SPECIFICATIONS

Torque Specifications

Description	Nm	lb-ft	lb-in
Front Seat			
Recliner-to-cushion frame bolts	55	41	—
Safety belt buckle bracket-to-seat track nuts	36	27	—
Safety belt buckle-to-safety belt buckle bracket bolt	42	31	—
Seat track-to-cushion frame nuts	36	27	—

Torque Specifications (Continued)

Description	Nm	lb-ft	lb-in
Seat track-to-floor bolts and nuts	48	35	—
Side air bag module bracket-to-backrest frame bolts	10	—	89
Side air bag module-to-bracket nuts	6	—	53
Rear Seat			
Backrest pivot bracket-to-floor bolt	23	17	—
Backrest striker bolt	23	17	—
Backrest-to-floor bolt	23	17	—

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DESCRIPTION AND OPERATION

Seats

Front Seats

The front seats can be equipped with the following systems:

- Manual seat tracks
- Power seat tracks
- Manual seat cushion height adjust (driver only)
- Manual recliner
- Power lumbar adjust (driver only)
- Seat side air bags
- Heated seats

Heated Seats

This system allows the electrical heating of the front seats on passenger demand.

The heated seats system has the following components:

- Heated seat relays
- Heater mats attached to the seat cushion and backrest
- Heated seat control switches, located on the HVAC module

Static Lumbar

The static front seat lumbar is mounted horizontally to provide more lower body displacement for front seat occupants.

Power Lumbar

The driver seat has an electro-mechanical backrest pad adjuster mounted horizontally to provide more lower body displacement. The lumbar switch is located on the side of the seat cushion side shield.

Manual Recline

The manual recline can be adjusted by a handle mounted on the outboard side of the cushion side shield.

Seat Side Air Bags

Driver and passenger seat side air bags are attached to the seat backrest frame. For diagnostic information, or if the seat side air bag has deployed, refer to Section 501-20B.

If a seat side air bag deployment took place, new seat back foam pad, trim cover, seat side air bag module, bracket and nuts, and U-nuts and bolts must be installed. Install a new seat backrest frame, if necessary.

Front seat backrest trim covers cannot be repaired. Install new front seat backrest trim covers. Cleaning is permissible.

Occupant Classification Sensor (OCS)

The Occupant Classification Sensor (OCS) system is standard equipment on all front passenger seats. For information on diagnosing or servicing the OCS system, refer to Section 501-20B.

Rear Seats

The fold-down rear seat backrests (coupe only) are a split (50/50) design and operate independently of each other.

The convertible is equipped with a fixed rear seat backrest.

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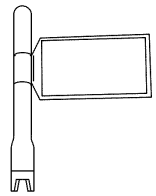
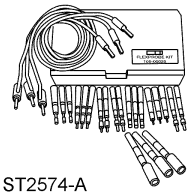
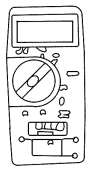
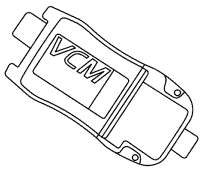
DIAGNOSIS AND TESTING

Seats

Special Tool(s)

 ST2502-A	Diagnostic Tool, Restraint System (2 required) 418-133
 ST2574-A	Flex Probe Kit 105-R025C or equivalent
 ST1137-A	FLUKE 73 III Automotive Meter 105-R0057 or equivalent
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Restraint System Diagnostic Tool Warning

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

Principles of Operation

Power Seats

The 6-way power seat feature moves the seat in 6 possible directions: the base of the seat can be moved forward or rearward and the front and back of the seat cushion can be moved up and down independently. The power seat feature operates independent of the position of the ignition.

The power seat motors are hardwired to the seat control switch. The circuits are normally at ground through the seat control switch. An individual circuit is switched to power when a specific adjustment position is selected.

Heated Seats

NOTICE: **Do not install a new heater mat on a front passenger seat cushion. If a new cushion heater mat is needed on the front passenger seat, an occupant classification sensor (OCS) service kit equipped with a heater mat must be installed. Failure to follow this instruction may result in incorrect operation of the OCS system. Refer to Section 501-20B for the OCS removal and installation procedure.**

The driver and passenger heated seats share a common battery voltage circuit to the heated seat relay junction box. The ignition switch supplies circuit voltage to the logic board and illumination of the heated seat switches located on the HVAC module. Battery voltage is supplied to the heater mats.

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DIAGNOSIS AND TESTING (Continued)

There are 2 voltage supply circuits to the heated seat relay. One circuit energizes the heated seat relay and heated seat switch indicator when the ignition switch is in the RUN position and the heated seat switch is activated. This closes the relay, switching voltage to the cushion and backrest heater mats from the other voltage supply circuit. The heated seat will remain on until the heated seat switch is selected off or a 10-minute time-out period occurs. If ignition switch is cycled OFF, the heated seat system is off.

Each seat's cushion and backrest heater mats are wired in series circuits. Seat temperature is maintained using a bi-metallic thermostat in each cushion heater mat which opens and closes, switching voltage on and off to the heater mats.

Inspection and Verification

1. Verify the customer concern by operating the system.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Front seat track • Seat at limit(s) of travel • Seat tracks obstructed or damaged • Power lumbar assembly damaged	• Heated seat bussed electrical center (BEC) fuse 66 (25A) • Driver power seat and lumbar BEC fuse 14 (30A) • Passenger power seat BEC fuse 15 (30A) • Loose, corroded or damaged connectors • Seat control switch • Heated seat switch (part of HVAC module) • Heated seat relays • Lumbar control switch • Cushion heater mat • Backrest heater mat

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. If the concern is not visually evident, verify the symptom. GO to Symptom Chart.

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
• The power seat is inoperative — driver	• Fuse • Circuitry • Seat control switch	• GO to Pinpoint Test A.
• The power seat is inoperative — passenger	• Fuse • Circuitry • Seat control switch	• GO to Pinpoint Test B.
• The power seat moves but is noisy	• Seat track alignment • Seat track	• GO to Pinpoint Test C.
• The power seat moves but is loose	• Fastening hardware • Seat track	• GO to Pinpoint Test D.
• The power seat does not make full travel	• Seat track obstructed • Seat track	• GO to Pinpoint Test E.
• The power seat does not move horizontally/vertically — driver	• Circuitry • Seat control switch • Seat track	• GO to Pinpoint Test F.
• The power seat does not move horizontally/vertically — passenger	• Circuitry • Seat control switch • Seat track	• GO to Pinpoint Test G.
• The power lumbar is inoperative	• Fuse • Circuitry • Lumbar control switch • Lumbar assembly	• GO to Pinpoint Test H.
• The heated seat is inoperative	• Fuse • Circuitry	• GO to Pinpoint Test I.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart (Continued)

Condition	Possible Sources	Action
• The heated seat is inoperative — driver seat does not heat but the heated seat indicator illuminates when pressed	• Circuitry • Cushion heater mat • Backrest heater mat • Heated seat relay • HVAC module	• GO to Pinpoint Test J.
• The heated seat is inoperative — passenger seat does not heat but the heated seat indicator illuminates when pressed	• Circuitry • Cushion heater mat • Backrest heater mat • Heated seat relay • HVAC module	• GO to Pinpoint Test K.

Pinpoint Tests

Refer to Inspection and Verification and the Symptom Chart for direction to the appropriate pinpoint test.

Pinpoint Test A: The Power Seat is Inoperative — Driver

Refer to Wiring Diagrams Cell 120, Power Seats for schematic and connector information.

Normal Operation

The seat control switch is supplied battery voltage through circuit 566 (DG) and is grounded by circuit 1205 (BK). The seat control switch then supplies voltage and ground to the appropriate circuits to operate the seat motors.

This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- Seat control switch

PINPOINT TEST A: THE POWER SEAT IS INOPERATIVE — DRIVER

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

NOTICE: **Use the correct probe adapter(s) when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The air bag warning indicator illuminates when the correct restraints control module (RCM) fuse is removed and the ignition switch is ON.

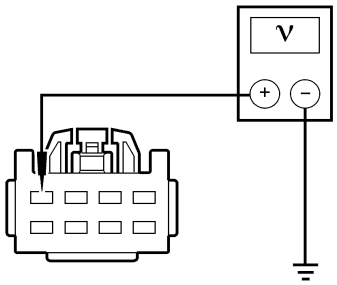
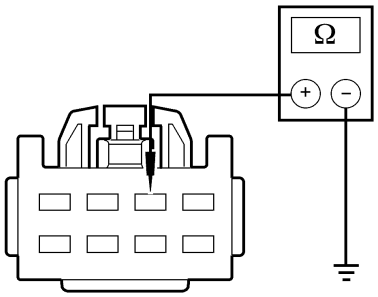
NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

Test Step		Result / Action to Take
A1	**CHECK VOLTAGE TO SEAT CONTROL SWITCH CIRCUIT 566 (DG)**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Driver Seat Side Air Bag C367. • Connect Restraint System Diagnostic Tool to driver seat side air bag C367. • Disconnect: Driver Seat Control Switch C360. • **⚠ WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE POWER SEAT IS INOPERATIVE — DRIVER (Continued)

Test Step		Result / Action to Take
A1	**CHECK VOLTAGE TO SEAT CONTROL SWITCH CIRCUIT 566 (DG) (Continued)**	
	• Measure the voltage between driver seat control switch C360-4, circuit 566 (DG), harness side and ground.  N0013956 • **Is the voltage greater than 10 volts?**	**Yes** GO to **A2**. **No** VERIFY bussed electrical center (BEC) fuse 14 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.
A2	**CHECK SEAT CONTROL SWITCH CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Measure the resistance between driver seat control switch C360-2, circuit 1205 (BK), harness side and ground.  N0013957 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.

Pinpoint Test B: The Power Seat is Inoperative — Passenger

Refer to Wiring Diagrams Cell 120, Power Seats for schematic and connector information.

Normal Operation

The seat control switch is supplied battery voltage through circuit 1462 (RD/WH) and is grounded by circuit 1205 (BK). The seat control switch then supplies voltage and ground to the appropriate circuits to operate the seat motors.

This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- Seat control switch

DIAGNOSIS AND TESTING (Continued)

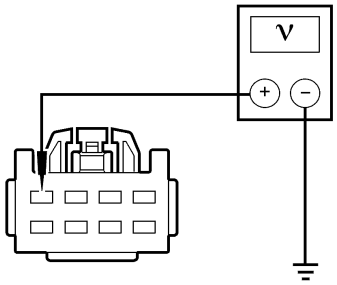
PINPOINT TEST B: THE POWER SEAT IS INOPERATIVE — PASSENGER

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

***NOTICE:* Use the correct probe adapter(s) when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The air bag warning indicator illuminates when the correct restraints control module (RCM) fuse is removed and the ignition switch is ON.

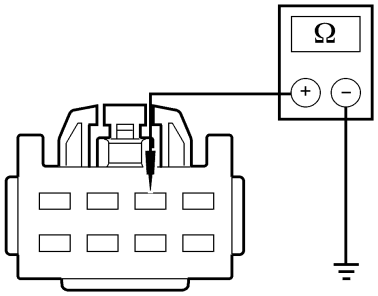
NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

Test Step		Result / Action to Take
B1	**CHECK VOLTAGE TO SEAT CONTROL SWITCH CIRCUIT 1462 (RD/WH)**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Passenger Seat Side Air Bag C337. • Connect Restraint System Diagnostic Tool to passenger seat side air bag C337. • Disconnect: Passenger Seat Control Switch C3190. • **⚠ WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01. • Measure the voltage between passenger seat control switch C3190-4, circuit 1462 (RD/WH), harness side and ground.  N0013956 • **Is the voltage greater than 10 volts?**	**Yes** GO to **B2**. **No** VERIFY bussed electrical center (BEC) fuse 15 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: THE POWER SEAT IS INOPERATIVE — PASSENGER (Continued)

Test Step		Result / Action to Take
B2	**CHECK SEAT CONTROL SWITCH CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Measure the resistance between passenger seat control switch C3190-2, circuit 1205 (BK), harness side and ground.  N0013957 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.

Pinpoint Test C: The Power Seat Moves But is Noisy

Normal Operation

Power seat movement should be quiet during operation. Some noise is acceptable.

This pinpoint test is intended to diagnose the following:

- Seat track alignment
- Seat track obstruction
- Seat track

PINPOINT TEST C: THE POWER SEAT MOVES BUT IS NOISY

Test Step		Result / Action to Take
C1	**CHECK THE TRACK ALIGNMENT**	
	• Check the alignment of the track to the floor and the track to the seat. • **Is the track out of alignment?**	**Yes** ALIGN the track to the seat and the floor. TEST the system for normal operation. **No** IDENTIFY the cause and REPAIR as necessary. TEST the system for normal operation.

Pinpoint Test D: The Power Seat Moves But is Loose

Normal Operation

Power seat movement should be smooth and the seat cushion should not rock during or after operation.

This pinpoint test is intended to diagnose the following:

- Seat track fastening hardware
- Seat track

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: THE POWER SEAT MOVES BUT IS LOOSE

Test Step		Result / Action to Take
D1	CHECK THE FASTENING HARDWARE	
	• Inspect the seat fastening hardware. • **Is the fastening hardware loose?**	**Yes** TIGHTEN all fastening hardware to specification. TEST the system for normal operation. **No** IDENTIFY the cause and REPAIR as necessary. TEST the system for normal operation.

Pinpoint Test E: The Power Seat Does Not Make Full Travel

Normal Operation

The power seat should travel fully horizontal (forward/rearward) and vertical (front up/down and rear up/down).

This pinpoint test is intended to diagnose the following:

- Seat track obstruction
- Seat track

PINPOINT TEST E: THE POWER SEAT DOES NOT MAKE FULL TRAVEL

NOTE: The air bag warning indicator illuminates when the correct restraints control module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

Test Step		Result / Action to Take
E1	CHECK FOR AN OBSTRUCTION IN THE SEAT TRACK	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Remove the affected seat. Refer to Seat — Front in this section. • **Are there any obstructions in the track?**	**Yes** REMOVE the obstruction(s) from the track(s). TEST the system for normal operation. REPOWER the SRS. REFER to Section 501-20B. **No** IDENTIFY the cause and REPAIR as necessary. TEST the system for normal operation. REPOWER the SRS. REFER to Section 501-20B.

Pinpoint Test F : The Power Seat Does Not Move Horizontally/Vertically — Driver

Refer to Wiring Diagrams Cell 120, Seating for schematic and connector information.

Normal Operation

When pressed in 1 of 6 available directions, the seat control switch supplies battery voltage and ground to 1 of 3 power seat track motors through horizontal motor circuits 980 (YE/WH) and 981 (RD/WH), front height motor circuits 979 (RD/LB) and 990 (YE/LB) or rear height motor circuits 982 (YE/LG) and 983 (RD/LG). The seat control switch is normally closed to ground on all 6 of the seat motor circuits, so if one circuit becomes closed to power, the circuit on the opposite side of the same motor is still closed to ground. The seat motor will then operate, moving the seat track in the selected direction. Moving the seat control switch in the opposite direction reverses polarity to the seat motor, which causes the seat motor to move the seat track in the opposite direction.

DIAGNOSIS AND TESTING (Continued)

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Seat control switch
- Seat track motor

PINPOINT TEST F: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — DRIVER

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

NOTE: The air bag warning indicator illuminates when the correct restraints control module (RCM) fuse is removed and the ignition switch is ON.

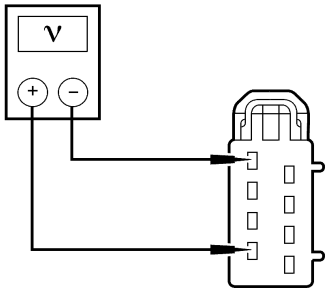
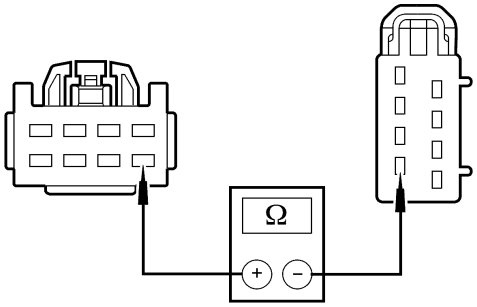
NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

Test Step		Result / Action to Take
F1	**CHECK THE HORIZONTAL MOTOR FOR CORRECT OPERATION**	
	• Operate the driver seat control switch to the forward and rearward positions. • **Does the seat move horizontally?**	**Yes** GO to F2. **No** GO to F9.
F2	**DETERMINE SEAT HEIGHT ADJUST FAILURE**	
	• Determine the seat height adjust failure. • **Does the seat front or rear height adjust up and down?**	**Yes** If only the front height adjust operates, GO to F3. If only the rear height adjust operates, GO to F6. **No** INSTALL a new seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation.
F3	**CHECK VOLTAGE TO THE REAR HEIGHT MOTOR**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Driver Seat Side Air Bag C367. • Connect Restraint System Diagnostic Tool to driver seat side air bag C367. • Disconnect: Driver Power Seat Motor Assembly C353. • **⚠ WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

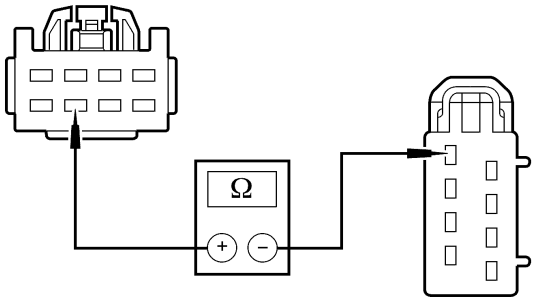
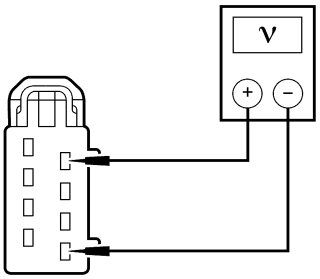
PINPOINT TEST F: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — DRIVER (Continued)

Test Step		Result / Action to Take
F3	**CHECK VOLTAGE TO THE REAR HEIGHT MOTOR (Continued)**	
	• Measure the voltage between driver power seat motor assembly C353-8, circuit 983 (RD/LG) and C353-2, circuit 982 (YE/LG), harness side, while operating the seat control switch rear height up and down.  N0013778 • **Is the voltage greater than 10 volts when the seat control switch is toggled in both directions and 0 volt in the rest position?**	**Yes** INSTALL a new power seat track. REFER to Seat Track — Power in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** GO to F4.
F4	**CHECK CIRCUIT 983 (RD/LG) FOR AN OPEN**	
	• Disconnect: Driver Seat Control Switch C360. • Measure the resistance between driver seat control switch C360-5, circuit 983 (RD/LG), harness side and driver power seat motor assembly C353-8, circuit 983 (RD/LG), harness side.  N0013779 • **Is the resistance less than 5 ohms?**	**Yes** GO to F5. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.

(Continued)

DIAGNOSIS AND TESTING (Continued)

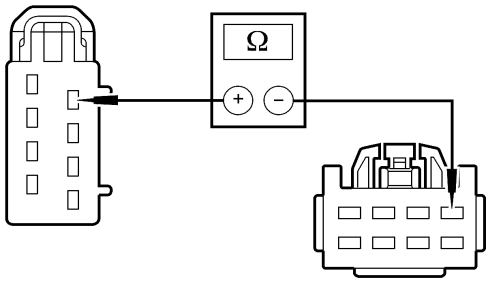
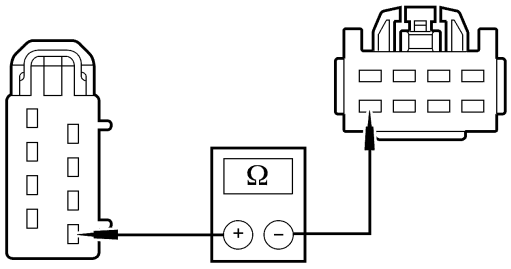
PINPOINT TEST F: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — DRIVER (Continued)

Test Step		Result / Action to Take
F5	**CHECK CIRCUIT 982 (YE/LG) FOR AN OPEN**	
	• Measure the resistance between driver seat control switch C360-7, circuit 982 (YE/LG), harness side and driver power seat motor assembly C353-2, circuit 982 (YE/LG), harness side.  N0013780 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new driver seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.
F6	**CHECK VOLTAGE TO THE FRONT HEIGHT MOTOR**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Driver Seat Side Air Bag C367. • Connect Restraint System Diagnostic Tool to driver seat side air bag C367. • Disconnect: Driver Power Seat Motor Assembly C353. • **WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01. • Measure the voltage between driver power seat motor assembly C353-1, circuit 979 (RD/LB) and C353-7, circuit 990 (YE/LB), harness side while operating the driver seat control switch front height up and down.  N0013781 • **Is the voltage greater than 10 volts when the seat control switch is toggled in both directions and 0 volt in the rest position?**	**Yes** INSTALL a new power seat track. REFER to Seat Track — Power in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** GO to F7.
F7	**CHECK CIRCUIT 979 (RD/LB) FOR AN OPEN**	
	• Disconnect: Driver Seat Control Switch C360.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

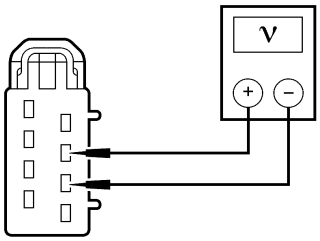
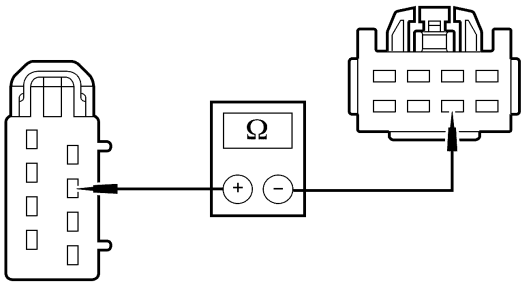
PINPOINT TEST F: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — DRIVER (Continued)

Test Step		Result / Action to Take
F7	**CHECK CIRCUIT 979 (RD/LB) FOR AN OPEN (Continued)**	
	• Measure the resistance between driver seat control switch C360-1, circuit 979 (RD/LB), harness side and driver power seat motor assembly C353-1, circuit 979 (RD/LB), harness side.  N0013782 • **Is the resistance less than 5 ohms?**	**Yes** GO to F8. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.
F8	**CHECK CIRCUIT 990 (YE/LB) FOR AN OPEN**	
	• Measure the resistance between driver seat control switch C360-8, circuit 990 (YE/LB), harness side and driver power seat motor assembly C353-7, circuit 990 (YE/LB), harness side.  N0013783 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new driver seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.
F9	**CHECK VOLTAGE TO THE HORIZONTAL MOTOR**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Driver Seat Side Air Bag C367. • Connect Restraint System Diagnostic Tool to driver seat side air bag C367. • Disconnect: Driver Power Seat Motor Assembly C353. • ⚠ **WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

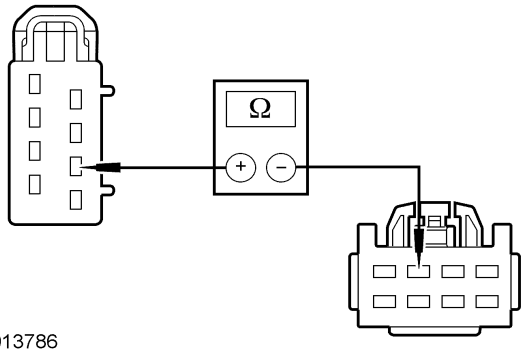
PINPOINT TEST F: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — DRIVER (Continued)

Test Step		Result / Action to Take
F9	**CHECK VOLTAGE TO THE HORIZONTAL MOTOR (Continued)**	
	• Measure the voltage between driver power seat motor assembly C353-3, circuit 981 (RD/WH) and C353-5, circuit 980 (YE/WH), harness side while operating the seat control switch forward and rearward.  N0013784 • **Is the voltage greater than 10 volts when the seat control switch is toggled in both directions and 0 volt in the rest position?**	**Yes** INSTALL a new power seat track. REFER to Seat Track — Power in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** GO to **F10**.
F10	**CHECK CIRCUIT 981 (RD/WH) FOR AN OPEN**	
	• Disconnect: Driver Seat Control Switch C360. • Measure the resistance between driver seat control switch C360-6, circuit 981 (RD/WH), harness side and driver power seat motor assembly C353-3, circuit 981 (RD/WH), harness side.  N0013785 • **Is the resistance less than 5 ohms?**	**Yes** GO to **F11**. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — DRIVER (Continued)

Test Step		Result / Action to Take
F11	CHECK CIRCUIT 980 (YE/WH) FOR AN OPEN	
• Measure the resistance between driver seat control switch C360-3, circuit 980 (YE/WH), harness side and driver power seat motor assembly C353-5, circuit 980 (YE/WH), harness side.  N0013786 • **Is the resistance less than 5 ohms?**		**Yes** INSTALL a new driver seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.

Pinpoint Test G: The Power Seat Does Not Move Horizontally/Vertically — Passenger

Refer to Wiring Diagrams Cell 120, Seating for schematic and connector information.

Normal Operation

When pressed in 1 of 6 available directions, the seat control switch supplies battery voltage and ground to 1 of 3 power seat track motors through horizontal motor circuits 986 (YE/WH) and 987 (RD/WH), front height motor circuits 984 (YE/LB) and 985 (RD/LB) or rear height motor circuits 988 (YE/LG) and 989 (RD/LG). The seat control switch is normally closed to ground on all 6 of the seat motor circuits, so if one circuit becomes closed to power, the circuit on the opposite side of the same motor is still closed to ground. The seat motor will then operate, moving the seat track in the selected direction. Moving the seat control switch in the opposite direction reverses polarity to the seat motor, which causes the seat motor to move the seat track in the opposite direction.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Seat control switch
- Seat track motor

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — PASSENGER

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

NOTE: The air bag warning indicator illuminates when the correct restraints control module (RCM) fuse is removed and the ignition switch is ON.

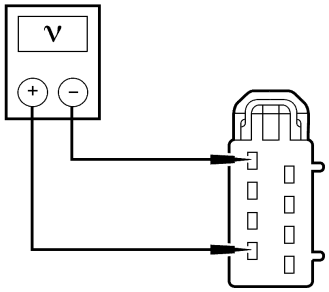
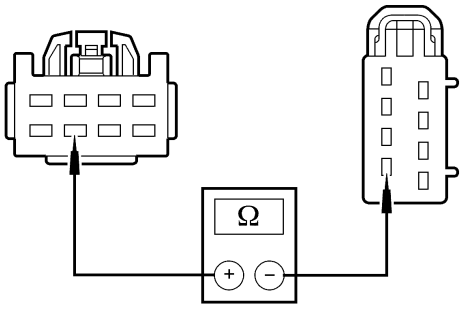
NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

Test Step		Result / Action to Take
G1	**CHECK THE HORIZONTAL MOTOR FOR CORRECT OPERATION**	
	• Operate the passenger seat control switch to the forward and rearward positions. • **Does the seat move horizontally?**	**Yes** GO to G2. **No** GO to G9.
G2	**DETERMINE SEAT HEIGHT ADJUST FAILURE**	
	• Determine seat height adjust failure. • **Does the seat front or rear height adjust up and down?**	**Yes** If only the rear height adjust operates, GO to G3. If only the front height adjust operates, GO to G6. **No** INSTALL a new seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.
G3	**CHECK VOLTAGE TO THE FRONT HEIGHT MOTOR**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Passenger Seat Side Air Bag C337. • Connect Restraint System Diagnostic Tool to passenger seat side air bag C337. • Disconnect: Passenger Power Seat Motor Assembly C3015. • **⚠ WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

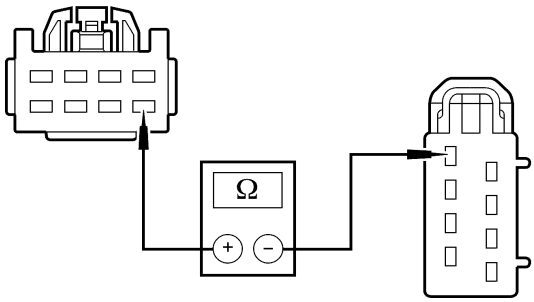
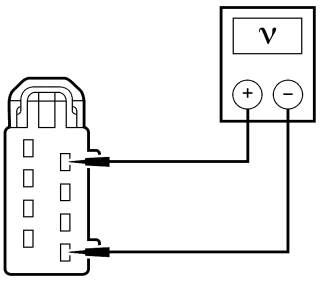
PINPOINT TEST G: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — PASSENGER (Continued)

Test Step		Result / Action to Take
G3	**CHECK VOLTAGE TO THE FRONT HEIGHT MOTOR (Continued)**	
	• Measure the voltage between passenger power seat motor assembly C3015-8, circuit 984 (YE/LB) and C3015-2, circuit 985 (RD/LB), harness side, while operating the seat control switch rear height up and down.  N0013778 • **Is the voltage greater than 10 volts when the seat control switch is toggled in both directions and 0 volt in the rest position?**	**Yes** INSTALL a new power seat track. REFER to Seat Track — Power in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B. **No** GO to **G4**.
G4	**CHECK CIRCUIT 984 (YE/LB) FOR AN OPEN**	
	• Disconnect: Passenger Seat Control Switch C3190. • Measure the resistance between passenger seat control switch C3190-7, circuit 984 (YE/LB), harness side and passenger power seat motor assembly C3015-8, circuit 984 (YE/LB), harness side.  N0051568 • **Is the resistance less than 5 ohms?**	**Yes** GO to **G5**. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.

(Continued)

DIAGNOSIS AND TESTING (Continued)

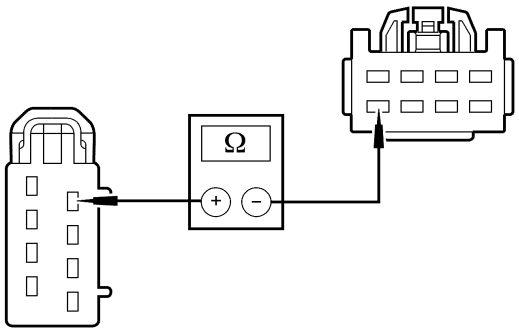
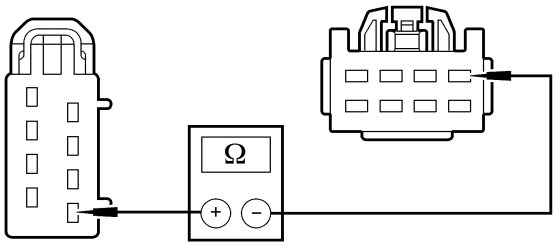
PINPOINT TEST G: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — PASSENGER (Continued)

Test Step		Result / Action to Take
G5	CHECK CIRCUIT 985 (RD/LB) FOR AN OPEN	
	• Measure the resistance between passenger seat control switch C3190-5, circuit 985 (RD/LB), harness side and passenger power seat motor assembly C3015-2, circuit 985 (RD/LB), harness side.  N0051569 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new passenger seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.
G6	CHECK VOLTAGE TO THE REAR HEIGHT MOTOR	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Passenger Seat Side Air Bag C337. • Connect Restraint System Diagnostic Tool to passenger seat side air bag C337. • Disconnect: Passenger Power Seat Motor Assembly C3015. • ⚠ **WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01. • Measure the voltage between passenger power seat motor assembly C3015-1, circuit 988 (YE/LG) and C3015-7, circuit 989 (RD/LG), harness side while operating the passenger seat control switch front height up and down.  N0013781 • **Is the voltage greater than 10 volts when the seat control switch is toggled in both directions and 0 volt in the rest position?**	**Yes** INSTALL a new power seat track. REFER to Seat Track — Power in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B. **No** GO to G7.
G7	CHECK CIRCUIT 988 (YE/LG) FOR AN OPEN	
	• Disconnect: Passenger Seat Control Switch C3190.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

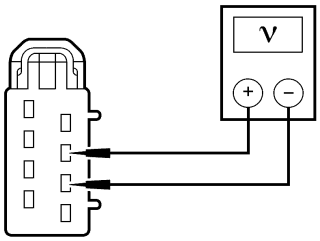
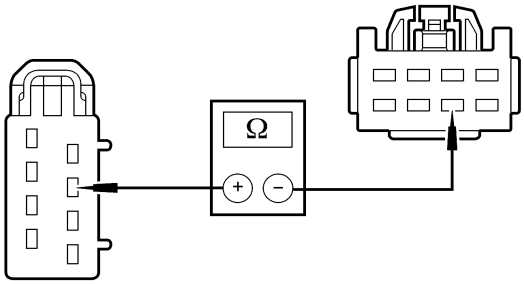
PINPOINT TEST G: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — PASSENGER (Continued)

Test Step		Result / Action to Take
G7	**CHECK CIRCUIT 988 (YE/LG) FOR AN OPEN (Continued)**	
	• Measure the resistance between passenger seat control switch C3190-8, circuit 988 (YE/LG), harness side and passenger power seat motor assembly C3015-1, circuit 988 (YE/LG), harness side.  N0051570 • **Is the resistance less than 5 ohms?**	**Yes** GO to **G8**. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.
G8	**CHECK CIRCUIT 989 (RD/LG) FOR AN OPEN**	
	• Measure the resistance between passenger seat control switch C3190-1, circuit 989 (RD/LG), harness side and passenger power seat motor assembly C3015-7, circuit 989 (RD/LG), harness side.  N0051571 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new passenger seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT driver seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.
G9	**CHECK VOLTAGE TO THE HORIZONTAL MOTOR**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Passenger Seat Side Air Bag C337. • Connect Restraint System Diagnostic Tool to passenger seat side air bag C337. • Disconnect: Passenger Power Seat Motor Assembly C3015. • **⚠ WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

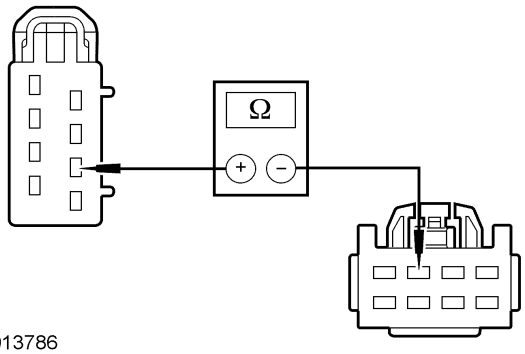
PINPOINT TEST G: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — PASSENGER (Continued)

Test Step		Result / Action to Take
G9	**CHECK VOLTAGE TO THE HORIZONTAL MOTOR (Continued)**	
	• Measure the voltage between passenger power seat motor assembly C3015-3, circuit 987 (RD/WH) and C3015-5, circuit 986 (YE/WH), harness side while operating the seat control switch forward and rearward.  N0013784 • **Is the voltage greater than 10 volts when the seat control switch is toggled in both directions and 0 volt in the rest position?**	**Yes** INSTALL a new power seat track. REFER to Seat Track — Power in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B. **No** GO to **G10**.
G10	**CHECK CIRCUIT 987 (RD/WH) FOR AN OPEN**	
	• Disconnect: Passenger Seat Control Switch C3190. • Measure the resistance between passenger seat control switch C3190-6, circuit 987 (RD/WH), harness side and driver power seat motor assembly C3015-3, circuit 987 (RD/WH), harness side.  N0013785 • **Is the resistance less than 5 ohms?**	**Yes** GO to **G11**. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: THE POWER SEAT DOES NOT MOVE HORIZONTALLY/VERTICALLY — PASSENGER (Continued)

Test Step		Result / Action to Take
G11	CHECK CIRCUIT 986 (YE/WH) FOR AN OPEN	
• Measure the resistance between passenger seat control switch C3190-3, circuit 986 (YE/WH), harness side and driver power seat motor assembly C3015-5, circuit 986 (YE/WH), harness side.  N0013786 • **Is the resistance less than 5 ohms?**		**Yes** INSTALL a new passenger seat control switch. REFER to Seat Control Switch in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.

Pinpoint Test H: The Power Lumbar is Inoperative

Refer to Wiring Diagrams Cell 120, Seating for schematic and connector information.

Normal Operation

The lumbar control switch is supplied battery voltage on circuit 566 (DG) and ground on circuit 1205 (BK). When the lumbar control switch is operated, voltage and ground are supplied to the power lumbar motor circuits 1094 (PK) and 1097 (BN) to move the lumbar assembly inward or outward. Operating the lumbar control switch in the opposite direction reverses the polarity to the power lumbar motor, which moves the lumbar assembly in the opposite direction.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Lumbar control switch
- Power lumbar assembly

PINPOINT TEST H: THE POWER LUMBAR IS INOPERATIVE

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

NOTE: The air bag warning indicator illuminates when the correct restraints control module (RCM) fuse is removed and the ignition switch is ON.

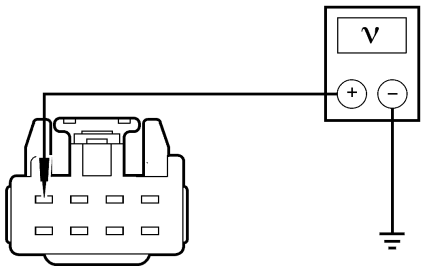
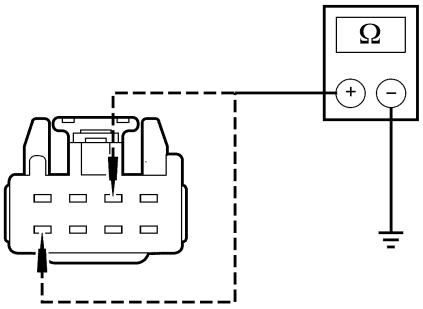
NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

Test Step		Result / Action to Take
H1	CHECK CIRCUIT 566 (DG) FOR VOLTAGE	
• Ignition OFF.		

(Continued)

DIAGNOSIS AND TESTING (Continued)

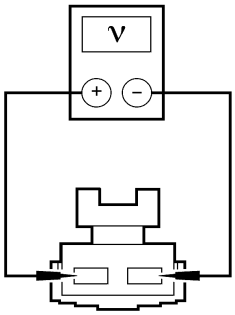
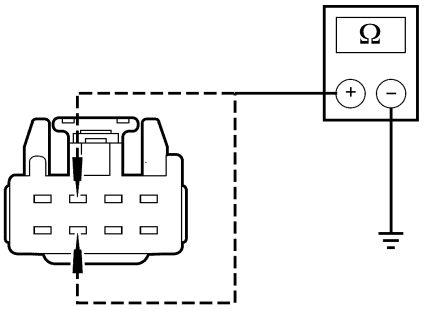
PINPOINT TEST H: THE POWER LUMBAR IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
H1	**CHECK CIRCUIT 566 (DG) FOR VOLTAGE (Continued)**	
	• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Driver Seat Side Air Bag C367. • Connect Restraint System Diagnostic Tool to driver seat side air bag C367. • Disconnect: Lumbar Control Switch C361. • **WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01. • Measure the voltage between lumbar control switch C361-4, circuit 566 (DG), harness side and ground.  N0013787 • **Is the voltage greater than 10 volts?**	**Yes** GO to **H2**. **No** VERIFY bussed electrical center (BEC) fuse 14 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.
H2	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Measure the resistance between lumbar control switch C361-2, circuit 1205 (BK), harness side and ground; and between lumbar control switch C361-8, circuit 1205 (BK), harness side and ground.  N0013788 • **Are the resistances less than 5 ohms?**	**Yes** GO to **H3**. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.
H3	**CHECK THE LUMBAR MOTOR**	
	• Connect: Lumbar Control Switch C361. • Disconnect: Power Lumbar Motor C366.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: THE POWER LUMBAR IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
H3	**CHECK THE LUMBAR MOTOR (Continued)**	
	• Measure the voltage between power lumbar motor C366-1, circuit 1097 (BN), harness side and power lumbar motor C366-2, circuit 1094 (PK), harness side.  N0040627 • Operate the power lumbar control switch in both directions. • **Is the voltage greater than 10 volts in both directions?**	**Yes** INSTALL a new power lumbar assembly. REFER to Lumbar Assembly in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** GO to **H4**.
H4	**CHECK CIRCUITS 1094 (PK) AND 1097 (BN) FOR A SHORT TO GROUND**	
	• Disconnect: Lumbar Control Switch C361. • Measure the resistance between lumbar control switch C361-3, circuit 1097 (BN), harness side and ground; and between lumbar control switch C361-7, circuit 1094 (PK), harness side and ground.  N0013790 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **H5**. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.
H5	**CHECK CIRCUITS 1094 (PK) AND 1097 (BN) FOR AN OPEN**	
	• Measure the resistance between power lumbar switch C361, harness side and power lumbar motor C366, harness side, using the following chart:	

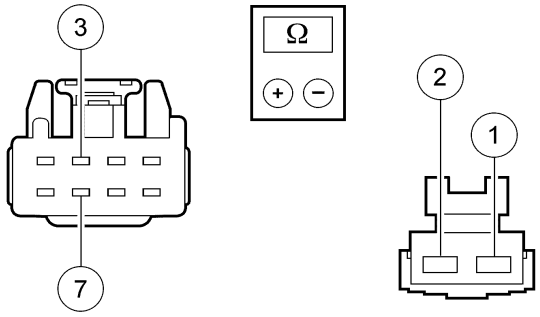
(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: THE POWER LUMBAR IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
H5	CHECK CIRCUITS 1094 (PK) AND 1097 (BN) FOR AN OPEN (Continued)	

Power Lumbar Switch	Circuit	Power Lumbar Motor
C361-3	1097 (BN)	C366-1
C361-7	1094 (PK)	C366-2



N0081259

- **Are the resistances less than 5 ohms?**

Yes
INSTALL a new lumbar control switch. REFER to Lumbar Control Switch in this section. TEST the system for normal operation.

DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.

No
REPAIR the circuit. TEST the system for normal operation.

DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.

Pinpoint Test I: The Heated Seat is Inoperative

Normal Operation

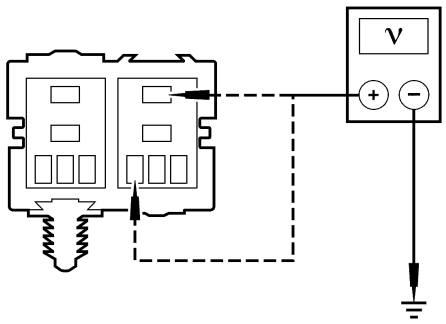
The HVAC module includes the heated seat switch buttons and indicators. The heated seat system will function when the HVAC module is ON or OFF. There is a relay box located behind the headlamp switch area containing 2 micro relays for the driver and passenger heated seats. Battery voltage from circuit 1048 (LB/WH) is supplied to the coil and switch of the driver and passenger heated seat relays. When the ignition switch is ON and the engine running, ground is supplied to the driver or passenger heated seat relay coil from the respective heated seat switch in the HVAC module to energize the relay. This closes the relay switch and voltage is supplied to the respective seat's cushion and backrest heater mats. The cushion and backrest heater mats are connected in series circuit with ground supplied to the backrest heater mat, completing the heater mat circuit to heat the seat. If the heated seat switch is on when the ignition switch is turned OFF, the heated seat switch will be on when the ignition switch is turned back ON.

This pinpoint test is intended to diagnose the following:

- Fuse(s)
- Wiring, terminals or connectors
- Heated seat switch (part of HVAC module)
- Heated seat relay
- Cushion heater mat
- Backrest heater mat

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: THE HEATED SEAT IS INOPERATIVE

Test Step		Result / Action to Take
I1	**CHECK THE HEATED SEAT INDICATORS**	
	• Ignition ON. • Operate both heated switches on. • **Do one or both heated seat switch indicators illuminate?**	**Yes** If both indicators illuminate, GO to **I2**. For driver seat only, GO to Pinpoint Test J. For passenger seat only, GO to Pinpoint Test K. **No** Turn the ignition key OFF and DISASSEMBLE as necessary to disconnect all of the HVAC module electrical connectors. WAIT one minute to allow the system to reset and RECONNECT the electrical connectors. RETEST the system. If the heated seat indicator still does not illuminate, INSTALL a new HVAC module. REFER to Section 412-01. TEST the system for normal operation.
I2	**CHECK THE HEATED SEAT POWER CIRCUITS**	
	• Ignition OFF. • Disconnect: Heated Seat Relay Driver or Passenger. • Ignition ON. • Measure the voltage at heated seat relay socket pin 1, circuit 1048 (LB/WH) and ground; and between pin 3, circuit 1048 (LB/WH) and ground.  N0074687 • **Are both voltages greater than 10 volts?**	**Yes** VERIFY the climate control system is operating correctly, REFER to Section 412-00. **No** VERIFY bussed electrical center (BEC) fuse 66 (25A) is OK. If OK, REPAIR circuit 1048 (LB/WH). TEST the system for normal operation.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test J: The Heated Seat is Inoperative — Driver Seat Does Not Heat But the Heated Seat Indicator Illuminates When Pressed

Normal Operation

The HVAC module includes the heated seat switch buttons and indicators. The heated seat system will function when the HVAC module is ON or OFF. There is a relay box located behind the headlamp switch area containing 2 micro relays for the driver and passenger heated seats. Battery voltage from circuit 1048 (LB/WH) is supplied to the coil and switch side of the driver heated seat relay. When the ignition switch is ON and the engine running, ground is supplied to the driver heated seat relay coil from the driver heated seat switch in the HVAC module to energize the relay. This closes the relay switch supplying voltage to driver seat cushion heater mat from circuit 1064 (YE/LB). The cushion and backrest heater mats are connected in series by circuit 1066 (GN/LB) and ground is supplied to backrest heater mat circuit 1205 (BK), completing the heater mat circuit to heat the driver seat. If the heated seat switch is on when the ignition switch is turned OFF, the heated seat switch will be on when the ignition switch is turned back ON.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Heated seat switch (part of HVAC module)
- Heated seat relay
- Cushion heater mat
- Backrest heater mat

PINPOINT TEST J: THE HEATED SEAT IS INOPERATIVE — DRIVER SEAT DOES NOT HEAT BUT THE HEATED SEAT INDICATOR ILLUMINATES WHEN PRESSED

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

NOTE: The air bag warning indicator illuminates when the correct restraints control module (RCM) fuse is removed and the ignition switch is ON.

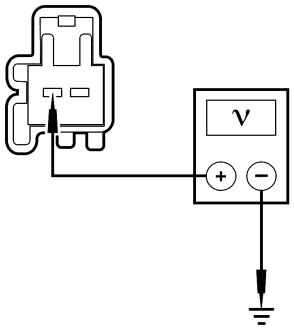
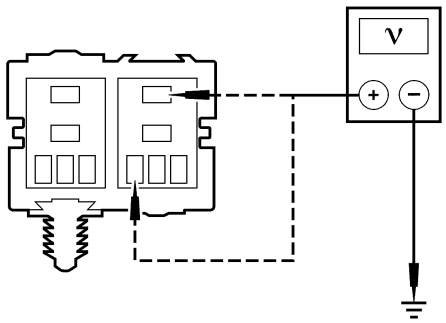
NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

	Test Step	Result / Action to Take
J1	**CHECK CIRCUIT 1064 (YE/LB) FOR VOLTAGE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Driver Seat Side Air Bag C367. • Connect Restraint System Diagnostic Tool to driver seat side air bag C367. • Disconnect: Driver Heated Seat C3300. • **⚠ WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

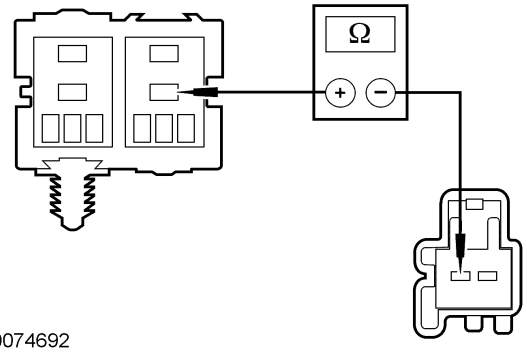
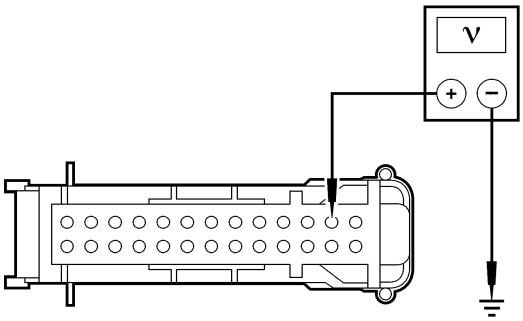
PINPOINT TEST J: THE HEATED SEAT IS INOPERATIVE — DRIVER SEAT DOES NOT HEAT BUT THE HEATED SEAT INDICATOR ILLUMINATES WHEN PRESSED (Continued)

Test Step		Result / Action to Take
J1	**CHECK CIRCUIT 1064 (YE/LB) FOR VOLTAGE (Continued)**	
	• Measure the voltage between driver heated seat C3300-1, circuit 1064 (YE/LB), harness side and ground.  N0074694 • **Is the voltage greater than 10 volts when the heated seat switch is depressed and 0 volt when the switch is off?**	**Yes** GO to J6. **No** GO to J2.
J2	**CHECK THE HEATED SEAT RELAY**	
	• Ignition OFF. • Swap the passenger heated seat relay with the driver heated seat relay. • Ignition ON. • **Does the seat heat when the heated seat switch is depressed?**	**Yes** INSTALL a new heated seat relay. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** GO to J3.
J3	**CHECK THE HEATED SEAT POWER CIRCUITS**	
	• Ignition OFF. • Disconnect: Heated Seat Relay (Driver). • Measure the voltage at driver heated seat relay socket pin 1, circuit 1048 (LB/WH) and ground; and between pin 3, circuit 1048 (LB/WH) and ground.  N0074687 • **Are both voltages greater than 10 volts?**	**Yes** GO to J4. **No** REPAIR circuit 1048 (LB/WH). TEST the system for normal operation.

(Continued)

DIAGNOSIS AND TESTING (Continued)

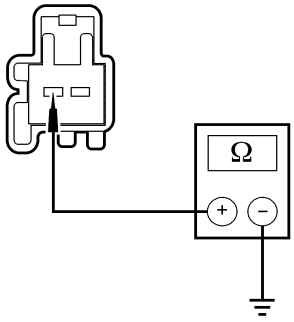
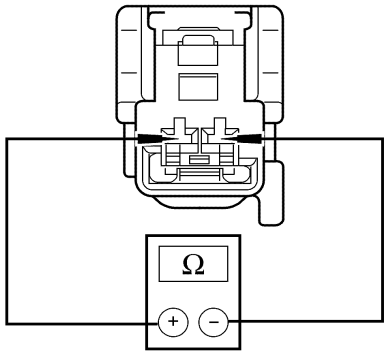
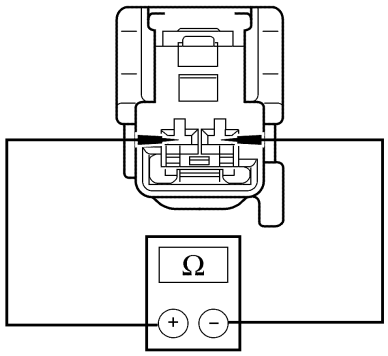
PINPOINT TEST J: THE HEATED SEAT IS INOPERATIVE — DRIVER SEAT DOES NOT HEAT BUT THE HEATED SEAT INDICATOR ILLUMINATES WHEN PRESSED (Continued)

Test Step		Result / Action to Take
J4	CHECK CIRCUIT 1064 (YE/LB) FOR AN OPEN	
	• Measure the resistance between driver heated seat relay socket pin 5, circuit 1064 (YE/LB) and driver cushion heater mat C3300-1 circuit 1064 (YE/LB), harness side.  N0074692 • **Is the resistance less than 5 ohms?**	**Yes** GO to J5. **No** REPAIR the circuit. TEST the system for normal operation. DISCONNECT the battery ground cable. CONNECT driver seat side air bag C367. REPOWER the SRS. REFER to Section 501-20B.
J5	CHECK THE HEATED SEAT REQUEST CIRCUIT	
	• Connect: Driver Heated Seat Relay. • Disconnect: HVAC Module C294a. • Measure the voltage between HVAC module C294a-12, circuit 581 (RD), harness side and ground.  N0074693 • **Is the voltage greater than 10 volts?**	**Yes** INSTALL a new HVAC module. REFER to Section 412-01. **No** REPAIR circuit 581 (RD). TEST the system for normal operation.
J6	CHECK CIRCUIT 1205 (BK) FOR AN OPEN	
	• Ignition OFF. • Disconnect: Driver Heated Seat C3310.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: THE HEATED SEAT IS INOPERATIVE — DRIVER SEAT DOES NOT HEAT BUT THE HEATED SEAT INDICATOR ILLUMINATES WHEN PRESSED (Continued)

Test Step	Result / Action to Take
J6 CHECK CIRCUIT 1205 (BK) FOR AN OPEN (Continued) • Measure the resistance between driver seat C3310-2 circuit 1205 (BK), harness side and ground.  N0028225 • **Is the resistance less than 5 ohms?**	**Yes** GO to **J7**. **No** REPAIR circuit 1205 (BK). TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.
J7 CHECK THE CUSHION HEATER MAT FOR AN OPEN • Measure the resistance between driver cushion heater mat C3300 pins 1 and 2, component side.  A0073993 • **Is the resistance between 0.8 and 1.3 ohms?**	**Yes** GO to **J8**. **No** INSTALL a new cushion heater mat. REFER to Seat Cushion Cover — Front in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.
J8 CHECK THE BACKREST HEATER MAT FOR AN OPEN • Disconnect: Driver Backrest Heater Mat C3310. • Measure the resistance between backrest heater mat C3310 pins 1 and 2, component side.  A0073993 • **Is the resistance between 0.8 and 1.3 ohms?**	**Yes** REPAIR seat harness. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B. **No** INSTALL a new backrest heater mat. REFER to Seat Cushion Cover — Front in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C367. CONNECT driver seat side air bag module C367. REPOWER the SRS. REFER to Section 501-20B.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test K: The Heated Seat is Inoperative — Passenger Seat Does Not Heat But the Heated Seat Indicator Illuminates When Pressed

Normal Operation

The HVAC module includes the heated seat switch buttons and indicators. The heated seat system will function when the HVAC module is ON or OFF. There is a relay box located behind the headlamp switch area containing 2 micro relays for the driver and passenger heated seats. Battery voltage from circuit 1048 (LB/WH) is supplied to the coil and switch side of the passenger heated seat relay. When the ignition switch is ON and the engine running, ground is supplied to the passenger heated seat relay coil from the passenger heated seat switch in the HVAC module to energize the relay. This closes the relay switch supplying voltage to passenger seat cushion heater mat from circuit 2124 (YE/LB). The cushion and backrest heater mats are connected in series by circuit 2126 (GY/LB) and ground is supplied to the backrest heater mat circuit 1205 (BK), completing the heater mat circuit to heat the driver seat. If the heated seat switch is on when the ignition switch is turned OFF, the heated seat switch will be on when the ignition switch is turned back ON.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Heated seat switch (part of HVAC module)
- Heated seat relay
- Cushion heater mat
- Backrest heater mat

PINPOINT TEST K: THE HEATED SEAT IS INOPERATIVE — PASSENGER SEAT DOES NOT HEAT BUT THE HEATED SEAT INDICATOR ILLUMINATES WHEN PRESSED

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

NOTICE: **Do not install a new heater mat on a front passenger seat cushion. If a new cushion heater mat is needed on the front passenger seat, an occupant classification sensor (OCS) system service kit equipped with a heater mat must be installed. Failure to follow this instruction may result in incorrect operation of the OCS system. Refer to Section 501-20B for the OCS removal and installation procedure.**

NOTE: The air bag warning indicator illuminates when the correct restraints control module (RCM) fuse is removed and the ignition switch is ON.

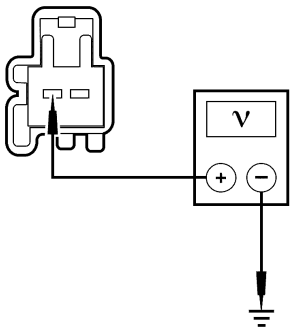
NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

Test Step		Result / Action to Take
K1	**CHECK CIRCUIT 2124 (YE/LB) FOR VOLTAGE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B. • Disconnect: Passenger Seat Side Air Bag C337. • Connect Restraint System Diagnostic Tool to passenger seat side air bag C337. • Disconnect: Passenger Heated Seat C334.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

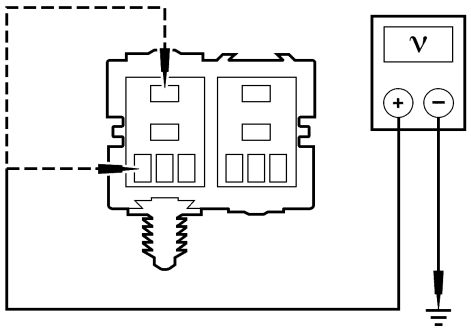
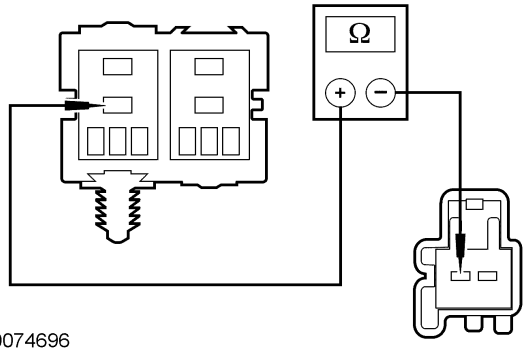
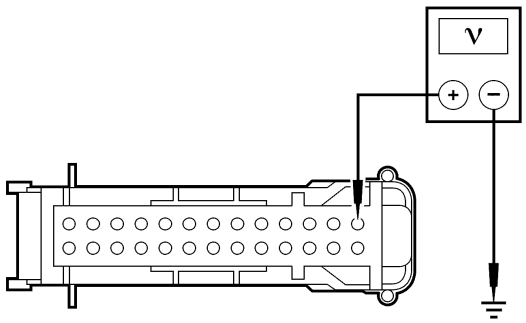
PINPOINT TEST K: THE HEATED SEAT IS INOPERATIVE — PASSENGER SEAT DOES NOT HEAT BUT THE HEATED SEAT INDICATOR ILLUMINATES WHEN PRESSED (Continued)

Test Step		Result / Action to Take
K1	**CHECK CIRCUIT 2124 (YE/LB) FOR VOLTAGE (Continued)**	
	• **⚠ WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.** Connect the battery ground cable. Refer to Section 414-01. • Ignition ON. • Measure the voltage between passenger heated seat C334-1 circuit 2124 (YE/LB), harness side and ground.  N0074694 • **Is the voltage greater than 10 volts when the heated seat switch is depressed and 0 volt when the switch is off?**	**Yes** GO to **K6**. **No** GO to **K2**.
K2	**CHECK THE HEATED SEAT RELAY**	
	• Ignition OFF. • Swap the passenger heated seat relay with the driver heated seat relay. • Ignition ON. • **Does the seat heat when the heated seat switch is depressed?**	**Yes** INSTALL a new heated seat relay. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B. **No** GO to **K3**.
K3	**CHECK THE HEATED SEAT POWER CIRCUITS**	
	• Ignition OFF. • Disconnect: Heated Seat Relay (Passenger).	

(Continued)

DIAGNOSIS AND TESTING (Continued)

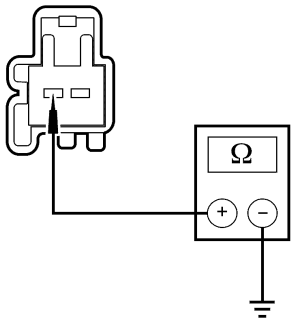
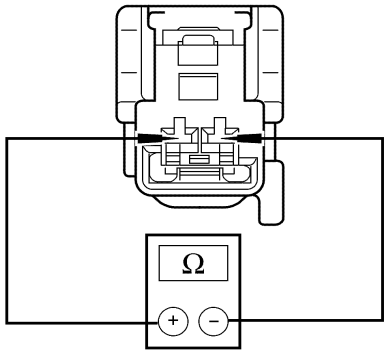
PINPOINT TEST K: THE HEATED SEAT IS INOPERATIVE — PASSENGER SEAT DOES NOT HEAT BUT THE HEATED SEAT INDICATOR ILLUMINATES WHEN PRESSED (Continued)

Test Step		Result / Action to Take
K3	**CHECK THE HEATED SEAT POWER CIRCUITS (Continued)**	
	• Measure the voltage at passenger heated seat relay socket pin 1, circuit 1048 (LB/WH) and ground; and between pin 3, circuit 1048 (LB/WH) and ground.  N0074695 • **Are both voltages greater than 10 volts?**	**Yes** GO to **K4**. **No** REPAIR circuit 1048 (LB/WH). TEST the system for normal operation.
K4	**CHECK CIRCUIT 2124 (YE/LB) FOR AN OPEN**	
	• Measure the resistance between passenger heated seat relay socket pin 5, circuit 2124 (YE/LB) and passenger cushion heater mat C334-1, circuit 2124 (YE/LB), harness side.  N0074696 • **Is the resistance less than 5 ohms?**	**Yes** GO to **K5**. **No** REPAIR the circuit TEST the system for normal operation. DISCONNECT the battery ground cable. CONNECT passenger seat side air bag C337. REPOWER the SRS. REFER to Section 501-20B.
K5	**CHECK THE HEATED SEAT REQUEST CIRCUIT**	
	• Connect: Passenger Heated Seat Relay. • Disconnect: HVAC Module C294a. • Measure the voltage between HVAC module C294a-13, circuit 2119 (DG/VT), harness side and ground.  N0074697 • **Is the voltage greater than 10 volts?**	**Yes** INSTALL a new HVAC module. REFER to Section 412-01. **No** REPAIR circuit 2119 (DG/VT). TEST the system for normal operation.

(Continued)

DIAGNOSIS AND TESTING (Continued)

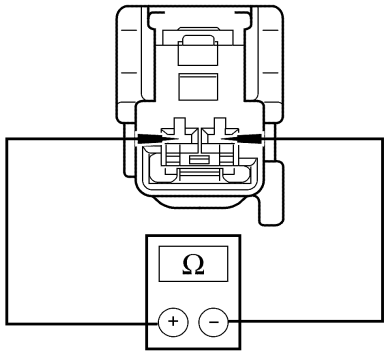
PINPOINT TEST K: THE HEATED SEAT IS INOPERATIVE — PASSENGER SEAT DOES NOT HEAT BUT THE HEATED SEAT INDICATOR ILLUMINATES WHEN PRESSED (Continued)

Test Step		Result / Action to Take
K6	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Ignition OFF. • Disconnect: Passenger Heated Seat C335. • Measure the resistance between passenger seat C335-2 circuit 1205 (BK), harness side and ground.  N0028225 • **Is the resistance less than 5 ohms?**	**Yes** GO to **K7**. **No** REPAIR circuit 1205 (BK). TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.
K7	**CHECK THE CUSHION HEATER MAT FOR AN OPEN**	
	• Measure the resistance between passenger cushion heater mat C334 pins 1 and 2, component side.  A0073993 • **Is the resistance between 0.8 and 1.3 ohms?**	**Yes** GO to **K8**. **No** INSTALL a new passenger cushion heater mat. REFER to Seat Cushion Cover — Front in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from driver seat side air bag module C337. CONNECT driver seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.

(Continued)

DIAGNOSIS AND TESTING (Continued)

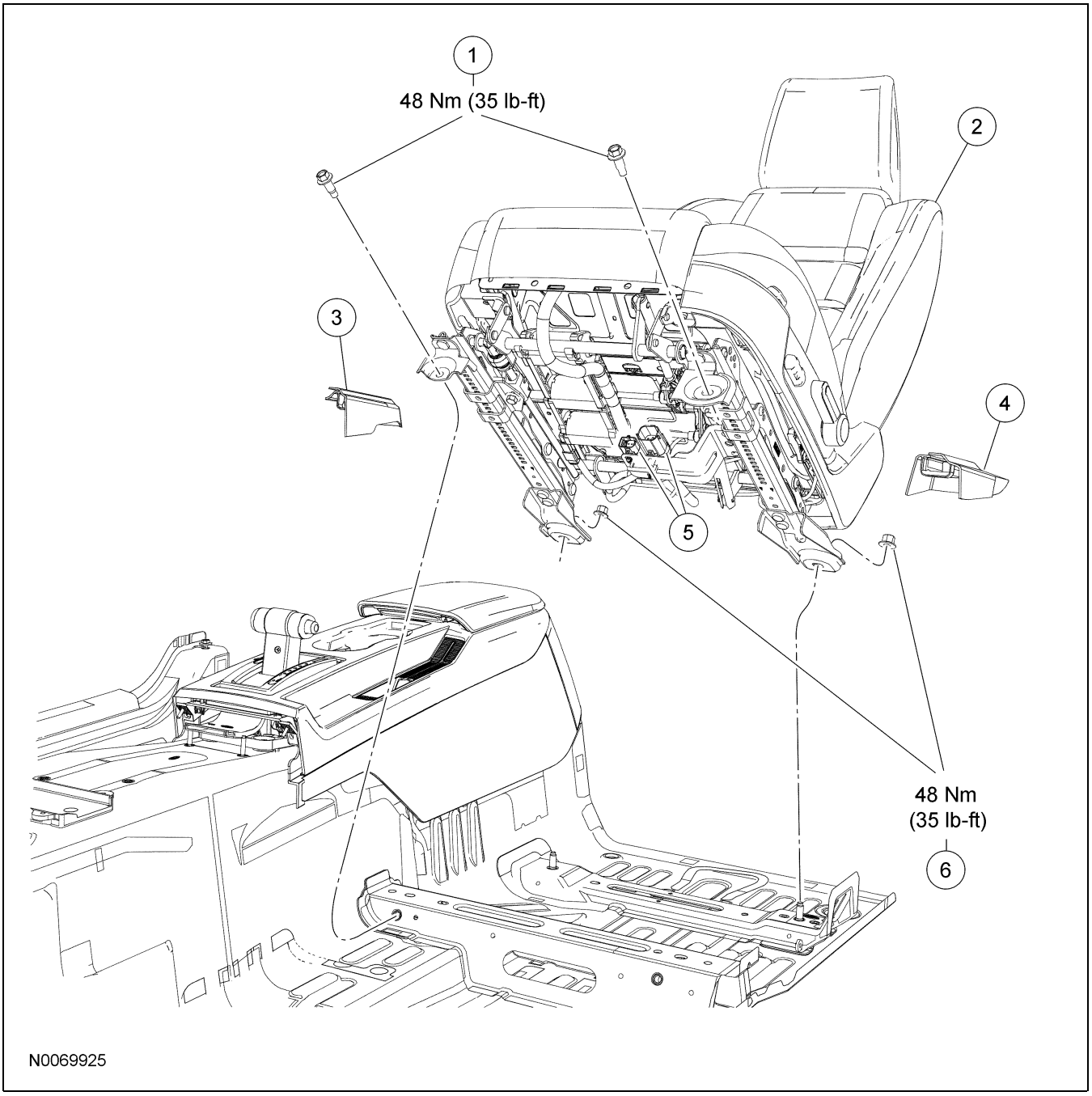
PINPOINT TEST K: THE HEATED SEAT IS INOPERATIVE — PASSENGER SEAT DOES NOT HEAT BUT THE HEATED SEAT INDICATOR ILLUMINATES WHEN PRESSED (Continued)

Test Step		Result / Action to Take
K8	**CHECK THE BACKREST HEATER MAT FOR AN OPEN**	
	• Disconnect: Passenger Backrest Heater Mat C335. • Measure the resistance between passenger backrest heater mat C335 pins 1 and 2, component side.  A0073993 • **Is the resistance between 0.8 and 1.3 ohms?**	**Yes** REPAIR seat harness. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B. **No** INSTALL a new backrest heater mat. REFER to Seat Cushion Cover — Front in this section. TEST the system for normal operation. DISCONNECT the battery ground cable. DISCONNECT the Restraint System Diagnostic Tool from passenger seat side air bag module C337. CONNECT passenger seat side air bag module C337. REPOWER the SRS. REFER to Section 501-20B.

REMOVAL AND INSTALLATION

Seat — Front

NOTE: LH shown, RH similar.



Item	Part Number	Description
1	—	Seat track-to-floor bolts
2	—	Front seat
3	618C84	Inboard seat track nut cover

(Continued)

Item	Part Number	Description
4	618C82	Outboard seat track nut cover
5	—	Seat electrical connectors (part of 14A699)
6	N807939	Seat track-to-floor nuts

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REMOVAL AND INSTALLATION (Continued)

Removal and Installation

⚠ **WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.**

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

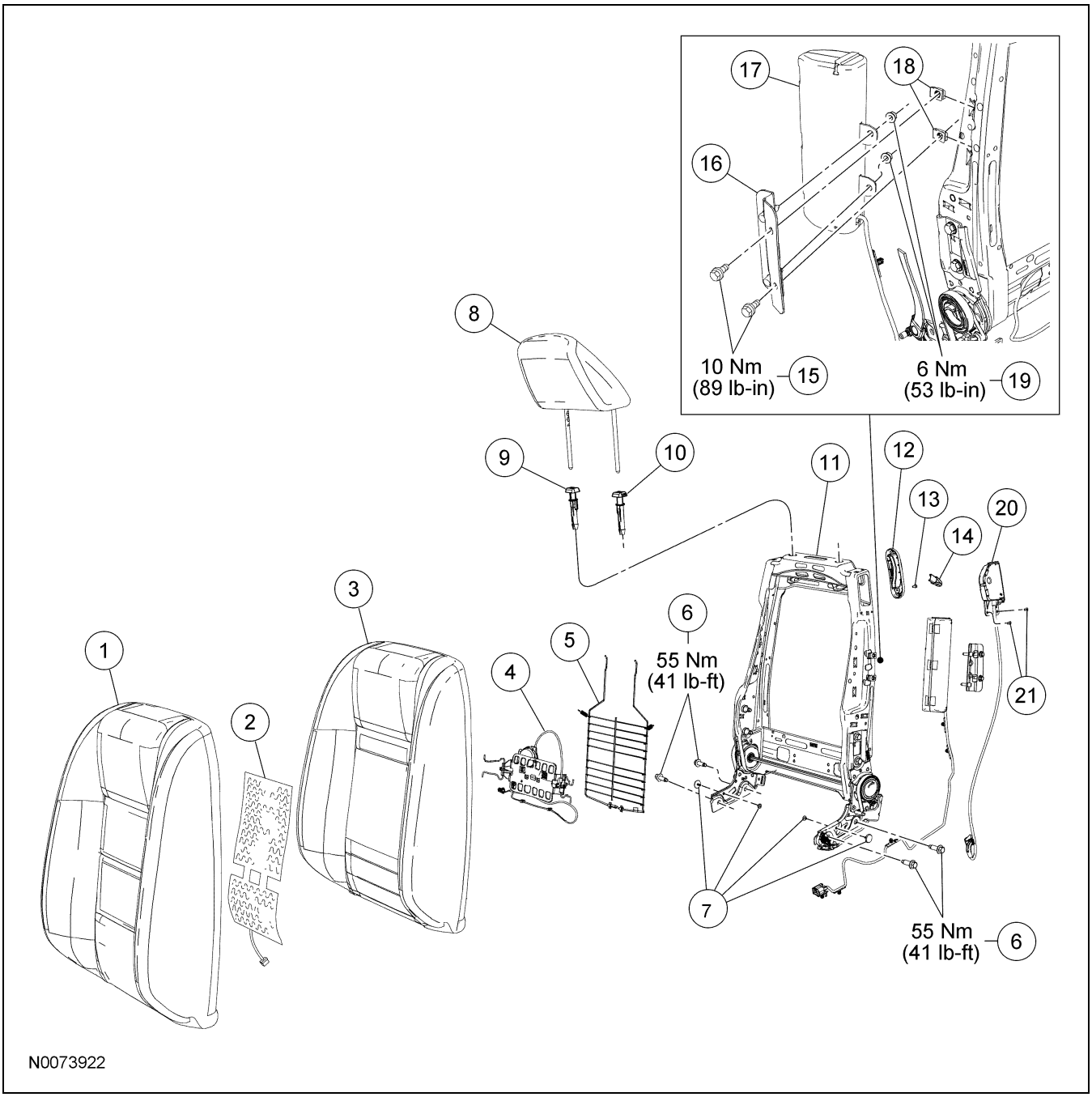
1. Position the seat to gain access to the seat track-to-floor nuts and bolts.
2. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.
3. Remove the 2 seat track nut covers.
4. Remove the 2 seat track-to-floor nuts.
   - To install, tighten to 48 Nm (35 lb-ft).
5. Remove the 2 seat track-to-floor bolts.
   - To install, tighten to 48 Nm (35 lb-ft).
6. Disconnect the side air bag module and main seat harness electrical connectors and remove the seat.
7. To install, reverse the removal procedure.
8. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

REMOVAL AND INSTALLATION

Seat — Exploded View, Front

Front Seat Backrest

NOTE: LH shown, RH similar.



Item	Part Number	Description
1	64417	Backrest trim cover
2	14D696	Heater mat (if equipped)
3	64810	Backrest foam pad

(Continued)

Item	Part Number	Description
4	65500	Power lumbar assembly (driver side only) (if equipped)
5	63226	Static lumbar

(Continued)

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REMOVAL AND INSTALLATION (Continued)

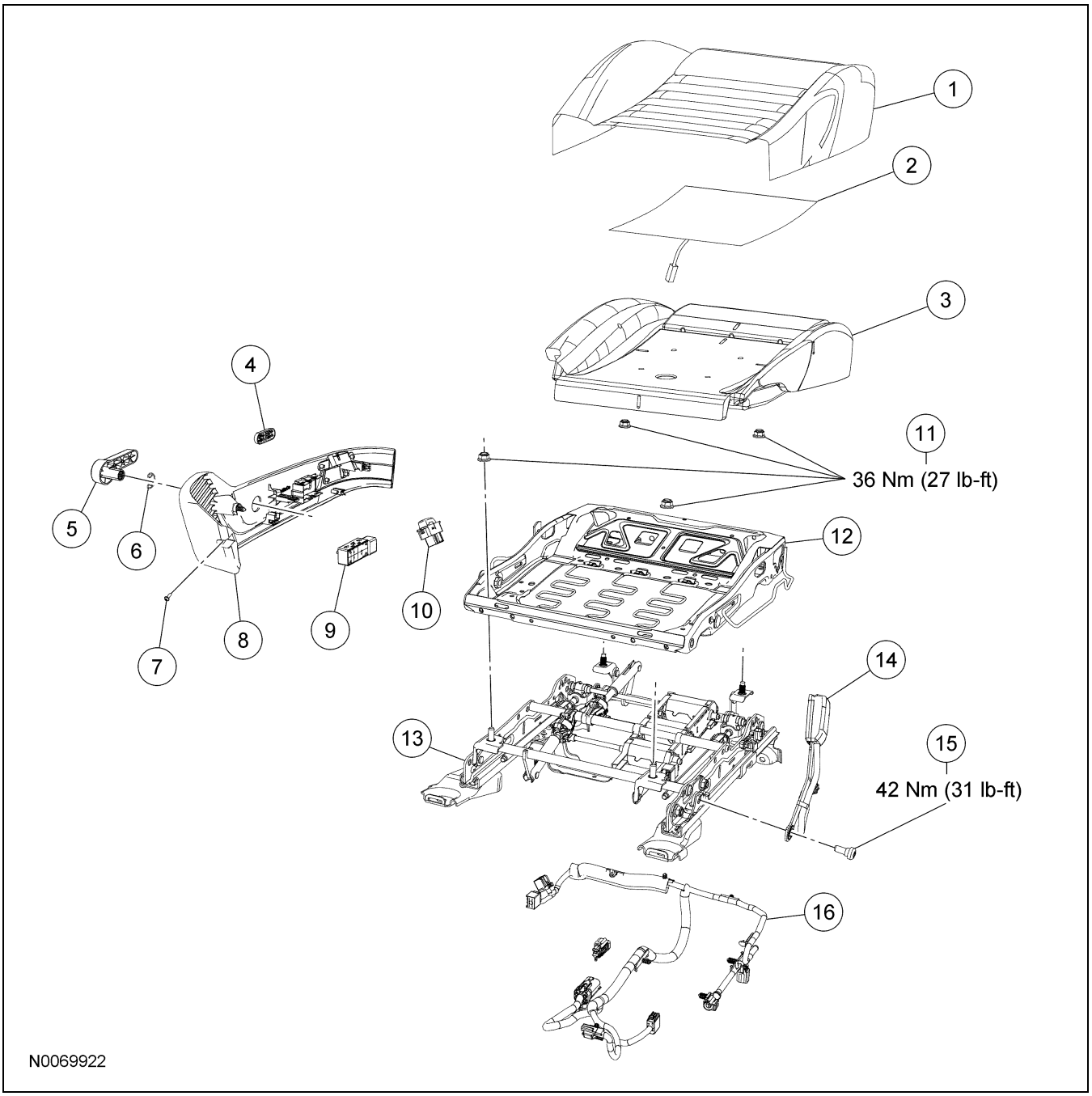
Item	Part Number	Description
6	W500633	Recliner-to-cushion frame bolts
7	—	Pin-type retainers
8	611A08	Head restraint assembly
9	022537	Inboard head restraint guide
10	020617	Outboard head restraint guide
11	61018	Backrest frame
12	62672	Backrest recliner release bezel
13	W506943	Backrest recliner release bezel screw
14	62762	Backrest recliner release handle

(Continued)

Item	Part Number	Description
15	N605892	Side air bag module bolts
16	611D79	Side air bag module bracket
17	611D11	Side air bag module
18	W520822	U-nuts
19	—	Side air bag module-to-bracket nuts (part of 611D11)
20	62432	Backrest recliner release
21	W711024	Backrest recliner release rivets

REMOVAL AND INSTALLATION (Continued)

Driver Power Front Seat Cushion



Item	Part Number	Description
1	62901	Cushion trim cover
2	14D698	Heater mat (if equipped)
3	—	Cushion foam pad
4	—	Seat control switch knob (if equipped)
5	62622	Recliner handle
6	—	Recliner handle clip (part of 62622)
7	—	Cushion side shield screw

(Continued)

Item	Part Number	Description
8	62187	Cushion side shield
9	14A701	Seat control switch
10	619A74	Lumbar control switch (if equipped)
11	W520113	Cushion frame-to-seat track nuts
12	63101	Cushion frame
13	61701	Power seat track
14	61203	Safety belt buckle

(Continued)

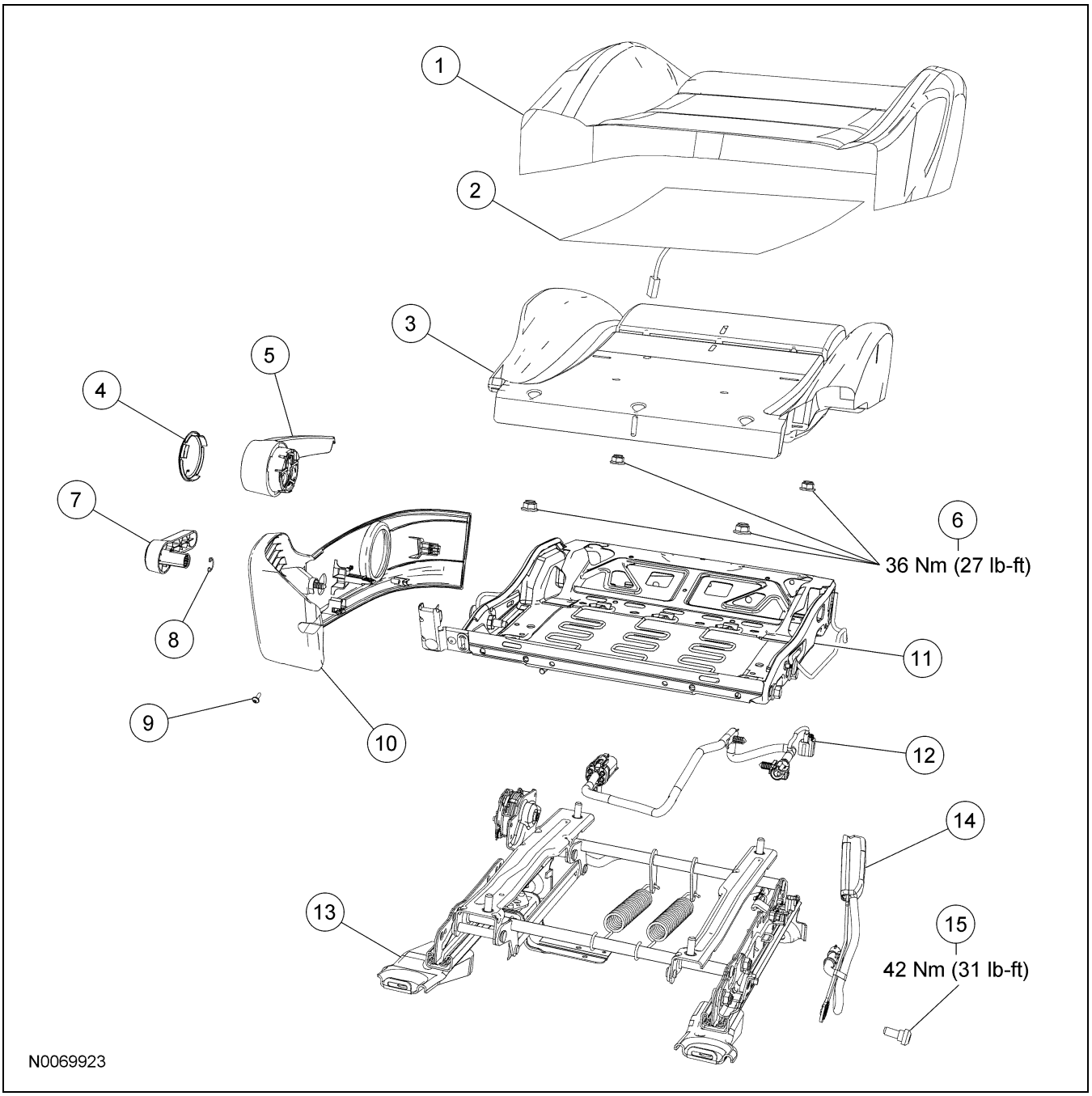
REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
15	—	Safety belt buckle bolt (part of 61203)

(Continued)

Item	Part Number	Description
16	14A699	Driver seat wire harness

Driver Manual Front Seat Cushion



Item	Part Number	Description
1	62901	Cushion trim cover
2	14D698	Heater mat (if equipped)
3	—	Cushion foam pad

(Continued)

Item	Part Number	Description
4	62768	Manual height adjust handle center cover (if equipped)
5	61753	Manual height adjust handle (if equipped)

(Continued)

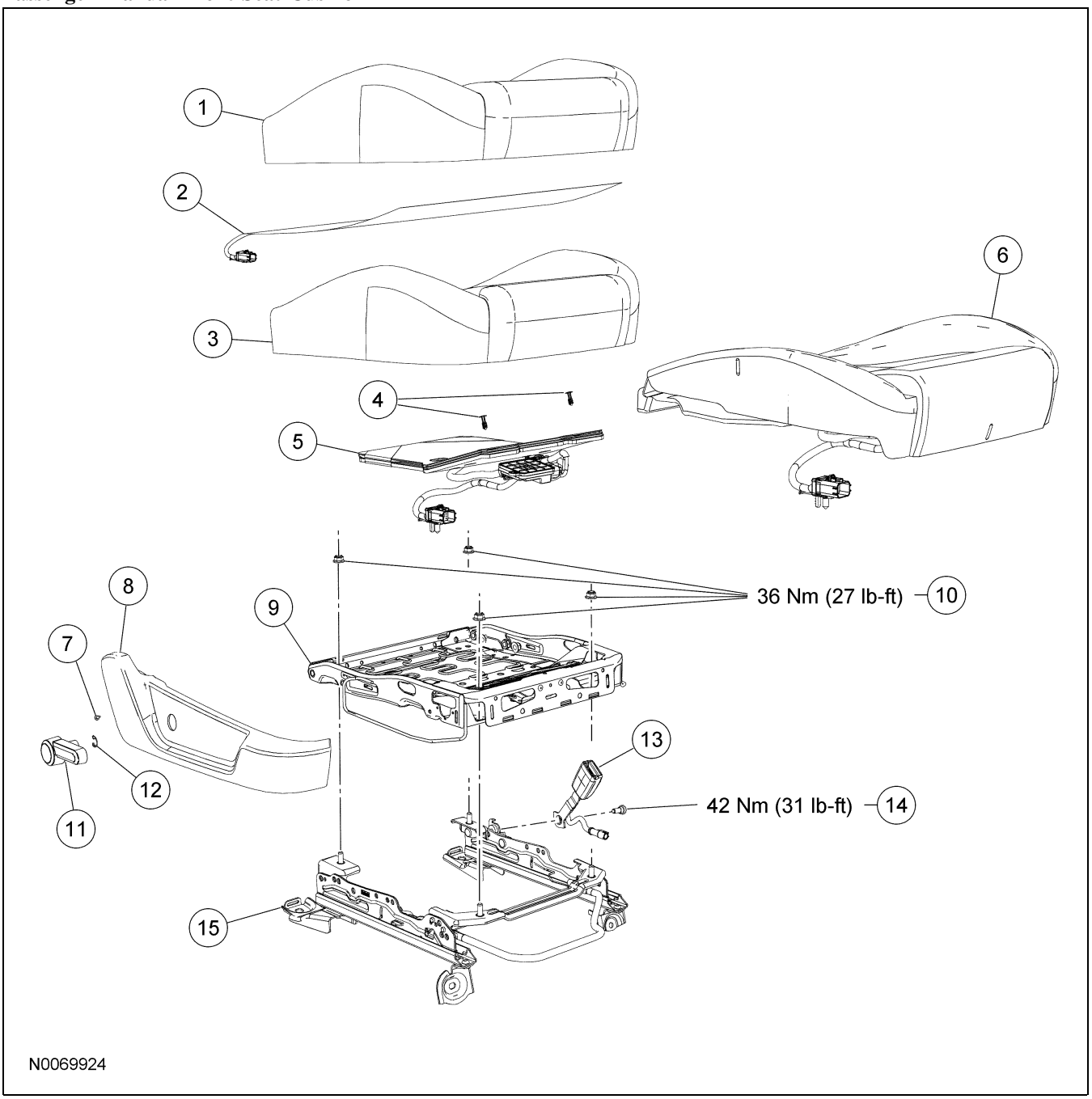
REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
6	W520113	Cushion frame-to-seat track nuts
7	62622	Recline handle
8	—	Recline handle clip (part of 62622)
9	—	Cushion side shield screw
10	62187	Cushion side shield

(Continued)

Item	Part Number	Description
11	63101	Cushion frame
12	14A699	Driver seat wire harness
13	61701	Seat track
14	61203	Safety belt buckle
15	—	Safety belt buckle bolt (part of 61203)

Passenger Manual Front Seat Cushion



REMOVAL AND INSTALLATION (Continued)

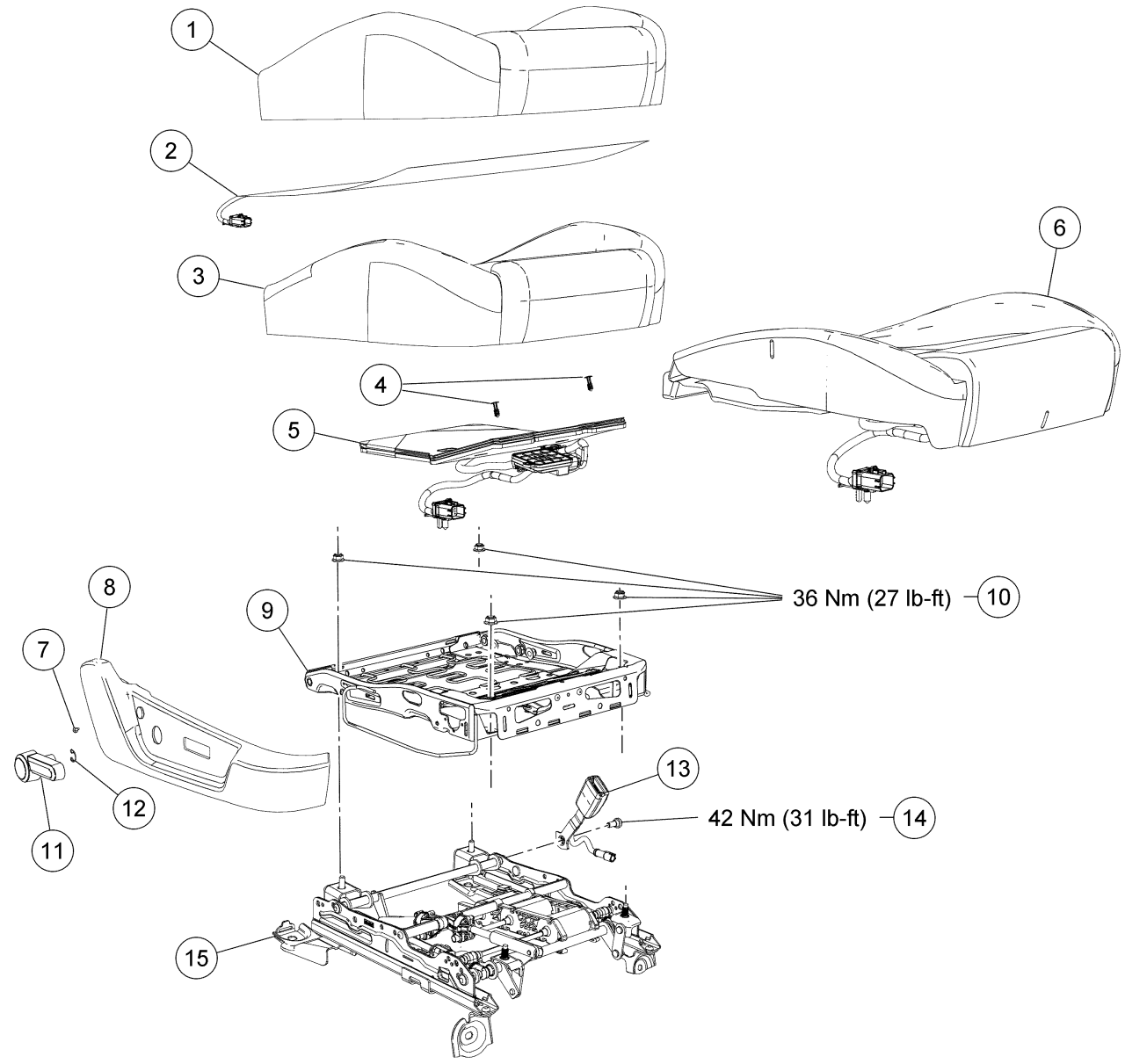
Item	Part Number	Description
1	62900	Cushion trim cover
2	—	Heater mat (part of 632A22) (if equipped)
3	—	Cushion foam pad (part of 632A22)
4	—	Pin-type retainers [part of OEM Occupant Classification Sensor (OCS) system]
5	—	OEM OCS system
6	632A22	OCS system service kit
7	—	Side shield screw
8	62186	Side shield

(Continued)

Item	Part Number	Description
9	63100	Cushion frame
10	W520113	Cushion frame-to-seat track nuts
11	62622	Recline handle
12	—	Recline handle clip (part of 62622)
13	61203	Safety belt buckle
14	—	Safety belt buckle bolt (part of 61203)
15	618B46	Manual seat track

REMOVAL AND INSTALLATION (Continued)

Passenger Power Front Seat Cushion



Item	Part Number	Description
1	62900	Cushion trim cover
2	—	Heater mat (part of 632A22) (if equipped)
3	—	Cushion foam pad (part of 632A22)
4	—	Pin-type retainers (part of OEM Occupant Classification Sensor (OCS) system)
5	—	OEM OCS system

(Continued)

Item	Part Number	Description
6	632A22	OCS system service kit
7	—	Side shield screw
8	62186	Side shield
9	63100	Cushion frame
10	W520113	Cushion frame-to-seat track nuts
11	62622	Recline handle
12	—	Recline handle clip (part of 62622)

(Continued)

REMOVAL AND INSTALLATION (Continued)

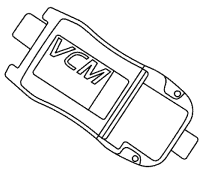
Item	Part Number	Description
13	61203	Safety belt buckle
14	—	Safety belt buckle bolt (part of 61203)
15	61701	Power seat track

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

Seat Backrest — Front

Special Tool(s)

 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Removal and Installation

NOTICE: **To prevent system failure, it is necessary to carry out the Occupant Classification Sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover is installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset.**

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: If a driver or passenger seat backrest heater mat is faulty, a new seat backrest foam pad must be installed with the heater mat. Do not reuse the original seat backrest foam pad.

NOTE: Note all harness routing for correct installation.

All seats

1. Remove the front seat. For additional information, refer to Seat — Front in this section.

2. Remove the clip and recline handle.

Driver seat

3. If equipped, remove the manual height adjust handle.
   - Remove the manual height adjust handle center cover.
   - Remove the 2 screws and manual height adjust handle.

All seats

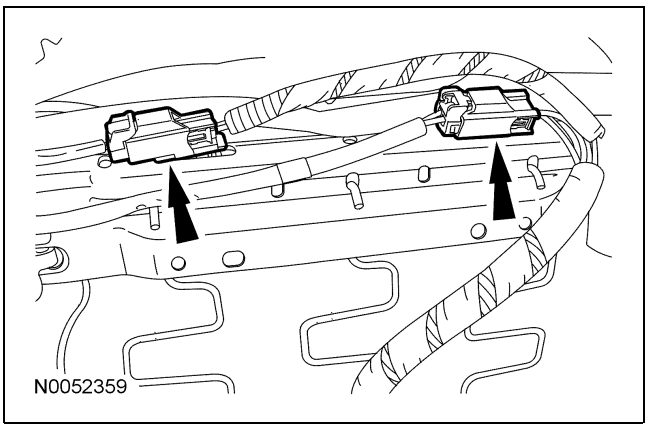
4. **NOTE:** Inspect the cushion side shield retaining clips for damage. Install new retainers if damage is present.

   Remove the screw at the rear of the cushion side shield. Release the retaining clips and pin-type retainer and separate the side shield.
   - Vehicles with a manual seat, remove the cushion side shield.

5. Separate the side air bag module electrical connector and the wire harness pin-type retainers from the seat track bracket and cushion frame.

Driver seat

6. If equipped, release the cushion trim cover rear lower J-clip and disconnect the power lumbar and heated seat cushion electrical connector.
   - Separate the connectors from the seat cushion frame.



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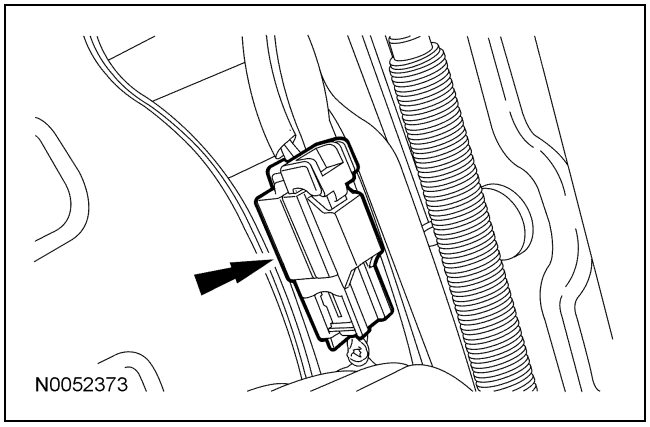
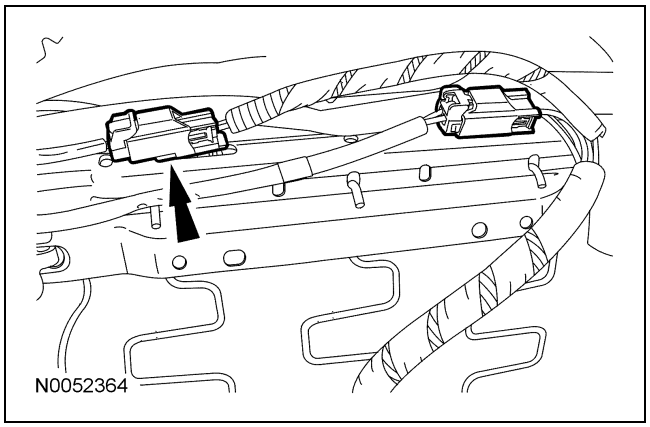
REMOVAL AND INSTALLATION (Continued)

7. If equipped, disconnect the backrest heated seat electrical connector and separate it from the bottom of the seat cushion frame.



Passenger seat

8. If equipped, release the cushion cover rear J-clip and disconnect the backrest heated seat electrical connector.
   - Detach the connector from the seat cushion frame.



All seats

9. Remove the 2 outboard recliner-to-cushion frame bolts.
   - To install, tighten to 55 Nm (41 lb-ft).
10. At the rear inboard side of the seat, release the cushion trim cover flap from the cushion frame bracket.
11. Remove the 2 inboard recliner-to-cushion frame bolts and remove the backrest.
    - To install, tighten to 55 Nm (41 lb-ft).
12. To install, reverse the removal procedure.
13. Install the seat. For additional information, refer to Seat — Front in this section.
14. Repower the SRS. **If the passenger seat has been serviced, do not prove out the SRS at this time.** For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

REMOVAL AND INSTALLATION (Continued)

Passenger seat

15. **WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.**

    WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.

    NOTICE: **To prevent system failure, the following precautions must be taken before carrying out the Occupant Classification Sensor (OCS) system reset:**

    - **Make sure the voltage to the Occupant Classification System Module (OCSM) is above 8 volts and less than 18 volts.**
    - **Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS system reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.**
    - **Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.**
    - **Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before the carrying out the OCS system reset process.**

    Carry out the Occupant Classification Sensor (OCS) system reset.

16. If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following and repair any concerns found.
    - OCS system connector and wiring for damage
    - Pressure sensor hose for kinks and/or damage
    - Seat-related wiring harness and body wiring harness terminals and connectors for damage

17. **NOTE:** The ignition switch must be cycled after the OCS system reset.

    Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit. For additional information, refer to Occupant Classification Sensor in Section 501-20B.

All seats

18. Prove out the SRS as follows:

    Turn the ignition key from ON to OFF. Wait 10 seconds, then turn the key back to ON and visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is detected, the air bag warning indicator will:

    - fail to light.
    - remain lit continuously.
    - flash.

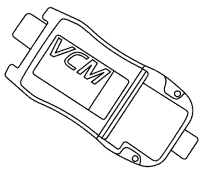
    The flashing might not occur until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag warning indicator is inoperative and a SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

    Clear all continuous DTCs from the RCM using a scan tool.

REMOVAL AND INSTALLATION

Seat Track — Manual

Special Tool(s)

 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Removal and Installation

NOTICE: **To prevent system failure, it is necessary to carry out the Occupant Classification Sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover is installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset.**

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: Note all wire harness routing for correct installation.

All seats

1. Remove the front seat. For additional information, refer to Seat — Front in this section.
2. Remove the clip and recline handle.

Driver seat

3. If equipped, remove the manual height adjust handle.
   - Remove the manual height adjust handle center cover.
   - Remove the 2 screws and manual height adjust handle.

All seats

4. Remove the screw at the rear of the cushion side shield. Pull out on the side of the cushion side shield, release the retaining clips and pin-type retainer and remove the side shield.
5. Separate the side air bag module electrical connector and wire harness pin-type retainers from the manual seat track bracket.
6. Release all cushion trim cover-to-cushion frame retainers.
7. Disconnect the safety belt buckle switch and separate the pin-type retainers from the seat track.
8. Separate the main seat electrical connector from the manual seat track.

Driver seat

9. Disconnect the seat position sensor and separate the pin-type retainer.

All seats

10. Remove the 4 nuts and manual seat track.
    - Lift the cushion foam pad to access the manual seat track nuts.
    - To install, tighten to 36 Nm (27 lb-ft).
11. Remove the bolt and safety belt buckle.
    - To install, tighten to 42 Nm (31 lb-ft).
12. To install, reverse the removal procedure.
13. Install the seat. For additional information, refer to Seat — Front in this section.
14. Repower the SRS. **If the passenger seat has been serviced, do not prove out the SRS at this time.** For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

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REMOVAL AND INSTALLATION (Continued)

Passenger seat

15. **WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.**

    WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.

    NOTICE: **To prevent system failure, the following precautions must be taken before carrying out the Occupant Classification Sensor (OCS) system reset:**

    - **Make sure the voltage to the Occupant Classification System Module (OCSM) is above 8 volts and less than 18 volts.**
    - **Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS system reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.**
    - **Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.**
    - **Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before the carrying out the OCS system reset process.**

    Carry out the Occupant Classification Sensor (OCS) system reset.

16. If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following and repair any concerns found.
    - OCS system connector and wiring for damage
    - Pressure sensor hose for kinks and/or damage
    - Seat-related wiring harness and body wiring harness terminals and connectors for damage

17. **NOTE:** The ignition switch must be cycled after the OCS system reset.

    Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit. For additional information, refer to Occupant Classification Sensor in Section 501-20B.

All seats

18. Prove out the SRS as follows:

    Turn the ignition key from ON to OFF. Wait 10 seconds, then turn the key back to ON and visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is detected, the air bag warning indicator will:

    - fail to light.
    - remain lit continuously.
    - flash.

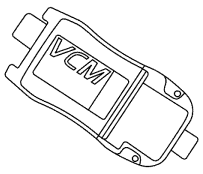
    The flashing might not occur until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag warning indicator is inoperative and a SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

    Clear all continuous DTCs from the RCM using a scan tool.

REMOVAL AND INSTALLATION

Seat Track — Power

Special Tool(s)

 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Removal and Installation

NOTICE: **To prevent system failure, it is necessary to carry out the Occupant Classification Sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover is installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset.**

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: Note all wire harness routing for correct installation.

All seats

1. Remove the front seat. For additional information, refer to Seat — Front in this section.
2. Remove the clip and recline handle.
3. Remove the screw at the rear of the cushion side shield. Pull out on the side of the cushion side shield, release the retaining clips and pin-type retainer and separate the side shield.

Driver seat

4. If equipped, remove the manual height adjust handle.
   - Remove the manual height adjust handle center cover.
   - Remove the 2 screws and manual height adjust handle.
5. Disconnect the seat position sensor and separate the pin-type retainer.

All seats

6. Separate the side air bag module electrical connector and wire harness from the power seat track bracket.
7. Release the cushion trim cover rear J-clip, disconnect the power lumbar electrical connector and separate it from the cushion frame.
8. Disconnect the power seat track motor electrical connector, separate the main seat electrical connector and wire harness from the power seat track bracket and position the wire harness aside.
9. Disconnect the safety belt buckle switch and separate the pin-type retainer from the seat track.
10. Release all cushion trim cover to cushion frame retainers.
11. Remove the 4 nuts and power seat track.
    - Lift the cushion foam pad to access the power seat track nuts.
    - To install, tighten to 36 Nm (27 lb-ft).
12. Remove the bolts and safety belt buckle and bracket.
    - To install, tighten to 42 Nm (31 lb-ft).
13. To install, reverse the removal procedure.
14. Install the seat. For additional information, refer to Seat — Front in this section.

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REMOVAL AND INSTALLATION (Continued)

15. Repower the SRS. **If the passenger seat has been serviced, do not prove out the SRS at this time.** For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

Passenger seat

16. ⚠ **WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.**

⚠ **WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.**

NOTICE: **To prevent system failure, the following precautions must be taken before carrying out the Occupant Classification Sensor (OCS) system reset:**

- **Make sure the voltage to the Occupant Classification System Module (OCSM) is above 8 volts and less than 18 volts.**
- **Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS system reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.**
- **Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.**
- **Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before the carrying out the OCS system reset process.**

Carry out the Occupant Classification Sensor (OCS) system reset.

REMOVAL AND INSTALLATION (Continued)

17. If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following and repair any concerns found.
    - OCS system connector and wiring for damage
    - Pressure sensor hose for kinks and/or damage
    - Seat-related wiring harness and body wiring harness terminals and connectors for damage
18. **NOTE:** The ignition switch must be cycled after the OCS system reset.

    Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit. For additional information, refer to Occupant Classification Sensor in Section 501-20B.

All seats

19. Prove out the SRS as follows:

    Turn the ignition key from ON to OFF. Wait 10 seconds, then turn the key back to ON and visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is detected, the air bag warning indicator will:

    - fail to light.
    - remain lit continuously.
    - flash.

    The flashing might not occur until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag warning indicator is inoperative and a SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

    Clear all continuous DTCs from the RCM using a scan tool.

REMOVAL AND INSTALLATION

Seat Backrest Cover — Front

Removal and Installation

⚠ WARNING: Front seat backrest trim covers installed on seats equipped with seat side air bags cannot be repaired. A new trim cover must be installed. Cleaning is permissible. Failure to follow these instructions may result in the seat side air bag module deploying incorrectly and increase the risk of serious personal injury or death in a crash.

⚠ WARNING: To correctly retain the backrest trim cover, always install 2 hog rings when attaching the backrest trim cover wire to the listing wire in each foam pad window. Failure to follow this instruction may result in the seat side air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.

NOTICE: **Use care when separating the seat cushion trim cover from the hook-and-loop strip. The hook-and-loop strip may be torn from the seat cushion foam.**

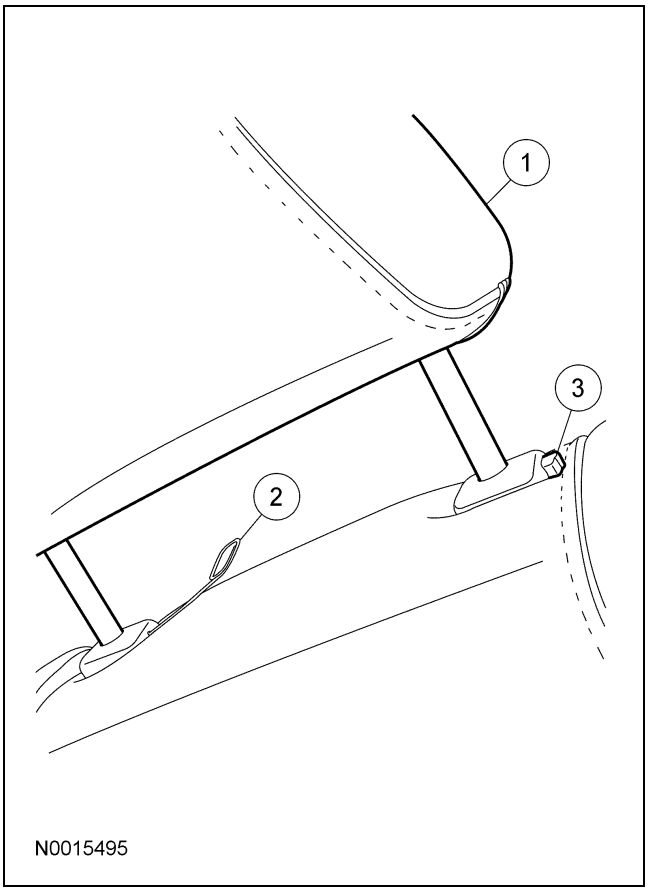
NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Remove the front seat. For additional information, refer to Seat — Front in this section.

2. Remove the front seat backrest. For additional information, refer to Seat Backrest — Front in this section.

3. Remove the head restraint.
   1 Position the head restraint as high as it will go.
   2 Using an appropriate tool, push through the hole on the inboard side of the head restraint guide and release the head restraint.
     - Hold the head restraint up so it does not engage back into the head restraint guide.
   3 Release the head restraint guide on the other side and remove the head restraint.



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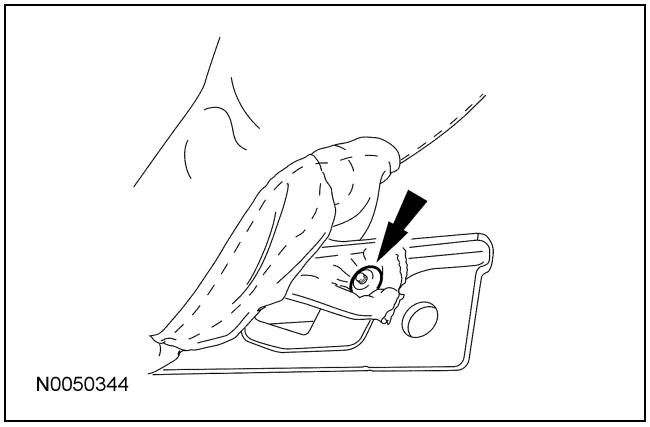
REMOVAL AND INSTALLATION (Continued)

4. Remove the pin-type retainers attaching the backrest trim cover to the inboard and outboard recliners.

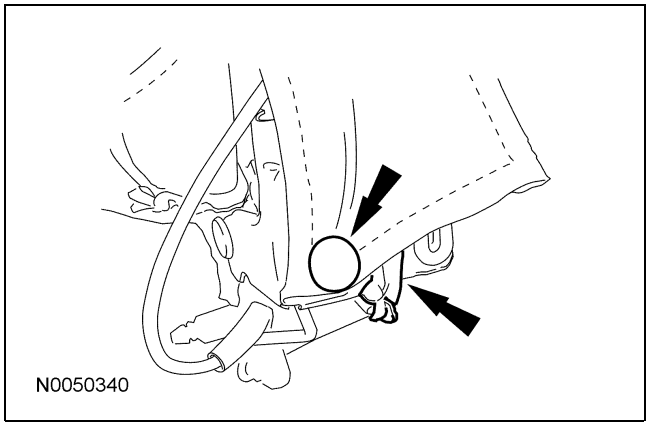


5. Remove the backrest recliner release bezel screw. Slide down, pull and remove the backrest recliner release bezel and backrest recliner release handle.

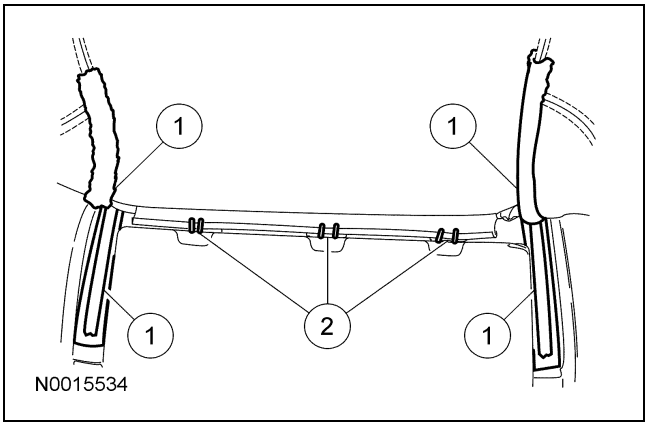
6. Release the outer J-strip at the bottom of the backrest trim cover.

7. Detach the harness wires from the backrest cover.

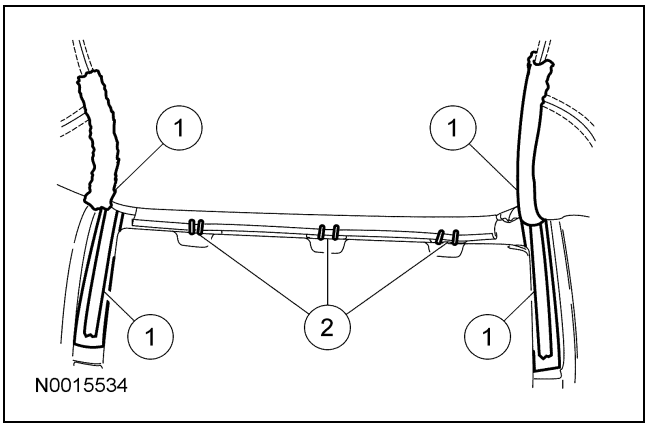
8. Release the pin-type retainer and backrest trim from the backrest frame.



9. Invert the backrest trim cover up and remove the first row of hog rings.
   1 Place a hand between the backrest trim cover and backrest foam pad and carefully separate the hook-and-loop strips.
   2 Remove the 2 hog rings per window.



10. Invert the backrest trim cover up and remove the second row of hog rings.
    1 Place a hand between the backrest trim cover and backrest foam pad and carefully separate the hook-and-loop strips.
    2 Remove the 2 hog rings per window.



11. Invert the backrest trim cover to the top of the backrest.

12. **NOTE:** The head restraint guides are not interchangeable.

    Release and remove the 2 head restraint guides.

13. Remove the backrest trim cover.

14. To install, reverse the removal procedure.

15. Install the front seat backrest. For additional information, refer to Seat Backrest — Front in this section.

16. Install the seat. For additional information, refer to Seat — Front in this section.

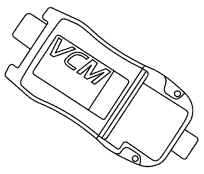
REMOVAL AND INSTALLATION (Continued)

17. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

REMOVAL AND INSTALLATION

Seat Cushion Cover — Front

Special Tool(s)

 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Removal and Installation

NOTICE: **To prevent system failure, it is necessary to carry out the Occupant Classification Sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover is installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset.**

NOTICE: **Use care when separating the seat cushion trim cover from the hook-and-loop strip. The hook-and-loop strip can be torn from the seat cushion foam.**

NOTE: If a driver or passenger seat cushion heater mat is faulty, a new seat cushion foam pad must be installed with the heater mat. Do not reuse the original seat cushion foam pad.

NOTE: When installing an Occupant Classification Sensor (OCS) system service kit equipped with heated seats, a new seat cushion heater mat must be installed. Do not reuse the OEM OCS seat cushion heater mat. The OCS system service kit does not come with a new seat cushion heater mat.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

All seats

1. Remove the front seat. For additional information, refer to Seat — Front in this section.
2. Remove the front seat backrest. For additional information, refer to Seat Backrest — Front in this section.
3. Release all seat cushion trim cover-to-cushion frame retainers.
4. Separate the hook-and-loop strips, remove the hog rings and separate the cushion trim cover from the cushion foam pad.
5. To install, reverse the removal procedure.
6. Install the seat. For additional information, refer to Seat — Front in this section.
7. Repower the SRS. **If the passenger seat has been serviced, do not prove out the SRS at this time.** For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

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REMOVAL AND INSTALLATION (Continued)

Passenger seat

8. **⚠ WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.**

   ⚠ WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.

   NOTICE: **To prevent system failure, the following precautions must be taken before carrying out the Occupant Classification Sensor (OCS) system reset:**

   - **— Make sure the voltage to the Occupant Classification System Module (OCSM) is above 8 volts and less than 18 volts.**
   - **— Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS system reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.**
   - **— Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.**
   - **— Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before the carrying out the OCS system reset process.**

   Carry out the OCS system reset.

9. If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following and repair any concerns found.
   - OCS system connector and wiring for damage
   - Pressure sensor hose for kinks and/or damage
   - Seat-related wiring harness and body wiring harness terminals and connectors for damage

10. **NOTE:** The ignition switch must be cycled after the OCS system reset.

    Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit. For additional information, refer to Occupant Classification Sensor in Section 501-20B.

All seats

11. Prove out the SRS as follows:

    Turn the ignition key from ON to OFF. Wait 10 seconds, then turn the key back to ON and visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is detected, the air bag warning indicator will:

    - fail to light.
    - remain lit continuously.
    - flash.

    The flashing might not occur until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag warning indicator is inoperative and a SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

    Clear all continuous DTCs from the RCM using a scan tool.

REMOVAL AND INSTALLATION

Seat Control Switch

Removal and Installation

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.
2. Remove the clip and recline handle.
3. Remove the seat control switch knob.
4. Remove the screw at the rear of the cushion side shield. Pull out on the side of the cushion side shield, release the retaining clips and pin-type retainer and separate the side shield.
5. Disconnect the seat control switch.
6. Release the retainers and remove the seat control switch from the cushion side shield.
7. **NOTE:** Inspect the cushion side shield retaining clips for damage. Install new retainers if damage is present.

   To install, reverse the removal procedure.
8. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

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REMOVAL AND INSTALLATION

Lumbar Control Switch

Removal and Installation

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.
2. Remove the clip and recline handle.
3. Remove the screw at the rear of the cushion side shield. Pull out on the side of the cushion side shield, release the retaining clips and pin-type retainer and separate the side shield.
4. Disconnect the lumbar control switch.
5. Release the retainers and remove the lumbar control switch from the cushion side shield.
6. **NOTE:** Inspect the cushion side shield retaining clips for damage. Install new retainers if damage is present.

   To install, reverse the removal procedure.
7. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

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REMOVAL AND INSTALLATION

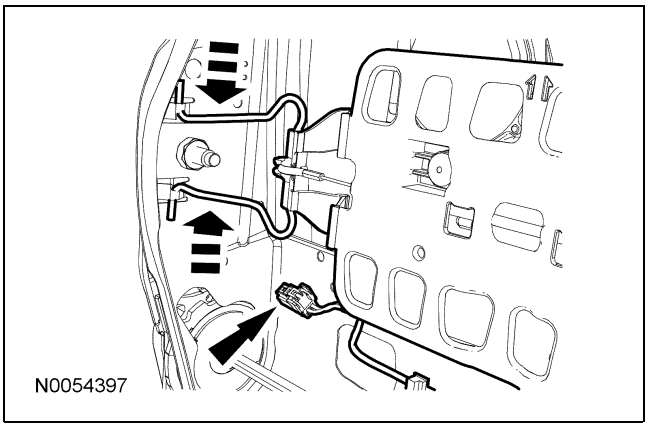
Lumbar Assembly

Removal and Installation

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Remove the seat. For additional information, refer to Seat — Front in this section.
2. Remove the front seat backrest. For additional information, refer to Seat Backrest — Front in this section.
3. Remove the pin-type retainers attaching the backrest trim cover to the inboard and outboard recliners.
4. Release the J-clip at the back of the backrest trim cover and separate the hook-and-loop strip.
5. Invert the backrest trim cover to expose the lumbar assembly.
   - Note the wire harness routing for installation.
6. Disconnect the power lumbar electrical connector. Unhook the 4 lumbar hooks (2 shown) from the backrest frame and remove the lumbar assembly.



7. To install, reverse the removal procedure.
8. Install the front seat backrest. For additional information, refer to Seat Backrest — Front in this section.
9. Install the seat. For additional information, refer to Seat — Front in this section.
10. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

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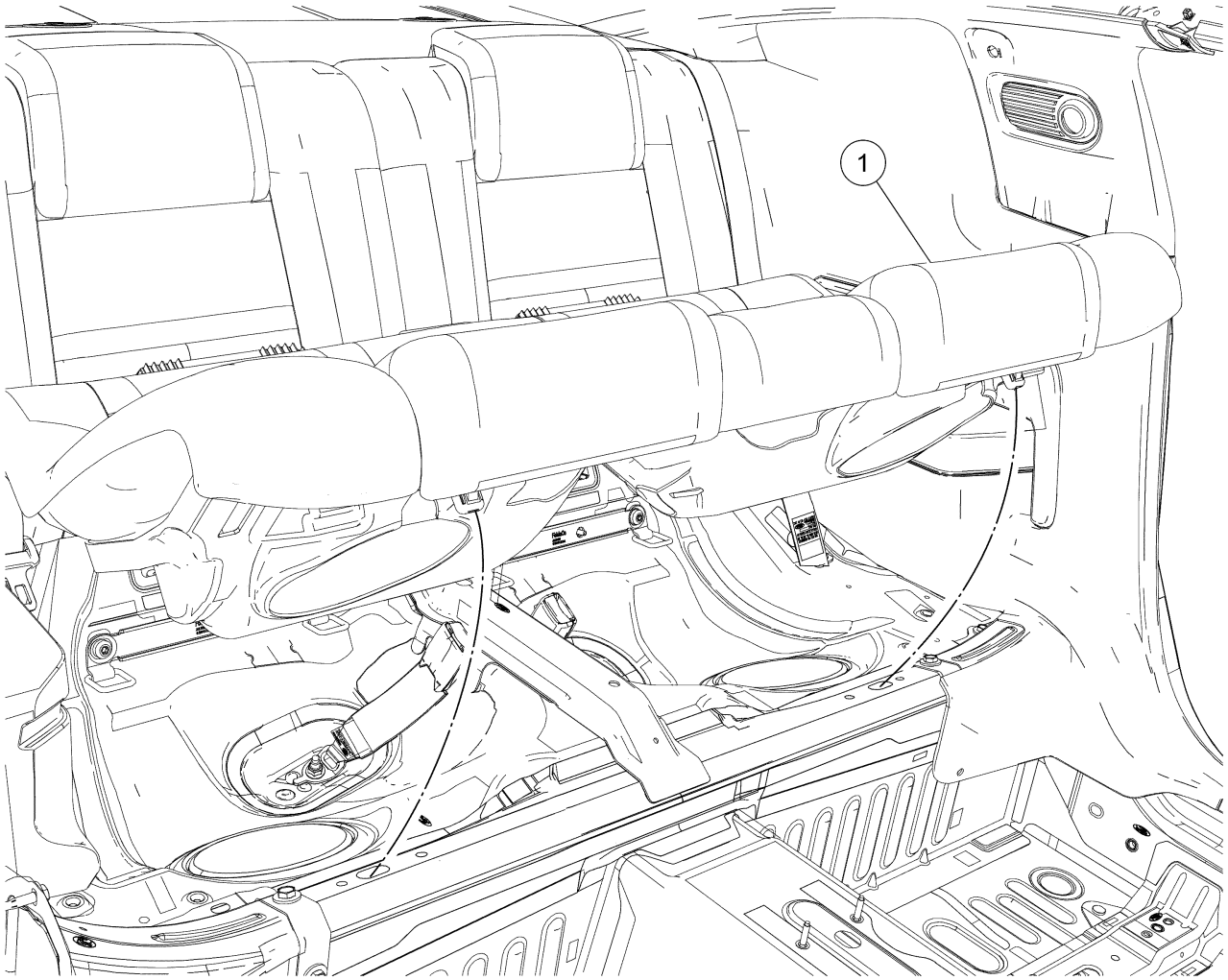
REMOVAL AND INSTALLATION

Seat Cushion — Rear



N0014036

Item	Part Number	Description
1	—	Seat cushion assembly

Removal

1. From under the front of the rear cushion assembly, push in each of the 2 seat cushion release tabs, lift up at the front and remove the rear cushion assembly.

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REMOVAL AND INSTALLATION (Continued)

Installation

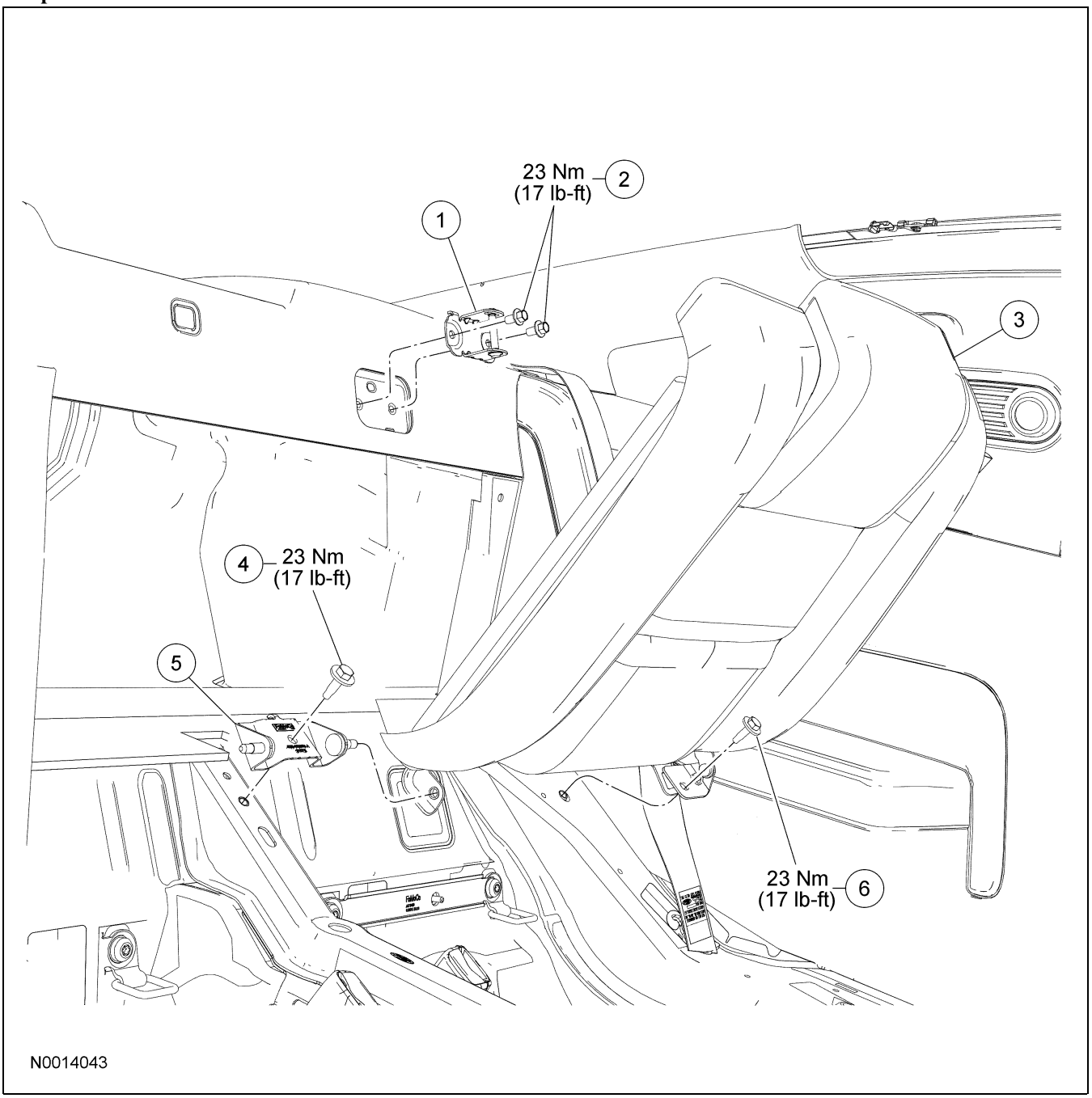
1. **NOTE:** Make sure the safety belt webbing is not twisted and the safety belts and buckles are accessible to the occupants.

   Align the cushion assembly and push down, engaging the retainer tabs.

REMOVAL AND INSTALLATION

Seat Backrest — Rear

Coupe Backrest



Item	Part Number	Description
1	62452	Backrest striker
2	W505260	Backrest striker bolts
3	—	Backrest assembly

(Continued)

Item	Part Number	Description
4	W505433	Backrest pivot bracket bolt
5	60615	Backrest pivot bracket
6	W505433	Backrest-to-floor bolt

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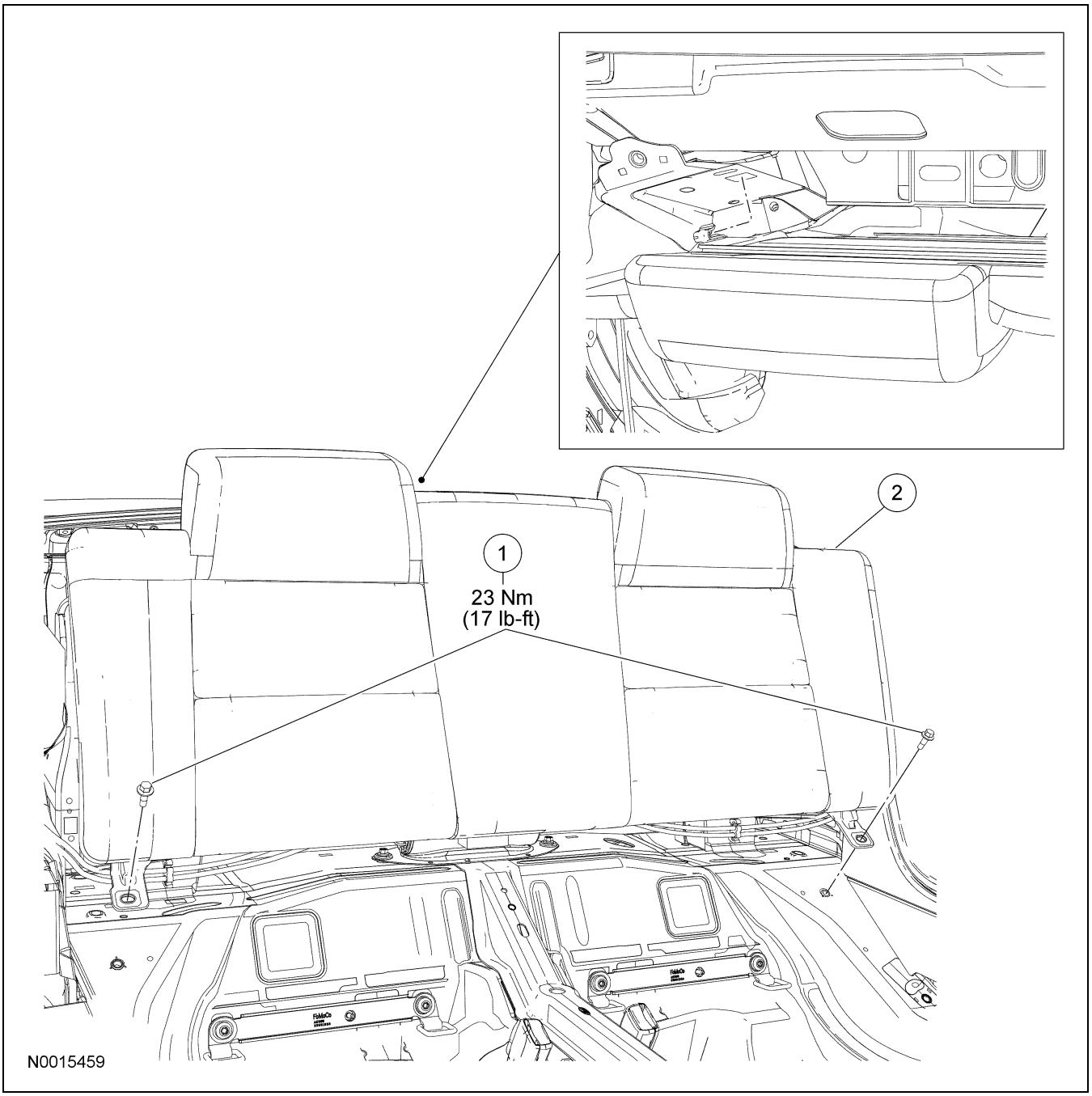
REMOVAL AND INSTALLATION (Continued)

Convertible Backrest



Item	Part Number	Description
1	W505433	Backrest-to-floor bolts
2	—	Backrest assembly

Removal and Installation

NOTE: Coupe LH 50 percent backrest shown, RH 50 percent backrest similar.

All vehicles

1. Remove the rear seat cushion. For additional information, refer to Seat Cushion — Rear in this section.

REMOVAL AND INSTALLATION (Continued)

Coupe vehicles

2. Remove the bolt, pull the strap to pivot the backrest down, slide the backrest out of the backrest pivot bracket and remove the LH backrest.
   - To install, tighten to 23 Nm (17 lb-ft).

Vehicles with a convertible top

3. Remove the 2 backrest bolts at the bottom, slide the backrest up, disengaging the hooks, and remove the backrest.
   - To install, tighten to 23 Nm (17 lb-ft).

All vehicles

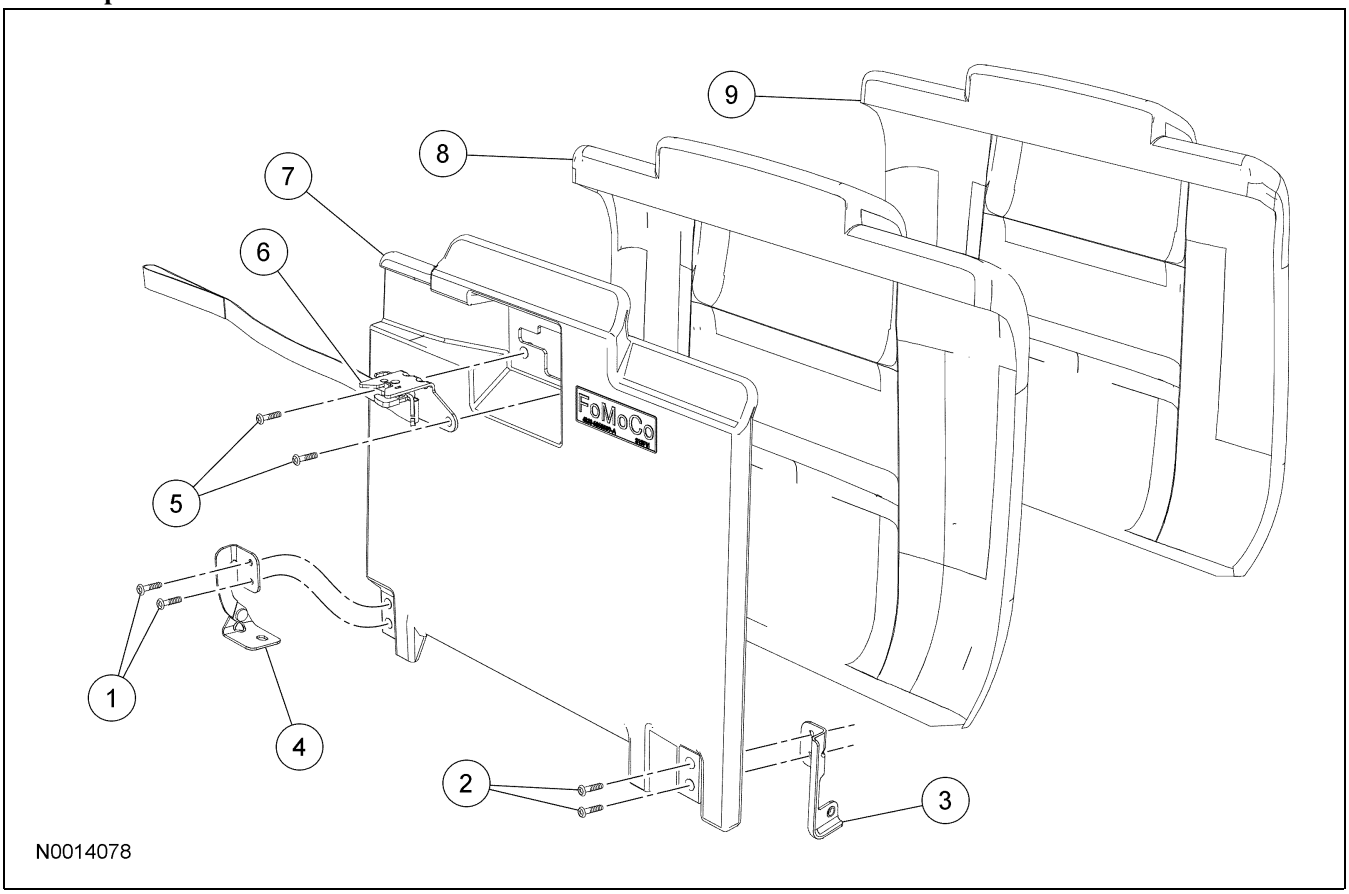
4. **NOTE:** Make sure the safety belt webbing is not twisted and the safety belts and buckles are accessible to the occupants.

   To install, reverse the removal procedure.

REMOVAL AND INSTALLATION

Seat — Exploded View, Rear

Hard Top 50 Percent Backrest



Item	Part Number	Description
1	—	Rivets
2	—	Rivets
3	—	Inboard pivot bracket
4	60515	Outboard pivot bracket
5	—	Rivets
6	—	Backrest latch assembly

(Continued)

Item	Part Number	Description
7	60509	Backrest panel
8	—	Backrest foam pad
9	66601	Backrest trim cover

1. For additional information, refer to the procedures in this section.

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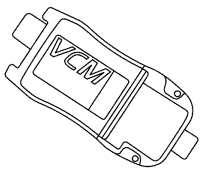
DISASSEMBLY AND ASSEMBLY

Seat Cushion — Front

Special Tool(s)

 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

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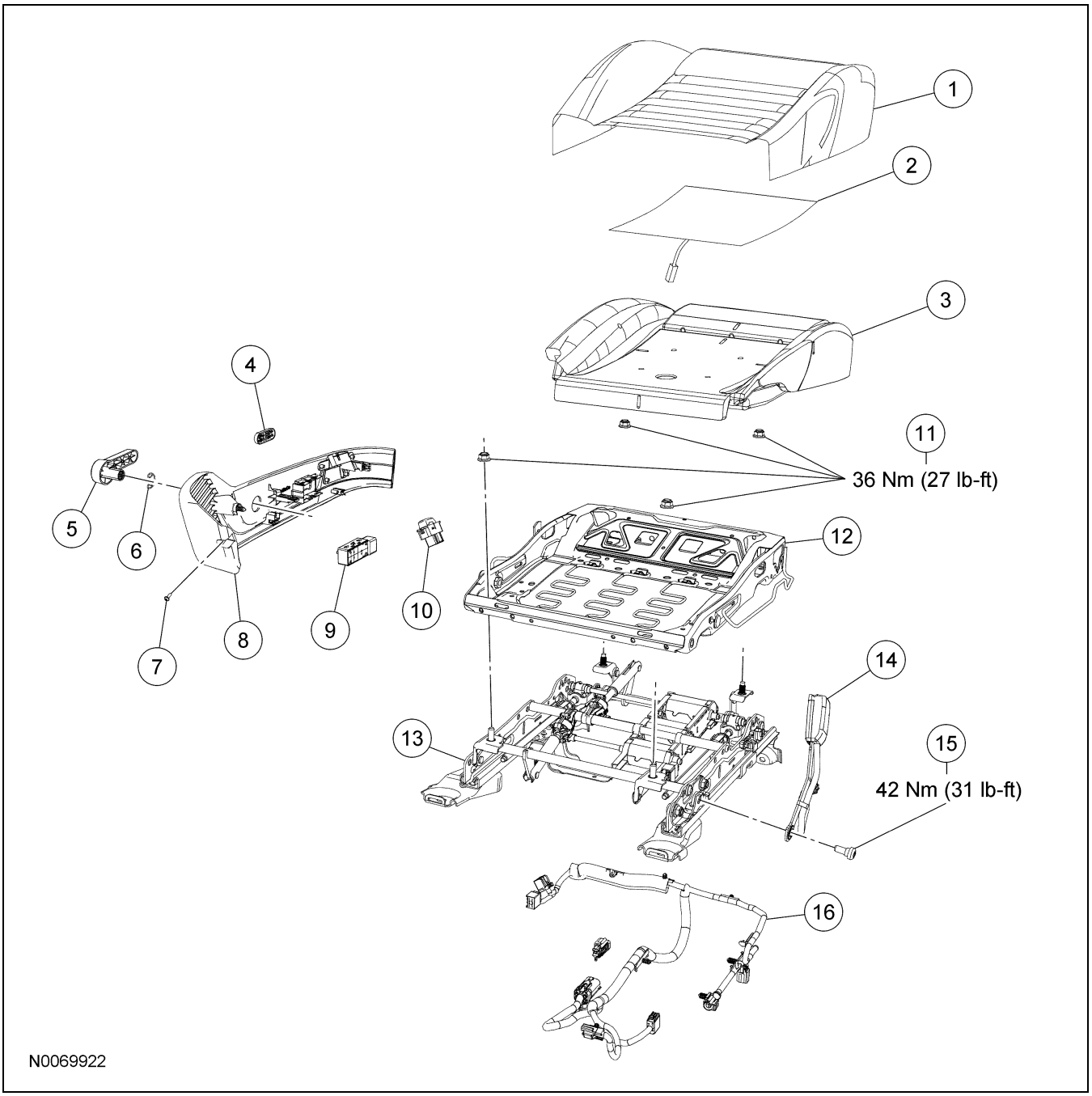
DISASSEMBLY AND ASSEMBLY (Continued)

Driver Power Front Seat Cushion



Item	Part Number	Description
1	62901	Cushion trim cover
2	14D698	Heater mat (if equipped)
3	—	Cushion foam pad
4	—	Seat control switch knob (if equipped)
5	62622	Recline handle
6	—	Recline handle clip (part of 62622)
7	—	Cushion side shield screw

(Continued)

Item	Part Number	Description
8	62187	Cushion side shield
9	14A701	Seat control switch
10	619A74	Lumbar control switch (if equipped)
11	W520113	Cushion frame-to-seat track nuts
12	63101	Cushion frame
13	61701	Seat track
14	61203	Safety belt buckle

(Continued)

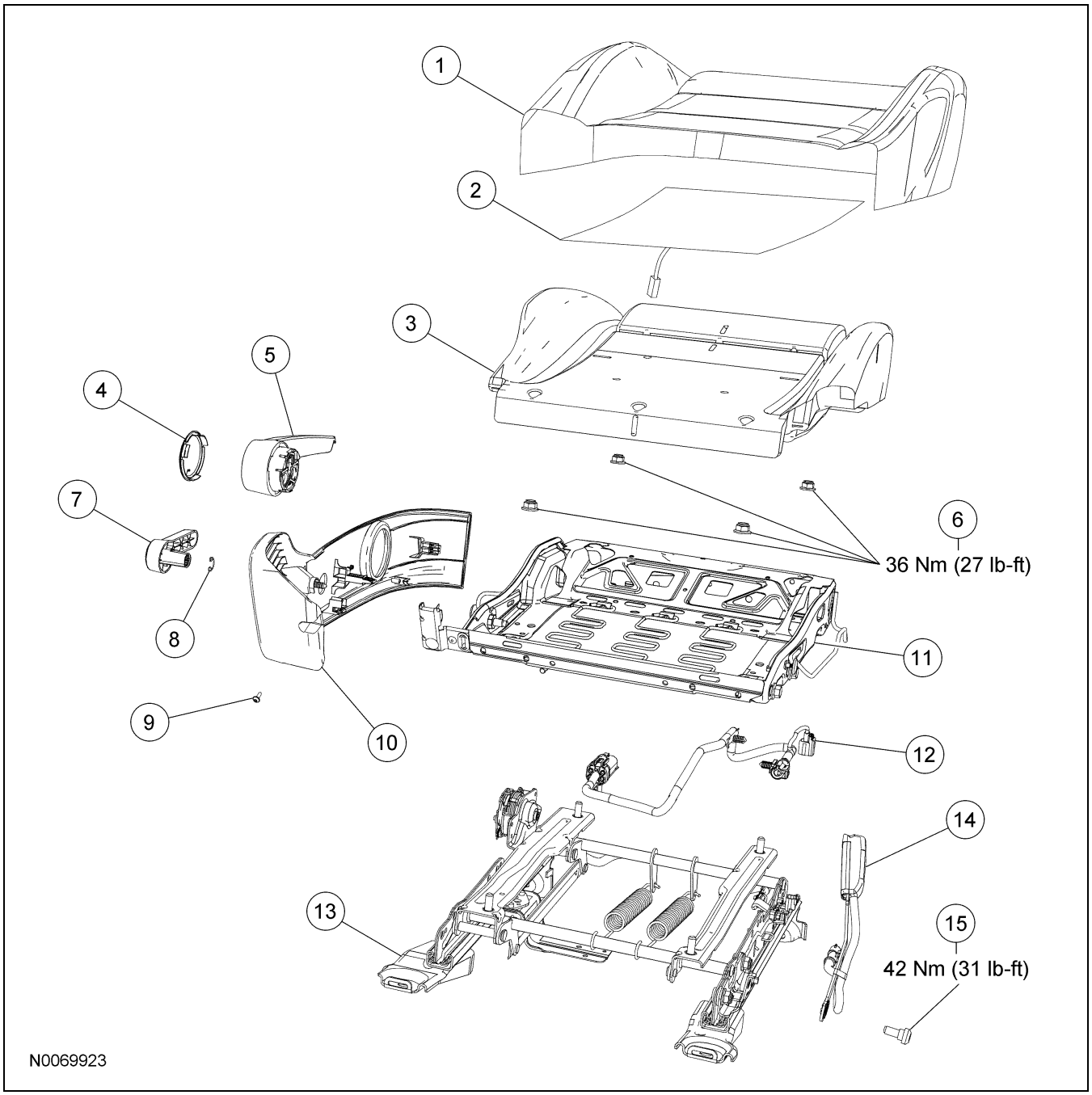
DISASSEMBLY AND ASSEMBLY (Continued)

Item	Part Number	Description
15	—	Safety belt buckle bolt (part of 61203)

(Continued)

Item	Part Number	Description
16	14A699	Driver seat wire harness

Driver Manual Front Seat Cushion



Item	Part Number	Description
1	62901	Cushion trim cover
2	14D698	Heater mat (if equipped)
3	—	Cushion foam pad

(Continued)

Item	Part Number	Description
4	62768	Manual height adjust handle center cover (if equipped)
5	61753	Manual height adjust handle (if equipped)

(Continued)

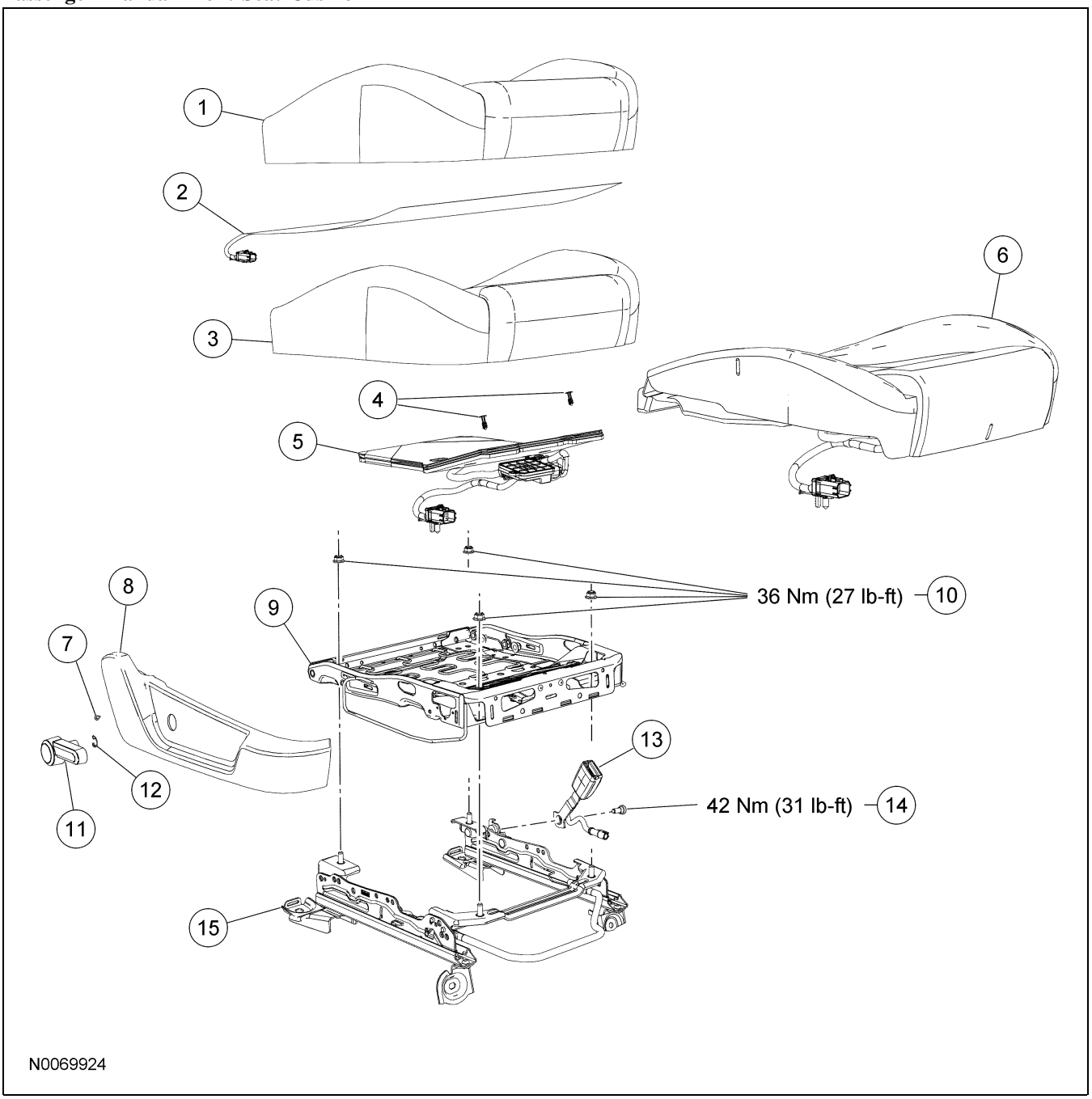
DISASSEMBLY AND ASSEMBLY (Continued)

Item	Part Number	Description
6	W520113	Cushion frame-to-seat track nuts
7	62622	Recline handle
8	—	Recline handle clip (part of 62622)
9	—	Cushion side shield screw
10	62187	Cushion side shield

(Continued)

Item	Part Number	Description
11	63101	Cushion frame
12	14A699	Driver seat wire harness
13	61701	Seat track
14	61203	Safety belt buckle
15	—	Safety belt buckle bolt (part of 61203)

Passenger Manual Front Seat Cushion



DISASSEMBLY AND ASSEMBLY (Continued)

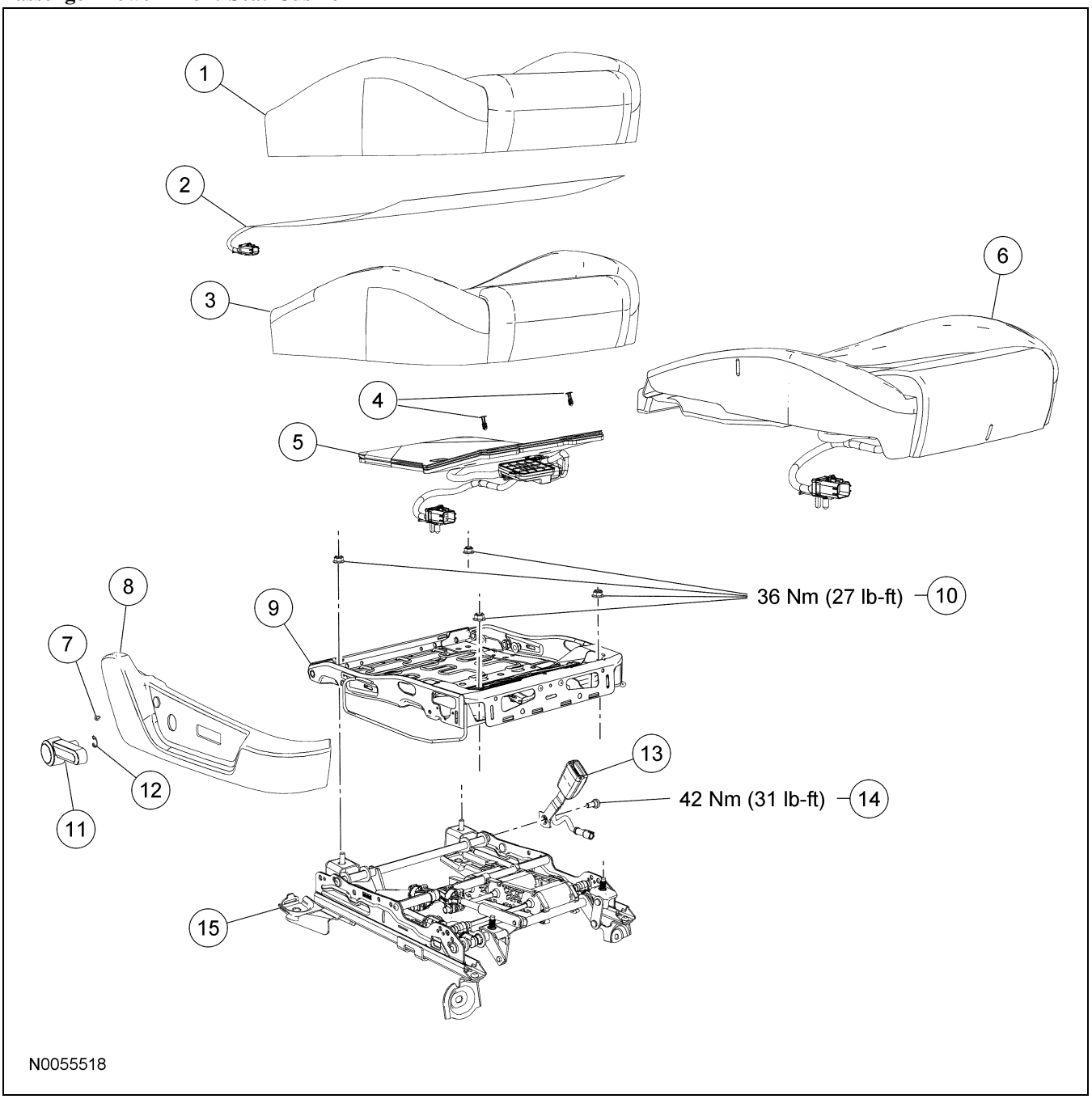
Item	Part Number	Description
1	62900	Cushion trim cover
2	—	Heater mat (if equipped)
3	—	Cushion foam pad
4	—	Pin-type retainers [part of OEM Occupant Classification Sensor (OCS) system]
5	—	OEM OCS system
6	632A22	OCS system service kit
7	—	Side shield screw
8	62186	Side shield

(Continued)

Item	Part Number	Description
9	63100	Cushion frame
10	W520113	Cushion frame-to-seat track nuts
11	62622	Recline handle
12	—	Recline handle clip (part of 62622)
13	61203	Safety belt buckle
14	—	Safety belt buckle bolt (part of 61203)
15	618B46	Manual seat track

DISASSEMBLY AND ASSEMBLY (Continued)

Passenger Power Front Seat Cushion



Item	Part Number	Description
1	62900	Cushion trim cover
2	—	Heater mat (if equipped)
3	—	Cushion foam pad
4	—	Pin-type retainers (part of OEM Occupant Classification Sensor (OCS) system)
5	—	OEM OCS system
6	632A22	OCS system service kit
7	—	Side shield screw

(Continued)

Item	Part Number	Description
8	62186	Side shield
9	63100	Cushion frame
10	W520113	Cushion frame-to-seat track nuts
11	62622	Recline handle
12	—	Recline handle clip (part of 62622)
13	61203	Safety belt buckle

(Continued)

DISASSEMBLY AND ASSEMBLY (Continued)

Item	Part Number	Description
14	—	Safety belt buckle bolt (part of 61203)
15	61701	Power seat track

Disassembly

⚠ WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **To prevent system failure, it is necessary to carry out the Occupant Classification Sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover is installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset.**

NOTE: Occupant Classification Sensor (OCS) system components [seat cushion foam pad, bladder with pressure sensor and Occupant Classification System Module (OCSM) module] are calibrated to each other and are serviced as an assembly. The OCS system components are not to be installed separately. If a new OCS system component or seat cushion foam pad are needed, a new OCS system service kit (seat cushion foam pad, bladder with pressure sensor, OCSM and seat wire harness) must be installed as an assembly.

NOTE: To identify between a production OCS system and an OCS system service kit, inspect the OCSM electrical connector.

A production OCS system allows the disconnection of the OCSM electrical connector.

An OCS system service kit has the electrical connector glued to the OCSM, it cannot and should not be disconnected or altered.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: When installing an OCS system service kit, refer to Section 501-20B for the OCS service kit installation procedure.

NOTE: If a driver or passenger seat cushion heater mat is faulty, a new seat cushion foam pad must be installed with the heater mat. Do not reuse the original seat cushion foam pad.

When installing an OCS service kit equipped with heated seats, a new cushion heater mat must be installed. Do not reuse the OEM OCS driver cushion heater mat. The OCS service kit does not come with a new cushion heater mat.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

All seats

1. Remove the front seat. For additional information, refer to Seat — Front in this section.
2. Remove the front seat backrest. For additional information, refer to Seat Backrest — Front in this section.
3. Remove the seat track. For additional information, refer to Seat Track — Manual or Seat Track — Power in this section.
4. If equipped, disconnect the seat control switch and lumbar control switch and remove the cushion side shield.
5. If equipped, release the retainers and remove the seat control switch and the lumbar control switch from the cushion side shield.
6. If equipped, disconnect the heated seat electrical connectors.
7. Release the cushion trim cover rear J-strip.

Driver seat and passenger seat with OEM Occupant Classification Sensor (OCS) system

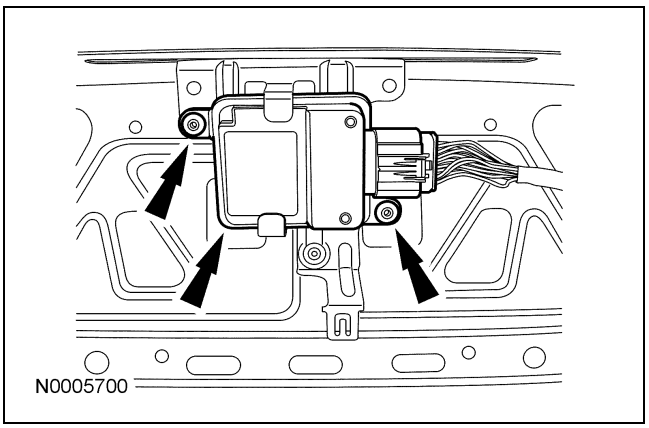
DISASSEMBLY AND ASSEMBLY (Continued)

8. Remove the cushion foam pad and cushion trim cover from the cushion frame.

Passenger seat

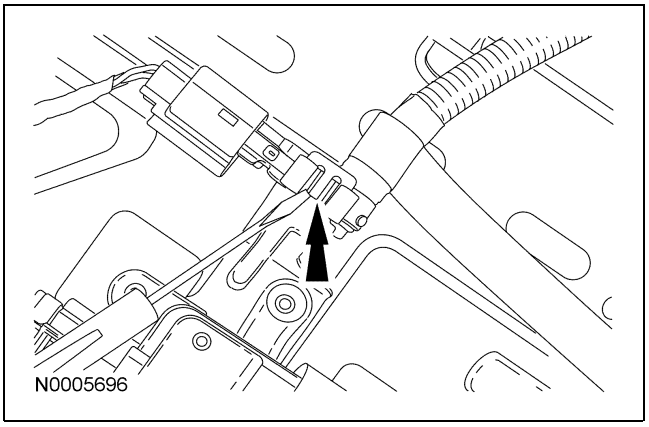
9. *NOTICE:* **To prevent system failure, do not oversize the seat cushion frame holes used to rivet the Occupant Classification System Module (OCSM) in place.**

   Using a 5 mm (0.19 in) drill, remove the 2 rivets and separate the OCSM from the cushion frame.



10. **NOTE:** OEM OCS pressure sensor shown, OCS system service kit pressure sensor similar.

    Bend to release the tab and remove the pressure sensor from the bracket.



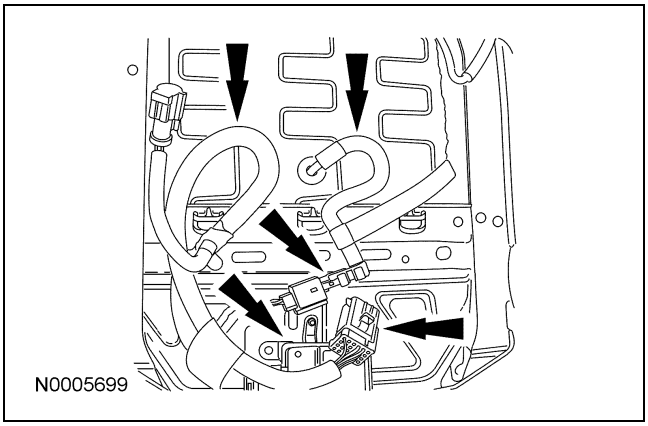
11. **NOTE:** Note all wire harness routing for correct installation.

    Release any seat wire harness routing pin-type retainers from the cushion frame.

12. If equipped with OEM OCS, remove the OCS bladder pin-type retainers.

13. **NOTE:** Note the cushion frame opening that the OCS components and seat wire harness are being routed through for installation.

    Remove the OCS system components and wire harness from the cushion frame.



All seats

14. **NOTE:** Note all wire harness routing for correct installation.

    If driver seat, release any pin-type retainer(s) and remove the seat wire harness from the cushion frame.

15. *NOTICE:* **Use care when separating the seat cushion trim cover from the hook-and-loop strip. The hook-and-loop strip can be torn from the seat cushion foam.**

    Separate the hook-and-loop strips, remove the hog rings and separate the cushion trim cover from the cushion foam pad.

Assembly

All seats

1. Position the cushion trim cover to the cushion foam pad, attach the hook-and-loop strips and install the hog rings.

2. If driver seat, route the seat wire harness to the cushion frame and attach the pin-type retainer(s) as noted during removal.

DISASSEMBLY AND ASSEMBLY (Continued)

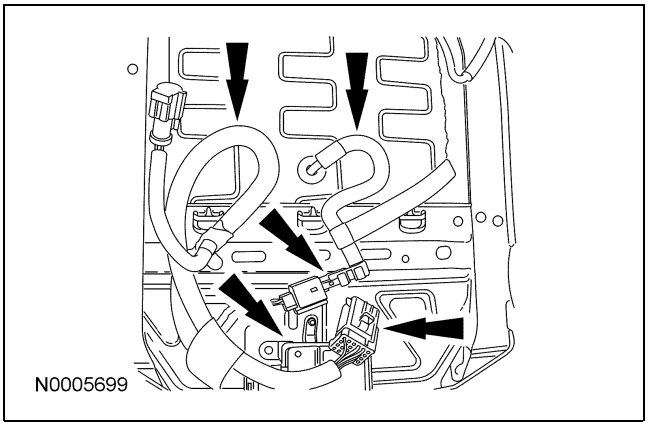
Passenger seat

3. **⚠ WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.**

   ***NOTICE:* Failure to route the Occupant Classification Sensor (OCS) system seat and components through the correct seat cushion support opening can cause component failure.**

   Position the OCS components and seat wire harness through the cushion frame opening as noted during removal.

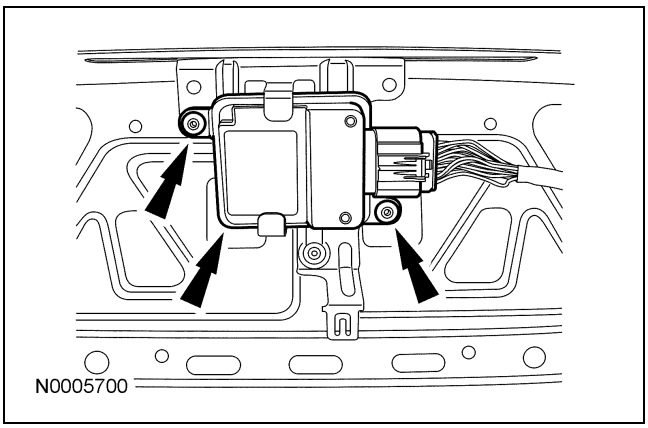
   - Feed the hose, pressure sensor, wire harness, electrical connectors and OCSM through the opening in the cushion frame.



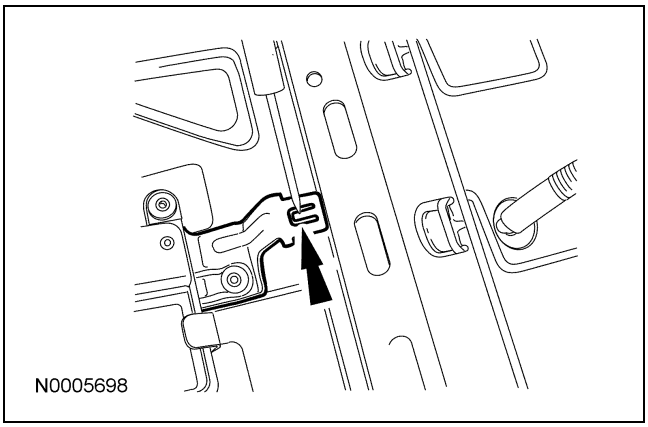
4. If equipped with OEM OCS, install the OCS bladder pin-type retainers.

5. Position the OCSM onto the seat cushion pan bracket and install the new rivets.

   - The OCSM must be correctly positioned and securely riveted in place. Failure to do so can set a DTC in the RCM.

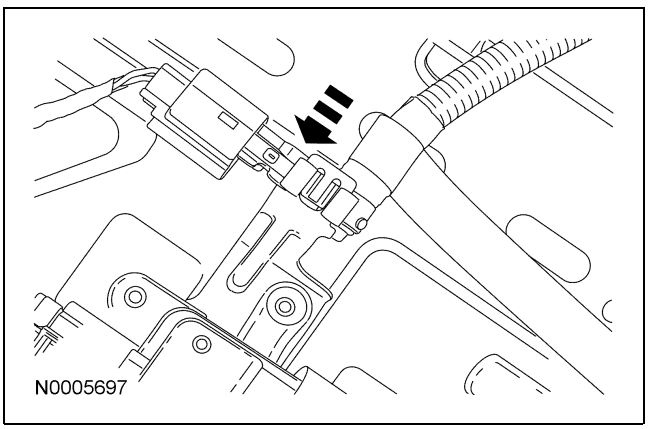


6. Bend the retaining tab back on the pressure sensor bracket.



7. Install the pressure sensor onto the cushion frame bracket, making sure the retaining tab is completely engaged.

   - When installed correctly, an audible click will be heard and the pressure sensor will not be able to be removed from its bracket without disengaging the retaining tab.



DISASSEMBLY AND ASSEMBLY (Continued)

8. Attach all seat wire harness routing clips and pin-type retainers to the cushion frame as noted during removal.

All seats

9. If equipped, connect the heated seat electrical connector.

10. If equipped, install the seat control switch and the lumbar control switch into the cushion side shield.
    - Install the seat control switch knob.

11. If equipped, position the cushion side shield to the cushion frame and connect the seat control switch and lumbar control switch.

12. Position the cushion foam pad and trim cover to the cushion frame.

13. Install the seat track. For additional information, refer to Seat Track — Manual or Seat Track — Power in this section.

14. Install the seat backrest. For additional information, refer to Seat Backrest — Front in this section.

15. Install the seat. For additional information, refer to Seat — Front in this section.

16. Repower the SRS. **If the passenger seat has been serviced, do not prove out the SRS at this time.** For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

Passenger seat

17. **⚠ WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.**

    ⚠ WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.

    NOTICE: **To prevent system failure, the following precautions must be taken before carrying out the Occupant Classification Sensor (OCS) system reset:**

    - **— Make sure the voltage to the Occupant Classification System Module (OCSM) is above 8 volts and less than 18 volts.**
    - **— Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS system reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.**
    - **— Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.**
    - **— Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before the carrying out the OCS system reset process.**

    Carry out the OCS system reset.

DISASSEMBLY AND ASSEMBLY (Continued)

18. If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following and repair any concerns found.
    - OCS system connector and wiring for damage
    - Pressure sensor hose for kinks and/or damage
    - Seat-related wiring harness and body wiring harness terminals and connectors for damage
19. **NOTE:** The ignition switch must be cycled after the OCS system reset.

    Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit. For additional information, refer to Occupant Classification Sensor in Section 501-20B.

All seats

20. Prove out the SRS as follows:

    Turn the ignition key from ON to OFF. Wait 10 seconds, then turn the key back to ON and visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is detected, the air bag warning indicator will:

    - fail to light.
    - remain lit continuously.
    - flash.

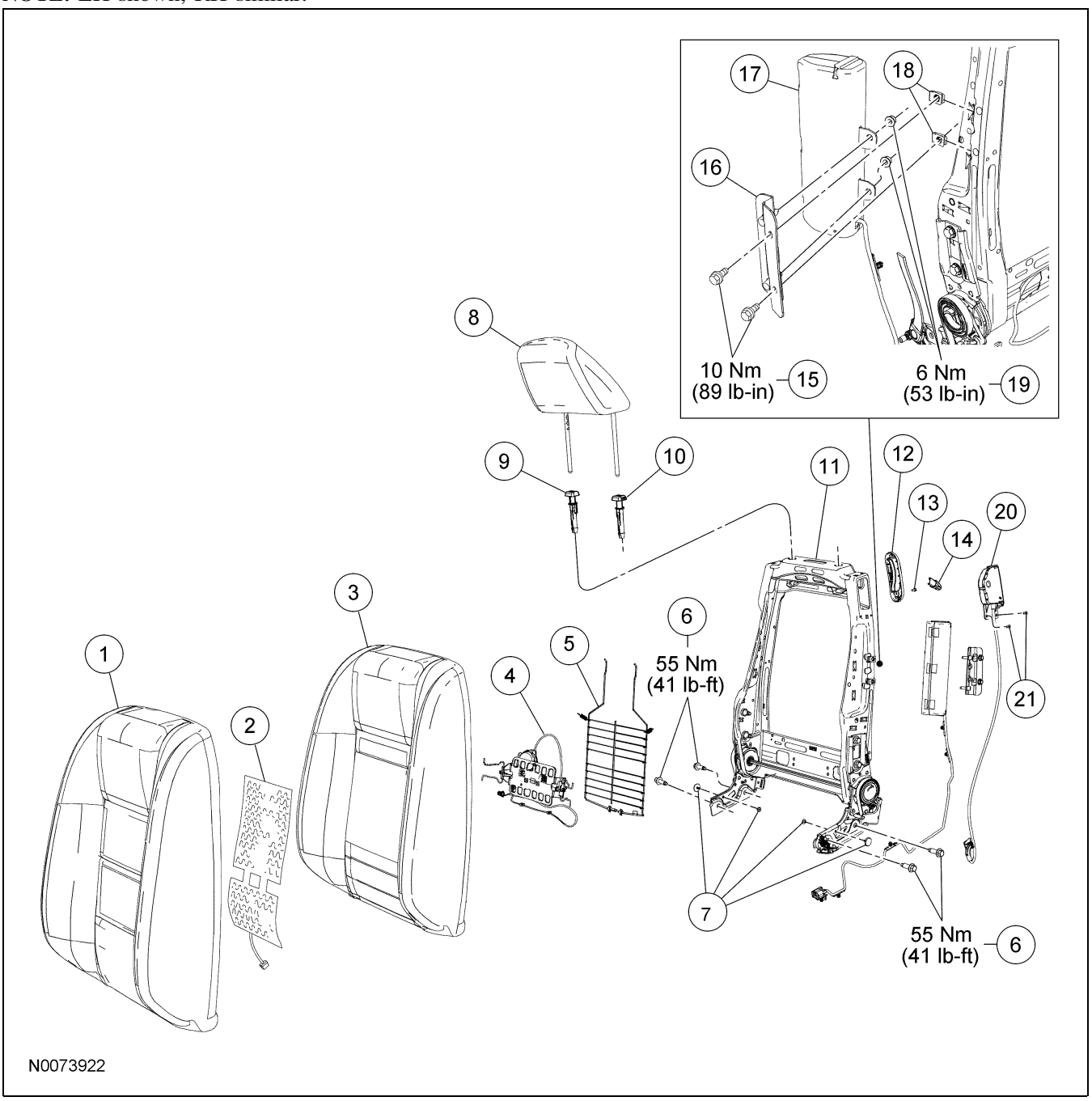
    The flashing might not occur until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag warning indicator is inoperative and a SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

    Clear all continuous DTCs from the RCM using a scan tool.

DISASSEMBLY AND ASSEMBLY

Seat Backrest — Front

NOTE: LH shown, RH similar.



Item	Part Number	Description
1	64417	Backrest trim cover
2	14D696	Heater mat (if equipped)
3	64810	Backrest foam pad
4	65500	Power lumbar assembly (driver side only) (if equipped)

(Continued)

Item	Part Number	Description
5	63226	Static lumbar
6	W500633	Recliner-to-cushion frame bolts
7	—	Pin-type retainers
8	611A08	Head restraint assembly
9	022537	Inboard head restraint guide

(Continued)

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DISASSEMBLY AND ASSEMBLY (Continued)

Item	Part Number	Description
10	020617	Outboard head restraint guide
11	61018	Backrest frame
12	62672	Backrest recliner release bezel
13	W506943	Backrest recliner release bezel screw
14	62762	Backrest recliner release handle
15	N605892	Side air bag module bolts
16	611D79	Side air bag module bracket
17	611D11	Side air bag module
18	W520822	U-nuts
19	—	Side air bag module-to-bracket nuts (part of 611D11)
20	62432	Backrest recliner release
21	W711024	Backrest recliner release rivets

Disassembly

⚠ WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: If the seat side air bag cover has been damaged or separated from its mounting, or if the air bag material has been exposed, install a new seat side air bag module. Never try to repair the seat side air bag module. Failure to follow these instructions may result in the seat side air bag deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

⚠ WARNING: Front seat backrest trim covers installed on seats equipped with seat side air bags cannot be repaired. A new trim cover must be installed. Cleaning is permissible. Failure to follow these instructions may result in the seat side air bag module deploying incorrectly and increase the risk of serious personal injury or death in a crash.

NOTE: If a side air bag deployment took place, new backrest foam pad, trim cover, side air bag module, bracket and nuts, and U-nuts and bolts must be installed. A new seat back frame should be installed, if necessary.

NOTE: If a driver or passenger seat backrest heater mat is faulty, a new seat backrest foam pad must be installed with the heater mat. Do not reuse the original seat backrest foam pad.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

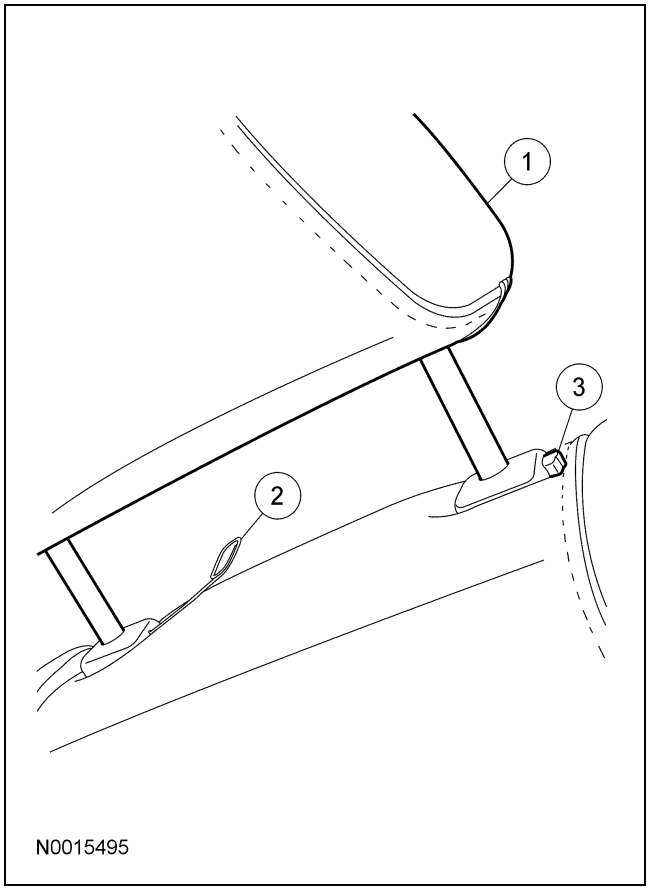
NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Remove the front seat. For additional information, refer to Seat — Front in this section.

2. Remove the front seat backrest. For additional information, refer to Seat Backrest — Front in this section.

DISASSEMBLY AND ASSEMBLY (Continued)

3. Remove the head restraint.
   1 Position the head restraint as high as it will go.
   2 Using an appropriate tool, push through the hole on the inboard side of the head restraint guide and release the head restraint.
     - Hold the head restraint up so it does not engage back into the head restraint guide.
   3 Release the head restraint guide on the other side and remove the head restraint.



4. Remove the pin-type retainers attaching the backrest trim cover to the inboard and outboard recliners.

5. Remove the backrest recliner release bezel screw. Slide down, pull and remove the backrest recliner release bezel and backrest recliner release handle.

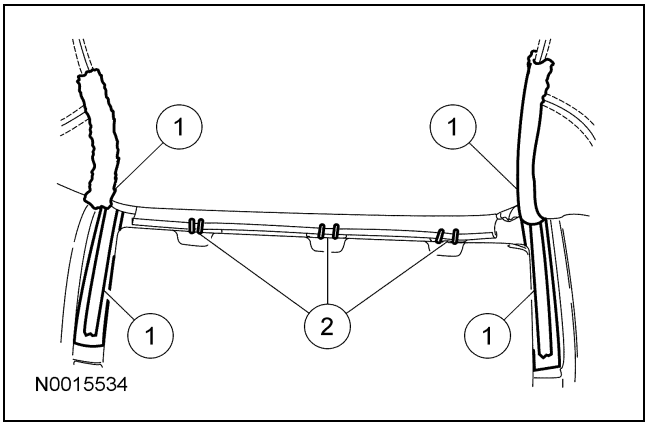
6. Release the J-strip at the bottom of the backrest trim cover and hook-and-loop strips.

7. **⚠ WARNING: Front seat backrest trim covers installed on seats equipped with seat side air bags cannot be repaired. A new trim cover must be installed. Cleaning is permissible. Failure to follow these instructions may result in the seat side air bag module deploying incorrectly and increase the risk of serious personal injury or death in a crash.**

   ⚠ WARNING: To correctly retain the backrest trim cover, always install 2 hog rings when attaching the backrest trim cover wire to the listing wire in each foam pad window. Failure to follow this instruction may result in the seat side air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.

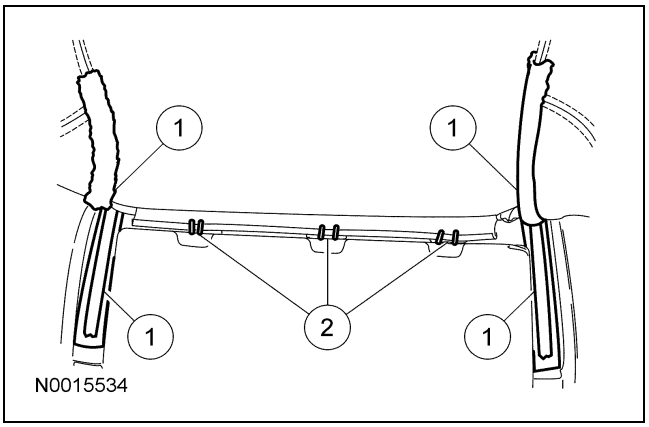
   NOTICE: **Use care when separating the seat backrest trim cover from the hook-and-loop strip. The hook-and-loop strip may be torn from the seat backrest foam.**

   Invert the backrest trim cover upward and remove the first row of hog rings.
   1 Place a hand between the backrest trim cover and backrest foam pad, and carefully separate the hook-and-loop strips.
   2 Remove the 2 hog rings per window.



DISASSEMBLY AND ASSEMBLY (Continued)

8. Invert the backrest trim cover upward and remove the second row of hog rings.
   1 Place a hand between the backrest trim cover and backrest foam pad, and carefully separate the hook-and-loop strips.
   2 Remove the 2 hog rings per window.



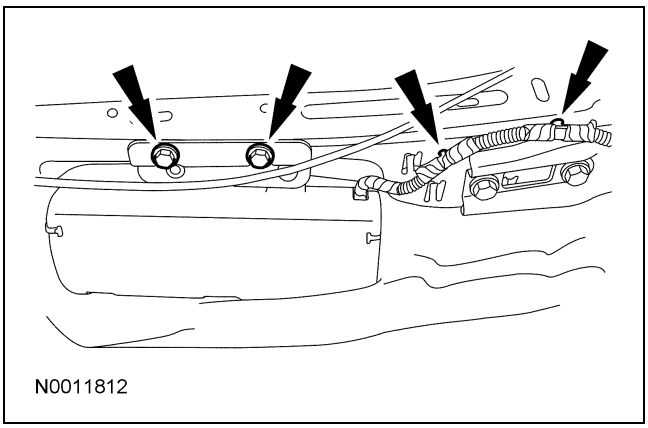
9. Invert the backrest trim cover to the top of the backrest.

10. **NOTE:** The head restraint guides are not interchangeable.
    Release and remove the 2 head restraint guides.

11. Remove the backrest trim cover.

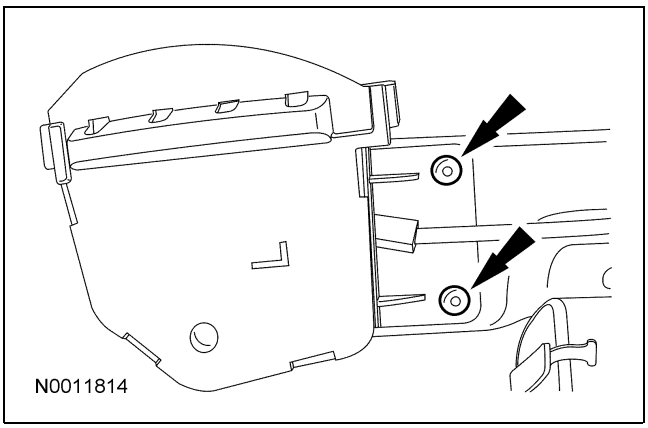
12. Remove the backrest foam pad from the backrest frame.

13. Remove the side air bag module.
    - Release the side air bag module wire harness pin-type retainers from the backrest frame.
      - Note wire harness routing for assembly.
    - Remove the side air bag module bracket-to-backrest frame bolts.
    - Remove the side air bag module with wire harness.



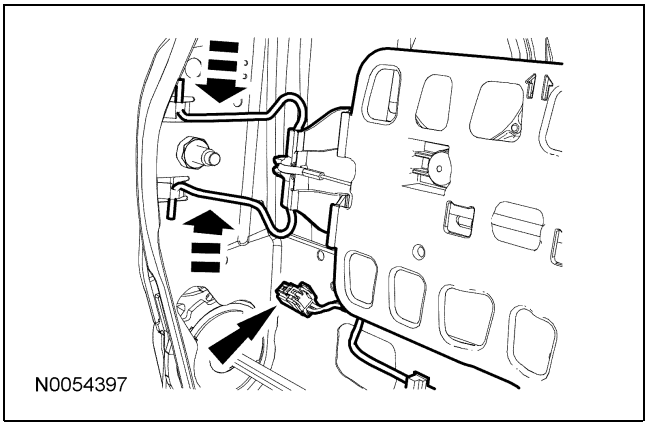
14. **NOTE:** Make note of all cable routing for correct assembly.
    Remove the recliner cable and casing from the outboard recliner.

15. Remove 2 rivets, pull out at the bottom and remove the backrest recliner release with cable.
    - If necessary, remove the tie strap holding the cable to the backrest frame.



DISASSEMBLY AND ASSEMBLY (Continued)

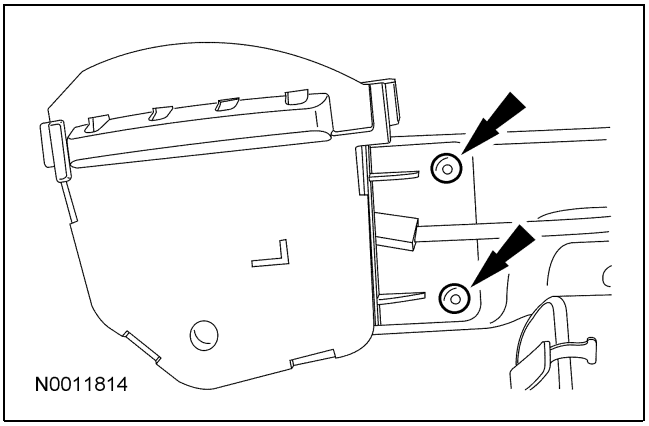
16. Disconnect the power lumbar electrical connector. Detach the 4 lumbar hooks (2 shown) from the backrest frame and remove the lumbar assembly.



Assembly

All seats

1. Attach the 4 lumbar hooks and install the lumbar assembly to the backrest frame.
   - If equipped, connect the power lumbar electrical connector.
2. Position the backrest recliner release with cable and install the 2 rivets.
   - If necessary, install a tie strap, holding the cable to the backrest frame.

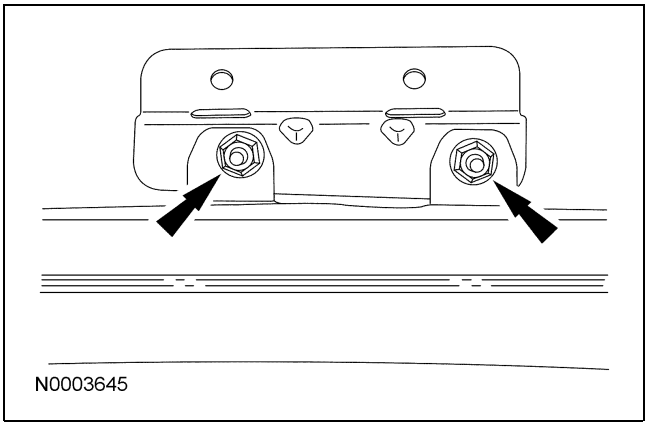


3. Route the backrest recliner release cable as noted during disassembly and install the cable and casing to the outboard recliner.

Seats with a new side air bag module

4. **NOTE:** When installing a new side air bag module after deployment, install a new module bracket, module-to-bracket nuts, U-nuts (to backrest frame), module and bracket-to-backrest frame bolts.

   Install the side air bag module bracket on the side air bag module and tighten the 2 nuts.
   - Tighten the nuts to 6 Nm (53 lb-in).



DISASSEMBLY AND ASSEMBLY (Continued)

All seats

5. **⚠ WARNING: Before installing the seat side air bag module/deployment chute assembly:**

   — Inspect the side air bag module and mounting surfaces for any damage or foreign material.

   — Remove any foreign material from the mounting surfaces of the deployment chute, the seat backrest frame mounting bracket and the air bag module cavity in the seat backrest foam pad.

   — Install new parts if damaged.

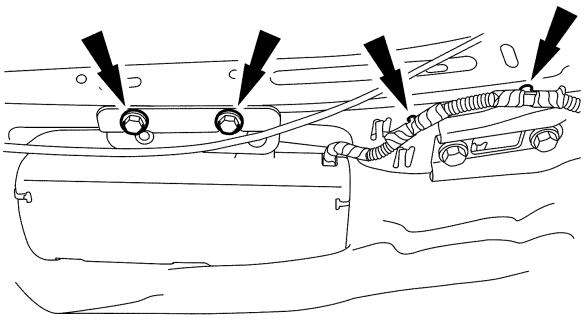
   Failure to follow these instructions may result in the seat side air bag deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

   ⚠ WARNING: If the seat side air bag cover has been damaged or separated from its mounting, or if the air bag material has been exposed, install a new seat side air bag module. Never try to repair the seat side air bag module. Failure to follow these instructions may result in the seat side air bag deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

   NOTICE: **To avoid component damage, make sure the side air bag module wiring harness is not pinched between the side air bag module and the mounting bracket.**

   Position the side air bag module bracket to the backrest frame, install the bolts and install the wire harness pin-type retainers to the backrest frame.

   - Tighten the bolts to 10 Nm (89 lb-in).



N0011812

6. Position the backrest frame into the backrest foam pad.

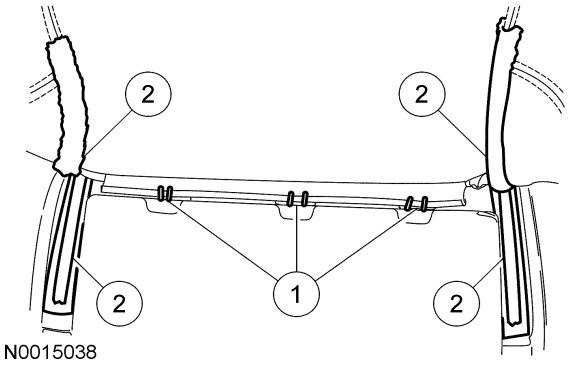
7. Position the backrest trim cover to the top of the backrest.

8. **⚠ WARNING: To correctly retain the backrest trim cover, always install 2 hog rings when attaching the backrest trim cover wire to the listing wire in each foam pad window. Failure to follow this instruction may result in the seat side air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.**

   Roll the backrest trim cover down and install the second row of hog rings.

   1 Install the 2 hog rings per window as shown.

   2 Attach the hook-and-loop strips.



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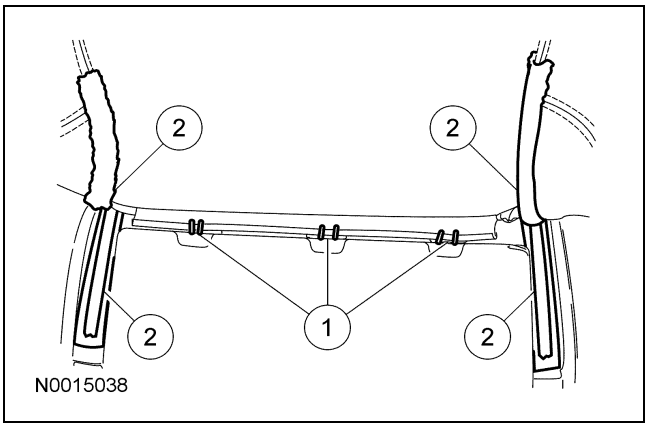
DISASSEMBLY AND ASSEMBLY (Continued)

9. ⚠ **WARNING: To correctly retain the backrest trim cover, always install 2 hog rings when attaching the backrest trim cover wire to the listing wire in each foam pad window. Failure to follow this instruction may result in the seat side air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.**

   Roll the backrest trim cover down and install the first row of hog rings.

   1 Install the 2 hog rings per window as shown.

   2 Attach the hook-and-loop strips.



10. Attach the J-strip at the bottom of the backrest trim cover.

11. Slide the backrest recliner release bezel upward to engage the clip, install the screw.

12. Install the backrest recliner release handle.

13. Install the pin-type retainers attaching the backrest trim cover to the inboard and outboard recliners.

14. **NOTE:** The head restraint guides are not interchangeable.

    Install the 2 head restraint guides.

15. Install the head restraint.

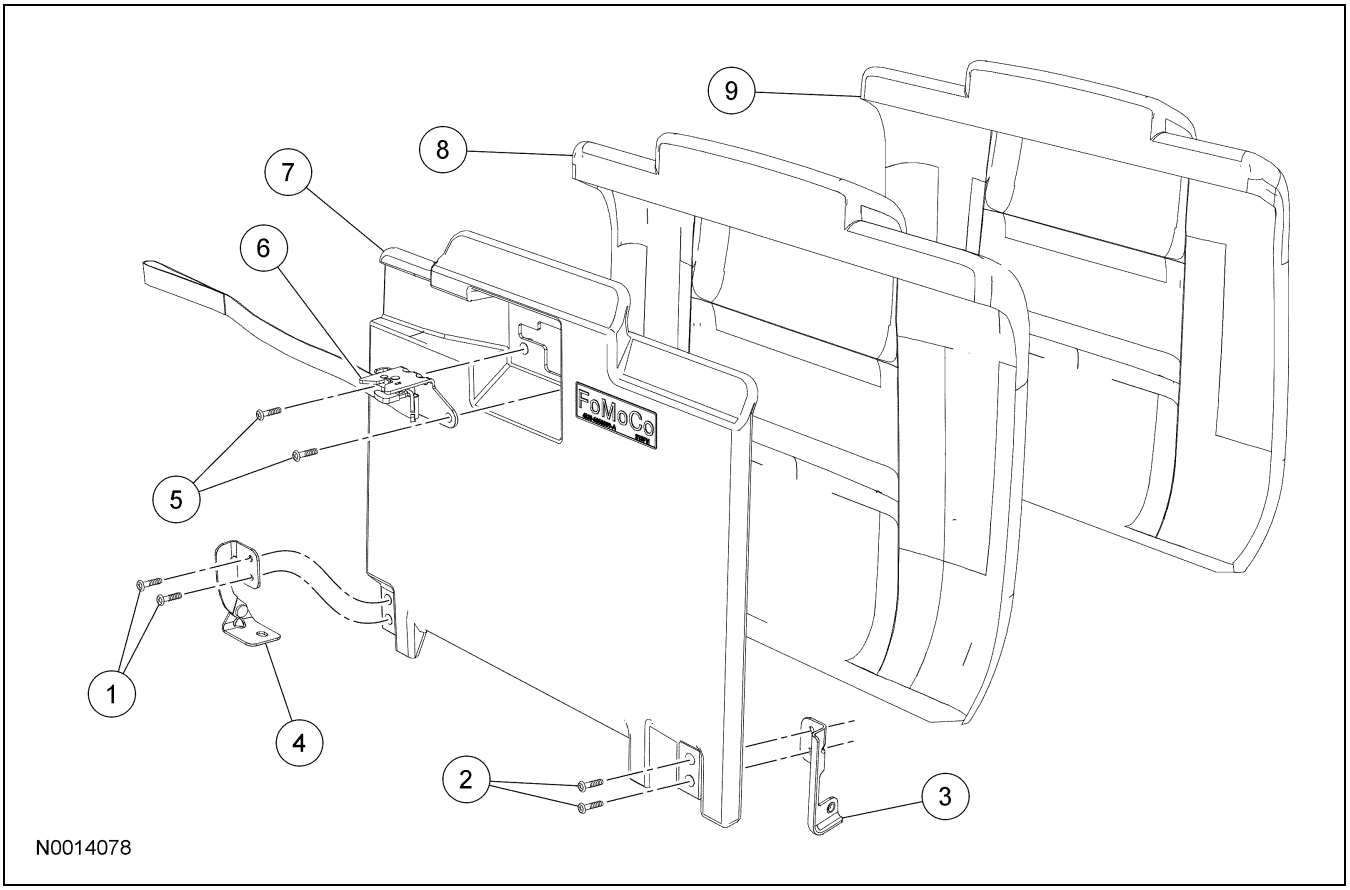
16. Install the front seat backrest. For additional information, refer to Seat Backrest — Front in this section.

17. Install the seat. For additional information, refer to Seat — Front in this section.

18. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

DISASSEMBLY AND ASSEMBLY

Seat Backrest — Rear, Coupe



Item	Part Number	Description
1	—	Rivets
2	—	Rivets
3	—	Inboard pivot bracket
4	60515	Outboard pivot bracket
5	—	Rivets
6	—	Backrest latch assembly
7	60509	Backrest panel
8	—	Backrest foam pad
9	66601	Backrest trim cover

Disassembly

1. Remove the rear seat cushion. For additional information, refer to Seat Cushion — Rear in this section.
2. Remove the rear seat backrest. For additional information, refer to Seat Backrest — Rear in this section.
3. Release the backrest trim cover J-strip and remove the staples.
4. Pull the backrest panel out from the backrest foam pad and backrest trim cover.
   - During assembly, the latch release strap must come through the trim cover.
5. Remove the 4 rivets and pivot brackets.
6. Remove the rivets, separate the pin-type retainer from the cable end and remove the backrest latch assembly.

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DISASSEMBLY AND ASSEMBLY (Continued)

7. ***NOTICE:*** **Use care when separating the seat backrest trim cover from the hook-and-loop strip. The hook-and-loop strip can be torn from the seat backrest foam.**

   Release the hook-and-loop strips and separate the backrest trim cover from the backrest foam pad.

8. To assemble, reverse the disassembly procedure.

SPECIFICATIONS

Material

Item	Specification	Fill Capacity
Dow Urethane Adhesive Betaseal™ Express	—	—
Dow Urethane One Step Glass Primer Betaprime™ 5500 / 5500A / 5500SA	—	—
Lacquer Touch-Up Paint (match color to exterior grid wire) PM-19500-XXXX	ESR-M2P100-C	—
Rear Window Defroster Repair PM-11 (US); CPM-11 (Canada)	—	—
Sika Urethane Adhesive Sika Tack ASAP	—	—
Sika Urethane Metal and Glass Primer Sika 206 G+P	—	—
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A	—

General Specifications

Item	Specification
Polypropylene Film Fine Line Tape (commercially available)	—
Terminal Kit - Back Glass	4F1Z-14421-AA

Torque Specifications

Description	Nm	lb-in
Door window glass bolts	9	80
Door window regulator and motor nuts	10	89
Rear quarter window glass bolts (convertible)	10	89
Rear quarter window inner belt weatherstrip bolts	9	80
Rear quarter window regulator and motor nuts (convertible)	10	89

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DESCRIPTION AND OPERATION

Glass, Frames and Mechanisms

NOTE: For convertible, the rear quarter glass seal (division bar) is bonded to the glass and cannot be serviced separately.

The glass, frames and mechanisms consist of the:

- door glass.
- heated rear window switch (integral to HVAC module).
- heated window grid wire (if equipped).
- HVAC module.
- rear quarter glass.
- rear window defrost relay.
- rear window glass.
- Smart Junction Box (SJB).
- window control switches.
- window regulators.
- window regulator motors.
- windshield glass

Windshield Glass

The windshield exterior mouldings are installed with the windshield glass. The windshield exterior mouldings cannot be replaced without removal of the windshield.

Window Control Switch

Power windows are standard. The window control switches are available only to the front seat passengers. There are no window control switches for the rear seat passengers. The rear quarter windows (convertible only) are operated by a single switch, located in the driver's door. The rear window switch operates the rear quarter windows in up/down only. The front window control switches use double-detent switches. The first detent is for up/down and the second detent is for one-touch up/down.

Window, One-Touch Up/Down

The window one-touch up/down feature is activated by pulling/pressing the window control switch to the up/down position (second detent). This allows the front door window glass to move upward/downward until it is fully closed/open. A momentary activation of the window control switch, while the window glass is moving upward or downward, stops the front door window glass. The bounce-back feature is incorporated into the one-touch up feature. Bounce-back occurs if the window motor detects an obstruction/foreign material in the window channel. It also occurs if a door window motor initialization is not carried out after repairs or if the door window glass channel needs to be lubricated. The rear quarter windows (convertible only) do not have the one-touch up/down feature.

Window, Short Drop

The window motors monitor their respective door ajar switches. When the window motor senses a door has been opened (by monitoring its door ajar switch), the window motor opens the window slightly to clear the grooved channel weatherstrip. After the door is closed, the window motor senses the closed door (by monitoring its door ajar switch), and the window motor fully closes and seats the window glass into the grooved channel weatherstrip. This function is on both the coupe and the convertible.

Window Glass, Door

The bottom of the door window glass is mounted in 2 window glass clamps which are part of the front door window regulator. Door window glass bolts and spacers provide attachment points for the door window glass and prevent direct contact between the door window glass bolts and the door window glass.

Window Glass, Quarter

The coupe rear quarter window glasses are set in urethane adhesive. The convertible rear quarter window glasses are powered and have a full down sensor incorporated to indicate when the convertible top may operate. Any time the convertible rear quarter window glass is replaced, it must be adjusted.

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DESCRIPTION AND OPERATION (Continued)

Window Glass, Rear

The coupe rear window is mounted with urethane adhesive and contain the rear window defrost grid (if equipped). The convertible rear window is sewn into the convertible top and contains the rear window defrost grid (if equipped). The convertible rear window is replaced with a convertible top material. Refer to Section 501-18.

Convertible Top Drop Window Function

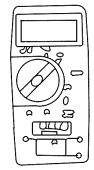
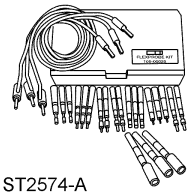
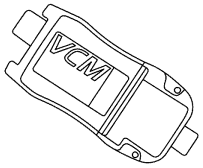
NOTE: The Smart Junction Box (SJB) may also be identified as the Generic Electronic Module (GEM).

When the convertible top switch is operated (to raise or lower the convertible top), the SJB sends a signal on a shared circuit to the 4 window motors to activate a full down operation of all 4 windows. When the rear quarter windows reach the full down position, the full down sensor in each rear quarter window motor sends a signal to the SJB that the windows are in the full down position. At this time, the SJB allows the convertible top to operate (up or down). If the SJB does not see the full down signal from both rear quarter window motors, the convertible top does not operate. The SJB also disables/inhibits the rear quarter window control switch from operating the rear quarter windows when the convertible top ajar switch indicates the convertible top is not in the full UP or full DOWN position. This function is to prevent an accidental opening of the convertible top with the windows in the up position causing contact between the windows and convertible top which may result in damage to the convertible top or windows.

DIAGNOSIS AND TESTING

Glass, Frames and Mechanisms

Special Tool(s)

 ST1137-A	73III Automotive Meter 105-R0057 or equivalent
 ST2574-A	Flex Probe Kit 105-R025B or equivalent
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Principles of Operation

Power Window Control

The power window one-touch up or down operations (front windows only) are controlled by the window motors. These features function only when the key is in the ON or ACC positions. The one-touch up or down operations are requested by pulling or pressing the window control switch up or down to the second detent. When the second detent of the window control switch is pulled/pressed, the auto circuit is grounded through the switch and the commanded up or down circuit is also grounded through the switch. Depending on which (up or down) circuit carries voltage, the window motor operates the window to the commanded one-touch up or down direction.

The window motor maintains operation until:

- the voltage at the window motor drops below 9 volts.
- a motor stall is detected by monitoring the current draw.

A momentary activation of the window control switch stops the one-touch up/down operation. Pulling or pressing the window control switches to the first detent operates the windows in a proportional mode. Each window motor has a dedicated auto circuit which provides ground to the window motor(s) for one-touch up/down operation.

For convertible, when the convertible top switch is operated (to raise or lower the convertible top), the Smart Junction Box (SJB) sends a signal to the window motors to activate a full down operation of all 4 windows. The SJB will disable/inhibit the rear quarter window control switch from operating the rear quarter windows when the convertible top ajar switch indicates the convertible top is not in the full UP or full DOWN position.

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Power window regulator • Window run weatherstrip • Door window glass	• Bussed Electrical Center (BEC) fuses: — 5 (30A) — 7 (30A) — 11 (30A) — 12 (30A) — 44 (10A) — 52 (30A) • Smart Junction Box (SJB) fuse 6 (5A) • Window control switch • Window motor • Rear window defrost relay • Rear window defrost grid • Circuitry

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **NOTE:** Make sure to use the latest scan tool software release.

   If the cause is not visually evident, connect the scan tool to the Data Link Connector (DLC).

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DIAGNOSIS AND TESTING (Continued)

5. **NOTE:** The Vehicle Communication Module (VCM) LED prove out confirms power and ground from the DLC are provided to the VCM.

   If the scan tool does not communicate with the VCM:

   - check the VCM connection to the vehicle.
   - check the scan tool connection to the VCM.
   - refer to Section 418-00, No Power To The Scan Tool, to diagnose no power to the scan tool.

6. If the scan tool does not communicate with the vehicle:

   - verify the ignition key is in the ON position.
   - verify the scan tool operation with a known good vehicle.
   - refer to Section 418-00 to diagnose no response from the SJB.

7. Carry out the network test.

   - If the scan tool responds with no communication from one or more modules, refer to Section 418-00.
   - If the network test passes, retrieve and record the Continuous Memory Diagnostic Trouble Codes (CMDTCs).

8. **NOTE:** The SJB may also be identified as the Generic Electronic Module (GEM).

   Clear the CMDTCs and carry out the self-test diagnostics for the SJB.

9. If the DTCs retrieved are related to the concern, go to the Smart Junction Box (SJB) DTC Chart. For all other DTCs, refer to Section 419-10.

10. If no DTCs related to the concern are retrieved, GO to Symptom Chart.

DTC Chart

Smart Junction Box (SJB) DTC Chart

DTC	Description	Action
B1141	Convertible Top Full Down Position Switch Circuit Failure	GO to Pinpoint Test J.
B1142	Convertible Top Full Up Position Switch Circuit Failure	GO to Pinpoint Test J.
B1342	ECU is Faulted	CLEAR the DTCs. RETRIEVE the DTCs. If DTC B1342 is retrieved, INSTALL a new Smart Junction Box (SJB). REFER to Section 419-10. TEST the system for normal operation.
B1345	Heated Backlite Input Circuit Short to Ground	GO to Pinpoint Test D.
B1348	Heated Backlite Relay Circuit Open	GO to Pinpoint Test D.
B1349	Heated Backlite Relay Short to Battery	GO to Pinpoint Test D.
B1475	Accessory Delay Relay Short to Battery	GO to Pinpoint Test I.
B2052	Accessory Delay Relay Output Failure	GO to Pinpoint Test H.
B2060	Heated Backlite Indicator Circuit Failure	GO to Pinpoint Test D.
B2061	Heated Backlite Indicator Circuit Shorted to Ground	GO to Pinpoint Test D.
B2360	Window Motor Control Output Circuit Failure	GO to Pinpoint Test G.
All other DTCs	—	REFER to the Master DTC Chart in Section 419-10.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
• A single power window is inoperative — driver front	• Fuse • Circuitry • Window control switch • Window motor • Smart Junction Box (SJB)	• GO to Pinpoint Test A.
• A single power window is inoperative — passenger front	• Fuse(s) • Circuitry • Passenger window control switch • Driver window control switch • Window motor	• GO to Pinpoint Test B.
• All power windows are inoperative	• Fuse(s) • Circuitry • Accessory delay relay • SJB	• GO to Pinpoint Test H.
• A single power window is inoperative — rear quarter	• Fuse • Circuitry • Rear window control switch • Rear window motor(s)	• GO to Pinpoint Test C.
• The one-touch up/down feature is inoperative	• Fuse • Circuitry • Window control switch • Window motor • SJB	• If driver window, GO to Pinpoint Test A. If passenger window, GO to Pinpoint Test B.
• The defrost system is inoperative	• Fuse • Circuitry • Heated rear window relay • HVAC module • Heated rear window grid	• GO to Pinpoint Test D.
• The defrost system will not shut off automatically	• Circuitry • Heated rear window relay • HVAC module	• GO to Pinpoint Test E.
• The short drop windows do not operate correctly	• Circuitry • Driver window motor • Passenger window motor • Door ajar switch • Window motor not initialized	• GO to Pinpoint Test F.
• The delayed accessory is inoperative	• Fuse(s) • Circuitry • Accessory delay relay • SJB	• GO to Pinpoint Test H.
• The delayed accessory does not turn off	• Circuitry • Accessory delay relay • SJB	• GO to Pinpoint Test I.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart (Continued)

Condition	Possible Sources	Action
• Bounce-back occurring	• Door window glass out of adjustment • Door window glass weatherstrip worn • Obstruction in the window channel	• ADJUST the door window glass. • INSTALL a new door window glass weatherstrip. • REMOVE the obstruction from the window channel. DE-INITIALIZE the door window motor by disconnecting the battery with the door window motor in operation, then INITIALIZE the door window motor. REFER to Window Motor Initialization in this section.
• The one-touch up feature is inoperative	• Door window motor not initialized • Window control switch	• DE-INITIALIZE the door window motor by disconnecting the battery with the door window motor in operation, then INITIALIZE the door window motor. REFER to Window Motor Initialization in this section. If the one-touch up feature is still inoperative, INSTALL a new power window control switch.
• The convertible top drop function is inoperative/does not operate correctly	• Window motor • Circuitry • SJB	• GO to Pinpoint Test G.

Pinpoint Tests

Pinpoint Test A: A Single Power Window is Inoperative — Driver Front

Refer to Wiring Diagrams Cell 100, Power Windows for schematic and connector information.

Normal Operation

During normal operation, battery voltage is provided to the driver power window motor at all times through circuit 2034 (VT/YE). When the accessory delay relay is active, the driver power window motor receives voltage through circuit 400 (LB/BK). Ground is provided to the driver power window motor through circuit 1205 (BK). Pulling the window control switch up provides voltage to the window motor through circuit 226 (WH/BK) to command the window up. Pressing the window control switch down provides voltage to the window motor through circuit 227 (YE) to command the window down.

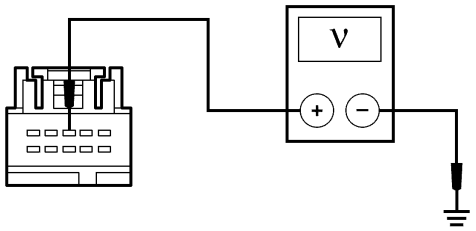
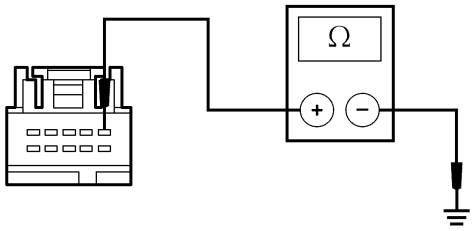
This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- Window motor
- Window control switch
- Smart Junction Box (SJB)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: A SINGLE POWER WINDOW IS INOPERATIVE — DRIVER FRONT

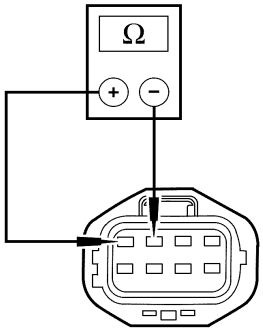
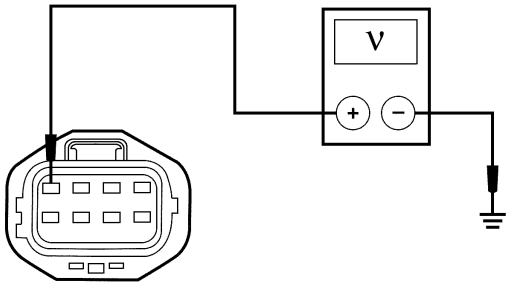
NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

Test Step		Result / Action to Take
A1	**CHECK THE POWER SUPPLY TO THE DRIVER WINDOW CONTROL SWITCH**	
	• Ignition OFF. • Disconnect: Driver Window Control Switch C504. • Ignition ON. • Measure the voltage between driver window control switch C504-3, circuit 985 (RD/LB), harness side and ground.  N0012607 • **Is the voltage greater than 10 volts?**	**Yes** GO to **A2**. **No** GO to **A11**.
A2	**CHECK THE DRIVER WINDOW CONTROL SWITCH CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Ignition OFF. • Measure the resistance between driver window control switch C504-1, circuit 1205 (BK), harness side and ground.  N0012608 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A3**. **No** REPAIR the circuit. TEST the system for normal operation.
A3	**CHECK THE DRIVER WINDOW CONTROL SWITCH FOR AN OPEN**	
	• Carry out the Window Control Switch Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Is the driver window control switch OK?**	**Yes** GO to **A4**. **No** INSTALL a new driver window control switch. REFER to Window Control Switch in this section. TEST the system for normal operation.
A4	**CHECK FOR SHORT BETWEEN CIRCUITS 226 (WH/BK) AND 227 (YE)**	
	• Disconnect: Driver Window Motor C518.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

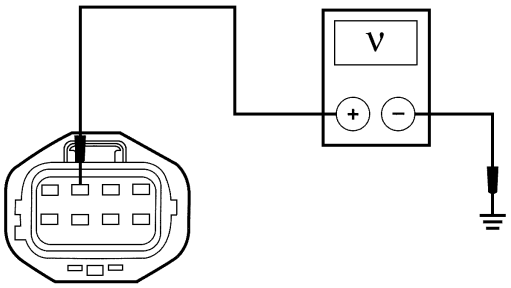
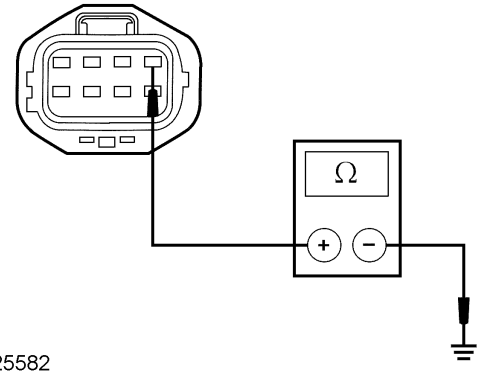
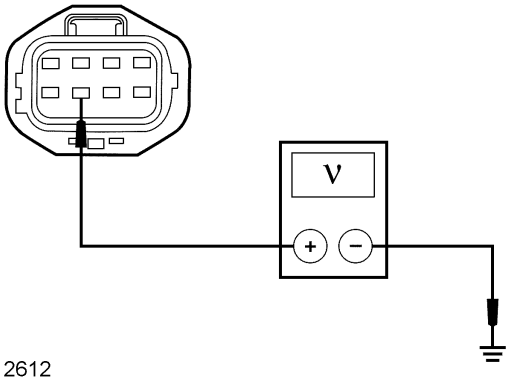
PINPOINT TEST A: A SINGLE POWER WINDOW IS INOPERATIVE — DRIVER FRONT (Continued)

Test Step		Result / Action to Take
A4	**CHECK FOR SHORT BETWEEN CIRCUITS 226 (WH/BK) AND 227 (YE) (Continued)**	
	• Measure the resistance between driver window motor C518-3, circuit 226 (WH/BK), harness side and C518-4, circuit 227 (YE), harness side.  N0093721 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **A5**. **No** REPAIR the circuit. TEST the system for normal operation.
A5	**CHECK CIRCUIT 227 (YE) FOR AN OPEN**	
	• Connect: Driver Window Control Switch C504. • Ignition ON. • Measure the voltage between driver window motor C518-4, circuit 227 (YE), harness side and ground while rocking the driver window control switch to the DOWN position.  N0012609 • **Is the voltage greater than 10 volts with the switch in the DOWN position?**	**Yes** GO to **A6**. **No** REPAIR the circuit. TEST the system for normal operation.

(Continued)

DIAGNOSIS AND TESTING (Continued)

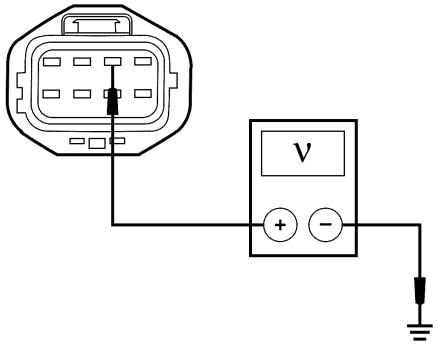
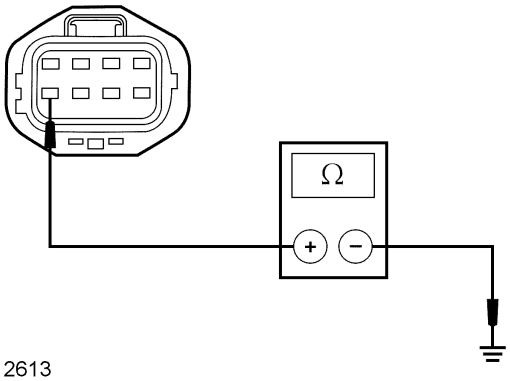
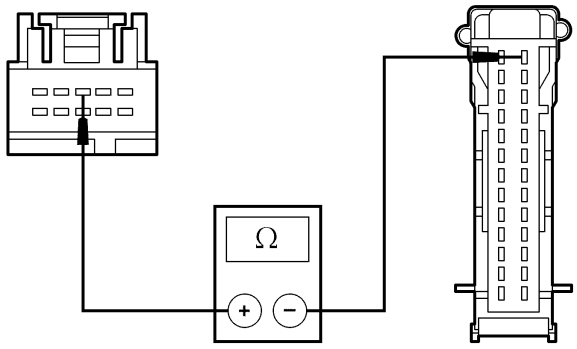
PINPOINT TEST A: A SINGLE POWER WINDOW IS INOPERATIVE — DRIVER FRONT (Continued)

Test Step		Result / Action to Take
A6	**CHECK CIRCUIT 226 (WH/BK) FOR AN OPEN**	
	• Measure the voltage between driver window motor C518-3, circuit 226 (WH/BK), harness side and ground while rocking the driver window control switch to the UP position.  N0012610 • **Is the voltage greater than 10 volts with the switch in the UP position?**	**Yes** GO to **A7**. **No** REPAIR the circuit. TEST the system for normal operation.
A7	**CHECK CIRCUIT 404 (VT/LG) FOR AN OPEN**	
	• Measure the resistance between driver window motor C518-1, circuit 404 (VT/LG), harness side and ground while rocking the driver window control switch to the UP (second detent) and DOWN (second detent) positions.  N0025582 • **Is the resistance less than 5 ohms with the switch in the UP and DOWN positions?**	**Yes** GO to **A8**. **No** REPAIR the circuit. TEST the system for normal operation.
A8	**CHECK CIRCUIT 2034 (VT/YE) FOR AN OPEN**	
	• Measure the voltage between driver window motor C518-7, circuit 2034 (VT/YE), harness side and ground.  N0012612 • **Is the voltage greater than 10 volts?**	**Yes** GO to **A9**. **No** VERIFY the Bussed Electrical Center (BEC) fuse 5 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. REPAIR the circuit. TEST the system for normal operation.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: A SINGLE POWER WINDOW IS INOPERATIVE — DRIVER FRONT (Continued)

Test Step		Result / Action to Take
A9	**CHECK CIRCUIT 400 (LB/BK) FOR AN OPEN**	
	• Measure the voltage between driver window motor C518-2, circuit 400 (LB/BK), harness side and ground.  N0025583 • **Is the voltage greater than 10 volts?**	**Yes** GO to **A10**. **No** REPAIR the circuit. TEST the system for normal operation.
A10	**CHECK THE DRIVER WINDOW MOTOR CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Measure the resistance between driver window motor C518-8, circuit 1205 (BK), harness side and ground.  N0012613 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new driver window motor. REFER to Window Regulator and Motor — Front Door in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
A11	**CHECK CIRCUIT 985 (RD/LB) FOR AN OPEN**	
	• Ignition OFF. • Disconnect: SJB C2280E. • Measure the resistance between driver window control switch C504-3, circuit 985 (RD/LB), harness side and SJB C2280E-26, circuit 985 (RD/LB), harness side.  N0025584 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A12**. **No** REPAIR the circuit. TEST the system for normal operation.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: A SINGLE POWER WINDOW IS INOPERATIVE — DRIVER FRONT (Continued)

Test Step		Result / Action to Take
A12	**CHECK THE SJB FOR CORRECT OPERATION**	
	• Disconnect all of the SJB connectors. • Check for: — corrosion. — pushed-out pins. • Connect all of the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. REPEAT the self-test. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test B: A Single Power Window is Inoperative — Passenger Front

Refer to Wiring Diagrams Cell 100, Power Windows for schematic and connector information.

Normal Operation

During normal operation, battery voltage is provided to the passenger power window motor at all times through circuit 2033 (BN/LB). When the accessory delay relay is active, the passenger power window motor receives voltage through circuit 170 (RD/LB) and the passenger front window control switch receives voltage through circuit 984 (YE/LB). Ground is provided to the passenger power window motor through circuit 1205 (BK). Pulling the driver or passenger window control switch up provides voltage to the window motor through circuit 313 (WH/YE) to command the window up. Pressing the driver or passenger window control switch down provides voltage to the window motor through circuit 314 (TN/LB) to command the window down.

This pinpoint test is intended to diagnose the following:

- Fuse(s)
- Wiring, terminals or connectors
- Driver window control switch
- Front passenger window control switch
- Front passenger window motor

PINPOINT TEST B: A SINGLE POWER WINDOW IS INOPERATIVE — PASSENGER FRONT

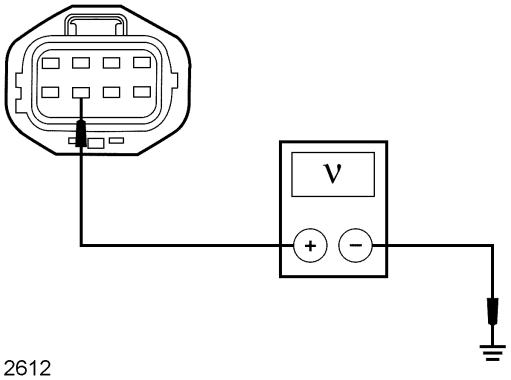
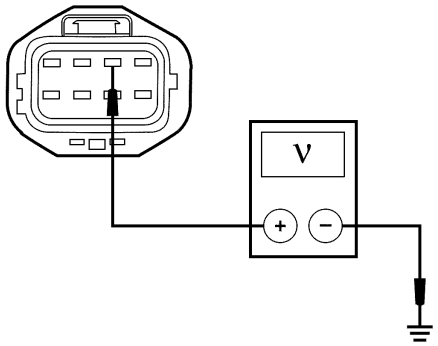
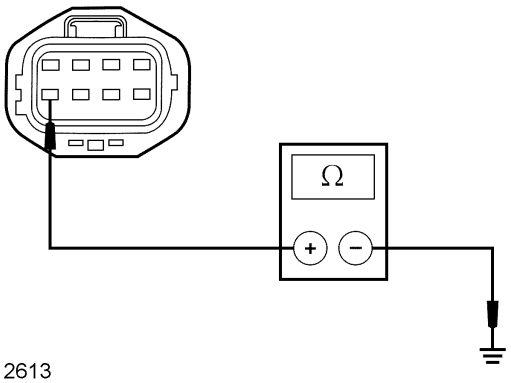
NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

Test Step		Result / Action to Take
B1	**CHECK THE OPERATION FROM THE DRIVER WINDOW CONTROL SWITCH**	
	• Using the driver window switch, operate the passenger window in the up, down and auto positions. • **Does the passenger window operate for all positions?**	**Yes** GO to **B12**. **No** GO to **B2**.
B2	**CHECK THE DRIVER WINDOW CONTROL SWITCH**	
	• Ignition OFF. • Disconnect: Driver Window Control Switch C504. • Carry out the Master Window Adjust Switch component test. Refer to Wiring Diagrams Cell 149 for component testing. • **Did the driver window control switch pass the component test?**	**Yes** GO to **B3**. **No** INSTALL a new driver window control switch. REFER to Window Control Switch in this section. TEST the system for normal operation.
B3	**CHECK CIRCUIT 2033 (BN/LB) FOR VOLTAGE**	
	• Disconnect: Front Passenger Window Motor C623. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

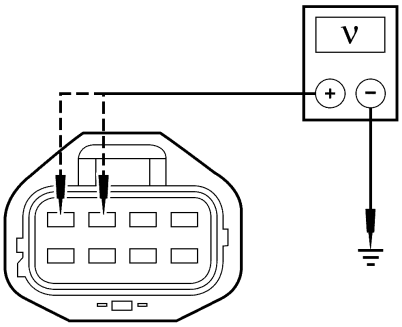
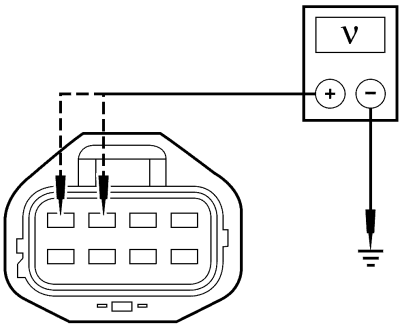
PINPOINT TEST B: A SINGLE POWER WINDOW IS INOPERATIVE — PASSENGER FRONT (Continued)

Test Step		Result / Action to Take
B3	**CHECK CIRCUIT 2033 (BN/LB) FOR VOLTAGE (Continued)**	
	• Measure the voltage between front passenger window motor C623-7, circuit 2033 (BN/LB), harness side and ground.  N0012612 • **Is the voltage greater than 10 volts?**	**Yes** GO to **B4**. **No** VERIFY that bussed electrical center (BEC) fuse 7 (30A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. TEST the system for normal operation.
B4	**CHECK CIRCUIT 170 (RD/LB) FOR VOLTAGE**	
	• Measure the voltage between front passenger window motor C623-2, circuit 170 (RD/LB), harness side and ground.  N0025583 • **Is the voltage greater than 10 volts?**	**Yes** GO to **B5**. **No** VERIFY that smart junction box (SJB) fuse 6 (5A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. TEST the system for normal operation.
B5	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Ignition OFF. • Measure the resistance between front passenger window motor C623-8, circuit 1205 (BK), harness side and ground.  N0012613 • **Is the resistance less than 5 ohms?**	**Yes** GO to **B6**. **No** REPAIR the circuit. TEST the system for normal operation.
B6	**CHECK CIRCUITS 313 (WH/YE) AND 314 (TN/LB) FOR A SHORT TO VOLTAGE**	
	• Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

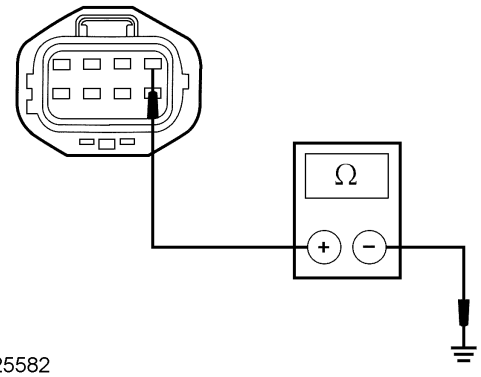
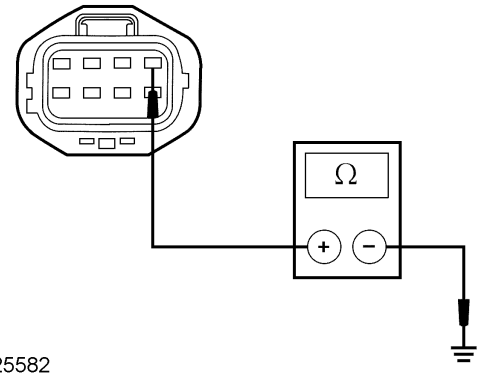
PINPOINT TEST B: A SINGLE POWER WINDOW IS INOPERATIVE — PASSENGER FRONT (Continued)

Test Step		Result / Action to Take
B6	**CHECK CIRCUITS 313 (WH/YE) AND 314 (TN/LB) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between ground and front passenger window motor: — C623-3, circuit 313 (WH/YE), harness side. — C623-4, circuit 314 (TN/LB), harness side.  N0093221 • **Is any voltage present?**	**Yes** GO to **B7**. **No** GO to **B8**.
B7	**CHECK FOR A SHORTED FRONT PASSENGER WINDOW CONTROL SWITCH**	
	• Ignition OFF. • Disconnect: Front Passenger Window Control Switch C604. • Ignition ON. • Measure the voltage between ground and front passenger window motor: — C623-3, circuit 313 (WH/YE), harness side. — C623-4, circuit 314 (TN/LB), harness side.  N0093221 • **Is any voltage present?**	**Yes** REPAIR the circuit(s). TEST the system for normal operation. **No** INSTALL a new front passenger window control switch. REFER to Window Control Switch in this section. TEST the system for normal operation.
B8	**CHECK CIRCUIT 405 (VT/LB) FOR A SHORT TO GROUND**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

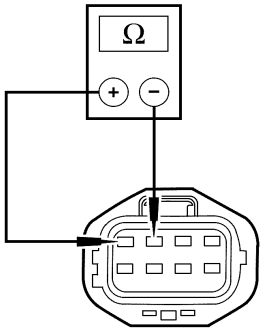
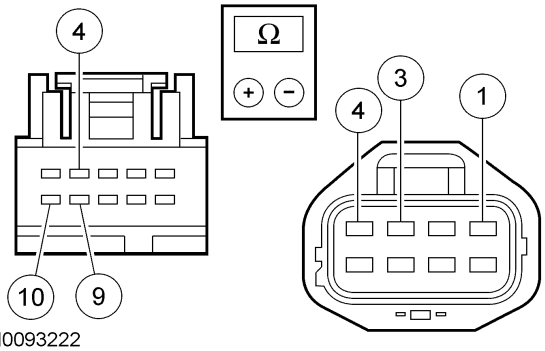
PINPOINT TEST B: A SINGLE POWER WINDOW IS INOPERATIVE — PASSENGER FRONT (Continued)

Test Step		Result / Action to Take
B8	**CHECK CIRCUIT 405 (VT/LB) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between front passenger window motor C623-1, circuit 405 (VT/LB), harness side and ground.  N0025582 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **B10**. **No** GO to **B9**.
B9	**CHECK FOR A SHORTED FRONT PASSENGER WINDOW CONTROL SWITCH**	
	• Disconnect: Front Passenger Window Control Switch C604. • Measure the resistance between front passenger window motor C623-1, circuit 405 (VT/LB), harness side and ground.  N0025582 • **Is the resistance greater than 10,000 ohms?**	**Yes** REPAIR the circuit(s). TEST the system for normal operation. **No** INSTALL a new front passenger window control switch. REFER to Window Control Switch in this section. TEST the system for normal operation.
B10	**CHECK FOR SHORT BETWEEN CIRCUITS 313 (WH/YE) AND 314 (TN/LB)**	
	• Disconnect: Front Passenger Window Control Switch C604.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

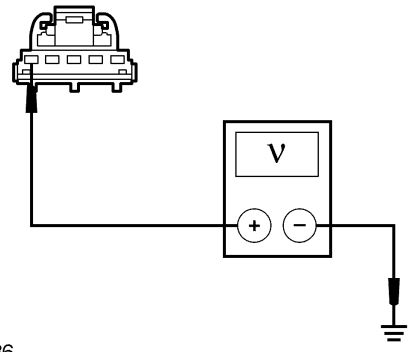
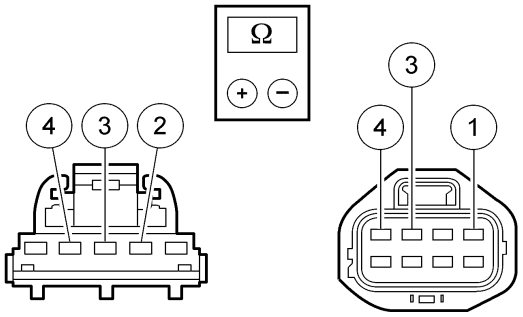
PINPOINT TEST B: A SINGLE POWER WINDOW IS INOPERATIVE — PASSENGER FRONT (Continued)

Test Step		Result / Action to Take
B10	**CHECK FOR SHORT BETWEEN CIRCUITS 313 (WH/YE) AND 314 (TN/LB) (Continued)**	
	• Measure the resistance between front passenger window motor C623-3, circuit 313 (WH/YE), harness side and C623-4, circuit 314 (TN/LB), harness side.  N0093721 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **B11**. **No** REPAIR the circuit. TEST the system for normal operation.
B11	**CHECK CIRCUITS 313 (WH/YE), 314 (TN/LB) AND 405 (VT/LB) FOR AN OPEN**	
	• Measure the resistance between driver window control switch C504, harness side and front passenger window motor C623, harness side using the following chart: **Driver Window Control Switch** / **Circuit** / **Front Passenger Window Motor** C504-4 / 314 (TN/LB) / C623-4 C504-9 / 405 (VT/LB) / C623-1 C504-10 / 313 (WH/YE) / C623-3  N0093222 • **Are the resistances less than 5 ohms?**	**Yes** INSTALL a new front passenger window motor. REFER to Window Regulator and Motor — Front Door in this section. TEST the system for normal operation. **No** REPAIR the circuit(s). TEST the system for normal operation.
B12	**CHECK THE FRONT PASSENGER WINDOW CONTROL SWITCH**	
	• Ignition OFF. • Disconnect: Front Passenger Window Control Switch C604. • Carry out the Window Adjust Switch, Passenger Side component test. Refer to Wiring Diagrams Cell 149 for component testing. • **Did the front passenger window control switch pass the component test?**	**Yes** GO to **B13**. **No** INSTALL a new front passenger window control switch. REFER to Window Control Switch in this section. TEST the system for normal operation.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: A SINGLE POWER WINDOW IS INOPERATIVE — PASSENGER FRONT (Continued)

Test Step		Result / Action to Take
B13	**CHECK CIRCUIT 984 (YE/LB) FOR VOLTAGE**	
	• Measure the voltage between front passenger window control switch C604-5, circuit 984 (YE/LB), harness side and ground.  N0025586 • **Is the voltage greater than 10 volts?**	**Yes** GO to **B14**. **No** VERIFY that SJB fuse 6 (5A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. TEST the system for normal operation.
B14	**CHECK CIRCUITS 313 (WH/YE), 314 (TN/LB) AND 405 (VT/LB) FOR AN OPEN**	
	• Measure the resistance between front passenger window control switch C604, harness side and front passenger window motor C623, harness side using the following chart: **Front Passenger Window Control Switch** / **Circuit** / **Front Passenger Window Motor** C604-2 / 405 (VT/LB) / C623-1 C604-4 / 313 (WH/YE) / C623-3 C604-3 / 314 (TN/LB) / C623-4  N0093223 • **Are the resistances less than 5 ohms?**	**Yes** INSTALL a new front passenger window motor. REFER to Window Regulator and Motor — Front Door in this section. TEST the system for normal operation. **No** REPAIR the circuit(s). TEST the system for normal operation.

Pinpoint Test C: A Single Power Window is Inoperative — Rear Quarter

Refer to Wiring Diagrams Cell 100, Power Windows for schematic and connector information.

Normal Operation

The quarter window motors receive voltage at all times through circuit 1773 (RD/LB) (LH) and 1670 (BN/YE) (RH). With the key in the ON position (or with the accessory delay relay active), the quarter window motors receive voltage through circuit 882 (BN/YE)/193 (YE/LG) (LH) and 882 (BN/YE) (RH). Ground is provided to the quarter window motors through circuit 1205 (BK).

DIAGNOSIS AND TESTING (Continued)

When the window control switch is pulled up, voltage is supplied to the LH/RH quarter window motors through circuit 884 (YE/BK) to command the windows up. When the window control switch is pushed, voltage is supplied to the LH/RH quarter window motors through circuit 885 (YE/LB) to command the windows down.

The Smart Junction Box (SJB) disables/inhibits the rear quarter window control switch from operating the rear quarter windows when the convertible top ajar switch indicates the convertible top is not in the full UP or full DOWN position.

This pinpoint test is intended to diagnose the following:

- Fuse(s)
- Wiring, terminals or connectors
- Rear window control switch
- Window motor
- SJB

PINPOINT TEST C: A SINGLE POWER WINDOW IS INOPERATIVE — REAR QUARTER

NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

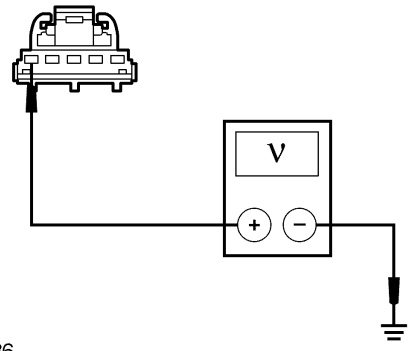
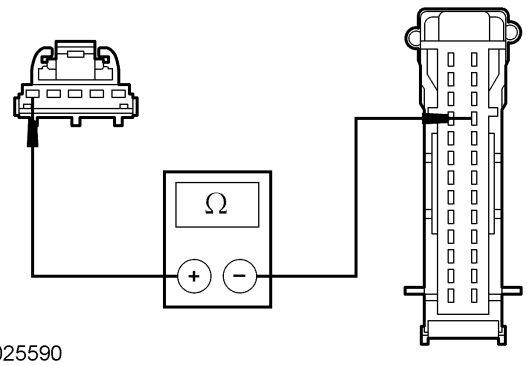
NOTE: If SJB on-demand DTC B1141 or B1142 is present, the rear quarter windows may still function during convertible top operation, but will not function when commanded by the window control switch. Refer to the Smart Junction Box (SJB) DTC Chart for diagnosis.

Test Step		Result / Action to Take
C1	**CARRY OUT THE ON-DEMAND SELF TEST FOR THE CONVERTIBLE TOP AJAR SWITCH**	
	NOTE: False DTCs will set if the convertible top is not in the full down position before carrying out this test. • Connect the scan tool. • Ignition ON. • With the convertible top and the rear windows in the full DOWN position, carry out the on-demand self test for the SJB. • **Does DTC B1141 or DTC B1142 set as current?**	**Yes** GO to Pinpoint Test J. **No** GO to **C2**.
C2	**CHECK THE OPERATION OF THE REAR WINDOWS**	
	• Operate the rear windows with the driver rear window control switch. • **Are both rear windows inoperative?**	**Yes** GO to **C3**. **No** GO to **C6**.
C3	**CHECK THE REAR WINDOW CONTROL SWITCH FOR AN OPEN**	
	• Ignition OFF. • Disconnect: Rear Window Control Switch C566. • Carry out the Window Control Switch Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Is the window control switch OK?**	**Yes** GO to **C4**. **No** INSTALL a new window control switch. REFER to Window Control Switch in this section. TEST the system for normal operation.
C4	**CHECK CIRCUIT 333 (YE/RD) FOR VOLTAGE**	
	• Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

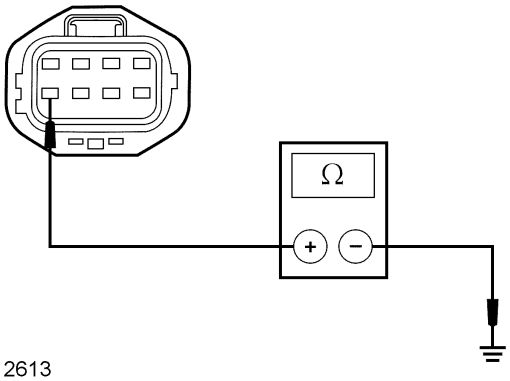
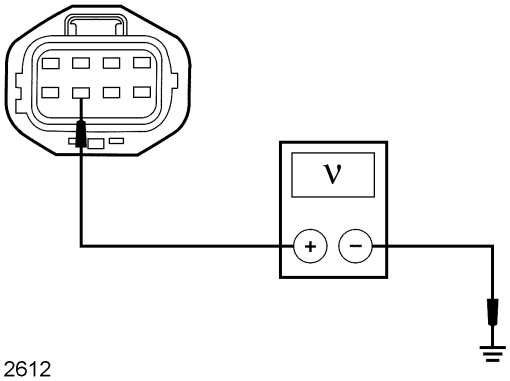
PINPOINT TEST C: A SINGLE POWER WINDOW IS INOPERATIVE — REAR QUARTER (Continued)

Test Step		Result / Action to Take
C4	**CHECK CIRCUIT 333 (YE/RD) FOR VOLTAGE (Continued)**	
	• Measure the voltage between rear window control switch C566-5, circuit 333 (YE/RD), harness side and ground.  N0025586 • **Is the voltage greater than 10 volts?**	**Yes** GO to **C6**. **No** GO to **C5**.
C5	**CHECK CIRCUIT 333 (YE/RD) FOR AN OPEN**	
	• Ignition OFF. • Disconnect: SJB C2280E. • Measure the resistance between rear window control switch C566-5, circuit 333 (YE/RD), harness side and SJB C2280E-23, circuit 333 (YE/RD), harness side.  N0025590 • **Is the resistance less than 5 ohms?**	**Yes** GO to **C13**. **No** REPAIR the circuit. TEST the system for normal operation.
C6	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Ignition OFF. • Disconnect: Suspect Window Motor C3118 (Left Rear) or C3119 (Right Rear).	

(Continued)

DIAGNOSIS AND TESTING (Continued)

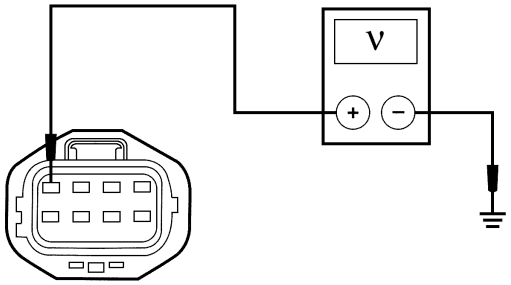
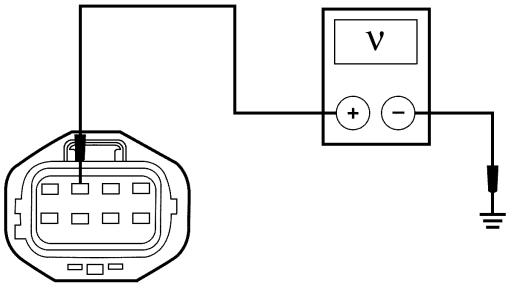
PINPOINT TEST C: A SINGLE POWER WINDOW IS INOPERATIVE — REAR QUARTER (Continued)

Test Step		Result / Action to Take
C6	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN (Continued)**	
	• Measure the resistance between LH rear window motor C3118-8, or RH rear window motor C3119-8, circuit 1205 (BK), harness side and ground.  N0012613 • **Is the resistance less than 5 ohms?**	**Yes** GO to **C7**. **No** REPAIR the circuit. TEST the system for normal operation.
C7	**CHECK THE VBATT CIRCUIT FOR AN OPEN**	
	• Ignition ON. • Measure the voltage between LH rear window motor, C3118-7, or RH rear window motor C3119-7, circuit 1670 (BN/YE), harness side and ground.  N0012612 • **Is the voltage greater than 10 volts?**	**Yes** GO to **C8**. **No** For LH, VERIFY the Bussed Electrical Center (BEC) fuse 11 (30A) is OK. For RH, VERIFY the BEC fuse 12 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. REPAIR the circuit. TEST the system for normal operation.
C8	**CHECK CIRCUIT 885 (YE/LB) FOR AN OPEN**	
	• Ignition OFF. • Disconnect: Rear Window Control Switch C566. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

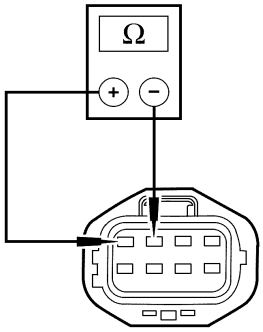
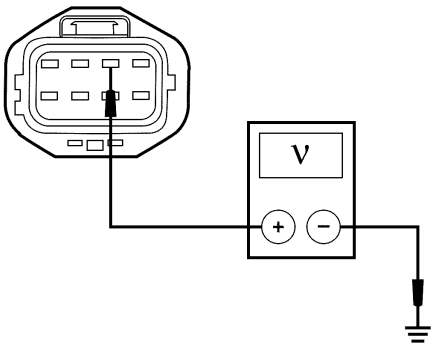
PINPOINT TEST C: A SINGLE POWER WINDOW IS INOPERATIVE — REAR QUARTER (Continued)

Test Step		Result / Action to Take
C8	**CHECK CIRCUIT 885 (YE/LB) FOR AN OPEN (Continued)**	
	• While rocking the rear window control switch to the DOWN position, measure the voltage between LH rear window motor C3118-4, or RH rear window motor C3119-4, circuit 885 (YE/LB), harness side and ground.  N0012609 • **Is the voltage greater than 10 volts with the switch in the DOWN position?**	**Yes** GO to **C9**. **No** REPAIR the circuit. TEST the system for normal operation.
C9	**CHECK CIRCUIT 884 (YE/BK) FOR AN OPEN**	
	• While rocking the passenger window control switch to the UP position, measure the voltage between LH rear window motor C3118-3, or RH rear window motor C3119-3, circuit 884 (YE/BK), harness side and ground.  N0012610 • **Is the voltage greater than 10 volts with the switch in the UP position?**	**Yes** GO to **C10**. **No** REPAIR the circuit. TEST the system for normal operation.
C10	**CHECK FOR SHORT BETWEEN CIRCUITS 884 (YE/BK) AND 885 (YE/LB)**	
	• Ignition OFF. • Disconnect: Rear Window Control Switch C566.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

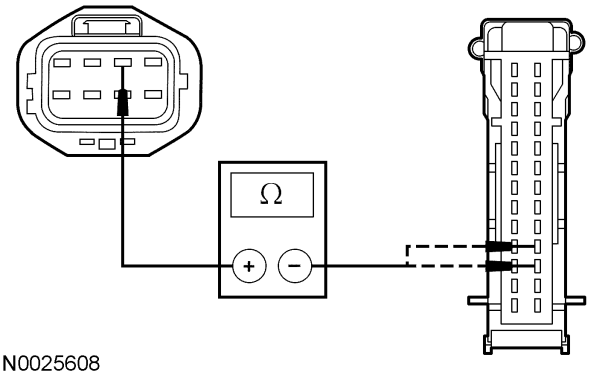
PINPOINT TEST C: A SINGLE POWER WINDOW IS INOPERATIVE — REAR QUARTER (Continued)

Test Step		Result / Action to Take
C10	**CHECK FOR SHORT BETWEEN CIRCUITS 884 (YE/BK) AND 885 (YE/LB) (Continued)**	
	• Measure the resistance between LH rear window motor C3118-3, circuit 884 (YE/BK), harness side and C3118-4, circuit 885 (YE/LB), harness side.  N0093721 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **C11**. **No** REPAIR the circuit. TEST the system for normal operation.
C11	**CHECK CIRCUIT 882 (BN/YE) FOR VOLTAGE**	
	• Ignition ON. • Measure the voltage between LH rear window motor C3118-2, or RH rear window motor C3119-2, circuit 882 (BN/YE), harness side and ground.  N0025583 • **Is the voltage greater than 10 volts?**	**Yes** INSTALL a new rear quarter window regulator and motor. REFER to Window Regulator Motor — Rear Quarter in this section. TEST the system for normal operation. **No** GO to **C12**.
C12	**CHECK CIRCUITS 193 (YE/LG) OR 882 (BN/YE) FOR AN OPEN**	
	• Ignition OFF. • Disconnect: SJB C2280E.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST C: A SINGLE POWER WINDOW IS INOPERATIVE — REAR QUARTER (Continued)

Test Step		Result / Action to Take
C12	**CHECK CIRCUITS 193 (YE/LG) OR 882 (BN/YE) FOR AN OPEN (Continued)**	
	• Measure the resistance between LH rear window motor C3118-2, circuit 882 (BN/YE), harness side and SJB C2280E-17, circuit 193 (YE/LG), harness side; or between RH rear window motor C3119-2, circuit 882 (BN/YE), harness side and SJB C2280E-16, circuit 882 (BN/YE), harness side.  N0025608 • **Is the resistance less than 5 ohms?**	**Yes** GO to **C13**. **No** REPAIR the circuit in question. TEST the system for normal operation.
C13	**CHECK THE SJB FOR CORRECT OPERATION**	
	• Disconnect all of the SJB connectors. • Check for: — corrosion. — pushed-out pins. • Connect all of the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test D: The Defrost System is Inoperative

Refer to Wiring Diagrams Cell 56, Heated Window for schematic and connector information.

Normal Operation

When the rear window defrost switch on the HVAC module is pressed, a ground signal is sent to the Smart Junction Box (SJB) on circuit 1426 (PK). The SJB then grounds circuit 1389 (WH) which energizes the rear window defrost relay. When the rear window defrost relay is active, voltage is supplied to the rear window defrost grid through circuit 186 (BN/LB). The rear window defrost grid is grounded by circuit 1205 (BK). The SJB provides rear window defrost status to the HVAC module through circuit 1427 (TN/LB).

DTC Description	Fault Trigger Conditions
• B1345 — Heated Backlite Input Circuit Short to Ground	Defrost switch or input circuit short to ground.
• B1348 — Heated Backlite Relay Circuit Open	Open or short to ground in relay control circuit.
• B1349 — Heated Backlite Relay Short to Battery	Short to battery in relay control circuit.
• B2060 — Heated Backlite Indicator Circuit Failure	Short to battery in heated backlite status circuit.
• B2061 — Heated Backlite Indicator Circuit Shorted to Ground	Short to ground in heated backlite status circuit.

This pinpoint test is intended to diagnose

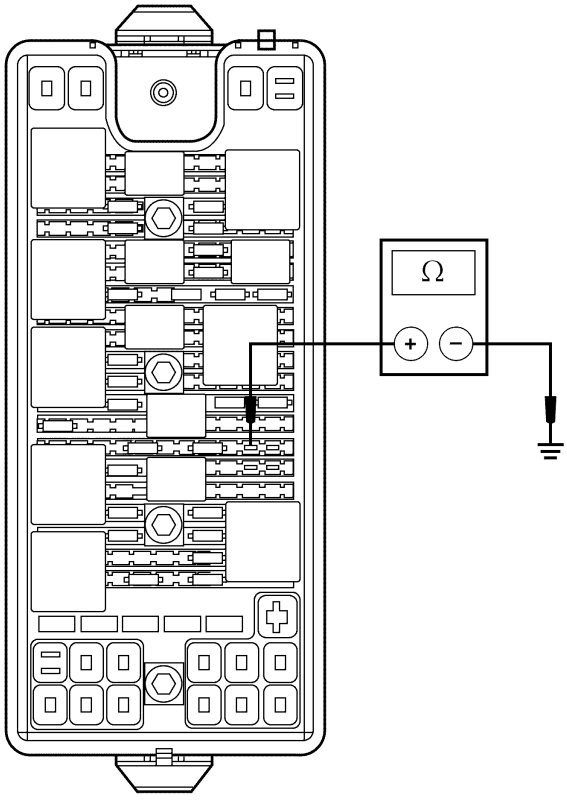
DIAGNOSIS AND TESTING (Continued)

the following:

- Fuse(s)
- Wiring, terminals or connectors
- Rear window defrost relay
- HVAC module
- Rear window defrost grid
- SJB

PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE

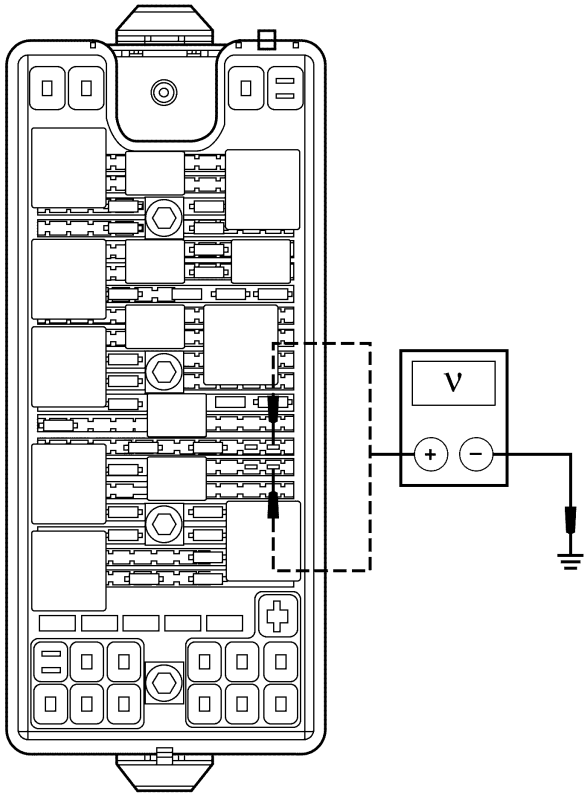
NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

Test Step		Result / Action to Take
D1	**CHECK FOR RECORDED SJB DTCs**	
	• Ignition ON. • Check the recorded results from the SJB self-test. • **Are any DTCs retrieved?**	**Yes** If DTC B1348, GO to **D10**. If DTC B1349, GO to **D9**. If DTC B1345, GO to **D13**. If DTC B2060, GO to **D16**. If DTC B2061, GO to **D15**. **No** GO to **D2**.
D2	**CHECK CIRCUIT 1389 (WH) FOR GROUND**	
	• Ignition OFF. • Disconnect: Rear Window Defrost Relay. • Ignition ON. • Press the rear window defrost switch to ON. • Measure the resistance between rear window defrost relay pin 86, circuit 1389 (WH), harness side and ground.  N0025842 • **Is the resistance less than 100 ohms?**	**Yes** GO to **D3**. **No** GO to **D7**.
D3	**CHECK CIRCUIT 298 (VT/OG) FOR AN OPEN**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

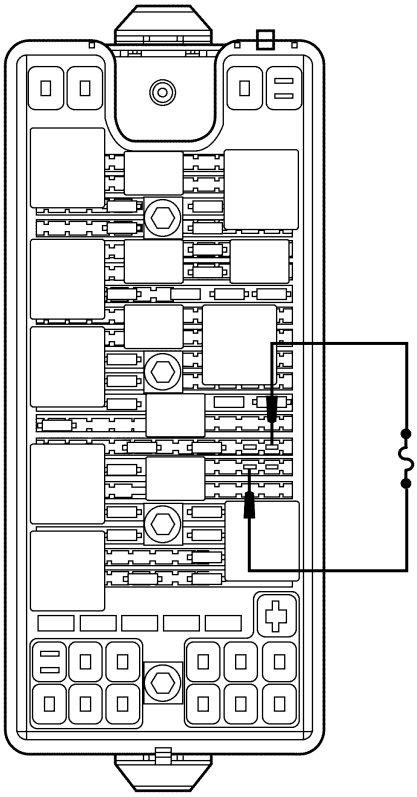
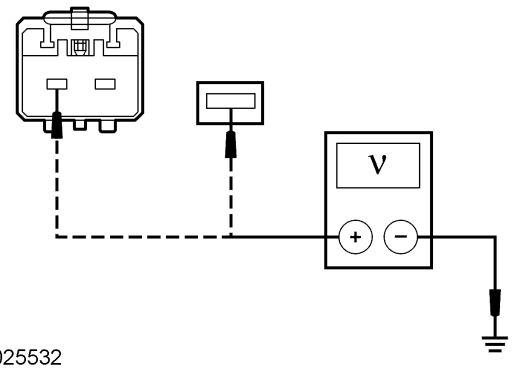
PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
D3	**CHECK CIRCUIT 298 (VT/OG) FOR AN OPEN (Continued)**	
	• Measure the voltage between rear window defrost relay pin 30, harness side and ground; and between rear window defrost relay pin 85, circuit 298 (VT/OG), harness side and ground.  N0025843 • **Is the voltage greater than 10 volts?**	**Yes** GO to **D4**. **No** VERIFY the Bussed Electrical Center (BEC) fuse 52 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. REPAIR the circuit. TEST the system for normal operation.
D4	**CHECK THE REAR WINDOW DEFROST RELAY FOR AN OPEN OR INTERNAL SHORT (NO DTCs)**	
	• Carry out the Rear Window Defrost Relay Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Is the rear window defrost relay OK?**	**Yes** GO to **D5**. **No** INSTALL a new rear window defrost relay. TEST the system for normal operation.
D5	**CHECK CIRCUIT 186 (BN/LB) FOR AN OPEN**	
	• Disconnect: Rear Window Defrost Grid C402A (coupe) or C402 (convertible). • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

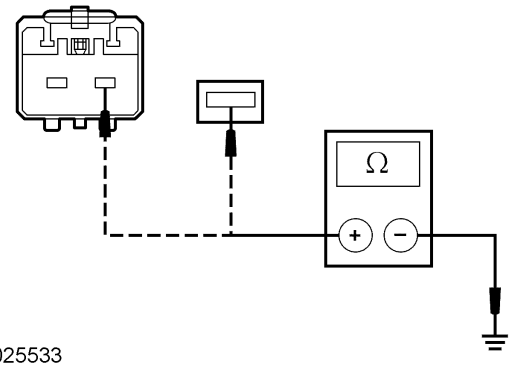
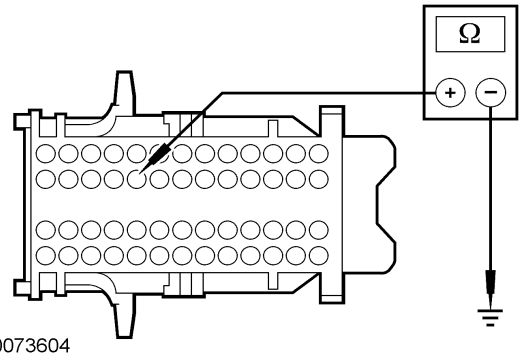
PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>D5</td><td>CHECK CIRCUIT 186 (BN/LB) FOR AN OPEN (Continued)</td><td rowspan="2">Yes
REMOVE the jumper wire. GO to D6.
No
REPAIR the circuit. TEST the system for normal operation.</td></tr>
<tr><td colspan="2">• Connect a fused jumper wire between rear window defrost relay pin 30, circuit 298 (VT/OG), harness side and rear window defrost relay pin 87, circuit 186 (BN/LB), harness side.
 
N0025844
• Measure the voltage between rear window defrost grid C402a-1 (coupe), circuit 186 (BN/LB), harness side and ground; or between rear window defrost gridC402-1 (convertible), circuit 186 (BN/LB), harness side and ground.
 
N0025532
• Is the voltage greater than 10 volts?</td></tr>
<tr><td>D6</td><td>CHECK CIRCUIT 1205 (BK) FOR AN OPEN</td><td></td></tr>
<tr><td colspan="2">• Disconnect: Rear Window Defrost Grid C402B (Coupe Only).
• Ignition OFF.</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

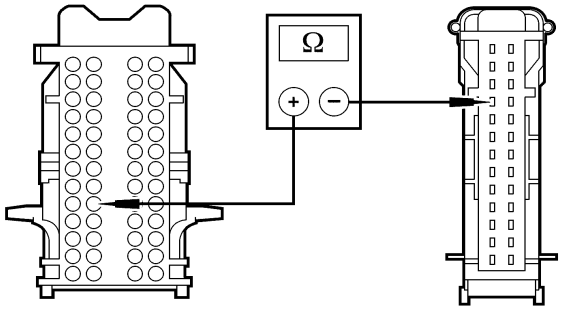
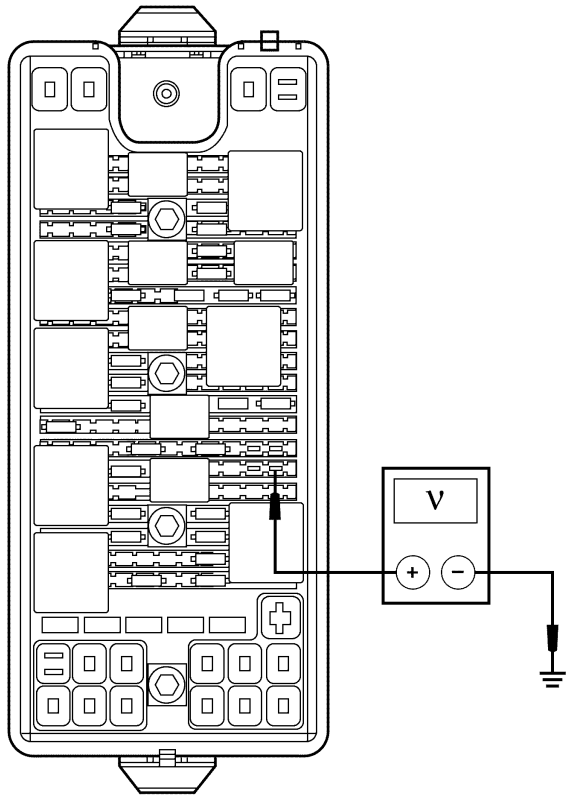
PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
D6	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN (Continued)**	
	• Measure the resistance between rear window defrost grid C402B-1 (coupe), circuit 1205 (BK), harness side and ground; or between rear window defrost grid C402-2 (convertible), circuit 1205 (BK), harness side and ground.  N0025533 • **Is the resistance less than 5 ohms?**	**Yes** REPAIR the rear window defrost grid. REFER to Window Grid Wire Repair in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
D7	**CHECK THE HVAC FOR CORRECT OPERATION**	
	NOTE: The use of an analog ohmmeter may be necessary for this step due to the momentary ground signal of the heated rear window switch. • Ignition OFF. • Disconnect: SJB C2280B. • While pressing the rear window defrost switch to ON, measure the resistance between SJB C2280B-18, circuit 1426 (PK), harness side and ground.  N0073604 • **Is the resistance less than 5 ohms?**	**Yes** GO to **D18**. **No** GO to **D8**.
D8	**CHECK CIRCUIT 1426 (PK) FOR AN OPEN**	
	• Disconnect: HVAC Module C294A.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

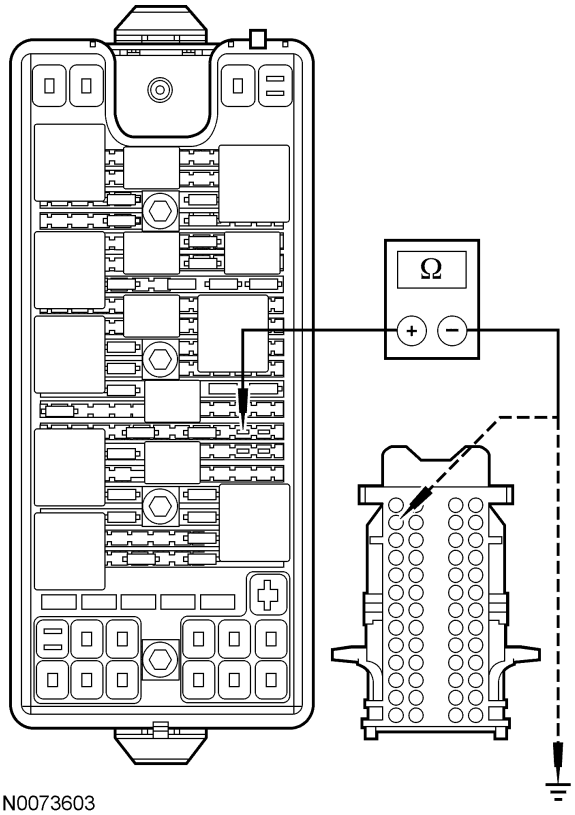
PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
D8	**CHECK CIRCUIT 1426 (PK) FOR AN OPEN (Continued)**	
	• Measure the resistance between SJB C2280B-18, circuit 1426 (PK), harness side and HVAC C294A-10, circuit 1426 (PK), harness side.  N0073605 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new HVAC module. REFER to Section 412-01. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
D9	**CHECK CIRCUIT 298 (VT/OG) FOR VOLTAGE**	
	• Ignition OFF. • Disconnect: Rear Window Defrost Relay. • Measure the voltage between rear window defrost relay pin 85, circuit 298 (VT/OG), harness side and ground.  N0025845 • **Is the voltage greater than 10 volts?**	**Yes** GO to **D10**. **No** VERIFY the BEC fuse 52 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. REPAIR the circuit. TEST the system for normal operation.

(Continued)

DIAGNOSIS AND TESTING (Continued)

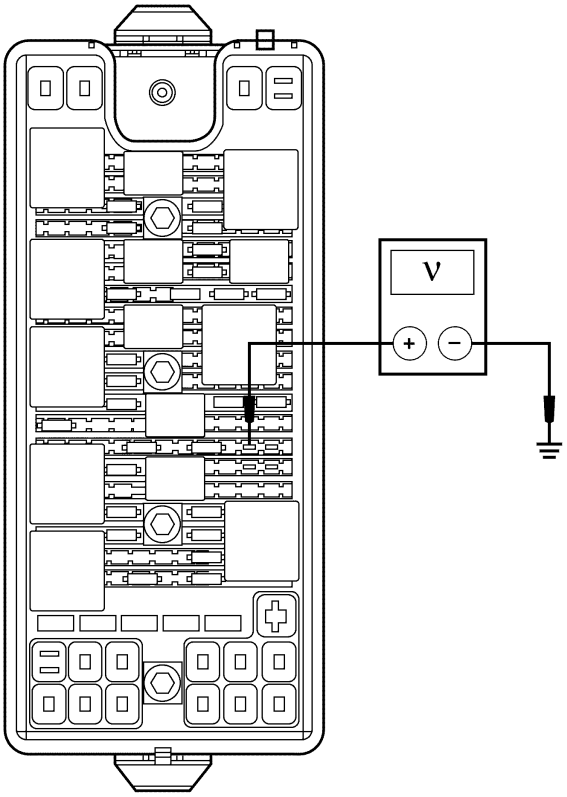
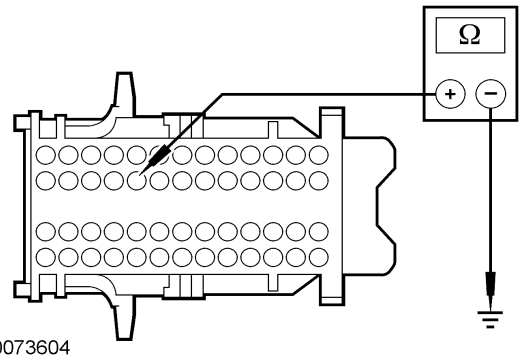
PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
D10	**CHECK THE REAR WINDOW DEFROST RELAY FOR AN OPEN OR AN INTERNAL SHORT (DTC B1348, B1349)**	
	• Ignition OFF. • Disconnect: Rear Window Defrost Relay. • Carry out the Rear Window Defrost Relay Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Is the rear window defrost relay OK?**	**Yes** GO to **D11**. **No** INSTALL a new rear window defrost relay. TEST the system for normal operation.
D11	**CHECK CIRCUIT 1389 (WH) FOR AN OPEN OR SHORT TO GROUND**	
	• Disconnect: SJB C2280C. • Measure the resistance between rear window defrost relay pin 86, circuit 1389 (WH), harness side and SJB C2280C-12, circuit 1389 (WH), harness side; and between rear window defrost relay pin 86, circuit 1389 (WH) and ground.  N0073603 • **Is the resistance less than 5 ohms between the rear window defrost relay and the SJB and greater than 10,000 ohms between rear window defrost relay and ground?**	**Yes** GO to **D12**. **No** REPAIR the circuit. TEST the system for normal operation.
D12	**CHECK CIRCUIT 1389 (WH) FOR A SHORT TO VOLTAGE**	
	• Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

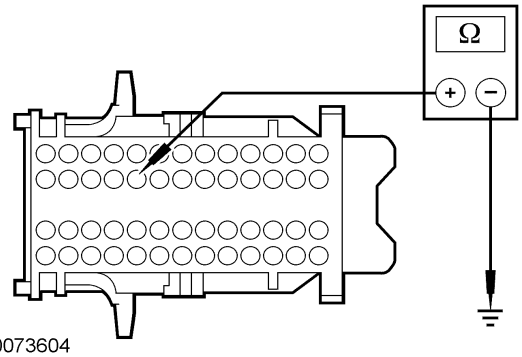
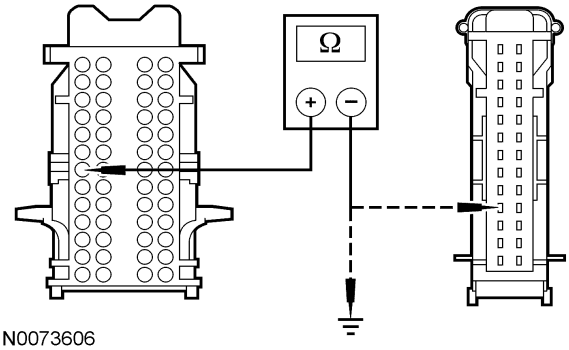
PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
D12	**CHECK CIRCUIT 1389 (WH) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between rear window defrost relay pin 86, circuit 1389 (WH), harness side and ground.  N0025847 • **Is any voltage present?**	**Yes** REPAIR the circuit. TEST the system for normal operation. **No** GO to **D18**.
D13	**VERIFY DTC B1345**	
	• Ignition OFF. • Disconnect: SJB C2280B. • Ignition ON. • Measure the resistance between SJB C2280B-18, circuit 1426 (PK), harness side and ground.  N0073604 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **D18**. **No** GO to **D14**.
D14	**CHECK CIRCUIT 1426 (PK) FOR A SHORT TO GROUND**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

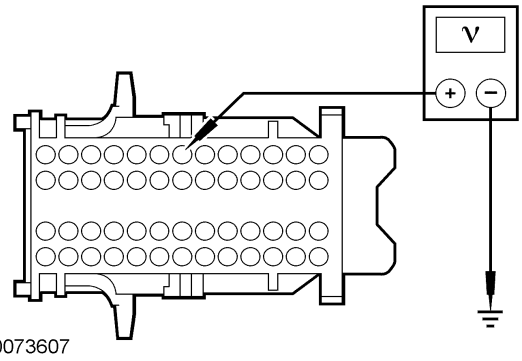
PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
D14	**CHECK CIRCUIT 1426 (PK) FOR A SHORT TO GROUND (Continued)**	
	• Disconnect: HVAC Module C294A. • Measure the resistance between SJB C2280B-18, circuit 1426 (PK), harness side and ground.  N0073604 • **Is the resistance greater than 10,000 ohms?**	**Yes** INSTALL a new HVAC module. REFER to Section 412-01. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
D15	**CHECK CIRCUIT 1427 (TN/LB) FOR AN OPEN OR SHORT TO GROUND**	
	• Ignition OFF. • Disconnect: HVAC Module C294A. • Disconnect: SJB C2280B. • Measure the resistance between SJB C2280B-7, circuit 1427 (TN/LB), harness side and HVAC module C294A-4, circuit 1427 (TN/LB), harness side; and between SJB C2280B-7, circuit 1427 (TN/LB), harness side and ground.  N0073606 • **Is the resistance less than 5 ohms between the SJB and the HVAC and greater than 10,000 ohms between the SJB and ground?**	**Yes** GO to **D16**. **No** REPAIR the circuit. TEST the system for normal operation.
D16	**CHECK CIRCUIT 1427 (TN/LB) FOR A SHORT TO VOLTAGE**	
	• Ignition OFF. • Disconnect: HVAC Module C294A. • Disconnect: SJB C2280B. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
D16	**CHECK CIRCUIT 1427 (TN/LB) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between SJB C2280B-7, circuit 1427 (TN/LB), harness side and ground.  N0073607 • **Is any voltage present?**	**Yes** REPAIR the circuit. TEST the system for normal operation. **No** GO to D17.
D17	**CHECK THE HVAC MODULE FOR AN OPEN OR INTERNAL SHORT**	
	• Install a known good HVAC module. • Operate the rear window defrost. • **Does the indicator illuminate?**	**Yes** INSTALL a new HVAC module. REFER to Section 412-01. TEST the system for normal operation. **No** GO to D18.
D18	**CHECK THE SJB FOR CORRECT OPERATION**	
	• Disconnect all of the SJB connectors. • Check for: — corrosion. — pushed-out pins. • Connect all of the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. REPEAT the self-test. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test E: The Defrost System Will Not Shut Off Automatically

Refer to Wiring Diagrams Cell 56, Heated Window for schematic and connector information.

Normal Operation

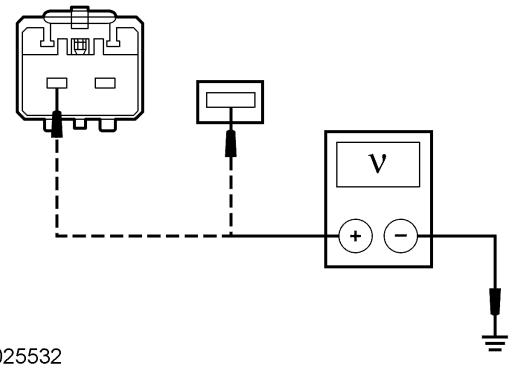
When the rear window defrost switch on the HVAC module is pressed, a ground signal is sent to the Smart Junction Box (SJB) on circuit 1426 (PK). The SJB then grounds circuit 1389 (WH) which energizes the rear window defrost relay. When the rear window defrost relay is active, voltage is supplied to the rear window defrost grid through circuit 186 (BN/LB). The rear window defrost grid is grounded by circuit 1205 (BK). The SJB provides rear window defrost status to the HVAC module through circuit 1427 (TN/LB).

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Rear window defrost switch
- Rear window defrost relay
- SJB

DIAGNOSIS AND TESTING (Continued)

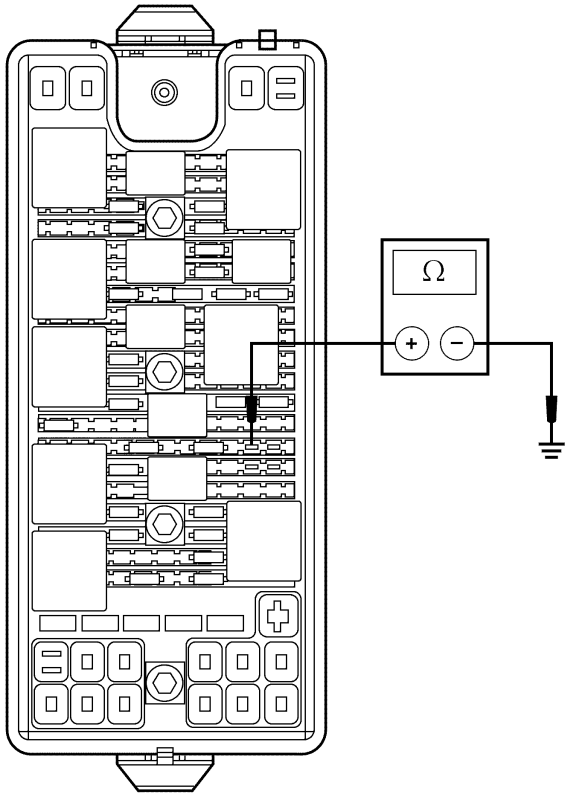
PINPOINT TEST E: THE DEFROST SYSTEM WILL NOT SHUT OFF AUTOMATICALLY

Test Step		Result / Action to Take
E1	**CHECK THE REAR WINDOW DEFROST RELAY FOR AN OPEN OR INTERNAL SHORT**	
	• Ignition ON. • Disconnect: Rear Window Defrost Relay. • Carry out the Rear Window Defrost Relay Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Does the rear window defrost relay pass the component test?**	**Yes** GO to **E2**. **No** INSTALL a new rear window defrost relay. CLEAR the DTCs. REPEAT the self-test.
E2	**CHECK CIRCUIT 186 (BN/LB) FOR A SHORT TO VOLTAGE**	
	• Disconnect: Rear Window Defrost C402A (coupe), C402 (convertible). • Measure the voltage between heated rear window C402A-1 (coupe), C402-1 (convertible), circuit 186 (BN/LB), harness side and ground.  N0025532 • **Is the voltage greater than 10 volts?**	**Yes** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test. **No** GO to **E3**.
E3	**CHECK CIRCUIT 1389 (WH) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Disconnect: SJB C2280C.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST E: THE DEFROST SYSTEM WILL NOT SHUT OFF AUTOMATICALLY (Continued)

Test Step		Result / Action to Take
E3	**CHECK CIRCUIT 1389 (WH) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between the rear window defrost relay pin 86, circuit 1389 (WH), harness side and ground.  N0025842 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **E4**. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
E4	**CHECK THE SJB FOR CORRECT OPERATION**	
	• Disconnect all of the SJB connectors. • Check for: — corrosion. — pushed-out pins. • Connect all of the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. REPEAT the self-test. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test F: The Short Drop Windows Do Not Operate Correctly

Refer to Wiring Diagrams Cell 100, Power Windows for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

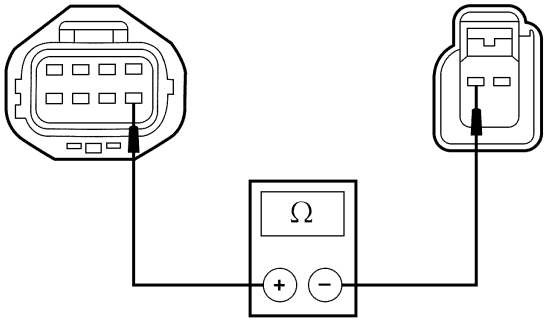
Normal Operation

The short drop window feature is activated when one (or both) of the doors are opened, which opens a door ajar switch. When the driver door is opened (opening the driver door ajar switch), a signal on circuit 1312 (LG/BK) is interpreted by the driver window motor that the driver door is open. The driver window motor then carries out the short drop function on the driver window. When the passenger door is opened (opening the passenger door ajar switch), a signal on circuit 1314 (YE/LG) is interpreted by the passenger window motor that the passenger door is open. The passenger window motor then carries out the short drop function on the passenger window. This feature is on both the coupe and the convertible.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Driver window motor
- Passenger window motor
- Door ajar switch
- Window motor not initialized

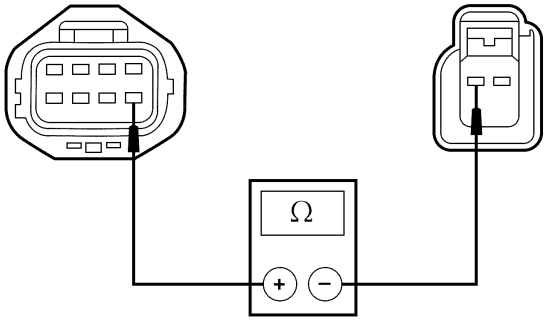
PINPOINT TEST F: THE SHORT DROP WINDOWS DO NOT OPERATE CORRECTLY

Test Step		Result / Action to Take
F1	**VERIFY THE DOOR AJAR SWITCH OPERATION**	
	• Open and close the driver door and view the interior lamps operation. • Open and close the passenger door and view the interior lamps operation. • **Do the interior lamps operate correctly?**	**Yes** GO to F2. **No** REFER to Section 417-02 to continue the diagnosis of the interior lamps.
F2	**CARRY OUT THE SHORT DROP CALIBRATION**	
	• Ignition ON. • Carry out the Window Motor Initialization in this section. • **Does the short drop window feature operate correctly?**	**Yes** The system is operating correctly at this time. INFORM the customer of the short drop window feature. REFER to the Owner's Literature. **No** For the driver window, GO to F3. For the passenger window, GO to F4.
F3	**CHECK CIRCUIT 1312 (LG/BK) FOR AN OPEN**	
	• Ignition OFF. • Disconnect: Driver Door Ajar Switch C526. • Disconnect: Driver Window Motor C518. • Measure the resistance between driver window motor C518-5, circuit 1312 (LG/BK), harness side and driver door ajar switch C526-2, circuit 1312 (LG/BK), harness side.  N0025601 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new driver window motor. REFER to Window Regulator and Motor — Front Door in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
F4	**CHECK CIRCUIT 1314 (YE/LG) FOR AN OPEN**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SHORT DROP WINDOWS DO NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
F4	CHECK CIRCUIT 1314 (YE/LG) FOR AN OPEN (Continued)	
	• Disconnect: Passenger Door Ajar Switch C602. • Disconnect: Passenger Window Motor C623. • Measure the resistance between passenger window motor C623-5, circuit 1314 (YE/LG), harness side and passenger door ajar switch C602-2, circuit 1314 (YE/LG), harness side.  N0025601 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new passenger window motor. REFER to Window Regulator and Motor — Front Door in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.

Pinpoint Test G: The Convertible Top Drop Function is Inoperative/Does Not Operate Correctly

Refer to Wiring Diagrams Cell 100, Power Windows for schematic and connector information.

Normal Operation

The convertible top drop function is activated when the convertible top switch is operated. When the Smart Junction Box (SJB) sees the voltage drop on circuit 2038 (LB/OG) (lower) or circuit 2052 (VT/OG) (raise), the SJB first sends a signal to all 4 window motors on circuits 2032 (LB) (driver), 2031 (GY/PK) (passenger), 2020 (GY/YE) (LH rear) and 2021 (WH/YE) (RH rear). At this time, all 4 window motors operate to the fully down position. The rear window motors have a fully down sensor the SJB monitors. When the SJB sees that the LH and RH rear windows are fully down, it then grounds circuit 1174 (WH/RD) (lower relay) or 588 (VT) (raise relay) to close the desired relay and operate the convertible top in the requested direction. If the SJB does not see the correct signal from the LH rear and RH rear window full down sensors, the SJB does not allow the convertible top to operate.

- DTC B2360 Window Motor Control Output Circuit Failure — A single low-side driver is connected to all 4 smart motors. An open or short to ground on one or more of these circuits can set this DTC.

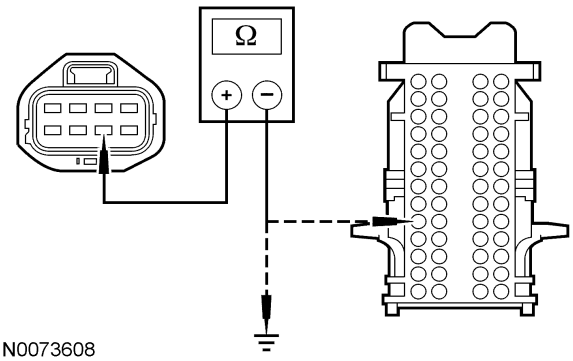
This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Driver window motor
- Passenger window motor
- RH rear window motor
- LH rear window motor
- SJB

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: THE CONVERTIBLE TOP DROP FUNCTION IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

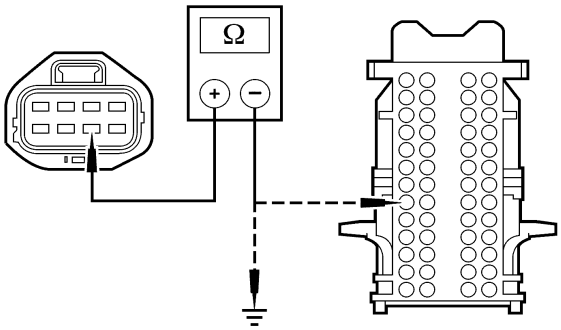
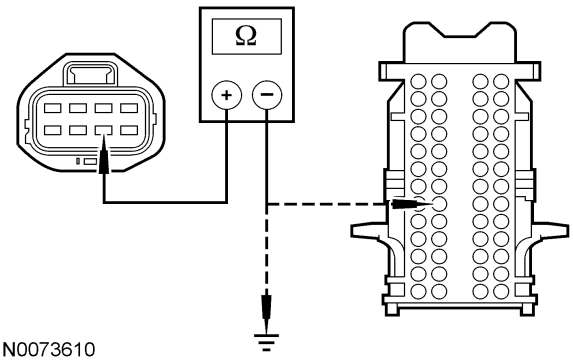
NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

Test Step		Result / Action to Take
G1	**VERIFY THE WINDOW OPERATION**	
	• Ignition ON. • Open and close all of the windows using the driver window control switches. • **Do all of the windows operate correctly?**	**Yes** GO to **G2**. **No** If the driver window does not operate correctly, GO to Pinpoint Test A. If the passenger window does not operate correctly, GO to Pinpoint Test B. If one or both of the rear windows do not operate correctly, GO to Pinpoint Test C.
G2	**OPERATE THE CONVERTIBLE TOP**	
	• Attempt to operate the convertible top. • **Do the windows drop fully before the convertible top starts to operate?**	**Yes** The system is operating correctly at this time. INFORM the customer of the convertible top drop function. REFER to the Owner's Literature. **No** For the driver window, GO to **G3**. For the passenger window, GO to **G4**. For both, INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. For the LH rear window, GO to **G5**. For the RH rear window, GO to **G6**. For both rear windows, INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.
G3	**CHECK CIRCUIT 2032 (LB) FOR AN OPEN OR SHORT TO GROUND**	
	• Disconnect: SJB C2280D. • Disconnect: Driver Window Motor C518. • Measure the resistance between driver window motor C518-6, circuit 2032 (LB), harness side and SJB C2280D-5, circuit 2032 (LB), harness side; and between driver window motor C518-6, circuit 2032 (LB), harness side and ground.  N0073608 • **Is the resistance less than 5 ohms between the window motor and the SJB and greater than 10,000 ohms between the window motor and ground?**	**Yes** INSTALL a new driver door window regulator and motor. REFER to Window Regulator and Motor — Front Door in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
G4	**CHECK CIRCUIT 2031 (GY/PK) FOR AN OPEN OR SHORT TO GROUND**	
	• Disconnect: SJB C2280D. • Disconnect: Passenger Window Motor C623.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

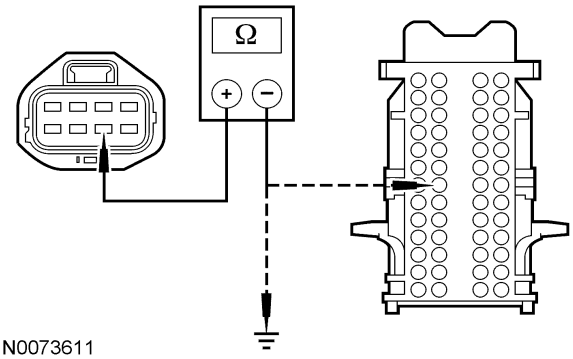
PINPOINT TEST G: THE CONVERTIBLE TOP DROP FUNCTION IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
G4	**CHECK CIRCUIT 2031 (GY/PK) FOR AN OPEN OR SHORT TO GROUND (Continued)**	
	• Measure the resistance between passenger window motor C623-6, circuit 2031 (GY/PK), harness side and SJB C2280D-6, circuit 2031 (GY/PK), harness side; and between passenger window motor C623-6, circuit 2031 (GY/PK), harness side and ground.  N0073609 • **Is the resistance less than 5 ohms between the window motor and the SJB, and greater than 10,000 ohms between the window motor and ground?**	**Yes** INSTALL a new passenger door window regulator and motor. REFER to Window Regulator and Motor — Front Door in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
G5	**CHECK CIRCUITS 2031 (GY/PK) AND 2020 (GY/YE) FOR AN OPEN OR SHORT TO GROUND**	
	• Ignition OFF. • Disconnect: SJB C2280D. • Disconnect: LH Rear Window Motor C3118. • Measure the resistance between LH rear quarter window motor C3118-6, circuit 2031 (GY/PK), harness side and SJB C2280D-19, circuit 2020 (GY/YE), harness side; and between LH rear quarter window motor C3118-6, circuit 2031 (GY/PK), harness side and ground.  N0073610 • **Is the resistance less than 5 ohms between the window motor and the SJB, and greater than 10,000 ohms between the window motor and ground?**	**Yes** INSTALL a new LH rear quarter window regulator and motor. REFER to Window Regulator Motor — Rear Quarter in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
G6	**CHECK CIRCUITS 2031 (GY/PK) AND 2021 (WH/YE) FOR AN OPEN OR SHORT TO GROUND**	
	• Ignition OFF. • Disconnect: SJB C2280D. • Disconnect: RH Rear Window Motor C3119.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: THE CONVERTIBLE TOP DROP FUNCTION IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
G6	**CHECK CIRCUITS 2031 (GY/PK) AND 2021 (WH/YE) FOR AN OPEN OR SHORT TO GROUND (Continued)**	
	• Measure the resistance between RH rear quarter window motor C3119-6, circuit 2031 (GY/PK), harness side and SJB C2280D-20, circuit 2021 (WH/YE), harness side; and between RH rear quarter window motor C3119-6, circuit 2031 (GY/PK), harness side and ground.  N0073611 • **Is the resistance less than 5 ohms between the window motor and the SJB, and greater than 10,000 ohms between the window motor and ground?**	**Yes** INSTALL a new RH rear quarter window regulator and motor. REFER to Window Regulator Motor — Rear Quarter in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.

Pinpoint Test H: The Delayed Accessory is Inoperative

Normal Operation

The accessory delay relay is located in the Smart Junction Box (SJB), and the relay coil receives battery voltage through circuit 294 (WH/LB) at all times. When the key is turned ON, the SJB activates the accessory delay relay by grounding the relay coil, and power is sent to all window control switches. When the key is turned OFF, the SJB continues to ground the accessory delay relay coil for approximately 10 minutes, or until a door is opened.

- DTC B2052 Accessory Delay Relay Output Failure — Output circuit shorted to ground or open.

This pinpoint test is intended to diagnose the following:

- Fuse(s)
- Accessory delay relay
- Wiring, terminals or connectors
- Bussed Electrical Center (BEC)
- SJB

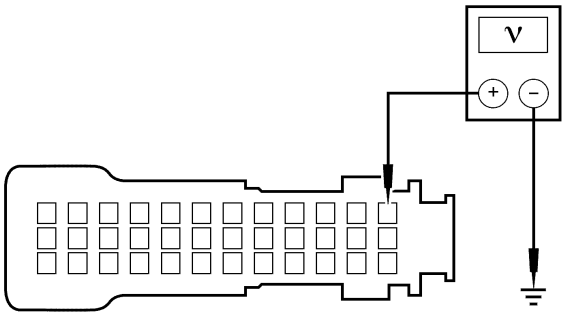
PINPOINT TEST H: THE DELAYED ACCESSORY IS INOPERATIVE

Test Step		Result / Action to Take
H1	**CHECK THE CORRECT OPERATION OF THE DOOR AJAR SWITCHES**	
	• Open and close the LH and RH doors and verify the interior lights turn ON when the doors are open, and OFF when the doors are closed. Carry out the Accessory Delay Relay Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Do the interior lights operate correctly?**	**Yes** GO to **H2**. **No** REFER to Section 417-02 to diagnose the interior light concern.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: THE DELAYED ACCESSORY IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
H2	**CHECK THE ACCESSORY DELAY RELAY**	
	• Disconnect: Accessory Delay Relay. • Carry out the Accessory Delay Relay Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Is the accessory delay relay OK?**	**Yes** VERIFY the SJB fuse 6 (5A) is OK. If OK, GO to **H3**. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. REPAIR the circuit. TEST the system for normal operation. **No** INSTALL a new accessory delay relay. TEST the system for normal operation.
H3	**CHECK CIRCUIT 294 (WH/LB) FOR VOLTAGE**	
	• Disconnect: SJB C2280H. • Measure the voltage between SJB C2280H-1, circuit 294 (WH/LB) harness side and ground.  N0061711 • **Is the voltage greater than 10 volts?**	**Yes** GO to **H4**. **No** VERIFY the BEC fuse 44 (10A) is OK, If OK, REPAIR the circuit. TEST the system for normal operation. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. REPAIR the circuit. TEST the system for normal operation.
H4	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all SJB connectors. • Check for: — corrosion. — pushed-out pins. • Connect all SJB connectors and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

Pinpoint Test I: The Delayed Accessory Does Not Turn Off

Normal Operation

The accessory delay relay is located in the Smart Junction Box (SJB), and the relay coil receives battery voltage through circuit 294 (WH/LB) at all times. When the key is turned ON, the SJB activates the accessory delay relay by grounding the relay coil, and power is sent to all window control switches. When the key is turned OFF, the SJB continues to ground the accessory delay relay coil for approximately 10 minutes, or until a door is opened.

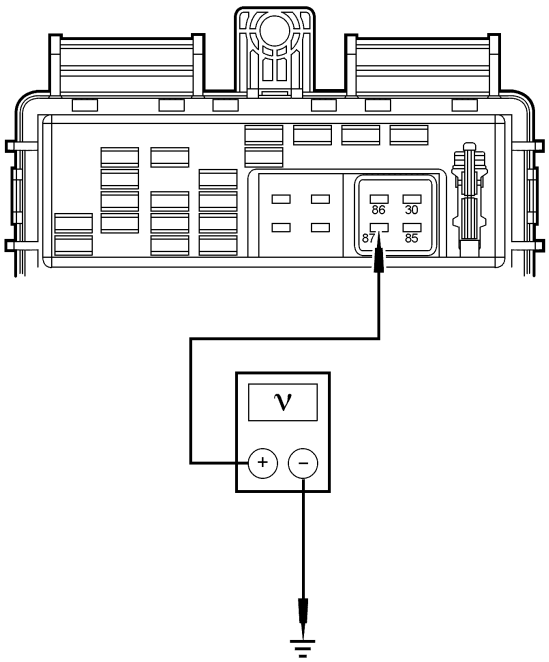
- DTC B1475 Accessory Delay Relay Short to Battery — Output circuit shorted to battery or relay contacts stuck closed.

This pinpoint test is intended to diagnose the following:

- Fuse(s)
- Accessory delay relay
- Wiring, terminals or connectors
- SJB

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: THE DELAYED ACCESSORY DOES NOT TURN OFF

Test Step		Result / Action to Take
I1	**CHECK FOR CORRECT OPERATION OF THE DOOR AJAR SWITCHES**	
	• Open and close and LH and RH doors and verify the interior lights turn ON when the doors are open, and OFF when the doors are closed. Carry out the Accessory Delay Relay Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Do the interior lights operate correctly?**	**Yes** GO to I2. **No** REFER to Section 417-02 to diagnose the interior light concern.
I2	**CHECK THE ACCESSORY DELAY RELAY**	
	• Disconnect: Accessory Delay Relay. • Carry out the Accessory Delay Relay Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Is the accessory delay relay OK?**	**Yes** GO to I3. **No** INSTALL a new accessory delay relay. TEST the system for normal operation.
I3	**CHECK FOR SHORT TO VOLTAGE AT ACCESSORY DELAY RELAY OUTPUT**	
	• Measure the voltage between accessory delay relay pin 87, harness side and ground.  N0061716 • **Is any voltage present?**	**Yes** GO to I4. **No** GO to I5.
I4	**CHECK FOR SHORT TO VOLTAGE**	
	• Measure the voltage between SJB and ground. Refer to the following table: • Disconnect SJB C2280A, C2280E and C2280G.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: THE DELAYED ACCESSORY DOES NOT TURN OFF (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>I4</td><td>CHECK FOR SHORT TO VOLTAGE (Continued)

<table><tr><th>SJB Connector/Pin</th><th>Circuit</th></tr><tr><td>C2280A-14</td><td>687 (GY/YE)</td></tr><tr><td>C2280E-26</td><td>985 (RD/LB)</td></tr><tr><td>C2280E-25</td><td>984 (YE/LB)</td></tr><tr><td>C2280E-19</td><td>956 (OG/LG)</td></tr><tr><td>C2280E-17</td><td>193 (YE/LG)</td></tr><tr><td>C2280E-16</td><td>882 (BN/YE)</td></tr><tr><td>C2280E-23</td><td>333 (YE/RD)</td></tr><tr><td>C2280G-2</td><td>400 (RD/LB)/ 170 (RD/LB)</td></tr></table>• Is any voltage present?</td><td>Yes
REPAIR the circuit in question. TEST the system for normal operation.
No
GO to I5.</td></tr>
<tr><td>I5</td><td>CHECK FOR CORRECT SJB OPERATION
• Disconnect all SJB connectors.
• Check for:
— corrosion.
— pushed-out pins.
• Connect all SJB connectors and verify the concern is still present?
• Is the concern still present?</td><td>Yes
INSTALL a new SJB. TEST the system for normal operation.
No
The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.</td></tr>
</table>

Pinpoint Test J: DTCs B1141/B1142 — Convertible Top Full Down/Up Position Switch Circuit Failure

Refer to Wiring Diagrams Cell 103, Convertible Top for schematic and connector information.

Refer to Wiring Diagrams Cell 100, Power Windows for schematic and connector information.

Normal Operation

The Smart Junction Box (SJB) monitors the status of the convertible top through circuits 1558 (TN/BK) and 700 (WH/VT). When the convertible top is in the full UP position, the convertible top ajar switch closes and provides ground to circuit 1558 (TN/BK). When the convertible top is in the full DOWN position, the convertible top ajar switch closes and provides ground to circuit 700 (WH/VT). Ground is provided to the convertible top ajar switch through circuit 1205 (BK). DTC B1141 sets if the convertible top ajar switch on-demand self test is run with the convertible top not in the full DOWN position. DTC B1142 sets if the convertible top ajar switch on-demand self test is run with the convertible top in the full UP position. If DTC B1141 or B1142 is present, the rear quarter windows may still function during convertible top operation, but will not function when commanded by the window control switch.

- B1141 Convertible Top Full Down Position Switch Circuit Failure — Open or short to battery.
- B1142 Convertible Top Full Up Position Switch Circuit Failure — Open or short to ground.

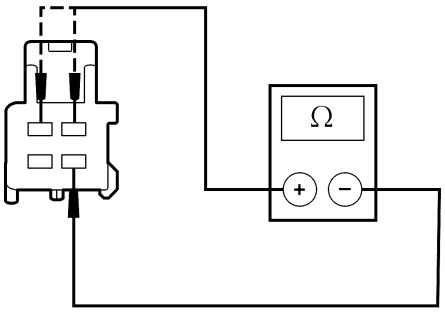
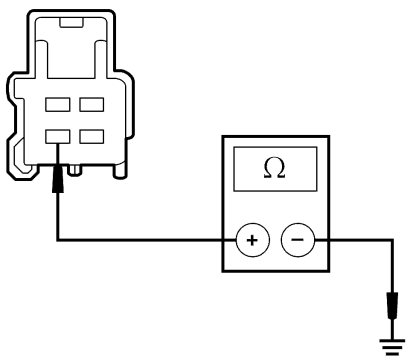
This pinpoint test is intended to diagnose

DIAGNOSIS AND TESTING (Continued)

the following:

- Wiring, terminals and connectors
- Convertible top ajar switch
- SJB

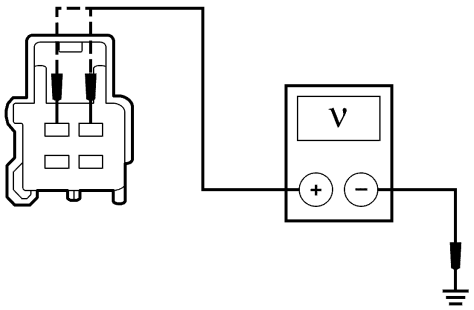
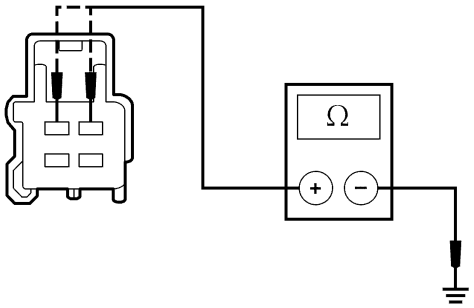
PINPOINT TEST J: DTCs B1141/B1142 — CONVERTIBLE TOP FULL DOWN/UP POSITION SWITCH CIRCUIT FAILURE

Test Step		Result / Action to Take
J1	**CARRY OUT THE ON-DEMAND SELF TEST FOR THE CONVERTIBLE TOP AJAR SWITCH**	
	NOTE: False DTCs will set if the convertible top is not in the full DOWN position before carrying out this test. • Connect the scan tool. • Ignition ON. • With the convertible top and the rear windows in the full DOWN position, carry out the on-demand self test for the SJB. • **Does DTC B1141 or DTC B1142 set as current?**	**Yes** GO to J2. **No** The concern is not present at this time. RETURN the vehicle to the customer.
J2	**CHECK THE CONVERTIBLE TOP AJAR SWITCH OPERATION**	
	• Ignition OFF. • Disconnect: Convertible Top Ajar Switch C3266. • Measure the resistance between convertible top ajar switch C3226-1, circuit 1588 (TN/BK), component side and convertible top ajar switch C3266-3, circuit 1205 (BK), component side, with convertible top in the full UP position; and between convertible top ajar switch C3226-2, circuit 700 (WH/VT), component side and convertible top ajar switch C3266-3, circuit 1205 (BK), component side, with convertible top in the full DOWN position.  N0027058 • **Are the resistances less than 20 ohms?**	**Yes** GO to J3. **No** INSTALL a new convertible top ajar switch. For additional information, refer to Section 501-18. CLEAR the DTCs. REPEAT the self-test.
J3	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Measure the resistance between convertible top ajar switch C3266-3, circuit 1205 (BK), harness side and ground.  N0026301 • **Is the resistance less than 5 ohms?**	**Yes** GO to J4. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: DTCs B1141/B1142 — CONVERTIBLE TOP FULL DOWN/UP POSITION SWITCH CIRCUIT FAILURE (Continued)

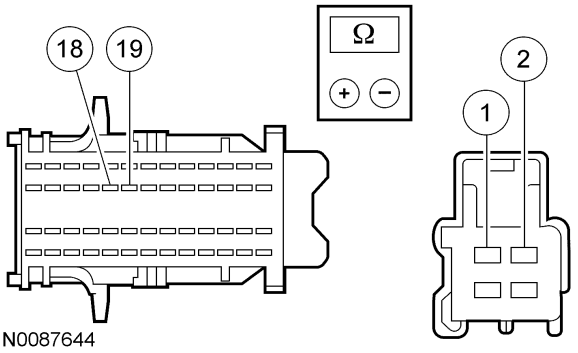
Test Step		Result / Action to Take
J4	**CHECK CIRCUITS 700 (WH/VT) AND 1558 (TN/BK) FOR A SHORT TO VOLTAGE**	
	• Disconnect: SJB C2280C. • Ignition ON. • Measure the voltage between convertible top ajar switch C3266-2, circuit 700 (WH/VT), harness side and ground; and between convertible top ajar switch C3266-1, circuit 1558 (TN/BK), harness side and ground.  N0026304 • **Is any voltage present?**	**Yes** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test. **No** GO to **J5**.
J5	**CHECK CIRCUITS 700 (WH/VT) AND 1558 (TN/BK) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Measure the resistance between convertible top ajar switch C3266-1, circuit 1558 (TN/BK), harness side and ground; and between convertible top ajar switch C3266-2, circuit 700 (WH/VT), harness side and ground.  N0026302 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **J6**. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
J6	**CHECK CIRCUITS 700 (WH/VT) AND 1558 (TN/BK) FOR AN OPEN**	
	• Measure the resistance between SJB C2280C, harness side and convertible top ajar switch C3266, harness side using the following chart:	

SJB	Circuit	Convertible Top Ajar Switch
C2280C-19	700 (WH/VT)	C3266-2
C2280C-18	1558 (TN/BK)	C3266-1

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: DTCs B1141/B1142 — CONVERTIBLE TOP FULL DOWN/UP POSITION SWITCH CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
J6	**CHECK CIRCUITS 700 (WH/VT) AND 1558 (TN/BK) FOR AN OPEN (Continued)**	
	 N0087644 • **Are the resistances less than 5 ohms?**	**Yes** GO to J7. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
J7	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion. — pushed-out pins. • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

Component Tests

Grid Wire Test

1. Using a bright lamp inside the vehicle, inspect the wire grid from the exterior. A broken grid wire appears as a brown spot.
2. Run the engine at idle. Set the heated rear window switch to ON. The heated rear window indicator should come on.
3. Working from the interior of the vehicle with a voltmeter, contact the broad red-brown stripes of the heated rear window positive lead to battery side and the negative lead to ground side. The meter should read 10-13 volts. A lower voltage reading indicates a loose ground connection.
4. Contact a good ground point with the negative lead of the meter. The voltage reading should not differ.
5. With the negative lead of the meter grounded, touch each grid line of the heated rear window at its midpoint with the positive lead. A reading of approximately 6 volts indicates the line is good. A reading of zero volts indicates the line is broken between the midpoint and the B+ side of the grid line. A reading of 12 volts indicates the circuit is broken between the midpoint of the grid line and ground.

GENERAL PROCEDURES

Fixed Glass Seal Test

1. Locate and plug all cabin air vents.
2. Set the blower to fresh air intake.
3. Set the blower to high and close all doors and windows.
4. Apply soapy water to the exterior seal of the suspect window.
5. Inspect for leaks.
   - If soapy water begins to bubble, there is a leak in the seal.
6. Reseal the suspect glass as necessary.

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GENERAL PROCEDURES

Window Grid Wire Repair

General Equipment

Polypropylene Film Fine Line Tape (Commercially available)

Material

Item	Specification
Lacquer Touch-Up Paint (match color to exterior grid wire) PM-19500-XXXX	ESR-M2P100-C
Rear Window Defroster Repair PM-11 (US); CPM-11 (Canada)	—
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A

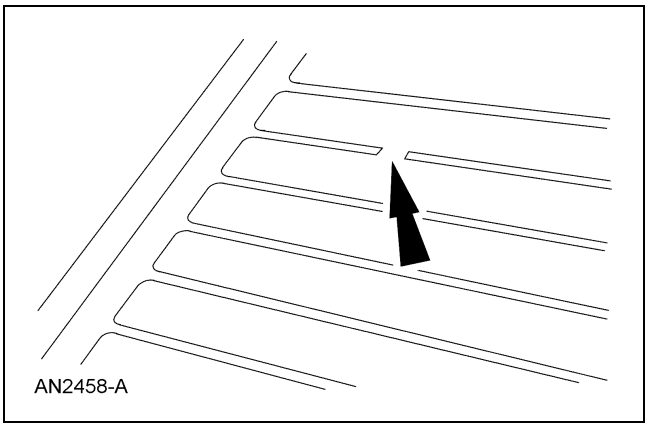
NOTE: The grid line material is not embedded into the glass, but is baked to the glass surface and consequently can be scraped off. An undamaged grid line will have small ridges that project above the surface of the glass and can easily be felt when running a fingernail across them. Grid lines that have been ‘‘razor bladed’’ will feel smooth when a fingernail is dragged across the affected area. Inoperative lines may appear to the eye to be undamaged due to residue remaining on the glass and will require diagnosis with a voltmeter or 12V test lamp. For additional information, refer to Diagnosis and Testing in this section.

1. Bring the vehicle up to a room temperature of at least 16°C (60°F) or above.

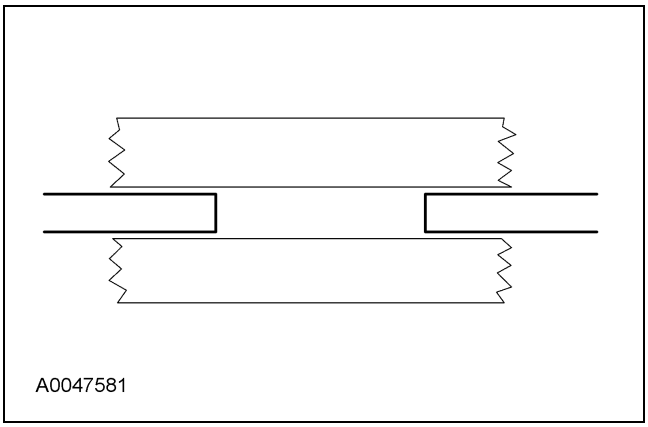
2. ***NOTICE:*** **Do not use scrapers, sharp instruments or abrasive window cleaners on the interior surface of the rear window glass as this may cause damage to the grid lines.**

   Clean the entire grid line repair area with glass cleaner and 0000 steel wool to remove all dirt, wax, grease, oil or other foreign material.

3. Mark the location of the grid break on the exterior of the rear window glass.



4. Using a polypropylene film fine line tape, mask the area directly above and below the grid break extending the tape 26 mm (1.02 in) beyond the concern area in both directions. The break area should be at the center of the mask.



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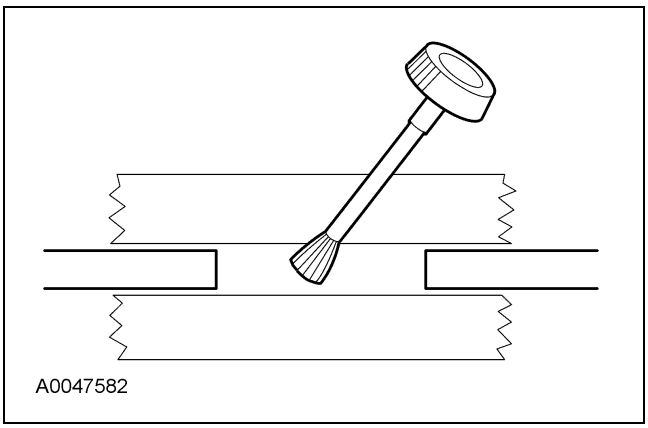
GENERAL PROCEDURES (Continued)

5. **NOTE:** If the brown layer is not broken or missing, apply only the silver grid repair compound to the break. If both the brown and silver layers of the grid are broken or missing, apply a coating of the lacquer touch up paint across the break in the grid line prior to applying the rear window defroster repair compound. Do not overlap the silver grid line with the paint. Several applications may be necessary to achieve a color match.

   NOTE: Allow at least 5 minutes of drying time between applications for the touch up paint or the silver repair coating. Applying fewer coats or not allowing adequate drying time between coats will produce repaired resistance that is greater than OEM resistance, resulting in poor defrost performance and excessive localized heating.

   Apply the repair coating to the grid break area in several smooth, continuous strokes. Extend the silver repair coating at least 6.35 mm (0.25 in) on both sides of the break area.

   Apply a minimum of 6 applications of the grid repair compound.



6. **NOTE:** The repair coating air-dries in approximately one minute and can be energized after 5 minutes. Optimum adhesion occurs after approximately 24 hours.

   Allow the repair area to dry completely and remove the mask.

7. ***NOTICE:*** **Be careful not to damage the grid line with the razor blade. If this occurs, additional repair may be necessary.**

   Remove any excess repair compound above or below the grid line with a razor blade.

8. **NOTE:** The interior side of the grid lines are not painted, but due to the silver tarnishing will tend to change the grid to a gold or brown color. The repair area will be bright silver and will also tarnish over time to match the rest of the grid.

   Test the system for normal operation.

GENERAL PROCEDURES

Lead Terminal Repair

General Equipment

Terminal Kit — Back Glass 4F1Z-14421-AA

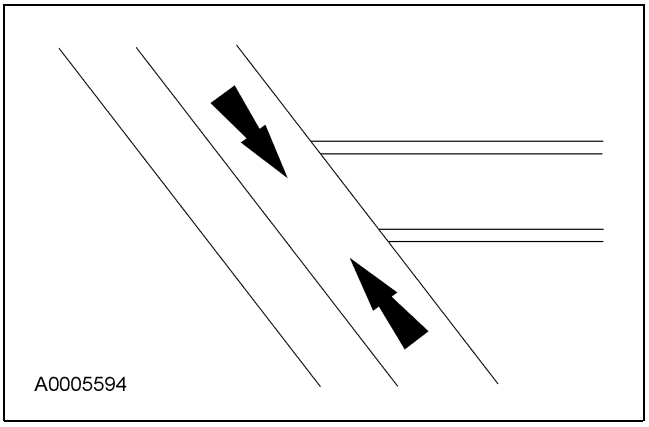
Material

Item	Specification
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A

1. Bring the vehicle up to room temperature of at least 16°C (60°F) or above.

2. **NOTE:** The new terminal will cover the original terminal location, but it must be placed so that the terminal conductive areas will be placed on a good conductive base.

   Clean the bus bar in the area to be repaired with steel wool (000 to 0000 grade), and then with glass cleaner to remove all dirt, wax, grease, oil or other foreign material.



3. ***NOTICE:*** **Do not use any type of flame torch or flame-heated soldering gun for this procedure. Use of these tools provide inadequate heat generation at the tip and the exhaust heat can cause damage to plastic trim parts in the area. Use only an electric soldering gun with 100 watts or more of power. Before using the soldering gun, be sure to melt a small amount of rosin core solder to the tip. The solder will assist in achieving better heat transfer from the soldering gun tip to the new terminal.**

   NOTE: Depending on the original terminal location, and whether the terminal is covered by pillar trim, will determine where to locate the new terminal. Some grid line bus bars may only allow the placement of the terminal above or below the original tab location due to space limitations. For most vehicle applications, the replacement tab location will cover the original tab location, but still allow the replacement tab to attach to the bus bar on good conductive material.

   Place the replacement terminal type A over the original tab location, making sure the conductive areas of the terminal will be on a good conductive area. Do not place the terminal tab foot on the original location, which does not have conductive material.

4. Hold the terminal in place with an item such as a regular lead pencil at a 90 degree angle from the terminal. (Holding at other than a 90 degree angle may allow the terminal to slip when the solder liquefies.)

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GENERAL PROCEDURES (Continued)

5. **NOTE:** The new terminal has pre-applied solder, flux and temperature-sensitive paint. The paint provides a visual indication when the terminal has reached the correct temperature to melt solder on the terminal. When the correct temperature is achieved, the temperature paint will liquefy and change color.

   Place the soldering gun tip on the top of the terminal, but not on the painted areas of the tab. Energize the soldering gun and watch for the painted area of the terminal to liquefy and change color. The paint should liquefy in approximately 25-45 seconds after heating. As soon as the paint color completely changes on either side of the terminal, de-energize the soldering gun and continue to hold the terminal in place with the soldering gun and pencil for an additional 30 seconds.

6. Remove the soldering gun and pencil from the terminal. The terminal should be allowed to cool for another 2 minutes before the wiring lead is attached to the terminal.

7. Attach the electrical lead connection to this terminal, turn on the heated rear window and verify the operation.

GENERAL PROCEDURES

Window Glass Adjustment — Front Door

Initial Adjustment

NOTE: The following procedure must be carried out after a door window glass or a door window regulator and motor is replaced, or removed and re-installed.

NOTE: The LH or RH front window motor must be de-initialized, then initialized whenever the front window motor is removed from the window regulator, a new window regulator and motor is installed, a new window glass is installed or for any operation in which grease or lubricants are applied to the window regulator or glass run.

NOTE: Window glass on convertible top vehicles needs to be aligned/adjusted as a system. The rear quarter glass must be correctly aligned to the front door glass and the convertible top for correct operation. For additional information, refer to Window Glass Adjustment — Rear Quarter, Convertible in this section.

1. Remove the door opening weatherstrip.

2. Close the door.

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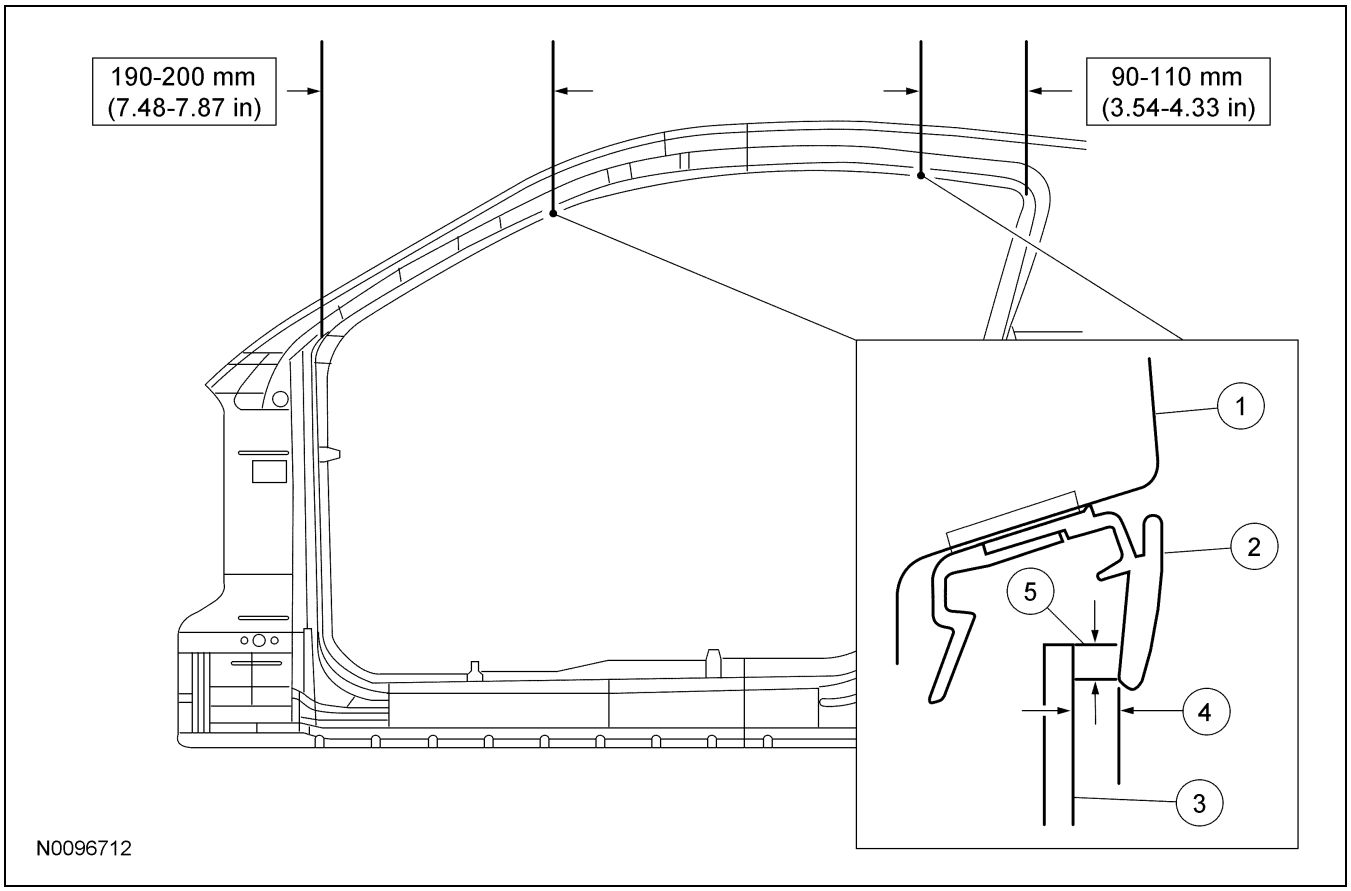
GENERAL PROCEDURES (Continued)

3. Check the dimension of the gap between the door window glass and the weatherstrip retainer in the locations shown. If the dimension is within the specification, only a final adjustment is required.
   1 Sheet metal
   2 Weatherstrip retainer
   3 Door window glass
   4 5 mm (0.196 in)
   5 4-6 mm (0.16-0.24 in)



4. Remove the door trim panel. For additional information, refer to Section 501-05.
5. Remove the water shield and the interior beltline weatherstrip.

GENERAL PROCEDURES (Continued)

6. *NOTICE:* **The exterior beltline weatherstrip contains a metal core surrounded by rubber and must be removed with care. The exterior beltline weatherstrip must be replaced if it is bent during removal.**

   Remove the exterior beltline weatherstrip.

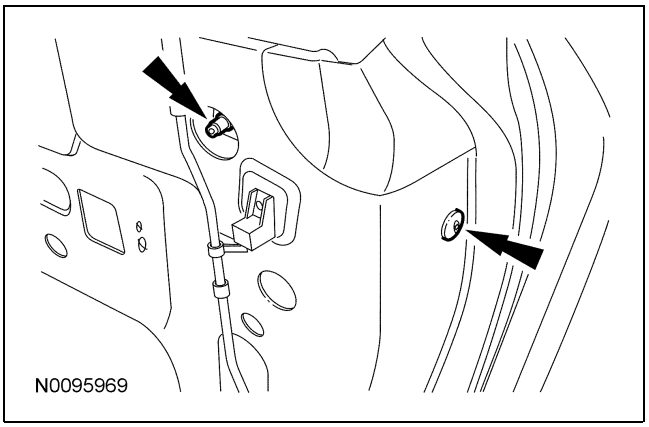
   - Starting at rear of the door, work exterior beltline weatherstrip off from the sheet metal flange with fingers. Technique is to partially remove the exterior beltline weatherstrip approximately every 15.2 cm (6 in) down entire length of the door, and then go back and remove the beltline weatherstrip from the vehicle.

7. **NOTE:** The glass stabilizer must be replaced if broken during removal.

   Remove the mid-door glass stabilizer.

   - To remove, gently insert a screwdriver between the sheet metal and plastic backing of the glass stabilizer.

8. If equipped, loosen but do not remove the rear glass management bracket fasteners. This will allow free door glass movement during the adjustment procedure.



9. **NOTE:** As the door window glass is moved up and down, the door window glass clamps have plastic inserts equipped with ramp-style surfaces that tip the glass in or out as the glass assembly is slid up or down.

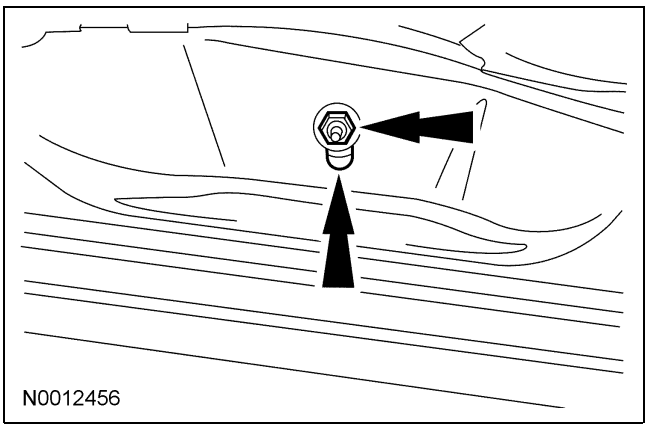
   Loosen the 2 (front and rear) door window glass bolts.

10. Fully close the door.

11. Adjust the door window glass by physically moving the glass to the specified position and tighten the door window glass bolts.

    - Tighten to 9 Nm (80 lb-in).

12. From underneath the door, loosen the front window regulator guide rail lock nut.



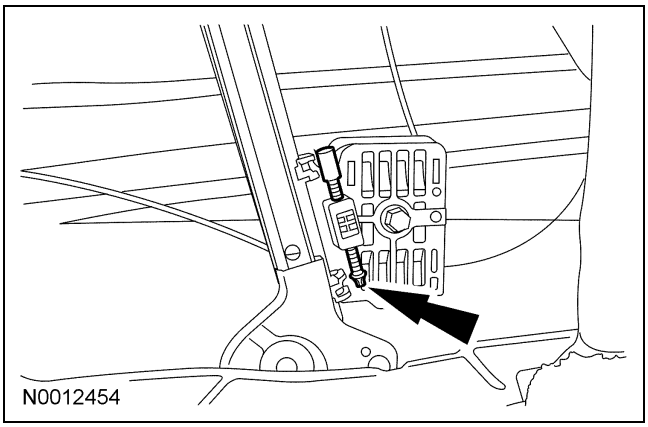
13. Operate the door window glass to the full DOWN position.

14. Tighten the front window regulator guide rail lock nut.

15. Operate the door window glass to the full UP position and verify the dimensions meet the specification as outlined in the initial adjustment graphics. If necessary, re-adjust the door glass as outlined in the previous steps.

16. **NOTE:** Door window front height adjustment shown, door window rear height adjustment similar.

    To adjust the door window front and rear height, lower the door window to access the front and rear height stop adjustments.



GENERAL PROCEDURES (Continued)

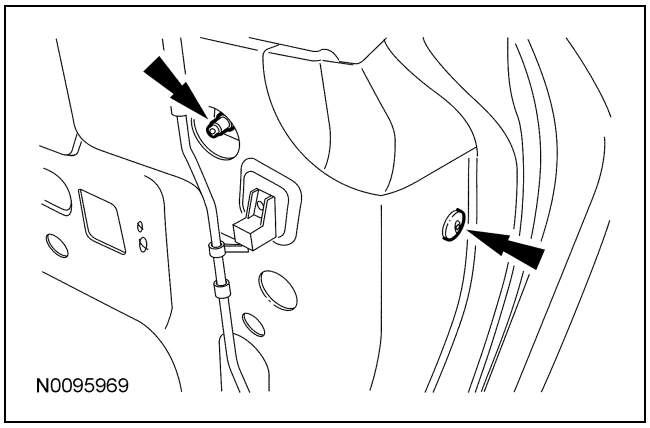
17. **NOTE:** If necessary, additional door glass adjustment may also be possible by loosening the glass clamp bolts, adjusting the door glass and then re-tightening the glass clamp bolts to 9 Nm (80 lb-in).

    Adjust the door window front and rear height stop adjustments to achieve the specified door window height.

18. **NOTE:** To prevent preloading of the glass management bracket, tighten the screw to specification before tightening the nut.

    If equipped, tighten the rear glass management bracket fasteners.

    - Tighten the glass management bracket screw to 9 Nm (80 lb-in).
    - Tighten the glass management bracket nut to 11 Nm (97 lb-in).



19. Install the mid-door glass stabilizer.

20. Install the exterior beltline weatherstrip.

21. Install the interior beltline weatherstrip and the water shield.

22. Install the door opening weatherstrip.

23. Install the door trim panel. For additional information, refer to Section 501-05.

24. Initialize the door window motor. For additional information, refer to Window Motor Initialization in this section.

25. Operate the door window up and down several times to check for smooth operation and adequate sealing properties (it may be necessary to carry out a water leak test with a hose).

Final Adjustment

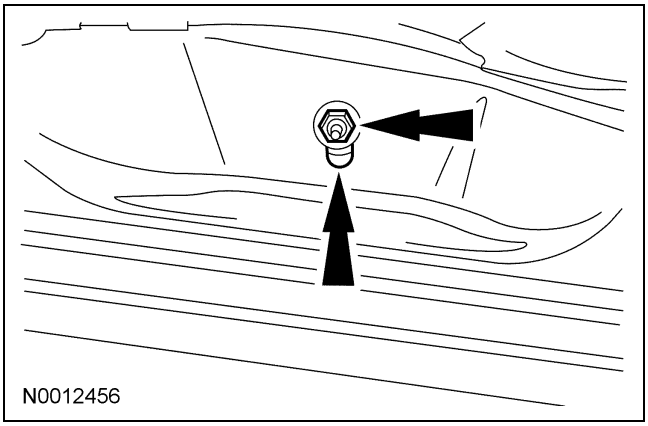
1. **NOTE:** This procedure should be carried out as a final adjustment to the initial adjustment or can be used as a minor adjustment for the door window glass.

   NOTE: After the initial adjustment is carried out (or if only a minor adjustment is required) the final adjustment, if necessary, can be made. Use the front and rear window regulator guide rail jackscrews for inboard/outboard movement of the door window glass.

   NOTE: The rear adjustment is a jackscrew that is exposed by removing the round reflector located at the bottom of the door trim panel.

   NOTE: The front adjustment is a sliding stud and nut located on the bottom of the door.

   From underneath the door, loosen the front window regulator guide rail lock nut.



2. Remove the round reflector located at the bottom of the door trim panel.

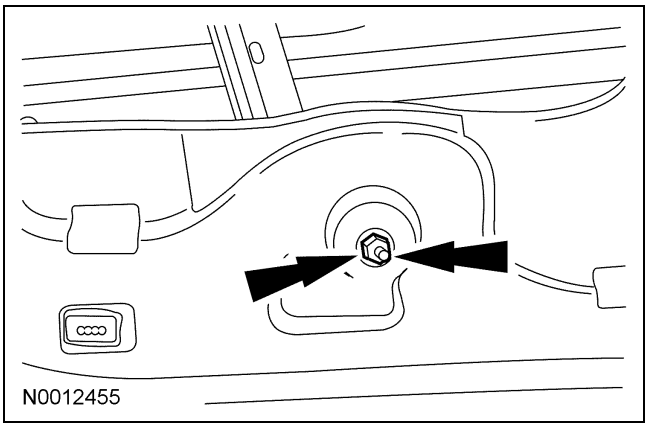
GENERAL PROCEDURES (Continued)

3. *NOTICE:* **Use caution when adjusting jackscrews. The 4-mm hex jackscrews strip easily.**

   NOTE: The clockwise direction of the jackscrew moves the door glass outboard. The counterclockwise direction of the jackscrew moves the door glass inboard.

   Loosen the lock nut, adjust the jackscrew on the rear window regulator guide rail as necessary and tighten the lock nut.

   - For convertible, adjust the door glass so it is flush to the rear quarter glass seal (division bar) or outward no more than 2 mm (0.08 in).



4. From underneath the door, tighten the front window regulator guide rail lock nut.

5. Initialize the door window motor. For additional information, refer to Window Motor Initialization in this section.

6. **NOTE:** For convertible vehicles, position the convertible top in the full UP position and the rear quarter glass in the full DOWN position when testing window operation.

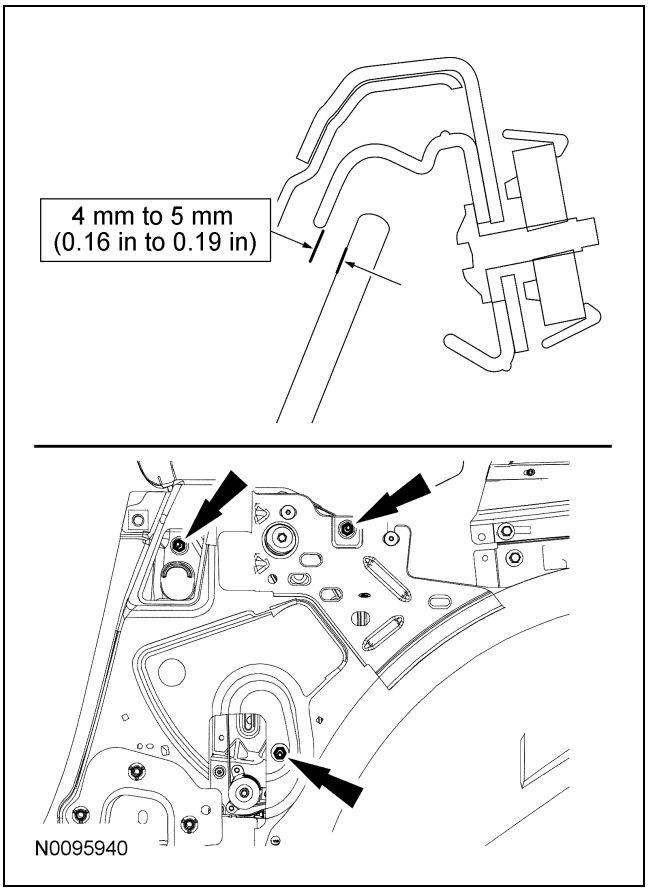
   Operate the door window up and down several times to check for smooth operation and adequate sealing properties (it may be necessary to carry out a water leak test with a hose).

   - If bounce-back occurs, repeat Steps 3 through 5 to adjust the glass as necessary to eliminate the bounce-back condition. If further adjustment is needed, the door window glass clamps may be loosened to allow additional adjustment as required.

7. Install the round reflector.

GENERAL PROCEDURES

Window Glass Adjustment — Rear Quarter, Convertible



NOTE: Make sure the front door glass is adjusted correctly before adjusting the rear quarter glass. Window glass on convertible top vehicles needs to be aligned/adjusted as a system. The rear quarter glass must be correctly aligned to the front door glass and the convertible top for correct operation. For additional information, refer to Window Glass Adjustment — Front Door in this section.

1. Remove the rear quarter trim panel. For additional information, refer to Section 501-05.

2. With the convertible top in the CLOSED position, lower the front door and quarter window glass to the fully OPEN position.

3. Remove the rear side rail seal from the convertible top rear weatherstrip retainer channel.

4. Raise the front door and quarter glass to the fully CLOSED position.

5. **NOTE:** Make sure the front door glass is flush to the rear quarter glass seal (division bar) or outboard no more than 2 mm (0.08 in).

   Check the quarter glass-to-convertible top weatherstrip retainer alignment. There should be a 4 to 5 mm (0.16 to 0.19 in) gap between the quarter glass and the weatherstrip retainer.

   - If necessary, use one or more of the available quarter glass jackscrews. Loosen the lock nut, adjust the jackscrew to position the glass inboard/outboard and tighten the lock nut.

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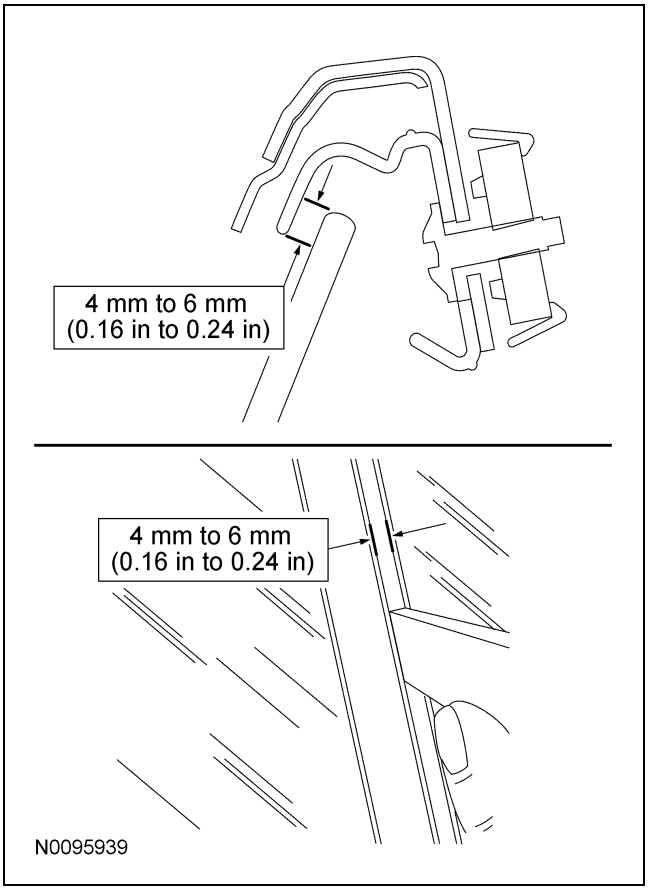
GENERAL PROCEDURES (Continued)

6. Loosen the 2 rear quarter window glass bolts just enough to allow some glass movement.
   - Adjust the quarter glass to be inset into the weatherstrip retainer 4 to 6 mm (0.16 to 0.24 in) while maintaining a constant 4 to 6 mm (0.16 to 0.24 in) gap between the rear quarter window glass seal (division bar) and the edge of the door glass.
   - Tighten the 2 rear quarter window glass bolts to 10 Nm (89 lb-in).



7. Lower the front door and quarter glass to the fully OPEN position.
8. Install the rear side rail seal into the convertible top rear weatherstrip retainer channel.
9. Install the rear quarter trim panel. For additional information, refer to Section 501-05.

GENERAL PROCEDURES

Window Motor Initialization

NOTE: Initialization is required to learn both the full UP and full DOWN positions and the profile of the glass as it travels through the glass channel. Once initialized, obstacle detection is enabled. The convertible rear window motors do NOT need to be initialized as they do not have one-touch up or one-touch down functions.

NOTE: The LH or RH front window motor must be de-initialized, then initialized whenever the front window motor is removed from the window regulator, a new window regulator and motor is installed, a new window glass is installed or for any operation in which grease or lubricants are applied to the window regulator or glass run.

NOTE: A new (original factory setting) or de-initialized LH or RH front window motor may allow one-touch down operation, but will not operate in one-touch up mode until initialized. If a new LH or RH front window motor has been installed, proceed to the initialization procedure.

NOTE: If diagnosing a LH or RH front window switch problem, perform the window initialization procedure before replacing the window switch.

NOTE: All front window components (window glass, window regulator, window motor and glass top run) must be installed/tightened and adjusted to specification before carrying out this procedure.

NOTE: Excessive bounce-back (window reverses direction with no obstructions present) may indicate that a de-initialization procedure may need to be performed.

NOTE: A battery disconnect does not require this procedure to be carried out unless the battery was disconnected while the window was operating.

NOTE: The motor will only operate in the 9-16 volt range. If the voltage drops below 9 volts, the window will not function correctly or may stop moving. If the voltage drops below 9 volts while the motor is operating, the motor will become de-initialized and will need to be initialized.

De-initialization

1. The motor can be de-initialized in 2 ways:
   - Disconnect the battery cable from the battery while the window is operating.
   - Remove the window motor fuse while the window is operating.
2. After the motor has been de-initialized, reconnect/reinstall the battery cable or fuse and carry out the initialization procedure.

Initialization

⚠ WARNING: Keep objects and body parts clear of the glass panel when carrying out the initialization procedure. During the initialization procedure, the glass panel closes with high force and cannot detect objects in its path. Failure to follow this instruction may result in serious personal injury.

NOTE: If this procedure is only partially completed, the front window motor remains non-initialized and may allow one-touch down operation, but does NOT allow one-touch up operation.

NOTE: The door MUST be closed during this procedure (for convertibles, the top and quarter glass must be in the CLOSED and UP position) in order for the door window motor to initialize.

NOTE: The windows must be in the full OPEN position for this procedure to operate correctly.

3. Press and hold the window control switch in the UP position at the second detent until the window glass stalls into the glass top run for at least 2 seconds.
4. Once the top run is reached, hold the window control switch in the DOWN position at the second detent until the window glass stalls at the bottom of its travel for at least 2 seconds.
5. Cycle the window glass up and down once more to set the window soft stop for the DOWN position.

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GENERAL PROCEDURES (Continued)

6. Test for correct window operation by carrying out the one-touch up and one-touch down features.

GENERAL PROCEDURES

Glass Reseal — Windshield

Material

Item	Specification
Dow Urethane Adhesive Betaseal™ Express	—
Sika Urethane Adhesive Sika Tack ASAP	—
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A

Coupe

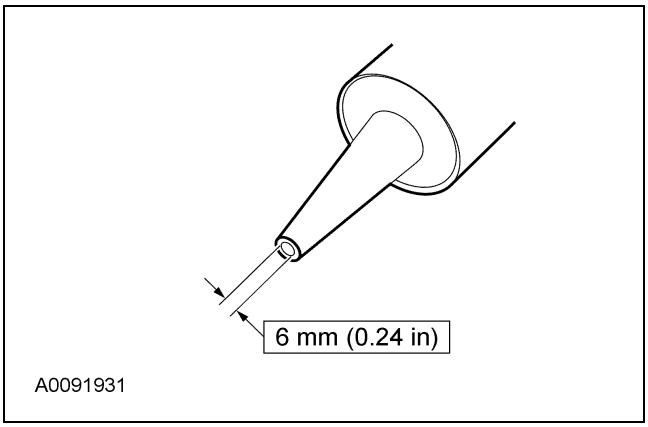
1. Remove the RH and LH A-pillar trim panels. For additional information, refer to Section 501-05.
2. Remove the overhead console.
3. Remove the LH and RH sun visors.
4. Lower the front portion of the headliner and block with a suitable material.

Convertible

5. Remove the LH and RH A-pillar trim panel and the header trim panel. For additional information, refer to Section 501-05.

All vehicles

6. Remove the cowl vent screen. For additional information, refer to Section 501-02.
7. Clean the interior and exterior of the windshield glass surface with glass cleaner.
8. Cut the urethane adhesive applicator tip to specification.



9. **NOTE:** Use either a high-ratio, electric or battery-operated caulk gun that applies the urethane adhesive with less effort and a continuous bead.

   NOTE: Make sure all gaps in the urethane adhesive are smoothed into one continuous bead.

   Apply urethane adhesive over top of the existing urethane adhesive.

   - Apply the urethane adhesive to the top and sides of the windshield from the interior of the vehicle.
   - Apply the urethane adhesive to the bottom of the windshield from the exterior of the vehicle.

10. **NOTE:** The urethane adhesive must cure for a minimum of one hour before testing for air or water leaks.

    After the urethane adhesive has cured, check the windshield glass seal for air or water leaks through the urethane adhesive bead and add urethane adhesive as necessary.

11. Install the cowl vent screen. For additional information, refer to Section 501-02.

Convertible

12. Install the header trim panel and the LH and RH A-pillar trim panels. For additional information, refer to Section 501-05.

Coupe

13. Position the front portion of the headliner.

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GENERAL PROCEDURES (Continued)

14. Install the LH and RH sun visors.
15. Install the overhead console.
16. Install the RH and LH A-pillar trim panels. For additional information, refer to Section 501-05.

All vehicles

17. Install and adjust the wiper blade and pivot arms as necessary. For additional information, refer to Section 501-16.

GENERAL PROCEDURES

Glass Reseal — Rear

Material

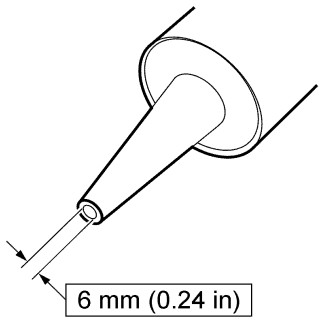
Item	Specification
Dow Urethane Adhesive Betaseal™ Express	—
Sika Urethane Adhesive Sika Tack ASAP	—
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A

1. Remove the parcel shelf. For additional information, refer to Section 501-05.

2. Disconnect the rear window glass electrical connectors.

3. Clean the interior and exterior of the rear window glass surface with glass cleaner.

4. Cut the urethane adhesive applicator tip to specification.



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5. **NOTE:** Use either a high-ratio, electric or battery-operated caulk gun that applies the urethane adhesive with less effort and a continuous bead.

   NOTE: Make sure all gaps in the urethane adhesive are smoothed into one continuous bead.

   Apply urethane adhesive over top of the existing urethane adhesive.

   - Apply the urethane adhesive to the top and sides of the rear window glass from the interior of the vehicle.
   - Apply the urethane adhesive to the bottom of the rear window glass from the exterior of the vehicle (with the luggage compartment lid open approximately 45 degrees).

6. **NOTE:** The urethane adhesive must cure for a minimum of one hour before testing for air or water leaks.

   After the urethane adhesive has cured, check the rear window glass seal for air or water leaks through the urethane adhesive bead and add urethane adhesive as necessary.

7. Connect the rear window glass electrical connectors.

8. Install the quarter trim panels and parcel shelf. For additional information, refer to Section 501-05.

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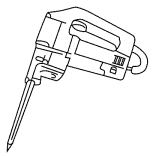
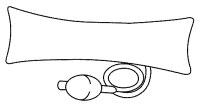
REMOVAL AND INSTALLATION

Windshield Glass

Special Tool(s)

 ST1320-A	Deluxe Windshield Removal Tool 164-R2450 or equivalent
 ST2218-B	The Pumper 164-R2459 or equivalent

Material

Item	Specification
Dow Urethane Adhesive Betaseal™ Express	—
Dow Urethane One Step Glass Primer Betaprime™ 5500 / 5500A / 5500SA	—
Sika Urethane Adhesive Sika Tack ASAP	—
Sika Urethane Metal and Glass Primer Sika 206 G+P	—
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A

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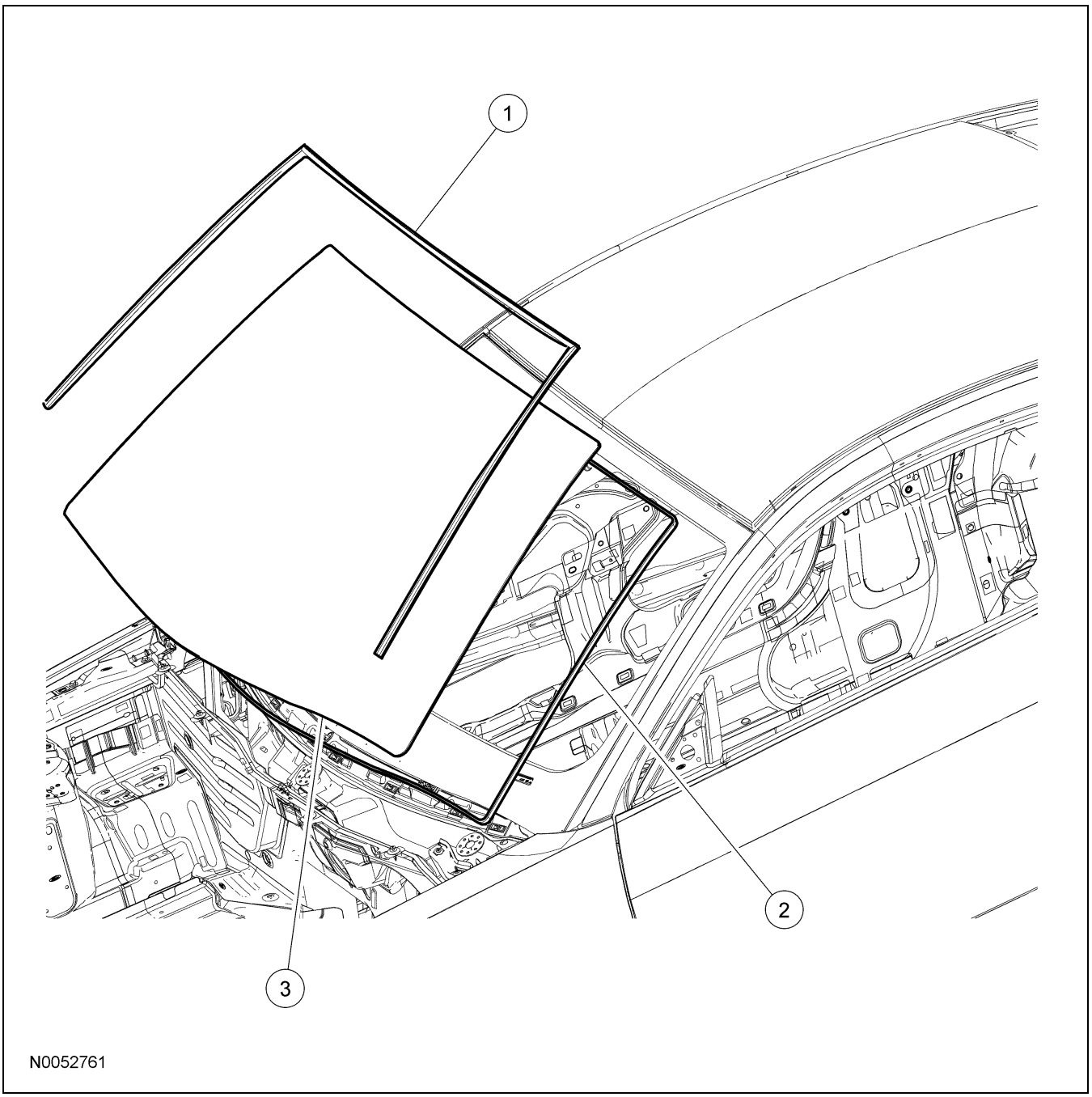
REMOVAL AND INSTALLATION (Continued)



Item	Part Number	Description
1	7603110	Windshield glass moulding (may be serviced separately and is included with new windshield glass assembly)
2	—	Urethane adhesive
3	6303100	Windshield glass assembly (new assembly includes windshield glass moulding)

Removal

NOTICE: **For vehicles equipped with a roof glass panel, cut the windshield urethane adhesive from the inside of the vehicle to prevent damage to the front glass roof applique.**

All vehicles

1. Remove the cowl vent screen. For additional information, refer to Section 501-02.

REMOVAL AND INSTALLATION (Continued)

2. Remove the interior rear view mirror. For additional information, refer to Section 501-09.

Coupe

3. Remove the A-pillar trim panels. For additional information, refer to Section 501-05.

4. Remove the overhead console.

5. Remove the LH and RH sun visors.

6. Lower the front portion of the headliner and block with a suitable material.

Convertible

7. Remove the LH and RH A-pillar trim panels and the header trim panel. For additional information, refer to Section 501-05.

All vehicles

8. Before cutting the urethane adhesive, remove dirt and other foreign material from the windshield pinch weld area.
   - Use a clean shop towel or oil-free compressed air.

9. **NOTE:** Refer to manufacturer's instructions before using the Deluxe Windshield Removal Tool.

   Lubricate the urethane adhesive with water to aid the Deluxe Windshield Removal Tool when cutting the urethane adhesive.

10. **⚠ WARNING: Always wear eye protection when servicing a vehicle. Failure to follow this instruction may result in serious personal injury.**

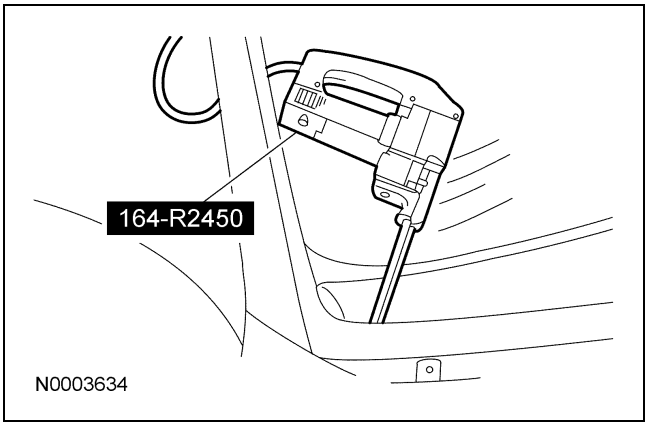
    ⚠ WARNING: Wear protective gloves when handling components or parts that have pointed or sharp edges. Failure to follow this instruction may result in serious personal injury.

    NOTICE: **To avoid rust formation, use extreme care not to scratch the paint or primer, or otherwise damage the pinch weld during glass removal.**

    NOTE: Insert the blade into the Deluxe Windshield Removal Tool so that the flat side is against the glass. This will leave the entire urethane adhesive bead on the pinch weld and allow a dry fit of the replacement windshield glass.

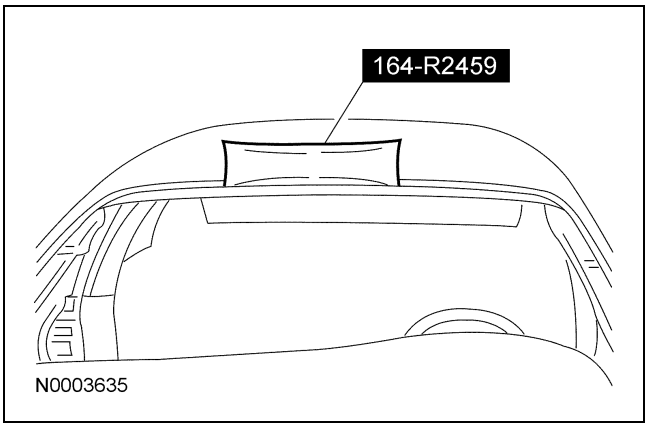
    NOTE: Support the windshield glass as necessary to prevent the glass from dropping while cutting the urethane adhesive.

    Insert the Deluxe Windshield Removal Tool at the upper center of the windshield glass and work toward the bottom corners.

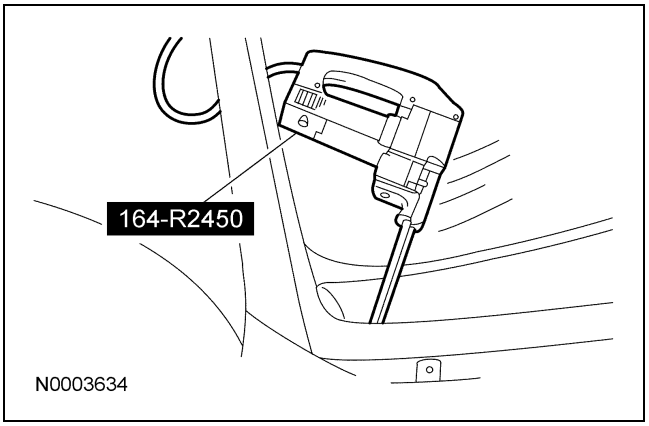


REMOVAL AND INSTALLATION (Continued)

11. Using The Pumper, distance the windshield from the body.



12. Insert the Deluxe Windshield Removal Tool into the bottom of the urethane adhesive and cut from corner to corner.



13. Carefully remove the windshield glass from the vehicle and place on a stable work surface.

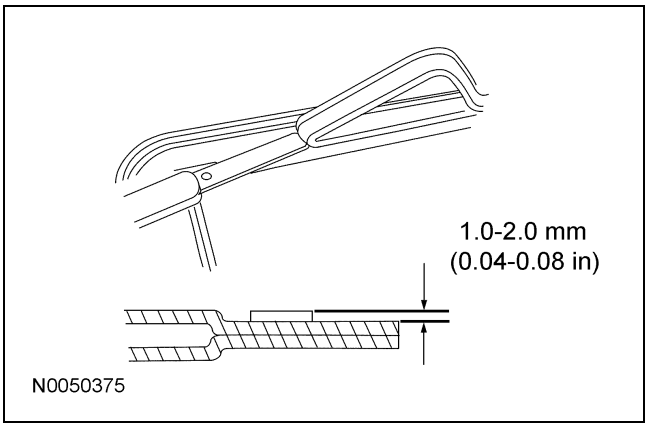
Installation

All vehicles

1. Dry-fit the windshield glass on the existing urethane adhesive bead on the pinch weld.
   - Position the windshield glass on the pinch weld.
   - Center the windshield glass in the opening.
   - Adjust the windshield glass stop blocks (if equipped) as needed for best fit.
   - Make alignment marks with tape or non-staining grease pencil (preferably at the glass stop blocks) on the windshield glass and the body.
2. After the dry-fit alignment, remove the windshield glass and moulding assembly from the windshield opening and place on a stable work surface with the interior side of the glass facing up.
3. **⚠ WARNING: Repair any corrosion found on the pinch weld. The pinch weld is a structural component of the vehicle. Corrosion left unrepaired may reduce the structural integrity of the vehicle. Failure to follow this instruction may result in serious injury to vehicle occupant(s).**

   NOTE: Avoid scratching the pinch weld. Repair all minor scratches or exposed metal on the pinch weld following manufacturer's instructions. Use the same brand pinch weld primer, glass primer and urethane adhesive.

   Using an appropriate tool, trim the urethane adhesive leaving a 1-2 mm (0.04-0.08 in) base of original equipment urethane adhesive on the pinch weld.



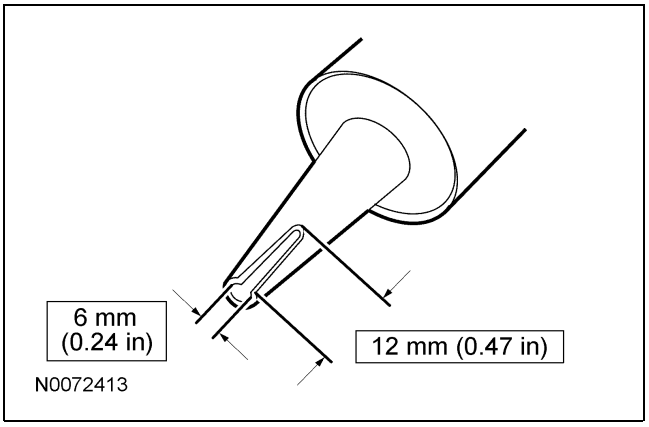
4. Using a clean shop towel, brush or oil-free compressed air, clean the pinch weld area. Remove any foreign material or water that may have entered during windshield removal.
5. If reinstalling the same windshield glass, remove the remaining urethane adhesive from the glass leaving a thin layer to bond with the new urethane adhesive bead.
6. If installing a new windshield glass, clean the inside of the glass surface with glass cleaner.
   - Make sure to thoroughly clean the surface of the blackened border area where the urethane adhesive will be applied.

REMOVAL AND INSTALLATION (Continued)

7. **NOTE:** Be sure to use the same brand and cure-rate products for the urethane adhesive and glass primer. Do not mix different brands of urethane adhesive and glass primer. For additional information, refer to the Material Chart in this procedure.

   If installing a new windshield glass, apply glass primer according to manufacturer's instructions. Allow at least 6 minutes to dry.

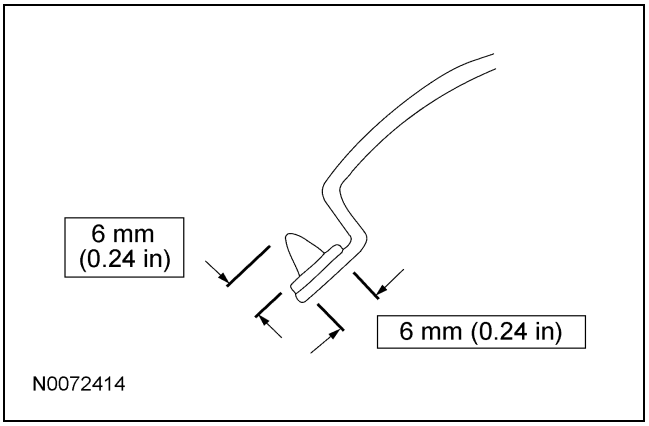
8. Cut the urethane adhesive applicator tip to specification. This will produce a triangular bead during application.



9. **NOTE:** The windshield glass must be positioned within 10 minutes of applying the urethane adhesive.

   NOTE: Use either a high-ratio, electric or battery-operated caulk gun that applies the urethane adhesive with less effort and a continuous bead.

   Apply urethane adhesive on top of the existing trimmed urethane adhesive bead on the pinch weld, starting and ending at the bottom of the windshield near the center, making sure there are no gaps in the bead.



10. ⚠ **WARNING: Do not drive vehicle until the urethane adhesive seal has cured. Follow urethane adhesive manufacturer's curing directions. Inadequate or incorrect curing of the urethane adhesive seal will adversely affect glass retention. Failure to follow these instructions may result in serious injury to vehicle occupant(s).**

    NOTICE: **Before positioning the windshield glass, open vehicle windows to prevent the air pressure of closing doors from affecting the urethane adhesive bond.**

    Using the alignment marks made previously, position the windshield glass on the pinch weld.

    - For vehicles equipped with a glass roof, using a plastic windshield setting tool (or equivalent), carefully tuck the top of the windshield moulding beneath the leading edge of the front glass roof applique.

11. **NOTE:** The urethane adhesive must cure for a minimum of one hour before testing for air or water leaks.

    After the urethane adhesive has cured, check the windshield glass seal for air or water leaks through the urethane adhesive bead and add urethane adhesive as necessary.

12. Install the interior rear view mirror. For additional information, refer to Section 501-09.

13. Install the cowl vent screen. For additional information, refer to Section 501-02.

Convertible

14. Install the header trim panel and the LH and RH A-pillar trim panels. For additional information, refer to Section 501-05.

Coupe

15. Position the front portion of the headliner.

16. Install the LH and RH sun visors.

17. Install the overhead console.

18. Install the LH and RH A-pillar trim panels. For additional information, refer to Section 501-05.

REMOVAL AND INSTALLATION (Continued)

All vehicles

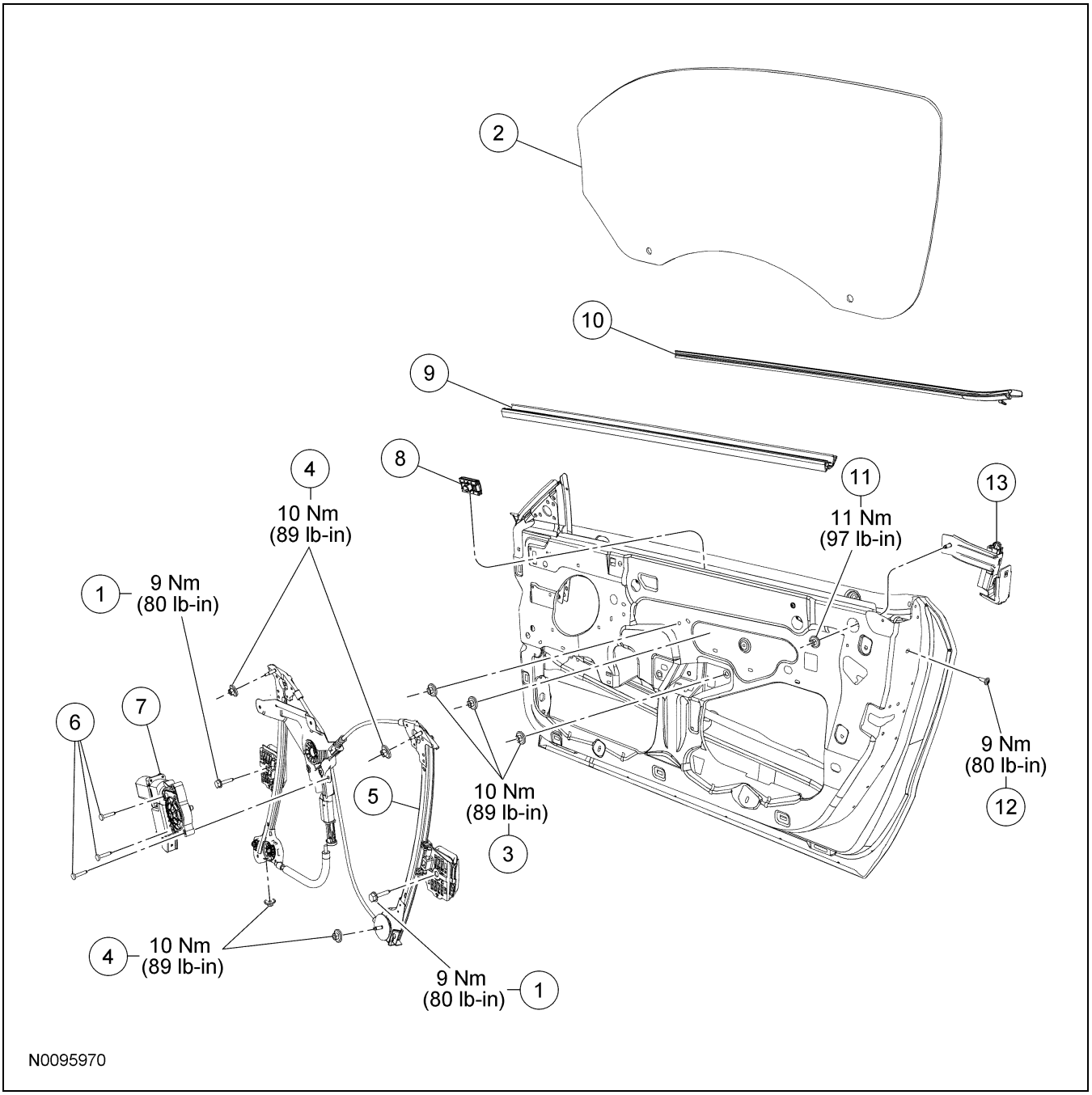
19. Install and adjust the wiper blade and pivot arms as necessary. For additional information, refer to Section 501-16.

REMOVAL AND INSTALLATION

Glass, Frames and Mechanisms — Exploded View, Front Door

NOTE: Coupe shown, convertible similar.

NOTE: RH side shown, LH side similar.



Item	Part Number	Description
1	63231A06	Door window glass bolts and sleeves (2 required)
2	6321410 RH/ 6321411 LH	Door window glass (coupe)

(Continued)

Item	Part Number	Description
2	7621410 RH/ 7621411 LH	Door window glass (convertible)
3	N621907	Door window motor nuts (3 required)

(Continued)

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REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
4	N621907	Door window regulator nuts (4 required)
5	6323208 RH/ 6323209 LH	Door window regulator
6	—	Door window regulator motor screws (3 required)
7	6323394 RH/ 6323395 LH	Door window regulator motor
8	6322380	Mid-door glass stabilizer
9	6321456 RH/ 6321457 LH	Interior beltline weatherstrip
10	6321452 RH/ 6321453 LH	Exterior beltline weatherstrip
11	N621907	Rear glass management bracket nut (if equipped)
12	N807675	Rear glass management bracket screw (if equipped)
13	63222A00 RH/ 63222A01 LH	Rear glass management bracket

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

Window Glass — Front Door

Removal and Installation

NOTE: The LH or RH front window motor must be de-initialized, then initialized whenever the front window motor is removed from the window regulator, a new window regulator and motor is installed, a new window glass is installed or for any operation in which grease or lubricants are applied to the window regulator or glass run.

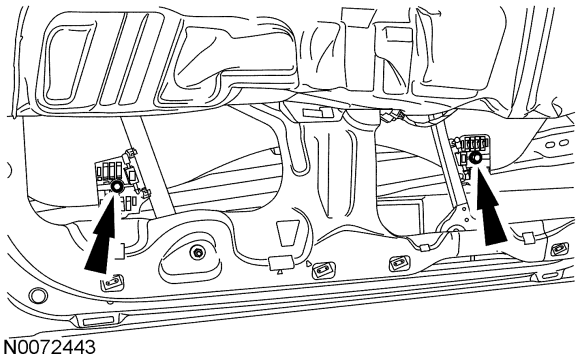
1. Remove the door trim panel. For additional information, refer to Section 501-05.

2. Position the watershield aside.

3. **NOTE:** If the window glass bolts are inaccessible, reconnect the window control switch to raise or lower the glass as necessary.

   Remove the 2 door window glass bolts and sleeves.

   - To install, tighten to 9 Nm (80 lb-in).


N0072443

4. Tip the front of the glass down to clear the door filler and remove the door window glass.

5. To install, reverse the removal procedure.

   - Make sure the window glass is correctly seated into the window glass clamps during installation.
   - Adjust the door window glass as necessary. For additional information, refer to Window Glass Adjustment — Front Door in this section.
   - Initialize the LH or RH front window motor. For additional information, refer to Window Motor Initialization in this section.

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REMOVAL AND INSTALLATION

Window Regulator and Motor — Front Door

Removal and Installation

NOTE: The LH or RH front window motor must be de-initialized, then initialized whenever the front window motor is removed from the window regulator, a new window regulator and motor is installed, a new window glass is installed or for any operation in which grease or lubricants are applied to the window regulator or glass run.

1. Remove the door window glass. For additional information, refer to Window Glass — Front Door in this section.
2. Disconnect the door window motor electrical connector.
3. Remove the 3 door window motor nuts.
   - To install, tighten to 10 Nm (89 lb-in).
4. **NOTE:** Make certain not to disturb the jackscrew when removing the lower right window regulator nut. This may affect the window adjustment.

   Remove the 4 door window regulator nuts.
   - To install, tighten to 10 Nm (89 lb-in).
5. Remove the door window regulator and motor through the rear access hole.
6. To install, reverse the removal procedure.
   - Adjust the door window glass as necessary. For additional information, refer to Window Glass Adjustment — Front Door in this section.
   - Initialize the window motor. For additional information, refer to Window Motor Initialization in this section.

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REMOVAL AND INSTALLATION

Window Regulator Motor — Front Door

Removal and Installation

NOTE: The LH or RH front window motor must be de-initialized, then initialized whenever the front window motor is removed from the window regulator, a new window regulator and motor is installed, a new window glass is installed or for any operation in which grease or lubricants are applied to the window regulator or glass run.

1. Remove the door window glass. For additional information, refer to Window Glass — Front Door in this section.

2. Disconnect the door window motor electrical connector.

3. Remove the 3 door window motor nuts.
   - To install, tighten to 10 Nm (89 lb-in).

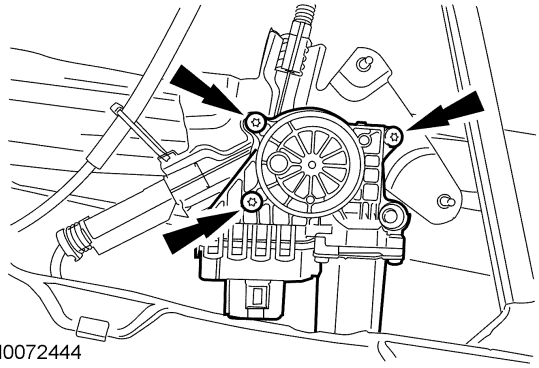
4. **NOTE:** Make certain not to disturb the jackscrew when removing the lower right window regulator nut. This may affect the window adjustment.

   Remove the 4 door window regulator nuts.
   - To install, tighten to 10 Nm (89 lb-in).

5. **NOTE:** Is not necessary to remove the regulator and motor assembly from the door remove the window motor.

   Position the door window regulator and motor assembly as necessary to access the door window motor screws.

6. Remove the 3 door window motor screws and the door window motor.


N0072444

7. To install, reverse the removal procedure.
   - Adjust the door window glass as necessary. For additional information, refer to Window Glass Adjustment — Front Door in this section.
   - Initialize the window motor. For additional information, refer to Window Motor Initialization in this section.

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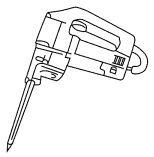
REMOVAL AND INSTALLATION

Window Glass — Rear Quarter, Coupe

Special Tool(s)

 ST1320-A	Deluxe Windshield Removal Tool 164-R2450 or equivalent

Material

Item	Specification
Dow Urethane Adhesive Betaseal™ Express	—
Dow Urethane One Step Glass Primer Betaprime™ 5500 / 5500A / 5500SA	—
Sika Urethane Adhesive Sika Tack ASAP	—
Sika Urethane Metal and Glass Primer Sika 206 G+P	—
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A

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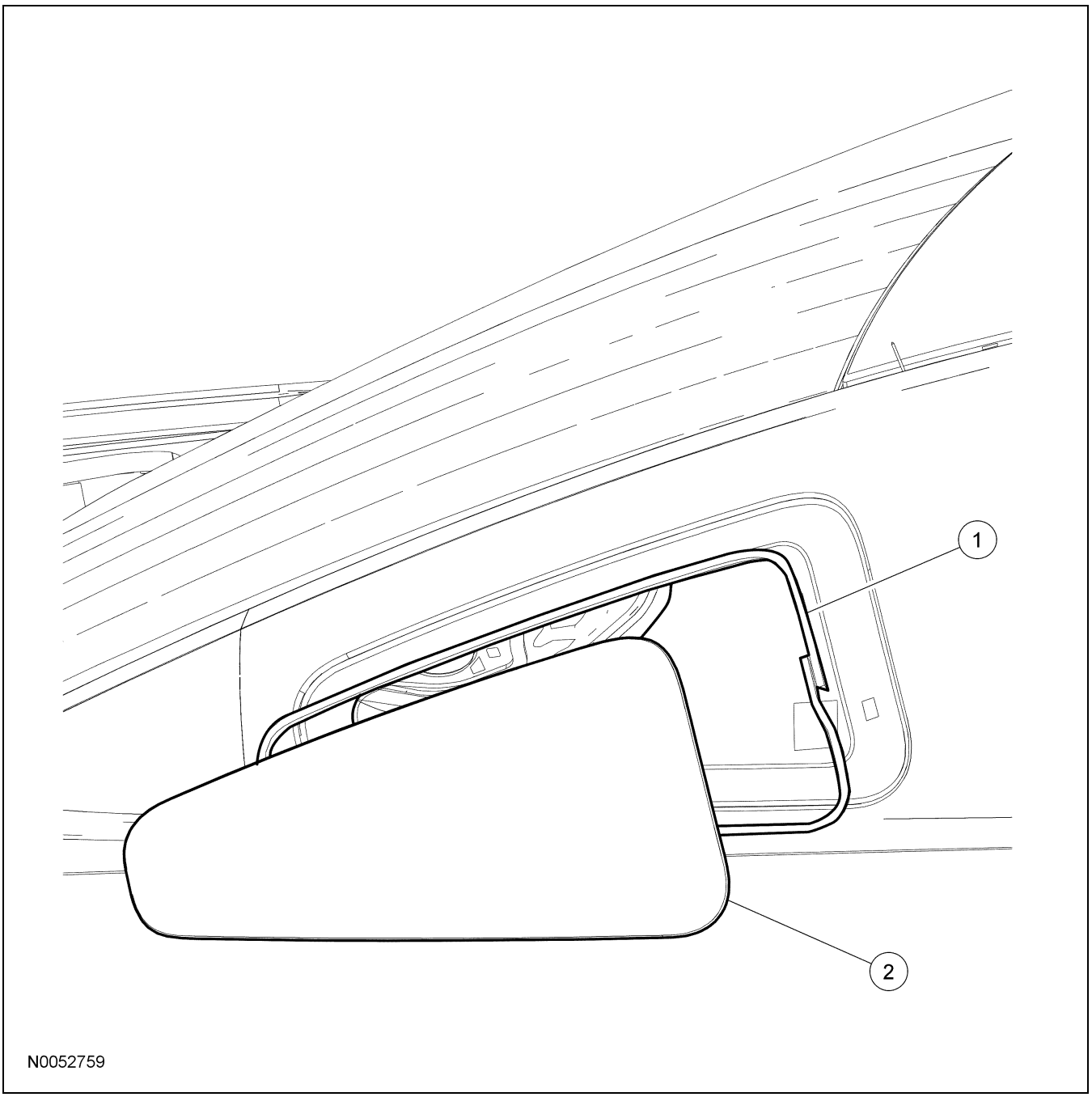
REMOVAL AND INSTALLATION (Continued)



Item	Part Number	Description
1	—	Urethane adhesive
2	6329710 RH/ 632971 LH	Quarter window glass

Removal

NOTE: If the quarter window glass is being removed to repair a dust/water leak, remove and reinstall the existing quarter window glass.

1. Remove the quarter window trim panel. For additional information, refer to Section 501-05.
2. Before cutting the urethane adhesive, remove dirt and other foreign material from the quarter window glass pinch weld area.
   - Use a clean shop towel or oil-free compressed air.
3. **NOTE:** Refer to manufacturer's instructions before using the Deluxe Windshield Removal Tool.

   Lubricate the urethane adhesive with water to aid the Deluxe Windshield Removal Tool when cutting the urethane adhesive.

REMOVAL AND INSTALLATION (Continued)

4. **⚠ WARNING: Always wear eye protection when servicing a vehicle. Failure to follow this instruction may result in serious personal injury.**

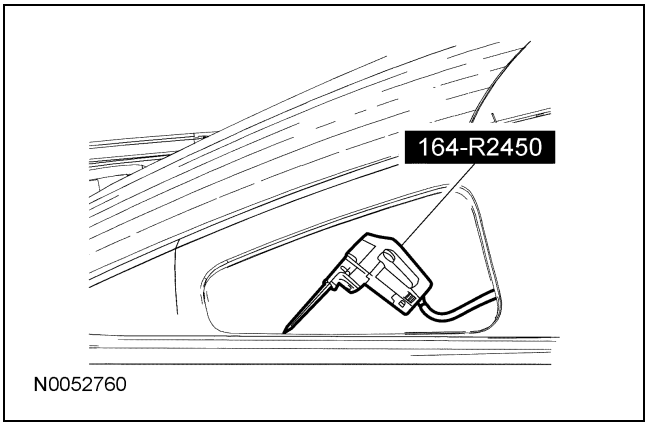
   ⚠ WARNING: Wear protective gloves when handling components or parts that have pointed or sharp edges. Failure to follow this instruction may result in serious personal injury.

   NOTICE: **To avoid rust formation, use extreme care not to scratch the paint or primer or otherwise damage the pinch weld during glass removal.**

   NOTE: Insert the blade into the Deluxe Windshield Removal Tool so that the flat side is against the glass. This will leave the entire urethane adhesive bead on the pinch weld and allow a dry fit of the replacement quarter window glass.

   NOTE: Support the quarter window glass as necessary to prevent the glass from dropping while cutting the urethane adhesive.

   Using the Deluxe Windshield Removal Tool, cut at the upper center of the quarter glass and work toward the bottom corners. Then cut through the remaining urethane adhesive along the bottom of the quarter window glass.



5. Remove the quarter window glass.

Installation

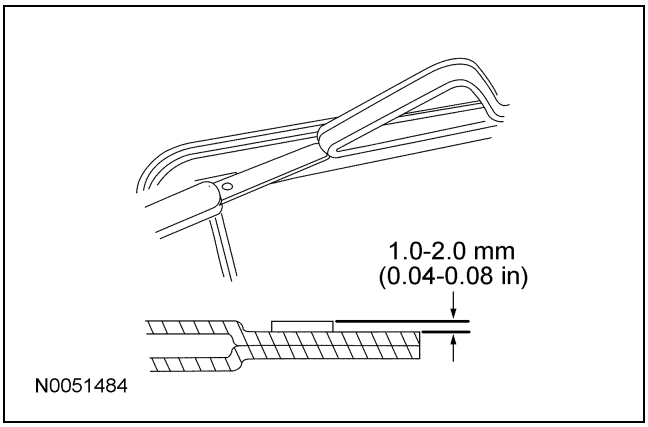
1. Dry-fit the quarter window glass on the existing urethane bead on the pinch weld.
   - Position the quarter window glass on the pinch weld.
   - Center the quarter window glass in the opening for best fit.
   - Make alignment marks with tape or non-staining grease pencil on the quarter window glass and the body.

2. After the dry-fit alignment, remove the quarter window glass from the opening and place on a stable work surface with the interior side of the glass facing up.

3. **⚠ WARNING: Repair any corrosion found on the pinch weld. The pinch weld is a structural component of the vehicle. Corrosion left unrepaired may reduce the structural integrity of the vehicle. Failure to follow this instruction may result in serious injury to vehicle occupant(s).**

   NOTE: Avoid scratching the pinch weld. Repair all minor scratches or exposed metal on the pinch weld following manufacturer's instructions. Use the same brand pinch weld primer, glass primer and urethane adhesive.

   Using an appropriate tool, trim the urethane adhesive leaving a 1-2 mm (0.04-0.08 in) base of original equipment urethane adhesive on the pinch weld.



4. If reinstalling the original quarter window glass, remove the urethane adhesive from the quarter window glass.

REMOVAL AND INSTALLATION (Continued)

5. Using a clean shop towel, brush or oil-free compressed air, clean the pinch weld area. Remove any foreign material or water that may have entered during quarter window removal.

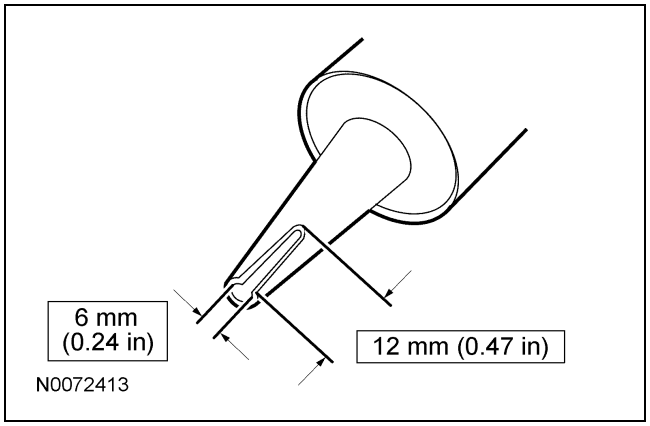
6. If reinstalling the same quarter window glass, remove the remaining urethane adhesive from the glass leaving a thin layer to bond with the new urethane adhesive bead.

7. If installing a new quarter window glass, clean the inside of the glass surface with glass cleaner to make sure the ceramic-coated area is clean.

8. **NOTE:** Be sure to use the same brand and cure-rate products for the urethane adhesive and glass primer. Do not mix different brands of urethane adhesive and glass primer. For additional information, refer to the Material Chart in this procedure.

   If installing a new quarter window glass, apply glass primer according to manufacturer's instructions. Allow at least 6 minutes to dry.

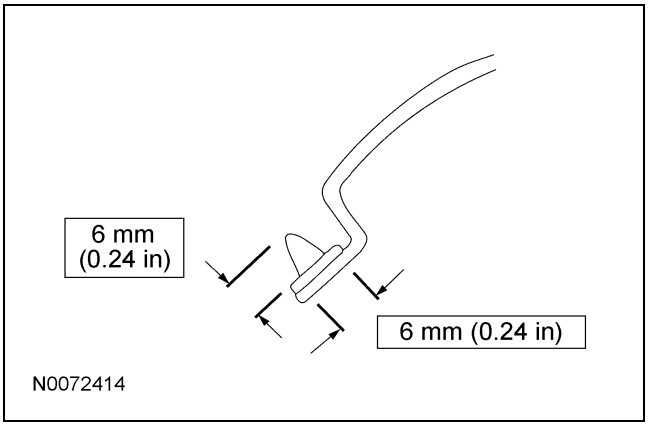
9. Cut the urethane adhesive applicator tip to specification. This will produce a triangular bead during application.



10. **NOTE:** The quarter window glass must be positioned within 10 minutes of applying the urethane adhesive.

    NOTE: Use either a high-ratio, electric or battery-operated caulk gun that applies the urethane adhesive with less effort and a continuous bead.

    Apply urethane adhesive on to top the existing trimmed urethane adhesive bead on the pinch weld, starting and ending at the bottom of the quarter window glass near the center, making sure there are no gaps in the bead.



11. **WARNING: Do not drive vehicle until the urethane adhesive seal has cured. Follow urethane adhesive manufacturer's curing directions. Inadequate or incorrect curing of the urethane adhesive seal will adversely affect glass retention. Failure to follow these instructions may result in serious injury to vehicle occupant(s).**

    ***NOTICE:* Before positioning the quarter window glass, open vehicle windows to prevent the air pressure of closing doors from affecting the urethane adhesive bond.**

    Using the alignment marks made previously, position the quarter window glass on the pinch weld.

12. **NOTE:** The urethane adhesive must cure for a minimum of one hour before testing for air or water leaks.

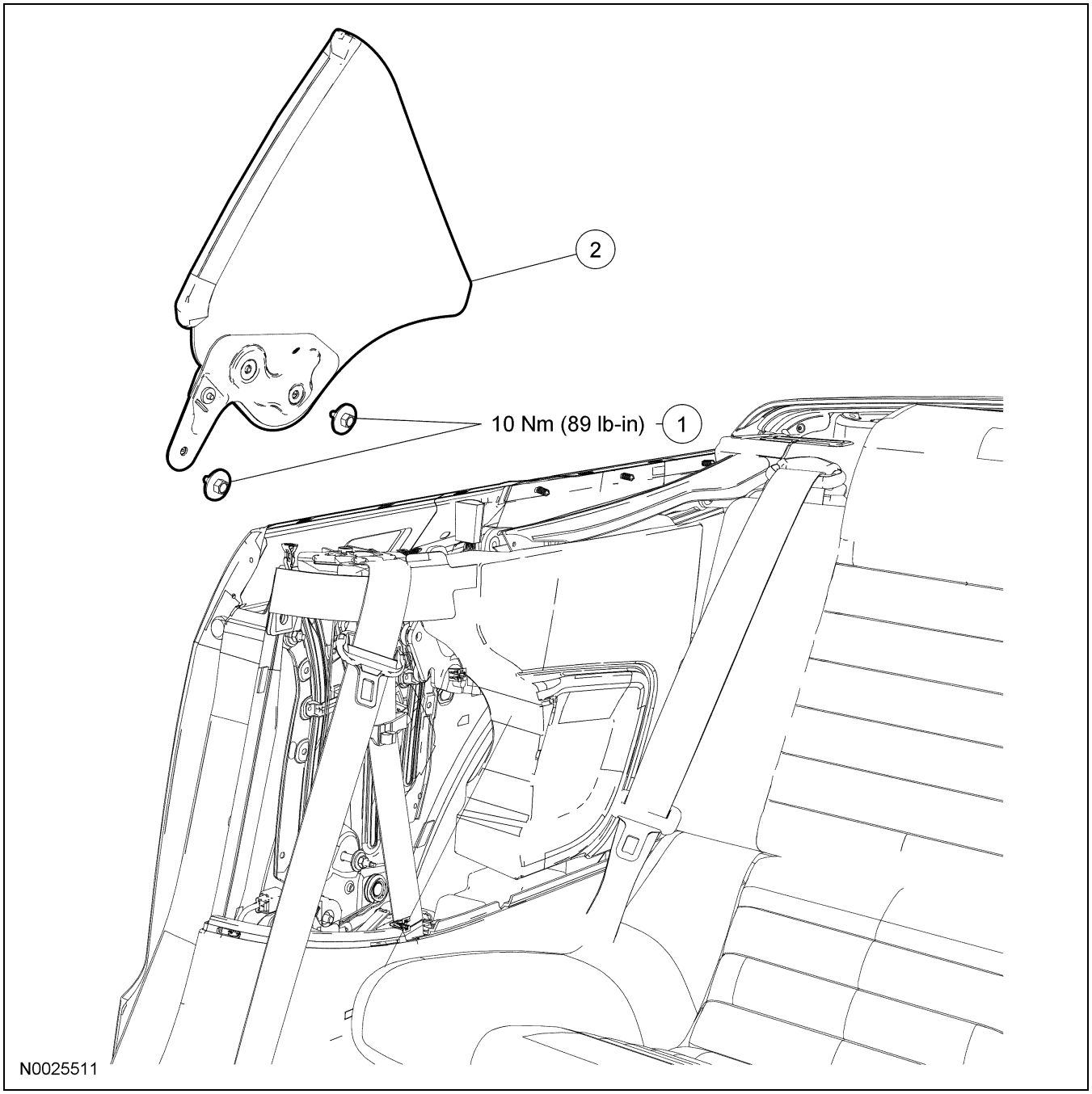
    After the urethane adhesive has cured, check the quarter window glass seal for air or water leaks through the urethane adhesive bead and add urethane adhesive as necessary.

REMOVAL AND INSTALLATION (Continued)

13. Install the quarter window trim panel. For additional information, refer to Section 501-05.

REMOVAL AND INSTALLATION

Window Glass — Rear Quarter, Convertible



Item	Part Number	Description
1	W711156	Rear quarter window glass bolts (2 required)
2	7629710 RH/ 7629711 LH	Rear quarter window glass

Removal

NOTE: The rear quarter glass seal (division bar) is bonded to the glass and cannot be serviced separately.

1. Remove the rear quarter trim panel. For additional information, refer to Section 501-05.

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REMOVAL AND INSTALLATION (Continued)

2. Remove the 2 rear quarter glass bolts and the rear quarter window glass.

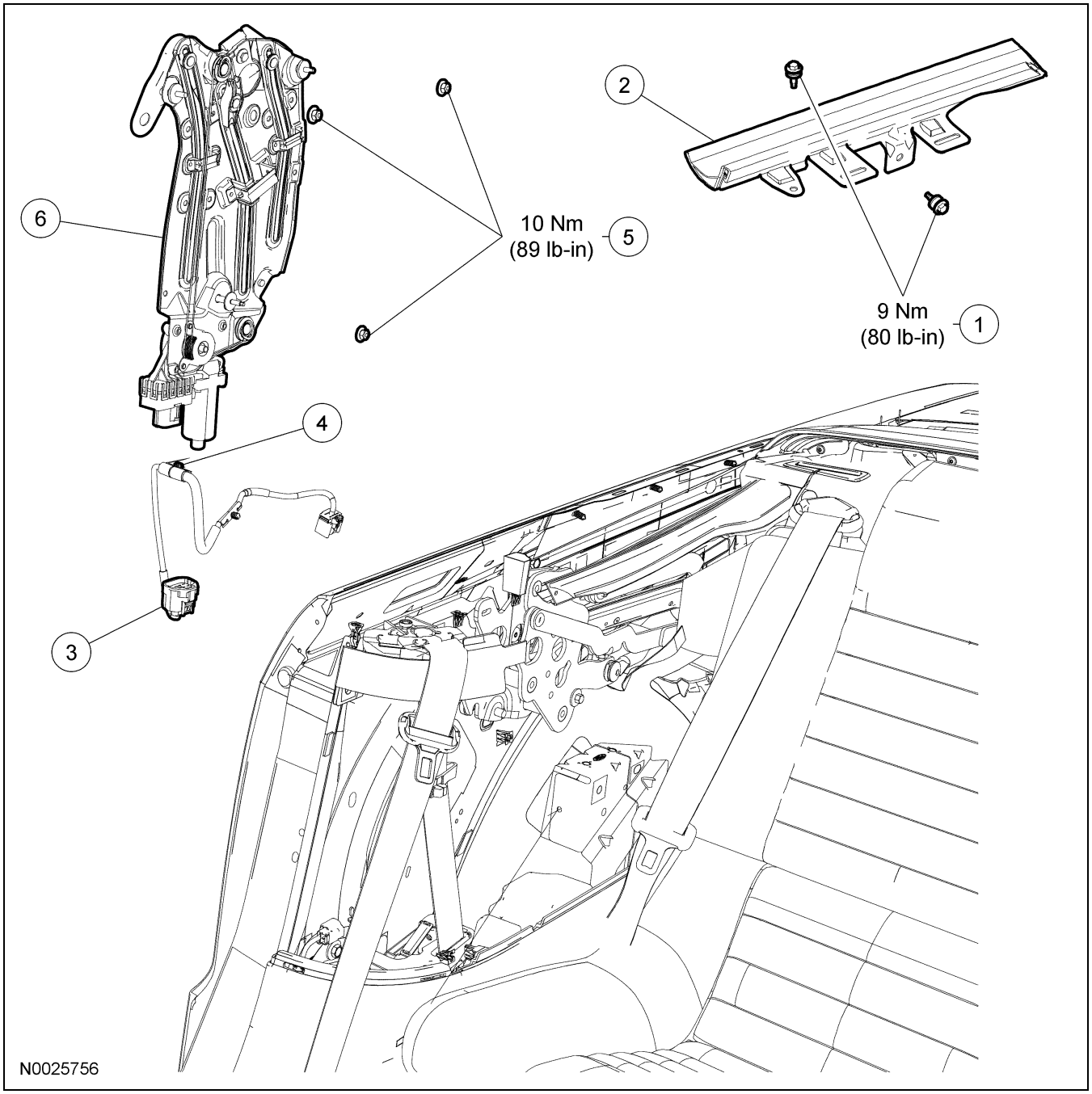
Installation

1. Install the rear quarter window glass and finger-tighten the 2 bolts.
2. **NOTE:** If installing a new rear quarter glass due to a torn/separating quarter glass seal (division bar), make sure the front door glass is adjusted correctly. For additional information, refer to Window Glass Adjustment — Front Door in this section.

   Adjust the rear quarter window glass. For additional information, refer to Window Glass Adjustment — Rear Quarter, Convertible in this section.

REMOVAL AND INSTALLATION

Window Regulator Motor — Rear Quarter



Item	Part Number	Description
1	W505424	Rear quarter window inner belt weatherstrip bolts (2 required)
2	76297B06 RH/ 76297B07 LH	Rear quarter window inner belt weatherstrip

(Continued)

Item	Part Number	Description
3	—	Rear quarter window motor electrical connector (part of 14A017)
4	—	Rear quarter window regulator and motor harness locator (part of 14A017)

(Continued)

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REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
5	N621906	Rear quarter window regulator and motor nuts (3 required)
6	76304306 RH/ 76304307 LH	Rear quarter window regulator and motor

Removal and Installation

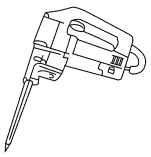
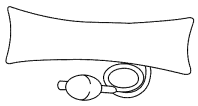
1. Remove the rear quarter window glass. For additional information, refer to Window Glass — Rear Quarter, Convertible in this section.
2. Remove the 2 bolts and the rear quarter window inner belt weatherstrip.
   - To install, tighten to 9 Nm (80 lb-in).
3. Disconnect the electrical connector from the rear quarter window motor.
4. Remove the harness locator from the rear quarter window regulator and motor assembly.
5. **NOTE:** Make certain not to disturb the jackscrews when removing the rear quarter window regulator and motor assembly nuts.

   Remove the 3 nuts and the rear quarter window regulator and motor assembly.
   - To install, tighten to 10 Nm (89 lb-in).
6. To install, reverse the removal procedure.
   - Adjust the quarter window glass as necessary. For additional information, refer to Window Glass Adjustment — Rear Quarter, Convertible in this section.

REMOVAL AND INSTALLATION

Window Glass — Rear

Special Tool(s)

 ST1320-A	Deluxe Windshield Removal Tool 164-R2450 or equivalent
 ST2218-B	The Pumper 164-R2459 or equivalent

Material

Item	Specification
Dow Urethane Adhesive Betaseal™ Express	—
Dow Urethane One Step Glass Primer Betaprime™ 5500 / 5500A / 5500SA	—
Sika Urethane Adhesive Sika Tack ASAP	—
Sika Urethane Metal and Glass Primer Sika 206 G+P	—
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A

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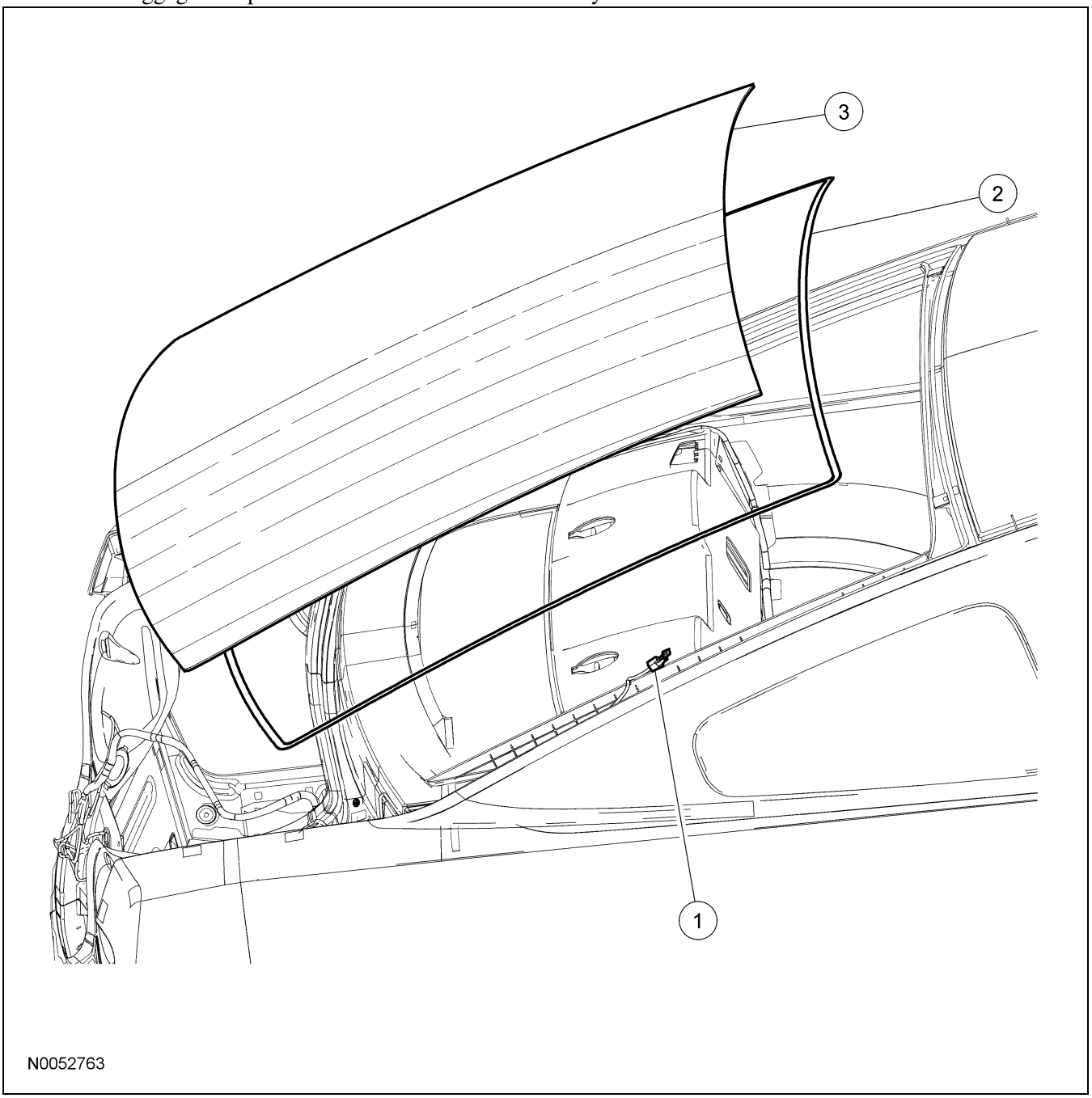
REMOVAL AND INSTALLATION (Continued)

NOTE: The luggage compartment lid is not shown for clarity.



Item	Part Number	Description
1	—	Heated rear window electrical connector (part of 14A005)
2	—	Urethane adhesive
3	6342006	Rear window glass

Removal

1. Remove the parcel shelf. For additional information, refer to Section 501-05.
2. Disconnect the 2 heated rear window electrical connectors.
3. Before cutting the urethane adhesive, remove dirt and other foreign material from the rear window glass pinch weld area.
   - Use a clean shop towel or oil-free compressed air.

REMOVAL AND INSTALLATION (Continued)

4. **NOTE:** Refer to manufacturer's instructions before using the Deluxe Windshield Removal Tool.

   Lubricate the urethane adhesive with water to aid the Deluxe Windshield Removal Tool when cutting the urethane adhesive.

5. **WARNING: Always wear eye protection when servicing a vehicle. Failure to follow this instruction may result in serious personal injury.**

   WARNING: Wear protective gloves when handling components or parts that have pointed or sharp edges. Failure to follow this instruction may result in serious personal injury.

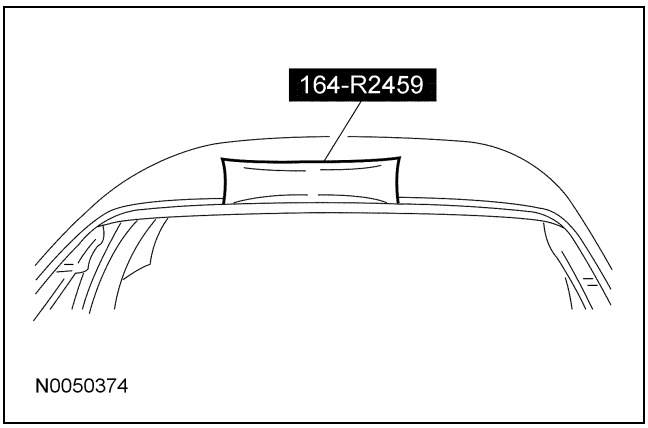
   NOTICE: **To avoid rust formation, use extreme care not to scratch the paint or primer, or otherwise damage the pinch weld during glass removal.**

   NOTE: Insert the blade into the Deluxe Windshield Removal Tool so that the flat side is against the glass. This will leave the entire urethane adhesive bead on the pinch weld and allow a dry fit of the replacement rear window glass.

   NOTE: Support the rear window glass as necessary to prevent the glass from dropping while cutting the urethane adhesive.

   Using the Deluxe Windshield Removal Tool (with the luggage compartment lid open approximately 45 degrees), cut the urethane adhesive from the glass starting at the bottom outboard corner of the rear window glass.

6. Using The Pumper, distance the rear window glass from the body to cut the remaining urethane adhesive and remove the rear window glass. Place the rear window glass on a stable work surface.



Installation

1. Dry-fit the rear window glass on the existing urethane adhesive bead on the pinch weld.
   - Position the rear window glass on the pinch weld.
   - Center the rear window glass in the opening.
   - Adjust the rear window glass stop blocks (if equipped) as needed for best fit.
   - Make alignment marks with tape or non-staining grease pencil (preferably at the glass stop blocks) on the rear window glass and the body.

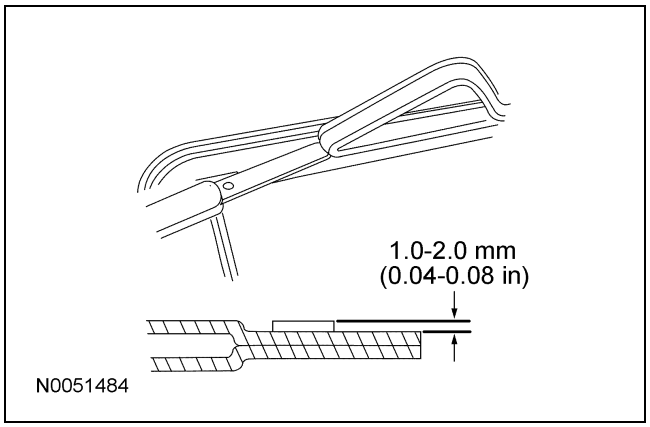
2. After the dry-fit alignment, remove the rear window glass and moulding assembly from the windshield opening and place on a stable work surface with the interior side of the glass facing up.

REMOVAL AND INSTALLATION (Continued)

3. ⚠ **WARNING: Repair any corrosion found on the pinch weld. The pinch weld is a structural component of the vehicle. Corrosion left unrepaired may reduce the structural integrity of the vehicle. Failure to follow this instruction may result in serious injury to vehicle occupant(s).**

   NOTE: Avoid scratching the pinch weld. Repair all minor scratches or exposed metal on the pinch weld following manufacturer's instructions. Use the same brand pinch weld primer, glass primer and urethane adhesive.

   Using an appropriate tool, trim the urethane adhesive leaving a 1-2 mm (0.04-0.08 in) base of original equipment urethane adhesive on the pinch weld.



4. Using a clean shop towel, brush or oil-free compressed air, clean the pinch weld area. Remove any foreign material or water that may have entered during rear window glass removal.

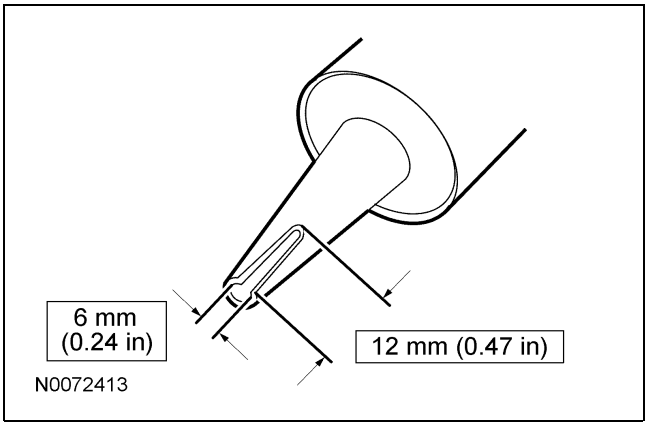
5. If reinstalling the original rear window glass, remove the urethane adhesive from the rear window glass leaving a thin layer to bond with the new urethane bead.

6. If installing a new rear window glass, clean the inside of the glass surface with glass cleaner.
   - Make sure to thoroughly clean the surface of the blackened border area where the urethane adhesive will be applied.

7. **NOTE:** Be sure to use the same brand and cure-rate products for the urethane adhesive and glass primer. Do not mix different brands of urethane adhesive and glass primer. For additional information, refer to the Material Chart in this procedure.

   If installing a new rear window glass, apply glass primer according to manufacturer's instructions. Allow at least 6 minutes to dry.

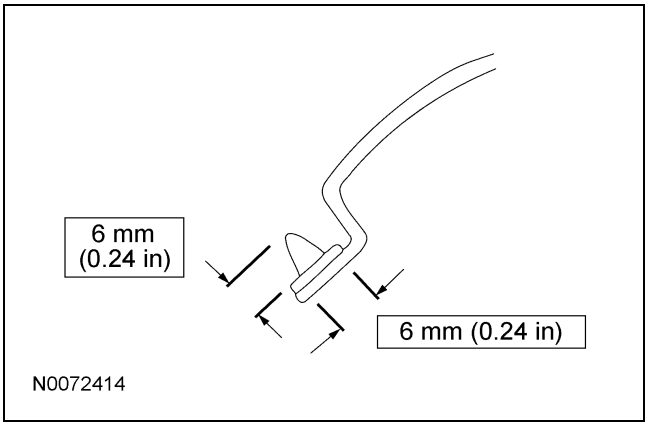
8. Cut the urethane adhesive applicator tip to specification. This will produce a triangular bead during application.



9. **NOTE:** The rear window glass must be positioned within 10 minutes of applying the urethane adhesive.

   NOTE: Use either a high-ratio, electric or battery-operated caulk gun that applies the urethane adhesive with less effort and a continuous bead.

   Apply urethane adhesive on top of the existing trimmed urethane adhesive bead on the pinch weld, starting and ending at the bottom of the quarter window glass near the center, making sure there are no gaps in the bead.



REMOVAL AND INSTALLATION (Continued)

10. ⚠ **WARNING: Do not drive vehicle until the urethane adhesive seal has cured. Follow urethane adhesive manufacturer's curing directions. Inadequate or incorrect curing of the urethane adhesive seal will adversely affect glass retention. Failure to follow these instructions may result in serious injury to vehicle occupant(s).**

    NOTICE: **Before positioning the windshield glass, open vehicle windows to prevent the air pressure of closing doors from affecting the urethane adhesive bond.**

    Using the alignment marks made previously, position the rear window glass on the pinch weld.

11. **NOTE:** The urethane adhesive must cure for a minimum of one hour before testing for air or water leaks.

    After the urethane adhesive has cured, check the rear window glass seal for air or water leaks through the urethane adhesive bead and add urethane adhesive as necessary.

12. Connect the 2 heated rear window electrical connectors.

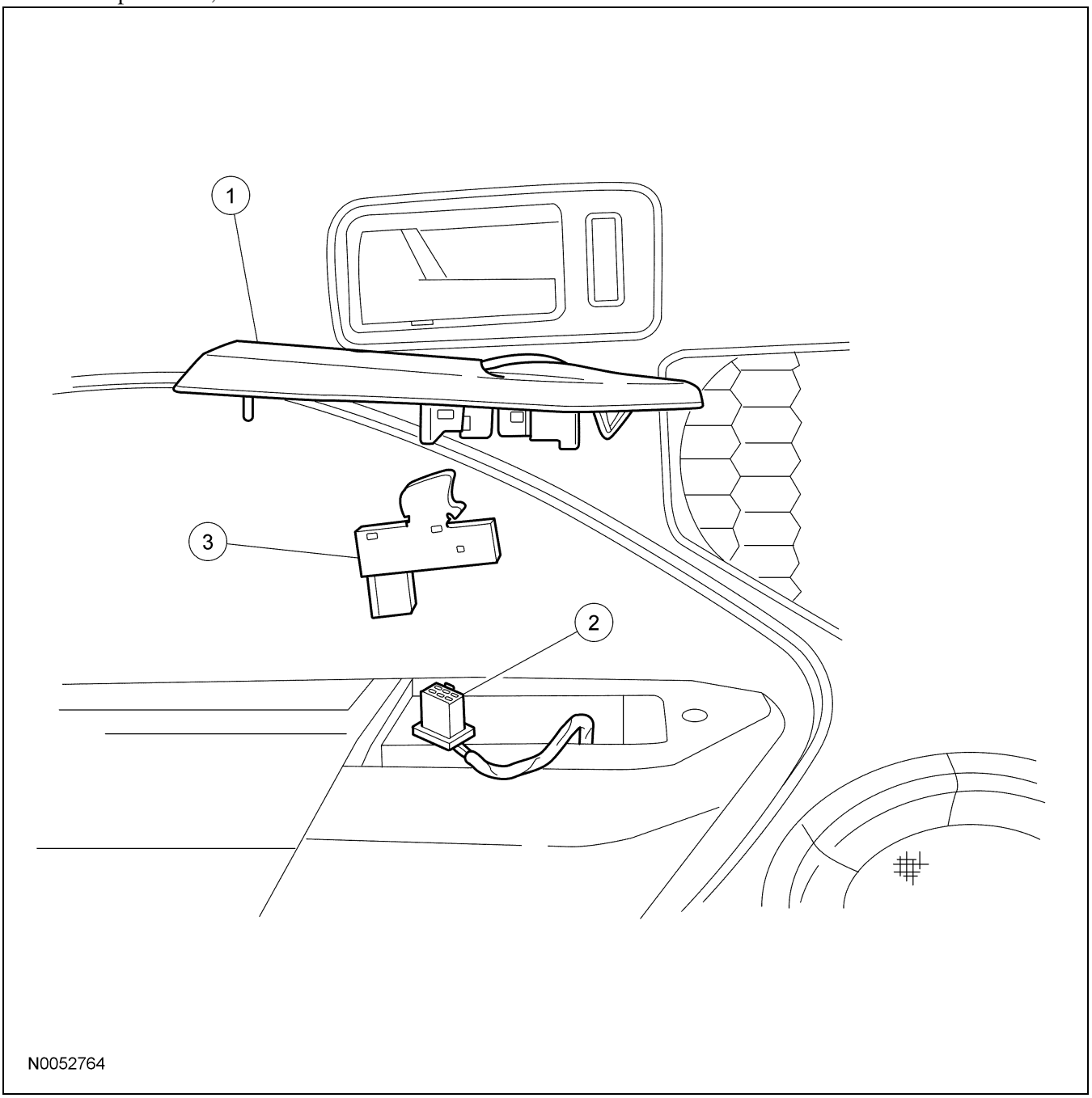
13. Install the quarter trim panels and parcel shelf. For additional information, refer to Section 501-05.

REMOVAL AND INSTALLATION

Window Control Switch

NOTE: LH side shown, RH side similar.

NOTE: Coupe shown, convertible similar.



Item	Part Number	Description
1	241A22	Door panel switch plate
2	—	Window control switch electrical connector (part of 14630/14631)
3	14529	Window control switch

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REMOVAL AND INSTALLATION (Continued)

Removal and Installation

1. *NOTICE:* **Use a shop towel or similar material between the tool and the door trim panel or damage to the door trim panel may occur.**

   Release the clip and remove the door panel switch plate.

   - Disconnect the electrical connector.

2. Release the tabs and remove the window control switch.

3. To install, reverse the removal procedure.

SPECIFICATIONS

Torque Specifications

Description	Nm	lb-ft	lb-in
Instrument panel center support bolts	20	15	—
Instrument panel cowl top bracket nut	9	—	80
Instrument panel lower support bolts	9	—	80

Torque Specifications (Continued)

Description	Nm	lb-ft	lb-in
Instrument panel support bolt	20	15	—
Instrument panel upper support bolts	40	30	—
Steering column shaft bolt	25	18	—

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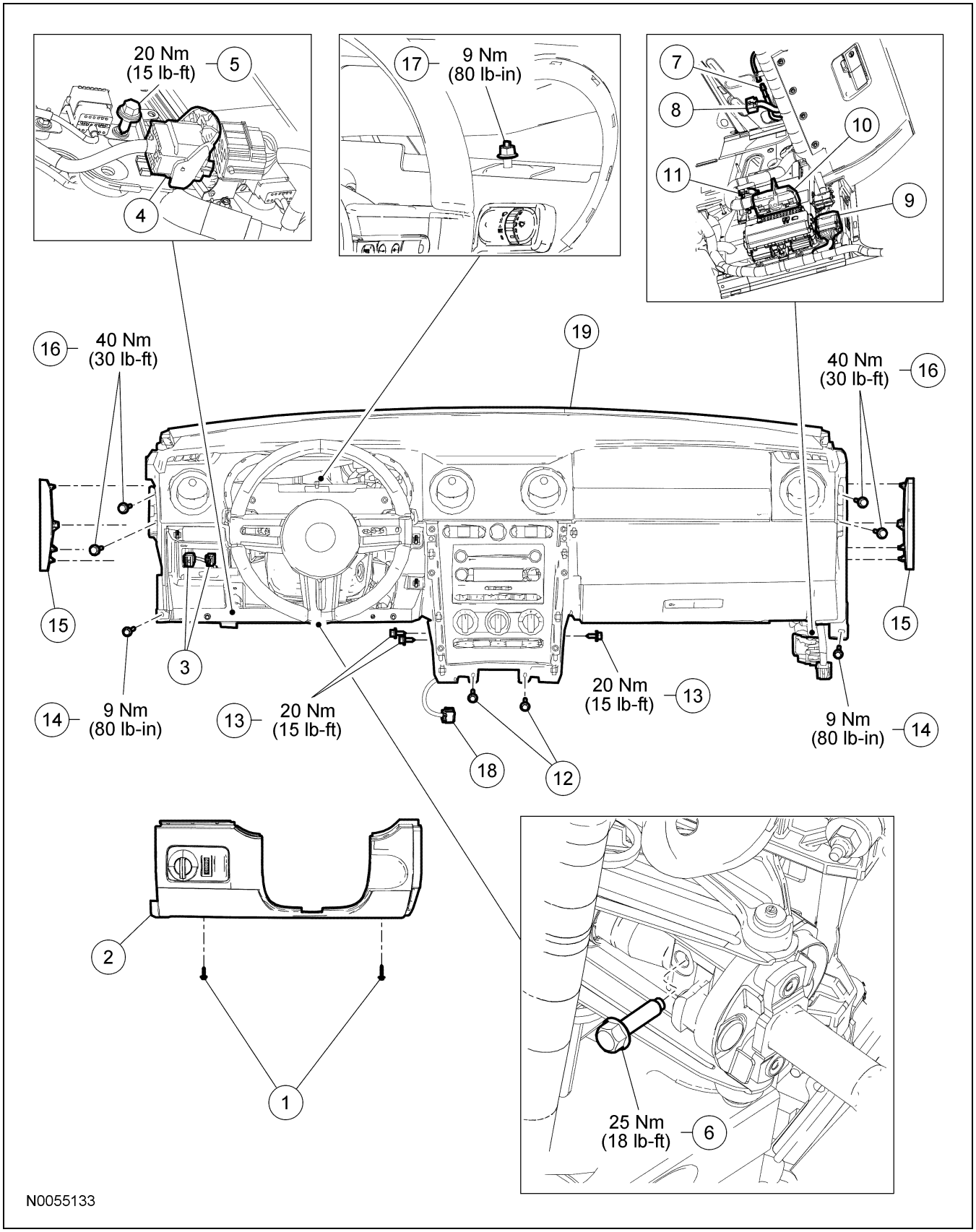
REMOVAL AND INSTALLATION

Instrument Panel — Exploded View



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REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
1	W505156	Steering column opening cover screws (2 required)
2	6304459	Steering column opening cover
3	—	Headlamp switch electrical connectors (2 required) (part of 14401)
4	—	Bulkhead electrical connector (part of 14401)
5	W711097	Instrument panel support bolt
6	W704980	Steering column shaft bolt
7	19A136	Antenna connector
8	—	Defrost mode actuator electrical connector (part of 14401)
9	—	Bulkhead electrical connector (part of 14401)
10	—	Smart junction box (SJB) electrical connector (part of 14401)
11	—	SJB electrical connector (part of 14401)
12	W711564	Instrument panel center support screws (2 required)
13	W711097	Instrument panel center support bolts (3 required)
14	18C298	Instrument panel lower support bolts (2 required)
15	6304481/ 6304480	Instrument panel end panels (2 required)
16	W711097	Instrument panel upper support bolts (4 required)
17	N811309	Instrument panel cowl top bracket nut
18	—	Restraints control module (RCM) small connector (part of 14401)
19	6304304	Instrument panel

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

Instrument Panel

Removal and Installation

⚠ **CAUTION: Electronic modules are sensitive to static electrical charges. If exposed to these charges, damage may result.**

1. Depower the supplemental restraint system (SRS). For additional information, refer to Section 501-20B.
2. Remove the floor console. For additional information, refer to Console — Floor in this section.
3. Remove the 2 scuff plates.
4. Remove the 2 A-pillar lower trim panels.
5. **NOTE:** On the coupe, install the front locating hook, then snap the A-pillar trim panel in place working rearward.

   Remove the 2 A-pillar trim panels.
6. Remove the instrument cluster. For additional information, refer to Section 413-01.
7. ⚠ **CAUTION: Do not allow the steering column to rotate while the steering column shaft is disconnected or damage to the clockspring may result. If there is evidence that the steering column shaft has rotated, the clockspring must be removed and recentered. For additional information, refer to Section 501-20B.**

   Secure the steering wheel, remove and discard the bolt, and separate the steering column shaft from the steering column.
   - To install, use a new steering column shaft bolt and tighten to 25 Nm (18 lb-ft).
8. Remove the 2 screws and the steering column opening cover.
   - Disconnect the 2 electrical connectors
9. On the LH side, disconnect the instrument panel bulkhead electrical connector and remove the instrument panel support bolt.
   - To install, tighten to 20 Nm (15 lb-ft).
10. On the RH side disconnect the antenna in-line connector and the 4 instrument panel harness electrical connectors.
11. Remove the 2 instrument panel center support screws.
12. Remove the 3 instrument panel center support bolts.
    - To install, tighten to 20 Nm (15 lb-ft).
13. Through the instrument cluster opening, loosen the instrument panel cowl top bracket nut.
    - To install, tighten to 9 Nm (80 lb-in).
14. Remove the 2 instrument panel lower support bolts.
    - To install, tighten to 9 Nm (80 lb-in).
15. Remove the 2 instrument panel end panels.
16. Remove the 4 instrument panel upper support bolts.
    - To install, tighten to 40 Nm (30 lb-ft).
17. Disconnect the restraints control module (RCM) small connector.
18. ⚠ **CAUTION: To avoid damage to the instrument panel, an assistant is required when carrying out this step.**

    Remove the instrument panel.
19. To install, reverse the removal procedure.

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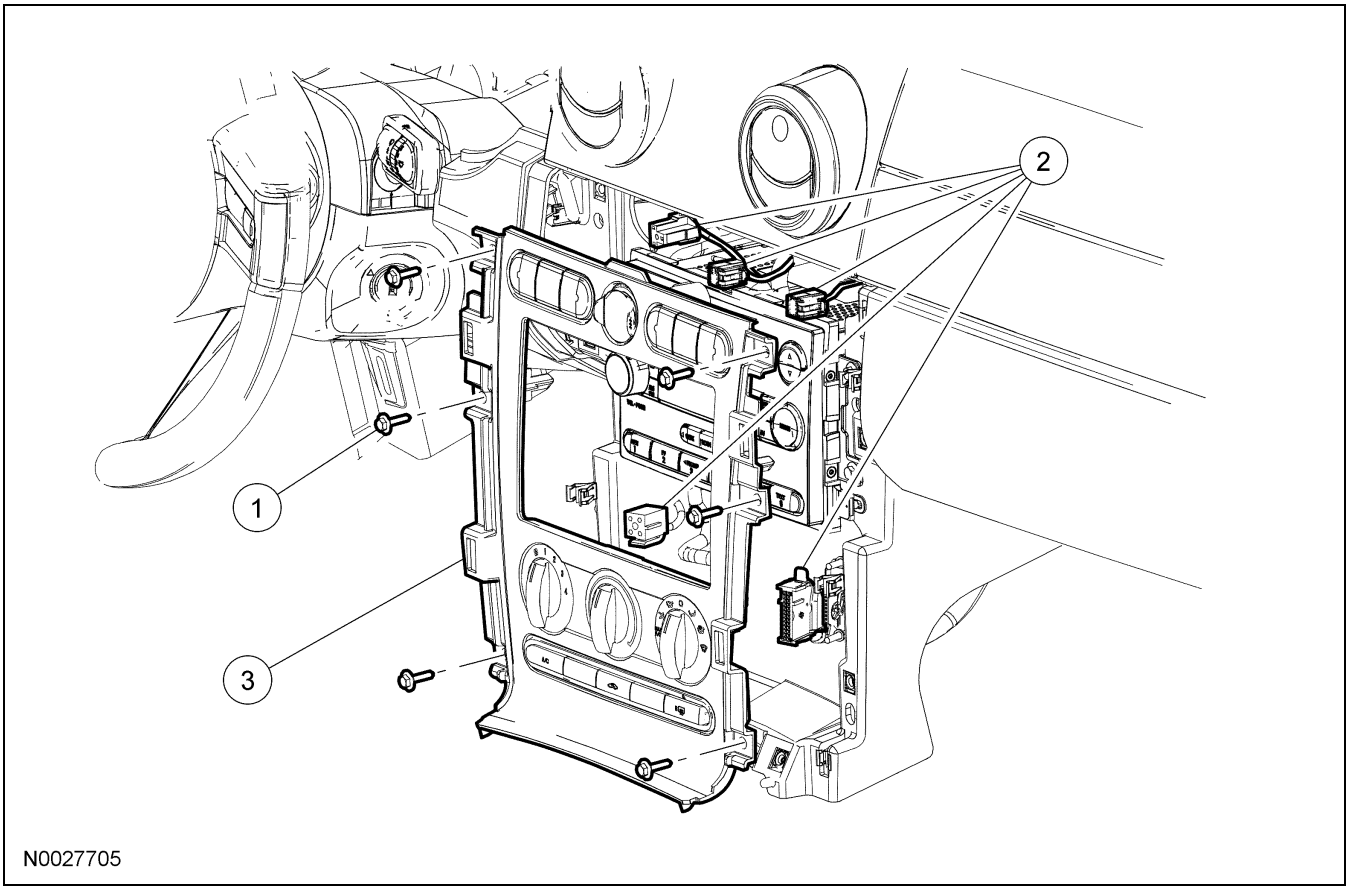
REMOVAL AND INSTALLATION

Instrument Panel Center Finish Panel



Item	Part Number	Description
1	W705314	Instrument panel center finish panel screw (6 required)
2	—	Instrument panel center finish panel electrical connectors (5 required) (part of 14401)
3	6304302	Instrument panel center finish panel

Removal and Installation

1. Remove the floor console. For additional information, refer to Console — Floor in this section.
2. Remove the 6 screws and remove the instrument panel center finish panel.
   - Disconnect the electrical connectors.
3. **NOTE:** Be sure that all climate control assembly electrical connectors are securely fastened before installing the center instrument panel finish panel.

   To install, reverse the removal procedure.

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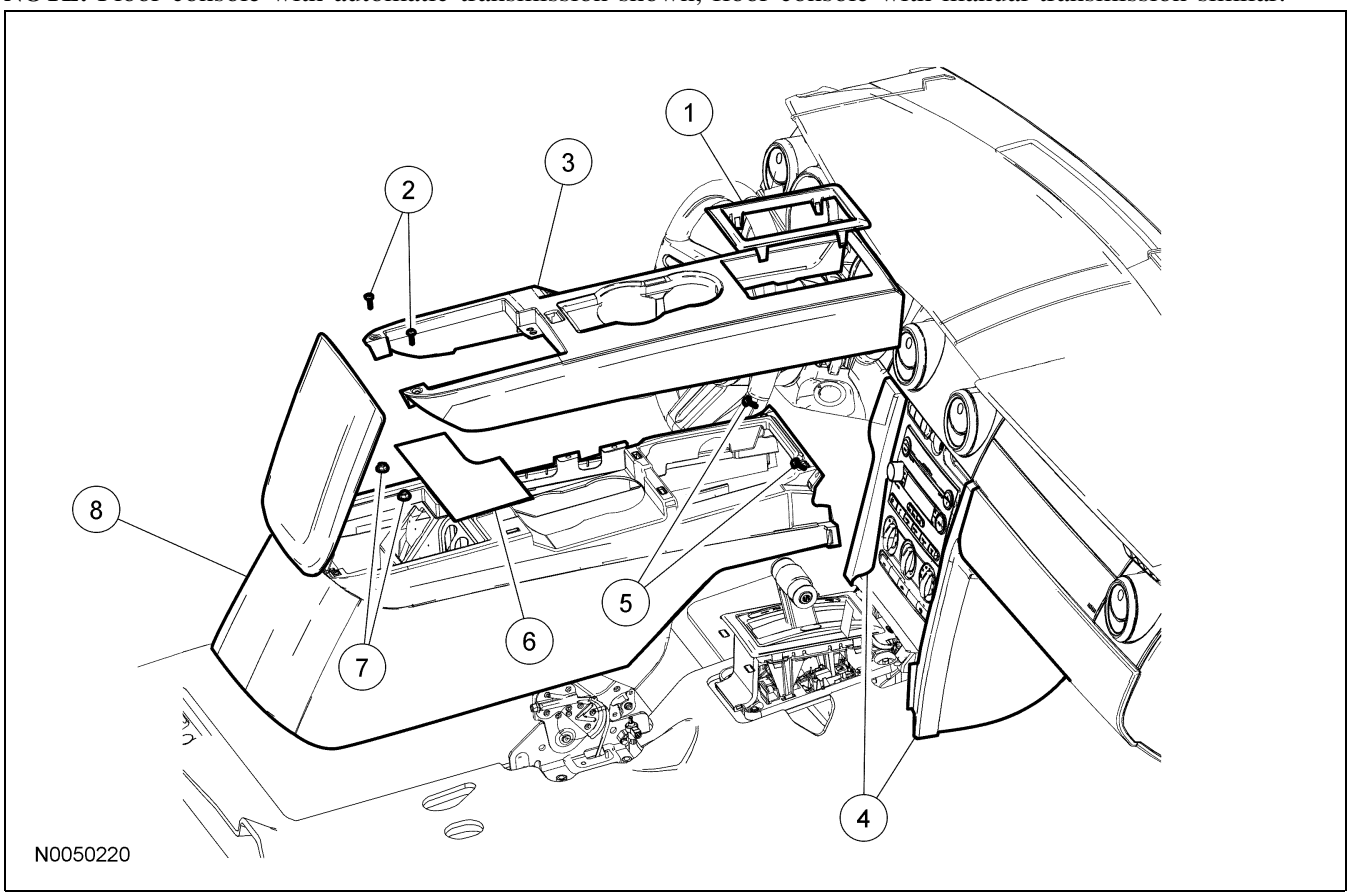
REMOVAL AND INSTALLATION

Console — Floor

NOTE: Floor console with automatic transmission shown, floor console with manual transmission similar.



Item	Part Number	Description
1	7E391	Selector lever bezel
2	W705314	Floor console finish panel screws (2 required)
3	044D90	Floor console finish panel
4	04608 RH/ 04609 LH	Instrument panel finish panels
5	W707628	Floor console screws (2 required)
6	13586	Storage compartment mat
7	W711098	Floor console nuts (2 required)
8	045A36	Floor console

Removal and Installation

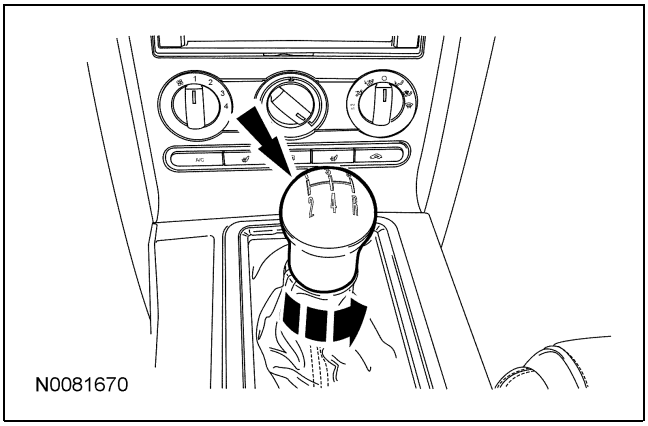
All vehicles

1. Apply the parking brake.

Vehicles with manual transmission

2. Place the gearshift lever in the NEUTRAL position.

3. Unscrew the gearshift lever knob.



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REMOVAL AND INSTALLATION (Continued)

4. Remove the gearshift lever knob and boot.
   - With a non-marring tool, lift the gearshift lever boot retainer upward.

Vehicles with automatic transmission

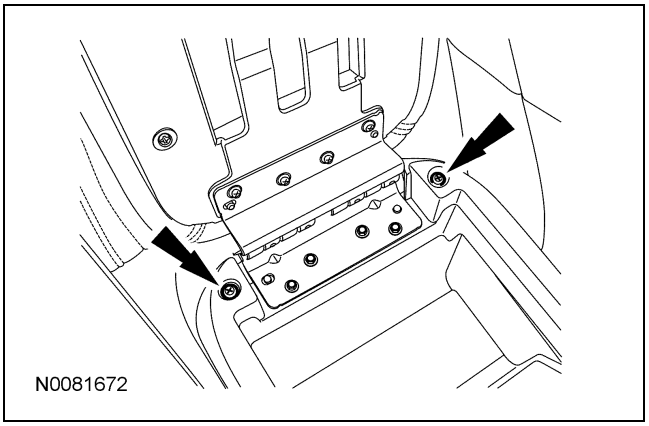
5. Place the selector lever in the NEUTRAL position.

6. Remove the selector lever bezel.
   - With a non-marring tool, lift the selector lever bezel upward.

All vehicles

7. Open the storage compartment door.

8. Remove the 2 floor console finish panel screws.



9. Remove the floor console finish panel.
   - Lift the floor console finish panel upward to release the retaining clips.
     - Disconnect the electrical connector(s).

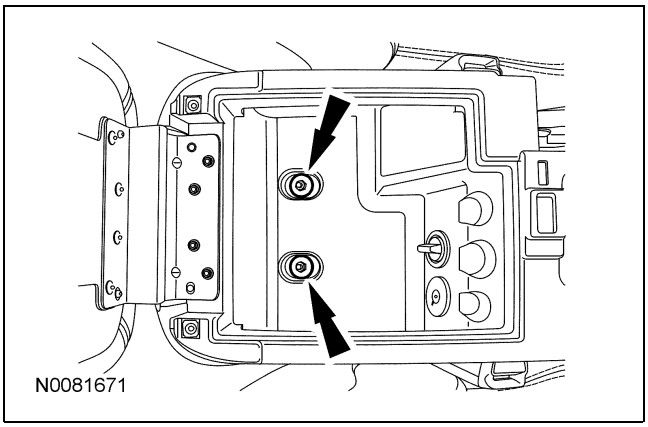
10. Disconnect the power point and audio jack electrical connectors.

11. Remove the LH and RH instrument panel finish panels.
    - Pull outward on the instrument panel finish panels to release the retaining clips.

12. Remove the 2 floor console screws.

13. Remove the storage compartment mat.

14. Remove the 2 floor console nuts.



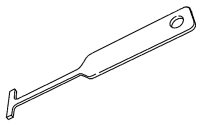
15. Remove the floor console.

16. To install, reverse the removal procedure.

REMOVAL AND INSTALLATION

Power Point

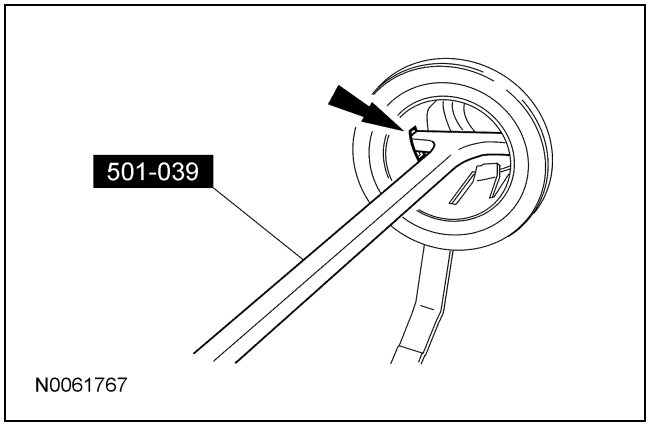
Special Tool(s)

 ST3024-A	Remover, Power Point Socket 501-039 or equivalent

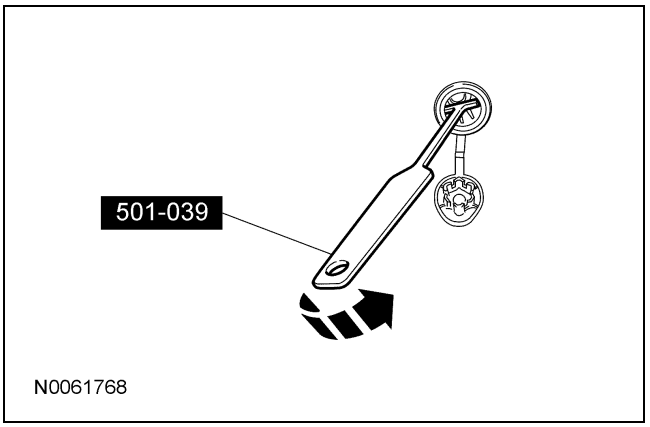
Removal

NOTE: Power point cover may differ depending on location.

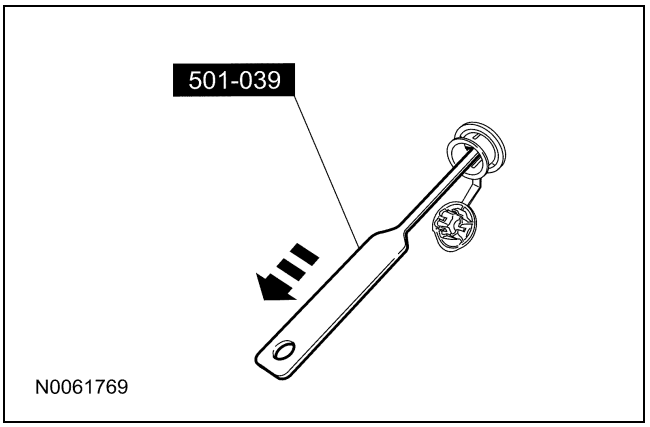
1. Open the power point cover.
2. Install the Power Point Socket Remover in one of the power point socket slots.



3. Position the Power Point Socket Remover so that it engages in the adjacent slot.



4. Using the Power Point Socket Remover, pull the power point socket out of the retainer.



5. Disconnect the electrical connector.

Installation

1. Connect the electrical connector.
2. Slide the power point socket into the retainer.

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SPECIFICATIONS

General Specifications

Item	Specification
Lubricants	
Multi-Purpose Grease Spray XL-5	ESB-M1C93B
Penetrating and Lock Lubricant XL-1	—

Lock Repair/Replacement Specifications

Part Number	Lock Repair Package Name
F85Z-11582-AA	Ignition Cylinder
F8ZZ-6321990-AA	Door Lock
XR32-6343262-BA	Luggage Compartment Lid
F8DZ-5406082-AA	Glove Box
F8DZ-5421970-AA	Lock Lever Kit

Torque Specifications

Description	Nm	lb-ft	lb-in
Door latch bolts	12	9	—
Door lock cylinder bolt	9	—	80
Exterior door handle studs	9	—	80
Hood latch bolts	12	9	—
Luggage compartment lid latch nuts	9	—	80
Luggage compartment lid lock cylinder bolts	9	—	80

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DESCRIPTION AND OPERATION

Handles, Locks, Latches and Entry Systems

NOTE: The smart junction box (SJB) is also known as the generic electronic module (GEM).

Lock Cylinders

Individual lock cylinders are repaired by discarding the inoperative lock cylinder and building a new lock cylinder using the appropriate lock repair package. The lock repair package includes a detailed instruction sheet to build the new lock cylinder to the current key code of the vehicle.

Hood Latch

The hood latch consists of the following components:

- Hood latch
- Hood latch release handle and cable

Doors

The door consists of the following components:

- Door ajar switch
- Door latch
- Door latch striker plate
- Door lock actuator
- Door lock control switch
- Door lock cylinder
- Door lock cylinder actuating rod
- Exterior door handle
- Exterior door handle actuating rod
- Interior door handle
- Interior door handle actuating cable
- Manual lock rod

Luggage Compartment

The luggage compartment consists of the following components:

- Luggage compartment lid ajar switch (early build)
- Luggage compartment lid latch with mechanical interior release handle and cable
- Luggage compartment lid lock cylinder

Power Lock/Unlock

The power lock/unlock feature requests both of the vehicle doors locked or unlocked upon customer request from either interior door lock switch in the vehicle. The power door locking system functions independently of ignition status or vehicle speed.

Autolock

NOTE: Manual transmission vehicles are not equipped with an autolock feature.

On vehicles equipped with an automatic transmission, the autolock feature can be enabled/disabled. For more information on enabling/disabling the autolock feature, refer to Autolock and Auto-Unlock Programming in this section.

The autolock feature automatically and conditionally locks both doors as a convenience to the customer.

Autolock occurs when both doors are closed, the brake pedal is applied while the speed is less than 8 km/h (5 mph), and then the speed increases to 8 km/h (5 mph) or greater.

Relock is dependent on an autolock event happening first.

Relock occurs after a door is opened, the brake pedal is applied while the speed is less than 8 km/h (5 mph), all the doors are closed again, and the speed increases to 8 km/h (5 mph) or greater.

Smart Unlock

NOTE: It is possible to lock the vehicle with the key in the ignition lock cylinder if the doors are locked with the remote keyless entry (RKE) transmitter, manually locked with the manual push buttons or with the key in the door lock cylinder.

The smart unlock feature prevents the driver door from locking with the key in the ignition lock cylinder. When the SJB receives a LOCK command from a door lock control switch, and the key is in the ignition lock cylinder with the driver door open, the SJB commands the driver door to unlock.

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DESCRIPTION AND OPERATION (Continued)

Power Door Trim Switch Inhibit

The power door trim switch inhibit feature disables the power door lock control switches if all the doors are locked and the perimeter alarm system (if equipped) becomes armed. The door lock control switches will be enabled if a valid unlock command is received from a RKE transmitter or when the key is turned to the RUN position.

Deactivating/Activating The Power Door Trim Switch Inhibit Feature

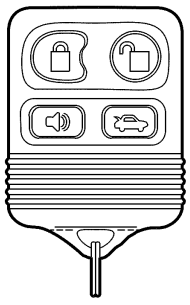
NOTE: Both of the doors must be closed during the inhibit programming procedure.

1. Turn the key to RUN.
2. Press the door lock control switch UNLOCK button 3 times.
3. Turn the key to OFF.
4. Press the door lock control switch UNLOCK button 3 times.
5. Turn the key to RUN.
6. Press the door lock control switch LOCK button 2 times. The horn chirps once if the inhibit feature was just deactivated or it chirps twice (1 short chirp and 1 long chirp) if the unlock inhibit feature was just activated.
7. Turn the key to OFF. The horn chirps to confirm the procedure is complete.

Remote Keyless Entry (RKE) System

The electronic door lock system has 3 main components:

- RKE transmitter
- SJB
- Tire pressure monitoring system (TPMS)/RKE antenna (external, but part of the SJB)



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The RKE transmitter initiates the following electronic system functions:

- Unlocks the driver door
- Unlocks both doors
- Locks both doors
- Releases the luggage compartment lid
- Locks both doors and flashes the turn signal lamps if all doors (hood and luggage compartment if equipped with alarm) are closed
- Activates/deactivates the panic alarm
- Commands the interior lamps on when unlocking and off when locking
- Sounds the horn once and flashes the turn signals twice when LOCK is pressed twice within 3 seconds, and the doors (hood and luggage compartment if equipped with alarm) are closed
- Sounds the horn twice when LOCK is pressed within 3 seconds if any door (hood and luggage compartment if equipped with alarm) is ajar
- Arms/disarms the alarm system (if equipped)

The RKE transmitter has a maximum operating range of 10 m (33 ft).

Remote Keyless Entry (RKE) Transmitter Lock/Unlock Control — Unlock

The RKE transmitter feature provides lock/unlock functions independently of key position, vehicle speed, or transmission position. The RKE transmitter feature provides a 2-step process for unlocking the doors. Upon receipt of the first request for unlocking the doors, the SJB unlocks the driver door only. If another unlock command is received within 3 seconds of the first, the SJB unlocks both the doors.

DESCRIPTION AND OPERATION (Continued)

Remote Keyless Entry (RKE) Transmitter Lock/Unlock Control — Lock

The RKE transmitter feature requests that both the doors be locked when the lock button on the RKE transmitter is pressed. On any press of the LOCK button with both the doors closed, the RKE transmitter feature commands one flash of the turn signal lamps. If any door (luggage compartment lid or hood, if equipped with perimeter alarm) is ajar, no flash occurs, indicating that both the doors were locked, but one or more closures are ajar. As soon as the last closure is closed, the turn signal lamps flash once. If 2 presses of the LOCK button are received within 3 seconds, the horn chirps once and the turn signal lamps flash twice to indicate that all the closures are closed and locked. If any door (luggage compartment lid or hood, if equipped with perimeter alarm) is ajar when the second lock command is received within 3 seconds of the first, the RKE transmitter feature commands the horn chirp twice without flashing the turn signal lamps to indicate that both the doors were locked, but one or more closures are ajar. When the key is in the RUN or START position, no turn signal lamp flashes or horn chirp confirmations occur.

Remote Keyless Entry (RKE) Transmitter Luggage Compartment Lid Release

The RKE transmitter feature releases the luggage compartment lid when the luggage compartment release button is pressed on the RKE transmitter. The feature will operate in any ignition key position, but does become disabled after the vehicle reaches a speed of 5 km/h (3 mph) or greater.

Panic Alarm

The panic alarm feature provides audible and visual alarms that are evident from the exterior of the vehicle. The panic alarm feature commands the turn signal lamps to flash and the horn to sound until deactivation. These outputs occur simultaneously. Activation of the panic alarm is accomplished by pressing the PANIC button on the RKE transmitter whenever the key is in the OFF position. The feature is disabled when the key is in any position other than OFF. Deactivation of an active panic alarm is accomplished by: 1) a second press of the RKE transmitter PANIC button, 2) switching the key out of the OFF position or, 3) a period of 2 minutes and 45 seconds has elapsed since the initial activation.

Perimeter Lighting Feature

The perimeter lighting feature illuminates the exterior of the vehicle in order to provide better visibility to the customer when entering the vehicle.

Vehicles equipped with perimeter lighting can have this feature activated or deactivated. Refer to Perimeter Lighting Feature Programming in this section for programming information.

The following items illuminate when the unlock button on the remote transmitter is pressed or the vehicle is unlocked, by using the driver door lock cylinder:

- Headlamps
- Parklamps

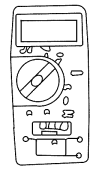
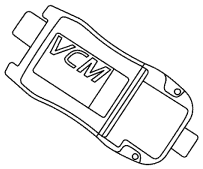
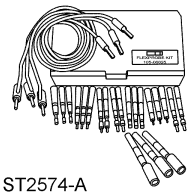
The lamps turn off:

- When the lock control on the remote transmitter is pressed
- If the ignition switch is turned to the RUN position
- After 25 seconds have elapsed since the perimeter lighting was activated

DIAGNOSIS AND TESTING

Locks, Latches and Entry Systems

Special Tool(s)

 ST1137-A	73III Automotive Meter 105-R0057 or equivalent
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool
 ST2574-A	Flex Probe Kit 105-R025C or equivalent

Material

Item	Specification
Multi-Purpose Grease XG-4 and/or XL-5	ESB-M1C93-B
Penetrating and Lock Lubricant (US); Penetrating Fluid (Canada) XL-1 (US); CXC-51-A (Canada)	—

Principles of Operation

NOTE: The Smart Junction Box (SJB) is also known as the Generic Electronic Module (GEM).

Power Locks

The power lock/unlock feature commands both of the vehicle doors to lock or unlock upon a command from the door lock control switch or Remote Keyless Entry (RKE) transmitter. Power locking and unlocking of the doors functions independently of the key position, vehicle speed, or transmission position. The SJB activates the power door lock relays to supply the correct power and grounds for the door lock actuators.

Remote Keyless Entry (RKE)

The SJB receives input from a programmed RKE transmitter, through the Tire Pressure Monitoring System (TPMS)/Remote Keyless Entry (RKE) antenna. The antenna is located externally on the SJB and is not serviceable. Based on the input from the RKE transmitter, the SJB:

- Unlocks the driver door
- Unlocks both doors
- Locks both doors
- Releases the luggage compartment lid
- Locks both doors and flashes the turn signal lamps if all doors (hood and luggage compartment lid if equipped with alarm) are closed
- Activates/deactivates the panic alarm
- Commands the interior lamps on when unlocking and off when locking
- Sounds the horn once and flashes the turn signals when LOCK is pressed twice within 3 seconds, and the doors (hood and luggage compartment lid if equipped with alarm) are closed
- Sounds the horn twice when LOCK is pressed within 3 seconds if any door (hood and luggage compartment lid if equipped with alarm) is ajar
- Arms/disarms the alarm system (if equipped)

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

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DIAGNOSIS AND TESTING (Continued)

Visual Inspection Chart

Mechanical	Electrical
• Latches	• Bussed Electrical Center (BEC) fuse(s): — 57 (20A) — 62 (20A) • Wiring, terminals or connectors • Remote Keyless Entry (RKE) transmitter • Door lock control switch(es) • Smart Junction Box (SJB)

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **NOTE:** Make sure to use the latest scan tool software release.

   If the cause is not visually evident, connect the scan tool to the Data Link Connector (DLC).
5. **NOTE:** The Vehicle Communication Module (VCM) LED prove-out confirms power and ground from the DLC are provided to the VCM.

   If the scan tool does not communicate with the VCM:
   - Check the VCM connection to the vehicle.
   - Check the scan tool connection to the VCM.
   - Refer to Section 418-00, No Power To The Scan Tool, to diagnose no communication with the scan tool.
6. If the scan tool does not communicate with the vehicle:
   - Verify the ignition key is in the ON position.
   - Verify the scan tool operation with a known good vehicle.
   - Refer to Section 418-00 to diagnose no response from the PCM.
7. Carry out the network test.
   - If the scan tool responds with no communication for one or more modules, refer to Section 418-00.
   - If the network test passes, retrieve and record the continuous memory DTCs.
8. Clear the continuous DTCs and carry out the self-test diagnostics for the SJB.
9. If the DTCs retrieved are related to the concern, go to DTC Charts. For all other DTCs, refer to the Diagnostic Trouble Code (DTC) Chart in Section 419-10.
10. If no DTCs related to the concern are retrieved, GO to Symptom Chart.

DTC Charts

Smart Junction Box (SJB) DTC Chart

DTC	Description	Action
B1300	Power Door Lock Circuit Failure	GO to Pinpoint Test F.
B1301	Power Door Lock Circuit Open	GO to Pinpoint Test A.
B1309	Power Door Lock Circuit Short to Ground	GO to Pinpoint Test E.
B1310	Power Door Unlock Circuit Failure	GO to Pinpoint Test F.
B1341	Power Door Unlock Circuit Short To Ground	GO to Pinpoint Test E.
B1551	Latch/Decklid Release Circuit Failure	GO to Pinpoint Test G.
B1982	Driver's Door Unlock Relay Circuit Failure	GO to Pinpoint Test F.
B2276	Less Than 2 Transmitters Programmed	PROGRAM the Remote Keyless Entry (RKE) transmitters. REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section.
B2425	Remote Keyless Entry Out of Synchronization	GO to Pinpoint Test H.
B2474	Passenger Door Lock Switch Ckt Short to Ground	GO to Pinpoint Test E.

DIAGNOSIS AND TESTING (Continued)

Smart Junction Box (SJB) DTC Chart (Continued)

DTC	Description	Action
B2475	Passenger Door Unlock Switch Circuit Short to Ground	GO to Pinpoint Test E.
All other DTCs	—	REFER to the Diagnostic Trouble Code (DTC) Chart in Section 419-10.

Symptom Chart

Electrical Symptom Chart

Condition	Possible Sources	Action
• No communication with the Smart Junction Box (SJB)	• Fuse(s) • Wiring, terminals or connectors • SJB	• REFER to Section 418-00.
• All door locks are inoperative	• Wiring, terminals or connectors • SJB	• GO to Pinpoint Test A.
• A single door lock is inoperative	• Wiring, terminals or connectors • Door lock actuator • SJB	• GO to Pinpoint Test B.
• The door locks operate only one way	• Wiring, terminals or connectors • Door lock control switch • SJB	• GO to Pinpoint Test C.
• All door locks are inoperative from one switch	• Wiring, terminals or connectors • Door lock control switch	• GO to Pinpoint Test D.
• The luggage compartment lid release is inoperative/does not operate correctly	• Fuse • Wiring, terminals or connectors • Remote Keyless Entry (RKE) transmitter • Luggage compartment lid release relay • Luggage compartment lid release solenoid • Vehicle speed signal • Bussed Electrical Center (BEC) • SJB	• GO to Pinpoint Test G.
• The Remote Keyless Entry (RKE) transmitter is inoperative	• RKE transmitter battery • RKE transmitter • RKE transmitter button pressed a substantial amount of times while outside the range of the vehicle • RKE transmitter programming • SJB	• GO to Pinpoint Test H.
• An individual button/feature is inoperative from the Remote Keyless Entry (RKE) transmitter	• All door locks • Horn system • Luggage compartment lid latch • Turn signals • RKE transmitter	• GO to Pinpoint Test I.

DIAGNOSIS AND TESTING (Continued)

Electrical Symptom Chart (Continued)

Condition	Possible Sources	Action
• The Remote Keyless Entry (RKE) transmitter has poor range performance	• Aftermarket systems • High power devices • RKE transmitter • RKE transmitter battery • Tire Pressure Monitoring System (TPMS)/RKE antenna • TV/radio transmission towers • SJB	• GO to Pinpoint Test J.
• The autolock does not operate correctly	• SJB	• GO to Pinpoint Test K.
• The smart unlock does not operate correctly	• SJB	• GO to Pinpoint Test L.
• The power door unlock inhibit feature is inoperative	• Unlock inhibit deactivated • SJB	• ACTIVATE the power door trim switch inhibit. CARRY OUT Unlock Inhibit Programming. REFER to Handles, Locks, Latches and Entry Systems in this section. If the concern is still present, INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.

Mechanical Symptom Chart

Condition	Possible Sources	Action
• Hard to open/close door from either door handle	• Door alignment • Door hinges • Striker adjustment • Door latch	• GO to Pinpoint Test M.
• A door is difficult/does not open from the exterior door handle	• Broken or binding linkage • Exterior door handle to latch rod adjustment • Exterior door handle • Door latch	• GO to Pinpoint Test N.
• A door is difficult/does not open from the interior door handle	• Broken or binding cable/linkage • Door latch	• GO to Pinpoint Test O.
• Exterior door release handle sticks	• Binding linkage • Broken handle return spring • Exterior door handle to latch rod adjustment • Door latch	• GO to Pinpoint Test P.
• Interior door release handle sticks	• Binding cable • Broken handle return spring • Door latch	• GO to Pinpoint Test Q.

DIAGNOSIS AND TESTING (Continued)

Mechanical Symptom Chart (Continued)

Condition	Possible Sources	Action
• Manual interior lock/unlock rod inoperative	• Bent or binding lock rod • Door latch	• Operate the door lock rod manually while observing the door lock rod for any binding or if the rod is bent. — If the rod is bent or damaged, REPAIR as necessary. TEST the system for normal operation. — If the rod is OK, INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.
• Squeak/rattle/chucking noise from door	• Door alignment • Striker adjustment • Door latch	• GO to Pinpoint Test R.
• Manual door lock cylinder inoperative	• Bent or binding lock rod and lever • Door lock cylinder • Door latch	• GO to Pinpoint Test S.
• Unable to remove the key from the ignition lock cylinder	• Wiring, terminals or connectors • Transmission selector lever • Binding steering column components • Ignition lock cylinder • Ignition switch	• GO to Pinpoint Test T.

Pinpoint Tests

Pinpoint Test A: All Door Locks are Inoperative

Refer to Wiring Diagrams Cell 110, Power Door Locks for schematic and connector information.

Normal Operation

The Bussed Electrical Center (BEC) fuse 62 (20A) provides voltage for the power lock/unlock system. Ground for the power lock/unlock system is provided by circuit 1205 (BK) to the Smart Junction Box (SJB). The SJB contains internal relays that are energized depending on input received.

When the SJB receives a door lock control switch lock command, the door lock relay is energized, supplying voltage to the door lock actuators through circuits 1328 (RD/OG) and 1383 (RD). The actuators are grounded through circuits 1329 (YE) and 1384 (LB). When the SJB receives an unlock request, the unlock relays are energized, and voltage and ground are reversed on the previously listed circuits.

- DTC B1301 (Power Door Lock Circuit Open) — a continuous or on-demand DTC that sets if the SJB detects an open on ground circuit 1205 (BK).

This pinpoint test is intended to diagnose the following:

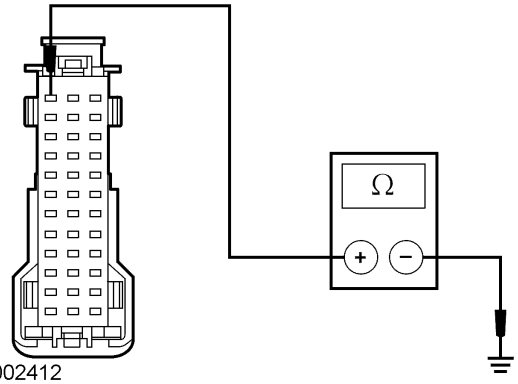
- Wiring, terminals or connectors
- SJB

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: ALL DOOR LOCKS ARE INOPERATIVE

NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: Failure to disconnect the battery when instructed will result in false resistance readings. Refer to Section 414-01.

Test Step		Result / Action to Take
A1	**RETRIEVE THE RECORDED DTCs FROM BOTH THE CONTINUOUS AND ON-DEMAND SJB SELF-TESTS**	
	• Check for recorded SJB DTCs from the continuous and on-demand self-tests. • **Are any DTCs recorded?**	**Yes** For DTC B1301, GO to **A3**. For DTCs B1300, B1310 and B1982, GO to Pinpoint Test F. For all other DTCs, REFER to DTC Charts in this section. **No** GO to **A2**.
A2	**VERIFY THE OPERATION OF THE LEFT AND RIGHT DOOR LOCK CONTROL SWITCHES**	
	• Press the lock and unlock button of both the left and the right door lock control switches while observing the door lock operation. • **Are the door locks inoperative from both switches?**	**Yes** GO to **A3**. **No** GO to Pinpoint Test D.
A3	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Disconnect: Negative Battery Cable. • Ignition OFF. • Disconnect: SJB C2280a. • Measure the resistance between the SJB C2280a-1, circuit 1205 (BK), harness side and ground.  N0002412 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A4**. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
A4	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test B: A Single Door Lock is Inoperative

Refer to Wiring Diagrams Cell 110, Power Door Locks for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

Normal Operation

The Bussed Electrical Center (BEC) fuse 62 (20A) provides voltage for the power lock/unlock system. Ground for the power lock/unlock system is provided by circuit 1205 (BK) to the Smart Junction Box (SJB). The SJB contains internal relays that are energized depending on input received.

When the SJB receives a door lock control switch lock command, the door lock relay is energized, supplying voltage to the door lock actuators through circuits 1328 (RD/OG) and 1383 (RD). The actuators are grounded through circuits 1329 (YE) and 1384 (LB). When the SJB receives an unlock request, the unlock relays are energized, supplying voltage and ground are reversed on the previously listed circuits.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Door lock actuator
- SJB

PINPOINT TEST B: A SINGLE DOOR LOCK IS INOPERATIVE

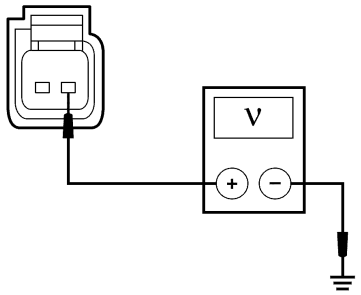
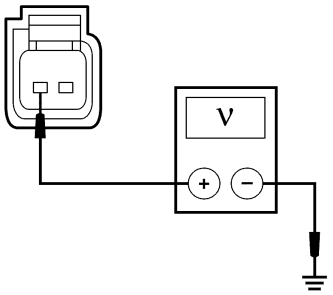
NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

Test Step		Result / Action to Take
B1	**RETRIEVE THE RECORDED DTCs FROM BOTH THE CONTINUOUS AND ON-DEMAND SJB SELF-TESTS**	
	• Check for recorded SJB DTCs from the continuous and on-demand self-tests. • **Are any DTCs recorded?**	**Yes** For DTCs B1300, B1310 and B1982, GO to Pinpoint Test F. For all other DTCs, REFER to DTC Charts in this section. **No** GO to **B2**.
B2	**CHECK THE DOOR LATCH FOR BINDING**	
	• Lock and unlock the inoperative door lock using the door lock rod. • **Does the door lock and unlock?**	**Yes** GO to **B4**. **No** GO to **B3**.
B3	**CHECK THE LOCK ROD FOR BINDING**	
	• Operate the door lock rod manually while observing the door lock rod for any binding or if the rod is bent. • **Is the door lock rod bent or binding?**	**Yes** REPAIR as necessary. TEST the system for normal operation. **No** INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.
B4	**CHECK CIRCUITS 1328 (RD/OG) AND 1383 (RD) FOR VOLTAGE**	
	• Ignition OFF. • Disconnect: Inoperative Door Lock Actuator.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: A SINGLE DOOR LOCK IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
B4	**CHECK CIRCUITS 1328 (RD/OG) AND 1383 (RD) FOR VOLTAGE (Continued)**	
	• **NOTE:** The SJB only supplies voltage to the actuator momentarily. It is important to monitor the meter while pressing the door lock control switch. While pressing the door lock control switch in the LOCK position, measure the voltage between the LH door lock actuator C525-1, circuit 1328 (RD/OG), harness side and ground; or between the RH door lock actuator C603-1, circuit 1383 (RD), harness side and ground.  N0072815 • **Is the voltage momentarily greater than 10 volts?**	**Yes** GO to **B5**. **No** GO to **B6**.
B5	**CHECK CIRCUITS 1329 (YE) AND 1384 (LB) FOR VOLTAGE**	
	• **NOTE:** The SJB only supplies voltage to the actuator momentarily. It is important to monitor the meter while pressing the door lock control switch. While pressing the door lock control switch in the UNLOCK position, measure the voltage between the LH door lock actuator C525-2, circuit 1329 (YE), harness side and ground; or between the RH door lock actuator C603-2, circuit 1384 (LB), harness side and ground.  N0072816 • **Is the voltage momentarily greater than 10 volts?**	**Yes** INSTALL a new door lock actuator. REFER to Door Lock Actuator in this section. TEST the system for normal operation. **No** GO to **B6**.
B6	**CHECK THE DOOR LOCK ACTUATOR CIRCUITS FOR AN OPEN**	
	• Disconnect: SJB C2280g (LH door inoperative). • Disconnect: SJB C2280h (RH door inoperative). • Measure the resistance between inoperative door lock actuator harness side and the SJB, harness side as follows:	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: A SINGLE DOOR LOCK IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>B6</td><td>CHECK THE DOOR LOCK ACTUATOR CIRCUITS FOR AN OPEN (Continued)</td><td rowspan="2">Yes
GO to B7.
No
REPAIR the circuit in question. TEST the system for normal operation.</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Door Lock Actuator Connector-Pin</th><th>SJB Connector-Pin</th><th>Circuit</th></tr>
<tr><td>LH C525-1</td><td>C2280g-3</td><td>1328 (RD/OG)</td></tr>
<tr><td>LH C525-2</td><td>C2280g-1</td><td>1329 (YE)</td></tr>
<tr><td>RH C603-1</td><td>C2280h-27</td><td>1383 (RD)</td></tr>
<tr><td>RH C603-2</td><td>C2280h-14</td><td>1384 (LB)</td></tr>
</table>
• Are the resistances less than 5 ohms?
</td></tr>
<tr><td>B7</td><td>CHECK FOR CORRECT SJB OPERATION</td><td rowspan="2">Yes
INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.
No
The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</td></tr>
<tr><td colspan="2">• Disconnect all the SJB connectors.
• Check for:
— corrosion
— damaged pins
— pushed-out pins
• Connect all the SJB connectors and make sure they seat correctly.
• Operate the system and verify the concern is still present.
• Is the concern still present?</td></tr>
</table>

Pinpoint Test C: The Door Locks Operate Only One Way

Refer to Wiring Diagrams Cell 110, Power Door Locks for schematic and connector information.

Normal Operation

The Smart Junction Box (SJB) sends voltage signals to the door lock control switches through circuits 1296 (OG/BK) and 1316 (WH/VT) for the lock requests, and through circuits 1297 (YE/RD) and 1317 (DB/LG) for the unlock requests. The door lock control switches receive ground through circuit 1205 (BK). When the lock or unlock switch is pressed, the voltage signal is routed to ground.

The SJB contains internal relays that are energized depending on input received. When the SJB receives a lock or unlock request from the door lock control switch, the SJB energizes the appropriate relay(s) to lock or unlock the doors.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Door lock control switch
- SJB

PINPOINT TEST C: THE DOOR LOCKS OPERATE ONLY ONE WAY

NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>C1</td><td>RETRIEVE THE RECORDED DTCs FROM THE SJB SELF-TEST</td><td rowspan="2">Yes
For DTC B1309, B1341, B2474, or B2475, GO to Pinpoint Test E.
For all other DTCs, REFER to DTC Charts in this section.
No
GO to C2.</td></tr>
<tr><td colspan="2">• Check for recorded SJB DTCs from the self-test.
• Are any DTCs recorded?</td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST C: THE DOOR LOCKS OPERATE ONLY ONE WAY (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>C2</td><td>CHECK THE DOOR LOCK CONTROL SWITCH
• Disconnect: Suspect Door Lock Control Switch.
• Carry out the driver or passenger door lock control switch component test. Refer to Wiring Diagrams Cell 149 for component testing.
• Is the door lock control switch OK?</td><td>Yes
GO to C3.
No
INSTALL a new door lock control switch. REFER to Door Lock Control Switch in this section. TEST the system for normal operation.</td></tr>
<tr><td>C3</td><td>CHECK THE DOOR LOCK CONTROL SWITCH CIRCUITS FOR AN OPEN
• Ignition OFF.
• Disconnect: SJB C2280e.
• Measure the resistance between the inoperative door lock control switch, harness side and the SJB, harness side as follows:
<table><tr><th>Door Control Switch Connector-Pin</th><th>SJB Connector-Pin</th><th>Circuit</th></tr><tr><td>LH C505-2</td><td>C2280e-1</td><td>1317 (DB/LG)</td></tr><tr><td>LH C505-4</td><td>C2280e-3</td><td>1316 (WH/VT)</td></tr><tr><td>RH C605-2</td><td>C2280e-5</td><td>1297 (YE/RD)</td></tr><tr><td>RH C605-4</td><td>C2280e-8</td><td>1296 (OG/BK)</td></tr></table>• Are the resistances less than 5 ohms?</td><td>Yes
GO to C4.
No
REPAIR the circuit in question. TEST the system for normal operation.</td></tr>
<tr><td>C4</td><td>CHECK FOR CORRECT SJB OPERATION
• Disconnect all the SJB connectors.
• Check for:
— corrosion
— damaged pins
— pushed-out pins
• Connect all the SJB connectors and make sure they seat correctly.
• Operate the system and verify the concern is still present.
• Is the concern still present?</td><td>Yes
INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.
No
The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</td></tr>
</table>

Pinpoint Test D: All Door Locks Are Inoperative From One Switch

Refer to Wiring Diagrams Cell 110, Power Door Locks for schematic and connector information.

Normal Operation

The Smart Junction Box (SJB) sends voltage signals to the door lock control switches through circuits 1296 (OG/BK) and 1316 (WH/VT) for the lock requests, and through circuits 1297 (YE/RD) and 1317 (DB/LG) for the unlock requests. The door lock control switches receive ground through circuit 1205 (BK). When the lock or unlock switch is pressed, the voltage signal is routed to ground.

The SJB contains internal relays that are energized depending on input received. When the SJB receives a lock or unlock request from the door lock control switch, the SJB energizes the appropriate relay(s) to lock or unlock the doors.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Door lock control switch

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: ALL DOOR LOCKS ARE INOPERATIVE FROM ONE SWITCH

NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

Test Step		Result / Action to Take
D1	**CHECK THE DOOR LOCK CONTROL SWITCH**	
	• Disconnect: Suspect Door Lock Control Switch. • Carry out the driver or passenger door lock control switch component test. Refer to Wiring Diagrams Cell 149 for component testing. • **Is the door lock control switch OK?**	**Yes** REPAIR circuit 1205 (BK) for an open. TEST the system for normal operation. **No** INSTALL a new door lock control switch. REFER to Door Lock Control Switch in this section. TEST the system for normal operation.

Pinpoint Test E: DTC B1309, B1341, B2474, Or B2475

Refer to Wiring Diagrams Cell 110, Power Door Locks for schematic and connector information.

Normal Operation

The Smart Junction Box (SJB) sends voltage signals to the door lock control switches through circuits 1296 (OG/BK) and 1316 (WH/VT) for the lock requests, and through circuits 1297 (YE/RD) and 1317 (DB/LG) for the unlock requests. The door lock control switches receive ground through circuit 1205 (BK). When the lock or unlock switch is pressed, the voltage signal is routed to ground.

DTC Description	Fault Trigger Conditions
• B1309 — Power Door Lock Circuit Short to Ground	An on-demand DTC that sets if the SJB detects a short to ground on circuit 1316 (WH/VT).
• B1341 — Power Door Unlock Circuit Short to Ground	An on-demand DTC that sets if the SJB detects a short to ground on circuit 1317 (DB/LG).
• B2474 — Passenger Door Lock Switch Circuit Short to Ground	An on-demand DTC that sets if the SJB detects a short to ground on circuit 1296 (OG/BK).
• B2475 — Passenger Door Unlock Switch Circuit Short to Ground	An on-demand DTC that sets if the SJB detects a short to ground on circuit 1297 (YE/RD).

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Door lock control switch(es)
- SJB

PINPOINT TEST E: DTC B1309, B1341, B2474, OR B2475

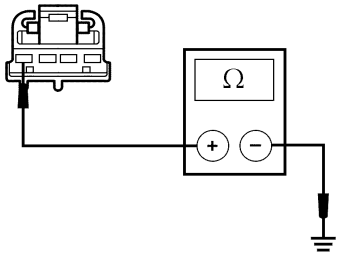
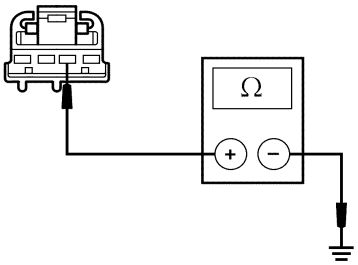
NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

Test Step		Result / Action to Take
E1	**RETRIEVE THE RECORDED DTCs FROM THE SJB SELF-TEST**	
	• Check for recorded SJB DTCs from the self-test. • **Are DTCs B1309, B1341, B2474 or B2475 recorded?**	**Yes** GO to **E2**. **No** GO to Symptom Chart.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST E: DTC B1309, B1341, B2474, OR B2475 (Continued)

Test Step		Result / Action to Take
E2	**CHECK THE DOOR LOCK CONTROL SWITCH**	
	• Disconnect: LH Door Lock Control Switch C505 (For DTCs B1309 or B1341). • Disconnect: RH Door Lock Control Switch C605 (For DTCs B2474 or B2475). • Repeat the SJB self-test. • **Are DTCs B1309, B1341, B2474, or B2475 retrieved again?**	**Yes** GO to **E3**. **No** INSTALL a new door lock control switch. REFER to Door Lock Control Switch in this section. TEST the system for normal operation.
E3	**CHECK THE DOOR LOCK CONTROL SWITCH CIRCUITS FOR A SHORT TO GROUND**	
	• Ignition OFF. • Disconnect: SJB C2280e. • Measure the resistance between the LH door lock control switch C505-4 (DTC B1309), circuit 1316 (WH/VT) harness side and ground; or between the RH door lock control switch C605-4 (DTC B2474), circuit 1296 (OG/BK), harness side and ground.  N0058783 • Measure the resistance between the LH door lock control switch C505-2 (DTC B1341), circuit 1317 (DB/LG) harness side and ground; or between the RH door lock control switch C605-2 (DTC B2475), circuit 1297 (YE/RD), harness side and ground.  N0072817 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **E4**. **No** REPAIR the circuit in question. CLEAR the DTCs. REPEAT the self-test.
E4	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test F: DTC B1300, B1310, Or B1982

Refer to Wiring Diagrams Cell 110, Power Door Locks for schematic and connector information.

Normal Operation

The Smart Junction Box (SJB) contains the all lock, passenger unlock, and the driver unlock relays. They are all non-serviceable relays. All 3 relays receive voltage through the Bussed Electrical Center (BEC) fuse 62 (20A) and circuit 1679 (WH/YE). Ground for the relays is provided through circuit 1205 (BK). Based on input from the door lock control switches or Remote Keyless Entry (RKE) transmitter, the SJB grounds the coil side of the relays, which in turn energizes the relay, and sends voltage to the appropriate output.

If the BEC fuse 62 (20A) has failed or is removed, all three DTCs will be present.

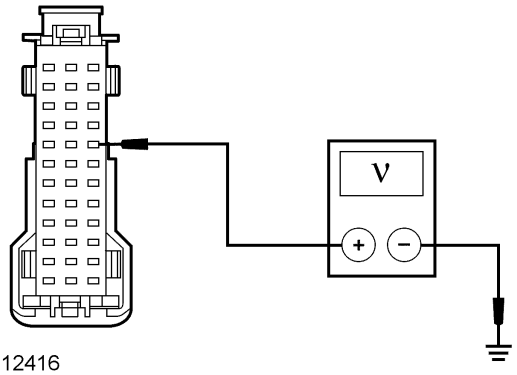
- DTC B1300 (Power Door Lock Circuit Failure) — a continuous and on-demand DTC that sets when the SJB detects no voltage output from the door lock relay, when the relay is energized.
- DTC B1310 (Power Door Unlock Circuit Failure) — a continuous and on-demand DTC that sets when the SJB detects no voltage output from the passenger door unlock relay, when the relay is energized.
- DTC B1982 (Driver's Door Unlock Relay Circuit Failure) — a continuous and on-demand DTC that sets when the SJB detects no voltage output from the driver door unlock relay, when the relay is energized.

This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- Lock actuators
- SJB

PINPOINT TEST F: DTC B1300, B1310, OR B1982

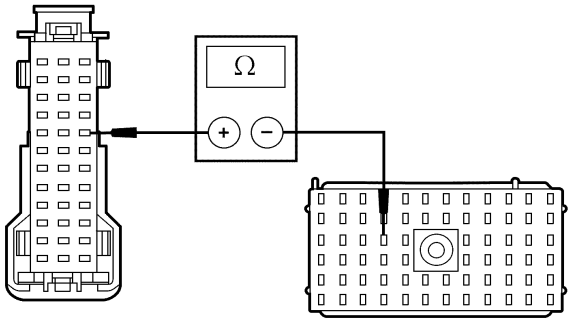
NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

Test Step		Result / Action to Take
F1	**RETRIEVE THE RECORDED SJB DTCs FROM THE SELF-TEST**	
	• Check for recorded SJB DTCs from the self-test. • **Are all three DTCs B1300, B1310, and B1982 present?**	**Yes** GO to F2. **No** GO to F5.
F2	**CHECK CIRCUIT 1679 (WH/YE) FOR VOLTAGE**	
	• Ignition OFF. • Disconnect: SJB C2280h. • Measure the voltage between the SJB C2280h-29, circuit 1679 (WH/YE), harness side and ground.  N0012416 • **Is the voltage greater than 10 volts?**	**Yes** GO to F5. **No** VERIFY the BEC fuse 62 (20A) is OK. If OK, GO to F3. If not OK, GO to F4.
F3	**CHECK CIRCUIT 1679 (WH/YE) FOR AN OPEN**	
	• Disconnect: BEC C1035a.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: DTC B1300, B1310, OR B1982 (Continued)

Test Step		Result / Action to Take
F3	**CHECK CIRCUIT 1679 (WH/YE) FOR AN OPEN (Continued)**	
	• Measure the resistance between the SJB C2280h-29, circuit 1679 (WH/YE) harness side, and the BEC C1035a-D9, circuit 1679 (WH/YE) harness side.  N0072818 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new BEC. CLEAR the DTCs. REPEAT the self-test. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
F4	**CHECK CIRCUITS 1328 (RD/OG) AND 1383 (RD) FOR A SHORT TO GROUND**	
	NOTE: If the BEC fuse 62 (20A) fails immediately, repair circuit 1679 (WH/YE) for a short to ground. • Install a new BEC fuse 62 (20A). • Connect: SJB C2280h. • Operate the door lock actuators by pressing LOCK on the door lock control switch. • **Is the BEC fuse 62 (20A) OK?**	**Yes** REPAIR circuit 1329 (YE) or circuit 1384 (LB) for a short to ground. CLEAR the DTCs. REPEAT the self-test. **No** REPAIR circuit 1328 (RD/OG) or circuit 1383 (RD) for a short to ground. CLEAR the DTCs. REPEAT the self-test.
F5	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test G: The Luggage Compartment Lid Release is Inoperative/Does Not Operate Correctly

Refer to Wiring Diagrams Cell 113, Luggage Compartment for schematic and connector information.

Normal Operation

When the Smart Junction Box (SJB) receives an open command from the Remote Keyless Entry (RKE) transmitter, the SJB grounds the luggage compartment lid release relay control circuit 26 (WH/VT). The luggage compartment lid release relay is located in the Bussed Electrical Center (BEC) and receives voltage from the BEC fuse 57 (20A). When the control circuit is grounded, the relay closes and supplies voltage to circuit 1092 (PK/OG) which energizes the luggage compartment lid release solenoid, releasing the luggage compartment lid. The luggage compartment lid release solenoid is grounded through circuit 1205 (BK).

DIAGNOSIS AND TESTING (Continued)

The SJB will not release the luggage compartment lid if the vehicle is traveling faster than 5 km/h (3 mph).

NOTE: The SJB releases the luggage compartment lid regardless of vehicle speed when a short to ground is detected on the luggage compartment lid disarm switch circuit 1350 (WH/PK).

- DTC B1551 (Latch/Decklid Release Circuit Failure) — a continuous or on-demand DTC that sets if the SJB detects an open or short to ground on the trunk release output circuit 26 (WH/VT).

This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- RKE transmitter
- Luggage compartment lid release relay
- Luggage compartment lid release solenoid (part of the luggage compartment lid latch)
- Vehicle speed signal
- BEC
- SJB

PINPOINT TEST G: THE LUGGAGE COMPARTMENT LID RELEASE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

NOTICE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

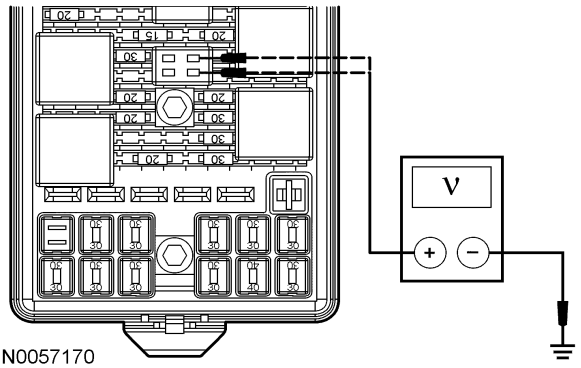
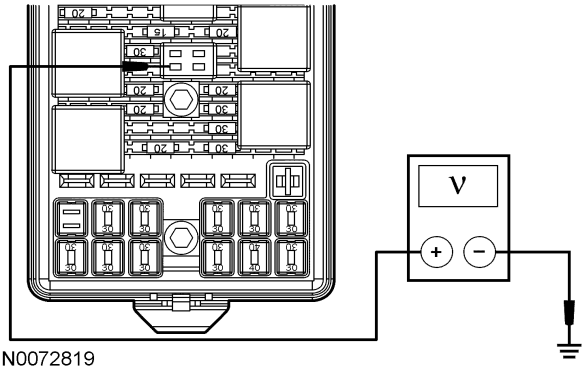
NOTE: Failure to disconnect the battery when instructed will result in false resistance readings. Refer to Section 414-01.

Test Step		Result / Action to Take
G1	**CHECK FOR COMPLETE FUNCTIONALITY OF THE RKE TRANSMITTER(S)**	
	• Check the RKE transmitter buttons LOCK, UNLOCK, and PANIC for correct operation. • **Do the RKE transmitter LOCK, UNLOCK, and PANIC buttons operate correctly?**	**Yes** GO to G2. **No** GO to Pinpoint Test H.
G2	**CHECK THE VEHICLE SPEED SIGNAL IN THE SJB**	
	• Enter the following diagnostic mode on the scan tool: SJB DataLogger. • Select the SJB PID (VSS_GEM) and monitor while the vehicle is stationary. • **Does the PID indicate any vehicle speed?**	**Yes** REFER to Section 413-01. **No** GO to G3.
G3	**CARRY OUT THE SJB TRUNK RELEASE ACTIVE COMMAND**	
	• Ignition ON. • Enter the following diagnostic mode on the scan tool: SJB DataLogger. • Select the SJB PID (TRUNK_REL) and command the luggage compartment lid release relay ON. • **Does the luggage compartment lid release operate?**	**Yes** REPLACE the inoperative RKE transmitter. PROGRAM all RKE transmitters. REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section. INFORM the customer that any RKE transmitters not present need to be programmed. TEST the system for normal operation. **No** GO to G4.
G4	**CHECK THE LUGGAGE COMPARTMENT LID RELEASE RELAY**	
	• Install a known good relay in the luggage compartment lid release relay location. • Enter the following diagnostic mode on the scan tool: SJB DataLogger. • Select the SJB PID (TRUNK_REL) and command the luggage compartment lid release relay ON. • **Does the luggage compartment lid release operate?**	**Yes** INSTALL a new luggage compartment lid release relay. TEST the system for normal operation. **No** GO to G5.
G5	**CHECK THE LUGGAGE COMPARTMENT LID RELEASE RELAY INPUT CIRCUITS FOR VOLTAGE**	
	• Disconnect: Luggage Compartment Lid Release Relay. • Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

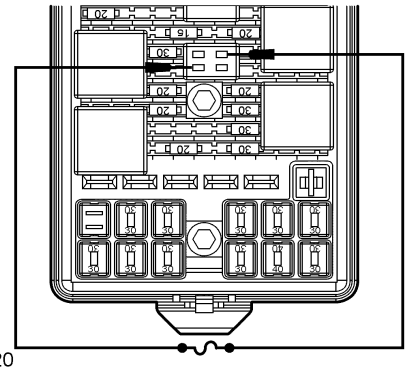
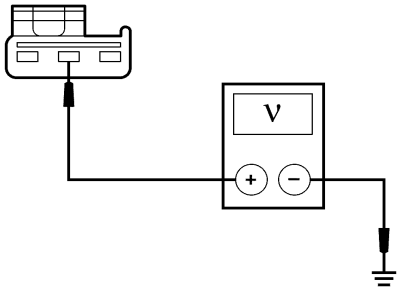
PINPOINT TEST G: THE LUGGAGE COMPARTMENT LID RELEASE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
G5	**CHECK THE LUGGAGE COMPARTMENT LID RELEASE RELAY INPUT CIRCUITS FOR VOLTAGE (Continued)**	
	• Measure the voltage between the luggage compartment lid release relay pin 86, BEC face side and ground, and between the luggage compartment lid release relay pin 87, BEC face side and ground.  N0057170 • **Are the voltages greater than 10 volts?**	**Yes** GO to **G6**. **No** VERIFY the BEC fuse 57 (20A) is OK. If OK, INSTALL a new BEC. If not OK, REFER to the Wiring Diagram manual to identify the possible causes of the circuit short. TEST the system for normal operation.
G6	**CHECK CIRCUIT 1092 (PK/OG) FOR A SHORT TO VOLTAGE**	
	• Measure the voltage between the luggage compartment lid release relay pin 30, circuit 1092 (PK/OG), BEC face side and ground.  N0072819 • **Is the voltage greater than 10 volts?**	**Yes** REPAIR the circuit. TEST the system for normal operation. **No** GO to **G7**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

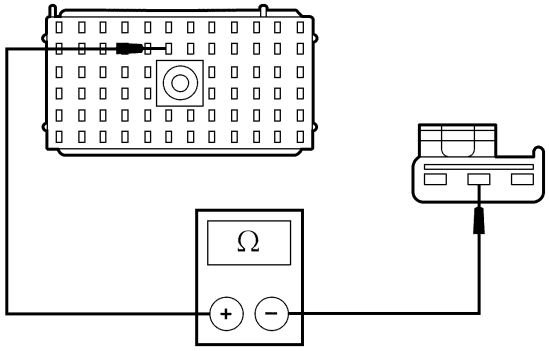
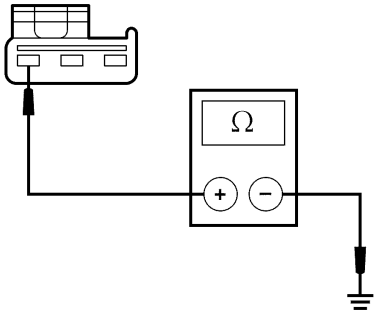
PINPOINT TEST G: THE LUGGAGE COMPARTMENT LID RELEASE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
G7	**BYPASS THE LUGGAGE COMPARTMENT LID RELEASE RELAY**	
	• Connect a fused jumper wire between the luggage compartment lid release relay pin 87, BEC face side and the luggage compartment lid release relay pin 30, circuit 1092 (PK/OG), BEC face side.  N0072820 • **Does the luggage compartment lid release?**	**Yes** REMOVE the jumper wire. GO to **G11**. **No** LEAVE the jumper wire connected. GO to **G8**.
G8	**CHECK CIRCUIT 1092 (PK/OG) FOR VOLTAGE**	
	• Disconnect: Luggage Compartment Lid Release Solenoid C430. • Measure the voltage between the luggage compartment lid release solenoid C430-2, circuit 1092 (PK/OG), harness side and ground.  N0057169 • **Is the voltage greater than 10 volts?**	**Yes** REMOVE the jumper wire. GO to **G10**. **No** REMOVE the jumper wire. GO to **G9**.
G9	**CHECK CIRCUIT 1092 (PK/OG) FOR AN OPEN**	
	• Disconnect: BEC C1035a.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

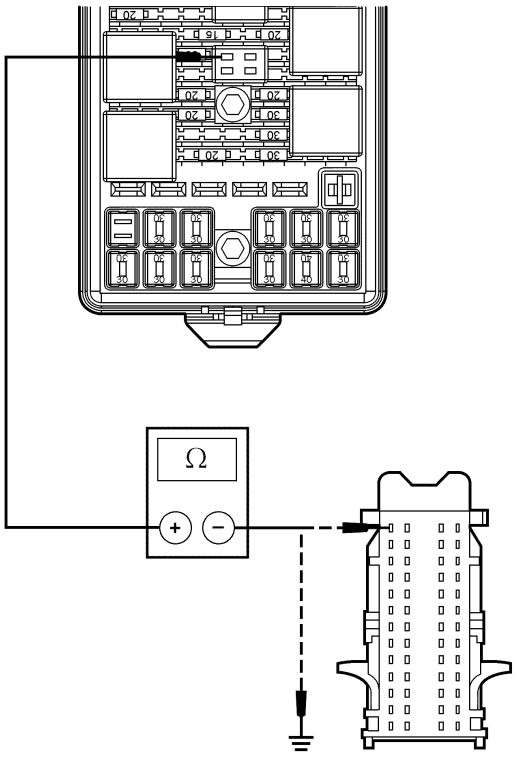
PINPOINT TEST G: THE LUGGAGE COMPARTMENT LID RELEASE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
G9	**CHECK CIRCUIT 1092 (PK/OG) FOR AN OPEN (Continued)**	
	• Measure the resistance between the BEC C1035a-E7, circuit 1092 (PK/OG), harness side and the luggage compartment lid release solenoid C430-2, circuit 1092 (PK/OG), harness side.  N0002419 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new BEC. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
G10	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Disconnect: Negative Battery Cable. • Measure the resistance between the luggage compartment lid release solenoid C430-3, circuit 1205 (BK), harness side and ground.  N0002418 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new luggage compartment lid latch. REFER to Luggage Compartment Lid Latch in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
G11	**CHECK THE BEC AND CIRCUIT 26 (WH/VT) FOR AN OPEN OR SHORT TO GROUND**	
	• Disconnect: SJB C2280c.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

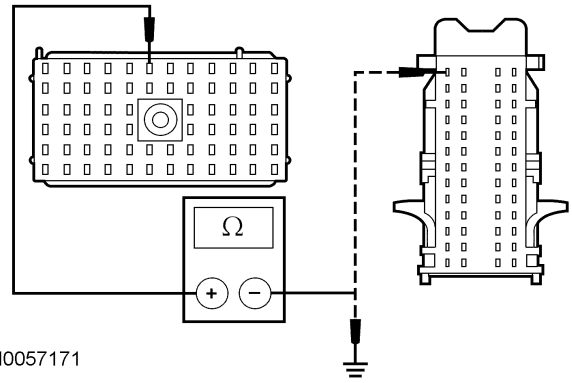
PINPOINT TEST G: THE LUGGAGE COMPARTMENT LID RELEASE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
G11	**CHECK THE BEC AND CIRCUIT 26 (WH/VT) FOR AN OPEN OR SHORT TO GROUND (Continued)**	
	• Measure the resistance between the luggage compartment lid release relay pin 85, circuit 26 (WH/VT), BEC face side and the SJB C2280c-13, circuit 26 (WH/VT), harness side; and between the luggage compartment lid release relay pin 85, circuit 26 (WH/VT), BEC face side and ground.  N0075643 • **Is the resistance less than 5 ohms between the relay and the SJB, and greater than 10,000 ohms between the relay and ground?**	**Yes** GO to **G13**. **No** GO to **G12**.
G12	**CHECK CIRCUIT 26 (WH/VT) FOR AN OPEN OR SHORT TO GROUND**	
	• Disconnect: BEC C1035a.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: THE LUGGAGE COMPARTMENT LID RELEASE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
G12	**CHECK CIRCUIT 26 (WH/VT) FOR AN OPEN OR SHORT TO GROUND (Continued)**	
	• Measure the resistance between the BEC C1035a-F7, circuit 26 (WH/VT), harness side and the SJB C2280c-13, circuit 26 (WH/VT), harness side; and between the BEC C1035a-F7, circuit 26 (WH/VT), harness side and ground.  N0057171 • **Is the resistance less than 5 ohms between the BEC and the SJB, and greater than 10,000 ohms between the BEC and ground?**	**Yes** INSTALL a new BEC. CLEAR the DTCs. REPEAT the self-test. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
G13	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test H: The Remote Keyless Entry (RKE) Transmitter Is Inoperative

Normal Operation

Remote locking and unlocking of the doors, activating the panic alarm, and releasing the luggage compartment lid latch is accomplished by the smart junction box (SJB) receiving a command message from the RKE transmitter through the Tire Pressure Monitoring System (TPMS)/Remote Keyless Entry (RKE) antenna. The SJB processes the command and provides the appropriate output. The RKE transmitters and SJB also utilize a rolling code to prevent the code from being ‘‘captured’’ by a code grabber. The system advances the counter in the RKE transmitter and SJB every time an RKE transmitter button is pressed.

The TPMS/RKE antenna is located externally on the SJB.

- DTC B2425 (Remote Keyless Entry Out of Synchronization) — a continuous DTC that sets when the SJB detects the rolling counter received from an RKE transmitter is 1,024 times or greater than the rolling counter stored in the module.

This pinpoint test is intended to diagnose the following:

- RKE transmitter battery
- RKE transmitter programming
- RKE transmitter
- RKE transmitter button pressed a substantial amount of times while outside the range of the vehicle
- SJB

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: THE Remote Keyless Entry (RKE) TRANSMITTER IS INOPERATIVE

NOTE: All RKE transmitters must be present to begin diagnosis of the RKE system.

NOTE: Aftermarket or dealer-installed systems may adversely affect the RKE system operation. These systems should be disconnected before diagnosing any RKE concerns.

Test Step		Result / Action to Take
H1	**CHECK FOR THE CORRECT RKE TRANSMITTERS**	
	NOTE: Make sure the RKE transmitters are those provided with the OEM system and not from an aftermarket or a dealer-installed system that may have been installed on the vehicle. • Check that the correct RKE transmitters are used with the vehicle. • **Are all the correct RKE transmitters present?**	**Yes** GO to **H2**. **No** The system cannot be tested without the correct RKE transmitters. INFORM the customer that all the correct RKE transmitters must to be present to proceed with diagnosis of the system.
H2	**CHECK IF THE RKE TRANSMITTER IS OUT OF SYNCHRONIZATION WITH THE SJB**	
	• Check the recorded results from the SJB self-test. • **Is continuous DTC B2425 present?**	**Yes** GO to **H3**. **No** GO to **H7**.
H3	**RESYNCHRONIZE THE INOPERATIVE RKE TRANSMITTER**	
	• Ignition OFF. • Press any button on the inoperative RKE transmitter 4 times consecutively within 30 seconds. • **Does the RKE transmitter operate correctly now?**	**Yes** The transmitter is now synchronized. CLEAR the DTCs. REPEAT the self-test. **No** GO to **H4**.
H4	**CHECK FOR A SECOND RKE TRANSMITTER**	
	• Check for another RKE transmitter that operates with the vehicle. • **Is there another RKE transmitter that operates with the vehicle?**	**Yes** GO to **H5**. **No** GO to **H6**.
H5	**RESYNCHRONIZE THE INOPERATIVE RKE TRANSMITTER USING THE SECOND RKE TRANSMITTER**	
	• Press any button on the operational RKE transmitter. • Within 30 seconds, press a button on the inoperative RKE transmitter. • Check the inoperative RKE transmitter for correct operation. • **Does the inoperative RKE transmitter operate now?**	**Yes** The transmitter is now synchronized. CLEAR the DTCs. REPEAT the self-test. **No** GO to **H6**.
H6	**PROGRAM THE INOPERATIVE RKE TRANSMITTER OR ALL THE RKE TRANSMITTERS**	
	• Program the inoperative RKE transmitter individually using a scan tool or program all RKE transmitters using the manual key cycle method. Refer to Remote Keyless Entry (RKE) Transmitter Programming in this section. • **Does the inoperative RKE transmitter(s) operate now?**	**Yes** The transmitter(s) is now synchronized. INFORM the customer that any RKE transmitters not present need to be programmed. CLEAR the DTCs. REPEAT the self-test. **No** GO to **H7**.
H7	**MAKE SURE THE RKE TRANSMITTER SIGNAL IS BEING RECEIVED**	
	• Enter the following diagnostic mode on the scan tool: Remote Keyless Entry. • **NOTE:** The remote keyless entry test is accessed through the scan tool by selecting Toolbox, Body, Security. Monitor the RKE Transmitter Identification Code (TIC) through the scan tool menus. • Verify the RKE transmitter signal is being received. Press a button on the RKE transmitter while observing the scan tool. • **Does the TIC show up on the scan tool screen when a button is pressed?**	**Yes** GO to **H8**. **No** GO to **H9**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: THE Remote Keyless Entry (RKE) TRANSMITTER IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
H8	**DETERMINE IF THE RKE TRANSMITTERS ARE PROGRAMMED**	
	• Enter the following diagnostic mode on the scan tool: Remote Keyless Entry. • Monitor the RKE transmitter TIC/DATA through the scan tool menus. • Verify the RKE transmitters are programmed to the vehicle. • **Does the TIC displayed under RKE transmitter match any of the TIC stored in memory?**	**Yes** GO to **H10**. **No** PROGRAM all the RKE transmitters. REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section. INFORM the customer that any RKE transmitters not present need to be programmed. TEST the system for normal operation.
H9	**CHECK THE RKE TRANSMITTER BATTERY**	
	• Using a thin coin, open the RKE transmitter. • Do not clean off any grease from the battery terminal on the back surface of the circuit board. • Verify the correct battery is being used (CR2032). • Remove the RKE transmitter battery and measure the voltage. • **Is the voltage greater than 2.5 volts?**	**Yes** GO to **H10**. **No** INSTALL a new battery. Do not program the RKE transmitters (damaged or dead batteries do not erase TICs from memory). TEST the system for normal operation.
H10	**CHECK FOR NORMAL OPERATION WITH A KNOWN GOOD RKE TRANSMITTER**	
	• Enter the following diagnostic mode on the scan tool: Remote Keyless Entry. • Monitor the RKE transmitter TIC/DATA through the scan tool menus. • Using the customer's second RKE transmitter or a known good RKE transmitter that is correct for the vehicle (and programmed to the vehicle), verify the RKE transmitter signal is being received. • **Does the TIC show up on the scan tool when a button is pressed on the RKE transmitter?**	**Yes** REPLACE the inoperative RKE transmitter. PROGRAM all the RKE transmitter(s). REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section. INFORM the customer that any RKE transmitters not present need to be programmed. CLEAR the DTCs. REPEAT the self-test. **No** GO to **H11**.
H11	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test I: An Individual Button/Feature Is Inoperative From The Remote Keyless Entry (RKE) Transmitter

Normal Operation

Remote locking and unlocking of the doors, activating the panic alarm, and releasing the luggage compartment latch is accomplished by the Smart Junction Box (SJB) receiving a command message from the remote keyless entry (RKE) transmitter through the Tire Pressure Monitoring System (TPMS)/Remote Keyless Entry (RKE) external antenna. The SJB processes the command and provides the appropriate output.

The SJB will disable the PANIC feature if the ignition key is in any position other than OFF or LOCK.

The SJB will disable the luggage compartment lid release if the vehicle is moving faster than 5 km/h (3 mph) or faster.

This pinpoint test is intended to diagnose the following:

- All door locks
- Horn system
- Luggage compartment lid latch
- Turn signals
- RKE transmitter

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: AN INDIVIDUAL BUTTON/FEATURE IS INOPERATIVE FROM THE Remote Keyless Entry (RKE) TRANSMITTER

Test Step		Result / Action to Take
I1	**VERIFY THE DOOR LOCK OPERATION**	
	• Press the lock and unlock button from the driver door lock control switch while observing the door lock operation. • **Do the door locks operate correctly?**	**Yes** GO to I2. **No** GO to Symptom Chart.
I2	**VERIFY THE HAZARD LAMP OPERATION**	
	• Place the hazard switch in the ON position. • **Do the hazard lamps operate correctly?**	**Yes** GO to I3. **No** REFER to Section 417-01.
I3	**VERIFY THE HORN OPERATION**	
	• Enter the following diagnostic mode on the scan tool: SJB DataLogger. • Select the SJB PID (HORN) and active command the horn on. • **Does the horn sound when commanded on?**	**Yes** GO to I4. **No** REFER to Section 413-06.
I4	**VERIFY THE LUGGAGE COMPARTMENT LID RELEASE OPERATION**	
	• Enter the following diagnostic mode on the scan tool: SJB DataLogger. • Select the SJB PID (TRUNK_REL) and active command the luggage compartment lid latch to release. • **Does the luggage compartment lid latch release?**	**Yes** REPLACE the inoperative RKE transmitter. PROGRAM all of the RKE transmitter(s). REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section. INFORM the customer that any RKE transmitters not present need to be programmed. TEST the system for normal operation. **No** GO to Pinpoint Test G.

Pinpoint Test J: The Remote Keyless Entry (RKE) Transmitter Has Poor Range Performance

Normal Operation

Remote locking and unlocking of the doors, activating the panic alarm, and releasing the luggage compartment lid latch is accomplished by the smart junction box (SJB) receiving a command message from the remote keyless entry (RKE) transmitter through the Tire Pressure Monitoring System (TPMS)/Remote Keyless Entry (RKE) antenna. The SJB processes the command and provides the appropriate output. The RKE transmitter has a normal operating range of 10 m (33 ft).

The TPMS/RKE antenna is located externally on the SJB.

This pinpoint test is intended to diagnose the following:

- Aftermarket systems
- High power devices
- RKE transmitter
- RKE transmitter battery
- TPMS/RKE antenna
- TV/radio transmission towers
- SJB

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: THE Remote Keyless Entry (RKE) TRANSMITTER HAS POOR RANGE PERFORMANCE

NOTE: All RKE transmitters must be present to begin diagnosis of the RKE system.

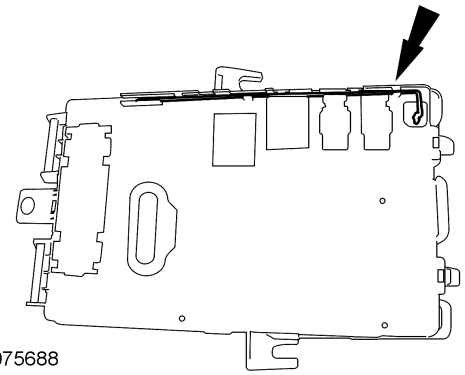
NOTE: Aftermarket or dealer-installed systems may adversely affect the RKE system operation. These systems should be disconnected before diagnosing any RKE concerns.

Test Step		Result / Action to Take
J1	**CHECK FOR THE CORRECT RKE TRANSMITTERS**	**Yes** GO to J2. **No** The system cannot be tested without the correct RKE transmitters. INFORM the customer that all the correct RKE transmitters must be present to proceed with diagnosis of the system.
	• **NOTE:** Make sure the RKE transmitters are those provided with the original equipment manufacturer (OEM) system and not from an aftermarket or a dealer installed system that may have been installed on the vehicle. Check that the correct RKE transmitters are used with the vehicle. • **Are all the correct RKE transmitters present?**	
J2	**CHECK ALL RKE TRANSMITTERS FOR POOR RANGE PERFORMANCE**	**Yes** GO to J4. **No** GO to J3.
	• **NOTE:** The 3 m (10 ft) measurement of range is not the standard but is a guideline that clearly indicates a vehicle is experiencing poor range performance. Check all RKE transmitters for poor range performance (less than 3 m [10 ft]). • **Do all RKE transmitters experience poor range?**	
J3	**CHECK THE RKE TRANSMITTER BATTERY**	**Yes** REPLACE the inoperative RKE transmitter and PROGRAM all RKE transmitters. REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section. INFORM the customer that any RKE transmitters not present need to be programmed. TEST the system for normal operation. **No** INSTALL a new battery (make sure the battery is seated correctly). DO NOT reprogram the RKE transmitters (weak or dead batteries do not erase TICs from memory). TEST the system for normal operation.
	• Using a thin coin, open the RKE transmitter. • Do not clean off any grease from the battery terminals on the back surface of the circuit board. • Verify the correct battery is used (CR2032). • Remove the RKE transmitter battery and measure the voltage. • **Is the voltage greater than 2.5 volts?**	
J4	**CHECK THE LOCATION OF THE VEHICLE AND THE APPROACH ANGLES AROUND THE VEHICLE**	**Yes** GO to J5. **No** The system is operating correctly at this time. TEST the system for normal operation.
	• Make sure the poor performance is consistent in nature and is not from one approaching angle. • The RKE transmitter range performance may be degraded in certain locations. For example, if the vehicle is within 0.8 km (0.5 mile) of high power devices or radio/TV towers, the operating distance of the RKE transmitters may be reduced. • **Is the poor range performance consistent around the vehicle?**	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: THE Remote Keyless Entry (RKE) TRANSMITTER HAS POOR RANGE PERFORMANCE (Continued)

Test Step		Result / Action to Take
J5	**CHECK THE TPMS/RKE ANTENNA**	
	• Verify the TPMS/RKE antenna is connected and not damaged.  N0075688 • **Is the antenna OK?**	**Yes** GO to J6. **No** If the antenna is disconnected, CONNECT the antenna correctly. TEST the system for normal operation. If the antenna is damaged, INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.
J6	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test K: The Autolock Does Not Operate Correctly

NOTE: The autolock feature is not available on manual transmission equipped vehicles.

Normal Operation

The autolocking function causes the vehicle to automatically lock all the doors when the following conditions are all concurrently met during the current key cycle:

- All doors are closed
- Autolocking function is active
- Key in ON position
- Brake pedal is applied and vehicle speed is less than 8 km/h (5 mph)
- Vehicle speed exceeds 8 km/h (5 mph)

Relock occurs after a door is opened, the brake pedal is applied while the vehicle speed is less than 8 km/h (5 mph), all the doors are closed again, and the vehicle speed increases to 8 km/h (5 mph) or greater.

This pinpoint test is intended to diagnose the following:

- Smart Junction Box (SJB)

PINPOINT TEST K: THE AUTOLOCK DOES NOT OPERATE CORRECTLY

Test Step		Result / Action to Take
K1	**VERIFY THE AUTOLOCK FEATURE IS ENABLED**	
	• Verify the autolock feature is enabled. • **Is the autolock feature enabled?**	**Yes** GO to K2. **No** PROGRAM the autolock feature. REFER to Autolock and Auto-Unlock Programming in this section.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST K: THE AUTOLOCK DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
K2	**CHECK COURTESY LAMPS**	
	• Open the driver door. • **Do the courtesy lamps illuminate?**	**Yes** GO to K3. **No** REFER to Section 417-02.
K3	**CHECK THE SJB VEHICLE SPEED, IGNITION SWITCH STATUS AND Brake Pedal Position (BPP) PIDs**	
	• Ignition ON. • Enter the following diagnostic mode on the scan tool: SJB DataLogger. • Monitor the SJB vehicle speed PID, ignition switch status PID and brake ON/OFF PID. • **Are the correct PID values received?**	**Yes** GO to K4. **No** REFER to Section 413-01 to continue diagnosis of the vehicle speed. REFER to Section 211-05 to continue diagnosis of the ignition switch status. REFER to Section 417-01 to continue diagnosis of the stoplamp switch.
K4	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test L: The Smart Unlock Does Not Operate Correctly

NOTE: It is possible to lock the vehicle with the keys in the ignition lock cylinder if the doors are locked with the Remote Keyless Entry (RKE) transmitter, manually locked with the lock button on the door, or by locking the driver door with a key.

Normal Operation

The smart unlock feature unlocks the driver door if the key is in the ignition lock cylinder and the driver door is open when the vehicle is locked with the door lock control switch. The smart unlock feature requests the driver door be unlocked one second after these conditions occur. The smart unlock feature unlocks the driver door only if the Transmitter Identification Code (TIC) programming modes are not active.

This pinpoint test is intended to diagnose the following:

- Smart Junction Box (SJB)

PINPOINT TEST L: THE SMART UNLOCK DOES NOT OPERATE CORRECTLY

Test Step		Result / Action to Take
L1	**CHECK THE COURTESY LAMP OPERATION**	
	• Open and close the driver door. • **Do the courtesy lamps operate correctly?**	**Yes** GO to L2. **No** REFER to Section 417-02.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST L: THE SMART UNLOCK DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
L2	**CHECK THE KEY-IN-IGNITION WARNING CHIME**	
	• Insert the key in the ignition switch. • Open the driver door. • **Does the key-in-ignition warning chime work correctly?**	**Yes** GO to **L3**. **No** REFER to Section 413-01.
L3	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test M: Hard To Open/Close Door From Either Door Handle

Normal Operation

The door latch can be actuated from the interior or exterior door handle. When actuated, the door latch releases and allows the door to open. If the door latch or the door hinges have insufficient lubrication or if the striker or door are misaligned, it causes extra force to be used when opening or closing the door.

This pinpoint test is intended to diagnose the following:

- Door alignment
- Door hinges
- Striker adjustment
- Door latch

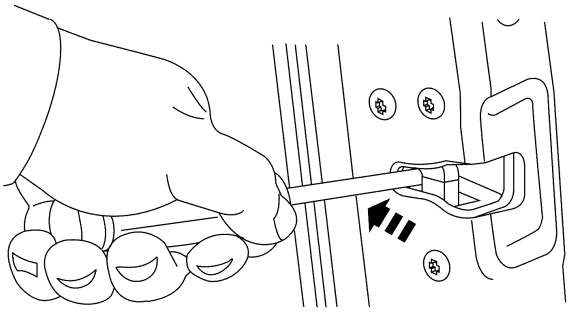
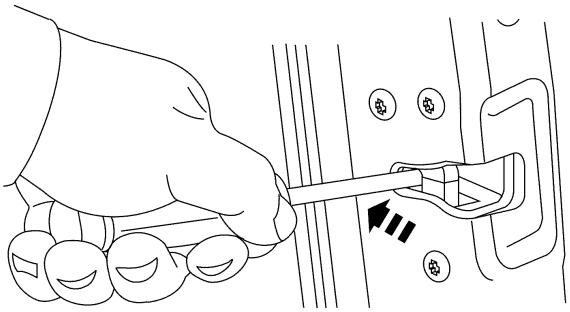
PINPOINT TEST M: HARD TO OPEN/CLOSE DOOR FROM EITHER DOOR HANDLE

Test Step		Result / Action to Take
M1	**CHECK THE LATCH OPERATION FROM BOTH DOOR HANDLES**	
	• Open and close the door using both the interior and exterior door handles. • **Does the door open normally from one of the door handles?**	**Yes** If the door is difficult/does not open from the exterior door handle, GO to Pinpoint Test N. If the door is difficult/does not open from the interior door handle, GO to Pinpoint Test O. **No** If the door does not operate correctly from both door handles, GO to **M2**.
M2	**CHECK THE LATCH OPERATION**	
	• Open the door.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: HARD TO OPEN/CLOSE DOOR FROM EITHER DOOR HANDLE (Continued)

Test Step		Result / Action to Take
M2	CHECK THE LATCH OPERATION (Continued)	
	• Using a screwdriver, fully close the latch (two clicks).  N0094195 • Verify that the latch releases easily while pulling on the interior/exterior door handle. • **Does the latch release easily?**	**Yes** GO to M4. **No** GO to M3.
M3	CHECK THE LATCH OPERATION AFTER LUBRICATION	
	• Lubricate the door latch. REFER to Latch Lubrication in this section. • Using a screwdriver, fully close the latch (two clicks).  N0094195 • Verify that the latch releases easily while pulling on the interior/exterior door handle. • **Does the latch release easily?**	**Yes** The concern was caused by an insufficiently lubricated door latch. **No** INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.
M4	CHECK THE STRIKER ADJUSTMENT	
	• Check the adjustment of the striker. REFER to Section 501-03. • **Is the striker adjusted correctly?**	**Yes** GO to M5. **No** ADJUST the striker as necessary. TEST the system for normal operation.
M5	CHECK THE DOOR ALIGNMENT	
	• Check the alignment of the door. REFER to Section 501-03. • **Is the door aligned correctly?**	**Yes** LUBRICATE the door hinges. TEST the system for normal operation. **No** ADJUST the door as necessary. TEST the system for normal operation.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test N: A Door Is Difficult/Does Not Open From The Exterior Door Handle

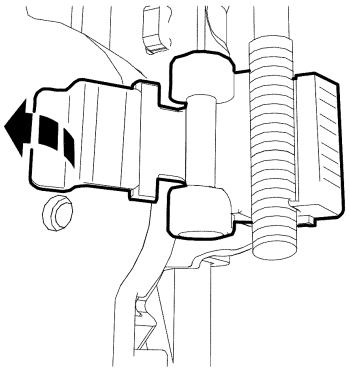
Normal Operation

The exterior door handle is connected to the door latch with an actuating rod. When the exterior door handle is pulled it causes the actuating rod to push down on the latch lever. The actuating rod can be adjusted for proper exterior door handle operation. When the latch lever is moved, the door latch releases, allowing the door to open.

This pinpoint test is intended to diagnose the following:

- Broken or binding linkage
- Exterior door handle to latch rod adjustment
- Exterior door handle
- Door latch

PINPOINT TEST N: A DOOR IS DIFFICULT/DOES NOT OPEN FROM THE EXTERIOR DOOR HANDLE

Test Step		Result / Action to Take
N1	**CHECK THE LATCH OPERATION FROM BOTH DOOR HANDLES**	
	• Open and close the door using both the interior and exterior door handles. • **Does the door open normally from one of the door handles?**	**Yes** If the door is difficult/does not open from only the exterior door handle, GO to **N2**. **No** If the door does not operate correctly from both door handles, GO to Pinpoint Test M.
N2	**CHECK THE EXTERIOR DOOR HANDLE**	
	• Remove the door trim panel. Refer to Section 501-05. • Open the clip and disconnect the exterior door handle actuating rod.  N0088081 • Pull and release the exterior door handle • **Does the exterior door handle operate correctly?**	**Yes** GO to **N3**. **No** INSTALL a new exterior door handle. REFER to Exterior Door Handle in this section. TEST the system for normal operation.
N3	**CHECK THE EXTERIOR DOOR HANDLE AND LINKAGE OPERATION**	
	• Operate the exterior door handle while observing the linkage. • **Are any of the exterior door handle components or linkages binding or broken?**	**Yes** REPAIR as necessary. TEST the system for normal operation. **No** GO to **N4**.
N4	**CARRY OUT THE EXTERIOR DOOR HANDLE ADJUSTMENT**	
	• Carry out the exterior door handle to latch rod adjustment. Refer to Door Handle to Latch Rod Adjustment in this section. • **Does the exterior door handle operate correctly?**	**Yes** The concern was caused by an improperly adjusted exterior door handle. **No** INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test O: A Door Is Difficult/Does Not Open From The Interior Door Handle

Normal Operation

The interior door handle is connected to the door latch by an actuating cable. When the interior door handle is pulled it causes the cable to pull on the latch lever. When the latch lever is moved, the door latch releases, allowing the door to open.

This pinpoint test is intended to diagnose the following:

- Broken or binding cable/linkage
- Door latch

PINPOINT TEST O: A DOOR IS DIFFICULT/DOES NOT OPEN FROM THE INTERIOR DOOR HANDLE

Test Step		Result / Action to Take
O1	**CHECK THE LATCH OPERATION FROM BOTH DOOR HANDLES**	
	• Open and close the door using both the interior and exterior door handles. • **Does the door open normally from one of the door handles?**	**Yes** If the door is difficult/does not open from only the interior door handle, GO to **O2**. **No** If the door does not operate correctly from both door handles, GO to Pinpoint Test M.
O2	**CHECK THE INTERIOR DOOR HANDLE AND CABLE/LINKAGE OPERATION**	
	• Remove the door trim panel. Refer to Section 501-05. • Install the interior door handle back onto the release cable. • Operate the interior door handle while observing the cable/linkage. • **Are any of the interior door handle components or cable/linkages binding or broken?**	**Yes** REPAIR as necessary. TEST the system for normal operation. **No** INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.

Pinpoint Test P: Exterior Door Release Handle Sticks

Normal Operation

The exterior door handle is connected to the door latch with an actuating rod. When the exterior door handle is pulled it causes the actuating rod to push down on the latch lever. The actuating rod can be adjusted for proper exterior door handle operation. When the latch lever is moved, the door latch releases, allowing the door to open. The handle has a return spring to make sure the handle returns to a closed position.

This pinpoint test is intended to diagnose the following:

- Binding linkage
- Broken handle return spring
- Exterior door handle adjustment
- Door latch

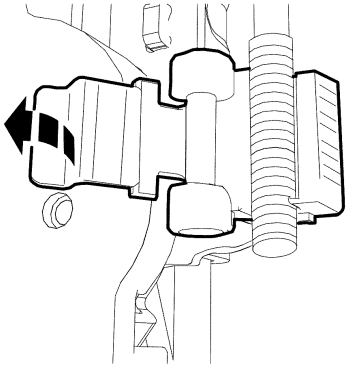
PINPOINT TEST P: EXTERIOR DOOR RELEASE HANDLE STICKS

Test Step		Result / Action to Take
P1	**CHECK FOR A BROKEN RETURN SPRING**	
	• Remove the door trim panel. Refer to Section 501-05.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST P: EXTERIOR DOOR RELEASE HANDLE STICKS (Continued)

Test Step		Result / Action to Take
P1	**CHECK FOR A BROKEN RETURN SPRING (Continued)**	
	• Open the clip and disconnect the exterior door handle actuating rod.  N0088081 • Pull and release the exterior door handle. • **Does the exterior door handle return to a closed position once released?**	**Yes** GO to **P2**. **No** INSTALL a new exterior door handle. REFER to Exterior Door Handle in this section. TEST the system for normal operation.
P2	**CARRY OUT THE EXTERIOR DOOR HANDLE ADJUSTMENT**	
	• Carry out the exterior door handle to latch rod adjustment. Refer to Door Handle to Latch Rod Adjustment in this section. • **Does the exterior door handle operate correctly?**	**Yes** The concern was caused by an improperly adjusted exterior door handle. **No** GO to **P3**.
P3	**CHECK THE EXTERIOR DOOR HANDLE AND LINKAGE OPERATION**	
	• Operate the exterior door handle while observing the linkage. • **Are any of the exterior door handle components or linkages binding?**	**Yes** REPAIR as necessary. TEST the system for normal operation. **No** INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.

Pinpoint Test Q: Interior Door Release Handle Sticks

Normal Operation

The interior door handle is connected to the door latch by an actuating cable. When the interior door handle is pulled it causes the cable to pull on the latch lever. When the latch lever is moved, the door latch releases, allowing the door to open. The handle has a return spring to make sure the handle returns to a closed position.

This pinpoint test is intended to diagnose the following:

- Binding cable
- Broken handle return spring
- Door latch

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST Q: INTERIOR DOOR RELEASE HANDLE STICKS

Test Step		Result / Action to Take
Q1	CHECK FOR A BROKEN RETURN SPRING	
	• Remove the interior door handle. Refer to Interior Door Handle in this section. • Pull and release the interior door handle. • **Does the interior door handle return to a closed position once released?**	**Yes** GO to Q2. **No** INSTALL a new interior door handle. REFER to Interior Door Handle in this section. TEST the system for normal operation.
Q2	CHECK THE INTERIOR DOOR HANDLE CABLE OPERATION	
	• Remove the door latch release cable. • Observe the door latch release cable for any damage or binding. • **Is the door latch release cable OK?**	**Yes** INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation. **No** REPAIR as necessary. TEST the system for normal operation.

Pinpoint Test R: Squeak/Rattle/Chucking Noise From Door

This pinpoint test is intended to diagnose the following:

- Door alignment
- Striker adjustment
- Door latch

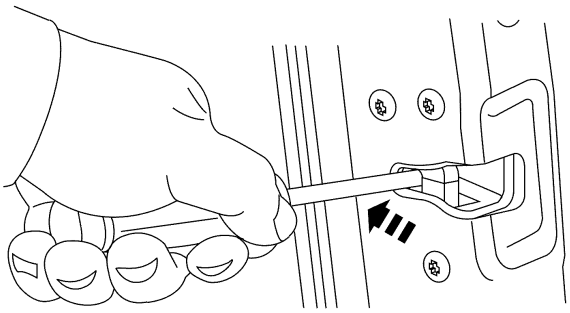
PINPOINT TEST R: SQUEAK/RATTLE/CHUCKING NOISE FROM DOOR

Test Step		Result / Action to Take
R1	CHECK FOR ANY LOOSE COMPONENTS	
	• Remove the door trim panel. REFER to Section 501-05. • Inspect inside the door for any loose components. • **Are there any loose components inside the door?**	**Yes** REPAIR as necessary. TEST the system for normal operation. **No** GO to R2.
R2	CHECK THE STRIKER ADJUSTMENT	
	• Check the adjustment of the striker. REFER to Section 501-03. • **Is the striker adjusted correctly?**	**Yes** GO to R3. **No** ADJUST the striker as necessary. TEST the system for normal operation.
R3	CHECK THE DOOR ALIGNMENT	
	• Check the alignment of the door. REFER to Section 501-03. • **Is the door aligned correctly?**	**Yes** GO to R4. **No** ADJUST the door as necessary. TEST the system for normal operation.
R4	CHECK THE LATCH OPERATION AFTER LUBRICATION	
	• Lubricate the door latch. REFER to Latch Lubrication in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST R: SQUEAK/RATTLE/CHUCKING NOISE FROM DOOR (Continued)

Test Step		Result / Action to Take
R4	**CHECK THE LATCH OPERATION AFTER LUBRICATION (Continued)**	
	• Using a screwdriver, fully close the latch (two clicks).  N0094195 • Operate the door latch and listen for the noise. • **Is the original noise still present after the latch is lubricated?**	**Yes** INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation. **No** The concern was caused by an insufficiently lubricated door latch.

Pinpoint Test S: Manual Door Lock Cylinder Inoperative

Normal Operation

The door lock cylinder is connected to the door latch via a lock rod and can be used to manually lock/unlock a door.

This pinpoint test is intended to diagnose the following:

- Bent or binding lock rod and lever
- Door lock cylinder
- Door latch

PINPOINT TEST S: MANUAL DOOR LOCK CYLINDER INOPERATIVE

Test Step		Result / Action to Take
S1	**CHECK THE LOCK CYLINDER OPERATION AFTER LUBRICATION**	
	• Spray a lock lubricant such as Motorcraft XL-1 into the lock cylinder opening for a couple seconds. • Operate the door lock cylinder with the key. • **Does the door lock and unlock using the door lock cylinder?**	**Yes** The concern was caused by an insufficiently lubricated lock cylinder. Spray a multi-purpose grease such as Motorcraft XL-5 into the lock cylinder for a couple seconds to provide long term lubrication. **No** GO to **S2**.
S2	**CHECK THE DOOR LOCK CYLINDER**	
	• Remove the door lock cylinder. Refer to Door Lock Cylinder in this section. • Operate the door lock cylinder with the key. • **Does the door lock cylinder rotate freely to both lock and unlock positions?**	**Yes** GO to **S3**. **No** INSTALL a new door lock cylinder. REFER to Door Lock Cylinder in this section. TEST the system for normal operation.
S3	**CHECK THE DOOR LOCK CYLINDER LINKAGE**	
	• Operate the door lock cylinder while observing the linkage. • **Is the door lock cylinder rod and lever bent or binding?**	**Yes** REPAIR as necessary. TEST the system for normal operation. **No** INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test T: Unable To Remove The Key From The Ignition Lock Cylinder

Refer to Wiring Diagrams Cell 37, Shift Interlock for schematic and connector information.

Normal Operation

The ignition switch contains a key removal inhibit solenoid (automatic transmission only). The solenoid prevents the ignition lock cylinder to be turned to lock and the key removed any time the transmission selector lever is in any position except park. The inhibit solenoid receives voltage at all times from the Bussed Electrical Center (BEC) fuse 68 (20A) on circuit 1050 (LG/VT). When the transmission selector lever is in any gear except park, the selector switch closes and connects circuit 1205 (BK) to circuit 664 (YE/LG), which supplies ground to the solenoid.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Transmission selector lever
- Binding steering column components
- Ignition lock cylinder
- Ignition switch

PINPOINT TEST T: UNABLE TO REMOVE THE KEY FROM THE IGNITION LOCK CYLINDER

Test Step		Result / Action to Take
T1	**CHECK FOR AN ENERGIZED KEY REMOVAL INHIBIT SOLENOID**	
	• Remove the BEC fuse 68 (20A). • Attempt to turn the ignition key to the run position and then back to the lock position and remove the key. • **Does the ignition lock cylinder turn to the lock position and can the key be removed?**	**Yes** REFER to Section 211-05 to continue diagnosis of the key removal inhibit solenoid system. **No** GO to **T2**.
T2	**CHECK THE IGNITION LOCK CYLINDER FOR BINDING**	
	• Remove the ignition lock cylinder. REFER to Ignition Lock Cylinder in this section. • Rotate the ignition lock cylinder through all positions using the key. • **Does the ignition lock cylinder freely rotate through all positions and can the key be removed from the lock cylinder?**	**Yes** REFER to Section 211-05 to continue diagnosis of the steering column for any binding steering column components or ignition switch. **No** INSTALL a new ignition lock cylinder. REFER to Ignition Lock Cylinder in this section. TEST the system for normal operation.

GENERAL PROCEDURES

Remote Keyless Entry (RKE) Transmitter Programming

NOTICE: **All Remote Keyless Entry (RKE) transmitters must be programmed at the same time.**

1. The vehicle must be electronically unlocked before entering program mode, via the RKE transmitter or the door lock control switch while the driver door is open.
2. Turn the key from the OFF to the RUN position 8 times within 10 seconds, with the eighth turn ending in the RUN position. If the module has successfully entered program mode, it locks and then unlocks all the doors.
3. Within 20 seconds, press any button on an RKE transmitter, and the doors lock and then unlock to confirm that the RKE transmitter has been programmed. Repeat this step for each RKE transmitter.
4. If the door locks do not respond for any RKE transmitter, wait several seconds and press the button again. If the door locks still fail to respond, refer to Inspection and Verification. Make sure that no more than the maximum number of RKE transmitters are attempted to be programmed.
5. Exiting the programming mode is accomplished if one of the following occurs:
   - Turning the key to the OFF position.
   - 20 seconds have passed since entering programming mode or since the last RKE transmitter was programmed.
   - The maximum number of RKE transmitters have been programmed.

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GENERAL PROCEDURES

Autolock and Auto-Unlock Programming

NOTE: Manual transmission vehicles are not equipped with an autolock feature.

1. Electronically unlock the vehicle using the Remote Keyless Entry (RKE) transmitter or the power lock control switch.
2. Close all doors.
3. Confirm the key is in the OFF position.
4. Turn the key from OFF to ON.
5. **NOTE:** Steps 4 through 8 must be carried out within 30 seconds.

   Press the door lock control switch UNLOCK button 3 times.
6. Turn the key from ON to OFF.
7. Press the door lock control switch UNLOCK button 3 times.
8. Turn the key from OFF to ON.
9. Verify that the horn chirps. This indicates the system is in the enable/disable mode and is ready to accept program changes.
10. Press the door lock control switch UNLOCK then LOCK button once to toggle the autolock/relock feature OFF.
11. Verify that the horn chirps 1 time. There should be only 1 chirp indicating that autolock/relock feature is disabled. If 1 chirp is heard, followed by a longer sound of the horn, the autolock/relock feature is enabled. Return to Step 9.
12. Turn the key to the OFF position to exit the enable/disable mode.
13. Verify that the horn chirps once to indicate that a feature has been changed.

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GENERAL PROCEDURES

Perimeter Lighting Feature Programming

Programming the Perimeter Lighting Feature Using the Door Lock Control Switch

NOTE: The following steps must be carried out within 30 seconds or the procedure will need to be repeated. If the procedure needs to be repeated, wait 30 seconds between programming sessions.

1. Turn the ignition switch from the OFF to the RUN position.
2. Press the unlock button on the door unlock control 3 times.
3. Turn the ignition switch from the RUN to the OFF position.
4. Press the unlock button on the door unlock control switch 3 times.
5. Turn the ignition switch to the RUN position. The horn chirps one time to indicate that programming mode is entered.
6. **NOTE:** The unlock button must be pressed twice within 5 seconds.

   Within 30 seconds of entering the programming mode, press the unlock button on the door lock control switch twice to enable/disable the perimeter lighting feature. The horn chirps once if the perimeter lighting is disabled or a chirp followed by a honk if the perimeter lighting is enabled.
7. Programming ends when the ignition switch state changes or times out after 2 minutes.

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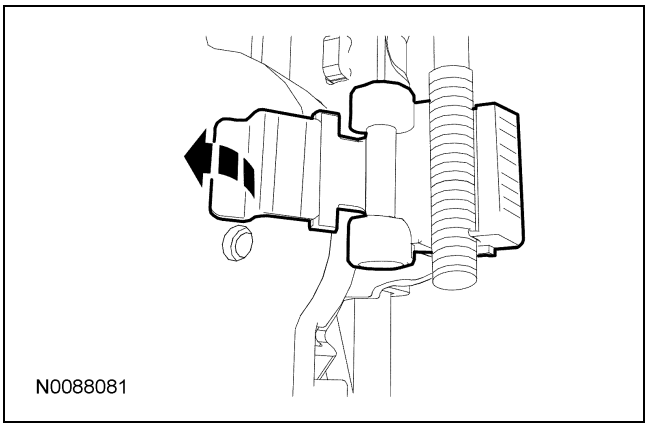
GENERAL PROCEDURES

Door Handle to Latch Rod Adjustment

NOTE: An incorrectly adjusted exterior door handle can cause a loose handle, rattle noise, door hard to open from the outside door handle, or the outside door handle to not sit flush in the closed position.

NOTE: Prior to carrying out the adjustment procedure, the door latch, exterior door handle, and linkages must be installed on the door.

1. Raise the door glass to the full-up position.
2. Remove the door trim panel. For additional information, refer to Section 501-05.
3. Position the watershield aside.
4. Open the clip and disconnect the exterior door handle actuating rod.



5. Position the actuating rod and latch actuating lever in a neutral position.
6. **NOTE:** Do not push up or pull down on the actuating rod or latch actuating lever.

   Reinstall the exterior door handle actuating rod back into the clip.
7. Close the clip and test the system to make sure that the exterior door handle is operating correctly.
8. Reseal the watershield.
9. Install the door trim panel. For additional information, refer to Section 501-05.

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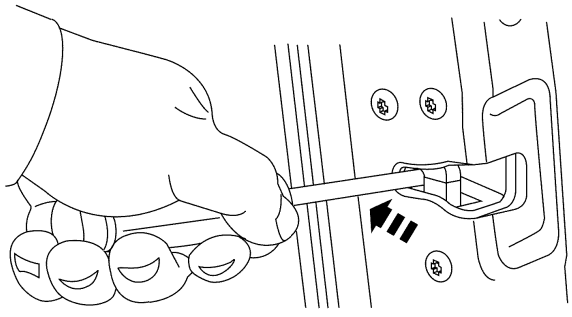
GENERAL PROCEDURES

Latch Lubrication

Material

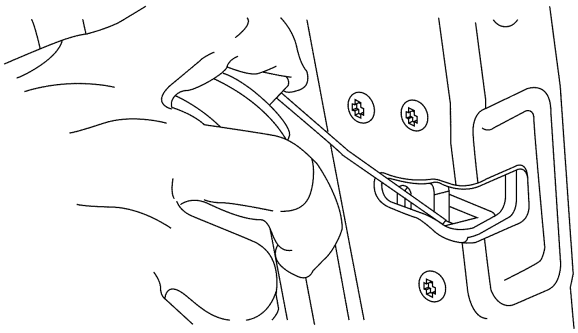
Item	Specification
Multi-Purpose Grease XG-4 and/or XL-5	ESB-M1C93-B

1. Open the door.
2. Using a screwdriver, fully close the latch (two clicks).



N0094195

3. Spray the multi-purpose grease into the opening on the door latch for approximately 5 seconds.



N0094196

4. Open the latch using either the interior or exterior door handle.
5. Open and close the door several times to circulate the lubricant inside the latch.
6. Wipe off any excess grease.

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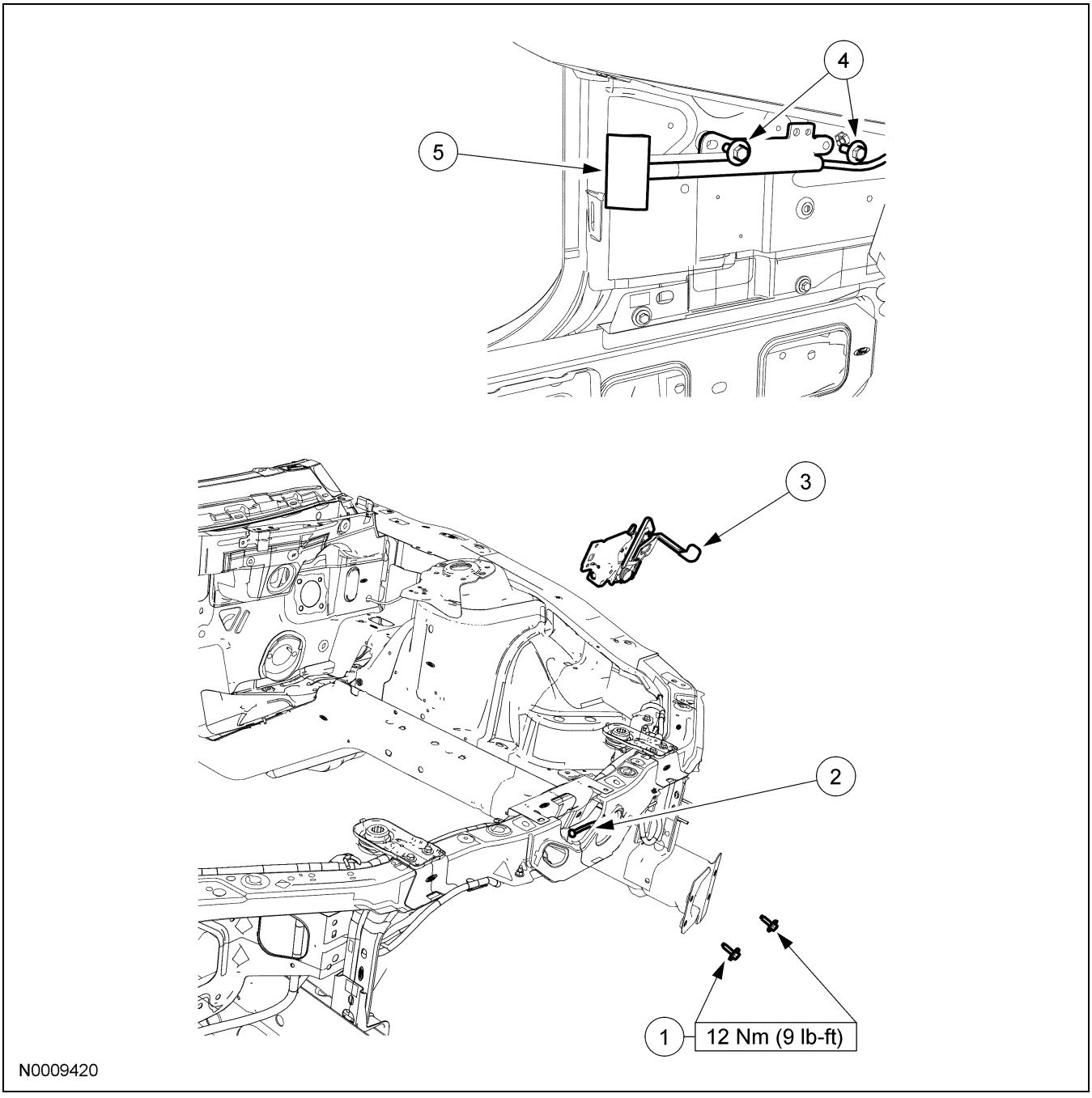
REMOVAL AND INSTALLATION

Hood Latch and Components — Exploded View



Item	Part Number	Description
1	W611103	Hood latch bolts (2 required)
2	—	Hood latch release cable (part of 16916)
3	16700	Hood latch

(Continued)

Item	Part Number	Description
4	N808727	Hood latch release handle screws (2 required)
5	16916	Hood latch release handle

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REMOVAL AND INSTALLATION (Continued)

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

Hood Latch

Material

Item	Specification
Multi-Purpose Grease Spray XL-5	ESB-M1C93B

Removal and Installation

1. Remove the 6 pin-type retainers and the upper radiator sight shield.

2. Remove the front bumper cover. For additional information, refer to Section 501-19.

3. **NOTE:** Mark the location of the hood latch to aid installation.

   Remove the 2 hood latch bolts.

   - To install, tighten to 12 Nm (9 lb-ft).

4. Disconnect the hood latch release cable.

5. Remove the hood latch.

6. To install, reverse the removal procedure.
   - Adjust the hood latch for correct engagement after installation.
   - Lubricate the hood latch after installation.

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REMOVAL AND INSTALLATION

Hood Latch Release Handle

Removal and Installation

1. Remove the hood latch. For additional information, refer to Hood Latch in this section.
2. Disconnect the hood latch release cable guides.
3. Remove the LH scuff plate.
4. Remove the LH A-pillar lower trim panel.
5. Remove the 2 hood latch release handle screws.
6. Remove the hood release latch handle and cable.
   - Release the grommet from the dash panel.
7. To install, reverse the removal procedure.

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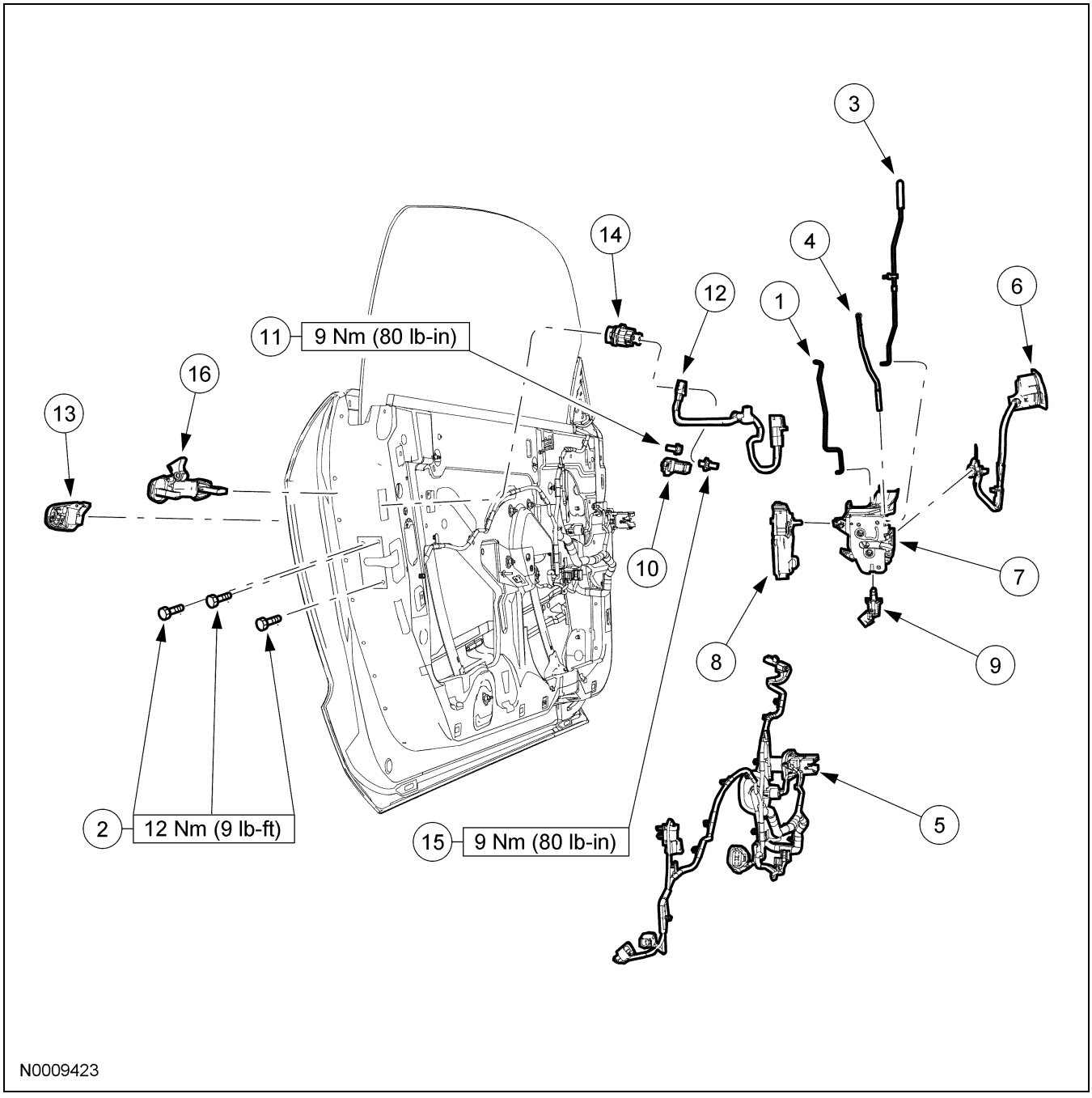
REMOVAL AND INSTALLATION

Front Door Handles, Locks and Latches — Exploded View



Item	Part Number	Description
1	22152/22153	Exterior door handle actuating rod (RH/LH)
2	W707400	Door latch bolts (3 required)
3	63218A01	Manual lock rod
4	6322135	Door lock cylinder actuating rod (if equipped)

(Continued)

Item	Part Number	Description
5	14630/14631	Wiring harness (RH/LH)
6	6322600/ 6322601	Interior door handle (RH/LH)
7	21812/21813	Front door latch (RH/LH)
8	218A42/ 218A423	Door lock actuator (RH/LH)

(Continued)

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REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
9	10B997	Door ajar switch
10	—	Door lock cylinder actuating pawl
11	632191	Door lock cylinder bolt (LH only)
12	6321991	Door disarm switch (if equipped)
13	422405	Door lock cylinder cover (if equipped)
14	7821991	Door lock cylinder (if equipped)
15	W709892	Exterior door handle studs (2 required RH)
16	22404/22405	Exterior door handle (RH/LH)

(Continued)

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

Interior Door Handle

Removal and Installation

1. Remove the door trim panel. For additional information, refer to Section 501-05.
2. Remove the interior door handle from the door trim panel.
3. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

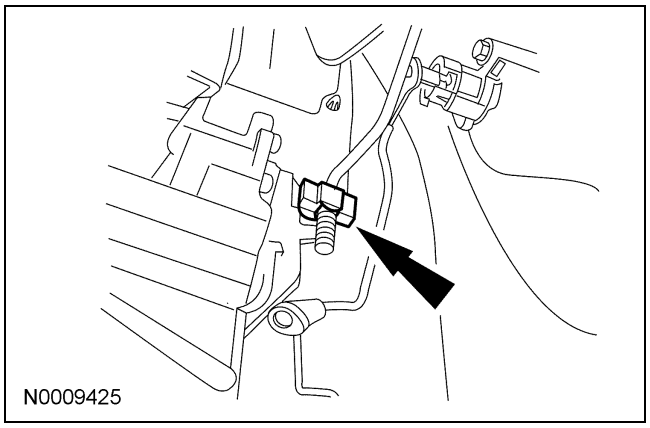
Door Latch

Material

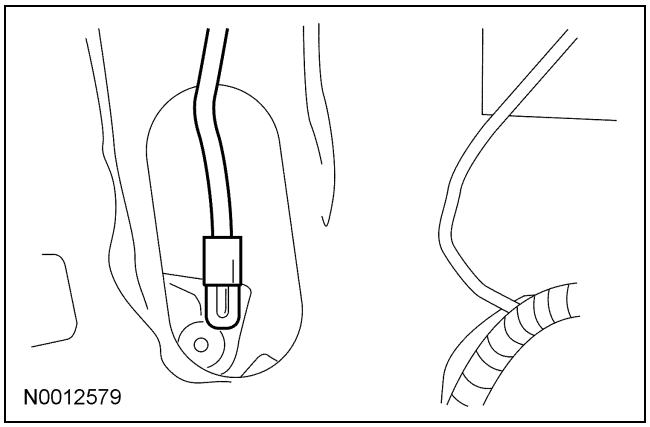
Item	Specification
Multi-Purpose Grease Spray XL-5	ESB-M1C93B

Removal

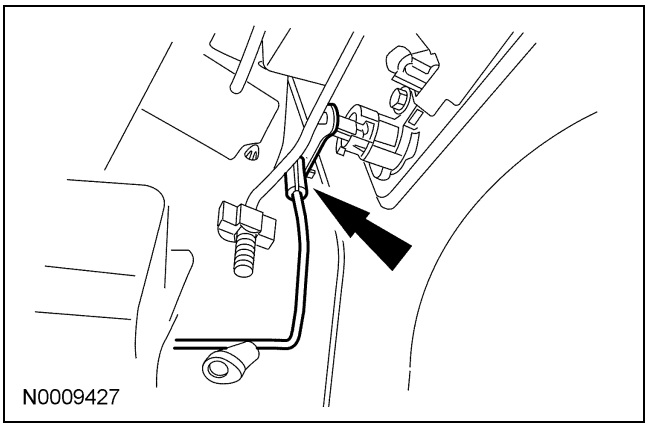
1. **NOTE:** LH side shown, RH side similar.
   Remove the door trim panel. For additional information, refer to Section 501-05.
2. Position the watershield aside.
3. Disconnect the exterior door handle actuating rod.


N0009425

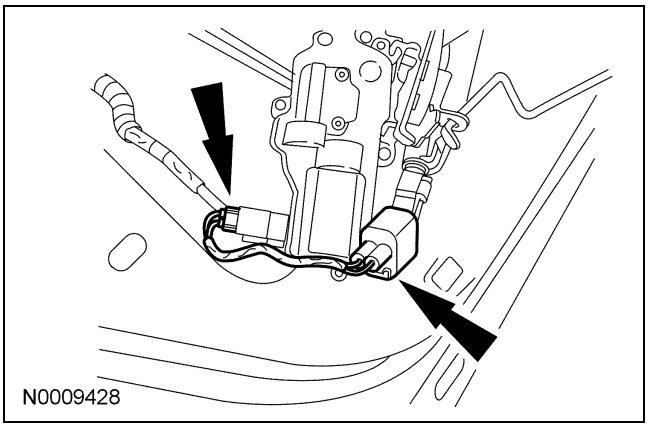
4. Remove the 3 door latch bolts.
5. Disconnect the manual lock rod.


N0012579

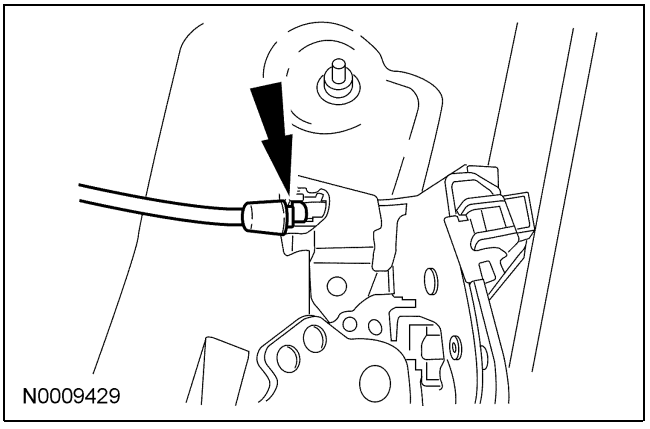
6. If equipped, disconnect the door lock cylinder actuating rod.


N0009427

7. Disconnect the 2 wiring harness electrical connectors.


N0009428

8. Remove the cable cover.
   - Release the clip.
   - Remove the pin-type retainer.
9. **⚠ CAUTION: Make sure the interior door handle actuating cable does not kink or damage to the cable may occur.**
   Disconnect the interior door handle actuating cable.


N0009429

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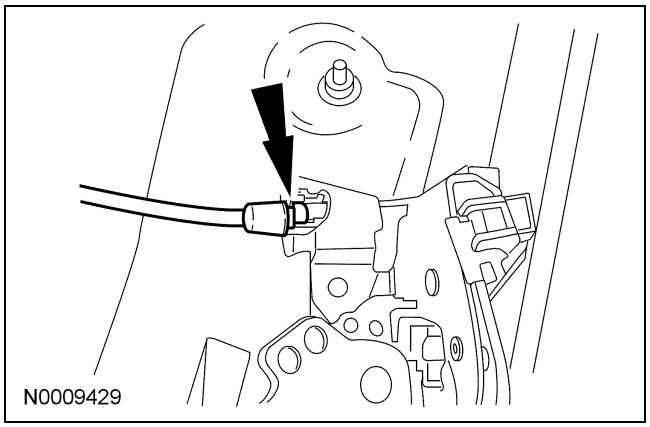
REMOVAL AND INSTALLATION (Continued)

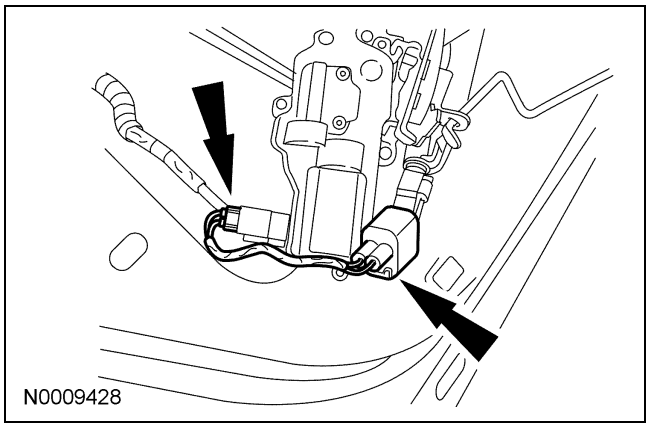
10. Remove the door latch.

Installation

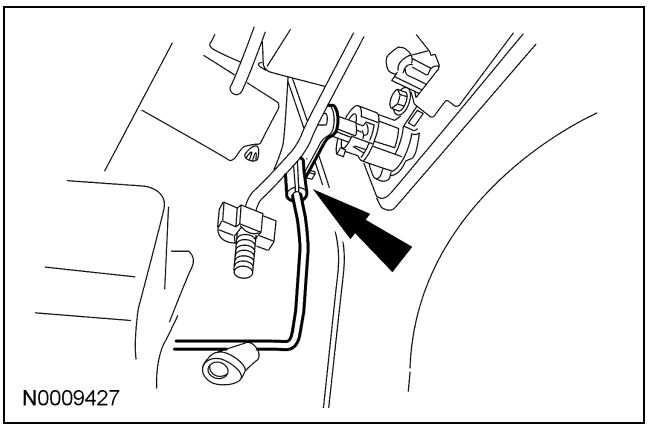
1. Position the door latch inside the door.
2. Connect the interior door handle actuating cable.



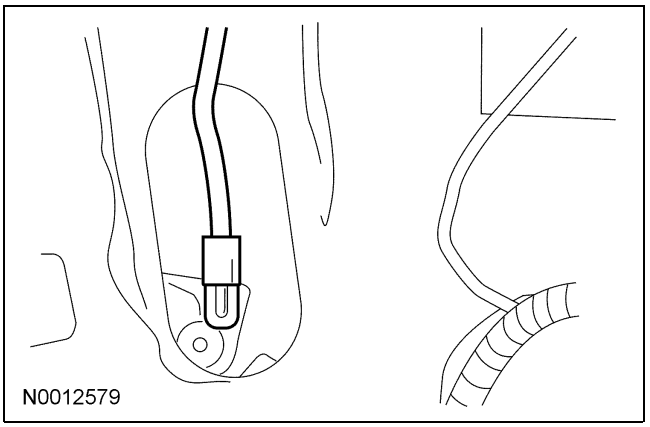
3. Connect the cable cover.
4. Connect the 2 wiring harness electrical connectors.



5. If equipped, connect the door lock cylinder actuating rod.

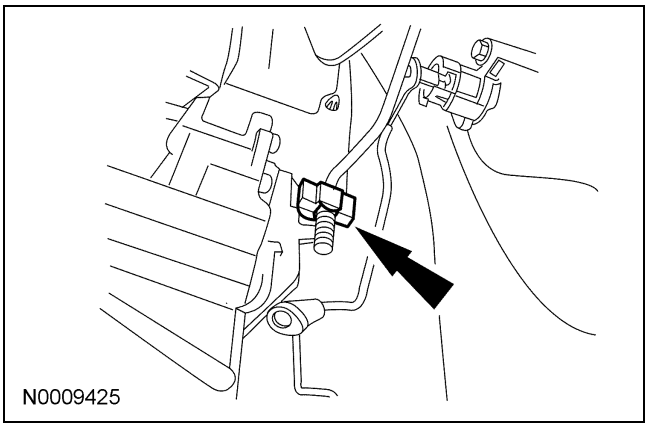


6. Connect the manual lock rod.



7. Install the 3 door latch bolts.
   - Tighten to 12 Nm (9 lb-ft).
8. **NOTE:** Push upward on the exterior door handle actuating rod and make sure the door latch is in a neutral position when installing the rod into the retaining clip to make sure the exterior door handle is correctly positioned.

   Connect the exterior door handle actuating rod into the clip.



REMOVAL AND INSTALLATION (Continued)

9. Reseal the watershield.

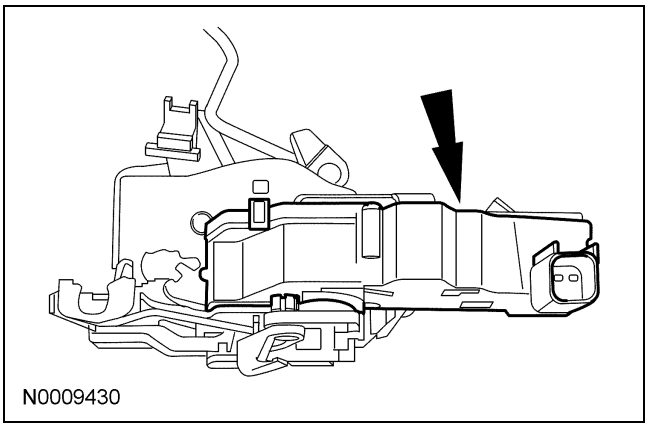
10. Install the door trim panel. For additional information, refer to Section 501-05.

REMOVAL AND INSTALLATION

Door Lock Actuator

Removal and Installation

1. Remove the door latch. For additional information, refer to Door Latch in this section.
2. Remove the door lock actuator.



3. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

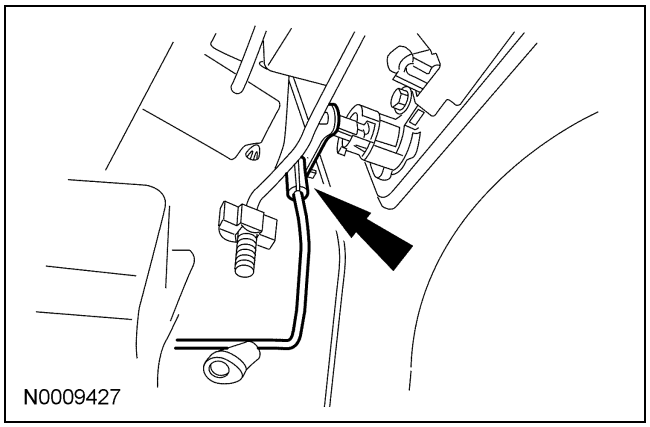
Door Lock Cylinder

Material

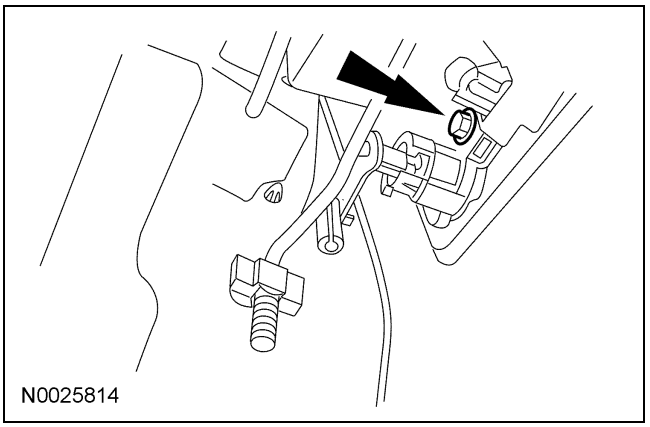
Item	Specification
Penetrating and Lock Lubricant XL-1	—

Removal and Installation

1. Remove the door trim panel. For additional information, refer to Section 501-05.
2. Position the watershield aside.
3. Disconnect the door lock cylinder actuating rod.



4. If equipped, disconnect the door disarm switch wiring harness electrical connector.
5. Remove the bolt and the door lock cylinder.
   - To install, tighten to 9 Nm (80 lb-in).



6. To install, reverse the removal procedure.
   - Lubricate the door lock cylinder after installation.

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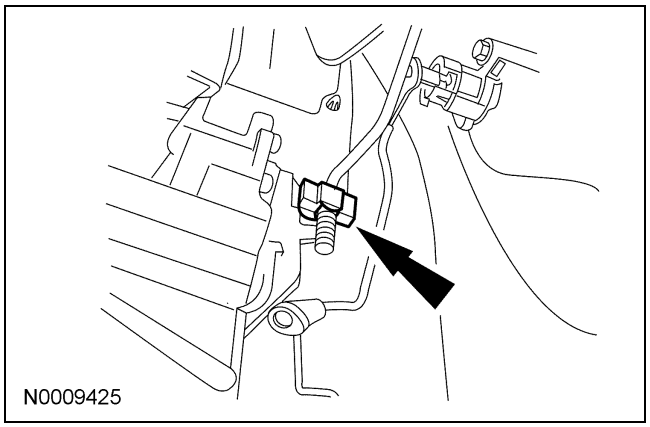
REMOVAL AND INSTALLATION

Exterior Door Handle

Removal

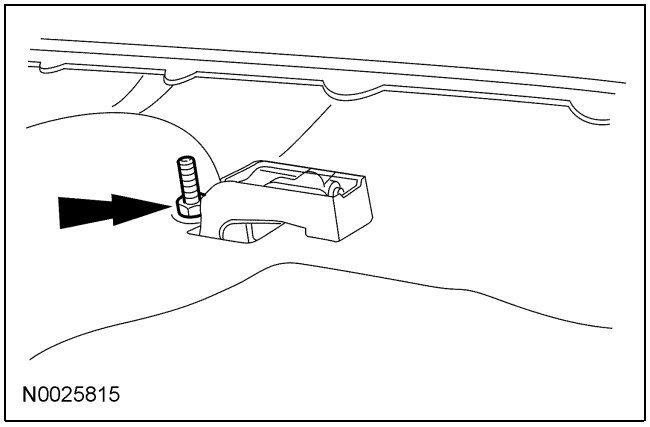
1. Raise the door window glass to the full-up position.
2. Remove the door trim panel. For additional information, refer to Section 501-05.
3. If equipped, remove the door lock cylinder. For additional information, refer to Door Lock Cylinder in this section.
4. **NOTE:** Push upward on the exterior door handle actuating rod when installing the rod into the retaining clip.

   Open the exterior door handle actuating clip and disconnect the actuating rod.



5. **NOTE:** Two exterior door handle studs must be removed on the RH side.

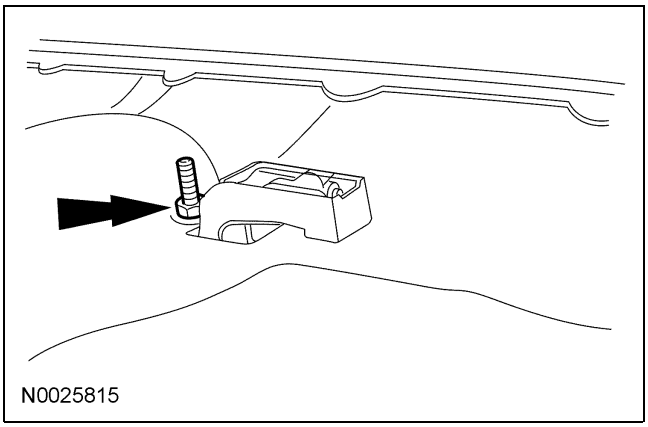
   Remove the exterior door handle studs.



6. Slide the exterior door handle rearward and remove.

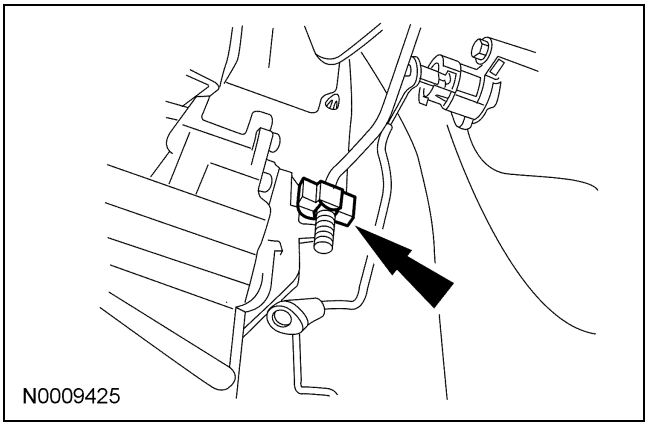
Installation

1. Insert the exterior door handle through the door panel to engage the bellcrank and then slide it forward.
2. Install the exterior door handle studs.
   - Tighten to 9 Nm (80 lb-in).



3. **NOTE:** Push upward on the exterior door handle actuating rod and make sure the door latch is in a neutral position when installing the rod into the retaining clip to make sure the exterior door handle is correctly positioned.

   Connect the exterior door handle actuating rod into the clip.



4. If equipped, install the door lock cylinder. For additional information, refer to Door Lock Cylinder in this section.

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REMOVAL AND INSTALLATION (Continued)

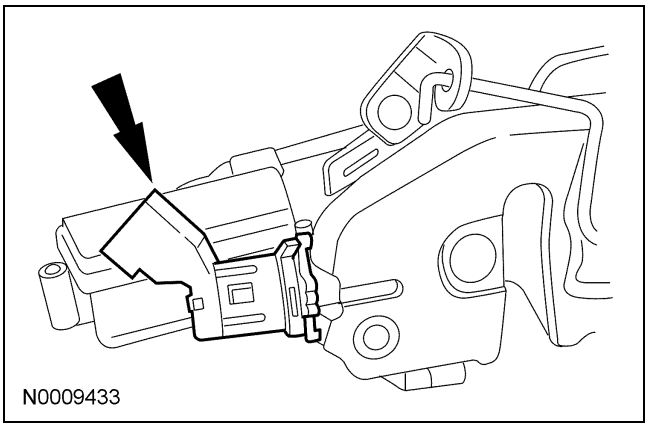
5. Install the door trim panel. For additional information, refer to Section 501-05.

REMOVAL AND INSTALLATION

Door Ajar Switch

Removal and Installation

1. Remove the door latch. For additional information, refer to Door Latch in this section.
2. Remove the door ajar switch.



3. To install, reverse the removal procedure.

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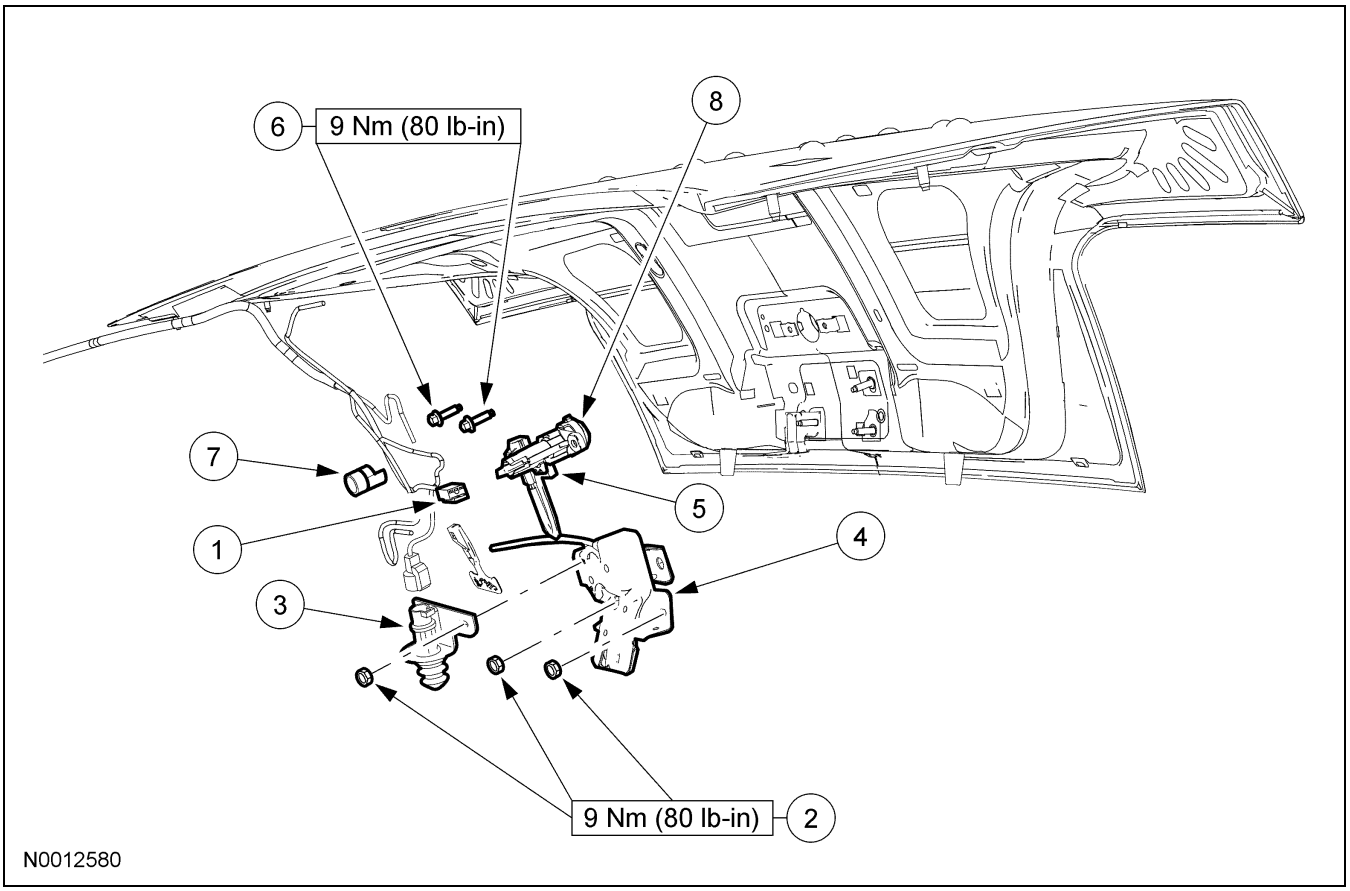
REMOVAL AND INSTALLATION

Luggage Compartment Lid Latch

Material

Item	Specification
Multi-Purpose Grease Spray XL-5	ESB-M1C93B



Item	Part Number	Description
1	—	Luggage compartment lid latch electrical connector (part of 19B516)
2	N807260	Luggage compartment lid latch nuts (3 required)
3	19A434	Luggage compartment lid ajar switch (early build)
4	43200	Luggage compartment lid latch
5	—	Luggage compartment lid anti-theft inhibit switch electrical harness (if equipped) (part of 6343262)

(Continued)

Item	Part Number	Description
6	W500614	Luggage compartment lid lock cylinder bolts (2 required)
7	—	Luggage compartment lid release cable (part of 43200)
8	43262	Luggage compartment lid lock cylinder

Removal and Installation

1. Remove the luggage compartment lid trim panel.

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REMOVAL AND INSTALLATION (Continued)

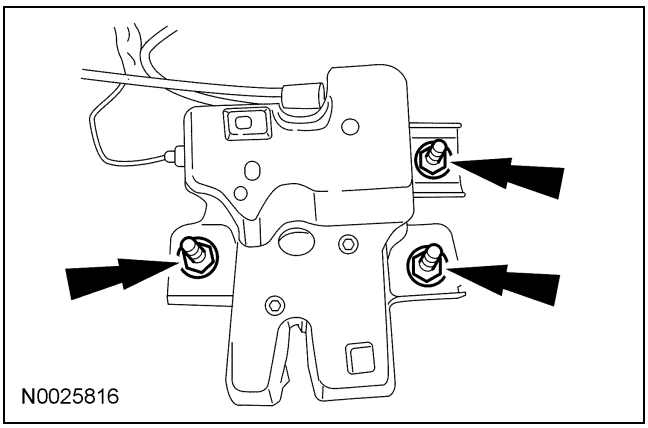
2. Disconnect the luggage compartment lid latch actuator cable from the luggage compartment lid lock cylinder.

3. Disconnect the luggage compartment lid latch electrical connector.

4. **NOTE:** Mark the location of the luggage compartment lid latch to aid installation.

   Remove the 3 luggage compartment lid latch nuts.

   - To install, tighten to 9 Nm (80 lb-in).



5. Position the luggage compartment lid ajar switch aside (early build).

6. Remove the luggage compartment lid latch.

7. To install, reverse the removal procedure.

   - Lubricate the luggage compartment lid latch after installation.

REMOVAL AND INSTALLATION

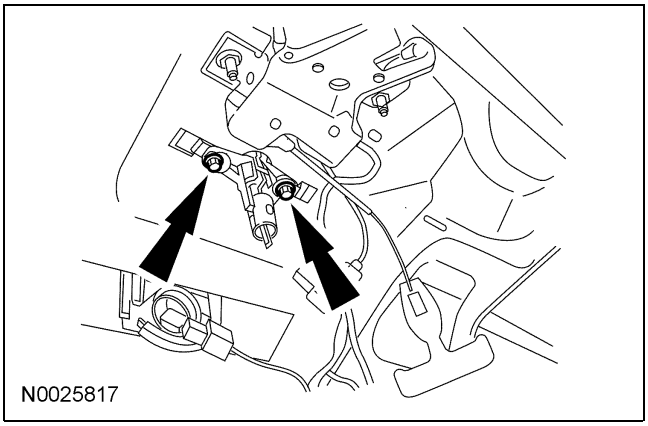
Luggage Compartment Lid Lock Cylinder

Material

Item	Specification
Penetrating and Lock Lubricant XL-1	—

Removal and Installation

1. Remove the luggage compartment lid trim panel.
2. Disconnect the luggage compartment lid latch actuator cable from the luggage compartment lid lock cylinder.
3. If equipped, disconnect the luggage compartment lid lock cylinder electrical connector.
4. Remove the 2 bolts and the luggage compartment lid lock cylinder.
   - To install, tighten to 9 Nm (80 lb-in).


N0025817

5. To install, reverse the removal procedure.
   - Lubricate the luggage compartment lid lock cylinder after installation.

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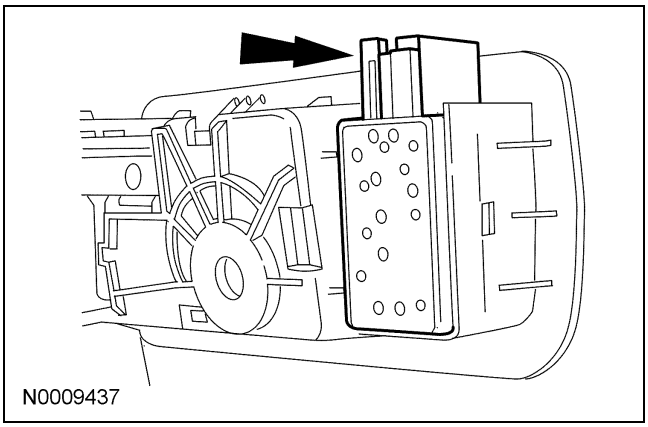
REMOVAL AND INSTALLATION

Door Lock Control Switch

Removal and Installation

1. Remove the interior door handle. For additional information, refer to Interior Door Handle in this section.

2. Remove the door lock control switch from the interior door handle.



3. To install, reverse the removal procedure.

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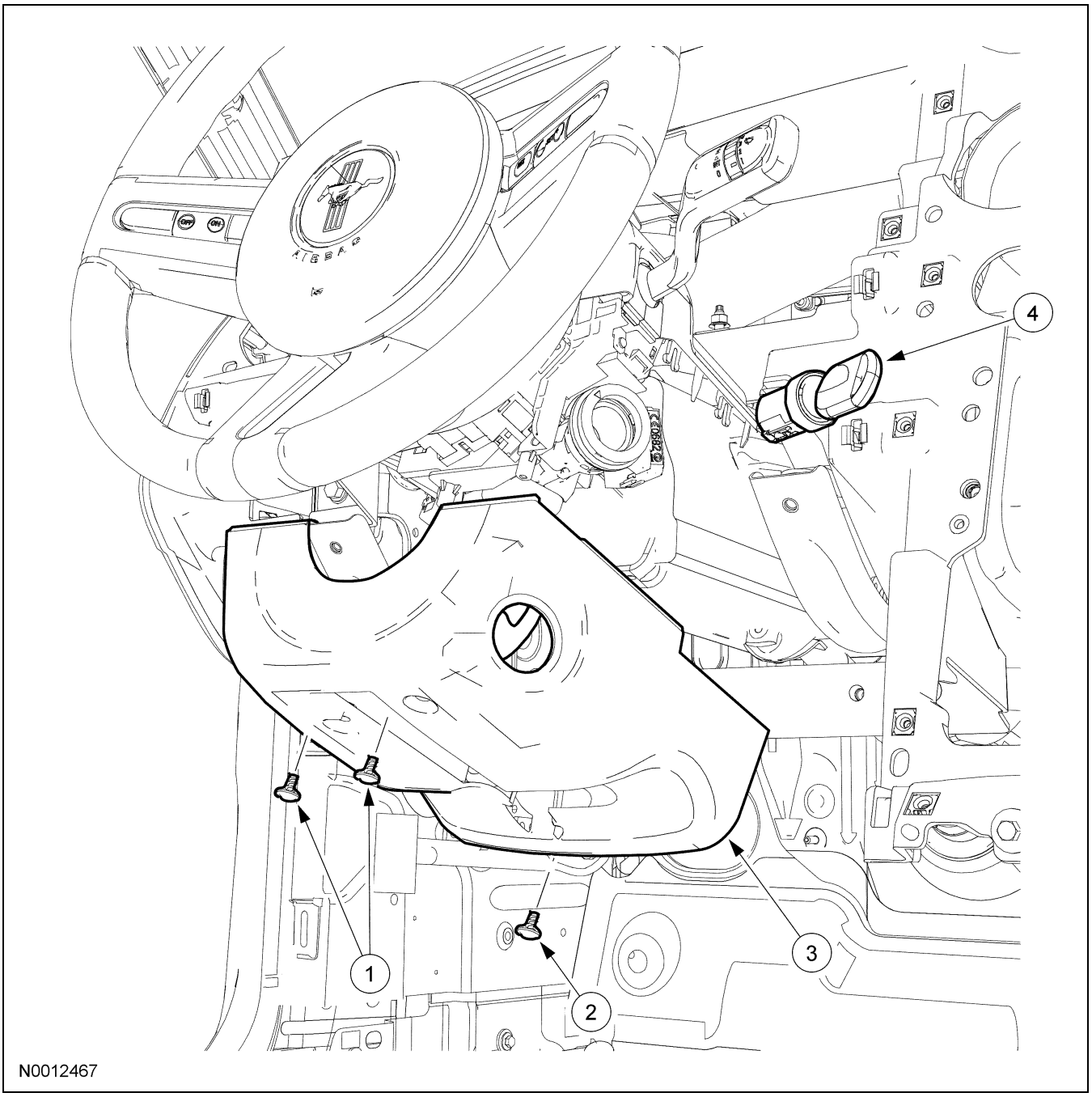
REMOVAL AND INSTALLATION

Ignition Lock Cylinder

Material

Item	Specification
Penetrating and Lock Lubricant XL-1	-



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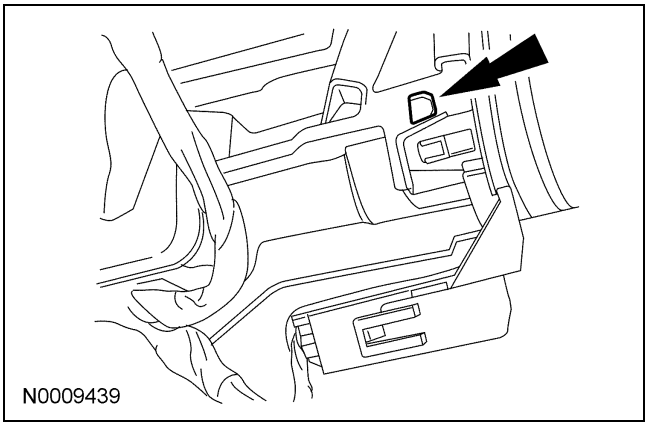
REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
1	W702110	Lower steering column shroud screws (2 required)
2	W706731	Lower steering column shroud screw
3	3533	Lower steering column shroud
4	11582	Ignition lock cylinder

Removal and Installation

1. Remove the steering column cover.
2. Remove the 3 screws and the lower steering column shroud.
3. Turn the key to the RUN position.
4. Insert a small punch into the hole and remove the ignition lock cylinder.



5. To install, reverse the removal procedure.
   - Lubricate the ignition lock cylinder after installation.

SPECIFICATIONS

Material

Item	Specification	Fill Capacity
Premium Quality Windshield Washer Fluid (Canada) CXC-37-(A, B, C, D, E, F, G, H) (Canada)	—	—
Premium Windshield Washer Concentrate (US) ZC-32-A or B (US)	WSB-M8B16-A2	—

General Specifications

Item	Specification
LH wiper blade to top edge of cowl top vent panel	39-52 mm (1.53-2.05 in)
RH wiper blade to top edge of cowl top vent panel	33-45 mm (1.29-1.77 in)

Torque Specifications

Description	Nm	lb-ft	lb-in
Windshield washer fluid reservoir bolts	6	—	53
Windshield washer fluid reservoir nut	6	—	53
Windshield wiper motor bolts	15	11	—
Windshield wiper mounting arm and pivot shaft bolts	7	—	62
Windshield wiper pivot arm nuts	28	21	—

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DESCRIPTION AND OPERATION

Wipers and Washers

The wiper and washer system consists of the following components:

- Wiper pivot arms
- Windshield washer nozzle and bracket
- Windshield washer pump
- Windshield washer fluid reservoir
- Windshield wiper blades
- Windshield wiper motor
- Windshield wiper mounting arm and pivot shaft
- Windshield wiper/washer switch

The wiper system is activated by the wiper/washer switch. The wiper/washer switch provides input to the wiper motor module to activate wash, low, high and intermittent modes.

The washer system consists of the washer reservoir and washer pump. When the wiper/washer switch is placed into the wash mode, the windshield wiper motor integral electronics activate the washer pump to direct washer fluid to the windshield.

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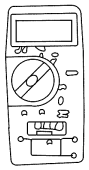
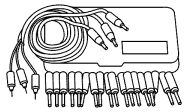
DIAGNOSIS AND TESTING

Wipers and Washers

Special Tool(s)

 ST1137-A	73III Automotive Meter 105-R0057 or equivalent
 ST1138-A	Flex Probe Kit 105-R025B or equivalent

Principles Of Operation

The windshield wiper motor is a smart wiper motor with an integrated electronics module. The internal components of the motor are the high/low relay, washer pump relay and the run/park relay and associated electronics.

The windshield wiper motor receives its inputs from the windshield wiper/washer switch. These signals are ground reference signals. When the switch is placed in different positions, various input signals are selected and sent through circuits to the motor. The windshield wiper motor module identifies these selected input signals and activates the motor to the selected function.

High Speed Windshield Wipers

When the wiper/wash switch is set to the HIGH-speed position, it supplies ground to the high/low-speed relay coil and the run/park relay coil, which causes the windshield wiper motor to operate at high speed. During HIGH-speed operation only, both the high/low-speed relay coil ground and the run/park relay coil ground are controlled directly by the windshield wiper/washer switch. This differs from LOW-speed or INTERMITTENT operation when the run/park relay coil is controlled by the microprocessor. When the switch is placed in the OFF position, the motor continues to operate until the motor returns to the PARK position and the internal Hall-effect sensor senses the motor magnet. The output to the run/park relay deactivates the relay and disconnects the voltage to the motor.

Since the high/low relay coil and the run/park relay coil are both controlled by a hard-wired circuit to the windshield wiper/washer switch, the windshield wipers will still operate in high-speed mode if the internal windshield wiper module fails, but will not automatically park when the windshield wiper/washer switch is turned to the OFF position.

Low Speed Windshield Wipers

When the wiper/wash switch is set to the LOW-speed position, it supplies ground to the internal windshield wiper motor module low-speed input and the windshield wiper motor operates at low speed. During LOW-speed operation, the internal run/park relay is activated by the microprocessor and supplies 12 volts to the low-speed brush of the windshield wiper motor. The run/park relay coil ground is controlled by the internal windshield wiper motor module based on inputs received from the windshield wiper/washer switch. When the switch is placed in the OFF position, the motor continues to operate until the motor returns to the PARK position and the internal Hall-effect sensor senses the motor magnet. The output to the run/park relay deactivates the relay and disconnects the voltage to the motor.

Since the run/park relay is controlled by the internal windshield wiper motor microprocessor, the wipers will only operate in high-speed mode if the internal windshield wiper motor module fails, and will not automatically park when the windshield wiper/washer switch is turned to the OFF position. This is due to the run/park and high/low relay coils being directly hard-wired to the switch in high speed. The diode prevents current flow through the high/low relay coil so the relay remains in the normally closed LOW-speed position.

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DIAGNOSIS AND TESTING (Continued)

Intermittent Wiper Speed Windshield Wipers

When the wiper/wash switch is set to the INTERMITTENT position(s), it supplies ground to the windshield wiper motor module inputs and the windshield wiper motor operates in intermittent mode. During INTERMITTENT operation, the windshield wiper motor activates the run/park relay coil which sends voltage through the high/low relay. The high/low relay remains deactivated, supplying the voltage to the low-speed brush of the windshield wiper motor. The windshield motor continues to operate until the internal Hall-effect sensor senses the magnet (PARK position) and deactivates the run/park relay, which disconnects voltage from the wiper motor. The windshield wipers remain parked until the windshield wiper motor module completes a time-out and then repeats the intermittent windshield wiper cycle.

Software Safe Mode

The windshield wiper motor defaults to software safe mode when the run/park sensor does not sense the Hall-effect magnet inside the wiper motor. This can be caused by an obstruction of the windshield wipers, a binding linkage or loss of the Hall sensor signal. The motor continues to operate in a high/low-speed condition, and when turned off, the wipers immediately park on the windshield. If necessary, the wipers can be turned on and off until they return to the PARK position.

Washer System

When windshield wash is selected on the wiper/wash switch, the windshield wiper motor module activates its integral washer relay which sends voltage to the washer pump to direct fluid to the windshield.

Windshield Wiper Circuit Function Table

Wiper/Wash Switch Position	Circuit 680 (LB/OG)	Circuit 61 (YE/RD)	Circuit 56 (DB/OG)	Circuit 58 (WH)	Circuit 63 (RD)
OFF	OPEN	OPEN	OPEN	OPEN	OPEN
INT 1	OPEN	OPEN	OPEN	OPEN	GROUND
INT 2	OPEN	OPEN	OPEN	GROUND	GROUND
INT 3	OPEN	OPEN	OPEN	GROUND	OPEN
INT 4	OPEN	OPEN	GROUND	GROUND	OPEN
INT 5	OPEN	OPEN	GROUND	OPEN	OPEN
LOW	OPEN	OPEN	GROUND	OPEN	GROUND
HIGH	OPEN	GROUND	GROUND	OPEN	GROUND
WASH	GROUND	OPEN/GROUND	OPEN/GROUND	OPEN/GROUND	OPEN/GROUND

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Windshield washer pump hoses • Windshield wiper mounting arm and pivot shaft	• Bussed electrical center (BEC) fuse 10 (30A) • Smart junction box (SJB) fuse 3 (10A) • Circuitry • Windshield wiper motor • Windshield washer pump • Windshield wiper/washer switch

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

DIAGNOSIS AND TESTING (Continued)

4. If the cause is not visually evident, verify the symptom and GO to Symptom Chart.

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
• The wipers are inoperative	• Fuse(s) • Circuitry • Windshield wiper motor • Windshield wiper/washer switch	• GO to Pinpoint Test A.
• The wipers stay on continuously	• Circuitry • Windshield wiper motor • Windshield wiper/washer switch	• GO to Pinpoint Test B.
• The high/low wiper speeds do not operate correctly	• Circuitry • Windshield wiper/washer switch • Windshield wiper motor	• GO to Pinpoint Test C.
• The intermittent wiper speed does not operate correctly	• Circuitry • Windshield wiper/washer switch • Windshield wiper motor	• GO to Pinpoint Test D.
• The wash and wipe function is inoperative	• Circuitry • Windshield wiper motor • Windshield wiper/washer switch	• If the washer pump is inoperative, GO to Pinpoint Test E. • If the washer pump is operative, INSTALL a new wiper motor. TEST the system for normal operation.
• The washer pump is inoperative	• Circuitry • Windshield wiper motor • Windshield washer pump	• GO to Pinpoint Test E.
• The wipers will not park at correct position	• Linkage • Pivot arm adjustment • Windshield wiper motor	• If the wipers immediately stop on the windshield as soon as they are turned off, INSTALL a new windshield wiper motor. • ADJUST the pivot arms, REFER to Wiper Blade and Pivot Arm Adjustment in this section.

Pinpoint Tests

Pinpoint Test A: The Wipers are Inoperative

Refer to Wiring Diagrams Cell 81, Wipers and Washers for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

Normal Operation

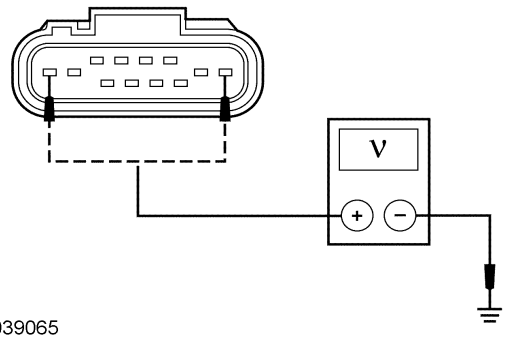
The windshield wiper motor receives open and ground inputs from the windshield wiper/washer switch through circuits 56 (DB/OG), 58 (WH), 61 (YE/RD) and 63 (RD) to activate the wipers to the appropriate modes. The internal wiper motor module controls the internal wiper run/park relay to control the windshield wiper motor in conjunction with the internal wiper high/low relay. The windshield wiper motor receives voltage from circuit 2026 (RD/OG) and is grounded through circuit 1205 (BK). The windshield wiper motor internal microprocessor and relays receive voltage from circuit 2025 (RD/YE) and are grounded through circuit 1205 (BK).

This pinpoint test is intended to diagnose the following:

- Fuse(s)
- Wiring, terminals or connectors
- Windshield wiper/washer switch
- Windshield wiper motor

PINPOINT TEST A: THE WIPERS ARE INOPERATIVE

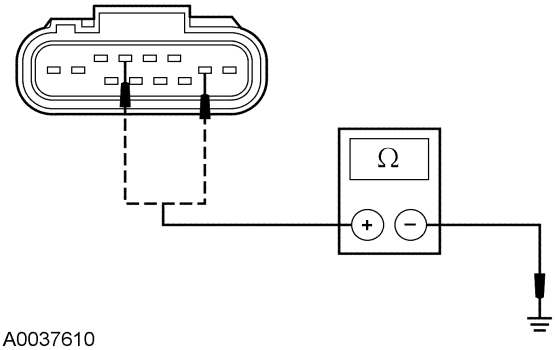
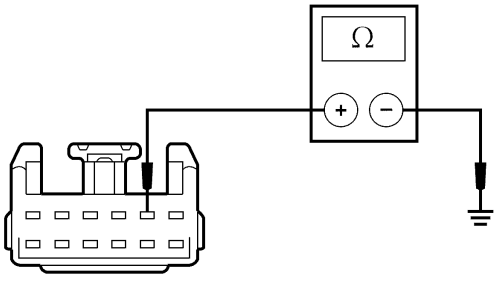
⚠ CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Test Step		Result / Action to Take
A1	**CHECK CIRCUITS 2025 (RD/YE) AND 2026 (RD/OG) FOR VOLTAGE**	
	• Key in OFF position. • Disconnect: Windshield Wiper Motor C125. • Key in ON position. • Measure the voltage between the windshield wiper motor C125-5, circuit 2026 (RD/OG), harness side and ground; and between windshield wiper motor C125-8, circuit 2025 (RD/YE), harness side and ground.  A0039065 • **Are the voltages greater than 10 volts?**	**Yes** GO to **A2**. **No** VERIFY the smart junction box (SJB) fuse 3 (10A) and bussed electrical center (BEC) fuse 10 (30A) are OK. If OK, REPAIR the circuit(s) in question. TEST the system for normal operation.
A2	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Key in OFF position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE WIPERS ARE INOPERATIVE (Continued)

Test Step		Result / Action to Take
A2	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN (Continued)**	
	• Measure the resistance between the windshield wiper motor C125-3, circuit 1205 (BK), harness side and ground; and between windshield wiper motor C125-6, circuit 1205 (BK), harness side and ground.  A0037610 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A3**. **No** REPAIR the circuit. TEST the system for normal operation.
A3	**CHECK THE WINDSHIELD WIPER/WASHER SWITCH**	
	• Disconnect: Windshield Wiper/Washer Switch C2137. • Carry out the windshield wiper/washer switch component test. Refer to Wiring Diagrams Cell 149 for component testing. • **Does the windshield wiper/washer switch pass the component test?**	**Yes** GO to **A4**. **No** INSTALL a new windshield wiper/washer switch. REFER to Wiper/Washer Switch in this section.
A4	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Measure the resistance between the windshield wiper/washer switch C2137-2, circuit 1205 (BK), harness side and ground.  N0011977 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A5**. **No** REPAIR the circuit. TEST the system for normal operation.
A5	**CHECK FOR SHORTS IN THE WINDSHIELD WIPER MOTOR HARNESS**	
	• Measure the resistance at the windshield wiper motor electrical connector between the circuits shown in the table.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE WIPERS ARE INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>A5</td><td>CHECK FOR SHORTS IN THE WINDSHIELD WIPER MOTOR HARNESS (Continued)</td><td rowspan="2">Yes
GO to A6.
No
REPAIR the circuit. TEST the system for normal operation.</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Windshield Wiper Motor C125</th><th>Windshield Wiper Motor C125</th></tr>
<tr><td>Pin 10, circuit 56 (DB/OG)</td><td>Pin 11, circuit 58 (WH)</td></tr>
<tr><td></td><td>Pin 1, circuit 63 (RD)</td></tr>
<tr><td></td><td>Pin 9, circuit 61 (YE/RD)</td></tr>
<tr><td>Pin 11, circuit 58 (WH)</td><td>Pin 1, circuit 63 (RD)</td></tr>
<tr><td></td><td>Pin 9, circuit 61 (YE/RD)</td></tr>
<tr><td>Pin 1, circuit 63 (RD)</td><td>Pin 9, circuit 61 (YE/RD)</td></tr>
</table>
• Is the resistance greater than 10,000 ohms for all measurements?
</td></tr>
<tr><td>A6</td><td>CHECK FOR CORRECT WINDSHIELD WIPER MOTOR OPERATION</td><td rowspan="2">Yes
INSTALL a new windshield wiper motor. REFER to Wiper Motor in this section. TEST the system for normal operation.
No
The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</td></tr>
<tr><td colspan="2">• Disconnect all the windshield wiper motor connectors.
• Check for:
— corrosion.
— pushed-out pins.
• Connect all the windshield wiper motor connectors and make sure they seat correctly.
• Operate the system and verify the concern is still present.
• Is the concern still present?</td></tr>
</table>

Pinpoint Test B: The Wipers Stay On Continuously

Refer to Wiring Diagrams Cell 81, Wipers and Washers for schematic and connector information.

Normal Operation

The windshield wiper motor receives open and ground inputs from the windshield wiper/washer switch through circuits 56 (DB/OG), 58 (WH), 61 (YE/RD) and 63 (RD) to activate the wipers to the appropriate modes. The module (internal) controls the run/park relay (internal) using internal circuitry to control the windshield wiper motor in conjunction with the high/low relay (internal).

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Windshield wiper motor
- Windshield wiper/washer switch

PINPOINT TEST B: THE WIPERS STAY ON CONTINUOUSLY

⚠ CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

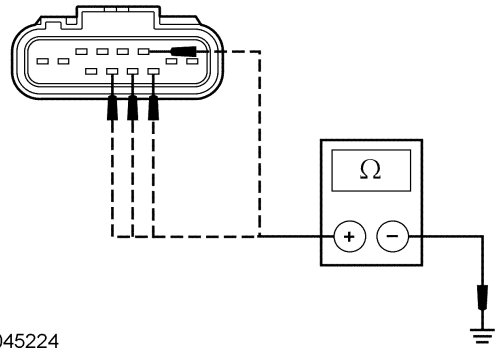
<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>B1</td><td>CHECK THE WINDSHIELD WIPER/WASHER SWITCH</td><td rowspan="2">Yes
GO to B2.
No
INSTALL a new windshield wiper/washer switch. REFER to Wiper/Washer Switch in this section.</td></tr>
<tr><td colspan="2">• Key in OFF position.
• Disconnect: Windshield Wiper/Washer Switch C2137.
• Carry out the windshield wiper/washer switch component test. Refer to Wiring Diagrams Cell 149 for component testing.
• Does the windshield wiper/washer switch pass the component test?</td></tr>
<tr><td>B2</td><td>CHECK CIRCUITS 56 (DB/OG), 58 (WH), 61 (YE/RD) AND 63 (RD) FOR A SHORT TO GROUND</td><td rowspan="2"></td></tr>
<tr><td colspan="2">• Disconnect: Windshield Wiper Motor C125.</td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: THE WIPERS STAY ON CONTINUOUSLY (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>B2</td><td>CHECK CIRCUITS 56 (DB/OG), 58 (WH), 61 (YE/RD) AND 63 (RD) FOR A SHORT TO GROUND (Continued)</td><td rowspan="2">Yes
GO to B3.
No
REPAIR the circuit(s) in question. TEST the system for normal operation.</td></tr>
<tr><td colspan="2">• Using the following table, measure the resistance between windshield wiper motor C125 harness side and ground:

<table><tr><th>Windshield Wiper Motor C125 Pin</th><th>Circuit</th></tr><tr><td>C125-10</td><td>56 (DB/OG)</td></tr><tr><td>C125-11</td><td>58 (WH)</td></tr><tr><td>C125-1</td><td>63 (RD)</td></tr><tr><td>C125-9</td><td>61 (YE/RD)</td></tr></table>
 

A0045224

• Are the resistances greater than 10,000 ohms?</td></tr>
<tr><td>B3</td><td>CHECK FOR CORRECT WINDSHIELD WIPER MOTOR OPERATION</td><td rowspan="2">Yes
INSTALL a new windshield wiper motor. REFER to Wiper Motor in this section. TEST the system for normal operation.
No
The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</td></tr>
<tr><td colspan="2">• Disconnect all the windshield wiper motor connectors.
• Check for:
— corrosion.
— pushed-out pins.
• Connect all the windshield wiper motor connectors and make sure they seat correctly.
• Operate the system and verify the concern is still present.
• Is the concern still present?</td></tr>
</table>

Pinpoint Test C: The High/Low Wiper Speeds Do Not Operate Correctly

Refer to Wiring Diagrams Cell 81, Wipers and Washers for schematic and connector information.

Normal Operation

The windshield wiper motor receives open and ground inputs from the windshield wiper/washer switch through circuits 56 (DB/OG), 58 (WH), 61 (YE/RD) and 63 (RD) to activate the wipers to the appropriate modes. The module (internal) controls the wiper run/park relay (internal) using internal circuitry to control the motor in conjunction with the high/low relay (internal).

This pinpoint test is intended to diagnose the following:

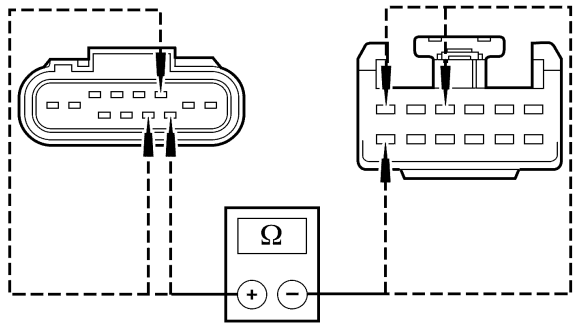
- Wiring, terminals or connectors
- Windshield wiper/washer switch
- Windshield wiper motor

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST C: THE HIGH/LOW WIPER SPEEDS DO NOT OPERATE CORRECTLY

⚠ CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>C1</td><td>CHECK THE WINDSHIELD WIPER/WASHER SWITCH</td><td rowspan="2">Yes
GO to C2.
No
INSTALL a new windshield wiper/washer switch. REFER to Wiper/Washer Switch in this section.</td></tr>
<tr><td colspan="2">• Key in OFF position.
• Disconnect: Windshield Wiper/Washer Switch C2137.
• Carry out the windshield wiper/washer switch component test. Refer to Wiring Diagrams Cell 149 for component testing.
• Does the windshield wiper/washer switch pass the component test?</td></tr>
<tr><td>C2</td><td>CHECK CIRCUITS 56 (DB/OG), 61 (YE/RD) AND 63 (RD) FOR AN OPEN</td><td rowspan="2">Yes
GO to C3.
No
REPAIR the circuit(s) in question. TEST the system for normal operation.</td></tr>
<tr><td colspan="2">• Disconnect: Windshield Wiper Motor C125.
• Using the following table, measure the resistance between windshield wiper/washer switch C2137 harness side and windshield wiper motor C125 harness side:

<table>
<tr><th>Windshield Wiper/Washer Switch C2137</th><th>Windshield Wiper Motor C125</th></tr>
<tr><td>Pin 12, circuit 56 (DB/OG)</td><td>Pin 10, circuit 56 (DB/OG)</td></tr>
<tr><td>Pin 4, circuit 63 (RD)</td><td>Pin 1, circuit 63 (RD)</td></tr>
<tr><td>Pin 6, circuit 61 (YE/RD)</td><td>Pin 9, circuit 61 (YE/RD)</td></tr>
</table>


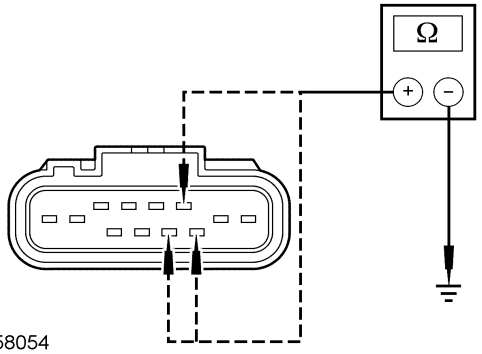
N0076739
• Is the resistance less than 5 ohms?</td></tr>
<tr><td>C3</td><td>CHECK CIRCUITS 56 (DB/OG), 61 (YE/RD) AND 63 (RD) FOR A SHORT TO GROUND</td><td></td></tr>
<tr><td colspan="2">• Using the following table, measure the resistance between windshield wiper motor C125 harness side and ground:

<table>
<tr><th>Windshield Wiper Motor C125</th><th>Ground</th></tr>
<tr><td>Pin 10, circuit 56 (DB/OG)</td><td>Ground</td></tr>
<tr><td>Pin 1, circuit 63 (RD)</td><td>Ground</td></tr>
<tr><td>Pin 9, circuit 61 (YE/RD)</td><td>Ground</td></tr>
</table></td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST C: THE HIGH/LOW WIPER SPEEDS DO NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
C3	**CHECK CIRCUITS 56 (DB/OG), 61 (YE/RD) AND 63 (RD) FOR A SHORT TO GROUND (Continued)**	
	 N0058054 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to C4. **No** REPAIR the circuit(s) in question. TEST the system for normal operation.
C4	**CHECK FOR SHORTS IN THE WINDSHIELD WIPER MOTOR HARNESS**	
	• Measure the resistance at the windshield wiper motor electrical connector between the circuits shown in the table.	

Windshield Wiper Motor C125	Windshield Wiper Motor C125
Pin 10, circuit 56 (DB/OG)	Pin 11, circuit 58 (WH)
	Pin 1, circuit 63 (RD)
	Pin 9, circuit 61 (YE/RD)
Pin 11, circuit 58 (WH)	Pin 1, circuit 63 (RD)
	Pin 9, circuit 61 (YE/RD)
Pin 1, circuit 63 (RD)	Pin 9, circuit 61 (YE/RD)

	• **Is the resistance greater than 10,000 ohms for all measurements?**	**Yes** GO to C5. **No** REPAIR the circuit. TEST the system for normal operation.
C5	**CHECK FOR CORRECT WINDSHIELD WIPER MOTOR OPERATION**	
	• Disconnect all the windshield wiper motor connectors. • Check for: — corrosion. — pushed-out pins. • Connect all the windshield wiper motor connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new windshield wiper motor. REFER to Wiper Motor in this section. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test D: The Intermittent Wiper Speed Does Not Operate Correctly

Refer to Wiring Diagrams Cell 81, Wipers and Washers for schematic and connector information.

Normal Operation

The windshield wiper motor receives open and ground inputs from the windshield wiper/washer switch through circuits 56 (DB/OG), 58 (WH), 61 (YE/RD) and 63 (RD) to activate the wipers to the appropriate modes. The module (internal) controls the wiper run/park relay (internal) using internal circuitry to control the motor in conjunction with the high/low relay (internal).

This pinpoint test is intended to diagnose

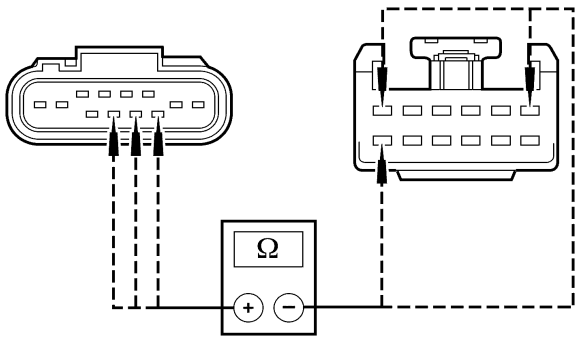
DIAGNOSIS AND TESTING (Continued)

the following:

- Wiring, terminals or connectors
- Windshield wiper motor
- Windshield wiper/washer switch

PINPOINT TEST D: THE INTERMITTENT WIPER SPEED DOES NOT OPERATE CORRECTLY

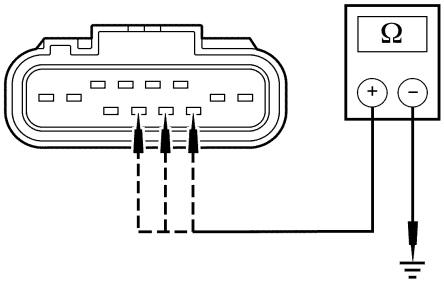
⚠ CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>D1</td><td>CHECK THE WINDSHIELD WIPER/WASHER SWITCH
• Key in OFF position.
• Disconnect: Windshield Wiper/Washer Switch C2137.
• Carry out the windshield wiper/washer switch component test. Refer to Wiring Diagrams Cell 149 for component testing.
• Does the windshield wiper/washer switch pass the component test?</td><td>Yes
GO to D2.
No
INSTALL a new windshield wiper/washer switch. REFER to Wiper/Washer Switch in this section.</td></tr>
<tr><td>D2</td><td>CHECK CIRCUITS 56 (DB/OG), 58 (WH) AND 61 (YE/RD) FOR AN OPEN
• Disconnect: Windshield Wiper Motor C125.
• Using the following table, measure the resistance between windshield wiper/washer switch C2137 harness side and windshield wiper motor C125 harness side:
<table><tr><th>Windshield Wiper/Washer Switch C2137</th><th>Windshield Wiper Motor C125</th></tr><tr><td>Pin 12, circuit 56 (DB/OG)</td><td>Pin 10, circuit 56 (DB/OG)</td></tr><tr><td>Pin 6, circuit 61 (YE/RD)</td><td>Pin 9, circuit 61 (YE/RD)</td></tr><tr><td>Pin 1, circuit 58 (WH)</td><td>Pin 11, circuit 58 (WH)</td></tr></table> 
N0072267
• Is the resistance less than 5 ohms?</td><td>Yes
GO to D3.
No
REPAIR the circuit. TEST the system for normal operation.</td></tr>
<tr><td>D3</td><td>CHECK CIRCUITS 56 (DB/OG), 58 (WH) AND 61 (YE/RD) FOR A SHORT TO GROUND
• Using the following table, measure the resistance between windshield wiper motor C125 harness side and ground:
<table><tr><th>Windshield Wiper Motor C125</th><th>Ground</th></tr><tr><td>Pin 10, circuit 56 (DB/OG)</td><td>Ground</td></tr><tr><td>Pin 11, circuit 58 (WH)</td><td>Ground</td></tr><tr><td>Pin 9, circuit 61 (YE/RD)</td><td>Ground</td></tr></table></td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: THE INTERMITTENT WIPER SPEED DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
D3	**CHECK CIRCUITS 56 (DB/OG), 58 (WH) AND 61 (YE/RD) FOR A SHORT TO GROUND (Continued)**	
	 N0058187 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to D4. **No** REPAIR the circuit(s) in question. TEST the system for normal operation.
D4	**CHECK FOR SHORTS IN THE WINDSHIELD WIPER MOTOR HARNESS**	
	• Measure the resistance at the windshield wiper motor electrical connector between the circuits shown in the table. **Windshield Wiper Motor C125** / **Windshield Wiper Motor C125** Pin 10, circuit 56 (DB/OG) / Pin 11, circuit 58 (WH) / Pin 1, circuit 63 (RD) / Pin 9, circuit 61 (YE/RD) Pin 11, circuit 58 (WH) / Pin 1, circuit 63 (RD) / Pin 9, circuit 61 (YE/RD) Pin 1, circuit 63 (RD) / Pin 9, circuit 61 (YE/RD) • **Is the resistance greater than 10,000 ohms for all measurements?**	**Yes** GO to D5. **No** REPAIR the circuit. TEST the system for normal operation.
D5	**CHECK FOR CORRECT WINDSHIELD WIPER MOTOR OPERATION**	
	• Disconnect all the windshield wiper motor connectors. • Check for: — corrosion. — pushed-out pins. • Connect all the windshield wiper motor connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new windshield wiper motor. REFER to Wiper Motor in this section. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test E: The Washer Pump is Inoperative

Refer to Wiring Diagrams Cell 81, Wipers and Washers for schematic and connector information.

Normal Operation

When activated, the windshield wiper/washer switch sends a ground signal through circuit 680 (LB/OG) to the windshield wiper motor. The windshield wiper motor then supplies voltage through circuit 941 (BK/WH) to activate the windshield washer pump motor. Ground is provided to the windshield washer pump through circuit 1205 (BK).

This pinpoint test is intended to diagnose

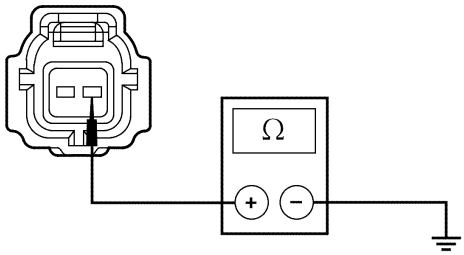
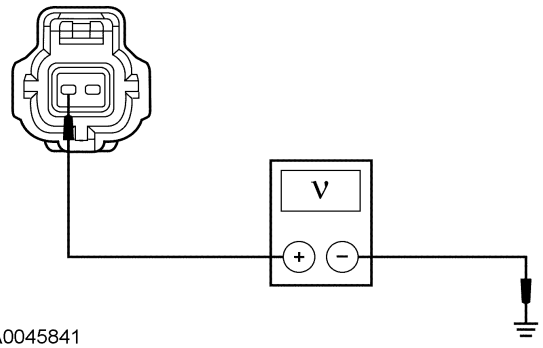
DIAGNOSIS AND TESTING (Continued)

the following:

- Wiring, terminals or connectors
- Windshield wiper motor
- Windshield washer pump

PINPOINT TEST E: THE WASHER PUMP IS INOPERATIVE

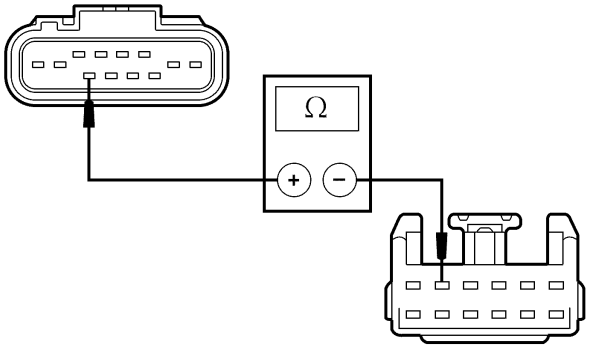
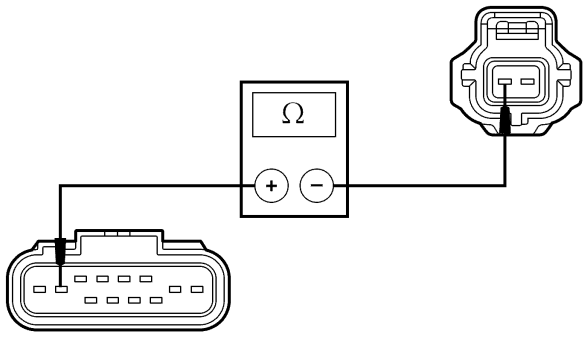
⚠ CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Test Step		Result / Action to Take
E1	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Key in OFF position. • Disconnect: Washer Pump Motor C137. • Measure the resistance between the windshield washer pump C137-2, circuit 1205 (BK), harness side and ground.  GK9963-A • **Is the resistance less than 5 ohms?**	**Yes** GO to **E2**. **No** REPAIR the circuit. TEST the system for normal operation.
E2	**CHECK THE WINDSHIELD WASHER PUMP FOR VOLTAGE**	
	• Key in ON position. • Measure the voltage between the windshield washer pump C137-1, circuit 941 (BK/WH) harness side and ground while pressing the windshield wiper/washer switch to the WASH position.  A0045841 • **Is the voltage greater than 10 volts?**	**Yes** INSTALL a new washer pump. REFER to Washer Pump and Reservoir in this section. **No** GO to **E3**.
E3	**CHECK THE WINDSHIELD WIPER/WASHER SWITCH**	
	• Key in OFF position. • Disconnect: Windshield Wiper/Washer Switch C2137. • Carry out the windshield wiper/washer switch component test. Refer to Wiring Diagrams Cell 149 for component testing. • **Does the windshield wiper/washer switch pass the component test?**	**Yes** GO to **E4**. **No** INSTALL a new windshield wiper/washer switch. REFER to Wiper/Washer Switch in this section.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST E: THE WASHER PUMP IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
E4	**CHECK CIRCUIT 680 (LB/OG) FOR AN OPEN CIRCUIT**	
	• Disconnect: Windshield Wiper Motor C125. • Measure the resistance between the windshield wiper/washer switch C2137-5, circuit 680 (LB/OG), harness side and windshield wiper motor connector C125-12, circuit 680 (LB/OG), harness side.  N0011982 • **Is the resistance less than 5 ohms?**	**Yes** GO to **E5**. **No** REPAIR the circuit. TEST the system for normal operation.
E5	**CHECK CIRCUIT 941 (BK/WH) FOR AN OPEN CIRCUIT**	
	• Measure the resistance between the windshield wiper motor connector C125-7, circuit 941 (BK/WH), harness side and the windshield washer pump connector C137-1, circuit 941 (BK/WH), harness side.  N0011983 • **Is the resistance less than 5 ohms?**	**Yes** GO to **E6**. **No** REPAIR the circuit. TEST the system for normal operation.
E6	**CHECK FOR CORRECT WINDSHIELD WIPER MOTOR OPERATION**	
	• Disconnect the windshield wiper motor connectors. • Check for: — corrosion. — pushed-out pins. • Connect all the windshield wiper motor connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new windshield wiper motor. REFER to Wiper Motor in this section. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

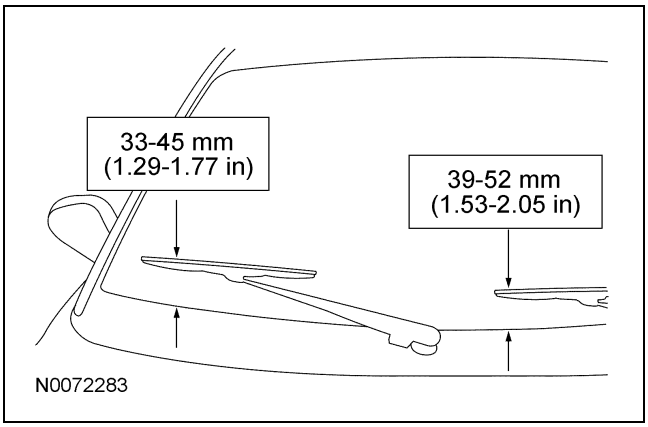
GENERAL PROCEDURES

Wiper Blade and Pivot Arm Adjustment

NOTE: When adjusting the wiper pivot arms, the wiper blades must not be less than the specified distance from the cowl weatherstrip.

1. Cycle and park the windshield wipers.
2. **NOTE:** Make sure there is no mechanical binding in the linkage preventing the wiper arms from returning to the fully PARKED position.

   Verify that the RH windshield wiper blade is 33-45 mm (1.29-1.77 in) above the cowl weatherstrip.



3. Verify that the LH wiper blade is 39-52 mm (1.53-2.05 in) above the cowl weatherstrip.
4. If the distance is not within specification, remove the windshield wiper pivot arms and reposition to specification. For additional information, refer to Wiper Pivot Arm in this section.

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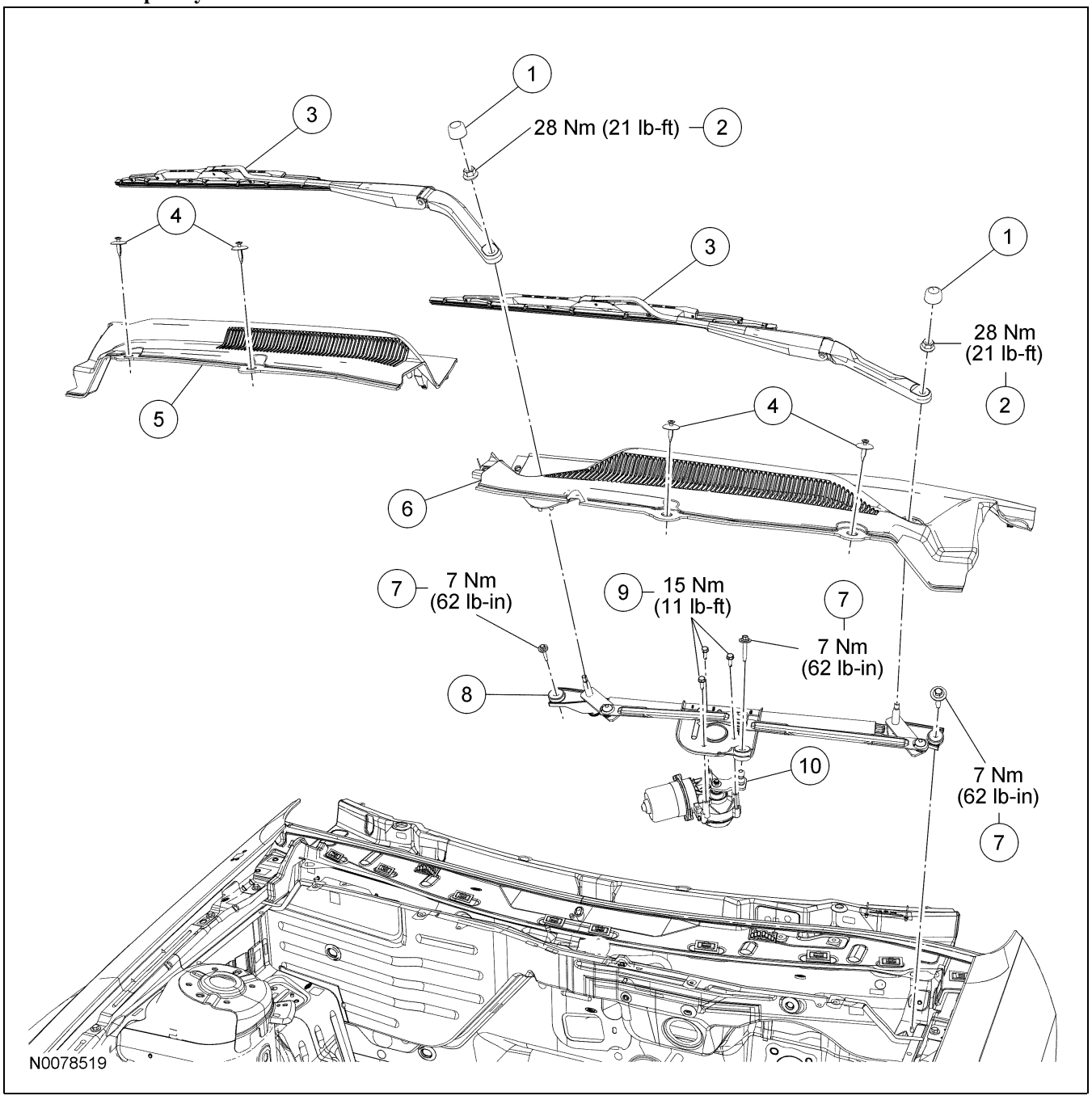
REMOVAL AND INSTALLATION

Wiper and Washer System — Exploded View

Windshield Wiper System



Item	Part Number	Description
1	17C526	Wiper pivot arm nut covers (2 required)
2	W706109	Wiper pivot arm nuts (2 required)

(Continued)

Item	Part Number	Description
3	17526 RH/ 17527 LH	Wiper pivot arms
4	N804837	Cowl top vent screen pin-type retainers (4 required)
5	63018A16	RH cowl top vent screen

(Continued)

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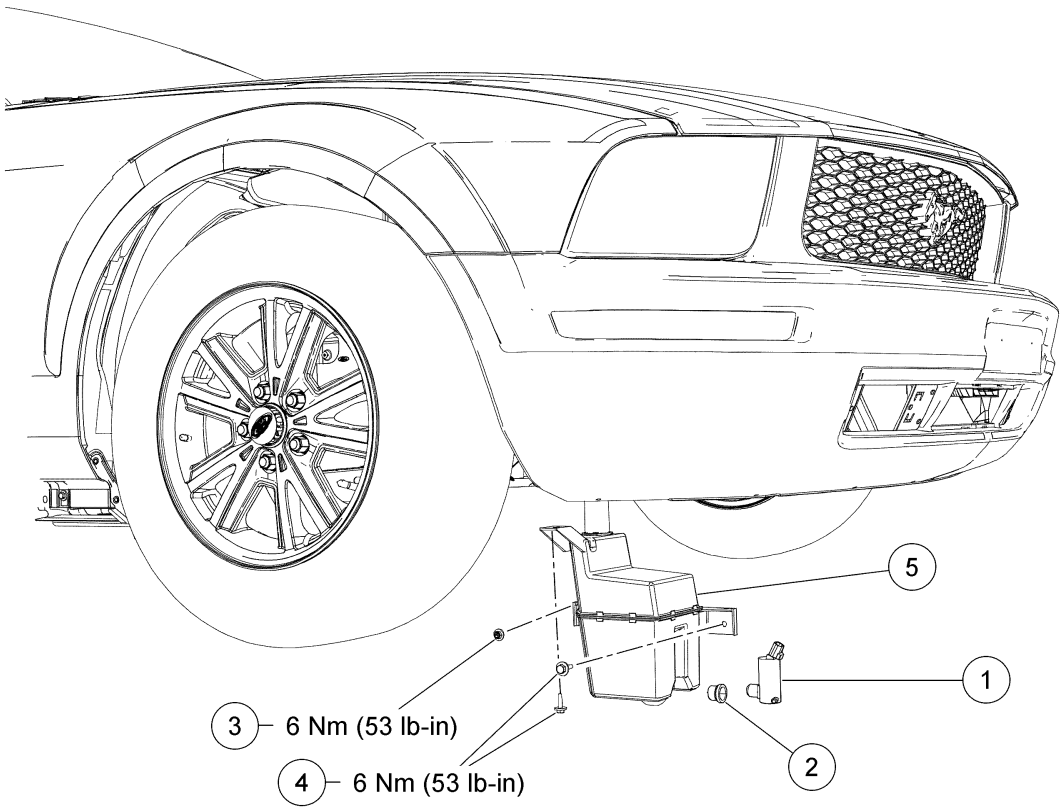
REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
6	63018A17	LH cowl top vent screen
7	W707532	Windshield wiper mounting arm and pivot shaft bolts (3 required)
8	17508	Windshield wiper mounting arm and pivot shaft
9	—	Windshield wiper motor bolts (3 required)
10	17504	Windshield wiper motor

(Continued)

Windshield Washer Pump and Fluid Reservoir



Item	Part Number	Description
1	17664	Windshield washer pump (or part of 17618)
2	17B610	Windshield washer pump seal (or part of 17664)
3	W623332	Windshield washer fluid reservoir nut
4	W710381	Windshield washer fluid reservoir bolts (2 required)
5	17618	Windshield washer fluid reservoir (includes 17664 and 17B618)

(Continued)

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

Wiper Pivot Arm

Removal and Installation

1. **NOTE:** New wiper pivot arms need to be installed as an assembly.

   Remove the 2 wiper pivot arm nut covers.

2. Remove the 2 wiper pivot arm nuts and the 2 wiper pivot arms.
   - Tighten to 28 Nm (21 lb-ft).

3. To install, reverse the removal procedure.
   - Adjust the wiper pivot arms. For additional information, refer to Wiper Blade and Pivot Arm Adjustment in this section.

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REMOVAL AND INSTALLATION

Wiper Mounting Arm and Pivot Shaft

Removal and Installation

1. Remove the RH and LH cowl vent screens. For additional information, refer to Section 501-02.
2. Remove the 3 bolts and the windshield wiper mounting arm and pivot shaft.
   - To install, tighten to 7 Nm (62 lb-in).
3. Disconnect the windshield wiper motor electrical connector.
4. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

Wiper Motor

Removal and Installation

⚠ **CAUTION: The internal permanent magnets used in the windshield wiper motor are made of a glass-like material. To avoid damaging the magnets, do not handle the windshield wiper motor roughly or strike the motor with a hammer or any other object.**

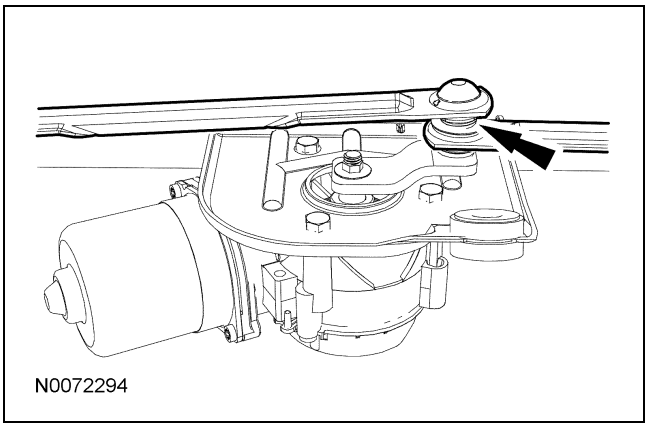
NOTE: A new wiper motor assembly comes with the linkage arm installed.

1. Remove the wiper mounting arm and pivot shaft. For additional information, refer to Wiper Mounting Arm and Pivot Shaft in this section.

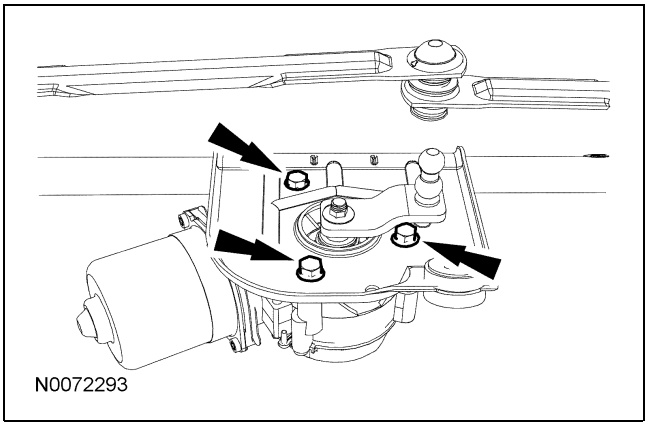
2. **NOTE:** Do not remove the wiper motor linkage arm from the wiper motor assembly. If the arm is removed, the wiper arms may not park in the correct location.

   Separate the wiper motor linkage arm from the wiper mounting arm and pivot shaft assembly.

   - Use a suitable tool at the location shown to separate the wiper linkage arm from the wiper mounting arm and pivot shaft assembly.


N0072294

3. Remove the 3 bolts and the windshield wiper motor.
   - To install, tighten to 15 Nm (11 lb-ft).


N0072293

4. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

Washer Pump and Reservoir

Material

Item	Specification
Premium Windshield Washer Concentrate (US) ZC-32-A or B (US)	WSB-M8B16-A2
Premium Quality Windshield Washer Fluid (Canada) CXC-37-(A, B, C, D, E, F, G, H) (Canada)	—

Removal and Installation

Windshield washer pump or fluid reservoir

⚠ **WARNING: Carefully read cautionary information on product label. For EMERGENCY MEDICAL INFORMATION seek medical advice. In the USA or Canada on Ford/Motorcraft products call: 1-800-959-3673. For additional information, consult the product Material Safety Data Sheet (MSDS) if available. Failure to follow these instructions may result in serious personal injury.**

1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to Section 100-02.

2. Disconnect windshield washer pump hose and drain the windshield washer solvent.

3. Disconnect the windshield washer pump electrical connector.

Windshield washer pump only

4. Remove the windshield washer pump.

Windshield washer fluid reservoir

5. Remove the 2 windshield washer fluid reservoir bolts.
   - To install, tighten to 6 Nm (53 lb-in).

6. Remove the nut and the windshield washer fluid reservoir.
   - To install, tighten to 6 Nm (53 lb-in).

Windshield washer pump or fluid reservoir

7. ⚠ **CAUTION: Do not operate the windshield pump before filling the windshield washer reservoir. Failure to do so could result in premature pump failure.**

   To install, reverse the removal procedure.

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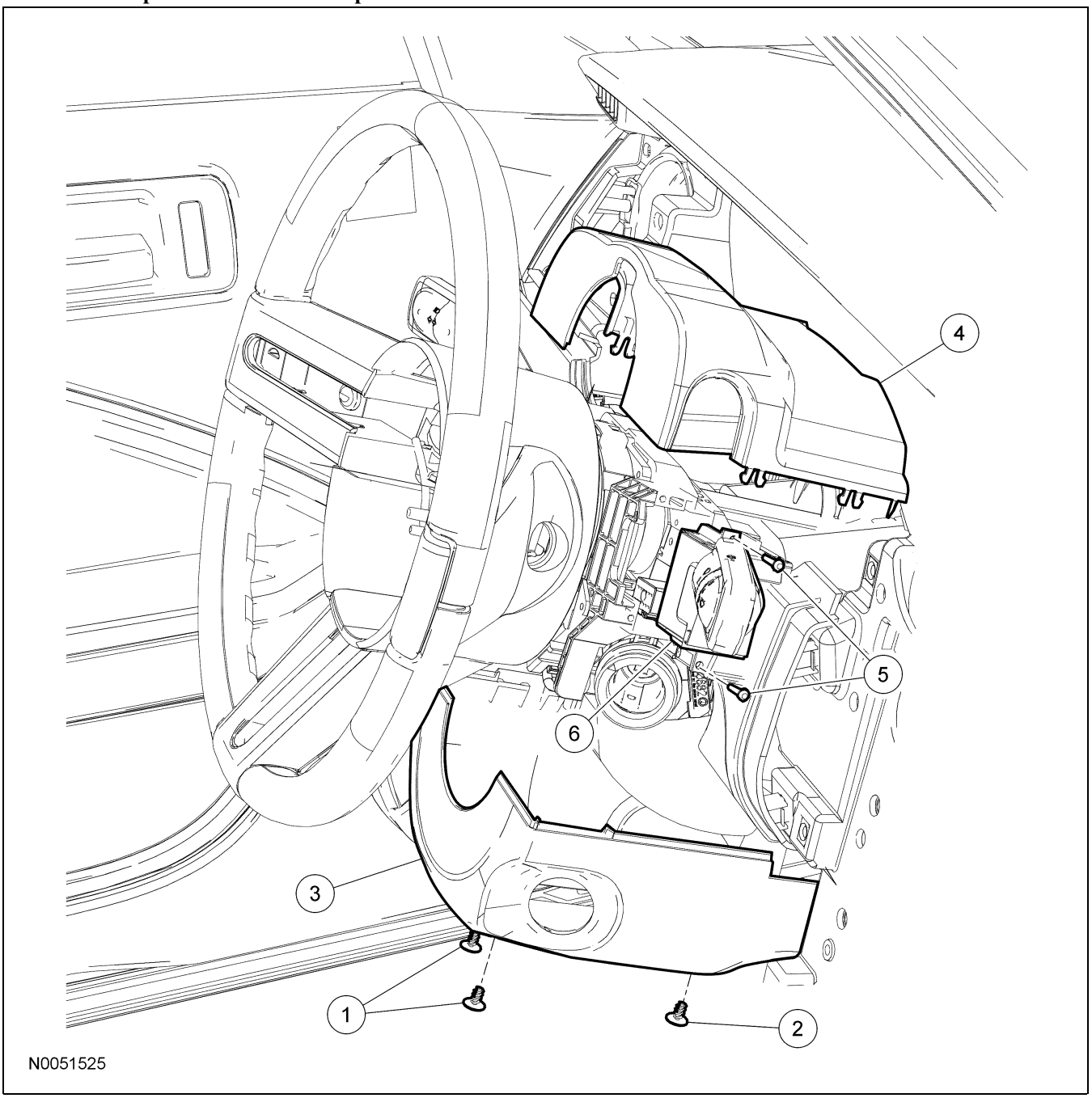
REMOVAL AND INSTALLATION

Wiper/Washer Switch

Windshield Wiper/Washer Switch Exploded View



Item	Part Number	Description
1	W710937	Steering column lower shroud screws (2 required)
2	W706805	Steering column lower shroud screw
3	3530	Steering column lower shroud

(Continued)

Item	Part Number	Description
4	3530	Steering column upper shroud
5	—	Windshield wiper/washer switch screws (2 required)
6	17A553	Windshield wiper/washer switch

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REMOVAL AND INSTALLATION (Continued)

Removal and Installation

1. Remove the 3 screws and the steering column upper and lower shrouds.
2. Remove the 2 windshield wiper/washer switch screws.
3. Disconnect the electrical connector and remove the windshield wiper/washer switch.
4. To install, reverse the removal procedure.

SPECIFICATIONS

Material

Item	Specification	Fill Capacity
MERCON® V Automatic Transmission Fluid XT-5-QM (or XT-5-QMC) (US); CXT-5-LM12 (Canada)	MERCON® V	—

Torque Specifications

Description	Nm	lb-ft	lb-in
Clevis-to-hydraulic lift cylinder rod bolts	20	—	177
Compression panel screws	2	—	18
Convertible top ajar switch screw	9	—	80
Convertible top frame No. 5 bow pivot bolts	9	—	80

Torque Specifications (Continued)

Description	Nm	lb-ft	lb-in
Convertible top latch screws	6	—	53
Header form panel screws	5	—	44
Hydraulic fluid reservoir fill plug	1	—	9
Hydraulic lift cylinder bracket bolts	20	—	177
Hydraulic line-to-motor bolts	14	—	124
Hydraulic pump and motor assembly nuts	4	—	35
L-bracket bolts	27	20	—
Pivot bracket bolts	48	35	—
Pivot bracket-to-quarter panel bracket bolts	11	—	97
Weatherstrip retaining channel screws	6	—	53

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DESCRIPTION AND OPERATION

Convertible Top

NOTE: The Smart Junction Box (SJB) may also be identified as the Generic Electronic Module (GEM).

The convertible top consists of the following components:

- Convertible top cover assembly
- Convertible top frame bows (1-5)
- Convertible top frame side rails
- Convertible top latches
- Header form panel
- Headliner
- Hydraulic pump and motor assembly
- Hydraulic lift cylinders with hydraulic lines
- Stay pads
- Weatherstrips

Convertible Top Assembly

The convertible top is not adjustable, and is removed from the vehicle as an assembly. Once removed, the convertible top components can be disassembled, replaced and installed as necessary.

Convertible Top Cover Assembly

The convertible top cover assembly includes the rear window glass. The rear window glass is not removable, and the convertible top material and rear glass must be installed as an assembly.

Convertible Top Frame Bows

The convertible top frame bows provide support for the convertible top cover assembly. The convertible top frame bows are the attachment points for the convertible top cover assembly.

Convertible Top Frame Side Rails

The convertible top frame side rails form the LH and RH side structure of the convertible top assembly. The convertible top frame side rails support the convertible top frame bows and provide the attachment points for the LH and RH side convertible top cover assembly.

Convertible Top Latches

The convertible top latches secure the convertible top assembly to the windshield header when the convertible top assembly is in the raised position. The convertible top latches must be manually released before lowering the convertible top assembly.

Header Form Panel

The header form panel supports the forward portion of the convertible top assembly. The convertible top latches secure the header form panel to the windshield header.

Headliner

The headliner is attached to the convertible top frame bows and must be installed after the convertible top cover assembly and the stay pads are removed.

Hydraulic Pump and Motor Assembly

The hydraulic pump and motor assembly provide pressurized hydraulic fluid to the hydraulic lines and the hydraulic lift cylinders.

The convertible top hydraulic system is comprised of the hydraulic lift cylinders, the motor, the hydraulic lines and a convertible top switch. The hydraulic system, except for the convertible top switch, is removed as an assembly, but the components may be installed separately.

Hydraulic Lift Cylinders and Hydraulic Lines

The hydraulic lines receive the pressurized hydraulic fluid from the hydraulic motor and pump assembly. The hydraulic lines carry the pressurized hydraulic fluid to the hydraulic lift cylinders which then raise or lower the convertible top assembly.

Stay Pads

The stay pads are attached to the convertible top frame bows and are installed as an assembly.

Weatherstrips

The weatherstrips seal the convertible top assembly to the vehicle to provide a weather-tight seal.

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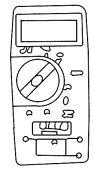
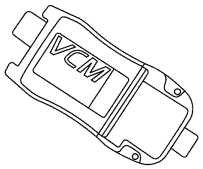
DIAGNOSIS AND TESTING

Convertible Top

Special Tool(s)

 ST1137-A	73III Automotive Meter 105-R0057 or equivalent
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Material

Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM (or XT-5-QMC) (US); CXT-5-LM12 (Canada)	MERCON® V

Principles of Operation

NOTE: The Smart Junction Box (SJB) may also be identified as the Generic Electronic Module (GEM).

The convertible top system is controlled by the SJB. When the convertible top switch is activated, the SJB commands the front and rear windows to the full down position. When the SJB detects that the LH and RH rear window motors are in the full downward position, it will command the appropriate relay to close in order to raise or lower the convertible top. If the SJB does not detect a full down signal from the LH and RH rear window motors, the convertible top operation will be disabled.

The convertible top assembly is a floating frame, Z-fold design. The main pivot brackets are attached to the body, and the convertible top frame side rails expand or fold when the convertible top is raised or lowered. The LH and RH stay pads are attached to the convertible top frame bows, and provide the main source of tension for the convertible top material. When the convertible top is in the full down position, it is stored in the compartment behind the rear seat backrest. When the convertible top is in the full up position, the body provides a stop which the convertible top frame No. 5 bow contacts to provide a weather seal for the convertible top against the body.

The convertible top hydraulic system uses a reversible hydraulic pump and motor assembly. When activated, the hydraulic pump uses hydraulic pressure to extend the hydraulic lift cylinders to raise the convertible top, or retract the hydraulic lift cylinders to lower the convertible top. The hydraulic motor/pump assembly is equipped with a thermal circuit breaker. In the event of a concern, the circuit breaker will reset after approximately 5 minutes. The thermal circuit breaker is integral to the hydraulic motor and pump assembly and cannot be serviced separately. In the event of a hydraulic system failure, the convertible top cannot be operated manually.

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

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DIAGNOSIS AND TESTING (Continued)

Visual Inspection Chart

Mechanical	Electrical
• Convertible top brackets and frame • Convertible top latches • Hydraulic motor and pump assembly • Hydraulic lift cylinders • Hydraulic lines	• Bussed Electrical Center (BEC) fuse(s): — 13 (40A) — 51 (10A) • Hydraulic motor and pump assembly • Convertible top ajar switch • Convertible top switch • Convertible top raise relay • Convertible top lower relay • LH or RH rear power window motor • Smart Junction Box (SJB) • Loose or corroded connections • Wiring harness

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **NOTE:** Make sure to use the latest scan tool software release.

   If the cause is not visually evident, connect the scan tool to the Data Link Connector (DLC).
5. **NOTE:** The Vehicle Communication Module (VCM) LED prove out confirms power and ground from the DLC are provided to the VCM.

   If the scan tool does not communicate with the VCM:

   - check the VCM connection to the vehicle.
   - check the scan tool connection to the VCM.
   - refer to Section 418-00, No Power To The Scan Tool, to diagnose no power to the scan tool.
6. If the scan tool does not communicate with the vehicle:
   - verify the ignition key is in the ON position.
   - verify the scan tool operation with a known good vehicle.
   - refer to Section 418-00 to diagnose no response from the SJB.
7. Carry out the network test.
   - If the scan tool responds with no communication for one or more modules, refer to Section 418-00.
   - If the network test passes, retrieve and record continuous memory DTCs.
8. Clear the continuous DTCs and carry out the self-test diagnostics for the SJB.
9. If the DTCs retrieved are related to the concern, go to the Smart Junction Box (SJB) DTC Chart. For all other DTCs, refer to Section 419-10.
10. If no DTCs related to the concern are retrieved, GO to Symptom Chart.

DTC Charts

Smart Junction Box (SJB) DTC Chart

DTC	Description	Action
B1402	Driver Power Window Down Switch Circuit Failure	GO to Pinpoint Test A.
B2068	Convertible Top Up Output Circuit Failure	GO to Pinpoint Test A.
B2069	Convertible Top Down Output Circuit Failure	GO to Pinpoint Test A.
B2481	Convertible Top Up/Down Switch Fault	GO to Pinpoint Test A.
B2578	Passenger Power Window Down Switch Circuit Failure	GO to Pinpoint Test A.
All Other DTCs	—	REFER to Section 419-10.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
• The convertible top does not raise/lower	• Bussed Electrical Center (BEC) • Circuitry • Convertible top lower relay • Convertible top raise relay • Convertible top switch • Fuse(s) • Hydraulic motor and pump assembly • LH rear window motor • RH rear window motor • Smart Junction Box (SJB)	• GO to Pinpoint Test A.
• The convertible top does not operate correctly	• Convertible top frame bows • Convertible top side rails • Hydraulic fluid leak • Hydraulic lift cylinder • Hydraulic motor and pump assembly • Low hydraulic fluid	• GO to Pinpoint Test B.

Pinpoint Tests

Pinpoint Test A: The Convertible Top Does Not Raise/Lower

Refer to Wiring Diagrams Cell 103, Convertible Top for schematic and connector information.

Refer to Wiring Diagrams Cell 100, Power Windows for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

Normal Operation

The convertible top switch supplies a ground signal to the Smart Junction Box (SJB) on circuit 2038 (LB/OG) when the convertible top switch is depressed to the lower position, or circuit 2052 (VT/OG) when the convertible top switch is depressed to the raise position. The convertible top system will not operate when the vehicle speed is greater than 5 km/h (3 mph) or if the ignition switch is in the START position. The convertible top hydraulic system uses a 12-volt reversible pump and motor assembly. When the SJB receives a request to operate the convertible top, the SJB sends a signal to the front and rear windows to lower the windows to the full down position. The SJB monitors the status of the rear windows on circuit 2012 (RD/BK) for the right rear window, and circuit 2014 (YE/LB) for the left rear window. When the SJB detects a full down signal from the RH and LH rear window motors, the convertible top operation is enabled. If the SJB does not detect a full down signal from the RH and LH rear window motors, the convertible top operation is disabled. When either the convertible top raise relay or the convertible top lower relay is activated, the other relay will remain in its normal state and supplies ground to the hydraulic motor and pump assembly. The convertible top raise and lower relay coils receive voltage at all times from SJB fuse 51 (10A). The convertible top raise and lower relay contacts receive voltage at all times from SJB fuse 13 (40A). When the convertible top switch is pressed to the lower position, and the SJB detects a full down signal from the LH and RH rear window motors, the SJB activates the convertible top lower relay by grounding circuit 1174 (WH/RD). When the convertible top lower relay is activated, voltage is supplied to the hydraulic motor and pump through circuit 902 (YE). Ground is supplied to the hydraulic motor and pump assembly through circuit 903 (RD). When the convertible top switch is pressed in the raise position, and the SJB detects a full down signal from the LH and RH rear window motors, the SJB activates the convertible top lower relay by grounding circuit 588 (VT). When the convertible top raise relay is activated, voltage is supplied to the hydraulic motor and pump assembly through circuit 903 (RD). Ground is supplied to the hydraulic motor and pump assembly through circuit 902 (YE).

The hydraulic motor/pump assembly is equipped with a thermal circuit breaker. In the event of a concern, the circuit breaker will reset after approximately 5 minutes. The thermal circuit breaker is integral to the hydraulic motor and pump assembly and cannot be serviced separately.

DIAGNOSIS AND TESTING (Continued)

DTC Description	Fault Trigger Conditions
B1402 — Driver Power Window Down Switch Circuit Failure	Short to ground detected by the Driver Seat Module (DSM) during on-demand self test.
B2068 — Convertible Top Up Output Circuit Failure	Short to ground, short to battery or open.
B2069 — Convertible Top Down Output Circuit Failure	Short to ground, short to battery or open.
B2481 — Convertible Top Up/Down Switch Fault	Short to ground.
B2578 — Passenger Power Window Down Switch Circuit Failure	Short to ground detected by the DSM during on-demand self test.

This pinpoint test is intended to diagnose the following:

- Bussed Electrical Center (BEC)
- Convertible top raise relay
- Convertible top lower relay
- Convertible top switch
- Fuse(s)
- Hydraulic motor and pump assembly
- LH or RH rear window motor
- SJB
- Wiring, terminals or connectors

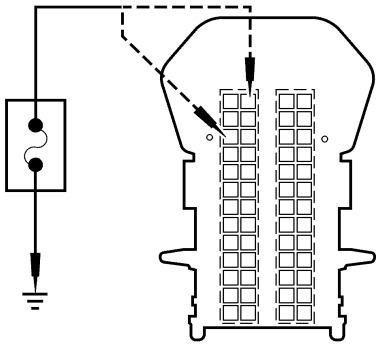
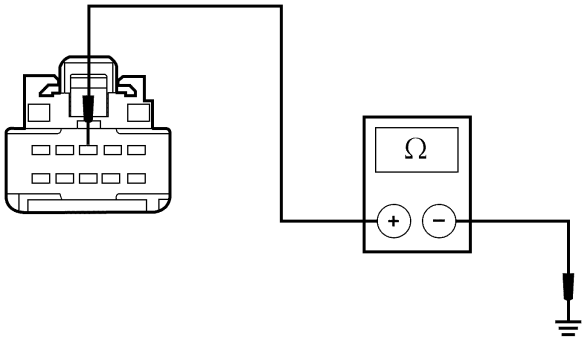
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER

Test Step		Result / Action to Take
A1	**RETRIEVE THE RECORDED DTCs FROM THE SJB**	**Yes** For DTC B2481, GO to A10. For DTC B2068, VERIFY that BEC fuse 51 (10A) is OK. If OK, GO to A12. For DTC B2069, VERIFY that BEC fuse 51 (10A) is OK. If OK, GO to A14. For DTC B1402 or B2578, GO to A21. **No** GO to A2.
	• **NOTE:** Repair all Vehicle Speed Sensor (VSS) DTCs before proceeding with pinpoint test. Retrieve the recorded SJB DTCs from the continuous and on-demand self tests. • **Are any SJB DTCs recorded?**	
A2	**CHECK THE VEHICLE SPEED INPUT**	**Yes** GO to A3. **No** REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual to diagnose the VSS.
	• Ignition ON. • Enter the following diagnostic mode on the scan tool: PCM DataLogger. • Monitor the PCM VSS PID. • **Does the PID display less than 5 km/h (3 mph)?**	
A3	**CHECK THE SJB CONVERTIBLE TOP SWITCH INPUT**	**Yes** GO to A4. **No** GO to A7.
	• Enter the following diagnostic mode on the scan tool: SJB PIDs. • Monitor the convertible top switch TOP__UP and TOP__DN SJB PIDs while operating the convertible top switch in the raise and lower positions. • **Does the PID status change from OFF to ON for both positions?**	
A4	**CHECK THE WINDOW OPERATION**	**Yes** GO to A5. **No** REFER to Section 501-11 to diagnose the convertible top drop feature.
	• Raise the front and rear windows to the full up position. • Operate the convertible top switch. • **Do the front and rear windows fully open?**	
A5	**CHECK THE REAR WINDOW FULL DOWN INPUTS TO THE SJB**	**Yes** GO to A6. **No** GO to A24.
	• Enter the following diagnostic mode on the scan tool: SJB DataLogger. • Lower the LH and RH rear windows to the full down position. • Monitor the LH and RH rear window LR__DOWN and RR__DOWN SJB PIDs. • **Does the PID status display Yes for both PIDs?**	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

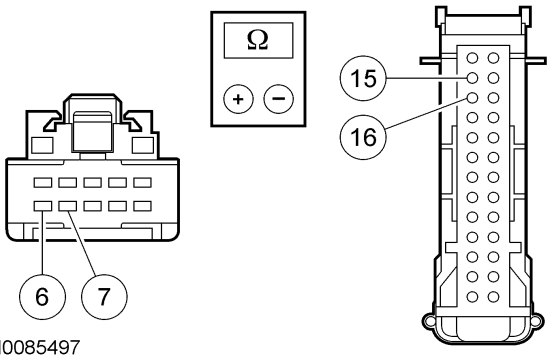
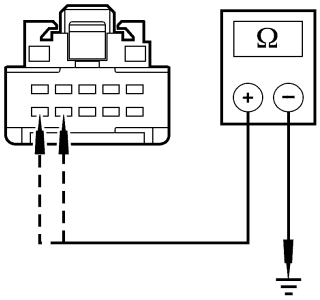
Test Step		Result / Action to Take
A6	**CHECK FOR CONVERTIBLE TOP MOTOR OPERATION**	
	• Ignition OFF. • Disconnect: SJB C2280C. • Ignition ON. • Connect a fused jumper wire between ground and SJB: — C2280C-11, circuit 588 (VT), harness side. — C2280C-26, circuit 1174 (WH/RD), harness side.  N0076731 • **Does the convertible top motor operate in both directions?**	**Yes** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation. **No** GO to **A16**.
A7	**CHECK CIRCUIT 1205 (BK) AT THE CONVERTIBLE TOP SWITCH FOR AN OPEN**	
	• Ignition OFF. • Disconnect: Convertible Top Switch C9013. • Measure the resistance between convertible top switch C9013-3, circuit 1205 (BK), harness side and ground.  N0025476 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A8**. **No** REPAIR the circuit. TEST the system for normal operation.
A8	**CHECK CIRCUITS 2038 (LB/OG) AND 2052 (VT/OG) FOR AN OPEN**	
	• Measure the resistance between convertible top switch C9013, harness side and SJB, harness side using the following chart:	

Convertible Top Switch	Circuit	SJB
C9013-6	2038 (LB/OG)	C2280F-16
C9013-7	2052 (VT/OG)	C2280F-15

(Continued)

DIAGNOSIS AND TESTING (Continued)

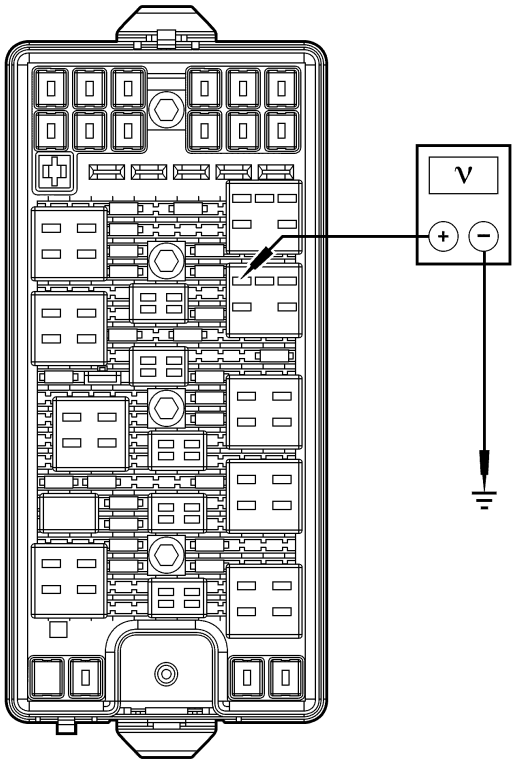
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A8	**CHECK CIRCUITS 2038 (LB/OG) AND 2052 (VT/OG) FOR AN OPEN (Continued)**	
	 N0085497 • **Are the resistances less than 5 ohms?**	**Yes** GO to **A9**. **No** REPAIR the circuit(s). TEST the system for normal operation.
A9	**CHECK THE OPERATION OF THE CONVERTIBLE TOP SWITCH**	
	• Measure the resistance between the convertible top switch pin 7, component side and the convertible top switch pin 3, component side while operating the convertible top switch in the raise position; and between the convertible top switch pin 6, component side and the convertible top switch pin 3, component side while operating the convertible top switch in the lower position. • **Are the resistances less than 5 ohms?**	**Yes** GO to **A27**. **No** INSTALL a new convertible top switch. REFER to Convertible Top Switch in this section. TEST the system for normal operation.
A10	**CHECK CIRCUITS 2038 (LB/OG) AND 2052 (VT/OG) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Disconnect: Convertible Top Switch C9013. • Disconnect: SJB C2280F. • Measure the resistance between ground and convertible top switch: — C9013-7, circuit 2052 (VT/OG), harness side. — C9013-6, circuit 2038 (LB/OG), harness side.  N0072270 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **A11**. **No** REPAIR the circuit(s). CLEAR the DTCs. REPEAT the self-test.
A11	**CHECK THE CONVERTIBLE TOP SWITCH**	
	• Measure the resistance between the convertible top switch pin 7, component side and the convertible top switch pin 3, component side; and between the convertible top switch pin 6, component side and the convertible top switch pin 3, component side. • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **A27**. **No** INSTALL a new convertible top switch. REFER to Convertible Top Switch in this section. CLEAR the DTCs. REPEAT the self-test.
A12	**CHECK CIRCUIT 588 (VT) FOR A SHORT TO VOLTAGE**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

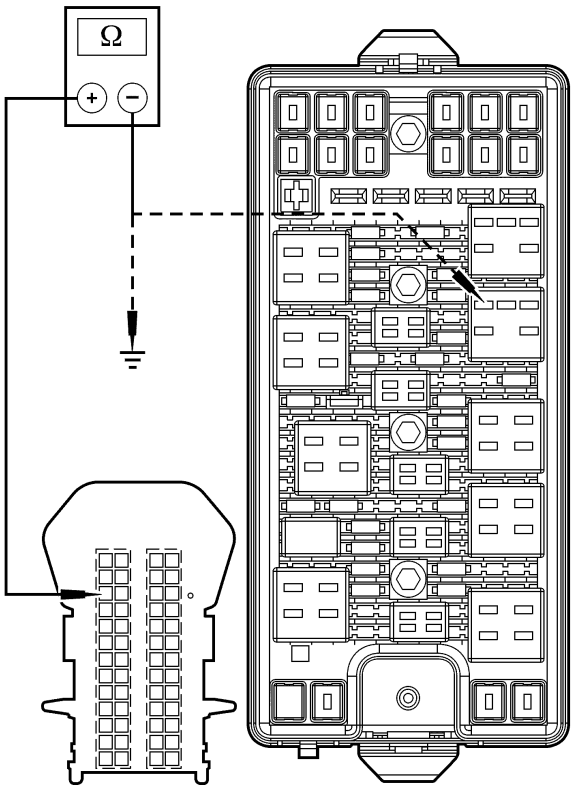
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A12	**CHECK CIRCUIT 588 (VT) FOR A SHORT TO VOLTAGE (Continued)**	
	• Disconnect: SJB C2280c. • Remove the BEC convertible top raise relay. • Ignition ON. • Measure the voltage between BEC convertible top raise relay pin 85 and ground.  N0072273 • **Is any voltage present?**	**Yes** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test. **No** GO to **A13**.
A13	**CHECK CIRCUIT 588 (VT) FOR A SHORT TO GROUND OR AN OPEN**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

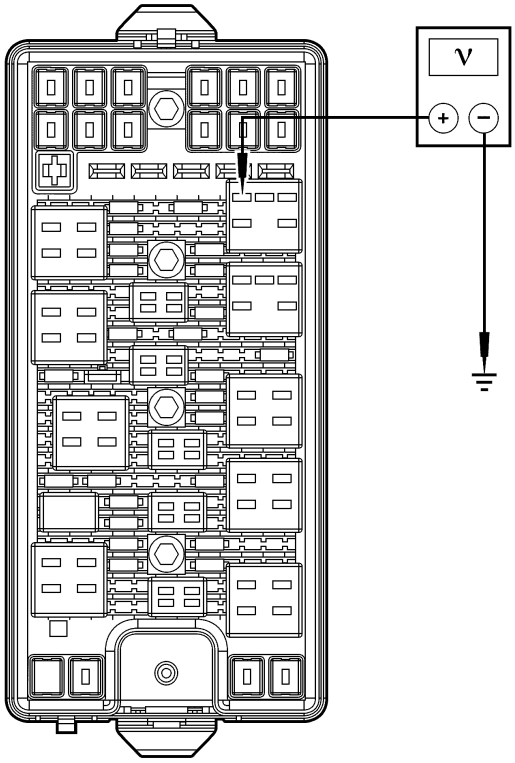
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A13	**CHECK CIRCUIT 588 (VT) FOR A SHORT TO GROUND OR AN OPEN (Continued)**	
	• Measure the resistance between SJB: — C2280c-11, circuit 588 (VT), harness side and BEC convertible top raise relay pin 85. — C2280c-11, circuit 588 (VT), harness side and ground.  N0076732 • **Is the resistance less than 5 ohms between the SJB and the BEC, and greater than 10,000 ohms between the SJB and ground?**	**Yes** CARRY OUT the relay component test for the convertible top raise relay. Refer to Wiring Diagrams Cell 149 for component testing. If the convertible top raise relay does not pass the component test, INSTALL a new convertible top raise relay. CLEAR the DTCs. REPEAT the self-test. If the convertible top raise relay passes the component test, GO to **A27**. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
A14	**CHECK CIRCUIT 1174 (WH/RD) FOR A SHORT TO VOLTAGE**	
	• Ignition OFF. • Disconnect: SJB C2280c. • Remove the BEC convertible top lower relay. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

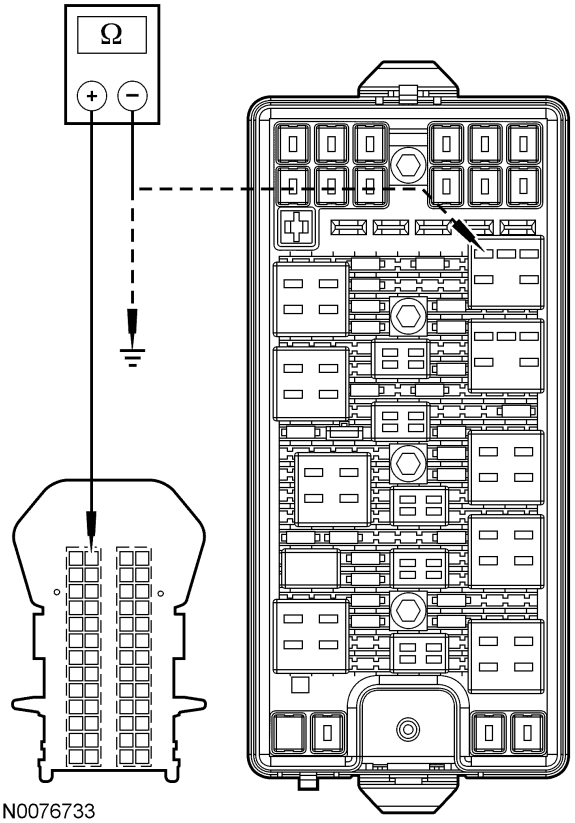
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A14	**CHECK CIRCUIT 1174 (WH/RD) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between BEC convertible top lower relay pin 85 and ground.  N0072271 • **Is any voltage present?**	**Yes** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test. **No** GO to **A15**.
A15	**CHECK CIRCUIT 1174 (WH/RD) FOR A SHORT TO GROUND OR AN OPEN**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

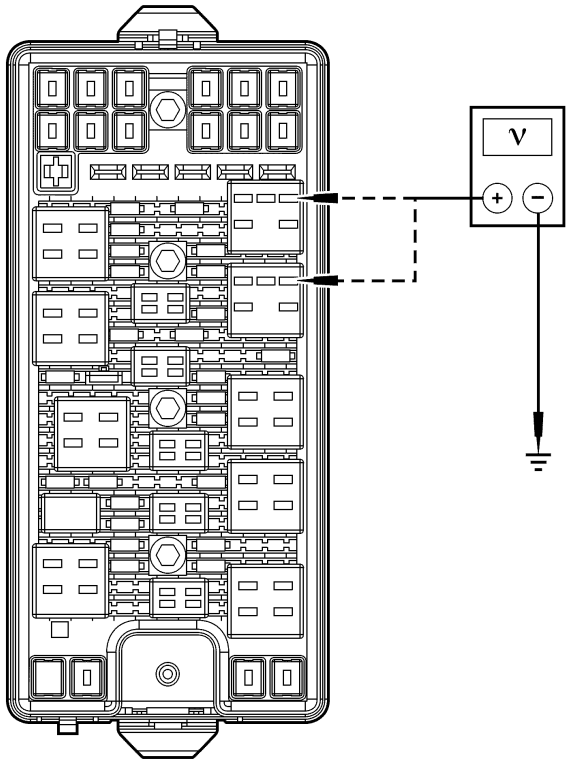
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A15	**CHECK CIRCUIT 1174 (WH/RD) FOR A SHORT TO GROUND OR AN OPEN (Continued)**	
	• Measure the resistance between SJB: — C2280c-26, circuit 1174 (WH/RD), harness side and BEC convertible top lower relay pin 85. — C2280c-26, circuit 1174 (WH/RD), harness side and ground.  N0076733 • **Is the resistance less than 5 ohms between the SJB and the BEC, and greater than 10,000 ohms between the SJB and ground?**	**Yes** CARRY OUT the relay component test for the convertible top lower relay. Refer to Wiring Diagrams Cell 149 for component testing. If the convertible top lower relay does not pass the component test, INSTALL a new convertible top lower relay. CLEAR the DTCs. REPEAT the self-test. If the convertible top lower relay passes the component test, GO to **A27**. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
A16	**CHECK THE CONVERTIBLE TOP RELAYS**	
	• Carry out the relay component test for the convertible top raise relay and the convertible top lower relay. Refer to Wiring Diagrams Cell 149 for component testing. • **Did the convertible top raise relay and the convertible top lower relay pass the relay component test?**	**Yes** GO to **A17**. **No** INSTALL a new convertible top raise relay or convertible top lower relay. TEST the system for normal operation.
A17	**CHECK FOR VOLTAGE TO THE CONVERTIBLE TOP RELAYS**	
	• Remove the convertible top raise and lower relays.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

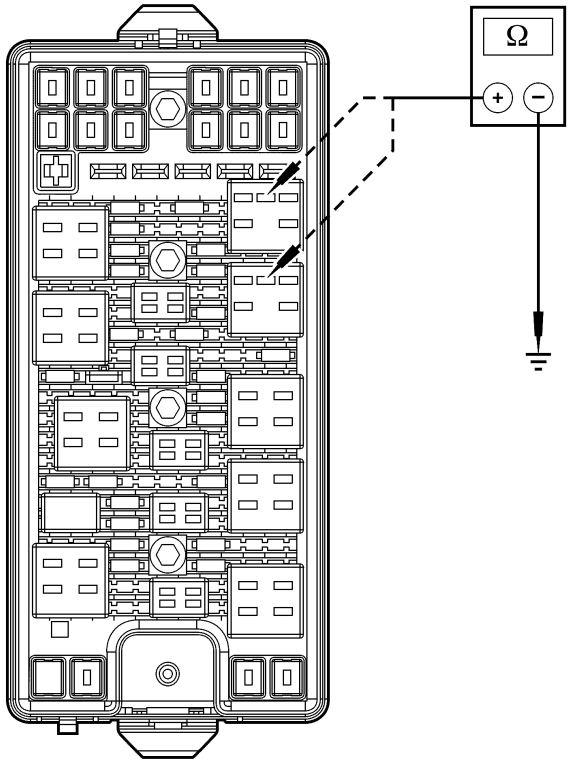
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A17	CHECK FOR VOLTAGE TO THE CONVERTIBLE TOP RELAYS (Continued)	
• Measure the voltage between ground and: — BEC convertible top lower relay pin 87. — BEC convertible top raise relay pin 87.  N0072275 • **Are the voltages greater than 10 volts?**		**Yes** GO to **A18**. **No** VERIFY that BEC fuse 13 (40A) is OK. If BEC fuse 13 (40A) is not OK, GO to **A20**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

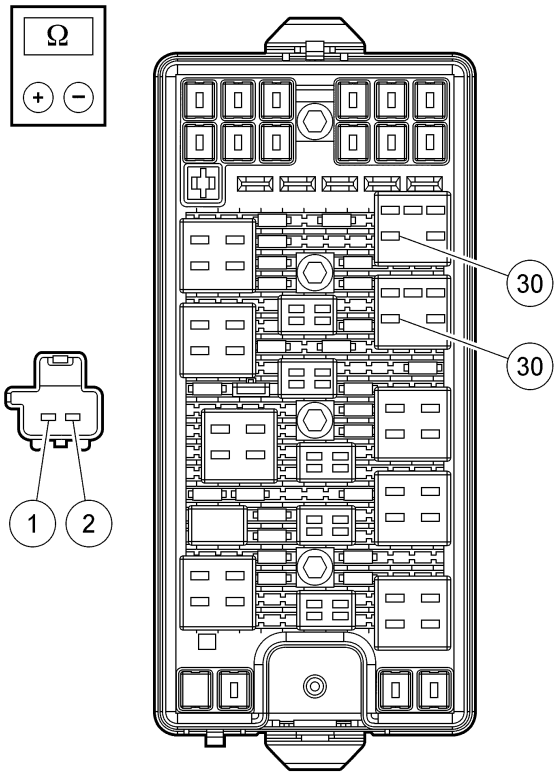
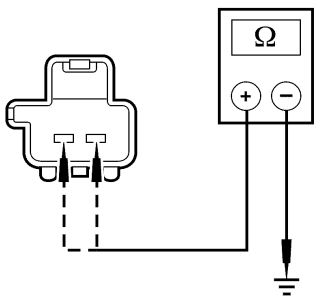
Test Step	Result / Action to Take
A18 CHECK CIRCUIT 1205 (BK) FOR AN OPEN • Measure the resistance between ground and: — BEC convertible top lower relay pin 87a. — BEC convertible top raise relay pin 87a.  N0072276 • **Are the resistances less than 5 ohms?**	**Yes** GO to **A19**. **No** REPAIR the circuit. TEST the system for normal operation.
A19 CHECK CIRCUITS 902 (YE) AND 903 (RD) FOR AN OPEN • Ignition OFF. • Disconnect: Convertible Top Motor C4062. • Measure the resistance between convertible top motor C4062, harness side and BEC relays using the following chart:	

Convertible Top Motor	Circuit	BEC
C4062-1	903 (RD)	Convertible Top Lower Relay Pin 30
C4062-2	902 (YE)	Convertible Top Raise Relay Pin 30

(Continued)

DIAGNOSIS AND TESTING (Continued)

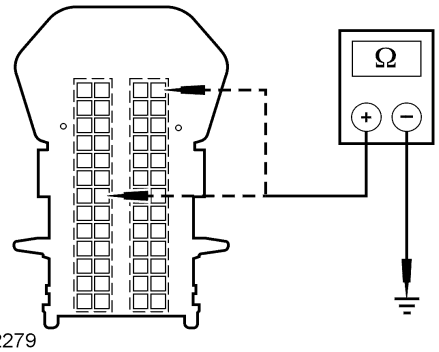
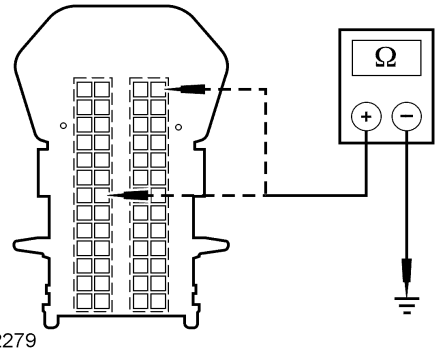
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A19	**CHECK CIRCUITS 902 (YE) AND 903 (RD) FOR AN OPEN (Continued)**	
	 N0085498 • **Are the resistances less than 5 ohms?**	**Yes** INSTALL a new convertible top motor. REFER to Hydraulic System, Lift Cylinder and Motor in this section. TEST the system for normal operation. **No** REPAIR the circuit(s). TEST the system for normal operation.
A20	**CHECK CIRCUITS 902 (YE) AND 903 (RD) FOR A SHORT TO GROUND**	
	• Disconnect: Convertible Top Motor C4062. • Measure the resistance between ground and convertible top motor: — C4062-1, circuit 903 (RD), harness side. — C4062-2, circuit 902 (YE), harness side.  N0072278 • **Are the resistances greater than 10,000 ohms?**	**Yes** INSTALL a new convertible top motor. REFER to Hydraulic System, Lift Cylinder and Motor in this section. TEST the system for normal operation. **No** REPAIR the circuit(s). TEST the system for normal operation.
A21	**CHECK THE OPERATION OF THE REAR WINDOW MOTORS**	
	• Raise the LH and RH rear windows to the full up position. • Ignition OFF. • Disconnect: SJB C2280c.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

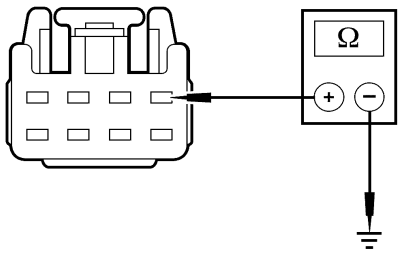
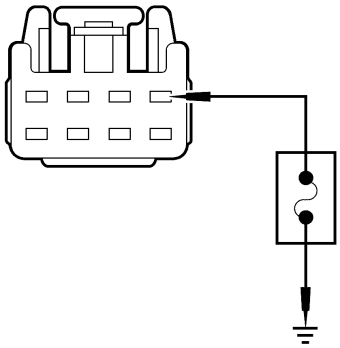
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A21	**CHECK THE OPERATION OF THE REAR WINDOW MOTORS (Continued)**	
	• Measure the resistance between ground and SJB: — **DTC B1402:** C2280c-52, circuit 2014 (YE/LB), harness side. — **DTC B2578:** C2280c-20, circuit 2012 (RD/BK), harness side.  N0072279 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A22**. **No** GO to **A27**.
A22	**CHECK CIRCUIT 2012 (RD/BK) OR 2014 (YE/LB) FOR A SHORT TO GROUND**	
	• Disconnect: **DTC B1402:** Inline C312. • Disconnect: **DTC B2578:** Inline C313. • Measure the resistance between ground and SJB: — **DTC B1402:** C2280c-52, circuit 2014 (YE/LB), harness side. — **DTC B2578:** C2280c-20, circuit 2012 (RD/BK), harness side.  N0072279 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **A23**. **No** REPAIR the circuit(s). CLEAR the DTCs. REPEAT the self-test.
A23	**CHECK RH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) AND LH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) FOR A SHORT TO GROUND**	
	• Disconnect: **DTC B1402:** LH Rear Window Motor C3118. • Disconnect: **DTC B2578:** RH Rear Window Motor C3119.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

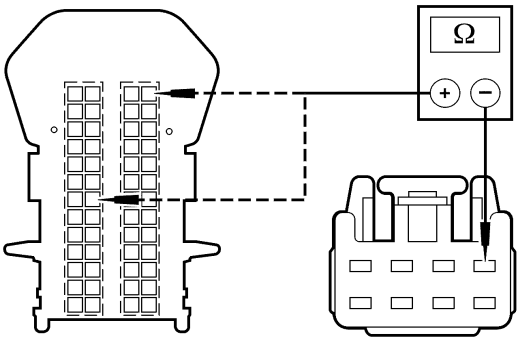
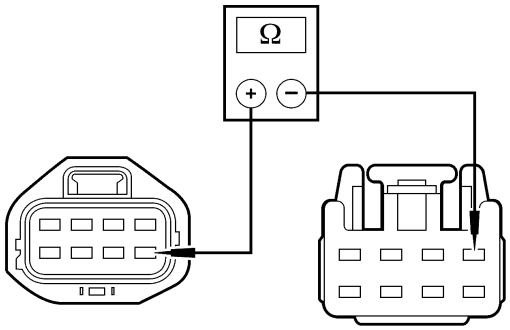
PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A23	**CHECK RH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) AND LH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between ground and SJB: — **DTC B1402:** C312-1, circuit 2012 (RD/BK), window motor side. — **DTC B2578:** C313-1, circuit 2012 (RD/BK), window motor side.  N0072590 • **Is the resistance greater than 10,000 ohms?**	**Yes** INSTALL a new LH or RH rear window motor as necessary. REFER to Section 501-11. CLEAR the DTCs. REPEAT the self-test. **No** REPAIR the circuit(s). CLEAR the DTCs. REPEAT the self-test.
A24	**CHECK THE INPUTS TO THE SJB**	
	• Ignition OFF. • Disconnect: Inline C312. • Disconnect: Inline C313. • Ignition ON. • Enter the following diagnostic mode on the scan tool: SJB DataLogger. • Monitor the LH and RH rear window LR__DOWN and RR__DOWN SJB PIDs while connecting a fused jumper wire between ground and inline: — C312-1, circuit 2014 (YE/BK), SJB side. — C313-1, circuit 2012 (RD/BK), SJB side.  N0076734 • **Does the PID status display Yes for both PIDs?**	**Yes** GO to **A26**. **No** GO to **A25**.
A25	**CHECK CIRCUIT 2012 (RD/BK) OR CIRCUIT 2014 (YE/LB) FOR AN OPEN**	
	• Disconnect: SJB 2280C.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE CONVERTIBLE TOP DOES NOT RAISE/LOWER (Continued)

Test Step		Result / Action to Take
A25	**CHECK CIRCUIT 2012 (RD/BK) OR CIRCUIT 2014 (YE/LB) FOR AN OPEN (Continued)**	
	• Measure the resistance between SJB: — C2280C-20, circuit 2012 (RD/BK), harness side and inline C313-1, circuit 2012 (RD/BK), SJB side. — C2280C-52, circuit 2014 (YE/LB), harness side and inline C312-1, circuit 2014 (YE/LB), SJB side.  N0073522 • **Are the resistances less than 5 ohms?**	**Yes** GO to **A27**. **No** REPAIR the circuit(s). TEST the system for normal operation.
A26	**CHECK RH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) AND LH REAR WINDOW MOTOR CIRCUIT 2012 (RD/BK) FOR AN OPEN**	
	• Disconnect: RH Rear Window Motor C3118. • Disconnect: LH Rear Window Motor C3119. • Measure the resistance between rear window motor: — **RH:**C3119-5, circuit 2012 (RD/BK), harness side and inline C313-1, circuit 2012 (RD/BK), window motor side. — **LH:**C3118-5, circuit 2012 (RD/BK), harness side and inline C312-1, circuit 2012 (RD/BK), window motor side.  N0073523 • **Are the resistances less than 5 ohms?**	**Yes** INSTALL a new LH or RH rear window motor. REFER to Section 501-11. TEST the system for normal operation. **No** REPAIR the circuit(s). TEST the system for normal operation.
A27	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion. — pushed-out pins. • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. CLEAR the DTCs. REPEAT the self-test. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test B: The Convertible Top Does Not Operate Correctly

Refer to Wiring Diagrams Cell 103, Convertible Top for schematic and connector information.

Normal Operation

The convertible top hydraulic system uses a 12-volt reversible pump and motor assembly. When active, the pump uses hydraulic pressure to extend the hydraulic lift cylinders to raise the convertible top, or retract the hydraulic lift cylinders to lower the convertible top. The convertible top assembly is a floating frame, Z-fold design. The main pivot brackets are attached to the body, and the convertible top frame side rails expand or fold when the convertible top is raised or lowered. The convertible top frame bows attach to the convertible top frame side rails and provide tension for the convertible top material.

This pinpoint test is intended to diagnose the following:

- Convertible top frame bows
- Convertible top side rails
- Hydraulic fluid leak
- Hydraulic lift cylinders
- Hydraulic motor/pump assembly
- Low hydraulic fluid

PINPOINT TEST B: THE CONVERTIBLE TOP DOES NOT OPERATE CORRECTLY

Test Step		Result / Action to Take
B1	**CHECK THE HYDRAULIC FLUID LEVEL**	
	• Lower the convertible top. • Gain access to the hydraulic motor and pump assembly. • **NOTE:** Make sure that the hydraulic lift cylinders are fully retracted before checking the hydraulic fluid level. Inspect the hydraulic reservoir and check the hydraulic fluid level. • **Is the hydraulic fluid level at the "+" sign that is molded into the hydraulic reservoir?**	**Yes** GO to **B4**. **No** GO to **B2**.
B2	**CHECK THE HYDRAULIC SYSTEM FOR LEAKS**	
	• Inspect all hydraulic fittings and hoses for hydraulic fluid leaks. • **Are any hydraulic fluid leaks present?**	**Yes** REPAIR the leaking hydraulic fitting or INSTALL a new hydraulic hose as necessary. BLEED the hydraulic system. REFER to System Bleeding in this section. TEST the system for normal operation. **No** GO to **B3**.
B3	**FILL THE HYDRAULIC SYSTEM**	
	• **NOTE:** The hydraulic fluid level should be at the "+" sign that is molded into the hydraulic reservoir. Add hydraulic fluid to the hydraulic fluid reservoir. • Operate the convertible top system. • **Does the convertible top system operate correctly?**	**Yes** The concern is not present at this time. RETURN the vehicle to the customer. **No** BLEED the hydraulic system. REFER to System Bleeding in this section. TEST the system for normal operation.
B4	**CHECK THE CONVERTIBLE TOP LINKAGE**	
	• Remove the hydraulic lift cylinder bolts and disconnect the hydraulic lift cylinders from the convertible top linkage. • **NOTE:** The convertible top is not adjustable. If the convertible top frame is damaged or requires adjustment, the damaged components must be replaced. Manually operate the convertible top assembly up and down while observing the convertible top linkage. • **Does the linkage operate smoothly without binding?**	**Yes** GO to **B5**. **No** INSTALL new components as necessary. REFER to Convertible Top Bows or Convertible Top Side Rail in this section. TEST the system for normal operation.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: THE CONVERTIBLE TOP DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
B5	**CHECK THE HYDRAULIC LIFT CYLINDERS**	
	• Operate the hydraulic system using a 12-volt fused (40A) power source. • **Do the hydraulic lift cylinders extend and retract fully and evenly?**	**Yes** GO to **B6**. **No** BLEED the hydraulic system. REFER to System Bleeding in this section. If concern is still present after bleeding the hydraulic system, INSTALL a new hydraulic lift cylinder. REFER to Hydraulic System, Lift Cylinder and Motor in this section. TEST the system for normal operation.
B6	**BLEED THE HYDRAULIC SYSTEM**	
	• Bleed the hydraulic system. Refer to System Bleeding in this section. • Operate the convertible top system upward and downward 3 times. • **Does the convertible top system operate correctly?**	**Yes** The concern is not present at this time. RETURN the vehicle to the customer. **No** INSTALL a new motor and pump assembly. REFER to Hydraulic System, Lift Cylinder and Motor in this section. TEST the system for normal operation.

GENERAL PROCEDURES

System Bleeding

Material

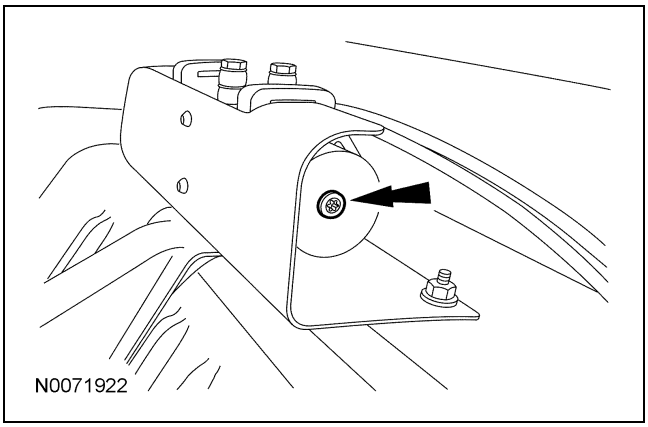
Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM (or XT-5-QMC) (US); CXT-5-LM12 (Canada)	MERCON® V

1. Remove the hydraulic system. For additional information, refer to Hydraulic System, Lift Cylinder and Motor in this section.
2. **NOTE:** The hydraulic fluid must be checked with the hydraulic motor and pump assembly in a level horizontal position.

   NOTE: The hydraulic fluid level should be at the ''+'' sign that is molded into the hydraulic fluid reservoir.

   Check the hydraulic fluid level and add transmission fluid as needed.

   - To add transmission fluid, remove the hydraulic fluid reservoir fill plug.
   - Add transmission fluid to the hydraulic fluid reservoir.
   - Install the hydraulic fluid reservoir fill plug.
     - Tighten to 1 Nm (9 lb-in).
   - Check the hydraulic fluid level.



3. **NOTE:** Make sure the hydraulic pump and motor assembly is above the hydraulic lift cylinders before operating the hydraulic pump and motor assembly.

   NOTE: A squealing noise may be heard due to the air in the hydraulic system.

   With the RH and LH hydraulic lift cylinder rod ends tilted upward, connect a 12-volt source and operate the hydraulic motor until the hydraulic cylinders are fully extended and then fully retracted.
4. Repeat Steps 2 and 3 until the hydraulic fluid level remains unchanged.
5. Install the hydraulic system. For additional information, refer to Hydraulic System, Lift Cylinder and Motor in this section.

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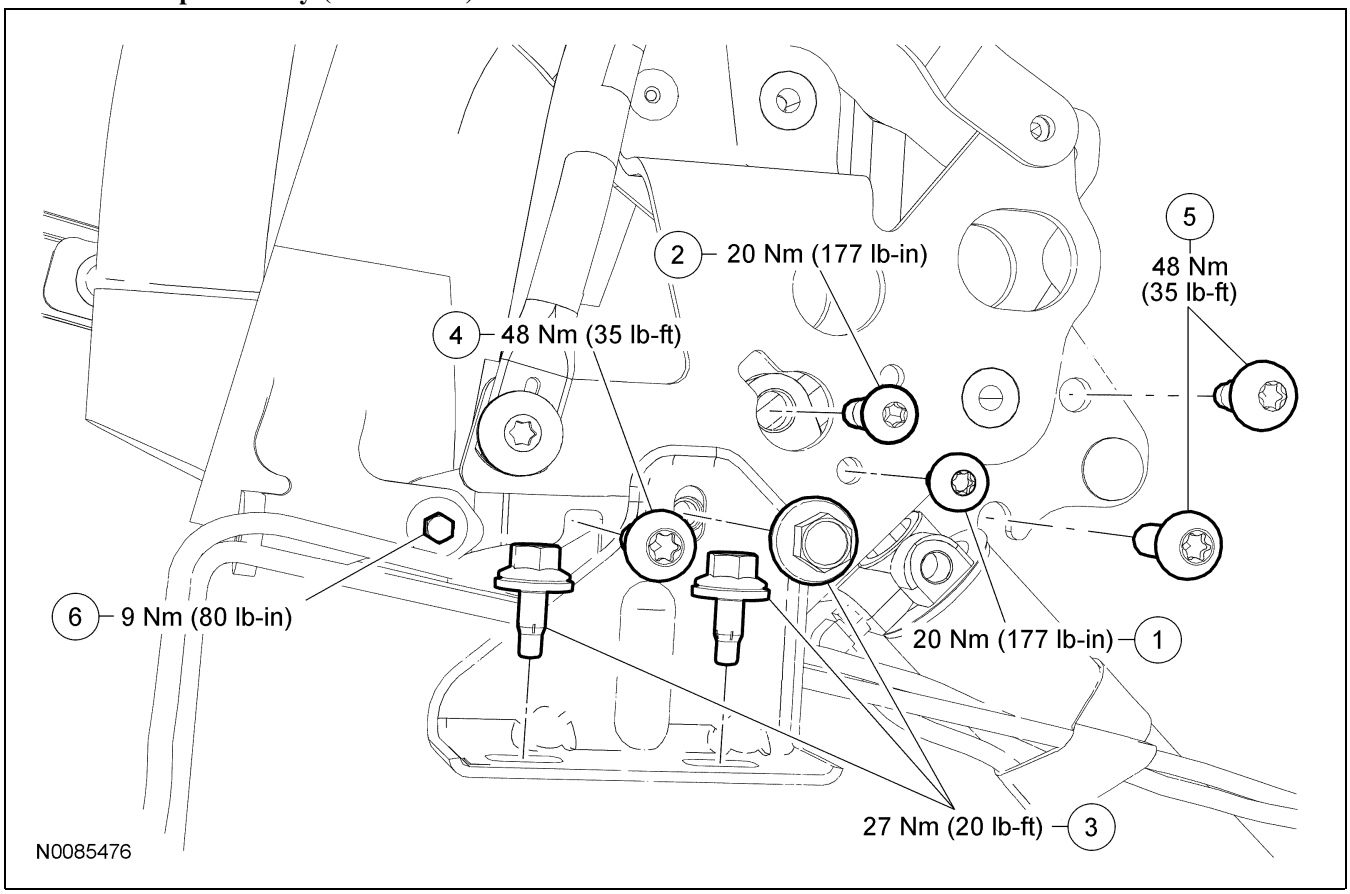
REMOVAL AND INSTALLATION

Convertible Top — Exploded View

Convertible Top Assembly (View 1 of 3)



Item	Part Number	Description
1	W709053	Hydraulic lift cylinder bracket bolt (2 required)
2	N808519	Clevis-to-hydraulic lift cylinder rod bolt (2 required)
3	W711423	L-bracket bolts (6 required)
4	W711772	Pivot bracket rear bolt (2 required)

(Continued)

Item	Part Number	Description
5	W711393	Pivot bracket front bolts (4 required)
6	W506413	Convertible top frame No. 5 bow pivot bolt (2 required)

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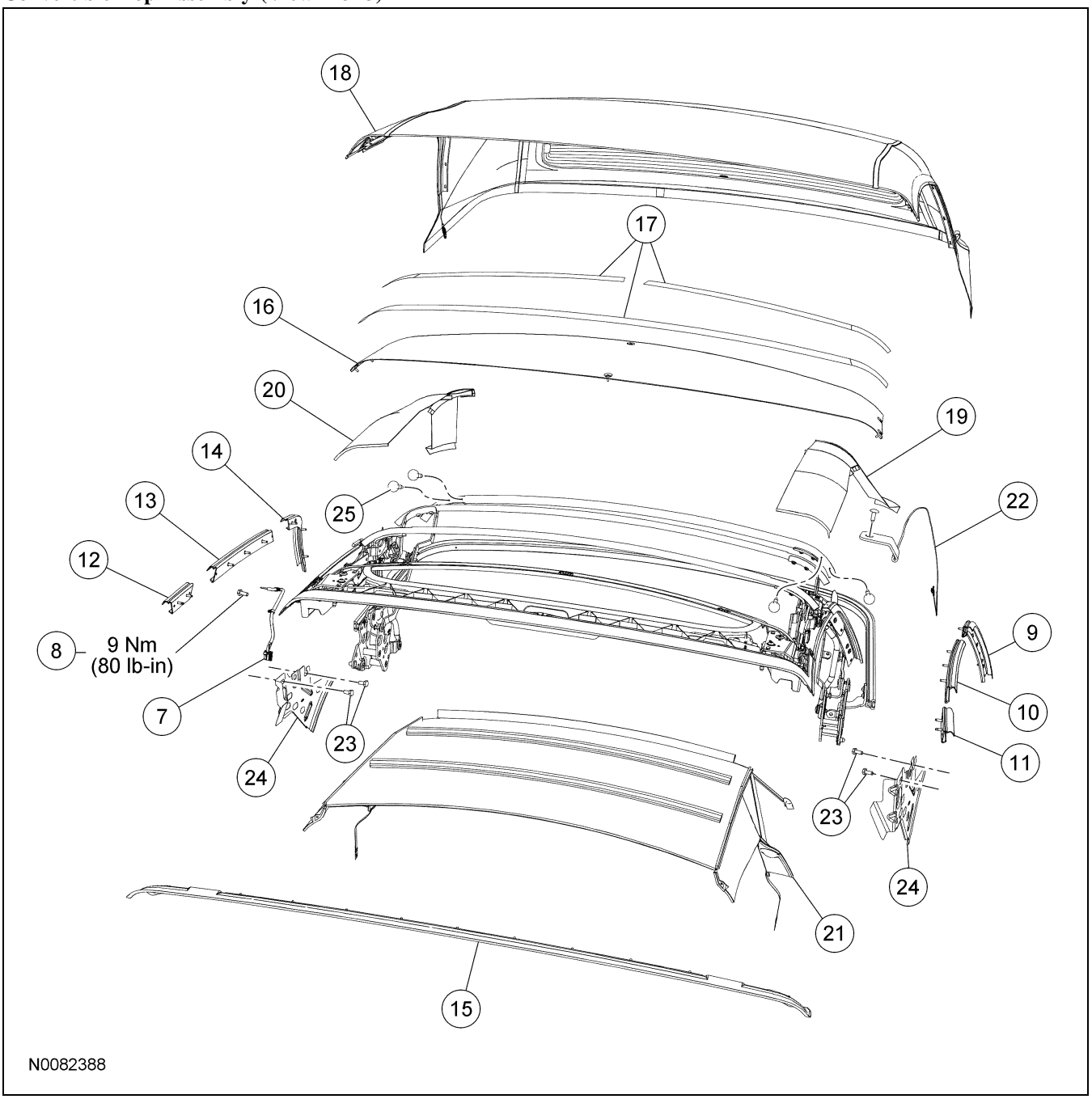
REMOVAL AND INSTALLATION (Continued)

Convertible Top Assembly (View 2 of 3)



Item	Part Number	Description
7	14018	Convertible top ajar switch
8	—	Convertible top ajar switch screw
9	51555	LH rear weatherstrip retainer channel
10	51561	LH center weatherstrip retainer channel
11	51543	LH front weatherstrip retainer channel

(Continued)

Item	Part Number	Description
12	51542	RH front weatherstrip retainer channel
13	51560	RH center weatherstrip retainer channel
14	51554	RH rear weatherstrip retainer channel
15	514A34	Compression panel
16	—	Header form panel (part of 7653038)

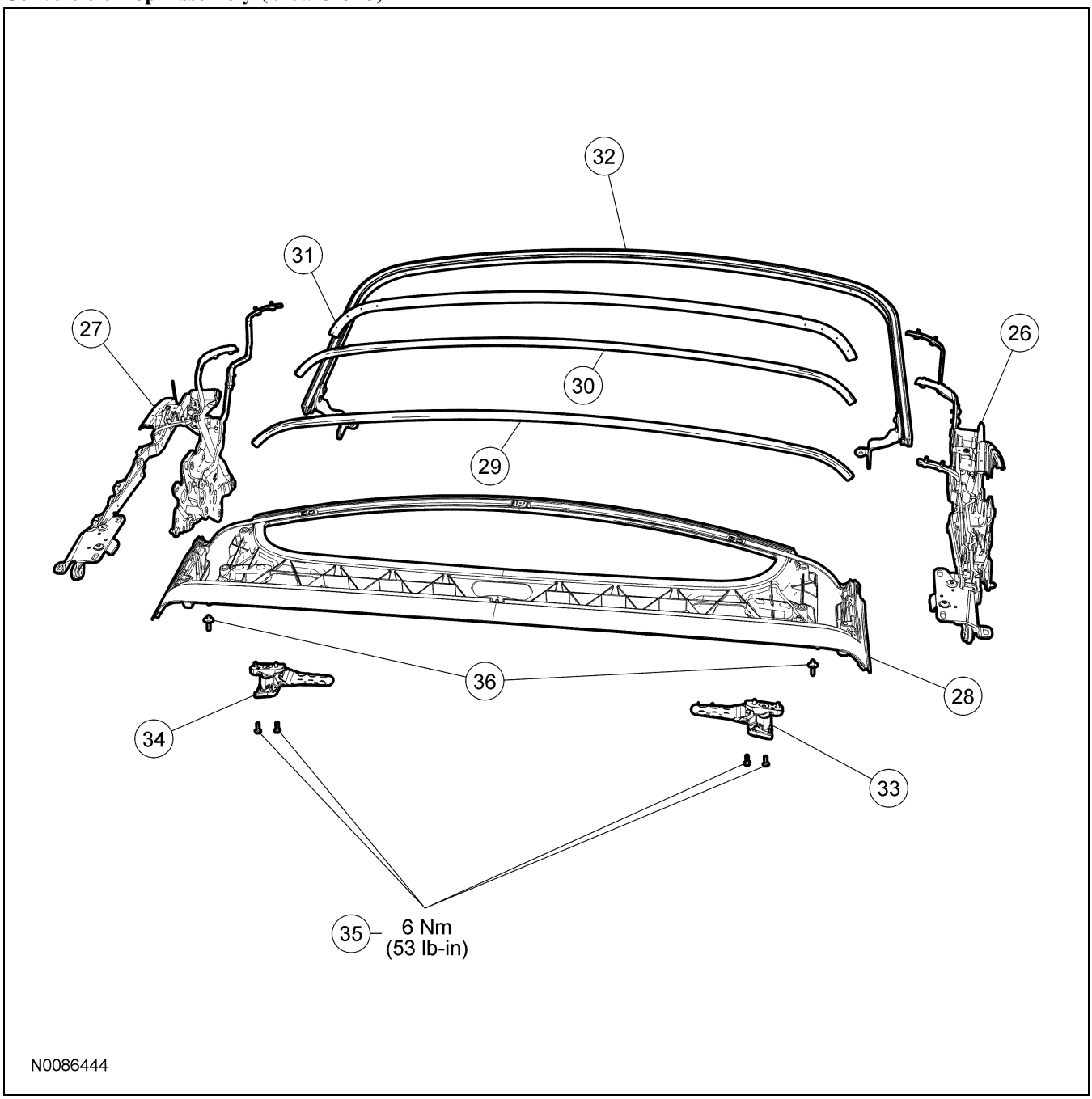
(Continued)

REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
17	—	Double-sided tape
18	52700	Top cover assembly
19	54212	LH stay pad
20	54213	RH stay pad
21	51916	Convertible top headliner
22	52806 RH/ 52807 LH	Convertible top tension cable
23	W710918	Pivot bracket-to-quarter panel bracket bolts (6 required)
24	28126 RH/ 28127 LH	Pivot bracket-to-quarter panel brackets
25	W707504	Rivet (37 required)

(Continued)

Convertible Top Assembly (View 3 of 3)



REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
26	53105	Convertible top frame LH side rail
27	53104	Convertible top frame RH side rail
28	53024	Convertible top frame No. 1 bow
29	51274	Convertible top frame No. 2 bow
30	51269	Convertible top frame No. 3 bow
31	52178	Convertible top frame No. 4 bow
32	52188	Convertible top frame No. 5 bow
33	50508-B	LH convertible top latch
34	50508-A	RH convertible top latch
35	—	Convertible top latch screws (4 required)
36	514A38	Dowel pins (2 required)

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

Convertible Top Ajar Switch

Removal and Installation

1. Remove the RH rear quarter trim panel. For additional information, refer to Section 501-05.
2. Remove the RH rear window inner belt moulding.
3. Remove the screw and the convertible top ajar switch.
   - To install, tighten to 9 Nm (80 lb-in).
4. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

Convertible Top Latch

Removal and Installation

NOTICE: **Make sure to hand-start the screws for the convertible top latches to avoid damaging the convertible top frame.**

1. Release the convertible top latches.
2. Partially open the convertible top.
3. Remove the caps and the 2 convertible top latch screws.
   - To install, tighten to 6 Nm (53 lb-in).
4. Remove the convertible top latch.
5. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

Convertible Top Assembly

Removal

NOTICE: **Removal, installation and handling of the convertible top requires an assistant or damage to the convertible top may occur.**

NOTICE: **Use care when working around or handling the convertible top material to avoid scratching or creasing the material.**

NOTICE: **Use care when handling the convertible top material to avoid damaging the rear glass. If damaged or broken, the rear glass cannot be replaced and will require replacement of the convertible top material.**

NOTICE: **Light scratches in the convertible top material can be removed using isopropyl alcohol and 600-grit sandpaper or steel wool. Use light pressure, polishing in a circular motion. Use care not to use excessive pressure. Do not use power tools, as these permanently damage the convertible top material. Heavy scratches require replacement of the convertible top material.**

NOTICE: **Light creases in the convertible top material can be removed by applying water to the creased area, and pulling the creased area flat, while applying mild heat from a heat gun. Use care not to apply excessive heat, as this permanently damages the convertible top material. Heavy creases may require replacement of the convertible top material.**

1. Remove the well sling channel and the 4 pin-type retainers from the rear seat backrest.
2. Remove the rear seat backrest. For additional information, refer to Section 501-10.
3. Disconnect the rear window defrost electrical connector.
4. Fully lower the convertible top.
5. Remove the LH and RH rear quarter trim panels. For additional information, refer to Section 501-05.
6. Remove the LH and RH inner quarter window belt line seals.
7. Disconnect the convertible top ajar switch electrical connector.
8. Momentarily place the convertible top switch in the raise position to release the tension on the convertible top frame.
9. Remove the LH and RH hydraulic lift cylinder bolts and brackets.
10. Remove the LH and RH clevis-to-hydraulic-lift cylinder rod bolts.
11. Position the hydraulic lift cylinders aside.
12. Remove the LH and RH bolts attaching the L-brackets to the quarter panel.
13. Loosen the LH and RH pivot bracket rear bolts and remove the 4 pivot bracket front bolts.
14. Remove the LH and RH convertible top frame No. 5 bow pivot bolts.
15. *NOTICE:* **Do not compress the convertible top frame No. 5 bow more than necessary to remove it from the vehicle. Excessive compression can damage the convertible top frame No. 5 bow.**

    Place a cargo strap or other suitable device around the convertible top frame No. 5 bow, near the ends, and compress the convertible top frame No. 5 bow approximately 80 cm (3.14 in), while lifting on the convertible top.
16. With an assistant, remove the convertible top assembly from the vehicle.
    - If necessary, release the tension of the convertible top frame No. 5 bow.

Installation

1. *NOTICE:* **Use care when cutting the tie straps or damage to the convertible top material may occur.**

   Cut and remove the No. 5 bow and side rail tie straps.

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REMOVAL AND INSTALLATION (Continued)

2. *NOTICE:* **Do not compress the convertible top frame No. 5 bow more than necessary to install it to the vehicle. Excessive compression can damage the convertible top frame No. 5 bow.**

   With an assistant, position the convertible top assembly into the vehicle.

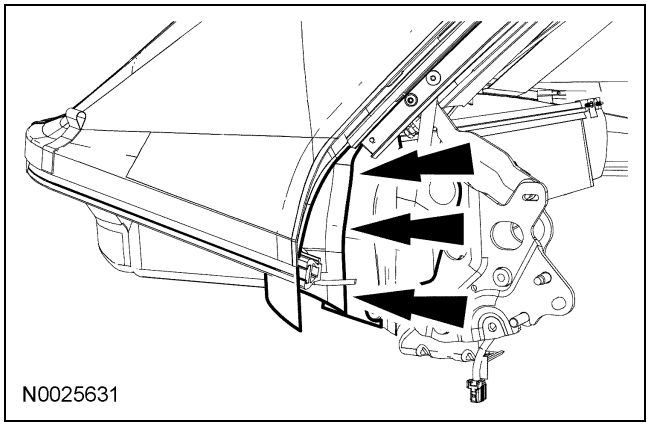
   - If necessary, compress the convertible top frame No. 5 bow approximately 80 cm (3.14 in).

3. Slowly release the convertible top frame No. 5 bow, while aligning the guide pins on the convertible top frame with the holes in the rear quarter panels.

4. Install the LH and RH convertible top frame No. 5 bow pivot bolts.

   - Tighten to 9 Nm (80 lb-in).

5. Position the water diverters as shown, making sure the edges overlap completely, and the diverters are not caught between the brackets and the body.



6. Install the LH and RH pivot bracket bolts.

   - Tighten to 48 Nm (35 lb-ft).

7. Operate the convertible top by hand, to make sure the top operates freely, without binding.

8. Position the LH and RH hydraulic lift cylinders.

9. Install the LH and RH clevis-to-hydraulic lift cylinder rod bolts.

   - Tighten to 20 Nm (177 lb-in).

10. Install the LH and RH hydraulic lift cylinder brackets and bolts.

    - Tighten to 20 Nm (177 lb-in).

11. Connect the convertible top ajar switch electrical connector.

12. **NOTE:** RH pivot bracket bolts and pivot bracket-to-quarter panel bracket bolts are shown, LH pivot bracket bolts and pivot bracket-to-quarter panel bracket bolts are similar.

    Using the convertible top switch, raise and latch the convertible top to check for correct alignment and latching.

    If the convertible top is not aligned or does not latch correctly, carry out the steps in the following sequence:

    1 Fully lower the convertible top.

    2 Loosen the 6 LH and RH pivot bracket bolts.

    3 Loosen the 4 LH and RH pivot bracket-to-quarter panel bracket bolts.

    4 Fully raise and latch the convertible top.

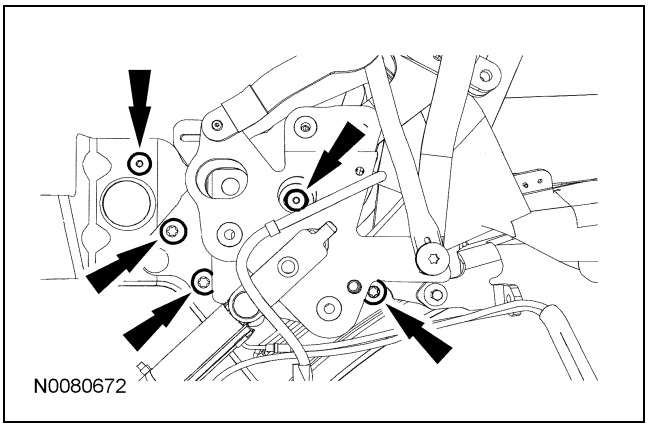
    5 Tighten the 4 LH and RH pivot bracket-to-quarter panel bracket bolts.

    - Tighten to 11 Nm (97 lb-in).

    6 Tighten the 6 LH and RH pivot bracket bolts.

    - Tighten to 48 Nm (35 lb-ft).

    7 Fully lower the convertible top.



13. Install the LH and RH bolts attaching the L-brackets to the quarter panel.

    - Tighten to 27 Nm (20 lb-ft).

REMOVAL AND INSTALLATION (Continued)

14. Install the LH and RH inner quarter window belt line seals.

15. Install the LH and RH rear quarter trim panels. For additional information, refer to Section 501-05.

16. ***NOTICE:*** **Use care when cutting the tie straps or damage to the convertible top material may occur.**

    Cut and remove the well sling tie strap.

17. Fully raise the convertible top.

18. Recheck the position of the water diverters, and adjust as necessary for correct placement.

19. Connect the rear window defrost electrical connector.

20. Install the rear seat backrest. For additional information, refer to Section 501-10.

21. Position the well sling channel and install the 4 pin-type retainers to the rear seat backrest.

22. Make sure the door glass and quarter glass correctly seal against the convertible top side rail. If adjustment is necessary, refer to Section 501-11.

REMOVAL AND INSTALLATION

Convertible Top Material

Removal

NOTICE: **Be sure to mark the location of the weatherstrip retaining channels prior to removal. If the weatherstrip retaining channels are not replaced in their original locations, the weatherstrips may not seal properly, resulting in water leaks and interior damage. Failure to replace the retaining channels correctly may require replacement of the convertible top assembly.**

NOTICE: **Use care when working around or handling the convertible top material to avoid scratching or creasing the material.**

NOTICE: **Use care when handling the convertible top material to avoid damaging the rear glass. If damaged or broken, the rear glass cannot be replaced, and will require replacement of the convertible top material.**

NOTICE: **Light scratches in the convertible top material can be removed using isopropyl alcohol and 600-grit sandpaper or steel wool. Use light pressure, polishing in a circular motion. Use care not to use excessive pressure. Do not use power tools, as these permanently damage the convertible top material. Heavy scratches require replacement of the convertible top material.**

NOTICE: **Light creases in the convertible top material can be removed by applying water to the creased area, and pulling the creased area flat, while applying mild heat from a heat gun. Use care not to apply excessive heat, as this permanently damages the convertible top material. Heavy creases may require replacement of the convertible top material.**

1. Remove the convertible top assembly. For additional information, refer to Convertible Top Assembly in this section.
2. Place the convertible top assembly on a flat surface and open fully.
3. Remove the screws and the LH and RH side front and rear weatherstrips and retainer channels.
4. Remove the 11 screws and the compression panel.
5. Remove the staples which secure the LH and RH front corners of the convertible top material to the frame.
6. Remove the front retaining track securing the front of the convertible top material from the front of the convertible top frame No. 1 bow.
7. Remove the foam tape and the rivets attaching the front corners of the convertible top material to the convertible top frame.
8. Pull the top material from the header form panel.
9. Remove the 6 screws and the header form panel.
10. Using chalk, mark the positioning of the old top cover at the top of the convertible top frame No. 5 bow.
11. Remove the staples attaching the convertible top material to the convertible top frame No. 5 bow.
12. Disconnect the heated rear window electrical connectors from the rear window glass.
13. Remove the convertible top cover elastic listing strap from the front side rails.
14. Remove the convertible top cover elastic listing straps (one on each side) from the front side rails.
15. Remove the convertible top cover elastic listing strap from the convertible top cover.
16. Remove the convertible top cover elastic listing straps (one on each side) from the rear side rails.
17. Position the water diverters aside to gain access to the tensioner cables.
18. Remove the tensioner cable guides from the convertible top frame No. 5 bow.

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REMOVAL AND INSTALLATION (Continued)

19. Remove the tensioner cables from the tensioner cable springs.

20. Remove the 2 pin-type retainers (1 each side) securing the convertible top material to the weatherstrip retainer channels.

21. Remove the convertible top channels from the convertible top frame No. 2 and No. 3 bows.
    - Remove the convertible top material.

Installation

NOTE: Using chalk, make sure to mark the position of the convertible top frame No. 5 bow on the new top cover.

1. Snap the convertible top channels into the guides on the convertible top frame No. 3 bow, then the No. 2 bow, and center the convertible top on the frame.

2. Using heavy wire or other suitable material, pull the convertible top listing strap through the channel on the underside of the top cover.

3. Using heavy wire or other suitable material, pull the convertible top tensioner cables through the channels to the rear of the convertible top.

4. Connect the heated rear window electrical connectors.

5. Install the convertible top tensioner cables to the tensioner cable springs.

6. Install the tensioner cable guides to the convertible top frame No. 5 bow.

7. Position the convertible top material, and secure to the weatherstrip retainer channels with pin-type retainers.

8. Attach the convertible top listing straps (one on each side) to the rear side rails.

9. Install the convertible top listing strap to the front side rails.

10. Install the convertible top listing straps (one on each side) to the front side rails.

11. Install the convertible top listing straps under the header form panel.

12. Install the header form panel and 6 screws in the following sequence.
    1 Tighten to 5 Nm (44 lb-in).
    2 Apply 3 pieces of double-sided tape to the header form panel.

13. Apply a light mist of water to the double-sided tape, and the underside of the convertible top material where it will contact the tape.

14. Install the rivets attaching the front corners of the convertible top material to the frame (2 each side) and cover the rivets with a short piece of foam tape.

15. Install the front retaining channel into place on the front of the frame and, starting in the center and working out towards the edges, clamp the convertible top material in place.

16. **NOTE:** Prior to stapling, make sure there are no wrinkles in the convertible top material along the front edge.

    Obtain 3/8-in long T50 (Stainless steel or Monel) staples commercially and using a pneumatic staple gun such as a Porter Cable US58 or equivalent, staple the front corners of the convertible top material to the frame.

17. Install the compression panel and 11 screws.
    - Tighten to 2 Nm (18 lb-in).

18. Using an assistant, pull the convertible top material rearward around the convertible top frame No. 5 bow, to the same position as the old top cover.

19. After all wrinkles are removed, remove the tape cover strip and press the convertible top material firmly against the front header panel to seat it against the double-sided tape.

REMOVAL AND INSTALLATION (Continued)

20. **NOTE:** Make sure there are no wrinkles on the top of the convertible top material.

    Obtain 3/8-in long T50 (Stainless steel or Monel) staples commercially and using a pneumatic staple gun such as a Porter Cable US58 or equivalent, staple the convertible top material to the convertible top frame No. 5 bow.

21. Remove the extra material from the convertible top below the convertible top frame No. 5 bow.

22. ***NOTICE:*** **Make sure the weatherstrip retaining channels are replaced in their original locations. Failure to replace the retaining channels in their correct positions may cause water leaks, resulting in interior damage.**

    Install the LH and RH side front and rear weatherstrip retainer channels and screws.

    - Tighten to 6 Nm (53 lb-in).

23. Install the left and right side weatherstrips.

24. Install the convertible top assembly in the vehicle. For additional information, refer to Convertible Top Assembly in this section.

REMOVAL AND INSTALLATION

Stay Pad

Removal

NOTICE: **Be sure to mark the location of the weatherstrip retaining channels prior to removal. If the weatherstrip retaining channels are not replaced in their original locations, the weatherstrips may not seal properly, resulting in water leaks and interior damage. Failure to replace the retaining channels correctly may require replacement of the convertible top assembly.**

NOTICE: **Use care when working around or handling the convertible top material to avoid scratching or creasing the material.**

NOTICE: **Use care when handling the convertible top material to avoid damaging the rear glass. If damaged or broken, the rear glass cannot be replaced, and will require replacement of the convertible top material.**

NOTICE: **Light scratches in the convertible top material can be removed using isopropyl alcohol and 600-grit sandpaper or steel wool. Use light pressure, polishing in a circular motion. Use care not to use excessive pressure. Do not use power tools, as these permanently damage the convertible top material. Heavy scratches require replacement of the convertible top material.**

NOTICE: **Light creases in the convertible top material can be removed by applying water to the creased area, and pulling the creased area flat, while applying mild heat from a heat gun. Use care not to apply excessive heat, as this permanently damages the convertible top material. Heavy creases may require replacement of the convertible top material.**

1. Remove the convertible top assembly. For additional information, refer to Convertible Top Assembly in this section.
2. Place the convertible top assembly on a flat surface and open fully.
3. Remove the screws and the LH and RH side front and rear weatherstrips and retainer channels.
4. Remove the 11 screws and the compression panel.
5. Remove the staples which secure the LH and RH front corners of the convertible top material to the frame.
6. Remove the front retaining track securing the front of the convertible top material from the front of the convertible top frame No. 1 bow.
7. Remove the foam tape and the rivets attaching the front corners of the convertible top material to the convertible top frame.
8. Pull the top material from the header form panel.
9. Remove the 6 screws and the header form panel.
10. Remove the convertible top cover elastic listing strap from the front side rails.
11. Remove the convertible top cover elastic listing straps (one on each side) from the front side rails.
12. Remove the convertible top cover elastic listing strap from the convertible top cover.
13. Remove the convertible top cover elastic listing straps (one on each side) from the rear side rails.
14. Position the water diverters aside to gain access to the tensioner cables.
15. Remove the tensioner cable guides from the convertible top frame No. 5 bow.
16. Remove the tensioner cables from the tensioner cable springs.
17. Remove the 2 pin-type retainers (1 each side) securing the convertible top material to the weatherstrip retainer channels.
18. Remove the convertible top channels from the convertible top frame No. 2 and No. 3 bows.
    - Remove the convertible top material.

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REMOVAL AND INSTALLATION (Continued)

19. Position aside the convertible top material from the convertible top frame tensioner cable stays attached to the No. 1 bow.

20. **NOTE:** Prior to performing this step, be sure to mark the distance from the convertible top frame No. 4 bow to the convertible top frame No. 5 bow on the new stay pad, using the original stay pad as a guide.

    Remove the staples attaching the stay pads to the convertible top frame No. 5 bow.

21. Remove the 6 fasteners (3 each side) attaching the stay pads to the front mount brackets.

22. Remove the 4 fasteners (2 each side) attaching the stay pads to the convertible top frame No. 4 bow.

23. Remove the 4 fasteners (2 each side) attaching the stay pads to the convertible top frame No. 3 bow.

Installation

1. Install the 4 fasteners (2 each side) attaching the stay pads to the convertible top frame No. 3 bow.

2. Install the 4 fasteners (2 each side) attaching the stay pads to the convertible top frame No. 4 bow.

3. Install the 6 fasteners (3 each side) attaching the stay pads to the front mount brackets.

4. **NOTE:** Make sure to install the new stay pads in the same location as the original stay pads.

    Pull the rear of the stay pad tight and staple the stay pad to the convertible top frame No. 5 bow, keeping the same distance to the convertible top frame No. 4 bow as the old stay pad.

5. Snap the convertible top channels into the guides on the convertible top frame No. 3 bow, then the No. 2 bow and center the convertible top on the frame.

6. Using heavy wire or other suitable material, pull the convertible top listing strap through the channel on the underside of the top cover.

7. Using heavy wire or other suitable material, pull the convertible top tensioner cables through the channels to the rear of the convertible top.

8. Install the convertible top tensioner cables to the tensioner cable springs.

9. Install the tensioner cable guides to the convertible top frame No. 5 bow.

10. Position the convertible top material and secure to the weatherstrip retainer channels with pin-type retainers.

11. Attach the convertible top listing straps (one on each side) to the rear side rails.

12. Install the convertible top listing strap to the front side rails.

13. Install the convertible top listing straps (one on each side) to the front side rails.

14. Install the convertible top listing straps under the header form panel.

15. Install the header form panel and 6 screws in the following sequence.
    1 Tighten to 5 Nm (44 lb-in).
    2 Apply 3 pieces of double-sided tape to the header form panel.

16. Apply a light mist of water to the double-sided tape and the underside of the convertible top material where it will contact the tape.

17. Install the rivets attaching the front corners of the convertible top material to the frame (2 each side) and cover the rivets with a short piece of foam tape.

18. Install the front retaining channel into place on the front of the frame and starting in the center and working out towards the edges, clamp the convertible top material in place.

REMOVAL AND INSTALLATION (Continued)

19. **NOTE:** Prior to stapling, make sure there are no wrinkles in the convertible top material along the front edge.

    Obtain 3/8-in long T50 (Stainless steel or Monel) staples commercially and using a pneumatic staple gun such as a Porter Cable US58 or equivalent, staple the front corners of the convertible top material to the frame.

20. Install the compression panel and 11 screws.
    - Tighten to 2 Nm (18 lb-in).

21. Using an assistant, pull the convertible top material rearward around the convertible top frame No. 5 bow, to the same position as the old top cover.

22. After all wrinkles are removed, remove the tape cover strip and press the convertible top material firmly against the front header panel to seat it against the double-sided tape.

23. Remove the extra material from the convertible top below the convertible top frame No. 5 bow.

24. ***NOTICE:*** **Make sure the weatherstrip retaining channels are replaced in their original locations. Failure to replace the retaining channels in their correct positions may cause water leaks, resulting in interior damage.**

    Install the LH and RH side front and rear weatherstrip retainer channels and screws.
    - Tighten to 6 Nm (53 lb-in).

25. Install the left and right side weatherstrips.

26. Install the convertible top assembly in the vehicle. For additional information, refer to Convertible Top Assembly in this section.

REMOVAL AND INSTALLATION

Convertible Top Headliner

Removal and Installation

1. Remove the convertible top stay pad. For additional information, refer to Stay Pad in this section.
2. Remove the sail panel clips from the convertible top frame.
3. Remove the 2 sail panel fasteners (1 each side) from the convertible top frame No. 5 bow.
4. Remove the 2 listing strap rivets (1 each side) from the rear rail.
5. Remove the 2 headliner mounting brackets (1 each side) from the rear rail.
6. Remove the 3 headliner fasteners from the convertible top frame No. 4 bow.
7. Remove the 6 fasteners attaching the headliner tracks to the convertible top frame No. 2 and No. 3 bows (3 each bow).
8. Remove the 2 listing strap fasteners (1 each side) from the convertible top frame between the convertible top frame No. 2 and No. 3 bows.
9. Remove the 6 headliner fasteners from front corners of the convertible top frame.
10. Remove the headliner from the convertible top frame.
11. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

Convertible Top Tension Cable

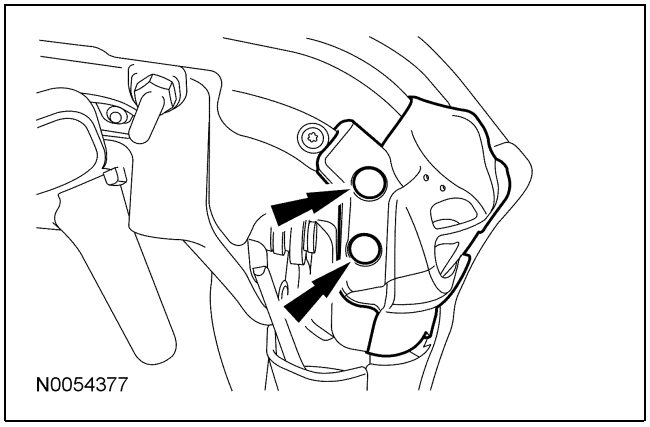
Removal

NOTE: LH shown, RH similar.

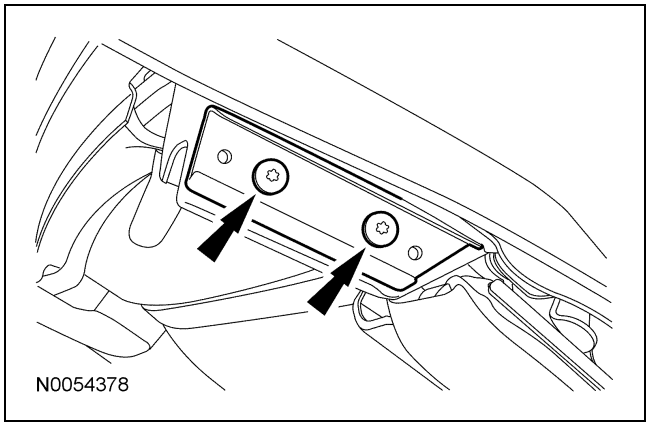
1. Remove the upper quarter trim panel cap and upper quarter trim panel. For additional information, refer to Section 501-05.

2. Open the convertible top approximately half-way.

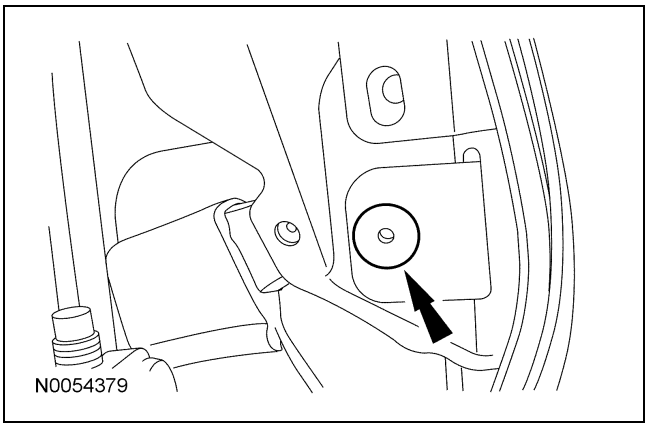
3. Remove pushpins and the front weatherstrip.



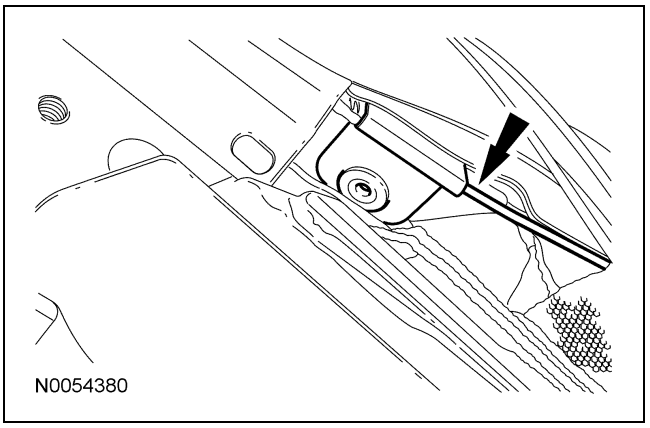
4. Remove the 2 Torx screws and the front weatherstrip retainer channel.



5. Drill out the rivet attaching the cable flag to the convertible top frame No. 1 bow. Once the cable flag is loose, use a small punch to knock out the rivet slug and clear the hole.



6. Using side cutters, cut the cable from the cable flag (cut as close to the flag as possible).



7. **NOTE:** Use the old cable to pull the new cable through the top.

   Temporarily tie the old cable to the spring end of the new tension cable (make sure it is secure).

8. Close the convertible top until it is approximately 15.25 cm (6 in) from the top of the windshield frame.

9. From inside vehicle, carefully pull the old tension cable out to feed the new tension cable through the convertible top. It may be necessary to open the convertible top to get the spring of the new cable passed through the body.

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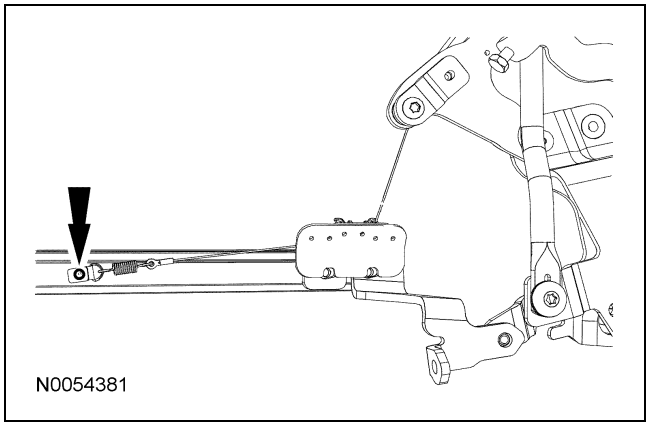
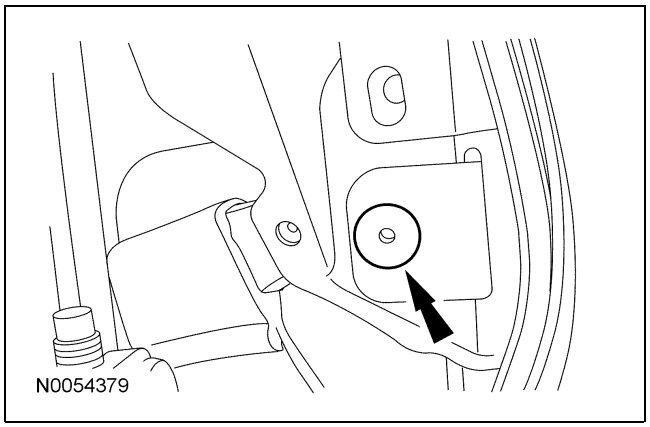
REMOVAL AND INSTALLATION (Continued)

10. With the convertible top 15.25 cm (6 in) from the top of the window, drill out the rivet attaching the old cable to the convertible top frame No. 5 bow. Use a small punch to knock out the rivet slug and clear the hole.

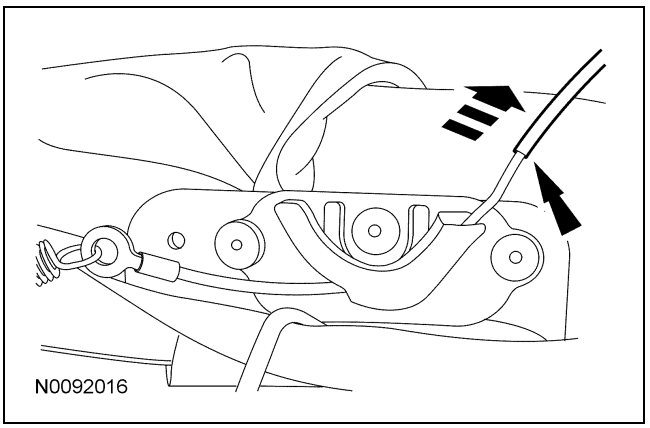


Installation

1. Open the convertible top as necessary to rivet new cable flag to convertible top frame No. 1 bow.



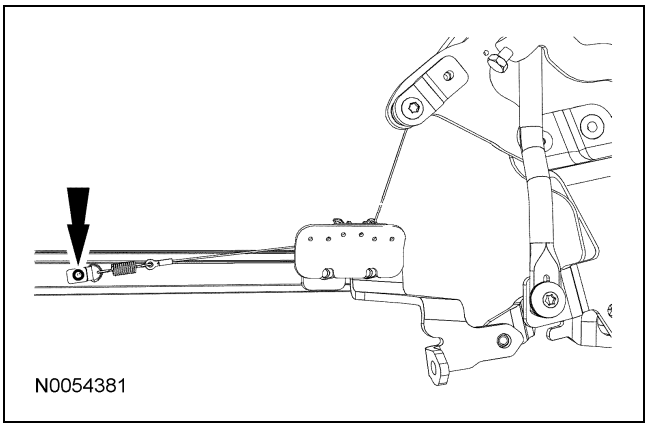
2. Pull the cable sheathing upward, approximately 15.25 cm (6 in) from the cable eyelet and position the cable into the cable guide.



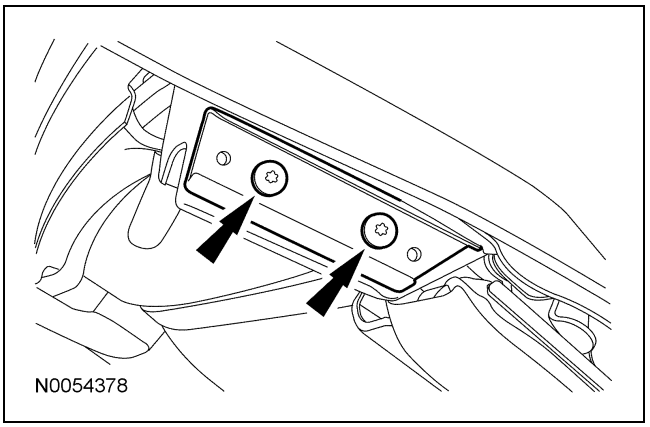
3. **NOTE:** Save the sound isolation webbing from the old cable spring so it can be transferred to the new cable spring.

   Pull the old cable through the cable guide and route the new cable through the cable guide.

4. Put the sound isolation material on the new cable spring and rivet new cable to convertible top frame No. 5 bow.

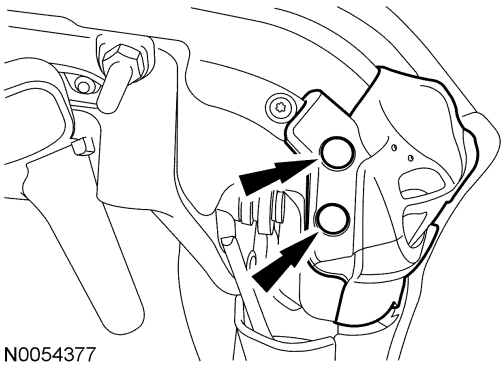


5. Install the 2 Torx screws and the front weatherstrip retainer channel.



REMOVAL AND INSTALLATION (Continued)

6. Install the front weatherstrip.
   - Install the 2 pushpins.



7. Close the convertible top completely.
   - Check the outside appearance of the convertible top.
   - From inside the vehicle, make sure the cable is routed through guide and cable is under tension. Repair as necessary.
8. Install the upper quarter trim panel cap and upper quarter trim panel. For additional information, refer to Section 501-05.

REMOVAL AND INSTALLATION

Convertible Top Bows

Removal and Installation

1. Remove the convertible top headliner. For additional information, refer to Convertible Top Headliner in this section.
2. Remove the screws and the appropriate convertible top frame bow(s).
3. **NOTE:** Manually operate the convertible top frame before installing the headliner, to be sure the frame operates smoothly, without binding.

   To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

Convertible Top Side Rail

Removal and Installation

1. Remove the convertible top headliner. For additional information, refer to Convertible Top Headliner in this section.
2. Remove the screws and the side rail(s) from the convertible top frame bows.
3. **NOTE:** Manually operate the convertible top frame before installing the headliner, to be sure the frame operates smoothly, without binding.

   To install, reverse the removal procedure.

   - Make sure the door glass and quarter glass correctly seal against the convertible top side rail. If adjustment is necessary, refer to Section 501-11.

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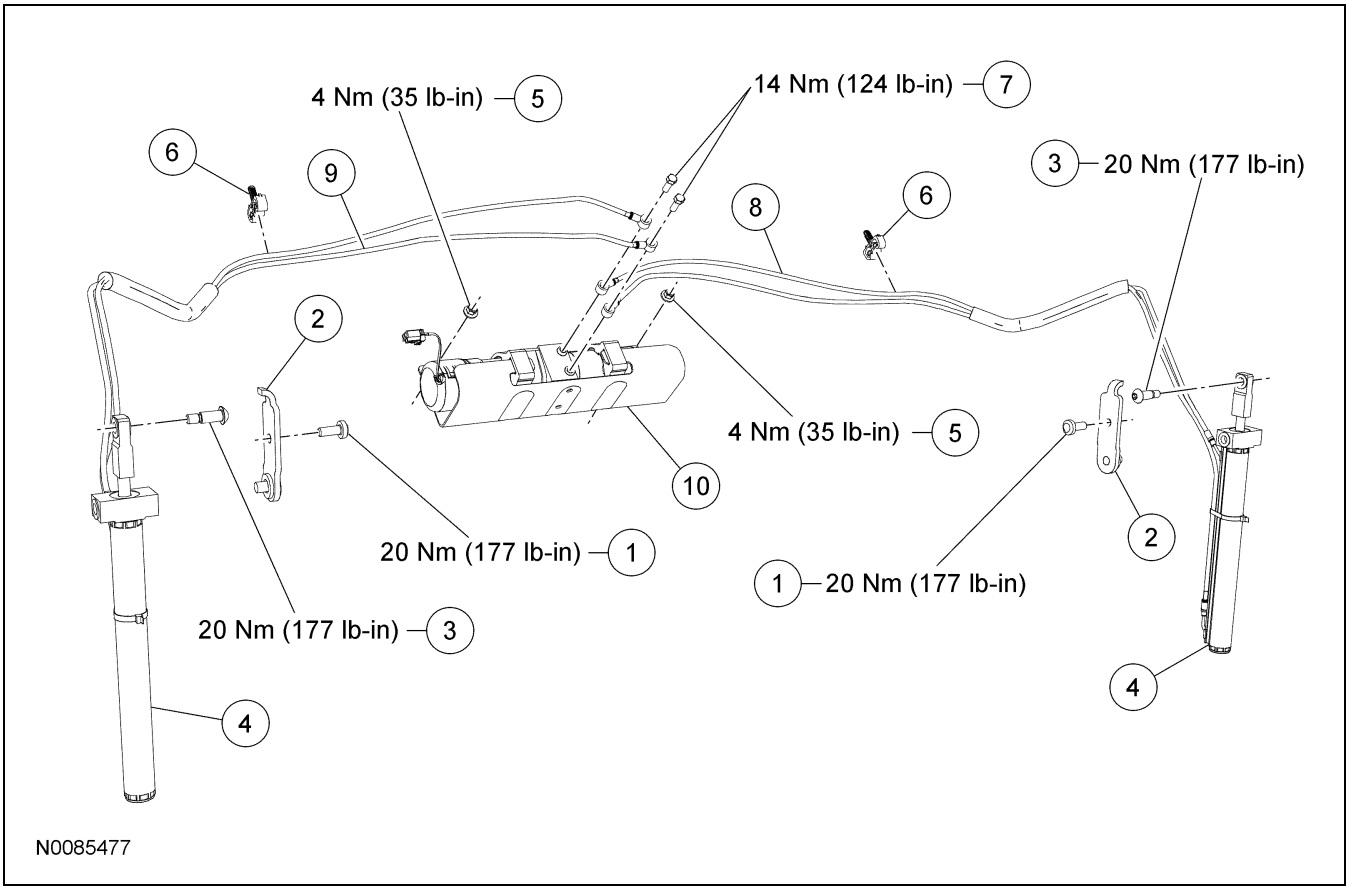
REMOVAL AND INSTALLATION

Hydraulic System, Lift Cylinder and Motor



Item	Part Number	Description
1	W505590	Hydraulic lift cylinder bracket bolts (2 required)
2	50668	Hydraulic lift cylinder brackets (2 required)
3	N808519	Clevis-to-hydraulic lift cylinder rod bolts (2 required)
4	50600	Hydraulic lift cylinders (2 required)
5	W704723	Convertible top pump and motor assembly nuts (2 required)
6	W710531	Hydraulic line locators
7	—	Hydraulic line-to-motor bolts
8	53390	Upper hydraulic line
9	53392	Lower hydraulic line
10	533A00	Hydraulic pump and motor assembly

Removal

NOTE: The convertible top hydraulic components are removed from the vehicle as an assembly. The hydraulic components are individually repaired and the system must be bled before being installed into the vehicle.

Hydraulic system

1. Lower the convertible top.
2. Remove the rear seat backrest. For additional information, refer to Section 501-10.
3. Remove the LH and RH quarter trim panels. For additional information, refer to Section 501-05.
4. Momentarily place the convertible top switch in the raise position to release the tension on the convertible top system.

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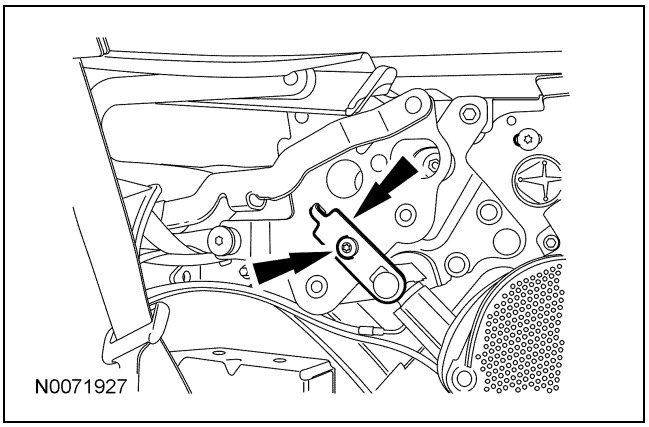
REMOVAL AND INSTALLATION (Continued)

5. Remove the LH and RH L-bracket bolts and the LH and RH L-brackets.

NOTE: LH side shown, RH side similar.

6. Remove the LH and RH hydraulic lift cylinder bracket bolts and the LH and RH hydraulic lift cylinder brackets.



7. Remove the LH and RH clevis-to-hydraulic lift cylinder rod bolts.

8. Fully lower the LH and RH hydraulic lift cylinders.

9. Release the LH and RH hydraulic line locators on each side.

10. Disconnect the hydraulic pump and motor assembly electrical connector.

11. **NOTE:** Remove the hydraulic pump and motor assembly and the LH and RH hydraulic lift cylinders together.

    Remove the hydraulic pump and motor assembly.

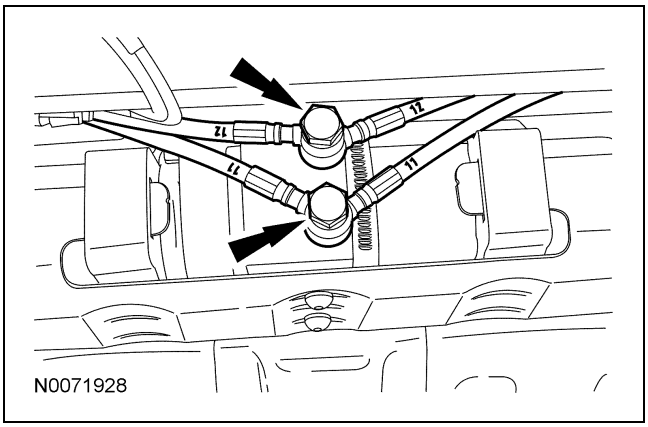
    - Remove the 2 hydraulic pump and motor assembly nuts.
    - Remove the hydraulic pump and motor assembly and the LH and RH hydraulic lift cylinders.

Hydraulic lift cylinder

12. Remove the hydraulic lines from the hydraulic lift cylinder.
    - Release the hydraulic line retaining tabs to remove the hydraulic lines from the hydraulic lift cylinder.

Motor assembly

13. Remove the hydraulic lines from the hydraulic pump and motor assembly.
    - Remove the hydraulic line-to-motor bolts from hydraulic pump and motor assembly.



Installation

Motor assembly

1. **NOTE:** Match the numbers that are visible on the hydraulic lines to the numbers that are stamped onto the hydraulic pump and motor assembly to make sure that the hydraulic lines are lined up to the correct hydraulic pump and motor assembly port.

   Install the hydraulic lines onto the hydraulic pump and motor assembly ports.

   - Install and tighten the hydraulic line-to-motor bolts to 14 Nm (124 lb-in).

Hydraulic lift cylinder

2. **NOTE:** Match the numbers that are visible on the hydraulic lines to the numbers that are stamped onto the hydraulic lift cylinder to make sure that the hydraulic lines are lined up to the correct hydraulic lift cylinder port.

   NOTE: Make sure that the hydraulic lines are fully seated into the hydraulic lift cylinder.

   Install the hydraulic lines into the hydraulic lift cylinder ports.

   - Install the hydraulic line retaining tabs to lock the hydraulic lines into the hydraulic lift cylinders.

REMOVAL AND INSTALLATION (Continued)

Hydraulic system

3. Bleed the hydraulic system. For additional information, refer to System Bleeding in this section.

4. **NOTE:** Install the hydraulic pump and motor assembly and the LH and RH hydraulic lift cylinders together.

   Position the hydraulic pump and motor assembly and the LH and RH hydraulic lift cylinders into the vehicle.

5. Install the hydraulic pump and motor assembly nuts.
   - Tighten to 4 Nm (35 lb-in).

6. Connect the hydraulic pump and motor assembly electrical connector.

7. Install the LH and RH hydraulic line locators.

8. Install the LH and RH clevis-to-hydraulic lift cylinder rod bolts.
   - Tighten to 20 Nm (177 lb-in).

9. Install the LH and RH hydraulic lift cylinder brackets and the LH and RH hydraulic lift cylinder bracket bolts.
   - Tighten to 20 Nm (177 lb-in).

10. Install the LH and RH L-brackets and the LH and RH L-bracket bolts.
    - Tighten to 27 Nm (20 lb-ft).

11. Install the LH and RH quarter trim panels. For additional information, refer to Section 501-05.

12. Install the rear seat backrest. For additional information, refer to Section 501-10.

13. Raise the convertible top.

REMOVAL AND INSTALLATION

Convertible Top Switch

Removal and Installation

1. Remove the overhead console.
   - Disconnect the overhead console electrical connector.
2. Disconnect the convertible top switch electrical connector.
3. Release the locking tabs, and remove the convertible top switch.
4. To install, reverse the removal procedure.

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SPECIFICATIONS

Torque Specifications

Description	Nm	lb-ft	lb-in
Front bumper bolts	25	18	—
Front bumper cover-to-reinforcement nuts	5	—	44

Torque Specifications (Continued)

Description	Nm	lb-ft	lb-in
Lower air deflector bolts	2	—	18
Rear bumper bolts	25	18	—
Rear bumper cover nuts	5	—	44

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DESCRIPTION AND OPERATION

Bumpers

NOTICE: **Never apply excessive heat to the bumper cover surface. Heat could cause distortion of the bumper cover.**

The bumper systems consist of the following components:

- Front bumper
- Front bumper cover
- Front bumper isolator
- Rear bumper
- Rear bumper cover
- Rear bumper isolator
- Rear bumper bracket

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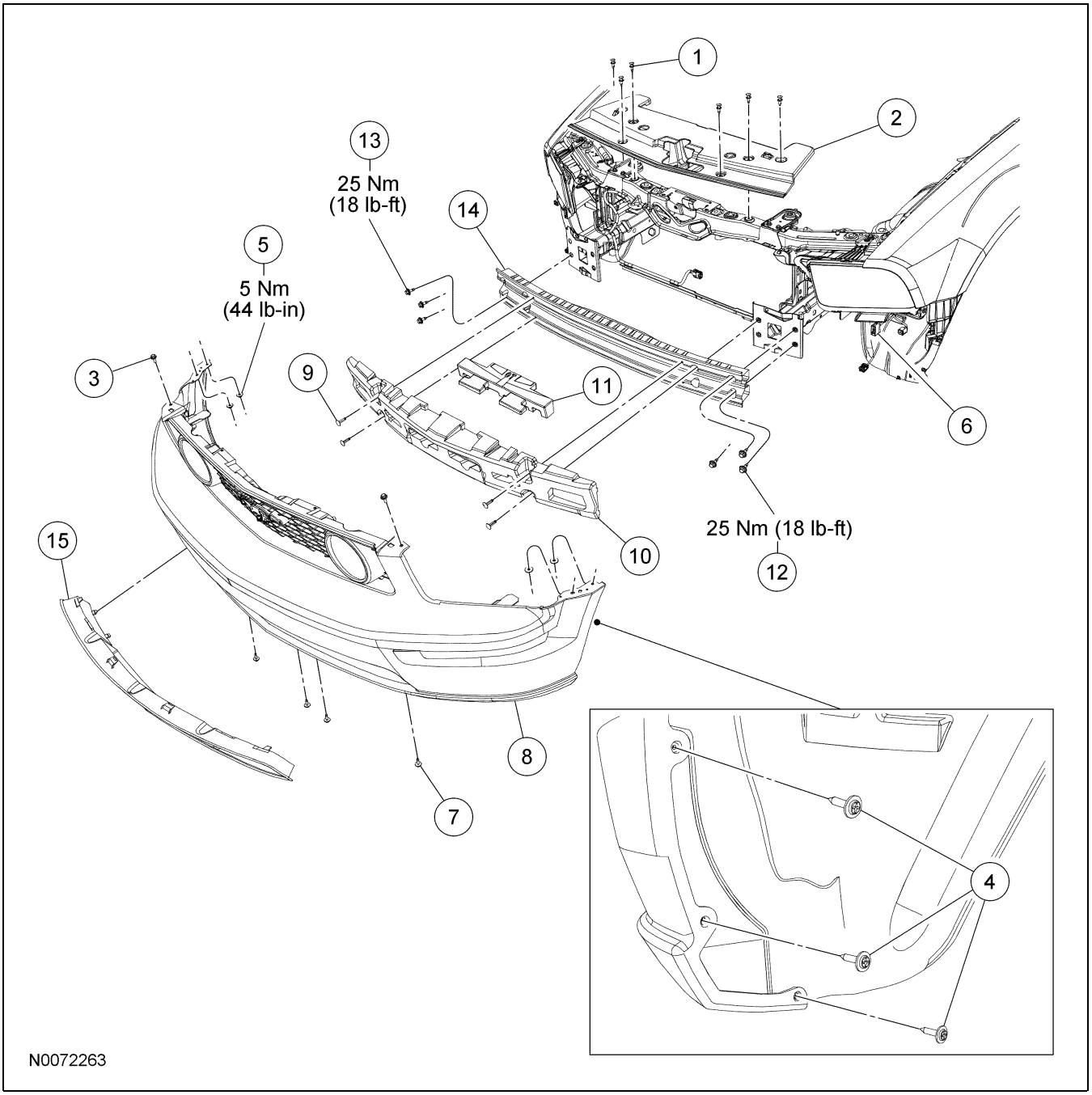
REMOVAL AND INSTALLATION

Bumper — Exploded View, Front

Base Vehicle and GT



Item	Part Number	Description
1	W705436	Upper radiator sight shield pin-type retainer (6 required)
2	8C291	Upper radiator sight shield
3	W712277	Front bumper cover bolt (upper) (2 required)

(Continued)

Item	Part Number	Description
4	W706805	Front fender splash shield-to-front bumper cover screws (6 required)
5	W711059	Front bumper cover-to-reinforcement nut (4 required)

(Continued)

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REMOVAL AND INSTALLATION (Continued)

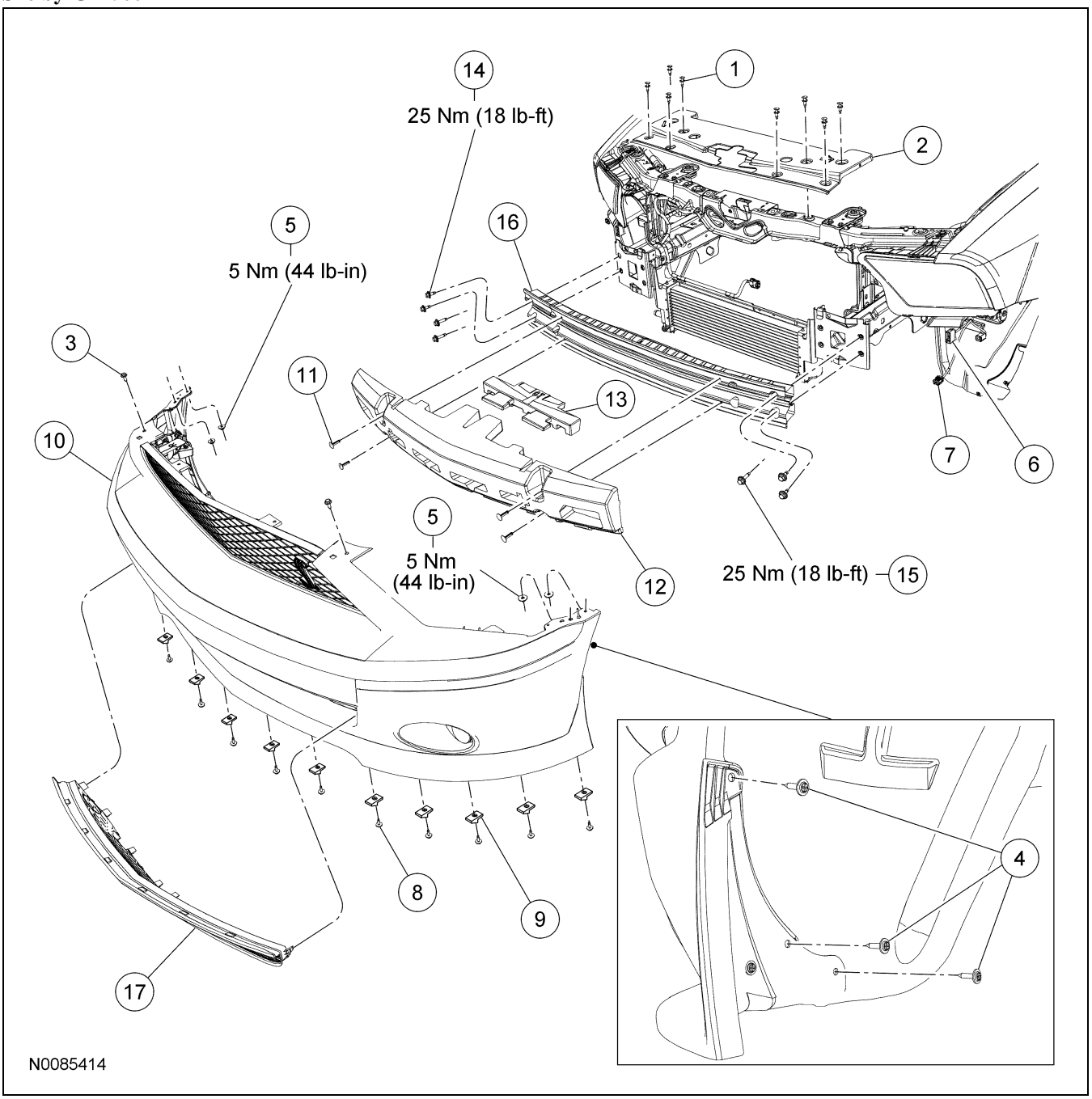
Item	Part Number	Description
6	—	Side marker light electrical connector (part of 14A464)
7	N801169	Lower air deflector screw (4 required)
8	17D957	Front bumper cover
9	310D12	Front bumper isolator pin-type retainer (4 required)
10	17E898	Front bumper lower outer isolator
11	17C882A	Front bumper upper center inner isolator (V6 only)

(Continued)

Item	Part Number	Description
11	17C882B	Front bumper upper center inner isolator (GT only)
12	W711097	Front bumper outboard bolt (4 required)
13	W711457	Front bumper inboard bolt (2 required)
14	17757	Front bumper
15	17B814	Lower radiator grille

REMOVAL AND INSTALLATION (Continued)

Shelby GT 500



Item	Part Number	Description
1	W705436	Upper radiator sight shield pin-type retainer (8 required)
2	8C291	Upper radiator sight shield
3	W712277	Front bumper cover bolt (upper) (2 required)
4	W706805	Front fender splash shield-to-front bumper cover screws (6 required)

(Continued)

Item	Part Number	Description
5	W711059	Front bumper cover-to-reinforcement nuts (4 required)
6	—	Side marker light electrical connector
7	—	Fog lamp electrical connector
8	W713519	Lower air deflector bolt (10 required)
9	W713547	Lower air deflector nut (10 required)

(Continued)

REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
10	17D957	Front bumper cover
11	310D12	Front bumper isolator pin-type retainer (4 required)
12	17C882A	Front bumper lower outer isolator
13	17C947	Front bumper pad-impact
14	W711097	Front bumper bolt (outboard) (4 required)
15	W711457	Front bumper bolt (inboard) (3 required)
16	17757	Front bumper
17	17B814	Lower radiator grille

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

Bumper Cover — Front

Removal and Installation

Base vehicle and GT

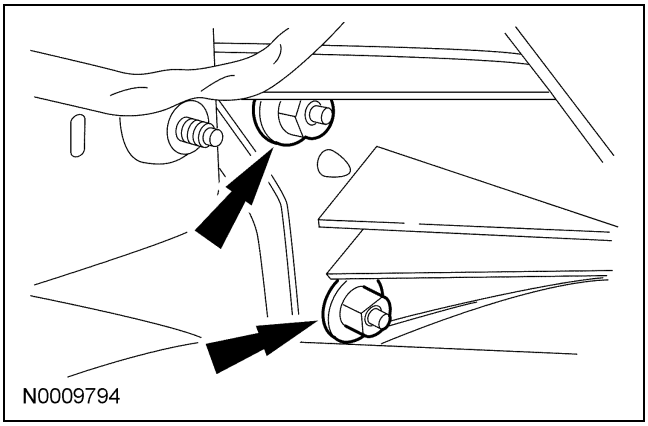
1. Remove the 6 pin-type retainers and the upper radiator sight shield.

Shelby GT 500

2. Remove the 8 pin-type retainers and the upper radiator sight shield.

All vehicles

3. Remove the 2 upper front bumper cover bolts.
4. Remove the 6 front fender splash shield-to-front bumper cover screws.
5. If equipped, remove the 10 lower air deflector bolts.
   - To install, tighten to 2 Nm (18 lb-in).
6. Position the front splash shield aside and remove the 4 front bumper cover-to-reinforcement nuts.
   - To install, tighten to 5 Nm (44 lb-in).



7. If equipped, disconnect the 2 fog lamp electrical connectors.
8. Disconnect the 4 side marker lamp electrical connectors and remove the front bumper cover.
9. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

Bumper — Front

Removal and Installation

1. Remove the front bumper cover. For additional information, refer to Bumper Cover — Front in this section.
2. Remove the 4 front bumper isolator pin-type retainers and the front bumper lower outer and upper center inner isolators.
3. Drill out the 6 front bumper spot welds.
4. Remove the front bumper bolts and the front bumper.
   - To install, tighten to 25 Nm (18 lb-ft).
5. **NOTE:** Spot welding the bumper is not required for installation.

   To install, reverse the removal procedure.

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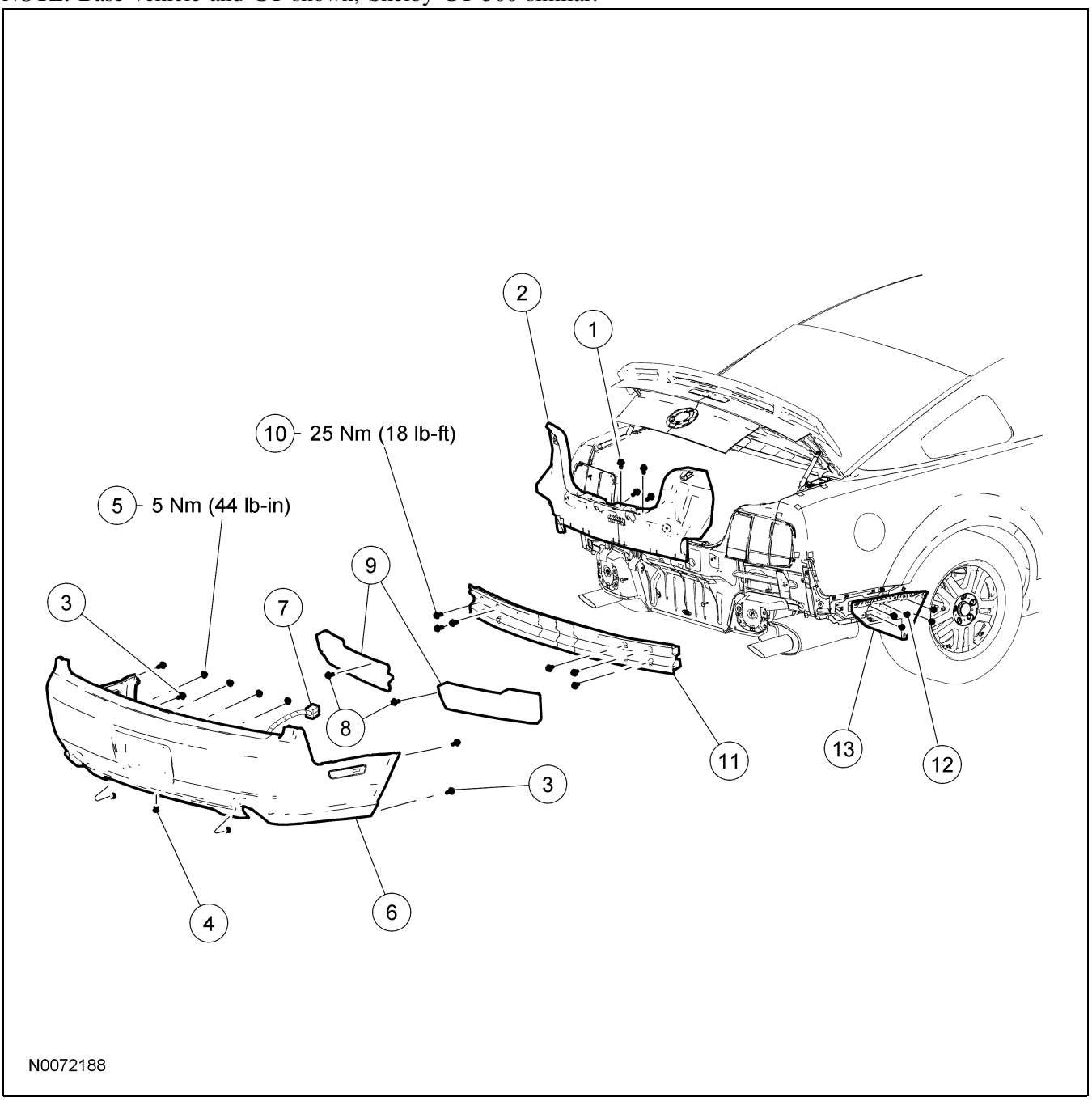
REMOVAL AND INSTALLATION

Bumper — Exploded View, Rear

NOTE: Base vehicle and GT shown, Shelby GT 500 similar.



Item	Part Number	Description
1	58403D24	Luggage compartment trim panel pin-type retainer (4 required)
2	63424A82	Luggage compartment trim panel

(Continued)

Item	Part Number	Description
3	W712919	Rear bumper cover-to-bumper cover bracket screws (4 required)
4	13A457	Rear bumper cover pin-type retainer (3 required) (if equipped)

(Continued)

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REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
5	N621927	Rear bumper cover nut (4 required)
6	17K835	Rear bumper cover
7	—	Rear bumper cover electrical connector (part of 14489)
8	310D12	Rear bumper isolator pin-type retainers (2 required)
9	17E899 LH/ 17E989 RH	Rear bumper isolators
10	W711097	Rear bumper bolt (6 required)
11	17906	Rear bumper
12	W611103	Rear bumper cover bracket bolt (12 required)
13	17D942	Rear bumper cover bracket

(Continued)

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

Bumper Cover — Rear

Removal and Installation

1. Remove the 4 pin-type retainers and the luggage compartment trim panel.
2. Remove the 4 rear bumper cover-to-bumper cover bracket screws.
3. **NOTE:** GT vehicles are equipped with 3 pin-type retainers.

   If equipped, remove the 3 rear bumper cover pin-type retainers.
4. From inside the luggage compartment, remove the 4 rear bumper cover nuts.
   - To install, tighten to 5 Nm (44 lb-in).
5. Disconnect the electrical connector from inside the luggage compartment and remove the rear bumper cover.
   - Feed the rear bumper electrical harness through the rear of the vehicle.
6. To install, reverse the removal procedure.
   - Transfer components as needed.

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REMOVAL AND INSTALLATION

Bumper — Rear

Removal and Installation

1. Remove the rear bumper cover. For additional information, refer to Bumper Cover — Rear in this section.
2. Remove the 2 pin-type retainers and the 2 rear bumper isolators.
3. Remove the 6 rear bumper bolts and the rear bumper.
   - To install, tighten to 25 Nm (18 lb-ft).
4. To install, reverse the removal procedure.

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SPECIFICATIONS

Torque Specifications

Description	Nm	lb-ft
Front Safety Belts		
D-ring bolt, convertible	40	30
D-ring bolt, coupe	48	35
Safety belt anchor bolt	40	30
Safety belt buckle bolt	40	30
Safety belt retractor and pretensioner bolt	40	30

Torque Specifications (Continued)

Description	Nm	lb-ft
Rear Safety Belts		
D-ring bolt, convertible	40	30
Lower anchors and tethers for children bolts	40	30
Safety belt anchor bolt	40	30
Safety belt buckle nut	40	30
Safety belt retractor bolt	40	30

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DESCRIPTION AND OPERATION

Safety Belt System

⚠ WARNING: After any crash, all of the following safety belt assemblies and attaching hardware must be inspected by an authorized dealer to verify correct function:

— Retractors

— Buckles

— Belt tension sensor (BTS) (if equipped)

— Front safety belt buckle support assemblies (slide bar) (if equipped)

— Safety belt shoulder belt height adjusters (if equipped)

— Child safety seat tether bracket assemblies

— Automatic locking retractor (ALR) feature for child safety seats (passenger seating positions only)

If any safety belt assembly is damaged, does not operate correctly or does not pass all of the Functional Tests in the Diagnosis and Testing portion of this section, a new safety belt assembly must be installed. If any safety belt assembly attaching areas are damaged or distorted, the sheet metal must be restored to its original structural integrity and new safety belt assembly and attaching hardware must be installed. Failure to install new safety belt assemblies and attaching hardware may increase the risk of serious personal injury or death in a crash.

After any crash that results in deployment of the driver and/or front outboard passenger safety belt pretensioners, new driver and/or front outboard passenger safety belt systems (including retractors, buckles and height adjusters) must be installed. Failure to install new safety belt systems increases the risk of serious personal injury or death in a crash.

When installing any new active occupant restraint components, use only Ford-specified service parts.

The active restraint system consists of the following serviceable items:

- Front safety belt buckles, attached to the inboard side of the seats
- Front safety belt retractors and pretensioners, located behind the LH and RH lower B-pillar trim panels
- Rear safety belt retractors, mounted to the rear package tray (coupe only)
- Rear safety belt retractors, mounted to a stanchion behind the rear seat backrest (convertible only)
- Rear safety belt buckle assemblies, attached to the floor pan
- Rear lower anchors and tethers for children at both seating positions, attached to the floor pan

The rear child safety seat tether anchors, at both seating positions, are welded to the underside of the package tray (coupe only) and are not serviceable.

Safety Belt Retractors

The safety belt retractors consist of the following features:

- Safety belt pretensioner (front only)
- Dual locking mode
  - — Emergency Locking Retractor (ELR)
  - — Automatic Locking Retractor (ALR) (all except driver seat)
- Belt Tension Sensor (BTS) (front passenger safety belt retractor only)

Safety Belt Retractor and Pretensioner

The pretensioner is a pyrotechnic device that deploys when activated by the Restraints Control Module (RCM) to remove excess safety belt webbing from the shoulder and lap safety belt in the event of an impact. If a deployment of the safety belt retractor and pretensioners occurs, a new assembly must be installed. Refer to Safety Belt Retractor and Pretensioner in this section.

Each front safety belt shoulder guide includes a 2-position safety belt presenter arm that rotates rearward to allow for occupant rear seat access (stowed position) and forward for front seat occupant use (worn position).

For safety belt retractor and pretensioner diagnostic and disposal information, refer to Section 501-20B.

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DESCRIPTION AND OPERATION (Continued)

Emergency Locking Retractor (ELR)

Every safety belt retractor is a 3-point restraint with the ELR feature. The safety belt retractor is designed to allow the occupant freedom of movement in normal operation. The ELR is a vehicle sensitive feature designed to activate and lock the safety belt webbing when braking hard, cornering hard or in an impact of approximately 8 km/h (5 mph). The ELR feature helps to reduce the forward movement of the driver and passengers. Refer to the appropriate Functional Test procedure in Safety Belt System in this section.

Automatic Locking Retractor (ALR)

The ALR feature does not allow freedom of movement. The ALR mode is used when locking a child seat in an outboard seating position or when a tight belt fit is desired. The ALR mode is automatically activated when the safety belt webbing is fully extracted from the retractor and then allowed to retract. As the safety belt webbing is retracted back onto the spool, an audible clicking sound is made indicating the safety belt retractor is in ALR mode and the safety belt webbing will not pull back out of the safety belt retractor. To disengage the ALR mode, allow the safety belt webbing to fully retract back onto the spool. The ALR mode is disengaged when the webbing is free to extract and retract back into the retractor. Refer to the appropriate Functional Test procedure in Safety Belt System in this section.

Belt Tension Sensor (BTS)

The safety BTS is part of the passenger front outboard safety belt and retractor assembly and is not serviced separately. The safety BTS is located at the safety belt anchor point and operates as part of the Occupant Classification Sensor (OCS) system on the front passenger seat. To diagnose the BTS or OCS system, refer to Section 501-20B.

Safety Belt Buckles

The front seat safety belt buckles are attached to the front seat tracks and can be serviced separately.

The rear seat safety belt buckles are attached to the floor pan behind the rear seat cushion and can be serviced separately.

Child Safety Seat Restraints

The child safety seat restraints include the following items:

- Non-serviceable child safety seat tether anchors located at both rear seating positions, welded to the underside of the package tray (coupe only)
- Serviceable lower anchors and tethers for children attachments mounted to the floor pan behind the rear seat cushion

If a child safety seat was in use during a collision, inspect the vehicle portion of the system for damage. Inspect the vehicle structure at the child safety seat component mounting areas and repair any damage to the original production configuration.

Lower Anchors and Tethers for Children

The lower anchors and tethers for children system is a standardized and uniform attachment system for installing child safety seats in passenger seating locations. The lower anchors and tethers for children system-equipped child safety seats have 2 lower attachments that connect to 2 attachment points (6-mm wires) that protrude from the bight-line between the seat cushion and seat backrest.

If any of the lower anchors and tethers for children attachment points (6-mm wires) are damaged, a new component(s) must be installed. Refer to Child Safety Seat Tether Anchor — LATCH in this section.

DIAGNOSIS AND TESTING

Safety Belt System

Principles of Operation

⚠ WARNING: After any crash, all of the following safety belt assemblies and attaching hardware must be inspected by an authorized dealer to verify correct function:

- **— Retractors**
- **— Buckles**
- **— Belt tension sensor (BTS) (if equipped)**
- **— Front safety belt buckle support assemblies (slide bar) (if equipped)**
- **— Safety belt shoulder belt height adjusters (if equipped)**
- **— Child safety seat tether bracket assemblies**
- **— Automatic locking retractor (ALR) feature for child safety seats (passenger seating positions only)**

If any safety belt assembly is damaged, does not operate correctly or does not pass all of the Functional Tests in the Diagnosis and Testing portion of this section, a new safety belt assembly must be installed. If any safety belt assembly attaching areas are damaged or distorted, the sheet metal must be restored to its original structural integrity and new safety belt assembly and attaching hardware must be installed. Failure to install new safety belt assemblies and attaching hardware may increase the risk of serious personal injury or death in a crash.

After any crash that results in deployment of the driver and/or front outboard passenger safety belt pretensioners, new driver and/or front outboard passenger safety belt systems (including retractors, buckles and height adjusters) must be installed. Failure to install new safety belt systems increases the risk of serious personal injury or death in a crash.

Safety Belt Warning System

The driver safety belt warning indicator illuminates and a chime sounds to remind the occupants to fasten their safety belts.

The conditions of operation for the driver safety belt warning indicator and chime are as follows:

- If the driver safety belt is not buckled before the ignition switch is turned to ON, then the safety belt warning indicator illuminates for 1 to 2 minutes and the warning chime sounds for 4 to 8 seconds.
- If the driver safety belt is buckled while the warning indicator is illuminated and the warning chime is sounding, then the safety belt warning indicator and warning chime turn off.
- If the driver safety belt is buckled before the ignition switch is turned to ON, the safety belt warning indicator and warning chime will remain off.

Belt-Minder®

The Belt-Minder® feature is a supplemental warning to the safety belt warning function. This feature provides an additional reminder to the driver that the driver and/or front passenger safety belt is unbuckled by intermittently sounding a chime and illuminating the safety belt warning indicator in the instrument cluster.

Either the driver or front passenger safety belt systems may activate the Belt-Minder®. If the Belt-Minder® warnings have expired (warnings for approximately 5 minutes) for one occupant (driver or front passenger), the other occupant can still activate the Belt-Minder® feature.

The passenger Belt-Minder® feature is activated only when the Occupant Classification Sensor (OCS) system detects a passenger in the right front seat and the passenger weight exceeds a programmed limit. For information on the OCS system, refer to Section 501-20B.

To activate or deactivate the Belt-Minder® feature, refer to Section 413-01.

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DIAGNOSIS AND TESTING (Continued)

If...	Then...
the driver and/or front passenger safety belt is buckled before the ignition switch is turned to the ON position or less than 1-2 minutes have elapsed since the ignition switch has been turned ON...	the Belt-Minder® feature will not activate.
the driver and/or front passenger safety belt is not buckled before the vehicle has reached at least 5 km/h (3 mph) and 1-2 minutes have elapsed since the ignition switch has been turned to ON...	the Belt-Minder® feature is activated — the safety belt warning indicator illuminates and the warning chime sounds for 6 seconds every 30 seconds, repeating for approximately 5 minutes or until the safety belt(s) is buckled.
the driver or front passenger safety belt becomes unbuckled for approximately 1 minute while the vehicle is traveling at least 5 km/h (3 mph) and more than 1-2 minutes have elapsed since the ignition switch has been turned to ON...	the Belt-Minder® feature is activated — the safety belt warning indicator illuminates and the warning chime sounds for 6 seconds every 30 seconds, repeating for approximately 5 minutes or until the safety belt(s) is buckled.

Inspection and Verification

1. Verify the customer's concern by operating the active restraint system to duplicate the condition.
2. Inspect to determine if any of the following mechanical or electrical concerns apply:

Visual Inspection Chart

Mechanical	Electrical
• Cut, frayed or incorrectly routed safety belt webbing • Safety belt buckle and tongue assembly • Safety belt retractor	• Bare, broken or disconnected wire • Connector not tightly engaged • Safety belt warning indicator burned out or broken

3. If the inspection reveals an obvious concern(s) that can be readily identified, service as required. With the exception of removing a twist from the safety belt webbing, do not attempt to repair a component of the safety belt system; new components must be installed.
4. If the concern remains after the inspection, determine the symptom. GO to Symptom Chart.
5. To check the active restraint system for correct operation, carry out the appropriate Functional Test(s).

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
• The safety belt warning indicator lamp does not operate	• Burned-out indicator • Circuitry • Instrument Cluster (IC) module • Restraints Control Module (RCM)	• If the air bag warning indicator is illuminated, REFER to Section 501-20B. If the air bag warning indicator is not illuminated, REFER to Section 413-01.
• The safety belt warning chime does not operate	• Safety belt switch • IC module • RCM • Wiring, terminals or connectors	• If the air bag warning indicator is illuminated, REFER to Section 501-20B. If the air bag warning indicator is not illuminated, REFER to Section 413-01.
• The safety belt retractor webbing does not extract or exhibits excessive pressure on the occupant during use	• Safety belt retractor is in Automatic Locking Retractor (ALR) mode • Safety belt retractor is binding internally	• CARRY OUT the Functional Test — Safety Belt Retractor and Functional Test — Safety Belt Retractor, ALR mode. REFER to Component Test in this section. INSTALL new components as directed.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart (Continued)

Condition	Possible Sources	Action
• The safety belt retractor webbing does not retract or has excessive slack during use	• Twisted or incorrectly routed safety belt webbing • Safety belt retractor is binding internally	• CORRECT the twisted safety belt webbing. REFER to Safety Belt Twisted at the Safety Belt Guide or Safety Belt Tongue Rotated on Belt in this section. CARRY OUT the appropriate Function Test. REFER to Component Test in this section.
	• Safety belt retractor	• INSTALL a new safety belt retractor. REFER to Safety Belt Retractor and Pretensioner or Safety Belt Retractor — Rear in this section.
• The Belt-Minder® feature is inoperative	• Belt-Minder® feature is deactivated	• REFER to Section 413-01 or the Seating and Safety Restraints section of the Owner's Literature to activate the Belt-Minder® feature. If the Belt-Minder® is activated, REFER to Section 413-01 to diagnose.
• Safety belt procedure after a collision	• Safety belt retractors • Safety belt buckles • Safety belt shoulder height adjuster(s) • Center seat safety belt and buckle (lap belt, if equipped) • Child safety seat attachment components	• REFER to Safety Belt Procedure After a Collision in this section.
• The safety belt tongue is rotated on the safety belt webbing	• Twisted or incorrectly routed safety belt webbing	• REFER to Safety Belt Tongue Rotated on Belt in this section.
• The safety belt webbing is twisted at the safety belt guide	• Twisted or incorrectly routed safety belt webbing	• REFER to Safety Belt Twisted at the Safety Belt Guide in this section.
• The safety belt webbing is dirty or soiled	• Dirty or soiled safety belt webbing	• REFER to Safety Belt Cleaning in this section.

Component Test

⚠ WARNING: After any crash, all of the following safety belt assemblies and attaching hardware must be inspected by an authorized dealer to verify correct function:

— Retractors

— Buckles

— Belt tension sensor (BTS) (if equipped)

— Front safety belt buckle support assemblies (slide bar) (if equipped)

— Safety belt shoulder belt height adjusters (if equipped)

— Child safety seat tether bracket assemblies

DIAGNOSIS AND TESTING (Continued)

— Automatic locking retractor (ALR) feature for child safety seats (passenger seating positions only)

If any safety belt assembly is damaged, does not operate correctly or does not pass all of the Functional Tests in the Diagnosis and Testing portion of this section, a new safety belt assembly must be installed. If any safety belt assembly attaching areas are damaged or distorted, the sheet metal must be restored to its original structural integrity and new safety belt assembly and attaching hardware must be installed. Failure to install new safety belt assemblies and attaching hardware may increase the risk of serious personal injury or death in a crash.

After any crash that results in deployment of the driver and/or front outboard passenger safety belt pretensioners, new driver and/or front outboard passenger safety belt systems (including retractors, buckles and height adjusters) must be installed. Failure to install new safety belt systems increases the risk of serious personal injury or death in a crash.

Carry out the appropriate Functional Test(s) as determined in Inspection and Verification.

Functional Test — Safety Belt Buckle and Tongue

The safety belt buckle and tongue assembly must operate freely during the latching and unlatching function. Fasten the safety belt by inserting the tongue (male portion) into the buckle (female portion).

1. Verify the following during the latching sequence:
   - Tongue insertion is not hindered by excessive effort.
   - A click is heard when the safety belt buckle latches the tongue.
2. Verify the system integrity by forcefully pulling on the safety belt webbing.
3. Unlatch the safety belt by fully depressing the safety belt buckle release button and allowing the safety belt to release and retract.
4. Verify the following during the unlatching process:
   - Push-button depression does not require excessive effort.
   - The tongue can be removed easily from the buckle.
5. Repeat the above steps 3 times.
6. If the functional test reveals a concern(s), install a new safety belt buckle or safety belt retractor as required.

Functional Test — Safety Belt Retractor

The safety belt retractor must be freely operational for extraction and retraction of the safety belt webbing between full extension and in-vehicle stowed positions.

1. Extract and retract the safety belt between the full extension and stowed positions.
2. Verify the safety belt retractor operates without excessive effort or binding.
3. Install a new safety belt retractor if any concern is found or the complaint has been verified.

Functional Test — Safety Belt Retractor, Automatic Locking Retractor (ALR) Mode

1. Position the seat backrest fully upright (if adjustable).
2. Position the safety belt shoulder height adjuster (if equipped) in the full down or up position.
3. Fasten the safety belt.
4. Pull out the safety belt webbing until the Automatic Locking Retractor (ALR) feature is activated.
5. Allow the safety belt webbing to retract until it stops.
6. Pull on the safety belt webbing to check that the safety belt retractor has remained in the ALR mode. If the safety belt retractor is not locked, install a new safety belt retractor.
7. Unfasten the safety belt and allow the safety belt webbing to retract to its stowed position.
8. Pull out and retract the safety belt webbing to verify the safety belt retractor has converted automatically out of ALR mode. If the safety belt retractor remains locked in the ALR mode, install a new safety belt retractor.

DIAGNOSIS AND TESTING (Continued)

Functional Test — Safety Belt Retractor, Road Test Inspection

⚠ **WARNING: The driver and passenger must be prepared to brace themselves in the event the safety belt retractor does not lock. Failure to follow this instruction may result in serious personal injury.**

NOTE: Make sure there is no excessive slack in the safety belt webbing across the torso during testing.

NOTE: Do not jerk on the safety belt webbing when carrying out this test.

1. Test the safety belts in the following sequence:
   1 Fasten the safety belts and proceed to a safe area.
   2 Attain a speed of 24 km/h (15 mph).
   3 ⚠ **WARNING: Apply maximum brake force only on dry concrete or equivalent hard surface, NEVER on wet pavement or gravel. Failure to follow this instruction may result in serious personal injury.**

     Grasp the shoulder harness, lean forward and apply the brakes, making a maximum braking application without a skid.
   4 The safety belts should lock up with minimum webbing extension.
   5 If there is a lockup of all safety belt retractors being tested, the safety belt retractors are functioning correctly. If any safety belt retractor fails to lock up, install a new safety belt retractor(s).

GENERAL PROCEDURES

Safety Belt Cleaning

⚠ **WARNING: Do not bleach or re-dye the safety belt webbing, as the webbing may weaken. Failure to follow this instruction may increase the risk of serious personal injury or death in a crash.**

1. Clean the safety belt webbing only with a mild soap solution recommended for cleaning carpet and upholstery. Follow the instructions provided with the soap.

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GENERAL PROCEDURES

Safety Belt Maintenance

⚠ WARNING: After any crash, all of the following safety belt assemblies and attaching hardware must be inspected by an authorized dealer to verify correct function:

- **Retractors**
- **Buckles**
- **Belt tension sensor (BTS) (if equipped)**
- **Front safety belt buckle support assemblies (slide bar) (if equipped)**
- **Safety belt shoulder belt height adjusters (if equipped)**
- **Child safety seat tether bracket assemblies**
- **Automatic locking retractor (ALR) feature for child safety seats (passenger seating positions only)**

If any safety belt assembly is damaged, does not operate correctly or does not pass all of the Functional Tests in the Diagnosis and Testing portion of this section, a new safety belt assembly must be installed. If any safety belt assembly attaching areas are damaged or distorted, the sheet metal must be restored to its original structural integrity and new safety belt assembly and attaching hardware must be installed. Failure to install new safety belt assemblies and attaching hardware may increase the risk of serious personal injury or death in a crash.

After any crash that results in deployment of the driver and/or front outboard passenger safety belt pretensioners, new driver and/or front outboard passenger safety belt systems (including retractors, buckles and height adjusters) must be installed. Failure to install new safety belt systems increases the risk of serious personal injury or death in a crash.

1. The safety belt assemblies should be periodically inspected to make sure that they have not become damaged and that they remain in correct operating condition, particularly if they have been subjected to severe stress.
2. Before installing the new safety belt assembly, the safety belt retaining areas must be inspected for damage and distortion. If the retaining points are damaged and distorted, the sheet metal must be reworked back to its original shape and structural integrity.
3. Install the new safety belt(s) using the appropriate instructions. Carry out the Functional Test Procedure. For additional information, refer to the appropriate Functional Test procedure in Safety Belt System in this section.

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GENERAL PROCEDURES

Safety Belt Procedure After a Collision

⚠ WARNING: After any crash, all of the following safety belt assemblies and attaching hardware must be inspected by an authorized dealer to verify correct function:

- **Retractors**
- **Buckles**
- **Belt tension sensor (BTS) (if equipped)**
- **Front safety belt buckle support assemblies (slide bar) (if equipped)**
- **Safety belt shoulder belt height adjusters (if equipped)**
- **Child safety seat tether bracket assemblies**
- **Automatic locking retractor (ALR) feature for child safety seats (passenger seating positions only)**

If any safety belt assembly is damaged, does not operate correctly or does not pass all of the Functional Tests in the Diagnosis and Testing portion of this section, a new safety belt assembly must be installed. If any safety belt assembly attaching areas are damaged or distorted, the sheet metal must be restored to its original structural integrity and new safety belt assembly and attaching hardware must be installed. Failure to install new safety belt assemblies and attaching hardware may increase the risk of serious personal injury or death in a crash.

After any crash that results in deployment of the driver and/or front outboard passenger safety belt pretensioners, new driver and/or front outboard passenger safety belt systems (including retractors, buckles and height adjusters) must be installed. Failure to install new safety belt systems increases the risk of serious personal injury or death in a crash.

1. Before installing a new safety belt assembly, the safety belt attaching areas must be inspected for damage and distortion. If the attaching points are damaged and distorted, the sheet metal must be worked back to its original shape and structural integrity.

2. Install the new safety belt(s). For additional information, refer to the procedure in this section. Carry out the Functional Test. For additional information, refer to the appropriate Functional Test procedure in Safety Belt System in this section.

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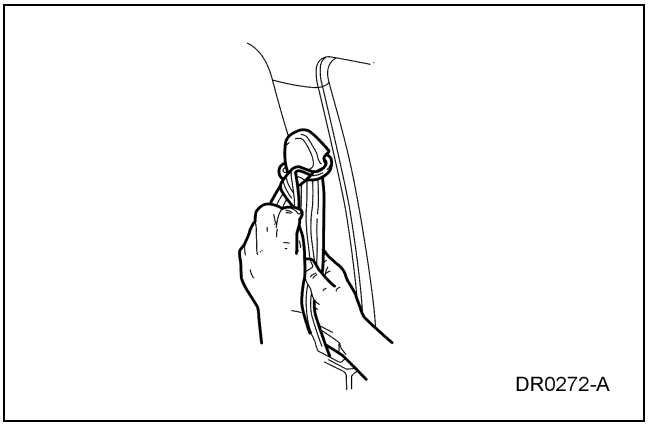
GENERAL PROCEDURES

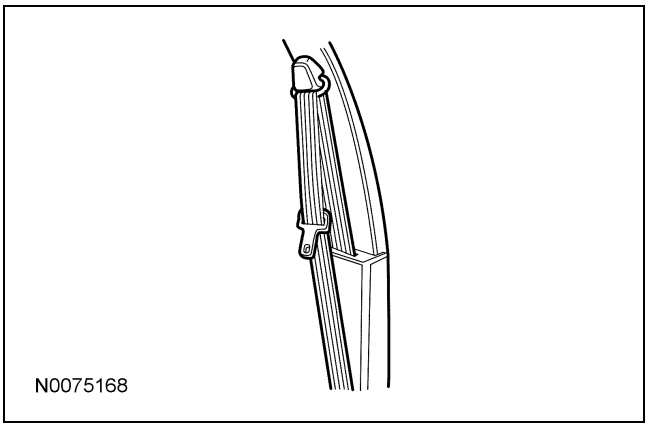
Safety Belt Twisted at the Safety Belt Guide

NOTE: These procedures apply to both wire-formed and stamped D-ring designs.

1. Grasp the safety belt webbing at the D-ring and fold the twisted portion of the belt webbing over itself.



2. Feed the folded portion of the safety belt webbing through the safety belt guide (D-ring) to remove the twist from the belt webbing.



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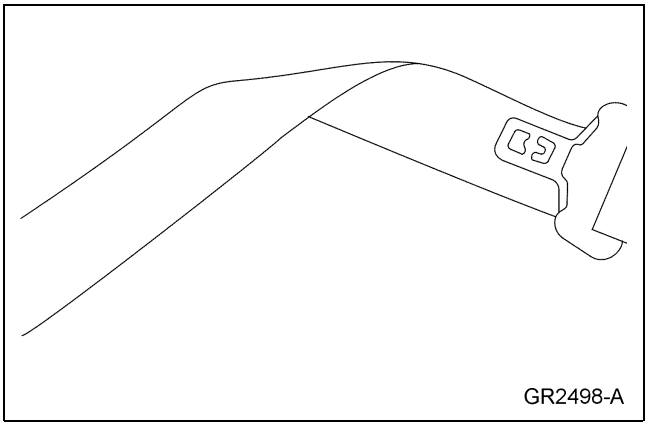
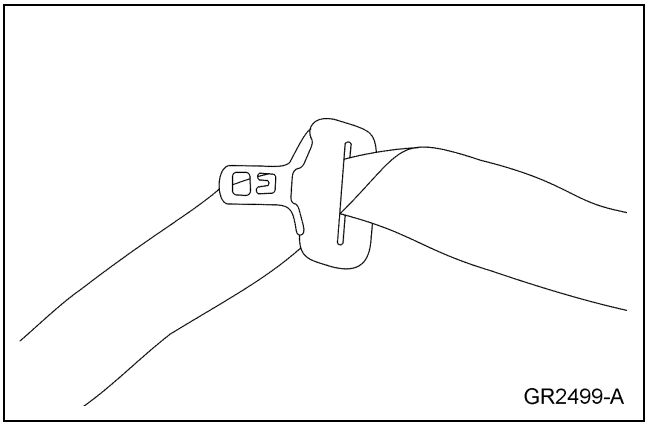
GENERAL PROCEDURES

Safety Belt Tongue Rotated on Belt

1. Fold the safety belt as indicated.



2. Pull the safety belt tongue over the fold in the safety belt.



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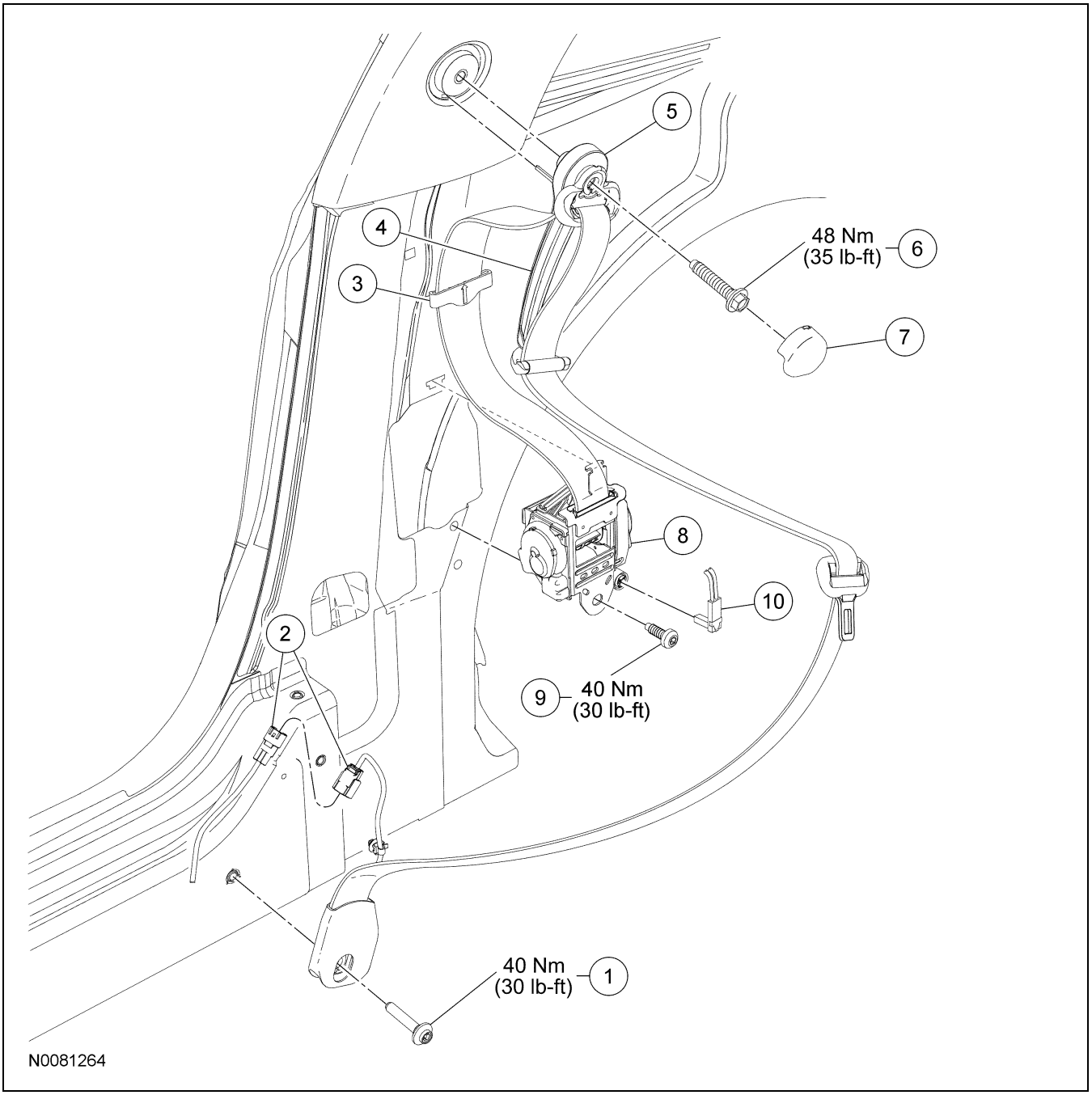
REMOVAL AND INSTALLATION

Safety Belt Retractor and Pretensioner

Safety Belt Retractor and Pretensioner — Coupe

NOTE: RH shown, LH similar.



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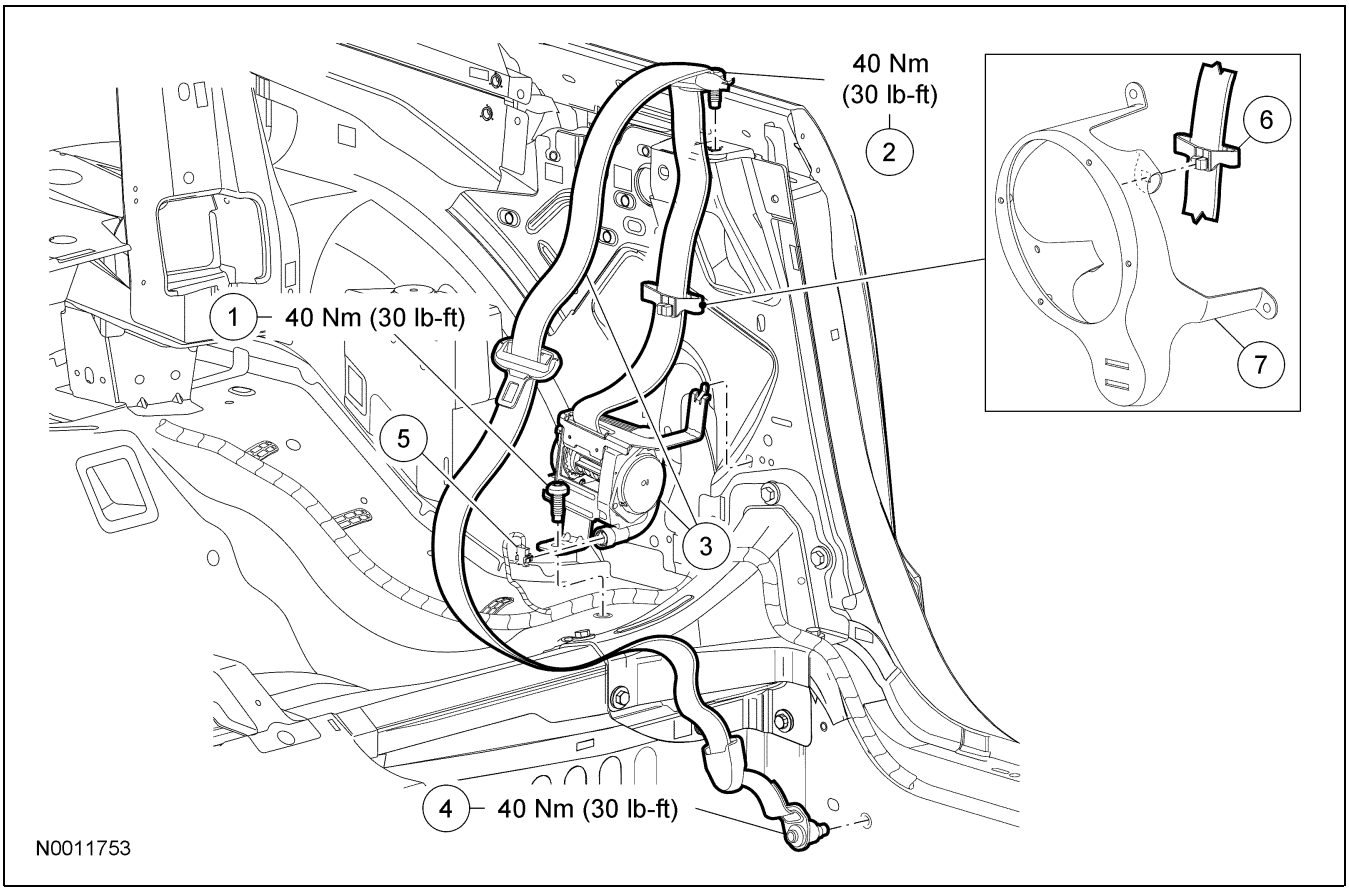
REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
1	—	Safety belt retractor and pretensioner anchor bolt (part of 611B08 RH/ 611B09 LH)
2	—	Belt Tension Sensor (BTS) electrical connector (part of 611B08)
3	—	Secondary safety belt guide (part of 611B08 RH/ 611B09 LH)
4	—	Safety belt presenter (part of 611B08 RH/ 611B09 LH)
5	—	D-ring (part of 611B08 RH/ 611B09 LH)
6	—	D-ring bolt (part of 611B08 RH/ 611B09 LH)
7	60262	D-ring cover
8	611B08 RH/ 611B09 LH	Safety belt retractor and pretensioner
9	—	Safety belt retractor and pretensioner bolt (part of 611B08 RH/ 611B09 LH)
10	—	Safety belt retractor and pretensioner electrical connector (part of 14A005)

(Continued)

Safety Belt Retractor and Pretensioner — Convertible

NOTE: LH shown, RH similar.



Item	Part Number	Description
1	—	Safety belt retractor and pretensioner bolt (part of 611B09 LH/ 611B08 RH)
2	—	D-ring bolt (part of 611B09 LH/ 611B08 RH)
3	611B09 LH/ 611B08 RH	Safety belt retractor and pretensioner
4	—	Safety belt anchor bolt (part of 611B09 LH/ 611B08 RH)

(Continued)

(Continued)

REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
5	—	Safety belt retractor and pretensioner electrical connector (part of 14A005)
6	—	Secondary safety belt guide (part of 611B09 LH/ 611B08 RH)
7	18963	Speaker bracket

Removal

⚠ WARNING: After any crash, all of the following safety belt assemblies and attaching hardware must be inspected by an authorized dealer to verify correct function:

- **— Retractors**
- **— Buckles**
- **— Belt tension sensor (BTS) (if equipped)**
- **— Front safety belt buckle support assemblies (slide bar) (if equipped)**
- **— Safety belt shoulder belt height adjusters (if equipped)**
- **— Child safety seat tether bracket assemblies**
- **— Automatic locking retractor (ALR) feature for child safety seats (passenger seating positions only)**

If any safety belt assembly is damaged, does not operate correctly or does not pass all of the Functional Tests in the Diagnosis and Testing portion of this section, a new safety belt assembly must be installed. If any safety belt assembly attaching areas are damaged or distorted, the sheet metal must be restored to its original structural integrity and new safety belt assembly and attaching hardware must be installed. Failure to install new safety belt assemblies and attaching hardware may increase the risk of serious personal injury or death in a crash.

After any crash that results in deployment of the driver and/or front outboard passenger safety belt pretensioners, new driver and/or front outboard passenger safety belt systems (including retractors, buckles and height adjusters) must be installed. Failure to install new safety belt systems increases the risk of serious personal injury or death in a crash.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition is ON.

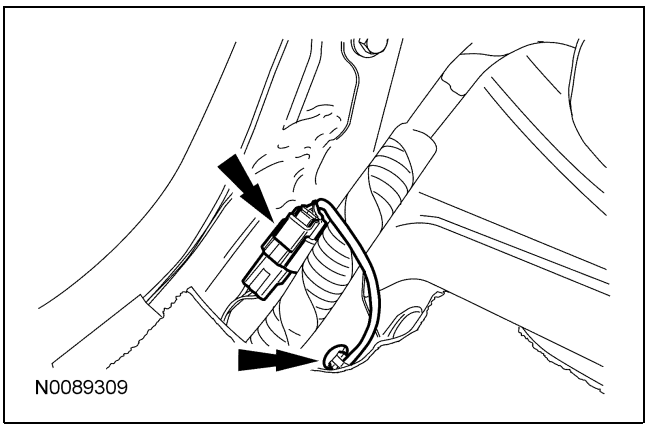
NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.

2. Remove the D-ring and quarter trim panel(s).
   - **For coupe**, remove the cover, bolt, spacer and D-ring cover.
     - Remove the lower quarter trim panel. For additional information, refer to Section 501-05.
   - **For convertible**, remove the upper and lower quarter trim panel(s). For additional information, refer to Section 501-05.
     - Remove the cover, bolt and D-ring.

3. Remove the safety belt bolt and anchor.

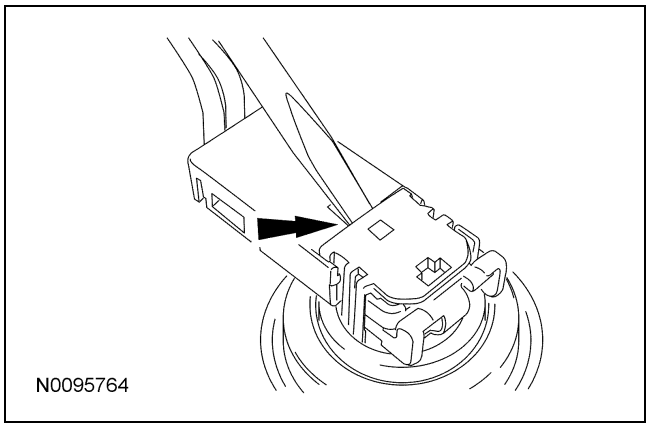
4. For passenger side, disconnect the Belt Tension Sensor (BTS) electrical connector.



REMOVAL AND INSTALLATION (Continued)

5. Remove the secondary safety belt guide from the B-pillar.

6. Disconnect the safety belt retractor and pretensioner electrical connector.
   - Use a small screwdriver to lift up and release the Connector Position Assurance (CPA) clip and remove the electrical connector.



7. Remove the bolt and safety belt retractor and pretensioner.

Installation

NOTICE: **To prevent component damage, the shipping clip on a new retractor must remain attached prior to the installation of the retractor to the vehicle.**

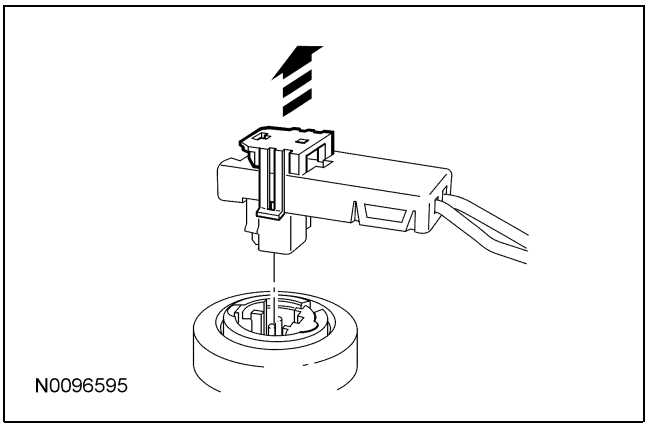
NOTE: The presenter must be in the downward position for correct installation of the safety belt retractor.

NOTE: Before installation, make sure the safety belt webbing is not twisted and the safety belts and buckles are accessible to the occupants.

1. Install the bolt and safety belt retractor and pretensioner.
   - Tighten to 40 Nm (30 lb-ft).

2. ***NOTICE:*** **The Connector Position Assurance (CPA) clip must be in the released position before installing the connector into the pretensioner. Failure to have the CPA clip in the released position may break the tabs on the CPA clip causing DTCs to set in the Restraints Control Module (RCM).**

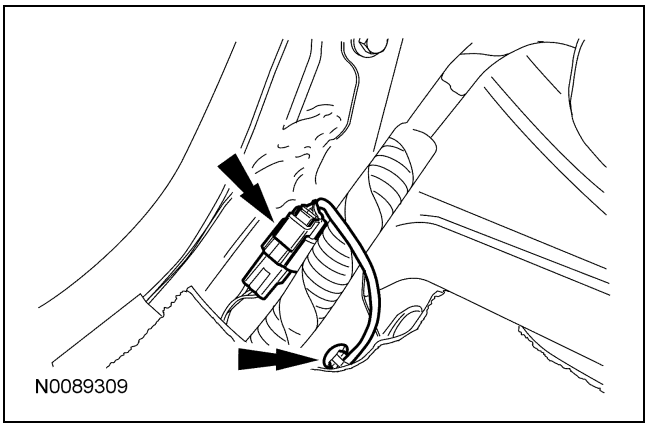
   Connect the safety belt retractor and pretensioner electrical connector.
   - Lift up the CPA clip.
   - Install the electrical connector fully into the safety belt retractor pretensioner and seat the CPA clip.



3. Install the secondary safety belt guide to the B-pillar.

4. Install the safety belt anchor and bolt.
   - Tighten to 40 Nm (30 lb-ft).

5. For passenger side, connect the BTS electrical connector.



6. For convertible, install the D-ring and bolt.
   - Tighten to 40 Nm (30 lb-ft).

REMOVAL AND INSTALLATION (Continued)

7. Install the quarter trim panel(s).
   - **For coupe**, install the lower quarter trim panel.
   - **For convertible**, install the upper and lower quarter trim panel(s).
   - *NOTICE:* **During RH quarter trim panel installation, keep the Belt Tension Sensor (BTS) cover on the outside of the quarter trim panel so the safety belt anchor rotates without binding. Failure to follow this instruction may result in component damage and/or system failure.**

     For additional information, refer to Section 501-05.
8. **NOTE:** If the D-ring cover is damaged or does not remain closed, install a new D-ring cover.

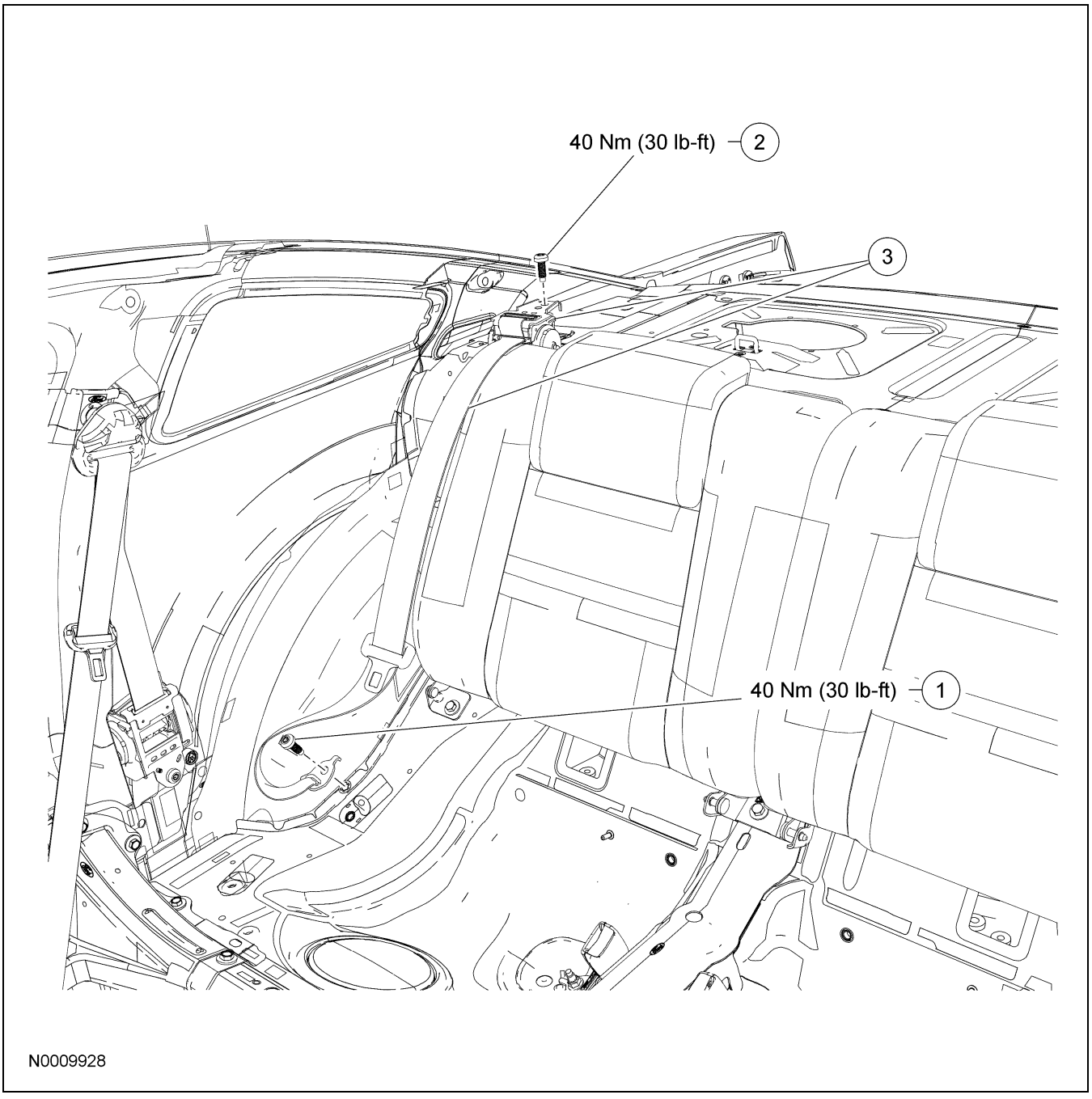
   For coupe, install the cover, bolt and D-ring.
   - Tighten to 48 Nm (35 lb-ft).
9. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of Section 501-20B.
10. Check the active restraint system for correct operation. For additional information, refer to Safety Belt System in this section.

REMOVAL AND INSTALLATION

Safety Belt Retractor — Rear

Safety Belt Retractor — Coupe

NOTE: RH shown, LH similar.



Item	Part Number	Description
1	—	Safety belt anchor bolt (part of 611B68 RH/ 611B69 LH)
2	—	Safety belt retractor bolt (part of 611B68 RH/ 611B69 LH)

(Continued)

Item	Part Number	Description
3	611B68 RH/ 611B69 LH	Safety belt retractor

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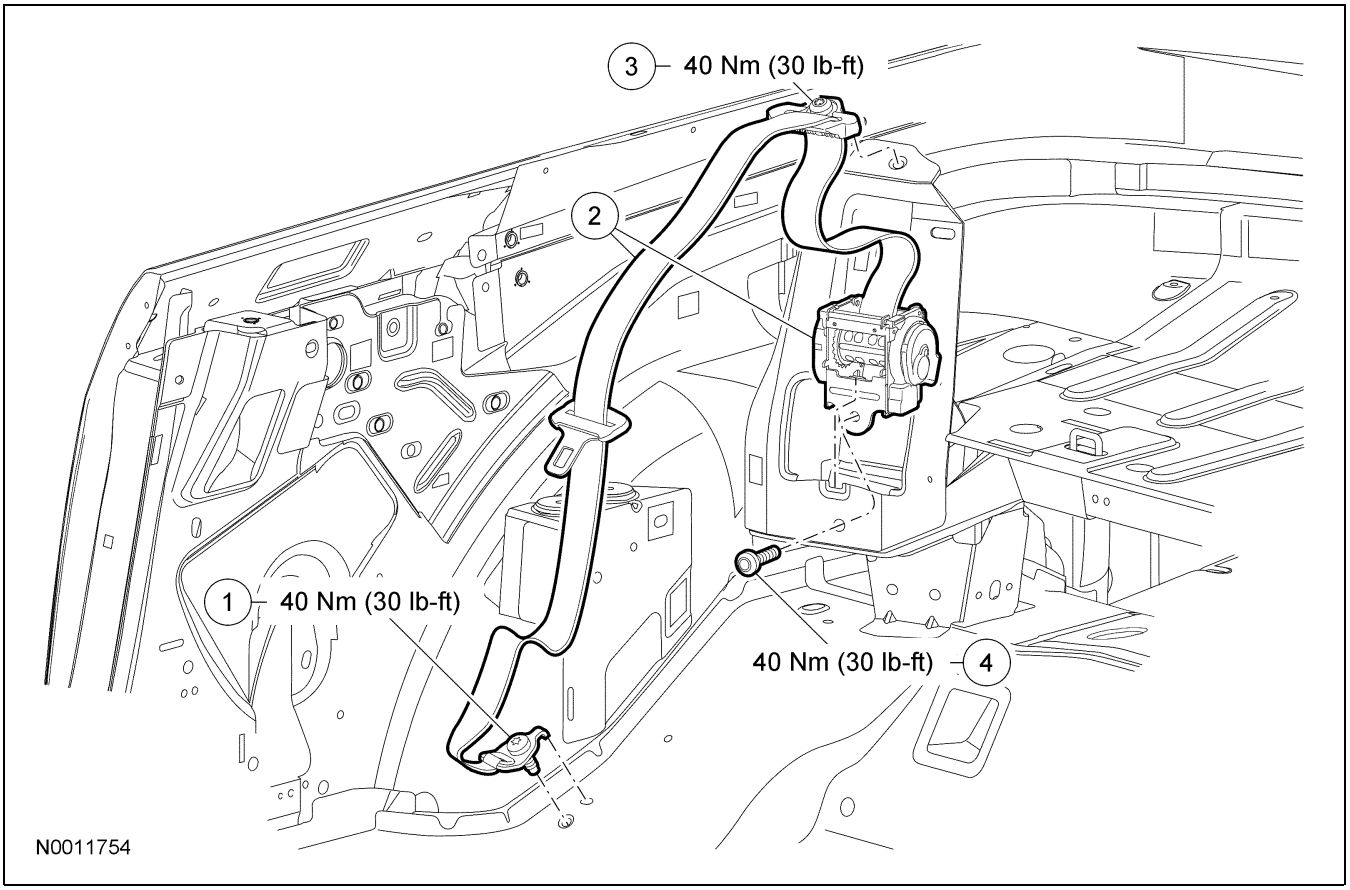
REMOVAL AND INSTALLATION (Continued)

Safety Belt Retractor — Convertible

NOTE: RH shown, LH similar.



Item	Part Number	Description
1	—	Safety belt anchor bolt (part of 611B68 RH/ 611B69 LH)
2	611B68 RH/ 611B69 LH	Safety belt retractor
3	—	D-ring bolt (part of 611B68 RH/ 611B69 LH)
4	—	Safety belt retractor bolt (part of 611B68 RH/ 611B69 LH)

Removal and Installation

⚠ **WARNING: After any crash, all of the following safety belt assemblies and attaching hardware must be inspected by an authorized dealer to verify correct function:**

- **Retractors**
- **Buckles**
- **Belt tension sensor (BTS) (if equipped)**
- **Front safety belt buckle support assemblies (slide bar) (if equipped)**
- **Safety belt shoulder belt height adjusters (if equipped)**
- **Child safety seat tether bracket assemblies**

REMOVAL AND INSTALLATION (Continued)

— Automatic locking retractor (ALR) feature for child safety seats (passenger seating positions only)

If any safety belt assembly is damaged, does not operate correctly or does not pass all of the Functional Tests in the Diagnosis and Testing portion of this section, a new safety belt assembly must be installed. If any safety belt assembly attaching areas are damaged or distorted, the sheet metal must be restored to its original structural integrity and new safety belt assembly and attaching hardware must be installed. Failure to install new safety belt assemblies and attaching hardware may increase the risk of serious personal injury or death in a crash.

After any crash that results in deployment of the driver and/or front outboard passenger safety belt pretensioners, new driver and/or front outboard passenger safety belt systems (including retractors, buckles and height adjusters) must be installed. Failure to install new safety belt systems increases the risk of serious personal injury or death in a crash.

All vehicles

1. Remove the rear seat cushion. For additional information, refer to Section 501-10.
2. Remove the safety belt anchor bolt.
   - To install, tighten to 40 Nm (30 lb-ft).

Coupe

3. Remove the parcel shelf. For additional information, refer to Section 501-05.

Convertible

4. Remove the rear seat backrest. For additional information, refer to Section 501-10.
5. **NOTE:** If the D-ring cover is damaged or does not remain attached, install a new D-ring cover.

   Open the D-ring cover and remove the D-ring bolt.
   - To install, tighten to 40 Nm (30 lb-ft).

All vehicles

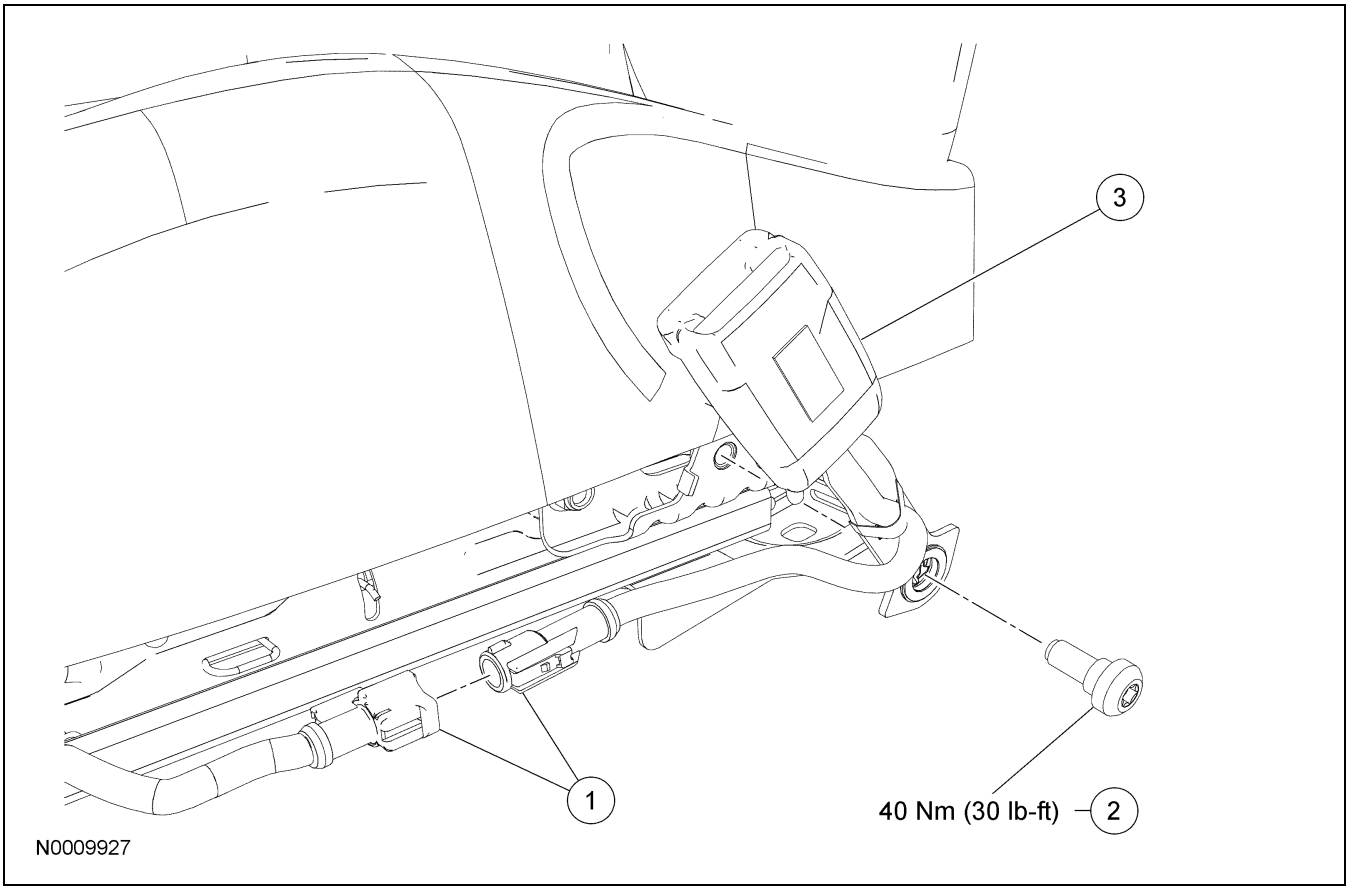
6. Remove the bolt and safety belt retractor.
   - To install, tighten to 40 Nm (30 lb-ft).
7. *NOTICE:* **The shipping clip on a new retractor must remain attached prior to the installation of the retractor into the vehicle. To prevent component failure, the clip must be removed after the retractor is installed.**

   NOTE: Before installation, make sure the safety belt webbing is not twisted and the safety belts and buckles are accessible to the occupants.

   To install, reverse the removal procedure.
8. Check the active restraint system for correct operation. For additional information, refer to the appropriate Functional Test procedure in Safety Belt System in this section.

REMOVAL AND INSTALLATION

Safety Belt Buckle — Front



Item	Part Number	Description
1	—	Safety belt buckle switch electrical connector
2	—	Safety belt buckle bolt (part of 61202 RH/ 61203 LH)
3	61202 RH/ 61203 LH	Safety belt buckle assembly

Removal and Installation

⚠ **WARNING: After any crash, all of the following safety belt assemblies and attaching hardware must be inspected by an authorized dealer to verify correct function:**

- **Retractors**
- **Buckles**
- **Belt tension sensor (BTS) (if equipped)**
- **Front safety belt buckle support assemblies (slide bar) (if equipped)**
- **Safety belt shoulder belt height adjusters (if equipped)**
- **Child safety seat tether bracket assemblies**

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REMOVAL AND INSTALLATION (Continued)

— Automatic locking retractor (ALR) feature for child safety seats (passenger seating positions only)

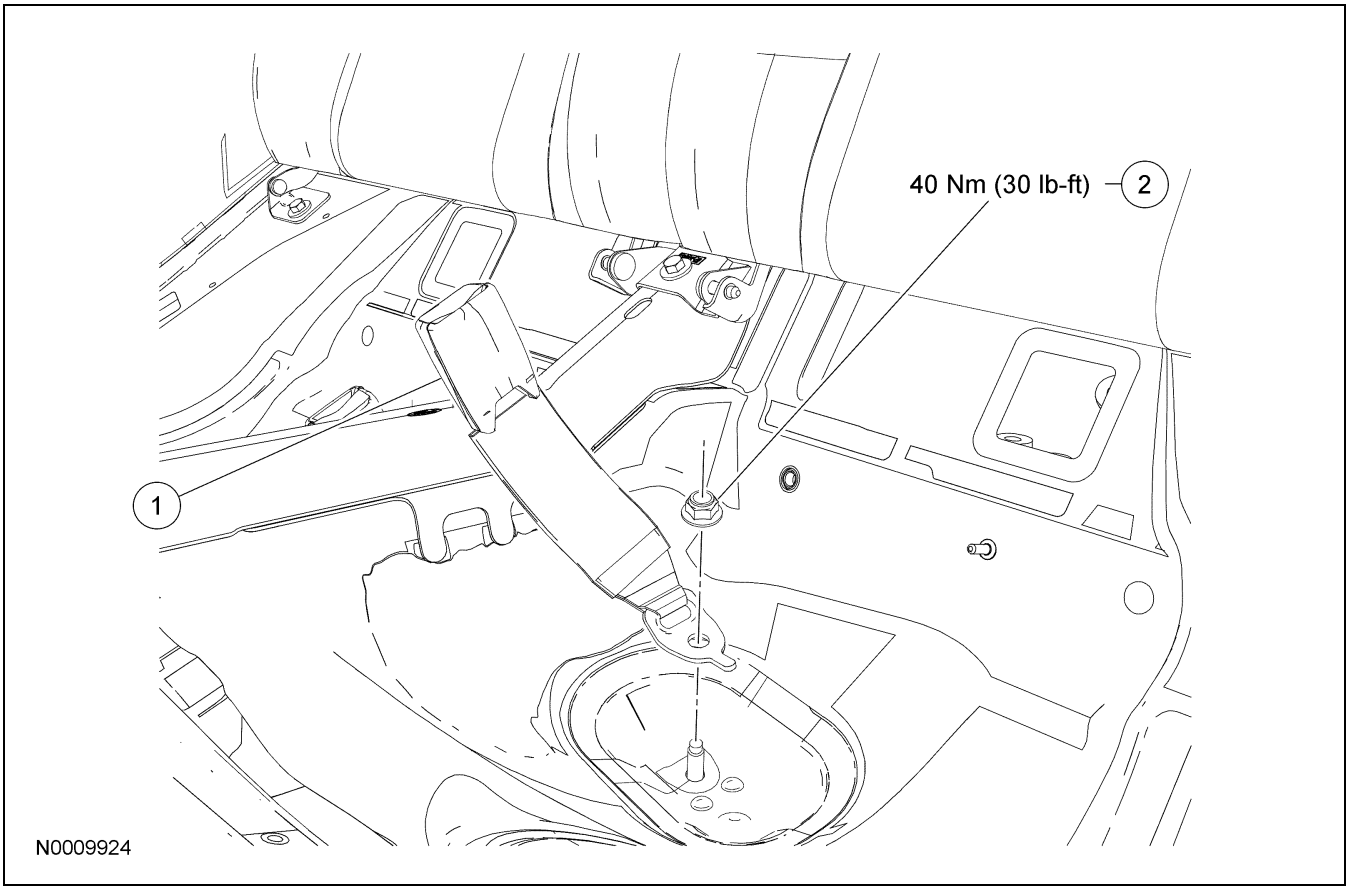
If any safety belt assembly is damaged, does not operate correctly or does not pass all of the Functional Tests in the Diagnosis and Testing portion of this section, a new safety belt assembly must be installed. If any safety belt assembly attaching areas are damaged or distorted, the sheet metal must be restored to its original structural integrity and new safety belt assembly and attaching hardware must be installed. Failure to install new safety belt assemblies and attaching hardware may increase the risk of serious personal injury or death in a crash.

After any crash that results in deployment of the driver and/or front outboard passenger safety belt pretensioners, new driver and/or front outboard passenger safety belt systems (including retractors, buckles and height adjusters) must be installed. Failure to install new safety belt systems increases the risk of serious personal injury or death in a crash.

1. Remove the front seat. For additional information, refer to Section 501-10.
2. Disconnect the safety belt buckle switch electrical connector.
3. Remove the bolt and safety belt buckle.
   - To install, tighten to 40 Nm (30 lb-ft).
4. To install, reverse the removal procedure.
5. Check the active restraint system for correct operation. For additional information, refer to the appropriate Functional Test procedure in Safety Belt System in this section.

REMOVAL AND INSTALLATION

Safety Belt Buckle — Rear



Item	Part Number	Description
1	60044 (RH/LH)	Safety belt buckle
2	W520113	Safety belt buckle nut

Removal and Installation

⚠ WARNING: After any crash, all of the following safety belt assemblies and attaching hardware must be inspected by an authorized dealer to verify correct function:

- **Retractors**
- **Buckles**
- **Belt tension sensor (BTS) (if equipped)**
- **Front safety belt buckle support assemblies (slide bar) (if equipped)**
- **Safety belt shoulder belt height adjusters (if equipped)**
- **Child safety seat tether bracket assemblies**

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REMOVAL AND INSTALLATION (Continued)

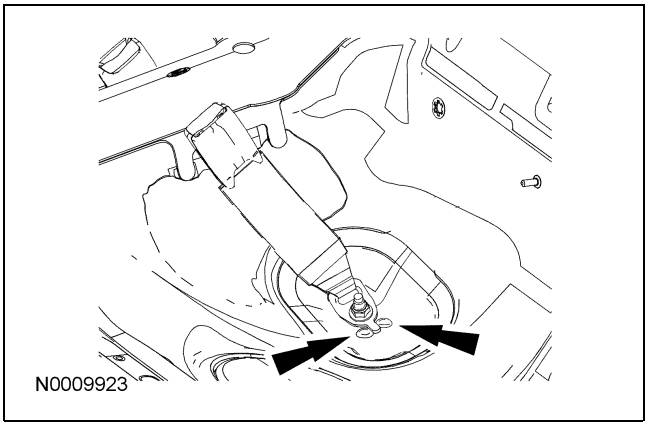
— Automatic locking retractor (ALR) feature for child safety seats (passenger seating positions only)

If any safety belt assembly is damaged, does not operate correctly or does not pass all of the Functional Tests in the Diagnosis and Testing portion of this section, a new safety belt assembly must be installed. If any safety belt assembly attaching areas are damaged or distorted, the sheet metal must be restored to its original structural integrity and new safety belt assembly and attaching hardware must be installed. Failure to install new safety belt assemblies and attaching hardware may increase the risk of serious personal injury or death in a crash.

After any crash that results in deployment of the driver and/or front outboard passenger safety belt pretensioners, new driver and/or front outboard passenger safety belt systems (including retractors, buckles and height adjusters) must be installed. Failure to install new safety belt systems increases the risk of serious personal injury or death in a crash.

1. Remove the rear seat cushion. For additional information, refer to Section 501-10.

2. Remove the nut and safety belt buckle.
   - When installing the safety belt buckle, align the locator tab between the dimples in the floor pan as shown for correct installation.
   - To install, tighten to 40 Nm (30 lb-ft).



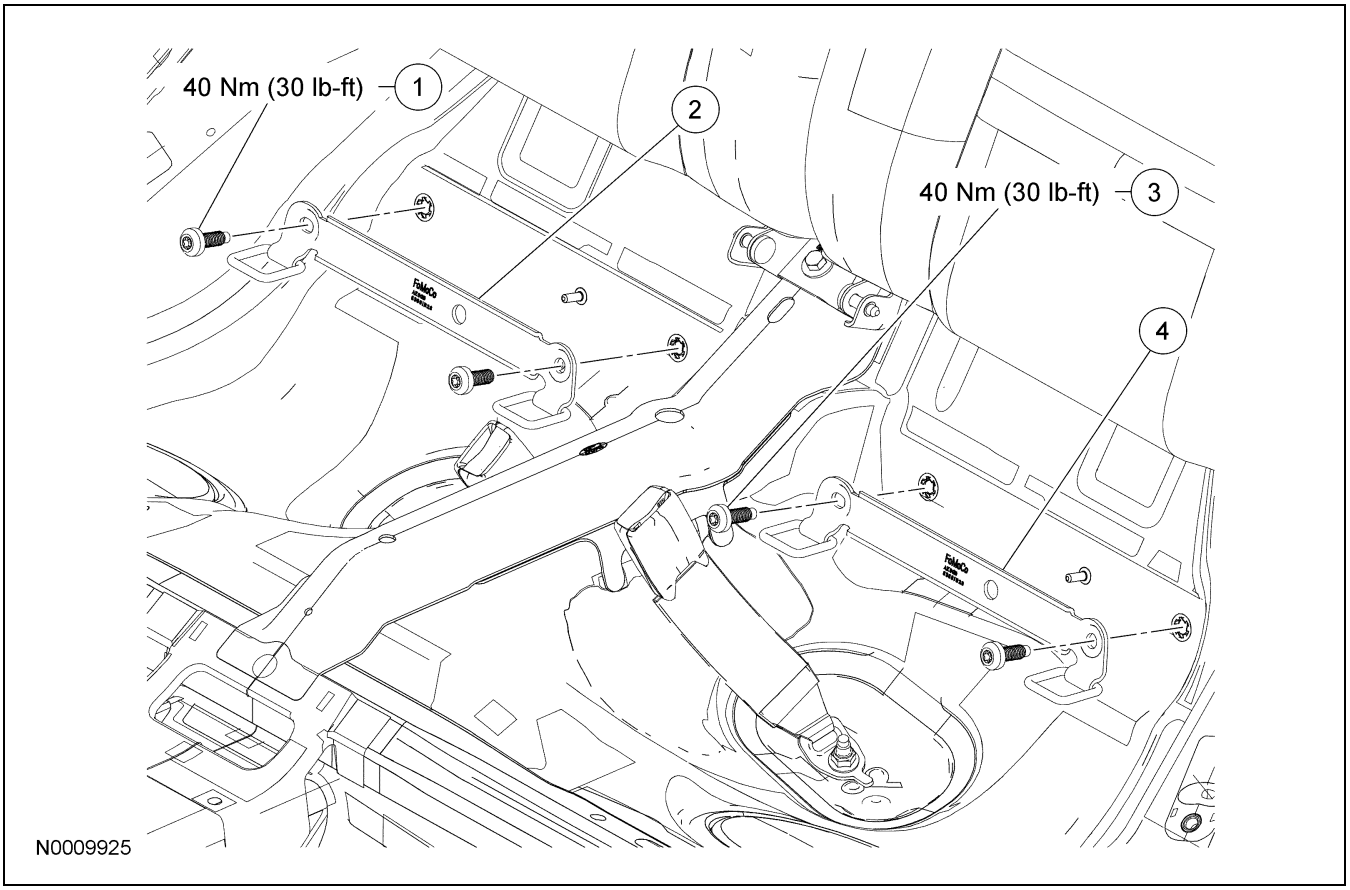
3. **NOTE:** Before installation, make sure the safety belt webbing is not twisted and the safety belts and buckles are accessible to the occupants.

   To install, reverse the removal procedure.

4. Check the active restraint system for correct operation. For additional information, refer to the appropriate Functional Test procedure in Safety Belt System in this section.

REMOVAL AND INSTALLATION

Child Safety Seat Tether Anchor — LATCH



Item	Part Number	Description
1	W700833	Lower anchors and tethers for children bolt
2	601B28	Lower anchors and tethers for children
3	W700833	Lower anchors and tethers for children bolt
4	601B28	Lower anchors and tethers for children

Removal and Installation

1. Remove the rear seat cushion. For additional information, refer to Section 501-10.

2. Remove the 2 lower anchors and tethers for children bolts.
   - To install, tighten to 40 Nm (30 lb-ft).

3. Remove the lower anchors and tethers for children attachment.
   - When installing, make sure the lower anchors and tethers for children is positioned with the locator pin going through the hole provided in the lower anchors and tethers for children attachment.

4. **NOTE:** Before installation, make sure the safety belt webbing is not twisted and the safety belts and buckles are accessible to the occupants.

   To install, reverse the removal procedure.

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SPECIFICATIONS

Torque Specifications

Description	Nm	lb-in
Driver air bag module bolts	7	62
Front impact severity sensor nut	10	89
Passenger air bag module bolts	11	97
Restraints Control Module (RCM) nuts	12	106

Torque Specifications (Continued)

Description	Nm	lb-in
Seat position sensor bolt	6	53
Seat side air bag module and bracket-to-seat backrest bolts	10	89
Seat side air bag module bracket-to-seat side air bag module nuts	6	53
Side impact sensor bolts	11	97

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DESCRIPTION AND OPERATION

Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)

The air bag Supplemental Restraint System (SRS) is designed to provide increased collision protection for front seat occupants, in addition to that provided by the 3-point safety belt system. Safety belt use is necessary to obtain the best occupant protection and to receive the full advantage of the SRS.

The serviceable air bag and safety belt pretensioner SRS components are shown in the following illustrations.

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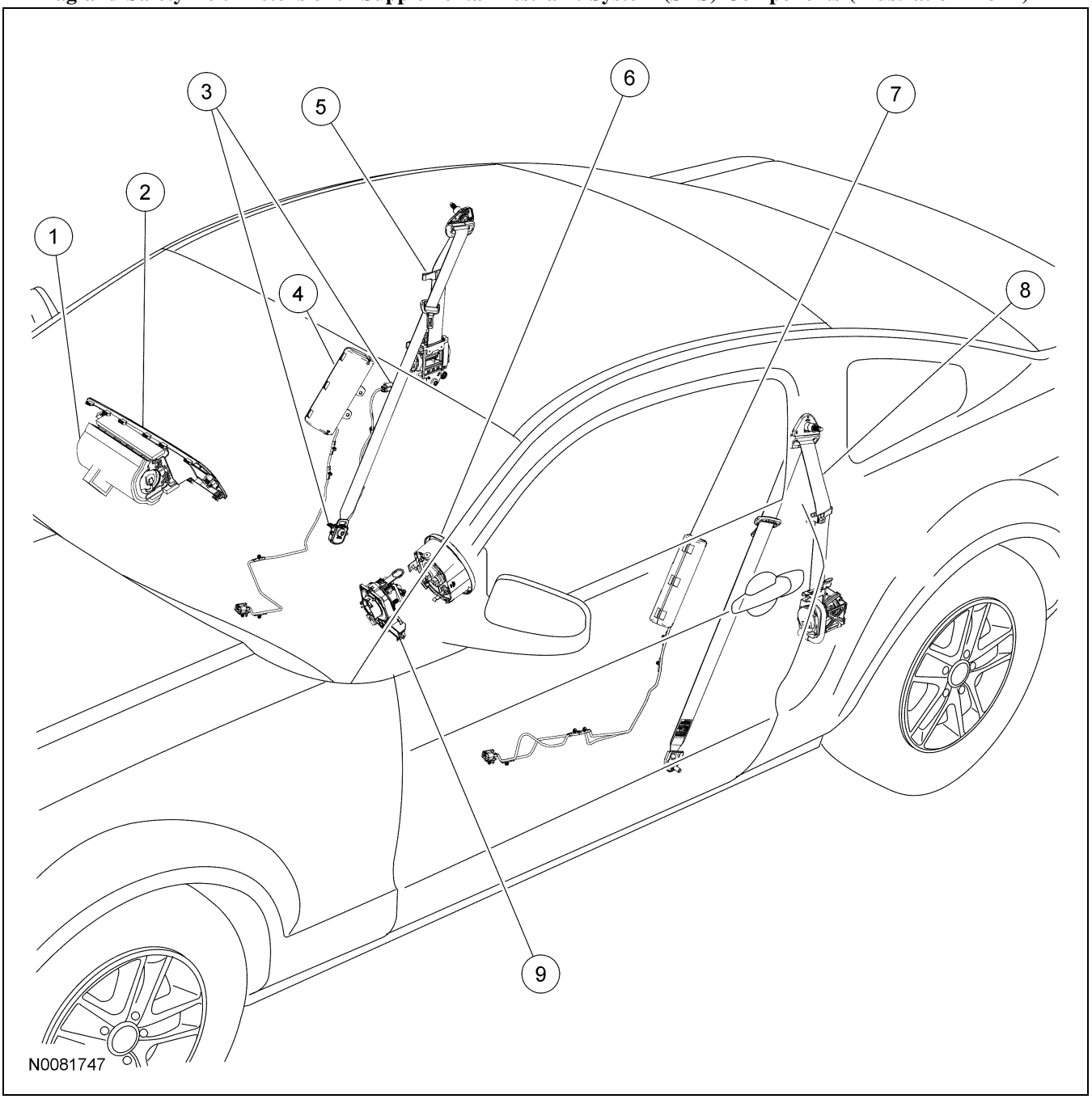
DESCRIPTION AND OPERATION (Continued)

Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) Components (Illustration 1 of 2)



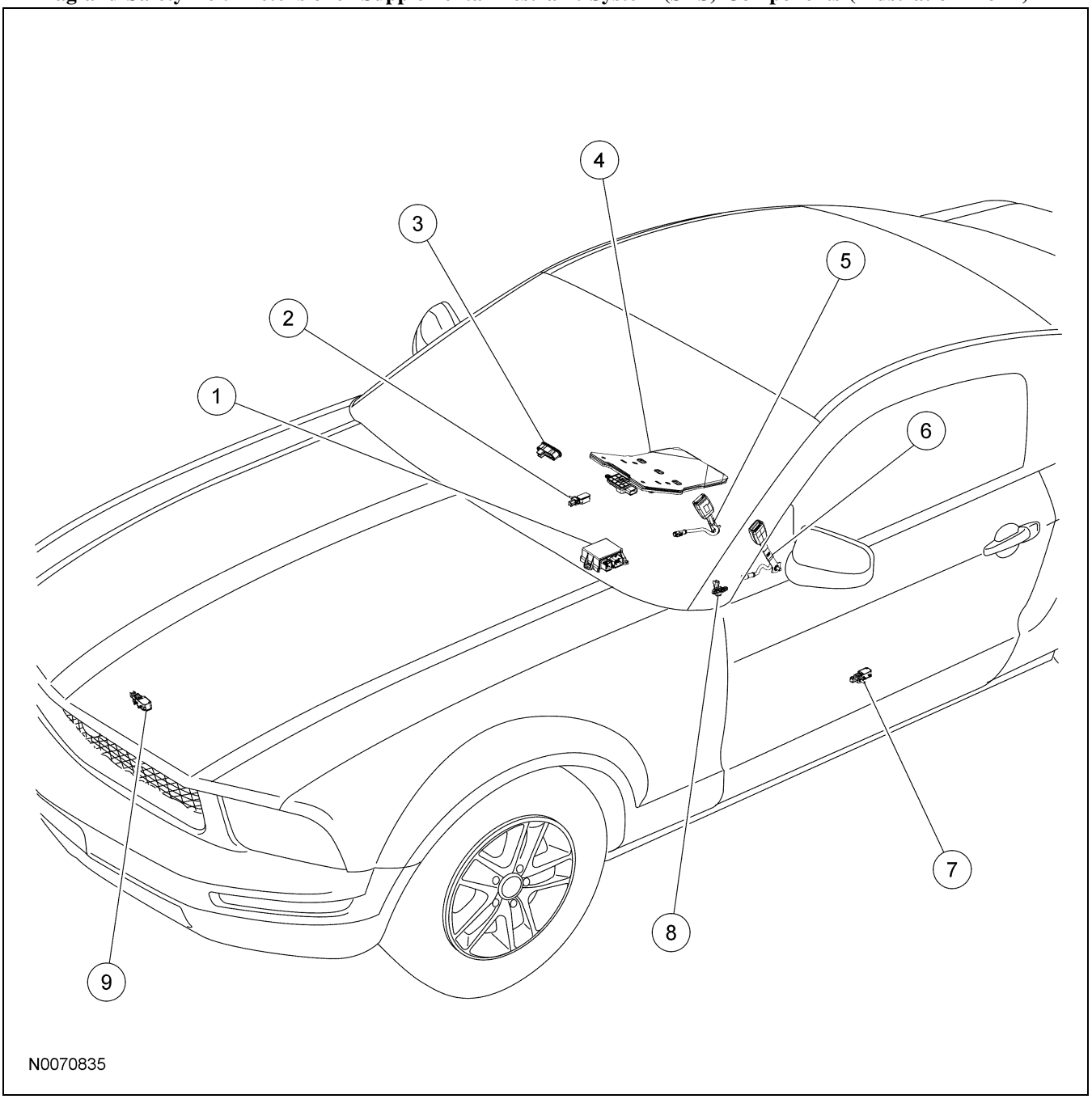
Item	Part Number	Description
1	044A74	Passenger air bag module assembly
2	04338	Passenger air bag cover
3	—	Belt Tension Sensor (BTS) (part of 611B08)
4	611D10	Passenger seat side air bag module
5	611B08	Passenger safety belt retractor and pretensioner (includes BTS)

(Continued)

Item	Part Number	Description
6	043B13	Driver air bag module
7	611D11	Driver seat side air bag module
8	611B09	Driver safety belt retractor and pretensioner
9	14A664	Clockspring

DESCRIPTION AND OPERATION (Continued)

Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) Components (Illustration 2 of 2)



Item	Part Number	Description
1	14B321	Restraints Control Module (RCM)
2	14B345	Passenger side impact sensor
3	—	Passenger Air Bag Deactivation (PAD) indicator
4	603B02	Occupant Classification Sensor (OCS) system

(Continued)

Item	Part Number	Description
5	61202	Passenger safety belt buckle (includes safety belt switch)
6	61203	Driver safety belt buckle (includes safety belt switch)
7	14B345	Driver side impact sensor
8	14B416	Seat position sensor

(Continued)

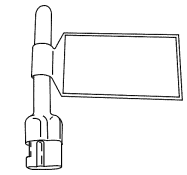
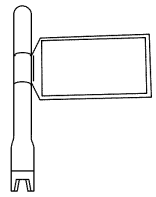
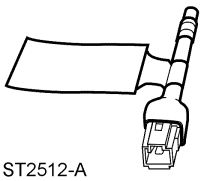
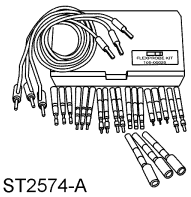
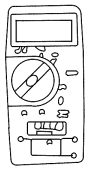
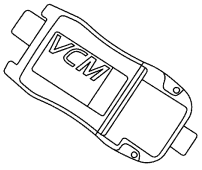
DESCRIPTION AND OPERATION (Continued)

Item	Part Number	Description
9	14B345	Front impact severity sensor (Driver/Center front crash sensor)

DIAGNOSIS AND TESTING

Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)

Special Tool(s)

 ST2507-A	Diagnostic Tool, Restraint System (2 Required) 418-133
 ST2502-A	Diagnostic Tool, Restraint System (3 Required) 418-F395
 ST2512-A	Diagnostic Tool, Restraint System (1 Required) 418-F403
 ST2574-A	Flex Probe Kit 105-R025C or equivalent
 ST1137-A	FLUKE 73III Automotive Meter 105-R0057 or equivalent
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Principles of Operation

During a frontal or side crash, the restraints control module (RCM) may deploy the safety belt retractor pretensioners, side air bag(s) and/or none, one or both stages of the driver/passenger dual-stage air bag based on crash severity and conditions. The fact that the pretensioners or air bags did not deploy for both front seat occupants in a collision does not indicate a fault with the supplemental restraints system (SRS).

In a frontal collision, the front impact severity sensor detects sudden vehicle deceleration and sends an electrical signal to the RCM. The RCM uses the information from the front impact severity sensor, safety belt buckle switches and the occupant classification system module (OCSM) to determine deployment. If deployment is required, the RCM sends voltage and current to the air bag module(s) and safety belt retractor pretensioner(s).

In a side collision, the side impact sensor(s) detects sudden vehicle lateral deceleration and sends an electrical signal to the RCM. The RCM uses the information from the side impact sensor, safety belt buckle switches and the OCSM to determine deployment. If deployment is required, the RCM sends voltage and current to the side air bag module(s) and safety belt retractor pretensioner(s).

The RCM performs a complete system ‘‘self-test’’ during each startup. If a SRS fault exists, the air bag warning indicator will illuminate and remain illuminated for the rest of the key cycle. In addition to the self-test at start up, the RCM continuously monitors all SRS components and circuitry for correct operation. The RCM communicates current and historical DTCs through the data link connector (DLC) using a scan tool. The RCM also communicates to the OCSM on a dedicated high-speed controller area network (HS-CAN) communication system.

Air Bag Warning Indicator

The air bag warning indicator:

- is located in the instrument cluster (IC) module.
- and circuitry prove out is a function of the restraints control module (RCM). The RCM will prove out the air bag warning indicator by lighting the air bag warning indicator for 6 seconds and then turn off.

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DIAGNOSIS AND TESTING (Continued)

- will flash and/or illuminate based on the supplemental restraint system (SRS) fault.
- will illuminate if the RCM is disconnected.

Air Bag Module Second Stage Deployment Check

Because the driver and passenger front air bags each have 2 deployment stages, it is possible that Stage 1 has deployed and Stage 2 has not.

If a front air bag module has deployed, it is **mandatory** that the front air bag module be remotely deployed using the appropriate air bag disposal procedure.

- For information on driver air bag module and/or passenger air bag module remote deployment, refer to Pyrotechnic Device Disposal in this section.

Clockspring

The clockspring:

- is mounted on the steering column, behind the steering wheel.
- allows for continuous electrical connections between the driver air bag module and the restraints control module (RCM) when the steering wheel is turned.
- allows for continuous electrical connections between the steering mounted controls and various other components.

Driver Air Bag Module

The driver air bag module:

- is installed new as an assembly.
- is a dual-stage air bag, deploying at 1 of 2 different rates depending upon impact severity.
- is mounted in the center of the steering wheel.
- will deploy upon receiving a flow of current from the restraints control module (RCM).

Impact Sensors

The impact sensors provide data to the restraints control module (RCM) for use in calculating impact severity. This is accomplished using various electrical sensors located throughout the vehicle. A front impact severity sensor is located in the front-center of the vehicle, behind the grille. In addition, there are side impact sensors located near the base of each B-pillar.

Loops/Squibs

All deployable devices contain an initiating device called a squib. The squib is part of the deployment loop. Air bag/safety canopies modules can contain more than one squib, some vehicles may have up to 4 squibs in one air bag module. Squibs are often referred to as loops during the diagnostic process.

Occupant Classification Sensor (OCS) System

The occupant classification sensor (OCS) system is found only on the front passenger seat. The front passenger seat OCS system is comprised of a silicone gel-filled bladder mounted in the seat cushion, a pressure sensor that is mounted to the seat frame and an occupant classification system module (OCSM) which is also mounted to the seat frame. Pressure is applied to the OCS system bladder when the weight of any occupant or object in the front passenger seat is sensed. The pressure is then transferred through a tube, is sensed by the OCS system pressure sensor, then electronically communicated to the OCSM system. Based on preprogrammed set points (Empty, Below Threshold, Indeterminate and/or Above Threshold), the OCSM will inform the restraints control module (RCM) of the necessary information via a dedicated high-speed controller area network (HS-CAN). The RCM uses this information in determining if the passenger air bag module is to be deployed in the event of a deployable collision. The RCM may also use this information to illuminate/not illuminate the passenger air bag deactivation (PAD) indicator.

When an OCS system fault is present, the OCSM communicates the fault information to the RCM. Upon receiving the fault information from the OCSM, the RCM will illuminate the air bag warning indicator or the air bag warning chime will be activated (if an air bag warning indicator fault is present). The supplemental restraint system (SRS) then defaults the passenger air bag module to ON (activated) regardless of the size of the occupant in the front outboard passenger seat.

The OCS system is also used for operation of the passenger Belt-Minder®. For information on the passenger Belt-Minder® feature, refer to Section 501-20A. To deactivate or reactivate the passenger Belt-Minder® feature, refer to Section 413-01 or the Owner's Literature.

DIAGNOSIS AND TESTING (Continued)

The OCSM components (seat cushion foam pad, bladder with pressure sensor and OCSM) are calibrated to each other and are serviced as an assembly. **OCS system components are not to be installed separately**.

The OCSM also interprets a variable voltage signal provided by the safety belt tension sensor to identify the presence of a properly fastened child safety seat in the front outboard passenger seat. The OCSM then communicates with the RCM, automatically deactivating the passenger air bag module. Refer to Safety Belt Tension Sensor in this section.

Passenger Air Bag Deactivation (PAD) Indicator

NOTICE: **The passenger air bag deactivation (PAD) indicator is part of the hazard/traction control switch assembly and cannot be serviced separately.**

The passenger air bag deactivation (PAD) indicator is a visual indicator used to inform the front seat occupants of the passenger air bag deactivation state. The PAD indicator is located in a position visible to each front seat occupant.

The restraints control module (RCM) controls the state of the PAD indicator through a direct hardwire connection, based on information provided by the occupant classification system module (OCSM). The PAD indicator is lit to indicate the passenger air bag module is deactivated (OFF). An exception to this is when the front passenger seat is determined to be empty, and therefore indication of a deactivated passenger air bag module is not necessary. In all other cases, the PAD indicator is unlit when the passenger air bag module is enabled.

When the ignition switch is in the RUN position, the PAD indicator prove-out period is initiated by the RCM. The RCM briefly activates the PAD indicator to verify operation.

When an OCS system fault is present, the supplemental restraint system (SRS) defaults the passenger air bag module to enabled regardless of the size of the occupant in the front outboard passenger seat. The PAD indicator will be unlit.

The following table indicates the passenger air bag status and the PAD indicator status based the size of the front outboard passenger occupant.

Passenger Air Bag and Passenger Air Bag Deactivation (PAD) Indicator Status

Occupant Size	Passenger Safety Belt Buckle Status	Passenger Air Bag Status	Passenger Air Bag Deact-ivation (PAD) Indicator Status
None	Unbuckled	Disabled	Unlit
None	Buckled	Disabled	Lit
Small	Buckled/ Unbuckled	Disabled	Lit
Large	Buckled/ Unbuckled	Enabled	Unlit

Passenger Air Bag Module

The passenger air bag module:

- is a dual-stage air bag, deploying at 1 of 2 different rates depending upon impact severity and safety belt usage.
- will deploy upon receiving a flow of current from the restraints control module (RCM).
- is installed as an assembly.
- is mounted in the right side of the instrument panel.

Restraints Control Module (RCM)

NOTE: When installing a new restraints control module (RCM), always make sure the correct RCM is being installed. If an incorrect RCM is installed, erroneous DTCs will result.

The RCM is mounted on the center tunnel under the instrument panel. The RCM:

- deploys the air bags in the event of a deployable impact.
- activates the safety belt retractor pretensioners to remove slack from the safety belt webbing.
- monitors the supplemental restraint system (SRS) for faults.
- illuminates the air bag warning indicator if a fault is detected.
- illuminates the PAD indicator when conditions warrant illumination.
- flashes the air bag warning indicator to indicate the lamp fault code (LFC) detected.

DIAGNOSIS AND TESTING (Continued)

- communicates through the data link connector (DLC) the current or historical DTCs.
- will active the chime, located in the instrument cluster (IC) module, if an air bag warning indicator fault is present and another SRS fault exists.
- records deployable and non-deployable impact data.

The RCM monitors the SRS for possible faults. If a fault is detected while the ignition switch is in the RUN position, the RCM will illuminate the air bag warning indicator located in the IC module.

When the ignition is cycled (turned off and then on), the air bag warning indicator will remain lit for 6 seconds and then go out. If an SRS fault exists, the air bag warning indicator will then flash the 2-digit LFC associated with that fault. The air bag warning indicator will flash the LFC 5 times, then remain illuminated for the rest of the key cycle. The RCM will communicate current and historical DTCs through the DLC using a scan tool. If the air bag warning indicator does not function, and the RCM detects a fault condition, the RCM will signal activate an audible chime. The chime is a series of 5 sets of 5 tone bursts. If the chime is heard, the SRS and the air bag warning indicator require repair.

LFCs are prioritized. If 2 or more faults occur at the same time, the fault having the highest priority will be displayed first. After that fault has been corrected, the next highest priority fault will be displayed.

The RCM includes a backup power supply. This feature provides sufficient power to deploy the front air bags, seat side air bags and the safety belt retractor pretensioners in the event that the ignition circuit is damaged in a collision before the air bags are deployed. The backup power supply will deplete its stored energy reserve in approximately one minute after the power and/or ground is removed from the RCM.

Restraint System Diagnostic Tool Warning

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

Safety Belt Buckle Switch

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled, to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

The safety belt buckle switches are also used for the driver safety belt warning system and the driver and passenger Belt-Minder®. Refer to Section 501-20A.

Safety Belt Pretensioners

As part of the supplemental restraint system (SRS) the safety belt retractors are equipped with pretensioners. The pretensioners remove excess slack from the safety belt webbing. The pretensioners are activated by the restraints control module (RCM) when the module detects an impact event force exceeding a programmed limit. Refer to Section 501-20A.

Safety Belt Tension Sensor

The safety belt tension sensor:

- is part of the front passenger safety belt and retractor assembly.
- is located at the safety belt anchor.
- is used in conjunction with the occupant classification sensor (OCS) system.
- is a 3-wire Hall-effect sensor that is part of the front passenger safety belt retractor.

DIAGNOSIS AND TESTING (Continued)

The safety belt tension sensor is a variable output sensor used by the OCS system to identify the presence of a child safety seat on the front passenger seat. The safety belt tension sensor senses the tension on the safety belt assembly then provides an output to the occupant classification system module (OCSM), indicating that the safety belt assembly is cinched. After sensing the weight applied to the seat by the occupant and using the safety belt tension sensor input, the OCSM determines how the occupant should be classified and communicates this information to the restraints control module (RCM). If the occupant is classified to be a child, the RCM will then automatically deactivate the passenger air bag module.

Seat Side Air Bag Module

The seat side air bag module:

- will deploy upon receiving a flow of current from the restraints control module (RCM), initiated by the side impact sensor and internal RCM circuitry.
- is installed as an assembly.
- is mounted in the driver/passenger seat back.

Seat Track Position Sensor

As part of the supplemental restraint system (SRS), the driver seat is equipped with a seat track position sensor. The seat track position sensor is comprised of integrated circuits called Hall-effect switch. The seat track position sensor indicates the position of the driver seat, forward or rearward, to the restraints control module (RCM). The RCM uses this information in determining the deployment rate of the dual-stage driver air bag module.

The RCM supplies current to the seat track position sensor. Current flows through the switch, both in the forward or rearward seat positions, to ground. The RCM will sense the difference in this current draw, 6 mA (forward) or 15 mA (rearward), and use this information in determining the deployment rate of the dual-stage driver air bag module. If the RCM detects current out of range, it will set a DTC.

Secondary Air Bag Warning (Chime)

The secondary air bag warning chime is an audible chime generated by the instrument cluster (IC) module and controlled by the restraints control module (RCM). If the RCM has detected a fault with the air bag warning indicator, a DTC will be stored in memory of the RCM. When a supplemental restraint system (SRS) fault has been detected and an air bag warning indicator fault is present, the RCM will sound the secondary air bag warning chime in a pattern of 5 sets of 5 beeps.

Diagnostic Instructions

The symptom chart can be used to help locate supplemental restraint system (SRS) concerns if no DTCs are retrieved and the listed symptoms are observed. Whether or not the listed symptoms are observed, always carry out the following:

1. Run the Self Test to determine what on-demand and continuous memory DTCs are being sensed by the restraints control module (RCM).
2. Retrieve all SRS DTCs and fault PIDs stored in the RCM memory.
3. If on-demand DTCs are different than continuous memory DTCs, always repair the on-demand DTCs first.

A DTC can indicate several concerns. The DTCs are to assist in system diagnosis and are not to be considered definitive. Always refer to the pinpoint test corresponding to the DTC to determine where the concern lies and to repair the concern correctly.

Diagnostic Test Options

Scan tool options:

- Retrieve/Clear Continuous Memory DTCs
- Self Test/On-Demand

Refer to the manufacturer's literature for the scan tool being used for correct scan tool test options.

Self Test/On-Demand

The Self Test option is used to verify that no electrical concerns exist with the supplemental restraint system (SRS). Upon entering the self-test, the restraints control module (RCM) will make an electrical check of each electrical component in the system. If a concern is detected, a DTC is displayed on the scan tool with a brief description of the DTC. The self-test should always be carried out after any repair to verify that the repair was successful.

DIAGNOSIS AND TESTING (Continued)

To run the on-demand Self Test, follow these steps:

1. Connect the scan tool to the data link connector (DLC).
2. Turn the ignition switch to the ON position.
3. Follow the manufacturer's instructions for the scan tool being used.
4. Select Self Test.
5. Select RCM.
6. The module will run the self-test and display on-demand (reflecting hard system concerns) and continuous memory (historic) DTCs on the scan tool.

Self Test/Continuous Memory and Clear DTCs

During vehicle operation, the restraints control module (RCM) will detect and store both intermittent and hard failure DTCs in non-volatile memory. The DTC strategy employed by the RCM incorporates a time-out scheme for determining when a concern exists in the system. This requires a concern to exist for up to one minute in the system before the RCM will detect it. For the RCM to determine that a concern no longer exists, the concern must be absent for up to one minute. The actual detection time-outs vary with each DTC and module. DTCs can be retrieved with a scan tool using the Self Test option. All DTCs stored in the RCM will be displayed on the scan tool along with a brief description of the DTC. If no DTCs are present, the scan tool will display a SYSTEM PASSED message. This option can also be used to clear DTCs from the RCM memory, as long as the concern no longer exists.

Once 128 key cycles have been recorded by the RCM since the concern was last detected, all continuous memory DTCs will automatically be removed from memory.

To retrieve or clear DTCs, follow these steps:

1. Connect the scan tool to the data link connector (DLC).
2. Turn the ignition switch to the ON position.
3. Follow the manufacturer's instructions for the scan tool being used.
4. Select Self Test.
5. Select RCM.
6. **NOTE:** Before proceeding with the clearing operation, make note of the DTCs displayed. Once cleared, DTCs cannot be retrieved.

   All DTCs will be displayed on the screen.
7. Clear the DTCs. After clearing the DTCs, cycle the key OFF, then ON.
   - Continuous memory DTCs that have been cleared will **not** reoccur as ''continuous memory'' in the same key cycle. Only new DTCs which were **not** present before clearing can occur as ''continuous memory'' after clearing.

DataLogger PID/Data

The DataLogger PID/Data option allows the scan tool operator to read the state of PIDs to aid in diagnosing the system. PIDs are real-time measurements of parameters, such as voltages and resistances, that are calculated by the restraints control module (RCM) and sent to the scan tool for display. Many of the PIDs supported by the modules are calculated periodically and are, therefore, not true real-time readings.

To retrieve PIDs, follow these steps:

1. Connect the scan tool to the data link connector (DLC).
2. Turn the ignition switch to the ON position.
3. Follow the manufacturer's instructions for the scan tool being used.
4. Select DataLogger.
5. Select RCM.

Active Commands

This command allows the technician to verify operation of the air bag warning indicator, the passenger air bag (PAD) indicator and chime. When the air bag output command is executed, the indicator(s) and the chime are activated simultaneously for approximately 4 seconds. All 3 of the devices are deactivated automatically.

DIAGNOSIS AND TESTING (Continued)

Lamp Fault Codes (LFC)

When the restraints control module (RCM) detects a system fault, it will cause the air bag warning indicator to flash a coded sequence; a lamp fault code (LFC). The code is 2 digits. The first digit is flashed with a 0.5-second interval between pulses. There is a 2-second pause before the second digit is flashed which also has a 0.5-second interval between pulses. There is a 5-second pause between each display of a LFC.

Each LFC is flashed 5 times after which the air bag indictor will remain lit for the remainder of the key-on cycle. If there are multiple LFCs, each LFC will flash in order of priority.

Each LFC has one or more associated DTCs.

Diagnosing Customer Concerns With On-Demand DTCs

If the air bag warning indicator is reported ON by the customer when the vehicle comes in for service, connect the scan tool and follow the Diagnostic Instruction procedures in this section to identify the concern.

Once the DTC is known, read the Normal Operation of the pinpoint test for the DTC involved.

Using the scan tool with the use of PIDs and active command(s) may be of assistance in diagnosing the concern.

- Follow the depowering procedure as directed in this section.
- Determine the location of components involved in creating the DTC.
- Carry out a thorough visual inspection of:
  - components.
  - connectors.
  - splices and wiring harnesses.
  - insulation on conductors.

Diagnosing Customer Concerns With Continuous Memory DTCs

If an air bag warning indicator ON is reported by the customer but is not present when the vehicle comes in for service, follow the Diagnostic Instruction procedures in this section to identify the intermittent DTC.

Once the DTC is known, read the Normal Operation section of the pinpoint test for the DTC involved.

- Follow the depowering procedure as directed in this section.
- Determine the location of components involved in creating the DTC.
- Carry out a thorough visual inspection of:
  - components.
  - connectors.
  - splices and wiring harnesses.
  - insulation on conductors.

Bit-Mapped DTCs

Many of the continuous memory and on-demand DTCs that can be present in the restraints control module (RCM) provide general fault information and require accessing the bit-mapped fault PIDs to identify the specific concern. DTCs that use fault PIDs are conceptually different from conventional DTCs.

Conventional DTCs identify a specific concern for a given component and point to a particular diagnostic path. In the diagnostic path, PIDs are sometimes used to determine the root cause.

DTCs that use fault PIDs do not identify the specific concern. The DTC identifies the component(s) or type of components in which the concern exists. The next level, fault PIDs, identifies the specific device and fault condition. Fault PIDs are available for both on-demand (active) and continuous memory (historic) DTCs. Those associated PIDs are an extension of the information provided by the DTC and are identified by the same DTC number. Using both DTC and the fault PID is necessary to define the specific fault present (in the same manner as normal DTCs).

A scan tool must be used to view DTCs and their fault PIDs. Once a scan tool has retrieved a DTC, use the scan tool to view the fault PIDs. Viewing the fault PIDs must be carried out to identify the specific concern that is present. When the viewing of fault PIDs has been carried out, the scan tool can display the PIDs associated with that DTC, including the status or state that exists (on-demand DTC) or existed (continuous memory DTC). Refer to the manufacturer's instructions for the scan tool being used on how to view fault PIDs.

DIAGNOSIS AND TESTING (Continued)

Prove Out Procedure

Turn the ignition switch from the OFF to the ON position and visually monitor the air bag warning indicator with all supplemental restraint system (SRS) components connected or restraint system diagnostic tools installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an SRS fault is present, the air bag warning indicator will:

- fail to light.
- remain lit continuously.
- flash.

The flashing might not occur until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the restraints control module (RCM) to complete the testing of the SRS. If the air bag warning indicator is inoperative and an SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator will need to be repaired before diagnosis can continue.

Air Bag Reconnect Checklist

The checklist below should be completed following diagnosis or repair of any air bag system concern:

- All in-seat harness connectors connected?
- Clockspring connectors connected?
- Occupant classification sensor (OCS) system connected?
- Passenger air bag deactivation (PAD) indicator connected?
- All air bag modules connected?
- All safety belt retractor pretensioner connectors connected?
- All sensors (front and side impact, safety belt buckle switch, driver seat position and passenger safety belt tension) connected?
- Restraints control module (RCM) connected?
- RCM fuse installed?
- Battery connected?

Air Bag Module Second Stage Deployment Check

Because the driver and passenger front air bags each have 2 deployment stages, it is possible that Stage 1 has deployed and Stage 2 has not.

If a front air bag module has deployed, it is **mandatory** that the front air bag module be remotely deployed using the appropriate air bag disposal procedure to make sure the second stage has been deployed.

- For information on driver or passenger air bag module remote deployment, refer to Pyrotechnic Device Disposal in this section.

Glossary

Air Bag/Pretensioner Restraint System Diagnostic Tools

Air bag/pretensioner restraint system diagnostic tools are used to simulate the equivalent resistance of an air bag module or safety belt pretensioner during certain diagnostic procedures.

Disconnect the Component

Disconnect the component means to disconnect the component vehicle harness connector, not to remove the component. Do not reconnect a disconnected component unless instructed to do so.

Deactivate the Supplemental Restraint System (SRS)

Deactivate the supplemental restraint system (SRS) means to carry out a deactivation procedure. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section.

Depower the SRS

Depower the SRS means to disconnect the battery and remove the restraints control module (RCM) fuse. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.

Deployment Loop

The deployment loop is made up of the RCM, deployable device, air bag(s), safety belt pretensioners (safety canopies, deployable steering columns, load limiting retractor, adaptive tether, adaptive vent, if equipped) and associated circuits.

Install a New Component

Install a new component means to remove the existing component and install a new authorized part obtained from Ford Customer Service Division.

DIAGNOSIS AND TESTING (Continued)

Prove Out the SRS

Prove out the SRS means to turn the ignition switch from the OFF to the ON position and visually monitor the air bag warning indicator with all SRS components connected. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an SRS fault is present, the air bag warning indicator will either fail to light, flash or remain lit continuously. The air bag warning indicator may not illuminate until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag warning indicator is inoperative and an SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator will need to be repaired before diagnosis can continue.

Reactivate the SRS

Reactivate the SRS means to carry out the reactivation procedure. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section.

Reconnect the SRS

Reconnect the SRS means to reconnect all system components. Refer to Air Bag System Reconnect Checklist in this section.

Repower the SRS

Repower the SRS means, turn the ignition ON, install the RCM fuse and connect the battery ground cable. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.

Secondary Air Bag Warning

The secondary air bag warning is an audible fault format that consists of 5 sets of 5 tone bursts, with each set of 5 tone bursts separated by a 5-second quiet period. One tone burst cycle will consist of one-second on and one-second off. This series of 5 activations is repeated every 30 minutes.

Squib

A squib (igniter) is a device designed to convert electrical energy to the heat energy necessary to deploy a pyrotechnic restraints system device.

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Damaged restraints control module (RCM) or loose mounting • Damaged occupant classification sensor (OCS) system component • Damaged front impact severity sensor(s) or loose mounting • Damaged side impact sensor(s) or loose mounting • Damaged or disconnected passenger air bag deactivation (PAD) indicator	• Open smart junction box (SJB) fuse 17 (10A) • Damaged wiring harness • Loose, damaged or corroded connectors • Circuitry open/shorted • Damaged shorting bars

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **NOTE:** Make sure to use the latest scan tool software release.

   If the cause is not visually evident, connect the scan tool to the data link connector (DLC).
5. **NOTE:** The vehicle communication module (VCM) LED prove out confirms power and ground from the DLC are provided to the VCM.

   If the scan tool does not communicate with the VCM:
   - check the VCM connection to the vehicle.
   - check the scan tool connection to the VCM.
   - refer to Section 418-00, No Power To The Scan Tool, to diagnose no communication with the scan tool.
6. If the scan tool does not communicate with the vehicle:
   - verify the ignition key is in the ON position.
   - verify the scan tool operation with a known good vehicle.
   - refer to Section 418-00 to diagnose no response from the PCM.
7. Carry out the network test.
   - If the scan tool responds with no communication for one or more modules, refer to Section 418-00.

DIAGNOSIS AND TESTING (Continued)

- If the network test passes, retrieve and record continuous memory DTCs.

8. Clear the continuous DTCs and carry out the self-test diagnostics for the restraints control module (RCM).
9. If the DTCs retrieved are related to the concern, go to the Supplemental Restraint System (SRS) DTC Chart. For all other DTCs, refer to Section 419-10.
10. If no DTCs related to the concern are retrieved, GO to Symptom Chart.

Supplemental Restraint System (SRS) DTC Chart

While the lamp fault codes (LFC) are an indication of a general concern in the passive restraints system, the DTCs are more specific. The DTCs can be retrieved from the restraints control module (RCM) with a scan tool via the data link connector (DLC).

Supplemental Restraint System (SRS) DTC Chart

DTC[a]	LFC[b]	Description	Action To Take
—	Continuous	The Air Bag Warning Indicator is Illuminated Continuously	GO to Pinpoint Test A.
B1231	13	Event Threshold Exceeded	INSTALL a new RCM and impact sensors.
B1317	Continuous	Battery Voltage High	GO to Pinpoint Test Y.
B1318	Continuous	Battery Voltage Low	GO to Pinpoint Test Y.
B1342	12	ECU Is Faulted	INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section.
B1869	NONE Continuous lamp Secondary air bag warning sounds if another fault is present	Lamp Air Bag Warning Indicator Circuit Open	GO to Pinpoint Test B.
B1870	NONE Continuous lamp Secondary air bag warning sounds if another fault is present	Lamp Air Bag Warning Indicator Circuit Short To Battery	GO to Pinpoint Test C.
B1884	18	PAD Warning Lamp Circuit Failure	GO to Pinpoint Test D.
B1890	18	PAD Warning Lamp Circuit Short to Battery	GO to Pinpoint Test E.
B1891	53	Air Bag Tone Warning Indicator Short to Battery	GO to Pinpoint Test F.
B1892	53	Air Bag Tone Warning Indicator Circuit Failure	GO to Pinpoint Test G.
B1921	14	Air Bag Diagnostic Monitor Ground Circuit Open	GO to Pinpoint Test H.
B2290	16	Occupant Classification System Fault	GO to Pinpoint Test I.

DIAGNOSIS AND TESTING (Continued)

Supplemental Restraint System (SRS) DTC Chart (Continued)

DTC[a]	LFC[b]	Description	Action To Take
B2292	33	Restraint System — Seatbelt Pretensioner Fault (Driver Pretensioner Circuit Failure)	GO to Pinpoint Test J.
B2292	34	Restraint System — Seatbelt Pretensioner Fault (Passenger Pretensioner Circuit Failure)	GO to Pinpoint Test J.
B2293	19	Restraint System — Airbag Fault (Driver Front Air Bag Circuit Failure)	GO to Pinpoint Test K.
B2293	21	Restraint System — Airbag Fault (Passenger Front Air Bag Circuit Failure)	GO to Pinpoint Test K.
B2295	22	Restraint System — Side Airbag Fault (Driver Seat Side Air Bag Circuit Failure)	GO to Pinpoint Test L.
B2295	23	Restraint System — Side Airbag Fault (Passenger Seat Side Air Bag Circuit Failure)	GO to Pinpoint Test L.
B2296	42	Restraint System — Impact Sensor Fault (Front Impact Severity Sensor Circuit Failure)	GO to Pinpoint Test M.
B2296	43	Restraint System — Impact Sensor Fault (Driver Side Impact Sensor Circuit Failure)	GO to Pinpoint Test M.
B2296	44	Restraint System — Impact Sensor Fault (Passenger Side Impact Sensor Circuit Failure)	GO to Pinpoint Test M.
B2434	51	Drivers Seat Belt Buckle Switch Circuit Short to Ground	GO to Pinpoint Test N.
B2435	51	Driver Seat Belt Buckle Switch Resistance out of Range	GO to Pinpoint Test O.
B2438	52	Passengers Seat Belt Buckle Switch Circuit Short to Ground	GO to Pinpoint Test P.
B2439	52	Passengers Seat Belt Buckle Switch Resistance out of Range	GO to Pinpoint Test Q.
B2477	NONE Continuous lamp Secondary air bag warning sounds if another fault is present	Module Configuration Failure	INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section.
B2691	51	Seat Belt Buckle Switch Circuit Fault, Front Driver's side	GO to Pinpoint Test R.
B2692	52	Front Passenger's Seat Belt Buckle Switch Circuit Fault	GO to Pinpoint Test S.
B2909	16	Belt Tension Sensor Fault	GO to Pinpoint Test T.
C1414	15	Incorrect Module Design Level	GO to Pinpoint Test U.

DIAGNOSIS AND TESTING (Continued)

Supplemental Restraint System (SRS) DTC Chart (Continued)

DTC[a]	LFC[b]	Description	Action To Take
C1947	49	Front Driver's Seat Track Position Switch Circuit Short to Ground	GO to Pinpoint Test V.
C1948	49	Front Driver's Seat Track Position Switch Circuit Resistance Out of Range	GO to Pinpoint Test W.
C1981	49	Front Driver's Seat Track Position Switch Circuit Fault	GO to Pinpoint Test X.
—	—	No Communication with the Restraints Control Module (RCM)	REFER to Section 418-00 to diagnose the no communication concern.

a Retrieved using scan tool.
b Flashed on air bag warning indicator.

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
• The air bag warning indicator is illuminated continuously	• Fuse • Ignition circuits • Ground circuits • Restraints control module (RCM) • Connector shorting bar • RCM camming beam • RCM disconnected • Other circuitry • Instrument cluster (IC) module	• GO to Pinpoint Test A.
• Air bag warning indicator flashing	• Supplemental restraint system (SRS) fault • RCM connector not fully seated	• REFER to Supplemental Restraint System (SRS) DTC Chart. • ENGAGE the RCM connector.
• Audible tone — DTCs retrieved	• SRS system fault and air bag warning indicator fault	• REFER to Supplemental Restraint System (SRS) DTC Chart.
• No communication with the RCM	• Fuse • Diagnostic tool • Data link connector (DLC) • RCM internal concern • Circuitry	• REFER to Section 418-00 to diagnose the no communication concern.

Pinpoint Tests

Pinpoint Test A: The Air Bag Warning Indicator is Illuminated Continuously

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

NOTE: Be sure to cycle the ignition switch and look for a 6-second indicator prove-out without lamp fault codes (LFCs).

Normal Operation

During normal operation, the air bag warning indicator will illuminate continuously for approximately 6 seconds and then go out after the ignition switch is placed in the ON or START position and no air bag fault exists. The air bag warning indicator will remain illuminated continuously after 5 cycles of a LFC, if a fault exists. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section. Be sure to cycle the ignition switch and look for an approximate 6 second indicator prove-out without LFCs.

The restraints control module (RCM) will communicate DTCs to the scan tool through the data link connector (DLC). If the scan tool displays NO COMMUNICATION when retrieving continuous DTCs, refer to Section 418-00 to diagnose the no communication concern.

This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- Damaged ignition circuit
- RCM disconnected from the vehicle harness
- Loss of RCM signal ground
- RCM
- Instrument cluster (IC) module

PINPOINT TEST A: THE AIR BAG WARNING INDICATOR IS ILLUMINATED CONTINUOUSLY

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

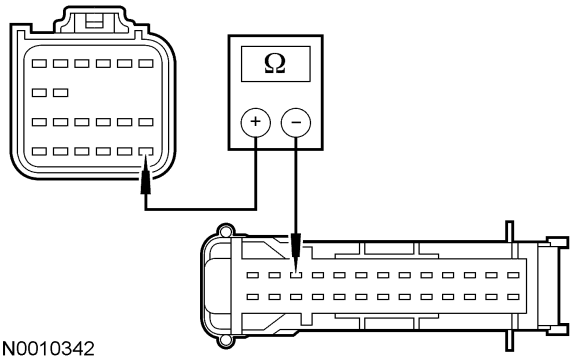
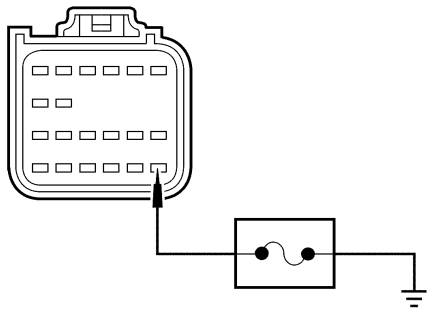
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
A1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	**Yes** If continuous memory DTCs were retrieved, GO to A2. If on-demand DTCs were retrieved, GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** GO to A2.
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Were any continuous or on-demand DTCs retrieved?**	
A2	**CHECK THE RCM CONNECTION**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE AIR BAG WARNING INDICATOR IS ILLUMINATED CONTINUOUSLY (Continued)

Test Step		Result / Action to Take
A2	**CHECK THE RCM CONNECTION (Continued)**	
	• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect: RCM C2041a. • Make sure RCM C2041a is connected and fully seated. • **Is RCM C2041a fully connected and the connector locking tab engaged?**	**Yes** GO to **A3**. **No** CONNECT C2041a and ENGAGE the locking tab. GO to **A5**.
A3	**CHECK CIRCUIT 608 (BK/YE) FOR AN OPEN**	
	• Disconnect: IC Module C220. • Disconnect: RCM C2041a. • Measure the resistance between IC module C220-24, circuit 608 (BK/YE), harness side and RCM C2041a-19, circuit 608 (BK/YE), harness side.  N0010342 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **A4**. **No** REPAIR circuit 608 (BK/YE). GO to **A5**.
A4	**CHECK THE AIR BAG WARNING INDICATOR OPERATION (DRIVE LAMP OFF)**	
	• Deactivate the SRS. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Connect: IC Module C220. • Ignition ON. • Connect a fused jumper between the RCM C2041a-19, circuit 608 (BK/YE), harness side and ground.  A0049155 • **Is the air bag warning indicator off?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **A5**. **No** INSTALL a new IC module. REFER to Section 413-01. GO to **A5**.
A5	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. **⚠ WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.**	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE AIR BAG WARNING INDICATOR IS ILLUMINATED CONTINUOUSLY (Continued)

Test Step		Result / Action to Take
A5	**CHECK FOR ADDITIONAL SRS DTCs (Continued)**	
	• Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. — If previously directed to deactivate the SRS, reactivate the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test B: DTC B1869 — Lamp Air Bag Warning Indicator Circuit Open

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

During normal operation, the air bag warning indicator will illuminate continuously for approximately 6 seconds and then go out after the ignition switch is placed in the ON or START position and no air bag fault exists. The restraints control module (RCM) turns the air bag warning indicator off by supplying a ground on the air bag warning indicator circuit.

If the RCM detects an open or short to ground on the air bag warning indicator circuit, it will store DTC B1869 in memory.

- DTC B1869 Lamp Air Bag Warning Indicator Circuit Open — If the RCM detects an open circuit or short to ground on the air bag warning indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- RCM
- Instrument cluster (IC) module

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: DTC B1869 — LAMP AIR BAG WARNING INDICATOR CIRCUIT OPEN

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

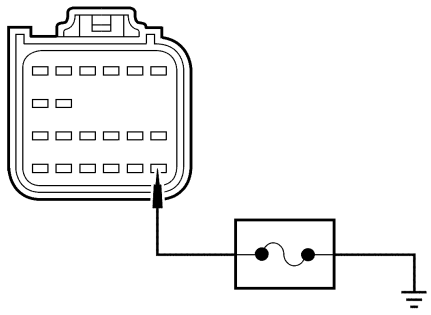
⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

***NOTICE:* Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

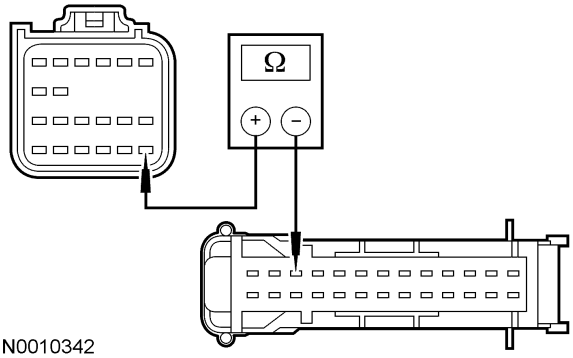
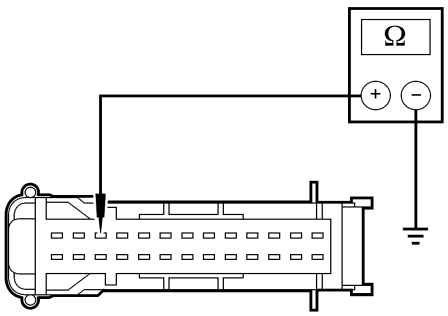
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
B1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1869 retrieved?**	**Yes** If the air bag warning indicator **does** illuminate, GO to **B2**. If the air bag warning indicator **does not** illuminate, GO to **B4**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **B6**.
B2	**CHECK THE AIR BAG WARNING INDICATOR OPERATION (DRIVE LAMP OFF)**	
	• Ignition OFF. • Deactivate the SRS. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Disconnect: RCM C2041a and C2041b. • Ignition ON. • Connect a fused jumper lead between RCM C2041a-19, circuit 608 (BK/YE), harness side and ground.  A0049155 • **Is the air bag warning indicator OFF?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **B7**. **No** GO to **B3**.
B3	**CHECK CIRCUIT 608 (BK/YE) FOR AN OPEN**	
	• Ignition OFF. • Disconnect: IC Module C220. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: DTC B1869 — LAMP AIR BAG WARNING INDICATOR CIRCUIT OPEN (Continued)

Test Step		Result / Action to Take
B3	**CHECK CIRCUIT 608 (BK/YE) FOR AN OPEN (Continued)**	
	• Measure the resistance between IC module C220-24, circuit 608 (BK/YE), harness side and RCM C2041a-19, circuit 608 (BK/YE), harness side.  N0010342 • **Is the resistance less than 0.5 ohm?**	**Yes** INSTALL a new IC module. REFER to Section 413-01. GO to **B7**. **No** REPAIR circuit 608 (BK/YE). GO to **B7**.
B4	**CHECK THE AIR BAG WARNING INDICATOR OPERATION (DRIVE LAMP ON)**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • **Is the air bag warning indicator ON?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **B7**. **No** GO to **B5**.
B5	**CHECK CIRCUIT 608 (BK/YE) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect: RCM C2041a and C2041b. • Disconnect: IC Module C220. • Measure the resistance between IC module C220-24, 608 (BK/YE), harness side and ground.  N0010341 • **Is the resistance greater than 10,000 ohms?**	**Yes** INSTALL a new IC module. REFER to Section 413-00. GO to **B7**. **No** REPAIR circuit 608 (BK/YE). GO to **B7**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: DTC B1869 — LAMP AIR BAG WARNING INDICATOR CIRCUIT OPEN (Continued)

Test Step		Result / Action to Take
B6	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1869 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. If the air bag warning indicator **does** illuminate, GO to **B2**. If the air bag warning indicator **does not** illuminate, GO to **B4**. **No** CHECK for causes of intermittent open or short to ground on circuit 608 (BK/YE). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **B7**.
B7	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. — If previously directed to deactivate the SRS, reactivate the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test C: DTC B1870 — Lamp Air Bag Warning Indicator Circuit Short to Battery

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

During normal operation, the air bag warning indicator will illuminate continuously for approximately 6 seconds and then go out after the ignition switch is placed in the ON or START position and no air bag fault exists. The restraints control module (RCM) illuminates the air bag warning indicator by removing the ground on the air bag warning indicator circuit.

If the RCM detects a short to battery on the air bag warning indicator circuit, it will store DTC B1870 in memory. If any other DTCs are detected with this DTC active, the secondary air bag warning tone will be activated.

- DTC B1870 Air Bag Warning Indicator Circuit Short to Battery — If the RCM detects a short to battery on the air bag warning indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- RCM
- Instrument cluster (IC) module

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST C: DTC B1870 — LAMP AIR BAG WARNING INDICATOR CIRCUIT SHORT TO BATTERY

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

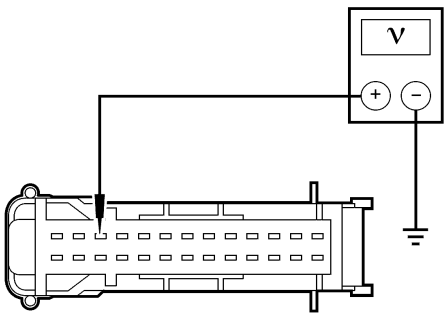
⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
C1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1870 retrieved?**	**Yes** GO to **C2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **C4**.
C2	**CHECK CIRCUIT 608 (BK/YE) FOR A SHORT TO VOLTAGE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: IC Module C220. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between IC module C220-24, circuit 608 (BK/YE), harness side and ground.  N0010340 • **Is any voltage present?**	**Yes** REPAIR circuit 608 (BK/YE). GO to **C5**. **No** GO to **C3**.
C3	**CHECK THE RCM**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST C: DTC B1870 — LAMP AIR BAG WARNING INDICATOR CIRCUIT SHORT TO BATTERY (Continued)

Test Step		Result / Action to Take
C3	**CHECK THE RCM (Continued)**	
	• Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. **NOTE:** DTC B1869 should be retrieved when carrying out the on-demand self test due to an open on circuit 608 (BK/YE), DTC B1870 should not be retrieved at this time. • **Was RCM on-demand DTC B1870 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to C5. **No** REPAIR or INSTALL a new IC module. REFER to Section 413-01. GO to C5.
C4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1870 retrieved?**	**Yes** GO to C2. **No** CHECK for causes of intermittent short to battery on circuit 608 (BK/YE). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire bundle. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to C5.
C5	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test D: LFC 18/DTC B1884 — PAD Warning Lamp Circuit Failure

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

NOTE: The passenger air bag deactivation (PAD) indicator is part of the hazard switch assembly and cannot be serviced separately.

Normal Operation

When the ignition is in the ON position, the PAD indicator prove-out period is initiated by the restraints control module (RCM). The RCM briefly activates the PAD indicator by supplying a ground on the PAD indicator circuit to verify operation. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

DIAGNOSIS AND TESTING (Continued)

If the RCM detects an open or short to ground on the PAD indicator circuit, it will store DTC B1884 in memory and flash lamp fault code (LFC) 18 on the air bag warning indicator.

- DTC B1884 PAD Warning Lamp Circuit Failure — If the RCM detects an open circuit or short to ground on the PAD indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- PAD indicator
- RCM

PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

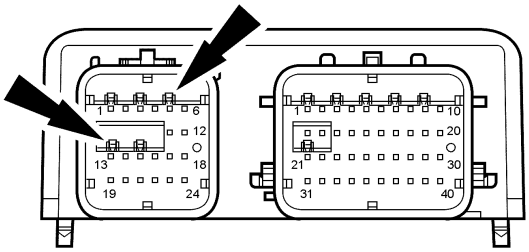
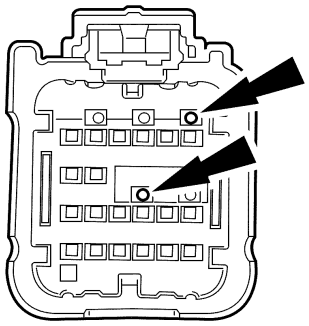
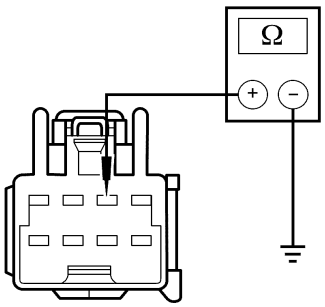
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
D1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1884 retrieved?**	**Yes** If the PAD indicator **does not** illuminate, GO to **D2**. If the PAD indicator **does** illuminate, GO to **D5**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **D9**.
D2	**CHECK THE RCM CONNECTOR**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

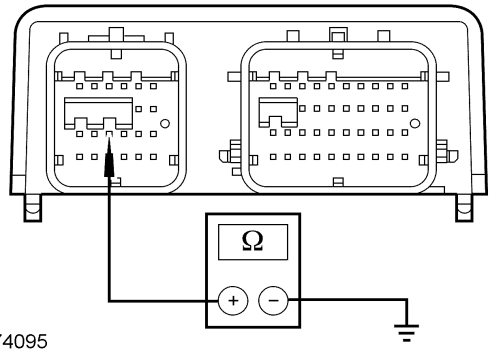
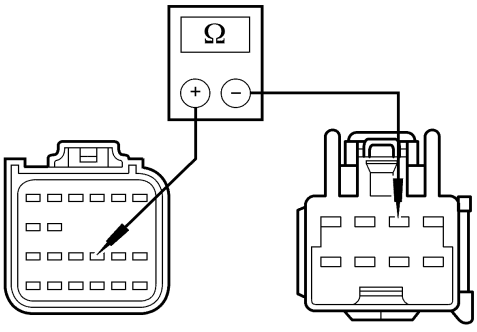
PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
D2	**CHECK THE RCM CONNECTOR (Continued)**	
	• Inspect the RCM C2041a component side for damaged camming beams.	
	 A0039637	
	• **NOTE:** The shorting bars can be accessed by prying out the cover from the harness side of the connector. Do not remove or defeat the shorting bars. Inspect RCM C2041a harness side for worn, damaged or dislodged shorting bars. Inspect for foreign material. Inspect for pushed out connector terminals.	
	 A0040761	
	• **Were any RCM connector concerns found?**	**Yes** CORRECT the connector concerns. GO to D10. **No** GO to D3.
D3	**CHECK CIRCUIT 1632 (TN/LB) FOR SHORT TO GROUND**	
	• Connect: RCM C2041a and C2041b. • Disconnect: PAD Indicator C2039. • Measure the resistance between PAD indicator C2039-2, circuit 1632 (TN/LB), harness side and ground.	
	 N0010339	
	• **Is the resistance greater than 10,000 ohms?**	**Yes** GO to D8. **No** GO to D4.

(Continued)

DIAGNOSIS AND TESTING (Continued)

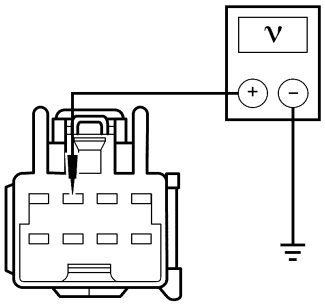
PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
D4	**CHECK THE RCM**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-15, circuit 1632 (TN/LB), component side and ground.  A0074095 • **Is the resistance greater than 10,000 ohms?**	**Yes** REPAIR circuit 1632 (TN/LB). GO to **D10**. **No** GO to **D8**.
D5	**CHECK THE PAD INDICATOR**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • **Is the PAD indicator ON?**	**Yes** GO to **D8**. **No** GO to **D6**.
D6	**CHECK CIRCUIT 1632 (TN/LB) FOR AN OPEN**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: PAD Indicator C2039. • Measure the resistance between PAD indicator C2039-2, circuit 1632 (TN/LB), harness side and RCM C2041a-15, circuit 1632 (TN/LB), harness side.  N0010338 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **D7**. **No** REPAIR circuit 1632 (TN/LB). GO to **D10**.
D7	**CHECK CIRCUIT 1850 (YE) FOR AN OPEN**	
	• Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
D7	**CHECK CIRCUIT 1850 (YE) FOR AN OPEN (Continued)**	
	• Measure the voltage between PAD indicator C2039-3, circuit 1850 (YE), harness side and ground.  N0010337 • **Is voltage greater than 10 volts?**	**Yes** INSTALL a new PAD indicator. REFER to Passenger Air Bag Deactivation (PAD) Indicator in this section. GO to D10. **No** REPAIR circuit 1850 (YE). GO to D10.
D8	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect: PAD Indicator C2039 (if previously disconnected). • Connect: RCM C2041a and C2041b (if previously disconnected). • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1884 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to D10. **No** CHECK for causes of intermittent open or short to ground on circuit 1632 (TN/LB). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to D10.
D9	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1884 retrieved?**	**Yes** GO to D2. **No** CHECK for causes of intermittent open or short to ground on circuit 1632 (TN/LB). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to D10.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
D10	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test E: LFC18/DTC B1890 — PAD Warning Lamp Circuit Short to Battery

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

When the ignition is in the ON position, the passenger air bag deactivation (PAD) indicator prove-out period is initiated by the restraints control module (RCM). The RCM briefly activates the PAD indicator by supplying a ground on the indicator circuit to verify operation. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

If the RCM detects a short to battery on the PAD warning lamp circuit, it will store DTC B1890 in memory and flash lamp fault code (LFC) 18 on the air bag warning indicator.

- DTC B1890 PAD Warning Lamp Circuit Short to Battery — If the RCM detects a short to battery on the PAD indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- PAD indicator
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST E: LFC 18/DTC B1890 — PAD WARNING LAMP CIRCUIT SHORT TO BATTERY

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

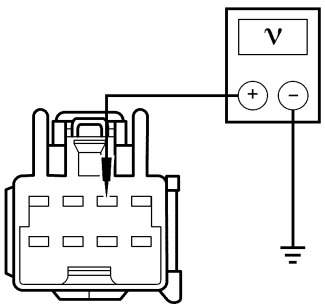
⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
E1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1890 retrieved?**	**Yes** GO to **E2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **E4**.
E2	**CHECK CIRCUIT 1632 (TN/LB) FOR A SHORT TO VOLTAGE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: PAD Indicator C2039. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between PAD indicator C2039-2, circuit 1632 (TN/LB), harness side and ground.  N0010336 • **Is any voltage present?**	**Yes** REPAIR circuit 1632 (TN/LB). GO to **E5**. **No** GO to **E3**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST E: LFC 18/DTC B1890 — PAD WARNING LAMP CIRCUIT SHORT TO BATTERY (Continued)

Test Step		Result / Action to Take
E3	**CHECK THE RCM**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. **NOTE:** DTC B1884 should be retrieved when carrying out the on-demand self test due to an open on circuit 1632 (TN/LB), DTC B1890 should not be retrieved at this time. • **Was RCM on-demand DTC B1890 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **E5**. **No** INSTALL a new PAD Indicator. REFER to Passenger Air Bag Deactivation (PAD) Indicator in this section. GO to **E5**.
E4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1890 retrieved?**	**Yes** GO to **E2**. **No** CHECK for causes of intermittent short to battery on circuit 1632 (TN/LB). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **E5**.
E5	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test F: LFC 53/DTC B1891 — Air Bag Tone Warning Indicator Circuit Short to Battery

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The connection between the instrument cluster (IC) module and restraint control module (RCM) is used to signal a chime in the IC module if the primary air bag warning indicator is inoperative and another supplemental restraint system (SRS) fault exists. The RCM monitors this connection to the IC module at C220 pin 23.

If the RCM detects a circuit failure on the connection to the cluster, it will store DTC B1891 in memory and flash lamp fault code (LFC) 53 (or a higher priority code if one exists) on the air bag warning indicator.

- DTC B1891 Air Bag Tone Warning Indicator Circuit Short to Battery — If the RCM detects a short to battery on the air bag tone warning indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Instrument cluster (IC) module
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: LFC 53/DTC B1891 — AIR BAG TONE WARNING INDICATOR CIRCUIT SHORT TO BATTERY

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

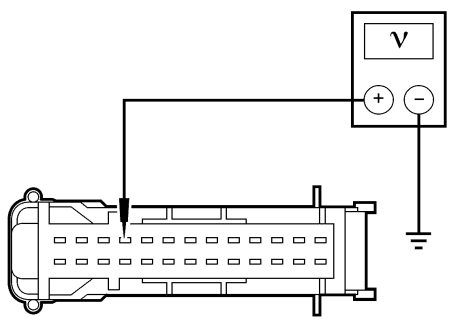
⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

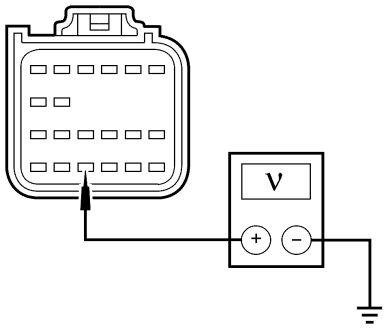
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
F1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1891 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to F2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to F4.
F2	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Disconnect: IC Module C220. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between IC module C220-23, circuit 1083 (LB/BK), harness side and ground.  N0010335 • **Is any voltage present?**	**Yes** REPAIR circuit 1083 (LB/BK). GO to F5. **No** GO to F3.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: LFC 53/DTC B1891 — AIR BAG TONE WARNING INDICATOR CIRCUIT SHORT TO BATTERY (Continued)

Test Step		Result / Action to Take
F3	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT**	
	• Ignition OFF. • Deactivate the SRS. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Connect: IC Module C220. • Ignition ON. • Measure the voltage between RCM C2041a-22, circuit 1083 (LB/BK), harness side and ground.  A0039642 • **Is voltage greater than 10 volts?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to F5. **No** INSTALL a new IC module. REFER to Section 413-01. GO to F5.
F4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1891 retrieved?**	**Yes** GO to F2. **No** CHECK for causes of intermittent short to voltage on circuit 1083 (LB/BK). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to F5.
F5	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. — If previously directed to deactivate the SRS, reactivate the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test G: LFC 53/DTC B1892 — Air Bag Tone Warning Indicator Circuit Failure

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The connection between the instrument cluster (IC) module and restraints control module (RCM) is used to signal a chime if the primary air bag warning indicator is inoperative and another supplemental restraint system (SRS) fault exists. The RCM monitors this connection to the IC module at C220 pin 23.

If the RCM detects a circuit failure on the connection to the IC module, it will store DTC B1891 in memory and flash lamp fault code (LFC) 53 (or a higher priority code if one exists) on the air bag warning indicator.

- DTC B1892 Air Bag Tone Warning Indicator Circuit Failure — If the RCM detects an open circuit or short to ground on the air bag tone warning indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- IC module
- RCM

PINPOINT TEST G: LFC 53/DTC B1892 — AIR BAG TONE WARNING INDICATOR CIRCUIT FAILURE

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

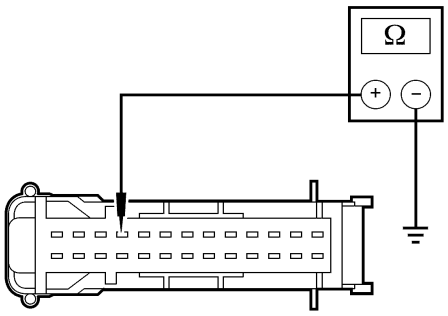
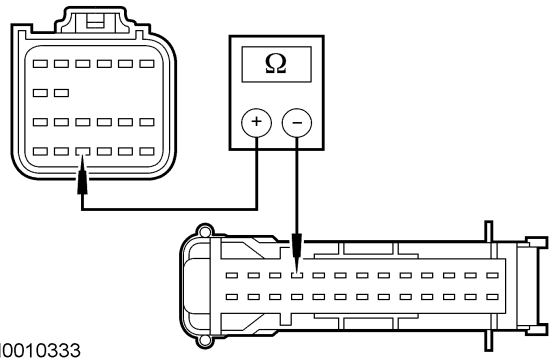
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
G1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1892 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to G2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to G5.
G2	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Disconnect: IC Module C220.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

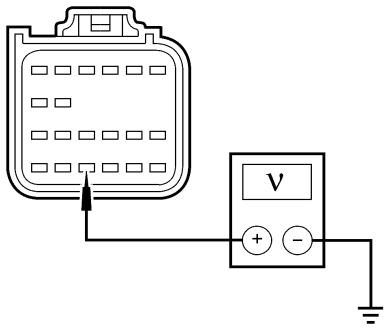
PINPOINT TEST G: LFC 53/DTC B1892 — AIR BAG TONE WARNING INDICATOR CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
G2	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between IC module C220-23, circuit 1083 (LB/BK), harness side and ground.  N0010334 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **G3**. **No** REPAIR circuit 1083 (LB/BK). GO to **G6**.
G3	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT FOR AN OPEN**	
	• Measure the resistance between RCM C2041a-22, circuit 1083 (LB/BK), harness side, and IC module C220-23, circuit 1083 (LB/BK), harness side.  N0010333 • **Is the resistance less than 5 ohms?**	**Yes** GO to **G4**. **No** REPAIR circuit 1083 (LB/BK). GO to **G6**.
G4	**CHECK THE AIR BAG TONE WARNING INDICATOR**	
	• Deactivate the SRS. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Connect: IC Module C220. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: LFC 53/DTC B1892 — AIR BAG TONE WARNING INDICATOR CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
G4	**CHECK THE AIR BAG TONE WARNING INDICATOR (Continued)**	
	• Measure the voltage between RCM C2041a-22, circuit 1083 (LB/BK), harness side and ground.  A0039642 • **Is voltage greater than 10 volts?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **G6**. **No** INSTALL a new IC module. REFER to Section 413-00. GO to **G6**.
G5	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1892 retrieved?**	**Yes** GO to **G2**. **No** CHECK for causes of intermittent open or short to ground on circuit 1083 (LB/BK). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **G6**.
G6	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. — If previously directed to deactivate the SRS, reactivate the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test H: LFC 14/DTC B1921 — Air Bag Diagnostic Monitor Ground Circuit Open

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

⚠ WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.

NOTE: A resistance difference as low as 10 ohms may set this DTC.

Normal Operation

The restraints control module (RCM) continuously monitors the resistance between the ground connections at the mounting bolts and the reference ground at C2041a pin 16, circuit 1203 (BK/LB). If the RCM detects a difference in resistance, it will store DTC B1921 in memory and flash lamp fault code (LFC) 14 on the air bag warning indicator.

- DTC B1921 Air Bag Diagnostic Monitor Ground Circuit Open — If the RCM detects a resistance difference between the case ground and pin 16 of C2041a, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- RCM mounting
- RCM

PINPOINT TEST H: LFC 14/DTC B1921 — AIR BAG DIAGNOSTIC MONITOR GROUND CIRCUIT OPEN

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

NOTE: Supplemental restraint system (SRS) components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

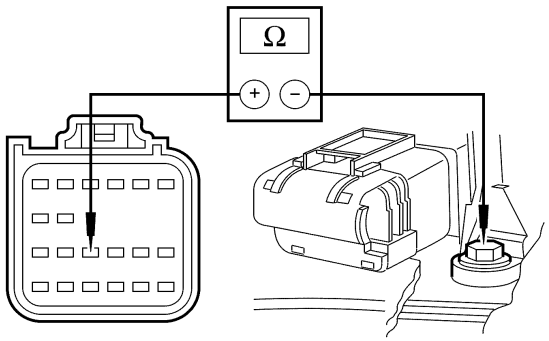
NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

Test Step		Result / Action to Take
H1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1921 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **H2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **H5**.
H2	**INSPECT THE RCM MOUNTING AND MOUNTING SURFACE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: LFC 14/DTC B1921 — AIR BAG DIAGNOSTIC MONITOR GROUND CIRCUIT OPEN (Continued)

Test Step		Result / Action to Take
H2	**INSPECT THE RCM MOUNTING AND MOUNTING SURFACE (Continued)**	
	• Inspect the RCM mounting and make sure that the retaining bolts are fully seated and tightened correctly. • Remove the RCM. Refer to Restraints Control Module (RCM) in this section. • Visually inspect the RCM and mounting surface for damage, corrosion or dirt. • **Was a significant amount of corrosion or dirt found, the RCM attached to the mounting surface incorrectly or were the RCM bolts not fully seated and tightened correctly?**	**Yes** CLEAN, TIGHTEN bolts or REPAIR the mounting surface as necessary. REINSTALL the RCM to the mounting surface. GO to H6. **No** GO to H3.
H3	**INSTALL THE RCM AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Clean the RCM mounting surfaces and bolts. • Install the RCM. Refer to Restraints Control Module (RCM) in this section. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1921 retrieved?**	**Yes** GO to H4. **No** Fault corrected. GO to H6.
H4	**CHECK GROUND CIRCUIT 1203 (BK/LB) FOR HIGH RESISTANCE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-16, circuit 1203 (BK/LB), harness side and the RCM case ground.  A0039644 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to H6. **No** REPAIR circuit 1203 (BK/LB). GO to H6.
H5	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B1921 retrieved?**	**Yes** GO to H2. **No** CHECK for causes of intermittent high resistance on circuit 1203 (BK/LB) or the chassis ground. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to H6.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: LFC 14/DTC B1921 — AIR BAG DIAGNOSTIC MONITOR GROUND CIRCUIT OPEN (Continued)

Test Step		Result / Action to Take
H6	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test I: LFC 16/DTC B2290 — Occupant Classification System Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

NOTE: Lamp fault code (LFC) 16 is shared between DTC B2290 and DTC B2909.

Normal Operation

The occupant classification sensor (OCS) system is used to classify the front passenger seat occupant in the event of a deployable impact. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The restraints control module (RCM) continuously monitors messages from the occupant classification system module (OCSM). If the RCM receives a fault message reported by the OCSM, it will store DTC B2290 in memory and flash LFC 16 on the air bag warning indicator.

The OCS system components (seat cushion foam pad, bladder with pressure sensor, OCSM and seat wiring harness) are calibrated to each other and are serviced as an assembly. The OCS system components are not to be installed separately. If a OCS system component or seat cushion foam pad are needed, a new OCS system service kit (seat cushion foam pad, bladder with pressure sensor, OCSM and seat wiring harness) must be installed as an assembly.

Fault PIDs[a]	Description	Fault Trigger Condition
2290__24__OD and 2290__24__CM	OCS Sensing Element Fault, Front Pass. side	When the occupant classification system module (OCSM) senses a failure on one of the bladder pressure sensor circuits, a fault will be indicated.
2290__25__OD and 2290__25__CM	OCS Calibration Fault, Front Pass. side	When the OCSM senses a difference in stored data, a fault will be indicated.

DIAGNOSIS AND TESTING (Continued)

Fault PIDs[a]	Description	Fault Trigger Condition
2290__26__OD and 2290__26__CM	OCS Communications Fault, Front Pass. side	When the OCSM is unable to communicate with the restraints control module (RCM), a fault will be indicated.
2290__27__OD and 2290__27__CM	Generic OCS Module Fault, Front Pass. side	When the OCSM senses a fault with the bladder pressure sensor and/or circuits, a fault will be indicated.

a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2290. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2290.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- OCS system component
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: To identify between a production OCS system and a OCS system service kit, inspect the OCSM electrical connector. A production OCS system allows the disconnection of the OCSM electrical connector.

A service OCS system service kit has the electrical connector glued to the OCSM, it cannot and should not be disconnected or altered.

NOTE: Mounting and orientation of the OCSM is critical for correct system operation. Failure to correctly position and securely fasten the OCSM in place can set a DTC in the RCM. If the vehicle has been in a collision in which the passenger seat may have been damaged, inspect the OCSM mounting area for deformation. If damaged, a new OCS system service kit must be installed. In addition, make sure the mounting area of the OCS system is restored to the original production configuration (install new as necessary).

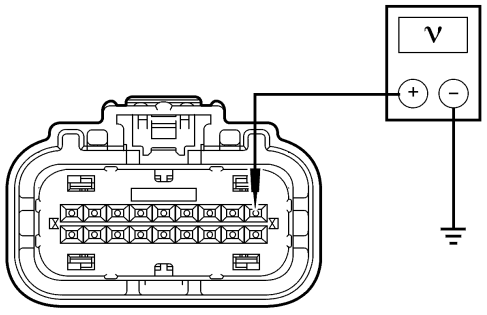
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
I1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs** • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2290 Fault PIDs. — Refer to PID list in Normal Operation to view B2290 fault PIDs. • **Do any on-demand DTC B2290 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. **Vehicles with a production OCS system** For 2290__26__OD (OCS Communications Fault, Front Pass. side), GO to **I2**. For 2290__24__OD (OCS Sensing Element Fault, Front Pass. side), GO to **I11**. For 2290__27__OD (Generic OCS Module Fault, Front Pass. side), GO to **I19**. For 2290__25__OD (OCS Calibration Fault, Front Pass. side), GO to **I29**. **Vehicles with a OCS system service kit** For 2290__27__OD (Generic OCS Module Fault, Front Pass. side), GO to **I19**. For 2290__26__OD (OCS Communications Fault, Front Pass. side), GO to **I20**. For 2290__25__OD (OCS Calibration Fault, Front Pass. side), GO to **I29**. For 2290__24__OD (OCS Sensing Element Fault, Front Pass. side), INSTALL

(Continued)

DIAGNOSIS AND TESTING (Continued)

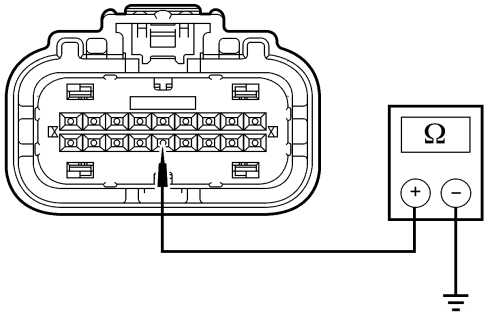
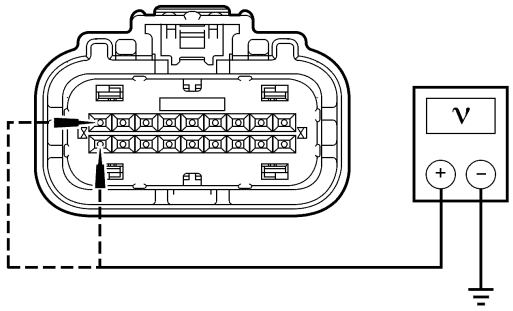
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs (Continued)**	
		Yes (Continued) a new OCS service kit. REFER to Occupant Classification Sensor in this section. GO to I31. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to I30.
I2	**CHECK THE SEAT WIRING AND CONNECTORS**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Carry out a thorough visual inspection of the OCS system wiring, terminals and connectors, the RCM wiring, terminals and connectors at RCM C2041b pins 17 and 18, and the related seat wiring harness and body wiring harness terminals and connectors. • **Were any problems noted?**	**Yes** REPAIR the seat connectors and wiring as needed. GO to I31. **No** GO to I3.
I3	**CHECK IGNITION CIRCUIT 937 (RD/WH) FOR VOLTAGE**	
	• Disconnect: Passenger Seat Side Air Bag C337. • Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337. • Disconnect: OCSM C3043. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between OCSM C3043-1, circuit 937 (RD/WH), harness side and ground.  N0003691 • **Is voltage greater than 10 volts?**	**Yes** GO to I4. **No** REPAIR circuit 937 (RD/WH). GO to I31.
I4	**CHECK GROUND CIRCUIT 1203 (BK/LB) FOR AN OPEN**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

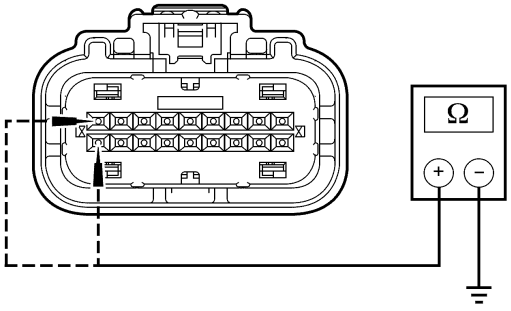
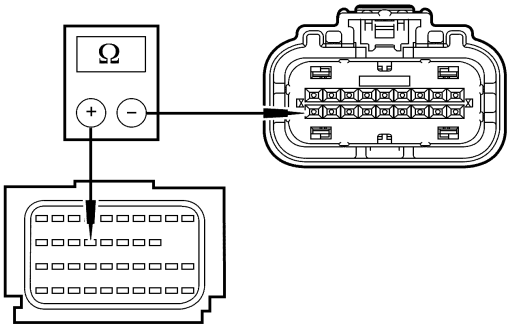
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I4	**CHECK GROUND CIRCUIT 1203 (BK/LB) FOR AN OPEN (Continued)**	
	• Measure the resistance between OCSM C3043-14, circuit 676 (PK/OG), harness side and ground.  N0003692 • **Is the resistance less than 5 ohms?**	**Yes** GO to **I5**. **No** REPAIR circuit 1203 (BK/LB). GO to **I31**.
I5	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO VOLTAGE**	
	• Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between OCSM: — C3043-18, circuit 1918 (BN/WH), harness side and ground. — C3043-9, circuit 1919 (PK/OG), harness side and ground.  N0003693 • **Is voltage present on either circuit?**	**Yes** REPAIR circuit 1918 (BN/WH) or 1919 (PK/OG). GO to **I31**. **No** GO to **I6**.
I6	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

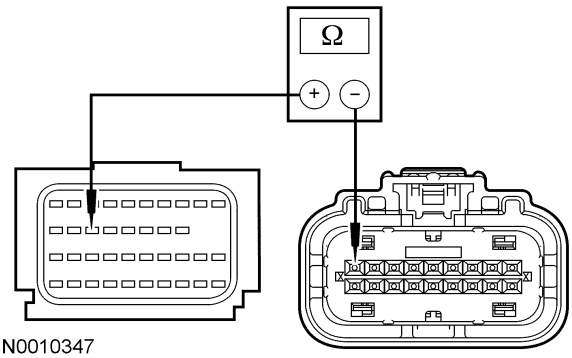
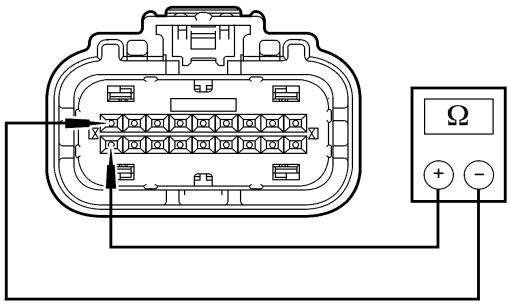
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I6	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between OCSM: — C3043-18, circuit 1918 (BN/WH), harness side and ground. — C3043-9, circuit 1919 (PK/OG), harness side and ground.  N0003694 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to I7. **No** REPAIR circuit 1918 (BN/WH) or 1919 (PK/OG). GO to I31.
I7	**CHECK CIRCUIT 1918 (BN/WH) FOR AN OPEN BETWEEN THE OCS AND RCM**	
	• Measure the resistance between RCM C2041b-17, circuit 1918 (BN/WH), harness side and OCSM C3043-18, circuit 1918 (BN/WH), harness side.  N0010346 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to I8. **No** REPAIR circuit 1918 (BN/WH). GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

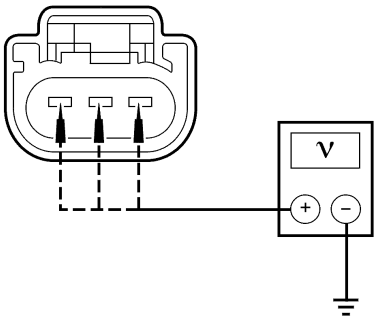
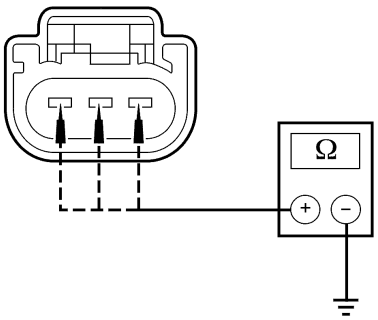
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I8	**CHECK CIRCUIT 1919 (PK/OG) FOR AN OPEN BETWEEN THE OCS AND RCM**	
	• Measure the resistance between RCM C2041b-18, circuit 1919 (PK/OG), harness side and OCSM C3043-9, circuit 1919 (PK/OG), harness side.  N0010347 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to I9. **No** REPAIR circuit 1919 (PK/OG). GO to I31.
I9	**CHECK FOR A SHORT BETWEEN CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG)**	
	• Measure the resistance between OCSM C3043-18, circuit 1918 (BN/WH), harness side and OCSM C3043-9, circuit 1919 (PK/OG), harness side.  N0003697 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to I10. **No** REPAIR circuits 1918 (BN/WH) and 1919 (PK/OG). GO to I31.
I10	**CHECK THE RCM**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good RCM. Refer to Restraints Control Module (RCM) in this section. • Connect: OCSM C3043. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2290 Fault PIDs. — Refer to PID list in Normal Operation to view B2290 fault PIDs. • **Do any on-demand DTC B2290 fault PIDs indicate a fault?**	**Yes** INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to I31. **No** Fault corrected. GO to I31.
I11	**CHECK THE SEAT WIRING AND CONNECTORS**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

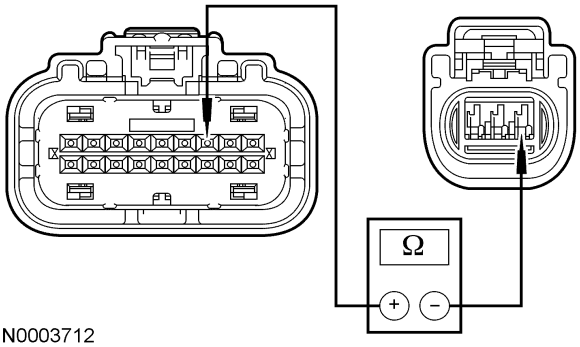
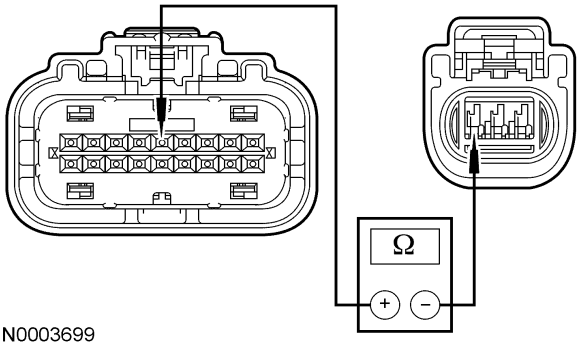
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I11	**CHECK THE SEAT WIRING AND CONNECTORS (Continued)**	
	• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Carry out a thorough visual inspection of the OCS system wiring, terminals and connectors and the related seat wiring harness and body wiring harness terminals and connectors. • **Were any problems noted?**	**Yes** REPAIR the seat connectors and wiring as needed. GO to I31. **No** GO to I12.
I12	**CHECK CIRCUITS 1568 (RD/WH), 1569 (GY/LB) AND 1570 (TN/BK) FOR A SHORT TO VOLTAGE**	
	• Disconnect: Passenger Seat Side Air Bag C337. • Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337. • Disconnect: RCM C2041a and C2041b. • Disconnect: OCS Pressure Sensor C3159. • Disconnect: OCSM C3043. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between OCS pressure sensor: — C3159-1, circuit 1568 (RD/WH), harness side and ground. — C3159-2, circuit 1570 (TN/BK), harness side and ground. — C3159-3, circuit 1569 (GY/LB), harness side and ground.  A0074066 • **Is voltage present on any circuit?**	**Yes** REPAIR circuit 1568 (RD/WH), 1569 (GY/LB) or 1570 (TN/BK). GO to I31. **No** GO to I13.
I13	**CHECK CIRCUITS 1568 (RD/WH), 1569 (GY/LB) AND 1570 (TN/BK) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between OCS pressure sensor: — C3159-1, circuit 1568 (RD/WH), harness side and ground. — C3159-2, circuit 1570 (TN/BK), harness side and ground. — C3159-3, circuit 1569 (GY/LB), harness side and ground.  A0074067 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to I14. **No** REPAIR circuit 1568 (RD/WH), 1569 (GY/LB) or 1570 (TN/BK). GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

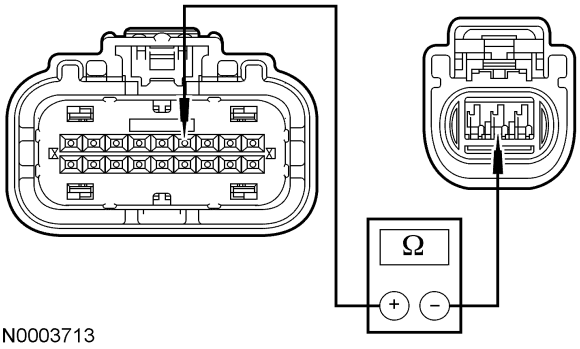
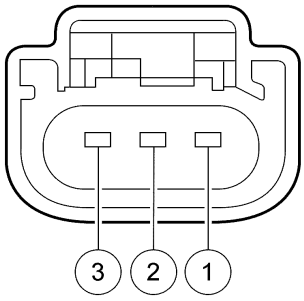
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I14	**CHECK CIRCUIT 1568 (RD/WH) FOR AN OPEN BETWEEN THE OCS MODULE AND PRESSURE SENSOR**	
	• Measure the resistance between OCSM C3043-3, circuit 1568 (RD/WH), harness side and OCS pressure sensor C3159-1, circuit 1568 (RD/WH), harness side.  N0003712 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **I15**. **No** REPAIR circuit 1568 (RD/WH). GO to **I31**.
I15	**CHECK CIRCUIT 1569 (GY/LB) FOR AN OPEN BETWEEN THE OCS MODULE AND PRESSURE SENSOR**	
	• Measure the resistance between OCSM C3043-5, circuit 1569 (GY/DB), harness side and OCS pressure sensor C3159-3, circuit 1569 (GY/DB), harness side.  N0003699 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **I16**. **No** REPAIR circuit 1569 (GY/LB). GO to **I31**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I16	**CHECK CIRCUIT 1570 (TN/BK) FOR AN OPEN BETWEEN THE OCS MODULE AND PRESSURE SENSOR**	
	• Measure the resistance between OCSM C3043-4, circuit 1570 (TN/BK), harness side and OCS pressure sensor C3159-2, circuit 1570 (TN/BK), harness side.  N0003713 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **I17**. **No** REPAIR circuit 1570 (TN/BK). GO to **I31**.
I17	**CHECK FOR A SHORT BETWEEN OCS PRESSURE SENSOR CIRCUITS 1568 (RD/WH), 1569 (GY/LB) AND 1570 (TN/BK)**	
	• Measure the resistance between the OCS pressure sensor circuits, harness side using the following chart: OCS Pressure Sensor / OCS Pressure Sensor C3159-1, circuit 1568 (RD/WH) / C3159-2, circuit 1570 (TN/BK) C3159-1, circuit 1568 (RD/WH) / C3159-3, circuit 1569 (GY/LB) C3159-2, circuit 1570 (TN/BK) / C3159-3, circuit 1569 (GY/LB)  N0080718 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **I18**. **No** REPAIR the affected circuits, 1568 (RD/WH), 1569 (GY/LB) and/or 1570 (TN/BK). GO to **I31**.
I18	**CHECK THE OCS SYSTEM**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a new OCS system service kit. Refer to Occupant Classification Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

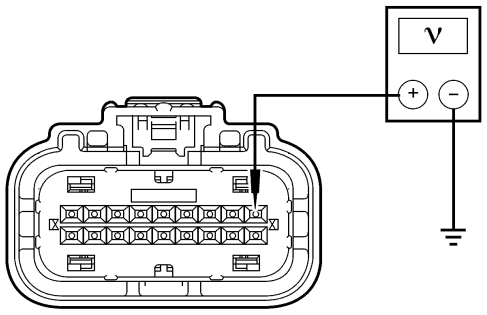
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I18	**CHECK THE OCS SYSTEM (Continued)**	
	• **⚠ WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.** ***NOTICE:*** **To prevent system failure, it is necessary to carry out the occupant classification sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset.** ***NOTICE:*** **To prevent system failure, the following precautions must be taken before carrying out the occupant classification sensor (OCS) system reset:** **— Make sure the voltage to the OCSM is above 8.0 volts and less than 18.0 volts.** **— Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS system reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.** **— Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.** **— Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before the carrying out the OCS system reset process.** Carry out the OCS system reset. • If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following and repair any concerns found. • OCS system connector and wiring for damage • Pressure sensor hose for kinks and/or damage • Seat-related wiring harness and body wiring harness terminals and connectors for damage • Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit. For additional information, refer to Occupant Classification Sensor in this section. • Ignition OFF. **NOTE:** The ignition switch must be cycled after the OCS system reset. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2290 Fault PIDs. — Refer to PID list in Normal Operation to view B2290 fault PIDs. • **Do any on-demand DTC B2290 fault PIDs indicate a fault?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to I31. **No** Fault corrected. GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

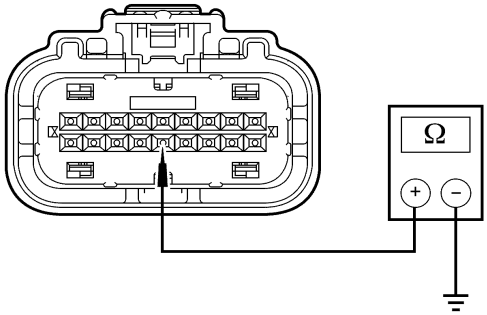
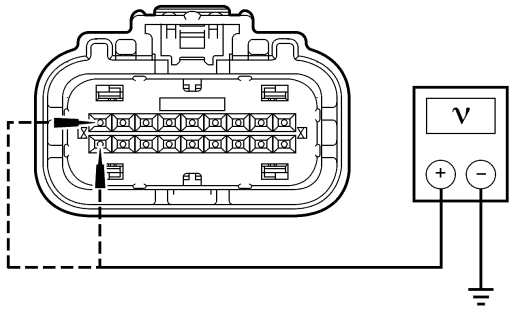
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I19	**CHECK FOR AN OCS MOUNTING FAULT**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • **NOTE:** The OCSM must be correctly positioned and securely fastened in place. Failure to do so can set a DTC in the RCM. Inspect the OCSM for correct mounting location and direction or for OCSM fastener tightness or for damage to the OCSM and seat cushion pan. • **Is the OCSM correctly located, are the fasteners tight and is there no damage to components?**	**Yes** INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to I31. **No** REPAIR as necessary. REFER to Occupant Classification Sensor in this section for correct mounting location/direction of the OCSM and the correct fasteners for mounting of the OCSM. If the seat cushion pan is damaged, refer to the appropriate procedure in Section 501-10 for repair. GO to I31.
I20	**CHECK THE SEAT WIRING AND CONNECTORS**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Carry out a thorough visual inspection of the OCS system wiring, terminals and connectors, the RCM wiring, terminals and connectors at RCM C2041b pins 17 and 18, and the related seat wiring harness and body wiring harness terminals and connectors. • **Were any problems noted?**	**Yes** REPAIR the seat connectors and wiring as needed. GO to I21. **No** GO to I21.
I21	**CHECK IGNITION CIRCUIT 937 (RD/WH) FOR VOLTAGE**	
	• Disconnect: Passenger Seat Side Air Bag C337. • Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337. • Disconnect: OCSM C3043. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between OCSM C3043-1, circuit 937 (RD/WH), harness side and ground.  N0003691 • **Is voltage greater than 10 volts?**	**Yes** GO to I22. **No** REPAIR circuit 937 (RD/WH). GO to I31.
I22	**CHECK GROUND CIRCUIT 1203 (BK/LB) FOR AN OPEN**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

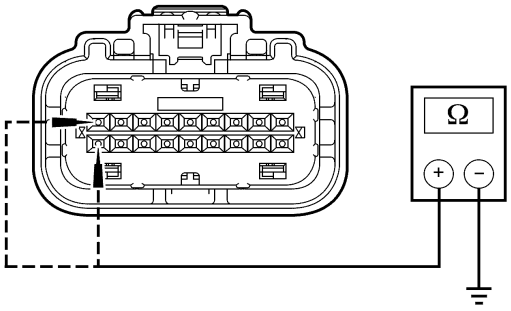
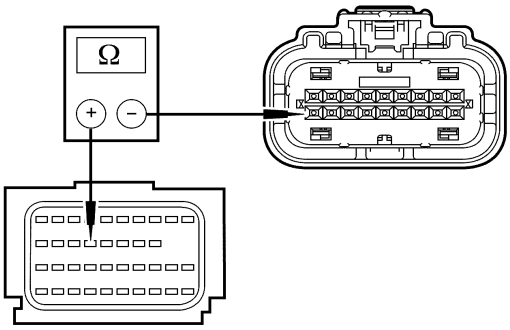
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I22	**CHECK GROUND CIRCUIT 1203 (BK/LB) FOR AN OPEN (Continued)**	
	• Measure the resistance between OCSM C3043-14, circuit 676 (PK/OG), harness side and ground.  N0003692 • **Is the resistance less than 5 ohms?**	**Yes** GO to **I23**. **No** REPAIR circuit 1203 (BK/LB). GO to **I31**.
I23	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO VOLTAGE BETWEEN THE PASSENGER SEAT AND RCM**	
	• Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between OCSM: — C3043-18, circuit 1918 (BN/WH), harness side and ground. — C3043-9, circuit 1919 (PK/OG), harness side and ground.  N0003693 • **Is voltage present on either circuit?**	**Yes** REPAIR circuit 1918 (BN/WH) or 1919 (PK/OG). GO to **I31**. **No** GO to **I24**.
I24	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO GROUND BETWEEN THE PASSENGER SEAT AND RCM**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

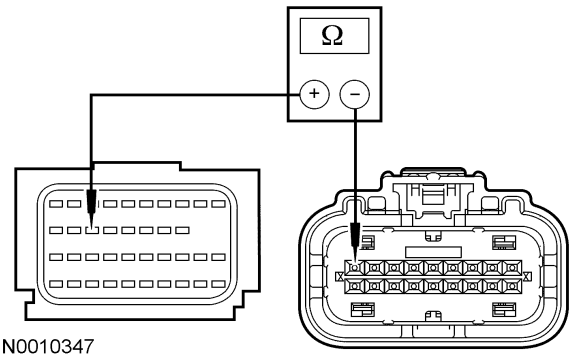
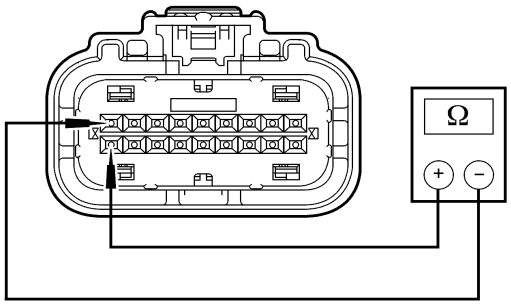
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I24	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO GROUND BETWEEN THE PASSENGER SEAT AND RCM (Continued)**	
	• Measure the resistance between OCSM: — C3043-18, circuit 1918 (BN/WH), harness side and ground. — C3043-9, circuit 1919 (PK/OG), harness side and ground.  N0003694 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to I25. **No** REPAIR circuit 1918 (BN/WH) or 1919 (PK/OG). GO to I31.
I25	**CHECK CIRCUIT 1918 (BN/WH) FOR AN OPEN BETWEEN THE PASSENGER SEAT AND RCM**	
	• Measure the resistance between RCM C2041b-17, circuit 1918 (BN/WH), harness side and OCSM C3043-18, circuit 1918 (BN/WH), harness side.  N0010346 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to I26. **No** REPAIR circuit 1918 (BN/WH). GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I26	**CHECK CIRCUIT 1919 (PK/OG) FOR AN OPEN BETWEEN THE PASSENGER SEAT AND RCM**	
	• Measure the resistance between RCM C2041b-18, circuit 1919 (PK/OG), harness side and OCSM C3043-9, circuit 1919 (PK/OG), harness side.  N0010347 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to I27. **No** REPAIR circuit 1919 (PK/OG). GO to I31.
I27	**CHECK FOR A SHORT BETWEEN CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG)**	
	• Measure the resistance between OCSM C3043-18, circuit 1918 (BN/WH), harness side and OCSM C3043-9, circuit 1919 (PK/OG), harness side.  N0003697 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to I28. **No** REPAIR circuits 1918 (BN/WH) and 1919 (PK/OG). GO to I31.
I28	**CHECK THE RCM**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good RCM. Refer to Restraints Control Module (RCM) in this section. • Connect: OCSM C3043. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2290 Fault PIDs. — Refer to PID list in Normal Operation to view B2290 fault PIDs. • **Do any on-demand DTC B2290 fault PIDs indicate a fault?**	**Yes** INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to I31. **No** Fault corrected. GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I29	**CHECK THE OCS SYSTEM**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition ON. • Enter the following diagnostic mode on the scan tool: OCS System Reset. • **⚠ WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.** ***NOTICE:*** **To prevent system failure, it is necessary to carry out the occupant classification sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset command.** ***NOTICE:*** **To prevent system failure, the following precautions must be taken before carrying out the occupant classification sensor (OCS) system reset:** **— Make sure the voltage to the OCSM is above 8.0 volts and less than 18.0 volts.** **— Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS system reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.** **— Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.** **— Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before the carrying out the OCS system reset process.** Carry out the OCS system reset. • If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following and repair any concerns found. • OCS system connector and wiring for damage • Pressure sensor hose for kinks and/or damage • Seat-related wiring harness and body wiring harness terminals and connectors for damage • Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit. For additional information, refer to Occupant Classification Sensor in this section. • Ignition OFF. **NOTE:** The ignition switch must be cycled after the OCS system reset. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2290 Fault PIDs. — Refer to PID list in Normal Operation to view B2290 fault PIDs. • **Do any on-demand DTC B2290 fault PIDs indicate a fault?**	**Yes** INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to I31. **No** Fault corrected. GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM FAULT (Continued)

Test Step		Result / Action to Take
I30	**CHECK FOR AN INTERMITTENT FAULT**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag C337. • Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2290 Fault PIDs. — Refer to PID list in Normal Operation to view B2290 fault PIDs. • **Do any on-demand DTC B2290 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. **Vehicles with a production OCS system** For 2290__26__OD (OCS Communications Fault, Front Pass. side), GO to I2. For 2290__24__OD (OCS Sensing Element Fault, Front Pass. side), GO to I11. For 2290__27__OD (Generic OCS Module Fault, Front Pass. side), GO to I19. For 2290__25__OD (OCS Calibration Fault, Front Pass. side), GO to I29. **Vehicles with a OCS system service kit** For 2290__27__OD (Generic OCS Module Fault, Front Pass. side), GO to I19. For 2290__26__OD (OCS Communications Fault, Front Pass. side), GO to I20. For 2290__25__OD (OCS Calibration Fault, Front Pass. side), GO to I29. For 2290__24__OD (OCS Sensing Element Fault, Front Pass. side), INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to I31. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to I31.
I31	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test J: LFC 33 and 34/DTC B2292 — Restraint System — Seatbelt Pretensioner Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The safety belt retractor pretensioners are activated by the restraints control module (RCM) to remove excessive slack from the safety belt webbing when an impact exceeding preprogrammed limits is detected.

The RCM continuously checks all of the safety belt retractor pretensioners and circuits. If the RCM detects one of the following faults with any of the safety belt retractor pretensioners or circuits, it will store DTC B2292 in memory and flash, depending on the fault indicator, or lamp fault code (LFC) 33 or 34 depending on the fault on the air bag warning indicator.

Fault PIDs[a]	Description	Fault Trigger Condition
2292__24__OD and 2292__24__CM	Pretensioner Circuit Short to Ground, Front Passenger Side	When the restraints control module (RCM) senses a short to ground on either of the passenger pretensioner circuits, a fault will be indicated.
2292__25__OD and 2292__25__CM	Pretensioner Circuit Short to Battery, Front Passenger Side	When the RCM senses a short to voltage on either of the passenger pretensioner circuits, a fault will be indicated.
2292__26__OD and 2292__26__CM	Pretensioner Circuit Open, Front Passenger Side	When the RCM measures greater resistance than 5 ohms between the passenger pretensioner circuits, a fault will be indicated.
2292__27__OD and 2292__27__CM	Pretensioner Circuit Resistance Low, Front Passenger Side	When the RCM measures resistance less than 0.9 ohm between the passenger pretensioner circuits, a fault will be indicated.
2292__28__OD and 2292__28__CM	Pretensioner Circuit Short to Ground, Front Driver Side	When the RCM senses a short to ground on either of the driver pretensioner circuits, a fault will be indicated.
2292__29__OD and 2292__29__CM	Pretensioner Circuit Short to Battery, Front Driver Side	When the RCM senses a short to voltage on either of the driver pretensioner circuits, a fault will be indicated.
2292__30__OD and 2292__30__CM	Pretensioner Circuit Open, Front Driver Side	When the RCM measures resistance greater than 5 ohms between the driver pretensioner circuits, a fault will be indicated.
2292__31__OD and 2292__31__CM	Pretensioner Circuit Resistance Low, Front Driver Side	When the RCM measures resistance less than 0.9 ohm between the driver pretensioner circuits, a fault will be indicated.

a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2292. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous memory DTC B2292.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Safety belt pretensioner
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SEATBELT PRETENSIONER FAULT

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

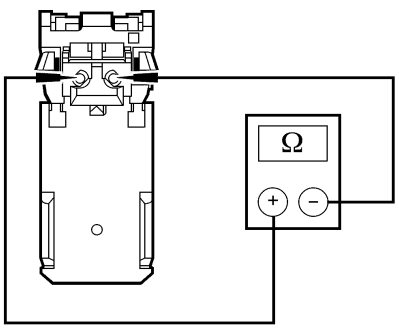
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
J1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2292 Fault PIDs. — Refer to PID list in Normal Operation to view B2292 fault PIDs. • **Do any on-demand DTC B2292 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to J2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to J12.

(Continued)

DIAGNOSIS AND TESTING (Continued)

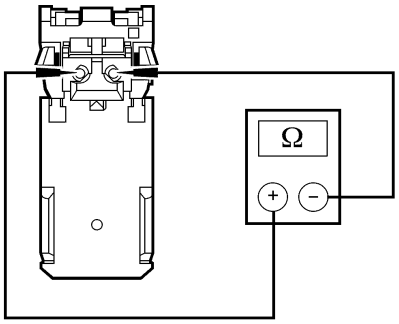
PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SEATBELT PRETENSIONER FAULT (Continued)

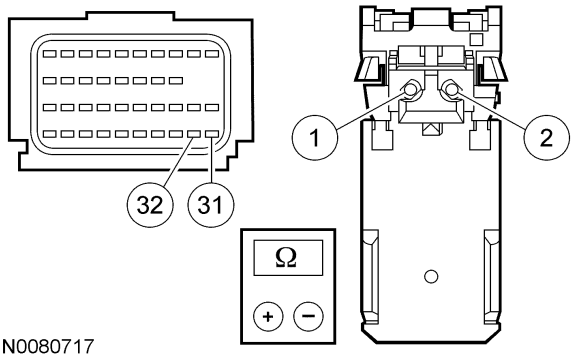
Test Step		Result / Action to Take
J2	**CHECK THE PRETENSIONERS**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: The Affected Safety Belt Retractor Pretensioner C3338 (Driver) or C3336 (Passenger). • Connect: Restraint System Diagnostic Tool 418-F395 to the Affected Safety Belt Retractor Pretensioner C3338 (Driver) or C3336 (Passenger). • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2292 Fault PIDs. — Refer to PID list in Normal Operation to view B2292 fault PIDs. • **Do any on-demand DTC B2292 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. For 2292__31__OD (Pretensioner Circuit Resistance Low, Front Driver Side), GO to J3. For 2292__30__OD (Pretensioner Circuit Open, Front Driver Side), GO to J5. For 2292__29__OD (Pretensioner Circuit Short to Battery, Front Driver Side), GO to J7. For 2292__28__OD (Pretensioner Circuit Short to Ground, Front Driver Side), GO to J9. For 2292__27__OD (Pretensioner Circuit Resistance Low, Front Passenger Side), GO to J4. For 2292__26__OD (Pretensioner Circuit Open, Front Passenger Side), GO to J6. For 2292__25__OD (Pretensioner Circuit Short to Battery, Front Passenger Side), GO to J8. For 2292__24__OD (Pretensioner Circuit Short to Ground, Front Passenger Side), GO to J10. **No** INSTALL a new driver or passenger safety belt retractor pretensioner. REFER to Section 501-20A. GO to J13.
J3	**CHECK FOR A SHORT BETWEEN THE DRIVER SAFETY BELT RETRACTOR PRETENSIONER CIRCUITS**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between driver safety belt retractor pretensioner C3338, circuit 1079 (LG/RD), harness side and C3338, circuit 1080 (LG/BK), harness side.  N0042444 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to J11. **No** REPAIR circuits 1079 (LG/RD) and 1080 (LG/BK). GO to J13.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SEATBELT PRETENSIONER FAULT (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>J4</td><td>CHECK FOR A SHORT BETWEEN THE PASSENGER SAFETY BELT RETRACTOR PRETENSIONER CIRCUITS</td><td rowspan="2">Yes
GO to J11.
No
REPAIR circuits 1081 (YE/RD) and 1082 (LB/BK). GO to J13.</td></tr>
<tr><td colspan="2">• Ignition OFF.
• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.
• Disconnect: Passenger Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool.
• Disconnect: RCM C2041a and C2041b.
• Measure the resistance between passenger safety belt retractor pretensioner C3336, circuit 1081 (YE/RD), harness side and C3336, circuit 1082 (LB/BK), harness side.
 

N0042444
• Is the resistance greater than 10,000 ohms?</td></tr>
<tr><td>J5</td><td>CHECK CIRCUITS 1079 (LG/RD) AND 1080 (LG/BK) FOR AN OPEN</td><td rowspan="2">Yes
GO to J11.
No
REPAIR circuit 1079 (LG/RD) or 1080 (LG/BK). GO to J13.</td></tr>
<tr><td colspan="2">• Ignition OFF.
• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.
• Disconnect: Driver Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool.
• Disconnect: RCM C2041a and C2041b.
• Measure the resistance between RCM C2041b, harness side and driver safety belt retractor pretensioner C3338, harness side using the following chart:
<table><tr><th>RCM</th><th>Circuit</th><th>Driver Safety Belt Retractor Pretensioner</th></tr><tr><td>C2041b-31</td><td>1079 (LG/RD)</td><td>C3338-2</td></tr><tr><td>C2041b-32</td><td>1080 (LG/BK)</td><td>C3338-1</td></tr></table> 

N0080717
• Are the resistances less than 0.5 ohm?</td></tr>
</table>

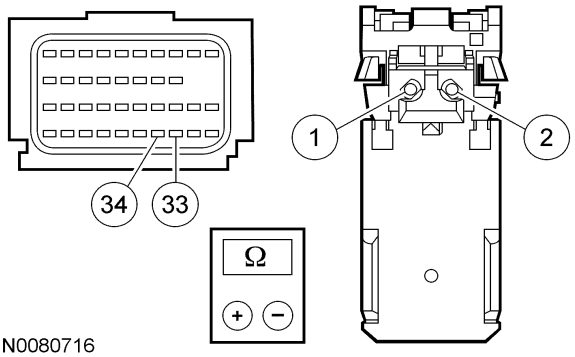
(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SEATBELT PRETENSIONER FAULT (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>J6</td><td>CHECK CIRCUITS 1081 (YE/RD) AND 1082 (LB/BK) FOR AN OPEN</td><td rowspan="2">Yes
GO to J11.
No
REPAIR circuit 1081 (YE/RD) or 1082 (LB/BK). GO to J13.</td></tr>
<tr><td colspan="2">• Ignition OFF.
• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.
• Disconnect: Passenger Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool.
• Disconnect: RCM C2041a and C2041b.
• Measure the resistance between RCM C2041b, harness side and passenger safety belt retractor pretensioner C3336, harness side using the following chart:

<table>
<tr><th>RCM</th><th>Circuit</th><th>Passenger Safety Belt Retractor Pretensioner</th></tr>
<tr><td>C2041b-33</td><td>1081 (YE/RD)</td><td>C3336-2</td></tr>
<tr><td>C2041b-34</td><td>1082 (LB/BK)</td><td>C3336-1</td></tr>
</table>

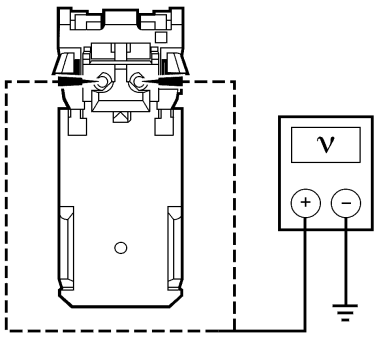
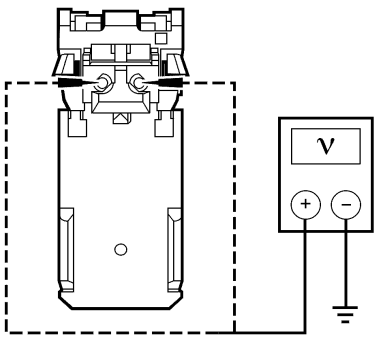
N0080716

• Are the resistances less than 0.5 ohm?</td></tr>
<tr><td>J7</td><td>CHECK CIRCUITS 1079 (LG/RD) AND 1080 (LG/BK) FOR A SHORT TO VOLTAGE</td><td></td></tr>
<tr><td colspan="2">• Ignition OFF.
• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.
• Disconnect: Driver Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool.
• Disconnect: RCM C2041a and C2041b.
• Repower the SRS. Do not prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.
• Ignition ON.</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

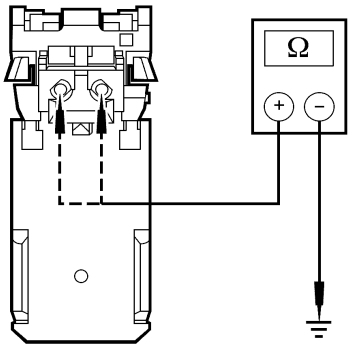
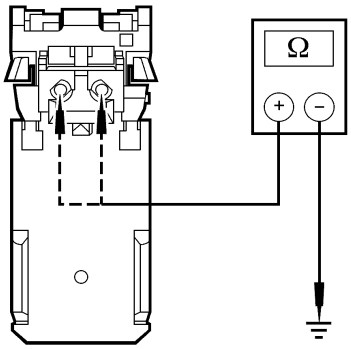
PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SEATBELT PRETENSIONER FAULT (Continued)

Test Step		Result / Action to Take
J7	**CHECK CIRCUITS 1079 (LG/RD) AND 1080 (LG/BK) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between driver safety belt retractor pretensioner: — C3338-2, circuit 1079 (LG/RD), harness side and ground. — C3338-1, circuit 1080 (LG/BK), harness side and ground.  N0042441 • **Is voltage present on either circuit?**	**Yes** REPAIR circuit 1079 (LG/RD) or circuit 1080 (LG/BK). GO to J13. **No** GO to J11.
J8	**CHECK CIRCUITS 1081 (YE/RD) AND 1082 (LB/BK) FOR A SHORT TO VOLTAGE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between passenger safety belt retractor pretensioner: — C3336-1, circuit 1082 (LB/BK), harness side and ground. — C3336-2, circuit 1081 (YE/RD), harness side and ground.  N0042441 • **Is voltage present on either circuit?**	**Yes** REPAIR circuit 1081 (YE/RD) or 1082 (LB/BK). GO to J13. **No** GO to J11.
J9	**CHECK CIRCUITS 1079 (LG/RD) AND 1080 (LG/BK) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SEATBELT PRETENSIONER FAULT (Continued)

Test Step		Result / Action to Take
J9	**CHECK CIRCUITS 1079 (LG/RD) AND 1080 (LG/BK) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between driver safety belt retractor pretensioner: — C3338-2, circuit 1079 (LG/RD), harness side and ground. — C3338-1, circuit 1080 (LG/BK), harness side and ground.  N0060931 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to J11. **No** REPAIR circuit 1079 (LG/RD) or 1080 (LG/BK). GO to J13.
J10	**CHECK CIRCUITS 1081 (YE/RD) AND 1082 (LB/BK) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between passenger safety belt retractor pretensioner: — C3336-2, circuit 1081 (YE/RD), harness side and ground. — C3336-1, circuit 1082 (LB/BK), harness side and ground.  N0060931 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to J11. **No** REPAIR circuit 1081 (YE/RD) or 1082 (LB/BK). GO to J13.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SEATBELT PRETENSIONER FAULT (Continued)

Test Step		Result / Action to Take
J11	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure the safety belt retractor pretensioner restraint system diagnostic tool, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Connect: Driver and Passenger Safety Belt Retractor Pretensioner Restraint System Diagnostic Tools. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2292 Fault PIDs. — Refer to PID list in Normal Operation to view B2292 fault PIDs. • **Does the original on-demand DTC B2292 fault PID indicate a fault?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to J13. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to J13.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SEATBELT PRETENSIONER FAULT (Continued)

Test Step		Result / Action to Take
J12	**CHECK FOR AN INTERMITTENT FAULT**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: The Affected Safety Belt Retractor Pretensioner C3338 (Driver) C3336 (Passenger). • Connect: Restraint System Diagnostic Tool 418-F395 to the Affected Safety Belt Retractor Pretensioner C3338 (Driver) C3336 (Passenger). • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2292 Fault PIDs. — Refer to PID list in Normal Operation to view B2292 fault PIDs. • **Do any on-demand DTC B2292 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. CHECK for causes of the intermittent fault at or near the affected safety belt retractor pretensioner connector. REPAIR any intermittent concerns found. If an intermittent concern **was** found and repaired, GO to J13. If an intermittent concern **was not** found and repaired, USE the fault PIDs recorded and GO to the appropriate pinpoint test step. For 2292__31__OD (Pretensioner Circuit Resistance Low, Front Driver Side), GO to J3. For 2292__30__OD (Pretensioner Circuit Open, Front Driver Side), GO to J5. For 2292__29__OD (Pretensioner Circuit Short to Battery, Front Driver Side), GO to J7. For 2292__28__OD (Pretensioner Circuit Short to Ground, Front Driver Side), GO to J9. For 2292__27__OD (Pretensioner Circuit Resistance Low, Front Passenger Side), GO to J4. For 2292__26__OD (Pretensioner Circuit Open, Front Passenger Side), GO to J6. For 2292__25__OD (Pretensioner Circuit Short to Battery, Front Passenger Side), GO to J8. For 2292__24__OD (Pretensioner Circuit Short to Ground, Front Passenger Side), GO to J10. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to J13.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SEATBELT PRETENSIONER FAULT (Continued)

Test Step		Result / Action to Take
J13	CHECK FOR ADDITIONAL SRS DTCs	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test K: LFC 19 and 21/DTC B2293 — Restraint System — Airbag Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The front air bags will deploy upon receiving a flow of current from the restraints control module (RCM).

The RCM continuously checks all of the front air bag circuits. If the RCM detects one of the following faults on any of the front air bag circuits, it will store DTC B2293 in memory and flash either lamp fault code (LFC) 19 or 21 depending on the fault on the air bag warning indicator.

Fault PIDs[a]	Description	Fault Trigger Condition
2293__16__OD and 2293__16__CM	Air Bag Inflator Circuit Resistance Low — Loop No. 2, Front Passenger Side	When the restraints control module (RCM) measures resistance less than 0.9 ohm between the passenger air bag loop circuits, a fault will be indicated.
2293__17__OD and 2293__17__CM	Air Bag Circuit Open — Loop No. 2, Front Passenger Side	When the RCM measures resistance greater than 5 ohms between the passenger air bag loop circuits, a fault will be indicated.
2293__18__OD and 2293__18__CM	Air Bag Circuit Short to Battery — Loop No. 2, Front Passenger Side	When the RCM senses a short to voltage on either of the passenger air bag loop circuits, a fault will be indicated.
2293__19__OD and 2293__19__CM	Air Bag Circuit Short to Ground — Loop No. 2, Front Passenger Side	When the RCM senses a short to ground on either of the passenger air bag loop circuits, a fault will be indicated.
2293__20__OD and 2293__20__CM	Air Bag Inflator Circuit Resistance Low — Loop No. 2, Front Driver Side	When the RCM measures resistance less than 0.9 ohm between the driver air bag loop circuits, a fault will be indicated.
2293__21__OD and 2293__21__CM	Air Bag Circuit Open — Loop No. 2, Front Driver Side	When the RCM measures resistance greater than 5 ohms between the driver air bag loop circuits, a fault will be indicated.

DIAGNOSIS AND TESTING (Continued)

Fault PIDs[a]	Description	Fault Trigger Condition
2293__22__OD and 2293__22__CM	Air Bag Circuit Short to Battery — Loop No. 2, Front Driver Side	When the RCM senses a short to voltage on either of the driver air bag loop circuits, a fault will be indicated.
2293__23__OD and 2293__23__CM	Air Bag Circuit Short to Ground — Loop No. 2, Front Driver Side	When the RCM senses a short to ground on either of the driver air bag loop circuits, a fault will be indicated.
2293__24__OD and 2293__24__CM	Air Bag Inflator Circuit Resistance Low — Loop No. 1, Front Passenger Side	When the RCM measures resistance less than 0.9 ohm between the passenger air bag loop circuits, a fault will be indicated.
2293__25__OD and 2293__25__CM	Air Bag Circuit Open — Loop No. 1, Front Passenger Side	When the RCM measures resistance greater than 5 ohms between the passenger air bag loop circuits, a fault will be indicated.
2293__26__OD and 2293__26__CM	Air Bag Circuit Short to Battery — Loop No. 1, Front Passenger Side	When the RCM senses a short to voltage on either of the passenger air bag loop circuits, a fault will be indicated.
2293__27__OD and 2293__27__CM	Air Bag Circuit Short to Ground — Loop No. 1, Front Passenger Side	When the RCM senses a short to ground on either of the passenger air bag loop circuits, a fault will be indicated.
2293__28__OD and 2293__28__CM	Air Bag Inflator Circuit Resistance Low — Loop No. 1, Front Driver Side	When the RCM measures resistance less than 0.9 ohm between the driver air bag loop circuits, a fault will be indicated.
2293__29__OD and 2293__29__CM	Air Bag Circuit Open — Loop No. 1, Front Driver Side	When the RCM measures resistance greater than 5 ohms between the driver air bag loop circuits, a fault will be indicated.
2293__30__OD and 2293__30__CM	Air Bag Circuit Short to Battery — Loop No. 1, Front Driver Side	When the RCM senses a short to voltage on either of the driver air bag loop circuits, a fault will be indicated.
2293__31__OD and 2293__31__CM	Air Bag Circuit Short to Ground — Loop No. 1, Front Driver Side	When the RCM senses a short to ground on either of the driver air bag loop circuits, a fault will be indicated.

a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2293. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2293.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Clockspring
- Driver/passenger air bag module
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
K1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2293 Fault PIDs. — Refer to PID list in Normal Operation to view B2293 fault PIDs. • **Do any on-demand DTC B2293 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **K2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **K38**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

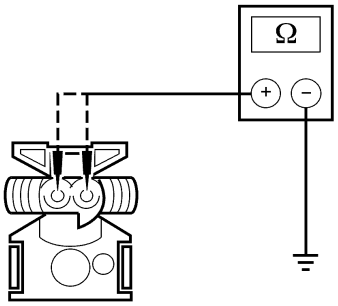
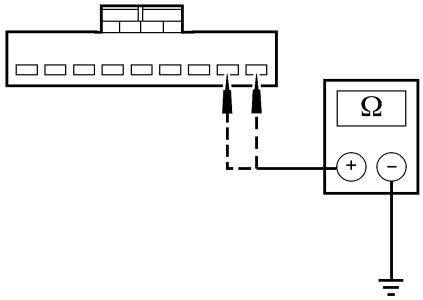
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K2	**CHECK THE DRIVER AND THE PASSENGER AIR BAG MODULES** • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • If the fault PID was reported for the driver air bag module: — remove the driver air bag module. Refer to Driver Air Bag Module in this section. — connect Restraint System Diagnostic Tool 418-F395 (2 required) to the driver air bag module loop 1 and loop 2 connectors. • If the fault PID was reported for the passenger air bag module: — disconnect passenger air bag module C256. — connect Restraint System Diagnostic Tool 418-F403 to passenger air bag module C256. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2293 Fault PIDs. — Refer to PID list in Normal Operation to view B2293 fault PIDs. • **Do any on-demand DTC B2293 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded in the Step K1, GO to the appropriate pinpoint test step. For 2293__31__OD (Air Bag Circuit Short to Ground - Loop No. 1, Front Driver Side), GO to **K3**. For 2293__30__OD (Air Bag Circuit Short to Battery - Loop No. 1, Front Driver Side), GO to **K5**. For 2293__29__OD (Air Bag Circuit Open - Loop No. 1, Front Driver Side), GO to **K7**. For 2293__28__OD (Air Bag Inflator Circuit Resistance Low - Loop No. 1, Front Driver Side), GO to **K11**. For 2293__27__OD (Air Bag Circuit Short to Ground - Loop No. 1, Front Passenger Side), GO to **K14**. For 2293__26__OD (Air Bag Circuit Short to Battery - Loop No. 1, Front Passenger Side), GO to **K15**. For 2293__25__OD (Air Bag Circuit Open - Loop No. 1, Front Passenger Side), GO to **K16**. For 2293__24__OD (Air Bag Inflator Circuit Resistance Low - Loop No. 1, Front Passenger Side), GO to **K18**. For 2293__23__OD (Air Bag Circuit Short to Ground - Loop No. 2, Front Driver Side), GO to **K20**. For 2293__22__OD (Air Bag Circuit Short to Battery - Loop No. 2, Front Driver Side), GO to **K22**. For 2293__21__OD (Air Bag Circuit Open - Loop No. 2, Front Driver Side), GO to **K24**. For 2293__20__OD (Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Driver Side), GO to **K28**. For 2293__19__OD (Air Bag Circuit Short to Ground - Loop No. 2, Front Passenger Side), GO to **K31**. For 2293__18__OD (Air Bag Circuit Short to Battery - Loop No. 2, Front Passenger Side), GO to **K32**. For 2293__17__OD (Air Bag Circuit Open - Loop No. 2, Front Passenger Side), GO to **K33**. For 2293__16__OD (Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Passenger Side), GO to **K35**. **No** If a fault PID was against driver air bag module in Step K1, INSTALL a new driver air bag module. REFER to Driver Air Bag Module in this section. GO to **K39**. If a fault PID was against passenger air

(Continued)

DIAGNOSIS AND TESTING (Continued)

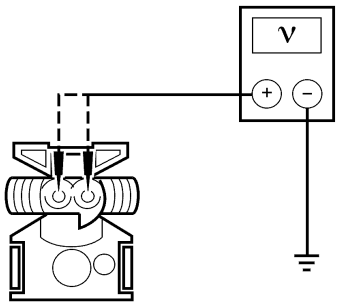
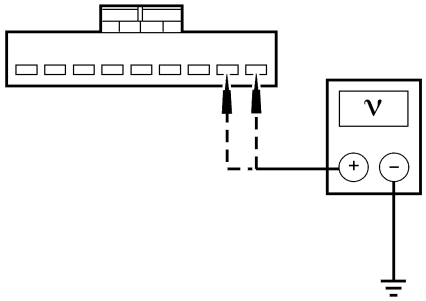
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K2	**CHECK THE DRIVER AND THE PASSENGER AIR BAG MODULES (Continued)**	
		No (Continued) bag module in Step K1, INSTALL a new passenger air bag module. REFER to Passenger Air Bag Module in this section. GO to K39.
K3	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO GROUND BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Disconnect: Driver Air Bag Module Loop 1 Restraint System Diagnostic Tool. • Measure the resistance between driver air bag module: — loop 1 electrical connector, circuit 614 (GY/OG), harness side and ground. — loop 1 electrical connector, circuit 615 (GY/WH), harness side and ground.  A0088716 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to K37. **No** GO to K4.
K4	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO GROUND BETWEEN THE RCM AND CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between clockspring: — C2274-1, circuit 614 (GY/OG), harness side and ground. — C2274-2, circuit 615 (GY/WH), harness side and ground.  A0088717 • **Are the resistances greater than 10,000 ohms?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to K39. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 614 (GY/OG) or 615 (GY/WH). GO to K39.
K5	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

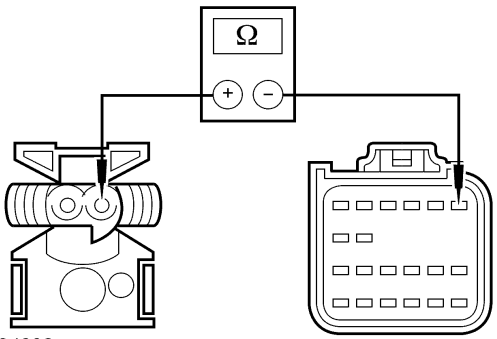
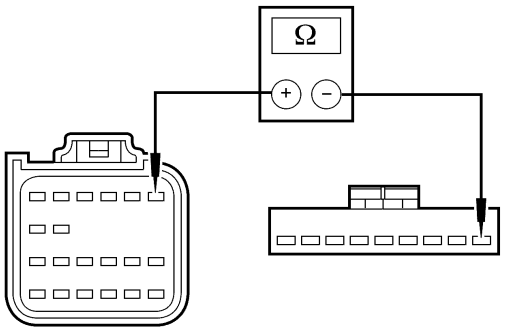
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K5	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1 (Continued)**	
	• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Loop 1 Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between driver air bag module: — loop 1 electrical connector, circuit 614 (GY/OG), harness side and ground. — loop 1 electrical connector, circuit 615 (GY/WH), harness side and ground.  A0088715 • **Is voltage present on either circuit?**	**Yes** GO to **K6**. **No** GO to **K37**.
K6	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND CLOCKSPRING**	
	• Ignition OFF. • Disconnect: Clockspring C2274. • Ignition ON. • Measure the voltage between clockspring: — C2274-1, circuit 614 (GY/OG), harness side and ground. — C2274-2, circuit 615 (GY/WH), harness side and ground.  A0088718 • **Is voltage present on either circuit?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 614 (GY/OG) or 615 (GY/WH). GO to **K39**. **No** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**.
K7	**CHECK FOR AN OPEN ON CIRCUIT 614 (GY/OG) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

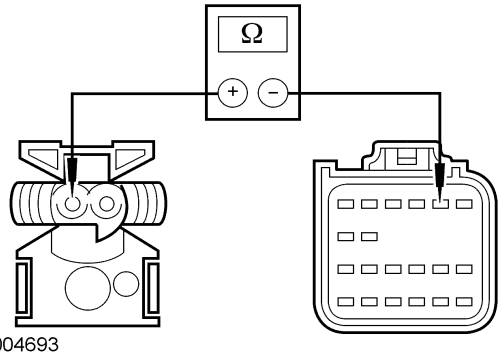
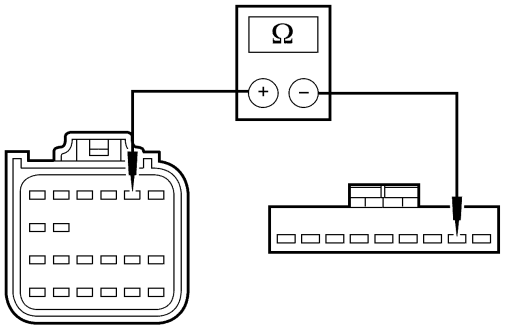
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K7	**CHECK FOR AN OPEN ON CIRCUIT 614 (GY/OG) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1 (Continued)**	
	• Disconnect: Driver Air Bag Module Loop 1 Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-1, circuit 614 (GY/OG), harness side and driver air bag module loop 1 electrical connector, circuit 614 (GY/OG), harness side.  N0004692 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K9**. **No** GO to **K8**.
K8	**CHECK FOR AN OPEN ON CIRCUIT 614 (GY/OG) BETWEEN THE RCM AND CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between RCM C2041a-1, circuit 614 (GY/OG), harness side and clockspring C2274-1, circuit 614 (GY/OG), harness side.  N0005029 • **Is the resistance less than 0.5 ohm?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuit 614 (GY/OG). GO to **K39**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

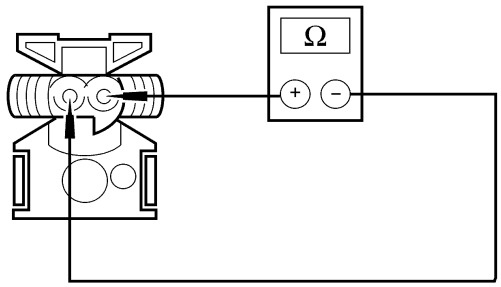
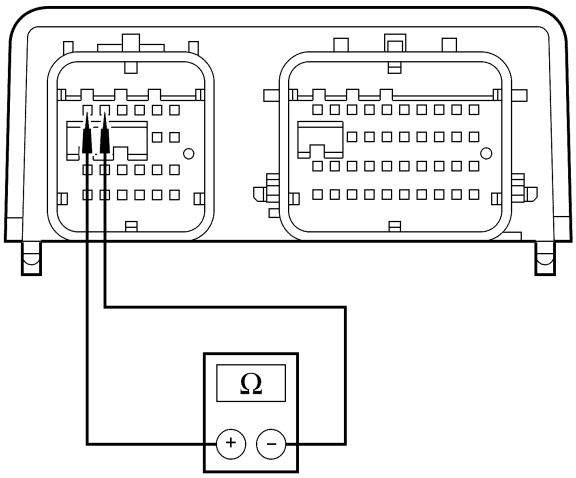
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K9	**CHECK FOR AN OPEN ON CIRCUIT 615 (GY/WH) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1**	
	• Measure the resistance between RCM C2041a-2, circuit 615 (GY/WH), harness side and driver air bag module loop 1 electrical connector, circuit 615 (GY/WH), harness side.  N0004693 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K37**. **No** GO to **K10**.
K10	**CHECK FOR AN OPEN ON CIRCUIT 615 (GY/WH) BETWEEN THE RCM AND CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between RCM C2041a-2, circuit 615 (GY/WH), harness side and clockspring C2274-2, circuit 615 (GY/WH), harness side.  N0005030 • **Is the resistance less than 0.5 ohm?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuit 615 (GY/WH). GO to **K39**.
K11	**CHECK FOR A SHORT BETWEEN DRIVER AIR BAG LOOP 1 CIRCUITS 614 (GY/OG) AND 615 (GY/WH)**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Loop 1 Restraint System Diagnostic Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

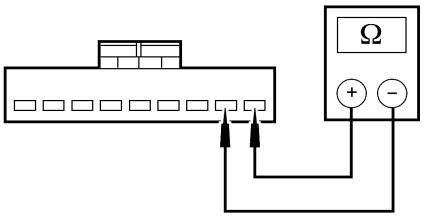
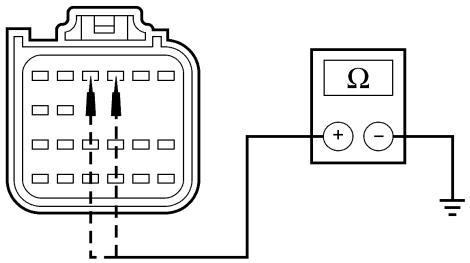
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K11	**CHECK FOR A SHORT BETWEEN DRIVER AIR BAG LOOP 1 CIRCUITS 614 (GY/OG) AND 615 (GY/WH) (Continued)**	
	• Measure the resistance between driver air bag module loop 1 electrical connector, circuit 614 (GY/OG), harness side and circuit 615 (GY/WH), harness side.  A0030492 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K12**.
K12	**CHECK THE RCM FOR LOW RESISTANCE**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a pin 1, component side and pin 2, component side.  A0041266 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K13**. **No** GO to **K37**.
K13	**CHECK FOR A SHORT BETWEEN CIRCUITS 614 (GY/OG) AND 615 (GY/WH)**	
	• Connect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

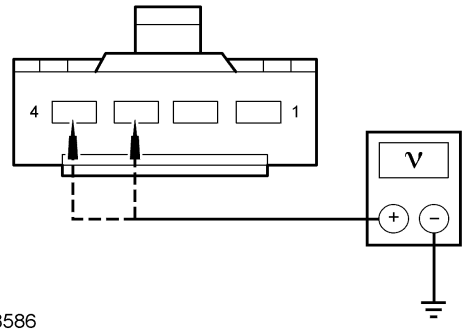
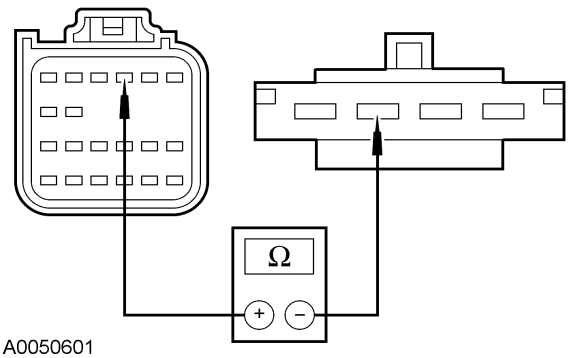
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K13	**CHECK FOR A SHORT BETWEEN CIRCUITS 614 (GY/OG) AND 615 (GY/WH) (Continued)**	
	• Disconnect: Clockspring C2274. • Measure the resistance between clockspring C2274-1, circuit 614 (GY/OG), harness side and C2274-2, circuit 615 (GY/WH), harness side.  A0088719 • **Is the resistance greater than 10,000 ohms?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuits 614 (GY/OG) and 615 (GY/WH). GO to **K39**.
K14	**CHECK CIRCUITS 607 (LB/OG) AND 616 (PK/BK) FOR A SHORT TO GROUND BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 1**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM: — C2041a-3, circuit 607 (LB/OG), harness side and ground. — C2041a-4, circuit 616 (PK/BK), harness side and ground.  A0041267 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 607 (LB/OG) or 616 (PK/BK). GO to **K39**.
K15	**CHECK CIRCUITS 607 (LB/OG) AND 616 (PK/BK) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 1**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

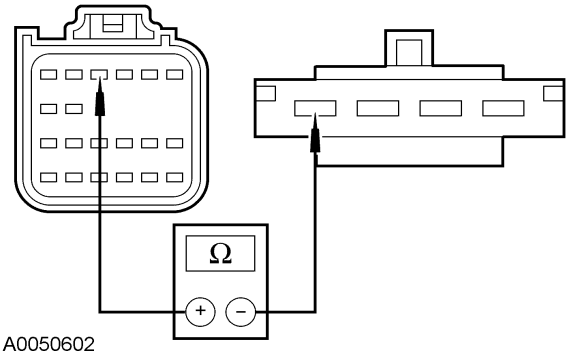
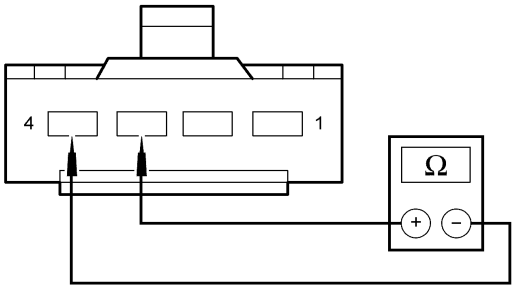
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K15	**CHECK CIRCUITS 607 (LB/OG) AND 616 (PK/BK) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 1 (Continued)**	
	• Measure the voltage between passenger air bag module: — C256-3, circuit 607 (LB/OG), harness side and ground. — C256-4, circuit 616 (PK/BK), harness side and ground.  A0088586 • **Is voltage present on either circuit?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 607 (LB/OG) or 616 (PK/BK). GO to **K39**. **No** GO to **K37**.
K16	**CHECK FOR AN OPEN ON CIRCUIT 607 (LB/OG) BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 1**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-3, circuit 607 (LB/OG), harness side and passenger air bag module C256-3, circuit 607 (LB/OG), harness side.  A0050601 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K17**. **No** REPAIR circuit 607 (LB/OG). GO to **K39**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

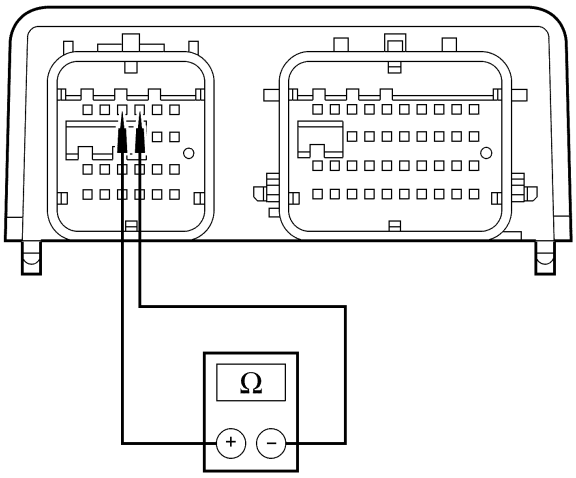
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K17	**CHECK FOR AN OPEN ON CIRCUIT 616 (PK/BK) BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 1**	
	• Measure the resistance between RCM C2041a-4, circuit 616 (PK/BK), harness side and passenger air bag module C256-4, circuit 616 (PK/BK), harness side.  A0050602 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K37**. **No** REPAIR circuit 616 (PK/BK). GO to **K39**.
K18	**CHECK FOR A SHORT BETWEEN PASSENGER AIR BAG MODULE LOOP 1 CIRCUITS 607 (LB/OG) AND 616 (PK/BK)**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Measure the resistance between passenger air bag module C256-3, circuit 607 (LB/OG), harness side and C256-4, circuit 616 (PK/BK), harness side.  A0029872 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K19**.
K19	**CHECK THE RCM FOR LOW RESISTANCE**	
	• Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

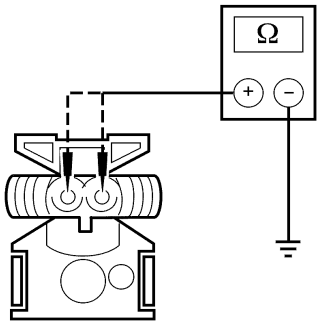
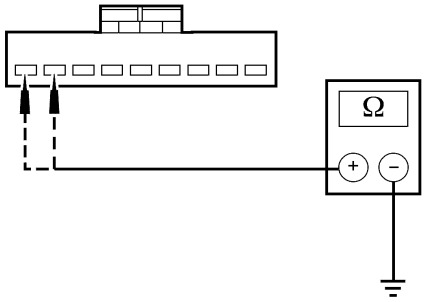
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K19	**CHECK THE RCM FOR LOW RESISTANCE (Continued)**	
	• Measure the resistance between RCM C2041a pin 3, component side and pin 4, component side.  A0041271 • **Is the resistance greater than 10,000 ohms?**	**Yes** REPAIR circuits 607 (LB/OG) and 616 (PK/BK). GO to **K39**. **No** GO to **K37**.
K20	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO GROUND BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 2**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Disconnect: Driver Air Bag Module Loop 2 Restraint System Diagnostic Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

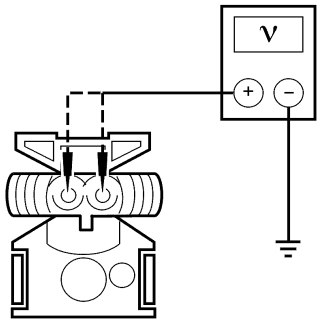
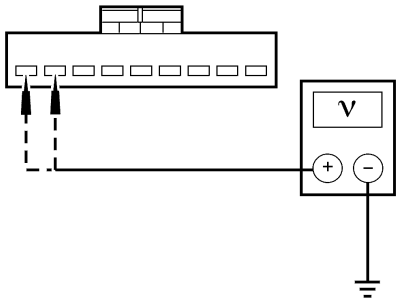
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K20	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO GROUND BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 2 (Continued)**	
	• Measure the resistance between driver air bag module: — loop 2 electrical connector, circuit 1516 (YE/WH), harness side and ground. — loop 2 electrical connector, circuit 1517 (RD/OG), harness side and ground.  A0094161 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K21**.
K21	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO GROUND BETWEEN THE RCM AND CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between clockspring: — C2274-8, circuit 1516 (YE/WH), harness side and ground. — C2274-9, circuit 1517 (RD/OG), harness side and ground.  A0088721 • **Are the resistances greater than 10,000 ohms?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1516 (YE/WH) or 1517 (RD/OG). GO to **K39**.
K22	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 2**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Loop 2 Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

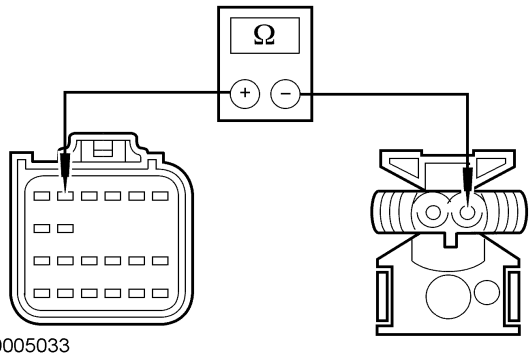
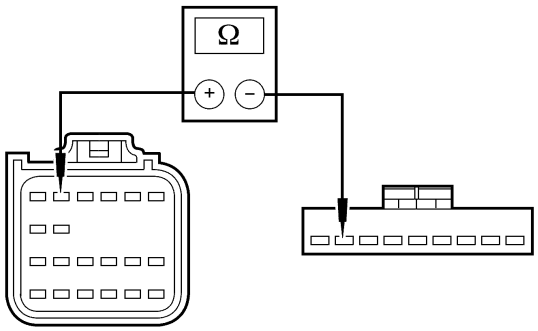
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K22	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 2 (Continued)**	
	• Measure the voltage between driver air bag module: — loop 2 electrical connector, circuit 1516 (YE/WH), harness side and ground. — loop 2 electrical connector, circuit 1517 (RD/OG), harness side and ground.  A0094162 • **Is voltage present on either circuit?**	**Yes** GO to **K23**. **No** GO to **K37**.
K23	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND CLOCKSPRING**	
	• Ignition OFF. • Disconnect: Clockspring C2274. • Ignition ON. • Measure the voltage between clockspring connector: — C2274-8, circuit 1516 (YE/WH), harness side and ground. — C2274-9, circuit 1517 (RD/OG), harness side and ground.  A0088722 • **Is voltage present on either circuit?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1516 (YE/WH) or 1517 (RD/OG). GO to **K39**. **No** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**.
K24	**CHECK FOR AN OPEN ON CIRCUIT 1516 (YE/WH) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 2**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Loop 2 Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

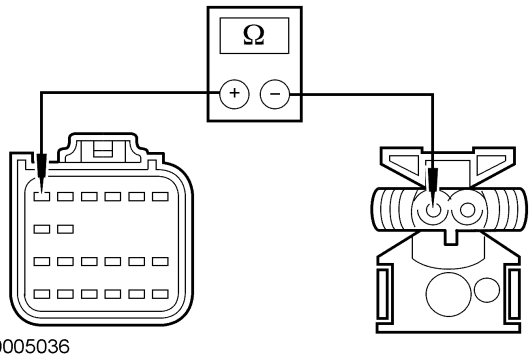
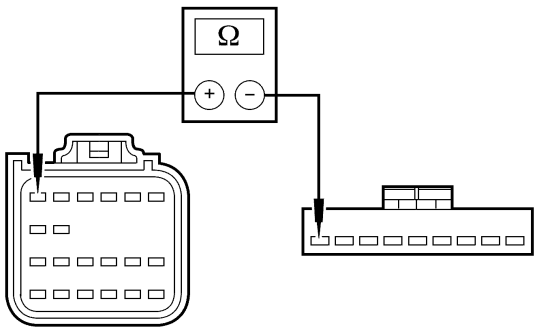
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K24	**CHECK FOR AN OPEN ON CIRCUIT 1516 (YE/WH) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 2 (Continued)**	
	• Measure the resistance between RCM C2041a-5, circuit 1516 (YE/WH), harness side and driver air bag module loop 2, circuit 1516 (YE/WH), harness side.  N0005033 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K26**. **No** GO to **K25**.
K25	**CHECK FOR AN OPEN ON CIRCUIT 1516 (YE/WH) BETWEEN THE RCM AND CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between RCM C2041a-5, circuit 1516 (YE/WH), harness side and clockspring C2274-8, circuit 1516 (YE/WH), harness side.  N0005034 • **Is the resistance less than 0.5 ohm?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuit 1516 (YE/WH). GO to **K39**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

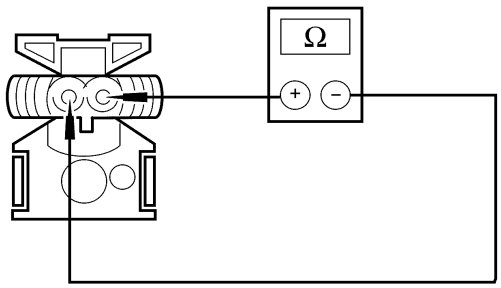
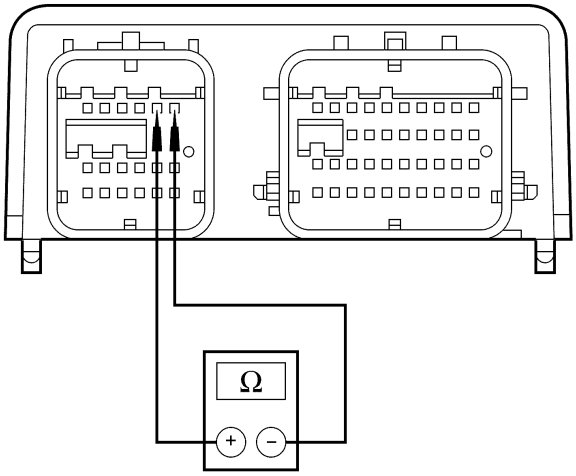
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K26	**CHECK FOR AN OPEN ON CIRCUIT 1517 (RD/OG) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 2**	
	• Measure the resistance between RCM C2041a-6, circuit 1517 (RD/OG), harness side and driver air bag module loop 2, circuit 1517 (RD/OG), harness side.  N0005036 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K37**. **No** GO to **K27**.
K27	**CHECK FOR AN OPEN ON CIRCUIT 1517 (RD/OG) BETWEEN THE RCM AND CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between RCM C2041a-6, circuit 1517 (RD/OG), harness side and clockspring C2274-9, circuit 1517 (RD/OG), harness side.  N0005035 • **Is the resistance less than 0.5 ohm?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuit 1517 (RD/OG). GO to **K39**.
K28	**CHECK FOR A SHORT BETWEEN DRIVER AIR BAG MODULE LOOP 2 CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG)**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Loop 2 Restraint System Diagnostic Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

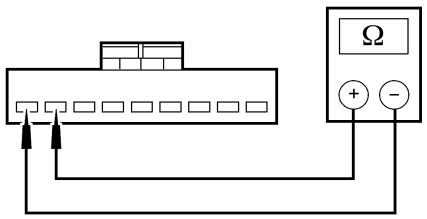
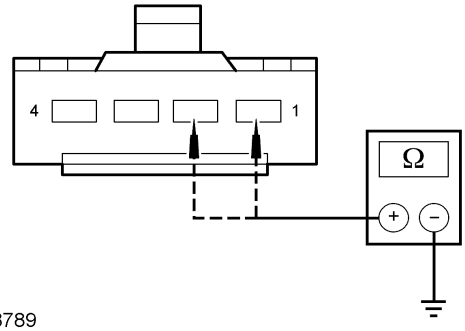
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K28	**CHECK FOR A SHORT BETWEEN DRIVER AIR BAG MODULE LOOP 2 CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) (Continued)**	
	• Measure the resistance between driver air bag module loop 2 electrical connector, circuit 1516 (YE/WH), harness side, and circuit 1517 (RD/OG), harness side.  A0030495 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K29**.
K29	**CHECK THE RCM FOR LOW RESISTANCE**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a pin 5, component side and pin 6, component side.  A0041276 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K30**. **No** GO to **K37**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

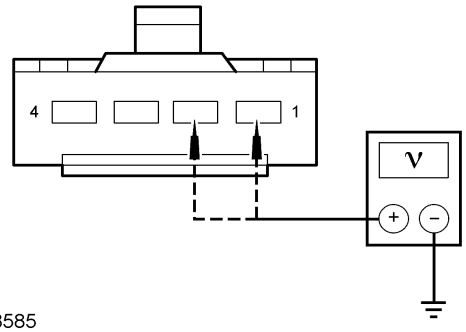
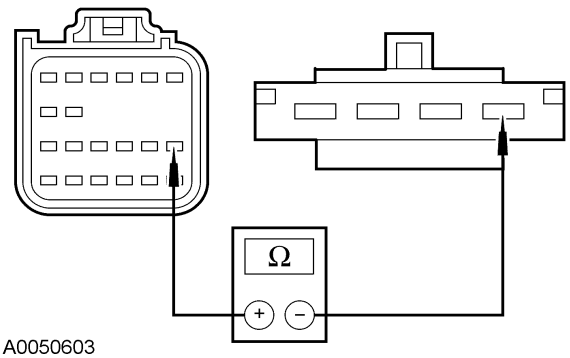
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K30	**CHECK FOR A SHORT BETWEEN CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG)**	
	• Connect: RCM C2041a and C2041b. • Disconnect: Clockspring C2274. • Measure the resistance between clockspring C2274-8, circuit 1516 (YE/WH), harness side and C2274-9, circuit 1517 (RD/OG), harness side.  A0088725 • **Is the resistance greater than 10,000 ohms?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuits 1516 (YE/WH) and 1517 (RD/OG). GO to **K39**.
K31	**CHECK CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD) FOR A SHORT TO GROUND BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 2**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between passenger air bag module: — C256-1, circuit 1518 (RD/WH), harness side and ground. — C256-2, circuit 1519 (LG/RD), harness side and ground.  A0088789 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1518 (RD/WH) or 1519 (LG/RD). GO to **K39**.
K32	**CHECK CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 2**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

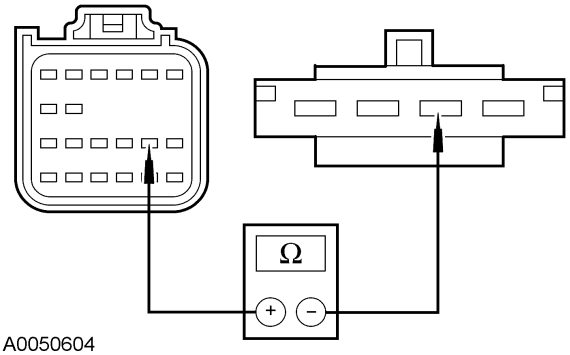
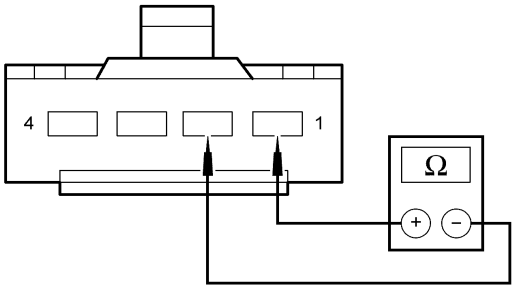
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K32	**CHECK CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 2 (Continued)**	
	• Measure the voltage between passenger air bag module: — C256-1, circuit 1518 (RD/WH), harness side and ground. — C256-2, circuit 1519 (LG/RD), harness side and ground.  A0088585 • **Is voltage present on either circuit?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1518 (RD/WH) or 1519 (LG/RD). GO to **K39**. **No** GO to **K37**.
K33	**CHECK FOR AN OPEN ON CIRCUIT 1518 (RD/WH) BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 2**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-13, circuit 1518 (RD/WH), harness side and passenger air bag module C256-1, circuit 1518 (RD/WH), harness side.  A0050603 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K34**. **No** REPAIR circuit 1518 (RD/WH). GO to **K39**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

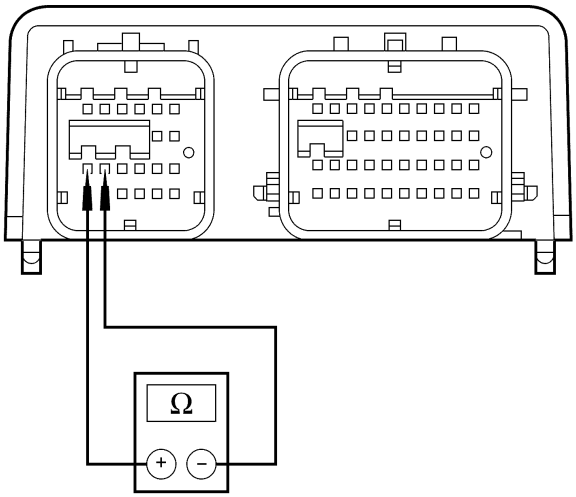
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K34	**CHECK FOR AN OPEN ON CIRCUIT 1519 (LG/RD) BETWEEN THE RCM AND PASSENGER AIR BAG MODULE**	
	• Measure the resistance between RCM C2041a-14, circuit 1519 (LG/RD), harness side and passenger air bag module C256-2, circuit 1519 (LG/RD), harness side.  A0050604 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K37**. **No** REPAIR circuit 1519 (LG/RD). GO to **K39**.
K35	**CHECK FOR A SHORT BETWEEN PASSENGER AIR BAG MODULE LOOP 2 CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD)**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Measure the resistance between passenger air bag module C256-1, circuit 1518 (RD/WH), harness side and C256-2, circuit 1519 (LG/RD), harness side.  A0029882 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K36**.
K36	**CHECK THE RCM FOR LOW RESISTANCE**	
	• Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K36	**CHECK THE RCM FOR LOW RESISTANCE (Continued)**	
	• Measure the resistance between RCM C2041a pin 13, component side and pin 14, component side.  A0041281 • **Is the resistance greater than 10,000 ohms?**	**Yes** REPAIR circuits 1518 (RD/WH) and 1519 (LG/RD). GO to K39. **No** GO to K37.
K37	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Connect: Driver or Passenger Air Bag Module Restraint System Diagnostic Tool(s). • Connect: RCM C2041a and C2041b. • Connect: Clockspring C2274 (if previously disconnected). • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2293 Fault PIDs. — Refer to PID list in Normal Operation to view B2293 fault PIDs. • **Does the original on-demand DTC B2293 fault PID indicate a fault?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to K39. **No** Fault corrected. GO to K39.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K38	CHECK FOR AN INTERMITTENT FAULT	
• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • If the fault PID was reported for the driver air bag module: — remove the driver air bag module. Refer to Driver Air Bag Module in this section. — connect restraint system diagnostic tools 418-F395 (2 required) to driver air bag module loop 1 and loop 2 connectors. • If the fault PID was reported for the passenger air bag module: — disconnect passenger air bag module C256. — connect Restraint System Diagnostic Tool 418-F403 to passenger air bag module C256. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2293 Fault PIDs. — Refer to PID list in Normal Operation to view B2293 fault PIDs. • **Do any on-demand DTC B2293 fault PIDs indicate a fault?**		**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. CHECK for causes of the intermittent fault at or near the affected air bag module connector. REPAIR any intermittent concerns found. If an intermittent concern **was** found and repaired, GO to K39. If an intermittent concern **was not** found, use the fault PIDs recorded and GO to the appropriate pinpoint test step. For 2293__31__OD (Air Bag Circuit Short to Ground - Loop No. 1, Front Driver Side), GO to K3. For 2293__30__OD (Air Bag Circuit Short to Battery - Loop No. 1, Front Driver Side), GO to K5. For 2293__29__OD (Air Bag Circuit Open - Loop No. 1, Front Driver Side), GO to K7. For 2293__28__OD (Air Bag Inflator Circuit Resistance Low - Loop No. 1, Front Driver Side), GO to K11. For 2293__27__OD (Air Bag Circuit Short to Ground - Loop No. 1, Front Passenger Side), GO to K14. For 2293__26__OD (Air Bag Circuit Short to Battery - Loop No. 1, Front Passenger Side), GO to K15. For 2293__25__OD (Air Bag Circuit Open - Loop No. 1, Front Passenger Side), GO to K16. For 2293__24__OD (Air Bag Inflator Circuit Resistance Low - Loop No. 1, Front Passenger Side), GO to K18. For 2293__23__OD (Air Bag Circuit Short to Ground - Loop No. 2, Front Driver Side), GO to K20. For 2293__22__OD (Air Bag Circuit Short to Battery - Loop No. 2, Front Driver Side), GO to K22. For 2293__21__OD (Air Bag Circuit Open - Loop No. 2, Front Driver Side), GO to K24. For 2293__20__OD (Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Driver Side), GO to K28. For 2293__19__OD (Air Bag Circuit Short to Ground - Loop No. 2, Front Passenger Side), GO to K31. For 2293__18__OD (Air Bag Circuit Short to Battery - Loop No. 2, Front Passenger Side), GO to K32. For 2293__17__OD (Air Bag Circuit Open - Loop No. 2, Front Passenger Side), GO to K33. For 2293__16__OD (Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Passenger Side), GO to K35. **No**	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
K38	CHECK FOR AN INTERMITTENT FAULT (Continued)	
		No (Continued) CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness, cycling the ignition key frequently and rotating the steering wheel (driver air bag module fault). **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to K39.
K39	CHECK FOR ADDITIONAL SRS DTCs	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test L: LFC 22 and 23/DTC B2295 — Restraint System — Side Airbag Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The seat side air bags will deploy upon receiving a flow of current from the restraints control module (RCM).

The RCM continuously checks all of the seat side air bags and circuits. If the RCM detects one of the following faults on any of the seat side air bag circuits, it will store DTC B2295 in memory and flash either lamp fault code (LFC) 22 or 23 depending on the fault on the air bag warning indicator.

Fault PIDs[a]	Description	Fault Trigger Condition
2295__24__OD and 2295__24__CM	Side Air Bag Circuit Resistance Low, Front Passenger Side	When the restraints control module (RCM) measures less than 0.9 ohm between the passenger side air bag module circuits, a fault will be indicated.
2295__25__OD and 2295__25__CM	Side Air Bag Circuit Open, Front Passenger Side	When the RCM measures greater than 5 ohms between the passenger side air bag module circuits, a fault will be indicated.
2295__26__OD and 2295__26__CM	Side Air Bag Circuit Short to Ground, Front Passenger Side	When the RCM senses a short to ground on either of the passenger side air bag module circuits, a fault will be indicated.

DIAGNOSIS AND TESTING (Continued)

Fault PIDs[a]	Description	Fault Trigger Condition
2295__27__OD and 2295__27__CM	Side Air Bag Circuit Short to Battery, Front Passenger Side	When the RCM senses a short to voltage on either of the passenger side air bag module circuits, a fault will be indicated.
2295__28__OD and 2295__28__CM	Side Air Bag Circuit Resistance Low, Front Driver Side	When the RCM measures less than 0.9 ohm between the driver side air bag module circuits, a fault will be indicated.
2295__29__OD and 2295__29__CM	Side Air Bag Circuit Open, Front Driver Side	When the RCM measures greater than 5 ohms between the driver side air bag module circuits, a fault will be indicated.
2295__30__OD and 2295__30__CM	Side Air Bag Circuit Short to Ground, Front Driver Side	When the RCM senses a short to ground on either of the driver side air bag module circuits, a fault will be indicated.
2295__31__OD and 2295__31__CM	Side Air Bag Circuit Short to Battery, Front Driver Side	When the RCM senses a short to voltage on either of the driver side air bag module circuits, a fault will be indicated.

a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2295. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2295.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Seat side air bag module
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIRBAG FAULT

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
L1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2295 Fault PIDs. — Refer to PID list in Normal Operation to view B2295 fault PIDs. • **Do any on-demand DTC B2295 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to L2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to L16.

(Continued)

DIAGNOSIS AND TESTING (Continued)

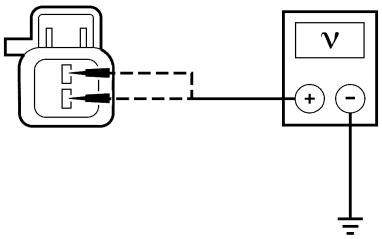
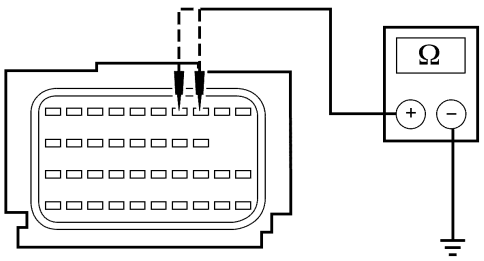
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
L2	**CHECK THE DRIVER AND PASSENGER SEAT SIDE AIR BAG MODULES**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger). • Connect: Restraint System Diagnostic Tool 418-133 to Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger). • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2295 Fault PIDs. — Refer to PID list in Normal Operation to view B2295 fault PIDs. • **Do any on-demand DTC B2295 fault PIDs indicate a fault?**	**Yes** Using the fault PIDs recorded in Step L1, GO to the appropriate pinpoint test step. For 2295__31__OD (Side Air Bag Circuit Short to Battery, Front Driver Side), GO to L3. For 2295__30__OD (Side Air Bag Circuit Short to Ground, Front Driver Side), GO to L4. For 2295__29__OD (Side Air Bag Circuit Open, Front Driver Side), GO to L5. For 2295__28__OD (Side Air Bag Circuit Resistance Low, Front Driver Side), GO to L7. For 2295__27__OD (Side Air Bag Circuit Short to Battery, Front Passenger Side), GO to L9. For 2295__26__OD (Side Air Bag Circuit Short to Ground, Front Passenger Side), GO to L10. For 2295__25__OD (Side Air Bag Circuit Open, Front Passenger Side), GO to L11. For passenger seat side air bag module with a low resistance fault (2295__24__OD (Side Air Bag Circuit Resistance Low, Front Passenger Side), GO to L13. **No** REMOVE and INSPECT the seat side air bag module jumper harness for damage. If a concern is found, REPAIR the harness. If no concern is found in the harness or the harness cannot be repaired, INSTALL a new seat side air bag module. REFER to Side Air Bag Module in this section. GO to L17.
L3	**CHECK CIRCUITS 1257 (WH/LB) AND 1258 (RD) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

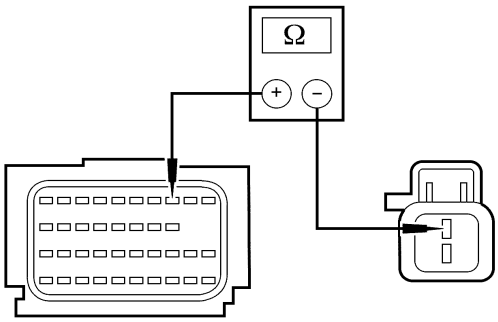
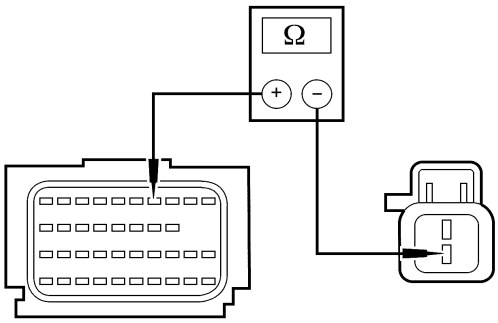
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
L3	**CHECK CIRCUITS 1257 (WH/LB) AND 1258 (RD) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Measure the voltage between driver seat side air bag module: — C367-1, circuit 1257 (WH/LB), harness side and ground. — C367-2, circuit 1258 (RD), harness side and ground.  N0059342 • **Is voltage present on either circuit?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1257 (WH/LB) or 1258 (RD). GO to L17. **No** GO to L15.
L4	**CHECK CIRCUITS 1257 (WH/LB) AND 1258 (RD) FOR A SHORT TO GROUND BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM: — C2041b-3, circuit 1257 (WH/LB), harness side and ground. — C2041b-4, circuit 1258 (RD), harness side and ground.  A0079102 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to L15. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1257 (WH/LB) or 1258 (RD). GO to L17.
L5	**CHECK FOR AN OPEN ON CIRCUIT 1257 (WH/LB) BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

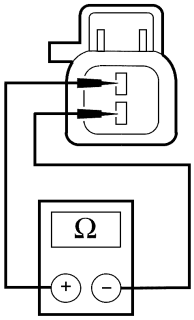
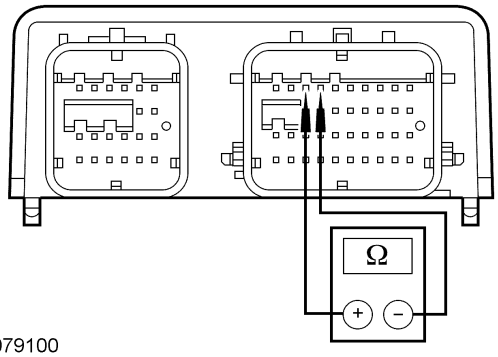
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
L5	**CHECK FOR AN OPEN ON CIRCUIT 1257 (WH/LB) BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Measure the resistance between RCM C2041b-3, circuit 1257 (WH/LB), harness side and driver seat side air bag module C367-1 (or driver seat side air bag bridge resistor C3108-1), circuit 1257 (WH/LB), harness side.  N0010355 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **L6**. **No** REPAIR circuit 1257 (WH/LB). GO to **L17**.
L6	**CHECK FOR AN OPEN ON CIRCUIT 1258 (RD) BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE**	
	• Measure the resistance between RCM C2041b-4, circuit 1258 (RD), harness side and driver seat side air bag module C367-2 (or driver seat side air bag bridge resistor C3108-2), circuit 1258 (RD), harness side.  N0010354 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **L15**. **No** REPAIR circuit 1258 (RD). GO to **L17**.
L7	**CHECK FOR A SHORT BETWEEN DRIVER SEAT SIDE AIR BAG MODULE CIRCUITS 1257 (WH/LB) AND 1258 (RD)**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

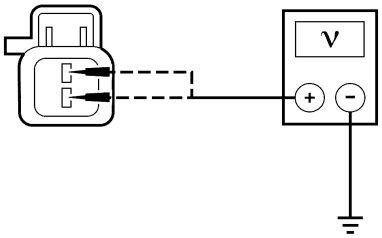
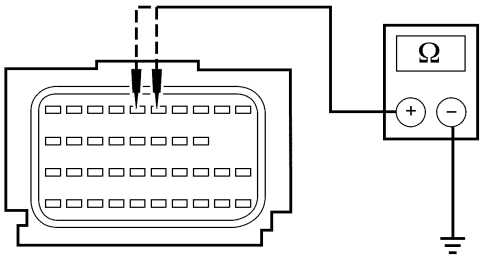
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
L7	**CHECK FOR A SHORT BETWEEN DRIVER SEAT SIDE AIR BAG MODULE CIRCUITS 1257 (WH/LB) AND 1258 (RD) (Continued)**	
	• Measure the resistance between driver seat side air bag module C367-1, circuit 1257 (WH/LB), harness side and C367-2, circuit 1258 (RD), harness side.  A0029887 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to L15. **No** GO to L8.
L8	**CHECK THE RCM FOR LOW RESISTANCE**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b pin 3, component side and pin 4, component side.  A0079100 • **Is the resistance greater than 10,000 ohms?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuits 1257 (WH/LB) and 1258 (RD). GO to L17. **No** GO to L15.
L9	**CHECK CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

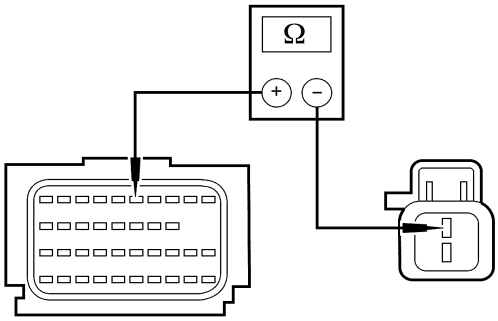
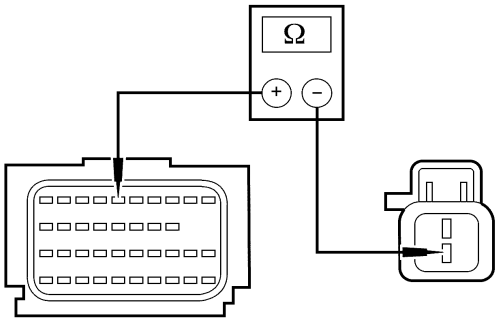
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
L9	**CHECK CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Measure the voltage between passenger seat side air bag module: — C337-1, circuit 1259 (WH/YE), harness side and ground. — C337-2, circuit 1260 (BN/YE), harness side and ground.  N0059342 • **Is voltage present on either circuit?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1259 (WH/YE) or 1260 (BN/YE). GO to **L17**. **No** GO to **L15**.
L10	**CHECK CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) FOR A SHORT TO GROUND BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM: — C2041b-5, circuit 1259 (WH/YE), harness side and ground. — C2041b-6, circuit 1260 (BN/YE), harness side and ground.  A0079098 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **L15**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1259 (WH/YE) or 1260 (BN/YE). GO to **L17**.
L11	**CHECK FOR AN OPEN ON CIRCUIT 1259 (WH/YE) BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

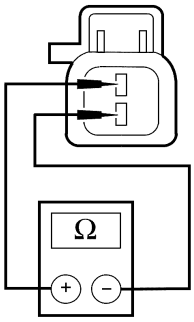
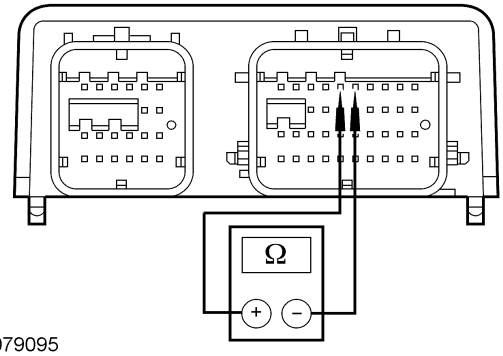
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
L11	**CHECK FOR AN OPEN ON CIRCUIT 1259 (WH/YE) BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Measure the resistance between RCM C2041b-5, circuit 1259 (WH/YE), harness side and passenger seat side air bag module C337-1, circuit 1259 (WH/YE), harness side.  N0010353 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **L12**. **No** REPAIR circuit 1259 (WH/YE). GO to **L17**.
L12	**CHECK FOR AN OPEN ON CIRCUIT 1260 (BN/YE) BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE**	
	• Measure the resistance between RCM C2041b-6, circuit 1260 (BN/YE), harness side and passenger seat side air bag module C337-2, circuit 1260 (BN/YE), harness side.  N0010352 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **L15**. **No** REPAIR circuit 1260 (BN/YE). GO to **L17**.
L13	**CHECK FOR A SHORT BETWEEN PASSENGER SEAT SIDE AIR BAG MODULE CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE)**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
L13	**CHECK FOR A SHORT BETWEEN PASSENGER SEAT SIDE AIR BAG MODULE CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) (Continued)**	
	• Measure the resistance between passenger seat side air bag module C337-1, circuit 1259 (WH/YE), harness side and C337-2, circuit 1260 (BN/YE), harness side.  A0029887 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to L15. **No** GO to L14.
L14	**CHECK THE RCM FOR LOW RESISTANCE**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b pin 5, component side and pin 6, component side.  A0079095 • **Is the resistance greater than 10,000 ohms?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuits 1259 (WH/YE) and 1260 (BN/YE). GO to L17. **No** GO to L15.
L15	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Connect: Driver and Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2295 Fault PIDs. — Refer to PID list in Normal Operation to view B2295 fault PIDs. • **Does the original on-demand DTC B2295 fault PID indicate a fault?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to L17. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to L17.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIRBAG FAULT (Continued)

Test Step		Result / Action to Take
L16	**CHECK FOR AN INTERMITTENT FAULT**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger). • Connect: Restraint System Diagnostic Tool 418-133 to Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger). • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2295 Fault PIDs. — Refer to PID list in Normal Operation to view B2295 fault PIDs. • **Do any on-demand DTC B2295 fault PIDs indicate a fault?**	**Yes** CHECK for causes of the intermittent fault at or near the affected seat side air bag connector. REPAIR any intermittent concerns found. If an intermittent concern **was** found and repaired, GO to L17. If an intermittent concern **was not** found, USE the fault PIDs recorded and GO to the appropriate pinpoint test step. For 2295__31__OD (Side Air Bag Circuit Short to Battery, Front Driver Side), GO to L3. For 2295__30__OD (Side Air Bag Circuit Short to Ground, Front Driver Side), GO to L4. For 2295__29__OD (Side Air Bag Circuit Open, Front Driver Side), GO to L5. For 2295__28__OD (Side Air Bag Circuit Resistance Low, Front Driver Side), GO to L7. For 2295__27__OD (Side Air Bag Circuit Short to Battery, Front Passenger Side), GO to L9. For 2295__26__OD (Side Air Bag Circuit Short to Ground, Front Passenger Side), GO to L10. For 2295__25__OD (Side Air Bag Circuit Open, Front Passenger Side), GO to L11. For passenger seat side air bag module with a low resistance fault (2295__24__OD (Side Air Bag Circuit Resistance Low, Front Passenger Side), GO to L13. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to L17.
L17	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test M: LFC 42, 43 and 44/DTC B2296 — Restraint System — Impact Sensor Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The impact sensor(s) provide data to the restraints control module (RCM) for use in calculating impact severity. This is accomplished using various electrical and electro-mechanical sensor(s) throughout the vehicle.

The RCM continuously monitors all of the impact sensor circuits. If the RCM detects one of the following faults on any of the impact sensor circuits, it will store DTC B2296 in memory and flash either lamp fault code (LFC) 42, 43 or 44 depending on the fault on the air bag warning indicator.

Fault PIDs[a]	Description	Fault Trigger Condition
2296__18__OD and 2296__18__CM	Driver/Center Front Crash Sensor Internal Fault	When the restraints control module (RCM) senses a internal failure with the driver/center front impact sensor, a fault will be indicated.
2296__19__OD and 2296__19__CM	Driver/Center Front Crash Sensor Mount/Communication Fault	When the RCM is unable to communicate with the driver/center front impact sensor, a fault will be indicated.
2296__28__OD and 2296__28__CM	Side Crash Sensor Internal Fault, Front Passenger Side	When the RCM senses an internal failure with the passenger side first row impact sensor, a fault will be indicated.
2296__29__OD and 2296__29__CM	Side Crash Sensor Mount or Communication Fault, Front Passenger Side	When the RCM is unable to communicate with the passenger side first row impact sensor, a fault will be indicated.
2296__30__OD and 2296__30__CM	Side Crash Sensor Internal Fault, Front Driver Side	When the RCM senses an internal failure with the driver/center front impact sensor, a fault will be indicated.
2296__31__OD and 2296__31__CM	Side Crash Sensor Mount or Communication Fault, Front Driver Side	When the RCM is unable to communicate with the driver side first row impact sensor, a fault will be indicated.

a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2296. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2296.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Impact sensor
- Impact sensor mounting
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
M1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Do any on-demand DTC B2296 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. For 2296__31__OD (Side Crash Sensor Mount or Communication Fault, Front Driver Side), GO to **M2**. For 2296__30__OD (Side Crash Sensor Internal Fault, Front Driver Side), INSTALL a new driver side impact sensor. REFER to Side Impact Sensor in this section. GO to **M34**. For 2296__29__OD (Side Crash Sensor Mount or Communication Fault, Front Passenger Side), GO to **M12**. For 2296__28__OD (Side Crash Sensor Internal Fault, Front Passenger Side), INSTALL a new passenger side impact sensor. REFER to Side Impact Sensor in this section. GO to **M34**. For 2296__19__OD (Driver/Center Front Crash Sensor Mount/Communication Fault), GO to **M22**. For 2296__18__OD (Driver/Center Front Crash Sensor Internal Fault), INSTALL a new front impact severity sensor. REFER to Front Impact Severity Sensor in this section. GO to **M34**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **M33**.
M2	**INSPECT THE DRIVER SIDE IMPACT SENSOR MOUNTING AND MOUNTING SURFACE**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

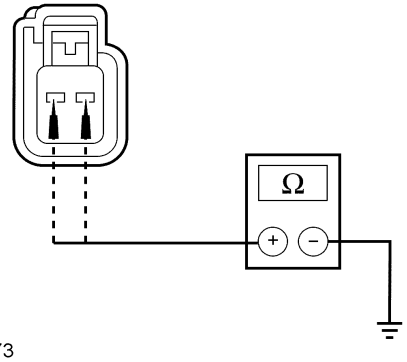
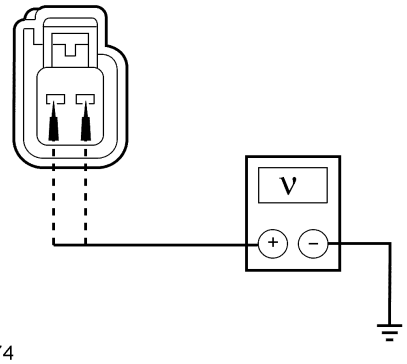
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M2	**INSPECT THE DRIVER SIDE IMPACT SENSOR MOUNTING AND MOUNTING SURFACE (Continued)**	
	• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Inspect the driver side impact sensor mounting and make sure that the retaining bolt is fully seated and tightened correctly. • Remove the driver side impact sensor. Refer to Side Impact Sensor in this section. • Visually inspect the driver side impact sensor and mounting surface for damage, corrosion or dirt. • **Was a significant amount of corrosion or dirt found, the driver side impact sensor attached to the mounting surface incorrectly or was the driver side impact sensor bolt not fully seated and tightened correctly?**	**Yes** CLEAN, TIGHTEN bolt or REPAIR the mounting surface as necessary. REINSTALL the driver side impact sensor. GO to **M34**. **No** GO to **M3**.
M3	**INSTALL THE DRIVER SIDE IMPACT SENSOR AND CARRY OUT AN ON-DEMAND SELF TEST**	
	• Clean and repair the mounting surface as necessary. Clean the driver side impact sensor mounting bolt. • Install the driver side impact sensor. Refer to Side Impact Sensor. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Were any on-demand B2296 fault PIDs for the driver side impact sensor indicating a fault?**	**Yes** GO to **M4**. **No** Fault corrected. GO to **M34**.
M4	**CHECK THE DRIVER SIDE IMPACT SENSOR GROUND CIRCUIT 1262 (BN/LG) FOR HIGH RESISTANCE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Side Impact Sensor C3209. • Measure the resistance between driver side impact sensor C3209-1, circuit 1262 (BN/LG), harness side and the driver side impact sensor case ground. • **Is the resistance less than 100 ohms?**	**Yes** GO to **M6**. **No** GO to **M5**.
M5	**CLEAN THE DRIVER SIDE IMPACT SENSOR MOUNTING SURFACE AND CARRY OUT AN ON-DEMAND SELF TEST**	
	• Remove the driver side impact sensor. Refer to Side Impact Sensor. • Clean and repair the mounting surface as necessary. Clean the driver side impact sensor mounting bolt. • Install the driver side impact sensor. Refer to Side Impact Sensor. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Were any on-demand B2296 fault PIDs for the driver side impact sensor indicating a fault?**	**Yes** GO to **M6**. **No** Fault corrected. GO to **M34**.
M6	**CHECK DRIVER SIDE IMPACT SENSOR CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

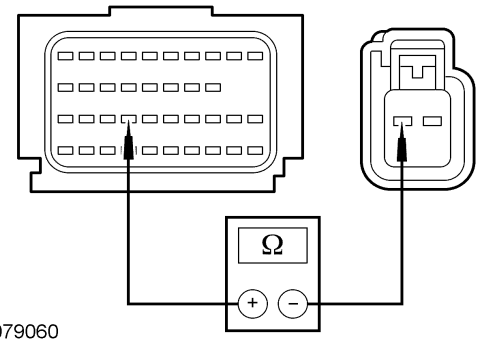
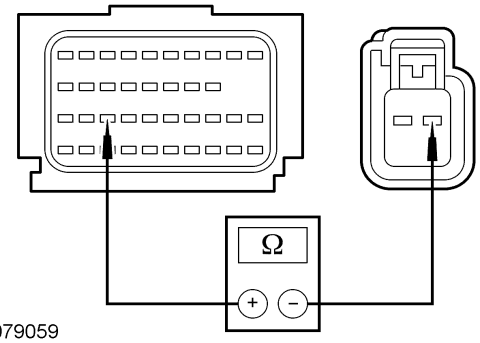
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M6	**CHECK DRIVER SIDE IMPACT SENSOR CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG) FOR A SHORT TO GROUND (Continued)**	
	• Disconnect: Driver Side Impact Sensor C3209. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between driver side impact sensor : — C3209-2, circuit 1261 (WH/LG), harness side and ground. — C3209-1, circuit 1262 (BN/LG), harness side and ground.  A0058373 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to M7. **No** REPAIR circuit 1261 (WH/LG) or 1262 (BN/LG). GO to M34.
M7	**CHECK DRIVER SIDE IMPACT SENSOR CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG) FOR A SHORT TO VOLTAGE**	
	• Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between driver side impact sensor: — C3209-2, circuit 1261 (WH/LG), harness side and ground. — C3209-1, circuit 1262 (BN/LG), harness side and ground.  A0058374 • **Is voltage present on either circuit?**	**Yes** REPAIR circuit 1261 (WH/LG) or 1262 (BN/LG). GO to M34. **No** GO to M8.
M8	**CHECK DRIVER SIDE IMPACT SENSOR CIRCUIT 1261 (WH/LG) FOR AN OPEN**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

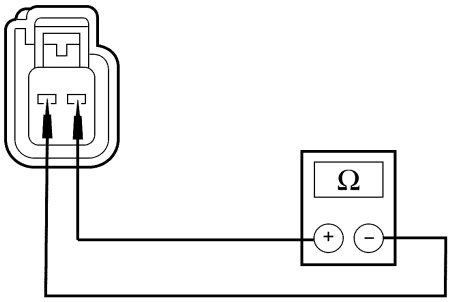
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M8	**CHECK DRIVER SIDE IMPACT SENSOR CIRCUIT 1261 (WH/LG) FOR AN OPEN (Continued)**	
	• Measure the resistance between RCM C2041b-27, circuit 1261 (WH/LG), harness side and driver side impact sensor C3209-1, circuit 1261 (WH/LG), harness side.  A0079060 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to M9. **No** REPAIR circuit 1261 (WH/LG). GO to M34.
M9	**CHECK DRIVER SIDE IMPACT SENSOR CIRCUIT 1262 (BN/LG) FOR AN OPEN**	
	• Measure the resistance between RCM C2041b-28, circuit 1262 (BN/LG), harness side and driver side impact sensor C3209-1, circuit 1262 (BN/LG), harness side.  A0079059 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to M10. **No** REPAIR circuit 1262 (BN/LG). GO to M34.

(Continued)

DIAGNOSIS AND TESTING (Continued)

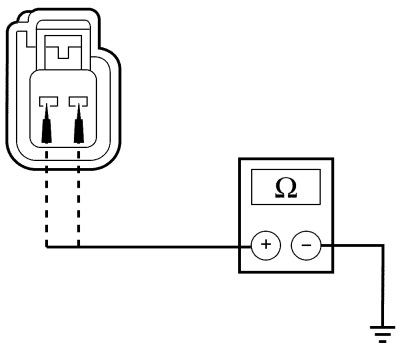
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M10	**CHECK FOR A SHORT BETWEEN DRIVER SIDE IMPACT SENSOR CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG)**	
	• Measure the resistance between driver side impact sensor C3209-2, circuit 1261 (WH/LG) and C3209-1, circuit 1262 (BN/LG), harness side.  A0058377 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to M11. **No** REPAIR circuits 1261 (WH/LG) and 1262 (BN/LG). GO to M34.
M11	**CHECK THE DRIVER SIDE IMPACT SENSOR**	
	• Install a known good driver side impact sensor. Refer to Side Impact Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Were any on-demand B2296 fault PIDs for the driver side impact sensor indicating a fault?**	**Yes** GO to M32. **No** Fault corrected. GO to M34.
M12	**INSPECT THE PASSENGER SIDE IMPACT SENSOR MOUNTING AND MOUNTING SURFACE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Inspect the passenger side impact sensor mounting and make sure that the retaining bolt is fully seated and tightened correctly. • Remove the passenger side impact sensor. Refer to Side Impact Sensor in this section. • Visually inspect the passenger side impact sensor and mounting surface for damage, corrosion or dirt. • **Was a significant amount of corrosion or dirt found, the passenger side impact sensor attached to the mounting surface incorrectly or was the passenger side impact sensor bolt not fully seated and tightened correctly?**	**Yes** CLEAN, TIGHTEN bolt or REPAIR the mounting surface as necessary. REINSTALL the passenger side impact sensor. GO to M34. **No** GO to M13.
M13	**INSTALL THE PASSENGER SIDE IMPACT SENSOR AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Clean and repair the mounting surface as necessary. Clean the passenger side impact sensor mounting bolt. • Install the passenger side impact sensor. Refer to Side Impact Sensor in this section. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

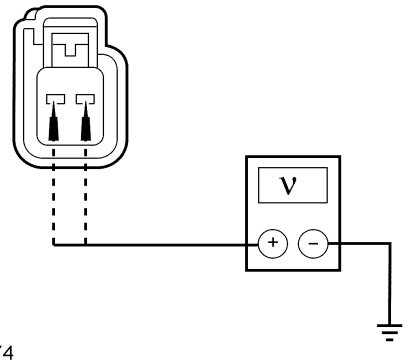
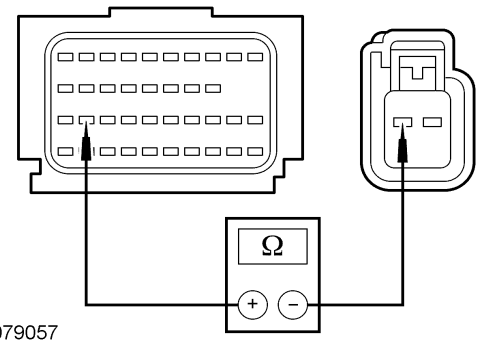
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M13	**INSTALL THE PASSENGER SIDE IMPACT SENSOR AND CARRY OUT THE ON-DEMAND SELF TEST (Continued)**	
	• Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Were any RCM on-demand B2296 fault PIDs for the passenger side impact sensor indicating a fault?**	**Yes** GO to M14. **No** Fault corrected. GO to M34.
M14	**CHECK THE PASSENGER SIDE IMPACT SENSOR GROUND CIRCUIT 1264 (BN) FOR HIGH RESISTANCE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Side Impact Sensor C3211. • Measure the resistance between passenger side impact sensor C3211-1, circuit 1264 (BN), harness side and the passenger side impact sensor case ground. • **Is the resistance less than 100 ohms?**	**Yes** GO to M16. **No** GO to M15.
M15	**CLEAN THE PASSENGER SIDE IMPACT SENSOR MOUNTING SURFACE AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Remove the passenger side impact sensor. Refer to Side Impact Sensor in this section. • Clean and repair the mounting surface as necessary. Clean the passenger side impact sensor mounting bolt. • Install the passenger side impact sensor. Refer to Side Impact Sensor in this section. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Were any RCM on-demand B2296 fault PIDs for the first row passenger side impact sensor indicating a fault?**	**Yes** GO to M16. **No** Fault corrected. GO to M34.
M16	**CHECK PASSENGER SIDE IMPACT SENSOR CIRCUITS 1263 (WH) AND 1264 (BN) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Side Impact Sensor C3211. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between passenger side impact sensor: — C3211-2, circuit 1263 (WH), harness side and ground. — C3211-1, circuit 1264 (BN), harness side and ground.  A0058373 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to M17. **No** REPAIR circuit 1263 (WH) or 1264 (BN). GO to M34.

(Continued)

DIAGNOSIS AND TESTING (Continued)

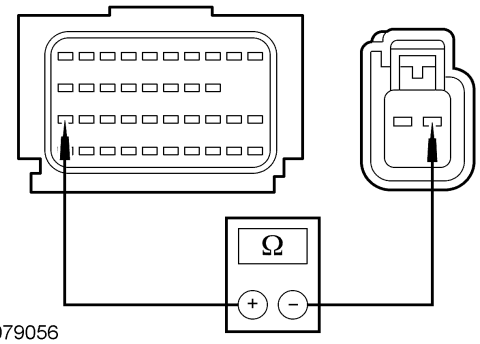
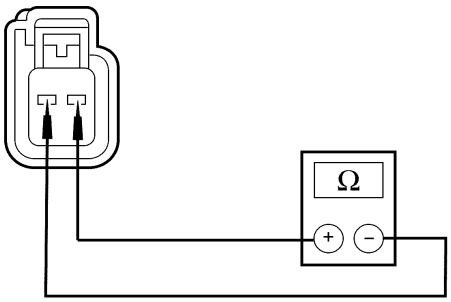
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M17	**CHECK PASSENGER SIDE IMPACT SENSOR CIRCUITS 1263 (WH) AND 1264 (BN) FOR A SHORT TO VOLTAGE**	
	• Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between passenger side impact sensor: — C3211-2, circuit 1263 (WH), harness side and ground. — C3211-1, circuit 1264 (BN), harness side and ground.  A0058374 • **Is voltage present on either circuit?**	**Yes** REPAIR circuit 1263 (WH) or 1264 (BN). GO to **M34**. **No** GO to **M18**.
M18	**CHECK PASSENGER SIDE IMPACT SENSOR CIRCUIT 1263 (WH) FOR AN OPEN**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between RCM C2041b-29, circuit 1263 (WH), harness side and passenger side impact sensor C3211-2, circuit 1263 (WH), harness side.  A0079057 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **M19**. **No** REPAIR circuit 1263 (WH). GO to **M34**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M19	**CHECK PASSENGER SIDE IMPACT SENSOR CIRCUIT 1264 (BN) FOR AN OPEN**	
	• Measure the resistance between RCM C2041b-30, circuit 1264 (BN), harness side and passenger side impact sensor C3211-1, circuit 1264 (BN), harness side.  A0079056 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to M20. **No** REPAIR circuit 1264 (BN). GO to M34.
M20	**CHECK FOR A SHORT BETWEEN PASSENGER SIDE IMPACT SENSOR CIRCUITS 1263 (WH) AND 1264 (BN)**	
	• Measure the resistance between passenger side impact sensor C3211-2, circuit 1263 (WH) and C3211-1, circuit 1264 (BN), harness side.  A0058377 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to M21. **No** REPAIR circuits 1263 (WH) and 1264 (BN). GO to M34.
M21	**CHECK THE PASSENGER SIDE IMPACT SENSOR**	
	• Install a known good passenger side impact sensor. Refer to Side Impact Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Were any on-demand B2296 fault PIDs for the passenger side impact sensor indicating a fault?**	**Yes** GO to M32. **No** Fault corrected. GO to M34.
M22	**INSPECT THE DRIVER/CENTER FRONT IMPACT SENSOR MOUNTING AND MOUNTING SURFACE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

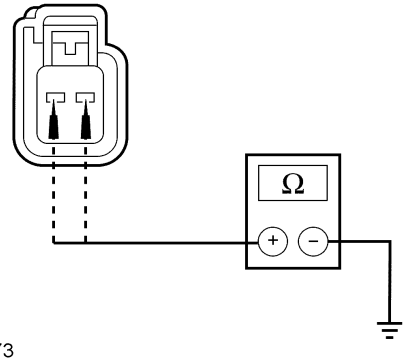
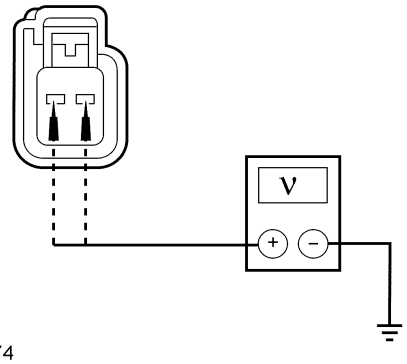
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M22	**INSPECT THE DRIVER/CENTER FRONT IMPACT SENSOR MOUNTING AND MOUNTING SURFACE (Continued)**	
	• Inspect the driver/center front impact sensor mounting and make sure that the retaining nut is fully seated and tightened correctly. • Remove the driver/center front impact sensor. Refer to Front Impact Severity Sensor in this section. • Visually inspect the driver/center front impact sensor and mounting surface for damage, corrosion or dirt. • **Was a significant amount of corrosion or dirt found, the driver/center front impact sensor attached to the mounting surface incorrectly or was the driver/center front impact sensor nut not fully seated and tightened correctly?**	**Yes** CLEAN, TIGHTEN nut or REPAIR the mounting surface as necessary. REINSTALL the driver/center front impact sensor. GO to M34. **No** GO to M23.
M23	**INSTALL THE DRIVER/CENTER FRONT IMPACT SENSOR AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Clean and repair the mounting surface as necessary. Clean the driver/center front impact sensor retaining nut. • Install the driver/center front impact sensor. Refer to Front Impact Severity Sensor in this section. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Were any on-demand B2296 fault PIDs for the driver/center front impact severity sensor indicating a fault?**	**Yes** GO to M24. **No** Fault corrected. GO to M34.
M24	**CHECK THE DRIVER/CENTER FRONT IMPACT SENSOR GROUND CIRCUIT 618 (VT/LG) FOR HIGH RESISTANCE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver/Center Front Impact Sensor C177. • Measure the resistance between driver/center front impact sensor C177-1, circuit 618 (VT/LG), harness side and the driver/center front impact sensor case ground. • **Is the resistance less than 100 ohms?**	**Yes** GO to M26. **No** GO to M25.
M25	**CLEAN THE DRIVER/CENTER FRONT IMPACT SENSOR MOUNTING SURFACE AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Remove the driver/center front impact sensor. Refer to Front Impact Severity Sensor in this section. • Clean and repair the mounting surface as necessary. Clean the driver/center front impact sensor retaining nut. • Install the driver/center front impact sensor. Refer to Front Impact Severity Sensor in this section. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Were any on-demand B2296 fault PIDs for the driver/center front impact sensor indicating a fault?**	**Yes** GO to M26. **No** Fault corrected. GO to M34.
M26	**CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUITS 617 (PK/OG) AND 618 (VT/LG) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver/Center Front Impact Sensor C177.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

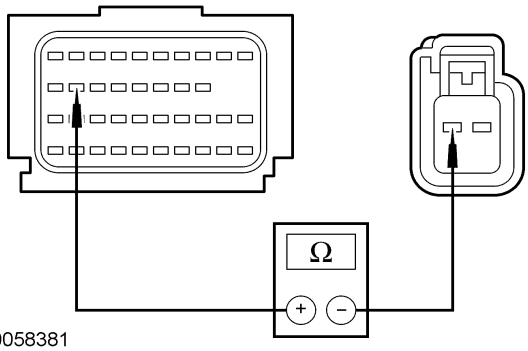
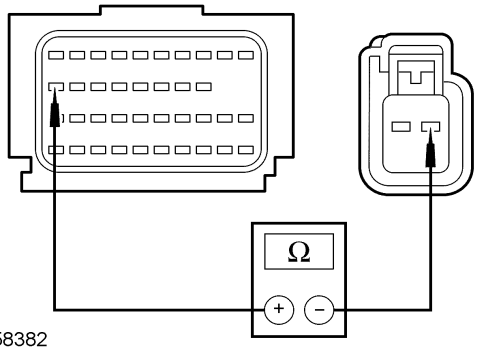
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M26	**CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUITS 617 (PK/OG) AND 618 (VT/LG) FOR A SHORT TO GROUND (Continued)**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between driver/center front impact sensor: — C177-2, circuit 617 (PK/OG), harness side and ground. — C177-1, circuit 618 (VT/LG), harness side and ground.  A0058373 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to M27. **No** REPAIR circuit 617 (PK/OG) or 618 (VT/LG). GO to M34.
M27	**CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUITS 617 (PK/OG) AND 618 (VT/LG) FOR A SHORT TO VOLTAGE**	
	• Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between driver/center front impact sensor: — C177-2, circuit 617 (PK/OG), harness side and ground. — C177-1, circuit 618 (VT/LG), harness side and ground.  A0058374 • **Is voltage present on either circuit?**	**Yes** REPAIR circuit 617 (PK/OG) or 618 (VT/LG). GO to M34. **No** GO to M28.
M28	**CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUIT 617 (PK/OG) FOR AN OPEN**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

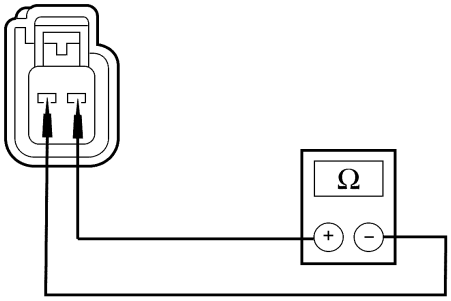
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M28	**CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUIT 617 (PK/OG) FOR AN OPEN (Continued)**	
	• Measure the resistance between RCM C2041b-19, circuit 617 (PK/OG), harness side and driver/center front impact sensor C177-2, circuit 617 (PK/OG), harness side.  A0058381 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to M29. **No** REPAIR circuit 617 (PK/OG). GO to M34.
M29	**CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUIT 618 (VT/LG) FOR AN OPEN**	
	• Measure the resistance between RCM C2041b-20, circuit 618 (VT/LG), harness side and driver/center front impact sensor C177-1, circuit 618 (VT/LG), harness side.  A0058382 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to M30. **No** REPAIR circuit 618 (VT/LG). GO to M34.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M30	**CHECK FOR A SHORT BETWEEN DRIVER/CENTER FRONT IMPACT SENSOR CIRCUITS 617 (PK/OG) AND 618 (VT/LG)**	
	• Measure the resistance between driver/center front impact sensor C177-2, circuit 617 (PK/OG), harness side and driver/center front impact sensor C177-1, circuit 618 (VT/LG), harness side.  A0058377 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to M31. **No** REPAIR circuits 617 (PK/OG) and 618 (VT/LG). GO to M34.
M31	**CHECK THE DRIVER/CENTER FRONT IMPACT SENSOR**	
	• Install a known good driver/center front impact sensor. Refer to Front Impact Severity Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Were any on-demand B2296 fault PIDs for the driver/center front impact sensor indicating a fault?**	**Yes** GO to M32. **No** Fault corrected. GO to M34.
M32	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install the original impact sensor. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Do any on-demand DTC B2296 fault PIDs indicate a fault?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to M34. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to M34.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M33	CHECK FOR AN INTERMITTENT FAULT	
• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2296 Fault PIDs. — Refer to PID list in Normal Operation to view B2296 fault PIDs. • **Do any RCM on-demand DTC B2296 fault PIDs indicate a fault?**		**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. CHECK for causes of the intermittent fault at or near the affected impact sensor connector. REPAIR any intermittent concerns found. If an intermittent concern **was** found and repaired, GO to **M34**. If an intermittent concern **was not** found and repaired, USE the fault PIDs recorded and GO to the appropriate pinpoint test step. For 2296__31__OD (Side Crash Sensor Mount or Communication Fault, Front Driver Side), GO to **M2**. For 2296__30__OD (Side Crash Sensor Internal Fault, Front Driver Side), INSTALL a new driver side impact sensor. REFER to Side Impact Sensor in this section. GO to **M34**. For 2296__29__OD (Side Crash Sensor Mount or Communication Fault, Front Passenger Side), GO to **M12**. For 2296__28__OD (Side Crash Sensor Internal Fault, Front Passenger Side), INSTALL a new passenger side impact sensor. REFER to Side Impact Sensor in this section. GO to **M34**. For 2296__19__OD (Driver/Center Front Crash Sensor Mount/Communication Fault), GO to **M22**. For 2296__18__OD (Driver/Center Front Crash Sensor Internal Fault), INSTALL a new front impact severity sensor. REFER to Front Impact Severity Sensor in this section. GO to **M34**. **No** VISUALLY INSPECT the affected impact sensor, mounting brackets and mounting surface for damage, corrosion or dirt. INSPECT the wiring, terminals and connectors for damage, corrosion or dirt. CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **M34**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR FAULT (Continued)

Test Step		Result / Action to Take
M34	CHECK FOR ADDITIONAL SRS DTCs	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test N: LFC 51/DTC B2434 — Drivers Seat Belt Buckle Switch Circuit Short to Ground

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

The RCM checks the driver safety belt buckle switch circuits for faults. If the RCM detects a short to ground fault, it will store DTC B2434 in memory and flash lamp fault code (LFC) 51 on the air bag warning indicator.

- DTC B2434 Drivers Seat Belt Buckle Switch Circuit Short to Ground — If the RCM detects a short to ground on the driver safety belt buckle circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Driver safety belt buckle switch
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST N: LFC 51/DTC B2434 — DRIVERS SEAT BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

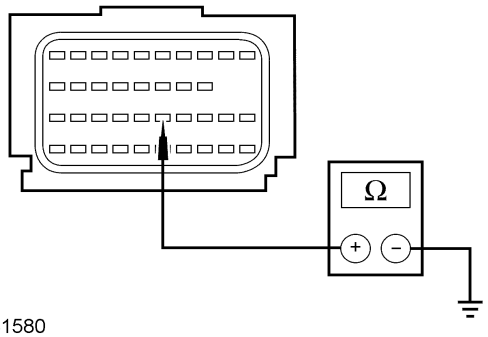
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
N1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2434 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **N2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **N5**.
N2	**CHECK DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT 85 (BN/LB) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Safety Belt Buckle Switch C323. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST N: LFC 51/DTC B2434 — DRIVERS SEAT BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
N2	**CHECK DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT 85 (BN/LB) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between RCM C2041b-25, circuit 85 (BN/LB), harness side and ground.  A0041580 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to N3. **No** REPAIR circuit 85 (BN/LB). GO to N6.
N3	**CHECK THE SAFETY BELT BUCKLE SWITCH**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good driver safety belt buckle. Refer to Section 501-20A. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2434 retrieved?**	**Yes** GO to N4. **No** Fault corrected. GO to N6.
N4	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2434 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to N6. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to N6.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST N: LFC 51/DTC B2434 — DRIVERS SEAT BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
N5	CHECK FOR AN INTERMITTENT FAULT	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2434 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to N2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to N6.
N6	CHECK FOR ADDITIONAL SRS DTCs	
	• Ignition OFF. **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test O: LFC 51/DTC B2435 — Drivers Seat Belt Buckle Switch Resistance Out of Range

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

The RCM checks the driver safety belt buckle switch circuits for faults. If the RCM detects a current out of range fault, it will store DTC B2435 in memory and flash lamp fault code (LFC) 51 on the air bag warning indicator.

- DTC B2435 Drivers Seat Belt Buckle Switch Resistance Out of Range — If the RCM detects a current out of range between buckled and unbuckled on the driver safety belt buckle switch, it will set this DTC.

This pinpoint test is intended to diagnose

DIAGNOSIS AND TESTING (Continued)

the following:

- Wiring, terminals or connectors
- Driver safety belt buckle switch
- RCM

PINPOINT TEST O: LFC 51/DTC B2435 — DRIVERS SEAT BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
O1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2435 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **O2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **O4**.
O2	**CHECK THE DRIVER SAFETY BELT BUCKLE SWITCH**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install a known good driver safety belt buckle switch. Refer to Section 501-20A. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2435 retrieved?**	**Yes** GO to **O3**. **No** Fault corrected. GO to **O5**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST O: LFC 51/DTC B2435 — DRIVERS SEAT BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE (Continued)

Test Step		Result / Action to Take
O3	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2435 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **O5**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **O5**.
O4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2435 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **O2**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **O5**.
O5	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test P: LFC 52/DTC B2438 — Passengers Seat Belt Buckle Switch Circuit Short to Ground

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

The RCM checks the passenger safety belt buckle switch circuits for faults. If the RCM detects a short to ground fault, it will store DTC B2438 in memory and flash lamp fault code (LFC) 52 on the air bag warning indicator.

- DTC B2438 Passengers Seat Belt Buckle Switch Circuit Short to Ground — If the RCM detects a short to ground on the passenger safety belt buckle circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Passenger safety belt buckle switch
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST P: LFC 52/DTC B2438 — PASSENGERS SEAT BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

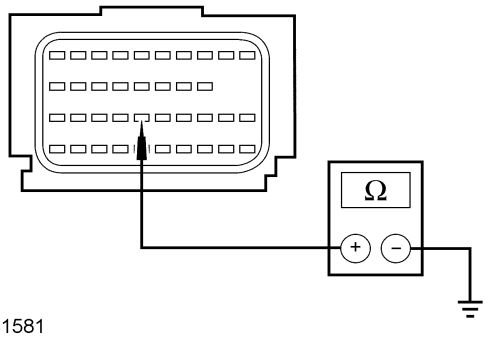
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
P1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2438 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **P2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **P5**.
P2	**CHECK PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT 1514 (RD/BK) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Safety Belt Buckle Switch C3066. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST P: LFC 52/DTC B2438 — PASSENGERS SEAT BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
P2	**CHECK PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT 1514 (RD/BK) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between RCM C2041b-26, circuit 1514 (RD/BK), harness side and ground.  A0041581 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to P3. **No** REPAIR circuit 1514 (RD/BK). GO to P6.
P3	**CHECK THE SAFETY BELT BUCKLE SWITCH**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good passenger safety belt buckle. Refer to Section 501-20A. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2438 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to P4. **No** Fault corrected. GO to P6.
P4	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2438 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to P6. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to P6.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST P: LFC 52/DTC B2438 — PASSENGERS SEAT BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
P5	CHECK FOR AN INTERMITTENT FAULT	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2438 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to P2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to P6.
P6	CHECK FOR ADDITIONAL SRS DTCs	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test Q: LFC 52/DTC B2439 — Passengers Seat Belt Buckle Switch Resistance Out of Range

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

The RCM checks the passenger safety belt buckle switch circuits for faults. If the RCM detects a current out of range fault, it will store DTC B2439 in memory and flash lamp fault code (LFC) 52 on the air bag warning indicator.

- DTC B2439 Passengers Seat Belt Buckle Switch Resistance Out of Range — If the RCM detects a current out of range between buckled and unbuckled on the passenger safety belt buckle switch, it will set this DTC.

This pinpoint test is intended to diagnose

DIAGNOSIS AND TESTING (Continued)

the following:

- Wiring, terminals or connectors
- Passenger safety belt buckle switch
- RCM

PINPOINT TEST Q: LFC 52/DTC B2439 — PASSENGERS SEAT BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
Q1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2439 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **Q2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **Q4**.
Q2	**CHECK THE PASSENGER SAFETY BELT BUCKLE SWITCH**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install a known good passenger safety belt buckle. Refer to Section 501-20A. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2439 retrieved?**	**Yes** GO to **Q3**. **No** Fault corrected. GO to **Q5**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST Q: LFC 52/DTC B2439 — PASSENGERS SEAT BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE (Continued)

Test Step		Result / Action to Take
Q3	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2439 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **Q5**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **Q5**.
Q4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2439 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **Q2**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **Q5**.
Q5	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test R: LFC 51/DTC B2691 — Seat Belt Buckle Switch Circuit Fault, Front Driver's Side

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

The RCM checks the driver safety belt buckle switch circuits for faults. If the RCM detects an open circuit or short to voltage fault, it will store DTC B2691 in memory and flash lamp fault code (LFC) 51 on the air bag warning indicator.

- DTC B2691 Seat Belt Buckle Switch Circuit Fault, Front Driver's Side — If the RCM detects an open or short to battery on the driver safety belt buckle switch circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Driver safety belt buckle switch
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST R: LFC 51/DTC B2691 — SEAT BELT BUCKLE SWITCH CIRCUIT FAULT, FRONT DRIVER'S SIDE

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

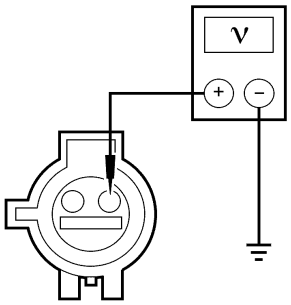
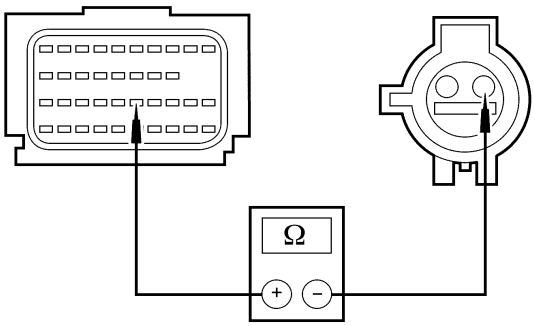
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
R1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2691 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **R2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **R8**.
R2	**CHECK CIRCUIT 85 (BN/LB) FOR A SHORT TO VOLTAGE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag C367. • Connect: Restraint System Diagnostic Tool 418-133 to Driver Seat Side Air Bag C367. • Disconnect: RCM C2041a and C2041b. • Disconnect: Driver Safety Belt Buckle Switch C323. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

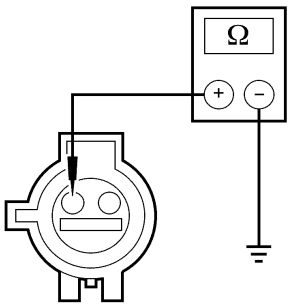
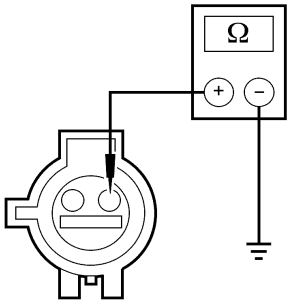
PINPOINT TEST R: LFC 51/DTC B2691 — SEAT BELT BUCKLE SWITCH CIRCUIT FAULT, FRONT DRIVER'S SIDE (Continued)

Test Step		Result / Action to Take
R2	**CHECK CIRCUIT 85 (BN/LB) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between driver safety belt buckle switch C323-2, circuit 85 (BN/LB), harness side and ground.  N0010351 • **Is any voltage present?**	**Yes** REPAIR circuit 85 (BN/LB). GO to **R9**. **No** GO to **R3**.
R3	**CHECK CIRCUIT 85 (BN/LB) FOR AN OPEN**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between RCM C2041b-25, circuit 85 (BN/LB), harness side and driver safety belt buckle switch C323-2, circuit 85 (BN/LB), harness side.  N0010349 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **R4**. **No** REPAIR circuit 85 (BN/LB). GO to **R9**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST R: LFC 51/DTC B2691 — SEAT BELT BUCKLE SWITCH CIRCUIT FAULT, FRONT DRIVER'S SIDE (Continued)

Test Step		Result / Action to Take
R4	**CHECK FOR AN OPEN GROUND CIRCUIT**	
	• Measure the resistance between driver safety belt buckle switch C323-1, circuit 1203 (BK/LB), harness side and ground.  N0010409 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to R5. **No** REPAIR circuit 1203 (BK/LB). GO to R9.
R5	**CHECK CIRCUIT 85 (BN/LB) FOR A SHORT TO GROUND**	
	• Measure the resistance between driver safety belt buckle switch C323-2, circuit 85 (BN/LB), harness side and ground.  N0010350 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to R6. **No** REPAIR circuit 85 (BN/LB). GO to R9.
R6	**CHECK THE SAFETY BELT BUCKLE SWITCH**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connectors are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good driver safety belt buckle. Refer to Section 501-20A. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2691 retrieved?**	**Yes** GO to R7. **No** Fault corrected. GO to R9.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST R: LFC 51/DTC B2691 — SEAT BELT BUCKLE SWITCH CIRCUIT FAULT, FRONT DRIVER'S SIDE (Continued)

Test Step		Result / Action to Take
R7	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2691 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **R9**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **R9**.
R8	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2691 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **R2**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **R9**.
R9	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test S: LFC 52/DTC B2692 — Front Passenger's Seat Belt Buckle Switch Circuit Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

The RCM checks the passenger safety belt buckle switch circuits for faults. If the RCM detects an open circuit or short to voltage fault, it will store DTC B2692 in memory and flash lamp fault code (LFC) 52 on the air bag warning indicator.

- DTC B2692 Front Passenger's Seat Belt Buckle Switch Circuit Fault — If the RCM detects an open or short to battery on the passenger safety belt buckle switch circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Passenger safety belt buckle switch
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST S: LFC 52/DTC B2692 — FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH CIRCUIT FAULT

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

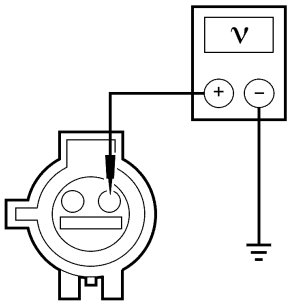
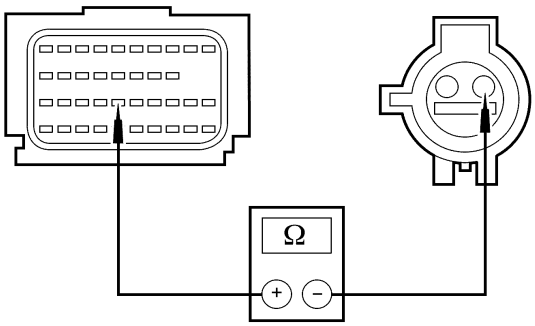
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
S1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2692 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **S2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **S8**.
S2	**CHECK CIRCUIT 1514 (RD/BK) FOR A SHORT TO VOLTAGE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag C337. • Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337. • Disconnect: RCM C2041a and C2041b. • Disconnect: Passenger Safety Belt Buckle Switch C337. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

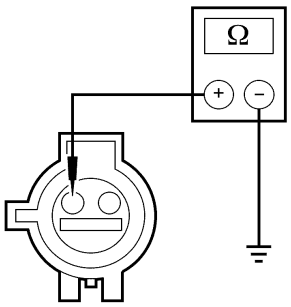
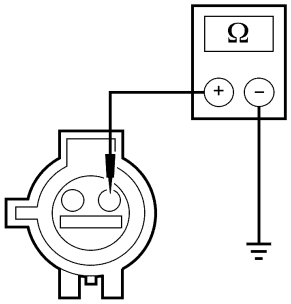
PINPOINT TEST S: LFC 52/DTC B2692 — FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
S2	**CHECK CIRCUIT 1514 (RD/BK) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between passenger safety belt buckle switch C337-2, circuit 1514 (RD/BK), harness side and ground.  N0010351 • **Is any voltage present?**	**Yes** REPAIR circuit 1514 (RD/BK). GO to **S9**. **No** GO to **S3**.
S3	**CHECK CIRCUIT 1514 (RD/BK) FOR AN OPEN**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between RCM C2041b-26, circuit 1514 (RD/BK), harness side and passenger safety belt buckle switch C3066-2, circuit 1514 (RD/BK), harness side.  N0010348 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **S4**. **No** REPAIR circuit 1514 (RD/BK). GO to **S9**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST S: LFC 52/DTC B2692 — FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
S4	**CHECK FOR AN OPEN GROUND CIRCUIT 1203 (BK/LB)**	
	• Measure the resistance between passenger safety belt buckle switch C3066-1, circuit 1203 (BK/LB), harness side and ground.  N0010409 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to S5. **No** REPAIR circuit 1203 (BK/LB). GO to S9.
S5	**CHECK CIRCUIT 1514 (RD/BK) FOR A SHORT TO GROUND**	
	• Measure the resistance between passenger safety belt buckle switch C3066-2, circuit 1514 (RD/BK), harness side and ground.  N0010350 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to S6. **No** REPAIR circuit 1203 (BK/LB). GO to S9.
S6	**CHECK THE SAFETY BELT BUCKLE SWITCH**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connectors are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good passenger safety belt buckle. Refer to Section 501-20A. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2692 retrieved?**	**Yes** GO to S7. **No** Fault corrected. GO to S9.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST S: LFC 52/DTC B2692 — FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
S7	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2692 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **S9**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **S9**.
S8	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC B2692 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **S2**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **S9**.
S9	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test T: LFC 16/DTC B2909 — Belt Tension Sensor Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

NOTE: Lamp fault code (LFC) 16 is shared between DTC B2290 and DTC B2909.

Normal Operation

The belt tension sensor (BTS) is part of the occupant classification sensor (OCS) system. The OCS system interprets a variable voltage signal provided by the safety belt tension sensor to identify the possible presence of a child safety seat in the front passenger seat. The voltage output of the belt tension sensor is proportional to the amount of tension applied to the sensor by the belt. No tension-low voltage is approximately 0.95 volt and high tension-high voltage is approximately 3.8 volts.

The OCS system continuously monitors the belt tension sensor circuits. If the occupant classification system module (OCSM) detects one of the following faults on any of the belt tension sensor circuits, it will report the failure to the restraints control module (RCM). The RCM will store DTC B2909 in memory and flash either LFC 16 on the air bag warning indicator.

The OCS system components (seat cushion foam pad, bladder with pressure sensor and OCSM) are calibrated to each other and are serviced as an assembly. The OCS system components are not to be installed separately with the exception of the belt tension sensor. If a new OCS system component or seat cushion foam pad are needed, a new OCS system service kit (seat cushion foam pad, bladder with pressure sensor and OCSM) must be installed as an assembly.

Fault PIDs[a]	Description	Fault Trigger Condition
2909__29__OD and 2909__29__CM	Front Passenger Side Belt Tension Sensor Short to Ground	When the occupant classification sensor occupant classification system module (OCSM) senses a short to ground on the belt tension sensor circuits, a fault will be indicated.
2909__31__OD and 2909__31__CM	Front Passenger Side Belt Tension Sensor Circuit Fault	When the OCSM senses a failure on the belt tension sensor circuits, a fault will be indicated.

a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2909. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2909.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- BTS
- OCSM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

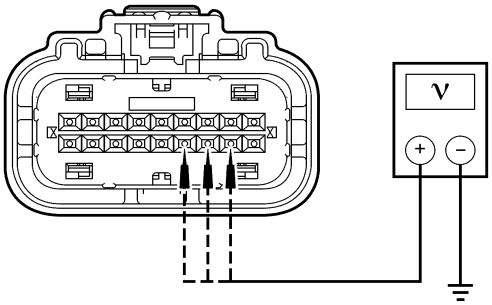
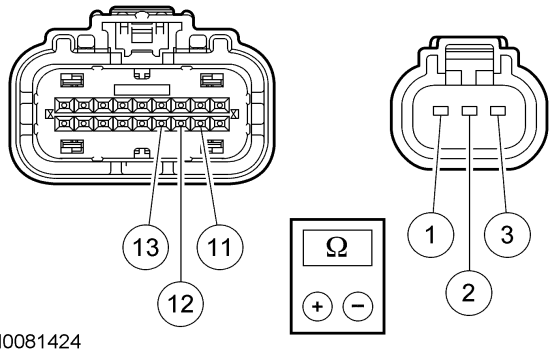
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
T1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2909 Fault PIDs. — Refer to PID list in Normal Operation to view B2909 fault PIDs. • **Do any on-demand DTC B2909 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. For 2909__31__OD (Front Passenger Side Belt Tension Sensor Circuit Fault), GO to **T2**. For 2909__29__OD (Front Passenger Side Belt Tension Sensor Short to Ground), GO to **T4**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **T9**.
T2	**CHECK THE BELT TENSION SENSOR CIRCUITS FOR A SHORT TO VOLTAGE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag C337. • Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337. • Disconnect: Belt Tension Sensor C3238. • Disconnect: OCSM C3043. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

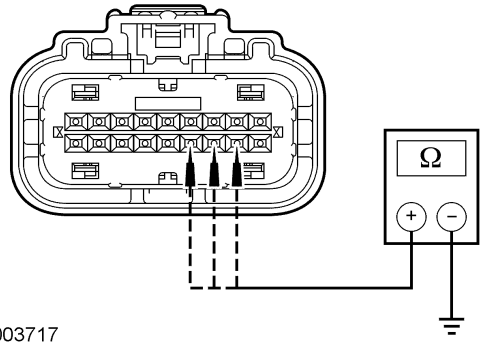
PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT (Continued)

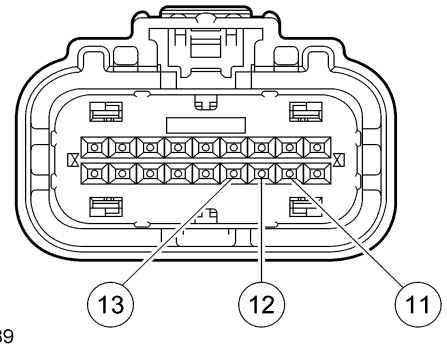
<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>T2</td><td>CHECK THE BELT TENSION SENSOR CIRCUITS FOR A SHORT TO VOLTAGE (Continued)</td><td rowspan="2">Yes
REPAIR circuit 2088 (TN/RD), 2089 (OG/BK) or 2090 (DB/OG). GO to T10.
No
GO to T3.</td></tr>
<tr><td colspan="2">• Measure the voltage between OCSM:
— C3043-11, circuit 2088 (TN/RD), harness side and ground
— C3043-13, circuit 2090 (DB/OG), harness side and ground
— C3043-12, circuit 2089 (OG/BK), harness side and ground.
 
N0003715
• Is voltage present on any circuit?</td></tr>
<tr><td>T3</td><td>CHECK THE BELT TENSION SENSOR CIRCUITS FOR AN OPEN</td><td rowspan="2">Yes
GO to T5.
No
REPAIR circuit 2088 (TN/RD), 2089 (OG/BK) or 2090 (DB/OG).
GO to T10.</td></tr>
<tr><td colspan="2">• Ignition OFF.
• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.
• Measure the resistance between OCSM C3043, harness side and belt tension sensor C3238, harness side using the following chart.
<table><tr><th>OCSM</th><th>Circuit</th><th>Belt Tension Sensor</th></tr><tr><td>C3043-11</td><td>2088 (TN/RD)</td><td>C3238-1</td></tr><tr><td>C3043-13</td><td>2090 (DB/OG)</td><td>C3238-2</td></tr><tr><td>C3043-12</td><td>2089 (OG/BK)</td><td>C3238-3</td></tr></table> 
N0081424
• Are the resistances less than 0.5 ohm?</td></tr>
<tr><td>T4</td><td>CHECK THE BELT TENSION SENSOR CIRCUITS FOR A SHORT TO GROUND</td><td></td></tr>
<tr><td colspan="2">• Ignition OFF.
• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.
• Disconnect: Passenger Seat Side Air Bag C337.
• Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337.</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>T4</td><td>CHECK THE BELT TENSION SENSOR CIRCUITS FOR A SHORT TO GROUND (Continued)</td><td rowspan="2">Yes
GO to T5.
No
REPAIR circuit 2088 (TN/RD), 2089 (OG/BK) or 2090 (DB/OG). GO to T10.</td></tr>
<tr><td colspan="2">• Disconnect: OCSM C3043.
• Measure the resistance between OCSM:
— C3043-11, circuit 2088 (TN/RD), harness side and ground.
— C3043-12, circuit 2089 (OG/BK), harness side and ground.
— C3043-13, circuit 2090 (DB/OG), harness side and ground.
 

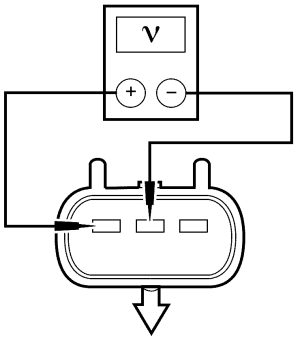
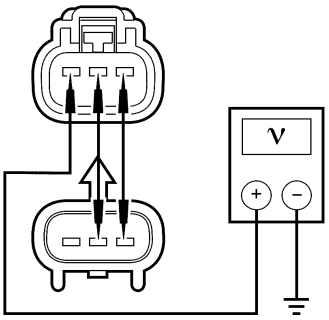
N0003717
• Are the resistances greater than 10,000 ohms?</td></tr>
<tr><td>T5</td><td>CHECK FOR A SHORT BETWEEN OCSM CIRCUITS 2088 (TN/RD), 2089 (OG/BK) AND 2090 (DB/OG)</td><td rowspan="2">Yes
GO to T6.
No
REPAIR circuit 2088 (TN/RD), 2089 (OG/BK) or 2090 (DB/OG). GO to T10.</td></tr>
<tr><td colspan="2">• Measure the resistance between the OCSM C3043, harness side using the following chart:
<table><tr><th>OCSM</th><th>OCSM</th></tr><tr><td>C3043-11, circuit 2088 (TN/RD)</td><td>C3043-12, circuit 2089 (OG/BK)</td></tr><tr><td>C3043-11, circuit 2088 (TN/RD)</td><td>C3043-13, circuit 2090 (DB/OG)</td></tr><tr><td>C3043-12, circuit 2089 (OG/BK)</td><td>C3043-13, circuit 2090 (DB/OG)</td></tr></table> 

N0081189
• Are the resistances greater than 10,000 ohms?</td></tr>
<tr><td>T6</td><td>CHECK THE OCSM OUTPUT</td><td></td></tr>
<tr><td colspan="2">• Connect: OCSM C3043.
• Repower the SRS. Do not prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.
• Ignition ON.</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT (Continued)

Test Step		Result / Action to Take
T6	**CHECK THE OCSM OUTPUT (Continued)**	
	• Measure the voltage between belt tension sensor C3238-1, circuit 2088 (TN/RD), harness side and C3238-2, circuit 2090 (DB/OG), harness side.  A0083314 • **Is voltage approximately 5 volts?**	**Yes** GO to **T7**. **No** INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to **T10**.
T7	**CHECK THE BELT TENSION SENSOR VOLTAGE OUTPUT**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect a fused jumper lead between belt tension sensor C3238-1, circuit 2088 (TN/RD), harness side and pin 1, circuit 2088 (TN/RD), component side. • Connect a fused jumper lead between belt tension sensor C3238-2, circuit 2090 (DB/OG), harness side and pin 2, circuit 2090 (DB/OG), component side. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Measure the voltage between belt tension sensor C3238-3, circuit 2089 (OG/BK), component side and ground as you vary the tension of the belt tension sensor by pulling on the safety belt webbing near the anchor of the safety belt.  A0080136 • **Does the voltage vary from approximately 0.95 volt with no tension applied to the sensor, to approximately 3.8 volts with full tension applied to the sensor?**	**Yes** GO to **T8**. **No** INSTALL a new belt tension sensor (part of safety belt and retractor assembly). REFER to Front Safety Belt Retractor in Section 501-20A. GO to **T10**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT (Continued)

Test Step		Result / Action to Take
T8	**CONFIRM THE BELT TENSION SENSOR FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect: Belt Tension Sensor C3238. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2909 Fault PIDs. — Refer to PID list in Normal Operation to view B2909 fault PIDs. • **Do any on-demand DTC B2909 fault PIDs indicate a fault?**	**Yes** INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to **T10**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **T10**.
T9	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • Enter the following diagnostic mode on the scan tool: DataLogger — RCM — View and Record All 2909 Fault PIDs. — Refer to PID list in Normal Operation to view B2909 fault PIDs. • **Do any on-demand DTC B2909 fault PIDs indicate a fault?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. For 2909__31__OD (Front Passenger Side Belt Tension Sensor Circuit Fault), GO to **T2**. For 2909__29__OD (Front Passenger Side Belt Tension Sensor Short to Ground), GO to **T4**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **T10**.
T10	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test U: LFC 15/DTC C1414 — Incorrect Module Design Level

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The restraints control module (RCM) monitors the communication condition and circuits of the occupant classification system module (OCSM) for an embedded vehicle ID. If the RCM detects an unexpected condition or code from the OCSM, it will store DTC C1414 in memory and flash lamp fault code (LFC) 15 on the air bag warning indicator.

- DTC C1414 Incorrect Module Design Level — If the RCM detects software and hardwired vehicle ID combination that does not match at start-up, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Incorrect RCM for vehicle
- Incorrect OCS system for vehicle

PINPOINT TEST U: LFC 15/DTC C1414 — INCORRECT MODULE DESIGN LEVEL

⚠ **WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.**

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
U1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1414 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **U2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **U5**.
U2	**CHECK THE OCS PART NUMBER**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Check the part number of the OCSM against the part number listed in the master parts catalog. • **Did the part number on the OCSM match the part number listed in the master parts catalog?**	**Yes** GO to **U3**. **No** INSTALL a new OCS system service kit with the correct part number. REFER to Occupant Classification Sensor in this section. GO to **U6**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST U: LFC 15/DTC C1414 — INCORRECT MODULE DESIGN LEVEL (Continued)

Test Step		Result / Action to Take
U3	**CHECK THE RCM PART NUMBER**	
	• Check the part number on the RCM against the part number listed in the master parts catalog. • **Did the part number on the RCM match the part number listed in the master parts catalog?**	**Yes** GO to **U4**. **No** INSTALL a new RCM with the correct part number. REFER to Restraints Control Module (RCM) in this section. GO to **U6**.
U4	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1414 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **U6**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **U6**.
U5	**CHECK FOR INTERMITTENT FAULTS**	
	• Ignition OFF. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1414 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **U2**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **U6**.
U6	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test V: LFC 49/DTC C1947 — Front Driver's Seat Track Position Switch Circuit Short to Ground

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver seat is equipped with a seat track position sensor. The seat track position sensor is comprised of integrated circuits called a Hall-effect switch. The seat track position sensor indicates the position of the driver seat, forward or rearward, to the restraints control module (RCM).

The RCM supplies current to the seat track position sensor. Current flows through the switch, both in the forward or rearward seat position to ground. The RCM will sense the difference in this current draw, 6 mA (forward) or 15 mA (rearward), and use this information in determining the deployment rate of the dual-stage driver air bag module. If the RCM detects current out of range, it will set a DTC.

The RCM continuously monitors the driver seat track position sensor circuits. If the RCM detects a short to ground, it will store DTC C1947 in memory and flash lamp fault code (LFC) 49 on the air bag warning indicator.

- DTC C1947 Front Driver's Seat Track Position Switch Circuit Short to Ground — If the RCM detects a short to ground on the driver seat track position sensor circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Driver seat track position sensor
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST V: LFC 49/DTC C1947 — FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT SHORT TO GROUND

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

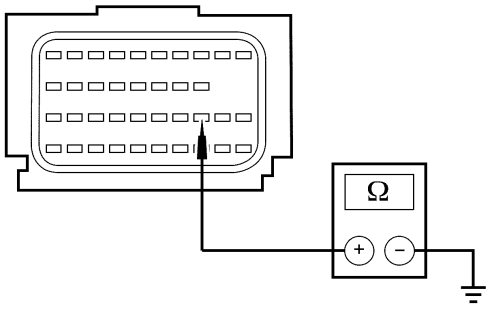
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
V1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1947 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **V2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **V5**.
V2	**CHECK CIRCUIT 1520 (LG) FOR A SHORT TO GROUND**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag C367. • Connect: Restraint System Diagnostic Tool 418-133 to Driver Seat Side Air Bag C367. • Disconnect: Driver Seat Track Position Sensor C356. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST V: LFC 49/DTC C1947 — FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
V2	**CHECK CIRCUIT 1520 (LG) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between RCM C2041b-23, circuit 1520 (LG), harness side and ground.  A0074754 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to V3. **No** REPAIR circuit 1520 (LG). GO to V6.
V3	**CHECK THE SEAT TRACK POSITION SENSOR**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good seat track position sensor. Refer to Seat Position Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1947 retrieved?**	**Yes** GO to V4. **No** Fault corrected. GO to V6.
V4	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original seat track position sensor. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1947 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to V6. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to V6.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST V: LFC 49/DTC C1947 — FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
V5	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1947 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to V2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to V6.
V6	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test W: LFC 49/DTC C1948 — Front Driver's Seat Track Position Switch Circuit Resistance Out of Range

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

NOTE: Due to the seat track position sensor being a Hall-effect type sensor, this pinpoint test will be diagnosing a current out of range fault instead of the current DTC definition for a resistance out of range fault.

Normal Operation

As part of the supplemental restraint system (SRS), the driver seat is equipped with a seat track position sensor. The seat track position sensor is comprised of integrated circuits called a Hall-effect switch. The seat track position sensor indicates the position of the driver seat, forward or rearward, to the restraints control module (RCM).

The RCM supplies current to the seat track position sensor. Current flows through the switch, both in the forward or rearward seat position to ground. The RCM will sense the difference in this current draw, 6 mA (forward) or 15 mA (rearward), and use this information in determining the deployment rate of the dual-stage driver air bag module. If the RCM detects current out of range, it will set a DTC.

The RCM monitors the driver seat track position sensor circuits. If the RCM detects a current out of range condition, it will store DTC C1948 in memory and flash lamp fault code (LFC) 49 on the air bag warning indicator.

- DTC C1948 Front Driver's Seat Track Position Switch Circuit Resistance Out of Range — If the RCM detects a current out of range between forward and rearward on the driver seat track position switch, it will set this DTC.

This pinpoint test is intended to diagnose

DIAGNOSIS AND TESTING (Continued)

the following:

- Seat track position sensor
- RCM

PINPOINT TEST W: LFC 49/DTC C1948 — FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT RESISTANCE OUT OF RANGE

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
W1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1948 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **W2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **W4**.
W2	**CHECK THE SEAT TRACK POSITION SENSOR**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install a known good seat track position sensor. Refer to Seat Position Sensor in this section. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1948 retrieved?**	**Yes** GO to **W3**. **No** Fault corrected. GO to **W5**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST W: LFC 49/DTC C1948 — FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT RESISTANCE OUT OF RANGE (Continued)

Test Step		Result / Action to Take
W3	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install the original seat track position sensor. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1948 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **W5**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **W5**.
W4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1948 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **W2**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **W5**.
W5	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test X: LFC 49/DTC C1981 — Front Driver's Seat Track Position Switch Circuit Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver seat is equipped with a seat track position sensor. The seat track position sensor is comprised of integrated circuits called a Hall-effect switch. The seat track position sensor indicates the position of the driver seat, forward or rearward, to the restraints control module (RCM).

DIAGNOSIS AND TESTING (Continued)

The RCM supplies current to the seat track position sensor. Current flows through the switch, both in the forward or rearward seat position to ground. The RCM will sense the difference in this current draw, 6 mA (forward) or 15 mA (rearward), and use this information in determining the deployment rate of the dual-stage driver air bag module. If the RCM detects current out of range, it will set a DTC.

The RCM monitors the driver seat track position sensor circuits. If the RCM detects an open circuit or short to voltage, it will store DTC C1981 in memory and flash lamp fault code (LFC) 49 on the air bag warning indicator.

- DTC C1981 Front Driver's Seat Track Position Switch Circuit Fault — If the RCM detects an open or short to battery on the driver seat track position sensor circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Seat track position switch
- RCM

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST X: LFC 49/DTC C1981 — FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT FAULT

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTICE: **Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

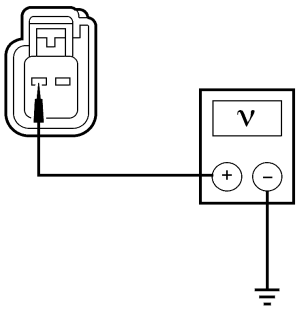
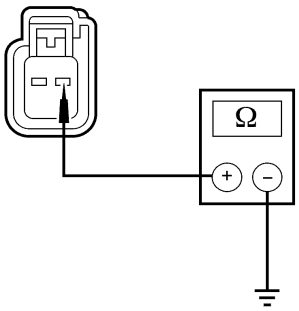
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
X1	**CHECK FOR CONTINUOUS AND ON-DEMAND DTCs**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1981 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **X2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **X7**.
X2	**CHECK CIRCUIT 1520 (LG) FOR A SHORT TO VOLTAGE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag C367. • Connect: Restraint System Diagnostic Tool 418-133 to Driver Seat Side Air Bag C367. • Disconnect: Driver Seat Track Position Sensor C356. • Disconnect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

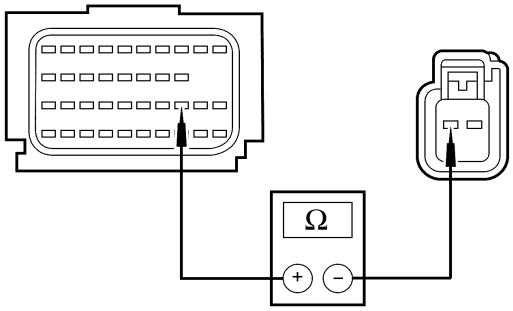
PINPOINT TEST X: LFC 49/DTC C1981 — FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
X2	**CHECK CIRCUIT 1520 (LG) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between driver seat track position sensor C356-2, circuit 1520 (LG), harness side and ground.  A0088603 • **Is any voltage present?**	**Yes** REPAIR circuit 1520 (LG). GO to **X8**. **No** GO to **X3**.
X3	**CHECK CIRCUIT 1203 (BK/LB) FOR AN OPEN**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between driver seat track position sensor C356-1, circuit 1203 (BK/LB), harness side and ground.  A0088601 • **Is the resistance less than 5 ohms?**	**Yes** GO to **X4**. **No** REPAIR circuit 1203 (BK/LB). GO to **X8**.
X4	**CHECK CIRCUIT 1520 (LG) FOR AN OPEN**	
	• Ignition OFF.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST X: LFC 49/DTC C1981 — FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
X4	**CHECK CIRCUIT 1520 (LG) FOR AN OPEN (Continued)**	
	• Measure the resistance between RCM C2041b-23, circuit 1520 (LG), harness side and driver seat track position sensor C356-2, circuit 1520 (LG), harness side.  A0048716 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **X5**. **No** REPAIR circuit 1520 (LG). GO to **X8**.
X5	**CHECK THE SEAT TRACK POSITION SENSOR**	
	• Install a known good seat track position sensor. Refer to Seat Position Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1981 retrieved?**	**Yes** GO to **X6**. **No** Fault corrected. GO to **X8**.
X6	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install the original seat track position sensor. • Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1981 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **X8**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **X8**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST X: LFC 49/DTC C1981 — FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
X7	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Was RCM on-demand DTC C1981 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **X2**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. GO to **X8**.
X8	**CHECK FOR ADDITIONAL SRS DTCs**	
	• Ignition OFF. ⚠ **WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.** • Reconnect all SRS components (if previously disconnected). — If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — RCM. • **Are any RCM DTCs retrieved indicating a fault?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Supplemental Restraint System (SRS) DTC Chart in this section for pinpoint test direction. **No** CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test Y: DTC B1317 or B1318 — Battery Voltage High or Battery Voltage Low

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

NOTE: DTCs B1317, B1318 or B1676 can be set if the vehicle has been recently jump started, the battery has been recently charged or the battery has been discharged. The battery may become discharged due to excessive load(s) on the charging system from aftermarket accessories or if the battery has been left unattended with the accessories on.

Normal Operation

The restraints control module (RCM) continuously monitors the input voltage for correct operation. If the RCM detects input voltage below 9.5 volts, it will store DTC B1318 in memory. If the RCM detects input voltage above 16.2 volts, it will store DTC B1317 in memory. If the RCM sets DTC B1317 or B1318, it will illuminate the air bag warning indicator.

- DTC B1317 Battery Voltage High— If the RCM detects voltage above 16.2 volts, it will set this DTC.

DIAGNOSIS AND TESTING (Continued)

- DTC B1318 Battery Voltage Low— If the RCM detects voltage below 9.5 volts, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- RCM

PINPOINT TEST Y: DTC B1317 OR B1318 — BATTERY VOLTAGE HIGH OR BATTERY VOLTAGE LOW

⚠ **WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.**

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

NOTE: Supplemental restraint system (SRS) components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

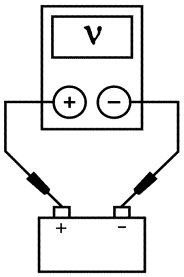
NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

	Test Step	Result / Action to Take
Y1	**RETRIEVE ALL CONTINUOUS MEMORY DTCs IN ALL MODULES**	
	• Ignition ON. • Enter the following diagnostic mode on the scan tool: Self Test — ALL CMDTC (Continuous Memory). • **Is DTC B1317, B1318 or B1676 present in one or more modules AND P0563, P0620, P0625, P0626 or P065B retrieved from the PCM?**	**Yes** REFER to Section 414-00 to diagnose the charging system. **No** GO to Y2.
Y2	**TEST BATTERY CONDITION**	
	NOTE: DTCs B1317, B1318 or B1676 can be set if the vehicle has been recently jump started, the battery has been recently charged or the battery has been discharged. The battery may become discharged due to excessive load(s) on the charging system from aftermarket accessories or if the battery has been left unattended with the accessories on. • Ignition OFF. • Carry out the battery condition test. Refer to Section 414-01. • **Did the battery pass the condition test?**	**Yes** If the battery passed the condition test but required a recharge, Section 414-00 to diagnose the charging system. CLEAR all continuous memory DTCs. TEST the system for normal operation. If the battery passed the condition test and did not require a recharge, GO to Y3. **No** INSTALL a new battery. CLEAR all continuous memory DTCs. PROVE OUT the SRS.
Y3	**CHECK CHARGING SYSTEM VOLTAGE**	
	NOTE: Do not allow the engine speed to increase above 2,000 rpm while performing this step or the generator may self excite and result in default charging system output voltage. If engine speed goes above 2,000 rpm, shut the vehicle off and restart the engine before performing this step.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

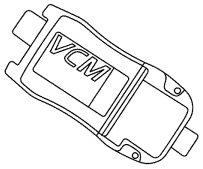
PINPOINT TEST Y: DTC B1317 OR B1318 — BATTERY VOLTAGE HIGH OR BATTERY VOLTAGE LOW (Continued)

Test Step		Result / Action to Take
Y3	**CHECK CHARGING SYSTEM VOLTAGE (Continued)**	
	• Measure the voltage of the battery: — for DTC B1317, turn all accessories off and run the engine at 1,500 rpm for a minimum of 2 minutes while measuring battery voltage. — for DTC B1318, turn on headlights and HVAC fan on high and run engine at 1,500 rpm for a minimum of 2 minutes while measuring battery voltage.  AJ0210-A • **Is the voltage between 13 and 15.2 volts?**	**Yes** For DTC B1318, GO to Y4. For DTC B1317, GO to Y6. **No** REFER to Section 414-00 to diagnose the charging system. CLEAR all continuous memory DTCs. PROVE OUT the SRS.
Y4	**CHECK THE RCM IGNITION CIRCUIT FOR HIGH RESISTANCE**	
	• Ignition OFF. • Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-12, circuit 937 (RD/WH), harness side, and SJB fuse 17. • **Is the resistance less than 1 ohm?**	**Yes** GO to Y5. **No** REPAIR the circuit as necessary. CLEAR all continuous memory DTCs. PROVE OUT the SRS.
Y5	**CHECK FOR OPEN GROUND TO THE MODULE**	
	• Measure the resistance between the RCM C2041a-16, circuit 1203 (BK/LB), harness side, and a good ground. • **Is the resistance less than 5 ohms?**	**Yes** GO to Y6. **No** REPAIR the circuit as necessary. MAKE SURE the RCM fasteners are clean and tightened to specification with no corrosion. REPAIR as necessary. CLEAR all continuous memory DTCs. PROVE OUT the SRS.
Y6	**CHECK FOR MODULE OPERATION**	
	• Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Check for the following: — corrosion. — damaged pins. — pushed-out pins. • Connect the RCM C310a and C310b and make sure the connector seats correctly. • Repower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR all continuous memory DTCs. PROVE OUT the SRS.

GENERAL PROCEDURES

Supplemental Restraint System (SRS) Depowering and Repowering

Special Tool(s)

 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Depowering Procedure

⚠ WARNING: Always wear eye protection when servicing a vehicle. Failure to follow this instruction may result in serious personal injury.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: To reduce the risk of accidental deployment, do not use any memory saver devices. Failure to follow this instruction may result in serious personal injury or death.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Turn all vehicle accessories OFF.
2. Turn the ignition switch to OFF.
3. At the Smart Junction Box (SJB), located in the RH lower kick panel, remove the cover and the RCM fuse 17 (10A) from the SJB. For additional information, refer to the Wiring Diagram Manual.
4. Turn the ignition ON and visually monitor the air bag indicator for at least 30 seconds. The air bag indicator will remain lit continuously (no flashing) if the correct RCM fuse has been removed. If the air bag indicator does not remain lit continuously, remove the correct RCM fuse before proceeding.
5. Turn the ignition switch to OFF.
6. **⚠ WARNING: Always deplete the backup power supply before repairing or installing any new front or side air bag supplemental restraint system (SRS) component and before servicing, removing, installing, adjusting or striking components near the front or side impact sensors or the restraints control module (RCM). Nearby components include doors, instrument panel, console, door latches, strikers, seats and hood latches.**

   Refer to the Description and Operation portion of Section 501-20B for location of the RCM and impact sensor(s).

   To deplete the backup power supply energy, disconnect the battery ground cable and wait at least 1 minute. Be sure to disconnect auxiliary batteries and power supplies (if equipped).

   Failure to follow these instructions may result in serious personal injury or death in the event of an accidental deployment.

   Disconnect the battery ground cable and wait at least one minute. For additional information, refer to Section 414-01.

Repowering Procedure

1. Turn the ignition switch from OFF to ON.
2. Install RCM fuse 17 (10A) to the SJB and close the cover.

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GENERAL PROCEDURES (Continued)

3. ⚠ **WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.**

   Connect the battery ground cable.

4. Prove out the SRS as follows:

   Turn the ignition switch from ON to OFF. Wait 10 seconds, then turn the ignition switch back ON and visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is present, the air bag warning indicator will:

   - fail to light.
   - remain lit continuously.
   - flash at a 5Hz rate (RCM not configured).

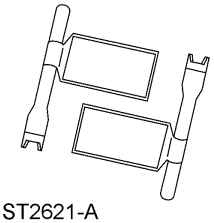
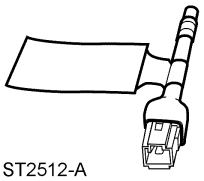
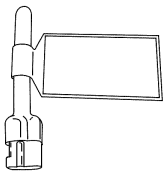
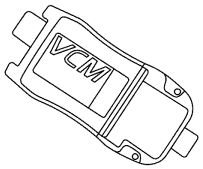
   The air bag warning indicator might not light until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag warning indicator is inoperative and an SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

   Clear all continuous DTCs from the RCM using a scan tool.

GENERAL PROCEDURES

Supplemental Restraint System (SRS) Deactivation and Reactivation

Special Tool(s)

 ST2621-A	Diagnostic Tool, Restraint System (2 required) 418-F395
 ST2512-A	Diagnostic Tool, Restraint System 418-F403
 ST2507-A	Diagnostic Tool, Restraint System (2 required) 418-133
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Deactivation

⚠ WARNING: Always wear eye protection when servicing a vehicle. Failure to follow this instruction may result in serious personal injury.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

⚠ WARNING: To reduce the risk of accidental deployment, do not use any memory saver devices. Failure to follow this instruction may result in serious personal injury or death.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Turn all vehicle accessories OFF.
2. Turn the ignition switch to OFF.
3. At the Smart Junction Box (SJB), located in the RH lower kick panel, remove the cover and the Restraints Control Module (RCM) fuse 17 (10A) from the SJB. For additional information, refer to the Wiring Diagram Manual.
4. Turn the ignition switch ON and visually monitor the air bag warning indicator for at least 30 seconds. The air bag warning indicator will remain lit continuously (no flashing) if the correct RCM fuse has been removed. If the air bag warning indicator does not remain lit continuously, remove the correct RCM fuse before proceeding.
5. Turn the ignition OFF.

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GENERAL PROCEDURES (Continued)

6. **⚠ WARNING: Always deplete the backup power supply before repairing or installing any new front or side air bag supplemental restraint system (SRS) component and before servicing, removing, installing, adjusting or striking components near the front or side impact sensors or the restraints control module (RCM). Nearby components include doors, instrument panel, console, door latches, strikers, seats and hood latches.**

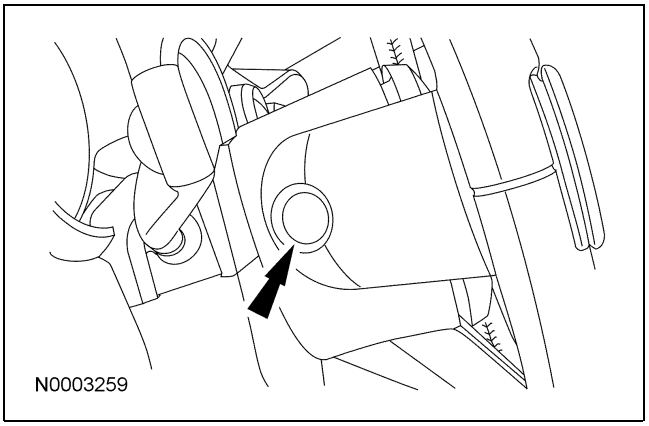
   Refer to the Description and Operation portion of Section 501-20B for location of the RCM and impact sensor(s).

   To deplete the backup power supply energy, disconnect the battery ground cable and wait at least 1 minute. Be sure to disconnect auxiliary batteries and power supplies (if equipped).

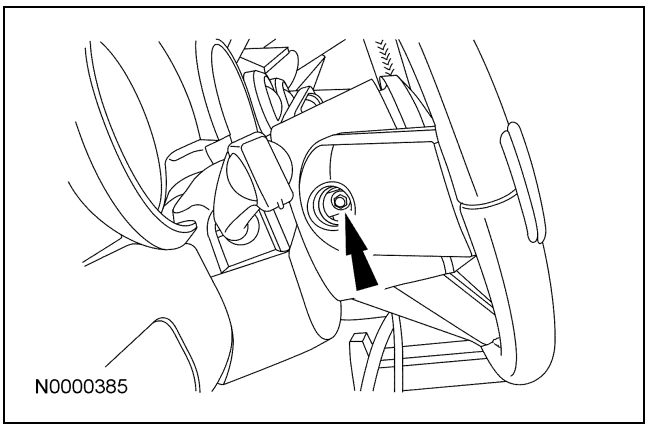
   Failure to follow these instructions may result in serious personal injury or death in the event of an accidental deployment.

   Disconnect the battery ground cable and wait at least one minute. For additional information, refer to Section 414-01.

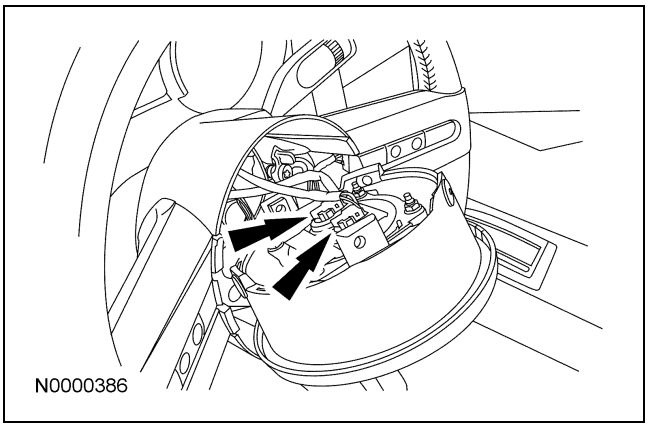
7. Remove the 2 driver air bag module bolt caps (1 shown) from the steering wheel.



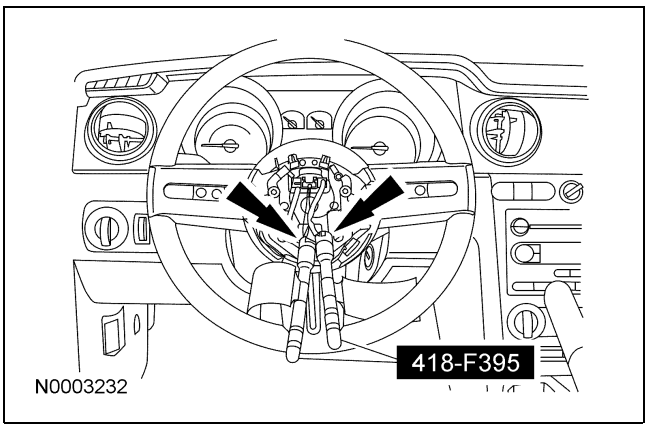
8. Remove the 2 driver air bag module bolts (1 shown).



9. Disconnect the 2 electrical connectors and remove the driver air bag module.



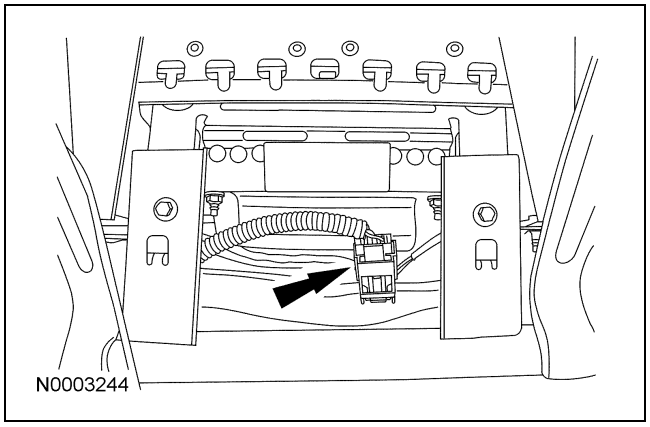
10. Attach the Restraint System Diagnostic Tool to the clockspring electrical connectors.



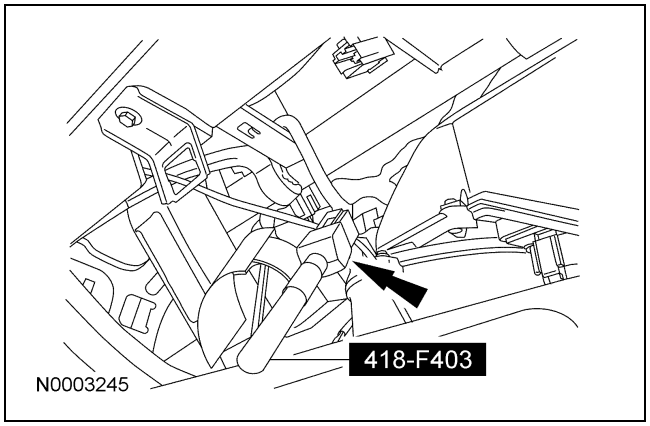
11. Fully lower the glove compartment door.

GENERAL PROCEDURES (Continued)

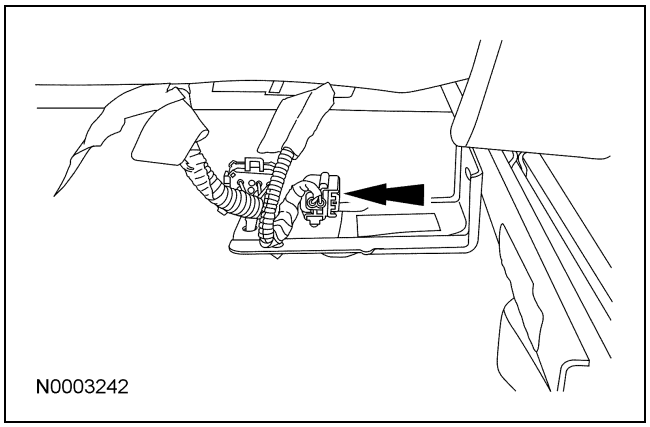
12. Disconnect the passenger air bag module electrical connector.



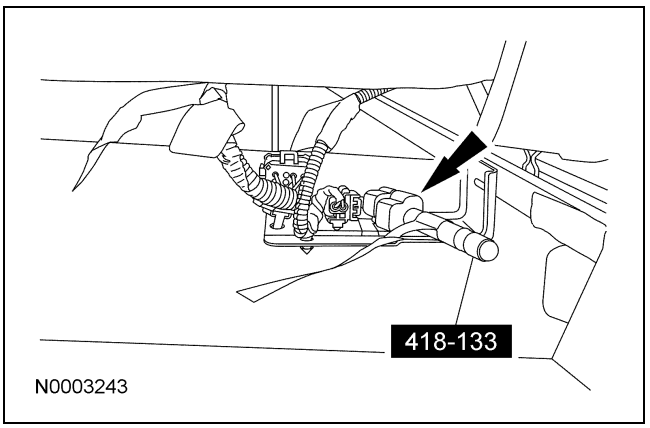
13. Attach the Restraint System Diagnostic Tool to the vehicle harness side of the passenger air bag module electrical connector.



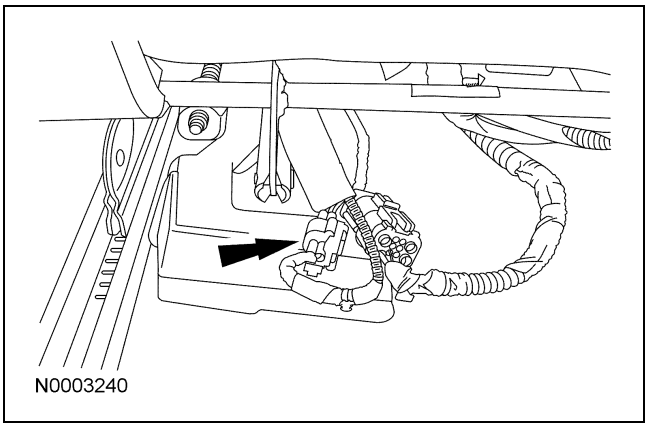
14. Release the red locking tab and disconnect the passenger side air bag module electrical connector.



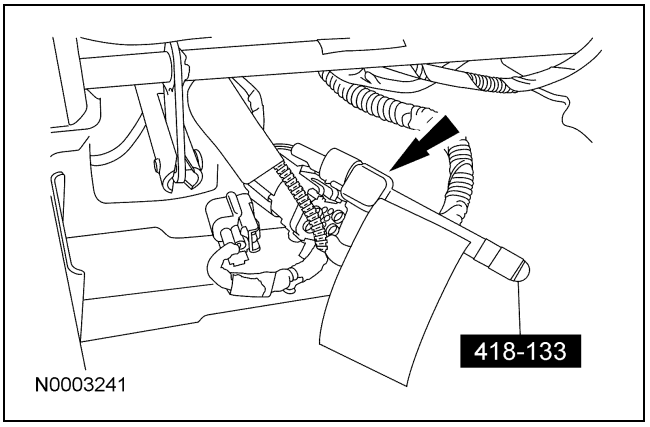
15. Attach the Restraint System Diagnostic Tool to the vehicle harness side of the passenger side air bag module electrical connector.



16. Release the red locking tab and disconnect the driver side air bag module electrical connector.



17. Attach the Restraint System Diagnostic Tool to the vehicle harness side of the driver side air bag module electrical connector.



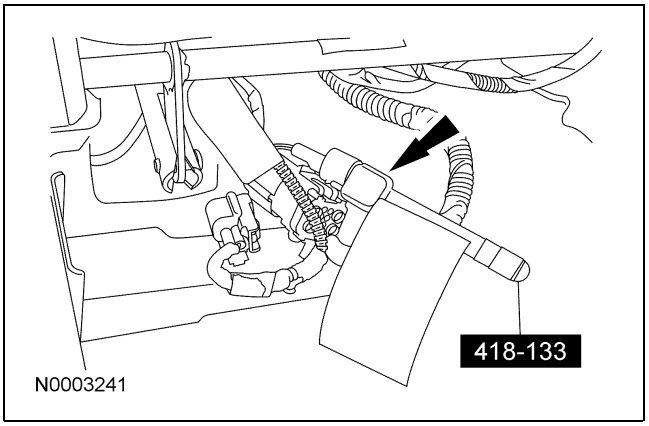
18. Install RCM fuse 17 (10A) to the RCM.

19. Connect the battery ground cable. For additional information, refer to Section 414-01.

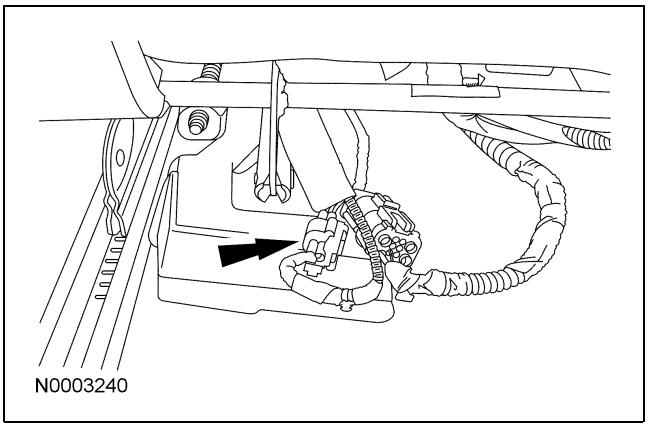
GENERAL PROCEDURES (Continued)

Reactivation

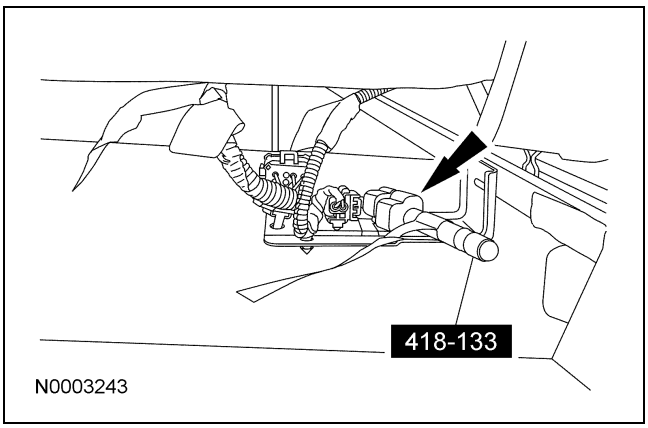
1. Remove RCM fuse 17 (10A) from the SJB.
2. Disconnect the battery ground cable and wait at least one minute.
3. Remove the Restraint System Diagnostic Tool from the vehicle harness side of the driver side air bag module electrical connector.



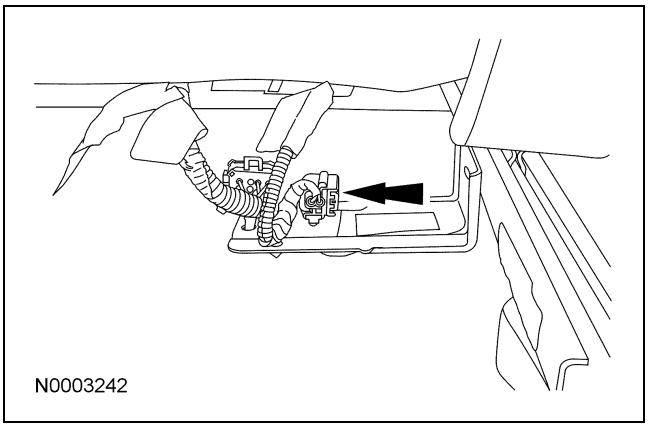
4. Connect the driver side air bag module electrical connector and reset the red locking tab.



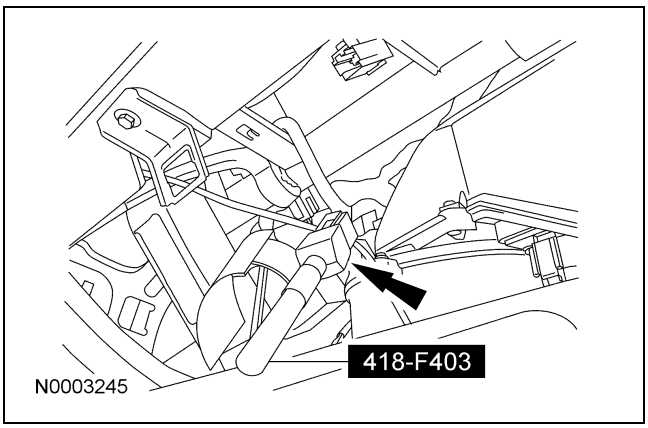
5. Remove the Restraint System Diagnostic Tool from the vehicle harness side of the passenger side air bag module electrical connector.



6. Connect the passenger side air bag module electrical connector and reset the red locking tab.

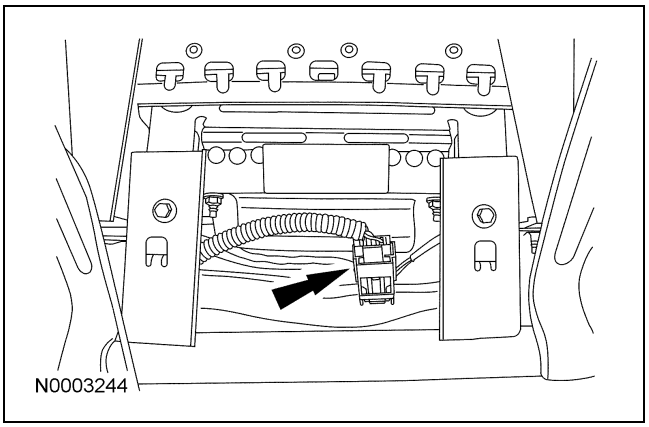


7. Remove the Restraint System Diagnostic Tool from the vehicle harness side of the passenger air bag module electrical connector.



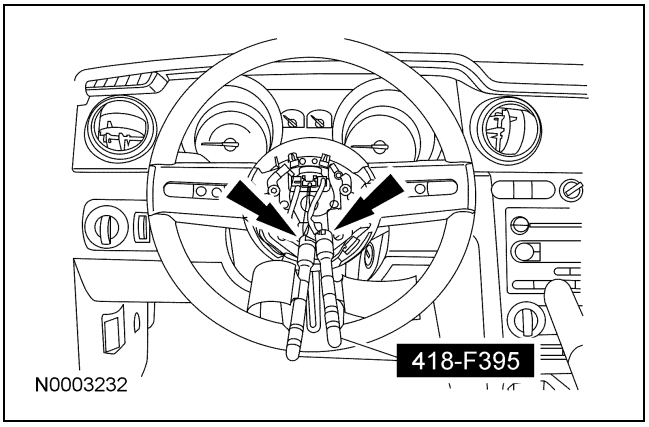
GENERAL PROCEDURES (Continued)

8. Connect the passenger air bag module electrical connector.

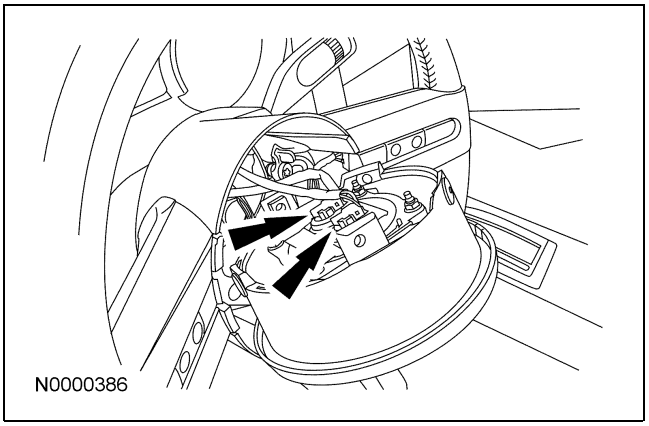


9. Close the glove compartment door.

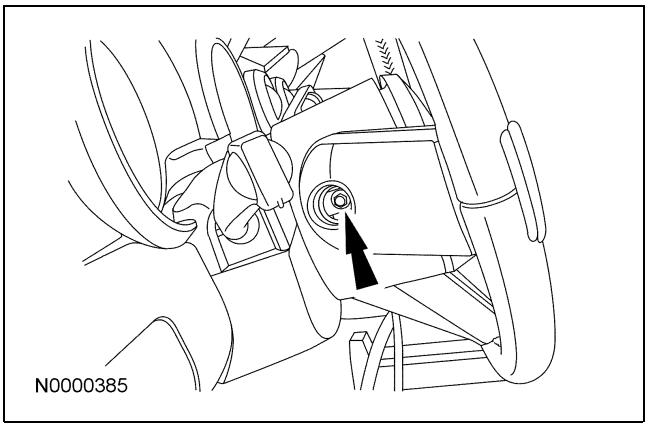
10. Remove the Restraint System Diagnostic Tool from the clockspring electrical connectors.



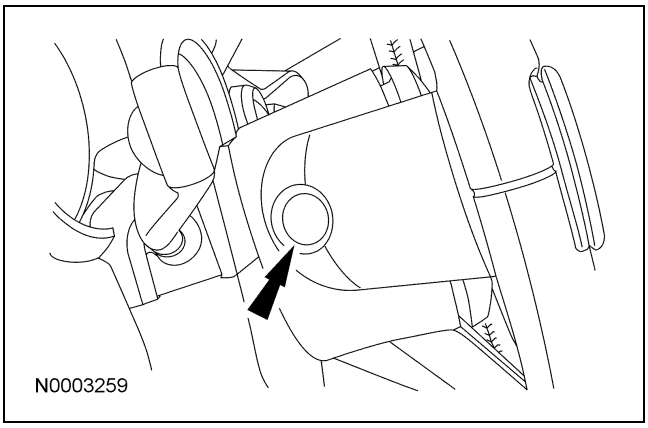
11. Connect the 2 electrical connectors and position the driver air bag module.



12. Install the 2 driver air bag module bolts (1 shown).
    - Tighten to 7 Nm (62 lb-in).



13. Install the 2 driver air bag module bolt caps (1 shown) in the steering wheel.



14. **⚠ WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.**

    Make sure all restraint system diagnostic tool(s) that may have been installed during the repair have been removed from the vehicle and all SRS components are connected.

15. Turn the ignition switch from OFF to ON.

16. Install RCM fuse 17 (10A) to the SJB and close the cover.

GENERAL PROCEDURES (Continued)

17. ⚠ **WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.**

    Connect the battery ground cable.

18. Prove out the SRS as follows:

    Turn the ignition switch from ON to OFF. Wait 10 seconds, then turn the ignition switch back to ON and visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is present, the air bag warning indicator will:

    - fail to light.
    - remain lit continuously.
    - flash at a 5Hz rate (RCM not configured).

    The air bag warning indicator might not light until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag warning indicator is inoperative and a SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

    Clear all continuous DTCs from the RCM using a scan tool.

GENERAL PROCEDURES

Inspection and Repair After a Supplemental Restraint System (SRS) Deployment

⚠ **WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.**

NOTE: After diagnosing or repairing a Supplemental Restraint System (SRS), the restraint system diagnostic tools (if required) must be removed before operating the vehicle over the road.

NOTE: Deployable devices (such as air bag modules, pretensioners) may deploy alone or in various combinations depending on the impact event.

NOTE: Always refer to the appropriate workshop manual procedures prior to carrying out vehicle repairs affecting the SRS and safety belt system.

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

All vehicles

1. **NOTE:** Refer to the correct removal and installation procedure for all SRS components being installed.

   When any deployable device or combination of devices are deployed and/or the Restraints Control Module (RCM) has the DTC B1231 (Event Threshold Exceeded) in memory, the repair of the vehicle SRS is to include the removal of all deployed devices and the installation of new deployable devices, the removal and installation of new impact sensors, and the removal and installation of a new RCM. DTCs must be cleared from all required modules after repairs are carried out.

Vehicles with Occupant Classification Sensor (OCS) system

2. **NOTE:** After installation of new Occupant Classification Sensor (OCS) system components, carry out the Occupant Classification Sensor (OCS) System Reset procedure as instructed in the workshop manual. Refer to the appropriate workshop manual for OCS system removal and installation procedure.

   When a vehicle has been involved in a collision and the Occupant Classification System Module (OCSM) has DTC B1231 stored in memory, the repair of the OCS system is to include the following procedures for the specified system:

   - For rail-type OCS system, inspect the passenger side floorpan for damage and repair as necessary. Install new OCS system rails.
   - For weight sensor bolt-type OCS system, inspect the passenger side floorpan for damage and repair as necessary. Install a new seat track with OCS system weight sensor bolts. DTC must be cleared from the OCSM before carrying out Occupant Classification Sensor (OCS) System Reset. Do not install a new OCSM unless DTC B1231 cannot be cleared.
   - **NOTE:** Most bladder-type OCSM do not store a DTC B1231 in memory after deployment. The DTC B1231 is stored only by the RCM.

     For bladder-type OCS system, inspect for damage and repair as necessary. If installation of an OCS system component is required, an OCS system service kit must be installed.

All vehicles

3. When any damage to the impact sensor mounting points or mounting hardware has occurred, repair or install new mounting points and mounting hardware as needed.

4. When the driver air bag module has deployed, a new clockspring must be installed.

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GENERAL PROCEDURES (Continued)

5. New driver and/or front passenger safety belt systems (including retractors, buckles and height adjusters) must be installed if the vehicle is involved in a collision that results in deployment of the driver and/or front passenger safety belt pretensioners. For additional information, refer to Section 501-20A.

6. Inspect the entire vehicle for damage, including the following components:
   - Steering column (deployable column if equipped)
   - Instrument panel knee bolsters and mounting points
   - Instrument panel braces and brackets
   - Instrument panel and mounting points
   - Seats and seat mounting points
   - Safety belts, safety belt buckles and safety belt retractors. For additional information, refer to Section 501-20A
   - SRS wiring, wiring harnesses and connectors

7. After carrying out the review and inspection of the entire vehicle for damage, repair or install new components as needed.

GENERAL PROCEDURES

Pyrotechnic Device Disposal

Disposal of Deployable Devices and Pyrotechnic Devices That are Undeployed/Inoperative

⚠ **WARNING: Always wear eye protection when servicing a vehicle. Failure to follow this instruction may result in serious personal injury.**

NOTE: All inoperative air bag modules and safety belt pretensioners have been placed on the Mandatory Return List. All discolored or damaged air bag modules must be treated the same as any inoperative live air bag being returned.

1. Depower the Supplemental Restraint System (SRS). For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

2. Remove the undeployed/inoperative device. For additional information, refer to the appropriate procedure in this section or Section 501-20A.

3. **NOTE:** When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the Vehicle Identification Number (VIN) must be recorded and sent to Ford Motor Company.

   If installing a new air bag module, record the necessary information and return the inoperative air bag module to Ford Motor Company.

Disposal of Deployable Devices and Pyrotechnic Devices That Are Deployed

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

2. Remove the deployed device. For additional information, refer to the appropriate procedure in this section or Section 501-20A.

3. **NOTE:** If a dual stage driver or passenger air bag module has deployed due to a crash event, the air bag module requires manual deployment to make sure both stages have deployed before scrapping the vehicle or disposing of the air bag module. To determine if a vehicle is equipped with dual stage driver or passenger air bag modules, refer to the Description and Operation portion of this section.

   Dispose of the deployed device in the same manner as any other part to be scrapped.

Disposal of Deployable Devices and Pyrotechnic Devices That Require Manual Deployment

1. Safety and environmental concerns require consideration and treatment of restraints system deployable and pyrotechnic devices when disposing of vehicles, deployable devices or pyrotechnic devices. Deploying deployable and pyrotechnic devices before scrapping a vehicle or the device eliminates the potential for hazardous exposures or reactions during processing. If special handling procedures are followed, deployable and pyrotechnic devices can be deployed safely and recycled with the vehicle, shipped separately to a recycling facility or disposed of safely.

NOTE: To determine the deployable devices a vehicle is equipped with, refer to the Description and Operation portion of this section.

A vehicle equipped with any of the following deployable devices requires manual deployment of the devices before scrapping the vehicle or component. For additional information, refer to the appropriate portion of this procedure.

- Driver air bag module
- Passenger air bag module
- Seat side air bag modules
- Safety canopy modules
- Side air curtain modules

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GENERAL PROCEDURES (Continued)

2. **NOTE:** To determine the pyrotechnic devices a vehicle is equipped with, refer to the Description and Operation portion of this section.

   A vehicle equipped with any of the following pyrotechnic devices requires manual deployment of the devices before scrapping the vehicle or component. For additional information, refer to the appropriate portion of this procedure.

   - Safety belt buckle pretensioners
   - Safety belt retractor pretensioners
   - Adaptive load limiting retractors
   - Deployable steering column

3. **NOTE:** To determine if a vehicle is equipped with dual stage driver or passenger air bag modules, refer to the Description and Operation portion of this section.

   If a dual stage driver or passenger air bag module has deployed due to a crash event, the air bag module requires manual deployment to make sure both stages have deployed before scrapping the vehicle or disposing of the air bag module. For additional information, refer to Driver Air Bag Module, Passenger Air Bag Module and Seat Side Air Bag Modules — Remote Deployment in this procedure.

Driver Air Bag Module, Passenger Air Bag Module and Seat Side Air Bag Modules — Remote Deployment

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

WARNING: Always carry or place a live safety canopy, or side air curtain module, with the module and tear seam pointed away from your body. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.

NOTE: For air bag modules with multiple loops, all the loops on the air bag module must be deployed.

NOTE: Some driver and passenger front air bags have 2 deployment stages. After a collision it is possible that Stage 1 has deployed and Stage 2 has not.

If a front air bag module has deployed, it is **mandatory** that the front air bag module be remotely deployed using the appropriate air bag disposal procedure.

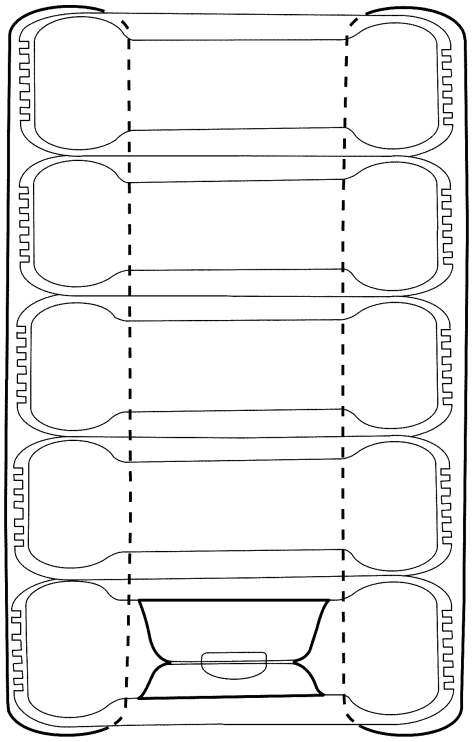
NOTE: A typical air bag disposal is shown that is similar for all vehicles.

GENERAL PROCEDURES (Continued)

All driver, passenger and seat side air bag modules

1. Make a container to house the air bag module for deployment.
   - **NOTE:** The tires must be of sufficient size to accommodate the air bag module.

     Obtain a tire and wheel assembly and an additional 4 tires (without wheels) of the same size.
   - With the tire and wheel assembly on the bottom, stack the tires.
   - Securely tie all of the tires together.



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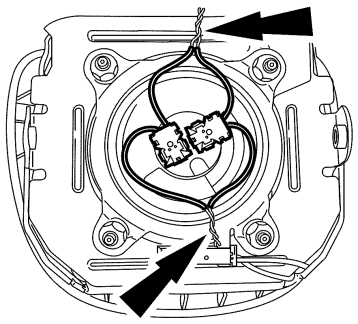
2. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.
3. Remove the air bag module. For additional information, refer to the appropriate procedure in this section.
4. **NOTE:** If the air bag module does not have a hardwired pigtail, it will be necessary to cut the wires and connector(s) from the vehicle wire harness and reconnect to the air bag module.

   Cut each of the air bag module wires near the electrical connector that connects to the vehicle wire harness.
5. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.
6. **NOTE:** Typical driver air bag module with 2 loops shown, other air bag modules with multiple loops similar.

   For air bag modules with multiple loops, twist together a wire from each loop then repeat for the remaining wires from each loop.



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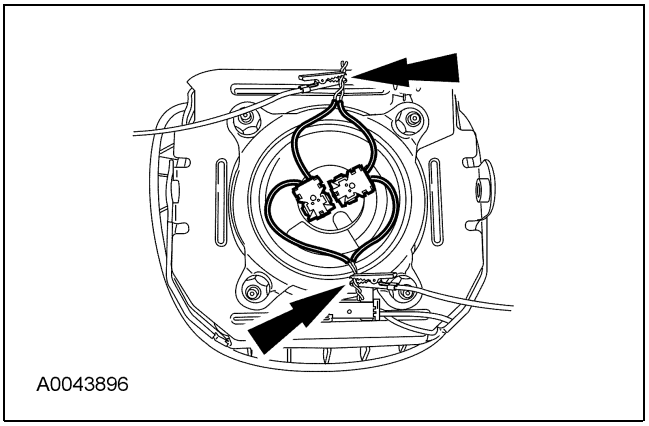
7. Make a jumper harness to deploy the air bag module.
   - Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
   - At one end of the jumper harness, connect the wires together.

GENERAL PROCEDURES (Continued)

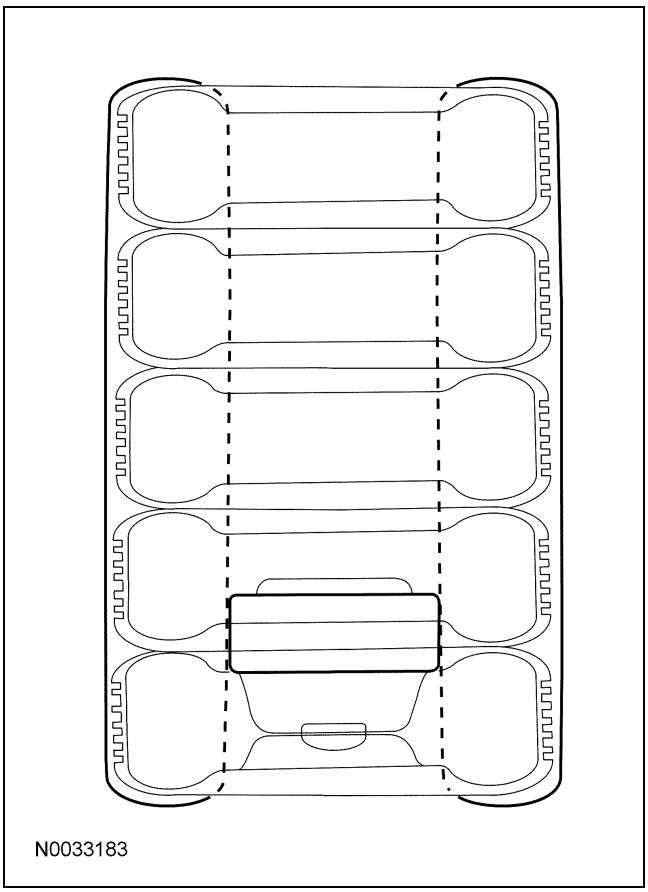
8. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the air bag module or to the twisted-together wires if multiple loops. Use tape or other insulating material to make sure that the leads do not make contact with each other.



Driver air bag modules

9. **NOTE:** Make sure to maintain the connections to the air bag module.

   With the stack of tires upright and the wheel on the bottom, carefully place the driver air bag module, with the trim cover facing up, on the wheel.



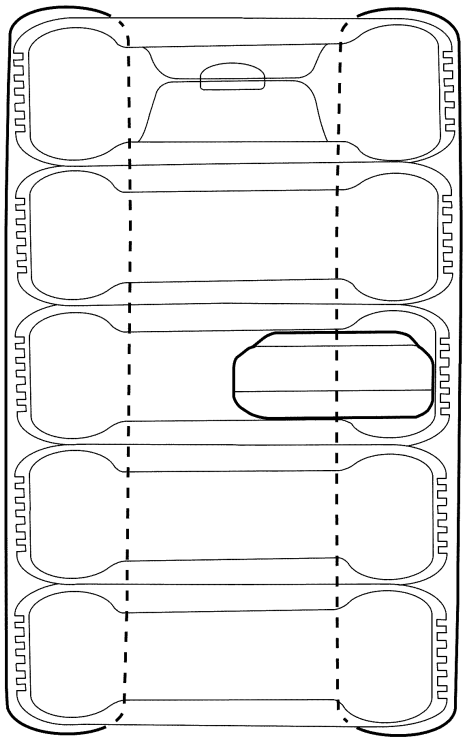
Passenger and seat side air bag modules

10. **NOTE:** Make sure to maintain the connections to the air bag module.

    Tip the stack of tires on its side and place the air bag module inside the center tire, making sure that there are 2 tires beneath the tire containing the air bag module and 2 tires (including the tire and wheel assembly) above the tire containing the air bag module.

GENERAL PROCEDURES (Continued)

11. Place the tire stack upright, with the wheel on top.



N0033184

All driver, passenger and seat side air bag modules

12. Remain at least 9.14 m (30 ft) away from the air bag module.

13. From the end of the jumper harness that is not connected to the air bag module, disconnect the 2 wires of the jumper harness from each other.

14. Deploy the air bag module by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.

15. To allow for cooling, wait at least 10 minutes before approaching the deployed air bag module.

16. Dispose of the deployed air bag module in the same manner as any other part to be scrapped.

Safety Belt Buckle Pretensioners, Safety Belt Retractor Pretensioners and Adaptive Load Limiting Safety Belt Retractors — Remote Deployment

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

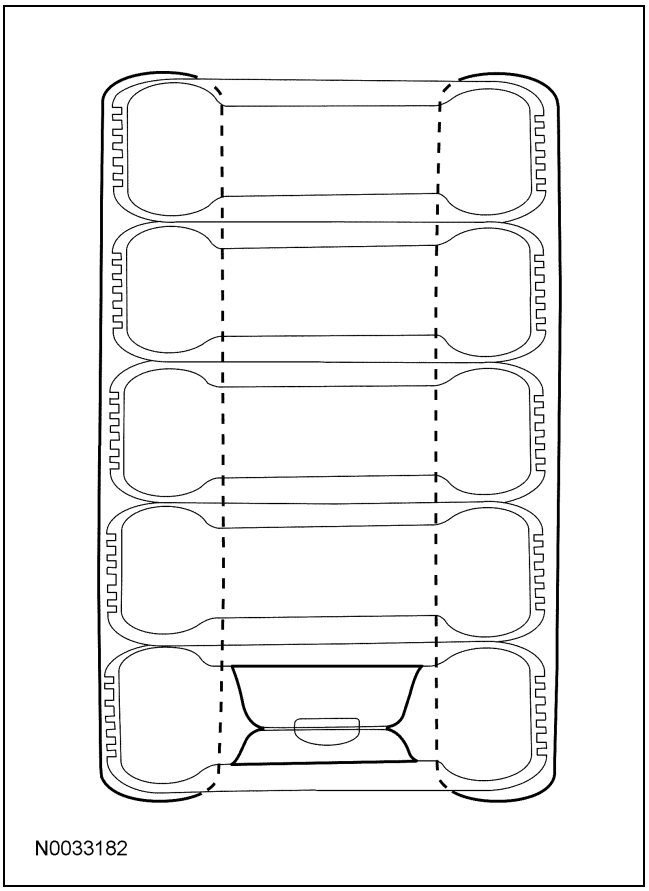
⚠ WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.

NOTE: A typical safety belt buckle and retractor disposal is shown that is similar for all vehicles.

GENERAL PROCEDURES (Continued)

1. Make a container to house the safety belt buckle or retractor for deployment.
   - **NOTE:** The tires must be of sufficient size to accommodate the safety belt buckle or retractor.

     Obtain a tire and wheel assembly and an additional 4 tires (without wheels) of the same size.
   - With the tire and wheel assembly on the bottom, stack the tires.
   - Securely tie all of the tires together.



2. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

3. Remove the safety belt buckle or retractor. For additional information, refer to the appropriate procedure in Section 501-20A.
   - When deploying a safety belt buckle pretensioner, install a nut and bolt of sufficient length and of the same diameter as was used to retain it to the seat.

4. **NOTE:** If the safety belt buckle or retractor does not have a hardwired pigtail, it will be necessary to cut the wires and connector(s) from the vehicle wire harness and reconnect to the safety belt buckle or retractor.

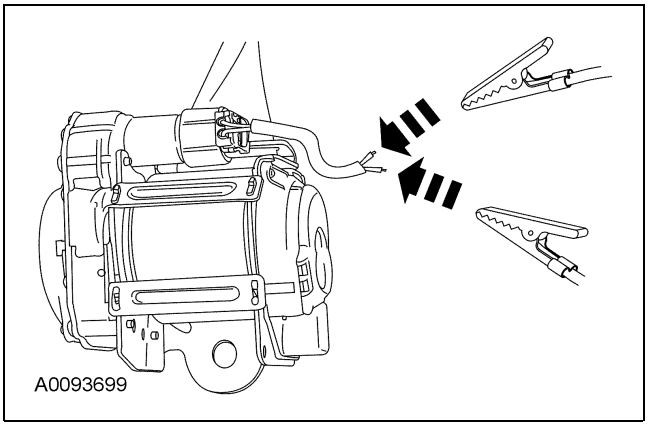
   Cut each of the safety belt buckle or retractor wires near the electrical connector that connects to the vehicle wire harness.

5. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.

6. Make a jumper harness to deploy the safety belt buckle or retractor.
   - Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
   - At one end of the jumper harness, connect the wires together.

7. **NOTE:** Typical safety belt retractor pretensioner shown, other safety belt buckle pretensioners and load limiting retractors similar.

   Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the safety belt buckle or retractor. Use tape or other insulating material to make sure that the leads do not make contact with each other.

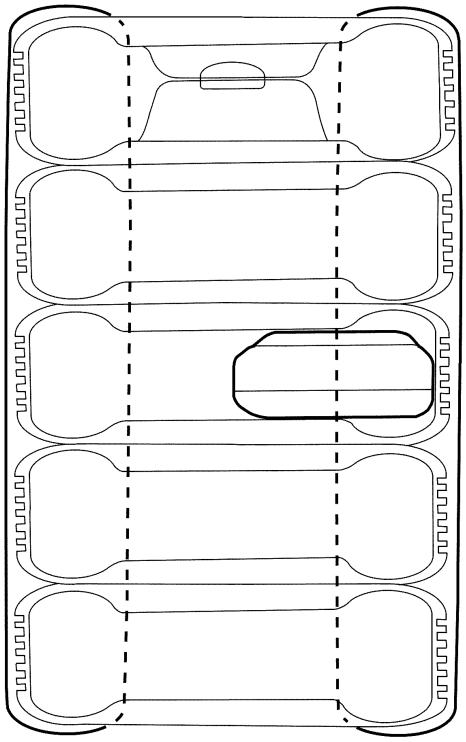


GENERAL PROCEDURES (Continued)

8. **NOTE:** Make sure to maintain the connections to the safety belt buckle or retractor.

   Tip the stack of tires on its side and place the safety belt buckle or retractor inside the center tire, making sure that there are 2 tires beneath the tire containing the safety belt buckle or retractor and 2 tires (including the tire and wheel assembly) above the tire containing the safety belt buckle or retractor.

9. Place the tire stack upright, with the wheel on top.



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10. Remain at least 9.14 m (30 ft) away from the safety belt buckle or retractor.

11. From the end of the jumper harness that is not connected to the safety belt buckle or retractor, disconnect the 2 wires of the jumper harness from each other.

12. Deploy the safety belt buckle or retractor by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.

13. To allow for cooling, wait at least 10 minutes before approaching the deployed safety belt buckle or retractor.

14. Dispose of the deployed safety belt buckle or retractor in the same manner as any other part to be scrapped.

Safety Belt Buckle Pretensioners, Safety Belt Retractor Pretensioners and Load Limiting Safety Belt Retractors — In-Vehicle Deployment

⚠ WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

⚠ WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.

NOTE: A typical safety belt buckle and retractor disposal is shown that is similar for all vehicles.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

2. Access the safety belt buckle or retractor electrical connectors. For additional information, refer to Section 501-20A.

3. Cut each of the safety belt buckle or retractor wires, leaving at least 101.6 mm (4 in) to work with.

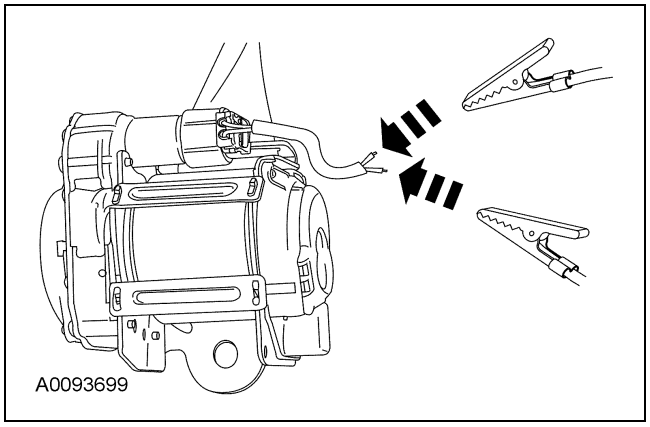
4. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.

GENERAL PROCEDURES (Continued)

5. Make a jumper harness to deploy the safety belt buckle or retractor.
   - Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
   - At one end of the jumper harness, connect the wires together.

6. **NOTE:** Typical safety belt retractor pretensioner shown, other safety belt buckle pretensioners and load limiting retractors are similar.

   Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the safety belt buckle or retractor. Use tape or other insulating material to make sure that the leads do not make contact with each other.



7. Remain at least 9.14 m (30 ft) away from the safety belt buckle or retractor.

8. From the end of the jumper harness that is not connected to the safety belt buckle or retractor, disconnect the 2 wires of the jumper harness from each other.

9. Deploy the safety belt buckle or retractor by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.

10. To allow for cooling, wait at least 10 minutes before approaching the deployed safety belt buckle or retractor.

11. Dispose of the deployed safety belt buckle or retractor in the same manner as any other part to be scrapped.

Safety Canopy Modules and Side Air Curtain Modules — In-Vehicle Deployment

⚠ **WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.**

NOTE: The safety canopy module deployment for a scrapped vehicle will occur in its installed position in the vehicle.

NOTE: A typical safety canopy module disposal is shown that is similar for all vehicles.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

2. Access the safety canopy/side air curtain module electrical connectors. For additional information, refer to the appropriate procedure in this section.

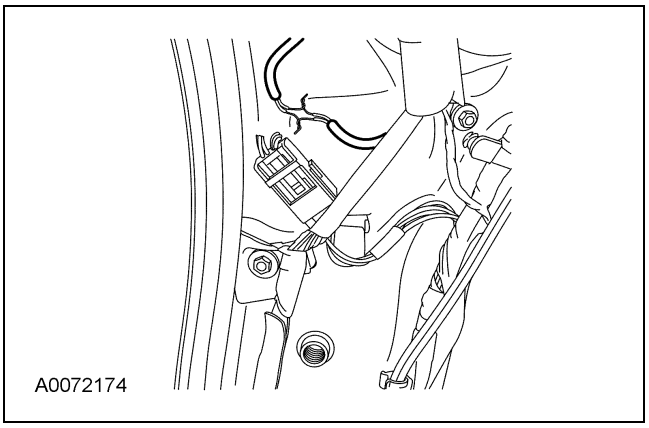
3. Cut each of the safety canopy/side air curtain module wires leaving at least 101.6 mm (4 in) to work with.

4. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.

GENERAL PROCEDURES (Continued)

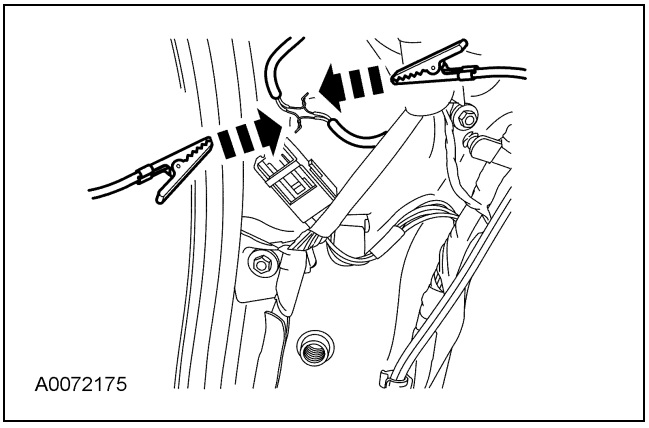
5. **NOTE:** Typical safety canopy/side air curtain module with 2 loops shown, other safety canopy/side air curtain modules with 2 loops are similar.

   For safety canopy/side air curtain modules with multiple loops, twist together a wire from each loop then repeat for the remaining wires from each loop.



6. Make a jumper harness to deploy the safety canopy/side air curtain module.
   - Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
   - At one end of the jumper harness, connect the wires together.

7. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the safety canopy/side air curtain module or to the twisted-together wires if multiple loops. Use tape or other insulating material to make sure that the leads do not make contact with each other.



8. From the end of the jumper harness that is not connected to the safety canopy/side air curtain module, disconnect the 2 wires of the jumper harness from each other.

9. Deploy the safety canopy/side air curtain module by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.

10. To allow for cooling, wait at least 10 minutes before approaching the deployed safety canopy/side air curtain module.

11. Dispose of the deployed safety canopy/side air curtain module in the same manner as any other part to be scrapped.

Deployable Steering Column — In-Vehicle Deployment

⚠ WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

2. **NOTE:** It may be necessary to lower or remove the deployable steering column from the instrument panel to access the deployable steering column electrical connector.

   Access the deployable steering column electrical connector.

3. **NOTE:** If the deployable steering column does not have a hardwired pigtail, it will be necessary to cut the wires and connector(s) from the vehicle wire harness and reconnect to the deployable steering column.

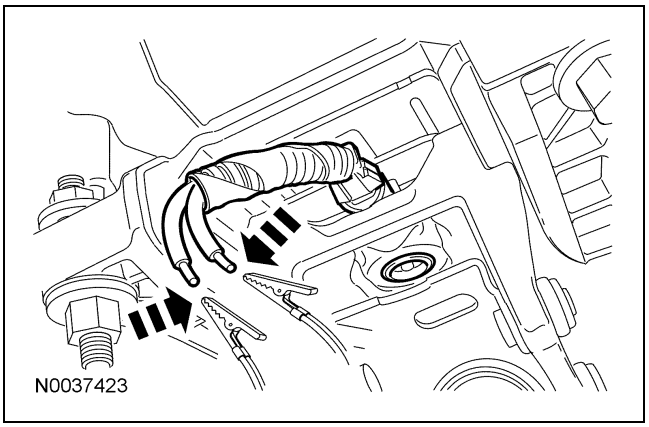
   Cut each of the deployable steering column wires, leaving at least 101.6 mm (4 in) to work with.

GENERAL PROCEDURES (Continued)

4. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.

5. Make a jumper harness to deploy the deployable steering column.
   - Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
   - At one end of the jumper harness, connect the wires together.

6. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the deployable steering column. Use tape or other insulating material to make sure that the leads do not make contact with each other.



7. Remain at least 9.14 m (30 ft) away from the deployable steering column.

8. From the end of the jumper harness that is not connected to the deployable steering column, disconnect the 2 wires of the jumper harness from each other.

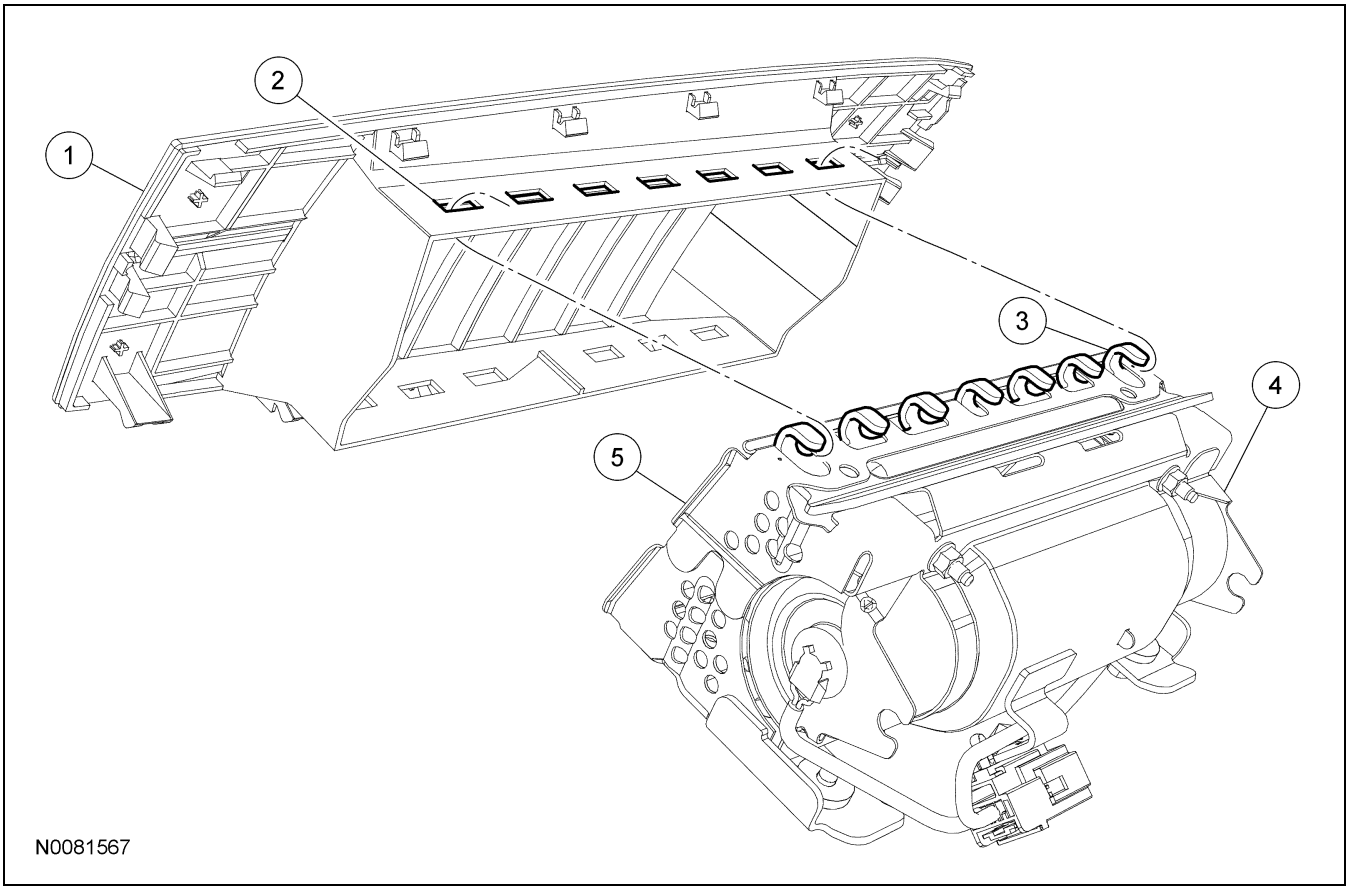
9. Deploy the deployable steering column by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.

10. To allow for cooling, wait at least 10 minutes before approaching the deployed steering column.

11. Dispose of the deployed steering column in the same manner as any other part to be scrapped.

REMOVAL AND INSTALLATION

Air Bag Trim Cover — Passenger



Item	Part Number	Description
1	04338	Passenger air bag cover
2	—	Passenger air bag cover window (part of passenger air bag cover)
3	—	Passenger air bag canister hook (part of canister)

(Continued)

Item	Part Number	Description
4	—	Passenger air bag canister (part of 044A74)
5	—	Passenger air bag soft pack (part of 044A74)

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REMOVAL AND INSTALLATION (Continued)

Removal

⚠ WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

⚠ WARNING: Do not use any sharp tools to separate the passenger air bag module trim cover from the passenger air bag module canister. Sharp tools may damage the passenger air bag module. Failure to follow this instruction may result in the passenger air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.

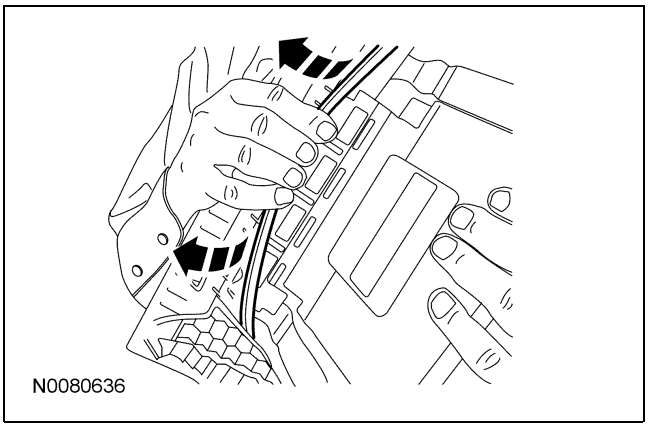
⚠ WARNING: Do not unpack or unroll the passenger air bag module soft pack. If the soft pack becomes unpacked or unrolled, install a new passenger air bag module assembly. Failure to follow these instructions may result in the passenger air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.

⚠ WARNING: Do not manipulate or compromise the passenger air bag module hooks during the removal or installation procedure. Failure to follow this instruction may result in the passenger air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.

1. Remove the passenger air bag module. For additional information, refer to Passenger Air Bag Module in this section.

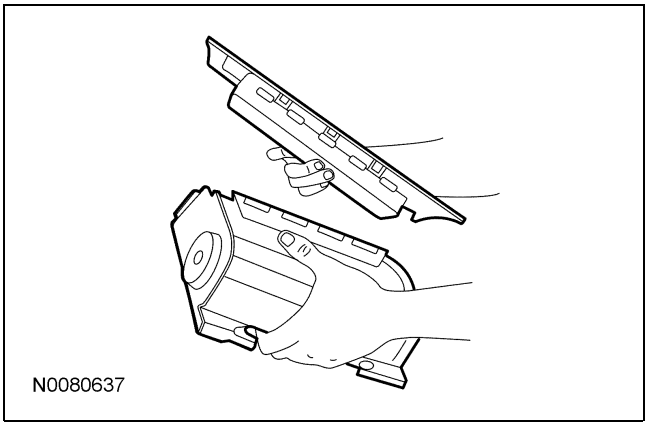
2. Place a mark on top of the passenger air bag module canister for correct installation.

3. Carefully lift the passenger air bag module cover from the bottom of the air bag module canister, separating the windows from the canister hooks.



4. **NOTE:** Place an X mark on the old air bag cover to avoid reinstalling.

   Remove the passenger air bag cover from the canister, separating the top windows from the canister hooks.



Installation

1. Place the passenger air bag cover on a clean work surface once it is removed from the shipping package.

REMOVAL AND INSTALLATION (Continued)

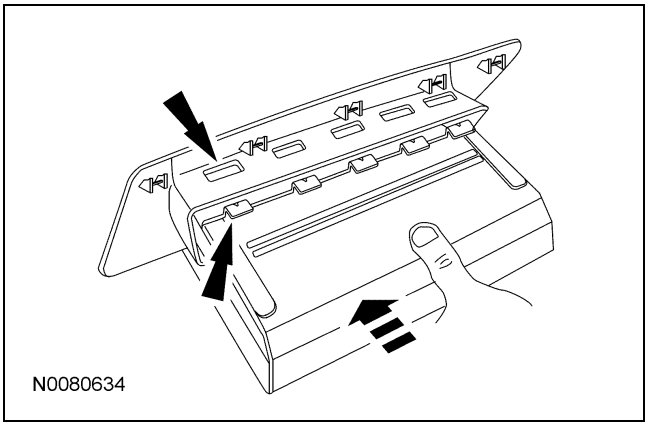
2. **WARNING: Carefully inspect the passenger air bag trim cover, canister and soft pack before assembly. If any foreign objects are found, remove them before attaching the passenger air bag trim cover to the canister. If the canister or soft pack is damaged, install a new passenger air bag module assembly. Failure to follow this instruction may result in the passenger air bag module deploying incorrectly, which increases the risk of serious personal injury or death in a crash.**

   Match the number of cover windows to the number of canister hooks before attaching the passenger air bag cover to the canister.

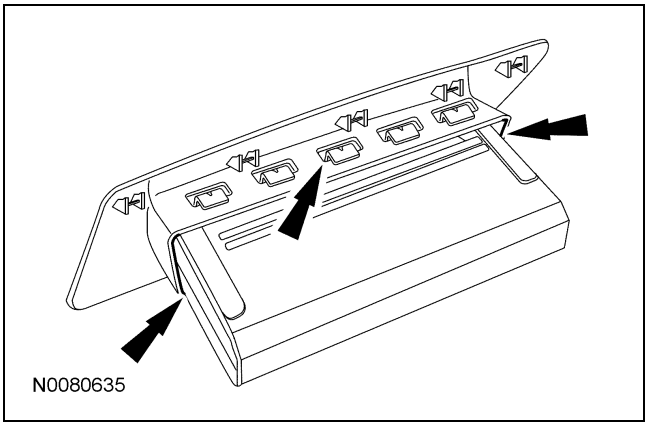
3. Match the top of the passenger air bag cover with the canister mark from the removal procedure.

4. Position the canister onto the passenger air bag cover and engage the bottom hooks into the air bag cover windows.

5. Push the top of the passenger air bag cover to engage the top canister hooks.



6. Inspect the passenger air bag cover windows-to-canister hooks to verify that every window has a hook installed and the sides are not tucked or folded against the air bag canister.



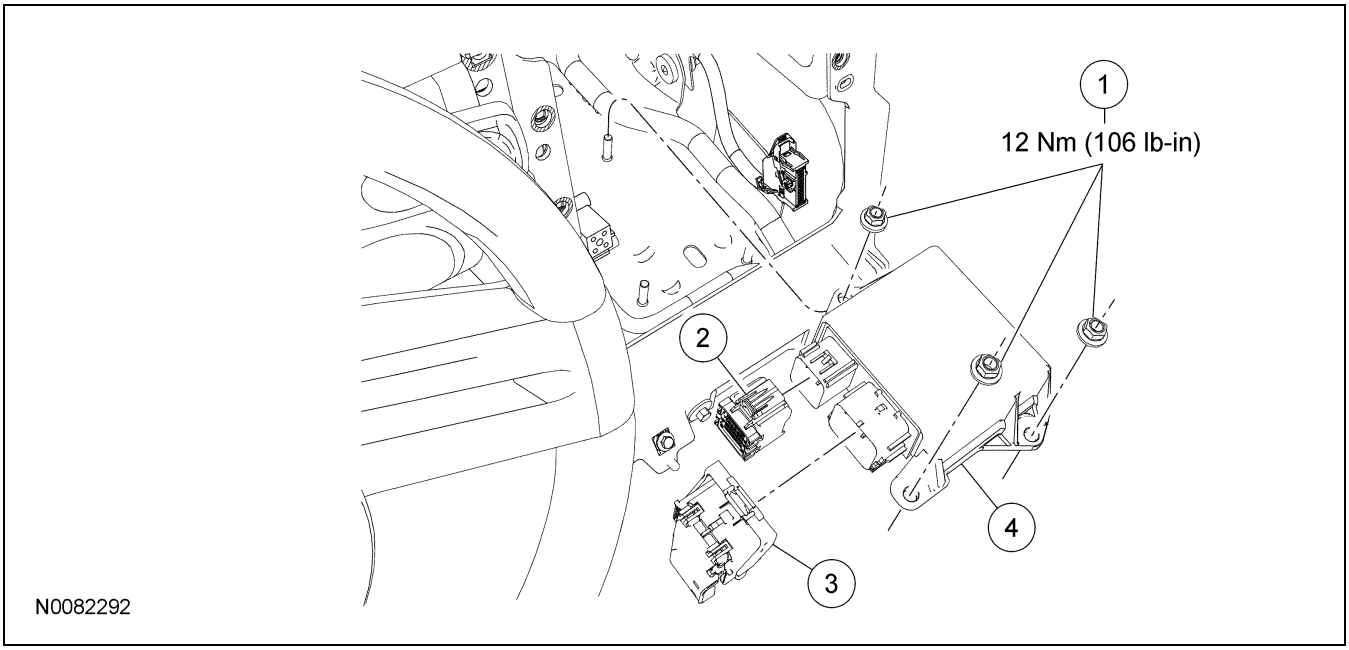
7. Install the passenger air bag module. For additional information, refer to Passenger Air Bag Module in this section.

8. **NOTE:** The video procedure utilizes a Fusion/Milan passenger air bag module assembly. It also applies to vehicles with similar passenger air bag module designs.

   Click here to view a video version of this procedure.

REMOVAL AND INSTALLATION

Restraints Control Module (RCM)



Item	Part Number	Description
1	W520111	Restraints Control Module (RCM) nuts (3 required)
2	—	RCM small connector (part of 14401)
3	—	RCM large connector (part of 14A005)
4	14B321	RCM

Removal

⚠ WARNING: If a vehicle has been in a crash, inspect the restraints control module (RCM) and the impact sensor (if equipped) mounting areas for deformation. If damaged, restore the mounting areas to the original production configuration. A new RCM and sensors must be installed whether or not the air bags have deployed. Failure to follow these instructions may result in serious personal injury or death in a crash.

⚠ WARNING: Do not handle, move or change the original horizontal mounting position of the restraints control module (RCM) while the RCM is connected and the ignition switch is ON. Failure to follow this instruction may result in the accidental deployment of the safety canopy and cause serious personal injury or death.

NOTICE: **When installing a new Restraints Control Module (RCM), it is necessary to carry outProgrammable Module Installation (PMI). System failure may occur if PMI is not performed. For additional information, refer to Section 418-01.**

NOTE: When installing a new Restraints Control Module (RCM) always make sure the correct RCM is being installed. If an incorrect RCM is installed, erroneous DTCs will result.

NOTE: The air bag warning indicator illuminates when the correct RCM fuse is removed and the ignition is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. If installing a new RCM, carry out the steps necessary to prepare for Programmable Module Installation (PMI). For additional information, refer to Section 418-01.

2. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

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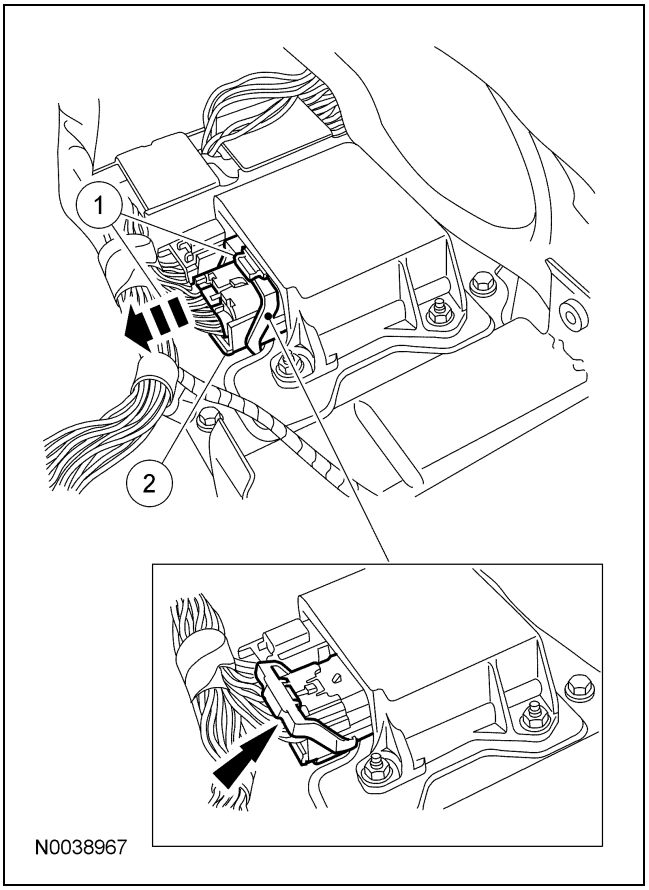
REMOVAL AND INSTALLATION (Continued)

3. Remove the instrument panel center finish panel. For additional information, refer to the appropriate procedure in Section 501-12.

4. Disconnect the large RCM electrical connector.
   1 Pinch the thumb tab and pivot the connector position assurance lever all the way back until it stops.
   2 Pull out and disconnect the large RCM electrical connector.



5. Disconnect the small RCM electrical connector.

6. Remove the 3 nuts and RCM.

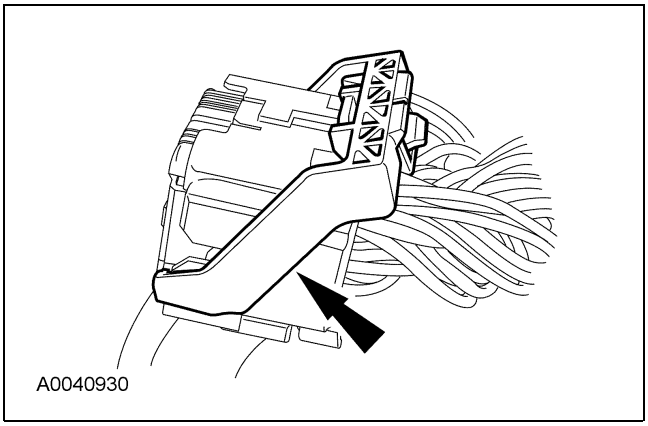
Installation

1. **⚠ WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.**

   Position the RCM and install the nuts.
   - Tighten to 12 Nm (106 lb-in).

2. Connect the small RCM electrical connector.

3. Make sure the largeRCM connector position assurance lever is in the full release position before attempting to connect the connector.



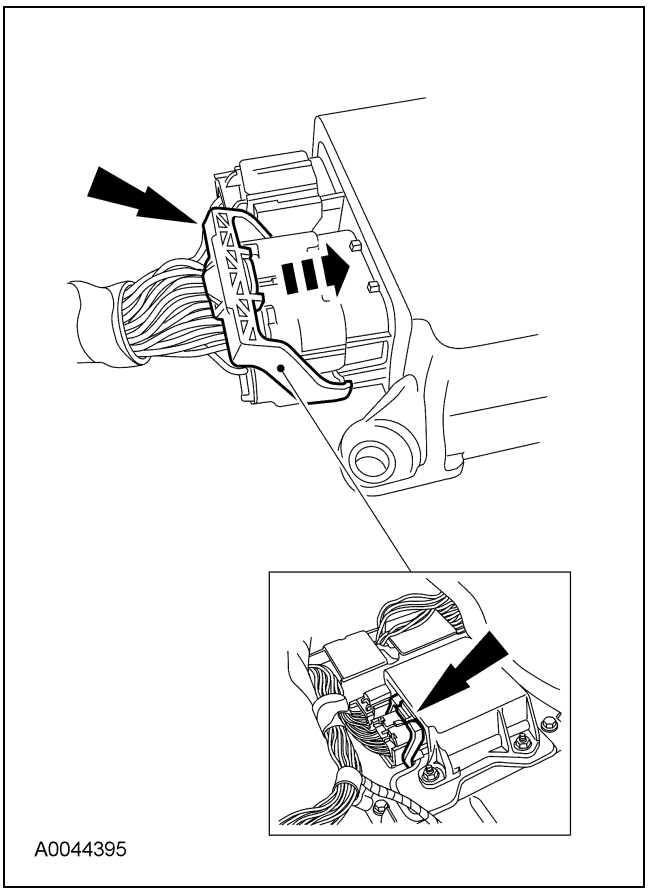
REMOVAL AND INSTALLATION (Continued)

4. ***NOTICE:*** **Putting the large RCM electrical wiring connector into the RCM on an angle can cause bad electrical connections and damage components.**

   NOTICE: **Do not push the connector to where the lever pivots and seats itself. Light pressure is needed to get the connector into position on the RCM before using the lever to fully seat the connector.**

   Connect the large RCM electrical wiring connector.

   - Using the connector position assurance lever, pivot it toward the RCM, drawing the connector into the RCM.
     - Make sure the thumb tab is engaged to the retainer on the RCM and locked in place.



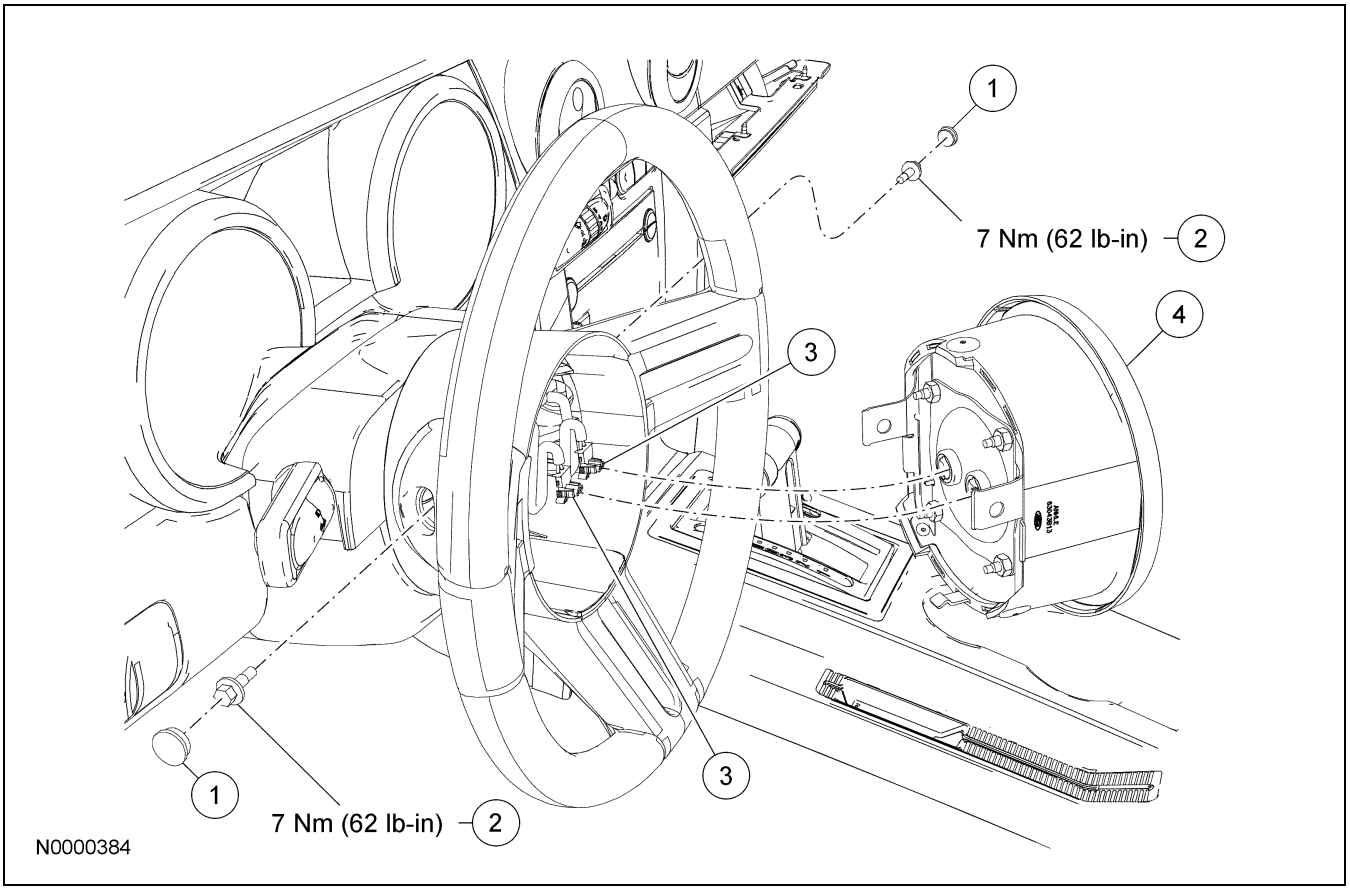
5. Install the instrument panel center finish panel. For additional information, refer to the appropriate procedure in Section 501-12.

6. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

7. If a new RCM was installed, carry out the steps necessary for PMI. For additional information, refer to Section 418-01.

REMOVAL AND INSTALLATION

Driver Air Bag Module



Item	Part Number	Description
1	3L518	Driver air bag module bolt caps (2 required)
2	W506411	Driver air bag module bolts (2 required)
3	—	Driver air bag module electrical connectors (part of 14A664)
4	043B13	Driver air bag module

Removal

⚠ WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition is ON.

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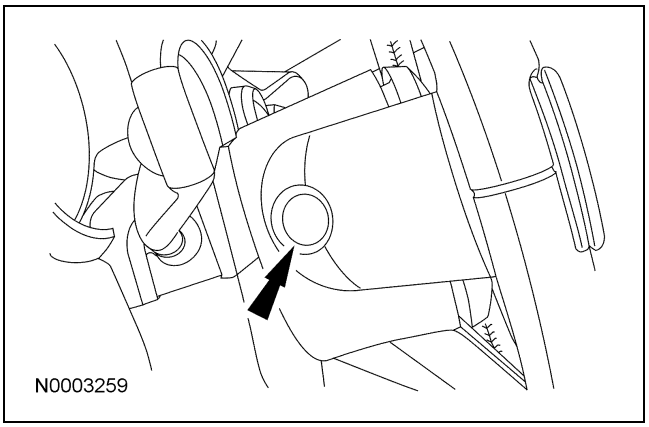
REMOVAL AND INSTALLATION (Continued)

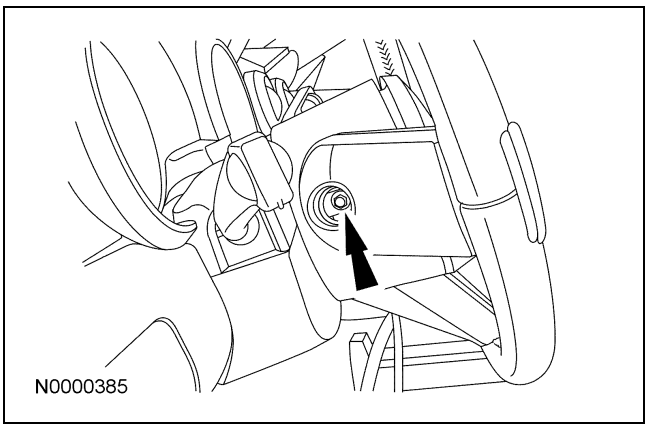
NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

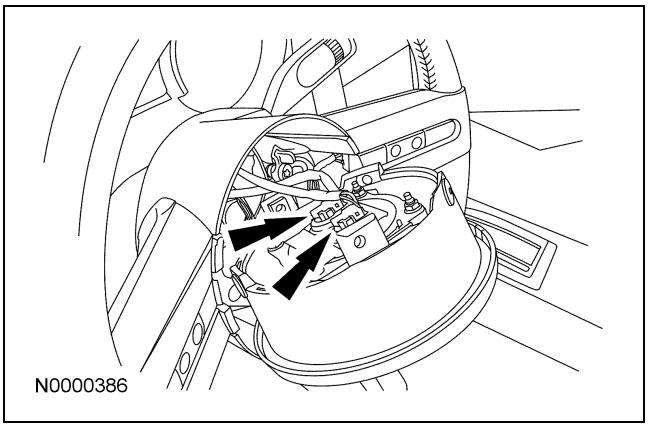
2. Remove the 2 driver air bag module bolt caps.



3. Remove the 2 driver air bag module bolts.
   - To install, tighten to 7 Nm (62 lb-in).



4. Disconnect the 2 driver air bag module electrical connectors and remove the driver air bag module.

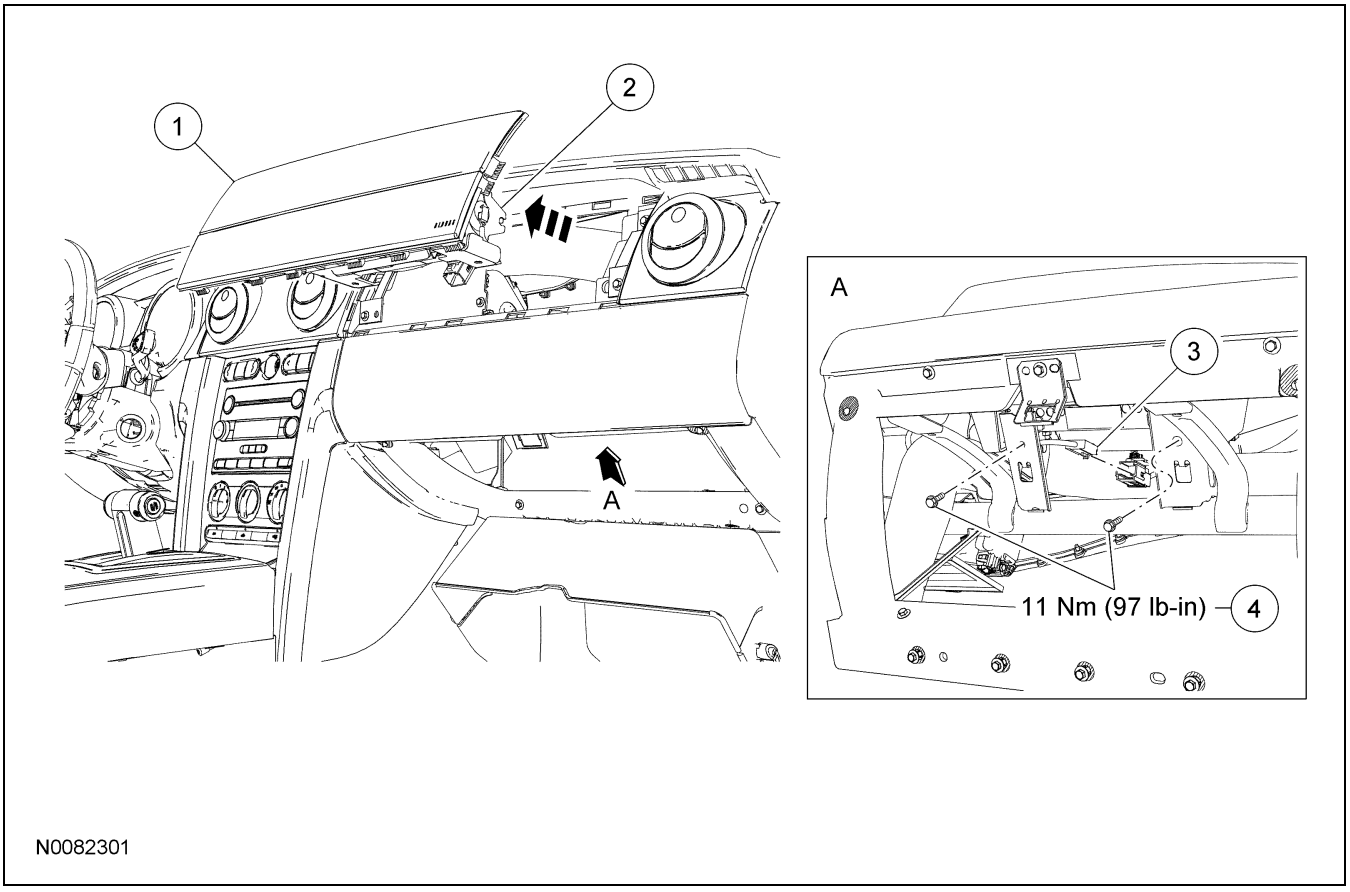


5. To install, reverse the removal procedure.

6. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

REMOVAL AND INSTALLATION

Passenger Air Bag Module



Item	Part Number	Description
1	04338	Passenger air bag cover
2	044A74	Passenger air bag module assembly
3	—	Passenger air bag module electrical connector (part of 14401)

(Continued)

Item	Part Number	Description
4	W505252	Passenger air bag module bolts (2 required)

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REMOVAL AND INSTALLATION (Continued)

Removal and Installation

⚠ **WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.**

⚠ **WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.**

NOTICE: **Do not install a new passenger air bag module assembly due to a damaged or discolored passenger air bag cover. The passenger air bag cover can be serviced separately from the passenger air bag module assembly. For additional information, refer to Air Bag Trim Cover — Passenger in this section.**

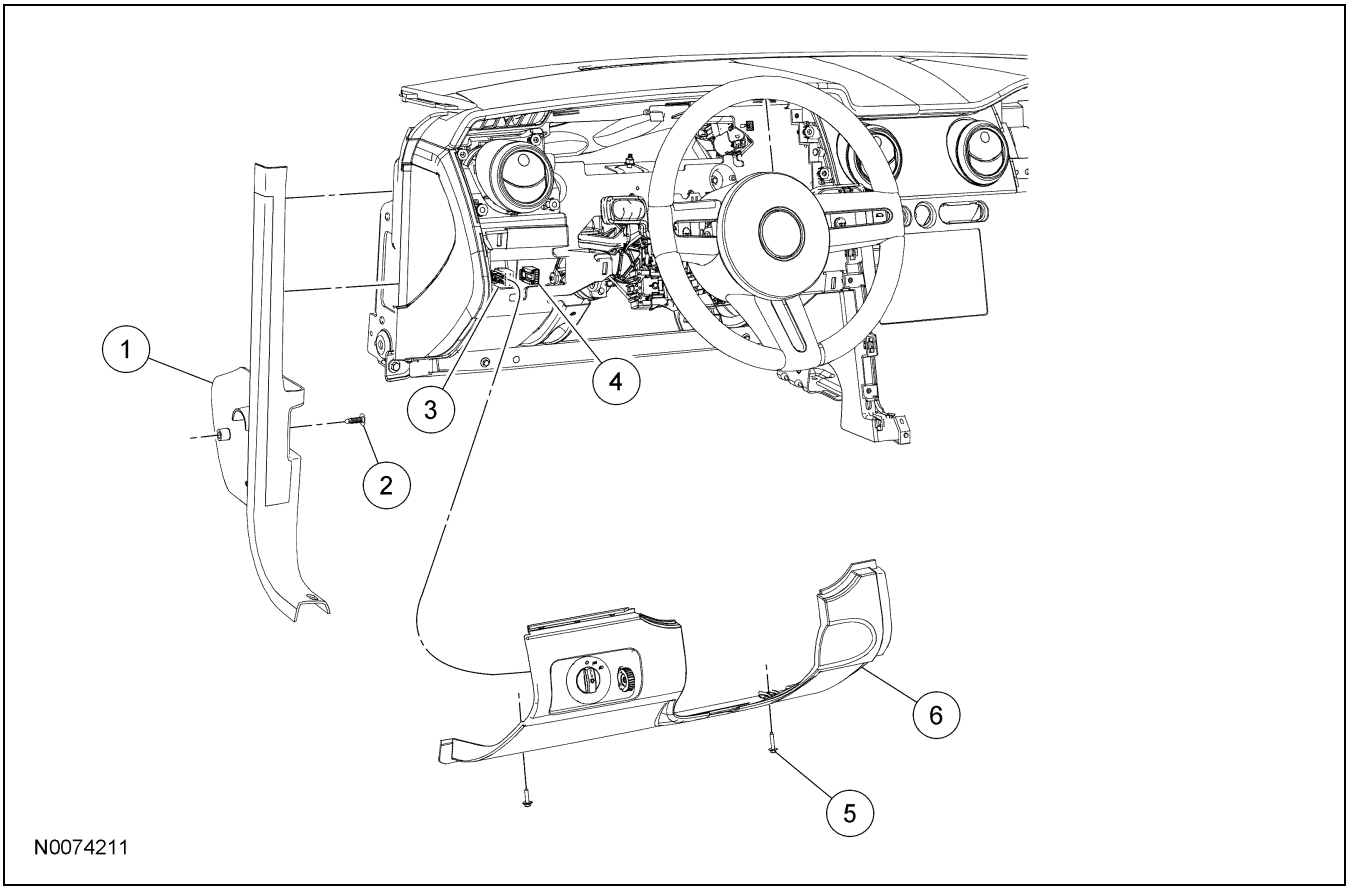
NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.
2. Lower the glove compartment door and disconnect the passenger air bag module electrical connector.
3. Remove the 2 air bag module bolts.
   - To install, tighten to 11 Nm (97 lb-in).
4. Through the glove box opening, release the passenger air bag cover clips (6 upper, 6 lower and 2 on each side) from the instrument panel and then remove the passenger air bag module.
5. To install, reverse the removal procedure.
6. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

REMOVAL AND INSTALLATION

Clockspring



Item	Part Number	Description
1	A30A64	LH A-pillar lower trim panel
2	W505156	LH A-pillar lower trim panel screw
3	—	Headlamp switch electrical connector (part of 14401)
4	—	Courtesy lamp switch electrical connector (part of 14401)

(Continued)

Item	Part Number	Description
5	W505156	Steering column opening cover screw (2 required)
6	04459	Steering column opening cover

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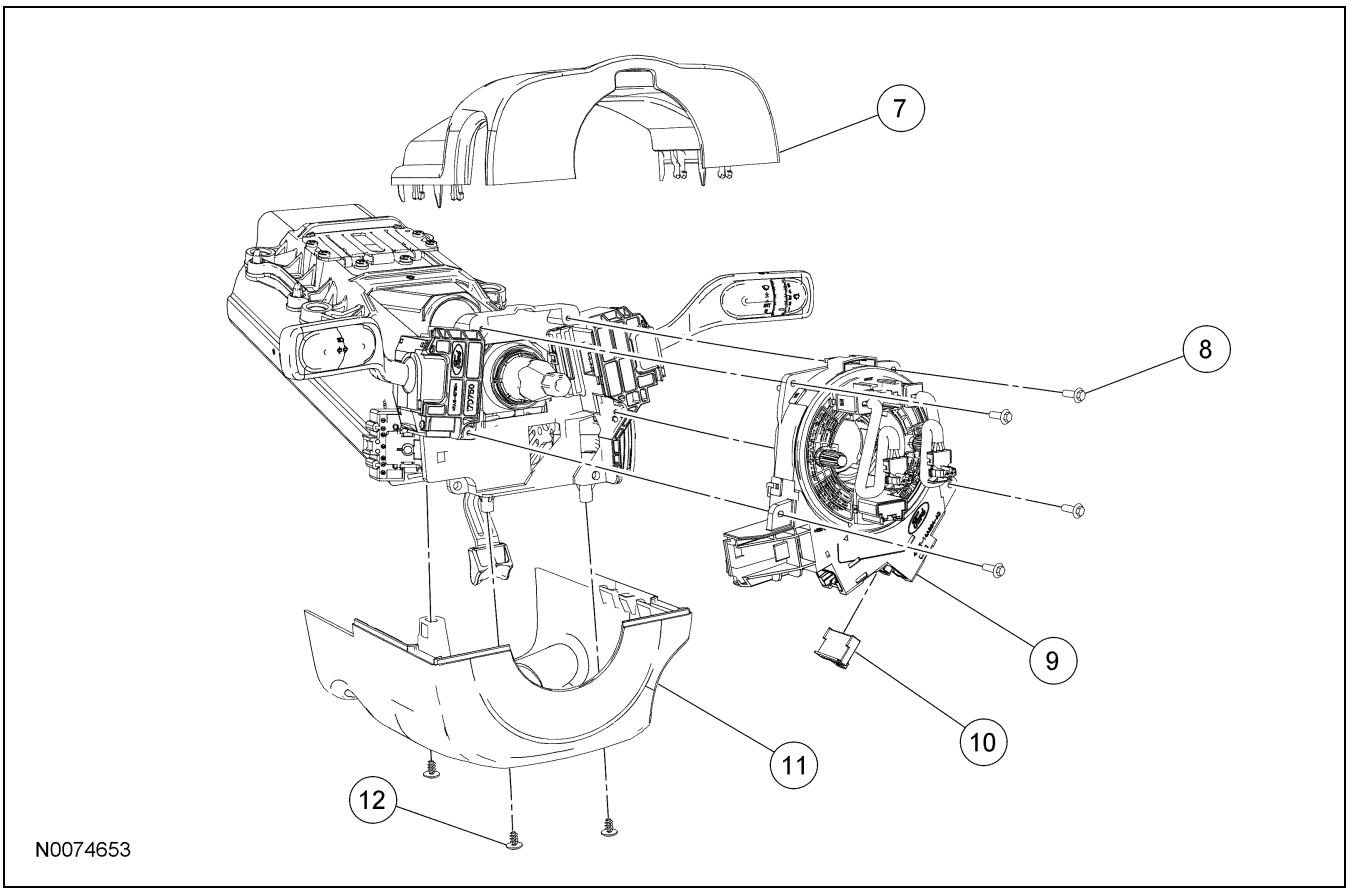
REMOVAL AND INSTALLATION (Continued)



Item	Part Number	Description
7	3530	Upper steering column shroud
8	—	Clockspring screw (part of 14A644) (4 required)
9	14A644	Clockspring
10	—	Clockspring electrical connector (part of 14401)
11	3K512	Lower steering column shroud
12	W504041	Lower steering column shroud screw (3 required)

Removal

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

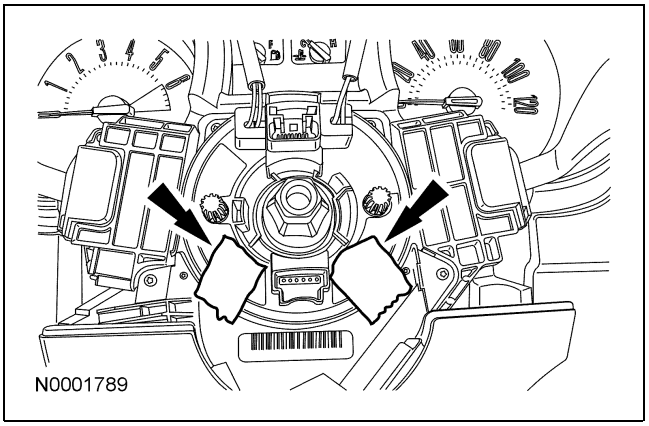
NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.
2. Make sure the road wheels are in the straight-ahead position.
3. Tilt the steering wheel in the downward position and lock the tilt handle.
4. Remove the driver air bag module. For additional information, refer to Driver Air Bag Module in this section.
5. Remove the LH A-pillar lower trim panel.
6. Remove the 2 screws and the steering column opening cover.
   - Disconnect the headlamp and courtesy light switches electrical connectors.
7. Remove the 3 lower steering column shroud screws.
8. Remove the upper steering column shroud.
9. Remove the lower steering column shroud.
10. Remove the steering wheel. For additional information, refer to Section 211-04.

REMOVAL AND INSTALLATION (Continued)

11. **NOTE:** If the clockspring is to be reinstalled, do not allow the clockspring to turn from its removal position.

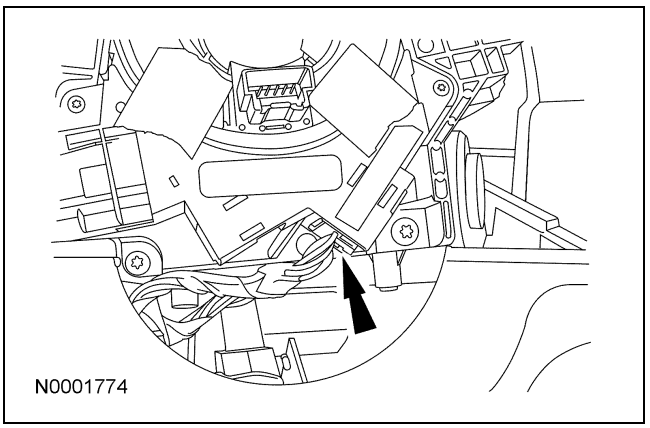
    If reusing the clockspring, tape the clockspring center rotor to the outer housing to keep it from rotating.



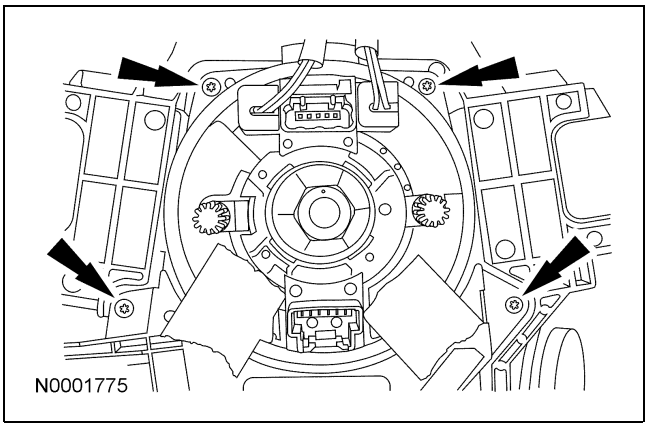
12. **NOTE:** The tilt steering column mechanism is spring loaded, carefully release the tilt handle while repositioning.

    Carefully position the steering column up and leave the tilt handle in the unlocked position.

13. Disconnect the clockspring electrical connector.



14. Remove the 4 screws and clockspring.



REMOVAL AND INSTALLATION (Continued)

Installation

Vehicles needing clockspring recentering

1. ⚠ **WARNING: If the clockspring is not correctly centralized, it may fail prematurely. If in doubt, repeat the centralizing procedure. Failure to follow these instructions may increase the risk of serious personal injury or death in a crash.**

   NOTICE: **Make sure the road wheels are in the straight-ahead position. Failure to follow this instruction may damage the clockspring.**

   If the vehicle's clockspring has rotated out of center, follow these steps to center the clockspring.

   1 Hold the clockspring outer housing stationary.

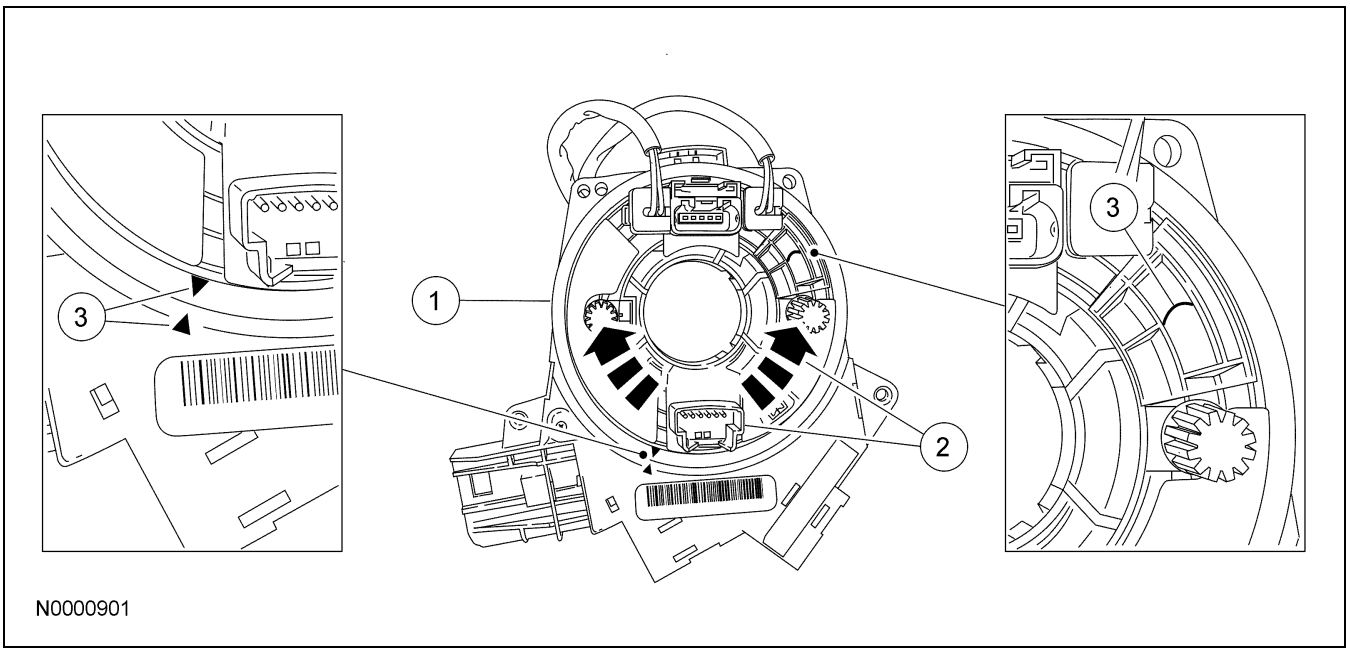
   2 *NOTICE:* **Overturning will destroy the clockspring. The internal ribbon wire acts as the stop and can be broken from its internal connection.**

   While turning the rotor counterclockwise, carefully feel for the ribbon wire to run out of length and for a slight resistance. Stop turning at this point.

   3 Turn the clockspring clockwise (approximately 3 turns) until the ribbon wire shows anywhere across the window (window will be near the 2 o'clock position) and the arrow on the rotor lines up with the arrow on the bottom left of the housing. Clockspring is now centered.

   - Do not allow the rotor to turn from this position.

REMOVAL AND INSTALLATION (Continued)



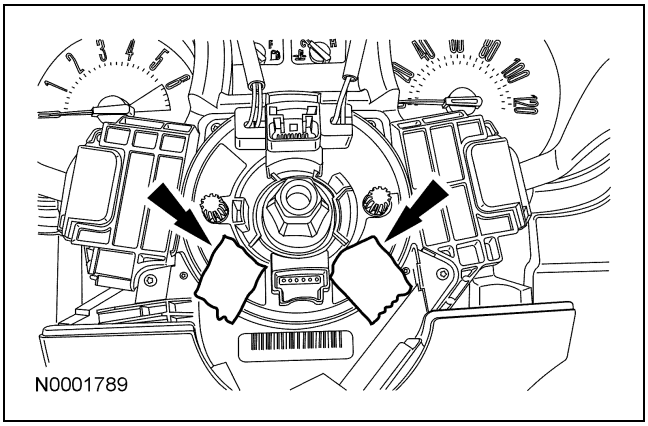
All vehicles

2. Install the clockspring and 4 screws.
3. Connect the clockspring electrical connector.
4. Position the lower steering column shroud upward.
5. Carefully position the steering column down and place the tilt handle in the locked position.
6. Install the upper steering column shroud.
7. Install the 3 lower steering column shroud screws.
8. Connect the headlamp and courtesy light switches electrical connectors and install the steering column opening cover and 2 screws.
9. Install the LH A-pillar lower trim panel.

Vehicle repairs reusing the same clockspring

10. **NOTE:** When the tape is removed, do not allow the clockspring to turn.

    Remove the tape applied during clockspring removal.



Vehicles installing a new clockspring

11. ***NOTICE:*** **Do not rotate the new clockspring between removing the sealing key and installing the steering wheel. If the vehicle is left unattended by the technician between removing the sealing key and installing the steering wheel, carry out the centralizing procedure. Failure to follow this instruction may result in component damage and/or system failure.**

    Remove the sealing key.

REMOVAL AND INSTALLATION (Continued)

12. ***NOTICE:*** **If the vehicle is left unattended by the technician between centralizing the clockspring and installing the steering wheel, to prevent damage to the clockspring, the centralizing procedure must be repeated.**

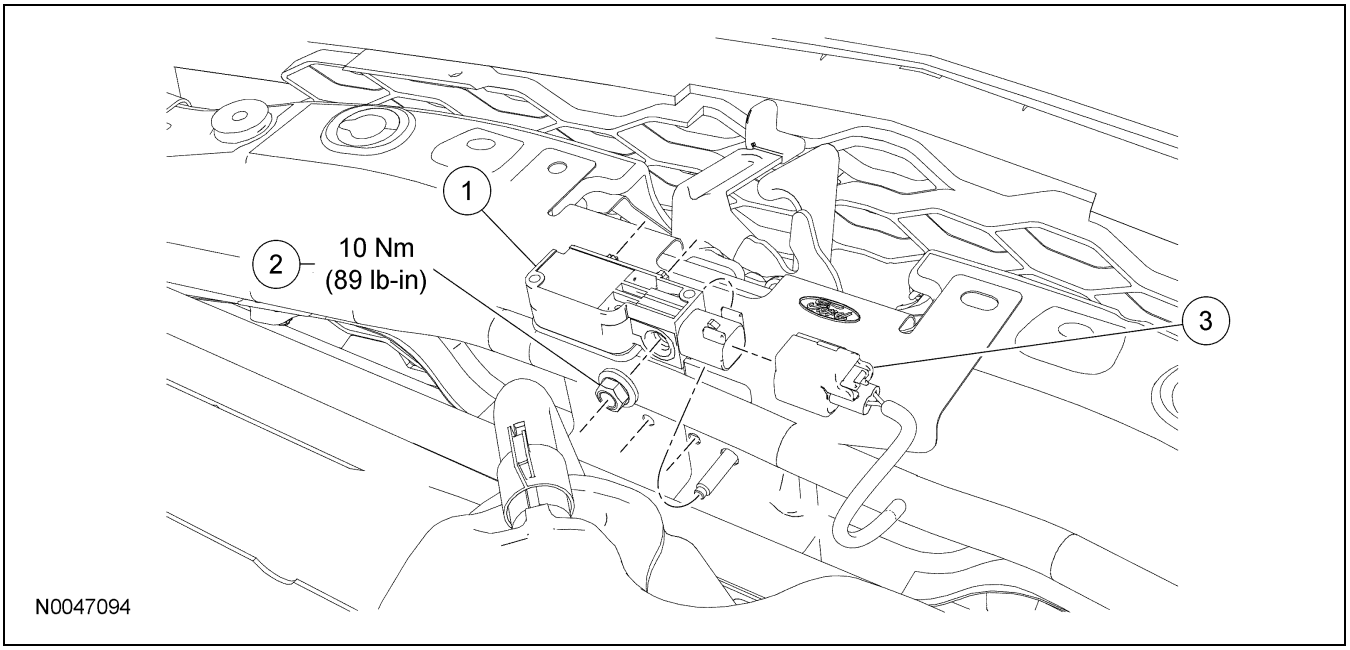
    Install the steering wheel. For additional information, refer to Section 211-00.

13. Install the driver air bag module. For additional information, refer to Driver Air Bag Module in this section.

14. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

REMOVAL AND INSTALLATION

Front Impact Severity Sensor



Item	Part Number	Description
1	14B345	Front impact severity sensor
2	W520111	Front impact severity sensor nut
3	—	Front impact severity sensor electrical connector (part of 14290)

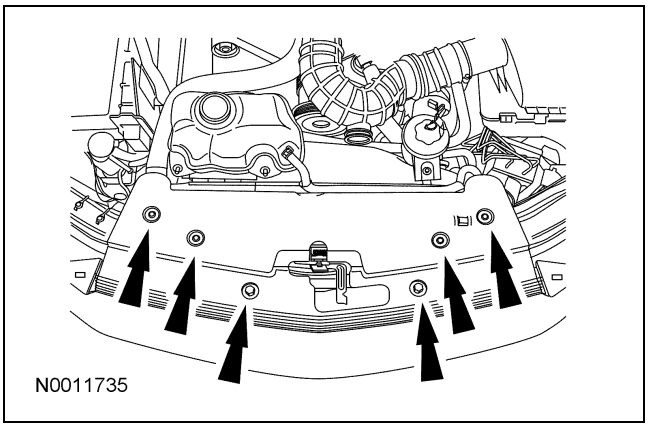
Removal and Installation

⚠ WARNING: If a vehicle has been in a crash, inspect the restraints control module (RCM) and the impact sensor (if equipped) mounting areas for deformation. If damaged, restore the mounting areas to the original production configuration. A new RCM and sensors must be installed whether or not the air bags have deployed. Failure to follow these instructions may result in serious personal injury or death in a crash.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.
2. Remove the 6 retainers and radiator upper air deflector.



3. Disconnect the front impact severity sensor electrical connector.
4. Remove the nut and front impact severity sensor.
   - To install, tighten to 10 Nm (89 lb-in).

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REMOVAL AND INSTALLATION (Continued)

5. ⚠ **WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.**

   NOTE: Before installation, make sure the front impact severity sensor mating surfaces are clean and free of corrosion and dirt.

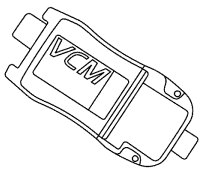
   To install, reverse the removal procedure.

6. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

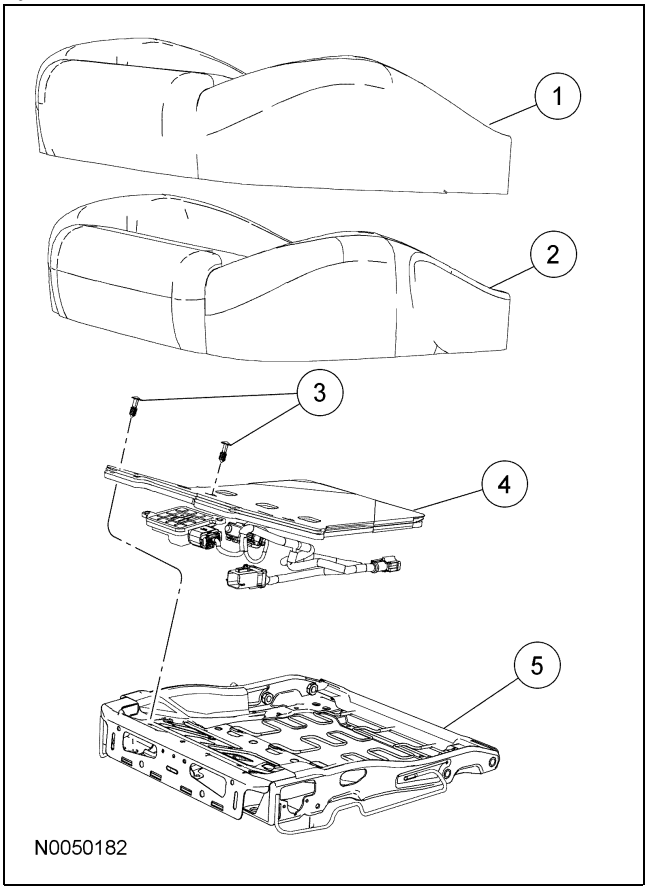
REMOVAL AND INSTALLATION

Occupant Classification Sensor

Special Tool(s)

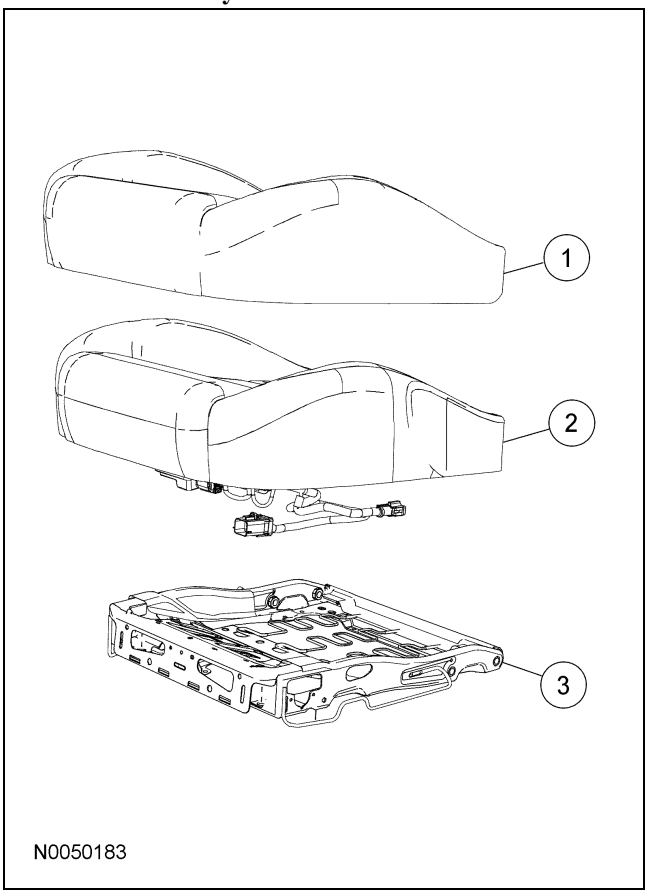
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Seat with OEM Occupant Classification Sensor (OCS) System



Item	Part Number	Description
1	62900	Seat cushion trim cover
2	—	Seat cushion foam pad
3	—	Pin-type retainers
4	—	Occupant Classification Sensor (OCS) system (bladder, hose with pressure sensor,Occupant Classification System Module (OCSM) and wiring harness)
5	63100	Seat cushion frame assembly

Seat with a OCS System Service Kit



Item	Part Number	Description
1	62900	Seat cushion trim cover
2	632A22	OCS system service kit (seat cushion foam pad, bladder, hose with pressure sensor,OCSM and wiring harness)
3	63100	Seat cushion frame assembly

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REMOVAL AND INSTALLATION (Continued)

Removal

⚠ **WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.**

NOTICE: **To prevent system failure, it is necessary to carry out the Occupant Classification Sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset command.**

NOTE: The heater mat on the front passenger seat cushion is not serviceable separately. If a new heater mat is needed on the front passenger seat cushion, a new Occupant Classification Sensor (OCS) system service kit equipped with a heater mat must be installed.

NOTE: OCS system components (seat cushion foam pad, bladder with pressure sensor and Occupant Classification System Module (OCSM) are calibrated to each other and are serviced as an assembly. The OCS system components are not to be installed separately. If a new OCS system, OCS system component or seat cushion foam pad are needed, a new OCS system service kit (seat cushion foam pad, bladder with pressure sensor, OCSM and seat wiring harness) must be installed as an assembly.

NOTE: To identify between a production OCS system and a OCS system service kit inspect the OCSM electrical connector. A production OCS system allows the disconnect of the OCSM electrical connector. A OCS system service kit has the OCSM electrical connector glued to the module. It cannot and should not be disconnected or altered.

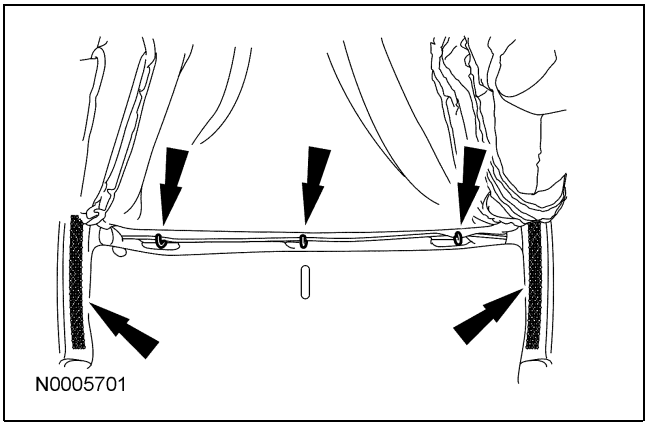
NOTE: The air bag warning indicator illuminates when the correct RCM fuse is removed and the ignition is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

All seats

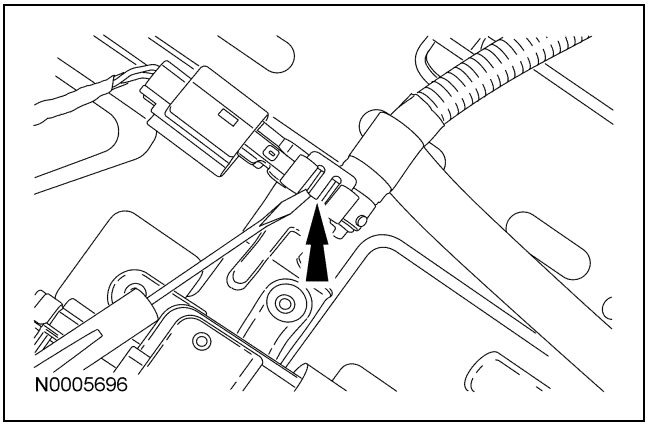
1. Remove the passenger seat. For additional information, refer to Section 501-10.
2. Remove the seat backrest. For additional information, refer to Section 501-10.
3. Remove the seat track. For additional information, refer to Section 501-10.
4. Release all the seat cushion trim cover J-clips and the pin-type retainer from the seat cushion frame assembly.
5. *NOTICE:* **Use care when separating the seat cushion trim cover from the hook-and-loop strip, or the hook-and-loop strip can be torn from the seat cushion foam pad.**

   Remove the hog rings and cushion trim cover from the foam pad.



6. **NOTE:** OEM OCS pressure sensor shown, OCS system service kit pressure sensor similar.

   Bend to release the retaining tab and remove the pressure sensor from the bracket.



REMOVAL AND INSTALLATION (Continued)

Seats with power

7. Disconnect the seat control switch electrical connector from the cushion side shield.

All seats

8. **NOTE:** Note position of wire harness routing for installation.

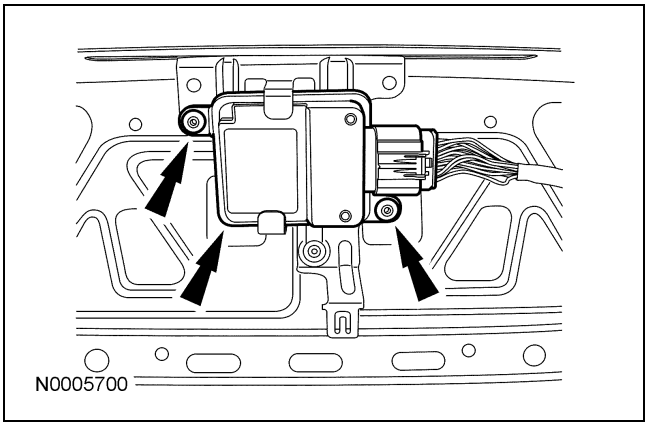
   Release all the seat wire harness routing clips and electrical connector retainers from the seat cushion frame.

Seats with an OEM Occupant Classification Sensor (OCS)

9. Release the 2 OCS system bladder pin-type retainers and separate it from the seat cushion frame.

All seats

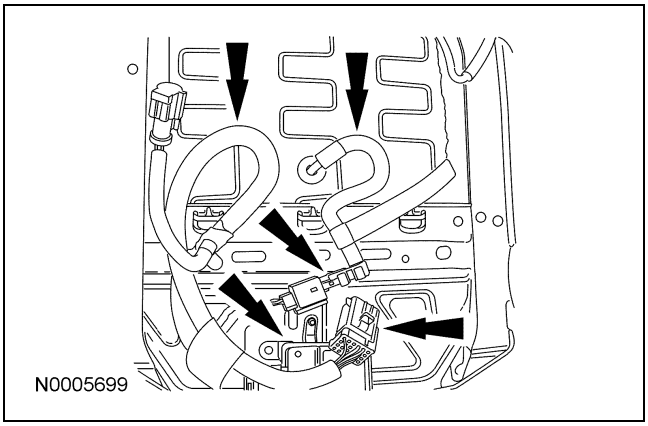
10. Remove the rivets and separate the OCSM from the seat cushion frame bracket.



11. **NOTE:** Note position of hose routing for installation.

    Remove the OCS system from the seat cushion frame assembly.

    - Feed the hose, pressure sensor, wire harness, electrical connector and OCSM through the opening in the seat cushion frame.



REMOVAL AND INSTALLATION (Continued)

Installation

All seats

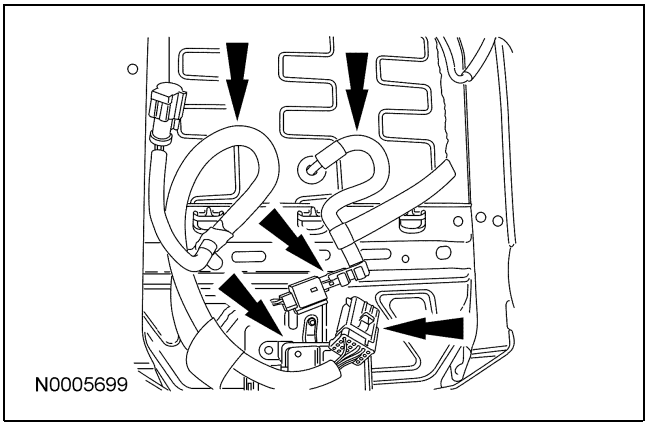
1. ⚠ **WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.**

   NOTICE: **Failure to route the seat Occupant Classification Sensor (OCS) system components through the correct seat cushion support opening may cause component failure.**

   NOTICE: **While positioning the seat cushion frame and Occupant Classification Sensor (OCS) system assembly, be careful not to damage any of the components. Failure to do so may result in component failure.**

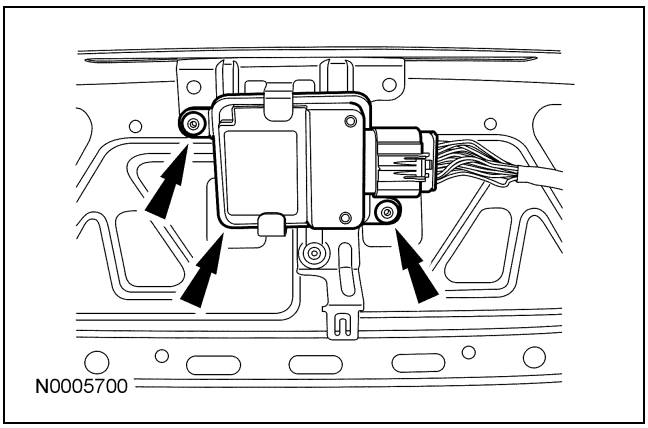
   Position the OCS system components to the seat cushion frame as noted during removal.

   - Feed the hose, pressure sensor, wire harness, electrical connector and the OCSM through the seat cushion frame.

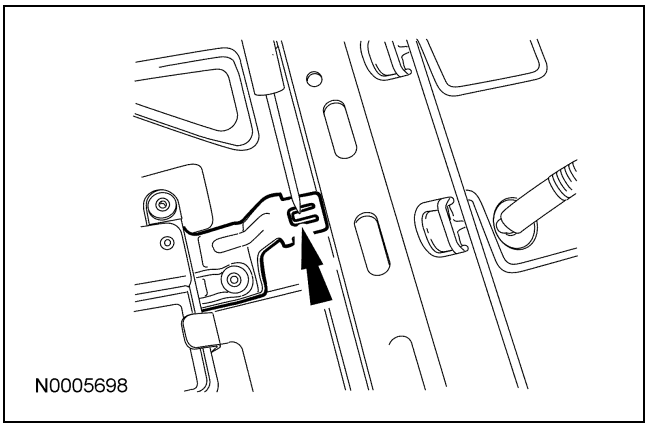


2. **NOTE:** Make sure the OCSM is correctly secured to the bracket.

   Position the OCSM onto the seat cushion frame bracket and install new rivets.



3. Bend the retaining tab back on the pressure sensor bracket.



Seats with an OCS system service kit

4. Position the OCS service kit foam pad and attach the 2 pin-type retainers to the seat cushion frame assembly.

Seats with a production OCS system

5. Attach the 2 OCS system bladder pin-type retainers to the seat cushion frame assembly.

All seats

6. Attach all the seat wire harness routing clips and electrical connector retainers to the cushion frame.

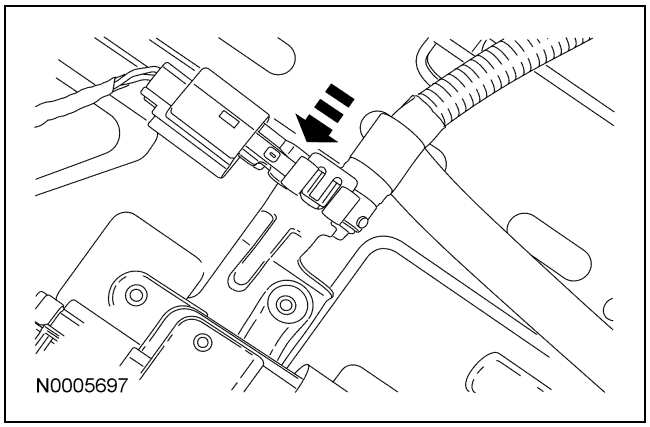
Seats with power

7. Connect the seat control switch electrical connector to the cushion side shield.

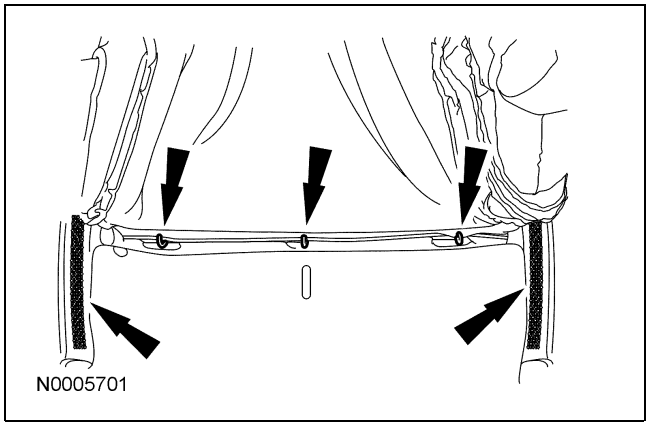
REMOVAL AND INSTALLATION (Continued)

All seats

8. Install the pressure sensor onto the seat cushion frame bracket, making sure the retaining tab is completely engaged.
   - When installed correctly, an audible click will be heard and the pressure sensor will not be able to be removed from its bracket without disengaging the retaining tab.



9. Install the seat cushion trim cover and hog rings to the seat cushion foam pad.



10. Fasten the seat cushion trim cover J-clips, hook-and-loop strips and pin-type retainer to the seat cushion frame.

11. Install the seat track. For additional information, refer to Section 501-10.

12. Install the seat backrest. For additional information, refer to Section 501-10.

13. Install the passenger seat. For additional information, refer to Section 501-10.

14. Repower the SRS. **Do not** prove out the SRS at this time For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

15. ⚠ **WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.**

    NOTICE: **To prevent system failure, the following precautions must be taken before carrying out the Occupant Classification Sensor (OCS) system reset:**

    — **Make sure the voltage to the Occupant Classification System Module (OCSM) is above 8.0 volts and less than 18.0 volts.**

    — **Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.**

    — **Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.**

    — **Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before carrying out the OCS system reset process.**

    Carry out the OCS system reset. **If the system reset was successful, proceed to step 19, otherwise proceed to step 16.**

REMOVAL AND INSTALLATION (Continued)

16. If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following:
    - OCS system wiring
    - Check the pressure sensor hose for kinks and/or damage
    - Related seat wiring harness, body wiring harness terminals and connectors

17. If the damage is found, repair and/or install new components as necessary.

18. Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit.

19. **NOTE:** The ignition switch must be cycled after the OCS system reset.

    Prove out the SRS as follows:

    Turn the ignition key from ON to OFF. Wait 10 seconds, then turn the ignition switch back to ON and visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is present, the air bag warning indicator will:

    — fail to light.

    — remain lit continuously.

    — flash at a 5Hz rate (RCM not configured).

    The air bag warning indicator might not light until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the RCM. If the air bag warning indicator is inoperative and a SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

    Clear all continuous DTCs from the RCM using a scan tool.

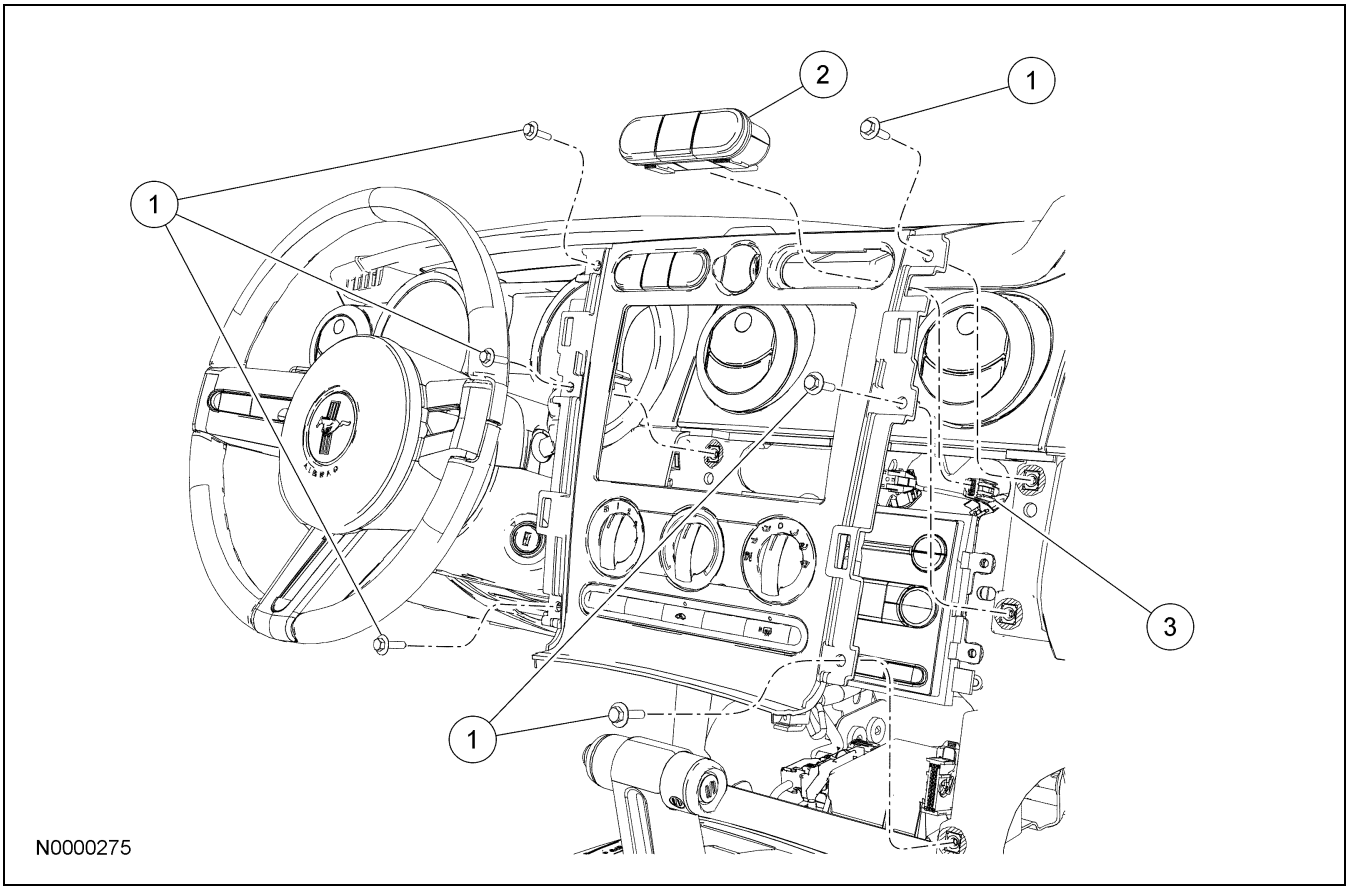
20. **NOTE:** A prepaid return postcard is provided with a new OCS system service kit. The serial number for the new part and the Vehicle Identification Number (VIN) must be recorded and sent to Ford Motor Company.

    If a new OCS system service kit was installed, fill out the necessary information on the OCS system traceability card and return it along with the complete inoperative OCS system to Ford Motor Company.

    - When returning the inoperative OCS system include: seat cushion foam pad, bladder, OCSM, pressure sensor (transducer), hose, electrical connectors and wire harness (service part OCS only).

REMOVAL AND INSTALLATION

Passenger Air Bag Deactivation (PAD) Indicator



Item	Part Number	Description
1	—	Center instrument panel finish panel screws
2	13D734	Passenger Air Bag Deactivation (PAD) indicator
3	—	PAD indicator electrical connector (part of 14401)

NOTE: The Passenger Air Bag Deactivation (PAD) indicator is part of the Hazard/Traction control switch assembly.

1. **NOTE:** The Ignition must be in OFF position if disconnecting the PAD indicator electrical connector. Otherwise, a DTC will be set in the Restraints Control Module (RCM) memory and must be cleared before releasing the vehicle.

   Turn the ignition the OFF and wait at least one minute.

2. Remove the instrument panel center finish panel. For additional information, refer to the appropriate procedure in Section 501-12.

3. Release the 4 tabs (2 upper and 2 lower) on the PAD indicator and remove it from the instrument panel center finish panel.

4. To install, reverse the removal procedure.

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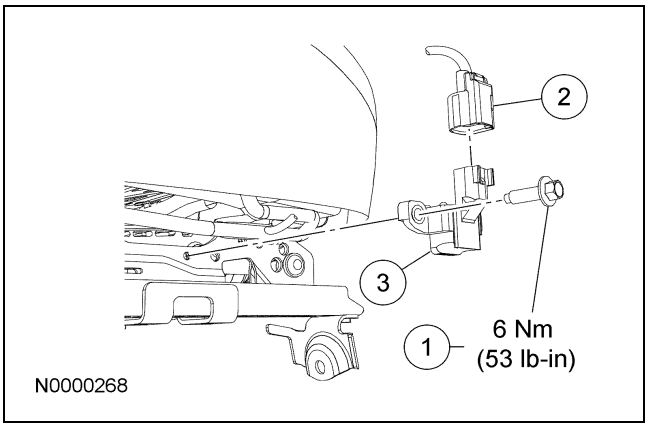
REMOVAL AND INSTALLATION (Continued)

5. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

REMOVAL AND INSTALLATION

Seat Position Sensor

NOTE: Power seat track shown, manual seat track similar.



Item	Part Number	Description
1	—	Seat position sensor bolt
2	—	Seat position sensor electrical connector (part of 14A699)
3	14B416	Seat position sensor

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Position the front seat to the rearmost and upward position.
2. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.
3. Disconnect the seat position sensor electrical connector.
4. **⚠ WARNING: Always tighten the seat position sensor retaining bolt to specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.**

   NOTE: Note the position of the seat position sensor locating tab for installation.

   Remove the bolt and seat position sensor.

   - To install, tighten to 6 Nm (53 lb-in).
5. To install, reverse the removal procedure.
6. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

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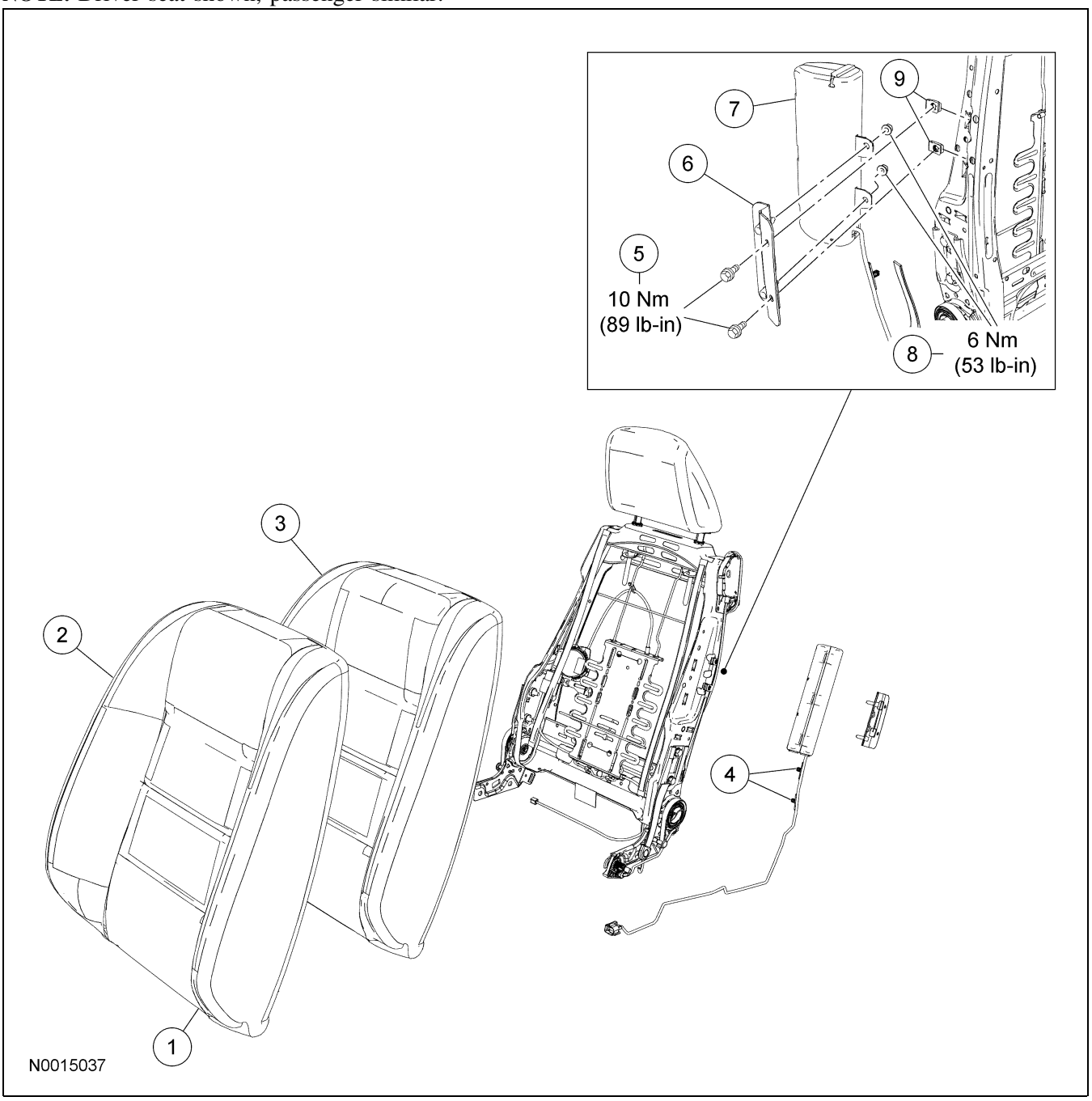
REMOVAL AND INSTALLATION

Side Air Bag Module

NOTE: Driver seat shown, passenger similar.



Item	Part Number	Description
1	—	Seat back trim cover J-clip and pin-type retainer (part of 64417)
2	64417	Seat back trim cover
3	64810	Seat back foam pad

(Continued)

Item	Part Number	Description
4	—	Side air bag module electrical wiring clips (part of 611D10)
5	N605892	Side air bag module bolts (2 required)
6	611D79	Side air bag module bracket
7	611D10	Side air bag module

(Continued)

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REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
8	—	Side air bag module-to-bracket nuts (part of 611D10) (2 required)
9	W520822	U-nuts

Removal

⚠ WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

⚠ WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

⚠ WARNING: If the seat side air bag cover has been damaged or separated from its mounting, or if the air bag material has been exposed, install a new seat side air bag module. Never try to repair the seat side air bag module. Failure to follow these instructions may result in the seat side air bag deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

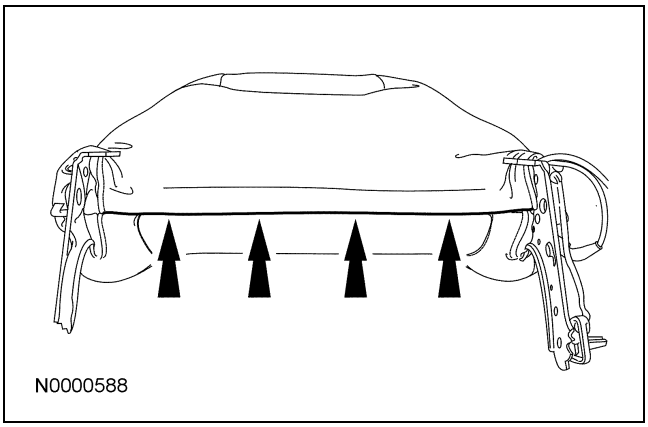
⚠ WARNING: Front seat backrest trim covers installed on seats equipped with seat side air bags cannot be repaired. A new trim cover must be installed. Cleaning is permissible. Failure to follow these instructions may result in the seat side air bag module deploying incorrectly and increase the risk of serious personal injury or death in a crash.

NOTE: If a side air bag deployment took place, a new seat back foam pad, trim cover, side air bag module, bracket and nuts, U-nuts and bolts must be installed. The seat back frame should be replaced if necessary.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.
2. Remove the front seat. For additional information, refer to Section 501-10.
3. Remove the front seat backrest. For additional information, refer to Section 501-10.
4. Remove the plastic rivets attaching the backrest trim cover to the inboard and outboard recliners.
5. Release the front seat backrest trim cover J-clip.



6. Remove the seat backrest trim cover inner J-clip.

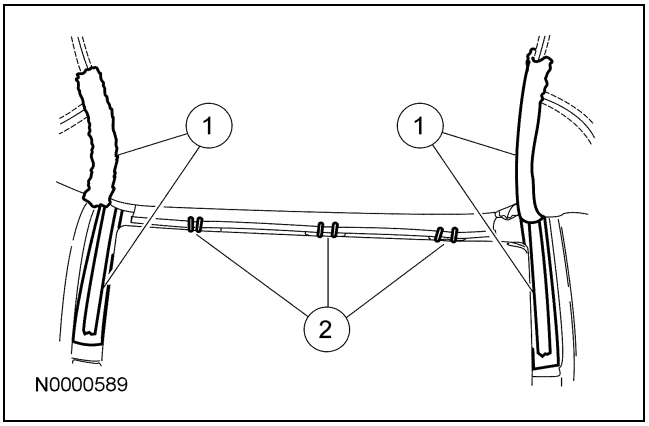
REMOVAL AND INSTALLATION (Continued)

7. ***NOTICE:*** **Use care when separating the seat cushion trim cover from the hook-and-loop strips. The hook-and-loop strips may be torn from the seat cushion foam.**

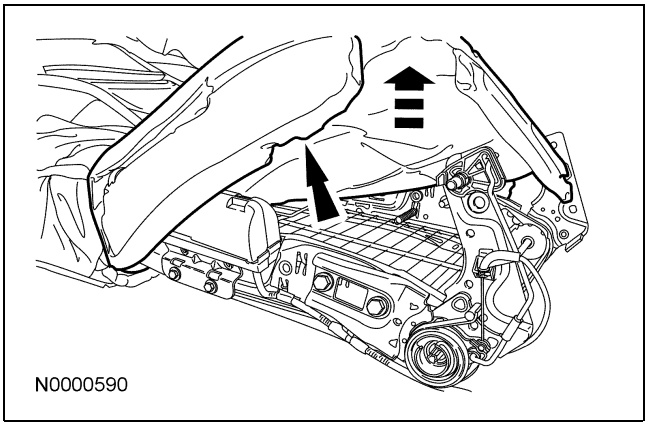
   Invert the seat backrest trim cover up.

   1 Place a hand between the seat backrest trim cover and foam pad and carefully separate the hook-and-loop strips.

   2 Remove the hog rings.

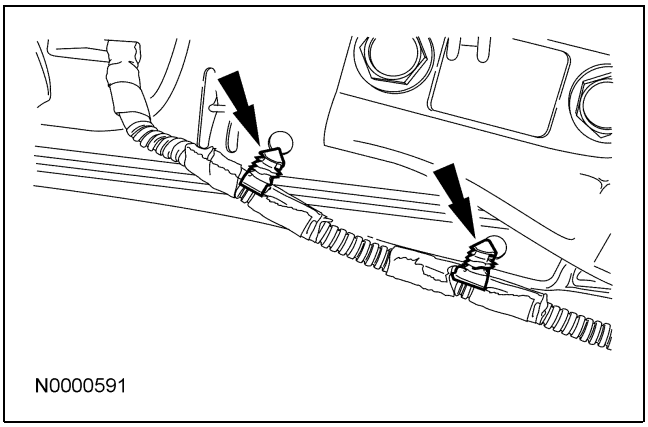


8. Position the seat back foam pad aside.

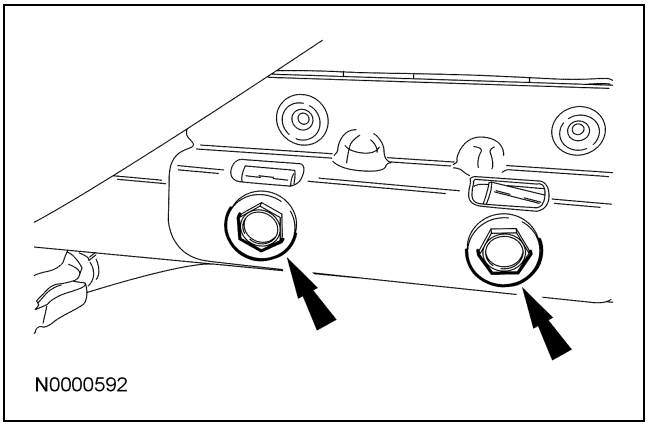


9. ***NOTICE:*** **Note the position of the wiring harness, to aid installation. An incorrectly routed wiring harness may become damaged when the seat is moved.**

   Detach the wiring pin-type retainers from seat backrest frame.



10. Remove the bolts and side air bag module.



REMOVAL AND INSTALLATION (Continued)

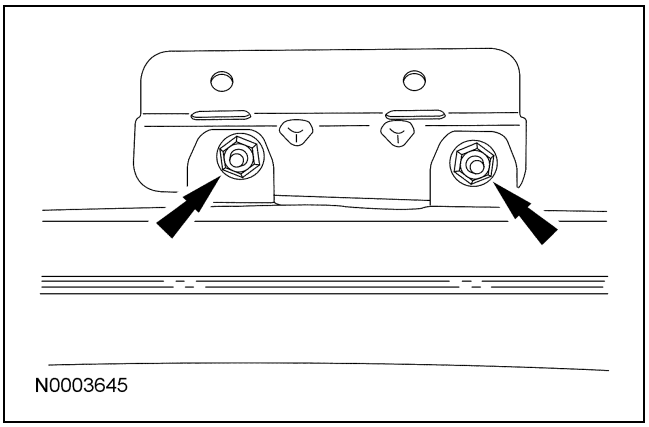
Installation

Seats installing a new side air bag module

1. **NOTE:** When installing a new side air bag module after deployment, install a new module, module bracket, module-to-bracket nuts, U-nuts-to-backrest frame and module and bracket-to-backrest frame bolts.

   Install the side air bag module bracket on the side air bag module and install the 2 nuts.

   - Tighten the nuts to 6 Nm (53 lb-in).



All seats

2. **⚠ WARNING: Before installing the seat side air bag module/deployment chute assembly:**

   — Inspect the side air bag module and mounting surfaces for any damage or foreign material.

   — Remove any foreign material from the mounting surfaces of the deployment chute, the seat backrest frame mounting bracket and the air bag module cavity in the seat backrest foam pad.

   — Install new parts if damaged.

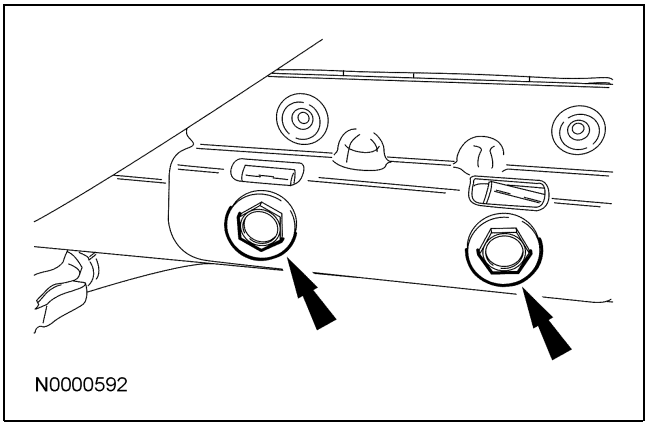
   Failure to follow these instructions may result in the seat side air bag deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

   ⚠ WARNING: If the seat side air bag cover has been damaged or separated from its mounting, or if the air bag material has been exposed, install a new seat side air bag module. Never try to repair the seat side air bag module. Failure to follow these instructions may result in the seat side air bag deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

   NOTICE: **Make sure the side air bag module wiring harness is not pinched between the side air bag module and the mounting bracket.**

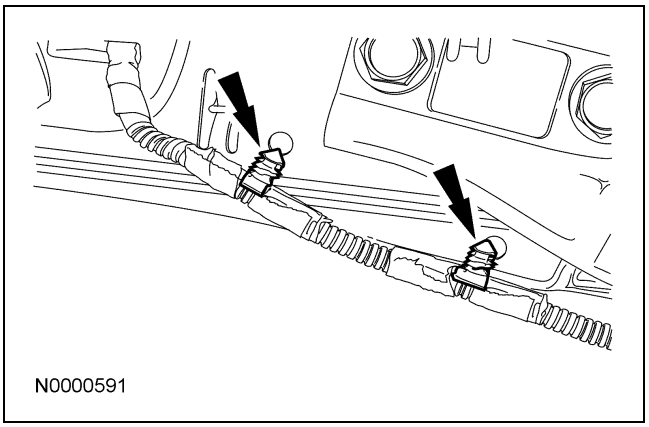
   Install the side air bag module and bolts.

   - Tighten the bolts to 10 Nm (89 lb-in).

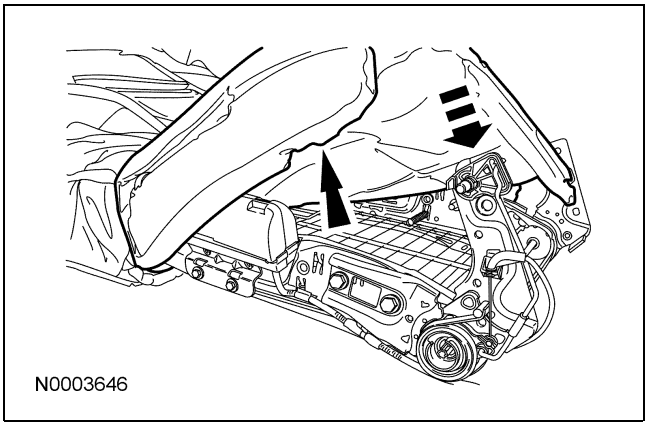


REMOVAL AND INSTALLATION (Continued)

3. Attach the wiring pin-type retainers to the seat backrest frame.



4. Reposition the seat back foam pad to the seat backrest frame.

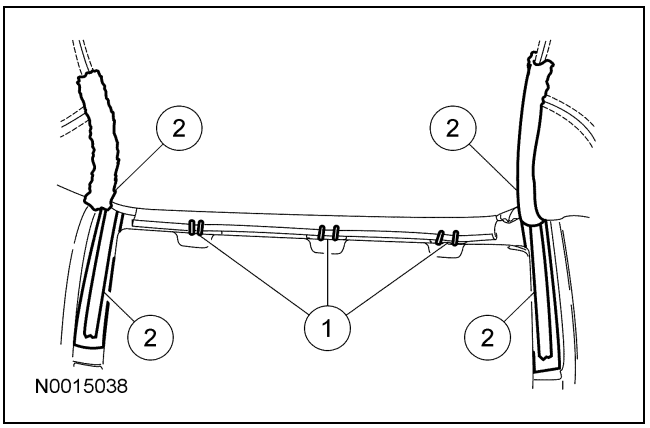


5. ⚠ **WARNING: To correctly retain the backrest trim cover, always install 2 hog rings when attaching the backrest trim cover wire to the listing wire in each foam pad window. Failure to follow this instruction may result in the seat side air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.**

   Install the seat backrest trim cover.

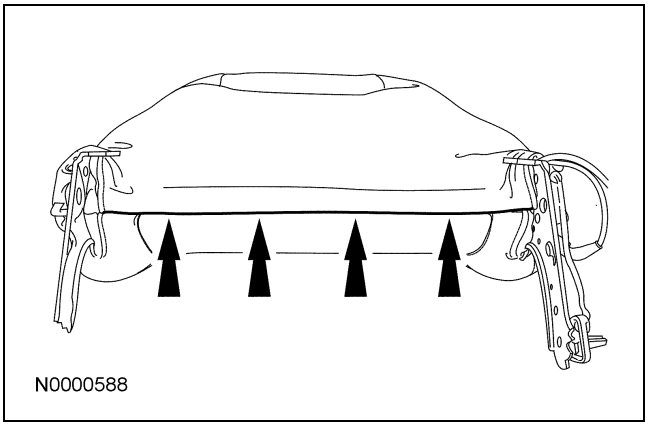
   1 Install the 2 hog rings per window as shown.

   2 Attach the hook-and-loop strips.



6. Attach the seat backrest trim cover inner J-clip.

7. Attach the front seat backrest trim cover J-clip.



8. Fold the backrest trim cover over on each side of the inboard and outboard recliner. Install the plastic rivets attaching the backrest trim cover to the inboard and outboard recliners.

9. Install the front seat backrest. For additional information, refer to Section 501-10.

10. Install the front seat. For additional information, refer to Section 501-10.

11. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

REMOVAL AND INSTALLATION (Continued)

12. ⚠ **WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.**

    NOTICE: **To prevent system failure, the following precautions must be taken before carrying out the Occupant Classification Sensor (OCS) system reset:**

    - **— Make sure the voltage to the Occupant Classification System Module (OCSM) is above 8.0 volts and less than 18.0 volts.**
    - **— Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS reset procedure. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.**
    - **— Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.**
    - **— Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before carrying out the OCS system reset process.**

    For passenger seat, Carry out the OCS system reset. **If the system reset was successful, proceed to Step 16, otherwise proceed to Step 13.**

13. If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following:
    - OCS system wiring
    - Check the pressure sensor hose for kinks and/or damage
    - Related seat wiring harness, body wiring harness terminals and connectors

14. If the damage is found, repair and/or install new components as necessary.

15. Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit.

16. **NOTE:** The ignition switch must be cycled after the OCS system reset.

    Prove out the SRS as follows:

    Turn the ignition switch from ON to OFF. Wait 10 seconds, then turn the ignition switch back to ON and visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is present, the air bag warning indicator will:

    — fail to light.

    — remain lit continuously.

    — flash at a 5Hz rate (RCM not configured).

    The air bag warning indicator might not light until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag warning indicator is inoperative and a SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

    Clear all continuous DTCs from the RCM using a scan tool.

REMOVAL AND INSTALLATION (Continued)

17. **NOTE:** A prepaid return postcard is provided with a new OCS system service kit. The serial number for the new part and the Vehicle Identification Number (VIN) must be recorded and sent to Ford Motor Company.

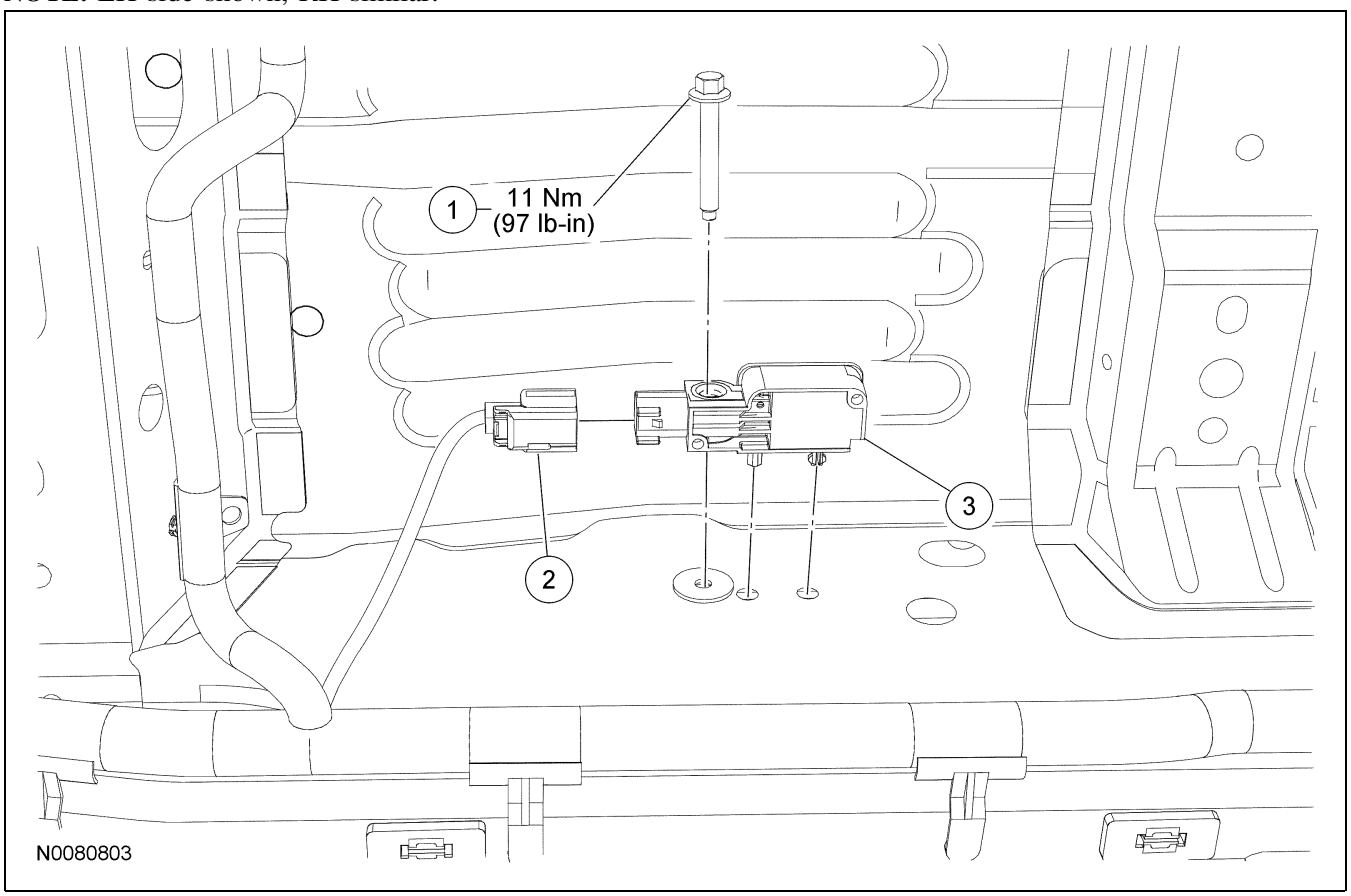
    If a new OCS system service kit was installed, fill out the necessary information on the OCS system traceability card and return it along with the complete inoperative OCS system to Ford Motor Company.

    - When returning the inoperative OCS system include: seat cushion foam pad, bladder, OCSM, pressure sensor (transducer), hose, electrical connectors and wire harness (service part OCS only).

REMOVAL AND INSTALLATION

Side Impact Sensor

NOTE: LH side shown, RH similar.



Item	Part Number	Description
1	—	Side impact sensor bolt (part of 14B345)
2	—	Side impact sensor electrical connector (part of 14A005)
3	14B345	Side impact sensor

Removal and Installation

⚠ WARNING: If a vehicle has been in a crash, inspect the restraints control module (RCM) and the impact sensor (if equipped) mounting areas for deformation. If damaged, restore the mounting areas to the original production configuration. A new RCM and sensors must be installed whether or not the air bags have deployed. Failure to follow these instructions may result in serious personal injury or death in a crash.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

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REMOVAL AND INSTALLATION (Continued)

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.
2. Remove the door scuff plate. For additional information, refer to Section 501-05.
3. Position the carpet aside.
4. Disconnect the side impact sensor electrical connector.
5. Remove the bolt and side impact sensor.
   - To install, tighten to 11 Nm (97 lb-in).
6. ⚠ **WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.**

   NOTE: Before installation, make sure the side impact severity sensor mating surfaces are clean and free of corrosion and dirt.

   To install, reverse the removal procedure.
7. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering in the General Procedures portion of this section.

SPECIFICATIONS

Material

Item	Specification	Fill Capacity
Clear Silicone Rubber TA-32	ESB-M4G92-A	—
Flexible Foam Repair TA-4	—	—
Interior Spray Paint PM-19M547-xxxxH	—	—
Metal Bonding Adhesive TA-1	—	—
Motorcraft® Acid Neutralizer ZC-1-A	—	—
Motorcraft® Adhesion Promoter PM-19A316-AA	—	—
Motorcraft® Alkaline Neutralizer ZC-2-A	—	—
Motorcraft® Custom Clear Coat Polish ZC-8-A	—	—
Motorcraft® Detail Wash ZC-3-A	—	—
Motorcraft® Metal Surface Prep ZC-31-A	—	—
Motorcraft® Premium Undercoating PM-25-A	—	—
Motorcraft® Premium Undercoating Quart PM-25-B	—	—
Motorcraft® Rust Inhibitor Aerosol PM-24-A	—	—
Motorcraft® Rust Inhibitor Quart PM-24-B	—	—
Plastic Bonding Adhesive TA-9	—	—
Roof Ditch Sealer TA-15	—	—

(Continued)

Material

Item	Specification	Fill Capacity
Seam Sealer TA-2	—	—
Trim and Weatherstrip Adhesive TA-14-A	—	—

General Equipment
3 Phase Inverter Spot Welder 254-00002
Compuspot 700F Welder 190-50080
I4 Inverter Spot Welder 254-00014
Inverter Welder with MIG Welder 254-00015

General Specifications — Welding Specifications

Item	Specification
Plug Weld Hole	8 mm (0.31 in)
Weld Wire ER70S-3 or equivalent	0.9-0.11 mm (0.035-0.045 in)

Weld Nugget Chart

Test Thickness of Metal (mm)	Nugget Size
0.7 + 0.7	4.3 mm (0.16 in)
0.7 + 0.7 + 0.7	4.3 mm (0.16 in)
0.9 + 0.9	4.7 mm (0.18 in)
0.9 + 0.9 + 0.9	4.7 mm (0.18 in)
1.0 + 1.0	5.2 mm (0.2 in)
1.0 + 1.0 + 1.0	5.2 mm (0.2 in)
2.0 + 2.0	7.1 mm (0.27 in)
2.0 + 2.0 + 2.0	7.1 mm (0.27 in)
3.0 + 3.0	8.7 mm (0.34 in)
3.0 + 3.0 + 3.0	8.7 mm (0.34 in)
3.0 + 0.7	4.3 mm (0.16 in)
0.7 + 3.0 + 1.0	5.2 mm (0.2 in)
2.0 + 2.0 + 0.7	4.3 mm (0.16 in)
0.9 + 0.9 + 2.0	4.7 mm (0.18 in)
2.0 + 0.9 + 1.0	5.2 mm (0.2 in)
1.0 + 3.0 + 1.0	5.2 mm (0.2 in)
3.0 + 1.0 + 2.0	7.1 mm (0.27 in)
0.9 + 0.7 + 0.9	4.3 mm (0.16 in)

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SPECIFICATIONS (Continued)

Descriptions of Ford Steel Families

Grade	Alloy Content	Heat Treatment	Typical Applications	Comments
Mild steel, bake hardened, solid solution strengthened	Low	Fully annealed/dead soft	Body panels (closures, floor pan, dash panel)	—
High Strength Low AlloyHigh-Strength Low Alloy (HSLA)	Low	Fully annealed/dead soft	Rails, structural members	Strengthened with fine particles and small grain size
Dual Phase Steel (DP)	Medium (Manganese Silicon, Molybdenum Chromium)	Fully annealed/partially hardened	Rails, structural members	15-50% of structure is hard martensite
Ultra High Strength Steel (UHSS) (Martensitic, Boron)	Low	Fully hardened	Rocker reinforcements, door beams, bumper beams	100% of structure is hard martensite
Transformation Induced Plasticity Steel (TRIP) steel	High (Manganese, Phosophorus, Silicon, Aluminum)	Fully annealed/ partially hardened	To be determined	Complex microstructure for high strength and ductility

Ford Recommended Steel Repairability Matrix

Grade	Trade Descrip-tions	Welding Method			Cold Repairs	Use of Heat for Repair	Temperature Range	Max-imum Heat
		Metal Inert Gas (MIG)	Squeeze-Type Resist-ance Spot Welding (STRW)	MIG Braze				
Mild Steel	Mild	Yes	Yes	NA	Yes[a]	Yes	Up to 650°C (1,200°F)	90 sec. x 2
Laminate Steel	Quiet steel	No	Yes	No	Yes[a]	NA		
Bake Hardened	BH 180, BH210, BH 250, BH 280	Yes	Yes	Yes	Yes[a]	Yes	Up to 650°C (1,200°F)	90 sec. x 2
Solid Solution Strengthened		Yes	Yes	Yes	Yes[a]	Yes	Up to 650° C (1200°F)	90 sec. x 2
High-Strength Low Alloy (HSLA)	HSLA 250, HSLA 350, HSLA 550	Yes	Yes	Yes	Yes[a]	Yes	Up to 650°C (1200°F)	90 sec. x 2

SPECIFICATIONS (Continued)

Ford Recommended Steel Repairability Matrix (Continued)

Grade	Trade Descrip-tions	Welding Method			Cold Repairs	Use of Heat for Repair	Temperature Range	Max-imum Heat
		Metal Inert Gas (MIG)	Squeeze-Type Resist-ance Spot Welding (STRW)	MIG Braze				
Dual Phase = 600 MPa Ultimate Tensile Strength (UTS)	DP 500, DP 600	Yes	Yes	Yes	Yes[a]	No	NA	NA
Dual Phase = 600 MPa Ultimate Tensile Strength (UTS) particular to 780 and 980 grades)[b]	DP 700, DP 780, DP 900	Yes[c]	Yes	Yes	No	No	NA	NA
Ultra High Strength Steel (UHSS) (Martensitic, Boron)[d]	Boron	Yes[a]	Yes	Yes	No	No	NA	NA
Transformation Induced Plasticity Steel (TRIP)	TRIP 590, TRIP780, TRIP980	NA	NA	NA	NA	NA	NA	NA

a Cold repairs can be performed if damage excludes kinks. May section only if approved procedure in workshop manual
b Dual phase steels DP 700, DP 780 and DP 980 must be replaced at factory joints, no sectioning unless approved procedure in workshop manual
c For DP 980, use MIG plug welding only, no stitch welding
d Boron components must be replaced at factory joints, no sectioning allowed

DESCRIPTION AND OPERATION

Body

⚠ WARNING: Never install used or reconditioned parts (as specified below) from pre-owned, salvaged or damaged vehicles. The use of such parts could lead to serious injury.

Never use non-Ford parts or accessories for completing repairs.

Ford Motor Company does not approve or recognize body and structural repair procedures, tools, parts or anything but new genuine Ford equipment. Ford cannot attest to the safety, quality, durability or legality of non-Ford parts or accessories. Use of such parts could lead to serious personal injury as they may contain damage which is not visible.

Ford does not approve use of the following:

- **Salvaged or used parts**
- **Major body clips or assemblies from salvage vehicles**
- **Aftermarket structural or body components**
- **Salvaged or reconditioned wheels**
- **Used supplemental restraint system (SRS) components**
  - **— air bags**
  - **— restraint system modules**
  - **— safety belts, buckles or retractors**
  - **— crash sensors**

Returning a vehicle to pre-accident condition can only be assured if repair procedures are carried out by skilled technicians using new genuine Ford parts and Ford-approved methods. Structural component repair procedures approved by Ford, using genuine Ford parts, have been validated by Ford Motor Company engineers.

Ford Motor Company does not endorse, cannot attest to, and makes no representations regarding structural repairs (frames, rails, aprons and body panels) carried out using non-genuine Ford Motor Company parts or non-Ford-approved methods. In particular, Ford makes no representations that the vehicle will meet any crash safety or anti-corrosion performance requirement. Such parts and methods have not been tested by Ford, and may not meet Ford's requirements for safety, performance, strength, quality, durability and corrosion protection.

Ford Motor Company bears no responsibility or liability of any kind if repairs are performed using alternative structural component repair procedures and/or parts.

The body consists of the following:

- Unibody construction
- Two door coupe
- Two door convertible
- Lightweight steel material
- Steel radiator support assembly
- High-Strength Low Alloy (HSLA), high-strength and mild steels
- Aluminum hood
- Bolted, removable front fenders, hinged doors and hood
- Front subframe assembly which houses steering and suspension components and provides structural support
- Steel fenders

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DESCRIPTION AND OPERATION (Continued)

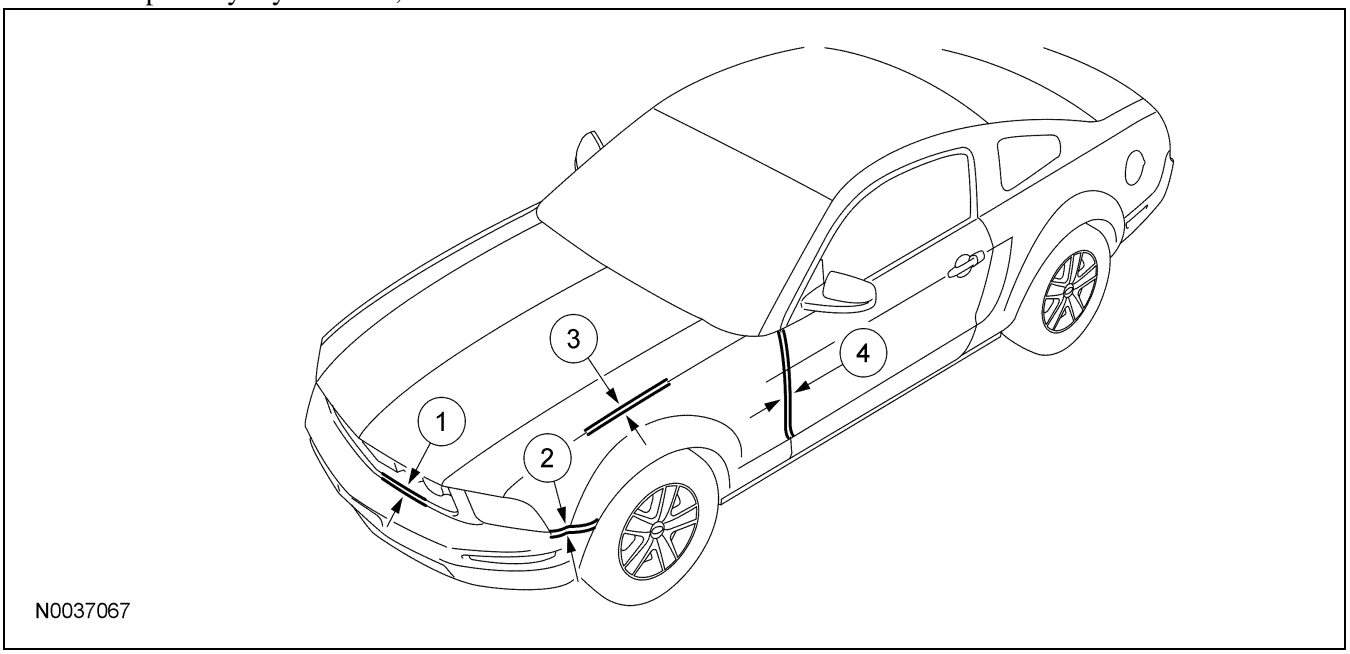
- Steel doors
- Steel luggage compartment lid
- High-strength roll-formed bolt-on front and rear bumper beams
- Rear underbody bracing on convertible models provides additional structural support
- Structural adhesive used in body side, rocker reinforcements, A-pillar and underbody
- Sound deadener material used on floor pan

For dimensional information, refer to the following illustrations:

Body Margins

NOTE: Dimensions apply to right and left side.

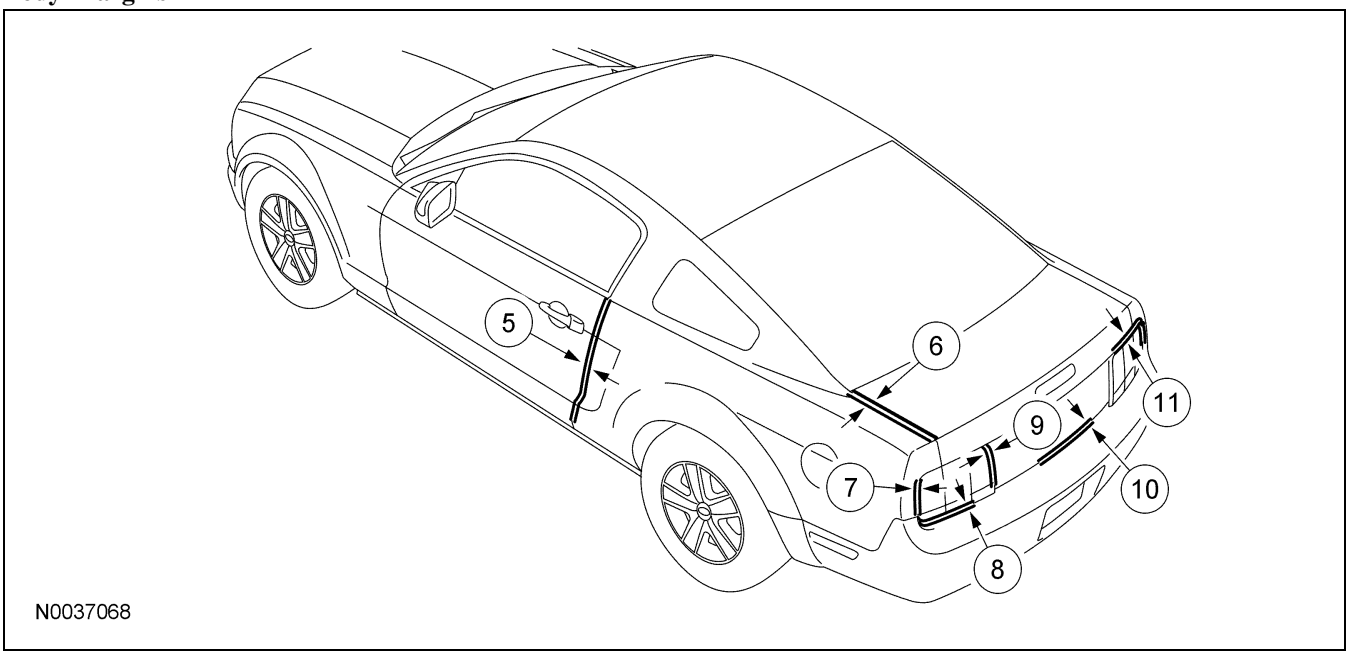
NOTE: Coupe body style shown, convertible similar.



Item	Description	Specification
1	Grille to fascia	1.0 mm (0.03 in) ± 1.0 mm (0.03 in)
2	Fender to fascia	1.0 mm (0.03 in) ± 1.0 mm (0.03 in)
3	Hood to fender	4.0 mm (0.15 in) ± 2.0 mm (0.07 in)
4	Door to fender	4.0 mm (0.15 in) ± 2.0 mm (0.07 in)

DESCRIPTION AND OPERATION (Continued)

Body Margins



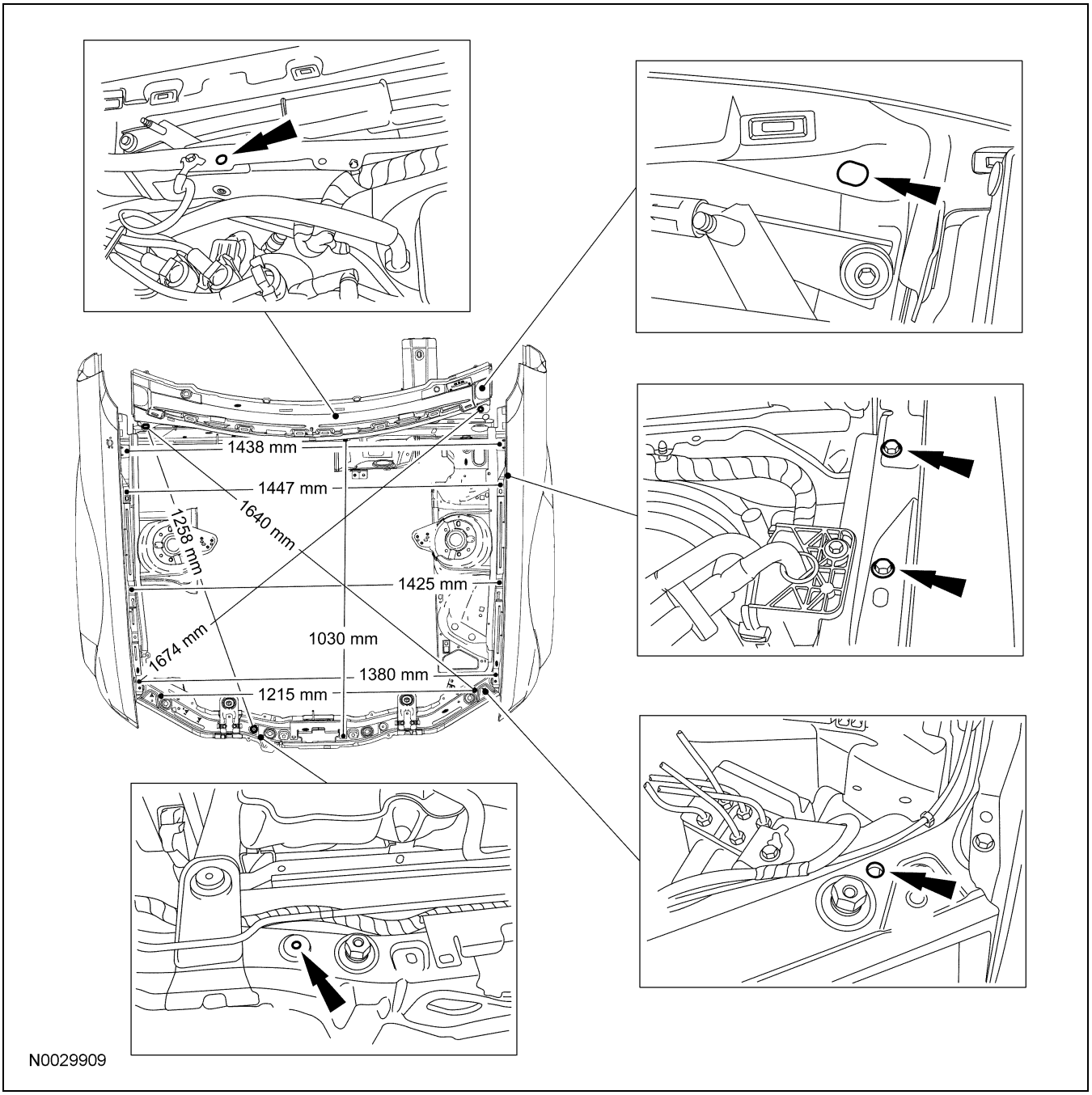
Item	Description	Specification
5	Door to quarter panel	4.0 mm (0.15 in) ± 2.0 mm (0.07 in)
6	Luggage compartment lid to quarter panel	4.0 mm (0.15 in) ± 2.0 mm (0.07 in)
7	Lamp assembly to quarter panel	3.0 mm (0.11 in) ± 2.0 mm (0.07 in)
8	Lamp assembly to fascia	4.0 mm (0.15 in) ± 2.0 mm (0.07 in)

Item	Description	Specification
9	Lamp assembly to luggage compartment	4.0 mm (0.15 in) ± 2.0 mm (0.07 in)
10	Luggage compartment lid to fascia	7.0 mm (0.27 in) ± 3.0 mm (0.11 in)
11	Luggage compartment lid to lamp assembly	4.0 mm (0.15 in) ± 2.0 mm (0.07 in)

DESCRIPTION AND OPERATION (Continued)

Underhood Dimensions

NOTE: Measurements are obtained on center, unless otherwise indicated.

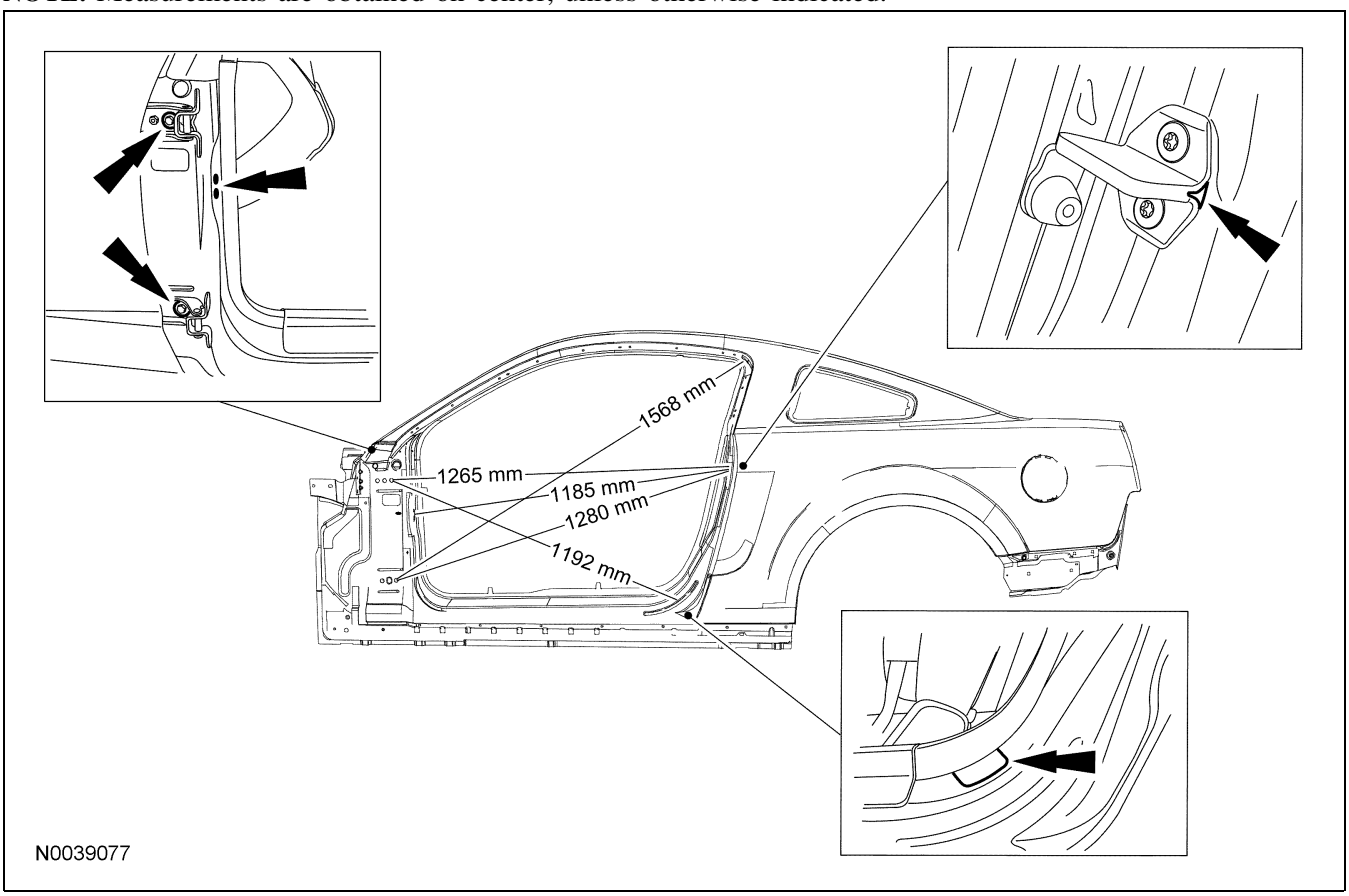


DESCRIPTION AND OPERATION (Continued)

Bodyside Closure Dimensions

Coupe

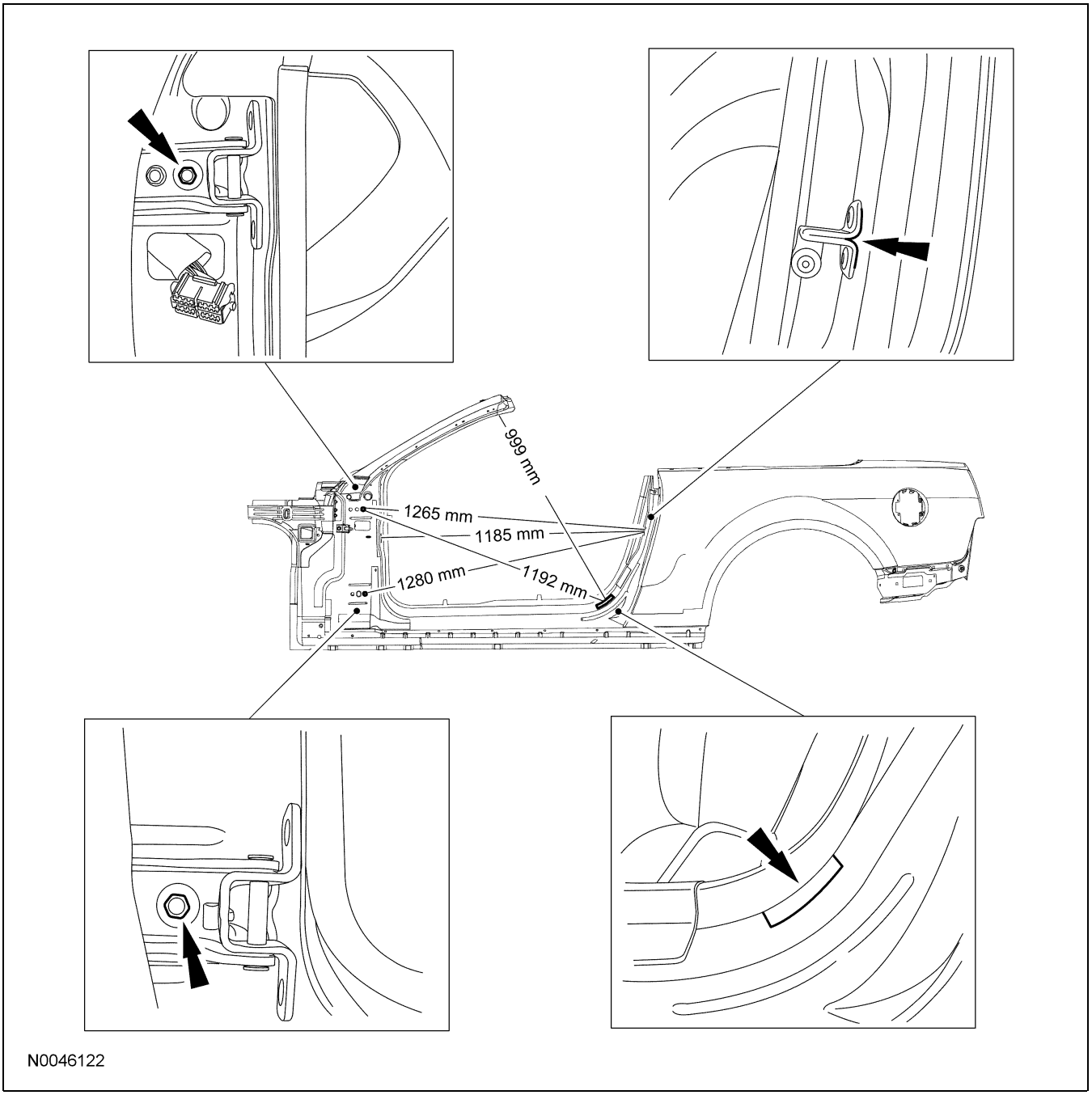
NOTE: Measurements are obtained on center, unless otherwise indicated.



DESCRIPTION AND OPERATION (Continued)

Convertible

NOTE: Measurements are obtained on center, unless otherwise indicated.



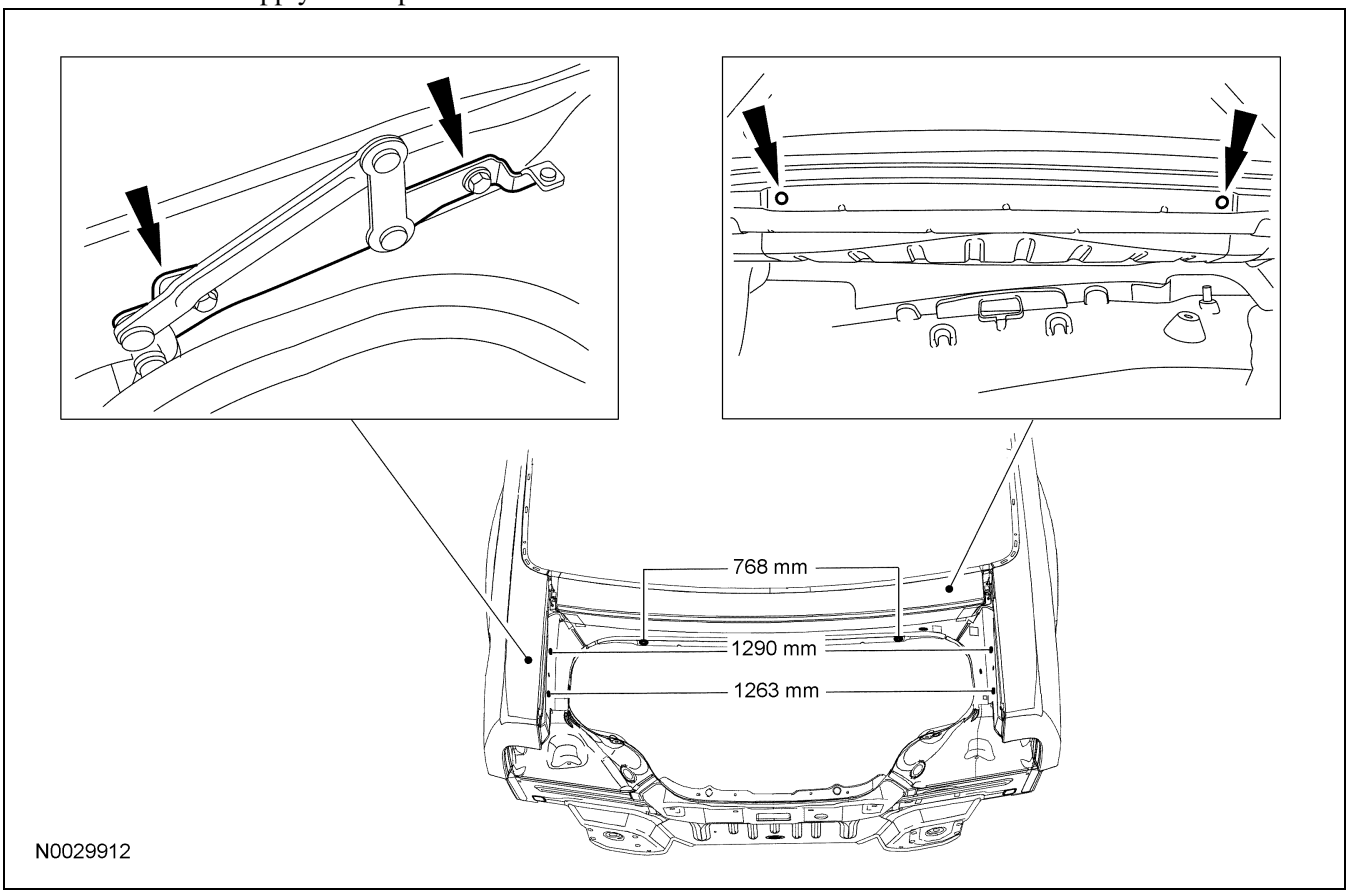
DESCRIPTION AND OPERATION (Continued)

Rear Opening Dimensions

Coupe

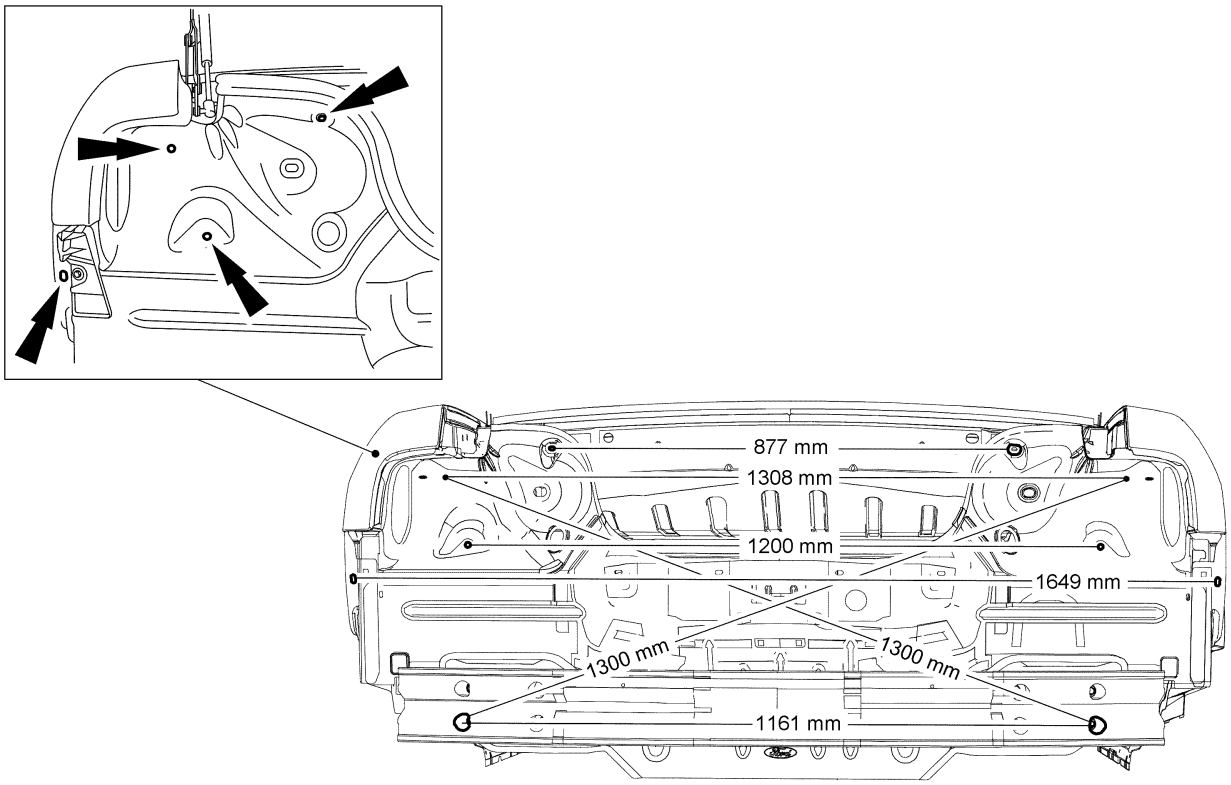
NOTE: Measurements are obtained on center, unless otherwise indicated.

NOTE: Dimensions apply to coupe and convertible.



DESCRIPTION AND OPERATION (Continued)

Convertible



DESCRIPTION AND OPERATION (Continued)

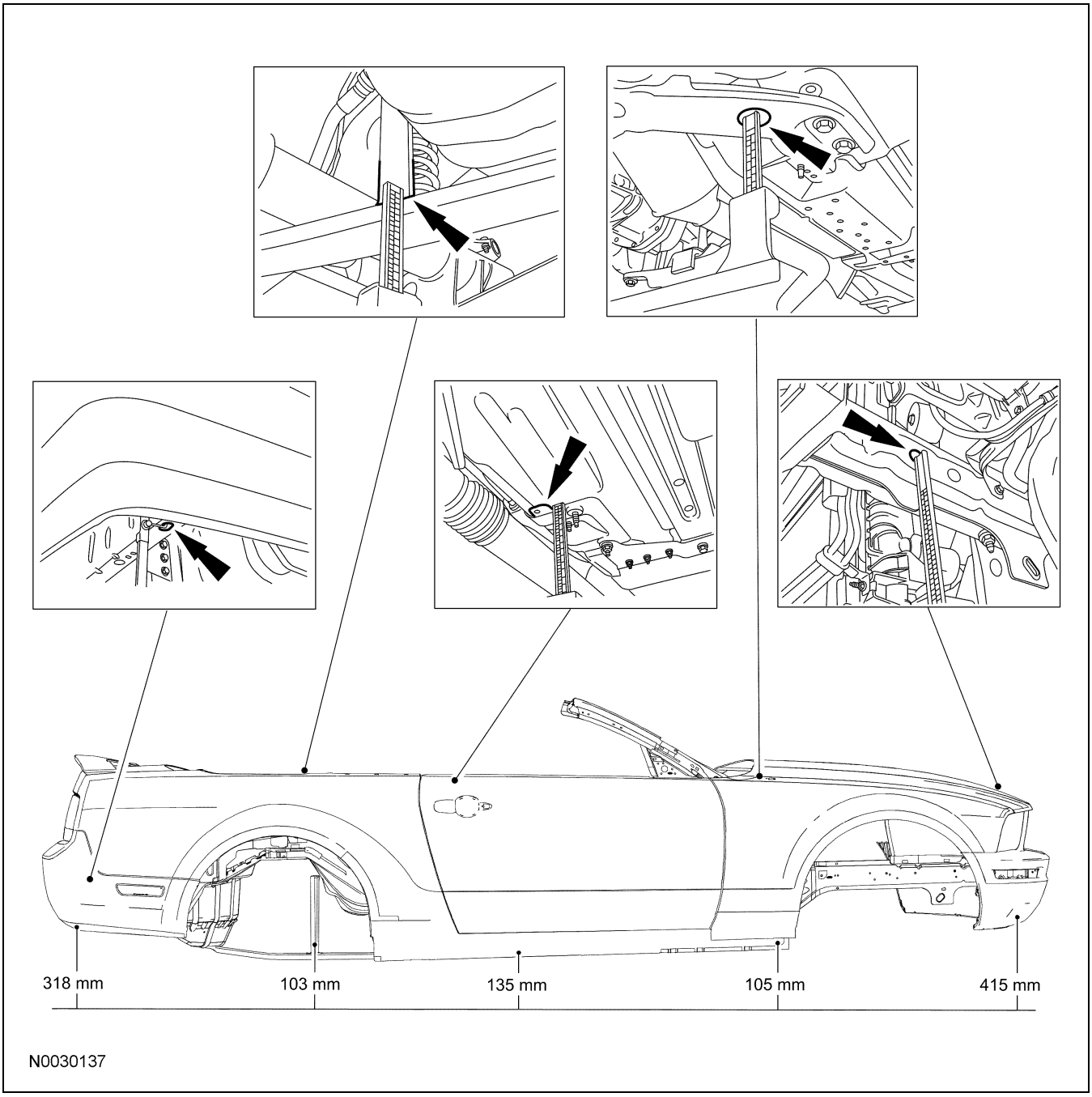
Underbody Dimensions

Frame Datum Height — Convertible

⚠ WARNING: Frame rail crush zones absorb crash energy during a collision and must be replaced if damaged. Straighten damaged frame rails to correct frame dimensions prior to frame member sectioning. Failure to follow these instructions may adversely affect frame rail performance and may result in serious personal injury to vehicle occupant(s).

NOTE: Datum height determined measuring from holes and slots on center, unless otherwise indicated.

NOTE: Inset views indicated from left side of vehicle.

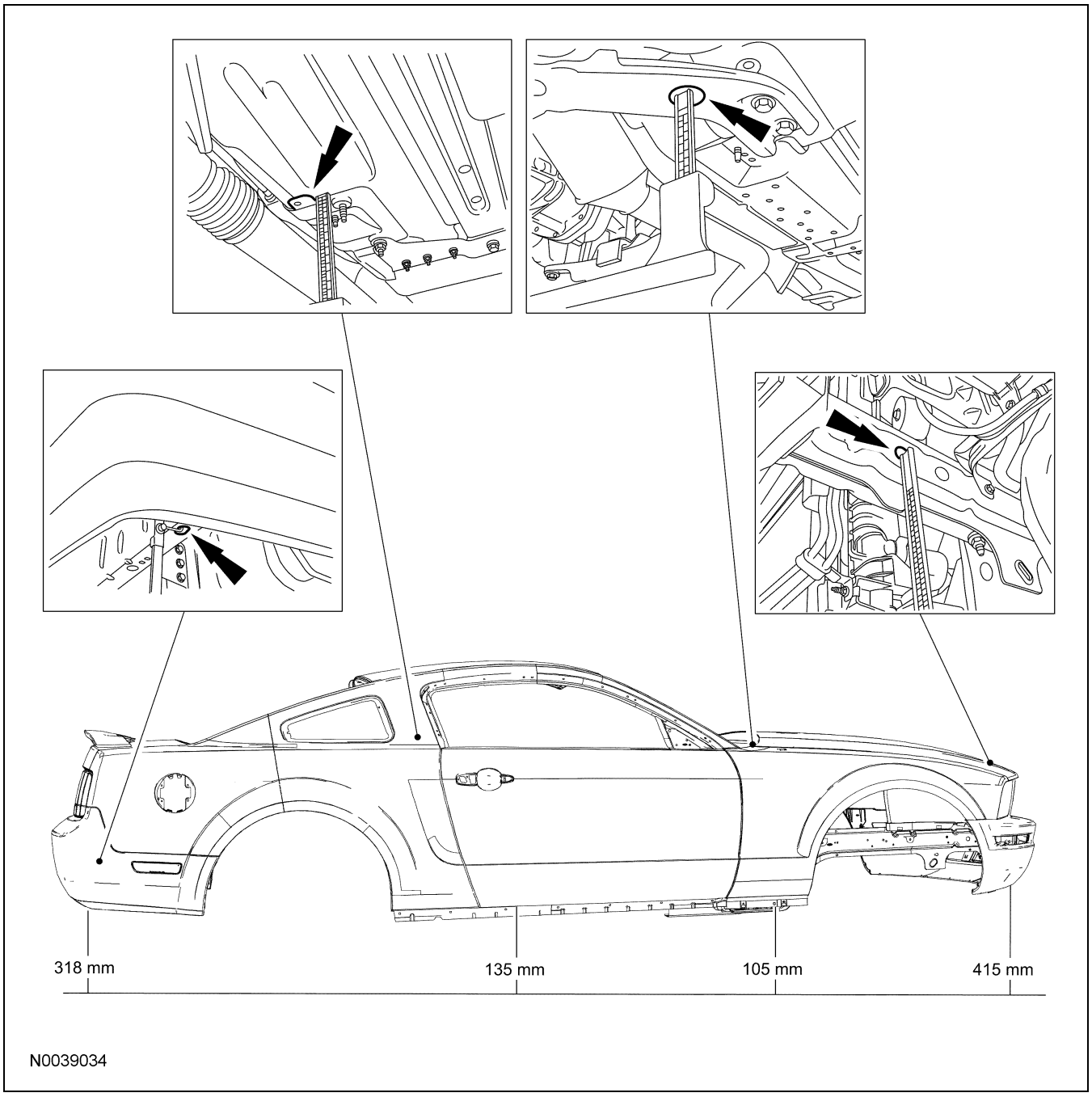


DESCRIPTION AND OPERATION (Continued)

Frame Datum Height — Coupe

NOTE: Datum height determined measuring from holes and slots on center, unless otherwise indicated.

NOTE: Inset views indicated from left side of vehicle.

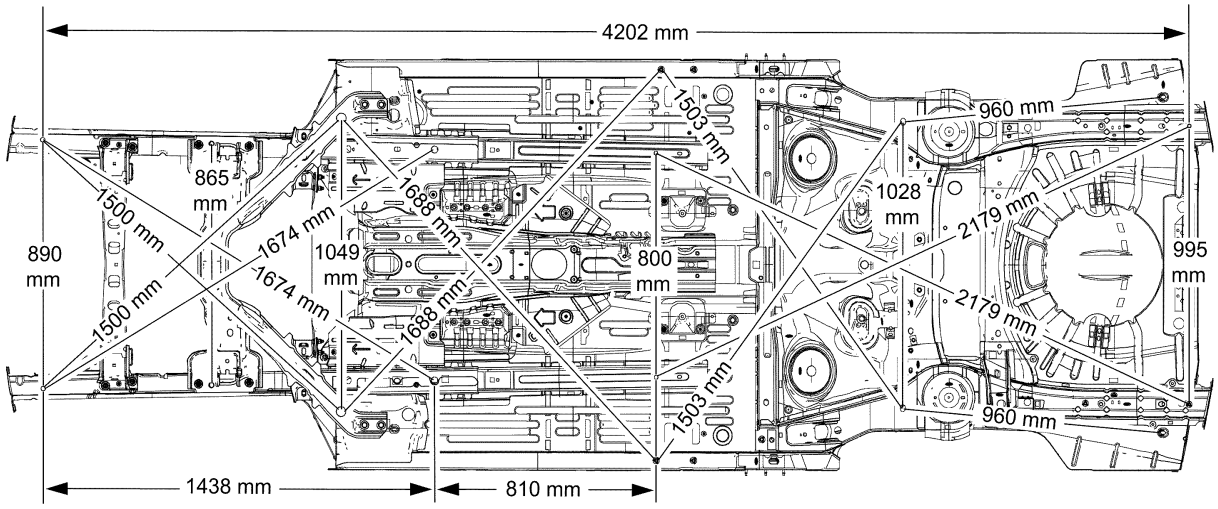


DESCRIPTION AND OPERATION (Continued)

Underbody Dimensions

NOTE: Measurements are obtained on center, unless otherwise indicated.

NOTE: Coupe shown, convertible similar.



DESCRIPTION AND OPERATION

Welding Precautions — Steel

Material

Item	Specification
Motorcraft Premium Undercoating PM-25-A	—
Motorcraft Rust Inhibitor Aerosol PM-24-A	—

General Equipment
3 Phase Inverter Spot Welder 254-00002
Compuspot 700F Welder 190-50080
I4 Inverter Spot Welder 254-00014
Inverter Welder with MIG Welder 254-00015

General Specifications — Welding Specifications

Item	Specification
Plug Weld Hole	8 mm (0.31 in)
Weld Wire ER70S-3 or equivalent	0.9-0.11 mm (0.035-0.045 in)

Weld Nugget Chart

Test Thickness of Metal (mm)	Nugget Size
0.7 + 0.7	4.3 mm (0.16 in)
0.7 + 0.7 + 0.7	4.3 mm (0.16 in)
0.9 + 0.9	4.7 mm (0.18 in)
0.9 + 0.9 + 0.9	4.7 mm (0.18 in)
1.0 + 1.0	5.2 mm (0.2 in)
1.0 + 1.0 + 1.0	5.2 mm (0.2 in)
2.0 + 2.0	7.1 mm (0.27 in)
2.0 + 2.0 + 2.0	7.1 mm (0.27 in)
3.0 + 3.0	8.7 mm (0.34 in)
3.0 + 3.0 + 3.0	8.7 mm (0.34 in)
3.0 + 0.7	4.3 mm (0.16 in)
0.7 + 3.0 + 1.0	5.2 mm (0.2 in)
2.0 + 2.0 + 0.7	4.3 mm (0.16 in)
0.9 + 0.9 + 2.0	4.7 mm (0.18 in)
2.0 + 0.9 + 1.0	5.2 mm (0.2 in)
1.0 + 3.0 + 1.0	5.2 mm (0.2 in)
3.0 + 1.0 + 2.0	7.1 mm (0.27 in)
0.9 + 0.7 + 0.9	4.3 mm (0.16 in)

⚠ WARNING: Invisible ultraviolet and infrared rays emitted in welding can injure unprotected eyes and skin. Always use protection such as a welder's helmet with dark-colored filter lenses of the correct density. Electric welding will produce intense radiation, therefore, filter plate lenses of the deepest shade providing adequate visibility are recommended. It is strongly recommended that persons working in the weld area wear flash safety goggles. Also wear protective clothing. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

The correct equipment and settings must be used when welding mild or high-strength steel. Metal Inert Gas (MIG) and Squeeze-Type Resistance Spot Welding (STRW) are the preferred methods. Surfaces must be clean and free of foreign materials.

- The correct protective clothing should always be worn.
- Correct eye protection must be worn.
- Adequate ventilation must be provided to avoid accumulation of poisonous gases.
- Foam sealers and sound deadeners located adjacent to the weld area should be removed or protected from exposure to heat as they are flammable.
- A test weld should always be carried out on a test sample.
- Follow equipment manufacturer's prescribed procedures and equipment settings for the type of weld being carried out.
- Use grinding discs and wire brushes dedicated to the type of material being welded.
- Follow equipment manufacturer's prescribed procedures and equipment settings for the type of weld being used. ER70S-2 or ER70S-6 wire are typically used for MIG welding steel.
- Disconnect the battery ground cable from the battery. Refer to section Section 414-01.

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DESCRIPTION AND OPERATION (Continued)

- Disconnect on-vehicle modules and protect them from possible heat damage and electrical currents when welding.
- Components made of high-strength steel should not be heated to straighten or repair. Severely bent or kinked components should be replaced with new ones.
- Factory spot welds may be substituted with either resistance spot welds or MIG plug welds. Spot/plug welds should equal factory welds in both location and quantity. Do not place a new spot weld directly over an original weld location. Plug weld hole should equal 8 mm (0.31 in) diameter.
- Corrosion protection needs to be restored whenever it is necessary to sand or grind through painted surfaces or E-coat, or when bare metal repairs are made. Refer to Restoring Corrosion Protection Following Repair in this section.

DESCRIPTION AND OPERATION

Sealers

Material

Item	Specification
Clear Silicone Rubber TA-32	ESB-M4G92-A
Roof Ditch Sealer TA-15	—
Seam Sealer TA-2	—

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

The correct sealing of joints is essential to repairing the vehicle correctly. Sealers are used to prevent wind noise, water leaks, exhaust fumes and dust from entering the vehicle. They also provide anti-corrosion barriers. Sealers are applied to areas such as door and rear compartment hem flanges, wheelhouse, quarter outer, floor, cowl, roof and other panel-to-panel attaching points. The following joint sealers are recommended for use depending upon the application:

- Brushable Seam Sealer — A sealer intended to restore the original brushed seam appearance. It is used to seal lap joints in sheet metal that are spot welded (for example, floorpans and cowls). Use a product obtained locally.
- Roof Ditch Sealer — A self-leveling sealer used for drip rails, roof seams, quarter panels to rear deck and for water leaks.
- Seam Sealer — Heavy-bodied, non-sag adhesive/sealer for use on standing cosmetic seams, truck bed seams, tooled door skin seams and floor pans.
- Clear Silicone Rubber — Used for sealing water leaks, noise concerns, remounting trim and repairing torn weatherstripping.

Sealers should remain flexible after curing and must be paintable. Follow the manufacturer's directions for correct application of these materials.

Any damage to originally sealed joints should be repaired by resealing. Along with attaching points of new panels, open joints that require bridging of sealer to close a gap should be sealed using a heavy-bodied sealer.

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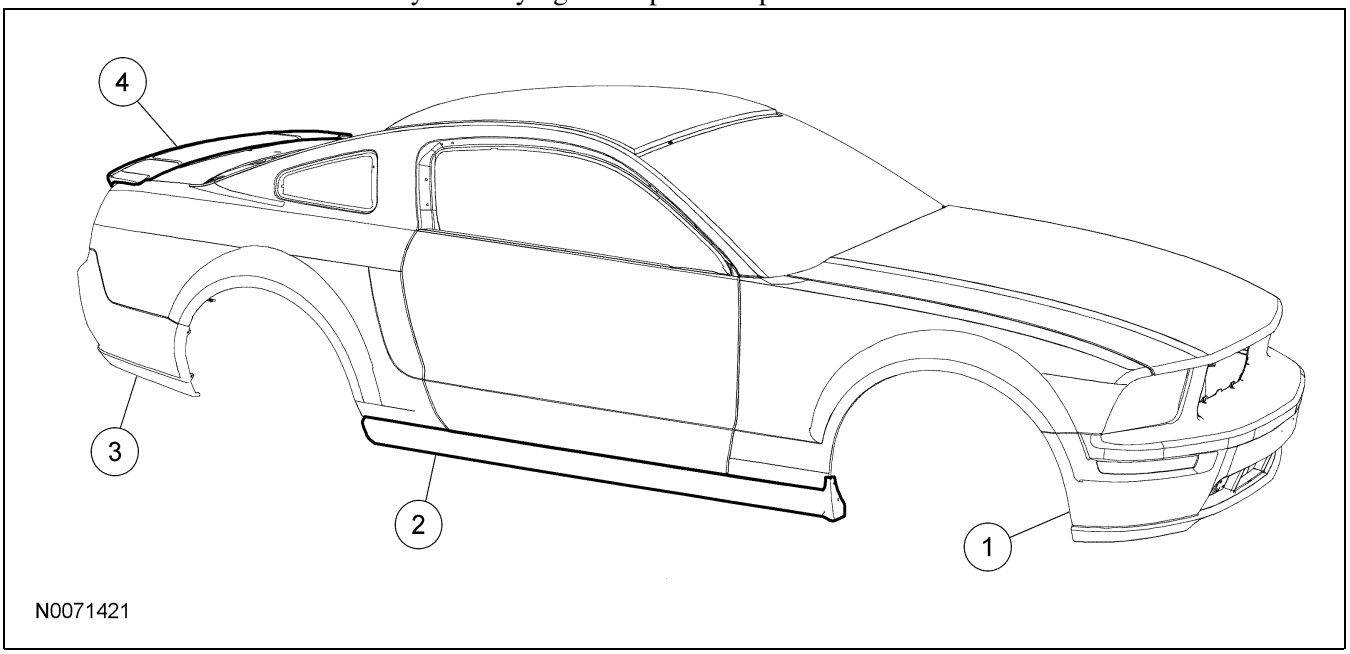
DESCRIPTION AND OPERATION

Plastic Components

Exterior Plastics — Painted

NOTE: The following illustration(s) are not all-inclusive of trim levels available. The actual trim level of the vehicle will determine the viability of carrying out a plastic repair.



Item	Part Number	Description
1	17D957	Bumper cover (front) — Thermoplastic Olefin (TPO)
2	10155 LH/ 10154 RH	Rocker panel moulding — TPO
3	17K835	Bumper cover (rear) — TPO
4	41602	Decklid spoiler — Acrylonitrile Butadiene Styrene (ABS)

Several considerations will determine viability of plastic repair procedure(s):

- Is the damage cosmetic or structural?
- Can the repair be carried out on the vehicle?
- Is the part readily available?
- Is component repair the most cost effective method?
- Can the component be economically restored to original strength and appearance?
- Will the repair provide for the fastest, highest quality repair?

Several types of plastic are in use for automotive application. However, all plastics will fall into 2 primary categories of thermoplastic or thermosetting plastic.

Thermosetting Plastic

Generally, thermosetting plastics are made with 2-part thermosetting resins. When mixed together, heat is generated, producing a cure that is irreversible. Because of this, thermosetting plastics will require the use of a 2-part adhesive for repair.

Sheet-Molded Compound

Sheet-Molded Composite (SMC) is a type of thermosetting plastic that uses glass fibers or nylon fibers in combination with thermosetting polyester resins. When fully cured SMC is strong and rigid.

SMC is similar to, but not identical to fiberglass. Ford Motor Company uses SMC in components such as fenders, hoods and liftgates.

Thermoplastic Compounds

Thermoplastic compounds are manufactured by a process that is reversible. Thermoplastics can be remolded repeatedly by reheating. This characteristic of thermoplastics makes plastic welding a possible repair alternative. A repair of thermoplastic compounds is still possible through the use of 2-part adhesive and filler repair materials and reinforcements as needed. Thermoplastics are widely used in interior trim components, wheel flares, body side cladding and bumper covers.

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DESCRIPTION AND OPERATION (Continued)

Polyolefin

Polyolefins fall into the family of thermoplastics with one unique characteristic: an oily or waxy feel to the material when sanded or ground. Polyolefin lends itself very well to remolding through the use of heat. Because of this, components made of this material lend themselves well to the possibility of plastic welding. Most adhesive repair materials and paint will not bond to surface of a polyolefin unless an adhesion promoter specially formulated for plastic is first applied to the exposed raw surface. Otherwise, polyolefins are repaired like most other thermoplastics. Some typical uses of polyolefins are bumper covers, fan shrouds and wheel housings

Correct identification of the various types of plastic is necessary to select the appropriate repair method(s) to carry out high quality plastic repairs. Refer to Plastics Identification in this section.

DESCRIPTION AND OPERATION

Sound Deadeners and Insulators

⚠ **WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.**

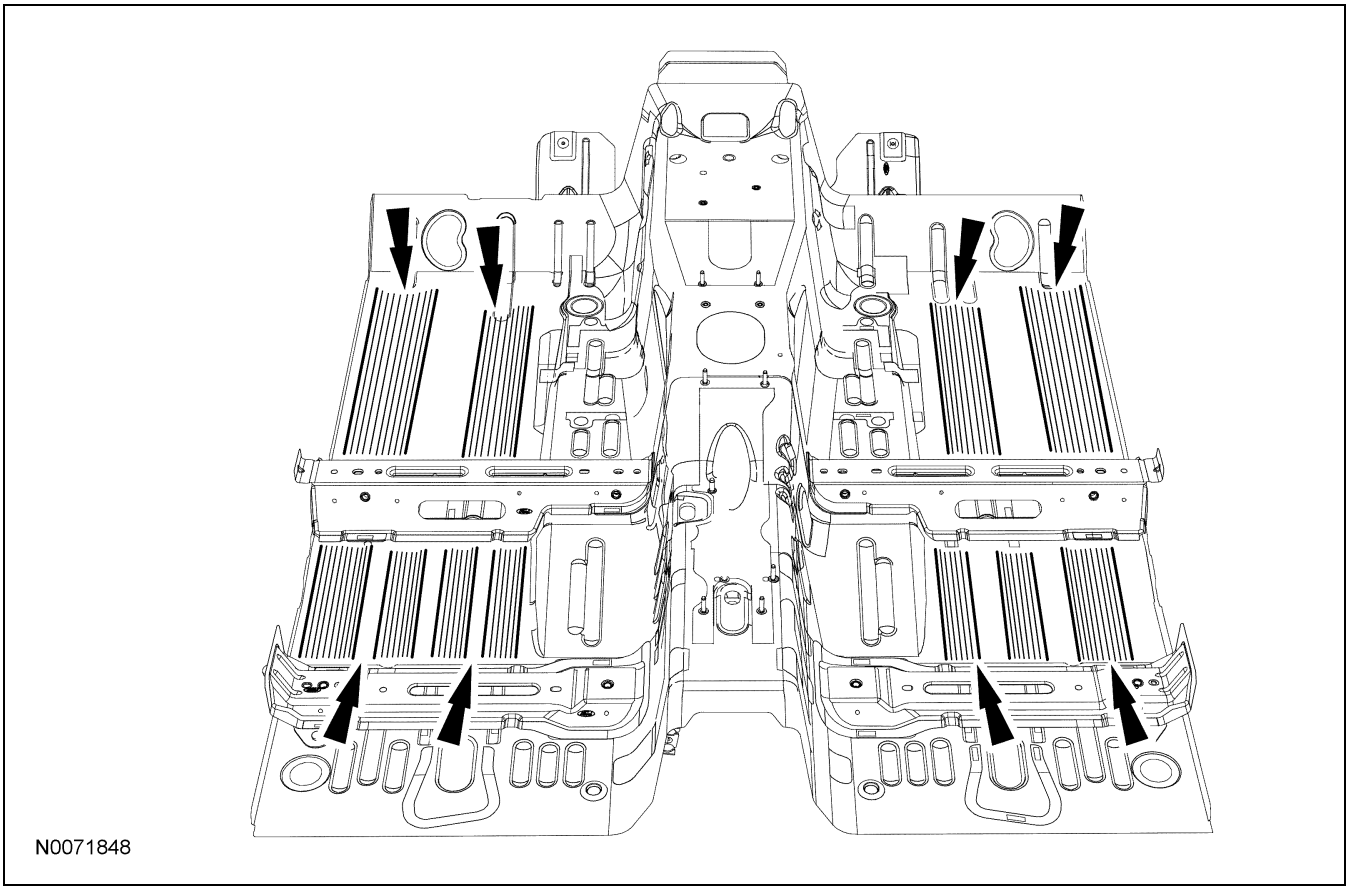
NOTICE: **Mastic is made of a combustible material and should be removed prior to carrying out welding procedures to the area. Heat zones from welding near the mastic can cause the mastic material to burn.**

NOTICE: **Corrosion protection must be restored to the area AFTER the mastic material is applied. Corrosion protection products may be wax based and loss of adhesion may occur.**

NOTE: The following illustrations serve as a reference to indicate mastic patch (butyl pad) locations. Additional insulators and sound deadeners are used beyond those indicated in the illustration.

NOTE: To restore the vehicle to design intent, missing or damaged sound deadeners and insulators should be replaced with the correct service replacement component. Illustration indicates pumpable mastic material applied as indicated.

Floor Pan



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DESCRIPTION AND OPERATION (Continued)

1. **NOTE:** In applications where mastic material is applied as a pumpable material at the factory, replacement of missing or damaged mastic is acceptable in the form of cut-to-fit butyl pad(s) or pumpable mastic material(s) when carrying out repairs.

   Whenever replacement of an existing mastic insulator is carried out, the surface must be thoroughly cleaned to make sure correct adhesion will occur. The surface should be 10°C (50°F) or greater before applying the mastic. The use of a heat gun to warm the metal surface will aid in adhesion.

DESCRIPTION AND OPERATION

Adhesives

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

Material

Item	Specification
Clear Silicone Rubber TA-32	ESB-M4G92-A
Metal Bonding Adhesive TA-1	—
Metal Patch Panel Adhesive TA-3	—
Motorcraft Metal Surface Prep ZC-31-A	—
Plastic Bonding Adhesive TA-9	—
Seam Sealer TA-2	—
Trim and Weatherstrip Adhesive TA-14-A	—

Adhesives are used in a variety of applications. Typical uses for adhesives include roof panels, door skins and quarter panels. Trim applications include body side mouldings, emblems, stationary glass and weatherstripping. Combination sealer/adhesives are also used. Surface preparation is critical to a high quality repair. Following the label instructions for the product is essential.

Work in a well-ventilated area and protect adjacent surfaces when working with adhesives. The use of eye protection and protective clothing is also recommended when working with adhesives. Carry out a trial fit, mark and align the surfaces before bonding the materials together.

Seam sealers and corrosion protection may be necessary once the adhesive(s) has cured, depending on the application. The following is a list of adhesives recommended for certain types of applications:

- Metal Bonding Adhesive — For bonding cold-rolled steel, galvanized steel, aluminum and correctly prepared E-coat. It is used for door skin and roof panel replacement and OEM structural adhesive replacement.
- Plastic Bonding Adhesive — For bonding a variety of plastics to plastics and plastics to primed, painted or E-coated metals. Also for general purpose bonding of trim components.
- Seam Sealer — Heavy-bodied, non-sag adhesive/sealer for use on: standing cosmetic seams, truck bed seams, tooled door skin seams and floor pans.
- Trim and Weatherstrip Adhesive — For use on body side moulding, emblems, trim, bumper impact strips and carpeting.
- Clear Silicone Rubber — Used for sealing water leaks, noise concerns, remounting trim and repairing torn weatherstripping.

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DESCRIPTION AND OPERATION (Continued)

Structural Adhesive

NOTE: Ford Motor Company does not approve or recognize structural repair procedures using anything but genuine Ford parts.

Structural repairs (frames, rails, aprons and body panels) carried out using other than Ford Motor Company parts have not been tested. In addition, structural equivalence and corrosion protection cannot be assured.

When returning a vehicle to pre-accident condition, make sure repair procedures are carried out by skilled technicians using genuine Ford Motor Company parts and approved methods.

Structural component repair procedures approved by Ford using genuine parts have been validated through testing by Ford Motor Company engineers. Should alternative structural component repair procedures and/or parts be used, repairers should be aware of the potential liability they incur.

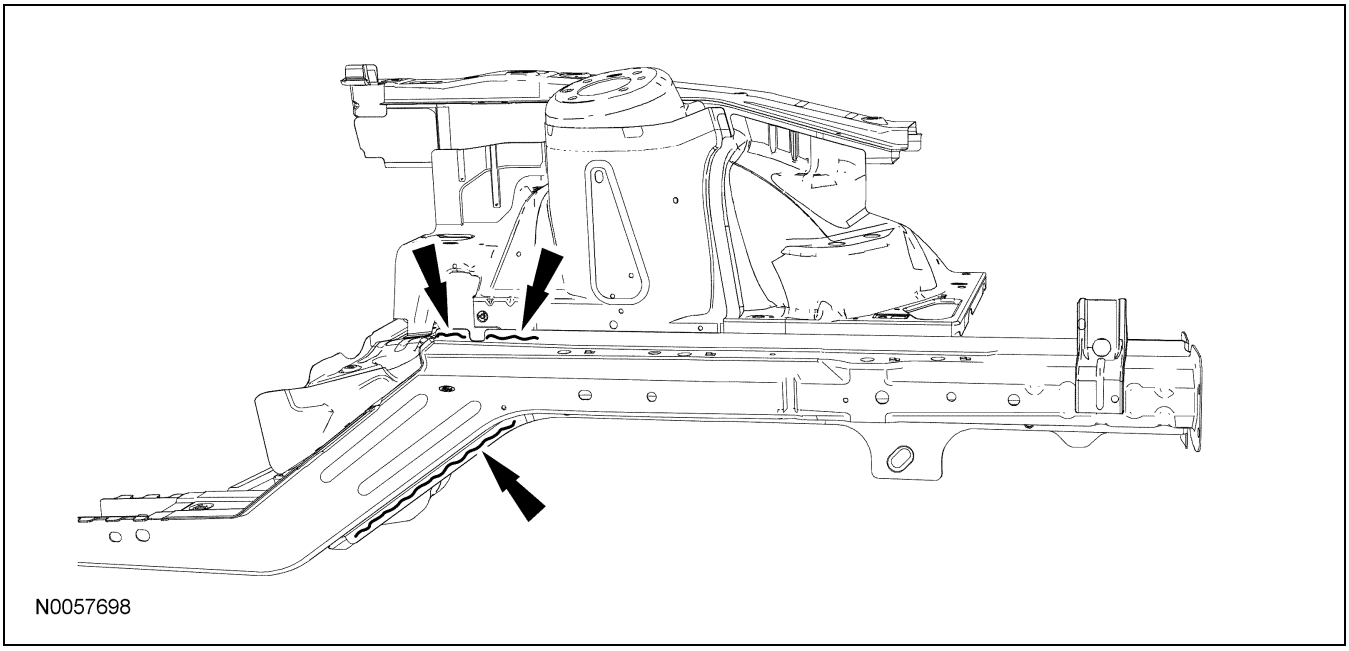
NOTE: Corrosion protection needs to be restored whenever it is necessary to sand or grind through painted surfaces or E-coat, or when bare metal repairs are made.

NOTE: Factory spot welds may be substituted with either resistance spot welds or Metal Inert Gas (MIG) plug welds. Spot/plug welds should equal factory welds in both location and quantity. Do not place a new spot weld directly over an original weld location. Plug weld hole should equal 8 mm (0.31 in) diameter.

NOTE: Remove the outer body sheet metal from the affected area prior to carrying out any reinforcing panel replacement. Refer to Sectioning Guidelines in this section.

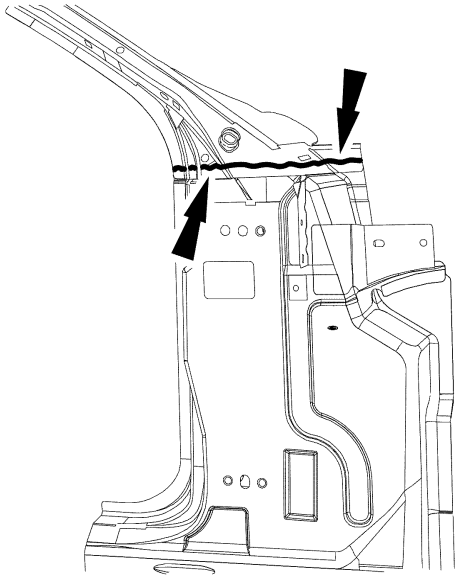
NOTE: The following illustrations identify structural adhesive locations.

Frame Rails



DESCRIPTION AND OPERATION (Continued)

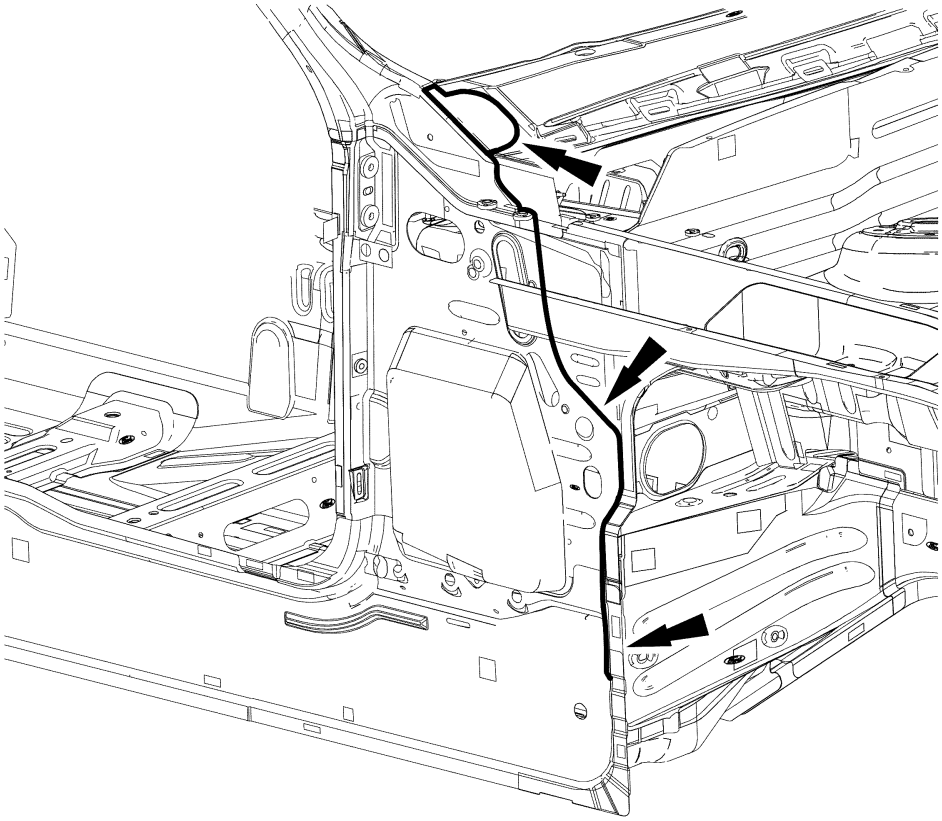
A-Pillar Reinforcement



N0057693

A-Pillar

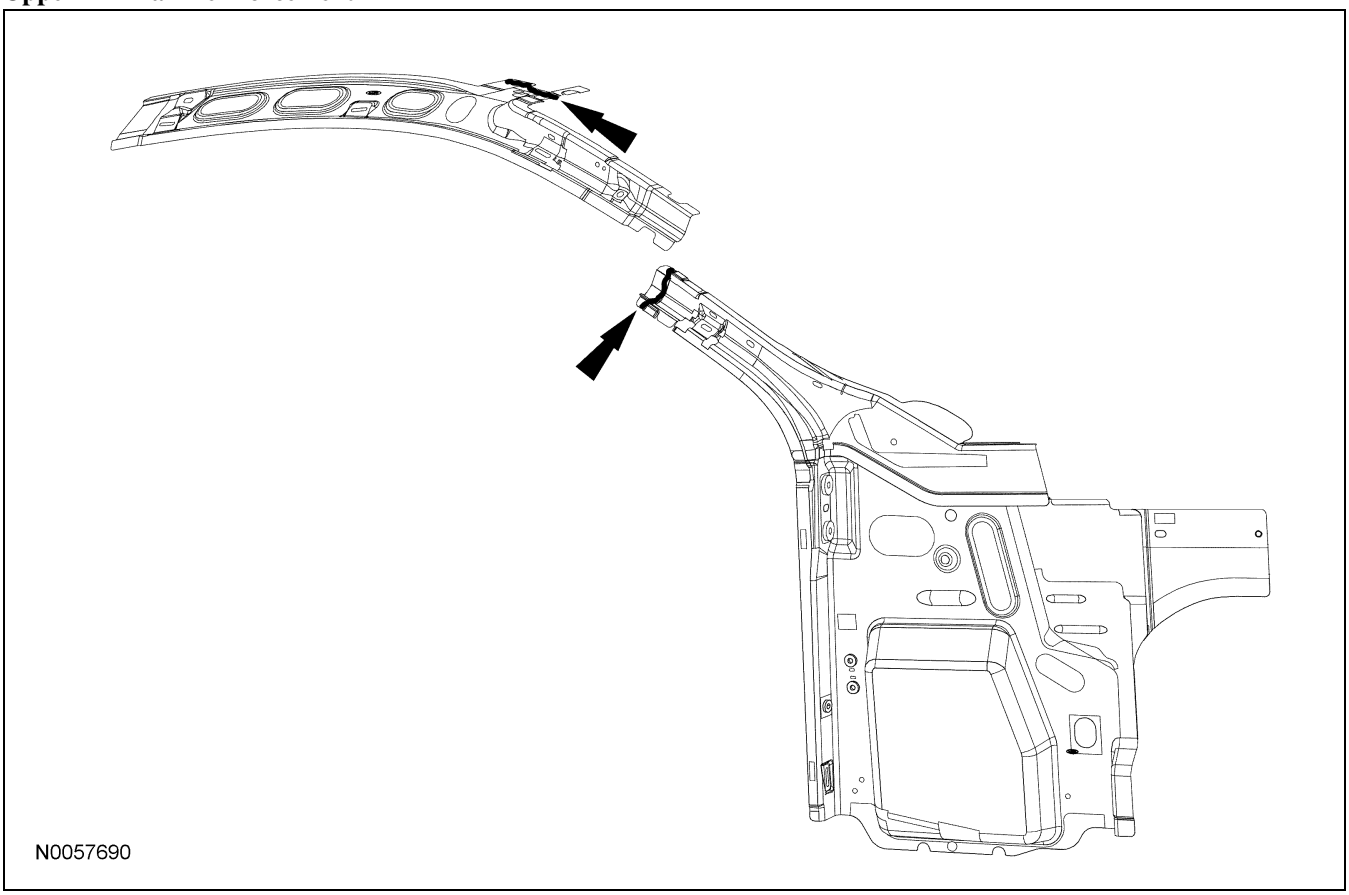
NOTE: Right side shown, left side similar.



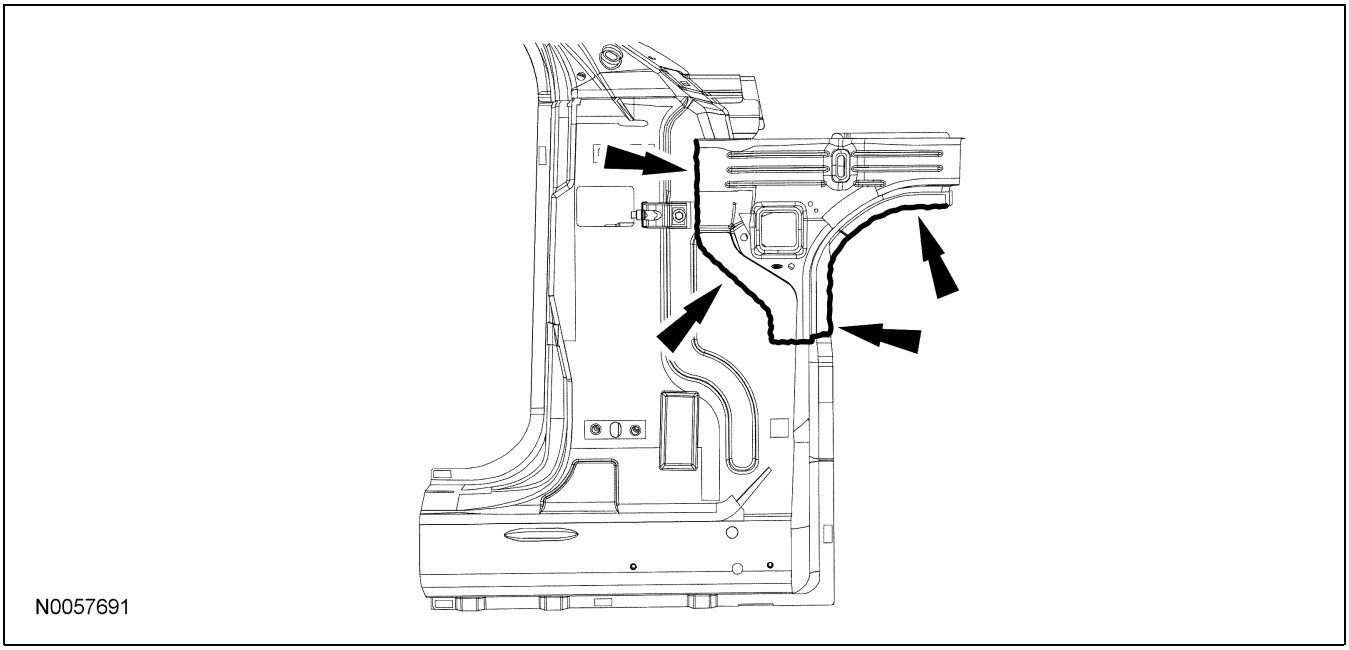
N0039593

DESCRIPTION AND OPERATION (Continued)

Upper A-Pillar Reinforcement



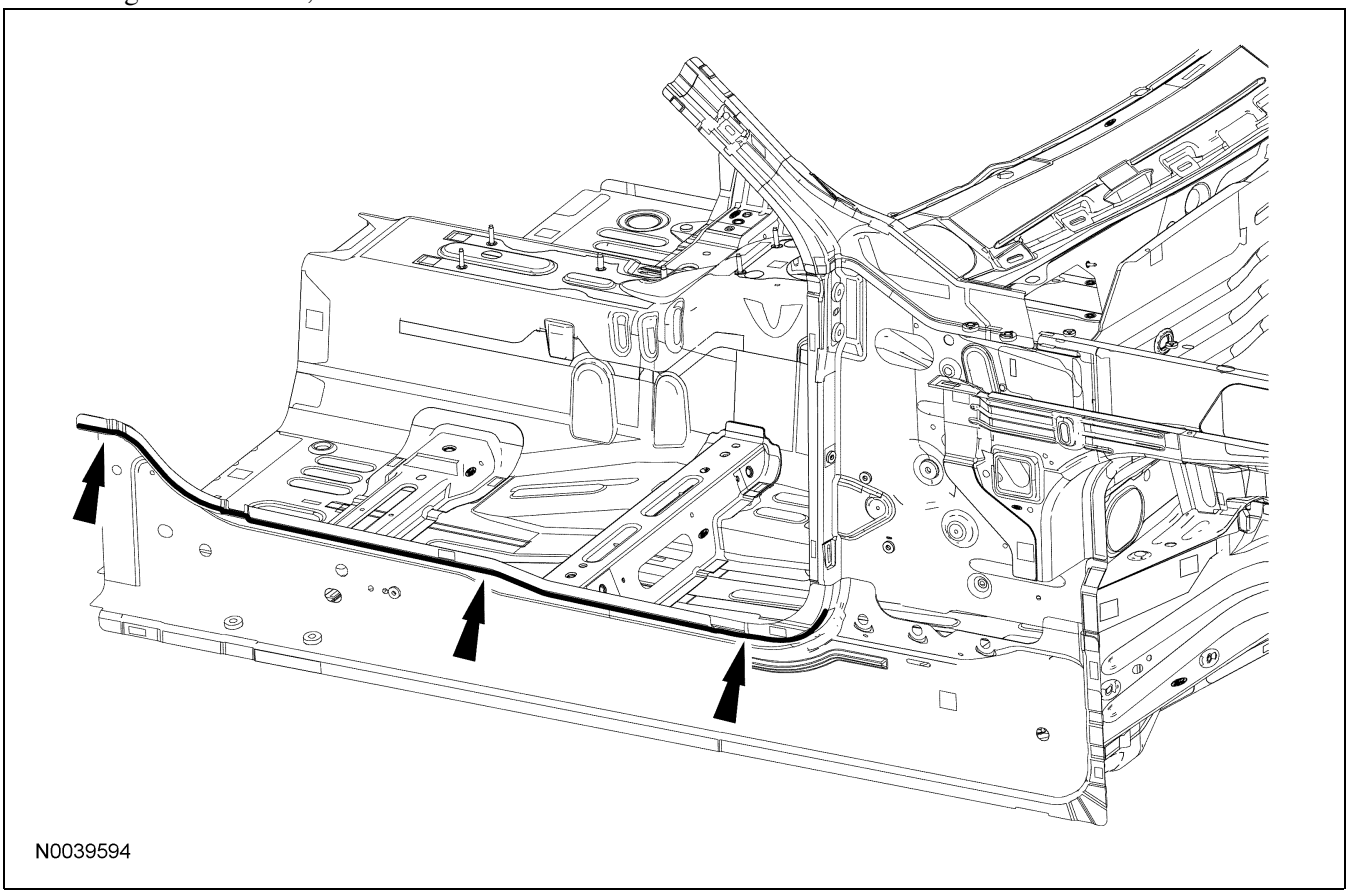
A-Pillar/Inner Fender Reinforcement



DESCRIPTION AND OPERATION (Continued)

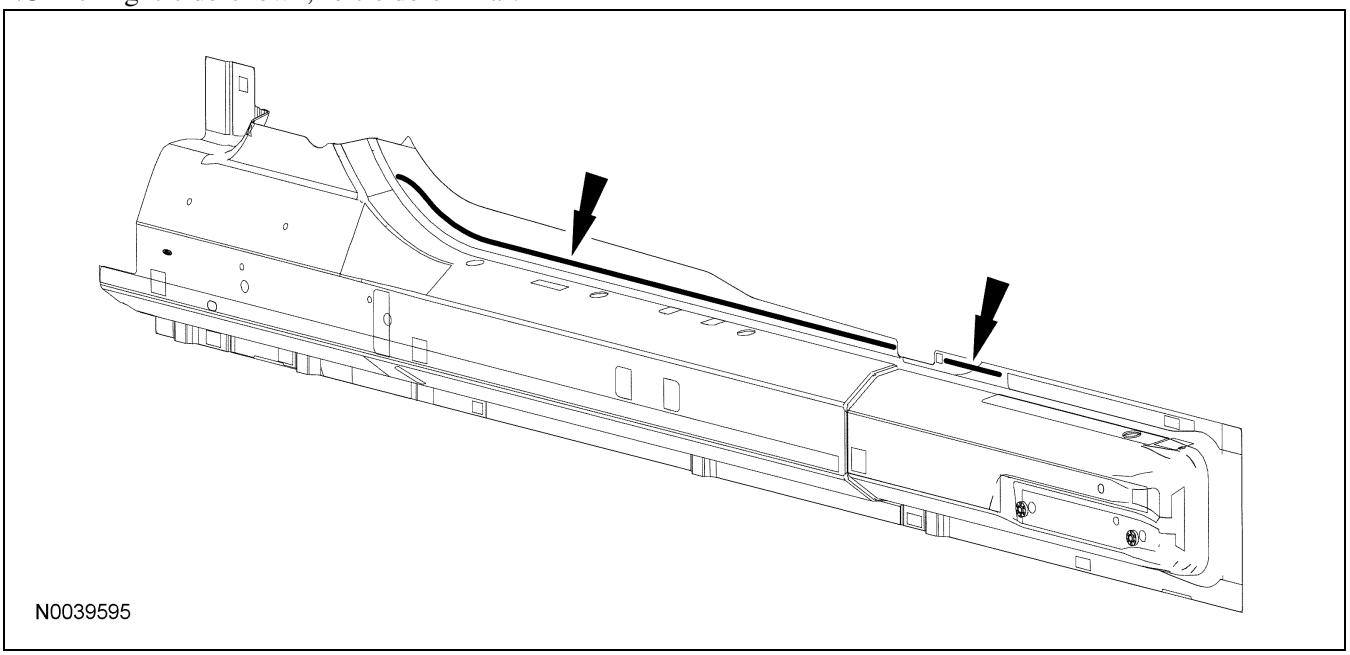
Floor Side Member

NOTE: Right side shown, left side similar.



Rocker Reinforcement — Coupe

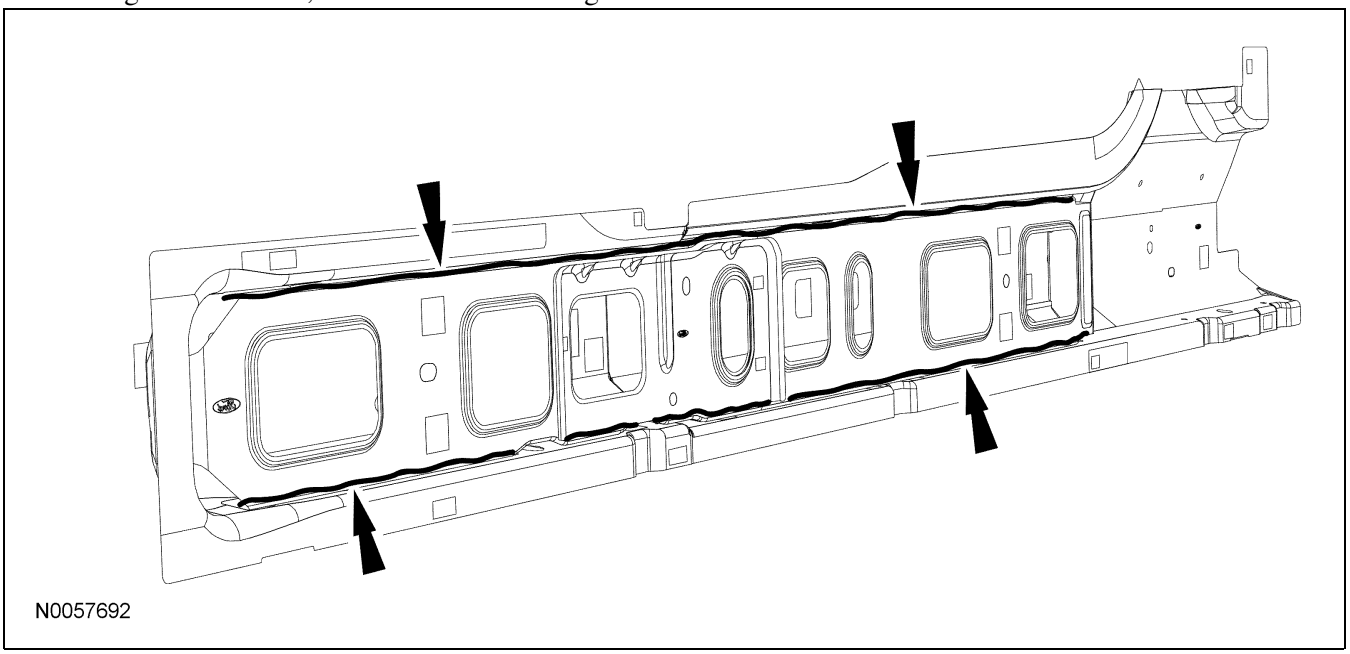
NOTE: Right side shown, left side similar.



DESCRIPTION AND OPERATION (Continued)

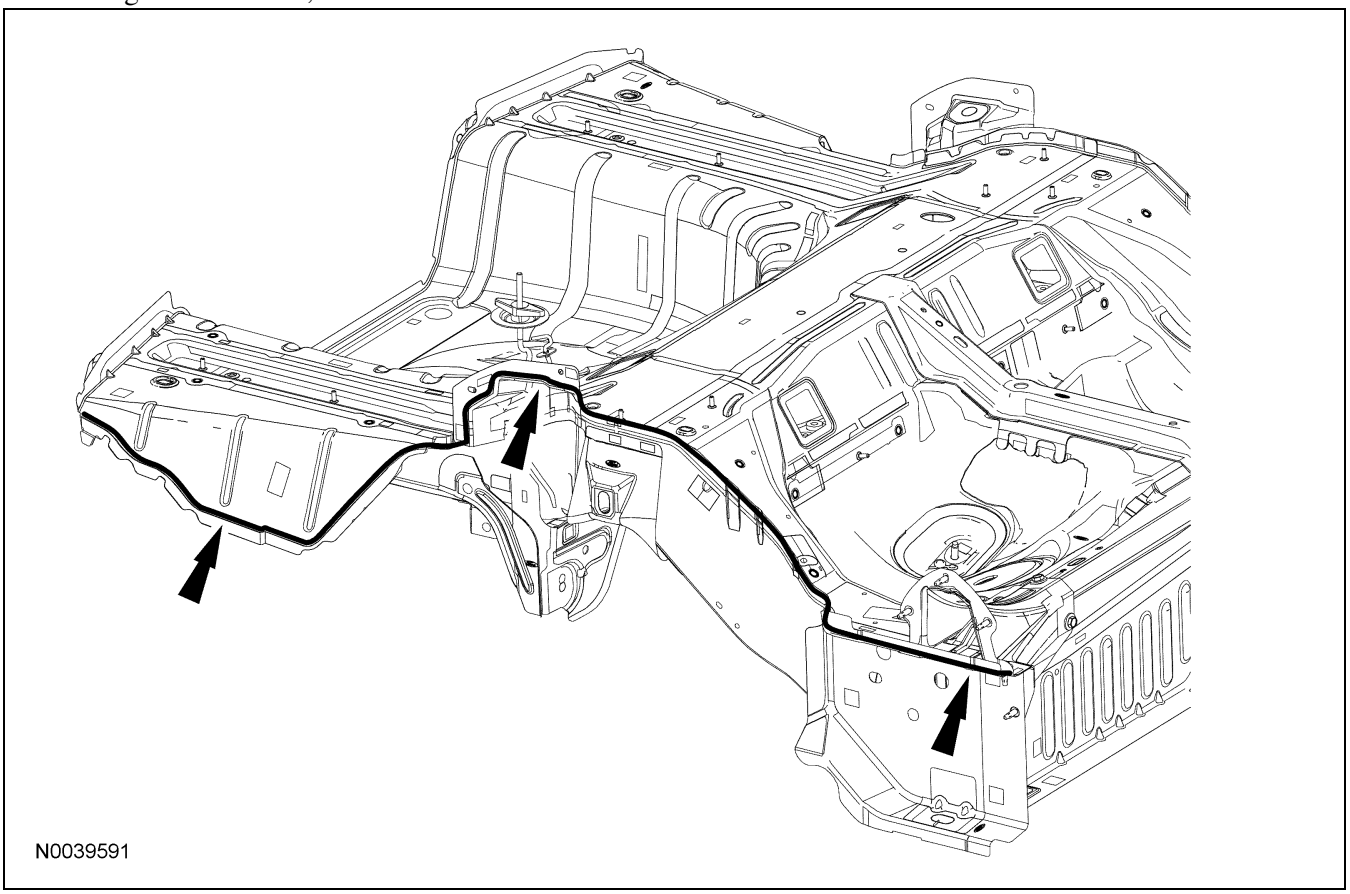
Rocker Reinforcement — Convertible

NOTE: Right side shown, viewed from inner edge.



Rear Underbody Wheelhouse

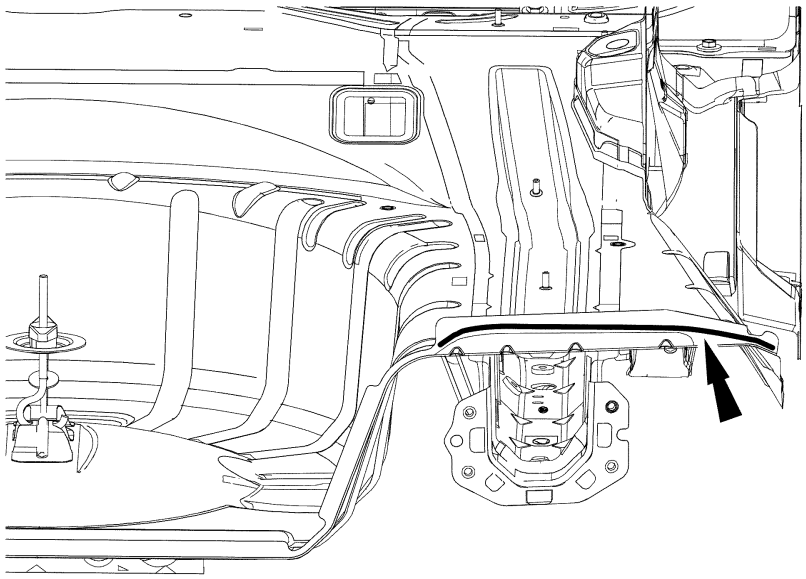
NOTE: Right side shown, left side similar.



DESCRIPTION AND OPERATION (Continued)

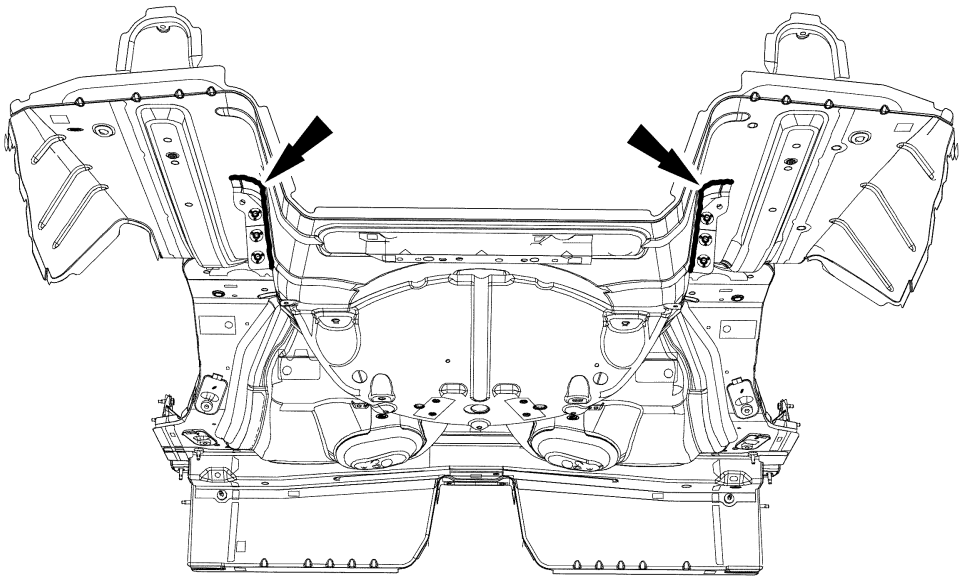
Rear Underbody Rear Flange

NOTE: Right side shown, left side similar.



N0039592

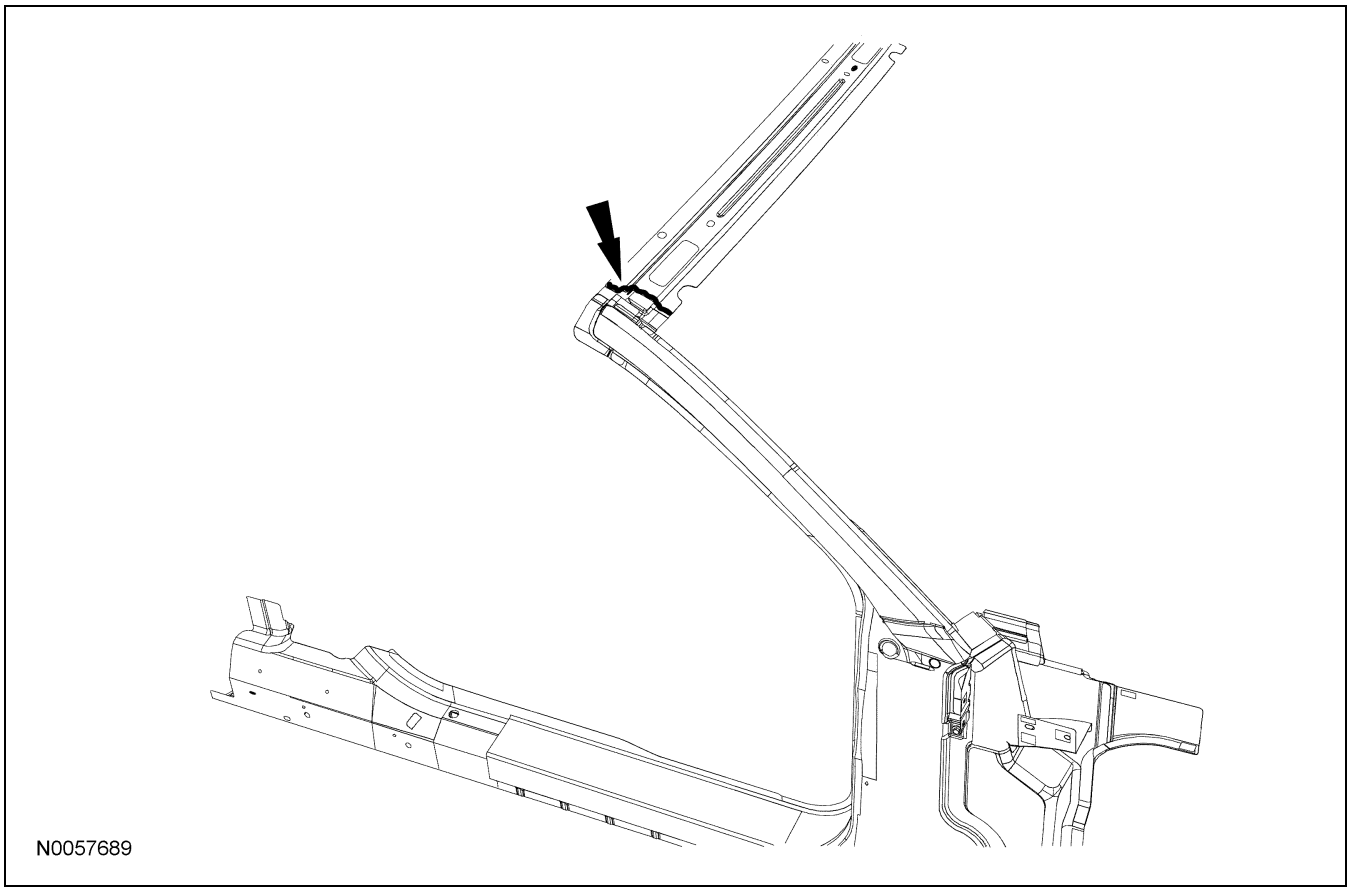
Rear Floor Pan Reinforcements



N0057694

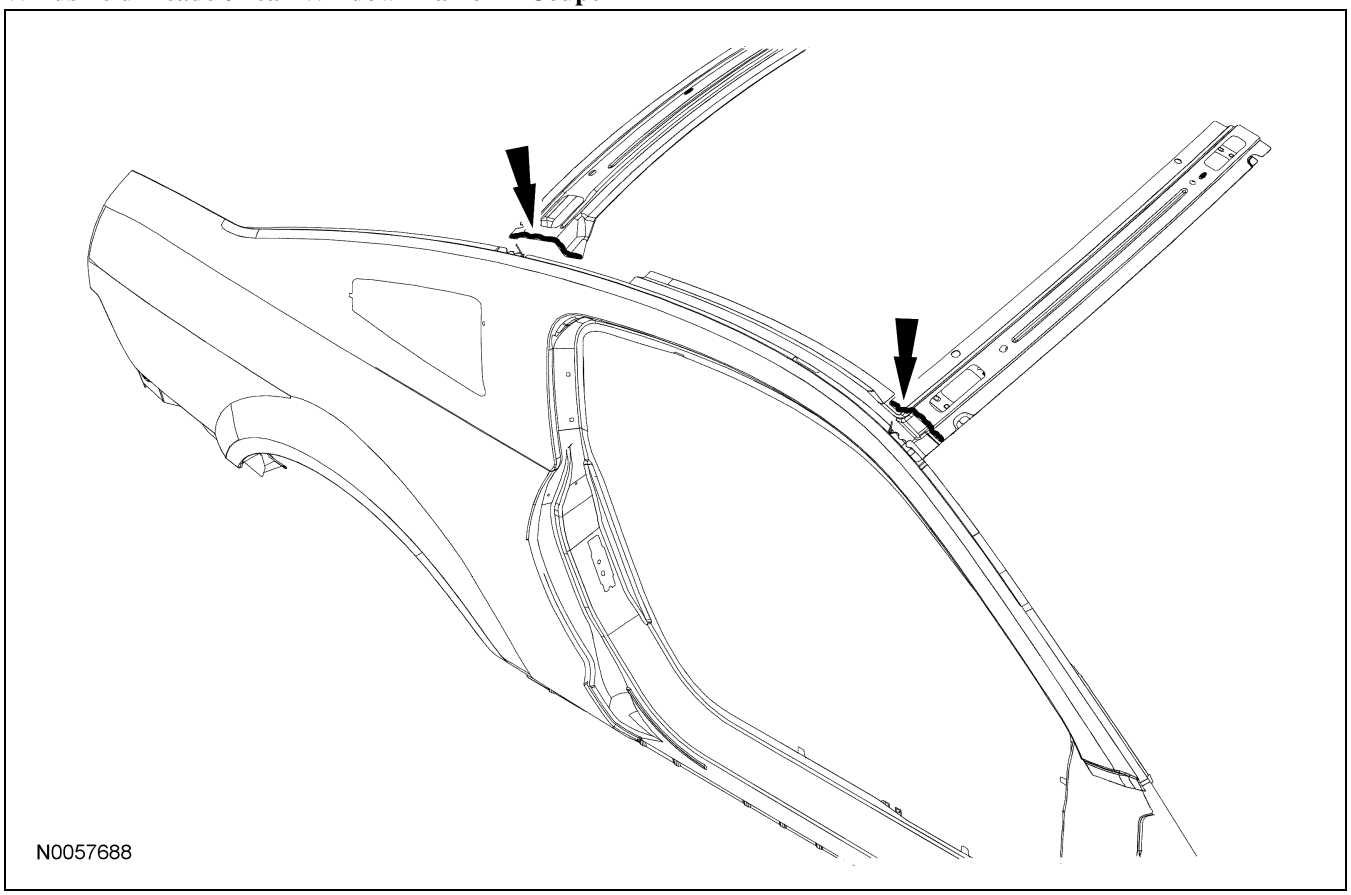
DESCRIPTION AND OPERATION (Continued)

Windshield Header — Convertible



DESCRIPTION AND OPERATION (Continued)

Windshield Header/Rear Window Frame — Coupe



GENERAL PROCEDURES

Sectioning Guidelines

General Equipment

3 Phase Inverter Spot Welder 254-00002
Compuspot 700F Welder 190-50080
I4 Inverter Spot Welder 254-00014
Inverter Welder with MIG Welder 254-00015

Material

Item	Specification
Flexible Foam Repair TA-4	—
Metal Bonding Adhesive TA-1	—

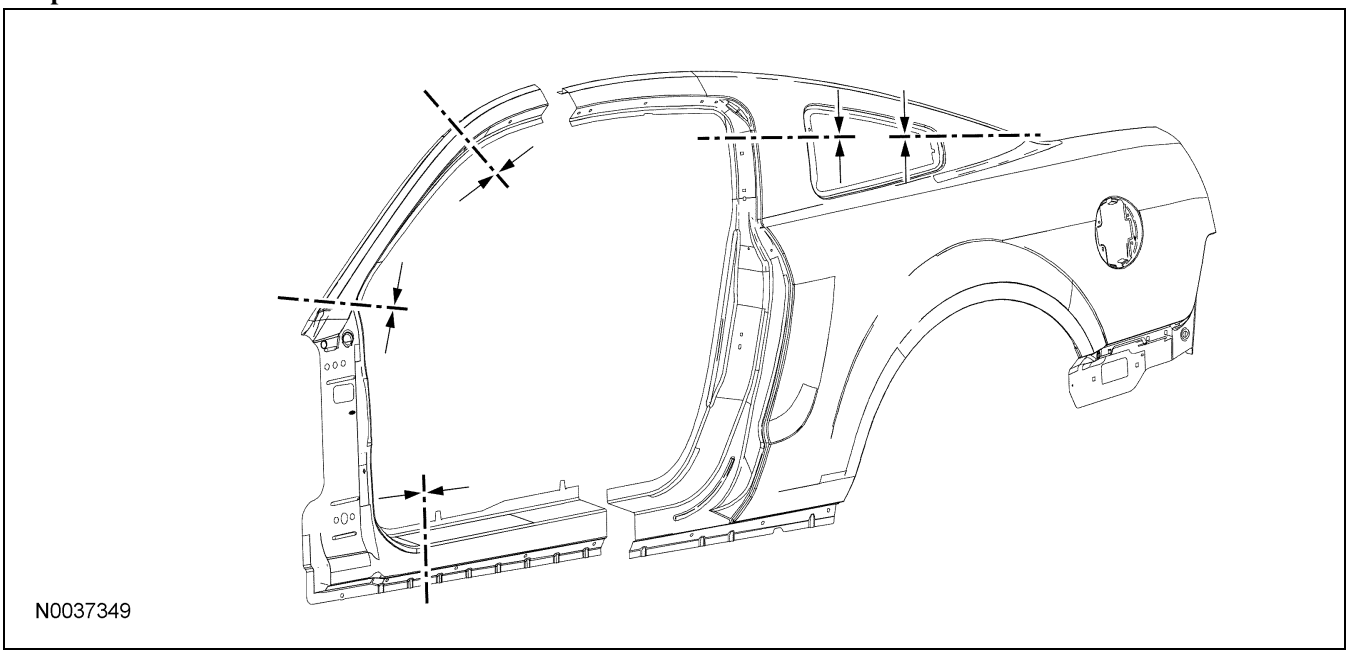
(Continued)

Material

Item	Specification
Motorcraft® Metal Surface Prep ZC-31-A	—
Motorcraft® Premium Undercoating PM-25-A	—
Motorcraft® Rust Inhibitor Aerosol PM-24-A	—
Seam Sealer TA-2	—

Body Side Sectioning

Coupe



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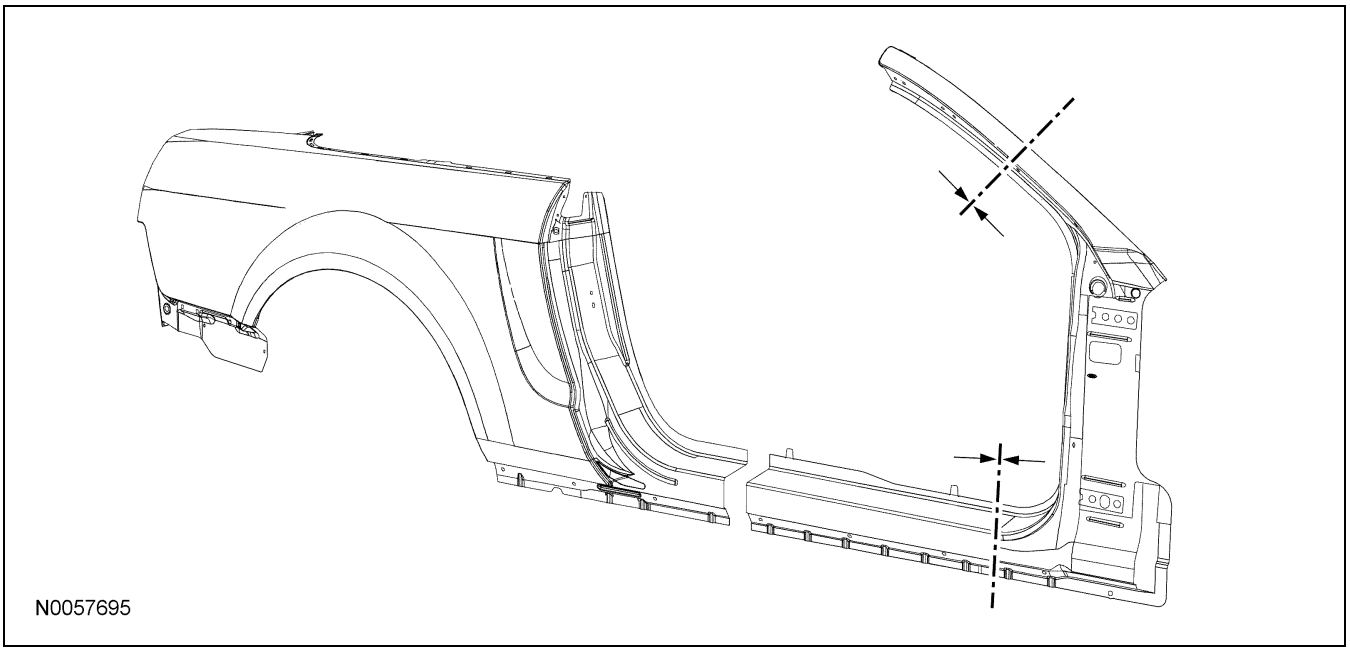
GENERAL PROCEDURES (Continued)

Convertible



⚠ WARNING: Never install used or reconditioned parts (as specified below) from pre-owned, salvaged or damaged vehicles. The use of such parts could lead to serious injury.

Never use non-Ford parts or accessories for completing repairs.

Ford Motor Company does not approve or recognize body and structural repair procedures, tools, parts or anything but new genuine Ford equipment. Ford cannot attest to the safety, quality, durability or legality of non-Ford parts or accessories. Use of such parts could lead to serious personal injury as they may contain damage which is not visible.

Ford does not approve use of the following:

- **Salvaged or used parts**
- **Major body clips or assemblies from salvage vehicles**
- **Aftermarket structural or body components**
- **Salvaged or reconditioned wheels**

GENERAL PROCEDURES (Continued)

- **Used supplemental restraint system (SRS) components**
  - **— air bags**
  - **— restraint system modules**
  - **— safety belts, buckles or retractors**
  - **— crash sensors**

Returning a vehicle to pre-accident condition can only be assured if repair procedures are carried out by skilled technicians using new genuine Ford parts and Ford-approved methods. Structural component repair procedures approved by Ford, using genuine Ford parts, have been validated by Ford Motor Company engineers.

Ford Motor Company does not endorse, cannot attest to, and makes no representations regarding structural repairs (frames, rails, aprons and body panels) carried out using non-genuine Ford Motor Company parts or non-Ford-approved methods. In particular, Ford makes no representations that the vehicle will meet any crash safety or anti-corrosion performance requirement. Such parts and methods have not been tested by Ford, and may not meet Ford's requirements for safety, performance, strength, quality, durability and corrosion protection.

Ford Motor Company bears no responsibility or liability of any kind if repairs are performed using alternative structural component repair procedures and/or parts.

⚠ WARNING: Invisible ultraviolet and infrared rays emitted in welding can injure unprotected eyes and skin. Always use protection such as a welder's helmet with dark-colored filter lenses of the correct density. Electric welding will produce intense radiation, therefore, filter plate lenses of the deepest shade providing adequate visibility are recommended. It is strongly recommended that persons working in the weld area wear flash safety goggles. Also wear protective clothing. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: On vehicles equipped with safety canopy options, prior to carrying out any sectioning repairs near the roof line or sail panel areas of the vehicle, remove the safety canopy module and related components. Failure to comply may result in accidental deployment or damage to the safety canopy. Refer to Section 501-20B. Failure to follow these instructions may result in serious injury to technician or vehicle occupant(s).

⚠ WARNING: Do not cut or grind body side components within 50 mm (1.96 in) of restraint anchoring points. Welding within 50 mm (1.96 in) of restraint anchoring points may result in incorrect operation of restraint devices. For additional restraints anchoring location information, refer to Section 501-20A and Section 501-20B. Failure to follow these instructions may result in serious injury to vehicle occupant(s).

NOTICE: **Electronic modules and related wiring may be damaged when exposed to heat from welding procedures. Carefully disconnect and remove, or position away from heat affected areas.**

NOTICE: **When carrying out repairs to LH quarter panel sheet metal, the factory sealer between the quarter panel and the fuel filler opening must be removed and sealed using Flexible Foam TA-4 to provide a correct seal.**

NOTE: Factory spot welds may be substituted with either resistance spot welds or Metal Inert Gas (MIG) plug welds. Spot/plug welds should equal factory welds in both location and quantity. Do not place a new spot weld directly over an original weld location. Plug weld hole should equal 8 mm (0.31 in) diameter.

GENERAL PROCEDURES (Continued)

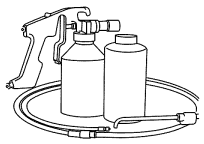
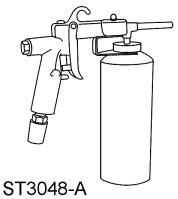
NOTE: When it is necessary to carry out weld-bonding procedures, refer to Weld-Bonding in this section.

1. Drill out the spot welds of the damaged panel to be sectioned. Using a cut-off wheel, reciprocating saw or plasma cutter, cut through the damaged area of the outer panel only and remove the section to be replaced.
2. When welding overlapping surfaces or substrates, apply weld-through primer between the surfaces prior to welding.
3. Make sure horizontal joints and flanges are correctly sealed with seam sealer to prevent moisture intrusion. Water and moisture migrate to horizontal joints and corrosion tends to occur more rapidly in these areas. Metal surfaces must be clean and dry before applying seam sealer.
4. Proceed with the refinishing process following Ford-approved paint recommendations. Apply corrosion protection material to the exterior surfaces or substrates after refinishing.

GENERAL PROCEDURES

Restoring Corrosion Protection Following Repair

Special Tool(s)

 ST3049-A	Rust Inhibitor Installation Kit 286-00002
 ST3048-A	Undercoating Spray Gun 286-00001

Material

Item	Specification
Motorcraft® Metal Surface Prep ZC-31-A	—
Motorcraft® Premium Undercoating PM-25-A	—
Motorcraft® Premium Undercoating Quart PM-25-B	—
Motorcraft® Rust Inhibitor Aerosol PM-24-A	—
Motorcraft® Rust Inhibitor Quart PM-24-B	—

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

NOTICE: **Drilling access holes in body panels is not recommended. Drilling holes will break the original paint finish and promote corrosion.**

NOTE: Corrosion protection needs to be restored whenever it is necessary to sand or grind through painted surfaces or E-coat, or when bare metal repairs are made.

NOTE: Refer to product label for preparation and handling instructions.

1. The surfaces must be free of oil, dirt and other foreign material. Carry out the process in the following sequence.
   1 Thoroughly clean and degrease metal surfaces using metal surface prep to remove wax and grease.
   2 For best results, the vehicle should be at room temperature. Attach the rust inhibitor canister to the Rust Inhibitor Installation Kit 286-00002.
   3 Rust inhibitor should be applied after the welding and refinishing process. Product cannot be welded through.
   4 Air pressure setting for applicator gun is 448-517 kPa (65-75 psi).
   - Use the long wand when spraying enclosed areas. The spray nozzle provides a 360-degree spray pattern. Insert the wand as far as possible into the access hole, pull the trigger and wait 2-3 seconds and slowly pull the wand out of the access hole.
   - The short, hook-shaped wand sprays in one direction and must be rotated to provide complete coverage.
   - Apply the material in light mist coats.
   - Material displaces moisture.
   5 Clean up any overspray with a mild solvent such as mineral spirits or bug and tar remover.

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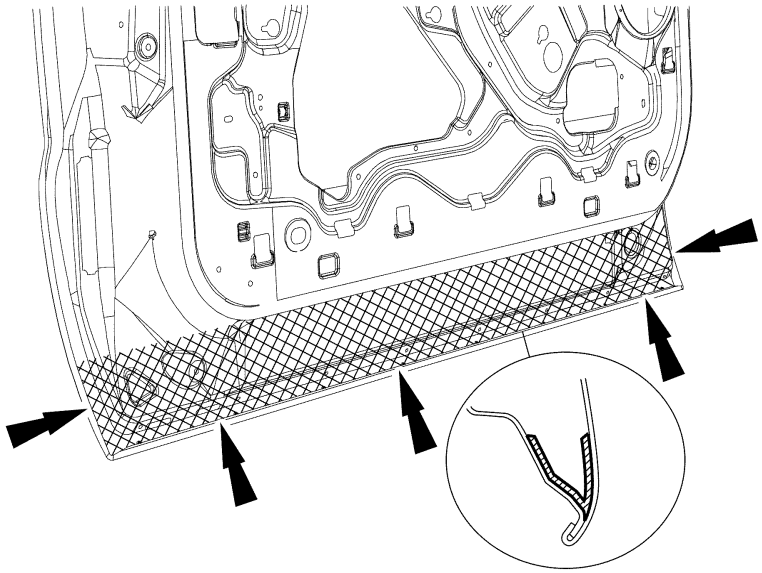
GENERAL PROCEDURES (Continued)

NOTE: The following illustrations provide typical applications of body seams and spot welded flanges and are not vehicle specific.

2. **NOTE:** Door assembly lower view.

   Apply rust inhibitor as shown to the inside of the door shell on all the interior metal surfaces using the most suitable applicator wand. Apply material to the exposed edges after carrying out the welding process. Make sure horizontal surfaces are well protected as they are more susceptible to corrosion. Keep door drain holes clear to prevent moisture buildup.

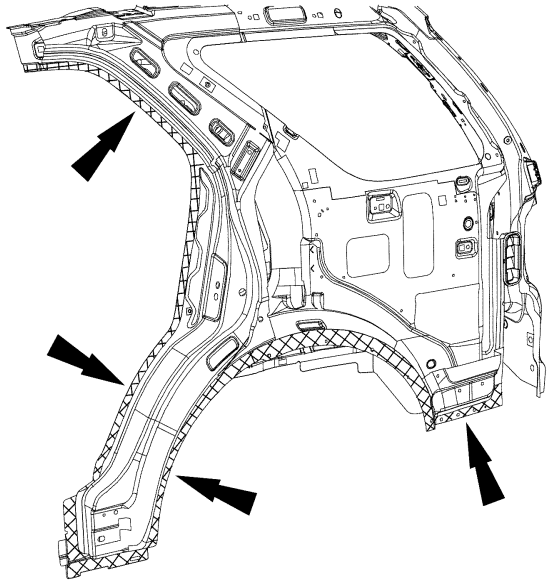


N0079009

GENERAL PROCEDURES (Continued)

3. **NOTE:** Quarter panel inner view.

   Apply rust inhibitor to the closed channel portion of the spot weld flange areas using the short, hook-shaped wand. Apply material to the exposed edges after carrying out the welding process. Make sure horizontal surfaces are well protected as they are more susceptible to corrosion.

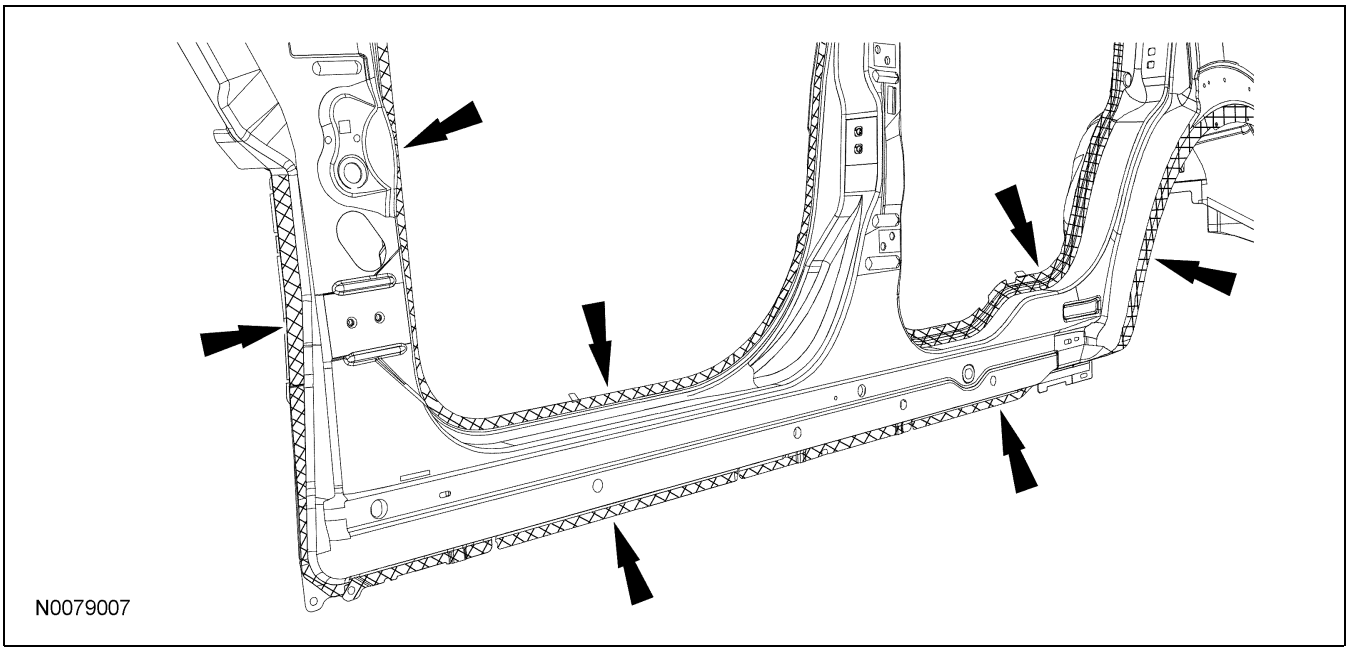


N0079008

GENERAL PROCEDURES (Continued)

4. **NOTE:** Door frame opening view.

   Apply rust inhibitor to the closed channel portion of the spot weld flange areas using the short, hook-shaped wand. Make sure horizontal surfaces are well protected as they are more susceptible to corrosion.



GENERAL PROCEDURES (Continued)

Body and Frame Undercoating

1. **WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.**

   WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

   NOTICE: **Do not allow undercoating on powertrain components. Failure to follow these instructions may result in incorrect operation of these components.**

   NOTE: Refer to product label for preparation and handling instructions.

   NOTE: Avoid high-pressure water spray cleaning to treated underbody area for 24 hours.

   Wire brush the area and make sure the surfaces are free of oil, dirt and other foreign material. Carry out the undercoating process in the following sequence.

   1 Thoroughly clean and degrease metal surfaces using metal surface prep to remove wax and grease.

   2 For best results, the vehicle should be at room temperature.

   - Canister attaches directly to the dispensing gun. Attach the undercoating canister to the Undercoating Spray Gun 286-00001.

   3 Undercoat should be applied after the welding and refinishing process. Product cannot be welded through.

   4 Air pressure setting for applicator gun is 552-621 kPa (80-90 psi).

   - Apply light mist coats, applicator sprays in fogging pattern.
   - Material displaces moisture.

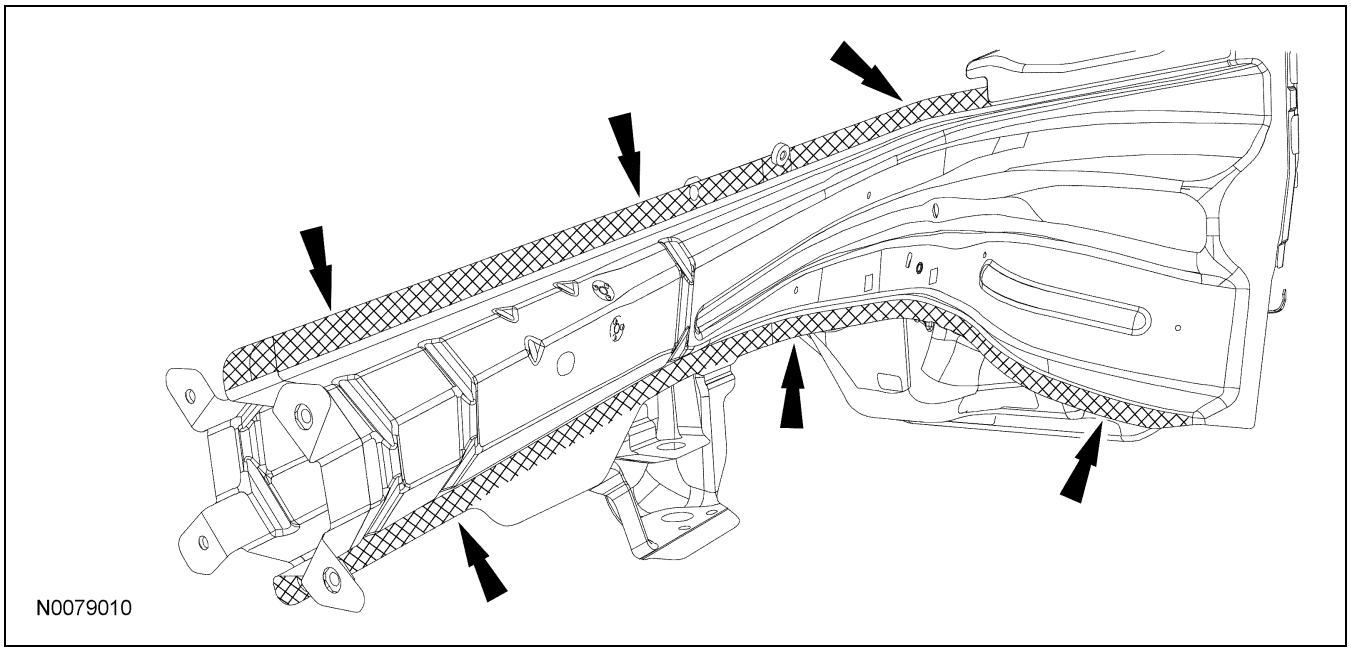
   5 Clean up any overspray with a mild solvent such as mineral spirits or bug and tar remover.

GENERAL PROCEDURES (Continued)

NOTE: The following illustrations provide typical applications to frame rails and are not vehicle specific.

2. **NOTE:** Frame rail exterior spot-weld flange view.

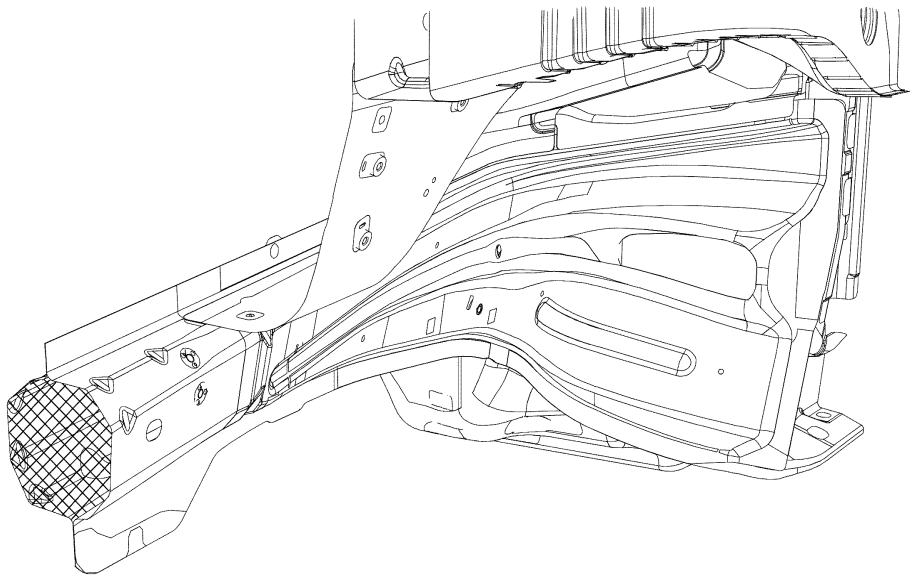
   Apply undercoat material to the exterior exposed edges after carrying out the welding and refinishing process.



GENERAL PROCEDURES (Continued)

3. **NOTE:** Cross section view of typical unibody frame rail shown.

   Apply rust inhibitor to the inner surfaces of the rail after carrying out welding process. Use the long wand and insert as far as possible, depress trigger and wait 2-3 seconds and slowly pull the wand to make sure the area is completely fogged.

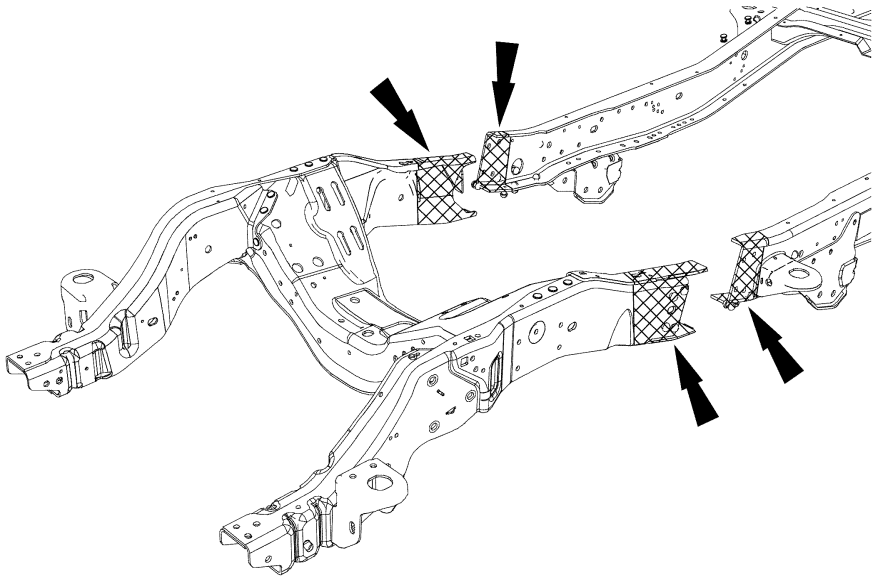


N0079006

GENERAL PROCEDURES (Continued)

4. **NOTE:** Full frame vehicle, front rail-to-mid rail section repair shown.

   Apply undercoat material to the exposed surfaces after carrying out the welding process. Make sure to completely cover any bare metal areas.



N0081361

GENERAL PROCEDURES

Refinishing — Environmental Damage

Material

Item	Specification
Motorcraft® Acid Neutralizer ZC-1-A	—
Motorcraft® Alkaline Neutralizer ZC-2-A	—
Motorcraft® Custom Clear Coat Polish ZC-8-A	—
Motorcraft® Detail Wash ZC-3-A	—

Iron Oxide (Rail Dust) or Acid Rain Decontamination

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

NOTICE: **In extreme cases of contamination, the vehicle may require refinishing. To avoid paint failure, follow the appropriate decontamination procedure prior to carrying out any panel refinishing procedure.**

NOTE: Iron oxide contamination appears as tiny rust spots on horizontal surfaces and in severe cases can be felt. This damage is typically caused from rail shipment, storage near railroad tracks or fallout from industrial manufacturing facilities.

NOTE: Acid rain contamination can be identified as water spotting and, in severe cases, staining within the water spots.

1. ***NOTICE:*** **Never paint over iron particles as rust spots will reoccur. Use only the recommended decontamination procedure detailed below.**

   Rinse any dust, dirt and foreign material from the vehicle body with cold water. Flush liberally.

2. Prepare the acid neutralizer by mixing 8 parts of water to 1 part neutralizer in a bucket.

3. ***NOTICE:*** **To avoid paint failure, do not allow the product to dry on the vehicle.**

   NOTE: Use a separate wash mitt for each product applied to the vehicle.

   Working quickly and beginning at the top of the vehicle and working to the sides, apply the acid neutralizer mix to the entire vehicle. Keep the vehicle wet with the solution and lightly agitate for 5 to 7 minutes. Continue around the vehicle 4 to 5 times. For severe conditions, work the product for up to 8 minutes.

4. Rinse the vehicle completely with cold water to remove the product.

5. Dry only the horizontal surfaces of the vehicle, do not dry the glass at this time.

6. ***NOTICE:*** **To avoid damage to the paint surface, do not apply the alkaline neutralizer directly to the vehicle plastic trim.**

   NOTE: Use a separate wash mitt for each product applied to the vehicle.

   NOTE: Alkaline neutralizer is a ready-to-use product. Do not mix with water.

   Pour the alkaline neutralizer into a squirt bottle and apply the solution to a clean wash mitt.

7. ***NOTICE:*** **To avoid paint failure, do not allow the alkaline neutralizer to dry on the vehicle.**

   Apply the product to the vehicle keeping the solution wet and lightly agitate for 5 to 7 minutes. For severe conditions, work the product for up to 8 minutes.

8. Rinse the vehicle completely with cold water to remove the product.

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GENERAL PROCEDURES (Continued)

9. Prepare the detail wash by mixing 29.5 ml (1 oz) with 3.78L (1 gal) of water.

10. Using a clean wash mitt, shampoo the entire vehicle and rinse with cold water. Dry the vehicle completely.

11. Visually inspect the paint surface for any remaining evidence of ferrous metal particles. Repeat procedure as necessary.

Surface Finishing Following Decontamination

1. *NOTICE:* **When attempting to affect a repair by buffing, polishing or color sanding, do not remove an excess of 0.3 mil of paint film or refinishing will be required.**

   NOTE: Acid rain discoloring or etching may require color sanding in addition to buffing and polishing. In extreme cases, refinishing may be required if the following procedure does not restore the vehicle finish.

   NOTE: Do not intermix buffing products. Use only one manufacturer's product.

   NOTE: Always follow the manufacturer's product usage sequence. Use the appropriate buffing or polishing pad at the recommended buffing speed as specified by the product manufacturer.

   Apply rubbing compound to the vehicle surface as recommended by the product manufacturer.

2. Apply machine glaze to the vehicle surface as recommended by the product manufacturer.

3. Use an alcohol and water mixture (1 to 1) to clean the buffed and polished areas. Verify removal of scratches and swirls before the application of the final polish.

4. Apply a final polish material by hand, with a dual-action sander and foam pad, or with an orbital polisher and appropriate polishing bonnet.

5. Wash and dry the vehicle.

GENERAL PROCEDURES

Plastics Identification

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

NOTE: Identification of the various plastic types is necessary to select the appropriate repair methods to make high quality plastic repairs. Plastics can generally be broken down into 2 categories, thermoplastics and thermosetting plastics. Thermoplastics can be remolded by heating. This makes plastic welding a possible repair alternative.

1. **NOTE:** In some instances, a code or material designation is stamped indicating the plastic type.

   Thermoplastics are solvent reactive. Types of thermoplastics include Thermoplastic Olefin (TPO), Polyvinyl Chloride (PVC) and Acrylonitrile Butadiene Styrene (ABS). Polyolefins have an oily or waxy appearance. Examples include some bumper covers, stone shields, fender aprons and fan shrouds. Polyolefins require an adhesion promoter prior to carrying out any refinish procedure.

   - To determine if the part is a polyolefin, grind the damaged area in an out-of-sight area. Grinding a polyolefin will melt and smear the plastic and leave a ragged edge. If the part is non-polyolefin, the area will grind or sand smoothly, producing a powdery dust.

Rigid Plastic Parts

Code	Family Name	Common Trade Name	Typical Application
ABS	Acrylonitrile Butadiene Styrene	ABS, Cycolac, Lustran, Kralistic	A-Pillars, Consoles, Grilles
SMC	Sheet Molded Composite	SMC	Body Panels

Flexible Plastic Parts

Code	Family Name	Common Trade Name	Typical Application
RRIM	Reinforced Reaction Injection-Mold Material PUR	RRIM	Fascias, Body Panels, Body Trims
TPO	Thermoplastic Polyolefin	Polytrope, Renflex, Santropren Telcar, Vistaflex, ETA, Apex, TPO	Bumpers, End Caps, Rubber Strips, Sight Shields, Claddings, Interior B-Post

2. Polyolefin plastic can also be identified by placing a small sliver in a container of water, if the sample floats, it is an polyolefin plastic. A non-polyolefin will sink when placed in a container of water.

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GENERAL PROCEDURES (Continued)

3. Generally, thermosetting plastics are rigid or semi-rigid. Sheet-Molded Composite (SMC) is reinforced with glass and other fibers and are strong and rigid. SMC is used for large panels such as hoods, liftgates, fenders and quarter panels.
   - A burn test can be a reliable method to determine if a plastic is a thermosetting plastic. Extreme care must be exercised when using this method.
     - Apply an open flame to the corner of the damaged component. If the material crystallizes and becomes hard, it is a thermosetting plastic.

GENERAL PROCEDURES

Refinishing — Manufacturing Damage

Material

Item	Specification
Motorcraft® Detail Wash ZC-3-A	—

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

NOTICE: **To avoid overspray damage to adjacent panels, protect adjacent areas/substrates when preparing for and during refinishing.**

NOTE: Peeling/delamination concerns can be described as lack of adhesion, either between the substrate and topcoats or between individual coats of paint.

1. Wash the repair area with detail wash or pH-neutral soap and water.
2. Remove any trim, emblems and hardware from the area to be repaired.
3. **NOTE:** All delamination must be removed.

   Sand or media blast the damaged surface, keeping the repair area as minimal as possible.
4. Treat any bare metal surface to prevent flash corrosion, and prime and block sand as necessary prior to refinishing.
5. Mask the adjacent panels to protect from overspray.
6. Spot repair the base coat as necessary, following the paint manufacturer's prescribed procedures.
7. Following the paint manufacturer's prescribed procedure, apply clear coat to the entire panel.

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GENERAL PROCEDURES

Plastics Refinishing

All Components

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Do not paint any air bag module trim covers or deployment doors. Paint may cause the air bag to deploy incorrectly. Failure to follow this instruction may increase the risk of serious personal injury or death in a crash.

NOTICE: **When using any Ford-approved refinishing product, it is recommended to stay within your paint system throughout the process. For example, do not use one manufacturer's primers and another manufacturer's topcoats.**

1. **NOTE:** Care must be used if applying heat to parts. Thermoplastics soften and tend to lose their shape when heated.

   The first step for any repair or refinish procedure is to identify the type of plastic. Is it thermosetting or thermoplastic, grained or smooth? This will determine how it should be cleaned and prepared for refinishing. For additional information, refer to Plastics Identification in this section.

   - It is essential that the correct cleaner is used, depending on which painting system is employed, solvent-based or water-based.
   - Clean part with warm water/mild detergent, then with plastic cleaner to remove wax, silicone and other contaminants. Do not allow parts to remain wet for extended periods.
   - As a general rule, if water beads on the part, it requires additional cleaning as all the manufacturing release agents have not been removed.

2. New parts may require baking in a spray booth or heating with heat lamps to release trapped solvents or mold release agents used in the manufacturing processes.

Non-grained components

3. After cleaning, lightly sand with 600-grit or finer sandpaper. Remove sanding residue with plastic cleaner and wipe dry.

Grained components

4. After cleaning, light use of a gray scuff pad is permissible providing the graining not be flattened. Remove sanding residue with plastic cleaner and wipe dry.

All components

5. Apply a plastics adhesion promoter to any bare plastic part following manufacturer's recommendation. Throughout the refinish procedure, any time bare plastic is exposed for any reason, it is essential that adhesion promoter be reapplied to that area.

6. A sealer may be required to prevent wrinkling and lifting of the topcoat prior to carrying out the refinish procedure.

7. Flexible and non-flexible components should be refinished separately as a flex additive may be required when refinishing flexible parts (refer to paint manufacturer's recommendation).

8. It is recommended to carry out refinishing of exterior components on-vehicle (after cut-in) to control color match and blending to adjacent panels.

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GENERAL PROCEDURES (Continued)

9. Proceed with the refinish process and follow the Ford-approved paint system procedures. Steps may vary between paint manufacturers.

GENERAL PROCEDURES

Plastics Repair

Material

Item	Specification
Plastic Bonding Adhesive TA-9	—

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

1. In deciding whether to repair or install a new component, follow these guidelines.
   - Is a part readily available?
   - Can the damaged part be economically returned to its original strength and appearance, or will the labor cost exceed the cost of a new component?
   - Will repair provide for the fastest, highest quality repair?

2. ***NOTICE:*** **Never apply solvents such as lacquer thinner or reducer at any stage of plastic repair. Solvents, cleaners and water are absorbed by many types of plastics and by the glass fibers used for reinforcements. If this occurs, the plastic may swell in the area of repair and cause the repair to fail. Remove cleaners and water quickly and use air and heat to speed up drying.**

   NOTICE: **During the repair of many plastics and particularly polyolefin plastics, an adhesion promoter must be applied to the substrate to allow repair materials and paint to bond correctly. Reapplication is required when grinding or sanding through the sealer or primered layers.**

   NOTE: When possible, it is recommended to carry out as much of the plastic repair as possible on the vehicle. Parts mounted on the vehicle are held in correct alignment throughout the repair. Attempting to repair the part off the vehicle may cause misalignment. This could lead to failure of the repair.

   Select the correct repair method by identifying the type of plastic being repaired. For additional information, refer to Plastics Identification in this section to determine the type of plastic being repaired.

3. **NOTE:** Always refer to the manufacturer's label directions for the type of repair materials, fillers and bonding agents being used as they are material specific.

   Determine whether a reinforcement piece is needed as a backer on large repairs.
   - Construct a reinforcement piece from a scrap piece of the type of plastic being repaired and follow manufacturer's label directions for the type of system being used.
   - When repairing Sheet-Molded Composite (SMC), a reinforcement piece can be constructed using several layers of glass cloth saturated with resin or structural adhesive. The weave of the cloth or screening should be loose enough to allow the resin to thoroughly penetrate. Reinforcement should cover the entire area of damage and extend outward beyond the damage or joint area.

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GENERAL PROCEDURES (Continued)

Sheet-Molded Composite (SMC) Panel Repair

NOTE: The following procedure applies to repair of structural cracks and large gouges. If damage is cosmetic, use of reinforcing cloth may not be necessary.

1. Panels to be repaired should be dry and at room temperature 18°C (65°F) to 24°C (75°F) prior to carrying out any repairs. Both sides of the panel must be thoroughly cleaned before sanding or grinding.

2. Cover the break in the SMC (front and back) with masking tape. This protects the damaged area from absorbing the prep cleaner and eliminates wicking of the cleaner through the fibers into the SMC.

3. Remove all waxes, silicones, dirt and road oils from the area surrounding both sides of the damaged area with a plastics wax and grease remover.
   - Remove the tape and sand the back of the repair area with an angle grinder, Dual Action (D/A) sander or by hand using 80-grit sandpaper. Remove all dust with a vacuum and tack cloth.

4. Create a reinforcing patch using a piece of scrap SMC that conforms well to the back of the damaged area or form a patch from fiberglass cloth.
   - Cut a section of cloth large enough to cover the repair, plus 25.4 mm (1 in) around the repair area.
   - Cut a section of plastic film backing approximately 25.4 mm (1 in) larger than the cloth. Lay the plastic on a smooth, flat surface where it will be used to create a pyramid patch.

5. Follow manufacturer's directions and apply plastic repair adhesive to the plastic film backing and smooth with plastic spreader to recommended thickness. Place the pre-cut fiberglass cloth on the adhesive-coated plastic film. Cover the cloth with a coat of repair adhesive and spread to the recommended thickness.

6. Apply the prepared patch to the backside of the panel and compress. Follow manufacturer's instructions for adhesive cure. Remove plastic film after adhesive cures and sand as necessary to remove roughness.

7. Remove masking tape from the front side of damaged area and grind down to the backing patch. Use an angle grinder with a 30- to 40-grit wheel. Make a gradual taper in the area, this will prevent bull's-eyes or read-through in the finished repair. Sand prepared area with a D/A sander or hand-sand with 80-grit sandpaper.

8. Build a pyramid patch using fiberglass cloth or equivalent and plastic repair adhesive. Following manufacturer's directions, apply patch to damaged area.

9. Rough-grind area to remove excess adhesive. Sand repair area with 80-grit sandpaper, making sure to cut slightly below the SMC finished surface. This will allow for a finish coat of plastic body repair material.

10. Apply a finish coat of plastic repair filler material per manufacturer's directions.

11. Finish-sand, prime and topcoat using Ford-approved paint systems.

Thermoplastic Compounds

1. In deciding whether to repair or install a new component, follow these guidelines.
   - Is a part readily available?
   - Can the damaged part be economically returned to its original strength and appearance, or will the labor cost exceed the cost of a new component?
   - Will repair provide for the fastest, highest quality repair?

2. **NOTE:** The following steps are to be used as a guideline. Depending on what brand of adhesives or patch materials are used, procedures may vary slightly.

   Thoroughly clean the damaged area with wax and grease remover formulated for use with plastics.

GENERAL PROCEDURES (Continued)

3. Hand sand the repair area with 80-grit sandpaper and remove any foreign material with compressed air.

4. Apply a plastics adhesion promoter per label directions to the repair area.

5. For small repairs, a plastic adhesive filler can be applied to damaged area. Follow manufacturer's directions and build layers to form a thickness above the damaged area. This will allow the area to be sanded smooth.

6. To repair large holes or cracks, measure and cut a piece of fiberglass cloth or equivalent 25.4 mm (1 in) larger than crack or hole.
   - Apply plastic repair adhesive to damaged area and immediately apply fiberglass cloth into plastic adhesive for reinforcement. Apply additional plastic repair adhesive for strength and shape as required.

7. Contour and shape the repair as necessary with a D/A sander. Avoid sanding through the repair.

8. Finish-sand the area and carry out any required paint operations using Ford-approved paint systems.

Tab Repair — Bumper

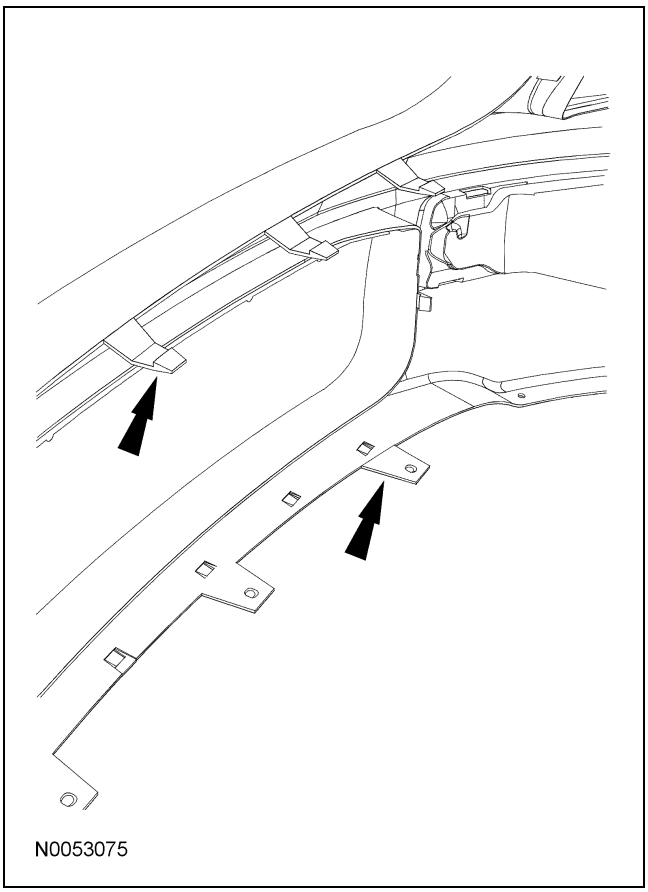
1. **NOTE:** Inspect the bumper cover to determine if part can be repaired to an acceptable level of quality of appearance, fit and durability. Will labor and material cost of the repair meet or exceed the cost of a new replacement bumper cover? If the bumper cover is determined to be repairable, proceed to the following steps.

   NOTE: The following steps are to be used as a guideline. Depending on what brand of adhesives or patch materials are used, procedures may vary slightly.

   Remove the affected bumper. For additional information, refer to Section 501-19.

NOTE: Illustration is not vehicle specific.

2. Clean the broken tab(s) with a plastics wax and grease remover.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3. Hand sand the repair area with 80-grit sandpaper and remove any foreign material with compressed air.

4. Apply a plastics adhesion promoter per label directions to the repair area.

5. Measure and cut a patch of fiberglass cloth or equivalent large enough to form the front of the tab, then slope back in a wedge shape approximately 51 mm (2 in) from original tab.

6. Prepare the repair adhesive cloth patch per manufacturer's instructions and apply to the affected area.
   - Immediately position the plastic repair material patch to form the tab shape.

7. Allow appropriate cure time and shape the repair tab using a small angle sander. Use extreme care to not sand through the exterior surface.

8. Carry out any required paint repair operations to the bumper cover using Ford-approved paint systems.

GENERAL PROCEDURES (Continued)

9. Reassemble and install the bumper cover. For additional information, refer to Section 501-19.

GENERAL PROCEDURES

Weld-Bonding

General Equipment

3 Phase Inverter Spot Welder 254-00002
Compuspot 700F Welder 190-50080
I4 Inverter Spot Welder 254-00014
Inverter Welder with MIG Welder 254-00015

Material

Item	Specification
Metal Bonding Adhesive TA-1	—
Motorcraft® Premium Undercoating PM-25-A	—
Motorcraft® Rust Inhibitor Aerosol PM-24-A	—
Seam Sealer TA-2	—

Weld-Bonding — Squeeze-Type Resistance Spot Welding (STRW) Method

⚠ WARNING: Never install used or reconditioned parts (as specified below) from pre-owned, salvaged or damaged vehicles. The use of such parts could lead to serious injury.

Never use non-Ford parts or accessories for completing repairs.

Ford Motor Company does not approve or recognize body and structural repair procedures, tools, parts or anything but new genuine Ford equipment. Ford cannot attest to the safety, quality, durability or legality of non-Ford parts or accessories. Use of such parts could lead to serious personal injury as they may contain damage which is not visible.

Ford does not approve use of the following:

- **Salvaged or used parts**
- **Major body clips or assemblies from salvage vehicles**
- **Aftermarket structural or body components**
- **Salvaged or reconditioned wheels**
- **Used supplemental restraint system (SRS) components**
  - **— air bags**
  - **— restraint system modules**
  - **— safety belts, buckles or retractors**
  - **— crash sensors**

Returning a vehicle to pre-accident condition can only be assured if repair procedures are carried out by skilled technicians using new genuine Ford parts and Ford-approved methods. Structural component repair procedures approved by Ford, using genuine Ford parts, have been validated by Ford Motor Company engineers.

Ford Motor Company does not endorse, cannot attest to, and makes no representations regarding structural repairs (frames, rails, aprons and body panels) carried out using non-genuine Ford Motor Company parts or non-Ford-approved methods. In particular, Ford makes no representations that the vehicle will meet any crash safety or anti-corrosion performance requirement. Such parts and methods have not been tested by Ford, and may not meet Ford's requirements for safety, performance, strength, quality, durability and corrosion protection.

Ford Motor Company bears no responsibility or liability of any kind if repairs are performed using alternative structural component repair procedures and/or parts.

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GENERAL PROCEDURES (Continued)

⚠ WARNING: Invisible ultraviolet and infrared rays emitted in welding can injure unprotected eyes and skin. Always use protection such as a welder's helmet with dark-colored filter lenses of the correct density. Electric welding will produce intense radiation, therefore, filter plate lenses of the deepest shade providing adequate visibility are recommended. It is strongly recommended that persons working in the weld area wear flash safety goggles. Also wear protective clothing. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

NOTE: Corrosion protection needs to be restored whenever it is necessary to grind through painted surfaces or E-coat, or when bare metal repairs are made. For additional information, refer to Restoring Corrosion Protection Following Repair in this section.

NOTE: On door shells that are manufactured with structural adhesives only, weld bonding door skins is not recommended. Only metal bonding adhesive should be used.

NOTE: Weld-bonding is a method used to join metals using Squeeze-Type Resistance Spot Welding (STRW) or Metal Inert Gas (MIG) and structural adhesive. The steps listed in this procedure apply to both types of welding. STRW is the preferred method. MIG welding should only be used when areas to be welded cannot be accessed using STRW-type machinery.

NOTE: Factory spot welds should be substituted with either resistance spot welds or MIG plug welds. Spot/plug welds should equal factory welds in both location and quantity. Do not place a new spot weld directly over an original weld location. Plug weld hole should equal 8 mm (0.31 in) diameter.

1. Verify the vehicle is dimensionally correct on a frame machine. Straighten if necessary.

2. Remove damaged panels with an air saw or air chisel. Remove only large portions of the damaged panel. Avoid cutting into mating flanges or adjacent parts.

3. Drill out the spot welds using an appropriate spot-weld cutter and remove the remaining portions of the panel to be replaced.

4. Prepare any damaged flanges on the vehicle using a hammer and dolly.

5. Grind the mating surface of the original flanges not greater than 25 mm (0.98 in) where the metal bonding adhesive will be applied.
   - Be sure to remove galvanizing on metal. Metal should have a shiny appearance.
   - Be careful not to damage the corners or thin the metal. The E-coat should also be removed on the opposite side of the flange only where the spot welds are to be placed.

6. Dry-fit and clamp the replacement service parts to verify a correct fit.
   - Remove the service part after verifying correct fit and alignment.

7. The ends of welding clamps should be insulated on the ends using tape or similar material when welding is carried out. Follow manufacturer's prescribed welding procedures and settings.

8. **NOTE:** Refer to product label for preparation and handling instructions.

   Prepare the adhesive. Dispense a small amount of metal bonding adhesive from the cartridge to make sure of an even flow of both components. Attach the mixing tip and dispense a mixing tip length of adhesive to make sure of a correct mix ratio.

GENERAL PROCEDURES (Continued)

9. **NOTE:** Welding can be carried out anytime during the adhesive curing process, or after the adhesive is fully cured. Welder settings will vary when welding through wet adhesive versus welding through fully cured adhesive. Refer to welder manufacturer's recommended settings for welding through fully cured adhesive. It is recommended to place a shunt weld in an area with no adhesive to make sure of conductivity, particularly when welding through fully cured adhesive.

   Create a test sample.

   1 Prepare the metal and adhesive as described. Apply a 6-9 mm (0.23-0.35 in) bead of adhesive and weld the sample.

   2 Place the welded sample in a vise and carry out destructive weld tests by peeling the scrap metal apart using large lock-type pliers. Measure the weld nugget to determine that the nugget meets Ford weld nugget requirements. If the weld nugget does not meet required size, adjust welder settings until the correct weld nugget size is achieved.

   3 When the correct weld nugget size is achieved, the service part can be weld-bonded. For additional information, refer to Specifications in this section.

10. Apply a 6-9 mm (0.23-0.35 in) bead of metal bonding adhesive to the vehicle prepared flange surface.

11. Place the service part(s) in the correct position on the vehicle.

    - When positioned, do not pull the component away from the vehicle. If repositioning is necessary, slide the service part(s). This will make sure of correct contact between the components and adhesive.

12. Clamp evenly and tightly. The adhesive contains glass beads which will prevent over-clamping the component.

13. **NOTE:** If welding will not be carried out immediately, allow a minimum of 1.5 to 2 hours of adhesive cure time at 21°C (70°F) before removing clamps. Cure time at lower temperatures should be increased. Clamps may be removed immediately after the component is welded.

    Wipe excess adhesive from the panel before it cures.

14. Finish any cosmetic section seams with fiber-filled body filler. Rough sand the filler, after the adhesive cures, apply conventional body filler and block-sand the area.

15. Use seam sealer wherever a cosmetic seam sealer is required.

16. Mix and apply primer surfacer per paint manufacturer's recommendations.

17. Mix and apply basecoat per Ford-approved paint recommendations.

18. Mix and apply clearcoat per Ford-approved paint recommendations. Refinishing materials may be force-dried following paint manufacturer's recommendations.

19. Apply corrosion protection to the repair area as required.

GENERAL PROCEDURES (Continued)

Weld-Bonding — Metal Inert Gas (MIG) Welding Method

⚠ WARNING: Invisible ultraviolet and infrared rays emitted in welding can injure unprotected eyes and skin. Always use protection such as a welder's helmet with dark-colored filter lenses of the correct density. Electric welding will produce intense radiation, therefore, filter plate lenses of the deepest shade providing adequate visibility are recommended. It is strongly recommended that persons working in the weld area wear flash safety goggles. Also wear protective clothing. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

NOTE: MIG weld-bonding can be substituted as an alternative to STRW method. It may only be used to weld areas that are inaccessible to STRW machinery. However when accessible STRW is the preferred method.

NOTE: Corrosion protection needs to be restored whenever it is necessary to grind through painted surfaces or E-coat, or when bare metal repairs are made. For additional information, refer to Restoring Corrosion Protection Following Repair in this section.

NOTE: On door shells that are manufactured with structural adhesives only, weld-bonding door skins is not recommended. Only metal bonding adhesive should be used.

NOTE: Factory spot welds should be substituted with either resistance spot welds or MIG plug welds. Spot/plug welds should equal factory welds in both location and quantity. Do not place a new spot weld directly over an original weld location. Plug weld hole should equal 8 mm (0.31 in) diameter.

1. Remove damaged panels with an air saw or air chisel. Remove only large portions of the damaged panel. Avoid cutting into mating flanges or adjacent parts.
   - Drill out the spot welds using an appropriate spot-weld cutter and remove the remaining portions of the panel to be replaced.
2. After removing the damaged sheet metal panel(s), repair any damaged flanges on the vehicle using a hammer and dolly.
3. Using an appropriate grinder, carefully grind around the entire receiving flange area following the original welds. Be sure to remove all E-coat, paint or galvanized coating from the mating surfaces of the joint.
   - Be sure to remove galvanizing on metal. Metal should have a shiny appearance.
   - Be careful not to damage the corners or thin the metal. The E-coat should also be removed on the opposite side of the flange only where the spot welds are to be placed.
4. Repeat the procedure from Step 3 on the mating surface of the replacement service part(s).
5. Prepare the new service panel for plug welds.
   - Using the original panel as a reference, drill or punch 8 mm (0.31 in) diameter holes in the exact number as the original spot welds. The holes should be positioned as close as possible to the original spot weld locations, without lining up exactly on top of an original spot weld site.
   - To make sure of correct weld performance, grind the immediate perimeter of the plug weld hole. Grind only in the area of the plug weld, this will keep corrosion to a minimum.

GENERAL PROCEDURES (Continued)

6. Dry-fit and clamp the replacement service parts to verify a correct fit and alignment.
   - Remove the service part after verifying correct fit and alignment.

7. The vehicle prepared flange areas where plug welds will be located must be kept free of adhesive. Apply 25 mm (0.98 in) tape to the plug weld areas to prevent contamination from the adhesive.

8. **NOTE:** Refer to product label for preparation and handling instructions.

   Prepare the adhesive. Dispense a small amount of metal bonding adhesive from the cartridge to make sure of an even flow of both components. Attach the mixing tip and dispense a mixing tip length of adhesive to make sure of correct mix ratio.

9. Apply a 6-9 mm (0.23-0.35 in) bead of adhesive to the vehicle prepared flange surface. Remove the tape from the plug weld areas.

10. Place the service part(s) in the correct position on the vehicle.
    - When positioned, do not pull the component away from the vehicle. If repositioning is necessary, slide the service part(s). This will make sure of correct contact between the components and adhesive.

11. Clamp evenly and tightly. The adhesive contains glass beads which will prevent over-clamping the component.

12. **NOTE:** Welding can be carried out anytime during the adhesive curing process, or after the adhesive is fully cured.

    NOTE: If welding will not be carried out immediately, allow a minimum of 1.5 to 2 hours of adhesive cure time at 21°C (70°F) before removing clamps. Cure time at lower temperatures should be increased. Clamps may be removed immediately after the component is welded.

    Wipe excess adhesive from the panel before it cures.

13. Finish any cosmetic section seams with fiber-filled body filler. Rough sand the filler, apply conventional body filler after the adhesive cures and block-sand the area.

14. Use seam sealer wherever a cosmetic seam sealer is required.

15. Mix and apply primer surfacer per paint manufacturer's recommendations.

16. Mix and apply basecoat per Ford-approved paint recommendations.

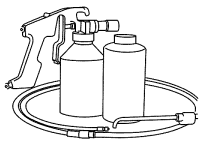
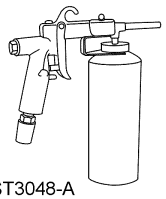
17. Mix and apply clearcoat per Ford-approved paint recommendations. Refinishing materials may be force-dried following paint manufacturer's recommendations.

18. Apply corrosion protection to the repair area as required.

REMOVAL AND INSTALLATION

Frame Members

Special Tool(s)

 ST3049-A	Rust Inhibitor Installation Kit 286-00002
 ST3048-A	Undercoating Spray Gun 286-00001

General Equipment

3 Phase Inverter Spot Welder 254-00002
Compuspot 700F Welder 190-50080
I4 Inverter Spot Welder 254-00014
Inverter Welder with MIG Welder 254-00015

Material

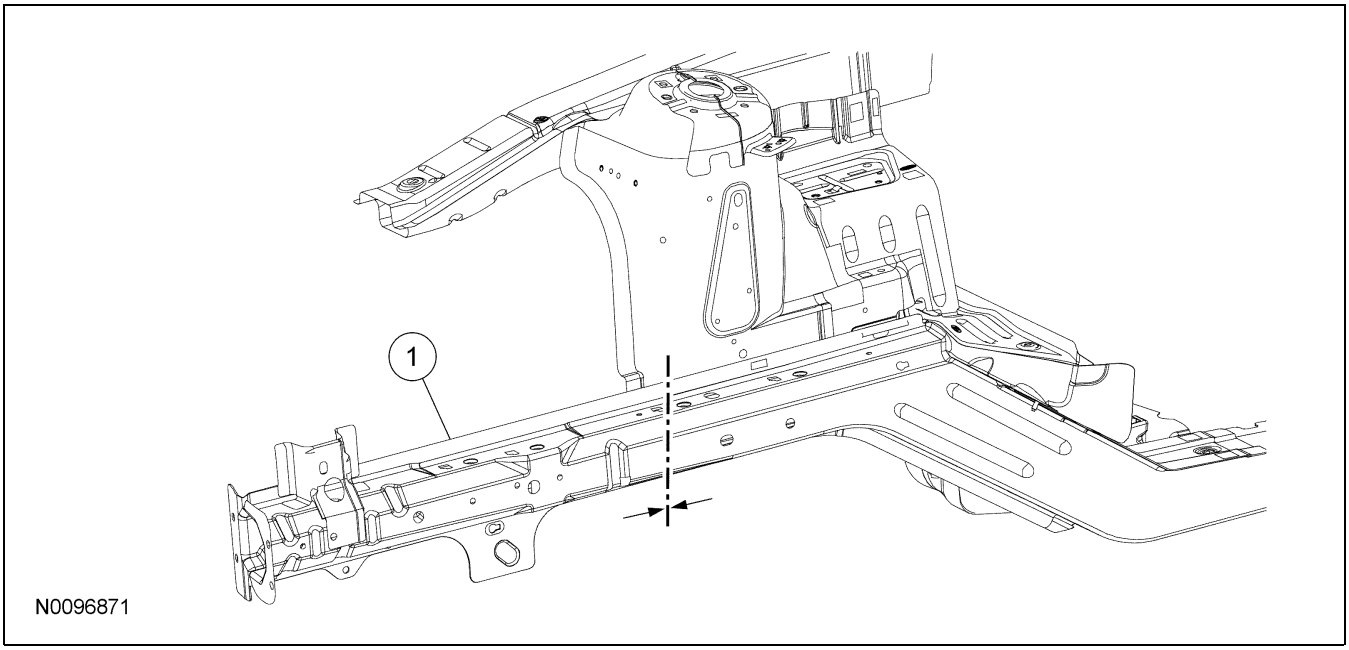
Item	Specification
Motorcraft® Metal Surface Prep ZC-31-A	—
Motorcraft® Premium Undercoating PM-25-A	—
Motorcraft® Rust Inhibitor Aerosol PM-24-A	—

Front Frame Rail

⚠ WARNING: Frame rail crush zones absorb crash energy during a collision and must be replaced if damaged. Straighten damaged frame rails to correct frame dimensions prior to frame member sectioning. Failure to follow these instructions may adversely affect frame rail performance and may result in serious personal injury to vehicle occupant(s).

NOTE: Right side shown, left side similar.

NOTE: Cut line shown in illustration is approximate, refer to the following procedure for specific cut locations.



Item	Part Number	Description
1	16055 LH/ 16054 RH	Frame rail sectioning kit

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REMOVAL AND INSTALLATION (Continued)

⚠ WARNING: Never install used or reconditioned parts (as specified below) from pre-owned, salvaged or damaged vehicles. The use of such parts could lead to serious injury.

Never use non-Ford parts or accessories for completing repairs.

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- **Major body clips or assemblies from salvage vehicles**
- **Aftermarket structural or body components**
- **Salvaged or reconditioned wheels**
- **Used supplemental restraint system (SRS) components**
  - **— air bags**
  - **— restraint system modules**
  - **— safety belts, buckles or retractors**
  - **— crash sensors**

Returning a vehicle to pre-accident condition can only be assured if repair procedures are carried out by skilled technicians using new genuine Ford parts and Ford-approved methods. Structural component repair procedures approved by Ford, using genuine Ford parts, have been validated by Ford Motor Company engineers.

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Ford Motor Company bears no responsibility or liability of any kind if repairs are performed using alternative structural component repair procedures and/or parts.

REMOVAL AND INSTALLATION (Continued)

⚠ WARNING: Invisible ultraviolet and infrared rays emitted in welding can injure unprotected eyes and skin. Always use protection such as a welder's helmet with dark-colored filter lenses of the correct density. Electric welding will produce intense radiation, therefore, filter plate lenses of the deepest shade providing adequate visibility are recommended. It is strongly recommended that persons working in the weld area wear flash safety goggles. Also wear protective clothing. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

NOTICE: **This sectioning procedure is only recommended when collision damage does not extend into the front shock tower area. For more severe collision damage, repairs must be made at the original factory seam and joint locations. Failure to follow these instructions may compromise the structural integrity of the vehicle.**

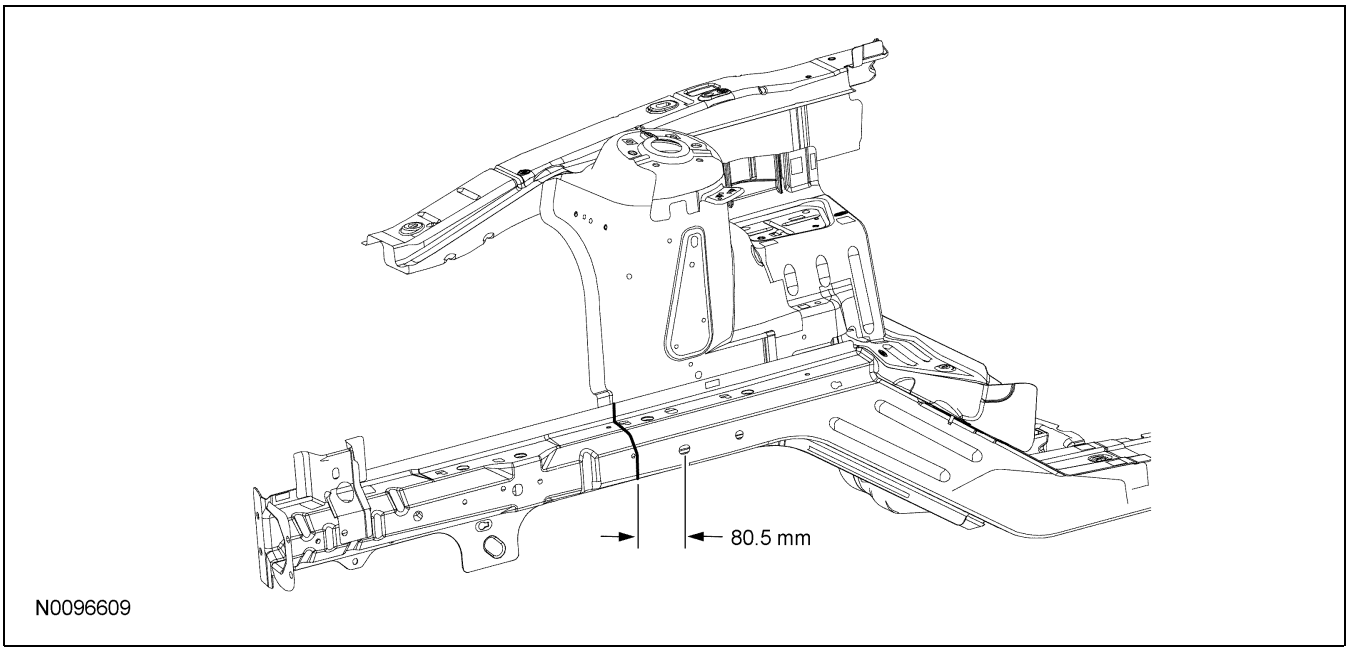
NOTE: The following repair procedure illustrates the sectioning of the front side member and fender reinforcement components. In situations where collision damage is less severe, the sectioning procedure to repair only those damaged components may be determined from these procedures.

1. Position the vehicle on a frame repair rack following the manufacturer's recommendations. Measure the vehicle to determine if the body requires straightening and alignment. For additional information, refer to Body in this section for dimensional information.
   - Remove the front bumper. For additional information, refer to Section 501-19.
2. Remove the engine. For additional information, refer to Section 303-00.
3. Remove the suspension components. For additional information, refer to Section 204-01.
4. *NOTICE:* **The frame rail sectioning instruction kit provides the specific service procedure instructions for replacement of the frame rail sectioning kit. It is mandatory that the replacement section be installed per the installation guidelines. The frame rail service component must be located to maintain the original factory dimensions. For additional information, refer to Body in this section for correct underbody dimensional information.**

   Remove the radiator support assembly.

REMOVAL AND INSTALLATION (Continued)

5. Cut off the front apron from the main part of the apron, 80.5 mm (3.16 in) forward of the 14 mm (0.55 in) x 20 mm (0.78 in) slot, and remove the remainder of the apron.



6. **NOTE:** Factory spot welds may be substituted with either resistance spot welds or Metal Inert Gas (MIG) plug welds. Spot/plug welds should equal factory welds in both location and quantity. Do not place a new spot weld directly over an original weld location. Plug weld hole should equal 8 mm (0.31 in) diameter.

   NOTE: Refer to welding equipment manufacturer's instructions for correct machine set up.

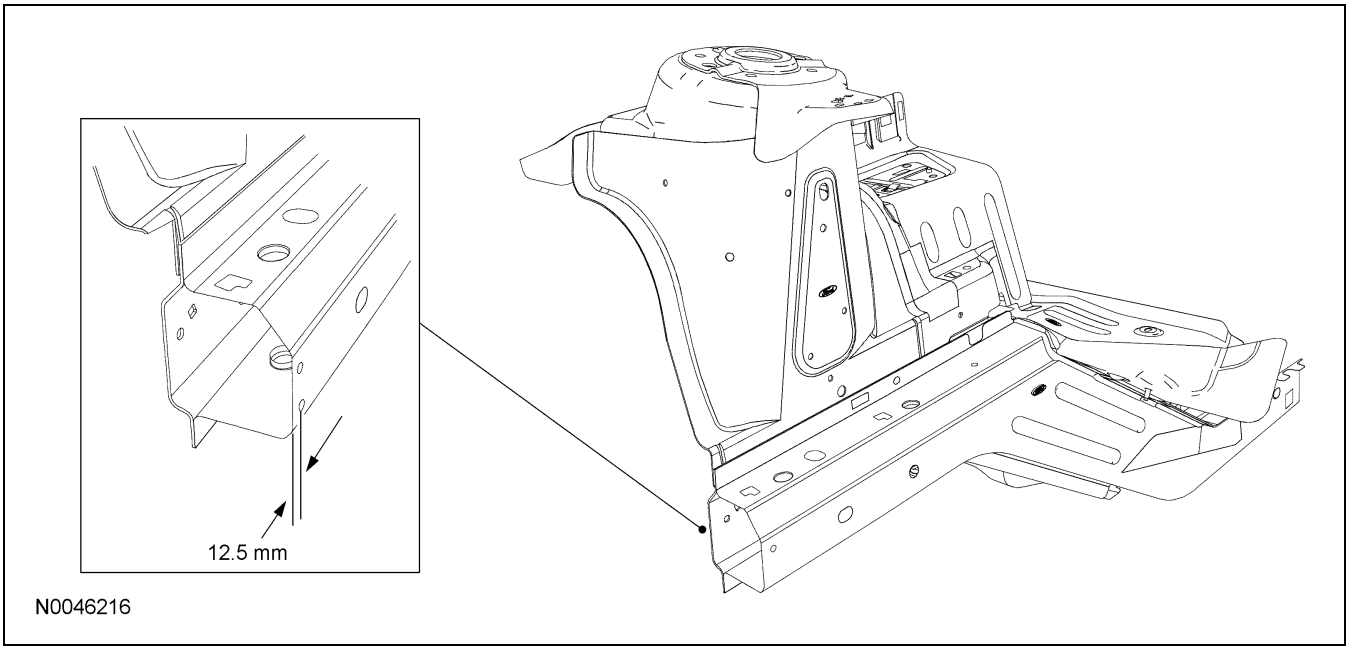
   Drill out the spot welds in the front fender apron reinforcement.

7. Drill out the spot welds attaching the shock tower to the apron panel, and the apron to the lower rail.
   - Dress all spot weld surfaces.

8. Chamfer inner and outer side member cutline surfaces to improve butt weld surfaces.

REMOVAL AND INSTALLATION (Continued)

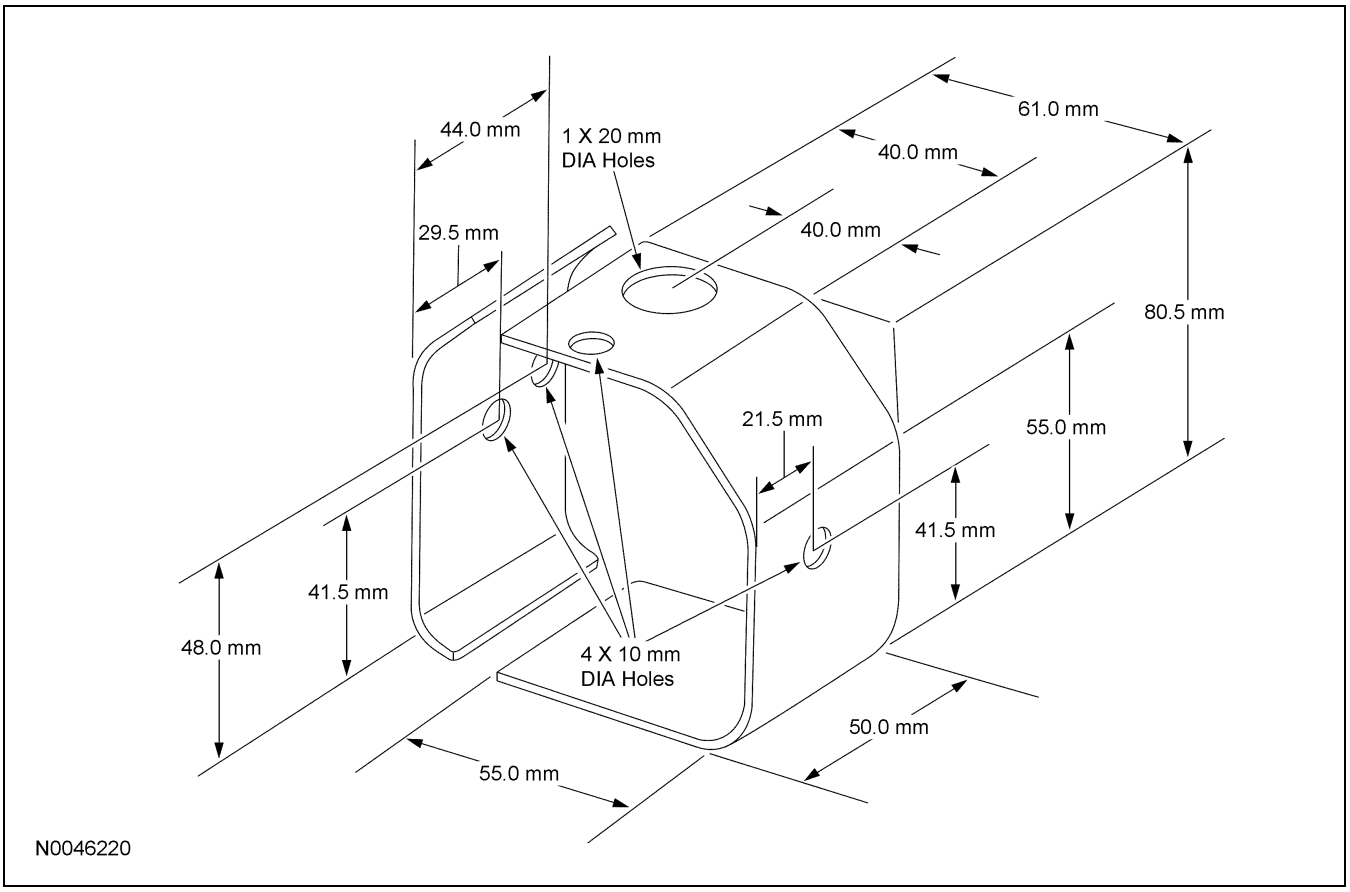
9. Measure 12.5 mm (0.49 in) rearward from the lower rail cutline. Drill seven 8 mm (0.31 in) holes in the insert overlap area flange.



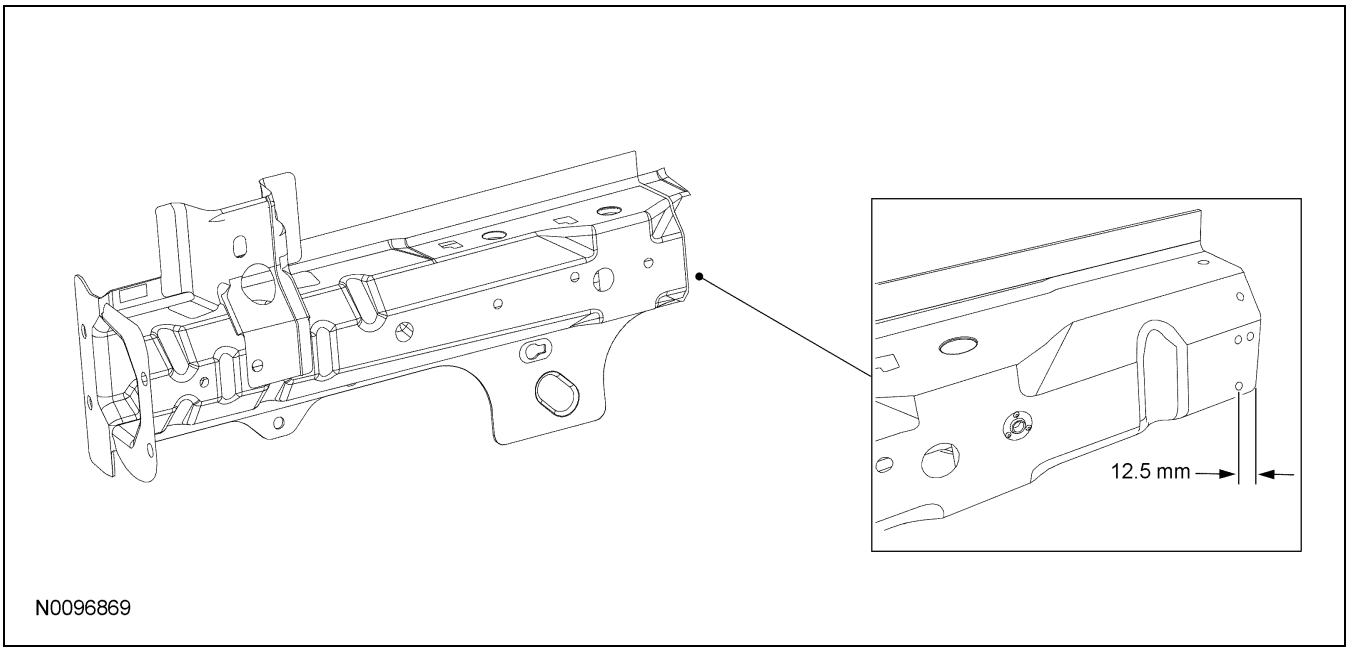
10. Transcribe the inner front side member cutline to the new lower side member, cut to length and chamfer the butt end to improve the weld surface.

REMOVAL AND INSTALLATION (Continued)

11. Construct an insert from the unused inner side member material.

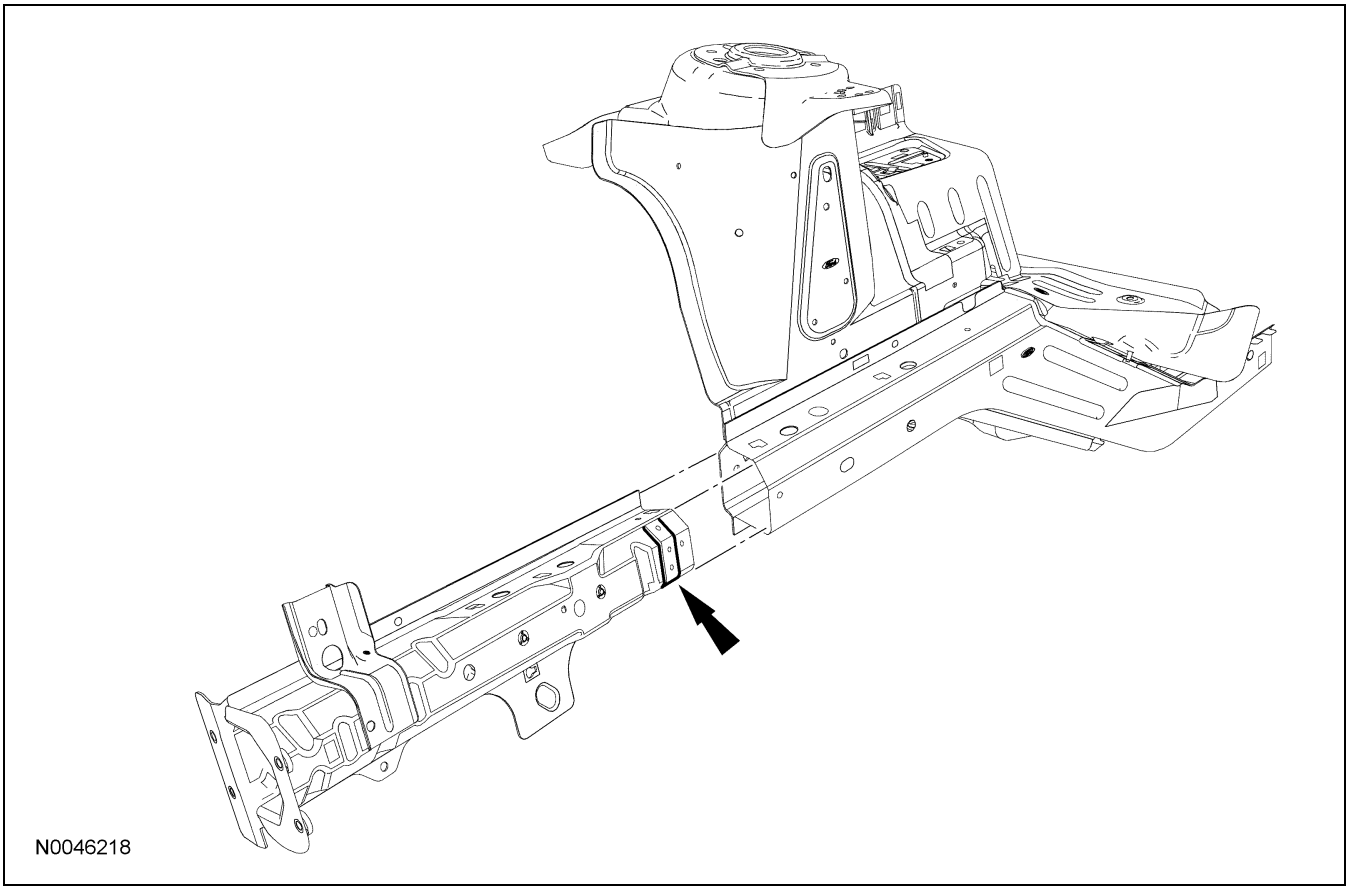


12. Measure 12.5 mm (0.49 in) forward from the lower rail cutline. Drill nine 8 mm (0.31 in) holes in the new lower side member for attachment of the insert.



REMOVAL AND INSTALLATION (Continued)

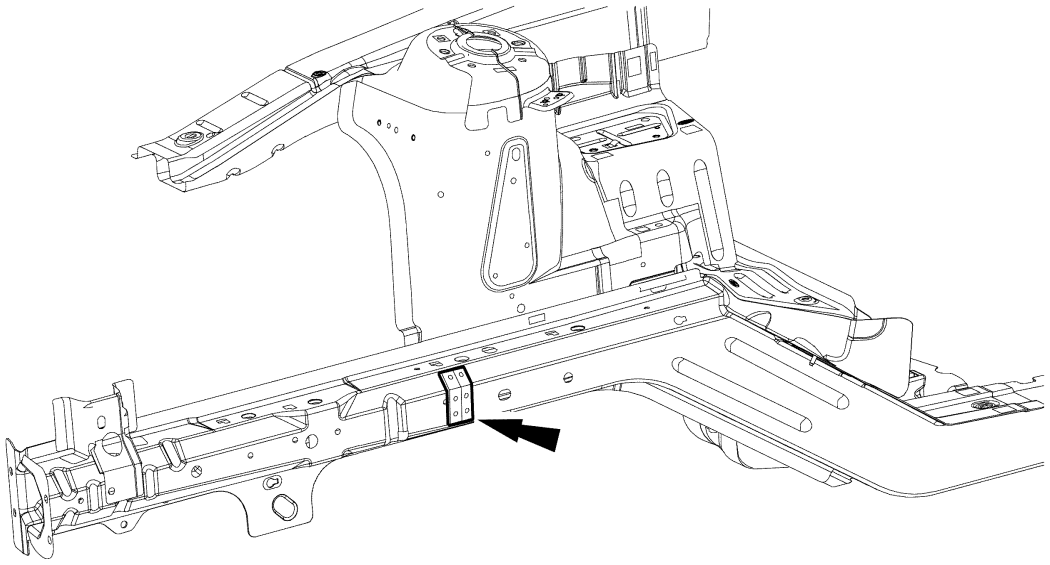
13. Apply corrosion protection to the repair areas on the vehicle and service parts.
14. Position the insert to the new lower side member, clamp and check fit and alignment.MIG plug weld 9 holes.



15. Measure underbody to verify correct dimensions. For additional information, refer to Body in this section for dimensional information.

REMOVAL AND INSTALLATION (Continued)

16. Position the new radiator support assembly, apron panel, rail assembly, front fender lower reinforcement and front fender upper reinforcement.
    - MIG plug weld all holes.



N0096870

17. Fusion weld the front fender upper and lower reinforcements to the front fender apron, front fender apron to the radiator support and the seam between the old and the new side members.
    - Dress all welds.
18. Install the engine. For additional information, refer to Section 303-00.
19. Install the suspension components. For additional information, refer to Section 204-01.

REMOVAL AND INSTALLATION

Inner Body Reinforcing Panels

General Equipment

3 Phase Inverter Spot Welder 254-00002
Compuspot 700F Welder 190-50080
I4 Inverter Spot Welder 254-00014
Inverter Welder with MIG Welder 254-00015

Material

Item	Specification
Motorcraft® Premium Undercoating PM-25-A	—
Motorcraft® Rust Inhibitor Aerosol PM-24-A	—
Seam Sealer TA-2	—

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REMOVAL AND INSTALLATION (Continued)

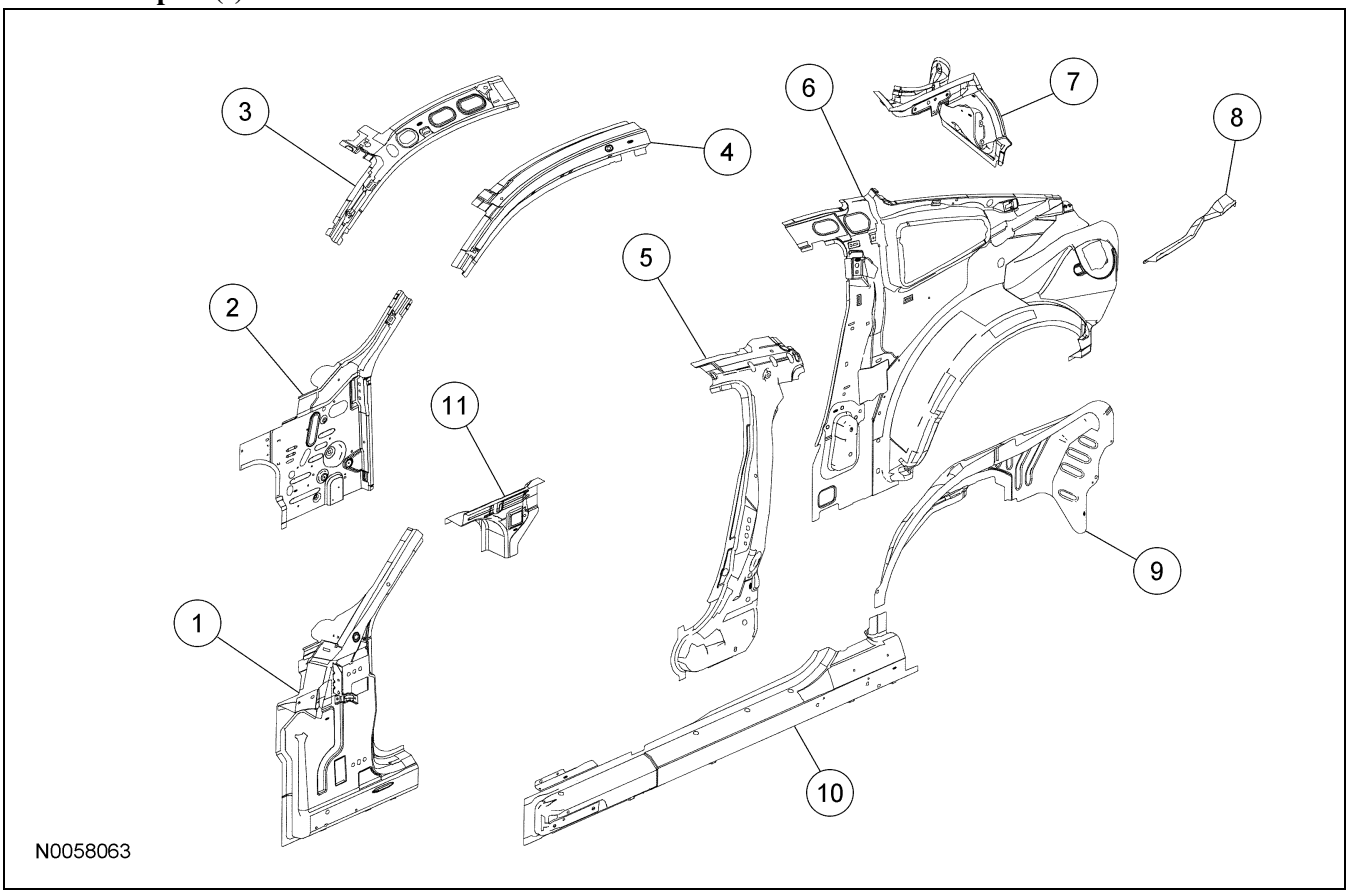
Coupe

⚠ WARNING: Invisible ultraviolet and infrared rays emitted in welding can injure unprotected eyes and skin. Always use protection such as a welder's helmet with dark-colored filter lenses of the correct density. Electric welding will produce intense radiation, therefore, filter plate lenses of the deepest shade providing adequate visibility are recommended. It is strongly recommended that persons working in the weld area wear flash safety goggles. Also wear protective clothing. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Do not cut or grind body side components within 50 mm (1.96 in) of restraint anchoring points. Welding within 50 mm (1.96 in) of restraint anchoring points may result in incorrect operation of restraint devices. For additional restraints anchoring location information, refer to Section 501-20A and Section 501-20B. Failure to follow these instructions may result in serious injury to vehicle occupant(s).

⚠ WARNING: Do not carry out body side sectioning repairs in areas of laser welds. Factory laser welds cannot be duplicated with conventional welding equipment and structural integrity may be compromised. Failure to follow this instruction may result in serious injury to vehicle occupant(s).

⚠ WARNING: Do not carry out body side sectioning repairs in areas of door hinge or striker anchoring points. Welding within 50 mm (1.96 in) of door hinge or striker locations may compromise structural integrity during a collision. Failure to follow these instructions may result in serious injury to vehicle occupant(s).



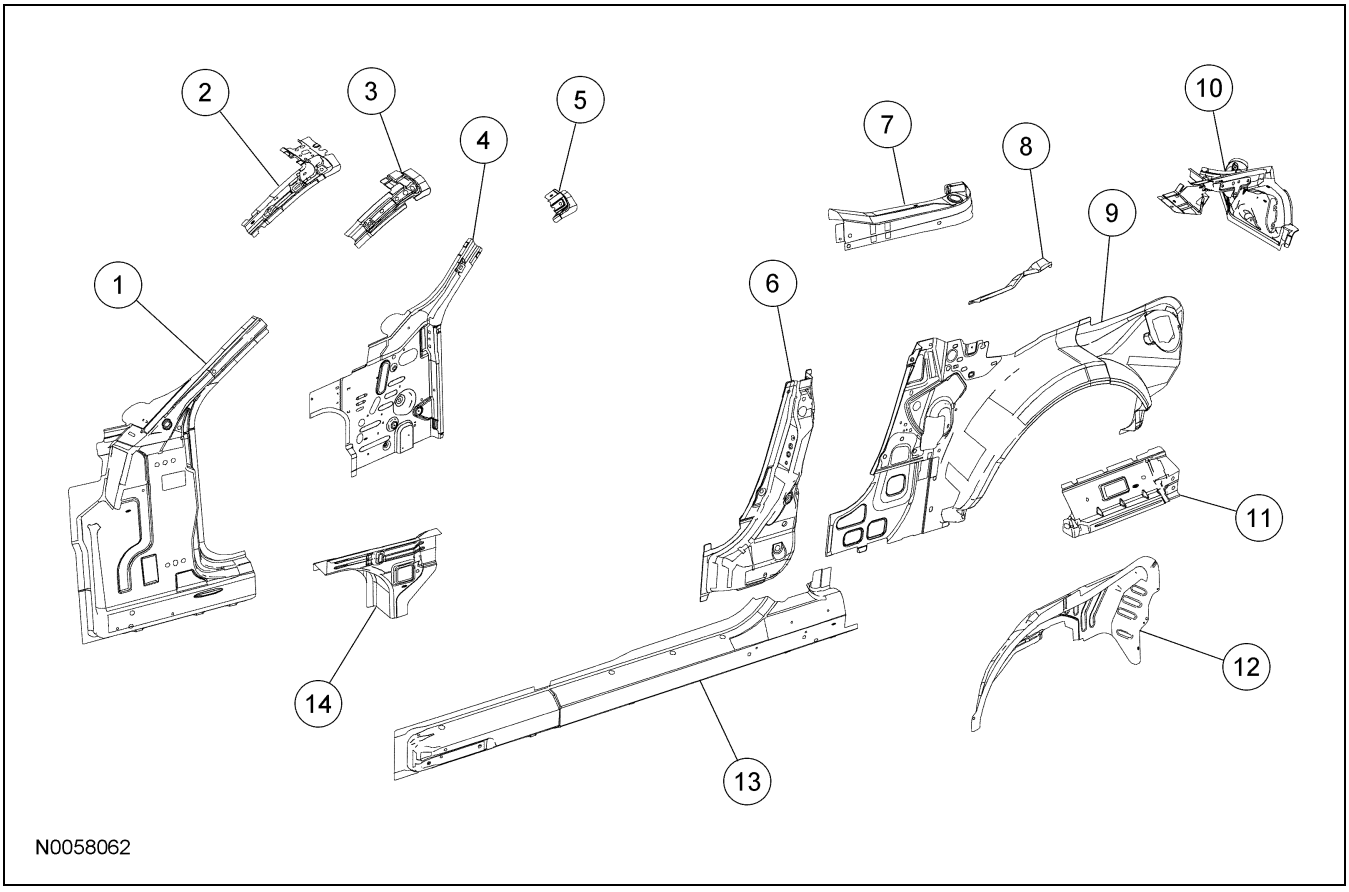
REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
1	02501 LH/ 02500 RH	A-pillar assembly — High-Strength Low Alloy (HSLA) 350 steel
2	02039B LH/ 02038B RH	Cowl side panel — HSLA 350 steel
3	02509 LH/ 02508 RH	A-pillar reinforcement — HSLA 350 steel
4	02505 LH/ 02504 RH	A-pillar inner — HSLA 350 steel
5	24301 LH/ 24300 RH	B-pillar inner —HSLA 350 steel (part of 27791 LH/ 27790 RH)
6	27791 LH/ 27790 RH	Quarter panel inner — mild steel

(Continued)

Item	Part Number	Description
7	28061 LH/ 28060 RH	Quarter panel upper rear extension — mild steel
8	28059 LH/ 28058 RH	Quarter panel lower extension — mild steel
9	—	Wheelhouse inner panel — mild steel (part of 27791 LH/ 27790 RH)
10	02B67 LH/ 02B66 RH	Rocker panel reinforcement — HSLA 350 steel
11	02733 LH/ 02732 RH	Gusset — HSLA 350 steel

Convertible



Item	Part Number	Description
1	02501 LH/ 02500 RH	A-pillar assembly — High-Strength Low Alloy (HSLA) 350 steel
2	02509 LH/ 02508 RH	A-pillar reinforcement — HSLA 350 steel

(Continued)

Item	Part Number	Description
3	02505 LH/ 02504 RH	A-pillar inner panel — HSLA 350 steel
4	02039B LH/ 02038B RH	Cowl side panel — HSLA 350 steel
5	025B33 LH/ 025B32 RH	Bracket — HSLA 350 steel

(Continued)

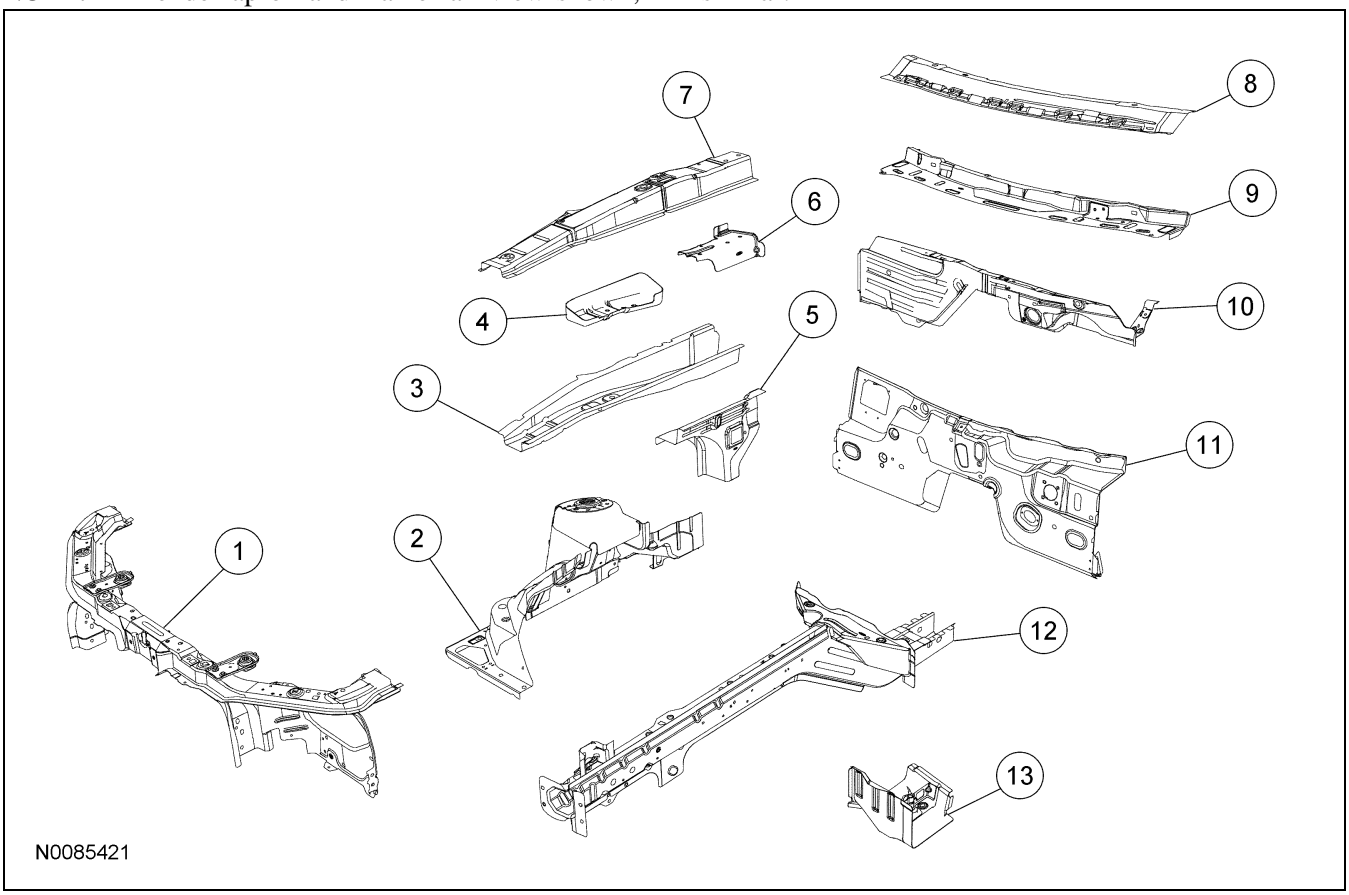
REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
6	24301 LH/ 24300 RH	B-pillar reinforcement —HSLA 350 steel (part of 27791 LH/ 27790 RH)
7	280C99 LH/ 280C98 RH	C-pillar reinforcement — mild steel
8	28059 LH/ 28058 RH	Quarter panel lower rear extension — mild steel
9	27791 LH/ 27790 RH	Quarter panel inner — mild steel
10	28061 LH/ 28060 RH	Quarter panel upper rear extension — mild steel
11	28153 LH/ 28152 RH	Quarter panel upper outer panel — mild steel
12	—	Wheelhouse inner panel — mild steel (part of 27791 LH/ 27790 RH)
13	02B67 LH/ 02B66 RH	Rocker panel reinforcement — HSLA 350 steel
14	02733 LH/ 02732 RH	Bracket — HSLA 350 steel

(Continued)

Front Structure

NOTE: LH fender apron and frame rail view shown, RH similar.



Item	Part Number	Description
1	16138	Radiator support — mild steel
2	16055 LH/ 16054 RH	Apron assembly — mild steel
3	16061 LH/ 16060 RH	Inner fender lower — mild steel
4	16D157 LH/ 16D156 RH	Inner fender reinforcement — mild steel
5	02733 LH/ 02732 RH	Gusset — High-Strength Low Alloy (HSLA) 350 steel
6	16D041 LH/ 16D040 RH	Inner fender reinforcement — mild steel
7	16155 LH/ 16154 RH	Inner fender upper — mild steel
8	302015	Cowl top outer panel — mild steel

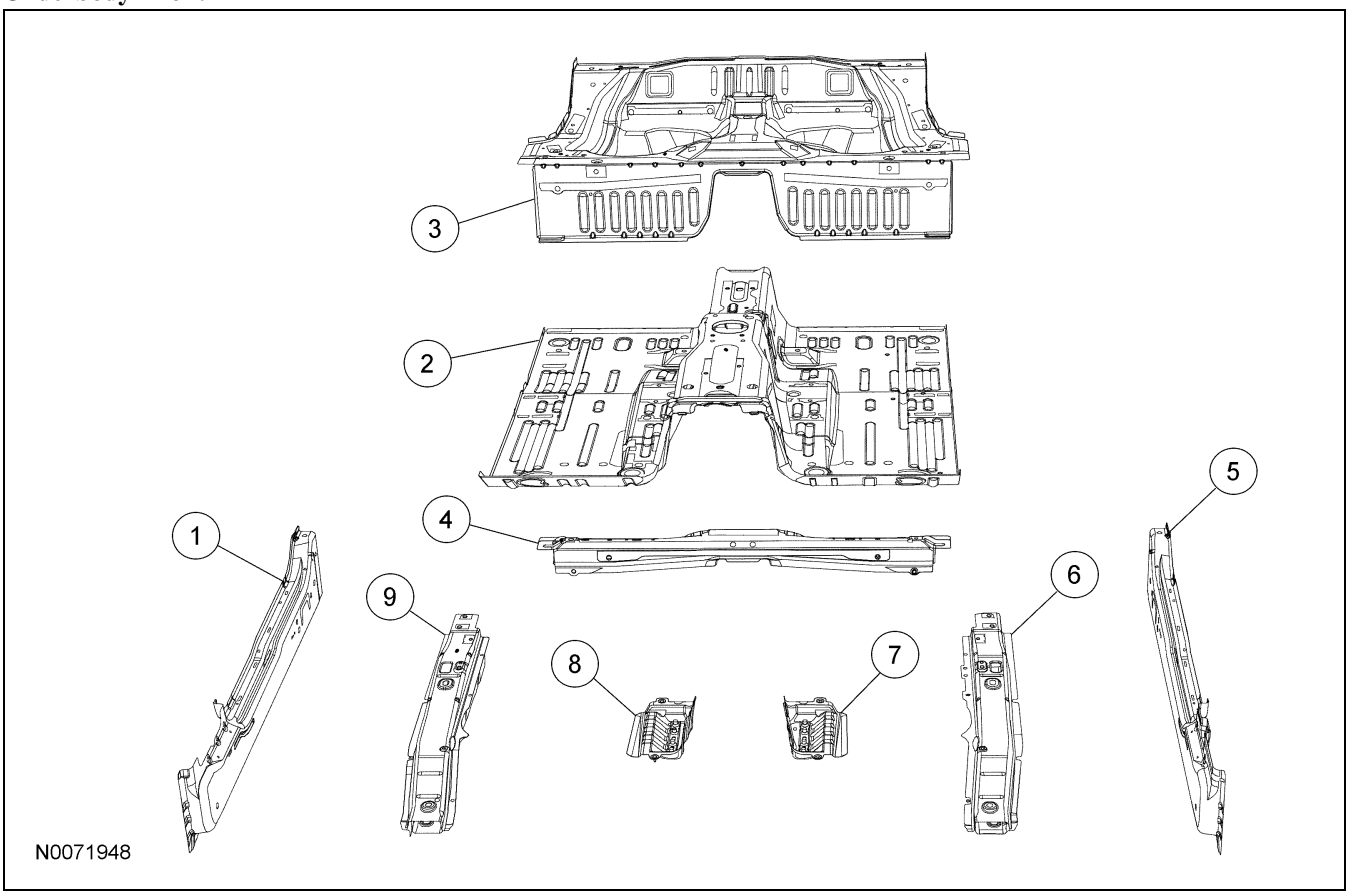
(Continued)

REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
9	302030	Cowl top inner panel — mild steel
10	—	Dash panel center — mild steel
11	1605	Dash panel lower — mild steel
12	10463 LH/ 10462 RH	Side member assembly — HSLA 350 steel
13	—	Reinforcement (part of 160554 LH/ 16054 RH) — HSLA 350 steel

(Continued)

Underbody Front

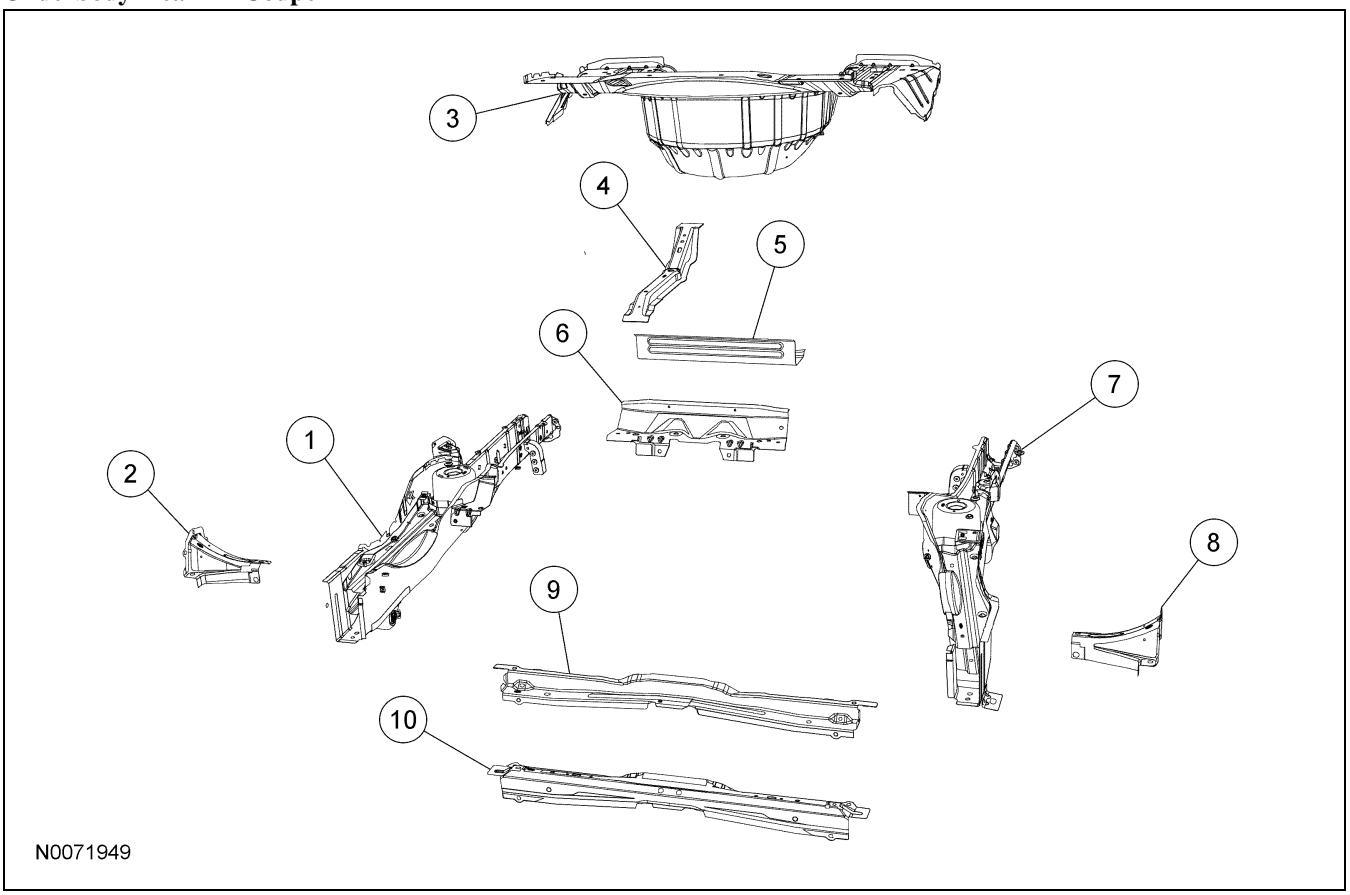


Item	Part Number	Description
1	10116	Floor side member assembly (RH) — High-Strength Low Alloy (HSLA) 350 steel
2	11135	Floor pan assembly — mild steel
3	11160	Floor pan assembly — mild steel
4	11644	Crossmember — mild steel
5	10117	Floor side member assembly (LH) — HSLA 350 steel
6	10535	Floor side member assembly (LH) — HSLA 350 steel
7	10063	Side member extension (LH) — HSLA 350 steel
8	10062	Side member extension (RH) — HSLA 350 steel
9	10534	Floor side member assembly (RH) — HSLA 350 steel

(Continued)

REMOVAL AND INSTALLATION (Continued)

Underbody Rear — Coupe



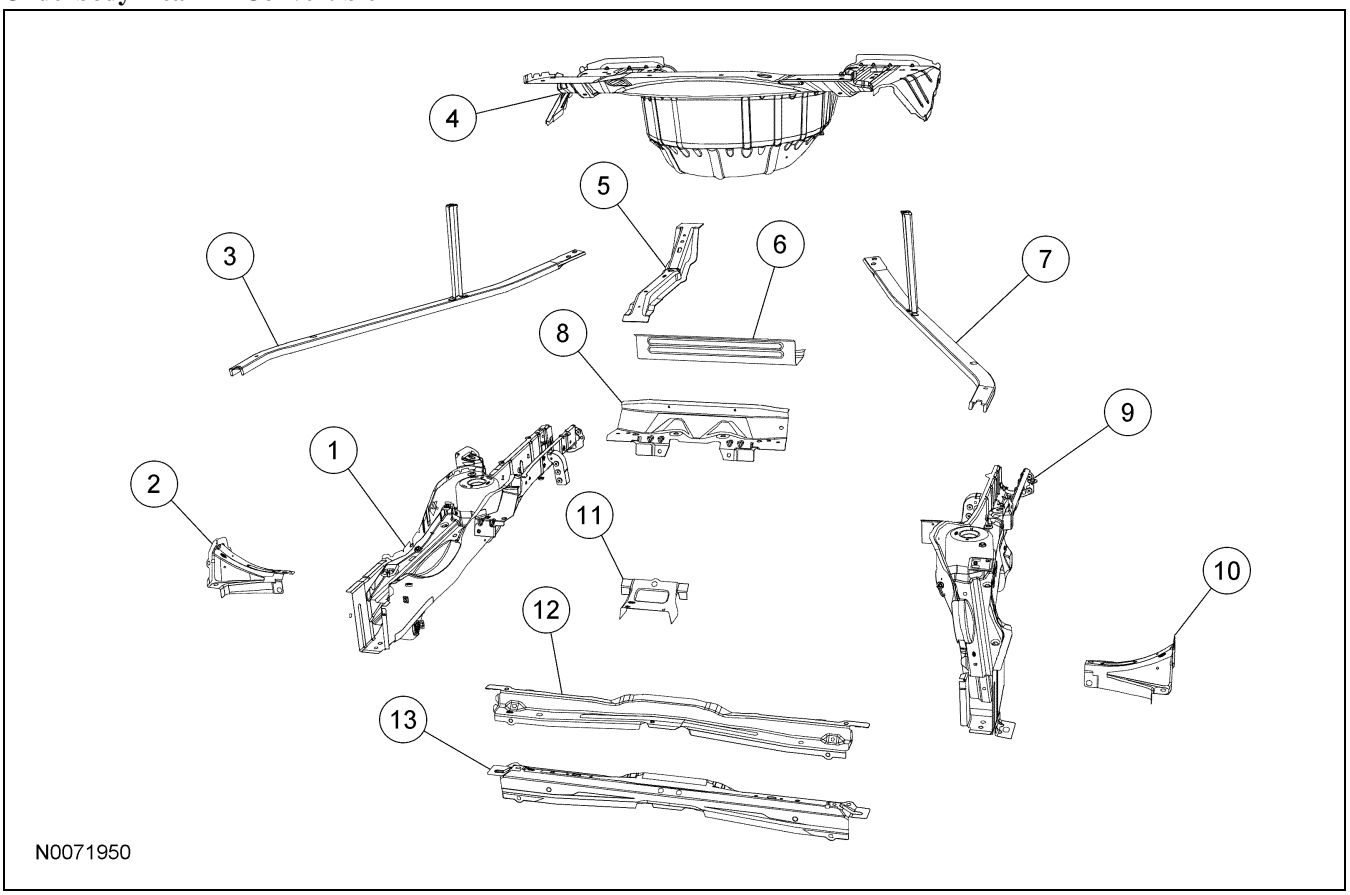
Item	Part Number	Description
1	10456	Side member assembly (RH) — High-Strength Low Alloy (HSLA) 350 steel
2	280C06	Support (RH) — HSLA 350 steel
3	11215	Floor pan assembly — mild steel
4	111K48	Reinforcement — HSLA 350 steel
5	10780	Rear crossmember — HSLA 350 steel

(Continued)

Item	Part Number	Description
6	102A24	Center crossmember — HSLA 350 steel
7	10457	Side member assembly (LH) — HSLA 350 steel
8	280C07	Support (LH) — HSLA 350 steel
9	44502	Crossmember — HSLA 350 steel
10	11644	Crossmember — HSLA 350 steel

REMOVAL AND INSTALLATION (Continued)

Underbody Rear — Convertible



Item	Part Number	Description
1	10456	Side member assembly (RH) — High-Strength Low Alloy (HSLA) 350 steel
2	280C06	Support (RH) — HSLA 350 steel
3	102B54	Brace (RH) — mild steel
4	11215	Floor pan assembly — mild steel
5	11K48	Reinforcement — HSLA 350 steel
6	10780	Rear crossmember — HSLA 350 steel
7	102B55	Brace (LH) — mild steel
8	102A24	Center crossmember — HSLA 350 steel
9	10457	Side member assembly (LH) — HSLA 350 steel
10	280C07	Support (LH) — HSLA 350 steel
11	116A34	Reinforcement — mild steel
12	44502	Crossmember — HSLA 350 steel
13	11644	Crossmember — HSLA 350 steel

⚠ WARNING: Never install used or reconditioned parts (as specified below) from pre-owned, salvaged or damaged vehicles. The use of such parts could lead to serious injury.

Never use non-Ford parts or accessories for completing repairs.

Ford Motor Company does not approve or recognize body and structural repair procedures, tools, parts or anything but new genuine Ford equipment. Ford cannot attest to the safety, quality, durability or legality of non-Ford parts or accessories. Use of such parts could lead to serious personal injury as they may contain damage which is not visible.

Ford does not approve use of the following:

- **Salvaged or used parts**
- **Major body clips or assemblies from salvage vehicles**
- **Aftermarket structural or body components**
- **Salvaged or reconditioned wheels**

REMOVAL AND INSTALLATION (Continued)

- **Used supplemental restraint system (SRS) components**
  - **— air bags**
  - **— restraint system modules**
  - **— safety belts, buckles or retractors**
  - **— crash sensors**

Returning a vehicle to pre-accident condition can only be assured if repair procedures are carried out by skilled technicians using new genuine Ford parts and Ford-approved methods. Structural component repair procedures approved by Ford, using genuine Ford parts, have been validated by Ford Motor Company engineers.

Ford Motor Company does not endorse, cannot attest to, and makes no representations regarding structural repairs (frames, rails, aprons and body panels) carried out using non-genuine Ford Motor Company parts or non-Ford-approved methods. In particular, Ford makes no representations that the vehicle will meet any crash safety or anti-corrosion performance requirement. Such parts and methods have not been tested by Ford, and may not meet Ford's requirements for safety, performance, strength, quality, durability and corrosion protection.

Ford Motor Company bears no responsibility or liability of any kind if repairs are performed using alternative structural component repair procedures and/or parts.

NOTE: Factory spot welds may be substituted with either resistance spot welds or Metal Inert Gas (MIG) plug welds. Spot/plug welds should equal factory welds in both location and quantity. Do not place a new spot weld directly over an original weld location. Plug weld hole should equal 8 mm (0.31 in) diameter.

NOTE: The following steps provide a general guideline for replacement of body structure components. Refer to exploded views for specific component and assembly information.

1. *NOTICE:* **Electronic modules and related wiring may be damaged when exposed to heat from welding procedures. Carefully disconnect and remove, or position away from heat affected areas.**

   NOTE: When it is necessary to carry out weld-bonding procedures, refer to Weld-Bonding in this section.

   Remove the outer body sheet metal from the affected area prior to carrying out any reinforcing panel replacement. For additional information, refer to Sectioning Guidelines in this section.

2. Where possible, create a backer piece using a portion of the old panel. This will create a stronger joint.

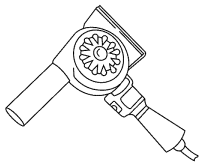
3. When welding overlapping surfaces or substrates, apply a weld-through primer between the surfaces prior to welding. When the surfaces have been welded, apply corrosion protection material to the exterior surfaces or substrates.
   - Make sure horizontal joints and flanges are correctly sealed with seam sealer to prevent moisture intrusion. Water and moisture migrate to horizontal joints and corrosion tends to occur more rapidly in these areas. Metal surfaces must be clean and dry before applying seam sealer.

4. Proceed with refinishing procedures following Ford-approved paint guidelines. Apply corrosion protection to the repair area as required.

REMOVAL AND INSTALLATION

Body Graphics — GT500, Bumpers

Special Tool(s)

 ST1073-A	Heat Gun 107-R0300

1. Thoroughly wash and dry the vehicle before carrying out removal and installation of stripe decals.

2. **NOTE:** Surface temperature of body panel(s) should be above 10°C (50°F). Avoid carrying out removal or installation of stripe decal(s) in direct sunlight. The following step is applicable to the removal of the stripe decals, regardless of the location on the vehicle.

   Warm the stripe decal on the affected panel with a hair dryer or heat gun on the lowest setting, being careful not to heat excessively, as this can melt the decal or damage the paint surface.

   - Beginning at the edge or corner of the stripe, slowly lift and remove the stripe, pull at an angle to the body panel. Keep the stripe warm with a heat gun or hair dryer slightly ahead of the area just removed.
   - Remove any remaining material or adhesive from the panel surface with an isopropanol cleaner or equivalent.
   - An alternate method of removing stripes is with a rubber-wheeled graphic removal tool.

Installation

1. Mix 1 teaspoon of liquid dishwashing soap or equivalent in 1.89L (1/2 gal) of water. Fill a spray bottle with this solution.

NOTE: The following steps detail the procedure(s) for carrying out installation of the front bumper stripes.

2. Remove the upper and lower grille(s) as necessary. For additional information, refer to Section 501-08.

3. Clean the surface(s) using a commercial wax and grease remover, following manufacturer's directions.

4. Reclean the surface(s) using an isopropanol cleaner.

5. Locate and mark the front bumper centerline at 3 points using a non-staining marker.

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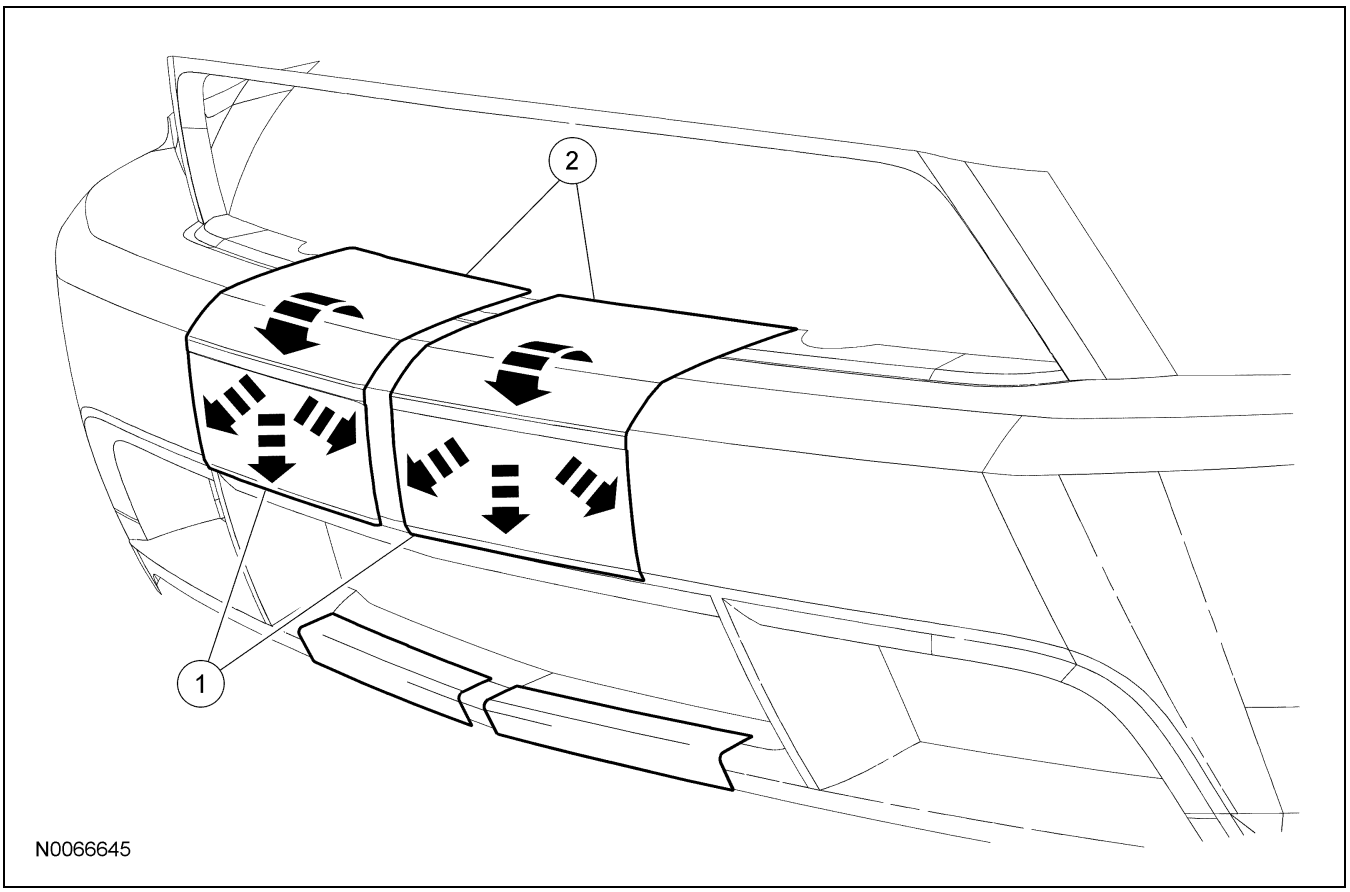
REMOVAL AND INSTALLATION (Continued)

6. **NOTE:** The lower portion of the front bumper stripe must be applied first, as the upper portion is designed to overlap the lower.

   Clean the front bumper cover stripe decal as necessary. Wet the bumper surface with the water/soap solution. Remove the liner from the adhesive side of the new decal and wet with the water/soap solution.

   - Position and apply the lower center portion of the bumper stripe decal (No. 1) first. Align in position with the front bumper center line mark. Beginning at the center of the stripe decal, use a plastic squeegee to remove the excess air and water/soap solution until the decal is firmly adhered. Wet the release paper with the water/soap solution and slowly remove the release paper, pulling at 180 degrees and a diagonal to the stripe decal.
   - Remove the liner paper from the adhesive side of the new upper section of the front bumper stripe decal, and wet with the water/soap solution. Position the upper section of the front bumper stripe decal (No. 2), being careful to overlap with the lower center stripe decal. Beginning at the center and working outward to the edges, use a plastic squeegee to remove the excess air and water/soap solution until the decal is firmly adhered. Wet the release paper with water/soap solution and slowly remove the release paper, pulling at 180 degrees and a diagonal to the stripe decal.
   - Carry out installation of the lower stripe decal as above.

REMOVAL AND INSTALLATION (Continued)



7. Repair blisters or air bubbles by piercing them with a small pin or needle at one end of the bubble. Work the trapped air out through the pin hole using a soft plastic squeegee, your thumb or finger. Move toward the pin hole and press the stripe firmly against the panel. It may be necessary to preheat the panel slightly to soften the adhesive. Heat may also be applied to assist in removal of small creases or irregularities.

8. **NOTE:** The following steps detail the procedure(s) for carrying out installation of the rear bumper stripes.

   Clean the surface(s) using a commercial wax and grease remover, following manufacturer's directions.

9. Reclean the surface(s) using an isopropanol cleaner.

10. **NOTE:** If the luggage compartment stripes are installed and the rear bumper stripes do not correctly align, the LH and RH bumper stripes may be separated and applied individually.

    Locate and mark the rear bumper centerline at 3 points using a non-staining marker.

11. Clean the rear bumper cover stripe decal as necessary. Wet the bumper surface with the water/soap solution. Remove the liner from the adhesive side of the new decal and wet with the water/soap solution.

12. Align the rear bumper stripe with the centerline locators but do not press in place at this time.

REMOVAL AND INSTALLATION (Continued)

13. *NOTICE:* **Location No. 3 on the associated illustration must be the last portion of the rear bumper stripe to have air and soap/water solution removed. If this direction is not followed, risk of trapped air and wrinkling of the stripe is dramatically increased.**

    Install the rear bumper stripe. When point No. 1 is complete, continue to squeegee at point No. 2. Location No. 3 (top edge) must be squeegeed last or risk of wrinkling and trapping air is dramatically increased.

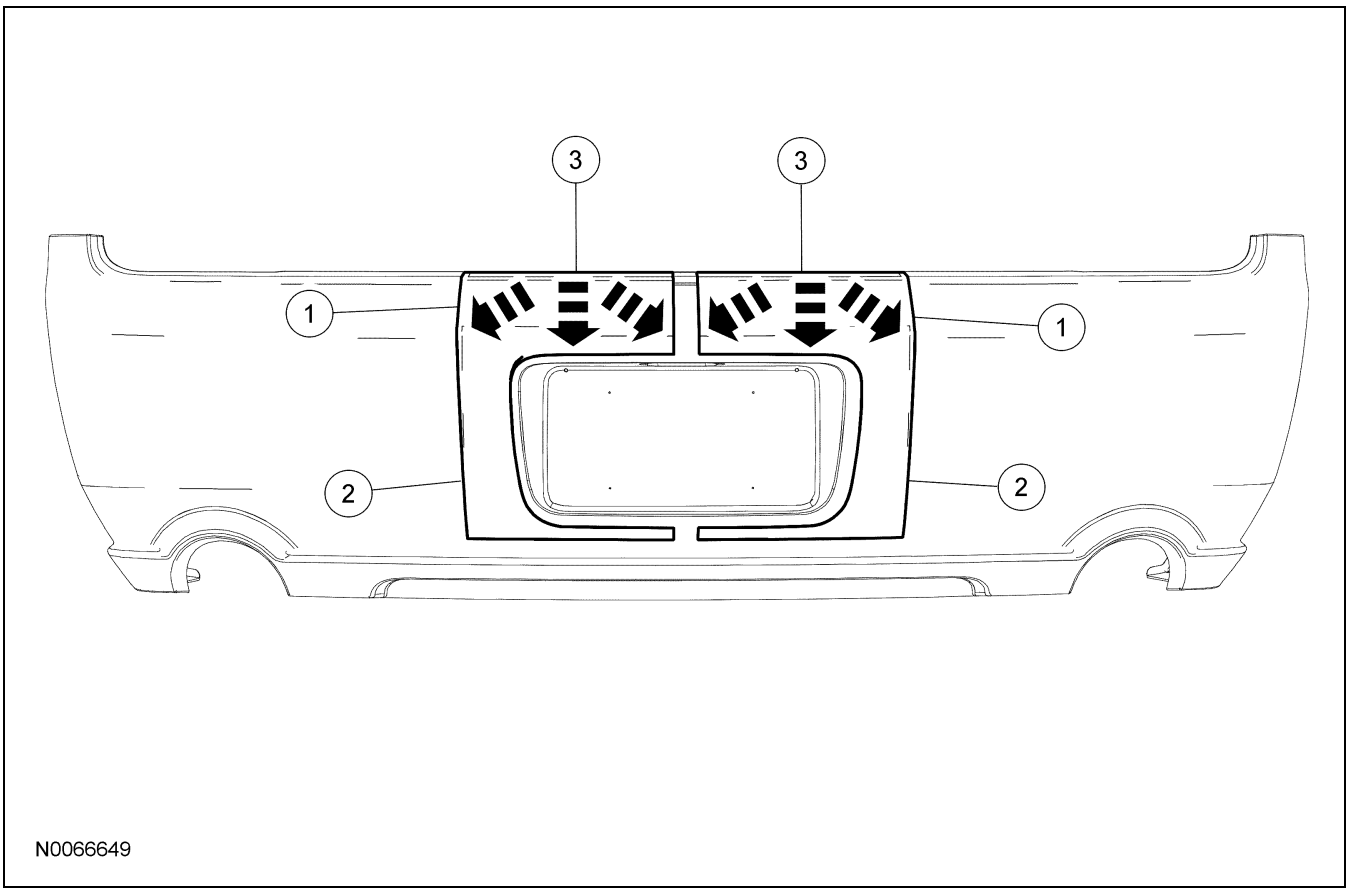
    1 Beginning at point No. 1, carefully squeegee all air and the soap/water solution from under the decal outward and down the decal.

    2 Continue working trapped air and the soap/water solution from under the decal at location No. 2.

    3 When the lower portion of the decal is firmly affixed, finish removing air and the soap/water solution at point No. 3.

    - Wet the release paper with the water/soap solution and slowly remove the release paper, pulling at 180 degrees and a diagonal to the stripe decal.

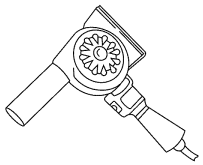
REMOVAL AND INSTALLATION (Continued)



REMOVAL AND INSTALLATION

Body Graphics — GT500, Hood

Special Tool(s)

 ST1073-A	Heat Gun 107-R0300

1. Thoroughly wash and dry the vehicle before carrying out removal and installation of stripe decals.

2. Remove the engine cover vent(s) from the hood. For additional information, refer to Section 501-08. Remove the windshield washer nozzle(s).

3. Warm the stripe decal on the affected panel with a hair dryer or heat gun on the lowest setting, being careful not to heat excessively, as this can melt the decal or damage the paint surface.
   - Beginning at the edge or corner of the stripe, slowly lift and remove the stripe, pull at an angle to the body panel. Keep the stripe warm with a heat gun or hair dryer slightly ahead of the area just removed.
   - Remove any remaining material or adhesive from the panel surface with an isopropanol cleaner or equivalent.
   - An alternate method of removing stripes is with a rubber-wheeled graphic removal tool.

Installation

1. Mix 1 teaspoon of liquid dishwashing soap or equivalent in 1.89L (1/2 gal) of water. Fill a spray bottle with this solution.

2. Clean the surface using a commercial wax and grease remover, follow the manufacturer's directions.

3. Reclean the surface using an isopropanol cleaner.

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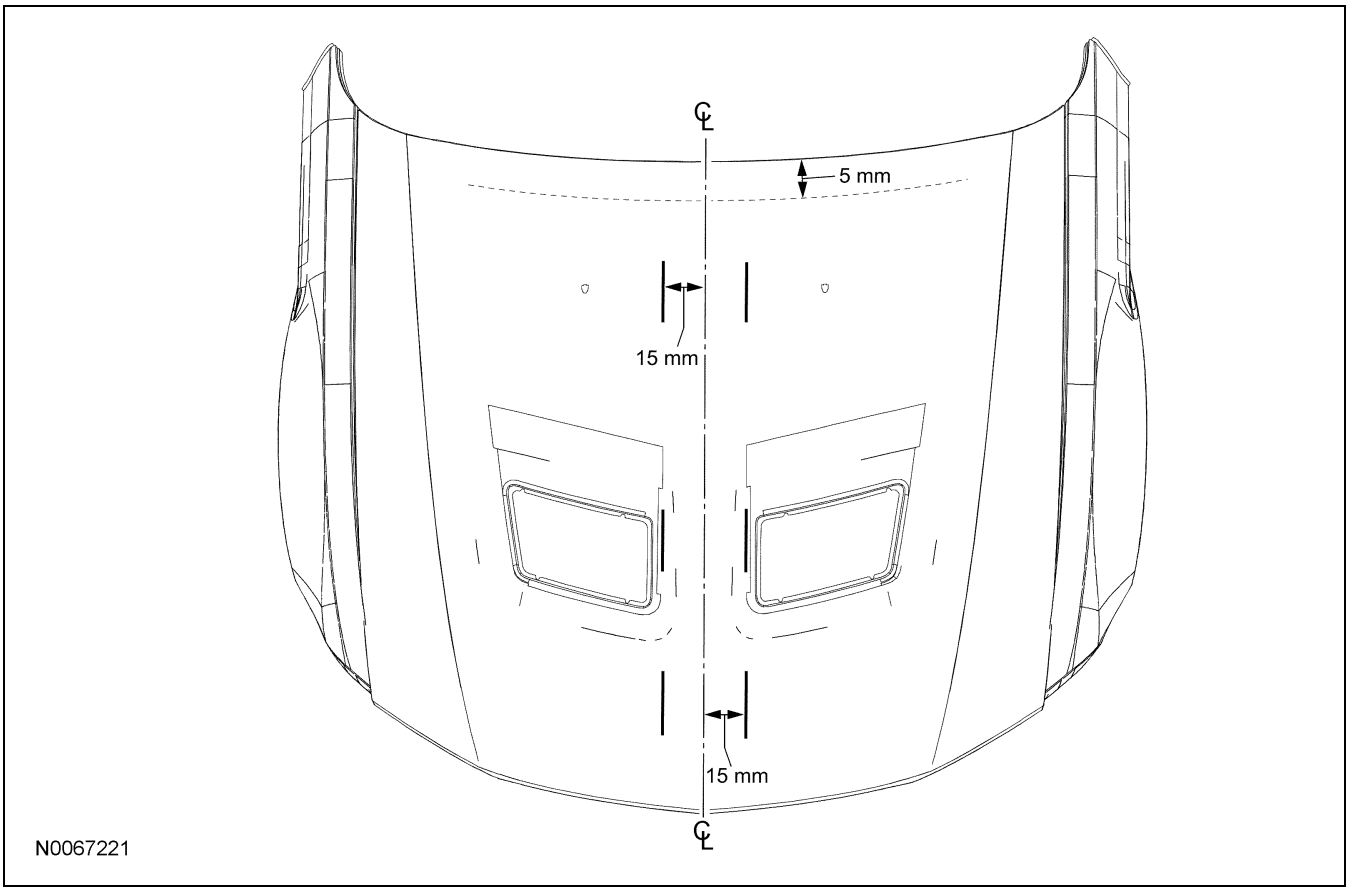
REMOVAL AND INSTALLATION (Continued)

4. **NOTE:** A non-staining, removable marker is required for hood layout.

   Prepare the hood layout.

   - Locate and mark the hood centerline at a minimum of 3 points.
   - Measure 15 mm (0.59 in) outboard of the centerline and mark at a minimum of 3 points.
   - Locate and mark a setback of 5 mm (0.19 in) at a minimum of 3 points from the cowl side of the hood.



5. **NOTE:** Surface temperature of body panel(s) should be above 10°C (50°F). Avoid carrying out installation of stripe decal(s) in direct sunlight.

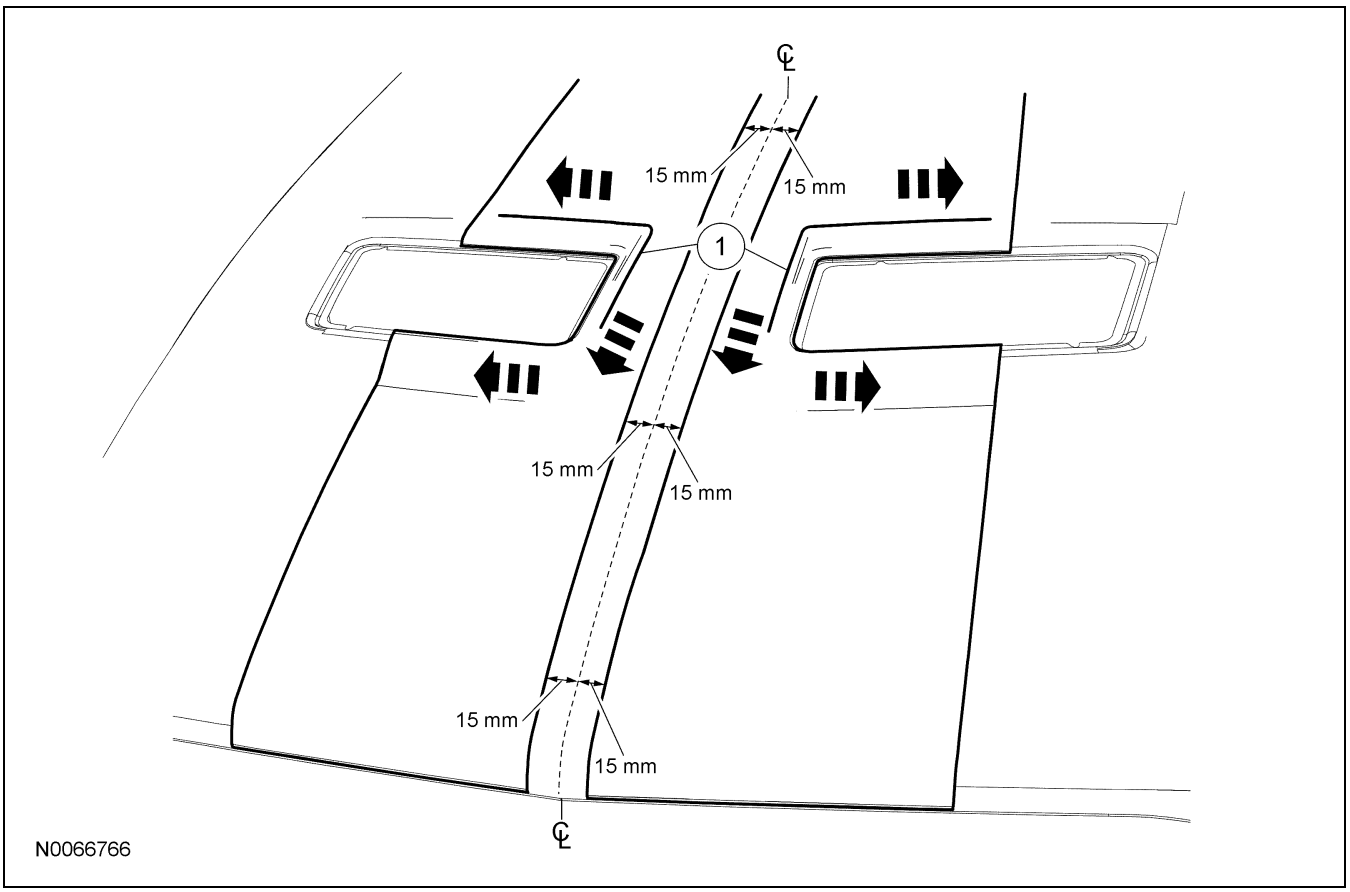
   Spray the entire hood surface with the soap/water solution.

6. Remove the liner from the adhesive side of the hood stripe and apply the soap/water solution to the stripe adhesive.

REMOVAL AND INSTALLATION (Continued)

7. Turn the stripe decal over and position to the appropriate locator marks on the hood, maintaining a 5 mm (0.19 in) setback from the cowl side edge of the hood panel.
   - Beginning at the inboard (No. 1) portion of the hood engine cover vent opening, using a balled up lint-free cloth or equivalent, firmly press the stripe decal onto the hood panel, working around the to the front engine cover vent opening and continuing on to the rearward (cowl side). Use a plastic squeegee to remove the excess air and water/soap solution from the remaining area, working from the center, outward to the edges, until the decal is firmly adhered. Do not attempt to wrap the decal in to the grille opening at this time.
   - When the stripe has been shaped around the hood engine cover vent opening, use a soft plastic squeegee to remove the excess air and water/soap solution from the remaining area, working from the center, outward to the edges, until the decal is firmly adhered.
   - Use a balled up lint-free cloth or equivalent and a heat gun on the lowest setting to complete shaping the stripe around the hood engine cover vent opening.

REMOVAL AND INSTALLATION (Continued)

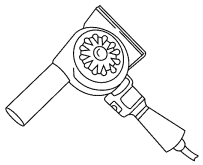


8. Carefully remove the outer protective liner from the hood stripe pulling off at 180 degrees and a diagonal to the stripe decal.
9. Remove the indexing marks previously applied to the hood.
10. Repair blisters or air bubbles by piercing them with a small pin or needle at one end of the bubble. Work the trapped air out through the pin hole using a soft plastic squeegee, your thumb or finger. Move toward the pin hole and press the stripe firmly against the panel. It may be necessary to preheat the panel slightly to soften the adhesive. Heat may also be used to remove small creases or irregularities.

REMOVAL AND INSTALLATION

Body Graphics — GT500, Roof

Special Tool(s)

 ST1073-A	Heat Gun 107-R0300

1. Thoroughly wash and dry the vehicle before carrying out removal and installation of stripe decals.

2. **NOTE:** Surface temperature of body panel(s) should be above 10°C (50°F). Avoid carrying out removal or installation of stripe decal(s) in direct sunlight. The following step is applicable to the removal of the stripe decals, regardless of the location on the vehicle.

   Warm the stripe decal on the affected panel with a hair dryer or heat gun on the lowest setting, being careful not to heat excessively, as this can melt the decal or damage the paint surface.

   - Beginning at the edge or corner of the stripe, slowly lift and remove the stripe, pull at an angle to the body panel. Keep the stripe warm with a heat gun or hair dryer slightly ahead of the area just removed.
   - Remove any remaining material or adhesive from the panel surface with an isopropanol cleaner or equivalent.
   - An alternate method of removing stripes is with a rubber-wheeled graphic removal tool.

Installation

1. Mix 1 teaspoon of liquid dishwashing soap or equivalent in 1.89L (1/2 gal) of water. Fill a spray bottle with this solution.

2. Clean the entire surface with a commercial wax and grease remover, follow the manufacturer's directions.

3. Reclean the surface using an isopropanol cleaner.

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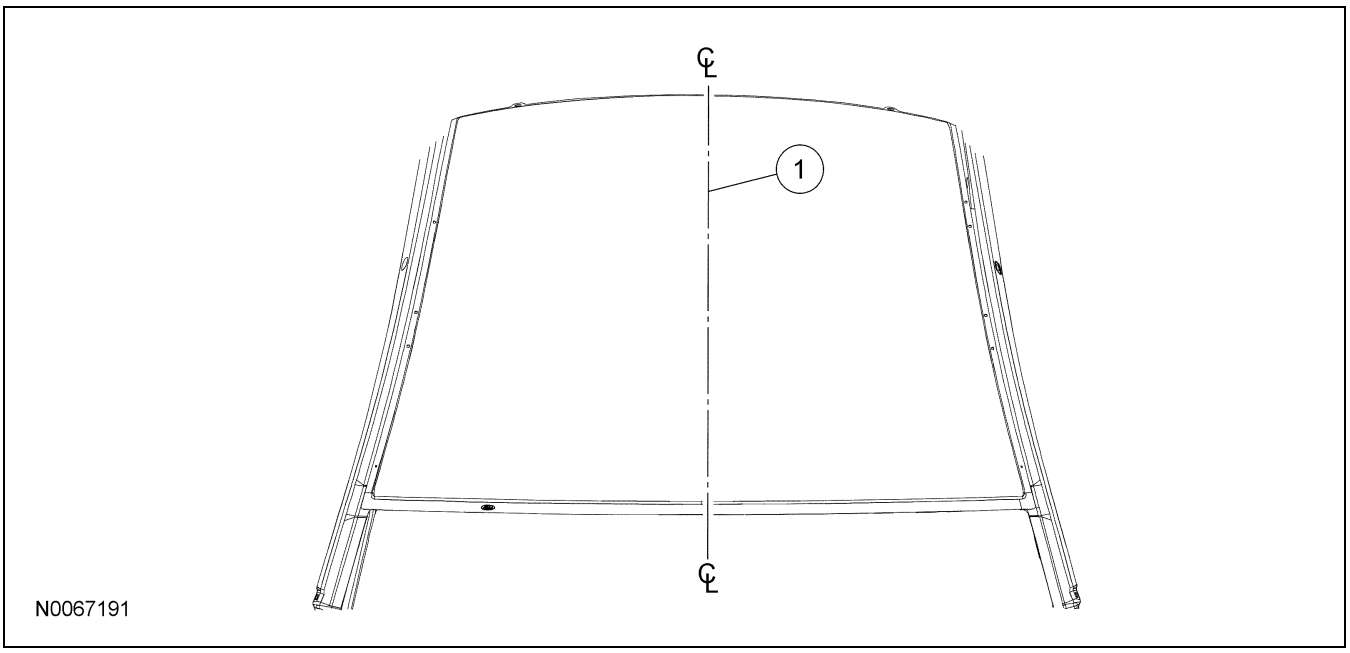
REMOVAL AND INSTALLATION (Continued)

4. Prepare the roof panel for placement of the stripe.
   1 Locate and mark the center line of the roof panel in at least 3 places using a non-staining marker.

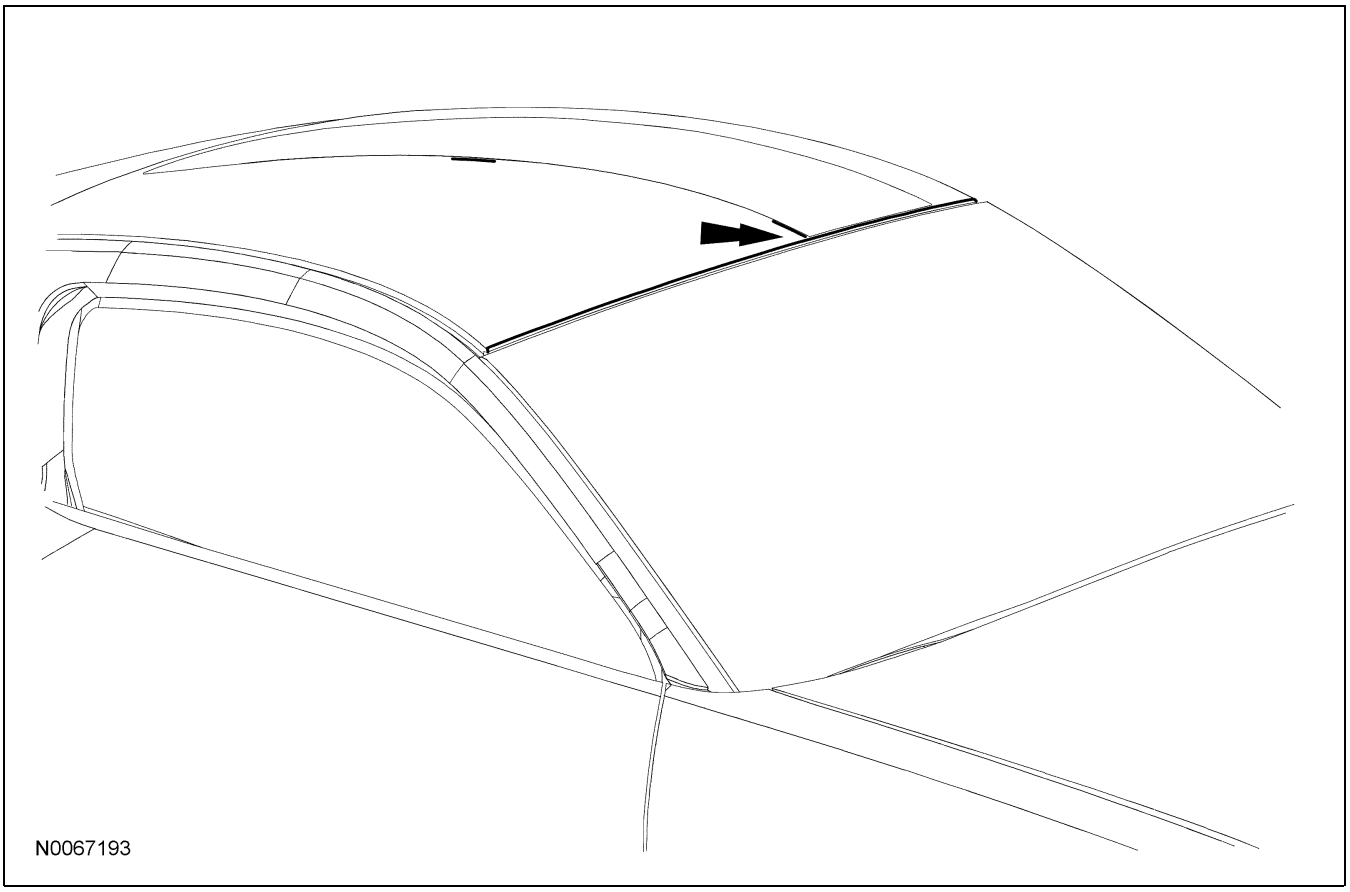


REMOVAL AND INSTALLATION (Continued)

5. **NOTE:** Roof stripes are designed with a 5 mm (0.19 in) setback built into the release paper.

   Remove the liner paper from the adhesive side of the new stripe decal and wet with the water/soap solution. Spray the roof panel with the water/soap solution. Align the decal release paper edge with the center line and front character line of the roof panel.

   - Beginning at the center and working outward to the edges, use a plastic squeegee to remove the excess air and water/soap solution until the stripe decal is firmly adhered.
   - Wet the release paper with the water/soap solution and slowly remove the release paper, pulling at 180 degrees and a diagonal to the stripe decal.
   - Repeat for the matching roof stripe.
   - Remove the locating marks from the roof panel.



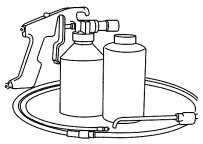
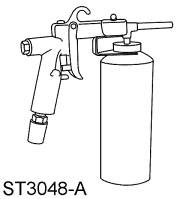
REMOVAL AND INSTALLATION (Continued)

6. Repair blisters or air bubbles by piercing them with a small pin or needle at one end of the bubble. Work the trapped air out through the pin hole using a soft plastic squeegee, your thumb or finger. Move toward the pin hole and press the stripe firmly against the panel. It may be necessary to preheat the panel slightly to soften the adhesive. Heat may also be applied to assist in removal of small creases or irregularities.

REMOVAL AND INSTALLATION

Frame Members — Rear

Special Tool(s)

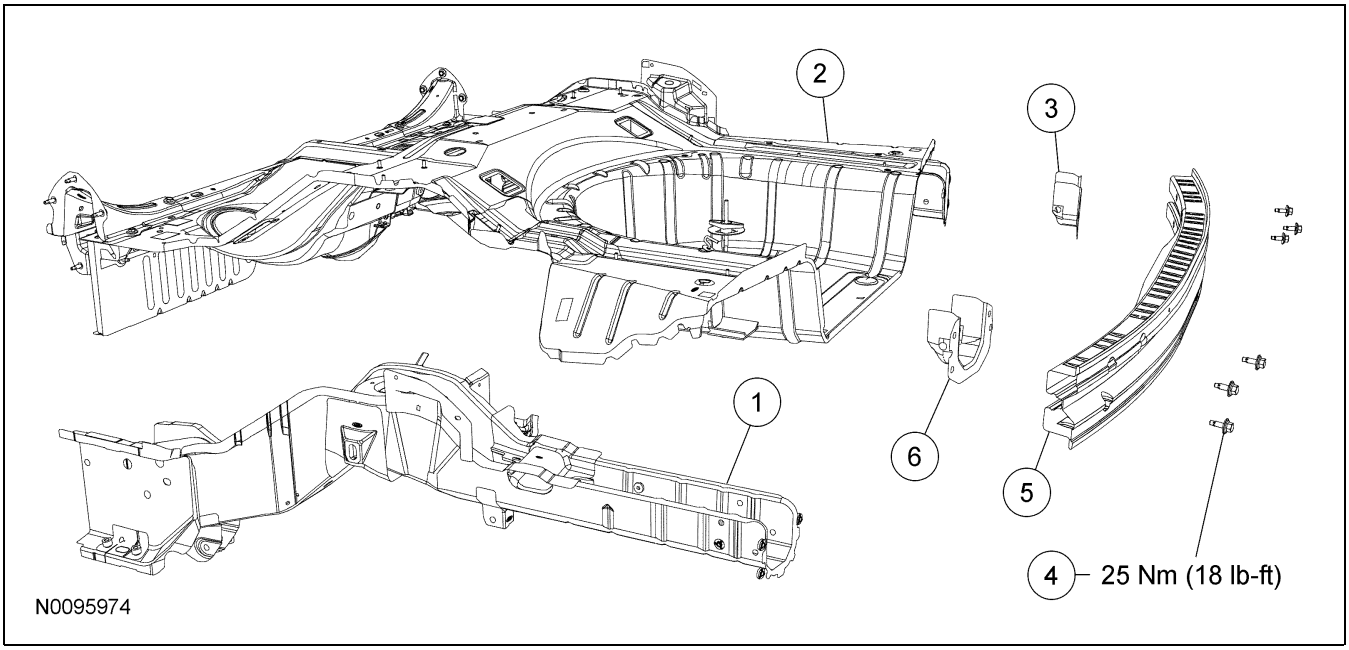
 ST3049-A	Rust Inhibitor Installation Kit 286-00002
 ST3048-A	Undercoating Spray Gun 286-00001

General Equipment

3 Phase Inverter Spot Welder 254-00002
Compuspot 700F Welder 190-50080
I4 Inverter Spot Welder 254-000014
Inverter Welder with MIG Welder 254-00015

Material

Item	Specification
Motorcraft® Metal Surface Prep ZC-31-A	—
Motorcraft® Premium Undercoating PM-25-A	—
Motorcraft® Rust Inhibitor Aerosol PM-24-A	—



Item	Part Number	Description
1	10457 LH/ 10456 RH	Rear floor side member — High-Strength Low Alloy (HSLA) 350 steel
2	—	Underbody assembly mild and High-Strength Steel (HSS) steel

(Continued)

Item	Part Number	Description
3	17A751	Rear bumper mounting bracket — HSLA 350 steel
4	W711097	Rear bumper bolt (6 required)
5	17906	Rear bumper — boron steel
6	17A750	Rear bumper mounting bracket — HSLA 350 steel

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REMOVAL AND INSTALLATION (Continued)

⚠ WARNING: Never install used or reconditioned parts (as specified below) from pre-owned, salvaged or damaged vehicles. The use of such parts could lead to serious injury.

Never use non-Ford parts or accessories for completing repairs.

Ford Motor Company does not approve or recognize body and structural repair procedures, tools, parts or anything but new genuine Ford equipment. Ford cannot attest to the safety, quality, durability or legality of non-Ford parts or accessories. Use of such parts could lead to serious personal injury as they may contain damage which is not visible.

Ford does not approve use of the following:

- **Salvaged or used parts**
- **Major body clips or assemblies from salvage vehicles**
- **Aftermarket structural or body components**
- **Salvaged or reconditioned wheels**
- **Used supplemental restraint system (SRS) components**
  - **— air bags**
  - **— restraint system modules**
  - **— safety belts, buckles or retractors**
  - **— crash sensors**

Returning a vehicle to pre-accident condition can only be assured if repair procedures are carried out by skilled technicians using new genuine Ford parts and Ford-approved methods. Structural component repair procedures approved by Ford, using genuine Ford parts, have been validated by Ford Motor Company engineers.

Ford Motor Company does not endorse, cannot attest to, and makes no representations regarding structural repairs (frames, rails, aprons and body panels) carried out using non-genuine Ford Motor Company parts or non-Ford-approved methods. In particular, Ford makes no representations that the vehicle will meet any crash safety or anti-corrosion performance requirement. Such parts and methods have not been tested by Ford, and may not meet Ford's requirements for safety, performance, strength, quality, durability and corrosion protection.

Ford Motor Company bears no responsibility or liability of any kind if repairs are performed using alternative structural component repair procedures and/or parts.

REMOVAL AND INSTALLATION (Continued)

⚠ WARNING: Invisible ultraviolet and infrared rays emitted in welding can injure unprotected eyes and skin. Always use protection such as a welder's helmet with dark-colored filter lenses of the correct density. Electric welding will produce intense radiation, therefore, filter plate lenses of the deepest shade providing adequate visibility are recommended. It is strongly recommended that persons working in the weld area wear flash safety goggles. Also wear protective clothing. Failure to follow these instructions may result in serious personal injury.

⚠ WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.

NOTE: Refer to welding equipment manufacturer's instructions for correct machine set up.

1. **NOTE:** All body alignment measurements are carried out with the vehicle detrimmed. Measurements are made metal to metal, on center, unless otherwise specified.

   Measure the vehicle to determine if the body requires straightening and alignment. The vehicle must be restored to its correct overall dimensions prior to beginning this procedure. For body dimensional information, refer to Body in this section.

   - Anchor the vehicle to a frame rack following the equipment manufacturer's instructions.

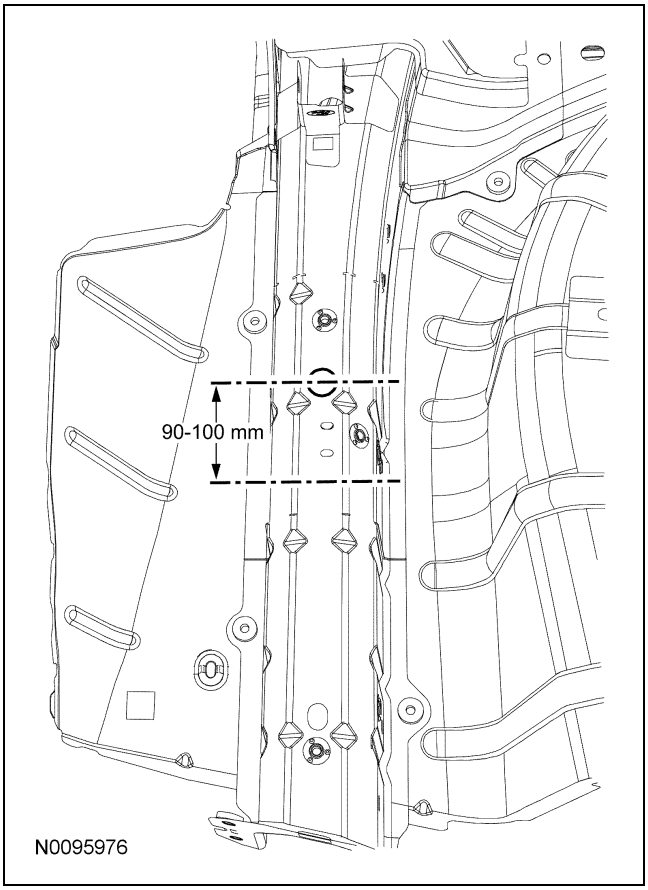
2. Remove the rear bumper assembly. For additional information, refer to Section 501-19.

3. Remove the Evaporative Emission (EVAP) canister located on the underbody. For additional information, refer to Section 303-13.

4. Position aside, plug and cover any open vapor lines.

5. Remove the muffler(s) from the affected side. For additional information, refer to Section 309-00.

6. Locate the drain hole at the 4th convolute on the frame rail, measure and mark 90 mm (3.543 in) to 100 mm (3.937 in) rearward from the center of the drain hole and scribe a cut line.

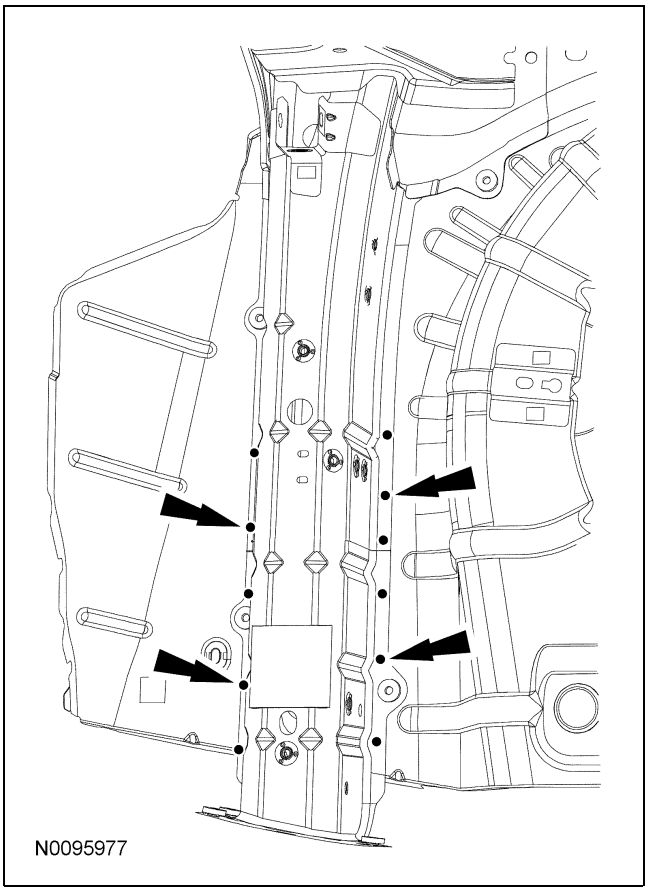


7. Using a die-grinder, carefully cut the frame rail only, at the scribe mark.

REMOVAL AND INSTALLATION (Continued)

8. **NOTE:** DO NOT drill pilot holes in an attempt to aid in spot weld removal.

   Drill out the spot welds attaching the frame rail to the underbody using a spot weld cutter or equivalent tool, and remove the damaged section.



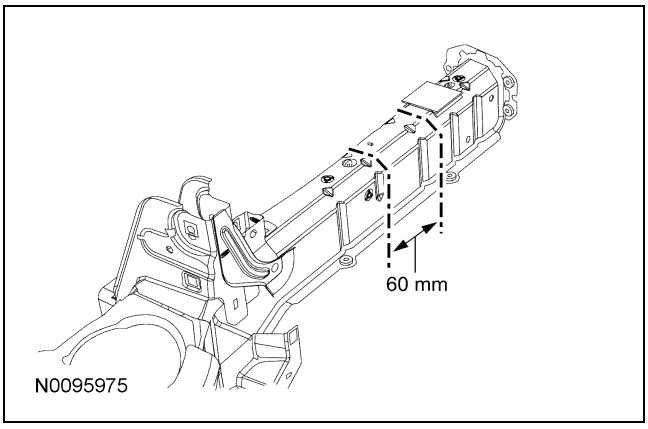
Installation

1. Using the original frame section as a guide, measure and cut the replacement section to the correct length.

2. Locate welded nuts on the original frame rail, position the replacement nut inserts at the same locations on the replacement frame rail and tack weld into position.

3. Prepare all surfaces for Metal Inert Gas (MIG) welding.
   - Grind smooth all spot weld nuggets on the floor pan.
   - Drill or punch plug weld holes in the replacement frame rail.
   - Chamfer the mating surfaces of the original frame rail and the replacement section.
   - Remove the E-coat from the immediate weld area on the vehicle frame rail and the replacement rail section. Clean the surfaces with metal surface prep or equivalent.
   - Apply a commercially available weld-through primer to the immediate weld area only, on all mating surfaces.

4. Create a backer sleeve from a suitable portion of frame rail material approximately 60 mm (2.362 in) long, to be inserted between the weld joint of the replacement frame section and the original frame rail.
   - Drill or punch plug weld holes in the backer sleeve and replacement rail section and MIG plug weld the sleeve to the replacement rail.



5. Install and clamp the replacement frame rail section to the vehicle. Verify correct alignment and dimensions. For additional information, refer to Body in this section.

6. MIG plug weld the replacement rail section to the original frame rail and seam weld around the entire joint using ER70S-3 wire 0.9 mm (0.035 in) to 1.1 mm (0.043 in) diameter.

REMOVAL AND INSTALLATION (Continued)

7. Use a dye penetrant to determine if any cracks or voids exist in the weld joint. If cracks or other defects exist, grind out the defect and repair until the weld is defect free.

8. Position and install the new bumper bracket(s).

9. Apply rust inhibitor to the inner surface of the repair area. For additional information, refer to Restoring Corrosion Protection Following Repair in this section.

10. Apply undercoating to the exterior surface of the frame rail and underbody area.

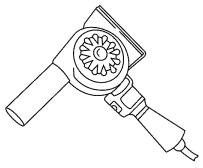
11. Reinstall the muffler components. For additional information, refer to Section 309-00.

12. Reinstall the bumper assembly. For additional information, refer to Section 501-19.

REMOVAL AND INSTALLATION

Body Graphics — GT500, Luggage Compartment

Special Tool(s)

 ST1073-A	Heat Gun 107-R0300

1. Thoroughly wash and dry the vehicle before carrying out removal and installation of stripe decals.

2. If the upper portion of the luggage compartment panel is to receive new stripes, remove the satellite radio antenna (if equipped). For additional information, refer to Section 415-00.

3. If the lower portion of the luggage compartment panel is to receive new stripes, remove the luggage compartment door name plate.

4. Warm the stripe decal on the affected panel with a hair dryer or heat gun on the lowest setting, being careful not to heat excessively, as this can melt the decal or damage the paint surface.
   - Beginning at the edge or corner of the stripe, slowly lift and remove the stripe, pull at an angle to the body panel. Keep the stripe warm with a heat gun or hair dryer slightly ahead of the area just removed.
   - Remove any remaining material or adhesive from the panel surface with an isopropanol cleaner or equivalent.
   - An alternate method of removing stripes is with a rubber-wheeled graphic removal tool.

Installation

All Panels

1. **NOTE:** Surface temperature of body panel(s) should be above 10°C (50°F). Avoid carrying out removal or installation of stripe decal(s) in direct sunlight. The following step is applicable to the removal of the stripe decals, regardless of the location on the vehicle.

   Mix 1 teaspoon of liquid dishwashing soap or equivalent in 1.89L (1/2 gal) of water. Fill a spray bottle with this solution.

2. Clean the surface using a commercial wax and grease remover, follow the manufacturers directions.

3. Reclean the surface using an isopropanol cleaner.

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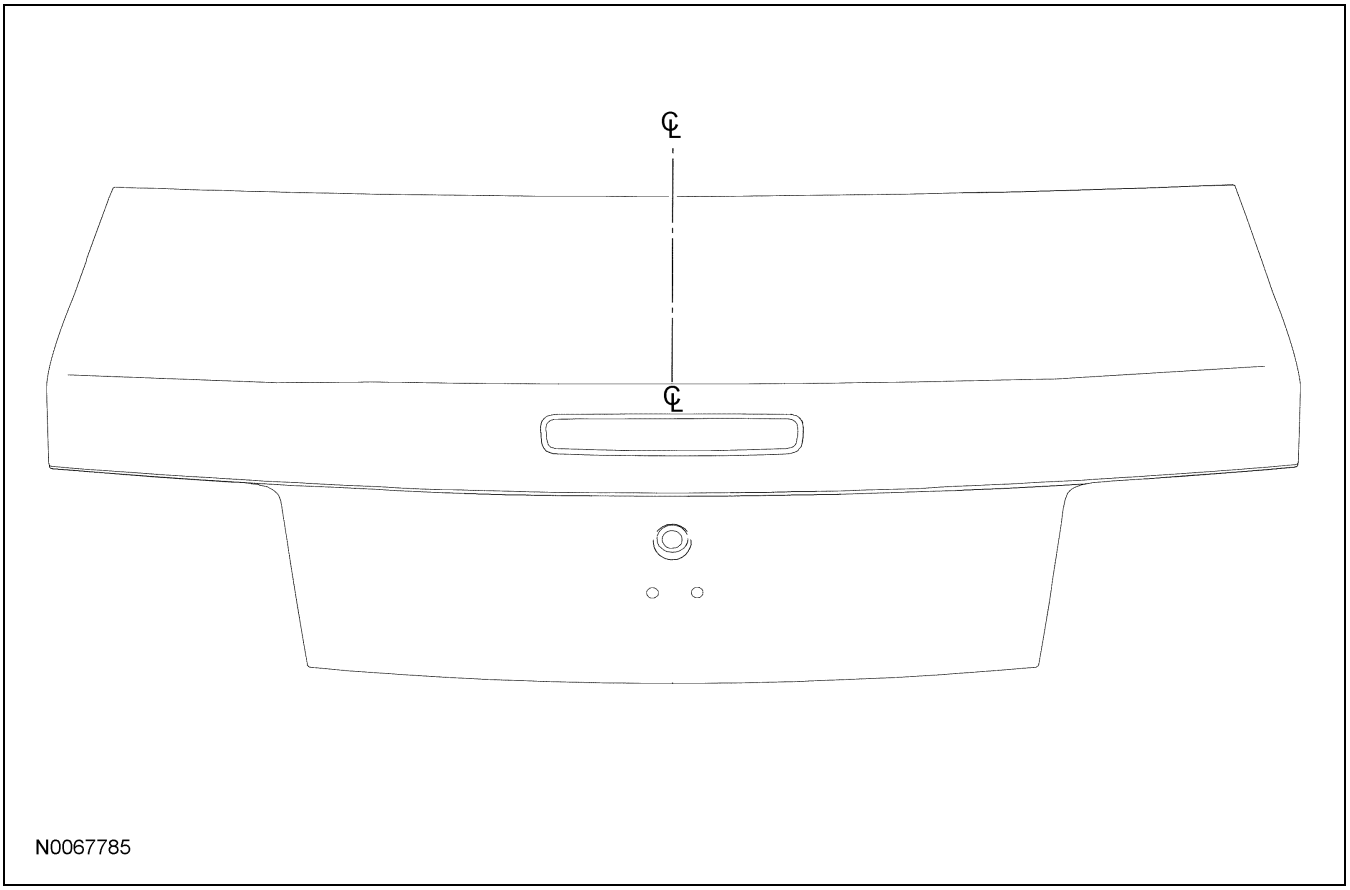
REMOVAL AND INSTALLATION (Continued)

Upper Luggage Compartment Panel

4. **NOTE:** A non-staining, removable marker is required for stripe installation layout on the panel.

   Locate and mark the panel centerline at a minimum of 2 points.



5. Remove the liner from the adhesive side of the new stripe and spray the stripe adhesive and luggage compartment panel with the soap/water solution.

REMOVAL AND INSTALLATION (Continued)

6. **NOTE:** If installing the luggage compartment upper panel stripe and the spoiler stripe is in place but does not correctly align, the LH and RH stripe may be separated and applied individually.

   NOTE: The luggage compartment stripes are designed with a 5 mm (0.19 in) setback built into the release paper.

   Align the stripe release paper (adhesive side down) with the leading edge of the luggage compartment panel and evenly spaced to the centerline.

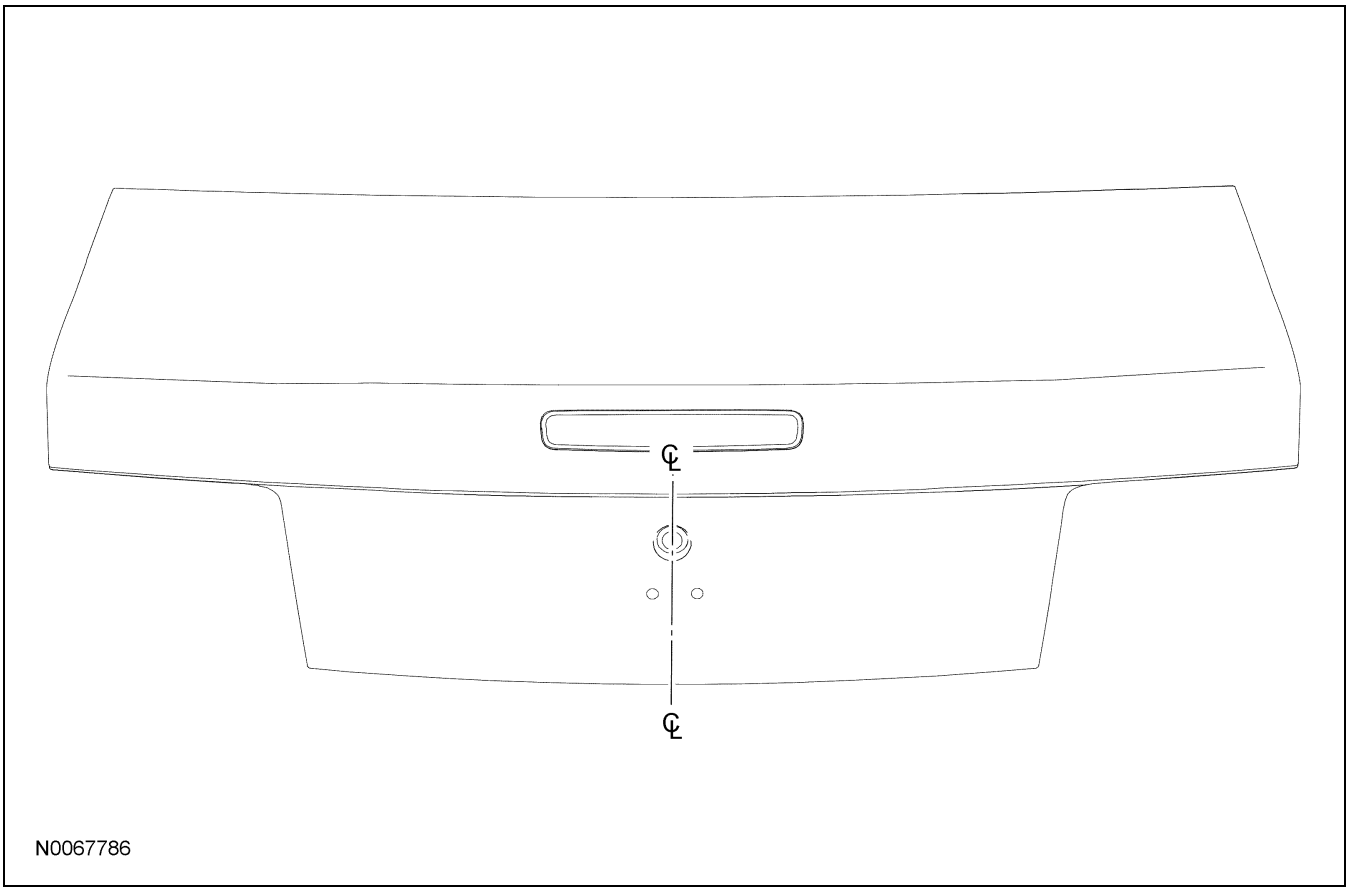
   - Beginning at the center and working outward to the edges, use a soft plastic squeegee to remove the excess air and soap/water solution until the decal is firmly adhered.
   - Wet the release paper with the soap/water solution and slowly remove the release paper, pulling at 180 degrees and a diagonal to the stripe decal.
   - Remove the centerline locating marks.

7. Repair blisters or air bubbles by piercing them with a small pin or needle at one end of the bubble. Work the trapped air out through the pin hole using a soft plastic squeegee, your thumb or finger, moving toward the pin hole and press the stripe firmly against the panel. It may be necessary to preheat the panel slightly to soften the adhesive. Heat may also be used to remove small creases or irregularities.

Lower Luggage Compartment Panel

8. **NOTE:** A non-staining, removable marker is required for stripe installation layout on the panel.

   Locate and mark the panel centerline at a minimum of 2 points.



REMOVAL AND INSTALLATION (Continued)

9. **NOTE:** The lower luggage compartment panel stripes are of a 2-piece design. The lower portion of the stripe kit must be installed first, as the upper stripe must over lap the lower portion.

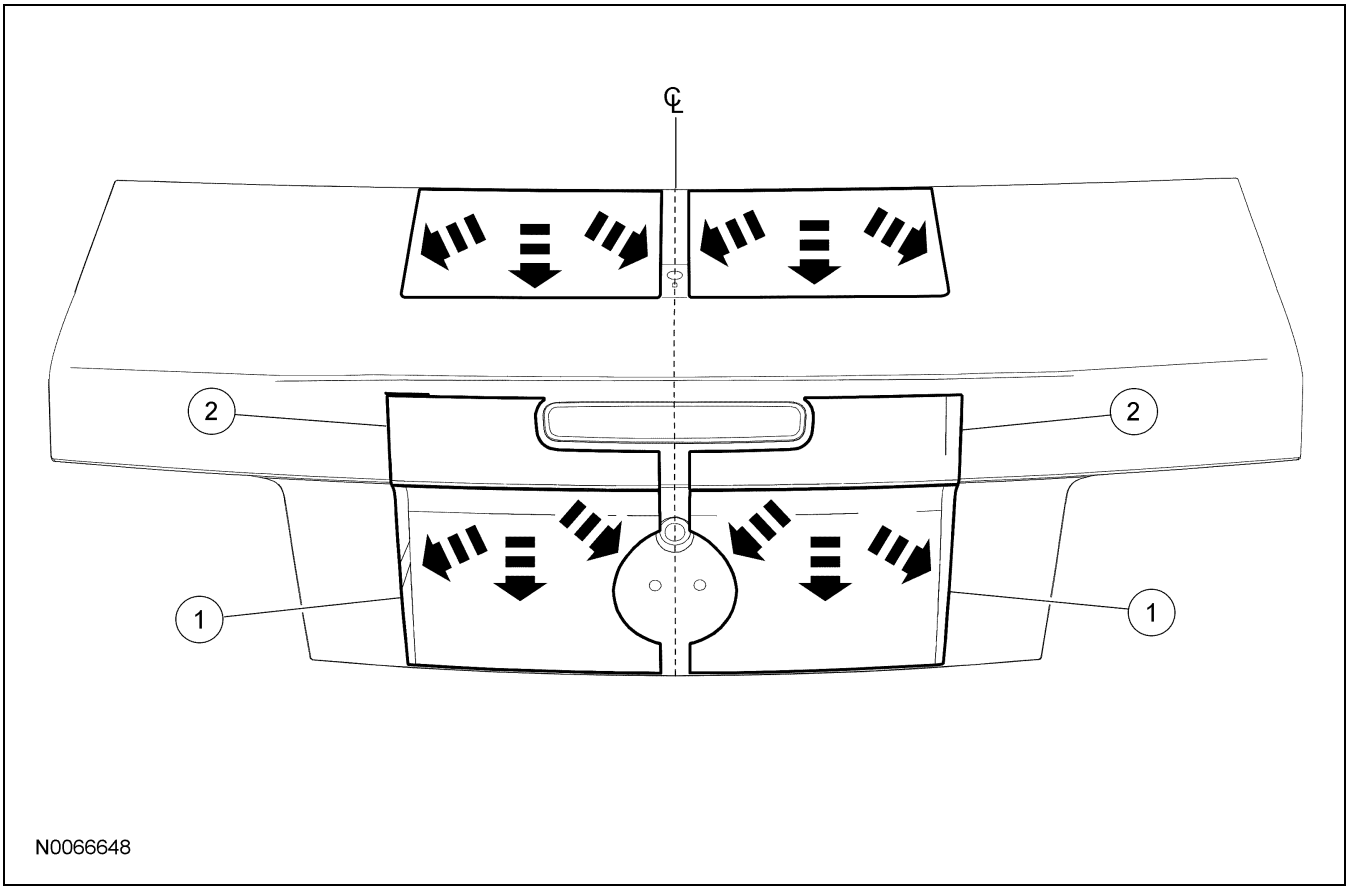
   NOTE: If installing the luggage compartment lower panel stripes and the rear bumper or spoiler stripe is in place but does not correctly align, the LH and RH stripe may be separated and applied individually.

   Remove the liner from the adhesive side of the new stripe and spray the stripe adhesive and luggage compartment panel with the soap/water solution.

10. **NOTE:** The luggage compartment stripes are designed with a 5 mm (0.19 in) setback built into the release paper.

    Align the stripe release paper (No. 1) adhesive side down with the bottom edge of the luggage compartment panel and evenly spaced to the centerline.

    - Beginning at the center and working outward to the edges, use a soft plastic squeegee to remove the excess air and soap/water solution until the decal is firmly adhered.
    - Wet the release paper with the soap/water solution and slowly remove the release paper, pulling at 180 degrees and a diagonal to the stripe decal.
    - Repeat for the upper portion (No. 2) of the stripe kit aligning the release paper to the upper edge of the luggage compartment panel and evenly spaced to the centerline.
    - Remove the centerline locating marks.



REMOVAL AND INSTALLATION (Continued)

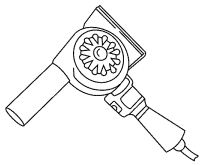
All Panels

11. Repair blisters or air bubbles by piercing them with a small pin or needle at one end of the bubble. Work the trapped air out through the pin hole using a soft plastic squeegee, your thumb or finger. Move toward the pin hole and press the stripe firmly against the panel. It may be necessary to preheat the panel slightly to soften the adhesive. Heat may also be used to remove small creases or irregularities.

REMOVAL AND INSTALLATION

Body Graphics — GT500, Spoiler

Special Tool(s)

 ST1073-A	Heat Gun 107-R0300

1. Thoroughly wash and dry the vehicle before carrying out removal and installation of stripe decals.

2. Warm the stripe decal on the affected panel with a hair dryer or heat gun on the lowest setting, being careful not to heat excessively, as this can melt the decal or damage the paint surface.
   - Beginning at the edge or corner of the stripe, slowly lift and remove the stripe, pull at an angle to the body panel. Keep the stripe warm with a heat gun or hair dryer slightly ahead of the area just removed.
   - Remove any remaining material or adhesive from the panel surface with an isopropanol cleaner or equivalent.
   - An alternate method of removing stripes is with a rubber-wheeled graphic removal tool.

Installation

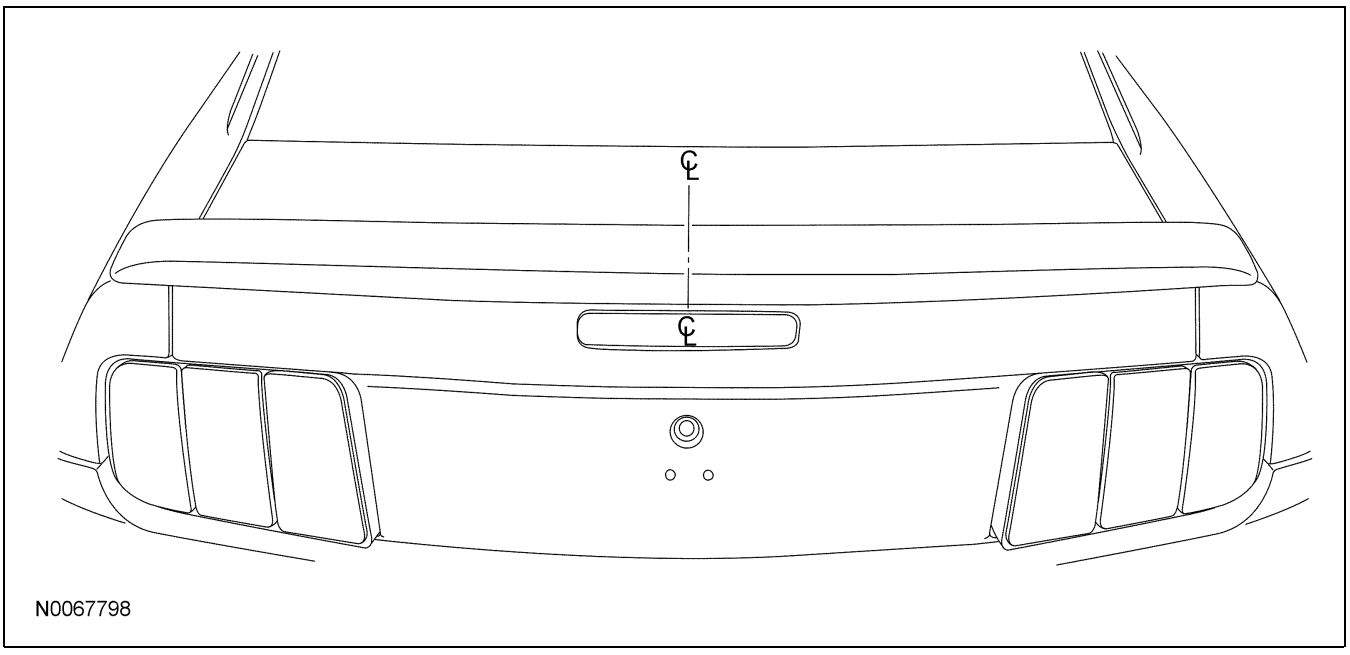
1. Mix 1 teaspoon of liquid dishwashing soap or equivalent in 1.89L (1/2 gal) of water. Fill a spray bottle with this solution.

2. Clean the surface using a commercial wax and grease remover, follow the manufacturer's directions.

3. Reclean the surface using an isopropanol cleaner or equivalent.

4. **NOTE:** A non-staining, removable marker is required for stripe installation layout on the panel.

   Locate and mark the spoiler centerline at a minimum of 2 points on the horizontal surface, 1 point on the vertical surface and the rear edge.



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REMOVAL AND INSTALLATION (Continued)

5. **NOTE:** The GT500 spoiler stripe kit is a 2-part kit, the lower portion of the kit must be installed first, as the upper portion of the stripe is designed to overlap the lower.

   NOTE: Surface temperature of body panel(s) should be above 10°C (50°F). Avoid carrying out removal or installation of stripe decal(s) in direct sunlight. The following step is applicable to the removal of the stripe decals, regardless of the location on the vehicle.

   NOTE: If installing the spoiler stripe kit and the luggage compartment stripes are in place but do not correctly align, the LH and RH stripe may be separated and applied individually.

   Install the spoiler stripe kit.

   1 Remove the adhesive liner paper from the lower portion of the spoiler stripe kit and spray the stripe adhesive and spoiler with the soap/water solution.

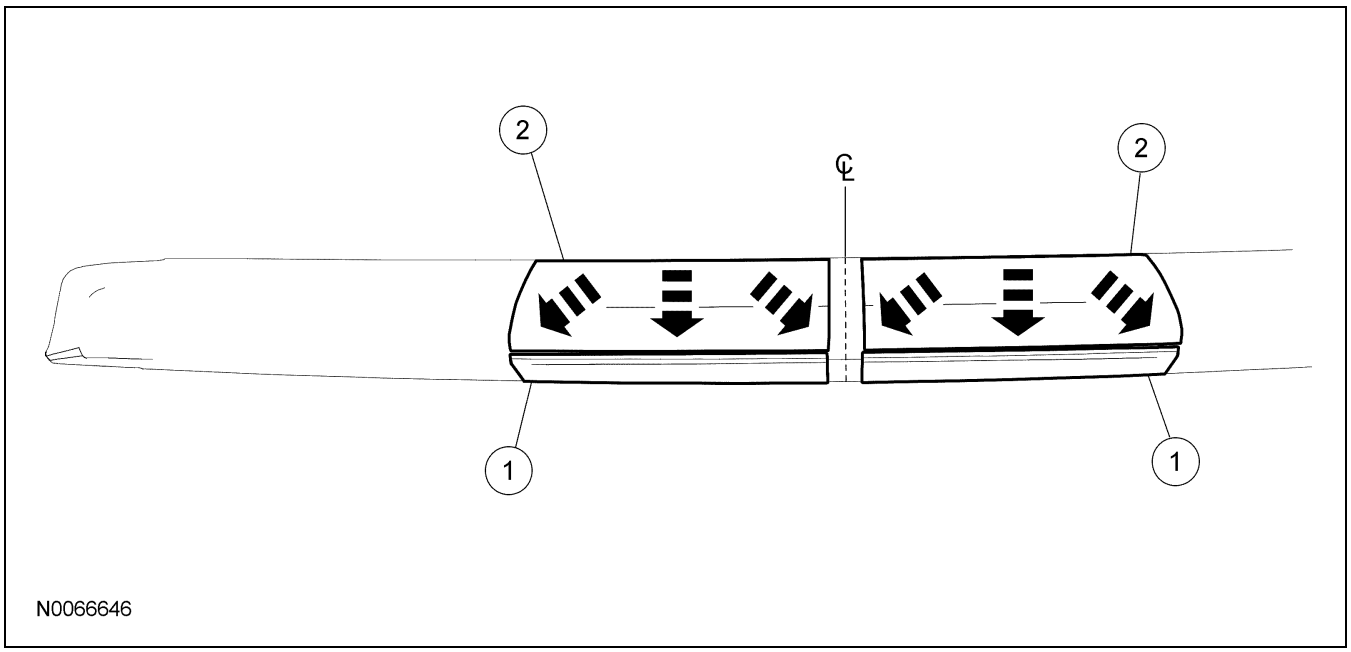
   - Position the stripe so the lower edge of the release paper aligns with the lower edge of the spoiler and is evenly spaced on the centerline.
   - Beginning at the center and working outward to the edges, use a soft plastic squeegee to remove the excess air and soap/water solution until the decal is firmly adhered.
   - Wet the release paper with the soap/water solution and slowly remove the release paper, pulling at 180 degrees and a diagonal to the decal.

   2 **NOTE:** Do not over wet the stripe or spoiler in this step as this may reduce or prevent correct overlap adhesion.

   Remove the adhesive liner paper from the upper portion of the spoiler stripe kit and spray the stripe adhesive and spoiler with the soap/water solution

   - Position the stripe so the leading edge of the release paper aligns with the leading edge of the spoiler and is evenly spaced on the centerline.
   - Beginning at the center and working outward to the edges, use a soft plastic squeegee to remove the excess air and soap/water solution until the decal is firmly adhered.
   - Wet the release paper with the soap/water solution and slowly remove the release paper, pulling at 180 degrees and a diagonal to the decal.
   - Carefully squeegee the overlap area making sure of adequate adhesion. A slight amount of heat may be applied to assist in adhesion if required.
   - Remove the centerline locating marks.

REMOVAL AND INSTALLATION (Continued)

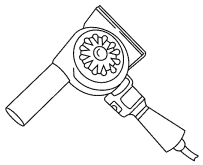


6. Repair blisters or air bubbles by piercing them with a small pin or needle at one end of the bubble. Work the trapped air out through the pin hole using a soft plastic squeegee, your thumb or finger. Move toward the pin hole and press the stripe firmly against the panel. It may be necessary to preheat the panel slightly to soften the adhesive. Heat may also be used to remove small creases or irregularities.

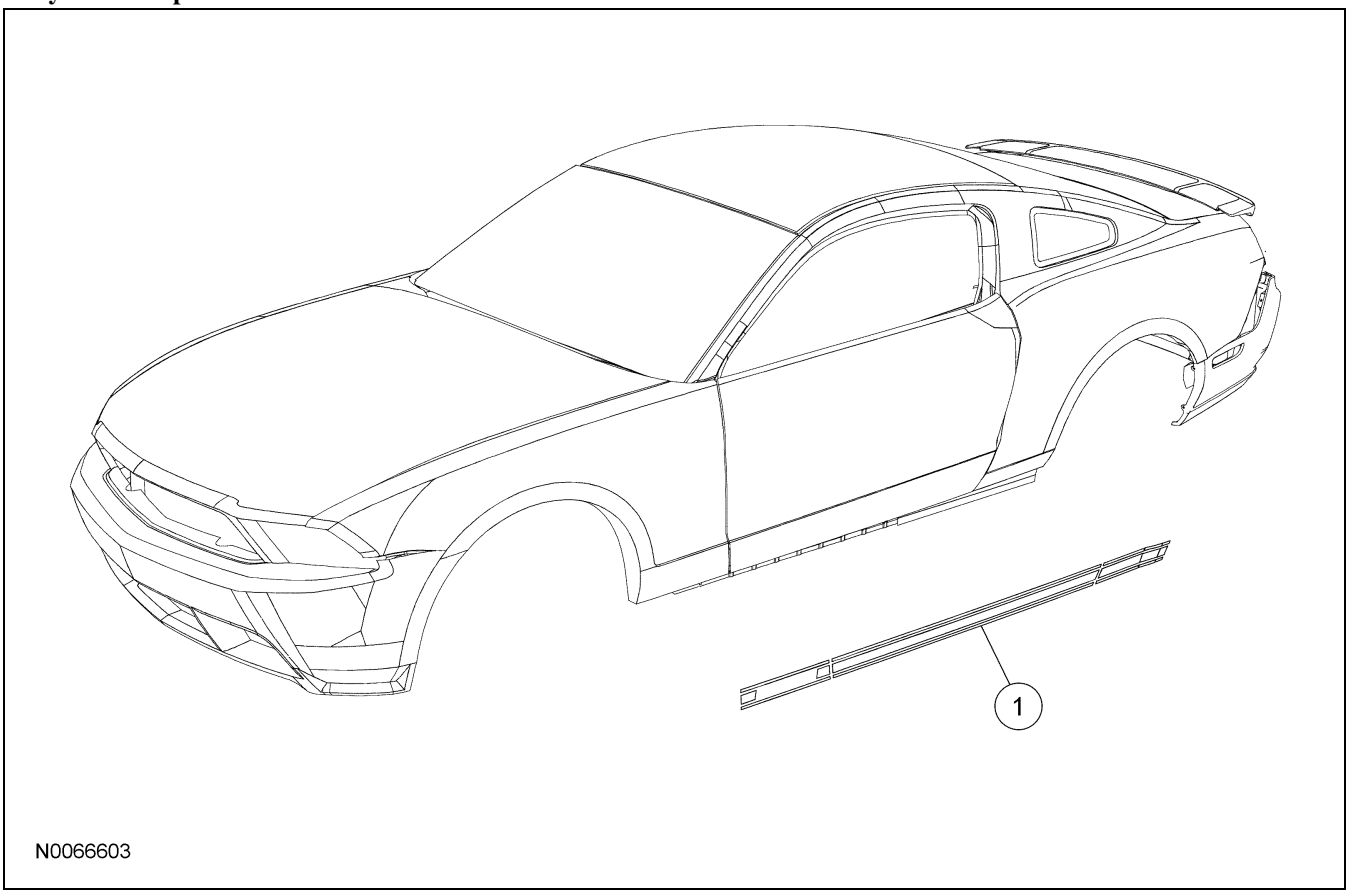
REMOVAL AND INSTALLATION

Body Graphics — Side Stripes

Special Tool(s)

 ST1073-A	Heat Gun 107-R0300

Body Side Stripe Decal — All Vehicles



Item	Part Number	Description
1	20000AB LH/ 20000AA RH	Body side stripe decal

NOTE: Surface temperature of body panel(s) should be above 10°C (50°F). Avoid carrying out removal or installation of stripe decal(s) in direct sunlight.

1. Thoroughly wash and dry the vehicle before carrying out removal and installation of stripe decals.

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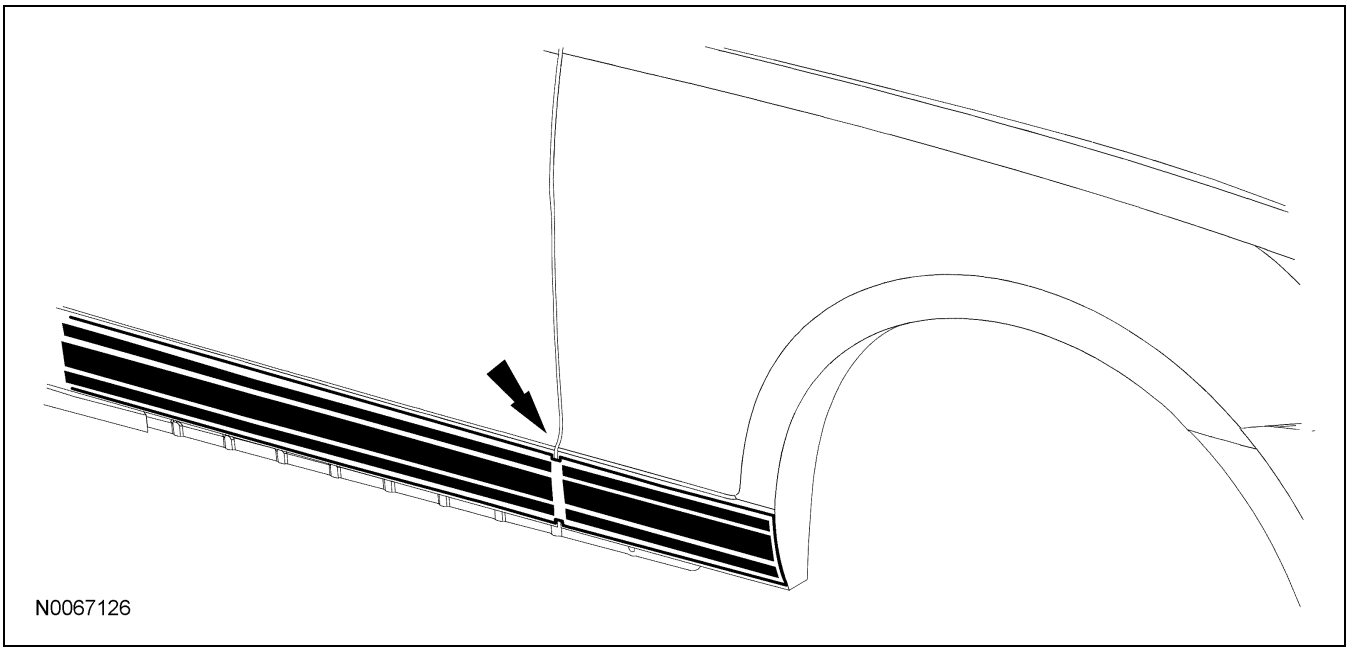
REMOVAL AND INSTALLATION (Continued)

2. Warm the stripe decal on the affected panel with a hair dryer or heat gun on the lowest setting, being careful not to heat excessively, as this can melt the decal or damage the paint surface.
   - Beginning at the edge or corner of the stripe, slowly lift and remove the stripe, pull at an angle to the body panel. Keep the stripe warm with a heat gun or hair dryer slightly ahead of the area just removed.
   - Remove any remaining material or adhesive from the panel surface with an isopropanol cleaner or equivalent.
   - An alternate method of removing stripes is with a rubber-wheeled graphic removal tool.

Installation

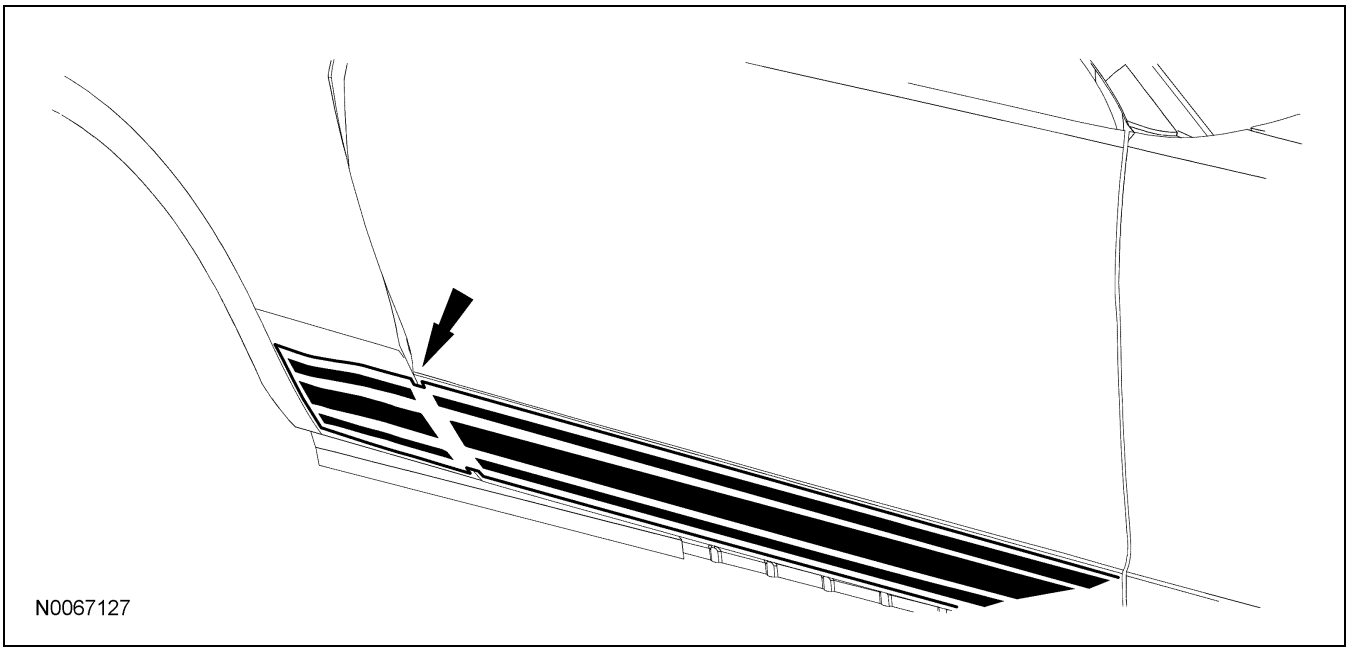
1. Clean the surface using a commercially available wax and grease remover, follow manufacturer's directions.
2. Reclean the surface using an ispropanol cleaner.
3. Mix 1 teaspoon of liquid dishwashing soap or equivalent in 1.89L (1/2 gal) of water. Fill a spray bottle with the solution.
4. **NOTE:** Dry fit and masking tape the stripe in position or, use an assistant to locate and position the new stripe decal.

   Position side stripe so the locator notches align with the fender-to-door gap.



REMOVAL AND INSTALLATION (Continued)

5. Check positioning of locator notches at the door-to-quarter panel gap.



6. Partially remove the body side stripe decal(s) adhesive liner paper as necessary.
   - Remove a small section of the liner from the adhesive side of the new stripe decal and wet with the water/soap solution.
   - Position and apply the new decal, removing the adhesive liner while pressing the decal into position, spraying the adhesive surface with the soap/water solution. Work from the front to the rear of the decal, while maintaining correct position of the decal on the vehicle.
   - Use a plastic squeegee and work diagonally along the stripe decal to remove the excess air and water/soap solution until the decal is firmly adhered. Wet the release paper with the water/soap solution and slowly remove the release paper, pulling at 180 degrees and a diagonal to the stripe decal.
7. Repair blisters or air bubbles by piercing them with a small pin or needle at one end of the bubble. Work the trapped air out through the pin hole using a soft plastic squeegee, your thumb or finger, moving toward the pin hole and press the stripe firmly against the panel. It may be necessary to preheat the panel slightly to soften the adhesive. Heat may also be used to remove small creases or irregularities.

SPECIFICATIONS

Material

Item	Specification	Fill Capacity
3M™ Strip Caulk - Black 051135-08578	WSB-M4G32-C	—
Clear Silicone Rubber TA-32	ESB-M4G92-A	—
Silicone Gasket and Sealant TA-30	WSE-M4G323-A4	—

(Continued)

Material

Item	Specification	Fill Capacity
Silicone Spray Lubricant XL-6	ESR-M13P4-A	—
Trim and Weatherstrip Adhesive TA-14-A	—	—

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DESCRIPTION AND OPERATION

Insulation

Insulation is used as a sound deadener to reduce exterior road and powertrain noises from the interior of the vehicle. Mastic insulators are also used as insulation. For information on the location of the mastic insulators, refer to Section 501-35. Insulation is installed:

- under the roof panel.
- above and below the instrument panel.
- on the cowl sides.
- over the front and rear floor areas.
- on a coupe, in the B and C-pillar sections.
- under the hood.

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DESCRIPTION AND OPERATION

Body Sealer Types And Applications

Clear Silicone Rubber

Clear Silicone Rubber TA-32 or equivalent meeting Ford Specification ESB-M4G92-A:

- does not run.
- is fast drying.
- remains semi-elastic.
- can be used for sealing water leaks, noise concerns, remounting trim and repairing torn weatherstripping.

Silicone Gasket and Sealant

Silicone Gasket and Sealant TA-30 or equivalent meeting Ford specification WSE-M4G323-A4:

- is a form-in-place gasket and multi-purpose adhesive/sealant.
- is a room temperature curing silicone rubber.
- does not release acetic acid during curing, non-corrosive.

Caulking Cord

3M™ Strip Caulk-Black 051135-08578 or equivalent meeting Ford specification WSB-M4G32-C:

- is a heavy-bodied, plastic base with a filler.
- is commonly known as perma-gum.
- is used on spot-weld holes and between surfaces not sealed with a gasket.

Weatherstrip Adhesive

Trim and Weatherstrip Adhesive TA-14-A or equivalent:

- is a quick drying, strong adhesive designed to hold weatherstripping onto all body panels and surrounding metal.

Silicone Lubricant

Silicone Spray Lubricant XL-6 or equivalent meeting Ford specification ESR-M13P4-A:

- is used to keep the door and the window weatherstrip pliable and soft.
- makes the door easier to close.
- retards weatherstrip squeaks.
- retards weatherstrip wear.
- helps retain door window alignment by reducing friction between the glass frame and the rubber weatherstrip.
- should not be used prior to painting.

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DIAGNOSIS AND TESTING

Body System

Inspection and Verification

Leaks

NOTE: Trim reveals the location of most leaks.

1. Remove any trim or carpet in the general area of the leak.
2. Road test or water test the vehicle.
3. Inspect for a dust pattern around the area in question. Inspect for water paths near and above the area in question.
4. Some leaks can be located by placing bright light under the vehicle, removing any necessary trim or carpet, and inspecting the interior of the body at joints and weld lines.

Noise

Wind noise, rattles and their sources are detected by driving the vehicle at highway speeds. The vehicle should be driven in 4 different directions with all of the windows closed, the radio off, the blower motor off and all of the ventilation ducts open.

Most wind noise leaks occur at the door and window seals or at the sheet metal joints in the door or the door opening.

Symptom Chart — Noise, Vibration and Harshness (NVH)

Symptom Chart — Noise, Vibration and Harshness (NVH)

NOTE: Noise, vibration and harshness (NVH) symptoms should be identified using the diagnostic tools that are available. For a list of these tools, an explanation of their uses and a glossary of common terms, refer to Section 100-04. Since it is possible that any one of multiple systems may be the cause of a symptom, it may be necessary to use a process of elimination type of diagnostic approach to pinpoint the responsible system. If this is not the causal system for the symptom, refer back to Section 100-04 for the next likely system and continue diagnosis.

Condition	Possible Sources	Action
• Draft/wind noise and water leak around door perimeter	• Loose fit seal	• PINCH seal carrier to improve retention on seal flange.
	• Seal installed incorrectly	• REINSTALL the seal.
	• Door misaligned	• REALIGN the door. CHECK door gaps and fit in door opening and adjust as necessary. REFER to Section 501-03.
	• Scuff plate installed incorrectly	• REINSTALL the scuff plate.
	• Seal or seal pushpins damaged	• INSTALL a new seal/pushpins.
	• Sheet metal joints in door or door opening	• SEAL leaks with Silicone Gasket and Sealant.
• Draft/wind noise and water leak around glass run	• Door glass misaligned	• ADJUST door glass.
	• Glass run installed incorrectly	• REINSTALL glass run. INSERT foam in glass run carrier if necessary.
	• Leak path behind glass run	• INSTALL foam rope behind glass run.
	• Glass run channel spread wide	• PINCH glass run channel to reduce size of opening.
	• Glass run damaged	• INSTALL a new glass run.

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DIAGNOSIS AND TESTING (Continued)

Symptom Chart — Noise, Vibration and Harshness (NVH) (Continued)

Condition	Possible Sources	Action
• Draft/wind noise and water leak at inner belt line	• Belt line seal installed incorrectly on flange • No contact with side glass • No contact with glass runs at both ends of belt line seal • Belt line seal damaged	• ADJUST seal. (Do not bend the flange.) • ADJUST door glass. • ADJUST belt line seal or ADD foam at seal ends. • INSTALL a new seal.
• Draft/wind noise and water leak at outer belt line	• Belt line seal installed incorrectly on flange (no glass contact) • Belt line seal does not contact the glass • No contact with glass runs at both ends of belt line seal • Belt line seal damaged	• ADJUST seal. • ADJUST door glass. • ADJUST belt line seal or ADD foam at seal ends. • INSTALL a new seal.
• Draft/wind noise at inner door handle/speaker opening	• Hole in weathershield • Weathershield misaligned • Exterior door handle seal misaligned/damaged • Speaker or speaker seal missing or damaged	• SEAL hole with suitable tape. • REALIGN weathershield. INSTALL a new weathershield if pressure sensitive adhesive fails. • REALIGN or INSTALL a new seal as necessary. REFER to Section 501-14. • REPAIR speaker seal or INSTALL a new door speaker.
• Draft/wind noise and water leaks at floor pan and grommets	• Missing or damaged plugs/grommets	• CHECK plugs/grommets for correct installation or damage. INSTALL new plugs/grommets if necessary.
• Road noise	• Missing mastic insulators • Missing body insulators	• CHECK for missing mastic insulators. REFER to Section 501-35. • CHECK for missing body insulators.
• Rattles in body/doors and instrument panel	• Loose wires/cables • Loose objects/components in door wells, pillars quarter trim panels • Buzz from instrument panel components	• CHECK that all wires/cables are correctly routed and inserted in correct retainers. • CHECK doors by carefully striking underside of doors with a rubber mallet while listening for rattles in doors and pillars. REMOVE or TIGHTEN loose objects/components. • IDENTIFY which components of the instrument panel are buzzing. SECURE/FASTEN components as necessary, ADD foam or felt as needed if rattle persists.
• Door drain holes collecting water	• Holes clogged with mud or road tar	• CLEAN drain holes of foreign material with a punch or screwdriver. CHECK drain holes regularly.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart — Noise, Vibration and Harshness (NVH) (Continued)

Condition	Possible Sources	Action
• Wind noise from exterior rear view mirror	• Exterior mirror housing misaligned	• REALIGN with edges shingled to airflow, with no gaps.
	• Mirror sail gasket folded/misaligned	• REINSTALL with gasket unfolded and aligned correctly.
	• Mirror housing trim cap installed incorrectly	• REINSTALL with edges shingled to airflow.
	• Air leak through mirror housing hinge	• Fully ENGAGE mirror into its operating position. USE foam to block air path through hinge.
	• Inner sail trim installed incorrectly	• REINSTALL sail trim. ADJUST door trim.
	• Inner sail trim installed incorrectly	• REINSTALL sail trim. ADJUST door trim.
	• Inner sail gasket/barrier installed incorrectly	• REINSTALL trim cover with gasket/barrier aligned correctly.
	• Air path through wiring bundle/fastener access holes	• BLOCK air path(s) with foam/tape.
	• Exposed fastener access hole on mirror housing/sail	• INSTALL a new cap if missing.
• Rattle/vibration from exterior rear view mirror	• Mirror glass adjustment screws loose	• REMOVE mirror glass and TIGHTEN mirror glass adjustment motor screws. REFER to Section 501-09.
	• Mirror mounting nuts loose	• TIGHTEN mirror mounting nuts. REFER to Section 501-09.
	• Aftermarket air deflector/stone shields	• If possible, REMOVE aftermarket air deflector/stone shield, then ROAD TEST vehicle. If concern is no longer present, ADVISE customer that aftermarket component was causing concern.
• Draft/wind noise and water leak around perimeter of all fixed glass	• Gaps in the sealant bead	• APPLY approved sealant.
	• Air traveling up windshield molding along A-pillar	• INSTALL foam rope full length of the A-pillar.
	• Gaps in sealant bead of windshield/rear glass	• RESEAL windshield/rear glass. REFER to Section 501-11.
	• Windshield/rear glass misaligned or not installed correctly	• REINSTALL windshield/rear glass. REFER to Section 501-11.
	• Rear hood seal at base of windshield misaligned/damaged	• REALIGN or INSTALL a new seal as necessary.
• Draft noise at cowl	• Cowl seal misaligned/damaged	• REALIGN or INSTALL a new seal as necessary.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart — Noise, Vibration and Harshness (NVH) (Continued)

Condition	Possible Sources	Action
• Wind noise created by airflow over or behind body panels	• Fender splash shield misaligned • Body panel misaligned (exposed edge) • Hood misaligned (front margin) • Front grille edge noise	• REALIGN fender splash shield. • REALIGN appropriate body panel. • CHECK hood gaps and fit. ADJUST hood as necessary. • APPLY foam in hollow areas behind louvers.
• Wind noise created by grille opening panel	• Grille relationship to leaking edge on hood • Sharp edges due to material imperfections	• If possible, ADJUST grille opening panel forward to eliminate wind noise. • REMOVE sharp edges (no damage to visible surface).
• Wind noise from air extractor (body vent)	• Air extractor housing seated incorrectly • Air extractor housing or flaps damaged	• REINSTALL air extractor housing. • INSTALL a new air extractor.
• Air leak at top of A-pillar — vehicles with a convertible top	• Seal at windshield heater installed incorrectly • Seal pinched • Gap between side rail and header seal at A-pillar	• REINSTALL seal. • FILL seal with foam to reshape it. • ADJUST J-hook/vinly top.
• Air leak at rear quarter glass (division bar) — vehicles with a convertible top	• No contact between front side glass and quarter glass division bar	• ADJUST front side glass regulator and rear quarter glass regulator.
• Air leak or wind noise from top of side glass — vehicles with a convertible top	• Gap between side rail and vinyl top • Seal at windshield header installed incorrectly • Seal damaged between side rail and vinyl top • Vinyl top damaged	• ADD additional foam tape to seal between side rail and vinyl top. • REINSTALL a seal. • INSTALL a new seal. • INSPECT vinyl top. INSTALL a new vinyl top as necessary. REFER to Section 501-18.
• Air leak or wind noise at windshield header — vehicles with a convertible top	• Vinyl top not flush with header • Seal at windshield header installed incorrectly • Header seal not flush with header	• ADJUST J-hook to lower the top to achieve a flush condition. • REINSTALL seal.
• Convertible top flapping with the top up	• Vinyl top contacting interior headliner	• Working from front to back, INSTALL a 6.35 mm (0.25 in) foam sheet between headliner and vinyl top at suspected area. Allow a clearance of 50 mm (2 in) 75 mm (3 in) away from roof bows and side rails.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart — Noise, Vibration and Harshness (NVH) (Continued)

Condition	Possible Sources	Action
• Wind noise from bug shield/exterior windshield sun visor	• Turbulence created by location and shape	• DETERMINE if an OEM part or aftermarket. If aftermarket ADVISE customer accordingly. If OEM, VERIFY correctly installed. If noise is abnormal repair or INSTALL a new as required.

SPECIFICATIONS

Torque Specifications

Description	Nm	lb-ft	lb-in
Fender bolts/nuts	11	—	97
Hood hinge-to-body bolts	22	16	—

Torque Specifications (Continued)

Description	Nm	lb-ft	lb-in
Hood hinge-to-hood bolts	22	16	—
Hood striker bolts	12	—	106
Wiper pivot arm nuts	28	21	—

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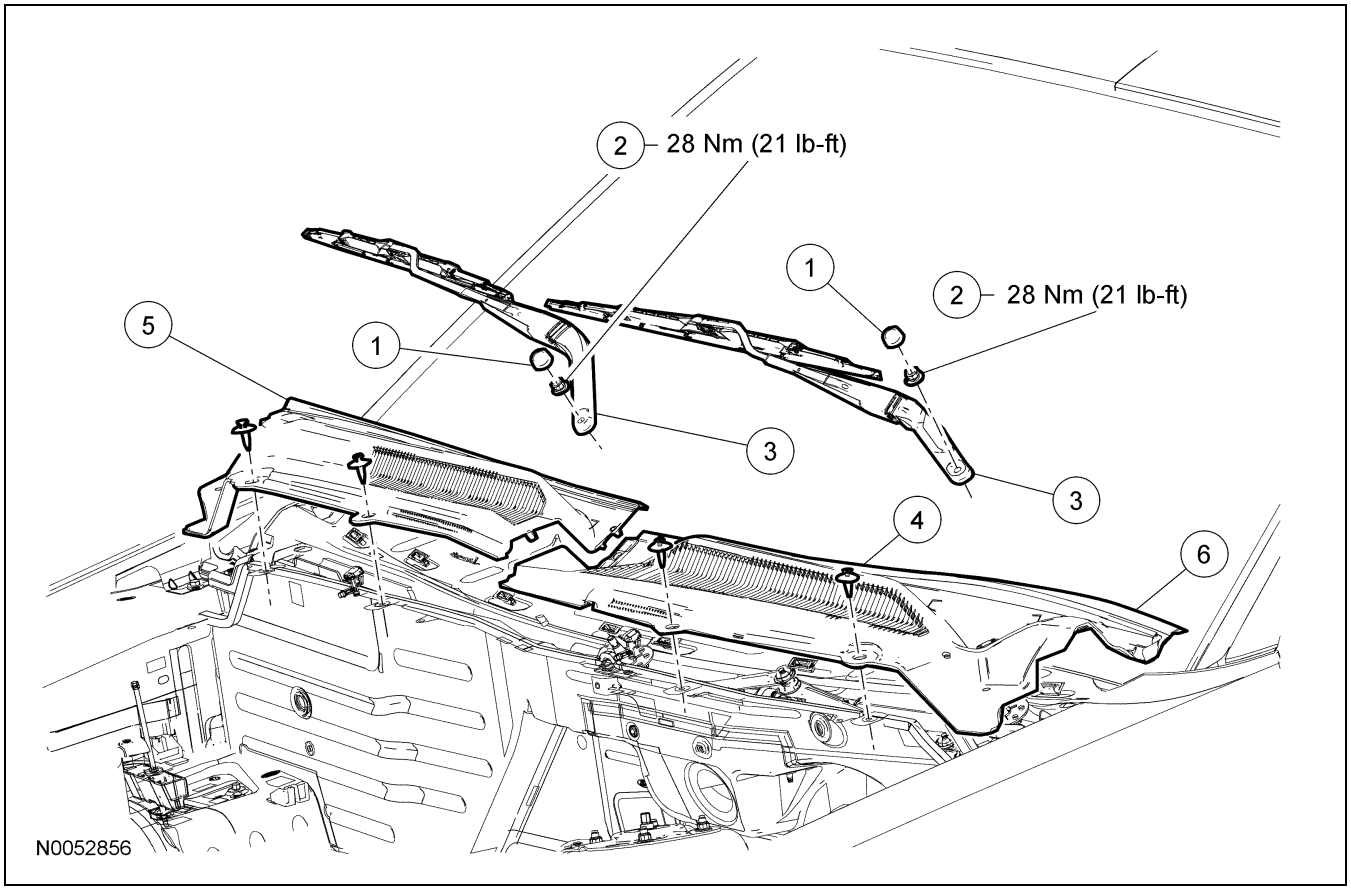
REMOVAL AND INSTALLATION

Cowl Vent Screen



Item	Part Number	Description
1	17D515	Wiper pivot arm nut covers (2 required)
2	W706109	Wiper pivot arm nuts (2 required)
3	175261/17527	Wiper pivot arms
4	N804837	Cowl vent screen pin-type retainer (4 required)
5	63018A14	RH cowl vent screen
6	63018A15	LH cowl vent screen

1. Remove the 2 wiper pivot arms. For additional information, refer to Section 501-16.
2. Remove the 4 cowl vent screen pin-type retainers.
3. **NOTE:** The RH cowl vent screen overlaps the LH cowl vent screen and must be removed first.

   Remove the RH and LH cowl vent screens.
4. To install, reverse the removal procedure.

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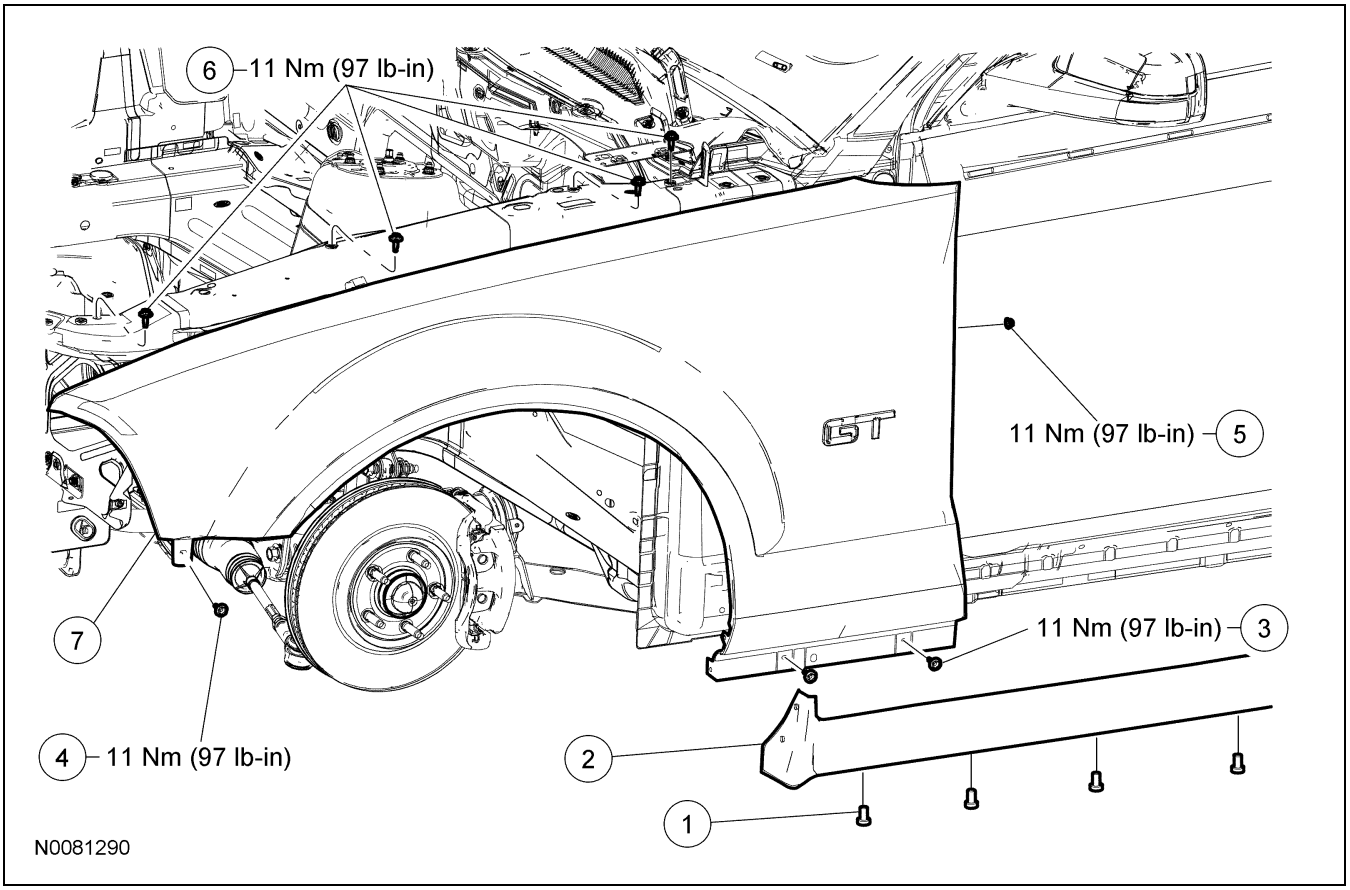
REMOVAL AND INSTALLATION

Fender



Item	Part Number	Description
1	39001B	Rocker panel pin-type retainer (4 required)
2	6310155	Rocker panel
3	W505421	Fender bolt (lower) (2 required)
4	W505421	Fender bolt
5	W711652	Fender support nut
6	W505421	Fender bolts (top) (4 required)
7	16015	Fender

Removal and Installation

Both fenders

1. Remove the front bumper cover. For additional information, refer to Section 501-19.
2. Remove the fender splash shield. For additional information, refer to Fender Splash Shield in this section.
3. Remove the 4 front rocker panel pin-type retainers and position the rocker panel aside.
4. Remove the 2 lower fender bolts.
   - To install, tighten to 11 Nm (97 lb-in).
5. Remove the fender bolt.

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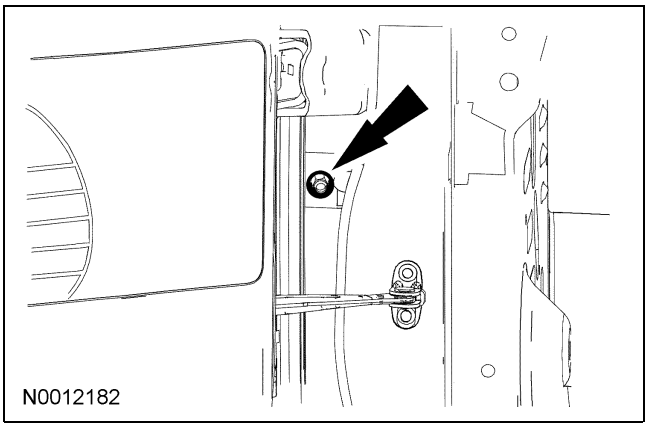
REMOVAL AND INSTALLATION (Continued)

6. Remove the fender support nut through the door opening.
   - To install, tighten to 11 Nm (97 lb-in).



Right fender

7. Disconnect the antenna lead-in cable. For additional information, refer to Section 415-00.

8. Disconnect the hood ajar switch.

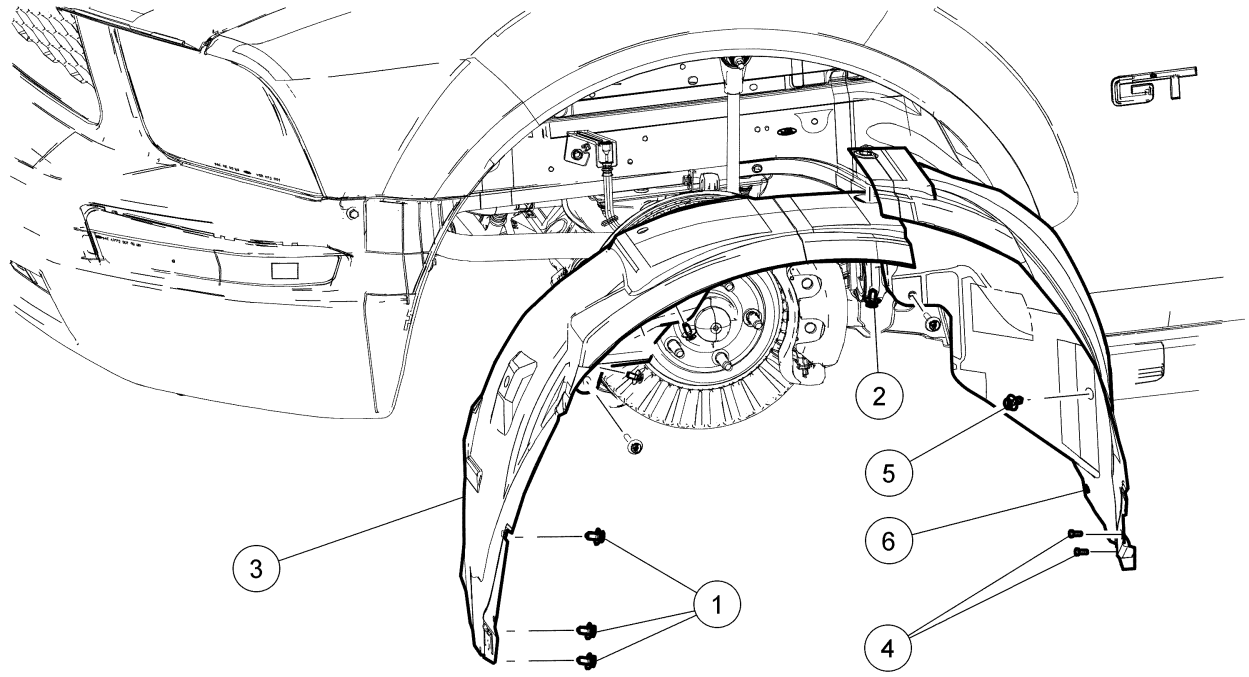
Both fenders

9. Remove the 4 top fender bolts and the fender.
   - To install, tighten to 11 Nm (97 lb-in).

10. To install, reverse the removal procedure.

REMOVAL AND INSTALLATION

Fender Splash Shield



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Item	Part Number	Description
1	W706805	Fender splash shield screws (3 required)
2	16K194	Fender splash shield pin-type retainer (front) (5 required)
3	16B568	Fender splash shield (front)
4	W709176	Rocker panel pin-type retainers (2 required)
5	16K194	Fender splash shield pin-type retainer (rear) (2 required)
6	16B568	Fender splash shield (rear)

Removal and Installation

1. Remove the 3 front fender splash shield screws.
2. Remove the 5 pin-type retainers and the front fender splash shield.
3. Remove the 2 pin-type retainers and position the rocker panel aside.
4. Remove the 2 pin-type retainers and the rear fender splash shield.
5. To install, reverse the removal procedure.

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SPECIFICATIONS

Material

Item	Specification	Fill Capacity
Multi-Purpose Grease XG-4 and/or XL-5	ESB-M1C93-B	—
Premium Long-Life Grease XG-1-C or XG-1-K (US); CXG-1-C (Canada)	ESA-M1C75-B	—
Silicone Spray Lubricant XL-6	ESR-M13P4-A	—

Torque Specifications

Description	Nm	lb-ft	lb-in
Door check arm bolts	9	—	80
Door check arm nuts	9	—	80
Door latch striker plate bolts	25	18	—
Front door hinge-to-body bolts	30	22	—
Front door hinge-to-front door bolts	30	22	—
Front door hinge-to-body nut	30	22	—
Luggage compartment lid hinge bolts	23	17	—
Luggage compartment lid hinge nuts	12	9	—

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GENERAL PROCEDURES

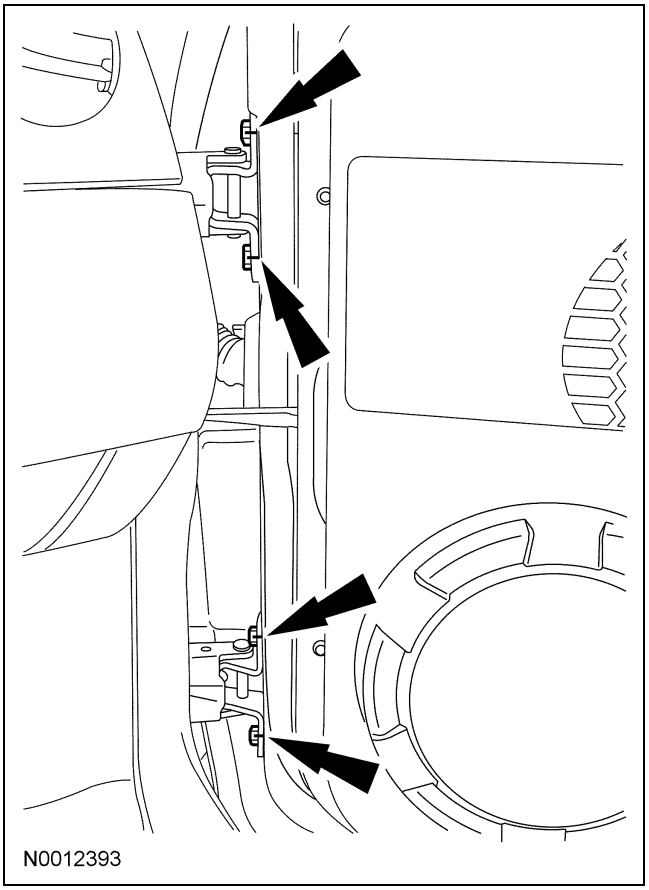
Door Alignment

All adjustments

1. Remove the door latch striker.

Horizontal and vertical adjustment

2. Loosen the front door hinge-to-front door bolts.



3. Adjust the front door. For additional information, refer to Section 501-35.

4. Tighten the front door hinge-to-front door bolts to 30 Nm (22 lb-ft).

Fore and aft adjustment

5. Remove the front fender. For additional information, refer to Section 501-02.

6. Loosen the door hinge-to-body bolts.

7. Adjust the front door. For additional information, refer to Section 501-35.

8. Tighten the front door hinge-to-body bolts to 30 Nm (22 lb-ft).

9. Install the front fender. For additional information, refer to Section 501-02.

All adjustments

10. Install the front door latch striker.
    - Tighten to 25 Nm (18 lb-ft).

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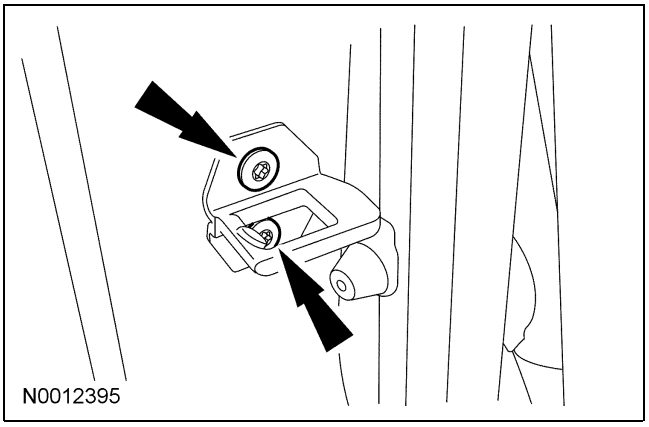
GENERAL PROCEDURES

Striker Adjustment

NOTE: After adjusting the door latch striker plate, verify the door can be closed easily and fits tightly.

1. Loosen the door latch striker plate bolts.



2. Reposition the door latch striker plate from side to side or up and down as necessary.
3. Tighten the 2 door latch striker plate bolts.
   - Tighten to 25 Nm (18 lb-ft).
4. Check the adjustment. For additional information, refer to Section 501-35. Repeat the procedure as necessary.

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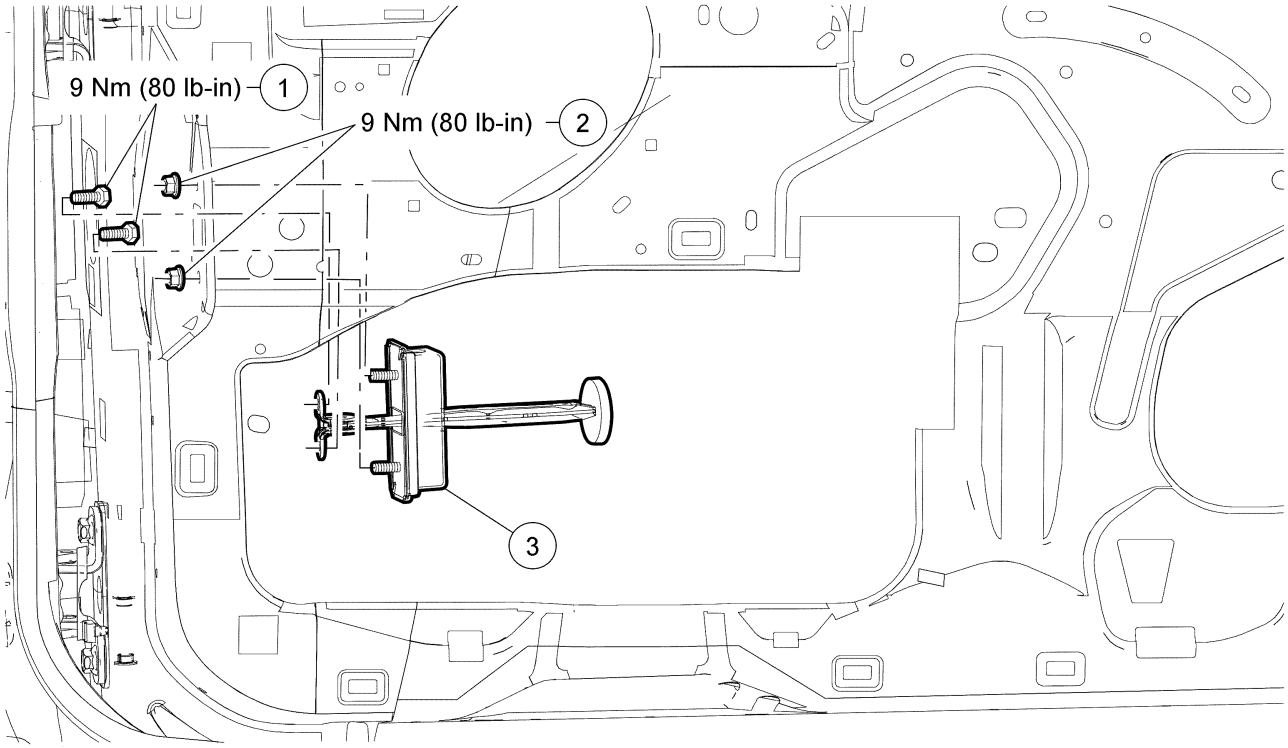
REMOVAL AND INSTALLATION

Door Check Arm



Item	Part Number	Description
1	56912	Door check arm bolts (2 required)
2	W705436	Door check arm nuts (2 required)
3	23500	Door check arm

Removal and Installation

1. Remove the front door trim panel. For additional information, refer to Section 501-05.
2. Remove the door check arm bolts.
   - To install, tighten to 9 Nm (80 lb-in).
3. Remove the nuts and the door check arm.
   - To install, tighten to 9 Nm (80 lb-in).
4. To install, reverse the removal procedure.

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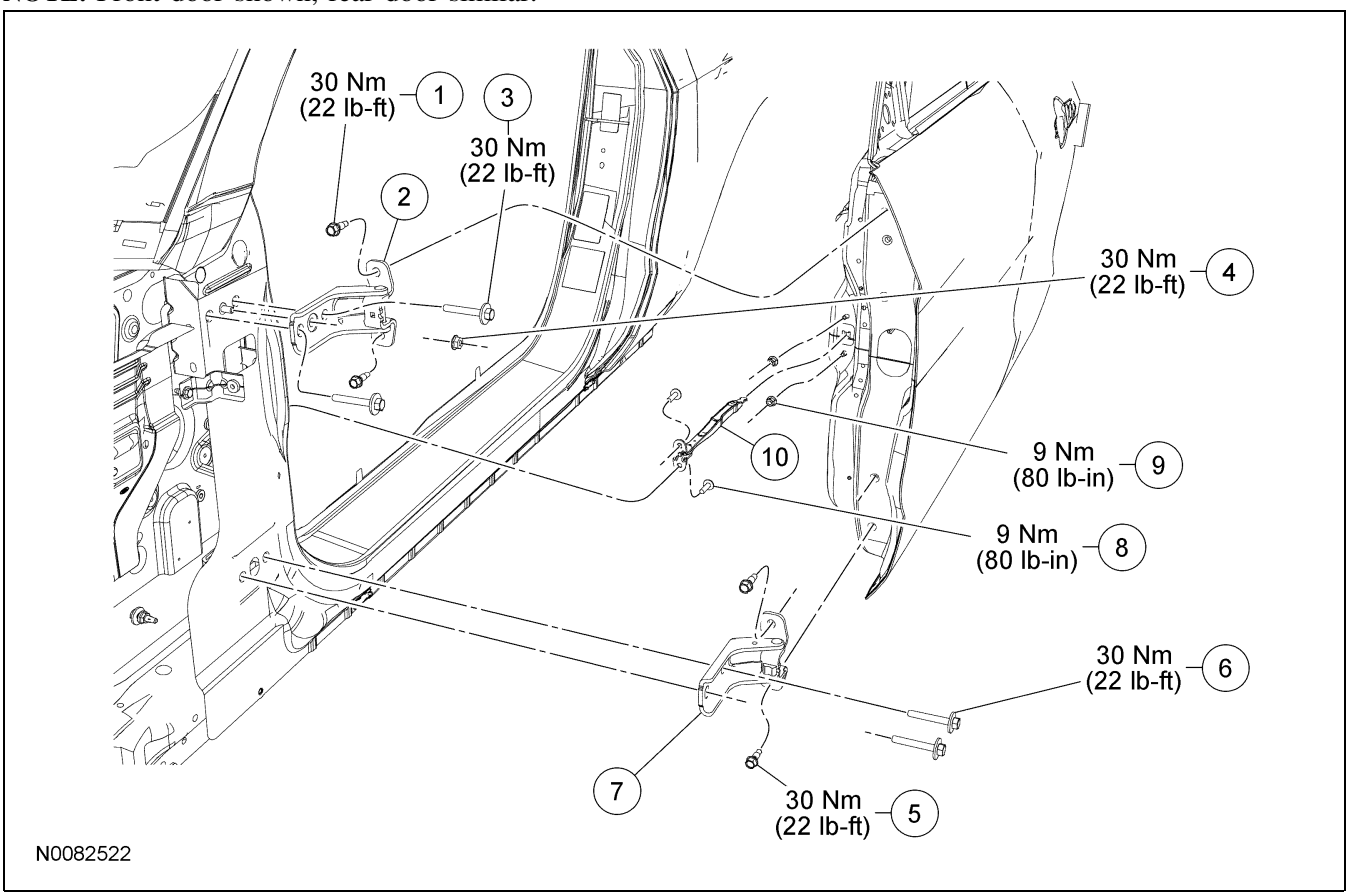
REMOVAL AND INSTALLATION

Door

NOTE: Front door shown, rear door similar.



Item	Part Number	Description
1	W710941	Front door hinge-to-door bolts
2	6322800	Front door upper hinge
3	W706289	Front door hinge-to-body bolts
4	W520111	Front door hinge-to-body nut
5	W710941	Front door hinge-to-door bolts
6	W706289	Front door hinge-to-body bolts
7	6322810	Front door lower hinge
8	W706897	Door check arm bolt
9	W520111	Door check arm nut
10	6323552	Door check arm

Removal and Installation

1. Remove the door check arm bolts.
   - To install, tighten to 9 Nm (80 lb-in).
2. **CAUTION: To minimize the possibility of cross threading, hand start all fasteners during the installation.**

   CAUTION: To avoid damaging the door, this step requires the help of an assistant.

   Mark the position of each hinge and remove the hinge-to-door bolts.
   - To install, tighten to 30 Nm (22 lb-ft).
3. Disconnect the door electrical connector at the A-pillar.
4. Remove the front door.

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REMOVAL AND INSTALLATION (Continued)

5. To install, reverse the removal procedure.
   - If necessary, align the door. For additional information, refer to Door Alignment in this section.

SPECIFICATIONS

Torque Specifications

Description	Nm	lb-ft
Lower front safety belt anchor bolt	40	30

Torque Specifications (Continued)

Description	Nm	lb-ft
Upper front safety belt anchor bolt	48	35

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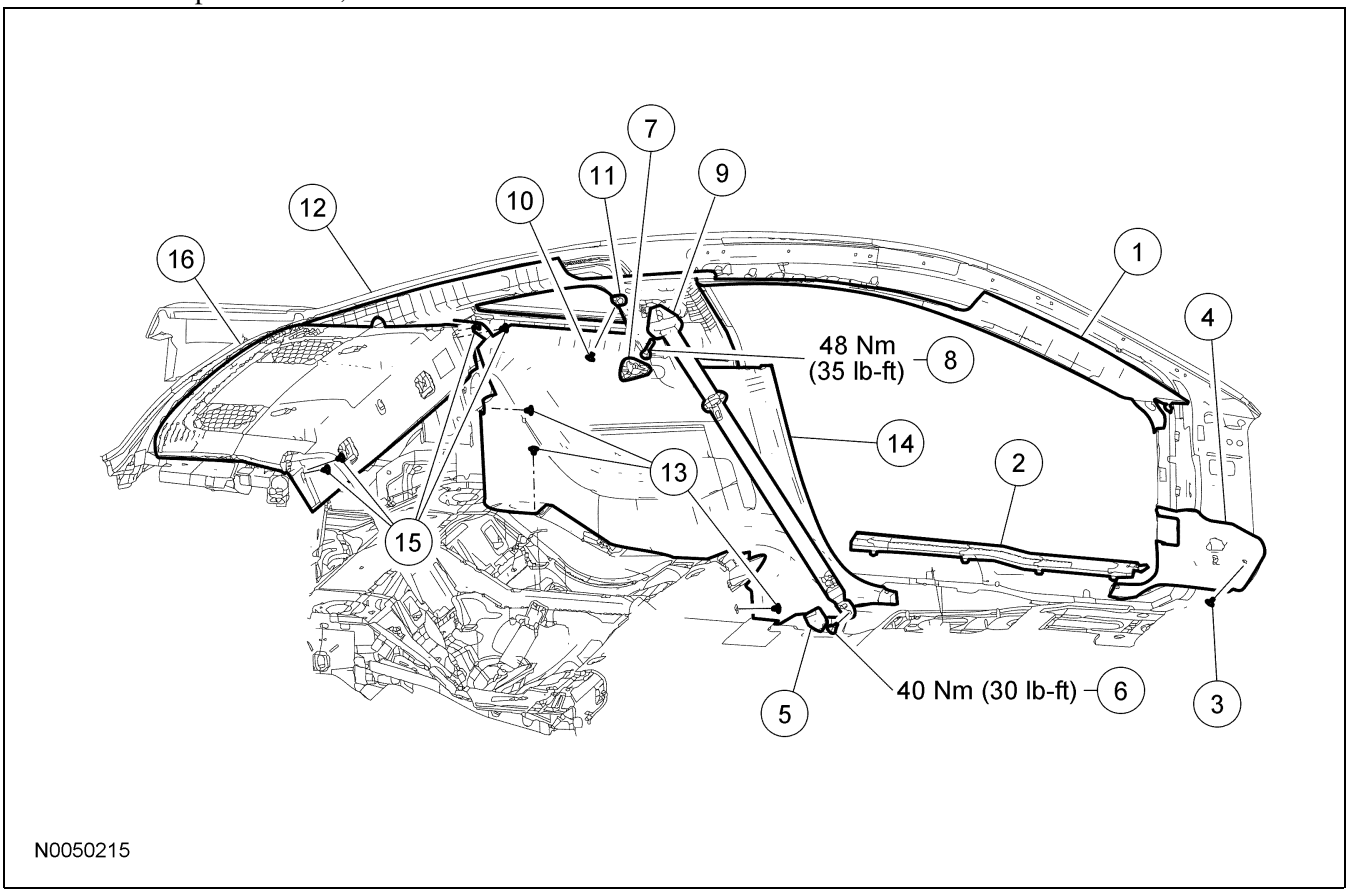
REMOVAL AND INSTALLATION

Interior Trim — Exploded View

NOTE: The coupe is shown, the convertible is similar.



Item	Part Number	Description
1	03598 RH/ 03599 LH	A-pillar trim panel
2	13208 RH/ 13209 LH	Door scuff plate
3	390018	A-pillar lower trim panel pin-type retainer
4	02344 RH/ 02345 LH	A-pillar lower trim panel
5	—	Lower front safety belt anchor bolt cover (part of 6311B08-A)
6	—	Lower front safety belt anchor bolt (part of 6311B08-A)
7	—	Upper front safety belt anchor bolt cover (part of 6311B08-A)

(Continued)

Item	Part Number	Description
8	—	Upper front safety belt anchor bolt (part of 6311B08-A)
9	6311B08	Front safety belt assembly
10	W505956	Coat hook bolt
11	29024	Coat hook
12	51986 RH/ 51987 LH	Quarter window trim panel
13	W706544	Quarter trim panel pin-type retainer (3 required)
14	31012 RH/ 31013 LH	Quarter trim panel
15	54403	Parcel shelf pin-type retainers (4 required)
16	6346668	Parcel shelf

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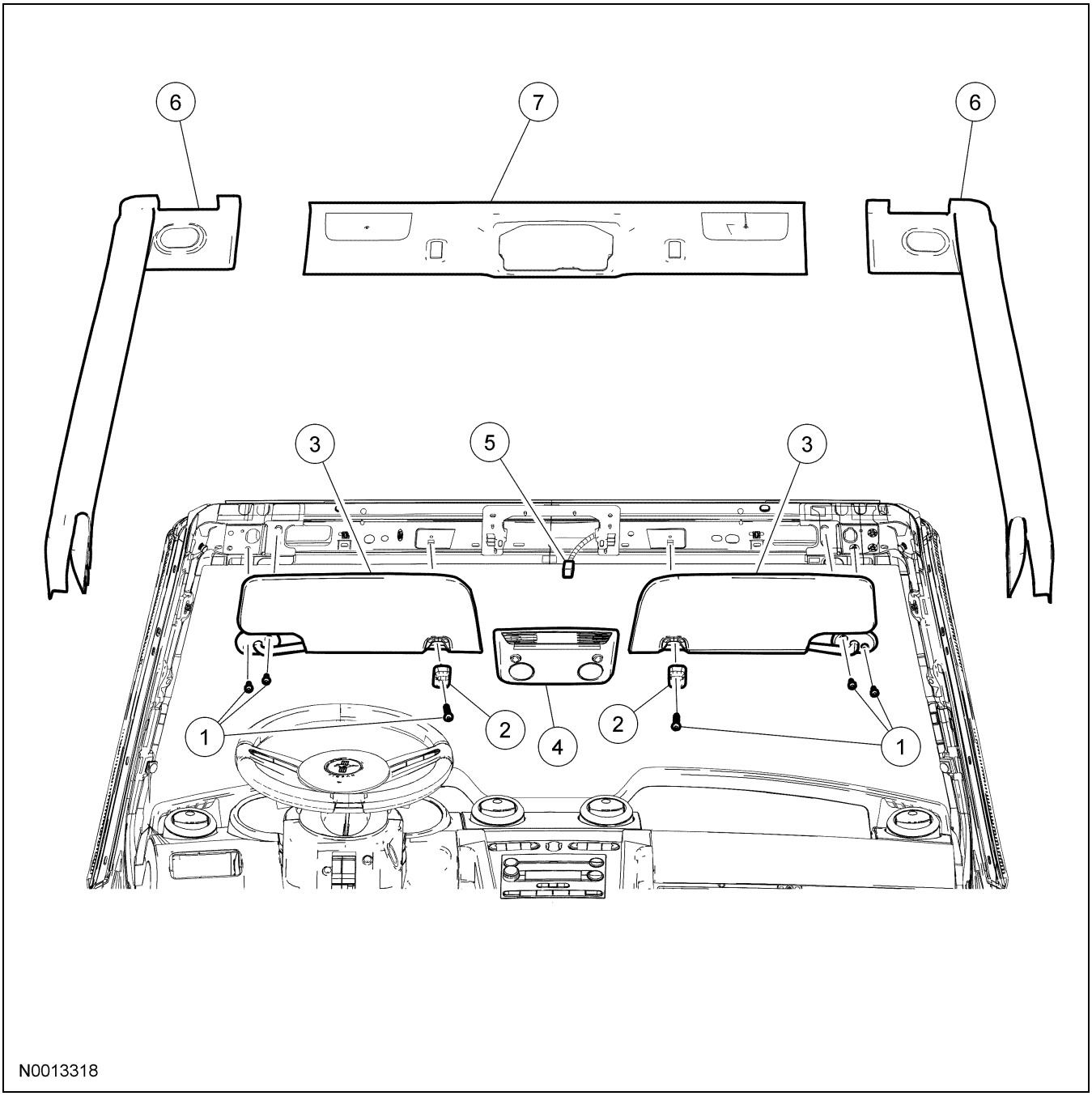
REMOVAL AND INSTALLATION (Continued)

1. For additional information, refer to the procedures in this section.

REMOVAL AND INSTALLATION

A-Pillar Trim Panel



Item	Part Number	Description
1	N806664	Sun visor screws/sun visor arm clip screws (6 required)
2	04132	Sun visor arm clips (2 required)
3	4104 RH/ 4105 LH	Sun visors (2 required)

(Continued)

Item	Part Number	Description
4	519A58	Overhead console
5	—	Overhead console electrical connector (part of 14A464)
6	030A64	A-pillar trim panel (2 required) (RH/LH)
7	51916	Header trim panel

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REMOVAL AND INSTALLATION (Continued)

Removal and Installation

NOTE: If removing the header trim panel, remove the 2 A-pillar trim panels.

1. Remove the 2 sun visor screws and the sun visor.
2. Remove the A-pillar trim panel.
3. If necessary, remove the overhead console.
   - Disconnect the electrical connector.
4. If necessary, remove the 2 screws and the 2 sun visor arm clips.
5. If necessary, remove the header trim panel.
6. To install, reverse the removal procedure.

REMOVAL AND INSTALLATION

Quarter Window Trim Panel

Removal and Installation

1. **NOTE:** On the coupe, install the front locating hook, then snap the A-pillar trim panel in place working rearward.

   Remove the 2 A-pillar trim panels.

2. Remove the rear quarter trim panel. For additional information, refer to Quarter Trim Panel — Coupe in this section.

3. Open the coat hook cover. Remove the bolt and coat hook.

4. Remove the upper front safety belt anchor bolt cover and bolt.

   - To install, tighten to 48 Nm (35 lb-ft).

5. Remove the quarter window trim panel.

6. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

Quarter Trim Panel — Coupe

Removal and Installation

1. Remove the door scuff plate.
2. Remove the quarter trim panel lower pin-type retainer.
3. Fold the rear seat forward, remove the 2 pin-type retainers and the rear quarter trim panel.
4. To install, reverse the removal procedure.

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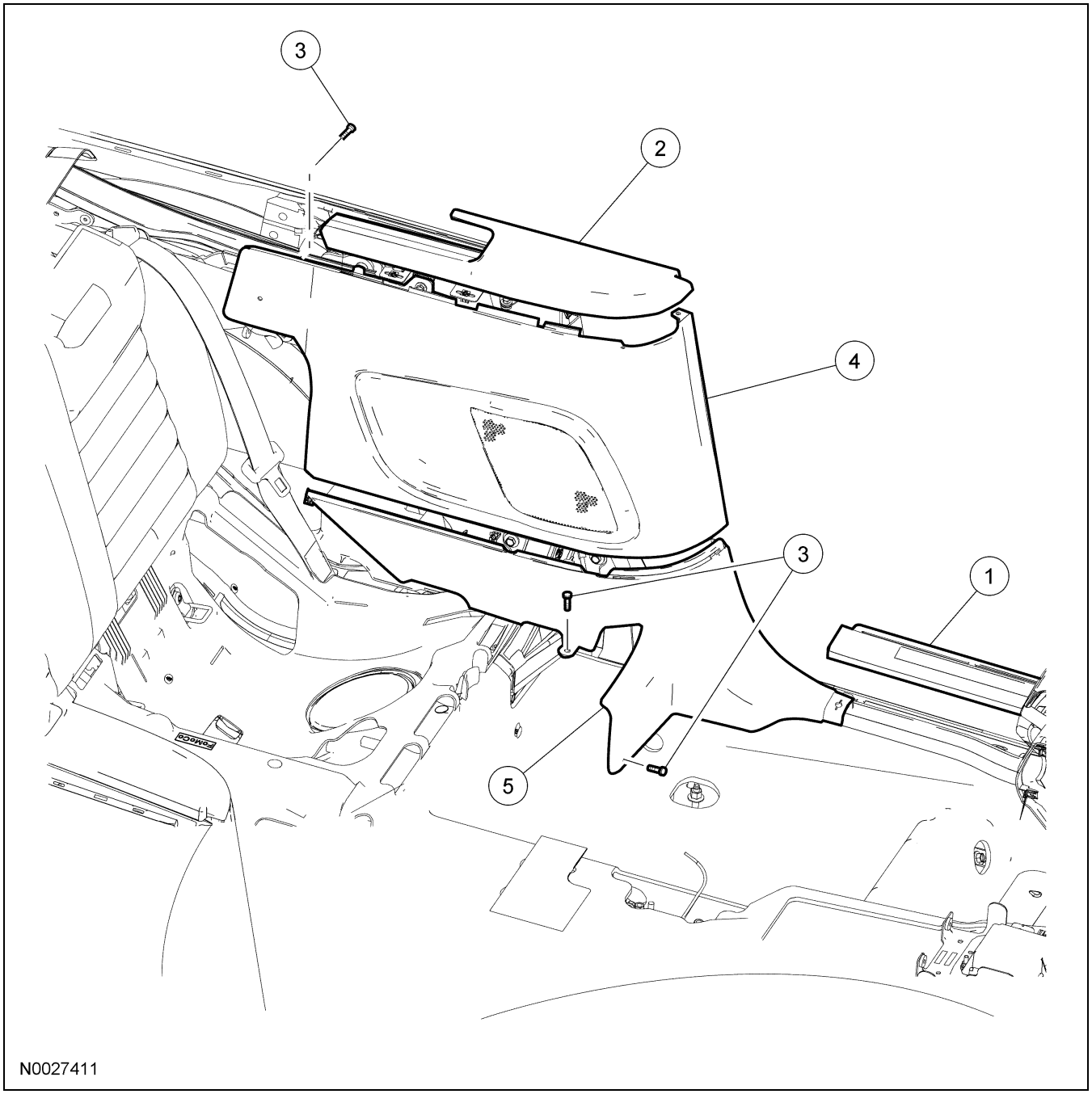
REMOVAL AND INSTALLATION

Quarter Trim Panel — Convertible



Item	Part Number	Description
1	13208 RH/ 13209 LH	Door scuff plate
2	31004 RH/ 31005 LH	Upper quarter trim panel cap
3	390018	Quarter trim panel pin-type retainers (3 required)

(Continued)

Item	Part Number	Description
4	31112 RH/ 31113 LH	Upper quarter trim panel
5	31012 RH/ 31013 LH	Lower quarter trim panel

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REMOVAL AND INSTALLATION (Continued)

Removal and Installation

NOTE: This procedure must be performed with the roof up, in order to access the retainers.

1. Remove the door scuff plate.
2. Remove the upper quarter trim panel cap.
3. Remove the rear seat cushion. For additional information, refer to Section 501-10.
4. Remove the pin-type retainer and the upper quarter trim panel.
5. Remove the 2 pin-type retainers and the lower quarter trim panel.
6. To install, reverse the removal procedure.

REMOVAL AND INSTALLATION

Parcel Shelf

Removal and Installation

1. Remove the quarter window trim panel. For additional information, refer to Quarter Window Trim Panel in this section.
2. Remove the 4 parcel shelf pin-type retainers.
3. Position the 2 rear seat belts aside and remove the parcel shelf.
4. To install, reverse the removal procedure.

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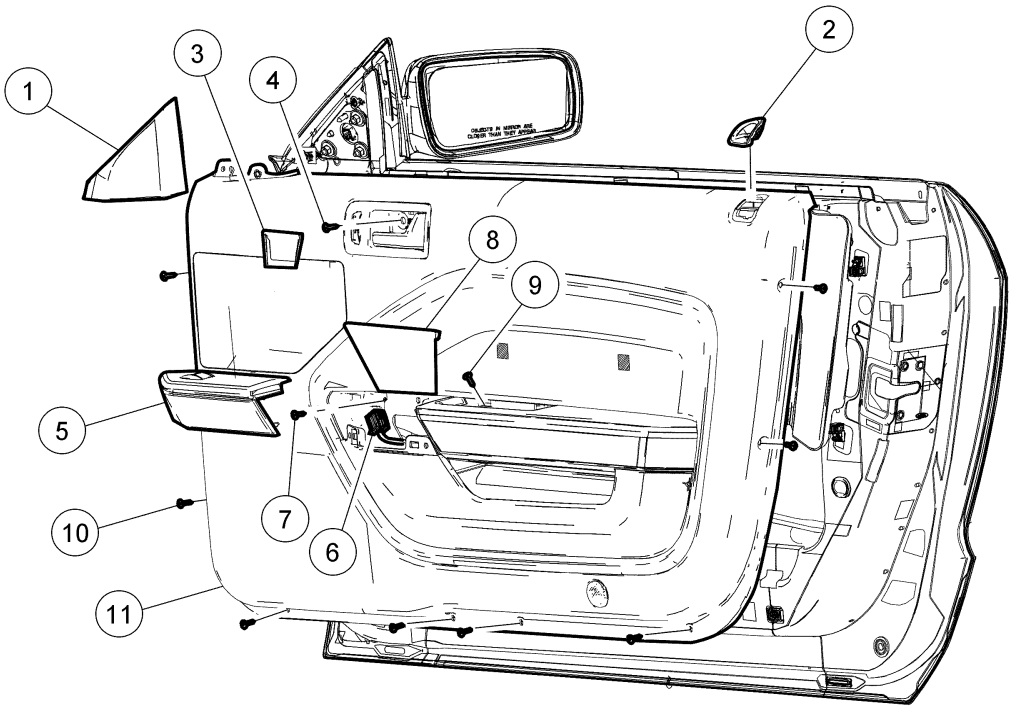
REMOVAL AND INSTALLATION

Door Trim Panel



N0050216

Item	Part Number	Description
1	17D698 RH/ 17D699 LH	Sail panel
2	21999	Door lock control knob bezel (RH/LH)
3	22620 RH/ 22621 LH	Interior door handle cover
4	N807780	Door trim panel bolt
5	14527 RH/ 14528 LH	Window control switch housing
6	—	Window control switch electrical connector
7	W709996	Door trim panel screw
8	6320456 RH/ 6320457 LH	Door trim panel handle cover
9	N807780	Door trim panel bolt
10	W709996	Door trim panel screw (8 required)
11	23942 RH/ 23943 LH	Door trim panel

Removal and Installation

1. Remove the sail panel.
   - If equipped, disconnect the exterior mirror control switch electrical connector.
2. Remove the interior door handle cover and the door trim panel bolt.
3. Remove the window control switch housing.
   - Disconnect the electrical connector.
4. Remove the door trim panel center screw.
5. Remove the door trim panel handle cover and the door trim panel bolt.

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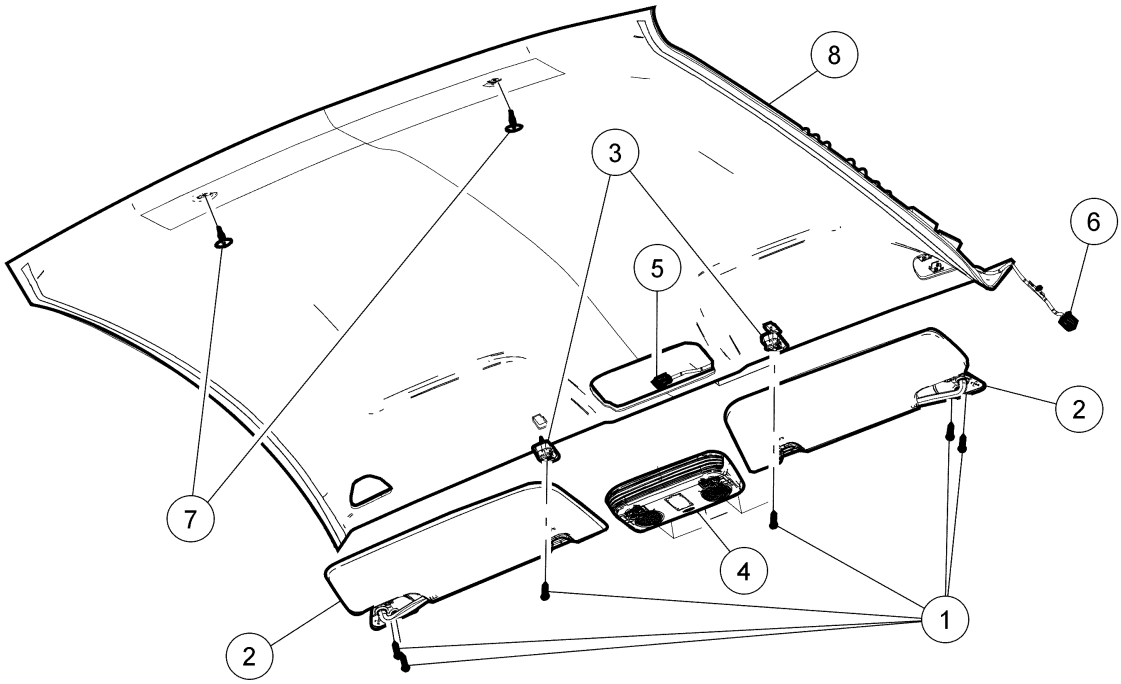
REMOVAL AND INSTALLATION (Continued)

6. Remove the 8 outer door trim panel screws and the door trim panel.
   - Disconnect the interior door handle actuating cable.
   - If equipped, disconnect the subwoofer electrical connector.
7. To install, reverse the removal procedure.

REMOVAL AND INSTALLATION

Headliner



N0050217

Item	Part Number	Description
1	N806664	Sun visor screws/sun visor arm clip screws (6 required)
2	6304104 RH/ 6304105 LH	Sun visors (2 required)
3	6304132	Sun visor arm clips (2 required)
4	519A58	Overhead console
5	—	Overhead console electrical connector (part of 14A464)
6	—	Headliner electrical connector (part of 14484)
7	W709950	Headliner pin-type retainers (2 required)
8	6351916	Headliner

Removal and Installation

1. Remove the quarter window trim panel. For additional information, refer to Quarter Window Trim Panel in this section.
2. Remove the 6 sun visor screws, the 2 sun visors, and the 2 sun visor arm clips.
3. Remove the overhead console.
   - Disconnect the electrical connector.
4. Remove the 2 headliner pin-type retainers.
5. Disconnect the headliner electrical connector and remove the headliner.

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REMOVAL AND INSTALLATION (Continued)

6. **NOTE:** A new headliner will need to be installed if the headliner is folded during removal or installation.

   To install, reverse the removal procedure.

SPECIFICATIONS

Material

Item	Specification	Fill Capacity
Dow Urethane Adhesive Betaseal® Express	—	—
Dow Urethane One Step Glass Primer Betaprime® 5500 / 5500A / 5500SA	—	—
Sika Urethane Adhesive Sika Tack ASAP	—	—

(Continued)

Material

Item	Specification	Fill Capacity
Sika Urethane Metal and Glass Primer Sika 206 G+P	—	—
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A	—

Torque Specifications

Description	Nm	lb-in
Rear spoiler nuts	5	44

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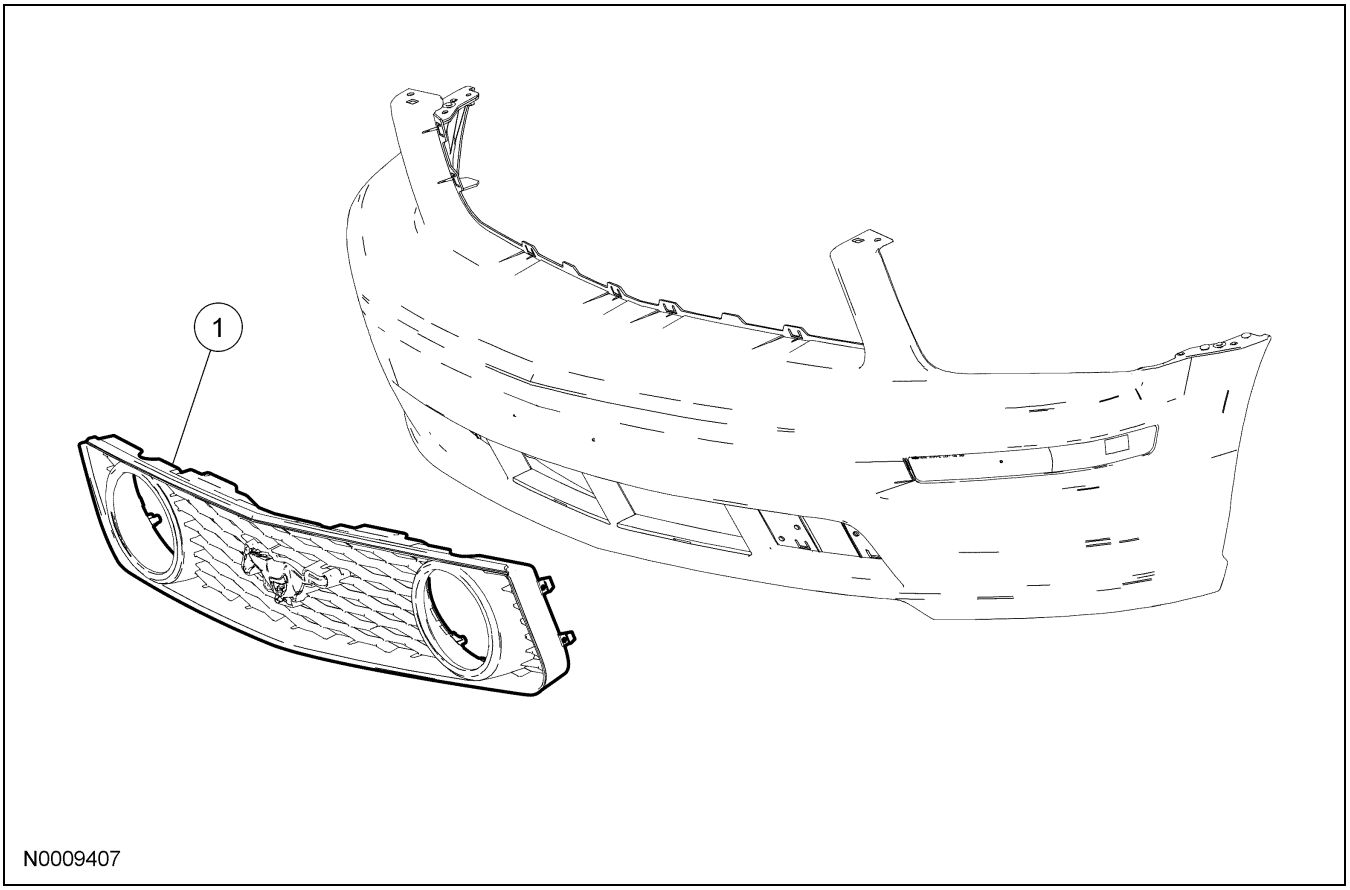
REMOVAL AND INSTALLATION

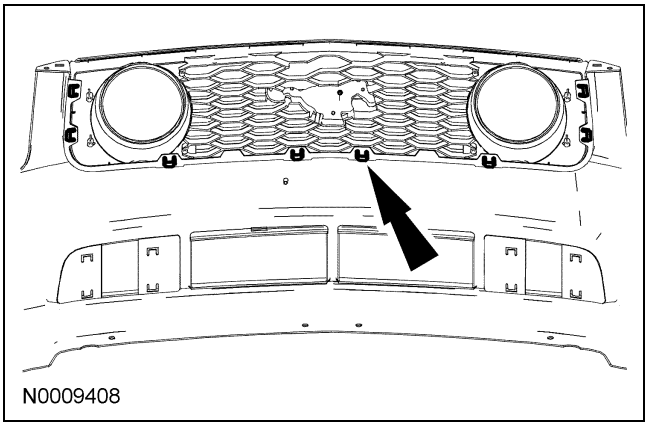
Radiator Grille



Item	Part Number	Description
1	8200	Radiator grille

Removal and Installation

1. Remove the front bumper cover. For additional information, refer to Section 501-19.
2. Release the radiator grille retaining clips from the front bumper cover and remove the radiator grille.



3. To install, reverse the removal procedure.

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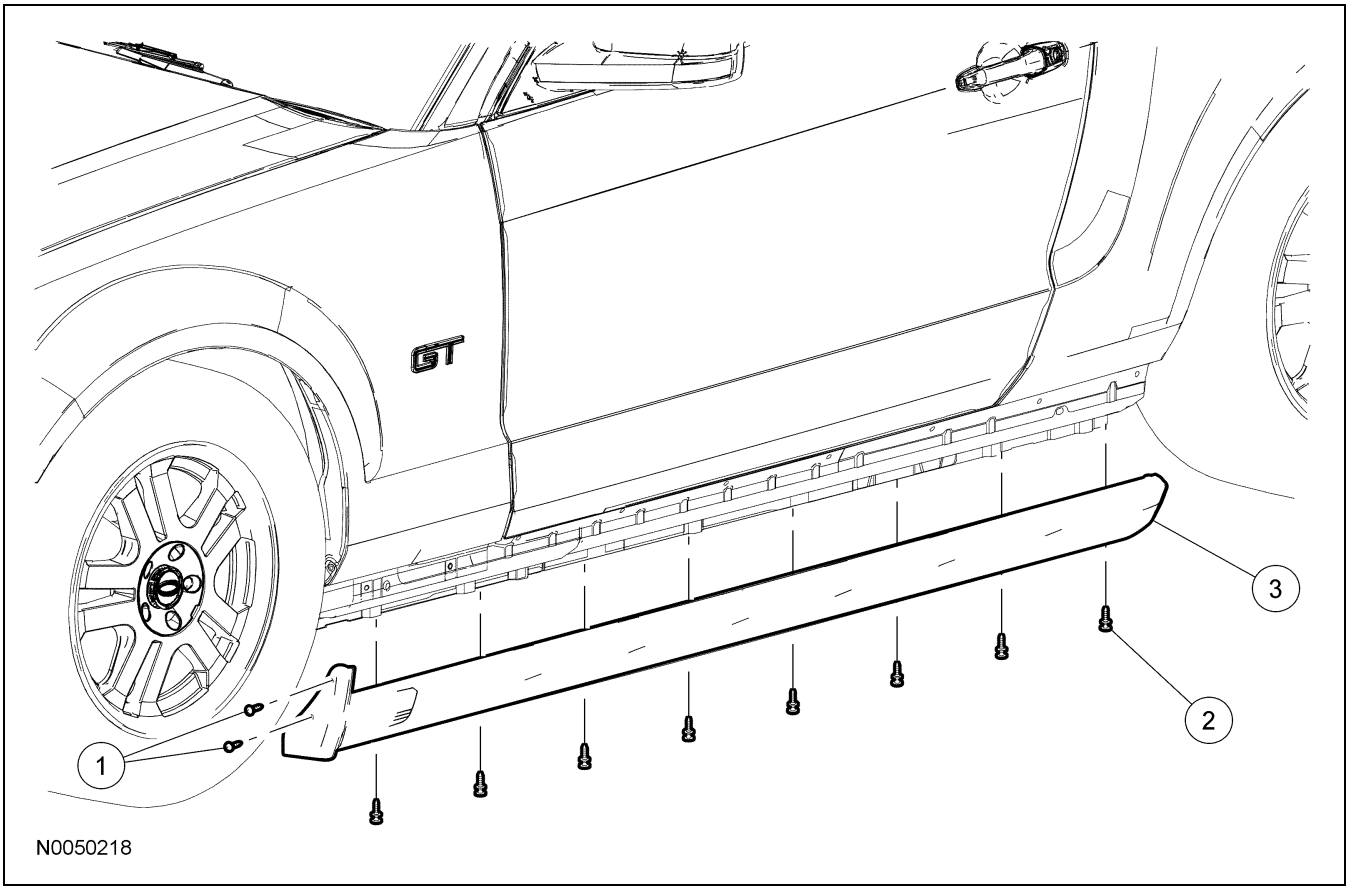
REMOVAL AND INSTALLATION

Rocker Panel Moulding



Item	Part Number	Description
1	W709176-S	Front rocker panel-to-fender pin-type retainers (2 required each side)
2	403D24	Rocker panel moulding pin-type retainer (8 required each side)
3	6310154 RH/ 6310155 LH	Rocker panel moulding

Removal and Installation

1. Remove the 2 front rocker panel moulding-to-fender pin-type retainers.
2. Remove the 8 rocker panel pin-type retainers.
3. Using a suitable tool, release the 8 hidden pin-type retainers and remove the rocker panel moulding.
4. To install, reverse the removal procedure.

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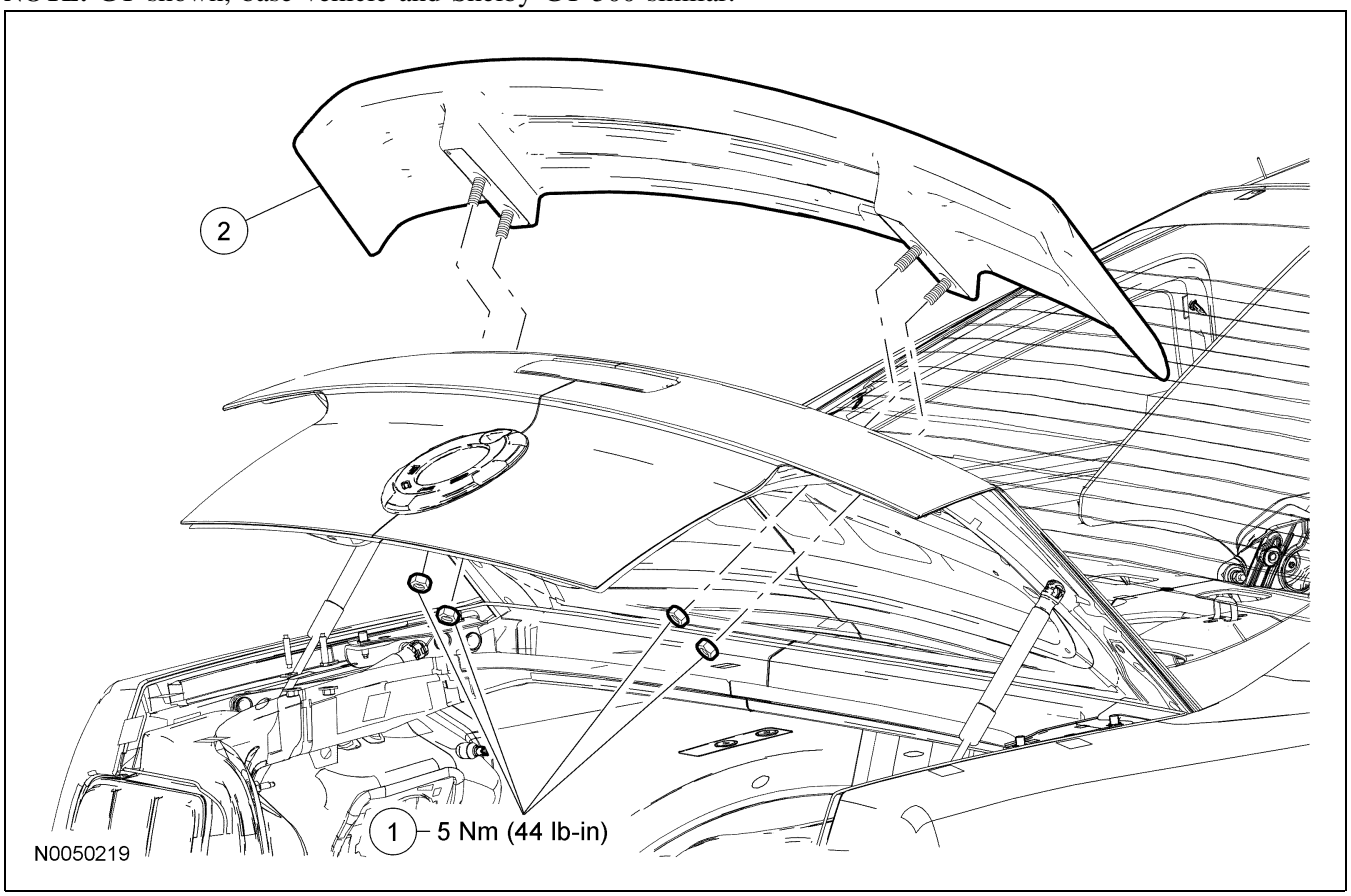
REMOVAL AND INSTALLATION

Spoiler — Rear

NOTE: GT shown, base vehicle and Shelby GT 500 similar.



Item	Part Number	Description
1	W702147-S	Rear spoiler nuts (4 required)
2	6341602	Rear spoiler

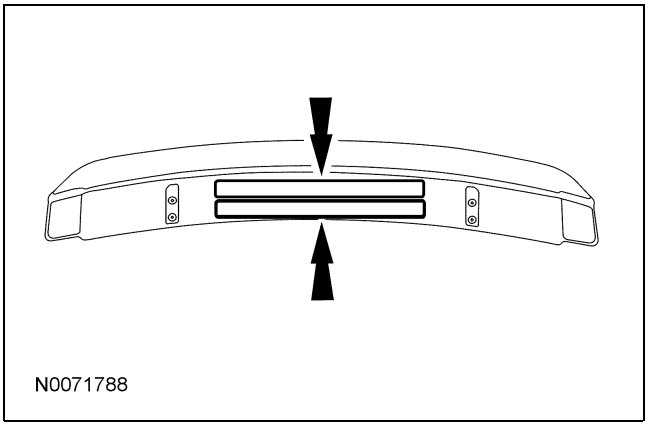
Removal

1. Remove the 4 nuts and remove the rear spoiler.

Installation

Base vehicle and Shelby GT 500

1. Clean the surfaces.
2. Apply double-sided tape to the rear spoiler as shown.



All vehicles

3. Install the rear spoiler.
4. Install the 4 mounting nuts.
   - Tighten to 5 Nm (44 lb-in).

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SPECIFICATIONS

Torque Specifications

Description	Nm	lb-in
Exterior mirror motor screws	7	62

Torque Specifications (Continued)

Description	Nm	lb-in
Exterior mirror mounting nuts	9	80

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DESCRIPTION AND OPERATION

Rear View Mirrors

Exterior Rear View Mirrors

The main components of the exterior rear view mirrors are the following:

- Manually adjusted exterior mirror glass
- Power adjusted exterior mirror glass (optional)
- Exterior mirror glass adjustment motors (optional — power exterior mirrors only)
- Exterior mirror plastic housing

Power Exterior Mirrors

Power mirrors allow the LH or RH exterior mirror glass to be positioned electronically. The position of the exterior mirror glass is controlled by the exterior mirror control switch, which is located on the LH front door trim panel. Adjusting the exterior mirror control switch to the LH or RH position determines which exterior mirror glass will be controlled.

Interior Rear View Mirror

The interior rear view mirror can be equipped with one of the following:

- Interior rear view mirror
- Interior auto-dimming rear view mirror (optional)

Interior Auto-Dimming Rear View Mirror

The interior auto-dimming rear view mirror feature automatically reduces the glare caused by headlamps reflecting in the interior rear view mirror. The interior auto-dimming rear view mirror adjusts the reflectance level of the interior rear view mirror glass to eliminate unwanted glare. The reflectance level of the mirror glass is variable and depends on the amount of rear glare in relation to ambient light conditions in front of the interior mirror. To provide increased visibility when backing up, the interior rear view mirror will automatically return to a high reflectance mode whenever the vehicle is in REVERSE.

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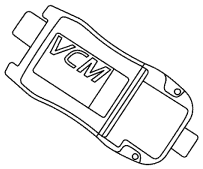
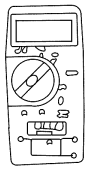
DIAGNOSIS AND TESTING

Rear View Mirrors

Special Tool(s)

 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool
 ST1137-A	73III Automotive Meter 105-R0057 or equivalent

Principles of Operation

Exterior Rear View Mirrors

NOTE: The smart junction box (SJB) may also be identified as the generic electronic module (GEM).

The exterior mirror control switch controls the movement of the LH and RH exterior mirror motors and glass. Adjusting the exterior rear view mirror control switch to the LH or RH position determines which power mirror glass will be controlled. Power is supplied to the exterior mirror switch from the SJB.

Interior Auto-Dimming Rear View Mirror

The interior auto-dimming rear view mirror feature automatically reduces the glare caused by headlamps reflecting in the interior rear view mirror. Power is supplied to the interior auto-dimming mirror when the ignition is in the RUN position or the accessory delay is active. When the vehicle is in the REVERSE position, voltage is sent to the interior auto-dimming mirror from the SJB to disable the auto-dimming mirror feature.

The interior auto-dimming rear view mirror has 2 photoelectric sensors that detect forward and rearward light conditions. Based on these inputs, the automatic dimming feature adjusts the reflectance level of the interior rear view mirror glass to eliminate unwanted glare. The reflectance level of the mirror glass is variable and depends on the amount of rear glare in relation to ambient light conditions in front of the interior mirror.

When the forward sensor detects daytime conditions, the rearward sensor is inactive and the interior rear view mirror stays in a high reflectance mode. When the forward sensor detects nighttime conditions, the rearward sensor is active and detects glare from the headlights of vehicles approaching from the rear or other glare-producing light sources. To provide increased visibility when backing up, the interior rear view mirror will automatically return to a high reflectance mode whenever the vehicle is in REVERSE.

If the forward or rearward sensors are blocked, the interior auto-dimming rear view mirror might not work correctly.

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Exterior mirror • Exterior mirror cover • Interior rear view mirror	• Smart junction box (SJB) fuse(s): — 4 (5A) — 7 (10A) • SJB • Exterior mirror control switch • Exterior mirror motor • Exterior mirror • Interior auto-dimming rear view mirror • Loose or corroded connections • Wiring harness

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **NOTE:** Make sure to use the latest scan tool software release.

   If the cause is not visually evident, connect the scan tool to the data link connector (DLC).

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DIAGNOSIS AND TESTING (Continued)

5. **NOTE:** The vehicle communication module (VCM) LED prove-out confirms power and ground from the DLC are provided to the VCM.

   If the scan tool does not communicate with the VCM:

   - check the VCM connection to the vehicle.
   - check the scan tool connection to the VCM.
   - refer to Section 418-00, No Power To The Scan Tool, to diagnose no communication with the scan tool.

6. If the scan tool does not communicate with the vehicle:

   - verify the ignition key is in the ON position.
   - verify the scan tool operation with a known good vehicle.
   - refer to Section 418-00 to diagnose no response from the SJB.

7. Carry out the network test.

   - If the scan tool responds with no communication from one or more modules, refer to Section 418-00.
   - If the network test passes, retrieve and record the continuous memory DTCs.

8. Clear the continuous DTCs and carry out the self-test diagnostics for the SJB.
9. If the DTCs retrieved are related to the concern, go to the Smart Junction Box (SJB) DTC Chart. For all other DTCs, refer to Section 419-10.
10. If no DTCs related to the concern are retrieved, GO to Symptom Chart — Rear View Mirrors or GO to Symptom Chart — Noise, Vibration and Harshness (NVH).

Smart Junction Box (SJB) DTC Chart

DTC	Description	Action
B2567	Reverse Mirror Output Circuit Failure	GO to Pinpoint Test D.
B2568	Reverse Mirror Output Circuit Short to Ground	GO to Pinpoint Test D.
All other DTCs	—	Refer to Section 419-10.

Symptom Chart — Rear View Mirrors

Symptom Chart — Rear View Mirrors

Condition	Possible Sources	Action
• The mirrors are inoperative	• Fuse • Circuitry • Exterior mirror control switch	• GO to Pinpoint Test A.
• A single mirror is inoperative	• Circuitry • Exterior mirror control switch • Exterior mirror motor • Exterior mirror	• GO to Pinpoint Test B.
• A single mirror does not function with switch logic	• Circuitry • Exterior mirror control switch • Exterior mirror motor • Exterior mirror	• GO to Pinpoint Test C.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart — Rear View Mirrors (Continued)

Condition	Possible Sources	Action
• The auto-dimming mirror does not operate correctly	• Obstructed rear-facing sensor — Stickers, window decals, tags — Non-OEM window tinting	• If possible, REMOVE the obstruction. If the obstruction cannot be removed, GO to Pinpoint Test D to test the interior auto-dimming mirror for correct function.
	• Obstructed forward-facing sensor — Stickers, window decals, tags — Non-OEM window tinting	
	• Light source near or inside of vehicle	• None. Any light source the rear-facing sensor is exposed to can be considered glare.
	• Vehicle inside garage or tunnel	• None. Ambient light conditions are similar to nighttime.
	• Fuse • Interior auto-dimming mirror • Circuitry	• GO to Pinpoint Test D.

Symptom Chart — Noise, Vibration and Harshness (NVH)

Symptom Chart — Noise, Vibration and Harshness (NVH)

NOTE: Noise, vibration and harshness (NVH) symptoms should be identified using the diagnostic tools that are available. For a list of these tools, an explanation of their uses and a glossary of common terms, refer to Section 100-04. Since it is possible any one of multiple systems may be the cause of a symptom, it may be necessary to use a process of elimination type of diagnostic approach to pinpoint the responsible system. If this is not the causal system for the symptom, refer back to Section 100-04 for the next likely system and continue diagnosis.

Condition	Possible Sources	Action
• Mirror vibrates/loose	• Exterior mirror mounting nuts loose	• TIGHTEN nuts to 9 Nm (80 lb-in).
	• **NOTE:** Compare the LH and RH exterior mirror glass to verify that the exterior mirror glass is loose. Mirror glass loose	• PRESS the center of the exterior mirror glass up, down, left and right to make sure that the exterior mirror glass is seated correctly. If the exterior mirror glass is still loose, REMOVE the exterior mirror glass and INSPECT the exterior mirror backing plate for damage. If the exterior mirror backing plate is damaged, INSTALL a new exterior mirror glass. REFER to Exterior Mirror Glass.
	• Aftermarket air deflector/stone shields	• If possible, REMOVE aftermarket air deflector/stone shield, then ROAD TEST the vehicle. If concern is no longer present, ADVISE customer that aftermarket components were causing undesired vibration.

DIAGNOSIS AND TESTING (Continued)

Symptom Chart — Noise, Vibration and Harshness (NVH) (Continued)

Condition	Possible Sources	Action
• Wind noise	• Foam gasket between the rear view mirror and door is missing or damaged	• VERIFY gasket is present and in good condition. REPOSITION gasket or INSTALL a new foam gasket between rear view mirror and door frame if necessary.
	• Exterior mirror is not correctly fitted to the door	• VERIFY that there are no gaps between the exterior mirror and the door. If necessary, LOOSEN the exterior mirror nuts and REPOSITION the exterior mirror.

Pinpoint Tests

Pinpoint Test A: The Mirrors are Inoperative

Refer to Wiring Diagrams Cell 124, Power Mirrors for schematic and connector information.

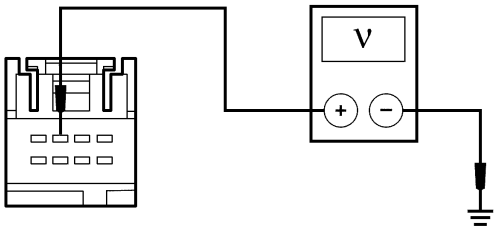
Normal Operation

The exterior mirror control switch receives power from the smart junction box (SJB) through circuit 956 (OG/LG) and ground through circuit 1205 (BK). The exterior mirror control switch uses circuit 542 (YE) as the common circuit for both exterior mirror up/down and right/left movement.

This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- Exterior mirror control switch

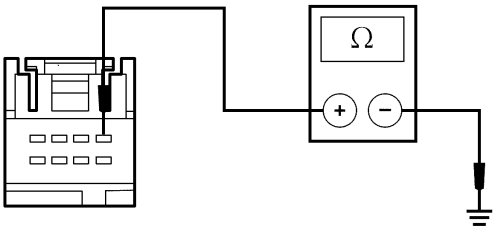
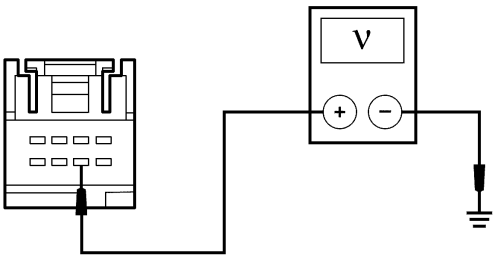
PINPOINT TEST A: THE MIRRORS ARE INOPERATIVE

Test Step		Result / Action to Take
A1	**CHECK CIRCUIT 956 (OG/LG) FOR VOLTAGE**	
	• Key in OFF position. • Disconnect: Exterior Mirror Control Switch C527. • Key in ON position. • Measure the voltage between exterior mirror control switch C527-3, circuit 956 (OG/LG), harness side and ground.  N0012113 • **Is the voltage greater than 10 volts?**	**Yes** GO to A2. **No** VERIFY that SJB fuse 4 (5A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation.
A2	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Key in OFF position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

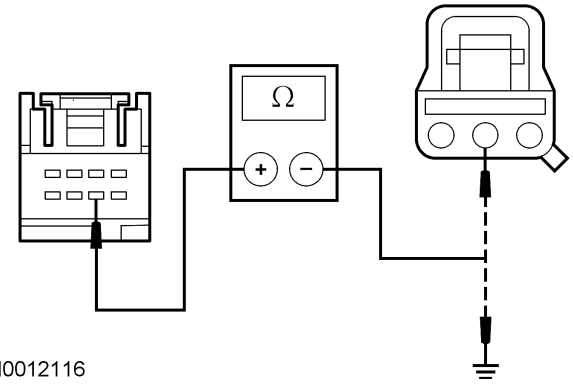
PINPOINT TEST A: THE MIRRORS ARE INOPERATIVE (Continued)

Test Step		Result / Action to Take
A2	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN (Continued)**	
	• Measure the resistance between exterior mirror control switch C527-1, circuit 1205 (BK), harness side and ground.  N0012114 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A3**. **No** REPAIR the circuit. TEST the system for normal operation.
A3	**CHECK CIRCUIT 542 (YE) FOR VOLTAGE**	
	• Key in ON position. • Measure the voltage between exterior mirror control switch C527-6, circuit 542 (YE), harness side and ground.  N0012115 • **Is voltage present?**	**Yes** REPAIR the circuit. TEST the system for normal operation. **No** GO to **A4**.
A4	**CHECK CIRCUIT 542 (YE) FOR AN OPEN OR A SHORT TO GROUND**	
	• Key in OFF position. • Disconnect: LH Exterior Mirror C516.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE MIRRORS ARE INOPERATIVE (Continued)

Test Step		Result / Action to Take
A4	**CHECK CIRCUIT 542 (YE) FOR AN OPEN OR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between exterior mirror control switch C527-6, circuit 542 (YE), harness side and ground; and between exterior mirror control switch C527-6, circuit 542 (YE), harness side and LH exterior mirror C516-2, circuit 542 (YE), harness side  N0012116 • **Is the resistance greater than 10,000 ohms between the exterior mirror control switch connector and ground and less than 5 ohms between the exterior mirror control switch connector and the exterior mirror connector?**	**Yes** INSTALL a new exterior mirror control switch. REFER to Exterior Mirror Control Switch in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.

Pinpoint Test B: A Single Mirror is Inoperative

Refer to Wiring Diagrams Cell 124, Power Mirrors for schematic and connector information.

Normal Operation

The exterior mirror control switch uses circuit 542 (YE) as the common circuit for both exterior mirror up/down and right/left movement.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Exterior mirror control switch
- Exterior mirror motor
- Exterior mirror

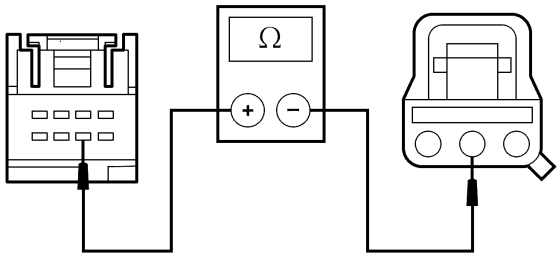
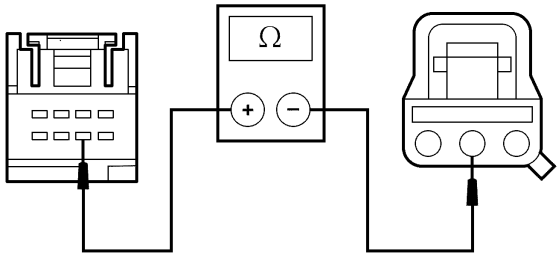
PINPOINT TEST B: A SINGLE MIRROR IS INOPERATIVE

Test Step		Result / Action to Take
B1	**CHECK THE LH EXTERIOR MIRROR**	
	• Set the exterior mirror control switch to the LH mirror position. • Use the exterior mirror control switch to operate the LH exterior mirror. • **Does the LH exterior mirror operate?**	**Yes** GO to **B2**. **No** GO to **B4**.
B2	**CHECK THE EXTERIOR MIRROR CONTROL SWITCH**	
	• Key in OFF position. • Disconnect: Exterior Mirror Control Switch C527. • Carry out the Exterior Mirror Control Switch Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Did the exterior mirror control switch pass the component test?**	**Yes** GO to **B3**. **No** INSTALL a new exterior mirror control switch. REFER to Exterior Mirror Control Switch in this section. TEST the system for normal operation.
B3	**CHECK CIRCUIT 542 (YE) FOR AN OPEN**	
	• Disconnect: RH Exterior Mirror C622.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: A SINGLE MIRROR IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
B3	**CHECK CIRCUIT 542 (YE) FOR AN OPEN (Continued)**	
	• Measure the resistance between exterior mirror control switch C527-6, circuit 542 (YE), harness side and RH exterior mirror C622-2, circuit 542 (YE), harness side.  N0012119 • **Is the resistance less than 5 ohms?**	**Yes** CHECK the RH exterior mirror jumper harness between the vehicle harness and the exterior mirror motor for open circuits and damaged or pushed-out pins. If the jumper harness is not OK, REPAIR the jumper harness. If the jumper harness cannot be repaired, INSTALL a new exterior mirror. REFER to Exterior Mirror in this section. If the jumper harness is OK, INSTALL a new exterior mirror motor. REFER to Exterior Mirror Motor in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
B4	**CHECK THE EXTERIOR MIRROR CONTROL SWITCH**	
	• Key in OFF position. • Disconnect: Exterior Mirror Control Switch C527. • Carry out the Exterior Mirror Control Switch Component Test. Refer to Wiring Diagrams Cell 149 for component testing. • **Did the exterior mirror control switch pass the component test?**	**Yes** GO to **B5**. **No** INSTALL a new exterior mirror control switch. REFER to Exterior Mirror Control Switch in this section. TEST the system for normal operation.
B5	**CHECK CIRCUIT 542 (YE) FOR AN OPEN**	
	• Disconnect: LH Exterior Mirror C516. • Measure the resistance between exterior mirror control switch C527-6, circuit 542 (YE), harness side and LH exterior mirror C516-2, circuit 542 (YE), harness side.  N0012119 • **Is the resistance less than 5 ohms?**	**Yes** CHECK the LH exterior mirror jumper harness between the vehicle harness and the exterior mirror motor for open circuits and damaged or pushed-out pins. If the jumper harness is not OK, REPAIR the jumper harness. If the jumper harness cannot be repaired, INSTALL a new exterior mirror. REFER to Exterior Mirror in this section. If the jumper harness is OK, INSTALL a new exterior mirror motor. REFER to Exterior Mirror Motor in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.

Pinpoint Test C: A Single Mirror Does Not Function With Switch Logic

Refer to Wiring Diagrams Cell 124, Power Mirrors for schematic and connector information.

Normal Operation

The exterior mirror control switch controls the LH exterior mirror movement by switching voltage and ground to circuits 541 (DB), 540 (RD) and 542 (YE). The exterior mirror switch controls the RH exterior mirror movement by switching voltage and ground to circuits 544 (VT), 543 (DG) and 542 (YE).

DIAGNOSIS AND TESTING (Continued)

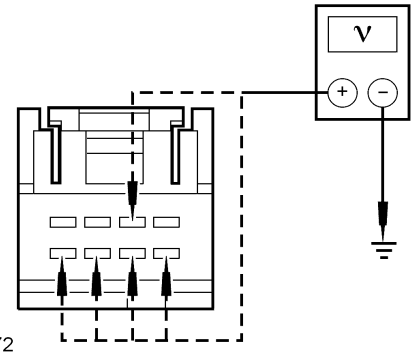
Mirror Movement

- When the LH/RH exterior mirror motor receives power through circuit 541 (DB)/544 (VT) and ground through circuit 542 (YE), the LH/RH exterior mirror will operate upward.
- When the LH/RH exterior mirror motor receives ground through circuit 541 (DB)/544 (VT) and power through circuit 542 (YE), the LH/RH exterior mirror will operate downward.
- When the LH/RH exterior mirror motor receives power through circuit 540 (RD)/543 (DG) and ground through circuit 542 (YE), the LH/RH exterior mirror will operate left.
- When the LH/RH exterior mirror motor receives ground through circuit 540 (RD)/543 (DG) and power through circuit 542 (YE), the LH/RH exterior mirror will operate right.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Exterior mirror control switch
- Exterior mirror motor
- Exterior mirror

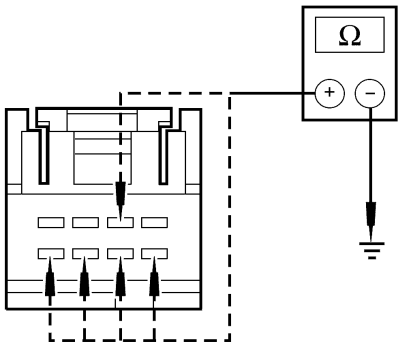
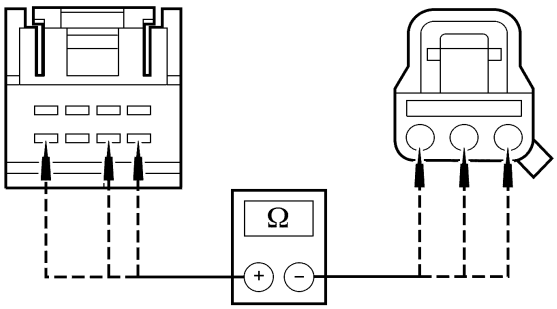
PINPOINT TEST C: A SINGLE MIRROR DOES NOT FUNCTION WITH SWITCH LOGIC

Test Step		Result / Action to Take
C1	**CHECK THE EXTERIOR MIRROR CONTROL CIRCUITS FOR A SHORT TO VOLTAGE**	
	• Key in OFF position. • Disconnect: Exterior Mirror Control Switch C527. • Key in ON position. • Measure the voltage between ground and exterior mirror control switch: — C527-2, circuit 544 (VT) harness side. — C527-5, circuit 541 (DB) harness side. — C527-6, circuit 542 (YE) harness side. — C527-7, circuit 543 (DG) harness side. — C527-8, circuit 540 (RD) harness side.  N0055772 • **Is voltage present?**	**Yes** REPAIR the circuit(s). TEST the system for normal operation. **No** GO to C2.
C2	**CHECK THE EXTERIOR MIRROR CONTROL CIRCUITS FOR A SHORT TO GROUND**	
	• Key in OFF position. • Disconnect: Exterior Mirror C516 (LH) or C622 (RH).	

(Continued)

DIAGNOSIS AND TESTING (Continued)

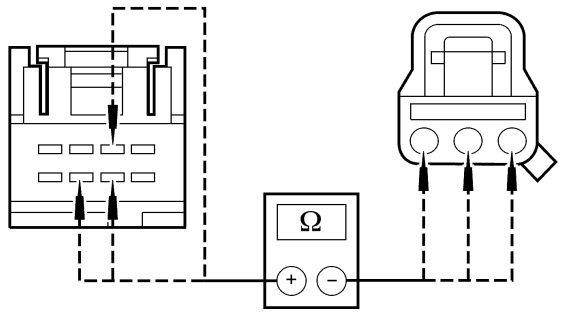
PINPOINT TEST C: A SINGLE MIRROR DOES NOT FUNCTION WITH SWITCH LOGIC (Continued)

Test Step		Result / Action to Take
C2	**CHECK THE EXTERIOR MIRROR CONTROL CIRCUITS FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between ground and exterior mirror control switch: — C527-2, circuit 544 (VT) harness side. — C527-5, circuit 541 (DB) harness side. — C527-6, circuit 542 (YE) harness side. — C527-7, circuit 543 (DG) harness side. — C527-8, circuit 540 (RD) harness side.  N0055771 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **C3**. **No** REPAIR the circuit(s). TEST the system for normal operation.
C3	**CHECK THE EXTERIOR MIRROR CONTROL CIRCUITS FOR AN OPEN**	
	• **NOTE:** LH mirror only. Measure the resistance between exterior mirror control switch: — C527-6, circuit 542 (YE) harness side and LH exterior mirror C516-2, circuit 542 (YE) harness side. — C527-8, circuit 540 (RD) harness side and LH exterior mirror C516-3, circuit 540 (RD) harness side. — C527-5, circuit 541 (DB) harness side and LH exterior mirror C516-1, circuit 541 (DB) harness side.  N0071121	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST C: A SINGLE MIRROR DOES NOT FUNCTION WITH SWITCH LOGIC (Continued)

Test Step		Result / Action to Take
C3	**CHECK THE EXTERIOR MIRROR CONTROL CIRCUITS FOR AN OPEN (Continued)**	
• **NOTE:** RH mirror only. Measure the resistance between exterior mirror control switch: — C527-6, circuit 542 (YE) harness side and RH exterior mirror C622-2, circuit 542 (YE) harness side. — C527-7, circuit 543 (DG) harness side and RH exterior mirror C622-3, circuit 543 (DG) harness side. — C527-2, circuit 544 (VT) harness side and RH exterior mirror C622-1, circuit 544 (VT) harness side.  N0071122 • **Are the resistances less than 5 ohms?**		**Yes** CHECK the LH or RH exterior mirror jumper harness between the vehicle harness and the exterior mirror motor for open or shorted circuits and damaged or pushed-out pins. If the jumper harness is not OK, REPAIR the jumper harness. If the jumper harness cannot be repaired, INSTALL a new LH or RH exterior mirror. REFER to Exterior Mirror in this section. If the jumper harness is OK, INSTALL a new LH or RH exterior mirror motor. REFER to Exterior Mirror Motor in this section. TEST the system for normal operation. **No** REPAIR the circuit(s). TEST the system for normal operation.

Pinpoint Test D: The Auto-Dimming Mirror Does Not Operate Correctly

Refer to Wiring Diagrams Cell 124, Power Mirrors for schematic and connector information.

Normal Operation

Under normal operation, the interior auto-dimming-mirror receives power from circuit 46 (VT) and ground from circuit 1205 (BK). When the vehicle is placed in REVERSE, the smart junction box (SJB) supplies voltage to circuit 2016 (WH/LG) and the interior auto-dimming mirror will turn the dimming feature off. There are 2 photoelectric sensors: one in the front of the interior rear view mirror and one mounted on the glass side of the mirror. If the sensors are blocked, the auto-dimming feature might not work correctly. Always verify both sensors are not physically blocked before attempting to diagnose auto-dimming mirror concerns.

- DTC B2567 Reverse Mirror Output Circuit Failure — Open or short to voltage on interior mirror reverse output circuit.
- DTC B2568 Reverse Mirror Output Circuit Short to Ground — Short to ground on interior mirror reverse output circuit.

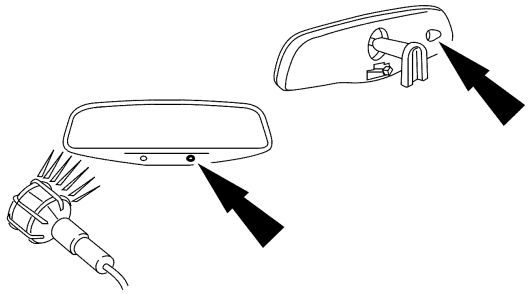
This pinpoint test is intended to diagnose the following:

- Fuse
- SJB
- Wiring, terminals or connectors
- Interior auto-dimming mirror

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: THE AUTO-DIMMING MIRROR DOES NOT OPERATE CORRECTLY

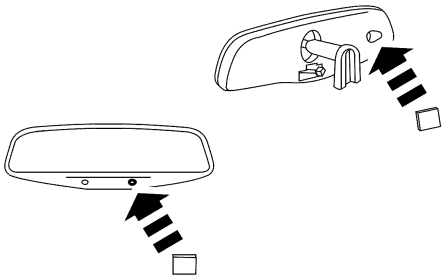
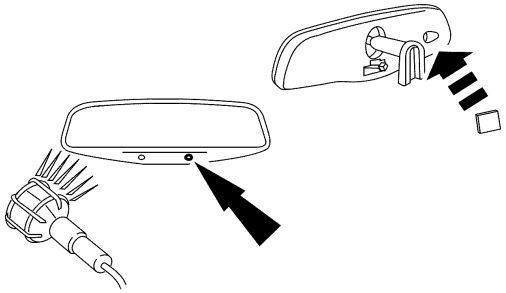
NOTE: If the transmission range (TR) sensor is malfunctioning and the backup lamps are on all the time or do not turn on, the auto-dimming interior mirror will not darken or return to normal view.

Test Step		Result / Action to Take
D1	**RETRIEVE THE DTCs FROM THE SJB**	
	• Use the recorded SJB DTCs from the continuous and on-demand self tests. • **Are any DTCs retrieved?**	**Yes** If DTC B2567, GO to **D10**. If DTC B2568, GO to **D14**. **No** GO to **D2**.
D2	**CHECK OPERATION OF THE BACKUP LAMPS**	
	• Key in ON position. • Move the selector lever through the entire range. • **Do the backup lamps illuminate only in REVERSE?**	**Yes** GO to **D3**. **No** REFER to Section 417-01 to diagnose the backup lamps.
D3	**VERIFY THE FORWARD AND REARWARD FACING SENSORS ARE NOT BLOCKED**	
	• Visually verify the forward and rearward facing sensors are not blocked. Sources of blockage can include: — stickers, window decals or tags. — fold-down screens for TVs or DVD players. — non-OEM window tinting. • **Were either of the sensors blocked?**	**Yes** If possible, REMOVE the blockage. TEST the system for normal operation. If it is not possible to remove the blockage, REVIEW the operation of the interior auto-dimming mirror with the customer. **No** GO to **D4**.
D4	**CHECK OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR — DAYLIGHT CONDITIONS**	
	• Key in ON position. • Use a bright lamp to illuminate the forward facing sensor and the rearward facing sensor. The mirror should adjust to a high reflectance mode (mirror will be clear).  N0057545 • **Does the mirror adjust to the high reflectance (clear) mode?**	**Yes** GO to **D5**. **No** GO to **D8**.
D5	**CHECK OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR — NIGHTTIME CONDITIONS WITHOUT GLARE**	
	• Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

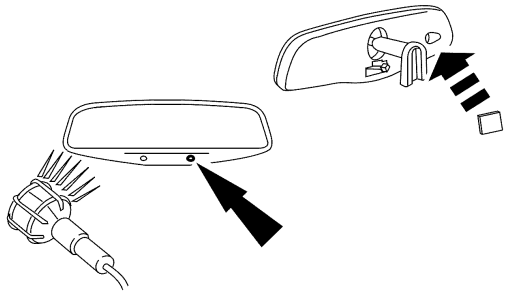
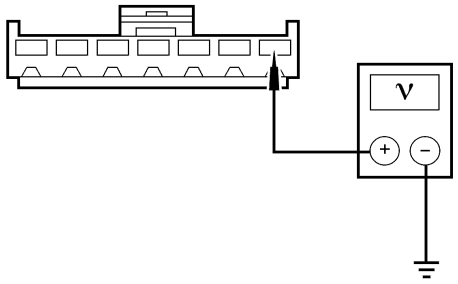
PINPOINT TEST D: THE AUTO-DIMMING MIRROR DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
D5	**CHECK OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR — NIGHTTIME CONDITIONS WITHOUT GLARE (Continued)**	
	• **NOTE:** Covering the sensor with a finger or hand is not adequate. Simulate nighttime conditions without glare: — cover the forward sensor with black electrical tape or other dark material. — cover the rearward facing sensor. The mirror should adjust to the high reflectance mode.  N0057547 • **Did the mirror adjust to the high reflectance (clear) mode?**	**Yes** GO to D6. **No** GO to D8.
D6	**CHECK OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR — NIGHTTIME CONDITIONS WITH GLARE**	
	• Key in ON position. • **NOTE:** Covering the sensor with a finger or hand is not adequate. Simulate nighttime conditions with glare: — cover the forward sensor with black electrical tape or other dark material. — illuminate the rearward facing sensor. The mirror should darken to a lower reflectance mode.  N0057546 • **Did the mirror darken to a lower reflectance (darker) mode?**	**Yes** GO to D7. **No** GO to D8.
D7	**CHECK OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR — NIGHTTIME CONDITIONS WITH THE VEHICLE IN REVERSE**	
	• Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

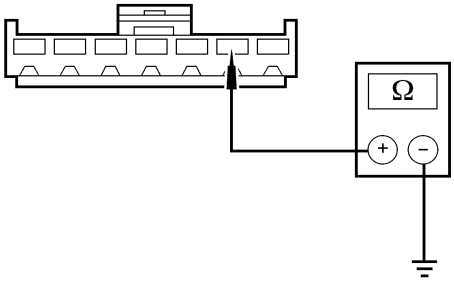
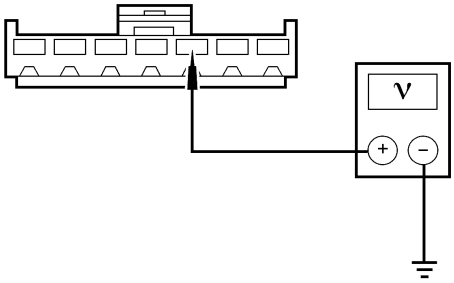
PINPOINT TEST D: THE AUTO-DIMMING MIRROR DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
D7	**CHECK OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR — NIGHTTIME CONDITIONS WITH THE VEHICLE IN REVERSE (Continued)**	
	• **NOTE:** Covering the sensor with a finger or hand is not adequate. Simulate nighttime conditions with glare: — cover the forward sensor with black electrical tape or other dark material. — illuminate the rearward facing sensor.  N0057546 • Select REVERSE. • **Did the mirror adjust to a high reflectance (clear) mode?**	**Yes** The system is operating normally at this time. REVIEW operation of the interior auto-dimming mirror feature with the customer. **No** GO to D8.
D8	**CHECK CIRCUIT 46 (VT) FOR VOLTAGE**	
	• Key in OFF position. • Disconnect: Interior Auto-Dimming Mirror C911. • Key in ON position. • Measure the voltage between interior auto-dimming mirror C911-1, circuit 46 (VT) harness side and ground.  A0073174 • **Is the voltage greater than 10 volts?**	**Yes** GO to D9. **No** VERIFY SJB fuse 7 (10A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation.
D9	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN**	
	• Key in OFF position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

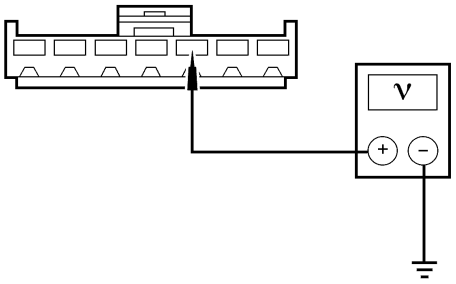
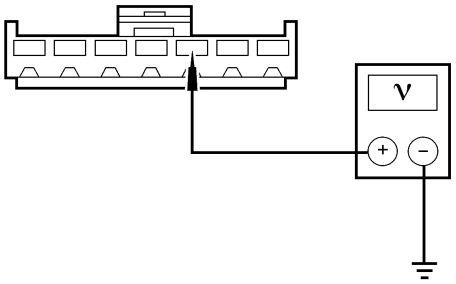
PINPOINT TEST D: THE AUTO-DIMMING MIRROR DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
D9	**CHECK CIRCUIT 1205 (BK) FOR AN OPEN (Continued)**	
	• Measure the resistance between interior auto-dimming mirror C911-2, circuit 1205 (BK) harness side and ground.  A0073175 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new interior auto-dimming mirror. REFER to Auto-Dimming Interior Mirror in this section. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
D10	**CHECK CIRCUIT 2016 (WH/LG) FOR VOLTAGE**	
	• Key in OFF position. • Disconnect: Interior Auto-Dimming Mirror C911. • Key in ON position. • Measure the voltage between interior auto-dimming mirror C911-3, circuit 2016 (WH/LG) harness side and ground.  A0073178 • **Is the voltage greater than 10 volts?**	**Yes** GO to **D11**. **No** GO to **D12**.
D11	**CHECK CIRCUIT 2016 (WH/LG) FOR A SHORT TO VOLTAGE**	
	• Key in OFF position. • Disconnect: SJB C2280C. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

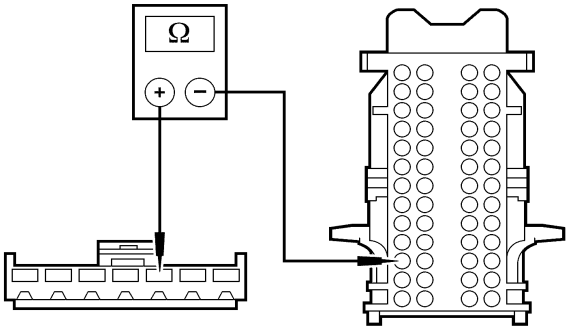
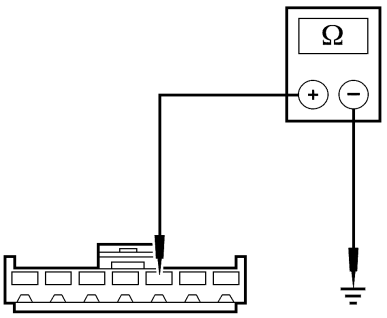
PINPOINT TEST D: THE AUTO-DIMMING MIRROR DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
D11	**CHECK CIRCUIT 2016 (WH/LG) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between interior auto-dimming mirror C911-3, circuit 2016 (WH/LG) harness side and ground.  A0073178 • **Is the voltage greater than 10 volts?**	**Yes** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test. **No** GO to **D16**.
D12	**CHECK CIRCUIT 2016 (WH/LG) FOR VOLTAGE WITH VEHICLE IN REVERSE**	
	• Key in ON position. • Select REVERSE. • Measure the voltage between interior auto-dimming mirror C911-3, circuit 2016 (WH/LG) harness side and ground.  A0073178 • **Is the voltage greater than 10 volts?**	**Yes** INSTALL a new interior auto-dimming mirror. REFER to Auto-Dimming Interior Mirror in this section. CLEAR the DTCs. REPEAT the self-test. **No** GO to **D13**.
D13	**CHECK CIRCUIT 2016 (WH/LG) FOR AN OPEN**	
	• Key in OFF position. • Disconnect: SJB C2280C.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

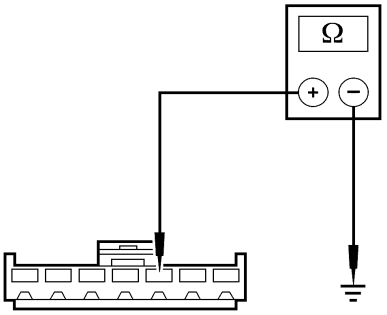
PINPOINT TEST D: THE AUTO-DIMMING MIRROR DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
D13	**CHECK CIRCUIT 2016 (WH/LG) FOR AN OPEN (Continued)**	
	• Measure the resistance between auto-dimming interior mirror C911-3, circuit 2016 (WH/LG) harness side and SJB C2280C-3, circuit 2016 (WH/LG) harness side.  N0076772 • **Is the resistance less than 5 ohms?**	**Yes** GO to D16. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
D14	**CHECK THE REVERSE OUTPUT CIRCUIT FOR A SHORT TO GROUND**	
	• Key in OFF position. • Disconnect: Interior Auto-Dimming Mirror C911. • Measure the resistance between interior auto-dimming mirror C911-3, circuit 2016 (WH/LG) harness side and ground.  N0076773 • **Is the resistance greater than 10,000 ohms?**	**Yes** INSTALL a new interior auto-dimming mirror. REFER to Auto-Dimming Interior Mirror in this section. CLEAR the DTCs. REPEAT the self-test. **No** GO to D15.
D15	**CHECK CIRCUIT 2016 (WH/LG) FOR A SHORT TO GROUND**	
	• Key in OFF position. • Disconnect: SJB C2280C.	

(Continued)

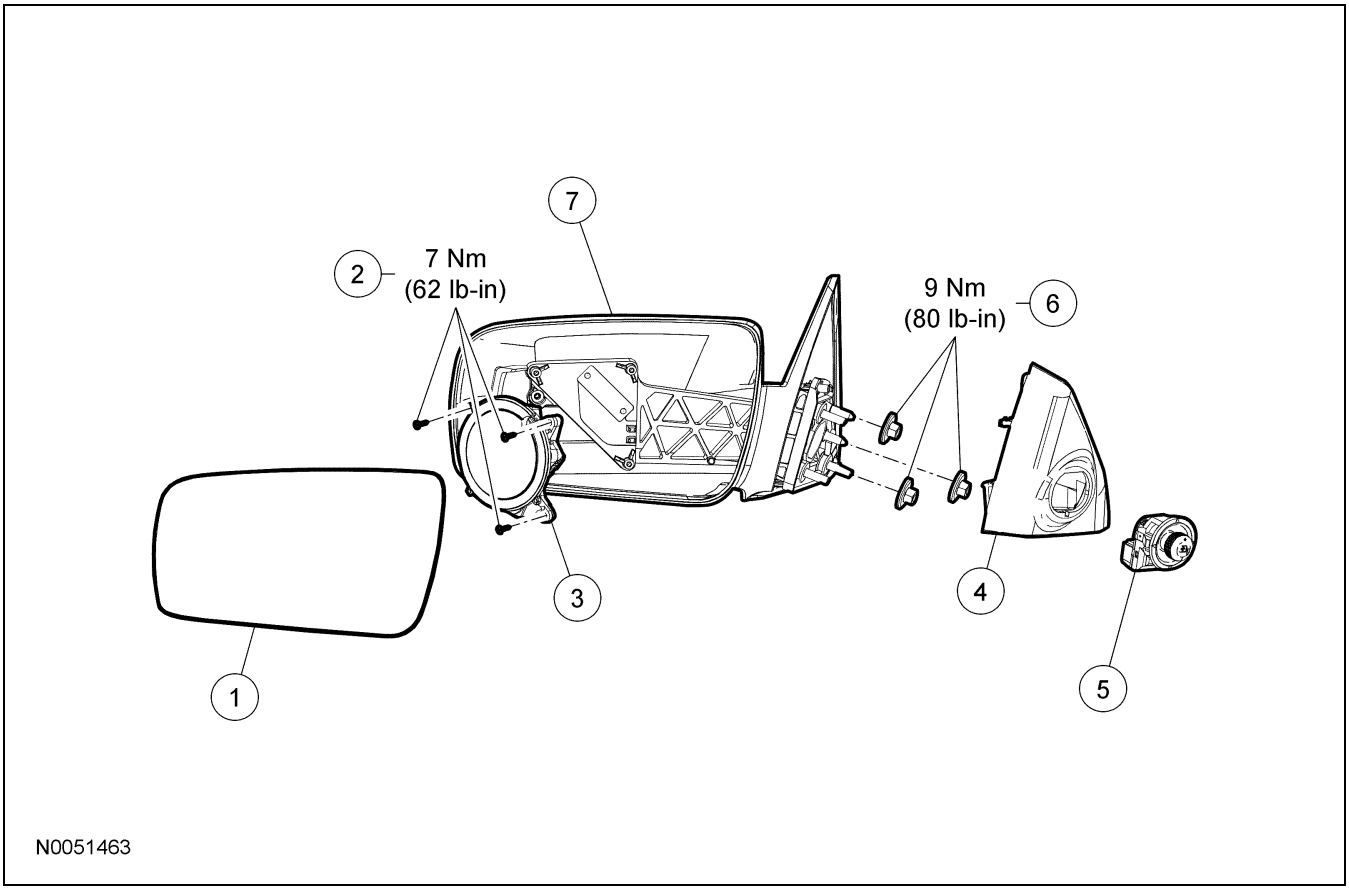
DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: THE AUTO-DIMMING MIRROR DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
D15	**CHECK CIRCUIT 2016 (WH/LG) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between interior auto-dimming mirror C911-3, circuit 2016 (WH/LG) harness side and ground.  N0076773 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to D16. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
D16	**CHECK THE SJB FOR CORRECT OPERATION**	
	• Disconnect all SJB connectors. • Check for: — corrosion. — pushed-out pins. • Connect all SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. REFER to Section 419-10. CLEAR the DTCs. REPEAT the self-test. **No** The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

REMOVAL AND INSTALLATION

Exterior Mirrors — Exploded View



Item	Part Number	Description
1	17K707	Exterior mirror glass
2	—	Exterior mirror motor screws (3 required)
3	17D696	Exterior mirror motor
4	17K709	Sail panel
5	17B676	Exterior mirror control switch

(Continued)

Item	Part Number	Description
6	N621907	Exterior mirror mounting nuts (3 required)
7	17682 RH/ 17683 LH	Exterior mirror

1. For additional information, refer to the procedures in this section.

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REMOVAL AND INSTALLATION

Exterior Mirror

Removal and Installation

1. Remove the sail panel.
   - If equipped, disconnect the exterior mirror control switch electrical connector.
2. Remove the 3 nuts and the exterior mirror.
   - To install, tighten to 9 Nm (80 lb-in).
3. To install, reverse the removal procedure.

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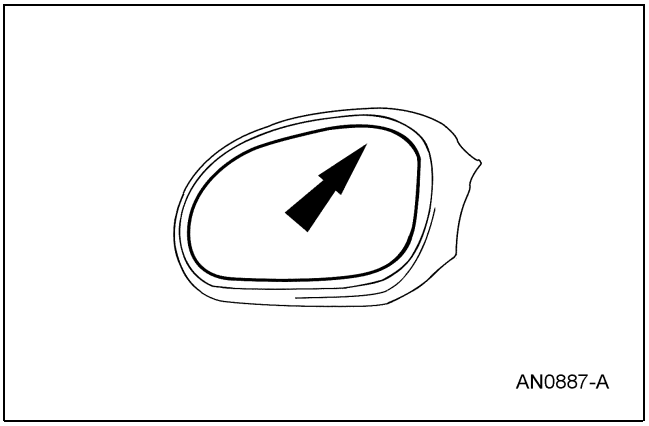
REMOVAL AND INSTALLATION

Exterior Mirror Glass

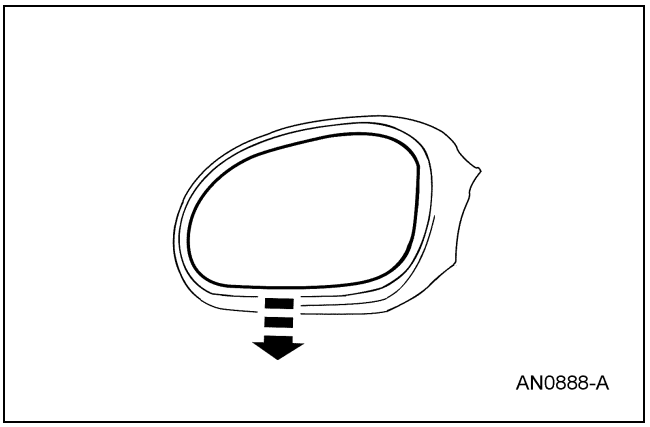
Removal

1. Position the inner edge of the exterior mirror glass to its maximum travel.



2. **WARNING: Place a shop towel between the hands and the exterior mirror glass for protection in case of glass breakage during mirror service. Failure to follow this instruction may result in serious personal injury.**

   Grasp the outer edge of the exterior mirror glass and pull outward to remove the exterior mirror glass.



Installation

1. **WARNING: Place a shop towel between the hands and the exterior mirror glass for protection in case of glass breakage during mirror service. Failure to follow this instruction may result in serious personal injury.**

   NOTE: An audible click will be heard during installation.

   Install the exterior mirror glass by pressing firmly in the center of the exterior glass until it snaps onto the exterior mirror motor.

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REMOVAL AND INSTALLATION

Exterior Mirror Motor

Removal and Installation

1. Remove the exterior mirror glass. For additional information, refer to Exterior Mirror Glass in this section.
2. Remove the 3 exterior mirror motor screws.
   - To install, tighten to 7 Nm (62 lb-in).
3. Disconnect the exterior mirror motor electrical connector.
4. Remove the exterior mirror motor.
5. To install, reverse the removal procedure.

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REMOVAL AND INSTALLATION

Exterior Mirror Control Switch

Removal and Installation

1. Remove the sail panel.
   - Disconnect the electrical connector.
2. Remove the exterior mirror control switch from the sail panel.
3. To install, reverse the removal procedure.

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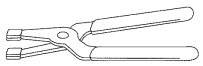
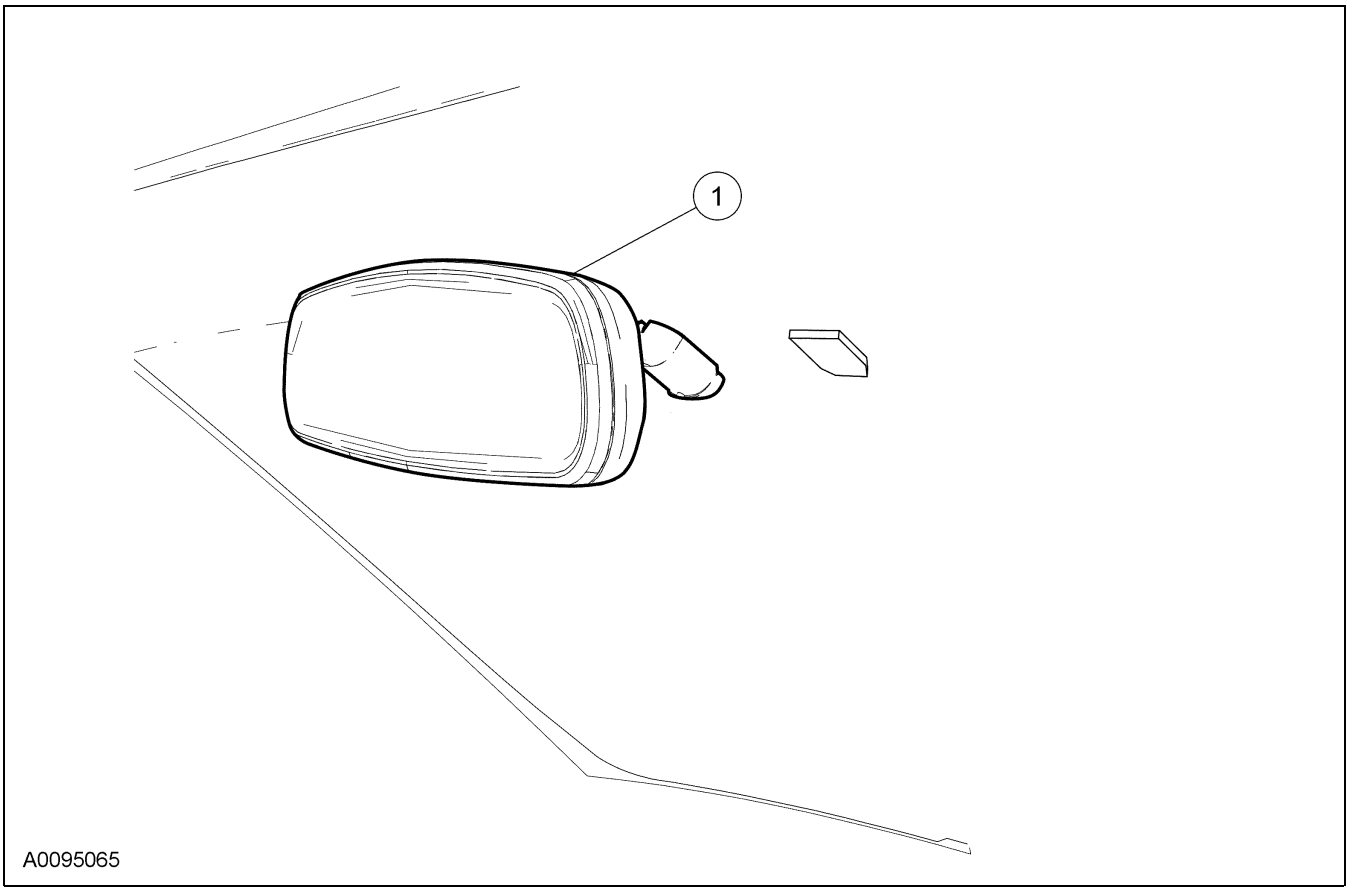
REMOVAL AND INSTALLATION

Interior Rear View Mirror

Special Tool(s)

 ST1793-A	Installer, Rear View Mirror 501-025 (T94P-17700-AH)



Item	Part Number	Description
1	17700	Interior rear view mirror

Removal

⚠ CAUTION: The interior rear view mirror is of the break-away design. Excessive force in any direction may cause damage to the mirror or the windshield.

1. Position the interior rear view mirror in the full up position.
2. Insert a suitable tool between the bottom of the mirror mount and bracket. Push upward on the tool until the mirror mount is released from the bracket.

Installation

1. Place the interior rear view mirror on the windshield bracket.

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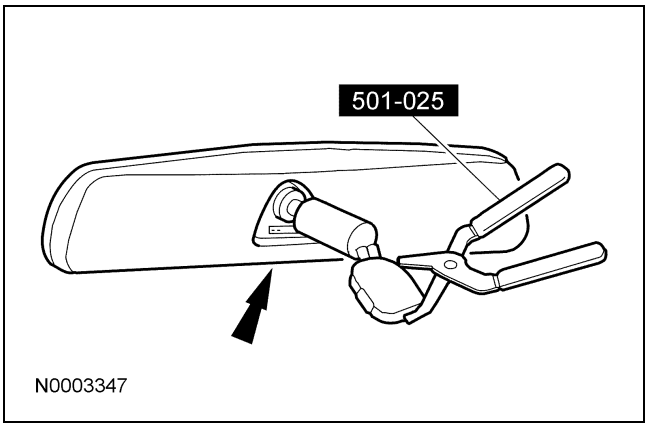
REMOVAL AND INSTALLATION (Continued)

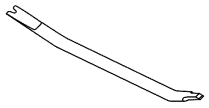
2. Using the special tool, press the interior rear view mirror in place until fully seated.

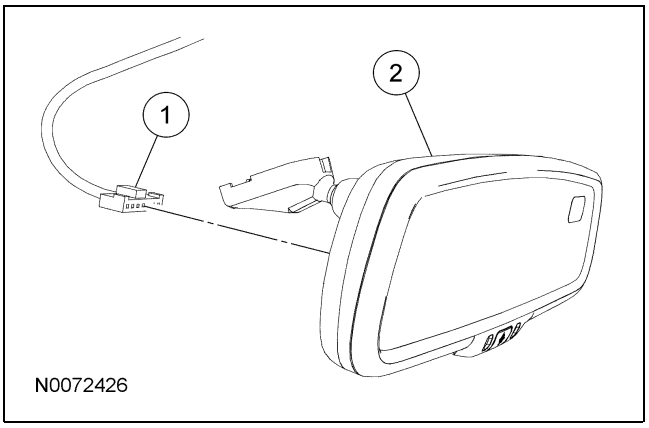


REMOVAL AND INSTALLATION

Auto-Dimming Interior Mirror

Special Tool(s)

 ST2833-A	Mirror Remover 501-D118

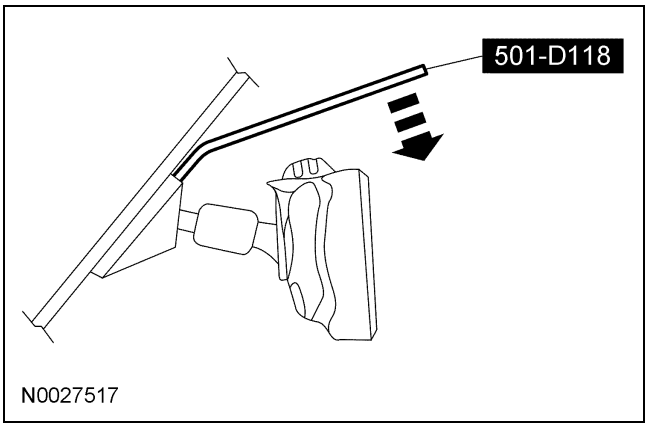


Item	Part Number	Description
1	—	Interior mirror electrical connector (part of 14A005)
2	17700	Interior mirror

Removal

1. If equipped, remove the wire cover.
2. Disconnect the electrical connector.
3. **NOTE:** High level mirror shown, others similar.

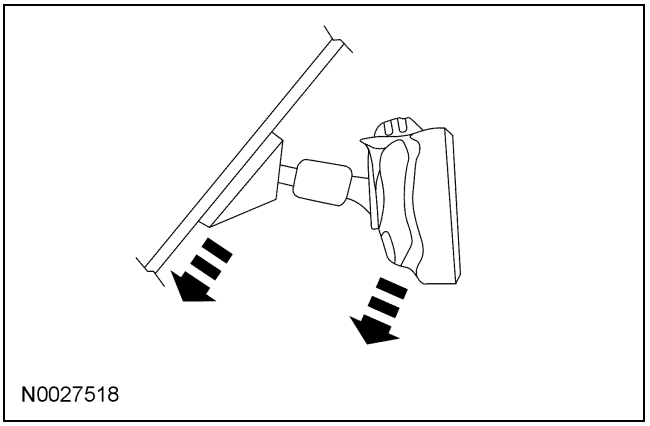
   Insert the special tool between the mirror mount and windshield bracket from the top.



4. Release the mirror mount from the windshield bracket by pulling the tool and mirror down and away from the windshield.

Installation

1. Slide the mirror mount over the windshield bracket from the top and adjust the mirror to the up position.



2. Quickly press the mirror assembly downward along the windshield until a click is felt. The click indicates the base is engaged to the windshield bracket.
3. Connect the electrical connector and check the compass zone and calibration. For additional information, refer to Section 419-11.

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