

2005 Ford Focus ZX5 S

2005 ACCESSORIES & BODY, CAB Handles, Locks, Latches And Entry Systems - Focus

2005 ACCESSORIES & BODY, CAB

Handles, Locks, Latches And Entry Systems - Focus

SPECIFICATIONS

GENERAL SPECIFICATIONS

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Item	Specification
Ignition lock cylinder kit	XS42-11582-AA
Threadlock 262 TA-26	WSK-M2G351-A6

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS CHART

Description	Nm	lb-ft	lb-in
Liftgate latch screws	7	-	62
Door latch screws	5	-	44
Hood latch bolts	7	-	62
Hood release cable nut	20	15	-
Luggage compartment lid latch nuts	9	-	80
Lower instrument panel	9	-	80

DESCRIPTION AND OPERATION

HANDLES, LOCKS, LATCHES AND ENTRY SYSTEMS

The handles, locks, latches and entry systems consist of the following components:

- Liftgate latch
- Liftgate lock cylinder
- Generic electronic module (GEM)
- Door latch
- Hood latch
- Remote keyless entry (RKE) transmitter

The passenger compartment doors are of a conventional latch-to-striker plate design with the striker located on the B and C pillars with a built-in door ajar switch

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The hood and liftgate striker plates locate into latches positioned in the vehicle body.

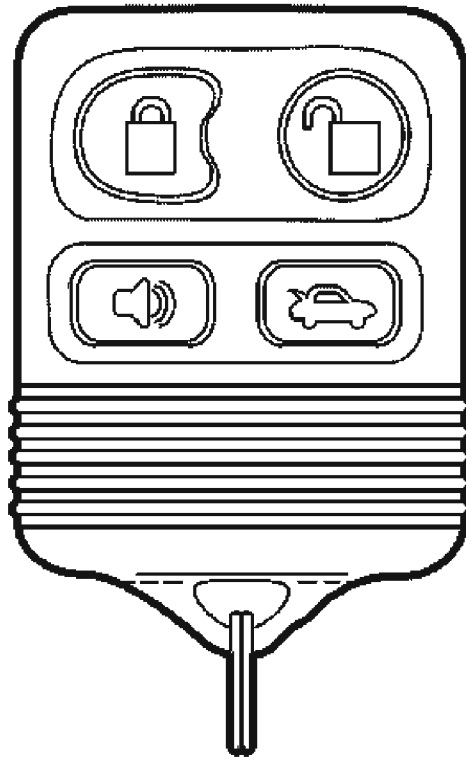
The hood can only be opened by operating the hood release cable handle situated in the instrument panel lower panel.

The liftgate/luggage compartment lid can be opened by a release switch located in the instrument panel. They can also be opened with the key in the liftgate/luggage compartment lid lock cylinder, by pressing the liftgate/luggage compartment lid release switch on the RKE transmitter or, on the wagon only, pressing the exterior liftgate release switch on the liftgate.

The door latch mechanisms are operated by a conventional actuating rod and cable system connected to the interior and exterior door handles.

The power lock system consists of the components used in the manual door lock system and includes the power door lock switches, power door lock actuator, circuit wiring and circuit protection.

The door handle and latch are removed from the inside of the door panel. The handle and latch cannot be removed separately. The actuating rods and latches are covered inside the door by a security shield.



A0088289

Fig. 1: Identifying Remote Transmitter
Courtesy of FORD MOTOR CO.

The RKE transmitter operates the following functions:

- Unlocking and locking the driver door
- Unlocking and locking all doors
- Unlocking and locking the liftgate
- Arms and disarms the anti-theft alarm system
- Deactivates a triggered alarm
- Activate and deactivates the panic alarm

The RKE transmitter has a minimum operating range of 10 m (33 feet).

Inputs and Outputs

The RKE system receives inputs from the following:

- Ignition switch (positions I and II)
- Door ajar switches
- Hood ajar switch
- Interior liftgate/luggage compartment lid release switch
- Exterior liftgate switch (wagon only)
- RKE transmitter
- anti-theft liftgate alarm inhibit switch

The RKE system distributes outputs to the following:

- GEM
- Door lock actuators
- Indicator LED
- Parking lamps
- Vehicle horn

RKE transmitter

The RKE system is completely independent in function but fully integrated within the GEM. The RKE system consists of a RKE transmitter and an antenna (radio frequency system).

The RKE transmitter for the radio frequency system operates without the RKE transmitter being directed at the vehicle. The normal range between the RKE transmitter and the antenna is 10 m (33 ft).

Before the RKE control system can be used, each RKE transmitter must be initialized to the vehicle. A maximum number of 4 RKE transmitters can be initialized to any vehicle. All RKE transmitters must be initialized at the same time.

The RKE system will not operate with the ignition lock cylinder in the RUN position.

Locking and Unlocking

The RKE transmitter contains four buttons to operate the system.

Press the LOCK button once to activate the central locking system and the alarm system (if equipped).

Press the LOCK button twice within three seconds and a horn tone will be heard along with a flash of the direction indicators indicating that the doors are locked. If any of the doors are ajar, the horn sounds twice.

Press the UNLOCK button once to unlock the driver door and disarm the alarm system (if equipped).

Press the UNLOCK button twice within three seconds to unlock the remaining doors.

Press the LIFTGATE RELEASE button once to release the liftgate/luggage compartment lid. This function works only if the ignition is in the OFF or ACC position or the vehicle speed is less than 4 mph (7 km/h).

Press the PANIC ALARM button to turn on the personal alarm.

Press the PANIC ALARM button a second time to turn off the personal alarm. The personal alarm also turns off if the ignition switch is turned to the ON or RUN position, or after 2 minutes of operation.

With the key in the OFF/ACC positions, pressing the RKE transmitter LOCK and UNLOCK buttons simultaneously for a minimum of 4 seconds toggles the unlocking mode from single door unlocking to central unlocking. Pressing both buttons again for 4 seconds toggles back to single door unlocking mode. Mode change is indicated by 2 flashes of the park lamps.

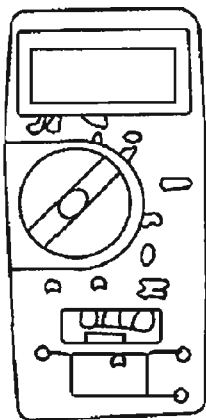
DIAGNOSIS AND TESTING

LOCKS, LATCHES AND ENTRY SYSTEMS

Refer to **SYSTEM WIRING DIAGRAMS** article for schematic and connector information.

Special Tool(s)

SPECIAL TOOL CHART



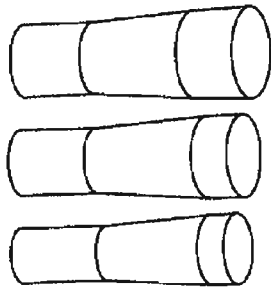
ST1137-A

73III Automotive Meter 105-R0057 or equivalent

Worldwide Diagnostic System (WDS)
418-F224, New Generation STAR (NGS)

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ST1444-A

Tester 418-F052, or equivalent diagnostic tool with appropriate adapter cable

Principles of Operations

The Door Lock Function

When a door lock control switch is moved into the lock position or a door lock cylinder is rotated to the lock position, a ground is provided to the lock circuit input to the generic electronic module (GEM). The GEM then provides 12 volts to one side of the door lock actuators contained in the door latch assembly and simultaneously grounds the other side of the door lock actuators. This completes the door lock actuator circuit, causing the door lock actuators to rotate a cam assembly, which then locks the doors.

The Door Unlock Function

When a door lock control switch is moved into the unlock position, the door lock switch grounds the unlock circuit input to the GEM. The GEM then provides 12 volts to the opposite side (relative to locking the door) of the door lock actuator(s) contained in the door latch assembly and simultaneously grounds the other side of the door lock actuator(s). This completes the door lock actuator circuit, causing the door lock actuator(s) to rotate a cam assembly in the opposite direction, which then unlocks the door(s).

The Liftgate/Luggage Compartment Lid Release

All vehicles are equipped with an interior liftgate/luggage compartment lid release switch. The wagon has an interior liftgate release switch and an exterior liftgate release switch. When either switch is pressed, it grounds an input circuit to the GEM. When the GEM senses the ground, it sends 12 volts to cycle the liftgate latch (3-door) or the central junction box (CJB) liftgate/luggage compartment lid relay (5-door, wagon and sedan). The switches will only work when the alarm is disarmed.

Door Lock Cylinder Functions

Both the driver and passenger doors can be locked from the driver door lock cylinder. When the ignition key is inserted into the door lock cylinder and is rotated into the lock position,

the linkage moves to rotate a cam in the door latch assembly. When the cam in the door latch rotates, it mechanically moves the door latch into the locked position. The other doors are locked or unlocked electronically.

Central

The door lock cylinder locks all doors when the key in the driver door lock cylinder is turned once to the lock position. Central unlocking of the doors can be accomplished by turning the key once to the unlock position to unlock the driver door and turning it a second time to the unlock position within 3 seconds without the vehicle being relocked.

Computer Operated Locks

Each front door lock actuator contains a bipolar motor that controls the lock and unlock linkage. The lock/unlock levers of both front door interior handles use linkages to actuate the lever lock switch located inside each front door lock actuator. The GEM uses only one electrical input for both lever lock switches. The GEM cannot determine whether the driver or passenger door lever lock switch was actuated. Therefore, actuating the lock feature from either front door lock button locks all doors.

The door lock control switches for both front doors also use only one input to the GEM.

Both rear passenger doors contain a rear door lock actuator that controls only electric lock or unlock of that door. Actuating the lock/unlock lever at either rear passenger door has no effect on the other doors.

Auto-lock

The auto-lock feature locks all door when all the doors, including the rear doors (if equipped) are closed, the brake pedal is pressed with the key in the RUN or START position, and the vehicle speed then exceeds 7 kph (5 mph) or higher. This feature relocks the doors (if any doors were open) after the brake pedal is pressed, once all the doors are read as closed and vehicle speed exceeds 7 kph (5 mph). The auto-lock feature can be enabled/disabled through the ignition switch. For additional information, refer to **AUTOLOCK AND HORN CHIRP PROGRAMMING**.

Inspection and Verification

NOTE: **Make sure that the battery is fully charged before starting electrical diagnosis.**

NOTE: **Prior to carrying out the GEM self-test, make sure the doors are open.**

1. Verify the customer concern.

2. Visually inspect for obvious signs of mechanical or electrical damage.

VISUAL INSPECTION CHART

Mechanical	Electrical
<ul style="list-style-type: none"> • Binding linkage • Damaged linkage • Misaligned door • Binding lock mechanism 	<ul style="list-style-type: none"> • Vehicle battery • Remote keyless entry (RKE) transmitter • RKE transmitter programming • Wiring harness • Loose or corroded connector(s) • Circuit(s) • Door lock control switch • Door lock actuator • Liftgate/luggage compartment lid latch • Liftgate/luggage compartment lid relay (sedan) • Liftgate/luggage compartment lid release switch • Liftgate release switch, exterior (wagon) • Generic electronic module (GEM) external antenna • GEM

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 cause is not visually evident, connect the diagnostic tool to the data link connector and select the vehicle to be tested from the diagnostic tool menu. If the diagnostic tool does not communicate with the vehicle:
 - Check that the program card is correctly installed.

- Check the connections to the vehicle.
 - Check the ignition switch position.
5. If the diagnostic tool still does not communicate with the vehicle, refer to the diagnostic tool operating manual.
 6. Carry out the diagnostic tool data link test. If the diagnostic tool responds with:
 - SCP or ISO circuit fault; all electronic control units no response/not equipped refer to **MODULE COMMUNICATIONS NETWORK**.
 - No response/not equipped for GEM, refer to **MULTIFUNCTION ELECTRONIC MODULES**.
 - System passed, retrieve and record the continuous diagnostic trouble codes (DTCs), erase the continuous DTCs, and carry out the self-test diagnostics for the GEM.
 7. If the DTCs retrieved are related to the concern, Go to the **GENERIC ELECTRONIC MODULE (GEM) DIAGNOSTIC TROUBLE CODE (DTC) INDEX**.
 8. If no DTCs related to the concern are retrieved, Go to **SYMPTOM CHART** to continue diagnostics.

Generic Electronic Module (GEM) Diagnostic Trouble Code (DTC) Index

GENERIC ELECTRONIC MODULE (GEM) DIAGNOSTIC TROUBLE CODE (DTC) INDEX

DTC	Description	Source	Action
B1300	Power Door Lock Circuit Failure	GEM	Go to PINPOINT TEST C .
B1309	Power Door Lock Circuit Short to Ground	GEM	Go to PINPOINT TEST C .
B1310	Power Door Unlock Circuit Failure	GEM	Go to PINPOINT TEST C .
B1341	Power Door Unlock Circuit Short to Ground	GEM	Go to PINPOINT TEST C .
B1551	Liftgate Release Circuit Failure	GEM	For 3-door vehicles, Go to PINPOINT TEST B . For 5-door and wagon vehicles, Go to PINPOINT TEST K .
B1553	Liftgate Release Circuit Short to	GEM	For 3-door vehicles, Go to PINPOINT

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	Battery		<u>TEST B.</u> For 5-door and wagon vehicles, Go to <u>PINPOINT TEST K.</u>
B1554	Liftgate Release Circuit Short to Ground	GEM	For 3-door vehicles, Go to <u>PINPOINT TEST B.</u> For 5-door and wagon vehicles, Go to <u>PINPOINT TEST K.</u>

For a complete list of GEM DTCs, refer to **MULTIFUNCTION ELECTRONIC MODULES** .

Symptom Chart**SYMPTOM CHART**

Condition	Possible Sources	Action
<ul style="list-style-type: none">No communication with the generic electronic module (GEM)	<ul style="list-style-type: none">Central junction box (CJB).Fuse(s).Circuit(s).GEM.	<ul style="list-style-type: none">Refer to <u>MULTIFUNCTION ELECTRONIC MODULES</u> .
<ul style="list-style-type: none">All door locks are inoperative	<ul style="list-style-type: none">Circuit(s).Fuse(s).Door lock actuator.Generic electronic module (GEM).Central junction box (CJB).	<ul style="list-style-type: none">Go to <u>PINPOINT TEST A.</u>
<ul style="list-style-type: none">The liftgate/luggage compartment lid is inoperative	<ul style="list-style-type: none">Linkage.Circuit(s).Fuse(s).Liftgate/luggage compartment lid latch.Liftgate/luggage compartment lid	<ul style="list-style-type: none">For 3-door vehicles, Go to <u>PINPOINT TEST B.</u>For sedan/wagon/5-door vehicles, Go to <u>PINPOINT TEST K.</u>

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	<ul style="list-style-type: none">release switch.• Liftgate/luggage compartment lid relay (sedan/wagon/5-door only).• Generic electronic module (GEM).	
<ul style="list-style-type: none">• All door locks are inoperative from one switch - door lock cylinder	<ul style="list-style-type: none">• Linkage.• Circuit(s).• Fuse(s).• Front door latch.• Generic electronic module (GEM).	<ul style="list-style-type: none">• Go to <u>PINPOINT TEST C.</u>
<ul style="list-style-type: none">• All door locks are inoperative from one switch	<ul style="list-style-type: none">• Circuit(s).• Fuse(s).• Door lock control switch.	<ul style="list-style-type: none">• Go to <u>PINPOINT TEST D.</u>
<ul style="list-style-type: none">• The doors do not lock/unlock using the remote keyless entry (RKE) transmitter	<ul style="list-style-type: none">• Generic electronic module (GEM) external antenna.• RKE transmitter.• RKE transmitter battery.• RKE transmitter programming.• Aftermarket system.• High power devices.• TV/radio transmission towers.• GEM.	<ul style="list-style-type: none">• Go to <u>PINPOINT TEST E.</u>
<ul style="list-style-type: none">• The liftgate/luggage compartment lid is inoperative using the remote keyless entry (RKE) transmitter	<ul style="list-style-type: none">• RKE transmitter.• Generic electronic module (GEM).	<ul style="list-style-type: none">• Go to <u>PINPOINT TEST F.</u>
<ul style="list-style-type: none">• Panic feature is inoperative/does not	<ul style="list-style-type: none">• Circuit.• Remote keyless	<ul style="list-style-type: none">• Go to <u>PINPOINT TEST G.</u>

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operate correctly	<ul style="list-style-type: none">entry (RKE) transmitter.• Horn.• Exterior lighting.• Generic electronic module (GEM).	
<ul style="list-style-type: none">The remote keyless entry (RKE) transmitter is out of synchronization	<ul style="list-style-type: none">• RKE transmitter button pressed a substantial amount of times while outside the range of the vehicle.• RKE transmitter.• Generic electronic module (GEM).	<ul style="list-style-type: none">• Go to <u>PINPOINT TEST H.</u>
<ul style="list-style-type: none">The remote keyless entry (RKE) transmitter has poor range performance	<ul style="list-style-type: none">• Generic electronic module (GEM) external antenna.• Aftermarket system.• High power devices.• TV/radio transmission towers.• RKE transmitter.• GEM.	<ul style="list-style-type: none">• Go to <u>PINPOINT TEST I.</u>
<ul style="list-style-type: none">The autolock does not operate correctly	<ul style="list-style-type: none">• Door ajar switches.• Circuitry.• Generic electronic module (GEM).	<ul style="list-style-type: none">• Go to <u>PINPOINT TEST J.</u>
<ul style="list-style-type: none">The ignition key is hard to turn	<ul style="list-style-type: none">• Key.• Ignition lock cylinder.• Ignition switch rod.• Ignition switch.	<ul style="list-style-type: none">• Refer to <u>STEERING COLUMN SWITCHES .</u>

Pinpoint Tests**PINPOINT TEST A: ALL DOOR LOCKS ARE INOPERATIVE****A1 CHECK THE LOCK(S) OPERATION**

- Key in OFF position.
- Press both the driver and passenger door lock control switches to the LOCK and UNLOCK position.
- **Are all the door locks inoperative?**
Yes : Go to A2.
No : Go to A5.

A2 CHECK THE GEM GROUND

- Disconnect: GEM C201a.
- Disconnect: GEM C201d.
- Measure the resistance between the GEM C201a pin 5, circuit 31-DK20 (BK), harness side and ground; and between the GEM C201d pin 1, circuit 91-DK20 (BK/BU), harness side and ground.

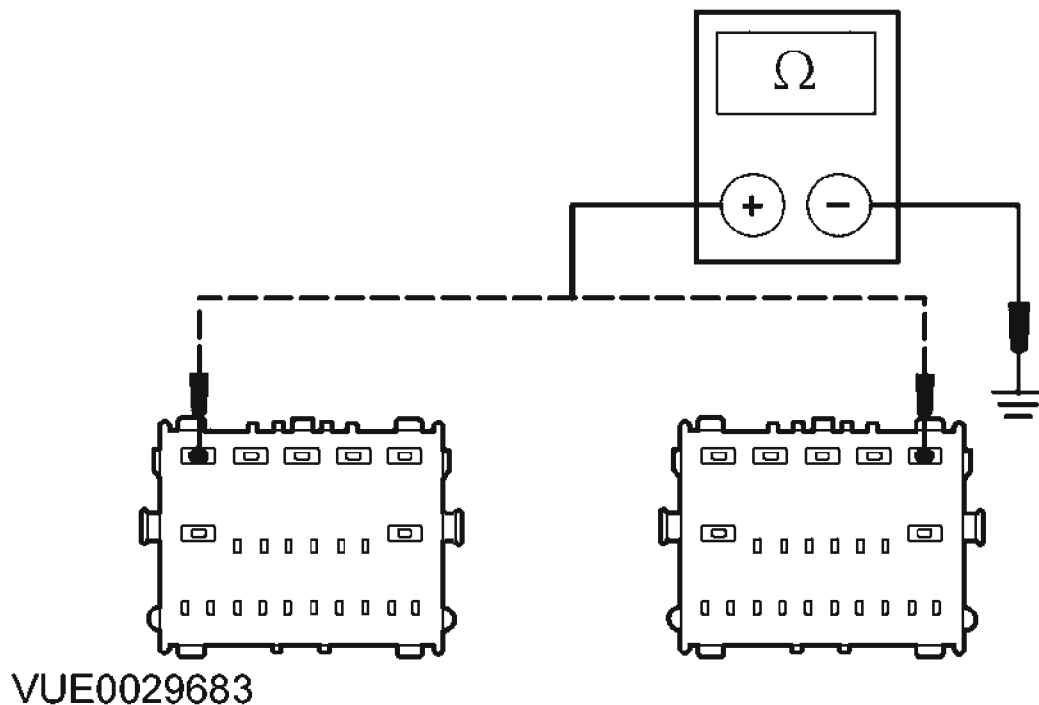


Fig. 2: Checking GEM Ground
 Courtesy of FORD MOTOR CO.

- **Are both resistances less than 0.5 ohms?**
Yes : Go to A3.
No : REPAIR the circuit(s). CLEAR the DTCs. REPEAT the self-test.

A3 CHECK CIRCUIT 29-AA17 (OG/WH) FOR VOLTAGE

- Disconnect: GEM C201c.
- Measure the voltage between the GEM C201c pin 1, circuit 29-AA17 (OG/WH), harness side and ground.

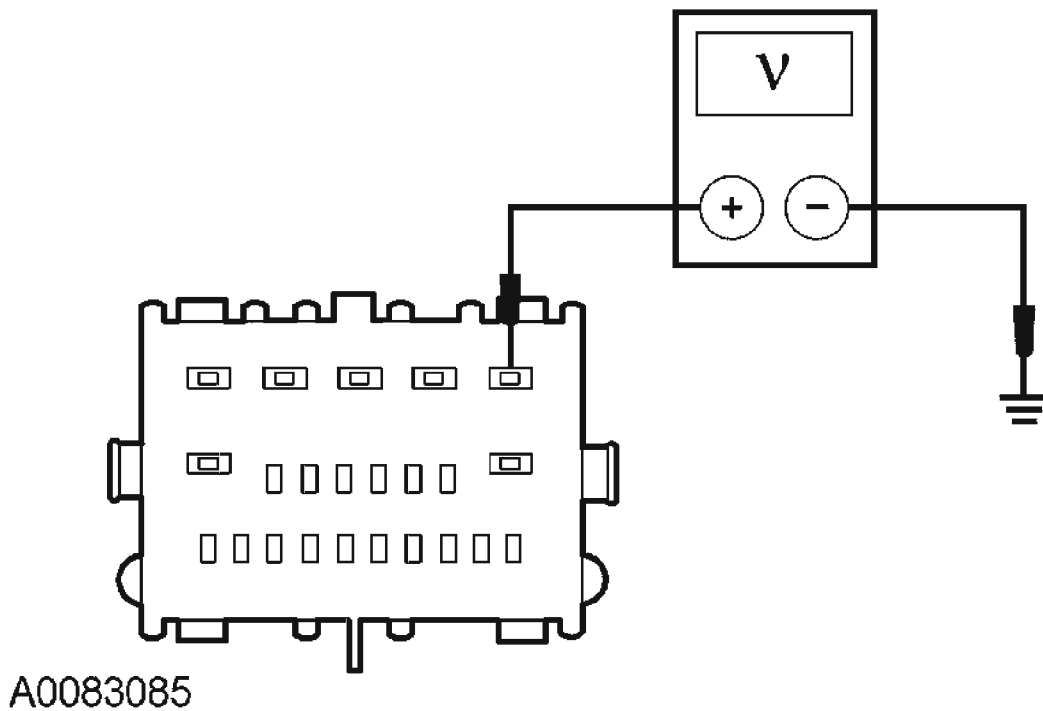


Fig. 3: Measuring Voltage Between GEM C201C Pin 1, Circuit 29-AA17 (OG/WH), Harness Side And Ground
 Courtesy of FORD MOTOR CO.

- Is the voltage greater than 10 volts?
 Yes : Go to A9.
 No : Go to A4.

A4 CHECK CIRCUIT 29-AA17 (OG/WH) FOR AN OPEN OR A SHORT TO GROUND

- Disconnect: CJB C270f.
- Measure the voltage between the GEM C201c pin 1, circuit 29-AA17 (OG/WH), harness side and the CJB C270f pin 2, circuit 29-AA17 (OG/WH), harness side; and between the GEM C201c pin 1, circuit 29-AA17 (OG/WH), harness side and ground.

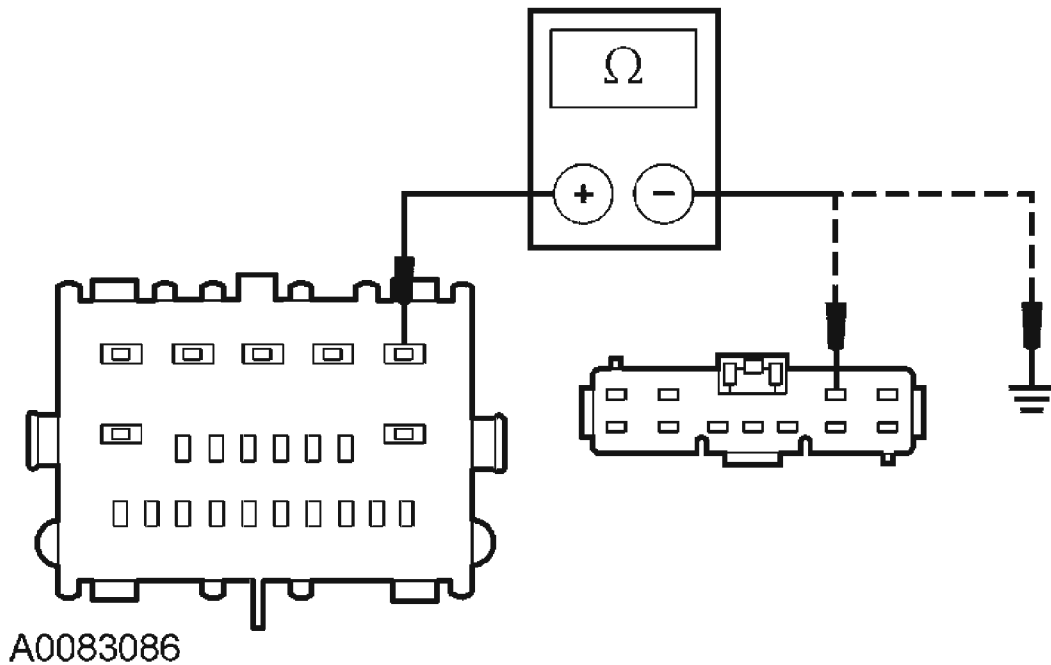


Fig. 4: Checking Circuit 29-AA17 (OG/WH) For An Open Or A Short To Ground

Courtesy of FORD MOTOR CO.

- Is the resistance less than 5 ohms between the GEM and CJB, and greater than 10,000 ohms between the GEM and ground?

Yes : INSTALL a new CJB. CLEAR the DTCs. REPEAT the self-test.

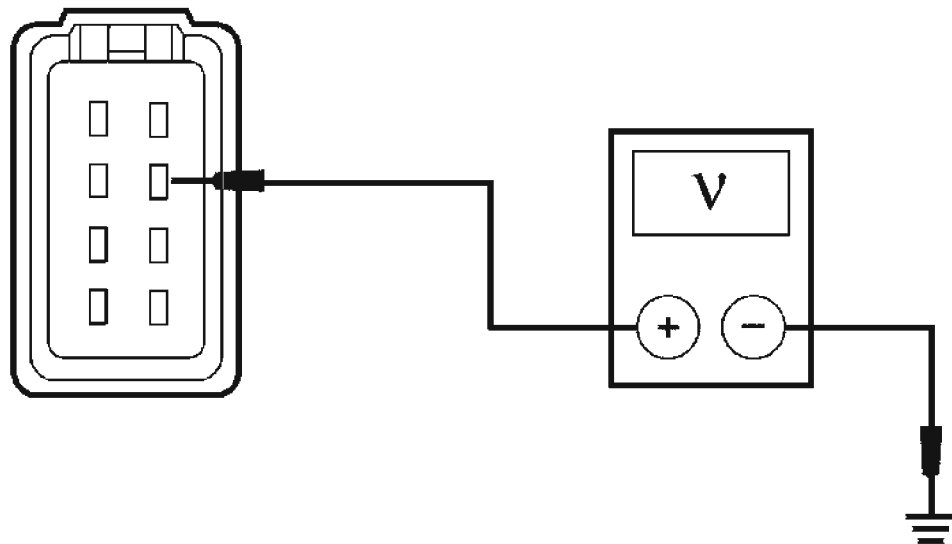
No : REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

A5 CHECK CIRCUIT 32-AA59 (WH/BK) FOR VOLTAGE

- Disconnect: Driver Side Door Lock Actuator C525.
- Disconnect: Passenger Side Door Lock Actuator C609.
- Disconnect: Driver Side Rear Door Lock Actuator C705.
- Disconnect: Passenger Side Rear Door Lock Actuator C805.
- Measure the voltage between the inoperative door lock actuator connector and ground while pressing the door lock control switch UNLOCK button of an operational door lock control switch.
 - Measure the voltage between the driver side door lock actuator C525 pin 2, circuit 32-AA59A (WH/BK), harness side and ground.
 - Measure the voltage between the passenger side door lock actuator C609 pin 2, circuit 32-AA59B (WH/BK), harness side and ground.
 - Measure the voltage between the driver side rear door lock actuator C705

pin 2, circuit 32-AA59 (WH/BK), harness side and ground.

- Measure the voltage between the passenger side rear door lock actuator C805 pin 2, circuit 32-AA59 (WH/BK), harness side and ground.



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Fig. 5: Checking Circuit 32-AA59 (WH/BK) For Voltage
Courtesy of FORD MOTOR CO.

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

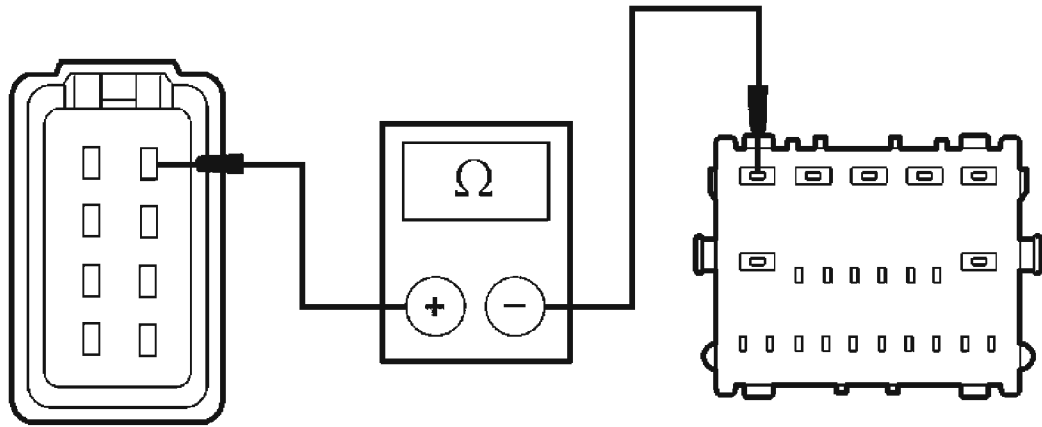
Yes : Go to A8.

No : If the driver door lock is inoperative, Go to A6.

Otherwise, REPAIR the suspect circuit(s). CLEAR the DTCs. REPEAT the self-test.

A6 CHECK CIRCUIT 32-AA59A (WH/BK) FOR AN OPEN

- Disconnect: GEM C201e.
- Measure the resistance between the GEM C201e pin 5, circuit 32-AA59A (WH/BK), harness side and the driver side door lock actuator C525 pin 2, circuit 32-AA59A (WH/BK), harness side.



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Fig. 6: Checking Circuit 32-AA59A (WH/BK) For An Open
Courtesy of FORD MOTOR CO.

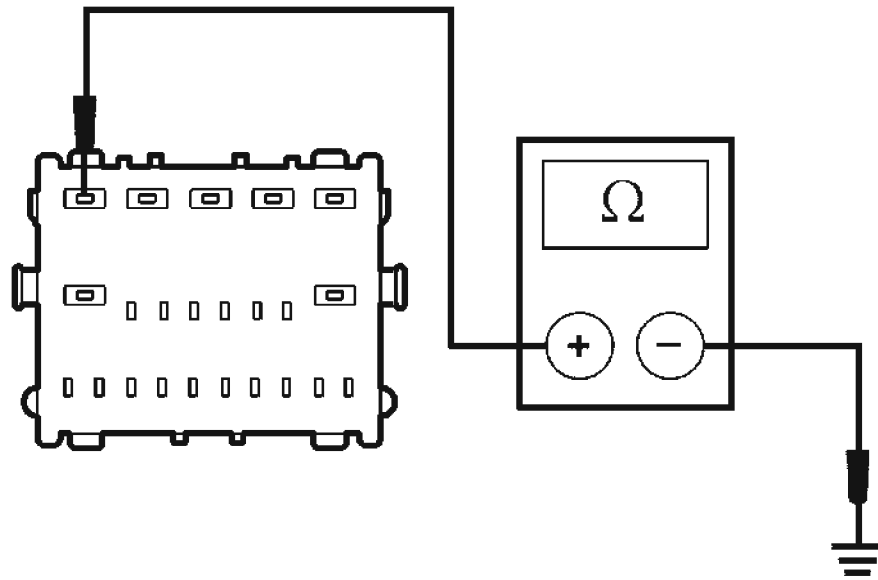
- **Is the resistance less than 5 ohms?**

Yes : Go to A7.

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

A7 CHECK CIRCUIT 32-AA59A (WH/BK) FOR A SHORT TO GROUND

- Measure the resistance between the GEM C201e pin 5, circuit 32-AA59A (WH/BK), harness side and ground.



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Fig. 7: Measuring Resistance Between GEM C201e Pin 5, Circuit 32-AA59A (WH/BK), Harness Side And Ground
 Courtesy of FORD MOTOR CO.

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

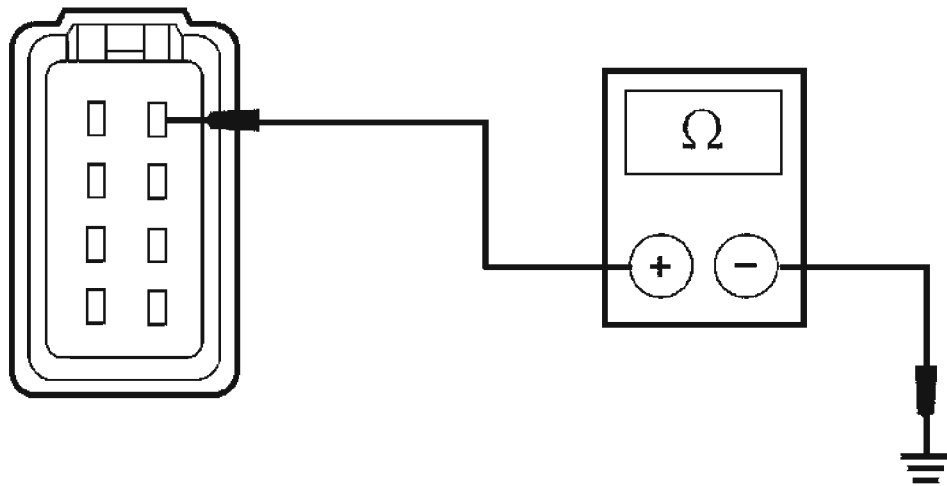
Yes : Go to A9.

No : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

A8 CHECK CIRCUIT 33-AA59 (YE/BK) FOR A SHORT TO GROUND

- Measure the resistance between the inoperative door lock actuator and ground while pressing the door lock control switch UNLOCK button and when the door lock control switch is released.
 - Measure the resistance between the driver door lock actuator C525 pin 1, circuit 33-AA59A (YE/BK), harness side and ground.
 - Measure the resistance between the passenger door lock actuator C609 pin 1, circuit 33-AA59B (YE/BK), harness side and ground.
 - Measure the resistance between the driver side rear door lock actuator C705 pin 1, circuit 33-AA59 (YE/BK), harness side and ground.
 - Measure the resistance between the passenger side rear door lock actuator C805 pin 1, circuit 33-AA59 (YE/BK), harness side and ground.



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Fig. 8: Checking Circuit 33-AA59 (YE/BK) For A Short To Ground
Courtesy of FORD MOTOR CO.

- **Are the resistances less than 5 ohms when UNLOCK is pressed, and greater than 10,000 ohms when UNLOCK is released?**

Yes : INSTALL a new door latch. REFER to **FRONT DOOR LATCH** or **REAR DOOR LATCH**. CLEAR the DTCs. REPEAT the self-test.

No : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

A9 CHECK FOR CORRECT GEM OPERATION

- Disconnect all GEM connectors.
- Check for:
 - Corrosion
 - Pushed-out pins
- Connect all GEM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes : INSTALL a new GEM. Refer to **MULTIFUNCTION ELECTRONIC MODULES** . CLEAR the DTCs. REPEAT the self-test.

No : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-

test.

PINPOINT TEST B: THE LIFTGATE IS INOPERATIVE - 3 DOOR**B1 CHECK THE GENERIC ELECTRONIC MODULE (GEM) DIAGNOSTIC TROUBLE CODES (DTCs)**

- Make sure the alarm is disabled.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: refer to the results from the previous GEM self-test.
- **Are any DTCs recorded?**
Yes : If DTC 1551 and an inoperative interior liftgate release switch, Go to B9.

If DTC 1553, Go to B7.

If DTC 1554, Go to B8.

No : Go to B2.

B2 CHECK THE LIFTGATE ACTUATOR OPERATION

- Enter the following diagnostic mode on the diagnostic tool: Activate the GEM liftgate actuator active command.
- **Does the liftgate operate correctly?**
Yes : Go to B3.
No : Go to B5.

B3 CHECK THE LIFTGATE RELEASE SWITCH

- Enter the following diagnostic mode on the diagnostic tool: Monitor the GEM liftgate release switch PID while pressing and releasing the liftgate release switch.
- **Does the liftgate release switch PID agree with the liftgate release switch status?**
Yes : Go to B4.
No : Go to B9.

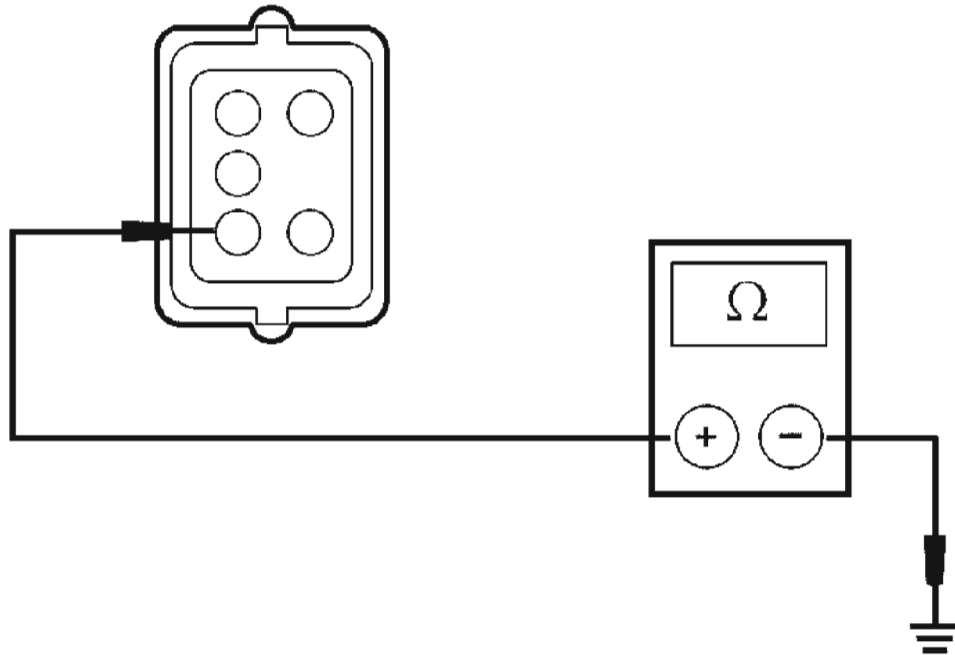
B4 CHECK THE GEM VEHICLE SPEED SIGNAL PID

- Monitor the GEM vehicle speed signal PID while driving the vehicle.
- **Does the GEM vehicle speed signal PID agree with the vehicle speed?**
Yes : Go to B13.
No : Go to B12.

B5 CHECK CIRCUIT 31-GL20 (BK) FOR AN OPEN

- Key in OFF position.
- Disconnect: Liftgate Latch Assembly C4223.

- Measure the resistance between the liftgate latch C4223 pin 3, circuit 31-GL20 (BK), harness side and ground.



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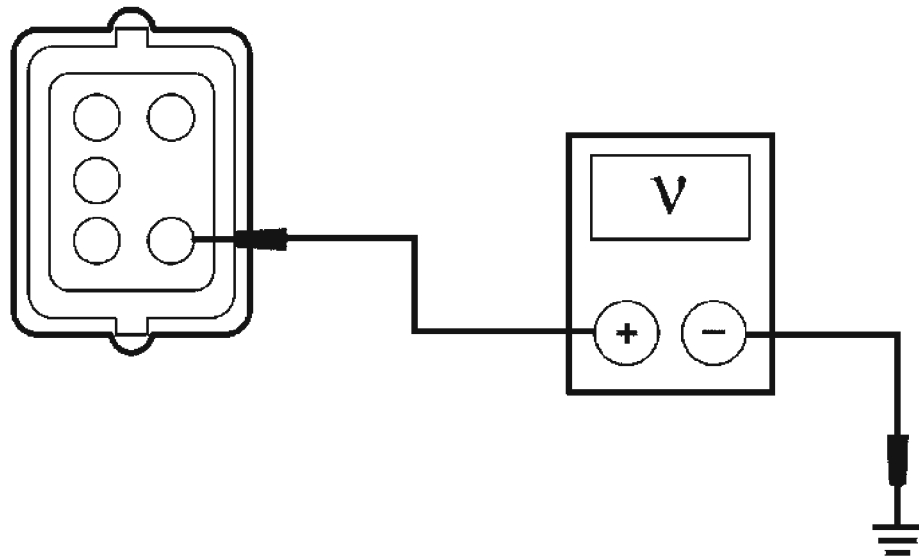
Fig. 9: Measuring Resistance Between Liftgate Latch C4223 Pin 3, Circuit 31-GL20 (BK), Harness Side And Ground
Courtesy of FORD MOTOR CO.

- **Is the resistance less than 5 ohms?**
Yes : Go to B6.
No : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

B6 CHECK FOR VOLTAGE TO THE LIFTGATE LATCH

- Key in ON position.
- Measure the voltage between the liftgate latch C4223 pin 1, circuit 32-AA27A (WH/GN), harness side and ground while pressing and releasing the liftgate release switch.



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Fig. 10: Checking For Voltage To Liftgate Latch
Courtesy of FORD MOTOR CO.

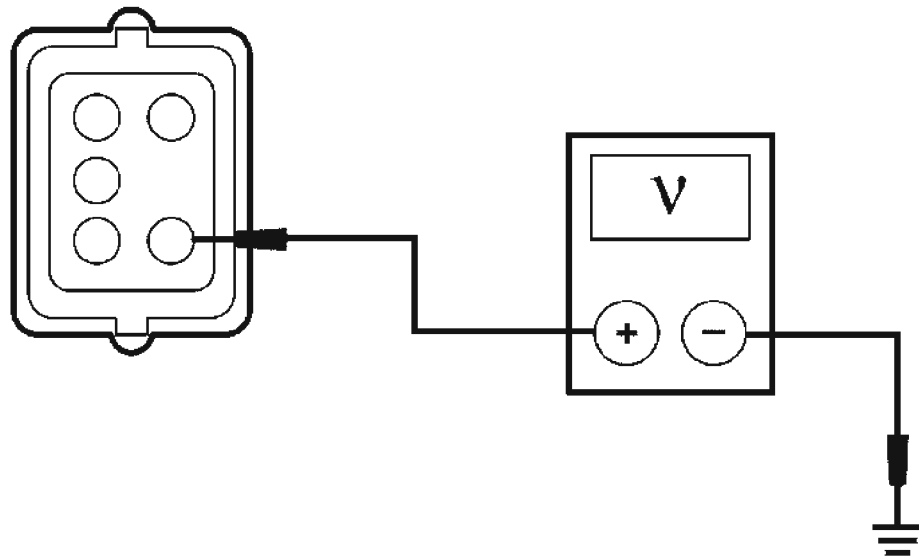
- Is the voltage greater than 10 volts with the liftgate release switch pressed and 0 volts with the liftgate release switch released?

Yes : INSTALL a new liftgate latch. REFER to **LIFTGATE LATCH**. CLEAR the DTCs. REPEAT the self-test.

No : Go to B7.

B7 CHECK THE LIFTGATE LATCH CIRCUIT FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Disconnect: GEM C201b.
- Key in ON position.
- Measure the voltage between the liftgate latch C4223 pin 1, circuit 32-AA27A (WH/GN), harness side and ground.



A0065261

Fig. 11: Measuring Voltage Between Liftgate Latch C4223 Pin 1, Circuit 32-AA27A (WH/GN), Harness Side And Ground
Courtesy of FORD MOTOR CO.

- **Is any voltage present?**

Yes : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

No : Go to B8.

B8 CHECK CIRCUIT 32-AA27 (WH/GN) FOR AN OPEN OR A SHORT TO GROUND

- Key in OFF position.
- Measure the resistance between the liftgate latch C4223 pin 1, circuit 32-AA27A (WH/GN), harness side and the GEM C201b pin 2, circuit 32-AA27 (WH/GN), harness side; and between the liftgate latch C4223 pin 1, circuit 32-AA27A (WH/GN), harness side and ground.

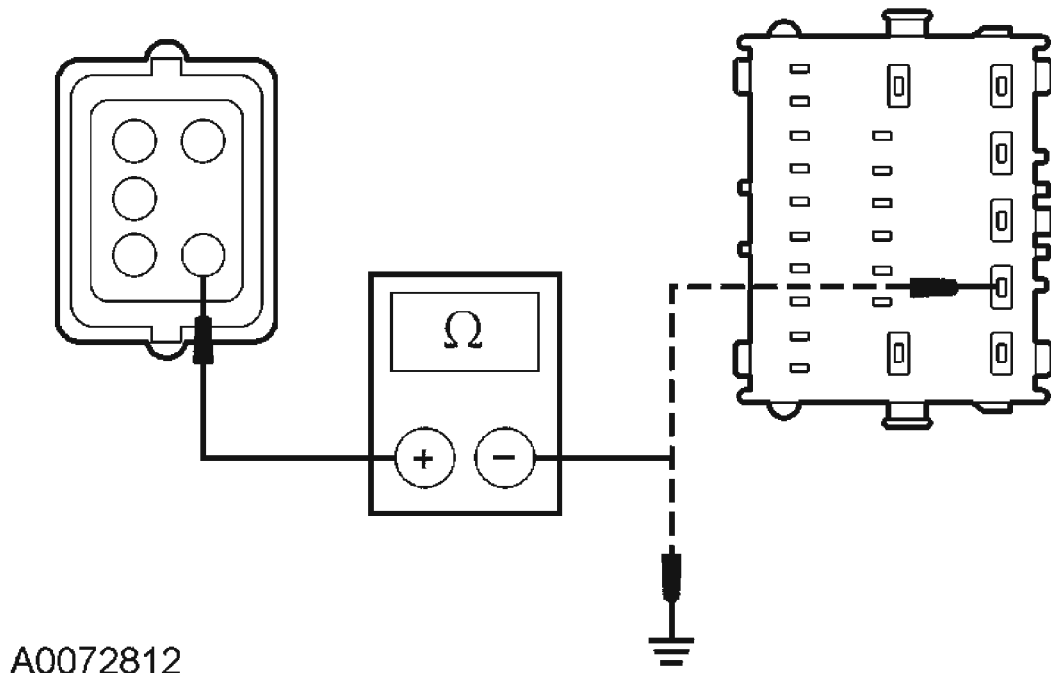


Fig. 12: Checking Circuit 32-AA27 (WH/GN) For An Open Or A Short To Ground

Courtesy of FORD MOTOR CO.

- Is the resistance less than 5 ohms between the GEM connector and the liftgate latch connector, and greater than 10,000 ohms between the liftgate latch connector and ground?

Yes : Go to B13.

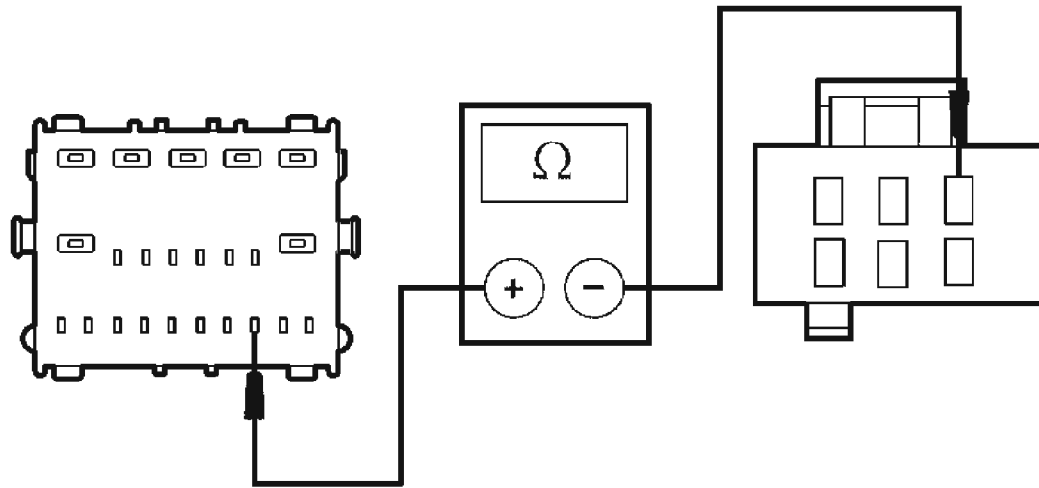
No :

REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

B9 CHECK LIFTGATE RELEASE SWITCH CIRCUIT FOR AN OPEN

- Key in OFF position.
- Disconnect: Liftgate Release Switch C2269.
- Measure the resistance between the GEM C201e pin 16, circuit 31S-AA30 (BK/YE), harness side and the liftgate release switch C2269 pin 3, circuit 31S-AA30 (BK/YE), harness side.



A0075045

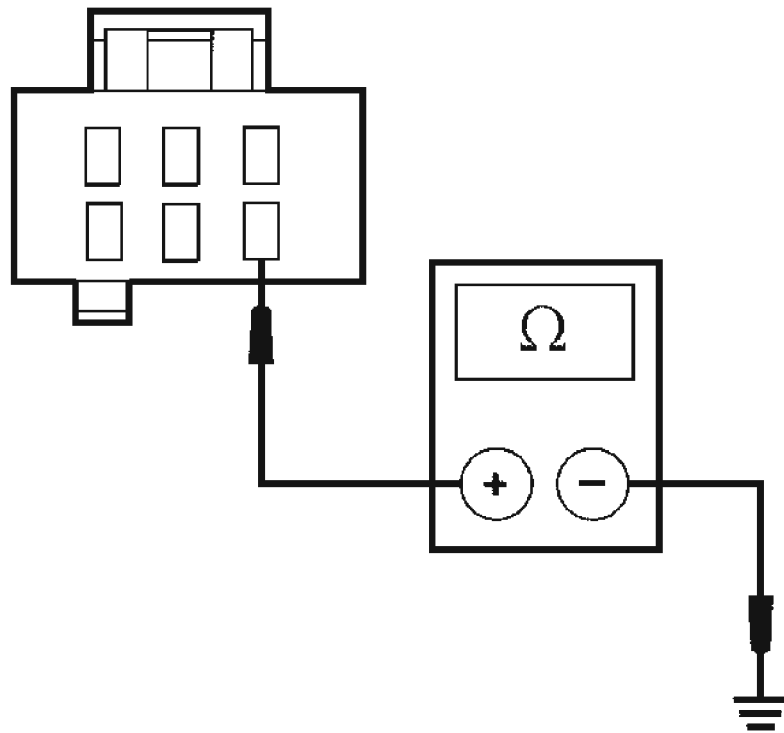
Fig. 13: Checking Liftgate Release Switch Circuit For An Open
Courtesy of FORD MOTOR CO.

- **Is the resistance less than 5 ohms?**
Yes : Go to B10.
No : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

B10 CHECK CIRCUIT 31-AA30 (BK) FOR AN OPEN

- Measure the resistance between the liftgate/luggage compartment lid release switch C2269 pin 6, circuit 31-AA30 (BK), harness side and ground.



A0075043

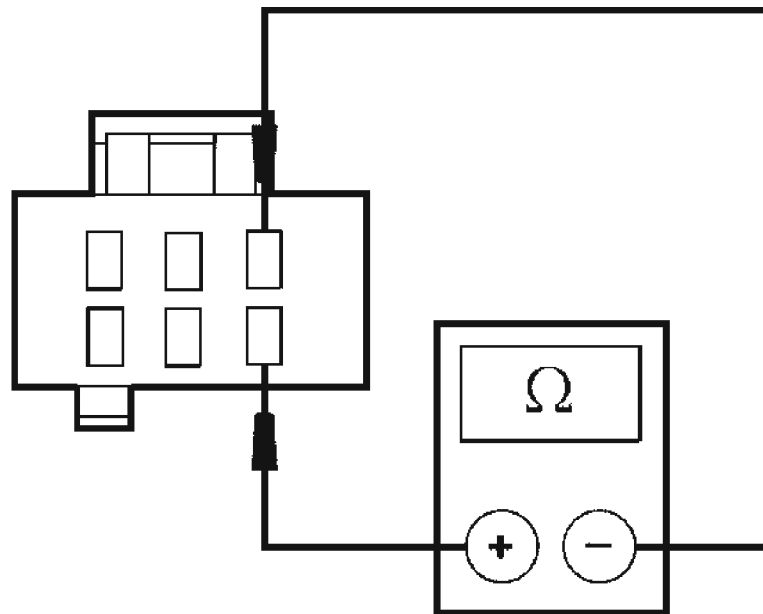
Fig. 14: Checking Circuit 31-AA30 (BK) For An Open
Courtesy of FORD MOTOR CO.

- **Is the resistance less than 5 ohms?**
Yes : Go to B11.
No : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

B11 CHECK THE LIFTGATE RELEASE SWITCH

- Measure the resistance between the liftgate release switch C2269 pin 6, component side and the liftgate release switch C2269 pin 3, component side while pressing the liftgate release switch.



A0075044

Fig. 15: Checking Liftgate Release Switch
Courtesy of FORD MOTOR CO.

- Is the resistance less than 5 ohms while pressing the liftgate release switch and greater than 10,000 ohms when released?

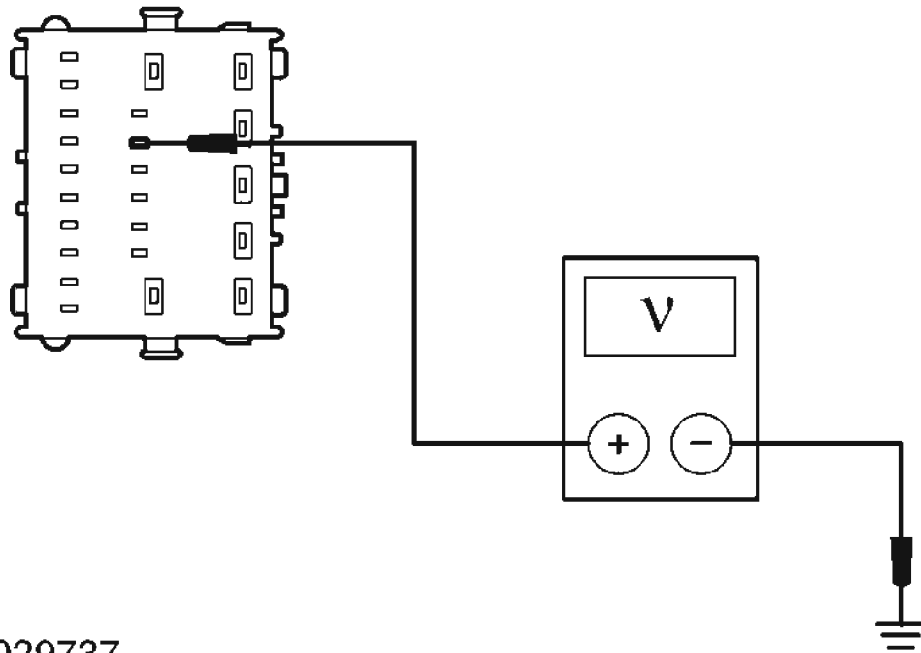
Yes : Go to B12.

No : INSTALL a new liftgate release switch.

CLEAR the DTCs. REPEAT the self-test.

B12 CHECK CIRCUIT 15S-AA17 (GN/WH) FROM THE INSTRUMENT CLUSTER FOR VOLTAGE

- Key in OFF position.
- Disconnect: GEM C201d.
- Key in ON position.
- Measure the voltage between the GEM C201d pin 12, circuit 15S-AA17 (GN/WH), harness side and ground.



VUE0029737

Fig. 16: Measuring Voltage Between GEM C201d Pin 12, Circuit 15S-AA17 (GN/WH), Harness Side And Ground
 Courtesy of FORD MOTOR CO.

- **Is the voltage greater than 10 volts?**
 Yes : Go to B13.
 No : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

B13 CHECK FOR CORRECT GEM OPERATION

- Disconnect all GEM connectors.
- Check for:
 - Corrosion
 - Pushed-out pins
- Connect all GEM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes : INSTALL a new GEM. Refer to **MULTIFUNCTION ELECTRONIC MODULES** . CLEAR the DTCs. REPEAT the self-test.

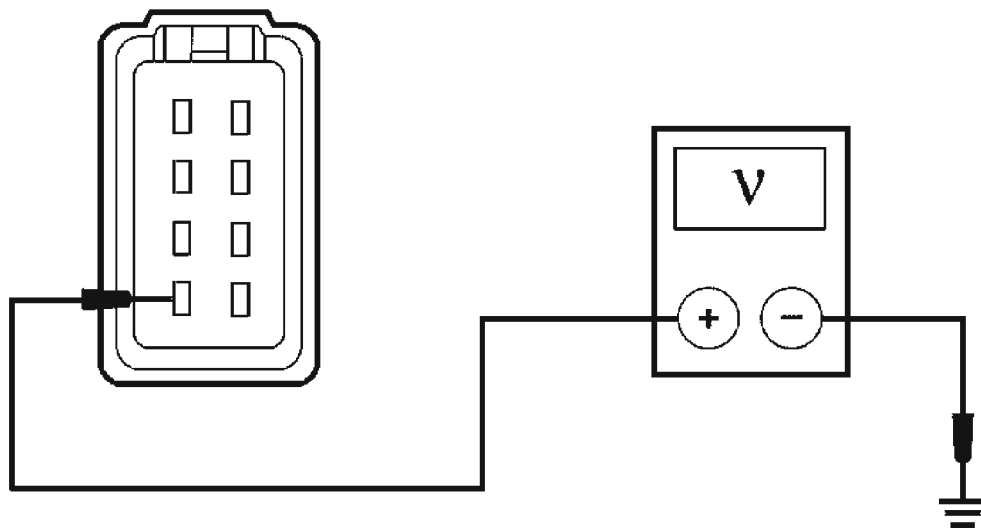
No : The system is operating correctly at this time. The concern may have been

caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST C: ALL DOOR LOCKS ARE INOPERATIVE FROM ONE SWITCH - DOOR LOCK CYLINDER

**C1 CHECK FOR VOLTAGE TO THE DOOR LOCK CYLINDER SWITCH
CIRCUIT 31S-AA63A (BK/OG)**

- Disconnect: Driver Door Latch C525.
- Measure the voltage between the driver side door lock actuator C525 pin 8, circuit 31S-AA63A (BK/OG), harness side and ground.



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Fig. 17: Checking For Voltage To Door Lock Cylinder Switch Circuit 31S-AA63A (BK/OG)

Courtesy of FORD MOTOR CO.

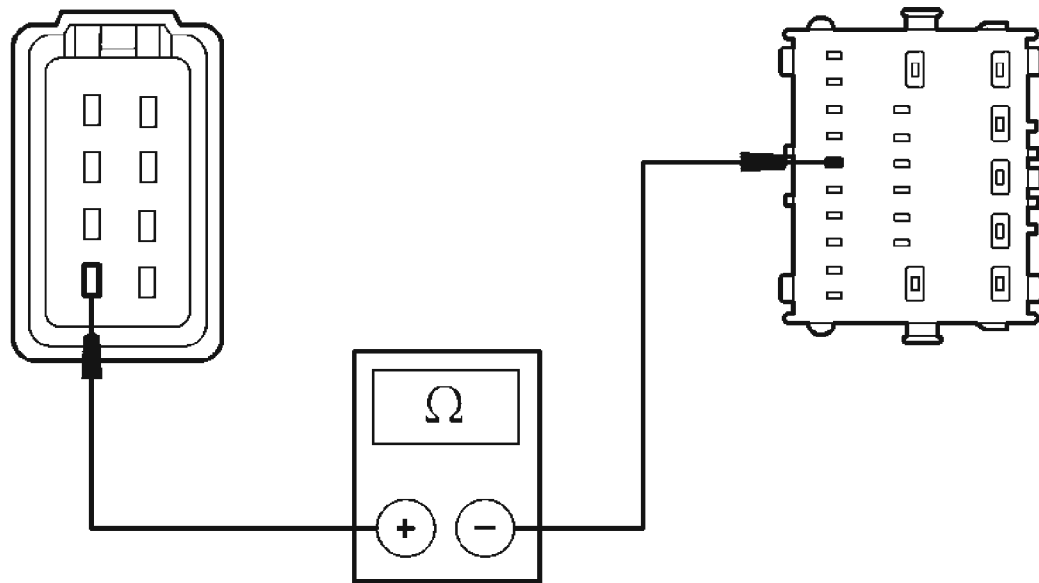
- **Is the voltage greater than 10 volts?**

Yes : Go to C3.

No : Go to C2.

C2 CHECK CIRCUIT 31S-AA63 (BK/OG) FOR AN OPEN

- Disconnect: GEM C201a.
- Measure the resistance between the driver door latch C525 pin 8, circuit 31S-AA63A (BK/OG), harness side and GEM C201a pin 19, circuit 31S-AA63 (BK/OG), harness side.



VUE0029740

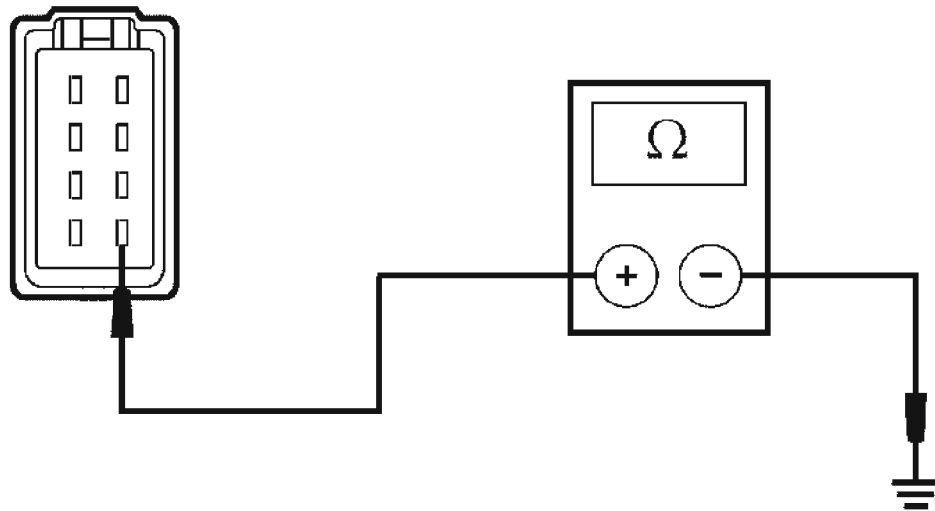
Fig. 18: Checking Circuit 31S-AA63 (BK/OG) For An Open
Courtesy of FORD MOTOR CO.

- **Is the resistance less than 5 ohms?**
Yes : Go to C6.
No : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

C3 CHECK CIRCUIT 31-AA64A (BK/GN) FOR VOLTAGE

- Measure the voltage between the driver door latch C525 pin 4, circuit 31S-AA64A (BK/GN), harness side and ground.



A0093907

Fig. 19: Measuring Voltage Between Driver Door Latch C525 Pin 4, Circuit 31S-AA64A (BK/GN), Harness Side And Ground
Courtesy of FORD MOTOR CO.

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

Yes : Go to C5.

No : Go to C4.

C4 CHECK CIRCUIT 31-AA64A (BK/GN) FOR AN OPEN

- Disconnect: GEM C201b.
- Measure the resistance between the driver door latch C525 pin 4, circuit 31S-AA64A (BK/GN), harness side and GEM C201b pin 16, circuit 31S-AA64 (BK/GN), harness side.

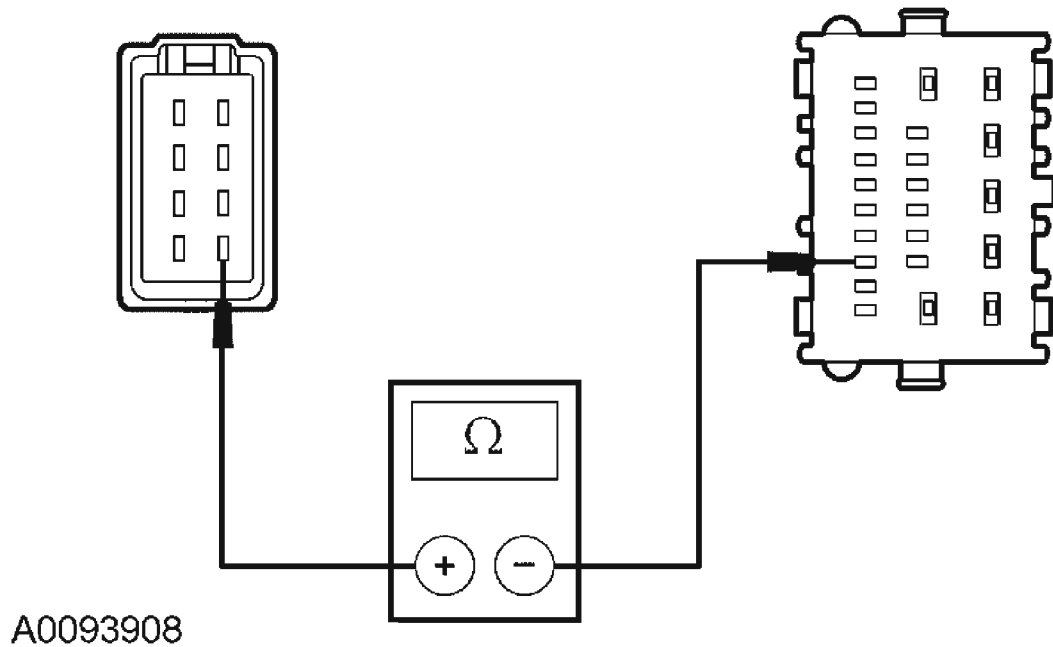


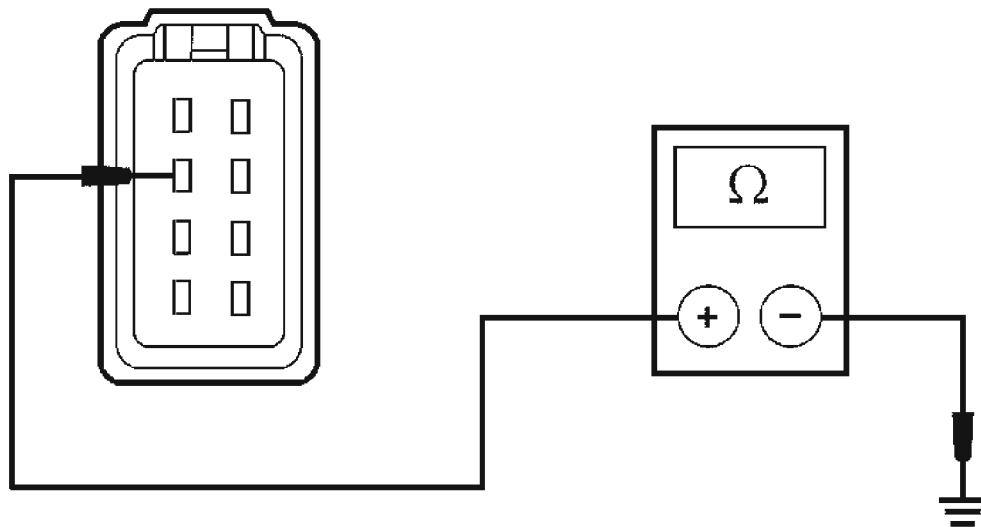
Fig. 20: Checking Circuit 31-AA64A (BK/GN) For An Open
Courtesy of FORD MOTOR CO.

- **Is the resistance less than 5 ohms?**
Yes : Go to C6.
No : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

C5 CHECK CIRCUIT 31-AA58 (BK) FOR AN OPEN

- Measure the resistance between the driver door latch C525 pin 6, circuit 31-AA58A (BK), harness side and ground.



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Fig. 21: Measuring Resistance Between Driver Door Latch C525 Pin 6, Circuit 31-AA58A (BK), Harness Side And Ground
 Courtesy of FORD MOTOR CO.

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

Yes : INSTALL a new front door latch. REFER to **FRONT DOOR LATCH**. CLEAR the DTCs. REPEAT the self-test.

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

C6 CHECK FOR CORRECT GEM OPERATION

- Disconnect all GEM connectors.
- Check for:
 - Corrosion
 - Pushed-out pins
- Connect all GEM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes : INSTALL a new GEM. Refer to **MULTIFUNCTION ELECTRONIC MODULES** . CLEAR the DTCs. REPEAT the self-test.

No : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

D1 CHECK THE SWITCH OPERATION IN THE LOCK AND UNLOCK POSITIONS

- Press lock and unlock on the door lock control switch while observing the results.
- **Are both the lock and unlock positions inoperative?**

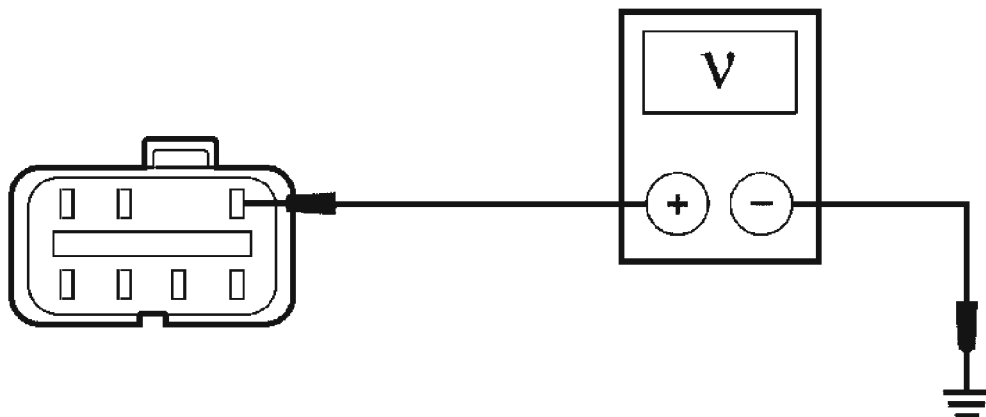
Yes : Go to D4.

No : If inoperative for lock, Go to D2.

If inoperative for unlock, Go to D3.

D2 CHECK CIRCUIT 31S-AA85 (BK/RD) FOR VOLTAGE

- Disconnect: Inoperative Driver Door Lock Control Switch C505 or Inoperative Passenger Door Lock Control Switch C605.
- Measure the voltage between the inoperative door lock control switch connector and ground.
 - Measure the voltage between the driver door lock control switch C505 pin 7, circuit 31S-AA85A (BK/RD), harness side and ground.
 - Measure the voltage between the passenger door lock control switch C605 pin 7, circuit 31S-AA85B (BK/RD), harness side and ground.



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Fig. 22: Measuring Voltage Between Passenger Door Lock Control Switch C605 Pin 7, Circuit 31S-AA85B (BK/RD) And Ground
Courtesy of FORD MOTOR CO.

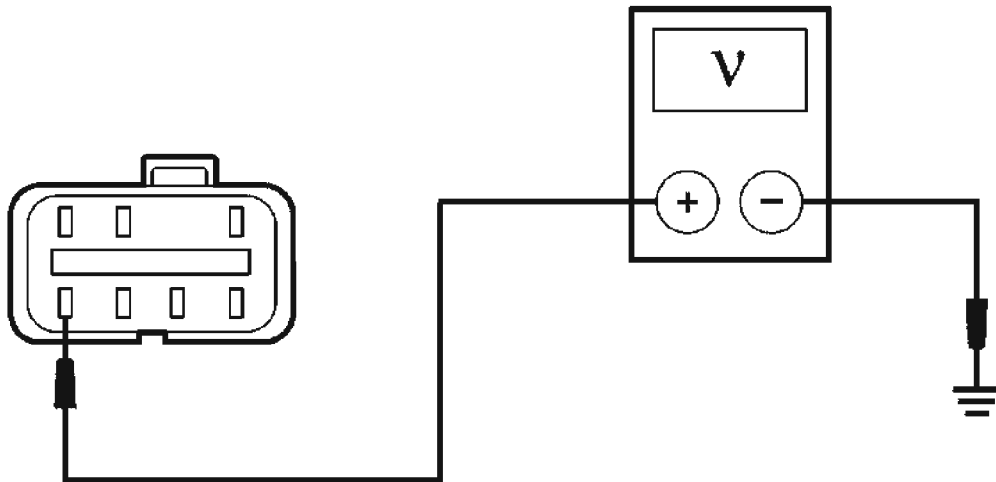
- Is the voltage greater than 10 volts?

Yes : INSTALL a new door lock control switch. CLEAR the DTCs. REPEAT the self-test.

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

D3 CHECK CIRCUIT 31S-AA39 (BK/YE) FOR VOLTAGE

- Disconnect: Inoperative Driver Door Lock Control Switch C505 or Inoperative Passenger Door Lock Control Switch C605.
- Measure the voltage between the inoperative door lock control switch connector and ground.
 - Measure the voltage between the driver door lock control switch C505 pin 1, circuit 31S-AA39A (BK/YE), harness side and ground.
 - Measure the voltage between the passenger door lock control switch C605 pin 1, circuit 31S-AA39B (BK/YE), harness side and ground.



A0093910

Fig. 23: Measuring Voltage Between Passenger Door Lock Control Switch C605 Pin 1, Circuit 31S-AA39B (BK/YE) And Ground
Courtesy of FORD MOTOR CO.

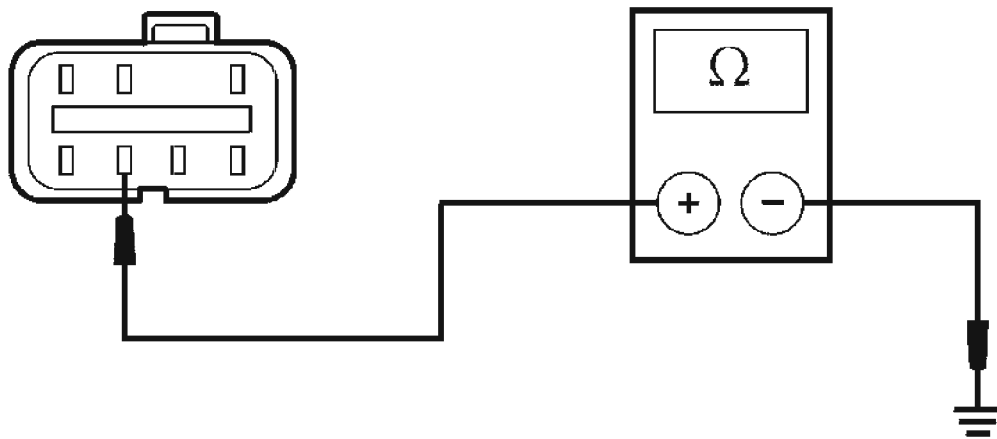
- Is the voltage greater than 10 volts?

Yes : INSTALL a new door lock control switch. CLEAR the DTCs. REPEAT the self-test.

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

D4 CHECK GROUND TO THE DOOR LOCK CONTROL SWITCH

- Disconnect: Inoperative Driver Door Lock Control Switch C505 or Inoperative Passenger Door Lock Control Switch C605.
- Measure the resistance between the inoperative door lock control switch connector and ground.
 - Measure the resistance between the driver door lock control switch C505 pin 2, circuit 31-AA34 (BK), harness side and ground.
 - Measure the resistance between the passenger door lock control switch C605 pin 2, circuit 31-AA39 (BK), harness side and ground.



A0093911

Fig. 24: Measuring Resistance Between Passenger Door Lock Control Switch C605 Pin 2, Circuit 31-AA39 (BK) And Ground
Courtesy of FORD MOTOR CO.

- **Is the resistance less than 5 ohms?**
 - Yes :** INSTALL a new door lock control switch. CLEAR the DTCs. REPEAT the self-test.
 - No :** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST E: THE DOORS DO NOT LOCK/UNLOCK USING THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER

NOTE: All RKE transmitters must be present to begin diagnosis of the RKE system.

NOTE: Aftermarket or dealer-installed systems may adversely effect the

RKE system operation. These systems should be disconnected before diagnosing any RKE concerns.

E1 CHECK FOR THE CORRECT RKE TRANSMITTERS

- Check that the correct RKE transmitters are used with the vehicle.
- Make sure the RKE transmitters are those provided with the OEM system and not from an aftermarket system, or a dealer-installed system that may have been installed on the vehicle.

- **Are all the correct RKE transmitters present?**

Yes : Go to E2.

No : The system cannot be tested without the correct RKE transmitters. INFORM the customer that all the correct RKE transmitters need to be present to proceed with diagnosis of the system.

E2 CHECK THE OPERATION OF THE RKE TRANSMITTER WITH THE KEY IN THE OFF POSITION

- Key in OFF position.
- Check the operation of the RKE transmitter.
- **Does the system operate correctly now?**

Yes : The system is operating as designed. INFORM the customer of the correct vehicle operation of the RKE transmitters only working with the key in the OFF position.

No : Go to E3.

E3 CHECK THE POWER DOOR LOCK SYSTEM FOR CORRECT OPERATION

- Verify the door lock/unlock operation by actuating the driver door lock control switch.
- **Do all the doors lock and unlock correctly?**

Yes : Go to E4.

No : To diagnose the inoperative door locks, Go to **PINPOINT TEST A**.

E4 CHECK IF THE GENERIC ELECTRONIC MODULE (GEM) EXTERNAL ANTENNA IS CONNECTED

- Verify that the GEM external antenna is connected correctly and is routed on the outside of the wire bundle.
- **Is the GEM external antenna connected correctly?**

Yes : Go to E5.

No : CONNECT the GEM external antenna correctly. CLEAR the DTCs. TEST the system for normal operation.

E5 CHECK FOR COMPLETE FUNCTIONALITY OF THE RKE TRANSMITTER(S)

- Check all the RKE transmitter buttons for correct operation.
- **Does the panic button operate correctly?**

Yes : REPLACE the inoperative RKE transmitter. REPROGRAM all RKE transmitters. REFER to **REMOTE TRANSMITTER PROGRAMMING**. INFORM the customer any RKE transmitters not present will need to be reprogrammed. CLEAR the DTCs. TEST the system for normal operation.

No : Go to E6.

E6 MAKE SURE THE RKE TRANSMITTER SIGNAL IS BEING RECEIVED

- Connect the diagnostic tool.
- Enter the following diagnostic mode on the diagnostic tool: Enter the GEM function tests, transmitter test or program transmitter. Monitor the RKE transmitter identification code (TIC) through the diagnostic tool menus.

NOTE: **The vehicle must be electronically unlocked prior to using any diagnostic tools (through the RKE transmitter or door lock control switch).**

- Verify the RKE transmitter signal is being received. Using a diagnostic tool, press a button on the RKE transmitter while observing the diagnostic tool.
- **Does the TIC show up on the diagnostic tool screen when a button is pressed?**

Yes : Go to E7.

No : Go to E8.

E7 CHECK IF THE RKE TRANSMITTERS ARE PROGRAMMED

- Enter the following diagnostic mode on the diagnostic tool: Enter the GEM function tests, transmitter test or program transmitter.

Monitor the RKE transmitter TIC/DATA through the diagnostic tool menus.

- Verify the RKE transmitters are programmed to the vehicle.
- **Does the TIC displayed under current RKE transmitter match any of the TICs stored in memory?**

Yes : Go to E9.

No : PROGRAM all the RKE transmitters.

REFER to **REMOTE TRANSMITTER PROGRAMMING**. INFORM the customer that any RKE transmitters not present need to be reprogrammed. CLEAR the DTCs. TEST the system for normal operation.

E8 CHECK THE RKE TRANSMITTER BATTERY

- Using a thin coin, open the RKE transmitter.

- Do not clean off any grease from the battery terminals on the back surface of the circuit board.
- Verify the correct battery is used (CR2032).
- Remove the RKE transmitter battery and measure the voltage.
- **Is the voltage greater than 2.5 volts?**

Yes : Go to E10.

No : INSTALL a new battery (be sure the battery is seated correctly). DO NOT reprogram the RKE transmitters (faulty or dead batteries do not erase TICs from memory). CLEAR the DTCs. TEST the system for normal operation.

E9 CHECK IF THE RKE TRANSMITTER IS OUT OF SYNCHRONIZATION WITH THE GEM

- The vehicle must be electronically unlocked prior to using any diagnostic tools (through the RKE transmitter or the door lock control switch).
- Retrieve continuous DTCs through the diagnostic tool.
- **Is continuous DTC B2425 stored in the GEM?**

Yes : To diagnose the RKE transmitter out of synchronization, Go to **PINPOINT TEST H**.

No : Go to E10.

E10 CHECK FOR NORMAL OPERATION WITH A KNOWN GOOD RKE TRANSMITTER

- Enter the following diagnostic mode on the diagnostic tool: Enter the GEM function tests, transmitter test or program transmitter.

Monitor the RKE transmitter TIC/DATA through the diagnostic tool menus.

- Use the customer's second RKE transmitter or a known good RKE transmitter that is correct for the vehicle and verify the RKE transmitter signal is being received by the GEM.
- **Does the TIC show up on the diagnostic tool when a button is pressed on the RKE transmitter?**

Yes : REPLACE the inoperative RKE transmitter. PROGRAM all RKE transmitter(s). REFER to **REMOTE TRANSMITTER PROGRAMMING**. INFORM the customer any RKE transmitters not present need to be reprogrammed. CLEAR the DTCs. TEST the system for normal operation.

No : Go to E11.

E11 CHECK THE GEM FOR CORRECT OPERATION

- Disconnect all GEM connectors.
- Check for:
 - Corrosion

- Pushed-out pins
- Connect all GEM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes : INSTALL a new GEM. Refer to **MULTIFUNCTION ELECTRONIC MODULES** . REPROGRAM all RKE transmitters. REFER to **REMOTE TRANSMITTER PROGRAMMING**. INFORM the customer any RKE transmitters not present will need to be reprogrammed. CLEAR the DTCs. REPEAT the self-test.

No : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST F: THE LIFTGATE/LUGGAGE COMPARTMENT LID RELEASE IS INOPERATIVE USING THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER

F1 CHECK THE OPERATION OF THE RKE TRANSMITTER WITH THE KEY IN THE OFF POSITION

- Key in OFF position.
- Check the operation of the RKE transmitter.
- **Are all the RKE transmitter buttons inoperative?**

Yes : To diagnose the inoperative RKE transmitter, Go to **PINPOINT TEST E**.

No : Go to F2.

F2 CHECK THE NUMBER OF TICs

- Enter the GEM function test, transmitter test or program transmitter.
- Access PROGRAM TIC and select the four memory locations.
- Record the alpha-numeric codes.
- **Are there two TICs stored at the TIC 1, TIC 2, TIC 3, and TIC 4 positions?**

Yes : Go to F3.

No : PROGRAM all the RKE transmitters. REFER to **REMOTE TRANSMITTER PROGRAMMING**. CLEAR the DTCs. REPEAT the self-test.

F3 CHECK THE LAST TIC AND LAST DATA RECEIVED

- From the diagnostic tool FUNCTION TEST, monitor the GEM LAST TIC/DATA RECEIVED while pressing and releasing the RKE transmitter liftgate button.
- **Does an eight digit alpha-numeric code appear for the LAST TIC RECEIVED and does the LAST DATA RECEIVED match the button press?**

Yes : Go to F5.

No : Go to F4.

F4 CHECK THE TIC AND DATA FOR THE SECOND TRANSMITTER

- From the diagnostic tool FUNCTION TEST, monitor the transmitter TIC/DATA while pressing and releasing the RKE transmitter liftgate button of the second transmitter.
- **Does an eight digit alpha-numeric code appear for the LAST TIC RECEIVED and does the LAST DATA RECEIVED match the button press?**
Yes : CHECK the battery of the RKE transmitter used in Step F2. If the battery is OK, a new RKE transmitter is necessary. PROGRAM the new RKE transmitter. REFER to REMOTE TRANSMITTER PROGRAMMING. CLEAR the DTCs. REPEAT the self-test.
No : Go to F5.

F5 CHECK THE TIC RECEIVED AGAINST THE LAST RECORDED TICS

- From the diagnostic tool FUNCTION TEST, monitor the Transmitter TIC/DATA using the recorded alpha-numeric codes from Step F2.
- **Is the TIC RECEIVED one of the TICs RECORDED in F2?**
Yes : Go to F6.
No : PROGRAM the RKE transmitter. REFER to REMOTE TRANSMITTER PROGRAMMING. CLEAR the DTCs. REPEAT the self-test.

F6 CHECK THE TRANSMITTER TIC AND DATA

- From the diagnostic tool FUNCTION TEST, monitor the Transmitter TIC/DATA.
- **Does each button pressed on the transmitter create the expected LAST DATA RECEIVED output?**
Yes : Go to F7.
No : PROGRAM the RKE transmitter. REFER to REMOTE TRANSMITTER PROGRAMMING. CLEAR the DTCs. REPEAT the self-test.

F7 CHECK THE GEM FOR CORRECT OPERATION

- Disconnect all GEM connectors.
- Check for:
 - Corrosion
 - Pushed-out pins
- Connect all GEM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**
Yes : INSTALL a new GEM. Refer to MULTIFUNCTION ELECTRONIC MODULES . REPROGRAM all RKE transmitters. REFER to REMOTE TRANSMITTER PROGRAMMING. INFORM the customer any RKE transmitters not present will need to be reprogrammed. CLEAR the DTCs. REPEAT the self-test.

No : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST G: PANIC FEATURE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY**G1 CHECK OPERATION FROM REMOTE KEYLESS ENTRY (RKE) TRANSMITTER**

- Press the PANIC button on the RKE transmitter.
- **Does the panic feature function correctly?**

Yes : PROGRAM the unprogrammed RKE transmitter. REFER to **REMOTE TRANSMITTER PROGRAMMING**. CLEAR the DTCs. REPEAT the self-test.

No ; If horn does not sound and lights do not flash, Go to G2.

If horn sounds but lights do not flash, refer to **EXTERIOR LIGHTING** .

If lights flash, but horn does not sound on vehicles without anti-theft, Go to G3.

If lights flash but horn does not sound on vehicle equipped with anti-theft, refer to **ANTI-THEFT - PERIMETER** or **ANTI-THEFT - PATS** .

G2 VERIFY BOTH TRANSMITTERS ARE INOPERATIVE

- Reprogram both RKE transmitters. Refer to **REMOTE TRANSMITTER PROGRAMMING**.
- Press the PANIC button on either of the two RKE transmitters.
- **Does the panic feature function correctly?**
Yes : CLEAR the DTCs. REPEAT the self-test.
No : Go to G4.

G3 CHECK FOR CORRECT HORN OPERATION

- Activate the horn using the horn switch on the steering wheel.
- **Does the horn sound?**
Yes : Go to G4.
No : refer to **HORN** .

G4 CHECK THE GEM FOR CORRECT OPERATION

- Disconnect all GEM connectors.
- Check for:
 - Corrosion
 - Pushed-out pins
- Connect all GEM connectors and make sure they seat correctly.

- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes : INSTALL a new GEM. Refer to **MULTIFUNCTION ELECTRONIC MODULES** . REPROGRAM all RKE transmitters. REFER to **REMOTE TRANSMITTER PROGRAMMING**. INFORM the customer any RKE transmitters not present will need to be reprogrammed. CLEAR the DTCs. REPEAT the self-test.

No : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST H: THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER IS OUT OF SYNCHRONIZATION

NOTE: All RKE transmitters must be present to begin diagnosis of the RKE system.

H1 RESYNCHRONIZE THE INOPERATIVE RKE TRANSMITTER

- Key in OFF position.
- Press any button on the inoperative RKE transmitter four times consecutively within 30 seconds.
- **Does the RKE transmitter operate correctly now?**
Yes : The system is OK. CLEAR the DTCs. TEST the system for normal operation.
No : Go to H2.

H2 CHECK FOR A SECOND RKE TRANSMITTER

- Check for another RKE transmitter that operates with the vehicle.
- **Is there another RKE transmitter that operates with the vehicle?**
Yes : Go to H3.
No : Go to H4.

H3 RESYNCHRONIZE THE INOPERATIVE RKE TRANSMITTER USING THE SECOND RKE TRANSMITTER

- Key in OFF position.
- Press any button on the operational RKE transmitter.
- Within 30 seconds, press a button on the inoperative RKE transmitter.
- Check the inoperative RKE transmitter for correct operation.
- **Does the inoperative RKE transmitter operate now?**
Yes : The system is OK. CLEAR the DTCs. TEST the system for normal operation.
No : Go to H4.

H4 PROGRAM THE INOPERATIVE RKE TRANSMITTER OR ALL THE RKE TRANSMITTERS

- Reprogram the inoperative RKE transmitter individually using a diagnostic tool or reprogram all RKE transmitters using the manual key cycle method. REFER to **REMOTE TRANSMITTER PROGRAMMING**.

- **Does the inoperative RKE transmitter operate now?**

Yes : The system is OK. INFORM the customer that any RKE transmitters not present will need to be reprogrammed. CLEAR the DTCs. TEST the system for normal operation.

No : To diagnose the inoperative RKE transmitter, Go to **PINPOINT TEST E**.

PINPOINT TEST I: THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER HAS POOR RANGE PERFORMANCE

NOTE: **All RKE transmitters must be present to begin diagnosis of the RKE system.**

NOTE: **Aftermarket or dealer-installed systems may adversely effect the RKE system operation. These systems should be disconnected before diagnosing any RKE concerns.**

I1 CHECK FOR THE CORRECT RKE TRANSMITTERS

- Check that the correct RKE transmitters are used with the vehicle.
- Make sure the RKE transmitters are those provided with the OEM system and not from an aftermarket system, or a dealer-installed system, that may have been installed on the vehicle.
- **Are all the correct RKE transmitters present?**

Yes : Go to I2.

No : The system cannot be tested without the correct RKE transmitters. INFORM the customer that all the correct RKE transmitters need to be present to proceed with diagnosis of the system.

I2 CHECK ALL RKE TRANSMITTERS FOR POOR RANGE PERFORMANCE

NOTE: **The 3 m (10 ft) measurement of range is not the standard but is a guideline that clearly indicates a vehicle is experiencing poor range performance.**

- Check all RKE transmitters for poor range performance (less than 3 m or 10 ft).
- **Do all RKE transmitters experience poor range?**

Yes : Go to I3.

No : REPLACE the inoperative RKE transmitter and REPROGRAM all RKE

transmitters, REFER to **REMOTE TRANSMITTER PROGRAMMING**. INFORM the customer any RKE transmitters not present will need to be reprogrammed. CLEAR the DTCs. TEST the system for normal operation.

I3 CHECK THE LOCATION OF THE VEHICLE AND THE APPROACH ANGLES AROUND THE VEHICLE

- Make sure the poor performance is consistent in nature and is not from one approaching angle.
- The RKE transmitter range performance may be degraded in certain locations. For example, if the vehicle is within 0.5 miles (0.8 km) of high-power devices or radio/TV towers, the operating distance of the transmitters may be reduced.

• Is the poor range performance consistent around the vehicle?

Yes : Go to I4.

No : The system is operating correctly at this time. CLEAR the DTCs. TEST the system for normal operation.

I4 CHECK IF THE GENERIC ELECTRONIC MODULE (GEM) EXTERNAL ANTENNA IS CONNECTED

- Verify that the GEM external antenna is connected correctly and is routed on the outside of the wire bundle.

• Is the GEM external antenna connected correctly?

Yes : Go to I5.

No : Correctly CONNECT the GEM external antenna. CLEAR the DTCs. TEST the system for normal operation.

I5 CHECK THE GENERIC ELECTRONIC MODULE (GEM) FOR CORRECT OPERATION

- Disconnect all the GEM connectors.
- Check for:
 - Corrosion
 - Pushed-out pins
- Connect all the GEM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes : INSTALL a new GEM. Refer to **MULTIFUNCTION ELECTRONIC MODULES** . REPROGRAM all RKE transmitters, REFER to **REMOTE TRANSMITTER PROGRAMMING**. INFORM the customer any RKE transmitters not present will need to be reprogrammed. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

No : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST J: THE AUTOLOCK DOES NOT OPERATE CORRECTLY**J1 VERIFY THE AUTOLOCK FEATURE IS ENABLED**

- Verify the autolock feature is enabled.
- **Is the autolock/relock feature enabled?**

Yes : Go to J2.

No : Turn the feature ON. Refer to **AUTOLOCK AND HORN CHIRP PROGRAMMING**.

J2 CHECK THE INTERIOR LAMP

- Open and close each door, liftgate and liftgate window glass while checking the interior lamp operation.
- **Do the interior lamps operate correctly?**

Yes : Go to J3.

No : To diagnose the interior lamps, refer to **INTERIOR LIGHTING** .

J3 CHECK THE PCM, INSTRUMENT CLUSTER AND ABS PIDS

- Enter the following diagnostic mode on the diagnostic tool: Monitor the PCM Vehicle Speed PID.
- Enter the following diagnostic mode on the diagnostic tool: Monitor the Instrument Cluster Ignition Switch Status PID.
- Enter the following diagnostic mode on the diagnostic tool: Monitor the Anti-Lock Brake System (ABS) Module Brake ON/OFF PID.
- **Are the correct values received?**

Yes : Go to J4.

No : To diagnose an incorrect vehicle speed PID, See **INTRODUCTION - GASOLINE** article .

To diagnose an incorrect ignition switch status PID, refer to **MULTIFUNCTION ELECTRONIC MODULES** .

To diagnose an incorrect brake ON/OFF PID, refer to **ANTI-LOCK CONTROL** .

J4 CHECK FOR CORRECT GENERIC ELECTRONIC MODULE (GEM) OPERATION

- Disconnect all the GEM connectors.
- Check for:
 - Corrosion
 - Pushed-out pins
- Connect all the GEM connectors and make sure they seat correctly.

- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes : INSTALL a new GEM. Refer to **MULTIFUNCTION ELECTRONIC MODULES** . CLEAR the DTCs. REPEAT the self-test.

No : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST K: THE LIFTGATE/LUGGAGE COMPARTMENT LID IS INOPERATIVE - 5-DOOR/SEDAN/WAGON

K1 CHECK THE GENERIC ELECTRONIC MODULE (GEM) DIAGNOSTIC TROUBLE CODES (DTCs)

- Make sure the alarm is disabled.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: refer to the results from the previous GEM self-test.

- **Are any DTCs recorded?**

Yes : If DTC B1551, Go to K14.

If DTC B1553, Go to K8.

If DTC B1554, Go to K9.

No : Go to K2.

K2 CHECK THE LIFTGATE/LUGGAGE COMPARTMENT LID ACTUATOR OPERATION

- Enter the following diagnostic mode on the diagnostic tool: Activate the GEM liftgate/luggage compartment lid actuator active command.

- **Does the liftgate/luggage compartment lid operate correctly?**

Yes : Go to K3.

No : Go to K5.

K3 CHECK THE LIFTGATE/LUGGAGE COMPARTMENT LID RELEASE SWITCH

- Enter the following diagnostic mode on the diagnostic tool: Monitor the GEM liftgate/luggage compartment lid release switch PID while pressing and releasing the liftgate/luggage compartment lid release switch.

- **Does the liftgate/luggage compartment lid release switch PID agree with the liftgate/luggage compartment lid release switch status?**

Yes : Go to K4.

No : Go to K14.

K4 CHECK THE GEM VEHICLE SPEED SIGNAL PID

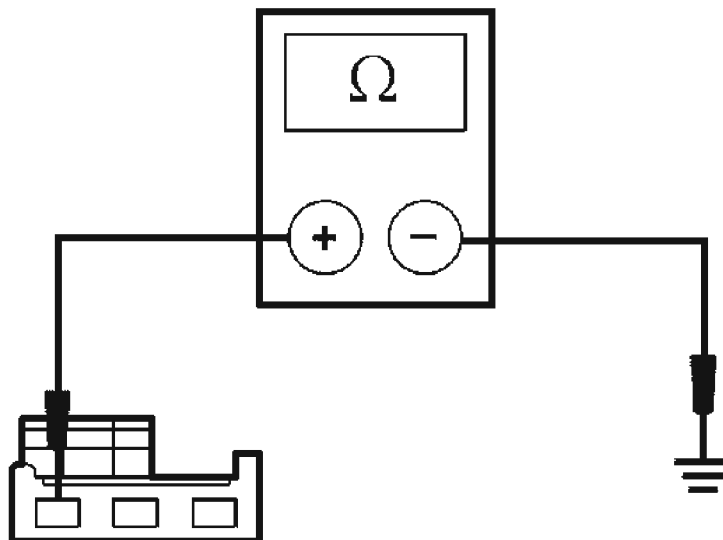
- Enter the following diagnostic mode on the diagnostic tool: Monitor the GEM vehicle speed signal PID while driving the vehicle.
- **Does the GEM vehicle speed signal PID agree with the vehicle speed?**
Yes : Go to K5.
No : Go to K17.

K5 CHECK THE CENTRAL JUNCTION BOX (CJB) LIFTGATE/LUGGAGE COMPARTMENT LID RELAY

- Key in OFF position.
- Disconnect: CJB Liftgate/Luggage Compartment Lid Relay.
- Carry out the liftgate/luggage compartment lid relay component test. Refer to COMPONENT TESTING .
- **Is the liftgate/luggage compartment lid relay ok?**
Yes : Go to K6.
No : INSTALL a new CJB liftgate/luggage compartment lid relay. CLEAR the DTCs. REPEAT the self-test

K6 CHECK THE CIRCUIT 31S-AA27 (BK) FOR AN OPEN

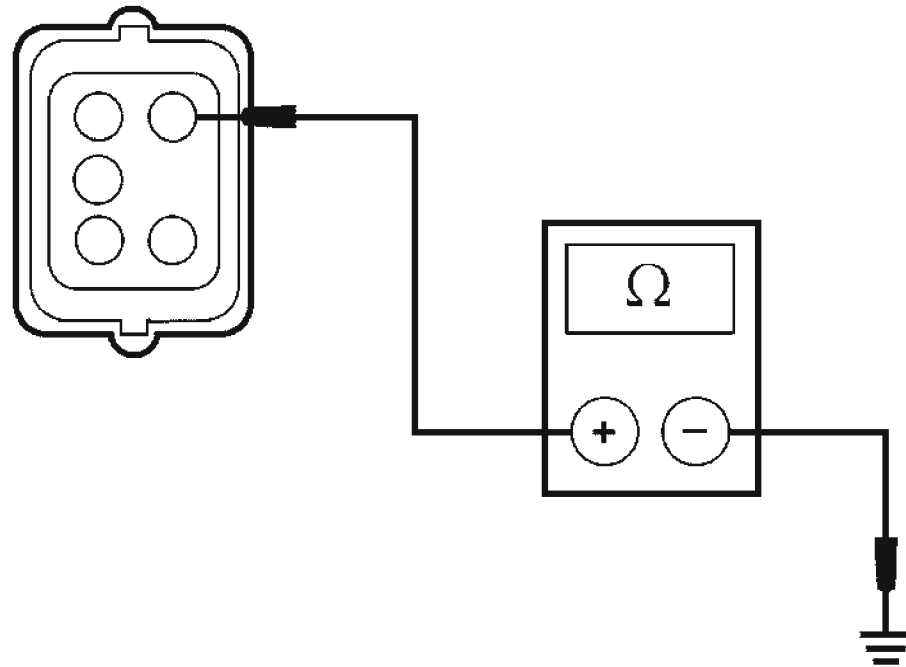
- Disconnect: Luggage Compartment Lid Latch C430 or Liftgate Latch C4223.
- For sedan, measure the resistance between the luggage compartment lid latch assembly C430 pin 2, circuit 31S-AA27 (BK), harness side and ground.



A0091572

Fig. 25: Checking Circuit 31S-AA27 (BK) For An Open
Courtesy of FORD MOTOR CO.

- For 5-door and wagon, measure the resistance between the liftgate latch assembly C4223 pin 2, circuit 31S-AA27 (BK), harness side and ground.



A0094514

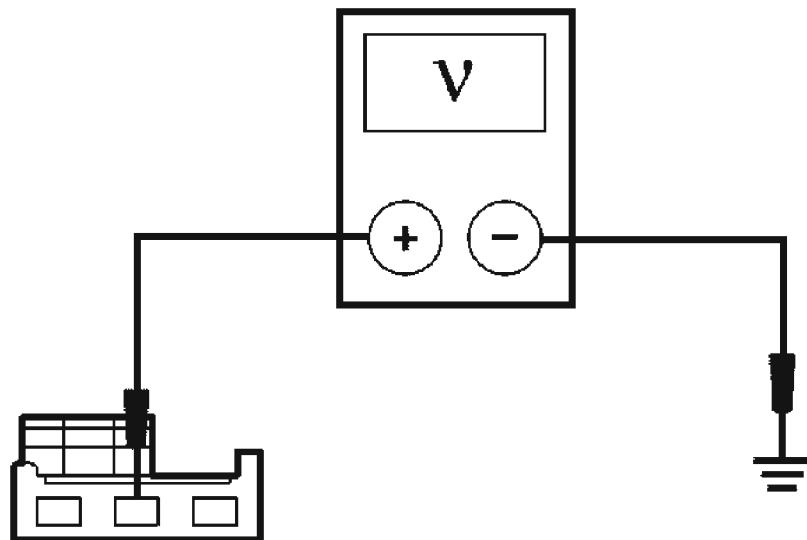
Fig. 26: Measuring Resistance Between Liftgate Latch Assembly C4223 Pin 2, Circuit 31S-AA27 (BK), Harness Side And Ground
Courtesy of FORD MOTOR CO.

- Is the resistance less than 5 ohms?
Yes : Go to K7.
No : REPAIR the circuit. CLEAR the DTCs.

REPEAT the self-test.

K7 CHECK FOR VOLTAGE TO THE LIFTGATE/LUGGAGE COMPARTMENT LID LATCH

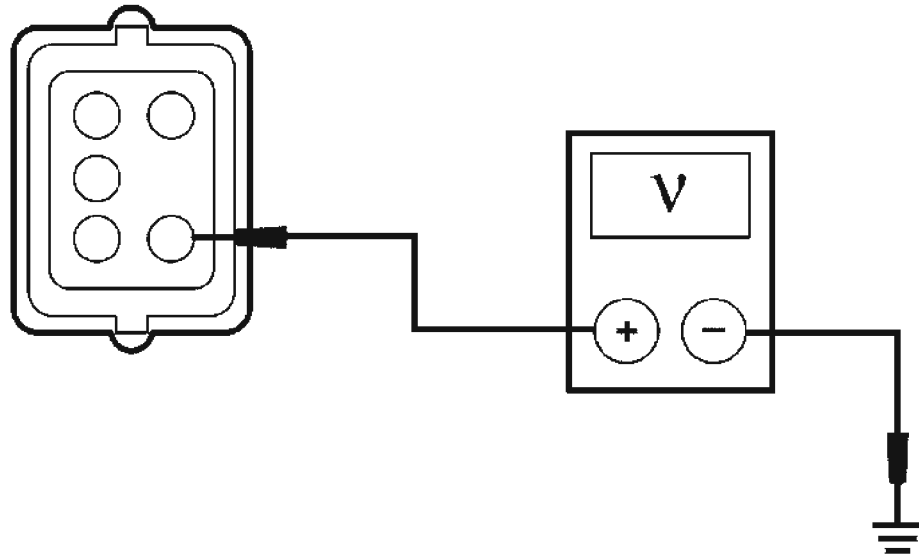
- Key in ON position.
- For sedan, measure the voltage between the luggage compartment lid latch C430 pin 2, circuit 32-AA27 (WH/GN), harness side and ground, while pressing and releasing the luggage compartment lid release switch.



A0091573

Fig. 27: Measuring Voltage Between Luggage Compartment Lid Latch C430 Pin 2, Circuit 32-AA27 (WH/GN), Harness Side And Ground
Courtesy of FORD MOTOR CO.

- For 5-door and wagon, measure the voltage between the liftgate latch C4223 pin 1, circuit 32-AA27A (WH/GN), harness side and ground, while pressing and releasing the liftgate release switch.



A0065261

Fig. 28: Measuring Voltage Between Liftgate Latch C4223 Pin 1, Circuit 32-AA27A (WH/GN), Harness Side And Ground
Courtesy of FORD MOTOR CO.

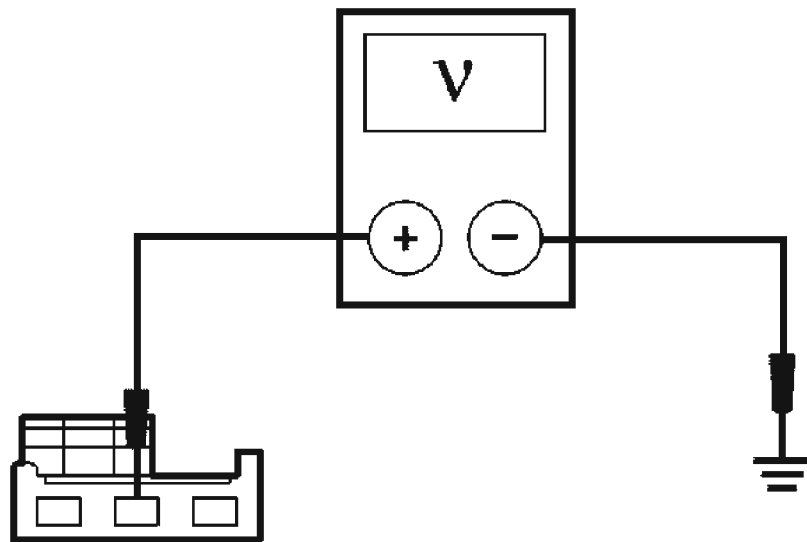
- Is the voltage greater than 10 volts with the liftgate/luggage compartment lid release switch pressed and 0 volts with the liftgate/luggage compartment lid release switch released?

Yes : INSTALL a new liftgate/luggage compartment lid latch assembly. REFER to **LUGGAGE COMPARTMENT LID LATCH** or **LIFTGATE LATCH**. CLEAR the DTCs. REPEAT the self-test.

No : Go to K8.

K8 CHECK THE LIFTGATE/LUGGAGE COMPARTMENT LID LATCH CIRCUIT FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Disconnect: CJB C270h.
- Key in ON position.
- For sedan, measure the voltage between the luggage compartment lid latch assembly C430 pin 2, circuit 32-AA27A (WH/GN), harness side and ground.

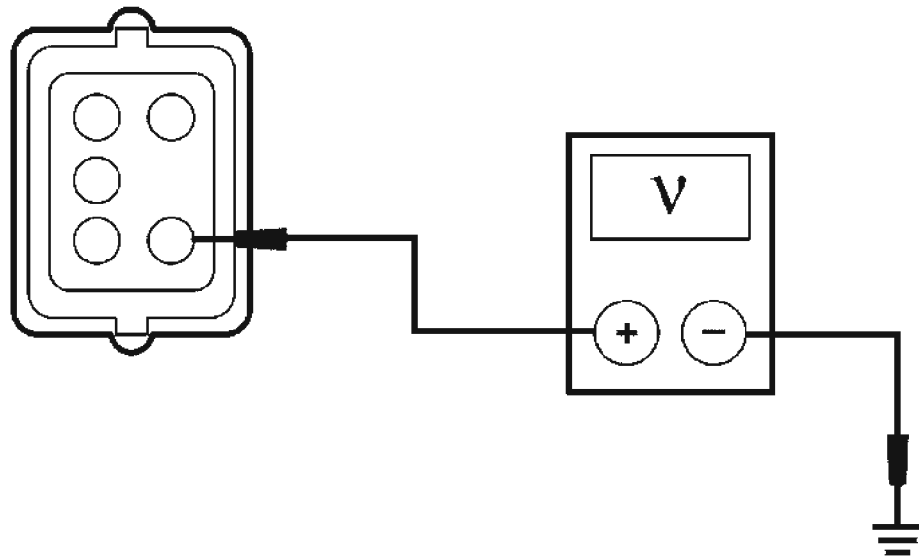


A0091573

Fig. 29: Measuring Voltage Between Luggage Compartment Lid Latch Assembly C430 Pin 2, Circuit 32-AA27A (WH/GN), Harness Side And Ground

Courtesy of FORD MOTOR CO.

- For 5-door and wagon, measure the voltage between the liftgate latch C4223 pin 1, circuit 32-AA27A (WH/GN), harness side and ground.



A0065261

Fig. 30: Measuring Voltage Between Liftgate Latch C4223 Pin 1, Circuit 32-AA27A (WH/GN), Harness Side And Ground
Courtesy of FORD MOTOR CO.

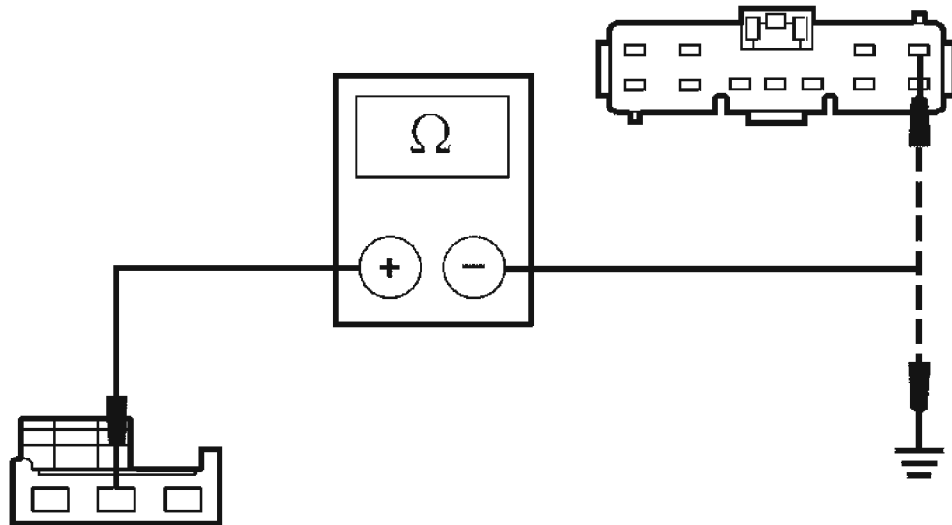
- **Is any voltage present?**

Yes : REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

No : Go to K9.

K9 CHECK CIRCUIT 32-AA27 (WH/GN) FOR AN OPEN OR A SHORT TO GROUND

- Key in OFF position.
- For sedan, measure the resistance between the luggage compartment lid latch C430 pin 2, circuit 32-AA27A (WH/GN), harness side and the CJB C270h pin 1, circuit 32-AA27 (WH/GN), harness side; and between the luggage compartment lid latch C430 pin 2, circuit 32-AA27A (WH/GN), harness side and ground.

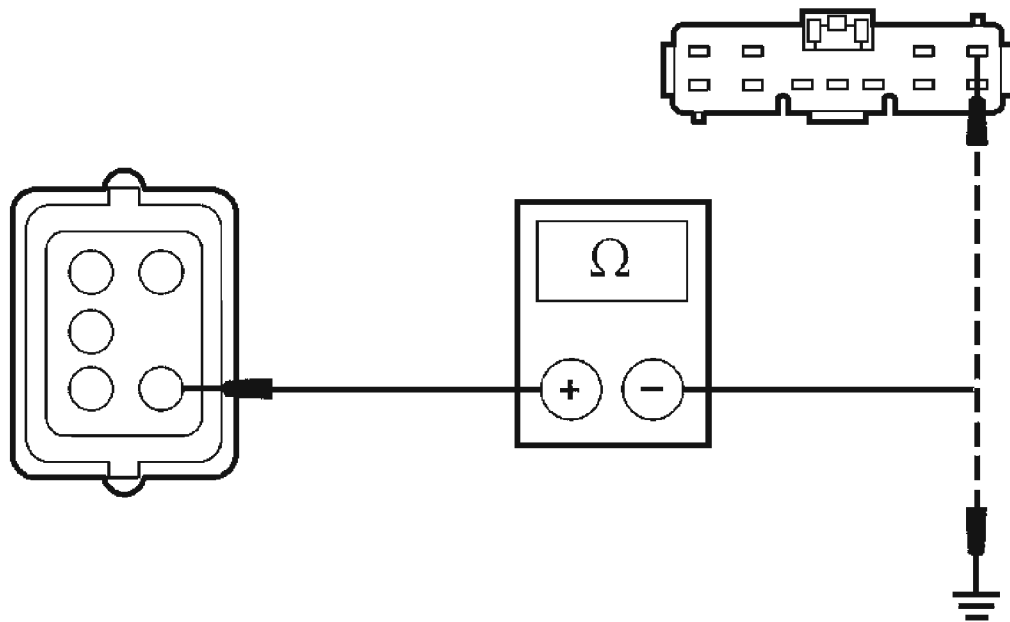


A0091571

Fig. 31: Checking Circuit 32-AA27 (WH/GN) For An Open Or A Short To Ground (Sedan)

Courtesy of FORD MOTOR CO.

- For 5-door and wagon, measure the resistance between the liftgate latch C4223 pin 1, circuit 32-AA27A (WH/GN), harness side and the CJB C270h pin 1, circuit 32-AA27 (WH/GN), harness side; and between the liftgate latch C4223 pin 1, circuit 32-AA27A (WH/GN), harness side and ground.



A0092664

Fig. 32: Checking Circuit 32-AA27 (WH/GN) For An Open Or A Short To Ground (5-Door And Wagon)
 Courtesy of FORD MOTOR CO.

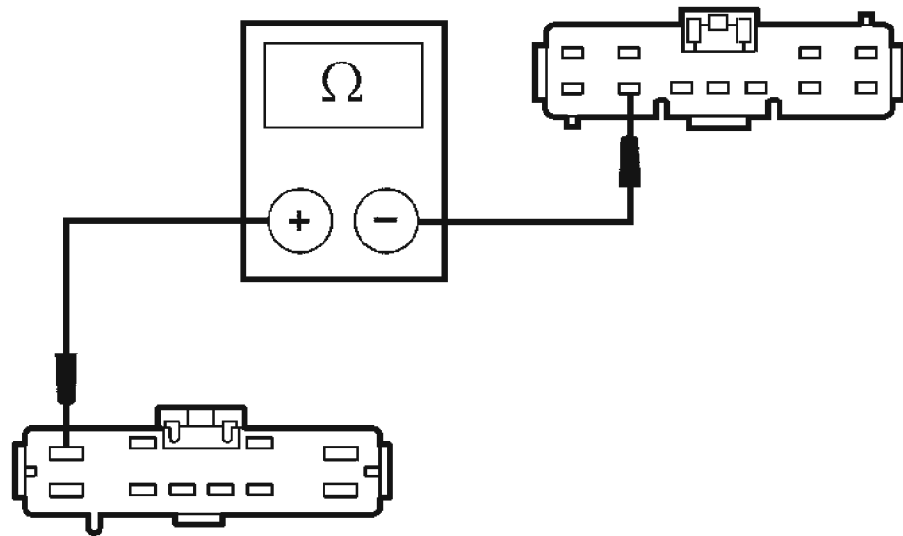
- Is the resistance less than 5 ohms between the CJB connector and the liftgate/luggage compartment lid latch connector, and greater than 10,000 ohms between the liftgate/luggage compartment lid latch connector and ground?

Yes : Go to K10.

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

K10 CHECK CIRCUIT 29-AA27 (OG/BK) FOR AN OPEN

- Disconnect: CJB C270a.
- Measure the resistance between the CJB C270h pin 10, circuit 29-AA27 (OG/BK), harness side and the CJB C270a pin 4, circuit 29-AA27 (OG/BK), harness side.



A0092006

Fig. 33: Checking Circuit 29-AA27 (OG/BK) For An Open
Courtesy of FORD MOTOR CO.

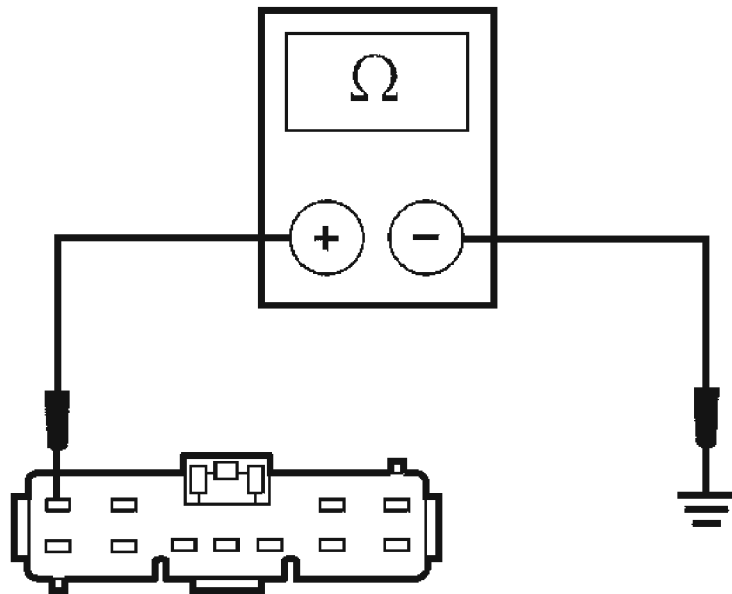
- **Is the resistance less than 5 ohms?**

Yes : Go to K11.

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

K11 CHECK CIRCUIT 31-AA51 (BK) FOR AN OPEN

- Measure the resistance between the CJB C270h pin 4, circuit 31-AA51 (BK), harness side and ground.



A0092007

Fig. 34: Measuring Resistance Between CJB C270h Pin 4, Circuit 31-AA51 (BK), Harness Side And Ground
Courtesy of FORD MOTOR CO.

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

Yes : Go to K12.

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

K12 CHECK CIRCUIT 32-AA51 (WH/BU) FOR A SHORT TO VOLTAGE

- Disconnect: GEM C201b.
- Key in ON position.
- Measure the voltage between the GEM C201b pin 2, circuit 32-AA51 (WH/BU), harness side and ground.

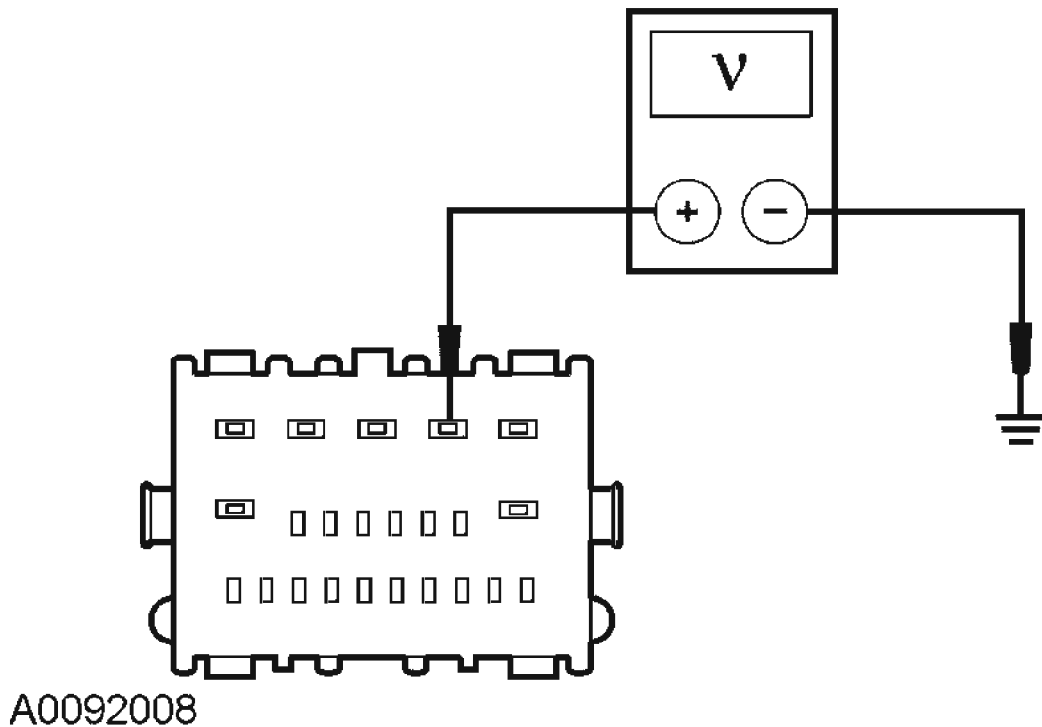


Fig. 35: Measuring Voltage Between GEM C201b Pin 2, Circuit 32-AA51 (WH/BU), Harness Side And Ground
Courtesy of FORD MOTOR CO.

- **Is any voltage present?**

Yes : REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

No : Go to K13.

K13 CHECK CIRCUIT 32-AA51 (WH/GN) FOR AN OPEN OR A SHORT TO GROUND

- Measure the resistance between the GEM C201b pin 2, circuit 32-AA51 (WH/BU), harness side and the CJB C270h pin 3, circuit 32-AA51 (WH/BU), harness side; and between the GEM C201b pin 2, circuit 32-AA51 (WH/BU), harness side and ground.

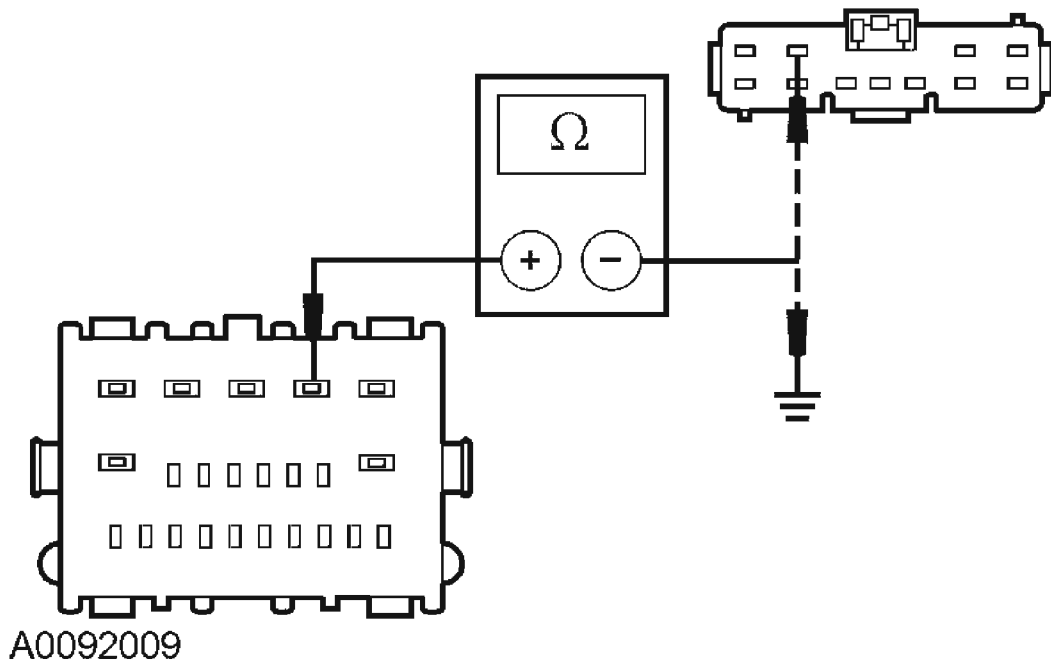


Fig. 36: Measuring Resistance Between GEM C201b Pin 2, Circuit 32-AA51 (WH/BU), Harness Side And CJB C270h Pin 3
 Courtesy of FORD MOTOR CO.

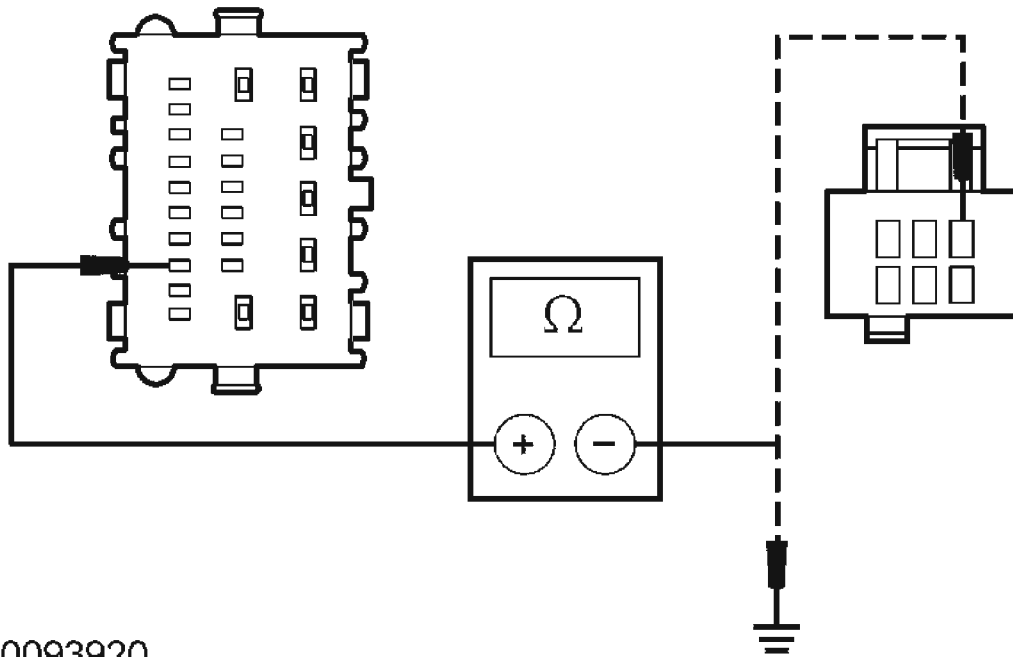
- Is the resistance less than 5 ohms between the GEM connector and the CJB connector, and greater than 10,000 ohms between the GEM connector and ground?

Yes : Go to K14.

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

K14 CHECK THE LIFTGATE/LUGGAGE COMPARTMENT LID RELEASE SWITCH CIRCUIT FOR AN OPEN OR A SHORT TO GROUND

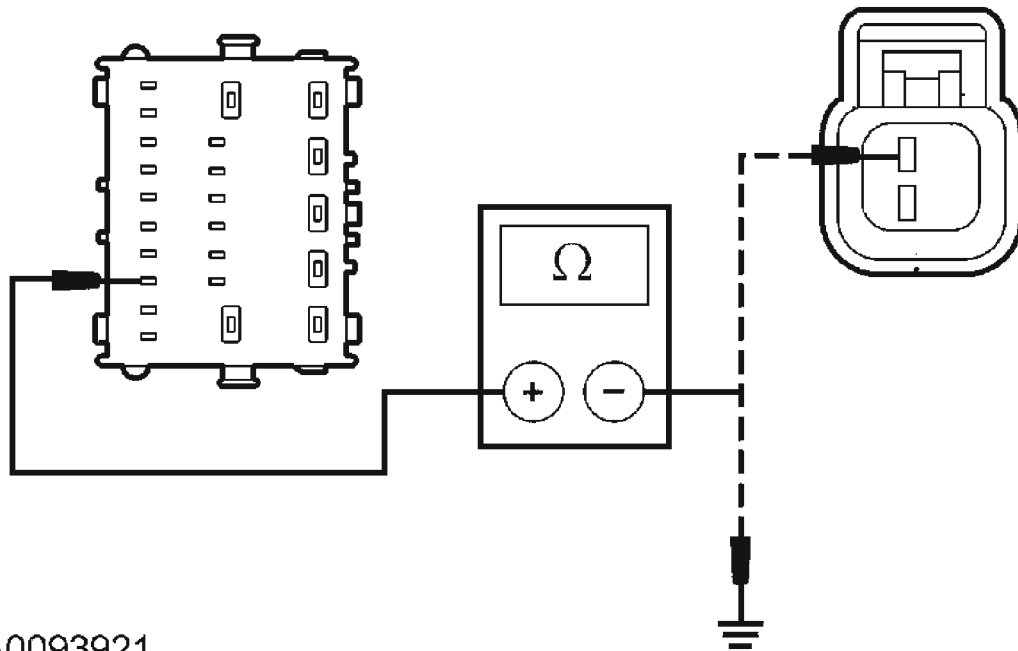
- Key in OFF position.
- Disconnect: GEM C201e.
- Disconnect: Interior Liftgate/Luggage Compartment Lid Release Switch C2269.
- Disconnect: Exterior Liftgate Release Switch C4224.
- Measure the resistance between the GEM C201e pin 16, circuit 31S-AA30 (BK/YE), harness side and the interior liftgate/luggage compartment lid release switch C2269 pin 3, circuit 31S-AA30 (BK/YE), harness side; and between the GEM C201e pin 16, circuit 31S-AA30 (BK/YE), harness side and ground.



A0093920

Fig. 37: Checking Liftgate/Luggage Compartment Lid Release Switch Circuit For An Open Or A Short To Ground
 Courtesy of FORD MOTOR CO.

- For wagon, measure the resistance between the GEM C201e pin 16, circuit 31S-AA30 (BK/YE), harness side and the exterior liftgate release switch C4224 pin 1, circuit 31S-AA30A (BK/YE), harness side; and between the GEM C201e pin 16, circuit 31S-AA30 (BK/YE), harness side and ground.



A0093921

Fig. 38: Checking Liftgate/Luggage Compartment Lid Release Switch Circuit For An Open Or A Short To Ground (Wagon)
Courtesy of FORD MOTOR CO.

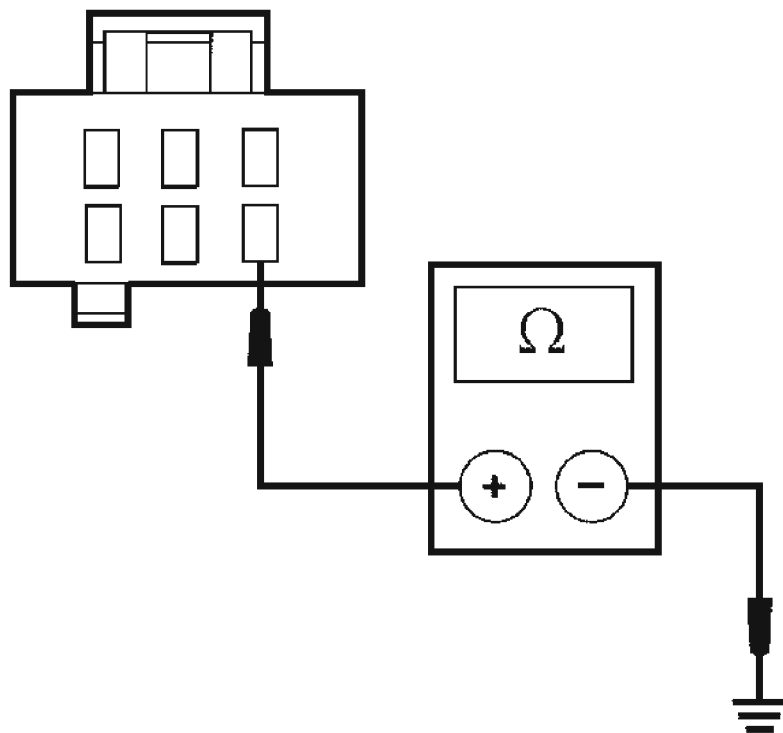
- Are the resistances less than 5 ohms?

Yes : Go to K15.

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

K15 CHECK CIRCUIT 31-AA30 (BK) FOR AN OPEN

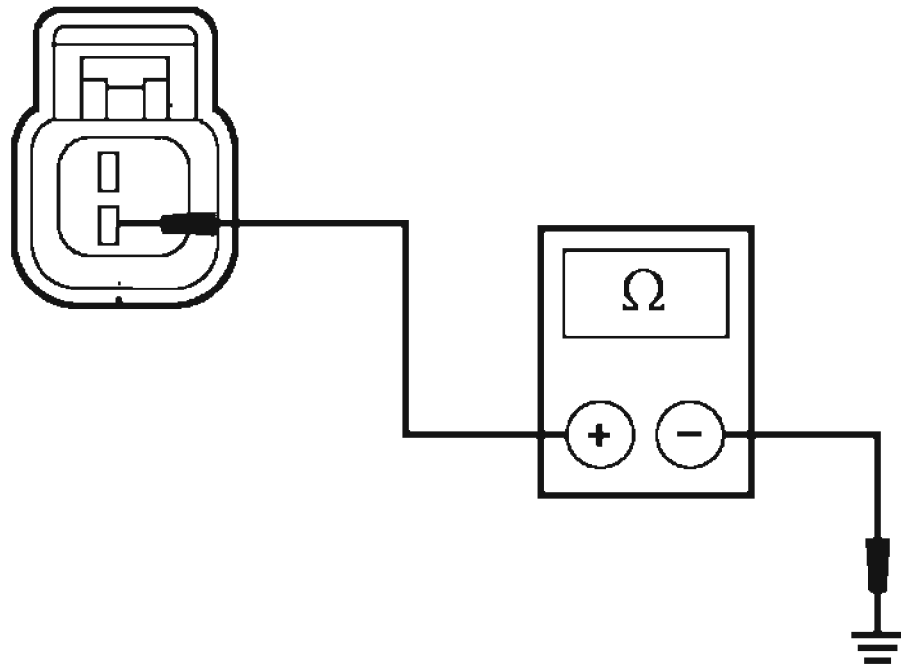
- Measure the resistance between the interior liftgate/luggage compartment lid release switch C2269 pin 6, circuit 31-AA30 (BK), harness side and ground.



A0075043

Fig. 39: Checking Circuit 31-AA30 (BK) For An Open
Courtesy of FORD MOTOR CO.

- For wagon, measure the resistance between the exterior liftgate release switch C4224 pin 2, circuit 31-AA30A (BK), harness side and ground.



A0057169

Fig. 40: Checking Circuit 31-AA30 (BK) For An Open (Wagon)
Courtesy of FORD MOTOR CO.

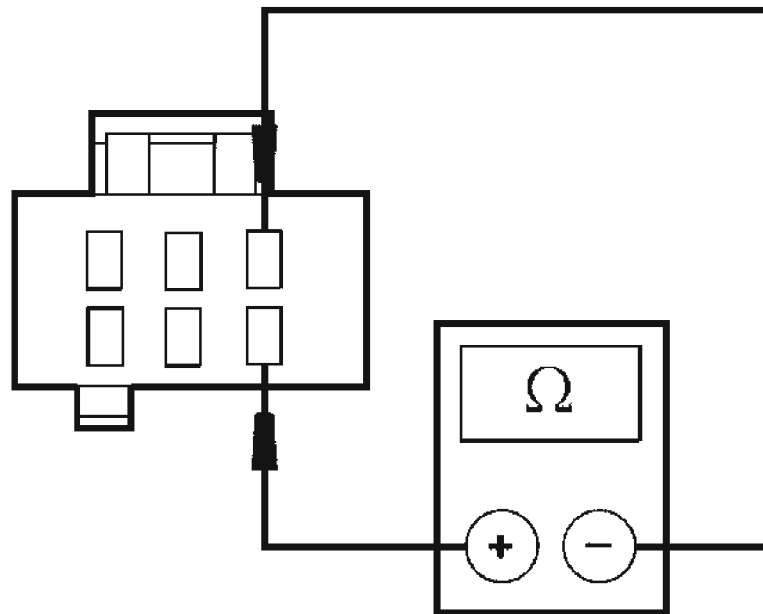
- **Is the resistance less than 5 ohms?**

Yes : Go to K16.

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

K16 CHECK THE LIFTGATE/LUGGAGE COMPARTMENT LID RELEASE SWITCH OPERATION

- Measure the resistance between the liftgate/luggage compartment lid release switch C2269 pin 3, component side and the liftgate/luggage compartment lid release switch C2269 pin 6, component side while pressing and releasing the liftgate/luggage compartment lid release switch.



A0075044

Fig. 41: Checking Liftgate/Luggage Compartment Lid Release Switch Operation

Courtesy of FORD MOTOR CO.

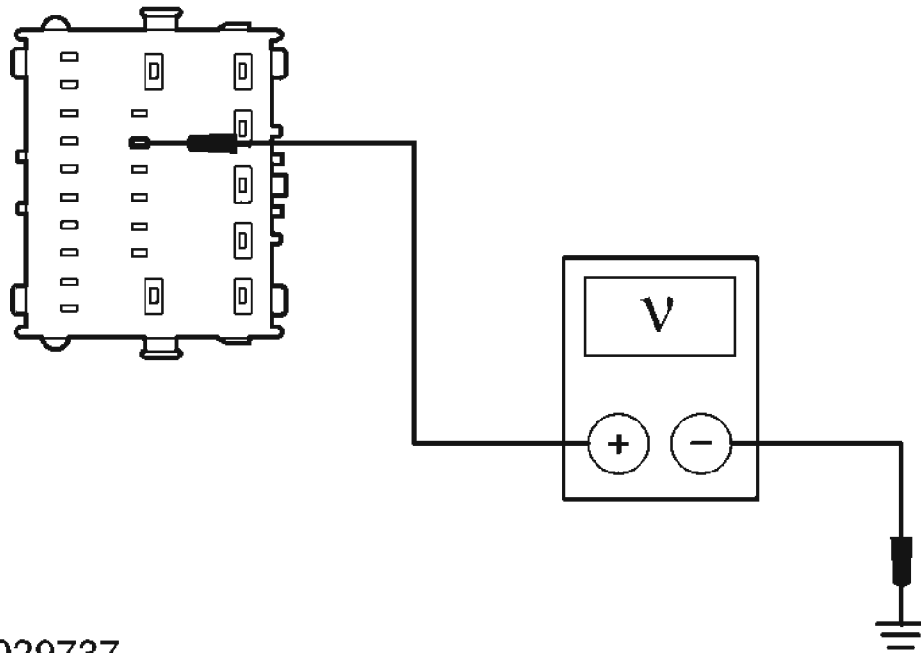
- Is the resistance less than 5 ohms with the liftgate/luggage compartment lid release switch pressed, and greater than 10,000 ohms with the liftgate/luggage compartment lid release switch not pressed?

Yes : Go to K18.

No : INSTALL a new liftgate/luggage compartment lid release switch. CLEAR the DTCs. REPEAT the self-test.

K17 CHECK CIRCUIT 15S-AA17 (GN/WH) FROM THE INSTRUMENT CLUSTER FOR VOLTAGE

- Key in OFF position.
- Disconnect: GEM C201d.
- Key in ON position.
- Measure the voltage between the GEM C201d pin 12, circuit 15S-AA17 (GN/WH), harness side and ground.



VUE0029737

Fig. 42: Measuring Voltage Between GEM C201d Pin 12, Circuit 15S-AA17 (GN/WH), Harness Side And Ground
 Courtesy of FORD MOTOR CO.

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

Yes : Go to K18.

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

K18 CHECK FOR CORRECT GEM OPERATION

- Disconnect all the GEM connectors.
- Check for:
 - Corrosion
 - Pushed-out pins
- Connect all the GEM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes : INSTALL a new GEM. Refer to **MULTIFUNCTION ELECTRONIC MODULES** . CLEAR the DTCs. REPEAT the self-test.

No : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

GENERAL PROCEDURES

AUTOLOCK AND HORN CHIRP PROGRAMMING

1. Close all the doors and windows.
2. Confirm that the ignition key is OFF.

NOTE: Steps 5 through 9 must be carried out within 30 seconds.

3. Turn the ignition key from OFF to RUN.
4. Press the door lock control switch UNLOCK button 3 times.
5. Turn the ignition key from RUN to OFF.
6. Press the door lock control switch UNLOCK button 3 times.
7. Turn the ignition key from OFF to RUN.
8. Verify that the horn chirps. This indicates the enable/disable mode is ready to accept program changes.
9. Press the door lock control switch UNLOCK button then the LOCK button one time to command the module to toggle the autolock feature.
10. Verify that the horn chirps. There should be one chirp indicating that the autolock feature is disabled. If one chirp is heard followed by a longer sound of the horn, the autolock feature is enabled.
11. Turn the key to the OFF position or wait 5 minutes to exit the enable/disable mode.
12. Verify that the horn chirps once to indicate that a feature is changed and that autolock is toggled.

REMOTE TRANSMITTER PROGRAMMING

NOTE: A maximum of 4 remote keyless entry (RKE) transmitters can be programmed to the vehicle. Programming must be done at the same time for all the RKE transmitters.

NOTE: Before entering the RKE transmitter programming mode, make sure the vehicle battery is fully charged and the anti-theft system is not armed or triggered (if equipped).

1. Close all doors to make sure conflicting chimes do not sound during programming.
2. Turn the ignition switch from position I to position II 4 times within 6 seconds.
3. Turn the ignition switch to position 0.
4. A chime sounds that indicates the learning mode has been accessed and it is possible to program the RKE transmitters.
5. Within 10 seconds of the previous step, press any button on the RKE transmitter being

programmed until a chime is heard. This indicates a new RKE transmitter code has been successfully programmed.

6. After each successful RKE transmitter programming, another 10 second learning mode is automatically entered, up to a maximum of 4 times.
7. To program additional RKE transmitters, repeat step 5.
8. The system exits the learning mode if the ignition switch is turned to position III, no new RKE transmitter is programmed during the 10 seconds, or if 4 RKE transmitters are programmed.

NOTE: An incorrect programming procedure does not affect the stored codes.

9. After successful programming, only the newly programmed RKE transmitters are accepted.
10. Test all the programmed RKE transmitters, by activating and deactivating the remote locking and unlocking functions.

REMOVAL AND INSTALLATION

HOOD LATCH

Removal and Installation

1. Remove the pin type retainers and the radiator air deflector.

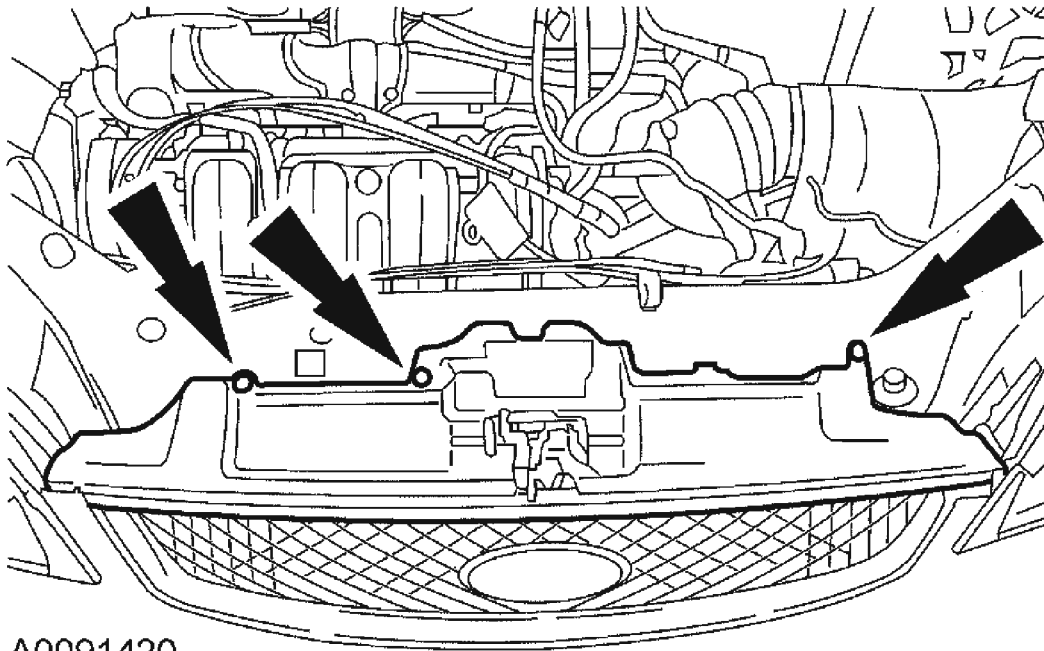


Fig. 43: Removing Pin Type Retainers And Radiator Air Deflector
Courtesy of FORD MOTOR CO.

2. Remove the 2 hood latch bolts.
 - Disconnect the hood latch electrical connector.

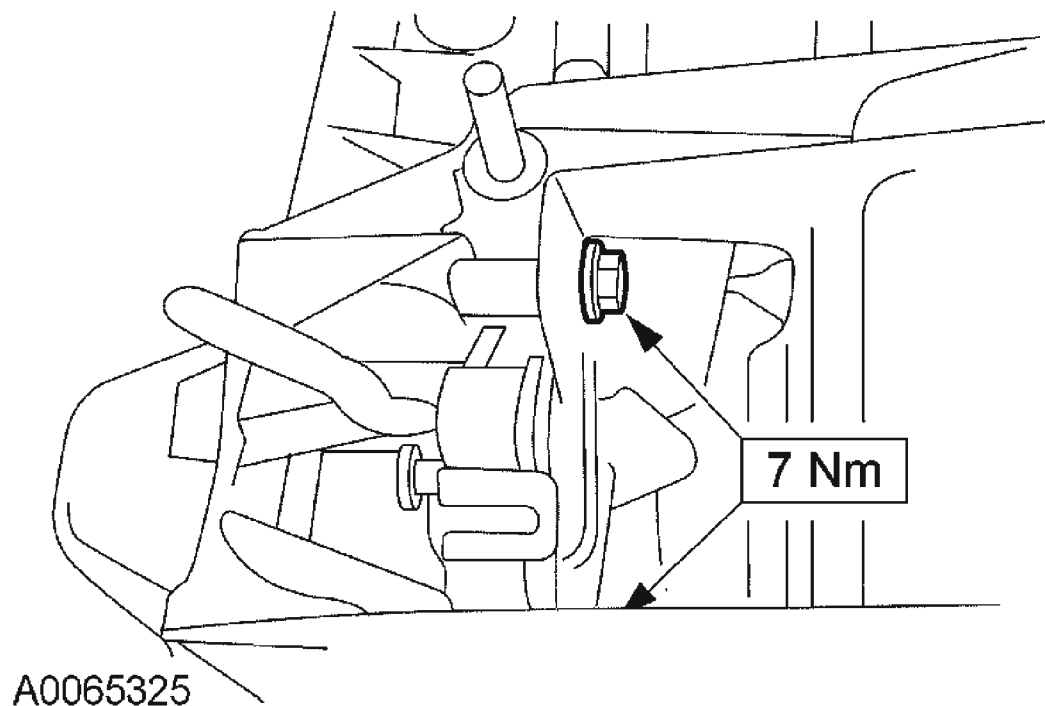


Fig. 44: Removing 2 Hood Latch Bolts
Courtesy of FORD MOTOR CO.

CAUTION: Make sure that the fins on the radiator are not damaged while moving the hood latch.

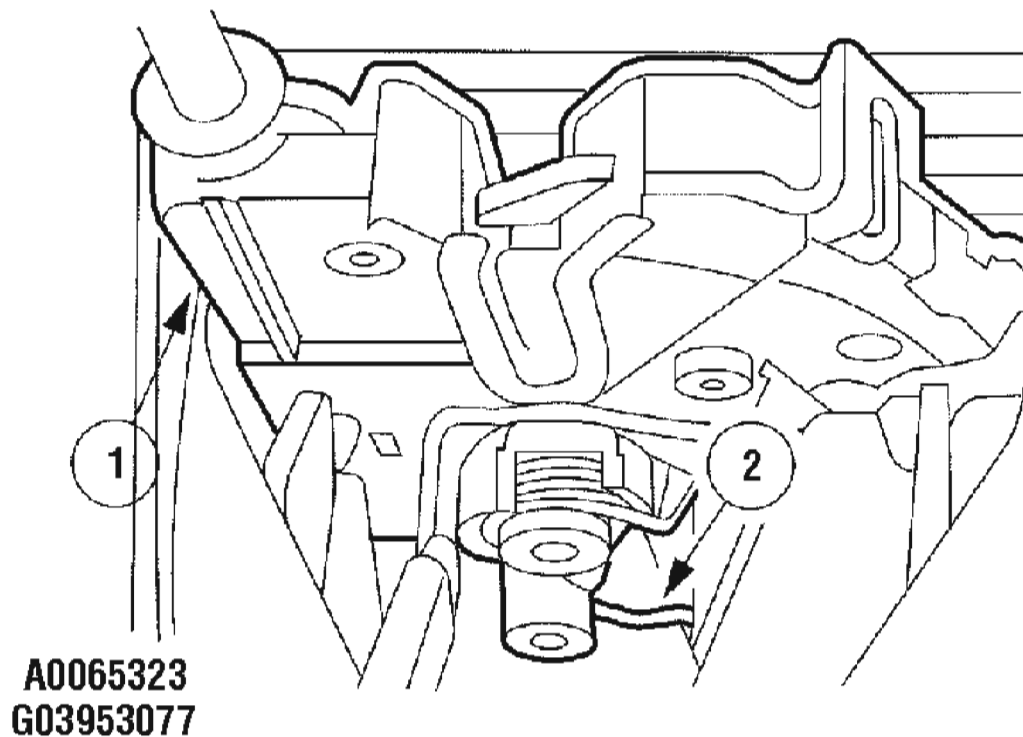


Fig. 45: Disconnecting Hood Latch Release Cable
Courtesy of FORD MOTOR CO.

3. Detach the hood latch.
 1. Move the hood latch to one side.
 2. Disconnect the hood latch release cable.
4. Remove the hood latch.
 - Rotate the hood latch to remove.

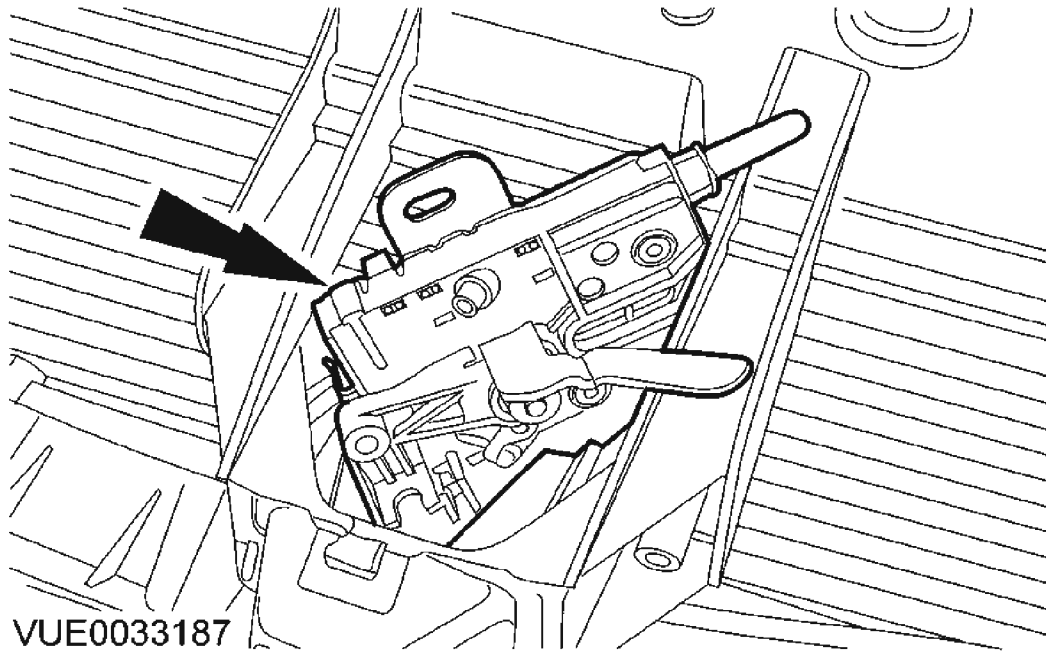


Fig. 46: Removing Hood Latch
Courtesy of FORD MOTOR CO.

5. To install, reverse the removal procedure.

FRONT DOOR LATCH

Removal and Installation

1. Remove the interior door handle. For additional information, refer to **INTERIOR DOOR HANDLE**.
2. Disconnect the door latch actuator electrical connector.

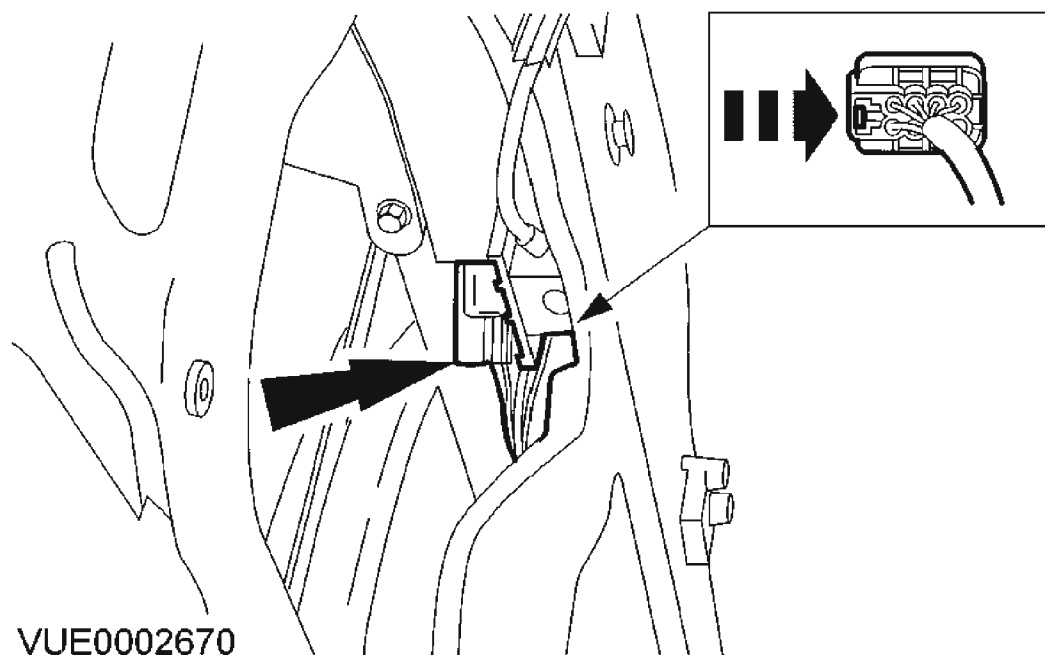


Fig. 47: Disconnecting Door Latch Actuator Electrical Connector
Courtesy of FORD MOTOR CO.

3. Remove the screws.

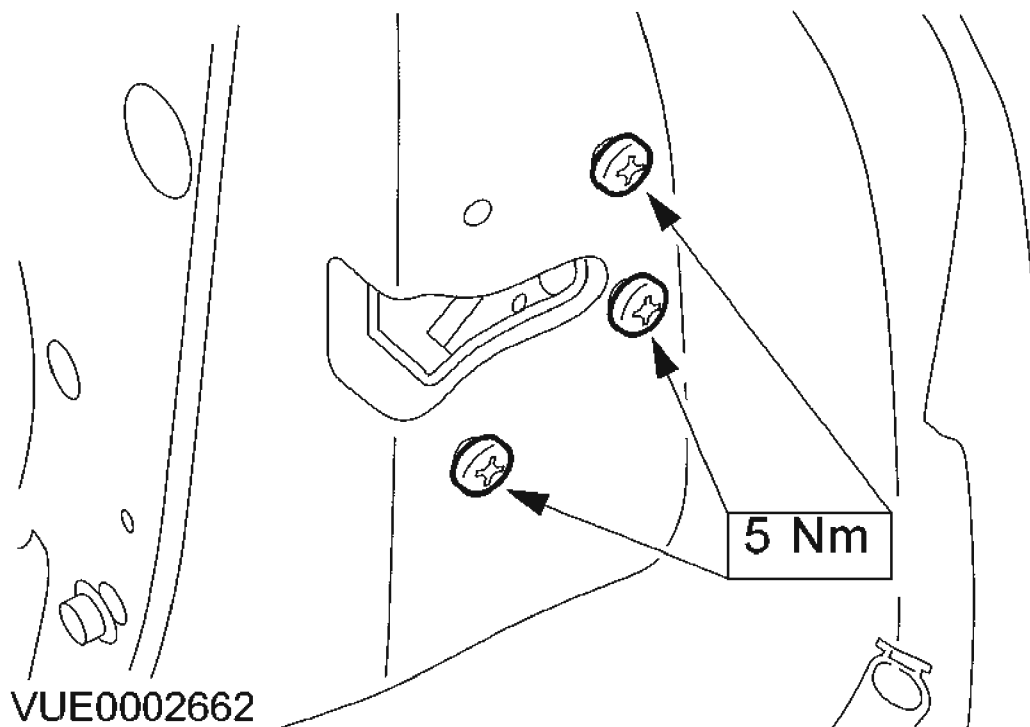


Fig. 48: Removing Screws
Courtesy of FORD MOTOR CO.

4. Remove the door latch security shield screws.

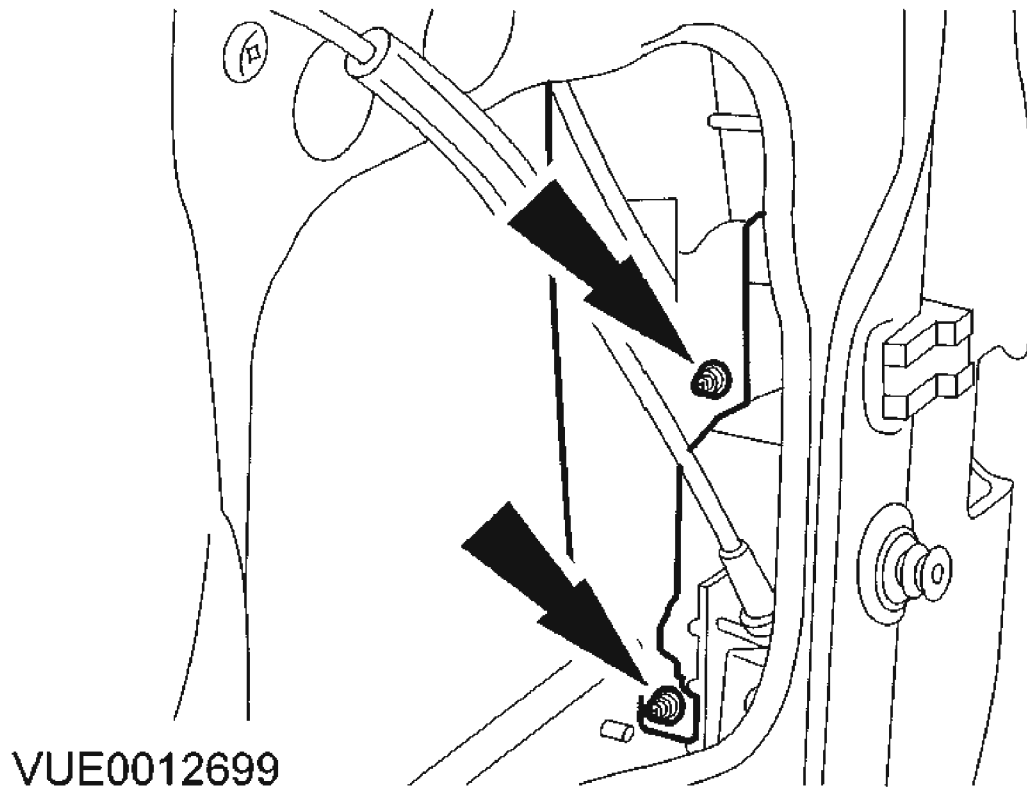


Fig. 49: Removing Door Latch Security Shield Screws
Courtesy of FORD MOTOR CO.

5. Unclip the security shield.

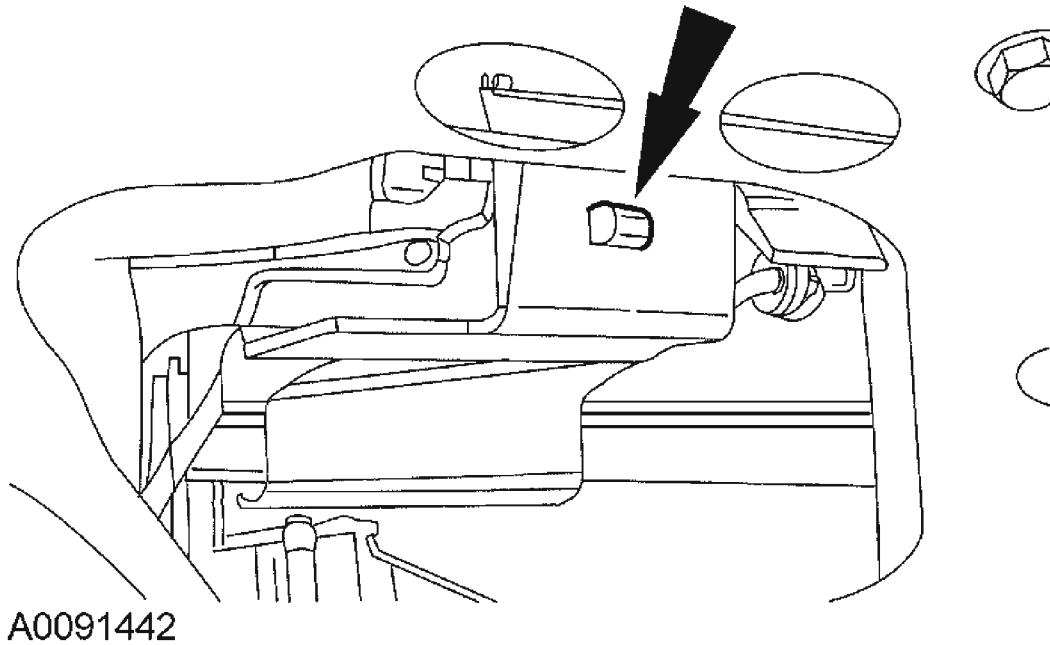


Fig. 50: Unclipping Security Shield
Courtesy of FORD MOTOR CO.

6. Unclip the security shield tab and remove the security shield from the vehicle.

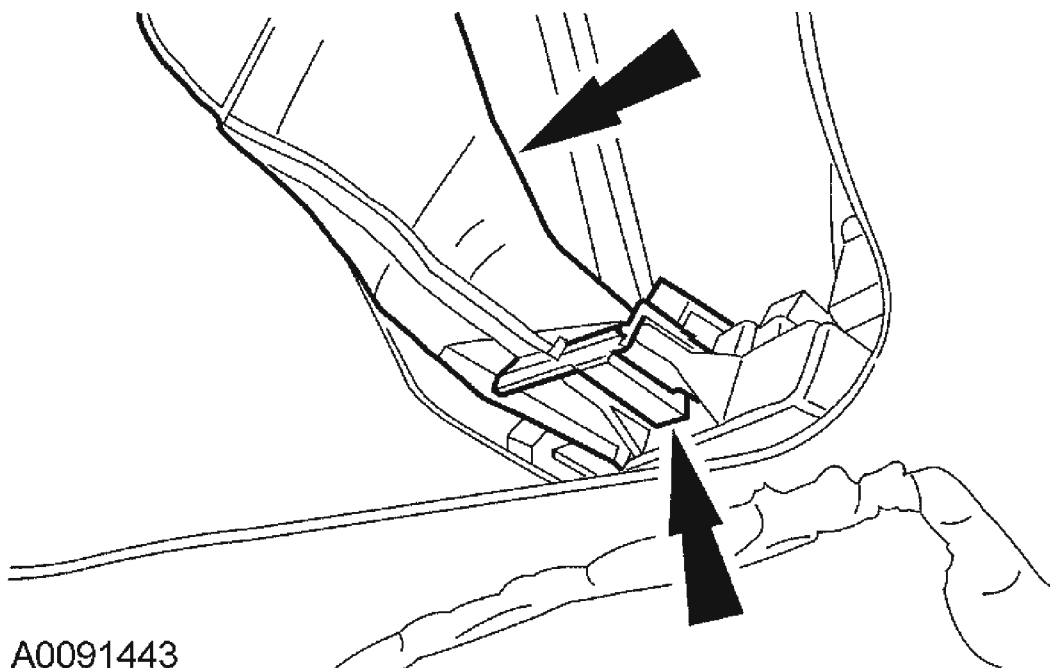


Fig. 51: Unclipping Security Shield Tab And Removing Security Shield From Vehicle

Courtesy of FORD MOTOR CO.

7. Disconnect the door lock cylinder connecting rod.
 1. Rotate the clip counterclockwise to release the connecting rod.
 2. Disconnect the connecting rod.

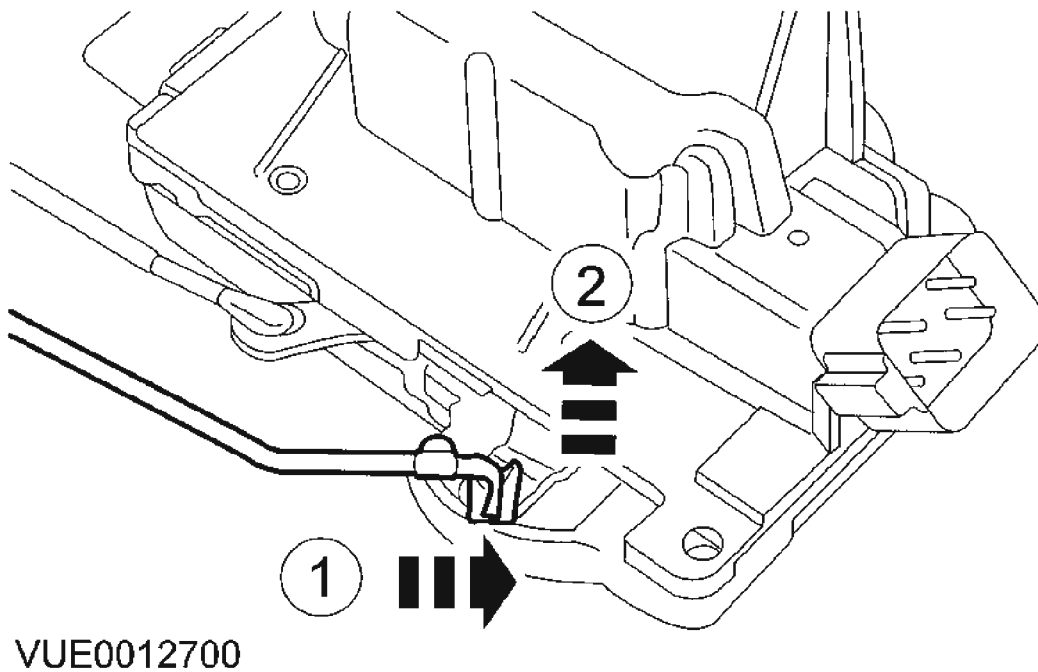
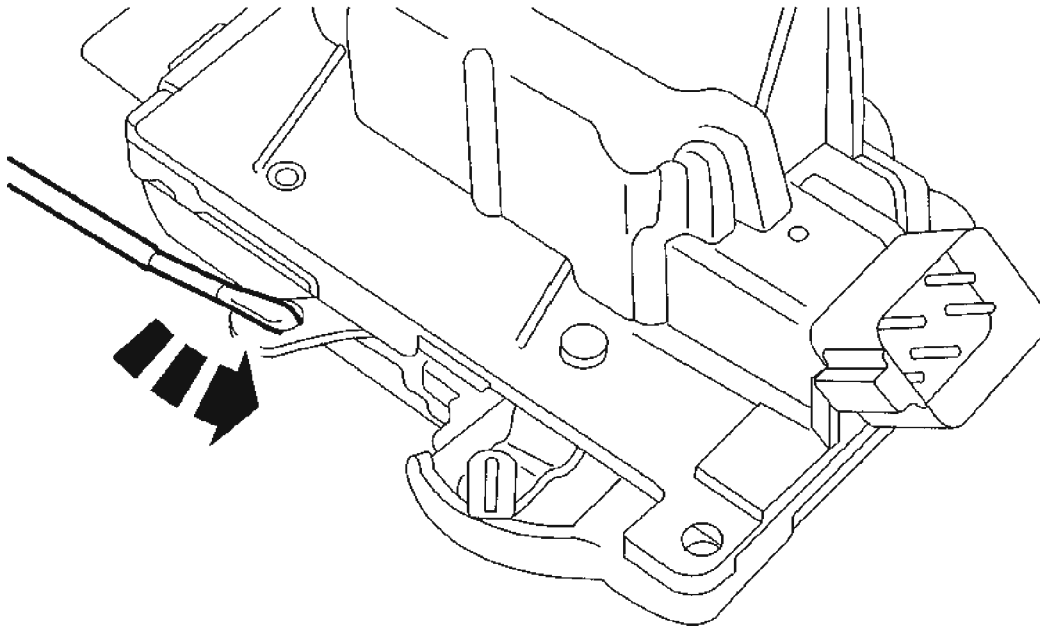


Fig. 52: Disconnecting Door Lock Cylinder Connecting Rod

Courtesy of FORD MOTOR CO.

8. Disconnect the exterior door handle reinforcement plate connecting rod.



VUE0012701

Fig. 53: Disconnecting Exterior Door Handle Reinforcement Plate Connecting Rod

Courtesy of FORD MOTOR CO.

9. Remove the door latch.
 1. Detach the door latch remote control outer cable.
 2. Rotate the door latch remote control clockwise.
 3. Remove the door latch.

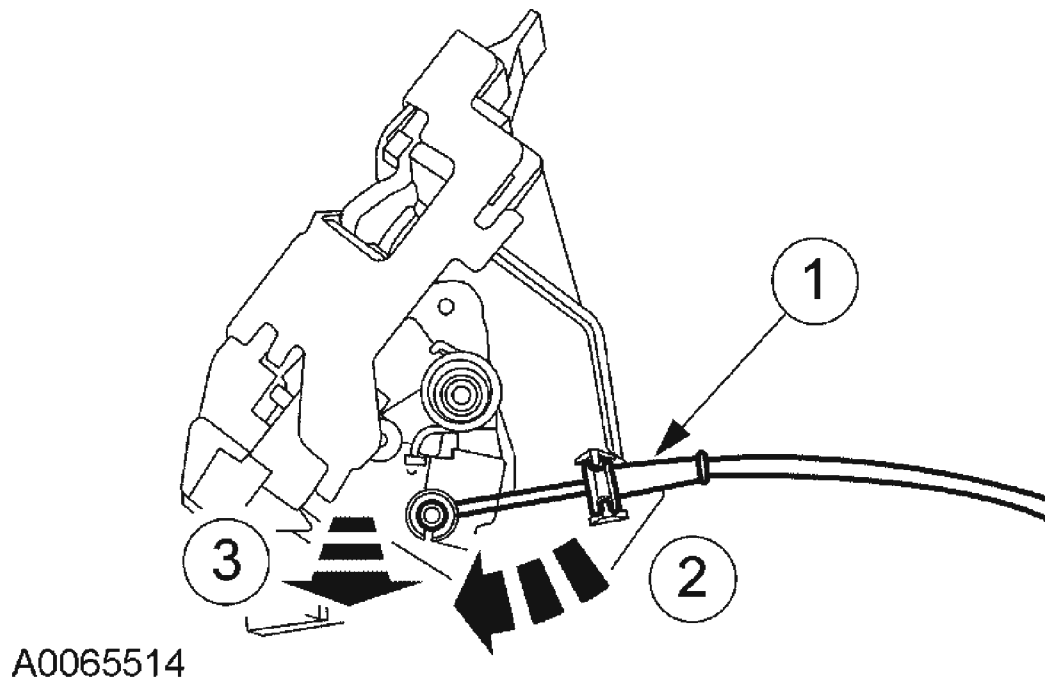


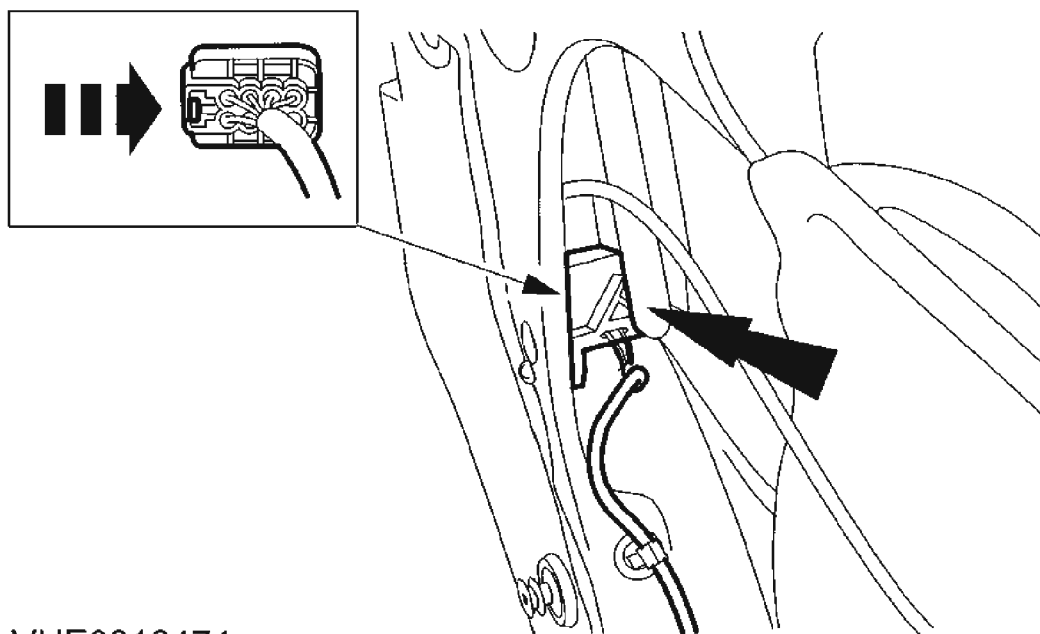
Fig. 54: Removing Door Latch
Courtesy of FORD MOTOR CO.

10. To install, reverse the removal procedure.

REAR DOOR LATCH

Removal and Installation

1. Remove the exterior door handle. For additional information, refer to **EXTERIOR DOOR HANDLE**.
2. Disconnect the door latch actuator electrical connector.



VUE0012474

Fig. 55: Disconnecting Door Latch Actuator Electrical Connector
Courtesy of FORD MOTOR CO.

3. Remove the screws and the plate.

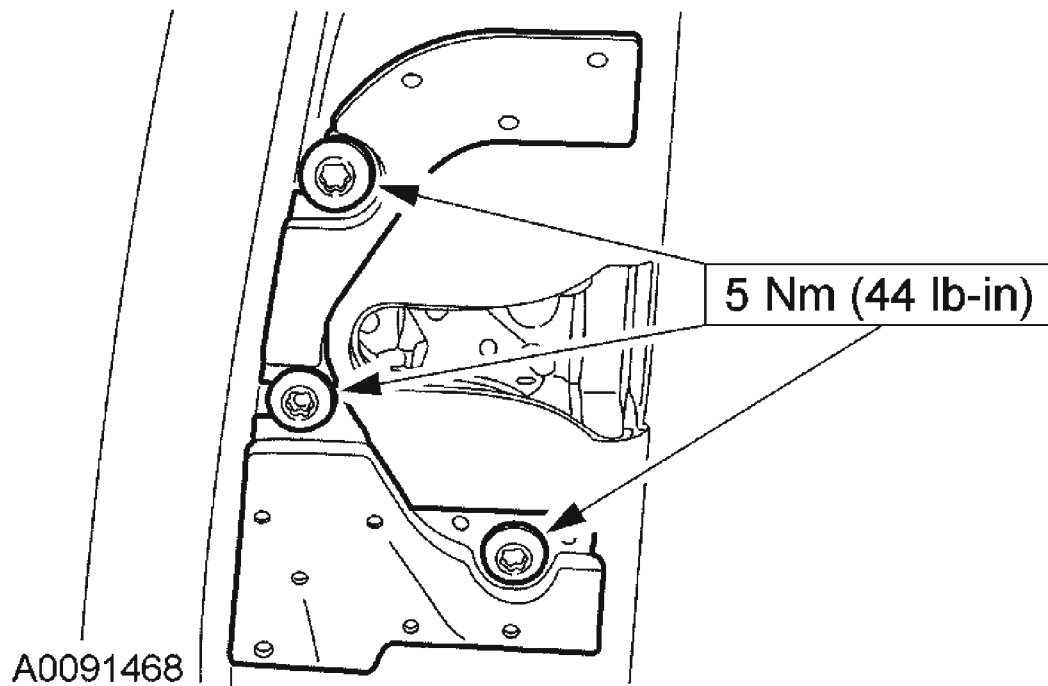
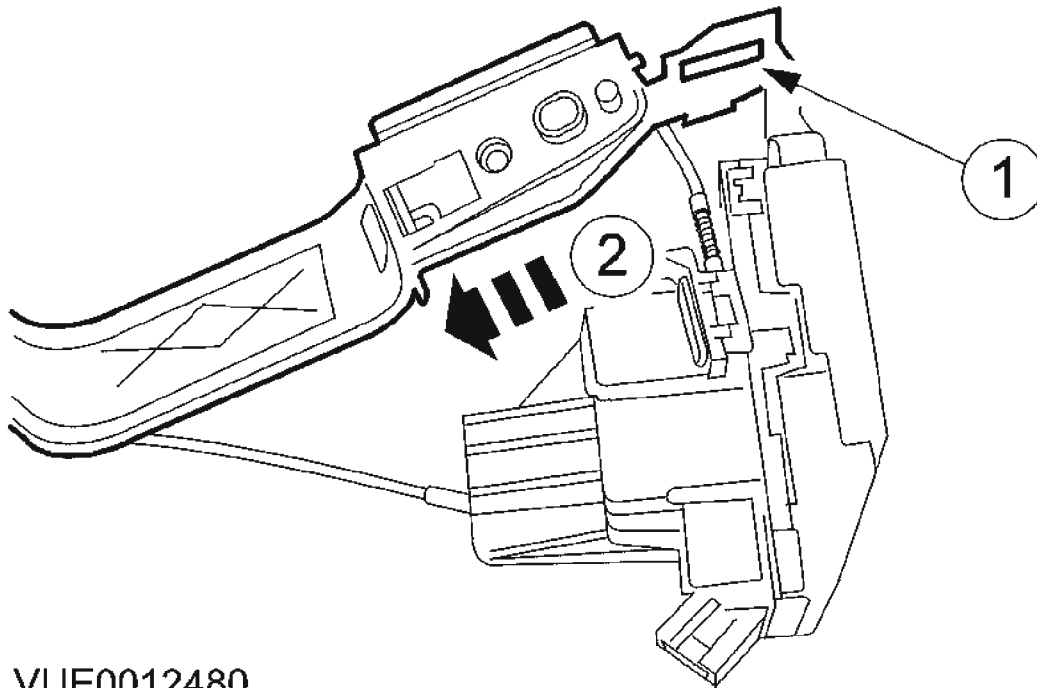


Fig. 56: Removing Screws And Plate
Courtesy of FORD MOTOR CO.

4. Detach the door latch from the exterior door handle reinforcement plate.
 1. Press the clip to release.
 2. Detach the door latch from the exterior door handle reinforcement plate.



VUE0012480

Fig. 57: Detaching Door Latch From Exterior Door Handle Reinforcement Plate
Courtesy of FORD MOTOR CO.

5. Remove the exterior door handle reinforcement plate.
 - Rotate the exterior door handle reinforcement plate 90 degrees counterclockwise.

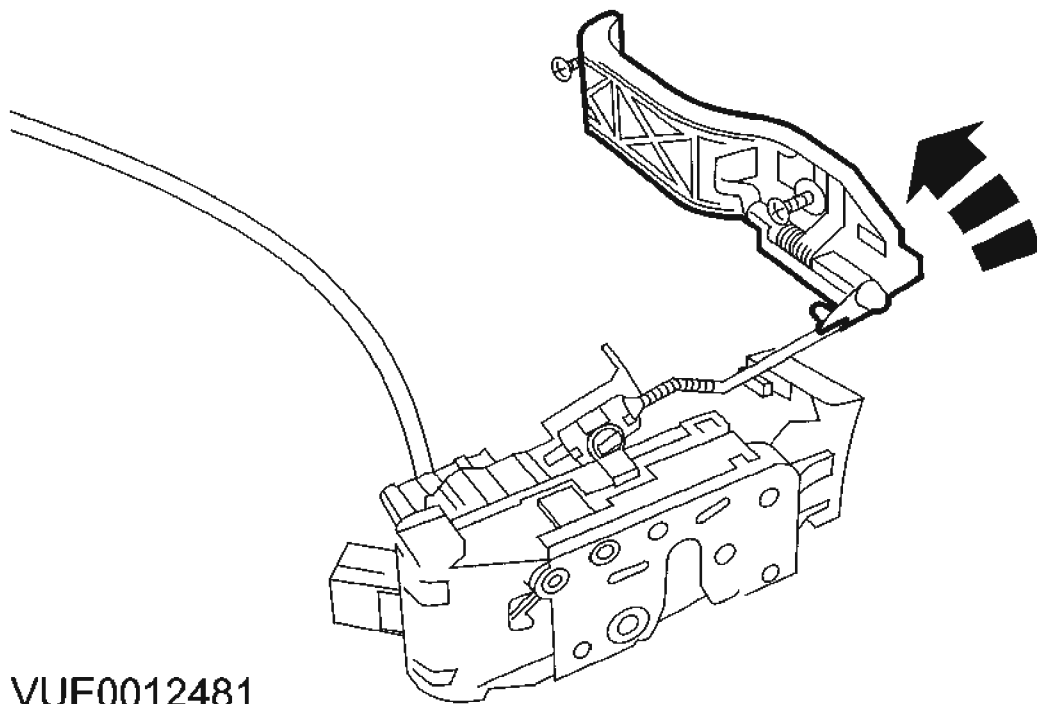
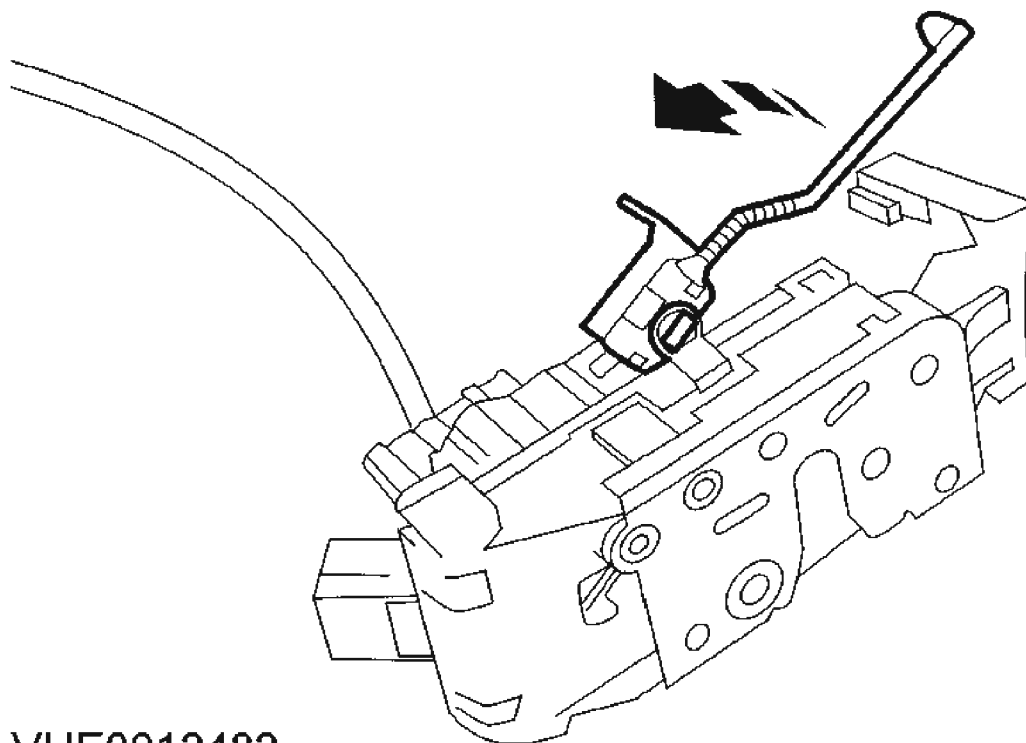


Fig. 58: Removing Exterior Door Handle Reinforcement Plate
Courtesy of FORD MOTOR CO.

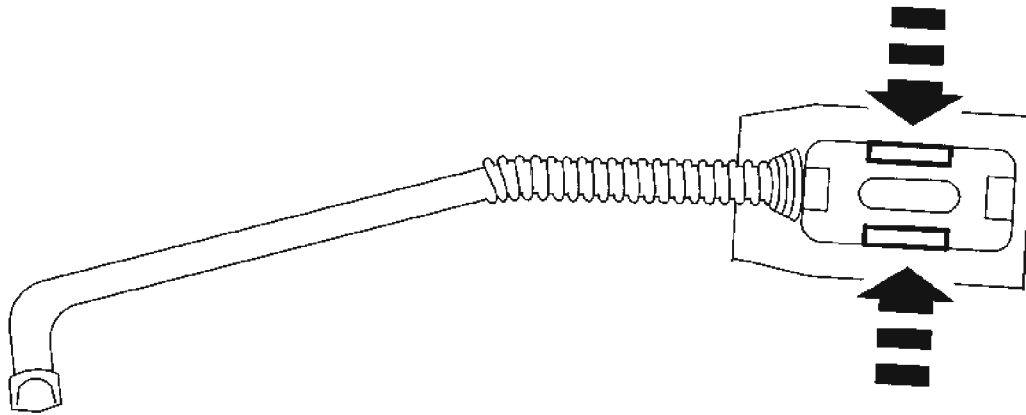
6. Remove the door latch connecting rod.
 - Rotate the door latch connecting rod 90 degrees counterclockwise.



VUE0012482

Fig. 59: Removing Door Latch Connecting Rod
Courtesy of FORD MOTOR CO.

7. Release the door latch connecting rod adjustment clip.



VUE0012483

Fig. 60: Releasing Door Latch Connecting Rod Adjustment Clip
Courtesy of FORD MOTOR CO.

8. Remove the door latch
 1. Detach the door latch remote control outer cable.
 2. Rotate the door latch remote control clockwise.
 3. Remove the door latch.

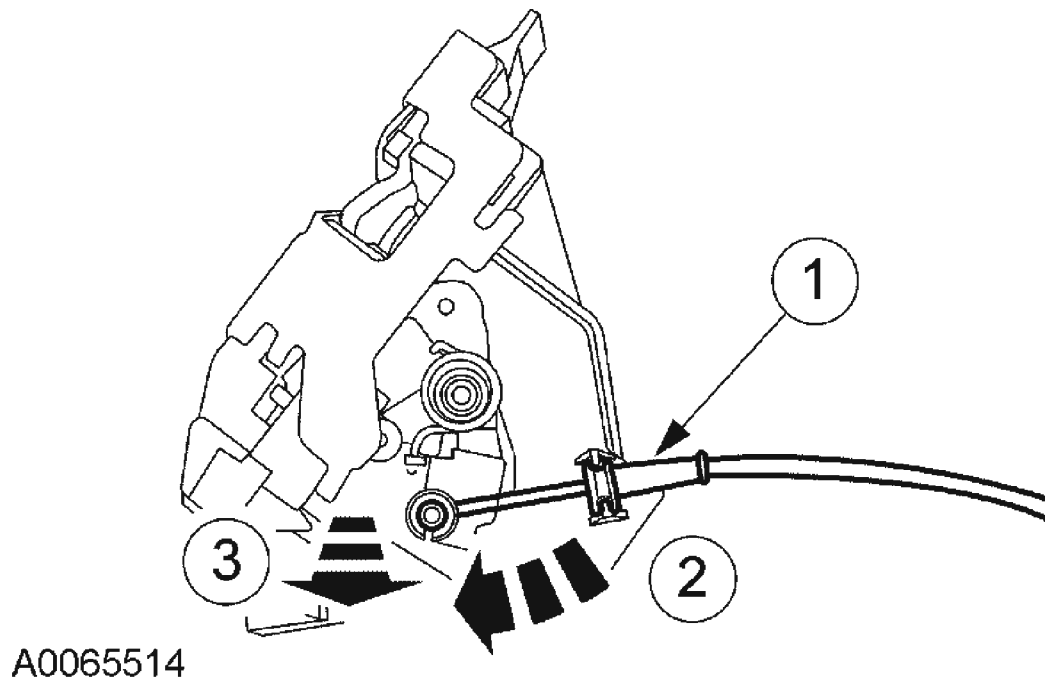


Fig. 61: Removing Door Latch
Courtesy of FORD MOTOR CO.

9. To install, reverse the removal procedure.

LIFTGATE LATCH

Removal and Installation All vehicles

NOTE: Wagon shown, all others similar.

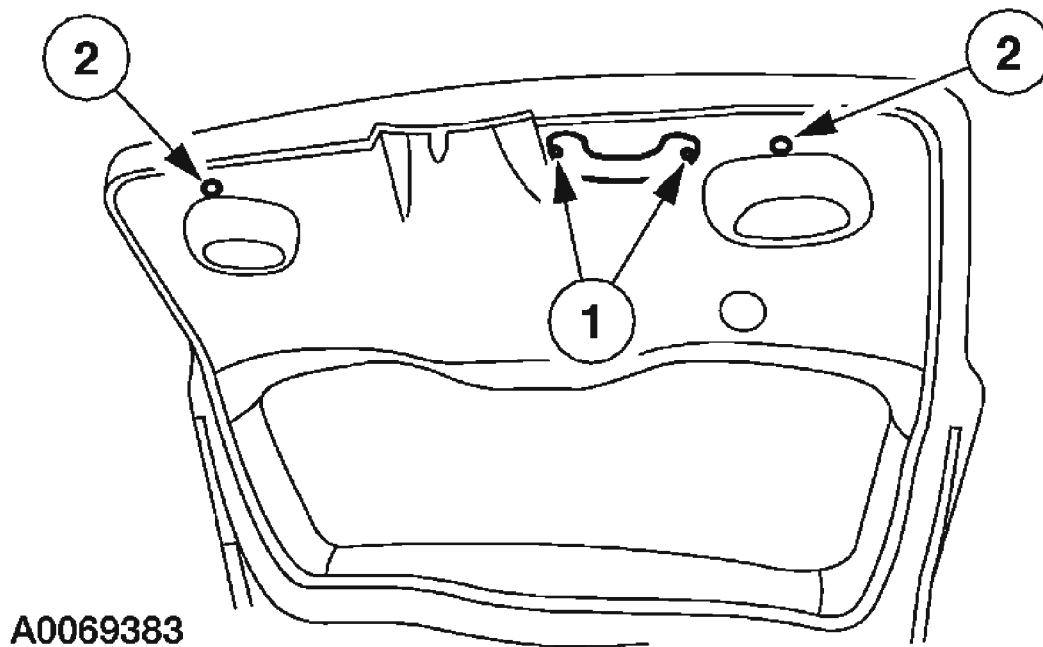


Fig. 62: Removing Liftgate Trim Panel
Courtesy of FORD MOTOR CO.

1. Remove the liftgate trim panel.
 1. Remove the pull handle covers, screws and handle.
 2. Remove the liftgate trim panel bolt covers and screws.
2. Disconnect and detach the liftgate latch electrical connector.

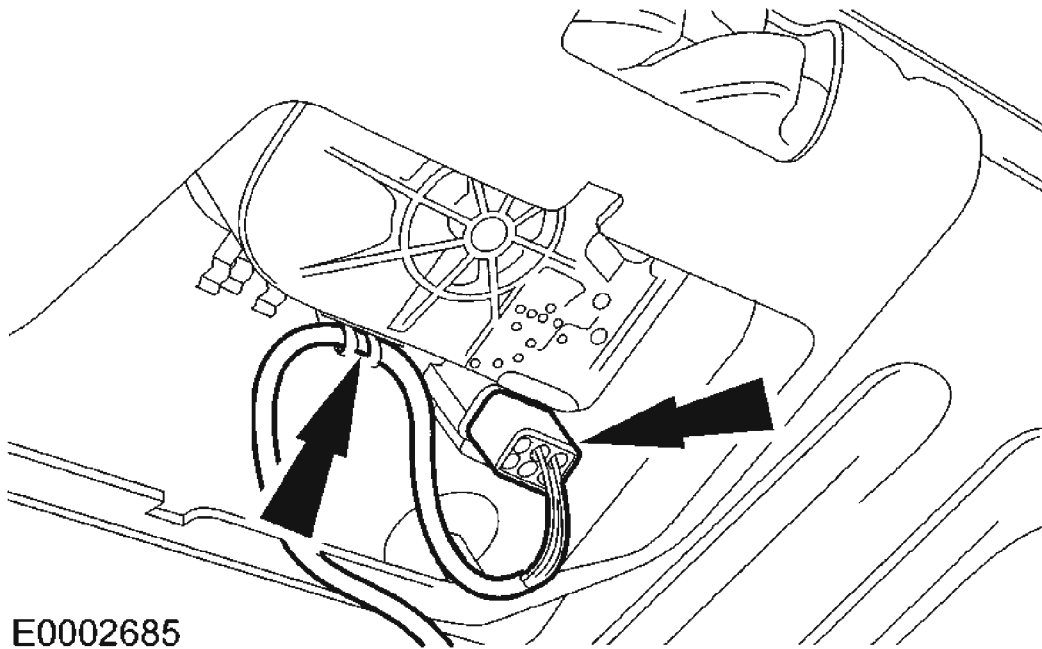


Fig. 63: Disconnecting And Detaching Liftgate Latch Electrical Connector
Courtesy of FORD MOTOR CO.

Wagon

3. Detach the liftgate latch cable from the retaining clips.

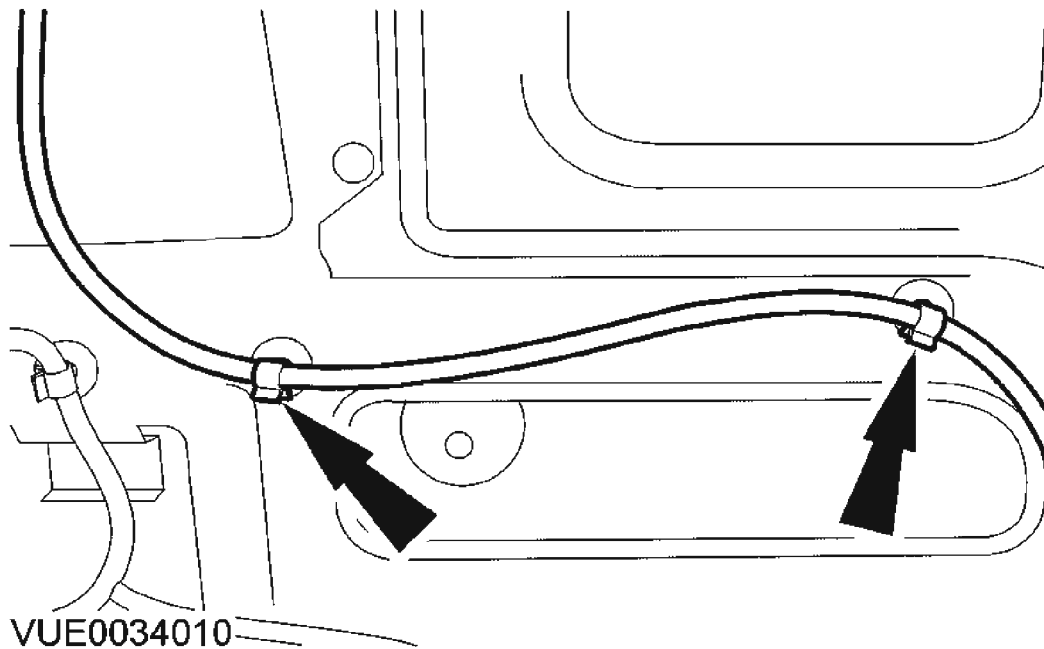


Fig. 64: Detaching Liftgate Latch Cable From Retaining Clips
Courtesy of FORD MOTOR CO.

4. Disconnect the liftgate latch cable from the liftgate lock assembly.

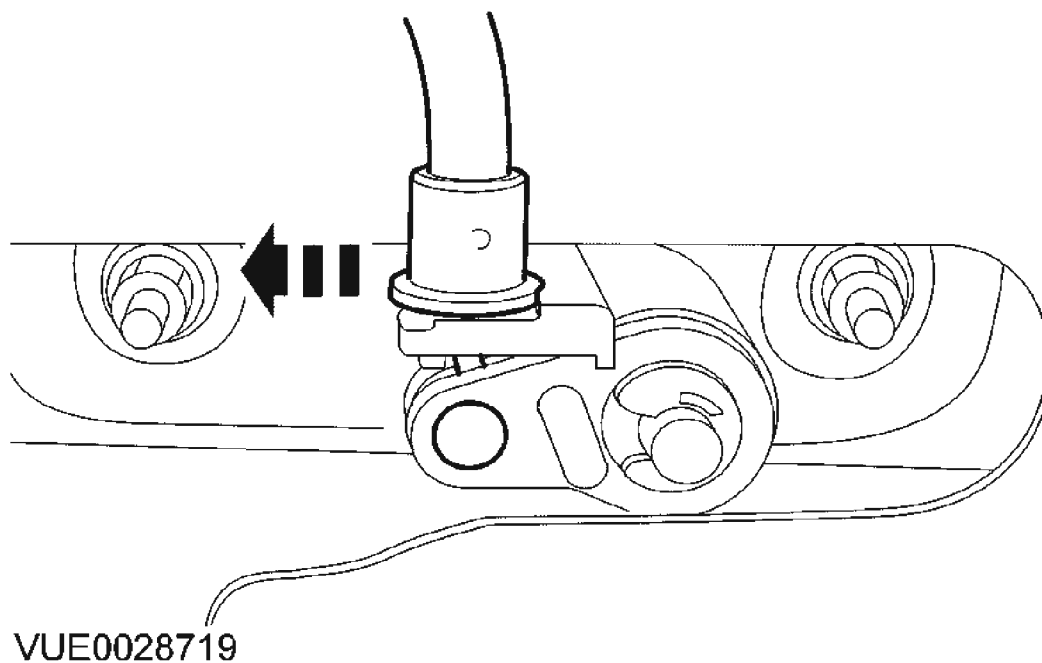


Fig. 65: Disconnecting Liftgate Latch Cable From Liftgate Lock Assembly
Courtesy of FORD MOTOR CO.

All vehicles

5. Remove the latch.

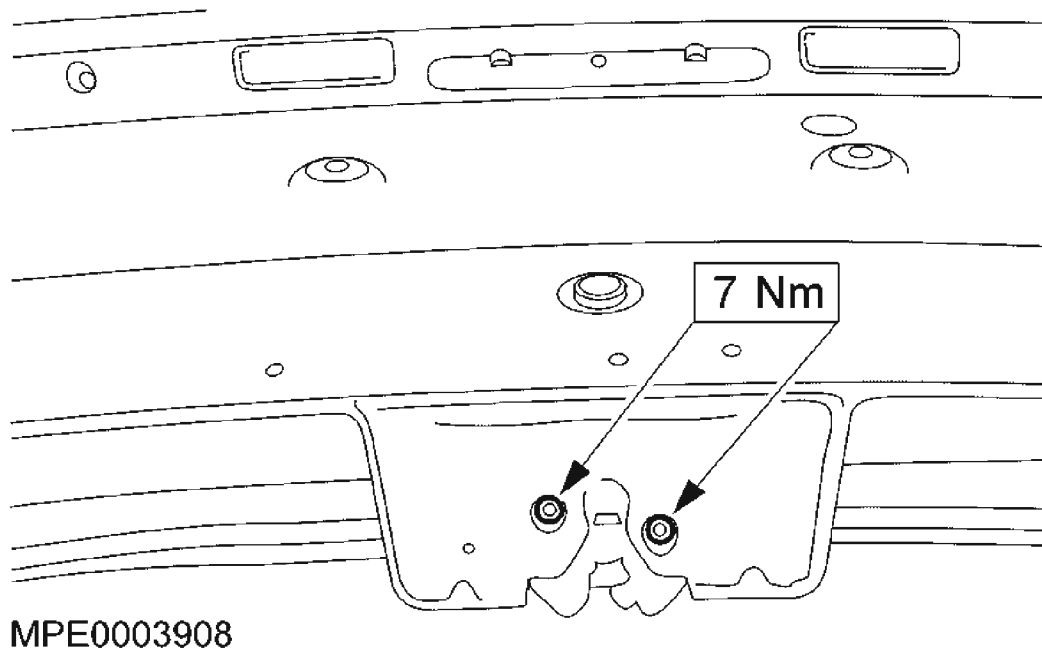


Fig. 66: Removing Latch
Courtesy of FORD MOTOR CO.

3-door and 5-door

6. If a new liftgate latch is being installed, for additional information, refer to **LIFTGATE LOCK CYLINDER**.
7. To install, reverse the removal procedure.

LUGGAGE COMPARTMENT LID LATCH

Removal and Installation

1. Remove the luggage compartment lid lock cylinder cover.

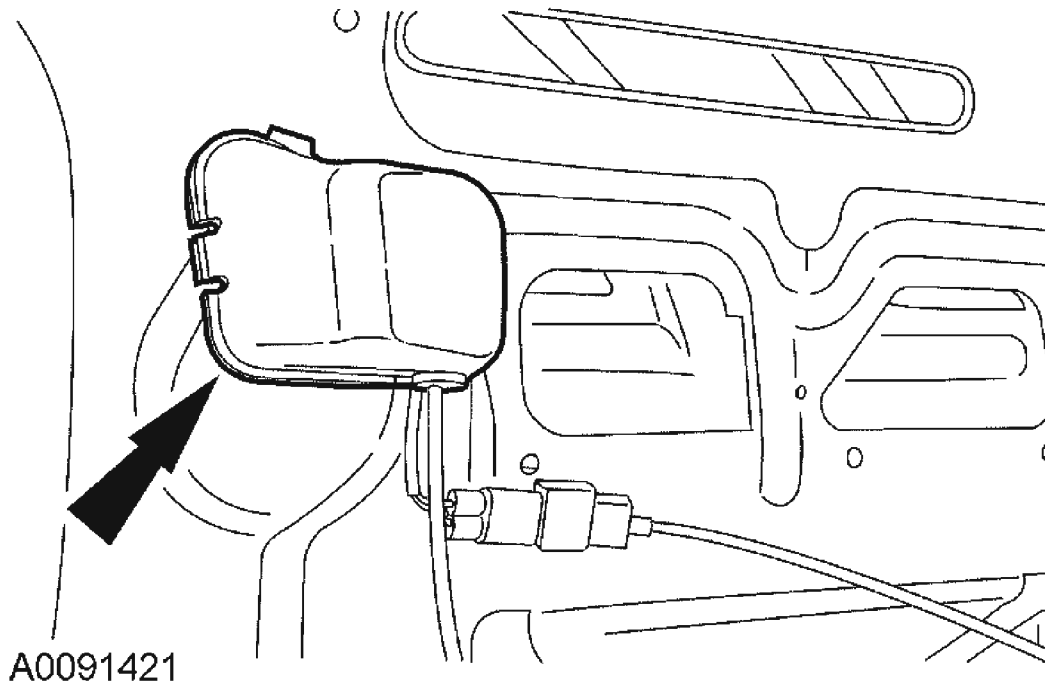


Fig. 67: Removing Luggage Compartment Lid Lock Cylinder Cover
Courtesy of FORD MOTOR CO.

2. Disconnect the cable from the lock cylinder.
 - If equipped, disconnect the electrical connector.

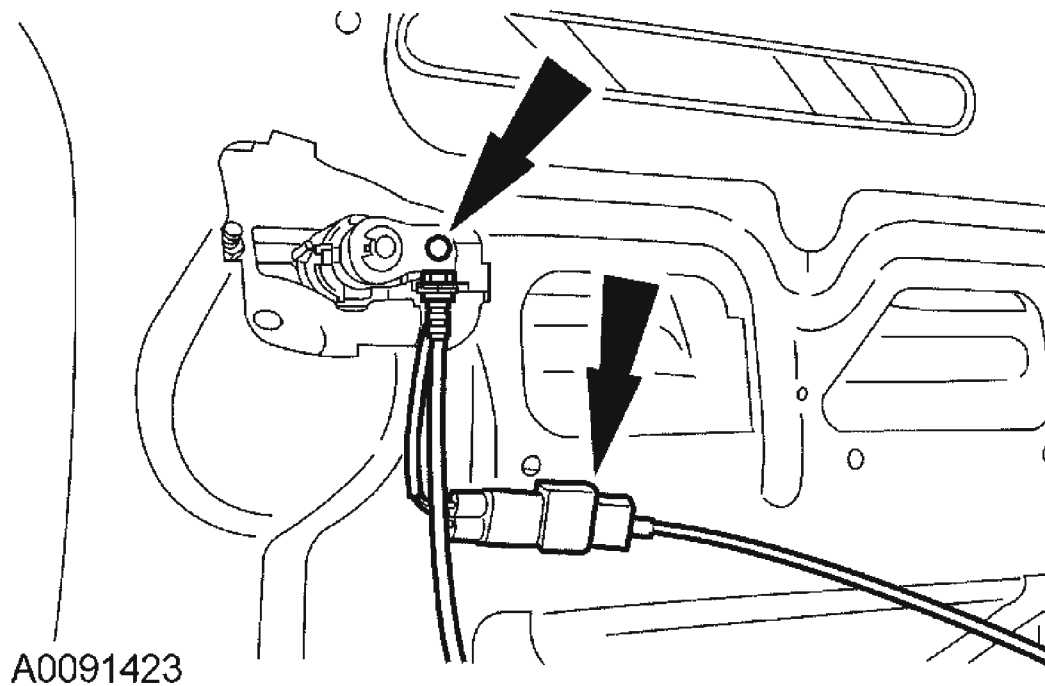


Fig. 68: Disconnecting Cable From Lock Cylinder
Courtesy of FORD MOTOR CO.

3. Release the remote cable guide.

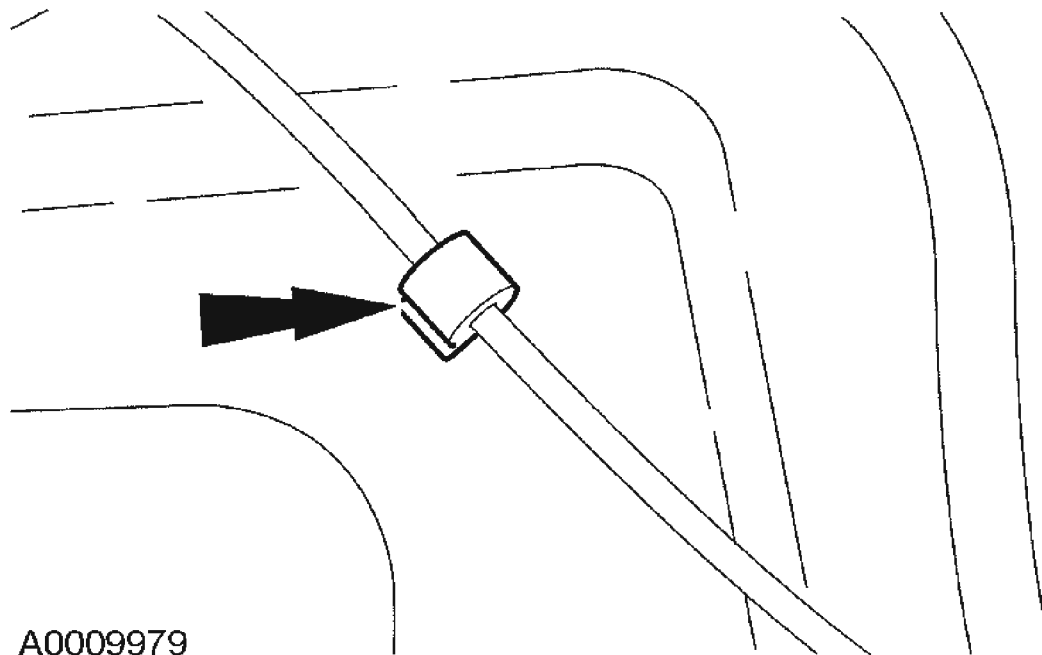


Fig. 69: Releasing Remote Cable Guide
Courtesy of FORD MOTOR CO.

4. Disconnect the electrical connector.

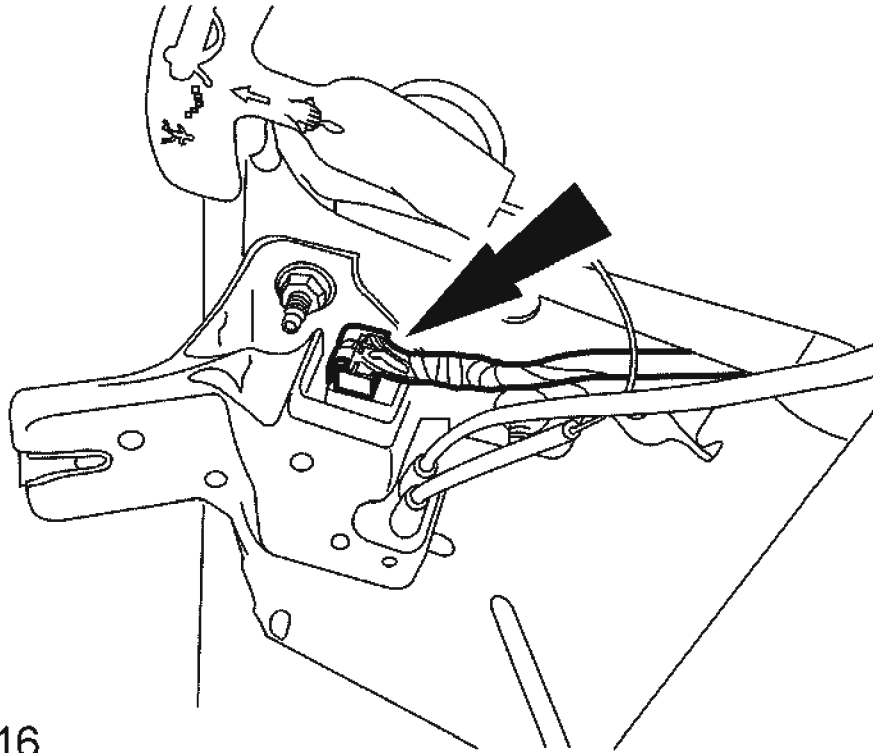


Fig. 70: Disconnecting Electrical Connector
Courtesy of FORD MOTOR CO.

5. Remove the bolts and the luggage compartment lid latch.

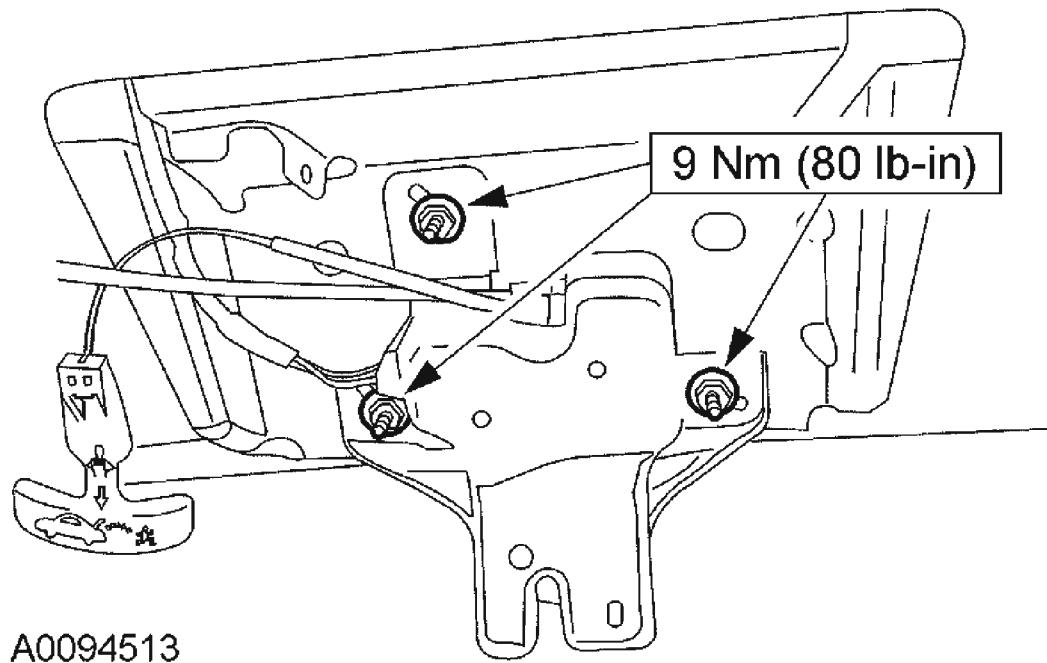


Fig. 71: Removing Bolts And Luggage Compartment Lid Latch
Courtesy of FORD MOTOR CO.

6. To install, reverse the removal procedure.

EXTERIOR DOOR HANDLE

Removal and Installation

1. Remove the interior door handle. For additional information, refer to **INTERIOR DOOR HANDLE**.
2. Remove the side impact energy absorber.

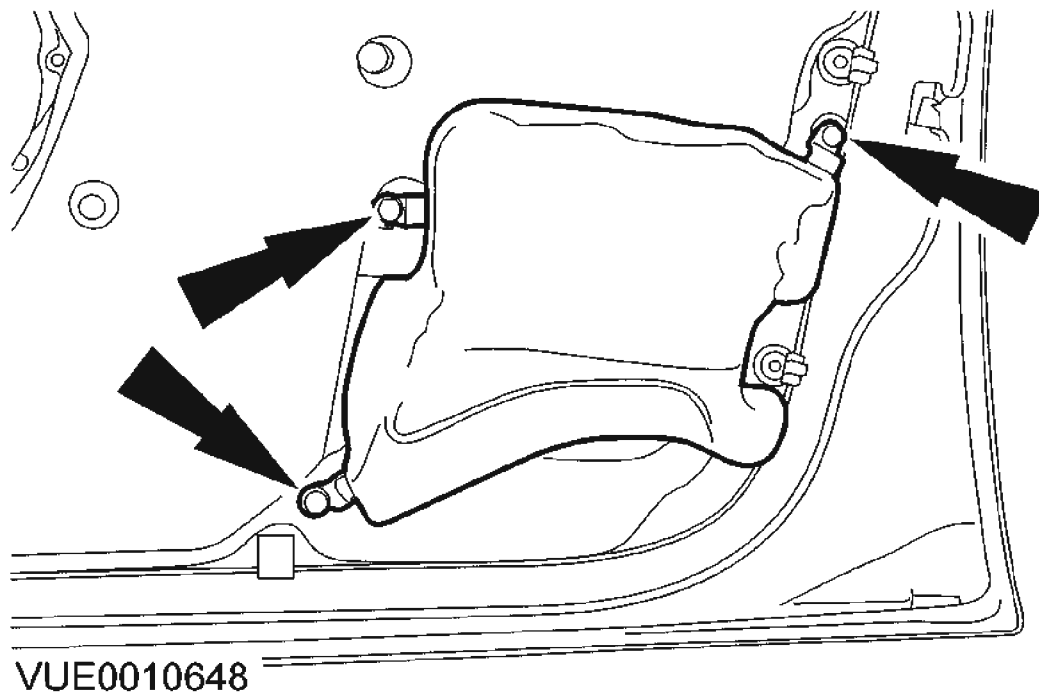


Fig. 72: Removing Side Impact Energy Absorber
Courtesy of FORD MOTOR CO.

CAUTION: Do not touch the adhesive surface as re-bonding will be impaired.

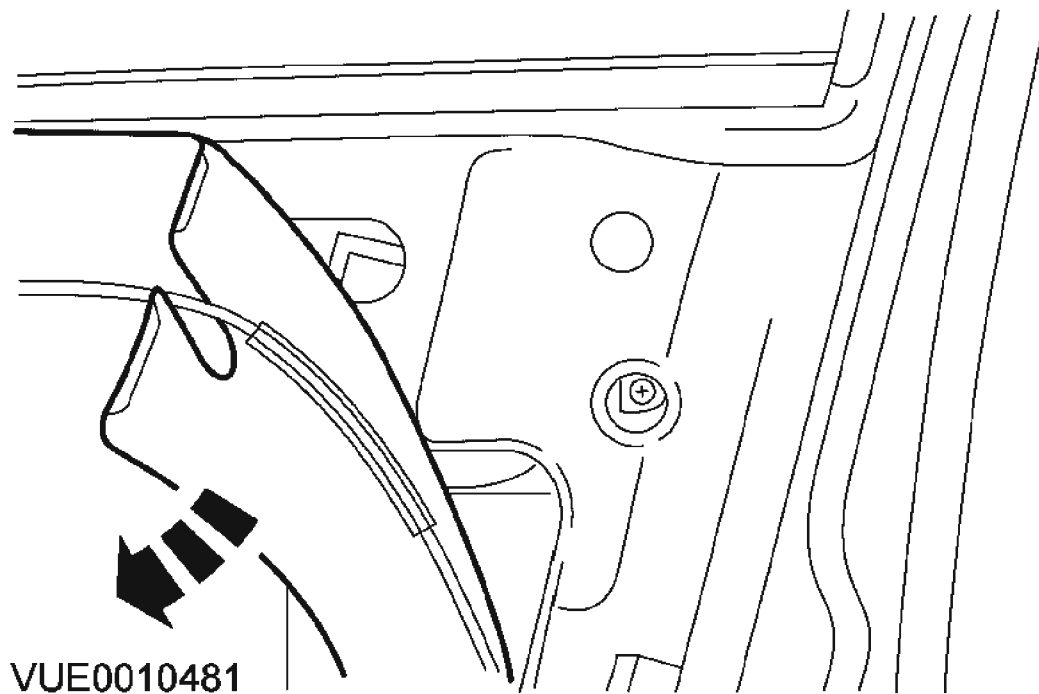


Fig. 73: Peeling Back Watershield
Courtesy of FORD MOTOR CO.

3. Peel back the watershield.
4. Remove the exterior door handle access hole grommet from the door, if equipped.

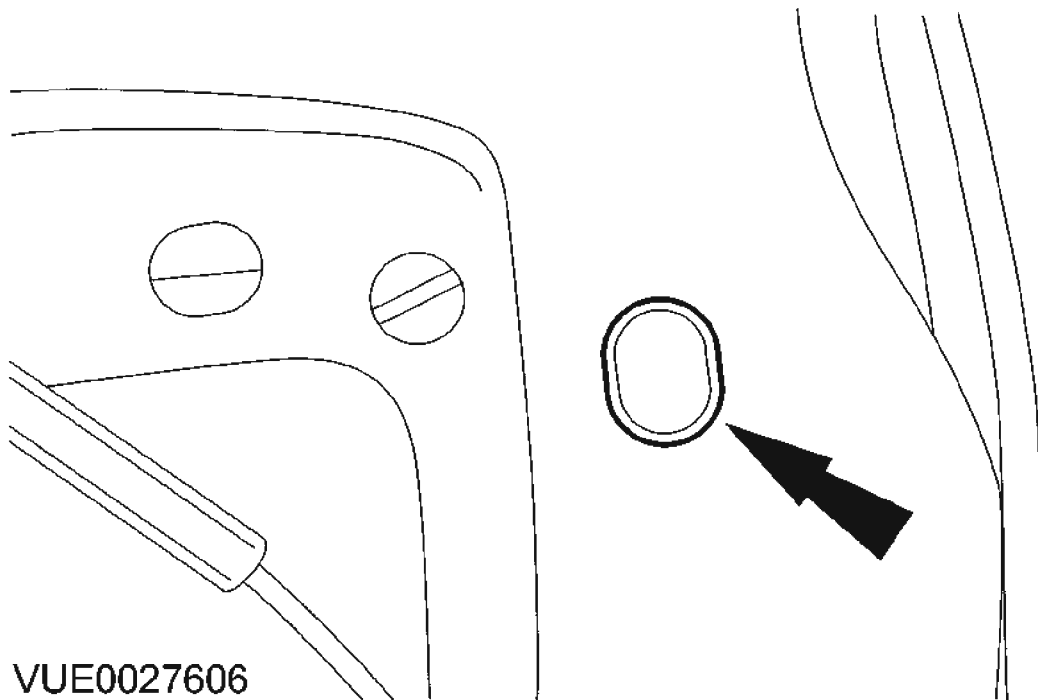


Fig. 74: Removing Exterior Door Handle Access Hole Grommet From Door
Courtesy of FORD MOTOR CO.

NOTE: The screws must be fully disengaged from the door lock cylinder bezel although it is not necessary to fully remove the screws.

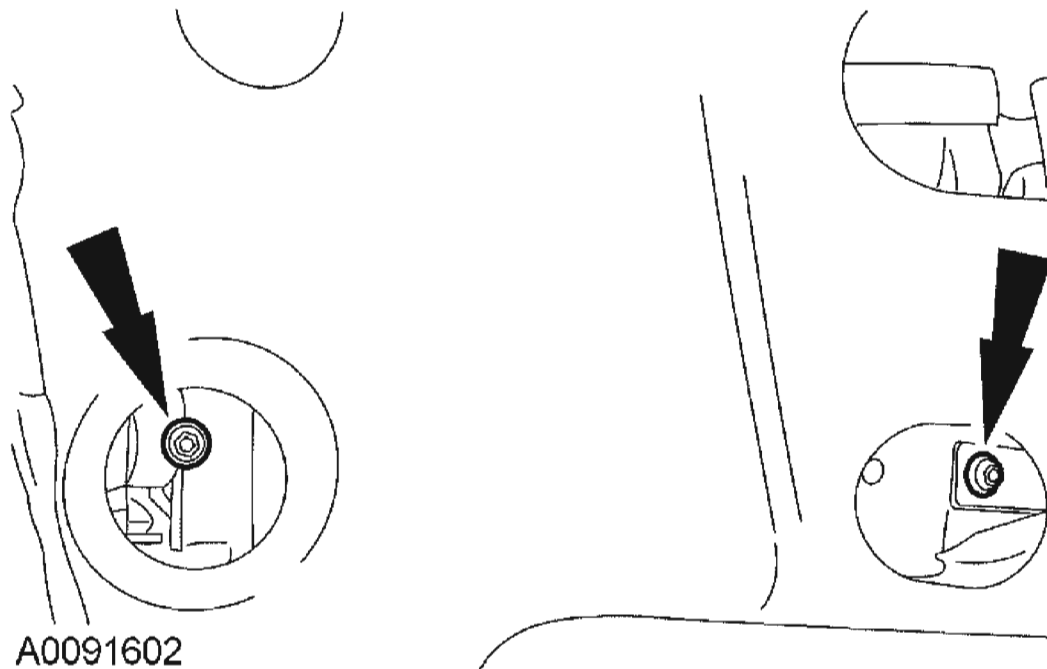


Fig. 75: Loosening Screws
Courtesy of FORD MOTOR CO.

5. Loosen the screws.
6. Remove the door lock cylinder bezel.

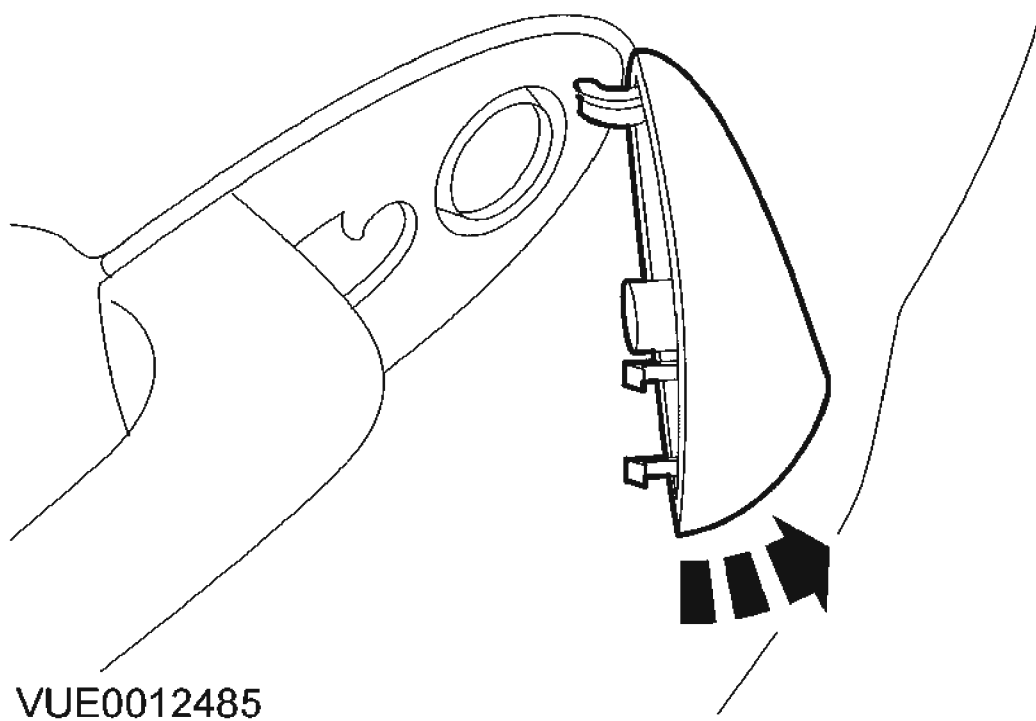
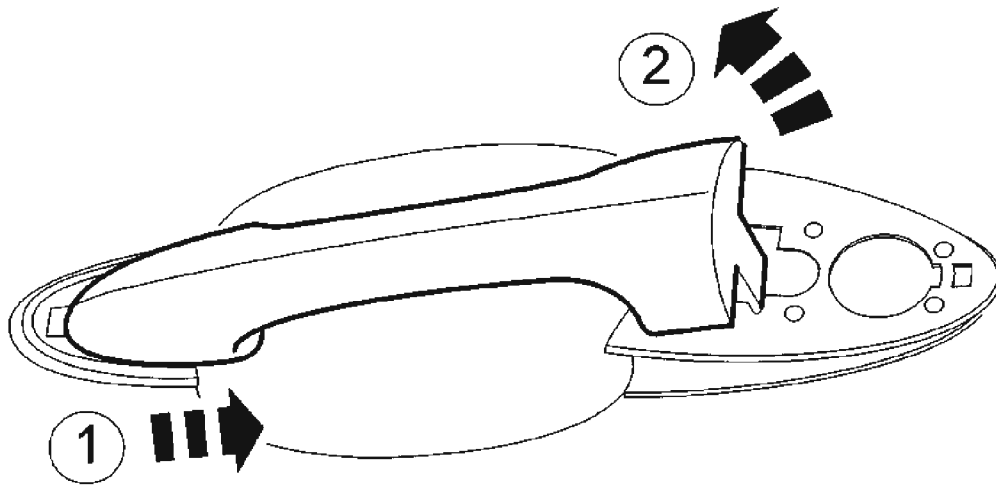


Fig. 76: Removing Door Lock Cylinder Bezel
Courtesy of FORD MOTOR CO.

7. Remove the exterior door handle.
 1. Slide the exterior door handle to release.
 2. Remove the exterior door handle and gaskets.



VUE0012491

Fig. 77: Removing Exterior Door Handle
Courtesy of FORD MOTOR CO.

8. To install, reverse the removal procedure.

IGNITION LOCK CYLINDER - FUNCTIONAL

Removal and Installation

1. Disconnect the battery. For additional information, refer to **BATTERY, MOUNTING AND CABLES**.
2. Position the lower instrument panel aside.

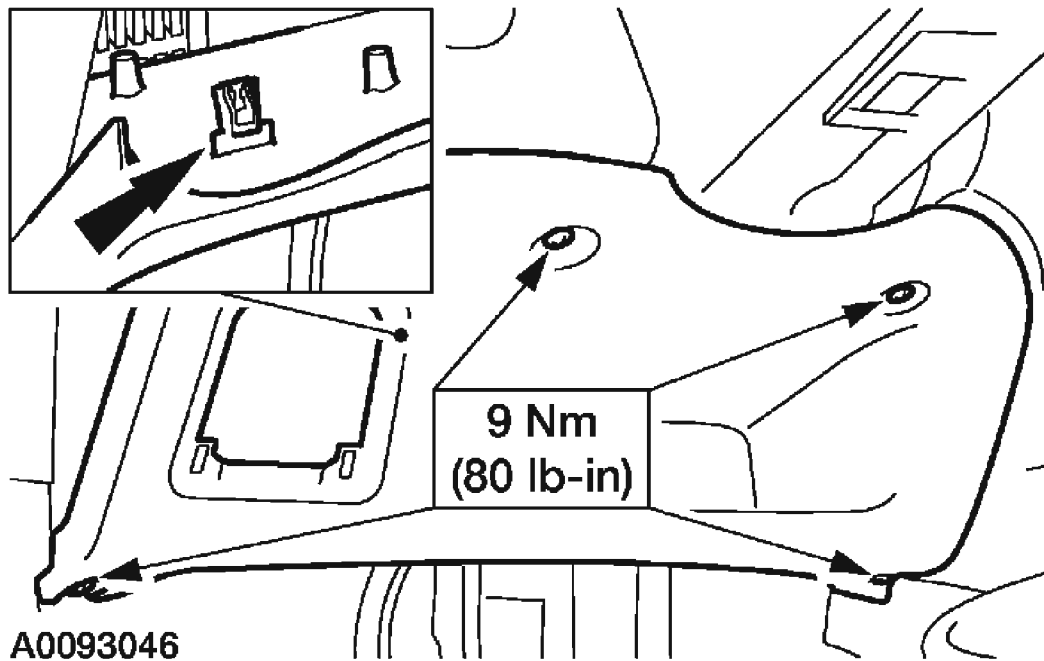


Fig. 78: Positioning Lower Instrument Panel Aside
Courtesy of FORD MOTOR CO.

3. Disconnect the hood release cable and the data link connector (DLC) from the instrument panel and remove the lower instrument panel.

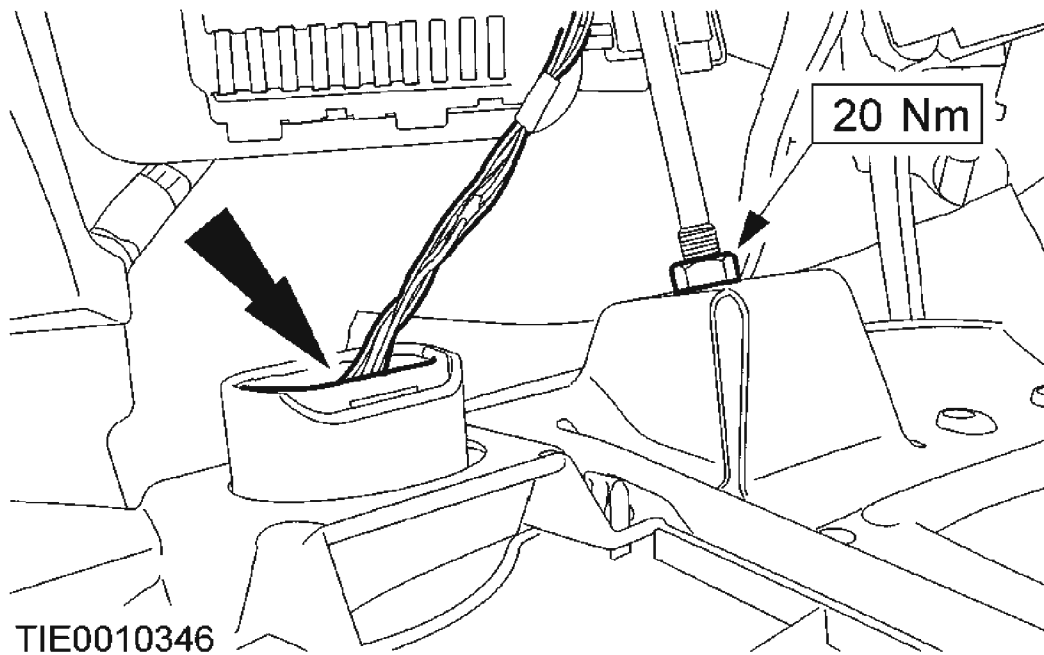


Fig. 79: Disconnecting Hood Release Cable And Data Link Connector (DLC) From Instrument Panel And Removing Lower Instrument Panel
Courtesy of FORD MOTOR CO.

4. Remove the steering column upper shroud.
 - Using a thin bladed screwdriver, release the 2 clips (one each side).

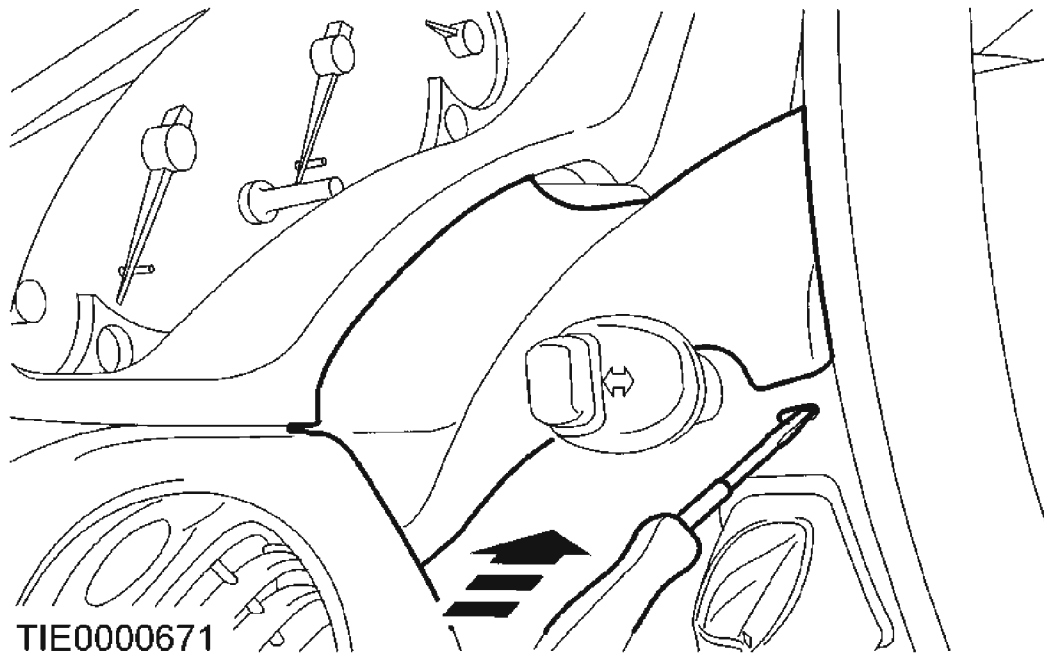


Fig. 80: Removing Steering Column Upper Shroud
Courtesy of FORD MOTOR CO.

5. Remove the audio control switch (if equipped).
 1. Using a thin bladed screwdriver, release the locking tang.
 2. Disconnect the electrical connector.

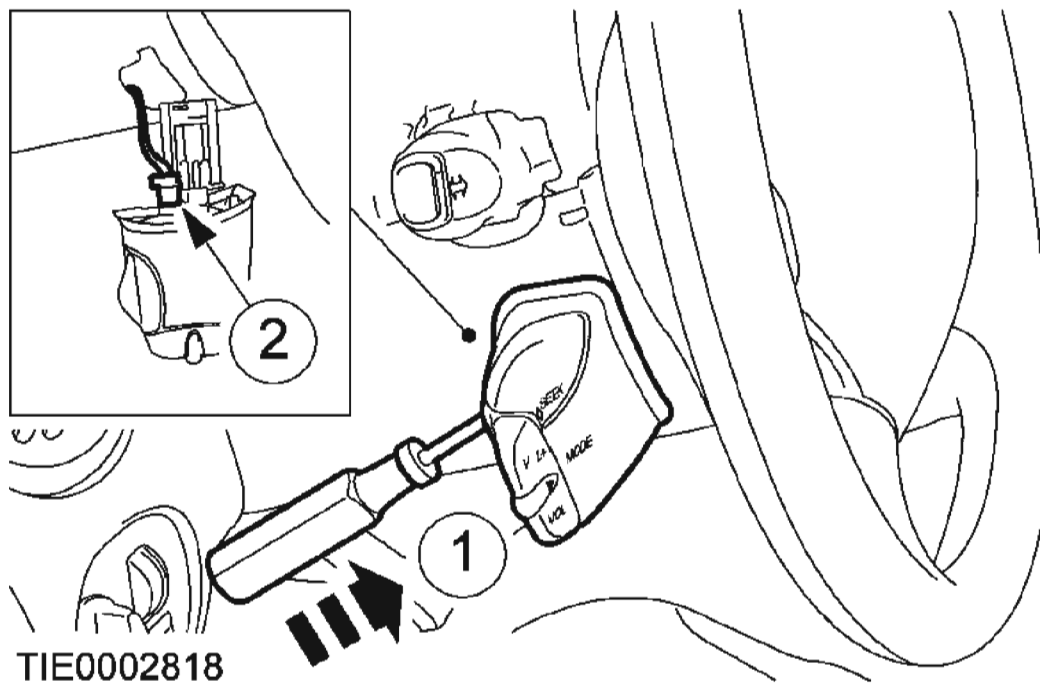


Fig. 81: Removing Audio Control Switch
Courtesy of FORD MOTOR CO.

6. Remove the steering column lower shroud.
 1. Release the steering column locking lever.
 2. Remove the screws.

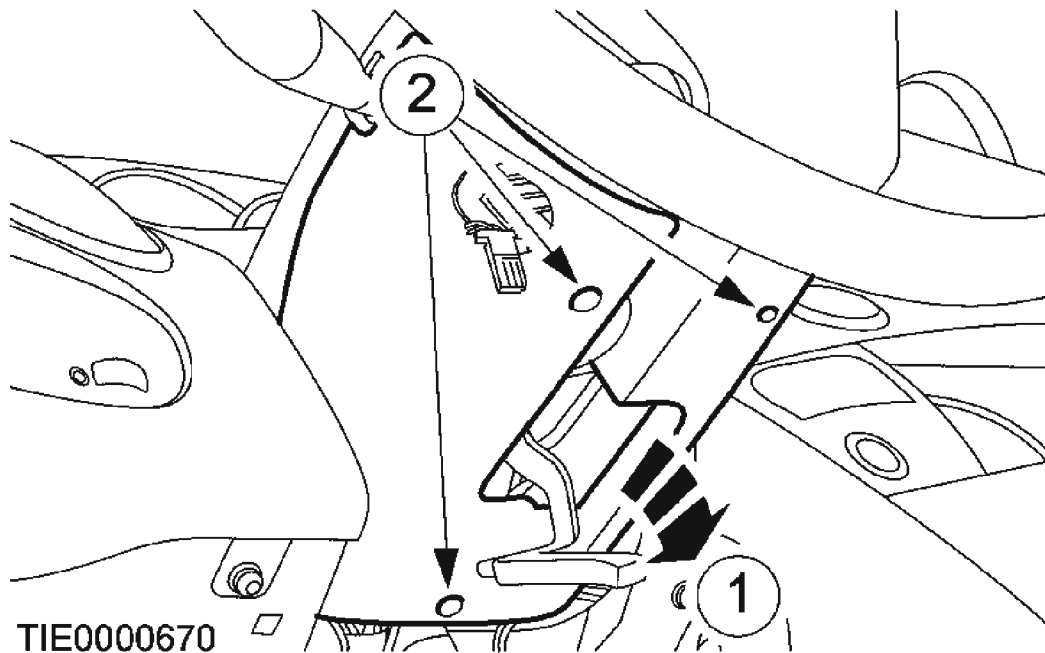


Fig. 82: Removing Steering Column Lower Shroud
Courtesy of FORD MOTOR CO.

7. Remove the ignition lock cylinder.
 1. Insert and turn the ignition key to position I (Accessory).
 2. Using a thin bladed screwdriver, press the detent.
 3. Remove the lock cylinder.

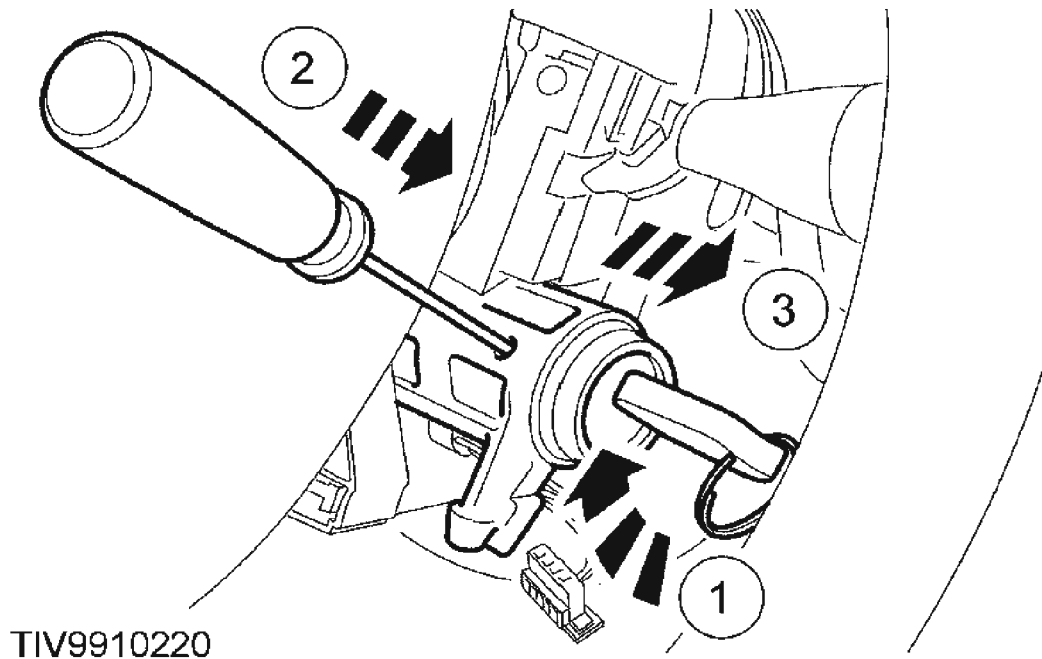


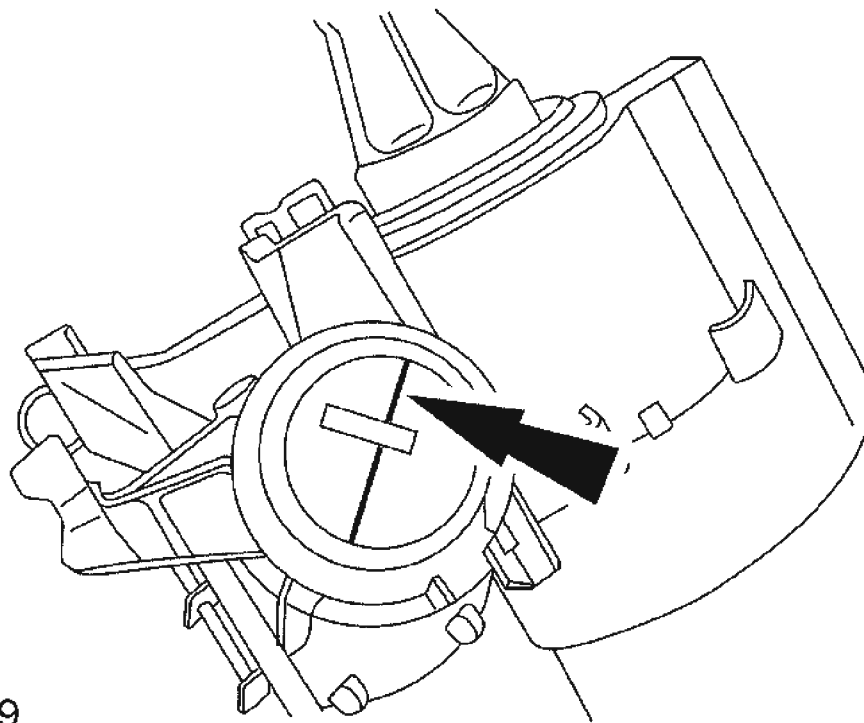
Fig. 83: Removing Ignition Lock Cylinder
Courtesy of FORD MOTOR CO.

8. To install, reverse the removal procedure.

IGNITION LOCK CYLINDER - NON FUNCTIONAL

Removal and Installation

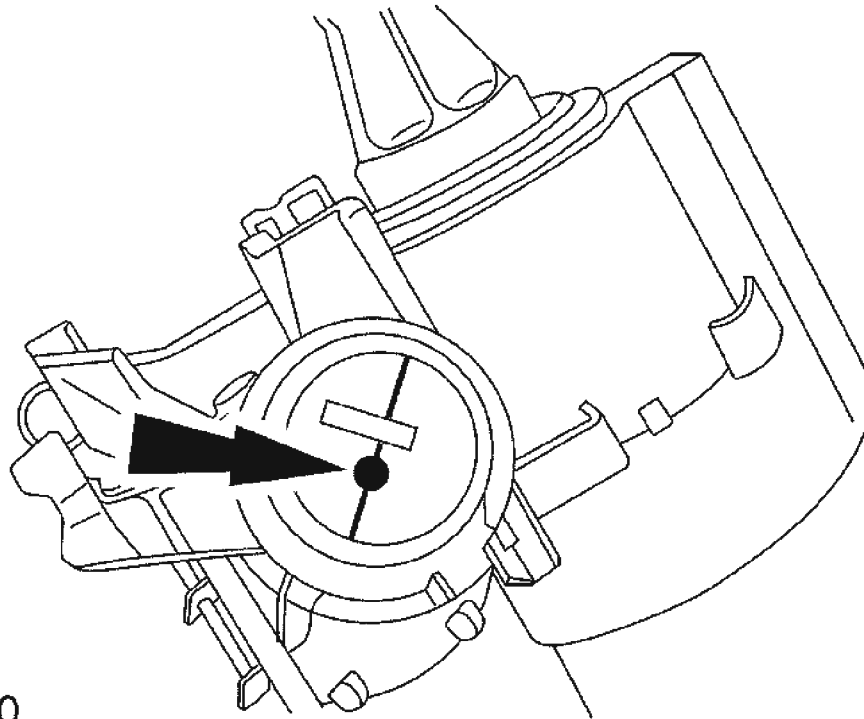
1. Remove the steering wheel. For additional information, refer to **STEERING COLUMN**.
2. Remove the passive anti-theft transceiver. For additional information, refer to **ANTI-THEFT - PATS**.
3. Draw a line through the middle of the ignition lock cylinder face 90 degrees to the key slot.



A0092219

Fig. 84: Drawing Line Through Middle Of Ignition Lock Cylinder
Courtesy of FORD MOTOR CO.

4. Mark a point on the line 3 mm (0.11 in) down from the slot which is just beyond the center of the lock face.

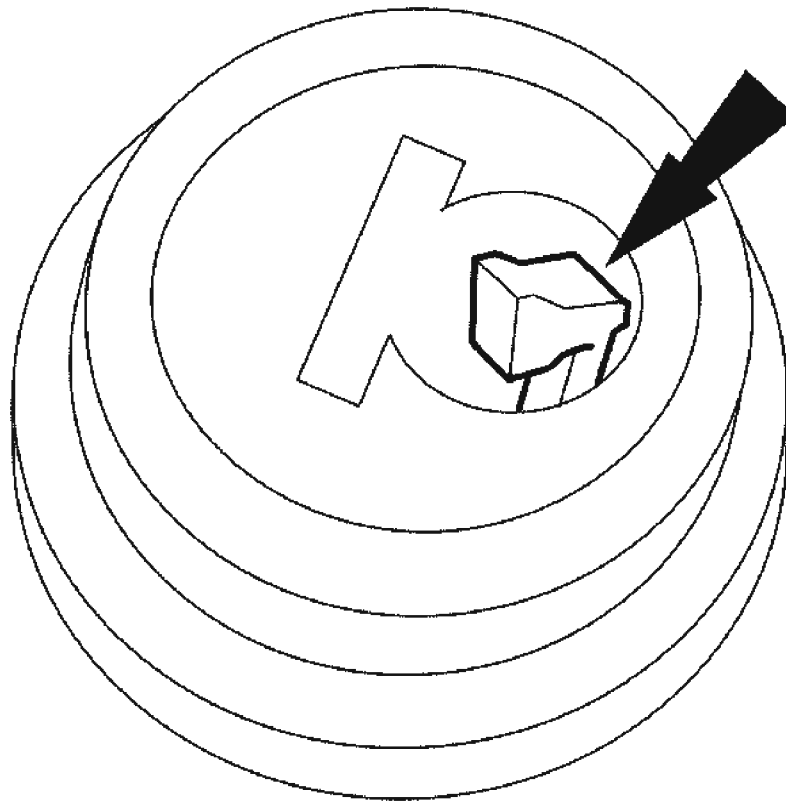


A0092220

Fig. 85: Marking Point On Line Down From Slot Which Is Just Beyond Center Of Lock Face

Courtesy of FORD MOTOR CO.

5. Drill a 4 mm (0.15 in) pilot hole 3 mm (0.11 in) deep.
6. Drill a 10 mm (0.39 in) hole 35 mm (1.37 in) deep.
7. Remove the lockbar from the side of the hole.



A0092221

Fig. 86: Removing Lockbar From Side Of Hole
Courtesy of FORD MOTOR CO.

8. Rotate the ignition lock cylinder while pressing the retainer pin on the housing and pull out.

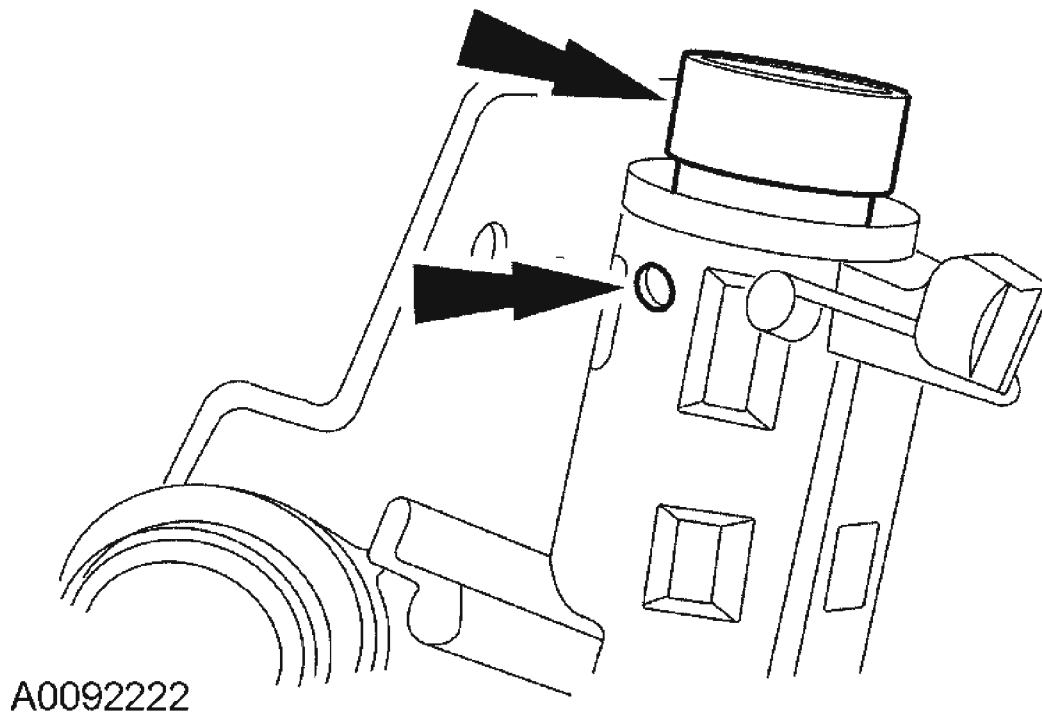


Fig. 87: Rotating Ignition Lock Cylinder While Pressing Retainer Pin On Housing And Pulling Out

Courtesy of FORD MOTOR CO.

9. Use the lock cylinder repair kit (XS4Z-11582-AA) and install the ignition lock cylinder.
 1. With the key in the ACC position insert the ignition lock cylinder.
 2. Turn the key to the OFF position and remove the key.

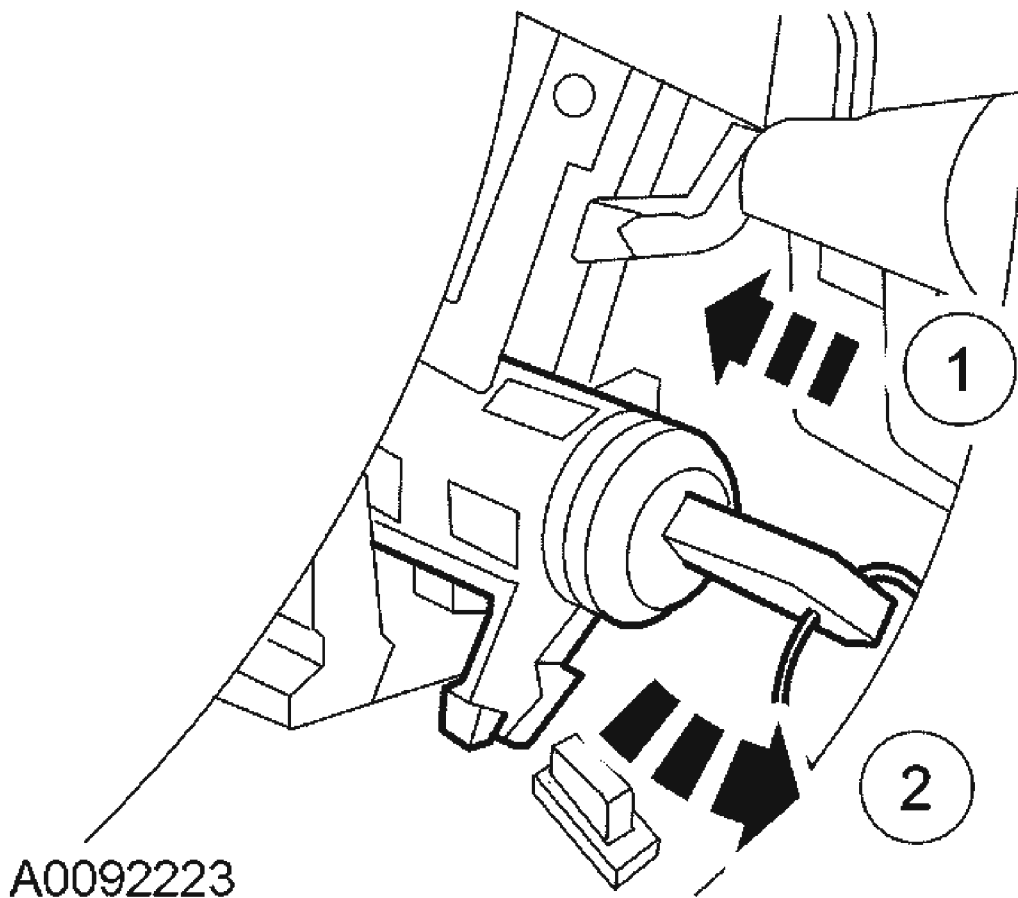


Fig. 88: Using Lock Cylinder Repair Kit (XS4Z-11582-AA) And Installing Ignition Lock Cylinder
Courtesy of FORD MOTOR CO.

10. Install the passive anti-theft transceiver. For additional information, refer to **ANTI-THEFT - PATS** .
11. Install the steering wheel. For additional information, refer to **STEERING COLUMN** .

LIFTGATE LOCK CYLINDER

Material

MATERIAL SPECIFICATION CHART

Item	Specification
Threadlock 262 TA-26	WSK-M2G351-A6

Removal

1. Remove the liftgate latch. For additional information, refer to **LIFTGATE LATCH**.
2. File down the liftgate lock cylinder housing to expose the spring and plunger.

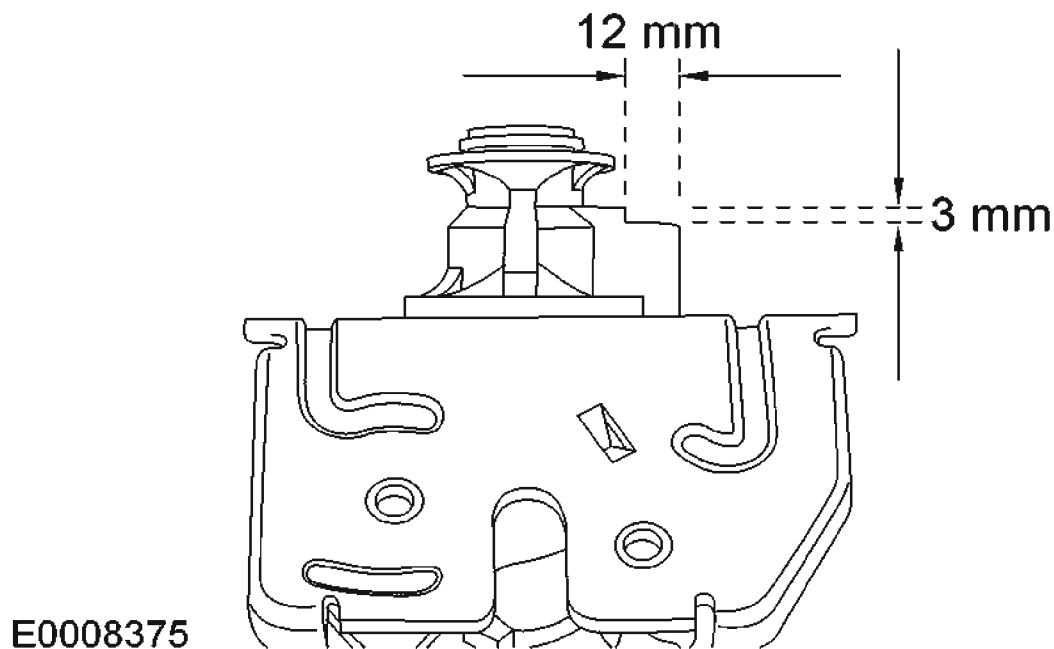


Fig. 89: Removing Liftgate Latch
Courtesy of FORD MOTOR CO.

3. Remove the spring and plunger. Discard the spring.

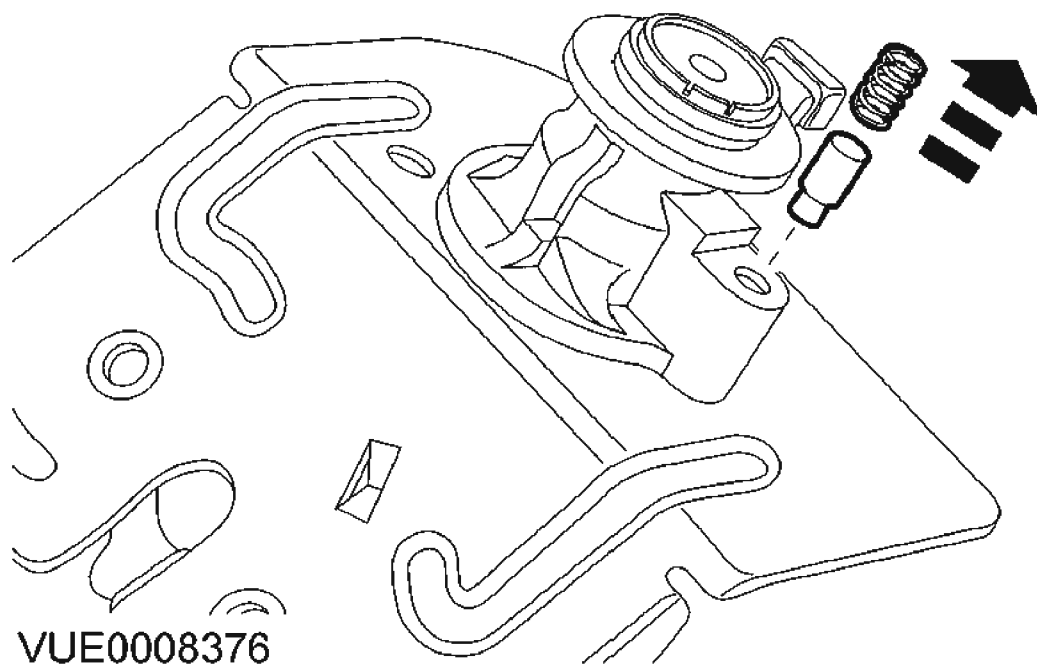
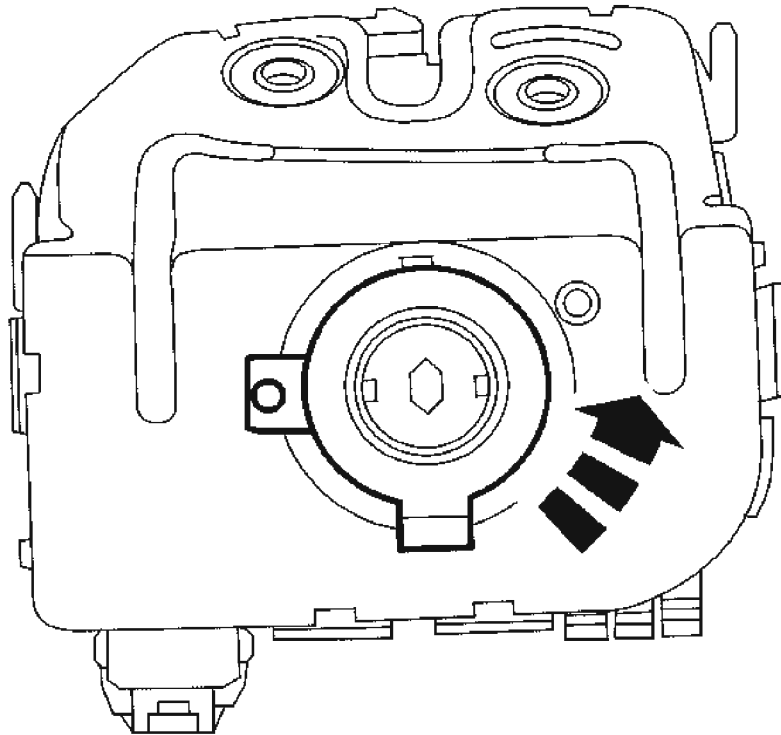


Fig. 90: Removing Spring And Plunger
Courtesy of FORD MOTOR CO.

4. Remove the liftgate lock cylinder.

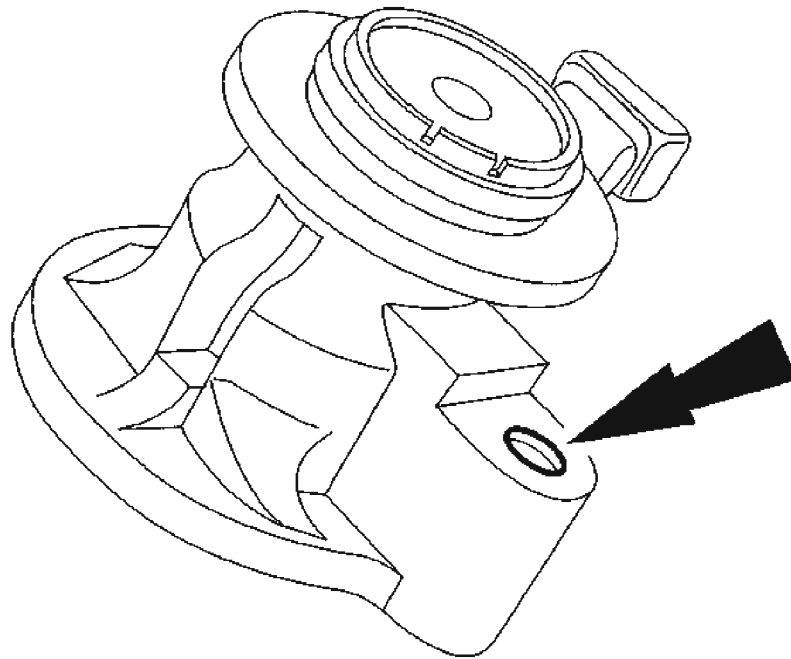


VUE0003899

Fig. 91: Removing Liftgate Lock Cylinder
Courtesy of FORD MOTOR CO.

Installation

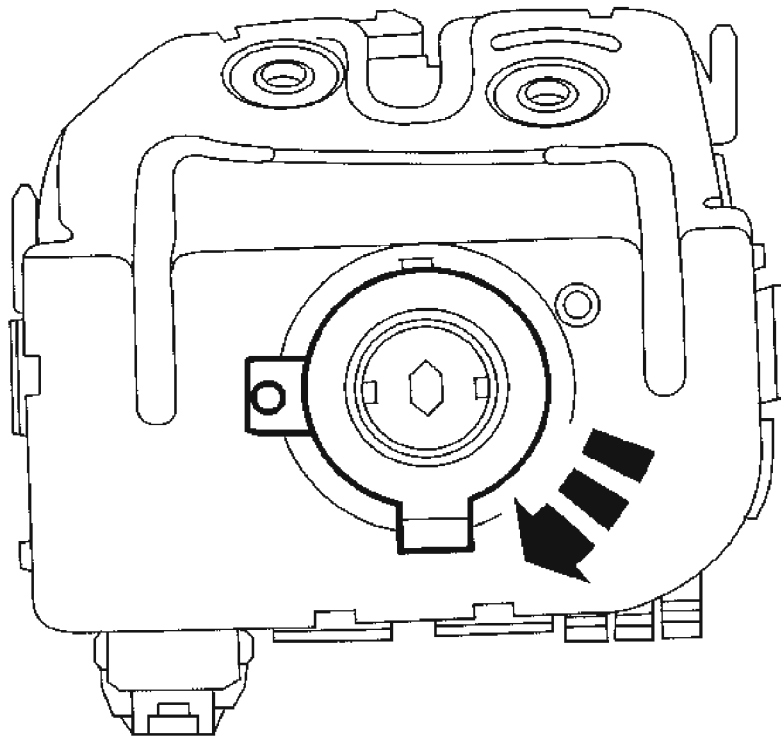
1. Using an M6 tap, cut a thread into the lock cylinder housing.



VUE0008377

Fig. 92: Cutting Thread Into Lock Cylinder Housing
Courtesy of FORD MOTOR CO.

2. Install the liftgate lock cylinder.



VUE0003900

Fig. 93: Installing Liftgate Lock Cylinder
Courtesy of FORD MOTOR CO.

3. Install the plunger.

NOTE: Use Theadlock 262 on the top 2 threads below the screw head.

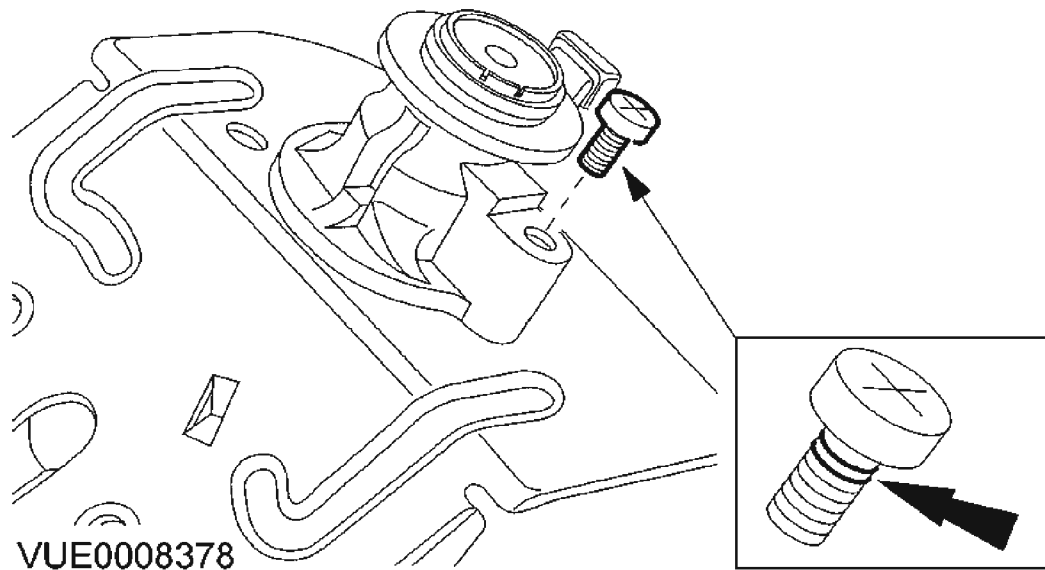


Fig. 94: Installing Plunger
Courtesy of FORD MOTOR CO.

4. Installing M6 by 6.5mm screw to secure the plunger.
5. Install the liftgate latch.

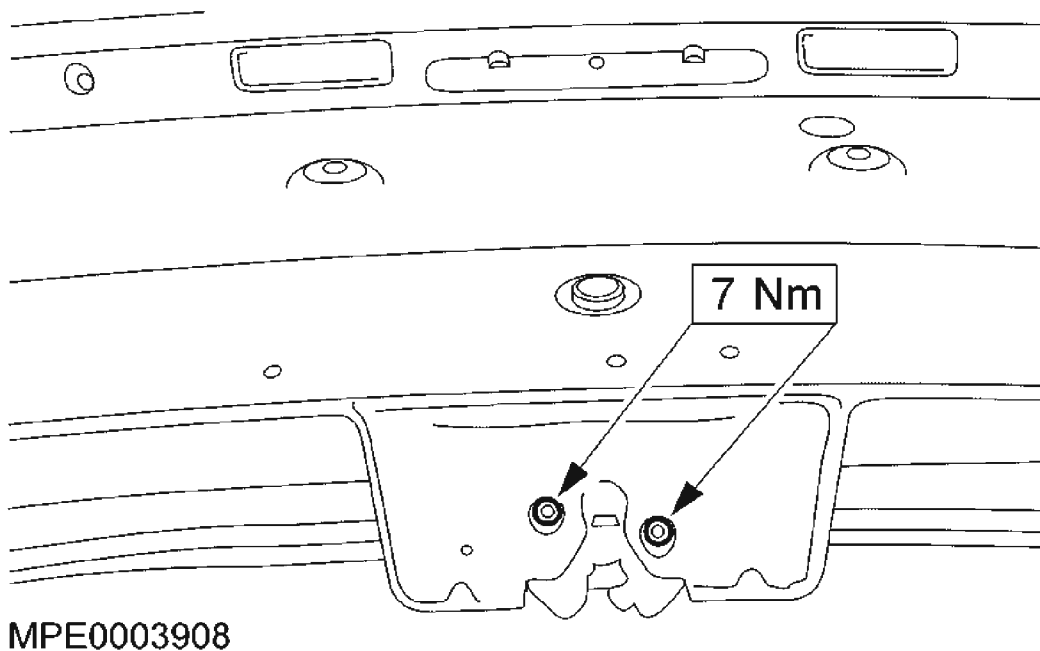


Fig. 95: Installing Liftgate Latch
Courtesy of FORD MOTOR CO.

6. Install the liftgate latch electrical connector.

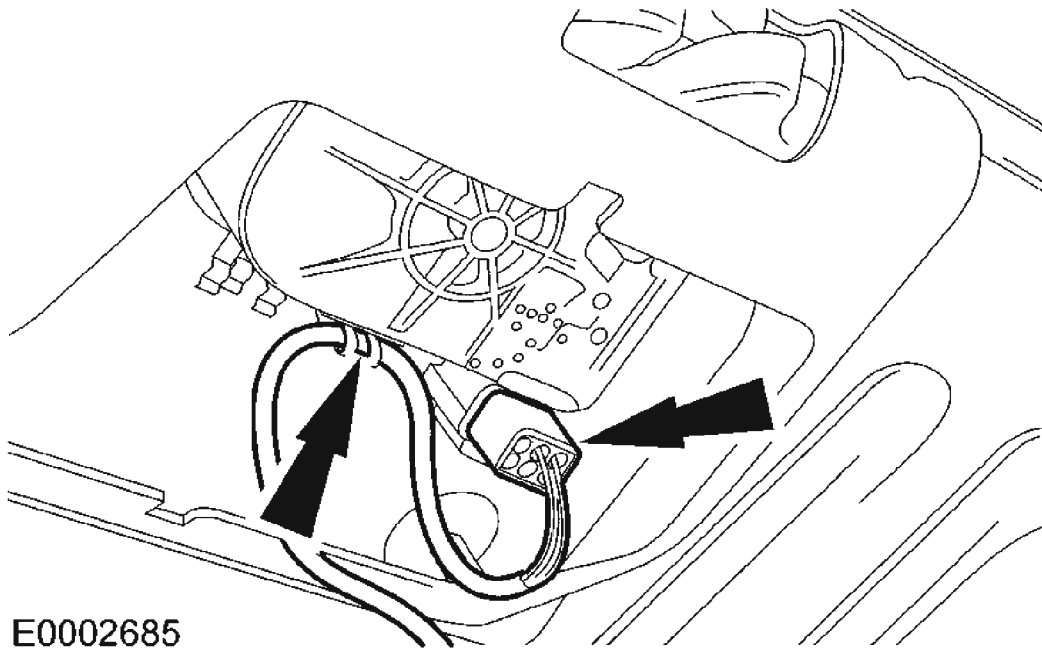


Fig. 96: Installing Liftgate Latch Electrical Connector
Courtesy of FORD MOTOR CO.

7. Install the liftgate trim panel.
 1. Install the liftgate trim screws and covers.
 2. Install the pull handle, screws and handle covers.

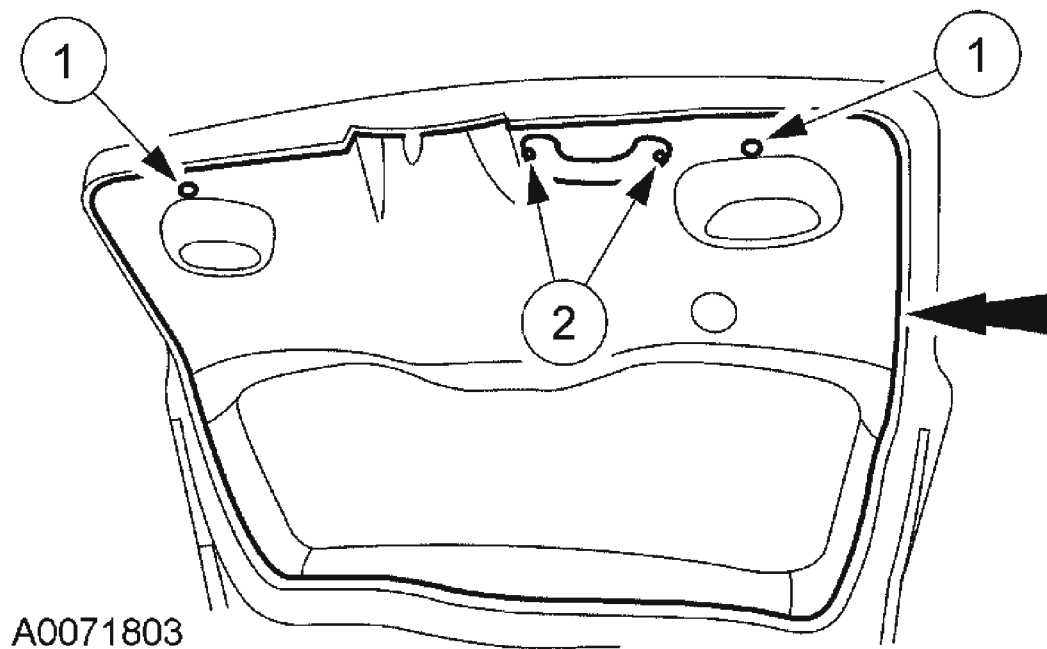


Fig. 97: Installing Pull Handle Screws And Handle Covers
Courtesy of FORD MOTOR CO.

LIFTGATE LOCK CYLINDER - WAGON

Removal and Installation

1. Remove the liftgate trim panel.
 1. Remove the pull handle covers, screws and handles.
 2. Remove the liftgate trim panel bolt covers and screws.

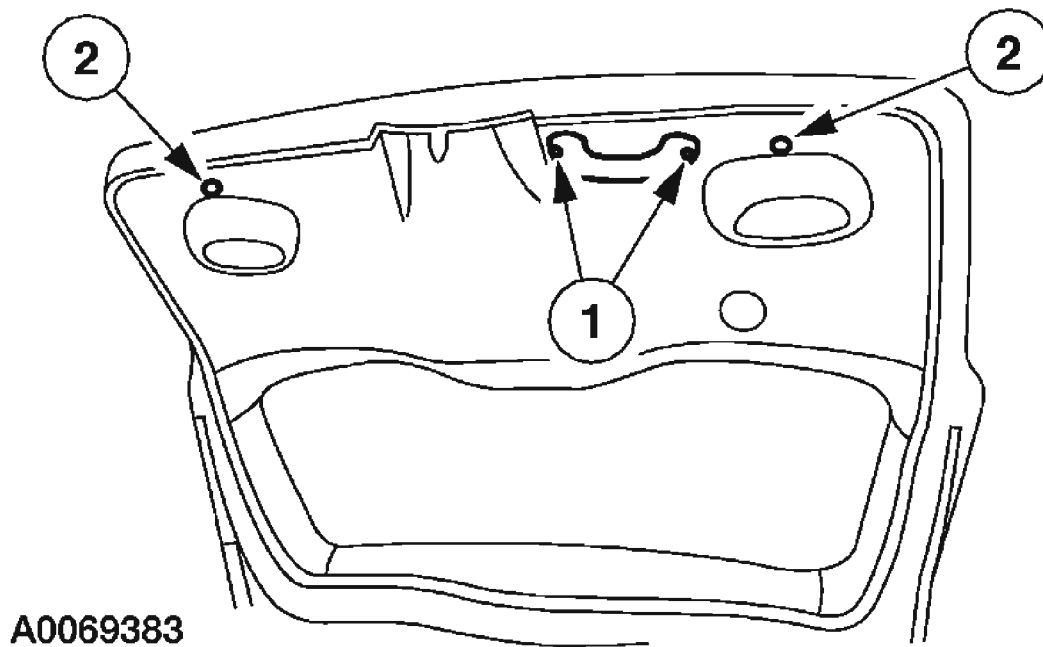
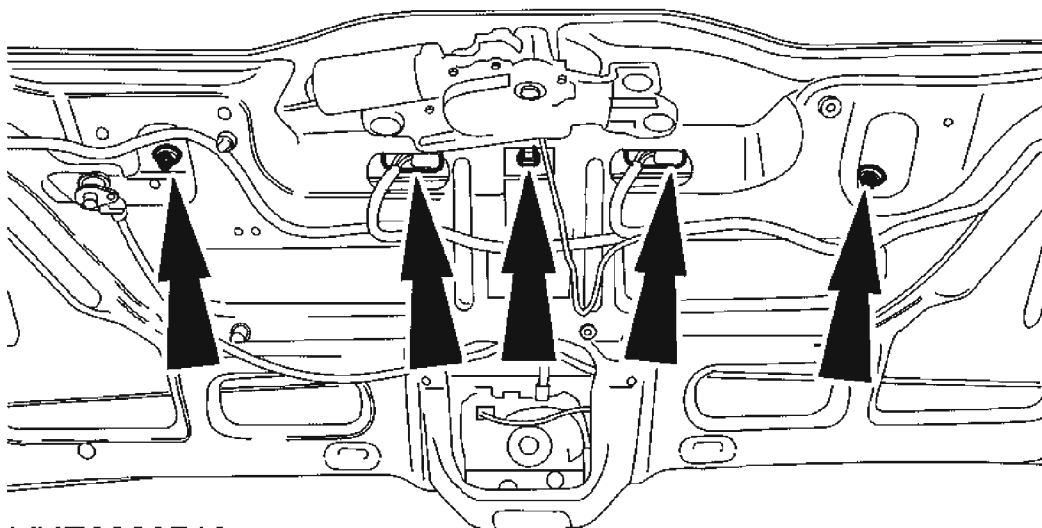


Fig. 98: Removing Liftgate Trim Panel
Courtesy of FORD MOTOR CO.

2. Removing exterior trim moulding and license plate lamps.
 - Remove the retaining screws.
 - Disconnect the license plate lamp electrical connectors.



VUE0028718

Fig. 99: Removing Exterior Trim Moulding And License Plate Lamps
Courtesy of FORD MOTOR CO.

3. Disconnect the liftgate latch cable from the liftgate lock assembly.

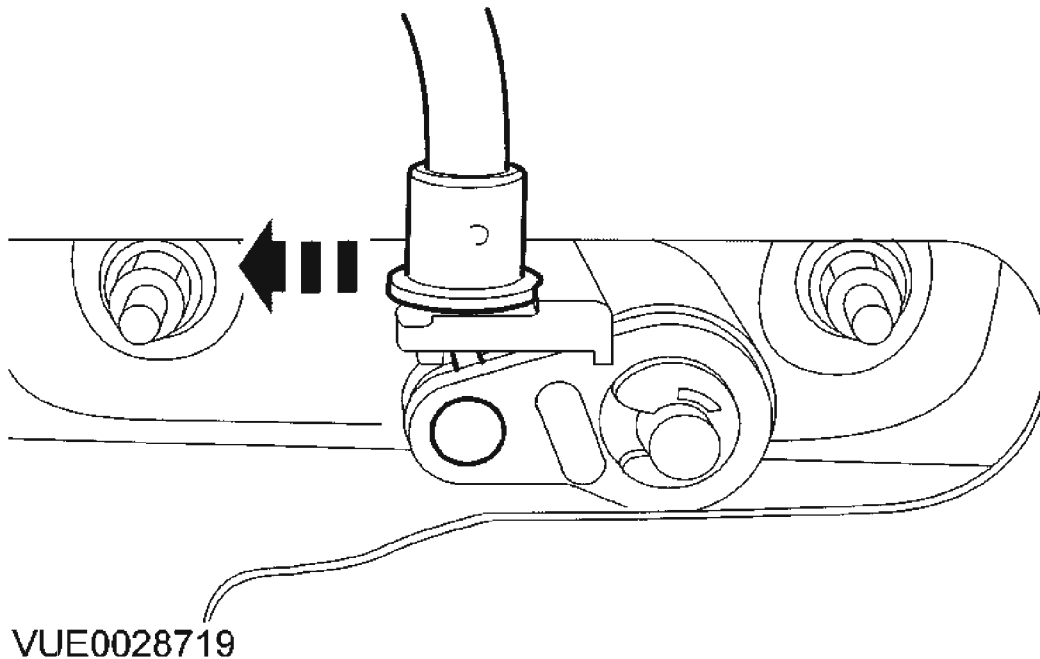


Fig. 100: Disconnecting Liftgate Latch Cable From Liftgate Lock Assembly
Courtesy of FORD MOTOR CO.

4. Remove the liftgate lock assembly.

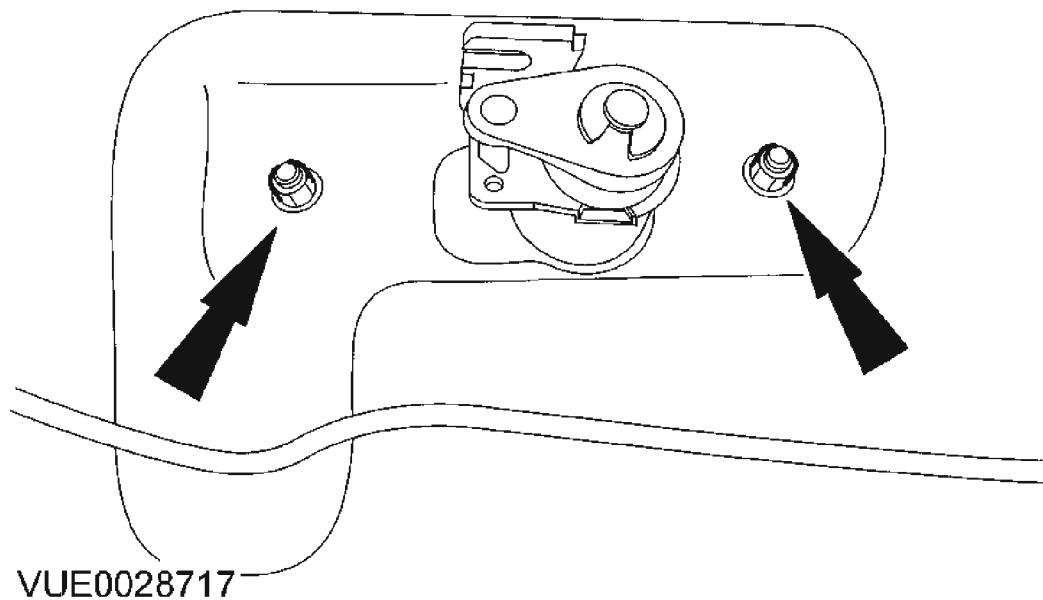


Fig. 101: Removing Liftgate Lock Assembly
Courtesy of FORD MOTOR CO.

5. Remove the liftgate latch cable actuator.
 - Remove the retaining clip.

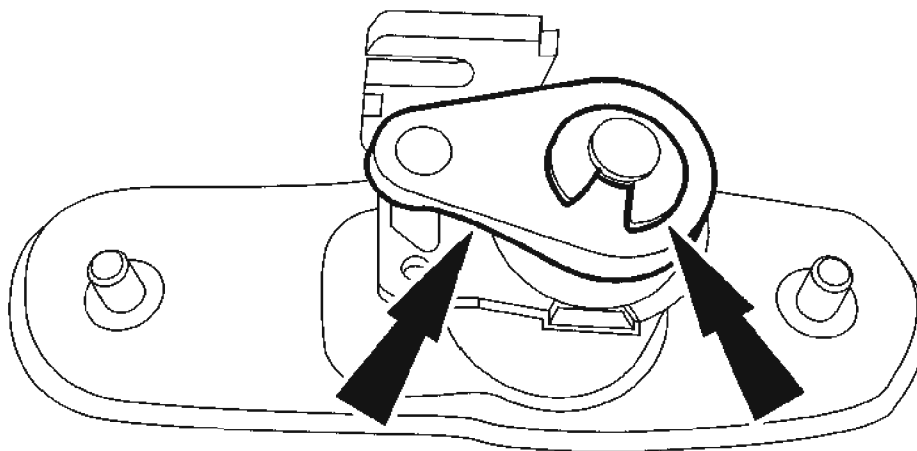
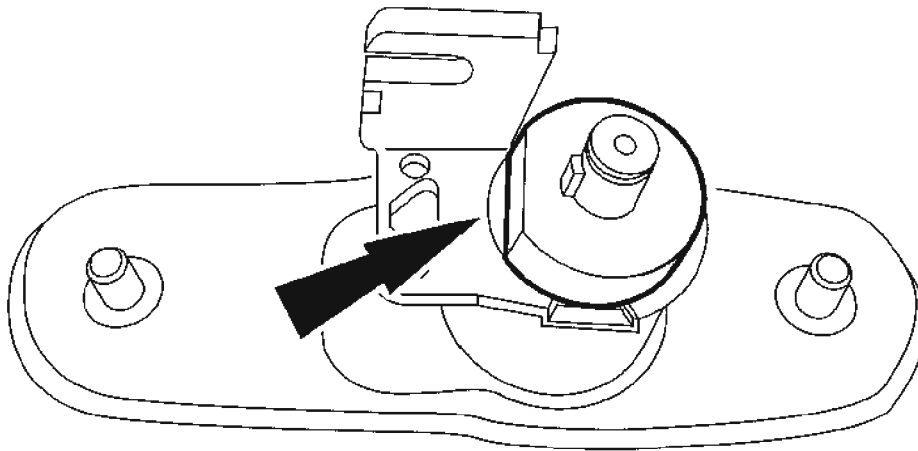


Fig. 102: Removing Liftgate Latch Cable Actuator
Courtesy of FORD MOTOR CO.

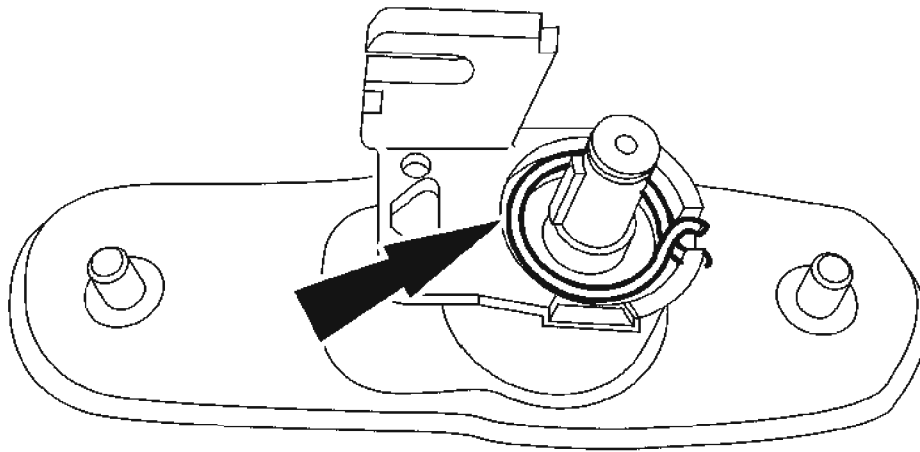
6. Remove the liftgate lock cylinder spacer.



VUE0028721

Fig. 103: Removing Liftgate Lock Cylinder Spacer
Courtesy of FORD MOTOR CO.

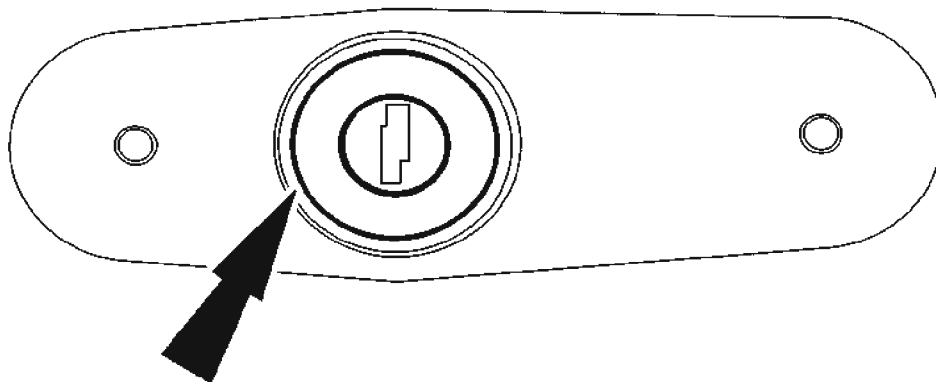
7. Remove the liftgate lock cylinder spring.



VUE0028722

Fig. 104: Removing Liftgate Lock Cylinder Spring
Courtesy of FORD MOTOR CO.

8. Remove the foreign matter excluder.



VUE0028723

Fig. 105: Removing Foreign Matter Excluder
Courtesy of FORD MOTOR CO.

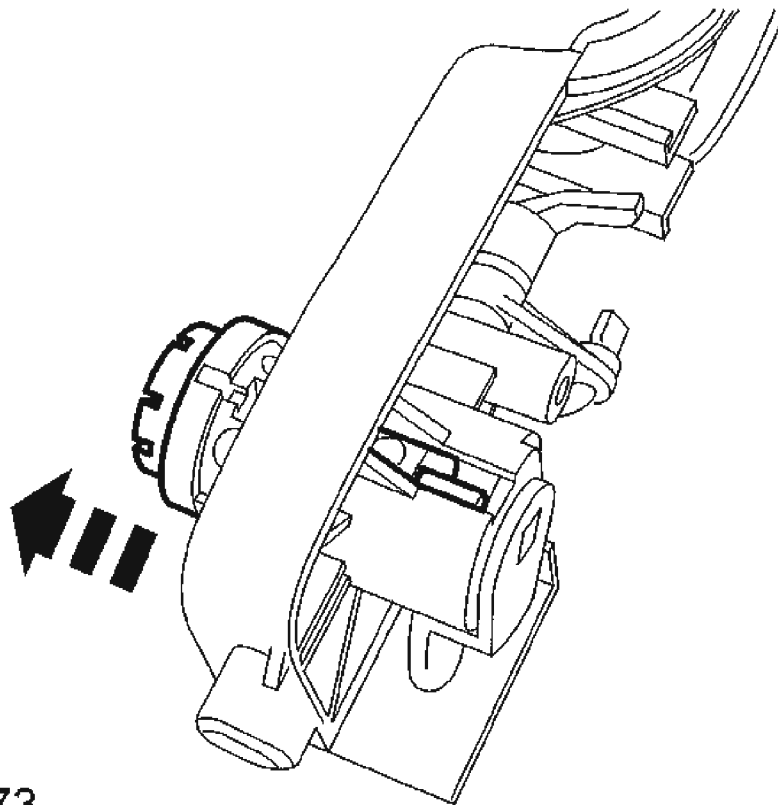
9. Insert the key and remove the liftgate lock cylinder.

10. To install, reverse the removal procedure.

DOOR LOCK CYLINDER

Removal and Installation

1. Remove the door latch. For additional information, refer to **FRONT DOOR LATCH**.
2. Remove the front door lock cylinder.



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Fig. 106: Removing Front Door Lock Cylinder
Courtesy of FORD MOTOR CO.

3. To install, reverse the removal procedure.

LUGGAGE COMPARTMENT LID LOCK CYLINDER

Removal and Installation

NOTE: Individual lock cylinders are repaired by discarding the inoperative cylinder and building a new lock cylinder using the

appropriate lock repair package. The lock repair package includes a detailed instruction sheet to build the current key code of the vehicle.

1. Remove the luggage compartment lid lock cylinder cover.

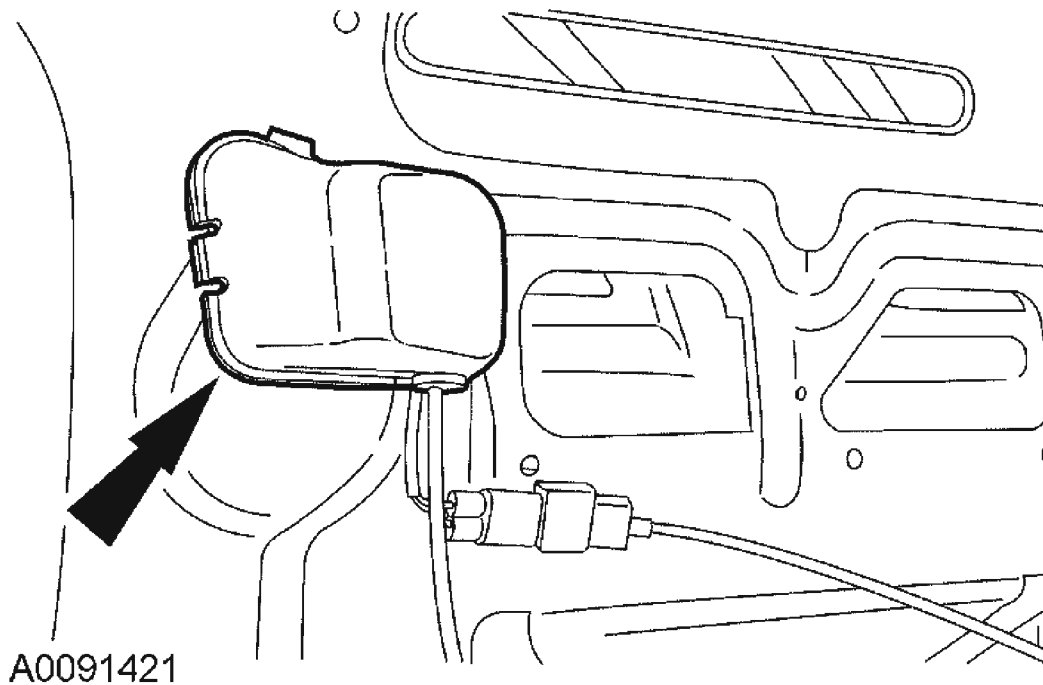


Fig. 107: Removing Luggage Compartment Lid Lock Cylinder Cover
Courtesy of FORD MOTOR CO.

2. Remove the 3 nuts and the luggage compartment lid handle.

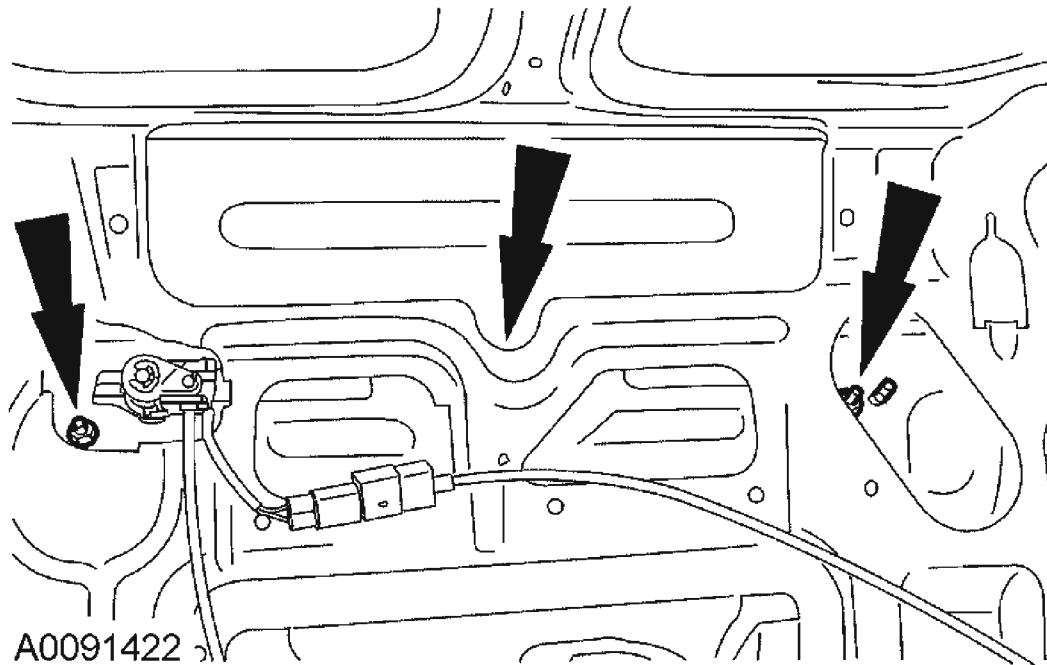


Fig. 108: Removing Nuts Of Luggage Compartment Lid Handle
Courtesy of FORD MOTOR CO.

3. Disconnect the cable and electrical connector.

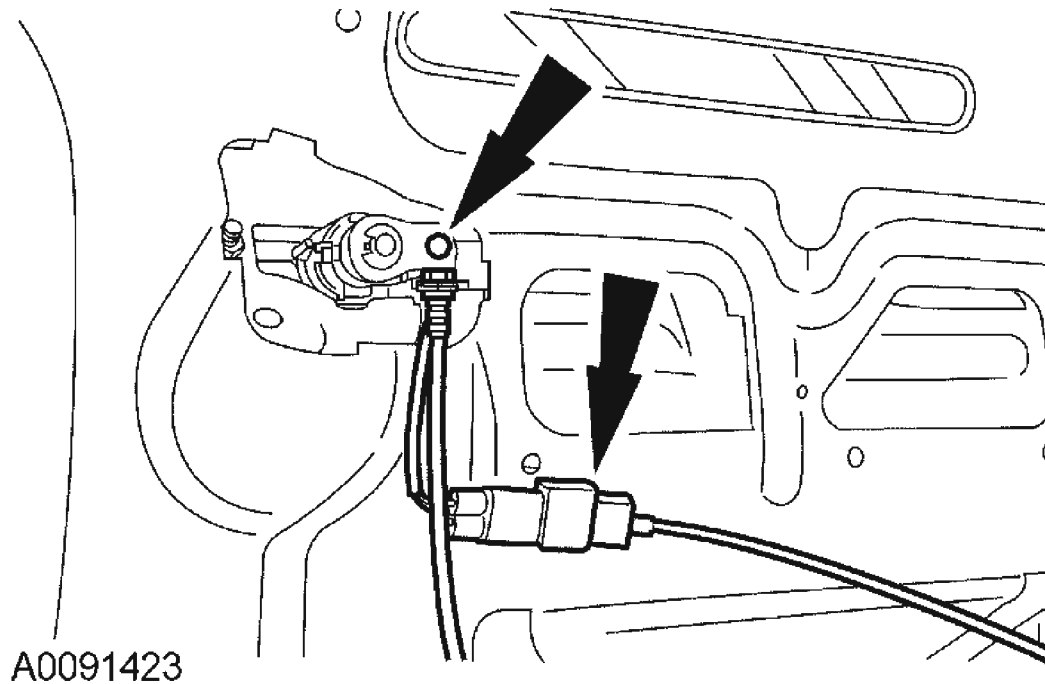


Fig. 109: Disconnecting Cable And Electrical Connector
Courtesy of FORD MOTOR CO.

4. Detach the electrical connector, remove the nut and the luggage compartment lid lock cylinder.

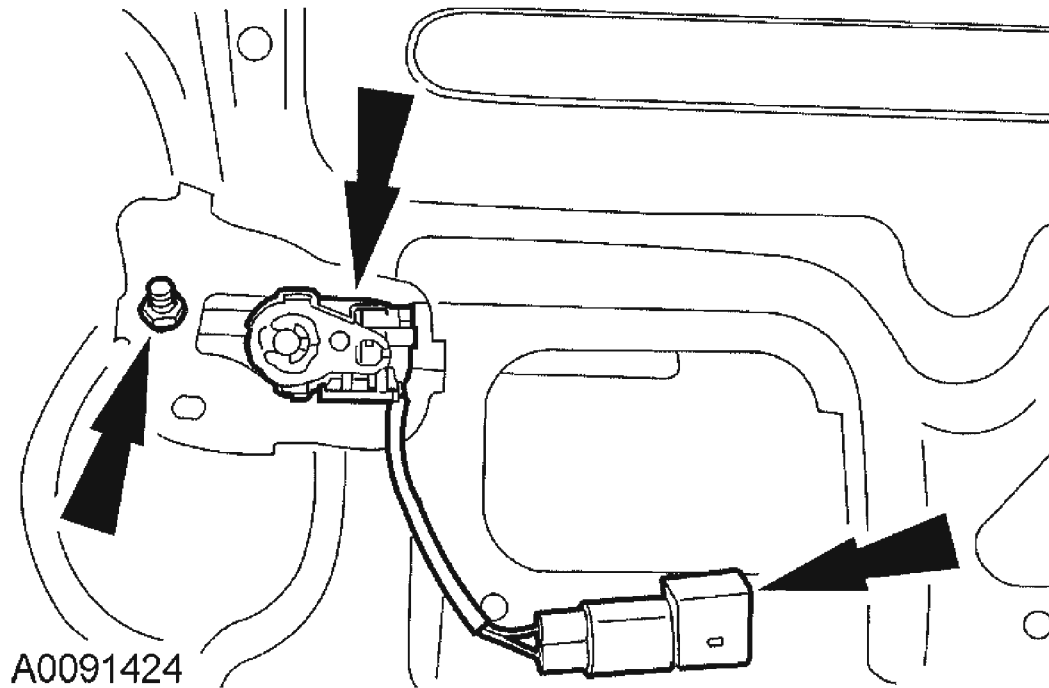


Fig. 110: Detaching Electrical Connector, Removing Nut And Luggage Compartment Lid Lock Cylinder
Courtesy of FORD MOTOR CO.

5. To install, reverse the removal procedure.

INTERIOR DOOR HANDLE

Removal and Installation

1. Remove the door trim panel. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** .
2. Remove the screw.

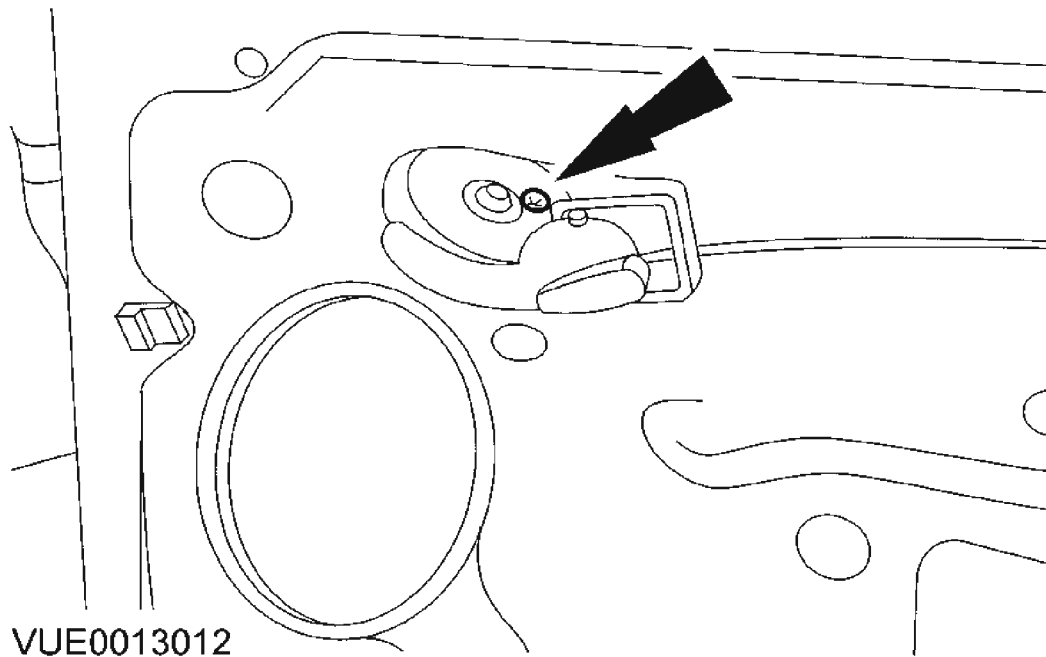


Fig. 111: Removing Screw
Courtesy of FORD MOTOR CO.

3. Detach the door latch remote control from the inner panel.
 1. Insert a suitable tool into the semi-circular shaped hole and pry towards the front of the interior door handle.
 2. Pull the front of the interior door handle away from the door inner panel.
 3. Unhook the interior door handle from the door inner panel.

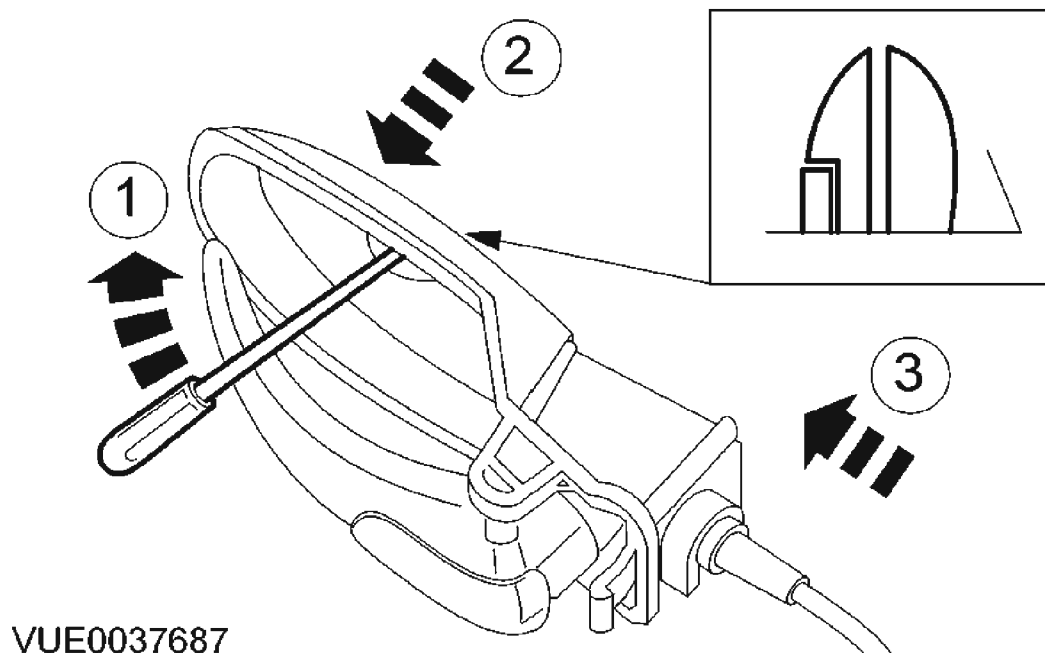


Fig. 112: Detaching Door Latch Remote Control From Inner Panel
Courtesy of FORD MOTOR CO.

NOTE: Set the door latch to the lock position.

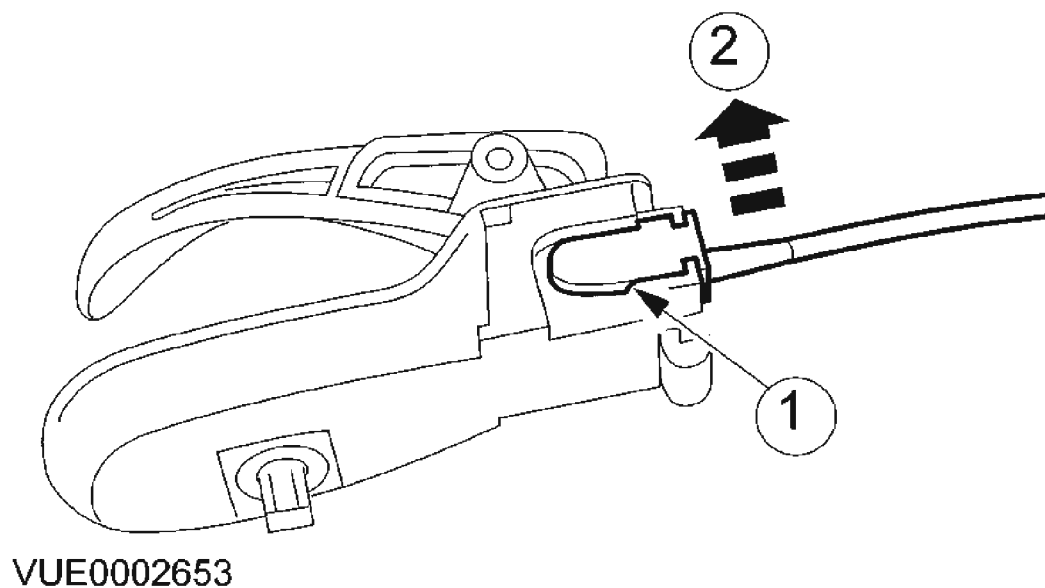


Fig. 113: Removing Remote Cable From Handle

Courtesy of FORD MOTOR CO.

4. Remove the remote cable from the handle.
 1. Using a thin bladed screwdriver unclip the remote cable, taking care not to damage the cable.
 2. Remove the remote cable from the handle.
5. To install, reverse the removal procedure.