2005 ACCESSORIES AND BODY, CAB

Glass, Frames & Mechanisms - F150 Pickup

SPECIFICATIONS

GENERAL SPECIFICATIONS

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Item	Specification
Foam Core Butyl	WSB-M3G143-B
Rear Window Defroster Repair PM-11 (Canada CPM-11)	ESB-M4J58-B
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A
Acrylic Lacquer Touch Up Paint (match color to exterior grid wire) PM-19500-XXXXX	ESR-M2P100-C
Terminal Kit - Back Glass 4F1Z-14421-AA	-
Dow Automotive 2-Hour Cure	
Urethane Adhesive Betaseal® Express	-
Urethane One Step Glass Primer Betaprime® 5500/5500 A/5500SA	-
Sika 2-Hour Cure	
Urethane Adhesive Sika Tack ASAP	-
Urethane Metal and Glass Primer Sika 206 G+P	-

TORQUE SPECIFICATIONS

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Description	Nm	lb-ft	lb-in
Front door window regulator bolts	11	8	-
Front door window glass-to-regulator bolts	9	-	80
Rear door window glass-to-regulator bolts	11	8	-
Rear door window regulator bolt	11	8	-
Rear window glass nut	4	-	35
Rear window glass regulator and motor assembly screw	11	8	-

DESCRIPTION AND OPERATION

GLASS, FRAMES AND MECHANISMS

The glass, frames and mechanisms article consists of the following:

- Windshield glass
- Front door window glass
- Front door window regulator and motor
- Front door window top run
- Rear door window glass
- Rear door window regulator and motor
- Rear door window top run
- Rear window glass
- Rear window glass regulator and motor
- Window control switch

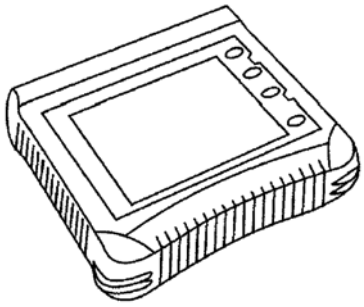
DIAGNOSIS AND TESTING

GLASS, FRAMES AND MECHANISMS

Refers to **SYSTEM WIRING DIAGRAMS - F150** article for schematic and connector information.

Special Tool(s)

SPECIAL TOOL(S) CHART

 ST2332-A	73III Automotive Meter 105-R0057 or equivalent

Principles of Operation

The left front window switch may be used to raise or lower all windows, or each individual side window may be controlled by the control switch located on each door panel.

The instrument control module (ICM) controls power to the power window system by activating or deactivating the delayed accessory relay.

The one-touch down feature will completely lower the driver side window when the master control is fully depressed, then released. The one-touch down feature is integrated into the LF window control switch.

There are 2 modes of LF window down operation: manual mode and auto mode. The manual mode is selected by pressing the LF window control switch to the 1st (DOWN) position. In manual mode, the window will move downward only while the switch is depressed. When the LF window control switch is pressed to the 2nd DOWN position, it enters auto mode and the window will open completely with a momentary press of the switch.

When the one-touch down feature has been activated, it will stay on until one of the following conditions is met:

- The LF window control switch is pushed to the UP position.
- The LF window control switch is released (OFF position) and then moved to the DOWN position (1st detent) or ONE-TOUCH DOWN (OTD) position (2nd detent).
- 7 seconds have elapsed since OTD was initiated.

Window operation is enabled whenever the delayed accessory is active and the LF window control switch is pressed to the UP or DOWN position. The switch provides delayed accessory power to one side of the motor and ground to the other side. The one-touch down feature is not active when the LF window control switch is in the UP position.

Passenger windows may be raised or lowered using the LF window control switch or the appropriate passenger window control switch. Passenger window control switches receive power when the delayed accessory relay is active and the LF remote lock-out switch is in the UNLOCK position. When in the LOCK-OUT position, the passenger windows are deactivated.

The delayed accessory relay provides power for the operation of the power windows and the power roof opening panel. The delayed accessory relay is active whenever the ignition switch is in the RUN or the ACC position, or when the ignition switch is changed from RUN or ACC to the OFF/LOCK position and the LF and RF doors are closed.

The ICM will deactivate the delayed accessory feature when:

- The LF door is ajar and the ignition switch is in the OFF/LOCK or KEY-OUT position.
- The RF door is ajar and the ignition switch is in the OFF/LOCK or KEY-OUT position.
- 10 minutes have elapsed since the ignition switch was changed from ACC or RUN to the OFF/LOCK position.

Inspection and Verification

1. Verify the customer concern by operating the power window/defrost system.
2. Visually inspect for obvious signs of mechanical and electrical damage. Refer to the following chart:

VISUAL INSPECTION CHART

Mechanical	Electrical

• Window regulator assembly • Window motor • Window glass • Window control switch	• Fuse(s) • Circuitry • Window control switch • Relay(s)

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

Symptom Chart

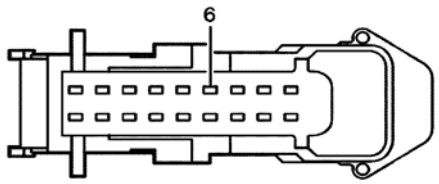
SYMPTOM CHART

Condition	Possible Sources	Action
• All power windows are inoperative	• Fuse(s). • Circuitry. Instrument cluster module (ICM). • Accessory delay relay. • Driver window control switch.	• GO to **PINPOINT TEST A**.
• Single power window is inoperative - driver front window	• Circuitry. • Driver window control switch. • Driver window motor.	• GO to **PINPOINT TEST B**.
• Single power window is inoperative - passenger front window	• Circuitry. • Driver window control switch. • Passenger window control switch. • Passenger window motor.	• GO to **PINPOINT TEST C**.
• Single power window is inoperative - driver rear window	• Circuitry. • Driver window control • Switch. Driver rear window control • Switch. • Driver rear window motor.	• GO to **PINPOINT TEST D**.
• Single power window is inoperative - passenger rear window	• Circuitry. • Driver window control switch.	• GO to **PINPOINT TEST E**.

	• Passenger rear window control switch. • Passenger rear window motor.	
• The power sliding window is inoperative	• Circuitry. • Rear sliding window control switch. • Rear sliding window motor.	• GO to **PINPOINT TEST F**.
• The one-touch down feature is inoperative	• Driver window control switch.	• INSTALL a new driver window control switch. Refer to **WINDOW CONTROL SWITCH - FRONT**.
• The back window defrost system is inoperative	• ICM. • Circuitry. • Heated back window relay. • Heated back window grid.	• GO to **PINPOINT TEST G**.
• The back window defrost system will not shut off automatically	• Heated back window relay. • Circuitry. • ICM. • Heated back window grid.	• GO to **PINPOINT TEST H**.

Connector Circuit Reference

Instrument Cluster Module (ICM) C220b

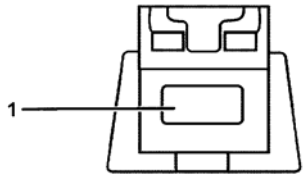


A0080813

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
6	CKT 1009 (OG/YE) heated backlight relay	Greater than 10,000 ohms to chassis ground and 0 volts.

Fig. 1: Instrument Cluster Module (ICM) C220b Connector
Courtesy of FORD MOTOR CO.

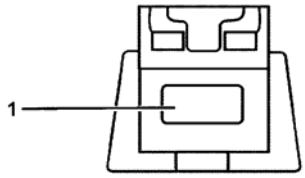
Heated Backlight Power C3241a



Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	CKT 186 (BN/LB) power	Greater than 10 volts with key ON and rear window defrost ON.

Fig. 2: Heated Backlight Power C3241a Connector
Courtesy of FORD MOTOR CO.

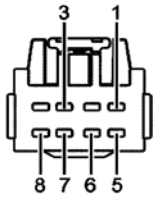
Heated Backlight Ground C3241b



Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	CKT 57 (BK) ground	Less than 5 ohms to chassis ground.

Fig. 3: Heated Backlight Ground C3241b Connector
Courtesy of FORD MOTOR CO.

Driver Window Control Switch C535 - Regular Cab

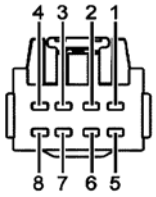


A0073202

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	CKT 400 (LB/BK) accessory delay power feed	Greater than 10 volts with the key ON.
3	CKT 57 (BK) driver window control switch ground	Less than 5 ohms to chassis ground.
5	CKT 992 (WH/BK) driver window UP	Greater than 10,000 ohms to chassis ground and 0 volts.
6	CKT 991 (TN/LB) driver window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
7	CKT 313 (WH/YE) passenger front window UP	Greater than 10,000 ohms to chassis ground and 0 volts.
8	CKT 314 (TN/LB) passenger front window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.

Fig. 4: Driver Window Control Switch C535 Connector
Courtesy of FORD MOTOR CO.

Driver Window Control Switch C504a - SuperCab and SuperCrew

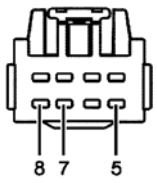


A0074109

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	CKT 317 (GY/OG) driver rear window UP	Greater than 10,000 ohms to chassis ground and 0 volts.
2	CKT 316 (YE/LB) driver rear window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
3	CKT 320 (RD/BK) passenger rear window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
4	CKT 319 (YE/BK) passenger rear window UP	Greater than 10,000 ohms to chassis ground and 0 volts.
5	CKT 992 (WH/BK) driver window UP	Greater than 10,000 ohms to chassis ground and 0 volts.
6	CKT 991 (TN/LB) driver window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
7	CKT 314 (TN/LB) passenger front window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
8	CKT 313 (WH/YE) passenger front window UP	Greater than 10,000 ohms to chassis ground and 0 volts.

Fig. 5: Driver Window Control Switch C504a Connector
Courtesy of FORD MOTOR CO.

Driver Window Control Switch C504b - SuperCab and SuperCrew



A0074110

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
5	CKT 57 (BK) driver window control switch ground	Less than 5 ohms to chassis ground.
7	CKT 193 (YE/LG) lock-out power feed	Greater than 10,000 ohms to chassis ground and 0 volts.
8	CKT 400 (LB/BK) accessory delay power feed	Greater than 10 volts with the key ON.

Fig. 6: Driver Window Control Switch C504b - SuperCab And SuperCrew Connector
Courtesy of FORD MOTOR CO.

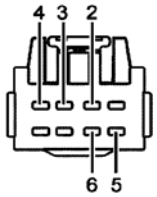
Driver Power Window Motor C524

A0073201

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	CKT 991 (TN/LB) driver window DOWN	Less than 5 ohms to chassis ground. Greater than 10 volts with the key ON and the driver window control switch depressed in the DOWN position with the key ON.
2	CKT 992 (WH/BK) driver window UP	Less than 5 ohms to chassis ground. Greater than 10 volts with the key ON and the driver window control switch depressed in the UP position with the key ON.

Fig. 7: Driver Power Window Motor C524 Connector
Courtesy of FORD MOTOR CO.

Passenger Front Window Control Switch C604



A0074111

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
2	CKT 334 (RD/YE) passenger front window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
3	CKT 314 (TN/LB) passenger front window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
4	CKT 193 (YE/LG) lock-out power feed	Greater than 10,000 ohms to chassis ground and 0 volts.
5	CKT 333 (YE/RD) passenger front window UP	Greater than 10,000 ohms to chassis ground and 0 volts.
6	CKT 313 (WH/YE) passenger front window UP	Greater than 10,000 ohms to chassis ground and 0 volts.

Fig. 8: Passenger Front Window Control Switch C604 Connector
Courtesy of FORD MOTOR CO.

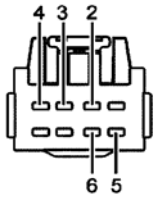
Passenger Front Power Window Motor C608

A0073201

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	CKT 333 (YE/RD) passenger front window UP	Less than 5 ohms to chassis ground. Greater than 10 volts when passenger front window control switch is depressed in the UP position with the key ON.
2	CKT 334 (RD/YE) passenger front window DOWN	Less than 5 ohms to chassis ground. Greater than 10 volts when passenger front window control switch is in the DOWN position with the key ON.

Fig. 9: Passenger Front Power Window Motor C608 Connector
Courtesy of FORD MOTOR CO.

Driver Rear Window Control Switch C701



A0074112

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
2	CKT 884 (YE/BK) driver rear window UP	Greater than 10,000 ohms to chassis ground and 0 volts.
3	CKT 316 (YE/LB) driver rear window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
4	CKT 193 (YE/LG) lock-out power feed	Greater than 10 volts with the key ON and the lock out feature OFF.
5	CKT 317 (GY/OG) driver rear window UP	Greater than 10,000 ohms to chassis ground and 0 volts.
6	CKT 885 (YE/LB) driver rear window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.

Fig. 10: Driver Rear Window Control Switch C701
Courtesy of FORD MOTOR CO.

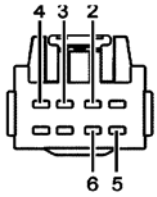
Driver Rear Power Window Motor C703

A0073201

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	CKT 885 (YE/LB) driver rear window motor DOWN	Less than 5 ohms to chassis ground. Greater than 10 volts when driver rear window control switch is depressed DOWN with the key ON.
2	CKT 884 (YE/BK) driver rear window motor UP	Less than 5 ohms to chassis ground. Greater than 10 volts when driver rear window control switch is depressed UP with the key ON.

Fig. 11: Driver Rear Power Window Motor C703 Connector
Courtesy of FORD MOTOR CO.

Passenger Rear Window Control Switch C801



A0074112

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
2	CKT 882 (BN/YE) passenger rear window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
3	CKT 320 (RD/BK) passenger rear window DOWN	Greater than 10,000 ohms to chassis ground and 0 volts.
4	CKT 193 (YE/LG) lock-out power feed	Greater than 10 volts with the key ON and the lock-out feature OFF.
5	CKT 319 (YE/BK) passenger rear window UP	Greater than 10,000 ohms to chassis ground and 0 volts.
6	CKT 881 (BN) passenger rear window UP	Greater than 10,000 ohms to chassis ground and 0 volts.

Fig. 12: Passenger Rear Window Control Switch C801 Connector
Courtesy of FORD MOTOR CO.

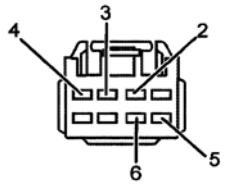
Passenger Rear Power Window Motor C803

A0073201

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	CKT 881 (BN) passenger rear window motor UP	Less than 5 ohms to chassis ground. Greater than 10 volts when passenger rear window control switch is depressed DOWN with the key ON.
2	CKT 882 (BN/YE) passenger rear window motor DOWN	Less than 5 ohms to chassis ground. Greater than 10 volts when passenger rear window control switch is depressed UP with the key ON.

Fig. 13: Passenger Rear Power Window Motor C803 Connector
Courtesy of FORD MOTOR CO.

Rear Window Adjust Switch C980

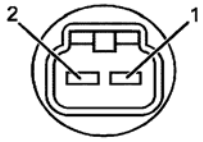


A0075004

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
2	CKT 1941 (YE/LB) sliding rear window motor OPEN	Less than 5 ohms to chassis ground. Greater than 10 volts when the sliding rear window control switch is depressed DOWN with the key ON.
3	CKT 57 (BK) ground	Less than 5 ohms to chassis ground.
4	CKT 400 (LB/BK) accessory delay power feed	Greater than 10 volts with the key ON.
5	CKT 57 (BK) ground	Less than 5 ohms to chassis ground.
6	CKT 1942 (RD/YE) sliding rear window motor CLOSE	Less than 5 ohms to chassis ground. Greater than 10 volts when sliding rear window control switch is depressed UP with the key ON.

Fig. 14: Rear Window Adjust Switch C980 Connector
Courtesy of FORD MOTOR CO.

Rear Sliding Window Motor C3145



A0075005

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	CKT 1941 (YE/LB) sliding rear window motor OPEN	Less than 5 ohms to chassis ground. Greater than 10 volts when the sliding rear window control switch is depressed DOWN with the key ON.
2	CKT 1942 (RD/YE) sliding rear window motor CLOSE	Less than 5 ohms to chassis ground. Greater than 10 volts when sliding rear window control switch is depressed UP with the key ON.

Fig. 15: Rear Sliding Window Motor C3145 Connector
Courtesy of FORD MOTOR CO.

Pinpoint Tests

Pinpoint Test A: All Power Windows Are Inoperative

Normal Operation

Under normal operation the instrument cluster module grounds the accessory delay relay through circuit 1332 (LB). Power is sent to the driver window control switch through circuit 400 (LB/BK) from the accessory delay relay. The driver window control switch is grounded through circuit 57 (BK).

Possible Causes

- Open in circuits 400 (LB/BK), 57 (BK) or 1332 (LB)
- Damaged accessory delay relay
- Damaged CJB
- Inoperative ICM
- Inoperative driver window control switch

PINPOINT TEST A: ALL POWER WINDOWS ARE INOPERATIVE

A1 CHECK THE VOLTAGE TO THE DRIVER WINDOW CONTROL SWITCH - CIRCUIT 400 (LB/BK)

- Disconnect: Driver Window Control Switch C535 (Regular Cab) or C504b (SuperCab or SuperCrew).
- Key in ON position.
- For Regular Cab, measure the voltage between driver window control switch C535-1, circuit 400 (LB/BK) harness side and ground.

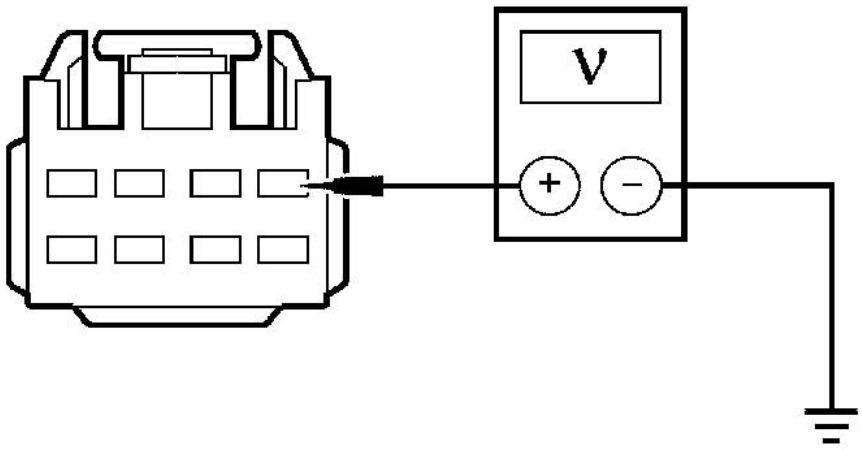


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Fig. 16: Measuring Voltage Between Driver Window Control Switch C535-1 (LB/BK) Harness Side And Ground
Courtesy of FORD MOTOR CO.

- For SuperCab or SuperCrew, measure the voltage between driver window control switch C504b-8, circuit 400 (LB/BK) harness side and ground.

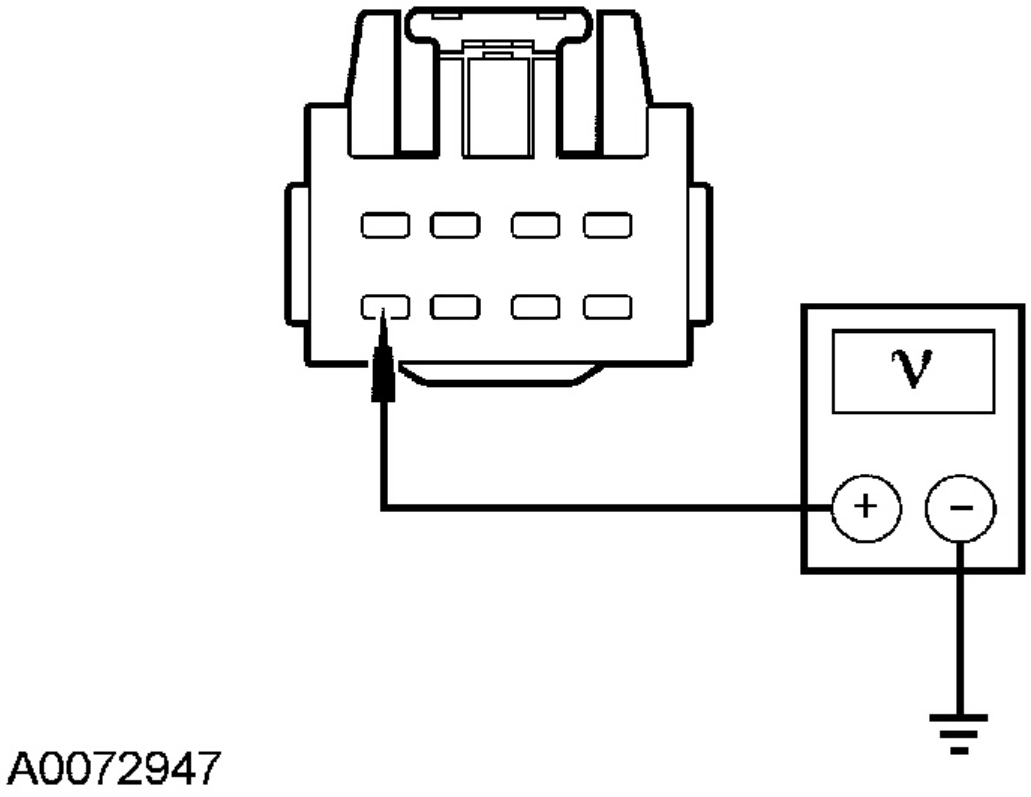

Fig. 17: Measuring Voltage Between Driver Window Control Switch C504b-8, Circuit 400 (LB/BK) Harness Side And Ground
Courtesy of FORD MOTOR CO.

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

  Yes : GO to A2.

  No : GO to A3.

A2 CHECK THE GROUND TO THE DRIVER WINDOW CONTROL SWITCH-CIRCUIT 57 (BK)

- Key in OFF position.
- For Regular Cab, measure the resistance between driver window control switch C535-3, circuit 57 (BK) harness side and ground.

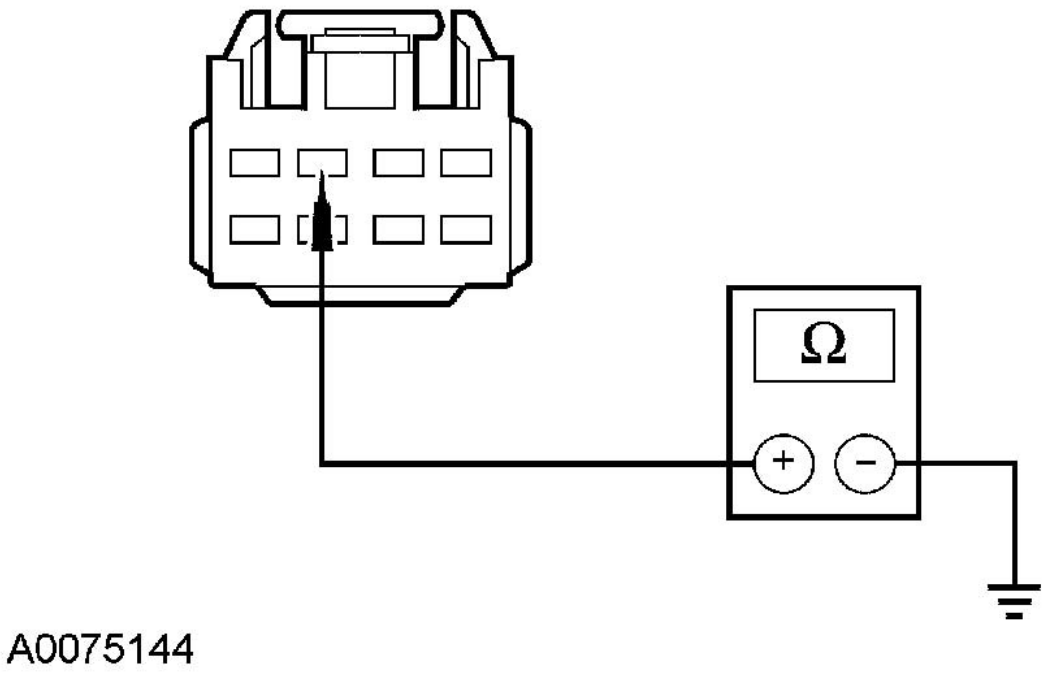

Fig. 18: Measuring Resistance Between Driver Window Control Switch C535-3, Circuit 57 (BK) Harness Side And Ground
Courtesy of FORD MOTOR CO.

- For SuperCab or SuperCrew, measure the resistance between driver window control switch C50b-5, circuit 57 (BK) harness side and ground.

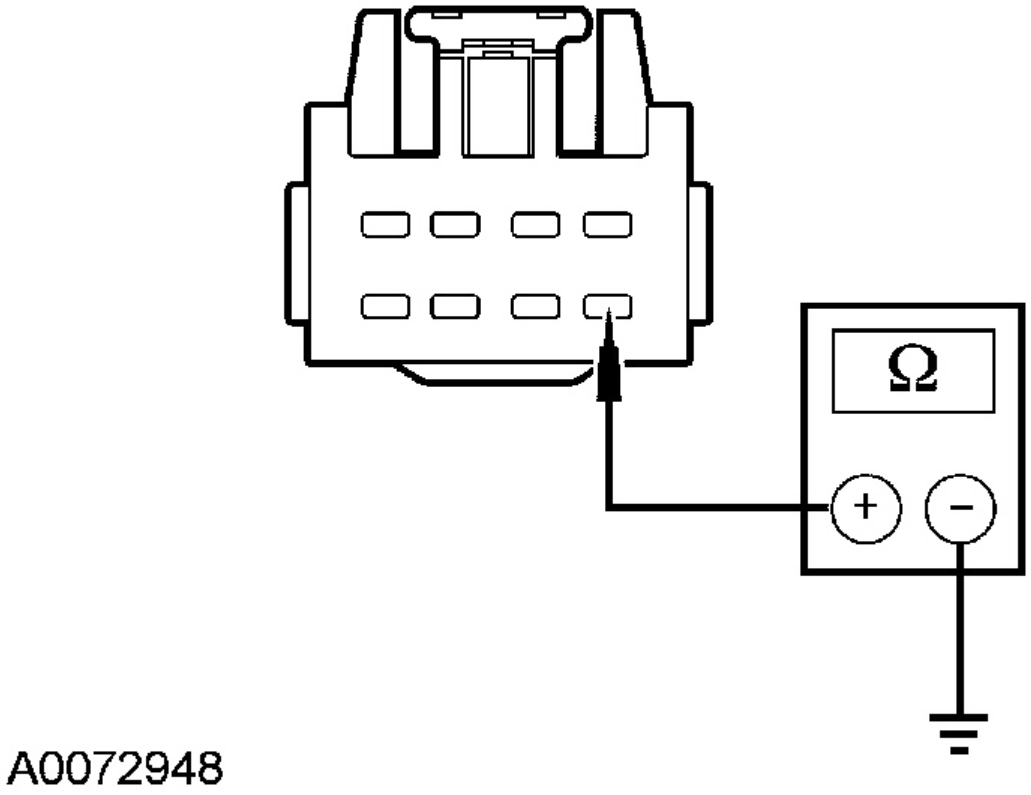

Fig. 19: Measuring Resistance Between Driver Window Control Switch C50b-5, Circuit 57 (BK) Harness Side And Ground
Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new driver window control switch. Refer to **WINDOW CONTROL SWITCH - FRONT**. TEST the system for normal operation.

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

A3 CHECK THE ACCESSORY DELAY RELAY

- Key in OFF position.
- Disconnect: Accessory Delay Relay.
- Carry out the accessory delay relay component test. Refers to **COMPONENT TESTING -- F150 PICKUP** article .
- **Is the accessory delay relay OK?**

  Yes : GO to A4.

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

A4 CHECK THE POWER TO THE ACCESSORY DELAY RELAY

- Key in ON position.
- Measure the voltage between accessory delay relay socket pin 85 and pin 30 harness side and ground.

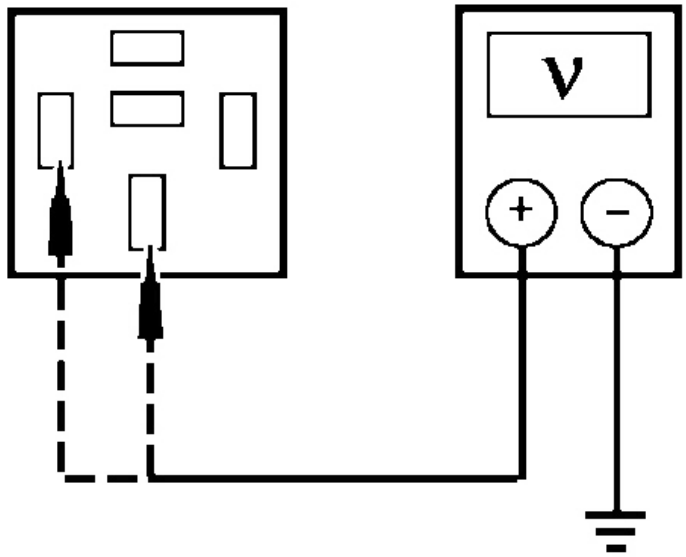

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Fig. 20: Measuring Voltage Between Accessory Delay Relay Socket Pin 85 And Pin 30 Harness Side And Ground
Courtesy of FORD MOTOR CO.

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

  Yes : GO to A5.

  No : REPAIR the power supply circuit or central junction box (CJB). TEST the system for normal operation.

A5 CHECK CIRCUIT 400 (LB/BK) FOR AN OPEN

- Key in OFF position.
- For Regular Cab vehicles, measure the resistance between driver window control switch C535-1, circuit 400 (LB/BK) and accessory delay relay socket pin 87, circuit 400 (LB/BK) harness side.

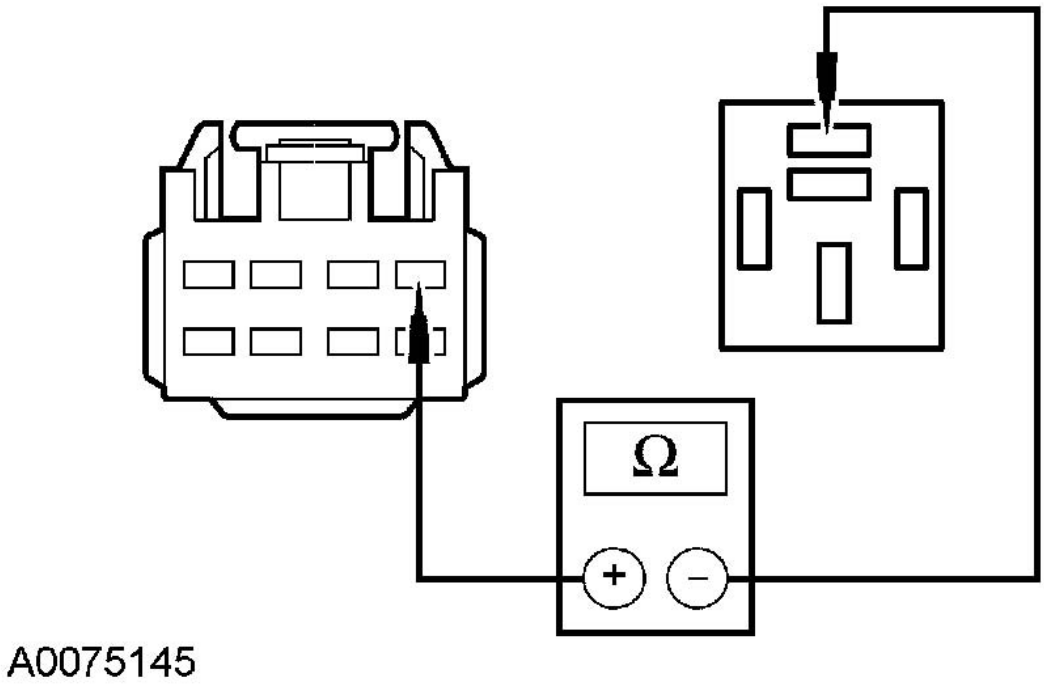

Fig. 21: Check Circuit 400 (LB/BK) For An Open (Regular Cab Vehicles)
Courtesy of FORD MOTOR CO.

- For SuperCab or SuperCrew vehicles, measure the resistance between driver window control switch C504-8, circuit 400 (LB/BK) and accessory delay relay socket pin 87, circuit 400 (LB/BK) harness side.

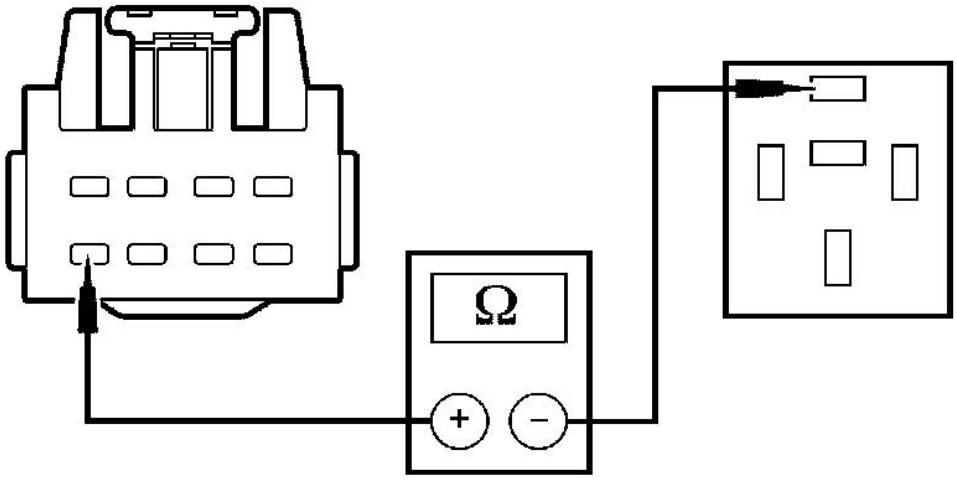

Fig. 22: Check Circuit 400 (LB/BK) For An Open (SuperCab Or SuperCrew Vehicles) Courtesy of FORD MOTOR CO.

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

  Yes : GO to A6.

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

A6 CHECK CIRCUIT 1332 (LB) FOR AN OPEN

- Disconnect: Instrument Cluster Module (ICM) C220b.
- Measure the resistance between accessory delay relay socket pin 85 and ICM C220b-5, circuit 1332 (LB).

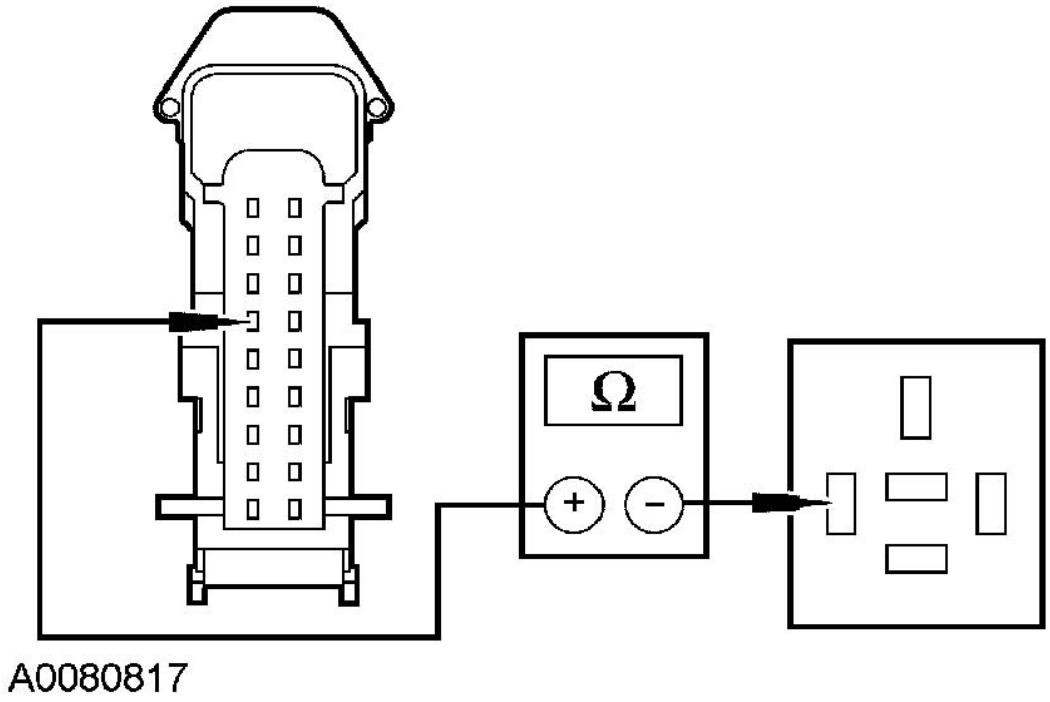

Fig. 23: Measuring Resistance Between Accessory Delay Relay Socket Pin 85 And ICM C220b-5, Circuit 1332 (LB)
Courtesy of FORD MOTOR CO.

- **Is the resistance less than 5 ohms?**
  Yes : INSTALL a new ICM. REFER to **INSTRUMENT CLUSTER** . TEST the system for normal operation.
  No : REPAIR the circuit. TEST the system for normal operation.

Pinpoint Test B: Single Power Window Is Inoperative - Driver Front Window

Normal Operation

Under normal operation the driver window control switch provides power to the power window motor through circuit 991 (TN/LB) and ground through 992 (WH/BK) to operate the driver window downward and power through circuit 992 (WH/BK) and ground through 991 (TN/LB) to operate the driver window upward.

Possible Causes

- Open in circuits 991 (TN/LB) or 992 (WH/BK)
- Inoperative driver window control switch
- Inoperative driver power window motor

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

B1 CHECK ALL POWER WINDOW OPERATION

- Check the operation of all windows.
- **Do all other power windows operate correctly?**

  Yes : GO to B2.

  No : REPAIR the power window supply circuit.

B2 CHECK THE DRIVER POWER WINDOW DOWN OPERATION

- Key in OFF position.
- Disconnect: Driver Window Control Switch C535 (Regular Cab) or C504a (SuperCab or SuperCrew).
- Connect a jumper wire between driver window control switch C535-5 (Regular Cab) C504a-5 (SuperCab or SuperCrew), circuit 992 (WH/BK) and ground; and between driver window control switch C535-6 (Regular Cab) or C504a-6 (SuperCab or SuperCrew), circuit 991 (TN/LB) and the positive battery terminal.

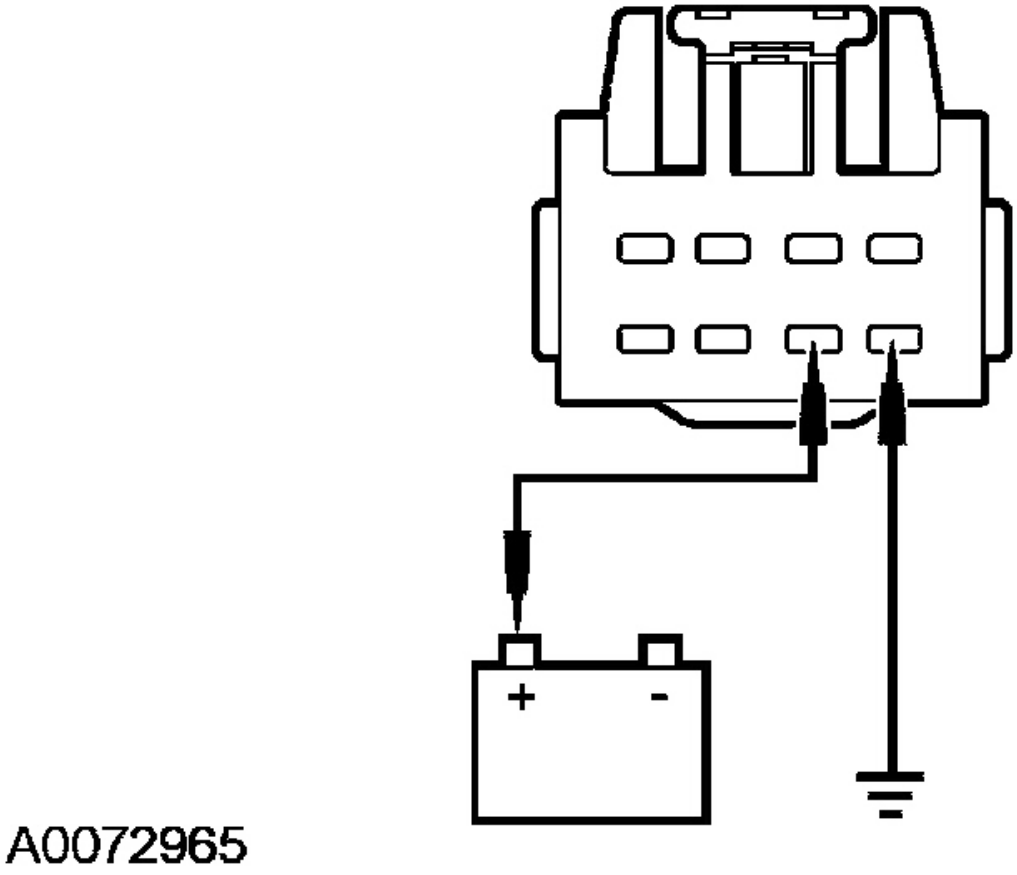

Fig. 24: Checking Driver Power Window Down Operation
Courtesy of FORD MOTOR CO.

- **Does the driver power window go down?**

  Yes : GO to B3.

  No : REMOVE the jumper wires. GO to B4.

B3 CHECK THE DRIVER POWER WINDOW UP ON OPERATION

- Connect a jumper wire between driver window control switch C535-6 (Regular Cab) or C504a-6 (SuperCab or SuperCrew), circuit 991 (TN/LB) and ground; and between driver window control switch C535-5 (Regular Cab) or C504a-5 (SuperCab or SuperCrew) circuit 992 (WH/BK) and the positive battery terminal.

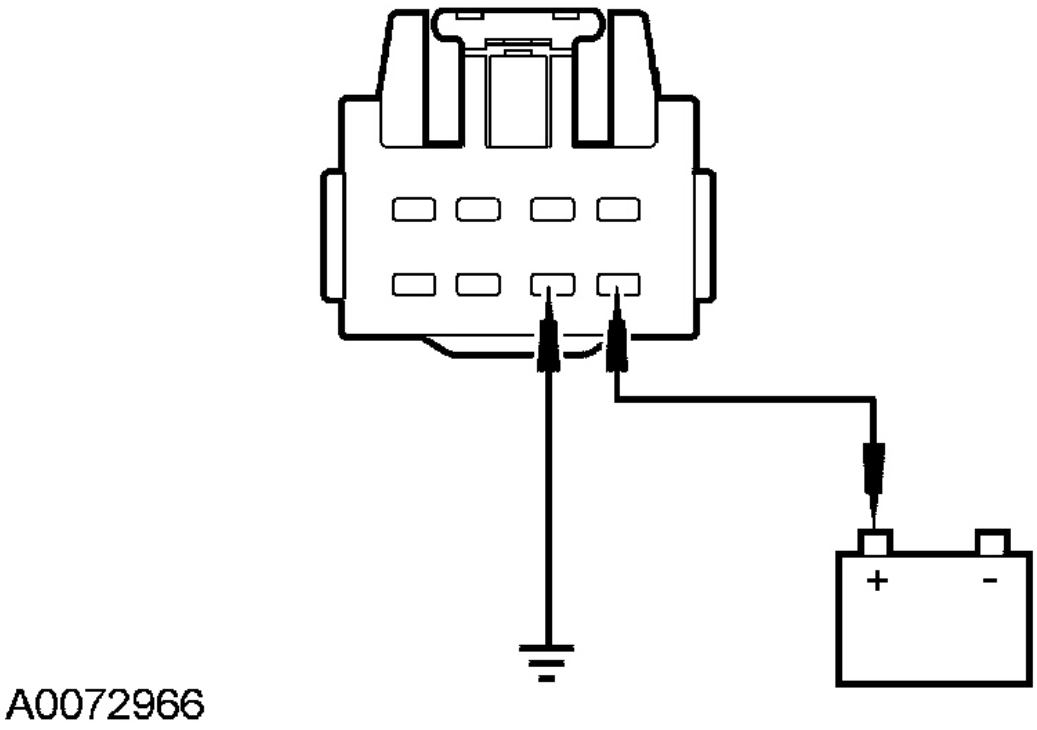

Fig. 25: Checking Driver Power Window Up On Operation
Courtesy of FORD MOTOR CO.

- **Does the driver power window go up?**

  Yes : INSTALL a new window control switch. REFER to **WINDOW CONTROL SWITCH - FRONT**. TEST the system for normal operation.

  No : REMOVE the jumper wires. GO to B4.

B4 CHECK CIRCUIT 991 (TN/LB) FOR AN OPEN

- Disconnect: Driver Power Window Motor C524.
- Measure the resistance between driver power window motor C524-1, circuit 991 (TN/LB) and driver window control switch C535-6 (Regular Cab) or C504a-6 (SuperCab or SuperCrew), circuit 991 (TN/LB) harness side.

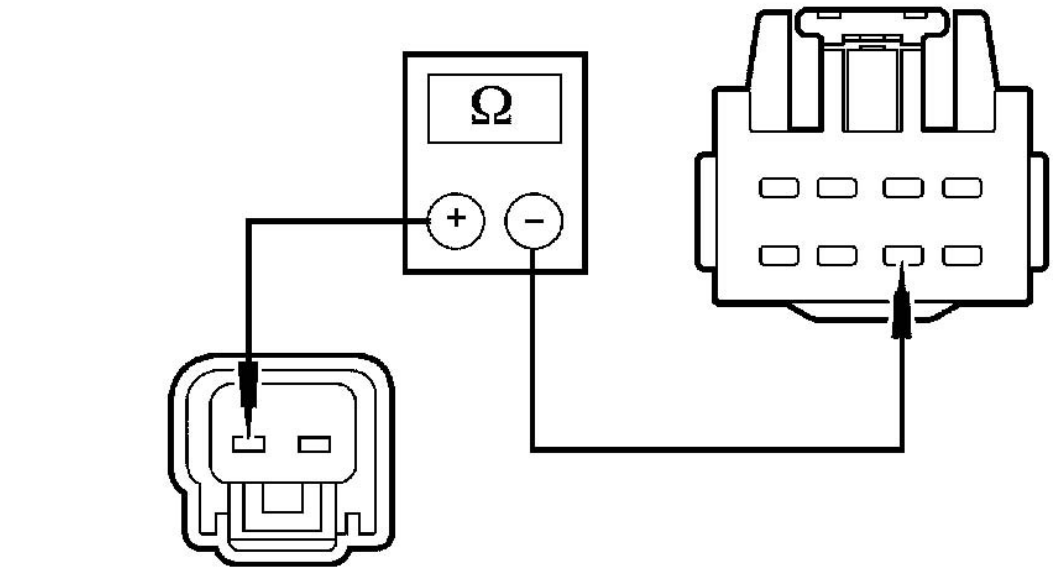

Fig. 26: Checking Circuit 991 (TN/LB) For An Open
Courtesy of FORD MOTOR CO.

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

  Yes : GO to B5.

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

B5 CHECK CIRCUIT 992 (WH/BK) FOR AN OPEN

- Measure the resistance between driver power window motor C535-5 (Regular Cab) or C524-2, circuit 992 (WH/BK) and driver window control switch C504a-5 (SuperCab or SuperCrew), circuit 992 (WH/BK) harness side.

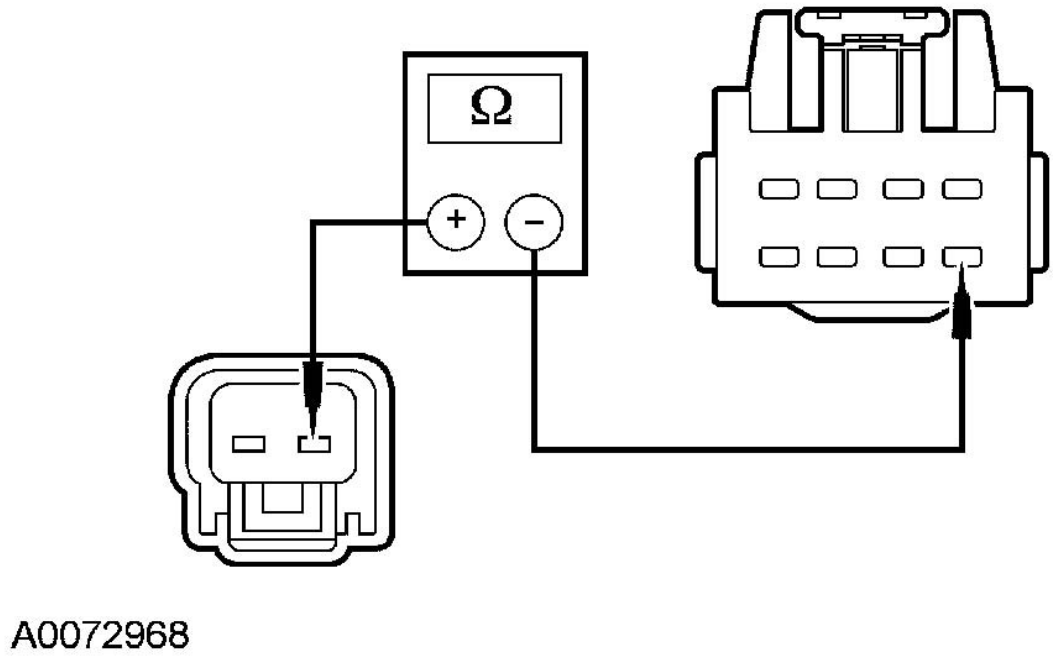

Fig. 27: Checking Circuit 992 (WH/BK) For An Open
Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new driver power window motor. REFER to **FRONT DOOR WINDOW REGULATOR AND MOTOR**. TEST the system for normal operation.

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

Pinpoint Test C: Single Power Window Is Inoperative - Passenger Front Window

Normal Operation

Under normal operation the passenger front window control switch receives power from the driver window control switch through circuit 400 (LB/BK) for Regular Cab, or through circuit 193 (YE/LG) for SuperCab and SuperCrew. The passenger front window control switch provides power to the power window motor through circuit 334 (RD/YE) and ground through 333 (YE/RD) to operate the passenger front window downward and power through circuit 333 (YE/RD) and ground through 334 (RD/YE) to operate the passenger front window upward.

When operating the passenger front window using the driver window control switch, power is sent to the passenger front window control switch through circuit 314 (TN/LB) and ground through 313 (WH/YE) to operate the passenger front window downward and power through circuit 313 (WH/YE) and ground through 314 (TN/LB) to operate the passenger front window upward.

Possible Causes

- Open in circuits 400 (LB/BK), 193 (YE/LG), 313 (WH/YE), 314 (TN/LB), 333 (YE/RD) or 334 (RD/YE)
- Inoperative driver window control switch
- Inoperative passenger front window control switch
- Inoperative passenger front window motor

PINPOINT TEST C: SINGLE POWER WINDOW IS INOPERATIVE - PASSENGER FRONT WINDOW

C1 CHECK THE VOLTAGE TO THE PASSENGER FRONT WINDOW CONTROL SWITCH - CIRCUIT 193 (YE/LG) OR CIRCUIT 400 (LB/BK)

- Disconnect: Passenger Front Window Control Switch C604.
- Key in ON position.

NOTE: If equipped, set the driver window control switch to the UNLOCK position.

- Measure the voltage between passenger front window control switch C604-4, circuit 193 (YE/LG) (SuperCrew and SuperCab), or C60-4, circuit 400 (LB/BK) (Regular Cab) harness side and ground.

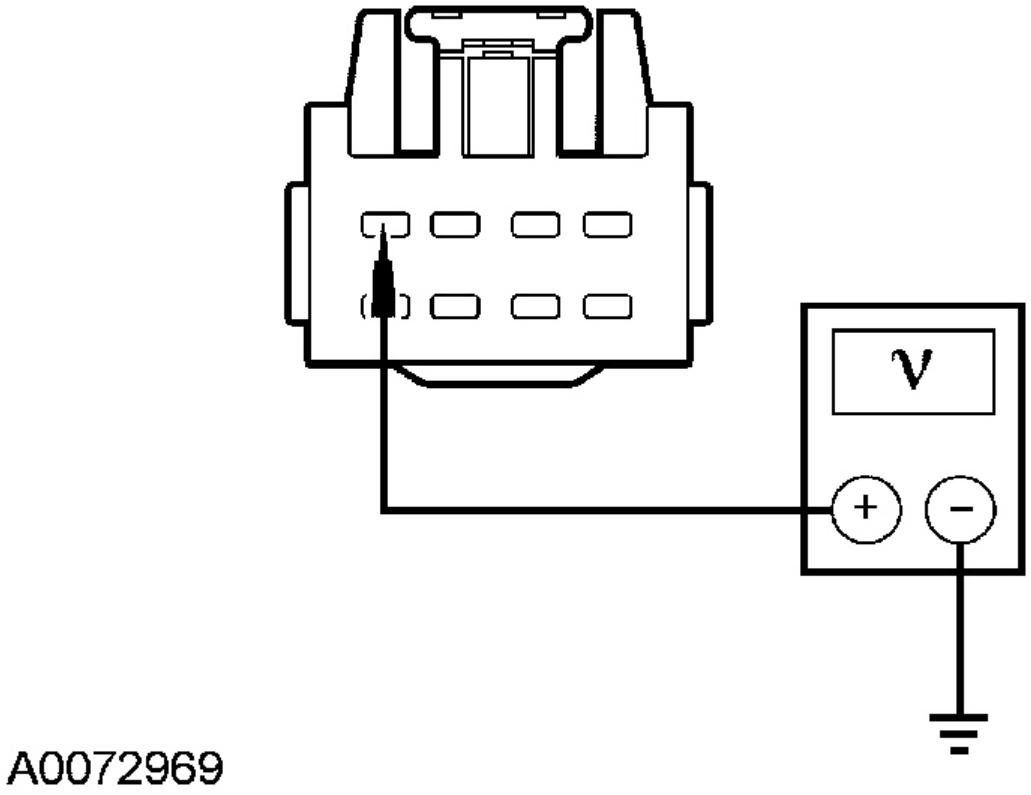

Fig. 28: Checking Voltage To Passenger Front Window Control Switch - Circuit 193 (YE/LG) Or Circuit 400 (LB/BK)
Courtesy of FORD MOTOR CO.

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

  Yes : GO to C2.

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

C2 CHECK THE GROUNDS TO THE PASSENGER FRONT WINDOW CONTROL SWITCH - CIRCUITS 313 (WH/YE) AND 314 (TN/LB)

- Key in OFF position.
- Measure the resistance between passenger front window control switch C604-5, circuit 313 (WH/YE) and C604-3, circuit 314 (TN/LB) harness side and ground.

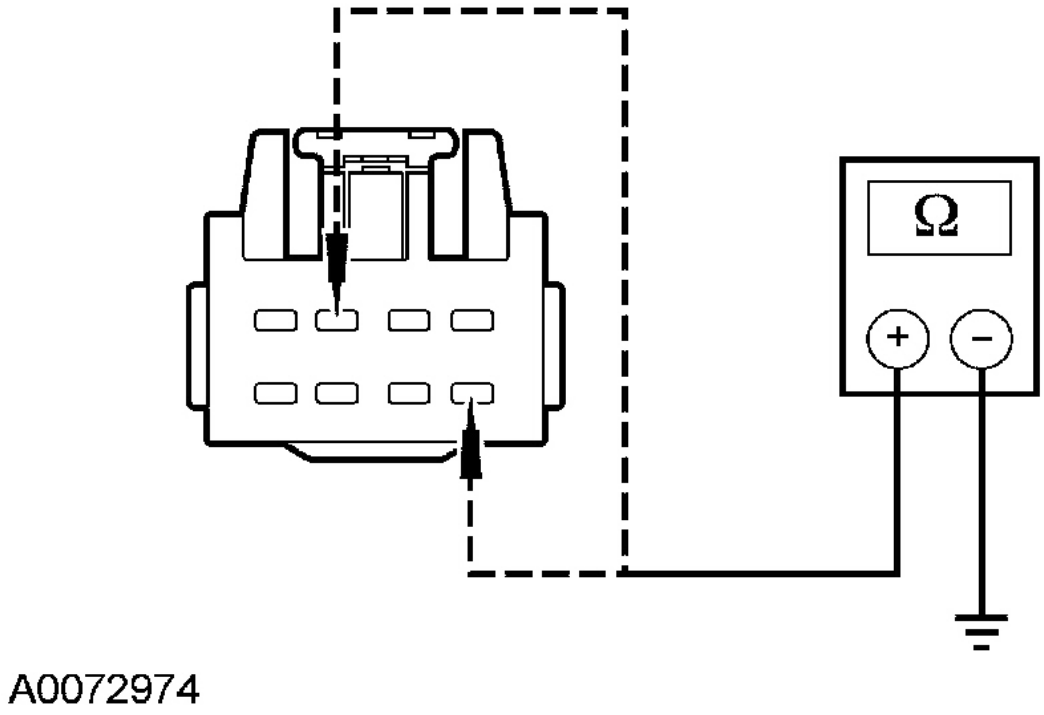

Fig. 29: Checking Grounds To Passenger Front Window Control Switch - Circuits 313 (WH/YE) And 314 (TN/LB)
Courtesy of FORD MOTOR CO.

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

  Yes : GO to C4.

  No : GO to C3.

C3 CHECK CIRCUITS 313 (WH/YE) AND 314 (TN/LB) FOR AN OPEN

- Key in OFF position.
- Disconnect: Driver Window Control Switch C504a (SuperCab or SuperCrew) or C535 (Regular Cab).
- For Regular Cab, measure the resistance between driver window control switch C535-7, circuit 313 (WH/YE) and passenger front window control switch C604-5, circuit 313 (WH/YE) harness side.

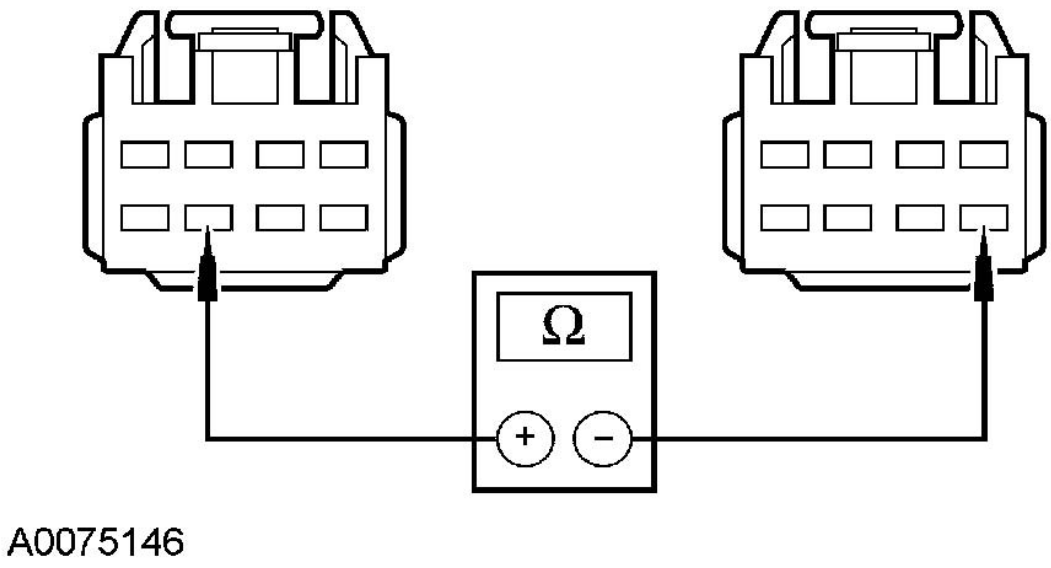

Fig. 30: Checking Circuits 313 (WH/YE) For An Open (Regular Cab)
Courtesy of FORD MOTOR CO.

- For SuperCab or SuperCrew, measure the resistance between driver window control switch C504a-8, circuit 313 (WH/YE) and passenger front window control switch C604-5, circuit 313 (WH/YE) harness side.

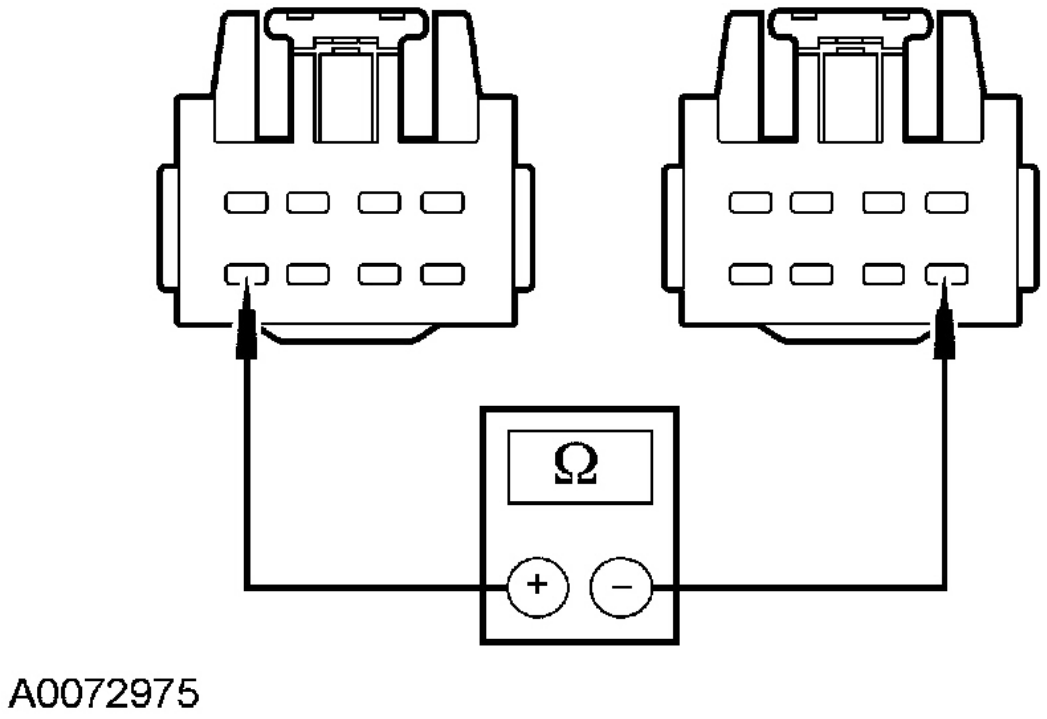

Fig. 31: Checking Circuits 313 (WH/YE) For An Open (SuperCab Or SuperCrew)
Courtesy of FORD MOTOR CO.

- For Regular Cab, measure the resistance between driver window control switch C535a-8, circuit 314 (TN/LB) and passenger front window control switch C604-3, circuit 314 (TN/LB) harness side.

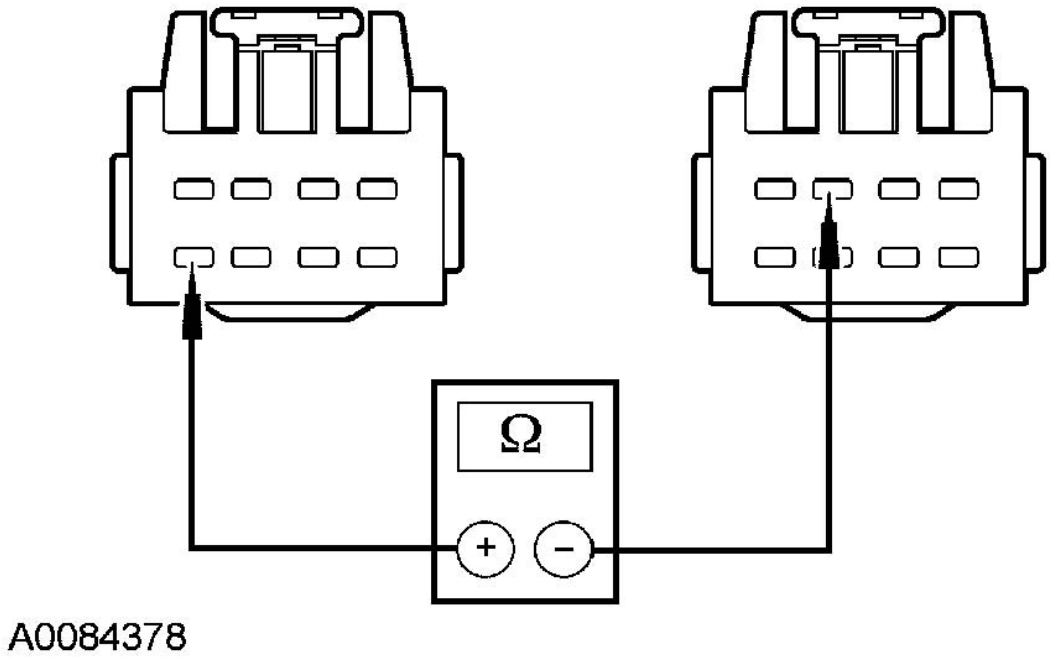

Fig. 32: Checking Circuits 314 (TN/LB) For An Open (Regular Cab)
Courtesy of FORD MOTOR CO.

- For SuperCab or SuperCrew, measure the resistance between driver window control switch C504a-7, circuit 314 (TN/LB) and passenger front window control switch C604-3, circuit 314 (TN/LB) harness side.

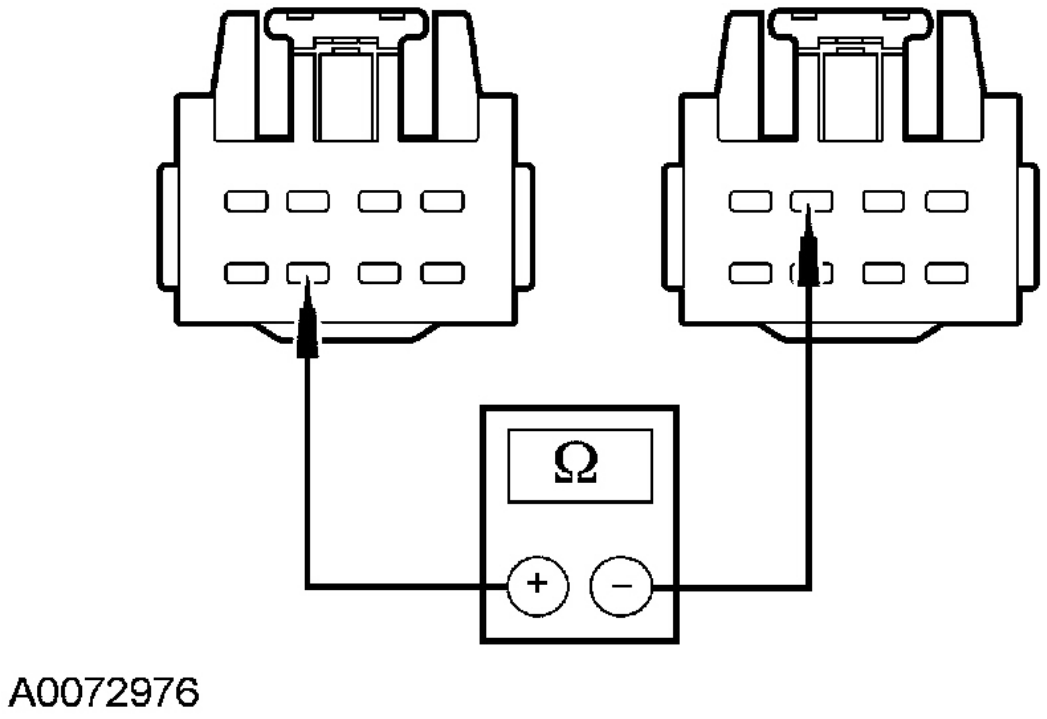

Fig. 33: Checking Circuits 314 (TN/LB) For An Open (SuperCab Or SuperCrew) Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new driver window control switch. REFER to **WINDOW CONTROL SWITCH - FRONT**. TEST the system for normal operation.

  No : REPAIR circuit 313 (WH/YE) or circuit 314 (TN/LB). TEST the system for normal operation.

C4 CHECK THE PASSENGER FRONT WINDOW CONTROL SWITCH

- Key in ON position.

NOTE: If equipped, set the driver window control switch to the UNLOCK position.

- For Regular Cab, connect a jumper wire between passenger front window control switch C604-5, circuit 313 (WH/YE) and C604-6, circuit 333 (YE/RD); and a second jumper wire between C604-4, circuit 400 (LB/BK) and C604-2, circuit 334 (RD/YE) harness side. The window should operate in the downward direction.

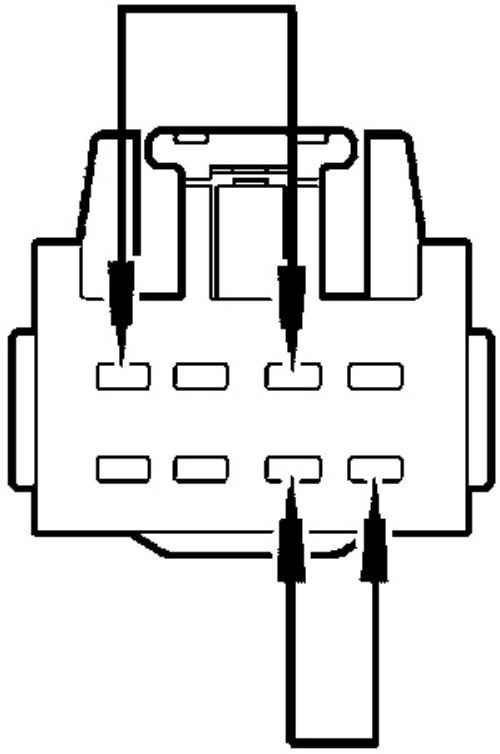

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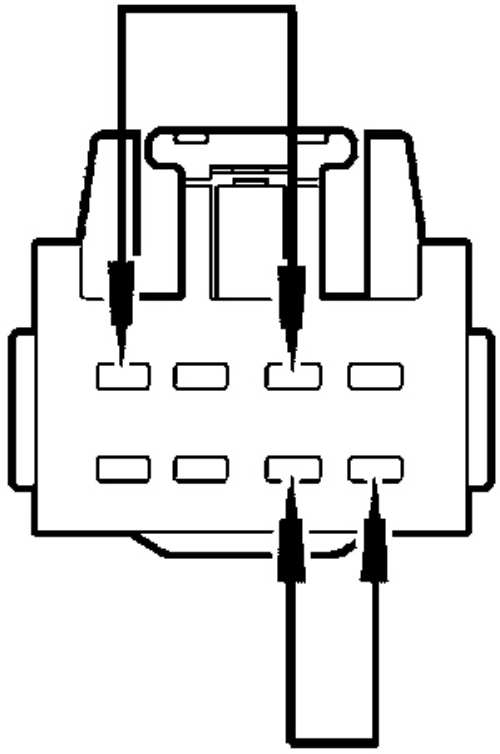
Fig. 34: Checking Passenger Front Window Control Switch (Regular Cab)
Courtesy of FORD MOTOR CO.

- For SuperCab or SuperCrew, connect a jumper wire between passenger front window control switch C604-5, circuit 313 (WH/YE) and C604-6, circuit 333 (YE/RD); and a second jumper wire between C604-4, circuit 193 (YE/LG) and C604-2, circuit 334 (RD/YE) harness side. The window should operate in the downward direction.



A0072977

Fig. 35: Checking Passenger Front Window Control Switch (SuperCab Or SuperCrew)
Courtesy of FORD MOTOR CO.

- For Regular Cab, connect a jumper wire between passenger front window control switch C604-3, circuit 314 (TN/LB) and C604-2, circuit 334 (RD/YE); and a second jumper wire between C604-4, circuit 400 (LB/BK) and C604-6, circuit 333 (YE/RD) harness side. The window should operate in the upward direction.

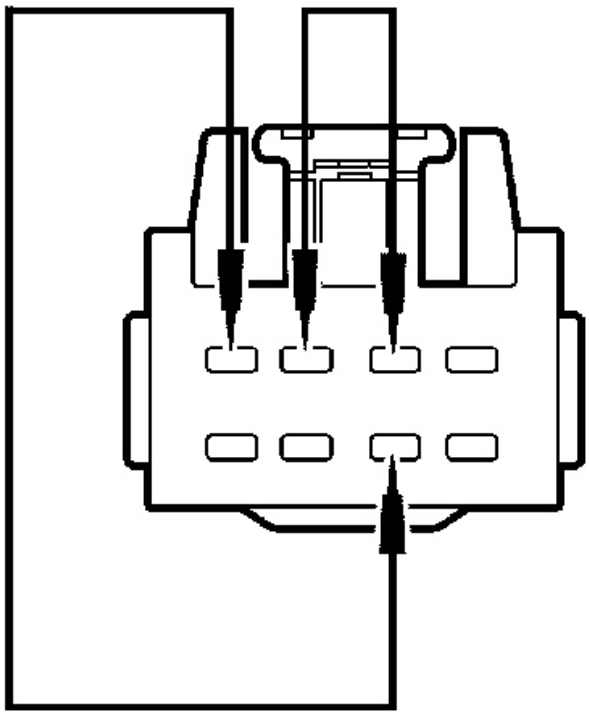


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Fig. 36: Checking Passenger Front Window Control Switch (Regular Cab)
Courtesy of FORD MOTOR CO.

- For SuperCab or SuperCrew, connect a jumper wire between passenger front window control switch C604-3, circuit 314 (TN/LB) and C604-2, circuit 334 (RD/YE); and a second jumper wire between C604-4, circuit 193 (YE/LG) and C604-6, circuit 333 (YE/RD) harness side. The window should operate in the upward direction.

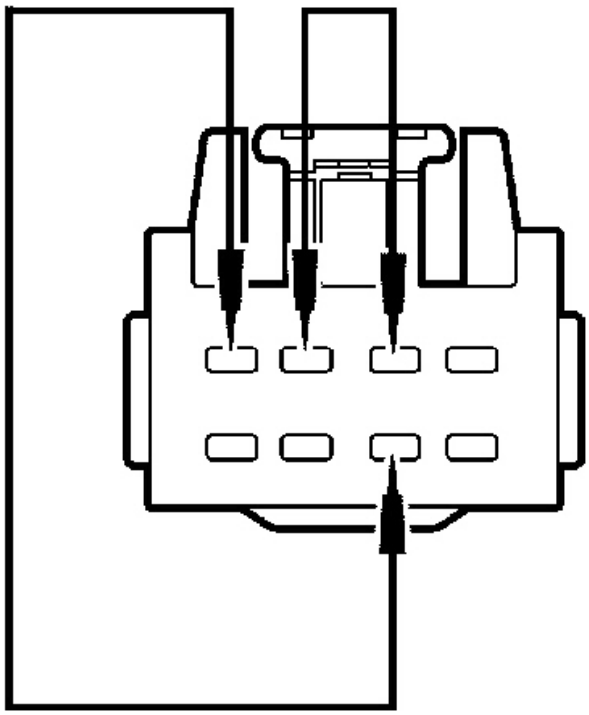

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Fig. 37: Checking Passenger Front Window Control Switch (SuperCab Or SuperCrew)
Courtesy of FORD MOTOR CO.

- **Does the window operate correctly?**

  Yes : If the passenger front window did not operate with the passenger front window control switch, INSTALL a new passenger front window control switch. If the passenger front power window did operate with the passenger front window control switch but not with the driver window control switch, INSTALL a new driver window control switch. REFER to **WINDOW CONTROL SWITCH - FRONT**. TEST the system for normal operation.

  No : GO to C5.

C5 CHECK CIRCUITS 333 (YE/RD) AND 334 (RD/YE) FOR AN OPEN

- Key in OFF position.
- Disconnect: Passenger Front Window Motor C608.
- Measure the resistance between passenger front window control switch C604-6, circuit 333 (YE/RD) and passenger front window motor C608-1, circuit 333 (YE/RD) harness side.

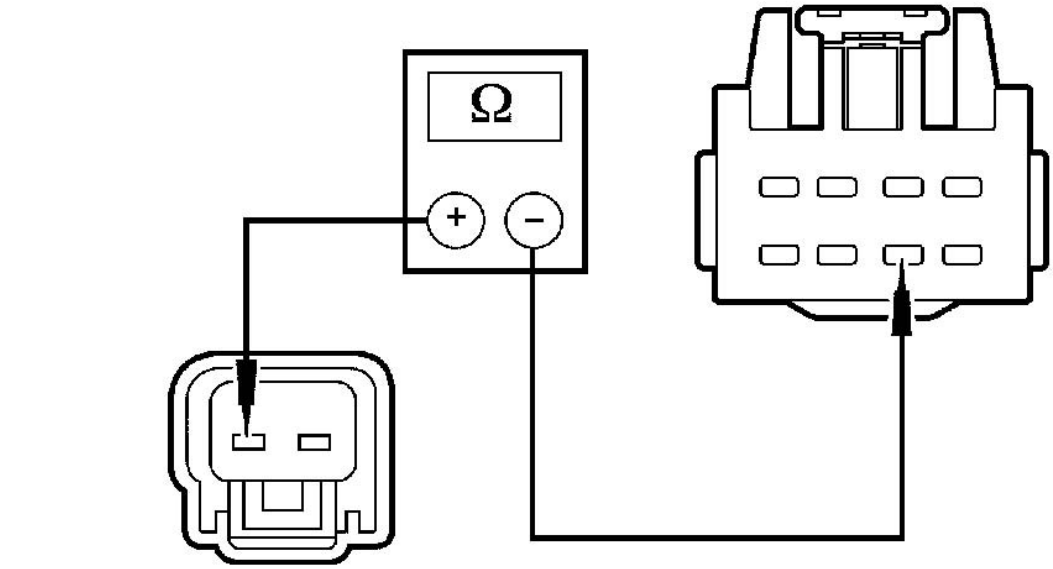
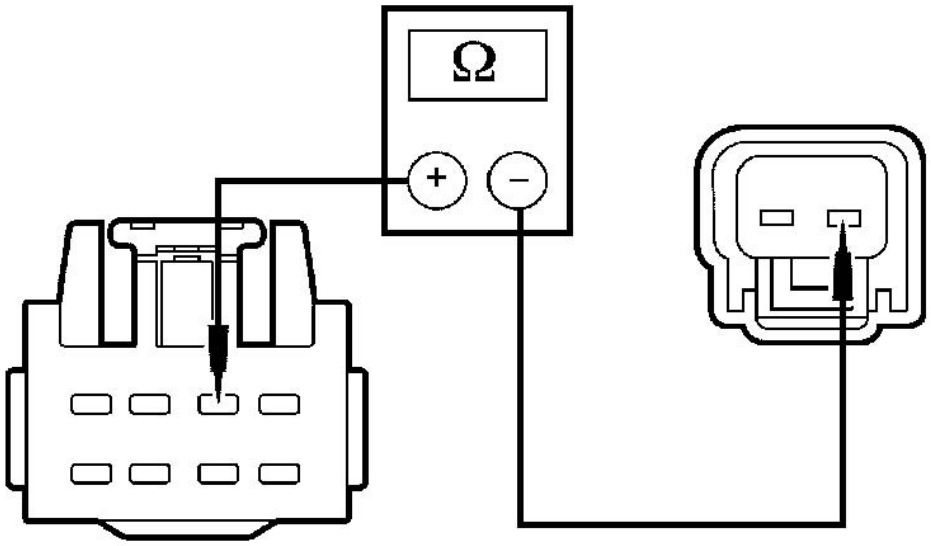


Fig. 38: Checking Circuits 333 (YE/RD) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between passenger front window control switch C604-2, circuit 334 (RD/YE) and passenger front window motor C608-2, circuit 334 (RD/YE) harness side.



A0072989

Fig. 39: CHECK CIRCUITS 334 (RD/YE) FOR AN OPEN
Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new passenger front window motor. REFER to **FRONT DOOR WINDOW REGULATOR AND MOTOR**. TEST the system for normal operation.

  No : REPAIR circuit 333 (YE/RD) or circuit 334 (RD/YE). TEST the system for normal operation.

Pinpoint Test D: Single Power Window Is Inoperative - Driver Rear Window

Normal Operation

Under normal operation the driver rear window control switch receives power from the driver window control switch through circuit 193 (YE/LG). The driver rear window control switch provides power to the power window motor through circuit 885 (YE/LB) and ground through 884 (YE/BK) to operate the driver rear window downward and power through circuit 884 (YE/BK) and ground through 885 (YE/LB) to operate the driver rear window upward.

When operating the driver rear window using the driver window control switch, power is sent to the driver rear window control switch through circuit 316 (YE/LB) and ground through 317 (GY/OG) to operate the driver rear window downward and power through circuit 317 (GY/OG) and ground through 316 (YE/LB) to operate the driver rear window upward.

Possible Causes

- Open in circuits 193 (YE/LG), 316 (YE/LB), 317 (GY/OG), 881 (BN), 882 (BN/YE), 884 (YE/BK) or 885 (YE/LB)
- Inoperative driver window control switch
- Inoperative driver rear window control switch
- Inoperative driver rear window motor

PINPOINT TEST D: SINGLE POWER WINDOW IS INOPERATIVE - DRIVER REAR WINDOW

D1 CHECK THE VOLTAGE TO THE DRIVER REAR WINDOW CONTROL SWITCH - CIRCUIT 193 (YE/LG)

- Disconnect: Driver Rear Window Control Switch C701.
- Key in ON position.

NOTE: Set the driver window control switch to the UNLOCK position.

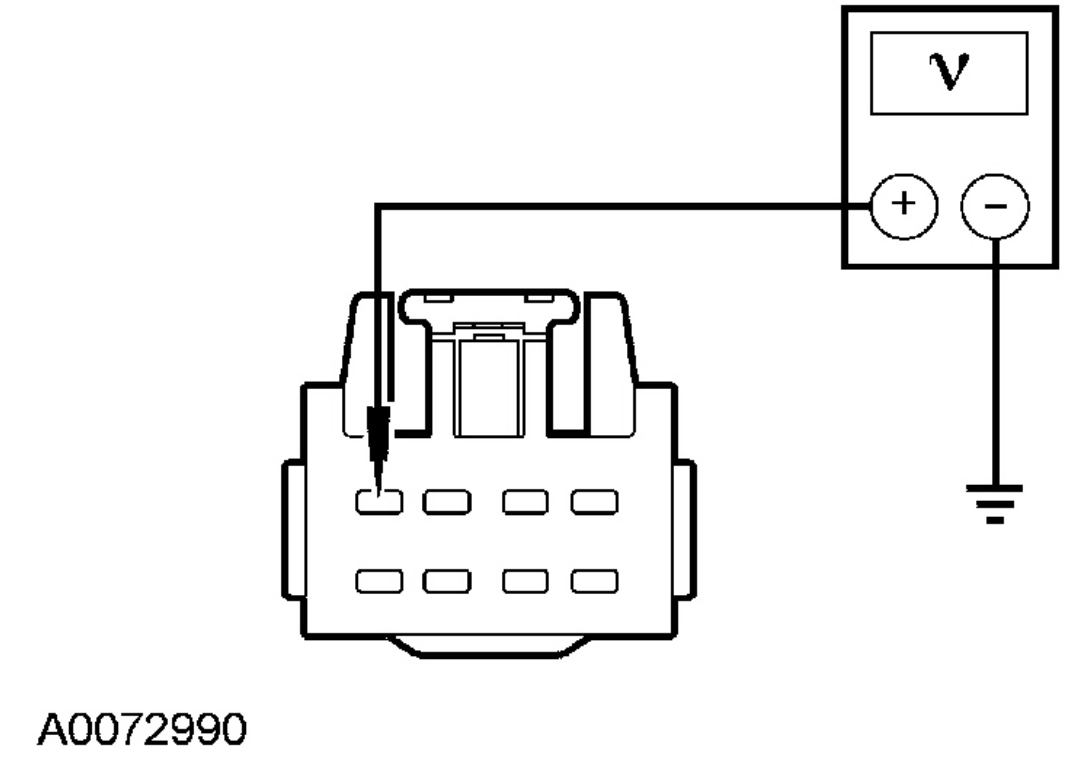


Fig. 40: Measuring Voltage Between Driver Rear Window Control Switch C701-4, Circuit 193 (YE/LG) Harness Side And Ground
Courtesy of FORD MOTOR CO.

- Measure the voltage between driver rear window control switch C701-4, circuit 193 (YE/LG) harness side and ground.
- **Is the voltage greater than 10 volts?**

  Yes : GO to D2.

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

D2 CHECK THE GROUNDS TO THE DRIVER REAR WINDOW CONTROL SWITCH - CIRCUITS 316 (YE/LB) AND 317 (GY/OG)

- Key in OFF position.
- Measure the resistance between driver rear window control switch C701 -5, circuit 317 (GY/OG) and C701-3, circuit 316 (YE/LB) harness side and ground.

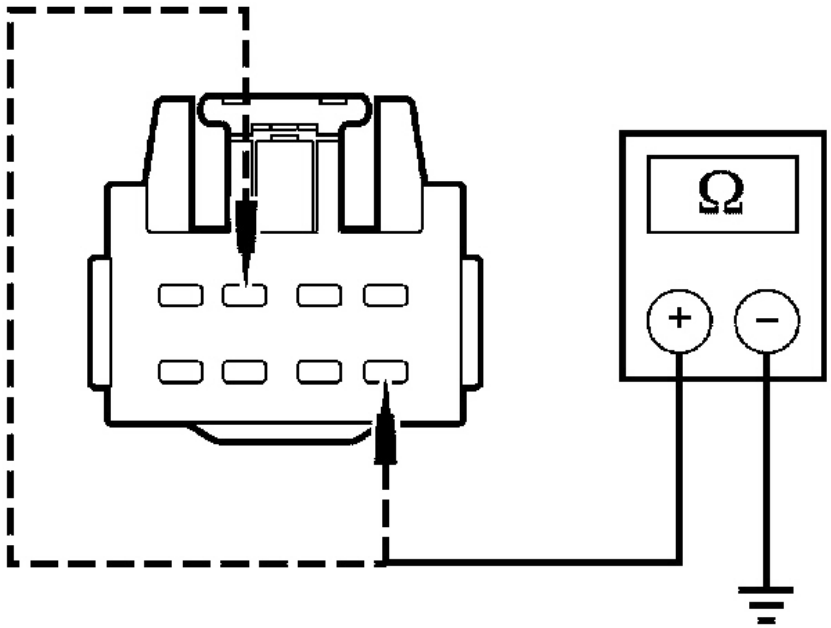


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Fig. 41: Checking Grounds To Driver Rear Window Control Switch - Circuits 316 (YE/LB) And 317 (GY/OG)
Courtesy of FORD MOTOR CO.

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

  Yes : GO to D4.

  No : GO to D3.

D3 CHECK CIRCUITS 316 (YE/LB) AND 317 (GY/OG) FOR AN OPEN

- Key in OFF position.
- Disconnect: Driver Window Control Switch C504a.
- Measure the resistance between driver window control switch C504a-2, circuit 316 (YE/LB) and driver rear window control switch C701-3, circuit 316 (YE/LB) harness side.

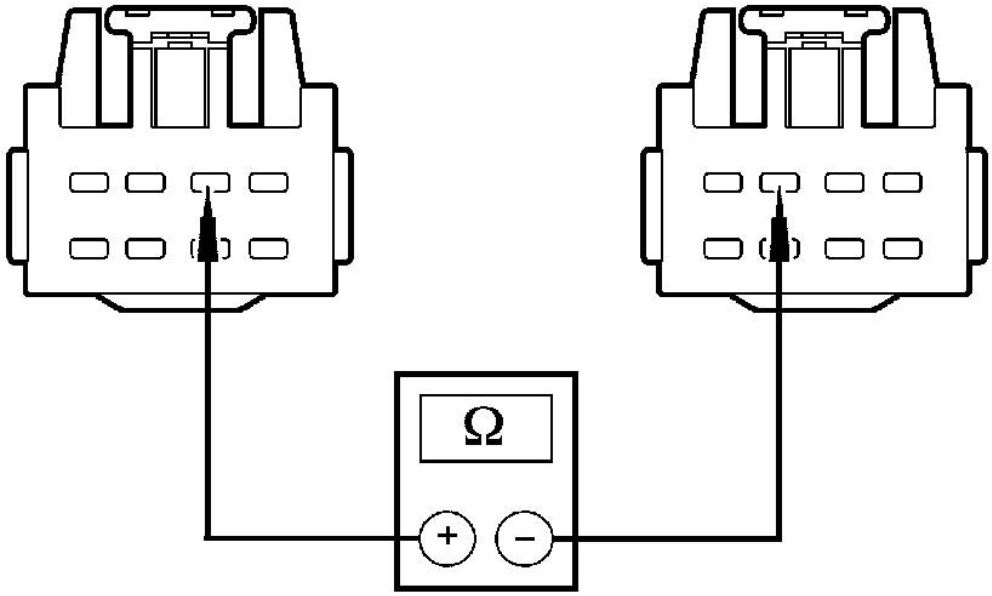


Fig. 42: Checking Circuits 316 (YE/LB) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver window control switch C504-1, circuit 317 (GY/OG) and driver rear window regulator control switch C701-5, circuit 317 (GY/OG) harness side.

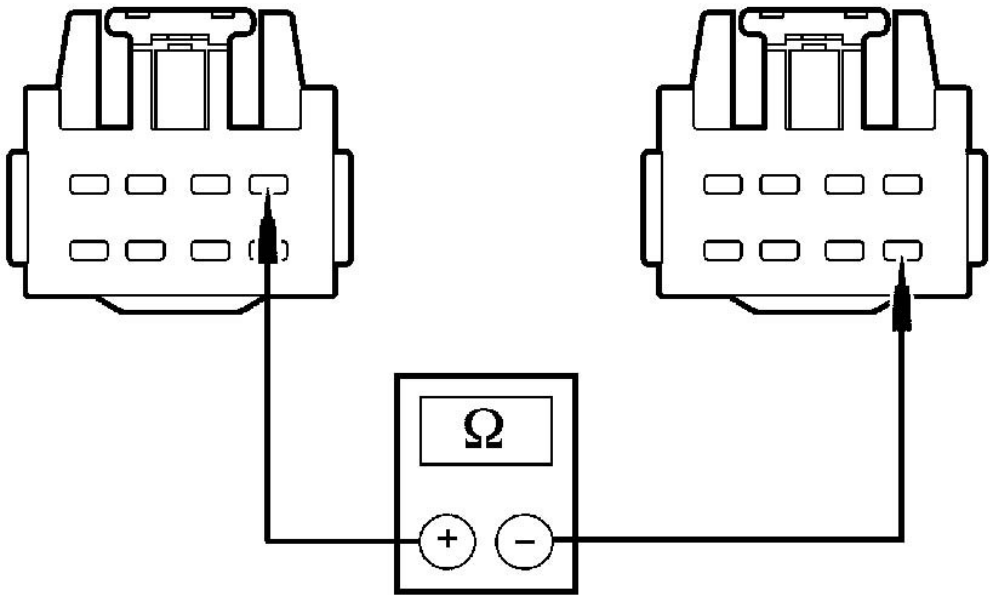


Fig. 43: Checking 317 (GY/OG) For An Open
Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new driver rear window control switch. REFER to **WINDOW CONTROL SWITCH - REAR**. TEST the system for normal operation.

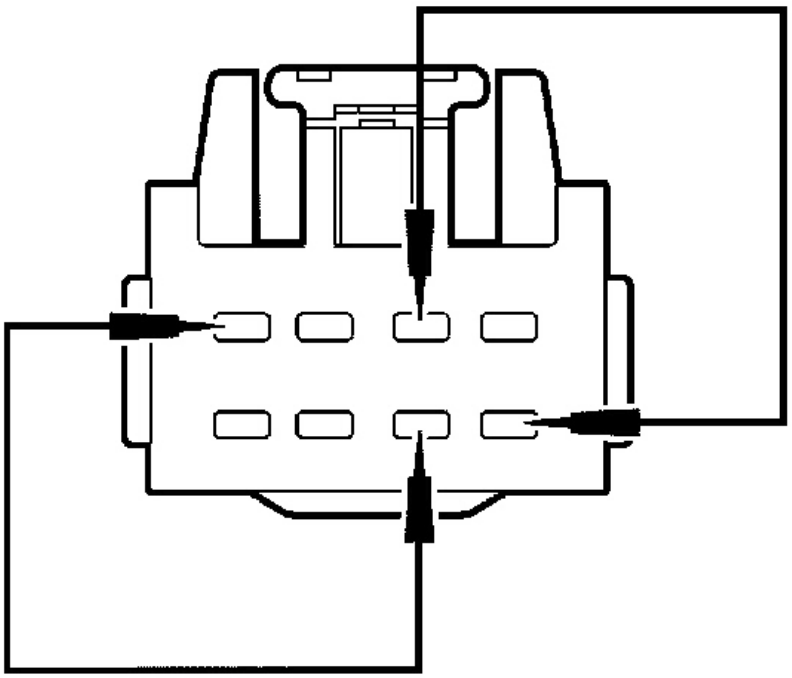
  No : REPAIR circuit 316 (YE/LB) or circuit 317 (GY/OG). TEST the system for normal operation.

D4 CHECK THE DRIVER REAR WINDOW CONTROL SWITCH

- Disconnect: Driver Rear Window Control Switch C701.
- Key in ON position.

NOTE: Set the driver window control switch to the UNLOCK position.

- Connect a jumper wire between driver rear window control switch C701-5, circuit 317 (GY/OG) and C701-2, circuit 884 (YE/BK); and a second jumper wire between C701-4, circuit 193 (YE/LG) and C701 -6, circuit 885 (YE/LB) harness side. The window should operate in the downward direction.



A0080818

Fig. 44: Checking Driver Rear Window Control Switch
Courtesy of FORD MOTOR CO.

- Connect a jumper wire between driver rear window control switch C701-3, circuit 316 (YE/LB) and C701 -6, circuit 885 (YE/LB); and a second jumper wire between C701-4, circuit 193 (YE/LG) and C701-2, circuit 884 (YE/BK) harness side. The window should operate in the upward direction.

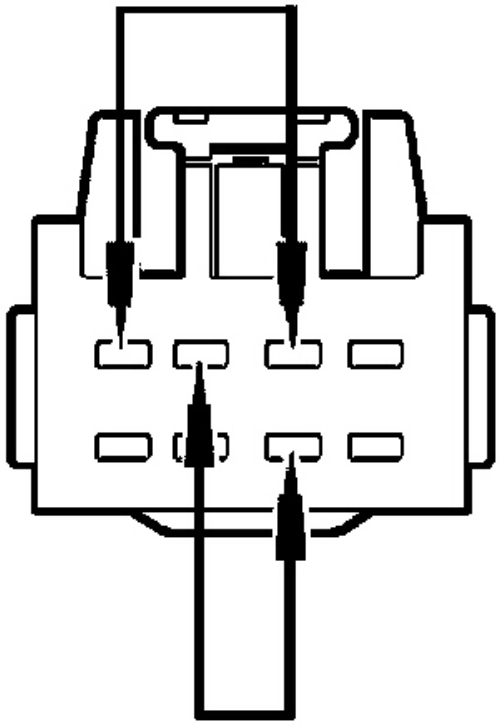


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Fig. 45: Checking Driver Rear Window Control Switch
Courtesy of FORD MOTOR CO.

- **Does the window operate correctly?**

  Yes : If the driver rear window did not operate with the driver rear window control switch, INSTALL a new driver rear window control switch. REFER to **WINDOW CONTROL SWITCH - REAR**. If the driver rear power window did operate with the driver rear window control switch but not with the driver front window control switch, INSTALL a new driver front window control switch. REFER to **WINDOW CONTROL SWITCH - FRONT**. TEST the system for normal operation.

  No : GO to D5.

D5 CHECK CIRCUITS 884 (YE/BK) AND 885 (YE/LB) FOR AN OPEN

- Key in OFF position.
- Disconnect: Driver Rear Window Motor C703.
- Measure the resistance between driver rear window control switch C701-2, circuit 884 (YE/BK)

and driver rear window motor C703-2, circuit 884 (YE/BK) harness side.

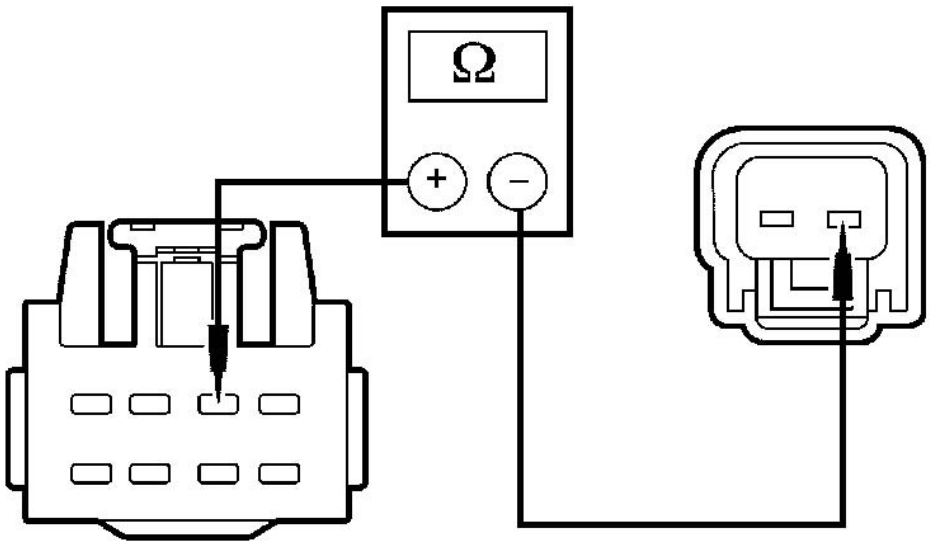


Fig. 46: Checking Circuits 884 (YE/BK) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver rear window control switch C701-6, circuit 885 (YE/LB) and driver rear window motor C703-1, circuit 885 (YE/LB) harness side.

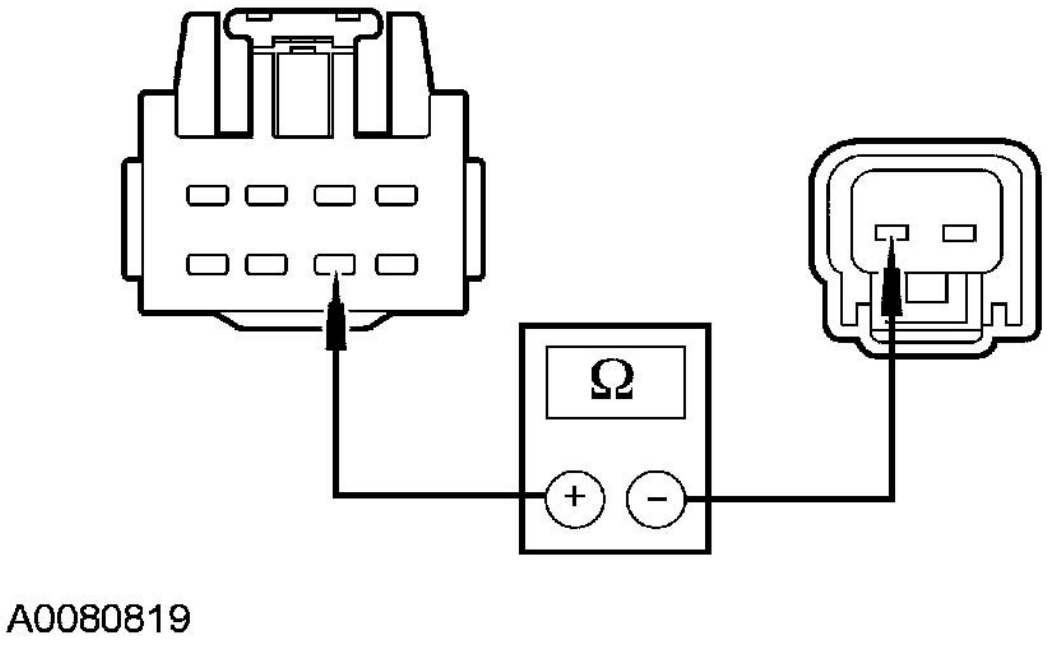


Fig. 47: Checking Circuits 885 (YE/LB) For An Open
Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new driver rear window motor. REFER to **REAR DOOR WINDOW REGULATOR AND MOTOR - SUPERCAB** or **REAR DOOR WINDOW REGULATOR AND MOTOR - SUPERCREW**. TEST the system for normal operation.

  No : REPAIR circuit 885 (YE/LB), or circuit 884 (YE/BK). TEST the system for normal operation.

Pinpoint Test E: Single Power Window Is Inoperative - Passenger Rear Window

Normal Operation

Under normal operation the passenger rear window control switch receives power from the driver window control switch through circuit 193 (YE/LG). The passenger rear window control switch provides power to the power window motor through circuit 882 (BN/YE) and ground through 881 (BN) to operate the passenger rear window downward and power through circuit 881 (BN) and ground through 882 (BN/YE) to operate the passenger rear window upward.

When operating the passenger rear window using the driver window control switch, power is sent to the passenger rear window control switch through circuit 320 (RD/BK) and ground through 319 (YE/BK) to operate the passenger rear window downward and power through circuit 319 (YE/BK) and ground through 320 (RD/BK) to operate the passenger rear window upward.

Possible Causes

- Open in circuits 193 (YE/LG), 319 (YE/BK), 320 (RD/BK), 881 (BN) or 882 (BN/YE)
- Inoperative driver window control switch
- Inoperative passenger rear window control switch
- Inoperative passenger rear window motor

PINPOINT TEST E: SINGLE POWER WINDOW IS INOPERATIVE - PASSENGER REAR WINDOW

E1 CHECK THE VOLTAGE TO THE PASSENGER REAR WINDOW CONTROL SWITCH - CIRCUIT 193 (YE/LG)

- Disconnect: Passenger Rear Window Control Switch C801.
- Key in ON position.

NOTE: Set the driver window control switch to the UNLOCK position.

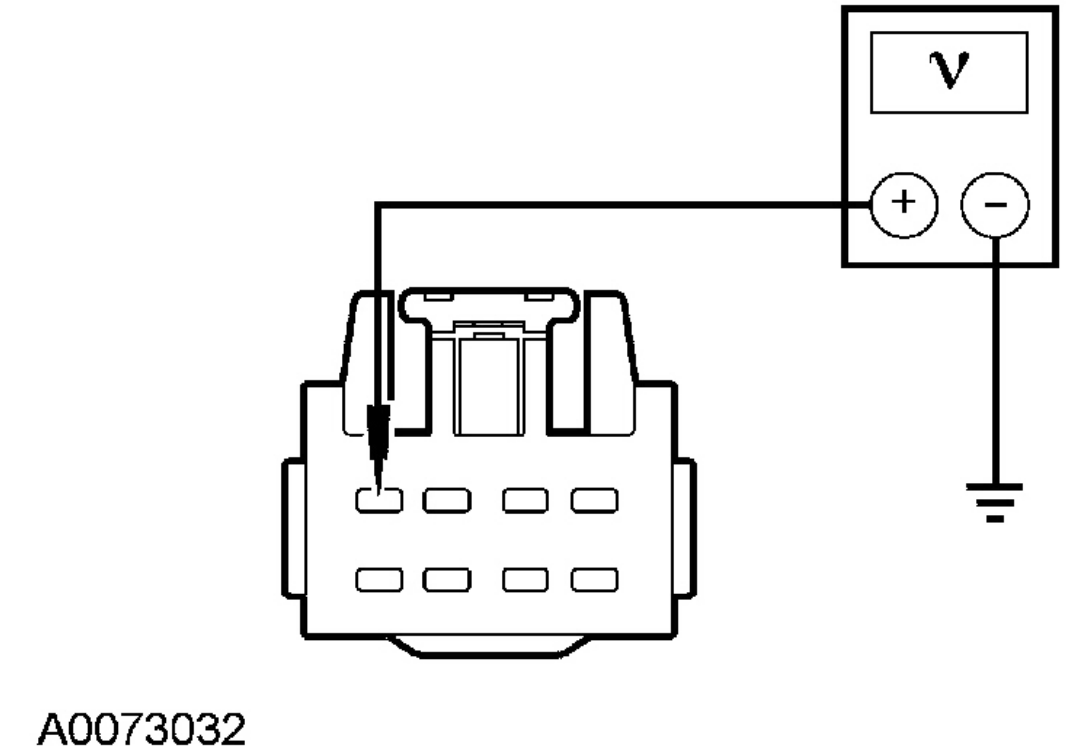


Fig. 48: Checking Voltage To Passenger Rear Window Control Switch - Circuit 193 (YE/LG)
Courtesy of FORD MOTOR CO.

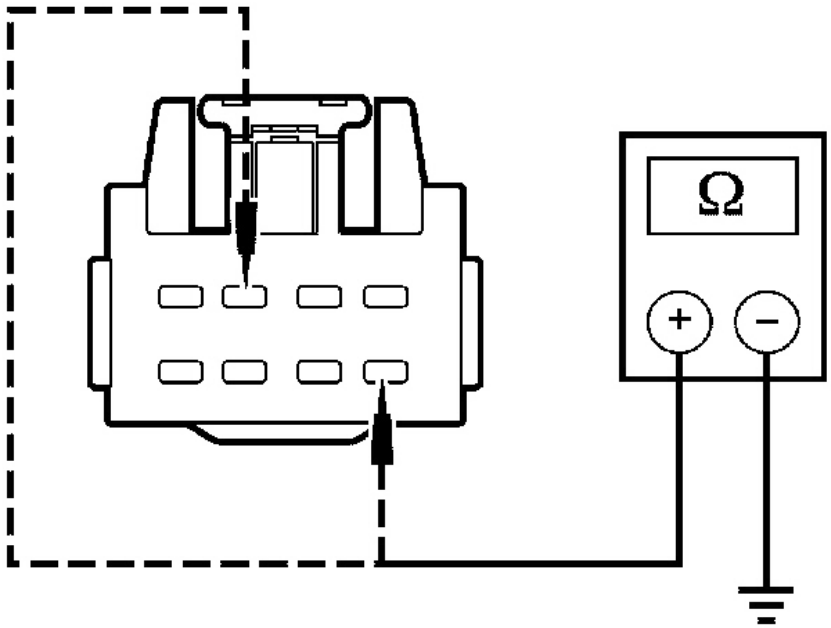
- Measure the voltage between passenger rear window control switch C801-4, circuit 193 (YE/LG) harness side and ground.
- **Is the voltage greater than 10 volts?**

  Yes : GO to E2.

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

E2 CHECK THE GROUNDS TO THE PASSENGER REAR WINDOW CONTROL SWITCH - CIRCUITS 320 (RD/BK) AND 319 (YE/BK)

- Key in OFF position.
- Measure the resistance between passenger rear window control switch C801-3, circuit 320 (RD/BK) and ground, and between C801-5, circuit 319 (YE/BK) harness side and ground.



A0073033

Fig. 49: Checking Grounds To Passenger Rear Window Control Switch - Circuits 320 (RD/BK) And 319 (YE/BK)
Courtesy of FORD MOTOR CO.

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

  Yes : GO to E4.

  No : GO to E3.

E3 CHECK CIRCUITS 320 (RD/BK) AND 319 (YE/BK) FOR AN OPEN

- Key in OFF position.
- Disconnect: Driver Window Control Switch C504a.
- Measure the resistance between driver window control switch C504a-3, circuit 320 (RD/BK) and passenger rear window control switch C801-3, circuit 320 (RD/BK), harness side.

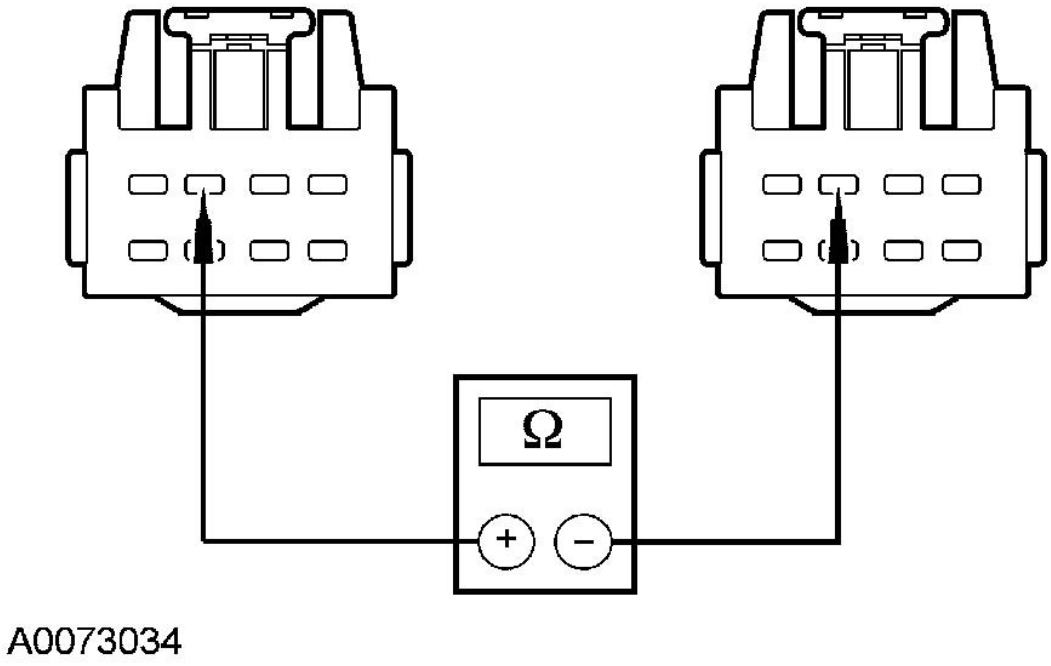


Fig. 50: Checking Circuits 320 (RD/BK) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver window control switch C504a-4, circuit 319 (YE/BK) and passenger rear window control switch C801-5, circuit 319 (YE/BK), harness side.

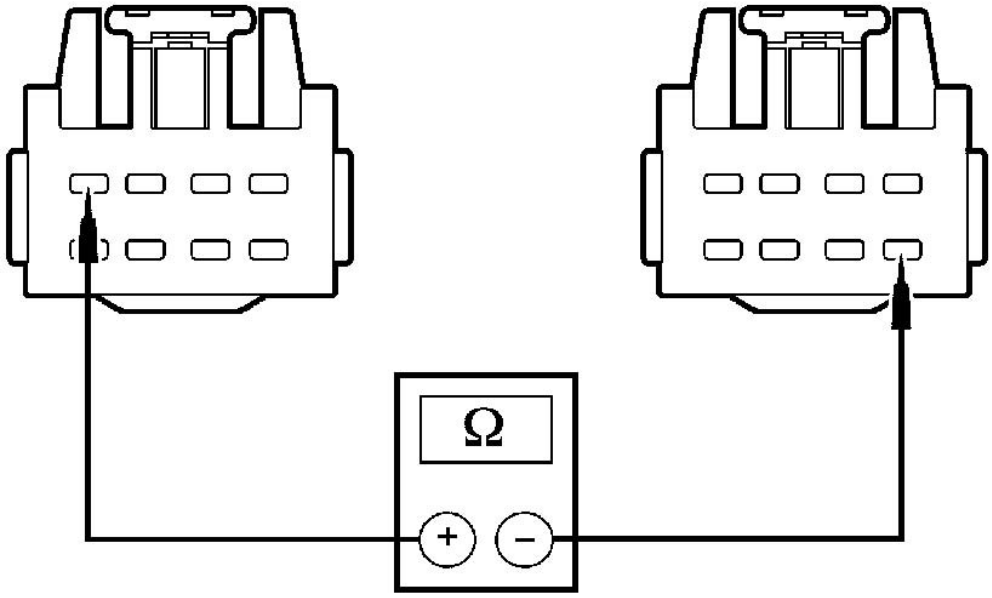


Fig. 51: Checking Circuits 319 (YE/BK) For An Open
Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new passenger rear window control switch. REFER to **WINDOW CONTROL SWITCH - REAR**. TEST the system for normal operation.

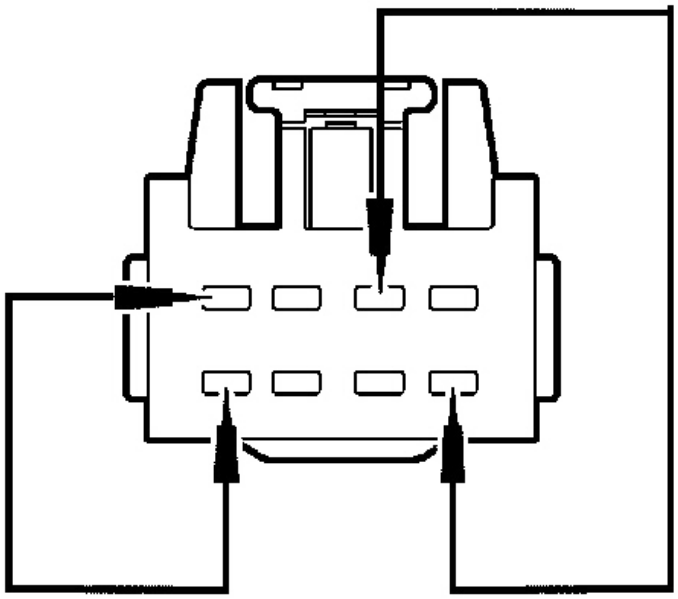
  No : REPAIR circuit 320 (RD/BK) or circuit 319 (YE/BK). TEST the system for normal operation.

E4 CHECK THE PASSENGER REAR WINDOW CONTROL SWITCH

- Disconnect: Passenger Rear Window Control Switch C801.
- Key in ON position.

NOTE: Set the driver window control switch to the UNLOCK position.

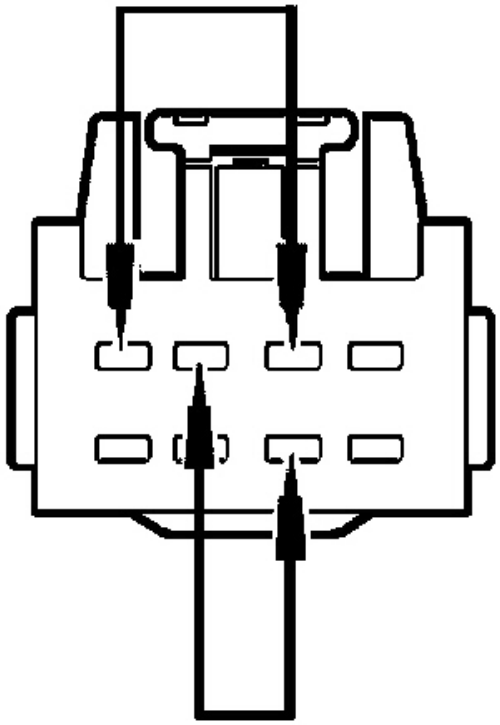
- Connect a jumper wire between passenger rear window control switch C801-5, circuit 319 (YE/BK) and C801-2, circuit 882 (BN/YE); and a second jumper wire between C801-4, circuit 193 (YE/LG) and C801-6, circuit 881 (BN) harness side. The window should operate in the downward direction.



A0073036

Fig. 52: Checking Passenger Rear Window Control Switch
Courtesy of FORD MOTOR CO.

- Connect a jumper wire between passenger rear window control switch C801-3, circuit 320 (RD/BK) and CS 801-6, circuit 881 (BN); and a second jumper wire between C801-4, circuit 193 (YE/LG) and C801-2, circuit 882 (BN/YE) harness side. The window should operate in the upward direction.



A0073038

Fig. 53: Checking Passenger Rear Window Control Switch
Courtesy of FORD MOTOR CO.

- **Does the window operate correctly?**

  Yes : If the passenger rear window did not operate with the passenger rear window control switch, INSTALL a new passenger rear window control switch. REFER to **WINDOW CONTROL SWITCH - REAR**. If the passenger rear power window did operate with the passenger rear window control switch but not with the driver front window control switch, INSTALL a new passenger front window control switch. REFER to **WINDOW CONTROL SWITCH - FRONT**. TEST the system for normal operation.

  No : GO to E5.

E5 CHECK CIRCUITS 882 (BN/YE) AND 881 (BN) FOR AN OPEN

- Key in OFF position.
- Disconnect: Passenger Rear Window Motor C803.
- Measure the resistance between passenger rear window control switch C801-6, circuit 881 (BN)

and passenger rear window motor C803-1, circuit 881 (BN) harness side.

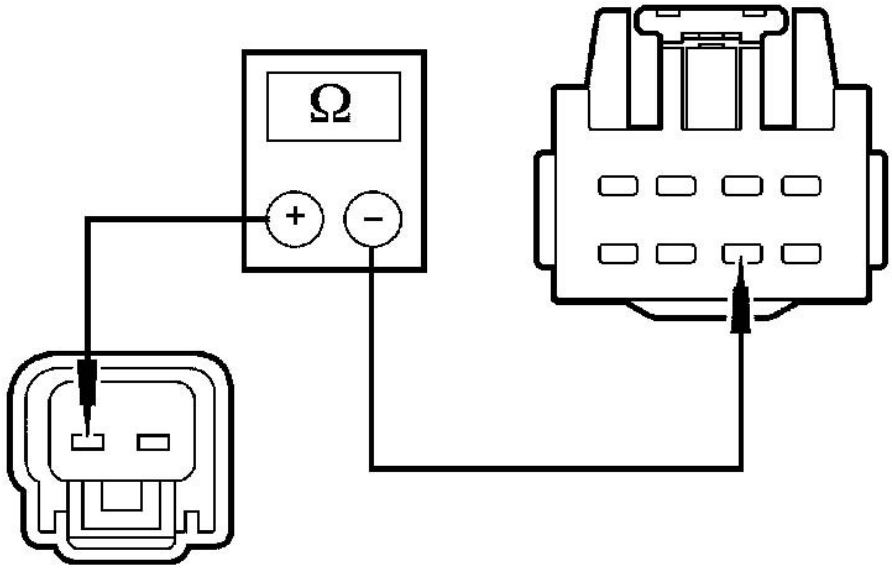


Fig. 54: Checking Circuits 881 (BN) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between passenger rear window con switch C801-2, circuit 882 (BN/YE) and passenger rear window motor C803-2, circuit 882 (BN/YE) harness side.

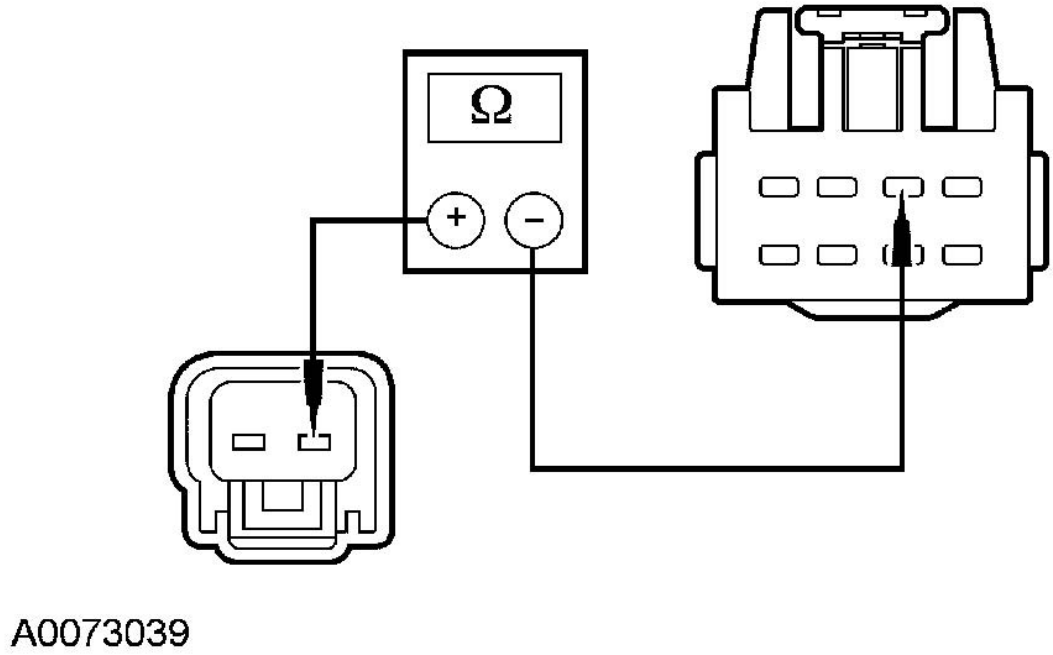


Fig. 55: Checking Circuits 882 (BN/YE) For An Open
Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new passenger rear window motor. REFER to **REAR DOOR WINDOW REGULATOR AND MOTOR - SUPERCAB** or **REAR DOOR WINDOW REGULATOR AND MOTOR - SUPERCREW**. TEST the system for normal operation.

  No : REPAIR circuit 881 (BN) or circuit 882 (BN/YE). TEST the system for normal operation.

Pinpoint Test F: The Power Sliding Window is Inoperative

Normal Operation

Under normal operation the rear window adjust switch provides power to the power sliding window motor through circuit 1941 (YE/LB) and ground through 1942 (RD/YE) to operate the power sliding window to the open position and power through circuit 1942 (RD/YE) and ground through 1941 (YE/LB) to operate the power sliding window to the CLOSED position.

Possible Causes

- Open in circuits 1941 (YE/LB) or 1942 (RD/YE)
- Inoperative rear window adjust switch
- Inoperative power sliding rear window motor

PINPOINT TEST F: THE POWER SLIDING WINDOW IS INOPERATIVE

F1 CHECK THE VOLTAGE TO THE POWER SLIDING WINDOW

- Key in OFF position.
- Disconnect: Rear Window Adjust Switch C980.
- Key in ON position.
- Measure the voltage between rear window adjust switch C980-4, circuit 400 (LB/BK) harness side and ground.

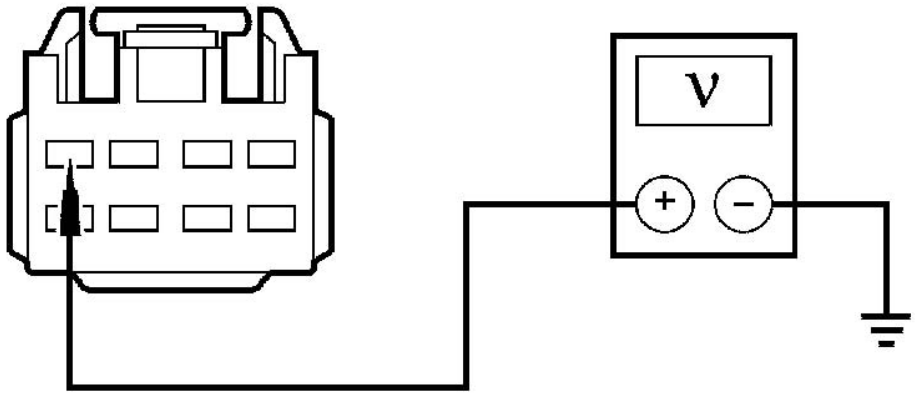


Fig. 56: Measuring Voltage Between Rear Window Adjust Switch C980-4, Circuit 400 (LB/BK) Harness Side And Ground
Courtesy of FORD MOTOR CO.

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

  Yes : GO to F2.

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

F2 CHECK GROUND TO THE REAR WINDOW CONTROL SWITCH

- Key in OFF position.
- Measure the resistances between rear window adjust switch C980-3, circuit 57 (BK) harness side and ground, and between C980-5, circuit 57 (BK) harness side and ground.

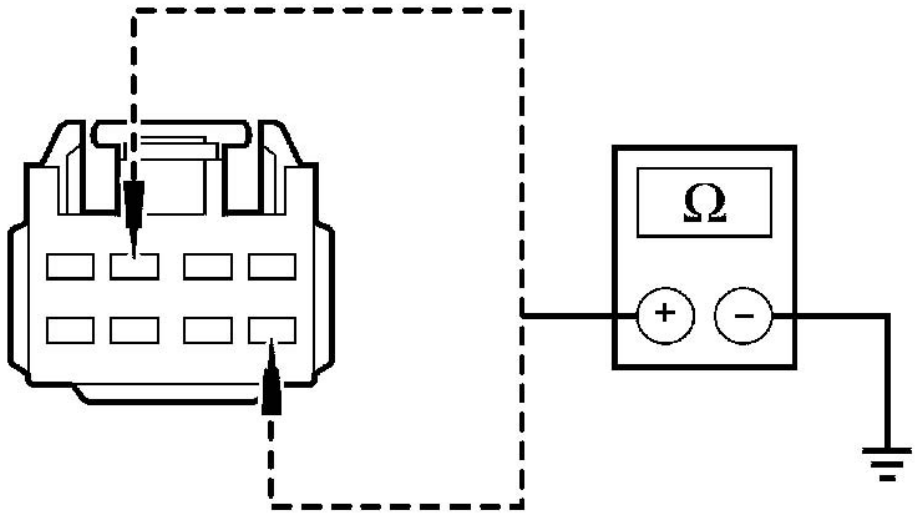


Fig. 57: Checking Ground To Rear Window Control Switch
Courtesy of FORD MOTOR CO.

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

  Yes : GO to F3.

  No : REPAIR the circuit(s). TEST the system for normal operation.

F3 CHECK THE REAR WINDOW ADJUST SWITCH

- Key in ON position.
- Connect a fused jumper between rear window adjust switch C980-4, circuit 400 (LB/BK) and C980-2, circuit 1941 (YE/LB) harness side; and between rear window adjust switch C980-6, circuit 1942 (RD/YE) and C980-3, circuit 57 (BK) harness side. The rear sliding window should open.

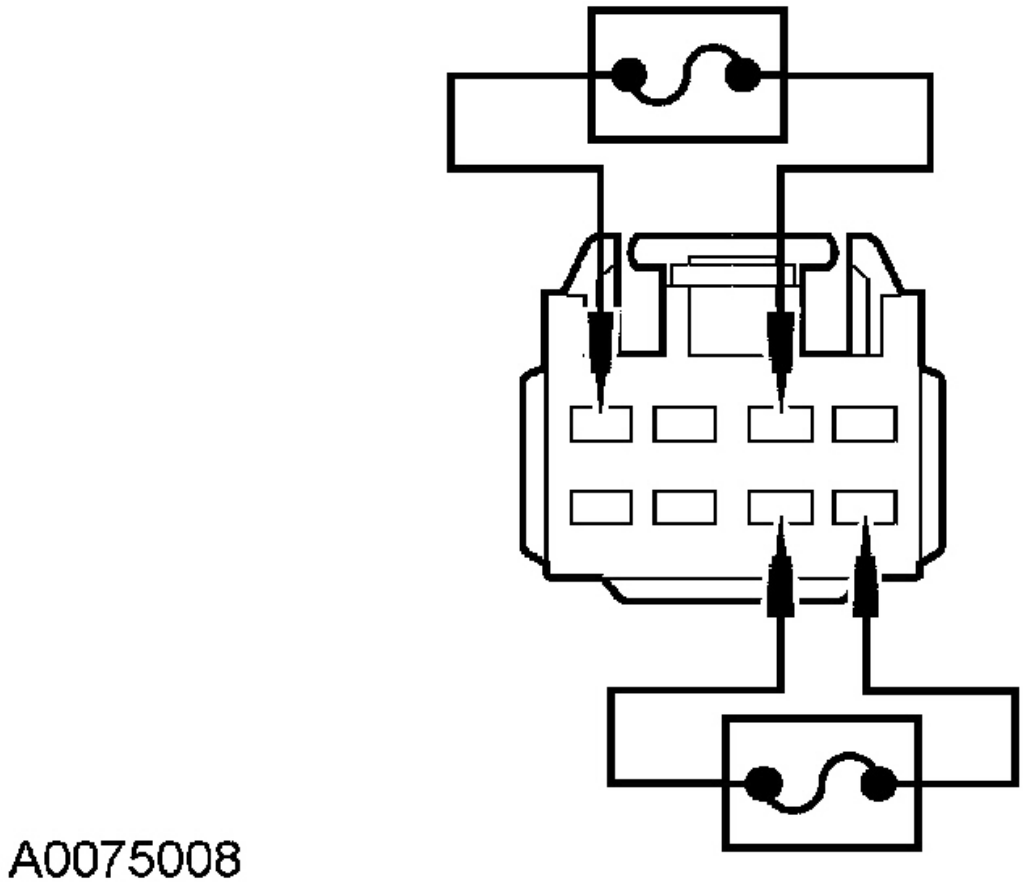


Fig. 58: Checking Rear Window Adjust Switch (Rear Sliding Window Should Open)
Courtesy of FORD MOTOR CO.

- Connect a fused jumper between rear window adjust switch C980-4, circuit 400 (LB/BK) and C980-6, circuit 1942 (RD/YE) harness side; and between rear window adjust switch C980-2, circuit 1941 (YE/LB) and C980-3, circuit 57 (BK) harness side. The rear sliding window should close.

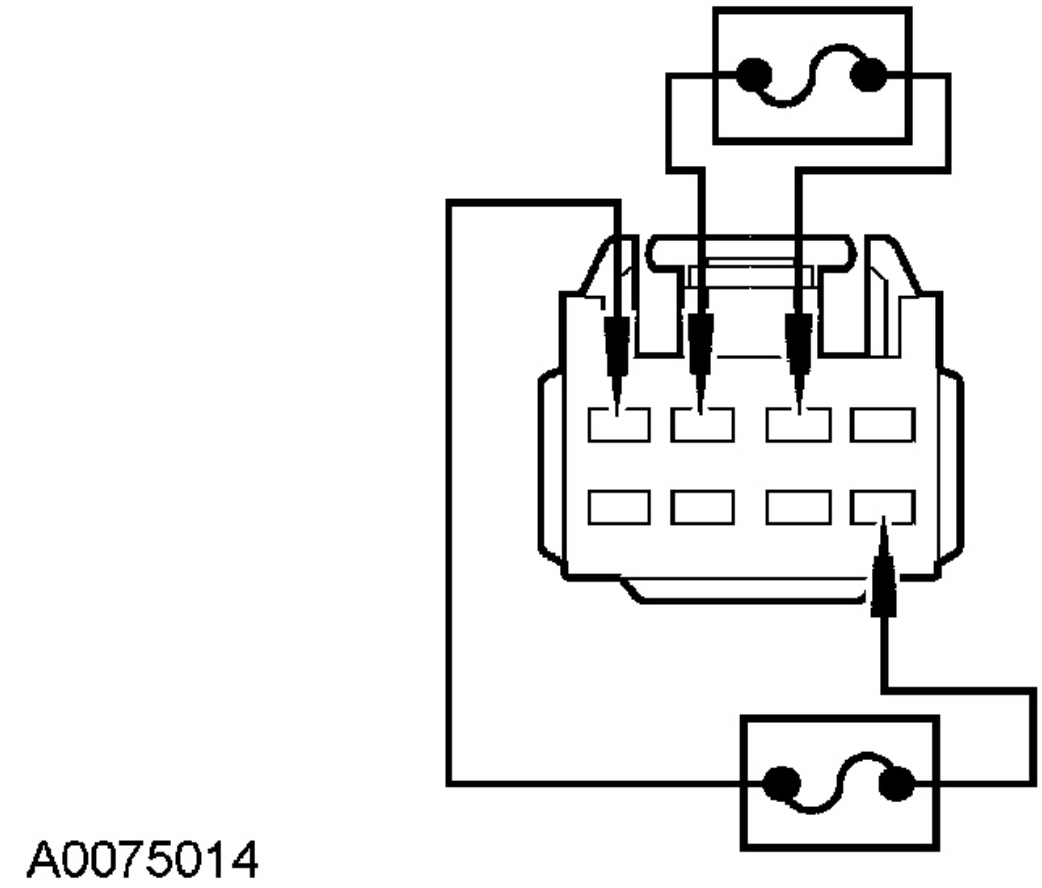


Fig. 59: Checking Rear Window Adjust Switch (Rear Sliding Window Should Close)
Courtesy of FORD MOTOR CO.

- **Did the rear power sliding window open and close?**

  Yes : INSTALL a new rear window adjust switch. TEST the system for normal operation.

  No : GO to F4.

F4 CHECK CIRCUIT 1941 (YE/LB) AND CIRCUIT 1942 (RD/YE) FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Disconnect: Rear Sliding Window Motor C3145.
- Key in ON position.
- Measure the voltage between rear sliding window motor C3145-1, circuit 1941 (YE/LB) harness side and ground, and between C3145-2, circuit 1942 (RD/YE) harness side and ground.

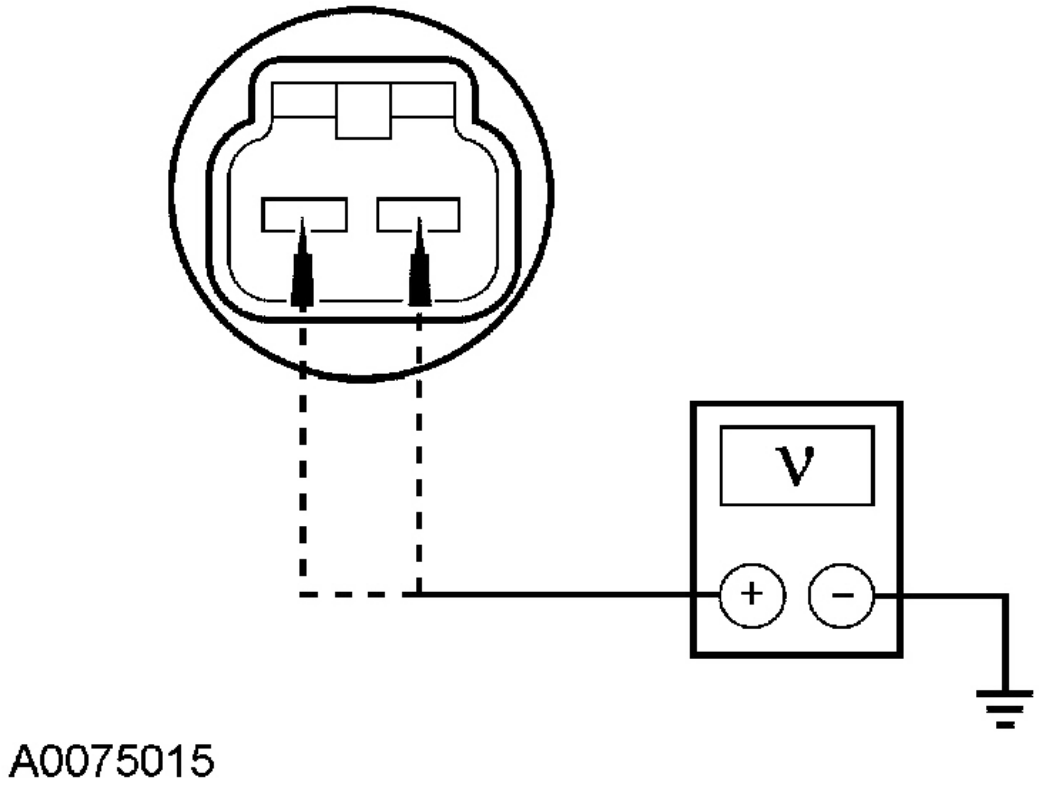


Fig. 60: Checking Circuit 1941 (YE/LB) And Circuit 1942 (RD/YE) For Short To Voltage
Courtesy of FORD MOTOR CO.

- **Are the voltages greater than 10 volts?**

  Yes : REPAIR the circuit(s). TEST the system for normal operation.

  No : GO to F5.

F5 CHECK CIRCUIT 1941 (YE/LB) AND CIRCUIT 1942 (RD/YE) FOR A SHORT TO GROUND

- Measure the resistance between rear sliding window motor C3145-1, circuit 1941 (YE/LB) harness side and ground; and between C3145-2, circuit 1942 (RD/YE) harness side and ground.

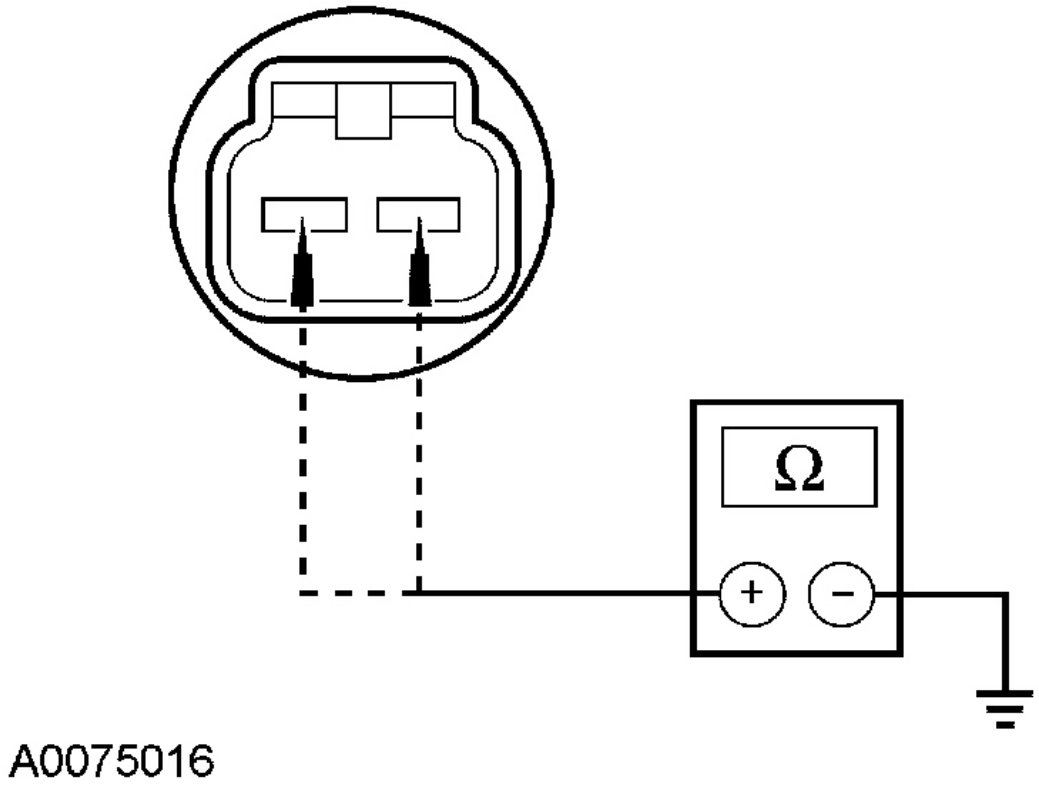


Fig. 61: Checking Circuit 1941 (YE/LB) And Circuit 1942 (RD/YE) For Short To Ground
Courtesy of FORD MOTOR CO.

- **Are the resistances greater than 10,000 ohms?**

  Yes : GO to F6.

  No : REPAIR the circuit(s). TEST the system for normal operation.

F6 CHECK CIRCUIT 1941 (YE/LB) AND CIRCUIT 1942 (RD/YE) FOR AN OPEN

- Measure the resistance between rear sliding window motor C3145-1, circuit 1941 (YE/LB) and rear window adjust switch C980-4, circuit 1941 (YE/LB) harness side; and between rear sliding window motor C3145-2, circuit 1942 (RD/YE) and rear window adjust switch C980-6, 1942 (RD/YE) harness side.

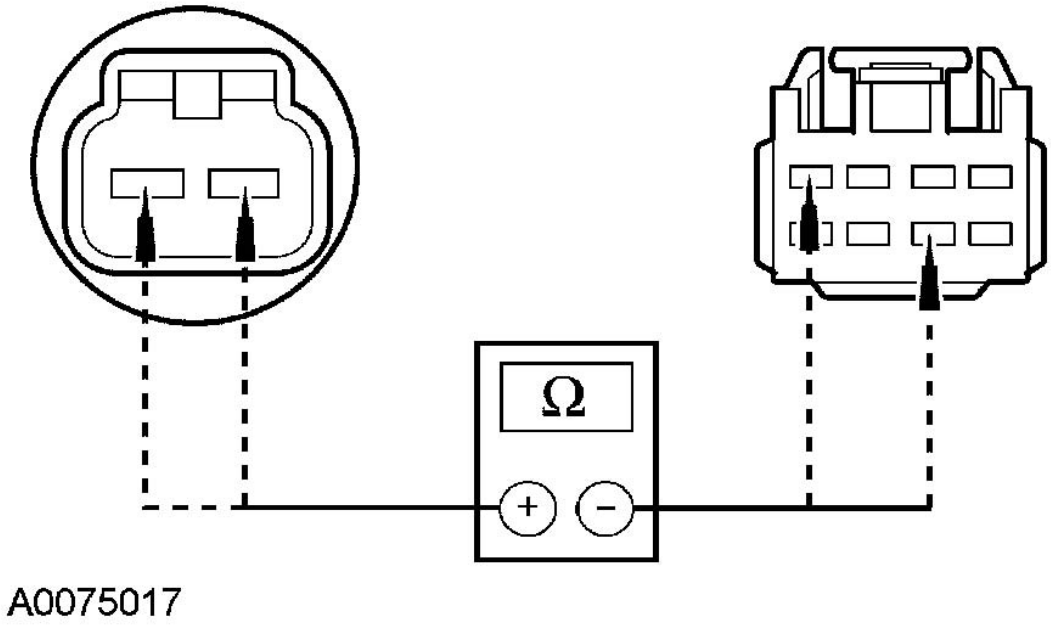


Fig. 62: Checking Circuit 1941 (YE/LB) And Circuit 1942 (RD/YE) For An Open
Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new passenger rear window motor. REFER to **REAR DOOR WINDOW REGULATOR AND MOTOR - SUPERCAB** or **REAR DOOR WINDOW REGULATOR AND MOTOR - SUPERCREW**. TEST the system for normal operation.

  No : REPAIR the circuit(s). TEST the system for normal operation.

Pinpoint Test G: The Defrost System Is Inoperative

Normal Operation

Under normal operation the heated backlight relay receives power from circuit 1113 (YE/LG) and central junction box (CJB) fuse 10 (10A). When the rear window defrost switch is depressed on the temperature control module, a message is sent to the instrument cluster module (ICM) through the multiplex link system. Once the ICM receives the message to turn on the rear window defrost the ICM grounds circuit 1009 (OG/YE) to activate the heated backlight relay. Power is then sent to the rear window defrost grid through circuit 186 (BN/LB) from the heated backlight relay. The rear window defrost grid then receives ground through circuit 57 (BK) to chassis ground.

Possible Causes

- Inoperative ICM
- Inoperative temperature control module

- Inoperative heated backlight relay
- Multiplex communication error
- Open in circuits 186 (BN/LB), 1113 (YE/LG), 1009 (OG/YE) or 57 (BK)

PINPOINT TEST G: THE DEFROST SYSTEM IS INOPERATIVE

G1 CHECK THE POWER TO THE HEATED BACKLIGHT RELAY

- Disconnect: Heated Backlight Relay.
- Key in ON position.
- Measure the voltage between rear window defrost relay socket pin 85 harness side and ground; and between pin 30 harness side and ground.

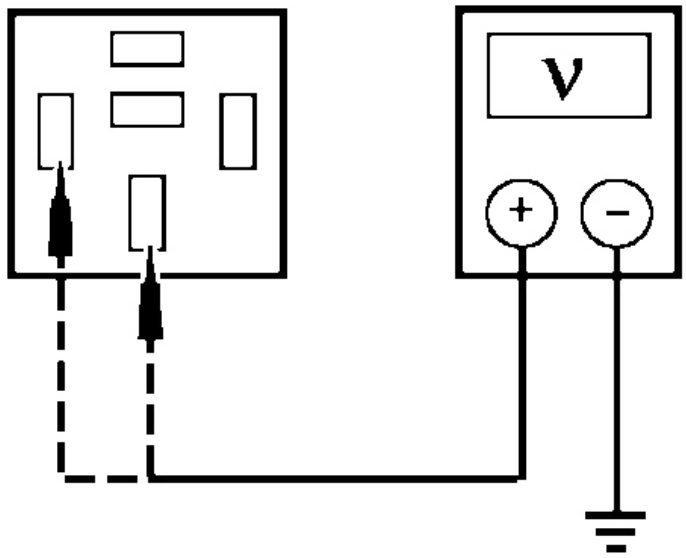


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Fig. 63: Checking Power To Heated Backlight Relay
Courtesy of FORD MOTOR CO.

- **Are the voltages greater than 10 volts?**

  Yes : GO to G2.

  No : REPAIR the circuit(s). TEST the system for normal operation.

G2 CHECK THE ICM OUTPUT

- Turn on the rear window defrost.

- Measure the voltage between rear window defrost relay socket pin 85 and pin 86 harness side.

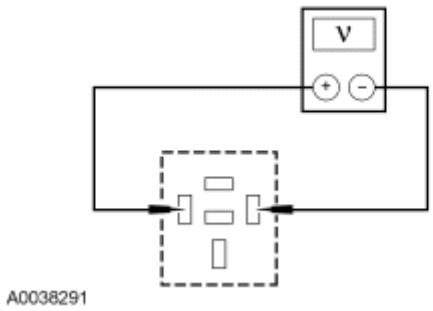


Fig. 64: Measuring Voltage Between Rear Window Defrost Relay Socket Pin 85 And Pin 86 Harness Side
Courtesy of FORD MOTOR CO.

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

  Yes : GO to G3.

  No : GO to G6.

G3 CHECK THE HEATED BACKLIGHT RELAY

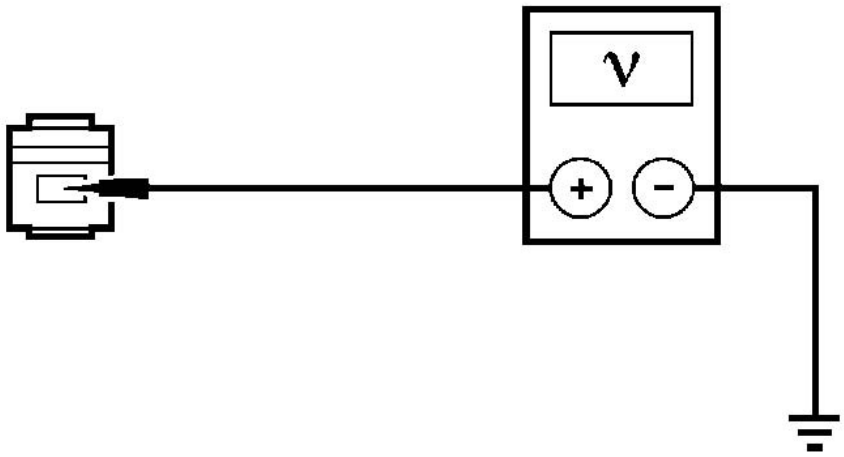
- Carry out the heated backlight relay component test. Refers to **COMPONENT TESTING -- F150 PICKUP** article .
- **Did the heated backlight relay pass the component test?**

  Yes : GO to G4.

  No : INSTALL a new heated backlight relay. TEST the system for normal operation.

G4 CHECK THE REAR WINDOW DEFROST GRID VOLTAGE

- Connect: Heated Backlight Relay.
- Disconnect: Rear Window Defrost Grid Power C402a.
- Key in ON position.
- Turn rear window defrost ON.
- Measure the voltage between rear window defrost grid power C402a, circuit 186 (BN/LB) and ground.



A0010207

Fig. 65: Measuring Voltage Between Rear Window Defrost Grid Power C402a, Circuit 186 (BN/LB) And Ground
Courtesy of FORD MOTOR CO.

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

  Yes : GO to G5.

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

G5 CHECK THE REAR WINDOW DEFROST GRID GROUND

- Key in OFF position.
- Disconnect: Rear Window Defrost Grid Ground C402b.
- Measure the resistance between rear window defrost grid ground C402b, circuit 57 (BK) and ground.

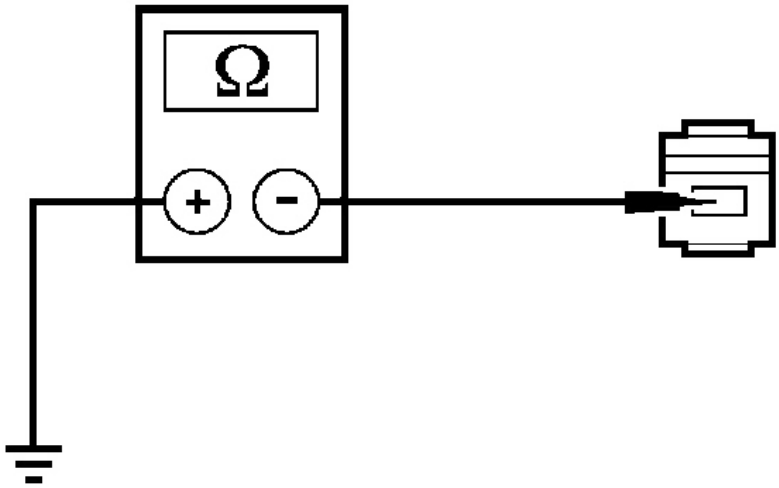


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Fig. 66: Measuring Resistance Between Rear Window Defrost Grid Ground C402b, Circuit 57 (BK) And Ground
Courtesy of FORD MOTOR CO.

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

  Yes : REPAIR the rear window defrost grid or INSTALL a new rear window glass. REFER to **WINDOW GRID WIRE REPAIR** or **REAR WINDOW GLASS**. TEST the system for normal operation.

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

G6 CHECK THE REAR WINDOW DEFROST SWITCH

- Enter the following diagnostic mode on the diagnostic tool: ICM Rear Window Defrost PID.
- Monitor the ICM rear window defrost PID while turning the rear window defrost on.
- **Does the PID match the expected state of the rear window defrost?**

  Yes : GO to G7.

  No : INSTALL a new temperature control module. REFER to **CONTROL COMPONENTS** . TEST the system for normal operation.

G7 CHECK CIRCUIT 1009 (OG/YE) FOR AN OPEN

- Disconnect: ICM C220b.
- Measure the resistance between ICM C220b-6, circuit 1009 (OG/YE) and rear window defrost

relay socket pin 86, circuit 1009 (OG/YE) harness side.

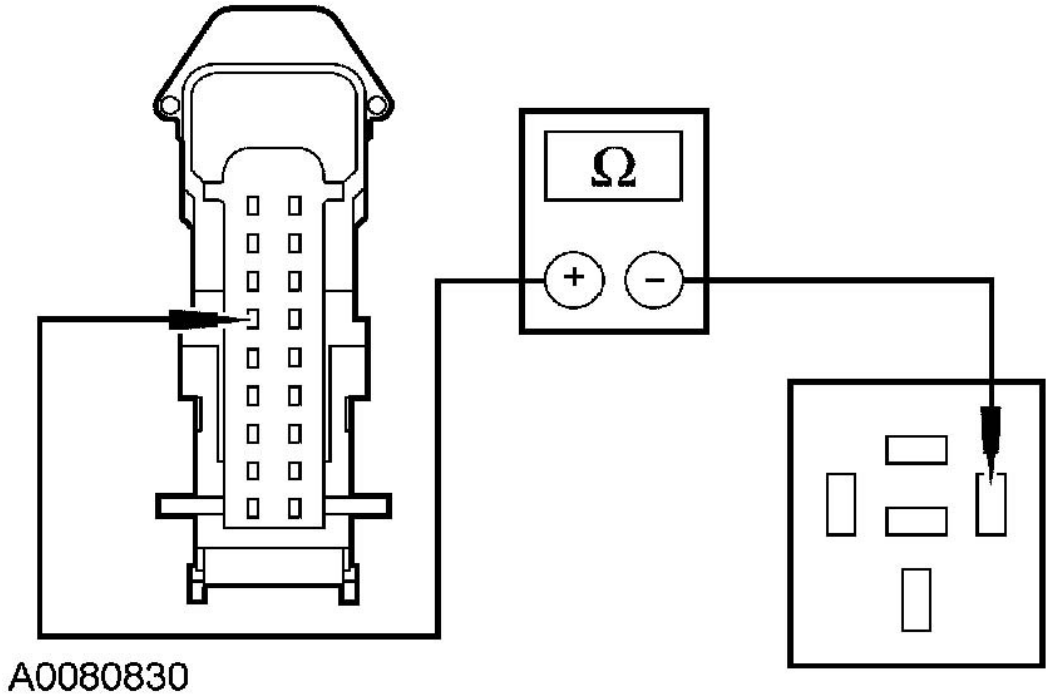

Fig. 67: Checking Circuit 1009 (OG/YE) For An Open
Courtesy of FORD MOTOR CO.

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

  Yes : INSTALL a new ICM. REFER to **INSTRUMENT CLUSTER** . TEST the system for normal operation.

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

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

Normal Operation

Under normal operation the heated backlight relay receives power from circuit 1113 (YE/LG) and central junction box (CJB) fuse 10 (10A). When the rear window defrost switch is depressed on the temperature control module, a message is sent to the instrument cluster module (ICM) through the multiplex link system. Once the ICM receives the message to turn on the rear window defrost, the ICM grounds circuit 1009 (OG/YE) to activate the heated backlight relay. Power is then sent to the rear window defrost grid through circuit 186 (BN/LB) from the heated backlight relay. The rear window defrost grid then receives ground through circuit 57 (BK) to chassis ground.

Possible Causes

- Inoperative ICM
- Inoperative heated backlight relay
- Multiplex communication error
- Short to voltage in circuit 186 (BN/LB)
- Short to ground in circuit 1009 (OG/YE)

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

H1 CHECK CIRCUIT 186 (BN/LB) FOR A SHORT TO VOLTAGE

- Disconnect: Heated Backlight Relay.
- Key in ON position.
- **Is the rear window defrost ON?**

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

  No : GO to H2.

H2 CHECK THE REAR WINDOW DEFROST RELAY

- Key in OFF position.
- Measure the resistance between rear window defrost relay socket pin 86, circuit 1009 (OG/YE) harness side and ground.

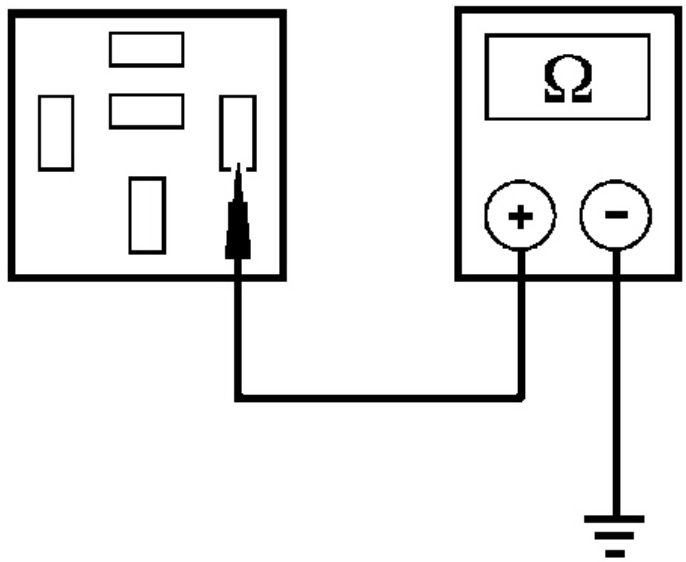

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Fig. 68: Measuring Resistance Between Rear Window Defrost Relay Socket Pin 86, Circuit 1009 (OG/YE) Harness Side And Ground
Courtesy of FORD MOTOR CO.

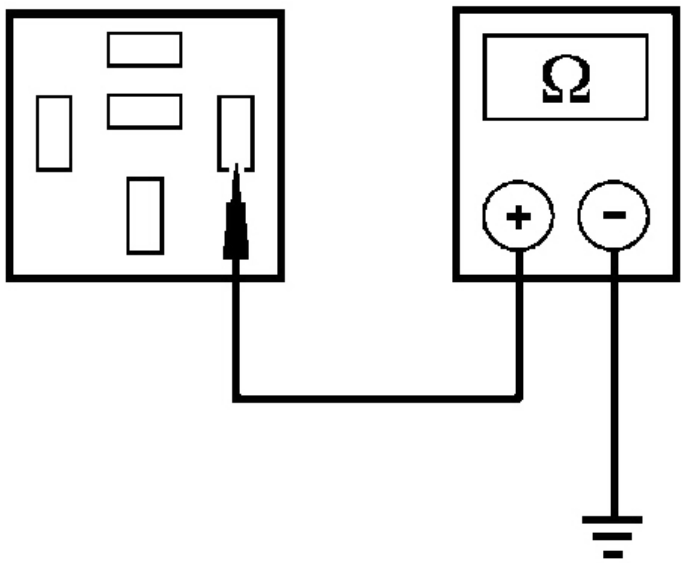
- **Is the resistance greater than 10,000 ohms?**

  Yes : INSTALL a new rear window defrost relay. TEST the system for normal operation.

  No : GO to H3.

H3 CHECK THE INSTRUMENT CLUSTER MODULE (ICM)

- Disconnect: ICM C220b.
- Measure the resistance between rear window defrost relay socket pin 86, circuit 1009 (OG/YE) harness side and ground.



A0043703

Fig. 69: Measuring Resistance Between Rear Window Defrost Relay Socket Pin 86, Circuit 1009 (OG/YE) Harness Side And Ground
Courtesy of FORD MOTOR CO.

- **Is the resistance greater than 10,000 ohms?**

  Yes : INSTALL a new ICM. REFER to **INSTRUMENT CLUSTER** . TEST the system for normal operation.

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

GENERAL PROCEDURES

WINDOW GRID WIRE REPAIR

MATERIAL ITEM SPECIFICATION

Item	Specification
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A
Lacquer Touch Up Paint (match color to exterior grid wire) PM-19500-XXXXX	ESR-M2P100-C
Rear Window Defroster Repair PM-11 (Canada CPM-11)	-
Polypropylene Film Fine Line Tape (commercially available)	-

NOTE: If the first layer of the heated rear window grid (brown) is damaged or missing, it is necessary to apply touch up paint on the glass prior to applying the silver rear window defroster repair.

NOTE: The grid line material is not embedded into the glass but is baked to the glass surface and consequently can be scraped off. Inoperative lines may appear to the eye to be undamaged due to residue remaining on the glass and will require diagnosis with a voltmeter or 12V test lamp. For additional information, refer to DIAGNOSIS AND TESTING.

NOTE: 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. There may be some residue left on the glass that appears to be grid material but a check with a voltmeter or 12V test lamp will confirm an open circuit.

NOTE: If the brown color under the grid line is damaged or missing (this is very rare), it will be necessary to apply lacquer touch up paint for color match. This paint must meet specification and should be applied to the glass prior to applying the rear window defroster repair compound.

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.

1. Bring the vehicle up to 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.

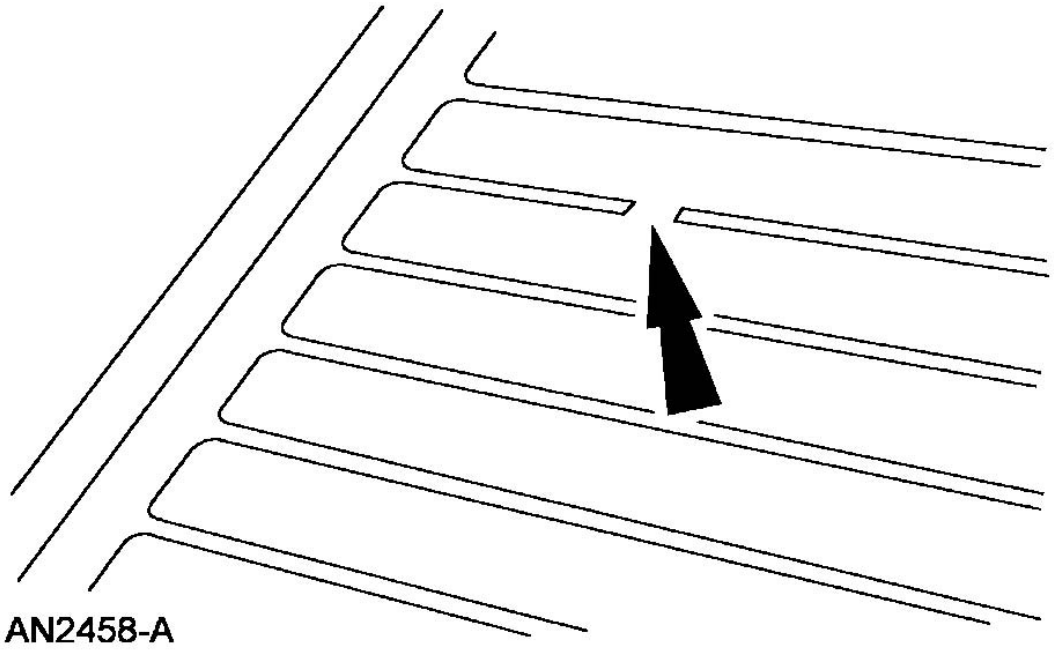


Fig. 70: Locating Of Grid Break On Exterior Of Rear Window Glass
Courtesy of FORD MOTOR CO.

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.

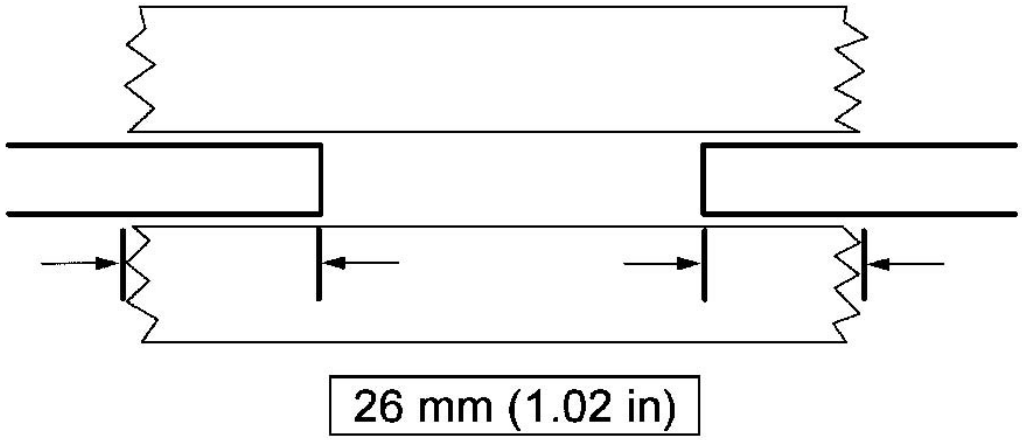


Fig. 71: Identifying Polypropylene Film Fine Line Tape
Courtesy of FORD MOTOR CO.

NOTE: If the brown layer is not broken or missing, apply only the silver grid repair compound to the break.

NOTE: 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 first. Do not overlap the silver grid line with the paint. Several applications may be necessary to achieve a color match.

NOTE: Extend the silver repair coating at least 6.35 mm (0.25 inch) on both sides of the break area.

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.

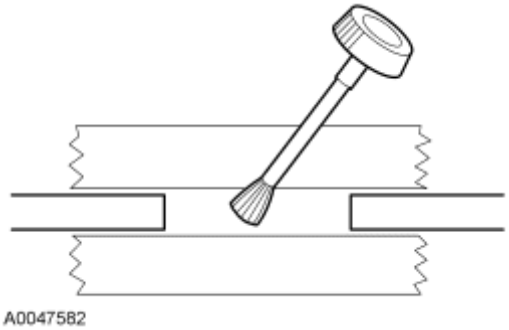


Fig. 72: Applying Repair Coating To Grid Break Area
Courtesy of FORD MOTOR CO.

5. Apply the repair coating to the grid break area in several smooth, continuous strokes.

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

6. After 5 minutes, or after the repair area has dried completely, remove the mask.

CAUTION: 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 repair coating air-dries in approximately 1 minute and can be energized after 5 minutes.

NOTE: Optimum adhesion occurs after approximately 24 hours.

8. Test the system for normal operation.

LEAD TERMINAL REPAIR

MATERIAL ITEM SPECIFICATION

Item	Specification
Terminal Kit - Back Glass 4F1Z-14421-AA	-
Ultra-Clear Spray Glass Cleaner ZC-23	ESR-M14P5-A

NOTE: The rear window glass must be at least 16°C (60°F) (room temperature) at the time of the repair.

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.

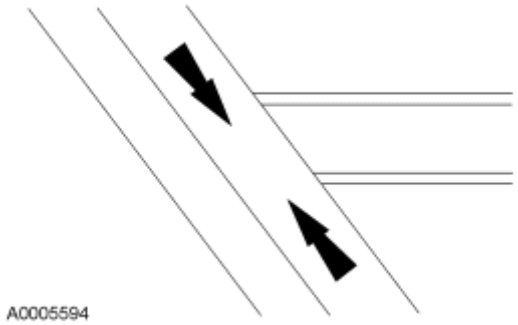


Fig. 73: Cleaning Bus Bar In Area To Be Repaired
Courtesy of FORD MOTOR CO.

1. Clean the bus bar in the area to be repaired with steel wool (3.0 to 4.0 grade), and then with window cleaner to remove all dirt, wax, grease, oil or other foreign material.

CAUTION: 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: 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.

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 buss-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 buss-bar on good conductive material.

2. 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.
3. 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.)

4. 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.
5. 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.
6. Attach the electrical lead connection to this terminal, turn on the heated rear window and verify the operation.

WINDSHIELD RESEAL

MATERIAL ITEM SPECIFICATION

Item	Specification
Dow Automotive 2-Hour Cure	
Urethane Adhesive Betaseal® Express	-
Sika 2-Hour Cure	
Urethane Adhesive Sika Tack ASAP	-

1. Remove the cowl panel grille. For additional information, REFER to **FRONT END BODY PANELS** .
2. Remove the A-pillar trim panels. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
3. If equipped, remove the overhead console or dome lamp assembly. For additional information, REFER to **INSTRUMENT PANEL AND CONSOLE** .
4. Remove the interior rear view mirror. For additional information, REFER to **REAR VIEW MIRRORS** .
5. Remove the sun visors.
6. Partially lower the front portion of the headliner near the windshield upper opening and block with a suitable material.
7. Clean the edge formed by the existing urethane and the glass on the inside at the top and sides and outside on the bottom of the windshield with an alcohol free cleaner.
8. Cut the urethane applicator tip to specification.

Fig. 74: 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 will apply the urethane with less effort and a continuous bead.

9. Apply a bead of urethane adhesive to the cleaned area.

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

10. Backfill the urethane application and clean the excess adhesive.

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

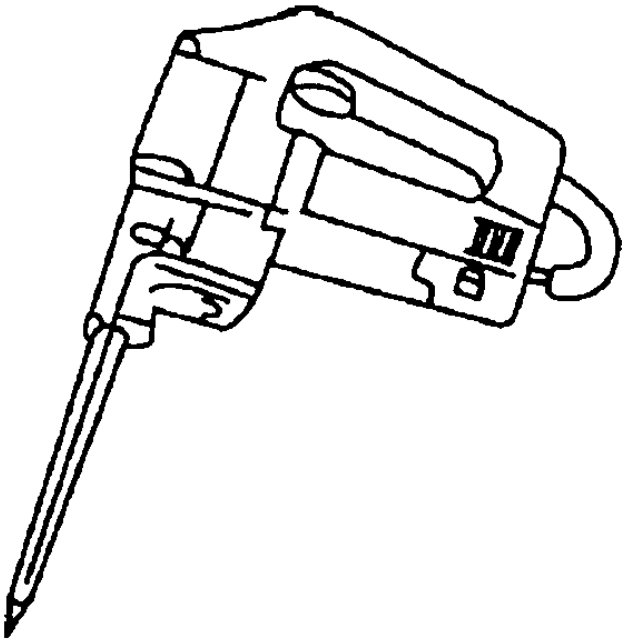
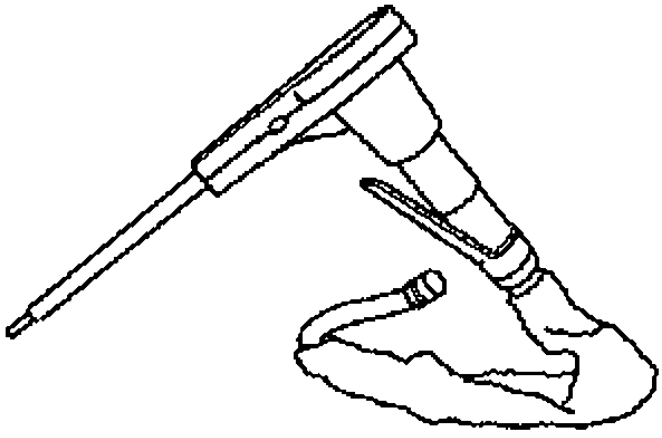
11. After the urethane has cured, check the windshield seal for air or water leaks through the urethane adhesive bead and add urethane adhesive as necessary.
12. Install the sun visors.
13. Install the interior rear view mirror. For additional information, REFER to **REAR VIEW MIRRORS** .
14. If equipped, install the overhead console or dome lamp assembly. For additional information, REFER to **INSTRUMENT PANEL AND CONSOLE** .
15. Install the A-pillar trim panels. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
16. Install the cowl panel grille. For additional information, REFER to **FRONT END BODY PANELS** .

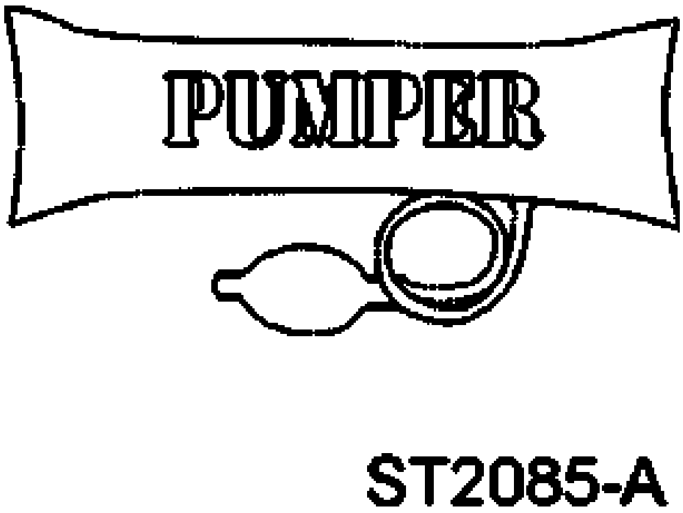
REMOVAL AND INSTALLATION

WINDSHIELD GLASS

SPECIAL TOOL(S) CHART

	Interior Auto Glass Cut-Out Knife Kit (Electric) 164-R2450 or equivalent

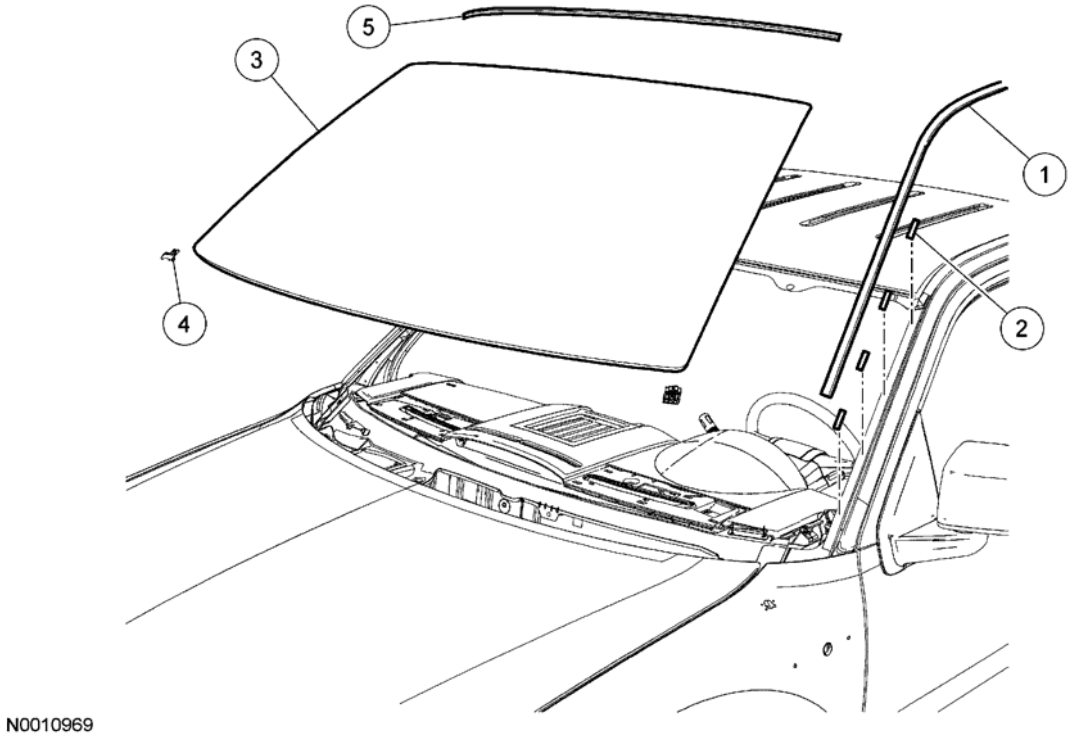
 ST1320-A	
 ST2579-A	Interior Auto Glass Cut-Out Knife Kit (Air Powered) 164-R2451 or equivalent

 ST2085-A	The Pumper 164-R2459 or equivalent

MATERIAL ITEM SPECIFICATION

Item	Specification
Dow Automotive 2-Hour Cure	
Urethane Adhesive Betaseal® Express	-
Urethane One Step Glass Primer Betaprime® 5500/5500 A/5500SA	-
Sika 2-Hour Cure	
Urethane Adhesive Sika Tack ASAP	-
Urethane Metal and Glass Primer Sika 206 G+P	-

WARNING: To prevent glass splinters from entering the eyes or cutting hands, wear safety glasses and heavy gloves when cutting and removing the glass from the vehicle.



Item	Part Number	Description
1	03136 RH/LH	Roof ditch moulding
2	10182	Y-clip (8 required)
3	03100	Windshield glass
4	03296	Windshield glass spacer blocks (2 required)
5	03682	Windshield glass moulding assembly

Fig. 75: Identifying Glass Assembly From Vehicle
Courtesy of FORD MOTOR CO.

Removal

CAUTION: When installing urethane-installed glass parts, the vehicle must not be driven until the urethane has cured. Adequate cure time is specified on the drive away chart for each urethane product as the temperatures and humidity vary. Inadequate or incorrect curing can adversely affect the retention of the windshield.

1. Remove the RH and LH side A-pillar trim panels, sun visors, retainers and, if equipped, overhead console. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the interior rear view mirror. For additional information, REFER to **REAR VIEW MIRRORS** .

3. Partially lower the front portion of the headliner near the windshield upper opening and block with suitable material.
4. Remove the cowl panel grille. For additional information, REFER to **FRONT END BODY PANELS** .

NOTE: LH side shown, RH side similar.

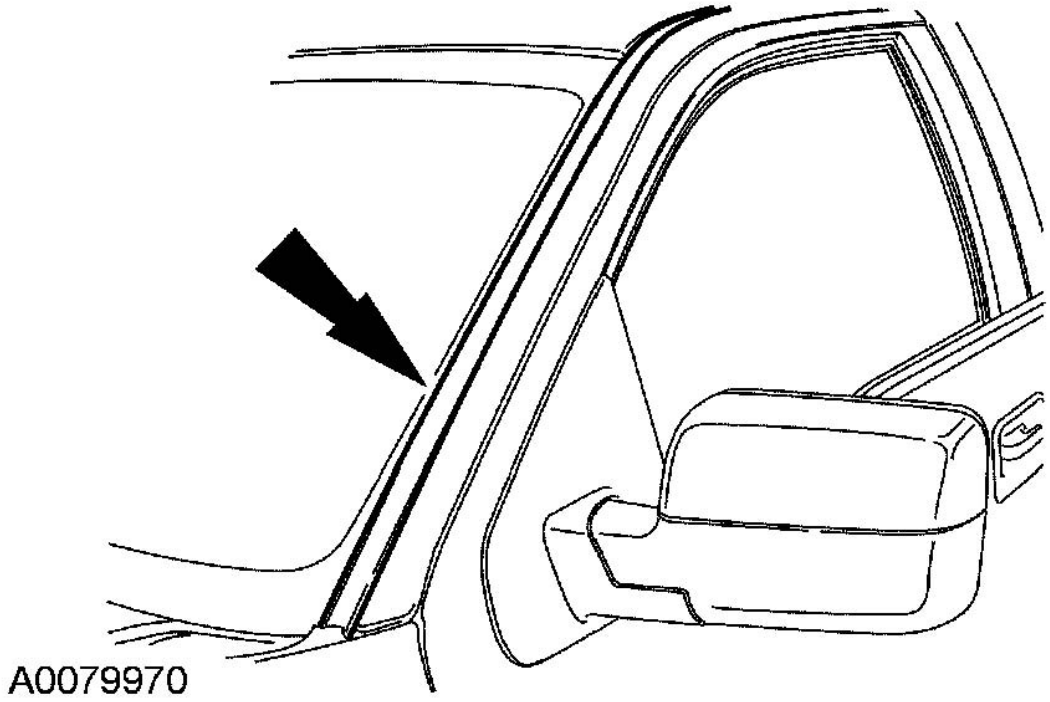


Fig. 76: Pressing And Hold Inside Edge Of Roof Ditch Moulding Away From Centerline Of Vehicle
Courtesy of FORD MOTOR CO.

5. Press and hold the inside edge of the roof ditch moulding away from the centerline of the vehicle.

NOTE: LH side shown, RH side similar.

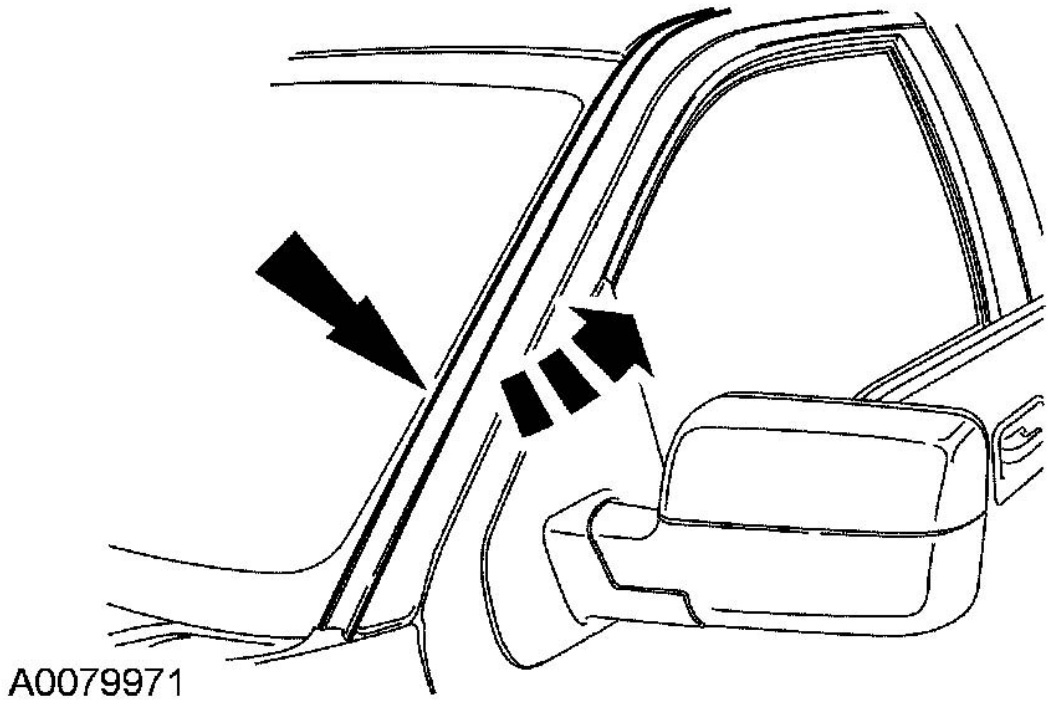


Fig. 77: Releasing Roof Ditch Moulding From Outside Edge Of Y-Clip
Courtesy of FORD MOTOR CO.

6. Carefully twist the outside edge of the roof ditch moulding upward to release it from the outside edge of the Y-clip.

NOTE: LH side shown, RH side similar.

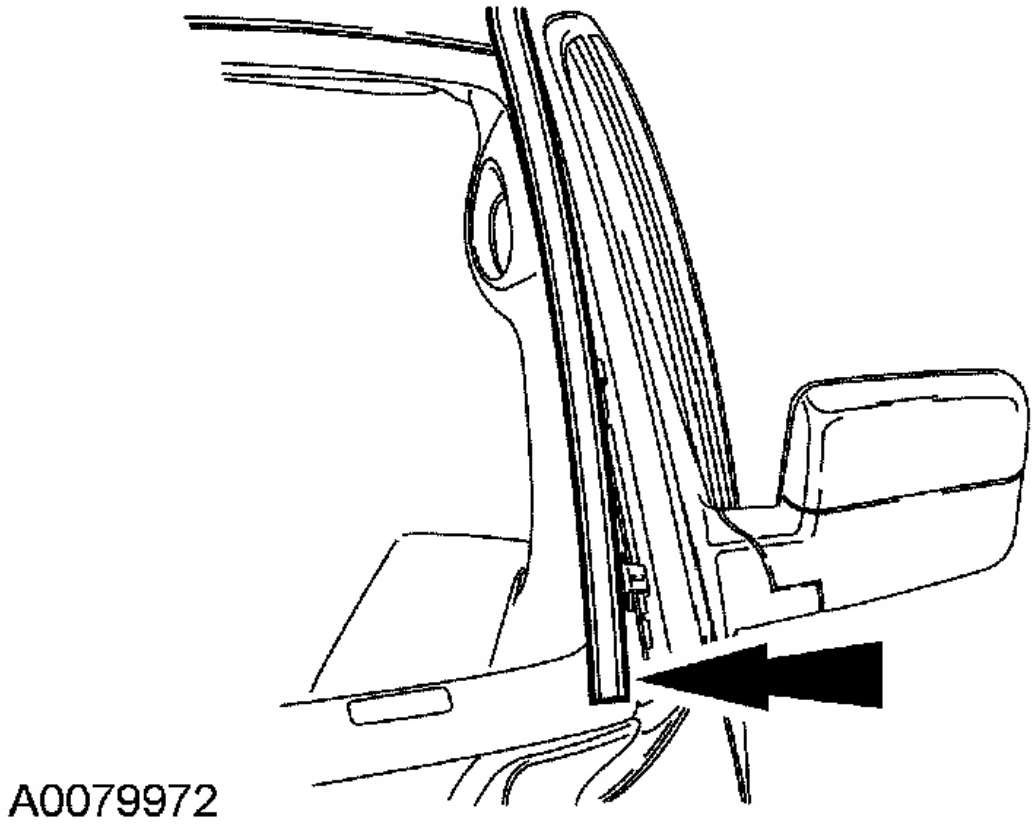


Fig. 78: Pushing Outside Edge Of Moulding In Toward Center Of Vehicle
Courtesy of FORD MOTOR CO.

7. Push the outside edge of the moulding in toward the center of the vehicle and slide the moulding off the inside edge of the Y-clip.
8. Release the moulding from the remaining 3 Y-clips and remove the moulding.

NOTE: LH side shown, RH side similar.

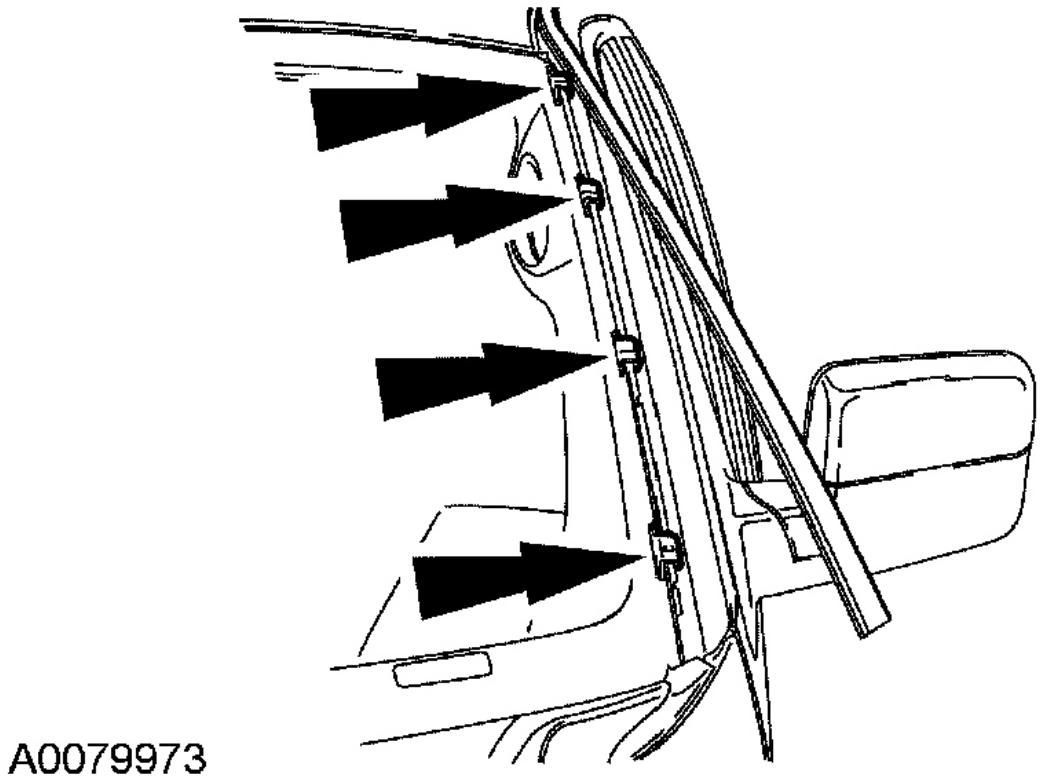


Fig. 79: Removing Y-Clips
Courtesy of FORD MOTOR CO.

9. Remove the Y-clips.
    - Starting with the bottom Y-clip, work upward toward the roof. Use light pressure to separate the A-pillar track near the Y-clip, then remove the Y-clip.

NOTE: Lubricate the urethane adhesive with water to aid the special tool when cutting.

NOTE: Be sure not to scratch the pinch weld while removing the windshield glass.

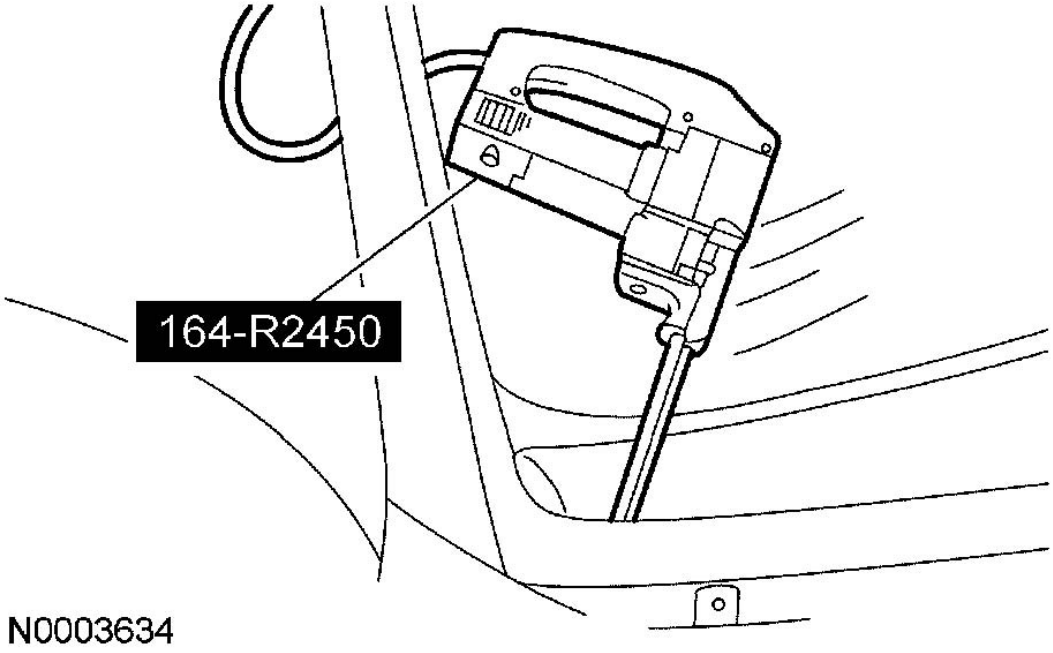


Fig. 80: Using Special Tool To Cut Urethane Adhesive From Windshield Glass
Courtesy of FORD MOTOR CO.

10. Using the special tool, cut the urethane adhesive from the windshield glass, starting at the top center and working toward the bottom corners.
11. Using the special tool, distance the windshield from the body.

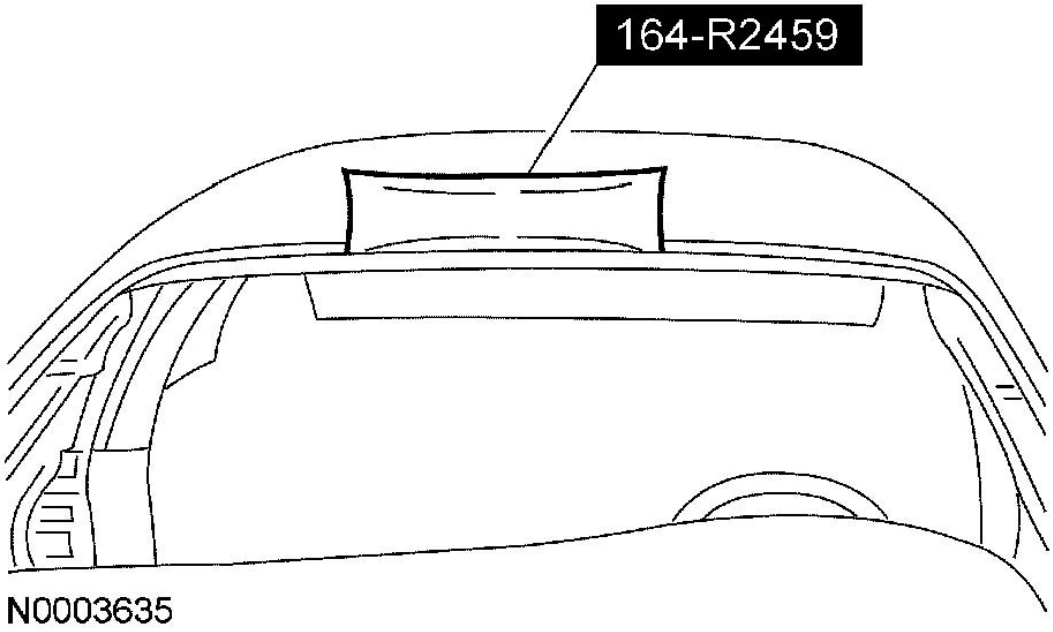


Fig. 81: Using Special Tool To Distance Windshield From Body
Courtesy of FORD MOTOR CO.

NOTE: Removing the windshield glass requires more than one technician.

NOTE: Be sure not to scratch the pinch weld while removing the windshield glass.

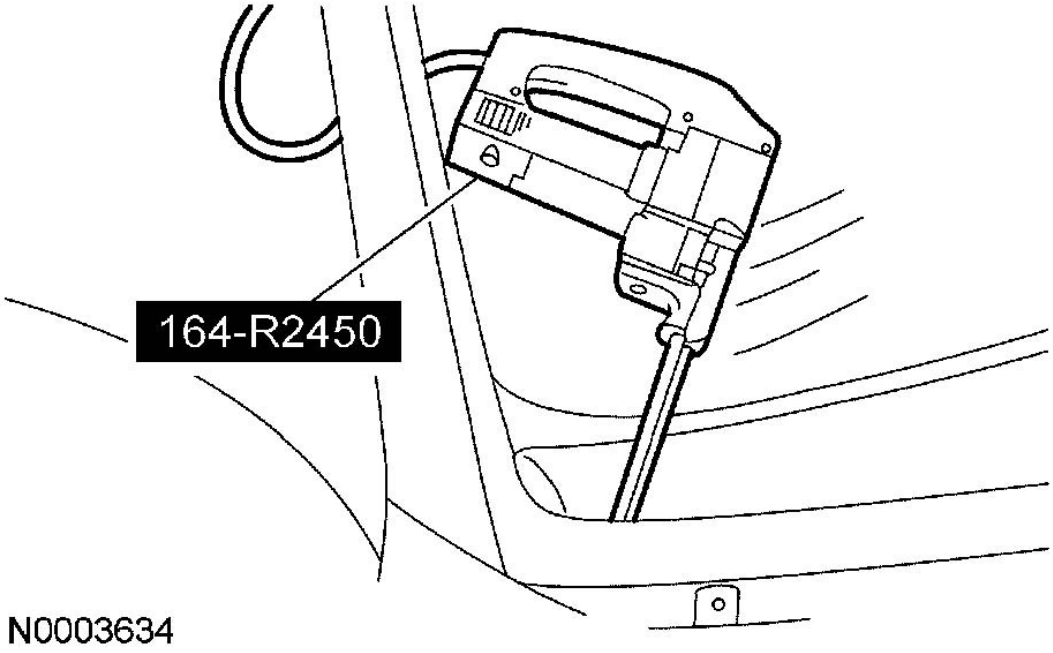


Fig. 82: Using Special Tool To Cut Remaining Urethane Adhesive
Courtesy of FORD MOTOR CO.

12. Using the special tool, cut the remaining urethane adhesive and remove the window glass.
13. Using a soft brush or vacuum, remove any dirt or foreign material from the pinch weld.

Installation

1. Install the glass moulding prior to glass installation.
2. Inspect the glass spacer blocks for damage. If necessary, install new spacer blocks.
3. Dry fit the windshield. Make alignment marks with tape or a non-staining pencil.
4. Trim the remaining urethane adhesive on the pinch weld to within specification. The surface should be smooth, free of cuts and contamination.

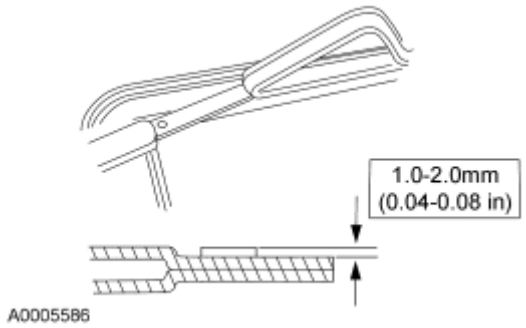


Fig. 83: Trimming Pinch Weld Urethane Adhesive On Pinch Weld
Courtesy of FORD MOTOR CO.

CAUTION: 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 ITEM SPECIFICATION Chart.

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

5. If installing a new windshield glass, apply urethane glass primer according to manufacturer's instructions. Allow at least 6 minutes to dry.
6. Cut the urethane applicator tip to specification.

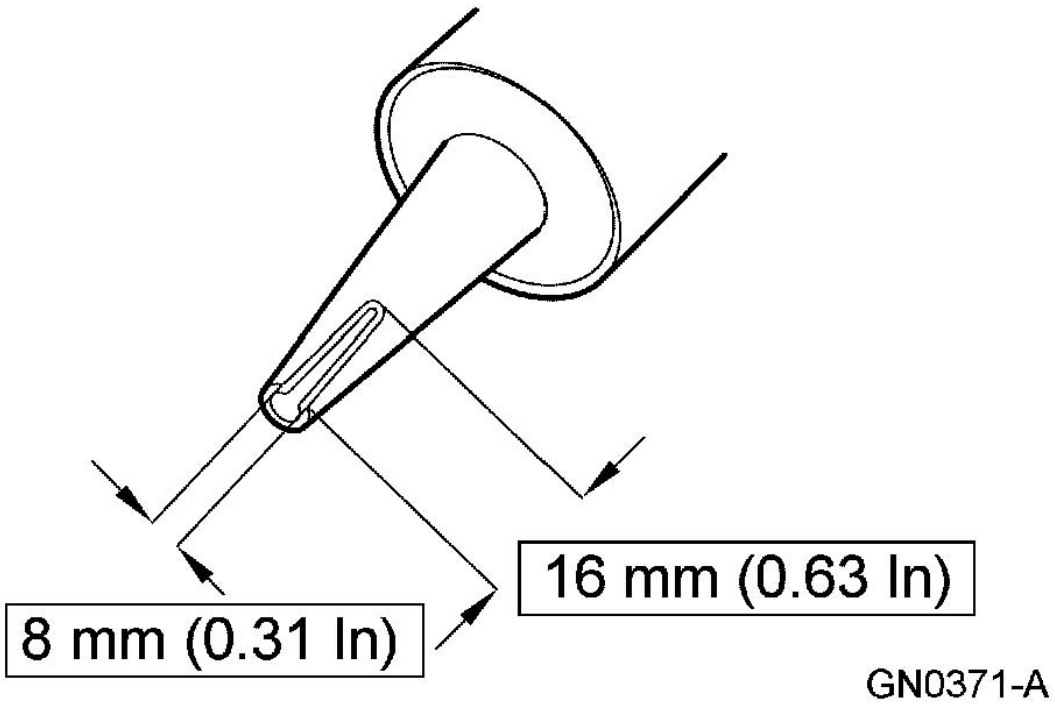


Fig. 84: Cutting Urethane Adhesive Applicator Tip To Specification
Courtesy of FORD MOTOR CO.

7. Apply a bead of urethane adhesive to the pinch weld just outside the foam dam.

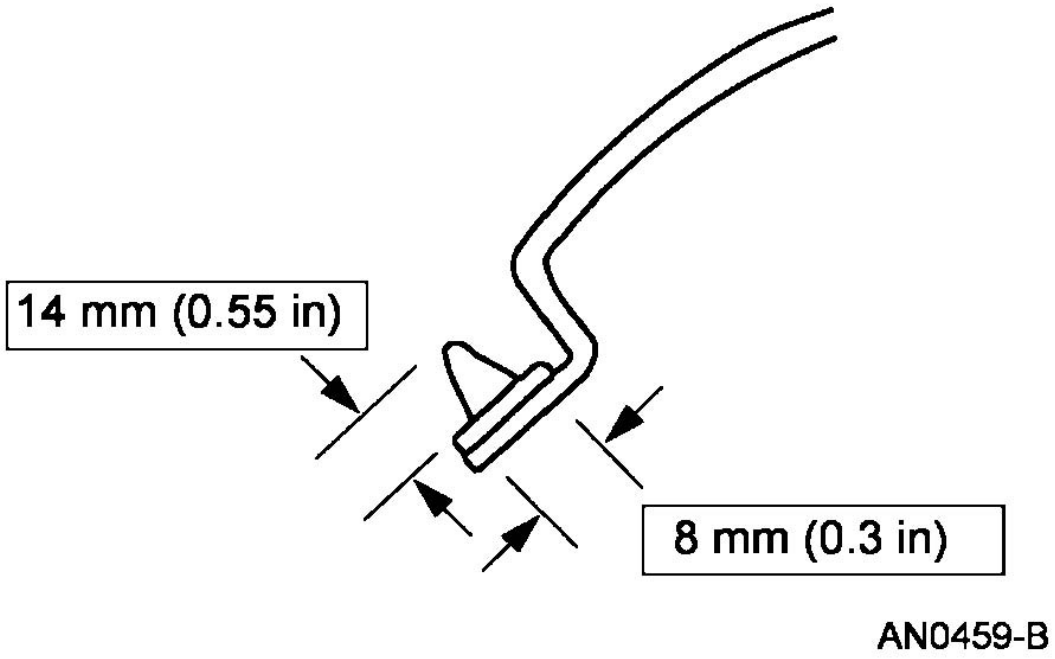


Fig. 85: Applying Bead Of Urethane Adhesive To Pinch Weld Just Outside Foam Dam
Courtesy of FORD MOTOR CO.

8. Install the windshield by aligning it to the marks previously made.
9. After the windshield glass has set, check for water leaks and add urethane where needed.
10. Install the Y-clips.
    - Each Y-clip snaps into a slot on the bottom of the roof ditch moulding.

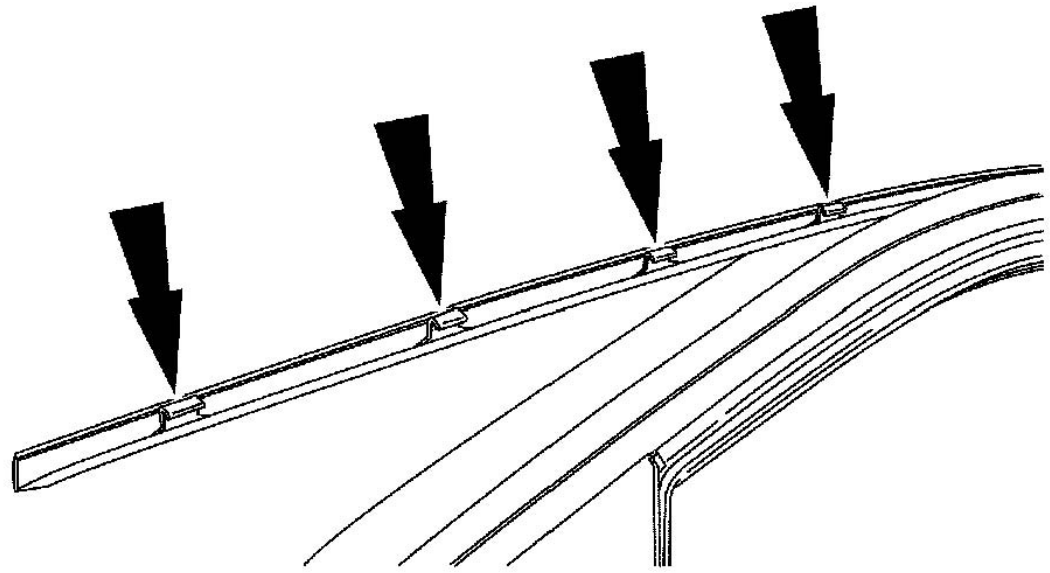
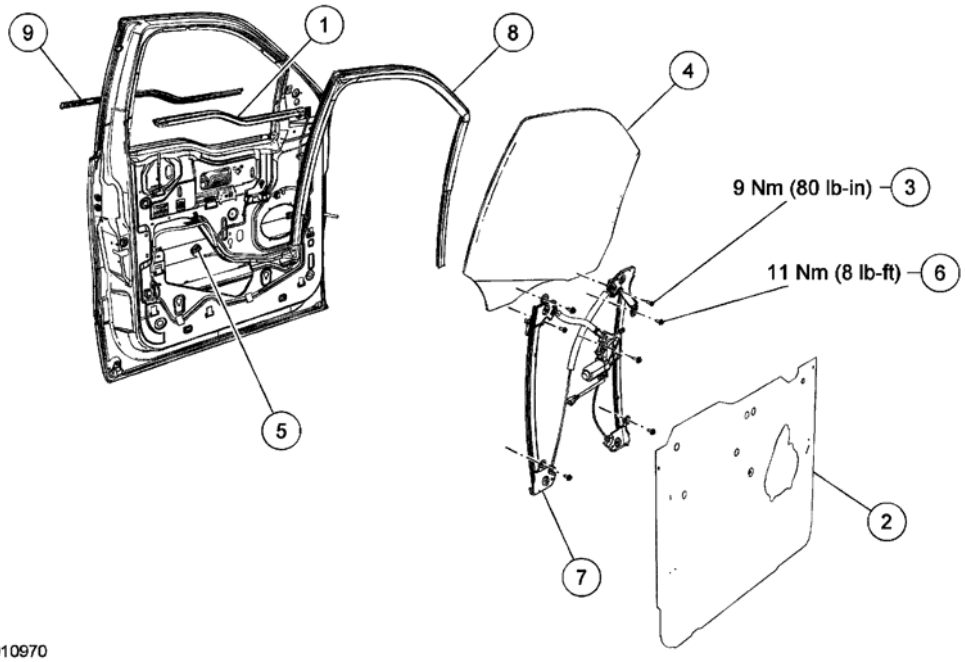


Fig. 86: Installing Y-Clips
Courtesy of FORD MOTOR CO.

11. Install the roof ditch mouldings.
12. Install the cowl panel grille. For additional information, REFER to **FRONT END BODY PANELS** .
13. Raise the front portion of the headliner near the windshield upper opening and install.
14. Install the interior rear view mirror. For additional information, REFER to **REAR VIEW MIRRORS** .
15. Install the RH and LH side A-pillar trim panels, sun visors, retainers and, if equipped, overhead console. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .

FRONT DOOR GLASS, FRAMES AND MECHANISMS - EXPLODED VIEW

NOTE: LH side shown, RH side similar.



Item	Part Number	Description
1	1521434 RH/ 1521435 LH	Front door interior moulding
2	15237A04 RH/ 15237A05 LH	Front door watershield
3	—	Front door window glass-to-regulator assembly bolt (2 required)
4	1521410 RH/ 1521411 LH	Front door window glass
5	14361	Front door window motor electrical connector

Item	Part Number	Description
6	W505421-S301	Front door window regulator bolt (5 required)
7	1523200 RH/ 1523201 LH	Front door window regulator assembly
8	1521596 RH/ 1521597 LH	Front door glass top run
9	1521452 RH/ 1521453 LH	Front door window glass exterior moulding

Fig. 87: Identifying Front Door Glass, Frames And Mechanisms
Courtesy of FORD MOTOR CO.

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

FRONT DOOR WINDOW GLASS

Removal and Installation

1. Remove the front door trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the front door interior moulding.
3. Remove the front door watershield.
4. Remove the front door window glass-to-regulator assembly bolts.
    - To install, tighten to 9 Nm (80 lb-in).

5. Lower the front door window regulator to the full downward position.
6. Pull the front door window glass out through the top outboard side of the door.

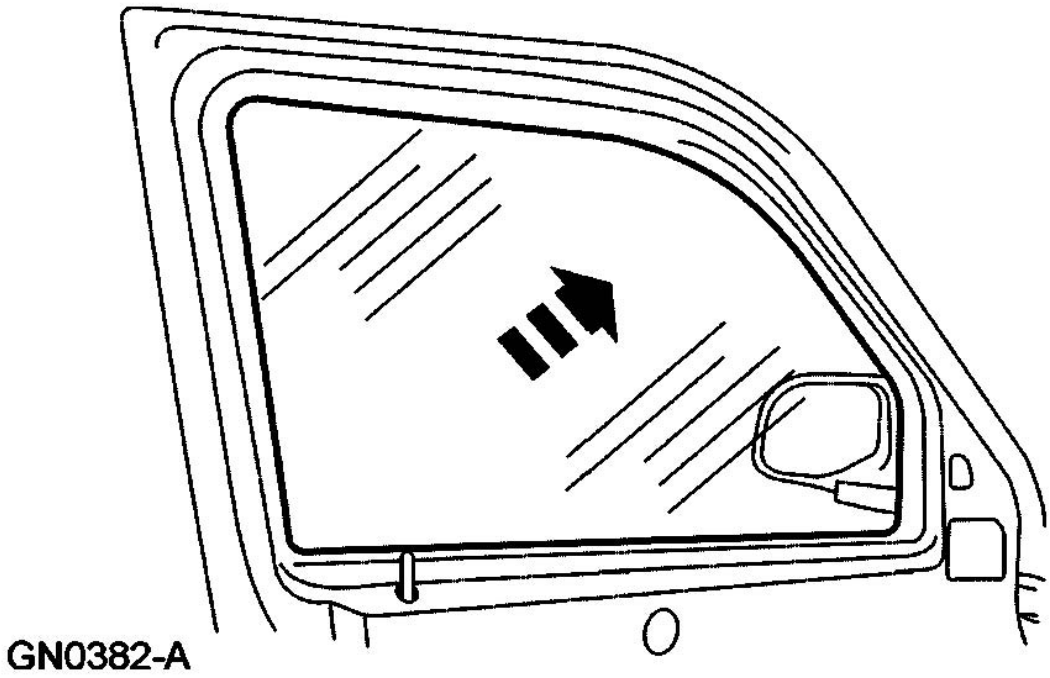


Fig. 88: Pulling Front Door Window Glass Out Through Top Outboard Side Of Door
Courtesy of FORD MOTOR CO.

7. To install, reverse the removal procedure.

FRONT DOOR WINDOW REGULATOR AND MOTOR

Removal and Installation

1. Remove the front door trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the front door watershield.
3. Secure the front door window glass in the full UPWARD position with tape.

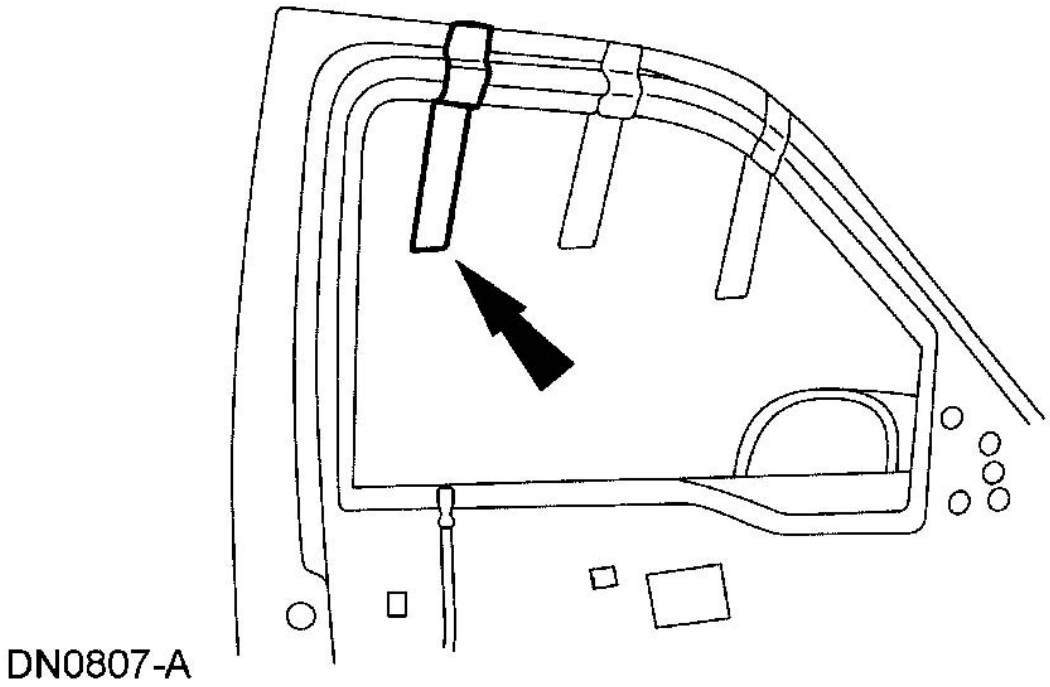


Fig. 89: Securing Front Door Window Glass In Full UPWARD Position With Tape
Courtesy of FORD MOTOR CO.

4. Remove the front door window glass-to-regulator assembly bolts.
    - Loosen the glass clamp fasteners through the 2 vertical slots in the inner door panel.
    - To install, tighten to 9 Nm (80 lb-in).
5. Disconnect the front door window electrical connector.
6. Remove the front door window regulator bolts.
    - To install, tighten to 11 Nm (8 lb-ft).
7. Remove the front door window regulator and motor.
8. To install, reverse the removal procedure.

FRONT DOOR GLASS TOP RUN

Removal and Installation

1. Remove the front door trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the front door window glass. For additional information, refer to **FRONT DOOR WINDOW GLASS**.
3. Remove the front door glass top run.

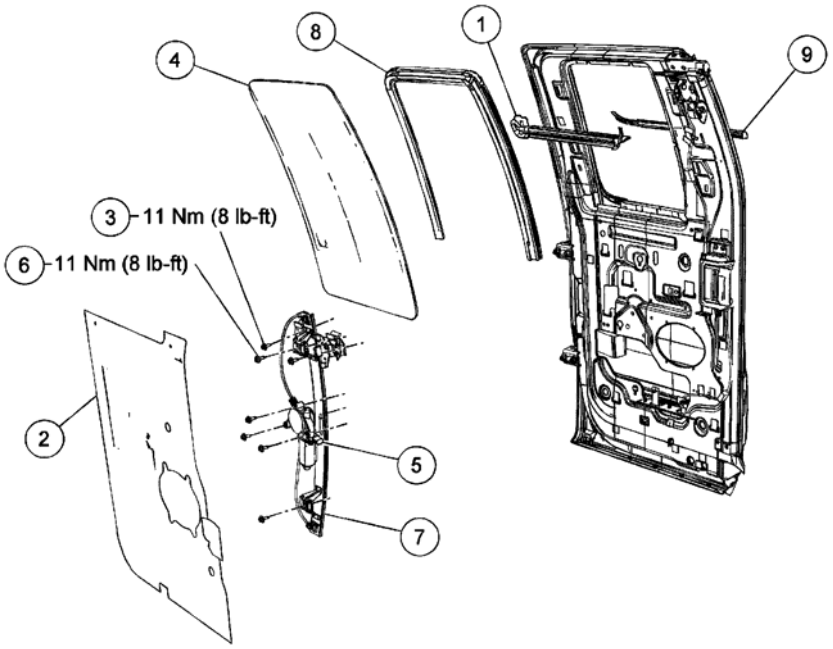
- Remove the front door glass top run through the top opening of the front door.

4. To install, reverse the removal procedure.

REAR DOOR GLASS, FRAMES AND MECHANISMS - EXPLODED VIEW

SuperCab

NOTE: LH side shown, RH side similar.



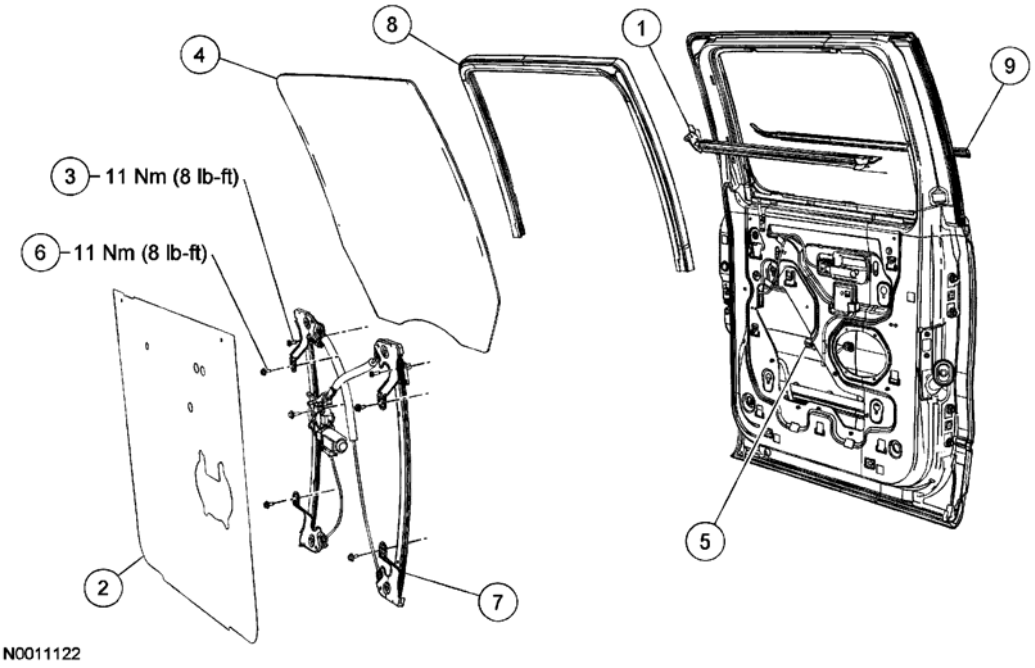
Item	Part Number	Description
1	1825860 RH/ 1825861 LH	Rear door interior moulding
2	1827458 RH/ 1827459 LH	Rear door watershield
3	—	Rear door window glass-to-regulator assembly bolt (2 required)
4	1825712 RH/ 1825713 LH	Rear door window glass
5	180103-14632	Rear door window motor electrical connector

Item	Part Number	Description
6	W505583-S301	Rear door window regulator bolt (5 required)
7	1827000 RH/ 1827001 LH	Rear door window regulator assembly
8	1825764 RH/ 1825765 LH	Rear door window glass top run
9	1825596 RH/ 1825597 LH	Rear door exterior moulding

Fig. 90: Exploded View Of Rear Door Glass, Frames And Mechanisms (SuperCab)
Courtesy of FORD MOTOR CO.

SuperCrew

NOTE: LH side shown, RH side similar.



Item	Part Number	Description
1	1625766 RH/ 1625767 LH	Rear door interior moulding
2	1627458 RH/ 1627459 LH	Rear door watershield
3	—	Rear door window glass-to-regulator assembly bolt (2 required)
4	1625712 RH/ 1625713 LH	Rear door window glass
5	180103-14632	Rear door window motor electrical connector

Item	Part Number	Description
6	W505421-S301	Rear door window regulator bolt (5 required)
7	1627000 RH/ 1627001 LH	Rear door window regulator assembly
8	1625766 RH/ 1625767 LH	Rear door window glass top run
9	1625596 RH/ 1625597 LH	Rear door exterior moulding

Fig. 91: Exploded View Of Rear Door Glass, Frames And Mechanisms (SuperCrew)
Courtesy of FORD MOTOR CO.

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

REAR DOOR WINDOW GLASS - SUPERCAB

Removal and Installation

1. Remove the rear door trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the rear door mounted speaker. For additional information, REFER to **SPEAKERS** .
3. Remove the rear door interior moulding.
4. Remove the rear door watershield.

NOTE: Some vehicles may use rivets instead of rear door window glass-to-regulator assembly bolts.

5. Remove the rear door window glass-to-regulator assembly bolts.
   - To install, tighten to 11 Nm (8 lb-ft).
6. Remove the rear door window glass.
   - Pull the rear door window glass out through the top inboard side of the door.
7. To install, reverse the removal procedure.

REAR DOOR WINDOW REGULATOR AND MOTOR - SUPERCAB

Removal and Installation

1. Remove the rear door trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the rear door mounted speaker. For additional information, REFER to **SPEAKERS** .
3. Remove the rear door interior moulding.
4. Remove the rear door watershield.
5. Secure the rear door glass in the full upward position with tape.

NOTE: Some vehicles may use rivets instead of rear door window glass-to-regulator assembly bolts.

6. Remove the rear door window glass-to-regulator assembly bolts.
   - To install, tighten to 11 Nm (8 lb-ft).
7. Disconnect the rear door window motor electrical connector.
8. Remove the rear door window regulator assembly bolts.
   - To install, tighten to 11 Nm (8 lb-ft).
9. Remove the rear door window regulator assembly.
10. To install, reverse the removal procedure.

REAR DOOR GLASS TOP RUN - SUPERCAB

Removal and Installation

1. Position the rear door window glass in the full DOWNWARD position.
2. Remove the rear door trim panel. For addition; information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
3. Remove the rear door mounted speaker. For additional information, REFER to **SPEAKERS** .
4. Remove the rear door interior moulding.
5. Remove the rear door window glass top run.

- Remove the rear door window glass top run through the top opening of the rear door.

6. To install, reverse the removal procedure.

REAR DOOR WINDOW GLASS - SUPERCREW

Removal and Installation

1. Remove the rear door trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the rear door mounted speaker. For additional information, REFER to **SPEAKERS** .
3. Remove the rear door interior moulding.
4. Remove the rear door watershield.

NOTE: Some vehicles may use rivets instead of rear door window glass-to-regulator assembly bolts.

5. Remove the rear door window glass-to-regulator assembly bolts.
   - To install, tighten to 11 Nm (8 lb-ft).
6. Remove the rear door window glass.
   - Pull the rear door window glass out through the top inboard side of the door.
7. To install, reverse the removal procedure.

REAR DOOR WINDOW REGULATOR AND MOTOR - SUPERCREW

Removal and Installation

1. Remove the rear door trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the rear door mounted speaker. For additional information, REFER to **SPEAKERS** .
3. Remove the rear door interior moulding.
4. Remove the rear door watershield.
5. Secure the rear door glass in the full upward position with tape.

NOTE: Some vehicles may use rivets instead of rear door window glass-to-regulator assembly bolts.

6. Remove the rear door window glass-to-regulator assembly bolts.
   - To install, tighten to 11 Nm (8 lb-ft).
7. Disconnect the rear door window motor electrical connector.
8. Remove the rear door window regulator assembly bolts.
   - To install, tighten to 11 Nm (8 lb-ft).
9. Remove the rear door window regulator assembly.

10. To install, reverse the removal procedure.

REAR DOOR GLASS TOP RUN - SUPERCREW

Removal and Installation

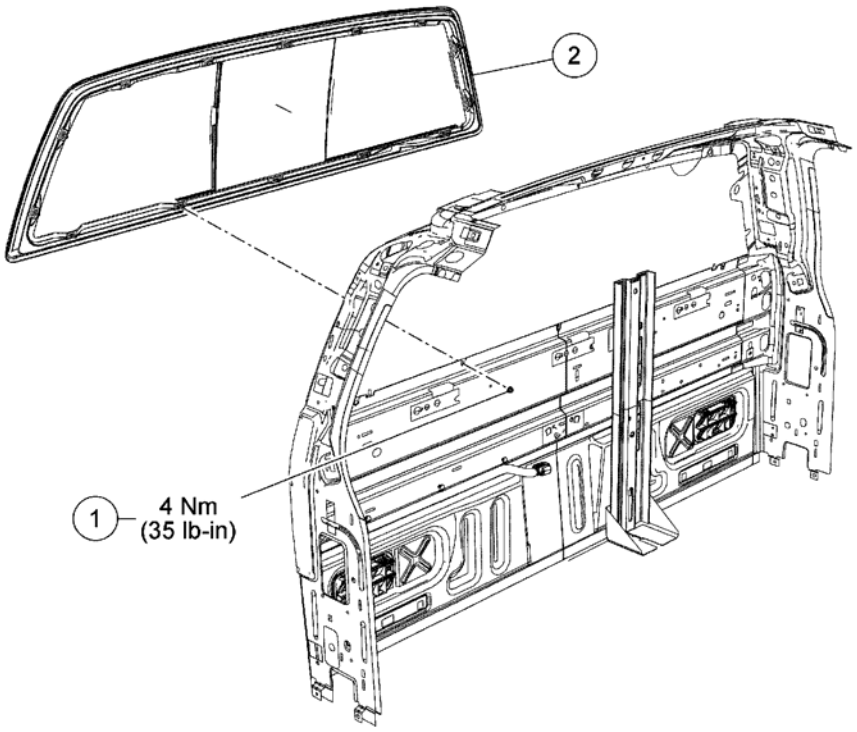
1. Position the rear door window glass in the full DOWNWARD position.
2. Remove the rear door trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
3. Remove the rear door mounted speaker. For additional information, REFER to **SPEAKERS** .
4. Remove the rear door interior moulding.
5. Remove the rear door window glass top run.
    - Remove the rear door window glass top run through the top opening of the rear door.
6. To install, reverse the removal procedure.

REAR WINDOW GLASS

MATERIAL ITEM SPECIFICATION

Item	Specification
Foam Core Butyl	WSB-M3G143-B

NOTE: Rear power sliding window shown, all others are similar.



N0011123

Item	Part Number	Description
1	N621901-S36	Rear window glass nut (14 required)
2	422A12-E	Rear window glass assembly

Fig. 92: Identifying Rear Power Sliding Window
Courtesy of FORD MOTOR CO.

Removal

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

All vehicles

1. Remove the headliner, for Regular and SuperCab vehicles. Lower and position the headliner forward, for SuperCrew vehicles. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the rear trim panel pin-type retainers.

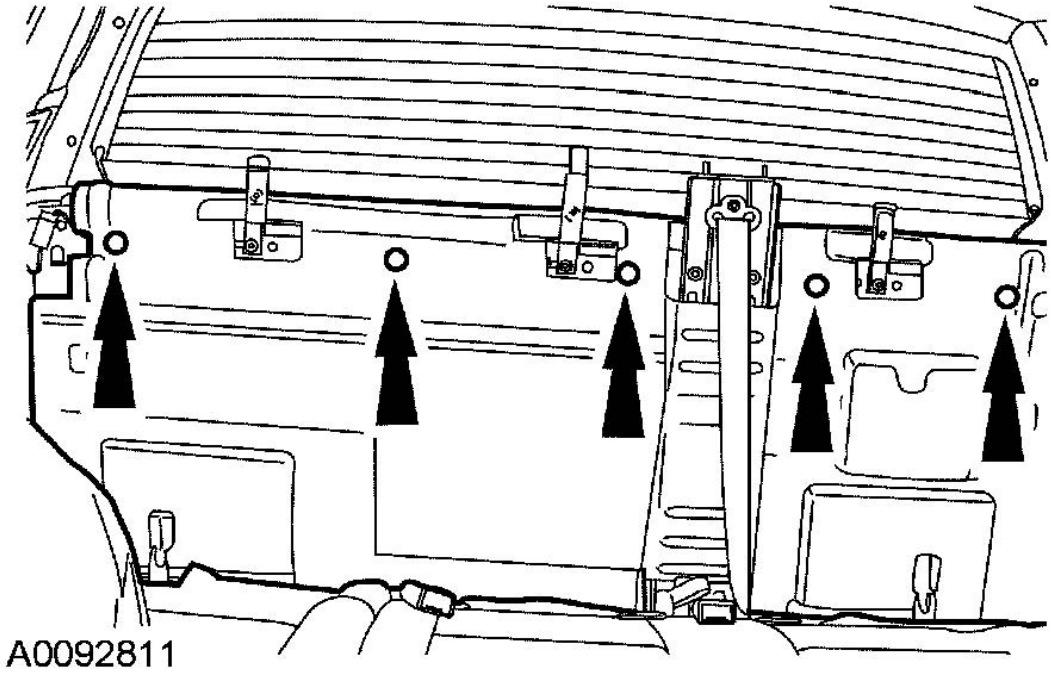


Fig. 93: Removing Rear Trim Panel Pin-Type Retainers
Courtesy of FORD MOTOR CO.

3. Remove the rear trim panel.

Power sliding rear window

4. Remove the rear corner trim. For SuperCab vehicles, remove the B-pillar trim panel. For SuperCrew vehicles, remove the C-pillar trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .

CAUTION: The following substeps are to prevent the cables from popping out of the motor housing. If an existing regulator and motor assembly is to be reused, do not allow the cables to pop out of the motor housing, as they can unwind from the drum. If the cables unwind from the drum, a new regulator and motor assembly will have to be installed.

NOTE: LH side shown, RH side similar.

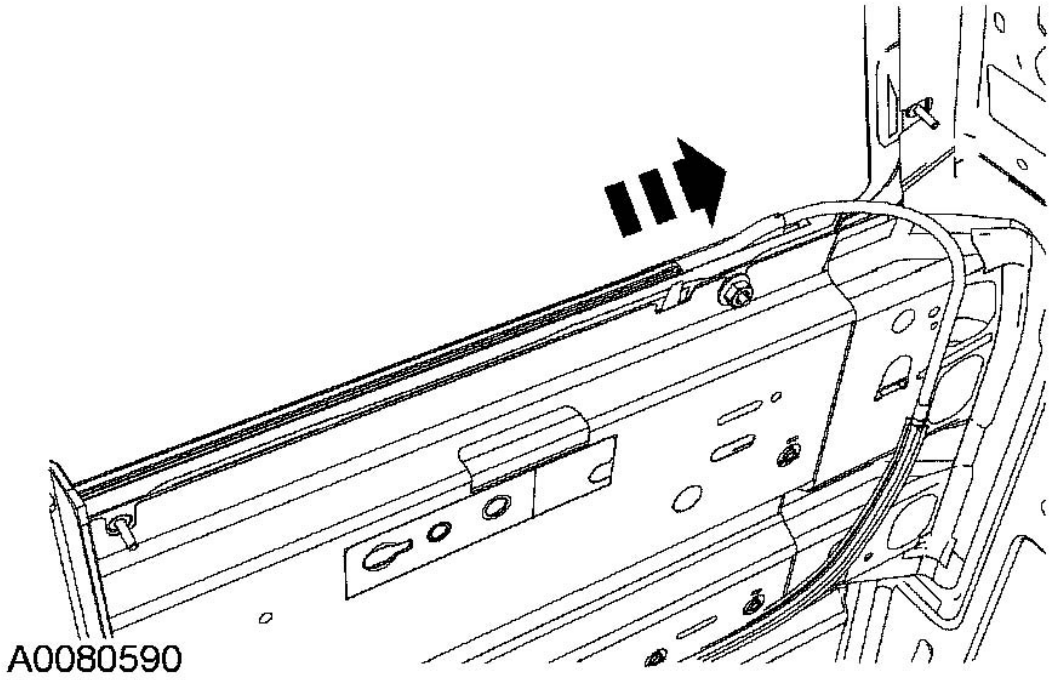


Fig. 94: Removing Side Cable
Courtesy of FORD MOTOR CO.

5. Remove the LH cable first, then the RH side cable. Press and hold the transition block away from the centerline of the vehicle.

NOTE: LH side shown, RH side similar.

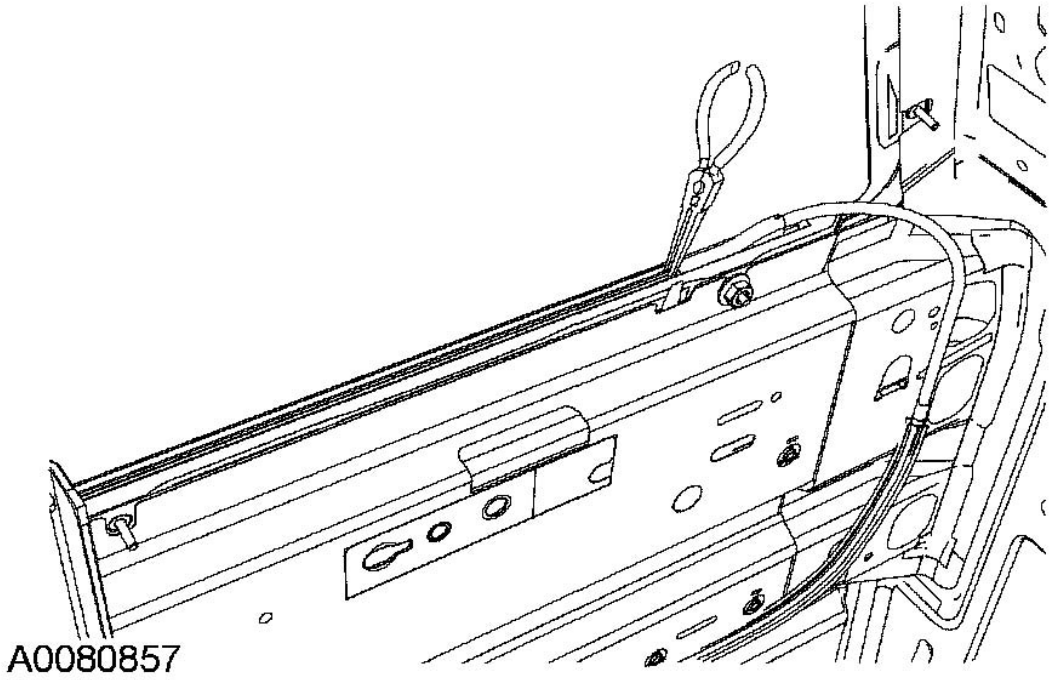


Fig. 95: Clamping And Holding Cable Near Transition Block
Courtesy of FORD MOTOR CO.

6. Clamp and hold the cable near the transition block.

NOTE: LH side shown, RH side similar.

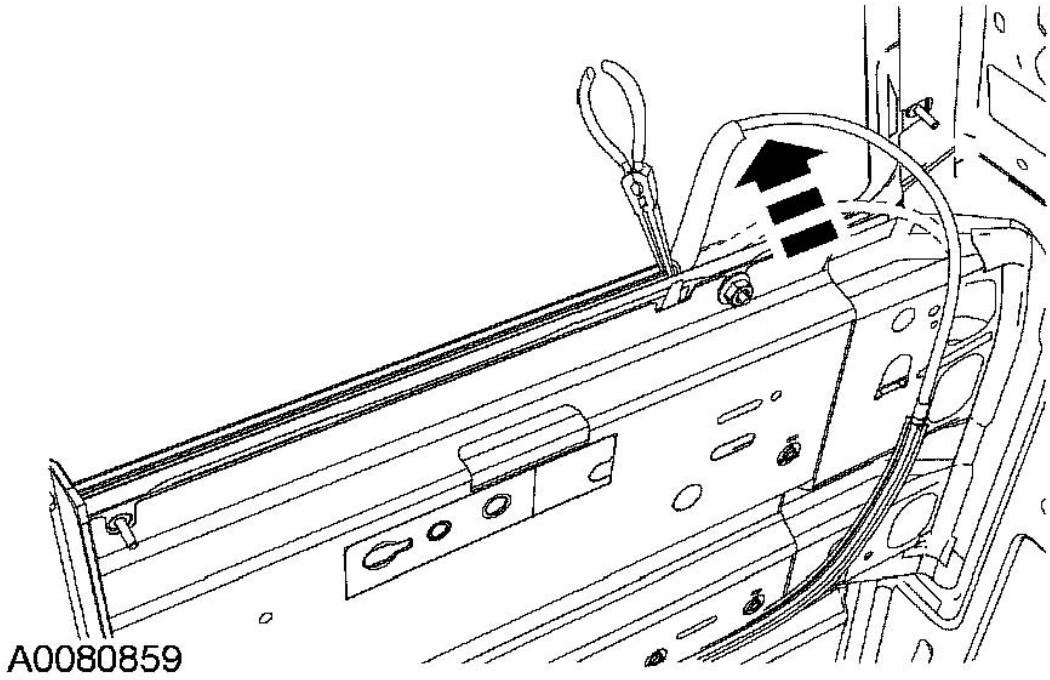


Fig. 96: Pulling Up End Of Transition Block And Lifting Out Of Groove
Courtesy of FORD MOTOR CO.

7. Gently pull up the end of the transition block and lift it out of the groove. Do not release the clamp.

NOTE: LH side shown, RH side similar.

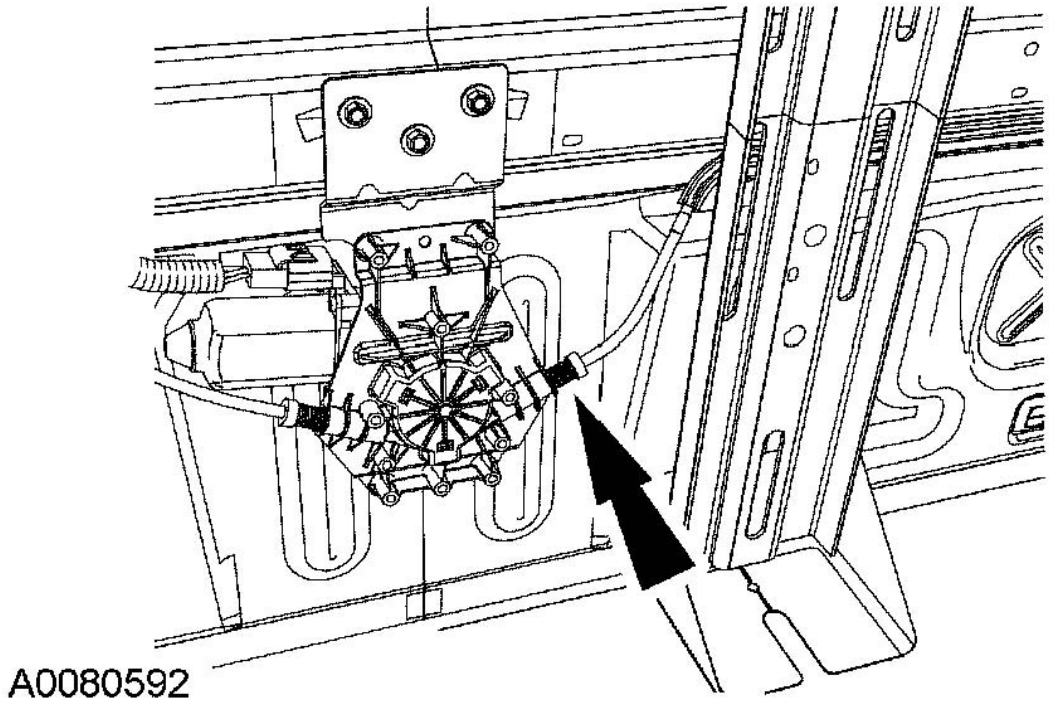


Fig. 97: Releasing Clamp On Cable To Gradually Unload Tensioning Spring On Motor Housing
Courtesy of FORD MOTOR CO.

8. Slowly release the clamp on the cable to gradually unload the tensioning spring on the motor housing.

NOTE: LH side shown, RH side similar.

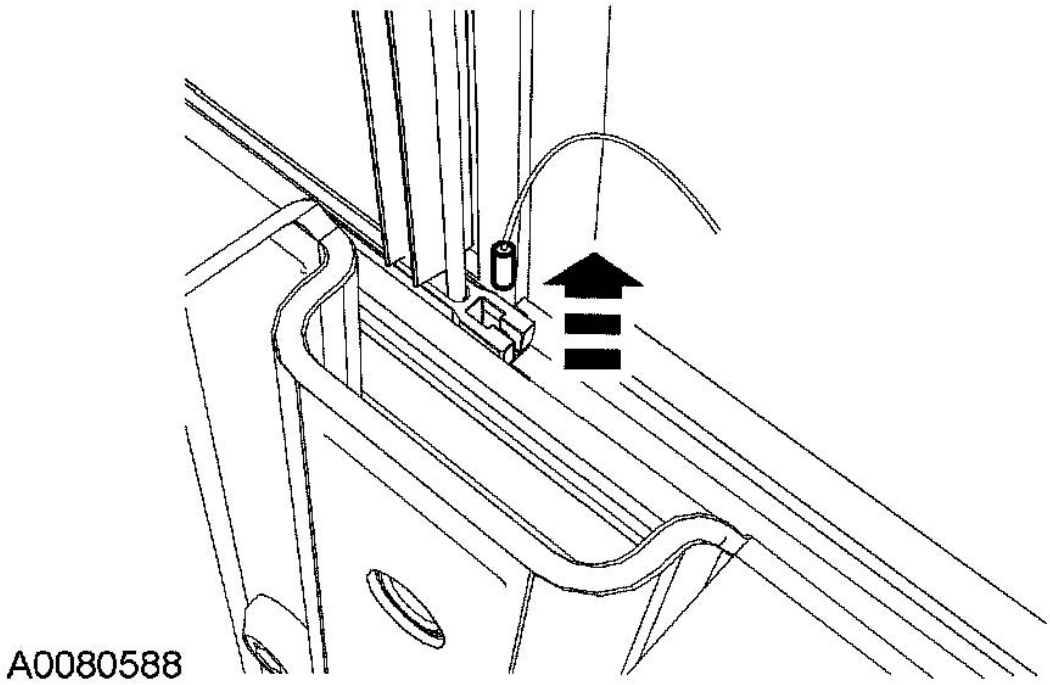


Fig. 98: Removing Cable Swag From Guide Bracket On Sliding Rear Window
Courtesy of FORD MOTOR CO.

9. Remove the cable swag from the guide bracket on the sliding rear window.

All vehicles

10. If equipped, disconnect the heated rear backlight connectors.
11. Remove the rear window glass nuts.

NOTE: Use only a plastic windshield setting tool to slide under the seal to separate the foam core butyl from the glass. Once the glass starts to separate from the body, constant hand pressure will break the seal and the glass can be removed. Failure to use a plastic windshield setting tool can damage the body or the glass frame.

12. Remove the rear window glass from the vehicle.

Installation

All vehicles

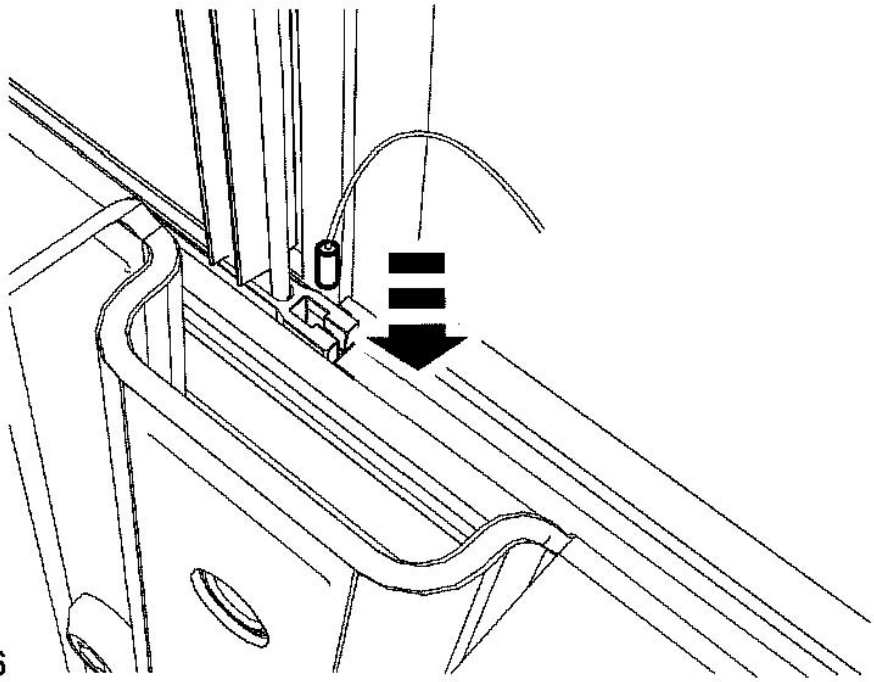
NOTE: Remove as much of the foam core butyl as possible from the body and window glass prior to installation.

1. Install the rear window glass.
   - Apply foam core butyl to the window. Overlap the foam core butyl by 25 mm (1 in) at the bottom middle of the rear window glass.
   - Carefully install the rear window glass into the body opening.
2. Install the rear window glass nuts.
   - Tighten to 4 Nm (35 lb-in).
3. If equipped, connect the heated rear backlight connectors.

Power sliding rear window

CAUTION: The following substeps are to prevent the cables from popping out of the motor housing. If an existing regulator and motor assembly is to be reused, do not allow the cables to pop out of the motor housing, as they can unwind from the drum. If the cables unwind from the drum, a new regulator and motor assembly will have to be installed.

NOTE: LH side shown, RH side similar.



A0080876

Fig. 99: Installing Cable Swag Into Guide Bracket On Sliding Rear Window
Courtesy of FORD MOTOR CO.

4. Install the LH cable first, then the RH side cable. Install the cable swag into the guide bracket on the sliding rear window.

NOTE: LH side shown, RH side similar.

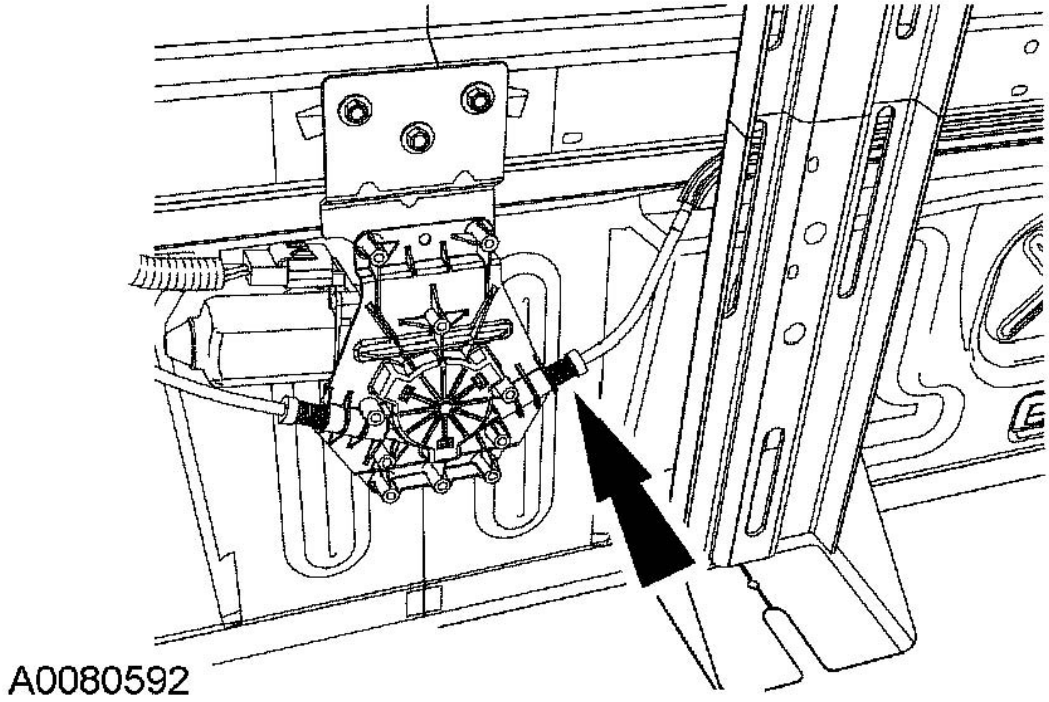


Fig. 100: Compressing And Hold Cable Tension Spring
Courtesy of FORD MOTOR CO.

5. Compress and hold the cable tension spring.

NOTE: LH side shown, RH side similar.

NOTE: While holding the LH cable under tension, cycle the window motor to decrease the freeplay on the RH cable. Reducing the freeplay on the RH cable will allow ease of installation of the RH cable.

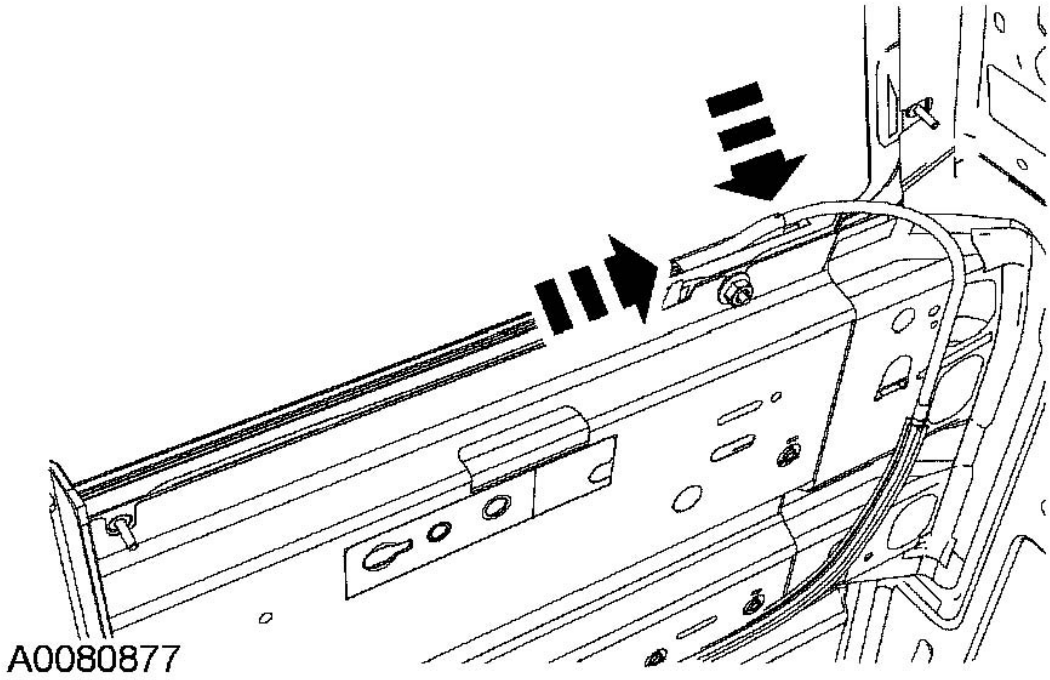


Fig. 101: Pressing Transition Block Away From Centerline Of Vehicle And Snapping It Into Groove
Courtesy of FORD MOTOR CO.

6. Press the transition block away from the centerline of the vehicle, then snap it into the groove. Release the cable tension spring.

NOTE: LH side shown, RH side similar.

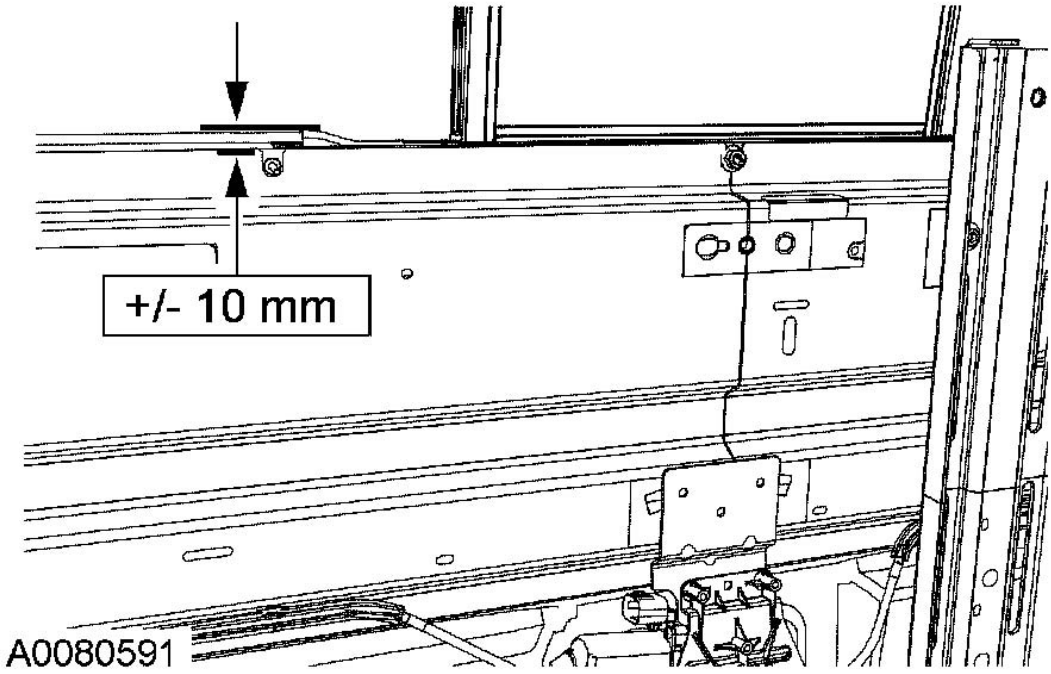


Fig. 102: Identifying Transition Block Is Correctly Seated When Its Top Edge Is Above Top Of Window Opening
Courtesy of FORD MOTOR CO.

7. The transition block is correctly seated when its top edge is +/- 10 mm (0.39 in) above the top of the window opening.
8. Install the rear corner trim. For SuperCab vehicles, install the B-pillar trim panel. For SuperCrew vehicles, install the C-pillar trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .

All vehicles

9. Install the rear trim panel.
10. Install the rear trim panel pin-type retainers.

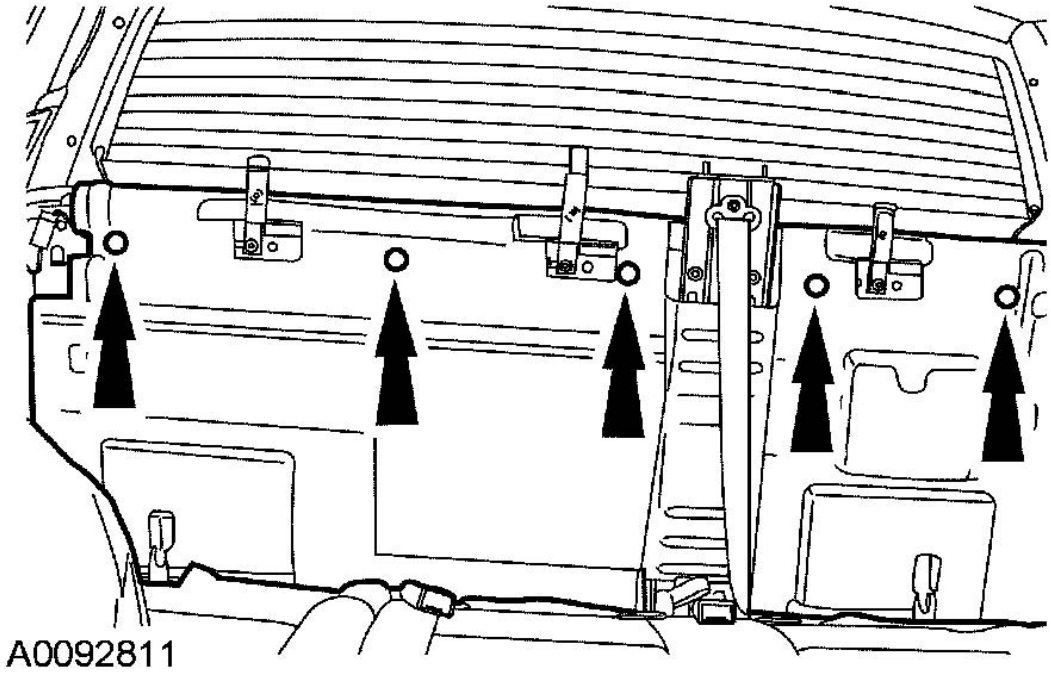


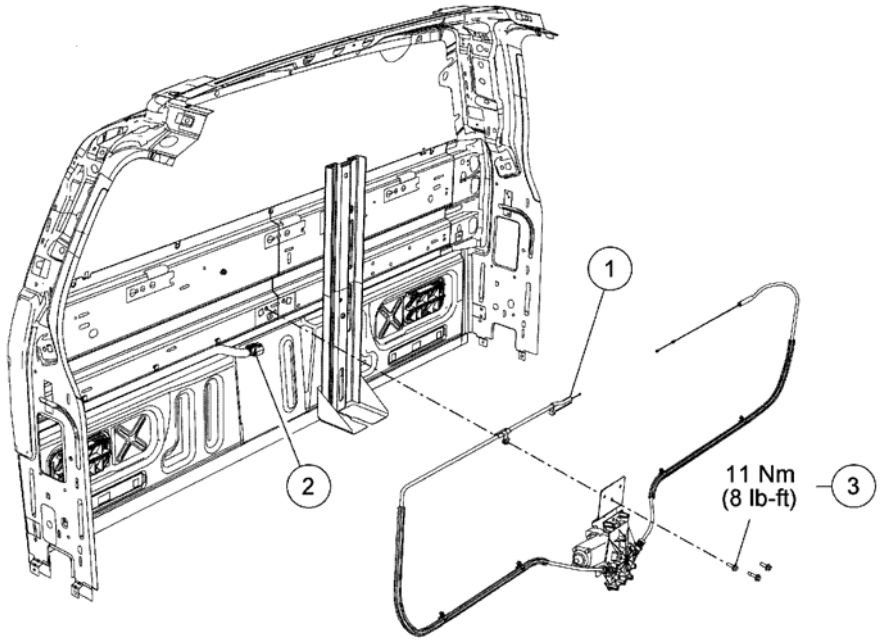
Fig. 103: Installing Rear Trim Panel Pin-Type Retainers
Courtesy of FORD MOTOR CO.

11. Install the headliner, for Regular and SuperCab vehicles. For SuperCrew vehicles, raise and reposition the headliner. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .

REAR WINDOW GLASS - REGULATOR AND MOTOR

MATERIAL ITEM SPECIFICATION

Item	Specification
Foam Butyl	WSB-M3G143-B



N0011154

Item	Part Number	Description
1	15422A12	Rear window glass regulator and motor assembly
2	14A05	Rear window glass motor electrical connector
3	N605891-S309	Rear window glass regulator and motor assembly screw (3 required)

Fig. 104: Identifying Rear Window Glass
Courtesy of FORD MOTOR CO.

Removal

1. Remove the rear trim panel pin-type retainers.

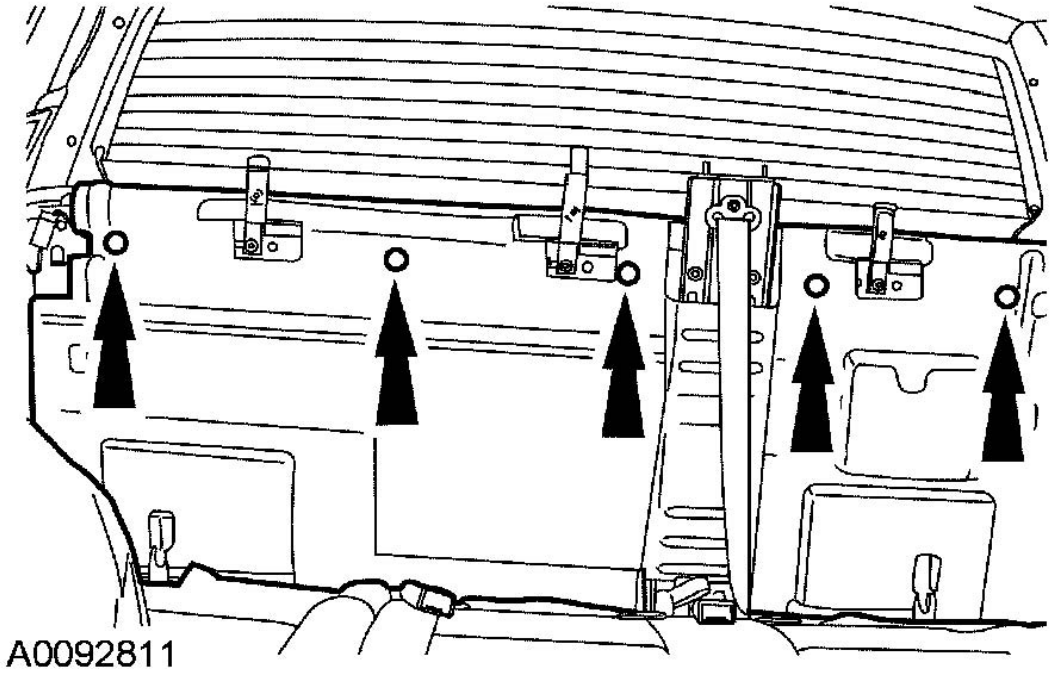


Fig. 105: Removing Rear Trim Panel Pin-Type Retainers
Courtesy of FORD MOTOR CO.

2. Remove the rear trim panel.
3. Remove the rear corner trim. For SuperCab vehicles, remove the B-pillar trim panel. For SuperCrew vehicles, remove the C-pillar trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .

CAUTION: The following substeps are to prevent the cables from popping out of the motor housing. If an existing regulator and motor assembly is to be reused, do not allow the cables to pop out of the motor housing, as they can unwind from the drum. If the cables unwind from the drum, a new regulator and motor assembly will have to be installed.

NOTE: LH side shown, RH side similar.

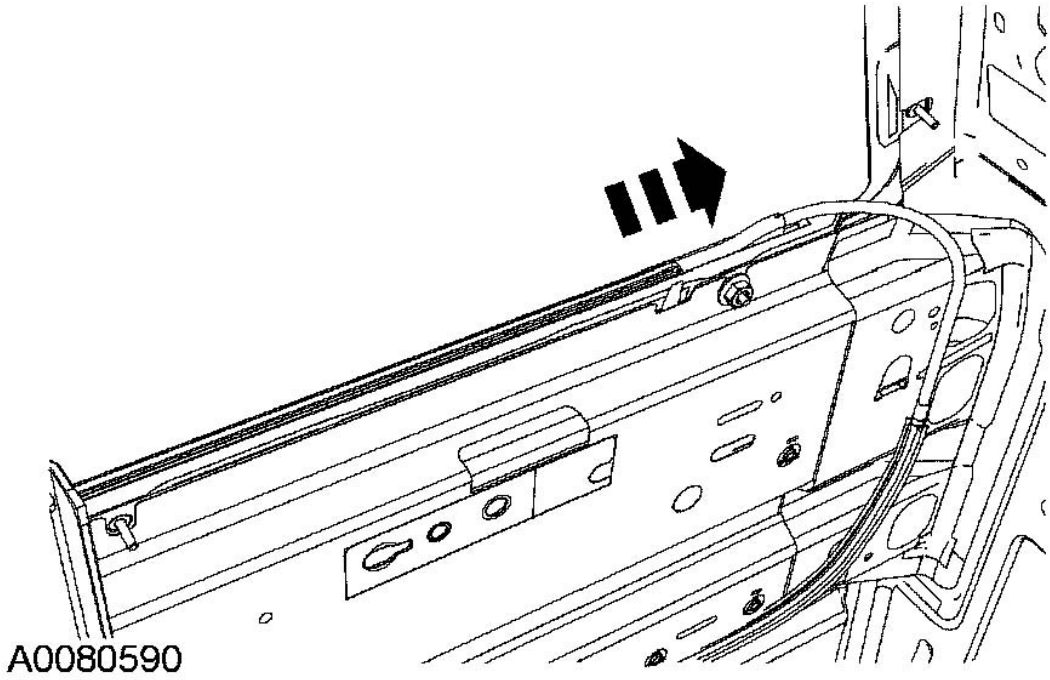


Fig. 106: Pressing And Holding Transition Block Away From Centerline Of Vehicle
Courtesy of FORD MOTOR CO.

4. Remove the LH cable first, then the RH cable. Press and hold the transition block away from the centerline of the vehicle.

NOTE: LH side shown, RH side similar.

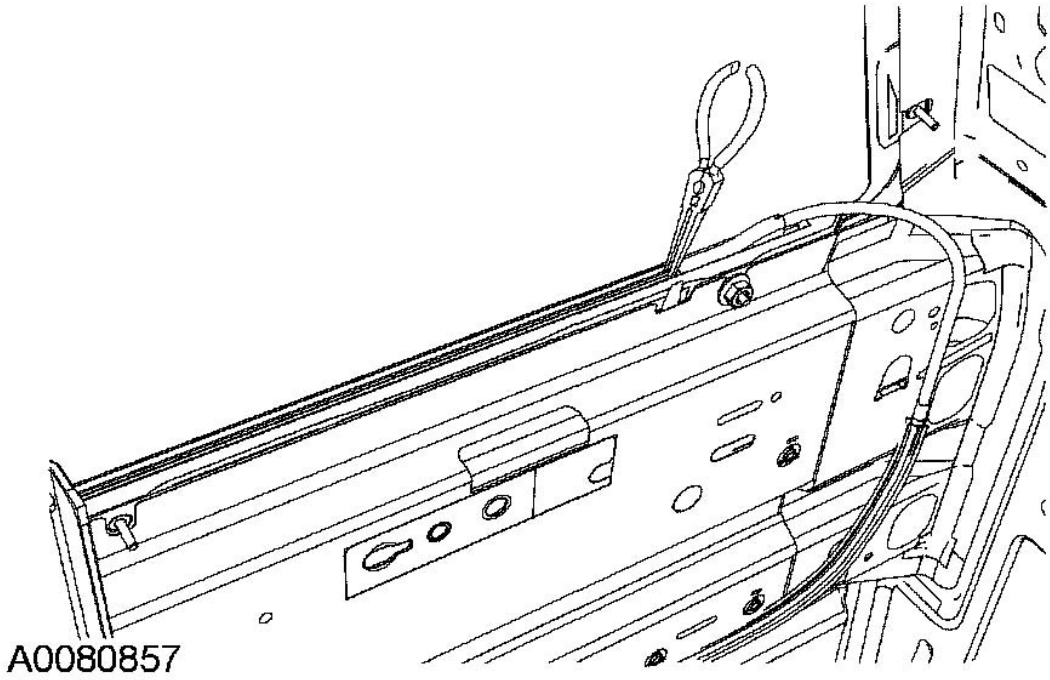


Fig. 107: Clamping And Holding Cable Near Transition Block
Courtesy of FORD MOTOR CO.

5. Clamp and hold the cable near the transition block.

NOTE: LH side shown, RH side similar.

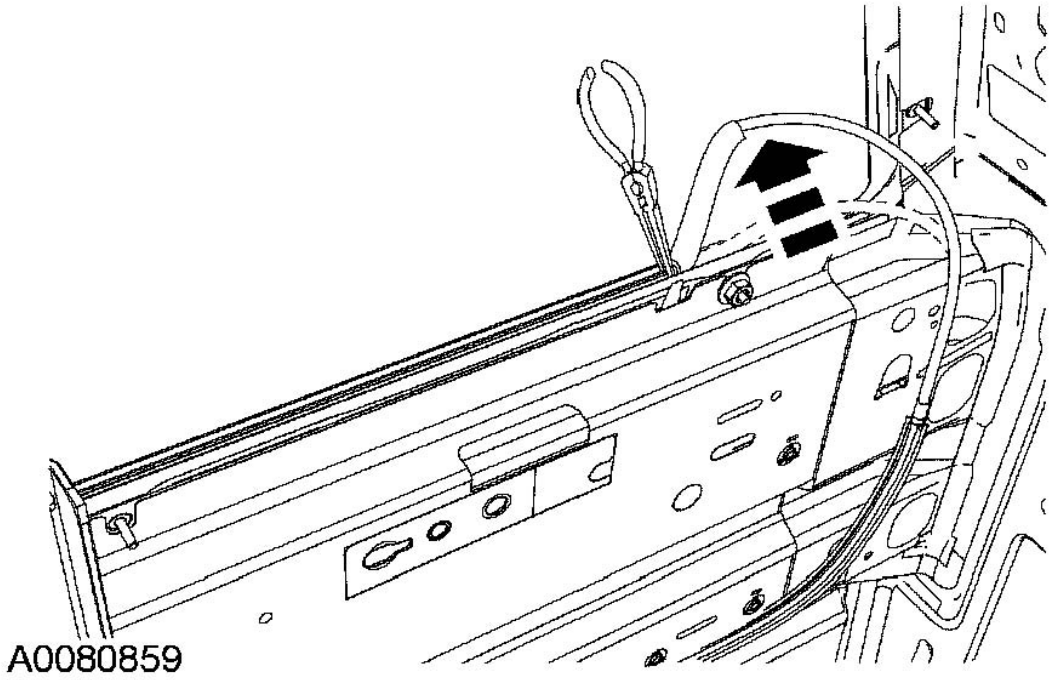


Fig. 108: Gently Pulling Up End Of Transition Block And Lifting It Out Of Groove
Courtesy of FORD MOTOR CO.

6. Gently pull up the end of the transition block and lift it out of the groove. Do not release the clamp.

NOTE: LH side shown, RH side similar.

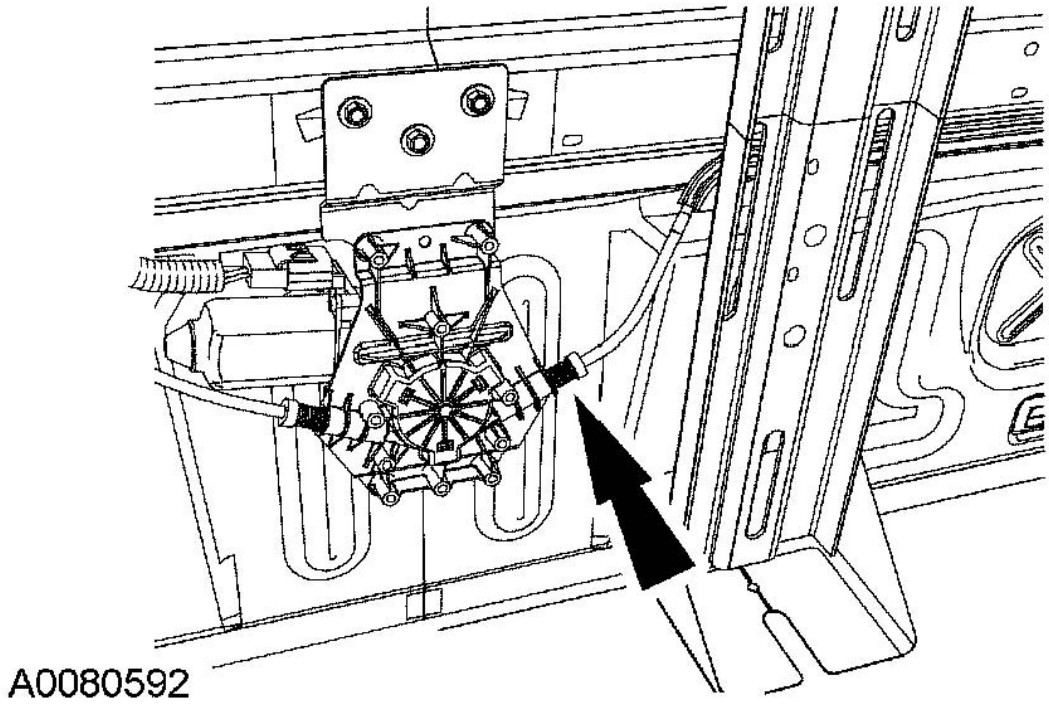


Fig. 109: Releasing Clamp On Cable To Gradually Unload Tension Spring On Motor Housing
Courtesy of FORD MOTOR CO.

7. Slowly release the clamp on the cable to gradually unload the tension spring on the motor housing.

NOTE: LH side shown, RH side similar.

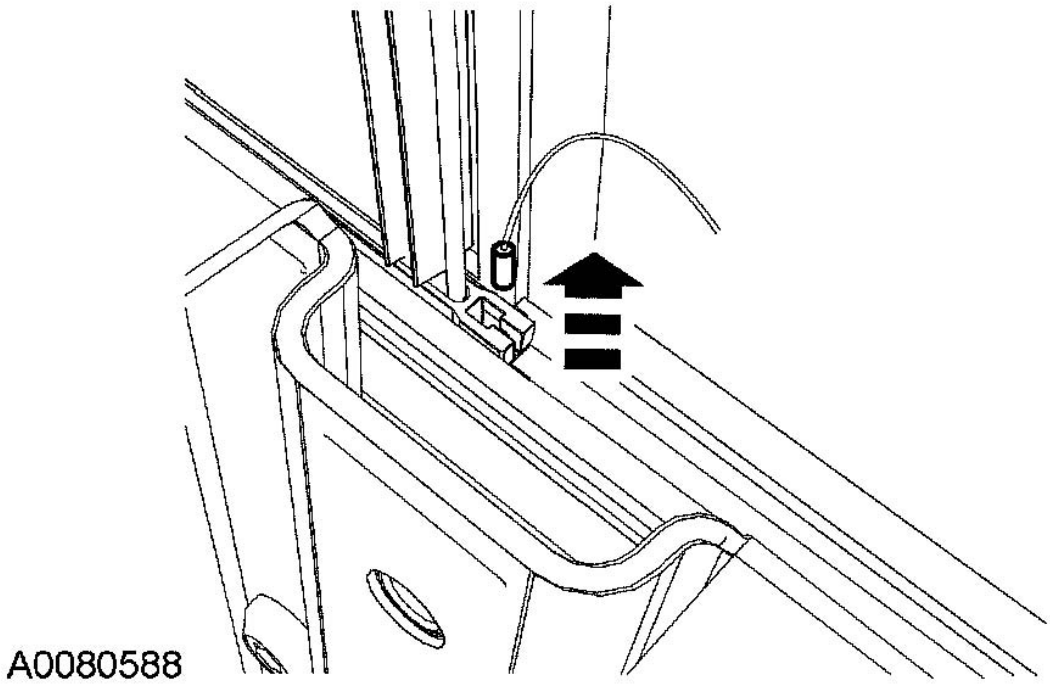


Fig. 110: Removing Cable Swag From Guide Bracket On Sliding Rear Window
Courtesy of FORD MOTOR CO.

8. Remove the cable swag from the guide bracket on the sliding rear window.
9. Disconnect the rear window glass motor electrical connector.
10. Remove the rear window glass regulator and motor assembly screws.
11. Remove the rear window glass regulator and motor assembly from the vehicle.

Installation

1. Install the rear window glass regulator and motor assembly to the vehicle.
2. Install the rear window glass regulator and motor assembly screws.
   - Tighten to 11 Nm (8 lb-ft).
3. Connect the rear window glass motor electrical connector.

CAUTION: The following substeps are to prevent the cables from popping out of the motor housing. If an existing regulator and motor assembly is to be reused, do not allow the cables to pop out of the motor housing, as they can unwind from the drum. If the cables unwind from the drum, a new regulator and motor assembly will have to be installed.

NOTE: LH side shown, RH side similar.

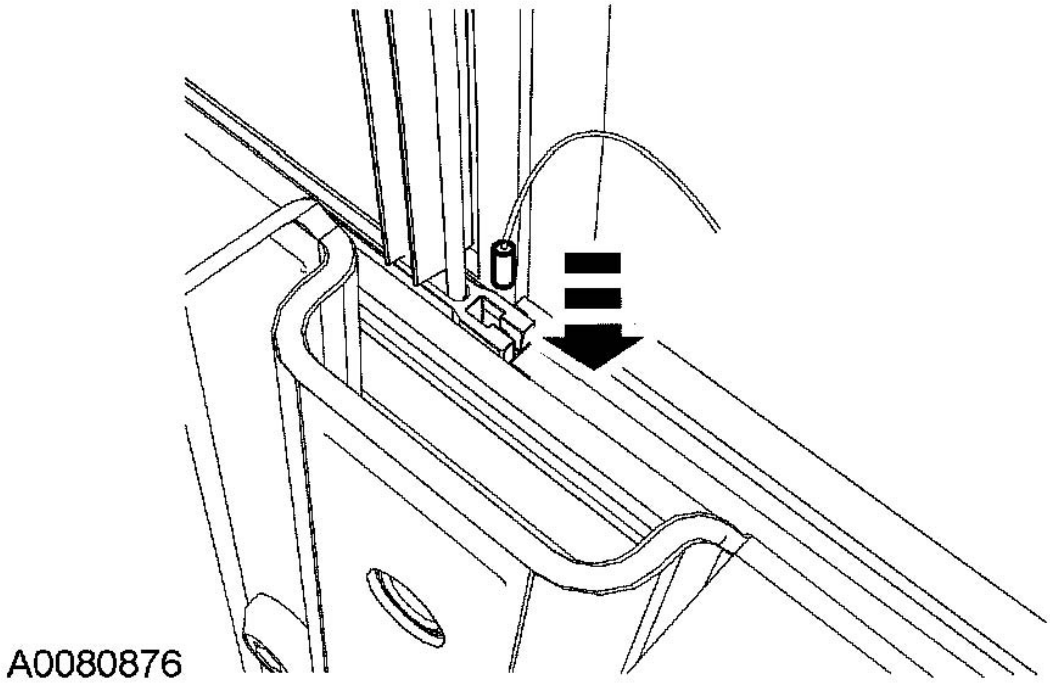


Fig. 111: Installing Cable Swag Into Guide Bracket On Sliding Rear Window
Courtesy of FORD MOTOR CO.

4. Install the LH cable first, then the RH cable. Install the cable swag into the guide bracket on the sliding rear window.

NOTE: LH side shown, RH side similar.

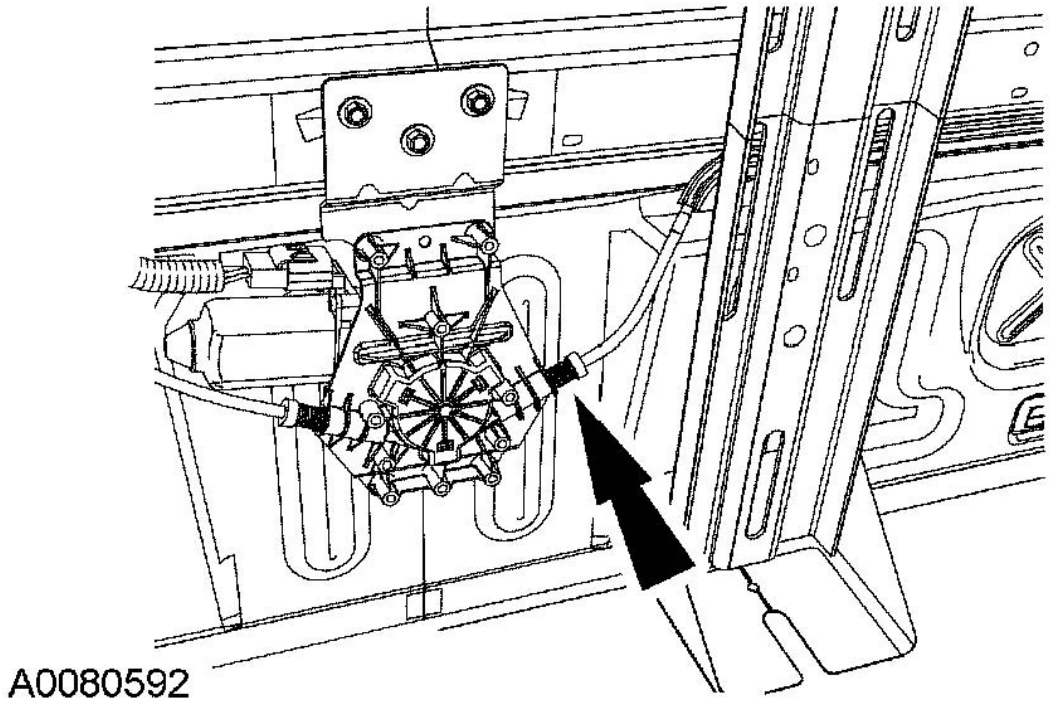


Fig. 112: Compressing And Hold Cable Tension Spring
Courtesy of FORD MOTOR CO.

5. Compress and hold the cable tension spring.

NOTE: LH side shown, RH side similar.

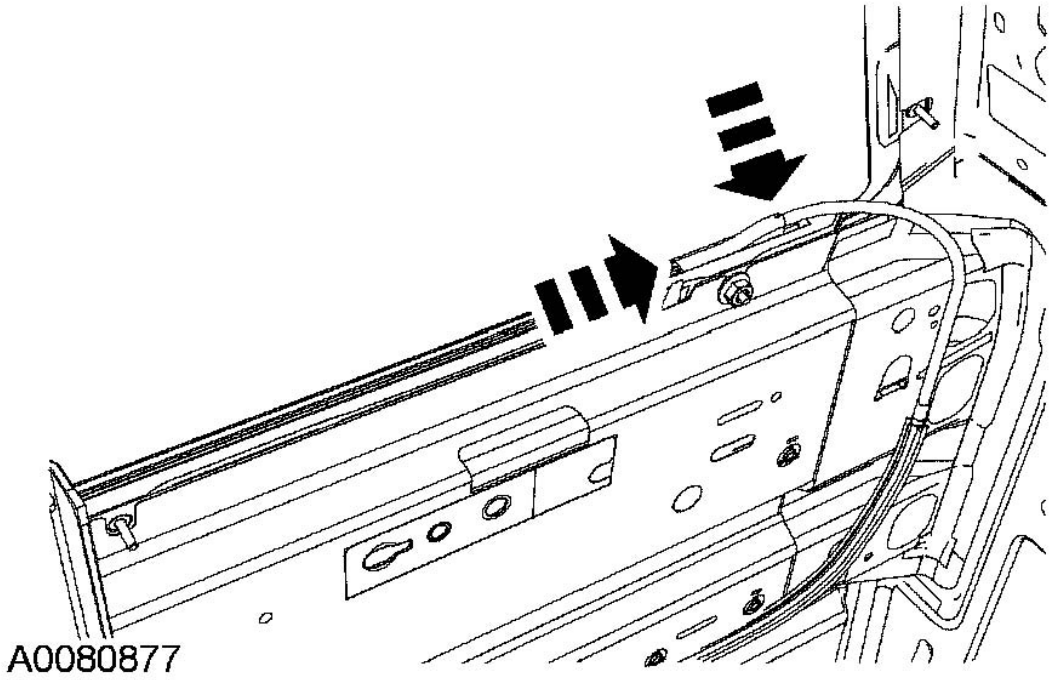


Fig. 113: Pressing Transition Block Away From Centerline Of Vehicle And Snapping Into The Groove
Courtesy of FORD MOTOR CO.

6. Press the transition block away from the centerline of the vehicle, then snap it into the groove. Release the cable tension spring.

NOTE: LH side shown, RH side similar.

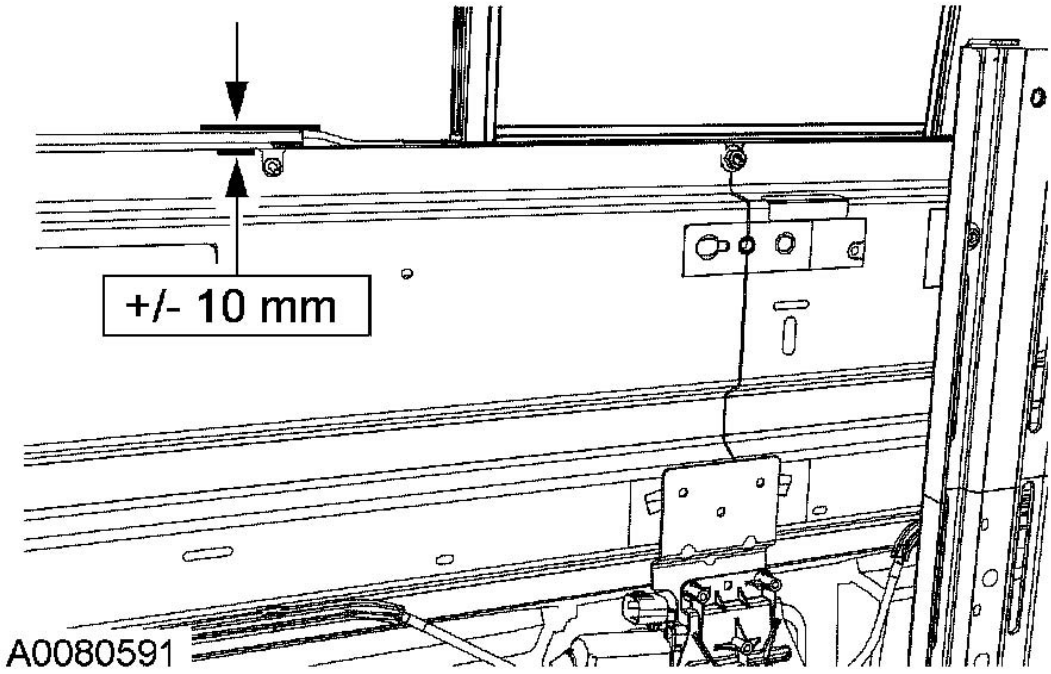


Fig. 114: Identifying Transition Block Is Correctly Seated When Its Top Edge Is Above Top Of Window Opening
Courtesy of FORD MOTOR CO.

7. The transition block is correctly seated when its top edge is +/- 10 mm (0.39 in) above the top of the window opening.
8. Install the rear corner trim. For SuperCab vehicles, install the B-pillar trim panel. For SuperCrew vehicles, install the C-pillar trim panel. For additional information, REFER to **INTERIOR TRIM AND ORNAMENTATION** .
9. Install the rear trim panel.
10. Install the rear trim panel pin-type retainers.

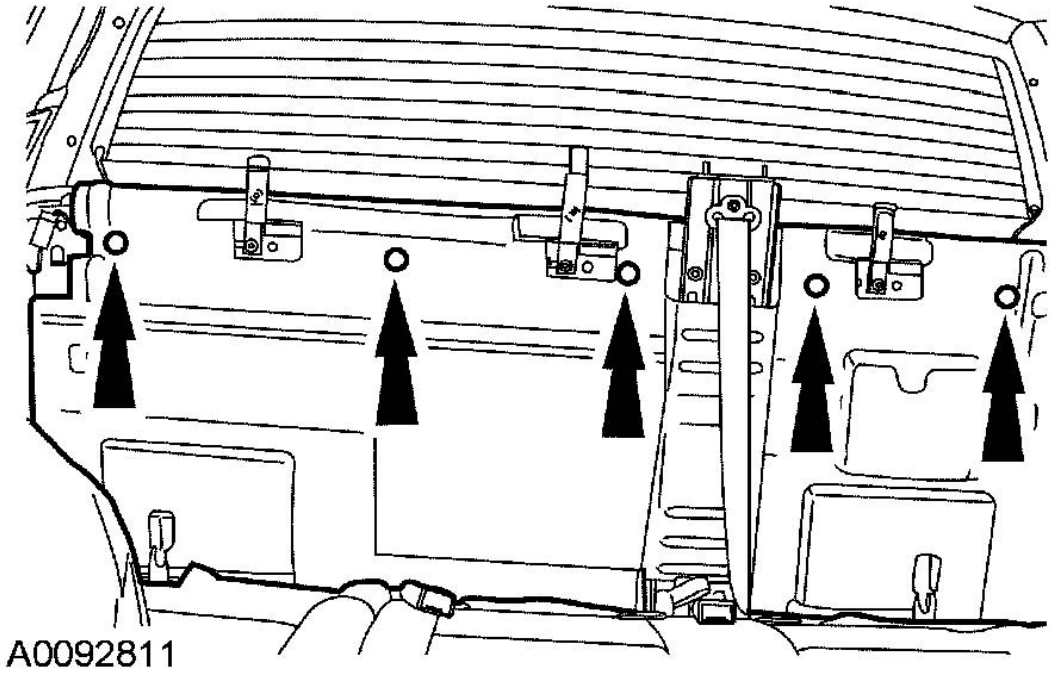
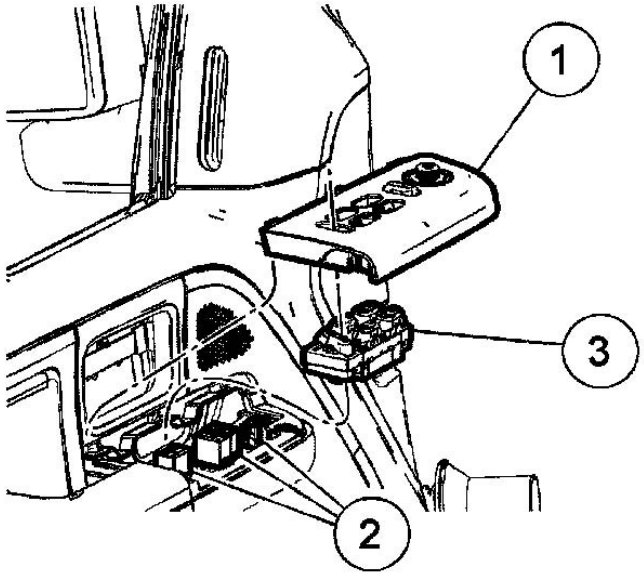


Fig. 115: Installing Rear Trim Panel Pin-Type Retainers
Courtesy of FORD MOTOR CO.

WINDOW CONTROL SWITCH - FRONT

NOTE: LH shown, RH similar.



A0072720

Item	Part Number	Description
1	14B132 RH/ 14B133 LH	Window control switch bezel
2	14A005	Window control switch electrical connectors
3	14529	Window control switch

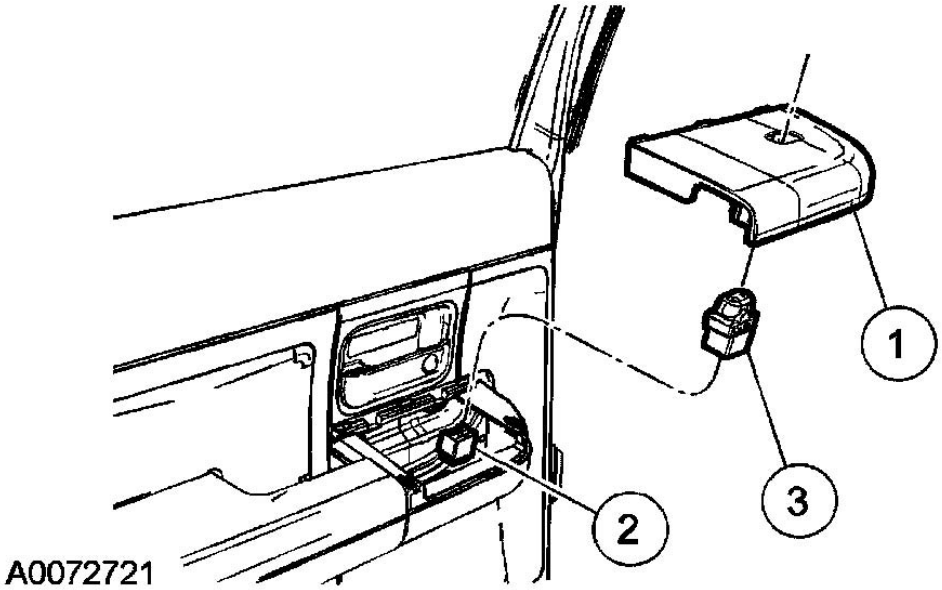
Fig. 116: Identifying Window Control Switch - Front
Courtesy of FORD MOTOR CO.

Removal and Installation

1. Remove the window control switch bezel.
2. Disconnect the window control switch electrical connectors.
3. Remove the window control switch.
4. To install, reverse the removal procedure.

WINDOW CONTROL SWITCH - REAR

NOTE: LH shown, RH similar.



Item	Part Number	Description
1	—	Window control switch bezel
2	—	Window control switch electrical connectors
3	—	Window control switch

Fig. 117: Identifying Window Control Switch - Rear
Courtesy of FORD MOTOR CO.

Removal and Installation

1. Remove the window control switch bezel.
2. Disconnect the window control switch electric, connectors.
3. Remove the window control switch.
4. To install, reverse the removal procedure.