2008 ACCESSORIES & BODY, CAB

Glass, Frames & Mechanisms - Mustang

SPECIFICATIONS

Material

Item	Specification	Fill Capacity
Dow Urethane Adhesive Betaseal® Express[a]	-	-
Dow Urethane One Step Glass Primer Betaprime® 5500 / 5500A / 5500SA[a]	-	-
Foam Core Butyl E69Z-19562-A	WSB-M3G143-B1	-
Lacquer Touch-Up Paint (match color to exterior grid wire) PM-19500-XXXX or PMP-19500-XXXX	ESR-M2P100-C	-
Rear Window Defroster Repair PM-11 (US); CPM-11 (Canada)	-	-
Sika Urethane Adhesive Sika Tack ASAP[b]	-	-
Sika Urethane Metal and Glass Primer Sika 206 G+P[b]	-	-
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A	-

[a] Dow Automotive 2-hour cure

[b] Sika 2-hour cure

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

DESCRIPTION AND OPERATION

GLASS, FRAMES AND MECHANISMS

The glass, frames and mechanisms consist of the:

- door glass.
- heated rear window switch.
- heated window grid wire (if equipped).
- rear quarter glass.
- rear window defrost relay.
- rear window glass.
- window control switches.
- window regulators.
- window regulator motors.
- windshield glass

Windshield Glass

The windshield exterior moldings are installed with the windshield glass. The windshield exterior moldings 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. The convertible rear quarter window glasses are powered and have a full down sensor incorporated to indicate when the convertible top may operate.

Window Glass, Rear

The coupe rear window is mounted in urethane and contains the heated rear window grid (if equipped). The convertible rear window is sewn into the convertible top and contains the heated rear window grid (if equipped). The convertible rear window is replaced with a convertible top material. Refer to **CONVERTIBLE TOP** article.

Convertible Top Drop Window Function

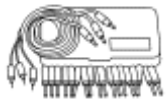
NOTE: The smart junction box (SJB) may also be identified as the generic electronic module (GEM).

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. Conversely, all 4 windows operate in any convertible top 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.

DIAGNOSTIC TESTS

GLASS, FRAMES AND MECHANISMS

Special Tools

Illustration	Tool Name	Tool Number
 ST1137-A	73III Automotive Meter	105-R0057 or equivalent
 ST1138-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS)	software with appropriate hardware, or equivalent scan tool
 ST2834-A	Flex Probe Kit	105-R025B or equivalent

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 SJB sends a signal to the window motors to activate a full down operation of all 4 windows.

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)
	• SJB
	• Window control switch
	• Window motor
	• Heated rear window relay
	• Heated rear window 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.

NOTE: Make sure to use the latest scan tool software release.

4. If the cause is not visually evident, connect the scan tool to the data link connector (DLC).

NOTE: The vehicle communication module (VCM) LED prove out confirms power and ground from the DLC are provided to the VCM.

5. 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 **MODULE COMMUNICATIONS NETWORK** article, 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 **MODULE COMMUNICATIONS NETWORK** article 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 **MODULE COMMUNICATIONS NETWORK** article.
   - If the network test passes, retrieve and record the continuous memory DTCs.

NOTE: The SJB may also be identified as the generic electronic module (GEM).

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 **MULTIFUNCTION ELECTRONIC MODULES** article.
10. If no DTCs related to the concern are retrieved, go to **Symptom 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 SJB. REFER to **MULTIFUNCTION ELECTRONIC MODULES** article. TEST the system for normal operation.
B1345	Heated Backlight Input Circuit Short to Ground	Go to **Pinpoint Test D**.
B1348	Heated Backlight Relay Circuit Open	Go to **Pinpoint Test D**.
B1349	Heated Backlight 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 Backlight Indicator Circuit Failure	Go to **Pinpoint Test D**.
B2061	Heated Backlight 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 **MULTIFUNCTION ELECTRONIC MODULES** article.

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 • SJB	• 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 • Heating ventilation air conditioning (HVAC) • Heated rear window grid	• Go to **Pinpoint Test D**.
	• Circuitry	

• The defrost system will not shut off automatically	• Heated rear window relay • HVAC	• 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**.
• 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**.
• 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**. 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 appropriate SYSTEM WIRING DIAGRAM ARTICLE, 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:

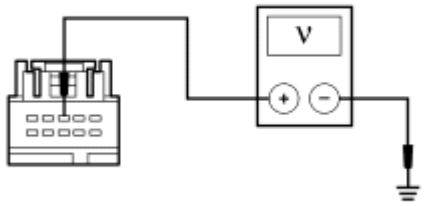
- Fuse
- Wiring, terminals or connectors
- Window motor
- Window control switch
- Smart junction box (SJB)

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

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

A1 CHECK THE POWER SUPPLY TO THE DRIVER WINDOW CONTROL SWITCH

- Key in OFF position.
- Disconnect: Driver Window Control Switch C504
- Key in ON position.



N0012607

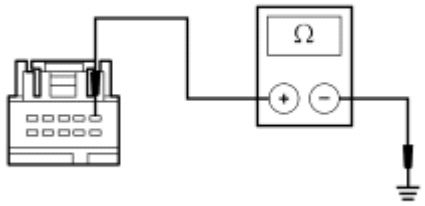
Fig. 1: Measuring Voltage Between Driver Window Control Switch C504-3 And Ground
Courtesy of FORD MOTOR CO.

- Measure the voltage between driver window control switch C504-3, circuit 985 (RD/LB), harness side and ground.
- **Is the voltage greater than 10 volts?**

  YES : Go to A2.

  NO : Go to A10 .

A2 CHECK THE DRIVER WINDOW CONTROL SWITCH CIRCUIT 1205 (BK) FOR AN OPEN



N0012608

Fig. 2: Measuring Resistance Between Driver Window Control Switch C504-1 And Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver window control switch C504-1, circuit 1205 (BK), harness side and ground.
- **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

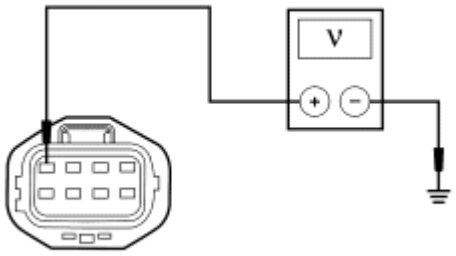
- Carry out the Window Control Switch Component Test. Refer to COMPONENT TESTING.
- **Is the driver window control switch OK?**

  YES : Go to A4.

  NO : INSTALL a new driver window control switch. REFER to **Window Control Switch**. TEST the system for normal operation.

A4 CHECK CIRCUIT 227 (YE) FOR AN OPEN

- Key in OFF position.
- Connect: Driver Window Control Switch C504
- Disconnect: Driver Window Motor C518
- Key in ON position.



N0012609

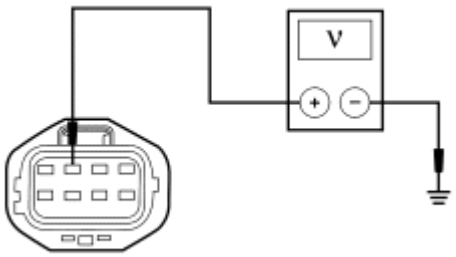
Fig. 3: Checking Circuit 227 (YE) For Open
Courtesy of FORD MOTOR CO.

- 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.
- **Is the voltage greater than 10 volts with the switch in the DOWN position?**

  YES : Go to A5.

  NO : REPAIR the circuit. TEST the system for normal operation.

A5 CHECK CIRCUIT 226 (WH/BK) FOR AN OPEN



N0012610

Fig. 4: Checking Circuit 226 (WH/BK) For Open
Courtesy of FORD MOTOR CO.

- 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.
- **Is the voltage greater than 10 volts with the switch in the UP position?**

  YES : Go to A6.

  NO : REPAIR the circuit. TEST the system for normal operation.

A6 CHECK CIRCUIT 404 (VT/LG) FOR AN OPEN

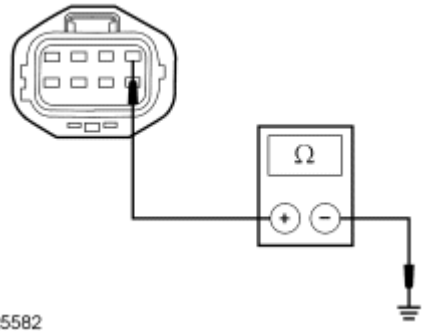


Fig. 5: Checking Circuit 404 (VT/LG) For Open
Courtesy of FORD MOTOR CO.

- 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 and DOWN positions.
- **Is the resistance less than 5 ohms with the switch in the UP and DOWN positions?**

  YES : Go to A7.

  NO : REPAIR the circuit. TEST the system for normal operation.

A7 CHECK CIRCUIT 2034 (VT/YE) FOR AN OPEN

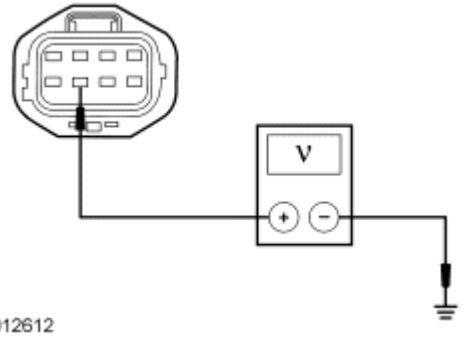


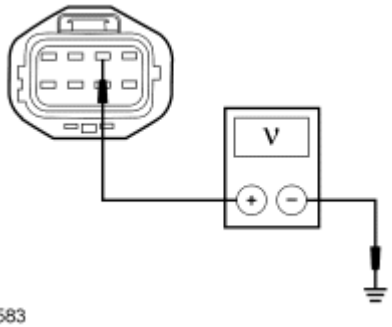
Fig. 6: Measuring Voltage Between Driver Window Motor C518-7 And Ground
Courtesy of FORD MOTOR CO.

- Measure the voltage between driver window motor C518-7, circuit 2034 (VT/YE), harness side and ground.
- **Is the voltage greater than 10 volts?**

  YES : Go to A8.

  NO : VERIFY the BEC fuse 5 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation.

A8 CHECK CIRCUIT 400 (LB/BK) FOR AN OPEN



N0025583

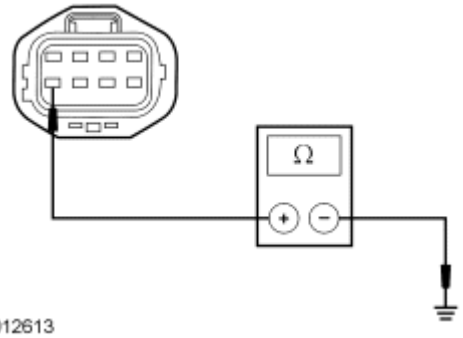
Fig. 7: Measuring Voltage Between Driver Window Motor C518-2 And Ground
Courtesy of FORD MOTOR CO.

- Measure the voltage between driver window motor C518-2, circuit 400 (LB/BK), harness side and ground.
- **Is the voltage greater than 10 volts?**

  YES : Go to A9.

  NO : REPAIR the circuit. TEST the system for normal operation.

A9 CHECK THE DRIVER WINDOW MOTOR CIRCUIT 1205 (BK) FOR AN OPEN



N0012613

Fig. 8: Measuring Resistance Between Driver Window Motor C518-8 And Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver window motor C518-8, circuit 1205 (BK), harness side and ground.
- **Is the resistance less than 5 ohms?**

  YES : INSTALL a new driver window motor. REFER to **Window Regulator and Motor - Front Door**. TEST the system for normal operation.

  NO : REPAIR the circuit. TEST the system for normal operation.

A10 CHECK CIRCUIT 985 (RD/LB) FOR AN OPEN

- Key in OFF position.
- Disconnect: SJB C2280e

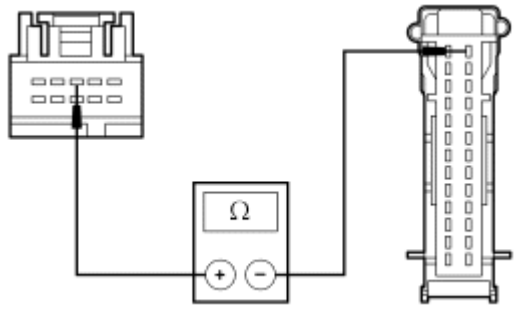


Fig. 9: Checking Circuit 985 (RD/LB) For Open
Courtesy of FORD MOTOR CO.

- 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.
- **Is the resistance less than 5 ohms?**

  YES : Go to A11.

  NO : REPAIR the circuit. TEST the system for normal operation.

A11 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 **MULTIFUNCTION ELECTRONIC MODULES** article. 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 appropriate SYSTEM WIRING DIAGRAM ARTICLE, 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). 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
- Passenger window control switch
- Driver window control switch
- Window motor
- Smart junction box (SJB)

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

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

B1 CHECK THE OPERATION FROM THE DRIVER WINDOW CONTROL SWITCH

- Key in ON position.
- Operate the passenger window from the driver window control switch.
- **Does the passenger window operate correctly from the driver window control switch?**

  YES : Go to B5.

  NO : Go to B2.

B2 CHECK CIRCUIT 1205 (BK) FOR AN OPEN

- Key in OFF position.
- Disconnect: Passenger Window Motor C623

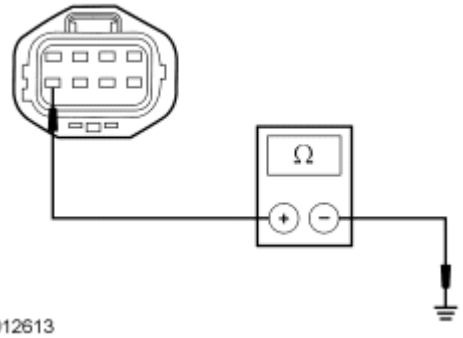


Fig. 10: Measuring Resistance Between Driver Window Motor C518-8 And Ground
Courtesy of FORD MOTOR CO.

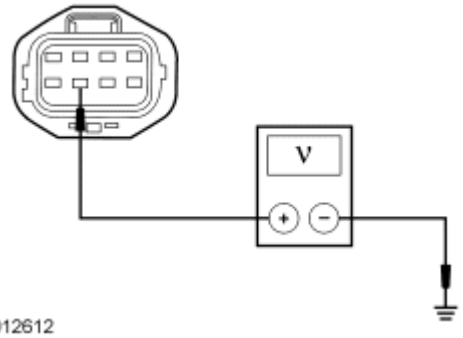
- Measure the resistance between passenger window motor C623-8, circuit 1205 (BK), harness side and ground.
- **Is the resistance less than 5 ohms?**

  YES : Go to B3.

NO : REPAIR the circuit. TEST the system for normal operation.

B3 CHECK CIRCUIT 2033 (BN/LB) FOR AN OPEN

- Key in ON position.



N0012612

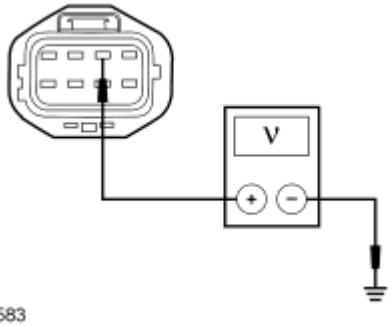
Fig. 11: Measuring Voltage Between Driver Window Motor C518-7 And Ground
Courtesy of FORD MOTOR CO.

- Measure the voltage between passenger window motor C623-7, circuit 2033 (BN/LB), harness side and ground.
- **Is the voltage greater than 10 volts?**

  YES : Go to B4.

  NO : VERIFY the bussed electrical center (BEC) fuse 7 (30A) is OK. If OK, REPAIR the circuit. CLEAR the DTCs. TEST the system for normal operation.

B4 CHECK CIRCUIT 170 (RD/LB) FOR AN OPEN



N0025583

Fig. 12: Measuring Voltage Between Driver Window Motor C518-2 And Ground
Courtesy of FORD MOTOR CO.

- Measure the voltage between passenger window motor C623-2, circuit 170 (RD/LB), harness side and ground.
- **Is the voltage greater than 10 volts?**

  YES : Go to B9.

  NO : REPAIR the circuit. TEST the system for normal operation.

B5 CHECK THE PASSENGER WINDOW CONTROL SWITCH FOR AN OPEN

- Disconnect: Suspect Window Control Switch

- Carry out the Window Control Switch Component Test. Refer to COMPONENT TESTING.
- **Is the window control switch OK?**

  YES : Go to B6.

  NO : INSTALL a new window control switch. REFER to **Window Control Switch**. TEST the system for normal operation.

B6 CHECK CIRCUIT 1205 (BK) FOR AN OPEN

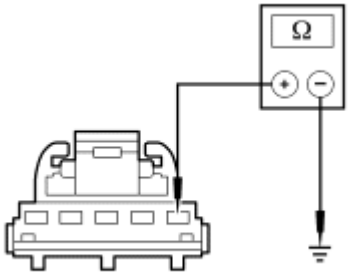


Fig. 13: Checking Circuit 1205 (BK) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between passenger window control switch C604-1, circuit 1205 (BK), harness side and ground.
- **Is the resistance less than 5 ohms?**

  YES : Go to B7.

  NO : REPAIR the circuit. TEST the system for normal operation.

B7 CHECK CIRCUIT 984 (YE/LB) FOR VOLTAGE

- Key in ON position.

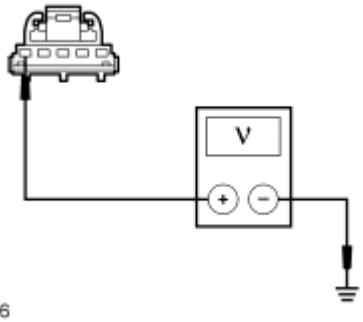


Fig. 14: Measuring Voltage Between Passenger Window Control Switch C604-5 And Ground
Courtesy of FORD MOTOR CO.

- Measure the voltage between passenger window control switch C604-5, circuit 984 (YE/LB), harness side and ground.
- **Is the voltage greater than 10 volts?**

YES : Go to B9.

NO : Go to B8 .

B8 CHECK CIRCUIT 984 (YE/LB) FOR AN OPEN

- Key in OFF position.
- Disconnect: SJB C2280e

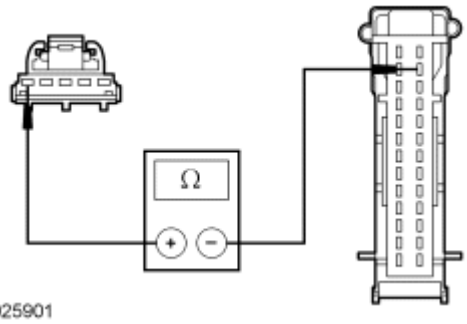


Fig. 15: Checking Circuit 984 (YE/LB) For Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between passenger window control switch C604-5, circuit 984 (YE/LB), harness side and SJB C2280e-25, circuit 984 (YE/LB), harness side.
- **Is the resistance less than 5 ohms?**

  YES : Go to B12.

  NO : REPAIR the circuit. TEST the system for normal operation.

B9 CHECK CIRCUIT 314 (TN/LB) FOR AN OPEN

- Key in OFF position.
- Connect: Window Control Switch
- Key in ON position.

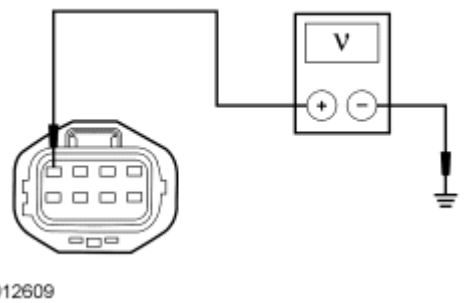


Fig. 16: Checking Circuit 314 (TN/LB) For An Open
Courtesy of FORD MOTOR CO.

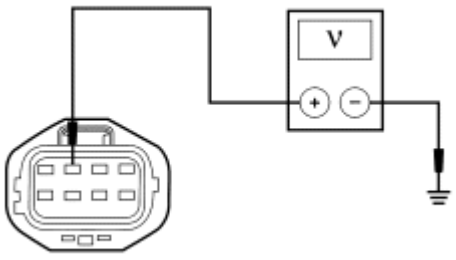
- Measure the voltage between passenger window motor C623-4, circuit 314 (TN/LB), harness side and ground while rocking the passenger and driver window control switches to the DOWN position.

- **Is the voltage greater than 10 volts with the switch in the DOWN position?**

  YES : Go to B10.

  NO : REPAIR the circuit. TEST the system for normal operation.

B10 CHECK CIRCUIT 313 (WH/YE) FOR AN OPEN



N0012610

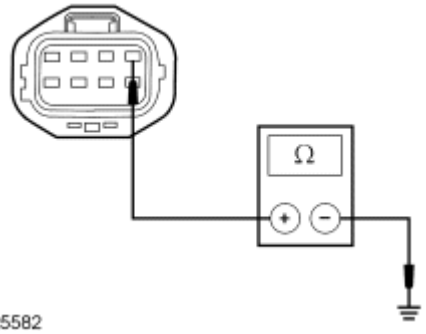
Fig. 17: Checking Circuit 313 (WH/YE) For An Open
Courtesy of FORD MOTOR CO.

- Measure the voltage between passenger window motor C623-3, circuit 313 (WH/YE), harness side and ground while rocking the passenger and driver window control switches to the UP position.
- **Is the voltage greater than 10 volts with the switch in the UP position?**

  YES : Go to B11.

  NO : REPAIR the circuit. TEST the system for normal operation.

B11 CHECK CIRCUIT 405 (VT/LB) FOR AN OPEN



N0025582

Fig. 18: Checking Circuit 405 (VT/LB) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between passenger window motor C623-1, circuit 405 (VT/LB), harness side and ground while rocking the passenger window control switch to the UP and DOWN positions.
- **Is the resistance less than 5 ohms with the switch in the UP and DOWN positions?**

  YES : INSTALL a new passenger window motor. REFER to **Window Regulator and Motor - Front Door**. TEST the system for normal operation.

  NO : REPAIR the circuit. TEST the system for normal operation.

B12 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 **MULTIFUNCTION ELECTRONIC MODULES** article. 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 C: A Single Power Window is Inoperative - Rear Quarter

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, 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).

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

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

NOTE: If smart junction box (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.

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 diagnostic tool.
- Key in ON position.
- 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

- Carry out the Window Control Switch Component Test. Refer to COMPONENT TESTING.
- **Is the window control switch OK?**

  YES : Go to C4.

  NO : INSTALL a new window control switch. REFER to **Window Control Switch**. TEST the system for normal operation.

C4 CHECK CIRCUIT 333 (YE/RD) FOR VOLTAGE

- Key in ON position.

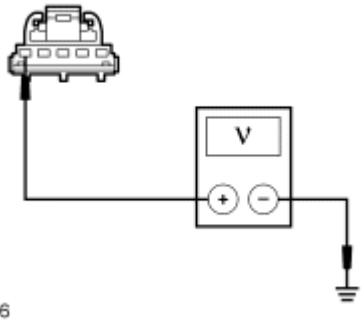


Fig. 19: Checking Circuit 333 (YE/RD) For Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between rear window control switch C566-5, circuit 333 (YE/RD), harness side and ground.
- **Is the voltage greater than 10 volts?**

  YES : Go to C6.

  NO : Go to C5 .

C5 CHECK CIRCUIT 333 (YE/RD) FOR AN OPEN

- Key in OFF position.
- Disconnect: SJB C2280e

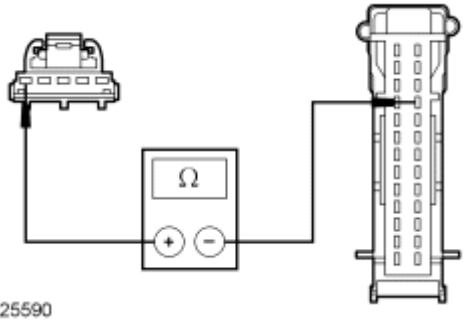


Fig. 20: Checking Circuit 333 (YE/RD) For Open
Courtesy of FORD MOTOR CO.

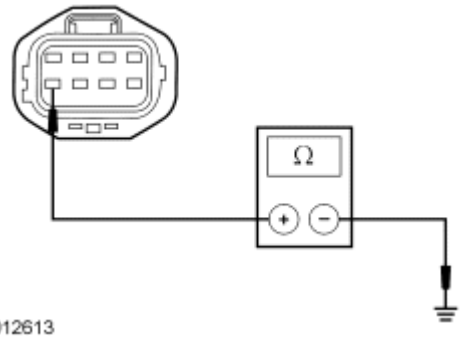
- Measure the resistance between rear window control switch C566-5, circuit 333 (YE/RD), harness side and SJB C2280e-23, circuit 333 (YE/RD), harness side.
- **Is the resistance less than 5 ohms?**

  YES : Go to C12.

  NO : REPAIR the circuit. TEST the system for normal operation.

C6 CHECK CIRCUIT 1205 (BK) FOR AN OPEN

- Key in OFF position.
- Disconnect: Suspect Window Motor



N0012613

Fig. 21: Checking Circuit 1205 (BK) For An Open
Courtesy of FORD MOTOR CO.

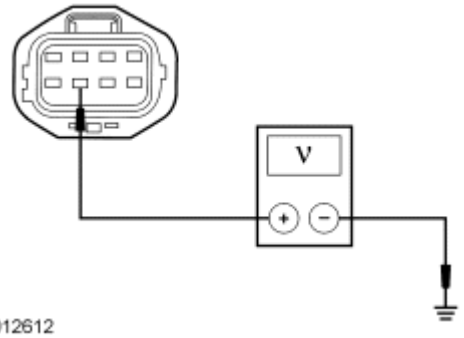
- Measure the resistance between LH rear window motor C3118-8, or RH rear window motor C3119-8, circuit 1205 (BK), harness side and ground.
- **Is the resistance less than 5 ohms?**

  YES : Go to C7.

  NO : REPAIR the circuit. TEST the system for normal operation.

C7 CHECK THE VBATT CIRCUIT FOR AN OPEN

- Key in ON position.



N0012612

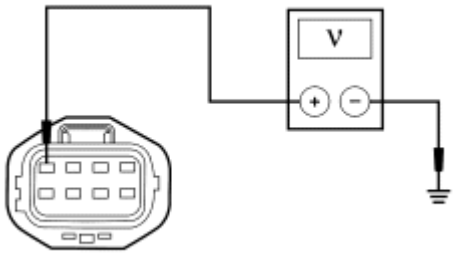
Fig. 22: Checking Vbatt Circuit For An Open
Courtesy of FORD MOTOR CO.

- 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.
- **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.

C8 CHECK CIRCUIT 885 (YE/LB) FOR AN OPEN



N0012609

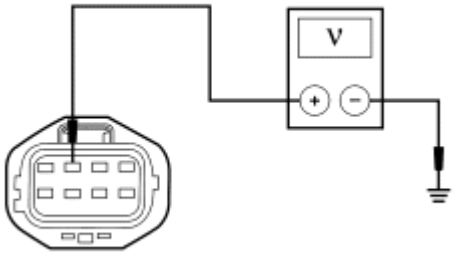
Fig. 23: Checking Circuit 885 (YE/LB) For An Open
Courtesy of FORD MOTOR CO.

- 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.
- **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



N0012610

Fig. 24: Checking Circuit 884 (YE/BK) For An Open
Courtesy of FORD MOTOR CO.

- 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.
- **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 CIRCUIT 882 (BN/YE) FOR VOLTAGE

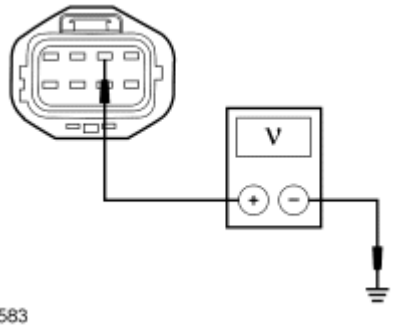


Fig. 25: Checking Circuit 882 (BN/YE) For Voltage
Courtesy of FORD MOTOR CO.

- 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.
- **Is the voltage greater than 10 volts?**

  YES : INSTALL a new rear quarter window regulator and motor. REFER to **Window Regulator Motor - Rear Quarter**. TEST the system for normal operation.

  NO : Go to C11.

C11 CHECK CIRCUITS 193 (YE/LG) OR 882 (BN/YE) FOR AN OPEN

- Key in OFF position.
- Disconnect: SJB C2280e

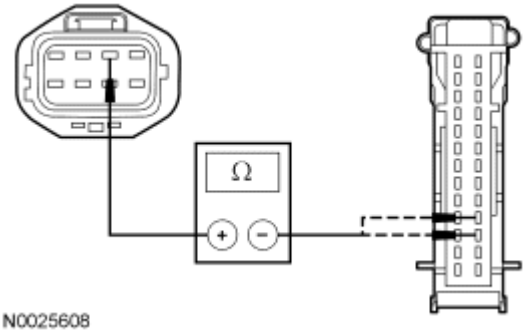


Fig. 26: Checking Circuits 882 (BN/YE) Or 193 (YE/LG) For An Open
Courtesy of FORD MOTOR CO.

- 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.
- **Is the resistance less than 5 ohms?**

  YES : Go to C12.

  NO : REPAIR the circuit in question. TEST the system for normal operation.

C12 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 **MULTIFUNCTION ELECTRONIC MODULES** article. 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 appropriate SYSTEM WIRING DIAGRAM ARTICLE, Heated Window for schematic and connector information.

Normal Operation

When the rear 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 heated rear window relay. When the relay is active, voltage is supplied to the heated rear window grid through circuit 186 (BN/LB). The heated rear window grid is grounded by circuit 1205 (BK). The SJB provides heated backlight status to the HVAC module through circuit 1427 (TN/LB).

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

This pinpoint test is intended to diagnose the following:

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

PINPOINT TEST D: THE DEFROST SYSTEM IS INOPERATIVE

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

D1 CHECK FOR RECORDED SJB DTCs

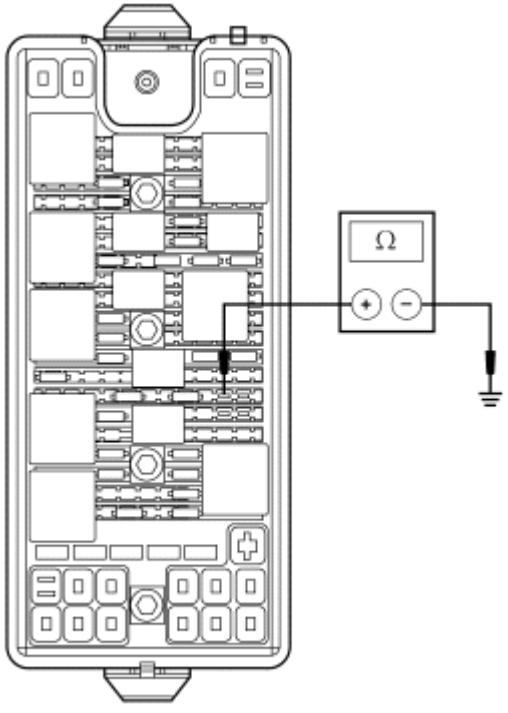
- Key in ON position.
- Check the recorded results from the SJB self-test.
- **Are any DTCs retrieved?**

  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

- Key in OFF position.
- Disconnect: Heated Rear Window Relay
- Key in ON position.
- Press the heated rear window switch to ON.



N0025842

Fig. 27: Checking Circuit 1389 (WH) For Ground
Courtesy of FORD MOTOR CO.

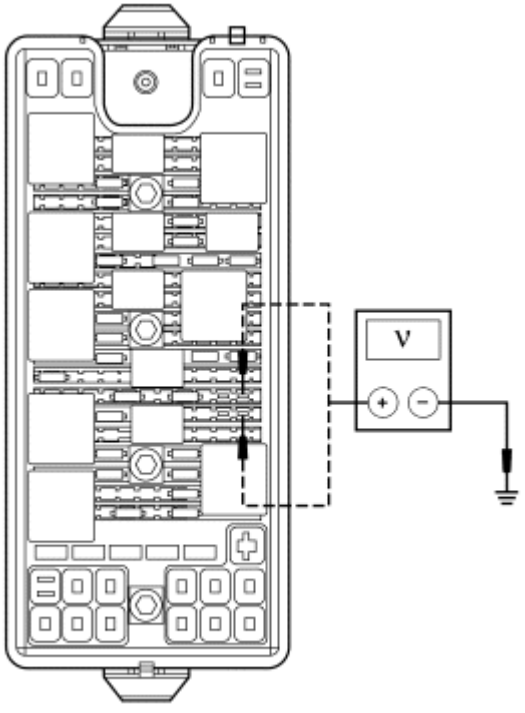
- Measure the resistance between heated rear window relay pin 86, circuit 1389 (WH), harness side and ground.
- **Is the resistance less than 100 ohms?**

YES : Go to D3.

NO : Go to D7.

D3 CHECK CIRCUIT 298 (VT/OG) FOR AN OPEN

- Key in OFF position.



N0025843

Fig. 28: Checking Circuit 298 (VT/OG) For An Open
Courtesy of FORD MOTOR CO.

- Measure the voltage between heated rear window relay pin 30, harness side and ground; and between heated rear window relay pin 85, circuit 298 (VT/OG), harness side and ground.
- **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.

D4 CHECK THE HEATED REAR WINDOW RELAY FOR AN OPEN OR INTERNAL SHORT (NO DTCs)

- Carry out the Heated Rear Window Relay Component Test. Refer to COMPONENT TESTING.
- **Is the heated rear window relay OK?**

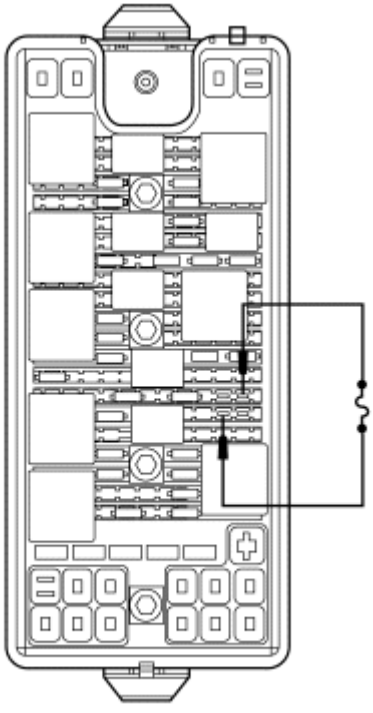
  YES : Go to D5.

  NO : INSTALL a new heated rear window relay. TEST the system for normal operation.

D5 CHECK CIRCUIT 186 (BN/LB) FOR AN OPEN

- Disconnect: Heated Rear Window

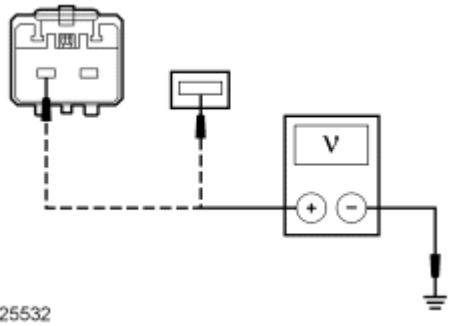
- Key in ON position.



N0025844

Fig. 29: Checking Circuit 186 (BN/LB) For Open (1 Of 2)
Courtesy of FORD MOTOR CO.

- Connect a fused (30A) jumper wire between heated rear window relay pin 30, circuit 298 (VT/OG), harness side and heated rear window relay pin 87, circuit 186 (BN/LB), harness side.



N0025532

Fig. 30: Checking Circuit 186 (BN/LB) For Open (2 Of 2)
Courtesy of FORD MOTOR CO.

- Measure the voltage between heated rear window C402a-1 (coupe), circuit 186 (BN/LB), harness side and ground; or between heated rear window C402-1 (convertible), circuit 186 (BN/LB), harness side and ground.
- **Is the voltage greater than 10 volts?**

YES : REMOVE the jumper wire. Go to D6.

NO : REPAIR the circuit. TEST the system for normal operation.

D6 CHECK CIRCUIT 1205 (BK) FOR AN OPEN

- Key in OFF position.

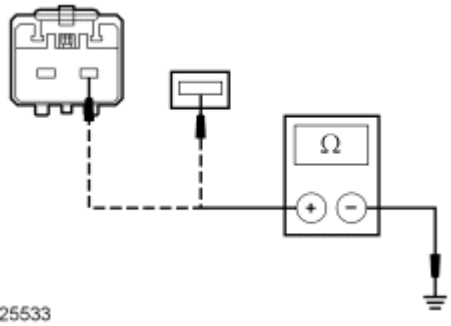


Fig. 31: Checking Circuit 1205 (BK) For Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between heated rear window C402b-1 (coupe), circuit 1205 (BK), harness side and ground; or between heated rear window C402-2 (convertible), circuit 1205 (BK), harness side and ground.
- **Is the resistance less than 5 ohms?**

  YES : REPAIR the heated rear window grid. REFER to **Window Grid Wire Repair**. 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.

- Key in OFF position.
- Disconnect: SJB C2280b

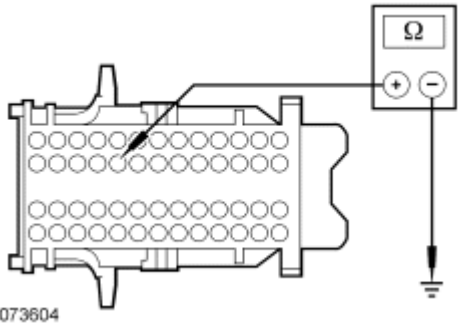


Fig. 32: Checking HVAC For Correct Operation
Courtesy of FORD MOTOR CO.

- While pressing the heated rear window switch to ON, measure the resistance between SJB C2280b-18, circuit 1426 (PK), harness side and ground.
- **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

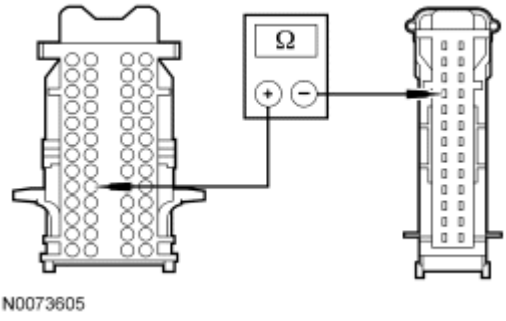


Fig. 33: Checking Circuit 1426 (PK) For An Open
Courtesy of FORD MOTOR CO.

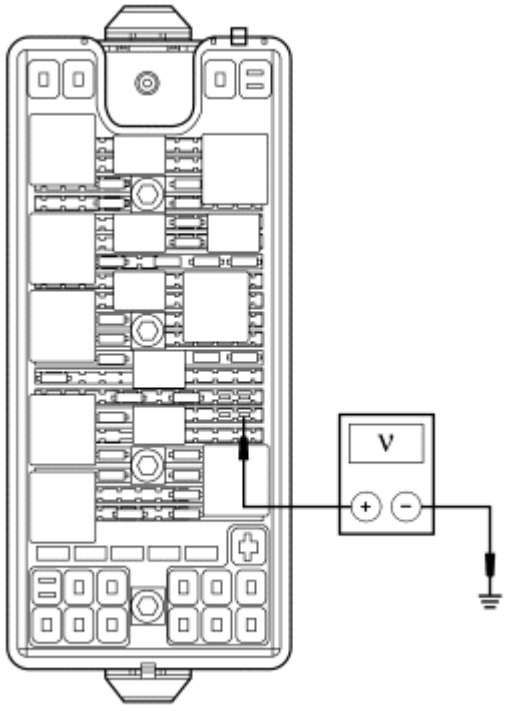
- Measure the resistance between SJB C2280b-18, circuit 1426 (PK), harness side and HVAC C294a-10, circuit 1426 (PK), harness side.
- **Is the resistance less than 5 ohms?**

  YES : INSTALL a new HVAC module. REFER to **CLIMATE CONTROL** article. TEST the system for normal operation.

  NO : REPAIR the circuit. TEST the system for normal operation.

D9 CHECK CIRCUIT 298 (VT/OG) FOR VOLTAGE

- Key in OFF position.
- Disconnect: Heated Rear Window Relay



N0025845

Fig. 34: Checking Circuit 298 (VT/OG) For Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between heated rear window relay pin 85, circuit 298 (VT/OG), harness side and ground.
- **Is the voltage greater than 10 volts?**

  YES : Go to D10.

  NO : VERIFY the bussed electrical center (BEC) fuse 52 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation.

D10 CHECK THE HEATED REAR WINDOW RELAY FOR AN OPEN OR AN INTERNAL SHORT (DTC B1348, B1349)

- Key in OFF position.
- Disconnect: Heated Rear Window Relay
- Carry out the Heated Rear Window Relay Component Test. Refer to COMPONENT TESTING.
- **Is the heated rear window relay OK?**

  YES : Go to D11.

  NO : INSTALL a new heated rear window relay. TEST the system for normal operation.

D11 CHECK CIRCUIT 1389 (WH) FOR AN OPEN OR SHORT TO GROUND

- Disconnect: SJB C2280c

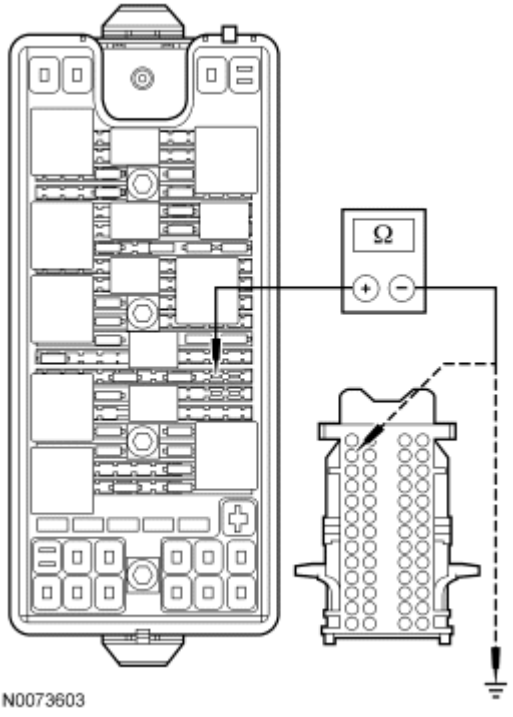


Fig. 35: Checking Circuit 1389 (WH) For An Open Or Short To Ground
Courtesy of FORD MOTOR CO.

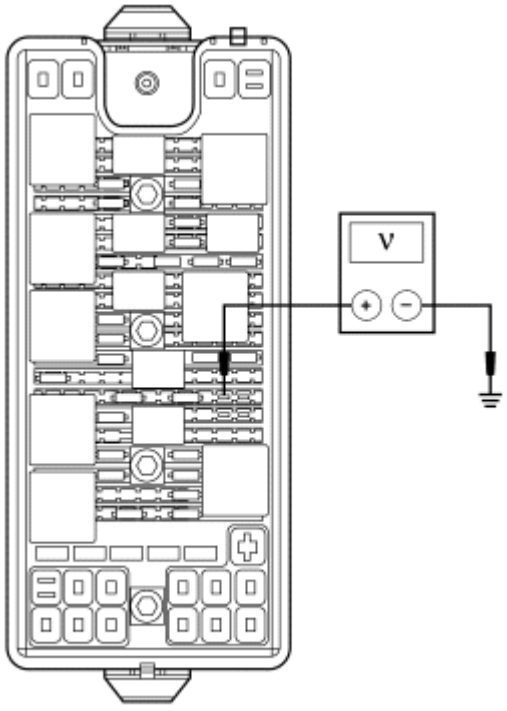
- Measure the resistance between heated rear window relay pin 86, circuit 1389 (WH), harness side and SJB C2280c-12, circuit 1389 (WH), harness side; and between heated rear window relay pin 86, circuit 1389 (WH) and ground.
- **Is the resistance less than 5 ohms between the heated rear window relay and the SJB and greater than 10,000 ohms between heated rear window 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

- Key in ON position.



N0025847

Fig. 36: Measuring Voltage Between Heated Rear Window Relay C1099-86 Circuit 1389 (WH) And Ground
Courtesy of FORD MOTOR CO.

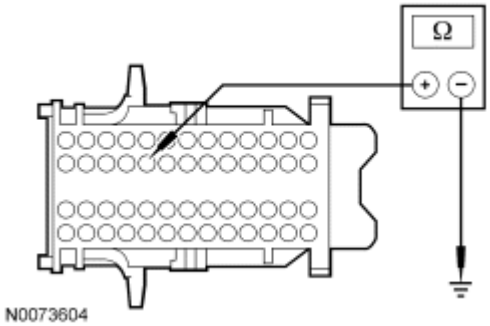
- Measure the voltage between heated rear window relay pin 86, circuit 1389 (WH), harness side and ground.
- **Is any voltage present?**

  YES : REPAIR the circuit. TEST the system for normal operation.

  NO : Go to D18.

D13 VERIFY DTC B1345

- Key in OFF position.
- Disconnect: SJB C2280b
- Key in ON position.



N0073604

Fig. 37: Measuring Resistance Between SJB C2280B-18, Circuit 1426 (PK), Harness Side & Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between SJB C2280b-18, circuit 1426 (PK), harness side and ground.
- **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

- Key in OFF position.
- Disconnect: HVAC Module C294a

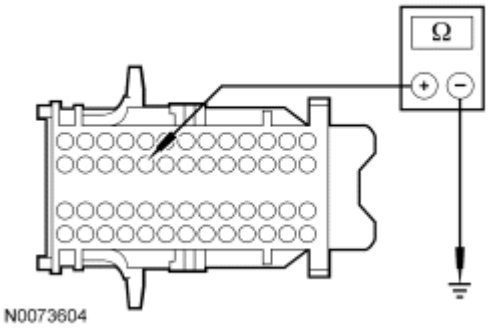


Fig. 38: Checking Circuit 1426 (PK) For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between SJB C2280b-18, circuit 1426 (PK), harness side and ground.
- **Is the resistance greater than 10,000 ohms?**

  YES : INSTALL a new HVAC module. REFER to **CLIMATE CONTROL** article. 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

- Key in OFF position.
- Disconnect: HVAC Module C294a
- Disconnect: SJB C2280b

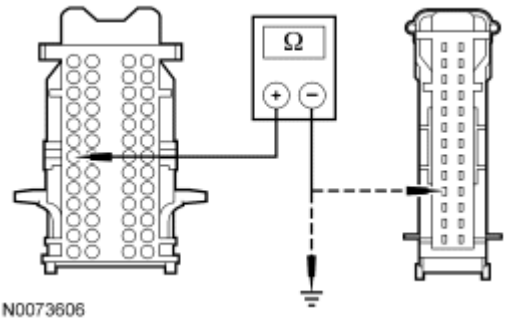


Fig. 39: Checking Circuit 1427 (TN/LB) For An Open Or Short To Ground
Courtesy of FORD MOTOR CO.

- 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.
- **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

- Key in OFF position.
- Disconnect: HVAC Module C294a
- Disconnect: SJB C2280b
- Key in ON position.

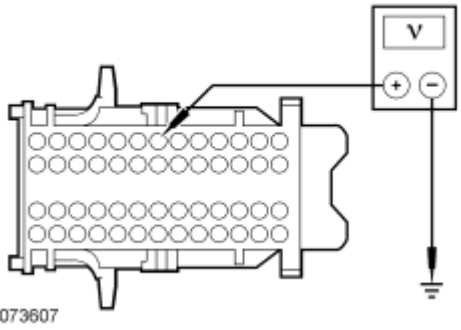


Fig. 40: Checking Circuit 1427 (TN/LB) For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between SJB C2280b-7, circuit 1427 (TN/LB), harness side and ground.
- **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 heated rear window.
- **Does the indicator illuminate?**

  YES : INSTALL a new HVAC module. REFER to **CLIMATE CONTROL** article. 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 **MULTIFUNCTION ELECTRONIC MODULES** article. 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 appropriate SYSTEM WIRING DIAGRAM ARTICLE, Heated Window for schematic and connector information.

Normal Operation

When the rear 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 heated rear window relay. When the relay is active, voltage is supplied to the heated rear window grid through circuit 186 (BN/LB). The heated rear window grid is grounded by circuit 1205 (BK). The SJB provides heated backlight status to the HVAC module through circuit 1427 (TN/LB).

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Heated rear window switch
- Heated rear window relay
- SJB

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

E1 CHECK THE HEATED REAR WINDOW RELAY FOR AN OPEN OR INTERNAL SHORT

- Key in ON position.
- Disconnect: Heated Rear Window Relay
- Carry out the Heated Rear Window Relay Component Test. Refer to COMPONENT TESTING.
- **Does the heated rear window relay pass the component test?**

  YES : Go to E2.

  NO : INSTALL a new heated rear window relay. CLEAR the DTCs. REPEAT the self-test.

E2 CHECK CIRCUIT 186 (BN/LB) FOR A SHORT TO VOLTAGE

- Disconnect: Heated Rear Window C402a (coupe), C402 (convertible)

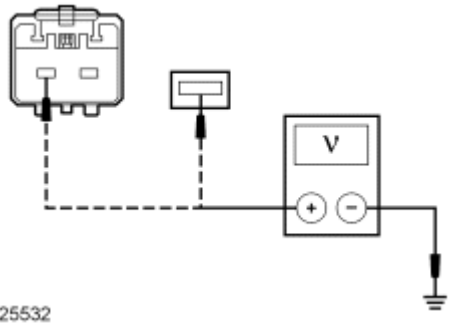


Fig. 41: Checking Circuit 186 (BN/LB) For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between heated rear window C402a-1 (coupe), C402-1 (convertible), circuit 186 (BN/LB), harness side and ground.
- **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

- Key in OFF position.
- Disconnect: SJB C2280c

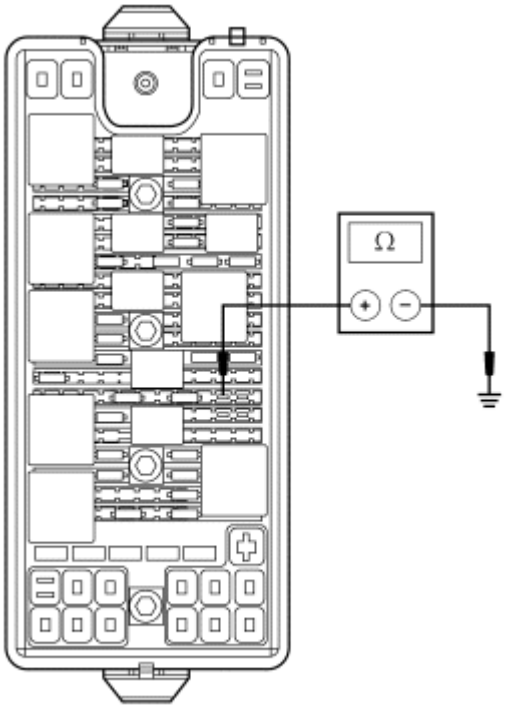


Fig. 42: Measuring Resistance Between Heated Rear Window Relay C1099-86 And Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between the heated rear window relay pin 86, circuit 1389 (WH), harness side and ground.
- **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 **MULTIFUNCTION ELECTRONIC MODULES** article. 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 appropriate SYSTEM WIRING DIAGRAM ARTICLE, Power Windows for schematic and connector information.

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

F1 VERIFY THE INTERIOR LAMP 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 **INTERIOR LIGHTING** article to continue the diagnosis of the interior lamps.

F2 CARRY OUT THE SHORT DROP CALIBRATION

- Key in ON position.
- Carry out the **Window Motor Initialization**.
- **Does the short drop window feature operate correctly?**

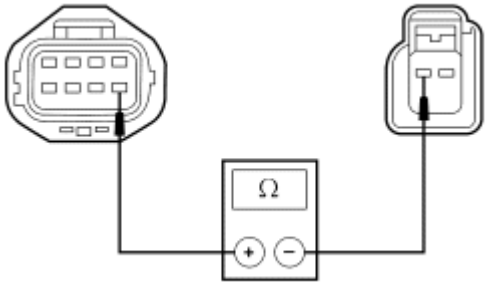
  YES : The system is operating correctly at this time. INFORM the customer of the short drop window feature. REFER to the Owner's Literature.

  NO : For the driver window, go to F3 .

  For the passenger window, go to F4 .

F3 CHECK CIRCUIT 1312 (LG/BK) FOR AN OPEN

- Key in OFF position.
- Disconnect: Driver Door Ajar Switch C526
- Disconnect: Driver Window Motor C518



N0025601

Fig. 43: Checking Circuit 1312 (LG/BK) For Open
Courtesy of FORD MOTOR CO.

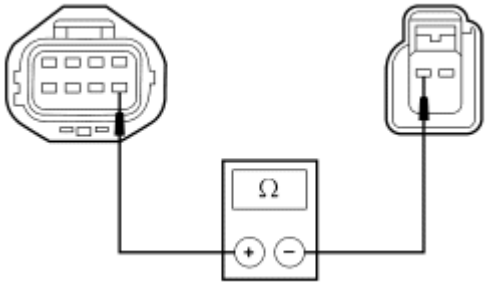
- Measure the resistance between driver window motor C518-5, circuit 1312 (LG/BK), harness side and driver door ajar switch C526-2, circuit 1312 (LG/BK), harness side.
- **Is the resistance less than 5 ohms?**

  YES : INSTALL a new driver window motor. REFER to **Window Regulator and Motor - Front Door**. 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

- Key in OFF position.
- Disconnect: Passenger Door Ajar Switch C602
- Disconnect: Passenger Window Motor C623



N0025601

Fig. 44: Checking Circuit 1314 (YE/LG) For An Open
Courtesy of FORD MOTOR CO.

- 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.
- **Is the resistance less than 5 ohms?**

  YES : INSTALL a new passenger window motor. REFER to **Window Regulator and Motor - Front Door**. 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 appropriate SYSTEM WIRING DIAGRAM ARTICLE, 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

PINPOINT TEST G: THE CONVERTIBLE TOP DROP FUNCTION IS INOPERATIVE/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.

G1 VERIFY THE WINDOW OPERATION

- Key in ON position.
- 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 **MULTIFUNCTION ELECTRONIC MODULES** article. 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 **MULTIFUNCTION ELECTRONIC MODULES** article. 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

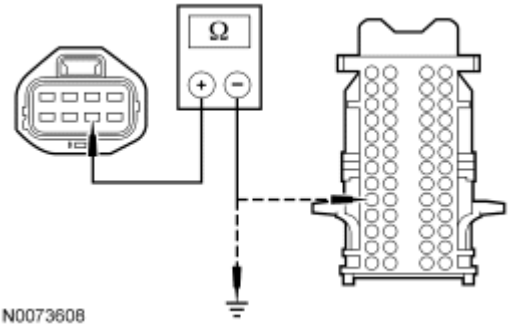


Fig. 45: Checking Circuit 2032 (LB) For An Open Or Short To Ground
Courtesy of FORD MOTOR CO.

- 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.
- **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**. 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

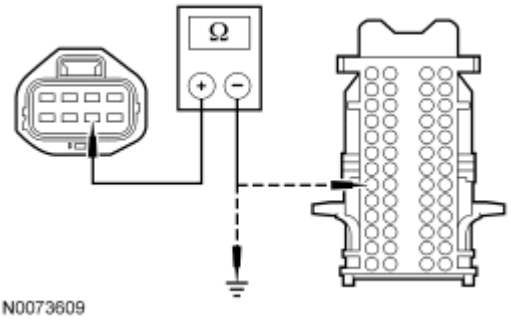


Fig. 46: Checking Circuit 2031 (GY/PK) For An Open Or Short To Ground
Courtesy of FORD MOTOR CO.

- 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.
- **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**. 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

- Key in OFF position.
- Disconnect: SJB C2280d
- Disconnect: LH Rear Window Motor C3118

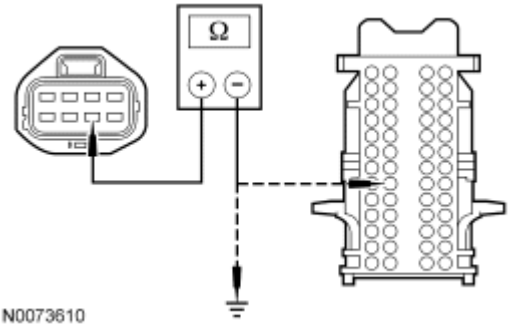


Fig. 47: Checking Circuits 2031 (GY/PK) & 2020 (GY/YE) For An Open Or Short To Ground
Courtesy of FORD MOTOR CO.

- 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.
- **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**. 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

- Key in OFF position.
- Disconnect: SJB C2280d
- Disconnect: RH Rear Window Motor C3119

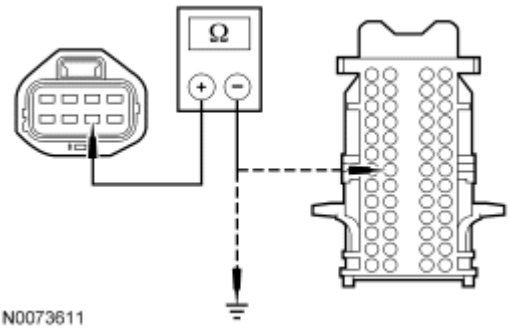


Fig. 48: Checking Circuits 2031 (GY/PK) & 2021 (WH/YE) For An Open Or Short To Ground
Courtesy of FORD MOTOR CO.

- 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.
- **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**. 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

H1 CHECK THE CORRECT OPERATION OF THE INTERIOR LIGHT

- 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 COMPONENT TESTING.
- **Do the interior lights operate correctly?**

  YES : Go to H2.

  NO : REFER to **INTERIOR LIGHTING** article to diagnose the interior light concern.

H2 CHECK THE ACCESSORY DELAY RELAY

- Disconnect: Accessory Delay Relay
- Carry out the Accessory Delay Relay Component Test. Refer to COMPONENT TESTING.
- **Is the accessory delay relay OK?**

  YES : VERIFY the SJB fuse 6 (5A) is OK. If OK, go to H3.

  NO : INSTALL a new accessory delay relay. TEST the system for normal operation.

H3 CHECK CIRCUIT 294 (WH/LB) FOR VOLTAGE

- Disconnect: SJB C2280H

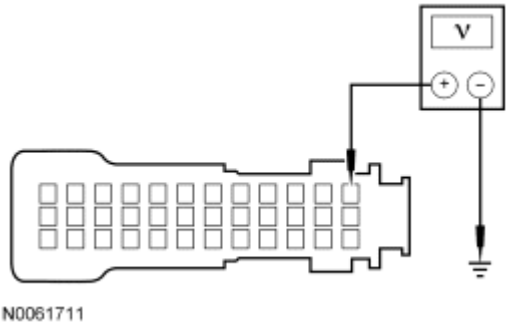


Fig. 49: Checking Circuit 294 (WH/LB) For Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between SJB C2280H-1, circuit 294 (WH/LB) harness side and ground.
- **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.

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 Relay 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

PINPOINT TEST I: THE DELAYED ACCESSORY RELAY DOES NOT TURN OFF

I1 CHECK FOR CORRECT OPERATION OF THE INTERIOR LIGHT

- 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 COMPONENT TESTING.
- **Do the interior lights operate correctly?**

  YES : Go to I2.

  NO : REFER to **INTERIOR LIGHTING** article 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 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

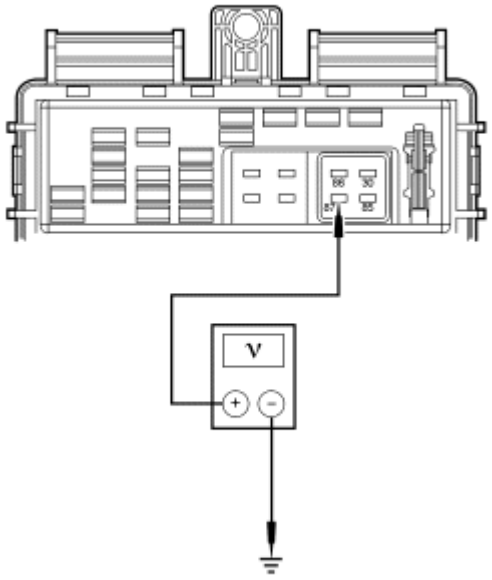


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Fig. 50: Checking Short To Voltage At Delayed Accessory Relay Output
Courtesy of FORD MOTOR CO.

- Measure the voltage between accessory delay relay pin 87, harness side and ground.
- **Is 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 tables:
- Disconnect SJB C2280A, C2280E and C2280G.

SJB Connector/Pin	Circuit
C2280A-14	687

	(GY/YE)
C2280E-26	985 (RD/LB)
C2280E-25	984 (YE/LB)
C2280E-19	956 (OG/LG)
C2280E-17	193 (YE/LG)
C2280E-16	882 (BN/YE)
C2280E-23	333 (YE/RD)
C2280G-2	400 (RD/LB)/ 170 (RD/LB)

- **Is voltage present?**

  YES : REPAIR the circuit in question. TEST the system for normal operation.

  NO : Go to I5.

I5 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 J: DTCs B1141/B1142 - Convertible Top Full Down/Up Position Switch Circuit Failure

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Convertible Top for schematic and connector information.

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, 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 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

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.

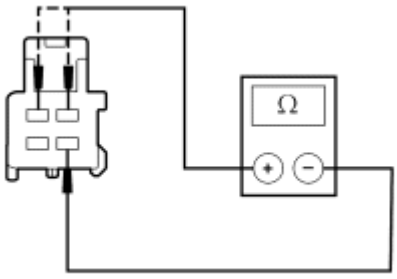
- Connect the diagnostic tool.
- Key in ON position.
- With the convertible top and the rear windows in the full down position, carry out the on-demand self test for the SJB.
- **Does DTC B1141 or DTC B1142 set as current?**

  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

- Key in OFF position.
- Disconnect: Convertible Top Ajar Switch C3266



N0027058

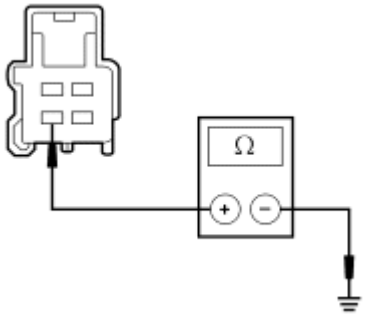
Fig. 51: Checking For Convertible Top Ajar Switch Operation
Courtesy of FORD MOTOR CO.

- Measure the resistance between convertible top ajar switch C3226-1, component side and convertible top ajar switch C3266-3, component side, with convertible top in the full up position; and between convertible top ajar switch C3226-2, component side and convertible top ajar switch C3266-3, component side, with convertible top in the full down position.
- **Are the resistances less than 20 ohms?**

  YES : Go to J3.

  NO : INSTALL a new convertible top ajar switch. For additional information, refer to **CONVERTIBLE TOP** article. CLEAR the DTCs. REPEAT the self-test.

J3 CHECK CIRCUIT 1205 (BK) FOR AN OPEN



N0026301

Fig. 52: Measuring Resistance Between Convertible Top Ajar Switch C3266-3, Circuit 1205 (BK) & Ground
Courtesy of FORD MOTOR CO.

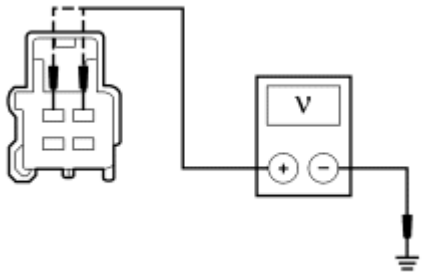
- Measure the resistance between convertible top ajar switch C3266-3, circuit 1205 (BK), harness side and ground.
- **Is the resistance less than 5 ohms?**

  YES : Go to J4.

  NO : REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

J4 CHECK CIRCUITS 700 (WH/VT) AND 1558 (TN/BK) FOR A SHORT TO VOLTAGE

- Disconnect: SJB C2280c
- Key in ON position.



N0026304

Fig. 53: Checking Circuit 700 (WH/VT) And 1558 (TN/BK) For Short To Voltage
Courtesy of FORD MOTOR CO.

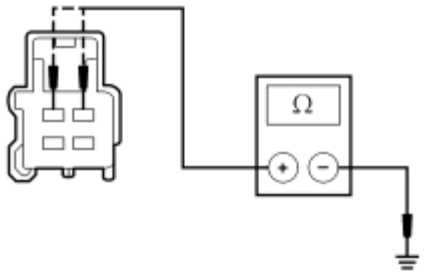
- Measure the voltage between convertible top ajar switch C3266-2, circuit 700 (WH/VT), harness side and ground; and between convertible top ajar switch C3266-1, circuit 1558 (TN/BK), harness side and ground.
- **Is any voltage present?**

  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

- Key in OFF position.



N0026302

Fig. 54: Checking Circuit 1558 (TN/BK) And 700 (WH/VT) For Short To Ground
Courtesy of FORD MOTOR CO.

- 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.
- **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

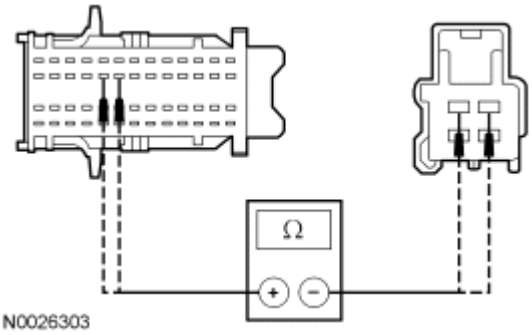


Fig. 55: Checking Circuits 700 (WH/VT) And 1558 (TN/BK) For Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between SJB C2280c-19, circuit 700 (WH/VT), harness side and convertible top ajar switch C3266-2, circuit 700 (WH/VT), harness side; and between SJB C2280c-18, circuit 1558 (TN/BK), harness side and convertible top ajar switch C3266-1, circuit 1558 (TN/BK), harness side.
- **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 **MULTIFUNCTION ELECTRONIC MODULES** article. 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.

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 DIAGNOSTIC TESTS.

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

NOTE: 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.

2. Clean the entire grid line repair area with window 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.

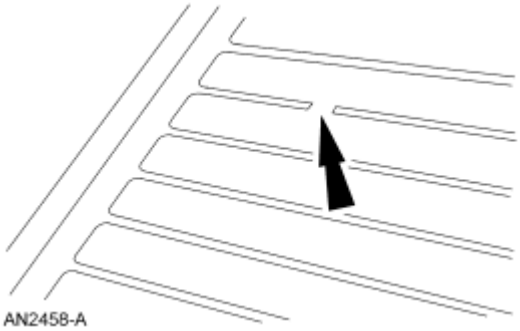


Fig. 56: Locating Grid Break
Courtesy of FORD MOTOR CO.

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.

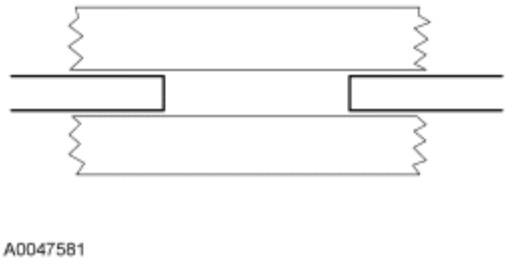


Fig. 57: Masking Grid Break Area
Courtesy of FORD MOTOR CO.

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.

5. 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.

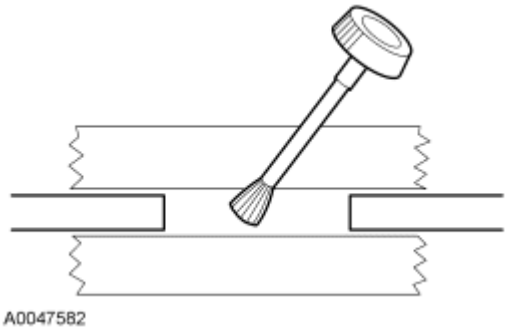


Fig. 58: Applying Repair Coating To Grid Break Area
Courtesy of FORD MOTOR CO.

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

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

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

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

   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.

8. Test the system for normal operation.

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.

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.

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

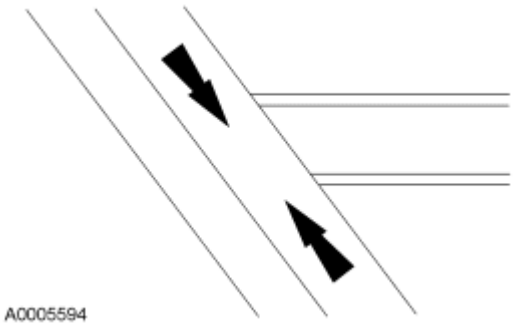


Fig. 59: Identifying Bus Bar Area To Be Repaired
Courtesy of FORD MOTOR CO.

NOTE: 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.

3. 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.)

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.

5. 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.

WINDOW GLASS ADJUSTMENT - FRONT DOOR, HEIGHT STOP ADJUSTMENT

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 **INTERIOR TRIM AND ORNAMENTATION** article.
2. Close the door.
3. Raise the door window glass to the desired height.

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

4. Lower the window to access the door window front and rear height stop adjustments.

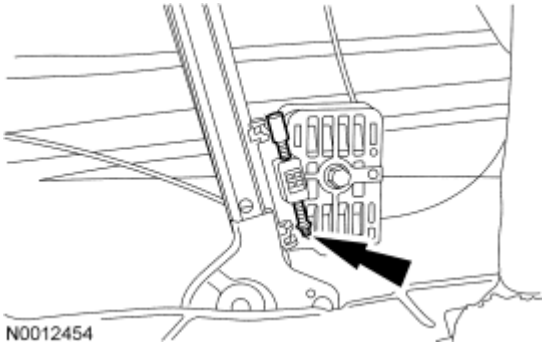


Fig. 60: Locating Door Window Front Height Adjuster
Courtesy of FORD MOTOR CO.

5. Adjust the door window front and rear height stop adjustments to achieve the desired door window height.
6. Install the door trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
7. Initialize the LH or RH front window motor. For additional information, refer to**Window Motor Initialization**.

WINDOW GLASS ADJUSTMENT - FRONT DOOR, STABILIZER

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.

1. Remove the door opening weatherstrip.
2. Close the door.
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 may be required.
    1. Sheet metal
    2. Weatherstrip retainer
    3. Door window glass
    4. 10.5 mm (0.41 in) (convertible)

       11.5 mm (0.45 in) (coupe)

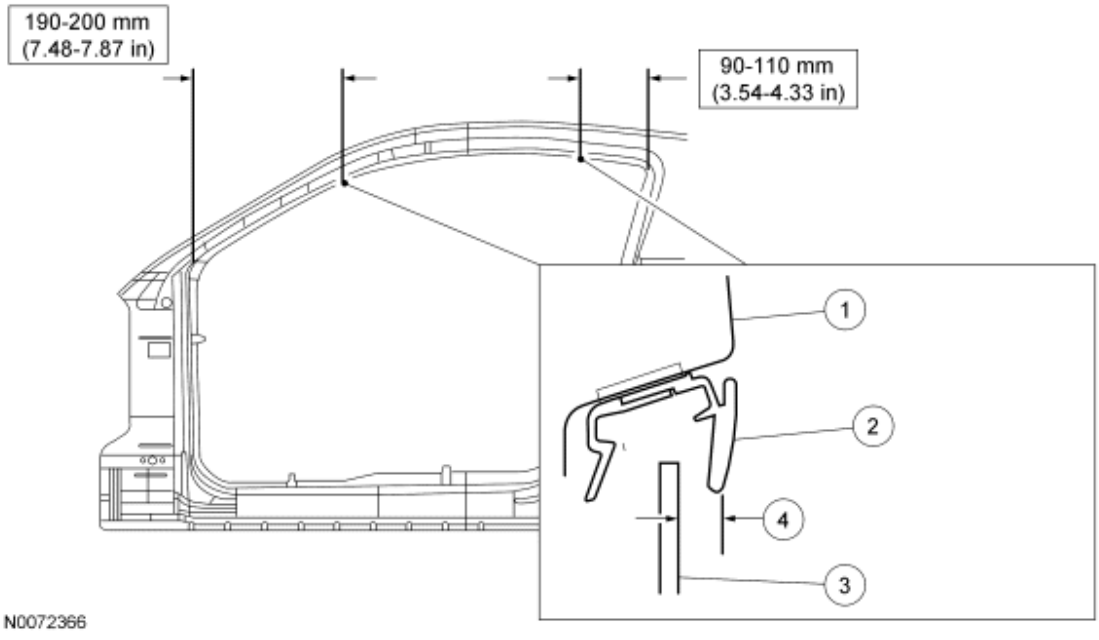


Fig. 61: Checking Dimension Of Gap Between Door Window Glass & Weatherstrip Retainer
Courtesy of FORD MOTOR CO.

4. Remove the door trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
5. Remove the water shield.

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.

6. Loosen the 2 (front and rear) door window glass bolts.
7. Fully close the door.
8. Adjust the door window glass by physically moving the glass to the desired position and tighten the door window glass bolts.
   - Tighten to 9 N.m (80 lb-in).
9. From underneath the door, loosen the front window regulator guide rail lock nut.

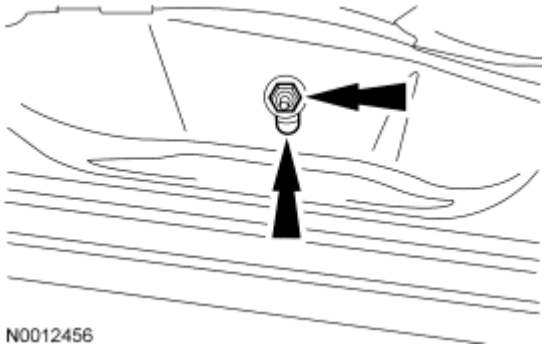


Fig. 62: Locating Front Window Regulator Guide Rail Lock Nut
Courtesy of FORD MOTOR CO.

10. Operate the door window glass to the full down position.
11. Tighten the front window regulator guide rail lock nut.
12. 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 glass as outlined in the previous steps.
13. Install the door opening weatherstrip.
14. Install the water shield.
15. Install the door trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
16. Initialize the door window motor. For additional information, refer to **Window Motor Initialization**.
17. Operate the 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

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 adjustments 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.

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

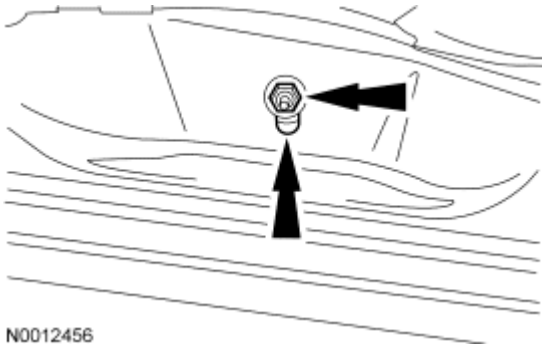


Fig. 63: Locating Front Window Regulator Guide Rail Lock Nut
Courtesy of FORD MOTOR CO.

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

NOTE: The clockwise direction of the jackscrew moves the window regulator guide rail inboard (the door window glass tips outboard), resulting in less seal pressure (maximum of 5 revolutions). The counterclockwise direction of the jackscrew moves the window regulator guide rail outboard (the door window glass tips inboard), resulting in more seal pressure (maximum of 10 revolutions).

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

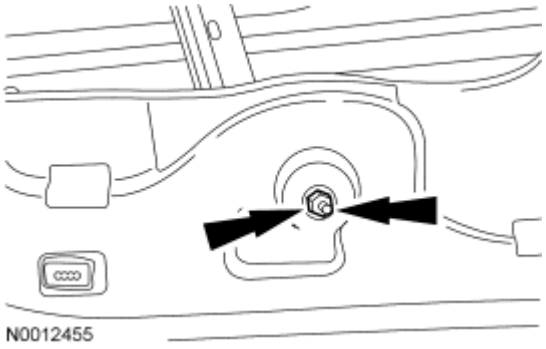


Fig. 64: Identifying Lock Nut
Courtesy of FORD MOTOR CO.

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**.
6. Operate the 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).
7. Install the round reflector.

WINDOW GLASS ADJUSTMENT - REAR QUARTER, CONVERTIBLE

1. Make sure the door alignment is properly adjusted. For additional information, refer to **BODY**

CLOSURES article.

2. Remove the rear quarter trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
3. Loosen the 2 rear quarter window glass bolts.
4. Adjust the rear quarter window glass to desired position.
5. Tighten the quarter window glass bolts to 10 Nm (89 lb-in).
6. Install the rear quarter trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article

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

GLASS RESEAL - WINDSHIELD

Material

Item	Specification
DOW AUTOMOTIVE 2-HOUR CURE	

Dow Urethane Adhesive Betaseal® Express	-
SIKA 2-HOUR CURE	
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 **INTERIOR TRIM AND ORNAMENTATION** article.
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 **INTERIOR TRIM AND ORNAMENTATION** article.

All vehicles

6. Remove the cowl vent screen. For additional information, refer to **FRONT END BODY PANELS** article.
7. Clean the interior and exterior of the windshield glass surface with glass cleaner.
8. Cut the urethane adhesive applicator tip to specification.

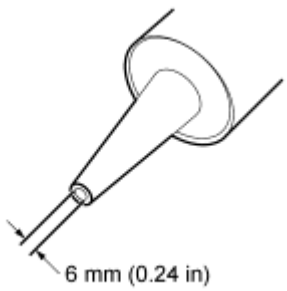


Fig. 65: Cutting Urethane Adhesive Applicator Tip To Specification
Courtesy of FORD MOTOR CO.

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.

9. 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.

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

10. After the urethane 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 **FRONT END BODY PANELS** article.

Convertible

12. Install the header trim panel and the LH and RH A-pillar trim panels. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.

Coupe

13. Position the front portion of the headliner.
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 **INTERIOR TRIM AND ORNAMENTATION** article.

All vehicles

17. Install and adjust the wiper blade and pivot arms as necessary. For additional information, refer to **WIPERS AND WASHERS** article.

GLASS RESEAL - REAR

Material

Item	Specification
DOW AUTOMOTIVE 2-HOUR CURE	
Dow Urethane Adhesive Betaseal® Express	-
SIKA 2-HOUR CURE	

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 **INTERIOR TRIM AND ORNAMENTATION** article.
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.

Fig. 66: Cutting Urethane Adhesive Applicator Tip To Specification
Courtesy of FORD MOTOR CO.

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.

5. 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).

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

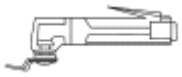
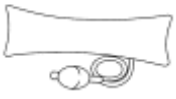
6. After the urethane has cured, check the rear window glass seal for air or water leaks through the urethane adhesive bead and add urethane adhesive as necessary.
7. Connect the rear window glass electrical connectors.
8. Install the quarter trim panels and parcel shelf. For additional information, refer to **INTERIOR TRIM**

AND ORNAMENTATION article.

REMOVAL AND INSTALLATION

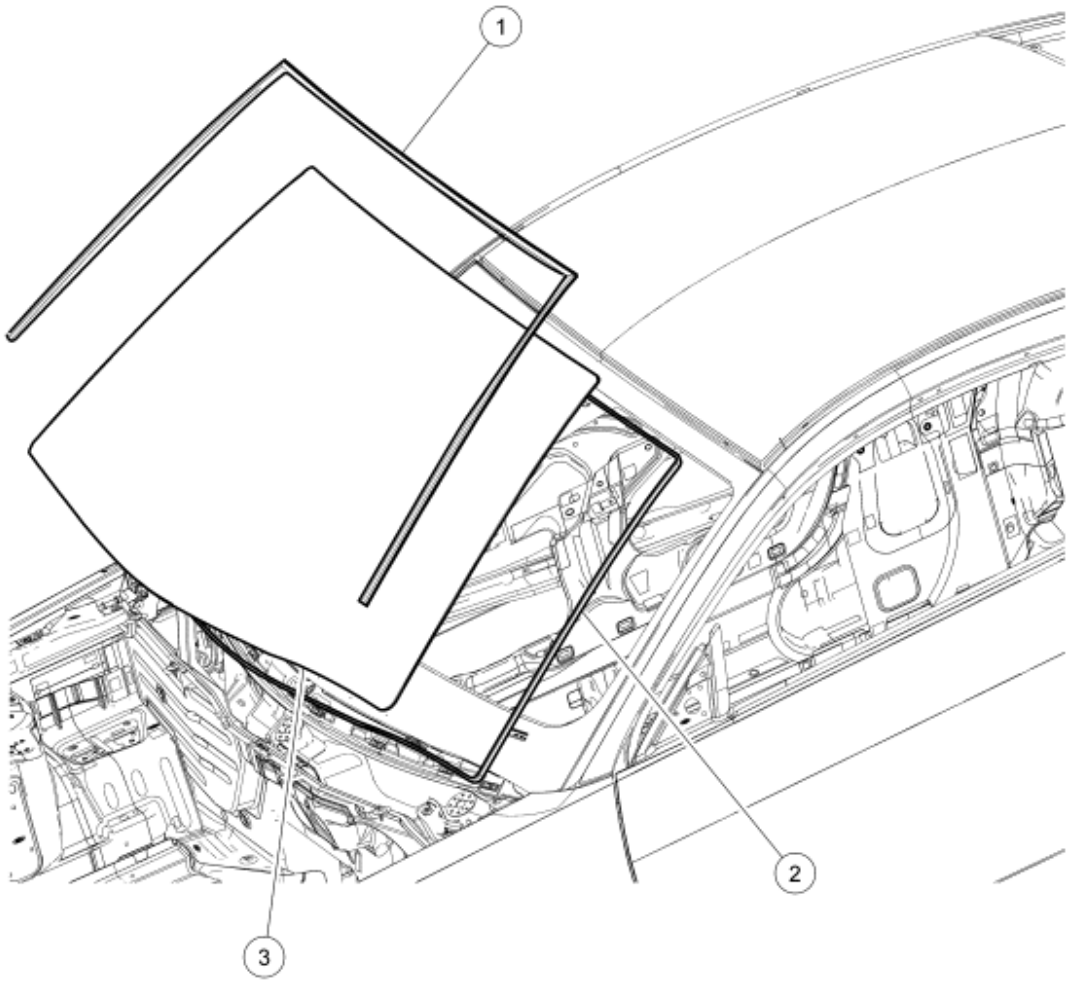
WINDSHIELD GLASS

Special Tools

Illustration	Tool Name	Tool Number
 ST2834-A	Interior Auto Glass Cut-Out Knife Kit	164-R2450 or equivalent
 ST1109-A	Rotunda Pneumatic Knife with Offset Blade	164-R1511 or equivalent
 ST2218-B	The Pumper	164-R2459 or equivalent

Material

Item	Specification
DOW AUTOMOTIVE 2-HOUR CURE	
Dow Urethane Adhesive Betaseal® Express	-
Dow Urethane One Step Glass Primer Betaprime® 5500 / 5500A / 5500SA	-
SIKA 2-HOUR CURE	
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



N0052761

Fig. 67: Exploded View Of Windshield Glass
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7603110	Windshield glass molding (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 molding)

REMOVAL

All vehicles

1. Remove the cowl vent screen. For additional information, refer to **FRONT END BODY PANELS**

article.

2. Remove the interior rear view mirror. For additional information, refer to **REAR VIEW MIRRORS** article.

Coupe

3. Remove the A-pillar trim panels. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
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 **INTERIOR TRIM AND ORNAMENTATION** article.

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.

NOTE: Refer to manufacturer's instructions before using the tool.

9. Lubricate the urethane adhesive with water to aid the Interior Auto Glass Cut-Out Knife Kit when cutting the urethane adhesive.

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.

CAUTION: 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 special 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.

10. Insert the special tool at the upper center of the windshield glass and work toward the bottom corners.

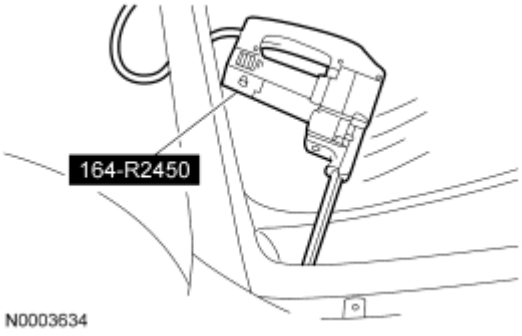


Fig. 68: Cutting Remaining Urethane Adhesive
Courtesy of FORD MOTOR CO.

11. Using the special tool, distance the windshield from the body.

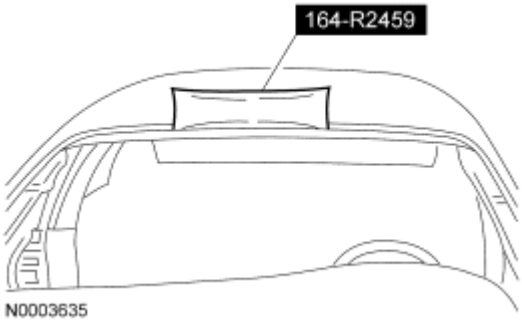


Fig. 69: Using Special Tool (164-R2459), Distance The Windshield From Body
Courtesy of FORD MOTOR CO.

12. Insert the special tool into the bottom of the urethane adhesive and cut from corner to corner.

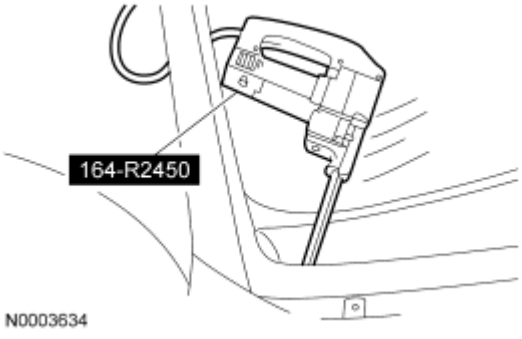


Fig. 70: Cutting Remaining Urethane Adhesive
Courtesy of FORD MOTOR CO.

13. Carefully remove the windshield glass from the vehicle and place on a stable work surface.
14. Using a soft brush or vacuum, clean the pinch weld.

INSTALLATION

All vehicles

1. Dry-fit the windshield glass on the existing urethane 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 molding assembly from the windshield opening and place on a stable work surface with the interior side of the glass facing up.

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. For minor scratches or exposed metal on the pinch weld, see the manufacturer's recommendations.

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

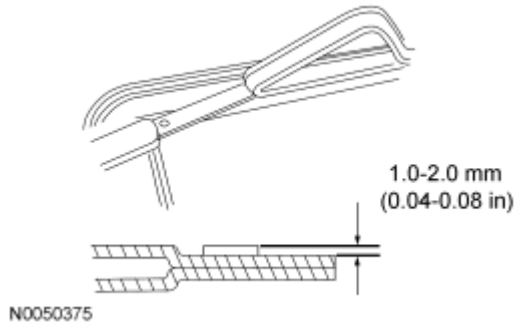


Fig. 71: Trimming Remaining Urethane Adhesive To Specification
Courtesy of FORD MOTOR CO.

4. Using a clean shop towel, brush or oil-free compressed air, clean the pinch weld area around the existing urethane. 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 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.

NOTE: Be sure to use the same brand and cure-rate products for the adhesive and primer. Do not mix different brands of urethane and primer. Refer to the Material Chart in this procedure.

NOTE: Sika uses the same black primer for the glass and pinch weld area.

7. If installing a new windshield glass, apply urethane glass primer according to manufacturer's instructions. Allow at least 6 minutes to dry.
8. Cut the applicator tip to specification. This will produce a triangular bead during application.

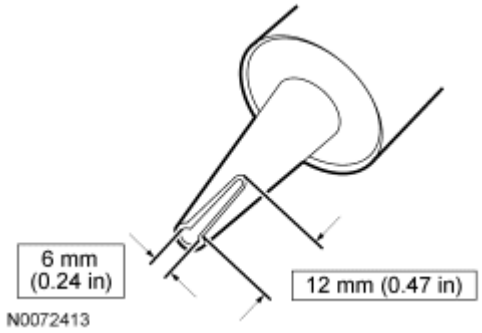


Fig. 72: Cutting Applicator Tip To Specification
Courtesy of FORD MOTOR CO.

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.

9. Apply a bead of urethane adhesive to the pinch weld. Make sure that all gaps in the urethane adhesive are smoothed into one continuous bead, starting at the bottom of the windshield glass near the center.

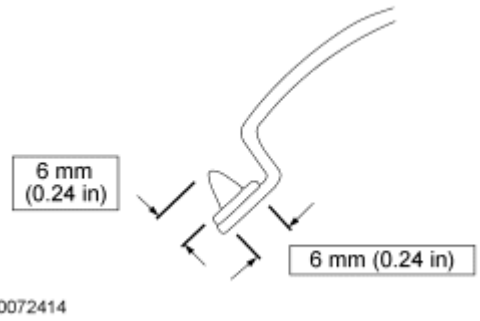


Fig. 73: Applying A Bead Of Urethane Adhesive To Pinch Weld
Courtesy of FORD MOTOR CO.

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

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

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).

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

11. After the urethane 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 **REAR VIEW MIRRORS** article.
13. Install the cowl vent screen. For additional information, refer to **FRONT END BODY PANELS** article.

Convertible

14. Install the header trim panel and the LH and RH A-pillar trim panels. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.

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 **INTERIOR TRIM AND**

ORNAMENTATION article.

All vehicles

19. Install and adjust the wiper blade and pivot arms as necessary. For additional information, refer to **WIPERS AND WASHERS** article.

GLASS, FRAMES AND MECHANISMS - EXPLODED VIEW, FRONT DOOR

NOTE: RH side shown, LH side similar.

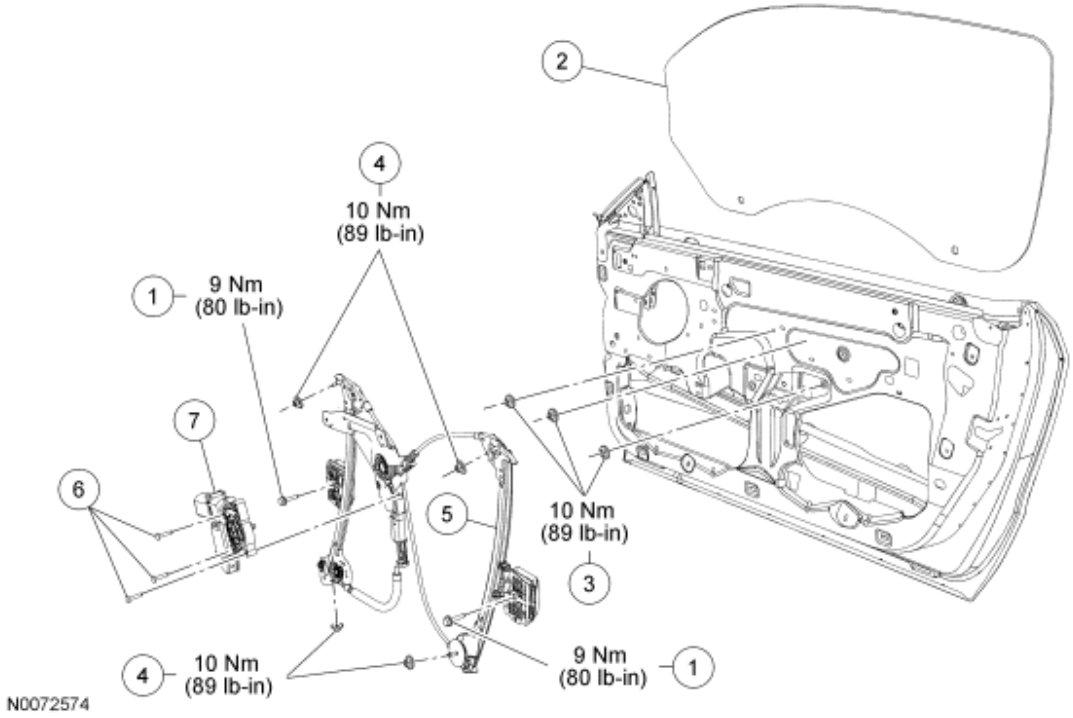


Fig. 74: Exploded View Of Front Door Glass, Frames & Mechanisms With Torque Specifications
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	63231A06	Door window glass bolts and sleeves (2 required)
2	6321410 RH/ 6321411 LH	Door window glass
3	N621906	Door window motor nuts (3 required)
4	N621906	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

1. For additional information, refer to the procedures.

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 **INTERIOR TRIM AND ORNAMENTATION** article.
2. Position the watershield aside.

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

3. Remove the 2 door window glass bolts and sleeves.
   - To install, tighten to 9 N.m (80 lb-in).

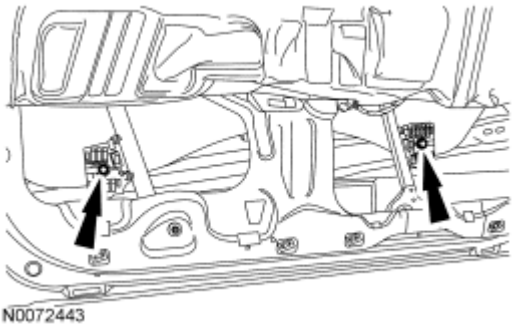


Fig. 75: Locating Door Window Glass Bolts & Sleeves
Courtesy of FORD MOTOR CO.

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, Height Stop Adjustment** and **Window Glass Adjustment - Front Door, Stabilizer**.
   - Initialize the LH or RH front window motor. For additional information, refer to **Window Motor Initialization**.

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**.
2. Disconnect the door window motor electrical connector.
3. Remove the 3 door window motor nuts.
   - To install, tighten to 10 N.m (89 lb-in).

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

4. Remove the 4 door window regulator nuts.
   - To install, tighten to 10 N.m (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, Height Stop Adjustment** and **Window Glass Adjustment - Front Door, Stabilizer**.
   - Initialize the window motor. For additional information, refer to **Window Motor Initialization**.

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**.
2. Disconnect the door window motor electrical connector.
3. Remove the 3 door window motor nuts.
   - To install, tighten to 10 N.m (89 lb-in).

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

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

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

5. 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.

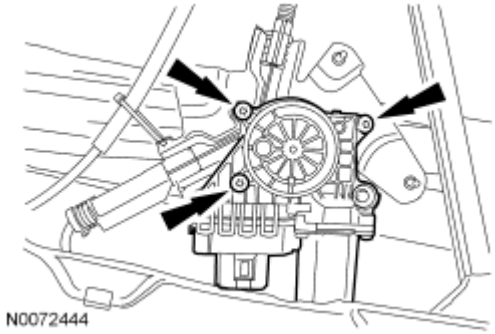


Fig. 76: Locating Door Window Motor Screws & Door Window Motor
Courtesy of FORD MOTOR CO.

7. To install, reverse the removal procedure.
    - Adjust the door window glass as necessary. For additional information, refer to **Window Glass Adjustment - Front Door, Height Stop Adjustment** and **Window Glass Adjustment - Front Door, Stabilizer**.
    - Initialize the window motor. For additional information, refer to **Window Motor Initialization**.

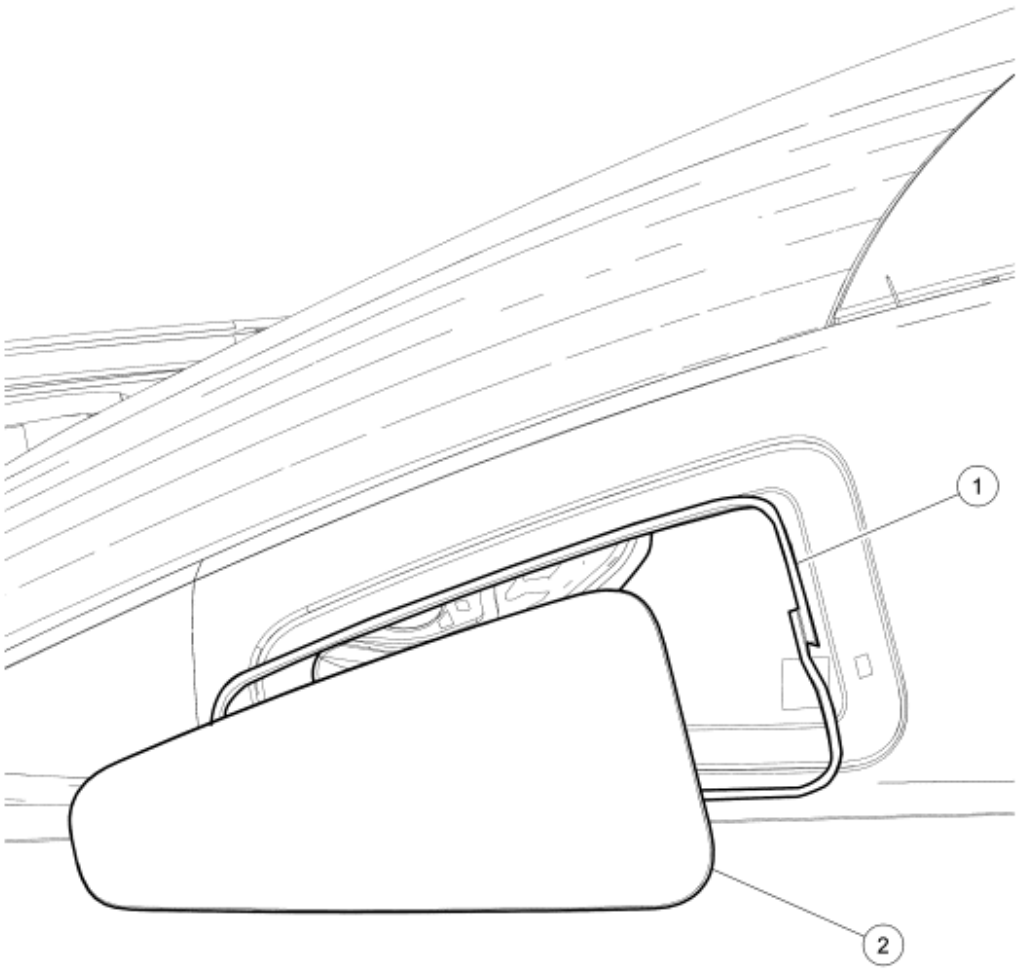
WINDOW GLASS - REAR QUARTER, COUPE

Special Tools

Illustration	Tool Name	Tool Number
 ST2834-A	Interior Auto Glass Cut-Out Knife Kit	164-R2450 or equivalent
 ST1109-A	Rotunda Pneumatic Knife with Offset Blade	164-R1511 or equivalent

Material

Item	Specification
DOW AUTOMOTIVE 2-HOUR CURE	
Dow Urethane Adhesive Betaseal® Express	-
Dow Urethane One Step Glass Primer Betaprime® 5500 / 5500A / 5500SA	-
SIKA 2-HOUR CURE	
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



N0052759

Fig. 77: Exploded View Of Window Glass - Rear Quarter, Coupe
Courtesy of FORD MOTOR CO.

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 **INTERIOR TRIM AND ORNAMENTATION** article.

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.

NOTE: Refer to manufacturer's instructions before using the tool.

3. Lubricate the urethane adhesive with water to aid the Interior Auto Glass Cut-Out Knife Kit when cutting the urethane adhesive.

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.

CAUTION: 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 special 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.

4. Using the special tool, cut at the upper center of the quarter glass and work toward the bottom corners. Then cut through the remaining urethane along the bottom of the quarter window glass.

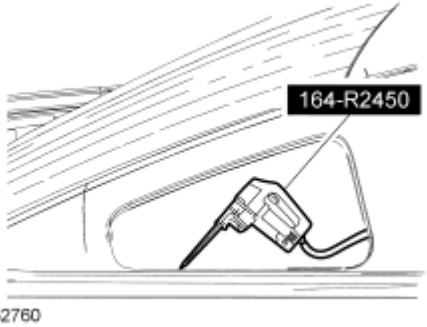


Fig. 78: Cutting Urethane Seal Using Special Tool
Courtesy of FORD MOTOR CO.

5. Remove the quarter window glass.

6. Using a soft brush or vacuum, clean the pinch weld.

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.

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. For minor scratches or exposed metal on the pinch weld, see the manufacturer's recommendations.

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

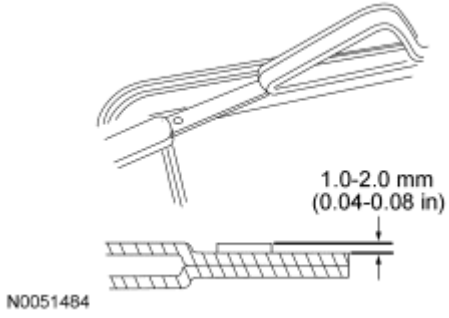


Fig. 79: Measuring Urethane With Appropriate Tool
Courtesy of FORD MOTOR CO.

4. If reinstalling the original quarter window glass, remove the urethane adhesive from the quarter window glass.
5. Using a clean shop towel, brush or oil-free compressed air, clean the pinch weld area around the existing urethane. 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 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.

NOTE: Be sure to use the same brand and cure-rate products for the adhesive and primer. Do not mix different brands of urethane and primer. Refer to the Material Chart in this procedure.

NOTE: Sika uses the same black primer for the glass and pinch weld area.

8. If installing a new quarter window glass, apply urethane glass primer according to manufacturer's instructions. Allow at least 6 minutes to dry.
9. Cut the applicator tip to specification. This will produce a triangular bead during application.

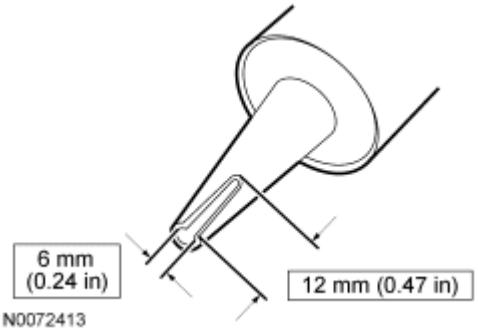


Fig. 80: Cutting Applicator Tip To Specification
Courtesy of FORD MOTOR CO.

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.

10. Apply a bead of urethane adhesive to the pinch weld. Make sure that all gaps in the urethane adhesive are smoothed into one continuous bead, starting at the bottom of the quarter window glass near the center.

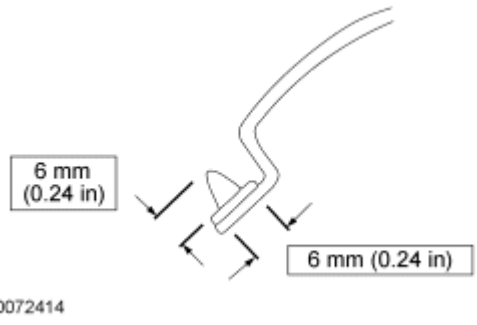


Fig. 81: Applying A Bead Of Urethane Adhesive To Pinch Weld
Courtesy of FORD MOTOR CO.

CAUTION: Before positioning the quarter window glass, open vehicle windows to prevent the air pressure of closing doors from affecting the adhesive bond.

11. Using the alignment marks made previously, position the quarter window glass on the pinch weld.

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).

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

12. After the urethane has cured, check the quarter window glass seal for air or water leaks through the urethane adhesive bead and add urethane adhesive as necessary.
13. Install the quarter window trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.

WINDOW GLASS - REAR QUARTER, CONVERTIBLE

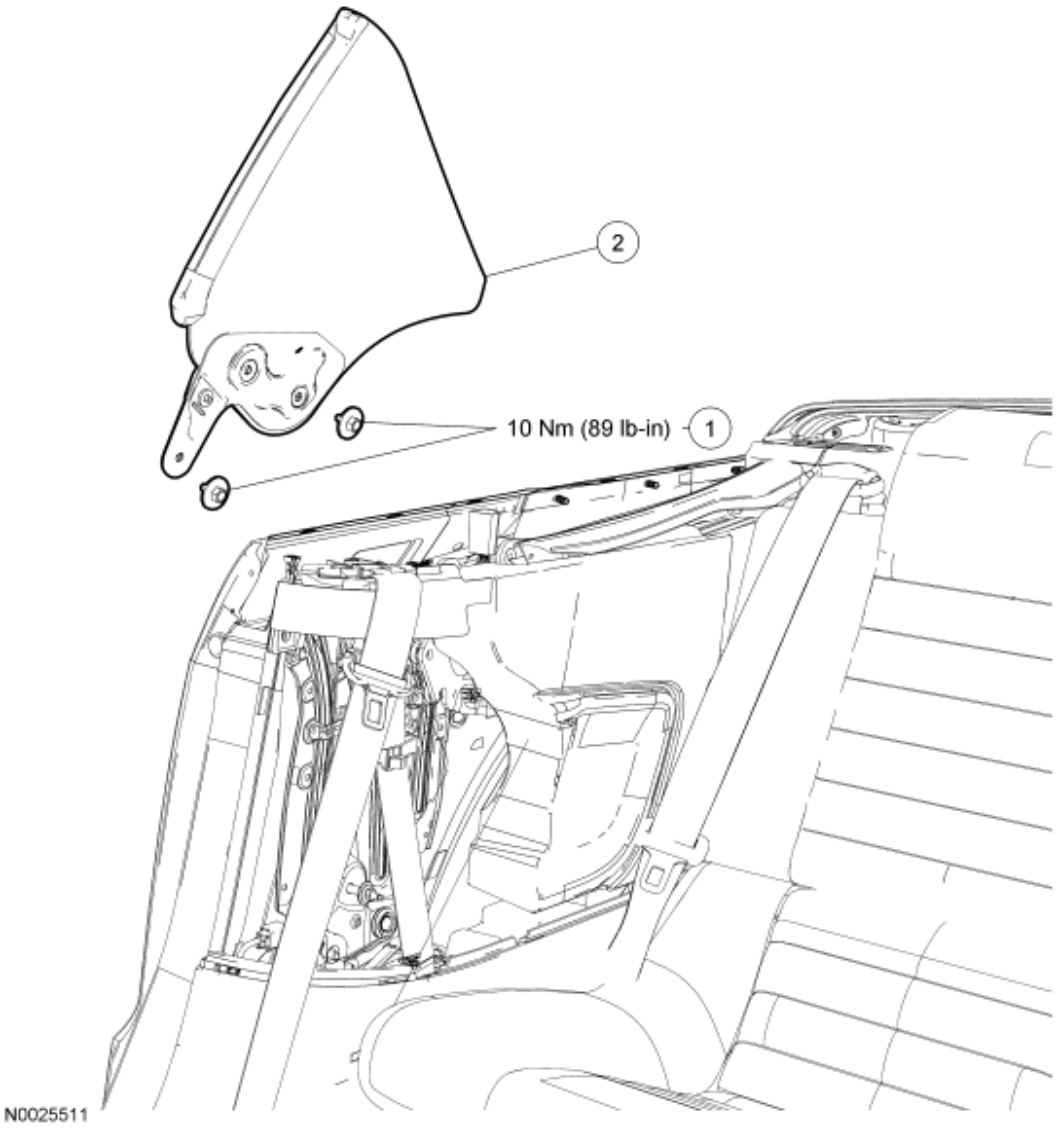


Fig. 82: Exploded View Of Rear Quarter Window Glass With Torque Specification - Convertible
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	W711156	Rear quarter window glass bolts (2 required)
2	7629710 RH/ 7629711 LH	Rear quarter window glass

REMOVAL

1. Remove the rear quarter trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
2. Remove the 2 bolts and the rear quarter window glass.

INSTALLATION

1. Install the rear quarter window glass and finger tighten the 2 bolts.
2. Adjust the rear quarter window glass to desired position and tighten the 2 bolts to 10 Nm (89 lb-in).
3. Install the rear quarter trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.

WINDOW REGULATOR MOTOR - REAR QUARTER

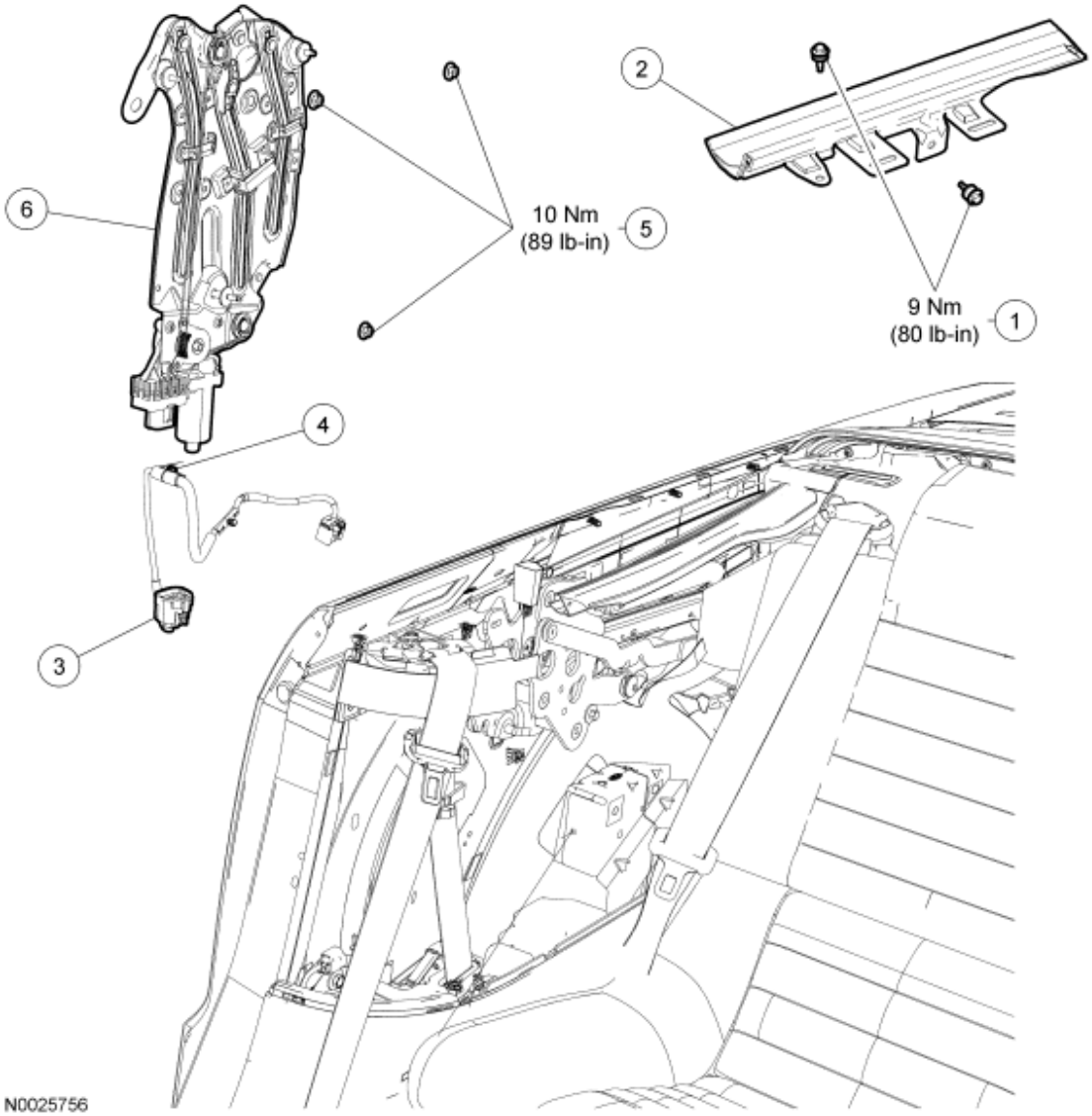


Fig. 83: Exploded View Of Rear Quarter Window Regulator Motor With Torque Specifications
Courtesy of FORD MOTOR CO.

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

3	-	Rear quarter window motor electrical connector (part of 14A017)
4	-	Rear quarter window regulator and motor harness locator (part of 14A017)
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

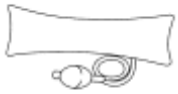
1. Remove the rear quarter window glass. For additional information, refer to **Window Glass - Rear Quarter, Convertible**.
2. Remove the 2 bolts and the rear quarter window inner belt weatherstrip.
   - To install, tighten to 9 Nm (80 lb-in).
3. Disconnect the electrical connector from the rear quarter window motor.
4. Remove the harness locator from the rear quarter window regulator and motor assembly.

NOTE: Make certain not to disturb the jack screws when removing the rear quarter window regulator and motor assembly nuts.

5. 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.

WINDOW GLASS - REAR

Special Tools

Illustration	Tool Name	Tool Number
 ST2834-A	Interior Auto Glass Cut-Out Knife Kit	164-R2450 or equivalent
 ST1109-A	Rotunda Pneumatic Knife with Offset Blade	164-R1511 or equivalent
 ST2218-B	The Pumper	164-R2459 or equivalent

Material

Item	Specification
DOW AUTOMOTIVE 2-HOUR CURE	
Dow Urethane Adhesive Betaseal® Express	-
Dow Urethane One Step Glass Primer Betaprime® 5500 / 5500A / 5500SA	-
SIKA 2-HOUR CURE	
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

NOTE: The luggage compartment lid is not shown for clarity.

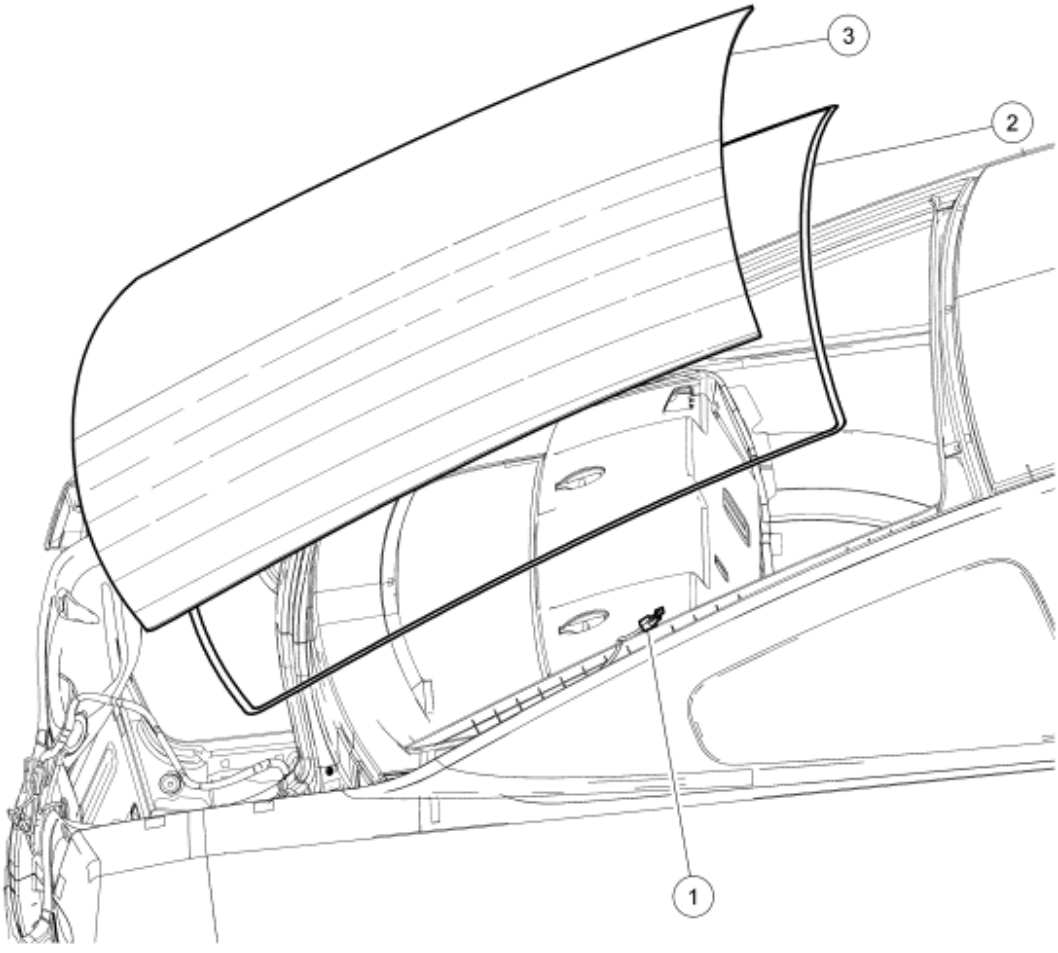


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Fig. 84: Exploded View Of Rear Window Glass
Courtesy of FORD MOTOR CO.

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 **INTERIOR TRIM AND ORNAMENTATION** article.
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.

NOTE: Refer to manufacturer's instructions before using the tool.

4. Lubricate the urethane adhesive with water to aid the Interior Auto Glass Cut-Out Knife Kit when cutting the urethane adhesive.

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.

CAUTION: 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 special 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.

5. Using an appropriate tool (with the luggage compartment lid open approximately 45 degrees), starting at the bottom outboard corner of the rear window glass, cut the urethane adhesive from the glass.
6. Using the special tool, distance the rear window glass from the body to cut the remaining adhesive and remove the rear window glass. Place the rear window glass on a stable work surface.

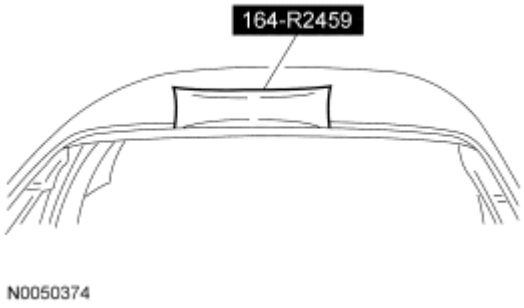

Fig. 85: Using Special Tool To Distance Windshield Glass From Body
Courtesy of FORD MOTOR CO.

7. Using a soft brush or vacuum, clean the pinch weld.

INSTALLATION

1. Dry-fit the rear window glass on the existing urethane 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 molding assembly from the windshield opening and place on a stable work surface with the interior side of the glass facing up.

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. For minor scratches or exposed metal on the pinch weld, see the manufacturer's recommendations.

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

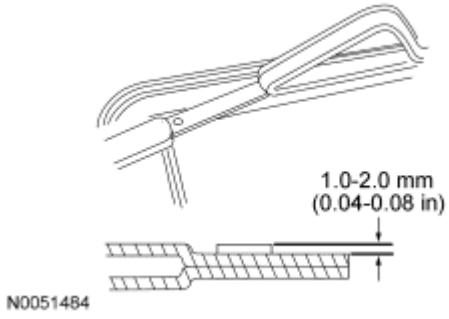

Fig. 86: Measuring Urethane With Appropriate Tool
Courtesy of FORD MOTOR CO.

4. Using a clean shop towel, brush or oil-free compressed air, clean the pinch weld area around the existing urethane. 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.

NOTE: Be sure to use the same brand and cure-rate products for the adhesive and primer. Do not mix different brands of urethane and primer. Refer to the Material Chart in this procedure.

NOTE: Sika uses the same black primer for the glass and pinch weld area.

7. If installing a new rear window glass, apply urethane glass primer according to manufacturer's instructions. Allow at least 6 minutes to dry.
8. Cut the applicator tip to specification. This will produce a triangular bead during application.

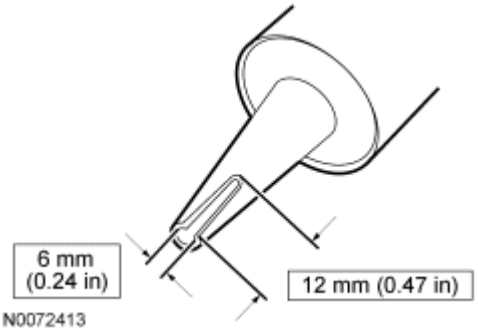

Fig. 87: Cutting Applicator Tip To Specification
Courtesy of FORD MOTOR CO.

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.

9. Apply a bead of urethane adhesive to the pinch weld. Make sure that all gaps in the urethane adhesive are smoothed into one continuous bead, starting at the bottom of the rear window glass near the center.

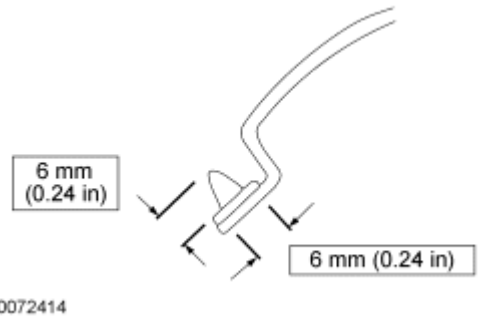

Fig. 88: Applying A Bead Of Urethane Adhesive To Pinch Weld
Courtesy of FORD MOTOR CO.

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

10. Using the alignment marks made previously, position the rear window glass on the pinch weld.

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).

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

11. After the urethane 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 **INTERIOR TRIM AND ORNAMENTATION** article.

WINDOW CONTROL SWITCH

NOTE: LH side shown, RH side similar.

NOTE: Coupe shown, convertible similar.

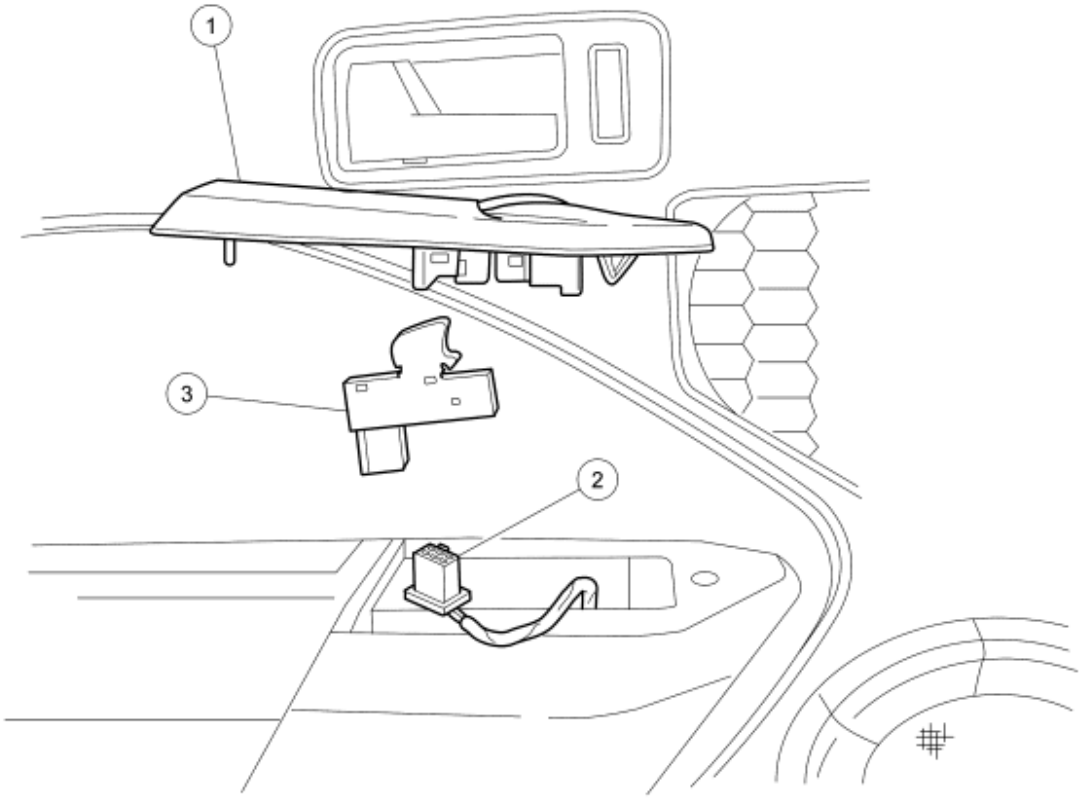

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Fig. 89: Identifying Window Control Switch
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	241A22	Door panel switch plate
2	-	Window control switch electrical connector (part of 14630/14631)
3	14529	Window control switches

REMOVAL AND INSTALLATION

NOTE: Use a shop towel or similar material between the tool and the door trim panel or damage to the door trim panel may occur.

1. 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.