
SECTION 9A

BODY WIRING SYSTEM

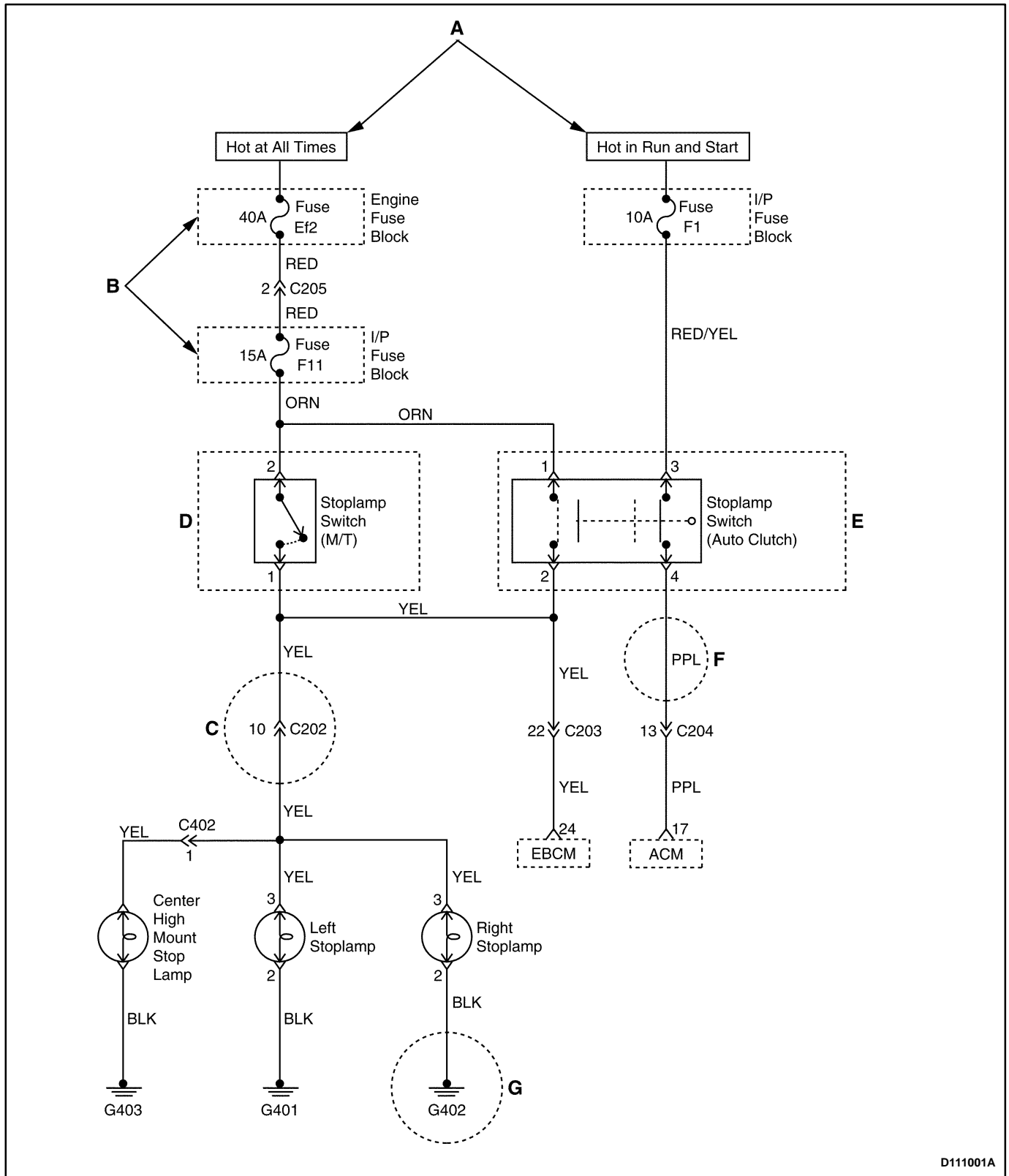
CAUTION: *Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.*

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DESCRIPTION AND OPERATION

HOW TO READ ELECTRICAL WIRING DIAGRAM



D111001A

Contents of Electrical Wiring Diagram

Position	Explanation
A	<ul style="list-style-type: none"> – The box above the fuse box: Power supply lines – Power supply lines: 30, 15, 15A, Ka, 58, 50 – Refer to “Circuit Identification Symbol” in this section for more details.
B	<ul style="list-style-type: none"> – Ef10 or F3: Fuse Number <ul style="list-style-type: none"> • Ef10: Fuse No 10 in the engine room fuse box • F3: Fuse No 3 in the passenger room fuse box – 40A: Fuse Capacity – Refer to “Relay Box Locator” and “Fuse Box Locator” in this section.
C	<ul style="list-style-type: none"> – Connector – Connector No C202, terminal No 10 – Refer to “How to Check Terminal Number of Connect” in this section
D	<ul style="list-style-type: none"> – Internal circuit of component (Relay) (Component Name, Terminal Number)
E	<ul style="list-style-type: none"> – Internal circuit of component (Switch) (Terminal Number)
F	<ul style="list-style-type: none"> – Wiring Harness Color – Refer to “Wire Color Chart” in this section
G	<ul style="list-style-type: none"> – Ground line. – G402: Ground Position – In case of the ground numberless, this means the body ground.

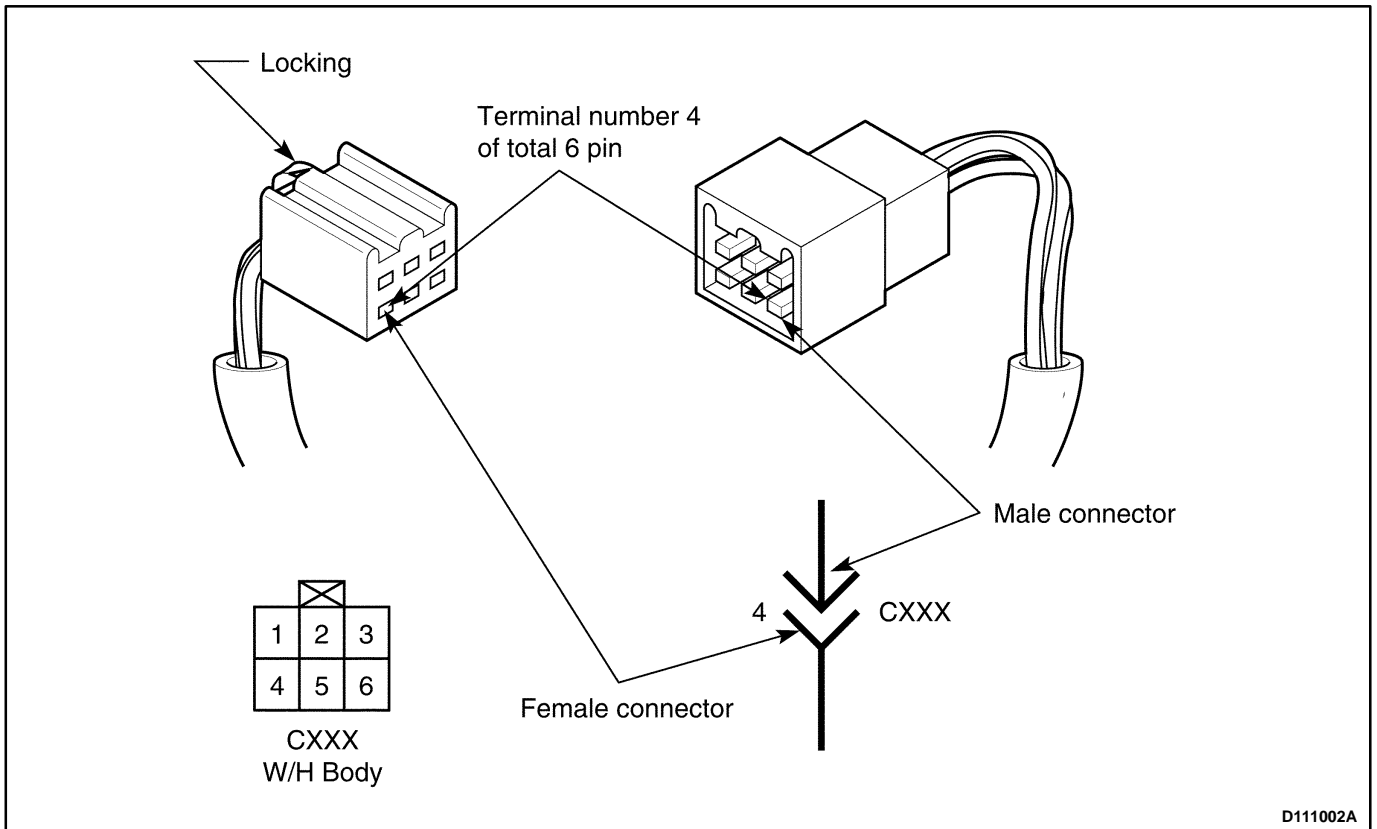
Circuit Identification Symbol

Identification Symbol	Meaning
C	Connector
Ef	Fuse in engine room fuse box
F	Fuse in passenger compartment fuse box
G	Ground

HOW TO CHECK TERMINAL NUMBER OF CONNECTOR

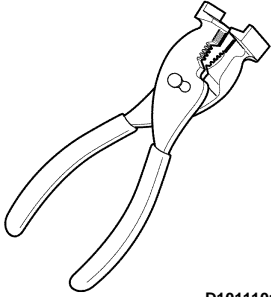
Terminal number is given based on female terminal connector.

Example: Terminal number 4 of 6 pin connection.



SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS TABLE

 <p>D1011101</p>	<p>DW-540-010 Relay Remover</p>
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SCHEMATIC AND ROUTING DIAGRAMS

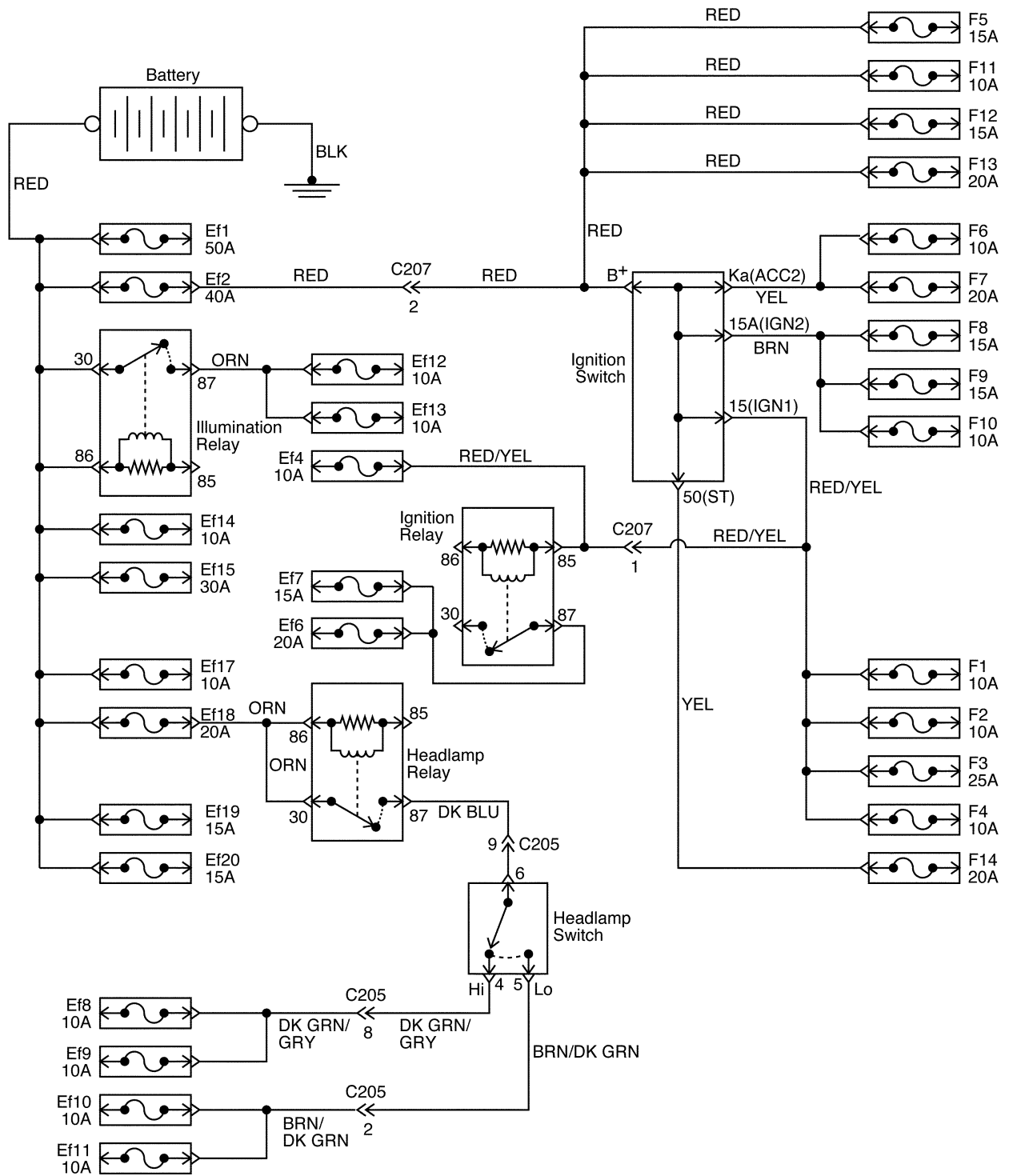
WIRE COLOR CHART

Wire Color	Abbreviation On Schematic
Green	DK GRN
Blue	DK BLU
Brown	BRN
Orange	ORN
Yellow	YEL
Grey	GRY
Red	RED
Black	BLK
White	WHT
Purple	PPL

Wires With Tracers

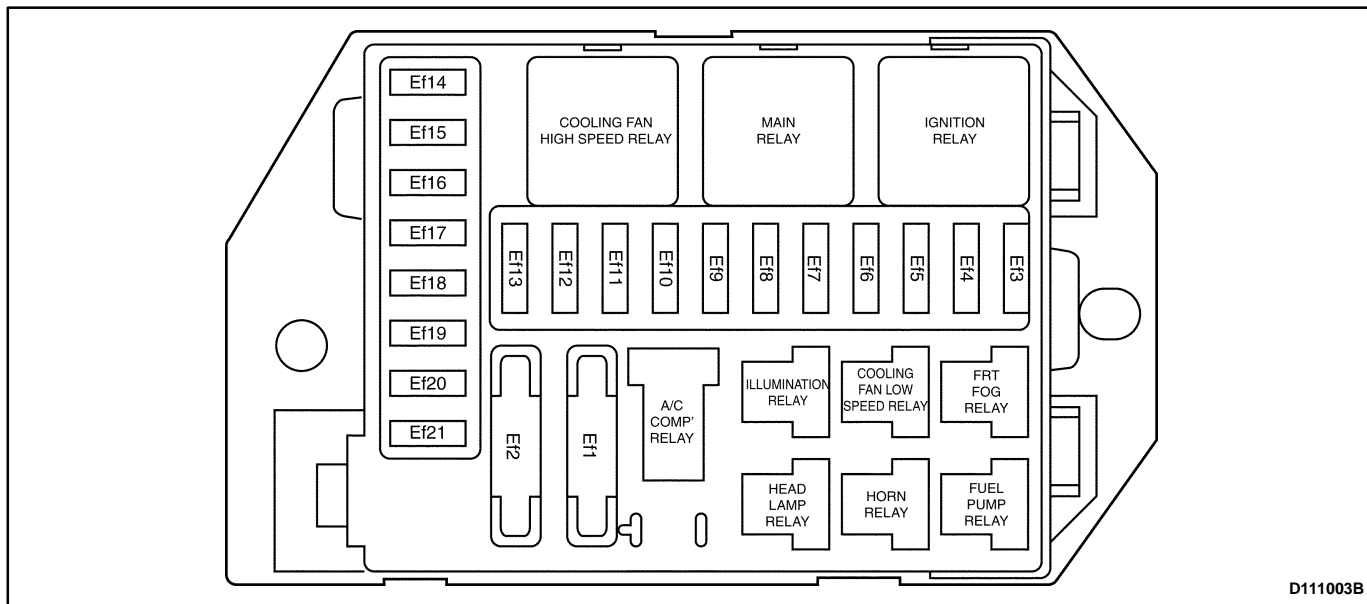
Wire Color	Abbreviation On Schematic
Red with White Tracer	RED/WHT

POWER DISTRIBUTION SCHEMATIC

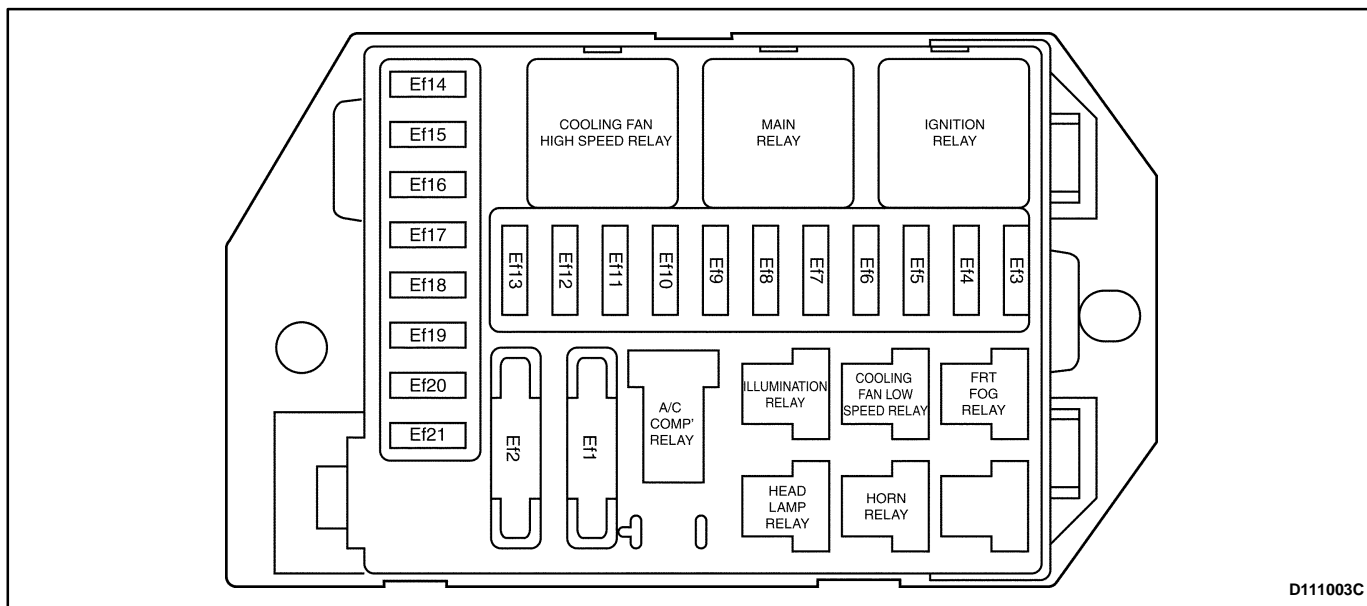


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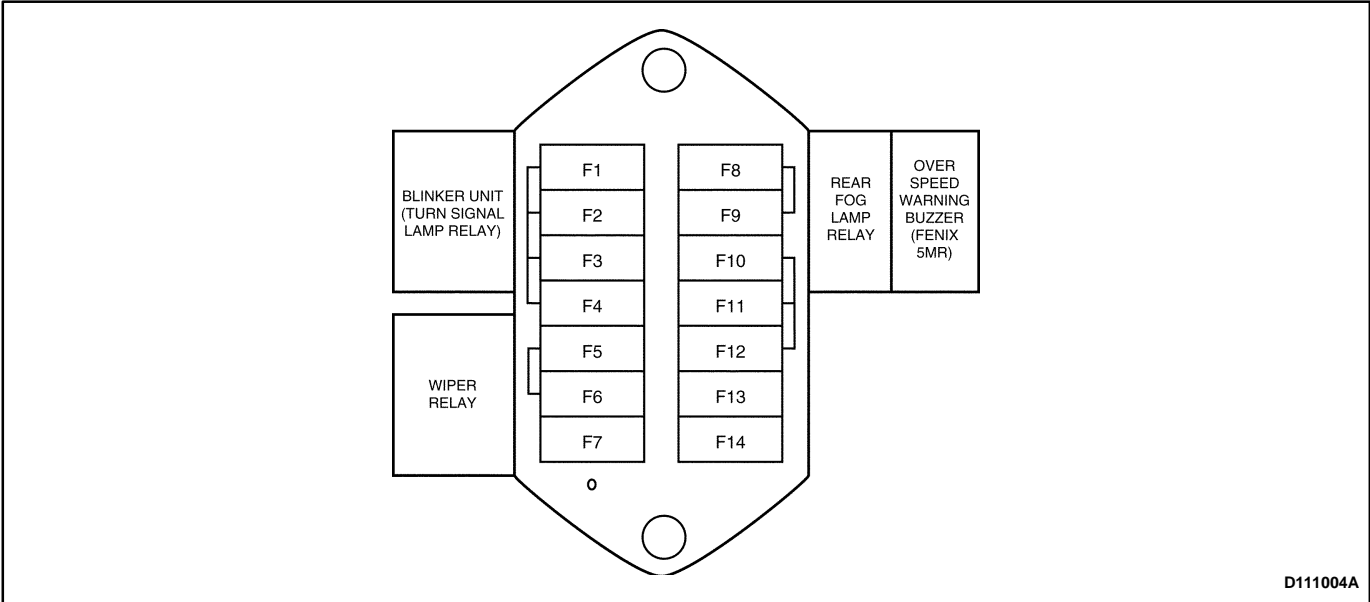
RELAY & FUSE BOX LOCATOR (ENGINE ROOM: SIRIUS D3)



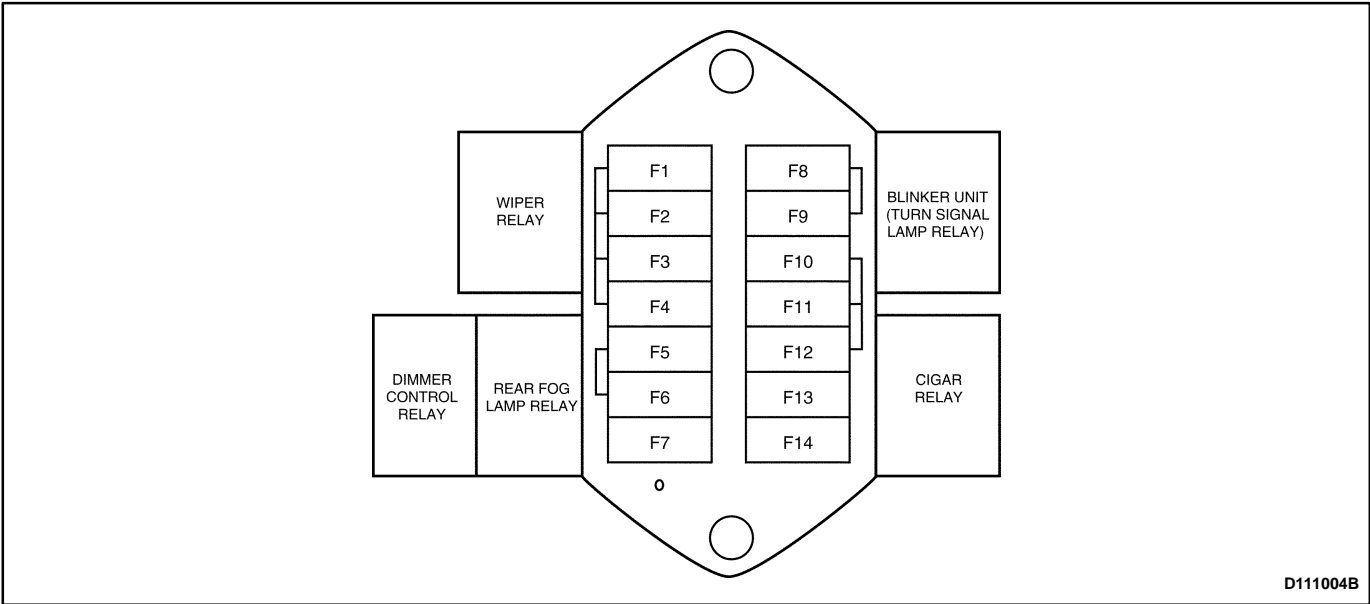
RELAY & FUSE BOX LOCATOR (ENGINE ROOM: FENIX 5MR)



FUSE BOX LOCATOR (PASSENGER COMPARTMENT: LHD)



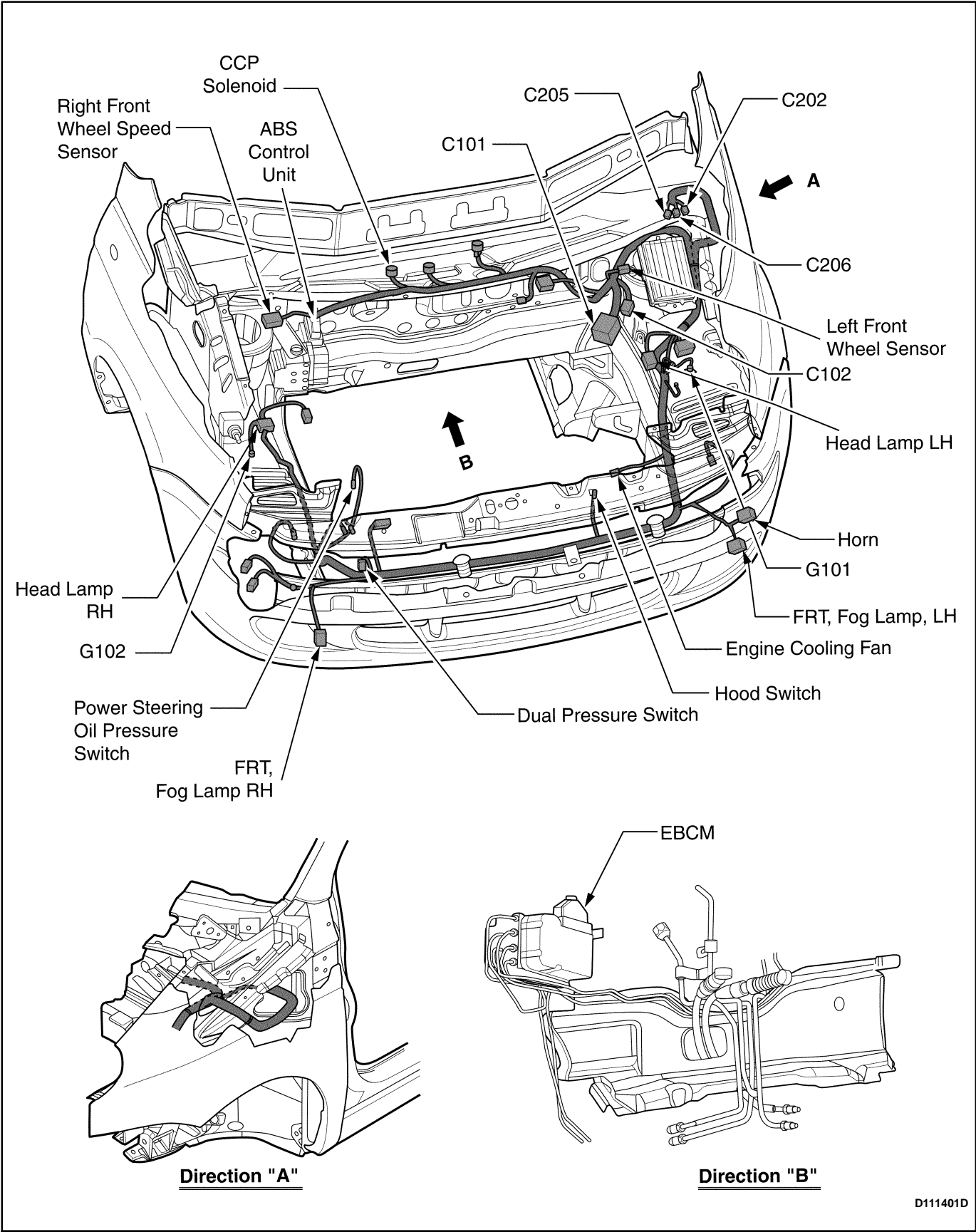
FUSE BOX LOCATOR (PASSENGER COMPARTMENT: RHD)



FUSE CHART

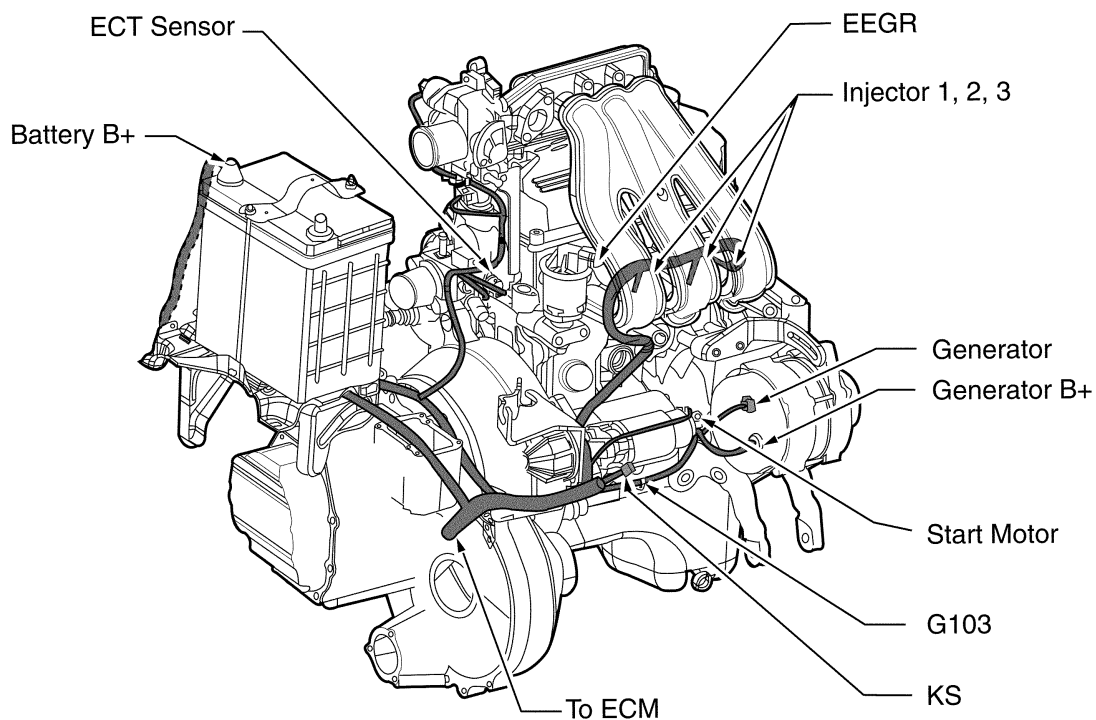
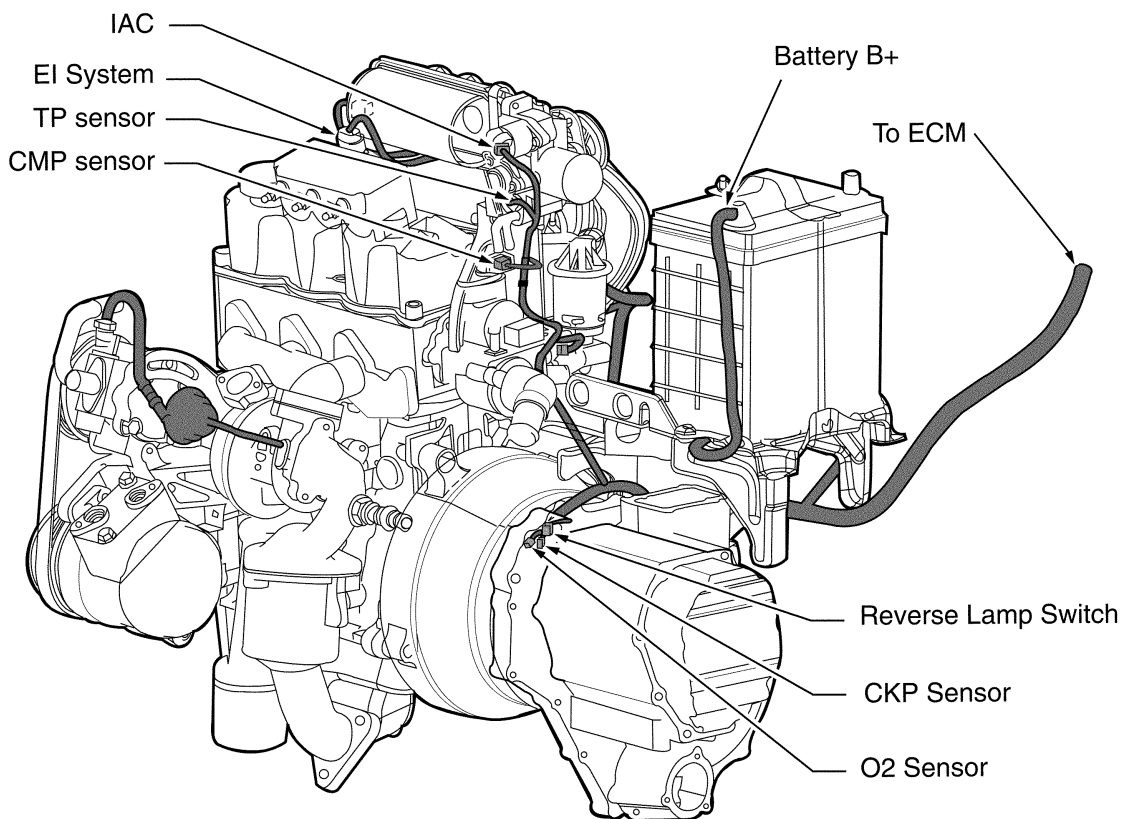
Fuse	Rating/ Source		Circuit
Ef1 (Engine Fuse)	50A	BAT	ABS
Ef2	40A	BAT	Ignition Switch, Instrument Panel Fuse Block (F5, F11 ~ F13)
Ef3	10A	BAT	Fuel cut-off Switch (Inertia Switch)
Ef4	10A	IGN 1	Fuel, EBCM, Generator, VSS, Fuel Pump Relay, Main Relay, Ignition Coil
Ef5	—	—	Not Used
Ef6	20A	BAT	Blower Motor
Ef7	15A	BAT	Rear Window Defogger
Ef8	10A	BAT	Headlamp Hi Beam, Right Side
Ef9	10A	BAT	Headlamp Hi Beam, Left Side
Ef10	10A	BAT	Headlamp Lo Beam, Right Side
Ef11	10A	BAT	Headlamp Lo Beam, Left Side
Ef12	10A	58	Tail and Illumination Lamps, Right Side
Ef13	10A	58	Tail and Illumination Lamps, Left Side
Ef14	10A	BAT	A/C Compressor
Ef15	30A	BAT	Radiator Fan
Ef16	10A	—	Spare
Ef17	10A	BAT	Horn
Ef18	20A	BAT	Headlamp Relay, Hi Beam Passing, DRL Module
Ef19	15A	BAT	ECM, Main Relay
Ef20	15A	BAT	Front Fog Lamp
Ef21	15A	—	Spare
F1 (Fuse)	10A	IGN 1	Cluster, Clock, IMMO, Anti-Theft Control Unit, DRL Relay
F2	10A	IGN 1	SDM
F3	25A	IGN 1	Hazard Switch, DRL Module
F4	10A	IGN 1	Turn Signal Lamp
F5	15A	BAT	Stop Lamp
F6	10A	ACC	Audio
F7	20A	ACC	Cigar Light
F8	15A	IGN 2	Wiper
F9	15A	IGN 2	Rear Wiper Motor, Front & Rear Washer, Backup Lamp
F10	10A	IGN 2	Auto Mirror Switch
F11	10A	Ef2	IMMO, Audio, Room Lamp
F12	15A	Ef2	Hazard, Clock
F13	20A	Ef2	Anti-Theft Control Unit, Door Lock
F14	20A	ST	Starter Motor

FRONT HARNESS ROUTING
(Left-Hand Drive Shown, Right-Hand Drive Similar)



D111401D

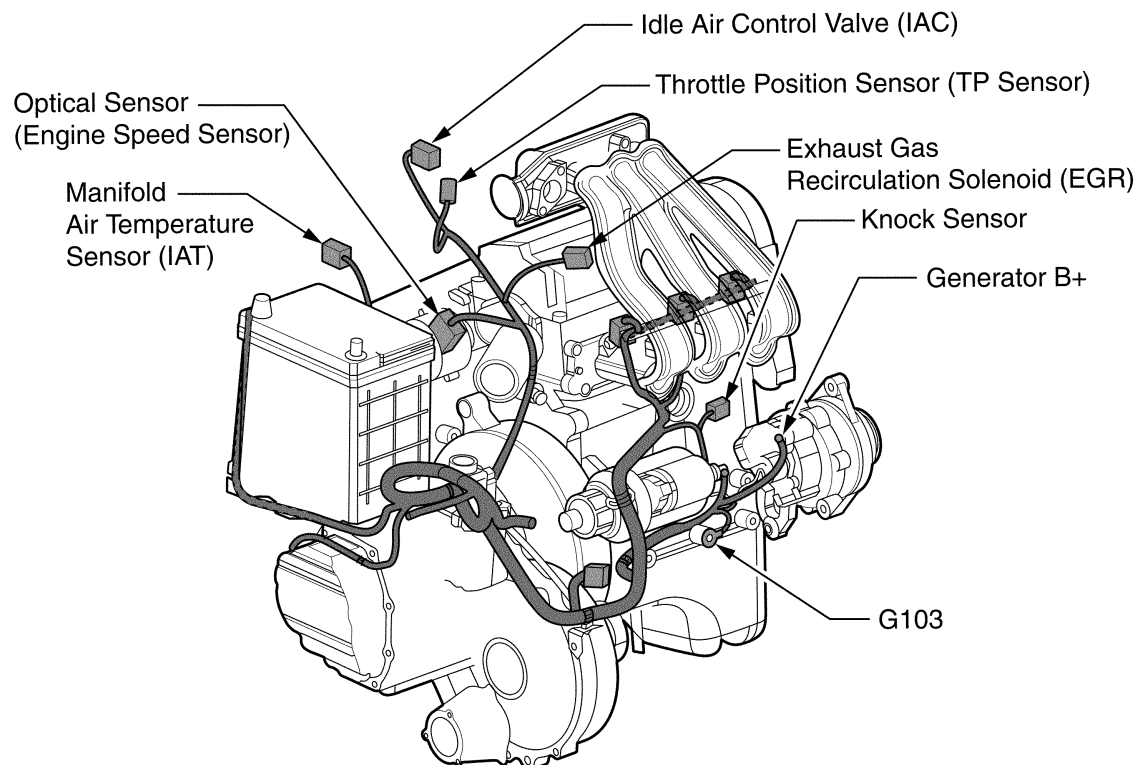
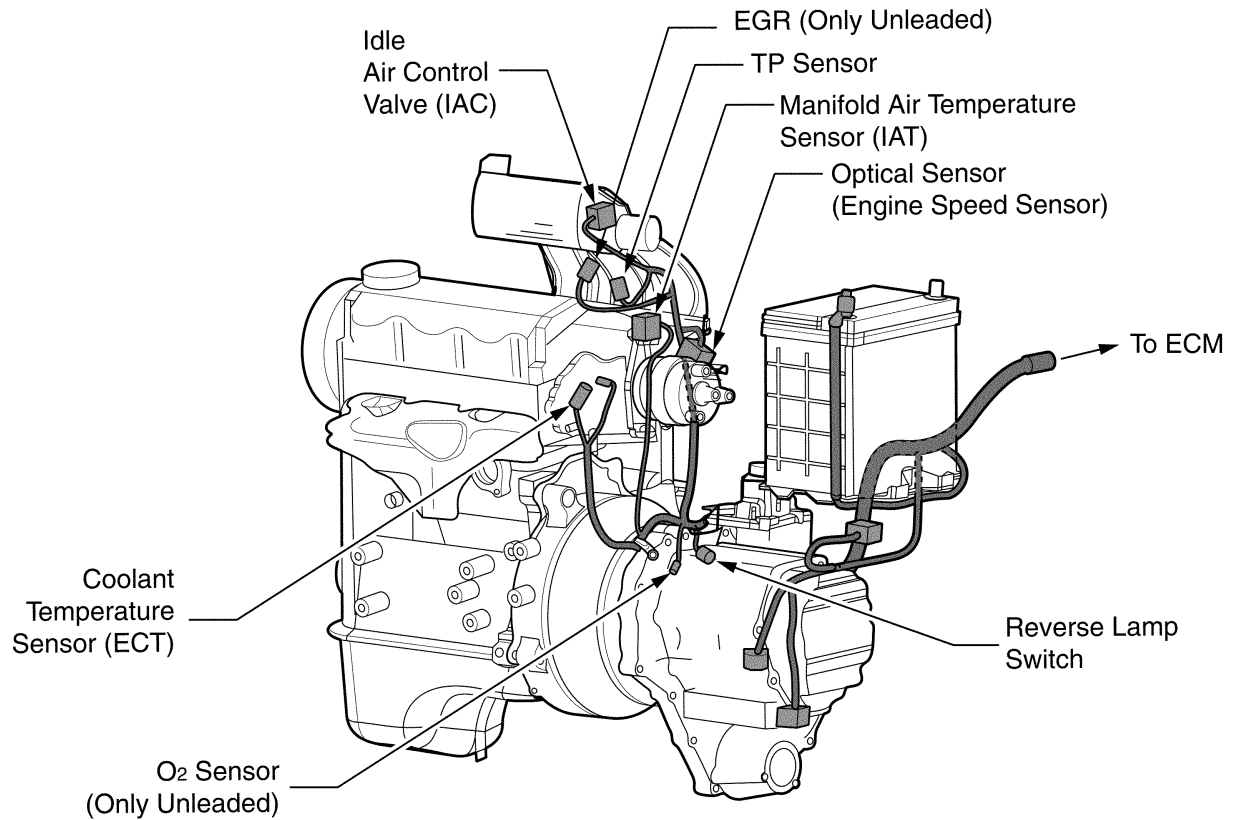
ENGINE HARNESS ROUTING (SIRIUS D3) (Left-Hand Drive Shown, Right-Hand Drive Similar)



D111402D

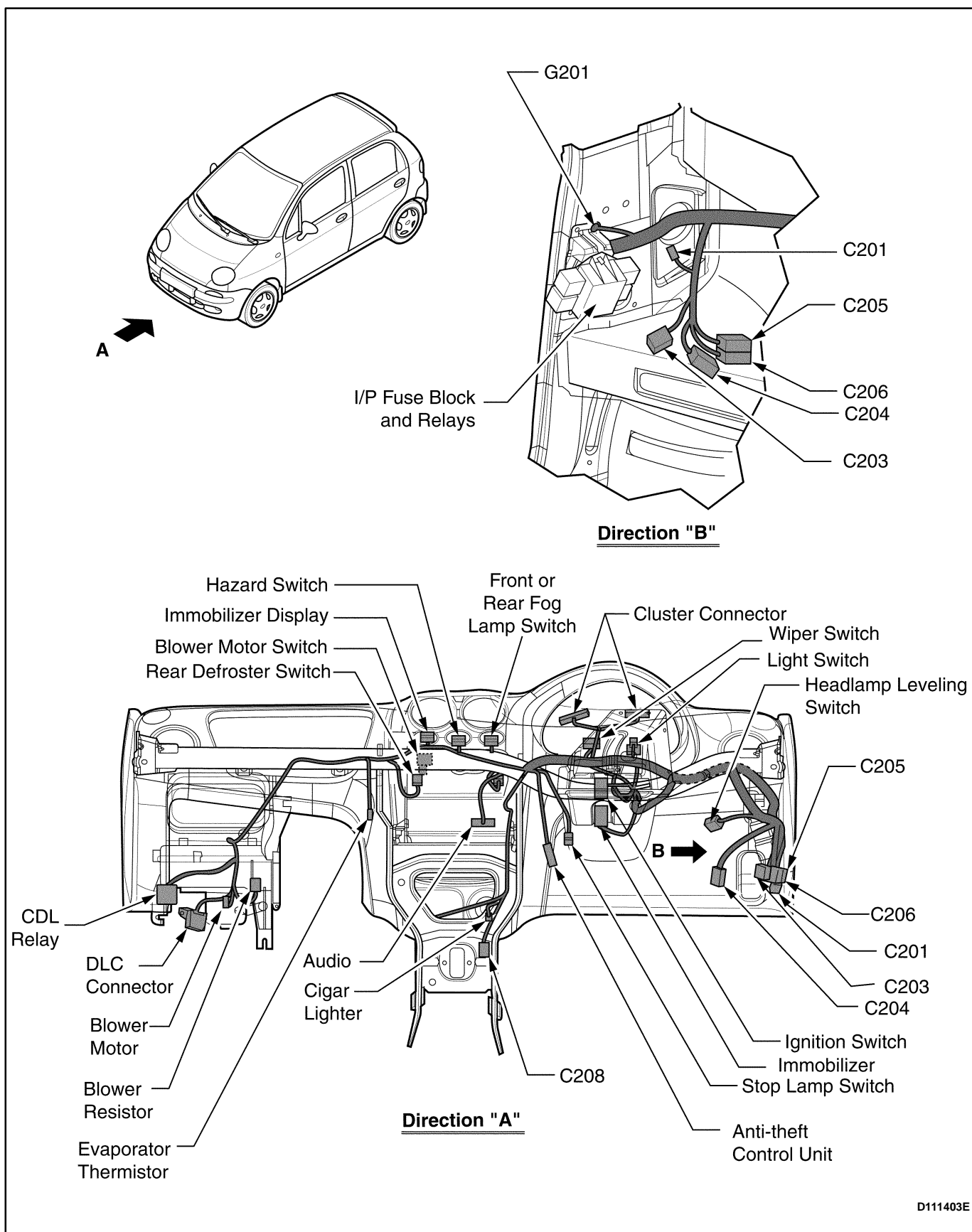
ENGINE HARNESS ROUTING (FENIX 5NR)

(Left-Hand Drive Shown, Right-Hand Drive Similar)



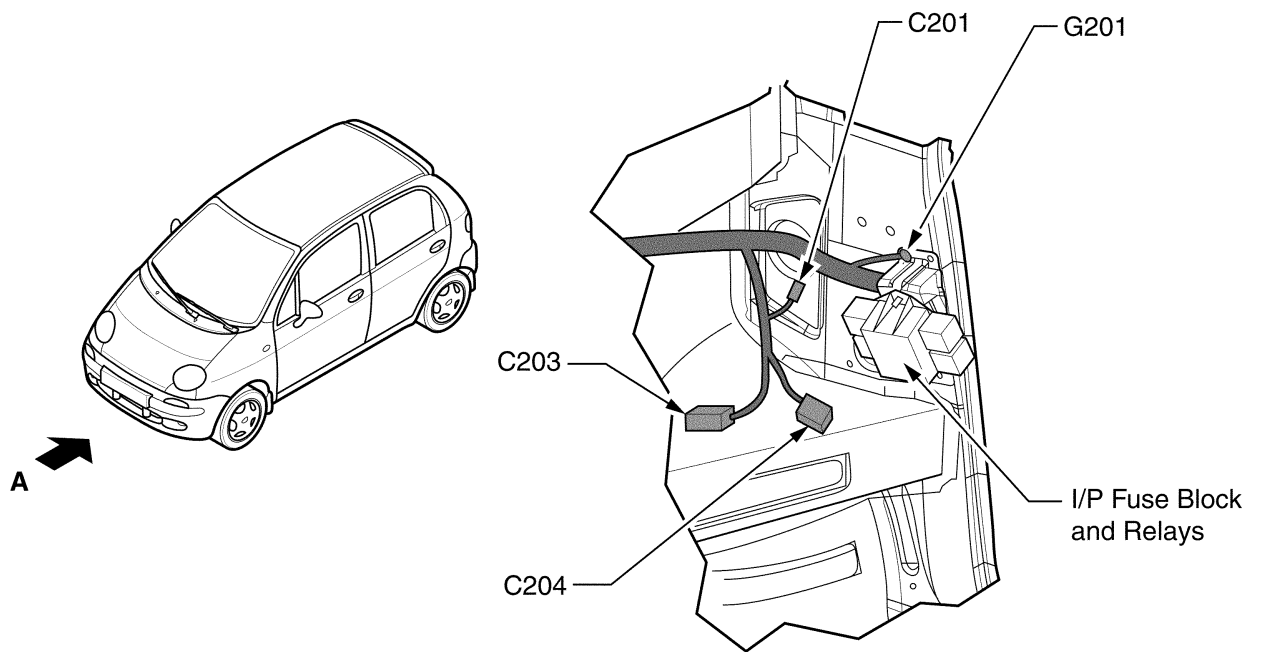
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INSTRUMENT HARNESS ROUTING (Left-Hand Drive)

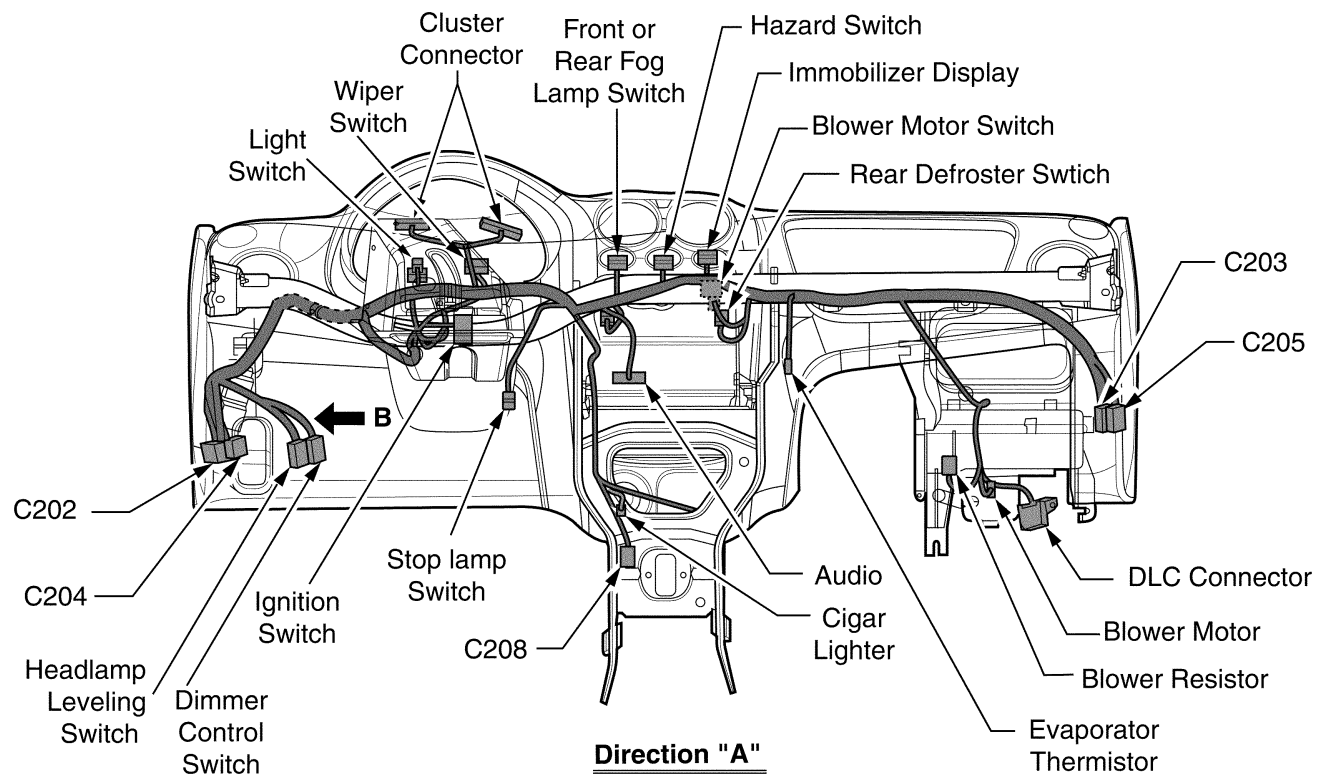


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INSTRUMENT HARNESS ROUTING (Right-Hand Drive)



Direction "B"

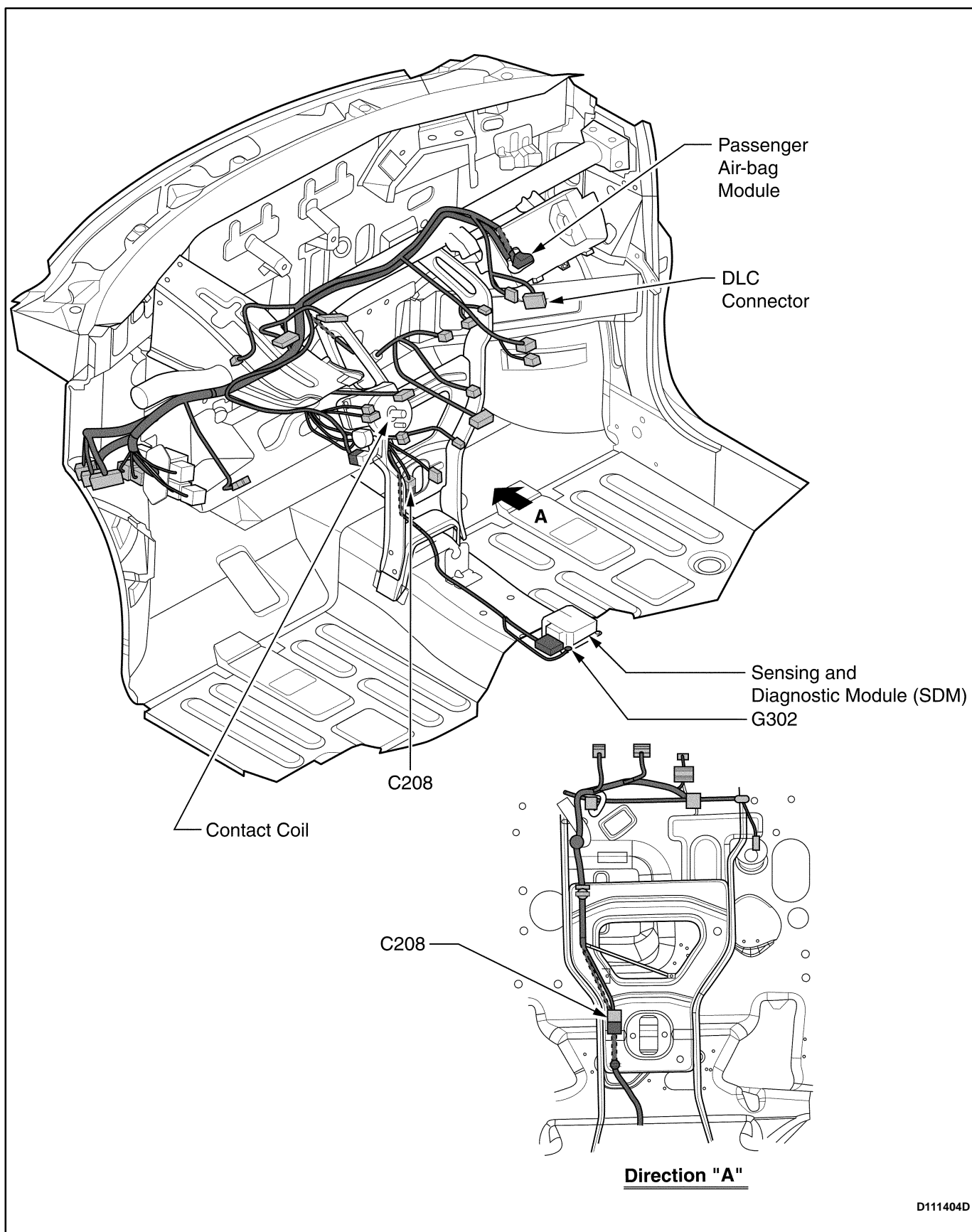


Direction "A"

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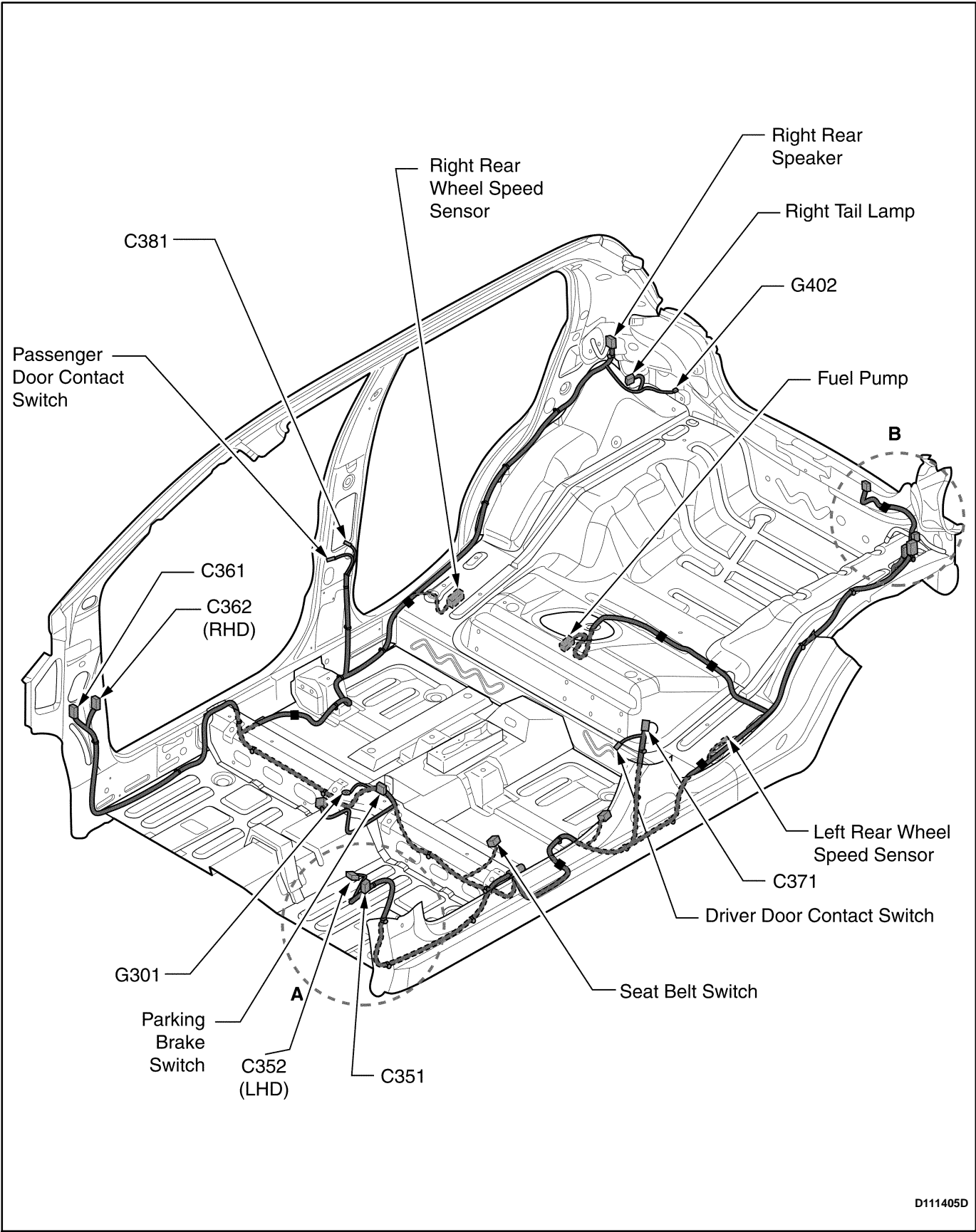
AIRBAG HARNESS ROUTING

(Left-Hand Drive Shown, Right-Hand Drive Similar)



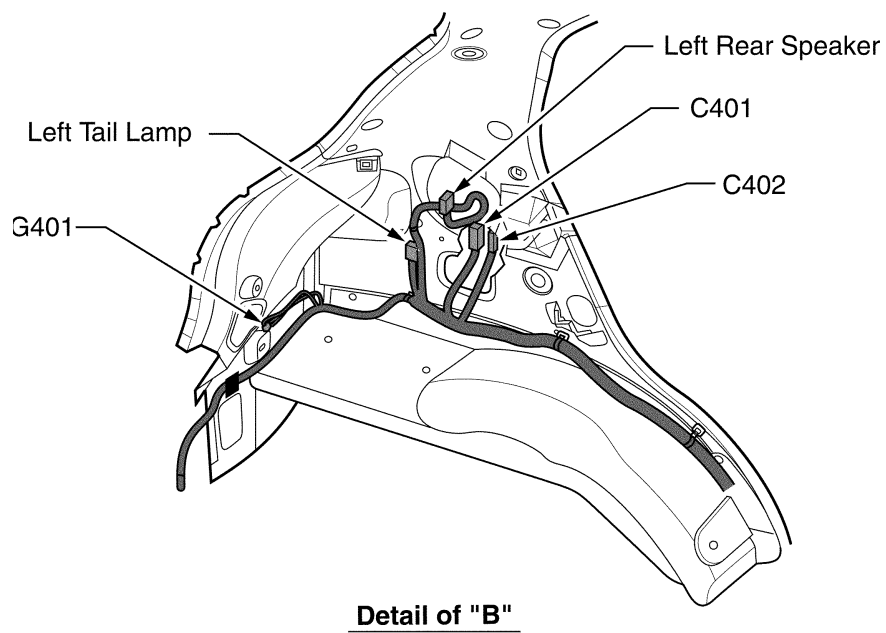
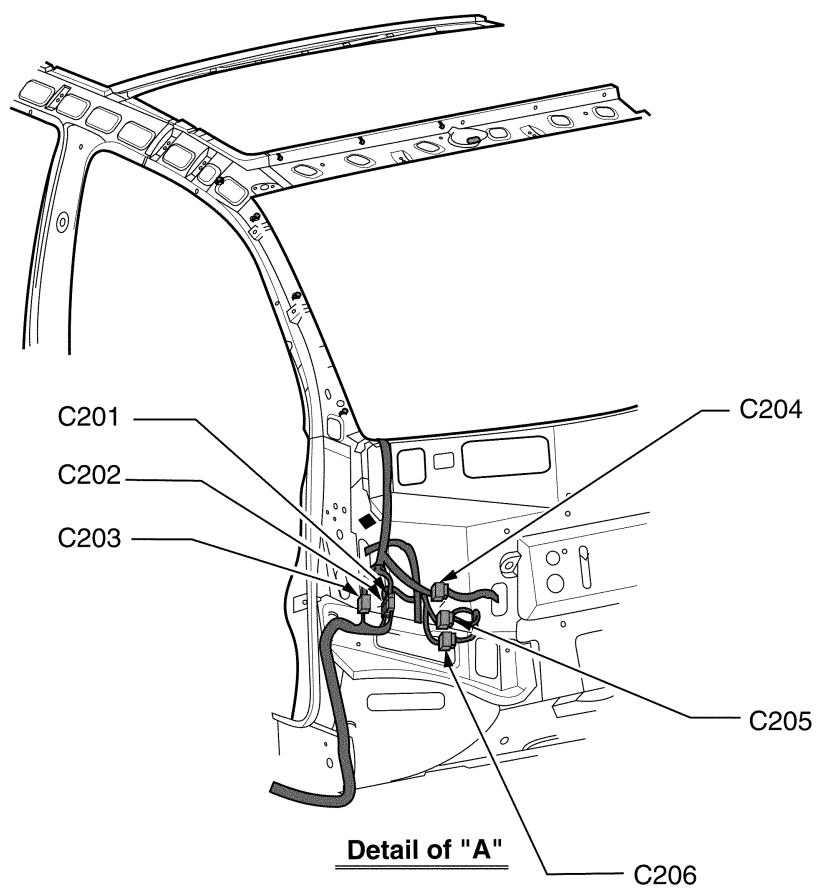
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BODY HARNESS ROUTING



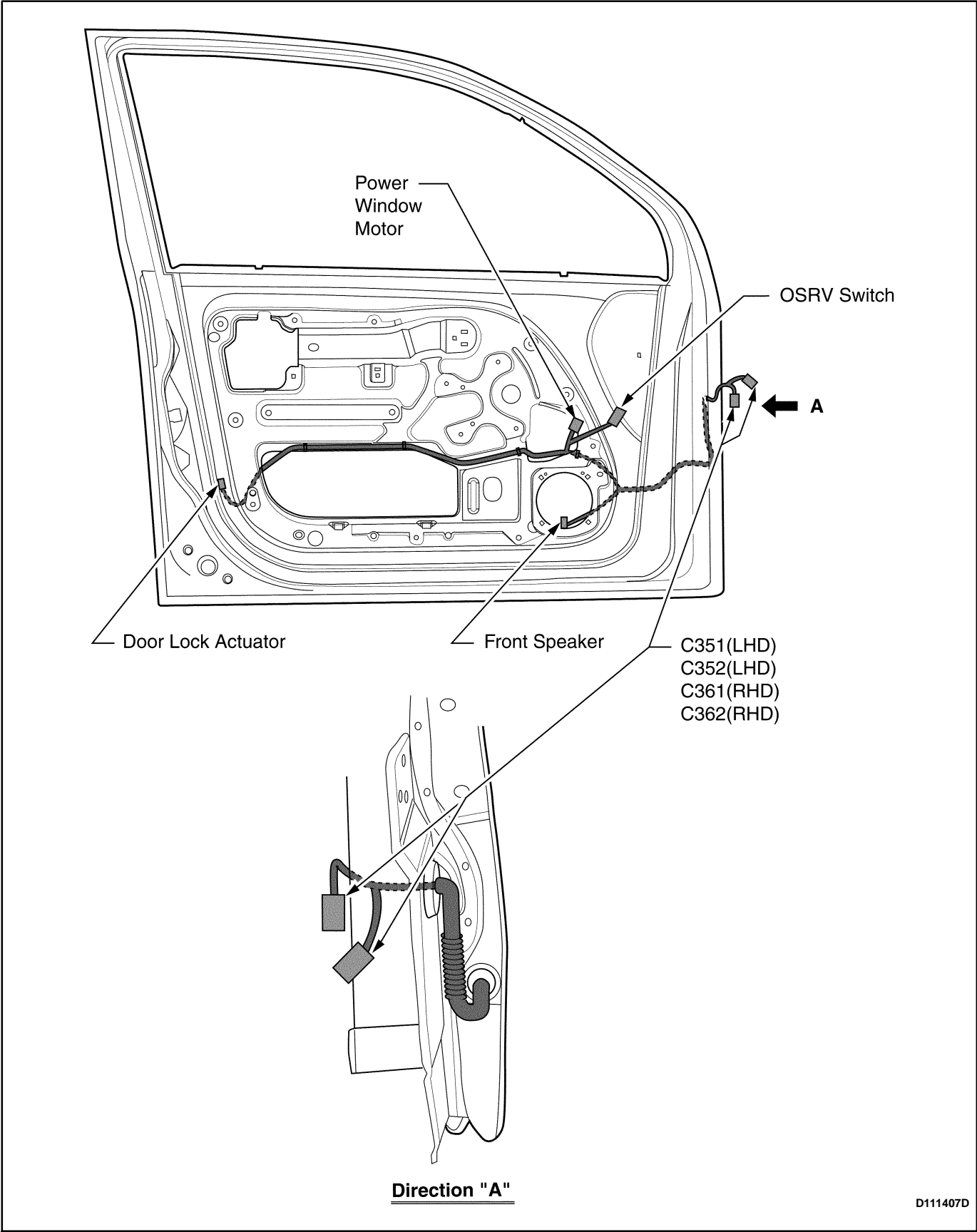
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BODY HARNESS ROUTING (Cont'd)



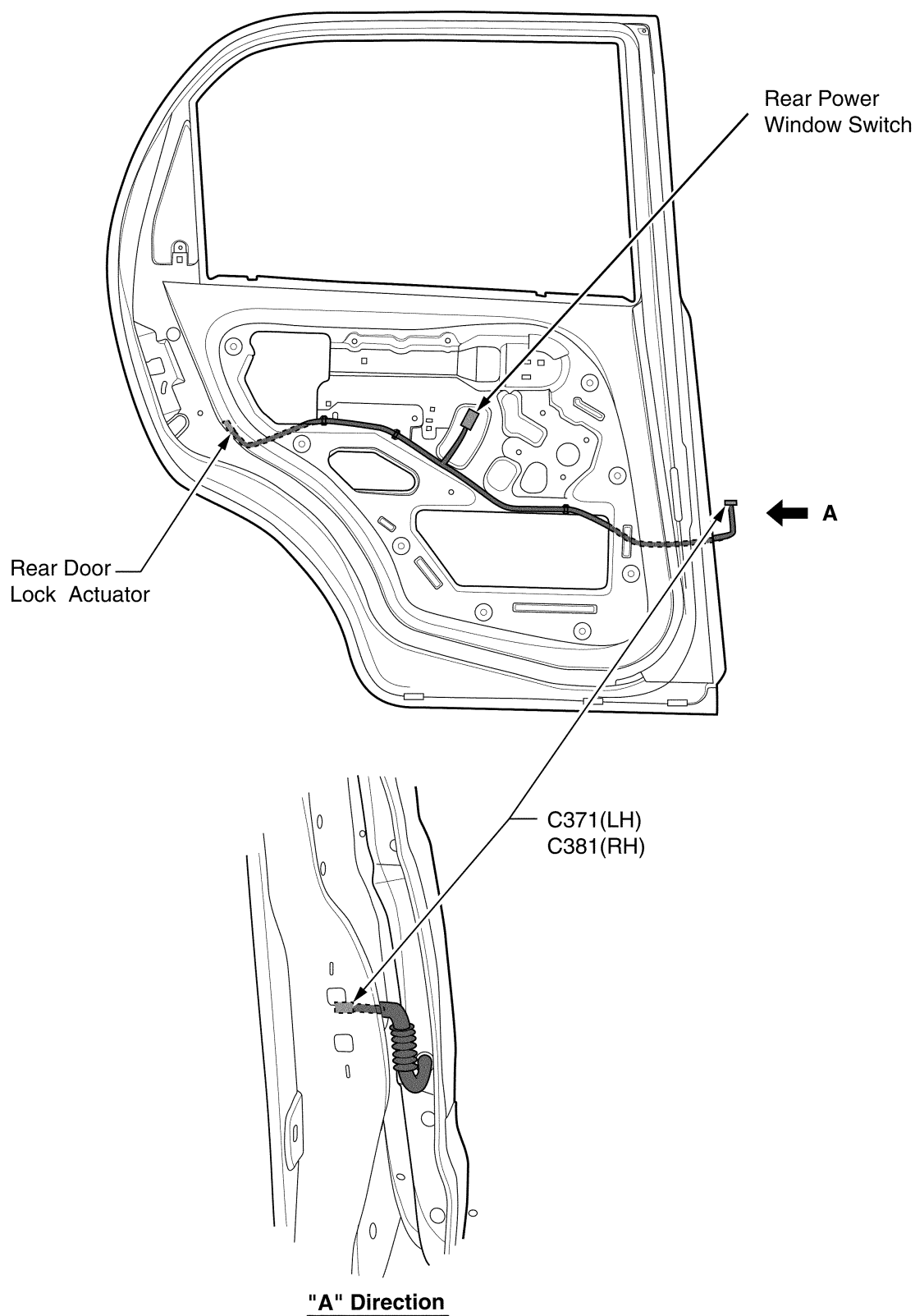
D111406D

FRONT DOOR HARNESS ROUTING



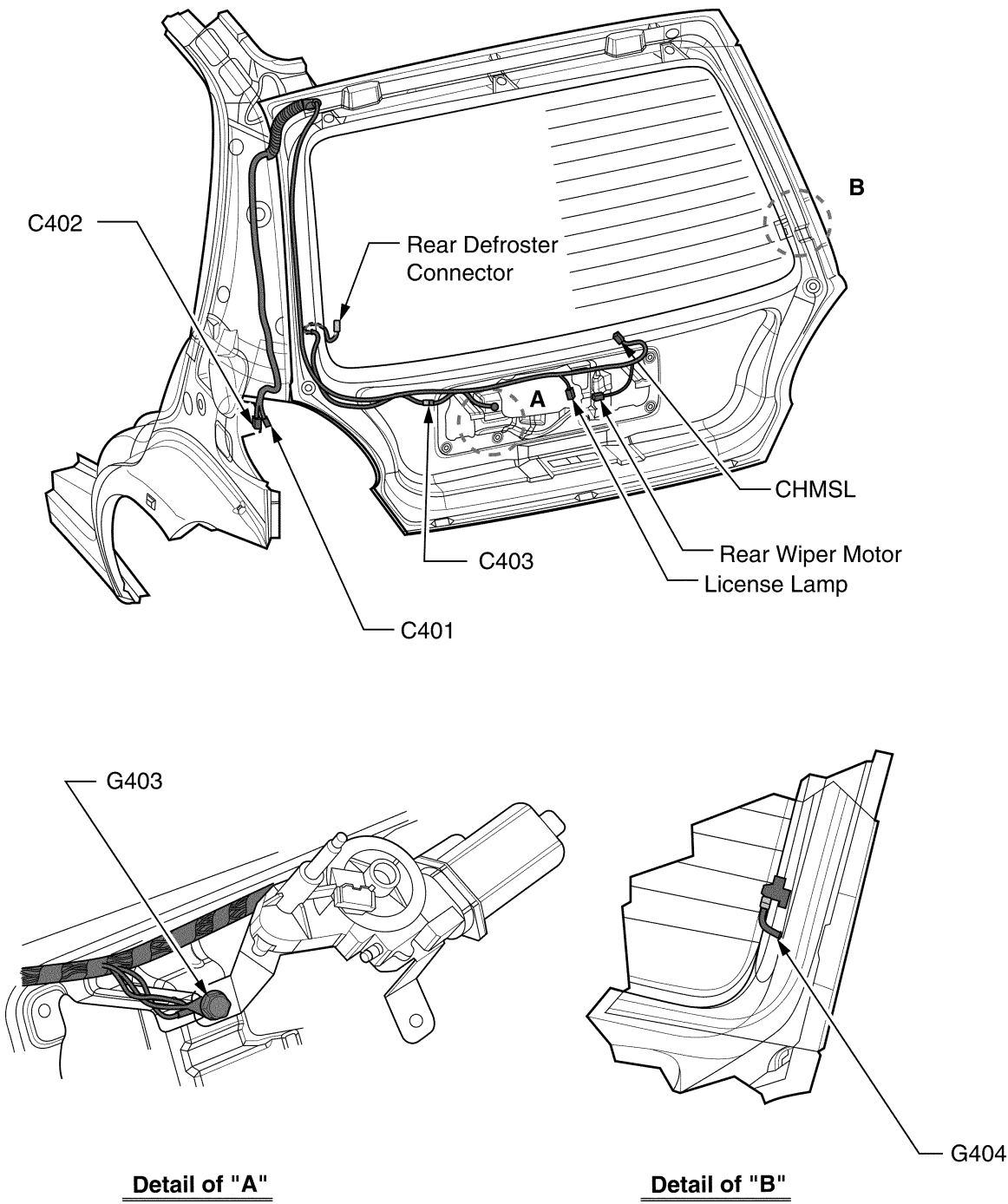
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REAR DOOR HARNESS ROUTING



D111408D

TAILGATE HARNESS ROUTING



D111409D

SECTION 9B

LIGHTING SYSTEMS

CAUTION: Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.

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DESCRIPTION AND OPERATION

HEADLAMPS AND PARKING LAMPS

The headlamps are controlled by the multifunction lever located on the left side of the steering column. They will come on with the ignition switch in any position. Turning the headlamp switch to the first position turns on the parking lamps, the license plate lamps and the instrument panel illumination. Turning the switch to the second position turns on all of the previous lamps and the headlamps. Turning the switch to the off position turns off all the lamps.

The parking lamps can be turned on by turning the lighting switch to the first position. The parking lamps can be turned off by turning the switch to the OFF position.

Headlamp high beam and low beam are also controlled by this lever. When the headlamps are on, pushing the lever away from the driver until the switch clicks changes the lamp from low beam to high beam. An indicator lamp on the instrument cluster assembly will come on when the high beam headlamps are on. To return the headlamps to low beam, pull the lever toward the driver.

The headlamps must be aimed for proper illumination of the road. Headlamp aim should be checked whenever a new headlamp assembly is installed or service repairs to the front end area may have disturbed the headlamp assembly or its mountings.

FRONT TURN SIGNAL LAMPS

When the turn signals are activated, the side turn signal lamps flash to signal a turn. The turn signal works only when the ignition switch is on.

The turn signals are controlled by the light switch on the left side of the steering column. Moving the lever all the way up or down (past the detent) will turn on the turn signals. When the turn is completed, the lever will return to horizontal and the turn signals will stop flashing.

For changing lanes or shallow turns where the steering wheel does not turn far enough to cancel the signal, move the signal only to the first detent and hold it there. When the lever is released, it will return to horizontal and the turn signal will cancel.

REAR FOG LAMP

The rear fog lamp is incorporated in the drive side tail-lamp assembly and are controlled by the rear fog lamp switch on the instrument panel. The rear fog lamp can be turned on only when headlamps are on.

TAILLAMPS

The taillamps, stoplamps, backup lamp(s), rear fog lamp (if equipped with) and turn signal lamps are one assembly.

Turning on either the headlamps or the parking lamps will also turn on the taillamps. When the brake pedal is pushed, the taillamps will glow brighter to serve as stoplamps.

The center high-mounted stoplamp is located in the rear window and will come on when the brake pedal is pressed.

LICENSE PLATE LAMPS

The license plate lamps will come on when the headlamps or the parking lamps are on. The license plate lamps are mounted on the rear bumper, above the license plate.

INTERIOR COURTESY LAMP

The courtesy lamp is located on the headliner just before the front seats. The lamp switch has three positions. If the switch is in the center position, the lamp will go on whenever a door is opened and go off when it is closed. In the ON position, the lamp will stay on until it is turned off. In the OFF position, the lamp will not come on, even when a door is opened.

BACKUP LAMP(S)

The backup lamps are located in the rear combination lamps. They will come on when the transaxle is shifted into REVERSE. On a vehicle with a manual transaxle, they are activated by a reverse switch which is part of the transaxle.

DAYTIME RUNNING LAMPS (DRL) (W/Europe Only)

The daytime running lamps (DRL) work in conjunction with the exterior lamps system. When the ignition switch is turned to the "II" position with the light switch off, parking, tail, license plate and instrument panel lights illuminate. And, when the engine is started, the headlamps (low beam) also come on.

They remain on until the ignition switch is turned off or the light switch is turned on. They revert to normal operation when the light switch is on.

The daytime running lamps (DRL) is optional.

DIAGNOSTIC INFORMATION AND PROCEDURES

HEADLAMPS

Condition	Probable Cause	Correction
Low Beam Headlamps Are Inoperative, High Beam Headlamps Are OK.	<ul style="list-style-type: none"> Faulty headlamp combination switch. 	<ul style="list-style-type: none"> Replace the headlamp combination switch.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse Ef10/Ef11 and the terminal 5 of the headlamp combination switch. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse Ef10 or Ef11 is blown. 	<ul style="list-style-type: none"> Replace the fuse Ef10 or Ef11
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse Ef10 or Ef11 and the terminal 2 of the headlamp connector. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Headlamp bulb is blown. 	<ul style="list-style-type: none"> Replace the headlamp bulb.
	<ul style="list-style-type: none"> The open grounds (G101, G102) circuit. 	<ul style="list-style-type: none"> Repair or replace the open ground circuit.
High Beam Headlamps Are Inoperative, Low Beam Headlamps Are OK.	<ul style="list-style-type: none"> Faulty headlamp combination switch. 	<ul style="list-style-type: none"> Replace the headlamp combination switch.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse Ef8/Ef9 and the terminal 4 of the headlamp combination switch. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse Ef8 or Ef9 is blown. 	<ul style="list-style-type: none"> Replace the fuse Ef10 or Ef11.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse Ef8 or Ef9 and the terminal 1 of the headlamp connector. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Headlamp bulb is blown. 	<ul style="list-style-type: none"> Replace the headlamp bulb.
	<ul style="list-style-type: none"> The open grounds (G101, G102) circuit. 	<ul style="list-style-type: none"> Repair or Replace the open ground circuit.
High Beam and Low Beam Headlamps Are Inoperative On Both Left and Right Sides.	<ul style="list-style-type: none"> The open circuit or a short circuit in the power supply circuit to the fuse Ef18. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse Ef18 is blown. 	<ul style="list-style-type: none"> Replace the fuse Ef18 (20A).
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse Ef18 and the terminal 86, 30 of the headlamp relay. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty headlamp relay. 	<ul style="list-style-type: none"> Replace the headlamp relay.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal 87 of the headlamp relay and the terminal 6 of the headlamp combination switch. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty headlamp combination switch. 	<ul style="list-style-type: none"> Replace the headlamp combination switch.
	<ul style="list-style-type: none"> The open ground (G201) circuit. 	<ul style="list-style-type: none"> Repair or Replace the open ground circuit.

TURN SIGNAL LAMPS AND HAZARD LAMPS

Condition	Probable Cause	Correction
Turn Signal Lamps and Hazard Lamps Do Not Work.	<ul style="list-style-type: none"> The open circuit or a short circuit between the power supply circuit and the fuse Ef2. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse Ef2 is blown. 	<ul style="list-style-type: none"> Replace the fuse Ef2.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse Ef2 and the fuse F12. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse F12 is blown. 	<ul style="list-style-type: none"> Replace the fuse F12.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse F12 and the terminal 8 of the hazard lamp switch connector. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty hazard lamp switch. 	<ul style="list-style-type: none"> Replace the hazard lamp switch.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal 7 of the hazard lamp switch connector and the terminal 49 of the turn signal lamp relay. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal 49a of the turn signal lamp relay and the terminal 9 of the hazard lamp switch connector. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty turn signal lamp relay. 	<ul style="list-style-type: none"> Replace the turn signal lamp relay.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal 49a of the turn signal lamp relay and the terminal 2 of the turn signal lamp switch connector. 	
	<ul style="list-style-type: none"> Faulty turn signal lamp switch. 	<ul style="list-style-type: none"> Replace the turn signal lamp switch.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal 1,3 of the turn signal switch connector and the terminal 2,5 of each turn signal lamp connectors. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Turn signal lamp bulb is blown. 	<ul style="list-style-type: none"> Replace the turn signal lamp bulb.
	<ul style="list-style-type: none"> The open grounds (G101, G102, G401, G402) circuits. 	<ul style="list-style-type: none"> Repair or Replace the open ground circuit.
Hazard Lamps Do Not Operate, Turn Signals Are OK.	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal 49a of the turn signal lamp relay and the terminal 9 of the hazard lamp switch connector. 	<ul style="list-style-type: none"> Repair or Replace the open circuit.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminals 5,6 of the hazard lamp switch connector and the terminals 2,5 of the turn signal lamp connectors. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.

STOPLAMPS AND INTERIOR COURTESY LAMP

Condition	Probable Cause	Correction
Stoplamps Do Not Work.	<ul style="list-style-type: none"> Fuse F5 is blown. 	<ul style="list-style-type: none"> Replace the fuse F5.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse F11 and the terminal 2 of the stoplamps switch connector (For vehicle equipped with M/T). 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty stoplamp switch. 	<ul style="list-style-type: none"> Replace the stoplamp switch.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal 1 of the stoplamp switch connector and the terminal 3 of the stoplamps connector (For vehicle equipped with M/T). 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Stoplamp bulb is blown. 	<ul style="list-style-type: none"> Replace the stoplamp bulb.
	<ul style="list-style-type: none"> The open ground (G401, G402) circuits. 	<ul style="list-style-type: none"> Repair or Replace the open ground circuit.
Interior Courtesy Lamp Does Not Work.	<ul style="list-style-type: none"> The open circuit or a short circuit in the power supply circuit to the fuse Ef2. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse Ef2 is blown. 	<ul style="list-style-type: none"> Replace the fuse Ef2.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse Ef2 and the fuse F11. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse F11 is blown. 	<ul style="list-style-type: none"> Replace the fuse F11.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the fuse F11 and the terminal 1 of the interior courtesy lamp connector. 	<ul style="list-style-type: none"> Repair or Replace the wiring connector.
	<ul style="list-style-type: none"> Interior courtesy lamp bulb is blown. 	<ul style="list-style-type: none"> Replace the bulb.
	<ul style="list-style-type: none"> Faulty interior courtesy lamp. 	<ul style="list-style-type: none"> Replace the interior courtesy lamp.

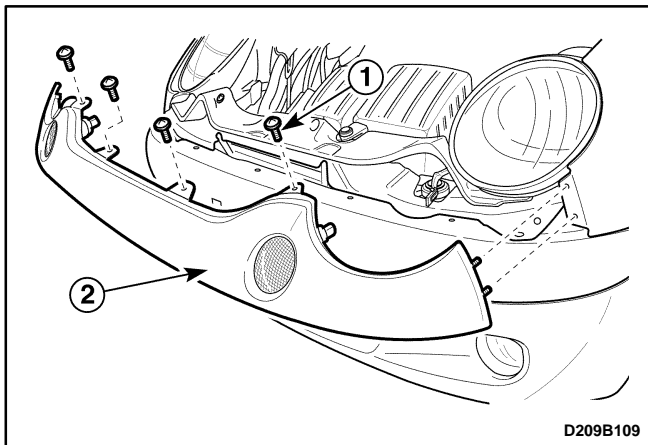
REAR FOG LAMP

Diagnostic Aids: The rear fog lamp will not operate unless the headlamps are ON. If the headlamps are not operating, repair that problem before attempting to diagnose the rear fog lamp.

Condition	Probable Cause	Correction
Rear Fog Lamp Does Not Work.	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal 87 of the headlamp relay and terminal 15,30 of the rear fog lamp relay. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty rear fog lamp relay. 	<ul style="list-style-type: none"> Replace the rear fog lamp relay.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal 87 of the rear fog lamp relay and terminal 6 of the rear fog lamp connector. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> The open circuit or a short circuit between the terminal E of the rear fog lamp relay and terminal 6 of the rear fog lamp switch. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty rear fog lamp switch. 	<ul style="list-style-type: none"> Replace the rear fog lamp switch.
	<ul style="list-style-type: none"> The open grounds (G201, G401) circuits. 	<ul style="list-style-type: none"> Repair or Replace the open ground circuit.
	<ul style="list-style-type: none"> Rear fog lamp bulb is blown. 	<ul style="list-style-type: none"> Replace the rear fog lamp bulb.

REPAIR INSTRUCTIONS

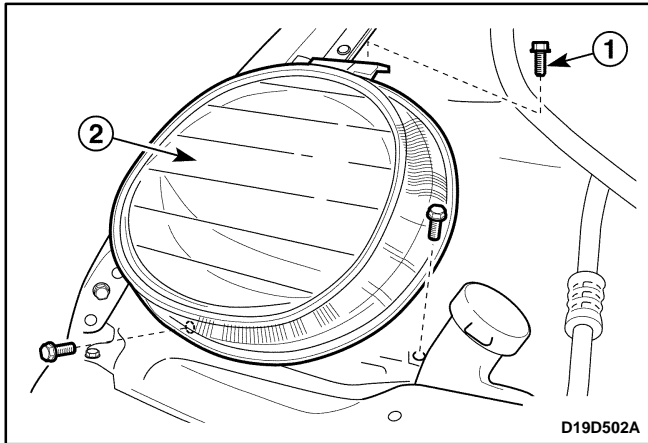
ON-VEHICLE SERVICE



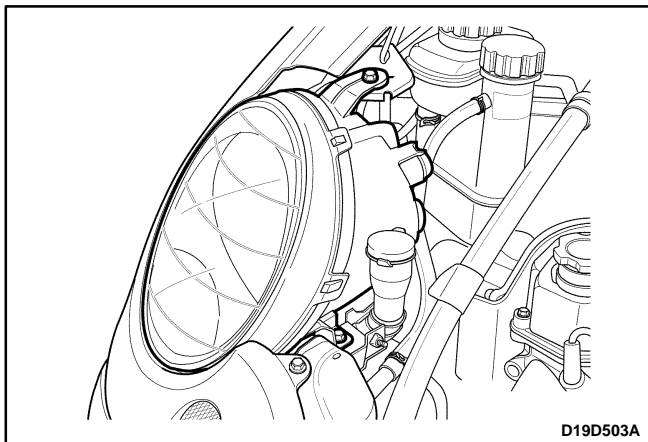
HEADLAMPS

Removal Procedure

1. Support the hood suitably.
2. Disconnect the negative battery cable.
3. Remove the front bumper spacer.
 - Remove the bolts (1).
 - Remove the front bumper spacer from the bumper fascia (2).

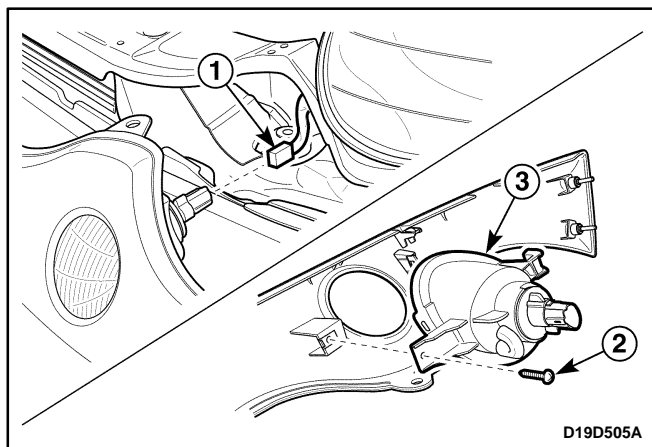


4. Remove the headlamp.
 - Remove the bolts and washer (1).
 - Disconnect the electrical connectors.
 - Remove the headlamp (2).



Installation Procedure

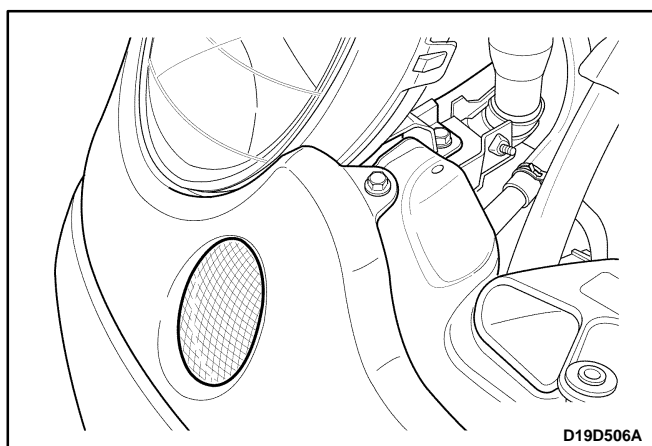
1. Install the headlamp with the bolts.
2. Connect the headlamp connector and parking lamp connector.
3. Install the front bumper spacer with the bolts.
4. Connect the negative battery cable.



TURN SIGNAL LAMPS

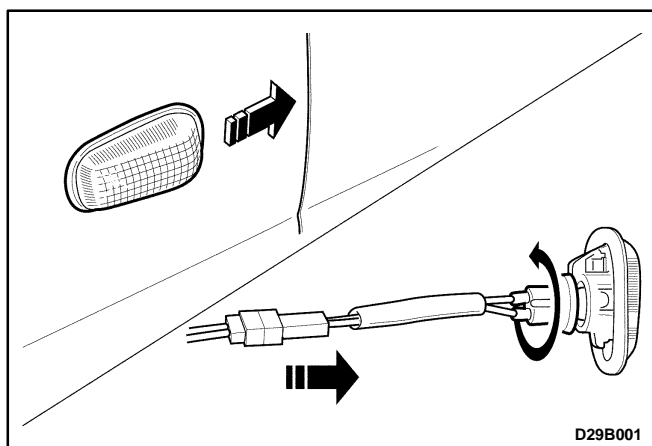
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the front bumper spacer. Refer to *Section 9M, Exterior Trim*.
3. Remove the turn signal lamps from the front bumper spacer.
 - Disconnect the electrical connector (1).
 - Remove the screw (2).
 - Remove the turn signal lamp assembly (3).



Installation Procedure

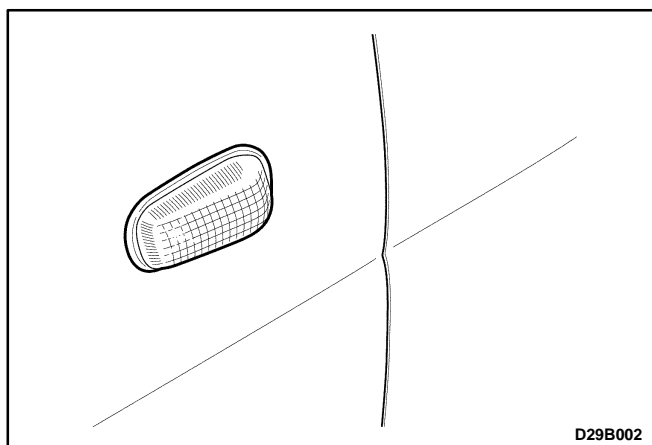
1. Connect the electrical connector.
2. Install the turn signal lamp assembly with the screw.
3. Install the front bumper spacer. Refer to *Section 9M, Exterior Trim*.
4. Connect the negative battery cable.



SIDE TURN SIGNAL LAMPS

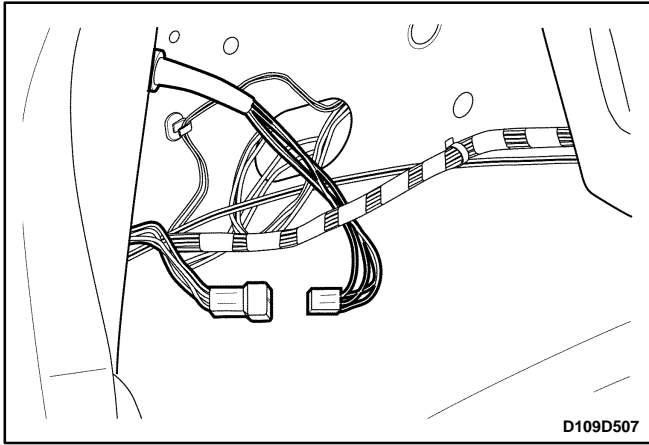
Removal Procedure

1. Disconnect the negative battery cable.
2. Slide the side turn signal lamp rearward.
3. Remove the lamp.
4. Disconnect the electrical connector.



Installation Procedure

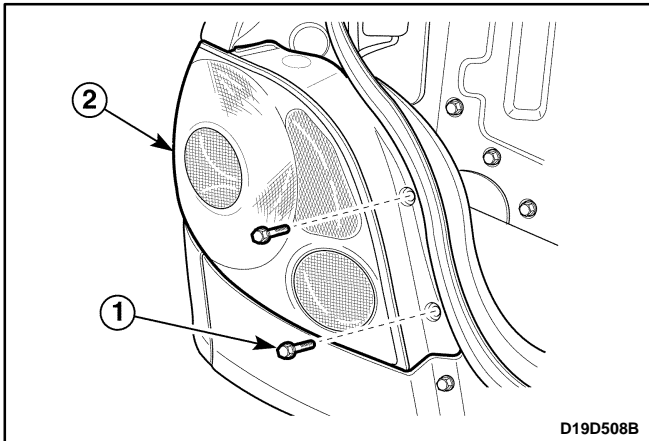
1. Connect the electrical connector.
2. Install the side turn signal lamp.
3. Connect the negative battery cable.



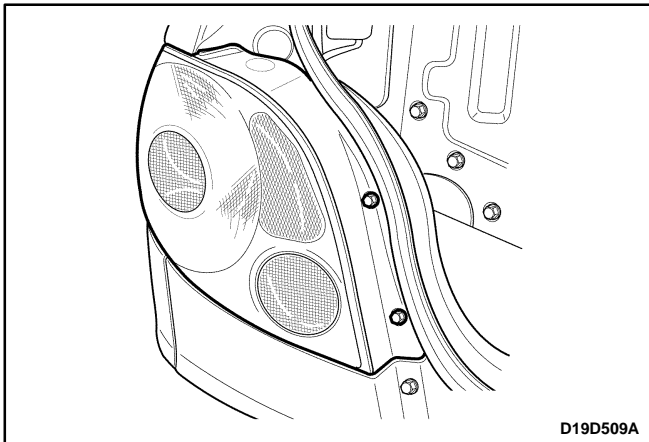
TAILLAMPS ASSEMBLY

Removal Procedure

1. Disconnect the negative battery cable.
2. Open the tailgate.
3. Remove the luggage compartment wheelhouse trim. Refer to *Section 9G, Interior Trim*.
4. Disconnect the electrical connector.

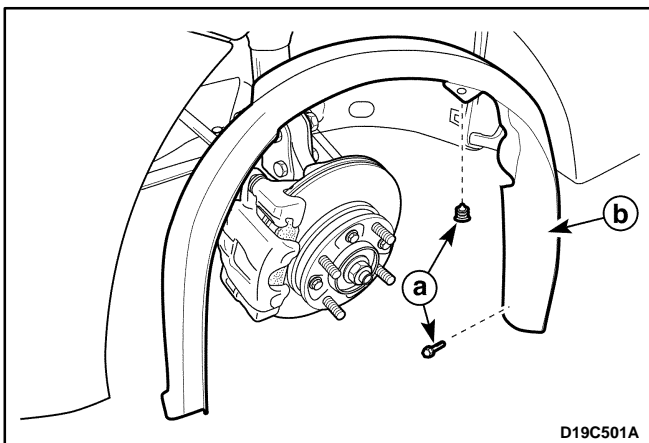


5. Remove the taillamp assembly.
 - Remove the screws (1).
 - Remove the taillamp (2).



Installation Procedure

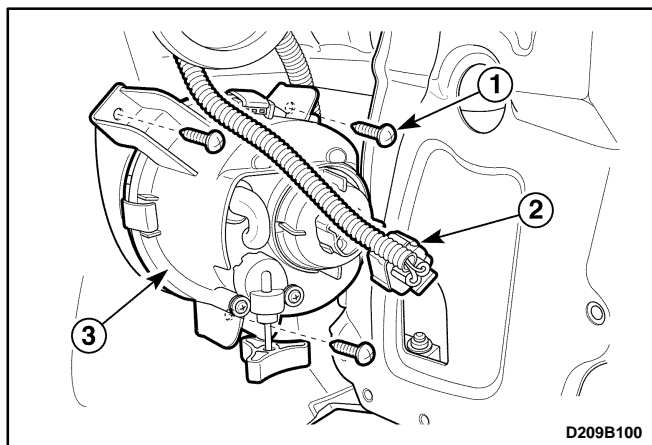
1. Install the taillamp assembly with the screws.
2. Connect the electrical connector.
3. Install the luggage compartment wheelhouse trim. Refer to *Section 9G, Interior Trim*.
4. Connect the negative battery cable.



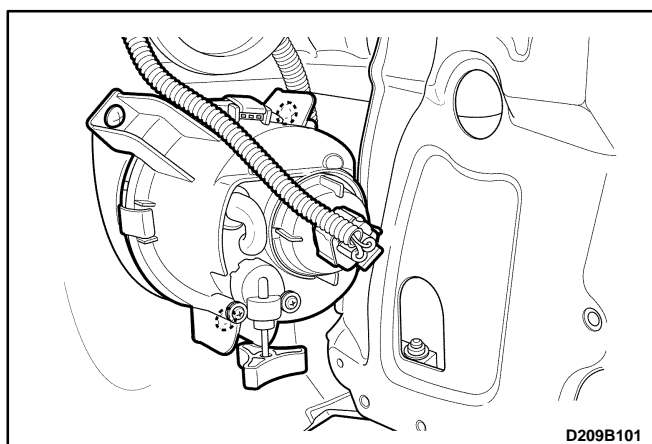
FRONT FOG LAMP

Removal Procedure

1. Disconnect the negative battery cable.
2. Raise and suitably support the vehicle.
3. Remove the front wheels.
4. Remove the front wheel house splash shield.
 - Remove the clip and bolts.
 - a. Bolt and clips.
 - Remove the wheel house splash shield.
 - b. Splash shield.

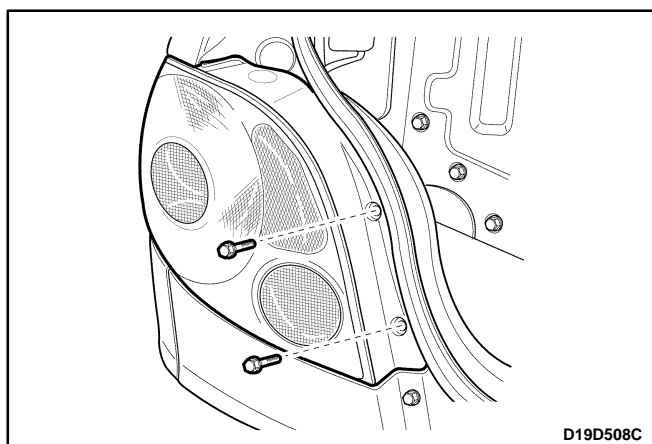


5. Remove the front fog lamp.
 - Remove the screws (1).
 - Disconnect the electrical connector (2).
 - Remove the front fog lamp (3).



Installation Procedure

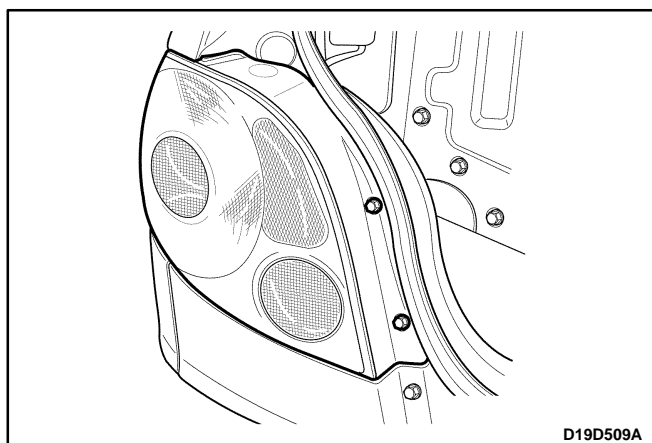
1. Install the front fog lamp with the screws.
2. Connect the front fog lamp connector.
3. Install the front wheelhouse splash shields with the clips and the bolts.
4. Install the front wheels.
5. Lower the vehicle.
6. Connect the negative battery cable.



REAR FOG/BACKUP LAMP(S)

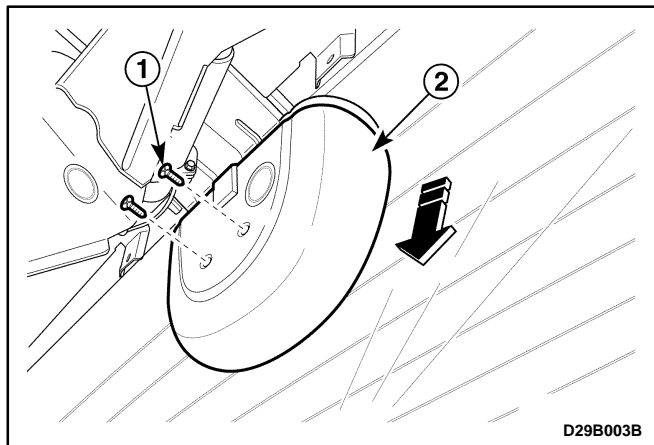
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the taillamp assembly. Refer to "Taillamps Assembly" in this section.
3. Remove the bulb(s).



Installation Procedure

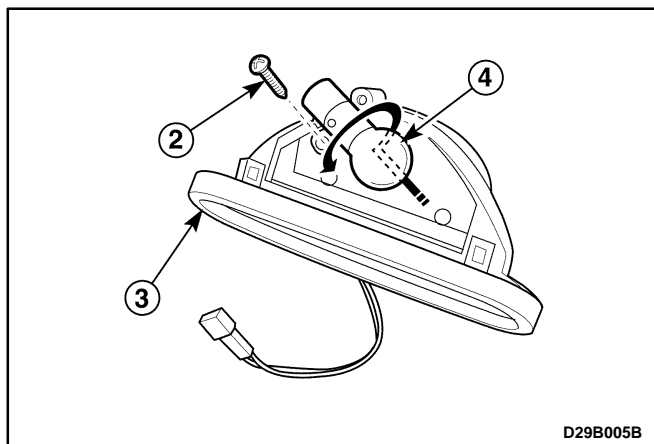
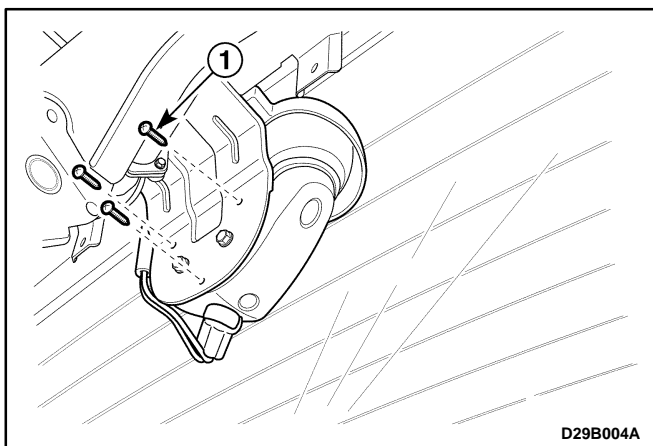
1. Install the bulb(s).
2. Install the taillamp assembly. Refer to "Taillamps Assembly" in this section.
3. Connect the negative battery cable.



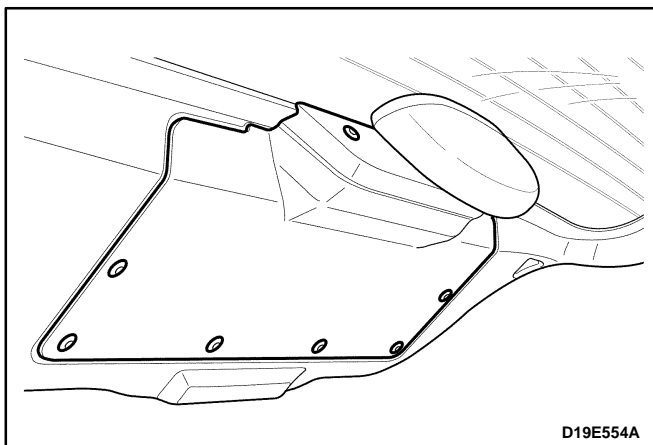
CENTER HIGH-MOUNTED STOPLAMP (CHMSL)

Removal Procedure

1. Disconnect the negative battery cable.
2. Open the tailgate.
3. Pry off the tailgate trim panel. Refer to *Section 9G Interior Trim*.
4. Remove the CHMSL cover.
 - Remove the screws (1).
 - Remove the CHMSL cover (2).
5. Remove the CHMSL and bulb.
 - Remove the screws (1).

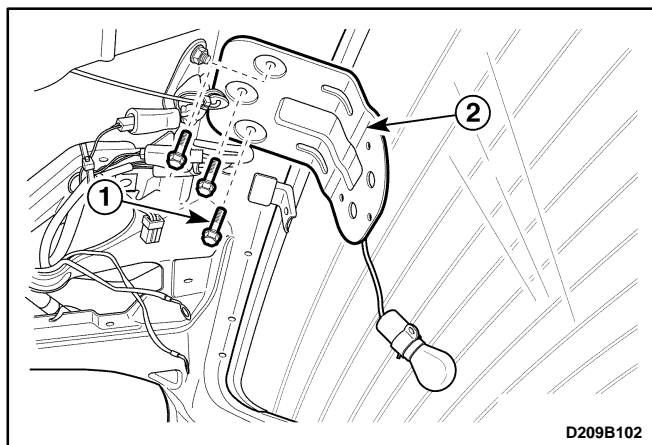


- Remove the screw from bulb socket (2).
- Remove the CHMSL (3).
- Remove the bulb (4).



Installation Procedure

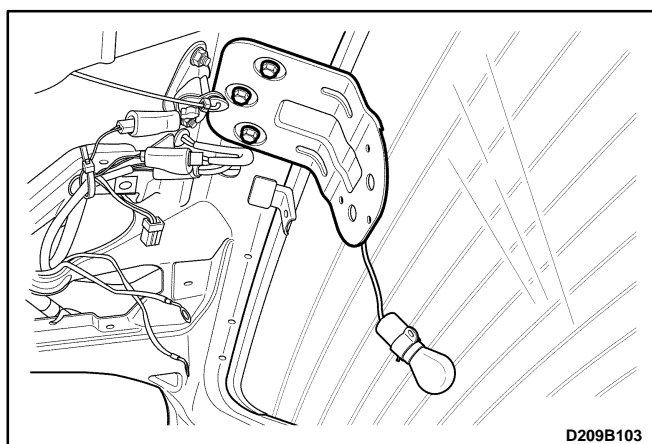
1. Install the CHMSL bulb.
2. Install the CHMSL with the screws.
3. Install the CHMSL cover with the screws.
4. Install the tailgate trim panel. Refer to *Section 9G, Interior Trim*.
5. Connect the negative battery cable.



CHMSL MOUNTING BRACKET

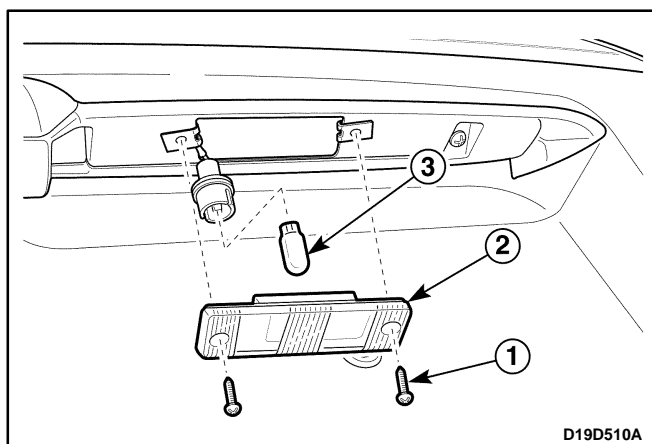
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the center high-mounted stoplamp (CHMSL). Refer to "Center High-Mounted Stoplamp" in this section.
3. Remove the rear window wiper motor assembly. Refer to *Section 9D, Wipers/Washer Systems*.
4. Remove the CHMSL mounting bracket.
 - Remove the bolts (1).
 - Remove the CHMSL mounting bracket (2).



Installation Procedure

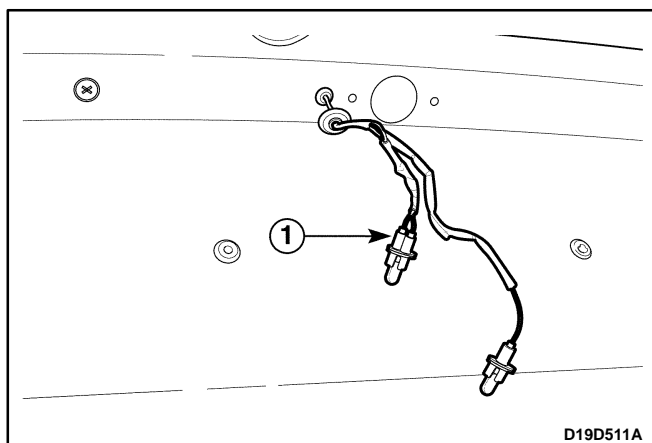
1. Install the CHMSL mounting bracket with the bolts.
2. Install the rear window wiper motor assembly. Refer to *Section 9D, Wipers/Washer Systems*.
3. Install the CHMSL. Refer to "Center High-Mounted Stoplamp" in this section.
4. Connect the negative battery cable.



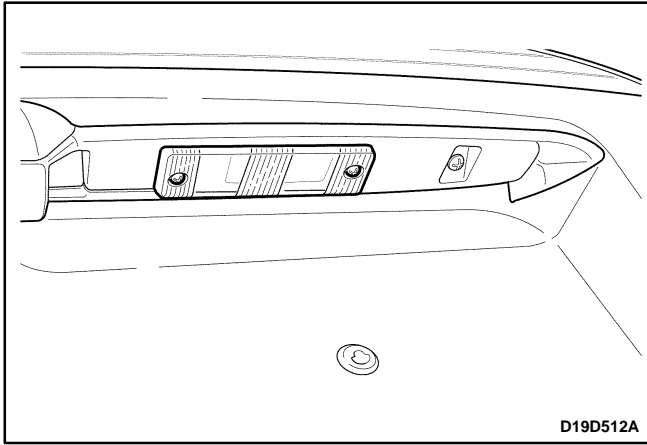
LICENSE PLATE LAMPS

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the license plate lamp from the tailgate handle.
 - Remove the screws (1).
 - Draw out the license plate lamp (2).
 - Remove the license plate lamp bulb (3).

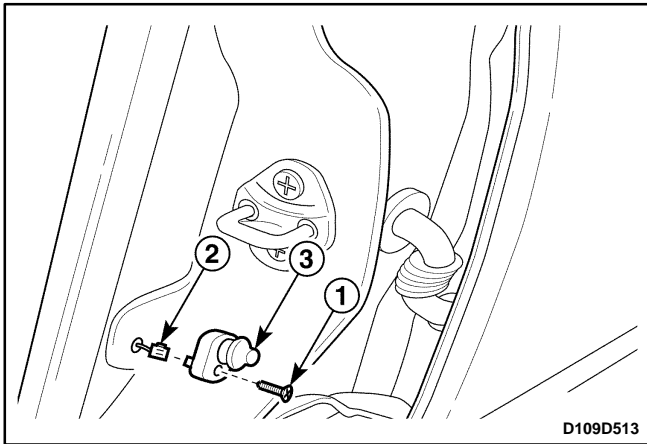


3. Remove the rear window wiper motor assembly. Refer to *Section 9D, Wipers/Washer Systems*.
4. Disconnect the electrical connector in the tailgate.
5. Remove the tailgate handle. Refer to *Section 9M, Exterior Trim*.
6. Remove the license plate lamp socket.
 - Remove the socket (1).



Installation Procedure

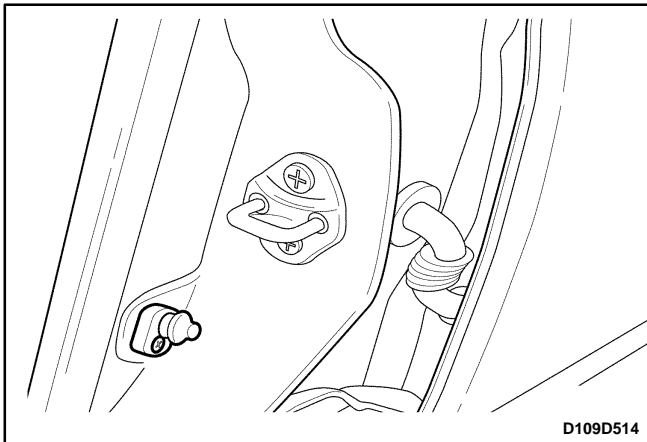
1. Install the license plate lamp socket.
2. Install the tailgate handle. Refer to *Section 9M, Exterior Trim*.
3. Connect the electrical connector.
4. Remove the rear window wiper motor assembly. Refer to *Section 9D, Wipers/Washer Systems*.
5. Install the license plate lamp bulb.
6. Install the license plate lamp with the screws.
7. Connect the negative battery cable.



DOOR JAMB SWITCH

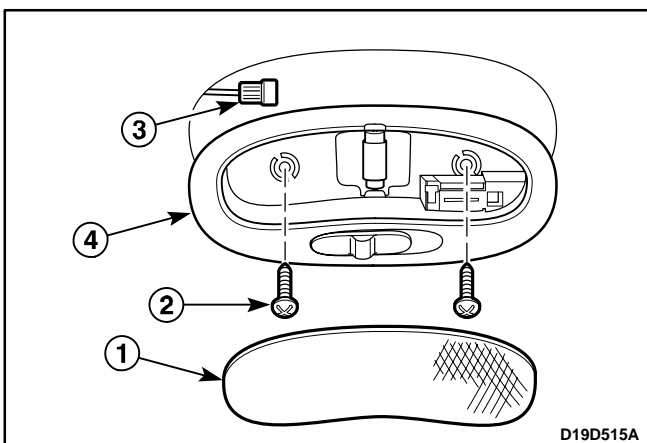
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the door jamb switch.
 - Remove the screw (1).
 - Disconnect the electrical connector (2).
 - Remove the door jamb switch (3).



Installation Procedure

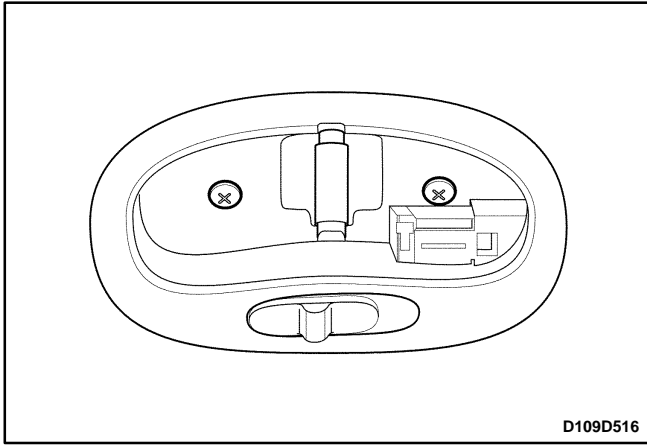
1. Install the door jamb switch with the screw.
2. Connect the electrical connector.
3. Connect the negative battery cable.



INTERIOR COURTESY LAMP

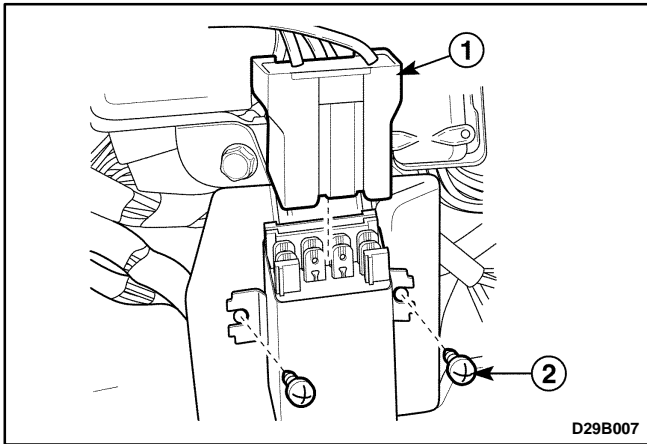
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the interior courtesy lamp.
 - Pry off the interior courtesy lamp lens (1).
 - Remove the screws (2).
 - Disconnect the electrical connector (3).
 - Remove the interior courtesy lamp (4).



Installation Procedure

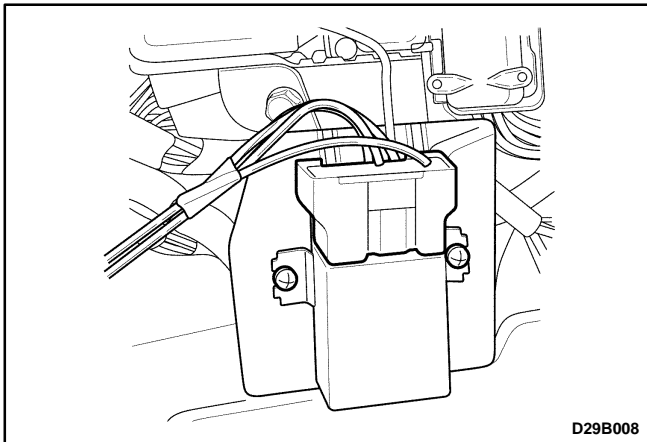
1. Connect the electrical connector.
2. Install the interior courtesy lamp with the screws.
3. Install the interior courtesy lamp lens.
4. Connect the negative battery cable.



DAYTIME RUNNING LAMP MODULE (W/Europe Only)

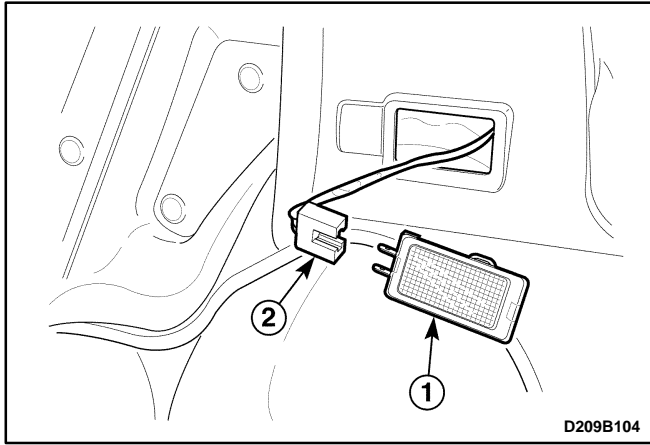
Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the electrical connector (1).
3. Remove the screws (2) and the daytime running lamp module.



Installation Procedure

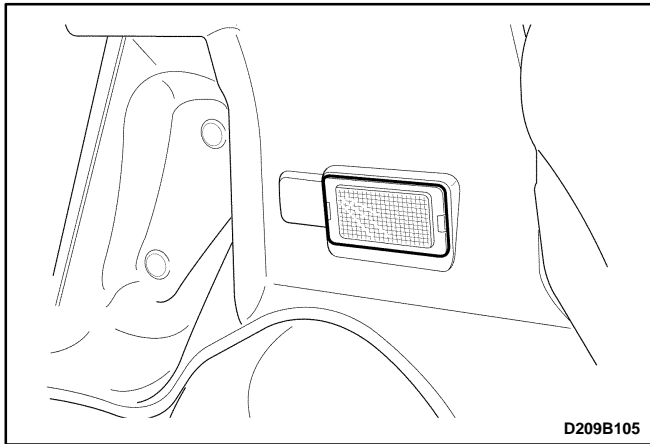
1. Install the daytime running lamp module with the bolts.
2. Connect the electrical connector.
3. Connect the negative battery cable.



LUGGAGE ROOM LAMP

Removal Procedure

1. Disconnect the negative battery cable.
2. Open the tailgate.
3. Remove the luggage room lamp.
 - Remove the luggage room lamp (1).
 - Disconnect the electrical connector (2).



Installation Procedure

1. Connect the electrical connector.
2. Install the luggage room lamp.
3. Connect the negative battery cable.

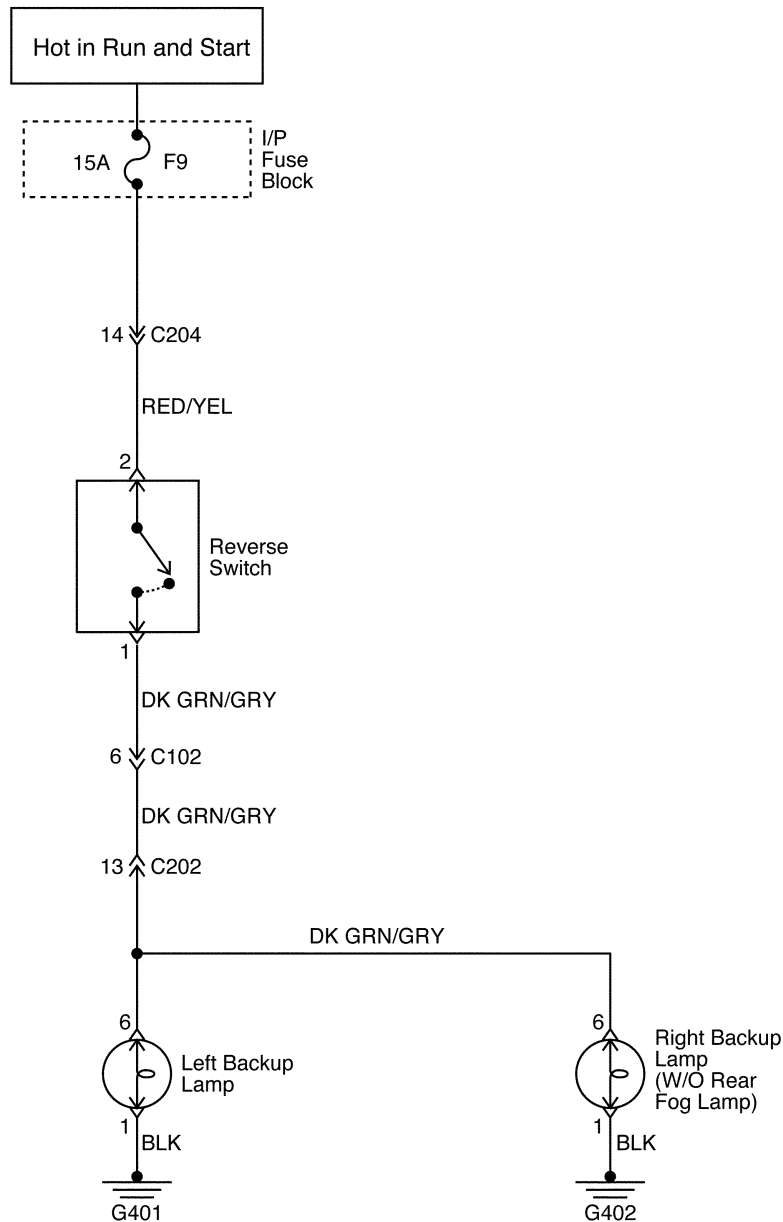
SPECIFICATIONS

BULB USAGE CHART

Bulb	Replacement Bulb Number
Backup Lamp(s)	21W
Center High Mounted Stoplamp	21W
Headlamps	Double 60/55W
Interior Courtesy Lamp	10W
License Plate Lamp	5W
Front Turn Signal Lamps	21W
Rear Fog Lamp	21W
Rear Turn Signal Lamps	21W
Side Marker Turn Signal Lamps	5W
Tail and Stoplamp	Double 5/21W, 5W
Parking Lamp	5W

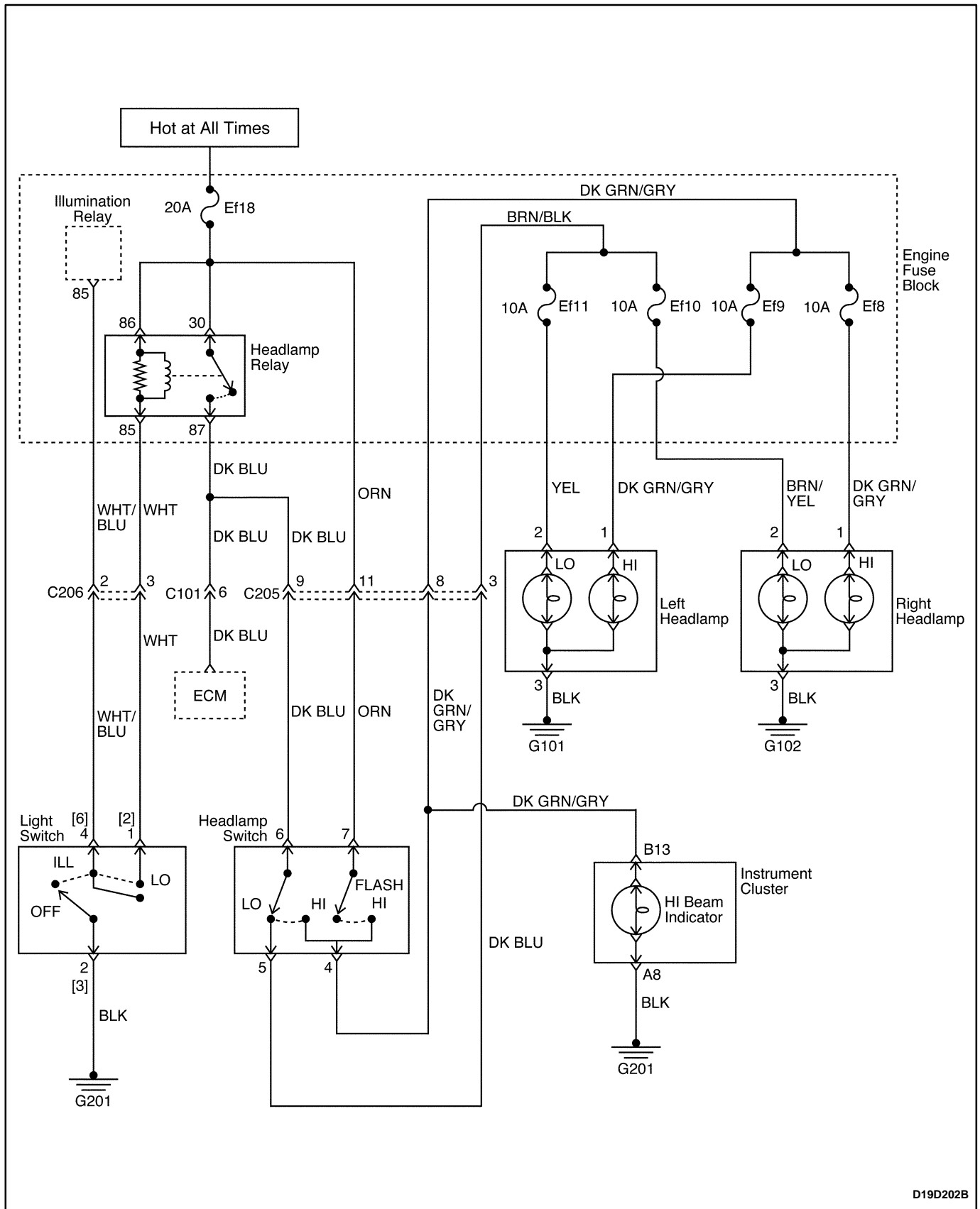
SCHEMATIC AND ROUTING DIAGRAMS

BACKUP LAMP(S) CIRCUIT



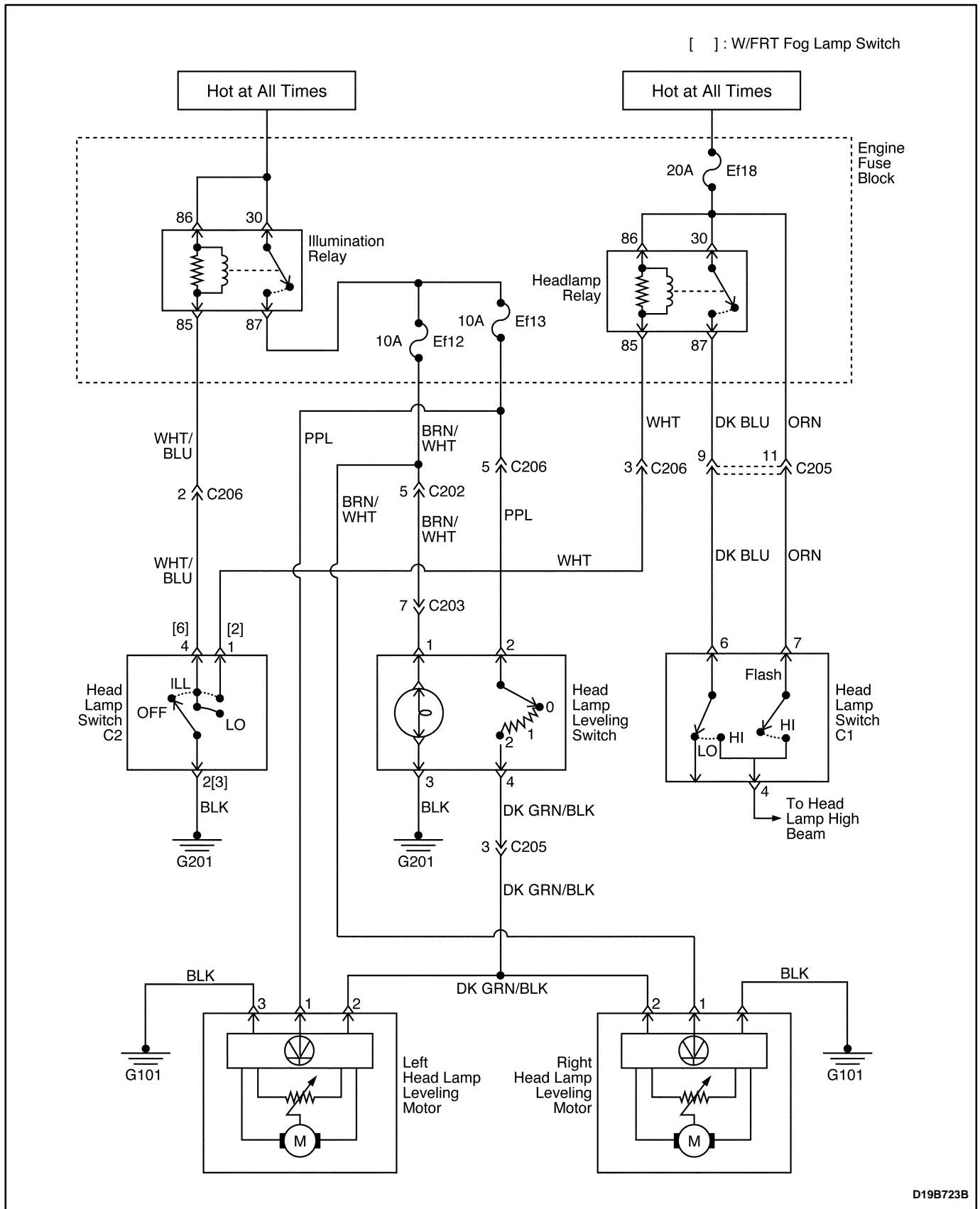
D19D201B

HEADLAMPS CIRCUIT

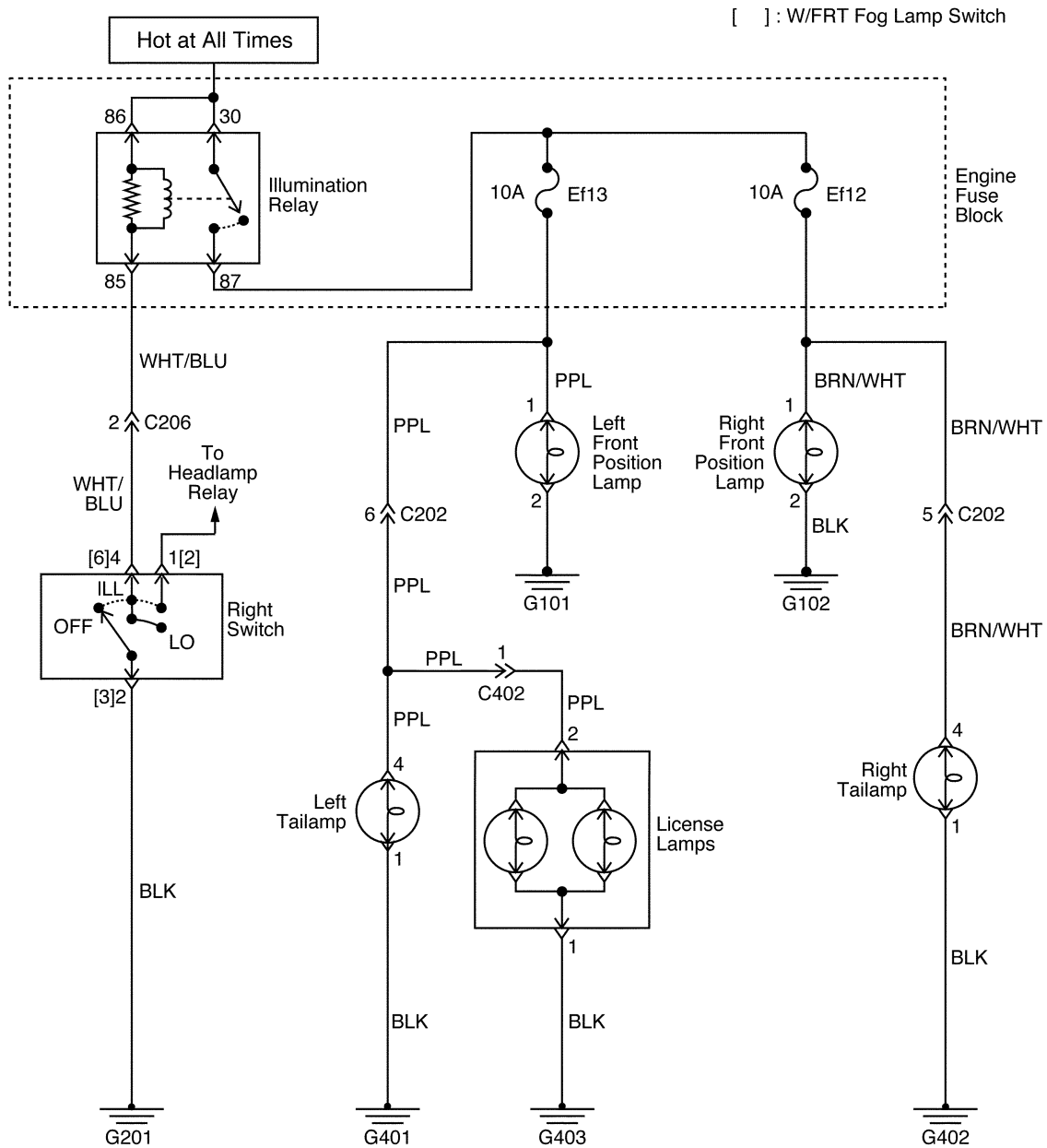


D19D202B

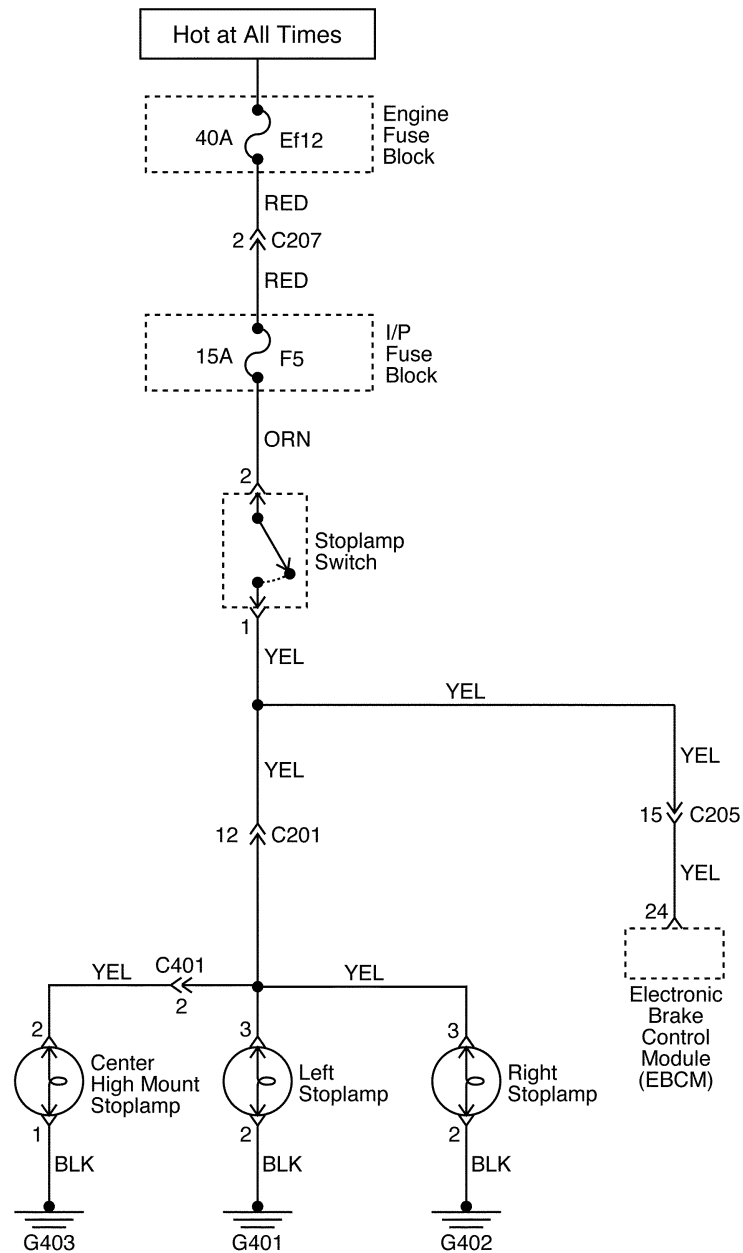
HEADLAMP LEVELING CIRCUIT



TAIL AND LICENSE PLATE LAMPS CIRCUIT

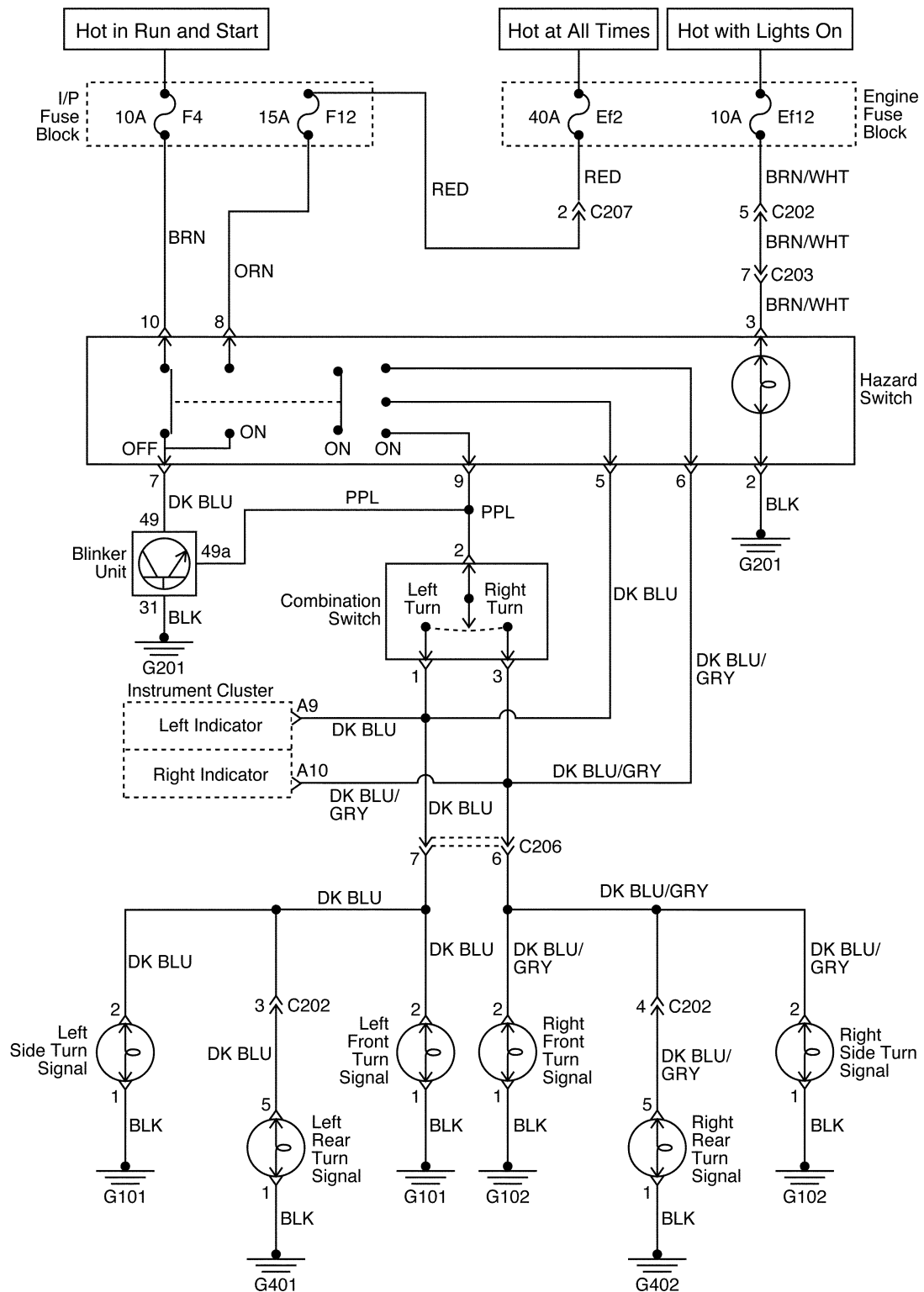


D19D203B

STOPLAMPS CIRCUIT

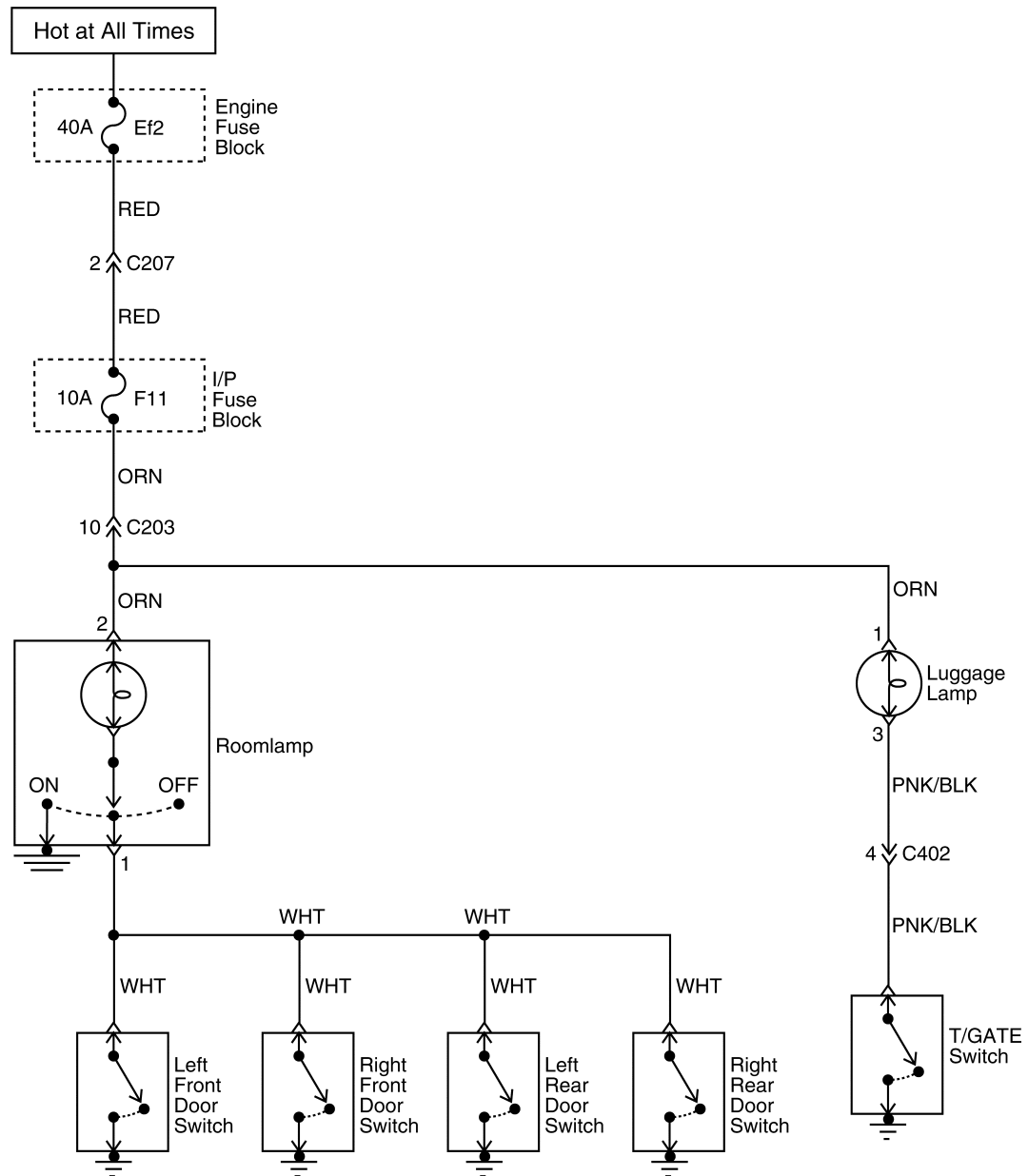
D19D204B

TURN AND HAZARD LAMPS CIRCUIT



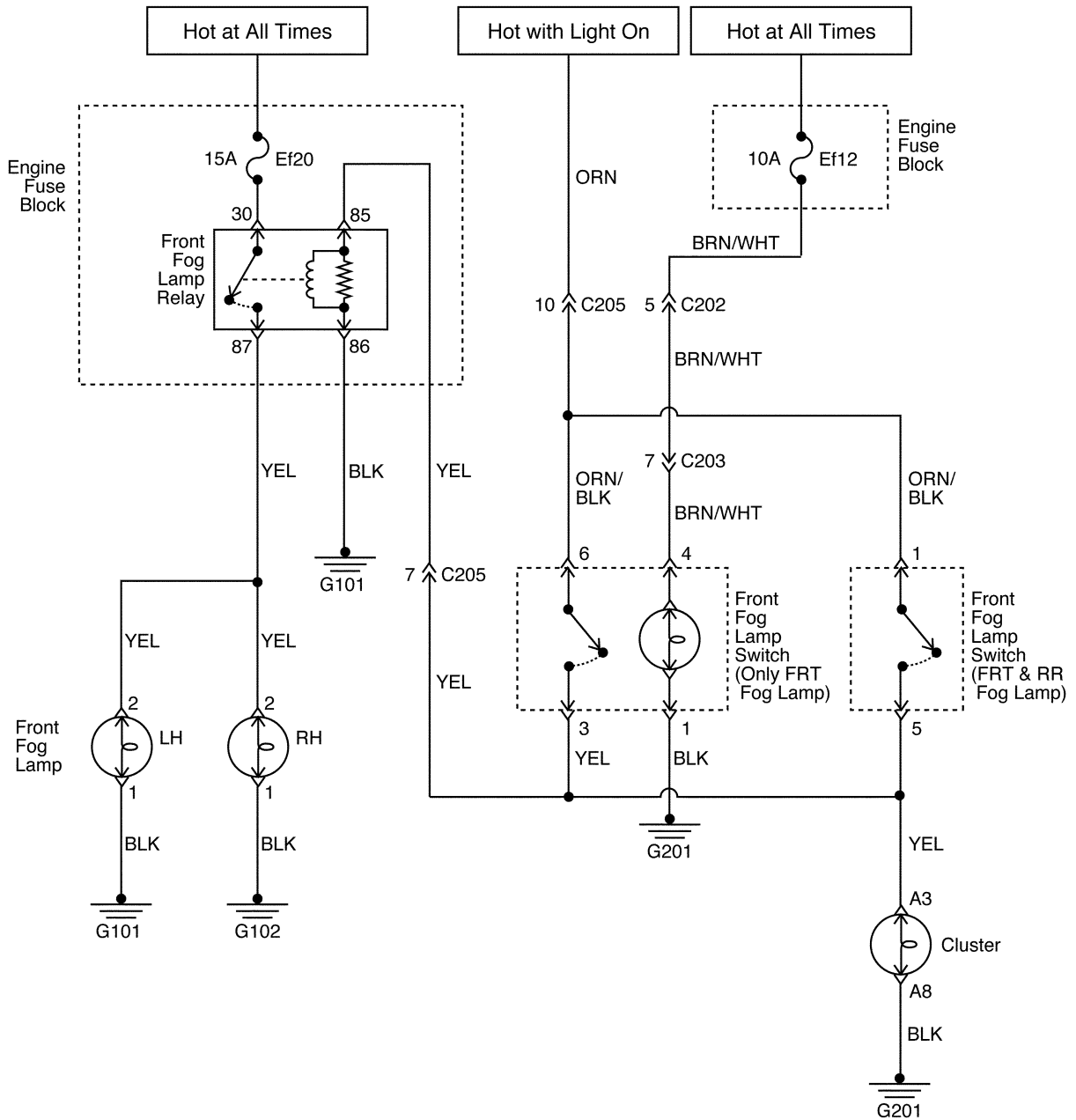
D19D205B

INTERIOR COURTESY LAMP CIRCUIT



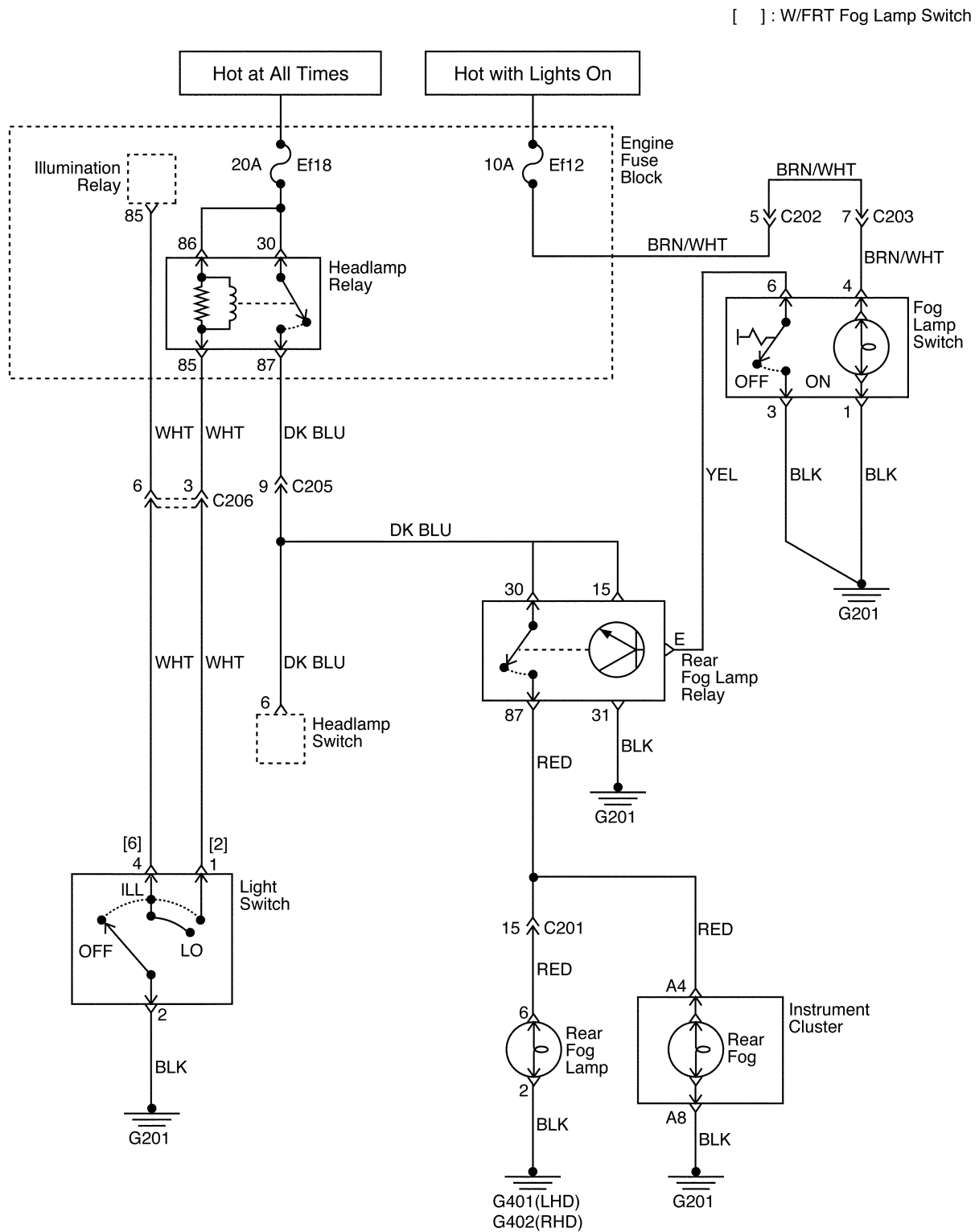
D19D206B

FRONT FOG LAMP CIRCUIT



D19B724A1

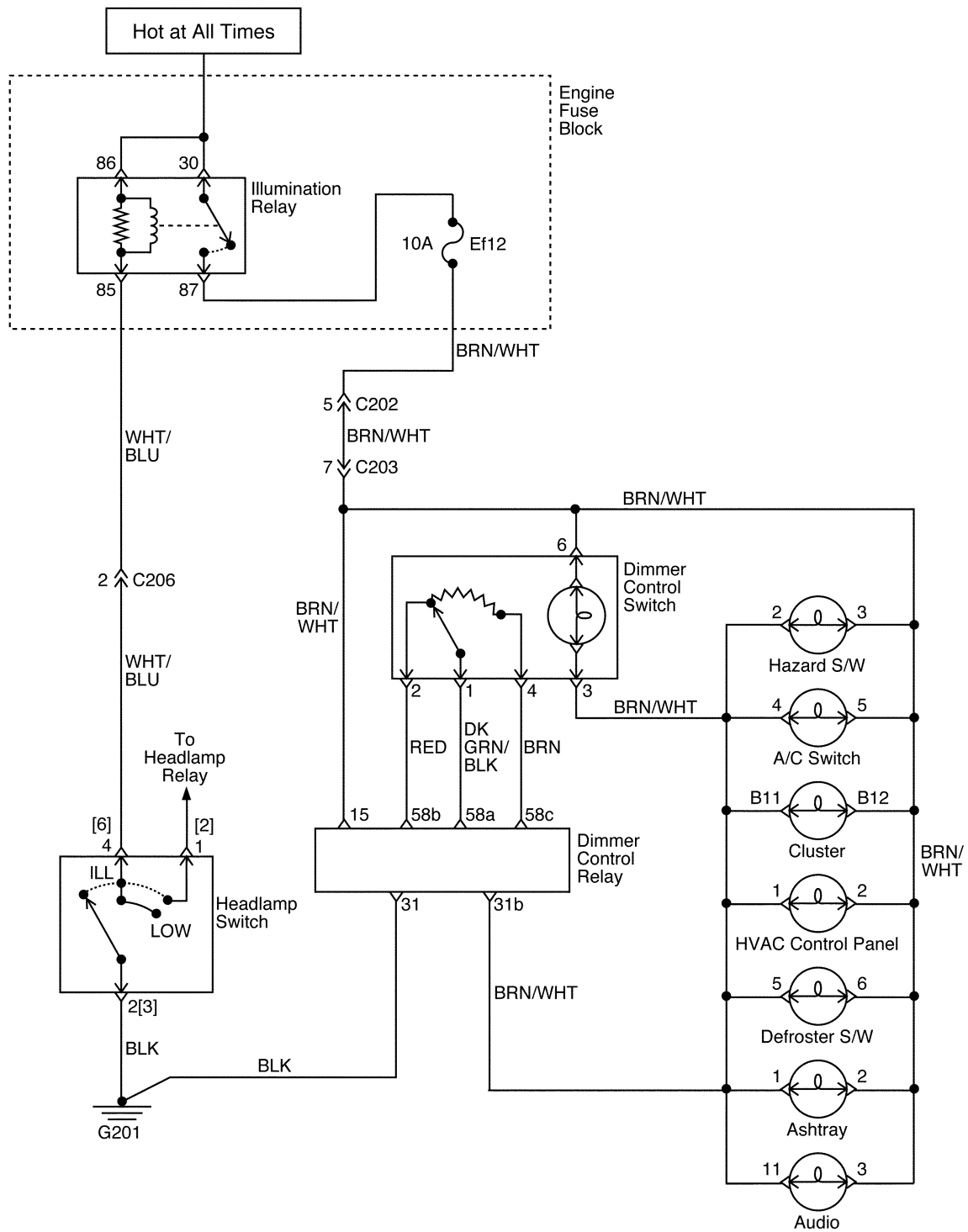
REAR FOG LAMP CIRCUIT



D19B724B

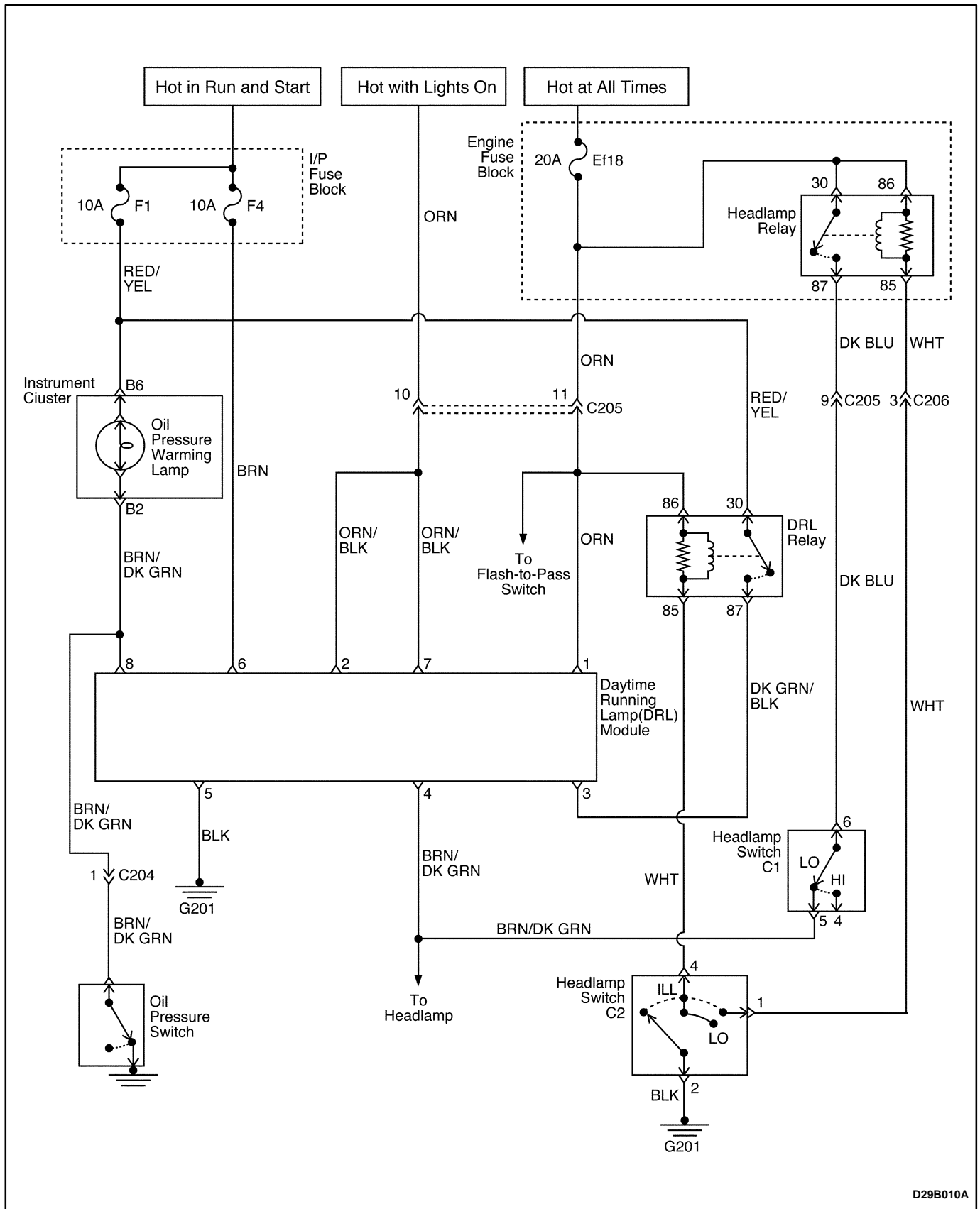
DIMMER CONTROL CIRCUIT (EXCEPT W/EUROPE)

[] : W/FRT Fog Lamp Switch



D29B009A

DAYTIME RUNNING LAMPS CIRCUIT (W/EUROPE ONLY)



SECTION 9C

HORNS

CAUTION: *Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.*

TABLE OF CONTENTS

Description and Operation	9C-2	Horn	9C-3
Horn	9C-2	Schematic and Routing Diagrams	9C-4
Repair Instructions	9C-3	Horn Wiring System	9C-4
On-Vehicle Service	9C-3		

DESCRIPTION AND OPERATION

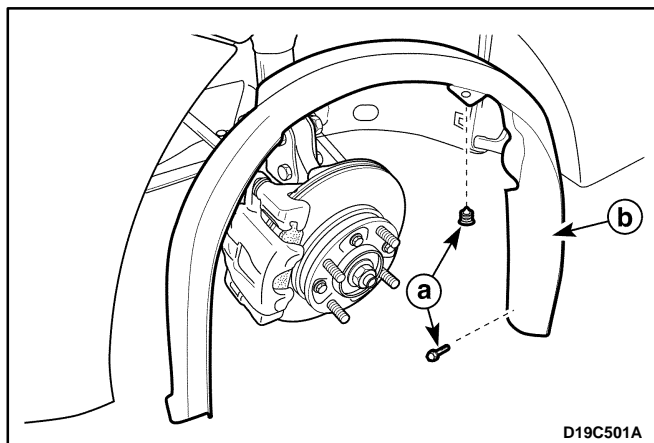
HORN

The horn is located under the hood. It is attached near the radiator at the front of the vehicle. The horn is actu-

ated by pressing the steering wheel pad, which grounds the horn's electrical circuit.

REPAIR INSTRUCTIONS

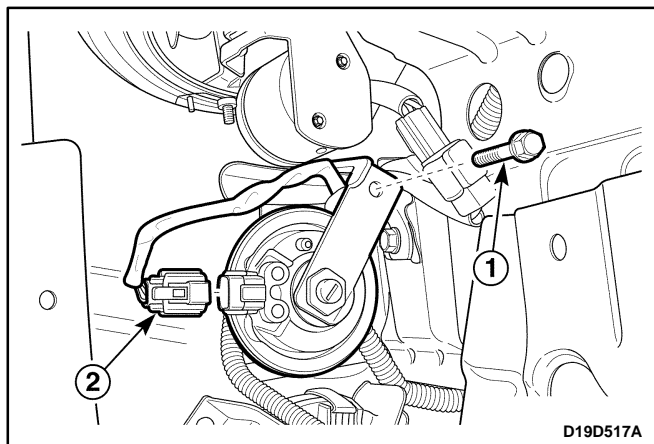
ON-VEHICLE SERVICE



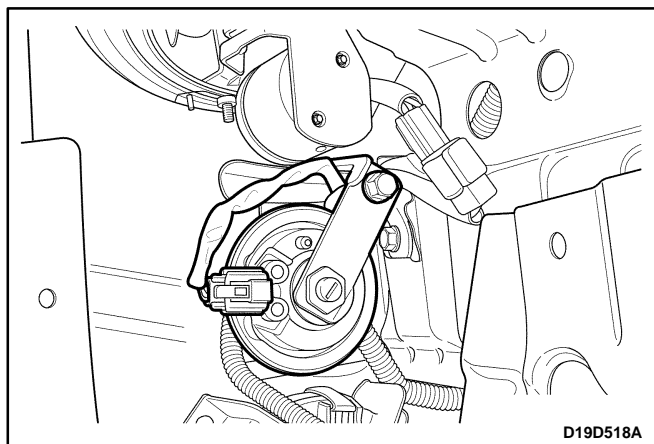
HORN

Removal Procedure

1. Disconnect the negative battery cable.
2. Raise and suitably support the vehicle.
3. Remove the front wheels.
4. Remove the front wheel house splash shield.
 - Remove the clip and bolts.
 - a. Bolts and clips.
 - Remove the wheel house splash shield.
 - b. Splash shield.



- 5 Remove the horn.
 - Remove the bolt (1).
 - Disconnect the electrical connector (2).

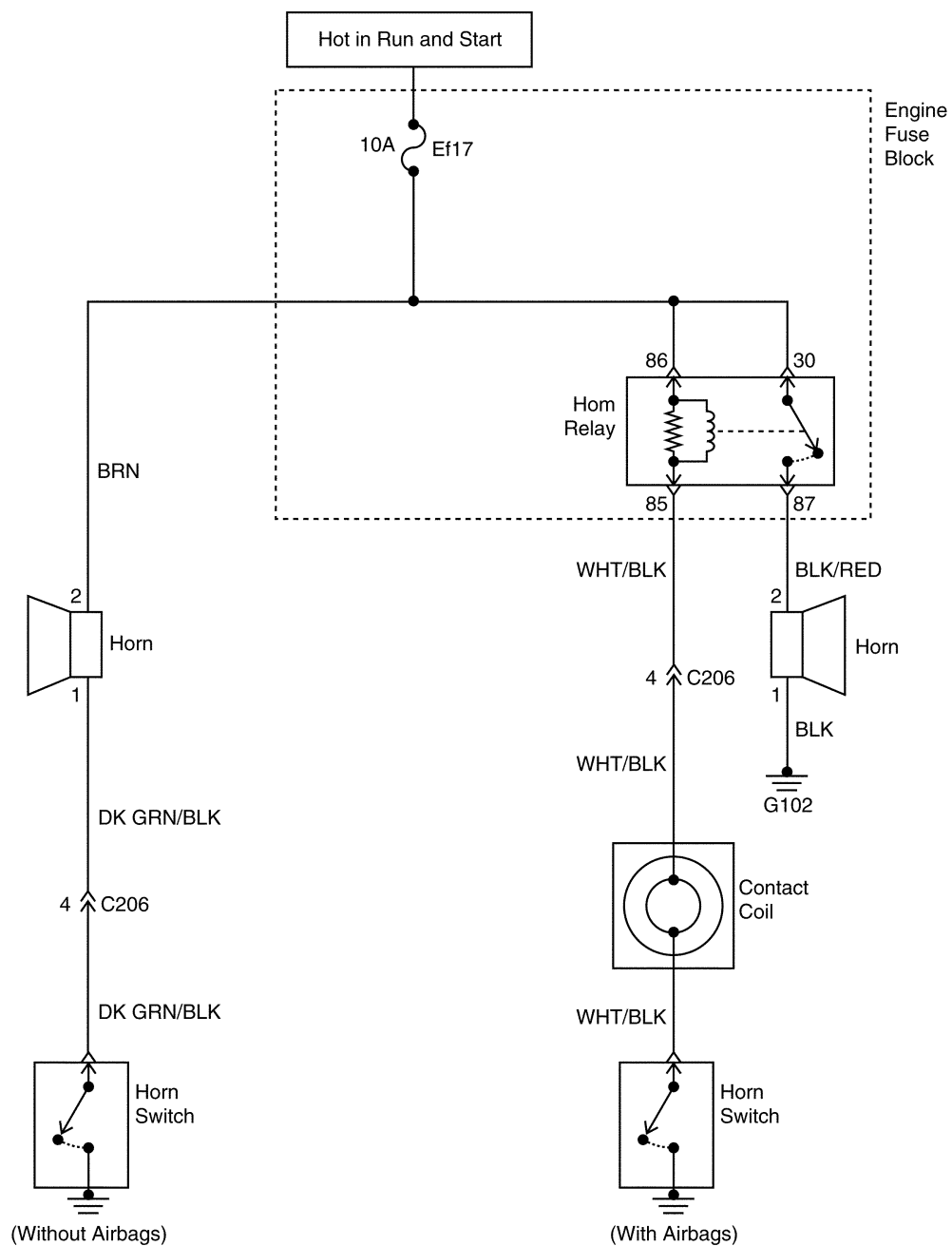


Installation Procedure

1. Install the horn with the bolt.
2. Connect the electrical connector.
3. Install the front wheel house splash shield with the clips and the bolts.
4. Install the front wheels.
5. Lower the vehicle.
6. Connect the negative battery cable.

SCHEMATIC AND ROUTING DIAGRAMS

HORN WIRING SYSTEM



SECTION 9D

WIPERS/WASHER SYSTEMS

CAUTION: Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.

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Rear Window Wiper Motor	9D-8		

DESCRIPTION AND OPERATION

WINDSHIELD WIPER SYSTEM

The windshield wiper system consists of a wiper motor, a linkage, a wiper arm and a blade, and a wiper/washer switch. The windshield wiper circuit incorporates a self-parking device which consists of a worm gear and a cam plate in order to keep the circuit engage temporarily when the switch is turned off. The wiper system is driven by a permanent magnet-type motor. The windshield wiper motor is mounted on the dash panel and is directly connected to the windshield wiper linkage.

The windshield wiper motor has two speeds, LOW and HIGH, and also has intermittent wiper capability. The wiper switch is an integral part of the wiper/washer switch. Windshield wiper operation is actuated through the lever on the right side of the steering column.

WINDSHIELD WASHER SYSTEM

The windshield washer system is equipped with a washer fluid reservoir, a washer fluid pump, hoses, nozzles,

and a wiper/washer switch. The windshield washer reservoir is mounted inner the front right wheel well splash shield. Attached to the reservoir is a washer pump, which pumps fluid through the hoses to the two nozzles mounted on the cowl panel. The washer switch is an integral part of the wiper/washer switch. Windshield washer operation is actuated through the lever on the right side of the steering column.

REAR WIPER/WASHER SYSTEM

The rear wiper/washer system is equipped with the high grade vehicle. The rear wiper and the washer are one assembly. The rear washer is installed to the rear wiper. The rear wiper/washer switch is same with the windshield wiper. Push the switch to one position forward and the rear wiper operate slowly. And push more the switch forward and the rear wiper/washer system operate.

DIAGNOSTIC INFORMATION AND PROCEDURES

WINDSHIELD/REAR WINDOW WIPER AND WASHER SYSTEM

Condition	Probable Cause	Correction
Windshield Wipers Do Not Work At Any Speed	<ul style="list-style-type: none"> The open or a short in the power supply circuit to the fuse F8. 	<ul style="list-style-type: none"> Repair or replace the open a short in the power supply circuit to the fuse F8.
	<ul style="list-style-type: none"> Fuse F8 is blown. 	<ul style="list-style-type: none"> Replace the fuse F8.
	<ul style="list-style-type: none"> Faulty wiper/washer switch. 	<ul style="list-style-type: none"> Replace the wiper/washer switch.
	<ul style="list-style-type: none"> The circuit between the wiper/washer switch connector and the wiper relay is open or short. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> The circuit between the fuse F8 and the wiper relay is open or short. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty wiper relay. 	<ul style="list-style-type: none"> Replace the wiper relay.
	<ul style="list-style-type: none"> The circuit between the wiper relay and the ground G201 is the open circuit or a short circuit. 	<ul style="list-style-type: none"> Repair or Replace the open circuit or a short circuit between the wiper relay and the ground G201.
	<ul style="list-style-type: none"> The circuit between the wiper/washer switch and the wiper motor is the open circuit or a short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> The circuit between the fuse F8 and the wiper motor is the open circuit or a short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> The circuit between the wiper relay and the wiper motor is the open circuit or a short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty wiper motor. 	<ul style="list-style-type: none"> Replace the wiper motor.
	<ul style="list-style-type: none"> The connection of the wiper linkage and the wiper motor is poor. 	<ul style="list-style-type: none"> Tighten completely the nut. Tighten completely the ball.
	<ul style="list-style-type: none"> Wiper linkage is out of order. 	<ul style="list-style-type: none"> Replace the wiper linkage.
Wipers Do Not Work On High Speed, Low Speed OK	<ul style="list-style-type: none"> Faulty wiper/washer switch. 	<ul style="list-style-type: none"> Replace the wiper/washer switch.
	<ul style="list-style-type: none"> The circuit between the wiper/washer switch and the wiper motor is the open circuit or a short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty wiper motor. 	<ul style="list-style-type: none"> Replace the wiper motor.
Wipers Do Not Work On Low Speed, High Speed OK	<ul style="list-style-type: none"> Faulty wiper/washer switch. 	<ul style="list-style-type: none"> Replace the wiper/washer switch.
	<ul style="list-style-type: none"> The circuit between the wiper/washer switch and the wiper motor is the open circuit or a short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty wiper motor. 	<ul style="list-style-type: none"> Replace the wiper motor.

WINDSHIELD/REAR WINDOW WIPER AND WASHER SYSTEM(Cont'd)

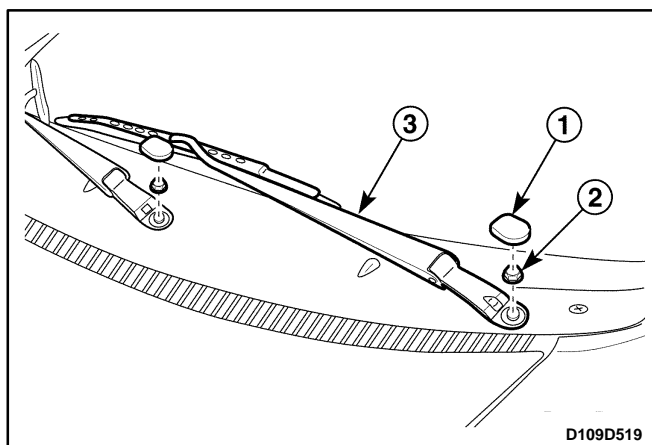
Condition	Probable Cause	Correction
Wipers Do Not On Intermittent, Other Speed OK	<ul style="list-style-type: none"> • The circuit between the fuse F8 and the wiper relay is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • The circuit between the fuse F8 and the wiper motor is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty wiper/washer switch. 	<ul style="list-style-type: none"> • Replace the wiper/washer switch.
	<ul style="list-style-type: none"> • The circuit between the wiper/washer switch and the wiper relay is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty wiper relay. 	<ul style="list-style-type: none"> • Replace the wiper relay.
	<ul style="list-style-type: none"> • The circuit between the wiper relay and the wiper motor is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Poor ground G201. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty wiper motor. 	<ul style="list-style-type: none"> • Replace the wiper motor.
Windshield Washer Does Not Work, Windshield Wipers OK	<ul style="list-style-type: none"> • The open or a short in the power supply circuit to the fuse F9. 	<ul style="list-style-type: none"> • Repair or Replace the open or a short in the power supply circuit to the fuse F9.
	<ul style="list-style-type: none"> • Fuse F9 is blown. 	<ul style="list-style-type: none"> • Replace the fuse.
	<ul style="list-style-type: none"> • The circuit between the fuse F9 and the wiper/washer switch is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty wiper/washer switch. 	<ul style="list-style-type: none"> • Replace the wiper/washer switch.
	<ul style="list-style-type: none"> • The circuit between the wiper/washer switch and the wiper relay is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty wiper relay. 	<ul style="list-style-type: none"> • Replace the wiper relay.
	<ul style="list-style-type: none"> • The circuit between the wiper relay and ground G201 is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • The circuit between the wiper/washer switch and the windshield washer pump is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty windshield washer pump. 	<ul style="list-style-type: none"> • Replace the windshield wash pump.
	<ul style="list-style-type: none"> • Poor ground G201. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.

WINDSHIELD/REAR WINDOW WIPER AND WASHER SYSTEM(Cont'd)

Condition	Probable Cause	Correction
Rear Wiper Does Not Work	<ul style="list-style-type: none"> • The open or a short in the power supply circuit to the fuse F9. 	<ul style="list-style-type: none"> • Repair or Replace the open or a short in the power supply circuit to the fuse F8.
	<ul style="list-style-type: none"> • Fuse F9 is blown. 	<ul style="list-style-type: none"> • Replace the fuse F9.
	<ul style="list-style-type: none"> • The circuit between the fuse F9 and the wiper/washer switch is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty wiper/washer switch. 	<ul style="list-style-type: none"> • Replace the wiper/washer switch.
	<ul style="list-style-type: none"> • The circuit between the wiper/washer switch and the rear window wiper motor is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • The circuit between the fuse F9 and the rear window wiper motor is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty rear window wiper motor. 	<ul style="list-style-type: none"> • Replace the rear window wiper motor.
	<ul style="list-style-type: none"> • Poor ground G403. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
Rear Window Washer Does Not Work, Rear Window Wiper OK	<ul style="list-style-type: none"> • The open or a short in the power supply circuit to the fuse F9. 	<ul style="list-style-type: none"> • Repair or Replace the open or a short in the power supply circuit to the fuse F9.
	<ul style="list-style-type: none"> • Fuse F9 is blown. 	<ul style="list-style-type: none"> • Replace the fuse F9.
	<ul style="list-style-type: none"> • The circuit between the fuse F9 and wiper/washer switch is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty wiper/washer switch. 	<ul style="list-style-type: none"> • Replace the wiper/washer switch.
	<ul style="list-style-type: none"> • The circuit between the wiper/washer switch and the windshield washer pump is the open circuit or a short circuit. 	<ul style="list-style-type: none"> • Repair or replace the wiring harness.
	<ul style="list-style-type: none"> • Faulty windshield washer pump. 	<ul style="list-style-type: none"> • Replace the windshield washer pump.
	<ul style="list-style-type: none"> • Poor ground G102. 	<ul style="list-style-type: none"> • Repair or Replace the wiring harness.

REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE

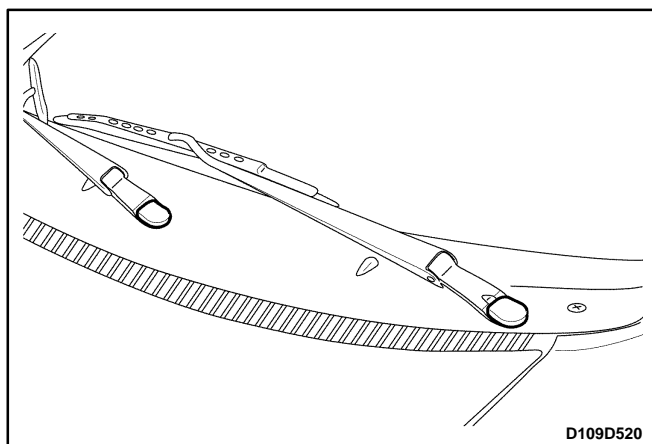


WINDSHIELD WIPER ARM

(Left-Hand Drive Shown, Right-Hand Drive Similar)

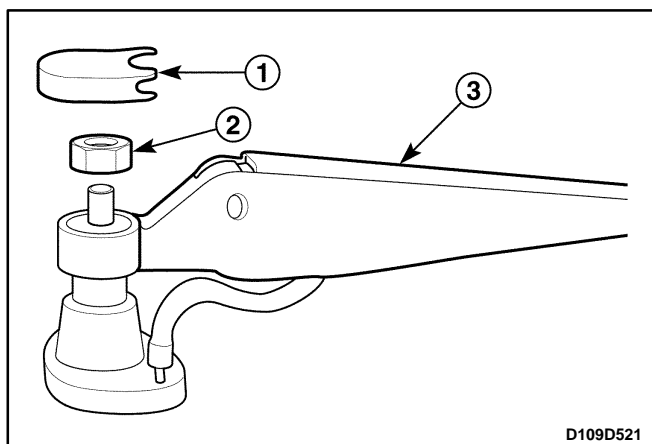
Removal Procedure

1. Remove the wiper arm.
 - Remove the cap (1).
 - Remove the nut (2).
 - Remove the wiper arm (3).



Installation Procedure

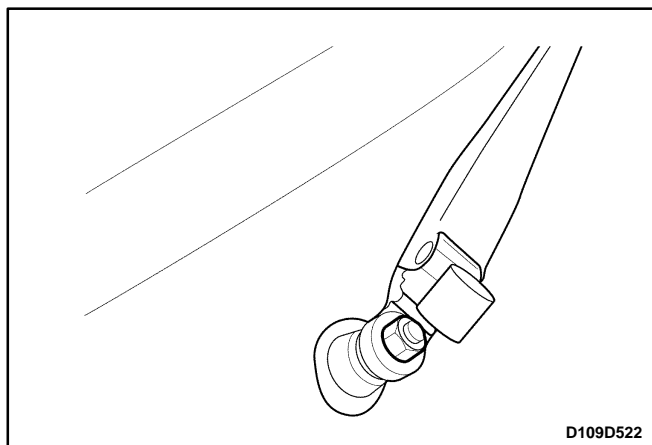
1. Install the wiper arm with the nut.
2. Install the cap.



REAR WINDOW WIPER ARM

Removal Procedure

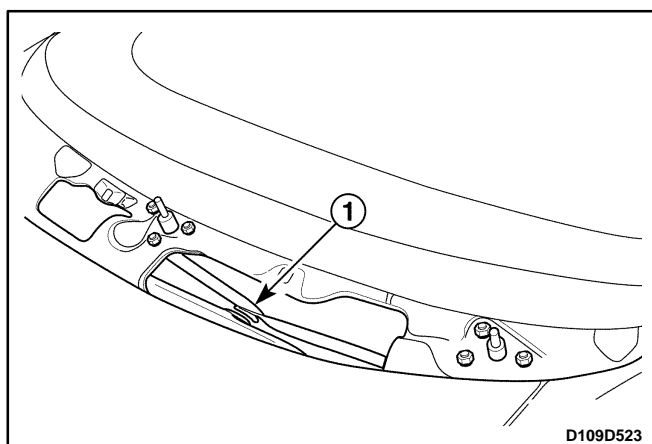
1. Remove the washer nozzle from the wiper arm. Refer to "Rear Washer Nozzle" in this section.
2. Remove the wiper blade. Refer to "Windshield Wiper Blade" in this section.
3. Remove the wiper arm.
 - Remove the cap (1).
 - Remove the nut (2).
 - Remove the wiper arm (3).



D109D522

Installation Procedure

1. Install the rear wiper arm with the nut.
2. Install the cap.
3. Install the wiper blade. Refer to "Windshield Wiper Blade" in this section.
4. Install the washer nozzle to the wiper arm. Refer to "Rear Washer Nozzle" in this section.



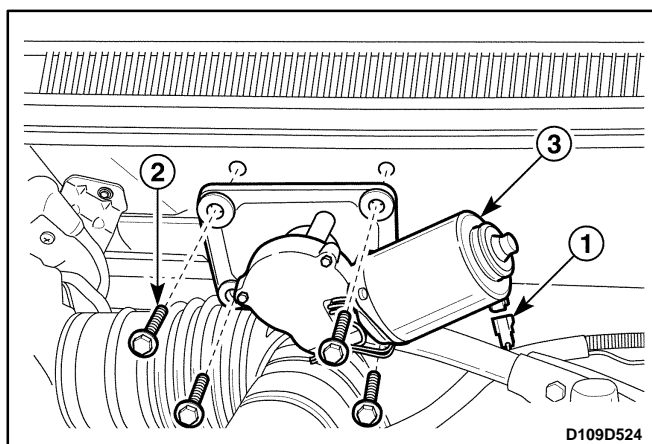
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WINDSHIELD WIPER MOTOR

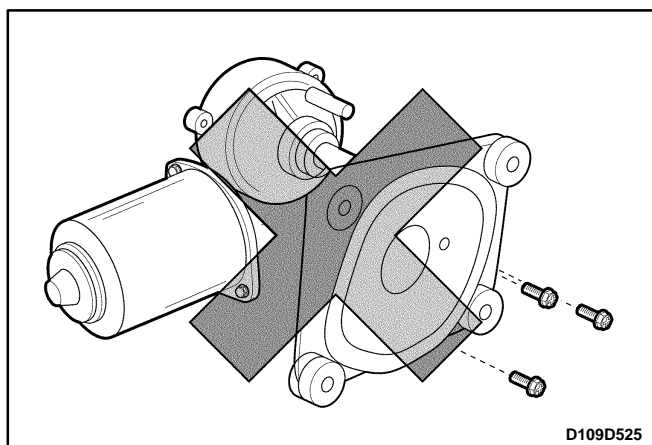
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the windshield wiper arm. Refer to "Windshield Wiper Arm" in this section.
3. Remove the cowl vent grille. Refer to *Section 9R, Body Front End*.
4. Separate the wiper motor from the wiper linkage.
 - Remove the wiper linkage ball from the wiper linkage (1).
5. Remove the wiper motor from the engine room.
 - Disconnect the electrical connector (1).
 - Remove the bolts (2).
 - Remove the wiper motor assembly (3).

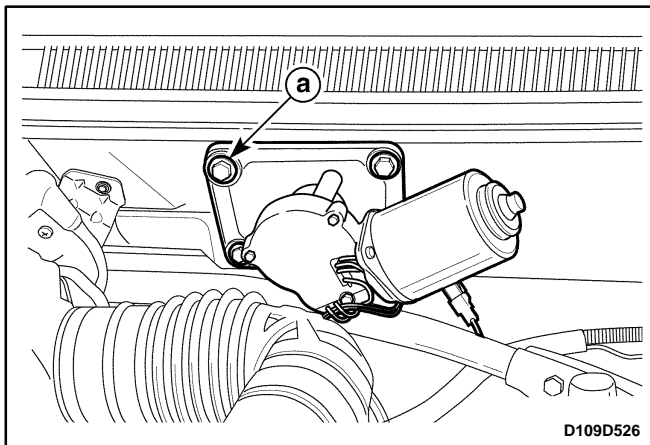


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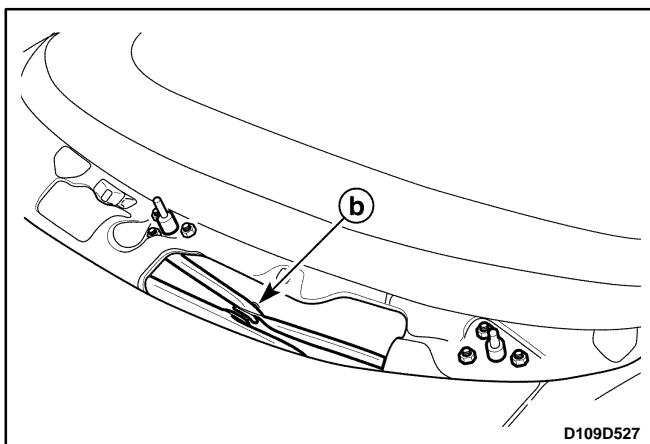
D109D525

Caution: Because the wiper motor link plate is fixed, do not separate the wiper motor from the bracket.

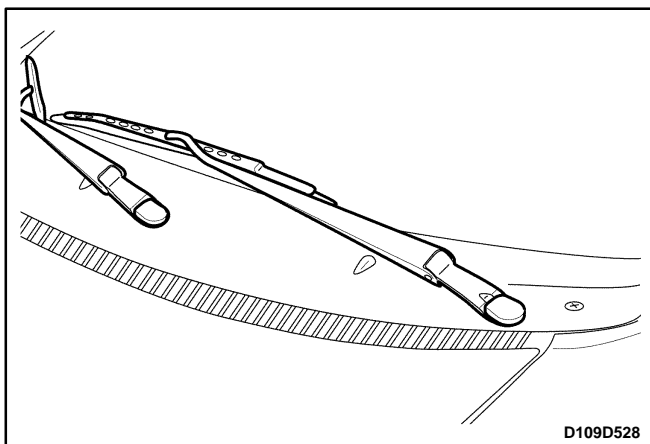


Installation Procedure

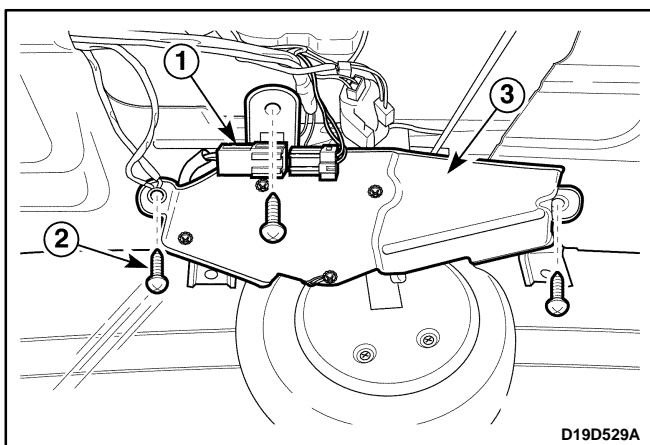
1. Install the wiper motor to the engine room with the bolts.
 - a. Wiper motor assembly bolt.
2. Connect the electrical connector.



3. Install the wiper linkage to the wiper motor linkage ball.
 - b. Wiper linkage ball.



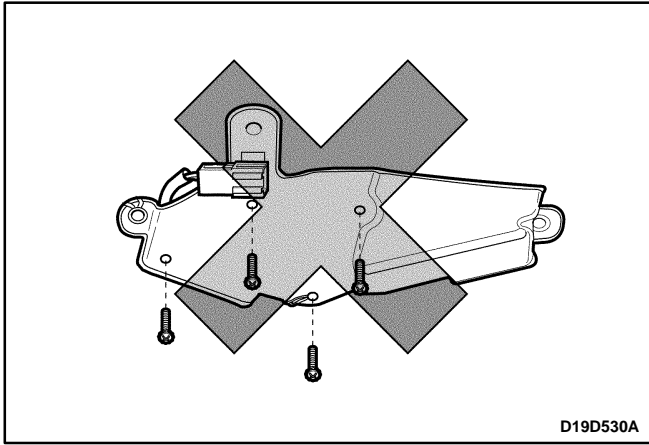
4. Install the cowl vent grille. Refer to *Section 9R, Body Front End*.
5. Install the windshield wiper arm. Refer to "Windshield Wiper Arm" in this section.
6. Connect the negative battery cable.



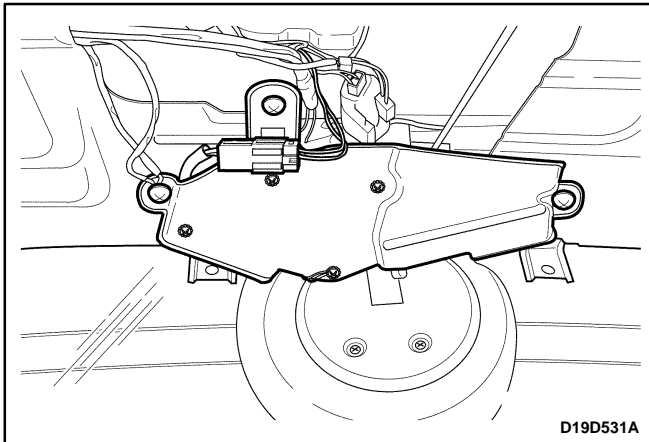
REAR WINDOW WIPER MOTOR

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the wiper arm from the tailgate. Refer to "Windshield Wiper Arm" in this section.
3. Remove the tailgate inside trim. Refer to *Section 9G, Interior Trim*.
4. Remove the rear wiper motor assembly.
 - Disconnect the electrical connector (1).
 - Remove the screws (2).
 - Remove the rear wiper motor assembly (3).

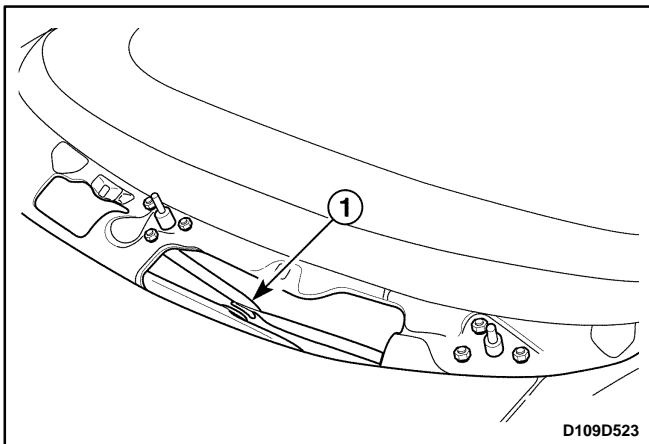


Caution: Because the wiper motor link plate is fixed, do not separate the wiper motor from the bracket.



Installation Procedure

1. Install the wiper motor assembly to the tailgate with the screws.
2. Connect the electrical connector.
3. Install the tailgate inside trim. Refer to *Section 9G, Interior Trim*.
4. Install the wiper arm. Refer to "Windshield Wiper Arm" in this section.
5. Connect the negative battery cable.

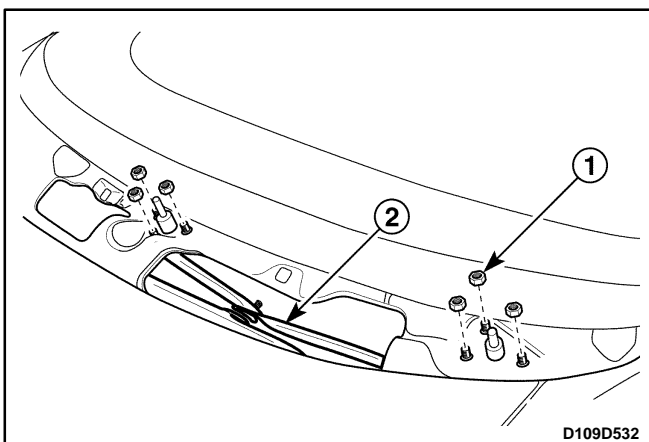


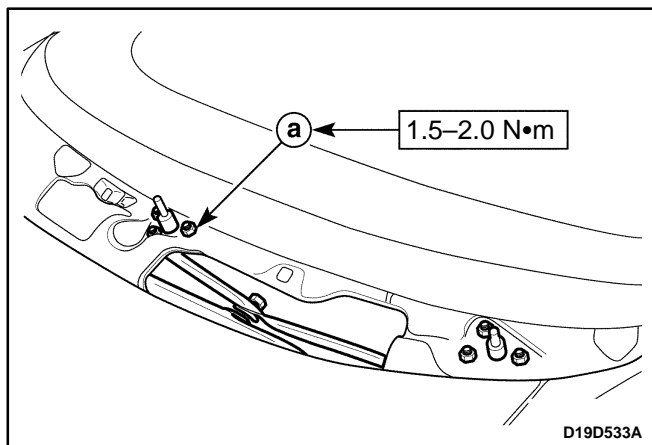
WINDSHIELD WIPER LINKAGE

(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Remove the windshield wiper arms. Refer to "Windshield Wiper Arm" in this section.
2. Remove the cowl vent grille. Refer to *Section 9R, Body Front End*.
3. Separate the wiper linkage from the wiper motor.
 - Separate the wiper linkage from the wiper motor linkage ball (1).
4. Remove the wiper linkage.
 - Remove the wiper linkage nuts (1).
 - Remove the wiper linkage (2).





Installation Procedure

1. Install the wiper linkage with the wiper linkage nuts.

Tighten

Tighten the wiper linkage nuts to 1.5–2.0 N•m (13–18 lb-in).

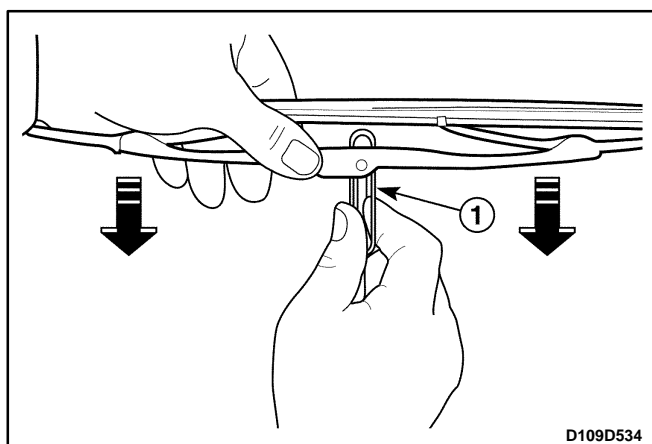
a. Wiper linkage nut.

2. Install the wiper motor linkage ball.
3. Install the cowl vent grille. Refer to *Section 9R, Body Front End*.
4. Install the windshield wiper arms. Refer to "Windshield Wiper Arm" in this section.

WINDSHIELD WIPER BLADE

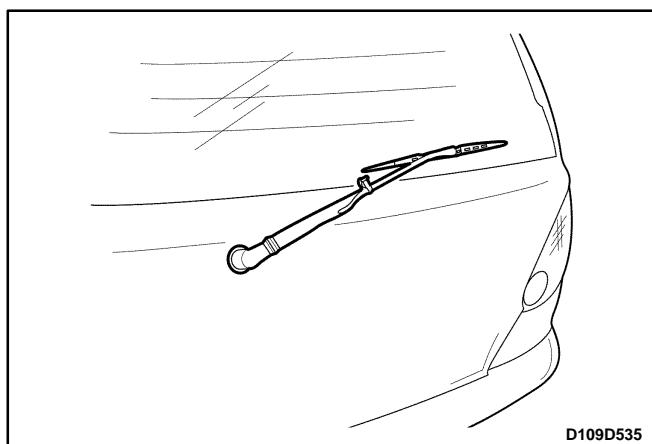
Removal Procedure

1. Pull the wiper blade off the arm by pushing the wiper blade retaining clip (1).



Installation Procedure

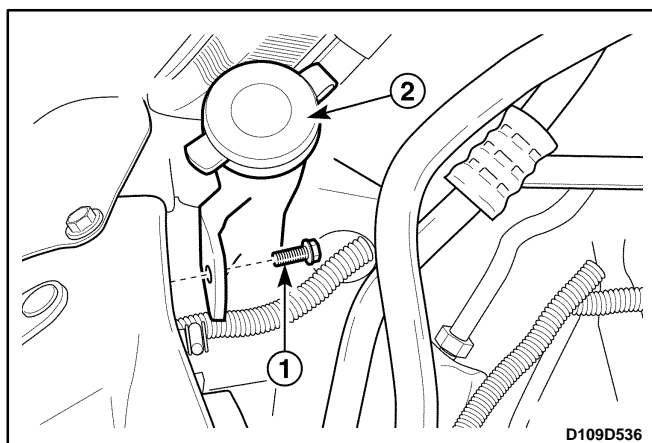
1. Install the wiper blade to the arm.

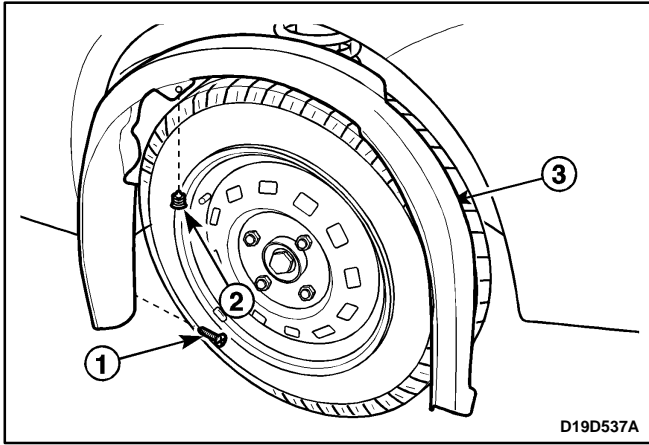


WASHER RESERVOIR

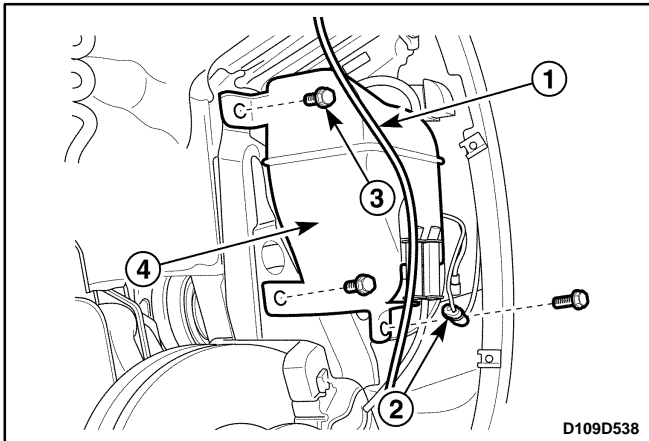
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the washer reservoir inlet.
 - Remove the bolt (1).
 - Remove the washer reservoir inlet (2).

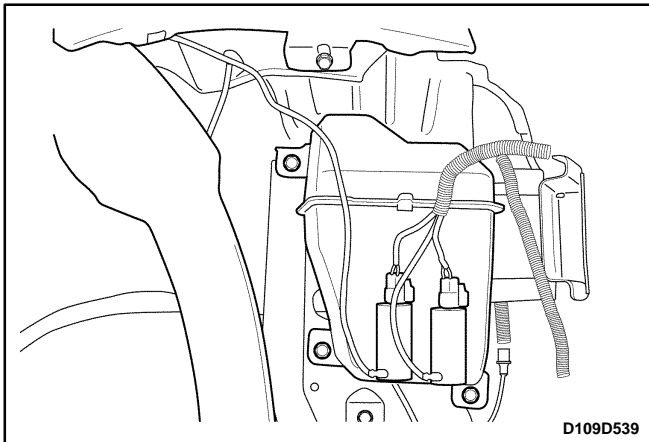




3. Raise and suitably support the vehicle.
4. Remove the front RH wheelhouse splash shield.
 - Remove the screws (1).
 - Remove the clips (2).
 - Remove the wheelhouse splash shield (3).



5. Remove the washer reservoir assembly.
 - Drain the washer fluid.
 - Disconnect the washer hose connector (1).
 - Disconnect the washer pump electrical connector (2).
 - Remove the bolts (3).
 - Remove the washer reservoir assembly (4).



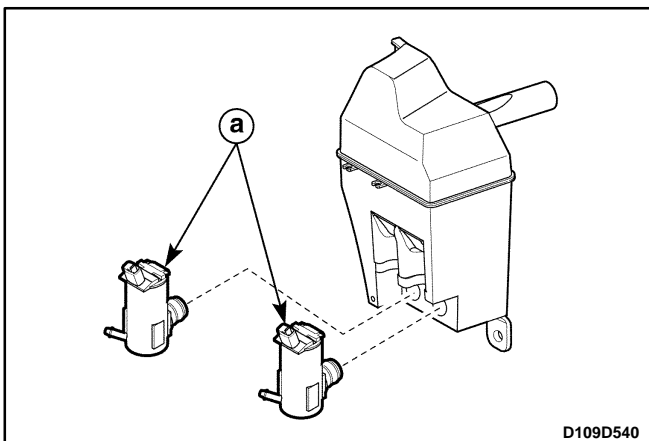
Installation Procedure

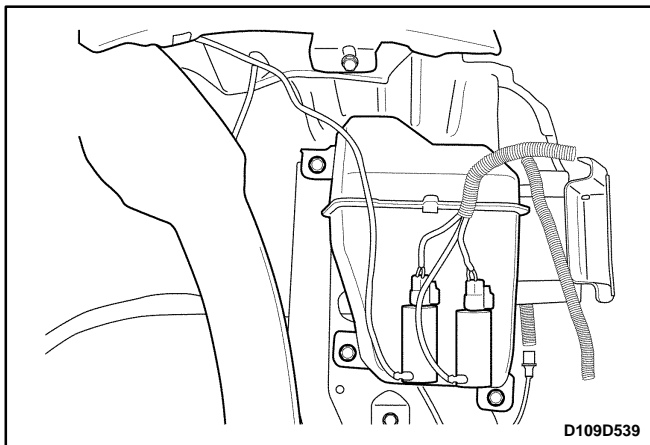
1. Install the washer reservoir assembly with the bolts.
2. Connect the washer pump electrical connector.
3. Connect the washer hose connector.
4. Install the front RH wheelhouse splash shield with the screws and the clips.
5. Lower the vehicle.
6. Install the washer reservoir with the bolt.
7. Connect the negative battery cable.

WASHER PUMP

Removal Procedure

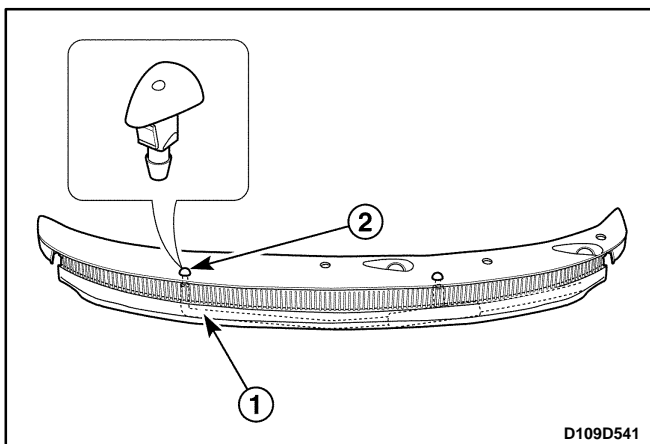
1. Disconnect the negative battery cable.
2. Remove the washer reservoir assembly. Refer to "Washer Reservoir" in this section.
3. Drain the washer fluid.
4. Remove the wiper motor from the washer reservoir assembly.
 - a. Washer pump.





Installation Procedure

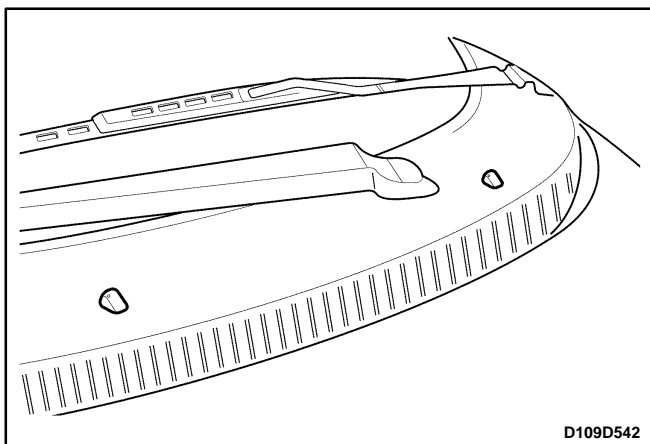
1. Install the wiper motor to the washer reservoir assembly.
2. Install the washer reservoir assembly. Refer to "Washer Reservoir" in this section.
3. Connect the negative battery cable.
4. Fill the washer reservoir.



WINDSHIELD WASHER NOZZLE

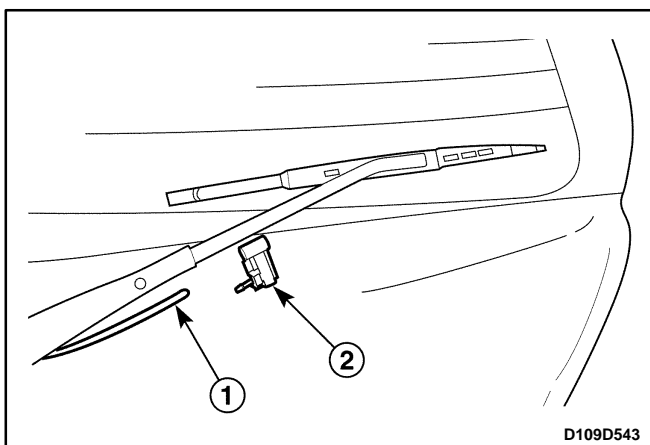
Removal Procedure

1. Remove the cowl vent grille. Refer to *Section 9R, Body Front End*.
2. Remove the washer nozzle from the cowl vent grille.
 - Disconnect the washer nozzle hose (1).
 - Remove the washer nozzle (2).



Installation Procedure

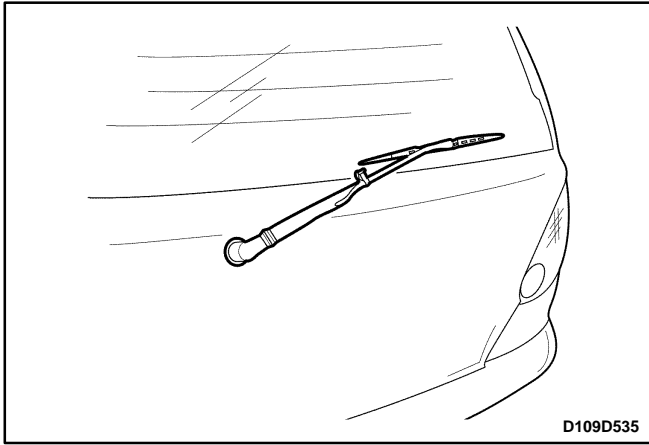
1. Install the washer nozzle to the cowl vent grille.
2. Install the washer nozzle hose to the washer nozzle.
3. Install the cowl vent grille. Refer to *Section 9R, Body Front End*.



REAR WINDOW WASHER NOZZLE

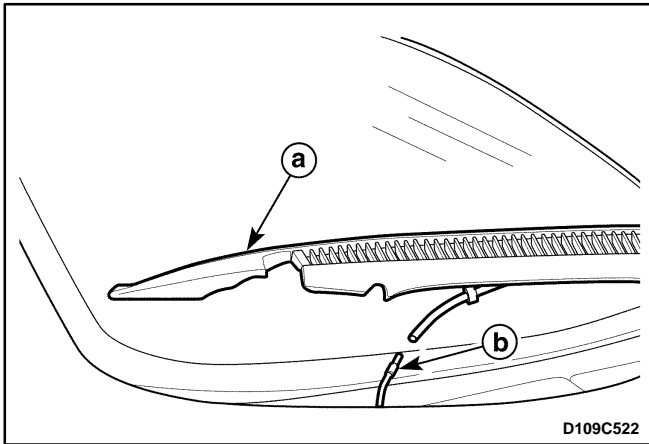
Removal Procedure

1. Remove the washer nozzle from the wiper arm.
 - Disconnect the washer nozzle hose (1).
 - Remove the washer nozzle (2).



Installation Procedure

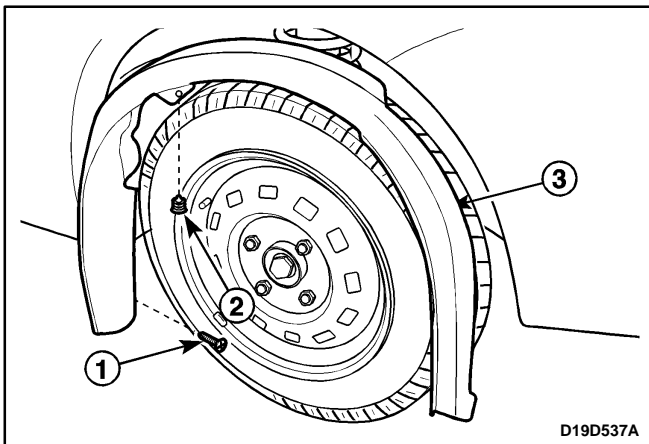
1. Install the washer nozzle to the wiper arm assembly.
 - Install the washer nozzle hose in the wiper arm return spring.
 - Fix the washer nozzle into the wiper arm.
 - Install the washer nozzle hose to the pivot cap connector.



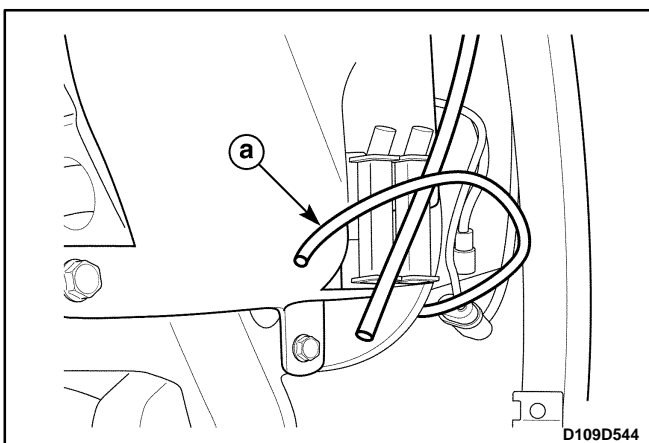
WASHER HOSE

Removal Procedure

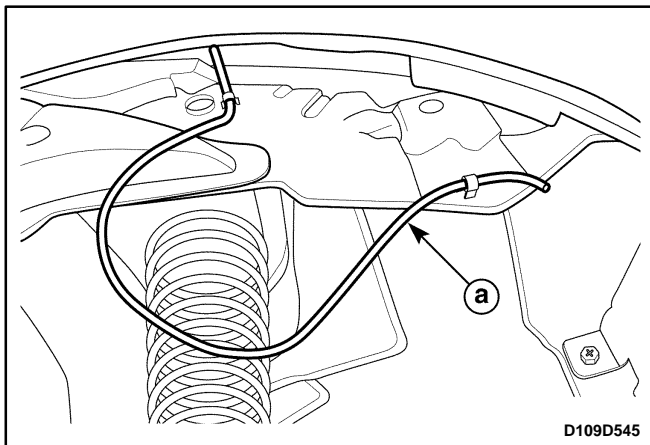
1. Remove the cowl vent grille. Refer to *Section 9R, Body Front End*.
 - a. Cowl vent grille.
2. Disconnect the washer hose connector.
 - b. Washer hose connector.



3. Raise and suitably support the vehicle.
4. Remove the front RH wheel.
5. Remove the front RH wheel house splash shield.
 - Remove the screws (1).
 - Remove the clips (2).
 - Remove the wheel house splash shield (3).

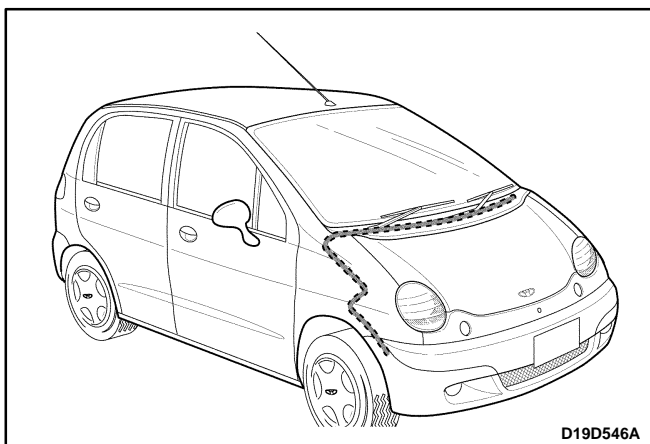


6. Disconnect the washer hose from the washer pump.
 - a. Washer hose.



7. Remove the washer hose.

a. Washer hose.



Installation Procedure

1. Connect the washer hose to the washer pump.
2. Install the front RH wheel house splash shield with the screws and the clips.
3. Install the front RH wheel.
4. Lower the vehicle.
5. Connect the washer hose connector.
6. Install the cowl vent grille. Refer to *Section 9R, Body Front End*.

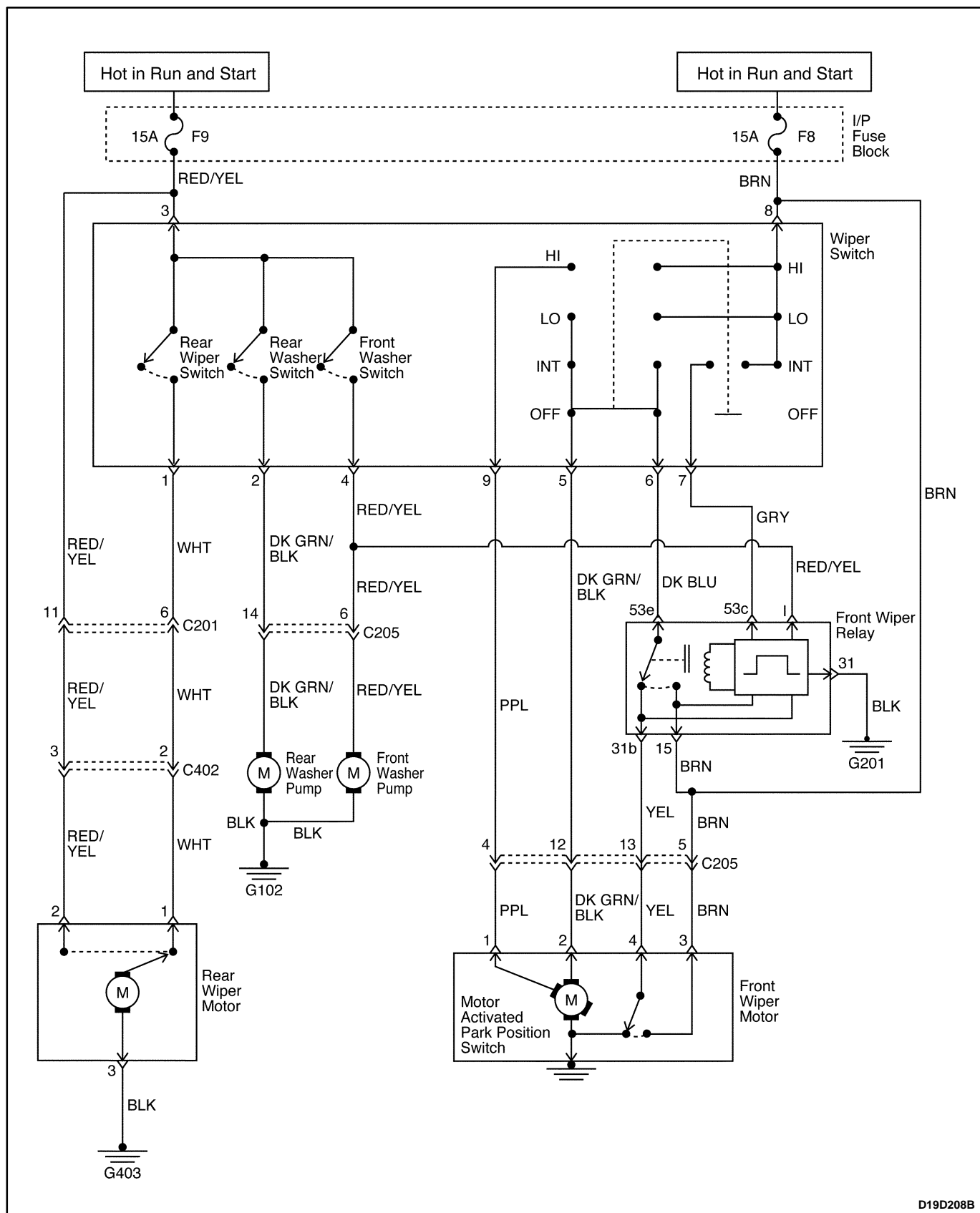
SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Wiper Linkage Conclusion Nut	1.5-2.0	—	13-18

SCHEMATIC AND ROUTING DIAGRAMS

WINDSHIELD/REAR WINDOW WIPER AND WASHER SYSTEM



SECTION 9E

INSTRUMENTATION/DRIVER INFORMATION

CAUTION: Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.

TABLE OF CONTENTS

Description and Operation	9E-2	Ashtray	9E-9
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Ashtray	9E-2	Digital Clock	9E-10
Instrument Panel Vents	9E-2	Glove Box	9E-11
Glove Box	9E-2	Instrument Cluster	9E-11
Digital Clock	9E-2	Instrument Panel	9E-12
Instrument Cluster	9E-2	Tie-Bar	9E-14
Speedometer/Odometer/Trip Odometer	9E-2	Instrument Cluster Trim Panel	9E-16
Fuel Gauge	9E-2	Instrument Trim Panel Assembly	9E-16
Temperature Gauge	9E-2	Instrument Cluster Indicator Lamps	9E-19
Instrument Cluster Indicator Lamps	9E-2	Speedometer/Odometer/Trip Odometer	9E-19
Component Locator	9E-3	Fuel Gauge/Temperature Gauge	9E-20
Instrument Panel Assembly	9E-3	Specifications	9E-22
Instrument Cluster	9E-4	Fastener Tightening Specifications	9E-22
Diagnostic Information and Procedures	9E-5	Instrument Cluster Indicator Lamps Specifications	9E-22
Cigar Lighter	9E-5	Schematic and Routing Diagrams	9E-23
HVAC Panel Illumination	9E-6	Instrument Cluster	9E-23
Digital Clock	9E-7	Instrument Panel Illumination	9E-25
Repair Instructions	9E-8	Digital Clock	9E-26
On-Vehicle Service	9E-8		
Cigar Lighter	9E-8		

DESCRIPTION AND OPERATION

CIGAR LIGHTER

The cigar lighter is located in the front portion of the instrument panel. To use the lighter, push it in completely. When the lighter is hot, it will release itself from contact with the heating element. The lighter and the heating element can be damaged if the lighter is not allowed to release itself fully from the heating element. Cigar lighter is not equipped with the lamp.

ASHTRAY

The ashtray is located in the lower portion of the instrument panel. In case of cleaning the ashtray up, remove the ashtray by pushing the upper button and clean it up. The ashtray lamp is optional.

INSTRUMENT PANEL VENTS

The center and the side vents in the instrument panel can be adjusted up and down and from side to side. The side vents can also be aimed toward the side windows in order to defog them.

GLOVE BOX

The glove box can be opened by pulling up on the latch handle. The glove box must be removed in order to gain access to the passenger-side airbag module.

DIGITAL CLOCK

The digital clock is located in the instrument panel, below the defroster grille. The clock is capable of a 12 – hour display.

INSTRUMENT CLUSTER

The instrument cluster is located above the steering column and in the instrument cluster trim panel. The instrument cluster contains the instruments that provide the driver with vehicle performance information. The instrument cluster contains a speedometer, an odometer, a trip odometer, a temperature gauge, a fuel gauge, and several indicator lamps. For replacement of the indicator lamp bulbs contained in the instrument cluster, refer to “Instrument Cluster Indicator Lamps Specifications” in this section.

SPEEDOMETER/ODOMETER/TRIP ODOMETER

The speedometer measures the speed of the vehicle. It consists of an instrument cluster gauge connected to the vehicle speed sensor on the transaxle output shaft.

The odometer measures the total distance the vehicle has traveled since it was manufactured. It consists of an instrument cluster gauge connected to the vehicle speed sensor on the transaxle output shaft.

The trip odometer measures the distance the vehicle has traveled since the odometer was last reset. It consists of an instrument cluster gauge connected to the vehicle speed sensor on the transaxle output shaft. The trip odometer can be reset to zero at any time so that the driver can record the distance traveled from any starting point.

FUEL GAUGE

The fuel gauge consists of an instrument cluster gauge connected to a sending unit in the fuel tank.

The fuel gauge indicates the quantity of fuel in the tank without the ignition switch position.

TEMPERATURE GAUGE

The temperature gauge consists of an instrument cluster gauge connected to a temperature sensor that is in contact with the circulating engine coolant.

The temperature gauge indicates the temperature of the coolant. Prolonged driving or idling in very hot weather may cause the pointer to move beyond the center of the gauge. The engine is overheating if the pointer moves into the red zone at the upper limit of the gauge.

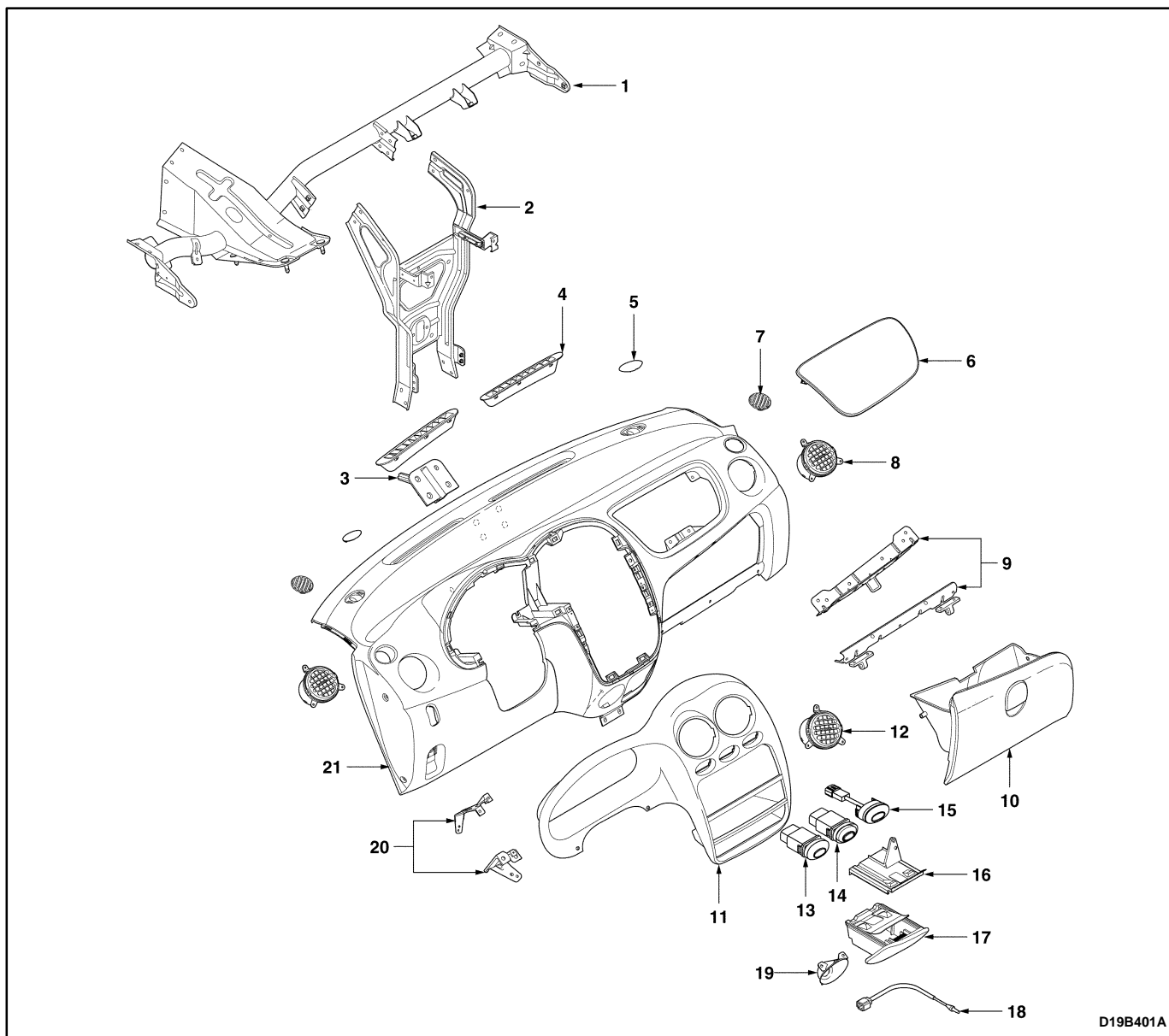
INSTRUMENT CLUSTER INDICATOR LAMPS

The instrument cluster contains indicator lamps that indicate the functioning of certain systems or the existence of potential problems with the operation of the vehicle. The indicator lamps are replaceable. For replacement of the indicator lamps contained in the instrument cluster, refer to “Instrument Cluster Indicator Lamps Specifications” in this section.

COMPONENT LOCATOR

INSTRUMENT PANEL ASSEMBLY

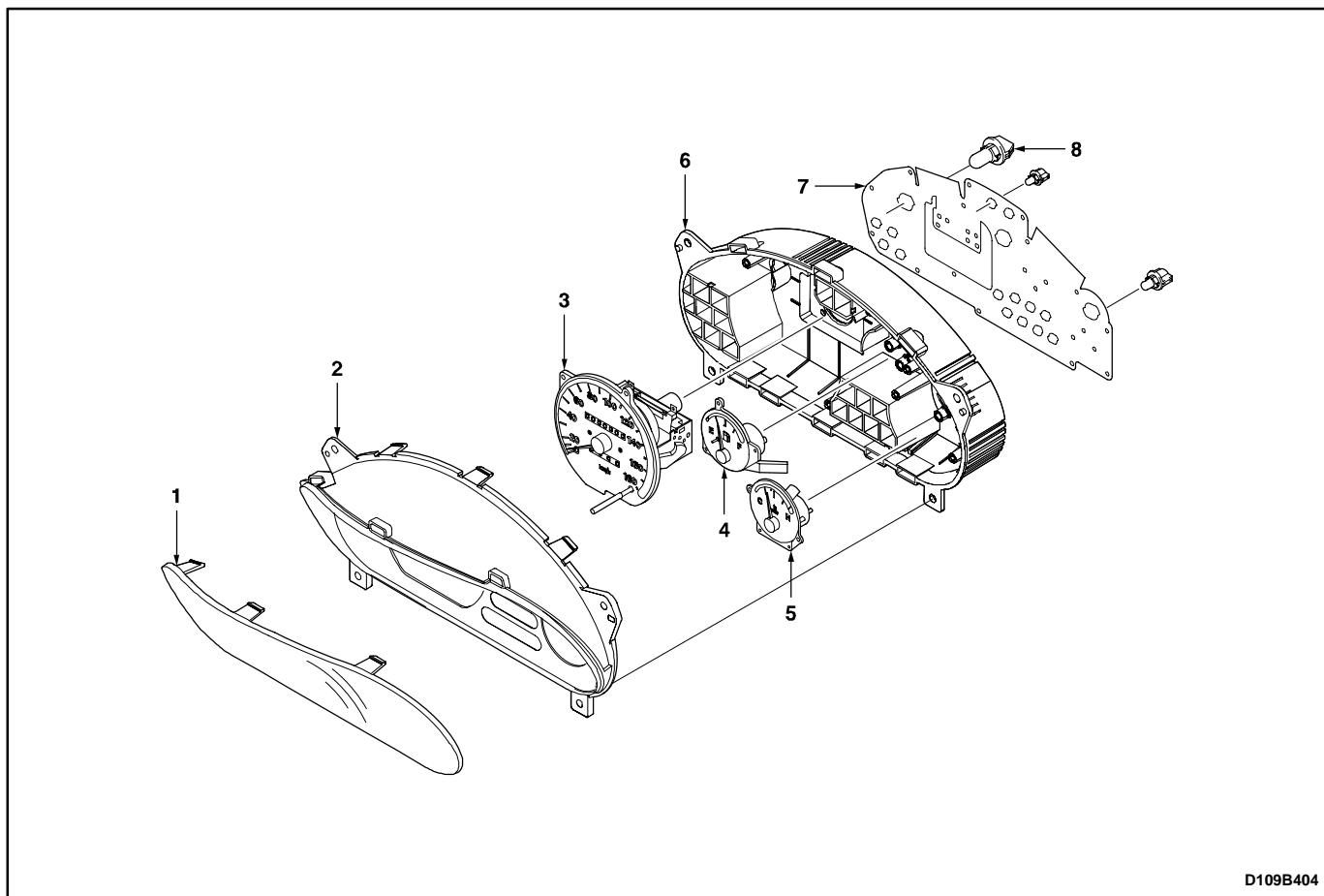
(Left-Hand Drive Shown, Right-Hand Drive Similar)



D19B401A

- | | |
|-----------------------------------|--|
| 1. Tie-Bar | 11. Instrument Cluster Housing Molding |
| 2. Tie-Bar Center | 12. Center Ventilation Grille |
| 3. Instrument Panel Guide | 13. Switch Blank Cover (Fog Lamp Switch) |
| 4. Defroster Grille | 14. Hazard Warning Switch |
| 5. Instrument Panel Upper Cap | 15. Immobilizer LED Indicator Switch |
| 6. Passenger's Airbag Blank Cover | 16. Ashtray Bracket |
| 7. Demister Grille | 17. Ashtray |
| 8. Side Ventilation Grille | 18. Ashtray Lamp |
| 9. Glove Box Bracket | 19. Cigar Lighter Housing |
| 10. Glove Box | 20. Instrument Cluster Bracket |
| | 21. Instrument Panel |

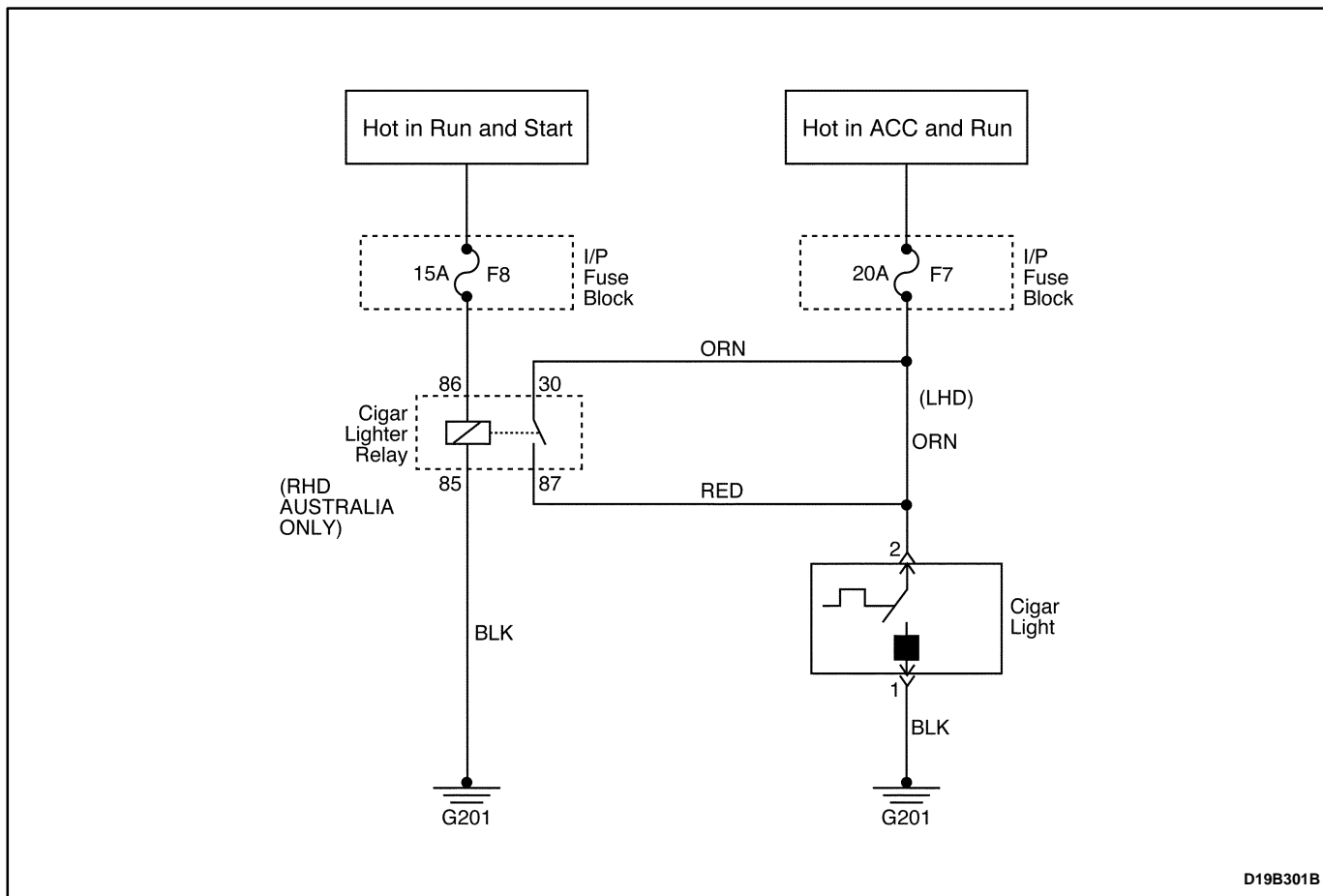
INSTRUMENT CLUSTER



D109B404

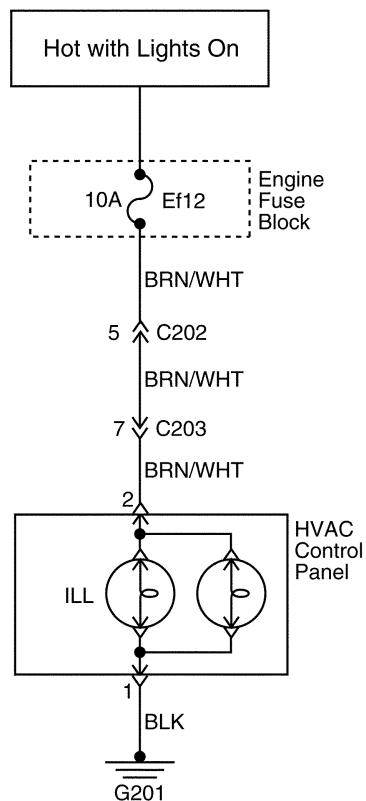
- | | |
|------------------------------------|----------------------------|
| 1. Instrument Cluster Lens | 5. Temperature Gauge |
| 2. Instrument Cluster Window Plate | 6. Instrument Cluster Case |
| 3. Speedometer Gauge | 7. Fronted Circuit Plate |
| 4. Fuel Gauge | 8. Instrument Cluster Bulb |

DIAGNOSTIC INFORMATION AND PROCEDURES



CIGAR LIGHTER

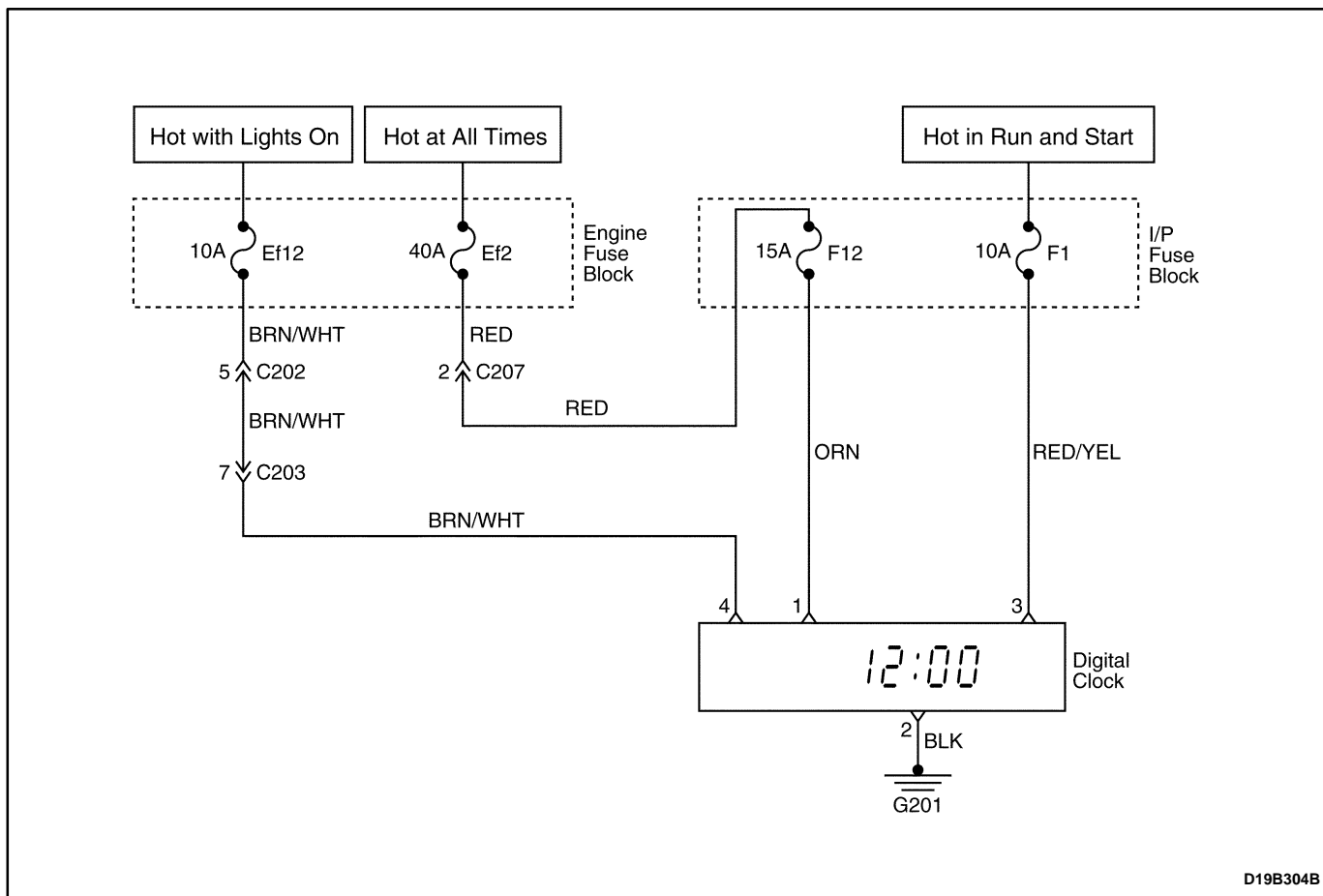
Condition	Probable Cause	Correction
Cigar Lighter Inoperative	<ul style="list-style-type: none"> The open or a short in the power supply circuit to the fuse F7. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse F7 is blown. 	<ul style="list-style-type: none"> Replace the fuse F7.
	<ul style="list-style-type: none"> The circuit between the fuse F7 and the terminal 2 of the cigar lighter connector is the open circuit or a short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty the cigar lighter connector. 	<ul style="list-style-type: none"> Repair or Replace the cigar lighter connector.
	<ul style="list-style-type: none"> Cigar lighter element is blown. 	<ul style="list-style-type: none"> Replace the cigar lighter.
	<ul style="list-style-type: none"> Open ground (G201) circuit. 	<ul style="list-style-type: none"> Repair the open ground circuit.



D19B302B

HVAC PANEL ILLUMINATION

Condition	Probable Cause	Correction
HVAC Panel Illumination Inoperative	<ul style="list-style-type: none"> The open or a short in the power supply circuit to the fuse Ef12. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse Ef12 is blown. 	<ul style="list-style-type: none"> Replace the fuse Ef12
	<ul style="list-style-type: none"> The circuit between the fuse Ef12 and the terminal 2 of the HVAC panel illumination connector is the open circuit or a short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty the HVAC panel illumination connector. 	<ul style="list-style-type: none"> Repair or Replace the instrument panel illumination connector.
	<ul style="list-style-type: none"> HVAC panel illumination bulb is blown. 	<ul style="list-style-type: none"> Replace the bulb.
	<ul style="list-style-type: none"> Open ground (G201) circuit. 	<ul style="list-style-type: none"> Repair the open ground circuit.



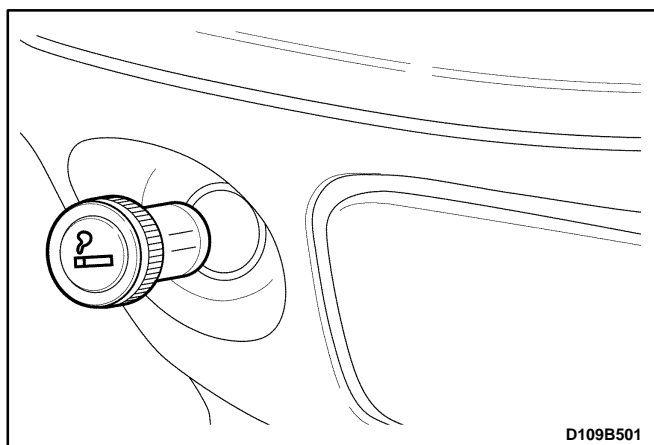
D19B304B

DIGITAL CLOCK

Condition	Probable Cause	Correction
Digital Clock Inoperative	<ul style="list-style-type: none"> The open or a short in the power supply circuit to the fuse Ef2 regardless of the ignition position. 	<ul style="list-style-type: none"> Repair or Replace the power supply circuit wiring harness.
	<ul style="list-style-type: none"> The open or a short in the power supply circuit to the fuse F1 with the ignition position I. 	<ul style="list-style-type: none"> Repair or Replace the power supply circuit wiring harness.
	<ul style="list-style-type: none"> The open or a short in the power supply circuit to the fuse Ef12 with the interior courtesy lamp ON. 	<ul style="list-style-type: none"> Repair or Replace the power supply circuit wiring harness.
	<ul style="list-style-type: none"> The circuit between the fuse Ef2 and the fuse F12 is open or short. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Fuse Ef2, Ef12, F1 or F12 is blown. 	<ul style="list-style-type: none"> Replace and fuse.
	<ul style="list-style-type: none"> The circuit between the fuse F12 and the digital clock connector. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> The circuit between the fuse F1 and the digital clock connector. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> The circuit between the Ef12 and the digital clock connector. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Faulty digital clock. 	<ul style="list-style-type: none"> Replace the digital clock.
	<ul style="list-style-type: none"> Open ground (G201) circuit. 	<ul style="list-style-type: none"> Repair the open ground circuit.

REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE

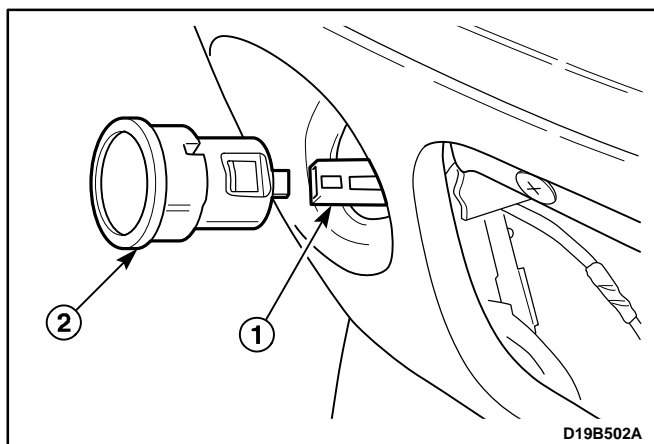


CIGAR LIGHTER

(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

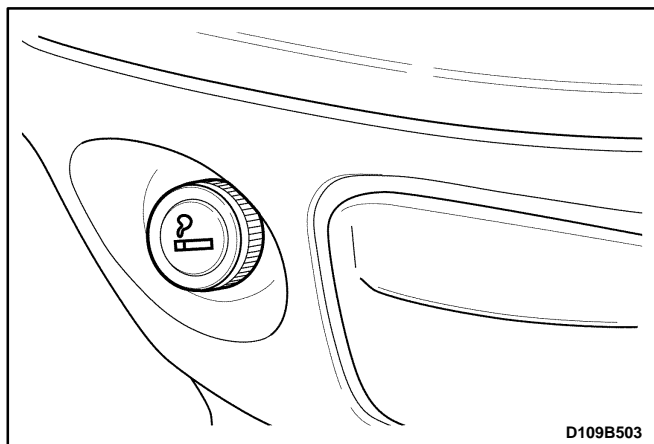
1. Disconnect the negative battery cable.
2. Remove the ashtray from the ashtray housing.
3. Remove the cigar lighter from the cigar lighter socket.



4. Remove the cigar lighter socket from the cigar lighter housing.

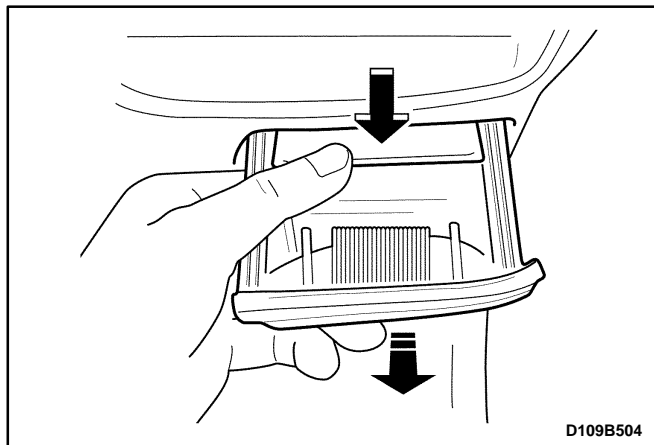
Caution: *Ashtray housing edge could cause serious injury.*

- Push out the socket.
- Disconnect the electrical connector (1).
- Remove the socket (2).



Installation Procedure

1. Connect the electrical connector.
2. Install the cigar lighter socket.
3. Install the cigar lighter in the cigar lighter socket.
4. Install the ashtray.
5. Connect the negative battery cable.

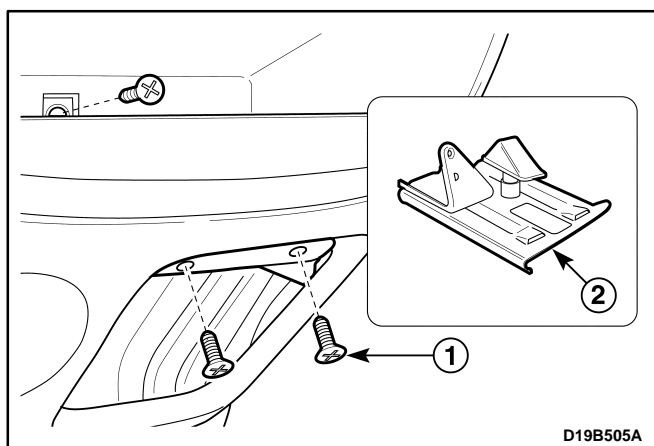


ASHTRAY

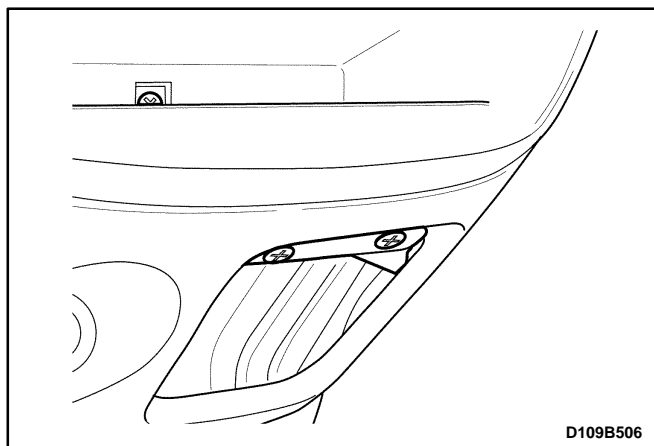
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Remove the ashtray from the ashtray bracket.
 - Pull off the ashtray by pressing the upper button.

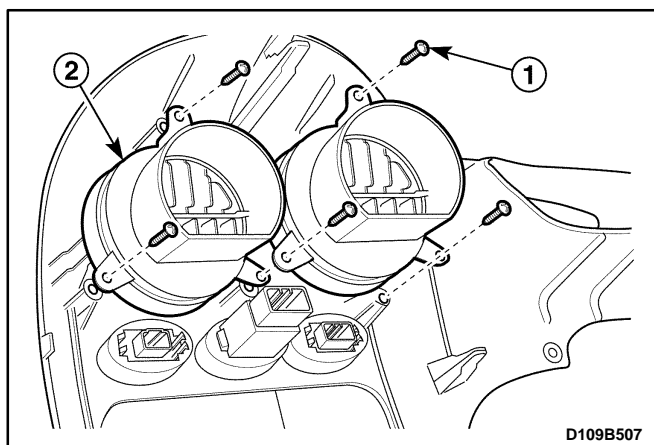


2. Remove the ashtray bracket from the instrument panel.
 - Remove the screws (1).
 - Remove the ashtray bracket (3).



Installation Procedure

1. Install the ashtray bracket with the screws.
2. Install the ashtray.

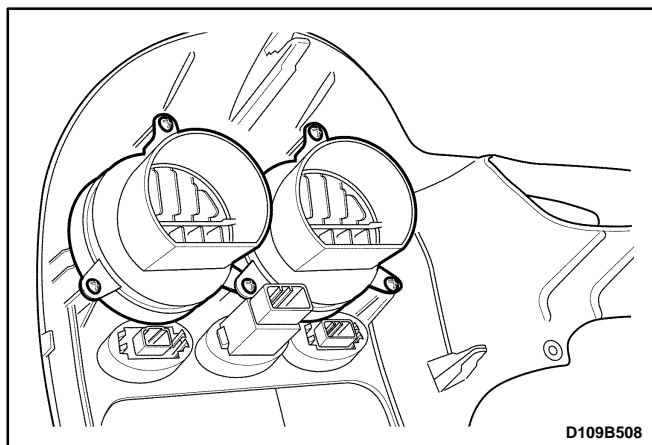


INSTRUMENT CLUSTER TRIM PANEL VENTS

(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

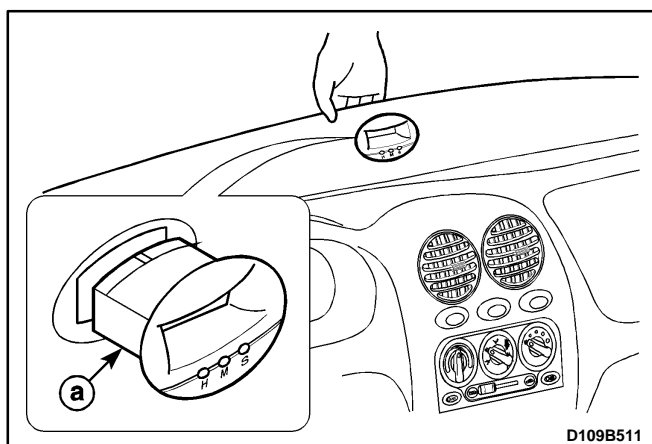
1. Remove the instrument cluster trim panel from the instrument panel. Refer to "Instrument Cluster Trim Panel" in this section.
2. Remove the vent from the instrument cluster trim panel.
 - Remove the screws (1).
 - Remove the vents (2).



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Installation Procedure

1. Install the vents to the instrument cluster trim panel with the screws.
2. Install the instrument cluster trim panel. Refer to “Instrument Cluster Trim Panel” in this section.



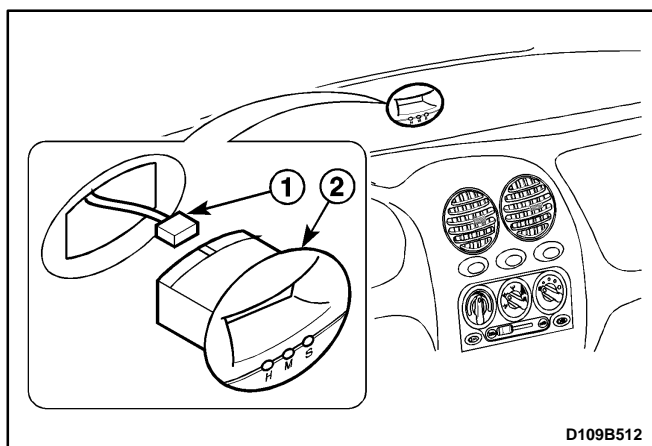
D109B511

DIGITAL CLOCK

(Left-Hand Drive Shown, Right-Hand Drive Similar)

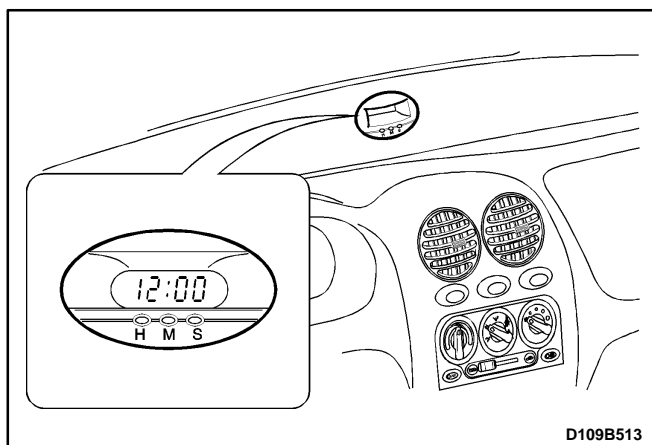
Removal Procedure

1. Disconnect the negative battery cable.
2. Pry off the defroster grille.
3. Unlock the locking of the digital clock.
 - a. Digital clock.



D109B512

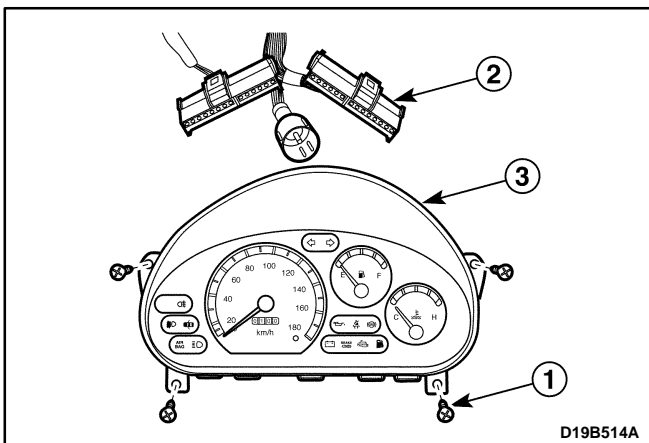
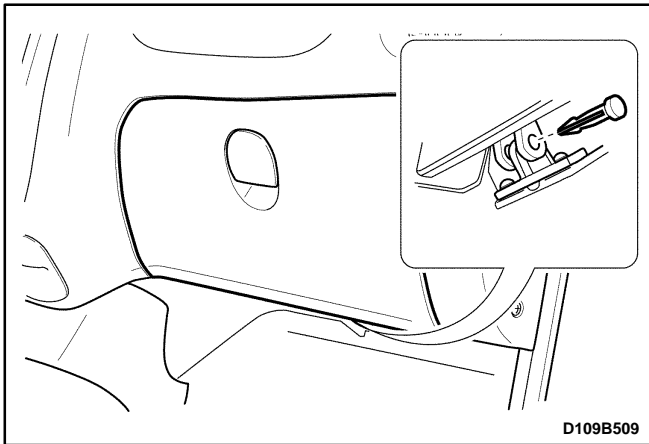
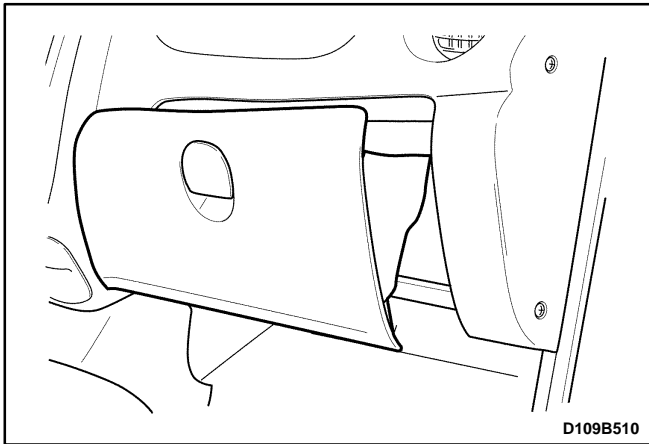
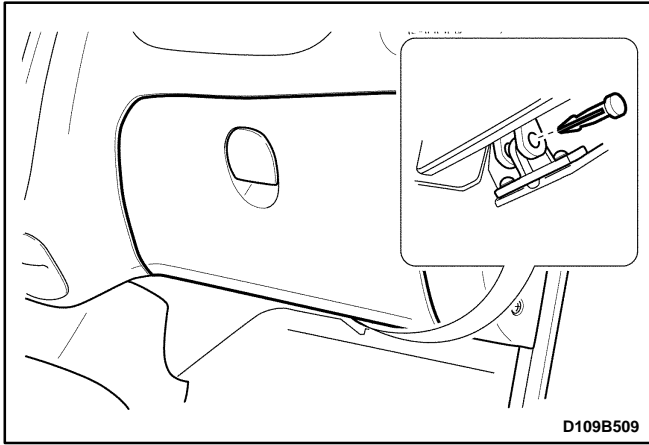
4. Remove the digital clock from the instrument panel.
 - Disconnect the electrical connector (1).
 - Remove the digital clock (2).



D109B513

Installation Procedure

1. Connect the electrical connector.
2. Install the digital clock to the instrument panel.
3. Connect the negative battery cable.
4. Set the clock.



GLOVE BOX

(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Remove the hinge pins at the base of the glove box.
2. Remove the glove box from the instrument panel.

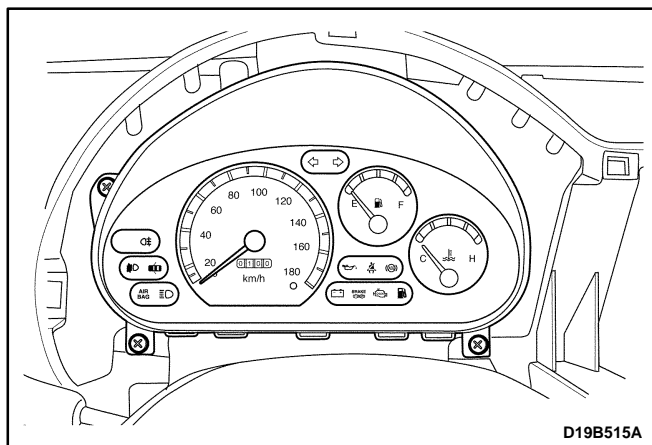
Installation Procedure

1. Install the glove box to the instrument panel with the hinge pins.

INSTRUMENT CLUSTER

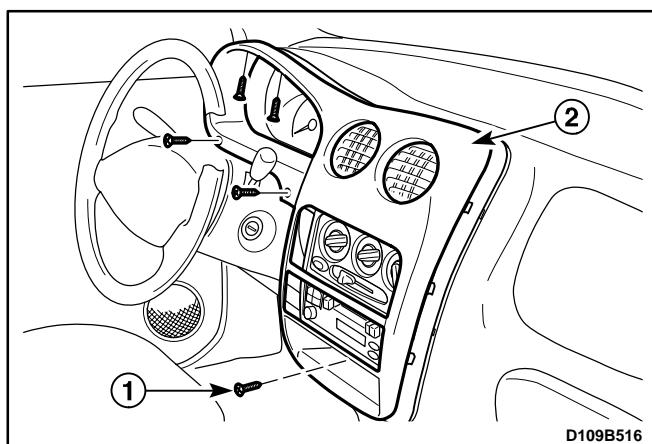
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the instrument cluster trim panel from the instrument panel. Refer to "Instrument Cluster Trim Panel" in this section.
3. Remove the instrument cluster assembly from the instrument panel.
 - Remove the screws (1).
 - Disconnect the electrical connector and the speedometer cable (2).
 - Remove the instrument cluster (3).



Installation Procedure

1. Connect the electrical connector and the speedometer cable.
2. Install the instrument cluster assembly to instrument panel with screws.
3. Install the instrument cluster trim panel to the instrument panel. Refer to "Instrument Cluster Trim Panel" in this section.
4. Connect the negative battery cable.



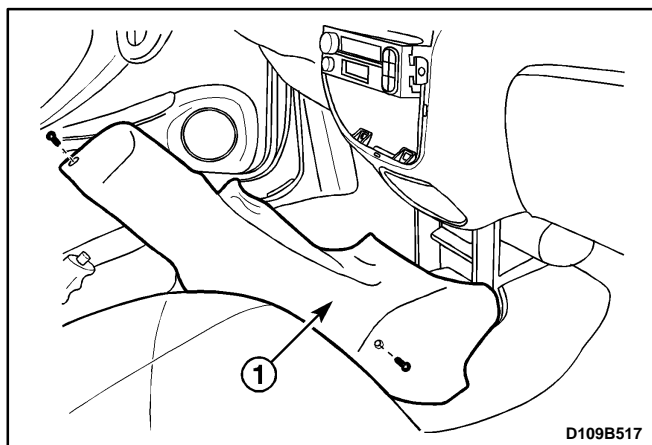
INSTRUMENT PANEL

(Left-Hand Drive Shown, Right-Hand Drive Similar)

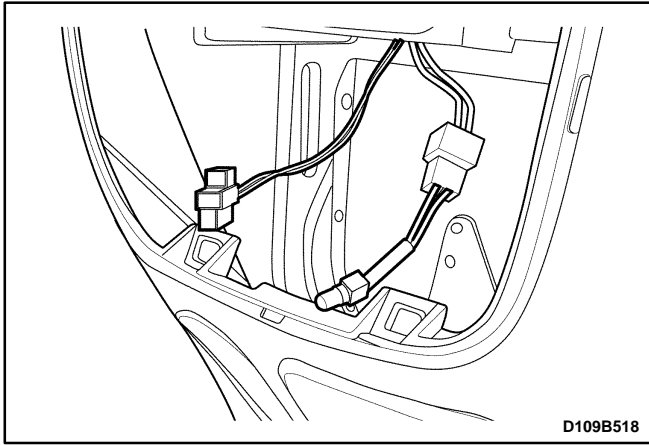
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the driver's airbag module from the steering wheel. Refer to *Section 8B, Supplemental Inflatable Restraints (SIR)* (For the vehicle equipped with the airbag).
3. Remove the steering wheel from the steering column. Refer to *Section 6E, Steering Wheel and Column*.
4. Remove the steering column trim cover. Refer to *Section 6E, Steering Wheel and Column*.
5. Remove the signal lamp switch and the wiper switch. Refer to *Section 6E, Steering Wheel and Column*.
6. Pry off the A-pillar trim panels. Refer to *Section 9G, Interior Trim*.
7. Remove the instrument cluster trim panel from the instrument panel.
 - Remove the screws (1)
 - Using a flathead screwdriver, remove the instrument cluster trim panel (2).

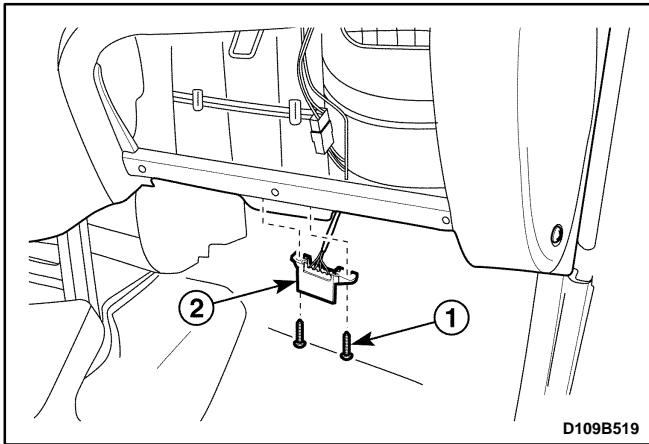
Notice: To prevent the instrument panel damage, cover the flathead screwdriver with a soft cloth.



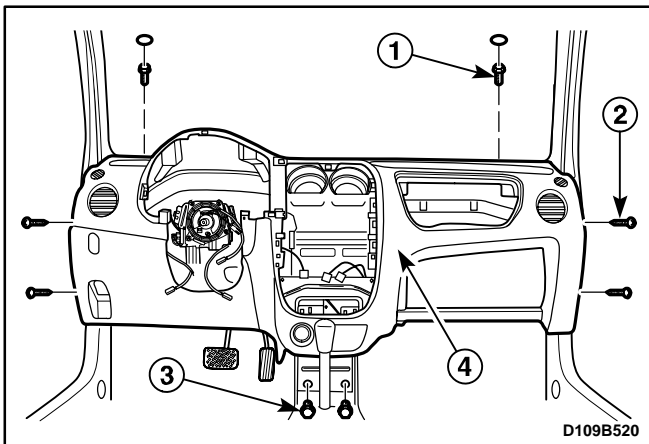
8. Remove the hood latch release lever from the instrument panel. Refer to *Section 9R, Body Front End*.
9. Remove the glove box assembly from the instrument panel. Refer to "Glove Box" in this section.
10. Remove the passenger's airbag module from the instrument panel. Refer to *Section 8B, Supplemental Inflatable Restraints (SIR)* (For vehicle equipped with the airbag).
11. Put aside the floor console after removing the screws (1).



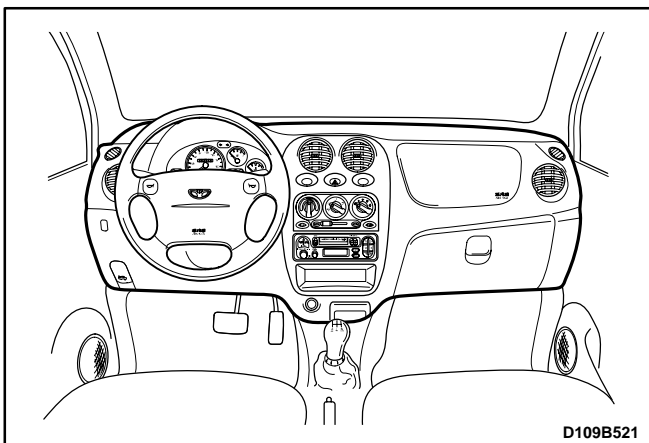
12. Remove the instrument cluster assembly. Refer to "Instrument Cluster" in this section.
13. Remove the A/C controller from the instrument. Refer to *Section 7B, Manual Control Heating, Ventilation, and Air Conditioning System*.
14. Remove the audio system from the instrument panel. Refer to *Section 9F, Audio Systems*.
15. Disconnect the cigar lighter connector.
16. Disconnect the ashtray lamp if equipped.



17. Disconnect the ALDL connector.
 - Remove the screws (1).
 - Disconnect the ALDL connector (2).



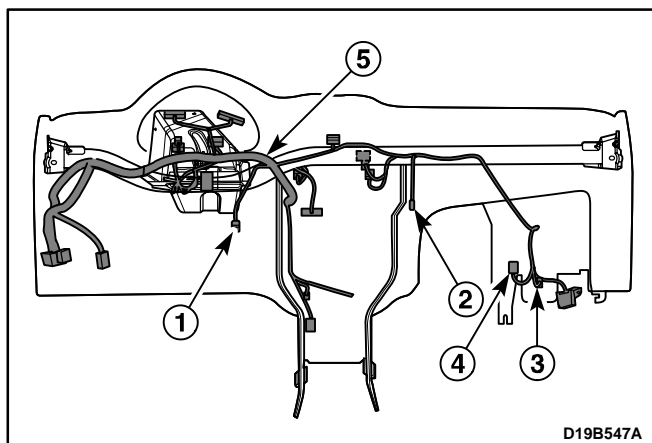
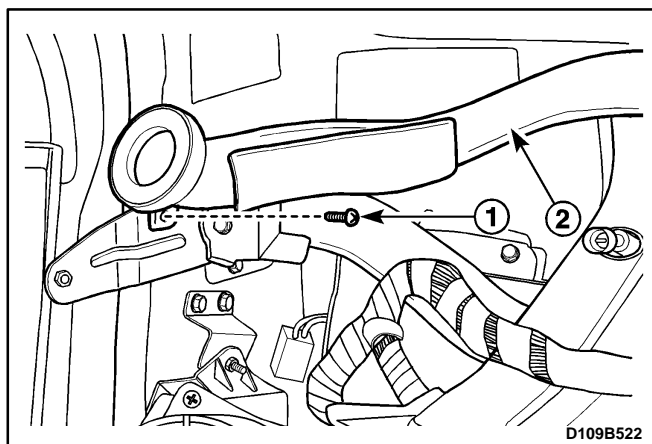
18. Remove the instrument trim panel assembly.
 - Remove the bolts after removing the caps (1).
 - Remove the screws on the side plate (2).
 - Remove the tie-bar retaining bolts on the lower panel (3).
 - Remove the instrument trim panel assembly (4).



Installation Procedure

1. Install the instrument trim panel assembly with the bolts and screws.
2. Connect the ALDL connector with the screws.
3. Connect the ashtray lamp if equipped with.
4. Connect the cigar lighter connector.
5. Install the audio system to the instrument panel. Refer to *Section 9F, Audio Systems*.
6. Install the A/C controller to the instrument panel. Refer to *Section 7B, Manual Control Heating, Ventilation, and Air Conditioning System*.

7. Install the instrument cluster assembly. Refer to "Instrument Cluster" in this section.
8. Install the floor console with the screws.
9. Install the passenger's airbag module to the instrument panel. Refer to *Section 8B, Supplemental Inflatable Restraints (SIR)* (For vehicle equipped with the airbag).
10. Install the glove box assembly to the instrument panel. Refer to "Glove Box" in this section.
11. Install the hood latch release lever to the instrument panel. Refer to *Section 9R, Body Front End*.
12. Install the instrument cluster trim panel to the instrument cluster trim panel with the screws.
13. Install the A-pillar trim panels. Refer to *Section 9G, Interior Trim*.
14. Install the signal lamp switch and the wiper switch. Refer to *Section 6E, Steering Wheel and Column*.
15. Install the steering column trim cover. Refer to *Section 6E, Steering Wheel and Column*.
16. Install the steering wheel to the steering column.
17. Install the driver's airbag module to the steering wheel. Refer to *Section 8B, Supplemental Inflatable Restraints (SIR)* (For vehicle equipped with the airbag).
18. Connect the negative battery cable.

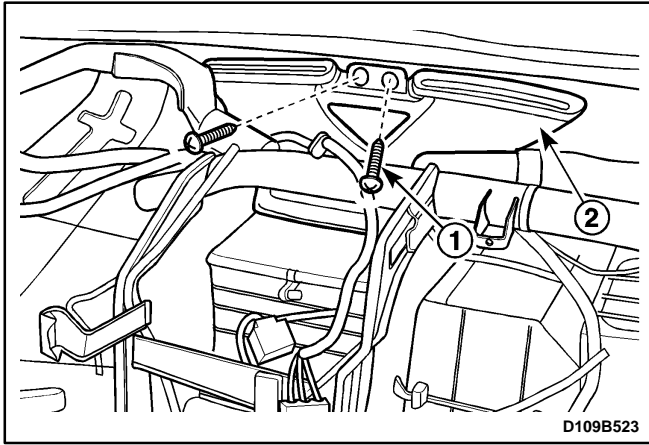


TIE-BAR

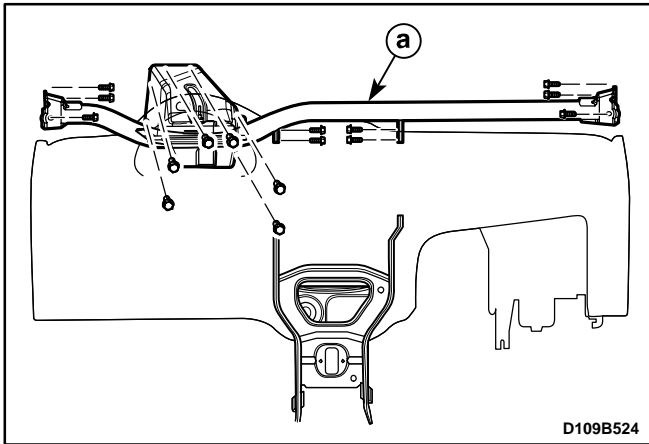
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

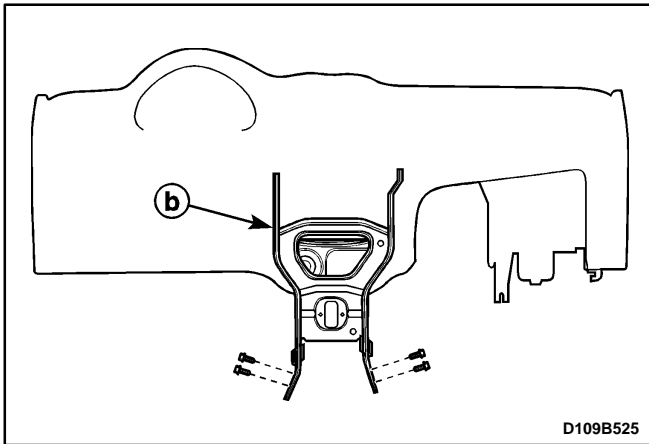
1. Disconnect the negative battery cable.
2. Remove the instrument panel assembly. Refer to "Instrument Panel" in this section.
3. Remove the defroster duct hose from the tie-bar.
 - Remove the screws (1).
 - Remove the defroster duct hose (2).
4. Remove the nuts and the steering column. Refer to *Section 6E, Steering Wheel and Column*.
5. Disconnect the electrical connectors and electrical wiring harness after removing the electrical wiring harness strips.
 - Remove the electrical wiring harness strip.
 - Disconnect the brake switch connector (1).
 - Disconnect the thermostat connector (2).
 - Disconnect the blow motor connector (3).
 - Disconnect the blow motor resistance connector (4).
 - Disconnect the electrical wiring harness (5).



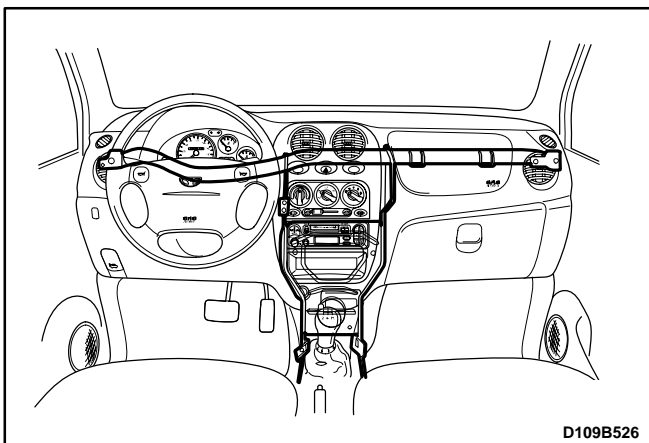
6. Remove the defroster duct from the cowl upper panel.
 - Remove the screws (1).
 - Remove the defroster duct (2).



7. Remove the bolts and the tie-bar.
 - a. Tie bar.



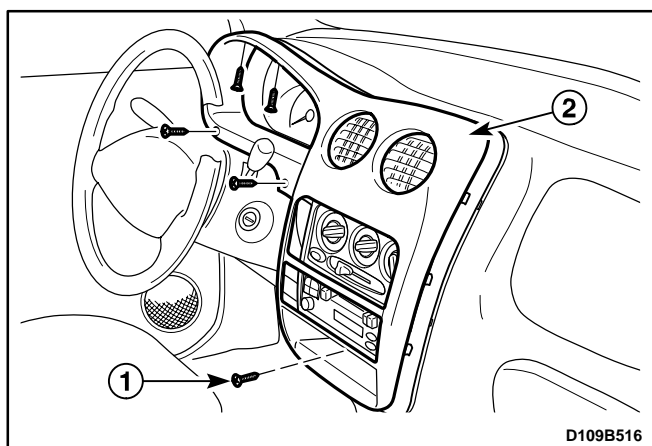
8. Remove the bolts and the tie-bar center.
 - b. Tie bar center.



Installation Procedure

1. Install the tie-bar with the bolts.
2. Install the tie-bar center with the bolts.
3. Install the defroster duct to the cowl upper panel with the screws.

4. Connect the electrical wiring harness.
5. Connect the blow motor resistance connector.
6. Connect the blow motor connector.
7. Connect the thermostat connector.
8. Connect the brake switch connector.
9. Bind the electrical wiring harness strip.
10. Install the steering column with the nuts.
11. Install the defroster duct hose with the screws.
12. Install the instrument panel assembly. Refer to "Instrument Panel" in this section.
13. Connect the negative battery cable.

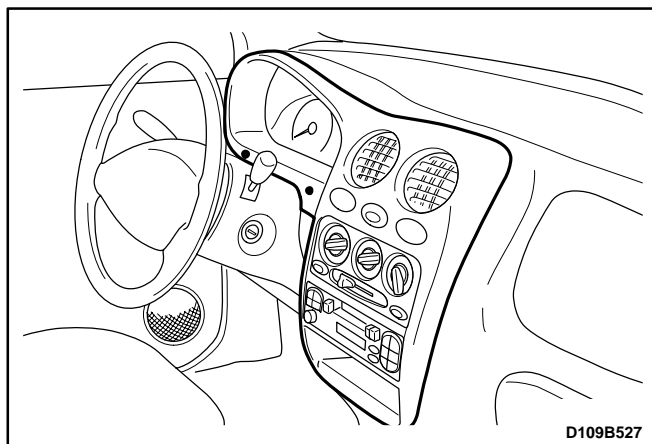


INSTRUMENT CLUSTER TRIM PANEL (Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

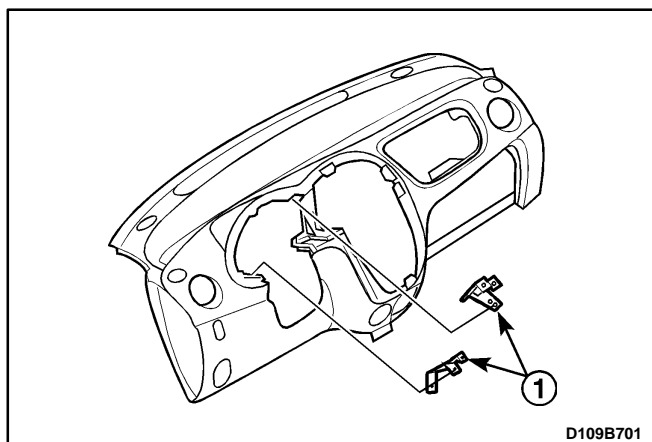
1. Remove the instrument cluster trim panel from the instrument panel.
 - Remove the screws (1).
 - Using a flathead screwdriver, remove the central console cover (2).

Notice: To prevent the instrument panel damage, cover the flathead screwdriver with a soft cloth.



Installation Procedure

1. Install the instrument cluster trim panel with the screws.

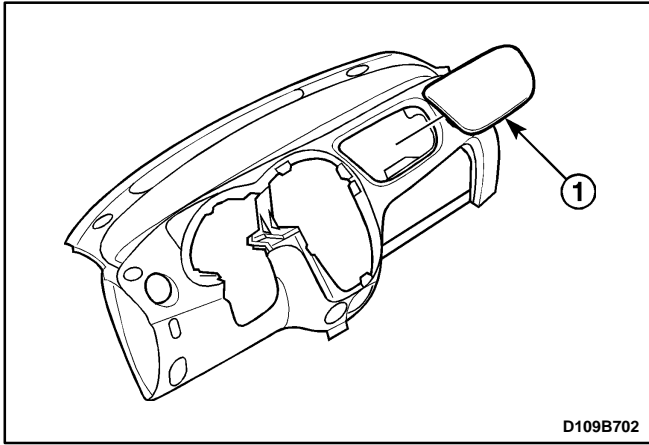


INSTRUMENT TRIM PANEL ASSEMBLY

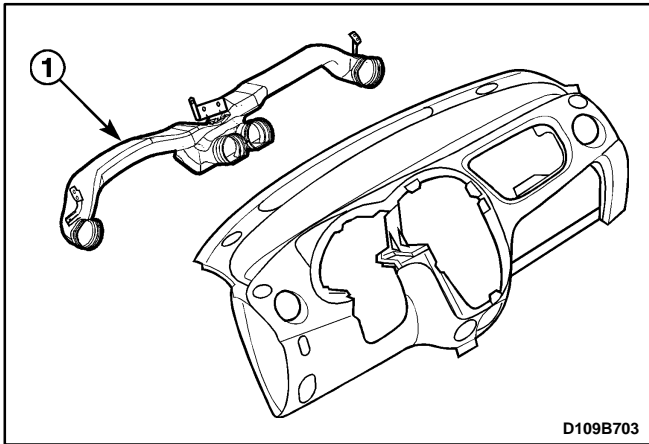
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

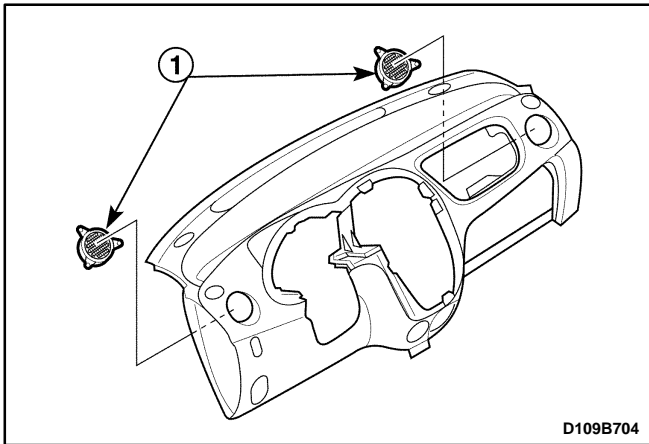
1. Disconnect the negative battery cable.
2. Remove the instrument panel assembly. Refer to "Instrument Panel" in this section.
3. Remove the instrument cluster brackets from the instrument panel.
 - Remove the screws.
 - Remove the instrument cluster brackets (1).



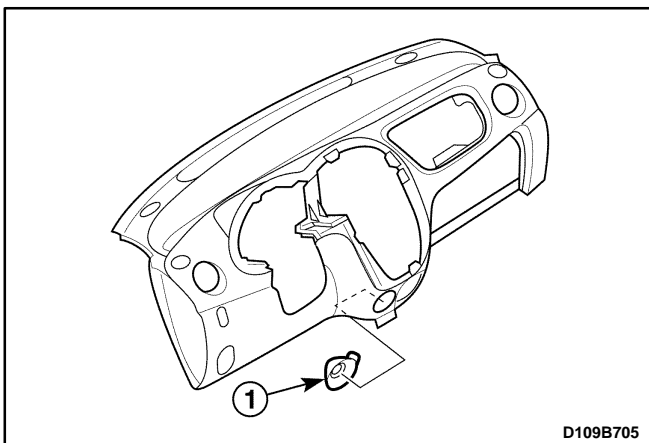
4. Remove the passenger's airbag module blank cover from the instrument panel.
- Remove the screws.
 - Remove the passenger's airbag module blank cover (1).



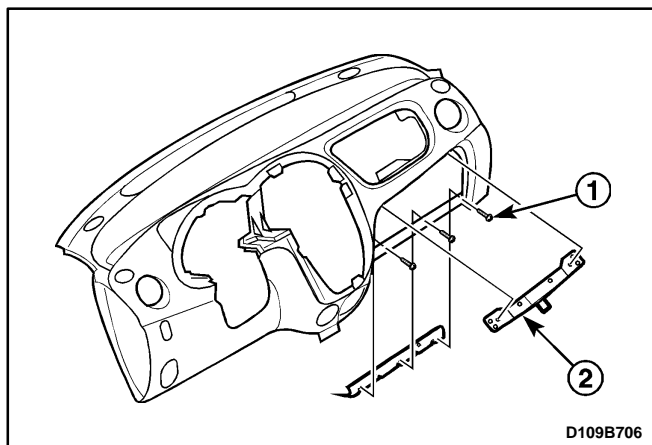
5. Remove the ventilation duct from the instrument panel.
- Remove the screws.
 - Remove the ventilation duct (1).



6. Remove the ventilation grilles from the instrument panel.
- Remove the screws.
 - Remove the ventilation grilles (1).

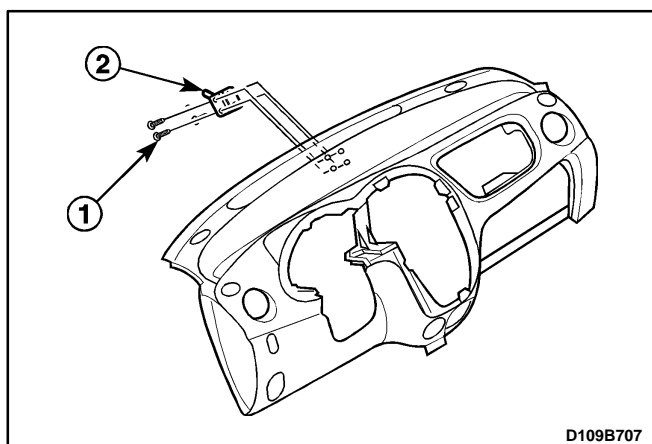


7. Remove the cigar lighter housing from the instrument panel.
- Remove the screws.
 - Remove the cigar lighter housing (1).



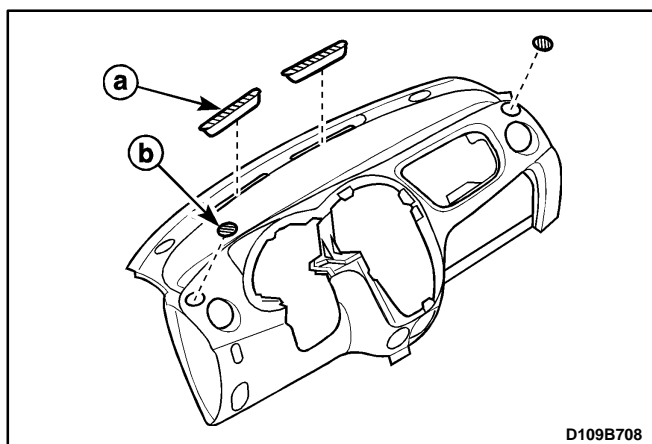
8. Remove the glove box striker and bracket from the instrument panel.

- Remove the screws (1).
- Remove the glove box striker and bracket (2).



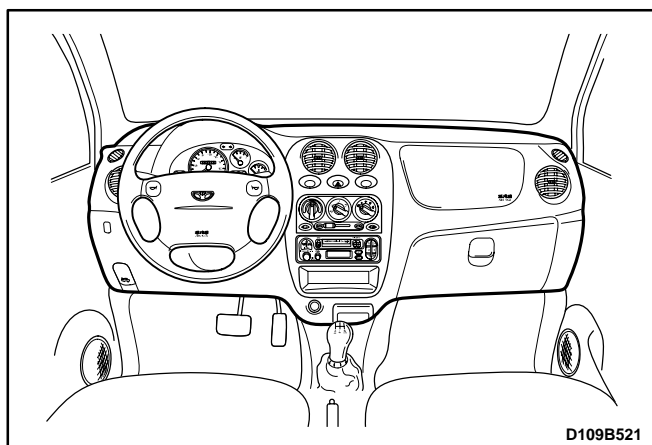
9. Remove the instrument panel guide from the instrument panel.

- Remove the screws (1).
- Remove the instrument panel guide (2).



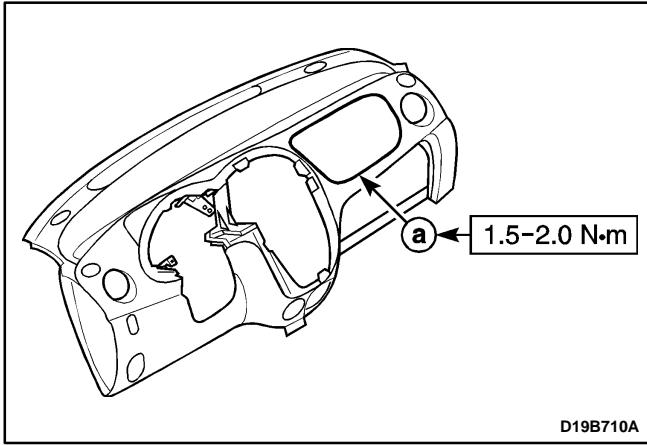
10. Remove the defroster grilles and the demister grilles from the instrument panel.

- a. Defroster grille.
- b. Demister grille.



Installation Procedure

1. Install the defroster grilles and the demister grilles to the instrument.
2. Install the instrument panel guide to the instrument panel with the screws.
3. Install the glove box striker and the bracket to the instrument panel with the screws.
4. Install the cigar lighter housing to the instrument panel with the screws.
5. Install the ventilation grilles to the instrument panel with the screws.
6. Install the ventilation duct to the instrument panel with the screws.

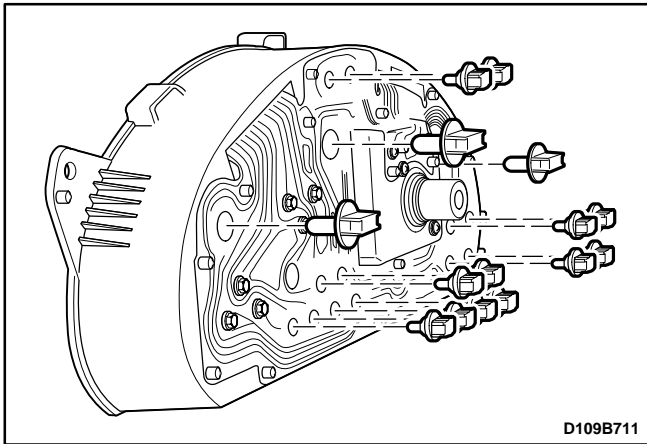


7. Install the passenger's airbag module blank cover to the instrument panel with the screws.

Tighten

Tighten the screws to 1.5–2 N.m (13–18 lb-in).

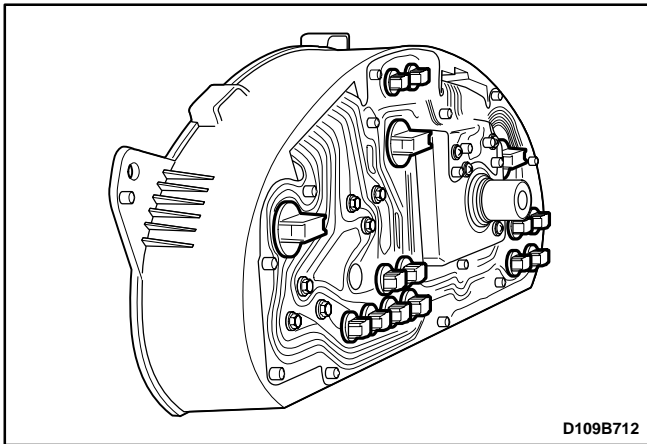
- a. Passenger's airbag module blank cover screw
8. Install the instrument cluster brackets to the instrument panel with the screws.
9. Install the instrument panel assembly. Refer to "Instrument Panel" in this section.
10. Connect the negative battery cable.



INSTRUMENT CLUSTER INDICATOR LAMPS

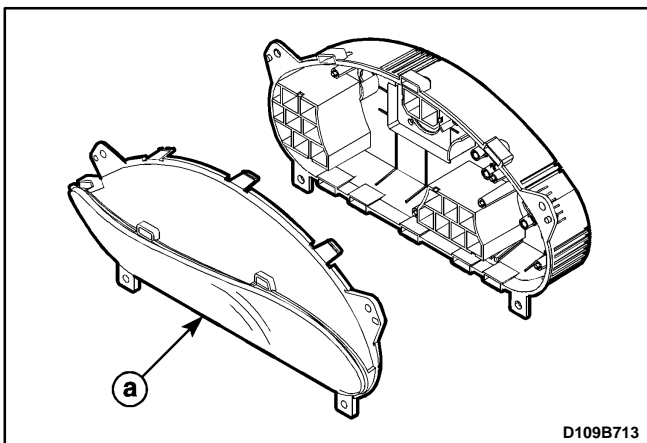
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the instrument cluster from the instrument panel. Refer to "Instrument Cluster" in this section.
3. Remove the indicator bulbs from the rear of the cluster.



Installation Procedure

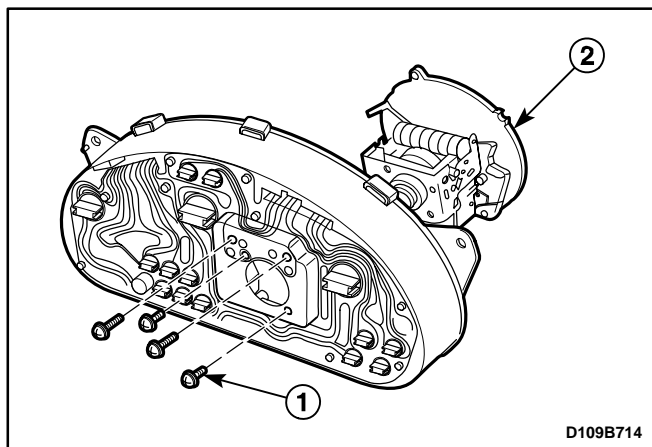
1. Install the indicator bulb.
2. Install the instrument cluster to the instrument panel. Refer to "Instrument Cluster" in this section.
3. Connect the negative battery cable.



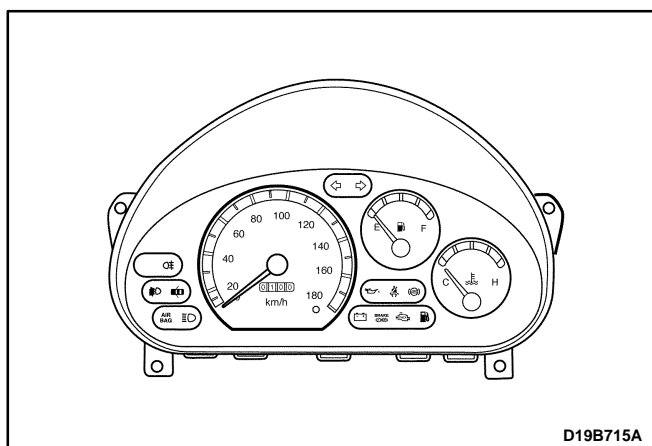
SPEEDOMETER/ODOMETER/TRIP ODOMETER

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the instrument cluster from the instrument panel. Refer to "Instrument Cluster" in this section.
3. Remove the instrument cluster lens and the face plate.
 - a. Window plate.

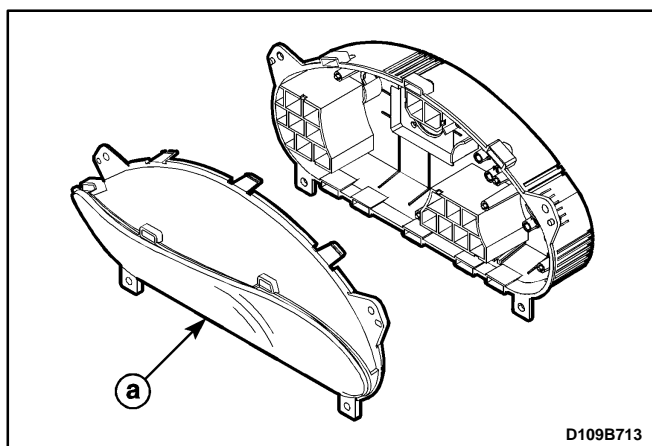


4. Remove the speedometer/odometer/trip odometer.
 - Remove the screws on the circuit plate (1).
 - Remove the speedometer/odometer/trip odometer (2).



Installation Procedure

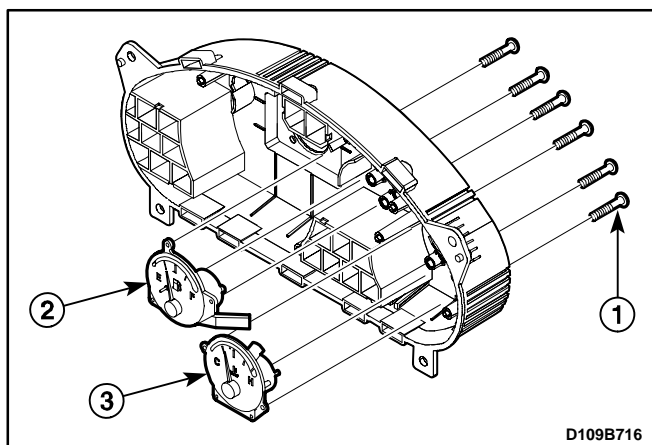
1. Install the speedometer/odometer/trip odometer with the screws.
2. Install the instrument cluster lens and the face plate.
3. Install the instrument cluster. Refer to “Instrument Cluster” in this section.
4. Connect the negative battery cable.

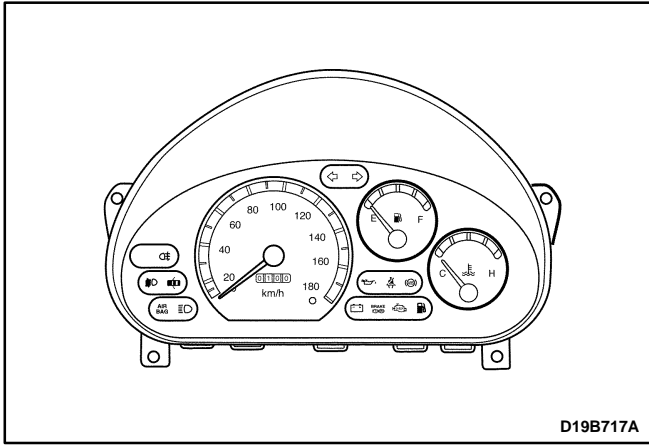


FUEL GAUGE/TEMPERATURE GAUGE

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the instrument cluster. Refer to “Instrument Cluster” in this section.
3. Remove the instrument cluster lens and the face plate.
 - a. Window plate.
4. Remove the fuel gauge/temperature gauge from the cluster assembly.
 - Remove the screws on the circuit plate (1).
 - Remove the fuel gauge (2).
 - Remove the temperature gauge (3).





Installation Procedure

1. Install the fuel gauge/temperature gauge to the cluster assembly with the screws.
2. Install the instrument cluster lens and the face plate.
3. Install the instrument cluster. Refer to "Instrument Cluster" in this section.
4. Connect the negative battery cable.

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

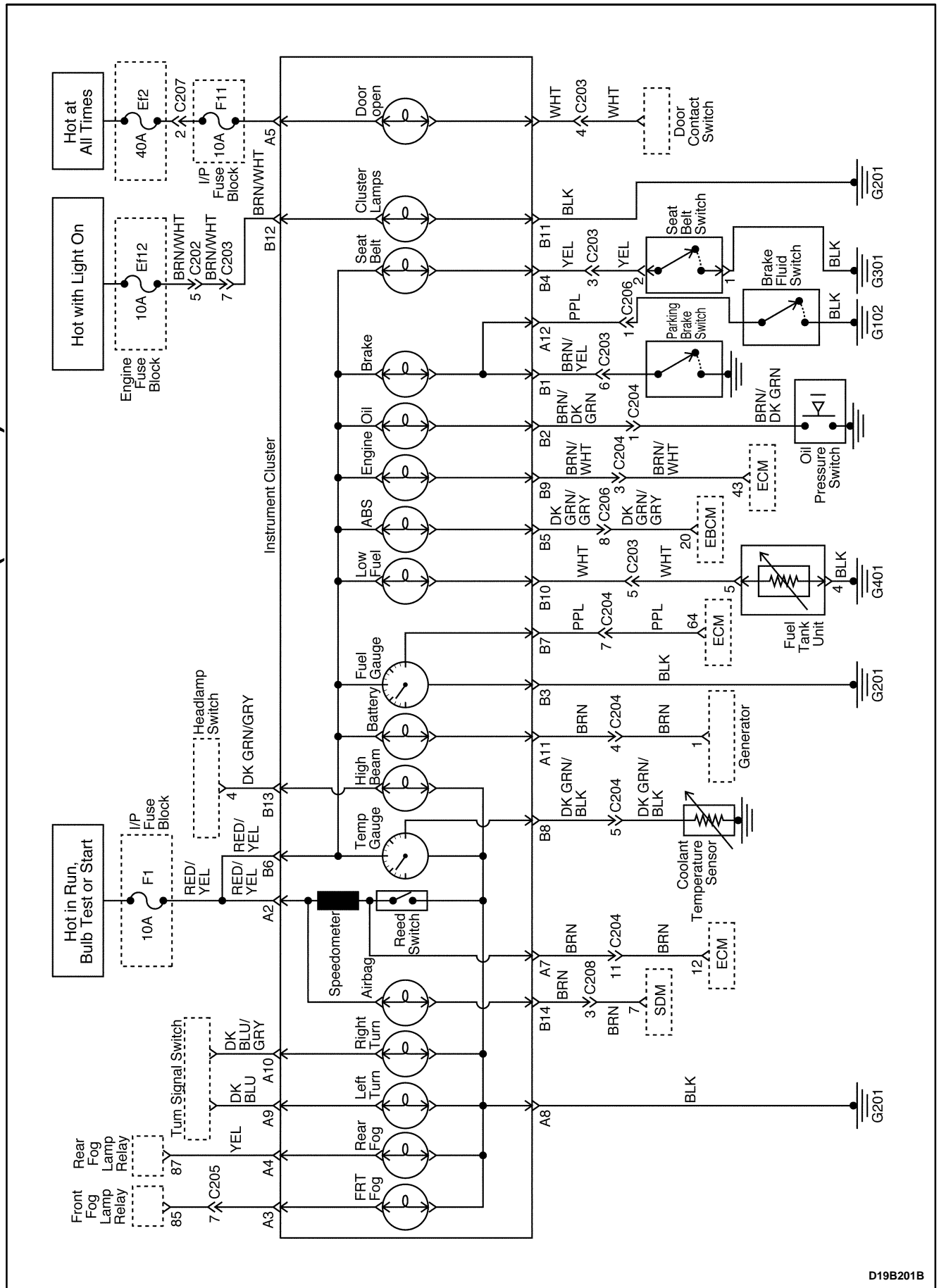
Application	N•m	Lb-Ft	Lb-In
Passenger's Airbag Module Blank Cover Screw	1.5–2	–	13–18

INSTRUMENT CLUSTER INDICATOR LAMPS SPECIFICATIONS

Indicator Lamp	Color	Bulb
ABS Warning	Amber	14 v 1.4 W
Airbag Warning	Red	14 v 1.4 W
Battery Charge Indicator	Red	14 v 1.4 W
Fasten Seat Belt Warning	Red	14 v 1.4 W
High Beam Indicator	Blue	14 v 1.4 W
Low Fuel Level Warning	Amber	12 v 3 W
Oil Pressure Warning	Red	14 v 1.4 W
Parking Brake Indicator and Brake Fluid Warning	Red	14 v 1.4 W
Service Engine Soon Warning	Amber	14 v 1.4 W
Turn Signal Indicators	Green	14 v 1.4 W
Instrument Cluster Illumination	Blue	12 v 3 W
Rear Fog Lamp Indicator	Amber	14 v 1.4 W

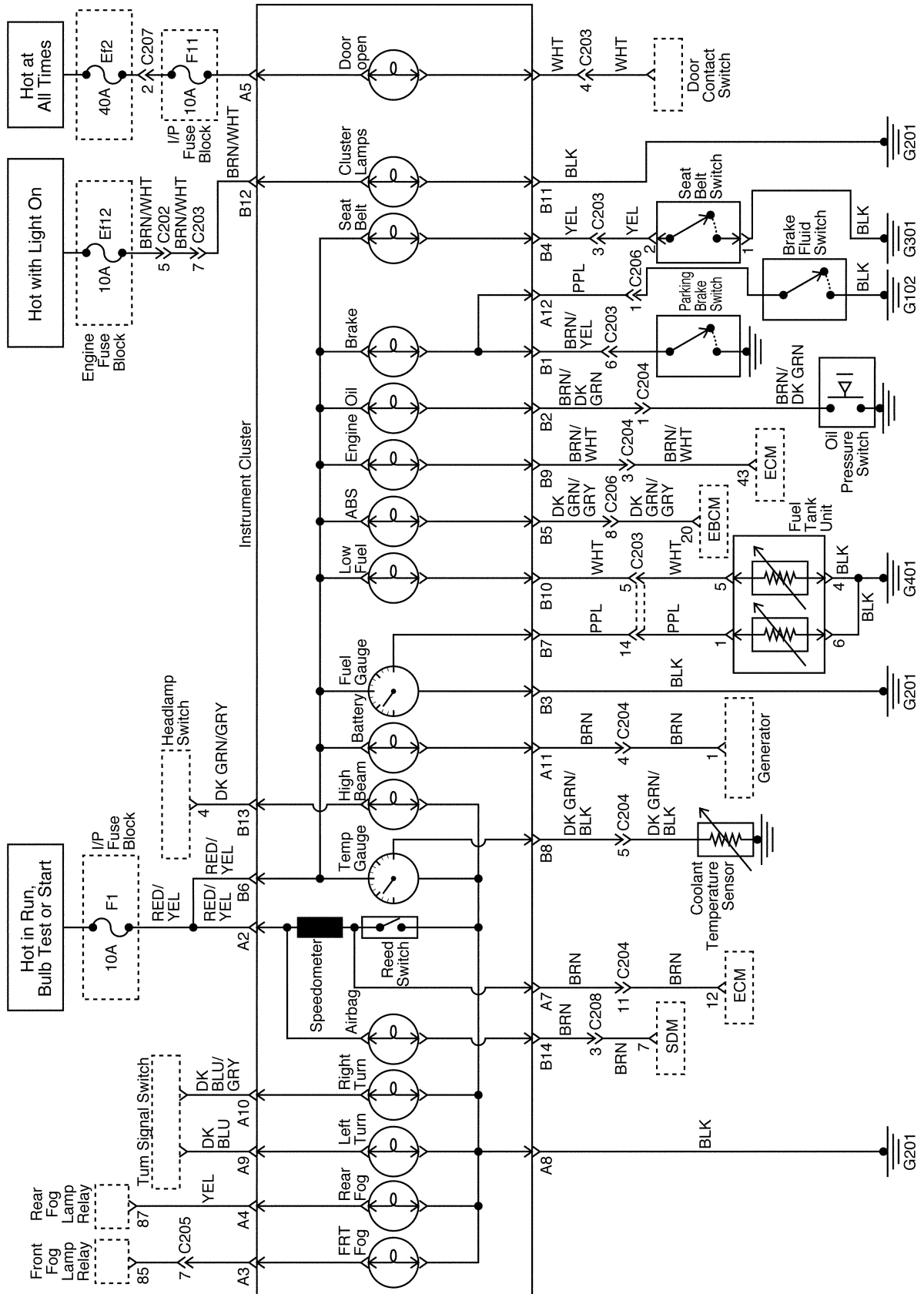
SCHEMATIC AND ROUTING DIAGRAMS

INSTRUMENT CLUSTER (SIRIUS D3)

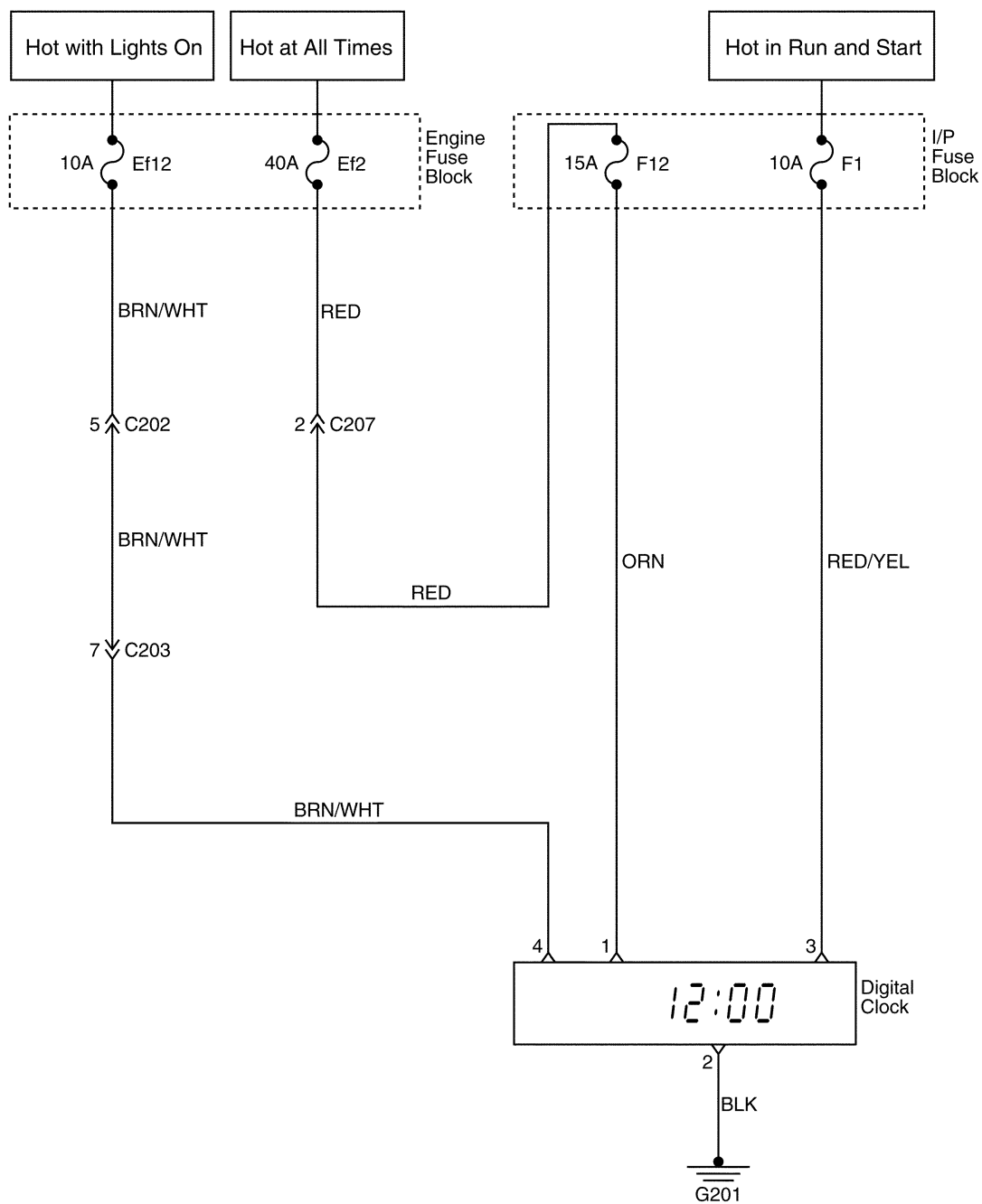


D19B201B

INSTRUMENT CLUSTER (FENIX 5MR)



D19B201S

DIGITAL CLOCK

SECTION 9F

AUDIO SYSTEMS

CAUTION: Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.

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DESCRIPTION AND OPERATION

STEREO CASSETTE AM/FM RADIO WITH CD CHANGER AND RDS/AUDIO SECURITY SYSTEM

The stereo digital logic cassette AM/FM radio with electronic tape ejection and the stereo digital logic cassette AM/FM radio with a CD changer located under the front seat (LH) are optional equipment.

The radio data system (RDS) uses a single button to select a specific radio station once it is set to the listener's preference.

The audio security system is activated whenever the audio system circuit is disconnected from the battery. A four-digit security code must be entered in order for the audio system to be functional once again. The security code is stamped on a card located in the vehicle (usually in the glove box). One of the following security code entering procedures can be followed.

With RDS

1. With the ignition switch in the I or II position, turn the radio ON. At this time, "CODE" will be shown on the radio display.
2. Press the P-UP button until the correct first digit is shown on the display.
3. Press the P-DN button to move over to the second digit and then press P-UP once again to enter the correct second digit.
4. Use steps two and three to enter the third and fourth digits using the same method.
5. After entering the correct four-digit security code, press the TP button. "CODE OK" will briefly appear on the radio display, and the system is ready for use.

Wrong Code

If the wrong code is entered, "ERROR 1" will appear on the display. After this, "CODE" will appear once again, and the correct security code can be entered. The time

between each new coding attempt is doubled; a total of ten coding attempts can be made.

FRONT AND REAR SPEAKERS

All audio systems use four speakers: two speakers mounted in the front doors and two speakers mounted in the rear parcel side shelf.

ROOF ANTENNA

Roof antenna is located on the roof and is designed to separate the antenna pole from the antenna base. The antenna pole should be removed to prevent the painting damage before washing the vehicle. The roof antenna cannot be adjusted.

TAPE PLAYER AND CASSETTE CARE

The head and the capstan are the two parts of the tape player that should be cleaned. This service should be performed every 100 hours of cassette operation.

In order to clean the head and the capstan, use a cotton swab dipped in rubbing alcohol.

A cassette cleaning kit may also be used to clean the head and the capstan. Follow the cleaning kit instructions to clean the tape player.

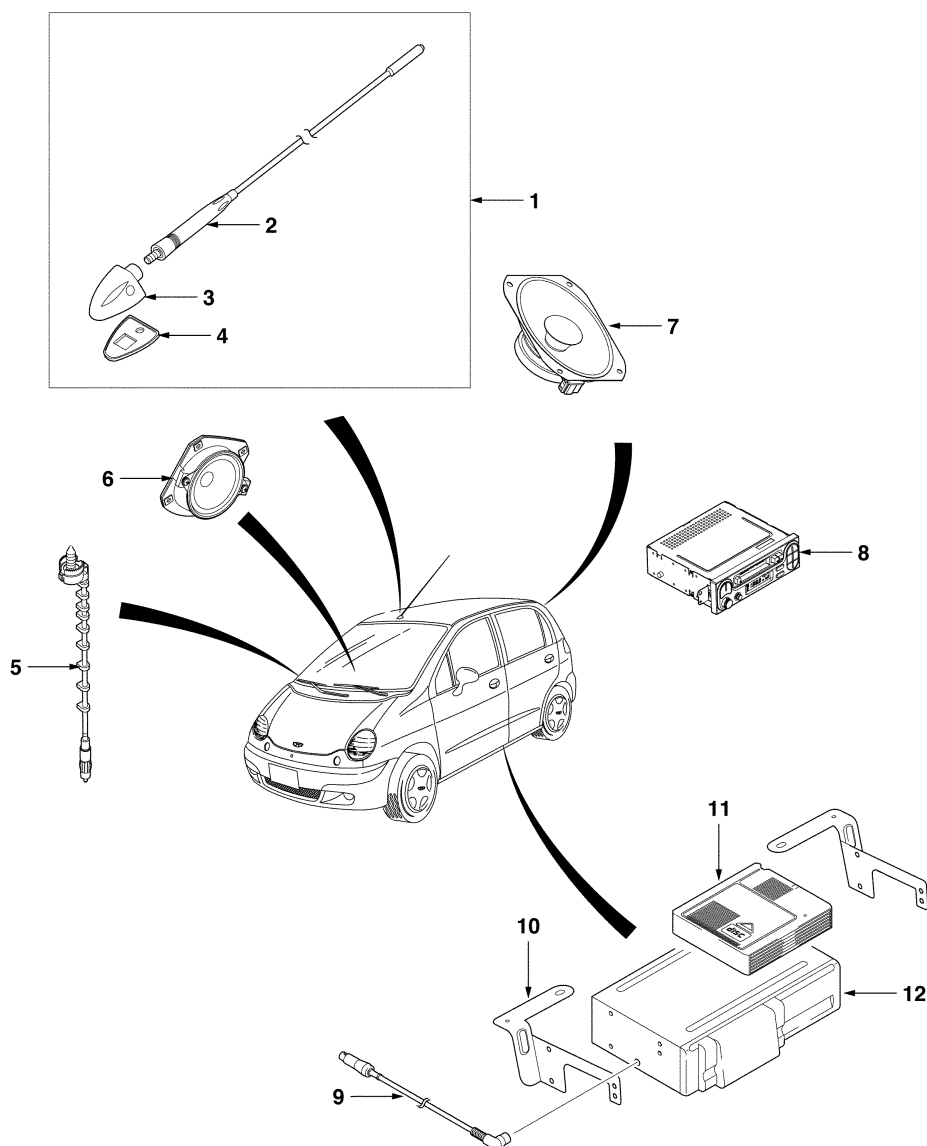
Do not touch the tape head with magnetized tools. If the head becomes magnetized, it will degrade cassettes played in the player. No service is performed on the cassettes. The cassette manufacturer handles warranties of the cassettes. Store cassettes away from extreme heat and direct sunlight.

COMPACT DISC CARE

Handle discs carefully. Store the discs in protective cases away from the sun, heat, and dust. If the surface is soiled, dampen a clean, soft cloth in a solution of mild neutral detergent and wipe the disc clean. Mini discs (about 3 inches in diameter), will not eject and should not be used.

COMPONENT LOCATOR

AUDIO SYSTEMS



D19D401B

1. Roof Antenna Assembly
2. Roof Antenna Pole
3. Roof Antenna Base
4. Roof Antenna Frame
5. Roof Antenna Cable
6. Front Speaker

7. Rear Speaker
8. Audio
9. CD Changer Cable
10. CD Changer Bracket
11. CD Changer Magazine
12. CD Changer

DIAGNOSTIC INFORMATION AND PROCEDURES

AUDIO SYSTEM

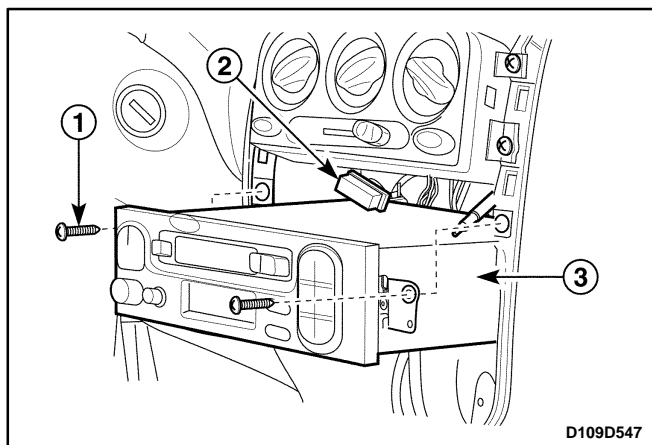
Condition	Probable Cause	Correction
Audio System Inoperative	<ul style="list-style-type: none"> The power supply circuit to the fuse Ef2 is open circuit or short circuit. 	<ul style="list-style-type: none"> Repair or Replace the power supply wiring harness.
	<ul style="list-style-type: none"> The fuse Ef2 is blown. 	<ul style="list-style-type: none"> Replace the fuse.
	<ul style="list-style-type: none"> The circuit between the fuse Ef2 and the fuse F11 is open or short. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> The fuse F6 or the fuse F11 is blown. 	<ul style="list-style-type: none"> Replace the fuse.
	<ul style="list-style-type: none"> The audio system circuit to the fuse F6 or the fuse F11 is open circuit or short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> Poor ground G201. 	<ul style="list-style-type: none"> Replace or Replace the wiring harness.
	<ul style="list-style-type: none"> Audio system is out of order. 	<ul style="list-style-type: none"> Replace the audio system.
Cassette Player Inoperative, AM/FM Functions OK	<ul style="list-style-type: none"> Bad-quality tape. 	<ul style="list-style-type: none"> Do not use a bad-quality tape.
	<ul style="list-style-type: none"> The cassette player destroy a good-quality tape. 	<ul style="list-style-type: none"> Clean the cassette player head, the capstan, and the drive system.
	<ul style="list-style-type: none"> Obstructions behind the tape door. 	<ul style="list-style-type: none"> Remove the obstruction using gentle force.
	<ul style="list-style-type: none"> Cassette player is out of order. 	<ul style="list-style-type: none"> Replace the audio system.
FM Does Not Work, AM and Cassette OK	<ul style="list-style-type: none"> Audio system is out of order. 	<ul style="list-style-type: none"> Replace the audio system.
AM Radio Does Not Work, FM and Cassette OK	<ul style="list-style-type: none"> AM radio reception is poor (Using a test antenna, test the AM radio reception). 	<ul style="list-style-type: none"> Replace the audio system.
	<ul style="list-style-type: none"> AM radio reception is good (Using a test antenna, test the AM radio reception). 	<ul style="list-style-type: none"> Replace the antenna cable between the audio system and the antenna.
Front Speakers Distorted or Inoperative	<ul style="list-style-type: none"> Damage, rattles, or vibration of the speaker and the door area. 	<ul style="list-style-type: none"> Make the necessary repairs to secure the component causing the distortion.
	<ul style="list-style-type: none"> The circuit between the front speaker connector and the radio connector is open circuit or short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.
	<ul style="list-style-type: none"> The connection of the front speaker connector and the audio connector is poor. 	<ul style="list-style-type: none"> Confirm the connection.
	<ul style="list-style-type: none"> Front speaker is out of order. 	<ul style="list-style-type: none"> Replace the front speaker.
	<ul style="list-style-type: none"> Audio system is out of order. 	<ul style="list-style-type: none"> Replace the audio system.
Rear Speakers Distorted or Inoperative	<ul style="list-style-type: none"> Damage, rattles, or vibration of the rear speaker and the rear parael side shelf. 	<ul style="list-style-type: none"> Make the necessary repairs to secure the component causing the distortion.
	<ul style="list-style-type: none"> The circuit between the rear speaker connector and the radio connector is open circuit or short circuit. 	<ul style="list-style-type: none"> Repair or Replace the wiring harness.

AUDIO SYSTEM (Cont'd)

Condition	Probable Cause	Correction
Rear Speakers Distorted or Inoperative	• The connection of the rear speaker connector and the audio connector is poor.	• Confirm the connection.
	• Rear speaker is out of order.	• Replace the rear speaker.
	• Audio system is out of order.	• Replace the audio system.

REPAIR INSTRUCTIONS

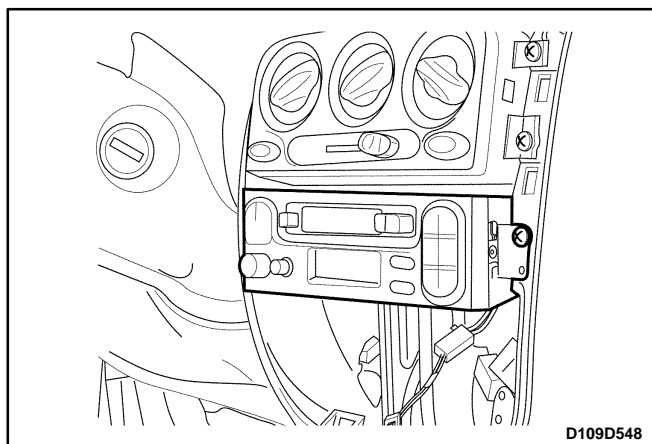
ON-VEHICLE SERVICE



AUDIO SYSTEM

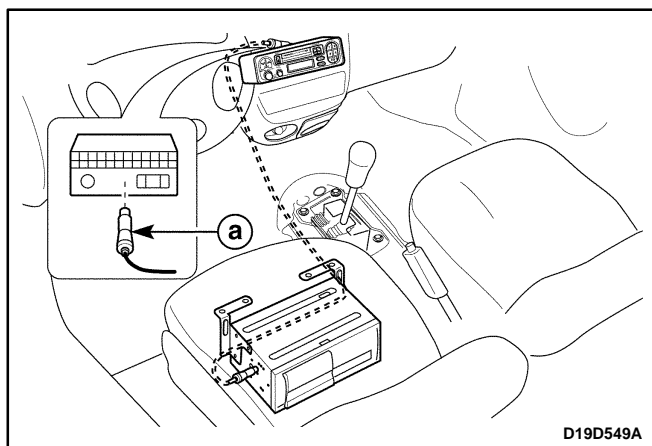
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the instrument cluster trim panel from the instrument panel. Refer to *Section 9E, Instrument/Driver Information*.
3. Remove the audio system from the instrument panel.
 - Remove the screws (1).
 - Disconnect the electrical connector and the antenna cable (2).
 - Remove the audio system (3).



Installation Procedure

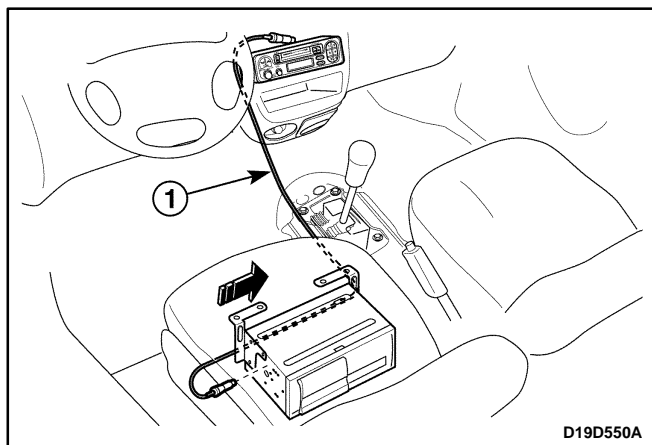
1. Connect the electrical connector and the antenna cable.
2. Install the audio system with the screws.
3. Install the instrument cluster trim panel. Refer to *Section 9E, Instrument/Driver Information*.
4. Connect the negative battery cable.



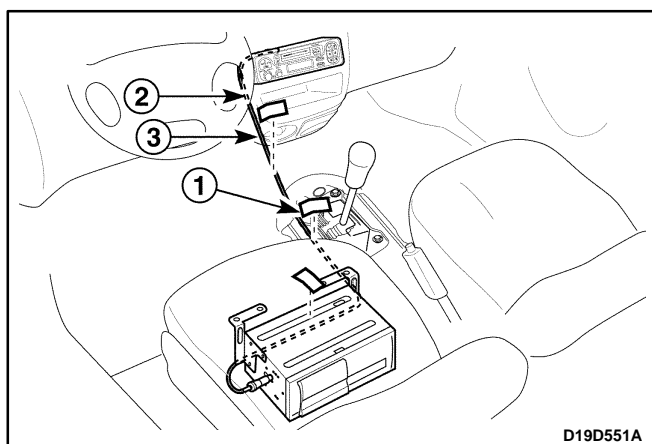
CD CHANGER

Removal Procedure

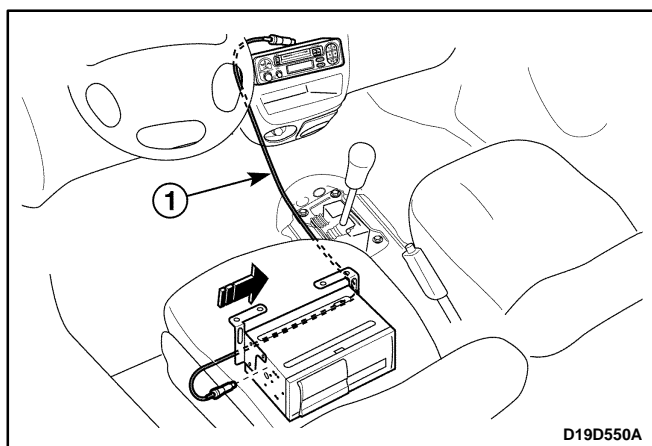
1. Disconnect the negative battery cable.
2. Remove the audio system from the instrument panel. Refer to "Audio System" in this section.
3. Remove the floor console. Refer to *Section 9G, Interior Trim*.
4. Disconnect the CD changer electrical connector from the audio system.
 - a. CD changer electrical connector.



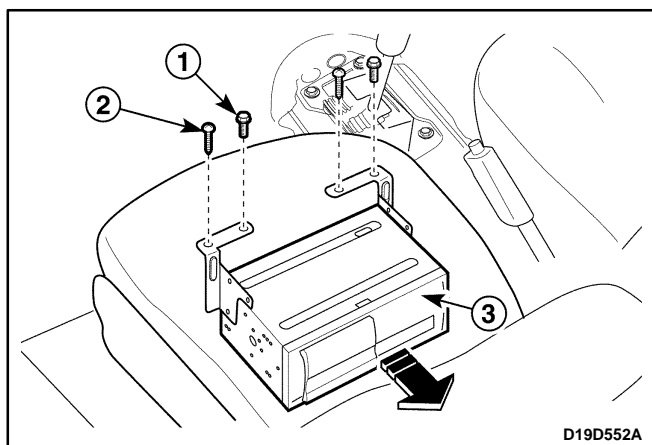
5. Disconnect the CD changer electrical connector from the CD changer (1).



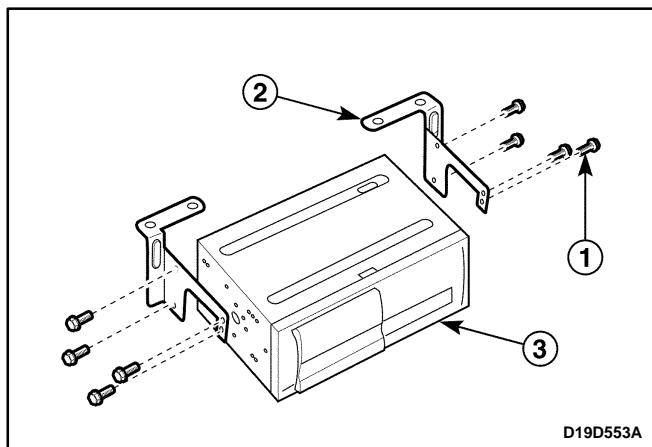
6. Remove the sponge pads and the clip.
- Remove the sponge pads retaining the CD changer cable (1).
 - Remove the clip retaining tie-bar (2).
 - Remove the clip retaining instrument panel wiring harness (3).



7. Remove the CD changer cable.
- Remove the CD changer cable (1).

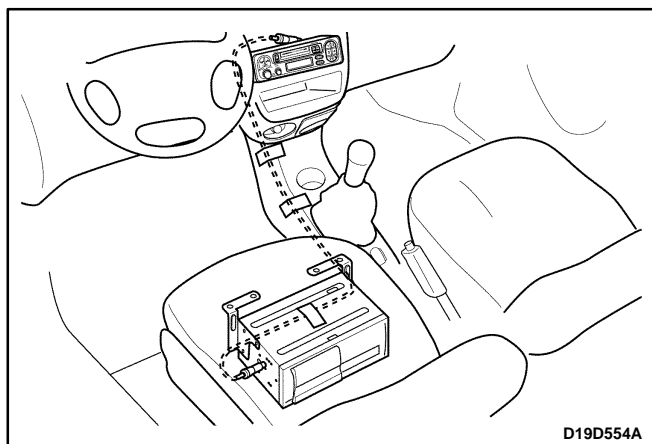


8. Remove the CD changer assembly.
- Remove the CD changer bracket mounting bolts (1).
 - Remove the CD changer bracket mounting screws (2).
 - Remove the CD changer assembly (3).



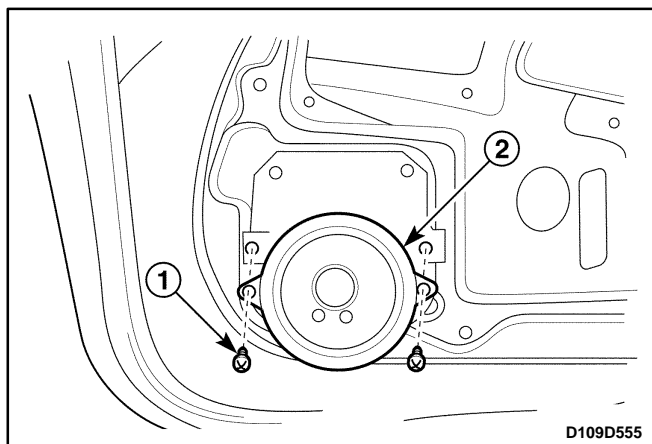
9. Separate the CD changer and the CD changer bracket.

- Remove the bolts from the CD changer bracket (1).
- Remove the CD changer bracket (2).
- Remove the CD changer (3).



Installation Procedure

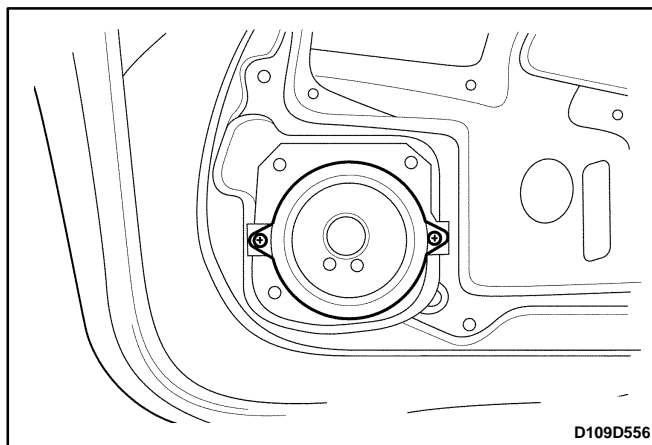
1. Install the CD changer bracket to the CD changer with the bolts.
2. Mount the CD changer assembly under the Driver's seat with the bolts and the screws.
3. Arrange the CD changer cable with the sponge pads and the clip.
4. Connect the CD changer electrical connectors.
5. Install the floor console. Refer to *Section 9G, Interior Trim*.
6. Install the Audio System to the instrument panel. Refer to "Audio System" in this section.
7. Connect the negative battery cable.



FRONT SPEAKERS

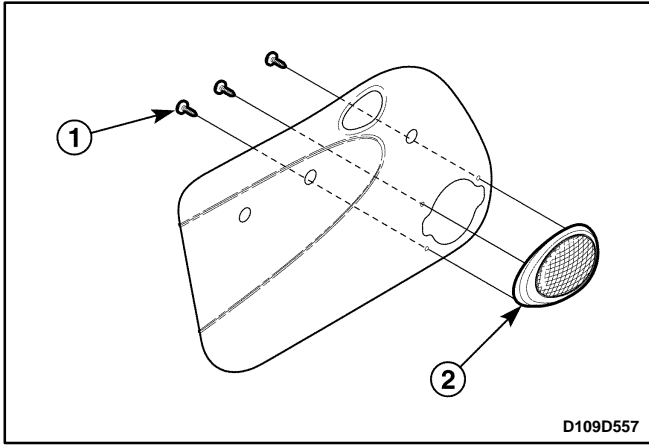
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the door seal trim. Refer to *Section 9P, Doors*.
3. Remove the speaker.
 - Remove the screws (1).
 - Disconnect the electrical connector.
 - Remove the speaker (2).



Installation Procedure

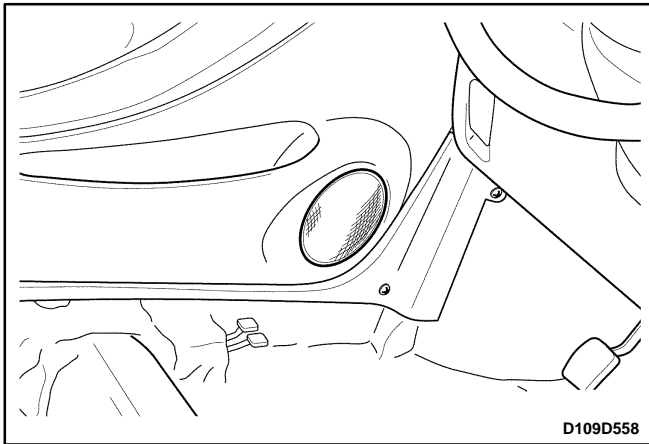
1. Connect the electrical connector.
2. Install the speaker with the screws.
3. Install the door seal trim. Refer to *Section 9P, Doors*.
4. Connect the negative battery cable.



FRONT SPEAKER COVERS

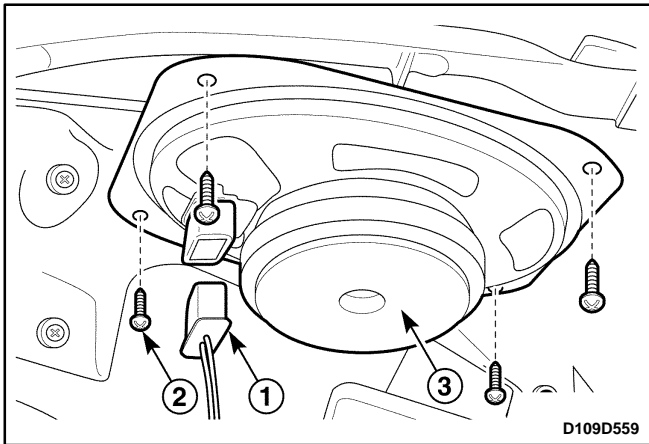
Removal Procedure

1. Remove the door trim panel. Refer to *Section 9G, Interior Trim*.
2. Remove the speaker cover from the door trim panel.
 - Remove the screws (1).
 - Remove the speaker cover (2).



Installation Procedure

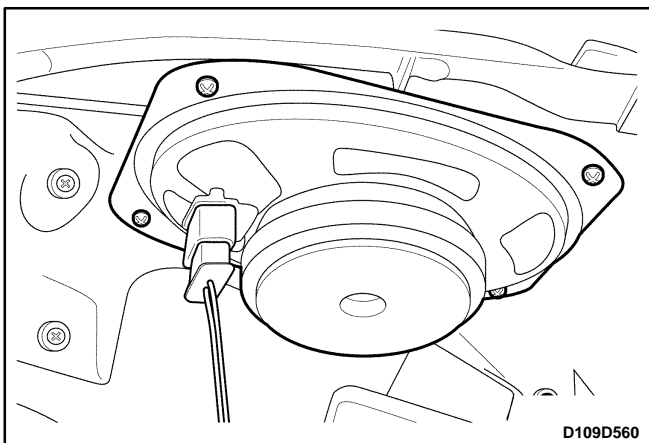
1. Install the speaker cover to the door trim panel with the screws.
2. Install the door trim panel. Refer to *Section 9G, Interior Trim*.



REAR SPEAKERS

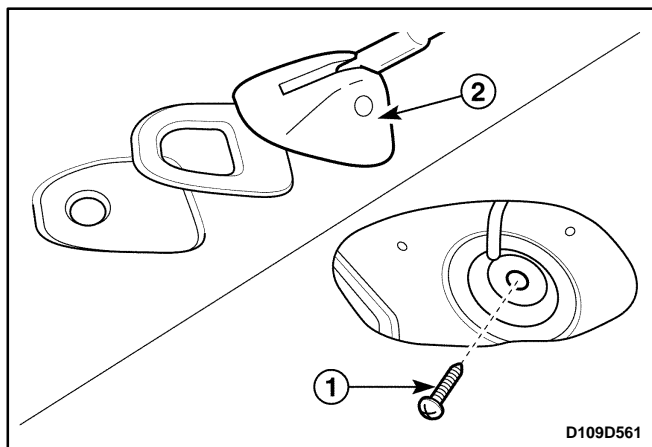
Removal Procedure

1. Disconnect the negative battery cable.
2. Open the tailgate.
3. Remove the rear speaker from the rear parcel side shelf.
 - Disconnect the electrical connector (1).
 - Remove the screws (2).
 - Remove the rear speaker (3).



Installation Procedure

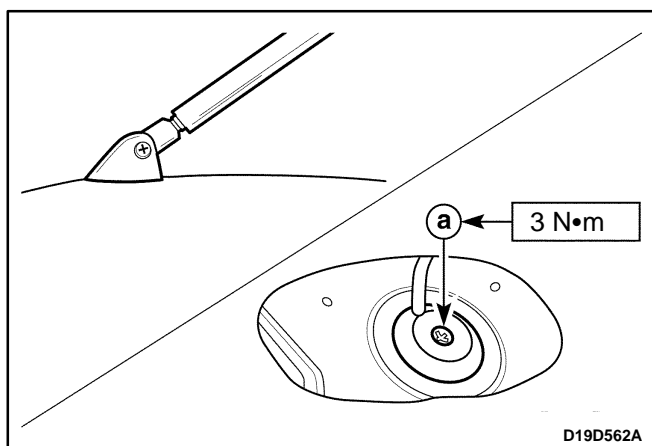
1. Install the rear speaker to the rear parcel side shelf with the screws.
2. Connect the electrical connector.
3. Connect the negative battery cable.



ROOF ANTENNA

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the interior courtesy lamp. Refer to *Section 9B, Lighting Systems*.
3. Remove the roof antenna.
 - Remove the screw from the vehicle inside (1).
 - Remove the roof antenna (2).



Installation Procedure

1. Install the roof antenna with the screw.

Tighten

Tighten the roof antenna retaining screw to 3 N•m (27 lb-in).

- a. Roof antenna retaining screw.
2. Install the interior courtesy lamp. Refer to *Section 9B, Lighting Systems*.
3. Connect the negative battery cable.

SPECIFICATIONS

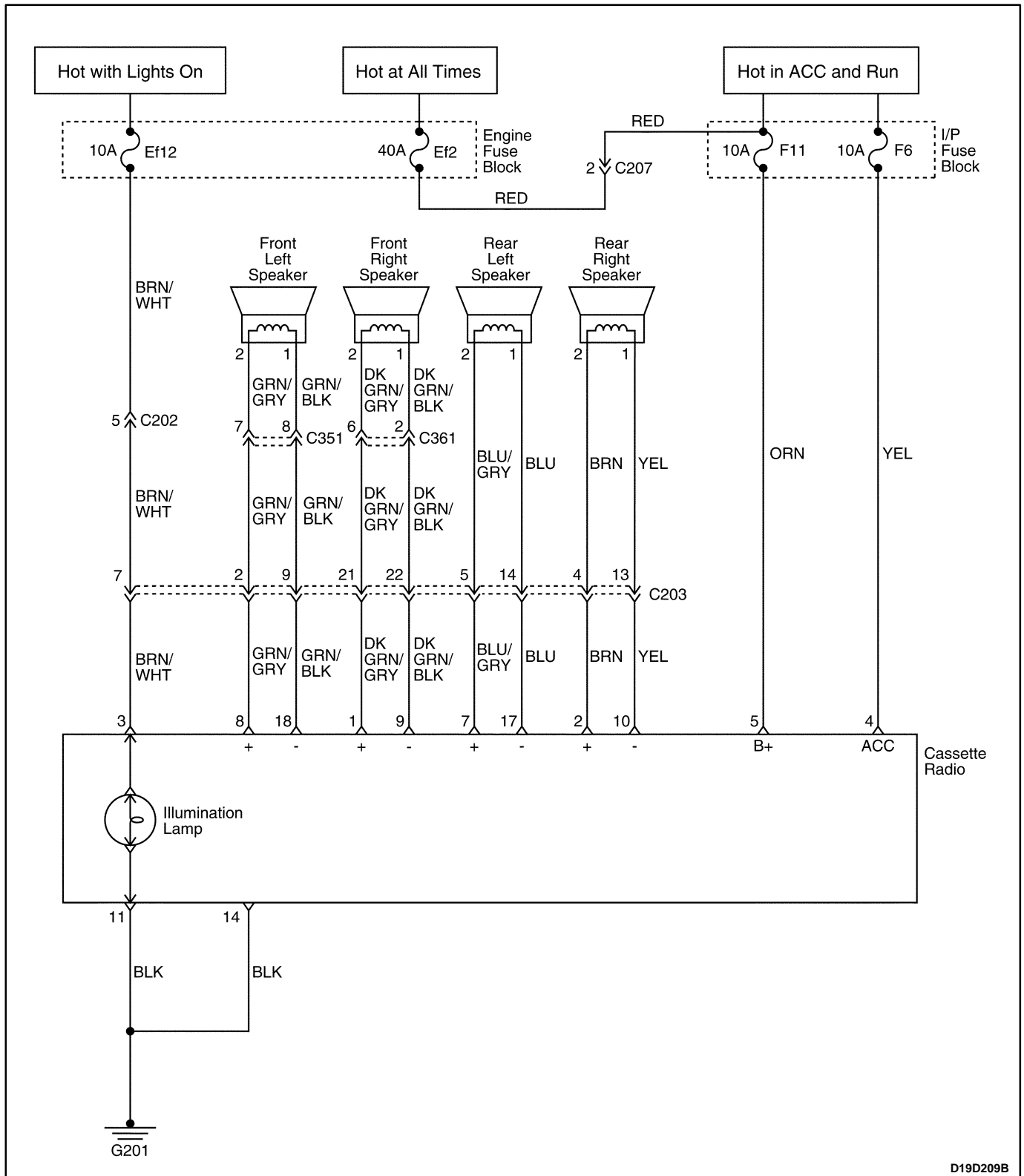
FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Roof Antenna Retaining Screw	3	–	27

SCHEMATIC AND ROUTING DIAGRAMS

AUDIO SYSTEM CIRCUIT

(Left-Hand Drive Shown, Right-Hand Drive Similar)



D19D209B

SECTION 9G

INTERIOR TRIM

CAUTION: *Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.*

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DESCRIPTION AND OPERATION

INTERIOR TRIM PANELS

The interior trim panels are molded plastic and fasten with screws or plastic clips.

PRESSURE RELIEF VENT

When all the windows are closed and the ventilation system is on, the addition of outside air to the interior of the vehicle causes a positive pressure within the vehicle. In order to relieve the pressure, air is released through one pressure relief vents. The pressure relief vent is located in the luggage compartment, behind the spare wheel.

FLOOR CONSOLE

The floor console fits over the tunnel in the floor of the vehicle and extends from under the center of the instrument panel to the front seat area. The floor console contains the transaxle shift lever and a cupholder.

The sensing and diagnosis module (SDM) for the airbag system is located under the floor console.

PARKING BRAKE CABLE COVER

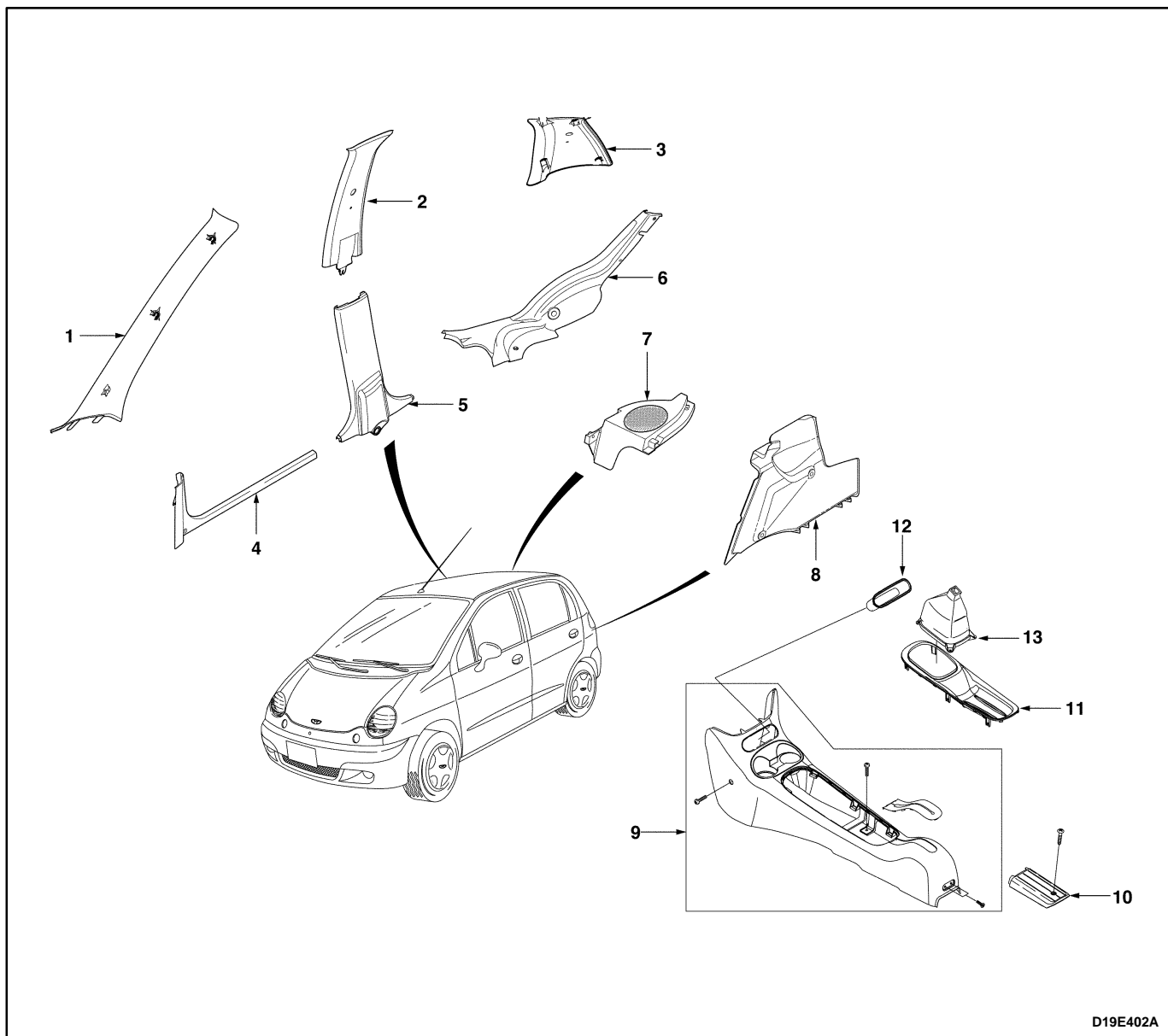
The parking brake cable cover should be removed to adjust the free play of the parking brake cable.

FLOOR CARPET

The molded one-piece floor carpet goes over both the front and the rear floor pans.

COMPONENT LOCATOR

INTERIOR TRIM

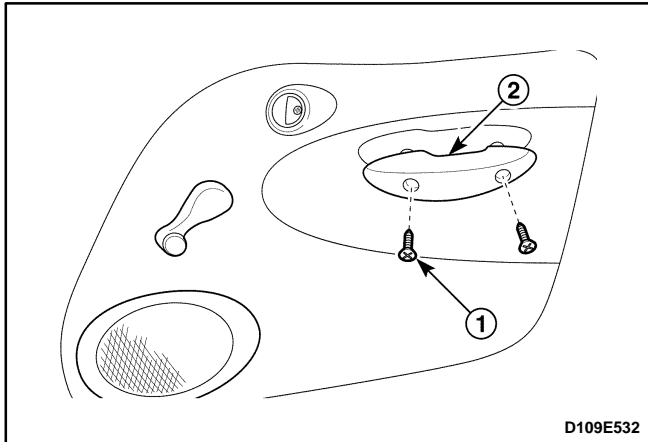


1. A-Pillar Trim Panel
2. B-Pillar Upper Trim Panel
3. C-Pillar Trim Panel
4. Front Rocker Trim Panel
5. B-Pillar Lower Trim Panel
6. Rear Rocker Trim Panel
7. Rear Parcel Side Shelf

8. Wheel House Trim Panel
9. Floor Console
10. Parking Brake Cable Cover
11. Console Cover Assembly
12. Deposit Box
13. Console Boot Assembly

REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE



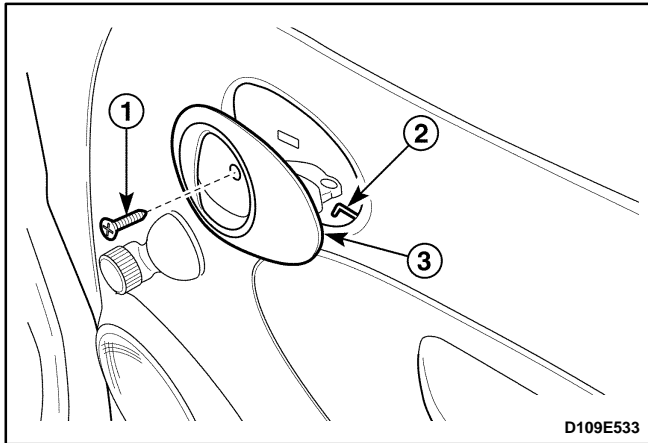
FRONT DOOR TRIM PANEL (STANDARD)

Tool Required

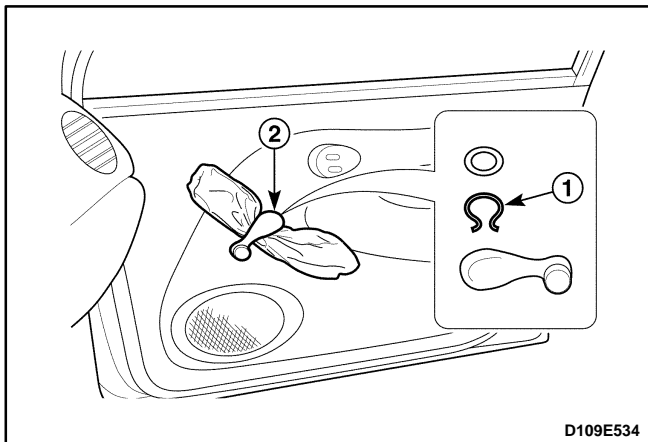
KM 475-B Trim Remover.

Removal Procedure

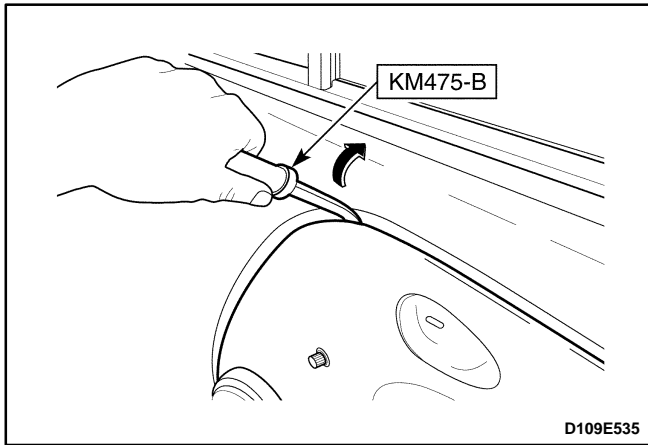
1. Remove the door pull from the front door.
 - Remove the screws (1).
 - Remove the door pull (2).



2. Remove the inside door handle.
 - Remove the screw (1).
 - Disconnect the inside door handle rod (2).
 - Pry off the inside door handle (3).

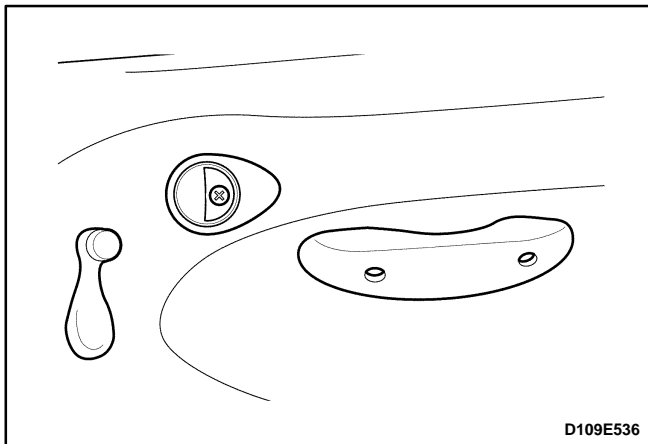


3. Remove the window regulator handle from the front door.
 - Using a cloth, pull out the clip (1).
 - Remove the regulator handle (2).



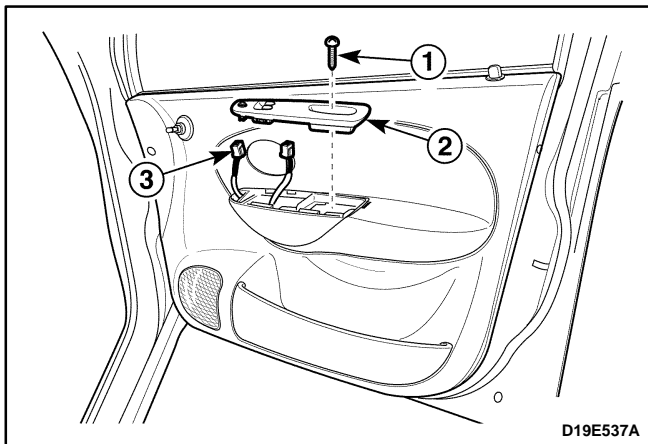
4. Pry off the trim panel using a trim remover KM 475-B.

Notice: Make sure to cover the remover with cloth to prevent the paint damage of the door.



Installation Procedure

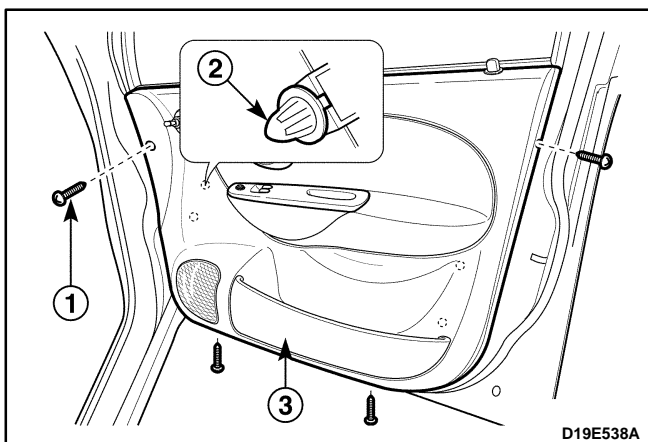
1. Install the trim panel.
2. Install the window regulator handle with the clip.
3. Install the inside door handle and the door pull with the screws.

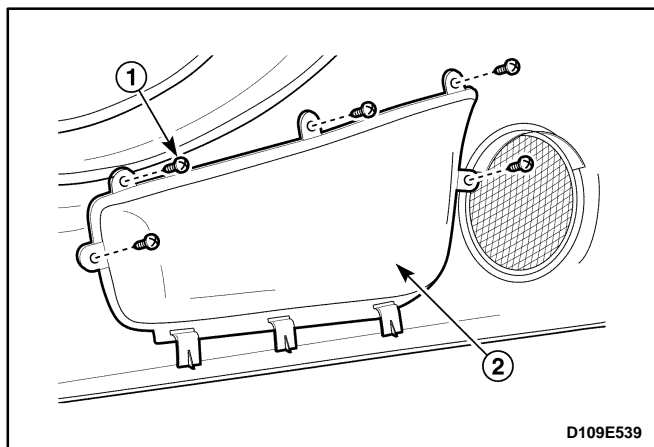


FRONT DOOR TRIM PANEL (DELUXE)

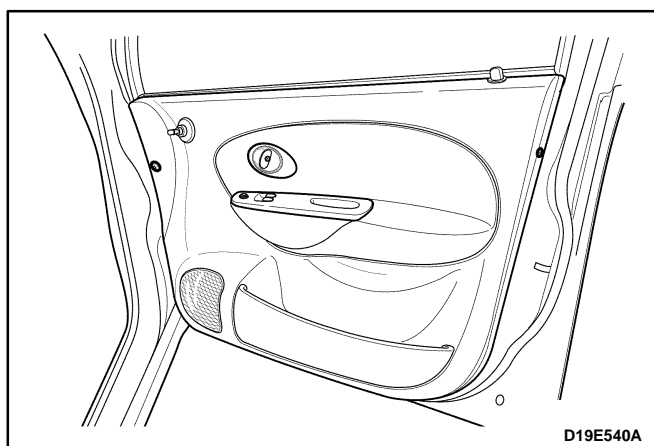
Removal Procedure

1. Remove the inside door handle. Refer to *Section 9P, Doors*.
2. Remove the power window/mirror control switch assembly from the front door.
 - Remove the screws (1).
 - Remove the power window/mirror control switch assembly (2).
 - Disconnect the electrical connectors (3).
3. Remove the trim panel.
 - Remove the screws (1).
 - Remove the clips (2).
 - Remove the trim panel (3).



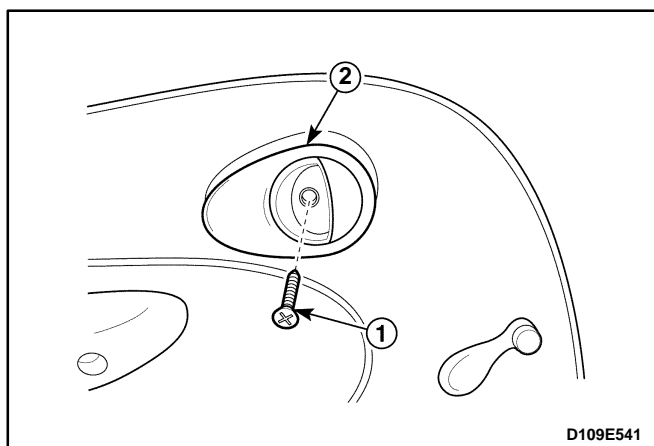


4. Remove the inside channel weatherstrip. Refer to *Section 9P, Doors*.
5. Remove the map pocket from the door trim.
 - Remove the screws (1).
 - Remove the map pocket (2).



Installation Procedure

1. Install the map pocket to the door trim with the screws.
2. Install the inside channel weatherstrip. Refer to *Section 9P, Doors*.
3. Install the door trim panel with the screws and the clips.
4. Install the power window/mirror control switch assembly with the screw.
5. Install the inside door handle. Refer to *Section 9P, Doors*.



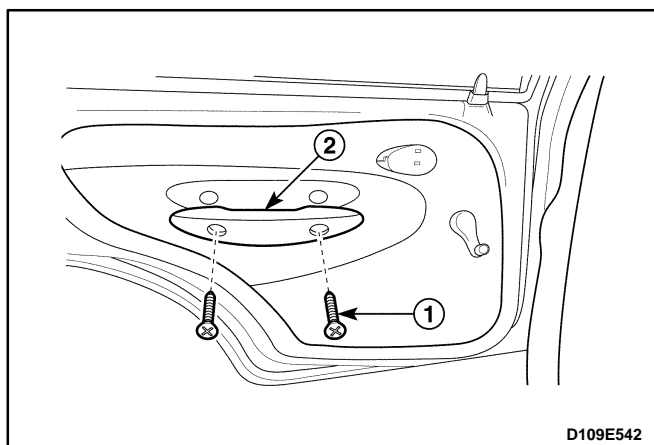
REAR DOOR TRIM PANEL (STANDARD)

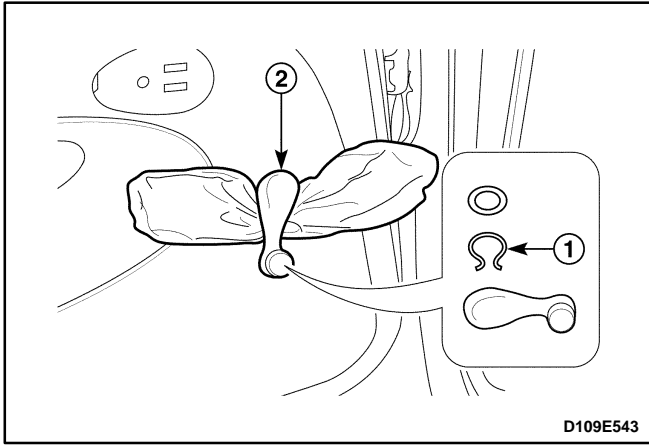
Tool Required

KM 475-B Trim Remover.

Removal Procedure

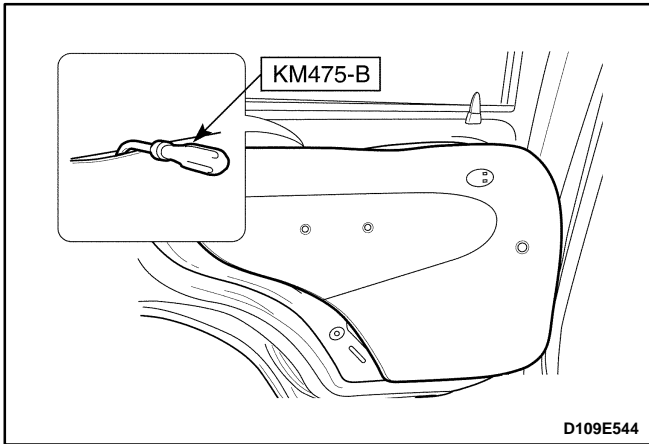
1. Remove the inside door handle.
 - Remove the screw (1).
 - Disconnect the inside door handle rod.
 - Pry off the inside door handle (2).
2. Remove the door pull.
 - Remove the screws (1).
 - Remove the door pull (2).





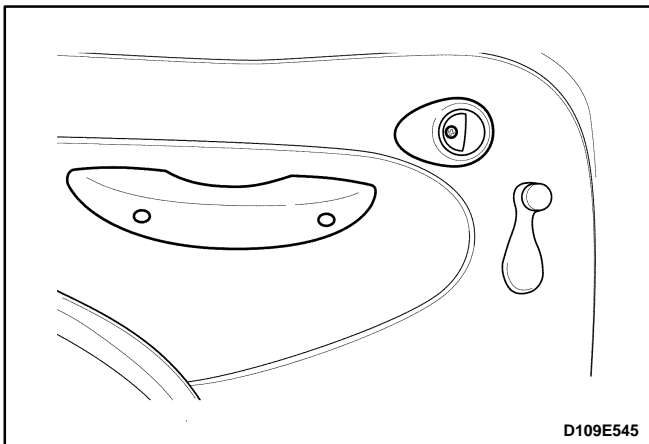
3. Remove the window regulator handle from the rear door.

- Using a cloth, pull out the clip (1).
- Remove the regulator handle (2).



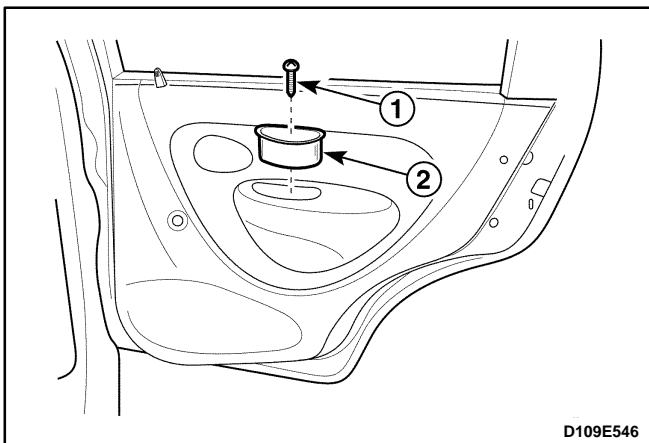
4. Pry off the trim panel using a trim remover KM 475-B.

Notice: Make sure to cover the remover with cloth to prevent the paint damage of the door.



Installation Procedure

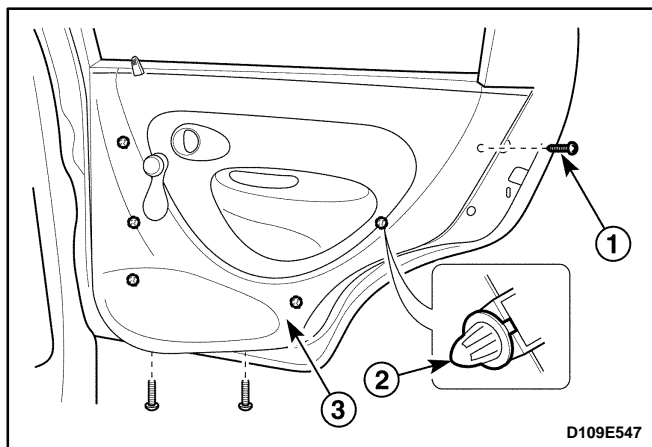
1. Install the trim panel.
2. Install the window regulator handle with the clip.
3. Install the inside door handle and the door pull with the screws.



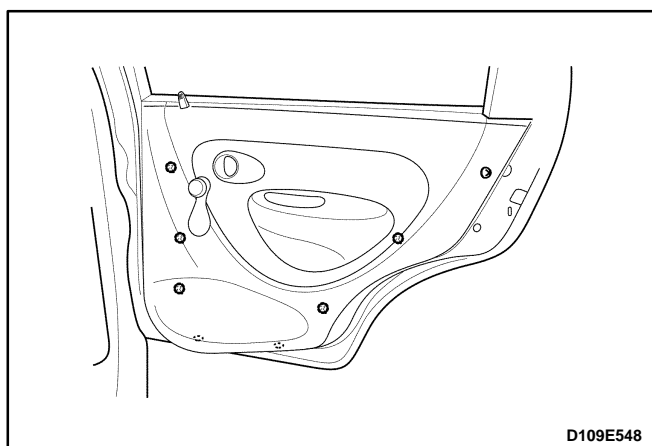
REAR DOOR TRIM PANEL (DELUXE)

Removal Procedure

1. Remove the inside door handle. Refer to *Section 9P, Doors*.
2. Remove the window regulator handle from the rear door. Refer to *Section 9P, Doors*.
3. Remove the door pull.
 - Remove the screw (1).
 - Remove the door pull (2).

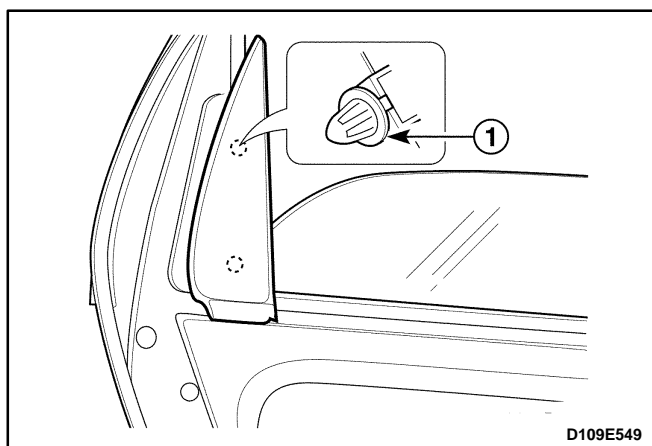


4. Remove the trim panel.
 - Remove the screws (1).
 - Remove the clips (2).
 - Remove the trim panel (3).
5. Remove the inside channel weatherstrip. Refer to *Section 9P, Doors*.



Installation Procedure

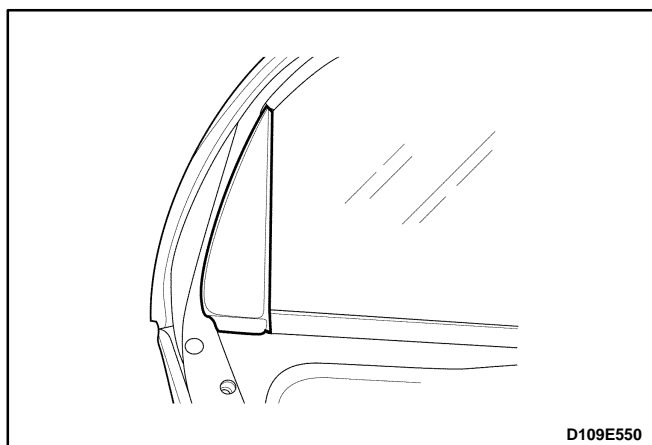
1. Install the inside channel weatherstrip. Refer to *Section 9P, Doors*.
2. Install the trim panel with the screws and the clips.
3. Install the door pull with the screw.
4. Install the window regulator handle. Refer to *Section 9P, Doors*.
5. Install the inside door handle. Refer to *Section 9P, Doors*.



REAR DOOR INTERIOR GARNISH MOLDING

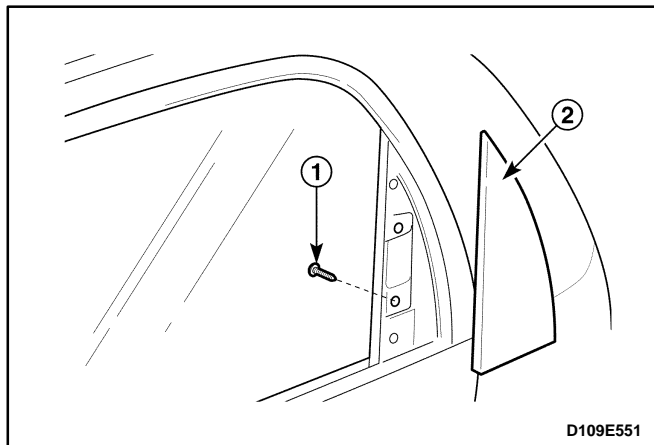
Removal Procedure

1. Pry off interior garnish molding.
 - Pry off the garnish molding caps (1).



Installation Procedure

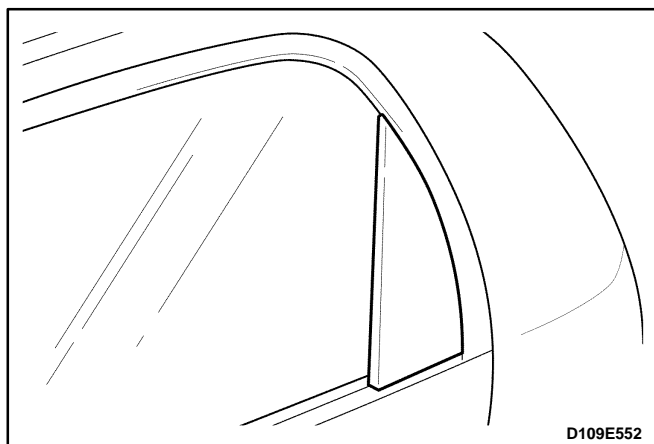
1. Install the interior garnish molding.



REAR DOOR EXTERIOR GARNISH MOLDING

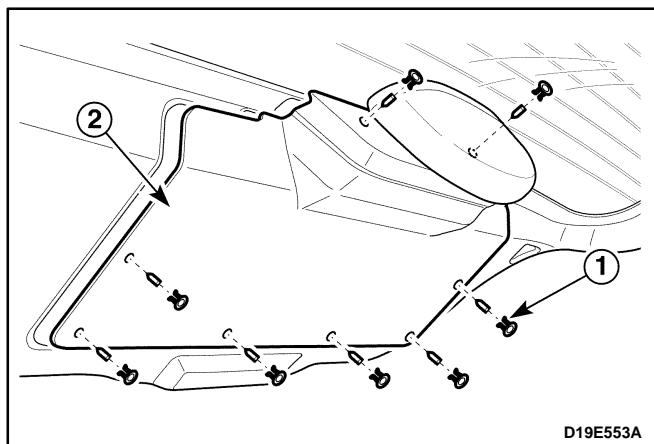
Removal Procedure

1. Pry off the interior garnish molding. Refer to "Rear Door Interior Garnish Molding" in this section.
2. Pry off the exterior garnish molding.
 - Remove the screw (1).
 - Pry off exterior garnish molding (2).



Installation Procedure

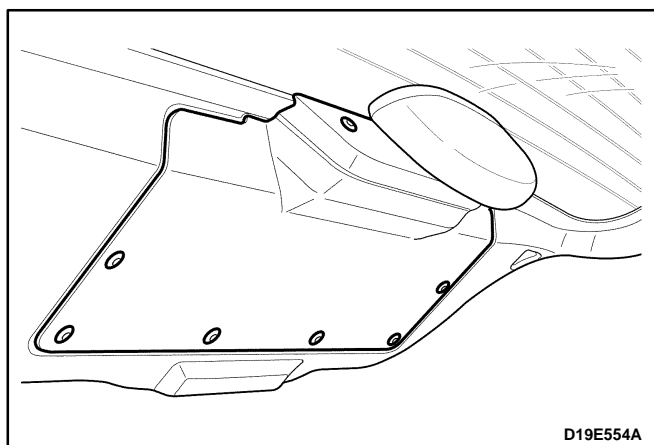
1. Install the exterior garnish molding with the screw.
2. Install the interior garnish molding. Refer to "Rear Door Interior Garnish Molding" in this section.



TAILGATE TRIM PANEL

Removal Procedure

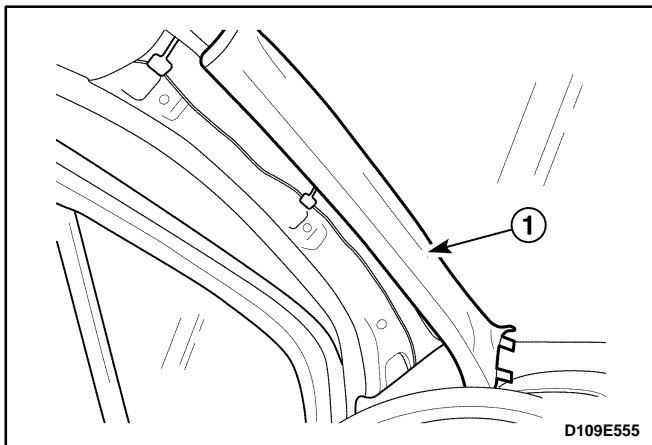
1. Open the tailgate.
2. Remove the trim from the tailgate.
 - Remove the clips by pushing the center of the clip (1).
 - Remove the trim (2).



Installation Procedure

1. Install the trim to the tailgate.

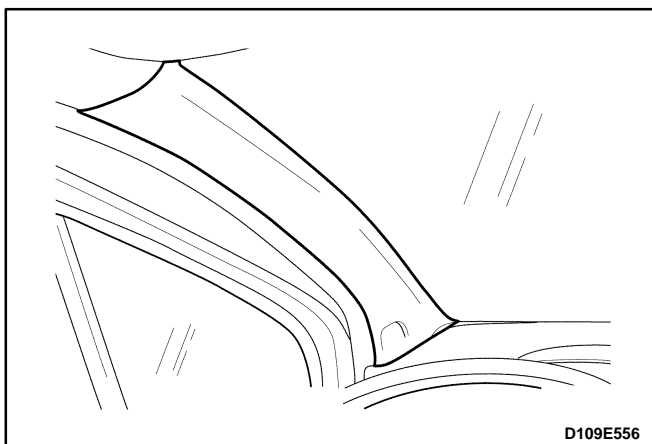
Notice: In case of the loose clips, replace the clips with the new ones.



A-PILLAR TRIM PANEL

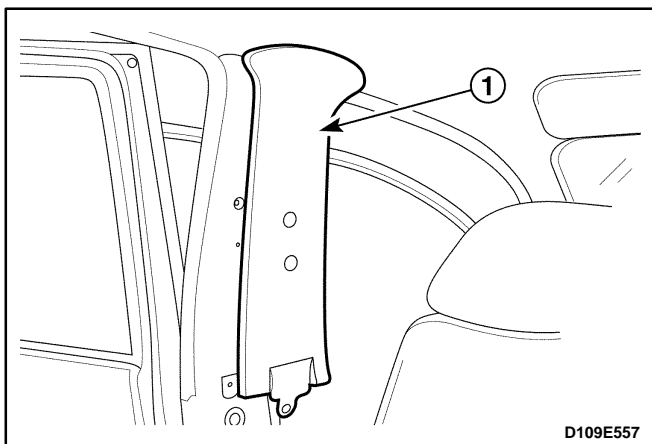
Removal Procedure

1. Pry off the A-pillar trim panel (1).



Installation Procedure

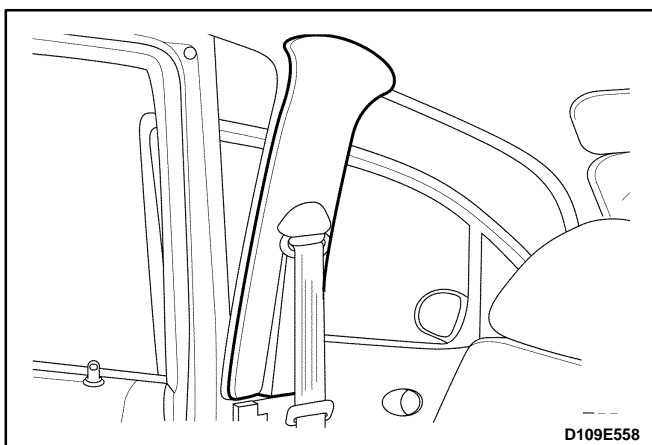
1. Install the A-pillar trim panel.



UPPER B-PILLAR TRIM PANEL

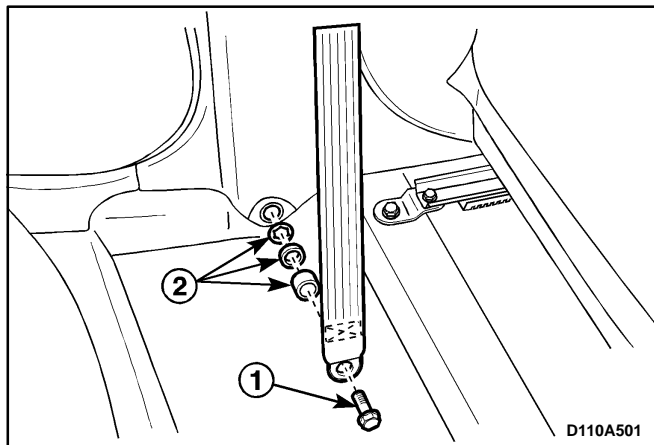
Removal Procedure

1. Remove the bolt on the upper B-pillar trim panel. Refer to *Section 8A, Seat Belts*.
2. Pry off the upper B-pillar trim panel.
 - Pry off the upper B-pillar trim panel by hands (1).



Installation Procedure

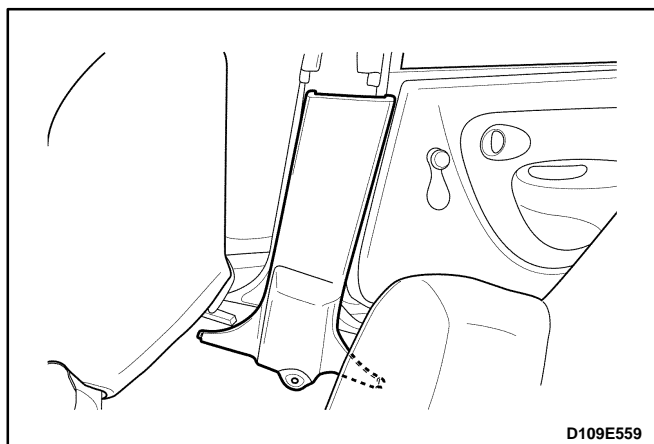
1. Install the upper B-pillar trim panel.
2. Install the bolt on the upper B-pillar trim panel. Refer to *Section 8A, Seat Belts*.



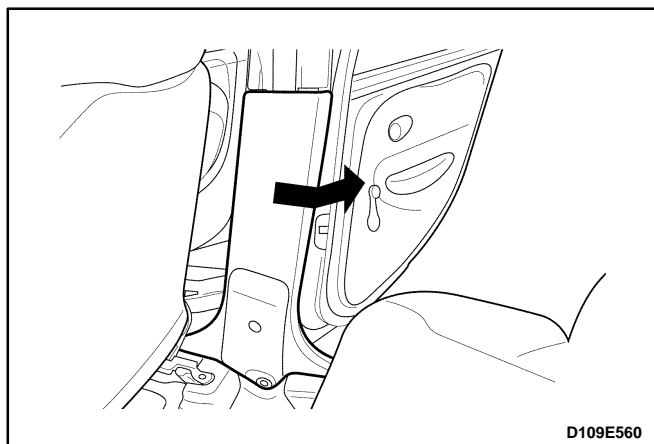
LOWER B-PILLAR TRIM PANEL

Removal Procedure

1. Remove the bolt on the lower B-pillar trim panel.
 - Remove the bolt (1).
 - Remove the spacer and the spring washer (2).
 - Remove the plastic protector from the seat belt anchor.

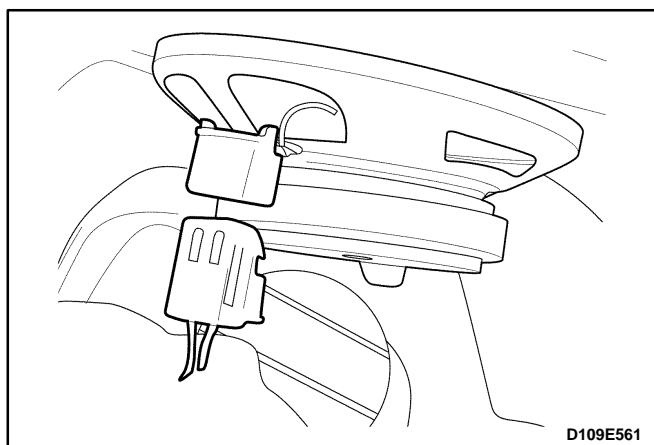


2. Pry off the lower B-pillar trim panel.



Installation Procedure

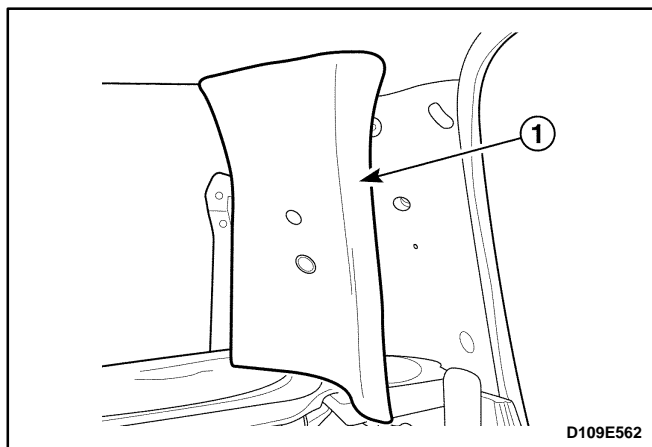
1. Install the lower B-pillar trim panel.
2. Install the bolt on the lower B-pillar trim panel. Refer to *Section 8A, Seat Belts*.



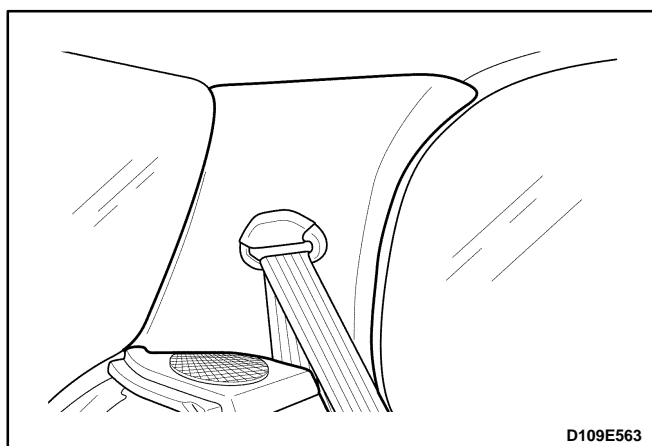
C-PILLAR TRIM PANEL

Removal Procedure

1. Disconnect the negative battery cable.
2. Open the tailgate.
3. Disconnect the rear speaker electrical connector.

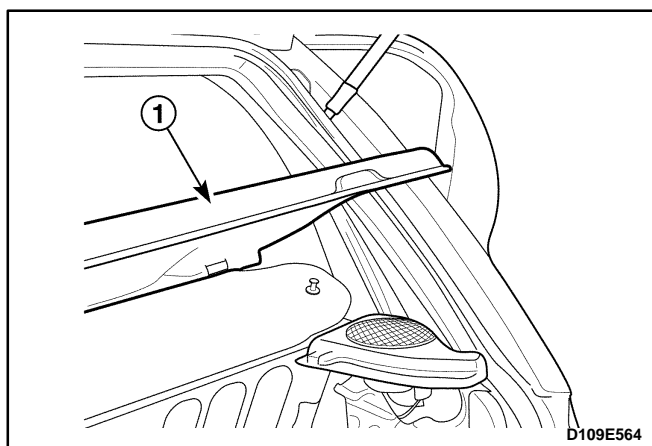


4. Remove the rear parcel side shelf. Refer to “Rear Parcel Side Shelf” in this section.
5. Remove the rear seatback.
6. Remove the rear seat belt bolt on the C-pillar trim panel. Refer to *Section 8A, Seat Belts*.
7. Pry off the C-pillar trim panel.
 - Pry off the C-pillar trim panel by hands (1).



Installation Procedure

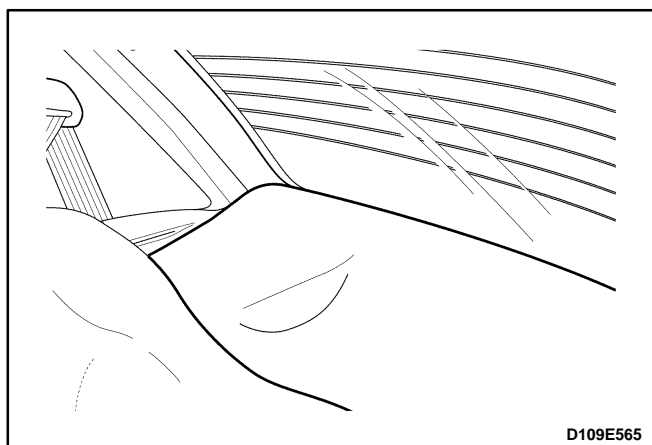
1. Install the C-pillar trim panel.
2. Install the rear seat belt bolt on the C-pillar trim panel. Refer to *Section 8A, Seat Belts*.
3. Install the rear seatback.
4. Install the rear parcel side shelf. Refer to “Rear Parcel Side Shelf” in this section.
5. Connect the rear speaker connector.
6. Connect the negative battery cable.



REAR PARCEL SHELF

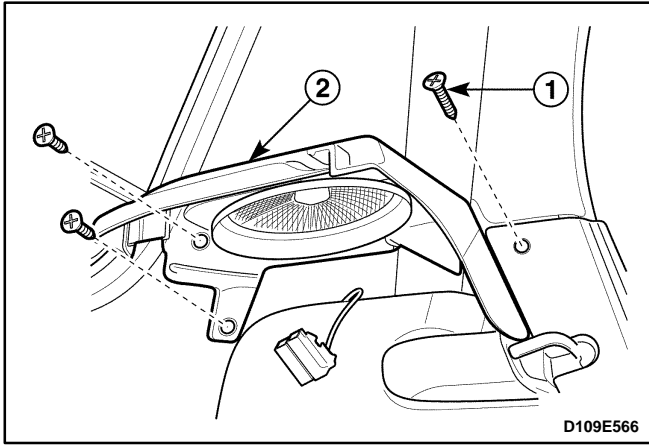
Removal Procedure

1. Open the tailgate.
2. Remove the rear parcel shelf (1).



Installation Procedure

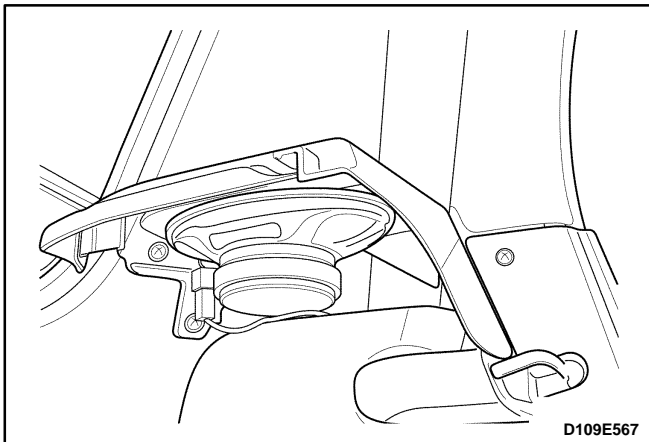
1. Install the rear parcel shelf.



REAR PARCEL SIDE SHELF

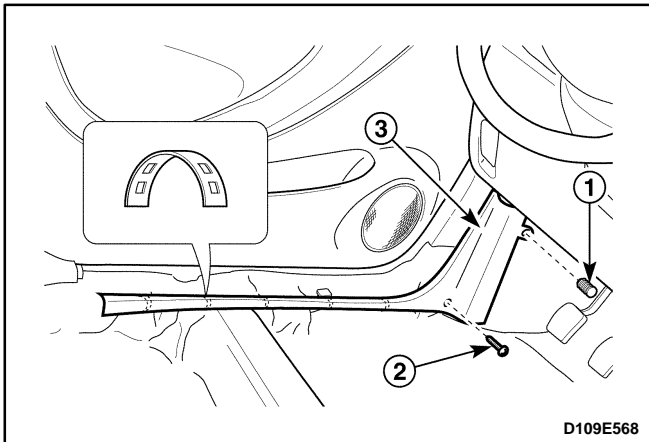
Removal Procedure

1. Disconnect the negative battery cable.
2. Open the tailgate.
3. Remove the seatback.
4. Remove the rear seat parcel shelf. Refer to "Rear Parcel Shelf" in this section.
5. Remove the rear speaker from the rear parcel shelf. Refer to *Section 9F, Audio Systems*.
6. Remove the rear parcel side shelf.
 - Remove the screws (1).
 - Remove the rear parcel side shelf (2).



Installation Procedure

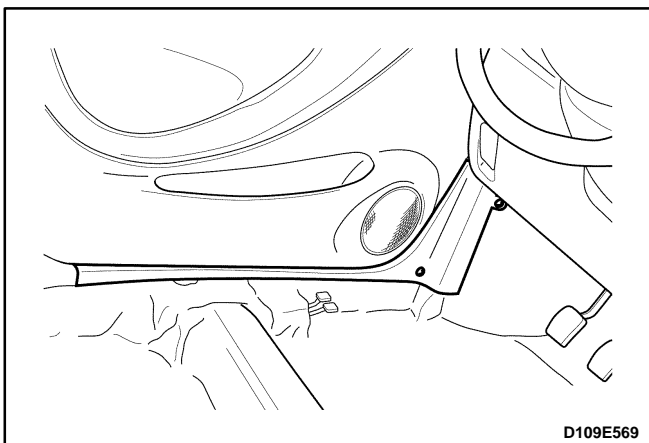
1. Install the rear parcel side shelf with the screw.
2. Install the rear speaker to the rear parcel shelf. Refer to *Section 9F, Audio Systems*.
3. Install the rear parcel shelf. Refer to "Rear Parcel Shelf" in this section.
4. Install the seatback.
5. Connect the negative battery cable.



FRONT ROCKER TRIM PANEL

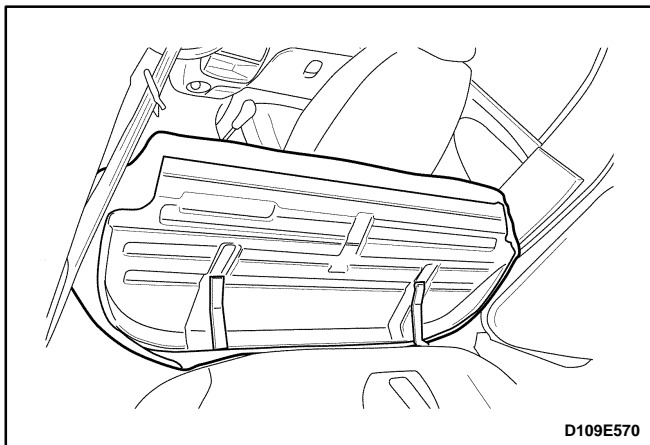
Removal Procedure

1. Pry off the rocker trim panel.
 - Remove the clip (1).
 - Remove the screw (2).
 - Pry off the rocker trim panel (3).



Installation Procedure

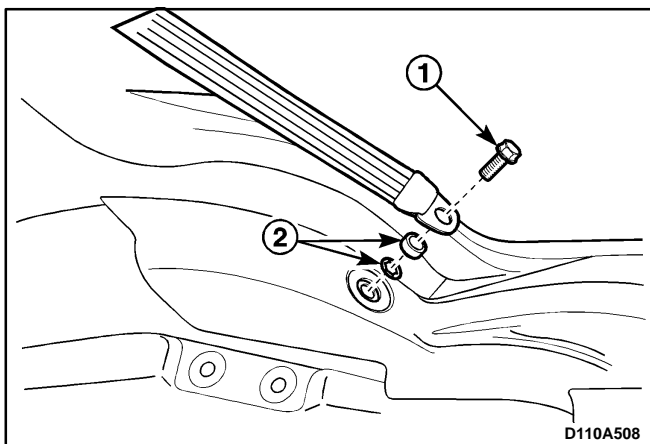
1. Install the rocker trim panel with the clip and the screw.



REAR ROCKER TRIM PANEL

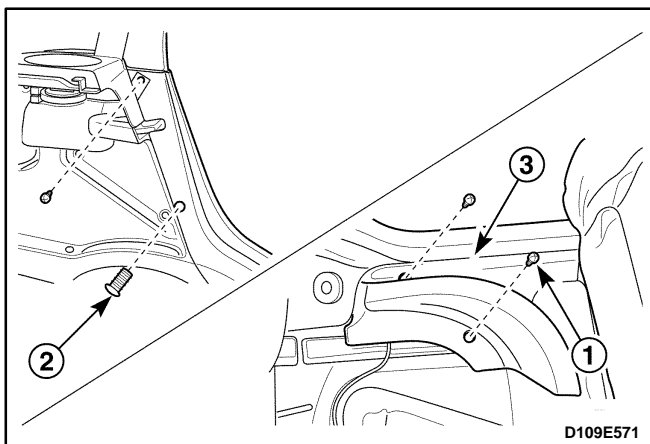
Removal Procedure

1. Remove the rear seat cushion.



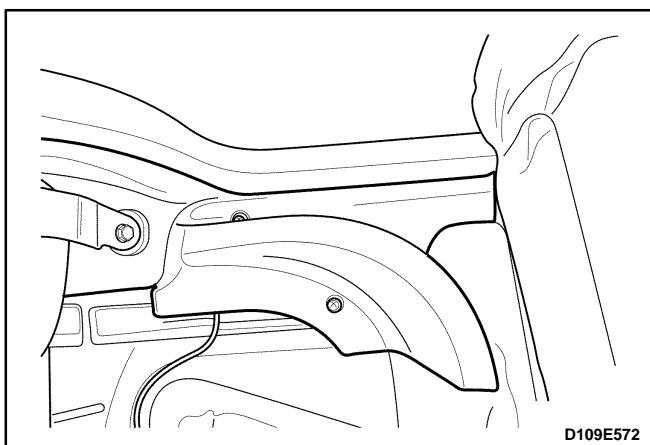
2. Remove the rear seat belt bolt on the floor.

- Remove the bolt (1).
- Remove the spacer and the spring washer (2).
- Remove the plastic protector from the seat belt anchor.



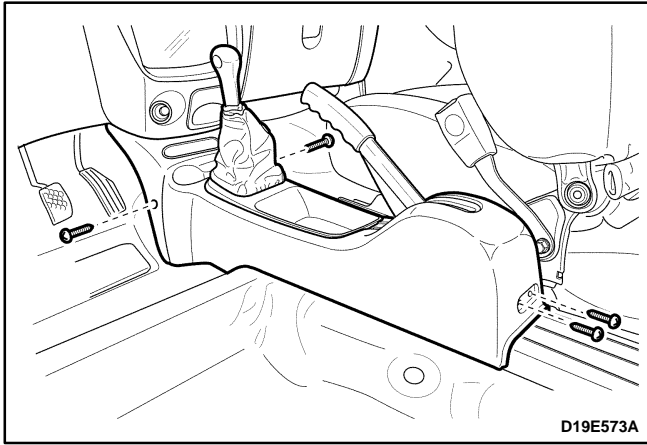
3. Pry off the rear rocker trim panel.

- Remove the screws securing the rear rocker trim panel (1).
- Remove the clip (2).
- Pry off the rear rocker trim panel (3).



Installation Procedure

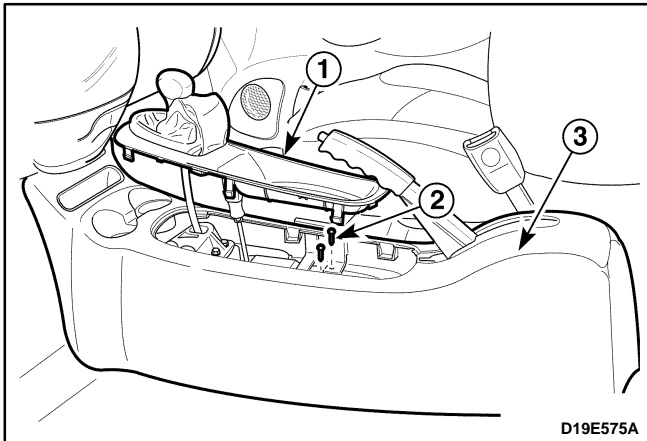
1. Install the rear rocker trim panel with the screws and the clip.
2. Install the rear seat belt bolt on the floor.
3. Install the rear seat cushion.



FLOOR CONSOLE

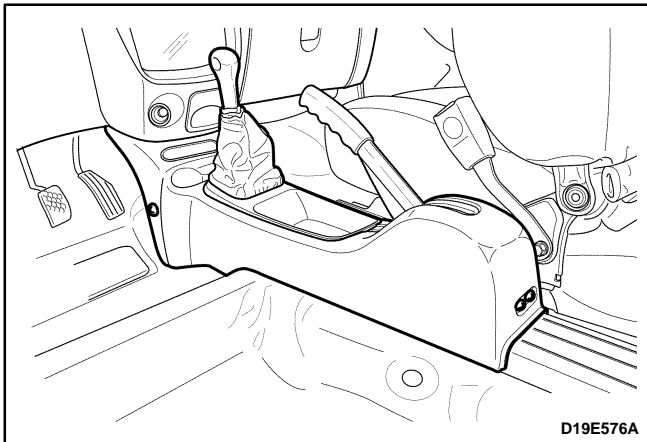
Removal Procedure

1. Remove the floor console screws.



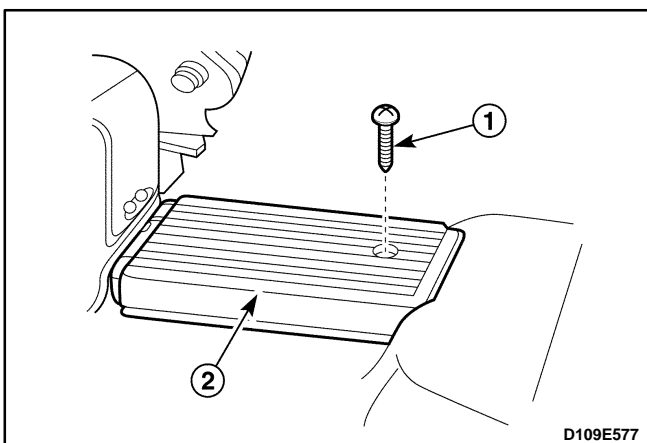
2. Remove the gear shift lever boot cover and the floor console.

- Remove the gear shift lever boot cover (1).
- Remove the screws (2).
- Remove the floor console (3).



Installation Procedure

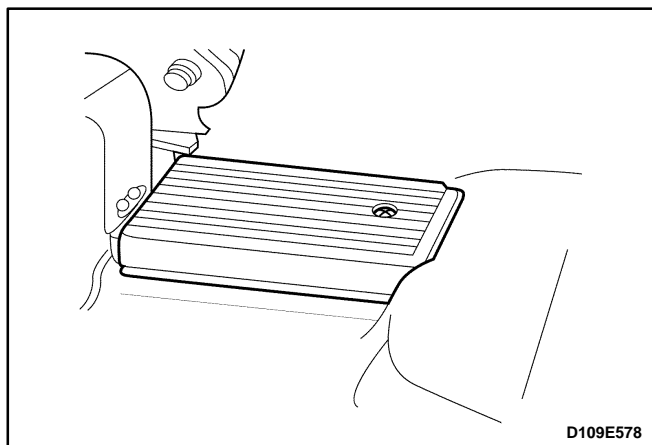
1. Install the floor console.
2. Install the gear shift lever boot cover to the floor console.
3. Tighten the floor console screws.



PARKING BRAKE CABLE COVER

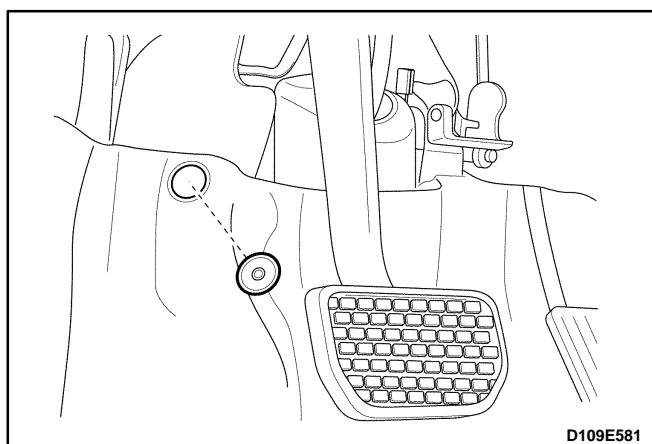
Removal Procedure

1. Remove the parking brake cable cover.
 - Remove the screw (1).
 - Remove the cable cover (2).



Installation Procedure

1. Install the parking brake cable cover with the screw.

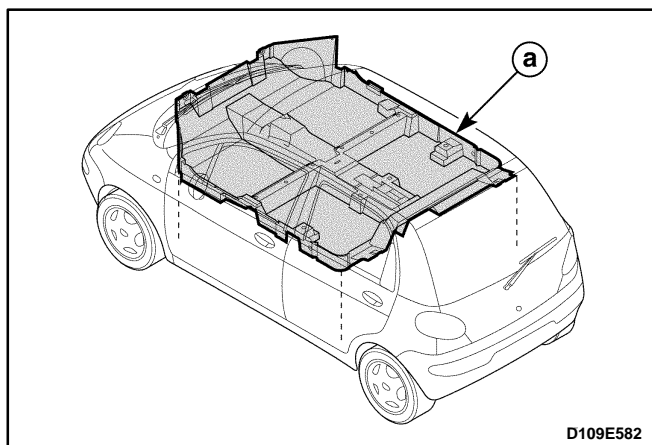


FLOOR CARPET

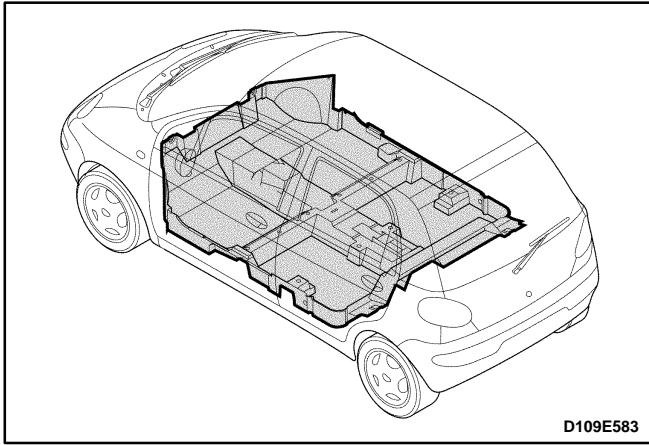
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the front seats. Refer to *Section 9H, Seats*.
3. Remove the rear seat cushion. Refer to *Section 9H, Seats*.
4. Remove the floor console. Refer to "Floor Console" in this section.
5. Pry off the front rocker trim panel. Refer to "Front Rocker Trim Panel" in this section.
6. Pry off the rear rocker trim panel. Refer to "Rear Rocker Trim Panel" in this section.
7. Pry off the lower B-pillar trim panel. Refer to "Lower B-pillar Trim Panel" in this section.
8. Remove the parking brake cable cover. Refer to "Parking Brake Cable Cover" in this section.
9. Remove the clips under the front seats.

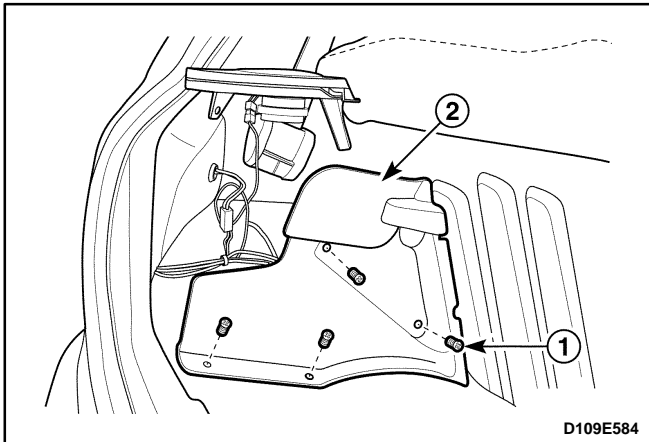


11. Remove the floor carpet.
 - a. Floor carpet.



Installation Procedure

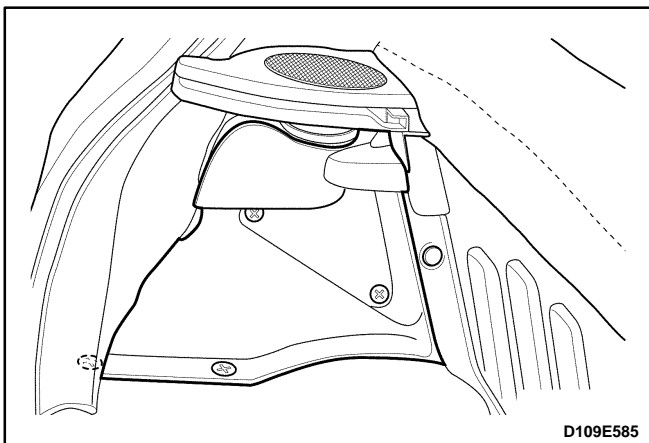
1. Install the floor carpet.
2. Install the clips.
3. Install the parking brake cable cover. Refer to "Parking Brake Cable Cover" in this section.
4. Install the lower B-pillar trim panel. Refer to "Lower B-pillar Trim Panel" in this section.
5. Install the rear rocker trim panel. Refer to "Rear Rocker Trim Panel" in this section.
6. Install the front rocker trim panel. Refer to "Front Rocker Trim Panel" in this section.
7. Install the floor console. Refer to "Floor Console" in this section.
8. Install the rear seat cushion. Refer to *Section 9H, Seats*.
9. Install the front seats. Refer to *Section 9H, Seats*.
10. Connect the negative battery cable.



LUGGAGE COMPARTMENT WHEELHOUSE TRIM PANEL

Removal Procedure

1. Pry off the luggage compartment wheel house trim panel.
 - Remove the screws (1).
 - Pry off the trim panel (2).

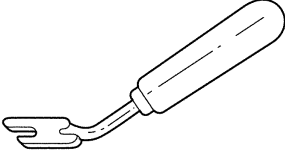


Installation Procedure

1. Install the luggage compartment wheelhouse trim panel with the plastic screws.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS TABLE

 <p>D109E101</p>	<p>KM-475-B Trim Remover</p>
---	--

SECTION 9H

SEATS

CAUTION: *Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.*

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Head Restraint	9H-5	Fastener Tightening Specifications	9H-13
Front Seatback	9H-6		

DESCRIPTION AND OPERATION

SEATS

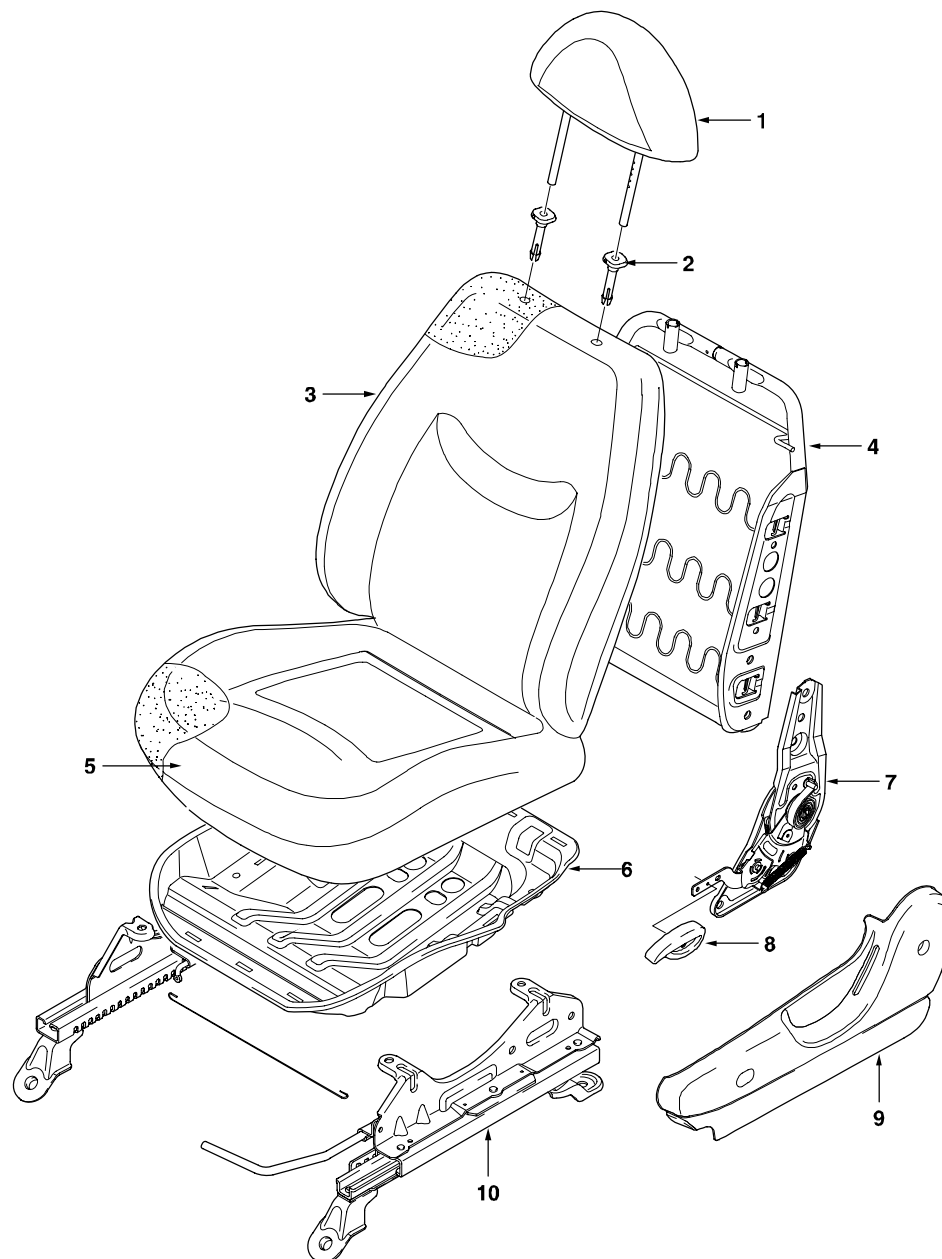
Important: Do not attempt to change the designed seat position by altering the designed seat adjuster-to-floor pan anchor provisions or the seat adjuster-to-seat frame anchor provisions. Changing the seat position could affect the performance of the seat system.

This vehicle is equipped with low-backed front seats with separate head restraints and a three-passenger

folding rear seat. Split folding rear seat is optional. Seats cushions and seatbacks have formed foam pads, which fit the contours of the full-panel seatback frame assembly and the designed contour of the seat cushion frame. There are no front seat forward or rearward relocation provisions provided at either the seat adjuster-to-seat frame or the seat adjuster-to-floor pan anchor attachments.

COMPONENT LOCATOR

FRONT SEAT

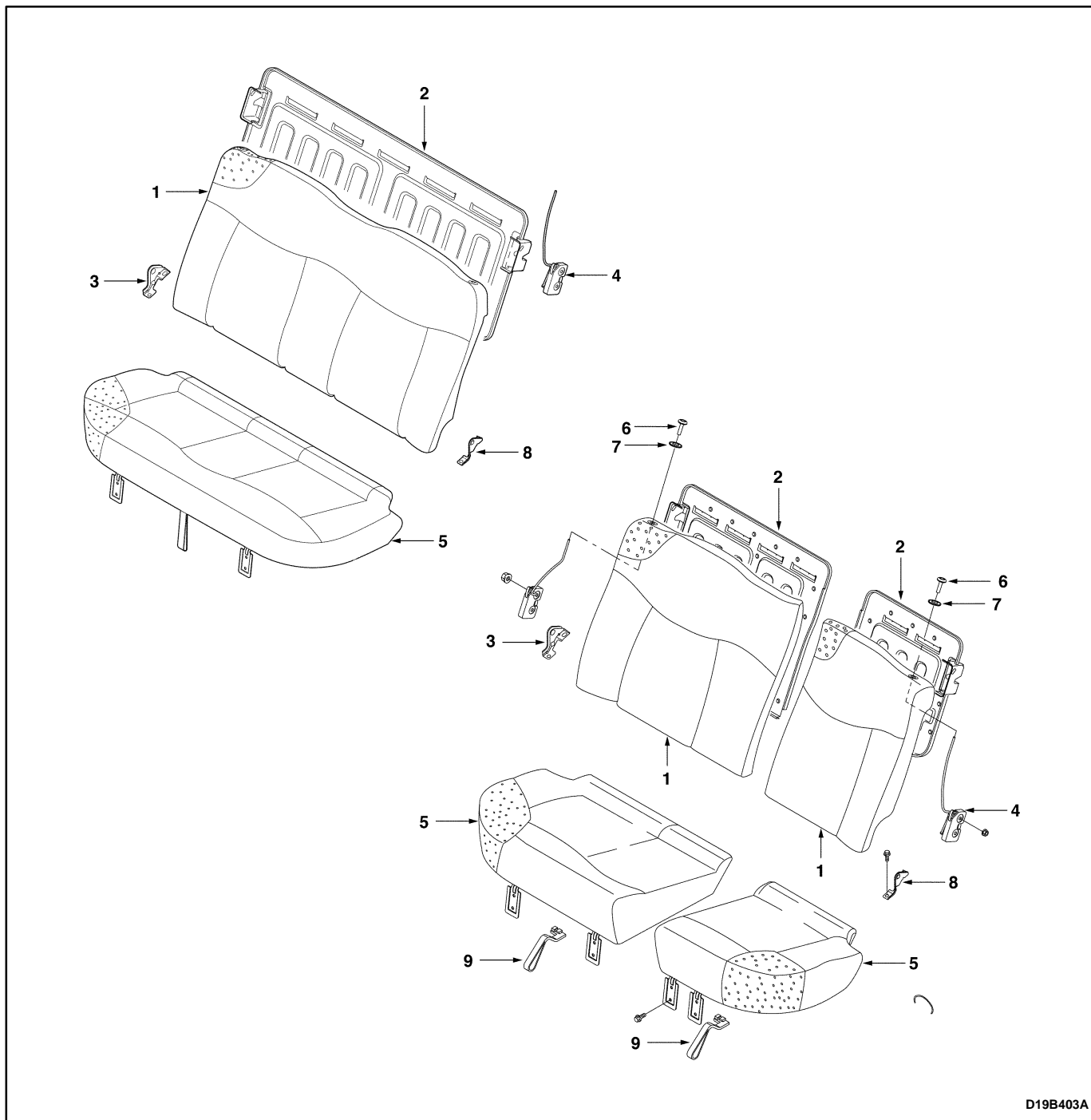


D109B402

1. Head Restraint
2. Guide Sleeve
3. Seatback
4. Seatback Frame
5. Seat Cushion

6. Seat Cushion Frame
7. Recliner
8. Recliner Knob
9. Seat Side Cover
10. Guide Rail

REAR SEAT



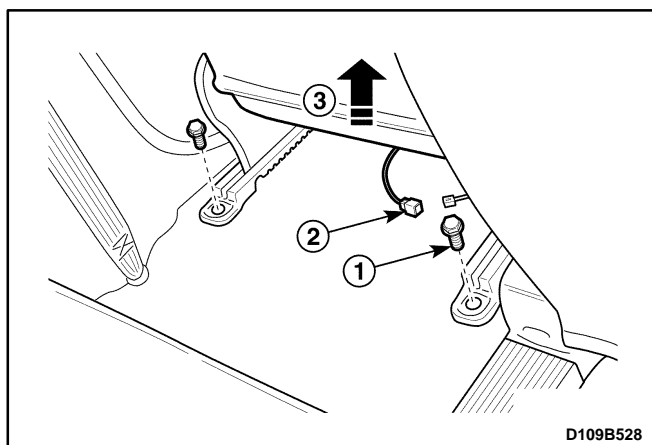
D19B403A

1. Rear Seatback Cushion
2. Rear Seatback Frame
3. Rear Seat Hinge
4. Rear Seat Lock
5. Rear Seat Cushion

6. Seat Release Knob
7. Eyelet
8. Seat Back Hinge
9. Rear Cushion Pull Loop

REPAIR INSTRUCTIONS

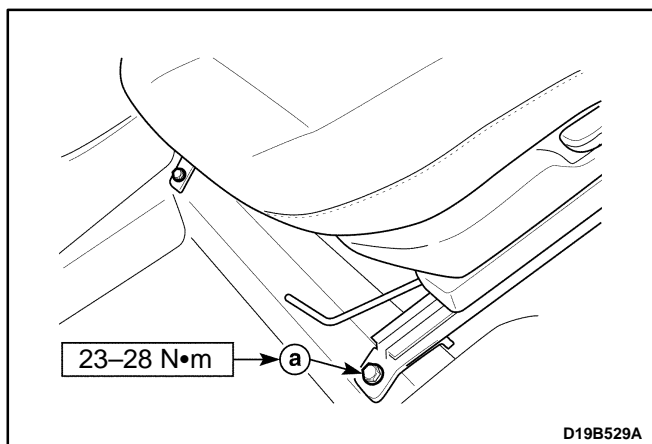
ON-VEHICLE SERVICE



FRONT SEATS

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the front seat.
 - Remove the bolts (1).
 - Disconnect the seat belt warning lamp connector (2).
 - Remove the seat (3).



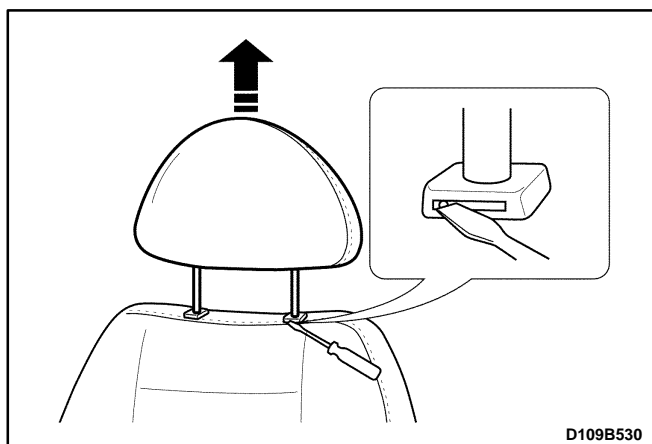
Installation Procedure

1. Connect the seat belt warning lamp connector.
2. Install the front seat with the bolts.

Tighten

Tighten the seat bolt to 23-28 N•m (17-21 lb-ft).

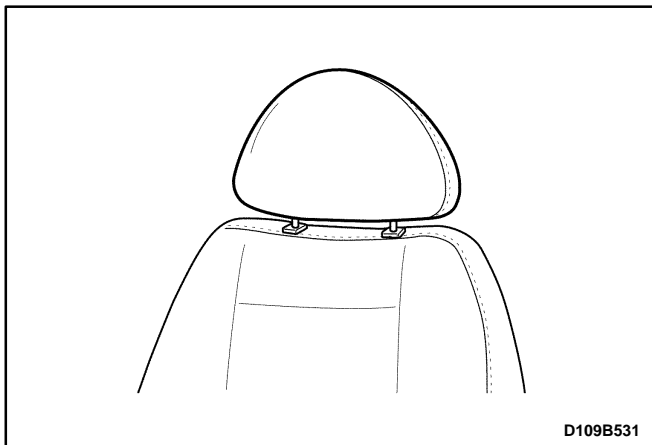
- a. Seat bolt.
3. Connect the negative battery cable.



HEAD RESTRAINT

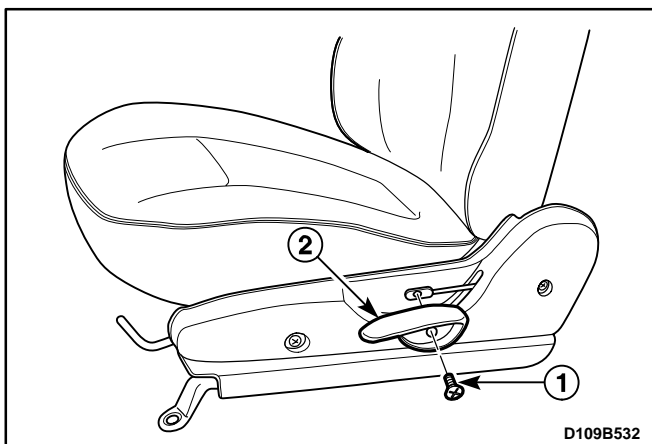
Removal Procedure

1. Pull the head restraint up to the stop position.
2. Insert a small flathead screwdriver in the notch in the left guide sleeve and pull up the head restraint by pushing the head restraint left.



Installation Procedure

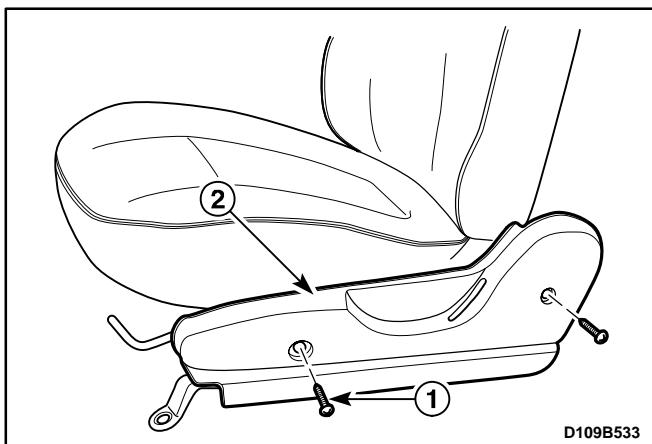
1. Install the head restraint into the guide sleeves. Press down in order to engage the stop pin.



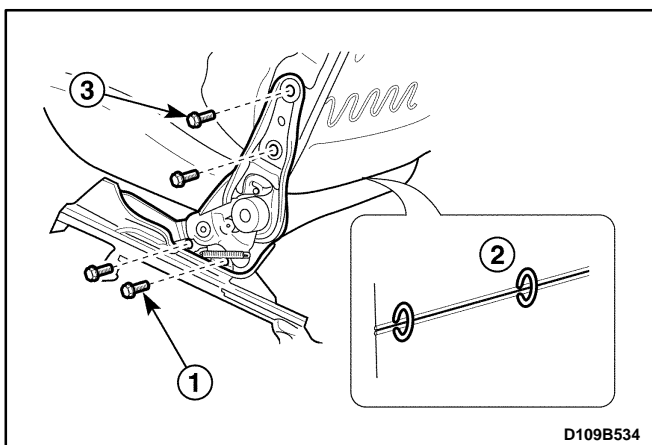
FRONT SEATBACK

Removal Procedure

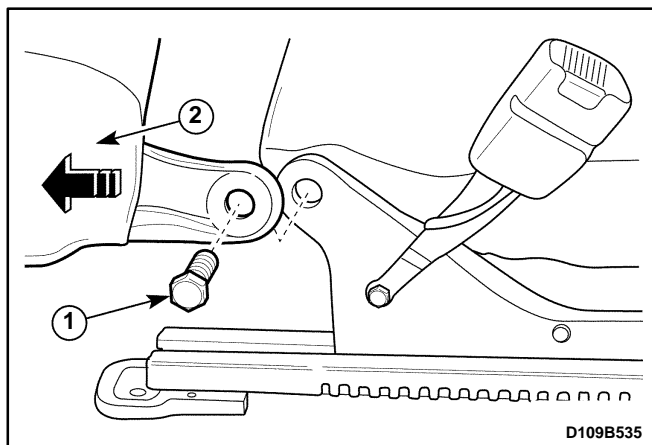
1. Disconnect the negative battery.
2. Remove the front seat assembly. Refer to "Front Seats" in this section.
3. Remove the recliner knob from the front seat.
 - Remove the screw (1).
 - Remove the recliner knob (2).



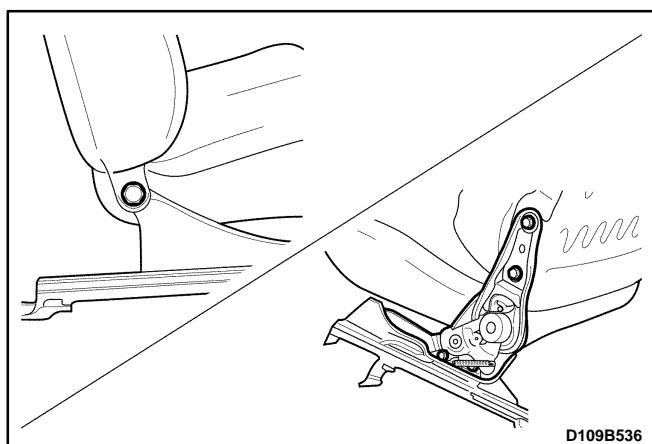
4. Remove the recliner cover from the front seat.
 - Remove the screws (1).
 - Remove the recliner cover (2).



5. Remove the recliner from the front seat.
 - Remove the bolts on the seat cushion (1).
 - Remove the seatback cover hog rings.
 - Remove the seatback cover (2).
 - Remove the bolts on the seatback (3).

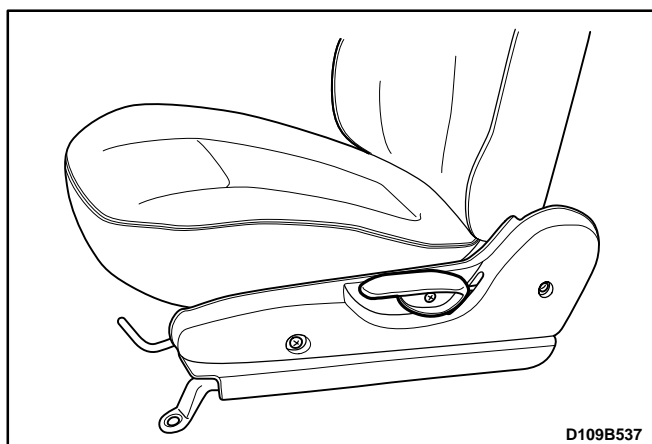


6. Remove the seatback bolt from the seat cushion (1).
7. Remove the seatback assembly (2).

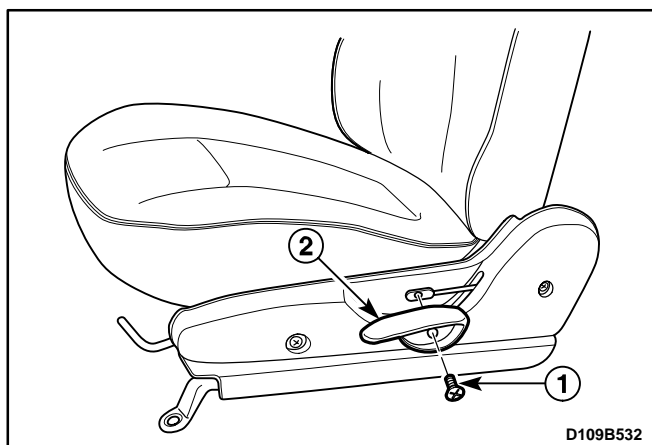


Installation Procedure

1. Install the seatback assembly with the bolt.
2. Install the recliner with the bolts
3. Install the seatback cover with the hog rings.



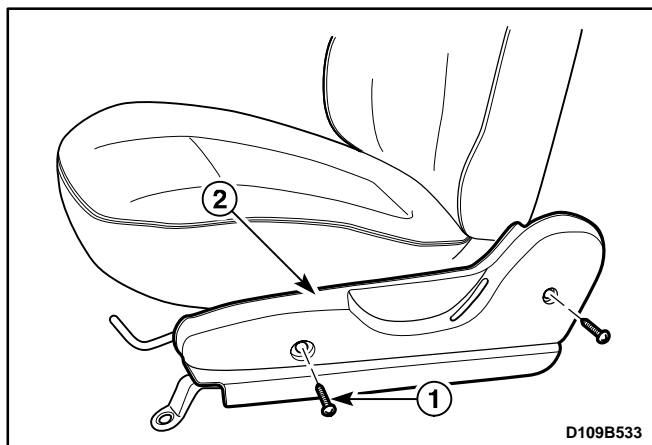
4. Install the recliner knob and the cover with the screws.
5. Install the front seat assembly. Refer to "Front Seat" in this section.
6. Connect the negative battery cable.



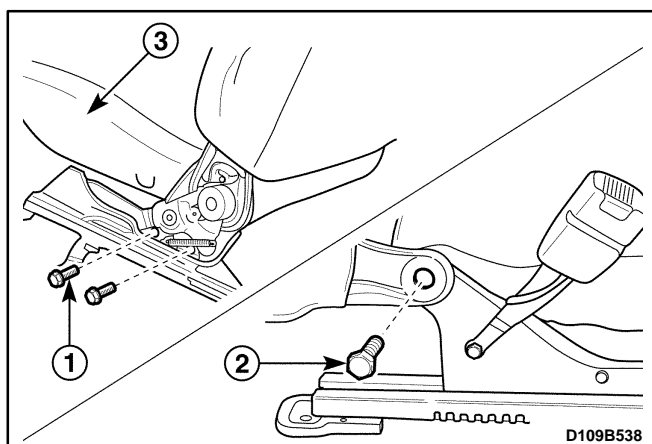
FRONT SEAT CUSHION

Removal Procedure

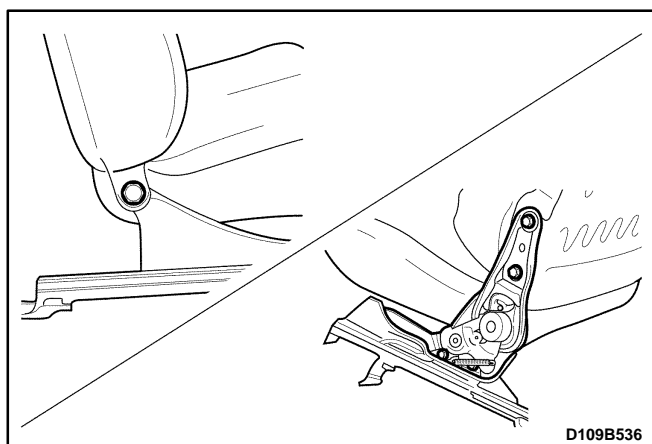
1. Disconnect the negative battery cable.
2. Remove the front seat assembly. Refer to "Front Seat" in this section.
3. Remove the seat belt buckle. Refer to *Section 8A, Seat Belts*.
4. Remove the recliner knob.
 - Remove the screw (1).
 - Remove the recliner knob (2).



5. Remove the recliner cover.
 - Remove the screws (1).
 - Remove the recliner cover (2).

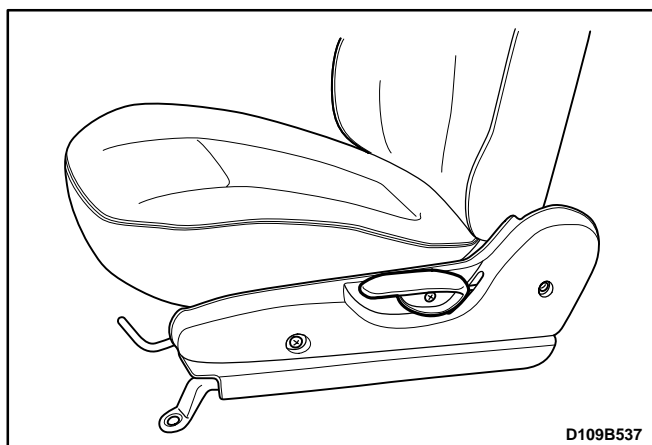


6. Remove the seat cushion.
 - Remove the recliner bolts on the seat cushion (1).
 - Remove the seatback bolt (2).
 - Remove the seat cushion (3).

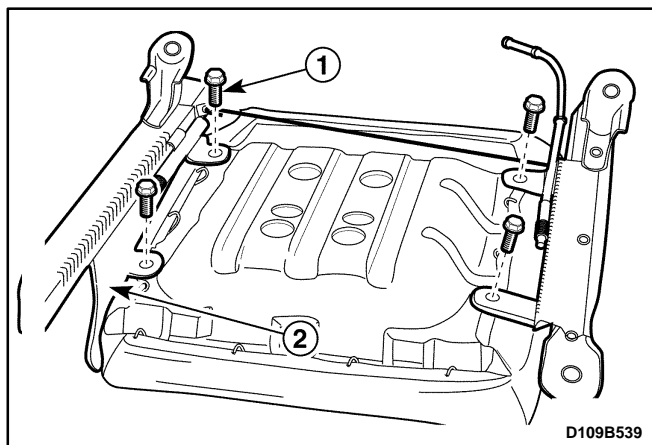


Installation Procedure

1. Install the seat cushion with the seatback bolt and the recliner bolts.



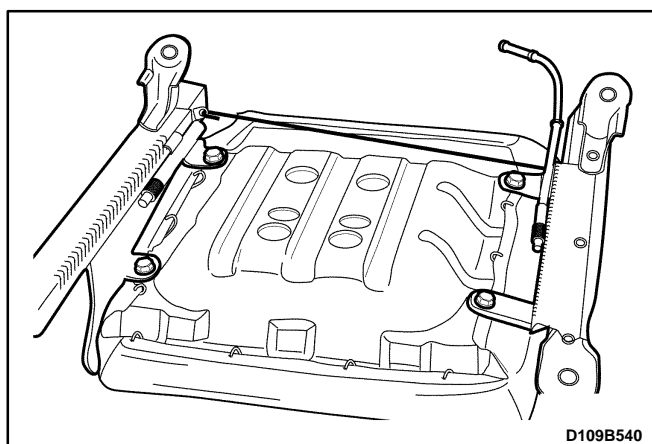
2. Install the recliner cover and the recliner knob with the screws.
3. Install the seat belt buckle. Refer to *Section 8A, Seat Belts*.
4. Install the front seat assembly. Refer to "Front Seats" in this section.
5. Connect the negative battery cable.



FRONT SEATS GUIDE RAIL

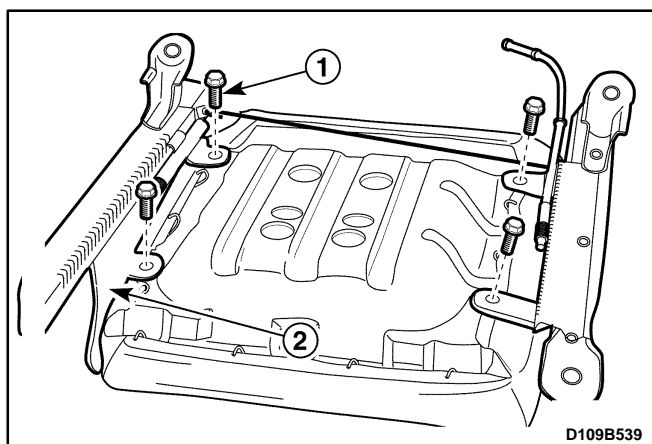
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the front seat assembly. Refer to "Front Seats" in this section.
3. Remove the guide rail from the seat.
 - Remove the bolts (1).
 - Remove the guide rail (2).



Installation Procedure

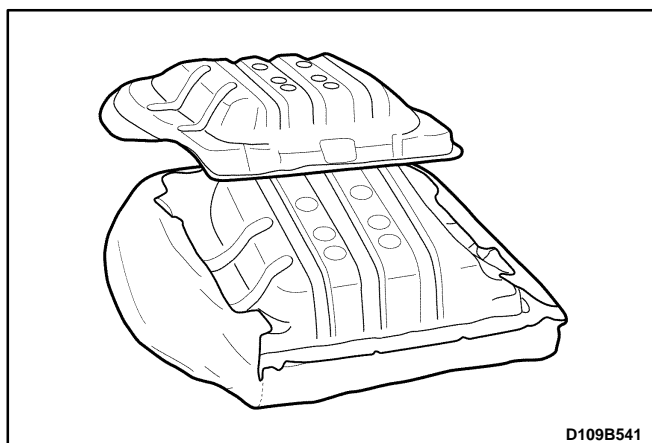
1. Install the guide rail to the seat with the bolts.
2. Install the front seat assembly. Refer to "Front Seat" in this section.
3. Connect the negative battery cable.



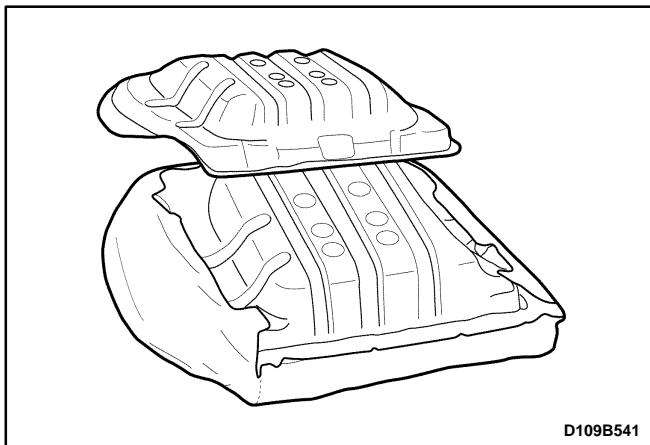
FRONT SEAT CUSHION FRAME

Removal Procedure

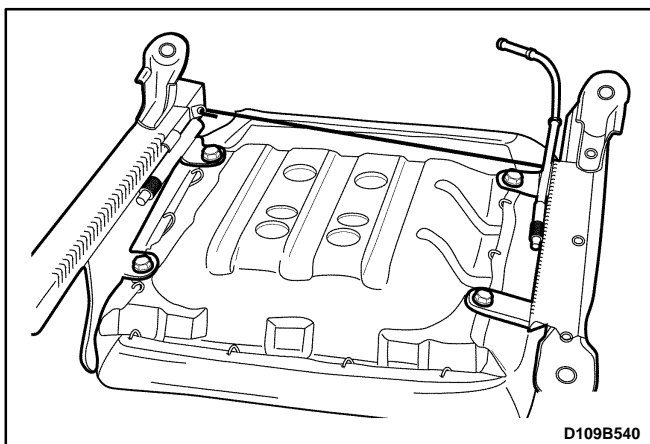
1. Disconnect the negative battery cable.
2. Remove the front seat cushion. Refer to "Front Seat Cushion" in this section.
3. Remove the guide rail.
 - Remove the bolts (1).
 - Remove the guide rail (2).



4. Remove the seat cushion cover.
 - Remove the hog rings.
5. Remove the seat cushion frame.



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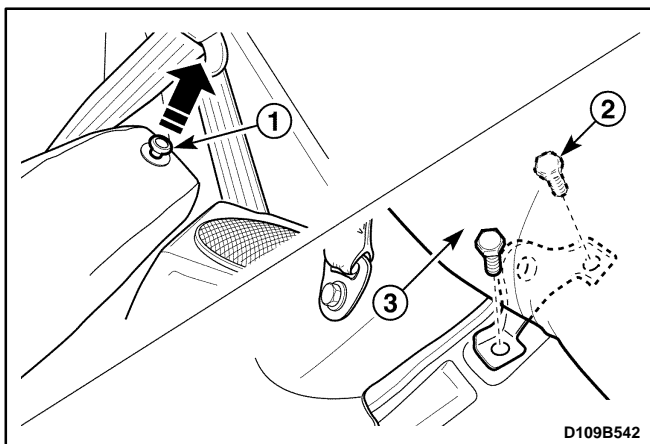
Installation Procedure

1. Install the seat cushion cover with the hog rings.

2. Install the guide rail with the bolts.

3. Install the front seat cushion. Refer to "Front Seat Cushion" in this section.

4. Connect the negative battery cable.



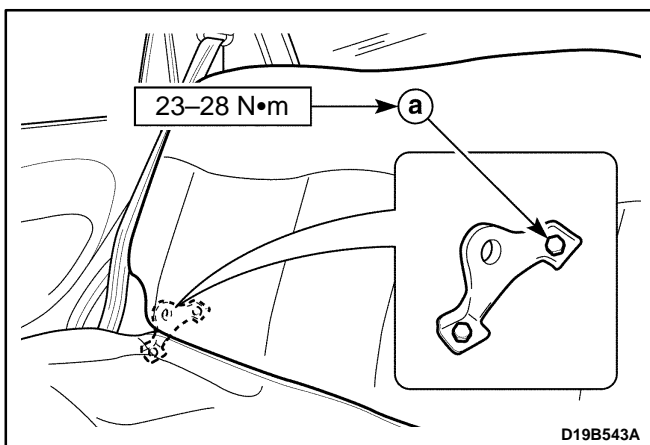
D109B542

REAR SEATBACK

Removal Procedure

1. Remove the rear seatback.

- Remove the rear seatback lock by pulling the lock knob upward (1).
- Remove the seatback hinge bolts (2).
- Remove the rear seatback (3).



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Installation Procedure

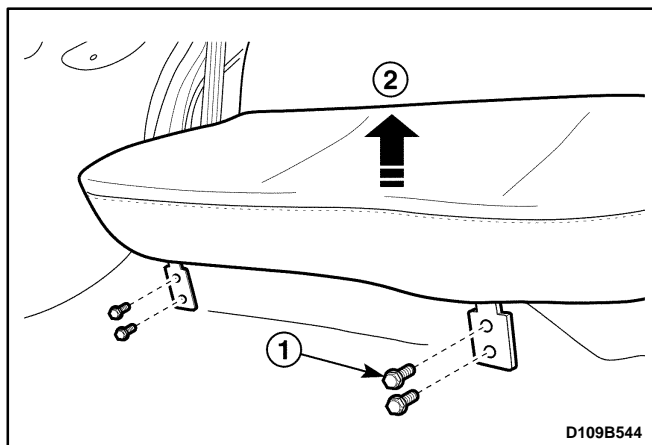
1. Install the rear seatback with the hinge bolts.

Tighten

Tighten the hinge bolts to 23–28 N.m (17–21 lb-ft).

a. Rear seatback hinge bolt.

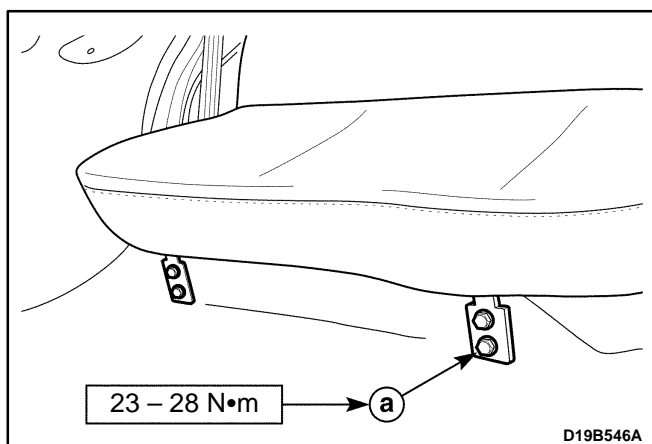
2. Press the lock knob.



REAR SEAT CUSHION

Removal Procedure

1. Remove the rear seat cushion.
 - Remove the bolts (1).
 - Lift and remove the rear seat cushion (2).



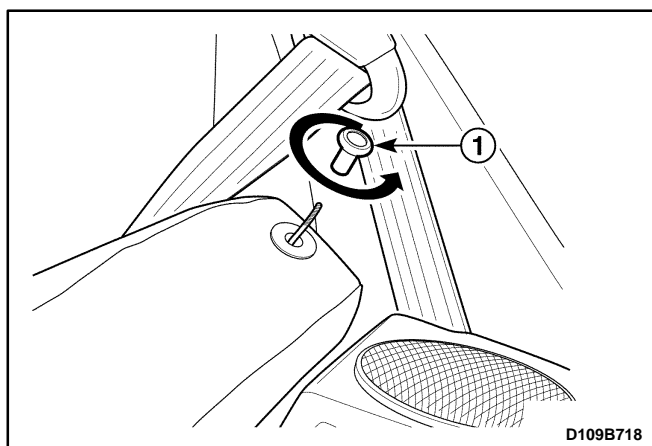
Installation Procedure

1. Install the rear seat cushion with the bolts.

Tighten

Tighten the rear seat cushion bolt to 23–28 N.m (17–21 lb–ft).

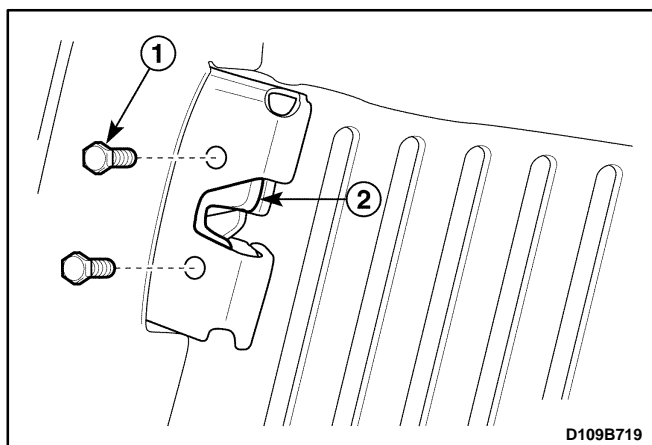
- a. Rear seat cushion bolt.



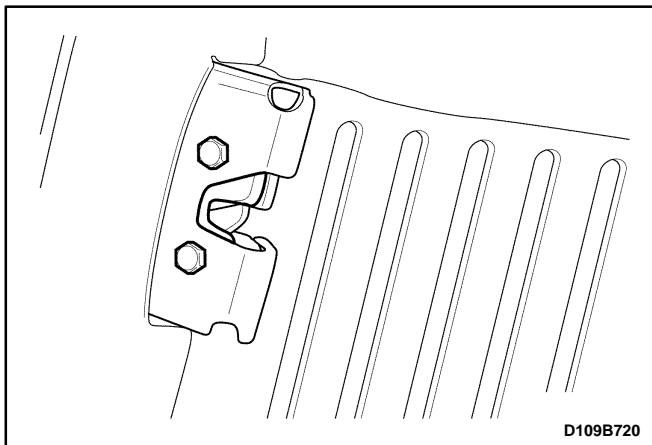
REAR SEATBACK LATCH

Removal Procedure

1. Remove the rear seatback assembly. Refer to “Rear Seatback” in this section.
2. Remove the lock knob from the seatback.
 - Remove the lock knob by twisting it (1).

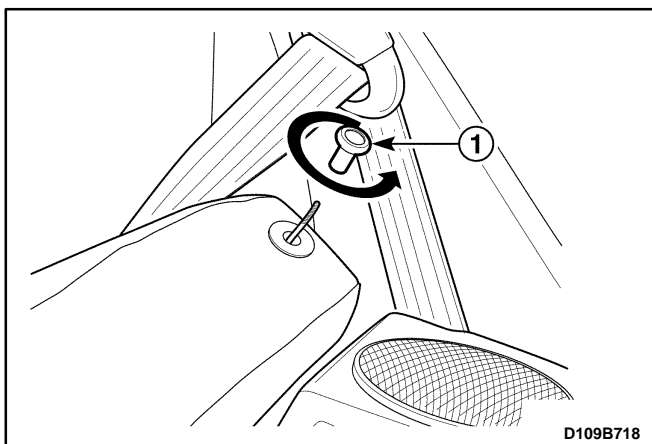


3. Remove the rear seatback cover from the seatback frame.
4. Remove the lock from the seatback frame.
 - Remove the bolts (1).
 - Remove the lock (2).

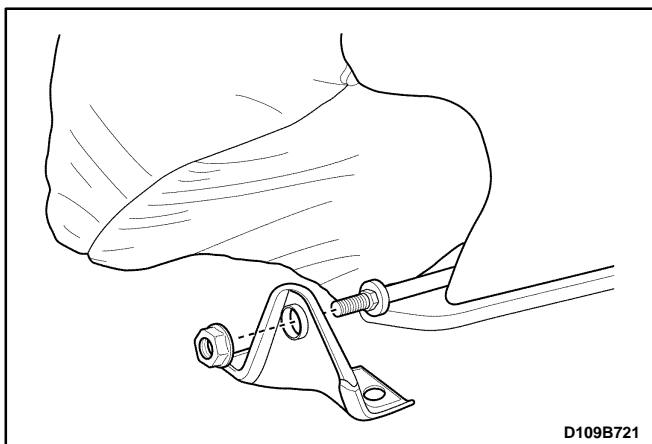


Installation Procedure

1. Install the lock to the seatback frame with the bolts.
2. Install the rear seatback cover to the seatback frame.



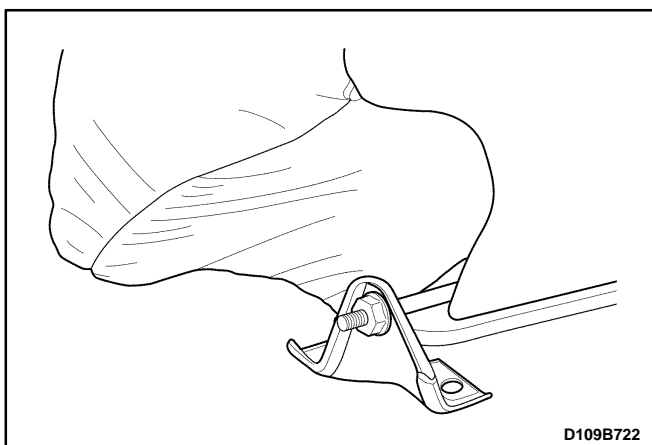
3. Install the lock knob to the seatback.
4. Install the rear seatback assembly. Refer to “Rear Seatback” in this section.



REAR SEATBACK HINGE

Removal Procedure

1. Remove the rear seatback assembly. Refer to “Rear Seatback” in this section.
2. Remove the hinge from the seatback.
 - Remove the nut.
 - Remove the hinge.



Installation Procedure

1. Install the hinge to the seatback with the nut.
2. Install the rear seatback assembly. Refer to “Rear Seatback” in this section.

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Front Seat Bolts (Both)	23 – 28	17 – 21	–
Rear Seat Cushion Bolts	23 – 28	17 – 21	–
Rear Seatback Bolts	23 – 28	17 – 21	–

SECTION 9I

WATERLEAKS

TABLE OF CONTENTS

Diagnostic Information and Procedures	9I-2	Specifications	9I-7
Waterleak Diagnosis	9I-2	Recommended Materials for	
Repair Instructions	9I-5	Waterleak Repairs	9I-7
On-Vehicle Service	9I-5	Watertest Stand Specifications	9I-7
Waterleak Repair	9I-5		

DIAGNOSTIC INFORMATION AND PROCEDURES

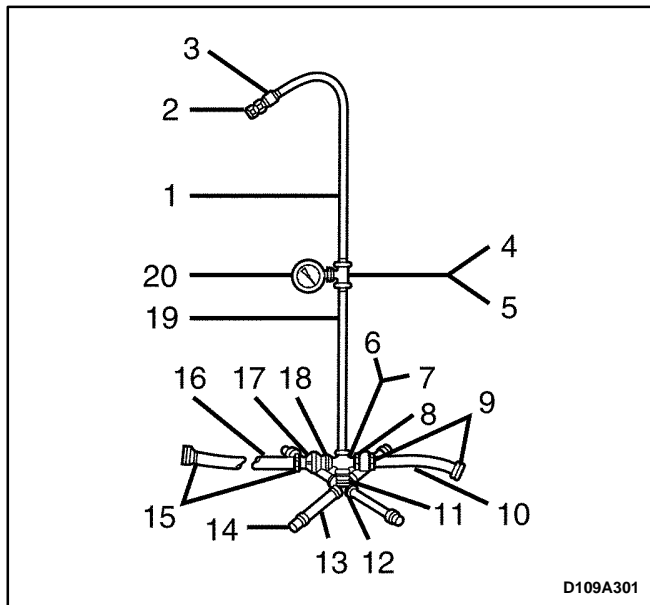
WATERLEAK DIAGNOSIS

The repair of waterleaks in the body requires proper testing and diagnosis. Repair waterleaks by adjusting the misaligned parts and using the proper repair materials. First, determine what conditions cause the leak. For example, the leak may occur only when the vehicle is parked on an incline, or water may appear only in the spare tire compartment. Second, test the area for the source of the leak using the following testing methods. If the general leak area is found, determine the exact entry point of the leak by using a water hose or an air hose. If the general leak area is not obvious, use the watertest stands to determine the area of the leak. It may be necessary to remove some interior trim panels or some parts in order to locate the leaks.

Important: It is necessary to find the origin of all the leaks before making any repairs. Random repairs may stop the leak only temporarily and may make future repairs more difficult. Continue localized testing in the general area in order to ensure that all leaks are found.

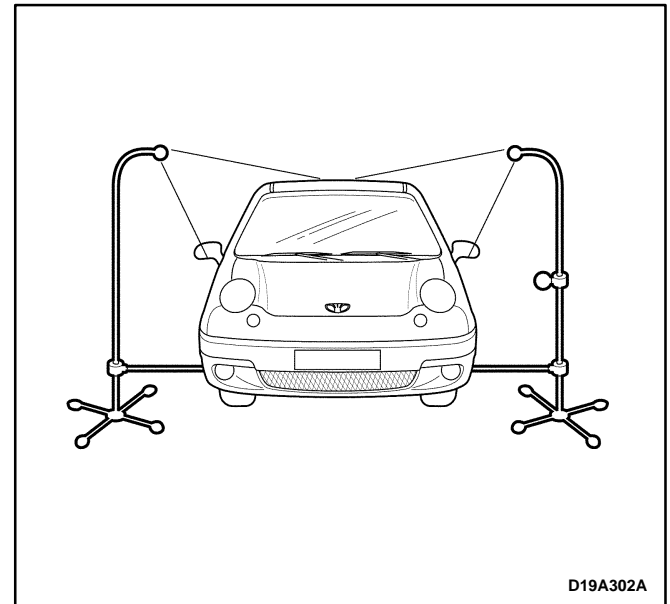
Generalized Testing

1. Set up the watertest stands.

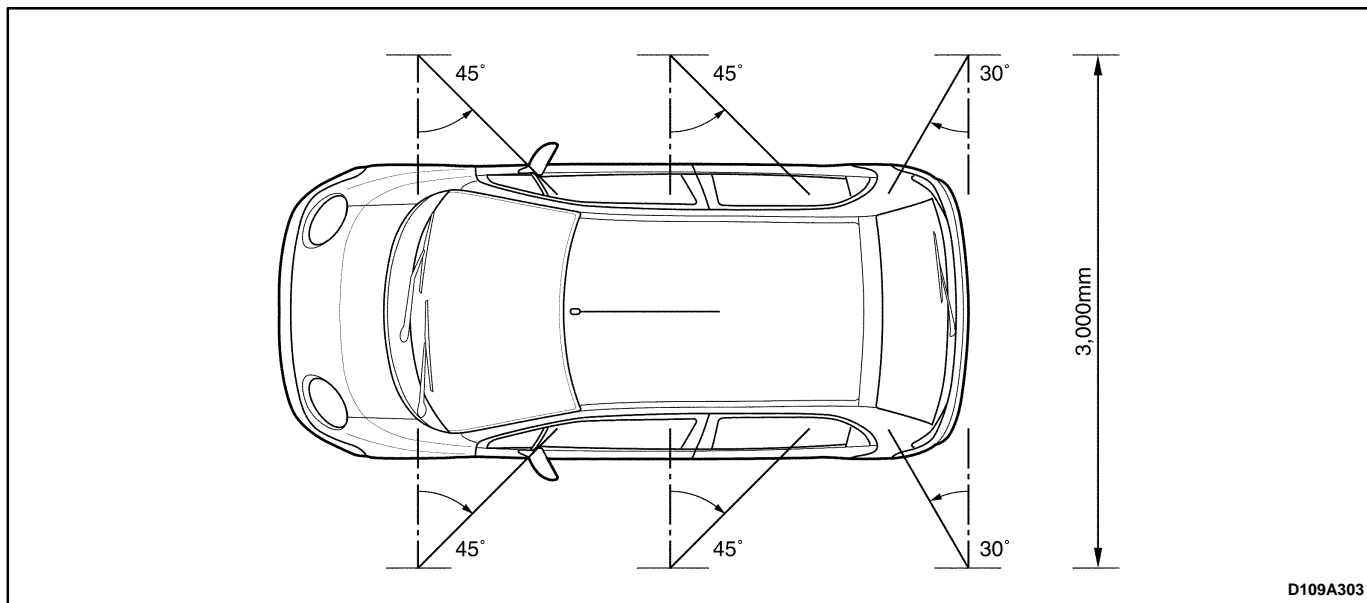


- 1 1/2-inch by 36-inch Pipe
- 2 Full-jet Spray Nozzle #1/2 GG-25 or Equivalent
Nozzle Height at 1,600 mm to the Floor
- 3 1/2-inch Coupling
- 4 1/2-inch by 1/2-inch by 1/4-inch Reducing T
(Right Only)
- 5 1/2-inch Coupling (Left Only)
- 6 1/2-inch Cross (Right Only)
- 7 1/2-inch Tee (Left Only)
- 8 1/2-inch Pipe-to-Hose Nipple (Right Only)
- 9 5/8-inch Female Hose Coupling
- 10 5/8-inch Input Hose (2 Feet Long, Right Only)
- 11 1/2-inch Close Nipple
- 12 1/2-inch Cross with Weld-on 1/2-inch Cap
- 13 1/2-inch by 1/2-inch Nipple
- 14 1/2-inch Cap
- 15 5/8-inch Female Hose Coupling
- 16 5/8-inch Cross Hose (12 Feet Long)
- 17 5/8-inch Hose Quick Connect
- 18 1/2-inch Pipe-to-Hose Nipple
- 19 1/2-inch by 30-inch Pipe (Straight)
- 20 1/4-inch Water Pressure Gauge (Right Only)

2. Set up the watertest stand leak test.



3. Perform the watertest stand leak test. Refer to "Watertest Stand Specifications" in this section.
4. If the local water pressure does not allow the required water pressure of 155 kPa (22.5 psi), move both stands closer to the vehicle so that the water spray overlaps.

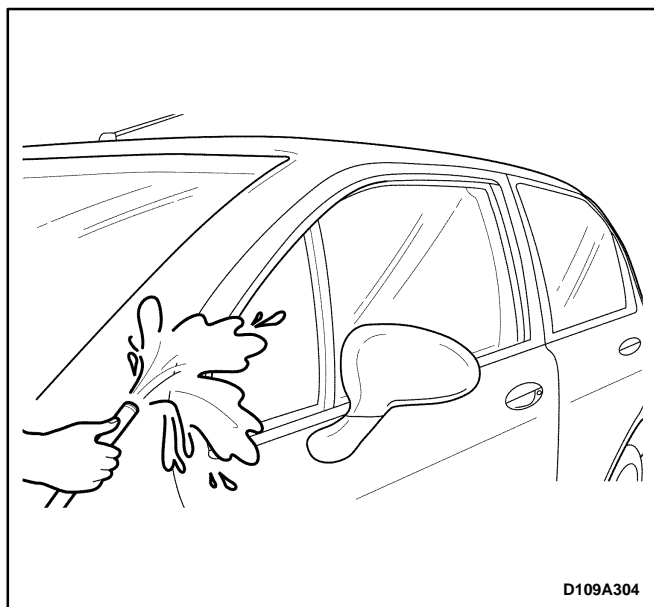


Localized Testing (Spot Test)

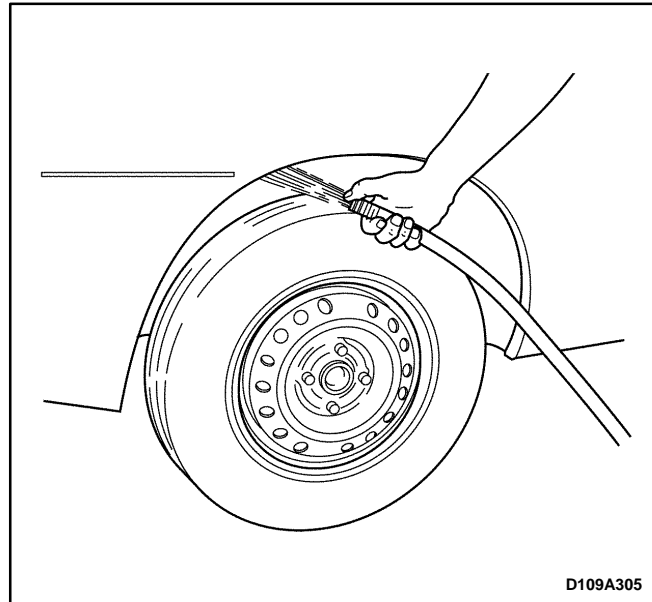
1. Do localized testing with a water hose or an air hose.
2. Begin testing by spraying the air or the water at the base of the suspected leak area. Continue spraying the air or the water upward until the leak is found.

Water Hose Test

1. Place another person inside the vehicle in order to detect the location of the leak.
2. Use a water hose without a nozzle.

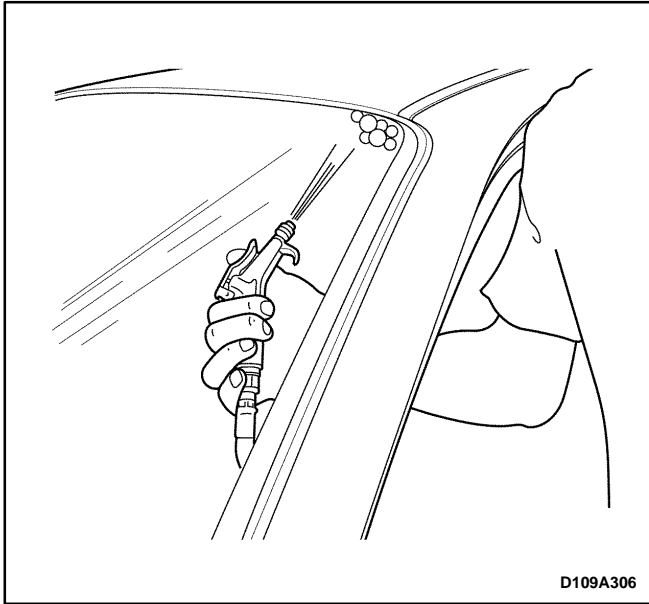


3. Begin spraying the water at the base of the suspected leak area. Continue spraying the water upward until the leak is found.



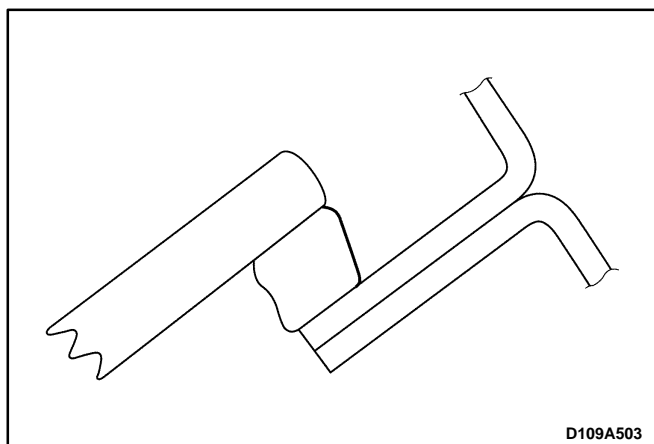
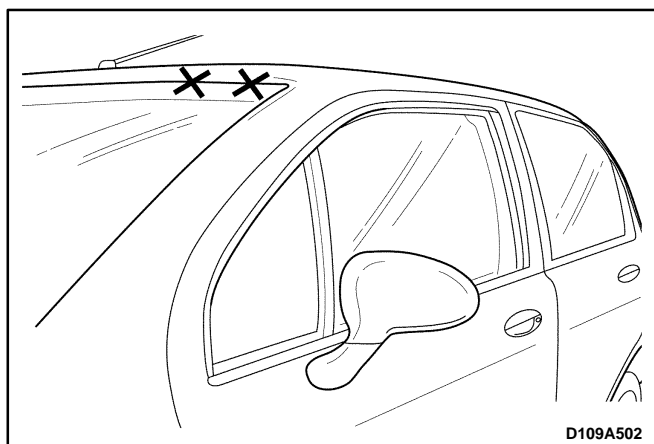
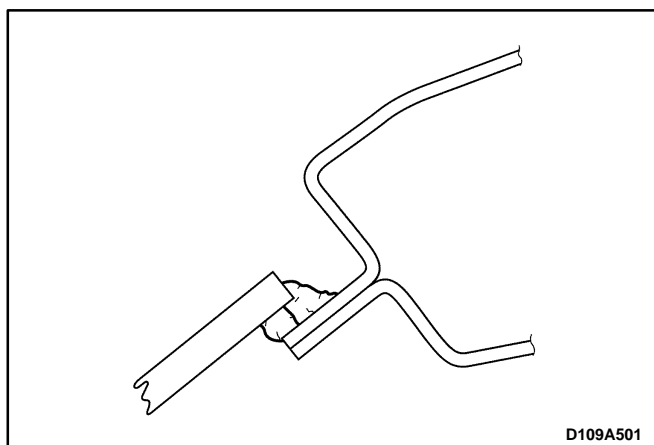
Air Hose Test

1. Apply soapy water to the outside of the vehicle in the suspected leak area.
2. Blow air from inside the vehicle. The air pressure should not exceed 205 kPa (29.7 psi).
3. Determine the location of the leaks from the bubbles formed in the soapy water.



REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE



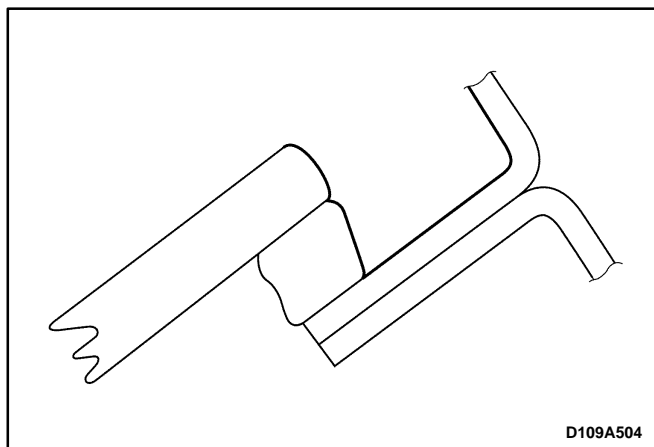
WATERLEAK REPAIR

Some waterleaks around the glass can be repaired without removing the glass.

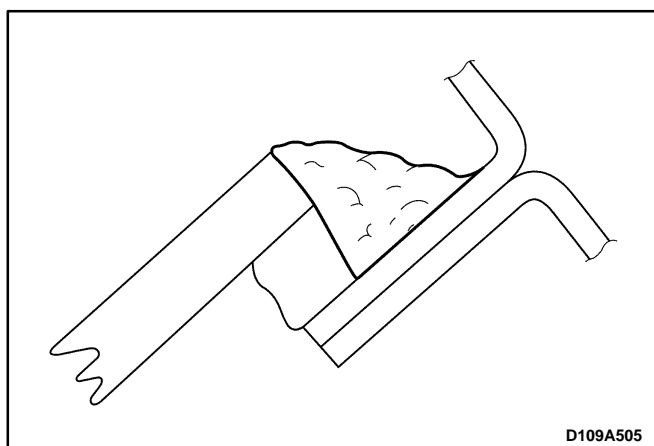
Important: This type of repair may be used only for urethane-installed glass.

- 1 Remove the reveal molding in the area of the leak. It may be necessary to remove the garnish molding or the trim strip lace in order to locate the leak.
2. While spraying water over leak area, carefully push the glass outward in order to determine the size of the leak.
3. Mark the location of the leak.
4. Use water to clean any dirt frame the area. Dry the area with an air hose.

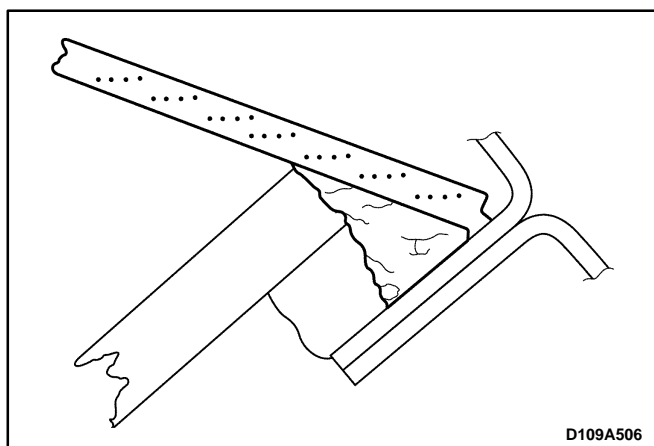
5. Using a sharp knife, trim off the uneven edges of the adhesive caulking material around the leak for a distance of 75 to 100 mm (3 to 4 inches) on both side of the leak.



6. Prime the trimmed area with the primer.
7. Using a sharp knife, trim off the uneven edges of the adhesive material around the leak 75 to 100 mm (3 to 4 inches) on both sides of the leak.



8. Allow the primer to dry for 5 minutes.
9. Apply the adhesive over the leak and for a distance of 75 to 100 mm (3 to 4 inches) on both sides of the leak.



10. Immediately after applying the adhesive, use a flat stick or a similar tool to work the adhesive into the leak area and into the joint between the original material and the vehicle body in order to ensure a watertight seal.
11. Spray warm or hot water over the repaired area in order to determine if the leak was repaired. Do not run a heavy stream of water directly on the freshly applied adhesive.
12. Install the trim strip lace if it was removed.
13. Install the garnish molding if it was removed.
14. Install the reveal molding.



Important: After the completion of any waterleak repair, re-test the area using the watertest stands. Do not use localized testing procedures on the newly-repaired areas, as the repair material may dislodge under abnormal pressure.

SPECIFICATIONS

RECOMMENDED MATERIALS FOR WATERLEAK REPAIRS

Leak Areas	Repair Materials
Windshield, back window	Urethane adhesive, caulking kit, or the equivalent
Metal joints	Brushable seam sealer which can be painted
Ventilation ducts	3M™ Auto Bedding and Glazing Compound or the equivalent
Small cracks and pin holes	3M™ Drip-Check Sealer or the equivalent
Large holes	3M™ Automotive Joint and Seam Sealer
Weatherstrips	3M™ 08011 Weatherstrip Adhesive or the equivalent
Bolts, studs, and screws	Strip caulk

WATERTEST STAND SPECIFICATIONS

Application	Description
Nozzle Type	Full jet spray nozzle #1/2 GG-25 or equivalent with a 60° included angle
Nozzle Height	Approximately 1,600 mm (63.0 in.) from the floor
Volume of Flow	14L (3.7 gal) per minute
Pressure	155 kPa (22.5 psi) measured at the nozzle
Windshield and A-Pillar Test Stand Position	Approximately 30° down, 45° toward the rear, and aimed at the corner of the windshield
B-Pillar Test Stand Position	Approximately 30° down, 45° toward the rear, and aimed at the center of the rear door
Back Window and tailgate Test Stand Position	Approximately 30° down, 45° toward the front and aimed approximately 610 mm (24.0 in.) from the corner of the back window

SECTION 9J

WINDNOISE

TABLE OF CONTENTS

Diagnostic Information and Procedures	9J-1	Repair Instructions	9J-2
Windnoise Diagnosis	9J-1	On-Vehicle Service	9J-2
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DIAGNOSTIC INFORMATION AND PROCEDURES

WINDNOISE DIAGNOSIS

Caution: *An assistant should drive the vehicle while the technician checks for the location of the windnoise, in order to prevent personal injury or vehicle damage.*

A test drive in the vehicle is necessary to accurately determine the location of the windnoise. Often there is a primary leak and secondary leaks. Failure to repair all leaks will only reduce the windnoise, not eliminate it.

During the test drive the technician should bring the following items to aid in determining the location of the windnoise.

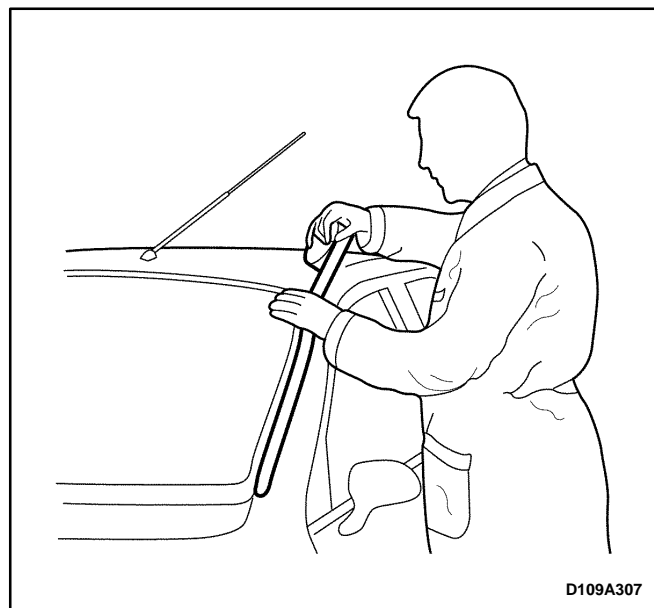
- A mechanics stethoscope or vacuum hose
- Masking tape
- Strip caulk
- A china marking pencil
- A screwdriver

Perform the following steps in order to conduct the road test:

1. Choose a route that includes smooth straight streets that run in all four directions (north, south, east, and west).
2. Choose streets with little traffic or noise that would interfere with the test.
3. Drive the vehicle at the speeds at which the noise was noticed by the customer or until the noise is produced. Do not exceed legal speed limits.
4. The windnoise is external if any of the following conditions occur:
 - The windnoise is caused by the wind.
 - The windnoise can be heard with the door glass lowered and while the vehicle is being driven.
 - The windnoise is eliminated when tape is placed over various moldings and gaps.

5. Internal windnoise is air leaving the vehicle and should be repaired in the following manner.

- In order to locate the leak, tape off the body lock pillar pressure relief valves. This will cause air pressure to build up inside the vehicle and enhance the windnoise.
- Use a stethoscope or a vacuum hose to locate the leak.
- Temporarily repair the leak with masking tape.



- Continue testing in order to determine if the noise has been eliminated or if other leaks exist.
- When all leaks have been found, return to the shop and make permanent repairs with the proper alignment techniques and sealing materials.

REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE

WINDNOISE REPAIR

Windnoise leak repairs are very similar to waterleak repairs. Refer to *Section 9I, Waterleaks*. The actual procedure depends on the type of seal being repaired. Leaks around the door opening weatherstrips do not always indicate a faulty weatherstrip. A door or window adjustment may resolve the condition. Refer to *Section 9L, Glass and Mirrors*.

SECTION 9K

SQUEAKS AND RATTLES

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		Squeak and Rattle Repair	9K-3

DIAGNOSTIC INFORMATION AND PROCEDURES

SQUEAK AND RATTLE DIAGNOSIS

Condition	Probable Cause	Correction
Rattle Coming From the Side Rail	<ul style="list-style-type: none">● Improperly connected brake lines.	<ul style="list-style-type: none">● Tap lightly on the brake lines and listen for a rattle.● Install plastic tie straps to secure the brake lines tightly together.
Rattle Under Vehicle at Higher RPM	<ul style="list-style-type: none">● The heat shield contacts with the underbody.	<ul style="list-style-type: none">● Raise the vehicle and perform a visual inspection.● Bend the heat shield slightly to gain clearance from the underbody.
Squeak From the Front of the Vehicle in Cold Weather	<ul style="list-style-type: none">● Poor front stabilizer shaft insulators taping.	<ul style="list-style-type: none">● While the vehicle is cold, perform a test drive and achieve full front suspension travel by driving through a dip in the road.● Remove the insulators and wrap teflon tape around the stabilizer shaft. Reinstall the insulators over the tape.
Thump From Rear of Vehicle on Bumps	<ul style="list-style-type: none">● Improperly secured spare tire in the rear compartment.	<ul style="list-style-type: none">● Open the rear compartment and perform a visual inspection of the spare tire and the tools.● Tightly secure the spare tire and all tools.● Perform a road test to verify that the noise is eliminated.
Glass Knock Coming From the Rear of the Vehicle When Driving Over Bumps	<ul style="list-style-type: none">● An out-of-adjustment hatchback latch.	<ul style="list-style-type: none">● Test drive the vehicle in order to verify this condition.● Loosen the latch nuts and adjust the latch downward.
Rattle Coming From Door	<ul style="list-style-type: none">● The door lock solenoid is loose.	<ul style="list-style-type: none">● Remove the door trim panel and check if the solenoid is loose.● Tighten the solenoid bolts.
	<ul style="list-style-type: none">● Rattling electrical connectors inside the door trim panel.	<ul style="list-style-type: none">● Tap on the trim panel and listen for a rattle.● Remove the trim panel and wrap foam padding around the connectors as required.
Squeak When Operating Doors	<ul style="list-style-type: none">● A lack of lubrication of the door hinge pins.	<ul style="list-style-type: none">● Operate the doors and listen for squeaks.● Lubricate the door hinge pins with light oil and coat with lithium grease.
	<ul style="list-style-type: none">● A lack of lubrication of the door hold open link arm.	<ul style="list-style-type: none">● Lubricate the door hold open link arm with light oil and coat with lithium grease.

SQUEAK AND RATTLE DIAGNOSIS (Cont'd)

Condition	Probable Cause	Correction
Squeak Coming From Console When Shifting Manual Transaxle (Condition Occurs In Cold Weather with a Cold Engine)	<ul style="list-style-type: none">• The faulty manual transaxle control lever lower boot.	<ul style="list-style-type: none">• Move the control lever between gears and listen for squeaks.• Remove the floor console and replace the lower shift boot or apply talcum powder to the lower shift boot.
Squeak Coming From Instrument Cluster Trim Plate	<ul style="list-style-type: none">• Rubbing of the cluster trim plate on the instrument panel.	<ul style="list-style-type: none">• Test drive the vehicle in order to verify this condition.• Remove the instrument cluster trim plate and install felt tape to the edges.

REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE

SQUEAK AND RATTLE REPAIR

Squeaks and rattles are caused by the unwanted movement between parts of a vehicle. There are three means to prevent squeaks or rattles.

- Attach the parts securely so that there is no relative motion during the operation of the vehicle.
- Separate the parts so that there is no contact during operation.
- Insulate the parts so that no squeaks or rattles occur with the movement of the parts. Low uniform friction surfaces can be used to eliminate “stick-slip” motion.

SECTION 9L

GLASS AND MIRRORS

CAUTION: Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.

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Outside Rearview Mirrors	9L-2	Front Door Quarter Glass	9L-12
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DESCRIPTION AND OPERATION

STATIONARY GLASS

Stationary glass consists of all the glass on the vehicle which is immovable within its frame, such as the windshield glass, the back glass, and the inside rearview mirror.

INSIDE REARVIEW MIRROR

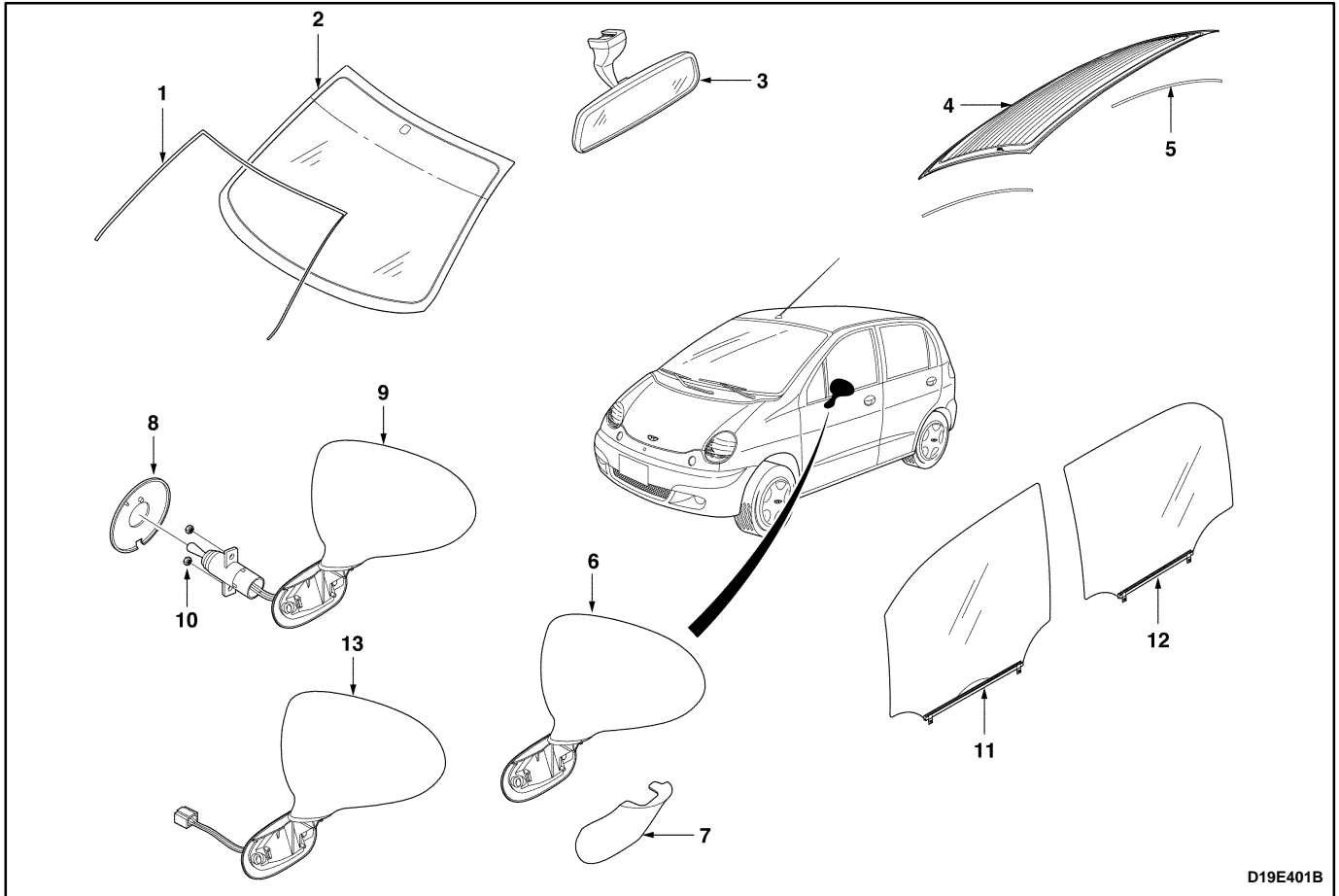
The inside rearview mirror can be manually adjusted up/down, fore/aft, and left/right. The rearview mirror pivots in two places: the ball-and-socket mirror pivot and the up/down hinge lever at the mirror support.

OUTSIDE REARVIEW MIRRORS

Three types of outside rearview mirrors are available. The outside rearview mirrors are adjusted by hand which is standard. The remote control and the electric outside rearview mirrors are optional. The outside rearview mirrors are installed on the front doors.

COMPONENTS LOCATOR

GLASS AND MIRROR

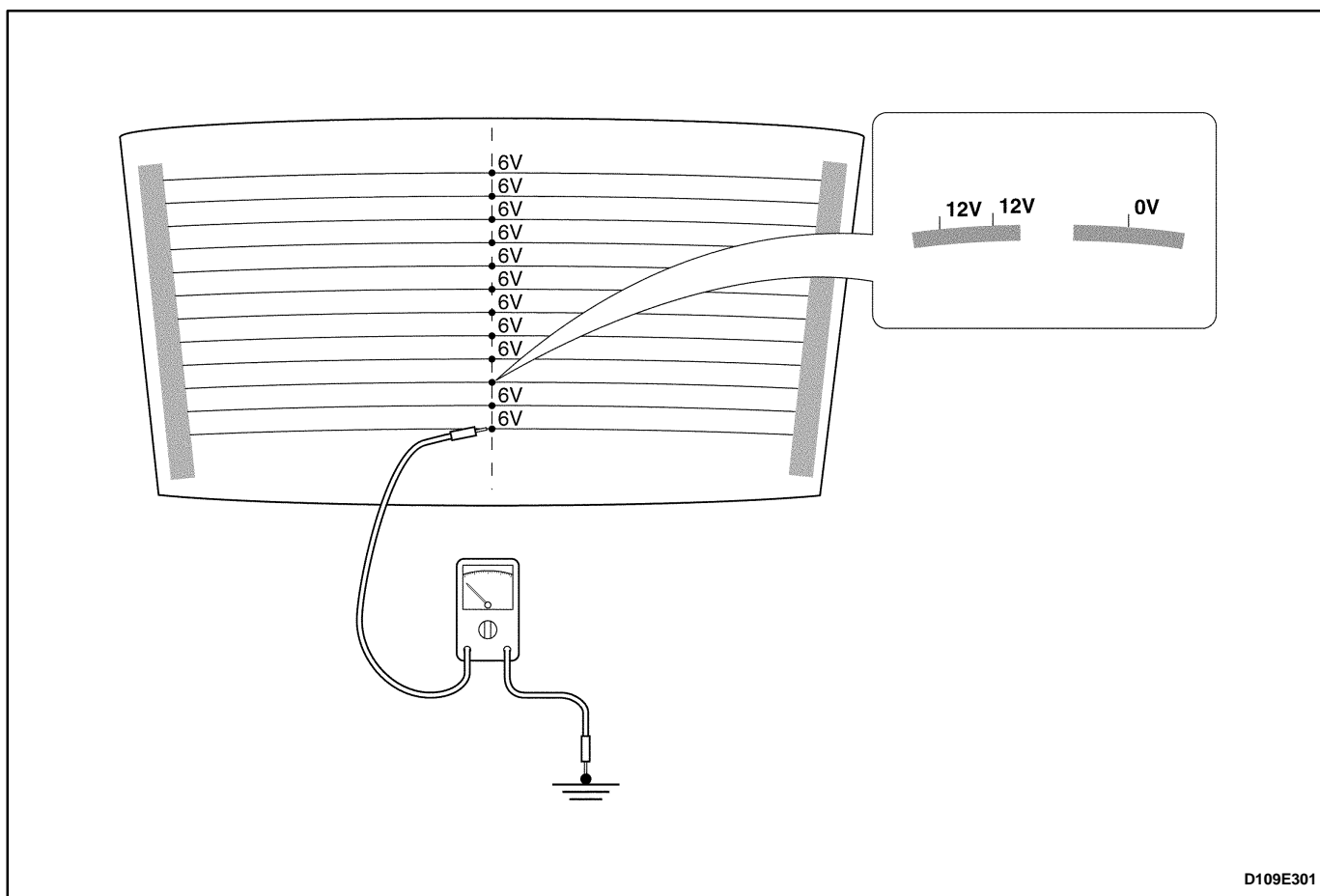


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- | | |
|-------------------------------------|--|
| 1. Windshield Molding | 7. Outside Rearview Mirror Cover |
| 2. Windshield | 8. Outside Rearview Mirror Trim Cover |
| 3. Inside Rearview Mirror | 9. Outside Rearview Mirror (Cable) |
| 4. Rear Window Glass | 10. Nuts |
| 5. Rear Window Glass Damping | 11. Front Door Glass |
| 6. Outside Rearview Mirror (Manual) | 12. Rear Door Glass |
| | 13. Outside Rearview Mirror (Electric) |

DIAGNOSTIC INFORMATION AND PROCEDURES

TESTING REAR WINDOW DEFOGGER GRID LINE



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If it has been observed during use that a grid line is inoperative, the following procedure can be used to find the break. If none of the grid lines is operating, a full system diagnosis should be completed before attempting to repair the grid lines.

1. Turn the ignition ON.

2. Turn on the rear window defogger.

Notice: Use care when touching the voltmeter terminals to a grid line. If the terminals are roughly applied, the grid line may be scratched, resulting in an open circuit.

3. From the inside of the vehicle, connect a voltmeter to each end of a grid line. The voltmeter will indicate battery voltage if the grid line is open.

4. If a grid line is found to be open, move a voltmeter terminal from one side of the grid line and retest at a

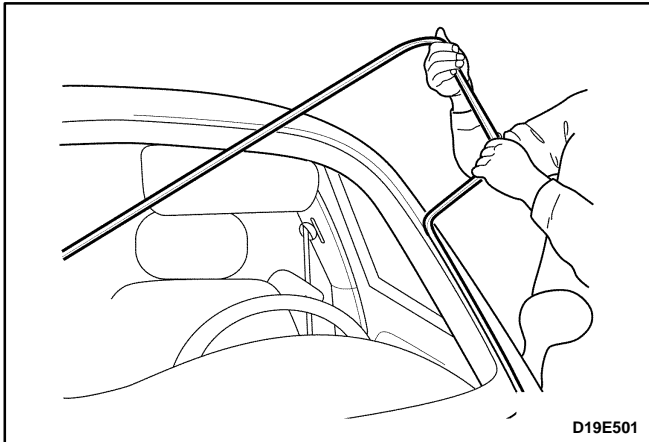
point nearer to the other side of the window. Continue to retest, each time bringing one of the voltmeter terminals closer to the opposite side of the window from where it was originally connected. The break in the grid line is at the point where the voltmeter begins reading 0 volts instead of battery voltage.

5. Use a marking crayon to lightly mark the break point on the rear window. Mark the glass instead of marking directly on the grid line, and make the mark far enough from the grid line so that the mark can easily be removed without disturbing the repair.

6. Use a grid line repair kit to fix the break in the grid line. Refer to "Rear Window Defogger Grid Line Repair" in this section.

REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE



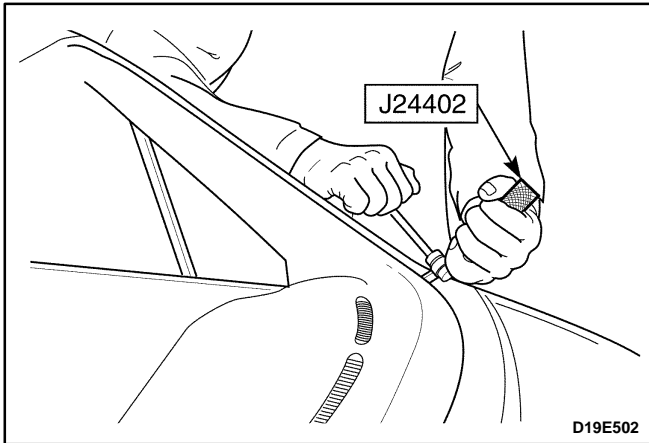
WINDSHIELD

Tool Required

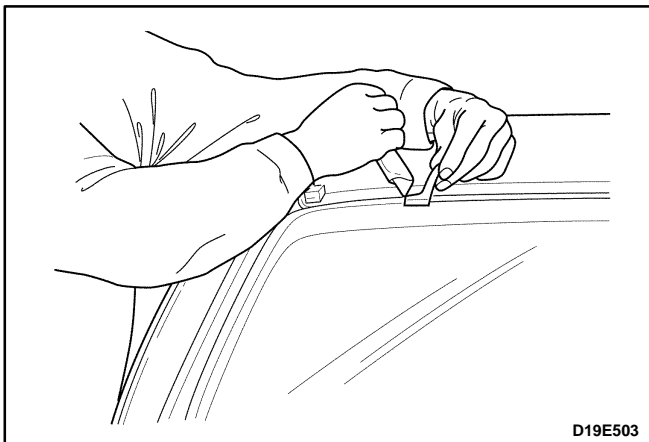
J-24402 Glass Sealant Remover

Removal Procedure

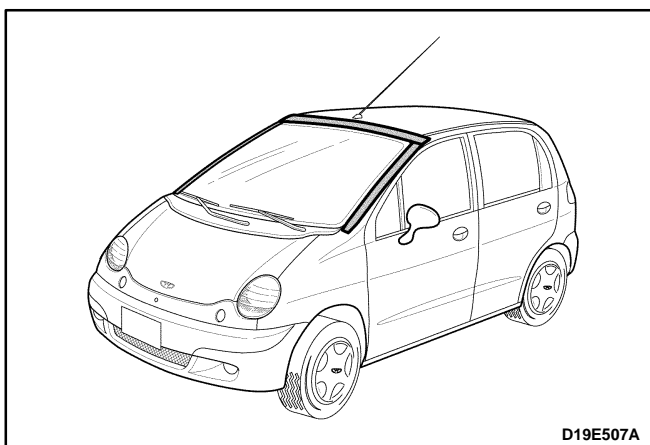
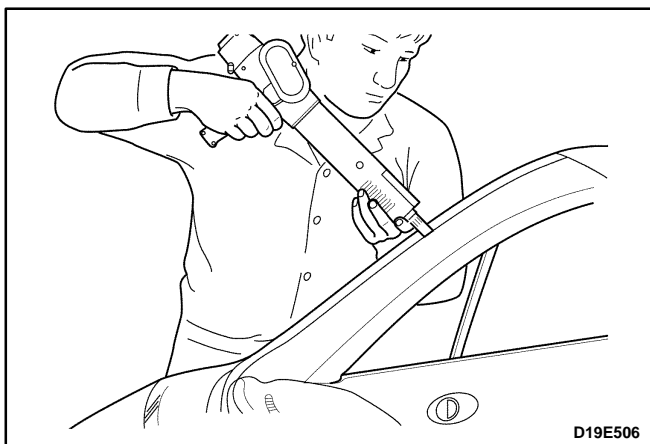
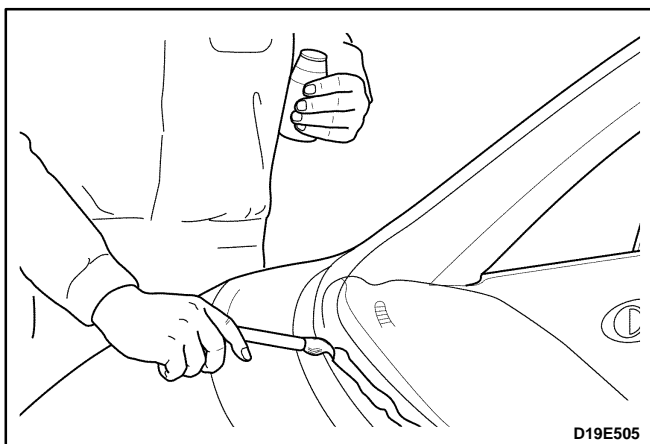
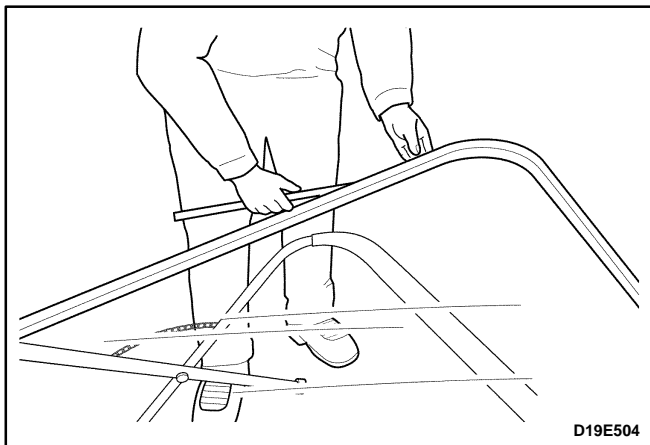
1. Remove the cowl vent grille. Refer to *Section 9R, Body Front End*.
2. Remove the inside rearview mirror. Refer to "Inside Rearview Mirror" in this section.
3. Remove the weatherstrip around the windshield.



4. Using the glass sealant remover J-24402, cut the adhesive around the windshield.



5. Remove the windshield from the vehicle.
6. Using a knife, remove the adhesive from the windshield.



Installation Procedure

1. Install the new weatherstrip to the windshield.

2. Apply tape to the new weatherstrip and the windshield to hold the weatherstrip in place.

3. Apply adhesive primer to the windshield frame and the perimeter of the windshield.

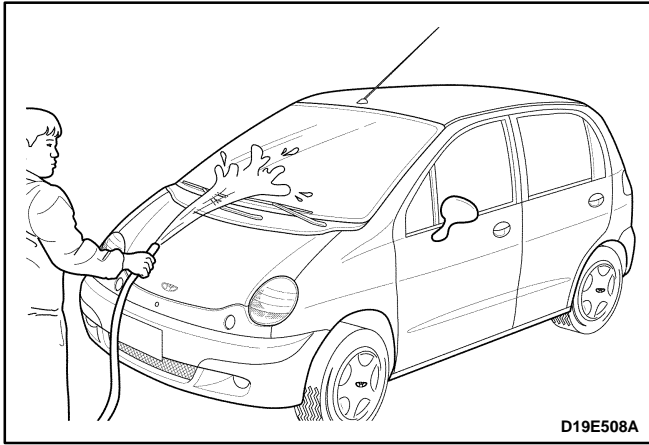
4. Apply glass adhesive to the windshield frame.

5. Install the windshield into the windshield frame.

6. Reposition the tape over the weatherstrip, the windshield and the windshield frame to hold the windshield in place.

7. Let the adhesive dry for 24 hours.

8. Remove the tape.

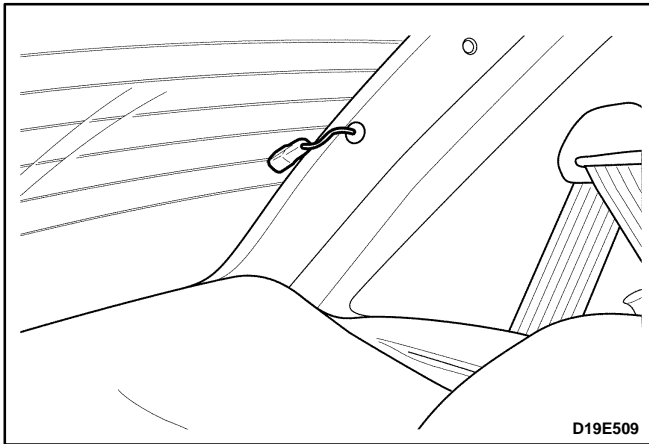


9. Check for waterleaks by pouring water on the windshield. If a leak is found, dry the windshield and fill the area that leaks with adhesive. If the leak persists, remove the windshield and repeat the entire procedure.
10. Install the inside rearview mirror. Refer to "Inside Rearview Mirror" in this section.
11. Install the cowl vent grille. Refer to *Section 9R, Body Front End*.

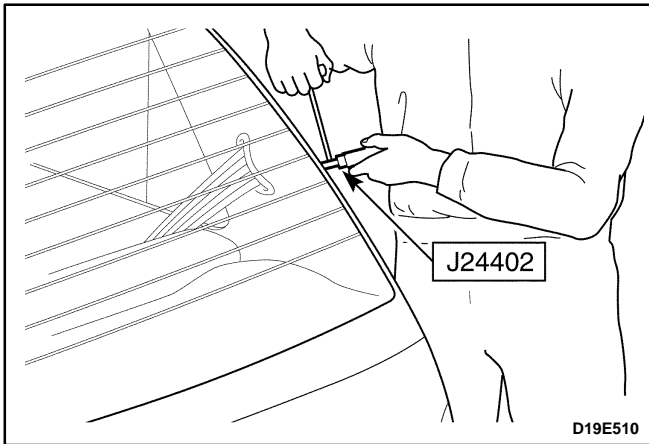
REAR WINDOW GLASS

Removal Procedure

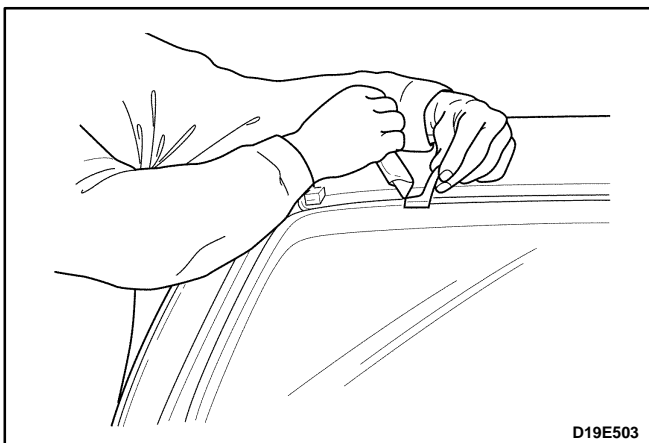
1. Disconnect the negative battery cable.
2. Disconnect the rear window defogger electrical connectors.

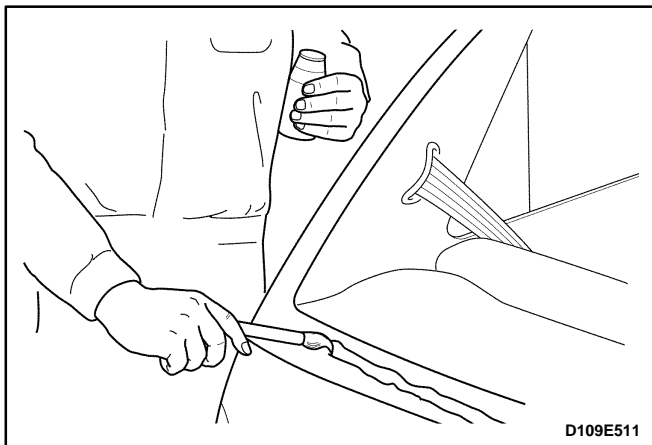


3. Using the glass sealant remover J-24402, cut the adhesive around the rear window glass.

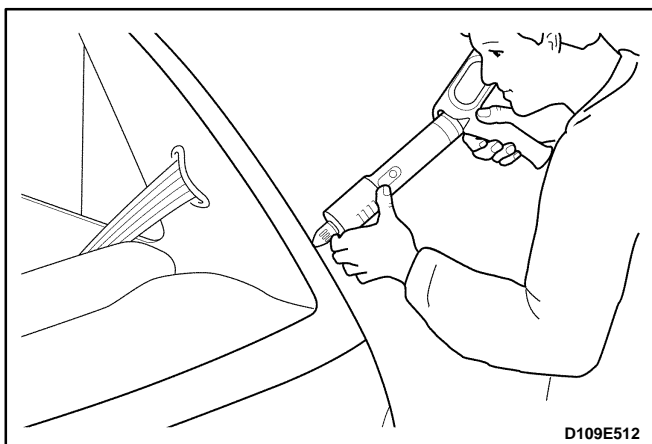


4. Remove the rear window glass from the vehicle.
5. Using a knife, remove the adhesive from the rear window glass.
6. Using a knife, remove the adhesive from the rear window frame.

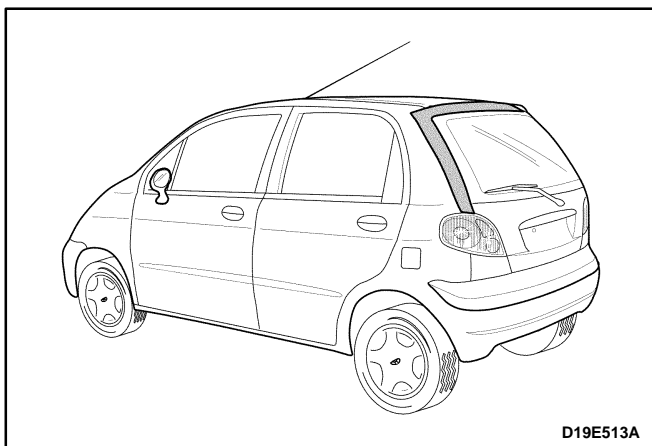




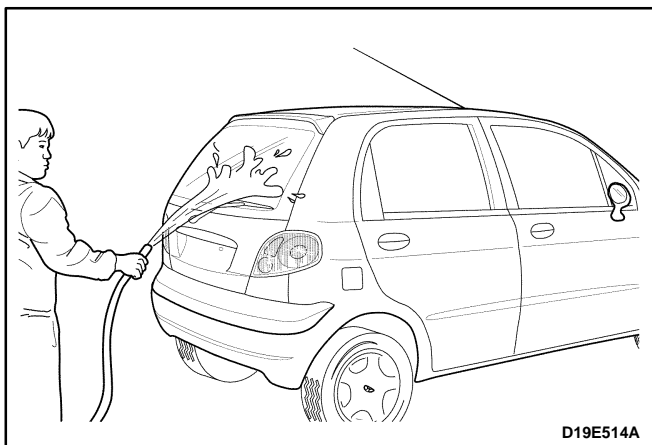
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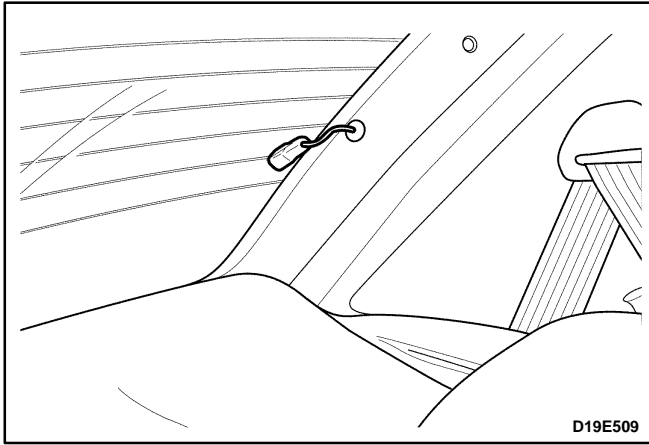
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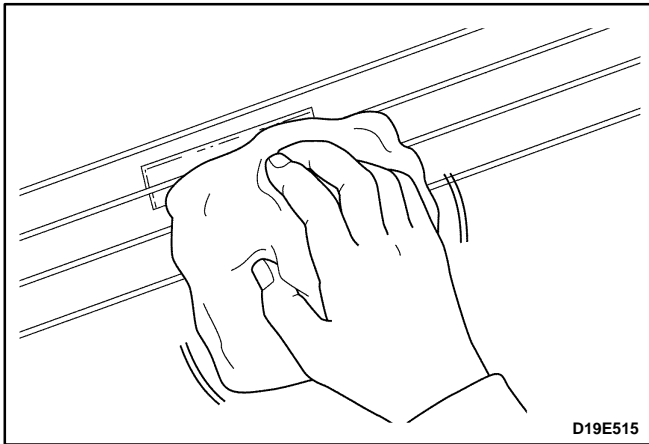
Installation Procedure

1. Apply tape to the new weatherstrip and the rear window to hold the weatherstrip in place.
2. Apply adhesive primer to the rear window frame and the perimeter of the rear window.
3. Apply glass adhesive to the rear window frame.
4. Install the rear window into the rear window frame.
5. Reposition the tape over the weatherstrip, the rear window and the rear window frame to hold the rear window in place.
6. Let the adhesive dry for 24 hours.
7. Remove the tape.
8. Check for waterleaks by pouring water on the rear window. If a leak is found, dry the window and fill the area that leaks with adhesive. If the leak persists, remove the rear window and repeat the entire procedure.
9. Connect the rear window defogger electrical connector.
10. Connect the negative battery cable.

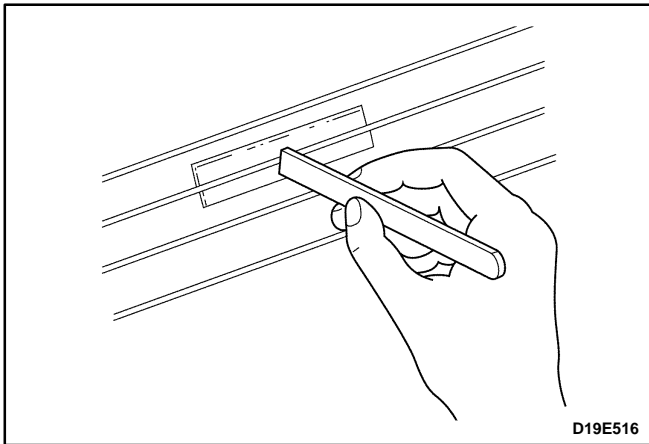


REAR WINDOW DEFOGGER GRID LINE REPAIR

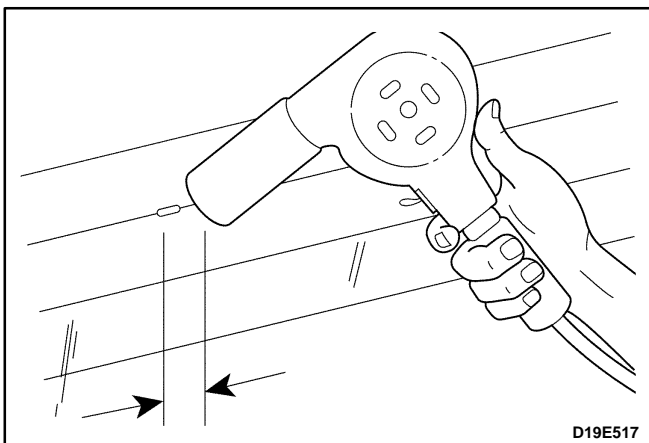
1. Disconnect the negative battery cable.
2. Disconnect the rear window defogger electrical connector.



3. Inspect the rear window defogger grid lines.
4. Use steel wool to buff the grid lines that are to be repaired. Wipe the lines clean using a cloth dampened with alcohol. Buff and clean about 6 mm (0.25 inch) beyond each side of the break in the grid line.

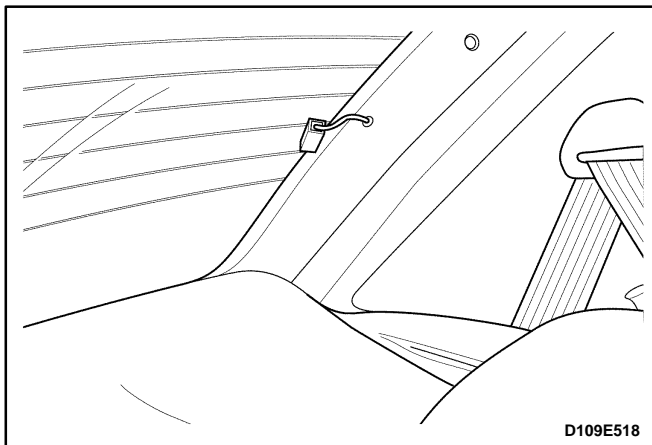


5. Attach a grid line repair decal or two strips of tape above and below the repair areas.
 - A repair decal or tape must be used in order to control the width of the repair areas.
 - If a decal is used, the die-cut metered slot must be the same width as the grid line.
6. Apply the grid repair material to the repair area using a small wooden stick or a spatula. The grid repair material should be at room temperature.
7. Carefully remove the decal or the tape.

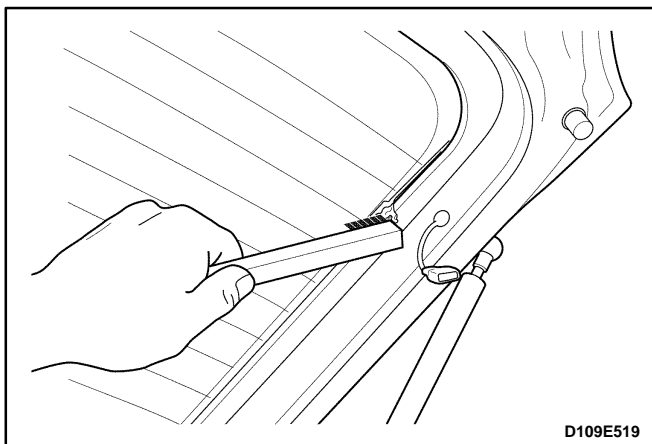


Notice: The grid line repair material must be cured with heat. In order to avoid heat damage to the interior trim, protect the trim near the repair area where heat will be applied.

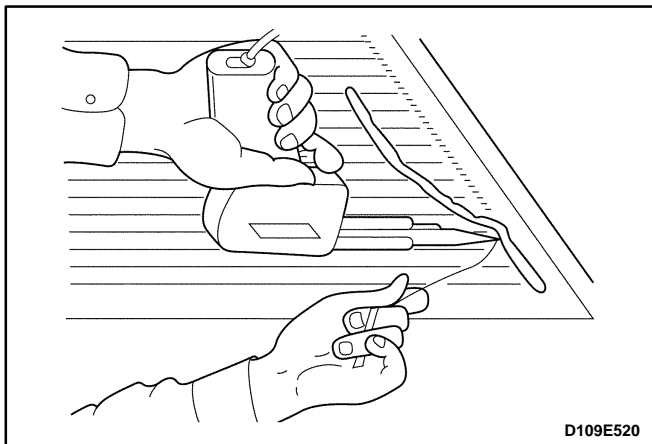
8. Heat the repair area for 1 to 2 minutes.
9. Hold the heat gun nozzle 25 mm (1 inch) from the surface. A minimum temperature of 149°C (300°F) is required.



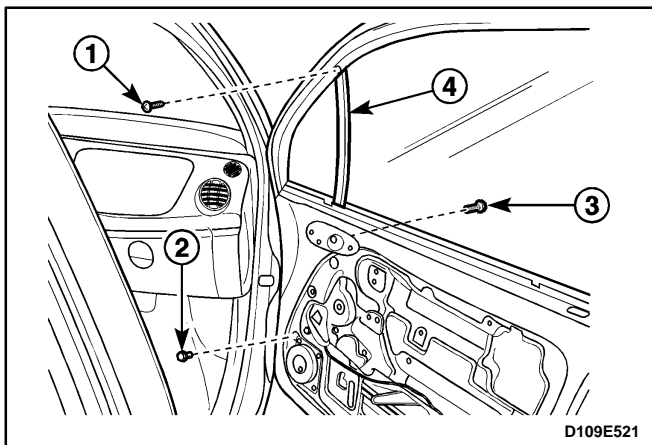
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10. Inspect the grid line repair area. If the repair appears discolored, apply a coating of tincture of iodine to the area using a pipe cleaner or a line brush. Allow the iodine to dry for about 30 seconds. Carefully wipe off the excess iodine with a lint-free cloth.
11. Test the operation of the rear window defogger in order to verify that the repair was successful.

Important: At least 24 hours is required for complete curing of the repair materials. The repair area should not be physically disturbed until after that time.

REAR WINDOW DEFOGGER BRAIDED LEAD WIRE REPAIR

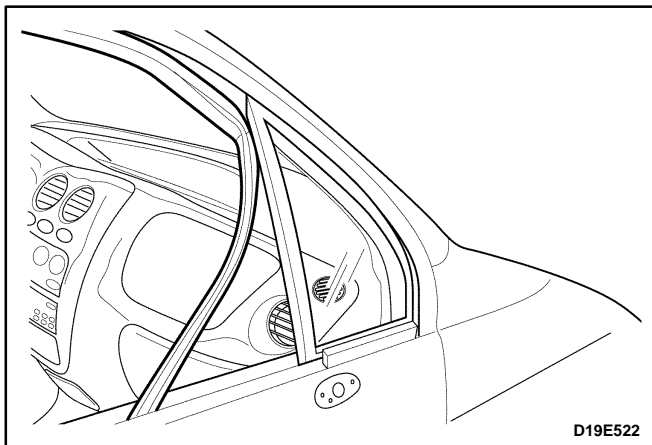
The rear window defogger bus lead wire or the terminal can be reattached by resoldering. Use a solder containing 3 percent silver and a rosin flux paste.

1. Disconnect the negative battery cable.
2. The repair area should be buffed with fine steel wool before soldering the bus lead wire.
3. Apply the paste-type rosin flux in small quantities to the wire lead and the bus lead wire repair area using a brush.
4. Coat the soldering iron tip with solder use only enough solder to ensure a complete repair.
5. Use only enough heat to melt the solder. Do not over-heat the wire when resoldering to the bus lead wire.

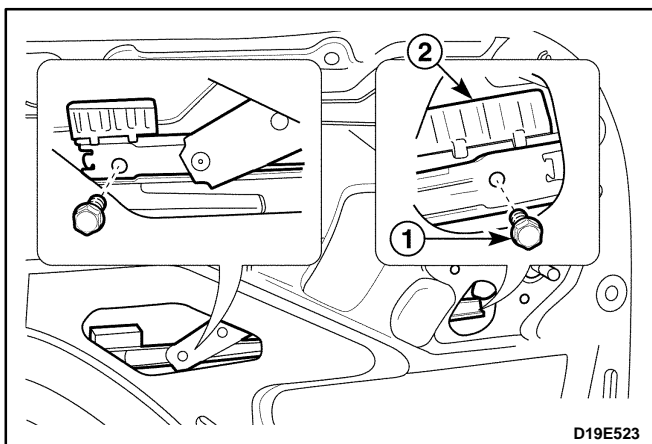
FRONT DOOR GLASS

Removal Procedure

1. Remove the front door seal trim. Refer to *Section 9P, Doors*.
2. Remove the outside rearview mirror from the front door. Refer to "Glass and Mirrors" in this section.
3. Remove the division bar.
 - Remove the screw (1).
 - Remove the inside bolt (2).
 - Remove the outside bolt (3).
 - Remove the division bar (4).



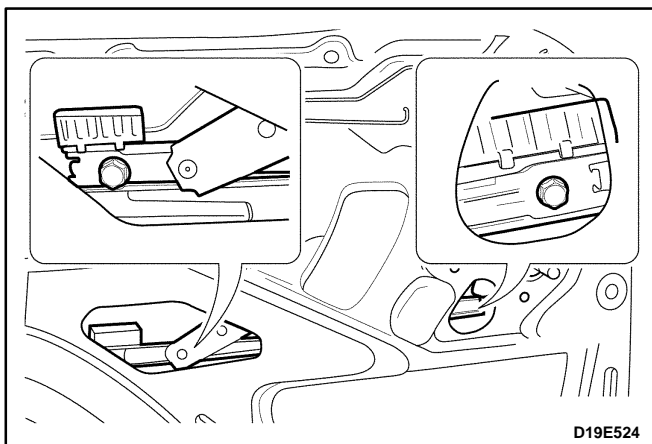
4. Remove the glass run from the front door.



5. Remove the glass from the front door.

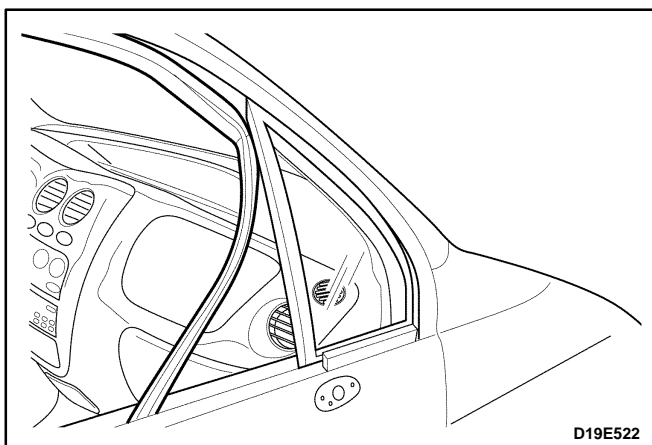
- Remove the glass retaining bolts (1).
- Remove the glass (2).

Notice: Make sure not to contact the glass with the body to prevent the paint damage.

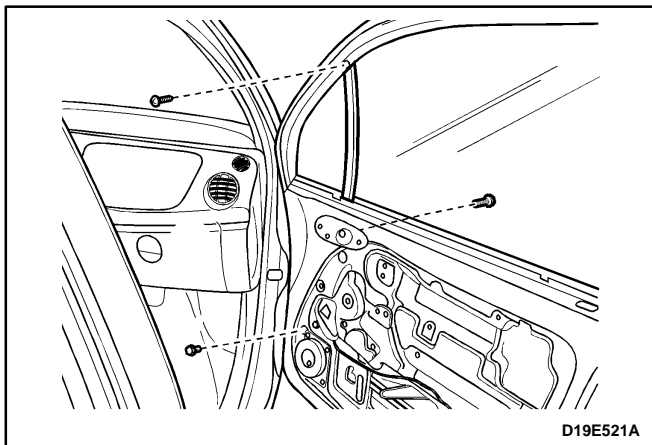


Installation Procedure

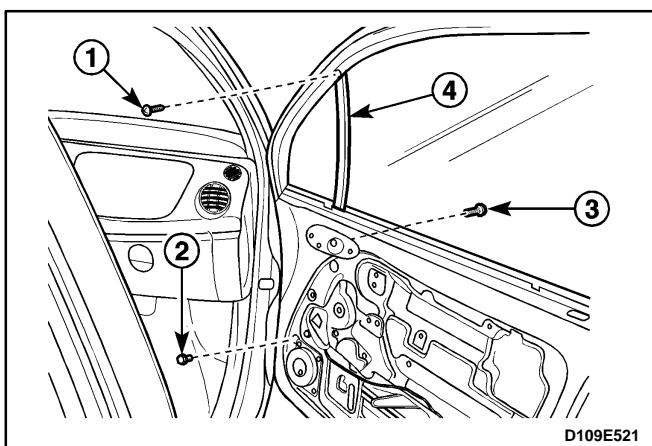
1. Install the front door glass with the bolts.



2. Install the front door glass run.



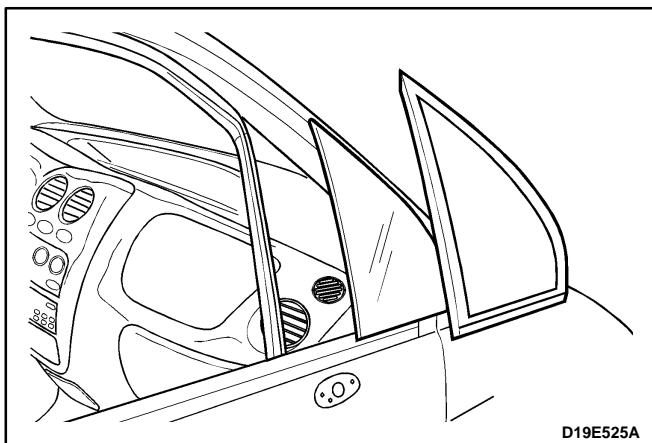
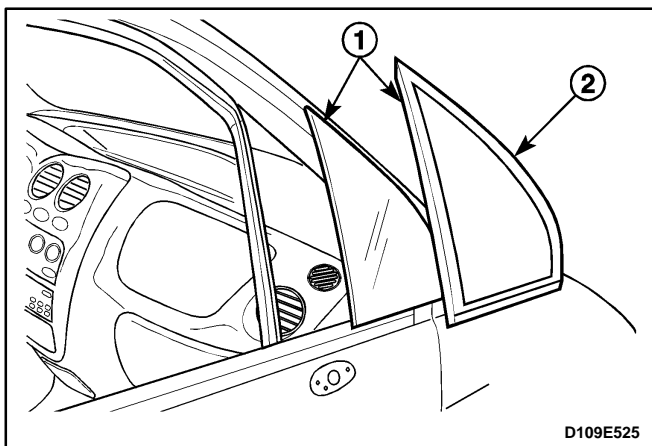
3. Install the division bar with the guide rail inside bolt, the guide rail outside bolt and the guide rail screw.
4. Install the outside rearview mirror. Refer to "Glass and Mirrors" in this section.
5. Install the front door seal trim. Refer to *Section 9P, Doors*.



FRONT DOOR QUARTER GLASS

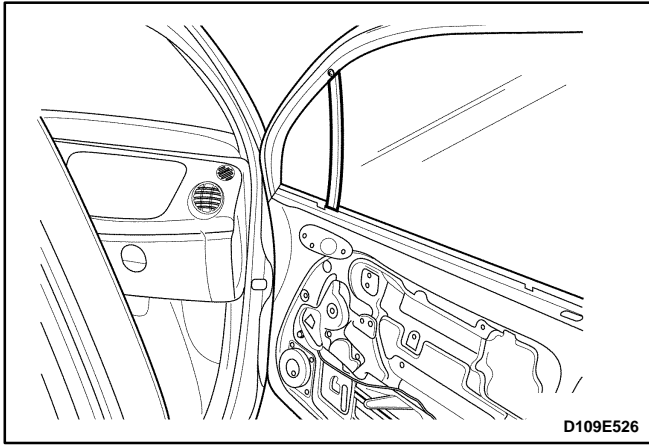
Removal Procedure

1. Remove the front door seal trim. Refer to *Section 9P, Doors*.
2. Remove the outside rearview mirror. Refer to "Outside Rearview Mirror" in this section.
3. Remove the guide rail.
 - Remove the screw (1).
 - Remove the inside bolt (2).
 - Remove the outside bolt (3).
 - Remove the division bar (4).
4. Remove the quarter glass from the front door.
 - Remove the quarter glass assembly (1).
 - Remove the quarter glass run (2).

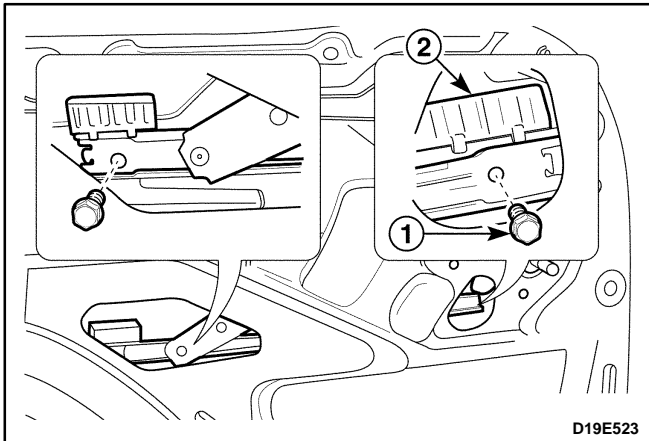


Installation Procedure

1. Install the quarter glass with the quarter glass run.



2. Install the division bar with the guide rail inside bolt, the guide rail outside bolt and the guide rail screw.
3. Inside the outside rearview mirror. Refer to "Outside Rearview Mirror" in this section.
4. Install the front door seal trim. Refer to *Section 9P, Doors*.

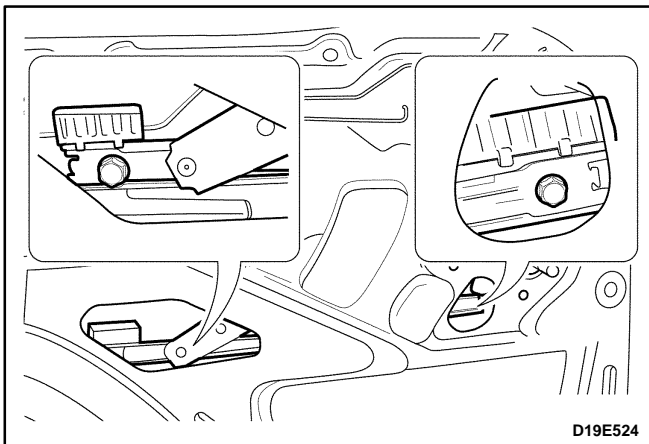


REAR DOOR GLASS

Removal Procedure

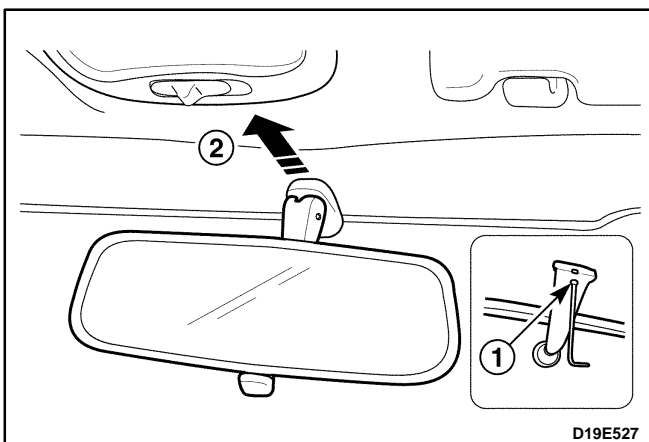
1. Remove the glass run. Refer to *Section 9P, Doors*.
2. Remove the glass.
 - Remove the bolts (1).
 - Remove the glass (2).

Notice: Make sure not to contact the glass with the body to prevent the paint damage.



Installation Procedure

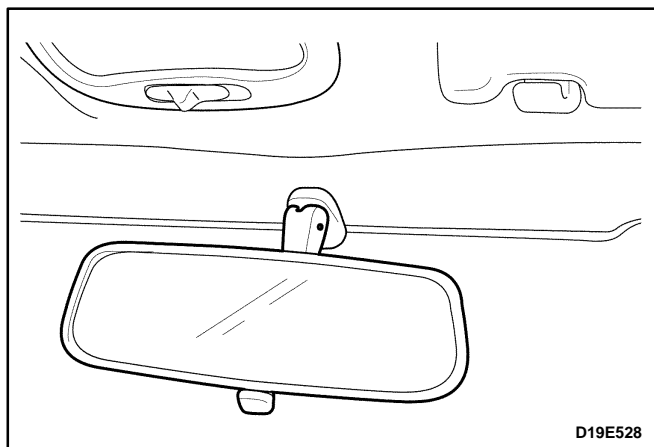
1. Install the glass with the bolts.
2. Install the glass run. Refer to *Section 9P, Doors*.



INSIDE REARVIEW MIRROR

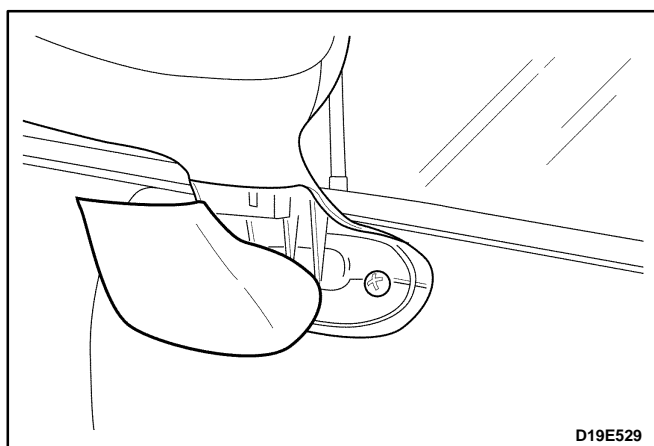
Removal Procedure

1. Remove the inside rearview mirror.
 - Remove the screw (1).
 - Remove the inside rearview mirror (2).



Installation Procedure

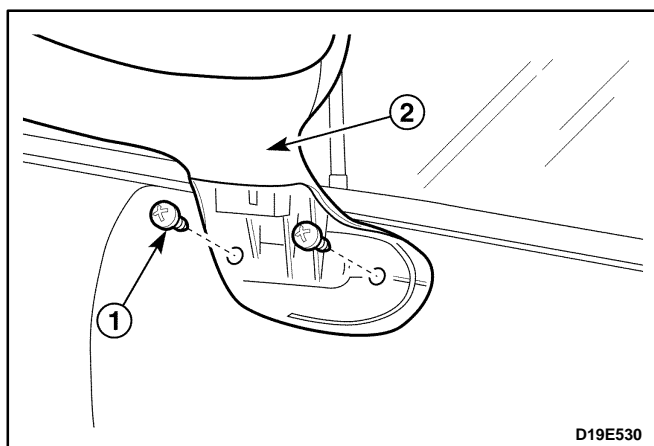
1. Install the inside rearview mirror with the screw.



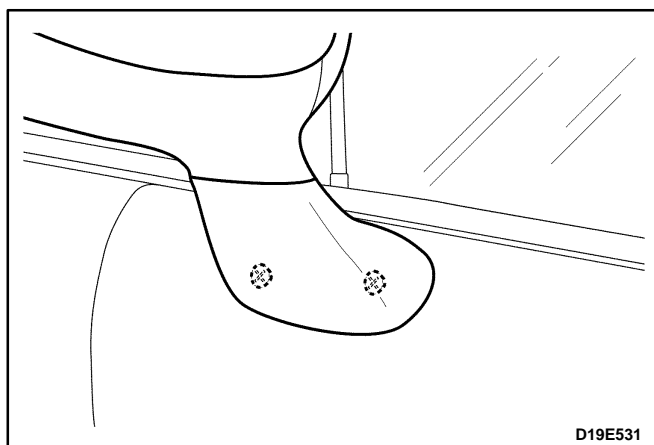
OUTSIDE REARVIEW MIRROR (MANUAL)

Removal Procedure

1. Remove the outside rearview mirror cover from the outside rearview mirror.

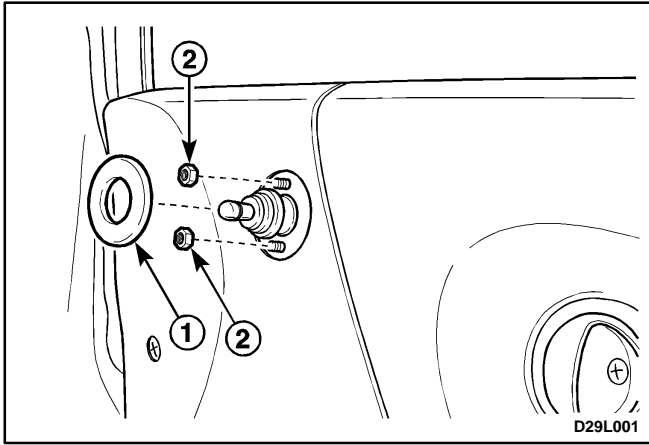


2. Remove the outside rearview mirror.
 - Remove the screws (1).
 - Remove the outside rearview mirror (2).



Installation Procedure

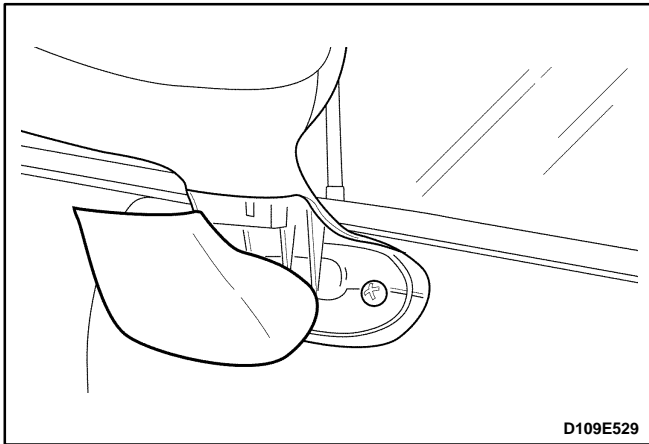
1. Install the outside rearview mirror with the screws.
2. Install the outside rearview mirror cover.



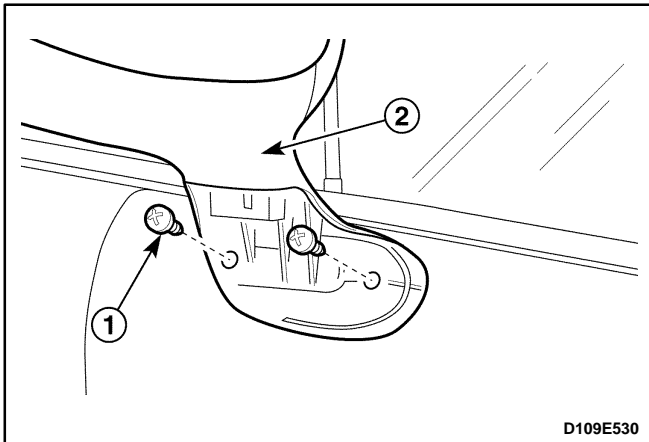
OUTSIDE REARVIEW MIRROR (CABLE)

Removal Procedure

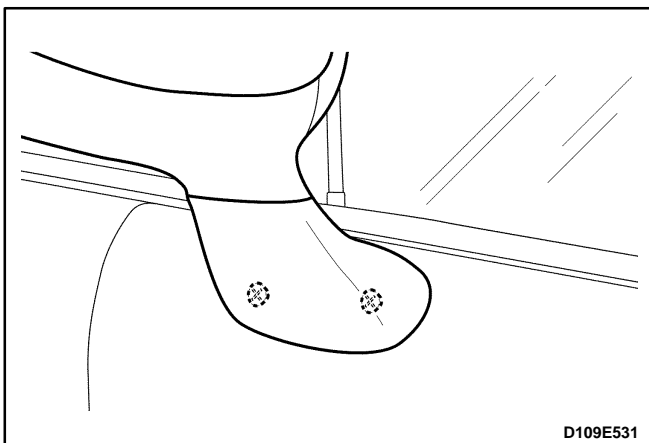
1. Pry off the outside rearview mirror inside trim cover (1).
2. Remove the mirror adjusting lever mounting nuts (2).



3. Remove the outside rearview mirror cover from the outside rearview mirror.

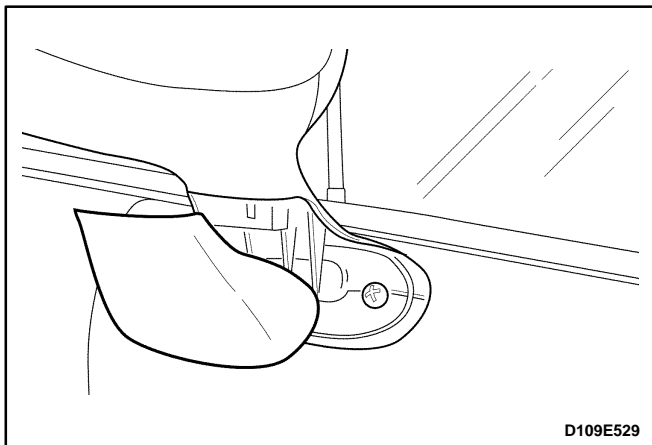


4. Remove the outside rearview mirror.
 - Remove the screws (1).
 - Remove the outside rearview mirror (2).



Installation Procedure

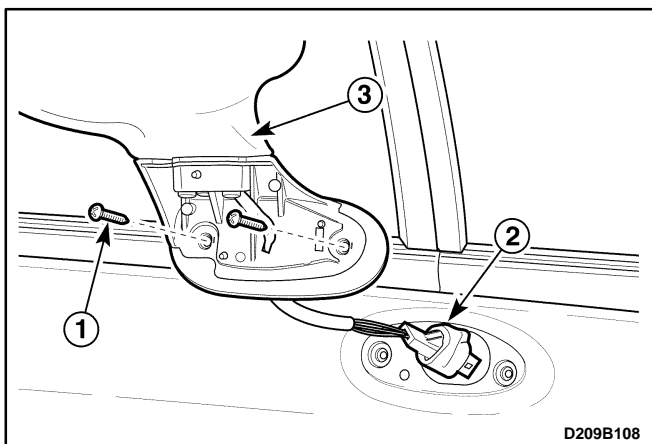
1. Install the outside rearview mirror with the screws.
2. Install the outside rearview mirror cover.
3. Install the mirror adjusting lever with the nuts.
4. Install the outside rearview inside trim cover.



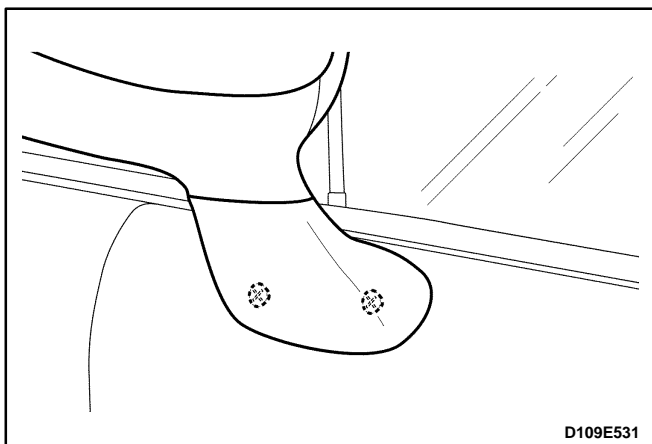
OUTSIDE REARVIEW MIRROR (ELECTRIC)

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the outside rearview mirror cover from the outside rearview mirror.



3. Remove the outside rearview mirror.
 - Remove the screws (1).
 - Disconnect the electrical connector (2).
 - Remove the outside rearview mirror (3).

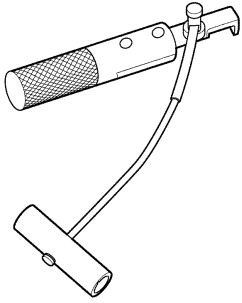


Installation Procedure

1. Connect the outside rearview mirror.
2. Install the outside rearview mirror with the screws.
3. Install the outside rearview mirror cover.
4. Connect the negative battery cable.

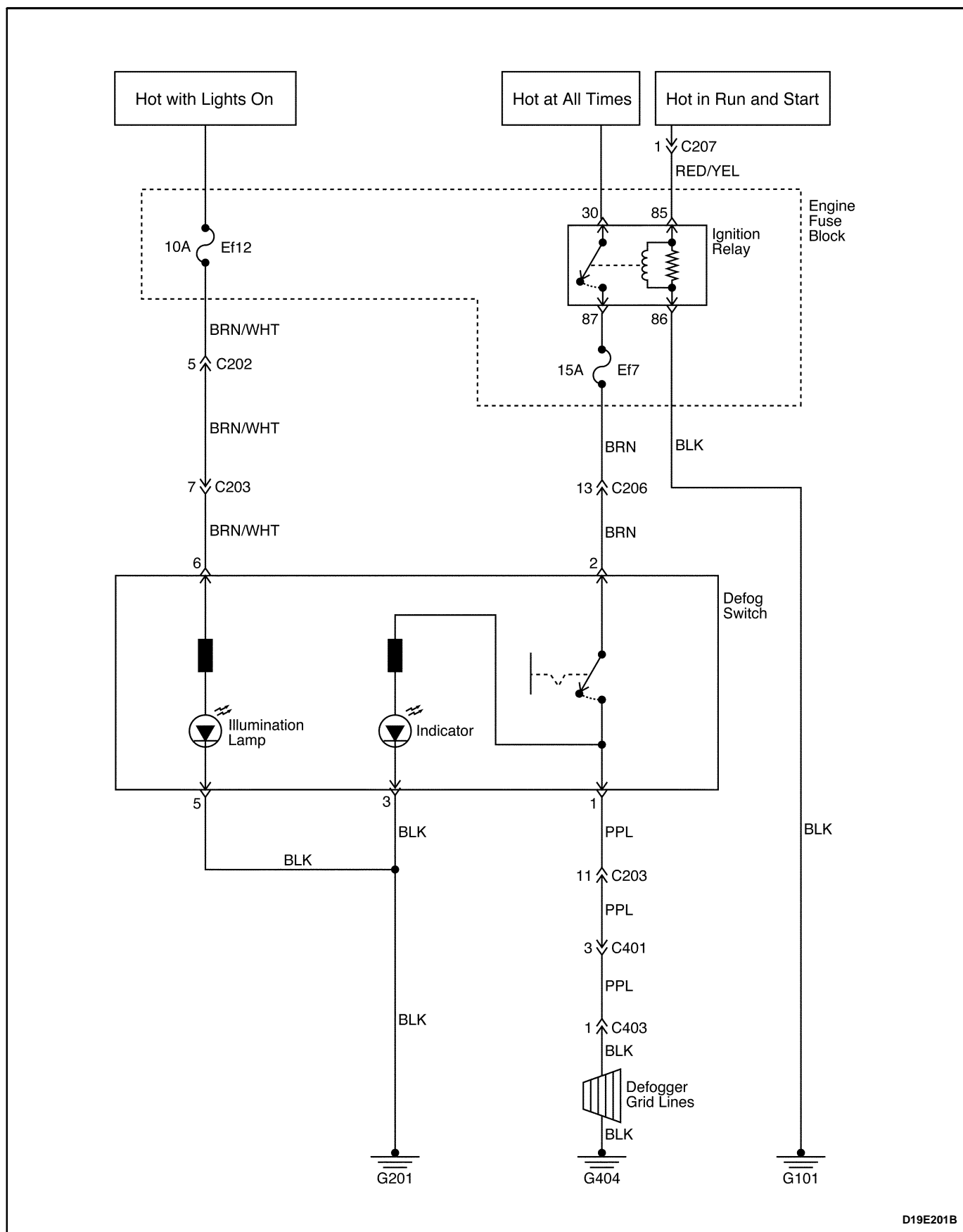
SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS TABLE

 <p>D109E102</p>	<p>J-24402 Glass Sealant Remover</p>
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SCHEMATIC AND ROUTING DIAGRAMS

REAR WINDOW DEFOGGER



D19E201B

SECTION 9M

EXTERIOR TRIM

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Description and Operation	9M-2	Roof Molding	9M-3
Emblems and Lettering	9M-2	Rear Spoiler	9M-3
Mud Guards	9M-2	Front Bumper Spacer	9M-4
Repair Instructions	9M-3	Tailgate Handle	9M-5
On-Vehicle Service	9M-3		

DESCRIPTION AND OPERATION

EMBLEMS AND LETTERING

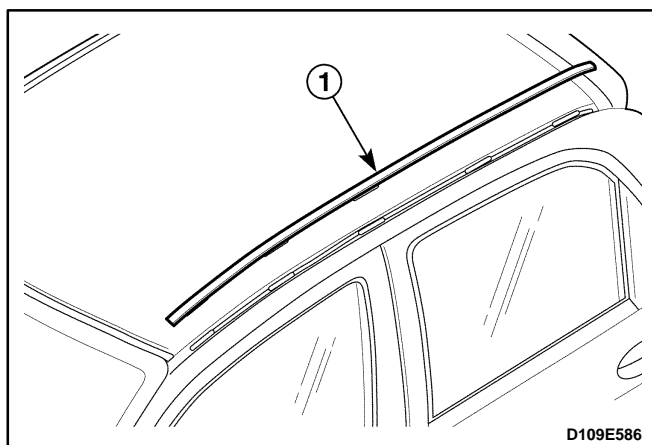
The emblems and lettering on the vehicle are attached by adhesive. The company emblem appears on the hood. The lettering, which appears in several places on the body of the vehicle, features the model, the grade, and the company name.

MUD GUARDS

Front and rear mud guards are optional equipment on all models. Mud guards will help prevent an excessive buildup of mud on the body.

REPAIR INSTRUCTIONS

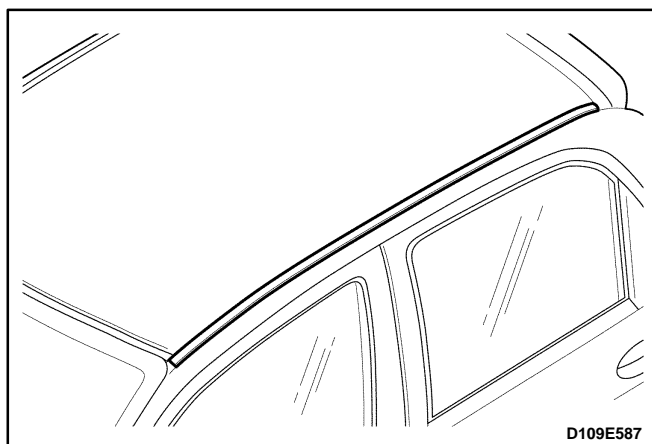
ON-VEHICLE SERVICE



ROOF MOLDING

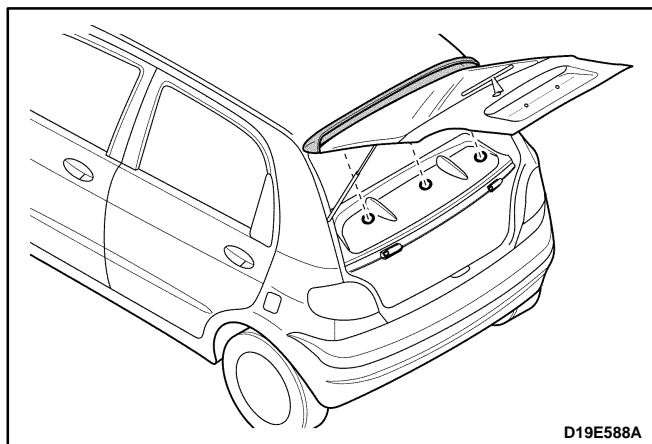
Removal Procedure

1. Remove the roof molding from the plastic clips (1).



Installation Procedure

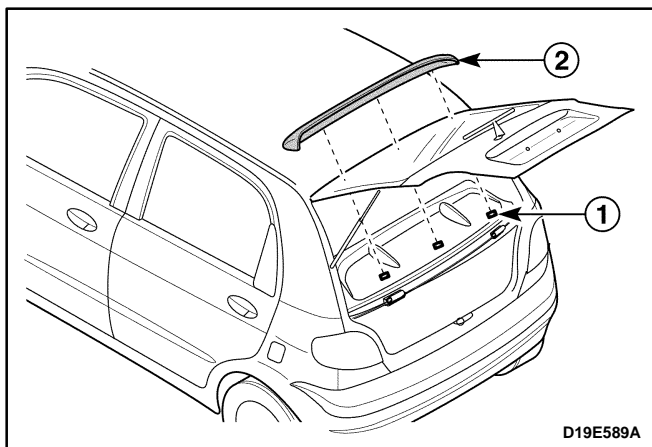
1. Press the roof molding onto the plastic clips.



REAR SPOILER

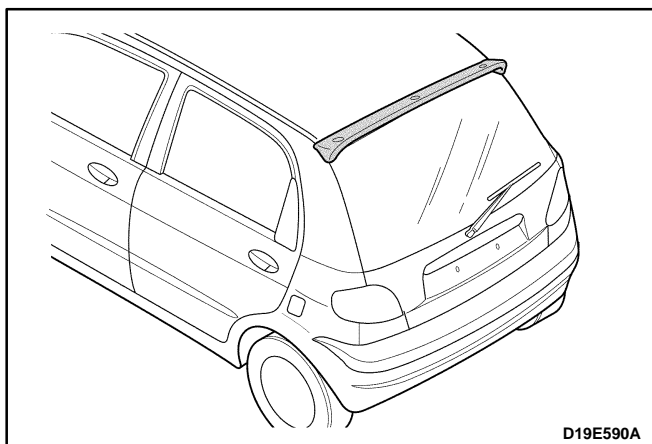
Removal Procedure

1. Open the tailgate.
2. Remove the spoiler seals.



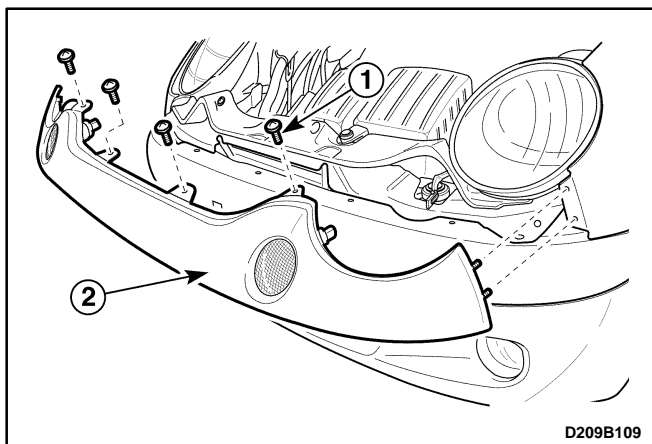
3. Remove the rear spoiler from the tailgate.

- Remove the nuts (1).
- Remove the rear spoiler (2).



Installation Procedure

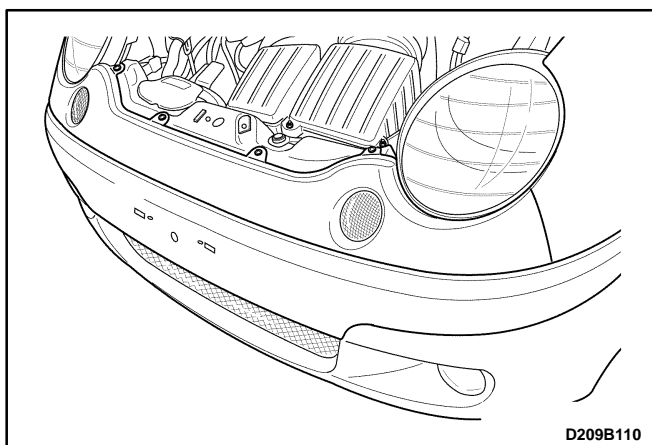
1. Install the rear spoiler on the tailgate with the nuts.
2. Install the spoiler seals.



FRONT BUMPER SPACER

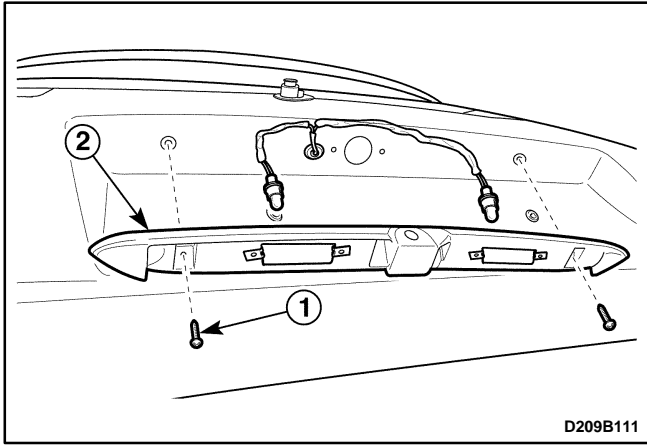
Removal Procedure

1. Support the hood suitably.
2. Disconnect the negative battery cable.
3. Remove the front bumper spacer.
 - Remove the bolts (1).
 - Remove the front bumper spacer from the bumper fascia (2).
4. Remove the turn signal lamps. Refer to *Section 9B, Lighting Systems*.



Installation Procedure

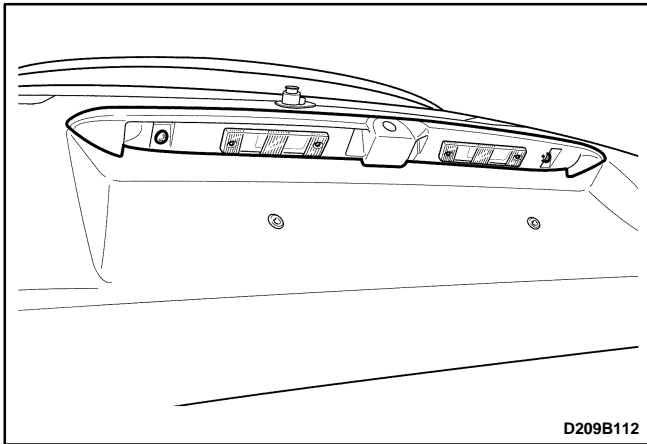
1. Install the turn signal lamps. Refer to *Section 9B, Lighting Systems*.
2. Install the front bumper spacer with the bolts.
3. Connect the negative battery cable.



TAILGATE HANDLE

Removal Procedure

1. Disconnect the negative battery cable.
2. Open the tailgate.
3. Remove the tailgate lock cylinder. Refer to *Section 9P, Doors*.
4. Remove the license plate lamps. Refer to *Section 9B, Lighting Systems*.
5. Remove the tailgate handle.
 - Remove the screws (1).
 - Remove the tailgate handle (2).



Installation Procedure

1. Install the tailgate handle with the screws.
2. Install the license plate lamps. Refer to *Section 9B, Lighting Systems*.
3. Remove the tailgate lock cylinder. Refer to *Section 9P, Doors*.
4. Connect the negative battery cable.

SECTION 9N

FRAME AND UNDERBODY

TABLE OF CONTENTS

Description and Operation	9N-2	Alignment Checking	9N-3
General Body Construction	9N-2	Floor Pan Insulators	9N-3
Transaxle Under Covers	9N-2	Specifications	9N-4
Repair Instructions	9N-3	Underbody Dimensions	9N-4
On-Vehicle Service	9N-3		

DESCRIPTION AND OPERATION

GENERAL BODY CONSTRUCTION

This vehicle is constructed with a unitized body which incorporates integral front and rear frame side rails.

The front suspension lower control arms are bolted to and retained by supports, one each on the right and left sides. The front suspension lower control arm supports are attached to the underbody with three bolts at two locations. The engine is bolted to the integral front side rails. The suspension strut towers must be dimensionally correct in relation to the remainder of the underbody in order to maintain specified suspension strut and caster/camber angles.

Since the individual underbody parts contribute directly to the overall strength of the body, it is essential to observe proper welding techniques during service repair

operations. The underbody parts should be properly sealed and rustproofed whenever body repair operations destroy or damage the original sealing and rustproofing. When rustproofing critical underbody parts, use a good-quality type of air-dry primer, such as a corrosion-resistant chromate or an equivalent material. Combination-type primer/surfacers are not recommended.

TRANSAXLE UNDER COVER

The transaxle under cover is one piece of steel that serve as shields for the underside of the transaxle. The covers help protect the engine from small rocks, gravel and other objects that would otherwise come into contact with the transaxle during normal driving conditions.

REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE

ALIGNMENT CHECKING

An accurate method of determining the alignment of the underbody uses a measuring tram gauge. The tram gauge set used to perform the recommended measuring checks must include a vertical pointer able to reach 457 mm (18 inches).

Two types of measurements can be made with a tram gauge: direct point-to-point measurements and measurements calculated on a horizontal plane (datum line) parallel to the underbody. Point-to-point measurements are generally taken on steering and suspension engine compartment parts and simply require the vertical pointers to be set equally.

For horizontal plane measurements, the vertical pointers must be set as specified for each point to be measured.

Dimensions-to-gauge holes are measured to the center of the holes and flush to the adjacent surface metal unless otherwise specified. It is recommended that the diagonal dimensions to the cross-body be checked on both sides in order to verify the dimensional accuracy of the vehicle underbody.

FLOOR PAN INSULATORS

The floor pan insulators have been designed for the higher floor pan temperatures that result from the use of the catalytic converter in the exhaust system. Therefore, when servicing a vehicle, it is essential that any in-

surators that may have been disturbed or removed be reinstalled in the original sequence and location. Also, if an insulator needs to be replaced, use only the insulation specified for that location on the floor pan.

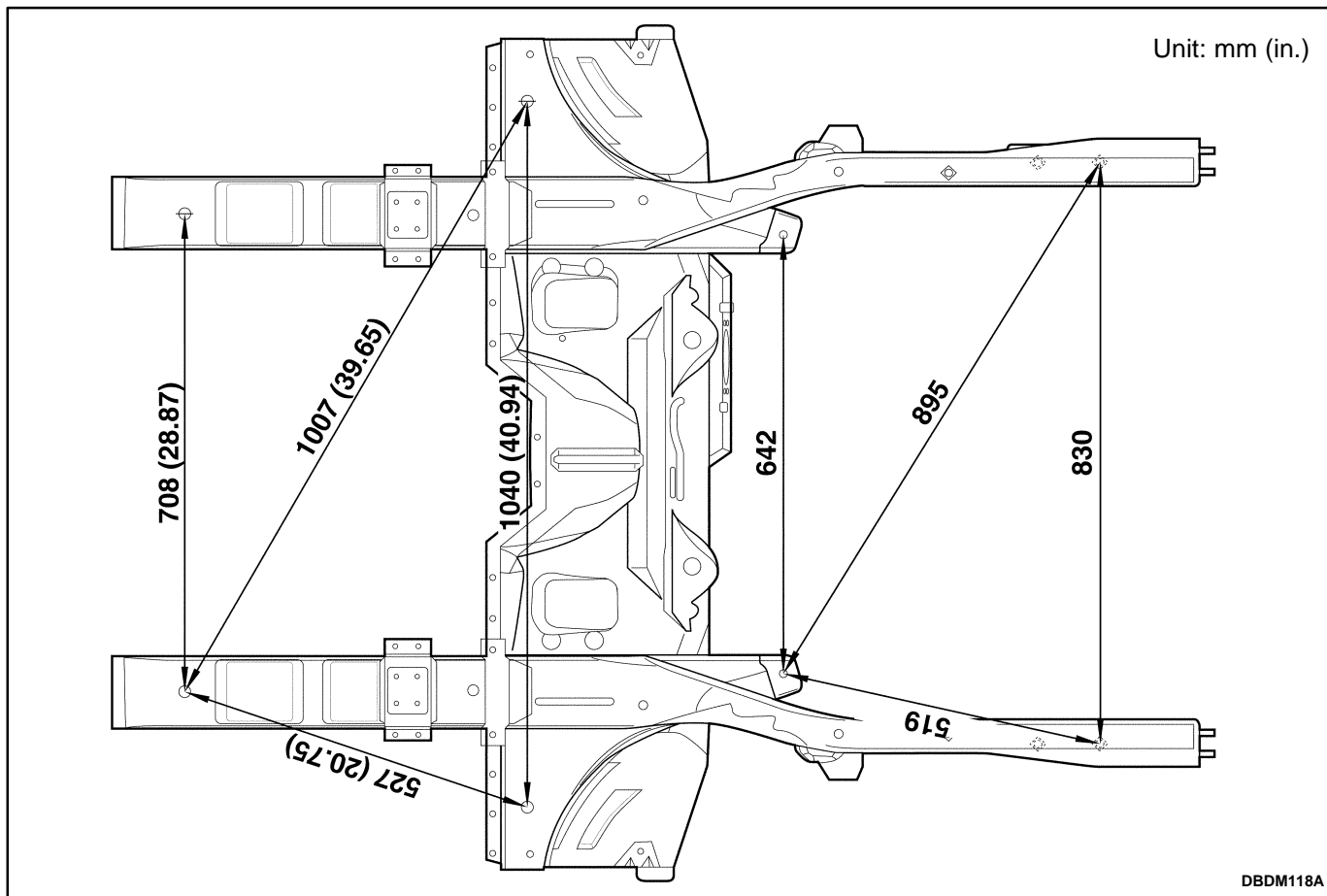
When servicing or replacing interior insulators, observe the following instructions.

- Install the insulators in the original position and sequence. Butt the pieces together in order to avoid gapping or overlapping.
- If it is necessary to replace an insulator, use only the specified insulation.
- Use the original part to determine the amount of replacement material required and as a template for cutting and fitting the new piece to the floor pan.
- When installing the insulator, do not enlarge any cut-outs or holes that are used for the attachment of interior parts such as the instrument panel or the floor console.
- Route the cross-body harness for interior parts over the floor pan insulators. Clip it in the original location.
- Do not apply spray-on deadeners or trim adhesives to the top of the floor pan at the area directly over the catalytic converter or the muffler.

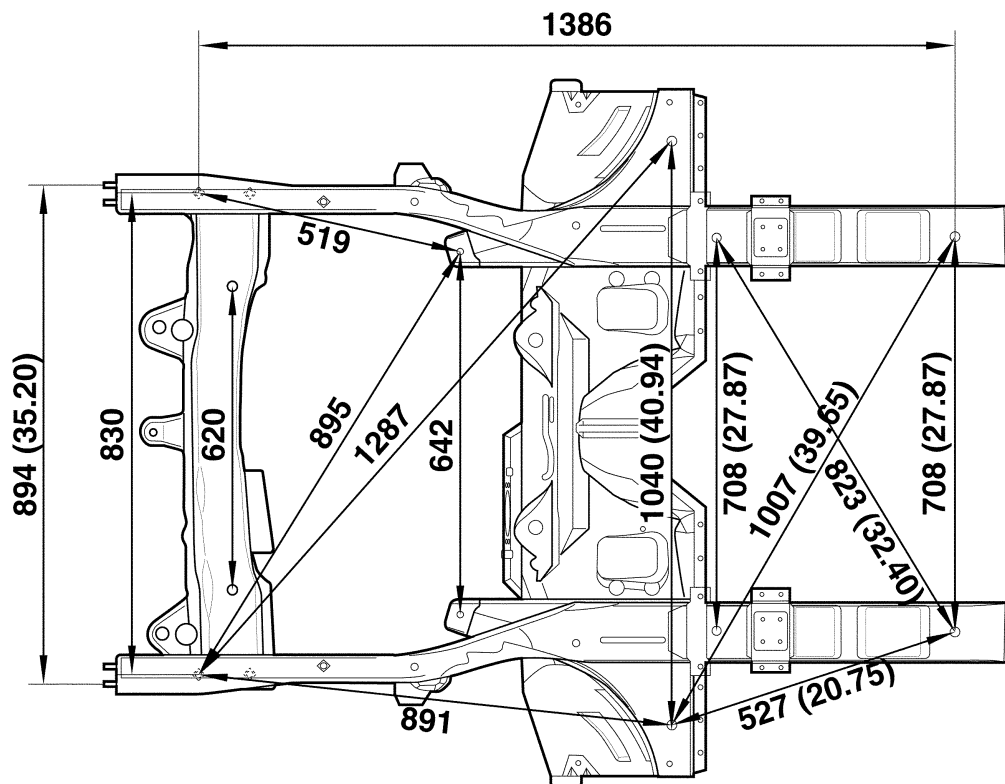
Any insulator service repair or replacement should be the same thickness, size, and location as the original installation in the vehicle.

SPECIFICATIONS

UNDERBODY DIMENSIONS

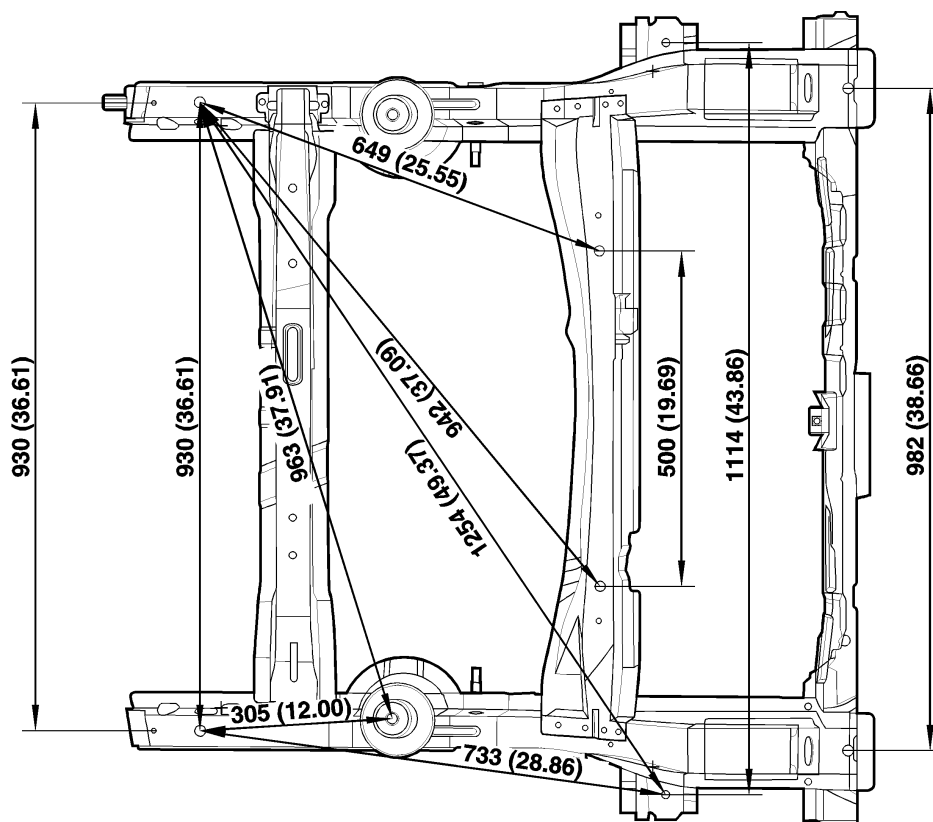


Unit: mm (in.)



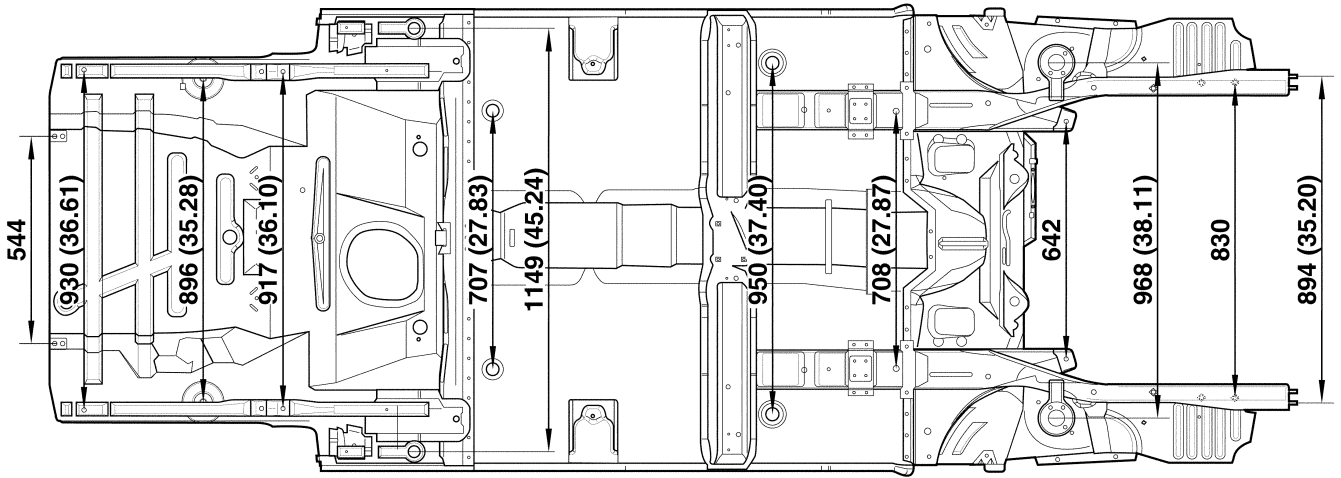
DBDM119A

Unit: mm (in.)



DBDM120

Unit: mm (in.)



DBDM117A

SECTION 90

BUMPERS AND FASCIAS

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Bumpers and Fascias	90-3	Rear Bumper Fascia	90-6
Repair Instructions	90-4	Rear Bumper Bracket	90-8

DESCRIPTION AND OPERATION

BUMPERS

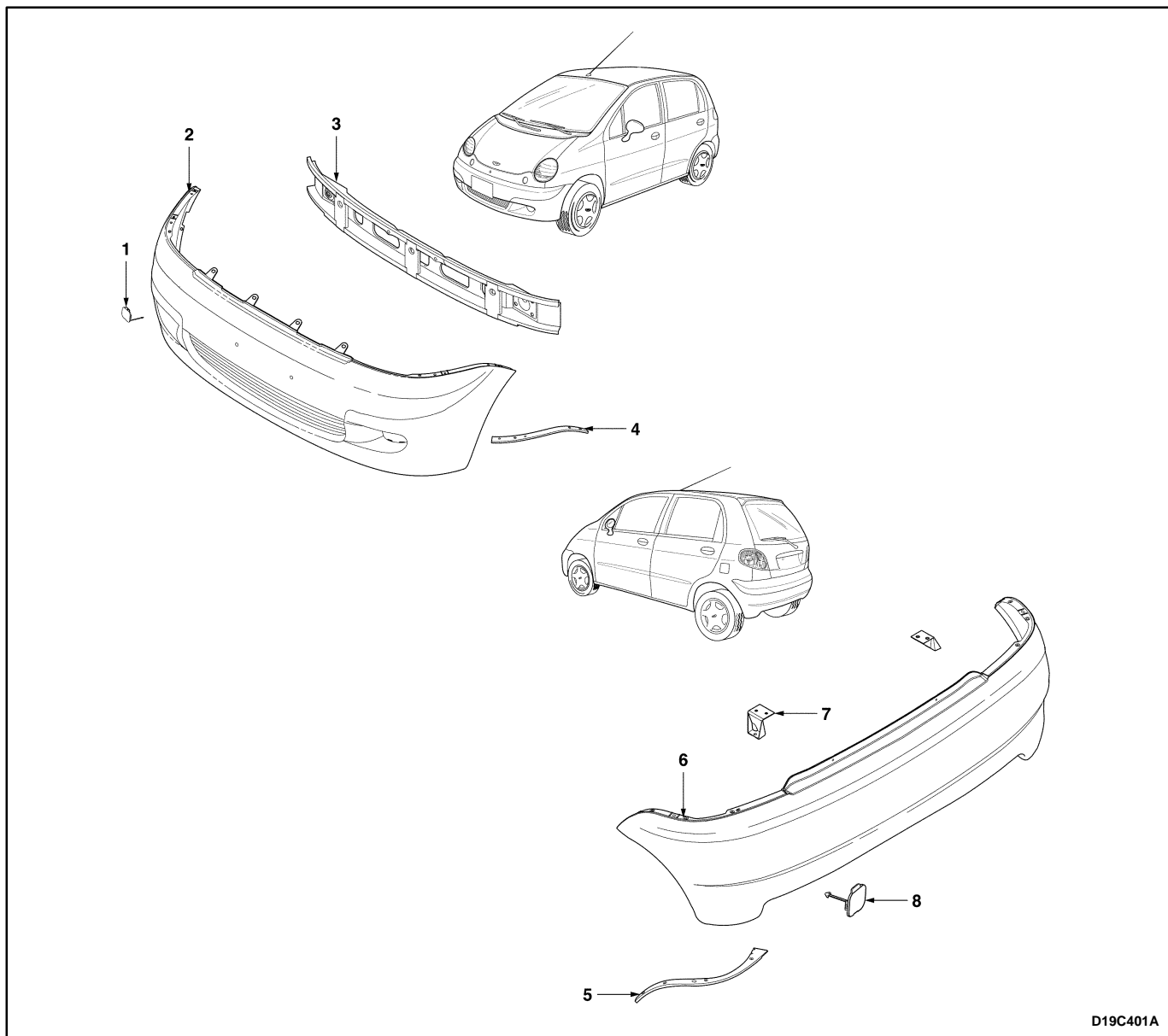
The bumper systems are installed with the body color bumper and the general bumper according to the vehicle grade.

The bumper systems are designed to sustain a collision into a fixed barrier at 4 km/h (2.5 mph) without damage. After absorbing the energy of a collision, these bumper

systems restore themselves to their original position. Both the front and the rear bumpers feature an internal foam energy absorber and a polymer fascia cover. The front bumper consists of the bumper fascia and the impact bar. Remove the fascia before removing the impact bar. The rear bumper consists of the bumper fascia and the bracket. Removal of rear bumper brackets can be possible without removing the bumper fascia.

COMPONENT LOCATOR

BUMPERS AND FASCIAS



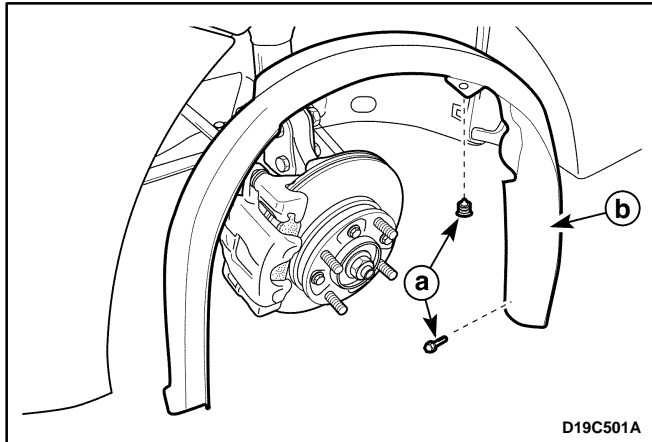
D19C401A

1. Front Towing Cover
2. Front Bumper
3. Front Bumper Impact Beam
4. Front Bumper Reinforcement

5. Rear Bumper Reinforcement
6. Rear Bumper
7. Rear Bumper Bracket
8. Rear Towing Cover

REPAIR INSTRUCTIONS

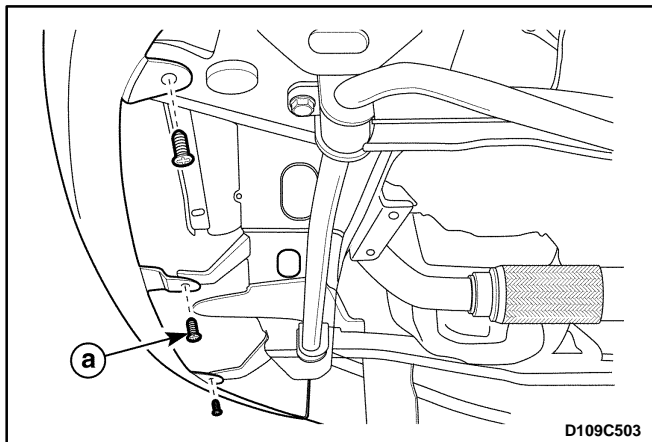
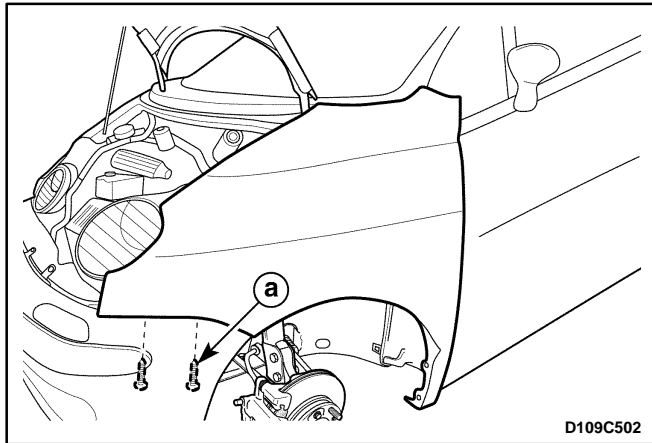
ON-VEHICLE SERVICE

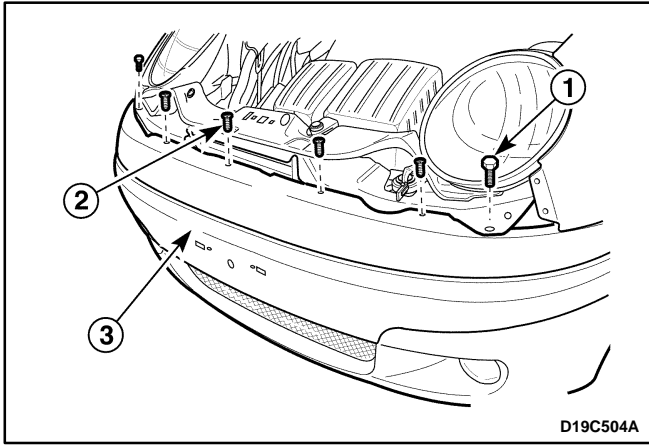


FRONT BUMPER FASCIA

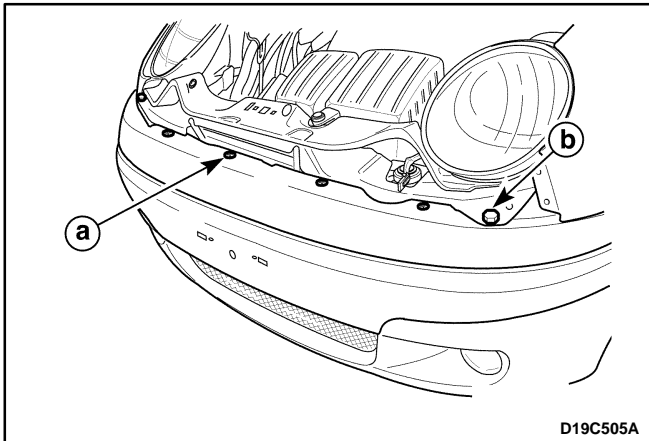
Removal Procedure

1. Disconnect the negative battery cable.
2. Raise and suitably support the vehicle.
3. Remove the front wheels.
4. Remove the front wheel house splash shields.
 - Remove the clip and bolts.
 - a. Bolt and clip.
 - Remove the wheel house splash shield.
 - b. Splash shield.
5. Remove the bolts on the both side of the fascia.
 - a. Bolt.
6. Remove the clips under the fascia.
 - a. Clip.





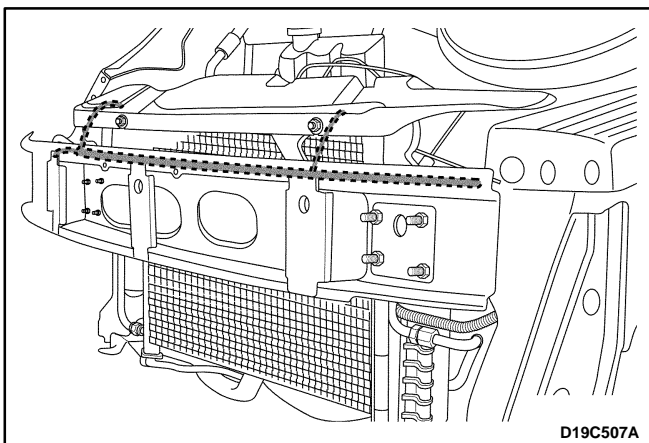
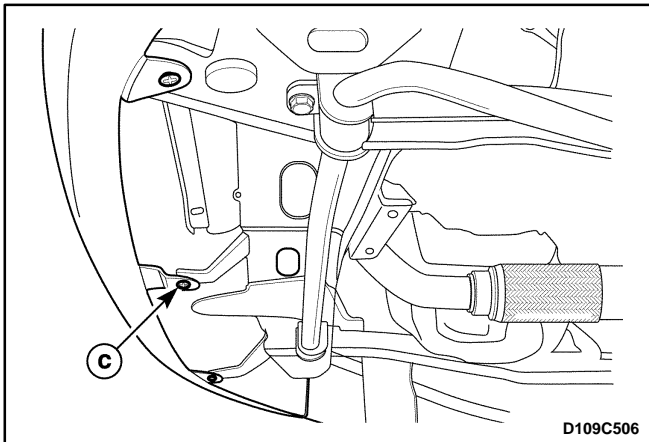
7. Lower the vehicle.
8. Remove the front bumper spacer from the bumper. Refer to *Section 9M, Exterior Trim*.
9. Remove the front bumper fascia.
 - Remove the bolts (1).
 - Remove the clips (2).
 - Remove the front bumper fascia (3).
10. Remove the front fog lamps. Refer to *Section 9B, Lighting Systems*.



Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

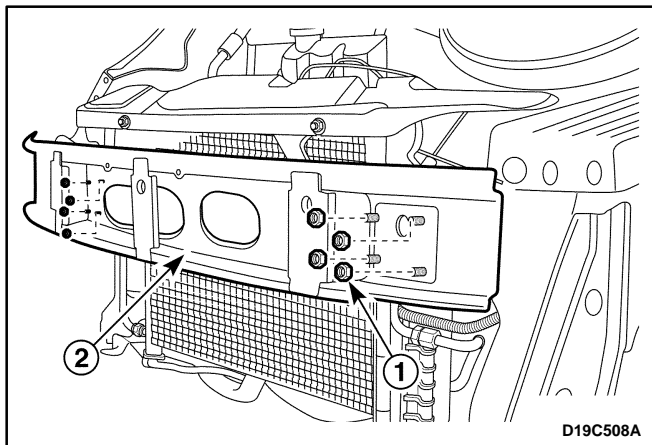
1. Install the front fog lamps. Refer to *Section 9B, Lighting Systems*.
2. Install the bumper fascia.
3. Install the clips on the top of the fascia.
 - a. Fascia upper clip.
4. Install the bolts on the top of the fascia.
 - b. Fascia upper bolt.
5. Install the front bumper spacer. Refer to *Section 9M, Exterior Trim*.
6. Raise and suitably support the vehicle.
7. Install the clips under the fascia.
 - c. Fascia lower clip.
8. Install the bolts on the both side of the fascia.
9. Install the front wheelhouse splash shields with the clips and the bolts.
10. Install the front wheels.
11. Lower the vehicle.
12. Connect the negative battery cable.



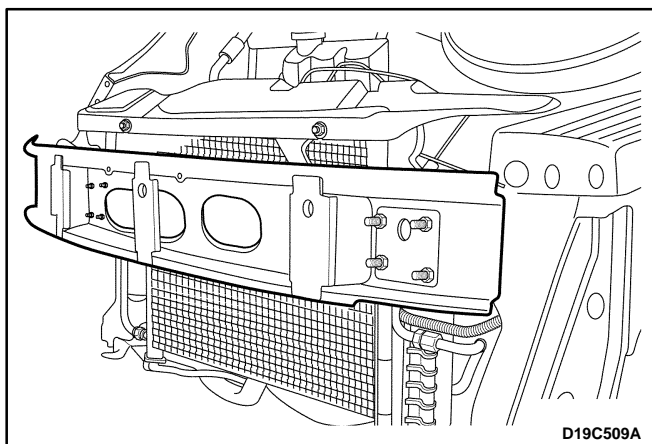
FRONT BUMPER IMPACT BAR

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the front bumper fascia. Refer to "Front Bumper Fascia" in this section.
3. Remove the front wiring harness retaining clip from the impact bar.



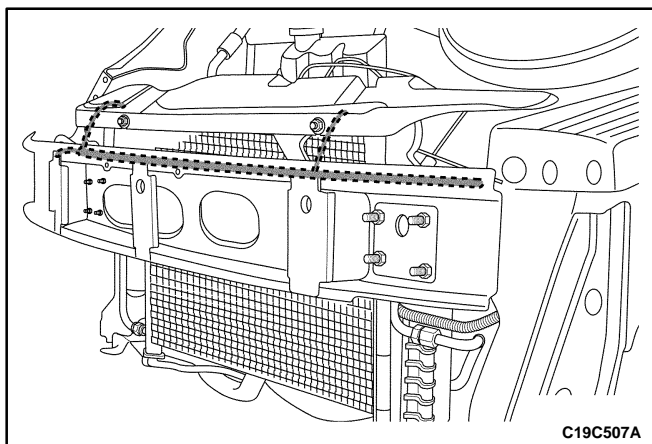
3. Remove the impact bar.
 - Remove the nuts (1).
 - Remove the impact bar (2).



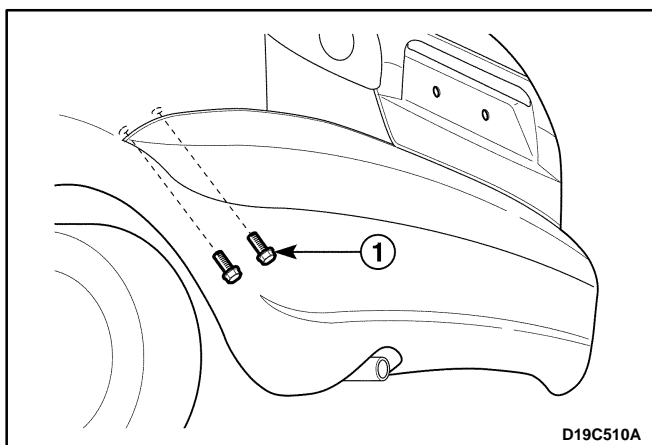
Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

1. Install the impact bar with the nuts.



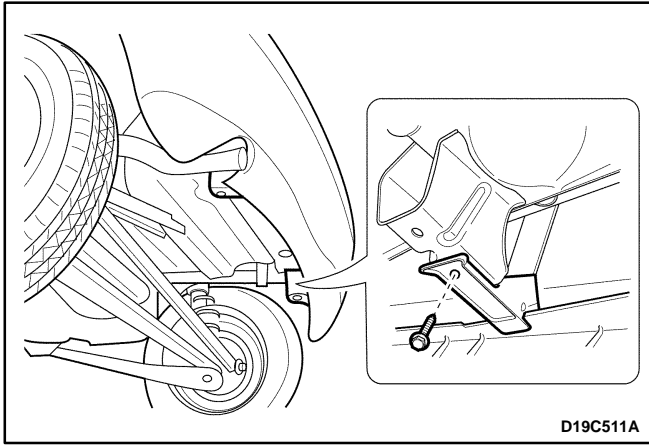
2. Install the front wiring harness retaining clip to the impact bar.
3. Install the front bumper fascia. Refer to "Front Bumper Fascia" in this section.
4. Connect the negative battery cable.



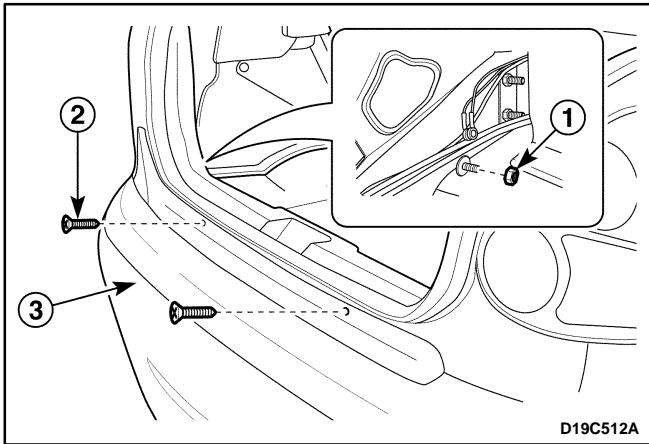
REAR BUMPER FASCIA

Removal Procedure

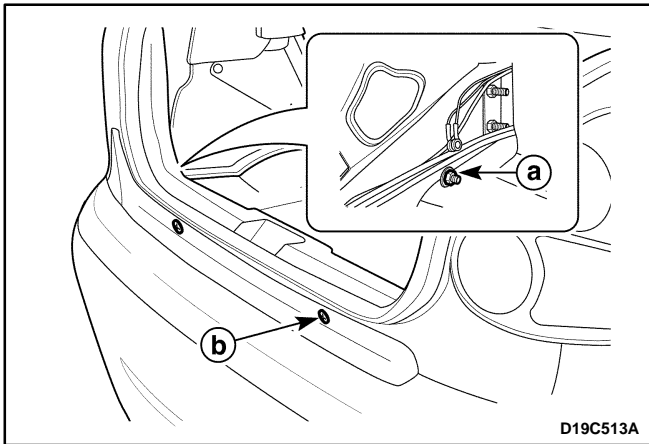
1. Raise and suitably support the vehicle.
2. Remove the bolts underneath the fascia.
 - Remove the bolts (1).



3. Remove the fascia bolts from the rear bumper bracket.



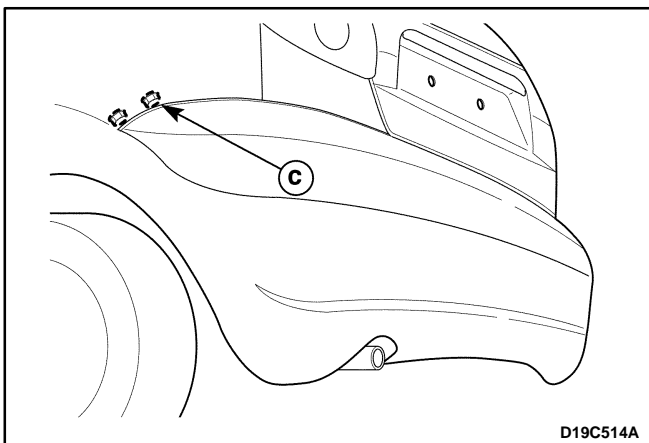
4. Lower the vehicle.
5. Remove the fascia.
 - Remove the nuts in the luggage compartment (1).
 - Remove the screws (2).
 - Remove the fascia (3).



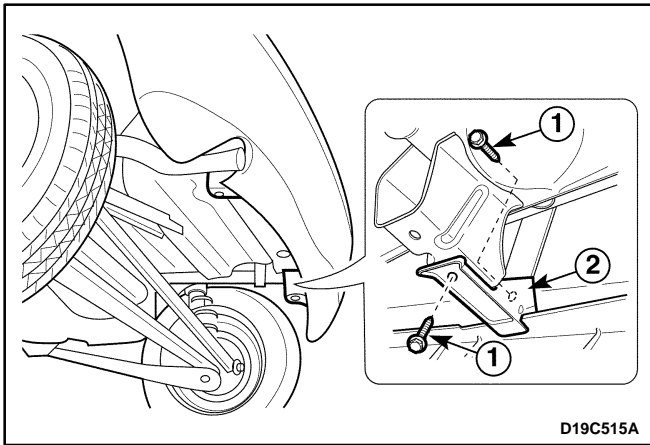
Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

1. Install the fascia.
2. Install the fascia upper nut.
 - a. The fascia upper nut.
3. Install the fascia upper screws
 - b. The fascia upper screws.



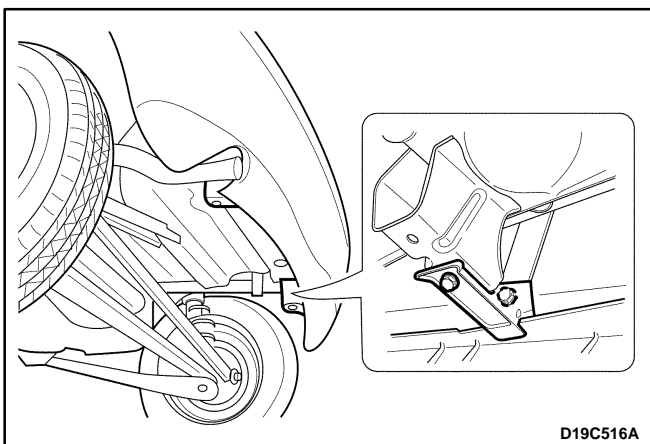
4. Raise and suitably support the vehicle.
5. Install the fascia lower bolts.
 - c. The fascia lower bolts.
6. Lower the vehicle.



REAR BUMPER BRACKET

Removal Procedure

1. Raise and suitably support the vehicle.
2. Remove the rear bumper bracket.
 - Remove the bolts (1).
 - Remove the bracket (2).



Installation Procedure

1. Install the rear bumper bracket with the bolts.
2. Lower the vehicle.

SECTION 9P

DOORS

CAUTION: *Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.*

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DESCRIPTION AND OPERATION

DOOR LOCK STRIKER

The front and the rear door lock strikers each consist of a striker with two screws threaded into a floating cage plate in the B-pillars and C-pillars. The door is secured in the closed position when the door lock fork snaps over and engages the striker.

CHILDPROOF REAR DOOR LOCK

The childproof rear door locks help prevent passengers, especially children, from opening the rear doors of the vehicle from the inside.

In order to activate these locks, move the levers of both rear doors to the lock position. Then, close both doors. Rear passengers will be unable to open the doors from the inside of the vehicle.

In order to deactivate the childproof rear door lock, unlock the door from the inside of the vehicle and open the door from the outside. Move the lever to the unlock position. The rear door will now work normally.

POWER DOOR LOCKS

The power door locks use a solenoid that is contained in each door lock assembly. The door locks are activated

by the actuator on the inside door handle or by the lock cylinder on the driver door only. When the driver door is locked or unlocked by the actuator or lock cylinder, all doors are locked or unlocked accordingly.

POWER WINDOWS

The power windows are controlled by electrical switches on the front door trim and operated by a motor at each window regulator. The windows are lowered by pressing the switch and raised by pulling up on the switch. The window will stop movement when the switch is released or when the window is completely open or closed.

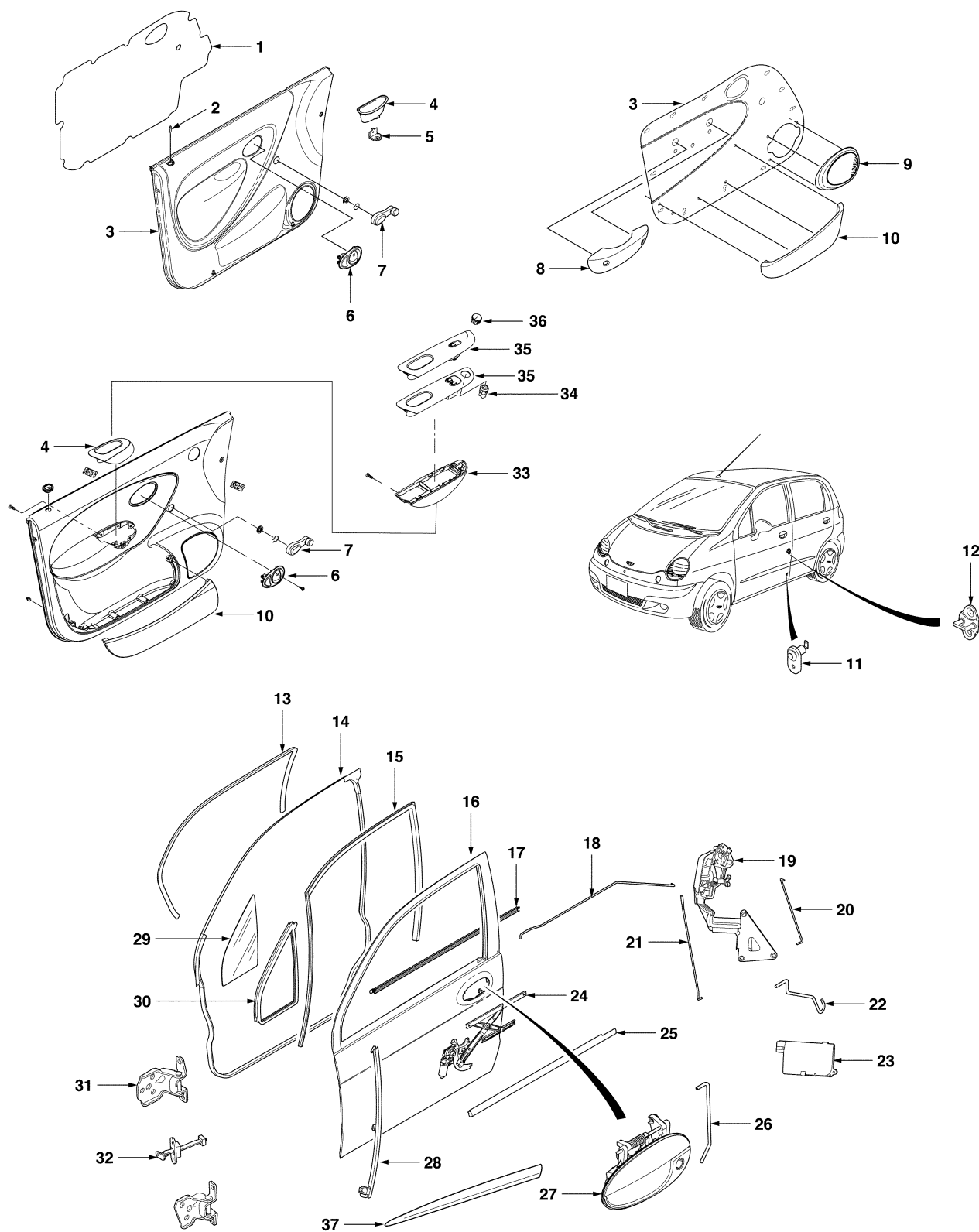
TAILGATE STRUT

This vehicle is equipped with the gas struts. The struts support the tailgate suitably when opening the tailgate.

The strut contained the high pressure compressed gas. Therefore, be careful not to take apart, puncture, apply heat or fire because the strut may explode.

COMPONENT LOCATOR

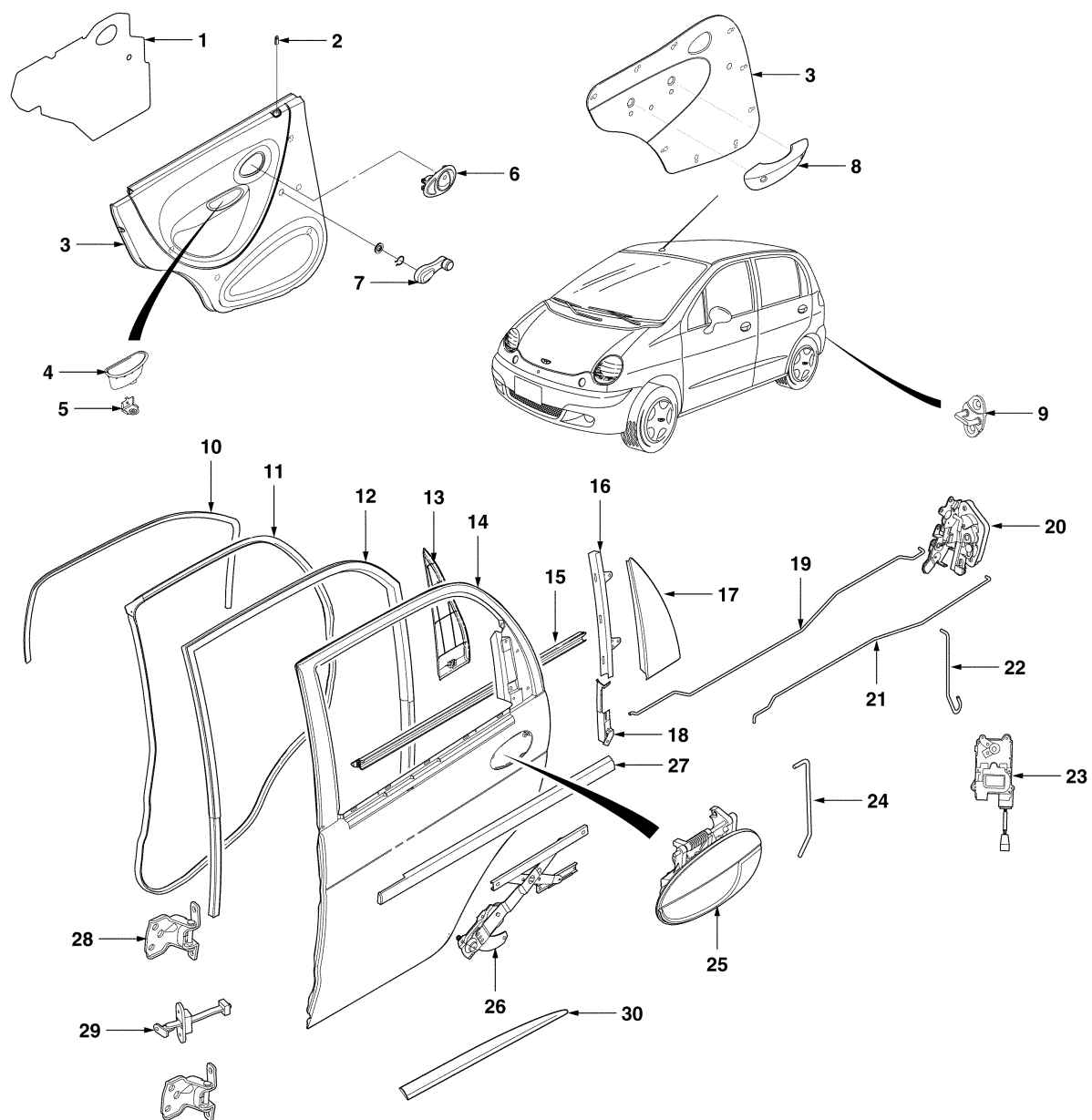
FRONT DOOR



D19C403A

- | | |
|--|----------------------------------|
| 1. Seal Trim | 20. Door Lock Cylinder Rod |
| 2. Lock Button | 21. Lock Rod |
| 3. Trim Panel | 22. Actuator Rod |
| 4. Pocket Handle (Deluxe Type) | 23. Actuator |
| 5. Pocket Handle Bracket (Deluxe Type) | 24. Window Regulator |
| 6. Inside handle | 25. Outside Channel Weatherstrip |
| 7. Manual Regulator Handle | 26. Outside Handle Rod |
| 8. Pocket Handle (Standard Type) | 27. Outside Handle |
| 9. Door Speaker Cover | 28. Division Bar |
| 10. Map Pocket | 29. Quarter Glass |
| 11. Contact Switch | 30. Quarter Glass Run |
| 12. Striker | 31. Door Hinge |
| 13. Opening Weatherstrip | 32. Door Hold Open Link |
| 14. Door Weatherstrip | 33. Power Window Switch Cover |
| 15. Glass Run | 34. Mirror Switch |
| 16. Front Door | 35. Power Window Switch Assembly |
| 17. Inside Channel Weatherstrip | 36. Mirror switch Blank |
| 18. Inside Handle Rod | 37. Door Side Molding |
| 19. Door Lock | |
-

REAR DOOR

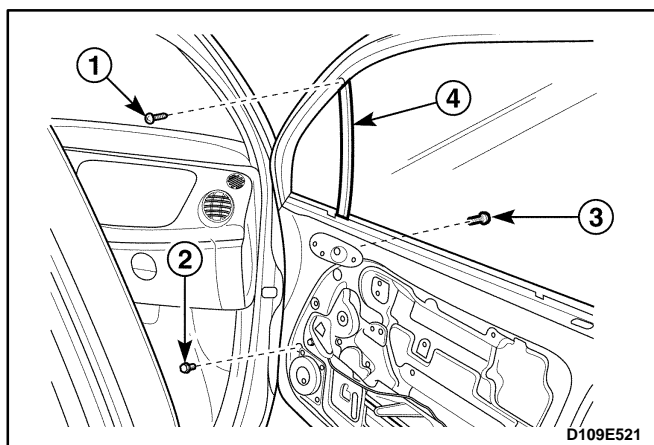


D19C404A

- | | |
|--|----------------------------------|
| 1. Seal Trim | 16. Upper Guide Rail |
| 2. Lock Button | 17. Exterior Garnish Molding |
| 3. Trim Panel | 18. Lower Guide Rail |
| 4. Pocket Handle (Deluxe Type) | 19. Lock Rod |
| 5. Pocket Handle Bracket (Deluxe Type) | 20. Door Lock |
| 6. Inside handle | 21. Inside Handle Rod |
| 7. Manual Regulator Handle | 22. Actuator Rod |
| 8. Pocket Handle (Standard Type) | 23. Actuator |
| 9. Striker | 24. Outside Handle Rod |
| 10. Opening Weatherstrip | 25. Outside Handle |
| 11. Door Weatherstrip | 26. Window Regulator |
| 12. Glass Run | 27. Outside Channel Weatherstrip |
| 13. Interior Garnish Molding | 28. Door Hinge |
| 14. Rear Door | 29. Door Hold Open Link |
| 15. Inside Channel Weatherstrip | 30. Door Side Molding |
-

REPAIR INSTRUCTIONS

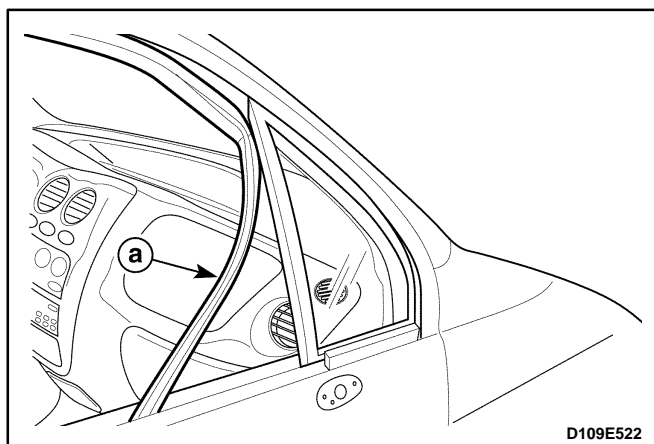
ON-VEHICLE SERVICE



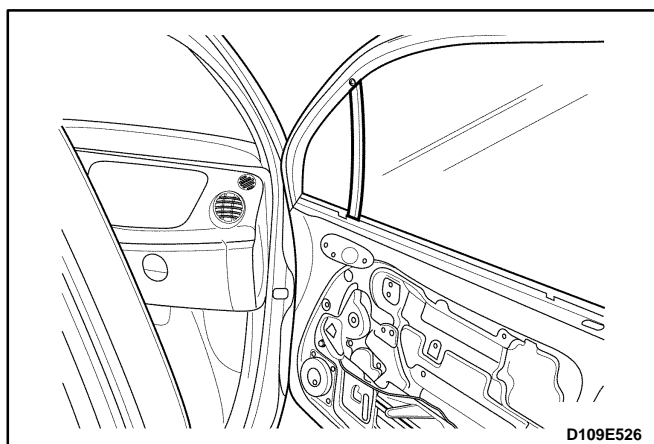
FRONT DOOR GLASS RUN

Removal Procedure

1. Remove the front door seal trim from the front door. Refer to "Door Seal Trim" in this section.
2. Remove the outside rearview mirror from the front door. Refer to *Section 9L, Glass and Mirrors*.
3. Remove the guide rail from the door.
 - Remove the screws (1).
 - Remove the inside bolts (2).
 - Remove the outside bolts (3).
 - Remove the division bar (4).

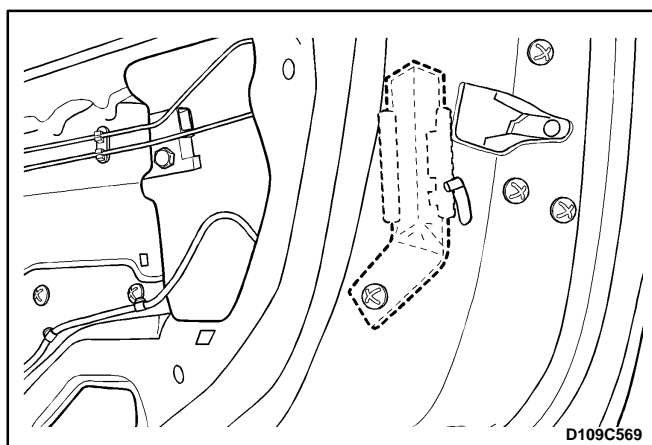
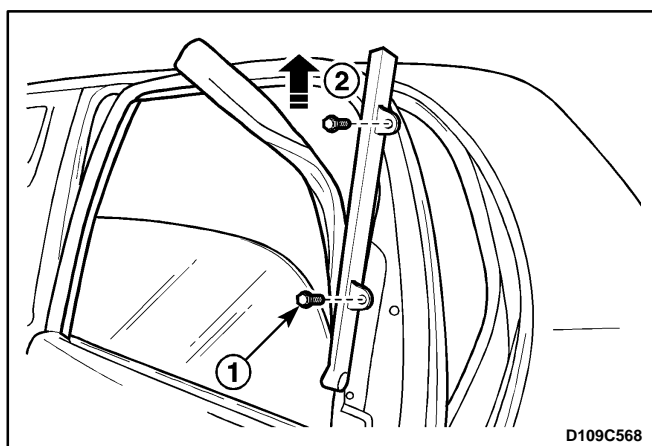
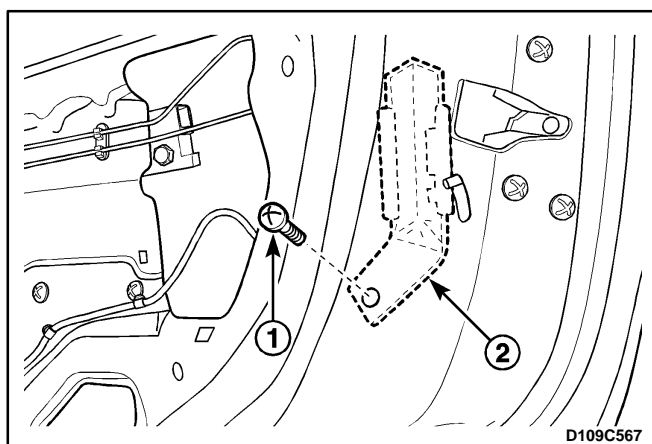
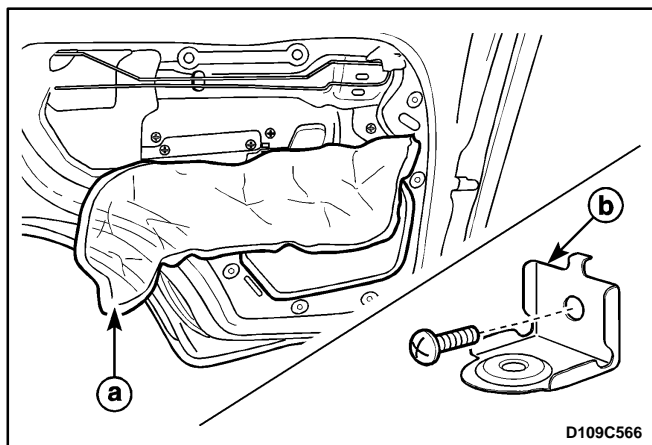


4. Remove the glass run.
 - a. Glass run.



Installation Procedure

1. Install the glass run.
2. Install the division bar with the bolts and the screws.
3. Install the outside rearview mirror. Refer to *Section 9L, Glass and Mirrors*.
4. Install the front door seal trim. Refer to "Door Seal Trim" in this section.



REAR DOOR GLASS RUN

Removal Procedure

1. Remove the inside channel weatherstrip from the rear door. Refer to *Section 9G, Interior Trim*.
2. Remove the outside channel weatherstrip from the rear doors. Refer to *Section 9G, Interior Trim*.
3. Remove the rear door trim panel. Refer to *Section 9G, Interior Trim*.
4. Remove the rear door seal trim.
 - a. Door seal trim.
 - b. Door pocket handle bracket.

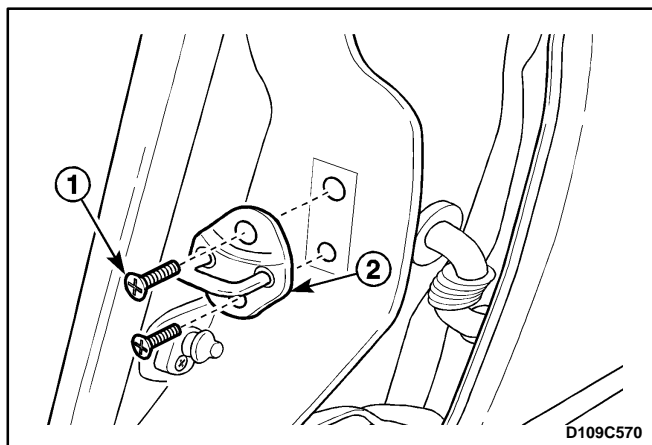
Important: In case of the deluxe type, remove the seal trim after removing the door pocket handle bracket.

5. Remove the guide piece.
 - Remove the screw (1).
 - Remove the guide piece (2).

6. Remove the upper guide rail and the glass run.
 - Remove the bolts (1).
 - Lift up and remove the upper guide rail and the glass run simultaneously (2).

Installation Procedure

1. Install the upper guide rail and the rear door glass run.
2. Install the guide piece with the screw.
3. Install the rear door seal trim.
4. Install the rear door trim panel. Refer to *Section 9G, Interior Trim*.
5. Install the outside channel weatherstrip to the rear door. Refer to *Section 9G, Interior Trim*.
6. Install the inside channel weatherstrip to the rear door. Refer to *Section 9G, Interior Trim*.



DOOR LOCK STRIKER

Removal Procedure

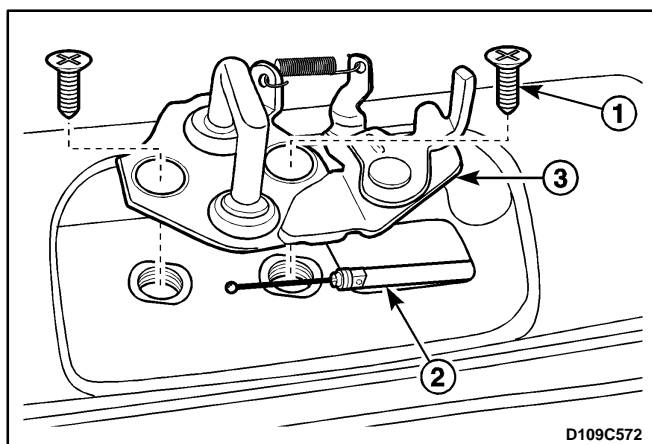
1. Remove the door lock striker.
 - Remove the screws (1).
 - Remove the door lock striker (2).



Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

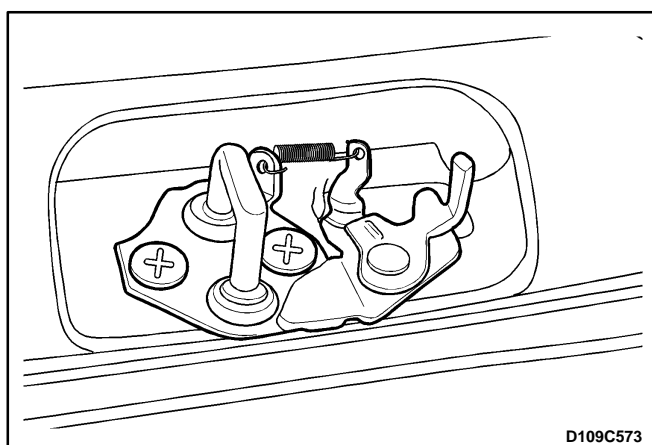
1. Install the door lock striker with the screws.



TAILGATE LOCK STRIKER

Removal Procedure

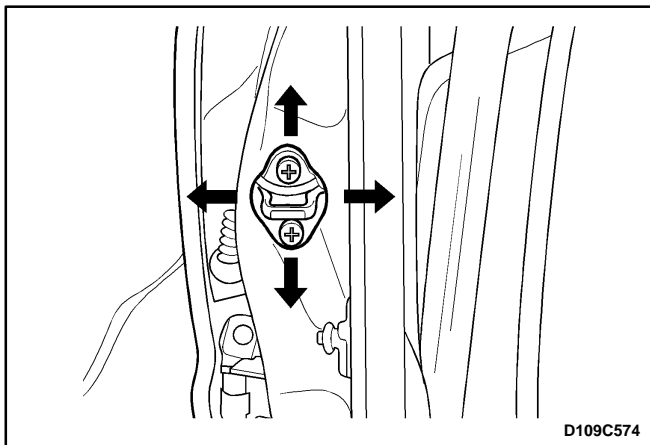
1. Open the tailgate and suitably support it.
2. Remove the tailgate lock striker.
 - Remove the screws (1).
 - Disconnect the cable (2).
 - Remove the striker (3).



Installation Procedure

Notice: Dissimilar metal in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

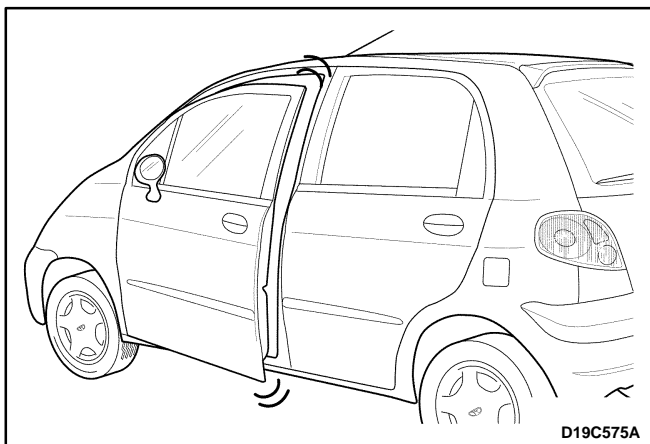
1. Connect the cable.
2. Install the tailgate lock striker with the screws.



DOOR LOCK STRIKER ADJUSTMENT

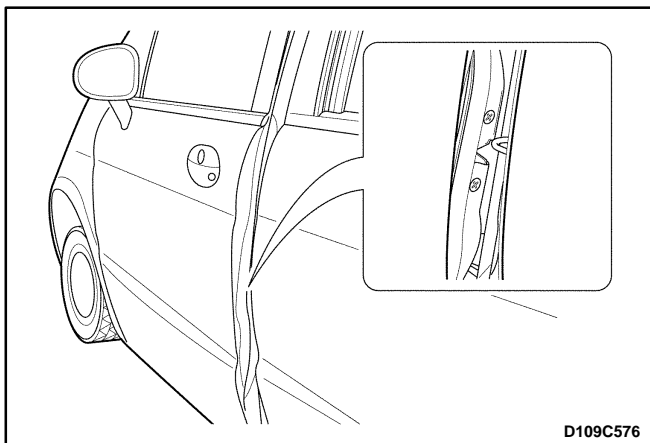
Notice: The door lock striker is an important attaching part that can affect the performance of vital components and systems and can cause major repair expenses. If replacement becomes necessary, the door lock striker must be replaced by one with the same part number or with an equivalent part if replacement becomes necessary. Do not use a replacement part of lesser quality or of a substitute design. The specified torque values must be used during reassembly in order to ensure the proper retention of the part.

The door lock striker consists of a striker with two screws that are threaded into a tapped, floating cage plate located in the appropriate body pillar. This floating cage plate allows the striker to be easily adjusted in or out and up or down. The door is secured in the closed position when the door lock fork snaps over and engages the striker.

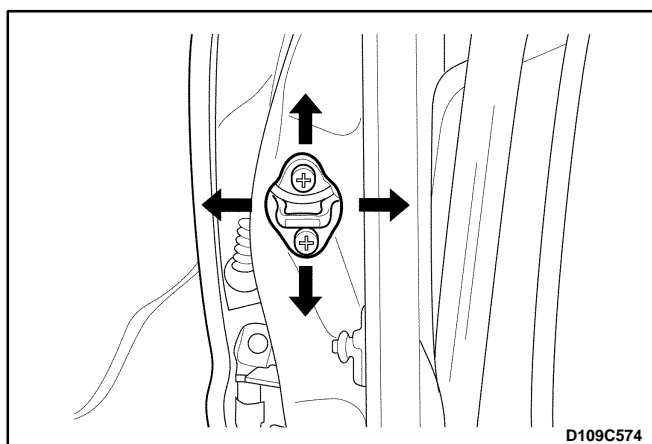
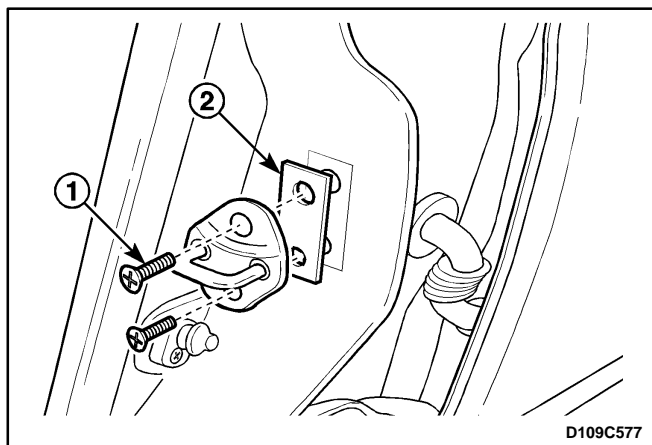


Fore/Aft Adjustment

1. The door must be properly aligned.
2. Close the door until the lock fork contacts the striker.
3. Stand next to the door opening and move the door slowly in and out, just touching the striker each time.



4. The alignment of the lock fork and the striker can be easily seen. The lock fork should be perpendicular to and fall near the middle of the striker. The lock fork should fall near the middle of the striker between the B-pillar and the end of the striker.



5. If a fore or aft adjustment is required, use the following steps:
 - Remove the striker screws (1).
 - Remove the spacer in order to move the striker toward the rear of the vehicle (2).
 - Add a 2 mm (0.08 inch) spacer in order to move the striker toward the front of the vehicle.
 - Install the striker screws.
6. Perform the up/down or the in/out adjustment. Refer to "Up/Down or In/Out Adjustment" in this section.

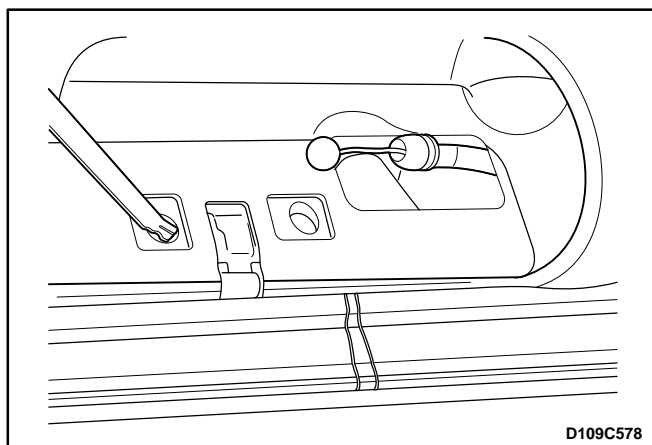
Up/Down or In/Out Adjustment

An adjustment of the striker in the up and down or in and out directions may be necessary for a number of reasons: vehicle frame damage as the result of a collision, installation of new door weatherstripping, customer complaints of excessive windnoise, or difficulty in opening or closing the door. In order to adjust the door striker in an up and down or in and out direction, perform the following procedure:

1. The door must be properly aligned.
2. Loosen the striker screws.
3. The floating cage plate can be moved slightly using the ends of the striker screws. Move the floating cage plate to the desired position.

Notice: It is important to use a flat-end rotary file in order not to damage the tapped floating cage plate. The striker screws and the tapped floating cage plate are important attaching parts that could affect the performance of vital components and systems.

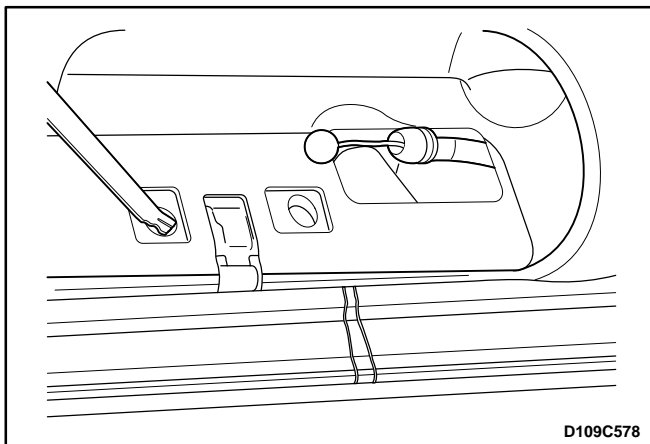
4. If proper adjustment requires that the floating cage plate be moved more than is possible, use an electric hand drill and a 3/8- inch rotary file with a flat head in order to enlarge the body opening in the direction required.
5. Tighten the striker screws to the correct position.



TAILGATE LOCK STRIKER ADJUSTMENT

Notice: The tailgate lock striker is an important attaching part that can affect the performance of vital components and systems and can cause major repair expenses. If replacement becomes necessary, the tailgate lock striker must be replaced by one with the same part number or with an equivalent part if replacement becomes necessary. Do not use a replacement part of lesser quality or of a substitute design. The specified torque values must be used during reassembly in order to ensure the proper retention of the part.

The tailgate lock striker consists of a striker with two screws that are threaded into a tapped, floating cage plate located in the appropriate body pillar. This floating cage plate allows the striker to be easily adjusted in or out and up or down. The tailgate is secured in the closed position when the tailgate lock fork snaps over and engages the striker.

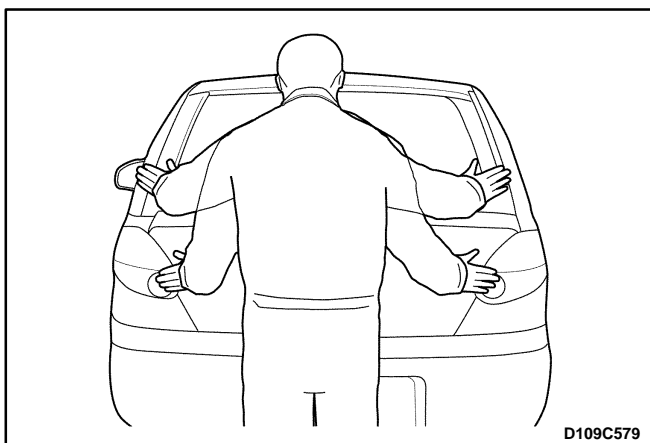


Fore/Aft or In/Out Adjustment

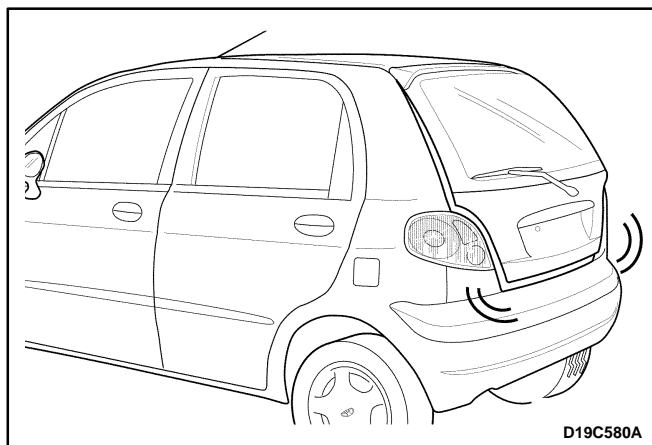
An adjustment of the striker in the fore and aft or in and out directions may be necessary for a number of reasons: vehicle frame damage as the result of a collision, installation of new tailgate weatherstripping, customer complaints of excessive windnoise, or difficulty in opening or closing the tailgate. In order to adjust the tailgate striker in an fore and aft or in and out direction, perform the following procedure:

1. The tailgate must be properly aligned.
2. Loosen the striker screws.
3. The floating cage plate can be moved slightly using the ends of the striker screws. Move the floating cage plate to the desired position.

Notice: It is important to use a flat-end rotary file in order not to damage the tapped floating cage plate. The striker screws and the tapped floating cage plate are important attaching parts that could affect the performance of vital components and systems.

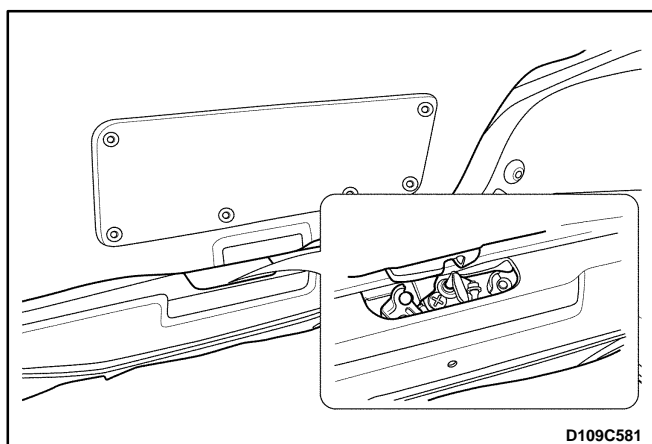


4. If proper adjustment requires that the floating cage plate be moved more than is possible, use an electric hand drill and a 3/8- inch rotary file with a flat head in order to enlarge the body opening in the direction required.
5. Tighten the striker screws to the correct position.
6. Perform the up/down adjustment. Refer to "Up and Down Adjustment" in this section.

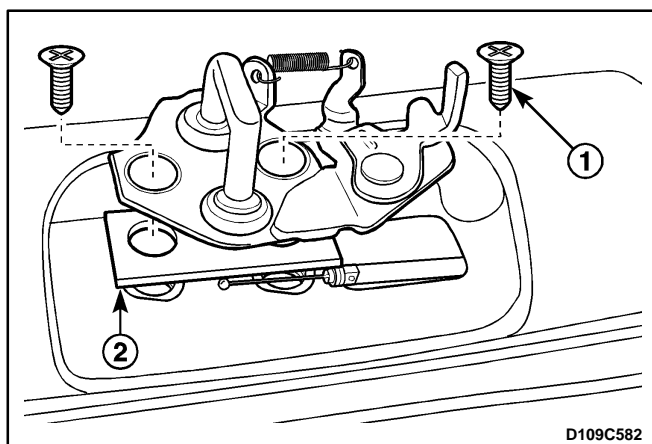


Up and Down Adjustment

1. The tailgate must be properly aligned.
2. Close the tailgate until the lock fork contacts the striker.
3. Stand next to the tailgate opening and move the tailgate slowly up and down, just touching the striker each time.

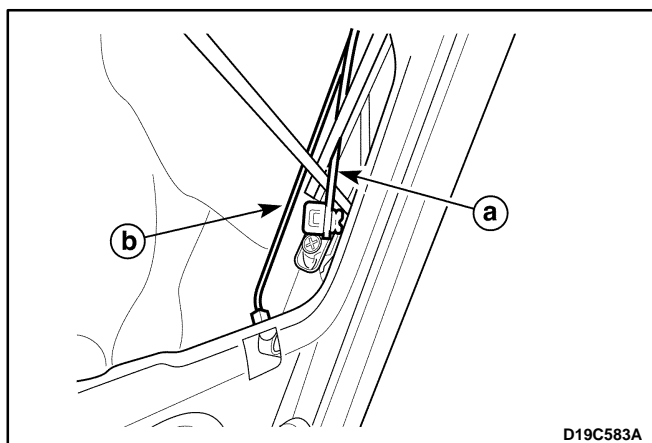


4. The alignment of the lock fork and the striker can be easily seen. The lock fork should be perpendicular to and fall near the middle of the striker. The lock fork should fall near the middle of the striker between the rear body pillar and the end of the striker.



5. If a up and down adjustment is required, use the following steps:

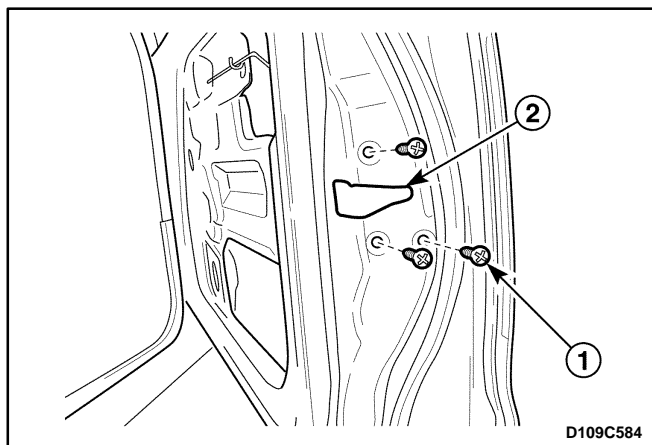
- Remove the striker screws (1).
- Remove the spacer in order to move the striker toward the down of the vehicle (2).
- Add a 2 mm (0.08 inch) spacer in order to move the striker toward the up of the vehicle.
- Install the striker screws.



FRONT DOOR LOCK

Removal Procedure

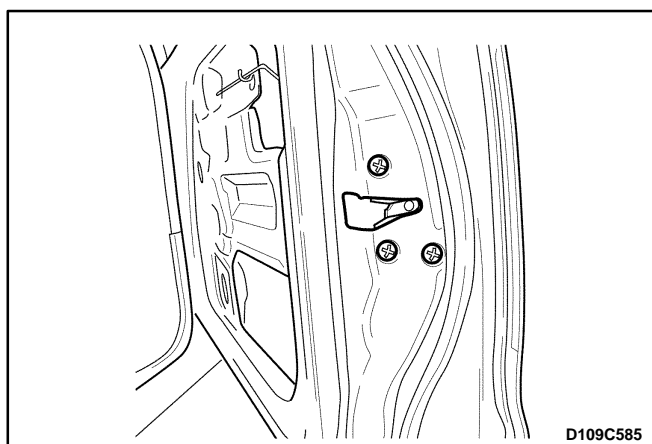
1. Disconnect the negative battery cable if equipped with the central door lock system.
2. Remove the seal trim. Refer to "Door Seal Trim" in this section.
3. Disconnect the outside door handle rod from the door lock.
 - a. Outside door handle rod.
 - b. Key rod.



4. Remove the front door lock.

- Remove the screws (1).
- Remove the front door lock (2).

Important: Disconnect the actuator connector, if equipped with the central door lock system.



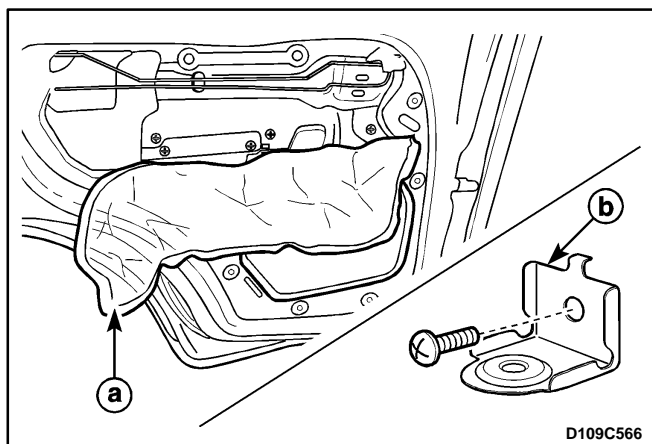
Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

1. Install the front door lock with screws.

Important: Connect the actuator connector if equipped with the central door lock system.

2. Connect the outside door handle rod and the key rod to the door lock.
3. Install the seal trim. Refer to “Door Seal Trim” in this section.
4. Connect the negative battery cable, if equipped with the central door lock system.

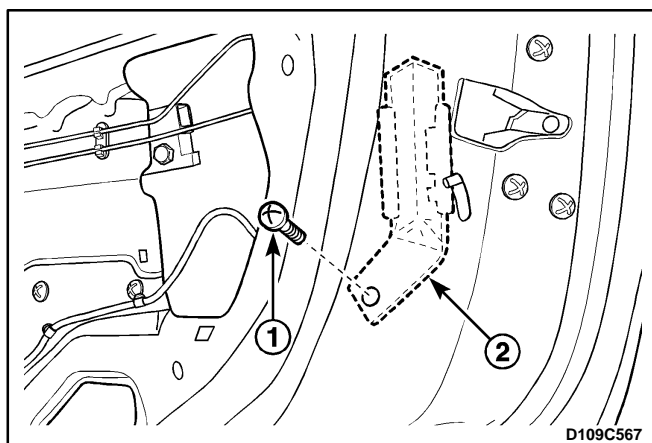


CHILDPROOF REAR DOOR LOCK

Removal Procedure

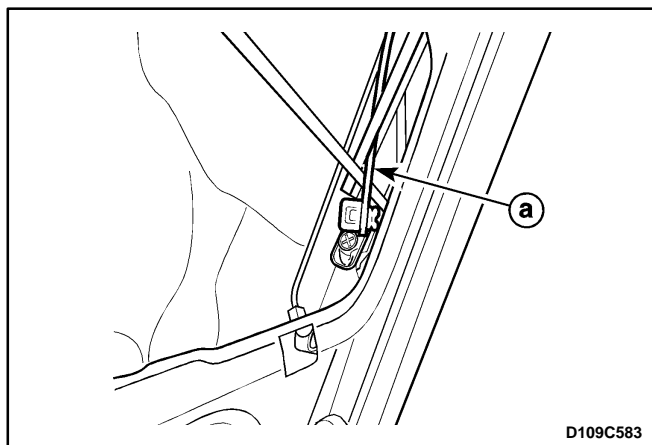
1. Disconnect the negative battery cable if equipped with the central door lock system.
2. Remove the door trim panel. Refer to *Section 9G, Interior Trim*.
3. Remove the door seal trim. Refer to “Door Seal Trim” in this section.
 - a. Door seal trim.
 - b. Door pocket handle bracket.

Important: In case of the deluxe type, remove the seal trim after removing the door pocket handle bracket.

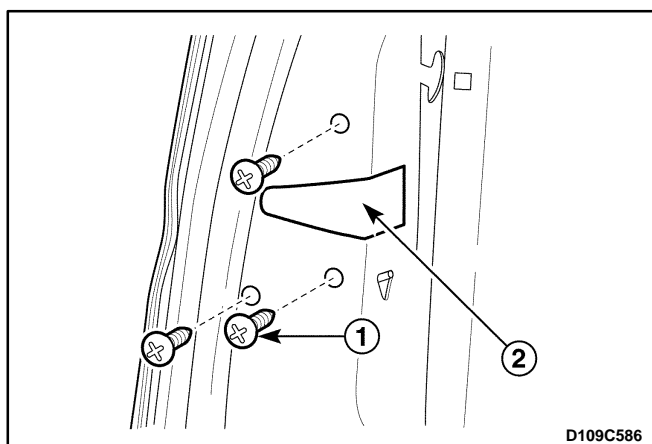


4. Remove the guide piece.

- Remove the screw (1).
- Remove the guide piece (2).

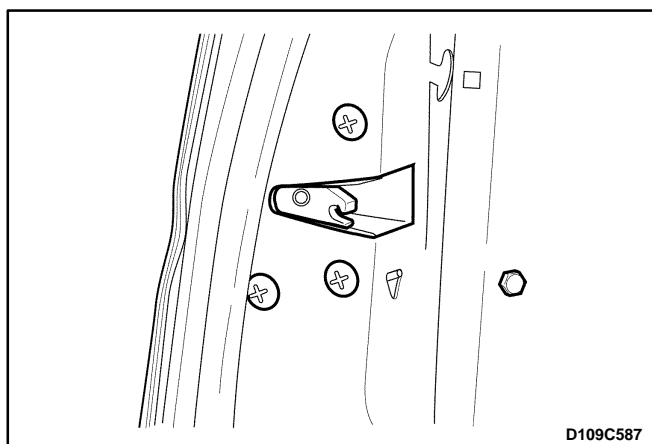


5. Disconnect the outside door handle rod from the door lock.
 - a. Outside door handle rod.



6. Disconnect the door lock from the vehicle.
 - Remove the screws (1).
 - Remove the door lock (2).

Important: Disconnect the actuator connector if equipped with the central door lock system.



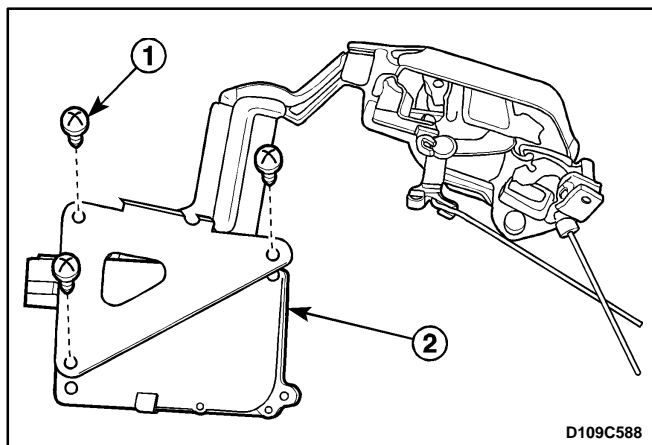
Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

1. Install the rear door lock with the screws.

Important: Connect the actuator connector if equipped with the central door lock system.

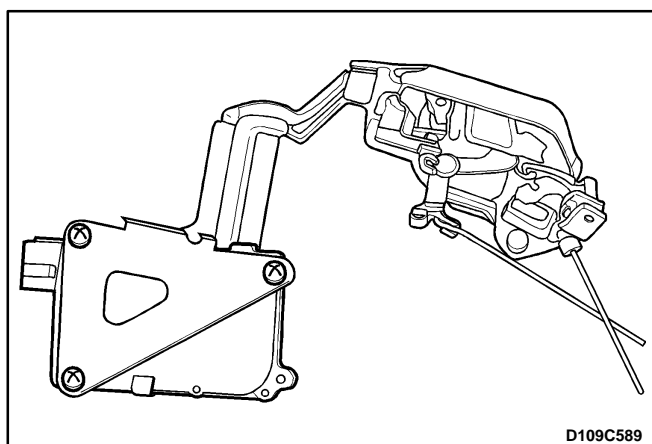
2. Connect the outside door handle rod to the door lock.
3. Install the guide rail with the screw.
4. Install the seal trim. Refer to "Door Seal Trim" in this section.
5. Install the door trim panel. Refer to *Section 9G, Interior Trim*.
6. Connect the negative battery cable if equipped with the central door lock system.



CENTRAL DOOR LOCK ACTUATOR

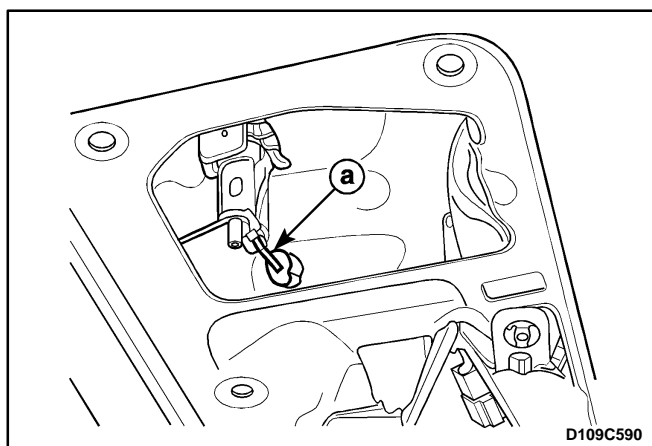
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the door seal trim. Refer to “Door Seal Trim” in this section.
3. Remove the door lock assembly. Refer to “Door Lock” in this section.
4. Remove the actuator from the door lock assembly.
 - Remove the screws (1).
 - Remove the actuator (2).



Installation Procedure

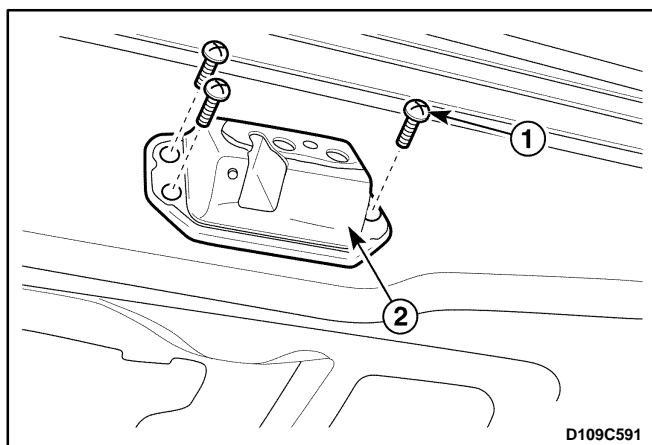
1. Install the door lock actuator to the door lock assembly with the screws.
2. Install the door lock assembly to the vehicle. Refer to “Door Lock” in this section.
3. Install the door seal trim. Refer to “Door Seal Trim” in this section.
4. Connect the negative battery cable.



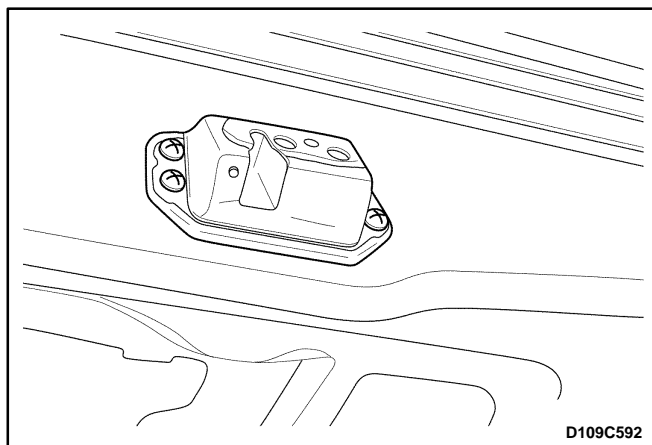
TAILGATE LOCK

Removal Procedure

1. Remove the tailgate trim panel. Refer to *Section 9G, Interior Trim*.
2. Remove the lock rod from the tailgate lock cylinder.
 - a. Lock rod.

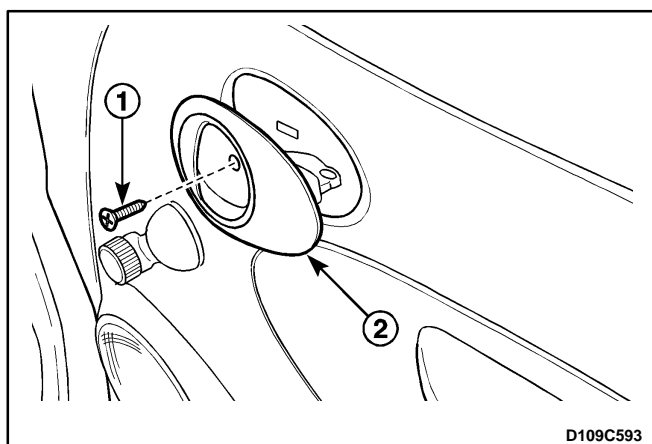


3. Remove the tailgate lock.
 - Remove the screws (1).
 - Remove the tailgate lock (2).



Installation Procedure

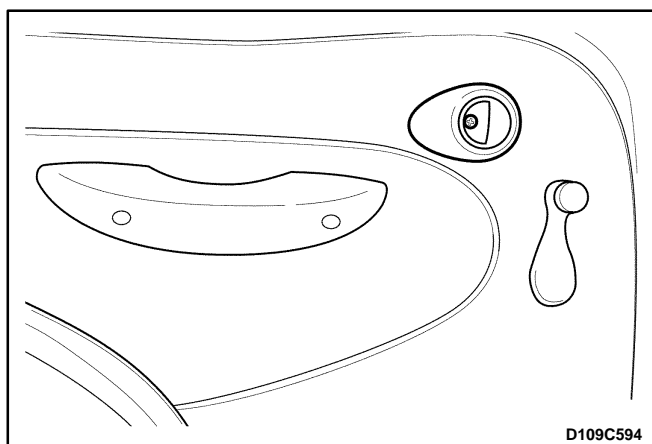
1. Install the tailgate lock with the screws.
2. Install the lock rod to the tailgate lock cylinder.
3. Install the tailgate trim panel. Refer to *Section 9G, Interior Trim*.



INSIDE DOOR HANDLE

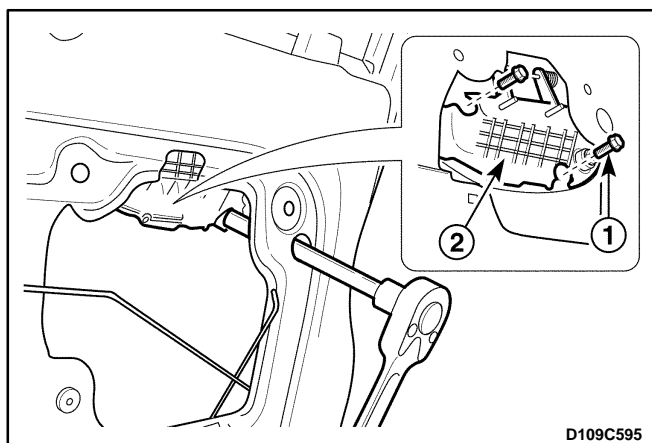
Removal Procedure

1. Removal the inside door handle.
 - Remove the screw (1).
 - Remove the inside door handle (2).



Installation Procedure

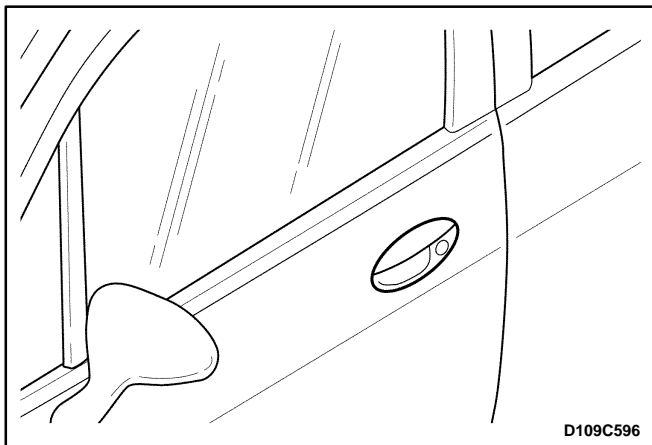
1. Install the inside door handle with the screw.



OUTSIDE FRONT DOOR HANDLE

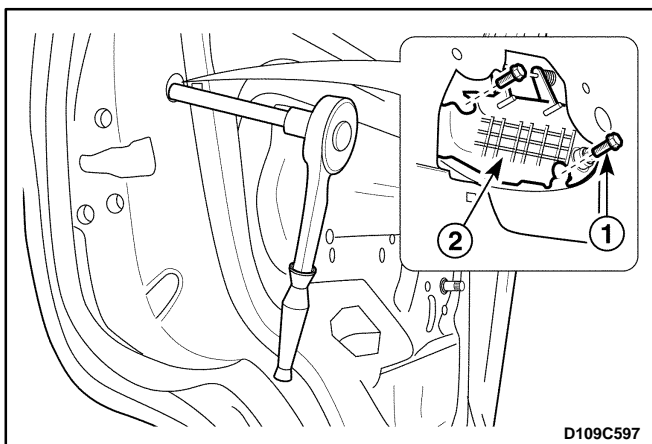
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the front door lock rods.
3. Remove the outside front door handle.
 - Remove the bolts (1).
 - Remove the outside front door handle (2).



Installation Procedure

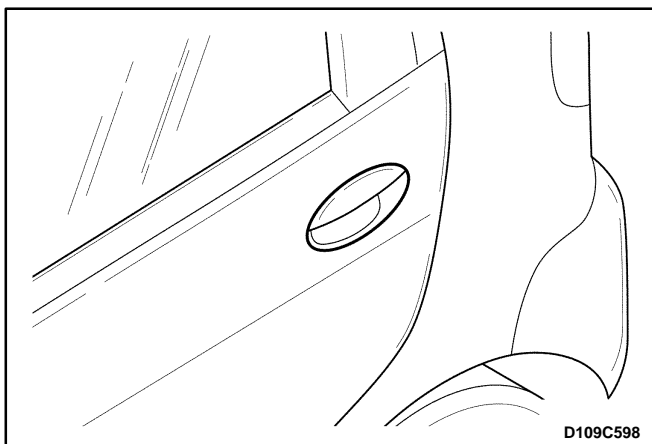
1. Install the outside front door lock handle with the bolts.
2. Install the front door lock rods.
3. Connect the negative battery cable.



OUTSIDE REAR DOOR HANDLE

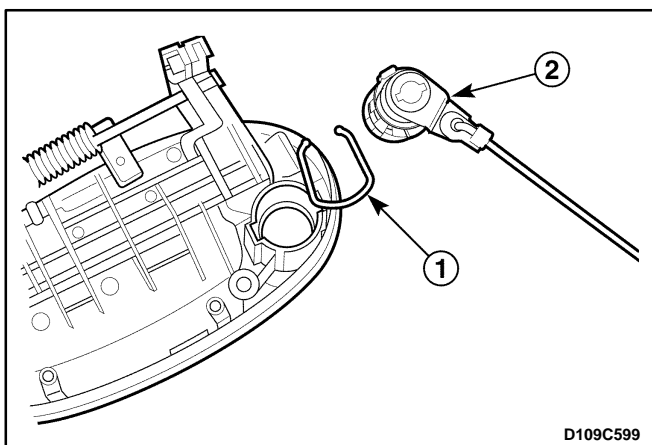
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the rear door lock. Refer to “Childproof Rear Door Lock” in this section.
3. Remove the outside rear door handle.
 - Remove the bolts (1).
 - Remove the outside rear door handle (2).



Installation Procedure

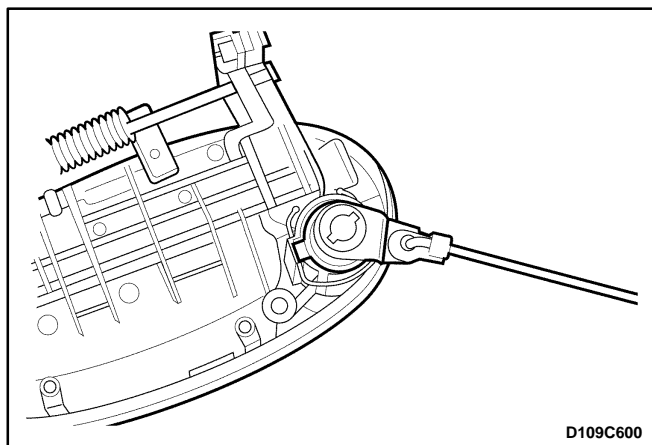
1. Install the outside rear door handle with the bolts.
2. Install the rear door lock. Refer to “Childproof Rear door Lock” in this section.
3. Connect the negative battery cable.



DOOR LOCK CYLINDER

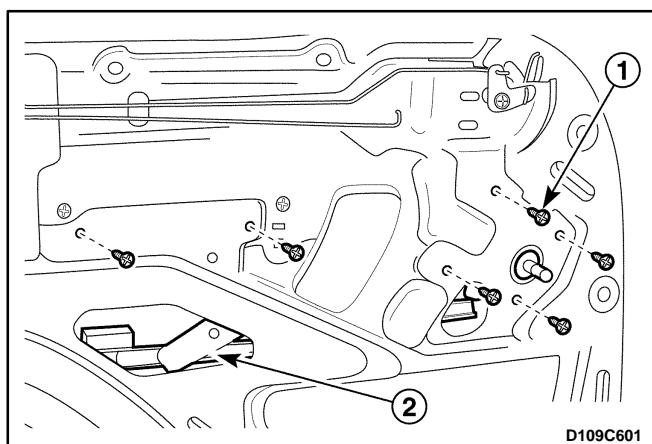
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the outside door handle. Refer to “Outside Front Door Handle” in this section.
3. Remove the door lock cylinder from the outside door handle.
 - Remove the clip (1).
 - Remove the door lock cylinder (2).



Installation Procedure

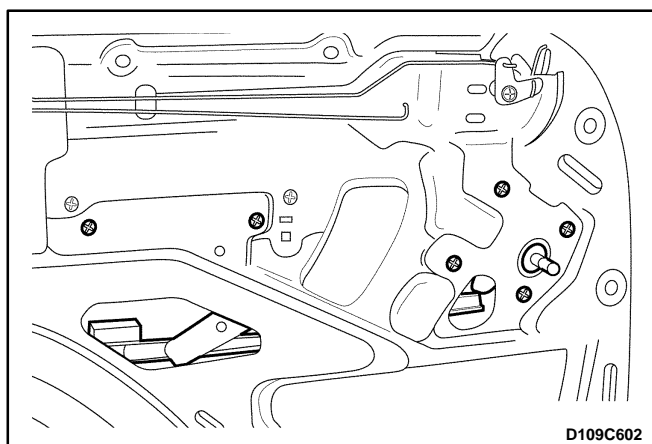
1. Install the door lock cylinder with the clip.
2. Install the outside door handle. Refer to "Outside Front Door Handle" in this section.
3. Connect the negative battery cable.



MANUAL WINDOW REGULATOR

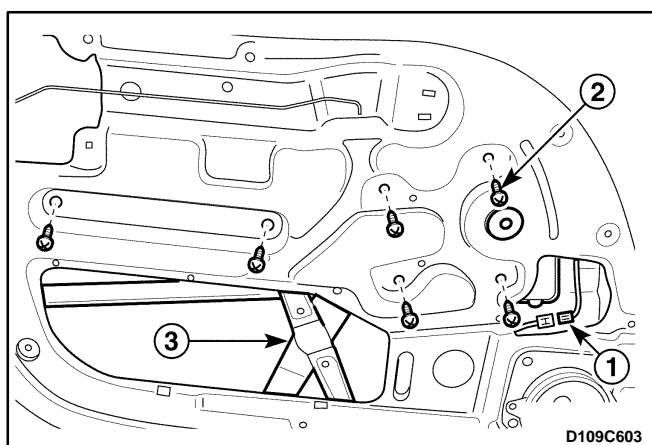
Removal Procedure

1. Remove the glass. Refer to *Section 9L, Glass and Mirrors*.
2. Remove the window regulator.
 - Remove the screws (1).
 - Remove the regulator (2).



Installation Procedure

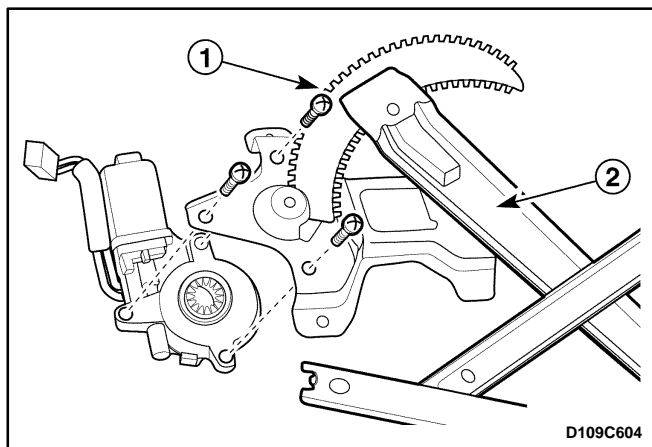
1. Install the regulator with the screws.
2. Install the glass. Refer to *Section 9L, Glass and Mirrors*.



POWER FRONT WINDOW REGULATOR

Removal Procedure

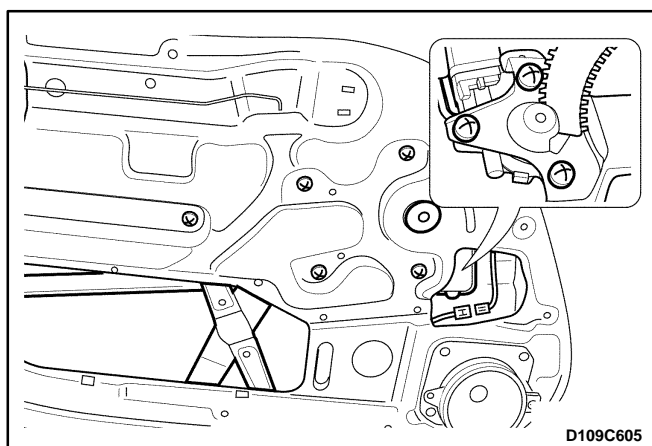
1. Disconnect the negative battery cable.
2. Remove the glass. Refer to *Section 9L, Glass and Mirrors*.
3. Remove the window regulator assembly.
 - Disconnect the window motor electrical connector (1).
 - Remove the screws (2).
 - Remove the window regulator assembly (3).



4. Remove the window motor from the window regulator.

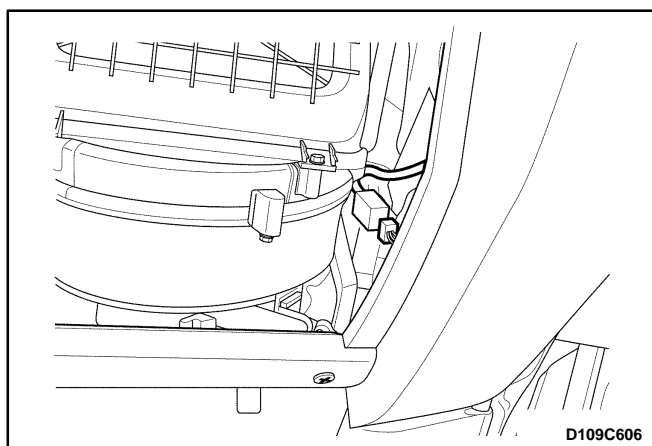
- Remove the screws (1).
- Remove the window regulator (2).

Caution: Be careful what you are doing when separating the window motor and the window regulator. You may be hurt.



Installation Procedure

1. Install the window motor to the window regulator with the screws.
2. Install the window regulator assembly with the screws.
3. Connect the window motor electrical connector.
4. Install the glass. Refer to Section 9L, Glass and Mirrors.
5. Connect the negative battery cable.

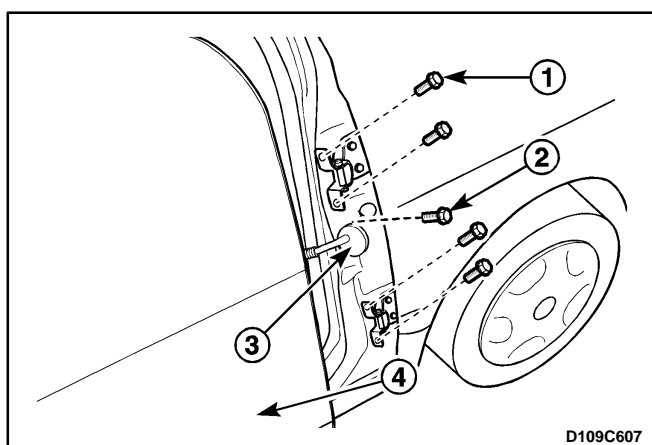


FRONT DOOR ASSEMBLY

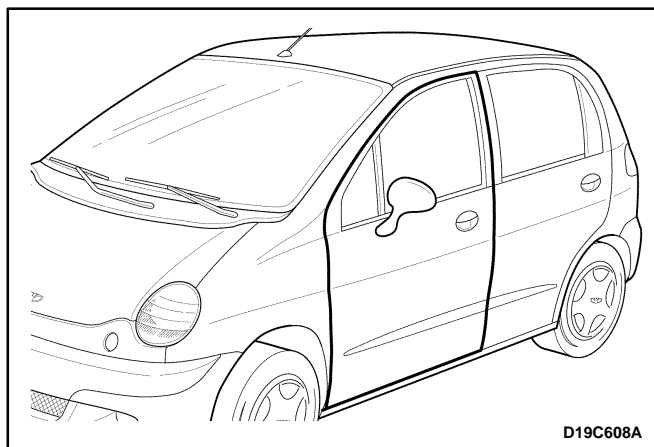
Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the electrical connector under the instrument panel.

Important: In case of the front passenger door, remove the glove box in advance.



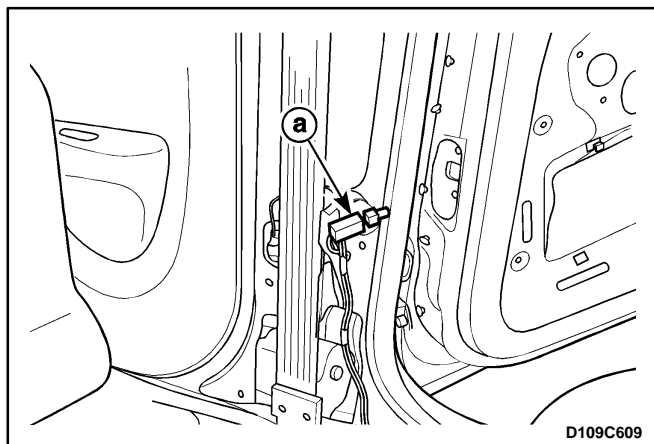
3. Remove the fender. Refer to Section 9R, Body Front End.
4. Remove the front door assembly.
 - Remove the door hinge bolts (1).
 - Remove the door hold open bolt (2).
 - Disconnect the body-to-door rubber grommet (3).
 - Remove the front door assembly (4).



Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fastener to prevent premature corrosion.

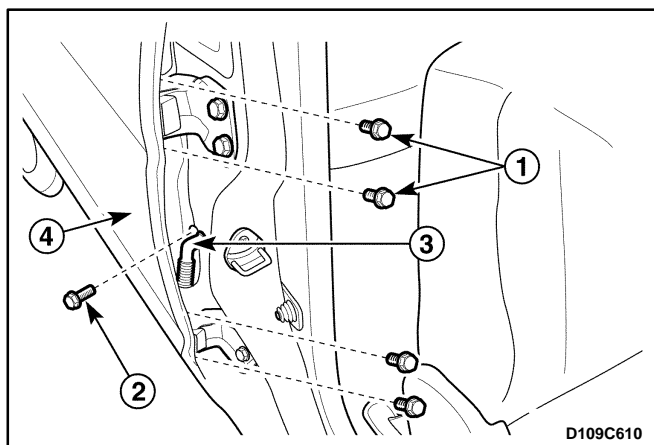
1. Connect the body-to-door rubber grommet.
2. With the aid of another technician, lightly secure the front door with the bolts.
3. Adjust the door for proper fit.
4. Tighten the hinge-to-body bolts.
5. Install the door hold open link with the bolt.
6. Install the fender. Refer to *Section 9R, Body Front End*.
7. Connect the electrical connector.
8. Connect the negative battery cable.
9. Perform the waterleak test. Refer to *Section 9I, Waterleak*.
10. Check for windnoise. Refer to *Section 9J, Windnoise*.

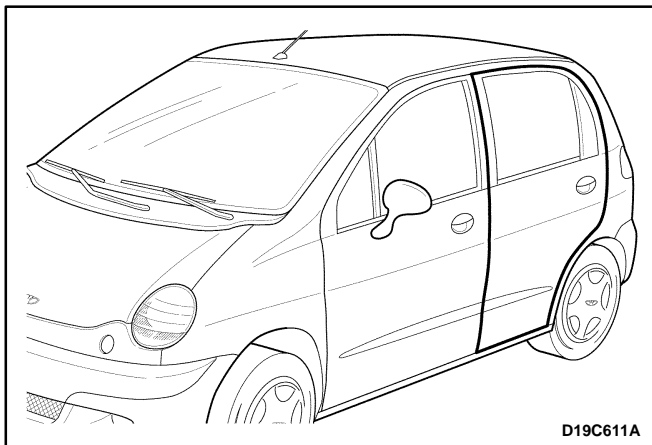


REAR DOOR ASSEMBLY

Removal Procedure

1. Disconnect the negative battery cable.
2. Pry off the lower B-pillar trim panel. Refer to *Section 9G, Interior Trim*.
3. Disconnect the rear door electrical connector.
 - a. Rear door electrical connector.
4. Remove the rear door assembly.
 - Remove the door hinge bolts (1).
 - Remove the door hold open link bolt (2).
 - Disconnect the body-to-door rubber grommet (3).
 - Remove the rear door assembly (4).





Installation Procedure

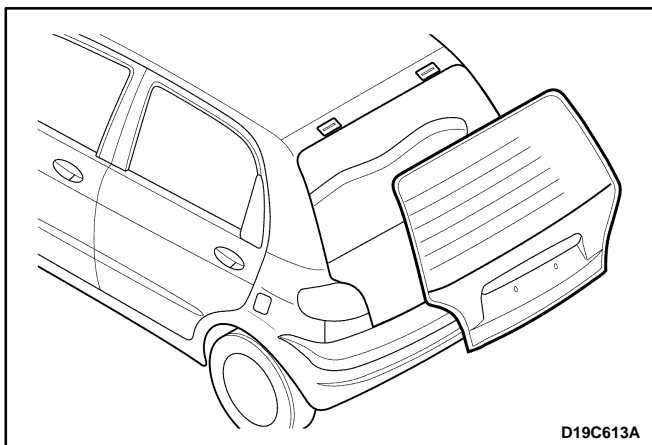
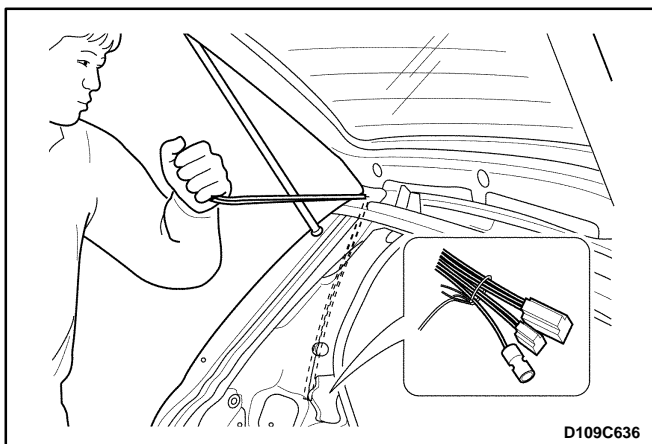
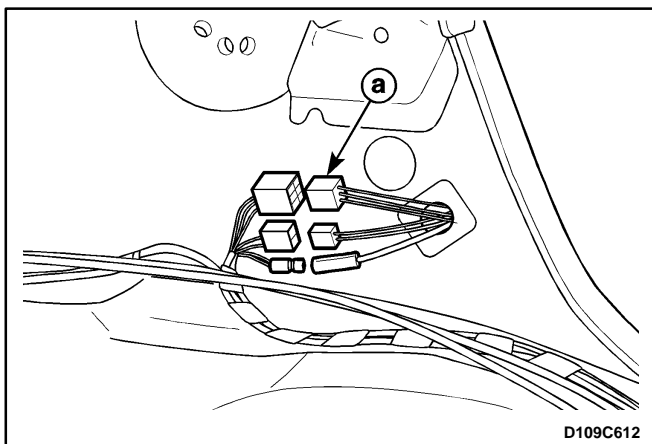
Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fastener to prevent premature corrosion.

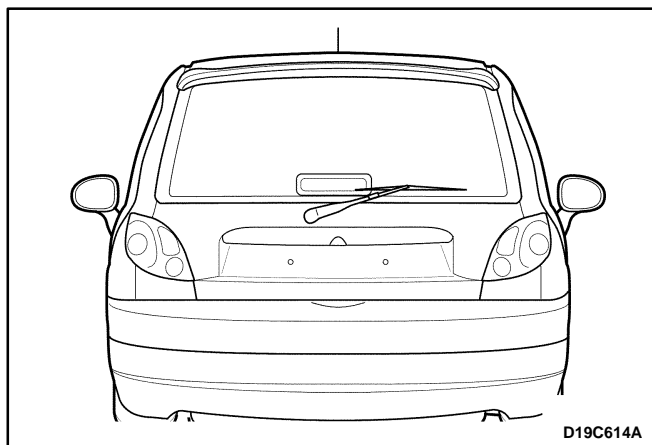
1. Connect the body-to-door rubber grommet.
2. With the aid of another technician, lightly secure the rear door with the bolts.
3. Adjust the door for proper fit.
4. Install the door hold open link with the bolt.
5. Connect the rear door electrical connector.
6. Connect the negative battery cable.
7. Perform the waterleak test. Refer to *Section 9I, Waterleaks*.
8. Check for windnoise. Refer to *Section 9J, Windnoise*.

TAILGATE

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the luggage compartment wheelhouse trim panel. Refer to *Section 9G, Interior Trim*.
3. Disconnect the tailgate electrical connector.
 - a. Tailgate electrical connector.
4. Remove the tailgate strut. Refer to "Tailgate Strut" in this section.
5. Remove the tailgate.
 - Remove the hinge bolts.
 - Disconnect the body-to-tailgate rubber grommet.
 - Remove the tailgate.





Installation Procedure

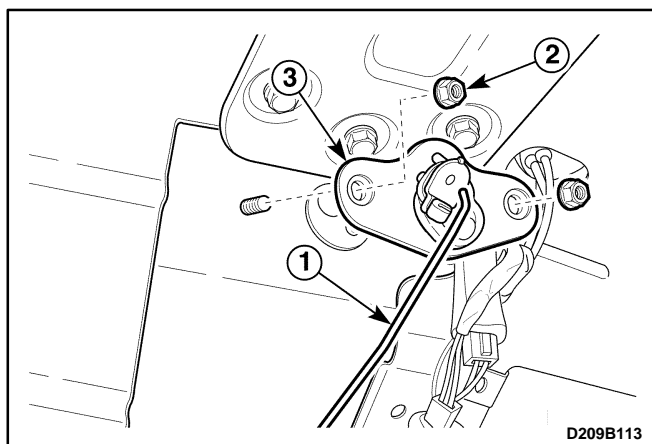
Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fastener to prevent premature corrosion.

1. Connect the body-to-tailgate rubber grommet.
2. With the aid of another technician, lightly secure the tailgate with the bolts.
3. Adjust the tailgate for proper fit.
4. Install the tailgate strut. Refer to "Tailgate Strut" in this section.
5. Connect the tailgate electrical connector.
6. Install the luggage compartment wheelhouse trim panel. Refer to *Section 9G, Interior Trim*.
7. Connect the negative battery cable.

TAILGATE LOCK CYLINDER

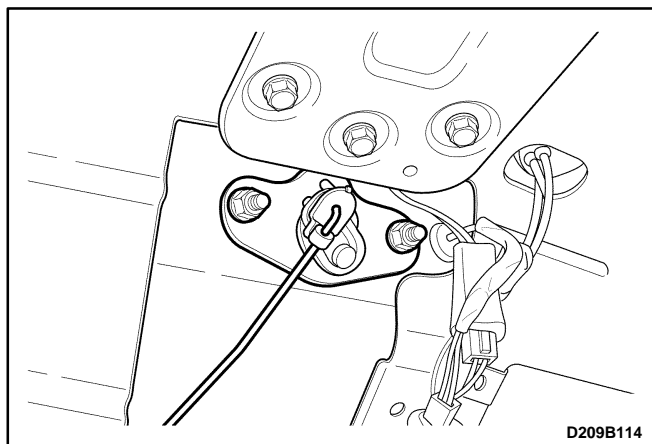
Removal Procedure

1. Disconnect the negative battery cable.
2. Open the tailgate.
3. Remove the rear window wiper motor assembly. Refer to *Section 9D, Wipers/Washer Systems*.
4. Remove the tailgate lock cylinder.
 - Disconnect the tailgate lock rod (1).
 - Remove the nuts from the tailgate lock cylinder (2).
 - Remove the tailgate lock cylinder (3).



Installation Procedure

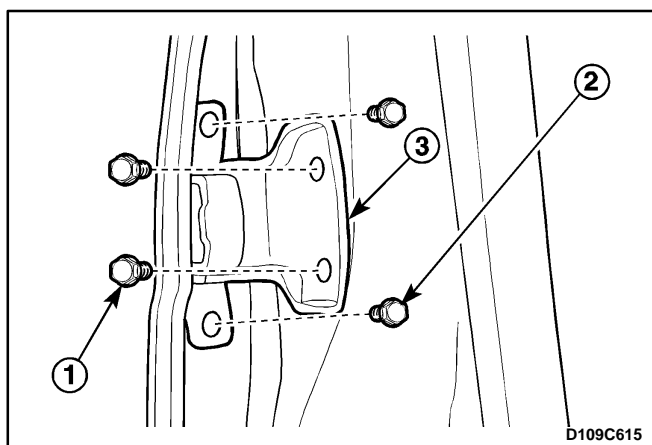
1. Install the tailgate lock cylinder.
2. Install the rear window wiper motor assembly. Refer to *Section 9D, Wipers/Washer Systems*.
3. Connect the negative battery cable.

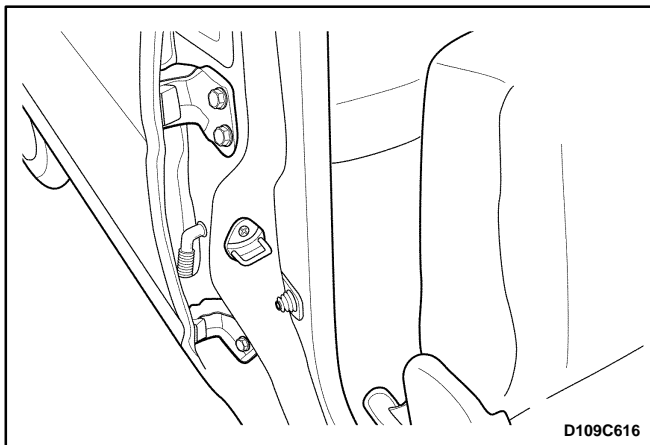


DOOR HINGE

Removal Procedure

1. With the aid of another technician, remove the door hinge.
 - Remove the hinge-to-body bolts (1).
 - Remove the hinge-to-door bolts (2).
 - Remove the door hinge (3).

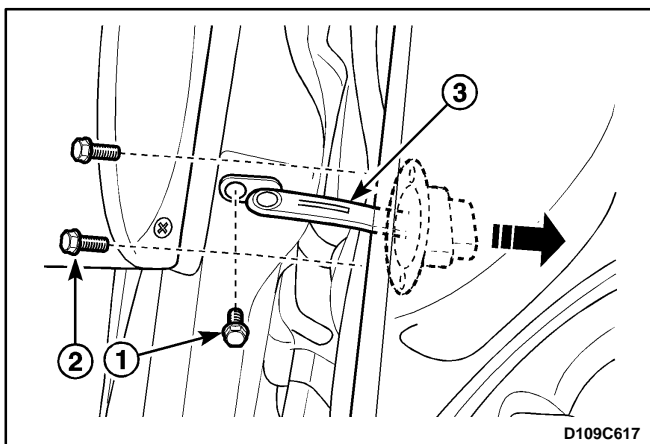




Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fastener to prevent premature corrosion.

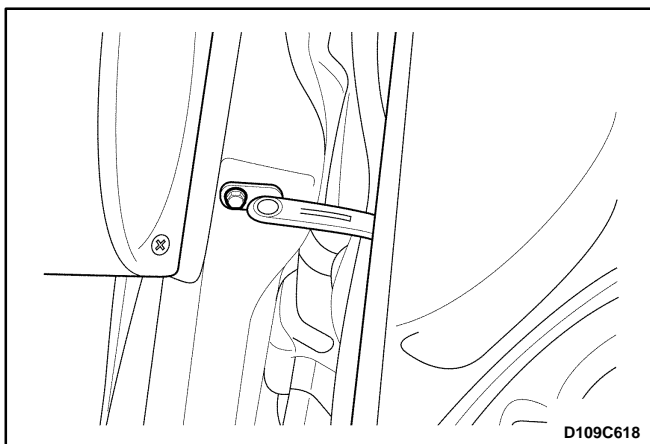
1. With the aid of another technician, install the hinge to the door and the body with the bolts.



DOOR HOLD OPEN LINK

Removal Procedure

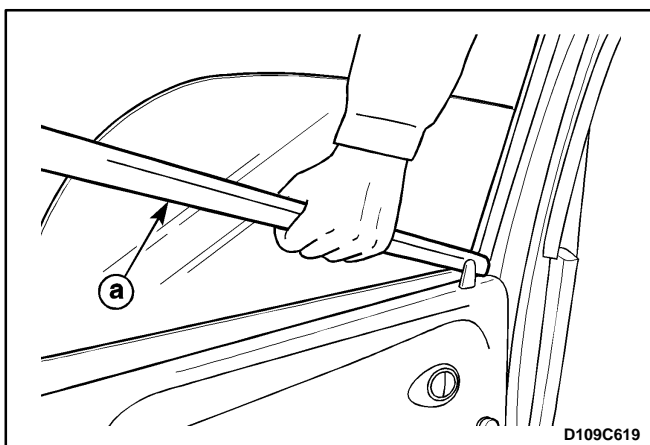
1. Remove the door seal trim. Refer to "Door Seal Trim" in this section.
2. Remove the door hold open link.
 - Remove the hinge-to-body bolt (1).
 - Remove the hinge-to-door bolts (2).
 - Remove the door hold open link (3).



Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fastener to prevent premature corrosion.

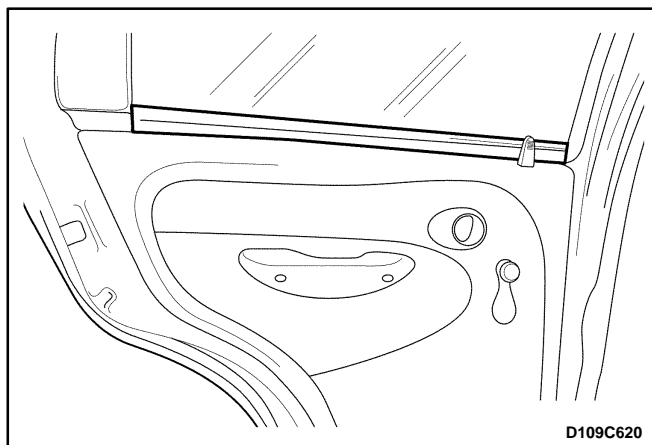
1. Install the door hold open link to the door and the body with the bolts.
2. Remove the door seal trim. Refer to "Door Seal Trim" in this section.



INSIDE CHANNEL WEATHERSTRIP (STANDARD)

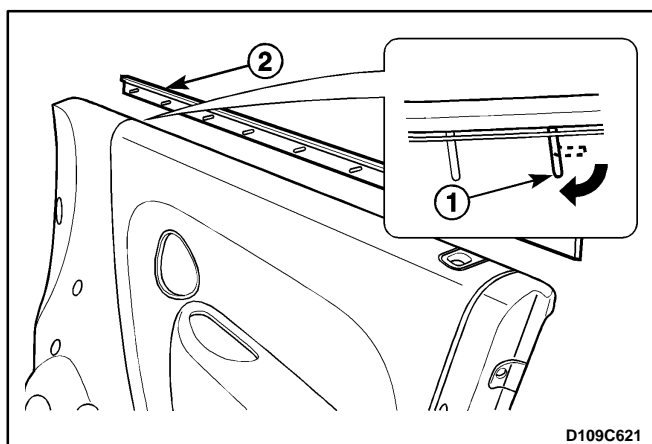
Removal Procedure

1. Remove the channel weatherstrip.
 - a. Weatherstrip.



Installation Procedure

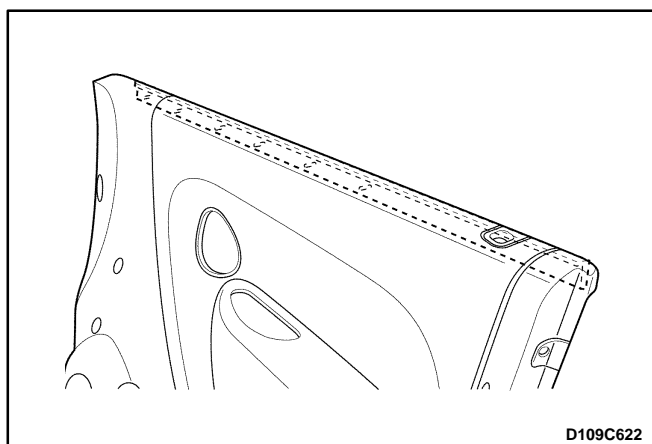
1. Install the channel weatherstrip.



INSIDE CHANNEL WEATHERSTRIP (DELUXE)

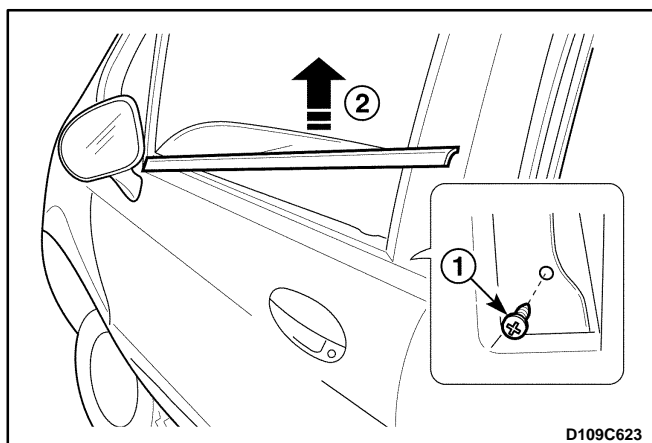
Removal Procedure

1. Remove the door trim. Refer to *Section 9G, Interior Trim*.
2. Remove the channel weatherstrip from the door trim.
 - Straighten the retaining tabs (1).
 - Remove the channel weatherstrip (2).



Installation Procedure

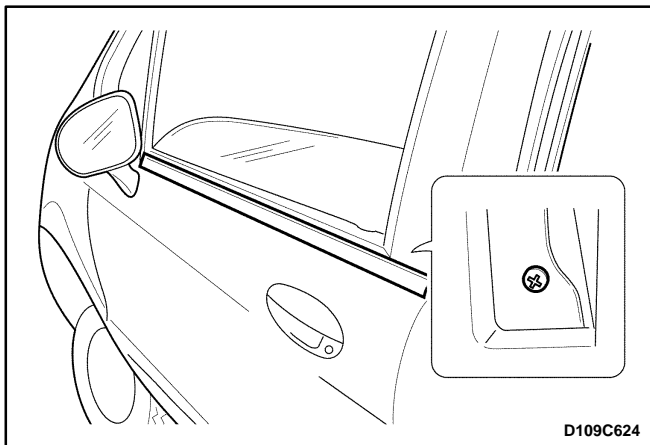
1. Install the channel weatherstrip onto the door trim panel.
2. Bend the retaining tabs to secure the channel weatherstrip to the door trim panel.
3. Install the door trim panel. Refer to *Section 9G, Interior Trim*.



DOOR OUTSIDE CHANNEL WEATHERSTRIP

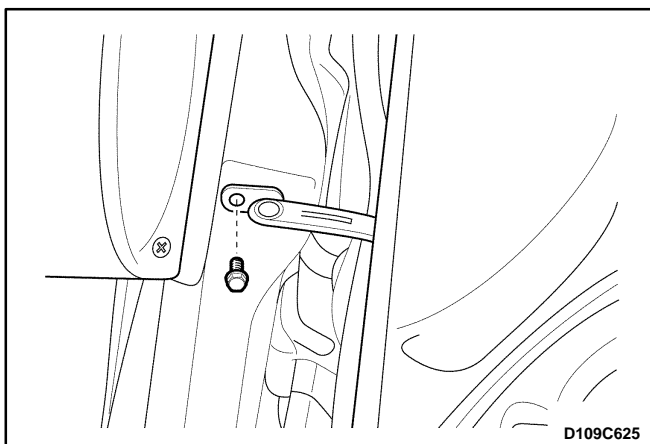
Removal Procedure

1. Remove the channel weatherstrip.
 - Remove the screw (1).
 - Lift off the outside channel weatherstrip (2).



Installation Procedure

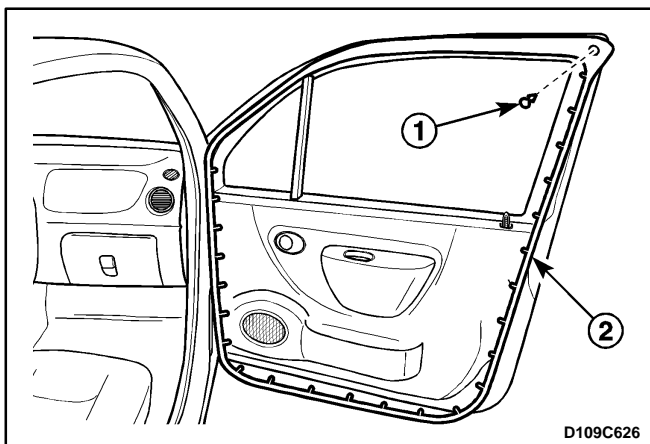
1. Press the outside channel weatherstrip onto the door.
2. Install the weatherstrip screw.



DOOR WEATHERSTRIP

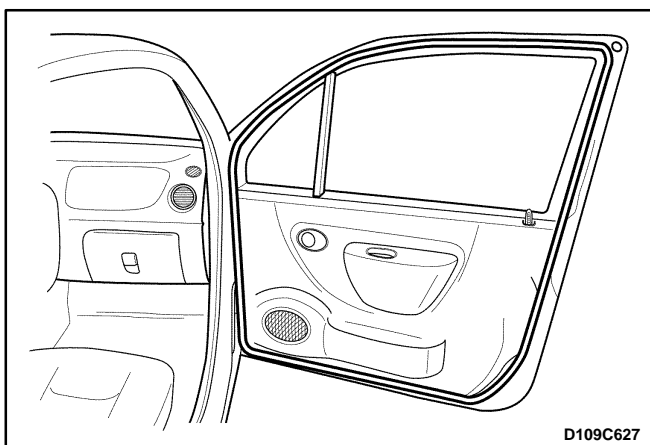
Removal Procedure

1. Remove the door hold open link bolt.



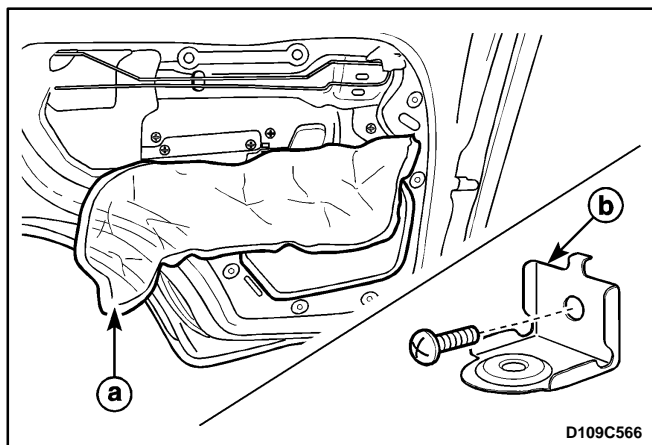
2. Remove the door weatherstrip.

- Remove the clip (1).
- Remove the weatherstrip pins (2).



Installation Procedure

1. Install the door weatherstrip with the clip and the pins.
2. Install the door hold open link bolt.

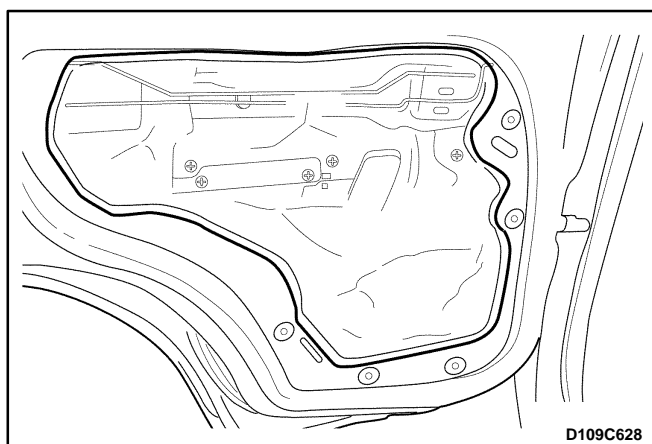


DOOR SEAL TRIM

Removal Procedure

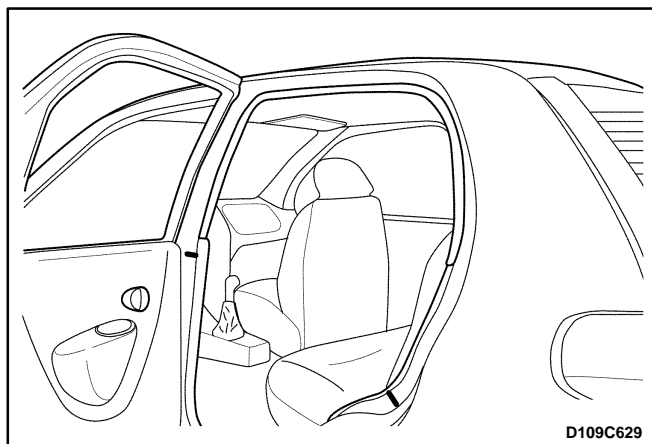
1. Remove the door trim panel. Refer to *Section 9G, Interior Trim*.
2. Remove the door seal trim.
 - a. Door seal trim.
 - b. Door pocket handle bracket.

Important: In case of the deluxe trim, remove the door pocket handle bracket in advance.



Installation Procedure

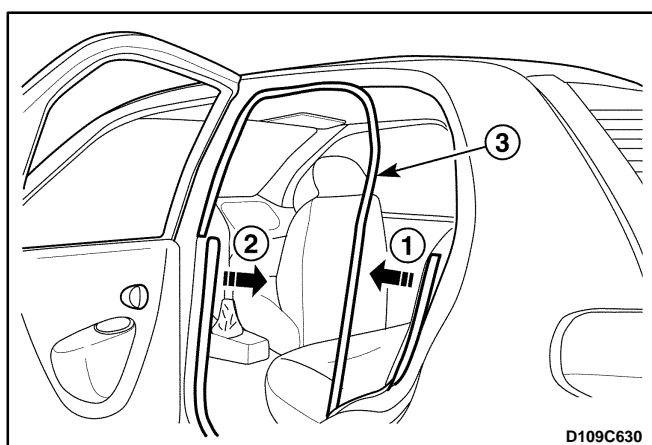
1. Install the door seal trim.
2. Install the door pocket handle bracket for the deluxe trim.
3. Install the door trim panel. Refer to *Section 9G, Interior Trim*.

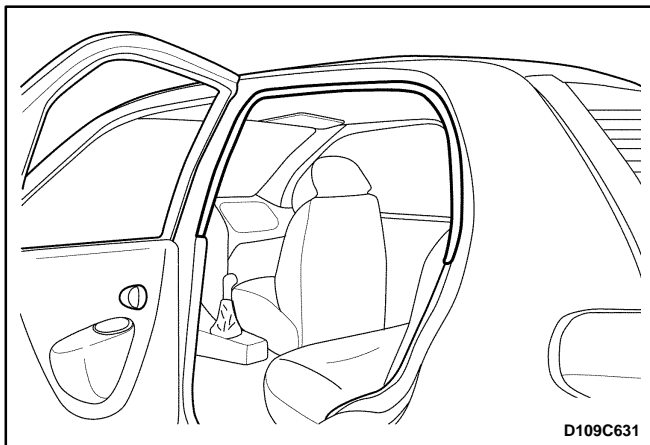


DOOR OPENING WEATHERSTRIP

Removal Procedure

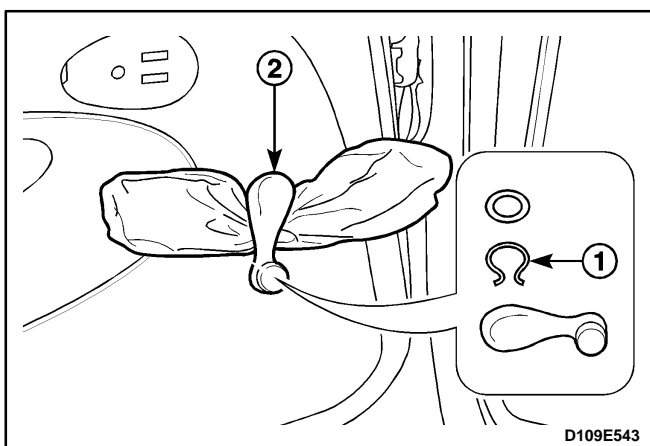
1. Mark the door opening weatherstrip edge by a soluble pen.
2. Remove the door opening weatherstrip.
 - Take off the rocker trim panel partially (1).
 - Take off the lower B-pillar trim panel partially (2).
 - Remove the door opening weatherstrip (3).





Installation Procedure

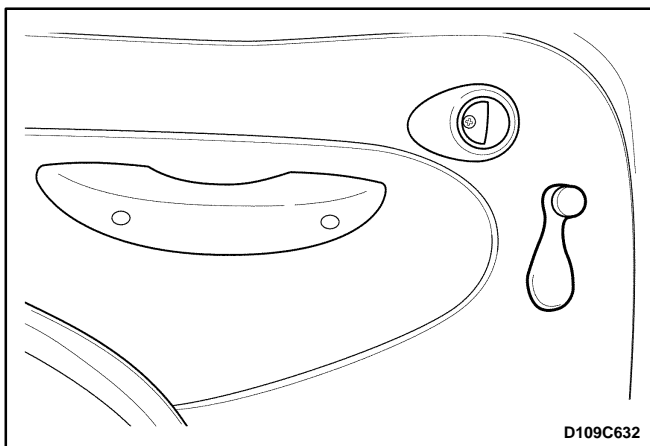
1. Install the door opening weatherstrip to match the marking.
2. Install the rocker panel trim and the lower B-pillar panel trim.



MANUAL WINDOW REGULATOR HANDLE

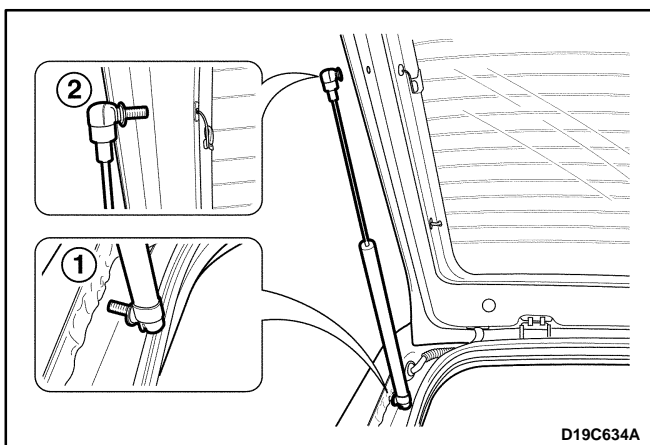
Removal Procedure

1. Remove the window regulator handle.
 - Using a cloth, pull out the clip (1).
 - Remove the window regulator handle (2).



Installation Procedure

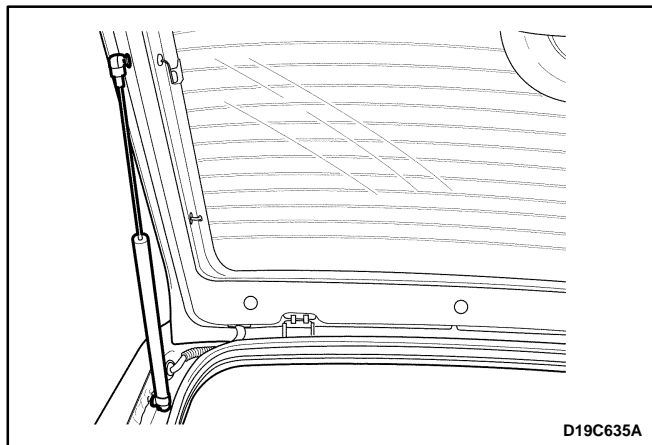
1. Install the window regulator handle with the clip.



TAILGATE STRUT

Removal Procedure

1. Open the tailgate and suitably support it.
2. Remove the tailgate strut assembly.
 - Remove the end fitting nut from the ball studs (rear body) (1).
 - Remove the end fitting nut from the ball studs (tailgate) (2).

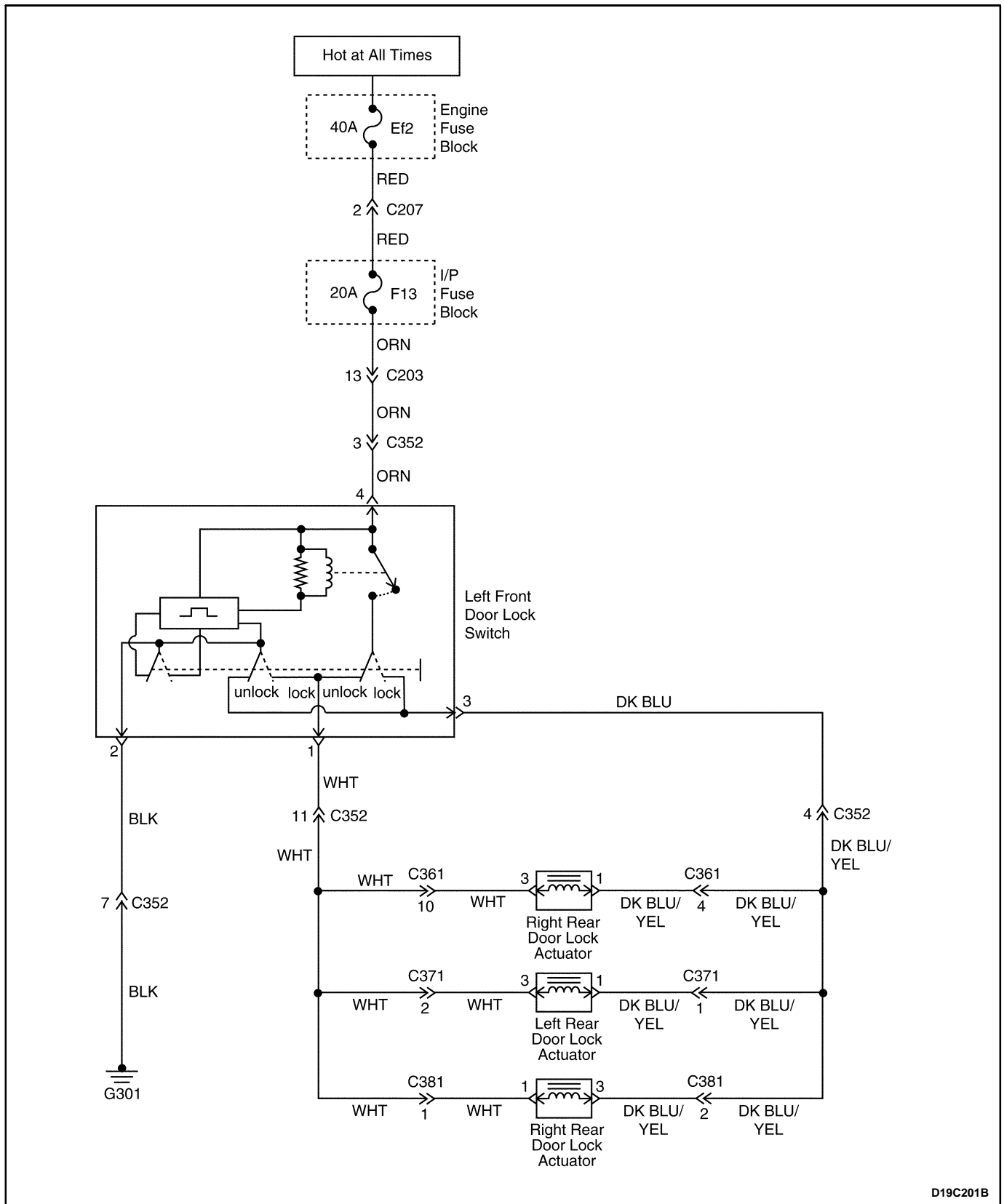


Installation Procedure

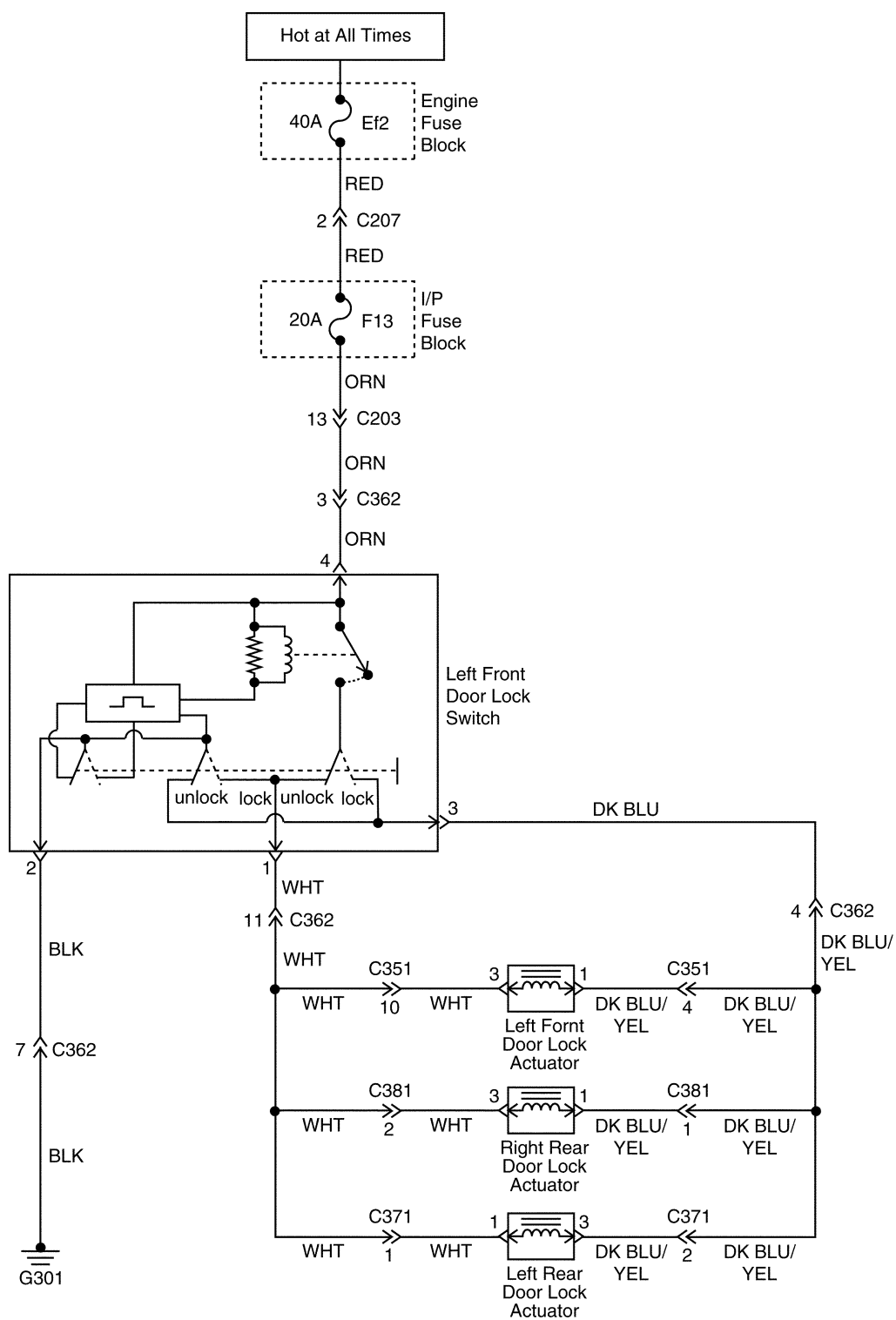
1. Install the tailgate strut with the ball studs.

SCHEMATIC AND ROUTING DIAGRAMS

POWER DOOR LOCKS (LEFT-HAND DRIVE)

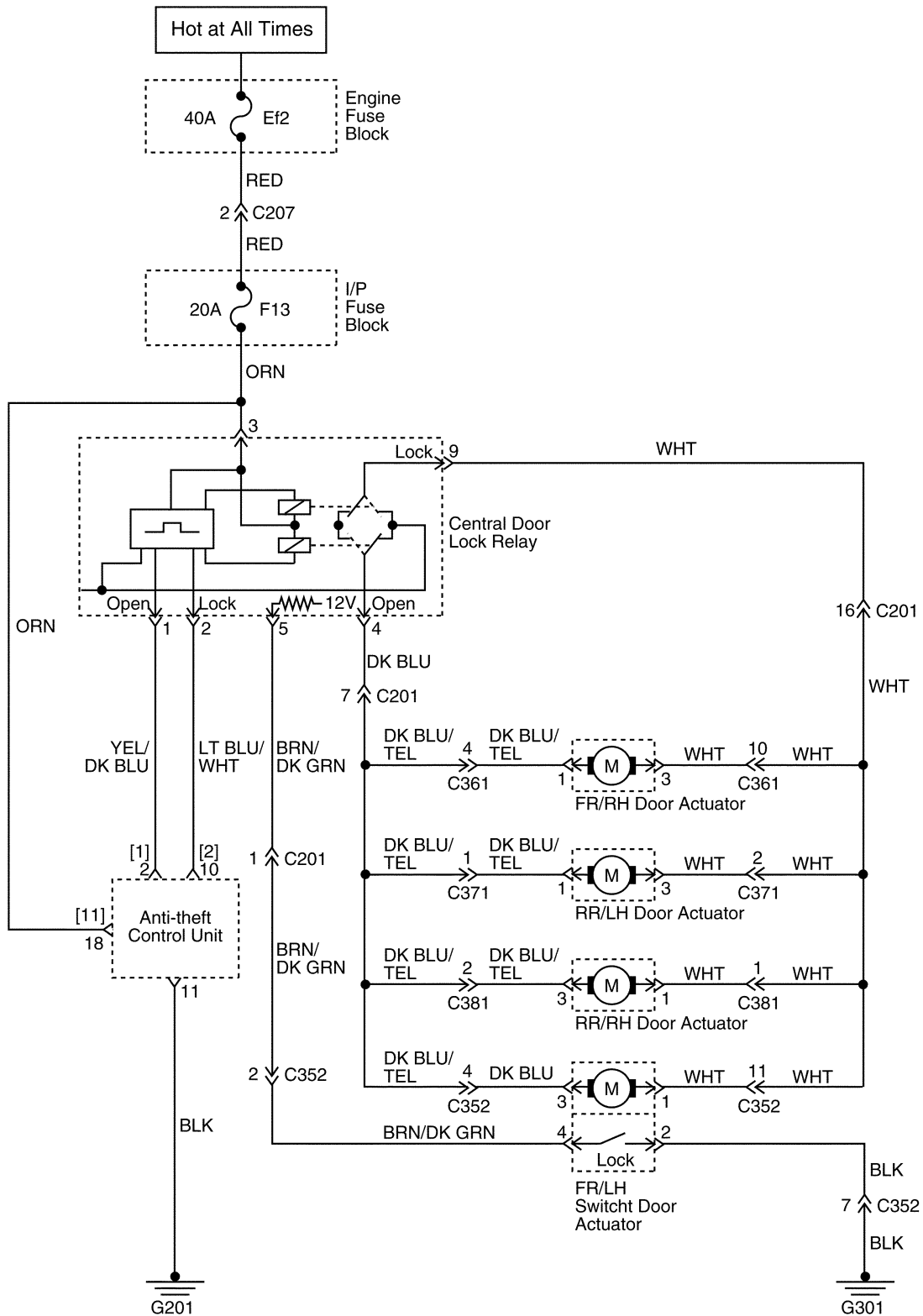


POWER DOOR LOCKS (RIGHT-HAND DRIVE)



POWER DOOR LOCKS (W/ ANTI-THEFT CONTROL : LHD)

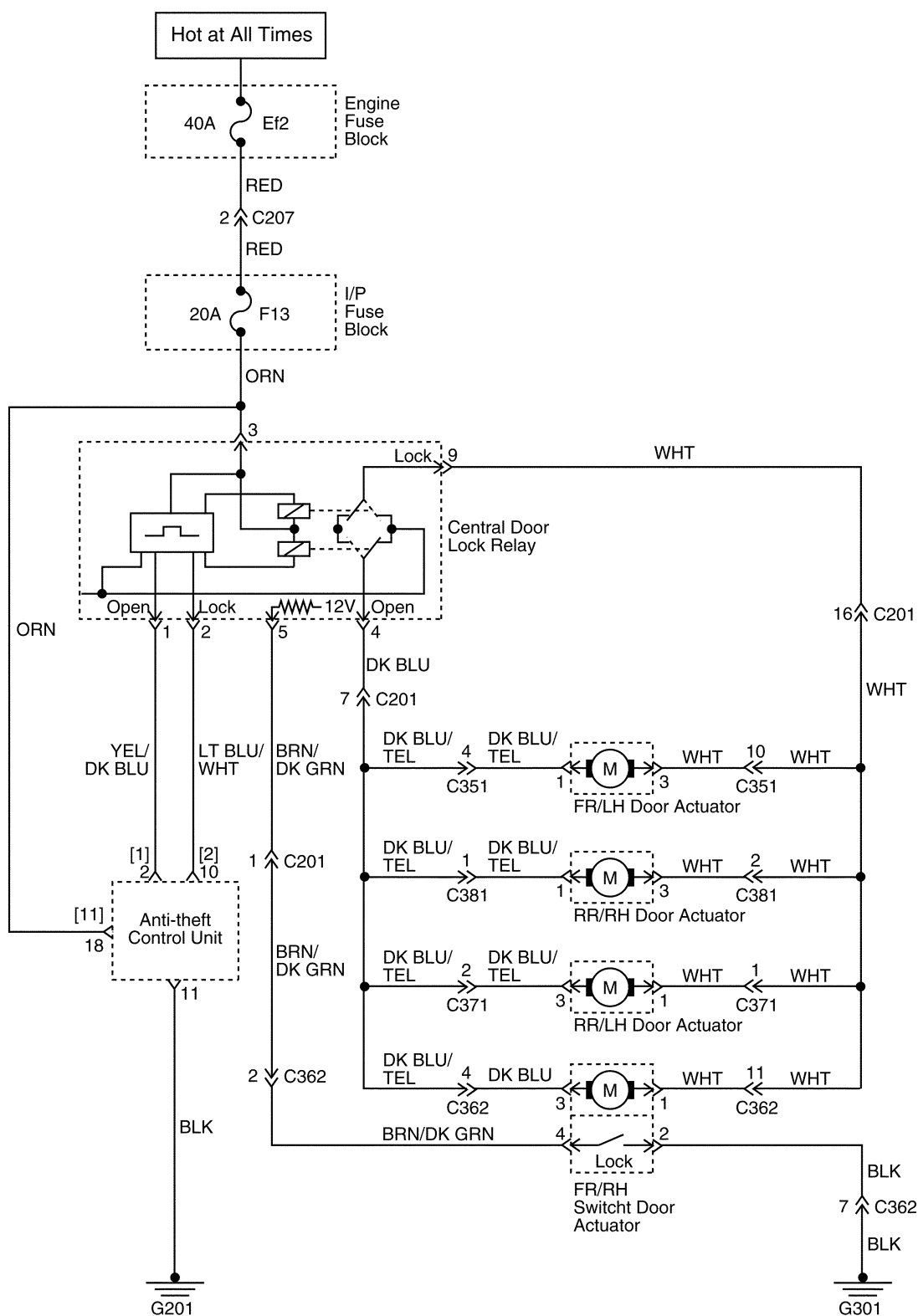
[] : W/FRT Fog Lamp Switch



D19C201S

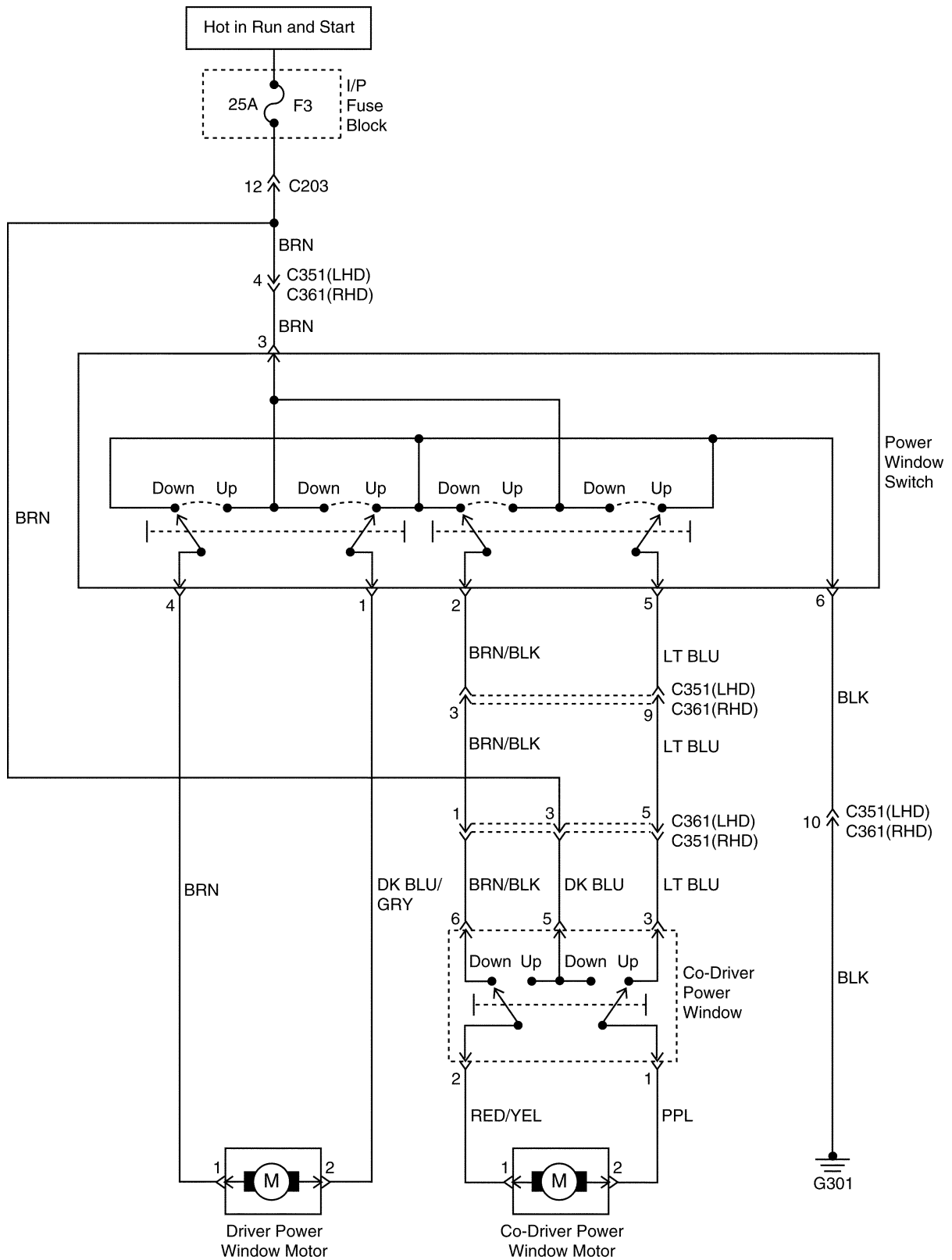
POWER DOOR LOCKS (W/ ANTI-THEFT CONTROL : RHD)

[] : W/FRT Fog Lamp Switch



D19C202S

POWER WINDOWS (FRONT ONLY)



D19C202B

SECTION 9Q

ROOF

TABLE OF CONTENTS

Description and Operation	9Q-2	On-Vehicle Service	9Q-4
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Sun Visors	9Q-2	Sun Visors	9Q-6
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Coat Hook	9Q-2	Coat Hook	9Q-6
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DESCRIPTION AND OPERATION

ROOF

The roof is a one-piece painted metal unit which incorporates a single, solid headliner and two moldings, one on each side of the vehicle's roof.

The moldings, which enclose and hide the roof rail seams, are serviceable as individual units.

The one-piece formed headliner, common to both the notchback and the hatchback, consists of a molded substrate covered with a foam-backed cloth facing. The one-piece construction requires servicing the headliner as a complete assembly.

MANUAL SUNROOF

The sunroof is

- Intended to provide light and air through the roof of the vehicle during the driving.
- Built into the roof.
- Made of glass.

SUN VISORS

The sun visors swing down or side in order to block out glare. They also swing to the side when they are released from the support.

PASSENGER ASSIST HANDLE

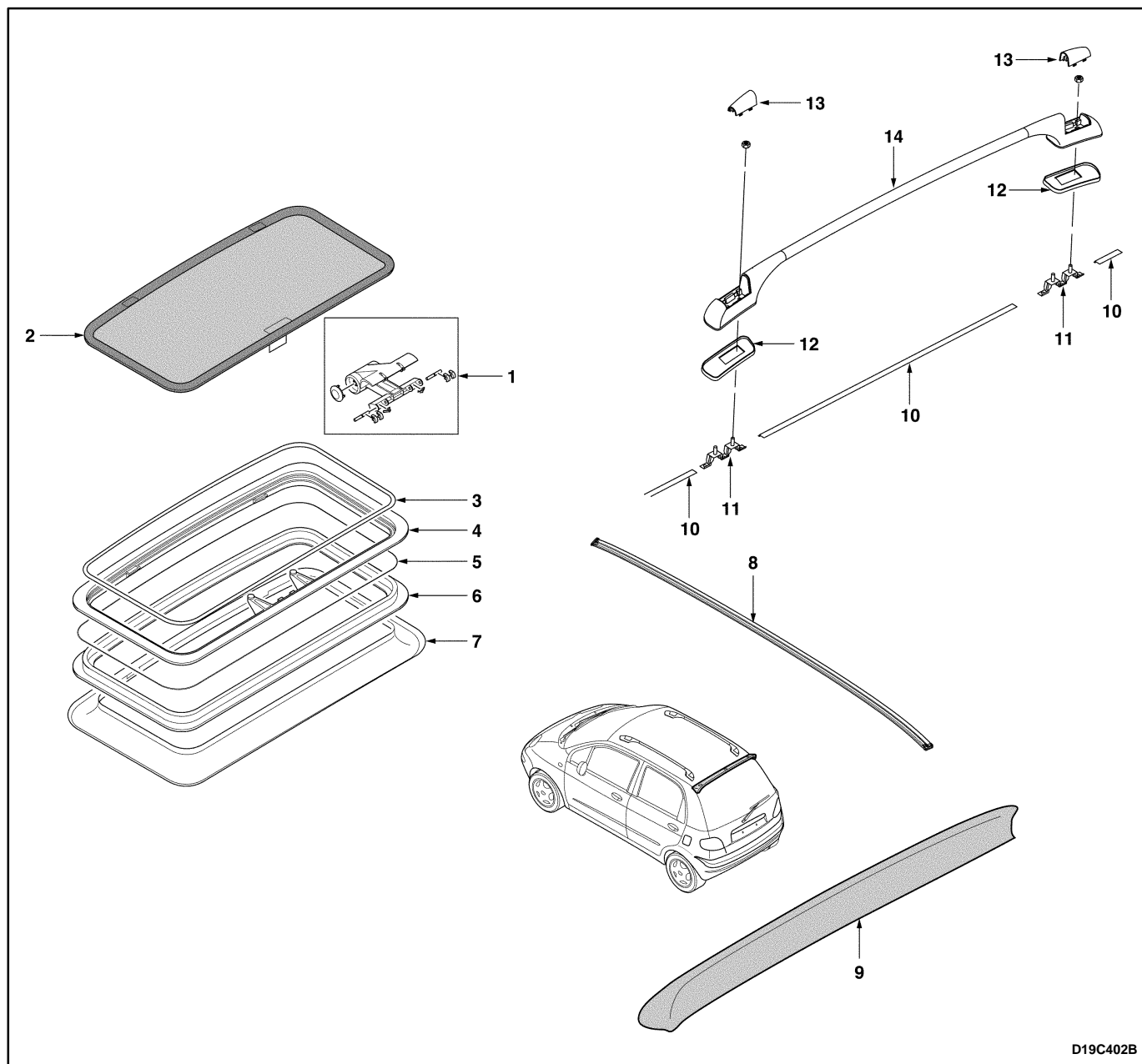
There is a passenger assist handle for the front passenger seat. Passengers can use these handles to assist in keeping their balance over rough roads or during sharp turns.

COAT HOOK

The coat hook is fastened to the headliner above the left-hand rear passenger seat for Left-Hand Drive or right hand rear passenger seat for Right-Hand Drive. This position has a coat hook in the place of a passenger assist handle.

COMPONENT LOCATOR

ROOF

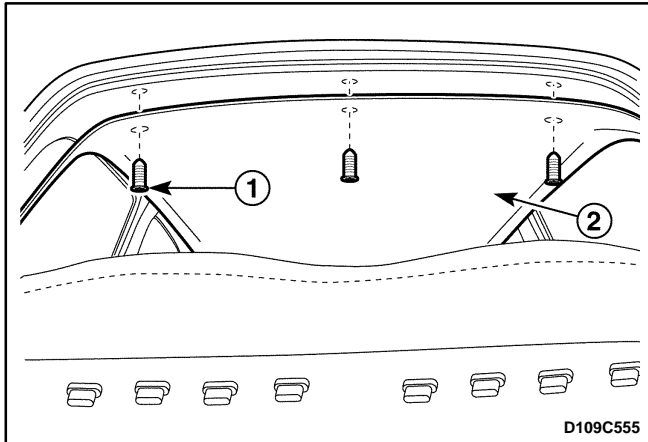


1. Sunroof Handle
2. Sunroof Screen
3. Sunroof Screen Seal
4. Sunroof Upper Frame
5. Roof Seal
6. Sunroof Lower Frame
7. Sunroof Cover

8. Roof Rail
9. Rear Spoiler
10. Roof Molding
11. Roof Rack Bracket
12. Roof Rack Pad
13. Cap
14. Roof Rack

REPAIR INSTRUCTIONS

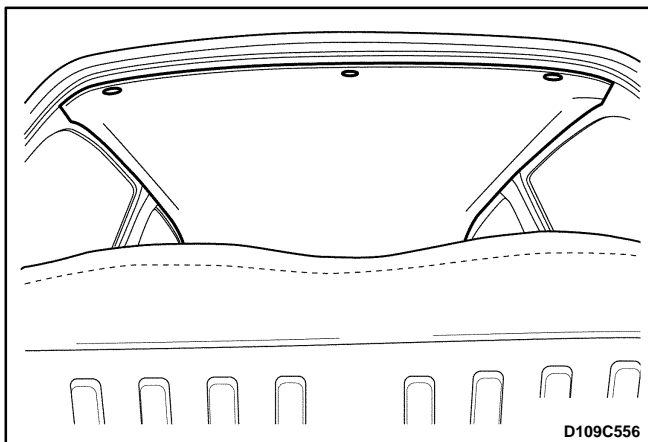
ON-VEHICLE SERVICE



FORMED HEADLINER

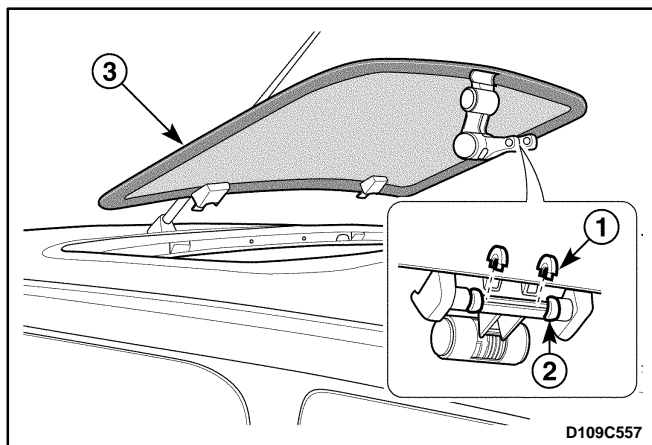
Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the sun visors. Refer to "Sun Visors" in this section.
3. Remove the interior courtesy lamp. Refer to *Section 9B, Lighting Systems*.
4. Pry off the A-pillar trim panel. Refer to *Section 9G, Interior Trim*.
5. Pry off the upper B-pillar trim panel. Refer to *Section 9G, Interior Trim*.
6. Pry off the C-pillar trim panel. Refer to *Section 9G, Interior Trim*.
7. Remove the passenger assist handle and the coat hook. Refer to "Passenger Assist Handle and The Coat Hook" in this section.
8. Remove the sunroof molding, if equipped with. Refer to "Manual Sunroof" in this section.
9. Take off the tailgate opening weatherstrip. Refer to *Section 9P, Doors*.
10. Remove the headliner.
 - Remove the clips (1).
 - Remove the headliner (2).



Installation Procedure

1. Install in the reverse order of removal.

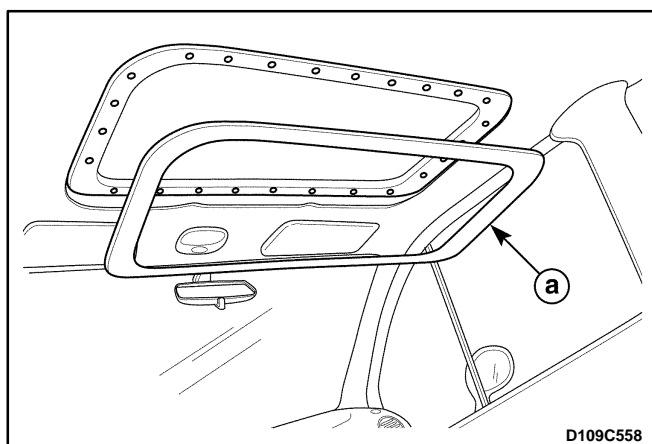


MANUAL SUNROOF

Removal Procedure

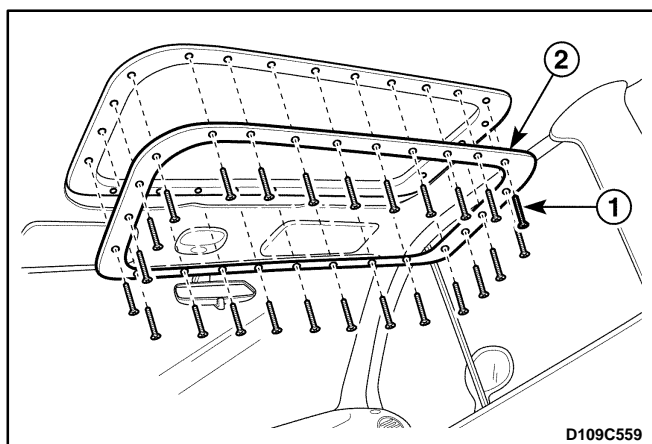
1. Remove the sunroof screen.

- Remove the clips (1).
- Remove the lock (2).
- Remove the screen (3).



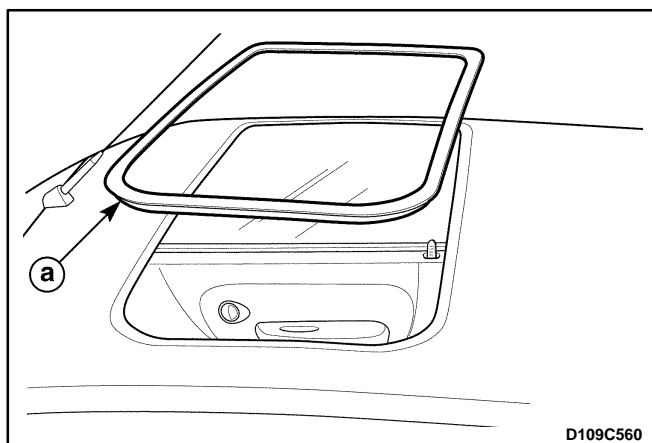
2. Remove the inside sunroof molding in the passenger compartment.

- a. Inside sunroof molding.



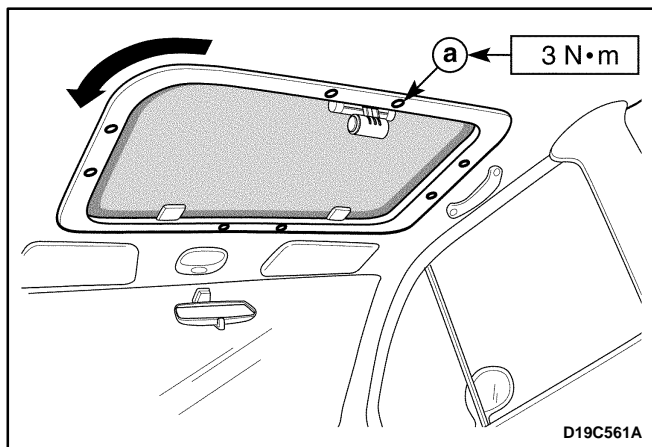
3. Remove the lower sunroof frame.

- Remove the screws (1).
- Remove the lower sunroof frame (2).



4. Remove the upper sunroof frame.

- a. Upper sunroof frame.



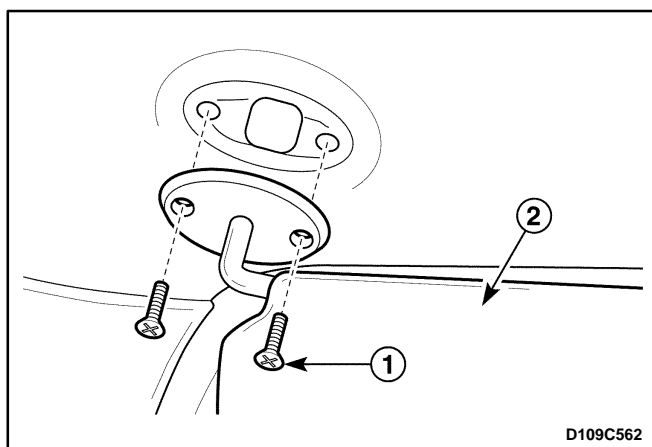
Installation Procedure

1. Install the upper sunroof frame.
2. Install the lower sunroof frame with the screws (a).
3. Install the inside sunroof molding.
4. Install the screen with the clips and the lock.

Tighten

Tighten the screws to 3 N·m (27 lb-in).

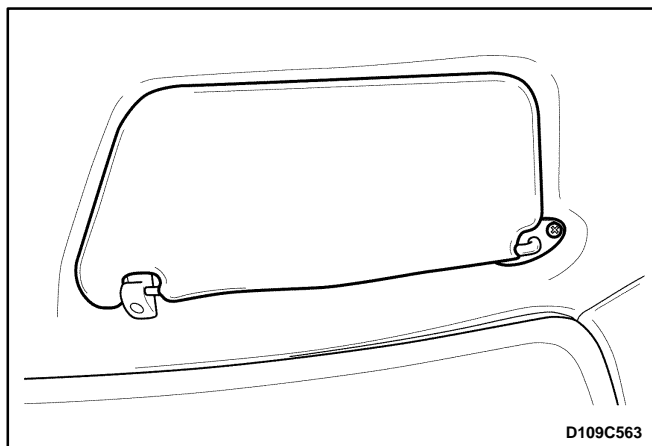
Notice: When installing the lower sunroof frame, make sure to tighten the screws previously as shown the figure and tighten all the screws.



SUN VISORS

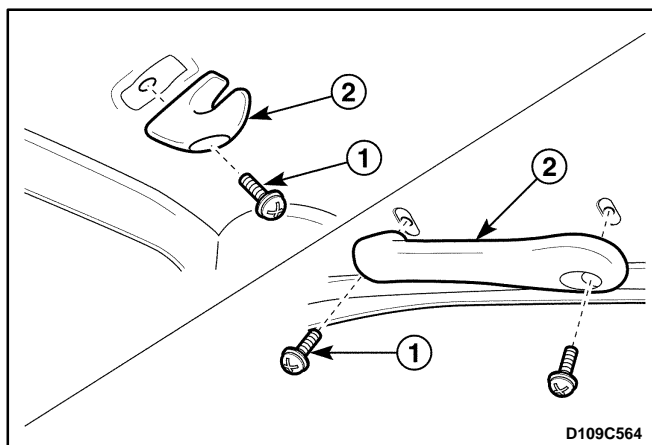
Removal Procedure

1. Remove the sun visors.
 - Remove the screws (1).
 - Remove the sun visors (2).



Installation Procedure

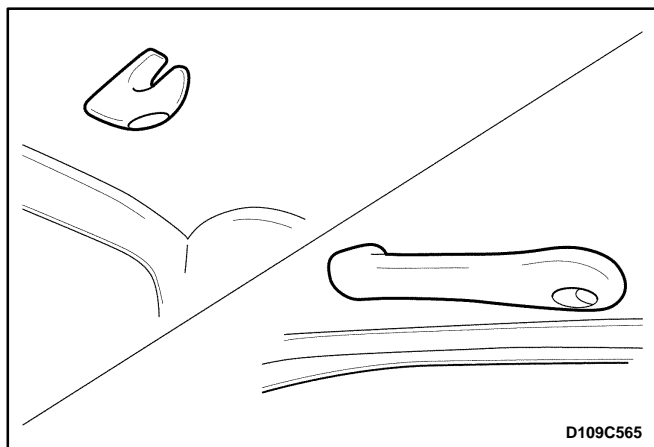
1. Install the sun visors with the screws.



PASSENGER ASSIST HANDLE OR THE COAT HOOK

Removal Procedure

1. Remove the passenger assist handle or the coat hook from the headliner.
 - Remove the screws (1).
 - Remove the coat hook or the assist handle (2).



Installation Procedure

1. Install the passenger assist handle or the coat hook to the headliner with the screws.

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Sunroof Frame Screws	3	–	27

SECTION 9R

BODY FRONT END

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Anticorrosion Materials	9R-3	Hood Latch Release Cable	9R-9
Front End Sealing	9R-4	Fender	9R-9

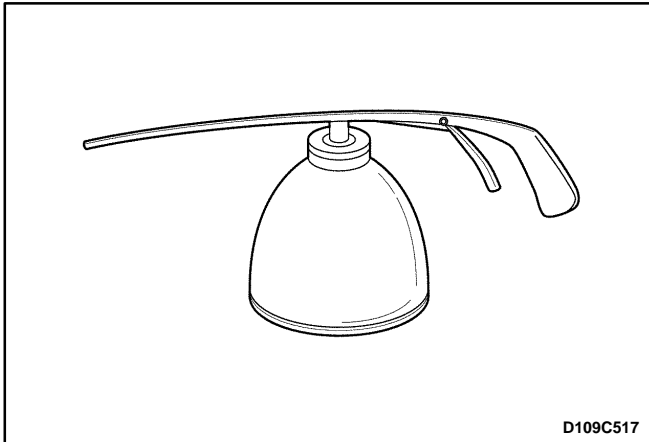
DESCRIPTION AND OPERATION

BODY FRONT END

This vehicle has a unitized body with a frame assembly supporting the engine and the transaxle. The fender panels and the radiator support are also integral parts of the body.

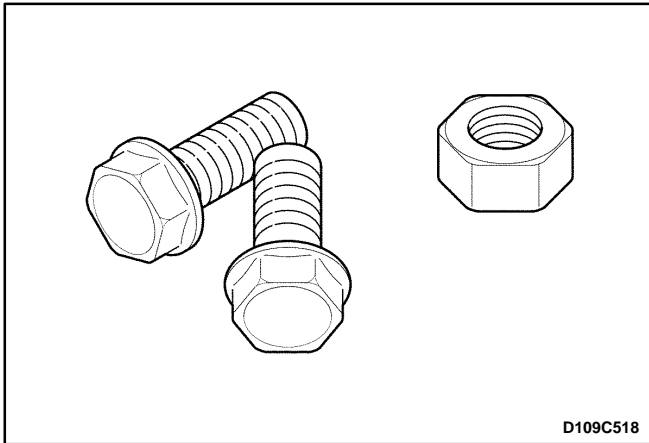
REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE



LUBRICATION

The hood hinges and the locking mechanisms require periodic lubrication for proper operation. Refer to *Section 0B, General Information* for the specific types and intervals of lubrication.



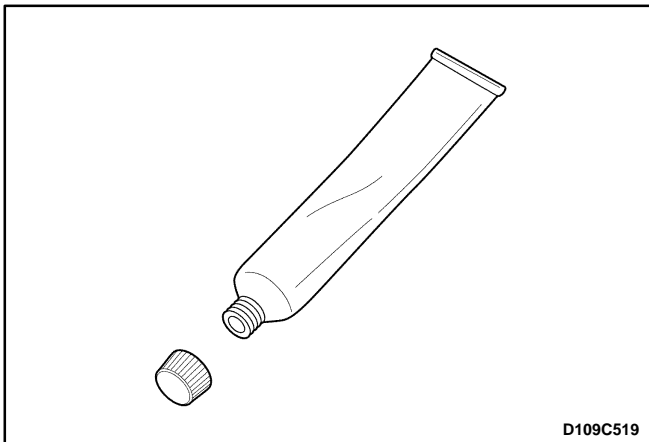
FASTENERS

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

Many aluminum components are used on current models. Aluminum in contact with steel may corrode rapidly if it is not protected by special finishes or isolators.

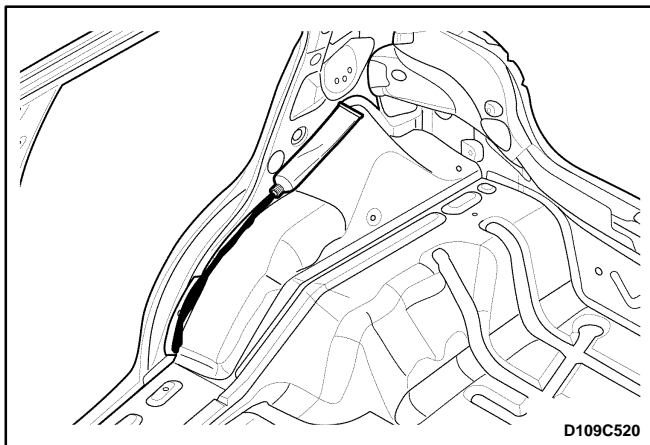
The fasteners used have a special finish which provides adequate protection from corrosion. These special fasteners differ in color in order to easily identify them from the standard metric fasteners, which are medium blue in color.

When replacing fasteners, avoid substituting otherwise similar fasteners in the same location.



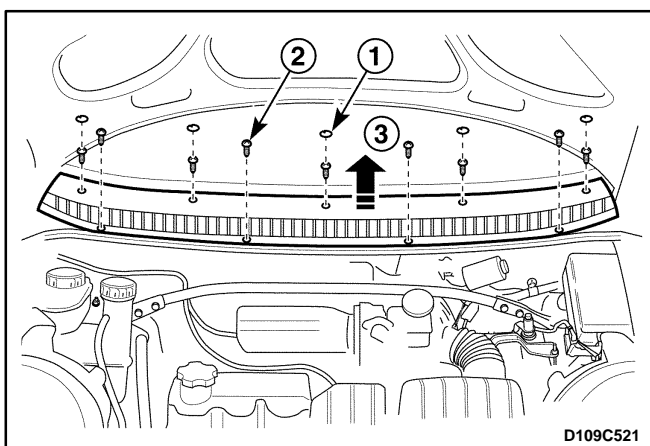
ANTICORROSION MATERIALS

In order to provide rust resistance, anticorrosion materials have been applied to the interior surfaces of most of the metal panels. When you service these panels, properly re-coat them with a service-type anticorrosion material if any of the original material has been disturbed.



FRONT END SEALING

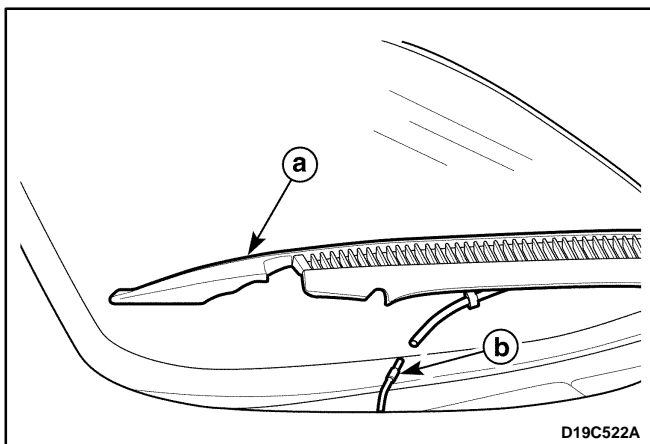
All locations where waterleaks may occur are sealed during production with high quality, durable sealers. If it becomes necessary to reseal specific areas, use a high quality sealer of medium-bodied consistency which will retain its flexible characteristics after curing and can be painted if necessary.



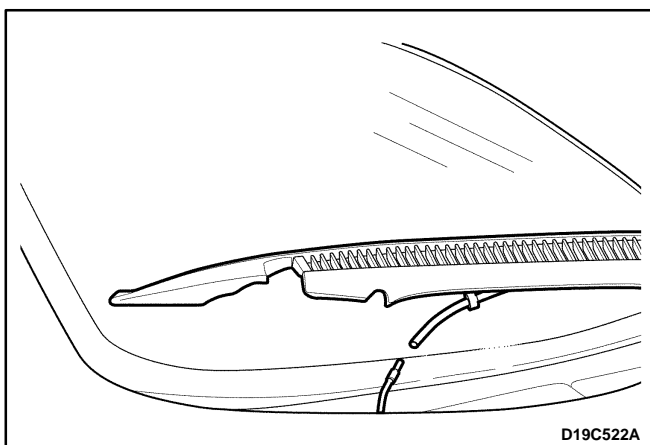
COWL VENT GRILLE

Removal Procedure

1. Remove the wiper arm assembly. Refer to *Section 9D, Wiper/Washer Systems*.
2. Remove the cowl vent grille screws and the clips.
 - Remove the screws after removing the upper cap (1).
 - Remove the lower retaining plastic clips (2).
 - Close the hood.
 - Lift up the cowl vent grille (3).

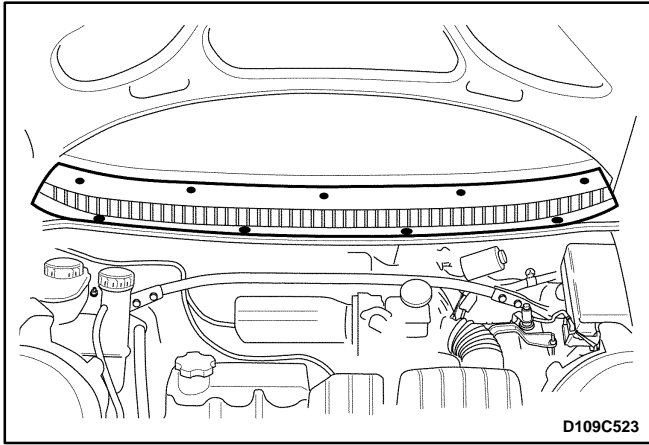


3. Remove the cowl vent grille.
 - Disconnect the front washer hose connector.
 - Remove the cowl vent grille.
 - a. Cowl vent grille.
 - b. Front washer hose connector.

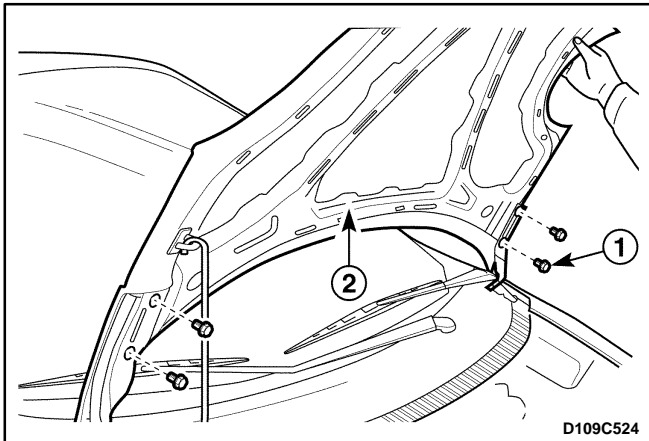


Installation Procedure

1. Connect the front washer hose connector.



2. Install the cowl vent grille with the screws and the clips.
3. Install the wiper arm assembly. Refer to *Section 9D, Wiper/Washer Systems*.

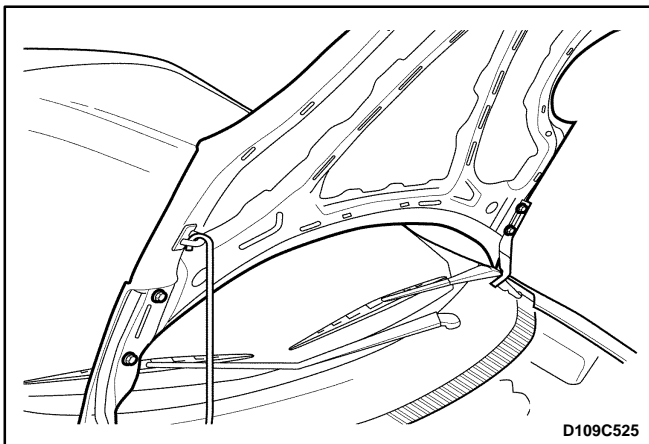


HOOD

Removal Procedure

Important: Install the protective coverings over the fenders and the windshield in order to prevent damage to the paint, the glass and the moldings when you are removing and installing the hood.

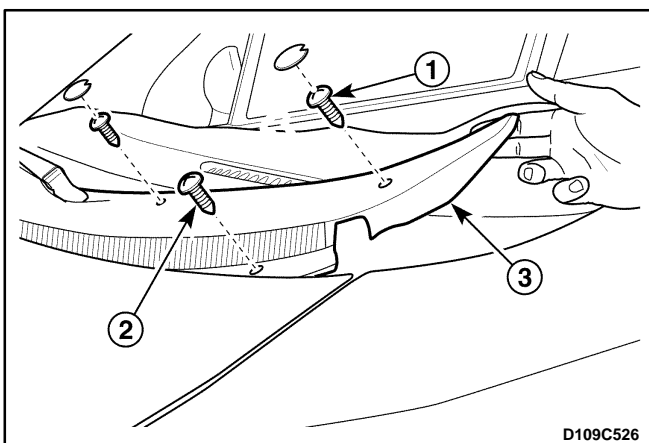
1. Raise and support the hood.
2. Remove the hood.
 - Remove the bolts (1).
 - Remove the hood (2).



Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

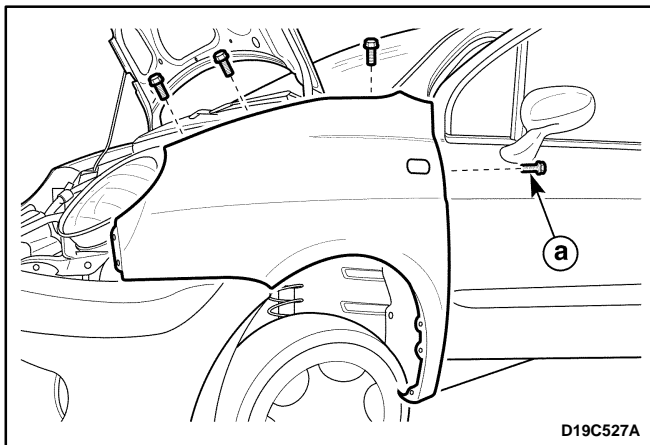
1. Install the hood with the bolts.
2. Inspect the hood for proper alignment.



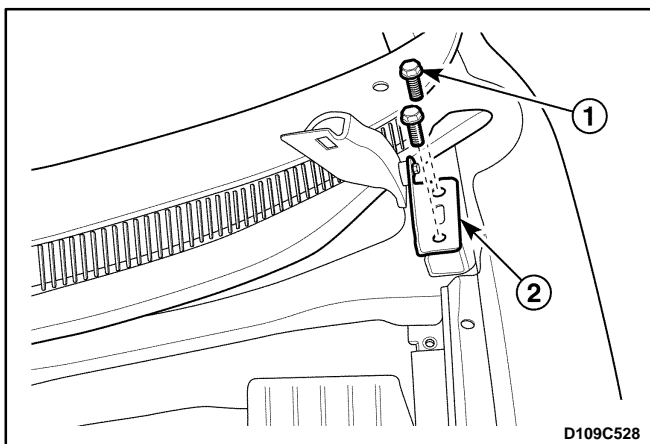
HOOD HINGE

Removal Procedure

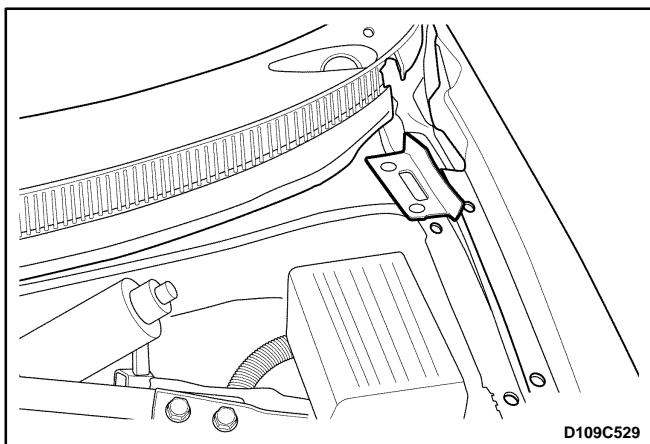
1. Remove the hood. Refer to "Hood" in this section.
2. Take off the cowl vent grille.
 - Remove the screws after removing the upper caps (1).
 - Remove the retaining screw on the cowl vent grille (2).
 - Take off the cowl vent grill (3).



3. Remove the bolts on the top of the fender.
 - a. Fender upper mounting bolt.



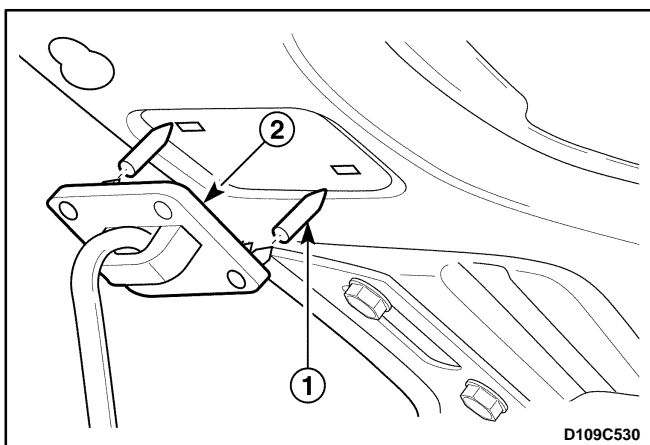
4. Remove the hood hinge.
 - Remove the bolts (1).
 - Remove the hood hinge (2).



Installation Procedure

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

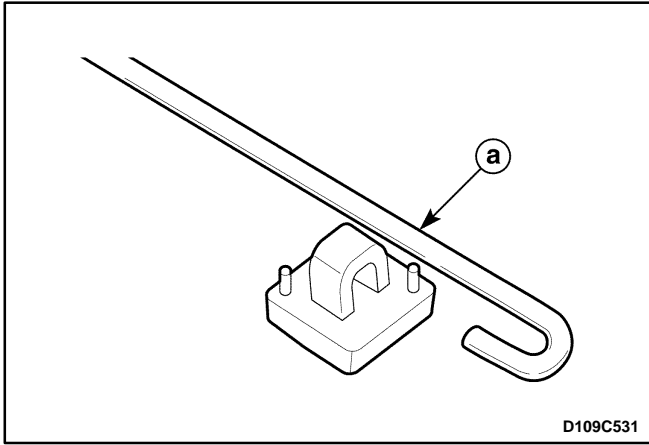
1. Install the hood hinge with the bolts.
2. Install the bolts along the top of the fender.
3. Install the cowl vent grille with the screws and the caps.
4. Install the hood. Refer to "Hood" in this section.



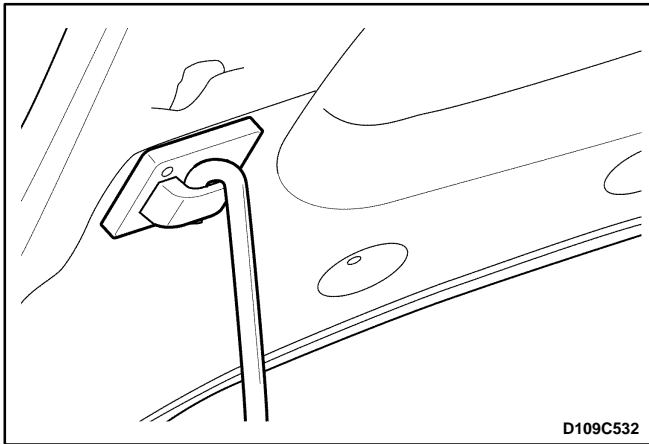
HOOD PROP ROD

Removal Procedure

1. Support the hood in the open position.
2. Remove the hood prop from the hood.
 - Using a sharp gimlet, press the pins (1).
 - Remove the hood prop (2).

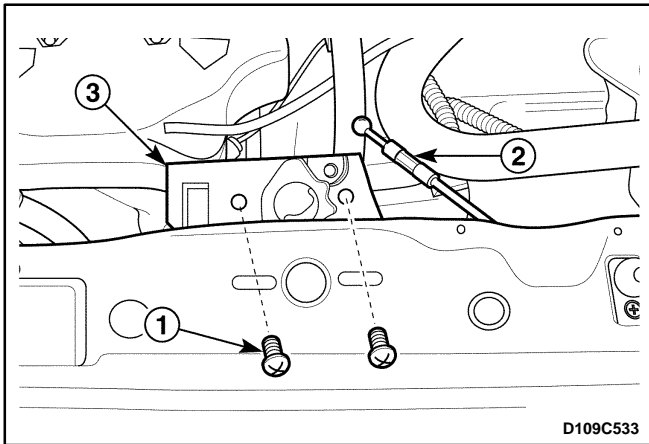


3. Remove the hood prop rod from the hood prop.
 - a. Hood prop rod.



Installation Procedure

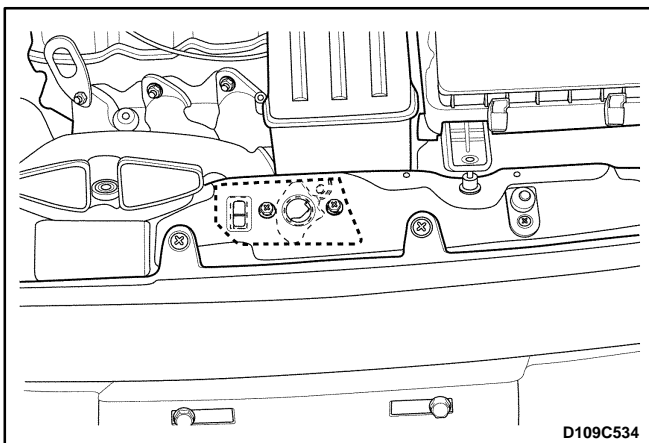
1. Install the hood prop rod to the hood prop.
2. Install the hood prop to the hood with the pins.



HOOD LATCH

Removal Procedure

1. Open the hood.
2. Remove the hood latch.
 - Remove the screws (1).
 - Disconnect the hood latch release cable (2).
 - Remove the hood latch (3).

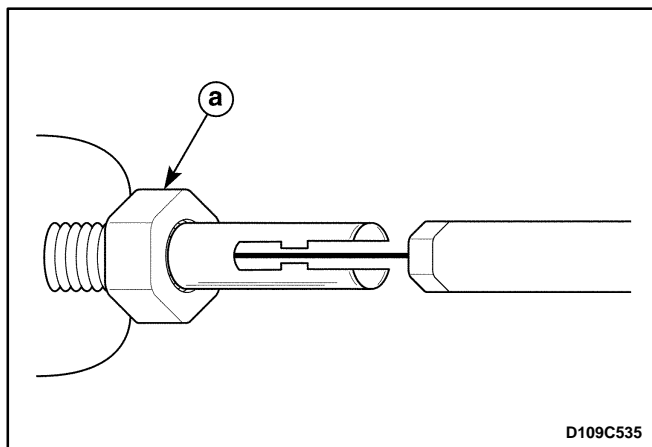


Installation Procedure

1. Connect the hood latch release cable to the latch.

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

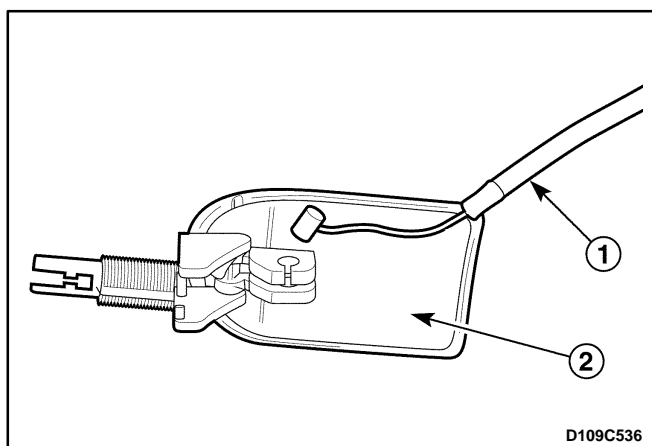
2. Install the hood latch with the screws.



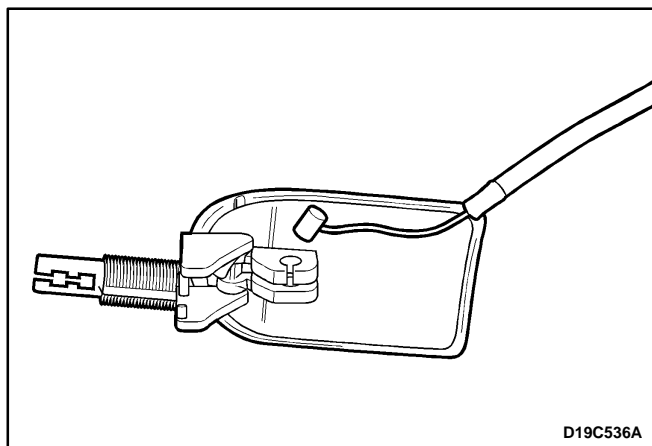
HOOD LATCH RELEASE LEVER (Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Remove the hood latch nut into the instrument panel.
 - a. Hood latch nut.

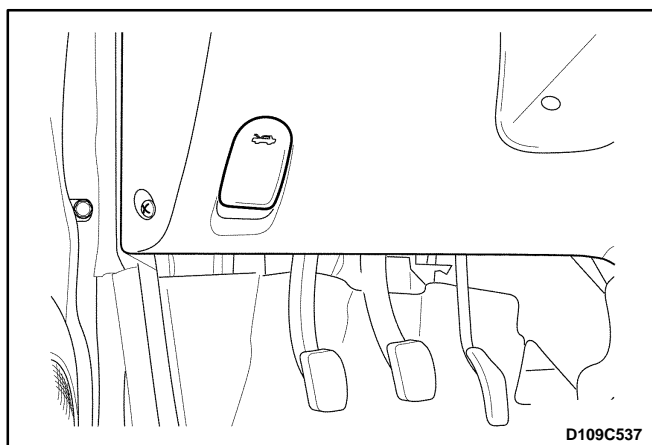


2. Remove the hood latch release lever.
 - Disconnect the cable (1).
 - Remove the hood latch release lever (2).



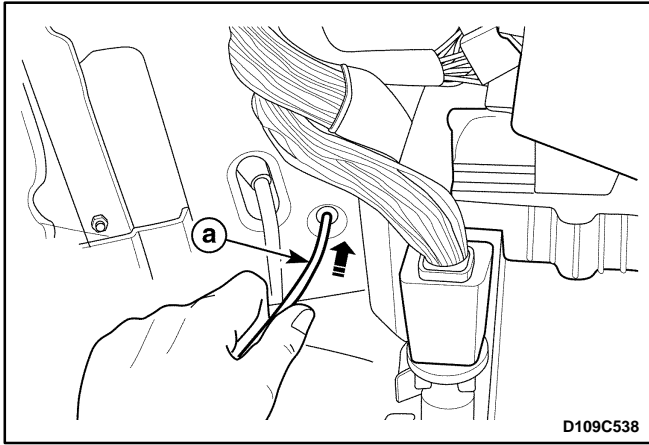
Installation Procedure

1. Connect the hood latch release cable to the hood latch lever.



Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

2. Install the hood latch lever release to the instrument panel with the hood latch nut.

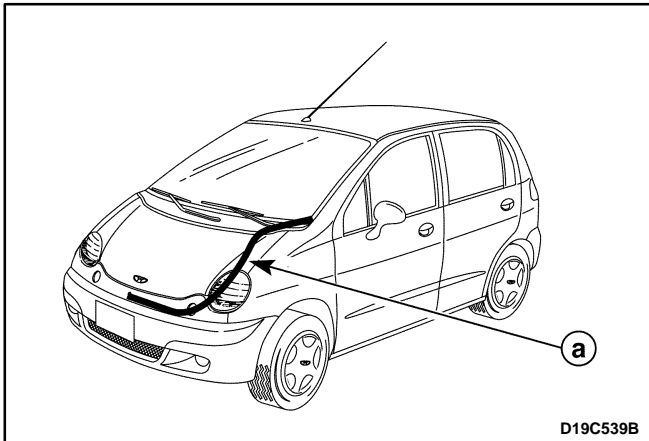


HOOD LATCH RELEASE CABLE

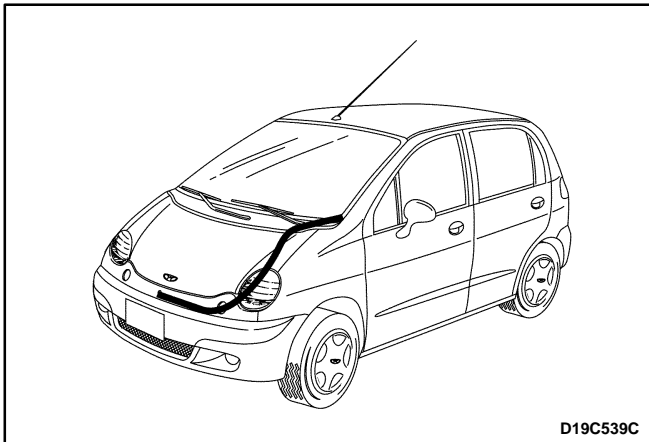
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Remove the hood latch release cable from the instrument panel. Refer to "Hood Latch Release Lever" in this section.
2. Push the cable toward the engine compartment through the body hole.
 - a. Hood latch lever cable.



3. Open and suitably support the hood.
4. Disconnect the hood latch release cable from the hood latch. Refer to "Hood Latch" in this section.
5. Remove the hood latch release cable after removing the plastic strip.
 - a. Hood latch release cable.



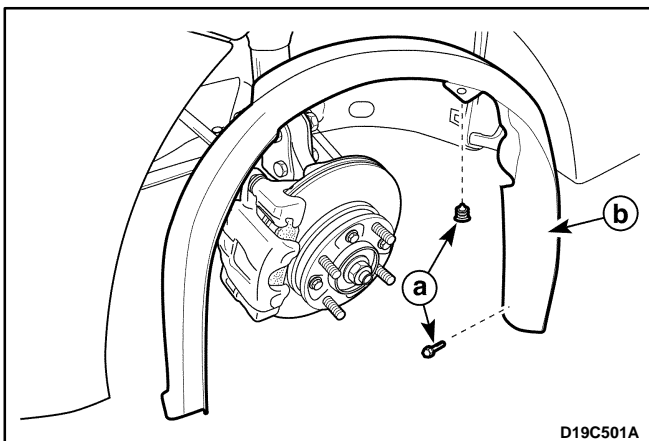
Installation Procedure

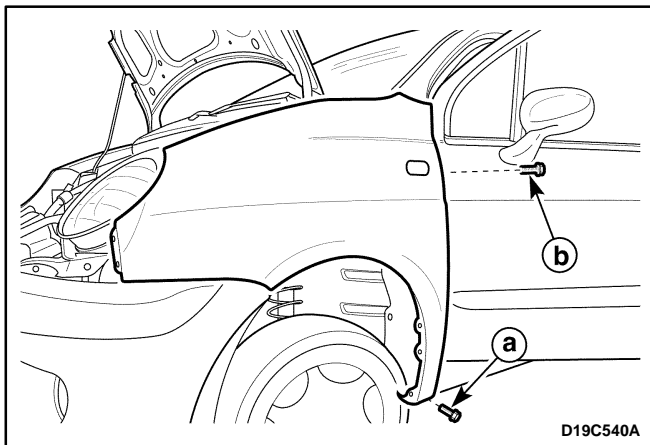
1. Connect the hood latch release cable to the hood latch. Refer to "Hood Latch" in this section.
2. Arrange the hood latch release cable with the plastic strip.
3. Push the cable toward the passenger compartment through the body hole.
4. Connect the hood latch release cable to the hood latch release lever. Refer to "Hood Latch Release Lever" in this section.

FENDER

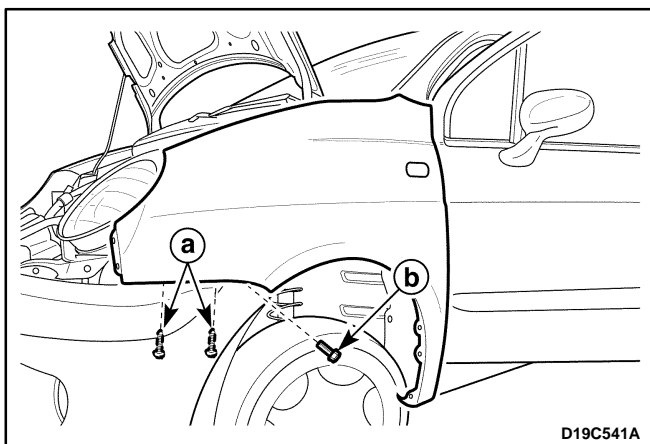
Removal Procedure

1. Raise and suitably support the vehicle.
2. Remove the wheelhouse splash shield.
 - Remove the clip and the bolt.
 - a. Clip and bolt.
 - Remove the wheel house splash shield.
 - a. Wheel house splash shield.

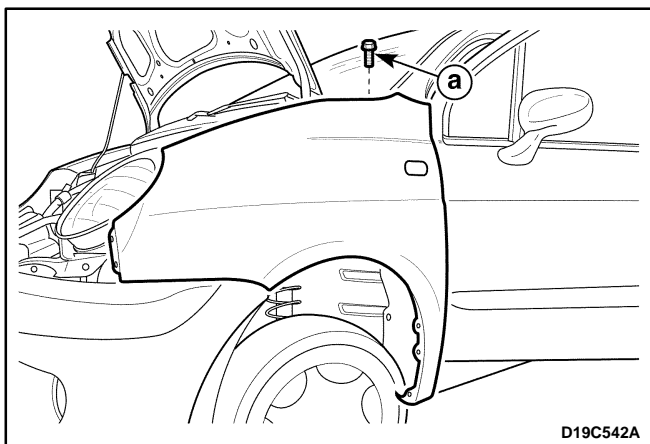




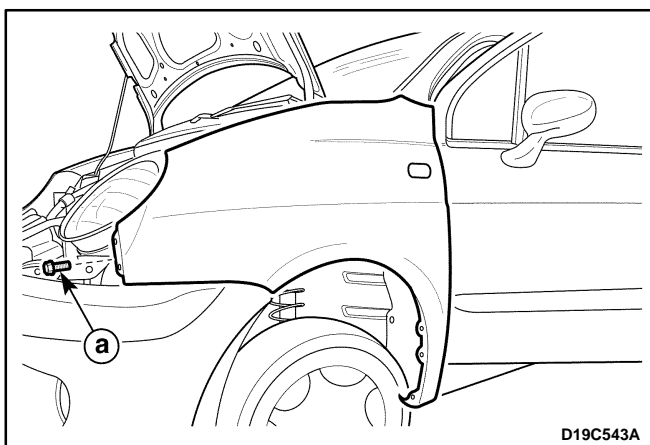
3. Remove the bolt at the base of the fender.
 - a. Fender mounting lower bolt.
4. Open the front door. Remove the bolt on the A-pillar.
 - b. Fender mounting bolt.



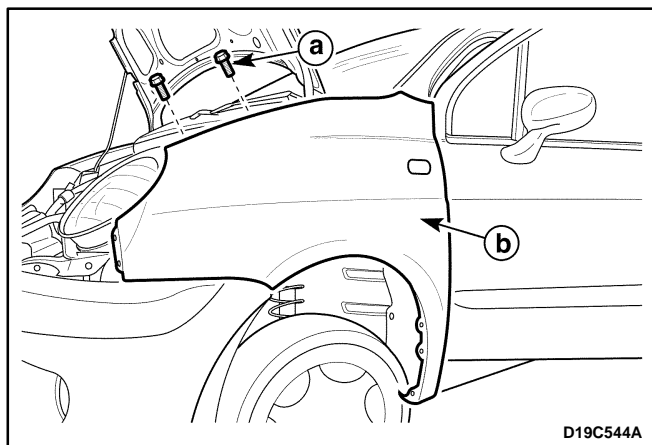
5. Remove the screws on the side of the front bumper fascia.
 - a. Bumper fascia side bolts.
6. Remove the bolt under the fender.
 - b. Fender mounting bolt.



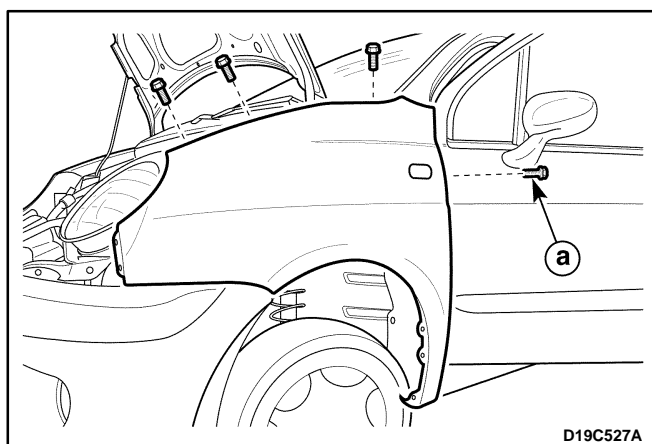
7. Lower the vehicle.
8. Take off the cowl vent grille. Remove the bolt on the top of the fender.
 - a. Fender mounting bolt.



9. Remove the front bumper spacer. Refer to *Section 9M, Exterior Trim*.
10. Remove the fender front bolt.
 - a. Fender front bolt.



11. Remove the bolts along the top of the fender.
 - a. Bolt.
12. Remove the fender.
 - b. Fender.

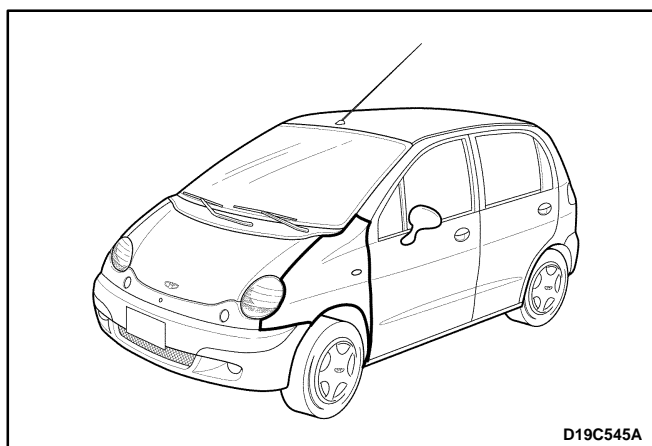


Installation Procedure

1. Install the fender.

Notice: Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

2. Install the bolts along the top of the fender.



3. Install the front bumper spacer.
4. Install the cowl vent grille.
5. Raise and suitably support the vehicle.
6. Install the bolts under the fender.
7. Install the screws on the side of the front bumper fascia.
8. Open the front door. Install the bolt on the A-pillar.
9. Install the bolt at the base of the fender.
10. Install the wheelhouse splash shield with the screws.
11. Lower the vehicle.

SECTION 9S

BODY REAR END

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Description and Operation	9S-2	Fuel Filler Door	9S-3
Fuel Filler Door	9S-2	Fuel Filler Door Remote Cable and Handle	9S-3
Repair Instructions	9S-3	Tailgate Remote Cable and Handle	9S-5
On-Vehicle Service	9S-3		

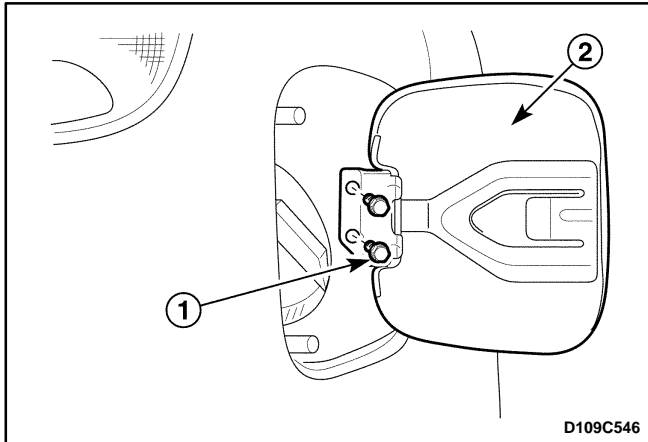
DESCRIPTION AND OPERATION

FUEL FILLER DOOR

The fuel filler door attaches to the fuel tank pocket on the right side of the vehicle.

REPAIR INSTRUCTIONS

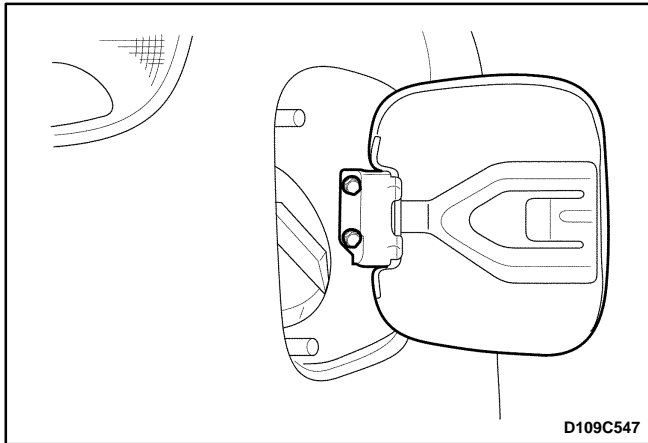
ON-VEHICLE SERVICE



FUEL FILLER DOOR

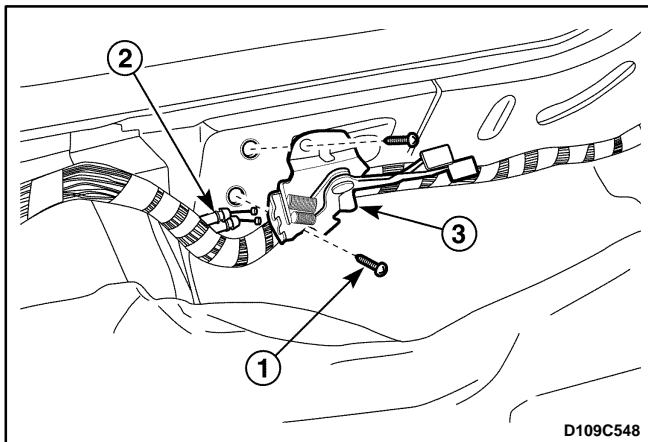
Removal Procedure

1. Pull the fuel filler door opening lever and open the fuel filler door.
2. Remove the fuel filler door.
 - Remove the bolts (1).
 - Remove the fuel filler door (2).



Installation Procedure

1. Install the fuel filler door with the bolts.

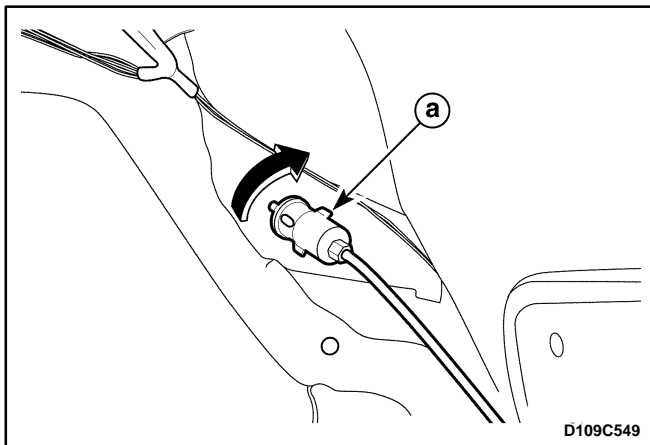


FUEL FILLER DOOR REMOTE CABLE AND HANDLE

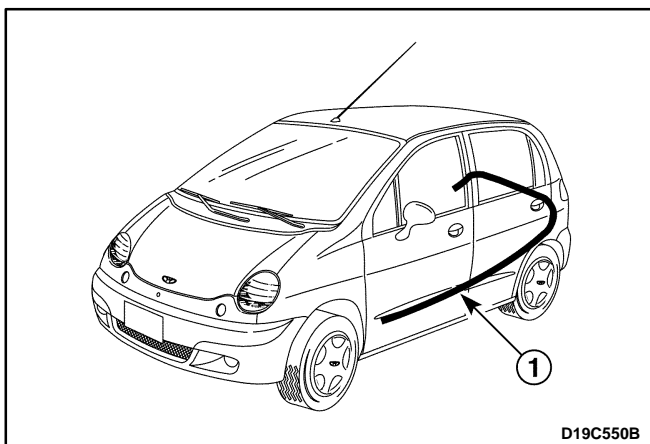
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

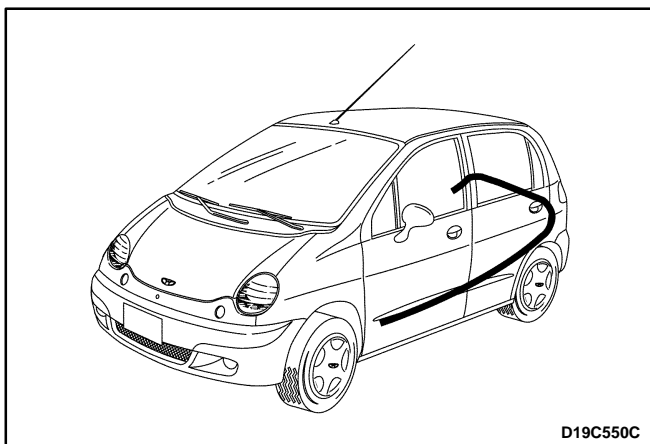
1. Pry off the front rocker trim panel. Refer to *Section 9G, Interior Trim*.
2. Remove the fuel filler door remote handle.
 - Remove the screws (1).
 - Disconnect the cable (2).
 - Remove the fuel filler door remote handle (3).



3. Pry off the lower B-pillar trim panel. Refer to *Section 9G, Interior Trim*.
4. Pry off the rear rocker trim panel. Refer to *Section to 9G, Interior Trim*.
5. Pry off the luggage compartment wheelhouse trim panel. Refer to *Section to 9G, Interior Trim*.
6. Remove the lock striker of the fuel filler.
 - Remove the lock striker by turning it rectangularly.
 - a. Lock striker

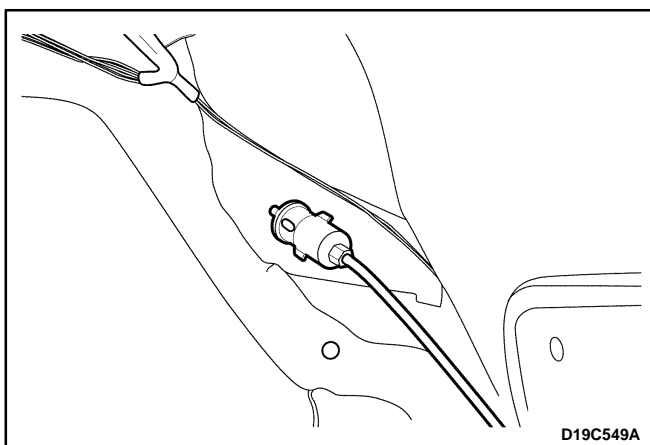


7. Remove the fuel filler door remote cable.
 - Remove the cable retaining strip.
 - Disconnect the fuel filler door remote cable (1).

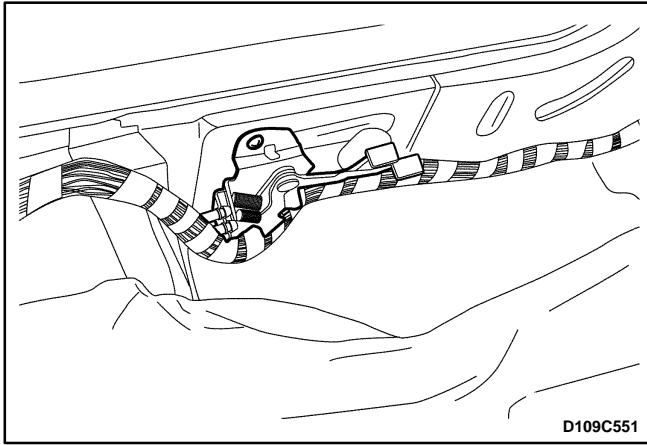


Installation Procedure

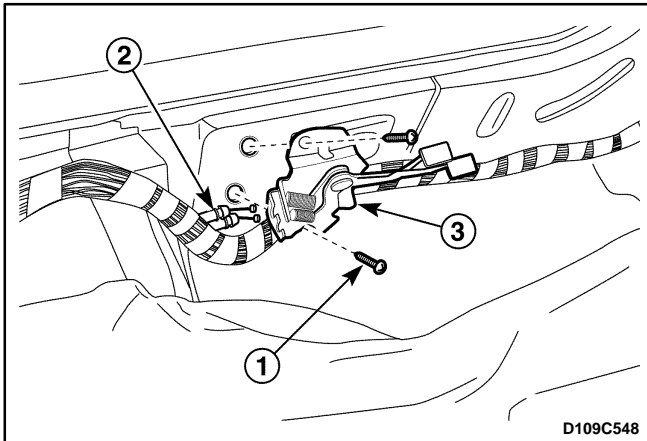
1. Connect the fuel filler door remote cable to the fuel filler door.
2. Retain the cable with the strip.



3. Install the lock striker of the fuel filler.
4. Install the luggage compartment wheelhouse trim panel. Refer to *Section 9G, Interior Trim*.
5. Install the rear rocker trim panel. Refer to *Section 9G, Interior Trim*.
6. Install the lower B-pillar trim panel. Refer to *Section 9G, Interior Trim*.



7. Connect the fuel filler door remote cable to the handle.
8. Install the fuel filler door remote handle with the screws.

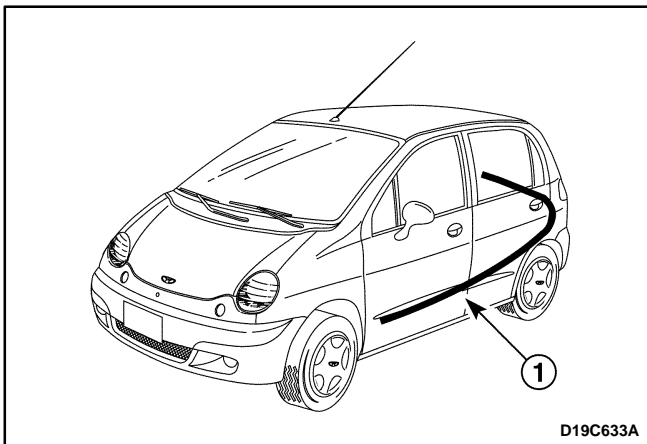


TAILGATE REMOTE CABLE AND HANDLE

(Left-Hand Drive Shown, Right-Hand Drive Similar)

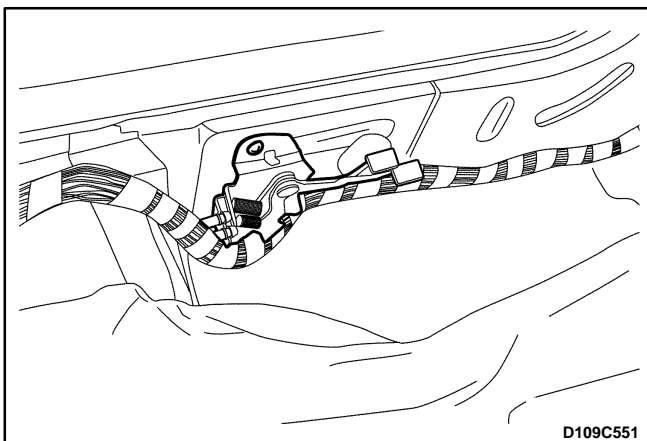
Removal Procedure

1. Pry off the front rocker trim panel. Refer to *Section 9G, Interior Trim*.
2. Remove the tailgate remote handle.
 - Remove the screws (1).
 - Disconnect the cable (2).
 - Remove the tailgate remote handle (3).
3. Pry off the lower B-pillar trim panel. Refer to *Section 9G, Interior Trim*.
4. Pry off the rear rocker trim panel. Refer to *Section 9G, Interior Trim*.
5. Pry off the luggage compartment wheelhouse trim panel. Refer to *Section 9G, Interior Trim*.
6. Disconnect the cable from the tailgate lock striker. Refer to *Section 9P, Doors*.
7. Remove the tailgate remote cable.
 - Remove the cable retaining strip.
 - Disconnect the tailgate remote cable (1).



Installation Procedure

1. Connect the tailgate remote cable to the tailgate lock striker.
2. Retain the cable with the strip.
3. Install the luggage compartment wheelhouse trim panel. Refer to *Section 9G, Interior Trim*.
4. Install the rear rocker trim panel. Refer to *Section 9G, Interior Trim*.
5. Install the lower B-pillar trim panel. Refer to *Section 9G, Interior Trim*.
6. Connect the tailgate remote cable to the handle.
7. Install the tailgate remote handle with the screws.



SECTION 9T

REMOTE KEYLESS ENTRY AND ANTI-THEFT SYSTEM

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IMMOBILIZER ANTI-THEFT SYSTEM

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SECTION 9T

REMOTE KEYLESS ENTRY AND ANTI-THEFT SYSTEM

CAUTION: *Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in LOCK unless otherwise noted.*

TABLE OF CONTENTS

Description and Operation	9T-2	Repair Instructions	9T-4
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DESCRIPTION AND OPERATION

REMOTE KEYLESS ENTRY AND ANTI-THEFT SYSTEM

The remote keyless entry and anti-theft system can perform the following functions:

- Remotely lock and unlock the vehicle doors with a hand-held high-frequency transmitter.
- Sense intrusion into the vehicle through the doors, the tailgate, or the hood.
- Activate a warning to signal an intrusion.
- Help the driver find the vehicle in a parking area.
- Automatically re-lock the doors if a door or the trunk is not opened within 30 seconds after the vehicle has been unlocked by the remote keyless entry.
- Communicate serial data to a scan tool to help diagnose system faults.

The remote keyless entry and anti-theft system consists of the following components:

- Keyless entry and anti-theft control module/receiver.
- Security indicator.
- Tailgate open switch.
- Door open switches.
- Central locking unit.
- Flashing turn signal lamps.
- Siren.
- Hood open switch.

REMOTE LOCKING AND UNLOCKING

The hand-held transmitter locks and unlocks the vehicle doors by sending radio waves to the control module/receiver in the vehicle. The effective range of the transmitter varies between 5 and 10 meters (approximately 16 to 32 feet), depending on whether or not objects such as other vehicles are blocking the path of the radio waves.

The transmitter has a LOCK button and an UNLOCK button which only function when the ignition is OFF. Pressing the UNLOCK button has the following effects:

- The doors are unlocked.
- The turn signal lamps flash twice.
- The control module is disarmed.

Pressing the LOCK button has the following effects:

- The doors are locked.
- The turn signal lamps flash once.
- The control module is armed.

The transmitter has a replaceable battery. The battery is designed to last at least two years before replacement is necessary.

SECURITY INDICATOR

There is a security indicator on the instrument panel. After the LOCK button of the transmitter is pressed, the module is placed in the armed mode, and the security indicator flashes. The security indicator turns ON for 1/8 second and OFF for 7/8 second. It then flashes at that frequency until the control module/receiver is disarmed.

INTRUSION SENSING

The anti-theft function is armed if the transmitter sends the LOCK message to the control module/receiver when the ignition is OFF.

When the hood, the door, or the tailgate is opened, the hood open switch, the door open switch, or the tailgate open switch will change its input to ground. The alarm will be activated if the hood open sensor, the door open sensor, or the tailgate open sensor changes its input to ground before either of the following conditions occurs:

- An UNLOCK message is received from the transmitter.

SIREN

The remote keyless entry system is armed when the LOCK message is received from the transmitter when the ignition is OFF. When the system is armed, it will activate the siren and flash the turn signals for 28 seconds if any of the following conditions occurs:

- A door is opened (front door open switch input is changed to ground).
- The tailgate is opened (tailgate open switch input is changed to ground).
- The hood is opened while the anti-theft system is armed (hood open switch input is changed to ground).

The siren is disarmed when any of the following conditions occurs:

- The ignition switch is turned ON with the key.
- The UNLOCK button or the LOCK button on the remote transmitter is pressed.

VEHICLE LOCATOR

The remote keyless entry system assists the driver in locating the vehicle. When the vehicle is unlocked with the remote control, the turn signals flash twice to indicate the location of the vehicle. The duration of the flashes and the length of time between flashes is used to indicate certain vehicle conditions. Refer to "Fault or Alarm Indication" in this section.

AUTOLOCKING (SAFETY LOCK)

The remote keyless entry system features an autolocking control. If the doors are unlocked with the remote transmitter when the control module/receiver is in the armed mode, the doors are automatically re-locked after 30 seconds unless any of the following events occur:

- The door is opened.
- The ignition switch is turned ON.
- The tailgate is opened.
- The hood is opened.

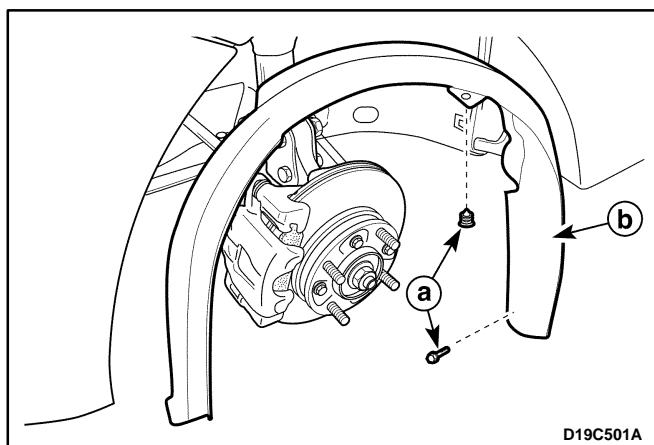
CONTROL MODULE/RECEIVER

The remote keyless entry control module/receiver is contained in the tie-bar center. The module/receiver processes signals from the remote transmitter and the intrusion sensors, and it activates the alarm if an intrusion is detected.

The control module/receiver will not communicate with transmitters from other vehicles because there are over four billion possible electronic password combinations, and passwords are not duplicated. The control module/receiver has an attached antenna to detect signals from the transmitter.

REPAIR INSTRUCTIONS

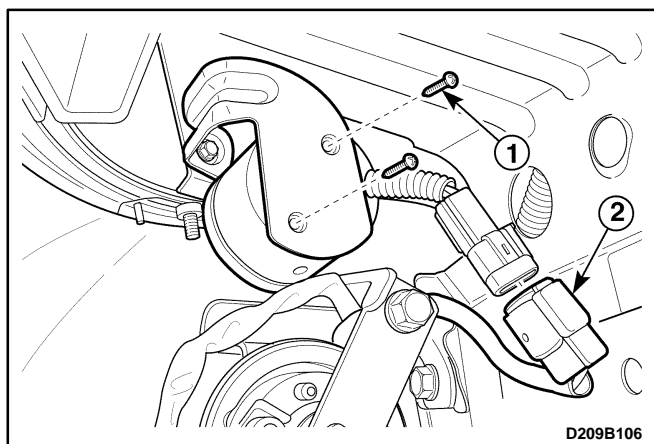
ON-VEHICLE SERVICE



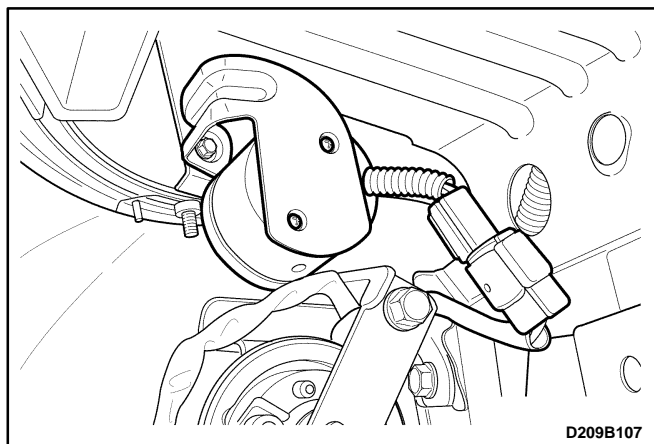
SIREN

Removal Procedure

1. Disconnect the negative battery cable.
2. Raise and suitably support the vehicle.
3. Remove the front wheels.
4. Remove the front wheel house splash shield.
 - Remove the clip and bolts.
 - a. Bolts and clips.
 - b. Splash shield.



- 5 Remove the siren.
 - Remove the screws (1).
 - Disconnect the electrical connector (2).



Installation Procedure

1. Install the siren with the screws.
2. Connect the electrical connector.
3. Install the front wheel house splash shield with the clips and the bolts.
4. Install the front wheels.
5. Lower the vehicle.
6. Connect the negative battery cable.

PASSWORD PROGRAMMING

If a transmitter is lost or damaged, the control module/receiver must be re-programmed to communicate with a new transmitter. The passwords recorded in the control module/receiver should not be deleted when power is off in the control module/receiver.

Each control module/receiver should be able to record five passwords. The following method is used to record new passwords in the control module/receiver:

1. Connect the scan tool to the data link connector (DLC) connector.
2. Send the programming mode message to the control module/receiver.
3. Press any button of the transmitter to generate a data code including a password which will be recorded by the control module/receiver. The control module/receiver sends a response message to the scan tool to indicate that the first password has been recorded.
4. Press any button of the transmitter three more times until the control module/receiver has responded that the third, fourth, and fifth passwords have been recorded.
5. Disconnect the scan tool.

The control module/receiver leaves the programming mode automatically and switches to the normal operating mode when either of the following conditions occurs:

- The scan tool is disconnected from the DLC.
- Five passwords are recorded in the control module/receiver.

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Hood Open Switch Mounting Screw	8	–	71
Siren Bracket Mounting Bolt	22	16	–
Siren Mounting Screws	8	–	71

REMOTE KEYLESS ENTRY AND ANTI-THEFT SYSTEM



BLANK

SECTION 9T

IMMOBILIZER ANTI-THEFT SYSTEM

CAUTION: Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in LOCK unless otherwise noted.

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DESCRIPTION AND OPERATION

IMMOBILIZER SYSTEM

The purpose of the Immobilizer system is to provide additional theft deterrence to the vehicle in which it is installed and to prevent it from being stolen or driven by unauthorized users.

The verification of the user authorization is done by an ignition key with integrated transponder.

The external LED displays the Immobilizer status and has an additional theft deterrence function.

To secure the communication, the status is exchanged between the Immobilizer and the ECM in a 5 byte of encoded data.

These 5 bytes are composed by a mixture of random data and two types of fixed code

- a vehicle model identification number : MIN
- a vehicle specific identification : VIN

The MIN is known from the first supply of the system.

The VIN is realized by ICU on the special order from the key coding (reading of transponder code and storing it as valid key code in Immobilizer EEPROM).

A different random data is computed at each key transition.

All the immobilization communication between the ECM and ICU is made on K-line (K line : Serial data line '7').

Due to the learning of the Vehicle specific identification Number, both ICU and ECM can stay in 3 stable modes

- Virgin mode (VIN not learnt)
- Learnt mode (VIN learnt)
- Neutral mode (for a new VIN learning)

In case of using valid key, the release message communication with the ECM take place and the LED displays the Immobilizer status valid key In case of using invalid key, the ECM disables the fuel injector circuit with coded intervention and sets DTC(Diagnostic Trouble Code)

The above conditions are maintained until the ignition is switched off.

An ECM without an immobilizer control unit cannot be interchanged for an ECM that is used with an immobilizer control unit system. The Immobilizer control unit and ECM must have a matching ID code. ID coding and key coding are accomplished by using Scanner-100

The Immobilizer system consists of

- a maximum of 5 ignition keys with integrated transponder
- the toroidal coil (Detection coil) for energizing and reading the transponder mounted at the ignition lock.
- the Immobilizer control unit(ICU) with :
 - power supply
 - ignition input circuit
 - transponder modulation and demodulation unit

– EEPROM

– driver electronic for the external status LED

– serial data link hardware

- the external status LED for displaying the Immobilizer status
- the serial data link between Immobilizer and ECM

ELECTRONICALLY CODED KEYS

Each valid ignition key has an internal transponder which is a read /write transponder.

The transponder contains an implementation of a crypto-algorithm with 96 bits of user configurable secret-key contained in EEPROM and transmits data to the ICU by modulating the amplitude of the electromagnetic field, and receives data and commands in a similar way.

DETECTION COIL

The toroidal coil is mounted at the ignition lock in front of the key barrel.

It is connected to the ICU with a four terminal connector fixed at the body of the coil.

The length of the connection between coil and Immobilizer is restricted to 50cm. The correct placement on the ignition lock and the exact electrical data is very important for the reading distance of transponder.

The toroidal coil and receiving coil inside the transponder built a transformer. During the reading process the coil induces energy into the transponder. The transponder charges the field and generates an amplitude modulated signal with the manchester coded data. This charge of the field is demodulated inside the Immobilizer.

The Immobilizer contains the coil driver hardware for direct connection of the toroidal coil.

IMMOBILIZER CONTROL UNIT

The function of the Immobilizer System is shared between the ICU and the ECM.

The task of the Immobilizer Electronic Control unit (ICU) are:

- Reading of the input information "ignition ON/OFF"
- Controlling the status LED
- Controlling the transponder read/write process (modulation, demodulation, decoding, comparison of the read code with the code of the valid keys).
- Communication with the ECM after ignition ON (receiving of the ECM-request and transmission of release message).
- Special functions for calculation and handling of the VIN-code.

The VIN code is calculated by the Immobilizer using a random generator.

The VIN code is transmitted from the Immobilizer in the release message communication only in case of using an authorized key. Without an authorized key it is not possible to get the system VIN code. In case of ECM internal state is in Virgin mode or neutral mode the ECM learns the system VIN code automatically after receiving the first release response message.

To get a synchronized Immobilizer system (same VIN-code in Immobilizer and ECM, authorized key) the DLC test equipment has to be used for authorization of the keys (first key coding). The usage of this test equipment is restricted to authorized persons.

- Communication with the DLC-test equipment. Main functions are the key coding procedure, the VIN-code handling and the support for system test functions.
- Handling of the software watchdog

Operation

In the active mode of immobilizer (engine OFF, IG key OFF) the status LED is blinking as mode A. When ignition is turned ON, the system wakes up and tries to read out the transponder.

In case of the detection of a valid key, the release message communication with the ECM takes place. The status LED displays the Immobilizer state "valid key".

After turning off the ignition (ignition OFF detection similar to the ECM ignition OFF detection), the Immobilizer changes to the active mode. The status LED is blinking as Mode A.

Data Link Connector (DLC) Mode

When the ignition is on, a scan tool can switch the immobilizer control unit to the DLC mode for diagnostics, key coding and ID coding.

- The status LED is turned off during DLC-mode
- The Immobilizer will answer all correct messages, which are defined as Immobilizer messages.

ID Code Handling

One of 65,535 VIN codes is stored in the immobilizer EEPROM.

The VIN code can be erased by using "Reset VIN code" command of the scan tool.

When the immobilizer control unit calculates a new VIN code, ECM VIN code should be reset to get identical with the immobilizer control unit's.

During diagnostic procedures, the VIN code can be read for comparison with the ECM VIN code by using the scan tool's "Read immobilizer control unit VIN code" command.

SERIAL DATA LINK

Serial data can be exchanged between a scan tool and the ECM and the Immobilizer control unit. The scan tool connection is the data link connector (DLC).

ELECTRONIC CONTROL MODULE (ECM)

• ECM in Virgin mode

In this mode, the ECM knows only the model vehicle identifier code.

The engine can be locked/unlocked.

ECM requests to ICU the VIN number. As soon as the ECM receives two correct consecutive communication frames with the same VIN code the ECM learns it.

The VIN code will be stored in non-volatile memory at the end of power latch phase. ECM enters in Learnt mode.

• ECM in Learnt mode

In such a state, ECM checks on every communication, the correct encoding of the ICU.

If the code received is not correct, then the vehicle is immobilized.

The coded 5 bytes of data emitted by ECM are a mixture of MIN code and random.

The coded 5 bytes of data emitted by ICU are a mixture of VIN code and random.

• ECM in Neutral mode

This mode is a special intermediate mode, used for ICU replacement or immobilizer option installation.

ECM request to ICU the VIN number. As soon as the ECM receives two correct consecutive communication frames with the same VIN code the ECM learns it. The VIN code will be stored in non-volatile memory at the end of power latch phase. ECM enters in Learnt mode.

- After turning on the ignition the ECM will control the engine in a normal way for starting and running while waiting for a valid release response message from the Immobilizer.

1. After receiving a response message including the information "ICU in learnt mode" and the correct system VIN-code

→ the ECM enters the release state, which allows to continue the running of the engine.

2. After receiving a response message including the information "ICU in learnt mode" and a wrong system VIN-code

→ the ECM does not send a new request and enters the blocked state, which causes the activation of the immobilization actions of the engine.

3. If the ECM doesn't receive a response message within a defined time from beginning of the release time period or the ECM receives a no release answer
→ the ECM enters the blocked state, which causes the activation of the immobilization actions of the engine.
- The inactive state of the Immobilizer (valid key/invalid key) ends with turning off the ignition.

SECURITY INDICATOR

There is a security indicator on the instrument panel.

Status LED

An external LED displays the immobilizer system status. The immobilizer contains the LED driver hardware for direct connection of one LED.

Status LED Modes

Status LED	Immobilizer System Status	Note
Blinking	Active	– Ignition OFF
Blinking	Active	– Invalid key detected – Ignition ON
OFF	Inactive	– Valid key detected – Ignition ON
Blinking	Active	– VIN-code is different between ICU and ECM in learnt state – Ignition ON
ON	Active	– Transponder reading error – Ignition ON
Blinking	Active	– Reader exciter ASIC error – Ignition OFF

DIAGNOSTIC INFORMATION AND PROCEDURES

IMMOBILIZER SYSTEM (FENIX 5MR)

The immobilizer anti-theft system requires diagnosis when it is not possible to start the engine. If the no-start condition occurs because of the immobilizer system, a diagnostic trouble code (DTC) 1600, 1601 or 1602 should be set.

The immobilizer control unit monitors the detection and the reading of the ignition key. The self-test capacity is limited to those functions. Faults are communicated to a scan tool during diagnosis, but they are not stored in the immobilizer control unit's memory.

Unauthorized use of a scan tool could be a method of defeating the immobilizer anti-theft system, so certain scan tool procedures require the use of a password. The following functions are password protected:

- Coding of an additional key.
- Deleting all key codes.
- Deletion of the immobilizer identification (ID) code.
- Deletion of the electronic control module (ECM) ID code.

The following functions do not require a password:

- Reading an ignition key to determine if the transponder is working or if a key is authorized.

- Reading the immobilizer ID code to verify that it matches the ECM ID code.

IMMOBILIZER SYSTEM (SIRIUS D3)

The immobilizer anti-theft system requires diagnosis when it is not possible to start the engine. If the no-start condition occurs because of the immobilizer system, a diagnostic trouble code (P) 1628, 1629 should be set.

The immobilizer control unit monitors the detection and the reading of the ignition key. The self-test capacity is limited to those functions. Faults are communicated to a scan tool during diagnosis, but they are not stored in the immobilizer control unit's memory.

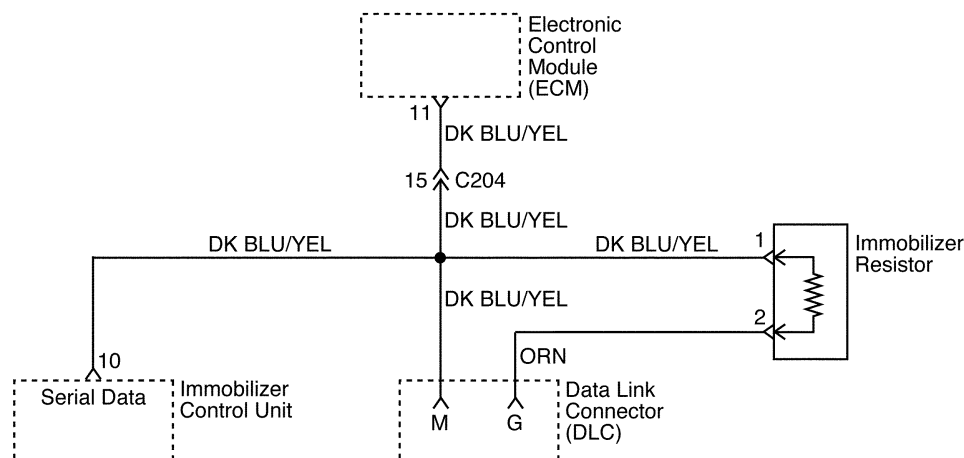
Unauthorized use of a scan tool could be a method of defeating the immobilizer anti-theft system, so certain scan tool procedures require the use of a password. The following functions are password protected:

- Coding of an additional key.
- Deleting all key codes.

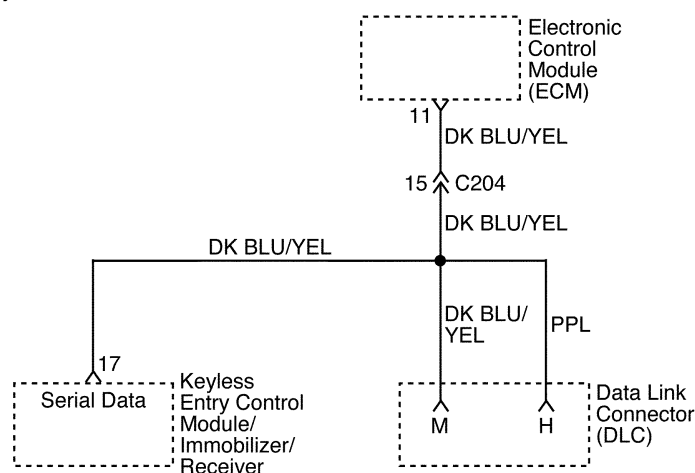
The following functions do not require a password:

- Reading an ignition key to determine if the transponder is working or if a key is authorized.
- Reading the immobilizer ID code to verify that it matches the ECM ID code.

Without Keyless Entry



With Keyless Entry



D19T002B

DIAGNOSTIC TROUBLE CODE (DTC) 1600 ECM IMMOBILIZER ERROR (NO ANSWER)

Circuit Description

When the ignition is turned ON, the key is tested by the immobilizer anti-theft system. While the key code is being read by the immobilizer control unit, the engine can start and run with any key that will turn the lock cylinder. The key code is read and compared with key codes that have been stored in the memory of the immobilizer control unit. If a valid key is detected, the immobilizer control unit sends a serial data release message to the electronic control module (ECM). Included in the release message is an identification (ID) code which assures that neither the immobilizer control unit nor the ECM has been substituted to defeat the system. If the ECM receives an invalid release message, the ECM performs the following actions:

- Disables the fuel injector circuit.
- Disables the fuel pump circuit.
- Disables the ignition coil.

DTC Will Set When

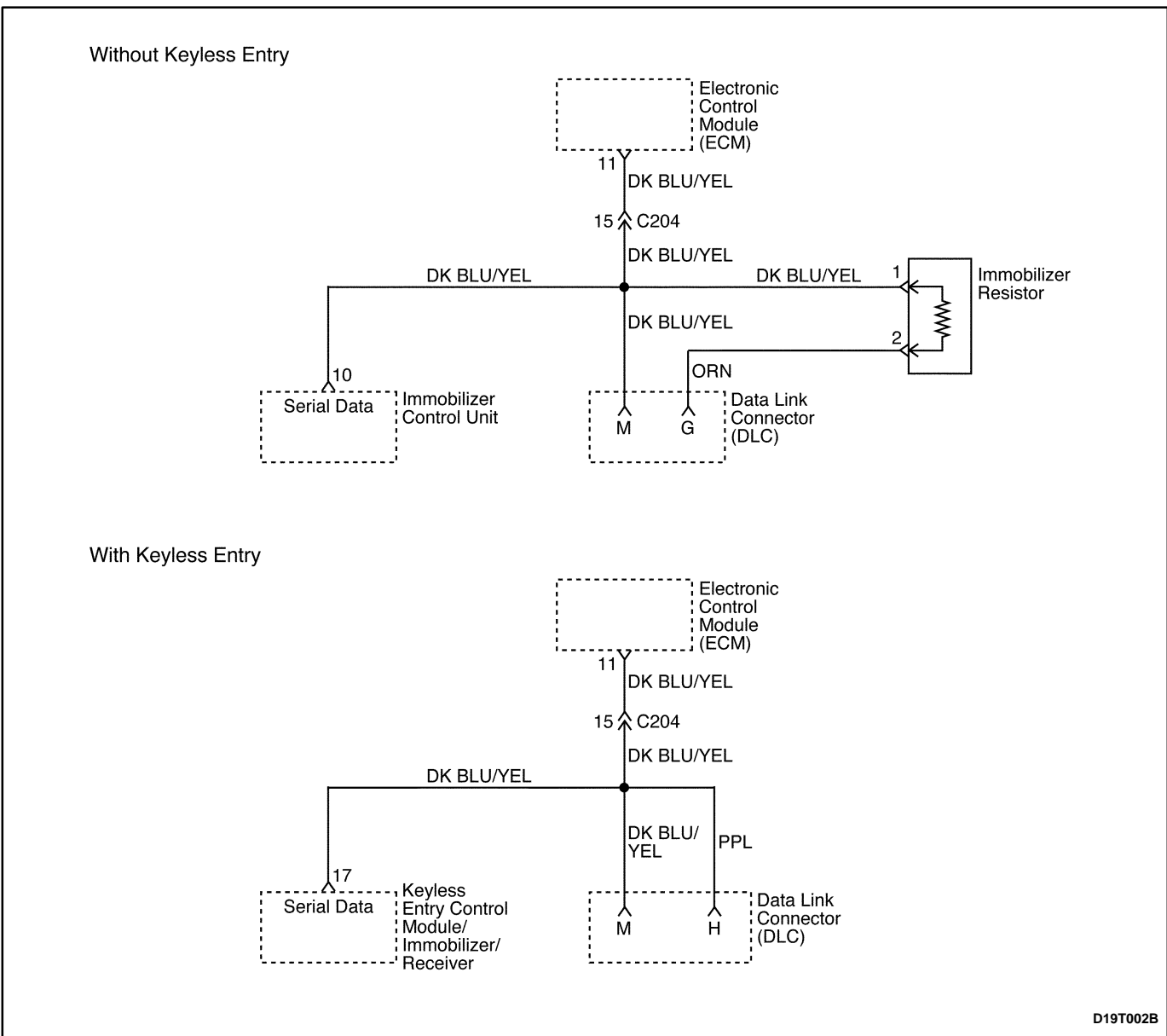
- The ECM does not receive the signal from the immobilizer control module when the ignition is turned on.
- The above conditions are maintained until the ignition is switched OFF.

DTC 1600 Will Clear When

- The ignition switch is turned OFF or the scan tool TROUBLE CODE CLEAR command is issued.

DTC 1600 – ECM Immobilizer Error (No Answer)

Step	Action	Value	Yes	No
1	Connect the scan tool using the following procedure: 1. Insert the cartridge into the scan tool. 2. Turn the ignition switch to the OFF position. 3. Connect the scan tool to the data link connector (DLC). 4. Connect the scan tool's power cord to the cigar lighter socket. 5. Turn the ignition ON, but do not start the engine. Is communication established between the scan tool and the immobilizer control unit?	–	Go to <i>Step 2</i>	Go to "Communication Between Immobilizer and Test Equipment"
2	Select CURRENT KEY STATUS from the scan tool menu. Did the STATUS OF CURRENT KEY message indicate "KEY IS WRONG"?	–	Go to "Key Status Errors"	Go to <i>Step 3</i>
3	Read the IMMO & ECM ID CODE message that was displayed after requesting DIAGNOSIS. Did the message differ from normal message? Normal Message – ECM MODE: LEARNT IMMO. MODE: LEARNT VIN CODE: SAME	–	Go to "Identification (ID) Code Reprogramming"	Go to <i>Step 4</i>
4	Check for an open serial data wire between the immobilizer control unit and the ECM. Was the circuit open?	–	Go to <i>Step 5</i>	Go to <i>Step 6</i>
5	Repair the open serial data wire between the ECM and the immobilizer control unit. Is the repair complete?	–	System OK	–
6	1. Replace the ECM. 2. Reprogram the identification (ID) code. Refer to "Identification (ID) Code Reprogramming" in this section. Is the repair complete?	–	System OK	–



**DIAGNOSTIC TROUBLE CODE (DTC) 1601
ECM IMMOBILIZER ERROR (INCORRECT ANSWER)**

Circuit Description

When the ignition is turned ON, the key is tested by the immobilizer anti-theft system. While the key code is being read by the immobilizer control unit, the engine can start and run with any key that will turn the lock cylinder. The key code is read and compared with key codes that have been stored in the memory of the immobilizer control unit. If a valid key is detected, the immobilizer control unit sends a serial data release message to the electronic control module (ECM). Included in the release message is an identification (ID) code which assures that neither the immobilizer control unit nor the ECM has been substituted to defeat the system. If the ECM re-

ceives an invalid release message, the ECM performs the following actions:

- Disables the fuel injector circuit.
- Disables the fuel pump circuit.
- Disables the ignition coil.

DTC 1601 Will Set When

- The ECM receives an incorrect release message from the immobilizer control unit more than five times.

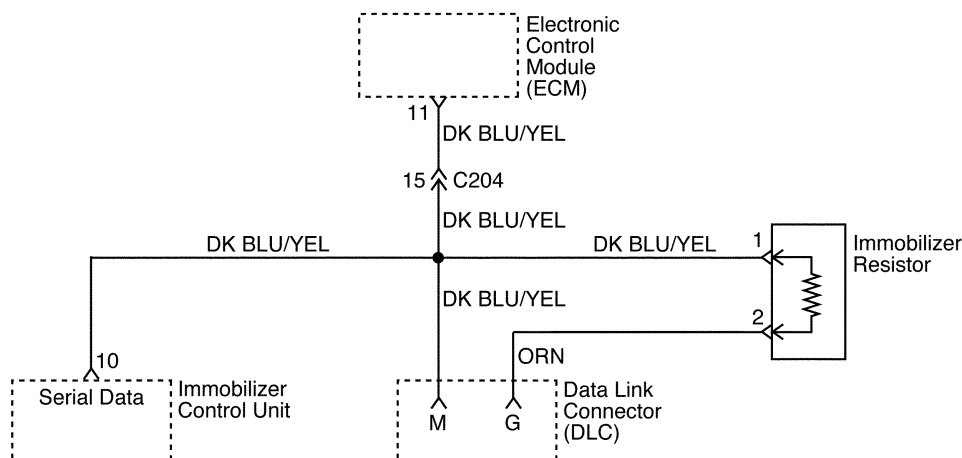
DTC 1601 Will Clear When

- The ignition switch is turned OFF or the scan tool TROUBLE CODE CLEAR command is issued.

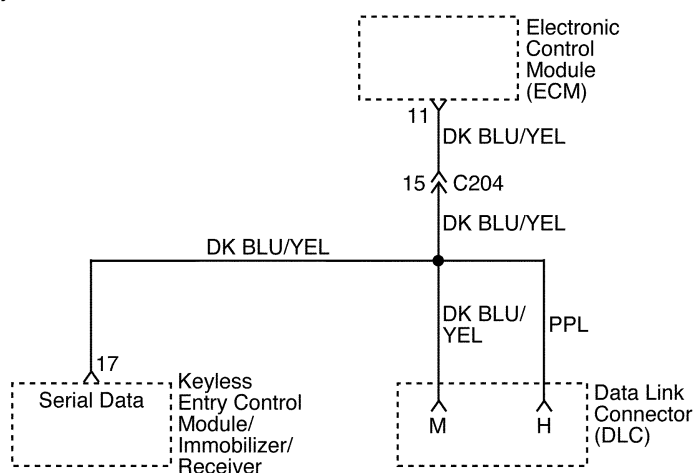
DTC 1601 – ECM Immobilizer Error (Incorrect Answer)

Step	Action	Value	Yes	No
1	Connect the scan tool using the following procedure: 1. Insert the cartridge into the scan tool. 2. Turn the ignition switch to the OFF. 3. Connect the scan tool to the data link connector (DLC). 4. Connect the scan tool's power cord to the cigar lighter socket. 5. Turn the ignition ON, but do not start the engine. Is communication established between the scan tool and the immobilizer control unit?	–	Go to Step 2	Go to "Communication Between Immobilizer and Test Equipment"
2	1. Select CURRENT KEY STATUS from the scan tool menu. 2. Read the STATUS OF CURRENT KEY message. Does the KEY STATUS message indicate "KEY IS WRONG"?	–	Go to "Key Status Errors"	Go to Step 3
3	1. Select DIAGNOSIS from the scan tool menu. 2. Read the IMMO & ECM ID CODE (immobilization and electronic control module identification code) message. Did the message differ from normal message? Normal Message – ECM MODE: LEARNT IMMO. MODE: LEARNT VIN CODE: SAME	–	Go to "Identification (ID) Code Reprogramming"	Go to Step 4
4	Check for an open serial data wire between the immobilizer control unit and the electronic control module (ECM). Was the circuit open?	–	Go to Step 5	Go to Step 6
5	Repair the open serial data wire between the ECM and the immobilizer control unit. Is the repair complete?	–	System OK	–
6	1. Replace the ECM. 2. Reprogram the ID code. Is the repair complete?	–	System OK	–

Without Keyless Entry



With Keyless Entry



D19T002B

DIAGNOSTIC TROUBLE CODE (DTC) 1602 ECM IMMOBILIZER ERROR (ECM LOCKED)

Circuit Description

When the ignition is turned ON, the key is tested by the immobilizer anti-theft system. While the key code is being read by the immobilizer control unit, the engine can start and run with any key that will turn the lock cylinder. The key code is read and compared with key codes that have been stored in the memory of the immobilizer control unit. If a valid key is detected, the immobilizer control unit sends a serial data release message to the electronic control module (ECM). Included in the release message is an identification (ID) code which assures that neither the immobilizer control unit nor the ECM has been substituted to defeat the system. If the ECM re-

ceives an invalid release message, the ECM performs the following actions:

- Disables the fuel injector circuit.
- Disables the fuel pump circuit.
- Disables the ignition coil.

DTC 1602 Will Set When

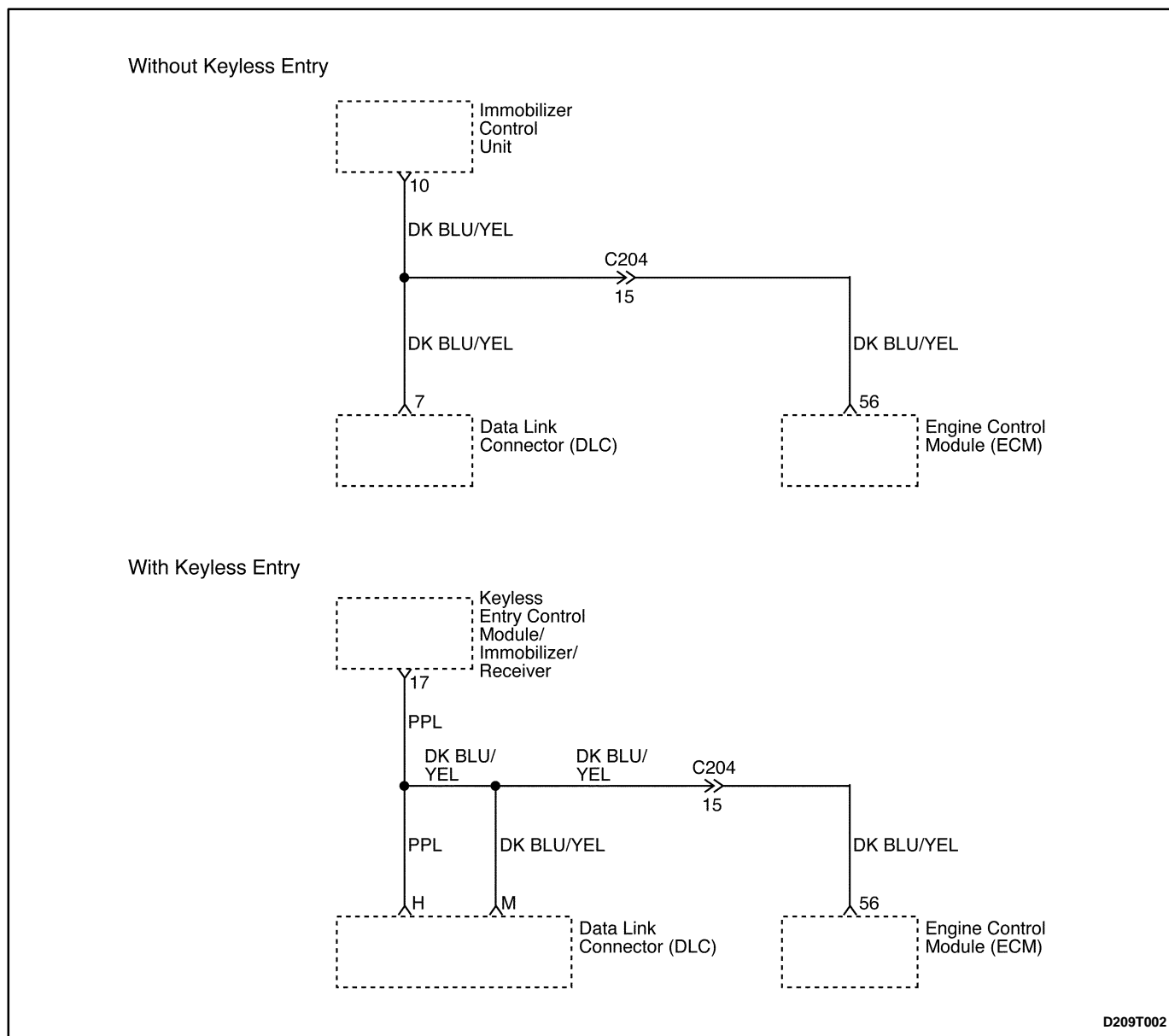
- The immobilizer control unit does not learn and store the codes of valid keys.

DTC 1602 Will Clear When

- The ignition switch is turned OFF or the scan tool TROUBLE CODE CLEAR command is issued.

DTC 1602 – ECM Immobilizer Error (ECM Locked)

Step	Action	Value	Yes	No
1	Connect the scan tool using the following procedure: 1. Insert the cartridge into the scan tool. 2. Turn the ignition switch to the OFF. 3. Connect the scan tool to the data link connector (DLC). 4. Connect the scan tool's power cord to the cigar lighter socket. 5. Turn the ignition ON, but do not start the engine. Is communication established between the scan tool and the immobilizer control unit?	–	Go to Step 2	Go to "Communication Between Immobilizer and Test Equipment"
2	1. Select CURRENT KEY STATUS from the scan tool menu. 2. Read the STATUS OF CURRENT KEY message. Does the KEY STATUS message indicate "KEY IS WRONG"?	–	Go to "Key Status Errors"	Go to Step 3
3	1. Select DIAGNOSIS from the scan tool menu. 2. Read the IMMO & ECM ID CODE (immobilization and electronic control module identification code) message. Did the message differ from normal message? Normal Message – ECM MODE: LEARNT IMMO. MODE: LEARNT VIN CODE: SAME	–	Go to "Identification (ID) Code Reprogramming"	Go to Step 4
4	Check for an open serial data wire between the immobilizer control unit and the electronic control module (ECM). Was the circuit open?	–	Go to Step 5	Go to Step 6
5	Repair the open serial data wire between the ECM and the immobilizer control unit. Is the repair complete?	–	System OK	–
6	1. Replace the ECM. 2. Reprogram the ID code. Is the repair complete?	–	System OK	–



DIAGNOSTIC TROUBLE CODE (P) 1628 (SIRIUS D3) ECM IMMOBILIZER ERROR (NO SUCCESSFUL COMMUNICATION)

Circuit Description

When the ignition is turned ON, the key is tested by the immobilizer anti-theft system. While the key code is being read by the immobilizer control unit, the engine can start and run with any key that will turn the lock cylinder. The key code is read and compared with key codes that have been stored in the memory of the immobilizer control unit. If a valid key is detected, the immobilizer control unit sends a serial data release message to the electronic control module (ECM). Included in the release message is an identification (ID) code which assures that neither the immobilizer control unit nor the ECM has been substituted to defeat the system. If the ECM re-

ceives an invalid release message, the ECM performs the following actions:

- Disables the fuel injector circuit.

P 1628 Will Set When

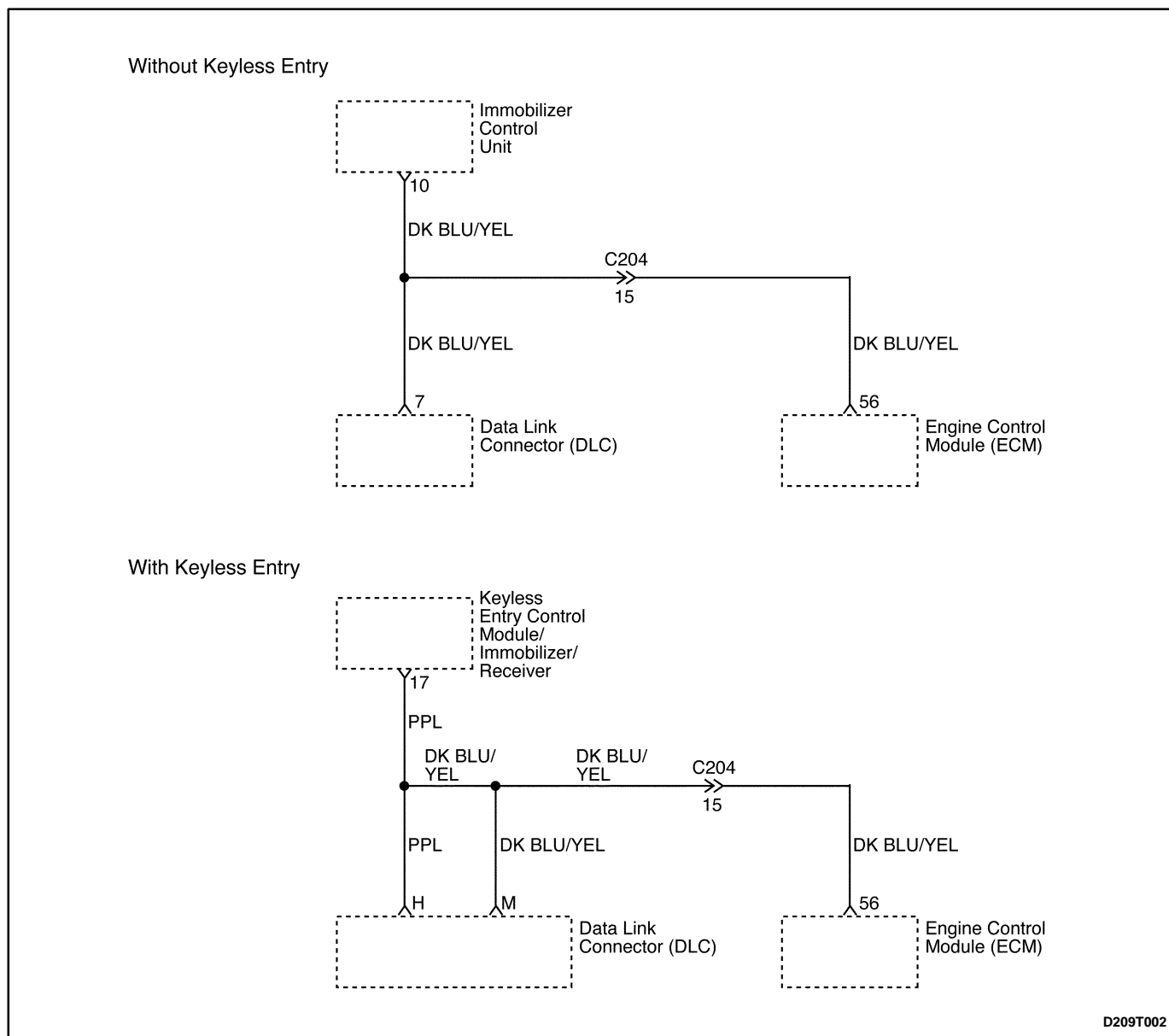
- The ECM does not receive the signal from the immobilizer control module within 1.260 seconds after the ignition is turned on.
- The above conditions are maintained until the ignition is switched OFF.

P 1628 Will Clear When

- The ignition switch is turned OFF or the scan tool TROUBLE CODE CLEAR command is issued.

P 1628 – ECM Immobilizer Error (No Successful Communication)

Step	Action	Value	Yes	No
1	Connect the scan tool using the following procedure: 1. Insert the cartridge into the scan tool. 2. Turn the ignition switch to the OFF position. 3. Connect the scan tool to the data link connector (DLC). 4. Connect the scan tool's power cord to the cigar lighter socket. 5. Select immobilizer mode on the scan tool. 6. Turn the ignition ON, but do not start the engine. Is communication established between the scan tool and the immobilizer control unit?	–	Go to <i>Step 2</i>	Go to "Communication Between Immobilizer and Test Equipment"
2	Read the IMMO & ECM ID CODE message that was displayed after requesting DIAGNOSIS. Did the message differ from normal message? Normal Message – ECM MODE: LEARNT IMMO. MODE: LEARNT VIN CODE: SAME	–	Go to "Identification (ID) Code Reprogramming"	Go to <i>Step 3</i>
3	Check for an open serial data wire between the immobilizer control unit and the ECM. Was the circuit open?	–	Go to <i>Step 4</i>	Go to <i>Step 5</i>
4	Repair the open serial data wire between the ECM and the immobilizer control unit. Is the repair complete?	–	System OK	–
5	1. Replace the immobilizer. 2. Reprogram the identification (ID) code. Refer to "Identification (ID) Code Reprogramming" in this section. Is the repair complete?	–	System OK	– Go to <i>Step 6</i>
6	1. Replace the ECM. 2. Turn the ignition ON, OFF for more than 4 seconds. 3. Turn the ignition ON. Is the repair complete?	–	System OK	–



DIAGNOSTIC TROUBLE CODE (P) 1629 (SIRIUS D3) ECM IMMOBILIZER ERROR (INCORRECT ANSWER)

Circuit Description

When the ignition is turned ON, the key is tested by the immobilizer anti-theft system. While the key code is being read by the immobilizer control unit, the engine can start and run with any key that will turn the lock cylinder. The key code is read and compared with key codes that have been stored in the memory of the immobilizer control unit. If a valid key is detected, the immobilizer control unit sends a serial data release message to the electronic control module (ECM). Included in the release message is an identification (ID) code which assures that neither the immobilizer control unit nor the ECM has

been substituted to defeat the system. If the ECM receives an invalid release message, the ECM performs the following actions:

- Disables the fuel injector circuit.

P 1629 Will Set When

- The ECM receives an incorrect release message from the immobilizer control unit more than five times.

P 1629 Will Clear When

- The ignition switch is turned OFF or the scan tool TROUBLE CODE CLEAR command is issued.

P 1629 – ECM Immobilizer Error (Incorrect Answer)

Step	Action	Value	Yes	No
1	Connect the scan tool using the following procedure: 1. Insert the cartridge into the scan tool. 2. Turn the ignition switch to the OFF. 3. Connect the scan tool to the data link connector (DLC). 4. Connect the scan tool's power cord to the cigar lighter socket. 5. Turn the ignition ON, but do not start the engine. Is communication established between the scan tool and the immobilizer control unit?	–	Go to <i>Step 2</i>	Go to "Communication Between Immobilizer and Test Equipment"
2	1. Select DIAGNOSIS from the scan tool menu. 2. Read the IMMO & ECM ID CODE (immobilization and electronic control module identification code) message. Did the message differ from normal message? Normal Message – ECM MODE: LEARNT IMMO. MODE: LEARNT VIN CODE: SAME	–	Go to "Identification (ID) Code Reprogramming"	Go to <i>Step 3</i>
3	1. Replace the ECM. 2. Reprogram the ID code. Is the repair complete?	–	System OK	– Go to <i>Step 4</i>
4	1. Replace the ECM. 2. Turn the ignition ON, OFF for more than 4 seconds. 3. Turn the ignition ON. Is the repair complete?	–	System OK	–

KEY STATUS ERRORS (FENIX 5MR)

The following KEY STATUS messages may be shown on the scan tool after commanding FIRST KEY CODING and KEY ADD:

- **IGNITION OFF STATUS.** This message informs the technician that the ignition is OFF during the key coding process. Turn the ignition ON during key coding, but do not start the engine.
- **KEY IS OCCUPIED.** Only five keys may be coded. If a new key is desired, the previous key codes must be deleted. Up to five keys may then be authorized.
- **ALREADY AUTHORIZED.** Key coding is being attempted with a key that is already authorized.
- **ERROR NO. A3, A4, A5.** There is no communication between the transponder in the ignition key and the detection coil. Follow the steps below to diagnose the problem:
 1. Try a different key. If a different key works, the problem is in the original key.
 2. If trying a different key results in the same error message, replace the detection coil.
- **INVALID KEY.** The communication between the immobilizer control unit and the key transponder has not validated the key. Follow the steps below to diagnose the problem:
 1. Code the key. Refer to "Key Coding Procedure" in this section.
 2. If the same message is received after key coding, check the connection of the detection coil.
 3. If the detection coil is okay, replace the immobilizer. Refer to "Immobilizer Control Unit" in this section.
- **NO TRANSPONDER DETECTED.** The fault may be in ignition key transponder, the detection coil, or the immobilizer. Follow the steps below to diagnose the problem:
 1. Try a different key. If a different key works, the problem is in the original key.
 2. If trying a different key results in the same error message, check the connection of the detection coil.
 3. If the connection of the detection coil is okay, disconnect the detection coil and use an ohmmeter to check for an open detection coil.
 4. If the detection coil is not open, replace the immobilizer control unit. Refer to "Immobilizer Control Unit" in this section.

KEY STATUS ERRORS (SIRIUS D3)

The following KEY STATUS messages may be shown on the scan tool after commanding FIRST KEY CODING and KEY ADD:

- **IGNITION OFF STATUS.** This message informs the technician that the ignition is off during the key coding process. Turn the ignition ON during key coding, but do not start the engine.
- **KEY IS OCCUPIED.** Only five keys may be coded. If a new key is desired, the previous key codes must be deleted. Up to five keys may then be authorized.
- **ALREADY AUTHORIZED.** Key coding is being attempted with a key that is already authorized.
- **ERROR NO. A3, A4, A5.** There is no communication between the transponder in the ignition key and the detection coil. Follow the steps below to diagnose the problem:
 1. Try a different key. If a different key works, the problem was in the original key.
 2. If trying a different key resulted in the same error message, replace the detection coil.
- **INVALID KEY.** The communication between the immobilizer control unit and the key transponder has not validated the key. Follow the steps below to diagnose the problem:
 1. Code the key. Refer to "Key Coding Procedure" in this section.
 2. If the same message is received after key coding, check the connection of the detection coil.
 3. If the detection coil is okay, replace the immobilizer. Refer to "Immobilizer Control Unit" in this section.
- **NO TRANSPONDER DETECTED.** The fault may be in ignition key transponder, the detection coil, or the Immobilizer. Follow the steps below to diagnose the problem:
 1. Try a different key. If a different key works, the problem was in the original key.
 2. If trying a different key resulted in the same error message, check the connection of the detection coil.
 3. If the connection of the detection coil is okay, disconnect the detection coil and use an ohmmeter to check for an open detection coil.
 4. If the detection coil was not open, replace the immobilizer control unit. Refer to "Immobilizer Control Unit" in this section.

COMMUNICATION BETWEEN IMMOBILIZER CONTROL UNIT AND TEST EQUIPMENT (FENIX 5MR)

1. Connect the test equipment as described in the *Scan Tool Equipment Manual*.
2. If communication between the scan tool and the test equipment was unsuccessful, wait 30 seconds and try again.
3. If communication was not successful on the second try, turn the ignition OFF and check the wire and connectors between the immobilizer control unit terminal 10 (17) and the data link connector (DLC) terminal M.
4. If the wire and connectors between the DLC and the immobilizer control unit are okay, replace the immobilizer control unit. Refer to "Immobilizer Control Unit" in this section.

Notice: Install the resistor cover in the DLC connector after remove the scan tool. Because ECM Immobilizer Error Problem may exist.

COMMUNICATION BETWEEN IMMOBILIZER CONTROL UNIT AND TEST EQUIPMENT (SIRIUS D3)

1. Connect the test equipment as described in the *Scan Tool Equipment Manual*.
2. If communication between the scan tool and the test equipment was unsuccessful, wait 30 seconds and try again.
3. If communication was not successful on the second try, turn the ignition OFF and check the wire and connectors between the immobilizer control unit terminal 10 and the data link connector (DLC) terminal 7 (8).
4. If the wire and connectors between the DLC and the immobilizer control unit are okay, replace the immobilizer control unit. Refer to "Immobilizer Control Unit" in this section.

REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE

KEY CODING PROCEDURE

1. Install the immobilizer control unit cartridge in the scan tool.
2. Turn the ignition OFF
3. Connect the scan tool.
4. Turn the ignition ON with the key to be coded.
5. Enter the four-digit password that enables service personnel to use the scan tool for coding keys.
6. A lost key can be deleted only by deleting all keys and reauthorizing the remaining keys as new keys. If a key is lost, go to the next step. If no keys have been lost but an additional key is desired, go to Step 8.
7. Use the scan tool command DELETE ALL KEY CODES.
8. Use the scan tool command AUTHORIZE ONE ADDITIONAL KEY.
9. Repeat Steps 4, 5, and 6 until the immobilizer control unit has recorded all of the new keys or, after a deletion, has reauthorized all of the remaining keys. The immobilizer control unit can record a maximum of five keys.
10. Return the system to the normal mode.
11. Turn OFF the ignition.
12. Turn ON the ignition.
13. Crank to start the engine.

ID CODE REPROGRAMMING

Reprogram the identification (ID) code in the following situations:

- An immobilizer control unit has been replaced.
- An electronic control module (ECM) has been replaced.

If a valid key has been lost, refer to "Key Coding Procedure" in this section.

Reprogramming Procedure

1. Turn the ignition OFF. Reprogramming is not allowed while the engine is running.
2. Insert the immobilizer control unit cartridge into the scan tool.
3. Do not start the vehicle, but turn the ignition ON.
4. Enter the four-digit password that enables service personnel to use the scan tool for ID code reprogramming.
5. Use the scan tool to command RESET ID CODE.

6. Turn the ignition OFF and ON again, but do not crank or start the engine. The ECM will reset the ECM ID code to match the new ID code that was calculated and sent by the immobilizer control unit when the ignition was first turned ON after the reset command.
7. Return the system to the normal mode.
8. Turn OFF the ignition.
9. Turn ON the ignition.
10. Start the engine.

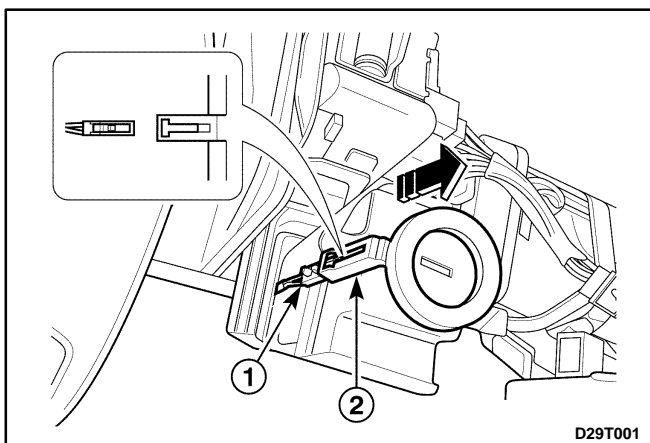
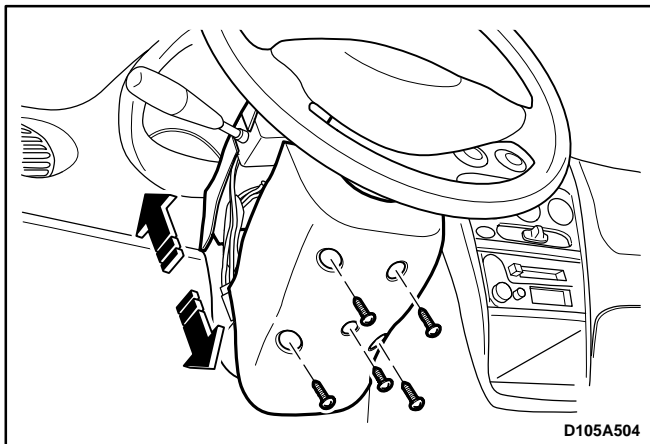
After reprogramming the ID code, the scan tool SYSTEM DIAGNOSIS command can verify that the ECM ID code matches the immobilizer control unit ID code.

If the reprogramming procedure does not result in matching ID codes, check the electrical connectors for the serial data wire between the immobilizer control unit and the ECM.

TRANSPONDER

Each valid ignition key has an internal transponder which is a read /write transponder.

The transponder contains an implementation of a crypto-algorithm with 96 bits of user configurable secret-key contained in EEPROM and transmits data to the ICU by modulating the amplitude of the electromagnetic field, and receives data and commands in a similar way.



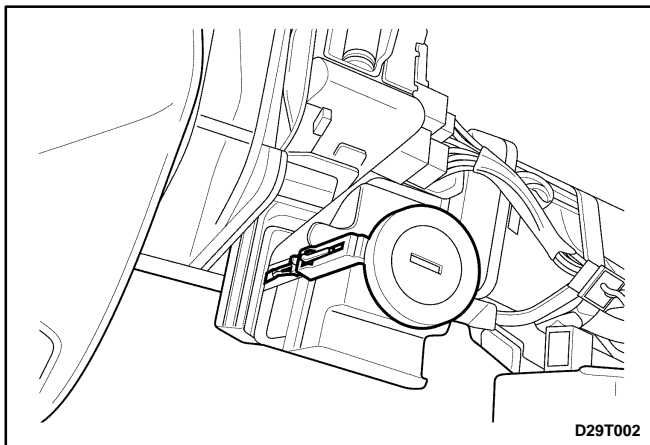
DETECTION COIL

(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

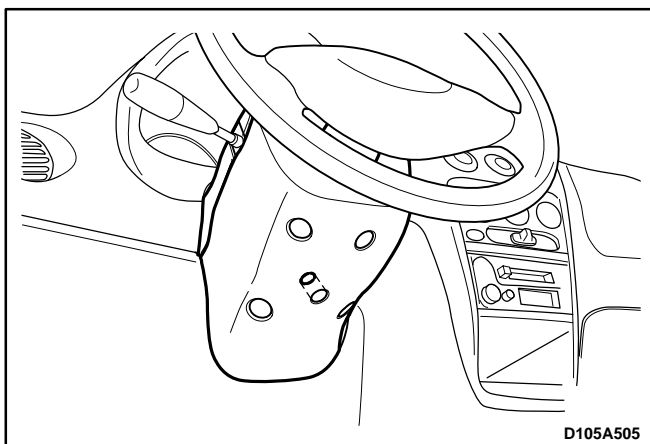
1. Remove the steering column covers. Refer to *Section 6E, Steering Wheel and Column*.
2. Remove the detection coil.
 - Disconnect the two-pin connector from the detection coil (1).
 - Pry the detection coil away from the lock cylinder (2).

Important: If the detection coil will be replaced with a new one, it does not matter if the key position trim ring is damaged during removal. A new trim ring is part of the new detection coil.

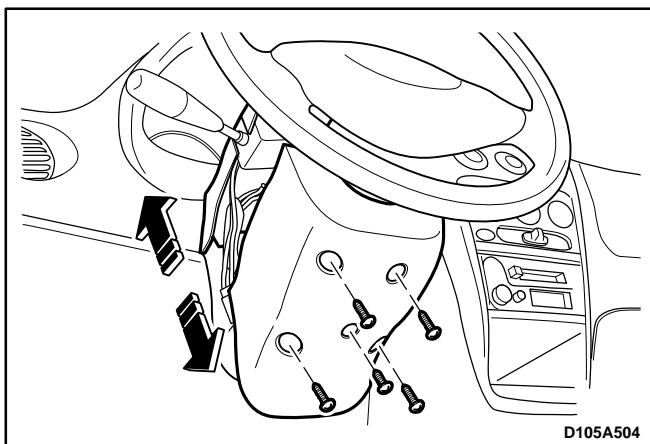


Installation Procedure

1. Install the detection coil by pressing it onto the lock cylinder until it snaps in place.
2. Connect the two-pin connector to the immobilizer.



3. Install the steering column covers with the screws. Refer to *Section 6E, Steering Wheel and Column*.

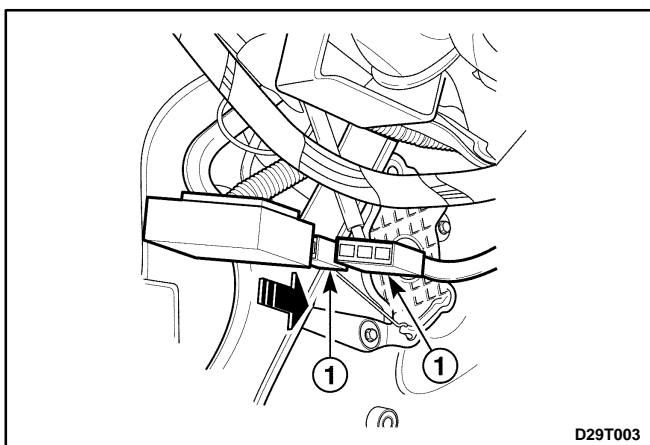


IMMOBILIZER CONTROL UNIT

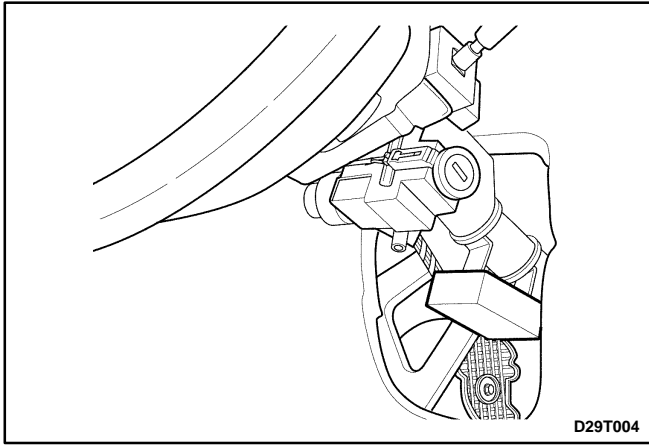
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the steering column covers. Refer to *Section 6E, Steering Wheel and Column*.



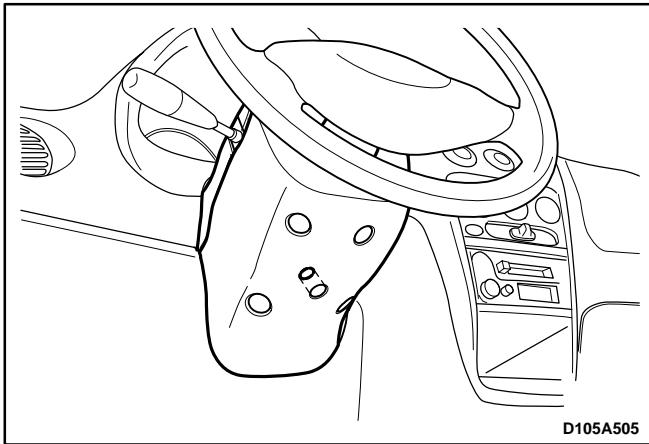
3. Slide the immobilizer control unit toward steering wheel until it slides off its mounting bracket.
4. Disconnect the electrical connectors from the immobilizer control unit (1).



Installation Procedure

After replacing the immobilizer control unit, the keys must be re-authorized using the key coding procedure. Refer to "Key Coding Procedure" in this section. Also, the electronic control module (ECM) identification (ID) code must be reset. Refer to "Identification (ID) Code Reprogramming" in this section.

1. Connect the electrical connectors to the immobilizer control unit.
2. Slide the immobilizer control unit onto its mounting bracket.



3. Install the steering column covers. Refer to *Section 6E, Steering Wheel and Column*.
4. Connect the negative battery cable.

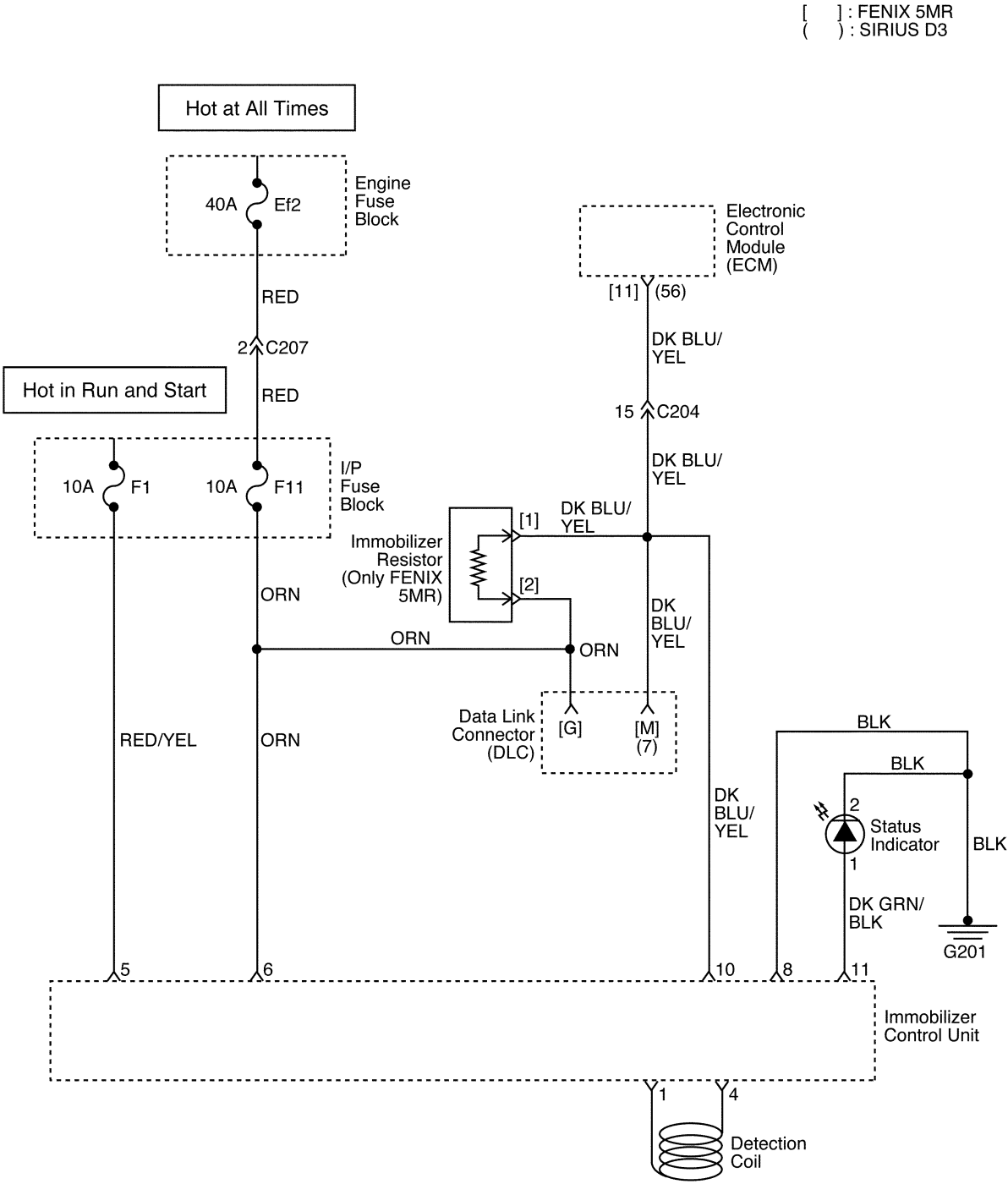
SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Immobilizer Control Unit Mounting Bolts	4	—	35

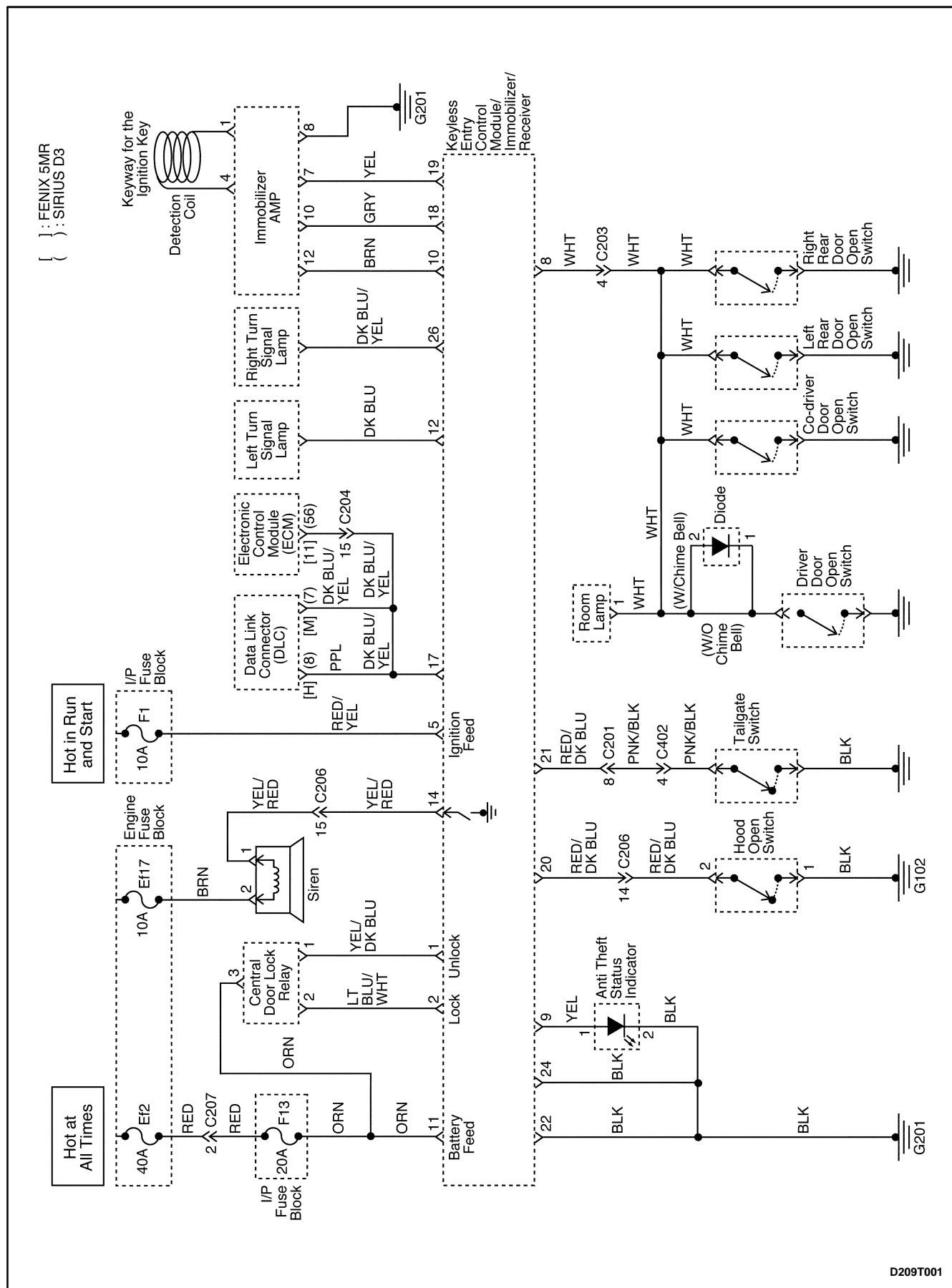
SCHEMATIC AND ROUTING DIAGRAMS

IMMOBILIZER ANTI-THEFT SYSTEM



SCHEMATIC AND ROUTING DIAGRAMS

REMOTE KEYLESS ENTRY AND IMMOBILIZER ANTI-THEFT SYSTEM



D209T001