
Workshop Manual

1999

F-Super Duty 250-550



Section 5: Body and Paint

[01: Body](#)

[02: Frame and Mounting](#)

GROUP 01: Body

[SECTION 501-00: Body System — General Information](#)

[SECTION 501-02: Front End Body Panels](#)

[SECTION 501-03: Body Closures](#)

[SECTION 501-04: Pickup Bed and Platform Body](#)

[SECTION 501-05: Interior Trim and Ornamentation](#)

[SECTION 501-08: Exterior Trim and Ornamentation](#)

[SECTION 501-09: Rear View Mirrors](#)

[SECTION 501-10: Seating](#)

[SECTION 501-11: Glass, Frames and Mechanisms](#)

[SECTION 501-12: Instrument Panel and Console](#)

[SECTION 501-14A: Handles, Locks, Latches and Mechanisms](#)

[SECTION 501-14B: Keyless Entry/Computer Operated Locks](#)

[SECTION 501-16: Wipers and Washers](#)

[SECTION 501-19: Bumpers](#)

[SECTION 501-20A: Occupant Restraints — Active](#)

[SECTION 501-20B: Supplemental Restraint System](#)

SECTION 501-00:
Body System — General Information

[SPECIFICATIONS](#)

DESCRIPTION AND OPERATION

[Body](#)

[Insulation](#)

[Body Sealer Types and Applications](#)

DIAGNOSIS AND TESTING

[Body System](#)

[Inspection and Verification](#)

[Symptom Chart](#)

SECTION 501-00: Body System — General
Information

1999 F-Super Duty 250-550 Workshop
Manual

SPECIFICATIONS

[Procedure revision date: 01/26/2000](#)

General Specifications	
Item	Specification
Sealers	
Silicone Rubber (Black) F4AZ-19562-B	WSE-M4G323-A1
Silicone Rubber (Clear) D6AZ-19562-AA	ESB-M4G92-A
Caulking Cord D6AZ-19560-A	ESB-M4G32-A

SECTION 501-00: Body System — General
Information

1999 F-Super Duty 250-550 Workshop
Manual

Body

The body:

- is a cab-forward design.
 - is constructed of lightweight, all steel welded material, with bolted removable front fenders (16005), hinged doors, and tailgate.
 - has roof and body side panels that are separate pieces.
 - is supported by a full frame.
 - has a standard two-door or optional four-door super cab, and four-door crew cab.
 - has a standard 2.44 m (8 ft) or optional 1.98 m (6.5 ft) pickup bed length.
-

SECTION 501-00: Body System — General
Information

1999 F-Super Duty 250-550 Workshop
Manual

DESCRIPTION AND OPERATION

[Procedure revision date: 01/26/2000](#)

Insulation

Insulation is installed:

- under the roof.
 - above and below the instrument panel.
 - at the cowl sides.
 - over the transmission tunnel.
 - over the floorpan areas.
 - in the rear quarter panels (Excursion).
-

SECTION 501-00: Body System — General
Information

1999 F-Super Duty 250-550 Workshop
Manual

DESCRIPTION AND OPERATION

[Procedure revision date: 01/26/2000](#)

Body Sealer Types and Applications

Silicone Rubber

Silicone Rubber F4AZ-19562-B (black) or Silicone Rubber D6AZ-19562-AA (clear) or equivalent meeting Ford specification WSE-M4G323-A1 or ESB-M4G92-A:

- does not run.
- is fast drying.
- remains semi-elastic.
- can be used for seam sealing in such areas as the floorpan, wheelhouse, bulkhead, door openings and drip rails.

Caulking Cord

Caulking Cord D6AZ-19560-A or equivalent meeting Ford specification ESB-M4G32-A:

- has a plastic base with a filler.
- is heavy bodied.
- is used on spot-weld holes, around mounting clips and between surfaces not sealed by a gasket.

SECTION 501-00: Body System — General
Information

1999 F-Super Duty 250-550 Workshop
Manual

DIAGNOSIS AND TESTING

[Procedure revision date: 01/26/2000](#)

Body System

Inspection and Verification

Leaks

NOTE: The trim will reveal the location of most leaks. Use spray chalk and a hose if necessary.

1. Remove any trim or carpet in the general area of the leak.
2. Road test or water hose test the vehicle.
3. Inspect for a dust pattern around the area in question. Inspect for water paths near and above the area in question.

4. Some leaks can be located by placing bright light under the vehicle, removing any necessary trim or carpet, and inspecting the interior of the body at joints and weld lines.

Noise

Wind noise, rattles and their sources are detected by driving the vehicle at highway speeds. The vehicle should be driven in four different directions, with all windows closed, radio off, blower motor off and all ventilation ducts open.

Most wind noise leaks will occur at the door and window seals or at the sheet metal joints in the door or the door opening.

Symptom Chart

SYMPTOM CHART		
Condition	Possible Sources	Action
<ul style="list-style-type: none">Dust and Water Leaks	<ul style="list-style-type: none">Body sealer missing.	<ul style="list-style-type: none">REMOVE the trim.
	<ul style="list-style-type: none">Opening in welds or body joints.	<ul style="list-style-type: none">CHECK for leaks and SEAL with appropriate sealer. ROAD TEST or WATER HOSE TEST for leaks. RECHECK the trim for leaks. Or USE a light under the vehicle with the trim removed.CHECK the interior of the body at joints and weld seams.
	<ul style="list-style-type: none">Components not fully installed.	<ul style="list-style-type: none">REINSTALL components.
	<ul style="list-style-type: none">Components missing.Components damaged.	<ul style="list-style-type: none">REPLACE any missing or damaged components as necessary.
	<ul style="list-style-type: none">Door out of adjustment.	<ul style="list-style-type: none">ADJUST the door. REFER to Section 501-03.
	<ul style="list-style-type: none">Watershield not properly attached.	<ul style="list-style-type: none">REATTACH the watershield.

<ul style="list-style-type: none"> Dust/Water Leaks at Floor Pan and Grommets 	<ul style="list-style-type: none"> Missing or damaged plugs or grommets. 	<ul style="list-style-type: none"> CHECK the plugs for proper installation. REPLACE if necessary.
<ul style="list-style-type: none"> Doors Collecting Water 	<ul style="list-style-type: none"> Door drain holes clogged with mud, road tar or rustproofing. 	<ul style="list-style-type: none"> CHECK the door drain holes regularly. CLEAN the drain holes of dirt and foreign materials with a punch or screwdriver.
<ul style="list-style-type: none"> Wind Noise, Air Entering the Vehicle Through Small Holes in the Body 	<ul style="list-style-type: none"> Leaks at door and window seals or sheet metal joints in doors or door openings. 	<ul style="list-style-type: none"> NOTE: Avoid silicone sealer(s) from coming in contact with the door weatherstrips. <p>SEAL leaks with an appropriate sealer.</p>
<ul style="list-style-type: none"> Rattles 	<ul style="list-style-type: none"> Loose screws, nuts, bolts, small pieces of deadener in door wells, pillars, and quarter panels. 	<ul style="list-style-type: none"> CHECK doors by carefully striking the underside of the door with a rubber mallet. LISTEN for loose objects in the door. REPAIR or TIGHTEN loose body bolts and screws. If tightening bolts/screws does not eliminate the rattle, cause could be misalignment. REFER to Section 501-03. APPLY additional sealer. INSTALL in proper location to eliminate rattle. If rattle is not caused by loose items inside of the door, INSPECT for components contacting each other. INSPECT for components contacting each other. REPAIR or REPLACE components or add anti-squeak material as necessary.

SECTION 501-02: Front End Body Panels

SPECIFICATIONS

DESCRIPTION AND OPERATION

[Front End Body Panels](#)

GENERAL PROCEDURES

[Hood Alignment](#)

REMOVAL AND INSTALLATION

[Air Deflector—Upper](#)

[Air Deflector—Right and Left](#)

[Cowl—Vent Grille](#)

[Fender](#)

[Radiator Grille Opening Panel Reinforcement](#)

[Radiator Grille Support](#)

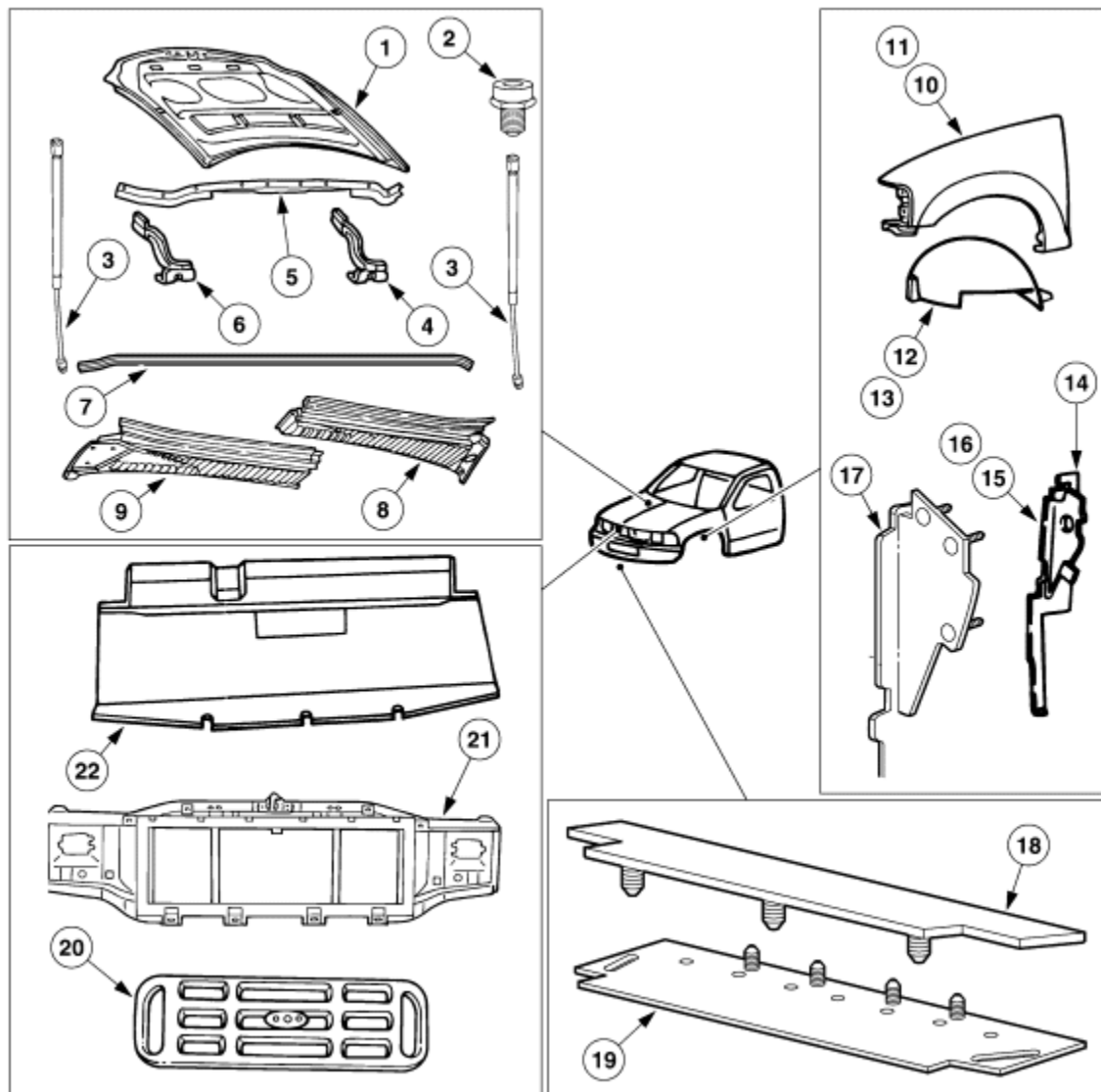
SECTION 501-02: Front End Body Panels
SPECIFICATIONS

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Torque Specifications			
Description	Nm	lb-ft	lb-in
Hood Hinge to Hood Bolts	24-32	18-24	—
Hood Hinge to Body Bolts	24-32	18-24	—
Front Fender Bolts	10-13	7-10	—
Radiator Support Bracket Bolts	10-14	7-11	—
Air Cleaner Assembly Bracket Bolts	7-9	—	62-80
Radiator Grille Opening Panel Reinforcement Bolts	7	—	62
Condenser Mounting Bolts	9	—	80
A/C Line Bracket Bolt	9	—	80
Coolant Reservoir Mounting Bolt	9-15	7-12	—

Front End Body Panels

Front End Body Panels



DN0555-C

Item	Part Number	Description
1	16612	Hood
2	N811520-S	Hood Adjustment Bumper (2 Req'd)

3	16C826	Hood Assist Gas Strut
4	16801	Hood Hinges (LH)
5	16C824	Hood Seal
6	16800	Hood Hinge (RH)
7	02918	Cowl to Hood Seal
8	02223	Cowl Top Vent Panel (LH)
9	02222	Cowl Top Vent Panel (RH)
10	16006	Front Fender (LH)
11	16005	Front Fender (RH)
12	16045	Front Fender Splash Shield (LH)
13	16045	Front Fender Splash Shield — (RH)
14	—	Gasoline Engine Only
15	8A261	Radiator Air Side Deflector Assy
16	8A211	Radiator Air Side Deflector Assy
17	8A261	Radiator Air Side Deflector Assy (Diesel Only)
18	19E673	A/C Upper Radiator Air Deflector (A/C Only)
19	19E673	Lower Radiator Air Deflector
20	—	Grille Assy
21	8A284	Radiator Grille Opening Panel Reinforcement
22	8327	Radiator Air Deflector

SECTION 501-02: Front End Body Panels 1999 F-Super Duty 250-550 Workshop Manual
GENERAL PROCEDURES [Procedure revision date: 01/26/2000](#)

Hood Alignment

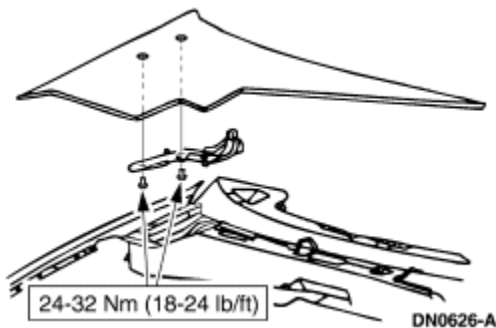
1. Raise and support the hood.
2. Loosen the hood hinge to hood bolts.



3. Move the hood forward or rearward and from side to side as required for proper hood fit.



4. Tighten the hood hinge to hood bolts.



5. Adjust the hood height using the hood adjustment bumpers until flush with the fenders.

Air Deflector—Upper

Removal

1. Raise the hood (16612).
2. Remove the radiator air deflector (8327).
 - Remove the pushpins attaching the air deflector.

Installation

1. Follow the removal procedure in reverse order.

SECTION 501-02: Front End Body Panels
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

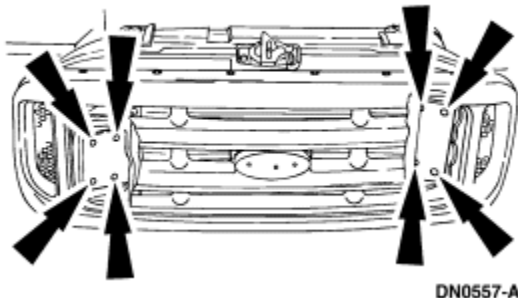
Air Deflector—Right and Left

Removal

1. Raise the hood (16612).
2. Remove the radiator air deflector (8326); for additional information, refer to [Air Deflector—Upper](#) in this section.
3. **NOTE:** On vehicles equipped with air conditioning, the right air deflector must be cut to clear the air conditioning lines.

Remove the radiator grille sight shields (8C071).

- Remove the pushpins attaching the radiator grille sight shields.



Installation

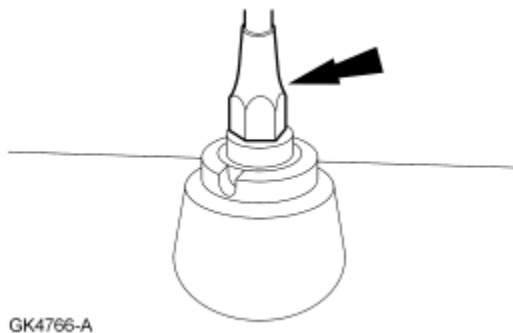
1. Follow the removal procedure in reverse order.

SECTION 501-02: Front End Body Panels 1999 F-Super Duty 250-550 Workshop Manual
REMOVAL AND INSTALLATION [Procedure revision date: 01/26/2000](#)

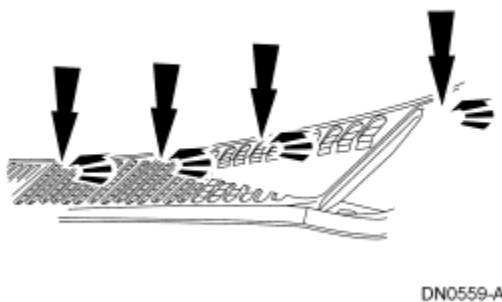
Cowl—Vent Grille

Removal and Installation

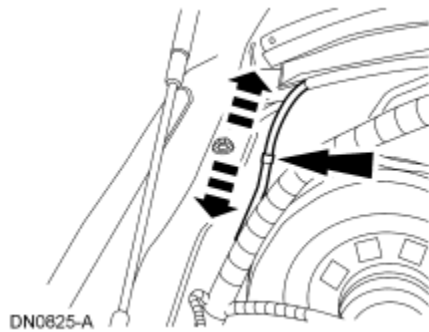
1. Remove the windshield wiper arms. For additional information, refer to [Section 501-16](#).
2. Remove the radio antenna mast.
 - Lift upward on cover.



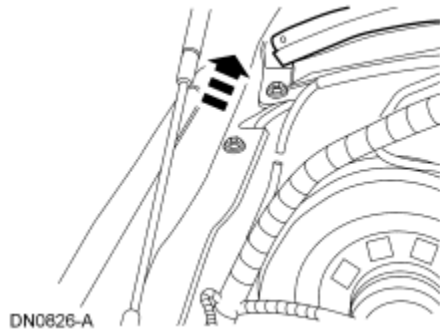
3. Remove the cowl top vent panel retaining screws.



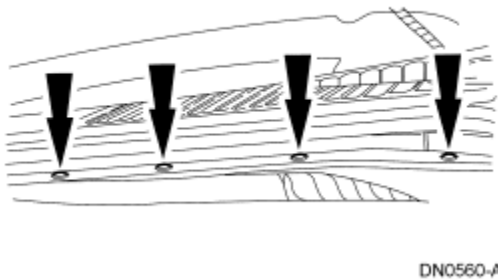
4. Raise the hood (16612).
5. Disconnect the windshield washer hose.



6. Remove the cowl panel weatherstrip.

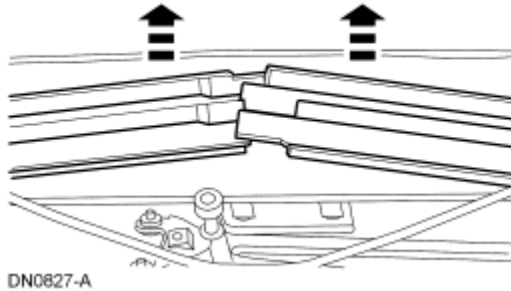


7. Remove and discard the cowl top vent panel pushpins.



8. **NOTE:** Remove the cowl top vent panel from the center to avoid damage to the locating pins at each outer end of the cowl panels.

Raise the cowl top vent panel.



9. Remove the cowl top vent panel.
10. To install, reverse the removal procedure.

SECTION 501-02: Front End Body Panels 1999 F-Super Duty 250-550 Workshop Manual
REMOVAL AND INSTALLATION [Procedure revision date: 01/26/2000](#)

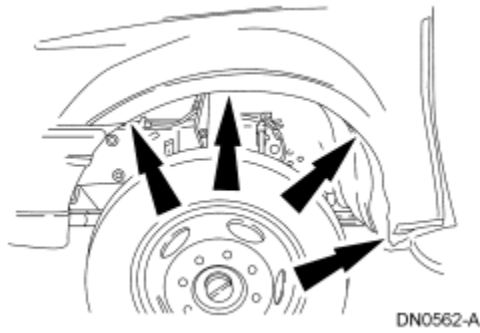
Fender

Removal

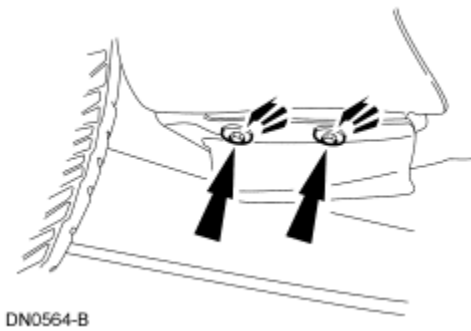
1. Support the hood using a prop rod.
2. Disconnect the hood lift (16C826).



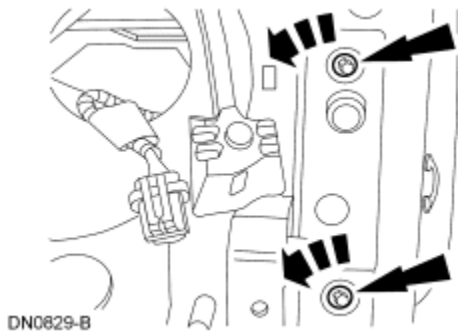
3. Remove the headlights and turn signals; for additional information, refer to [Section 417-01](#).
4. Remove the screws at the lower edge of the front fender (16006) securing the splash shield.



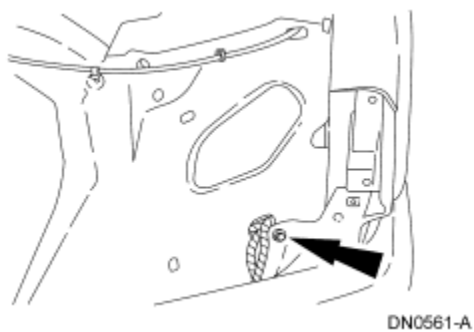
5. Remove the running board, if so equipped; for additional information, refer to [Section 501-08](#).
6. Remove the pushpins at the rear lower edge of the front fender.
7. Remove the bolts securing the lower rear of the front fender.



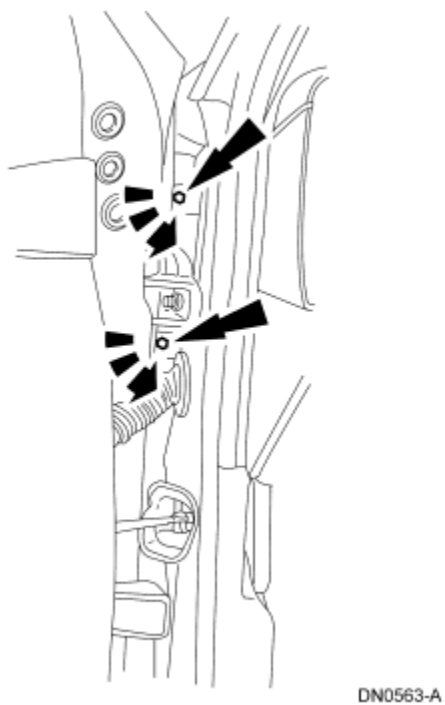
8. Remove the fender-to-radiator grille opening support retaining bolts.



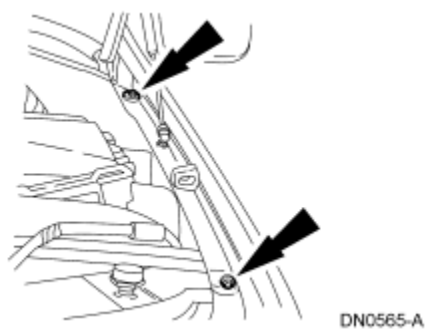
9. Remove the fender-to-radiator support retaining screws.



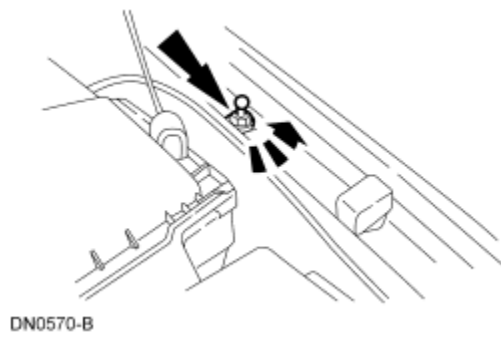
10. Open the door, then remove the fender retaining bolts.



11. Remove the upper fender retaining bolts.



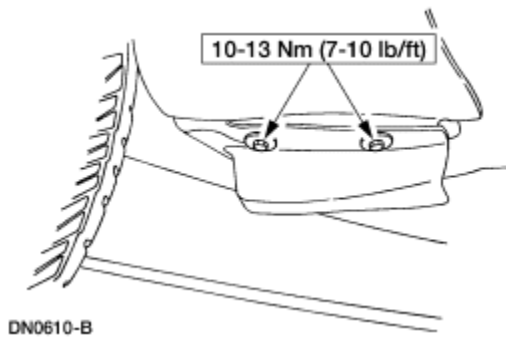
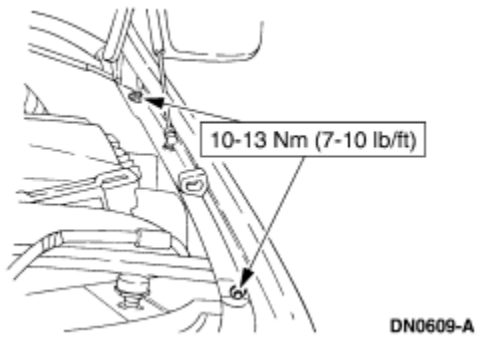
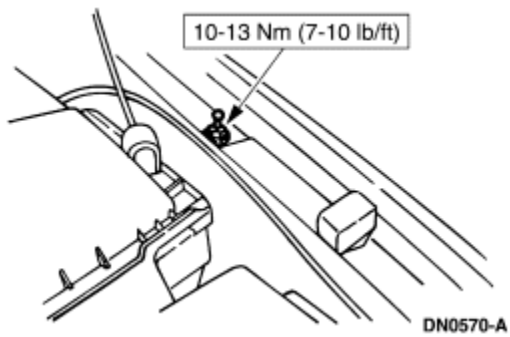
12. Remove the hood support bolt.

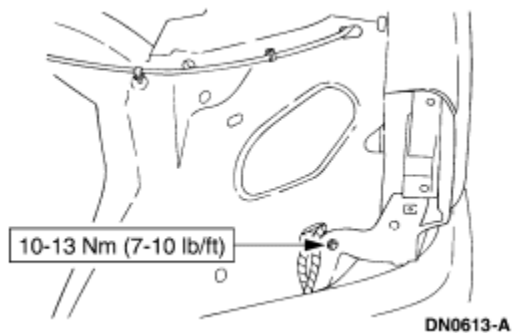
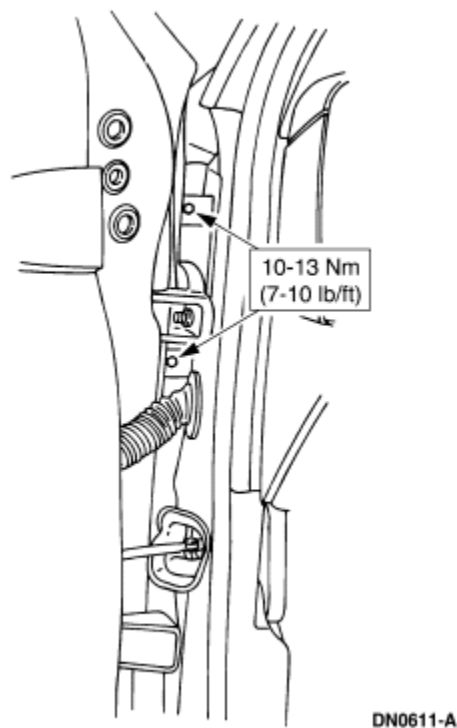


13. Remove the front fender.

Installation

1. Follow the removal procedure in reverse order.



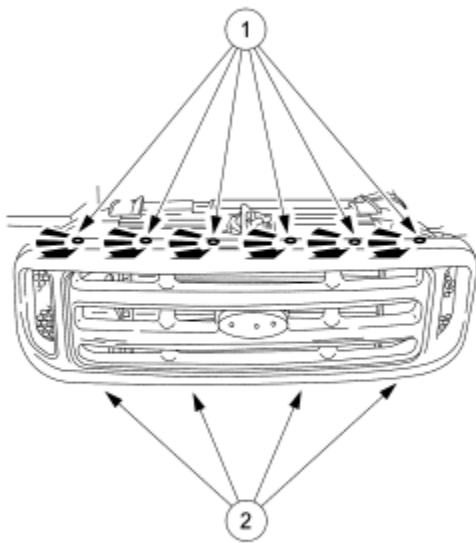


SECTION 501-02: Front End Body Panels 1999 F-Super Duty 250-550 Workshop Manual
REMOVAL AND INSTALLATION [Procedure revision date: 05/22/2002](#)

Radiator Grille Opening Panel Reinforcement

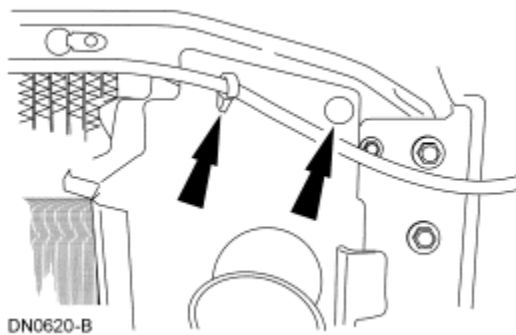
Removal

1. Remove the radiator grille.
 1. Remove the screws.
2. Disconnect the lower clips, then remove the radiator grille.



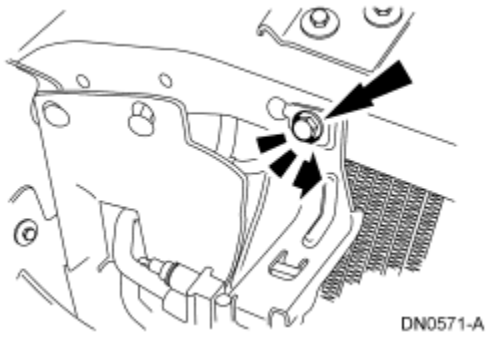
DN0567-A

2. Remove the upper radiator air deflector (8326).
3. Remove the headlamps. For additional information, refer to [Section 417-01](#).
4. Remove the parking lamp assemblies. For additional information, refer to [Section 417-01](#).
5. Remove the left side air deflector pushpin and hood latch cable clip.

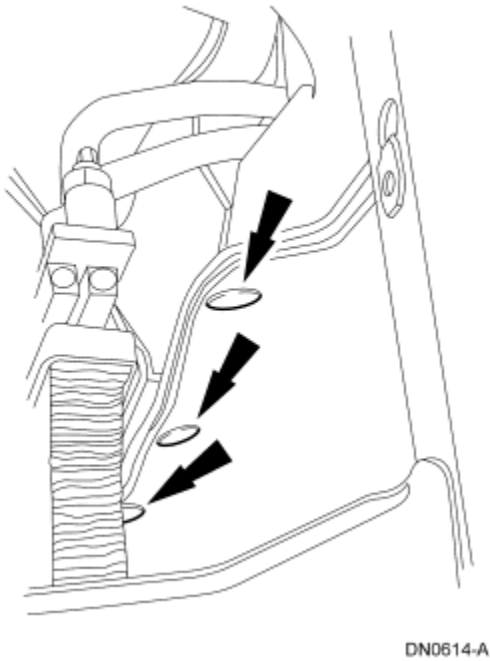


DN0620-B

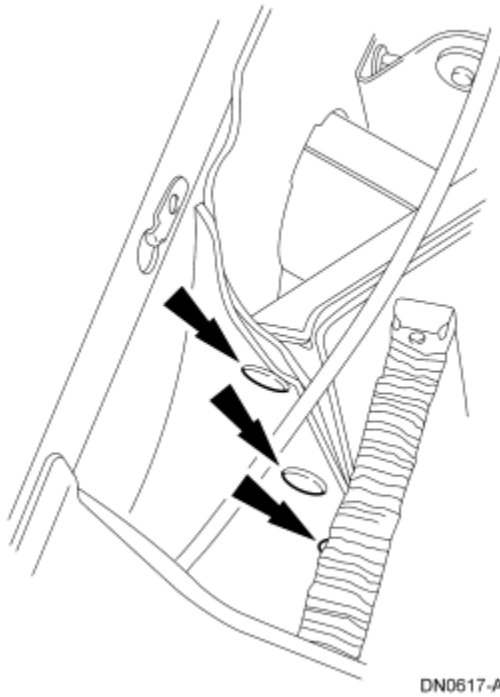
6. Remove the air conditioning condenser brackets.



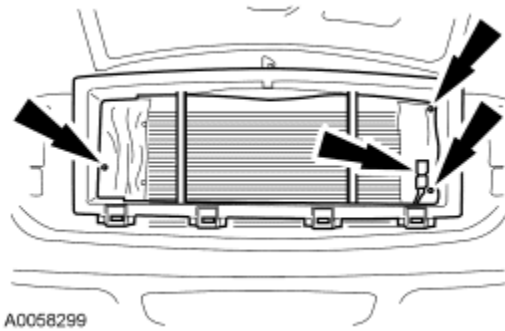
7. Unclip the hood release cable from the radiator support.
8. Remove the air deflector pushpins from the right rear air deflector.



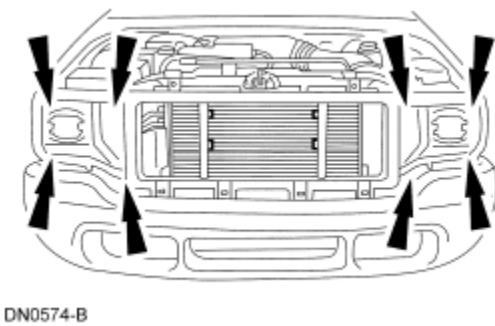
9. Remove the air deflector pushpins from the left rear air deflector.



10. Remove the three air deflector pin-type retainers and the air temperature sensor.



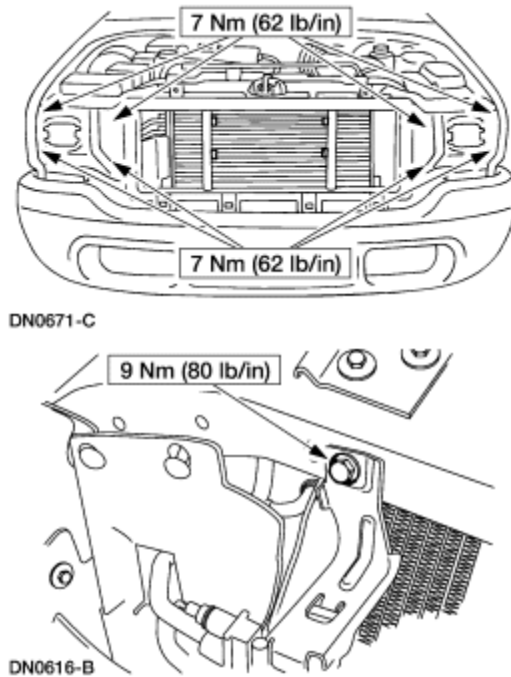
11. Remove the radiator grille opening panel reinforcement retaining bolts.



12. Lift the air conditioning condenser, then remove the radiator grille opening panel reinforcement (8A284).

Installation

1. To install, reverse the removal procedure.



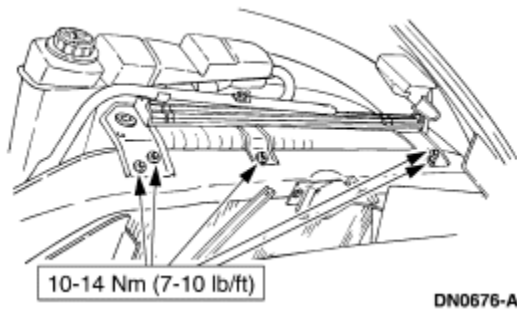
SECTION 501-02: Front End Body Panels 1999 F-Super Duty 250-550 Workshop Manual
REMOVAL AND INSTALLATION [Procedure revision date: 05/22/2002](#)

Radiator Grille Support

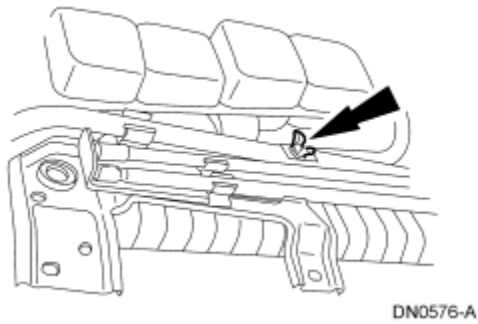
Removal and Installation

All vehicles

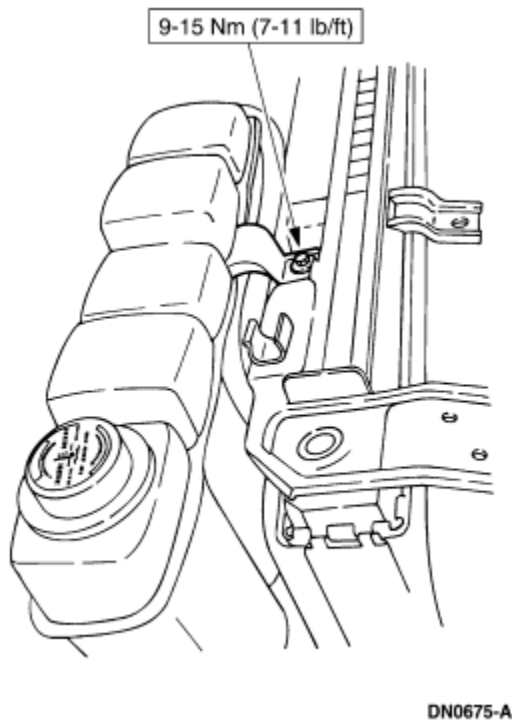
1. Raise the hood (16612).
2. Remove the upper radiator air deflector.
3. Remove the grille opening panel reinforcement. For additional information, refer to [Radiator Grille Opening Panel Reinforcement](#) in this section.
4. Remove the radiator support bracket retaining bolts.



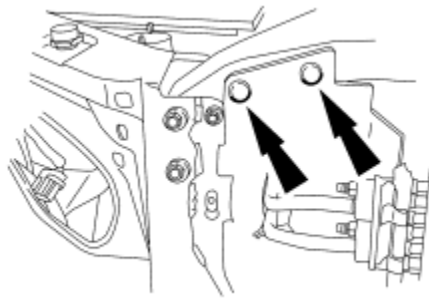
5. Remove the jack handle wing nut.



6. Remove the coolant reservoir retaining bolt.



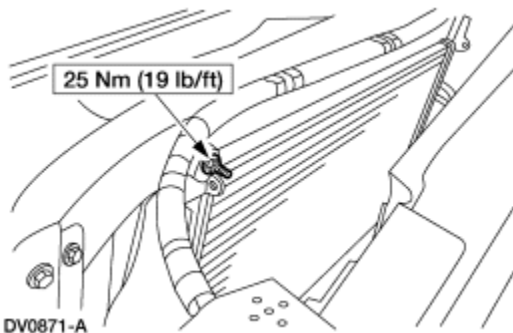
7. Remove the three right side air deflector pushpins.



DN0673-A

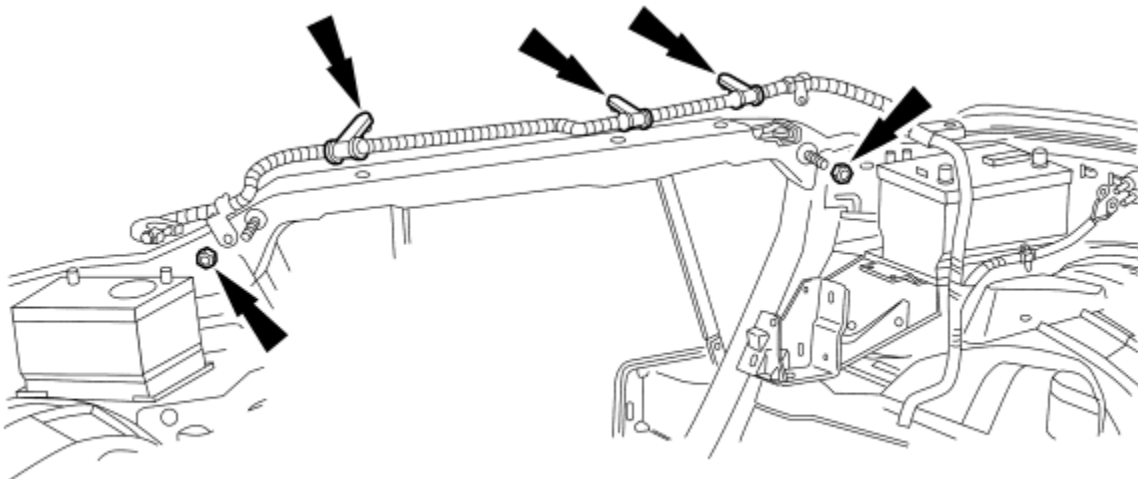
Diesel only

8. Remove the air charge cooler retainers (LH retainer shown, RH is similar).



DV0871-A

9. Disconnect the left side battery cable from the radiator grille support.



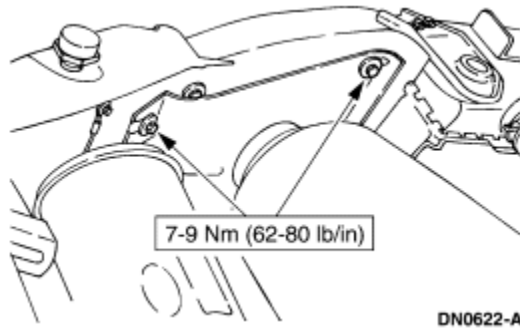
AJ0245-A

All vehicles

10. Remove the hood release. For additional information, refer to [Section 501-14A](#).

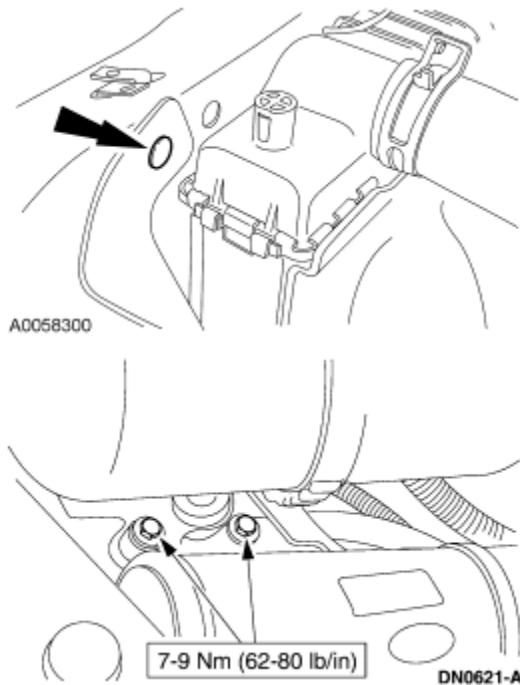
Gasoline only

11. Remove the air cleaner bracket retaining bolts.
 - Remove the top bracket retaining bolts.
 - Remove the bottom bracket retaining bolts.



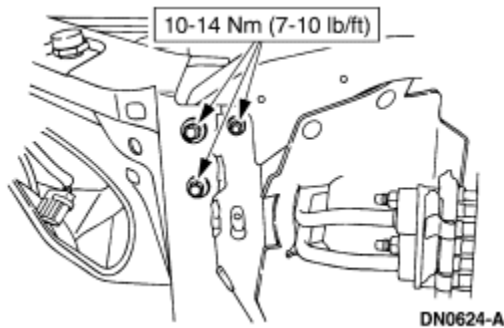
12. **NOTE:** Left side shown, right side similar.

Remove the two air deflector pin-type retainers on the back of the radiator support.



All vehicles

13. Remove the radiator support bracket retaining bolts (six on each side).



14. Remove the upper radiator support.
15. To install, reverse the removal procedure.

SECTION 501-03:

Body Closures

SPECIFICATIONS

DESCRIPTION AND OPERATION

Body Closures

GENERAL PROCEDURES

Hinge Adjustment—In and Out, Front Door and Crew Cab, Rear

Door Pre-Adjustment Inspection

Hinge Adjustment—Front Door and Crew Cab Rear Door

Hinge Adjustment—In And Out, Rear Door, SuperCab

Hinge Adjustment—Rear Door, SuperCab

Striker Adjustment

Striker Pre-Adjustment Inspection

REMOVAL AND INSTALLATION

Door—Front

Door—Rear, SuperCab

Door—Rear, Crew Cab

Weatherstrip

SECTION 501-03: Body Closures
SPECIFICATIONS

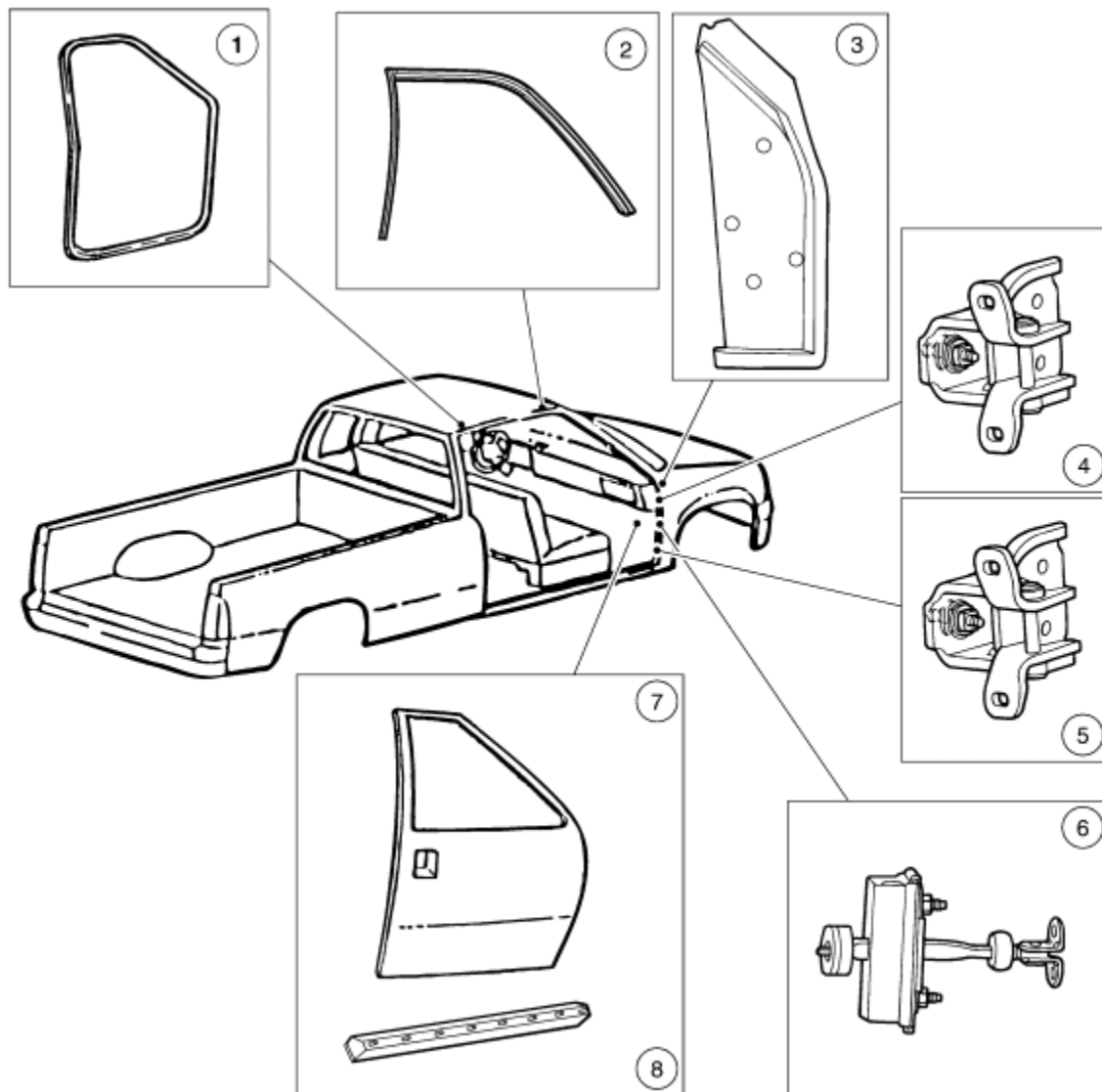
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

General Specifications	
Item	Specification
Door Hinge Lubricant	
Multi-Purpose Grease F5AZ-19G209-AA	ESR-M1C159-A
Door Latch, Linkage, Lock Lubricant	
Penetrating Lock Lubricant E8AZ-19A501-A	—

Torque Specifications			
Description	Nm	lb-ft	lb-in
Tailgate Hinge Bolt	35-55	26-41	—
Front Door Check to Front Door Bolt	10-14	7-11	—
Front Fender Splash Shield Screws	10-14	7-11	—
Front Fender Bolts	11-14	8-11	—
Radiator Grille Opening Panel Reinforcement Bolts	10-14	7-11	—
Windshield Wiper Pivot Arm Nuts	30-40	23-30	—
Cowl Top Vent Panel Screws	7-9	—	62-80
Rear Door Check to Door Frame Bolt	10-14	7-11	—
Rear Radio Speaker Screws	1-2	—	11-16
Front Door Hinge to Front Door Bolts	25-35	18-26	—
Front Door Handle Screw	8-11	—	71-98
Rear Door Window Latch Screws	2-3	—	18-26
Rear Door Hinge to Door Frame Nuts	25-35	18-26	—
Rear Door Hinge to Rear Door Bolts	25-35	18-26	—
Striker Retaining Bolts	10-14	7-11	—

Body Closures

Body Closure Components — F-250, F-350

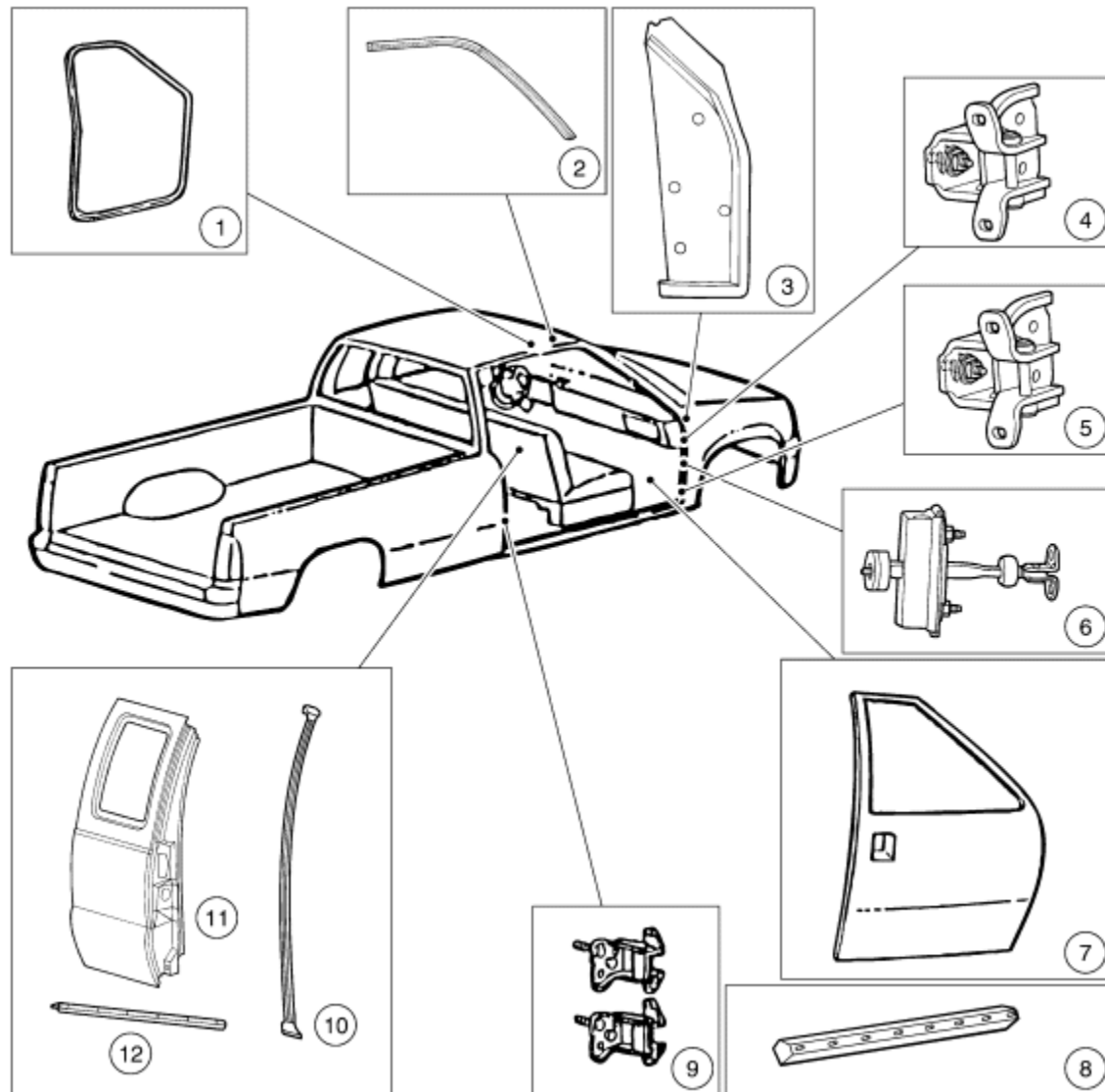


DN0647-C

Item	Part Number	Description
1	20708	Front Door Opening Weatherstrip
2	51222	Roof Side Rail Weatherstrip
3	025K10-1	Front Body Pillar Sound Insulator
4	22800	Front Door Upper Hinge
5	22810	Front Door Lower Hinge

6	23552	Front Door Check Assy
7	20124	Front Door
8	20758	Front Door Lower Weatherstrip

Body Closure Components — SuperCab

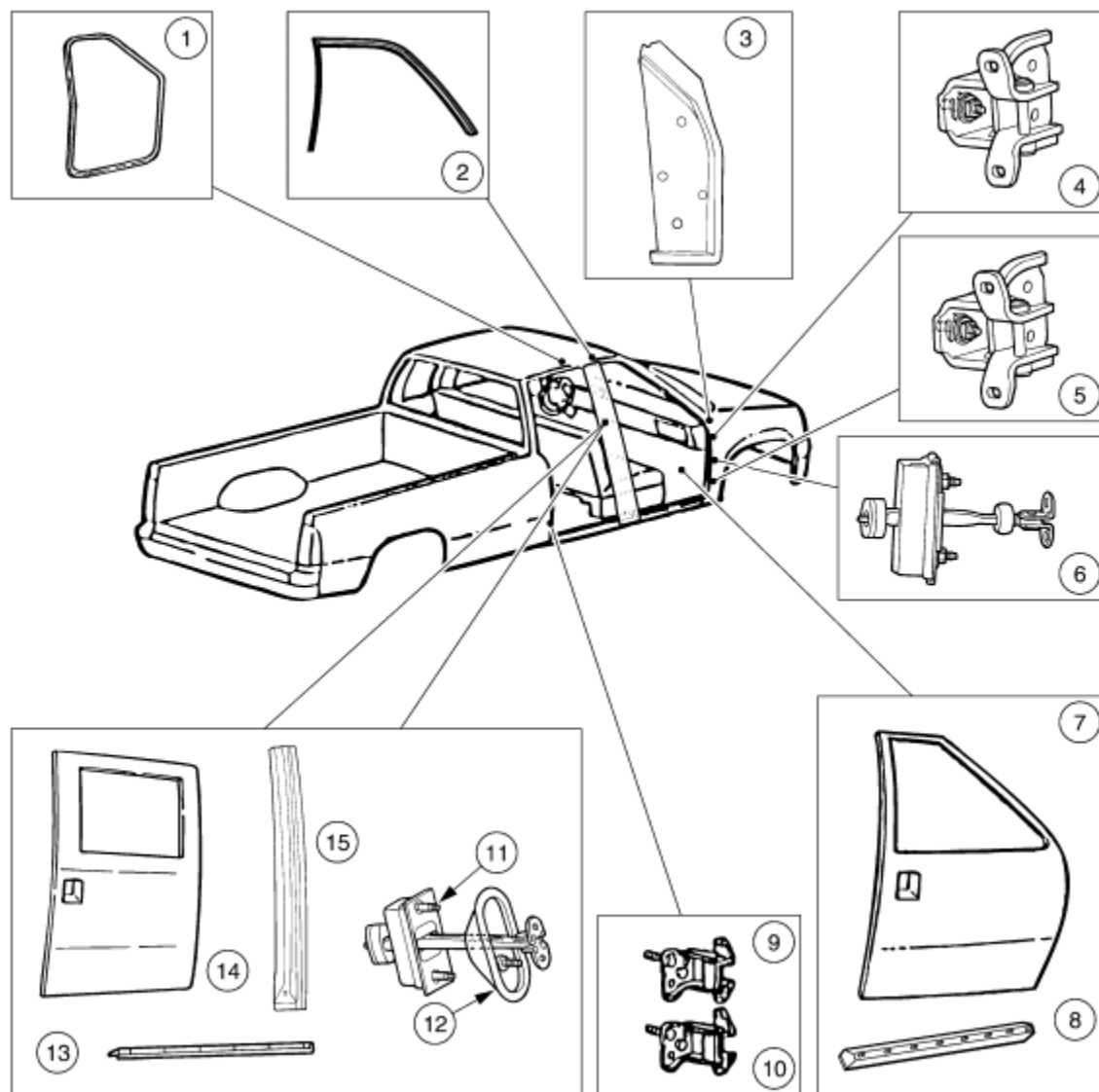


DN0648-C

Item	Part Number	Description
1	20708	Front Door Opening Weatherstrip
2	51222	Roof Side Rail Weatherstrip
3	025K10-1	Front Body Pillar Sound Insulator
4	22800	Front Door Upper Hinge
5	22810	Front Door Lower Hinge
6	23552	Front Door Check Assy

7	20124	Front Door
8	20758	Front Door Lower Weatherstrip
9	26800	Rear Door Hinges
10	253A10-1	Rear Door Opening Weatherstrip
11	24630	Rear Door
12	253A38	Rear Door Lower Weatherstrip

Body Closure Components — Crew Cab



DN0649-C

Item	Part Number	Description
1	20708	Front Door Opening Weatherstrip
2	51222	Roof Side Rail Weatherstrip
3	025K10-1	Front Body Pillar Sound Insulator

4	22800	Front Door Upper Hinge
5	22810	Front Door Lower Hinge
6	23552	Front Door Check Assy
7	20124	Front Door
8	20758	Front Door Lower Weatherstrip
9	26800	Upper Rear Door Hinges
10	26810	Lower Rear Door Hinge
11	27200	Rear Door Check Assy
12	272A46	Rear Door Check Cover
13	25838	Rear Door Lower Weatherstrip
14	24630	Rear Door
15	247A50-1	Body Side Inner Seal Assy

SECTION 501-03: Body Closures
GENERAL PROCEDURES

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Hinge Adjustment—In and Out, Front Door and Crew Cab, Rear

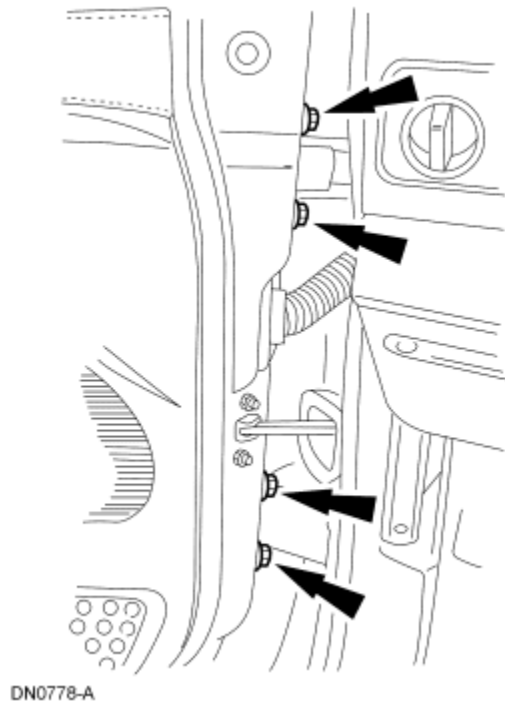
NOTE: Before performing the door hinge adjustment, refer to Door Pre-Adjustment Inspection in this section.

NOTE: The following procedure is for performing fore, aft, up, down and tilt adjustments.

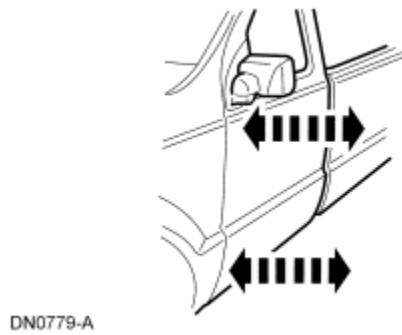
1. **NOTE:** The driver door is shown, the passenger door and Crew Cab rear doors are similar.

Remove the door striker.

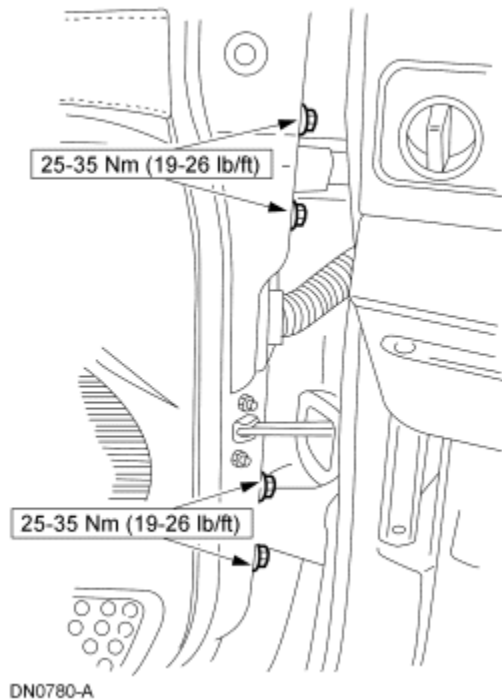
2. Loosen the bolts only enough to allow for slight door movement.



3. Carefully close and adjust the door until flush with the adjacent body panels.



4. Carefully open the door and tighten the bolts.



5. Re-install and adjust the door striker; refer to [Striker Adjustment](#) in this section.
6. Check the door for proper operation and alignment.

Door Pre-Adjustment Inspection

NOTE: Before attempting any door adjustment procedures, open and close the door several times and observe the operation. With the door in an open position, attempt to lift the door at the outboard lower edge. Check for excessive up and down travel. If the door exhibits excessive up and down movement, the door hinge bushings or door hinge pins may require replacement.

NOTE: Door hinges must be in the proper operating condition before the door(s) can be properly adjusted.

NOTE: Check the door(s) for any of the following conditions.

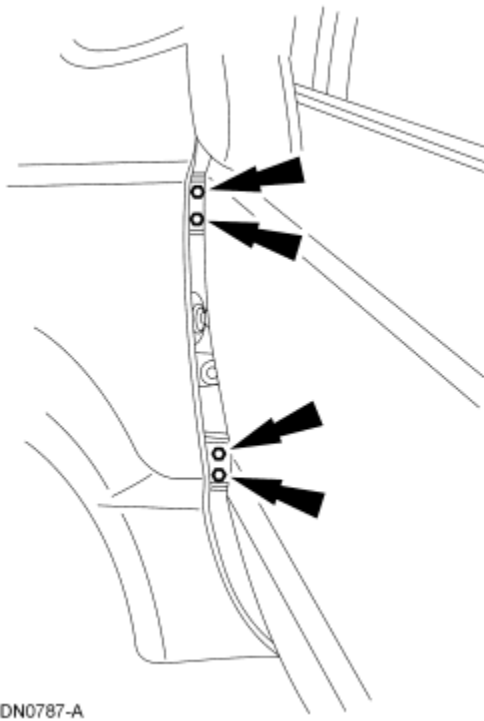
1. Check for the door dropping while opening.
 - If the hinge pin bushings are worn, replace the bushings.
 - If the hinge pins are worn, replace the hinge pins.
 - If the hinge(s) is damaged, replace the hinge(s).
 - If dirt or corrosion is on the door hinge(s), lubricate the door hinges; refer to Specifications in this section.
 2. Verify if the door closing requires high effort.
-

Hinge Adjustment—Front Door and Crew Cab Rear Door

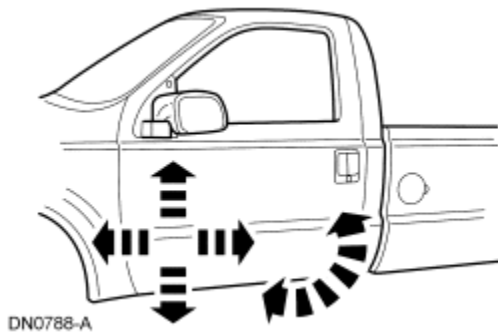
NOTE: Before performing the hinge adjustment, refer to Pre-Adjustment Inspection in this section.

1. Remove the door striker.
2. **NOTE:** The driver door is shown, the passenger door and rear doors on Crew Cab are similar.

Loosen the bolts only enough to allow for slight door movement.



3. Close and adjust the door until door gaps are uniform and the door is properly aligned with bodylines on the adjacent panels.



4. Tighten the bolts.



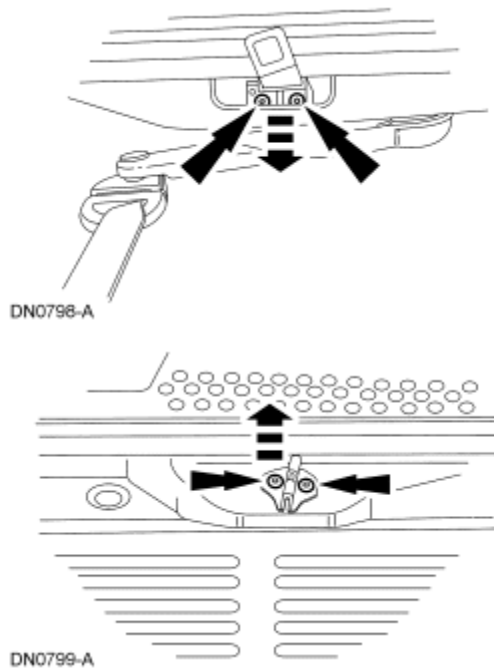
5. Re-install and adjust the door striker; refer to [Striker Adjustment](#) in this section.
6. Check the door for proper operation and alignment.

Hinge Adjustment—In And Out, Rear Door, SuperCab

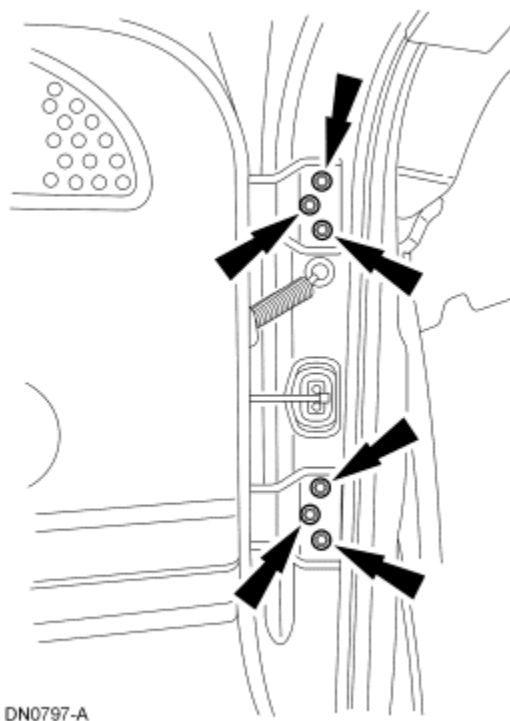
NOTE: Before performing the hinge adjustment, refer to Pre-Adjustment Inspection in this section.

1. **NOTE:** The left rear door is shown, the right rear door is symmetrically opposite.

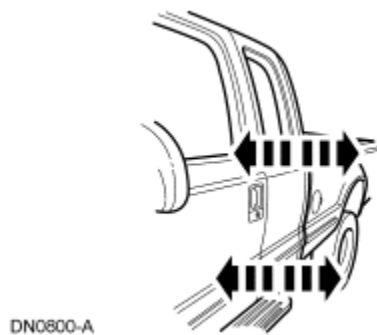
Remove the upper and lower door strikers.



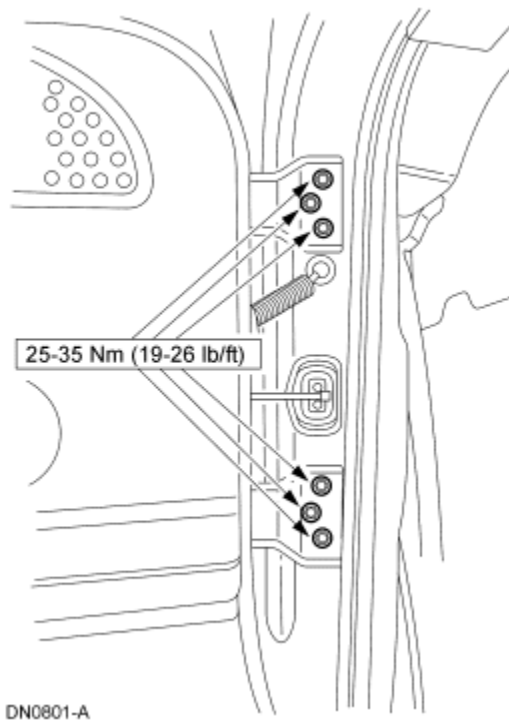
2. Loosen the bolts only enough to allow for slight door movement.



3. Close the doors and carefully adjust the rear door until flush with the adjacent panels.



4. Carefully open the doors and tighten the bolts.



5. Install and adjust the upper and lower strikers; refer to [Striker Adjustment](#) in this section.

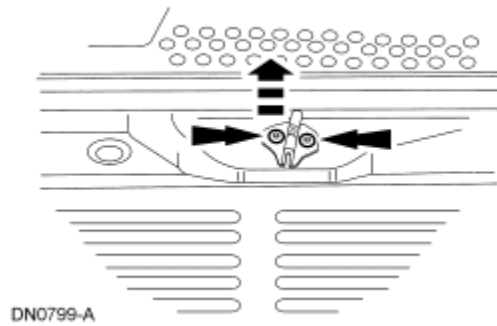
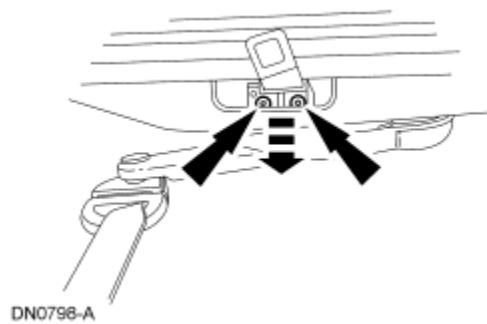
Hinge Adjustment—Rear Door, SuperCab

NOTE: The following procedure is for performing fore, aft, up, down and tilt adjustments.

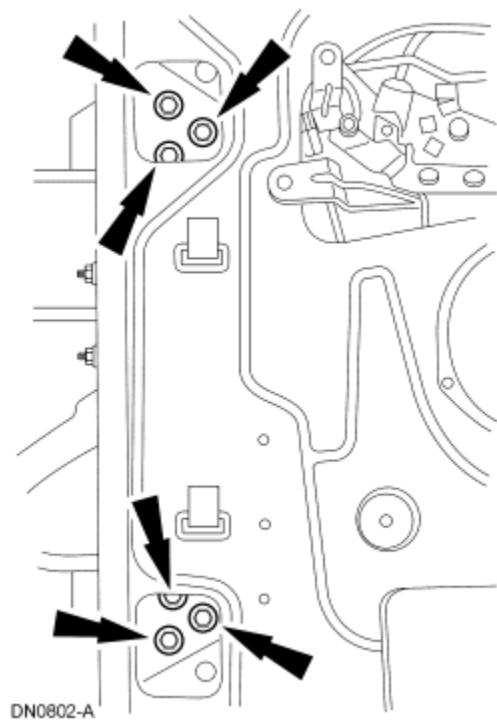
NOTE: Before performing the hinge adjustment, refer to Pre-Adjustment Inspection in this section.

1. Remove the rear door inside trim panel(s); refer to [Section 501-05](#).
2. **NOTE:** The left rear door is shown, the right rear door is symmetrically opposite.

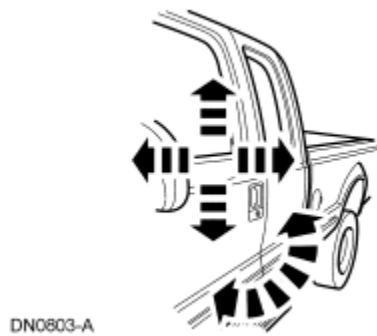
Remove the upper and lower door strikers.



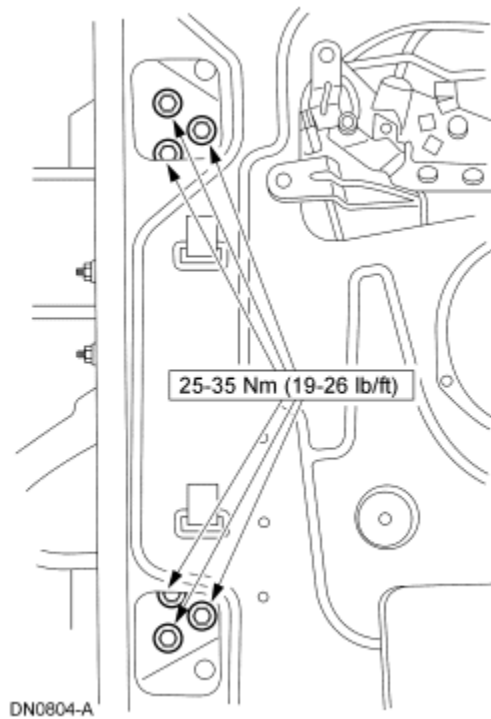
3. Loosen the bolts only enough to allow for slight door movement.



4. Close the doors and carefully adjust the rear door until properly aligned with all bodylines and adjacent panels.



5. Carefully open the doors and tighten the bolts.



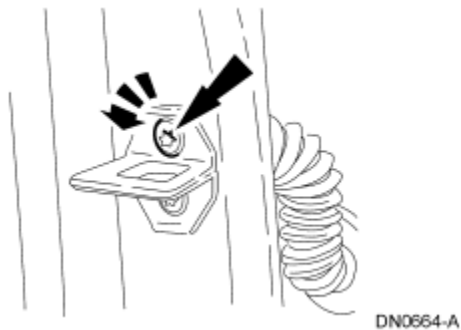
6. Install and adjust the upper and lower strikers; refer to [Striker Adjustment](#) in this section.

Striker Adjustment

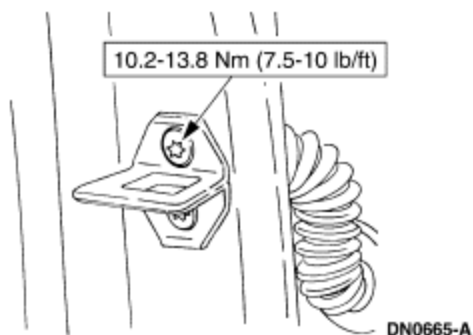
NOTE: Before carrying out the striker adjustment, refer to Striker Pre-Adjustment Inspection in this section.

1. **NOTE:** Scribe before removing.

Loosen the striker retaining bolts.



2. Adjust the door striker and tighten the striker retaining bolts.



3. To install, reverse the removal procedure.

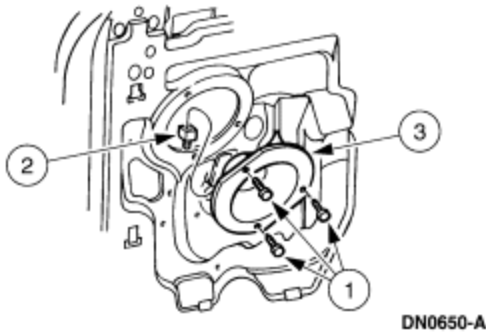
Striker Pre-Adjustment Inspection

1. Verify if the door springs upward while opening.
 - If the door striker is adjusted too low, adjust the door striker.
 - If the door latch is binding or sticking, lubricate the door latch. Refer to Specifications in this section.
 2. Verify if the door springs outward excessively while opening.
 - If the door striker is adjusted too far inboard, adjust the door striker.
-

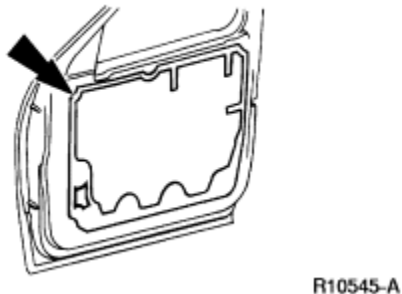
Door—Front

Removal

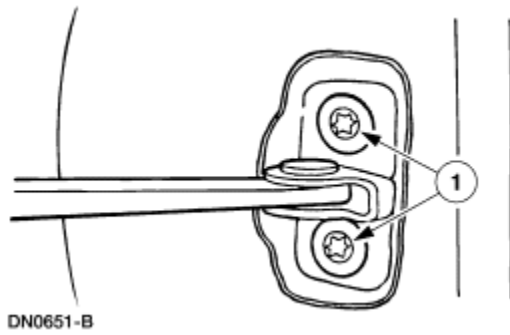
1. Disconnect the battery ground cable (14301), refer to [Section 414-01](#).
2. Remove the front door trim panel (23942), refer to [Section 501-05](#).
3. Remove the front radio speaker (18808).
 1. Remove the screws.
 2. Disconnect the electrical connector.
 3. Remove the radio speaker.



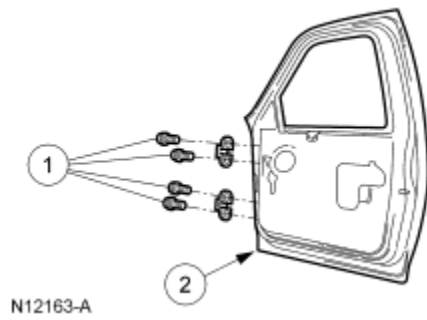
4. Remove the front door watershield.
 - Start at one corner and carefully peel the watershield from the front door (20124).



5. Disconnect the electrical connectors inside the front door, if so equipped.
6. Remove the front door check from the front A-pillar.
 1. Remove the bolts.

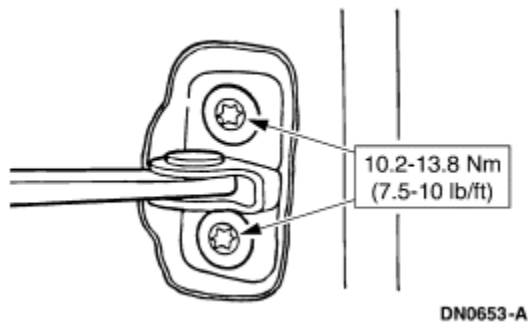
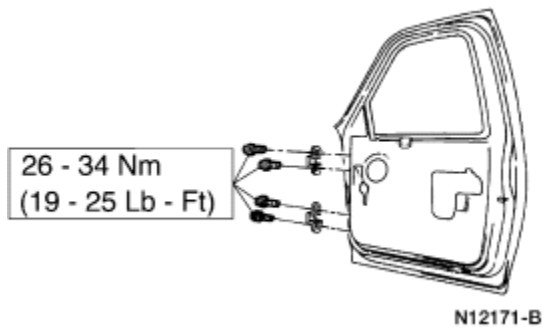


7. Remove the front door.
 1. Remove the two bolts (two bolts for each hinge).
 2. Remove the front door.



Installation

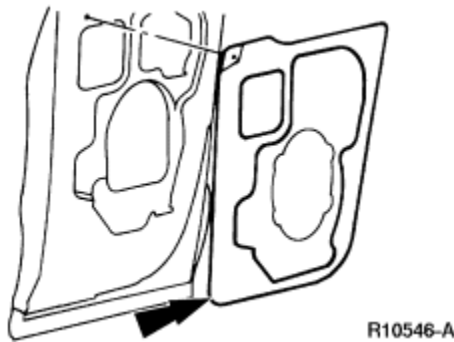
1. Follow the removal procedure in reverse order.



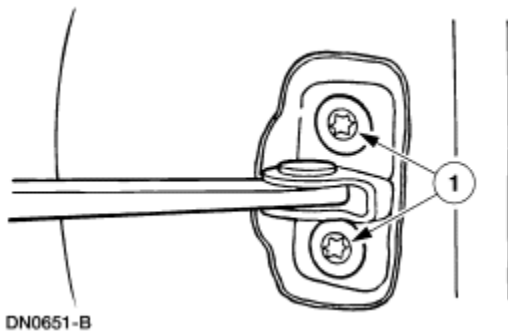
Door—Rear, SuperCab

Removal

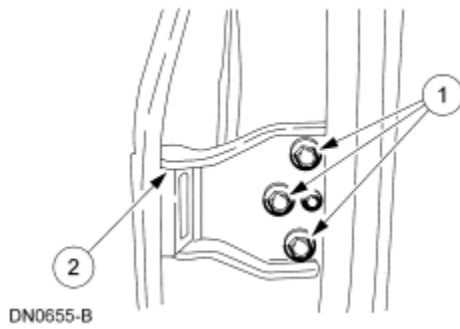
1. Remove the rear door trim panel; refer to [Section 501-05](#).
2. Remove the radio speaker (18808); refer to [Section 415-03](#).
3. Remove the rear door watershield.
 - Start at one corner and carefully peel the watershield from the rear door (24630).



4. Remove the rear door check from the B-pillar.
 1. Remove the bolts.

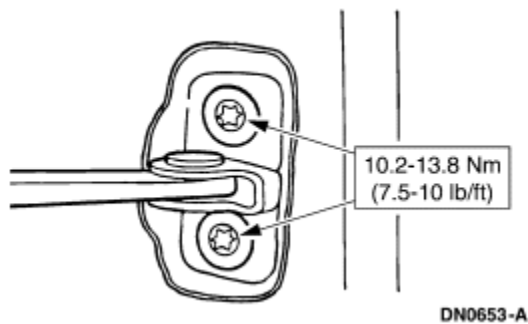
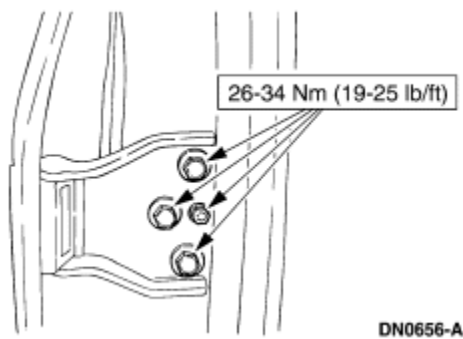


5. Remove the rear door.
 1. Remove the bolts (three on each hinge).
 2. Remove the rear door.



Installation

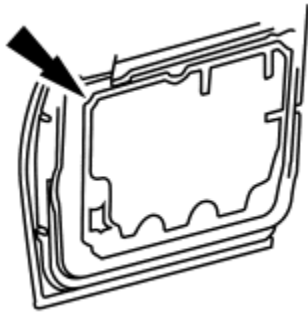
1. Follow the removal procedure in reverse order.



Door—Rear, Crew Cab

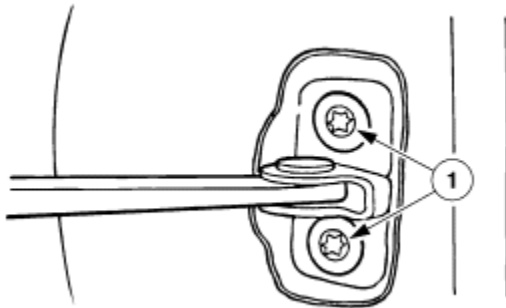
Removal

1. Disconnect the battery ground cable (14301), refer to [Section 414-01](#).
2. Remove the rear door trim panel, refer to [Section 501-05](#).
3. Remove the rear door watershield.
 - Start at one corner, and carefully peel the watershield from the rear door.



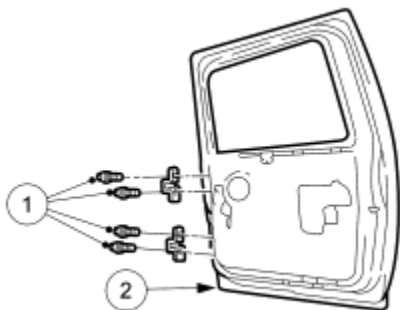
DN0657-A

4. Disconnect the electrical connectors inside the rear door, if so equipped.
5. Remove the rear door check from the rear door.
 1. Remove the bolts.



DN0651-B

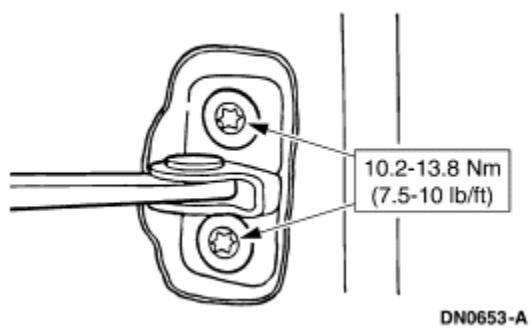
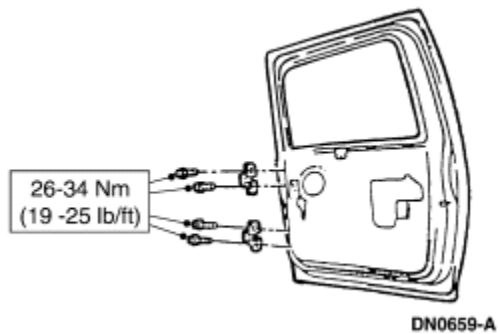
6. Remove the rear door.
 1. Remove the door to door hinge bolts (two bolts from each hinge).
 2. Remove the rear door.



DN0658-A

Installation

1. Follow the removal procedure in reverse order.



SECTION 501-03: Body Closures REMOVAL AND INSTALLATION

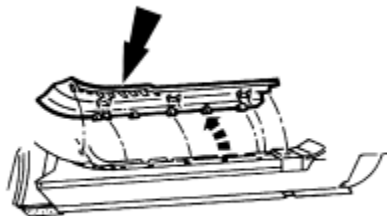
1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

Weatherstrip

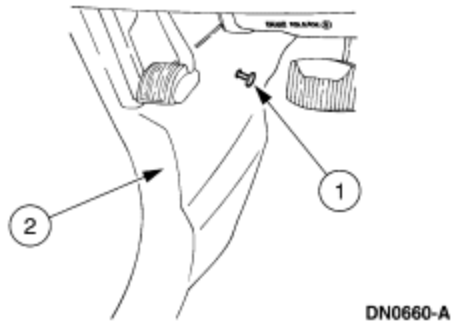
Removal

1. Remove the door scuff plate.

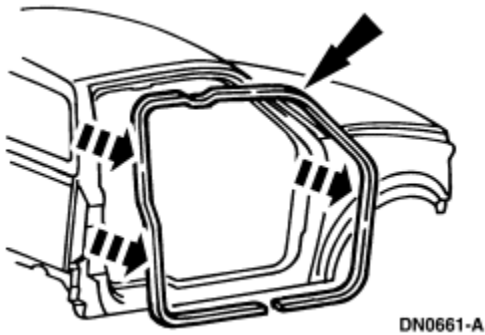


R10534-A

2. Remove the kick panel.
 1. Remove the kick panel pushpin.
2. Remove the kick panel.



3. Remove the front door opening weatherstrip (20708).



Installation

1. **NOTE:** When installing the weatherstrip to the door, make sure to place the weatherstrip to the outside of the trim panel.

Follow the removal procedure in reverse order.

SECTION 501-04:
Pickup Bed and Platform Body

[SPECIFICATIONS](#)

DESCRIPTION AND OPERATION

[Pickup Bed](#)

GENERAL PROCEDURES

[Pickup Bed Alignment](#)

REMOVAL AND INSTALLATION

[Body Side Outer Panel](#)

[Pickup Bed](#)

SECTION 501-04: Pickup Bed and Platform
Body
SPECIFICATIONS

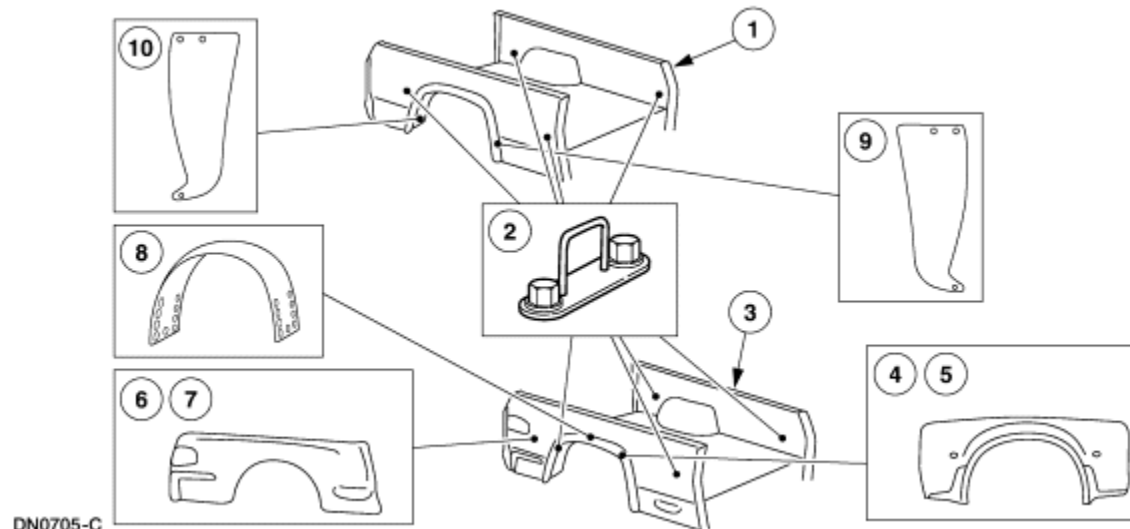
1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Torque Specifications			
Description	Nm	Lb/Ft	Lb/In
Pickup Box Bolts	63	47	—
Dual Rear Fender-to-Fender Bolt(s)	25	19	—
Dual Rear Fender-to-Fender Nuts	25	19	—

SECTION 501-04: Pickup Bed and Platform
Body
DESCRIPTION AND OPERATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Pickup Bed



DN0705-C

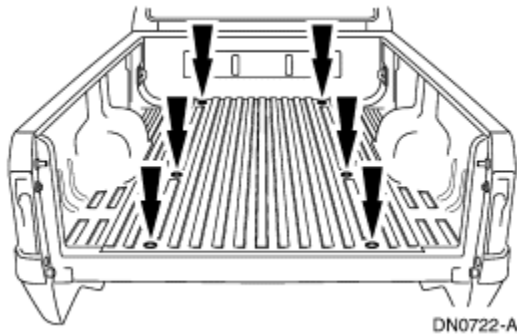
Item	Part Number	Description
1	—	Styleside Pickup Box
2	00064	Pickup Bed Tie Down Hooks
3	—	Pickup Box
4	16312	Body Side Fender Flare, RH (Dual Rear Wheels Only)
5	16313	Body Side Fender Flare, LH (Dual Rear Wheels Only)
6	278A98	Body Side Outer Panel, RH
7	278A99	Body Side Outer Panel, LH
8	28344	Shield — Rear Wheel Splash (Dual Rear Wheels Only)
9	28344	Shield — Rear Wheel Splash, Rear
10	28370	Shield — Rear Wheel Splash, Front

The pickup bed consists of the following:

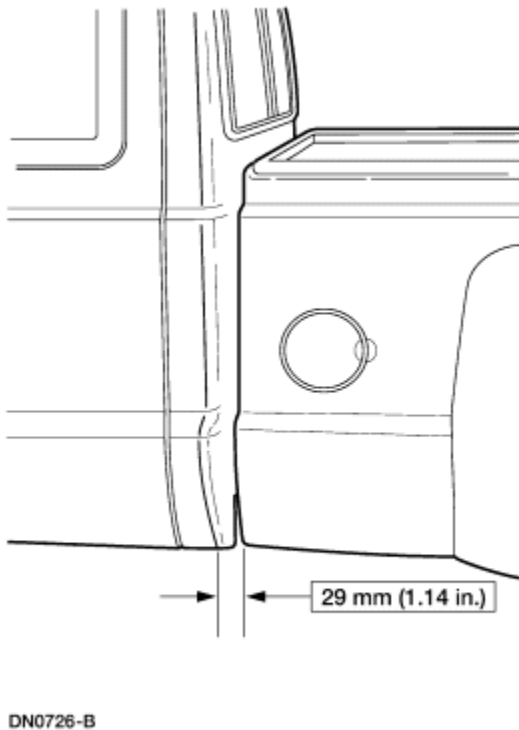
- Available in 6-3/4-ft and 8-ft lengths
- Is double-wall steel construction
- Houses four stake pockets in the top of the 6-3/4-ft bed and six stake pockets on the 8-ft bed
- Includes plastic fenders added to the bed outer panels for dual rear wheel vehicles
- Four pickup bed tie down eyelets standard

Pickup Bed Alignment

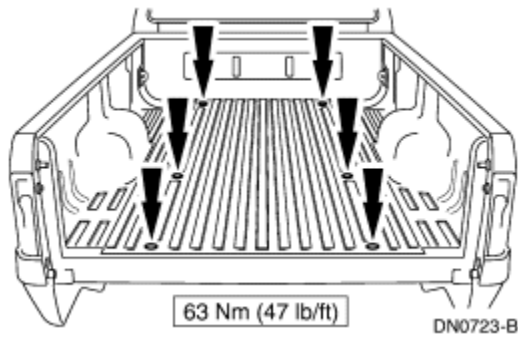
1. Loosen the pickup bed retaining bolts.



2. Move the pickup box so the front of the box is centered on the rear of the cab.
3. Adjust the pickup box to specification.



4. Tighten pickup bed box to specification.



SECTION 501-04: Pickup Bed and Platform
Body
REMOVAL AND INSTALLATION

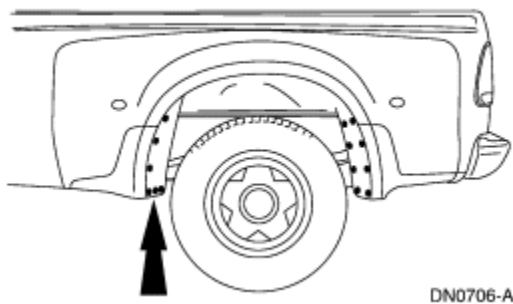
1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Body Side Outer Panel

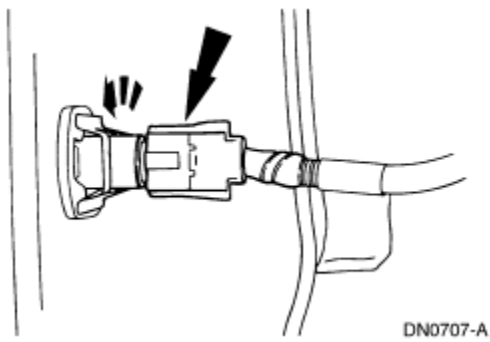
Removal

NOTE: If necessary, remove the rear wheels for easier access of the fender flare retaining bolts.

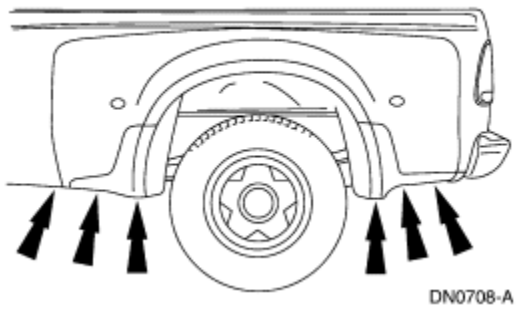
1. Remove the rear wheels; for additional information, refer to [Section 204-04](#).
2. Remove and discard 16 push pins from the dual rear wheel fender splash shield or 4 push pins from the single rear wheel splash shield.



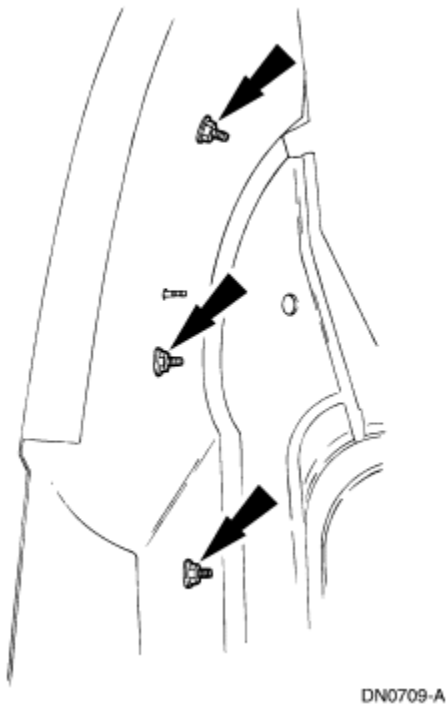
3. Remove the parking lamp electrical sockets from the fender flare.



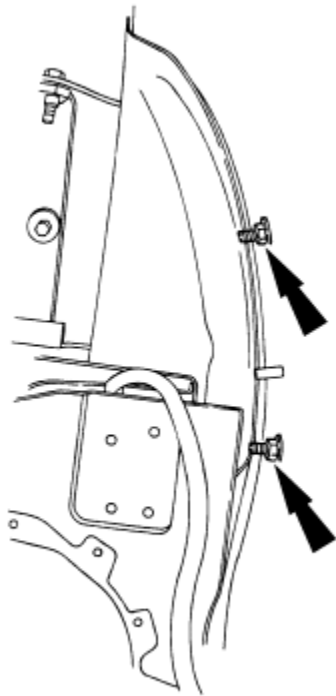
4. Remove six fender flare retaining nuts and bolts from the bottom front and the bottom rear of the fender flare.



5. Remove three fender retaining nuts from inside front of the fender flare.

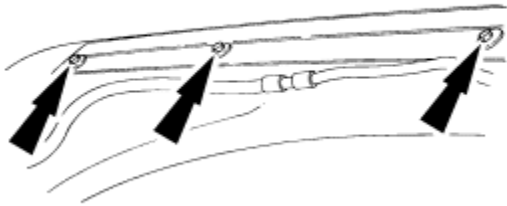


6. Remove two fender retaining nuts from inside rear of the fender flare.



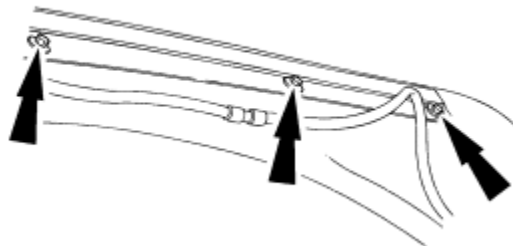
DN0710-A

7. Remove three fender flare retaining bolts and the bracket from top front of the fender.



DN0711-A

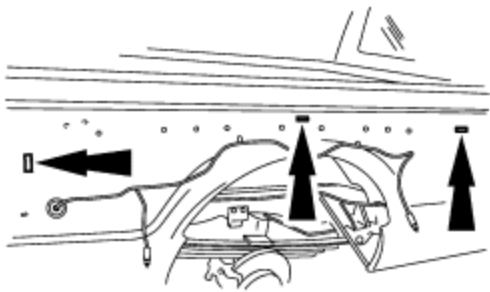
8. Remove three fender flare retaining bolts and the bracket from top rear of the fender.



DN0712-A

9. Remove the front fender.

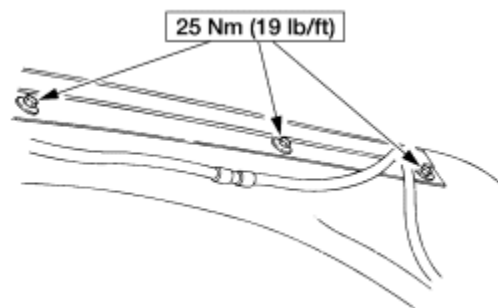
10. Remove and discard three fender hold down push pins from the fender.



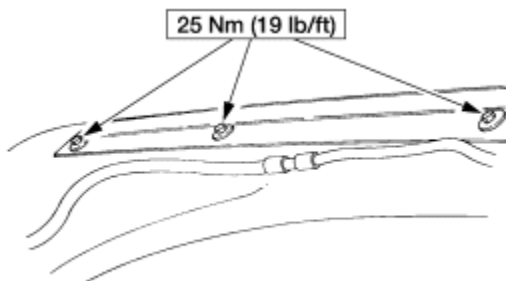
DN0713-A

Installation

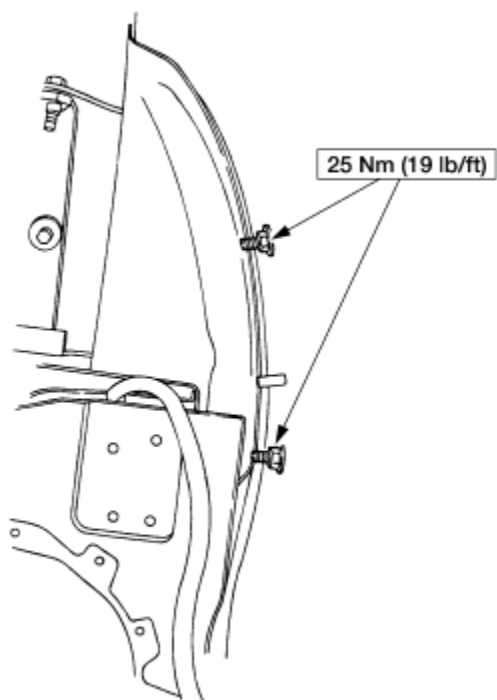
1. Follow the removal procedure in reverse order.



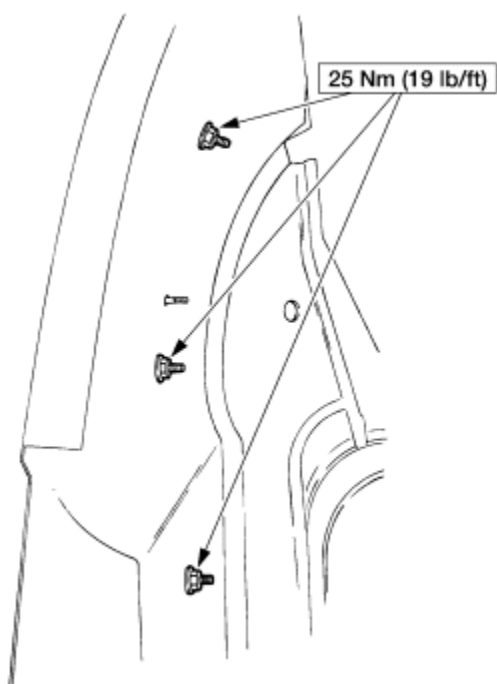
DN0714-B



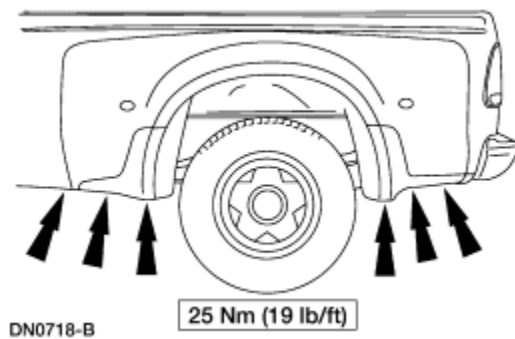
DN0715-B



DN0716-B



DN0717-B



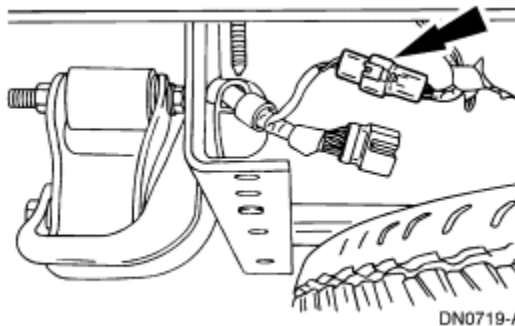
SECTION 501-04: Pickup Bed and Platform
Body
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

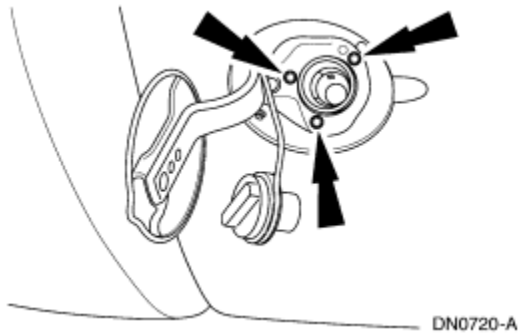
Pickup Bed

Removal

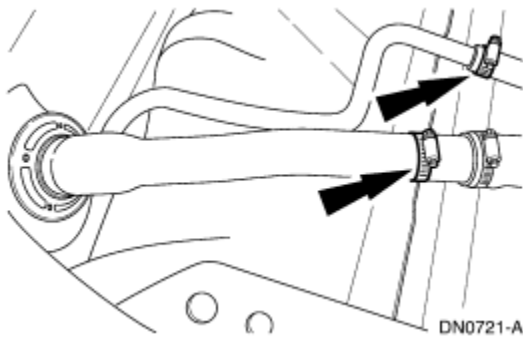
1. Remove the tailgate; for additional information, refer to Owner's Literature.
2. Remove the tail lamps; for additional information, refer to [Section 417-01](#).
3. Remove the rear bumper; for additional information, refer to [Section 501-19](#).
4. Disconnect the rear tail lamp electrical connector.



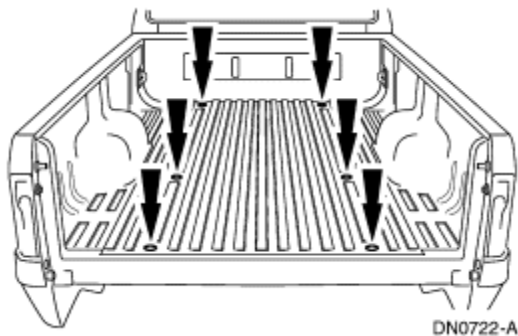
5. Remove the rear tail lamp wiring harness from the pickup bed.
6. Remove the fuel filler neck retaining screws.




7. Loosen the fuel filler assembly hose clamps, then position the fuel filler assembly aside.



8. Remove the pickup bed retaining bolts.



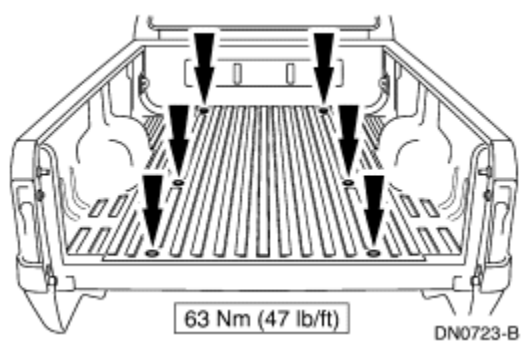
9.  **CAUTION:** Handle the pickup bed carefully when removing from the vehicle to avoid damage to the cab or bed finish.

NOTE: For 6-3/4-foot and 8-foot pickup beds, three assistants are necessary to remove the pickup bed from the vehicle.

Carefully lift and remove the pickup bed from the vehicle.

Installation

1. Follow the removal procedure in reverse order.



SECTION 501-05:
Interior Trim and Ornamentation

DESCRIPTION AND OPERATION

[Interior Trim](#)

REMOVAL AND INSTALLATION

[Trim Panel—Cowl Side](#)

[Trim Panel—Front Door](#)

[Trim Panel—Rear Door, Crew Cab](#)

[Trim Panel—Rear Door, SuperCab](#)

[Trim Panel—Rear Corner, Crew Cab](#)

[Trim Panel—Rear Corner, Regular Cab](#)

[Trim Panel—Rear Corner, SuperCab](#)

[Trim Panel—Back Panel Trim Cover, Crew Cab](#)

[Trim Panel—Back Panel Trim Cover, Regular Cab](#)

[Trim Panel—Back Panel Trim Cover, SuperCab](#)

[Visor—Inside](#)

[Visor—Inside, Secondary Blade](#)

[Moulding—Rear Seat Back, Upper, SuperCab](#)

[Moulding—Window Garnish, Rear Door, SuperCab](#)

[Moulding—Windshield Side Garnish](#)

[Headliner—Crew Cab](#)

[Headliner—Regular Cab, SuperCab](#)

SECTION 501-05: Interior Trim and
Ornamentation

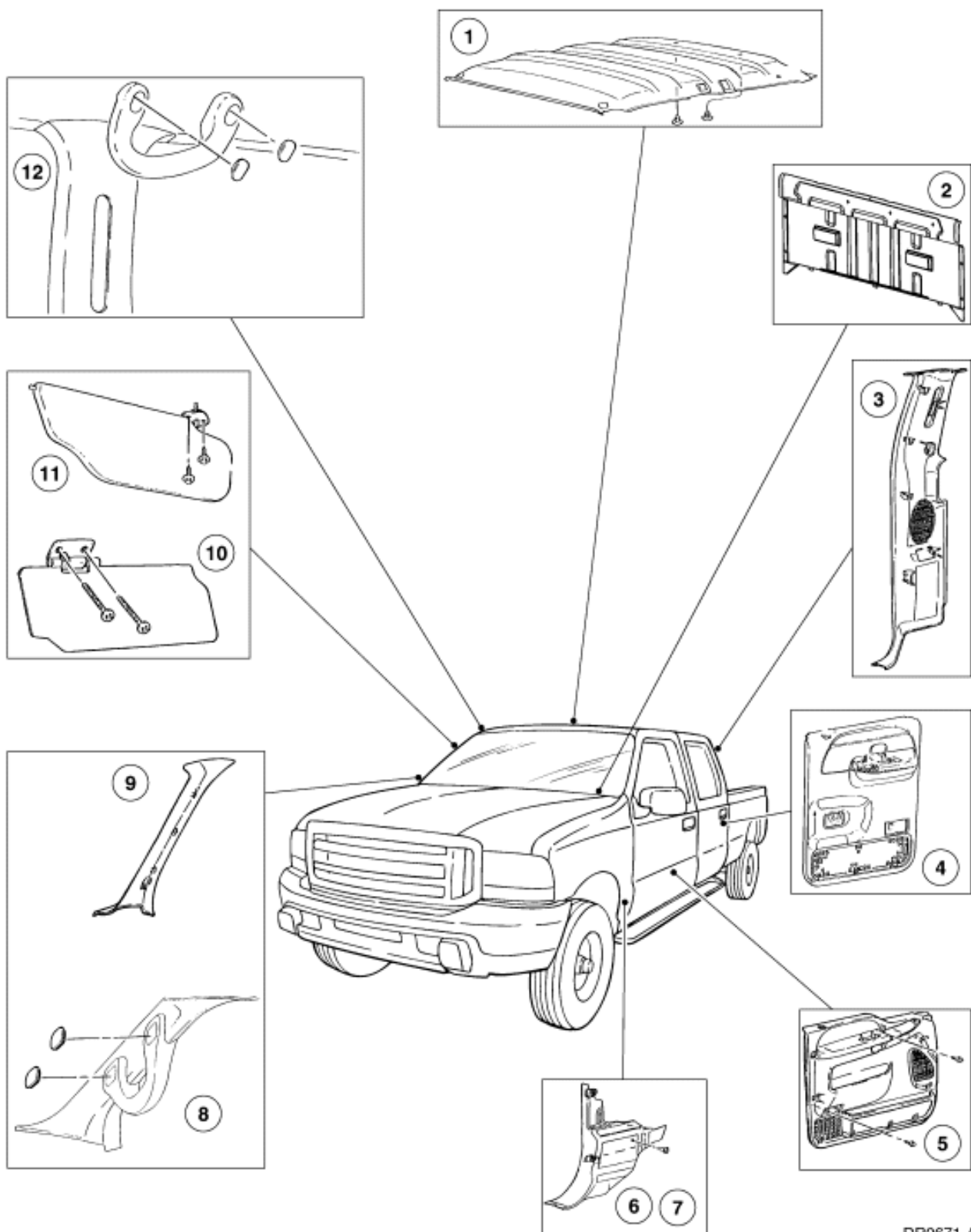
1999 F-Super Duty 250-550 Workshop
Manual

DESCRIPTION AND OPERATION

[Procedure revision date: 01/26/2000](#)

Interior Trim

Crew Cab

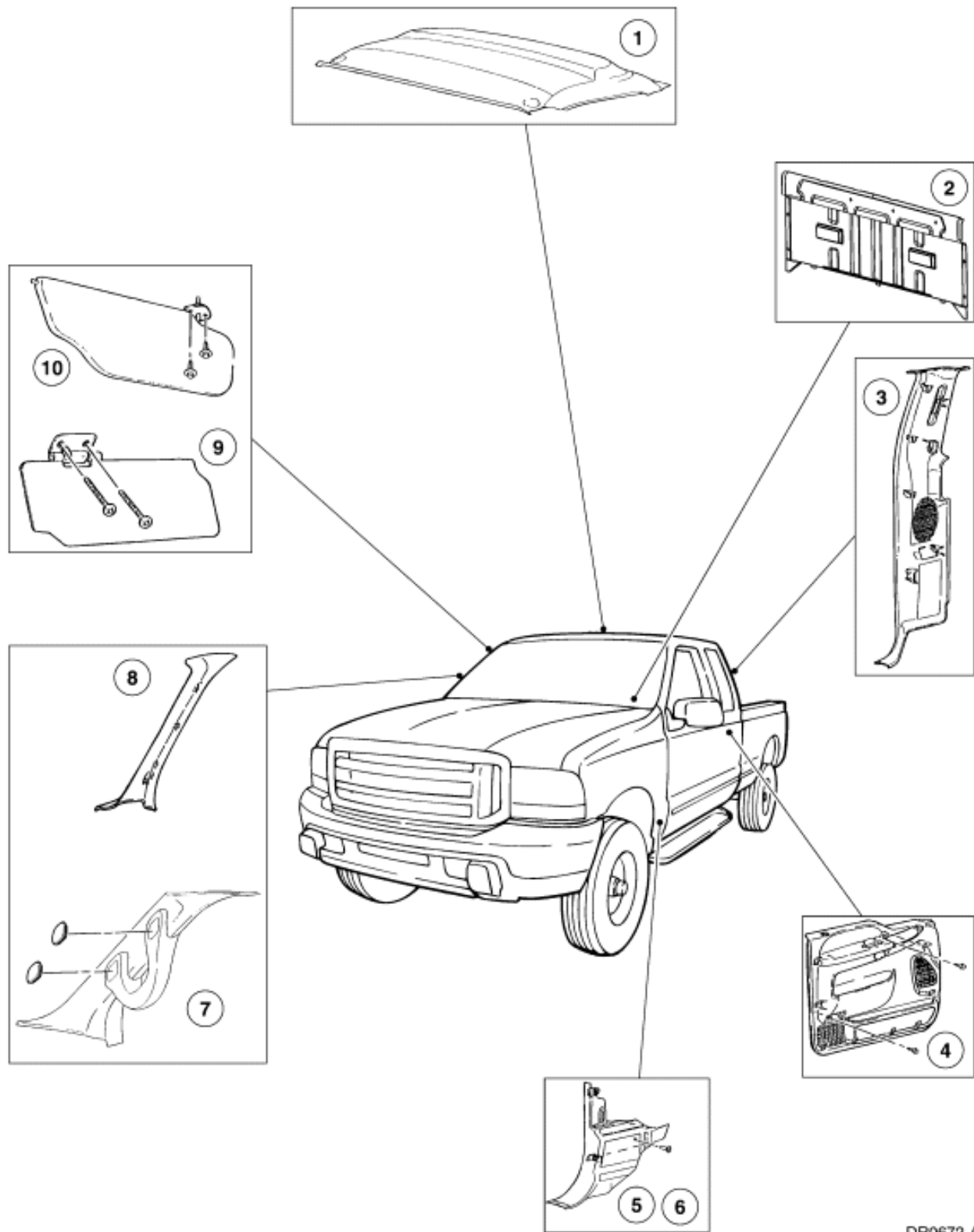


DR0671-A

Item	Part Number	Description
1	—	Headliner
2	—	Back Panel Trim Cover

3	278D12	Rear Corner Trim Panel
4	—	Rear Door Trim Panel
5	23942	Front Door Trim Panel
6	02345	Cowl Side Trim Panel — (LH)
7	02344	Cowl Side Trim Panel — (RH)
8	—	Right Front Inside Assist Handle
9	03598	Windshield Side Garnish Moulding
10	—	Inside Secondary Blade Visor
11	04100	Inside Visor
12	—	Rear Inside Assist Handle

Regular Cab, SuperCab (Typical)



DR0672-A

Item	Part Number	Description
1	—	Headliner

2	—	Back Panel Trim Cover
3	278D12	Rear Corner Trim Panel
4	23942	Front Door Trim Panel
5	02345	Cowl Side Trim Panel — (LH)
6	02344	Cowl Side Trim Panel — (RH)
7	—	Right Front Inside Assist Handle
8	03598	Windshield Side Garnish Moulding
9	—	Inside Secondary Blade Visor
10	04100	Inside Visor

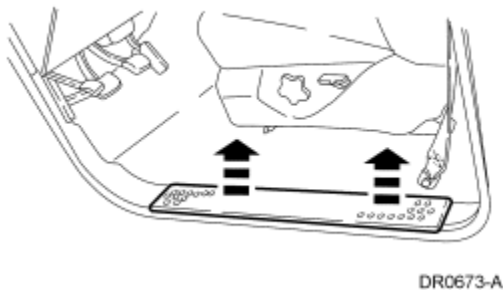
SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

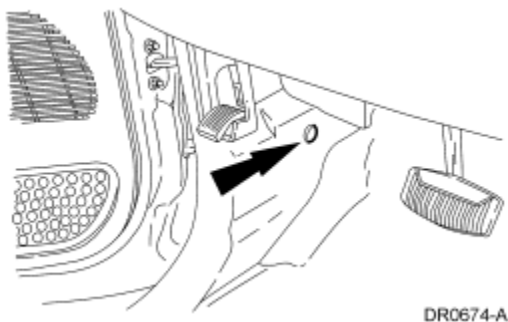
Trim Panel—Cowl Side

Removal and Installation

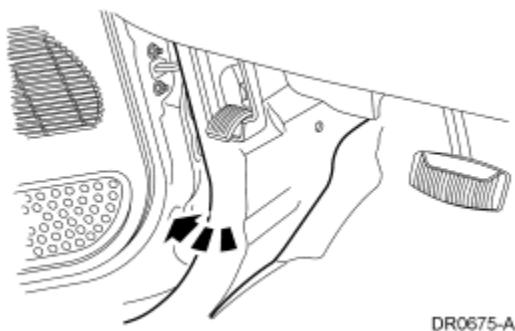
1. Remove the scuff plate.



2. Remove the pushpin.



3. Remove the cowl side trim panel (02344).



4. To install, reverse the removal procedure.

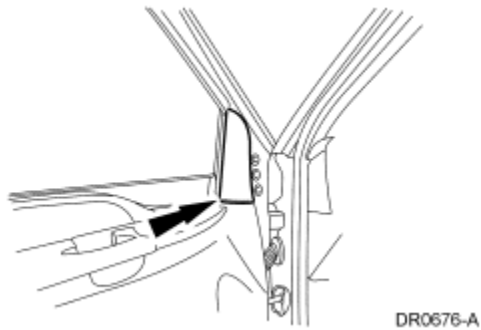
SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Trim Panel—Front Door

Removal

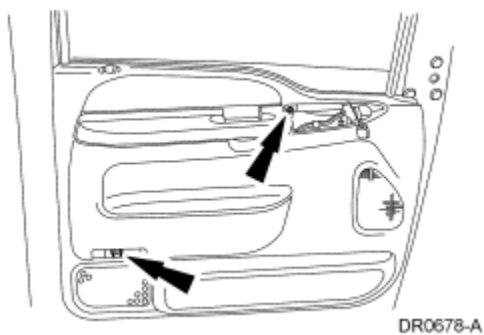
1. Remove the rear view mirror mounting hole cover (17K709).



2. If equipped, remove the window regulator handle (23342); refer to [Section 501-11](#).
3. If equipped, remove the window regulator switch plate (14524); refer to [Section 501-11](#).
4. If equipped, disconnect the power windows, power door lock switch and power mirror connectors.
5. If equipped, remove the front door trim panel reflector or the courtesy lamp lens.



6. Remove the screws.




7. **NOTE:** Remove the front door trim panel (23942) by pulling it straight upward.

Lift and remove the front door trim panel.

8. If equipped, twist the courtesy lamp connector one half turn and remove it from the front door trim panel.

Installation

1.  **CAUTION:** Insert the lower panel tabs first or they can break when installing the front door trim panel.

Follow the removal procedure in reverse order.

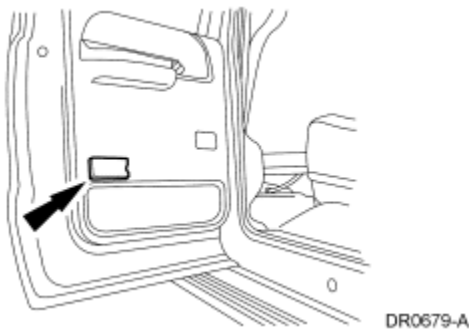
SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

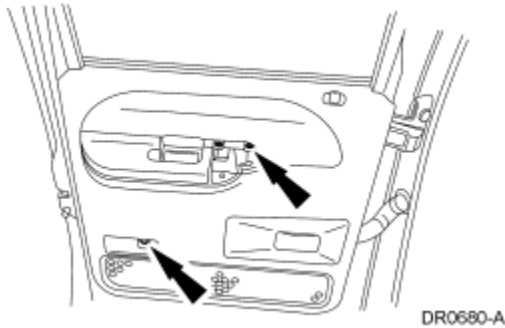
Trim Panel—Rear Door, Crew Cab

Removal and Installation

1. Remove the window regulator switch housing (14527). For additional information, refer to [Section 501-11](#).
2. If equipped, remove the window regulator handle (23342). For additional information, refer to [Section 501-11](#).
3. If equipped, disconnect the power window connector.
4. Remove the panel reflector.



5. Remove the screws.



6. **NOTE:** Remove the rear door trim panel by pulling it straight upward.

Lift and remove the rear door trim panel.

7.  **CAUTION:** Insert the lower panel tabs first or they can break when installing the rear door trim panel.

To install, reverse the removal procedure.

SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

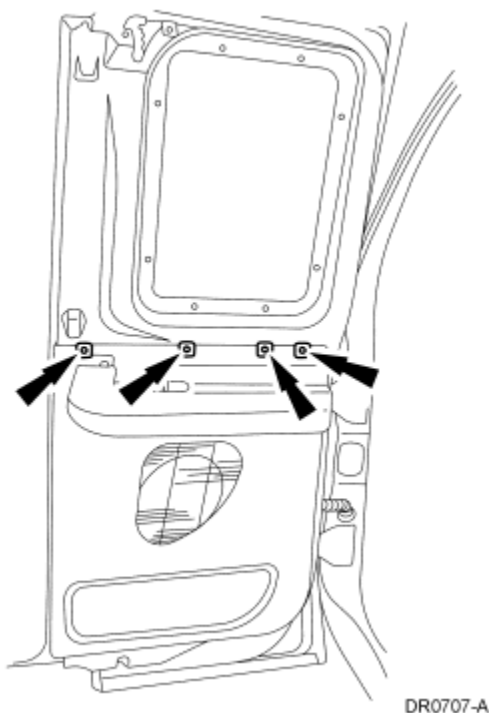
1999 F-Super Duty 250-550 Workshop
Manual


[Procedure revision date: 01/26/2000](#)

Trim Panel—Rear Door, SuperCab

Removal and Installation

1. Remove the rear door window garnish moulding. For additional information, refer to [Moulding—Window Garnish, Rear Door, SuperCab](#) in this section.
2. Remove the screws and the scrivenets.



3. Pull straight up to remove the rear door trim panel.
4.  **CAUTION: Insert the lower panel tabs first or they can break when installing the rear door trim panel.**

To install, reverse the removal procedure.

SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual

[Procedure revision date: 04/03/2002](#)

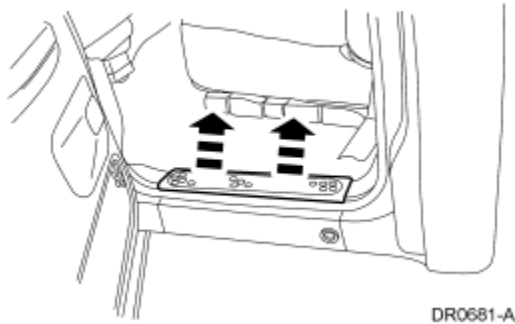
Trim Panel—Rear Corner, Crew Cab

Special Tool(s)	
	Torx Bit, Safety Belt Bolt 501-010 (T77L-2100-A)

ST1181-A

Removal and Installation

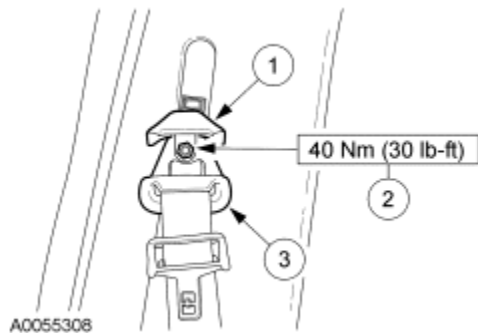
1. Remove the scuff plate.



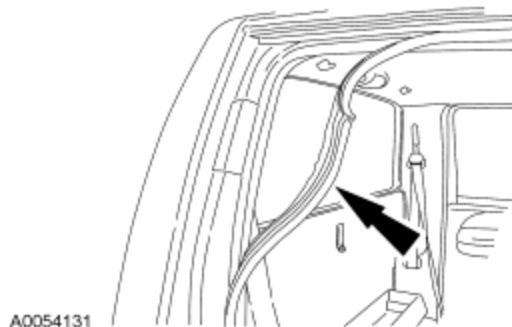
2. **NOTE:** Inspect the shoulder safety belt guide and cover for damage. If the shoulder safety belt guide or cover is damaged or cover does not remain closed, install a new shoulder safety belt guide.

Remove the shoulder safety belt guide.

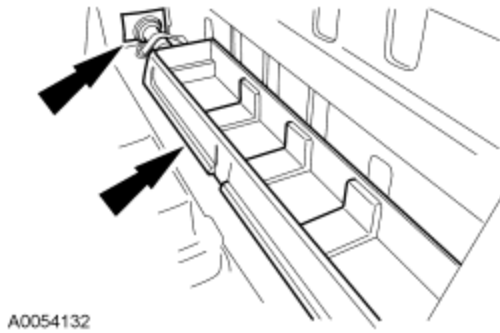
1. Position the shoulder safety belt guide cover up.
2. Use the Seat Belt Bolt Bit to remove the bolt.
3. Remove the shoulder safety belt guide.



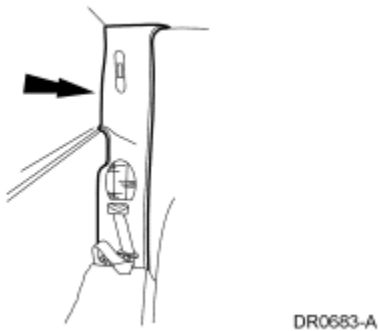
3. Pull the rear door opening weatherstrips away from the rear corner trim panel (278D12).



4. If equipped, remove the utility trays and jack assembly.



5. Remove the rear corner trim panel.



6. Route the safety belt and the shoulder safety belt guide through the rear corner trim panel openings.
7. Remove the rear corner trim panel from the vehicle.
8. To install, reverse the removal procedure.

SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 04/03/2002](#)

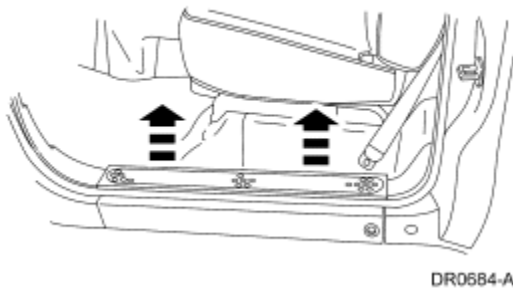
Trim Panel—Rear Corner, Regular Cab

Special Tool(s)

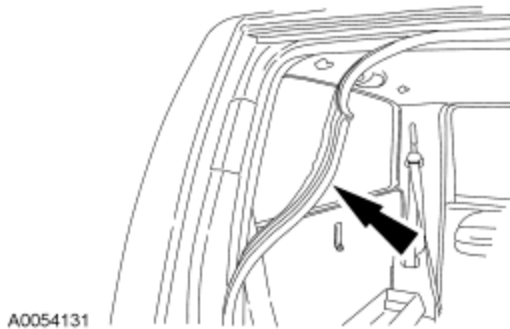


Removal and Installation

1. Remove the scuff plate.



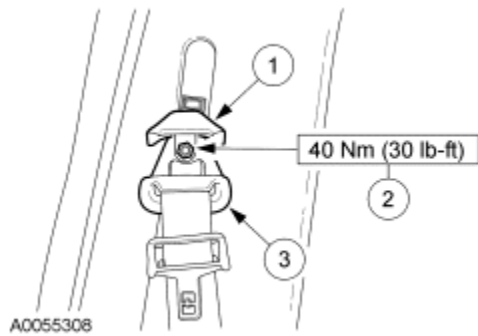
2. Position front seat(s) forward.
3. Pull the door opening weatherstrips away from the rear corner trim panel (278D12).



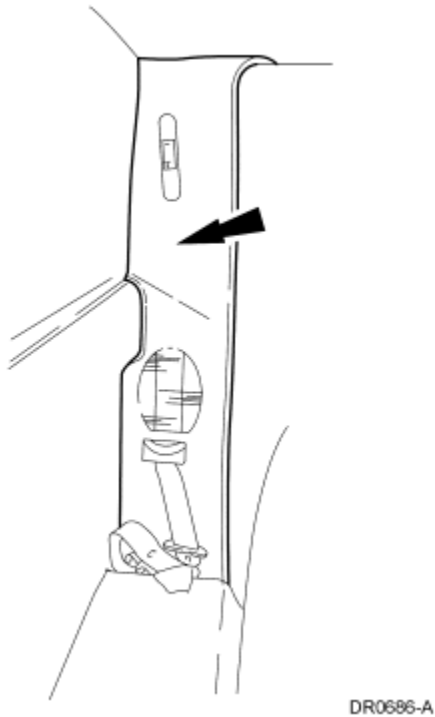
4. **NOTE:** Inspect the shoulder safety belt guide and cover for damage. If the shoulder safety belt guide or cover is damaged or cover does not remain closed, install a new shoulder safety belt guide.

Remove the shoulder safety belt guide.

1. Position the shoulder safety belt guide cover up.
2. Remove the shoulder safety belt guide bolt.
3. Remove the shoulder safety belt guide.



5. Remove the rear corner trim panel.



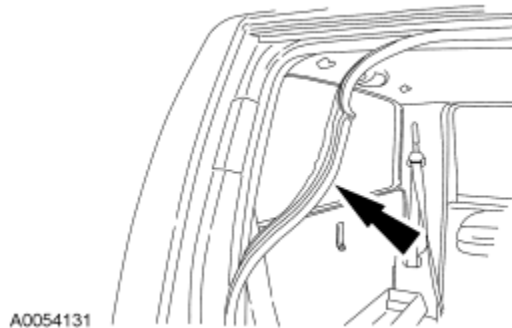
6. Route the front safety belt and the safety belt retractor through the rear corner trim panel.
7. Remove the rear corner trim panel from the vehicle.
8. To install, reverse the removal procedure.

Trim Panel—Rear Corner, SuperCab

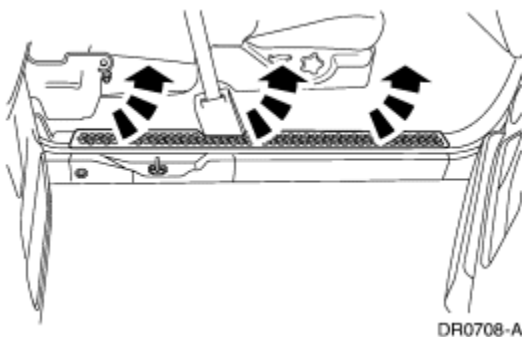
Special Tool(s)	
 ST1181-A	Torx Bit, Safety Belt Bolt 501-010 (T77L-2100-A)

Removal and Installation

1. Remove the rear seat. For additional information, refer to [Section 501-10](#).
2. Pull the rear door opening weatherstrips away from the rear corner trim panel (278D12).



3. Remove the scuff plate.

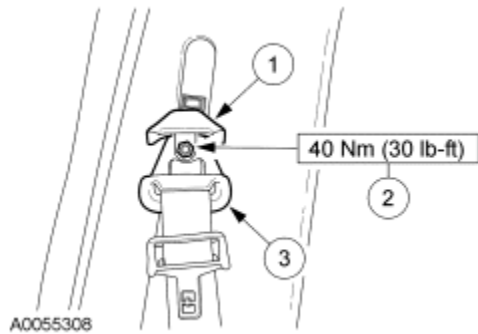


4. **NOTE:** Inspect the shoulder safety belt guide and cover for damage. If the shoulder safety belt guide or cover is damaged or cover does not remain closed, install a new shoulder safety belt guide.

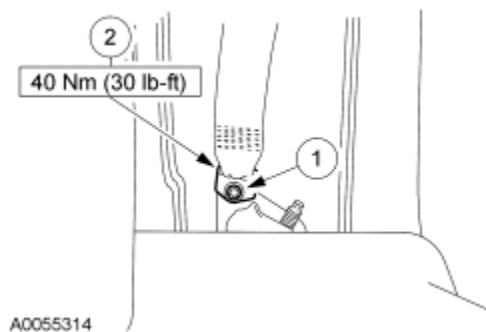
Remove the shoulder safety belt guide.

1. Position the shoulder safety belt guide cover up.

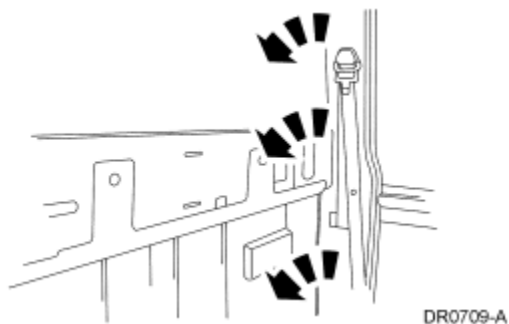
2. Use the Seat Belt Bolt Bit to remove the bolt.
3. Remove the shoulder safety belt guide.



5. Remove the safety belt anchor.
 1. Use the Seat Belt Bolt Bit to remove the bolt.
 2. Remove the safety belt anchor.



6. Remove the rear corner trim panel.

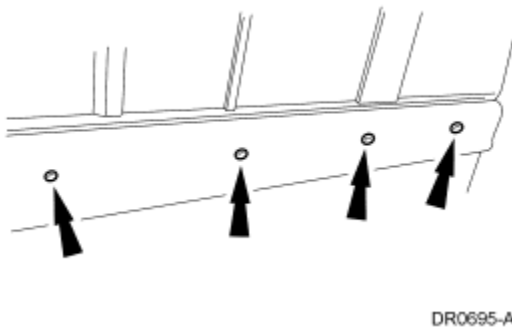


7. Route the safety belt and the shoulder safety belt guide through the rear corner trim panel openings.
 8. To install, reverse the removal procedure.
-

Trim Panel—Back Panel Trim Cover, Crew Cab

Removal

1. Remove the left and right rear corner trim panels (278D12); refer to [Trim Panel—Rear Corner, Crew Cab](#) in the section.
2. Remove the eight pushpins.



3. Remove the back panel trim cover.

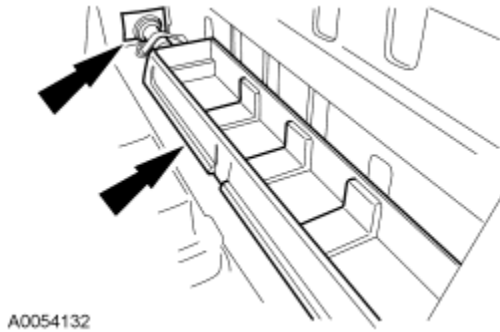
Installation

1. Follow the removal procedure in reverse order.

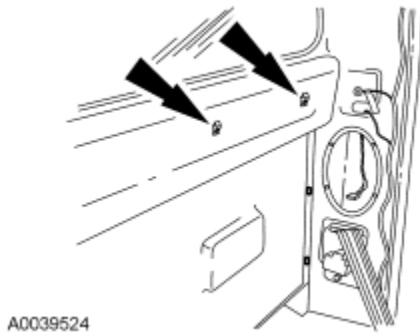
Trim Panel—Back Panel Trim Cover, Regular Cab

Removal and Installation

1. Remove child safety seat tether anchor. For additional information, refer to [Section 501-20A](#).
2. If equipped, remove the utility trays and jack assembly.



3. Remove the left and right rear corner trim panels (278D12). For additional information, refer to [Trim Panel—Rear Corner, Regular Cab](#) in this section.
4. Remove the four pushpins.



5. Remove the trim cover.
6. To install, reverse the removal procedure.

SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

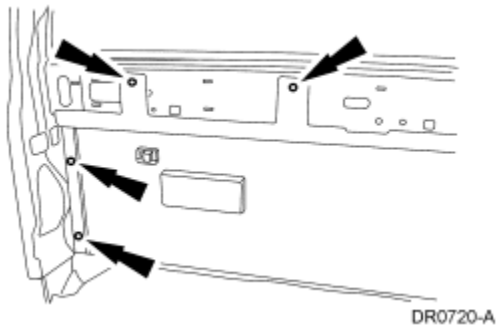
Trim Panel—Back Panel Trim Cover, SuperCab

Removal

1. If equipped, remove the rear seat; refer to [Section 501-10](#).
2. Remove the left and right rear corner trim panels (278D12); refer to [Trim Panel—Rear Corner, SuperCab](#) in this section.

3. **NOTE:** If equipped with a rear seat, there are only four pushpins.

Remove the eight pushpins.



4. Remove the back panel trim cover.

Installation

1. Follow the removal procedure in reverse order.

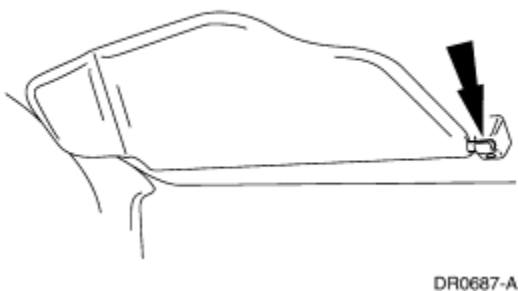
SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Visor—Inside

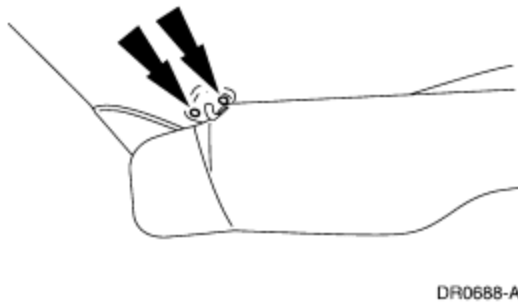
Removal

1. Release the inside visor (04100) from the visor arm clip.



2. Position the inside visor to access the screws.

3. Remove the screws.



4. Remove the inside visor.

Installation

1. Follow the removal procedure in reverse order.

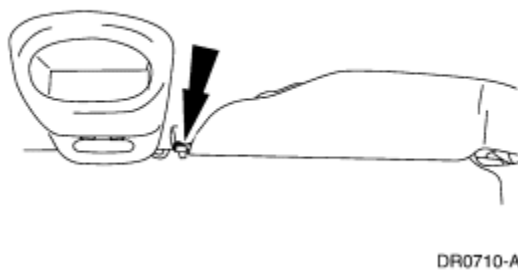
SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Visor—Inside, Secondary Blade

Removal

1. Release the inside visor (04100) from the visor arm clip.

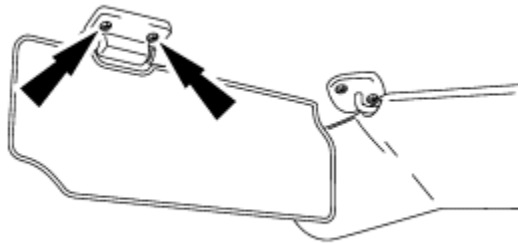


2. Position the visor out of the way.



DR0711-A

3. Position the inside visor secondary blade to access the screws.
4. Remove the screws.



DR0712-A

5. Remove the visor.

Installation

1. Follow the removal procedure in reverse order.

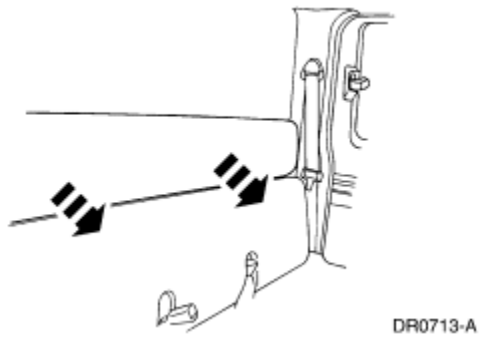
SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Moulding—Rear Seat Back, Upper, SuperCab

Removal

1. Pry the moulding to remove.



Installation

1. Follow the removal procedure in reverse order.

SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual

[Procedure revision date: 01/26/2000](#)

Moulding—Window Garnish, Rear Door, SuperCab

Removal and Installation

1. Remove the screws to the rear window latch. For additional information, refer to [Section 501-11](#).
2. Position the latch out of the way.
3. **NOTE:** The weatherstrip must be removed. It is fastened on top by a pushpin.

Pry the moulding to remove.



4. To install, reverse the removal procedure.

SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual

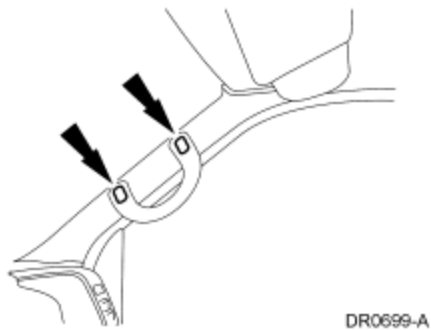
[Procedure revision date: 01/26/2000](#)

Moulding—Windshield Side Garnish

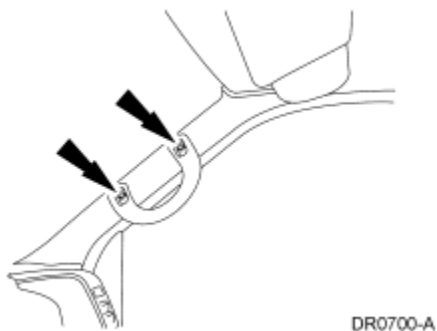
Removal and Installation

NOTE: Right side shown, left side similar.

1. Remove the right front inside assist handle covers.

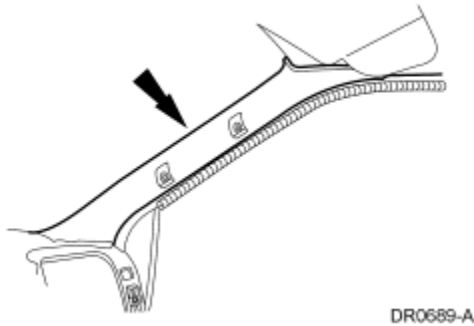


2. Remove the bolts.



3. Remove the right front inside assist handle.
4. **NOTE:** Carefully rotate the moulding during this step.

Pry the windshield side garnish moulding (03598) to remove.



5. To install, reverse the removal procedure.

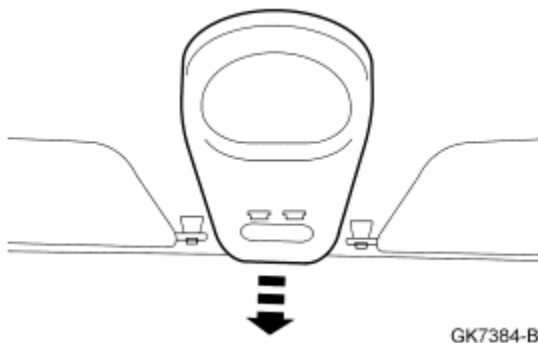
SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 04/03/2002](#)

Headliner—Crew Cab

Removal and Installation

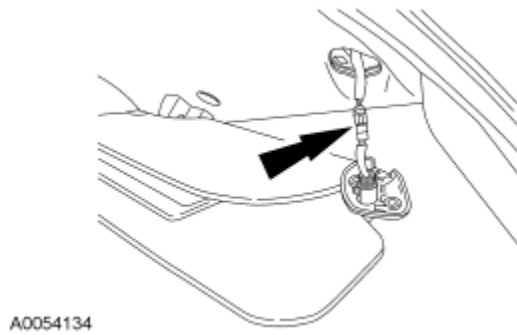
1. Remove the rear window. For additional information, refer to [Section 501-11](#).
2. If equipped, remove the overhead console.
 - Release the locking tabs while pulling down.



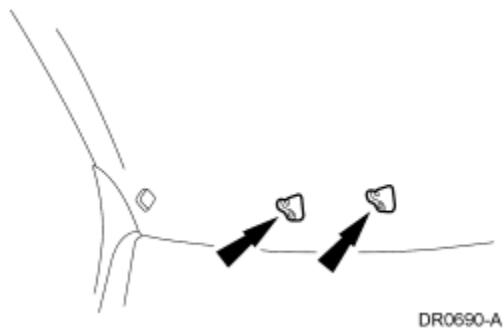
3. Remove the left and right visors.



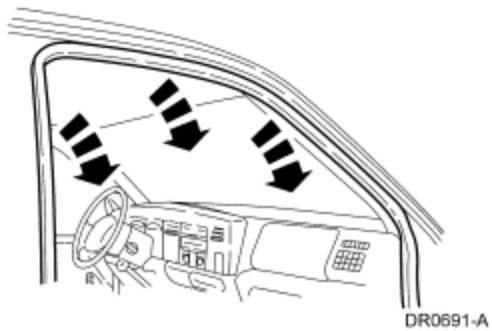
4. Disconnect the electrical connectors.



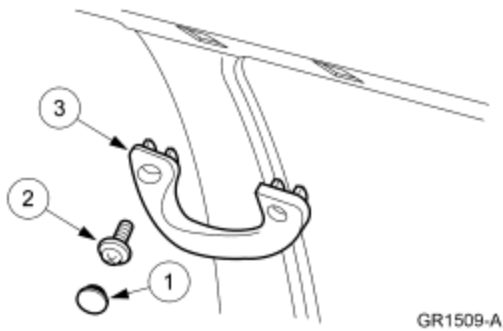
5. Remove the left and right visor arm clips.



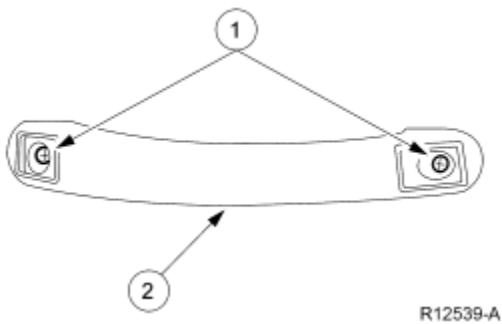
6. Position the left and right front door opening weatherstrips down from the headliner.



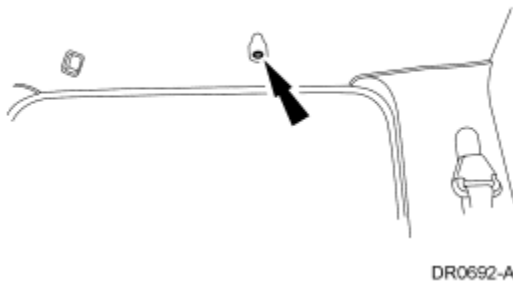
7. Remove the left and right windshield side garnish moulding. For additional information, refer to [Moulding—Windshield Side Garnish](#) in this section.
8. Remove rear B-pillar assist handles.
 1. Remove the four covers (two on each handle).
 2. Remove the two B-pillar assist handles.
 3. Remove the four screws (two on each handle).



9. If equipped, remove the rear and front passenger assist handles.
 1. Remove the covers and screws.
 2. Remove the rear assist handles.



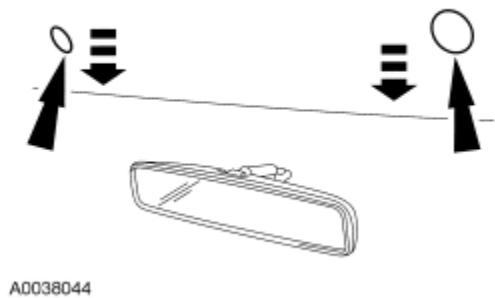
10. Remove the left and right rear coat hooks.



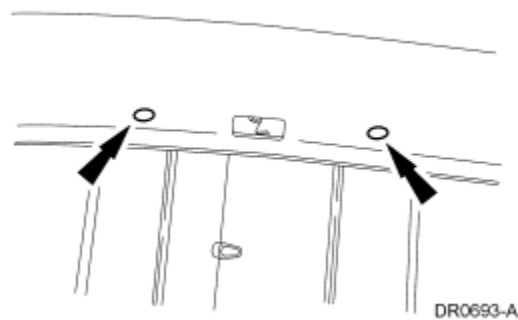
11. Remove the two courtesy lamps.
 - Remove the courtesy lamp lens, then remove the screws.




12. Remove the two headliner front pin-type retainers.



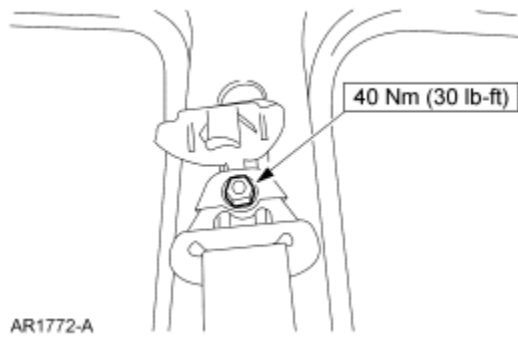
13. Remove the two headliner rear pin-type retainers.



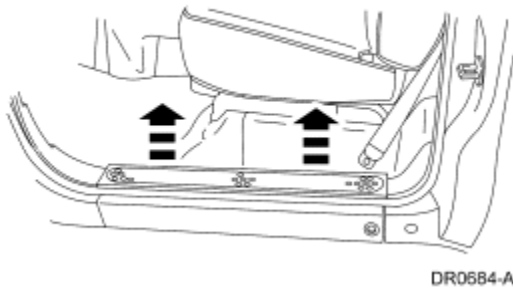
14.  **CAUTION:** If the safety belt retractor is to be reused, do not allow the safety belt to be retracted all the way into the retractor. Doing so may cause the retractor to lock and not release the safety belt.

NOTE: Inspect the shoulder safety belt guide and cover for damage. If the shoulder safety belt guide or cover is damaged or cover does not remain closed, install a new shoulder safety belt guide.

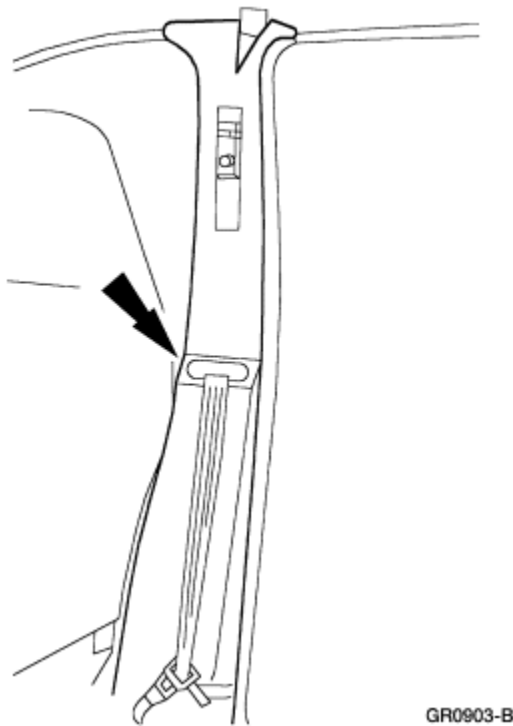
Lift up on the cover and remove the front and rear seat nut and shoulder safety belt guides.



15. Remove the front and rear door scuff plates.



16. Position the B-pillar trim panels aside.



17. **NOTE:** The left front seat back must be fully reclined.

NOTE: Make sure not to damage the headliner when removing it from the vehicle.

Remove the headliner through the rear window opening.

18. To install, reverse the removal procedure.

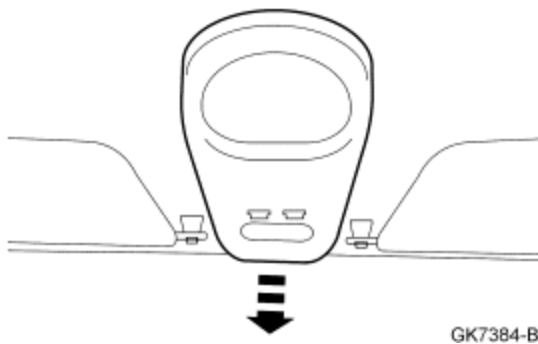
SECTION 501-05: Interior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Headliner—Regular Cab, SuperCab

Removal and Installation

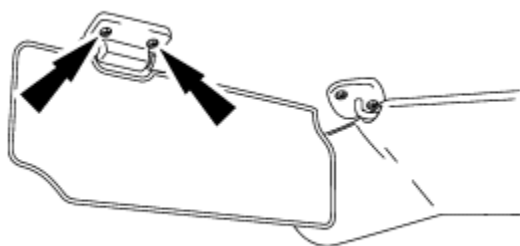
1. If equipped, remove the overhead console.
 - Release the locking tabs while pulling down.



2. Position the visor out of the way.

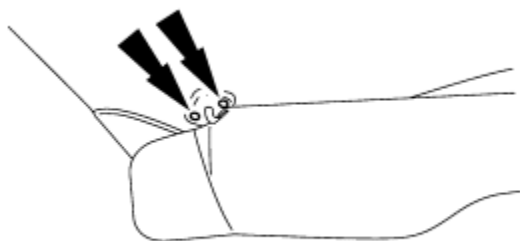


3. Remove the left and right inside secondary blade screws and visors.



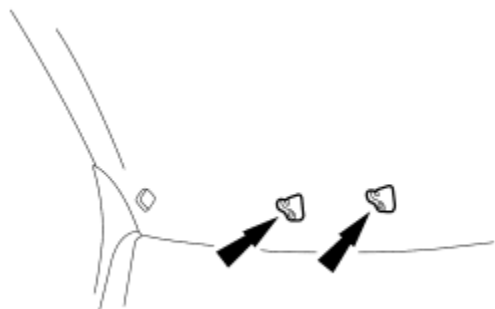
DR0712-A

4. Remove the left and right screws and visors.



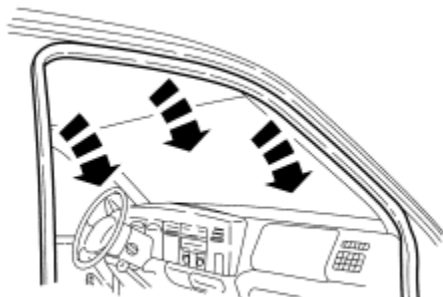
DR0688-A

5. Remove the left and right visor arm clips.



DR0690-A

6. Position the left and right front door opening weatherstrips down from the headliner.



DR0691-A

7. Remove the left and right windshield side garnish moulding. For additional information, refer to [Moulding—Windshield Side Garnish](#) in this section.
8. **NOTE:** SuperCab shown, regular cab similar.

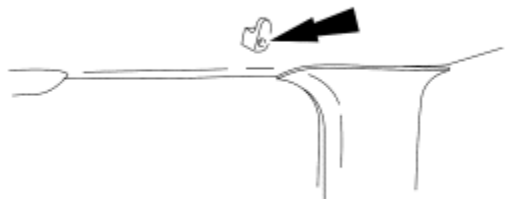
Remove the courtesy lamp lens, then remove the screws.



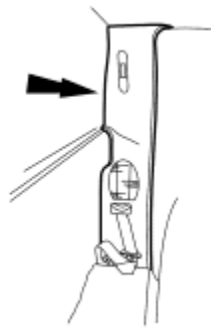
9. Remove the left and right rear door striker covers at the roof trim panel (SuperCab only).



10. Remove both of the left and right safety belt upper anchor bolts (SuperCab only). For additional information, refer to [Section 501-20A](#).
11. Remove the left and right coat hooks.

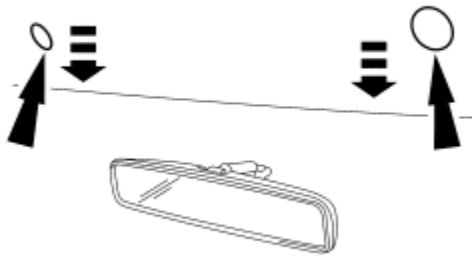


12. Remove the rear corner trim panel.



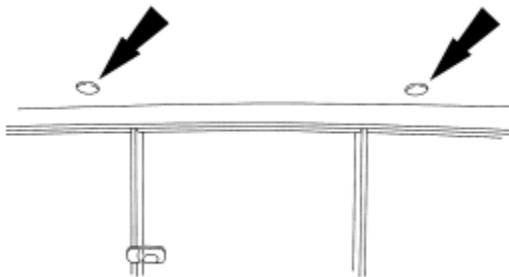
DR0683-A

13. Remove the two headliner front pin-type retainers.



A0038044

14. Remove the two headliner rear pin-type retainers (SuperCab only).



DR0719-A

15. Remove the headliner.

16. To install, reverse the removal procedure.

SECTION 501-08:
Exterior Trim and Ornamentation

[SPECIFICATIONS](#)

DESCRIPTION AND OPERATION

[Exterior Trim and Ornamentation](#)

REMOVAL AND INSTALLATION

[Radiator Grille](#)

[Trim Panel—Running Boards](#)

[Trim Panel—Body Side to Roof Moulding](#)

[Trim Panel—Tailgate, Upper](#)

SECTION 501-08: Exterior Trim and
Ornamentation
SPECIFICATIONS

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

General Specifications	
Item	Specification
Caulking Cord D6AZ-19560-A	ESB-M4G32-A

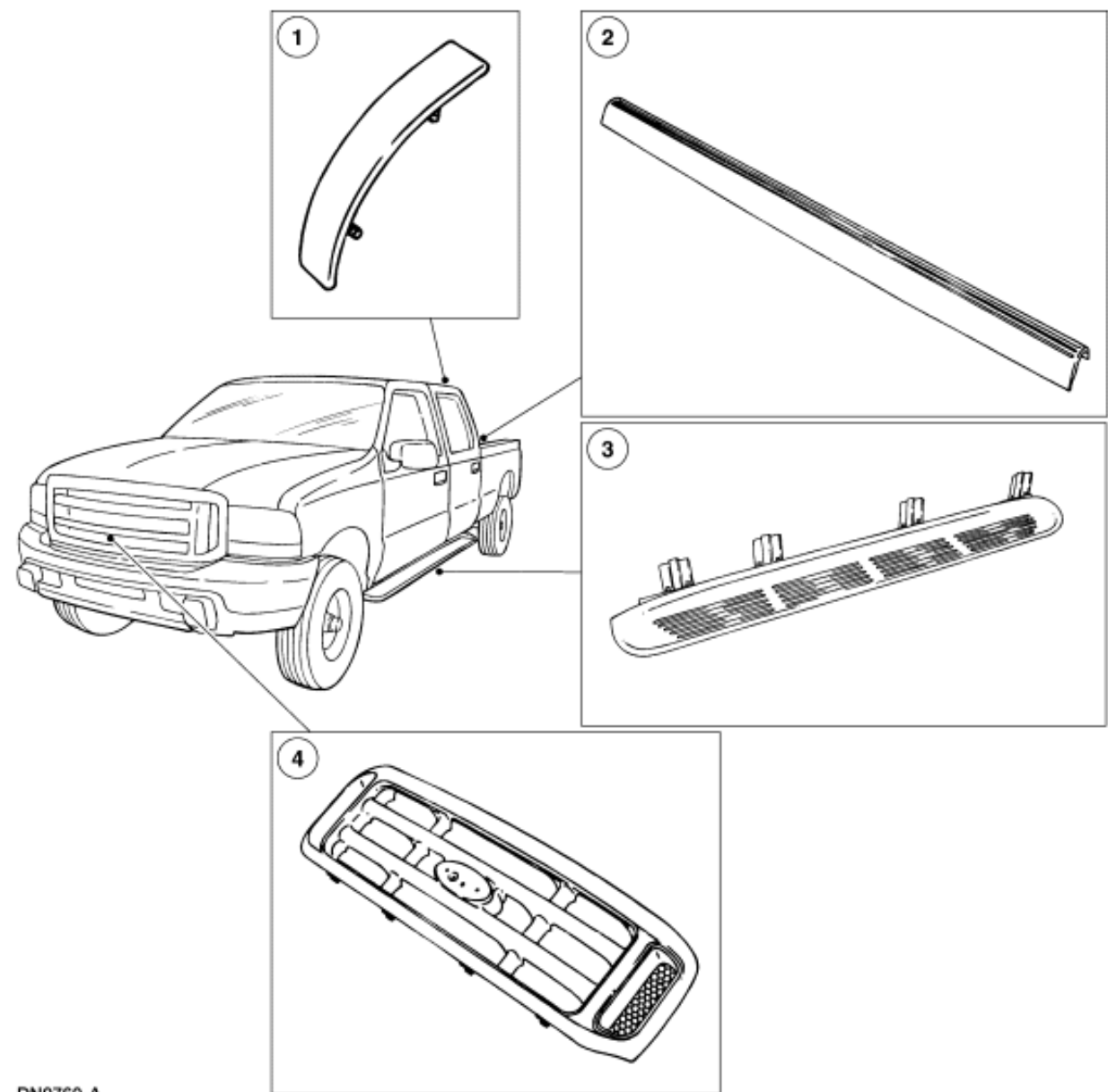
Torque Specifications		
Description	Nm	Lb/Ft
Tailgate Access Panel Screws	12	9
Running Board Bolts	20	15

SECTION 501-08: Exterior Trim and
Ornamentation
DESCRIPTION AND OPERATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Exterior Trim and Ornamentation

Exterior Trim



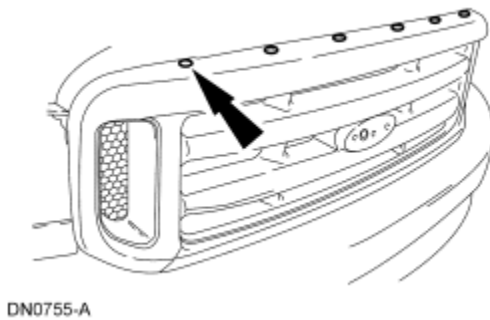
DN0760-A

Item	Part Number	Description
1	—	Body Side to Roof Joint Moulding
2	—	Upper Tailgate Moulding
3	—	Running Board Assy
4	8200	Radiator Grille

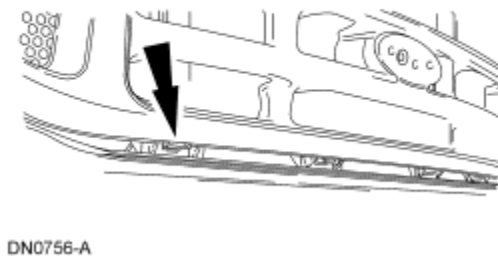
Radiator Grille

Removal

1. Remove the screws.



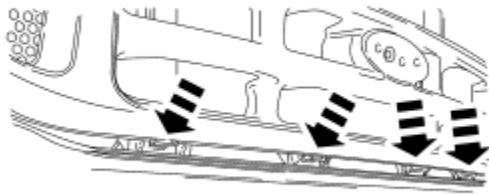
2. Release the lower retainers.



3. Remove the radiator grille (8200).

Installation

1. Position the radiator grille in the grille opening.
2. Secure the radiator grille retainers by pushing into place.



DN0757-A

3. Install the screws.

SECTION 501-08: Exterior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

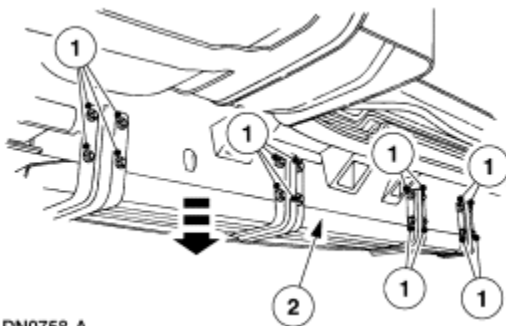
Trim Panel—Running Boards

Removal

1. **NOTE:** Left side on SuperCab shown, regular cab and Crew Cab similar. The right side is symmetrically opposite.

Remove the running board.

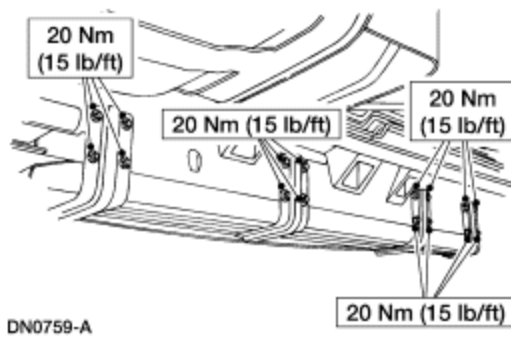
1. Remove the bolts.
2. Remove the running board.



DN0758-A

Installation

1. Follow the removal procedure in reverse order.



SECTION 501-08: Exterior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual

[Procedure revision date: 01/26/2000](#)

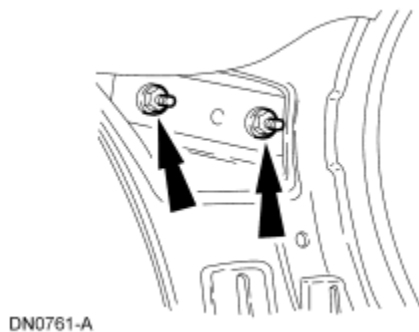
Trim Panel—Body Side to Roof Moulding

Removal

1. **NOTE:** Step one applies to SuperCab and Crew Cab only.

Remove the rear seat; refer to [Section 501-10](#).

2. Remove the rear safety belt retractor and tongue (611B69); refer to [Section 501-20A](#).
3. Remove the rear corner trim panel (278D12); refer to [Section 501-05](#).
4. Remove the two nuts.



5. Carefully pry the body side-to-roof moulding away from the vehicle body.

Installation

1. Clean out all remaining sealant from the body side to roof joint and replace with Ford Caulking Cord D6AZ-19560-A or equivalent meeting Ford specification ESB-M4G32-A.
2. Position a new body side-to-roof moulding (painted to match) on the vehicle and press into place.
3. Install the nuts.
4. Install the rear cab corner trim panel, safety belt and rear seat (if applicable).

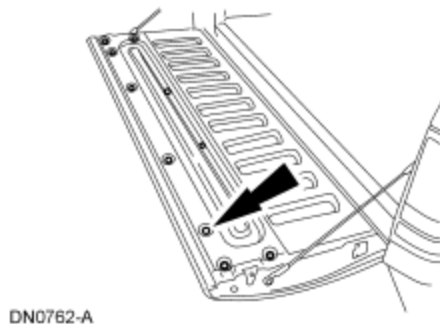
SECTION 501-08: Exterior Trim and
Ornamentation
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Trim Panel—Tailgate, Upper

Removal

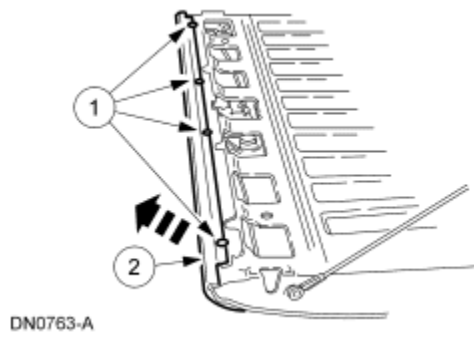
1. Remove the screws and remove the tailgate access panel.



2. **NOTE:** Use extreme care while removing the tailgate trim panel. The component is easily damaged during removal.

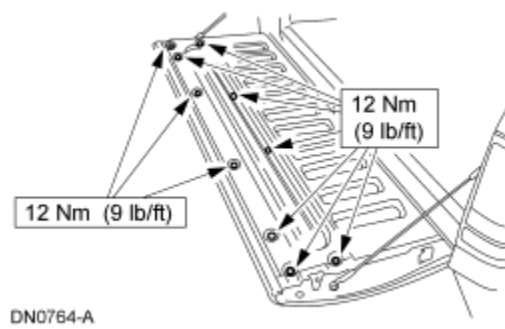
Remove the tailgate trim panel.

1. Remove the scrivenets.
2. Pull the tailgate trim panel away from the tailgate.



Installation

1. Follow the removal procedure in reverse order.



SECTION 501-09: Rear View Mirrors

[SPECIFICATIONS](#)

DESCRIPTION AND OPERATION

[Rear View Mirrors](#)

DIAGNOSIS AND TESTING

[Rear View Mirrors](#)

[Inspection and Verification](#)

[Symptom Chart](#)

[Pinpoint Tests](#)

[Component Tests](#)

REMOVAL AND INSTALLATION

[Mirror—Outside Rear View, Power](#)

[Mirror—Inside Rear View](#)

[Switch](#)

SECTION 501-09: Rear View Mirrors
SPECIFICATIONS

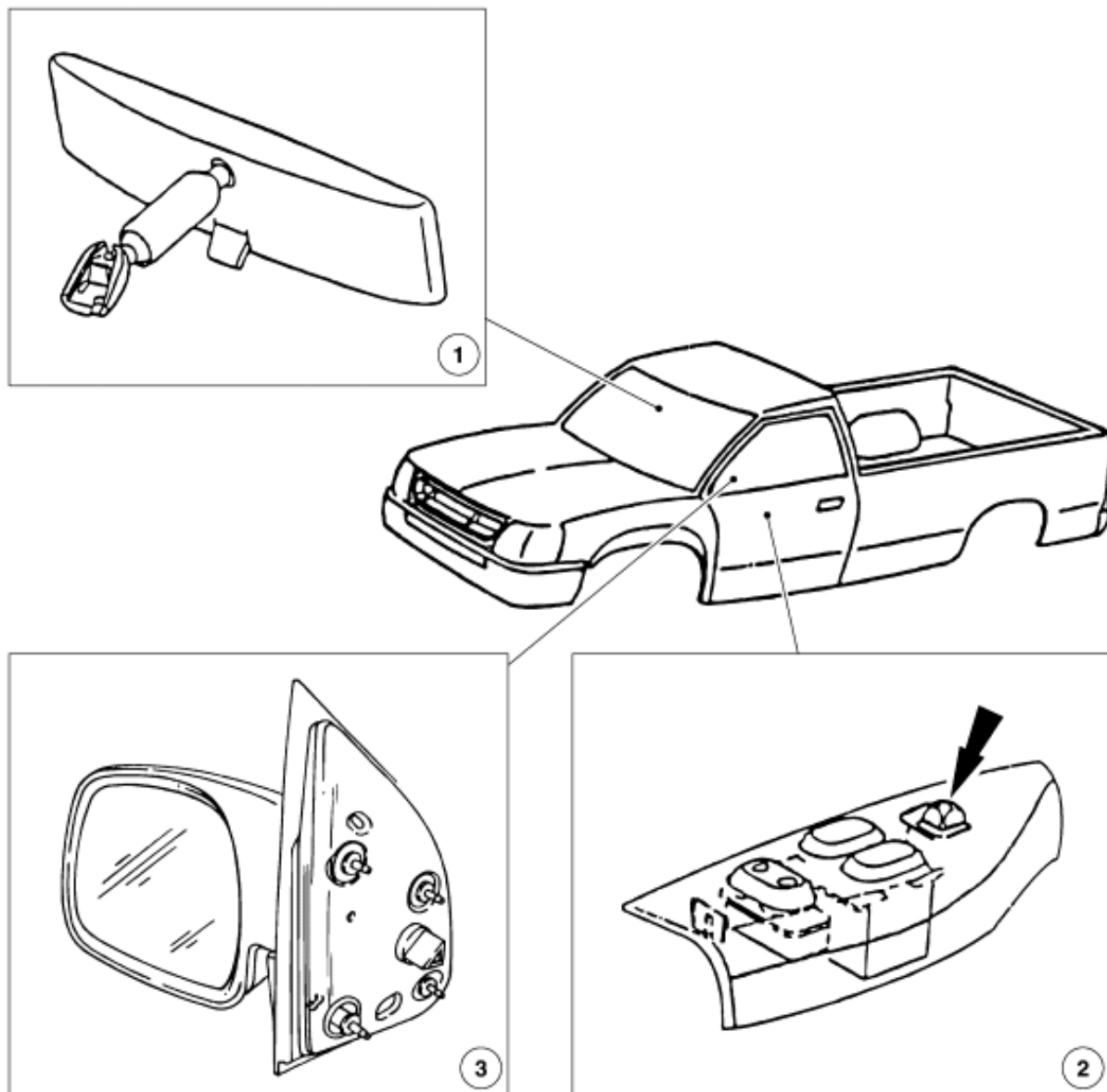
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

General Specifications	
Item	Specification
Adhesives	
Rear View Mirror Adhesive D9AZ-19554-CA	ESB-M2G176-A

Torque Specifications		
Description	Nm	Lb/In
Outside Rear View Mirror Nuts	7	62

Rear View Mirrors

Rear View Mirror Components



DN0747-A

Item	Part Number	Description
1	17700	Inside Rear View Mirror
2	17B676	Outside Rear View Mirror Control
3	17682	Outside Rear View Mirror

The inside rear view mirror (17700):

- is windshield mounted.
- is a manual hand-set day/night mirror.

The outside rear view mirrors (17682):


- are controlled manually or by optional power controls.
- are of a foldaway design.
- are finished in chrome on 4x2 models.
- Are color keyed on 4x4 models.

SECTION 501-09: Rear View Mirrors
DIAGNOSIS AND TESTING

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Rear View Mirrors

Refer to Wiring Diagrams Cell 124 ([F-53 Motorhome Chassis](#), [F-Super Duty 250-550](#)), Power Mirrors for schematic and connector information.

Special Tool(s)	
 ST1137-A	73 Digital Multimeter 105-R0051

Inspection and Verification

1. Verify the customer concern by operating the power outside rear view mirrors.
2. Verify the components related to the fuse for proper operation. If the components or systems are not operating properly, the fuse(s), fuse feed circuits or the fuse load side circuit(s) may be faulty.
3. Visually inspect for obvious signs of mechanical and electrical damage; refer to the following chart:


Visual Inspection Chart	
Mechanical	Electrical
<ul style="list-style-type: none"> Damaged mirror(s) Damaged outside rear view mirror control 	<ul style="list-style-type: none"> Blown fuse Damaged wiring Loose, corroded, or dirty connections Damaged outside rear view mirror control

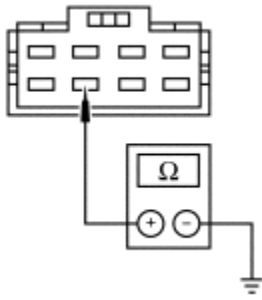
Symptom Chart

SYMPTOM CHART		
Condition	Possible Sources	Action
<ul style="list-style-type: none"> The Mirrors Are Inoperative 	<ul style="list-style-type: none"> Fuse. Circuit. Outside rear view mirror control. Motor. 	<ul style="list-style-type: none"> GO to Pinpoint Test A.
<ul style="list-style-type: none"> A Single Mirror Is Inoperative 	<ul style="list-style-type: none"> Circuit. Outside rear view mirror. 	<ul style="list-style-type: none"> GO to Pinpoint Test B.

Pinpoint Tests

PINPOINT TEST A: THE MIRRORS ARE INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
A1 CHECK FOR SHORT TO GROUND	
	1 Disconnect the battery (10655); refer to Section 414-01.
2  Outside Rear View Mirror Control	
3	3 Measure the resistance between the outside rear view control connector C550-6, Circuit 542 (Y) and chassis ground.



DN0727-A

- Is the resistance greater than 10,000 ohms?

→ **Yes**
GO to [A2](#).

→ **No**
REPAIR Circuit 542 (Y). RECONNECT the battery;
REFER to [Section 414-01](#). TEST the system for
normal operation.

A2 CHECK THE SWITCH GROUND

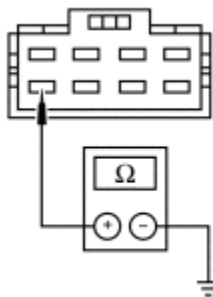
- 1** Disconnect the battery; refer to [Section 414-01](#).

2



Outside Rear View Mirror Control

3



DN0728-A

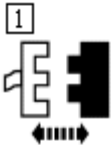
- 3** Measure the resistance between the outside rear view mirror control connector C550-5, Circuit 57 (BK) and chassis ground.

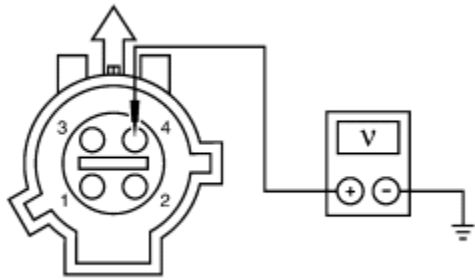
- Is the resistance 5 ohms or less?

→ **Yes**
REPLACE the outside rear view mirror switch.

	<p>RECONNECT the battery. TEST the system for normal operation.</p> <p>→ No</p> <p>REPAIR Circuit 57 (BK). RECONNECT the battery. TEST the system for normal operation.</p>
--	--

PINPOINT TEST B: A SINGLE MIRROR IS INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
B1 DETERMINE THE INOPERATIVE OUTSIDE REAR VIEW MIRROR	
	<p>1 Operate the outside rear view mirrors (17682) and determine which mirror is inoperative.</p>
	<ul style="list-style-type: none"> Does one of the outside rear view mirrors not operate? <p>→ Yes</p> <p>If the LH mirror is inoperative in the UP/DOWN mode, GO to B2 . If the LH mirror is inoperative in the LEFT/RIGHT mode, GO to B3 .</p> <p>If the RH mirror is inoperative in the UP/DOWN mode, GO to B4 . If the RH mirror is inoperative in the LEFT/RIGHT mode, GO to B5 .</p> <p>→ No</p> <p>System working properly.</p>
B2 CHECK THE LH MIRROR MOVEMENT (UP/DOWN)	
<p>1</p>  <p>LH Outside Rear View Mirror</p>	
2	<p>2 Measure the voltage between the LH rear view mirror connector C508-4, Circuit 541 (DB/Y) and chassis ground while operating the outside rear view mirror control (17B676) in the LH and UP position.</p>



DN0729-A

- Is the voltage 10 volts or greater?

→ Yes

REPLACE the LH outside rear view mirror. TEST the system for normal operation.

→ No

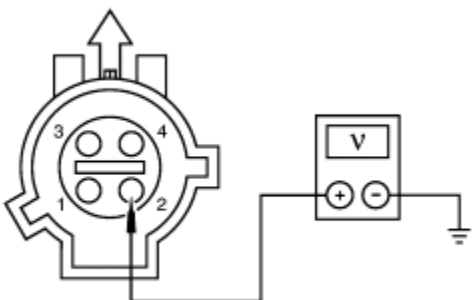
REPAIR Circuit 541 (DB/Y). TEST the system for normal operation.

B3 CHECK THE LH MIRROR MOVEMENT (LEFT/RIGHT)



LH Outside Rear View Mirror

2




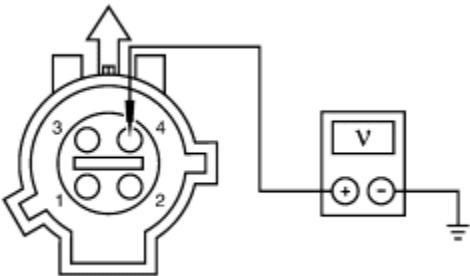

DN0730-A

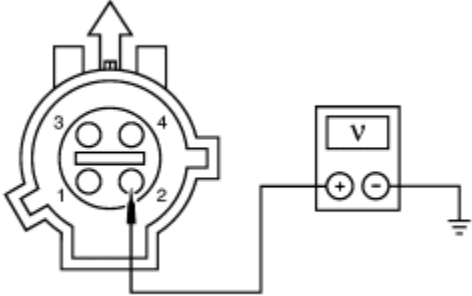
2 Measure the voltage between the LH rear view mirror connector C508-2, Circuit 540 (R) and chassis ground while operating the outside rear view mirror control in the LH and RIGHT position.

- Is the voltage 10 volts or greater?

→ Yes

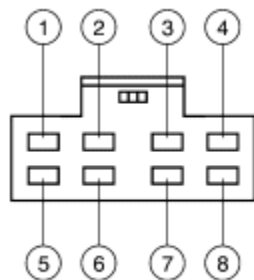
REPLACE the LH outside rear view mirror. TEST the system for normal operation.

	<p>→ No REPAIR Circuit 540 (R). TEST the system for normal operation.</p>
B4 CHECK THE RH MIRROR MOVEMENT (UP/DOWN)	
<p>1</p>  <p>RH Outside Rear View Mirror</p>	
<p>2</p>  <p>DN0729-A</p>	<p>2 Measure the voltage between the RH rear view mirror connector C608-4, Circuit 544 (P) and chassis ground while operating the outside rear view mirror control in the RH and RIGHT position.</p>
	<p>• Is the voltage 10 volts or greater?</p> <p>→ Yes REPLACE the RH outside rear view mirror. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 544 (P). TEST the system for normal operation.</p>
B5 CHECK THE RH MIRROR MOVEMENT (LEFT/RIGHT)	
<p>1</p>  <p>LH Outside Rear View Mirror</p>	
<p>2</p>	<p>2 Measure the voltage between the RH rear view mirror connector C608-2, Circuit 543 (DG) and chassis ground while operating the outside rear view mirror control in the RH and RIGHT position.</p>

 <p style="text-align: right;">DN0730-A</p>	
	<ul style="list-style-type: none"> • Is the voltage 10 volts or greater? <p>→ Yes REPLACE the RH outside rear view mirror. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 543 (DG). TEST the system for normal operation.</p>

Component Tests

Refer to the following connector end view and switch position function chart.



DN0748-A

Pin Number	Circuit	Circuit Function
1	54 (LG/Y)	Power Mirror Control Feed
2	66 (LB)	Remote Keyless Entry Switch Illumination
3	543 (DG)	Mirror Left/Right Motor (RH)
4	540 (R)	Mirror Left/Right Motor (LH)
5	57 (BK)	Ground Circuit
6	542 (Y)	Remote Mirror Motor Control (LH)

7	541 (DB)	Mirror Up/Down Motor (LH)
8	544 (P)	Mirror Up/Down Motor (RH)

Switch

Switch Position	Function	Pins	Result
LEFT	NEUTRAL	1,2	OPEN
LEFT	UP	1,2	OPEN
LEFT	DOWN	1,2	OPEN
LEFT	LEFT	1,2	OPEN
LEFT	RIGHT	1,2	OPEN
LEFT	NEUTRAL	1,3	OPEN
LEFT	UP	1,3	OPEN
LEFT	DOWN	1,3	OPEN
LEFT	LEFT	1,3	OPEN
LEFT	RIGHT	1,3	OPEN
LEFT	NEUTRAL	1,4	OPEN
LEFT	UP	1,4	OPEN
LEFT	DOWN	1,4	CLOSED
LEFT	LEFT	1,4	CLOSED
LEFT	RIGHT	1,4	OPEN
LEFT	NEUTRAL	1,5	OPEN
LEFT	UP	1,5	OPEN
LEFT	DOWN	1,5	OPEN
LEFT	LEFT	1,5	OPEN
LEFT	RIGHT	1,5	OPEN
LEFT	NEUTRAL	1,6	CLOSED
LEFT	UP	1,6	OPEN
LEFT	DOWN	1,6	OPEN
LEFT	LEFT	1,6	OPEN
LEFT	RIGHT	1,6	OPEN
LEFT	NEUTRAL	1,7	CLOSED
LEFT	UP	1,7	CLOSED
LEFT	DOWN	1,7	CLOSED
LEFT	LEFT	1,7	OPEN

LEFT	RIGHT	1,7	OPEN
LEFT	NEUTRAL	1,8	CLOSED
LEFT	UP	1,8	CLOSED
LEFT	DOWN	1,8	CLOSED
LEFT	LEFT	1,8	CLOSED
LEFT	RIGHT	1,8	CLOSED
LEFT	NEUTRAL	2,3	CLOSED
LEFT	UP	2,3	CLOSED
LEFT	DOWN	2,3	CLOSED
LEFT	LEFT	2,3	CLOSED
LEFT	RIGHT	2,3	CLOSED
LEFT	NEUTRAL	2,4	CLOSED
LEFT	UP	2,4	CLOSED
LEFT	DOWN	2,4	CLOSED
LEFT	LEFT	2,4	CLOSED
LEFT	RIGHT	2,4	CLOSED
LEFT	NEUTRAL	2,5	OPEN
LEFT	UP	2,5	OPEN
LEFT	DOWN	2,5	OPEN
LEFT	LEFT	2,5	OPEN
LEFT	RIGHT	2,5	OPEN
LEFT	NEUTRAL	2,6	OPEN
LEFT	UP	2,6	OPEN
LEFT	DOWN	2,6	OPEN
LEFT	LEFT	2,6	OPEN
LEFT	RIGHT	2,6	OPEN
LEFT	NEUTRAL	2,7	OPEN
LEFT	UP	2,7	OPEN
LEFT	DOWN	2,7	OPEN
LEFT	LEFT	2,7	OPEN
LEFT	RIGHT	2,7	OPEN
LEFT	NEUTRAL	2,8	OPEN
LEFT	UP	2,8	OPEN
LEFT	DOWN	2,8	OPEN
LEFT	LEFT	2,8	OPEN

LEFT	RIGHT	2,8	OPEN
LEFT	NEUTRAL	3,4	OPEN
LEFT	UP	3,4	OPEN
LEFT	DOWN	3,4	OPEN
LEFT	LEFT	3,4	OPEN
LEFT	RIGHT	3,4	OPEN
LEFT	NEUTRAL	3,5	OPEN
LEFT	UP	3,5	OPEN
LEFT	DOWN	3,5	OPEN
LEFT	LEFT	3,5	OPEN
LEFT	RIGHT	3,5	OPEN
LEFT	NEUTRAL	3,6	OPEN
LEFT	UP	3,6	OPEN
LEFT	DOWN	3,6	OPEN
LEFT	LEFT	3,6	OPEN
LEFT	RIGHT	3,6	OPEN
LEFT	NEUTRAL	3,7	OPEN
LEFT	UP	3,7	OPEN
LEFT	DOWN	3,7	OPEN
LEFT	LEFT	3,7	OPEN
LEFT	RIGHT	3,7	OPEN
LEFT	NEUTRAL	3,8	OPEN
LEFT	UP	3,8	OPEN
LEFT	DOWN	3,8	OPEN
LEFT	LEFT	3,8	OPEN
LEFT	RIGHT	3,8	OPEN
LEFT	NEUTRAL	4,5	OPEN
LEFT	UP	4,5	OPEN
LEFT	DOWN	4,5	OPEN
LEFT	LEFT	4,5	OPEN
LEFT	RIGHT	4,5	OPEN
LEFT	NEUTRAL	4,6	OPEN
LEFT	UP	4,6	CLOSED
LEFT	DOWN	4,6	OPEN
LEFT	LEFT	4,6	OPEN

LEFT	RIGHT	4,6	CLOSED
LEFT	NEUTRAL	5,6	OPEN
LEFT	UP	5,6	OPEN
LEFT	DOWN	5,6	OPEN
LEFT	LEFT	5,6	OPEN
LEFT	RIGHT	5,6	OPEN
LEFT	NEUTRAL	5,7	OPEN
LEFT	UP	5,7	OPEN
LEFT	DOWN	5,7	OPEN
LEFT	LEFT	5,7	OPEN
LEFT	RIGHT	5,7	OPEN
LEFT	NEUTRAL	5,8	OPEN
LEFT	UP	5,8	OPEN
LEFT	DOWN	5,8	OPEN
LEFT	LEFT	5,8	OPEN
LEFT	RIGHT	5,8	OPEN
LEFT	NEUTRAL	6,7	CLOSED
LEFT	UP	6,7	OPEN
LEFT	DOWN	6,7	OPEN
LEFT	LEFT	6,7	CLOSED
LEFT	RIGHT	6,7	CLOSED
LEFT	NEUTRAL	6,8	CLOSED
LEFT	UP	6,8	OPEN
LEFT	DOWN	6,8	CLOSED
LEFT	LEFT	6,8	CLOSED
LEFT	RIGHT	6,8	OPEN
LEFT	NEUTRAL	7,8	CLOSED
LEFT	UP	7,8	CLOSED
LEFT	DOWN	7,8	OPEN
LEFT	LEFT	7,8	CLOSED
LEFT	RIGHT	7,8	OPEN
RIGHT	NEUTRAL	1,2	OPEN
RIGHT	UP	1,2	OPEN
RIGHT	DOWN	1,2	OPEN
RIGHT	LEFT	1,2	OPEN

RIGHT	RIGHT	1,2	OPEN
RIGHT	NEUTRAL	1,3	OPEN
RIGHT	UP	1,3	OPEN
RIGHT	DOWN	1,3	OPEN
RIGHT	LEFT	1,3	OPEN
RIGHT	RIGHT	1,3	OPEN
RIGHT	NEUTRAL	1,4	OPEN
RIGHT	UP	1,4	OPEN
RIGHT	DOWN	1,4	OPEN
RIGHT	LEFT	1,4	OPEN
RIGHT	RIGHT	1,4	OPEN
RIGHT	NEUTRAL	1,5	OPEN
RIGHT	UP	1,5	OPEN
RIGHT	DOWN	1,5	OPEN
RIGHT	LEFT	1,5	OPEN
RIGHT	RIGHT	1,5	OPEN
RIGHT	NEUTRAL	1,6	OPEN
RIGHT	UP	1,6	OPEN
RIGHT	DOWN	1,6	OPEN
RIGHT	LEFT	1,6	OPEN
RIGHT	RIGHT	1,6	OPEN
RIGHT	NEUTRAL	1,7	OPEN
RIGHT	UP	1,7	OPEN
RIGHT	DOWN	1,7	OPEN
RIGHT	LEFT	1,7	OPEN
RIGHT	RIGHT	1,7	OPEN
RIGHT	NEUTRAL	1,8	OPEN
RIGHT	UP	1,8	OPEN
RIGHT	DOWN	1,8	OPEN
RIGHT	LEFT	1,8	OPEN
RIGHT	RIGHT	1,8	OPEN
RIGHT	NEUTRAL	2,3	OPEN
RIGHT	UP	2,3	OPEN
RIGHT	DOWN	2,3	OPEN
RIGHT	LEFT	2,3	OPEN

RIGHT	RIGHT	2,3	OPEN
RIGHT	NEUTRAL	2,4	OPEN
RIGHT	UP	2,4	OPEN
RIGHT	DOWN	2,4	OPEN
RIGHT	LEFT	2,4	OPEN
RIGHT	RIGHT	2,4	OPEN
RIGHT	NEUTRAL	2,5	OPEN
RIGHT	UP	2,5	OPEN
RIGHT	DOWN	2,5	OPEN
RIGHT	LEFT	2,5	OPEN
RIGHT	RIGHT	2,5	OPEN
RIGHT	NEUTRAL	2,6	OPEN
RIGHT	UP	2,6	OPEN
RIGHT	DOWN	2,6	OPEN
RIGHT	LEFT	2,6	OPEN
RIGHT	RIGHT	2,6	OPEN
RIGHT	NEUTRAL	2,7	OPEN
RIGHT	UP	2,7	OPEN
RIGHT	DOWN	2,7	OPEN
RIGHT	LEFT	2,7	OPEN
RIGHT	RIGHT	2,7	OPEN
RIGHT	NEUTRAL	2,8	OPEN
RIGHT	UP	2,8	OPEN
RIGHT	DOWN	2,8	OPEN
RIGHT	LEFT	2,8	OPEN
RIGHT	RIGHT	2,8	OPEN
RIGHT	NEUTRAL	3,4	OPEN
RIGHT	UP	3,4	OPEN
RIGHT	DOWN	3,4	OPEN
RIGHT	LEFT	3,4	OPEN
RIGHT	RIGHT	3,4	OPEN
RIGHT	NEUTRAL	3,5	OPEN
RIGHT	UP	3,5	OPEN
RIGHT	DOWN	3,5	OPEN
RIGHT	LEFT	3,5	OPEN

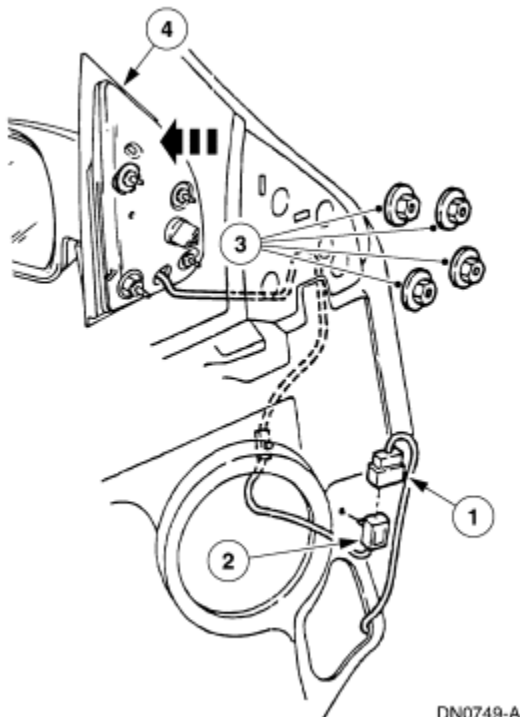
RIGHT	RIGHT	3,5	OPEN
RIGHT	NEUTRAL	3,6	OPEN
RIGHT	UP	3,6	OPEN
RIGHT	DOWN	3,6	OPEN
RIGHT	LEFT	3,6	OPEN
RIGHT	RIGHT	3,6	OPEN
RIGHT	NEUTRAL	3,7	OPEN
RIGHT	UP	3,7	OPEN
RIGHT	DOWN	3,7	OPEN
RIGHT	LEFT	3,7	OPEN
RIGHT	RIGHT	3,7	OPEN
RIGHT	NEUTRAL	3,8	OPEN
RIGHT	UP	3,8	OPEN
RIGHT	DOWN	3,8	OPEN
RIGHT	LEFT	3,8	OPEN
RIGHT	RIGHT	3,8	OPEN
RIGHT	NEUTRAL	4,5	OPEN
RIGHT	UP	4,5	CLOSED
RIGHT	DOWN	4,5	OPEN
RIGHT	LEFT	4,5	OPEN
RIGHT	RIGHT	4,5	CLOSED
RIGHT	NEUTRAL	4,6	OPEN
RIGHT	UP	4,6	OPEN
RIGHT	DOWN	4,6	OPEN
RIGHT	LEFT	4,6	OPEN
RIGHT	RIGHT	4,6	OPEN
RIGHT	NEUTRAL	4,7	OPEN
RIGHT	UP	4,7	OPEN
RIGHT	DOWN	4,7	CLOSED
RIGHT	LEFT	4,7	OPEN
RIGHT	RIGHT	4,7	CLOSED
RIGHT	NEUTRAL	4,8	OPEN
RIGHT	UP	4,8	OPEN
RIGHT	DOWN	4,8	OPEN
RIGHT	LEFT	4,8	OPEN

RIGHT	RIGHT	4,8	OPEN
RIGHT	NEUTRAL	5,6	OPEN
RIGHT	UP	5,6	OPEN
RIGHT	DOWN	5,6	OPEN
RIGHT	LEFT	5,6	OPEN
RIGHT	RIGHT	5,6	OPEN
RIGHT	NEUTRAL	5,7	CLOSED
RIGHT	UP	5,7	OPEN
RIGHT	DOWN	5,7	OPEN
RIGHT	LEFT	5,7	CLOSED
RIGHT	RIGHT	5,7	CLOSED
RIGHT	NEUTRAL	5,8	CLOSED
RIGHT	UP	5,8	OPEN
RIGHT	DOWN	5,8	CLOSED
RIGHT	LEFT	5,8	CLOSED
RIGHT	RIGHT	5,8	OPEN
RIGHT	NEUTRAL	6,7	OPEN
RIGHT	UP	6,7	OPEN
RIGHT	DOWN	6,7	OPEN
RIGHT	LEFT	6,7	OPEN
RIGHT	RIGHT	6,7	OPEN
RIGHT	NEUTRAL	6,8	OPEN
RIGHT	UP	6,8	OPEN
RIGHT	DOWN	6,8	OPEN
RIGHT	LEFT	6,8	OPEN
RIGHT	RIGHT	6,8	OPEN
RIGHT	NEUTRAL	7,8	CLOSED
RIGHT	UP	7,8	CLOSED
RIGHT	DOWN	7,8	OPEN
RIGHT	LEFT	7,8	CLOSED
RIGHT	RIGHT	7,8	OPEN

Mirror—Outside Rear View, Power

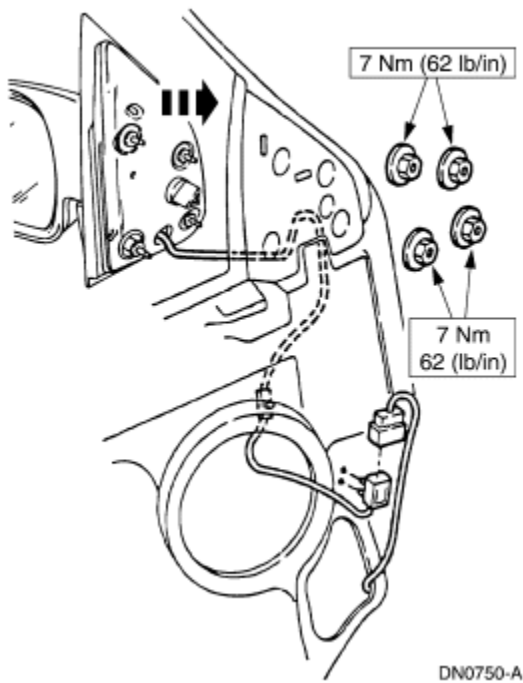
Removal

1. Disconnect the battery ground cable; refer to [Section 414-01](#).
2. Remove the front door trim panel; refer to [Section 501-05](#).
3. Remove the front door watershield; refer to [Section 501-05](#).
4. Remove the mirror sail cover to gain access to the mirror retaining nuts.
5. Remove the outside rear view mirror (17682).
 1. Disconnect the power mirror electrical connector.
 2. Disconnect the power mirror wiring clip.
 3. Remove the outside rear view mirror nuts.
 4. Remove the outside rear view mirror.
 - Feed the power mirror wiring through the opening in the front door.




Installation

- 1. To install, reverse the removal procedure.

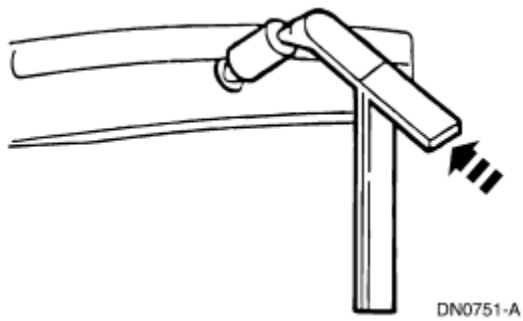


Mirror—Inside Rear View

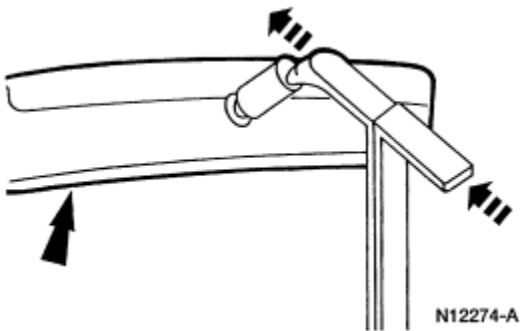
Special Tool(s)	
 ST1462-A	Rear View Mirror Remover 501-020 (T91T-17700-A)

Removal

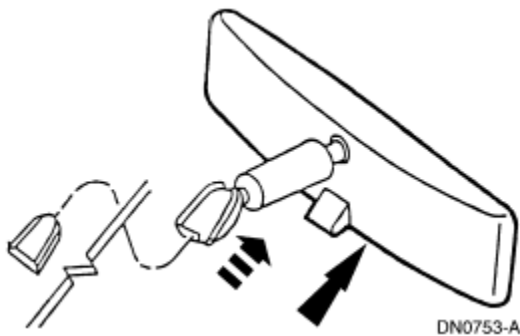
- 1. Insert the Rear View Mirror Remover into the mount on the inside rear view mirror (17700).



2. Use Rear View Mirror Remover to release the mirror retaining clip while pulling the inside rear view mirror away from the mirror mount.



3. Remove the inside rear view mirror.



4. **NOTE:** Applying low heat to the windshield glass will make removal of excess adhesive easier.

Use a wax pencil to mark the location of the inside rear view mirror bracket on the outside surface of the windshield glass.

5. Remove the remaining adhesive from the windshield glass.

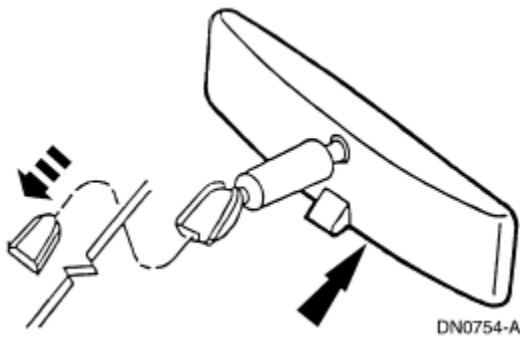
Installation

1. Clean the inside of the windshield glass with isopropyl alcohol to remove any remaining adhesive.

2. Use a fine grit sandpaper on the inside rear view mirror bracket to lightly scuff the bonding surface.
 - Wipe the surface clean with a paper towel soaked in isopropyl alcohol.
3. **NOTE:** Do not touch the mounting surfaces before installation.

Apply Rear View Mirror Adhesive D9AZ-19554-CA or equivalent meeting Ford specification ESB-M2G176-A to the bonding surface of the inside rear view mirror bracket and the windshield glass.

- Allow the accelerator material to dry for three minutes.
4. Press the inside rear view mirror bracket firmly against the windshield glass for approximately one minute.
 5. Allow the adhesive to set for five minutes.
 - Remove any excess adhesive from the windshield glass with a clean, alcohol dampened cloth.
 6. Slide the inside rear view mirror downward onto the inside rear view mirror bracket.



SECTION 501-09: Rear View Mirrors REMOVAL AND INSTALLATION

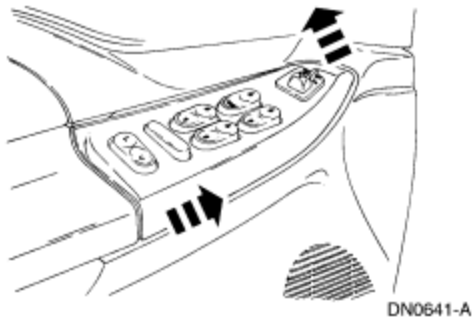
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Switch

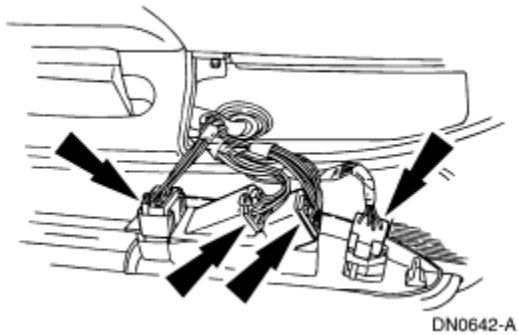
Removal

1. Disconnect the battery ground cable; refer to [Section 414-01](#).
2. **NOTE:** The left front door with power windows and power mirror is shown. The right front door and vehicles without power windows or mirror are similar.

Remove the door command center from the door.



3. Disconnect the electrical connectors.



4. Remove the door command center from the vehicle.

5. Remove the retaining clips on the mirror switch and remove the switch.

Installation

1. To install, reverse the removal procedure.

SECTION 501-10: Seating

SPECIFICATIONS

DESCRIPTION AND OPERATION

Seats

DIAGNOSIS AND TESTING

Seats

Inspection and Verification

Symptom Chart

REMOVAL AND INSTALLATION

Switch

Armrest

Seat Backrest—Rear, SuperCab

Seat Backrest—Rear, Crew Cab

Seat Backrest—Captain's Chair

Seat Backrest—40/20/40

Seat Backrest—Front Bench

Seat—Captain's Chair

Seat—40/20/40

Seat—Front Bench

Seat—Rear, SuperCab

Seat—Rear Bench, Crew Cab

Latch—Captain's Chair

Latch—Front Bench

Latch—40/20/40

Motor

DISASSEMBLY AND ASSEMBLY

Seat—Captain's Chair

Seat—40/20/40

Seat—Front Bench

Seat—Rear Bench, Crew Cab

Seat—Rear Bench, SuperCab

SECTION 501-10: Seating
SPECIFICATIONS

1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

Torque Specifications		
Description	Nm	lb-ft
Seat Back Retaining Bolt, Rear (SuperCab)	50	37
Seat Back Retaining Bolts, Rear (Crew Cab)	50	37
Seat Back Latch Retaining Bolts (40/20/40)	50	37
Seat Back Retaining Bolts (40/20/40)	50	37
Seat Back Retaining Bolts (Front Bench)	50	37
Front Seat Riser To Floor Mounting Bolts (Captain's Chair)	55	41
Front Seat Riser To Floor Mounting Nut (Captain's Chair)	55	41
Seat Riser To Floor Mounting Nut (Front Bench)	55	41
Seat Riser To Floor Mounting Nut, Rear (SuperCab)	55	41
Seat Riser To Floor Mounting Bolts, Rear (Crew Cab)	55	41
Seat Riser To Floor Mounting Nuts, Rear (Crew Cab)	55	41
Seat Latch Retaining Bolts (Captain's Chair)	50	37
Seat Latch Retaining Bolts (Front Bench)	50	37
Seat Latch Retaining Bolts (40/20/40)	50	37
Seat Track Release Bar, Manual (Captain's Chair)	12	9
Seat Track To Seat Frame Mounting Bolts (Manual Captain's Chair)	25	19
Seat Riser (Captain's Chair)	50	37
Seat Riser (40/20/40)	50	37
Seat Back Retaining Bolts (40/20/40)	50	37
Seat Track Retaining Bolts (Front Bench)	25	19
Seat Riser Retaining Nuts (Front Bench)	50	37
Armrest Retaining Bolts (Rear Flight Bench, Crew Cab)	50	37
Cup Holder Mounting Bolts (Rear Flight Bench, Crew Cab)	50	37
Rear Seat Mounting Bolts (SuperCab)	50	37

Seats

Three different types of front seats are available.

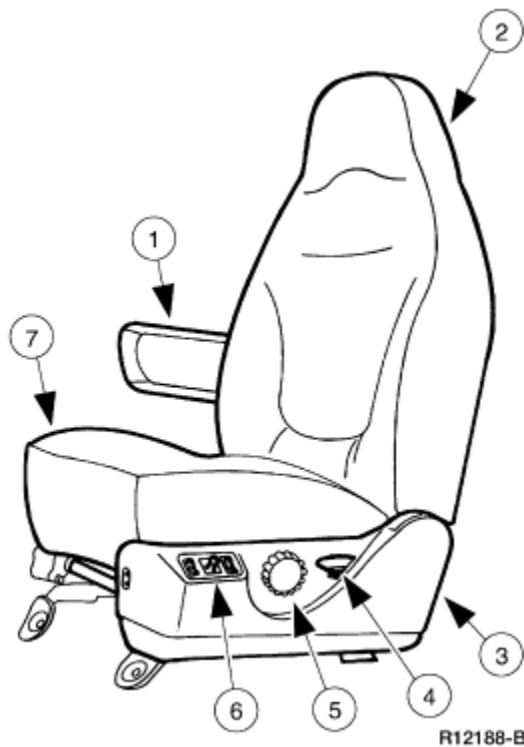
Captain's Chair

The captain's chair:

- Is a bucket design with inboard armrests.
- Is divided by a center console panel.
- Has a standard manual lumbar adjuster on the outboard sides.
- Has optional six-way power adjusters on the driver seat.

The captain's chair components include:

Captain's Chair Components



Item	Part Number	Description
1	64340	Armrest Cover and Pad
2	64416	Front Seat Back Cover
3	62186	Front Seat Track Shield

4	61735-6	Front Seat Adjust Handle
5	610A76	Front Seat Lumbar Support Handle
6	14A701	Seat Regulator Control Switch
7	62900	Front Seat Cushion Cover and Pad

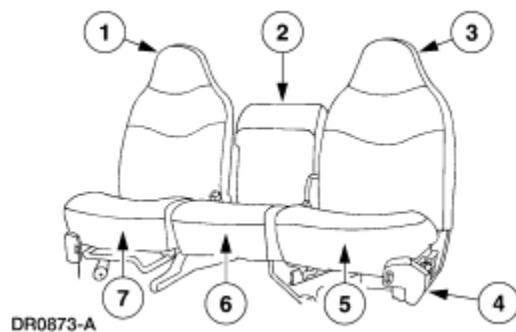
40/20/40 Split Bench

The 40/20/40 split bench seat:

- Has a standard manual lumbar adjuster on the outboard sides.
- Has optional six-way power adjusters on the driver seat.
- Has a front seat center that folds into an armrest that divides the front seat backs.
- Has a storage bin and cupholder built into the seat back.

The 40/20/40 split bench components include:

40/20/40 Split Bench Seat Components

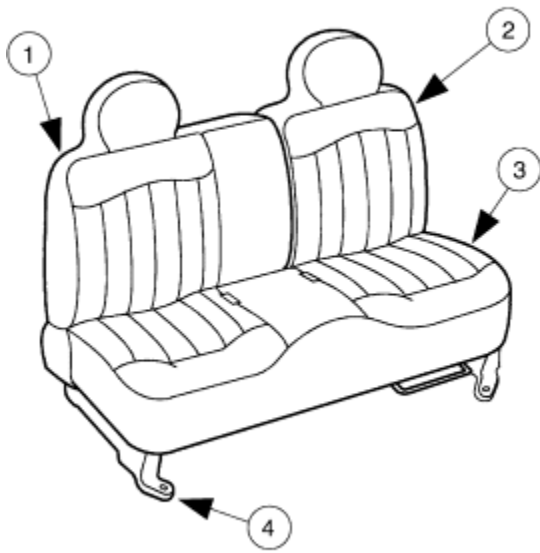


Item	Part Number	Description
1	256441	Front Seat Back Cover— (RH)
2	256013	20% Seat Back
3	256441	Front Seat Back Cover— (LH)
4	156218	Front Seat Track Shield
5	256290	Front Seat Cushion Cover— (LH)
6	256290	20% Seat Cushion Cover
7	256290	Front Seat Cushion Cover— (RH)

Full Bench Seat — Front

The full standard vinyl with optional cloth trim cover bench seat components include:

Full Bench Seat Components — Front Seat



R12194-B

Item	Part Number	Description
1	64416	Passenger Side Front Seat Back Cover
2	64417	Driver Side Front Seat Back Cover
3	62900	Front Seat Cushion Cover
4	61708-9	Front Seat Riser Support

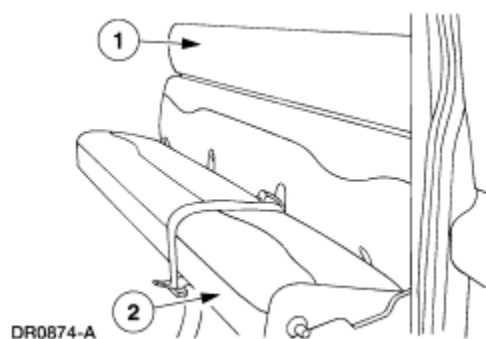
Rear Seat

The rear seat:

- Has a dual cupholder mounted at the center of the seat (Crew Cab with Flight Bench).
- Has a full bench standard vinyl with optional cloth trim cover.
- Has a forward facing fold-down rear seat that forms a load floor when folded down (SuperCab).

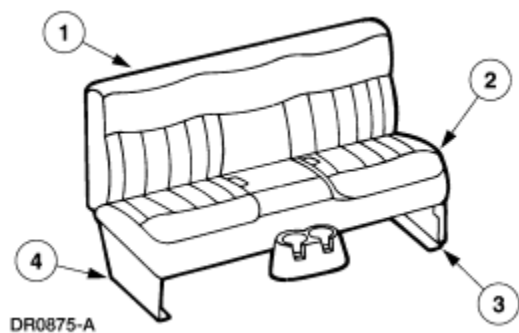
The rear seat components include:

Full Bench Seat Components — SuperCab Rear Seat



Item	Part Number	Description
1	2863604	Rear Seat Cushion Cover
2	228666	Rear Seat Back Cover

Full Bench Seat Components — Crew Cab Rear Seat (Flight Bench Shown)




Item	Part Number	Description
1	2664416	Rear Seat Back Cover
2	2662900	Rear Seat Cushion Cover
3	2561709	Left Side Seat Riser
4	2561708	Right Side Seat Riser

Seats

Refer to Wiring Diagrams Cell 120 ([F-53 Motorhome Chassis](#), [F-Super Duty 250-550](#)), Power Seats for schematic and connector information.

Refer to Wiring Diagrams Cell 149 ([F-53 Motorhome Chassis](#), [F-Super Duty 250-550](#)), Component Tests for schematic and connector information.

Special Tool(s)	
 ST1137-A	73 Digital Multimeter 105-R0051 or equivalent

Inspection and Verification

1. Verify the customer concern by operating the power seat.
2. Visually inspect for the following obvious signs of mechanical and electrical damage.

Visual Inspection Chart	
Mechanical	Electrical
<ul style="list-style-type: none"> • Seat track 	<ul style="list-style-type: none"> • Power distribution box Fuse 18 (30A, maxi) • Motor assembly • Circuitry • Seat regulator control switch

3. If the concern is not visually evident, determine the symptom and proceed to the symptom chart.

Symptom Chart

SYMPTOM CHART		
Condition	Possible Sources	Action
<ul style="list-style-type: none"> • The Power Seat Is Inoperative 	<ul style="list-style-type: none"> • Fuse (30 A maxi, Power Distribution Box). 	<ul style="list-style-type: none"> • REPLACE the fuse.
	<ul style="list-style-type: none"> • Circuitry. 	<ul style="list-style-type: none"> • CHECK Circuit 566 (DG) between the power distribution

		box and the seat regulator control switch. CHECK Circuit 57 (BK).
	<ul style="list-style-type: none"> Switch. 	<ul style="list-style-type: none"> TEST the seat regulator control switch; refer to the Electrical and Vacuum Troubleshooting Manual, Cell 149 Component Tests for additional information.
<ul style="list-style-type: none"> The Power Seat Moves But Is Noisy 	<ul style="list-style-type: none"> Seat track. 	<ul style="list-style-type: none"> CHECK for loose fasteners, obstructions or signs of binding. TIGHTEN loose fasteners. REMOVE any obstructions. INSTALL new seat track if necessary.
	<ul style="list-style-type: none"> Distorted seat track mounting location. 	<ul style="list-style-type: none"> REMOVE the seat and track. REPAIR the floor to seat track mounting location. REINSTALL the seat and track.
<ul style="list-style-type: none"> The Power Seat Moves But Is Loose 	<ul style="list-style-type: none"> Fastening hardware. 	<ul style="list-style-type: none"> TIGHTEN all fastening hardware.
<ul style="list-style-type: none"> The Power Seat Does Not Make Full Travel 	<ul style="list-style-type: none"> Seat track obstructed. 	<ul style="list-style-type: none"> REMOVE the obstruction.
	<ul style="list-style-type: none"> Seat track bent. 	<ul style="list-style-type: none"> REMOVE the seat and track assembly. STRAIGHTEN the seat track damage or INSTALL a new seat track. REINSTALL the seat and track assembly.
<ul style="list-style-type: none"> The Power Seat Does Not Move Horizontally/Vertically 	<ul style="list-style-type: none"> Motor assembly. 	<ul style="list-style-type: none"> TEST the suspect motor for operation. INSTALL a new motor.
	<ul style="list-style-type: none"> Circuitry. 	<ul style="list-style-type: none"> TEST Circuits 982 (Y/LG), 979 (R/LB), 983 (R/LG), 990

		(Y/LB), 980 (Y/W) and 981 (R/W) between the seat regulator control switch and the power seat motor assembly.
	<ul style="list-style-type: none"> Switch. 	<ul style="list-style-type: none"> TEST the seat regulator control switch; refer to the Electrical and Vacuum Troubleshooting Manual, Cell 149 Component Tests for additional information.

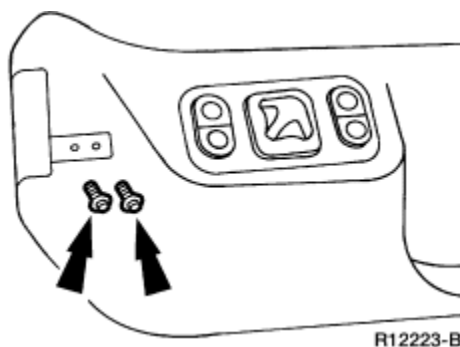
SECTION 501-10: Seating REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

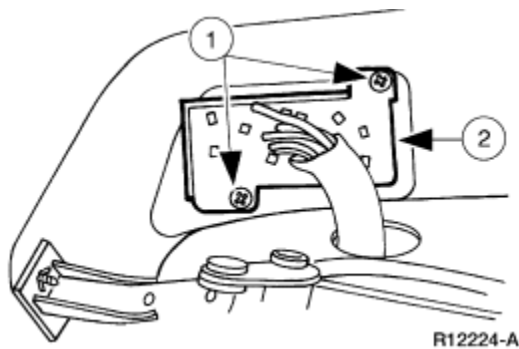
Switch

Removal

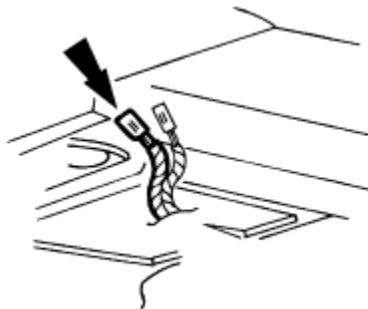
1. Disconnect the battery ground cable. For additional information, refer to [Section 414-01](#).
2. Remove the two screws on the bottom of the front seat track shield.



3. Remove the seat regulator control switch from the front of the seat track shield.
 1. Remove the screws.
 2. Disconnect the seat regulator control switch.



4. Disconnect the seat regulator control switch electrical connector and remove the seat regulator control switch.



Installation

1. Follow the removal procedure in reverse order.

SECTION 501-10: Seating REMOVAL AND INSTALLATION

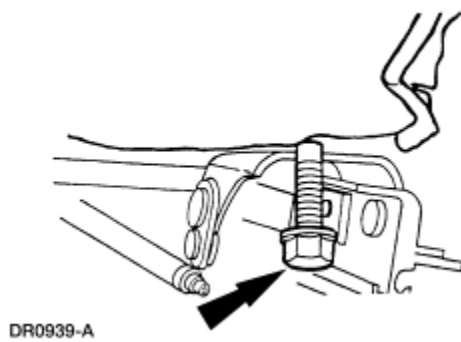
1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

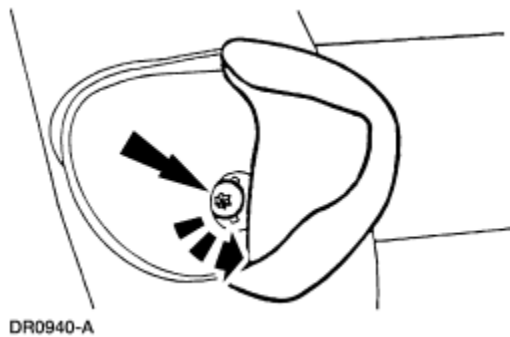
Armrest

Removal

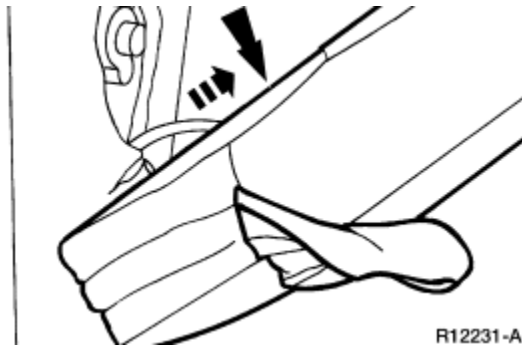
1. On driver side, lift the back right corner of the front seat cushion cover to access the armrest cable and remove the bolt.



2. Peel the armrest cover to access the armrest retaining bolt and remove the bolt.

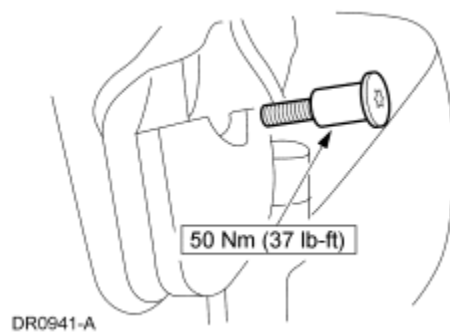


3. On the driver side, feed the armrest cable through the front seat back and remove the armrest.



Installation

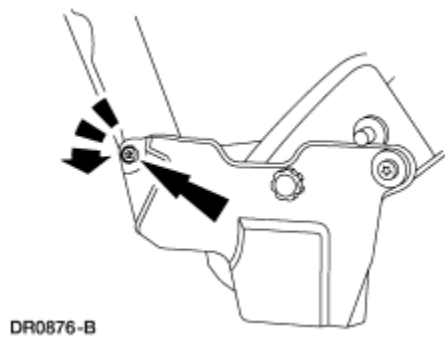
1. Follow the removal procedure in reverse order.



Seat Backrest—Rear, SuperCab

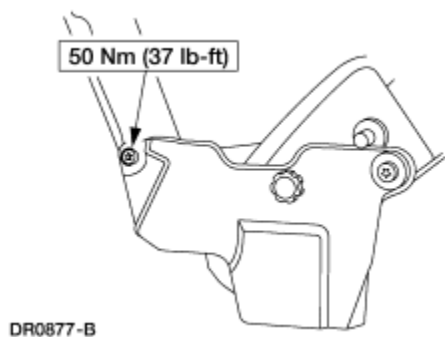
Removal

1. Remove the rear seat. For additional information, refer to [Seat—Rear, SuperCab](#) in this section.
2. Remove the seat back bolts.



Installation

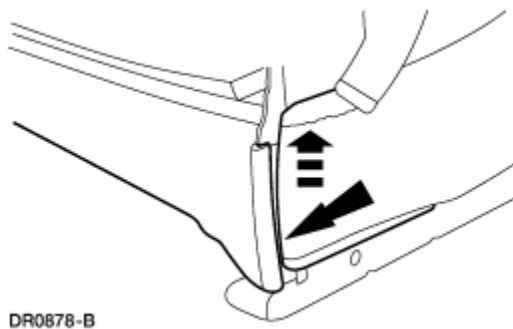
1. To install, reverse the removal procedure.



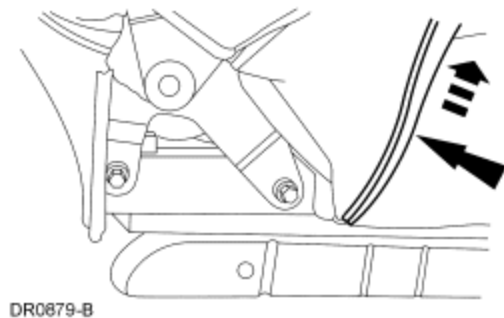
Seat Backrest—Rear, Crew Cab

Removal

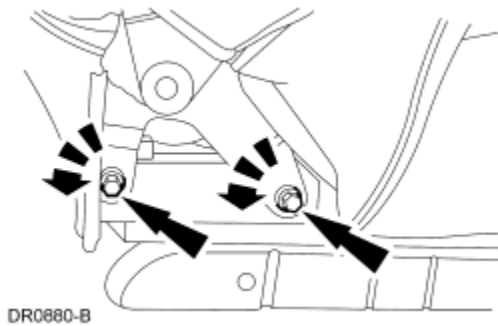
1. Remove the rear seat. For additional information, refer to [Seat—Rear Bench, Crew Cab](#) in this section.
2. Separate the seat cover J-channel clip.



3. Pull the seat covering to access seat back retaining bolts.

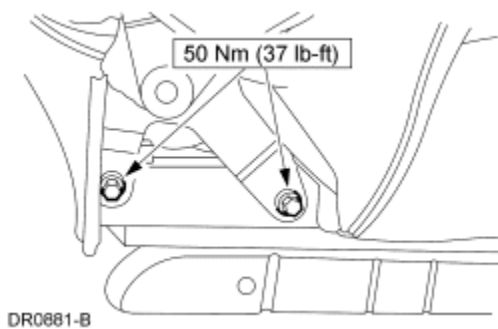


4. Remove the seat back bolts.



Installation

1. To install, reverse the removal procedure.



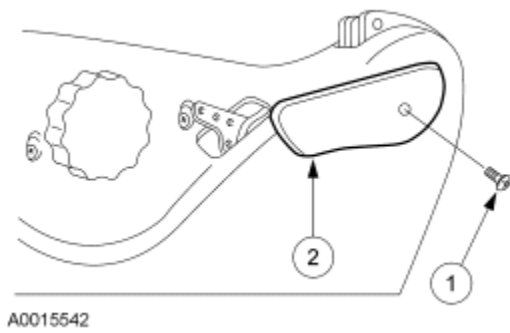
SECTION 501-10: Seating REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

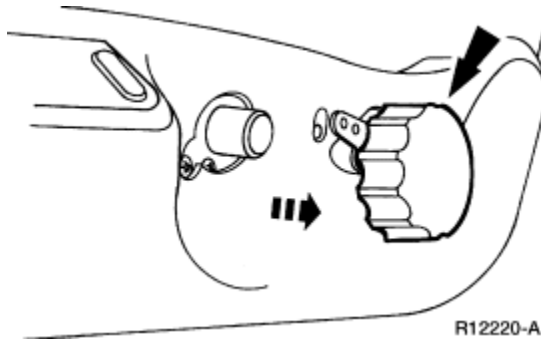
Seat Backrest—Captain's Chair

Removal

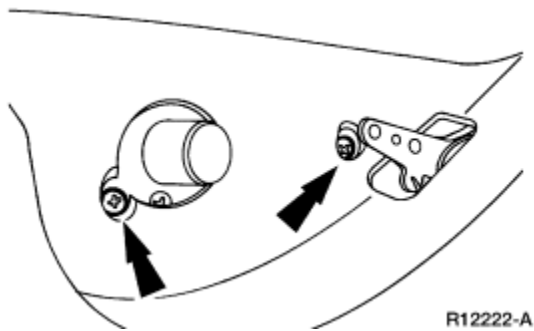
1. Remove the seat. For additional information, refer to [Seat—Captain's Chair](#) in this section.
2. Remove the armrest. For additional information, refer to [Armrest](#) in this section.
3. Remove the front seat back adjust handle.
 1. Remove the screw.
 2. Remove the front seat back adjust handle.



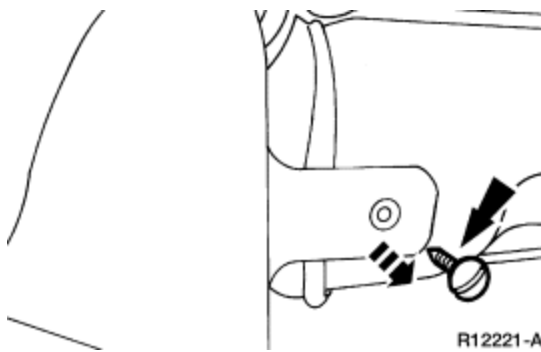
4. Pull the front seat lumbar support knob to remove.



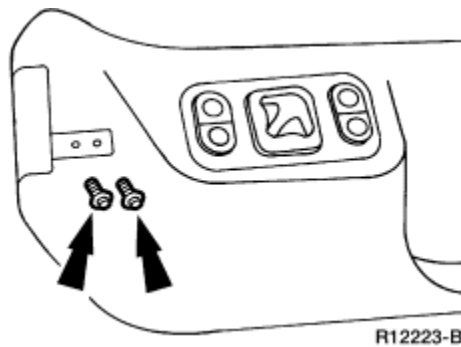
5. Remove the two front seat track shield screws.



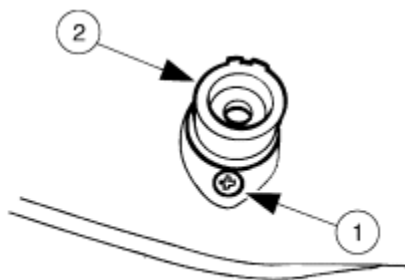
6. Remove the pushpin on the back of the front seat track shield.



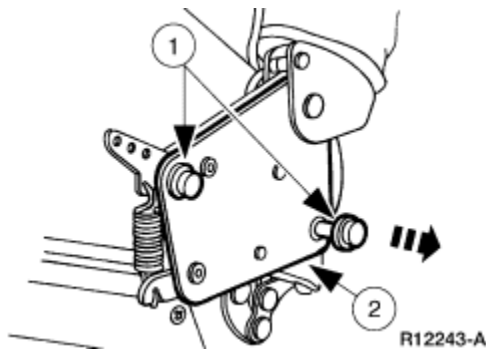
7. Remove the two screws on the bottom of the front seat track shield.



8. Remove the lumbar support gear.
 1. Remove the two screws.
 2. Remove the lumbar support gear.

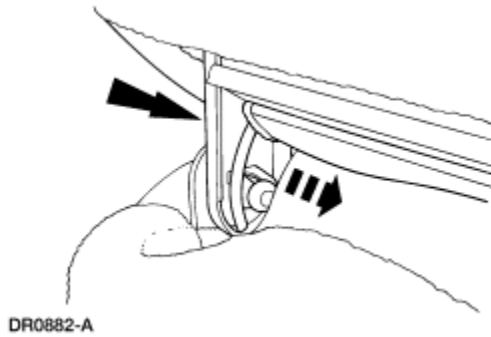


9. Remove the front seat adjuster from the front seat cushion frame.
 1. Remove the two bolts.
 2. Remove the front seat adjuster.



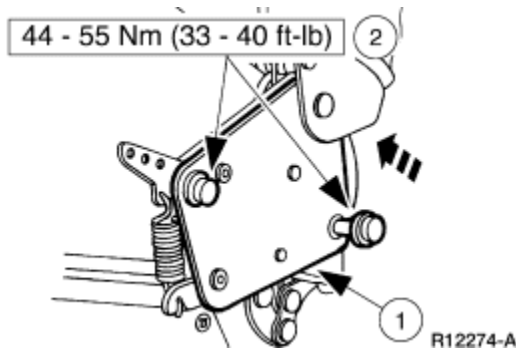
10. **NOTE:** Do not damage the plastic pivot bushing when removing the seat back.

Pull the front seat back away from the seat hinge and feed the lumbar support gear through the seat cushion opening to remove the seat back.



Installation

1. Follow the removal procedure in reverse order.
 1. Position the front seat adjuster.
 2. Install the bolts.

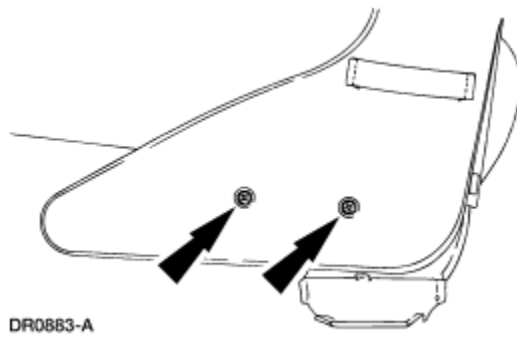


2. Check the restraint system for correct operation.

Seat Backrest—40/20/40

Removal

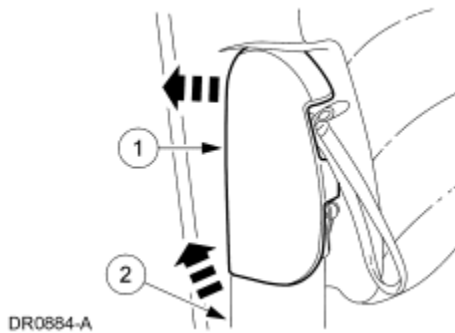
1. Remove the front seats. For additional information, refer to [Seat—40/20/40](#) in this section.
2. Remove the left side seat trim.



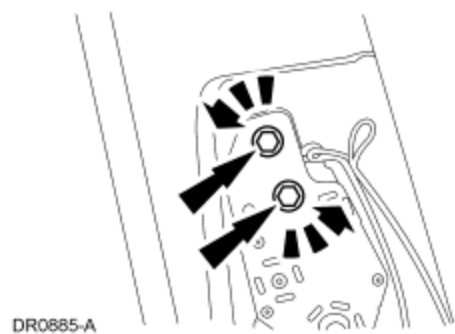
3. **NOTE:** The right side seat trim panels are mounted to the seat adjuster with pushpins.

Remove the right side seat trim.

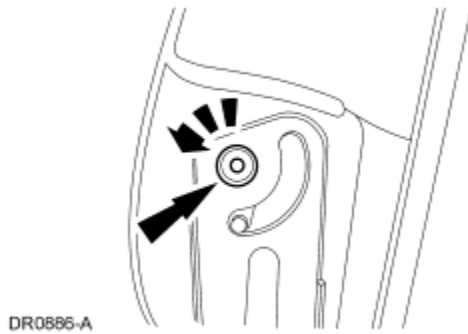
1. Remove the upper seat trim.
2. Remove the lower seat trim.



4. Remove the seat back mounting bolts from the right side of the seat back latch bracket.



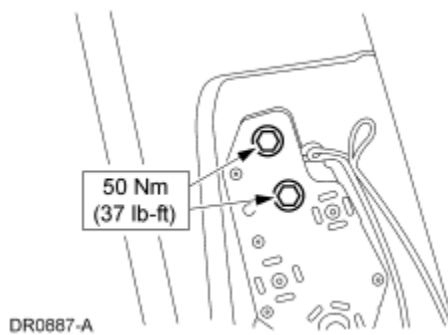
5. Remove the seat back mounting bolt from the left side of the seat back mounting bracket.



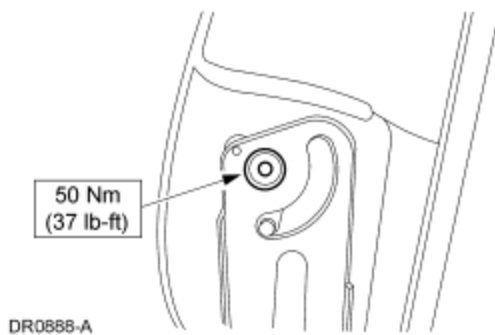
6. Remove the seat back.

Installation

1. Follow the removal procedure in reverse order.



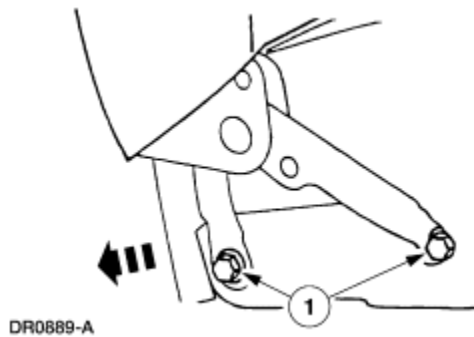
2. Check the restraint system for correct operation.



Seat Backrest—Front Bench

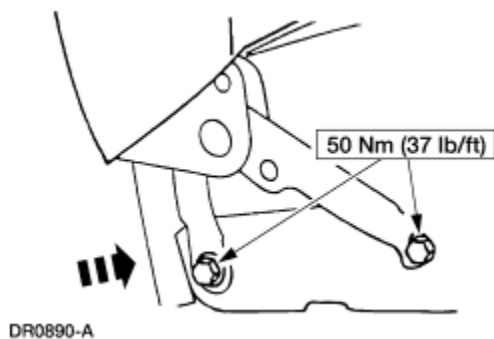
Removal

1. Remove the seat. For additional information, refer to [Seat—Front Bench](#) in this section.
2. Remove the front seat back retaining bolts.
 1. Remove the two bolts and the seat back.



Installation

1. Follow the removal procedure in reverse order.

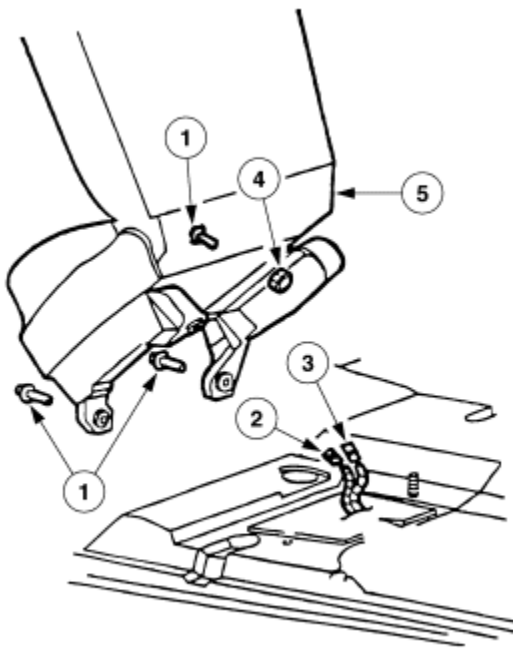


2. Check the restraint system for correct operation.

Seat—Captain's Chair

Removal

1. Disconnect the battery ground cable. For additional information, refer to [Section 414-01](#).
2. Remove the front seat.
 1. Remove the three front seat riser support-to-floorpan bolts.
 2. If equipped, disconnect the seat switch electrical connector.
 3. Disconnect the safety belt warning indicator electrical connector.
 4. Remove the front seat riser support to floorpan nut.
 5. Remove the front seat.

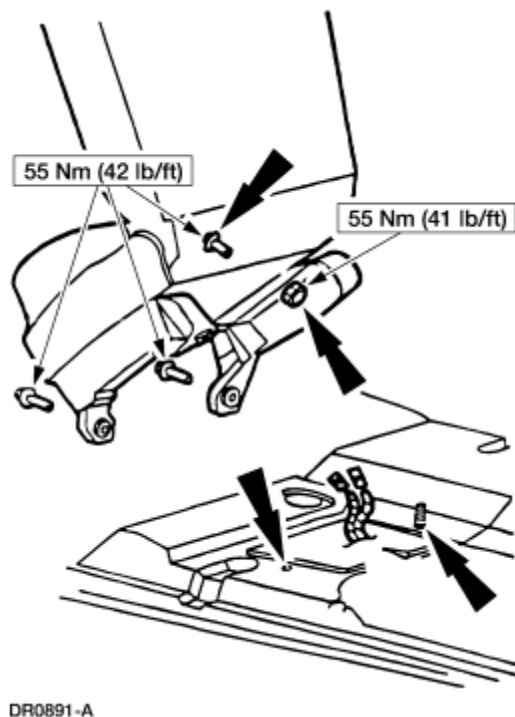


DR0948-A

Installation

1. **NOTE:** When installing the seat, tighten the front mounting bolts, then the rear mounting bolt and nut.

Follow the removal procedure in reverse order.



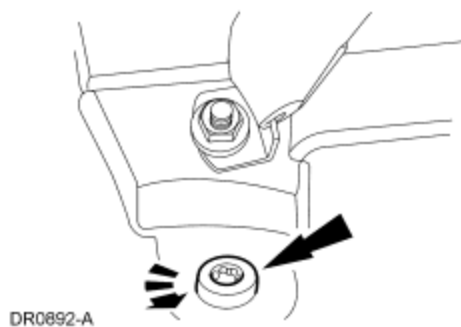
SECTION 501-10: Seating REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

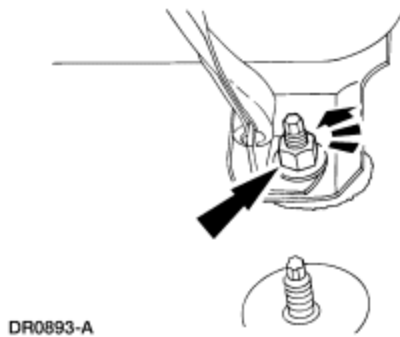
Seat—40/20/40

Removal

1. Remove the driver and passenger seats. For additional information, refer to [Seat—Captain's Chair](#) in this section.
2. Remove the center seat mounting bolt from right side rear mounting bracket.



3. Remove the center seat retaining nut from left side rear mounting bracket.



4. Remove the seat.

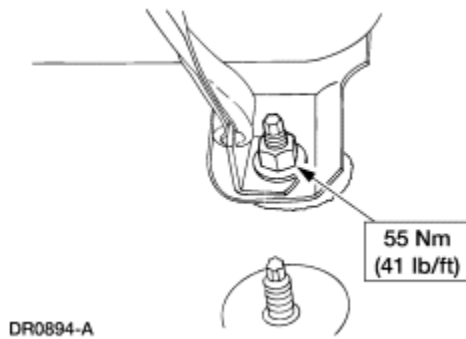
Installation

1. **NOTE:** When installing the seat, tighten the front mounting bolts, then the rear mounting bolts or nuts.

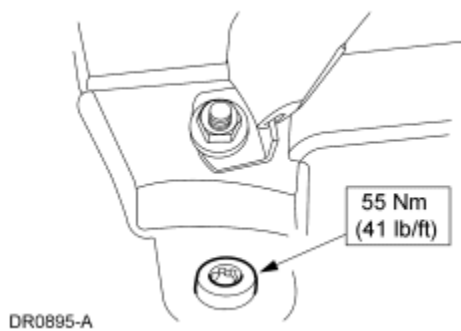
NOTE: Make sure the safety belt anchor is positioned over the stud before securing the nut.

- Make sure the safety belt webbing is not twisted prior to installation.

Follow the removal procedure in reverse order.



2. Check the restraint system for correct operation.



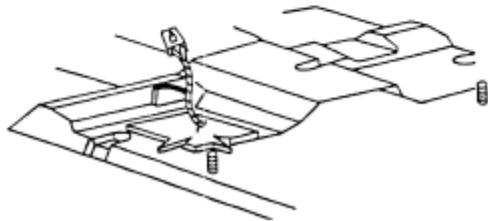
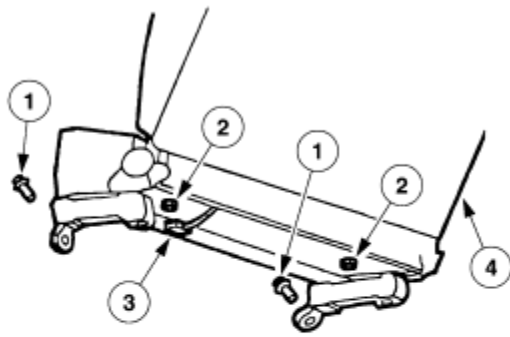
Seat—Front Bench

Removal

1. Disconnect the battery ground cable. For additional information, refer to [Section 414-01](#).
2. Remove the front safety belts from the front seat. For additional information, refer to [Section 501-20A](#).
3. **NOTE:** Removing the front seat requires more than one technician.

Remove the front seat.

1. Remove the two front seat riser support-to-floorpan bolts.
2. Remove the front seat riser-to-floorpan nuts.
3. Disconnect the safety belt electrical connector.
4. Remove the front seat.



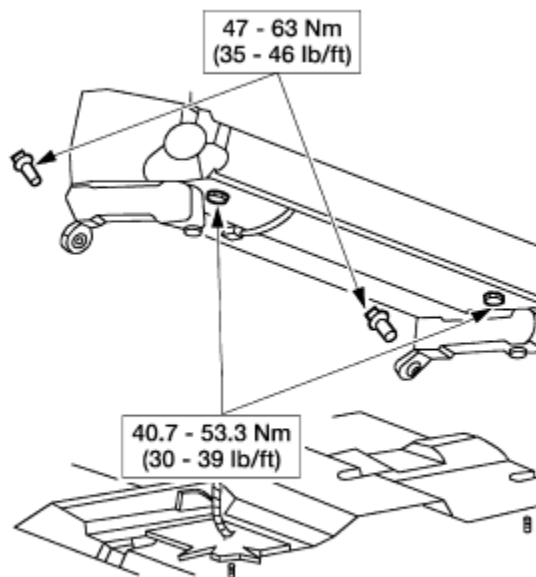
DR0896-A

Installation

1. **NOTE:** When installing the seat, tighten the front mounting bolts, then the rear mounting nuts.

Follow the removal procedure in reverse order.

- Adjust the seat to the full forward and rearward positions a few times to assure safety belt and buckle accessibility.
- Make sure the safety belt webbing is not twisted prior to installation.



GR1586-A

2. Check the restraint system for correct operation.

SECTION 501-10: Seating REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

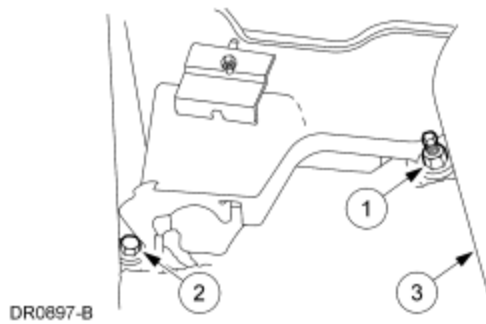
Seat—Rear, SuperCab

Removal

1. **NOTE:** Removing the seat requires more than one technician.

Place the rear seat bottom to the open position.
2. Remove the jack.
3. Remove the rear seat.
 1. Remove the two rear seat riser support-to-floorpan nuts.
 2. Remove the two rear seat riser support-to-floorpan bolts.

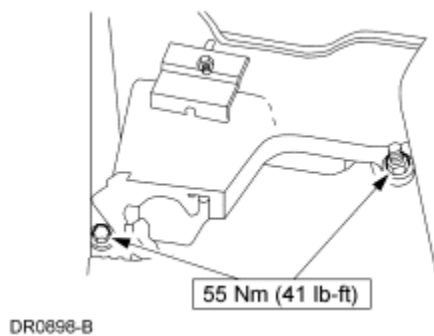
3. Remove the rear seat.



Installation

1. **NOTE:** When installing the seat, tighten the front mounting bolts, then the rear mounting nuts.

To install, reverse the removal procedure.



SECTION 501-10: Seating REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

Seat—Rear Bench, Crew Cab

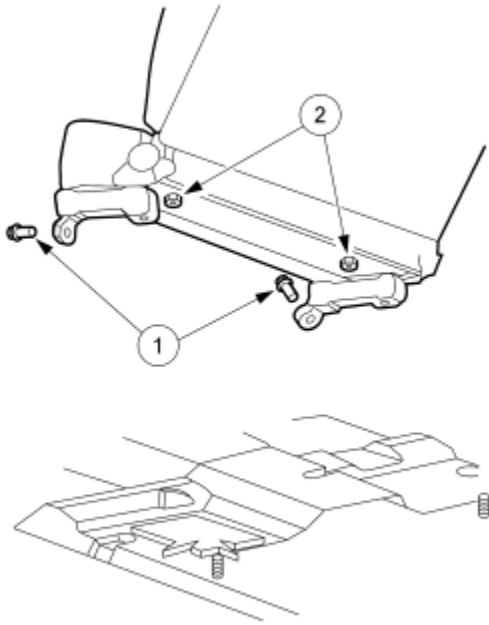
Removal

1. **NOTE:** Removing the rear seat requires more than one technician.

Remove the rear seat.

1. Remove the two rear seat riser support-to-floorpan bolts.

2. Remove the rear seat riser-to-floorpan nuts.
3. Remove the rear seat.

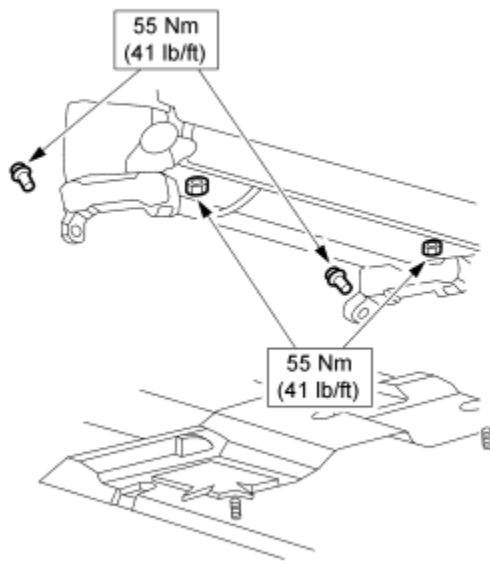


DR0899-A

Installation

1. **NOTE:** When installing the seat, tighten the front mounting bolts, then the rear mounting nuts.

To install, reverse the removal procedure.



DR0900-A

2. Check the restraint system for correct operation.
 - Make sure the safety belt webbing is not twisted prior to installation.

SECTION 501-10: Seating REMOVAL AND INSTALLATION

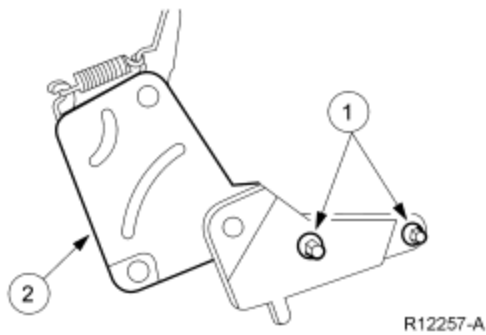
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Latch—Captain's Chair

Removal

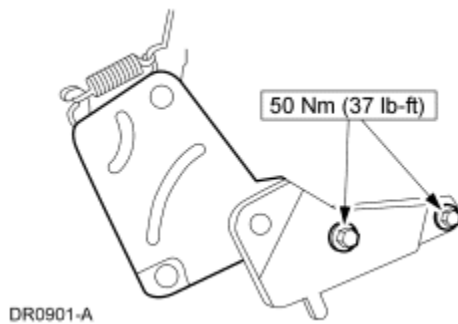
1. Remove the captain chair. For additional information, refer to [Seat—Captain's Chair](#) in this section.
2. Remove the seat back. For additional information, refer to [Seat Backrest—Captain's Chair](#) in this section.
3. Disassemble the seat. For additional information, refer to [Seat—Captain's Chair](#) in this section.
4. Remove the front seat latch.
 1. Remove the two bolts.

2. Remove the front seat latch.



Installation

1. Follow the removal procedure in reverse order.



2. Check the restraint system for correct operation.

SECTION 501-10: Seating REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual

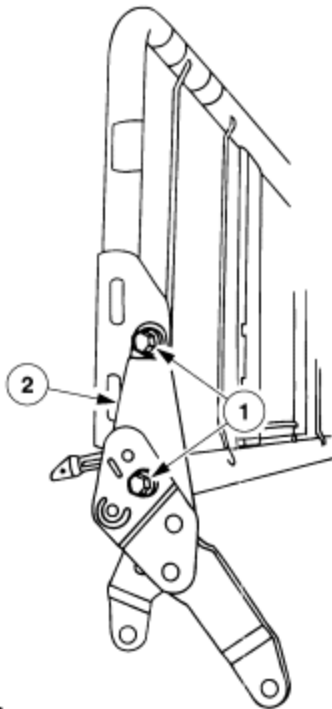
[Procedure revision date: 01/26/2000](#)

Latch—Front Bench

Removal

1. Remove the seat. For additional information, refer to [Seat—Front Bench](#) in this section.
2. Disassemble the seat. For additional information, refer to [Seat—Front Bench](#) in this section.
3. Remove the seat latch.
 1. Remove the two bolts.

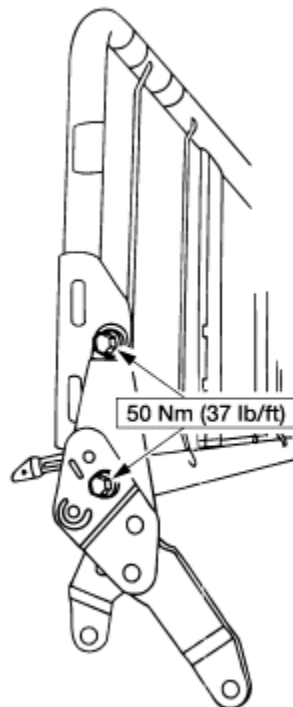
2. Remove the front seat latch.



DR0902-A

Installation

1. Follow the removal procedure in reverse order.



DR0903-A

2. Check the restraint system for correct operation.

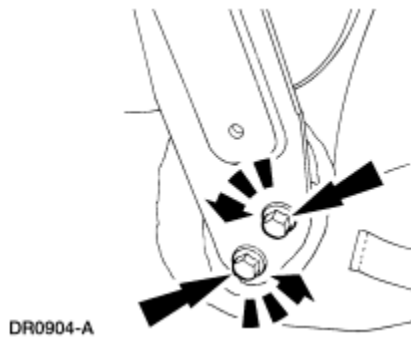
SECTION 501-10: Seating
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Latch—40/20/40

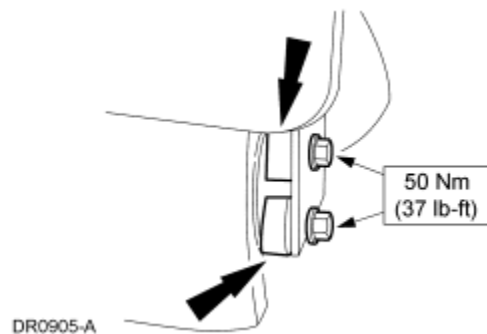
Removal

1. Remove the seat. For additional information, refer to [Seat—40/20/40](#) in this section.
2. Remove seat back. For additional information, refer to [Seat Backrest—40/20/40](#) in this section.
3. Remove the lower latch retaining bolts, spacers and the latch.



Installation

1. **NOTE:** Be sure to position the seat latch spacers in place before tightening the seat latch.
Follow the removal procedure in reverse order.



2. Check the restraint system for correct operation.

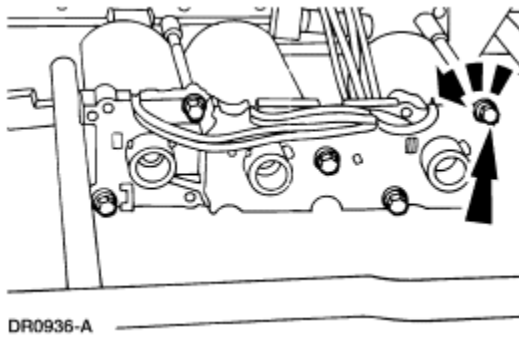
SECTION 501-10: Seating
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

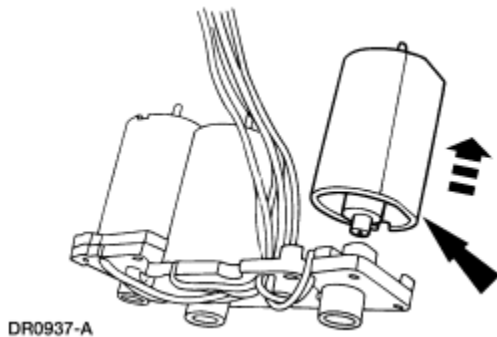
Motor

Removal

1. Remove the seat. For additional information, refer to [Seat—Captain's Chair](#) in this section.
2. Remove the seat track. For additional information, refer to [Seat—Captain's Chair](#) in this section.
3. Remove the seat motor retaining bolts.



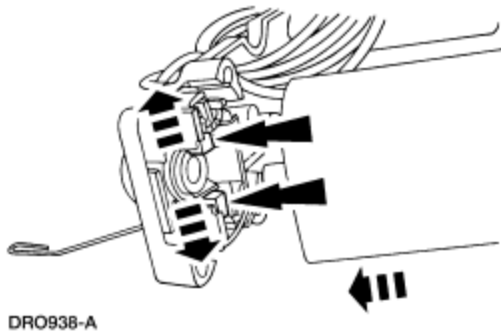
4. Remove the seat motor(s).



Installation

1. **NOTE:** When installing the new motor, the inductive contacts must be depressed before the motor can be installed on the wire harness bracket.

Follow the removal procedure in reverse order.



2. Check the restraint system for correct operation.

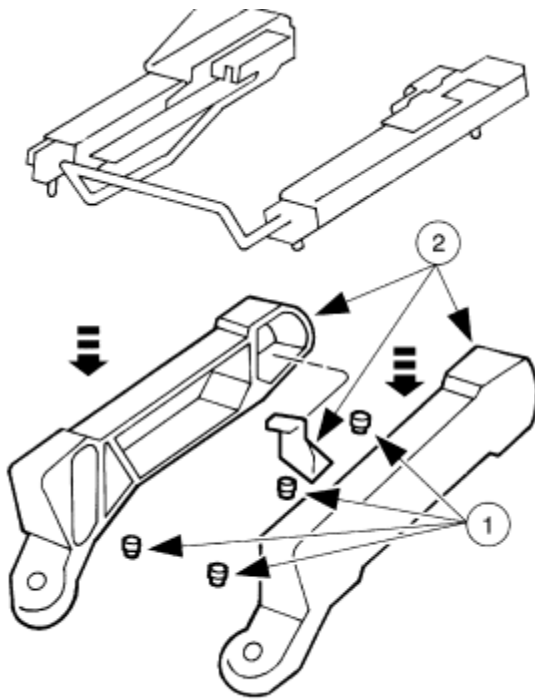
SECTION 501-10: Seating
DISASSEMBLY AND ASSEMBLY

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Seat—Captain's Chair

Disassembly

1. Remove the seat. For additional information, refer to [Seat—Captain's Chair](#) in this section.
2. Remove the seat safety belt buckle. For additional information, refer to [Section 501-20A](#).
3. If equipped, remove the seat control switch. For additional information, refer to [Switch](#) in this section.
4. If equipped, remove the armrest. For additional information, refer to [Armrest](#) in this section.
5. Remove the seat back. For additional information, refer to [Seat Backrest—Captain's Chair](#) in this section.
6. On all seats, remove the two seat risers.
 1. Remove the four nuts.
 2. Remove the two seat risers and the support bracket.

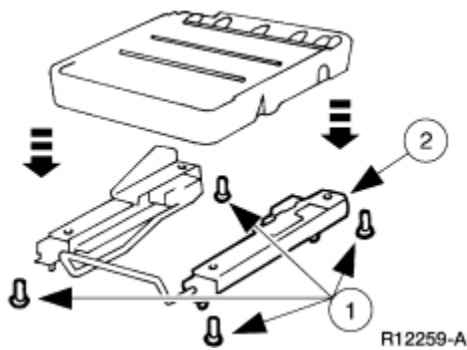


R12258-B

7. **NOTE:** On the power seat, remove the seat track and motor as an assembly.

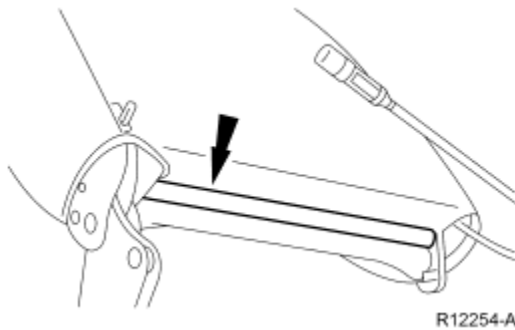
Remove the seat track.

1. Remove the four bolts.
2. Remove the front seat track.

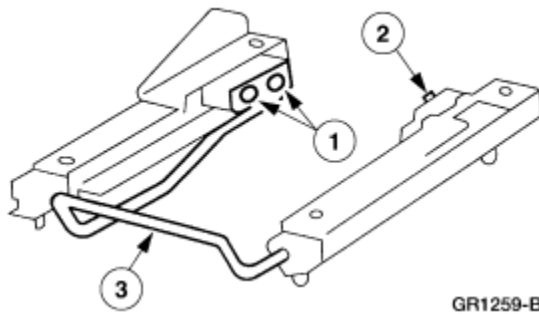


R12259-A

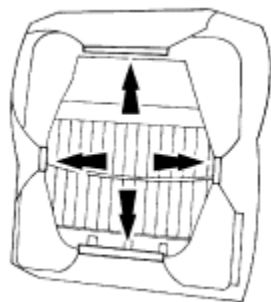
8. Unfasten the seat back cover J-strip and remove the cover.



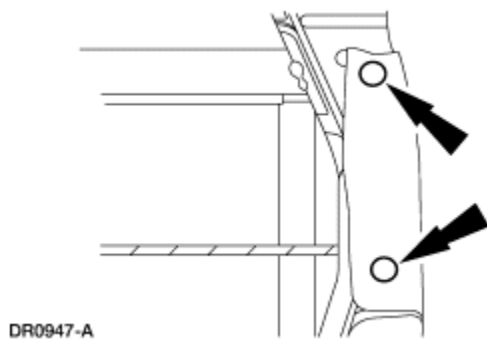
9. On the manual seat, remove the seat track release bar.
 1. Remove the two screws from the inboard seat track release bar.
 2. Remove one screw from the outboard seat track release bar.
 3. Remove the seat track release bar.



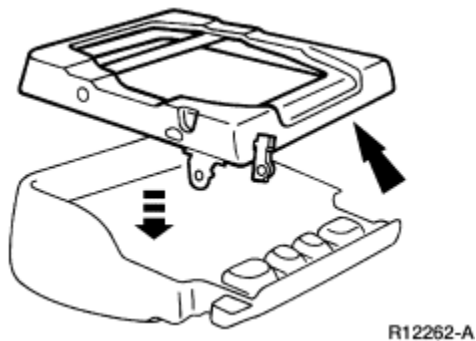
10. On all seats, unfasten the four front seat cushion cover J-strips.



11. Remove the two seat cushion pad pushpins.

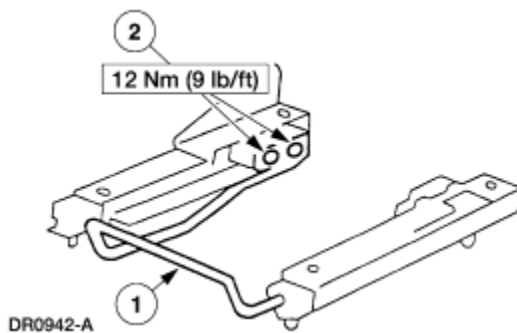


12. Remove the seat cushion pad from the seat cushion frame.



Assembly

1. Follow the disassembly procedure in reverse order.
2. On the manual seat, install the seat track release bar.
 1. Position the manual seat track release bar to the front seat track.
 2. Install the three bolts.

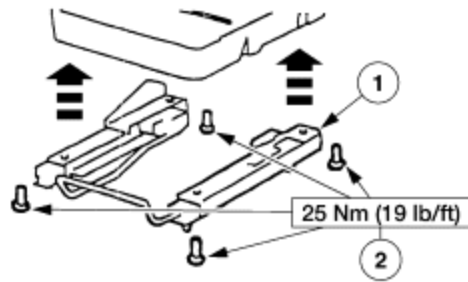


3. **NOTE:** On the power seat, install the seat track and motor as an assembly.

Install the seat track.

1. Install the seat track to the seat frame.

2. Install the four bolts.

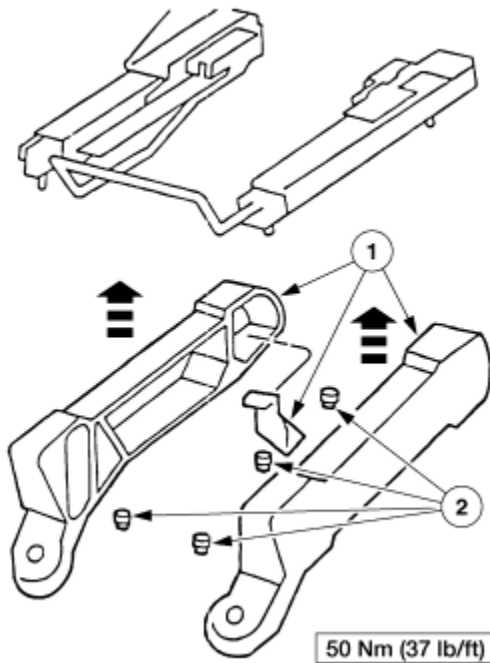


DR0943-A

4. **NOTE:** When installing the seat risers, make sure the seat belt buckle bracket is on the inboard rear seat riser.

On all seats, install the seat risers and tighten to specification.

1. Install the two seat risers and support bracket.
2. Install the nuts.

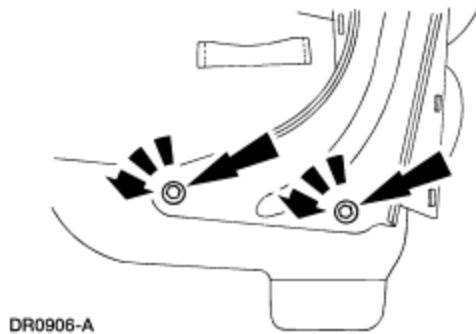


DR0944-A

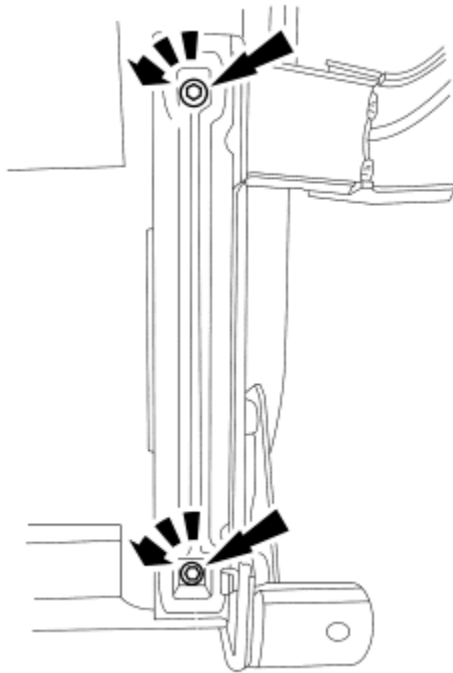
Seat—40/20/40

Disassembly and Assembly

1. Remove the driver and passenger seats. For additional information, refer to [Seat—Captain's Chair](#) in this section.
2. Remove center seat. For additional information, refer to [Seat—40/20/40](#) in this section.
3. Remove the seat back. For additional information, refer to [Seat Backrest—40/20/40](#) in this section.
4. Remove the seat latch. For additional information, refer to [Latch—40/20/40](#) in this section.
5. Remove the left side seat back bracket retaining bolts.

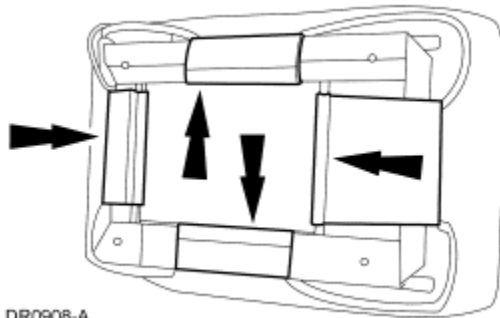


6. Remove the right and left side seat riser retaining bolts (left side shown, right side similar).



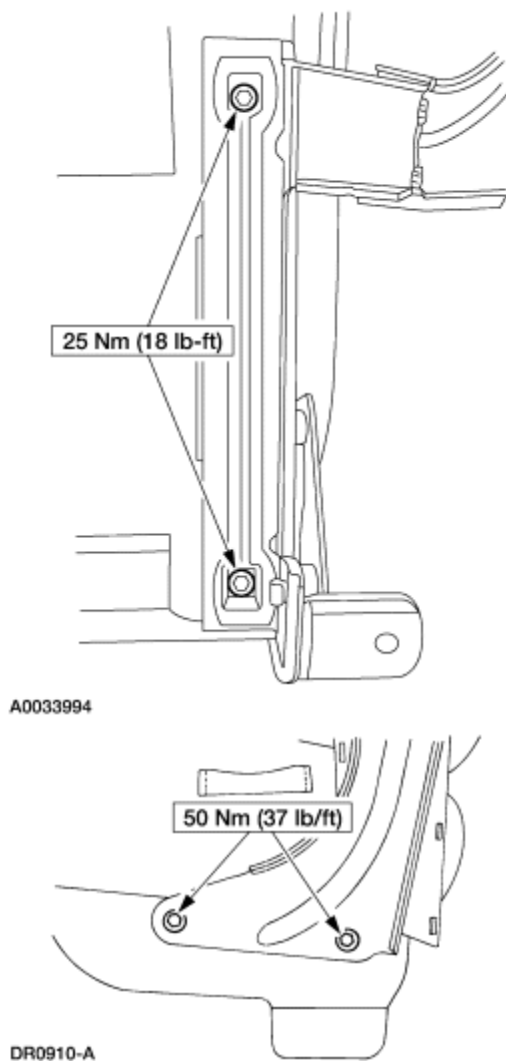
DR0907-A

7. Unfasten the four seat cushion cover J-strip retainers and remove the seat cushion.



DR0908-A

8. To assemble, reverse the disassembly procedure.



SECTION 501-10: Seating
DISASSEMBLY AND ASSEMBLY

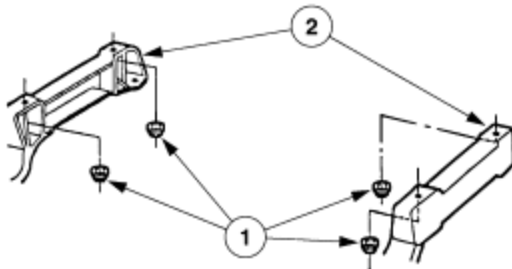
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Seat—Front Bench

Disassembly

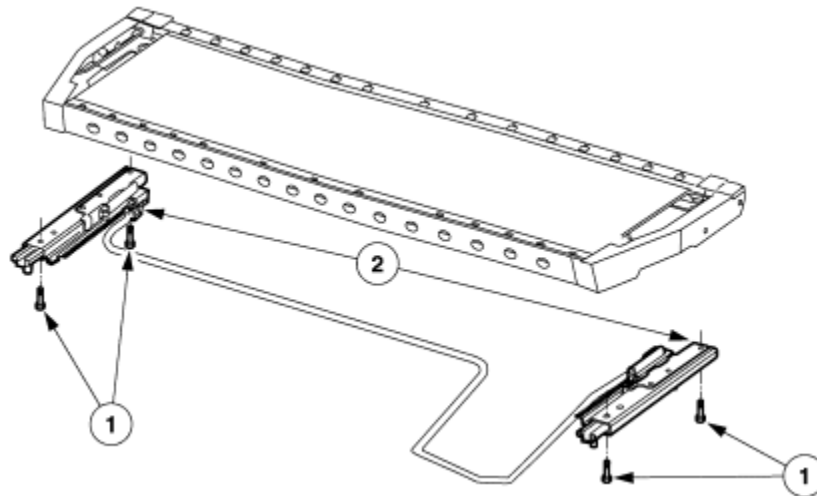
1. Remove the seat. For additional information, refer to [Seat—Front Bench](#) in this section.
2. Remove the seat back. For additional information, refer to [Seat Backrest—Front Bench](#) in this section.

3. Remove the two seat risers.
 1. Remove the four nuts.
 2. Remove the two front seat floor supports.



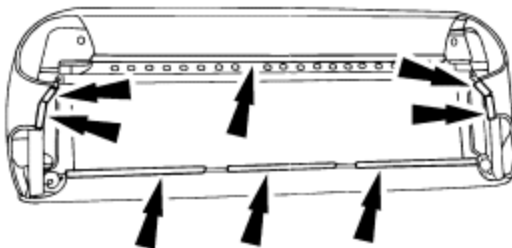
DR0911-A

4. Remove the two front seat tracks.
 1. Remove the four bolts.
 2. Remove the front seat tracks.



DR0978-A

5. Unfasten the eight seat cushion cover J-strips and remove the seat cushion cover.

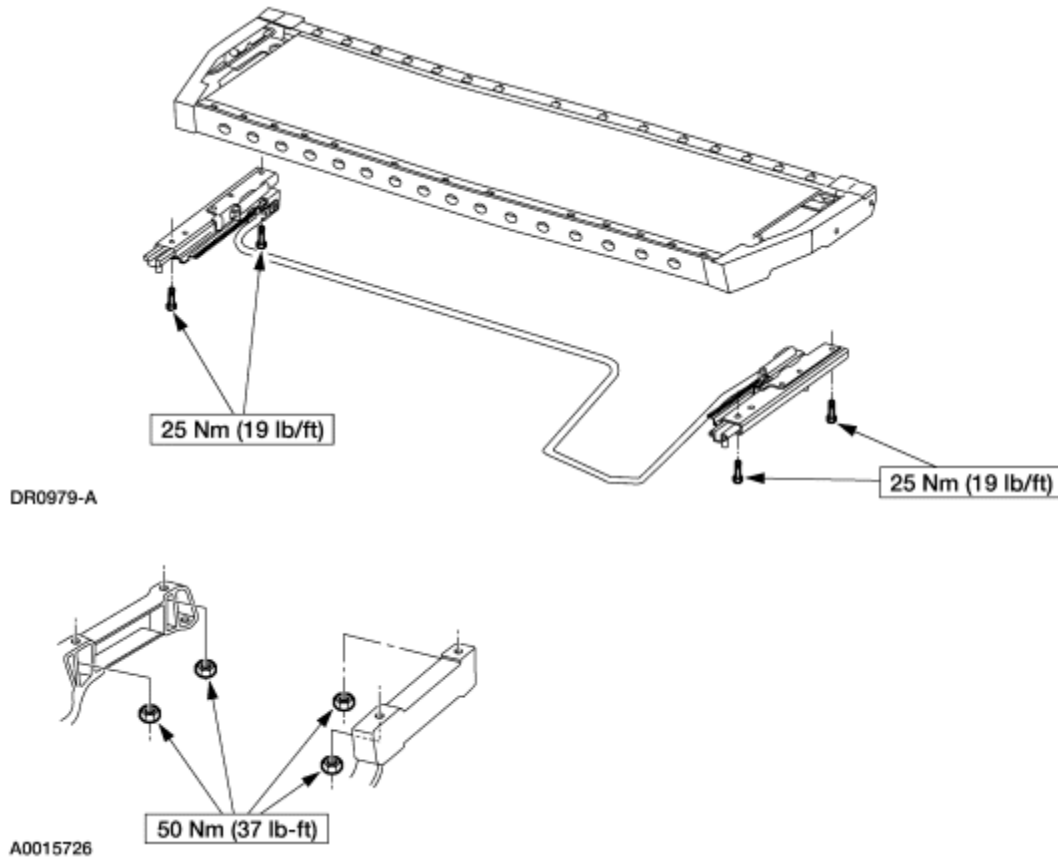


DR0912-A

6. Remove the seat cushion from the seat frame.

Assembly

1. Follow the disassembly procedure in reverse order.



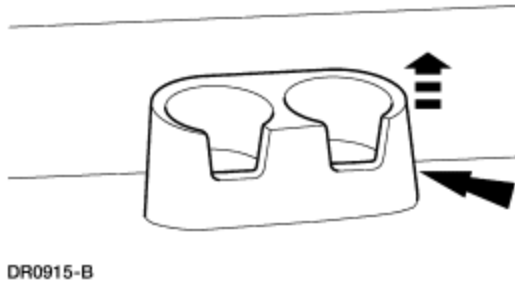
2. Check the restraint system for correct operation.

Seat—Rear Bench, Crew Cab

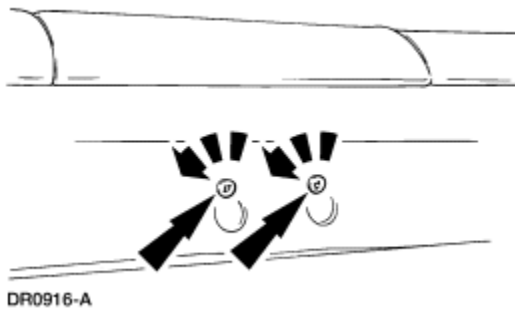
Disassembly

1. Remove the seat. For additional information, refer to [Seat—Rear Bench, Crew Cab](#) in this section.

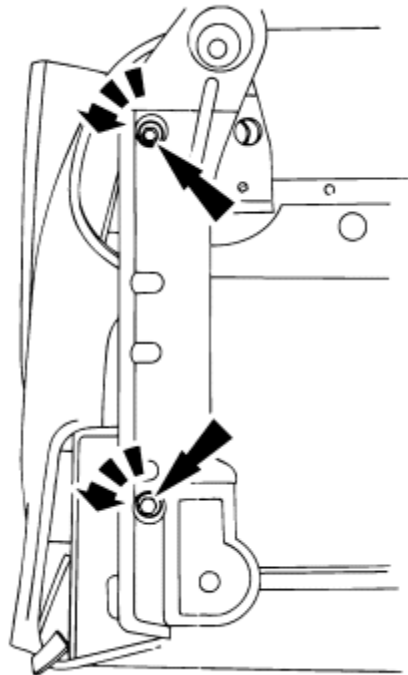
2. Remove the seat back. For additional information, refer to [Seat Backrest—Rear, Crew Cab](#) in this section.
3. Remove the cup holder from the center of the seat, if so equipped.



4. Remove two cup holder screws, if so equipped.



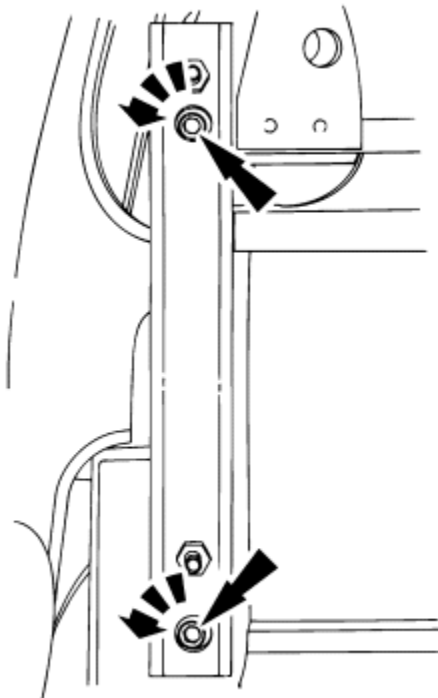
5. Remove the right and left seat risers (right side shown, left side similar).



DR0917-A

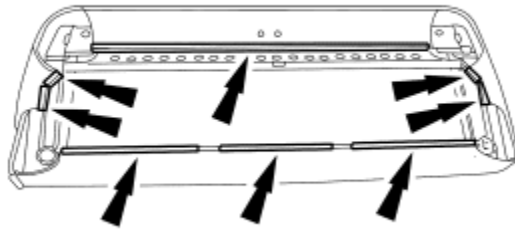
6. **NOTE:** Note location of spacers when removing for installation reference.

Remove the right and left seat spacers.



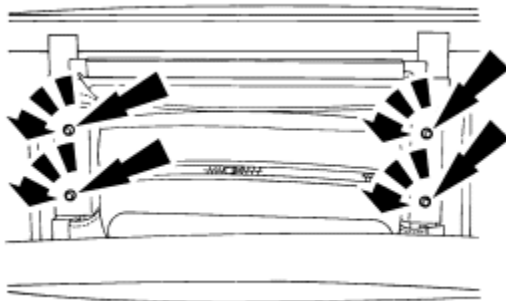
DR0918-A

7. Unfasten the seat cushion cover J-strips and remove the seat cushion cover.



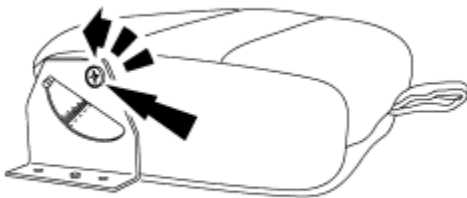
DR0919-B

8. Remove the seat cushion from the seat frame.
9. Remove four armrest bolts, if so equipped.



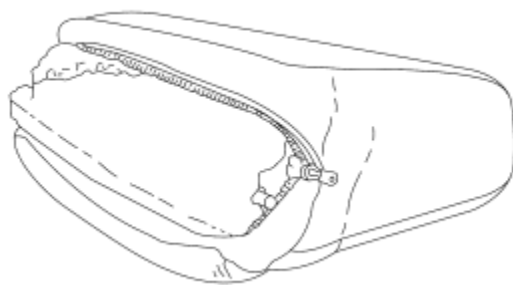
DR0920-A

10. Remove the armrest bracket bolts, if so equipped.



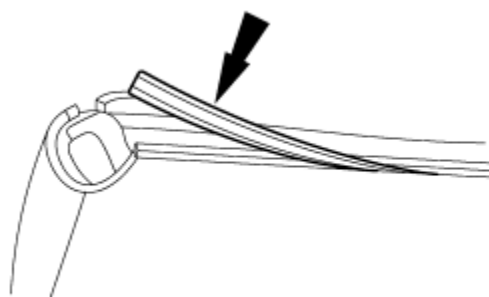
DR0921-B

11. Unzip armrest cover and remove from the armrest.



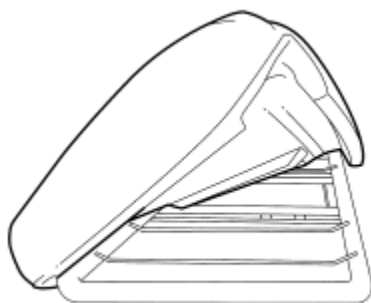
DR0922-B

12. Unfasten the seat back cover J-strips and remove the cover.



DR0923-B

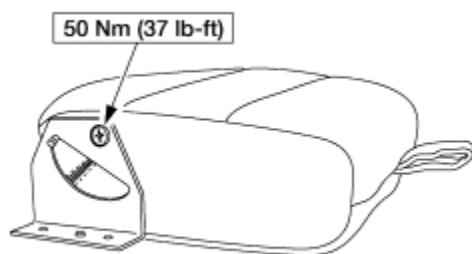
13. Remove the seat back cushion from the seat back frame.



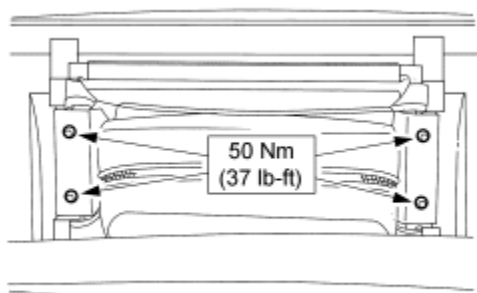
DR0924-A

Assembly

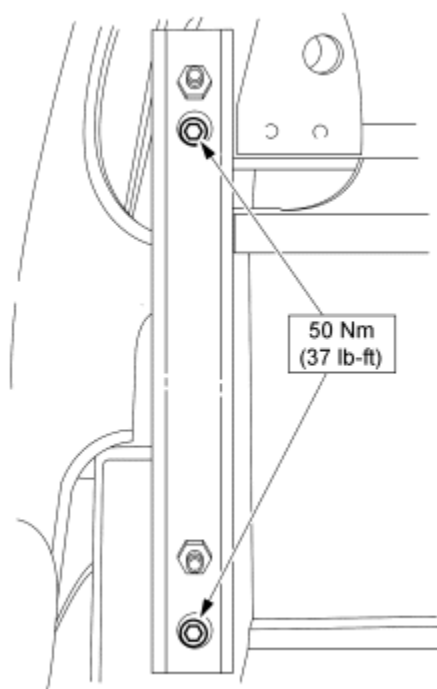
1. To install, reverse the disassembly procedure.



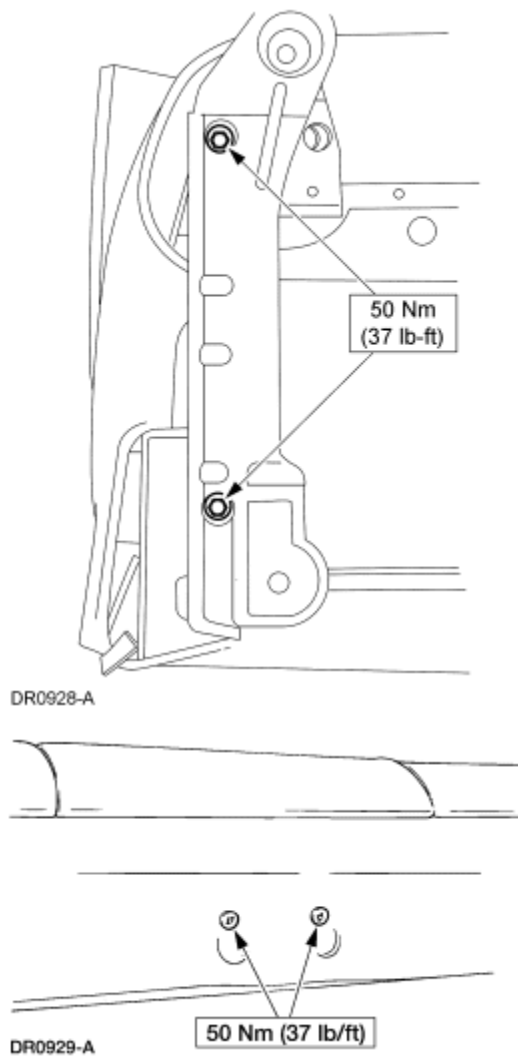
DR0925-B



DR0926-A



DR0927-A



2. Check the restraint system for correct operation.

SECTION 501-10: Seating
DISASSEMBLY AND ASSEMBLY

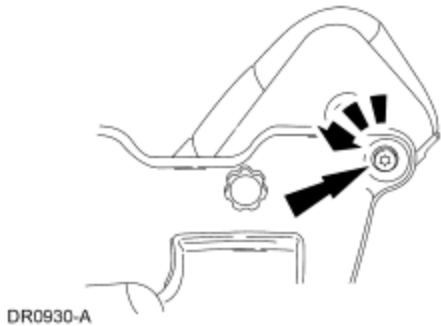
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Seat—Rear Bench, SuperCab

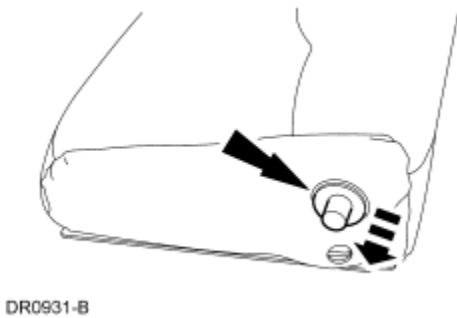
Disassembly

1. Remove the seat. For additional information, refer to [Seat—Rear, SuperCab](#) in this section.

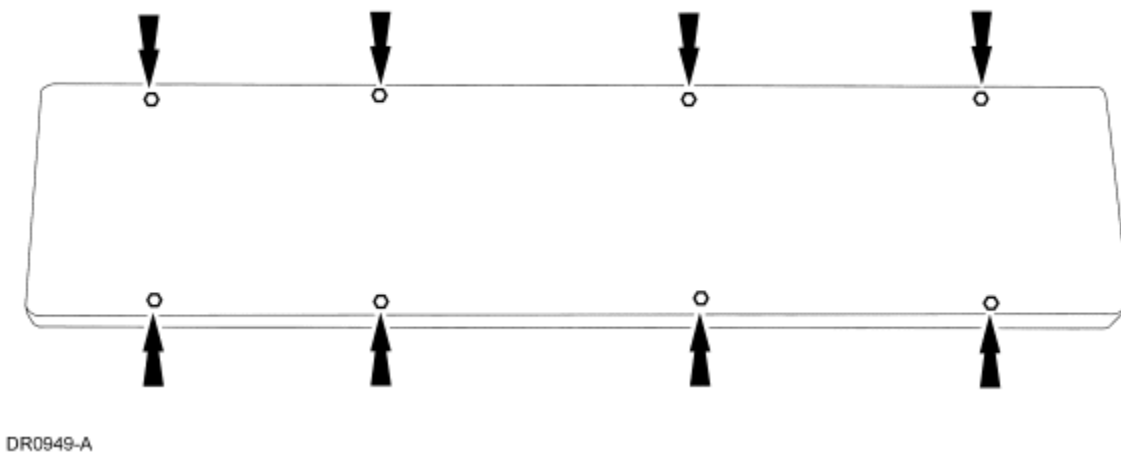
2. Remove the seat back. For additional information, refer to [Seat Backrest—Rear, SuperCab](#) in this section.
3. Remove the right and left seat bolts.



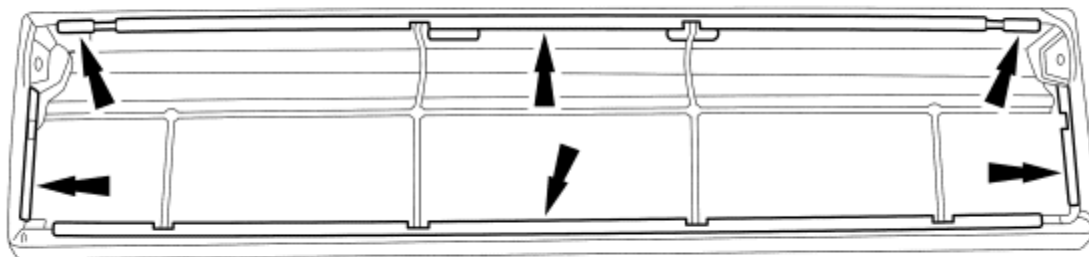
4. Remove the seat stop sleeves from the right and left side of the seat.



5. Remove the seat cushion floor panel screws.

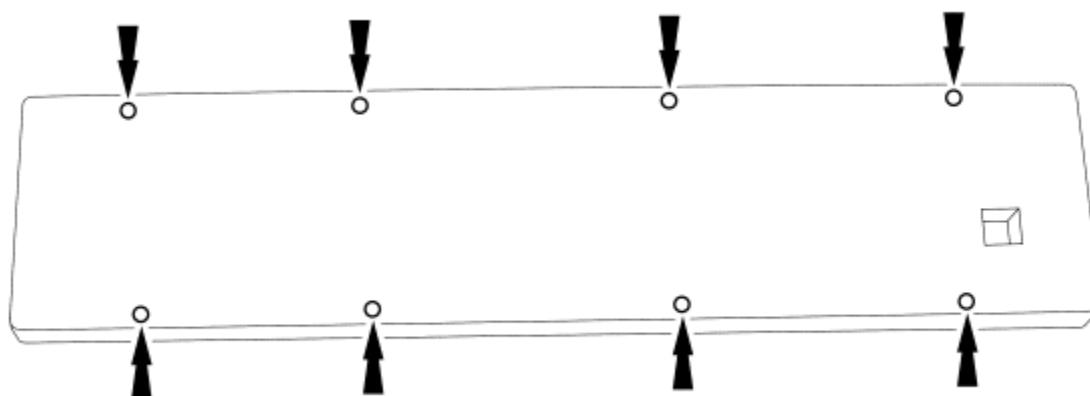


6. Unfasten the seat cushion cover J-strips and remove the cover.



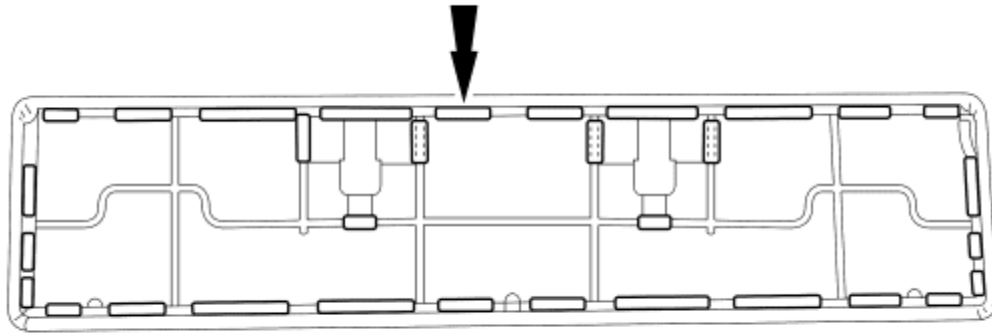
DR0933-B

7. Remove the seat cushion from the seat frame.
8. Remove the seat back floor panel screws.



DR0932-B

9. Unfasten the seat back cover J-strips and remove the cover.

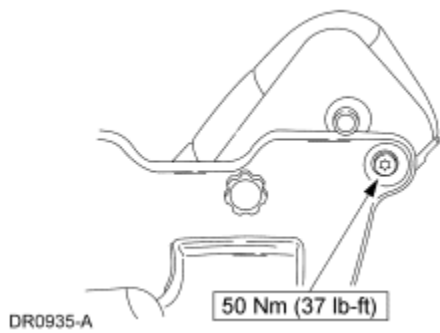


DR0934-B

10. Remove the seat back cushion from the seat back frame.

Assembly

1. To install, reverse the disassembly procedure.



DR0935-A

SECTION 501-11:
Glass, Frames and Mechanisms

[SPECIFICATIONS](#)

DESCRIPTION AND OPERATION

[Glass, Frames and Mechanisms](#)

DIAGNOSIS AND TESTING

[Glass, Frames and Mechanisms](#)

[Inspection and Verification](#)

[Symptom Chart](#)

[Pinpoint Tests](#)

REMOVAL AND INSTALLATION

[Switch](#)

[Window Glass—Front Door](#)

[Window Glass—Rear Door, Crew Cab](#)

[Window Glass—Rear Door SuperCab](#)

[Window Glass—Back](#)

[Motor—Front Door](#)

[Motor—Rear Door](#)

[Window Regulator—Front Door](#)

[Window Regulator—Rear Door](#)

[Windshield Glass](#)

SECTION 501-11: Glass, Frames and
Mechanisms

1999 F-Super Duty 250-550 Workshop
Manual

SPECIFICATIONS

[Procedure revision date: 01/26/2000](#)

General Specifications	
Item	Specification
Primers	
Urethane Body Primer WSB-M2G234-C	—
Urethane Glass Primer WSB-M2G314-B	—

Urethane Glass Primer Wipe WSB-M5B280-C2	—
Adhesive	
Urethane High Viscosity Adhesive WSB-M2G316-B	—

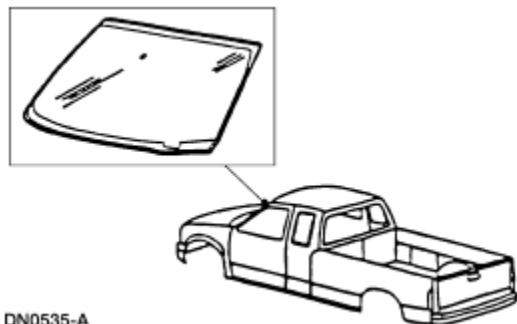
Torque Specifications			
Description	Nm	Lb/Ft	Lb/In
Rear Glass Run Bolt (Front Door)	10	—	89
Rear Glass Run Bolt (Rear Door Crew Cab)	10	—	89
Window Regulator Retaining Bolts (Rear Door, Crew Cab)	15	12	
Window Motor Retaining Bolts (Front Door)	15	12	
Window Regulator Electric Drive To Rear Door Window Regulator Assembly Bolts (Rear Door)	15	12	
Window Regulator Mounting Bolts (Front Door)	15	12	
Window Regulator Arm Retaining Nuts (Front Door)	15	12	
Window Regulator Arm Retaining Nuts (Rear Door)	15	12	

SECTION 501-11: Glass, Frames and Mechanisms
DESCRIPTION AND OPERATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Glass, Frames and Mechanisms

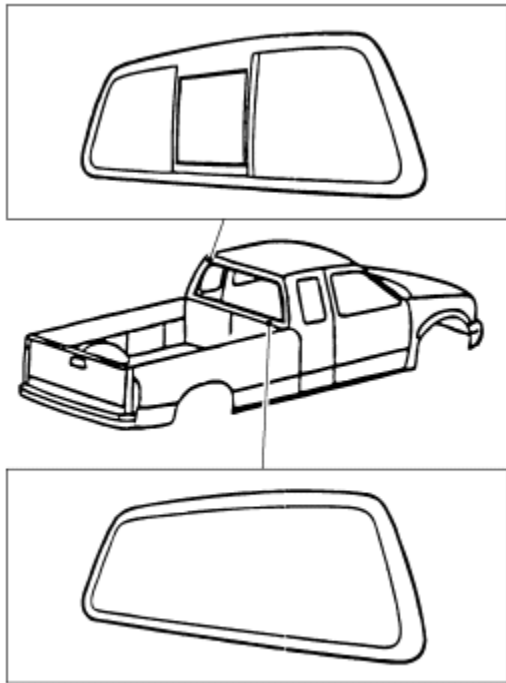
Windshield Glass



The windshield glass (03100):

- Is standard plastic and glass laminate safety glass.
- Is bonded to the window opening flange with urethane sealant.

Window Glass — Back

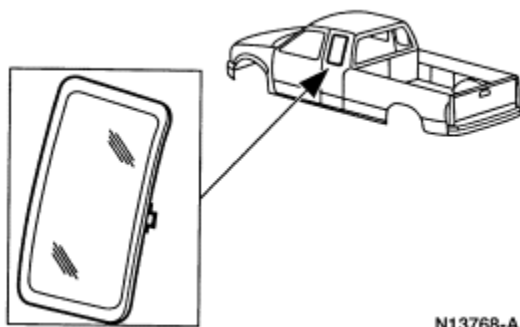


DN0536-A

The back window glass (42006):

- Is standard plastic and glass laminate safety glass.
- May be the fixed or sliding type.

Window Glass — Rear Side, SuperCab

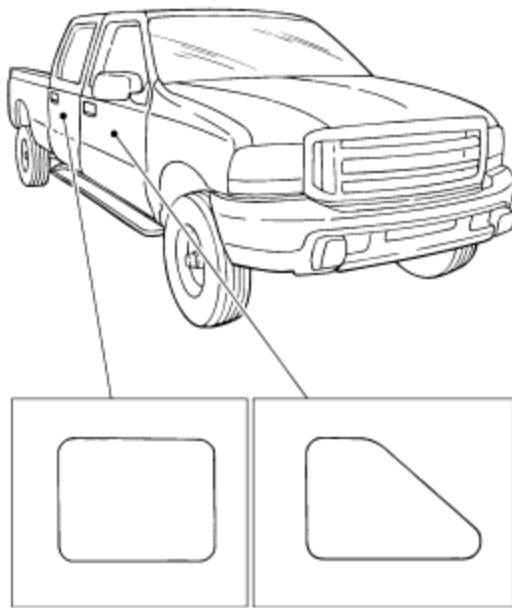


N13768-A

The rear side glass:

- The flip window is standard on SuperCab vehicles.
- Is located on the rear side door of the cab.

Window Glass — Front Doors and Crew Cab Rear Door

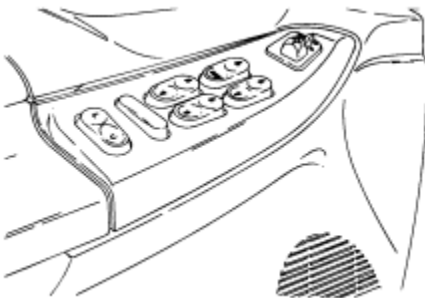


DN0537-A

The front door glass:

- Is standard tempered glass.
- Is lowered and raised manually or with optional power window controls.

Window Regulator Control Switch



DN0538-A

The window regulator control switch (14529):

- Is located on each front door trim panel and Crew Cab rear door trim panel.
- May be used to raise or lower the driver side, passenger side and rear windows from the master control on the driver side, or the passenger window from the passenger switch.
- Includes a one touch down feature for the driver door window.
- Can manually lower the driver side window when the master control is depressed half way (first detent).

- Will completely lower the driver side window when the master control is fully depressed and then released (second detent).

Power Window System

Features and Operation

The generic electronic module (GEM) controls the opening of the LH driver side power window (window down motion) by activating the one touch down window relay.

Down window motion operates in two modes, manual mode and auto mode. Down window mode is selected by pressing the double position LH window regulator control switch. When the GEM detects the first down position on the switch, it enters manual mode. In manual mode the window will move downward only while the switch is depressed. Similarly, when the GEM detects the second down position on the switch, it enters auto mode.

The power window system will operate only if:

- The ignition switch is in the RUN or ACC position or
- The delayed accessory feature is in the active mode.

Power Window System — Modes of Operation

There are two modes of operation for the power window system:

Manual Mode

When the LH window regulator control switch is pressed to the first down position, the window will move down until one of the following conditions are met:

- The LH window regulator control switch is no longer in the first down position.
- The LH window regulator control switch is pushed to the one touch down (OTD) position, causing the windows to enter auto mode.

Feature Input

NOTE: Delayed accessory feature must be active.

LH window regulator control switch, first down position.

Feature Output

- One touch down relay coil output (grounded when activated, open circuit when deactivated).

Auto Mode

Auto mode provides the one touch down feature (OTD feature). The OTD feature is activated when the LH window regulator control switch, for the LH window, is pressed to the second down position.

Auto mode will be terminated when any of the following conditions are met:

- The LH window regulator control switch is pushed to the up position.
- The LH window regulator control switch is released (OFF position) and then moved to the down position (first detent) or OTD position (second detent).
- One touch down sense lines, high and low (voltage difference: corresponds to window current).
- Note: Delayed accessory feature must be active.

Door open warning lamp switches (grounded when door is ajar, open circuit when door is closed).

Feature Output

- Down window relay coil output (grounded when activated, open circuit when deactivated).

One Touch Down Relay

The GEM controls manual down and OTD window movement with the one touch down relay.

The relay is activated by applying ground directly to one side of the down window relay coil, and is deactivated by removing the ground signal.

Features and Operation

The delayed accessory feature of the GEM provides power for the power window system. The following components are under the control of the delayed accessory relay:

- LH window regulator electric drive.
- RH window regulator electric drive.

The delayed accessory feature is active when:

- The ignition is in the RUN position or ACC position.
- The ignition switch makes a transition from RUN or ACC to OFF and both doors are closed (neither door is ajar).

NOTE: Delayed accessory is suspended (off) while the ignition is in the START position. The delayed accessory feature is re-activated when the ignition makes the transition from START to RUN. The delayed accessory feature becomes deactivated if:

- The LH driver or RH passenger door becomes ajar when the ignition switch is in the OFF or KEY OUT position.
- Ten minutes have elapsed since the ignition made a transition from RUN or ACC to OFF.

Feature Inputs

- Ignition switch RUN position: 12 V on both RUN and RUN/ACC inputs.
- Ignition switch ACC position: 12 V on RUN/ACC input only.

- Door open warning lamp switches (grounded when door is ajar, open when door is closed).

Feature Outputs

Delayed accessory relay coil output (grounded when active, open circuit when inactive).

Delayed Accessory Relay

The GEM controls the delayed accessory feature and power supply to the power windows through the delayed accessory relay.

The relay is activated by applying ground directly to one side of the delay accessory relay coil and deactivated by removing the ground signal.

Battery Saver Relay

The following components are under the control of the battery saver relay:

- Delayed accessory relay.
- Overhead interior lamp with map lamps.
- Underhood lamp switch.
- Glove box lamp switch.
- Overhead interior lamp switch.
- Interior lamp relay coil.

The battery saver relay becomes active (relay coil is energized) when the GEM is in awake mode and is deactivated (relay coil is de-energized) in sleep mode.

The battery saver will remain active until the ignition state is not ACC or RUN and 40 minutes have passed since the last active input. At that time, the relay will be deactivated and power to the above circuits will terminate.

Five minutes after the battery saver relay has become deactivated, the GEM will go into a lower power state known as sleep mode. In the sleep mode, the GEM will deactivate all outputs and will monitor select inputs.

Feature Inputs



- Sleep/Awake mode status.

Feature Outputs

- Battery saver relay (open circuit in sleep mode, grounded when awake).
-

Glass, Frames and Mechanisms

Refer to Wiring Diagrams Cell 149 ([F-53 Motorhome Chassis](#), [F-Super Duty 250-550](#)) for schematic and connector information.

Special Tool(s)	
 ST1137-A	73 Digital Multimeter 105-R0051 or Equivalent Need No.
 ST1217-A	New Generation Star (NGS) Tester 418-F048 (007-00500) or Equivalent Need No.

Inspection and Verification

- The power window system is a generic electronic module (GEM) controlled system.
- Verify the customer concern by operating the power window system.
- Visually inspect for obvious signs of mechanical and electrical damage; refer to the following chart:

Visual Inspection Chart	
Mechanical	Electrical
<ul style="list-style-type: none">• Window regulator electric drive• Window glass	<ol style="list-style-type: none">2. Fuse(s)3. Wiring harness4. Loose or corroded connector(s)5. Circuitry

3. If the concern remains after the inspection, connect the New Generation Star (NGS) Tester to the data link connector (DLC) located beneath the instrument panel and select the vehicle to be tested from the NGS menu. If the NGS does not communicate with the vehicle:
 4. Check that the program card is properly installed.
 5. Check the connections to the vehicle.
 6. Check the ignition switch position.
 5. If the NGS still does not communicate with the vehicle, refer to the New Generation Star (NGS) Tester manual.
- Perform the DATA LINK DIAGNOSTIC TEST. If the NGS responds with:
 - CKT 914, CKT 915 or CKT 70 = ALL ECUS NO RESP/NOT EQUIP, for additional information, refer to Section 418-00.
 - NO RESP/NOT EQUIP for the GEM, go to Pinpoint Test A.
 - SYSTEM PASSED, retrieve and record the continuous diagnostic trouble codes (DTCs), erase the continuous DTCs and perform self-test diagnostics for the GEM.
 - If the DTCs retrieved are related to the concern, go the GEM Diagnostic Trouble Code (DTC) Index to continue diagnostics.
 - If no DTCs related to the concern are retrieved, proceed to the Symptom Chart to continue diagnostics.

GEM Diagnostic Trouble Code (DTC) Index				
DTC	Test Mode	Description	Circuit	Action
No Code	—	No communication with the Generic Electronic Module.	—	GO to Pinpoint Test A .
B1217	Continuous, On-Demand	Horn relay coil circuit failure.	1 (DB)	REFER to Section 501-14B .
B1218	Continuous, On-Demand	Horn relay coil circuit short to battery.	1 (DB)	REFER to Section 501-14B .
B1243	Continuous, On-Demand	One touch down window switch circuit short to battery.	995 (GY)	GO to Pinpoint Test G .
B1300	Continuous, On-Demand	Power door lock circuit failure.	119 (PK/Y)	REFER to Section 501-14B .
B1302	Continuous, On-Demand	Accessory delay relay coil circuit failure.	Junction Box Fuse/Relay Panel	GO to Pinpoint Test B .
B1304	Continuous,	Accessory delay relay coil circuit	Junction Box	GO to Pinpoint

	On-Demand	short to battery.	Fuse/Relay Panel	Test B.
B1310	Continuous, On-Demand	Power door unlock circuit failure.	120 (PK/LG)	REFER to Section 501-14B.
B1317	Continuous, On-Demand	Battery voltage high.	Junction Box Fuse/Relay Panel	REFER to Section 414-00.
B1318	Continuous, On-Demand	Battery voltage low.	Junction Box Fuse/Relay Panel	REFER to Section 414-00.
B1322	On-Demand	Driver door ajar driver side circuit short to ground.	344 (BK/Y)	REFER to Section 417-02.
B1323	Continuous, On-Demand	Door ajar lamp circuit failure.	433 (DG/O)	REFER to Section 413-09.
B1325	Continuous, On-Demand	Door ajar lamp circuit short to battery.	433 (DG/O)	REFER to Section 413-09.
B1330	On-Demand	Door ajar passenger side circuit short to ground.	345 (BK/PK)	REFER to Section 417-02.
B1338	On-Demand	Door ajar RR or LR circuit short to ground.	346 (BK/W)	REFER to Section 417-02.
B1340	Continuous, On-Demand	Chime input request circuit short to ground.	1083 (LB/BK)	REFER to Section 501-20B.
B1342	Continuous, On-Demand	ECU is defective.	—	REPLACE GEM.
B1352	Continuous, On-Demand	Ignition key-in circuit failure.	158 (BK/PK)	REFER to Section 413-09.
B1355	On-Demand	Ignition run circuit failure.	640 (R/Y)	REFER to Section 413-09.
B1359	Continuous, On-Demand	Ignition run/accy circuit failure.	Junction Box Fuse/Relay Panel	REFER to Section 413-09.
B1366	Continuous, On-Demand	Ignition start circuit short to ground.	Junction Box Fuse/Relay Panel	REFER to Section 413-09.
B1371	Continuous, On-Demand	Illuminated entry relay circuit failure.	Junction Box Fuse/Relay Panel	REFER to Section 417-02.
B1373	Continuous, On-Demand	Illuminated entry relay short to battery.	Junction Box Fuse/Relay Panel	REFER to Section 417-02.
B1396	Continuous, On-Demand	Power door lock circuit short to battery.	119 (PK/Y)	REFER to Section 501-14B.
B1397	Continuous, On-Demand	Power door unlock circuit short to battery.	120 (PK/LG)	REFER to Section 501-14B.

B1398	On-Demand	Power window driver side one touch window relay circuit failure.	Junction Box Fuse/Relay Panel	GO to Pinpoint Test C.
B1400	On-Demand	Power window driver side one touch window relay short to battery.	Junction Box Fuse/Relay Panel	GO to Pinpoint Test C.
B1405	On-Demand	Power window driver side down circuit short to battery.	991 (T/LB)	GO to Pinpoint Test C.
B1410	Continuous, On-Demand	Power window driver side motor circuit failure.	Junction Box Fuse/Relay Panel	GO to Pinpoint Test G.
B1426	Continuous, On-Demand	Seat belt warning lamp circuit short to battery.	450 (DG/LG)	REFER to Section 413-09.
B1428	Continuous, On-Demand	Seat belt warning lamp circuit failure.	450 (DG/LG)	REFER to Section 413-09.
B1431	Continuous Wiper Test	Wiper run/park relay circuit failure.	646 (Y/W)	REFER to Section 501-16.
B1432	Continuous Wiper Test	Wiper run/park relay circuit short to battery.	646 (Y/W)	REFER to Section 501-16.
B1434	Continuous Wiper Test	Wiper hi/lo speed relay coil circuit failure.	647 (GY/LB)	REFER to Section 501-16.
B1436	Continuous Wiper Test	Wiper hi/lo speed relay coil circuit short to battery.	647 (GY/LB)	REFER to Section 501-16.
B1438	Continuous Wiper Test	Wiper mode select switch circuit failure.	684 (PK/Y)	REFER to Section 501-16.
B1441	Wiper Test	Wiper mode select switch circuit short to ground.	684 (PK/Y)	REFER to Section 501-16.
B1446	Continuous Wiper Test	Wiper park sense circuit failure.	671 (LB)	REFER to Section 501-16.
B1450	Continuous Wiper Test	Wiper wash/delay switch circuit failure.	680 (LB/O)	REFER to Section 501-16.
B1453	Continuous Wiper Test	Wiper wash/delay switch circuit short to ground.	680 (LB/O)	REFER to Section 501-16.
B1458	Continuous Wiper Test	Washer pump motor relay coil circuit failure.	686 (T/R)	REFER to Section 501-16.
B1460	Continuous Wiper Test	Washer pump motor relay coil circuit short to battery.	686 (T/R)	REFER to Section 501-16.
B1462	On-Demand	Seat belt switch circuit failure.	85 (BR/LB)	REFER to Section 413-09.
B1473	Continuous Wiper Test	Wiper low speed circuit motor failure.	671 (LB)	REFER to Section 501-16.
B1475	On-Demand	Accessory delay relay contact short to battery.	Junction Box Fuse/Relay Panel	GO to Pinpoint Test H.
B1476	Continuous	Wiper high speed circuit motor	671 (LB)	REFER to

	Wiper Test	failure.		Section 501-16.
B1483	Continuous	Brake pedal input circuit failure.	810 (R/LG)	REFER to Section 308-07A.
B1485	Continuous On-Demand	Brake pedal input short to battery.	810 (R/LG)	REFER to Section 308-07A.
B1574	On-Demand	LR door ajar circuit short to ground.	346 (BK/W)	REFER to Section 417-02.
B1577	On-Demand	Park lamp input circuit short to battery.	257 (W/R)	REFER to Section 413-09.
B1840	Continuous Wiper Test	Wiper front power circuit failure.	297 (BK/LG)	REFER to Section 501-16.
B1982	Continuous, On-Demand	Driver door unlock relay circuit failure.	164 (P/LB)	REFER to Section 501-14B.
B1983	Continuous, On-Demand	Driver door unlock relay circuit short to battery.	164 (P/LB)	REFER to Section 501-14B.
B2132	On-Demand	Dimmer switch short to ground.	402 (O/LG)	REFER to Section 417-02.
B2141	Continuous	NVM Configuration failure.	—	REFER to Section 419-10.
B2357	On-Demand	Driver window down current sense (low) circuit failure.	Junction Box Fuse/Relay Panel	GO to Pinpoint Test C.
B2425	Continuous	Remote Keyless Entry out of sync.	—	REFER to Section 501-14B.
C1125	Continuous, On-Demand	Brake fluid level sensor input circuit failure.	512 (T/LG), 531 (DG/Y)	REFER to Section 413-09.
C1182	Continuous, On-Demand	Park lamp flash relay circuit failure.	7 (LG/Y)	REFER to Section 501-14B.
C1183	Continuous, On-Demand	Park lamp flash relay circuit short to battery.	7 (LG/Y)	REFER to Section 501-14B.
C1189	On-Demand	Brake fluid level sensor input short circuit to ground.	512 (T/LG), 531 (DG/Y)	REFER to Section 413-09.
C1223	Continuous, On-Demand	Brake lamp warning output circuit failure.	977 (P/W)	REFER to Section 413-09.
C1225	Continuous, On-Demand	Brake lamp warning output circuit short to battery.	977 (P/W)	REFER to Section 413-09.

C1230	Continuous	Speed wheel sensor rear center input circuit failure.	—	REFER to Section 413-01.
C1446	Continuous, On-Demand	Park brake switch circuit failure.	162 (LG/R)	REFER to Section 413-09.
C1728	Continuous	Unable to transition between 4H and 2H.	—	REFER to Section 308-07A.
C1729	Continuous	Unable to transition between 4H and 4L.	—	REFER to Section 308-07A.
C1751	Continuous	Vehicle speed sensor No. 1 output circuit short to battery.	679 (GY/BK)	REFER to Section 413-01.
C1752	Continuous	Vehicle speed sensor No. 1 output circuit short to ground.	679 (GY/BK)	REFER to Section 413-01.
P0500	Continuous	Vehicle speed sensor (VSS) malfunction.	679 (GY/BK)	REFER to Section 413-01.
P1804	Continuous, On-Demand	Transmission 4-Wheel Drive high indicator circuit failure.	210 (LB)	REFER to Section 308-07A.
P1806	Continuous, On-Demand	Transmission 4-Wheel Drive high indicator short to battery.	210 (LB)	REFER to Section 308-07A.
P1808	Continuous, On-Demand	Transmission 4-Wheel Drive low indicator circuit failure.	975 (BR/Y)	REFER to Section 308-07A.
P1810	Continuous, On-Demand	Transmission 4-Wheel Drive low indicator short to battery.	975 (BR/Y)	REFER to Section 308-07A.
P1812	Continuous, On-Demand	Transmission 4-Wheel Drive mode select circuit failure.	465 (W/LB)	REFER to Section 308-07A.
P1815	Continuous, On-Demand	Transmission 4-Wheel Drive mode select short to ground.	465 (W/LB)	REFER to Section 308-07A.
P1819	On-Demand	Transmission neutral safety switch short to ground.	463 (R/W)	REFER to Section 308-07A.
P1820	Continuous, On-Demand	Transmission transfer case clockwise shift relay coil circuit failure.	782 (BR/W)	REFER to Section 308-07A.
P1822	Continuous, On-Demand	Transmission transfer case clockwise shift relay coil short to battery.	782 (BR/W)	REFER to Section 308-

				07A.
P1828	Continuous, On-Demand	Transmission transfer case counterclockwise shift relay coil circuit failure.	781 (O/LB)	REFER to Section 308-07A.
P1830	Continuous, On-Demand	Transmission transfer case counterclockwise shift relay coil short to battery.	781 (O/LB)	REFER to Section 308-07A.
P1832	Continuous, On-Demand	Transmission transfer case differential lockup solenoid circuit failure.	605 (R)	REFER to Section 308-07A.
P1834	Continuous, On-Demand	Transmission transfer case differential lockup solenoid short to battery.	605 (R)	REFER to Section 308-07A.
P1838	Continuous	Transmission transfer case shift motor circuit failure.	—	REFER to Section 308-07A.
P1865	Continuous, On-Demand	Transmission transfer case contact plate power short to ground.	976 (O)	REFER to Section 308-07A.
P1866	Continuous	Transmission transfer case system concern servicing required.	—	REFER to Section 308-07A.
P1867	Continuous, On-Demand	Transmission transfer case contact plate general circuit failure.	—	REFER to Section 308-07A.
P1876	Continuous, On-Demand	Transmission transfer case 2-Wheel Drive solenoid circuit failure.	145 (GY/BK)	REFER to Section 308-07A.
P1877	Continuous	Transmission transfer case 2-Wheel Drive solenoid circuit short to battery.	145 (GY/BK)	REFER to Section 308-07A.

GEM Parameter Identification (PID) Index			
PID	Circuit	Circuit Description	Expected Values
ACCDLY	N/A (JB-11)	Accessory Delay Relay Circuit	OFF, ON
ALL_RLY	119 (PK/Y)	All Door Lock Output Status (A15B)	OFF, ON
AUTOPIP	162 (LG/R)	Park Brake Switch Status (2900)	OFF, ON
AUX_IN	—	Auxiliary Motor Input	OFF, ON

AUX_LMP	—	Auxiliary Brake Motor Warning Lamp	OFF, ON
AUX_RLY	—	Auxiliary Brake Motor Relay	OFF, ON
BATSAV	N/A	Battery Saver Output Status	OFF, ON
BOO_GEM	810 (R/LG)	Brake Input Switch Input	OFF, ON
BRK_DIF	—	Brake Pressure Differential Switch	OFF, ON
BRKLAMP	977 (PK/W)	Brake Warning Lamp Status	OFF, ON
CCNTGEM	—	Number of Continuous DTCs in Module	13
CLTCHSW	N/A (JB-05)	Transmission Clutch Interlock Switch	ENGAGED, NOTENGD
D_DN_SW	991 (T/LB)	Driver Window Down Switch	OFF, DOWN
D_DR_SW	344 (BK/Y)	Left External Access Ajar Switch Status	CLOSED - AJAR
D_PWAMP	N/A	Driver Power Window Motor Current	0.25 to 63.75 Amps
D_PWRLY	991 (JB-08)	Driver Power Window Output Status	OFF, ON
D_SBELT	85 (BR/LB)	Driver Seat Belt Status	OUT, IN
DD_UNLK	164 (PK/LB)	Driver Door Unlock Output Status (A149)	OFF, ON
DR_UNLK	120 (PK/LG)	All Doors Unlock Output Status	OFF, ON
DRAJR_L	433 (DG/O)	Door Ajar Warning Lamp Status	OFF, ON
FLUID_1	512 (T/LG)	Brake Fluid Level Switch #1 (2909)	OFF, ON
FLUID_2	531 (DG/Y)	Brake Fluid Level Switch #2 (2909)	OFF, ON
FLUID_F	—	Brake Fluid Flow Switch	OFF, ON
HDL_DIM	402 (JB-10)	Headlamp Dimmer Switch (7101)	OFF, ON
HORNRLY	1 (JB-03)	Horn Control Relay Output Status (C110)	OFF, ON
IGN_KEY	158 (BK/PK)	Ignition Key In/Out	IN, OUT
IGN_GEM	640 (R/Y)	Ignition Switch Status	START-RUN-OFF-ACCY
INTLMP	N/A	Illuminated Entry Relay Circuit	OFF, ON
IPCHIME	1083 (LB/BK)	External Chime Request	OFF, ON
LOW_AIR	—	Low Air Brake Pressure Switch	OFF, ON

LRDR_SW	346 (BK/W)	Left Rear Door Ajar Switch	CLOSED - AJAR
MTR_CCW	782 (BR/W)	Transmission Transfer Counter CW Motor Output	OFF, OFF
MTR_CW	781 (O/LB)	Transmission Transfer Clockwise Motor Output	OFF, ON
NTRL_SW	463 (R/W)	Neutral Safety Switch Input	NOTNTRL, NTRL
OTD_SW	995 (JB-09)	Left Front Power Window One Touch Down Status	OFF, DOWN
P_DR_SW	345 (BK/PK)	Right External Access Ajar Switch Status	CLOSED - AJAR
PARK_SW	14 (JB-15)	Park Lamps Switch	OFF, ON
PARK_SW1	—	Parking Brake Status	N/A
PARK_SW2	—	Parking Brake Status	N/A
PBA_LMP	—	Park Brake Applied Warning Lamp	N/A
PBA_RLY	7 (LG/Y)	Park Brake Applied Relay (7103)	N/A
PBM_RLY	—	Park Brake Motor Relay	N/A
PBS_SOL	—	Park Brake Sense Solenoid	N/A
PLATE_A	771 (P/Y)	Transmission Case Contact Plate "A"	OPEN, CLOSED
PLATE_B	770 (W)	Transmission Case Contact Plate "B"	OPEN, CLOSED
PLATE_C	764 (BR/W)	Transmission Case Contact Plate "C"	OPEN, CLOSED
PLATE_D	763 (O/W)	Transmission Case Contact Plate "D"	OPEN, CLOSED
PLATEPW	976 (O)	Transmission Transfer Case Contact Plate Pull	OFF, ON
PRK_BRK	—	Park Brake Switch	OFF, ON
PRKBRKA	—	Park Brake Status	N/A
PRKFRLY	—	Park Lamp Flash Relay	OFF, ON
RRDR_SW	346 (BK/W)	Right Rear Door Ajar Switch	CLOSED-AJAR
SBLTLMP	450 (JIP-13)	Seat Belt Lamp Circuit	OFF, ON
SPEEDWP	N/A	Speed Dependent Wiper Function	ACTIVE, not ACT
VBATGEM	N/A	Battery Voltage	0.0 VDC-25.5 VDC
VSS_GEM	679 (JB-18)	Vehicle Speed Input	0-255 KPH

WASH_SW	680 (LB/O)	Washer Pump Switch	OFF, ON
WASHRLY	686 (T/R)	Washer Pump Relay Circuit	OFF, ON
WPHISP	647 (GY/LB)	Windshield Wiper Hi/Lo Speed Relay	OFF, ON
WPMODE	684 (PK/Y), 680 (LB/O)	Windshield Wiper Control Mode Select	WASH, OPEN, OFF, INTVL 1-7, LOW, HIGH
WPPRKS	671 (LB)	Windshield Wiper Park Sense	PARKED, not PRK
WPRUN	646 (Y/W)	Wiper Motor Run Relay Driver State	OFF, ON
2SPD_SW	—	Two Speed Rear Axle Switch	—
2WDSOL	145 (GY/BK)	2WD Hub Lock Solenoid Output Status	OFF, ON
4WDSGEM	465 (W/LB)	4WD Input Switch Status	2WD, 4WD HIGH, 4WD LOW, OPEN, SHORT TO GND
4WD_SW	—	4WD Input Switch	OPEN, CLOSED
4WDHIGH	210 (LB)	4WD High Output State	OFF, ON
4WDLOW	975 (BR/Y)	4WD Low Output State	OFF, ON
4WDSOL	605 (R)	4WD Hub Lock Solenoid Output Status	OFF, ON

GEM Active Commands Index		
Active Command	Display	Action
Enter Sleep Mode	—	ON, OFF
Clear Recall Last Remote Receive Data Byte and/or TIC PID (002E)	—	—
Program TIC Code Pointer (0036)	Transmitter Identification Code (TIC) 1	TIC 0
	Transmitter Identification Code (TIC) 2	TIC 1
	Transmitter Identification Code (TIC) 3	TIC 2
	Transmitter Identification Code (TIC) 4	TIC 3
Module Mode Command (0151)	Enter ECU Configuration Mode	—

	Exit ECU Configuration Mode	
One-Touch and Accessory Delay Command (0004)	One Touch Down Motor Relay Accessory Delay Relay	ON/ OFF ON/OFF
Front Windshield Wiper Control Command (0006)	Washer Pump Relay Control Wiper Run Relay Control Speed Relay Control	ON/ OFF ON/OFF ON/OFF
Warning Lamps and Chime Command (0008)	Chime Control Seat Belt Warning Lamp Door Ajar Warning Lamp	ON/ OFF ON/OFF ON/OFF
Battery Saver and Courtesy Entry Command (000C)	Illuminated Entry Relay Control	ON/ OFF
Four Wheel Drive Transfer Case and Indicator Control Command (000D)	Transfer Case Hublock Solenoid Low Transfer Case Hublock Solenoid Low	ON/ OFF ON/OFF
Door Lock/Unlock Control (0013)	Driver Door Unlock Relay All Doors Unlock Relay All Doors Lock Relay	ON/ OFF ON/OFF ON/OFF
Turn Signal and Marker Lamp Control (0015)	Parking Lamp Flash Relay	ON/ OFF
Horn Control Command (0017)	Horn Output	ON/ OFF
4WD Transfer Case Control (0030)	4WD Low Indicator Lamp 4WD High Indicator Lamp Clockwise Relay Control Counterclockwise Relay Control	ON/ OFF ON/OFF ON/OFF ON/OFF
Brake System Control Command (004C)	Auxiliary Brake Enabled Warning Lamp Auxiliary Brake Motor Relay Parking Brake Motor Relay Parking Brake Applied Solenoid	ON/ OFF ON/OFF ON/OFF ON/OFF
Indicator Lamp Control Command (0055)	Park Lamp Indicator Brake Lamp	ON/ OFF ON/OFF

Vehicle Option Content Control (0066)	Over Speed Warning Chime Vehicle Speed Dependent Wiper	ON/ OFF ON/OFF
Personality Configuration (0150)	Personality 1 Personality 2 Personality 3 Personality 4	DON'T PROGRAM, PROGRAM DON'T PROGRAM, PROGRAM DON'T PROGRAM, PROGRAM DON'T PROGRAM, PROGRAM

Symptom Chart

SYMPTOM CHART		
Condition	Possible Sources	Action
<ul style="list-style-type: none"> No Communication with the Generic Electronic Module 	<ul style="list-style-type: none"> Fuse(s). Circuit(s). Generic Electronic Module (GEM). 	<ul style="list-style-type: none"> GO to Pinpoint Test A.
<ul style="list-style-type: none"> All Power Windows Are Inoperative 	<ul style="list-style-type: none"> Fuse(s). Circuit(s). Accessory delay relay. Junction box fuse/relay panel. LF window regulator control switch. Generic Electronic Module (GEM). 	<ul style="list-style-type: none"> GO to Pinpoint Test B.
<ul style="list-style-type: none"> LF Power Window Is Inoperative 	<ul style="list-style-type: none"> Circuit(s). One touch down relay. Junction box fuse/relay panel. LF window regulator control switch. LF window motor. Generic Electronic Module (GEM). 	<ul style="list-style-type: none"> GO to Pinpoint Test C.

<ul style="list-style-type: none"> RF Power Window Is Inoperative 	<ul style="list-style-type: none"> Circuit(s). LF window regulator control switch. RF window regulator control switch. RF window motor. 	<ul style="list-style-type: none"> GO to Pinpoint Test D.
<ul style="list-style-type: none"> LR Power Window Is Inoperative 	<ul style="list-style-type: none"> Circuit(s). LF window regulator control switch. LR window regulator control switch. LR window motor. 	<ul style="list-style-type: none"> GO to Pinpoint Test E.
<ul style="list-style-type: none"> RR Power Window Is Inoperative 	<ul style="list-style-type: none"> Circuit(s). LF window regulator control switch. RR window regulator control switch. RR window motor. 	<ul style="list-style-type: none"> GO to Pinpoint Test F.
<ul style="list-style-type: none"> The One Touch Down Feature Is Inoperative 	<ul style="list-style-type: none"> Circuit(s). One touch down relay. Junction box fuse/relay panel. LF window regulator control switch. Generic Electronic Module (GEM). 	<ul style="list-style-type: none"> GO to Pinpoint Test G.
2. The Delayed Accessory Does Not Turn Off	3. Circuit(s). 4. Accessory delay relay. 5. Junction box fuse/relay panel. 6. Generic Electronic Module (GEM).	4. GO to Pinpoint Test H.

Pinpoint Tests



CAUTION: Disconnect the battery before removing and installing the GEM or it's connectors. Failure to do so will result in the GEM storing many erroneous diagnostic trouble codes (DTCs) and exhibiting erratic operation after installation.



CAUTION: Be careful when probing the junction box fuse/relay panel, power distribution box or any connectors. Damage will result to the connector receptacle if the probe or terminal being used is too large.


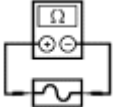


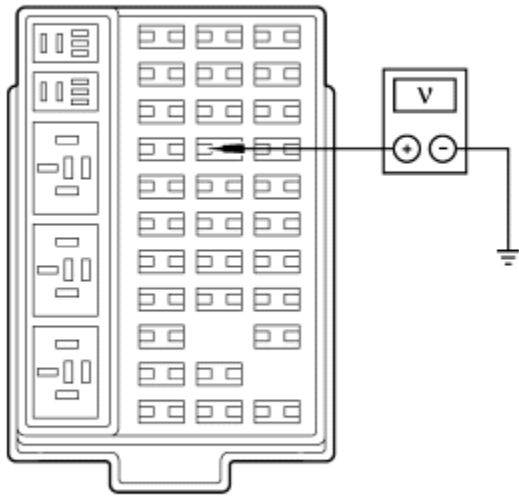
CAUTION: Electronic modules are sensitive to static electrical charges. If exposed to these charges, damage can result.

NOTE: If continuous DTCs are recorded and the symptom is not present when performing the pinpoint tests, an intermittent concern may be the cause. Always check for loose connections and corroded terminals.

NOTE: Complete the entire pinpoint test related to the symptom before replacing the GEM.

PINPOINT TEST A: NO COMMUNICATION WITH THE GENERIC ELECTRONIC MODULE

CONDITIONS	DETAILS/RESULTS/ACTIONS
A1 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FUSE 15 (5 A)	
1. 	
2.  Junction Box Fuse/Relay Panel Fuse 15 (5 A)	2 Check the junction box fuse/relay panel Fuse 15 (5 A).
	<p>5. Is the fuse OK?</p> <p>→ Yes GO to A2.</p> <p>→ No GO to A3.</p>
A2 CHECK FOR VOLTAGE AT THE JUNCTION BOX FUSE/RELAY PANEL	
1	1 Measure the voltage between the junction box fuse/relay panel voltage feed terminal for Fuse 15 and ground.



DN0830-A

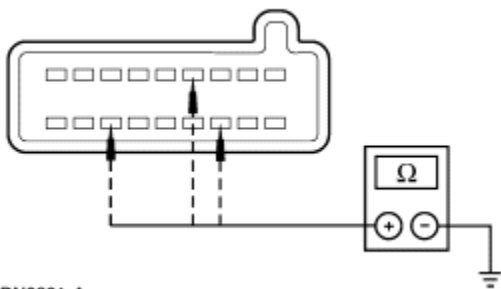
6. Is the voltage greater than 10 volts?

→ **Yes**
GO to A4.

→ **No**
GO to A5.

A3 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR A SHORT TO GROUND

1


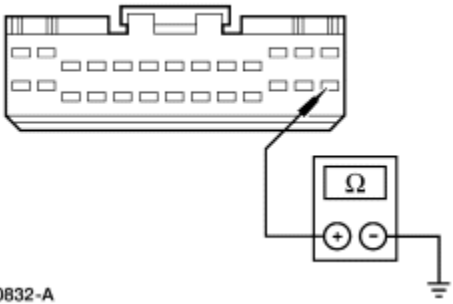



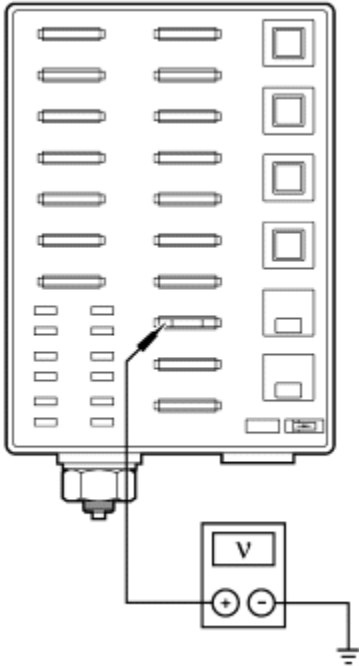
DN0831-A

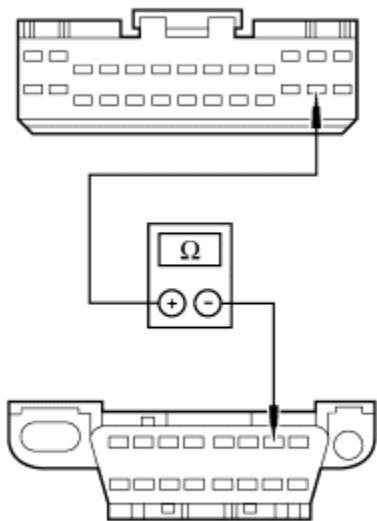
1 Remove the GEM from the junction box fuse/relay panel.

2 Remove the horn relay from the junction box fuse/relay panel.

3 Measure the resistance between Pin C241-4, Pin C241-12 and Pin C241-16 and ground.

	<p>2. Are the resistance readings greater than 10,000 ohms?</p> <p>→ Yes GO to A16.</p> <p>→ No REPLACE the junction box fuse/relay panel. TEST the system for normal operation.</p>
A4 CHECK CIRCUIT 676 (PK/O) FOR AN OPEN	
<p>1</p>  <p>GEM C239</p>	
<p>2.</p>  <p>DN0832-A</p>	<p>2 Measure the resistance between Pin C239-26, Circuit 676 (PK/O) and ground.</p>
	<p>3. Is the resistance less than 5 ohms?</p> <p>→ Yes GO to A7.</p> <p>→ No REPAIR Circuit 676 (PK/O). TEST the system for normal operation.</p>
A5 CHECK THE POWER DISTRIBUTION BOX FUSE 22 (50 A)	
<p>1.</p>  <p>Power Distribution Box Fuse 22 (50 A)</p>	<p>1 Check the power distribution box Fuse 22 (50 A).</p>

	<p>2. Is the fuse OK?</p> <p>→ Yes GO to A6.</p> <p>→ No REPAIR short to ground on Circuit 1052 (T/BK). TEST the system for normal operation.</p>
A6 CHECK CIRCUIT 1052 (T/BK) FOR AN OPEN	
<p>1</p>  <p>DN0833-A</p>	<p>1 Measure the voltage between the power distribution box voltage feed terminal for Fuse 22 and ground.</p>
	<p>2. Is the voltage greater than 10 volts?</p> <p>→ Yes REPAIR Circuit 1052 (T/BK). TEST the system for normal operation.</p> <p>→ No REPAIR or REPLACE the power distribution box as necessary. TEST the system for normal operation.</p>
A7 CHECK CIRCUIT 70 (LB/W) FOR AN OPEN	
<p>1</p>	<p>1 Measure the resistance of Circuit 70 (LB/W) between Pin C239-25 and Pin C227-7.</p>



DN0834-A

3. Is the resistance less than 5 ohms?

→ **Yes**

GO to A8.

→ **No**

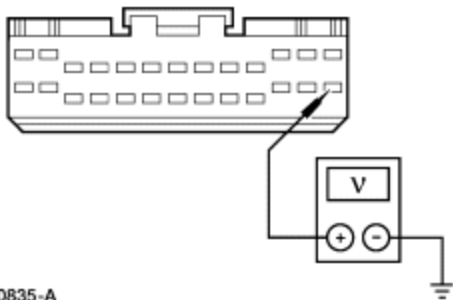
REPAIR Circuit 70 (LB/W). TEST the system for normal operation.

A8 CHECK CIRCUIT 676 (PK/O) FOR A SHORT TO POWER

1




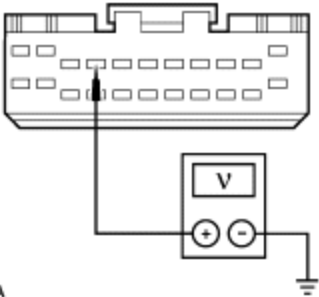



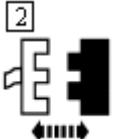

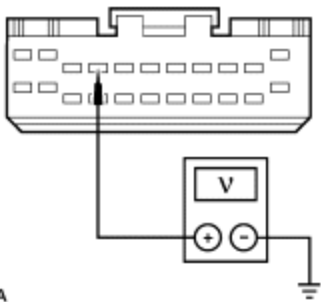
2

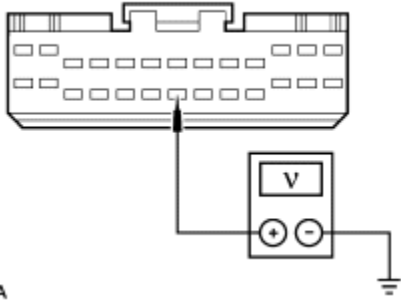


DN0835-A

2 Measure the voltage between Pin C239-26, Circuit 676 (PK/O) and ground.

	<p>4. Is the voltage greater than 10 volts?</p> <p>→ Yes REPAIR Circuit 676 (PK/O). TEST the system for normal operation.</p> <p>→ No If the vehicle is equipped with electric shift transfer case, GO to A9 .</p> <p>If the vehicle is not equipped with electric shift transfer case, GO to A11 .</p>
A9 CHECK CIRCUIT 465 (W/LB) FOR A SHORT TO POWER WITH SHIFT SWITCH CONNECTED	
<p>1</p> 	
<p>2</p>  <p>GEM C247</p>	
<p>3</p> 	
<p>4</p>  <p>DN0836-A</p>	<p>4 Measure the voltage between Pin C247-4, Circuit 465 (W/LB) and ground.</p>
	<p>2. Is the voltage greater than 10 volts?</p> <p>→ Yes GO to A10.</p>

	<p>→ No GO to A11.</p>
A10 CHECK CIRCUIT 465 (W/LB) FOR A SHORT TO POWER WITH SHIFT SWITCH DISCONNECTED	
<p>1</p> 	
<p>2</p>  <p>Shift Switch C246</p>	
<p>3</p> 	
<p>4</p>  <p>DN0836-A</p>	<p>4 Measure the voltage between Pin C247-4, Circuit 465 (W/LB) and ground.</p>
	<p>2. Is the voltage greater than 10 volts?</p> <p>→ Yes REPAIR Circuit 465 (W/LB). REPLACE the GEM. TEST the system for normal operation.</p> <p>→ No REPLACE the shift switch. REPLACE the GEM. TEST the system for normal operation.</p>
A11 CHECK CIRCUIT 682 (DB) FOR A SHORT TO POWER WITH MULTIFUNCTION SWITCH CONNECTED	
<p>1</p>	<p>1 Measure the voltage between Pin C239-20, Circuit 682 (DB) and ground.</p>



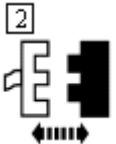
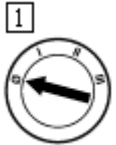
DN0837-A

3. Is the voltage greater than 10 volts?

→ **Yes**
GO to A12.

→ **No**
GO to A13.

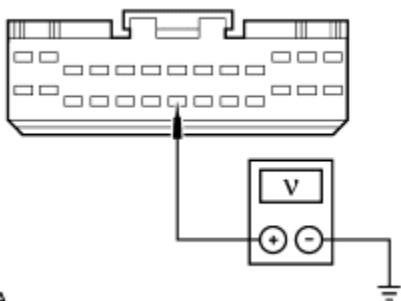
A12 CHECK CIRCUIT 682 (DB) FOR A SHORT TO POWER WITH MULTIFUNCTION SWITCH DISCONNECTED



Multifunction Switch C230

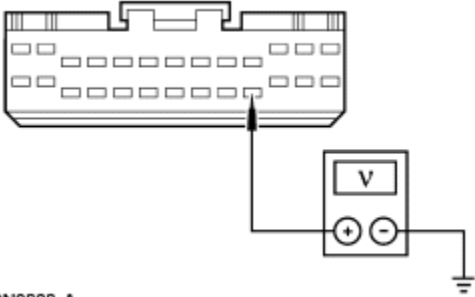





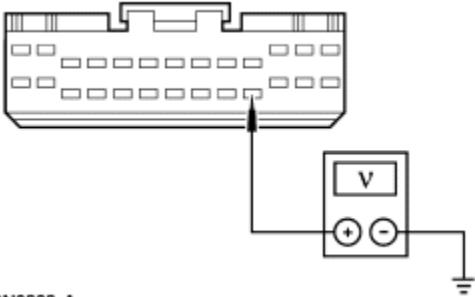



4

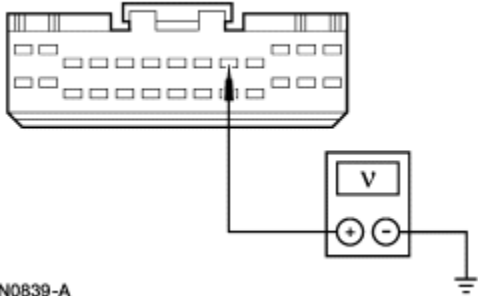





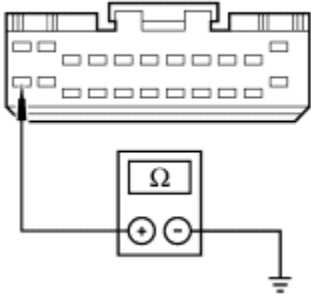

DN0837-A

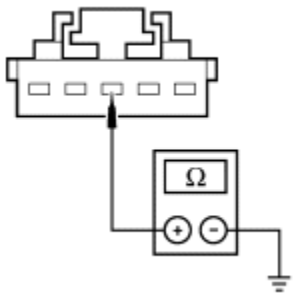
4 Measure the voltage between Pin C239-20, Circuit 682 (DB) and ground.

	<p>4. Is the voltage greater than 10 volts?</p> <p>→ Yes REPAIR Circuit 682 (DB). REPLACE the GEM. TEST the system for normal operation.</p> <p>→ No REPLACE the multifunction switch. REPLACE the GEM. TEST the system for normal operation.</p>
A13 CHECK CIRCUIT 684 (PK/Y) FOR A SHORT TO POWER WITH MULTIFUNCTION SWITCH CONNECTED	
<p>1</p>  <p>DN0838-A</p>	<p>1 Measure the voltage between Pin C239-23, Circuit 684 (PK/Y) and ground.</p>
	<p>5. Is the voltage greater than 10 volts?</p> <p>→ Yes GO to A14.</p> <p>→ No If the vehicle is not equipped with ABS, GO to A15 .</p> <p>If the vehicle is equipped with ABS, REPLACE the GEM. TEST the system for normal operation.</p>
A14 CHECK CIRCUIT 684 (PK/Y) FOR A SHORT TO POWER WITH MULTIFUNCTION SWITCH DISCONNECTED	
<p>1</p> 	
<p>2.</p> 	




Multifunction Switch C230	
<div data-bbox="168 205 201 237" data-label="Text">3</div> 	
<div data-bbox="168 369 201 401" data-label="Text">4</div>  <div data-bbox="175 720 266 741" data-label="Text">DN0838-A</div>	<p>4. Measure the voltage between Pin C239-23, Circuit 684 (PK/Y) and ground.</p>
	<p>6. Is the voltage greater than 10 volts?</p> <p>→ Yes REPAIR Circuit 684 (PK/Y). REPLACE the GEM. TEST the system for normal operation.</p> <p>→ No REPLACE the multifunction switch. REPLACE the GEM. TEST the system for normal operation.</p>
A15 CHECK CIRCUIT 519 (PK/Y) FOR A SHORT TO POWER	
<div data-bbox="168 1241 201 1272" data-label="Text">1</div> 	
<div data-bbox="168 1404 201 1436" data-label="Text">2</div>  <div data-bbox="162 1551 573 1583" data-label="Text">Differential Speed Sensor C404</div>	
<div data-bbox="168 1604 201 1635" data-label="Text">3</div> 	
<div data-bbox="168 1768 201 1799" data-label="Text">4</div>	<div data-bbox="729 1768 761 1799" data-label="Text">4</div> <p>Measure the voltage between Pin C239-9, Circuit 519 (LG/BK) and ground.</p>



 <p>DN0839-A</p>	
	<p>7. Is the voltage greater than 10 volts?</p> <p>→ Yes REPAIR Circuit 519 (LG/BK). REPLACE the GEM. TEST the system for normal operation.</p> <p>→ No REPLACE the GEM. TEST the system for normal operation.</p>
A16 CHECK THE HORN RELAY	
<p>1.</p> 	
	<p>2 Remove the horn relay from the junction box fuse/relay panel.</p>
	<p>3 Perform the relay component test. Refer to the Electrical and Vacuum Troubleshooting Manual.</p>
	<p>8. Is the horn relay OK?</p> <p>→ Yes GO to A17.</p> <p>→ No REPLACE the horn relay. TEST the system for normal operation.</p>
A17 CHECK CIRCUIT 810 (R/LG) FOR A SHORT TO GROUND	
	<p>1 Remove the GEM from the junction box fuse/relay panel.</p>
<p>2</p>	

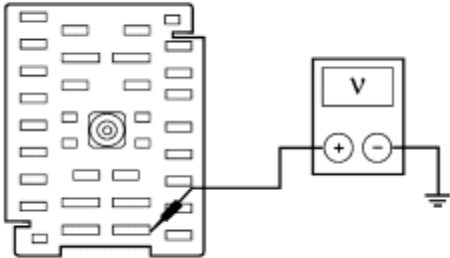

 <p>GEM C247</p>	
<p>3</p>  <p>Stop Lamp Switch C279</p>	
<p>4</p>  <p>DN0840-A</p>	<p>4 Measure the resistance between Pin C247-12, Circuit 810 (R/LG) and ground.</p>
	<p>9. Is the resistance greater than 10,000 ohms?</p> <p>→ Yes GO to A18.</p> <p>→ No REPAIR Circuit 810 (R/LG). TEST the system for normal operation.</p>
<p>A18 CHECK CIRCUIT 22 (LB/BK) FOR A SHORT TO GROUND</p>	
<p>1</p>  <p>Junction Box Fuse/Relay Panel C243</p>	<p>1. Measure the resistance between Pin C279-3, Circuit 22 (LB/BK) and ground.</p>
<p>2</p>	

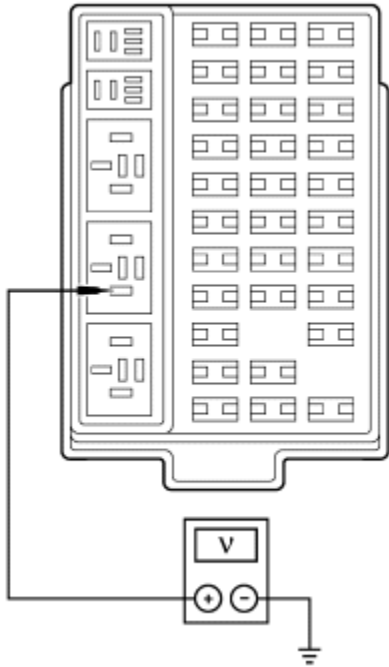
 <p>DN0841-A</p>	
	<p>10. Is the resistance greater than 10,000 ohms?</p> <p>→ Yes REPLACE the stop lamp switch. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 22 (LB/BK). TEST the system for normal operation.</p>

PINPOINT TEST B: ALL POWER WINDOWS ARE INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
B1 RETRIEVE THE DIAGNOSTIC TROUBLE CODES (DTCS)	
<p>1</p>  <p>NGS</p>	
<p>2</p>  <p>Retrieve/Clear Continuous DTCs</p>	
<p>3</p>  <p>On-Demand Self Test</p>	

	<p>11. Are any DTCs recorded?</p> <p>→ Yes If DTC B1302, GO to B9 .</p> <p>If DTC B1304, GO to B13 .</p> <p>If DTC B1398, GO to B2 .</p> <p>→ No GO to B2.</p>
B2 CHECK THE VOLTAGE TO THE ACCESSORY DELAY RELAY SWITCH INPUT	
<p>1</p> 	
	<p>2 Remove the accessory delay relay from the junction box fuse/relay panel.</p>
	<p>3 Measure the voltage of Circuit 170 (R/LB) between the accessory delay relay connector Pin 30, and ground.</p>
	<p>2. Is the voltage greater than 10 volts?</p> <p>→ Yes GO to B4.</p> <p>→ No GO to B3.</p>
B3 CHECK THE VOLTAGE TO THE JUNCTION BOX FUSE/RELAY PANEL	
<p>1</p>  <p>Junction Box Fuse/Relay Panel C242</p>	
<p>2</p>	<p>2. Measure the voltage between Pin C242-25, Circuit 170 (R/LB) and ground.</p>

 <p>GN0804-A</p>	
	<p>3. Is the voltage greater than 10 volts?</p> <p>→ Yes REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 170 (R/LB). CLEAR the DTCs. TEST the system for normal operation.</p>
B4 CHECK THE ONE TOUCH DOWN RELAY SWITCH INPUT	
	<p>1 Install the accessory delay relay.</p>
	<p>2. Remove the one touch down relay from the junction box fuse/relay panel.</p>
<p>3</p> 	
<p>4</p>	<p>4 Measure the voltage of Circuit 54 (LB/Y) between the one touch down relay connector Pin 86 and ground.</p>



DN0842-A

4. Is the voltage greater than 10 volts?

→ **Yes**
GO to B5.

→ **No**
GO to B8.

B5 CHECK THE VOLTAGE TO THE LF WINDOW REGULATOR CONTROL SWITCH

1.



2



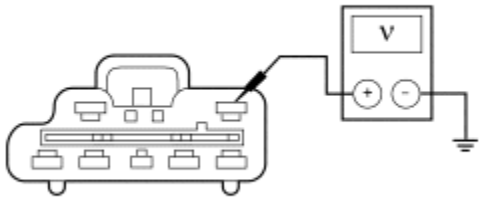
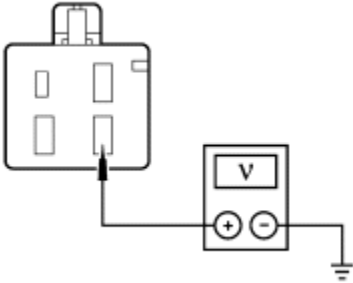



LF Window Regulator Control Switch
C510

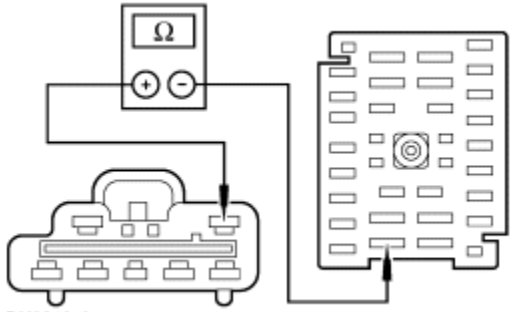
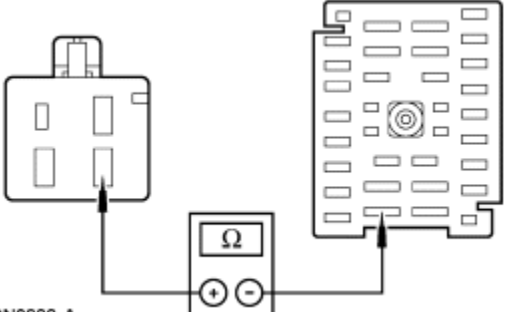

3

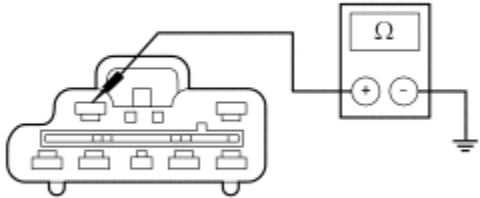

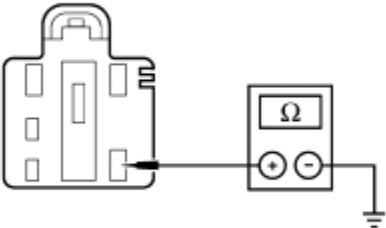



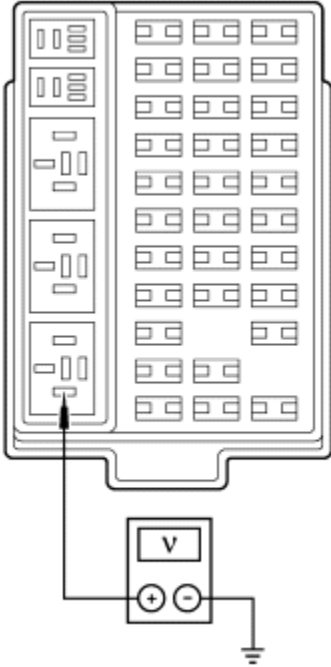
4

4 On Crew Cab models, measure the voltage

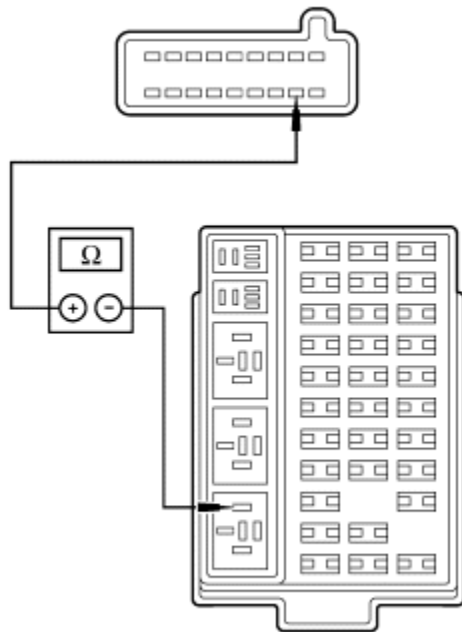
 <p>GN0805-A</p>	<p>between Pin C510-2, Circuit 400 (LB/BK) and ground.</p>
<p>5</p>  <p>DN0881-A</p>	<p>5 On Regular and SuperCab models, measure the voltage between Pin C510-4, Circuit 400 (LB/BK) and ground.</p>
	<p>5. Is the voltage greater than 10 volts?</p> <p>→ Yes GO to B7.</p> <p>→ No GO to B6.</p>
<p>B6 CHECK CIRCUIT 400 (LB/BK) FOR AN OPEN</p>	
<p>1</p> 	
<p>2</p>  <p>Junction Box Fuse/Relay Panel C242</p>	
<p>3</p> 	
<p>4</p>	<p>4. On Crew Cab models, measure the resistance of Circuit 400 (LB/BK) between Pin C510-2 and Pin</p>

 <p>DN0843-A</p>	<p>C242-10.</p>
<p>5</p>  <p>DN0882-A</p>	<p>5 On Regular and SuperCab models, measure the resistance of Circuit 400 (LB/BK) between Pin C510-4 and Pin C242-10.</p>
	<p>6. Is the resistance less than 5 ohms?</p> <p>→ Yes REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 400 (LB/BK). CLEAR the DTCs. TEST the system for normal operation.</p>
<p>B7 CHECK THE GROUND TO THE LF WINDOW REGULATOR CONTROL SWITCH</p>	
<p>1</p> 	
<p>2</p>	<p>2 On Crew Cab Models, measure the resistance between Pin C510-1, Circuit 57 (BK) and ground.</p>

 <p>GN0807-A</p>	
<p>3</p>  <p>LF Window Regulator Control Switch C511</p>	
<p>4</p>  <p>DN0883-A</p>	<p>4. On Regular and SuperCab models, measure the resistance between Pin C511-5, Circuit 57 (BK) and ground.</p>
	<p>7. Is the resistance less than 10 ohms?</p> <p>→ Yes REPLACE the LF window regulator control switch. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 57 (BK). CLEAR the DTCs. TEST the system for normal operation.</p>
<p>B8 CHECK THE ACCESSORY DELAY RELAY</p>	
	<p>1 Remove the accessory delay relay from the junction box fuse/relay panel.</p>
	<p>2 Perform the relay component test. Refer to the Electrical and Vacuum Troubleshooting Manual.</p>

	<p>8. Is the accessory delay relay OK?</p> <p>→ Yes REPLACE the LF window regulator control switch. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPLACE the accessory delay relay. CLEAR the DTCs. TEST the system for normal operation.</p>
<p>B9 CHECK THE VOLTAGE TO THE ACCESSORY DELAY RELAY COIL INPUT</p>	
<p>1</p> 	
	<p>2 Remove the accessory delay relay from the junction box fuse/relay panel.</p>
<p>3</p>  <p>DN0844-A</p>	<p>3 Measure the voltage of Circuit 54 (LG/Y) between the accessory delay relay connector Pin 86 and ground.</p>
	<p>9. Is the voltage greater than 10 volts?</p> <p>→ Yes GO to B11.</p>

	<p>→ No GO to B10.</p>
B10 CHECK THE INTERIOR LAMPS OPERATION	
	<p>1 Open the driver door.</p>
	<p>10. Do the interior lamps operate?</p> <p>→ Yes REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REFER TO Section 417-02.</p>
B11 TEST THE ACCESSORY DELAY RELAY	
	<p>1 Remove the accessory delay relay from the junction box fuse/relay panel.</p>
	<p>2 Perform the relay component test. Refer to the Electrical and Vacuum Troubleshooting Manual.</p>
	<p>11. Is the accessory delay relay OK?</p> <p>→ Yes GO to B12.</p> <p>→ No REPLACE the accessory delay relay. CLEAR the DTCs. TEST the system for normal operation.</p>
B12 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR AN OPEN	
	<p>1 Remove the GEM from the junction box fuse/relay panel.</p>
2.	<p>2 Measure the resistance between Pin C241-11 and the accessory delay relay connector Pin 85.</p>



DN0845-A

12. Is the resistance less than 5 ohms?

→ **Yes**

REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.

→ **No**

REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.

B13 PERFORM THE ACCESSORY DELAY RELAY COMPONENT TEST

1




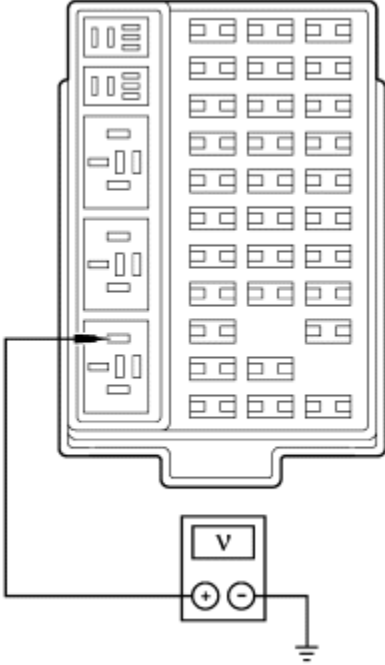
1 Remove the accessory delay relay from the junction box fuse/relay panel.

2 Perform the relay component test. Refer to the Electrical and Vacuum Troubleshooting Manual.





13. Is the accessory delay relay OK?

→ **Yes**

GO to B14.

	<p>→ No REPLACE the accessory delay relay. CLEAR the DTCs. TEST the system for normal operation.</p>
B14 CHECK THE ACCESSORY DELAY RELAY COIL OUTPUT FOR SHORT TO POWER	
	<p>1 Remove the GEM from the junction box fuse/relay panel.</p>
<p>2</p> 	
<p>3</p>  <p>DN0846-A</p>	<p>3 Measure the voltage between the accessory delay relay connector Pin 85 and ground.</p>
	<p>14. Is the voltage greater than 10 volts?</p> <p>→ Yes REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.</p>

PINPOINT TEST C: LF POWER WINDOW IS INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
C1 RETRIEVE THE DIAGNOSTIC TROUBLE CODES (DTCs)	
<div>1</div>  NGS	
<div>2</div>  Retrieve/Clear Continuous DTCs	
<div>3</div>  On-Demand Self Test	
	<p>2. Are any DTCs recorded?</p> <p>→ Yes If DTC B1398, GO to C2 . If DTC B1400, GO to C6 . If DTC B1405, GO to C22 . If DTC B2357, GO to C8 .</p> <p>→ No GO to C8.</p>
C2 CHECK THE ONE TOUCH DOWN RELAY	
<div>1</div> 	
	<div>2</div> Remove the one touch down relay from the junction box fuse/relay panel.
	<div>3</div> Perform the relay component test. Refer to the Electrical and Vacuum Troubleshooting Manual.

2. Is the one touch down relay OK?

→ **Yes**
GO to C3.

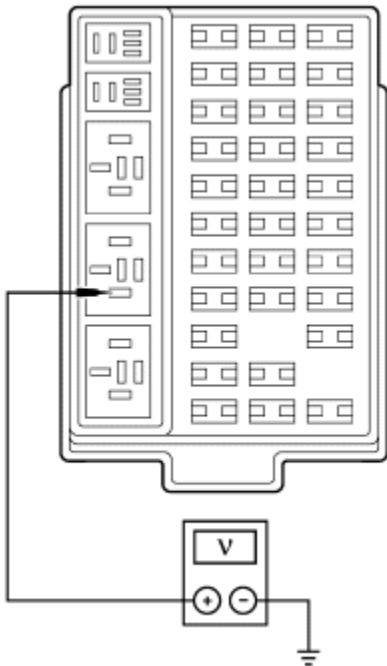
→ **No**
REPLACE the one touch down relay. CLEAR the DTCs. TEST the system for normal operation.

C3 CHECK THE VOLTAGE TO THE ONE TOUCH DOWN RELAY COIL INPUT

1



2




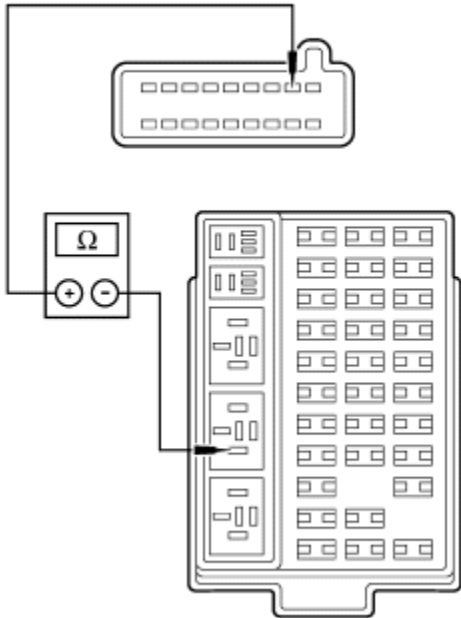
DN0842-A

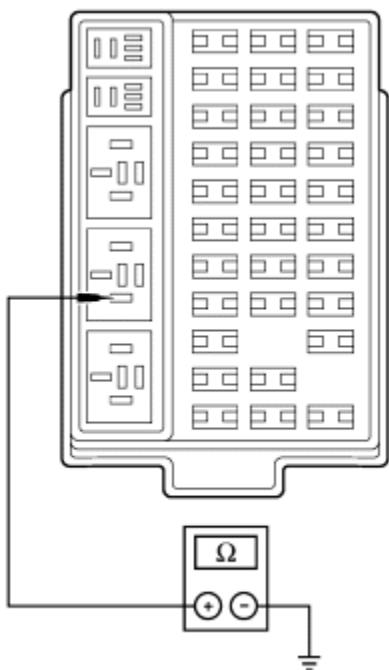
2 Measure the voltage between the one touch down relay connector Pin 86 and ground.

3. Is the voltage greater than 10 volts?

→ **Yes**
GO to C4.

→ **No**
REPLACE the junction box fuse/relay panel.
CLEAR the DTCs. TEST the system for normal

	operation.
C4 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR AN OPEN CIRCUIT	
<div data-bbox="168 254 201 289" data-label="Text">1</div> 	
	<div data-bbox="721 415 753 451" data-label="Text">2</div> Remove the GEM from the junction box fuse/relay panel.
<div data-bbox="168 510 201 546" data-label="Text">3</div>  <p>DN0847-A</p>	<div data-bbox="721 506 753 541" data-label="Text">3</div> Measure the resistance between Pin C241-2 and the one touch down relay connector Pin 86.
	<p>3. Is the resistance less than 5 ohms?</p> <p>→ Yes GO to C5.</p> <p>→ No REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p>
C5 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR A SHORT TO GROUND	
<div data-bbox="168 1770 201 1806" data-label="Text">1</div>	<div data-bbox="721 1766 753 1801" data-label="Text">1</div> Measure the resistance between one touch down relay connector Pin 86 and ground.



DN0846-A

4. Is the resistance greater than 10,000 ohms?

→ **Yes**

REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.

→ **No**

REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.

C6 TEST THE ONE TOUCH DOWN RELAY


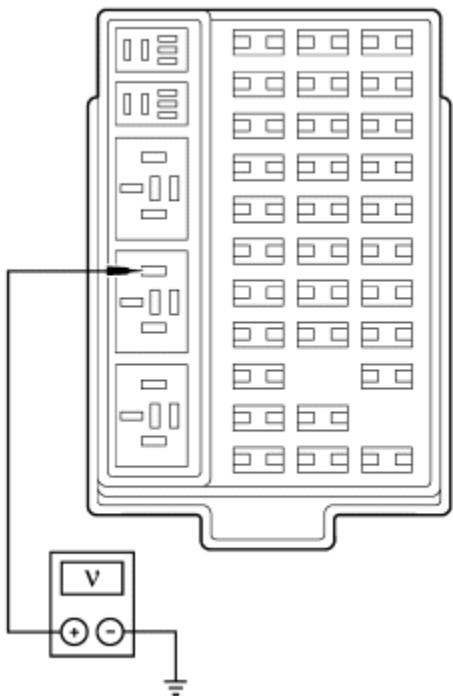
1







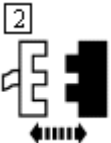


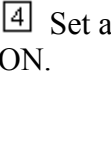

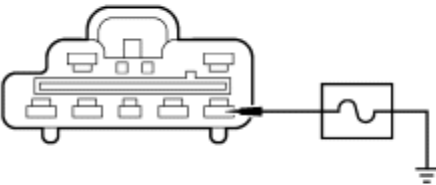
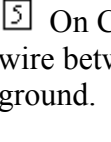

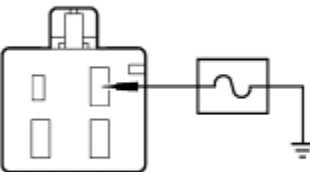
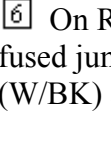

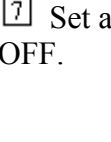


2 Remove the one touch down relay from the junction box fuse/relay panel.

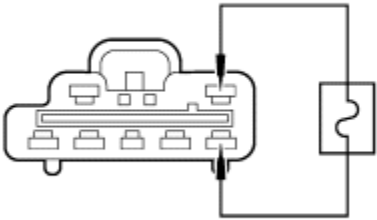
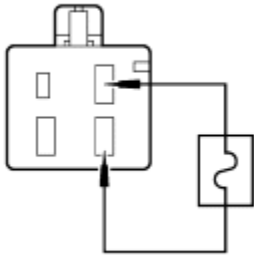


3 Perform the relay component test. Refer to the Electrical and Vacuum Troubleshooting Manual.

5. Is the one touch down relay OK?

	<p>→ Yes GO to C7.</p> <p>→ No REPLACE the one touch down relay. CLEAR the DTCs. TEST the system for normal operation.</p>
C7 CHECK THE ONE TOUCH DOWN RELAY COIL CIRCUIT FOR SHORT TO POWER	
	1 Remove the GEM from the junction box fuse/relay panel.
2 	
3  DN0849-A	3 Measure the voltage between the one touch down relay connector Pin 85 and ground.
	<p>6. Is the voltage greater than 10 volts?</p> <p>→ Yes REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPLACE the GEM. CLEAR the DTCs. TEST the</p>

	system for normal operation.
C8 CHECK THE LF WINDOW REGULATOR CONTROL SWITCH DOWN INPUT	
<div>1</div> 	
<div>2</div>  <p>PID/Data Monitor and Record</p>	<div>2</div> Monitor PID D_DN_SW while pressing the down position on the LF window regulator control switch.
	<p>7. Does the PID value agree with the switch position?</p> <p>→ Yes GO to C9.</p> <p>→ No GO to C14.</p>
C9 PERFORM THE ONE TOUCH DOWN RELAY COMPONENT TEST	
<div>1</div> 	
	<div>2</div> Remove the one touch down relay from the junction box fuse/relay panel.
	<div>3</div> Perform the relay component test. Refer to the Electrical and Vacuum Troubleshooting Manual.
	<p>8. Is the one touch down relay OK?</p> <p>→ Yes GO to C10.</p> <p>→ No REPLACE the one touch down relay. CLEAR the DTCs. TEST the system for normal operation.</p>
C10 CHECK THE ONE TOUCH DOWN RELAY SWITCH INPUT	
<div>1</div>	

	
<div data-bbox="170 281 279 422">  </div> <p>LF Window Regulator Control Switch C510</p>	
<div data-bbox="170 518 279 659">  </div>	
<div data-bbox="170 680 279 821">  </div> <p>Active Commands</p>	<div data-bbox="724 680 1399 751">  <p>Set active command ONE TOUCH DOWN to ON.</p> </div>
<div data-bbox="170 882 279 1022">  </div>  <p>DN0850-A</p>	<div data-bbox="724 882 1399 995">  <p>On Crew Cab models, connect a fused jumper wire between Pin C510-7, Circuit 992 (W/BK) and ground.</p> </div>
<div data-bbox="170 1281 279 1421">  </div>  <p>DN0884-A</p>	<div data-bbox="724 1281 1399 1394">  <p>On Regular and SuperCab models, connect a fused jumper wire between Pin C510-2, Circuit 992 (W/BK) and ground.</p> </div>
<div data-bbox="170 1680 279 1820">  </div> <p>Active Commands</p>	<div data-bbox="724 1680 1399 1751">  <p>Set active command ONE TOUCH DOWN to OFF.</p> </div>
<div data-bbox="170 1877 279 1906">  </div>	<div data-bbox="724 1877 1399 1915">  <p>On Crew Cab models, connect a fused jumper</p> </div>

 <p>DN0851-A</p>	<p>wire between Pin C510-7, Circuit 992 (W/BK) and Pin C510-2, Circuit 400 (LB/BK).</p>
<p>9</p>  <p>DN0885-A</p>	<p>9 On Regular and SuperCab models, connect a fused jumper wire between Pin C510-2, Circuit 992 (W/BK) and Pin C510-4, Circuit 400 (LB/BK).</p>
<p>10</p>  <p>LF Window Regulator Control Switch C510</p>	
	<p>9. Does the window move UP and DOWN?</p> <p>→ Yes REPLACE the LF window regulator control switch. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No GO to C11.</p>
<p>C11 CHECK THE LF WINDOW MOTOR DOWN CIRCUIT</p>	
<p>1</p> 	
<p>2</p>	



LF Window Motor C500

3



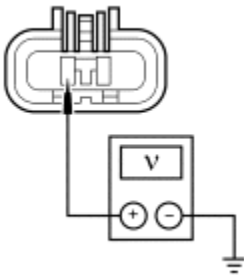
4



Active Commands

4 Set active command ONE TOUCH DOWN to ON.

5



DN0852-A

5 Measure the voltage of Circuit 996 (O/W) between C500 and ground.

10. Is the voltage greater than 10 volts?

→ **Yes**
GO to C12.

→ **No**
GO to C19.

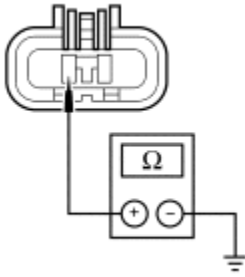
C12 CHECK THE LF WINDOW MOTOR UP CIRCUIT

1



2

2 Measure the resistance of Circuit 996 (O/W) between C500 and ground.



DN0853-A

11. Is the resistance less than 5 ohms?

→ **Yes**
GO to C13.

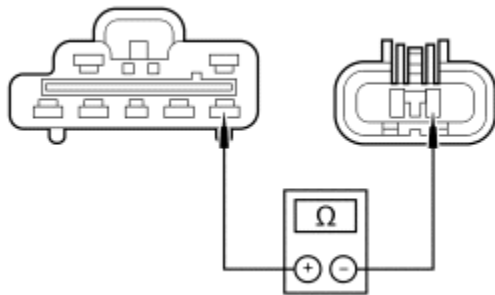
→ **No**
GO to C21.

C13 CHECK CIRCUIT 992 (W/BK) FOR AN OPEN



LF Window Regulator Control Switch
C510

2

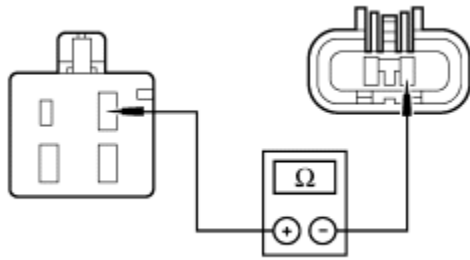


DN0854-A

2 On Crew Cab models, measure the resistance of Circuit 992 (W/BK) between Pin C510-7 and C500.

3

3 On Regulator and SuperCab models, measure the resistance of Circuit 992 (W/BK) between Pin C510-2 and C500.



DN0886-A

12. Is the resistance less than 5 ohms?

→ **Yes**

REPLACE the LF window motor. CLEAR the DTCs. TEST the system for normal operation.

→ **No**

REPAIR Circuit 992 (W/BK). CLEAR the DTCs. TEST the system for normal operation.

C14 CHECK THE LF WINDOW REGULATOR CONTROL SWITCH

1



2



LF Window Regulator Control Switch
C510

3



4

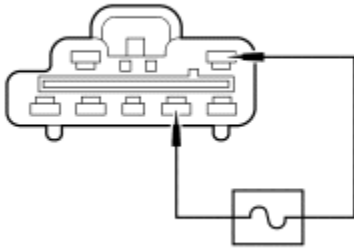


PID/Data Monitor and Record

4 Monitor PID D_DN_SW.

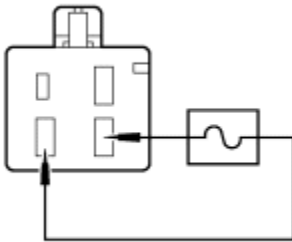
5

5 On Crew Cab models, connect a fused jumper wire between Pin C510-6, Circuit 991 (T/LB) and Pin C510-2, Circuit 400 (LB/BK).



DN0855-A

6



DN0887-A

6 On Regular and SuperCab models, connect a fused jumper wire between Pin C510-3, Circuit 991 (T/LB) and Pin C510-4, Circuit 400 (LB/BK).

13. Does the PID read DOWN when the jumper wire is connected and OFF when disconnected?

→ **Yes**

REPLACE the LF window regulator control switch. CLEAR the DTCs. TEST the system for normal operation.

→ **No**

If the fused jumper wire opens or there is no change in the PID value, GO to C15 .

C15 CHECK CIRCUIT 991 (T/LB) FOR AN OPEN

1



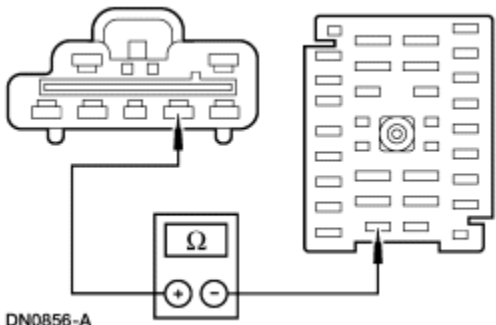
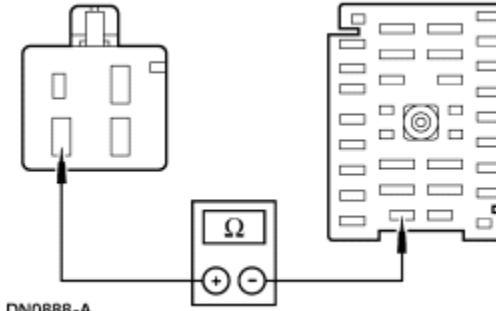
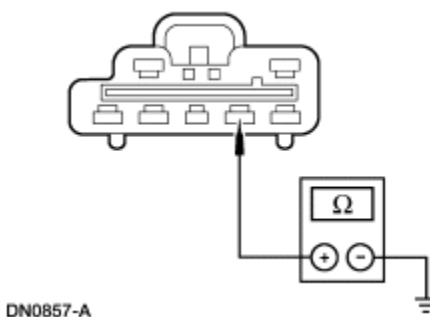
2

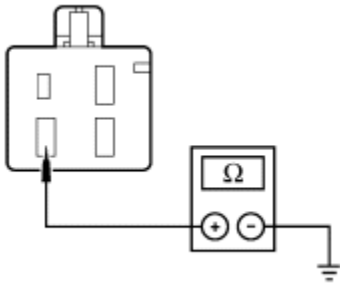


Junction Box Fuse/Relay Panel C243

3

3 On Crew Cab models, measure the resistance of

 <p>DN0856-A</p>	<p>Circuit 991 (T/LB) between Pin C510-6 and Pin C243-10.</p>
<p>4</p>  <p>DN0888-A</p>	<p>4 On Regular and SuperCab models, measure the resistance of Circuit 991 (T/LB) between Pin C510-3 and Pin C243-10.</p>
	<p>2. Is the resistance less than 5 ohms?</p> <p>→ Yes GO to C16.</p> <p>→ No REPAIR Circuit 991 (T/LB). CLEAR the DTCs. TEST the system for normal operation.</p>
<p>C16 CHECK CIRCUIT 991 (T/LB) FOR A SHORT TO GROUND</p>	
<p>1</p>  <p>DN0857-A</p>	<p>1 On Crew Cab models, measure the resistance between Pin C510-6, Circuit 991 (T/LB) and ground.</p>
<p>2</p>	<p>2 On Regular and SuperCab models, measure the resistance between Pin C510-3, Circuit 991 (T/LB) and ground.</p>



DN0889-A

2. Is the resistance greater than 10,000 ohms?

→ **Yes**

GO to C17.

→ **No**

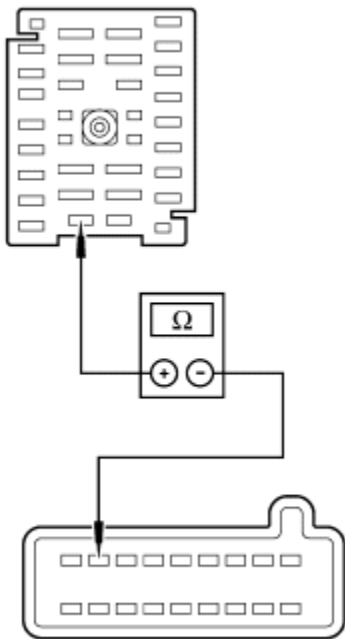
REPAIR Circuit 991 (T/LB). CLEAR the DTCs.
TEST the system for normal operation.

C17 CHECK JUNCTION BOX FUSE/RELAY PANEL FOR AN OPEN CIRCUIT

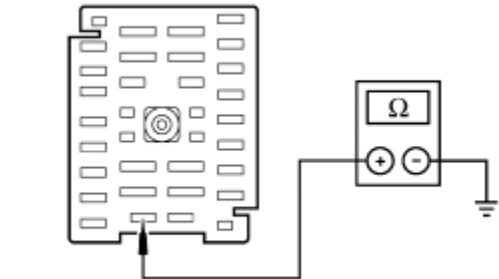

1 Remove the GEM for the junction box fuse/relay panel.

2

2 Measure the resistance between Pin C243-10, Circuit 991 (T/LB) and Pin C241-8.

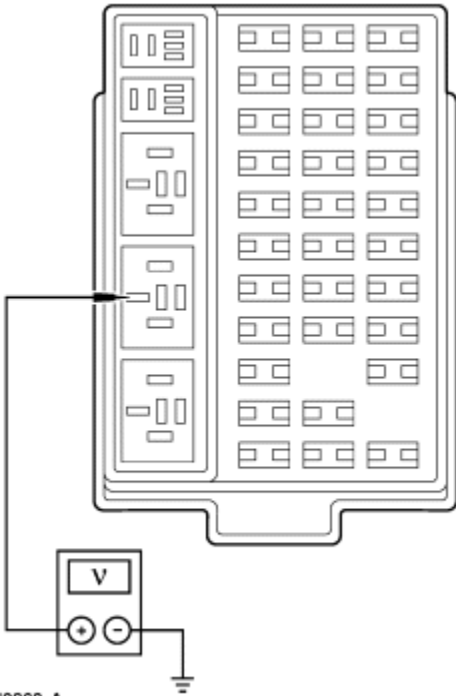


DN0858-A

	<p>3. Is the resistance less than 5 ohms?</p> <p>→ Yes GO to C18.</p> <p>→ No REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p>
C18 CHECK FOR A SHORT TO GROUND IN THE JUNCTION BOX FUSE/RELAY PANEL	
<p>1</p>  <p>DN0859-A</p>	<p>1 Measure the resistance between Pin C243-10, Circuit 991 (T/LB) and ground.</p>
<p>2</p>  <p>Junction Box Fuse/Relay Panel C243</p>	
	<p>4. Is the resistance greater than 10,000 ohms?</p> <p>→ Yes REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p>
C19 CHECK THE VOLTAGE TO THE ONE TOUCH DOWN RELAY COIL INPUT	
	<p>1 Remove the one touch down relay from the junction box fuse relay panel.</p>
<p>2</p>	



3



3 Measure the voltage between the one touch down relay connector Pin 30 and ground.

5. Is the voltage greater than 10 volts?

→ **Yes**
GO to C20.

→ **No**
REPLACE the junction box fuse/relay panel.
CLEAR the DTCs. TEST the system for normal operation.

C20 CHECK CIRCUIT 996 (T/LB) FOR AN OPEN

1



2



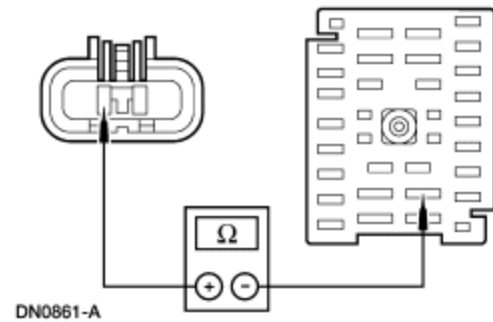
LF Window Motor C500

3



Junction Box Fuse/Relay Panel C242

4



4 Measure the resistance of Circuit 996 (O/W) between C500 and Pin C242-24.

6. Is the resistance less than 5 ohms?

→ **Yes**

REPLACE the junction box fuse/relay panel.
CLEAR the DTCs. TEST the system for normal operation.

→ **No**

REPAIR Circuit 996 (O/W). CLEAR the DTCs.
TEST the system for normal operation.

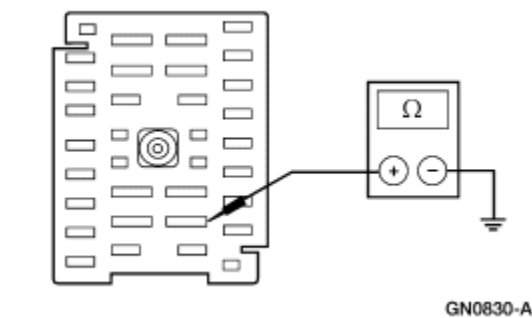
C21 CHECK CIRCUIT 57 (BK) FOR AN OPEN

1



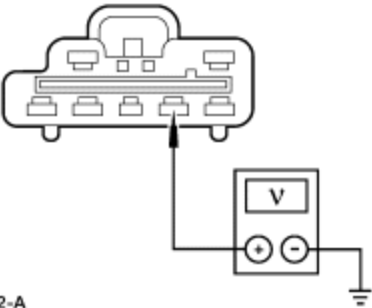
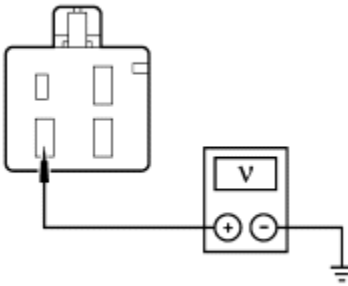


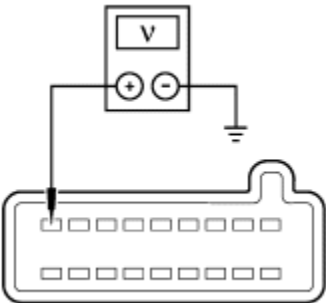

Junction Box Fuse/Relay Panel C243

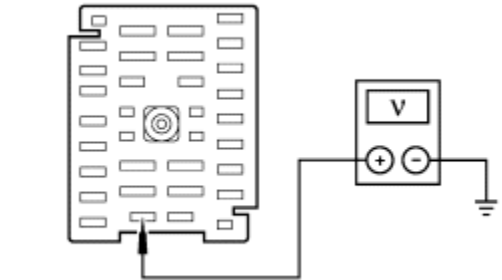
2






2 Measure the resistance between Pin C243-24, Circuit 57 (BK) and ground.

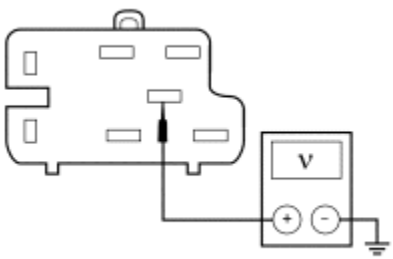


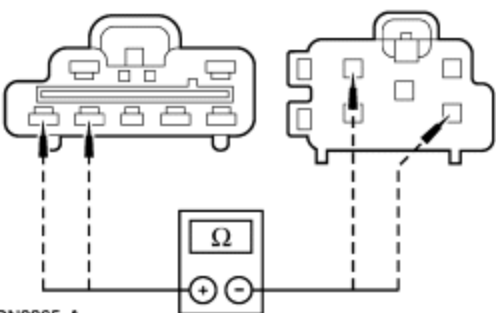

	<p>7. Is the resistance less than 5 ohms?</p> <p>→ Yes REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 57 (BK). CLEAR the DTCs. TEST the system for normal operation.</p>
C22 CHECK THE LF WINDOW REGULATOR CONTROL SWITCH FOR AN INTERNAL SHORT	
<p>1</p> 	
<p>2</p>  <p>LF Window Regulator Control Switch C510</p>	
<p>3</p>  <p>DN0862-A</p>	<p>3 On Crew Cab models, measure the voltage between Pin C510-6, Circuit 991 (T/LB) and ground.</p>
<p>4</p>  <p>DN0890-A</p>	<p>4 On Regular and SuperCab models, measure the voltage between Pin C510-3, Circuit 991 (T/LB) and ground.</p>

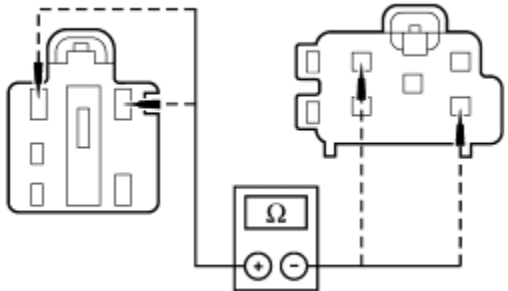


	<p>8. Is the voltage greater than 10 volts?</p> <p>→ Yes GO to C23.</p> <p>→ No REPLACE the LF window regulator control switch. CLEAR the DTCs. TEST the system for normal operation.</p>
C23 CHECK THE GEM FOR AN INTERNAL SHORT	
	<p>1 Remove the GEM from the junction box fuse/relay panel.</p>
<p>2</p>  <p>DN0863-A</p>	<p>2 Measure the voltage between Pin C241-9 and ground.</p>
	<p>9. Is the voltage greater than 10 volts?</p> <p>→ Yes GO to C24.</p> <p>→ No REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.</p>
C24 CHECK CIRCUIT 991 (T/LB) FOR A SHORT TO POWER	
<p>1</p>  <p>Junction Box Fuse/Relay Panel C243</p>	
<p>2</p>	<p>2 Measure the voltage between Pin C243-10, Circuit 991 (T/LB) and ground.</p>

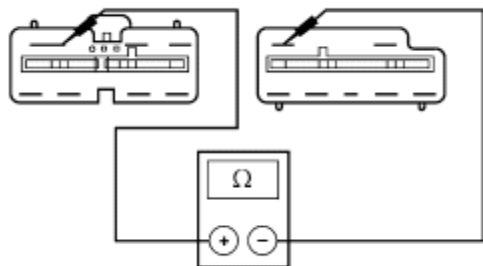
 <p>DN0864-A</p>	
	<p>10. Is the voltage greater than 10 volts?</p> <p>→ Yes REPAIR Circuit 991 (T/LB). CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p>

PINPOINT TEST D: RF POWER WINDOW IS INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
D1 CHECK THE VOLTAGE TO THE RF WINDOW REGULATOR CONTROL SWITCH	
<p>1</p> 	
<p>2</p>  <p>RF Window Regulator Control Switch C604</p>	
<p>3</p> 	
	<p>4 Place the LF window regulator control switch remote lock out feature in the UNLOCK position.</p>
<p>5</p>	<p>5 Measure the voltage between Pin C604-4, Circuit</p>

 <p>GN0851-A</p>	<p>193 (Y/LG) and ground.</p>
	<p>11. Is the voltage greater than 10 volts?</p> <p>→ Yes GO to D2.</p> <p>→ No GO to D3.</p>
<p>D2 CHECK CIRCUITS 313 (W/Y) AND 314 (T/LB) FOR AN OPEN</p>	
<p>1</p> 	
<p>2</p>  <p>LF Window Regulator Control Switch C510</p>	
<p>3</p>  <p>DN0865-A</p>	<p>3 On Crew Cab models, measure the resistance of Circuit 313 (W/Y) between Pin C510-4 and Pin C604-2; and the resistance of Circuit 314 (T/LB) between Pin C510-3 and Pin C604-7.</p>
<p>4</p>  <p>LF Window Regulator Control Switch</p>	

<p>C511</p> <p>5</p>  <p>DN0891-A</p>	<p>5 On Regular and SuperCab models, measure the resistance of Circuit 313 (W/Y) between Pin C511-2 and Pin C604-2; and the resistance of Circuit 314 (T/LB) between Pin C511-1 and Pin C604-7.</p>
	<p>12. Are the resistances less than 5 ohms?</p> <p>→ Yes GO to D4.</p> <p>→ No REPAIR Circuit 313 (W/Y) or Circuit 314 (T/LB). TEST the system for normal operation.</p>
<p>D3 CHECK THE LF WINDOW REGULATOR CONTROL SWITCH REMOTE LOCK OUT FOR AN OPEN</p>	
<p>1</p> 	
<p>2</p>  <p>LF Window Regulator Control Switch C510</p>	
	<p>3 Verify the LF window regulator control switch remote lock out feature is in the UNLOCK position.</p>
<p>4</p>	<p>4 Measure the resistance between the LF window regulator control switch Terminal 2 and Terminal 3.</p>



GN1282-A

13. Is the resistance less than 5 ohms?

→ **Yes**

REPAIR Circuit 193 (Y/LG). TEST the system for normal operation.

→ **No**

REPLACE the LF window regulator control switch. TEST the system for normal operation.

D4 CHECK THE RF WINDOW REGULATOR CONTROL SWITCH

1 Perform the RF window regulator control switch component test. Refer to the Electrical and Vacuum Troubleshooting Manual.

14. Is the RF window regulator control switch OK?

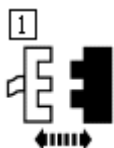
→ **Yes**

GO to D5.

→ **No**

REPLACE the RF window regulator control switch. TEST the system for normal operation.

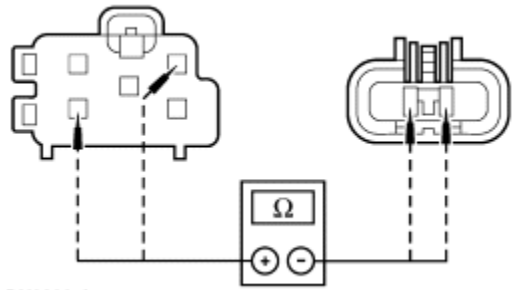
D5 CHECK CIRCUITS 333 (Y/R) AND 334 (R/Y) FOR AN OPEN






RF Window Motor C600

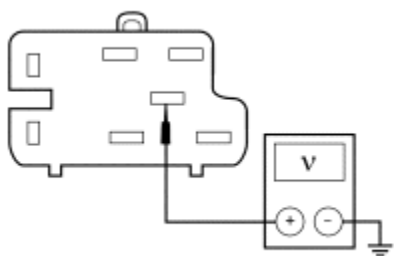
2

2 Measure the resistance of Circuit 333 (Y/R) between Pin C604-6 and C600; and the resistance of Circuit 334 (R/Y) between Pin C604-3 and C600.

 <p>DN0866-A</p>	
	<p>15. Are the resistances less than 5 ohms?</p> <p>→ Yes REPLACE the RF window motor. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 333 (Y/R) or Circuit 334 (R/Y). TEST the system for normal operation.</p>

PINPOINT TEST E: LR POWER WINDOW IS INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
E1 CHECK THE VOLTAGE TO THE LR WINDOW REGULATOR CONTROL SWITCH	
<p>1</p> 	
<p>2</p>  <p>LR Window Regulator Control Switch C703</p>	
<p>3</p> 	
	<p>4 Place the LF window regulator control switch remote lock out feature in the UNLOCK position.</p>
<p>5</p>	<p>5 Measure the voltage between Pin C703-4, Circuit 193 (Y/LG) and ground.</p>



GN0851-A

16. Is the voltage greater than 10 volts?

→ **Yes**
GO to E2.

→ **No**
GO to E3.

E2 CHECK CIRCUITS 316 (Y/LB) AND 317 (GY/O) FOR AN OPEN

1

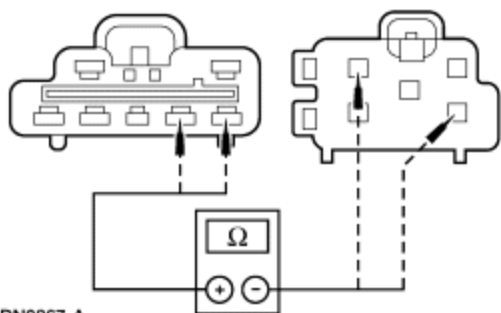


2



LF Window Regulator Control Switch
C510

3



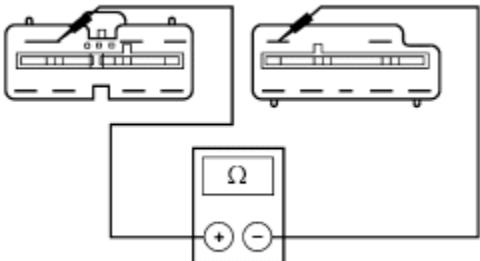



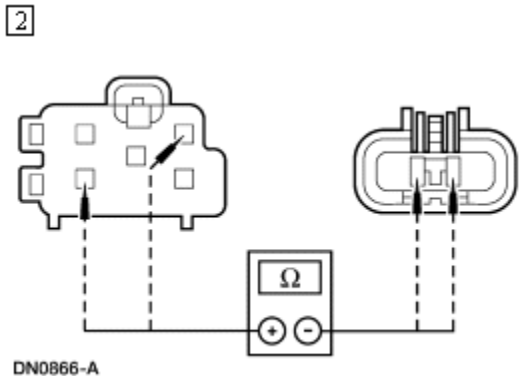
DN0867-A

3 Measure the resistance of Circuit 316 (Y/LB) between Pin C510-6 and Pin C703-7; and the resistance of Circuit 317 (GY/O) between Pin C510-7 and Pin C703-2.

2. Are the resistances less than 5 ohms?


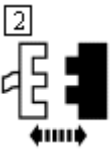

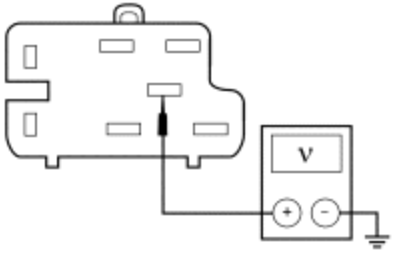
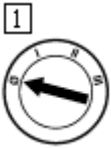
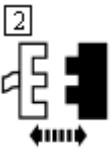
→ **Yes**

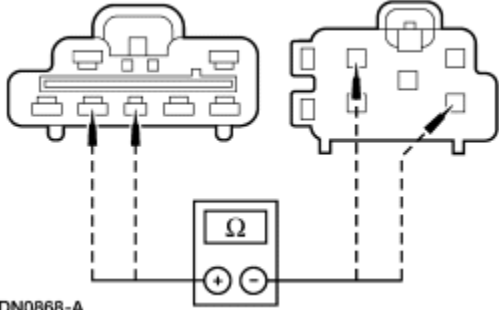


	<p>GO to E4.</p> <p>→ No REPAIR Circuit 316 (Y/LB) or Circuit 317 (GY/O). TEST the system for normal operation.</p>
E3 CHECK THE LF WINDOW REGULATOR CONTROL SWITCH REMOTE LOCK OUT FOR AN OPEN	
<p>1</p> 	
<p>2</p>  <p>LF Window Regulator Control Switch C510</p>	
	<p>3</p> <p>Verify the LF window regulator control switch remote lock out feature is in the UNLOCK position.</p>
<p>4</p>  <p>GN1282-A</p>	<p>4</p> <p>Measure the resistance between the LF window regulator control switch Terminal 2 and Terminal 3.</p>
	<p>3. Is the resistance less than 5 ohms?</p> <p>→ Yes REPAIR Circuit 193 (Y/LG). TEST the system for normal operation.</p> <p>→ No REPLACE the LF window regulator control switch. TEST the system for normal operation.</p>
E4 CHECK THE LR WINDOW REGULATOR CONTROL SWITCH	
	<p>1</p> <p>Perform the LR window regulator control switch component test. Refer to the Electrical and Vacuum Troubleshooting Manual.</p>

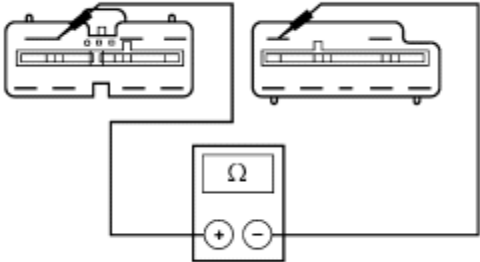

	<p>4. Is the LR window regulator control switch OK?</p> <p>→ Yes GO to E5.</p> <p>→ No REPLACE the LR window regulator control switch. TEST the system for normal operation.</p>
E5 CHECK CIRCUITS 884 (Y/BK) AND 885 (Y/LB) FOR AN OPEN	
<p>1</p>  <p>LR Window Motor C702</p>	
<p>2</p>  <p>DN0866-A</p>	<p>2 Measure the resistance of Circuit 884 (Y/BK) between Pin C703-6 and C702; and the resistance of Circuit 885 (Y/LB) between Pin C703-3 and C702.</p>
	<p>5. Are the resistances less than 5 ohms?</p> <p>→ Yes REPLACE the RF window motor. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 884 (Y/BK) or Circuit 885 (Y/LB). TEST the system for normal operation.</p>

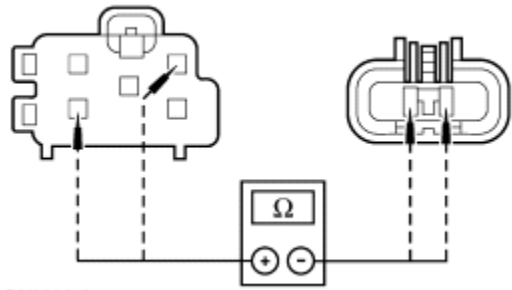
PINPOINT TEST F: RR POWER WINDOW IS INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
F1 CHECK THE VOLTAGE TO THE RR WINDOW REGULATOR CONTROL SWITCH	
1	




	
<div data-bbox="170 279 279 426">  </div> <div data-bbox="162 430 665 499"> RR Window Regulator Control Switch C803 </div>	
<div data-bbox="170 516 279 663">  </div>	
	<div data-bbox="722 678 1356 756"> 4 Place the LF window regulator control switch remote lock out feature in the UNLOCK position. </div>
<div data-bbox="170 772 203 804">5</div>  <div data-bbox="600 1119 690 1140">GN0851-A</div>	<div data-bbox="722 772 1404 850"> 5 Measure the voltage between Pin C803-4, Circuit 193 (Y/LG) and ground. </div>
	<div data-bbox="763 1245 1299 1276"> 6. Is the voltage greater than 10 volts? </div> <div data-bbox="722 1318 844 1392"> → Yes GO to F2. </div> <div data-bbox="722 1434 844 1507"> → No GO to F3. </div>
F2 CHECK CIRCUITS 319 (Y/BK) AND 320 (R/BK) FOR AN OPEN	
<div data-bbox="170 1570 279 1717">  </div>	
<div data-bbox="170 1732 279 1879">  </div> <div data-bbox="162 1883 657 1917"> LF Window Regulator Control Switch </div>	





C510	
<div data-bbox="170 205 203 237" data-label="Text">3</div> 	<div data-bbox="722 205 755 237" data-label="Text">3</div> <p>Measure the resistance of Circuit 319 (Y/BK) between Pin C510-5 and Pin C803-2; and the resistance of Circuit 320 (R/BK) between Pin C510-4 and Pin C803-7.</p>
	<p>7. Are the resistances less than 5 ohms?</p> <p>→ Yes GO to F4.</p> <p>→ No REPAIR Circuit 319 (Y/BK) or Circuit 320 (R/BK). TEST the system for normal operation.</p>
F3 CHECK THE LF WINDOW REGULATOR CONTROL SWITCH REMOTE LOCK OUT FOR AN OPEN	
<div data-bbox="170 1077 203 1108" data-label="Text">1</div> 	
<div data-bbox="170 1241 203 1272" data-label="Text">2</div>  <p>LF Window Regulator Control Switch C510</p>	
	<div data-bbox="722 1476 755 1507" data-label="Text">3</div> <p>Verify the LF window regulator control switch remote lock out feature is in the UNLOCK position.</p>
<div data-bbox="170 1570 203 1602" data-label="Text">4</div>	<div data-bbox="722 1570 755 1602" data-label="Text">4</div> <p>Measure the resistance between the LF window regulator control switch Terminal 2 and Terminal 3.</p>

 <p style="text-align: right;">GN1282-A</p>	
	<p>2. Is the resistance less than 5 ohms?</p> <p>→ Yes REPAIR Circuit 193 (Y/LG). TEST the system for normal operation.</p> <p>→ No REPLACE the LF window regulator control switch. TEST the system for normal operation.</p>
F4 CHECK THE RR WINDOW REGULATOR CONTROL SWITCH	
	<p>1 Perform the RR window regulator control switch component test. Refer to the Electrical and Vacuum Troubleshooting Manual.</p>
	<p>3. Is the RR window regulator control switch OK?</p> <p>→ Yes GO to F5.</p> <p>→ No REPLACE the RR window regulator control switch. TEST the system for normal operation.</p>
F5 CHECK CIRCUITS 881 (BR) AND 882 (BR/Y) FOR AN OPEN	
<p>1</p>  <p>RR Window Motor C802</p>	
<p>2</p>	<p>2 Measure the resistance of Circuit 881 (BR) between Pin C803-6 and C802; and the resistance of Circuit 882 (BR/Y) between Pin C803-3 and C802.</p>

 <p>DN0866-A</p>	
	<p>2. Are the resistances less than 5 ohms?</p> <p>→ Yes REPLACE the RR window motor. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 881 (BR) or Circuit 882 (BR/Y). TEST the system for normal operation.</p>

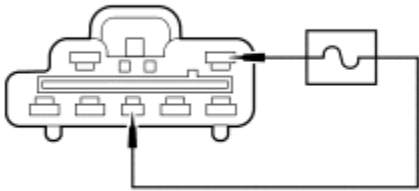
PINPOINT TEST G: THE ONE TOUCH DOWN FEATURE IS INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
G1 RETRIEVE THE DIAGNOSTIC TROUBLE CODES (DTCS)	
<p>1</p>  <p>NGS</p>	
<p>2</p>  <p>Retrieve/Clear Continuous DTCs</p>	
<p>3</p>  <p>On-Demand Self Test</p>	
	<p>3. Are any DTCs recorded?</p>

	<p>→ Yes If DTC B1243, GO to G3 .</p> <p>If DTC B1410, GO to G10 .</p> <p>If DTC B2357, GO to G10 . If other DTCs are set with B2357, service other DTCs first. If DTC B1342, REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No GO to G2.</p>
G2 CHECK THE ONE TOUCH DOWN RELAY INPUT	
<p>1</p> 	
<p>2</p>  <p>PID/Data Monitor and Record</p>	<p>2 Monitor PID OTD_SW while depressing the down button on the LF window regulator control switch.</p>
	<p>4. Does the PID value agree with the switch positions?</p> <p>→ Yes GO to G10.</p> <p>→ No GO to G3.</p>
G3 CHECK THE LF WINDOW REGULATOR CONTROL SWITCH	
<p>1</p> 	
<p>2</p>  <p>LF Window Regulator Control Switch C510</p>	
<p>3</p>	



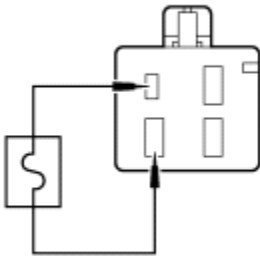
4



DN0869-A

4 On Crew Cab models, monitor PID OTD_SW while connecting a fused jumper between Pin C510-2, Circuit 400 (LB/BK) and Pin C510-5, Circuit 995 (GY).

5



DN0892-A

5 On Regular and SuperCab models, monitor PID OTD_SW while connecting a fused jumper between Pin C510-4, Circuit 400 (LB/BK) and Pin C510-2, Circuit 995 (GY).

5. Does the PID read **DOWN** when the fused jumper is connected and **OFF** when disconnected?

→ **Yes**

REPLACE the LF window regulator control switch. CLEAR the DTCs. TEST the system for normal operation.

→ **No**

If the PID displayed OFF, or the fused jumper opened, GO to G4 .

If the PID displayed DOWN, GO to G8 .

G4 CHECK CIRCUIT 995 (GY) FOR AN OPEN

1

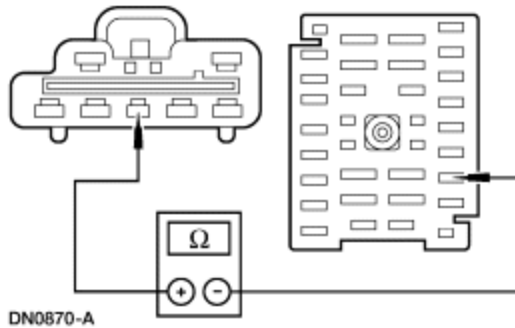


2



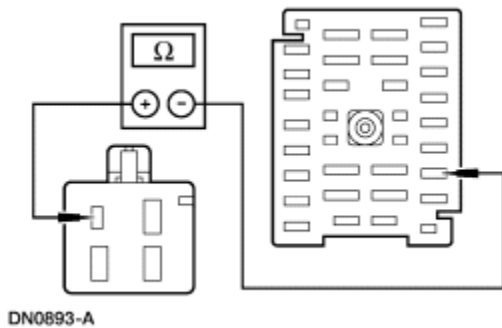
Junction Box Fuse/Relay Panel C243

3



3 On Crew Cab models, measure the resistance of Circuit 995 (GY) between Pin C510-5 and Pin C243-28.

4



4 On Regular and SuperCab models, measure the resistance of Circuit 995 (GY) between Pin C510-5 and Pin C243-28.

6. Is the resistance less than 5 ohms?

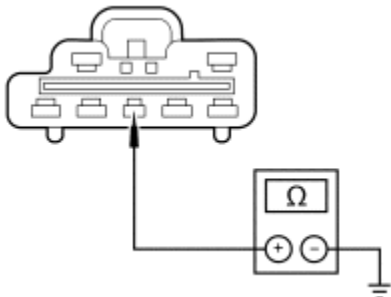
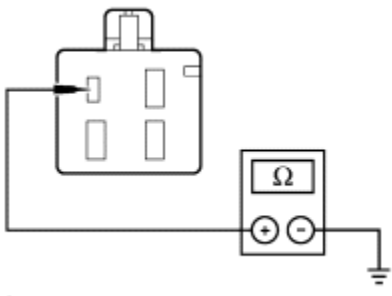
→ **Yes**
GO to G5.

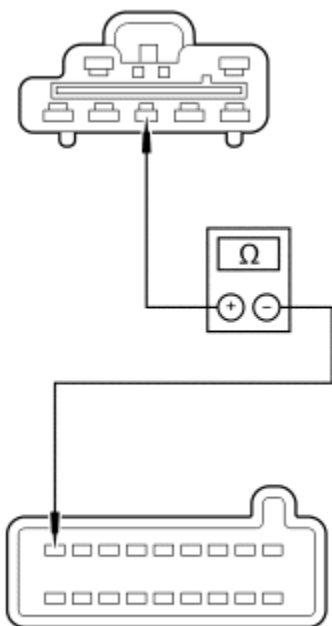
→ **No**
REPAIR Circuit 995 (GY). CLEAR the DTCs. TEST the system for normal operation.

G5 CHECK CIRCUIT 995 (GY) FOR A SHORT TO GROUND

1

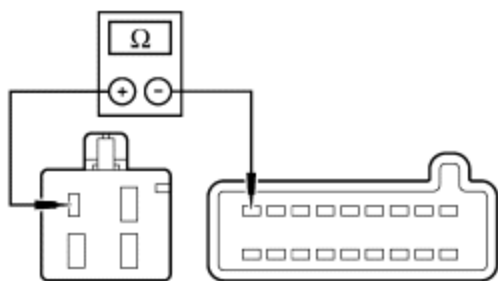
1 On Crew Cab models, measure the resistance of Circuit 995 (GY) between Pin C510-5 and ground.

 <p>DN0871-A</p>	
<p>2</p>  <p>DN0894-A</p>	<p>2 On Regular and SuperCab models, measure the resistance of Circuit 995 (GY) between Pin C510-1 and ground.</p>
	<p>7. Is the resistance greater than 10,000 ohms?</p> <p>→ Yes GO to G6.</p> <p>→ No REPAIR Circuit 995 (GY). CLEAR the DTCs. TEST the system for normal operation.</p>
<p>G6 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR AN OPEN</p>	
	<p>1 Remove the GEM from the junction box fuse/relay panel.</p>
<p>2</p>	<p>2 On Crew Cab models, measure the resistance between Pin C510-5, Circuit 995 (GY) and Pin C241-9.</p>



DN0872-A

3



DN0895-A

3 On Regular and SuperCab models, measure the resistance between Pin C510-1, Circuit 995 (GY) and Pin C241-9.

2. Is the resistance less than 5 ohms?

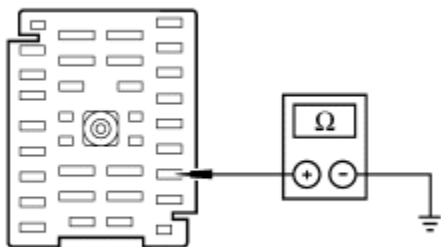
→ **Yes**
GO to G7.

→ **No**
REPLACE the junction box fuse/relay panel.
CLEAR the DTCs. TEST the system for normal operation.

G7 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR A SHORT TO GROUND

1

1 Measure the resistance of Circuit 995 (GY) between Pin C243-28 and ground.



DN0873-A

3. Is the resistance greater than 10,000 ohms?

→ **Yes**

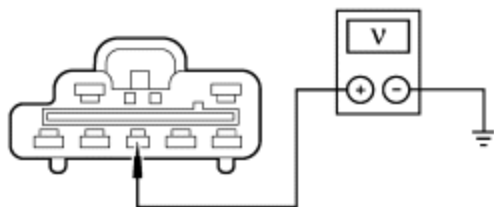
REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.

→ **No**

REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.

G8 CHECK CIRCUIT 995 (GY) FOR A SHORT TO POWER

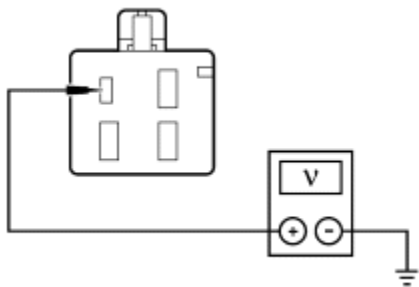
1



DN0874-A

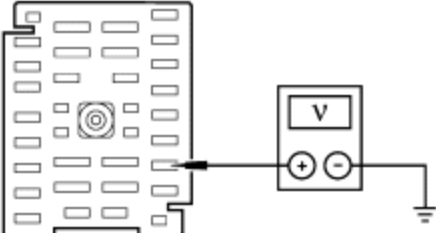

1 On Crew Cab models, measure the voltage of Circuit 995 (GY) between Pin C510-5 and ground.


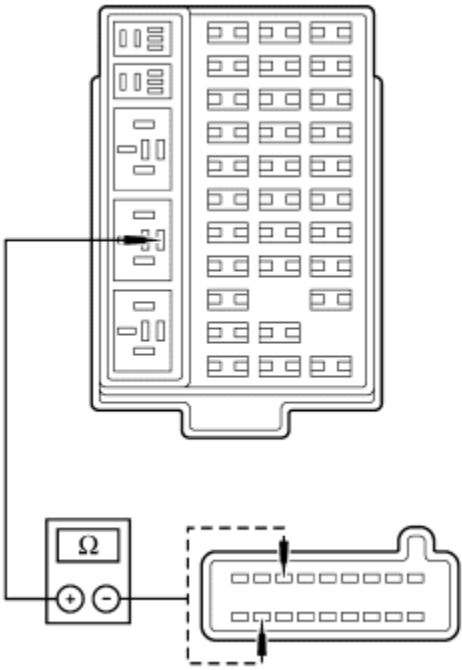
2

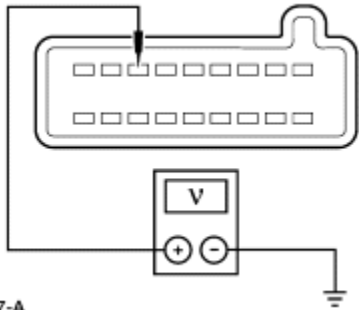


DN0896-A

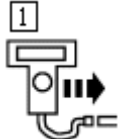


2 On Regular and SuperCab models, measure the voltage of Circuit 995 (GY) between Pin C510-1 and ground.




	<p>4. Is the voltage greater than 10 volts?</p> <p>→ Yes REPAIR Circuit 995 (GY). CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No GO to G9.</p>
G9 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR A SHORT TO POWER	
<p>1</p>  <p>DN0875-A</p>	<p>1 Measure the voltage of Circuit 995 (GY) between Pin C243-28 and ground.</p>
	<p>5. Is the voltage greater than 10 volts?</p> <p>→ Yes REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.</p>
G10 CHECK THE WINDOW OPERATION	
<p>1</p> 	
	<p>2 Toggle the LF window regulator control switch UP and DOWN.</p>
	<p>6. Does the window operate properly except for the one touch down?</p>

	<p>→ Yes GO to G11.</p> <p>→ No REFER to the Symptom Chart.</p>
G11 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR AN OPEN	
<p>1</p> 	
	<p>2 Remove the one touch down relay from the junction box fuse/relay panel.</p>
<p>3</p>  <p>DN0876-A</p>	<p>3 Measure the resistance between the one touch down relay connector Pin 87 and Pins C241-7 and C241-17.</p>
	<p>2. Is the resistance less than 5 ohms?</p> <p>→ Yes GO to G12.</p> <p>→ No REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p>
G12 CHECK FOR A SHORT TO POWER ON THE JUNCTION BOX FUSE/RELAY PANEL	

<p>1</p>  <p>DN0877-A</p>	<p>1 Measure the voltage between Pin C241-7 and ground.</p>
	<p>3. Is the voltage greater than 10 volts?</p> <p>→ Yes REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.</p>


PINPOINT TEST H: THE DELAYED ACCESSORY DOES NOT TURN OFF

CONDITIONS	DETAILS/RESULTS/ACTIONS
H1 RETRIEVE THE DIAGNOSTIC TROUBLE CODES (DTCs)	
<p>1</p>  <p>NGS</p>	
<p>2</p>  <p>Retrieve/Clear Continuous DTCs</p>	
<p>3</p>  <p>On-Demand Self Test</p>	




	<p>4. Are any DTCs recorded?</p> <p>→ Yes If DTC B1302, GO to H7 .</p> <p>If DTC B1475, GO to H4 .</p> <p>If DTC B1342, REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No GO to H2.</p>
H2 CHECK THE IGNITION STATES	
<p>1</p>  <p>PID/Data Monitor and Record</p>	<p>1 Monitor PID IGN_GEM while turning the ignition switch through the START, RUN, OFF and ACC positions.</p>
	<p>5. Do the PID values agree with the ignition switch positions?</p> <p>→ Yes GO to H3.</p> <p>→ No REPAIR the ignition circuit in question [RUN/ACC: Circuit 297 (BK/LG), RUN: Circuit 1040 (R/BK) and 687 (GY/Y), START: Circuit 32 (R/LB) and RUN/START: Circuits 1000 (R/BK) and 640 (R/Y)] CLEAR the DTCs. TEST the system for normal operation.</p>
H3 CHECK THE ACCESSORY DELAY RELAY COIL CIRCUIT	
<p>1</p> 	
<p>2</p>  <p>Active Commands</p>	<p>2 Monitor PID ACCDLY while toggling the active command ACC RLY ON and OFF.</p>

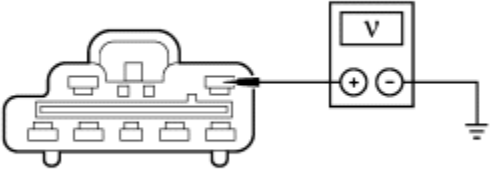
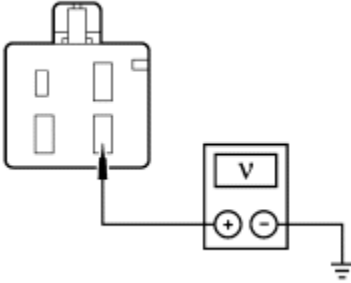

	<p>6. Does the ACCDLY PID value agree with the active command mode?</p> <p>→ Yes GO to H4.</p> <p>→ No GO to H7.</p>
--	---

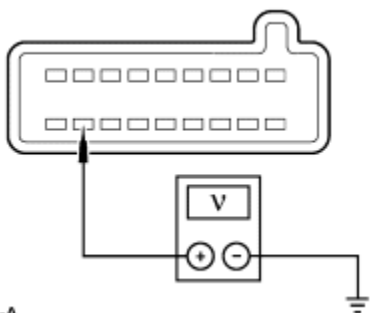
H4 CHECK THE ACCESSORY DELAY RELAY

<p>1</p> 	
	2 Remove the accessory delay relay.
	3 Perform the relay component test. Refer to the Electrical and Vacuum Troubleshooting Manual.
	<p>7. Is the accessory delay relay OK?</p> <p>→ Yes GO to H5.</p> <p>→ No REPLACE the accessory delay relay. CLEAR the DTCs. TEST the system for normal operation.</p>

H5 CHECK CIRCUIT 400 (LB/BK) FOR A SHORT TO POWER

<p>1</p> 	
<p>2</p>  <p>Junction Box Fuse/Relay Panel C243</p>	
<p>3</p>  <p>LF Window Regulator Control Switch C510</p>	

<p>4</p>  <p>DN0878-A</p>	<p>4 On Crew Cab models, measure the voltage between Pin C510-2, Circuit 400 (LB/BK) and ground.</p>
<p>5</p>  <p>DN0881-A</p>	<p>5 On Regular and SuperCab models, measure the voltage between Pin C510-4, Circuit 400 (LB/BK) and ground.</p>
	<p>2. Is the voltage greater than 10 volts?</p> <p>→ Yes REPAIR Circuit 400 (LB/BK). CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No GO to H6.</p>
<p>H6 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR A SHORT TO POWER</p>	
	<p>1 Remove the GEM from the junction box fuse/relay panel.</p>
<p>2</p> 	
<p>3</p>	<p>3 Measure the voltage between Pin C241-17 and ground.</p>



DN0879-A

3. Is the voltage greater than 10 volts?

→ **Yes**

REPLACE the junction box fuse/relay panel.
CLEAR the DTCs. TEST the system for normal operation.

→ **No**

REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.

H7 PERFORM THE ACCESSORY DELAY RELAY COMPONENT TEST

1



2 Remove the accessory delay relay.

3 Perform the relay component test. Refer to the Electrical and Vacuum Troubleshooting Manual.

4. Is the accessory delay relay OK?

→ **Yes**

GO to H8.

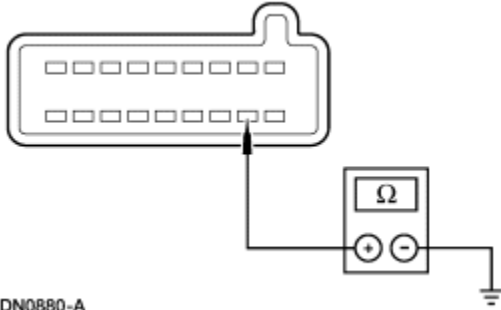
→ **No**

REPLACE the accessory delay relay. CLEAR the DTCs. TEST the system for normal operation.

H8 CHECK THE JUNCTION BOX FUSE/RELAY PANEL FOR A SHORT TO GROUND

1



	<p>2 Remove the GEM from the junction box fuse/relay panel.</p>
	<p>3 Remove the accessory delay relay.</p>
<p>4</p>  <p>DN0880-A</p>	<p>4 Measure the resistance between Pin C241-11 and ground.</p>
	<p>2. Is the resistance greater than 10,000 ohms?</p> <p>→ Yes REPLACE the GEM. CLEAR the DTCs. TEST the system for normal operation.</p> <p>→ No REPLACE the junction box fuse/relay panel. CLEAR the DTCs. TEST the system for normal operation.</p>

SECTION 501-11: Glass, Frames and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

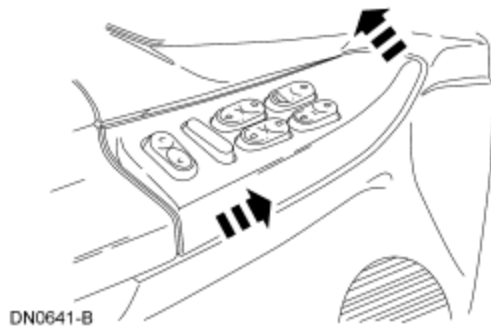
Switch

Removal

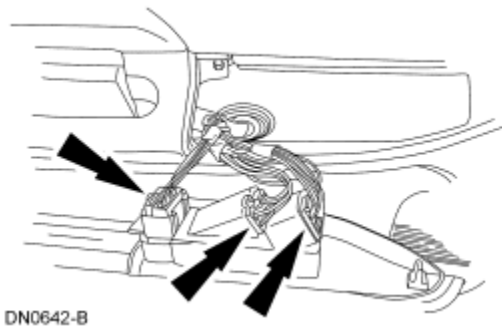
NOTE: Driver side shown, passenger side, Crew Cab and Excursion rear door similar.

1. Disconnect the battery ground cable. For additional information, refer to [Section 414-01](#).
2. **NOTE:** The left front door with power windows and power mirror is shown. The right front door with power windows is similar.

Remove the door command center from the door.



3. Disconnect the electrical connectors.



4. Remove the door command center from the vehicle.
5. Remove the retaining clips on the mirror switch and remove the switch.

Installation

1. To install, reverse the removal procedure.

SECTION 501-11: Glass, Frames and
Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual

[Procedure revision date: 01/26/2000](#)

Window Glass—Front Door

Removal and Installation



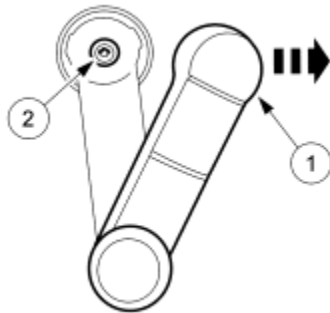
WARNING: Always wear safety glasses and gloves when handling glass to avoid personal injury.

With power windows

1. Remove the window control switch (14529). For additional information, refer to [Switch](#) in this section.

With manual windows

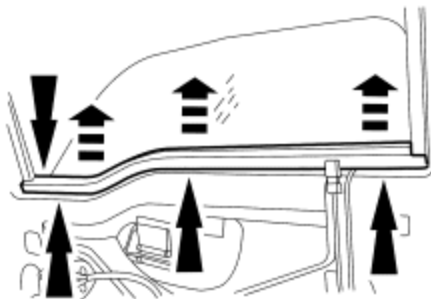
2. Remove the window regulator handle (23342).
 1. Position the window crank handle cover aside.
 2. Remove the window crank handle retaining screw and the window crank handle.



DN0539-A

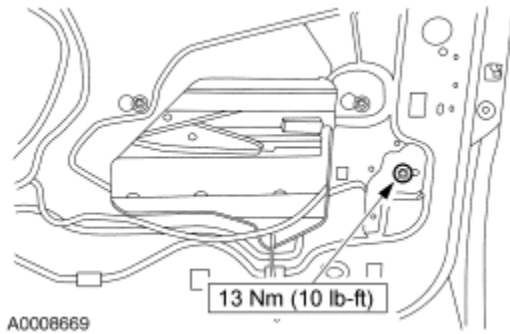
All vehicles

3. Remove the front door trim panel (23942), interior sail cover and watershield.
4. Remove the exterior mirror. For additional information, refer to [Section 501-09](#).
5. Temporarily install the window switch or the window crank, and lower the window to access the glass bracket nuts and remove the nuts.
6. Remove the inner and outer beltline weatherstrips.



DN0540-A

7. Loosen the rear glass run bolt.



8. Remove the front door window glass (21410) from the channel by sliding the channel forward, then position the door glass in the bottom of the door.
9. Remove the window glass from the inner door by tilting the window glass forward and lifting the glass out of the door.
10. **NOTE:** Make sure the door glass is seated in the glass run channel and the rear glass run bolt is positioned all the way forward prior to tightening the rear glass run bolt.

To install, reverse the removal procedure.

SECTION 501-11: Glass, Frames and Mechanisms
REMOVAL AND INSTALLATION

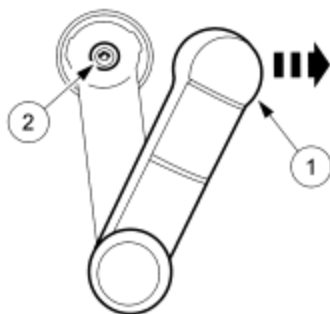
1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

Window Glass—Rear Door, Crew Cab

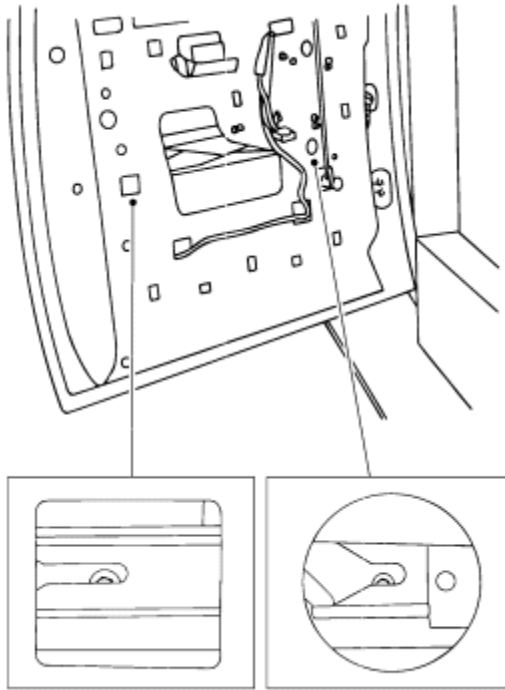
Removal

1. Remove the window switch; for additional information, refer to [Switch](#) in this section.



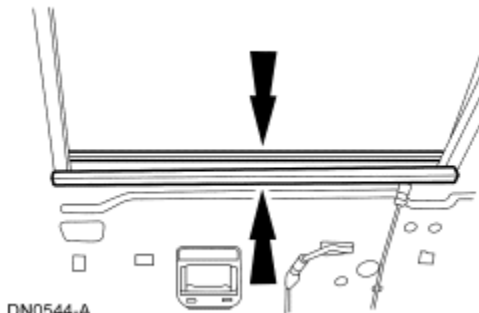
DN0539-A

2. Remove the window crank handle (manual windows only).
 1. Position the window crank handle cover aside.
 2. Remove the window crank handle retaining screw and the window crank handle.
3. Remove the door trim panel and watershield; for additional information, refer to [Section 501-05](#).
4. Temporarily install the window switch or window crank handle, and lower the window to access the glass bracket nuts and loosen the nuts.



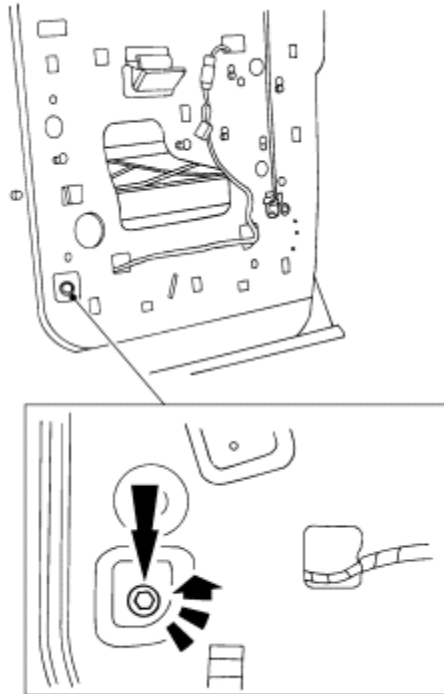
DN0543-A

5. Remove the inner beltline weatherstrip and outer beltline weatherstrip.



DN0544-A

6. Loosen the rear glass run bolt.

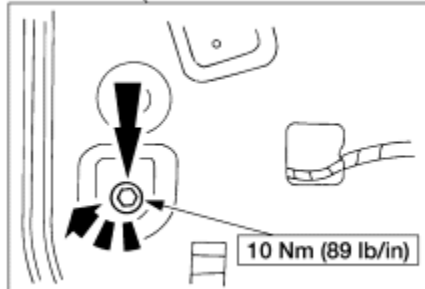
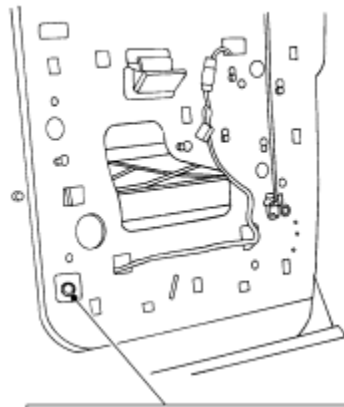


DN0545-A

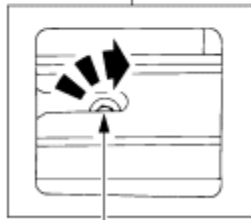
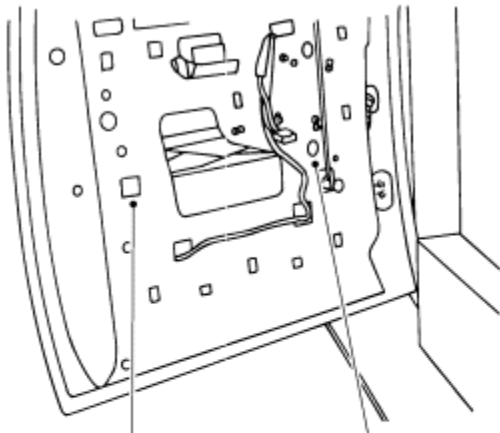
7. Remove the door glass from the regulator channel by sliding the channel forward, then position the door glass in the bottom of the door.
8. Remove the window glass.
 - Remove the front edge of the window glass from the glass run.
 - Lift the window glass up through the belt opening to remove from the door.

Installation

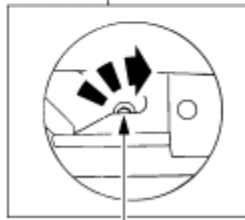
1. Follow the removal procedure in reverse order.



DN0546-B



10 Nm (89 lb/in)



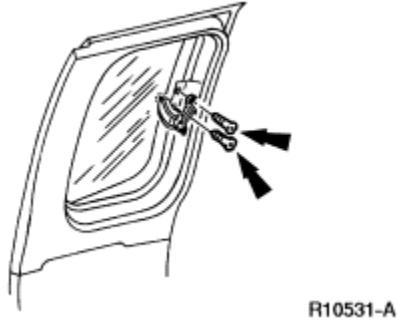
10 Nm (89 lb/in)

DN0547-B

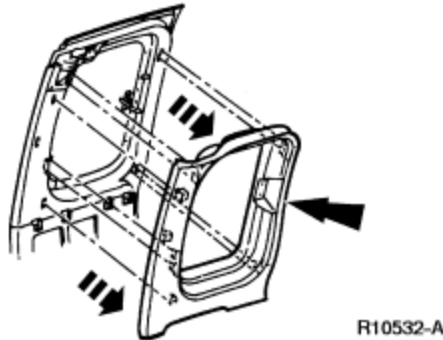
Window Glass—Rear Door SuperCab

Removal

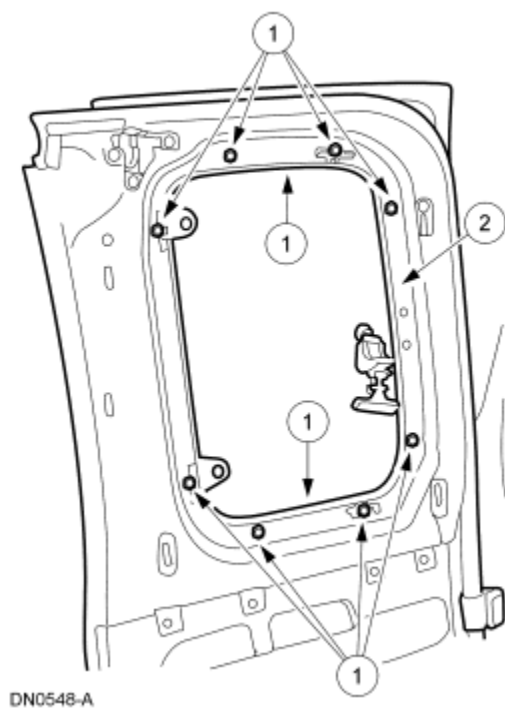
1. Remove the rear door window latch screws and position the latch aside.



2. Remove the rear door window trim panel.



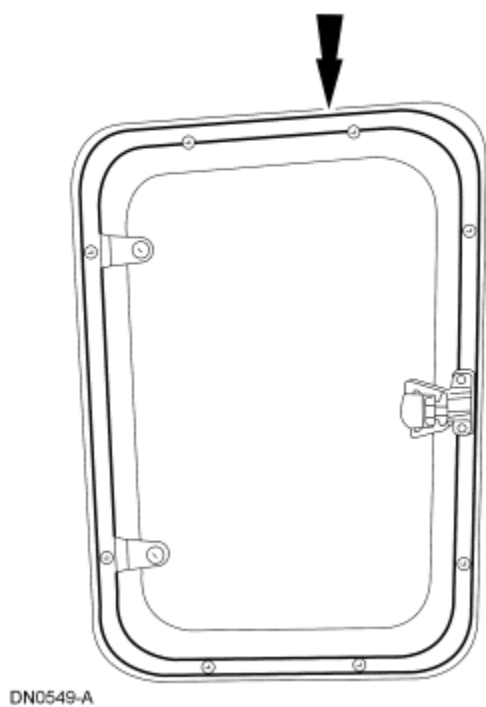
3. Remove the rear door window glass.
 1. Remove the eight window retaining nuts and two clips.
 2. Remove the rear door window glass and frame.



4. Remove excess foam butyl from the window frame and window opening.

Installation

1. Remove the release liner from the butyl seal around the window before installing the window.



2. Install the window frame and glass.
 - Position the window frame and glass.
 - **NOTE:** Loosely install all eight nuts and two trim clips before tightening.

Tighten the nuts.

3. Install the rear door window trim panel.
4. Install the rear door window latch.
5. Clean excess butyl from window area.

SECTION 501-11: Glass, Frames and
Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

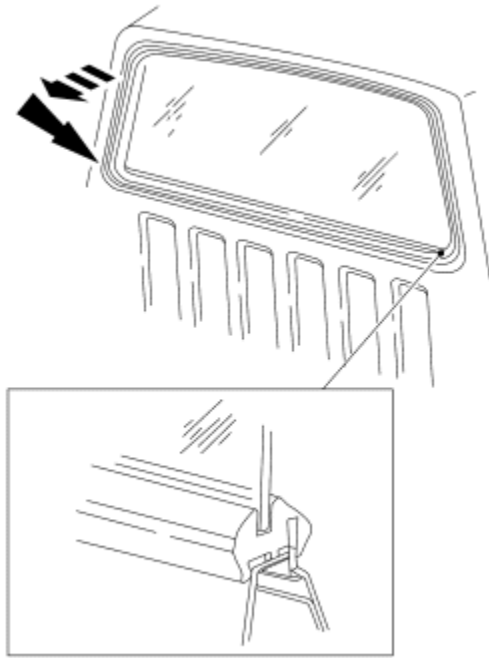
Window Glass—Back

Removal

1. **NOTE:** Removal of the back glass window requires an assistant to hold the back glass window as it is pushed out.

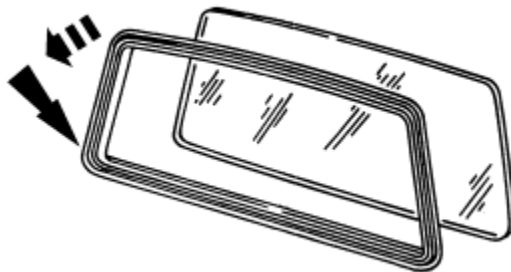
Remove the rear seat; for additional information, refer to [Section 501-10](#).

2. On SuperCab models, remove (pull off) the rear seat upper pad.
3. Remove the rear safety belt D-rings from the rear of the cab; for additional information, refer to [Section 501-20A](#).
4. Remove the scuff plates; for additional information, refer to [Section 501-05](#).
5. Partially remove the weatherstrip from the rear of the door jamb; for additional information, refer to [Section 501-03](#).
6. Remove the C-pillar trim panels; for additional information, refer to [Section 501-05](#).
7. From inside the vehicle, pull down on the back window glass weatherstrip and push back window glass and back window glass weatherstrip from back window glass opening.



DN0550-A

8. Remove weatherstrip from rear window.



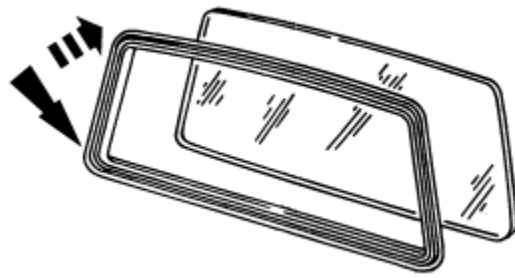
DN0551-A

9. Remove all traces of butyl from the window glass opening and the window weatherstrip.

Installation

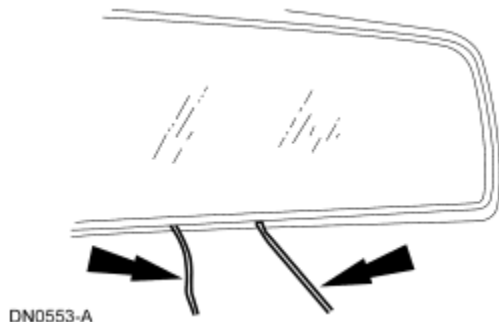
1. **NOTE:** Installation of the back glass window requires an assistant to push the back glass window as it is being installed.

Install the weatherstrip to the rear window.



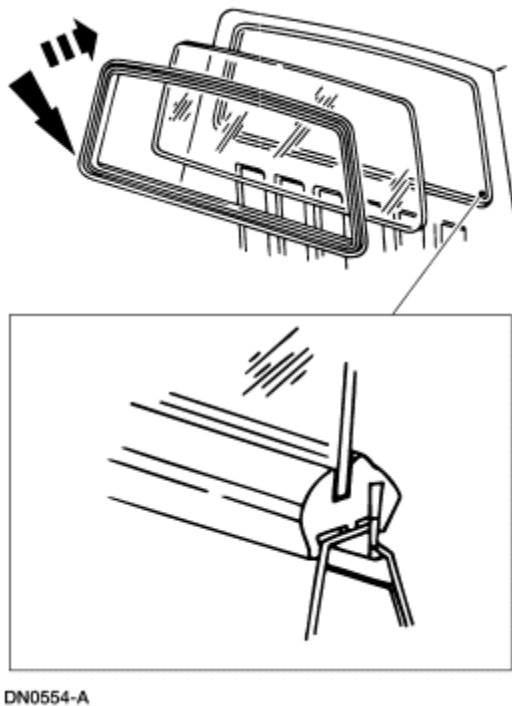
DN0552-A

2. Install the window installation rope to the window weatherstrip.



DN0553-A

3. Lubricate window weatherstrip with soapy water.
4. Position the rear window to the rear window opening.
5. Using the assistance of another technician, install the rear window.
 - Pull the installation rope from window weatherstrip.
 - Slightly push inward and downward on rear window glass (technician two).



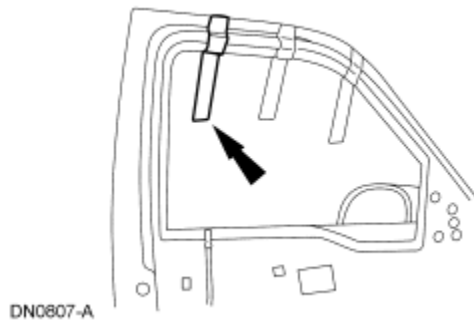
SECTION 501-11: Glass, Frames and
Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

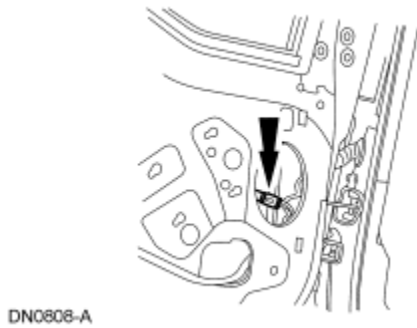
Motor—Front Door

Removal

1. Remove the window switch; for additional information, refer to [Switch](#) in this section.
2. Remove the door trim panel and watershield; for additional information, refer to [Section 501-05](#).
3. Tape the window in the full up position.

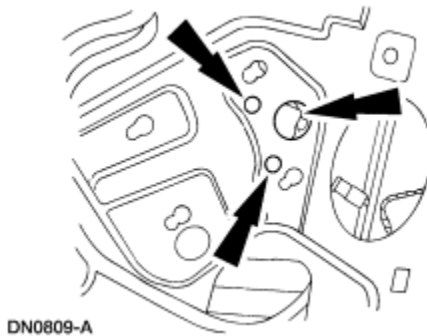


4. Disconnect the window motor electrical connector.



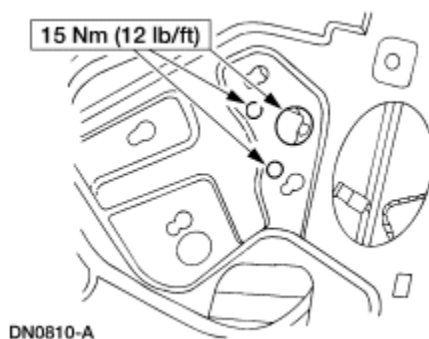
5. **NOTE:** Support the window motor while removing the window motor retaining screws.

Remove the window motor screws and remove the motor.



Installation

1. Follow the removal procedure in reverse order.



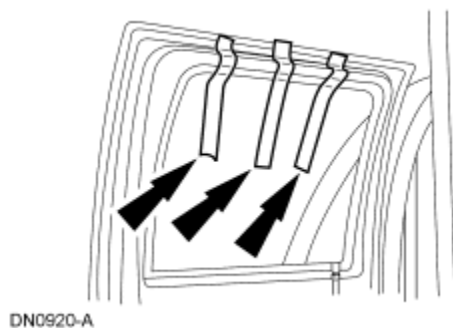
SECTION 501-11: Glass, Frames and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

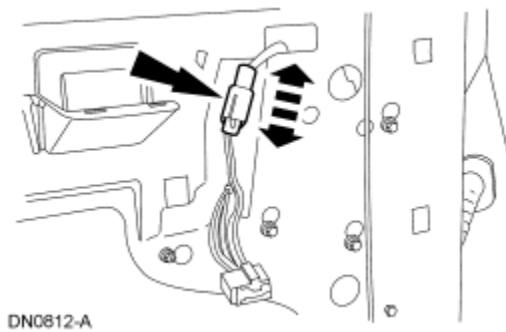
Motor—Rear Door

Removal and Installation

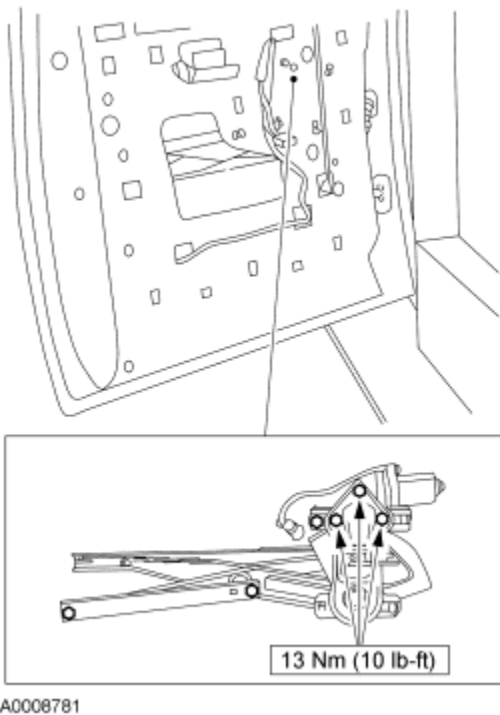
1. Remove the window switch (14529). For additional information, refer to [Switch](#) in this section.
2. Remove the rear door trim panel (27406) and the rear door trim watershield. For additional information, refer to [Section 501-05](#).
3. Remove the door speakers. For additional information, refer to [Section 415-03](#).
4. Tape the window glass (25712) in the full up position.



5. Disconnect the window regulator electric drive (23394).



6. Position the connector for the window regulator electric drive inside of the door.
7. Remove the bolts.

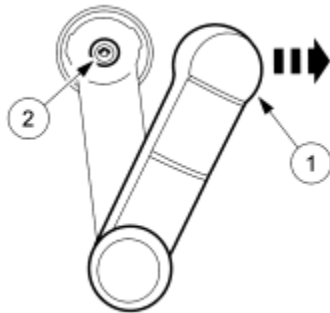


8. Separate the window regulator electric drive from the rear door window regulator (23200).
9. Remove the window regulator electric drive from the door.
10. To install, reverse the removal procedure.

Window Regulator—Front Door

Removal and Installation

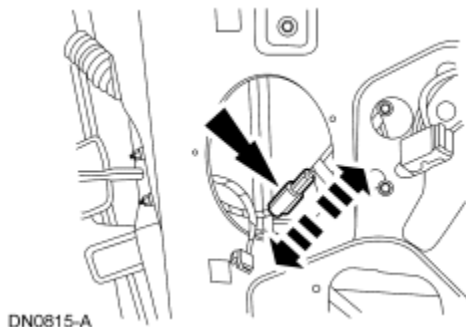
1. Remove the window control switch (14529) (if so equipped). For additional information, refer to [Switch](#) in this section.
2. Remove the window crank handle (23342) (manual windows only).
 1. Position the window crank handle cover aside.
 2. Remove the window crank handle retaining screw and the window crank handle.



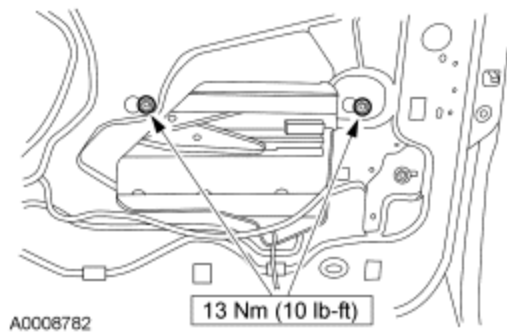
3. Remove the door trim panel. For additional information, refer to [Section 501-05](#).
4. Remove the door speaker. For additional information, refer to [Section 415-03](#). Remove the door watershield.
5. **NOTE:** Do not remove the window glass from the door.

Remove the window glass (21410) from the window regulator (23200).

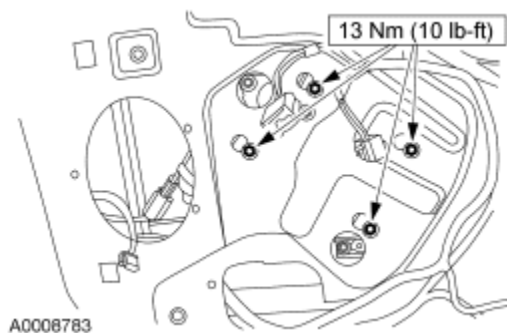
6. Tape the window glass in the full up position.
7. Disconnect the window motor electrical connector (power windows only).



8. Loosen the window regulator arm nuts and pull the arm from the mounting position.



9. Loosen the bolts and remove the window regulator.



10. To install, reverse the removal procedure.

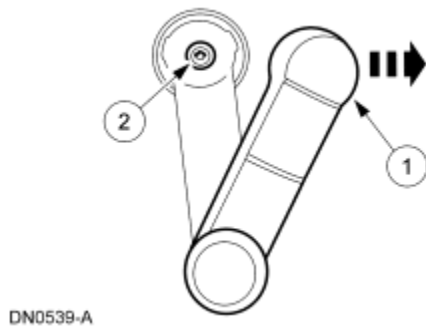
SECTION 501-11: Glass, Frames and
Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Window Regulator—Rear Door

Removal

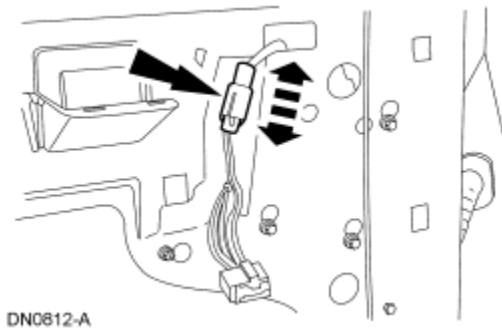
1. Remove the window switch; for additional information, refer to [Switch](#) in this section.
2. Remove the window crank handle (manual windows only).
 1. Position the window crank handle cover aside.
 2. Remove the window crank handle retaining screw and the window crank handle.



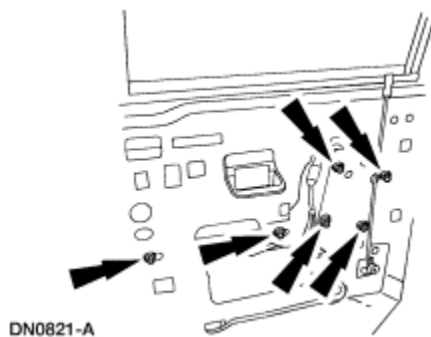
3. Remove the door trim panel and watershield; for additional information, refer to [Section 501-05](#).
4. **NOTE:** Do not remove the window glass from the door.

Remove the window from the window regulator; for additional information, refer to [Window Glass—Rear Door, Crew Cab](#) Replace in this section.

5. Tape the window glass in the full up position.
6. Disconnect the window motor electrical connector (power windows only).



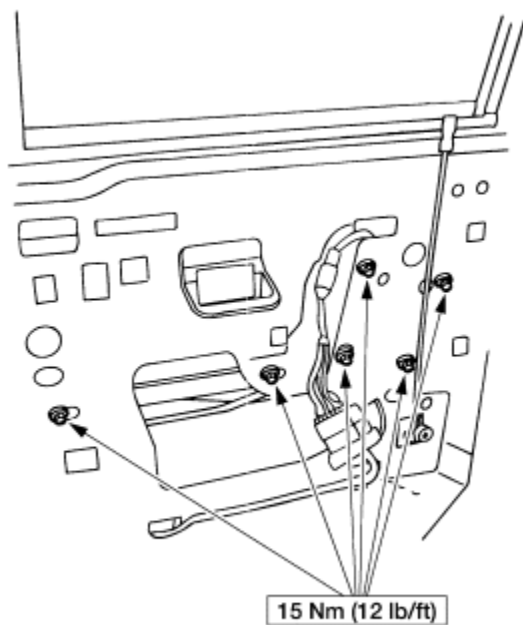
7. Loosen the window regulator arm retaining nuts and pull the arm from the mounting position.



8. Remove the rear door manual window regulator (27000) from the door.

Installation

- 1. Follow the removal procedure in reverse order.



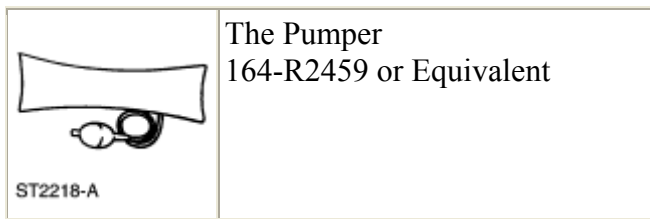
DN0822-A

SECTION 501-11: Glass, Frames and Mechanisms
REMOVAL AND INSTALLATION


1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)


Windshield Glass

Special Tool(s)	
 ST1320-A	Interior Auto Glass Cut-Out Knife Kit 164-R2450 or Equivalent



Removal

1. Remove the antenna.
2. Remove the windshield wiper arms; for additional information, refer to [Section 501-16](#).
3. Remove the cowl vent panels; for additional information, refer to [Section 501-02](#).
4. Remove the inside rear view mirror; for additional information, refer to [Section 501-09](#).
5. Remove the A-pillar mouldings; for additional information, refer to [Section 501-05](#).
6. Lower the front portion of the roof trim panel; for additional information, refer to [Section 501-05](#).
7. Lubricate the urethane sealant with water to aid the Interior Glass Cut-Out Knife Kit when cutting the urethane sealant.
8.  **WARNING: To prevent glass splinters from entering the eyes or cutting the hands, wear safety glasses and heavy gloves when cutting the glass from the vehicle.**

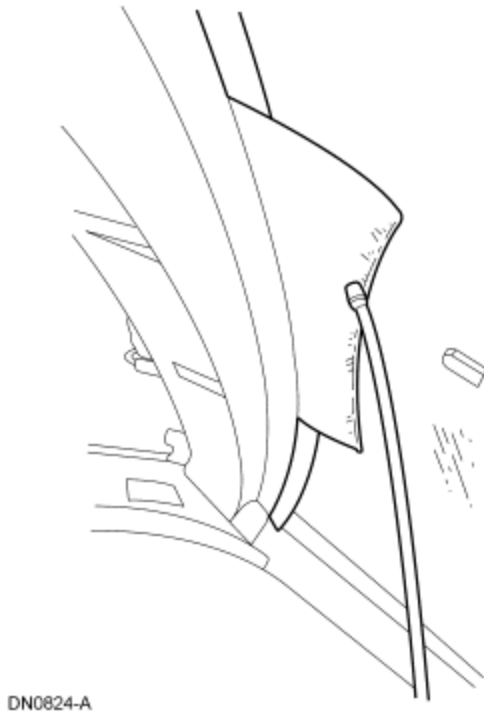
 **CAUTION: To prevent damage to the windshield header seal, turn the blade so that the flat side is against the pinch weld.**

NOTE: Support the windshield glass to prevent the glass from dropping before cuffing the bottom edge of the urethane sealant.

Insert the Interior Glass Cut-Out Knife into the urethane sealant at the upper center of the vehicle interior and work toward the bottom corners.



9. Insert the Pumper in the top center of the windshield and inflate.



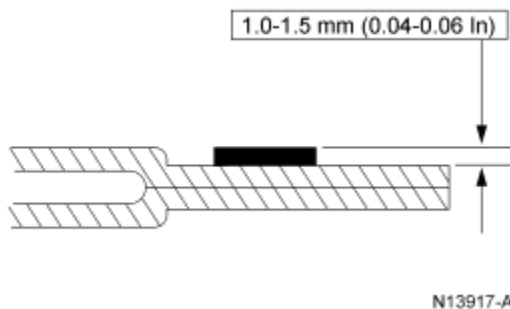
10. Insert the Interior Glass Cut-Out Knife into the bottom of the urethane sealant and work from corner to corner.

11.  **WARNING: Removing the glass requires more than one technician.**

NOTE: If resealing the windshield, tape the windshield at the windshield stops for aid when installing the windshield.

Carefully remove the windshield glass from the vehicle.

12. Trim the remaining urethane on the pinch weld to within the specification.
- The old urethane must be smooth and free of cuts and contamination.



13. Using a clean rag, wipe the pinch weld of any foreign material or water that may have entered the pinch weld during removal of the windshield.

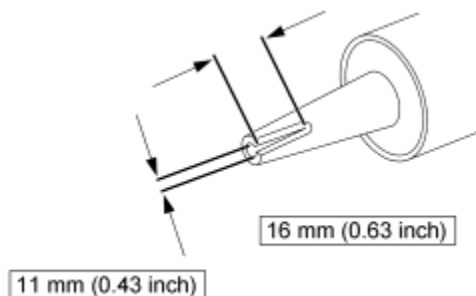
Installation

1. Check the pinch weld for damaged sheet metal, raised sheet metal at the spot welds, rust or foreign material that could cause glass damage.
2. Apply Urethane Body Primer WSB-M2G234-C (black) to any exposed metal on the pinch weld.
 - DO not apply the primer to the existing urethane bead.
 - Let the primer dry for a minimum of 6-10 minutes before proceeding.
3. If reinstalling the same windshield glass, remove all remaining traces of urethane sealant from the glass.
4. Clean the inside of the windshield glass with an alcohol-free cleaner.
5. **NOTE:** Apply with deliberate strokes, making sure not to overlap the applied area.

If installing a new windshield, apply Urethane Glass Primer Wipe WSB-M5B280-C2 (red) to the entire inside perimeter of the windshield glass. Wipe off immediately after each application.

6. If installing the same windshield, apply Urethane Glass Primer WSB-M2G31 4-B (black) to the entire inside perimeter of the windshield glass. Allow a minimum of 5 minutes drying time.
7. **NOTE:** The windshield glass must be positioned within 10 minutes of applying the urethane sealant.

Cut the adhesive applicator tip to specification, then apply an 11 mm (0.43 inch) wide bead of Urethane High Viscosity Adhesive WSB-M2G316-B to the entire primed area of the pinch weld.



DN013B-A

8.  **CAUTION:** After placing the urethane installed glass, the vehicle must not be driven until the urethane has cured. The curing time at temperatures above 13°C (55

°F) and relative humidity above 50% is 12-24 hours (decreasing at higher temperatures and lower humidities). Inadequate curing of the urethane can adversely affect the strength of the urethane sealant bond.

NOTE: Before installing the windshield glass, open the windows to prevent the windshield glass from being pushed out by air pressure as the door is closed.

Position the windshield glass on the vehicle pinch weld, aligning it with the marks.

9. Install the roof trim panel; for additional information, refer to [Section 501-05](#).
10. Install the A-pillar mouldings.
11. Install the inside rear view mirror; for additional information, refer to [Section 501-09](#).
12. Install the cowl vent panels; for additional information, refer to [Section 501-02](#).
13. Install the windshield wiper arms; for additional information, refer to [Section 501-16](#).
14. Install the antenna.

SECTION 501-12: Instrument Panel and Console

[SPECIFICATIONS](#)

DESCRIPTION AND OPERATION

[Instrument Panel](#)

[Console—Floor](#)

[Console—Overhead](#)

REMOVAL AND INSTALLATION

[Instrument Panel](#)

[Instrument Panel—Cluster Finish Panel](#)

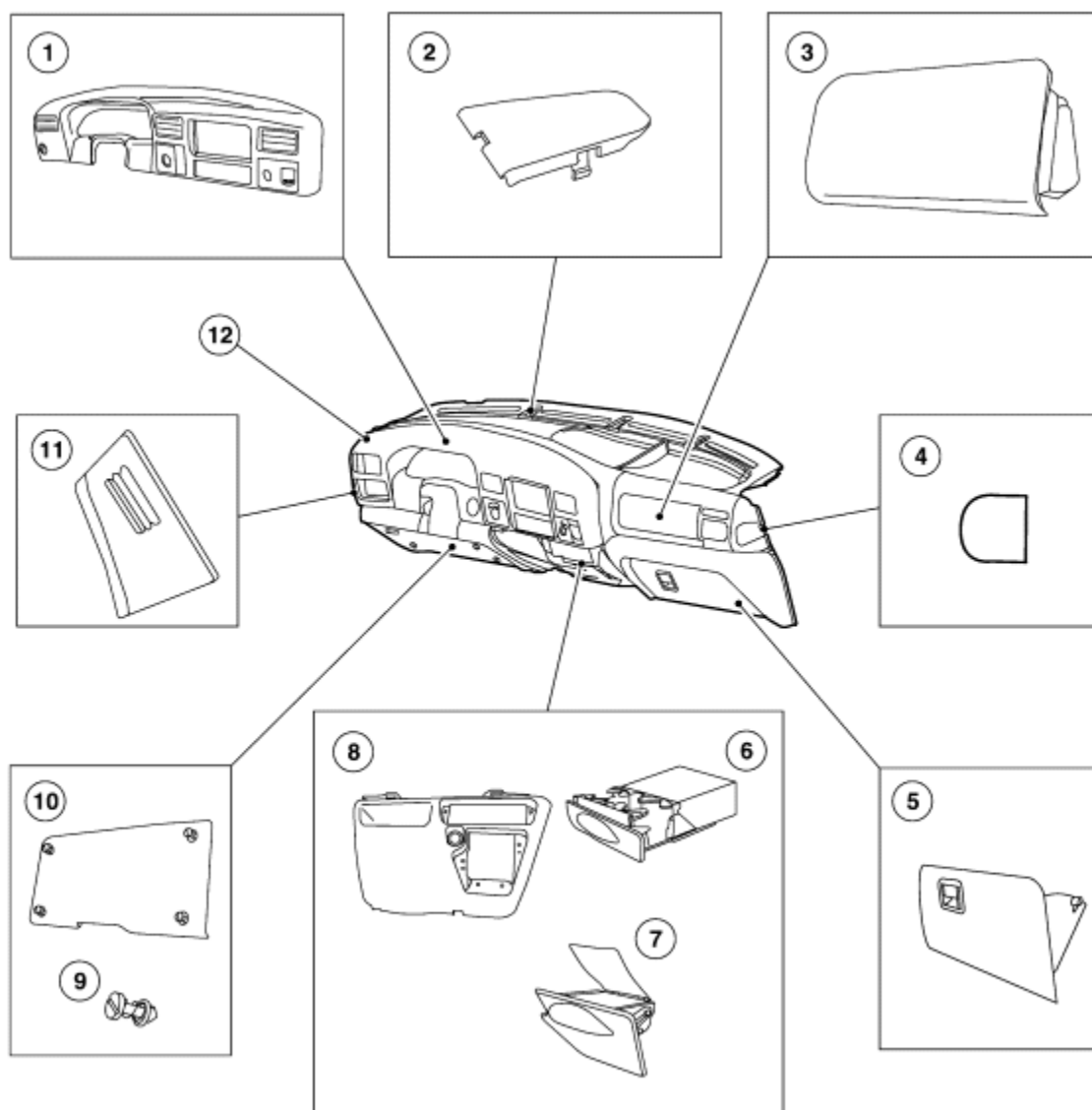
[Instrument Panel—Center Finish Panel](#)

[Console—Floor](#)

Torque Specifications			
Description	Nm	Lb/Ft	Lb/In
Ash Receptacle Bracket Screws	2-3	—	18-26
Beverage Holder Screws	2-3	—	18-26
Bulkhead Wiring Harness Connector Bolts	4-5	—	36-44
Ground Bolt	2-3	—	18-26
Floor Console Nuts	5-6	—	45-53
Instrument Panel Center Support Bolt	26-34	19-24	—
Instrument Panel Center Finish Panel Screws	2-3	—	18-26
Instrument Panel Cluster Finish Panel Screws	2-3	—	18-26
Instrument Panel Cowl Side Bolts	26-34	19-24	—
Instrument Panel Cowl Top Bolts (LH)	7-11	—	62-98
Instrument Panel Cowl Top Bolts (Center)	5	—	45
Instrument Panel Cowl Top Bolts (RH)	2-3	—	18-26
Steering Column Shaft Pinch Bolt	41-55	30-40	—
Parking Brake Release Handle Nuts	8-11	—	72-98

Instrument Panel

Instrument Panel Components



GR3134-B

Item	Part Number	Description
1	044D70	Instrument Panel Cluster Finish Panel
2	042N54	Instrument Panel Cover
3	044A74	Passenger Side Air Bag Module
4	024A78	Cowl Side Inner Panel Cover
5	06010	Glove Compartment
6	—	Beverage Holder
7	30702	Ash Receptacle
8	—	Instrument Panel Center Finish Panel
9	—	Instrument Panel Steering Column Cover Retainers

10	044F08	Instrument Panel Steering Column Cover
11	—	Instrument Panel Finish End Panel
12	04320	Instrument Panel

SECTION 501-12: Instrument Panel and
Console

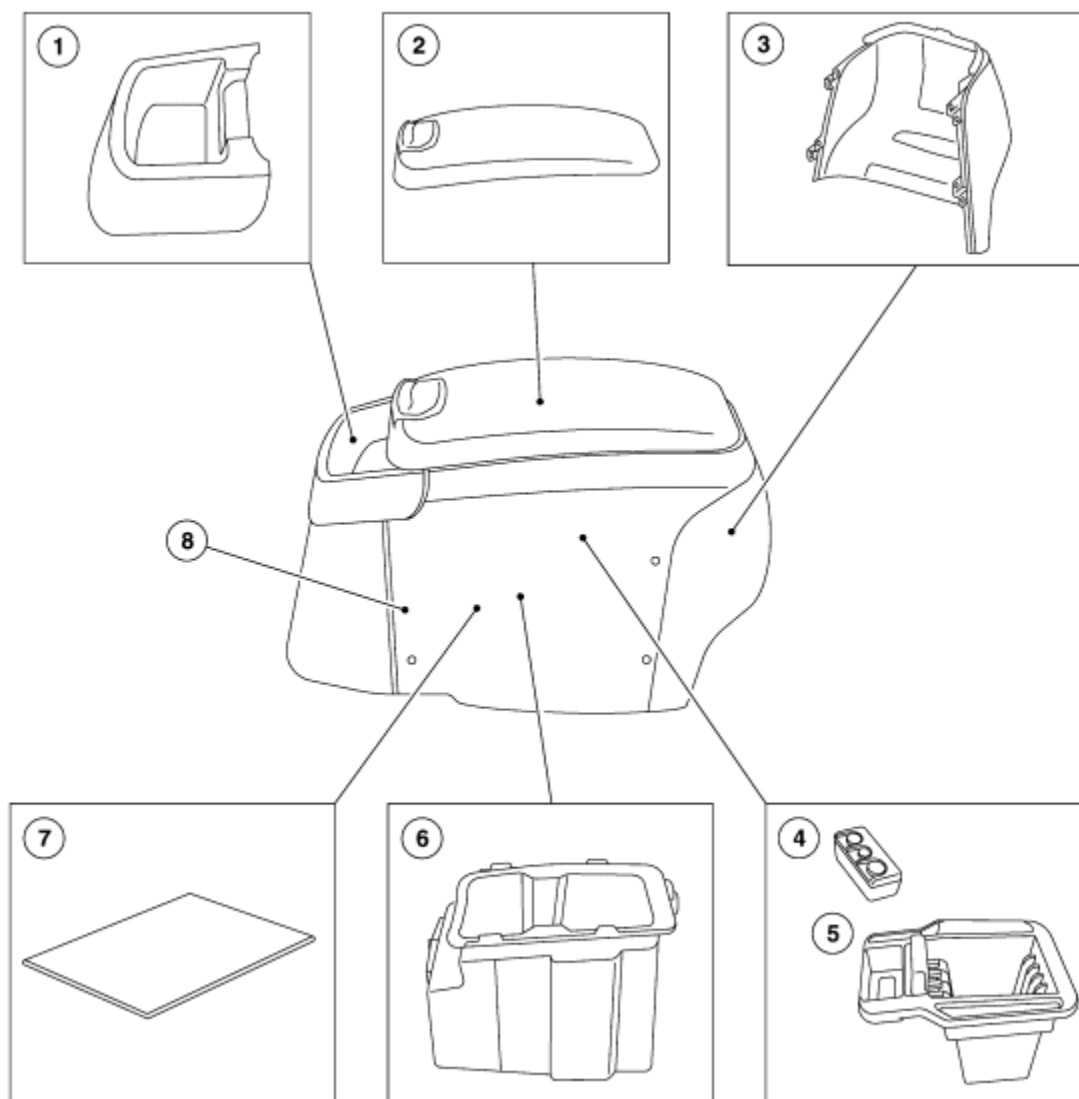
1999 F-Super Duty 250-550 Workshop
Manual

DESCRIPTION AND OPERATION

[Procedure revision date: 01/26/2000](#)

Console—Floor

Floor Console Components

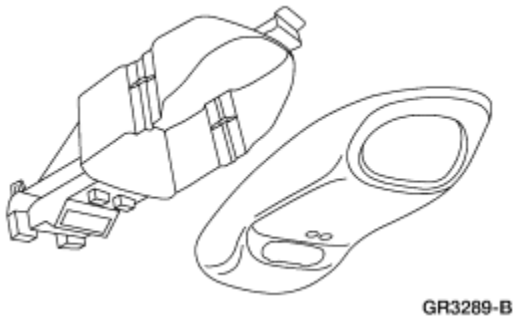


GR3135-C

Item	Part Number	Description
1	04567	Console Finish Panel
2	—	Console Cover
3	—	Console Rear Finish Panel
4	—	Coin Holder
5	—	Compact Disc Storage Tray
6	—	Storage Compartment
7	045G34	Console Tray Mat
8	—	Center Console Assembly

Console—Overhead

Overhead Console

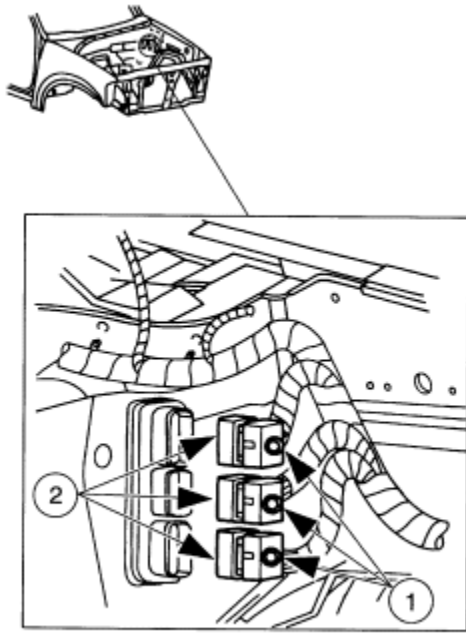


The overhead console consists of a storage compartment and an overhead trip computer.

Instrument Panel

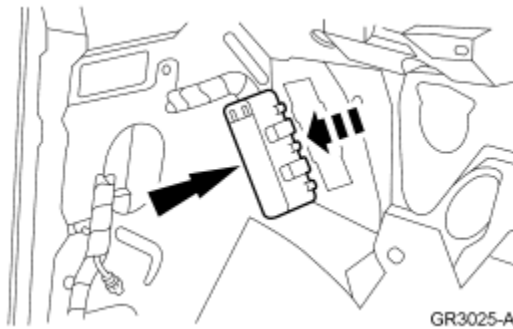
Removal

1. Remove the driver side air bag module; refer to [Section 501-20B](#).
2. Disconnect the LH bulkhead wiring harness connectors.
 1. Loosen the bolts.
 2. Disconnect the bulkhead wiring harness connectors.



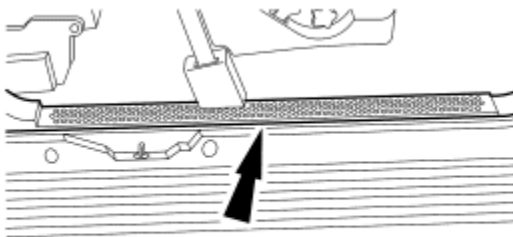
R10699-A

3. Remove the LH bulkhead wiring harness connectors from the dash panel.



GR3025-A

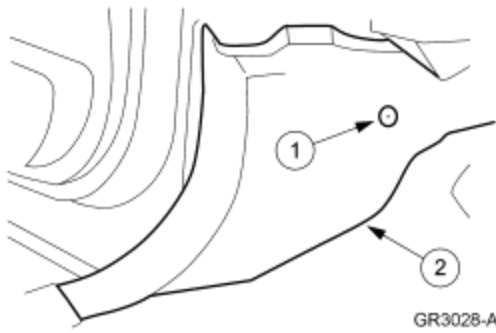
4. Remove the LH and RH scuff plates.



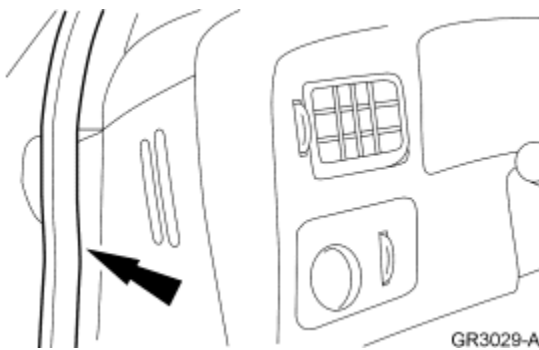
GR3137-A

5. Remove the LH and RH cowl side trim panels (02344).
 1. Remove the pushpins.

2. Remove the cowl side trim panels.



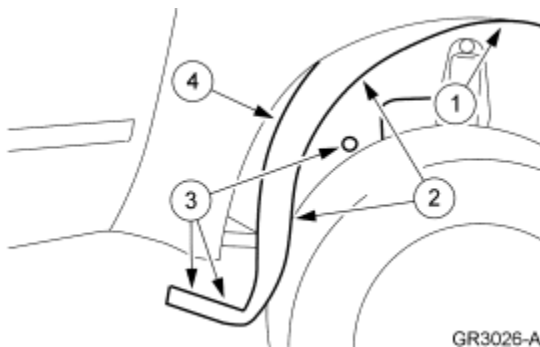
6. Position the LH and RH front door weatherstrips (20530) aside.



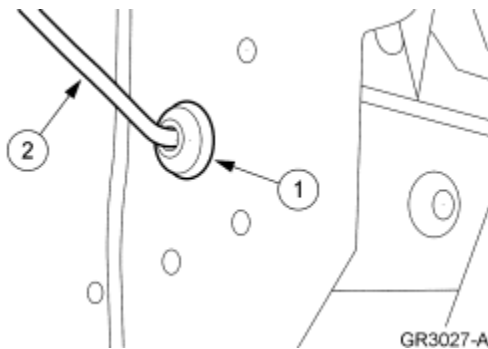
7. **NOTE:** The antenna cable will be removed with the instrument panel.


Remove the antenna base; refer to [Section 415-02](#).

8. Position the RH front fender splash shield (16102) away from the dash panel.
 1. Remove the three nuts.
 2. Remove the screws.
 3. Remove the pushpins.
 4. Position the front fender splash shield away from the dash panel.



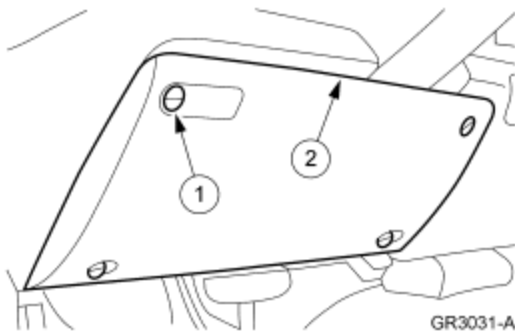
9. Route the antenna cable into the passenger compartment.
 1. Unseat the antenna cable grommet from the dash panel.
 2. Route the antenna cable into the passenger compartment.



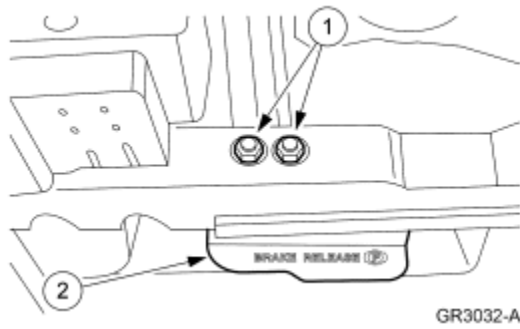
10.  **CAUTION: Use care when removing the instrument panel steering column cover (044F08) or damage to the cover locating tab may occur.**

Remove the instrument panel steering column cover.

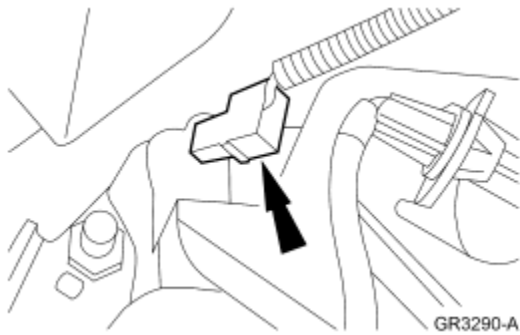
1. Unlock the retainers.
2. Remove the instrument panel steering column cover.



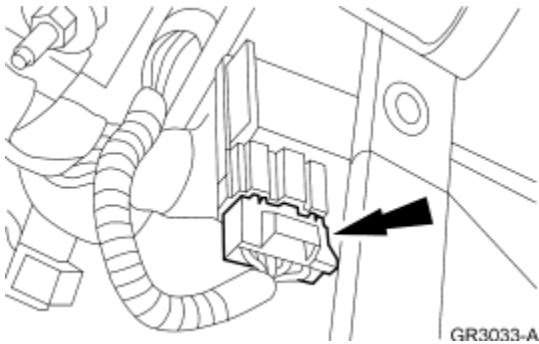
11. Position the parking brake release handle (2B658) aside.
 1. Remove the nuts.
 2. Position the parking brake release handle aside.



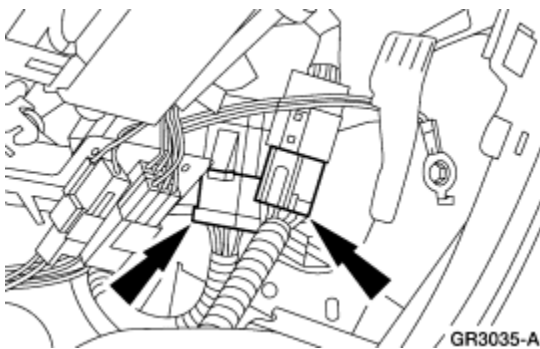
12. Disconnect the parking brake switch electrical connector.



13. Disconnect the brake pedal position (BPP) switch electrical connector.

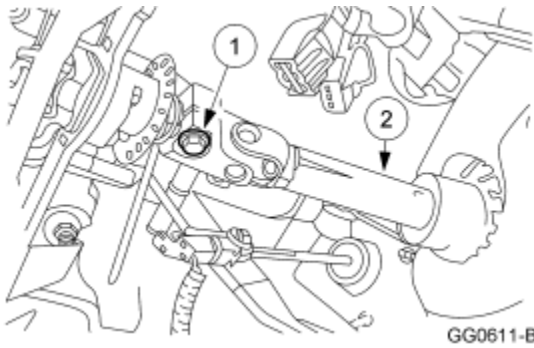


14. Through the steering column opening, disconnect the wiring harness electrical connectors.

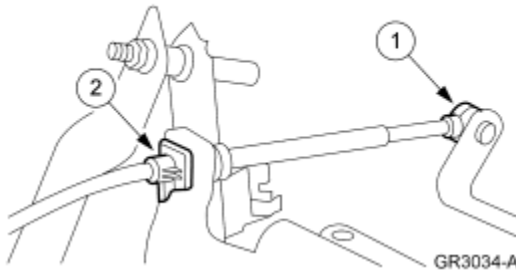


15. Separate the intermediate shaft from the steering column (3C529).

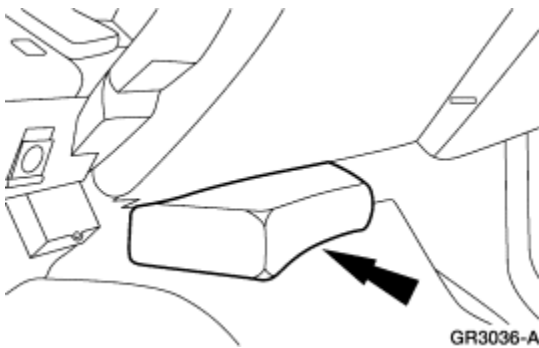
1. Remove the steering column shaft pinch bolt.
2. Separate the intermediate shaft from the steering column.



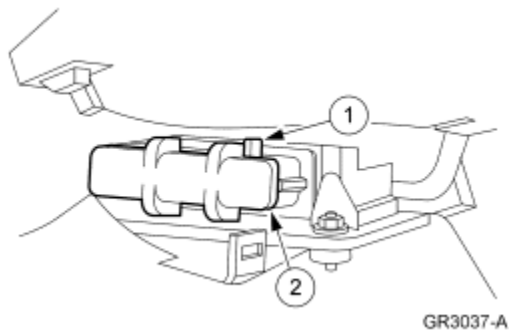
16. If equipped, disconnect the transmission shift cable from the steering column.
 1. Disconnect the cable from the steering column shift tube lever.
 2. Disconnect the cable from the steering column bracket.



17. Remove the electronic crash sensor (ECS) cover.



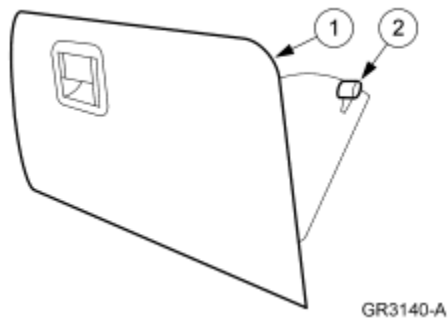
18. Disconnect the ECS electrical connector.
 1. Remove the locking clip.
 2. Disconnect the ECS electrical connector.



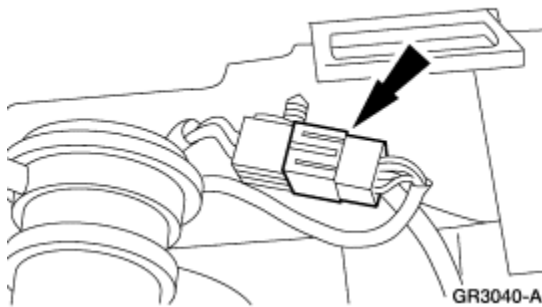
19. Lower the glove compartment (06010).

1. Open the glove compartment.

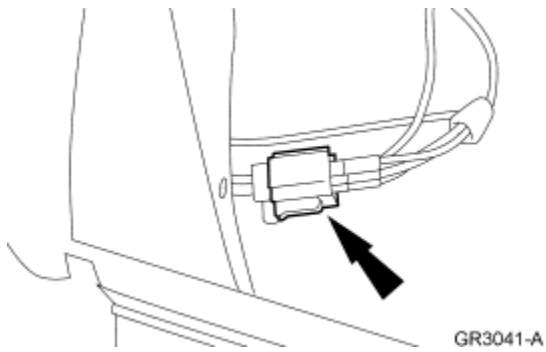
2. While releasing the glove compartment stops, lower the glove compartment.



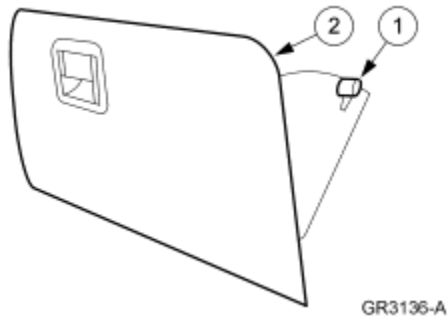
20. Disconnect the blend door actuator harness electrical connector.



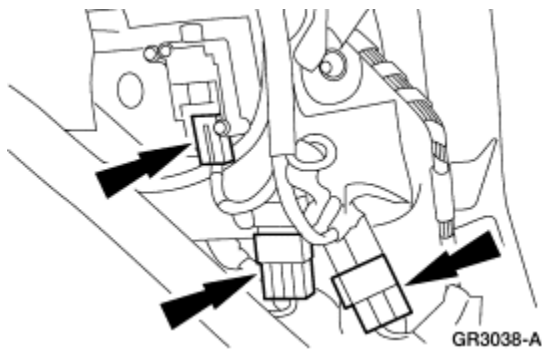
21. Disconnect the climate control vacuum harness connector.



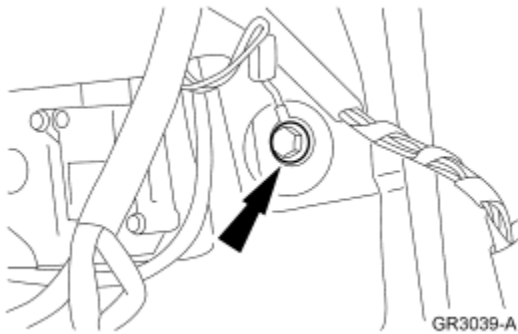
22. Close the glove compartment.
1. Depress the glove compartment stops.
 2. Close the glove compartment.



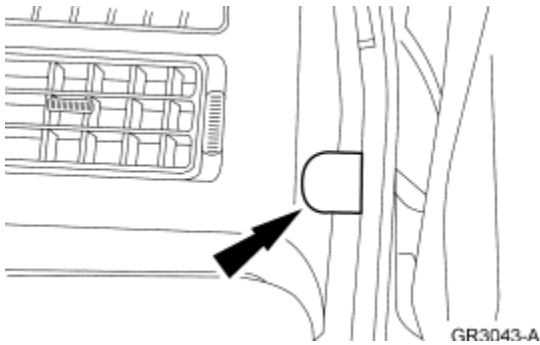
23. Disconnect the RH cowl side electrical connectors.



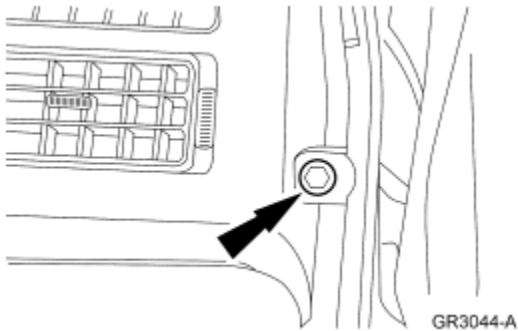
24. Remove the RH ground bolt.



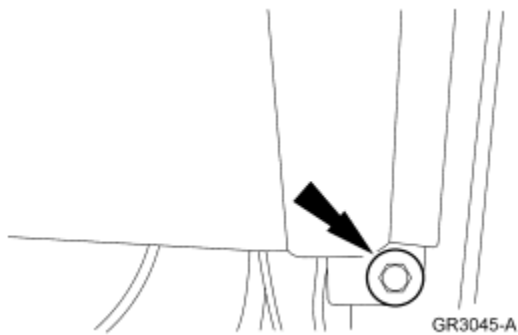
25. Remove the RH cowl side inner panel cover (024A78).



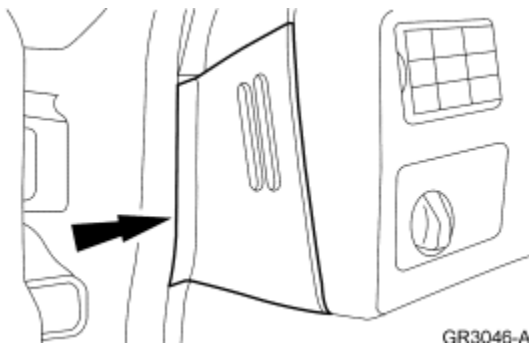
26. Remove the upper RH instrument panel cowl side bolt.



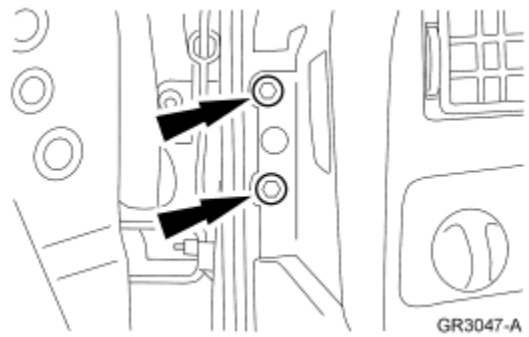
27. Remove the lower RH instrument panel cowl side bolt.



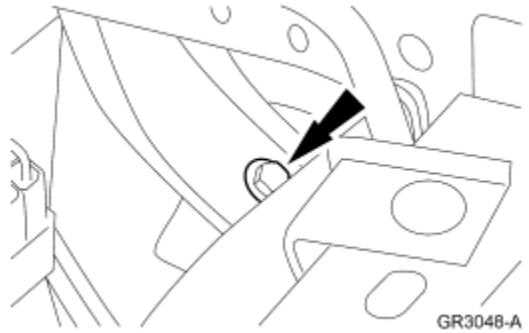
28. Remove the LH instrument panel finish end panel.



29. Remove the LH instrument panel cowl side bolts.

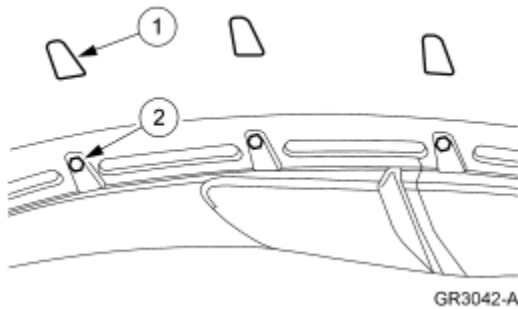


30. Remove the LH instrument panel center support bolt.



31. Remove the instrument panel cowl top bolts.

1. Remove the instrument panel covers (042N54).
2. Remove the bolts.



32. **NOTE:** Two technicians are required to perform this step.

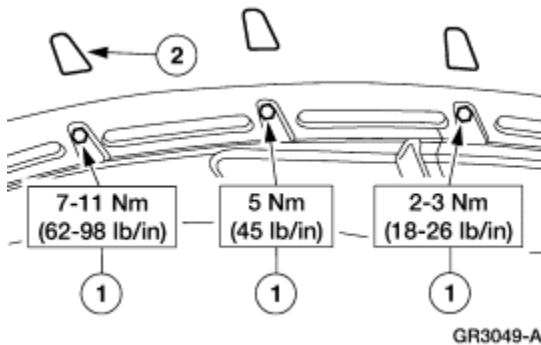
Remove the instrument panel (04320).

Installation

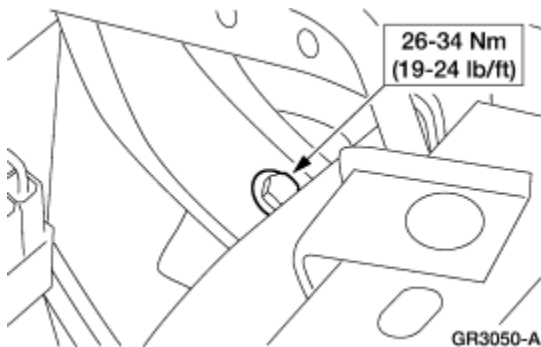
1. **NOTE:** Two technicians are required to perform this step.

Install the instrument panel.

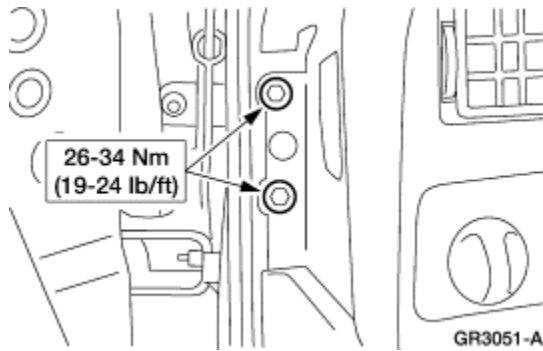
2. Install the instrument panel cowl top bolts.
 1. Install the bolts.
 2. Install the instrument panel covers.



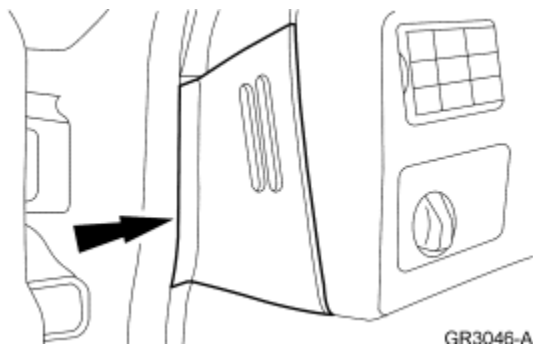
3. Install the LH instrument panel center support bolt.



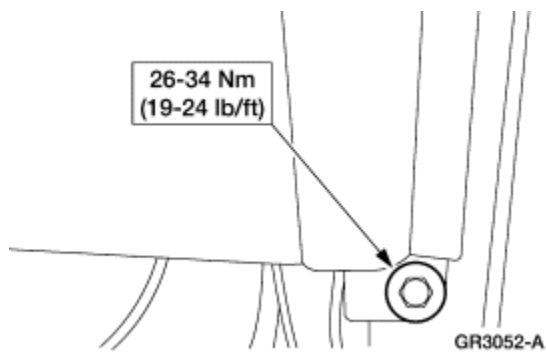
4. Install the LH instrument panel cowl side bolts.



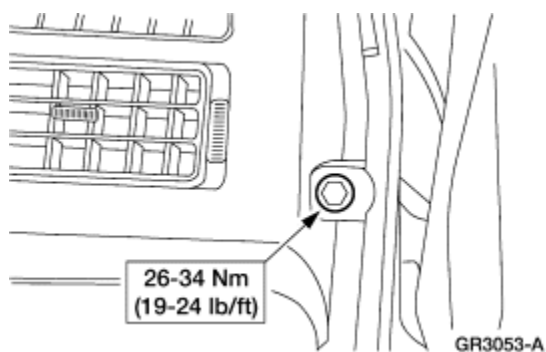
5. Install the LH instrument panel finish end panel.



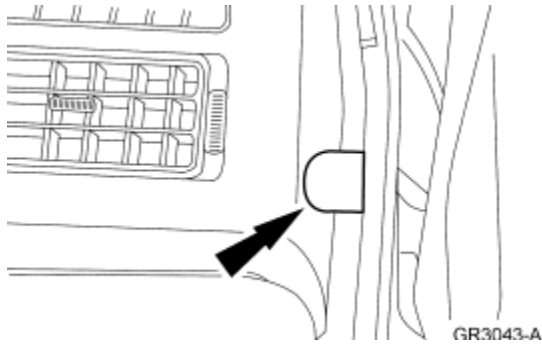
6. Install the lower RH instrument panel cowl side bolt.



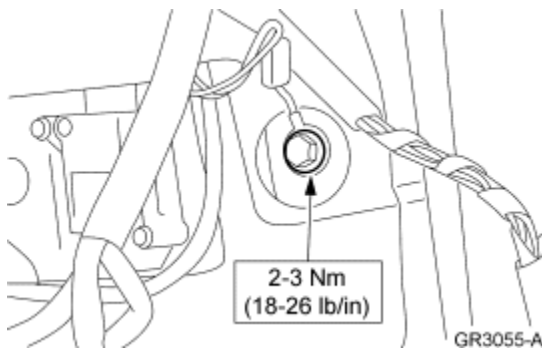
7. Install the upper RH instrument panel cowl side bolt.



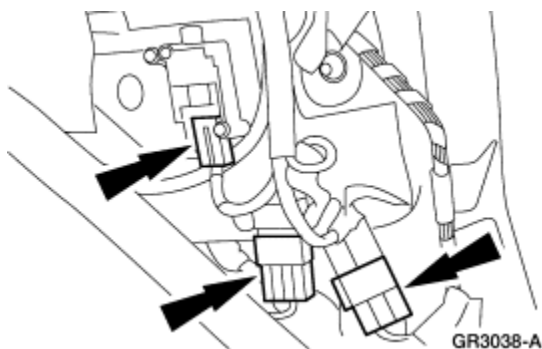
8. Install the RH cowl side inner panel cover.



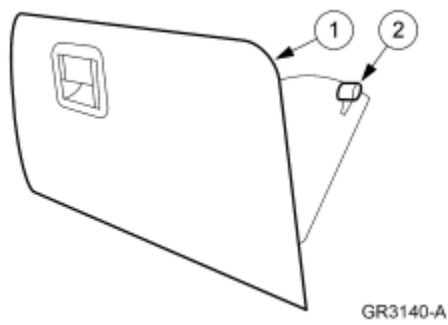
9. Install the RH ground bolt.



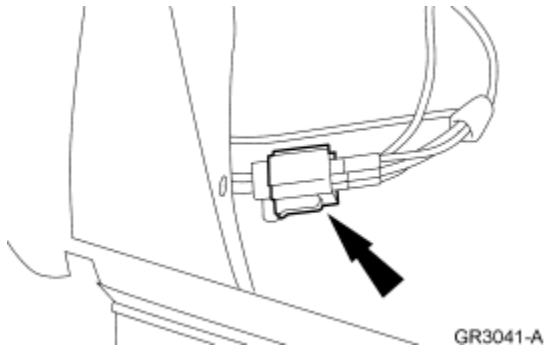
10. Connect the RH cowl side electrical connectors.



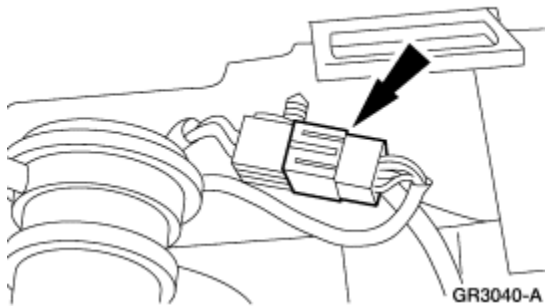
11. Lower the glove compartment.
1. Open the glove compartment.
 2. While releasing the glove compartment stops, lower the glove compartment.



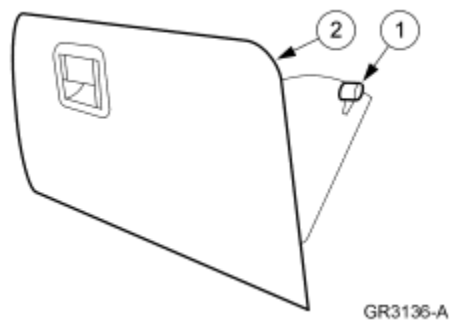
12. Connect the climate control vacuum harness connector.



13. Connect the blend door actuator harness electrical connector.

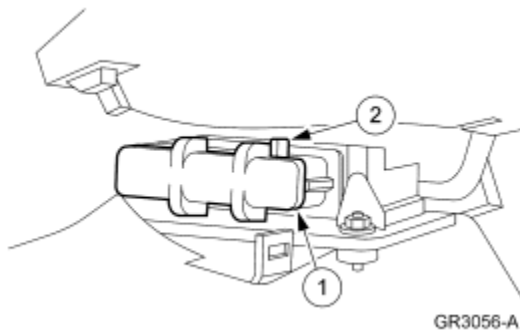


14. Close the glove compartment.
1. Depress the glove compartment stops.
 2. Close the glove compartment.

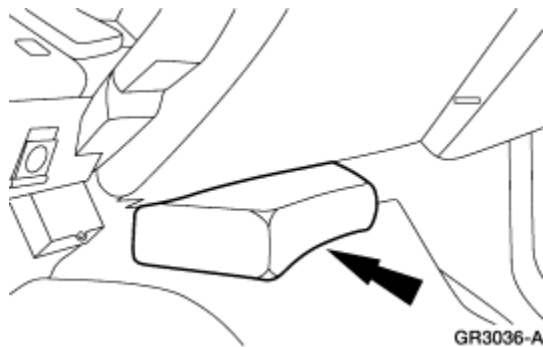


15. Connect the ECS electrical connector.

1. Connect the ECS electrical connector.
2. Install the locking clip.

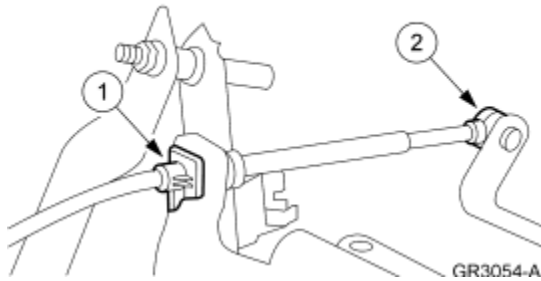


16. Install the ECS cover.

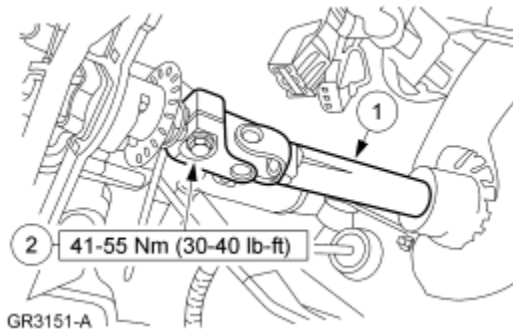


17. If equipped, connect the transmission shift cable to the steering column.

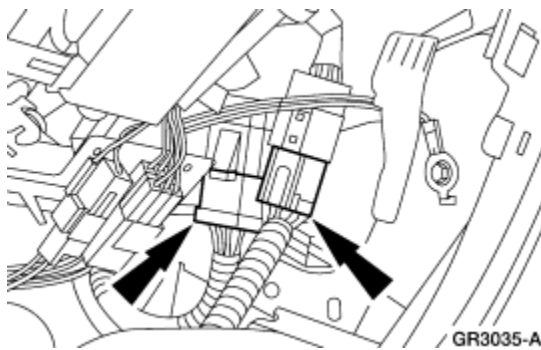
1. Connect the cable to the steering column bracket.
2. Connect the cable to the steering column shift lever.



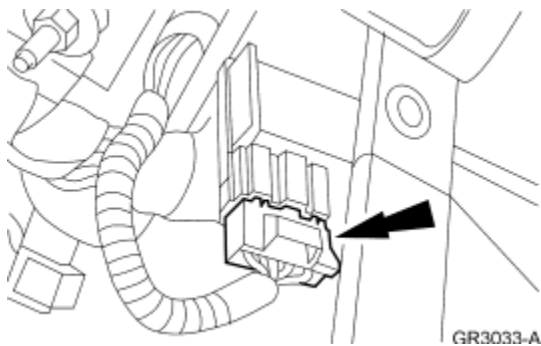
18. Connect the intermediate shaft to the steering column.
 1. Connect the intermediate shaft to the steering column.
 2. Install the steering column shaft pinch bolt.



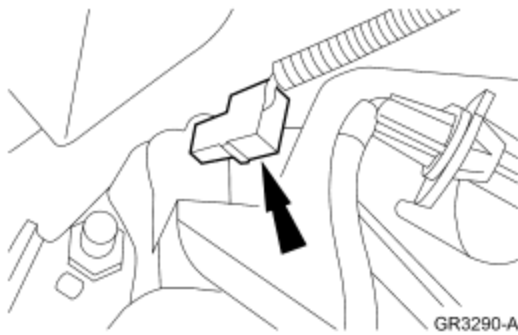
19. Through the steering column opening, connect the wiring harness electrical connectors.



20. Connect the BPP switch electrical connector.

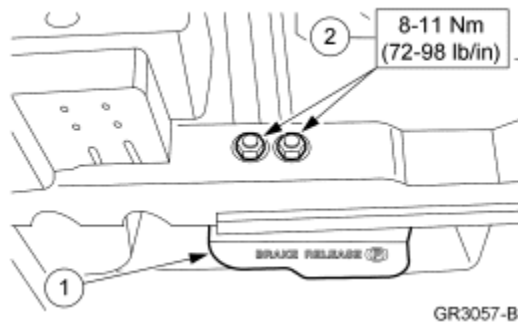


21. Connect the parking brake switch electrical connector.



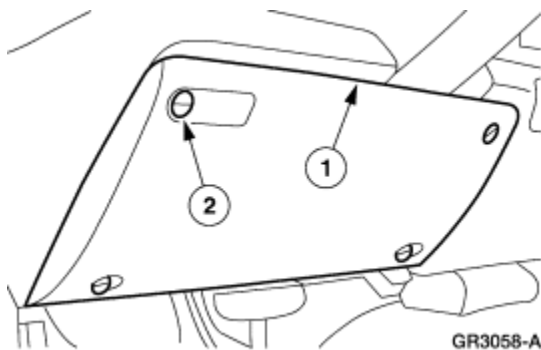
22. Install the parking brake release handle.

1. Position the parking brake release handle.
2. Install the nuts.



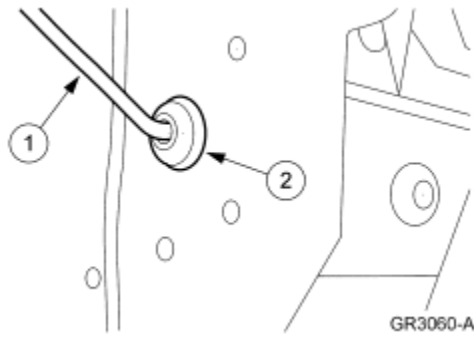
23. Install the instrument panel steering column cover.

1. Position the instrument panel steering column cover.
2. Lock the retainers.



24. Route the antenna cable into the inner fender opening.

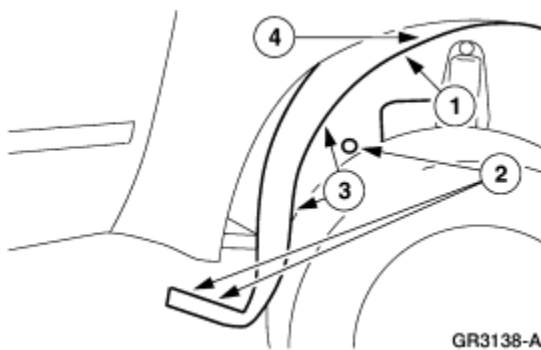
1. Route the antenna cable into the inner fender opening.
2. Seat the antenna cable grommet into the dash panel.



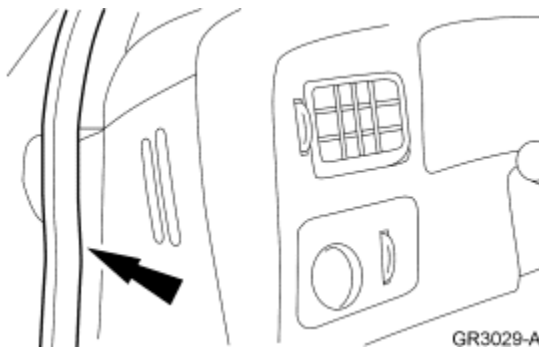
25. Install the antenna base; refer to [Section 415-02](#).

26. Install the RH front fender splash shield.

1. Position the front fender splash shield.
2. Install the pushpins.
3. Install the screws.
4. Install the two nuts.

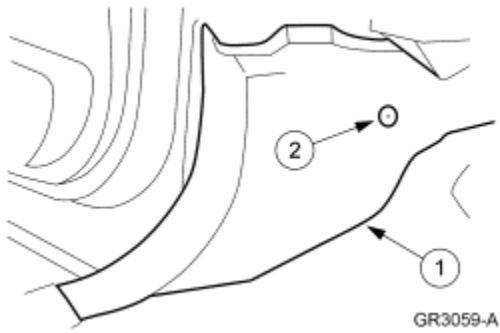


27. Install the LH and RH front door weatherstrips.

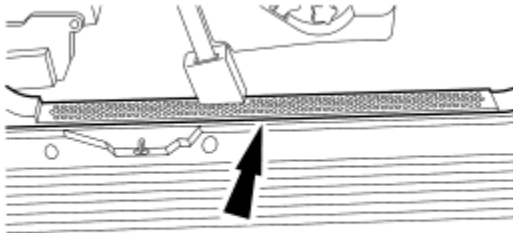


28. Install the LH and RH cowl side trim panels.

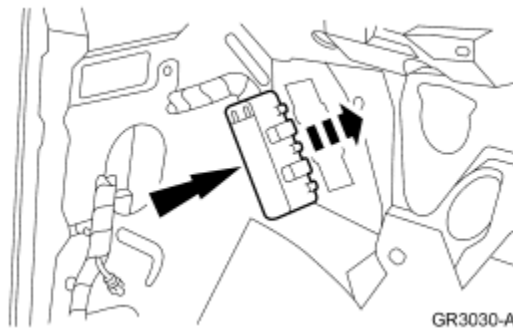
1. Position the cowl side trim panels.
2. Install the pushpins.



29. Install the LH and RH scuff plates.

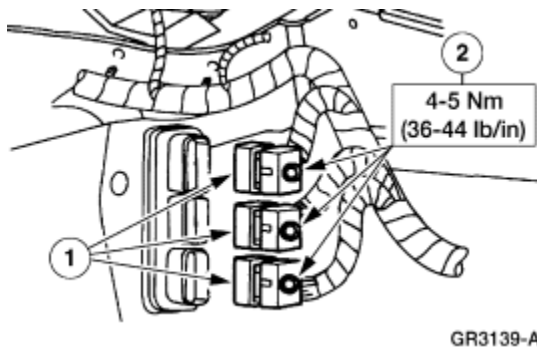


30. Install the LH bulkhead electrical connectors into the dash panel.



31. Connect the LH bulkhead wiring harness connectors.

1. Connect the bulkhead wiring harness connectors.
2. Tighten the bolts.



32. Install the driver side air bag module; refer to [Section 501-20B](#).

SECTION 501-12: Instrument Panel and Console REMOVAL AND INSTALLATION

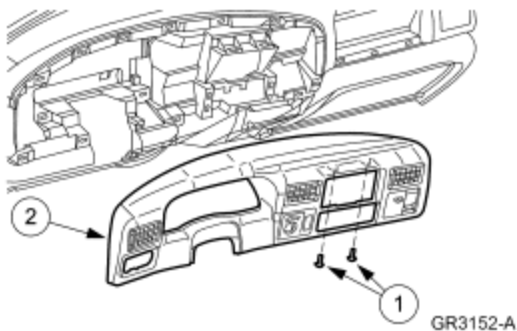
1999 F-Super Duty 250-550 Workshop
Manual

[Procedure revision date: 01/26/2000](#)

Instrument Panel—Cluster Finish Panel

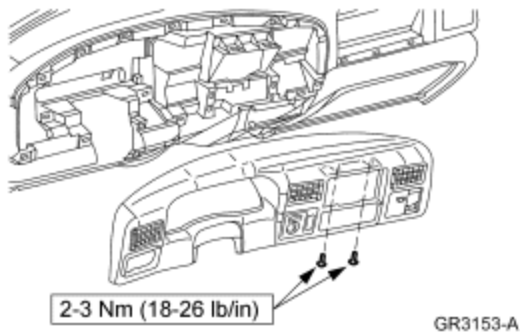
Removal

1. Remove the radio chassis (18806); refer to [Section 415-01](#).
2. Remove the instrument panel cluster finish panel.
 1. Loosen the screws.
 2. Remove the instrument panel cluster finish panel.
 - Disconnect the headlamp switch, panel dimmer switch, 4x4 switch (if equipped), passenger air bag deactivation switch, and power point electrical connectors.



Installation

1. To install, reverse the removal procedure.



SECTION 501-12: Instrument Panel and Console
REMOVAL AND INSTALLATION

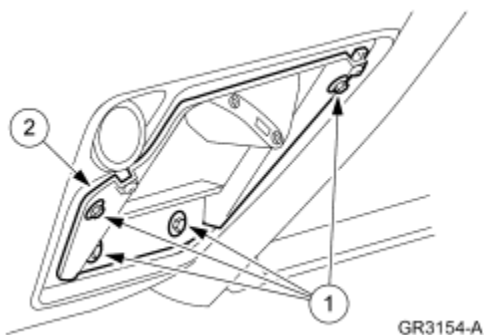
1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

Instrument Panel—Center Finish Panel

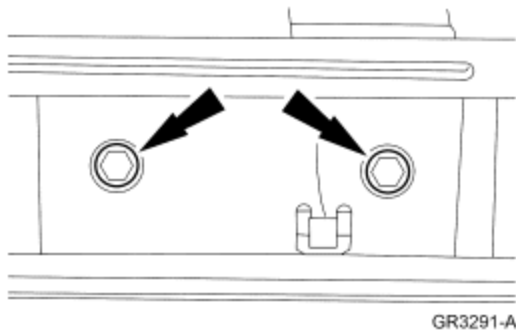
Removal

1. Remove the instrument panel cluster finish panel. For additional information, refer to [Instrument Panel—Cluster Finish Panel](#) in this section.
2. Remove the ashtray.
3. Remove the ashtray bracket.
 1. Remove the screws.
 2. Remove the ashtray bracket.

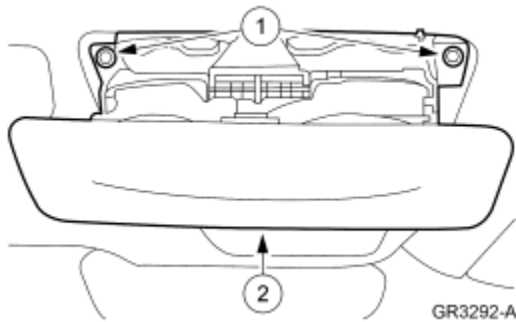


4. **NOTE:** Open the beverage holder to gain access to the lower beverage holder screws.

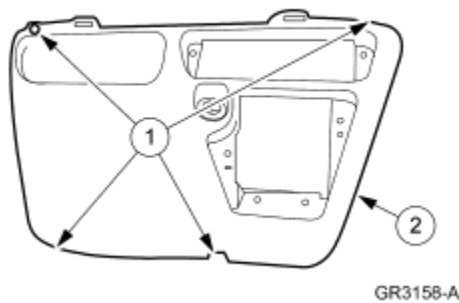
Remove the lower beverage holder screws.



5. Remove the beverage holder.
 1. Remove the upper screws.
 2. Remove the beverage holder.

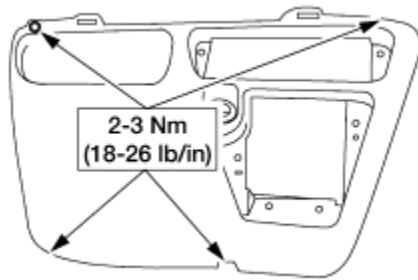


6. Remove the instrument panel center finish panel.
 1. Remove the screws.
 2. Remove the instrument panel center finish panel.
 - Disconnect the electrical connector.

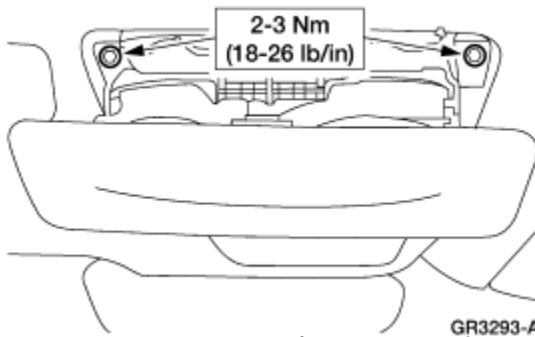


Installation

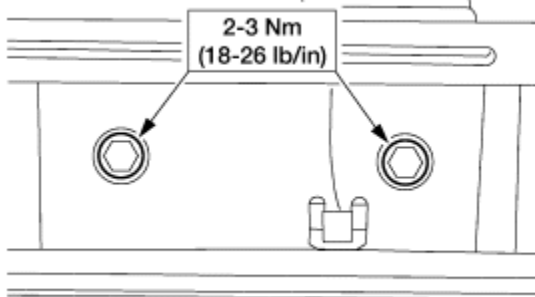
1. To install, reverse the removal procedure.



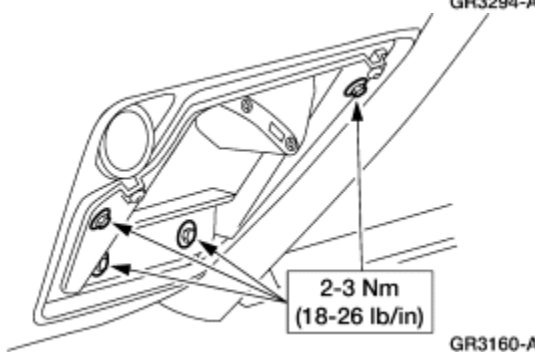
GR3159-A



GR3293-A



GR3294-A



GR3160-A

SECTION 501-12: Instrument Panel and
Console
REMOVAL AND INSTALLATION

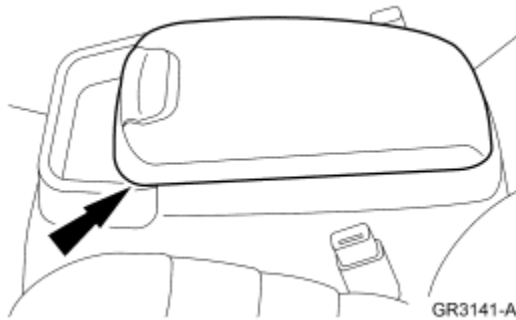
1999 F-Super Duty 250-550 Workshop
Manual

[Procedure revision date: 01/26/2000](#)

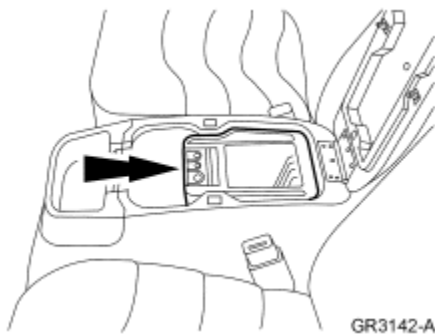
Console—Floor

Removal

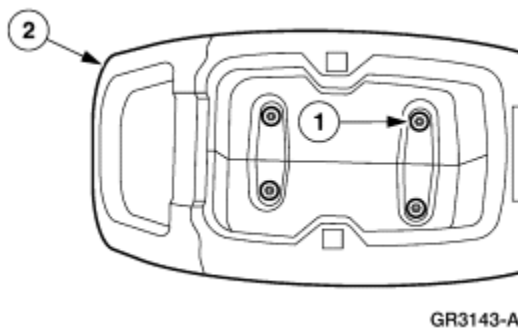
1. Open the floor console cover.



2. Remove the storage insert.

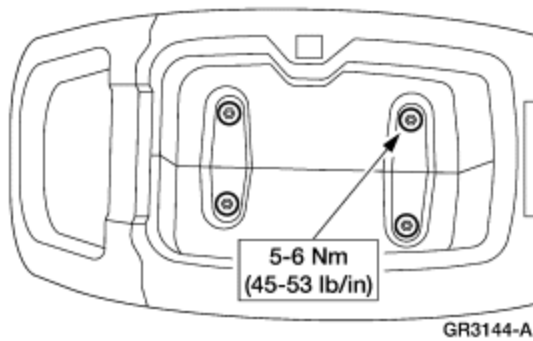


3. Remove the console tray mat (045G34).
4. Remove the floor console.
 1. Remove the nuts.
 2. Remove the floor console.



Installation

1. To install, reverse the removal procedure.



SECTION 501-14A:

Handles, Locks, Latches and Mechanisms

[SPECIFICATIONS](#)

DESCRIPTION AND OPERATION

[Handles, Locks, Latches And Mechanisms](#)

[Hood](#)

[Door, Front](#)

[Door, Rear, SuperCab](#)

[Door, Rear, Crew Cab](#)

[Tailgate](#)

DIAGNOSIS AND TESTING

[Locks, Latches And Mechanisms](#)

[Inspection and Verification](#)

[Symptom Chart](#)

[Pinpoint Tests](#)

[Component Test](#)

GENERAL PROCEDURES

[Latch Adjustment](#)

REMOVAL AND INSTALLATION

[Latch—Hood](#)

[Latch—Hood Release Cable](#)

[Handle—Hood Latch Release](#)
[Latch—Glove Box](#)
[Latch—Door, Front](#)
[Latch—Striker, Regular and Crew Cab](#)
[Latch—Striker, Front Door, SuperCab](#)
[Handle—Door, Inside Front](#)
[Handle—Door, Outside Front](#)
[Lock Cylinder—Door, Front](#)
[Latch Remote Control—Mini, Front Door](#)
[Push Button Rod—Front Door](#)
[Actuator—Door Lock](#)
[Switch](#)
[Switch—Door Ajar](#)
[Latch—Door, Rear Upper, SuperCab](#)
[Latch—Door, Rear Lower, SuperCab](#)
[Latch—Striker, Rear Door Upper, SuperCab](#)
[Latch—Striker, Rear Door Lower, SuperCab](#)
[Latch Remote Control—Rear Door, SuperCab](#)
[Latch Remote Control—Mini, SuperCab Rear Door](#)
[Handle—Door, Inside, Rear, SuperCab](#)
[Handle—Door, Outside, Rear, SuperCab](#)
[Latch—Door, Rear, Crew Cab](#)
[Handle—Door, Rear, Inside Crew Cab](#)
[Handle—Door, Rear, Outside Crew Cab](#)
[Latch Remote Control—Mini, Crew Cab Rear Door](#)
[Push Button Rod—Rear, Crew Cab](#)
[Push Button Rod—Linkage, Horizontal, Rear Door, Crew Cab](#)
[Push Button Rod—Bellcrank, Rear Door, Crew Cab](#)
[Handle—Tailgate](#)
[Latch—Tailgate](#)
[Lock Cylinder—Tailgate](#)

SECTION 501-14A: Handles, Locks, Latches and
Mechanisms
SPECIFICATIONS

1999 F-Super Duty 250-550 Workshop
Manual

[Procedure revision date: 01/26/2000](#)

General Specifications	
Item	Specification
Multi-Purpose Grease Spray D7AZ-19584-AA	ESB-M1C106-B

Torque Specifications			
Description	Nm	Lb/Ft	Lb/In
Hood Latch Bolts	12	9	—
Door Latch Bolts (Regular and Crew Cab)	12	9	—
Door Striker Bolts (Regular and Crew Cab)	25	19	—
Outside Door Handle Nuts	9	—	80
Upper Door Latch Bolts (SuperCab) Rear Door	9	—	80
Lower Door Latch Bolts (SuperCab) Rear Door	12	9	—
Upper Door Latch Striker Bolts (SuperCab) Rear Door	25	19	—
Lower Door Latch Striker Bolts (SuperCab) Rear Door	25	19	—
Tailgate Access Panel Screws	12	9	—
Tailgate Handle Nuts	9	—	80
Tailgate Latch Screws	25	19	—

SECTION 501-14A: Handles, Locks, Latches and
Mechanisms
DESCRIPTION AND OPERATION

1999 F-Super Duty 250-550 Workshop
Manual

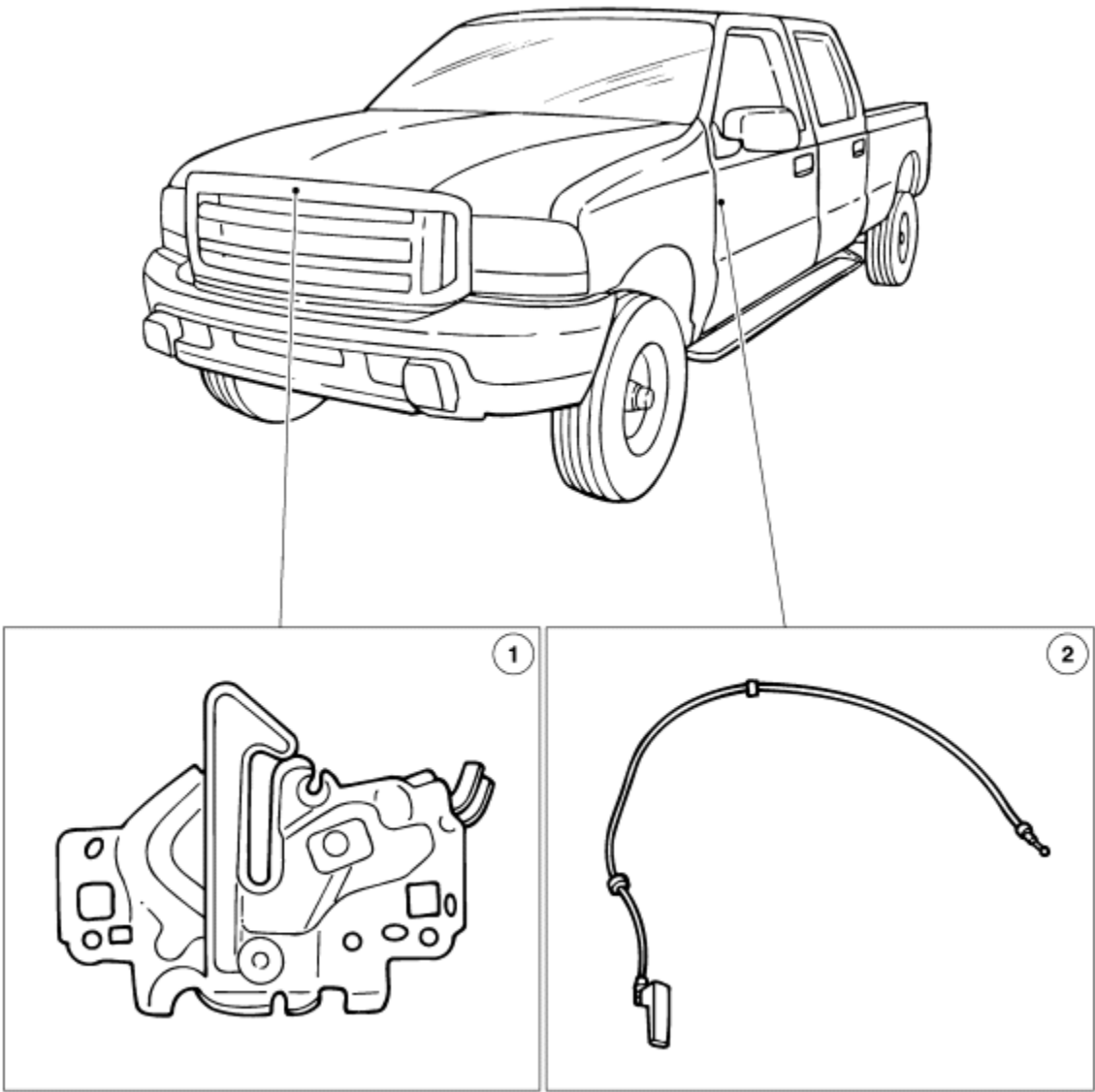
[Procedure revision date: 01/26/2000](#)

Handles, Locks, Latches And Mechanisms

Hood

Opening and closing of the hood (16612) is controlled by the following:

Hood Latch



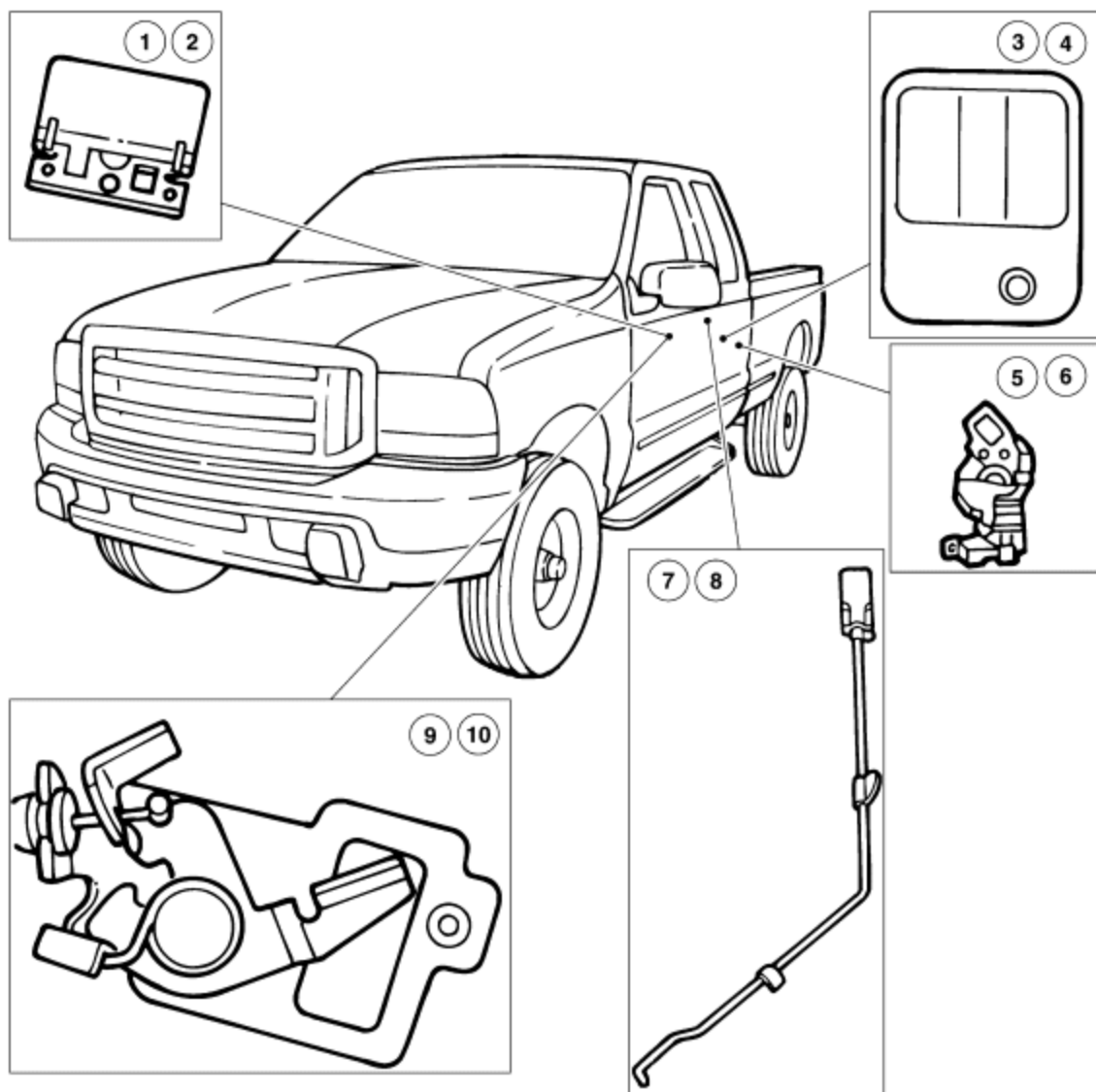
DN0644-A

Item	Part Number	Description
1	16700	Hood Latch
2	16916	Hood Latch Control Handle and Cable

Door, Front

Opening and closing of the front door (20124) is controlled by the following:

Front Door



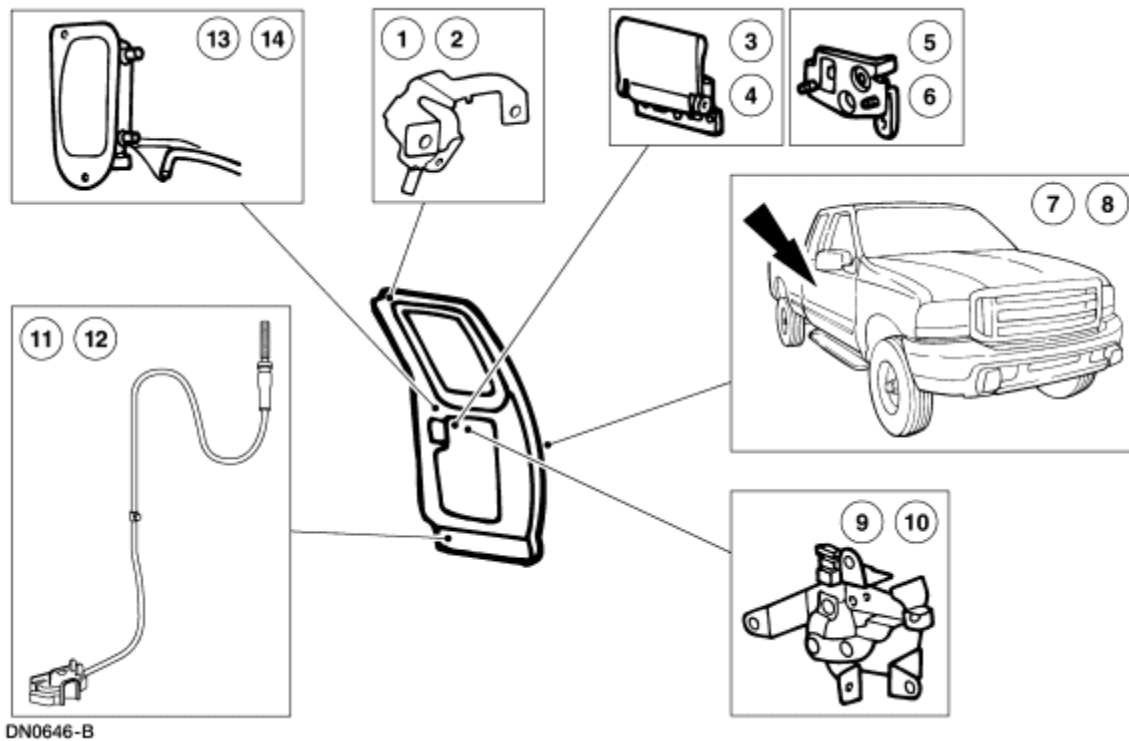
DN0645-B

Item	Part Number	Description
1	22600	Inside Door Handle (RH)
2	22601	Inside Door Handle (LH)
3	22400	Outside Door Handle (RH)
4	22401	Outside Door Handle (LH)
5	21812	Front Door Latch (RH)
6	21813	Front Door Latch (LH)
7	218A00	Push Button Rod (RH)
8	218A00	Push Button Rod (LH)
9	21818	Mini Remote (RH)
10	21819	Mini Remote (LH)

Door, Rear, SuperCab

Opening and closing of the rear door (24630) on the SuperCab body is controlled by the following:

Rear Door — SuperCab

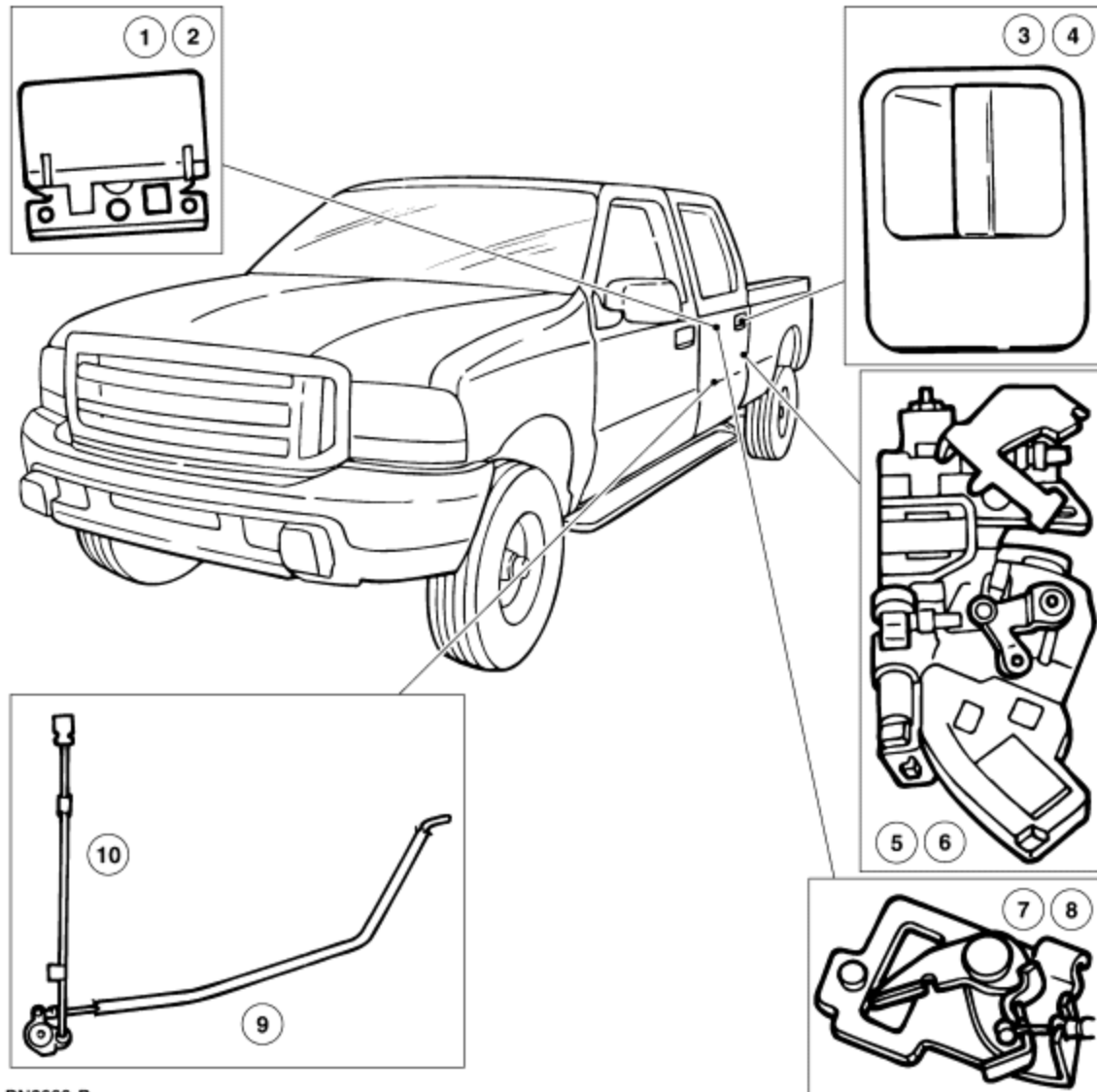


Item	Part Number	Description
1	264B64	Rear Door Latch, Upper (RH)
2	264B65	Rear Door Latch, Upper (LH)
3	22600	Inside Door Handle (RH)
4	22601	Inside Door Handle (LH)
5	431B14	Rear Door Mini-Remote (RH)
6	431B15	Rear Door Mini-Remote (LH)
7	24630	Rear Door (RH)
8	24631	Rear Door (LH)
9	26404	Rear Door Remote Control (RH)
10	26405	Rear Door Remote Control (LH)
11	264B76	Rear Door Latch and Cable, Lower (RH)
12	264B77	Rear Door Latch and Cable, Lower (LH)
13	26600	Outside Door Handle (RH)
14	26601	Outside Door Handle (LH)

Door, Rear, Crew Cab

Opening and closing of the rear door on the Crew Cab body is controlled by the following:

Rear Door — Crew Cab



DN0666-B

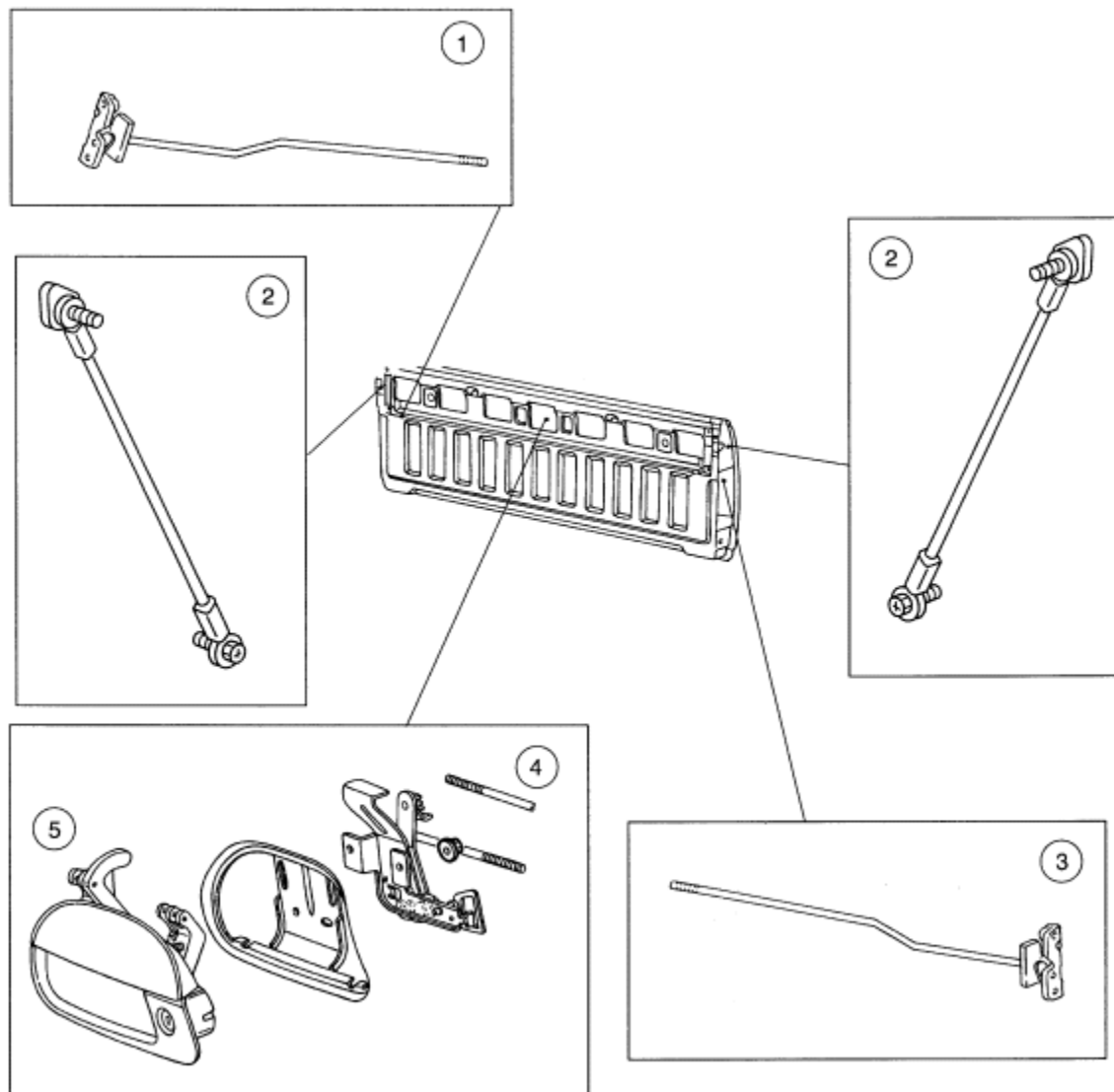
Item	Part Number	Description
1	22600	Inside Door Handle (RH)
2	22601	Inside Door Handle (LH)
3	26600	Outside Door Handle (RH)
4	26601	Outside Door Handle (LH)
5	264B52	Rear Door Latch (RH)
6	264B53	Rear Door Latch (LH)
7	21818	Rear Door Mini-Remote (RH)

8	21819	Rear Door Mini-Remote (LH)
9	264B14	Bellcrank and Horizontal Rod
10	264A80	Push Button Rod

Tailgate

Opening and closing of the tailgate (40700) is controlled by the following:

Handle and Latch — Tailgate



N12283-A

Item	Part Number	Description
1	43150	RH Tailgate Latch
2	43052	Tailgate Check Cable
3	43150	LH Tailgate Latch


4	43170	Tailgate Latch Remote Control
5	43400	Liftgate Handle

SECTION 501-14A: Handles, Locks, Latches and Mechanisms 1999 F-Super Duty 250-550 Workshop Manual

DIAGNOSIS AND TESTING [Procedure revision date: 01/26/2000](#)

Locks, Latches And Mechanisms

Refer to Wiring Diagrams Cell 110 ([F-53 Motorhome Chassis](#), [F-Super Duty 250-550](#)), Power Door Locks for schematic and connector information.

Special Tool(s)	
	73 Digital Multimeter 105-R0051 or Equivalent

Inspection and Verification

1. Verify the customer concern by operating the handles, locks, latches and mechanisms.
2. **NOTE:** Be sure the battery (10655) is fully charged before starting any electrical diagnosis.

Check for mechanical binding by manually operating the door locks. Operate the lock system several times from each switch while observing the operation of all door locks.

3. Verify the components of systems related to the fuse for proper operation. If the components or systems are not working properly, the fuse(s), fuse feed circuit(s) or fuse load side circuit(s) may be at fault.
4. Visually inspect for obvious signs of mechanical and electrical damage; refer to the following chart.

Visual Inspection Chart

Mechanical	Electrical
<ul style="list-style-type: none"> • Binding latch mechanisms • Binding linkage • Misaligned door 	<ul style="list-style-type: none"> • Battery • Circuitry open/shorted • Damaged door lock switch • Damaged power door lock actuator

5. If the fault is not visually evident, determine the symptom and proceed to the Symptom Chart.



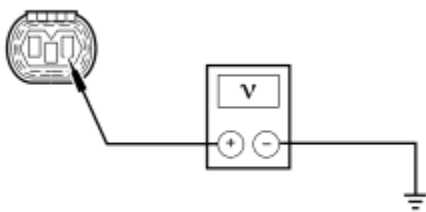
Symptom Chart

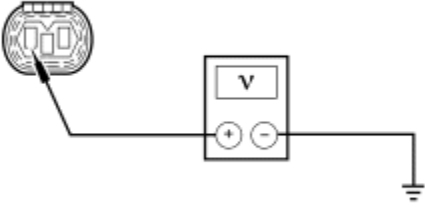
Symptom Chart		
Condition	Possible Sources	Action
<ul style="list-style-type: none"> • The Door Lock is Inoperative 	<ul style="list-style-type: none"> • Circuitry. • Power door lock actuator. 	<ul style="list-style-type: none"> • GO to Pinpoint Test A.
<ul style="list-style-type: none"> • The Door Locks are Inoperative 	<ul style="list-style-type: none"> • Fuse. • Battery. • Circuitry. • Poor ground. • Door lock switch. 	<ul style="list-style-type: none"> • GO to Pinpoint Test B.
<ul style="list-style-type: none"> • All the Locks Operate From One Switch Only 	<ul style="list-style-type: none"> • Power to switch. • Door lock switch. • Circuitry. 	<ul style="list-style-type: none"> • GO to Pinpoint Test C.
<ul style="list-style-type: none"> • The Door Locks Operate Only One Way 	<ul style="list-style-type: none"> • Circuitry. • Door lock switch. 	<ul style="list-style-type: none"> • GO to Pinpoint Test D.

Pinpoint Tests


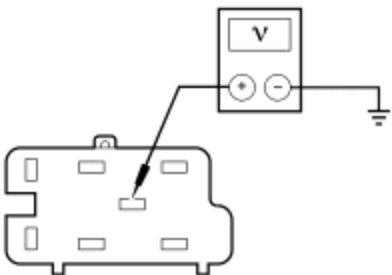
PINPOINT TEST A: THE DOOR LOCK IS INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
A1 CHECK THE MANUAL OPERATION OF THE SUSPECT DOOR LOCK	
	1 Manually operate the inoperative door lock.

	<p>2 Check for binding or stuck condition.</p>
	<ul style="list-style-type: none"> Is the lock stuck or binding? <p>→ Yes REPAIR or REPLACE binding components. TEST the system for normal operation.</p> <p>→ No GO to A2.</p>
<p>A2 CHECK THE POWER DOOR LOCK ACTUATOR FOR LOCK OPERATION</p>	
<p>1</p> 	
<p>2</p>  <p>Inoperative Power Door Lock Actuator</p>	
<p>3</p>  <p>N13703-A</p>	<p>3 Measure the voltage between the inoperative power door lock actuator connector, Circuit 117 (PK/BK), and ground while operating the door lock switch to the lock position.</p>
	<ul style="list-style-type: none"> Is the voltage greater than 10 volts? <p>→ Yes GO to A3.</p> <p>→ No REPAIR Circuit 117 (PK/BK). TEST the system for normal operation.</p>
<p>A3 CHECK THE POWER DOOR LOCK ACTUATOR FOR UNLOCK OPERATION</p>	
<p>1</p>	<p>1 Measure the voltage between the inoperative</p>

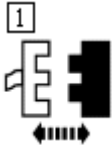
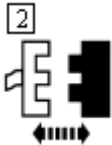
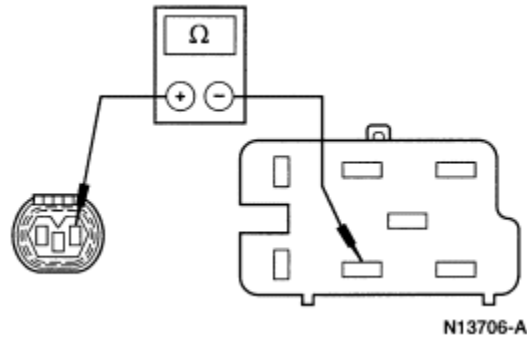
 <p>N13704-A</p>	<p>power door lock actuator connector, Circuit 118 (PK/O), and ground while operating the door lock switch to the unlock position.</p>
	<ul style="list-style-type: none"> • Is the voltage greater than 10 volts? <p>→ Yes REPLACE the power door lock actuator. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 118 (PK/O). TEST the system for normal operation.</p>

PINPOINT TEST B: THE DOOR LOCKS ARE INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
B1 CHECK CIRCUIT 517 (BK/W)	
<p>1</p>  <p>RH Door Lock Switch</p>	
<p>2</p>  <p>N13705-A</p>	<p>2 Measure the voltage between the RH door lock switch C603-4, Circuit 517 (BK/W), and ground.</p>

	<ul style="list-style-type: none"> • Is the voltage greater than 10 volts? <p>→ Yes GO to B2.</p> <p>→ No REPAIR Circuit 517 (BK/W). TEST the system for normal operation.</p>
--	--

B2 CHECK THE RESISTANCE ON CIRCUIT 117 (PK/BK)

<p>1</p>  <p>RH Door Lock Switch</p>	
<p>2</p>  <p>RH Front Power Door Lock Actuator</p>	
<p>3</p> 	<p>3 Measure the resistance between the RH door lock switch C603-6, Circuit 117 (PK/BK), and the RH front door lock actuator C602, Circuit 117 (PK/BK).</p>

	<ul style="list-style-type: none"> • Is the resistance less than 5 ohms? <p>→ Yes GO to B3.</p> <p>→ No REPAIR Circuit 117 (PK/BK). TEST the system for normal operation.</p>
--	---

B3 CHECK THE RESISTANCE ON CIRCUIT 118 (PK/O)

<p>1</p>	
----------	--

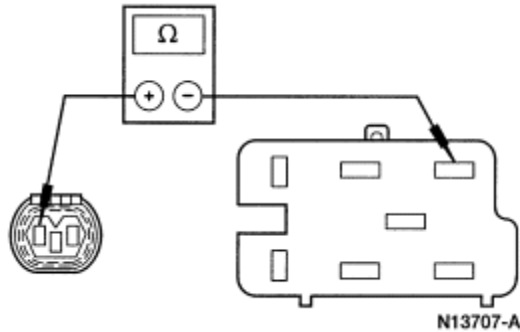


RH Door Lock Switch



RH Front Power Door Lock Actuator

3



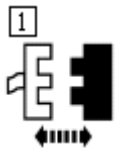
3 Measure the resistance between the RH door lock switch C603-3 (PK/O), and the RH front door lock actuator C602, Circuit 118 (PK/O).

- Is the resistance less than 5 ohms?

→ **Yes**
GO to [B4](#).

→ **No**
REPAIR Circuit 118 (PK/O). TEST the system for normal operation.

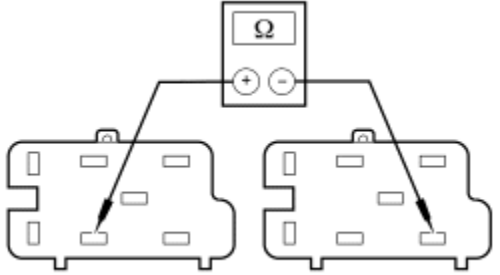
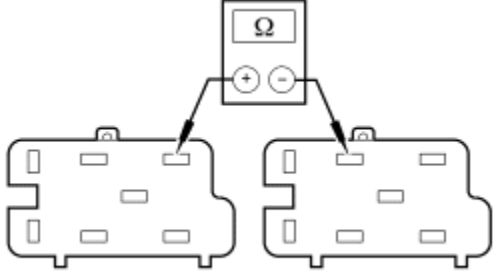
B4 CHECK THE LOCK/UNLOCK CIRCUITS BETWEEN THE SWITCHES




LH Door Lock Switch

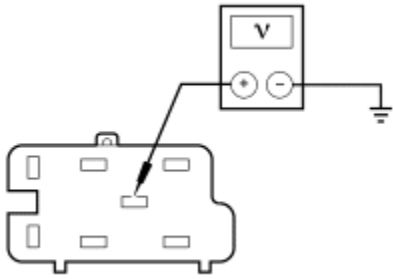
2

2 Measure the resistance between the RH door lock switch C603-7, Circuit 119 (PK/Y), and the LH door lock switch C505-6, Circuit 119 (PK/Y).

 <p>N13708-A</p>	
<p>3</p>  <p>N13709-A</p>	<p>3 Measure the resistance between the RH door lock switch C603-3, Circuit 120 (PK/LG), and the LH door lock switch C505-3, Circuit 120 (PK/LG).</p>
	<ul style="list-style-type: none"> • Are the resistances less than 5 ohms? <p>→ Yes REPLACE the RH door lock switch. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 119 (PK/Y) or 120 (PK/LG). TEST the system for normal operation.</p>

PINPOINT TEST C: ALL THE LOCKS OPERATE FROM ONE SWITCH ONLY

CONDITIONS	DETAILS/RESULTS/ACTIONS
C1 CHECK THE VOLTAGE TO THE INOPERATIVE DOOR LOCK SWITCH	
<p>1</p>  <p>Inoperative Door Lock Switch</p>	
<p>2</p>	<p>2 Measure the voltage between the inoperative door lock switch connector pin 4, Circuit 517 (BK/W), and ground.</p>



N13705-A

- Is the voltage greater than 10 volts?

→ **Yes**
GO to [C2](#).

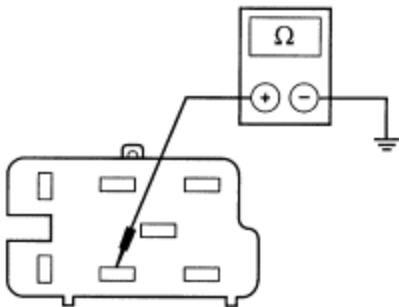
→ **No**
REPAIR Circuit 517 (BK/W). TEST the system for normal operation.

C2 CHECK THE CIRCUITRY RESISTANCES



LH Door Lock Switch

2

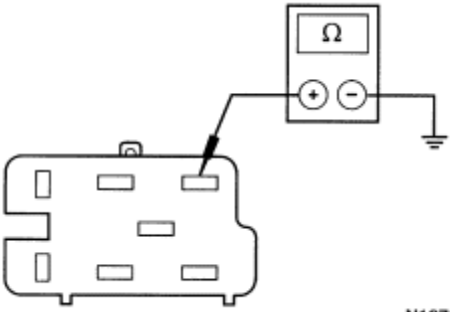


N13710-A


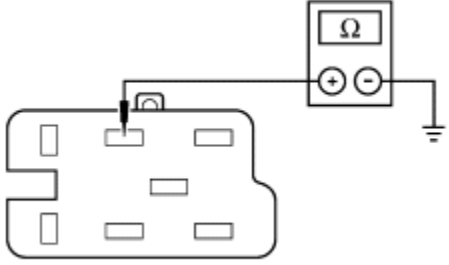
2 Measure the voltage between the LH door lock switch C505-6, Circuit 119 (PK/Y), and ground.


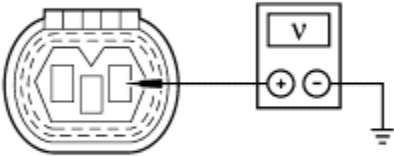
3

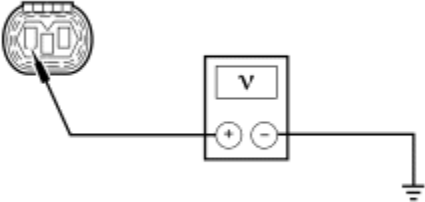
3 Measure the resistance between the LH door lock switch C505-3, Circuit 120 (PK/LG), and ground.

 <p>N13711-A</p>	
	<ul style="list-style-type: none"> • Are the resistances greater than 10,000 ohms? <p>→ Yes REPLACE the door lock switch in question. TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 119 (PK/Y) or 120 (PK/LG). TEST the system for normal operation.</p>

PINPOINT TEST D: ALL THE LOCKS OPERATE ONLY ONE WAY

CONDITIONS	DETAILS/RESULTS/ACTIONS
D1 CHECK CIRCUIT 57 (BK)	
<p>1</p>  <p>LH Door Lock Switch</p>	
<p>2</p>  <p>DN0692-A</p>	<p>2 Measure the resistance between the LH door lock switch C505-2, Circuit 57 (BK), and ground.</p>

	<ul style="list-style-type: none"> • Is the resistance less than 5 ohms? <p>→ Yes GO to D2.</p> <p>→ No REPAIR Circuit 57 (BK). TEST the system for normal operation.</p>
D2 CHECK CIRCUIT 117 (PK/BK)	
<p>1</p>  <p>RH Door Lock Actuator</p>	
<p>2</p>  <p>DN0805-A</p>	<p>2 Measure the voltage between the RH power door lock actuator connector, Circuit 117 (PK/BK), and ground while operating the door lock switch to the lock position.</p>
	<ul style="list-style-type: none"> • Is the voltage greater than 10 volts? <p>→ Yes GO to D3.</p> <p>→ No REPAIR Circuit 117 (PK/BK). TEST the system for normal operation.</p>
D3 CHECK CIRCUIT 118 (PK/O)	
<p>1</p>	<p>1 Measure the voltage between the RH power door lock actuator connector, Circuit 118 (PK/O), and ground while operating the door lock switch to the unlock position.</p>

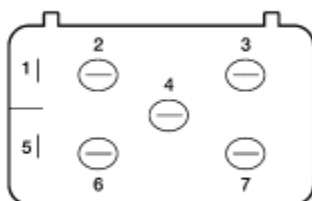
 <p>N13704-A</p>	
	<ul style="list-style-type: none"> • Is the voltage greater than 10 volts? <p>→ Yes REPAIR Circuit 517 (BK/W). TEST the system for normal operation.</p> <p>→ No REPAIR Circuit 118 (PK/O). TEST the system for normal operation.</p>

Component Test

Switch

1. Remove the switch; for additional information, refer to [Switch](#) in this section.

Refer to the following chart for switch testing.



DN0691-A

Power Door Lock Switch		
Pins	Switch Position	Result
1, 2	Neutral	Open
1, 2	Lock	Open
1, 2	Unlock	Open

1, 3	Neutral	Open
1, 3	Lock	Open
1, 3	Unlock	Open
1, 4	Neutral	Open
1, 4	Lock	Open
1, 4	Unlock	Open
1, 5	Neutral	Open
1, 5	Lock	Open
1, 5	Unlock	Open
1, 6	Neutral	Open
1, 6	Lock	Open
1, 6	Unlock	Open
1, 7	Neutral	Open
1, 7	Lock	Open
1, 7	Unlock	Open
2, 3	Neutral	Closed
2, 3	Lock	Open
2, 3	Unlock	Closed
2, 4	Neutral	Open
2, 4	Lock	Closed
2, 4	Unlock	Open
2, 5	Neutral	Open
2, 5	Lock	Open
2, 5	Unlock	Open
2, 6	Neutral	Open
2, 6	Lock	Open
2, 6	Unlock	Open
2, 7	Neutral	Open
2, 7	Lock	Open
2, 7	Unlock	Open
3, 4	Neutral	Open
3, 4	Lock	Open
3, 4	Unlock	Open
3, 5	Neutral	Open
3, 5	Lock	Open

3, 5	Unlock	Open
3, 6	Neutral	Open
3, 6	Lock	Open
3, 6	Unlock	Open
3, 7	Neutral	Open
3, 7	Lock	Open
3, 7	Unlock	Open
4, 5	Neutral	Open
4, 5	Lock	Open
4, 5	Unlock	Open
4, 6	Neutral	Open
4, 6	Lock	Open
4, 6	Unlock	Open
4, 7	Neutral	Open
4, 7	Lock	Open
4, 7	Unlock	Closed
5, 6	Neutral	Open
5, 6	Lock	Open
5, 6	Unlock	Open
6, 7	Neutral	Closed
6, 7	Lock	Closed
6, 7	Unlock	Open

SECTION 501-14A: Handles, Locks, Latches and
Mechanisms
GENERAL PROCEDURES

1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Latch Adjustment

NOTE: The following adjustment procedure is typical for all SuperCab rear door latch cables and is not required for latch linkage rods and other door cables.

1. Remove the slack from the cable without placing any load on the latch.

2. Position the cable into the clip.
3. Close the clip.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

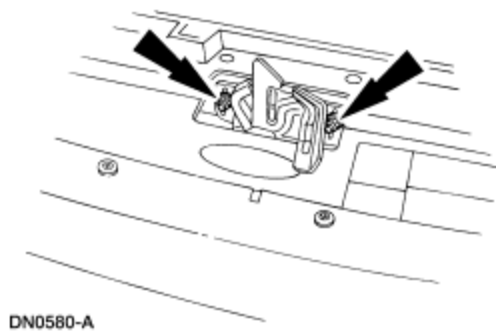
1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

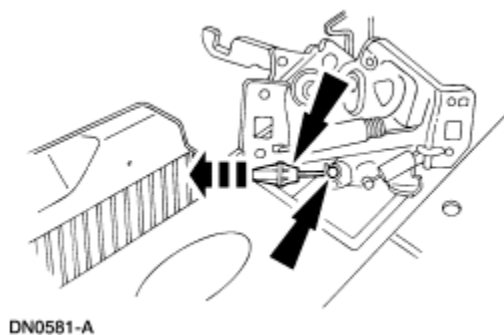
Latch—Hood

Removal

1. Remove the bolts.



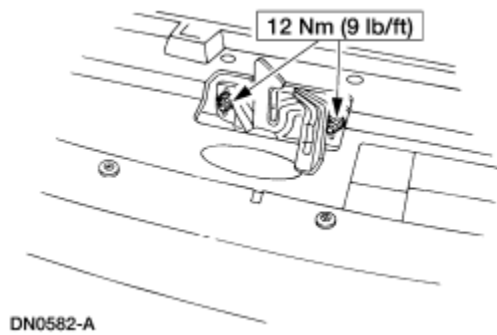
2. Disconnect the hood latch control handle and cable (16916).



3. Remove the hood latch (16700).

Installation

1. Follow the removal procedure in reverse order.



SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

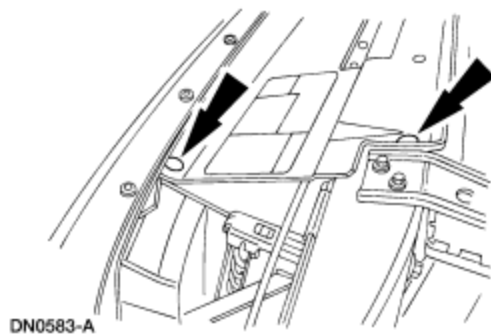
1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

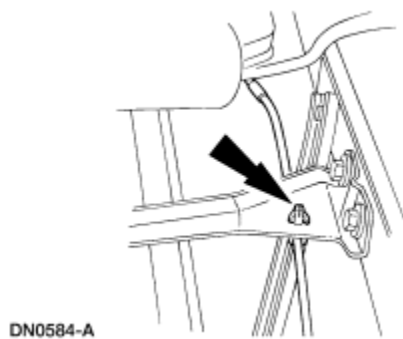
Latch—Hood Release Cable

Removal

1. Disconnect the battery (10655); for additional information, refer to [Section 414-01](#).
2. Remove the hood latch (16700); for additional information, refer to [Latch—Hood](#) in this section.
3. Remove the push pins.

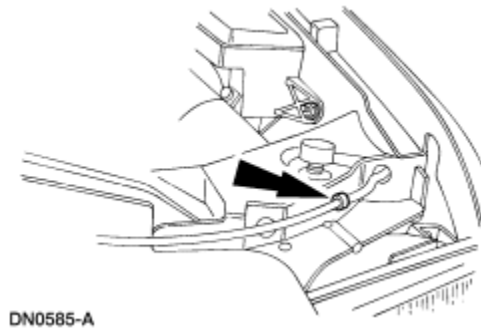


4. Roll back the air deflector to reveal the hood release cable guide.
5. Remove the hood release cable guide.

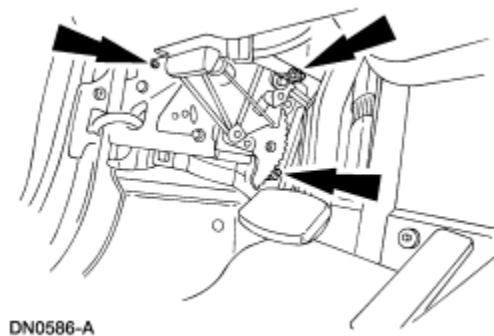


6. **NOTE:** The remaining hood release cable guides can only be removed by cutting them free from the vehicle body.

Remove the remaining hood release cable guides.



7. Remove the powertrain control module (PCM) (12A650); for additional information, refer to [Section 303-14A](#) (gas) or [Section 303-14B](#) (diesel).
8. Remove the nuts.



9. Lower the hood release/park brake bracket from the vehicle attaching points.
10. Disconnect the hood release cable.
 - Disconnect the cable end.
 - Disconnect the cable housing.
11. Remove the hood release cable and dash panel grommet through the front of the vehicle.

Installation

1. Follow the removal procedure in reverse order.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

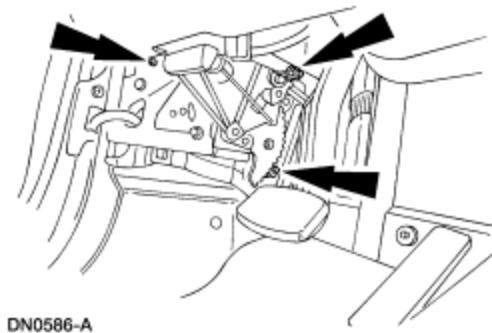
1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

Handle—Hood Latch Release

Removal

1. Disconnect the battery (10655).
2. Remove the powertrain control module (PCM) (12A650); for additional information, refer to [Section 303-14A](#) (gas) or [Section 303-14B](#) (diesel).
3. Remove the nuts.



4. Lower the hood release/park brake bracket away from the vehicle body.
5. Disconnect the hood release cable.
6. Remove the C-clip retaining the hood release handle to the park brake bracket.
7. Release the return spring and remove the hood release handle.

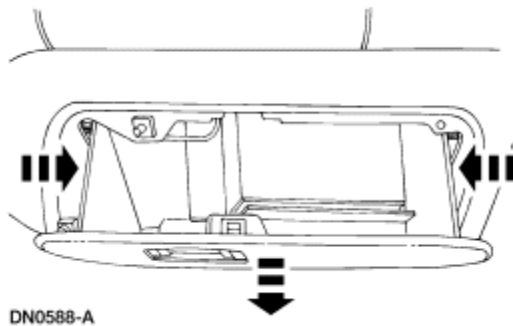
Installation

1. Follow the removal procedure in reverse order.

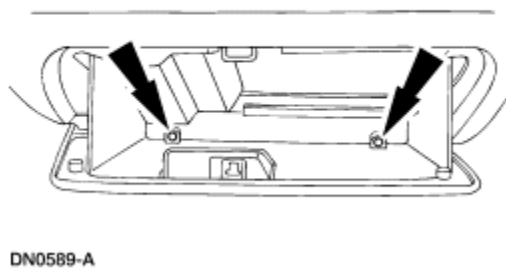
Latch—Glove Box

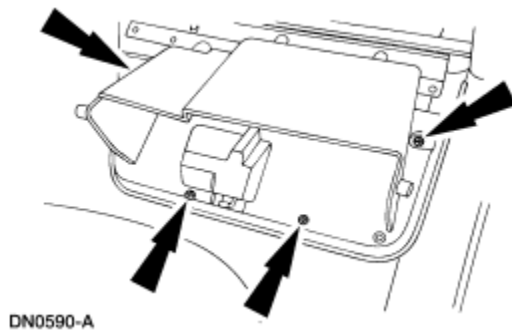
Removal

1. Open the glove box.
2. Release the glove box stops and tilt the glove box to the full down position.

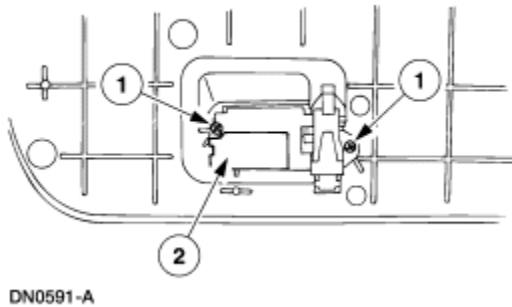


3. Remove the screws.





4. Remove the glove box.
5. Remove the glove box latch.
 1. Remove the screws.
 2. Remove the glove box latch.



Installation

1. Follow the removal procedure in reverse order.

Latch—Door, Front

Removal

1. **NOTE:** The window must be in full up position.

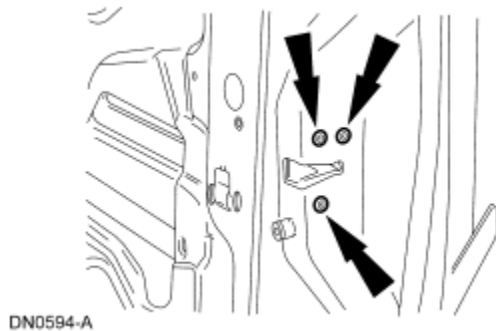
Remove the front door trim panel (23942); for additional information, refer to [Section 501-05](#).

2. Remove the outside front door handle; for additional information, refer to [Handle—Door, Outside Front](#).
3. Separate the push button rod from the front door latch (21812); for additional information, refer to [Push Button Rod—Front Door](#) in this section.
4. **NOTE:** The right door is shown, the left door is symmetrically opposite.

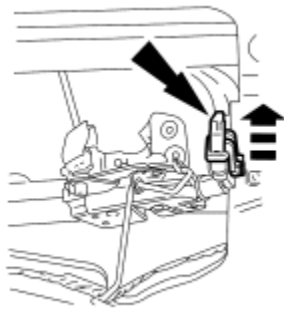
Remove the clips.



5. Remove the screws.

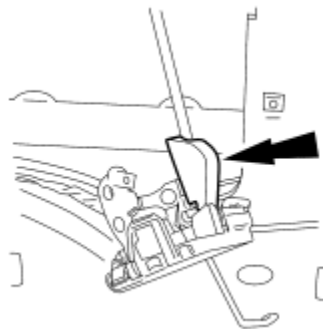


6. Position the front door latch in the inside door access opening.
7. Disconnect the electrical connector(s).



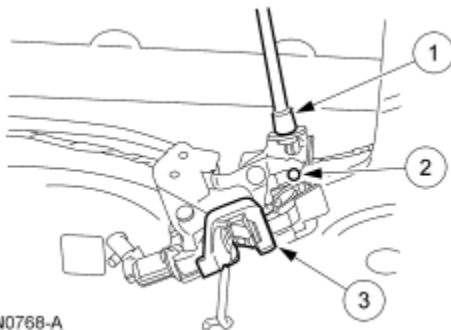
DN0595-A

8. Remove the front door latch cable cover.



DN0683-A

9. Remove the front door latch.
 1. Remove the remote control cable case from the latch.
 2. Remove the remote control cable from the front door latch.
 3. Remove the front door latch.

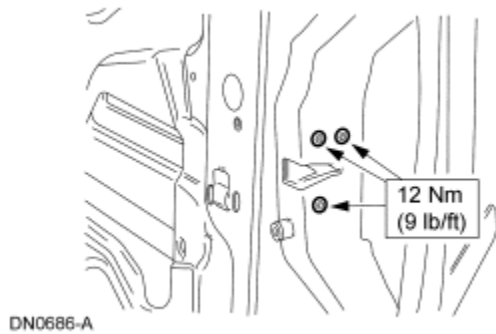


DN0768-A

Installation

1. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information.

Follow the removal procedure in reverse order.



SECTION 501-14A: Handles, Locks, Latches and Mechanisms

1999 F-Super Duty 250-550 Workshop Manual

REMOVAL AND INSTALLATION

[Procedure revision date: 01/26/2000](#)

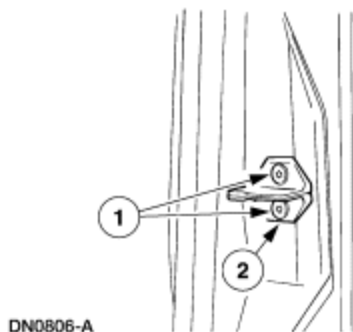
Latch—Striker, Regular and Crew Cab

Removal

1. **NOTE:** The left door is shown, the right door is symmetrically opposite.

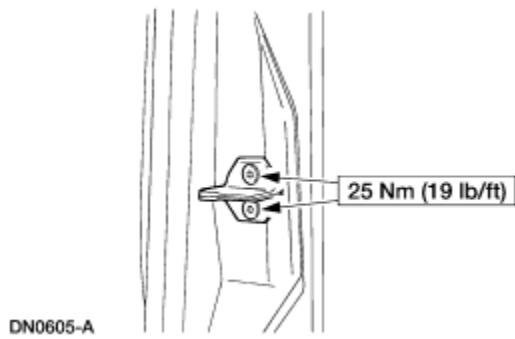
Remove the striker.

1. Remove the screws.
2. Remove the striker and, if applicable, the striker shim(s).



Installation

1. Follow the removal procedure in reverse order.



SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

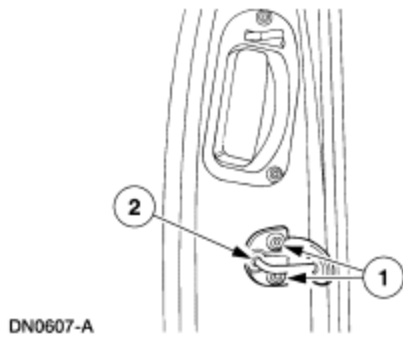
Latch—Striker, Front Door, SuperCab

Removal

1. Remove (peel off) the striker cover.

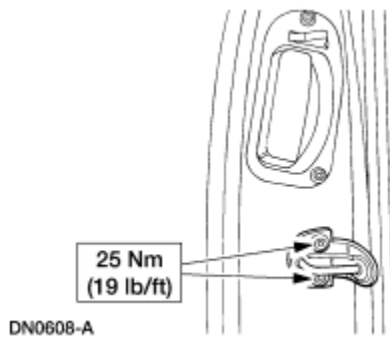


2. Remove the striker.
 1. Remove the bolts.
 2. Remove the striker.



Installation

1. Follow the removal procedure in reverse order. Refer to [Section 501-03](#) for striker adjustment.



SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

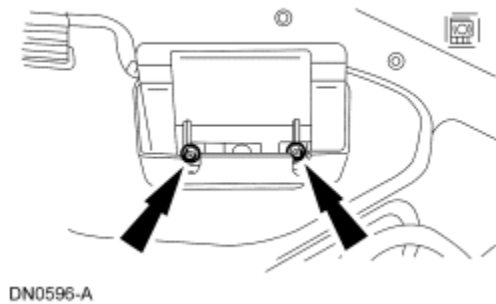
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Handle—Door, Inside Front

Removal

1. Remove the front door trim panel (23942); for additional information, refer to [Section 501-05](#).
2. **NOTE:** The left door is shown, the right door is symmetrically opposite.

Remove the nuts, and the inside door handle (22600).



Installation

1. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information.

Follow the removal procedure in reverse order.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

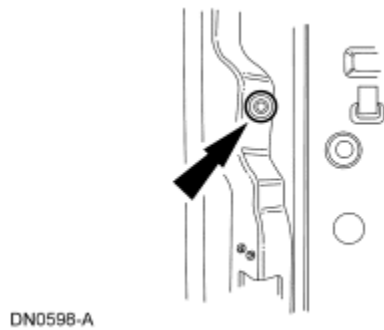
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Handle—Door, Outside Front

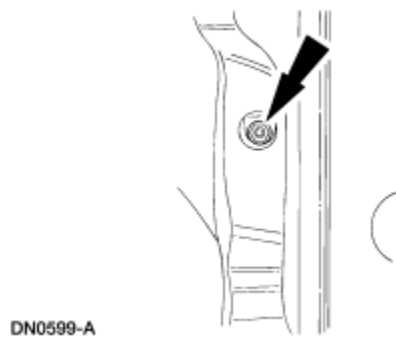
Removal

1. Remove the front door trim panel (23942); for additional information, refer to [Section 501-05](#).
2. Position the water shield aside.
3. **NOTE:** The left door is shown, the right door is symmetrically opposite.

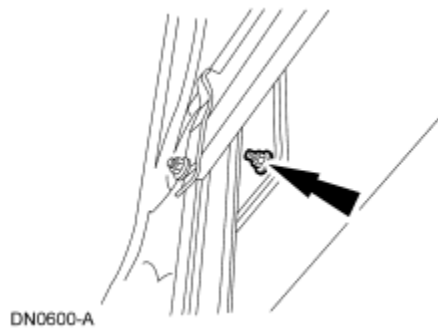
Remove the plug.



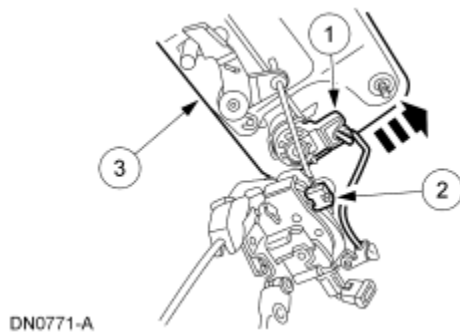
4. Remove the nut.



5. Remove the nut.



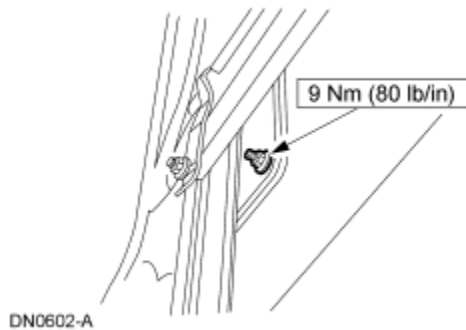
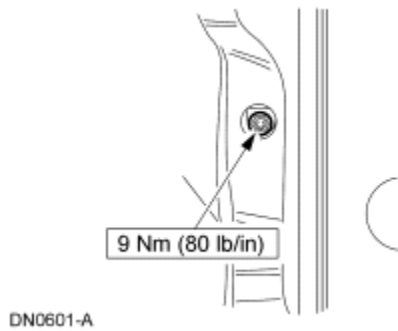
6. Pull the outside door handle out of the front door (20124) far enough to expose the attached door latch linkage.
7. Remove the outside door handle.
 1. Disconnect the lock cylinder linkage rod from the outside door handle.
 2. Disconnect the release rod from the front door latch (21812) by prying open the clip and removing the latch release rod.
 3. Remove the outside door handle.



Installation

1. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information.

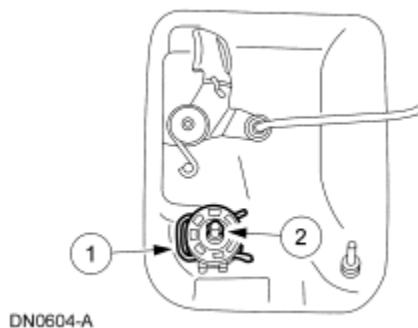
Follow the removal procedure in reverse order.



Lock Cylinder—Door, Front

Removal

1. Remove the front door trim panel (23942); for additional information, refer to [Section 501-05](#).
2. Remove the outside door handle; for additional information, refer to [Handle—Door, Outside Front](#) in this section.
3. Remove the lock cylinder (22050).
 1. Remove the spring clip.
 2. Remove the lock cylinder.



Installation

1. Follow the removal procedure in reverse order.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

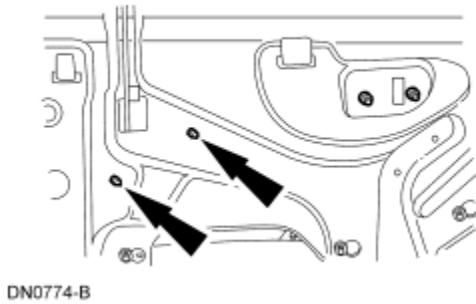
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Latch Remote Control—Mini, Front Door

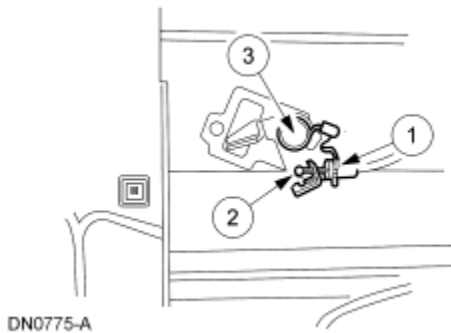
Removal

1. Remove the front door trim panel (23942); for additional information, refer to [Section 501-05](#).

2. Remove the inside door handle; for additional information, refer to [Handle—Door, Inside Front](#) in this section.
3. Remove the door handle cover by carefully pulling straight out.
4. Remove the clips securing the latch cable to the door.



5. Position the mini remote to the door access opening.
6. Remove the mini remote.
 1. Remove the cable case from the mini remote bracket.
 2. Remove the cable from the mini remote lever.
 3. Remove the mini remote.

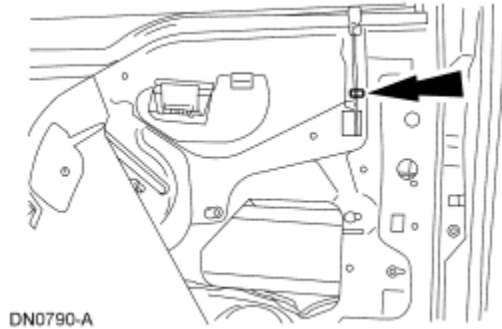


Installation

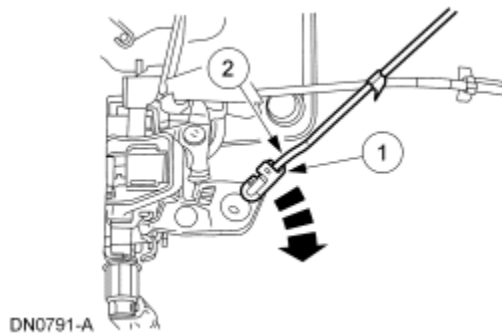
1. Follow the removal procedure in reverse order.

Push Button Rod—Front Door

1. Remove the front door trim panel (23942); for additional information, refer to [Section 501-05](#).
2. Remove the push button rod retainer clip.



3. Remove the push button rod.
 1. Remove the clip.
 2. Remove the rod.




Installation

1. Follow the removal procedure in reverse order.
-

Actuator—Door Lock

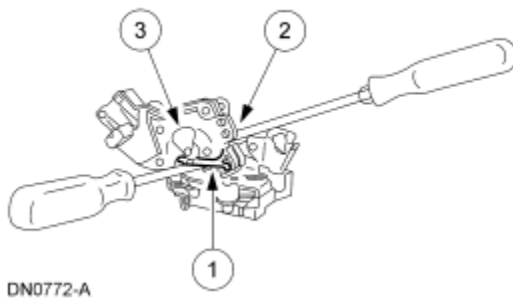
Removal

1. Remove the door latch; for additional information, refer to [Latch—Door, Front](#) or to [Latch—Door, Rear, Crew Cab](#) in this section.
2.  **CAUTION:** The door ajar switch must be removed before the door lock actuator can be removed; for additional information, refer to [Switch—Door Ajar](#) in this section.

NOTE: Front door latch shown, rear door latch is typical.

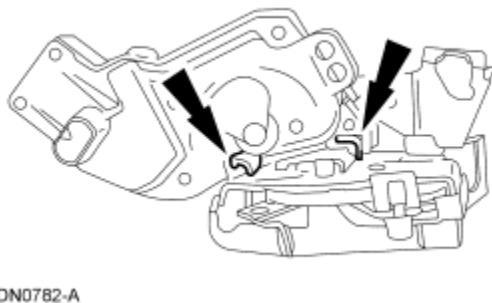
Remove the door latch lock actuator.

1. Pry up on tab.
2. Slide the door latch lock actuator off the latch channels using a prying action.
3. Remove the door latch lock actuator.



Installation

1. Align the door lock actuator onto the door latch channels, and slide on.



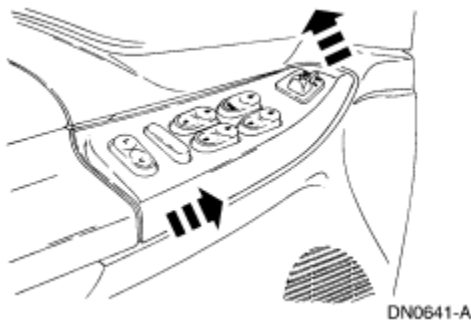
2. Follow the removal procedure in reverse order.

Switch

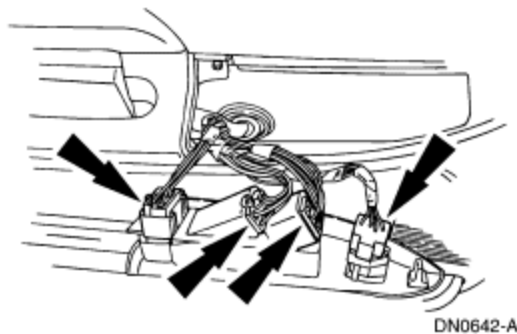
Removal

1. **NOTE:** The left front door (20124) with power windows and power mirror is shown. The right front door and vehicles without power windows or power mirror are similar.

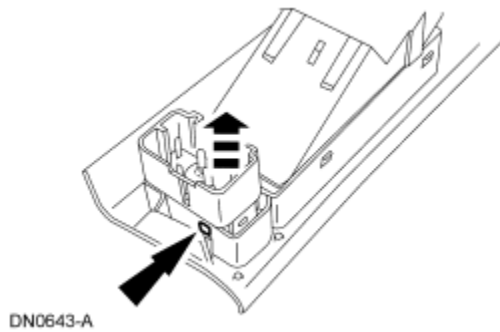
Remove the door command center enough to gain access to the electrical connectors.



2. Disconnect the electrical connectors.



3. Remove the door command center.
4. Release the front and back retaining clips on the door lock switch and remove the switch.



Installation

1. Follow the removal procedure in reverse order.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms

1999 F-Super Duty 250-550 Workshop Manual

REMOVAL AND INSTALLATION

[Procedure revision date: 01/26/2000](#)

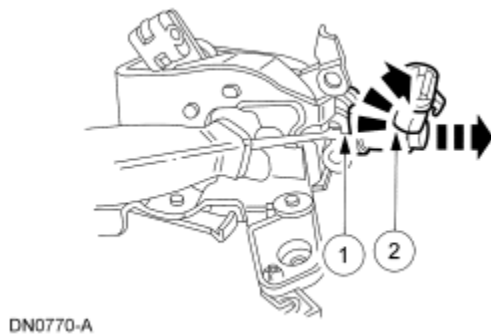
Switch—Door Ajar

Removal

1. Remove the door latch; for additional information, refer to [Latch—Door, Front](#), [Latch—Door, Rear Upper, SuperCab](#), [Latch—Door, Rear Lower, SuperCab](#), or to [Latch—Door, Rear, Crew Cab](#) in this section.
2. **NOTE:** The front door latch (21812) is shown, the rear door latch is typical.

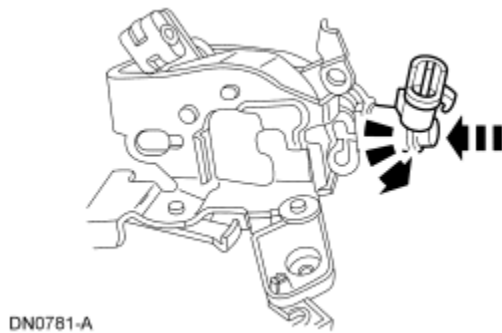
Remove the door ajar switch.

1. Pry out on the tab.
2. Turn the door ajar switch, and then pull it out.



Installation

1. Install the door ajar switch into the latch, and turn.



2. Install the door latch; for additional information, refer to [Latch—Door, Front](#), [Latch—Door, Rear Upper, SuperCab](#), [Latch—Door, Rear Lower, SuperCab](#), or to [Latch—Door, Rear, Crew Cab](#) in this section.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms

1999 F-Super Duty 250-550 Workshop Manual

REMOVAL AND INSTALLATION

[Procedure revision date: 01/26/2000](#)

Latch—Door, Rear Upper, SuperCab

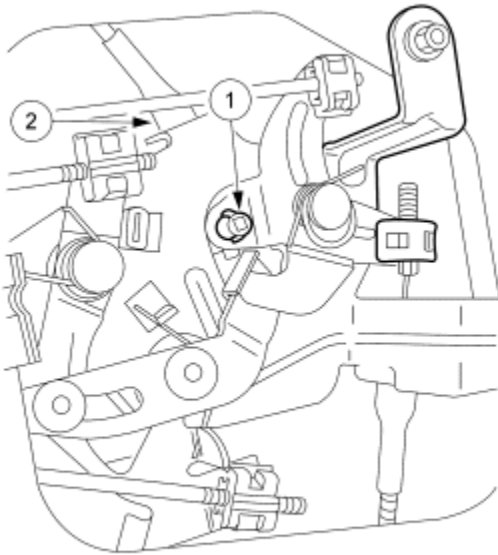
Removal

1. **NOTE:** The right door is shown, the left door is symmetrically opposite.

Remove the rear door interior trim; for additional information, refer to [Section 501-05](#).

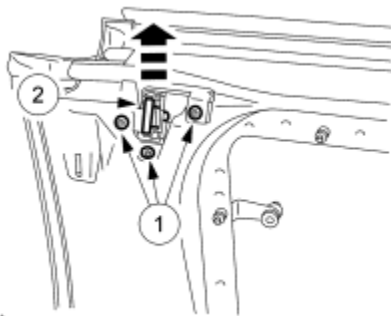
2. Remove the radio speaker; for additional information, refer to [Section 415-03](#).

3. Separate the upper latch release cable and case from the remote control.
 1. Remove the clip from the lever.
 2. Separate the cable case from the remote control bracket.



DN0796-A

4. Remove the rear door upper latch.
 1. Remove the screws.
 2. Remove the rear door upper latch.

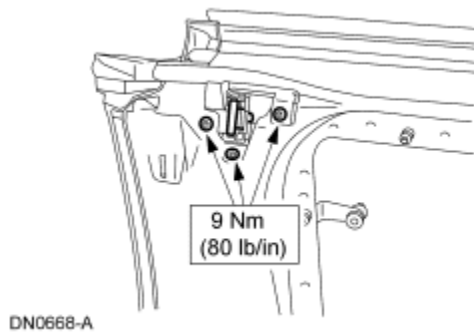


DN0667-A

Installation

1. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information. The linkage must be adjusted during installation; for additional information, refer to [Latch Adjustment](#) in this section.

Follow the removal procedure in reverse order.



SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

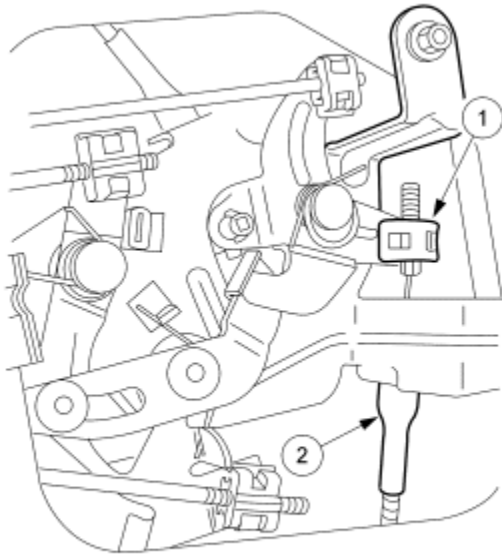
Latch—Door, Rear Lower, SuperCab

Removal

1. **NOTE:** The right door is shown, the left door is symmetrically opposite.

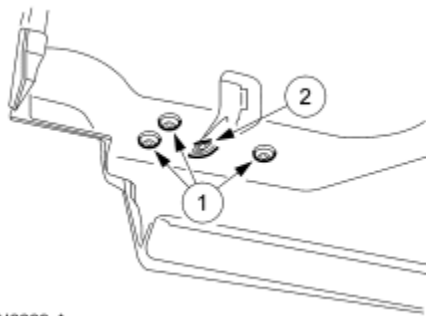
Remove the rear door interior trim panel; for additional information, refer to [Section 501-05](#).

2. Remove the radio speaker; for additional information, refer to [Section 415-03](#).
3. Separate the lower latch release cable and casing from the remote control.
 1. Open the clip and remove the cable.
 2. Separate the cable case from the remote control bracket.



DN0795-A

4. Remove the rear door lower latch.
 1. Remove the screws.
 2. Remove the rear door lower latch.

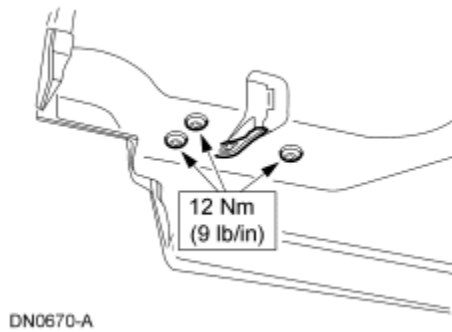


DN0669-A

Installation

1. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information. The linkage must be adjusted during installation; for additional information, refer to [Latch Adjustment](#) in this section.

Follow the removal procedure in reverse order.



SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

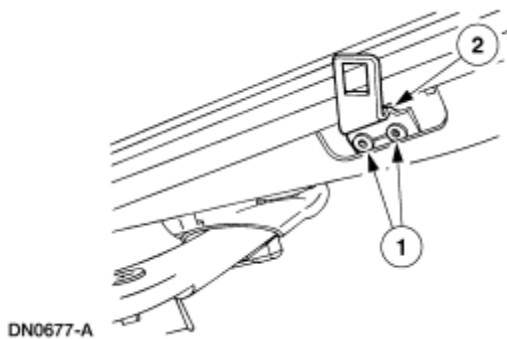
1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

Latch—Striker, Rear Door Upper, SuperCab

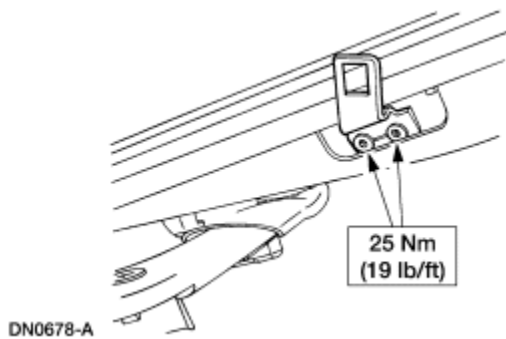
Removal

1. Remove (pull off) the upper striker trim cover.
2. Remove the rear door upper striker and shim(s), if so equipped.
 1. Remove the bolts.
 2. Remove the rear door upper striker and shim(s), if so equipped.



Installation

1. Follow the removal procedure in reverse order.



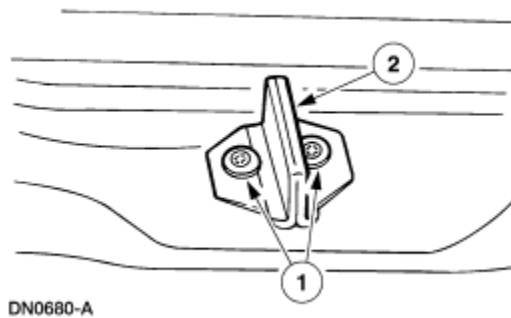
SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

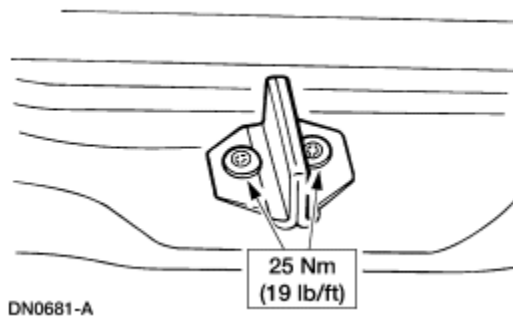
Latch—Striker, Rear Door Lower, SuperCab

1. Remove the rear door lower striker.
 1. Remove the bolts.
 2. Remove the rear door lower striker.



Installation

1. Follow the removal procedure in reverse order.



SECTION 501-14A: Handles, Locks, Latches and Mechanisms


1999 F-Super Duty 250-550 Workshop Manual

REMOVAL AND INSTALLATION

[Procedure revision date: 01/26/2000](#)

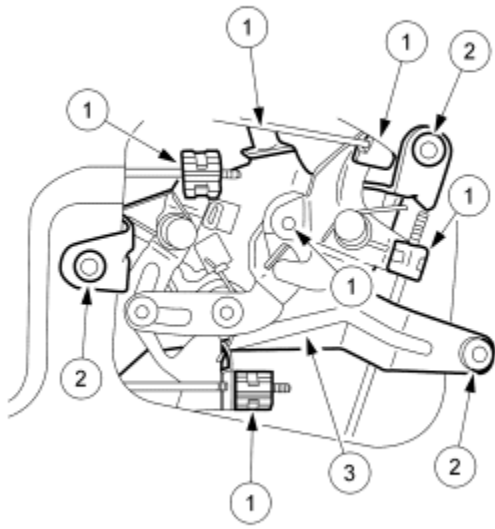
Latch Remote Control—Rear Door, SuperCab

Removal

1. Remove the rear door interior trim panel; for additional information, refer to [Section 501-05](#).
2.  **CAUTION: When drilling out the latch remote control rivets, do not oversize the holes in the door sheet metal.**

Remove the rear door remote control.

1. Disconnect the necessary rods and cables.
2. Remove the rivets.
 - Remove the rivet mandril (center).
 - Drill out the rivet starting with a 15/64-inch drill bit. Do not exceed a 1/4-inch drill bit for final drilling.
5. Remove the rear door remote control.



DN0682-B

Installation

1. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information. The linkage must be adjusted during installation; for additional information, refer to [Latch Adjustment](#) in this section. Refer to Specifications in this section for the correct replacement of the latch remote control rivets.

Follow the removal procedure in reverse order.

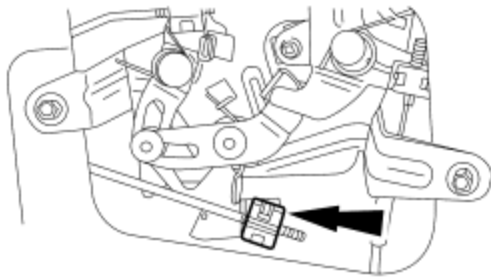
SECTION 501-14A: Handles, Locks, Latches and Mechanisms	1999 F-Super Duty 250-550 Workshop Manual
REMOVAL AND INSTALLATION	Procedure revision date: 01/26/2000

Latch Remote Control—Mini, SuperCab Rear Door

Removal

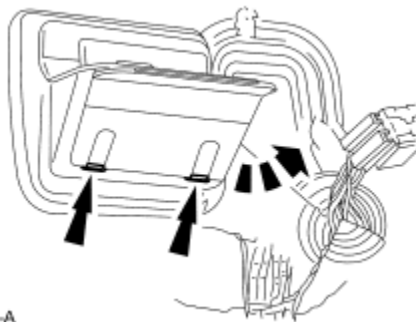
1. Remove the rear door trim panel (23942); for additional information, refer to [Section 501-05](#).
2. **NOTE:** The left rear door (24630) is shown, the right rear door is symmetrically opposite.

Open the clip and remove the rod.



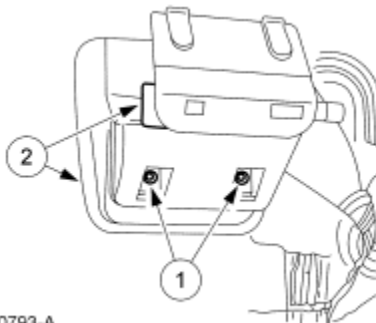
DN0593-A

3. Pry open the door handle cover.



DN0631-A

4. Remove the door handle and cover.
 1. Remove the nuts.
 2. Remove the door handle and cover.



DN0793-A

5. Remove the latch mini remote control through the interior door access opening.

Installation

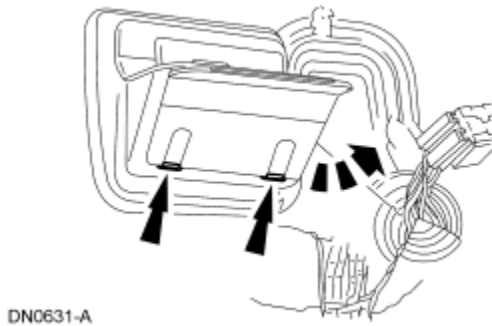
1. Follow the removal procedure in reverse order.
-

Handle—Door, Inside, Rear, SuperCab

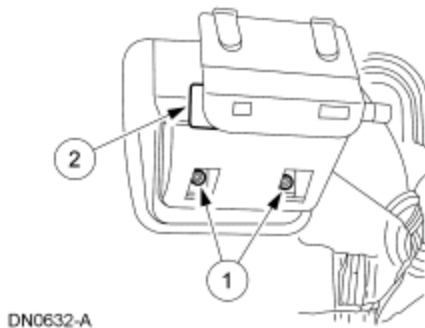
Removal

1. Remove the rear door interior trim panel; for additional information, refer to [Section 501-05](#).
2. **NOTE:** The left rear door (24630) is shown, the right rear door is symmetrically opposite.

Pry open the door handle cover.



3. Remove the inside door handle (22600).
 1. Remove the nuts.
 2. Remove the inside door handle.



Installation

1. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information.

Follow the removal procedure in reverse order.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

Latch—Door, Rear, Crew Cab

Removal

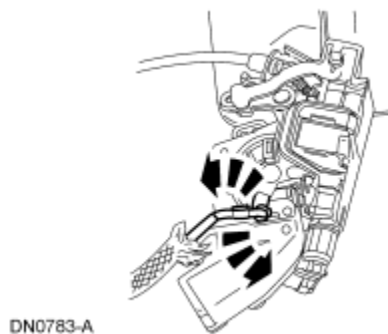
1. **NOTE:** The window must be in the full up position.

Remove the rear door trim panel (23942); for additional information, refer to [Section 501-05](#).

2. Remove the outside rear door handle; for additional information, refer to [Handle—Door, Rear, Outside Crew Cab](#) in this section.
3. Remove the guide clip from the door for the lock linkage.

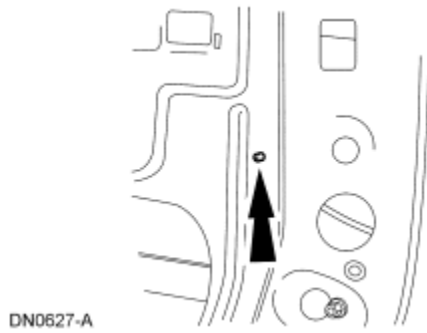


4. Separate the door lock linkage at the latch by pushing the clip down and pulling the rod from the latch.

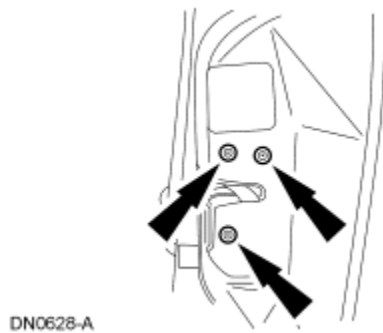


5. **NOTE:** The right rear door (24630) is shown, the left rear door is symmetrically opposite.

Remove the clip.

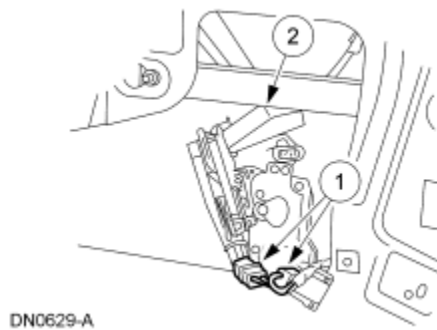


6. Remove the screws.



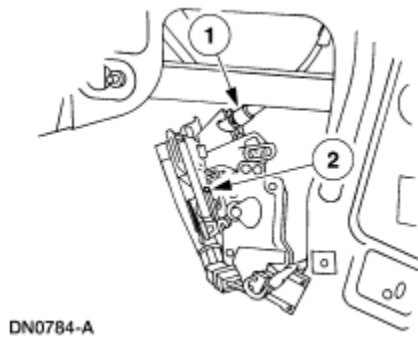
7. Position the latch to the inside door access opening.

1. Disconnect the electrical connectors.
2. Remove the door latch cable cover.



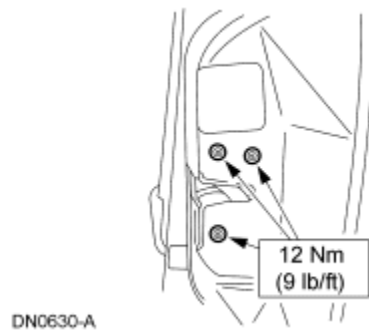
8. Remove the door latch.

1. Remove the door latch cable from the door latch.
2. Remove the door latch.



Installation

1. Follow the removal procedure in reverse order.



SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

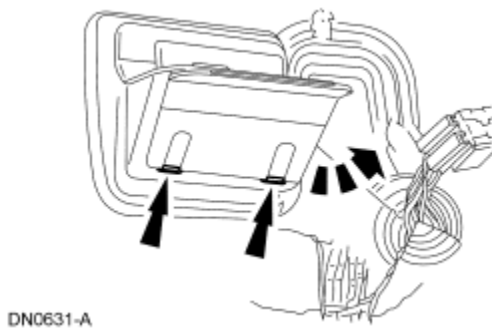
1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Handle—Door, Rear, Inside Crew Cab

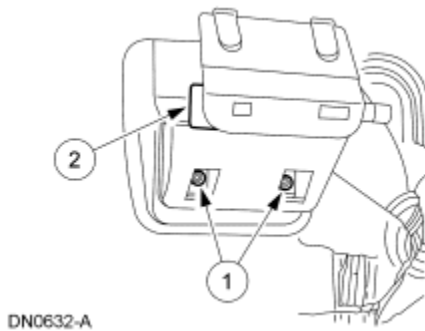
Removal

1. Remove the rear door interior trim panel; for additional information, refer to [Section 501-05](#).
2. **NOTE:** The left rear door (24630) is shown, the right rear door is symmetrically opposite.

Pry open the door handle cover.



3. Remove the inside door handle (22600).
 1. Remove the nuts.
 2. Remove the inside door handle.



Installation

1. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information.

Follow the removal procedure in reverse order.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

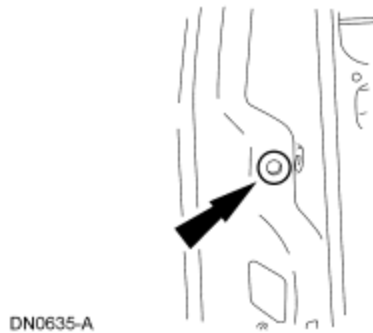
Handle—Door, Rear, Outside Crew Cab

Removal

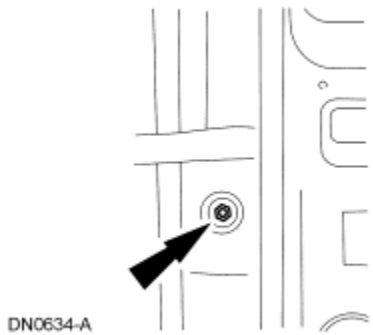
1. Remove the rear door interior trim panel; for additional information, refer to [Section 501-05](#).

2. **NOTE:** The door glass must be in the full up position to remove the outside door handle. The left rear door (24630) is shown, the right rear door is symmetrically opposite.

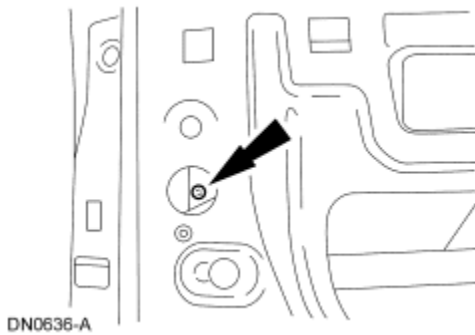
Remove the plug.



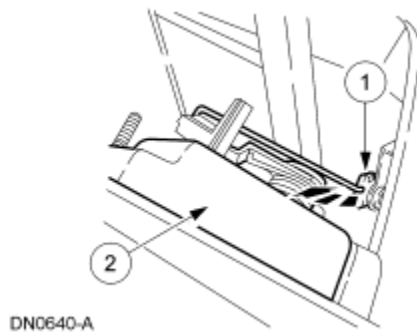
3. Remove the nut.



4. Remove the nut.



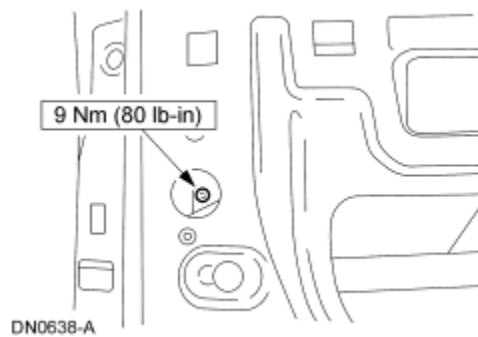
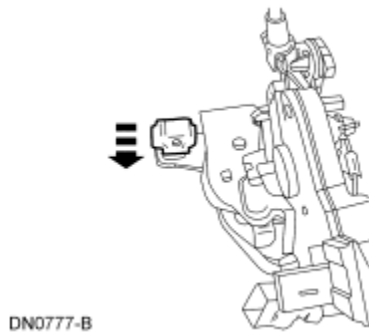
5. Pull the outside door handle away from the rear door far enough to access the door linkage.
6. Remove the outside door handle.
1. Release the clip.
 2. Remove the outside door handle.



Installation

1. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information. The clip must be completely down in the latch lever before connecting the release rod.

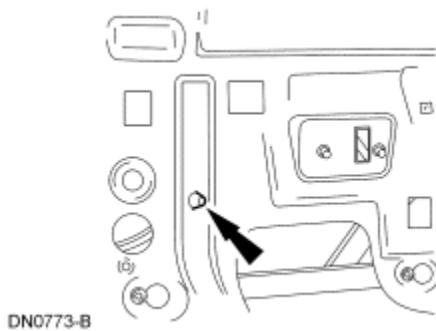
Follow the removal procedure in reverse order.



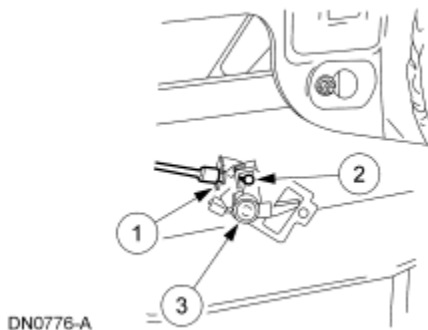
Latch Remote Control—Mini, Crew Cab Rear Door

Removal

1. Remove the rear door trim panel (23942); for additional information, refer to [Section 501-05](#).
2. Remove the inside door handle (22600); for additional information, refer to [Handle—Door, Rear, Inside Crew Cab](#).
3. Remove the door handle cover by carefully pulling straight out.
4. Remove the clip securing the latch cable to the door.



5. Position the mini remote to the door access opening.
6. Remove the mini remote.
 1. Remove the cable case from the mini remote bracket.
 2. Remove the cable from the mini remote lever.
 3. Remove the mini remote.



Installation

1. Follow the removal procedure in reverse order.

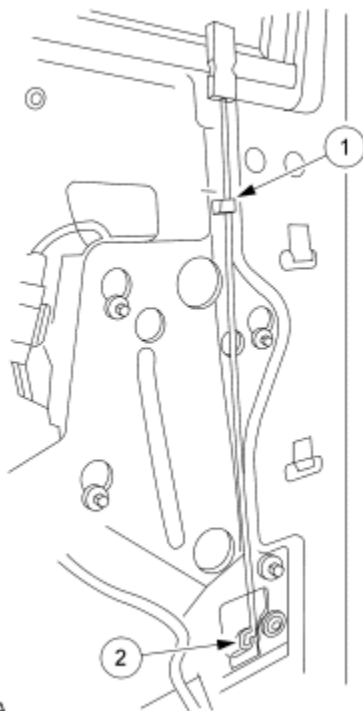
SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual

[Procedure revision date: 01/26/2000](#)

Push Button Rod—Rear, Crew Cab

1. Remove the rear door interior trim panel; for additional information, refer to [Section 501-05](#).
2. Remove the push button rod.
 1. Remove the push button rod guide clip.
 2. Remove the push button rod.



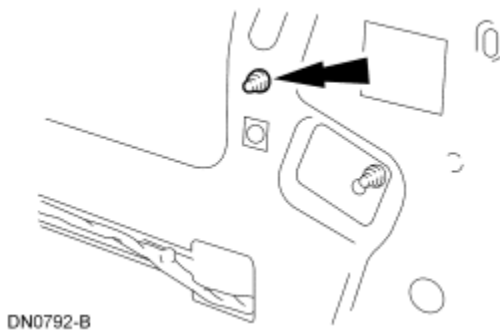
Installation

1. Follow the removal procedure in reverse order.

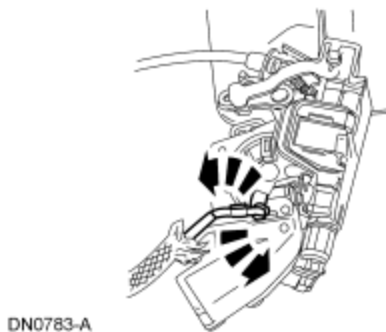
Push Button Rod—Linkage, Horizontal, Rear Door, Crew Cab

Removal

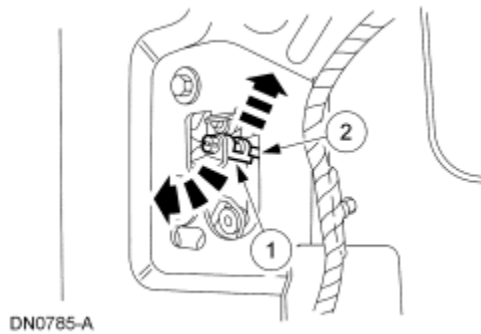
1. Remove the rear door trim panel (23942); for additional information, refer to [Section 501-05](#).
2. Remove the guide clip from the door for the lock linkage.



- Separate the door lock linkage at the latch by pushing the clip down and pulling the rod from the latch.



- Remove the push button rod linkage at the bellcrank.
 - Remove the clip.
 1. Remove the rod.



Installation

4. Follow the removal procedure in reverse order.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms 1999 F-Super Duty 250-550 Workshop Manual
 REMOVAL AND INSTALLATION [Procedure revision date: 01/26/2000](#)

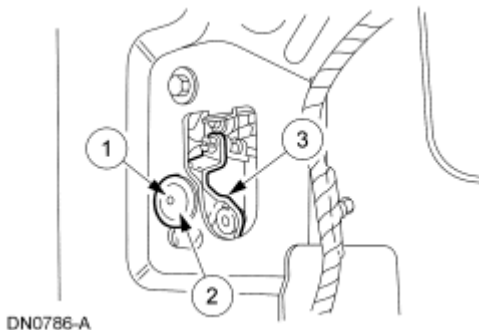
Push Button Rod—Bellcrank, Rear Door, Crew Cab

Removal

- Remove the rear door trim panel (23942); for additional information, refer to [Section 501-05](#).
- Remove the push button rod; for additional information, refer to [Push Button Rod—Rear, Crew Cab](#) in this section.
- Remove the push button rod linkage; for additional information, refer to [Push Button Rod—Linkage, Horizontal, Rear Door, Crew Cab](#) in this section.
- ☐ **CAUTION: When drilling out the push button rod bellcrank rivet, do not oversize the hole in the door sheet metal.**

Remove the push button rod bellcrank.

- Remove the rivet mandril (center).
- Drill out the rivet.
- Remove the push button bellcrank.



Installation

7. **NOTE:** If the component is to be replaced, refer to the Ford Master Parts Catalog for specific part information. Refer to Specifications in this section for the correct replacement rivet for the bellcrank.
Follow the removal procedure in reverse order.

SECTION 501-14A: Handles, Locks, Latches and Mechanisms

1999 F-Super Duty 250-550 Workshop Manual

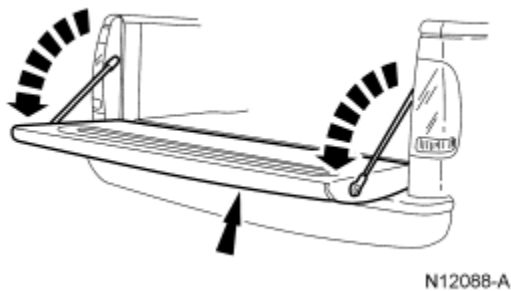
REMOVAL AND INSTALLATION

[Procedure revision date: 01/26/2000](#)

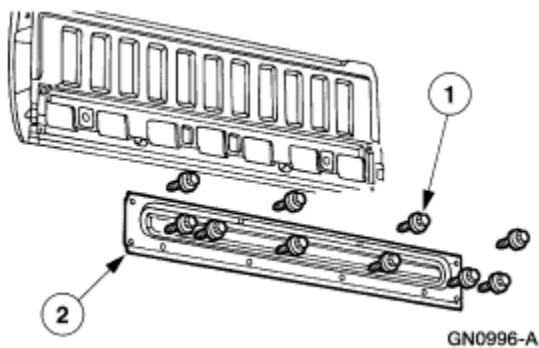
Handle—Tailgate

Removal

1. Open the tailgate (40700).

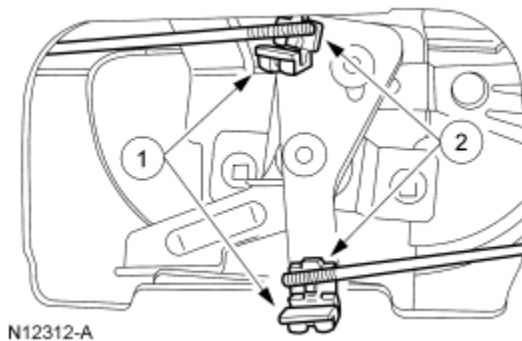


2. Remove the tailgate access panel.
 1. Remove the ten screws.
 2. Remove the tailgate access panel.

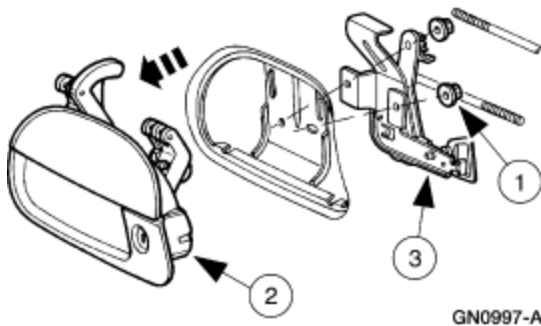


3. Disconnect the tailgate latch rods.

1. Open the two clips.
2. Disconnect the two rods.



4. Remove the tailgate handle.
 1. Remove the two nuts.
 2. Remove the tailgate handle.
 3. Remove the tailgate latch remote control.

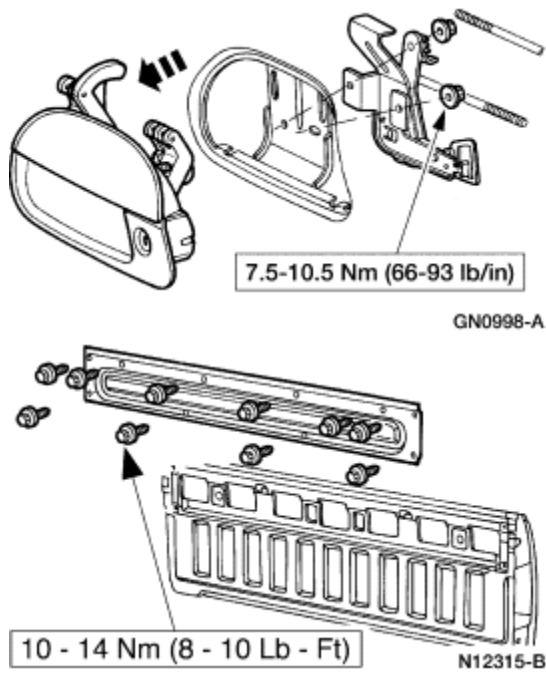


5. Remove the tailgate lock cylinder; for additional information, refer to [Lock Cylinder—Tailgate](#) in this section.

Installation

- **NOTE:** Make sure the tailgate handle and rods are in a relaxed position before closing the clips.

Follow the removal procedure in reverse order.



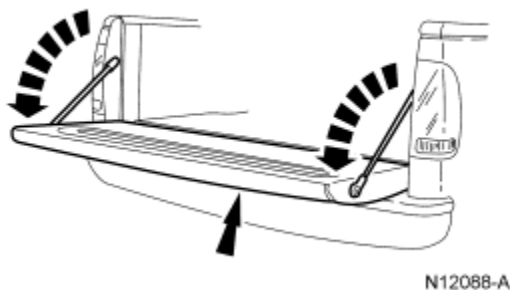
SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Latch—Tailgate

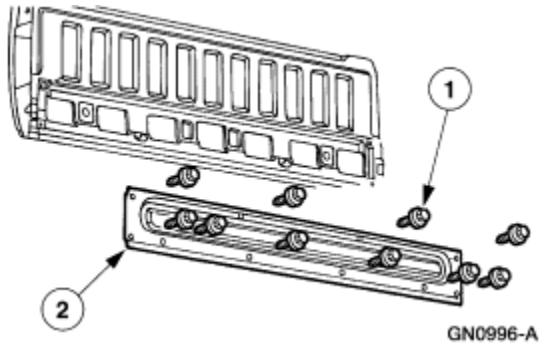
Removal

1. Open the tailgate (40700).

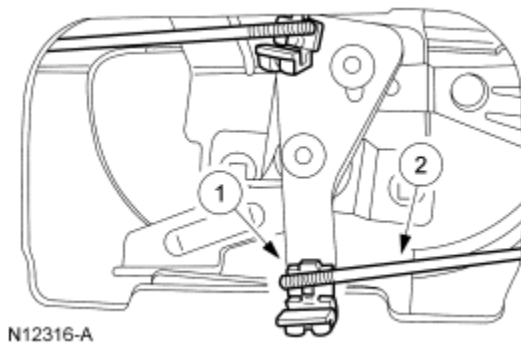


2. Remove the tailgate access panel.
 1. Remove the ten screws.

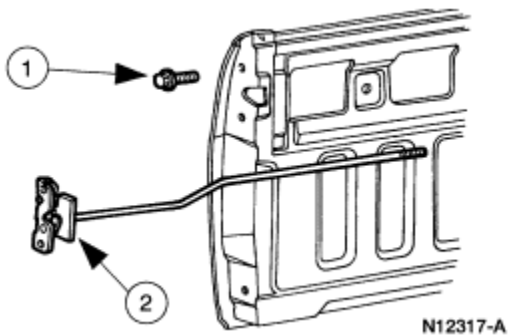
2. Remove the tailgate access panel.



3. Disconnect the tailgate latch rods.
 1. Open the clip.
 2. Disconnect the rod.

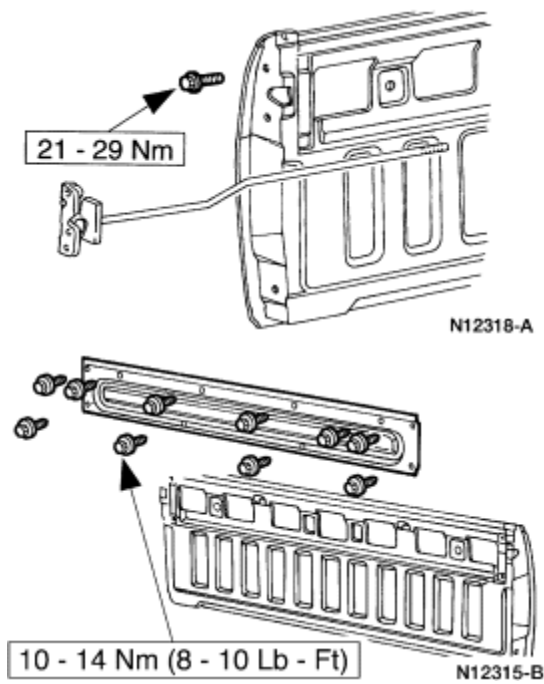


4. Remove the tailgate latch (RH shown, LH similar).
 1. Remove the two screws.
 2. Remove the tailgate latch.



Installation

1. Follow the removal procedure in reverse order.
 - If necessary, use Multi-Purpose Grease Spray D7AZ-19584-AA or equivalent meeting Ford specification ESB-M1C106-B to lubricate latches.



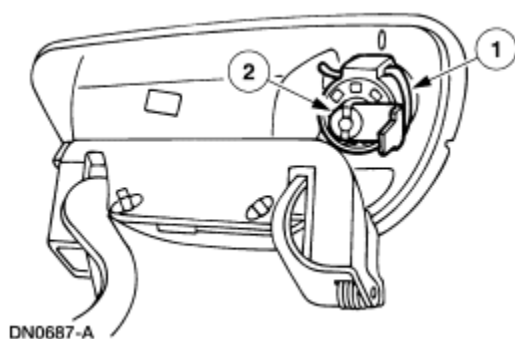
SECTION 501-14A: Handles, Locks, Latches and Mechanisms
REMOVAL AND INSTALLATION

1999 F-Super Duty 250-550 Workshop Manual
[Procedure revision date: 01/26/2000](#)

Lock Cylinder—Tailgate

Removal

1. Remove the tailgate handle; for additional information, refer to [Handle—Tailgate](#).
2. Remove the lock cylinder.
 1. Remove the clip.
 2. Remove the lock cylinder.



Installation

1. Follow the removal procedure in reverse order.

SECTION 501-14B: Keyless Entry/Computer Operated Locks

DESCRIPTION AND OPERATION

[Keyless Entry](#)

DIAGNOSIS AND TESTING

[Keyless Entry](#)

[Inspection and Verification](#)

[GEM Diagnostic Trouble Code \(DTC\) Index](#)

[GEM Parameter Identification \(PID\) Index](#)

[GEM Active Command Index](#)

[Symptom Chart](#)

[Pinpoint Tests](#)

[Component Tests](#)

GENERAL PROCEDURES

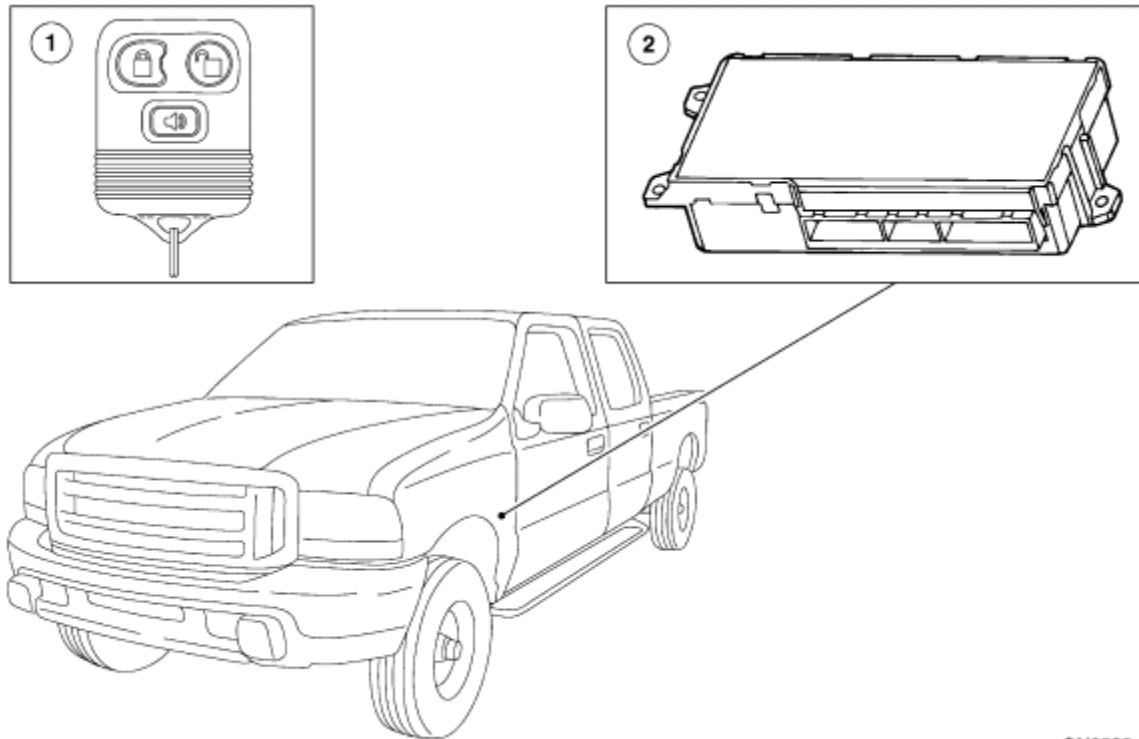
[Programming](#)

REMOVAL AND INSTALLATION

[Module—Generic Electronic](#)

Keyless Entry

Electronic Door Lock Control System Components



GN2525-A

Item	Part Number	Description
1	15K601	Keyless Entry Remote Transmitter
2	—	Generic Electronic Module (GEM)

The electronic door lock system has two main components: the generic electronic module (GEM) and the keyless entry remote transmitter (15K601).

The GEM receives input from the keyless entry remote transmitter and allows the following functions to be performed:

- Unlock the driver door.
- Unlock all the doors.
- Lock all the doors.
- Activate the panic alarm.
- Activate the interior lights when pressing the unlock button.
- Deactivate the interior lights when pressing the lock button.
- The horn chirps when the lock button is pressed twice.

- Allow for up to four transmitters to be programmed.

The remote entry features will not function when the ignition switch is in the RUN or ACC positions.

The keyless entry remote transmitters are reprogrammable and at least two must be programmed at the same time.

To unlock the driver door, press the unlock button on the keyless entry remote transmitter.

To unlock all the doors, press the unlock button a second time within five seconds of the first unlock.

To lock all the doors, press the lock button on the keyless entry remote transmitter once.

To confirm that all the doors have been locked, press the lock button again within five seconds of the first press. The horn will chirp once if the doors have locked and all doors are closed.

To activate the panic alarm, press the red panic button on the keyless entry remote transmitter. The horn will sound and the headlamps and exterior lamps will flash for a maximum of two minutes and 45 seconds.

To deactivate the panic alarm, press the red panic button on the keyless entry remote transmitter or turn the ignition switch to either RUN or ACC.

SECTION 501-14B: Keyless Entry/Computer
Operated Locks
DIAGNOSIS AND TESTING


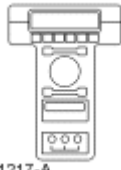
1999 F-Super Duty 250-550 Workshop
Manual
[Procedure revision date: 01/26/2000](#)

Keyless Entry

Refer to Wiring Diagrams Cell 59 ([F-53 Motorhome Chassis](#), [F-Super Duty 250-550](#)), Generic Electronic Module for schematic and connector information.

Refer to Wiring Diagrams Cell 111 ([F-53 Motorhome Chassis](#), [F-Super Duty 250-550](#)), Remote Keyless Entry (RKE) for schematic and connector information.

Special Tool(s)

 ST1137-A	73 Digital Multimeter or equivalent 105-R0051
 ST1217-A	New Generation STAR (NGS) Tester or equivalent 418-F048 (007-00500)

Inspection and Verification

1. The keyless entry system is a generic electronic module (GEM).
2. Verify the customer concern by using the keyless entry transmitters to operate the keyless entry system.
3. Visually inspect for the following obvious signs of mechanical and electrical damage.

Visual Inspection Chart	
Mechanical	Electrical
<ul style="list-style-type: none"> • Binding latches 	<ul style="list-style-type: none"> • Fuse(s) • Damaged wiring harness • Loose or corroded connector(s) • Circuitry open/shorted • Damaged relays • Keyless entry transmitter • Door ajar switch

4. If the concern remains after the inspection, connect the New Generation STAR (NGS) Tester to the data link connector (DLC) located beneath the instrument panel and select the vehicle to be tested from the NGS menu. If the NGS does not communicate with the vehicle:
 - check that the program card is properly installed.
 - check the connections to the vehicle.
 - check the ignition switch position.
5. If the NGS still does not communicate with the vehicle, refer to the New Generation STAR Tester manual.
6. Perform the DATA LINK DIAGNOSTIC TEST. If the NGS responds with: