2004 ACCESSORIES & EQUIPMENT

Doors - C/K SUV

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Armrest Mounting Screw	2 N.m	18 lb in
Check Strap Bolt	24 N.m	18 lb ft
Check Strap Nuts	24 N.m	18 lb ft
Clevis Bolt	24 N.m	18 lb ft
Door Hinge Bolt	24 N.m	18 lb ft
Door Lock and Actuator Assembly Mounting Bolt	9 N.m	80 lb in
Door Striker Bolt	24 N.m	18 lb ft
Inside Door Handle Mounting Bolt	9 N.m	80 lb in
Mirror Module Retaining Nut	0.6 N.m	5 lb in
Mirror Module Retaining Screw	0.6 N.m	5 lb in
Outside Door Handle Mounting Bolt	9 N.m	80 lb in
Outside Rearview Mirror Retaining Nut	9 N.m	80 lb in
Side Access Door Inside Handle Nut	9 N.m	80 lb in
Side Access Door Latch Bolt	9 N.m	80 lb ft
Side Access Door Latch Control	9 N.m	80 lb in
Side Access Door Lower Striker Bolt	24 N.m	18 lb ft
Side Access Door Upper Striker Bolt	24 N.m	18 lb ft
Side Door Inside Handle Nut	9 N.m	80 lb in
Window Retaining Bolt	2 N.m	18 lb in
Window Run Channel Bolt	9 N.m	80 lb in
Window Sash Channel Bolt	6 N.m	53 lb in
Window to Regulator Bolt	9 N.m	80 lb in

SCHEMATIC AND ROUTING DIAGRAMS

POWER WINDOW SCHEMATICS

Refer to Power Windows in System Wiring Diagrams .

DOOR LOCK/INDICATOR SCHEMATICS

cardiagn.com

Refer to Power Door Locks in System Wiring Diagrams .

OUTSIDE MIRROR SCHEMATICS

Refer to Defoggers, Memory Systems and Power Mirrors in System Wiring Diagrams .

DOOR CONTROL MODULE SCHEMATICS

Refer to Defoggers, Memory Systems, Power Door Locks, Power Mirrors and Power Windows in System Wiring Diagrams .

COMPONENT LOCATOR

POWER DOOR SYSTEMS COMPONENT VIEWS

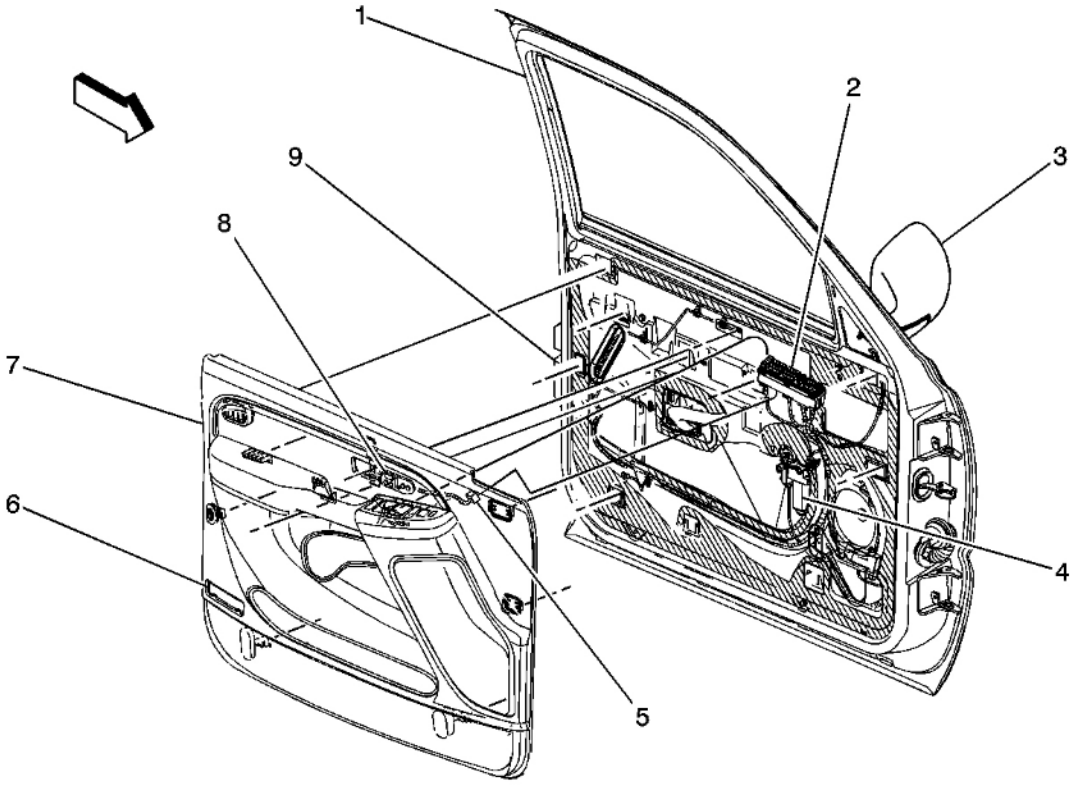


Fig. 1: Driver Door Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 1

Callout	Component Name
1	Driver Door

cardiagn.com

2	Driver Door Module (DDM)
3	Outside Rearview Mirror - Driver
4	Window Motor - Driver
5	Memory/Heated Seat Switch Connector
6	Door Courtesy Lamp - Left Front
7	Driver Door Panel
8	Memory/Heated Seat Switch
9	Mini Wedge (Door Jamb Switch) - Driver

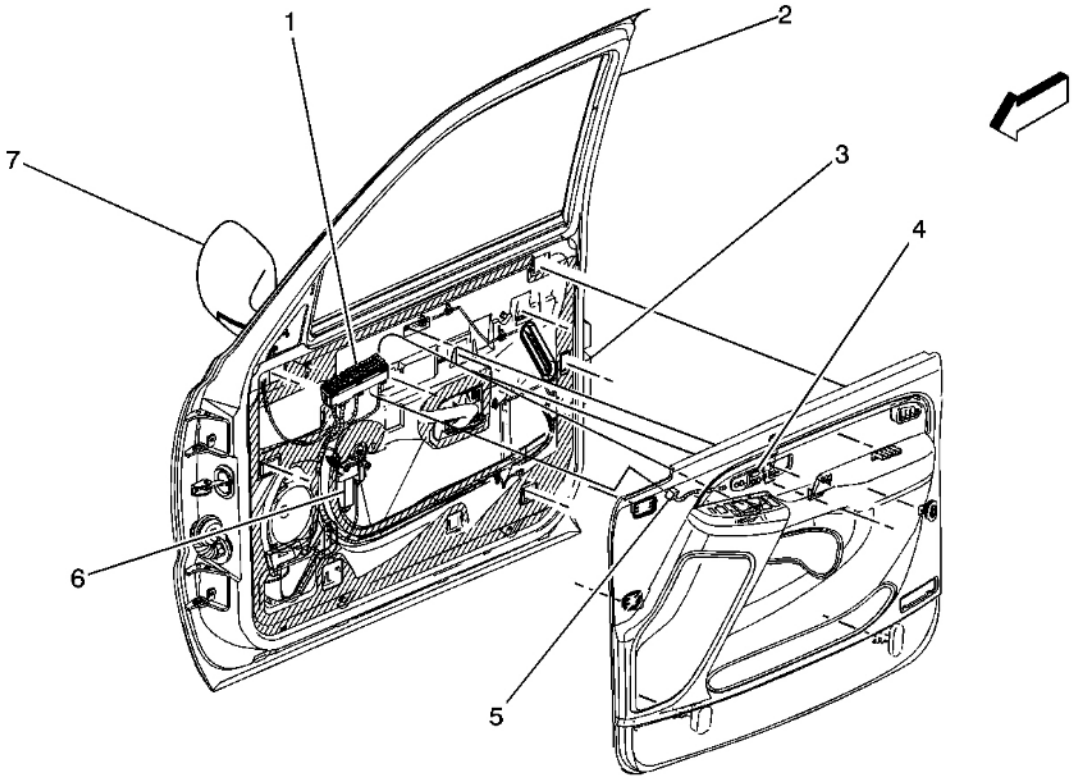


Fig. 2: Front Passenger Door Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 2

Callout	Component Name
1	Front Passenger Door Module (FPDM)
2	Front Passenger Door
3	Mini Wedge (Door Jamb Switch) - Front Passenger
4	Heated Seat Switch - Front Passenger
5	Heated Seat Switch Connector

cardiagn.com

6	Window Motor - Front Passenger
7	Outside Rearview Mirror - Front Passenger

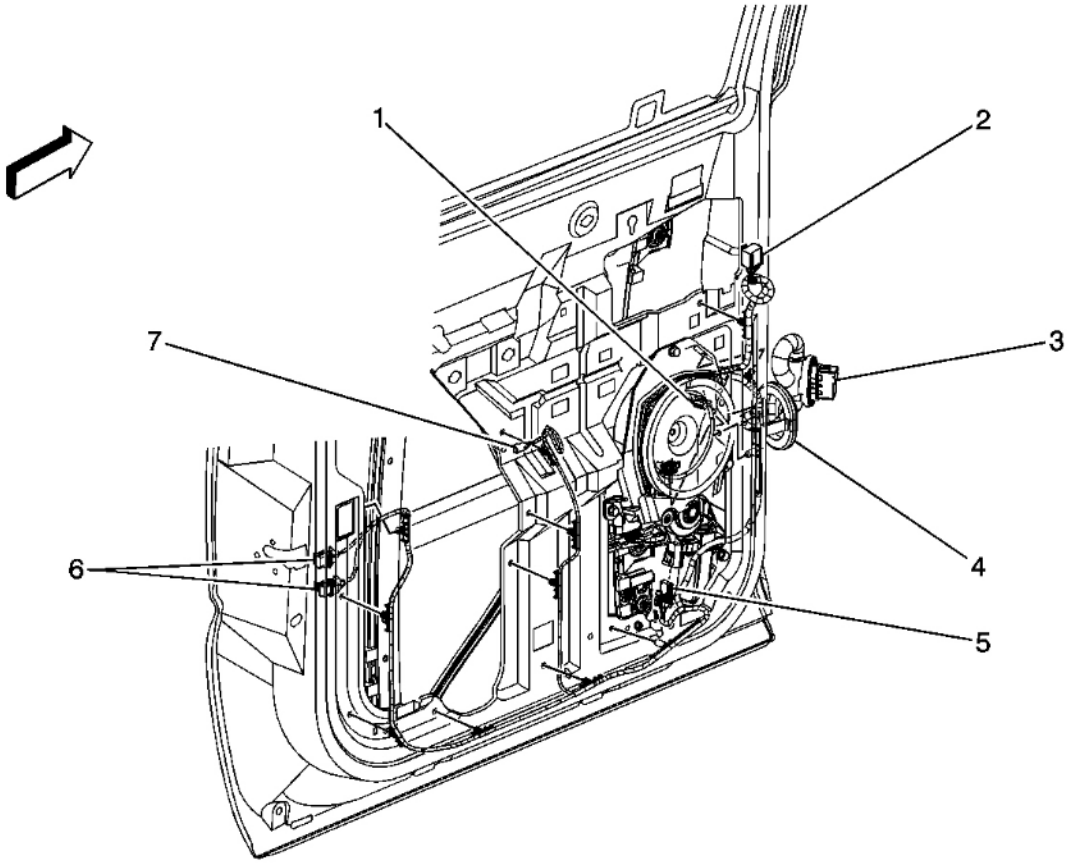


Fig. 3: LR Passenger Side Door Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 3

Callout	Component Name
1	Speaker - LR Door
2	Window Switch Connector - LR
3	C310
4	P700
5	Window Motor - LR
6	Mini Wedge (Door Jamb Switch) Connectors - LR
7	Door Courtesy Lamp Connector - LR

cardiagn.com

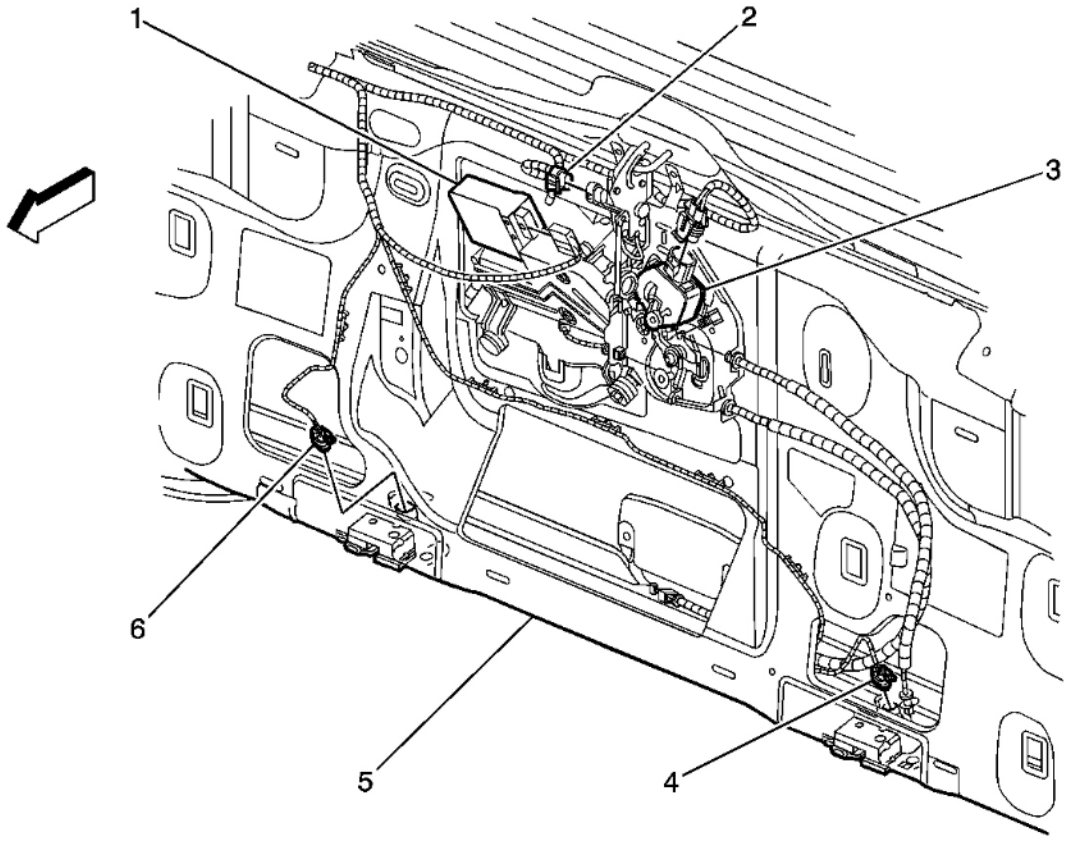


Fig. 4: Liftgate Component View (E52)
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 4

Callout	Component Name
1	Rear Window Wiper Module
2	Liftglass Ajar Switch
3	Door Lock Actuator - Liftgate
4	Liftgate Ajar Switch - Left Connector
5	Liftgate
6	Liftgate Ajar Switch - Right Connector

cardiagn.com

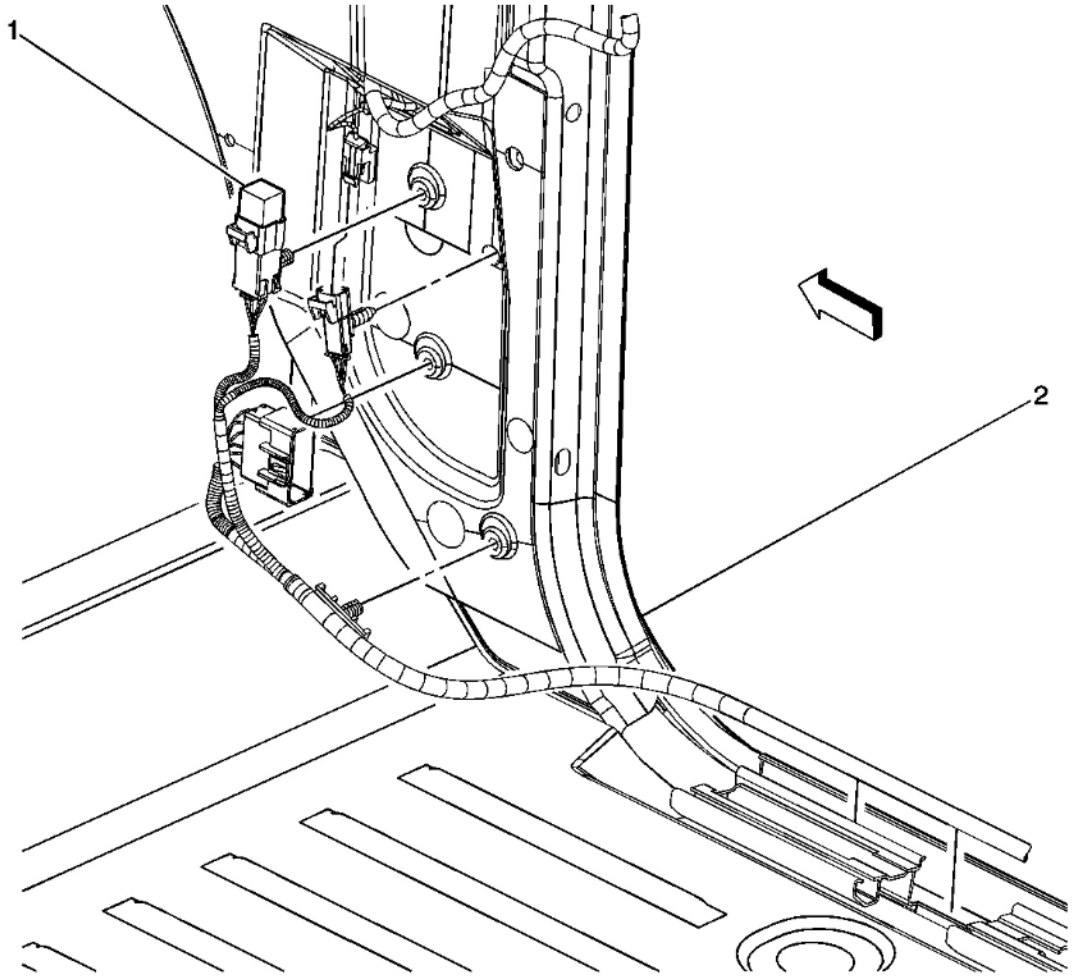


Fig. 5: Liftgate Lock Relay Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 5

Callout	Component Name
1	Liftgate Lock Relay
2	Passenger B-Pillar

cardiagn.com

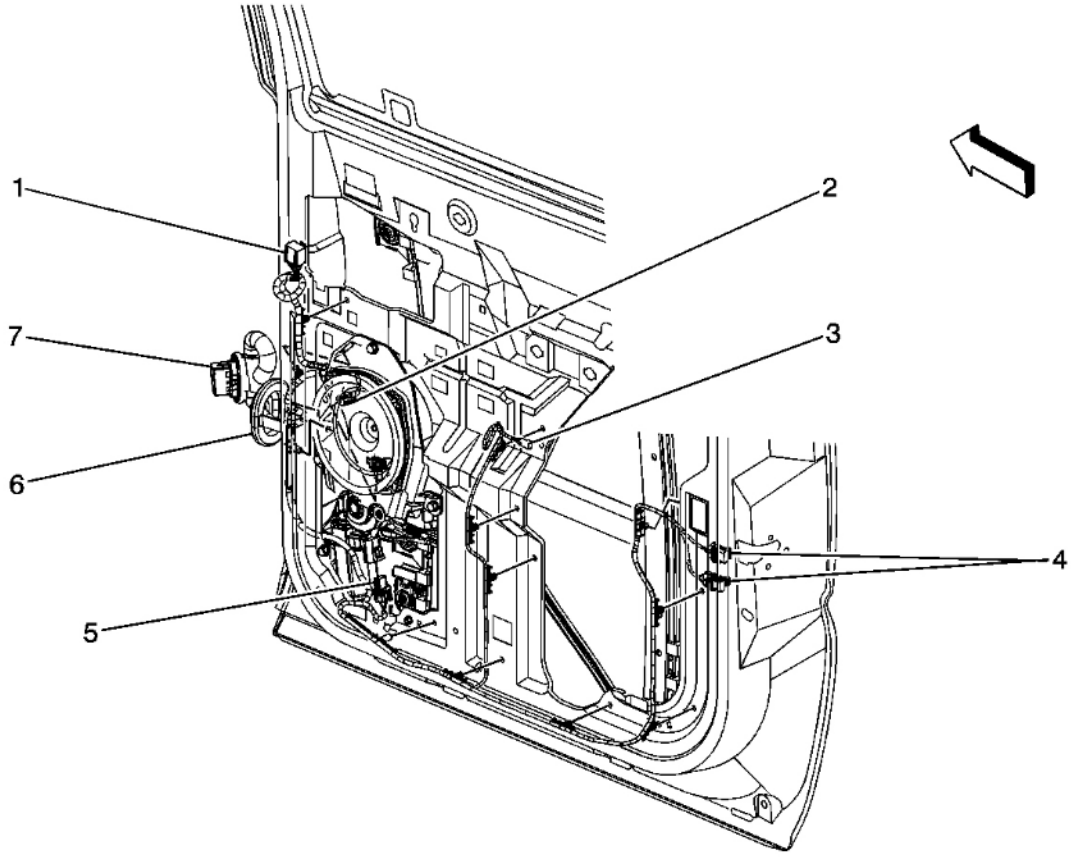


Fig. 6: RR Passenger Side Door Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 6

Callout	Component Name
1	Window Switch Connector - RR
2	Speaker - RR Door
3	Door Courtesy Lamp Connector - RR
4	Mini Wedge (Door Jamb Switch) Connectors - RR
5	Window Motor - RR
6	P800
7	C396

cardiagn.com

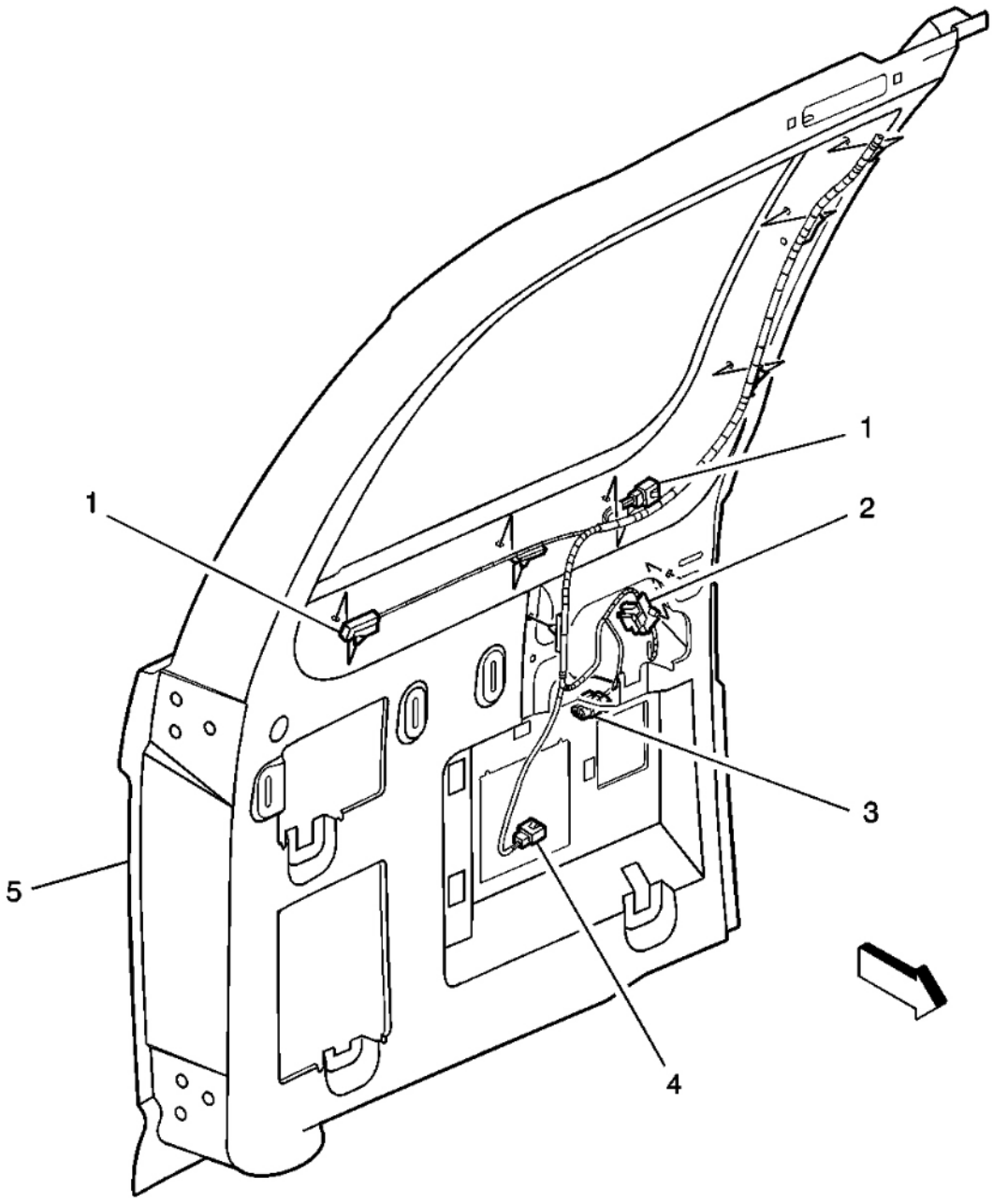


Fig. 7: RR Cargo Door Components View (Utility)
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 7

Callout	Component Name
1	Rear Defog Connector

cardiagn.com

2	Rear Door Upper Latch
3	Rear Door Lock Cylinder Connector
4	Rear Door Lock Actuator Connector
5	Rear Door Inner Panel

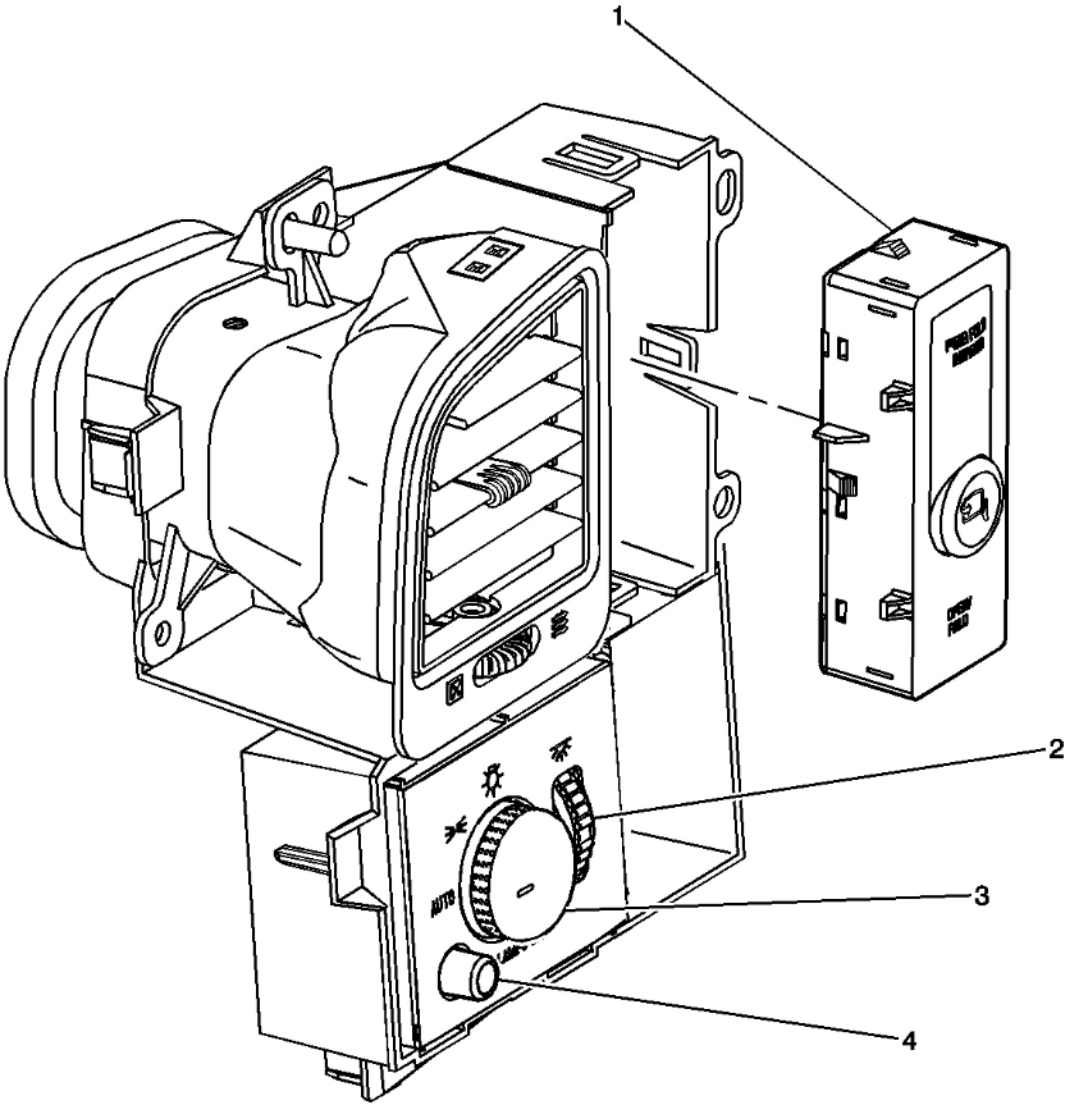


Fig. 8: Power Folding Mirror Switch Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 8

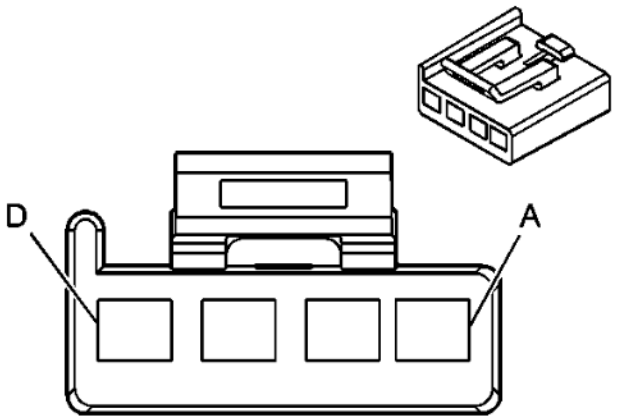
Callout	Component Name
1	Power Folding Mirror Switch

cardiagn.com

2	Dimmer Switch
3	Headlamp Switch
4	Dome Lamp Defeat Switch

POWER DOOR SYSTEMS CONNECTOR END VIEWS

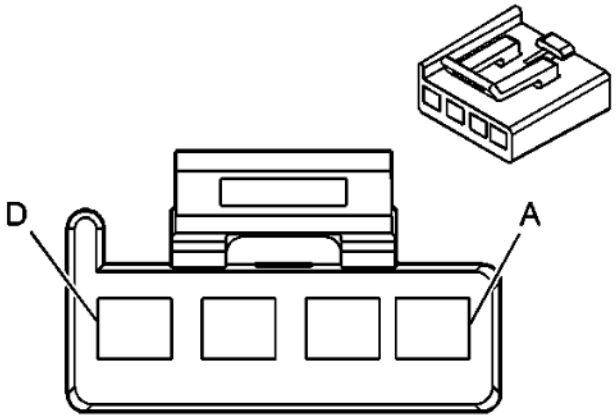
Door Contact Plate - Left Terminal Identification (Body Side)



Connector Part Information		• 12052856 • 4-Way F Metri-Pack 280 (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	PPL	293	Rear Defog Element Supply Voltage
B	PPL	293	Rear Defog Element Supply Voltage
C	PNK/BLK	1303	Cargo/Liftgate Ajar Switch Signal
D	BLK	1450	Ground

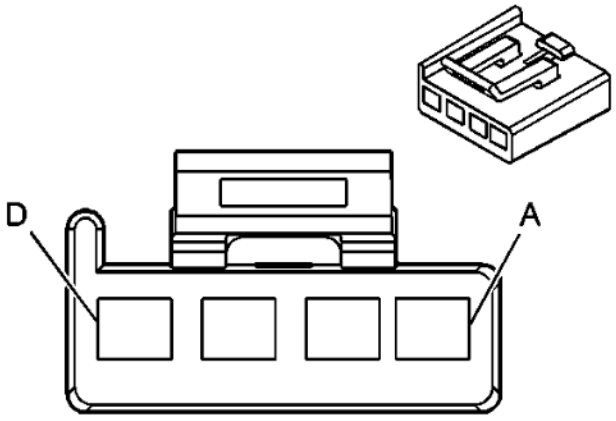
Door Contact Plate - Left Terminal Identification (Door Side)

cardiagn.com



Connector Part Information		• 12052856 • 4-Way F Metri-Pack 280 (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	BLK	1450	Ground
B-C	-	-	Not Used
D	PPL	293	Rear Defog Element Supply Voltage

Door Contact Plate - Right C1 Terminal Identification (Body Side)

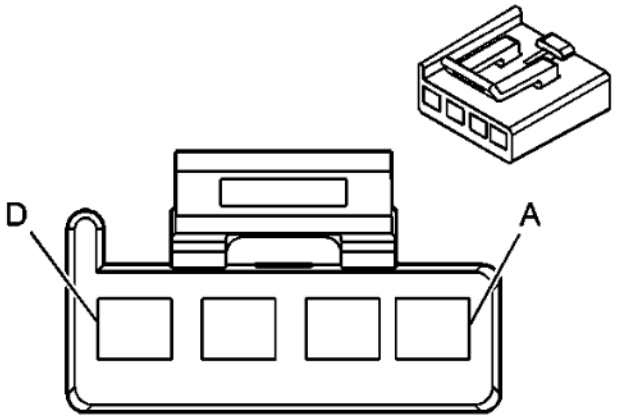


Connector Part Information		• 12052856 • 4-Way F Metri-Pack 280 (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	-	-	Not Used

cardiagn.com

B	BLK	1450	Ground
C	PNK/BLK	1303	Cargo Door Ajar Switch Signal
	PNK/BLK	1303	Cargo Door Ajar Switch Signal
D	PPL	293	Rear Defog Element Supply Voltage

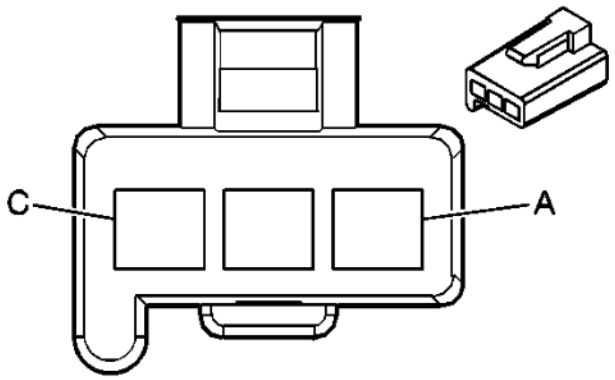
Door Contact Plate - Right C1 Terminal Identification (Door Side)



Connector Part Information		• 12052856 • 4-Way F Metri-Pack 280 (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	PPL	293	Rear Defog Element Supply Voltage
B	PNK/BLK	1303	Liftgate Ajar Switch Signal
C	BLK	1450	Ground
	BLK	1450	Ground
D	BLK	1450	Ground

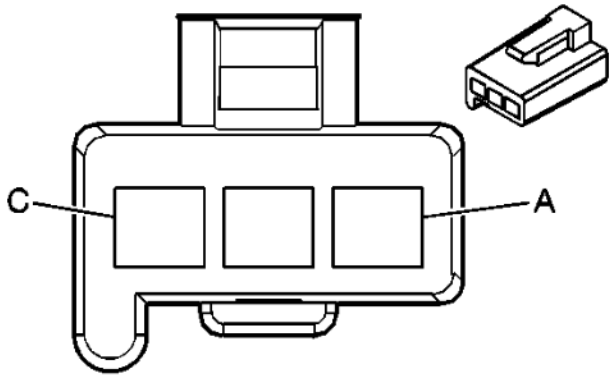
Door Contact Plate - Right C2 Terminal Identification (Body Side)

cardiagn.com



Connector Part Information		• 12041431 • 3-Way F M/P 280 (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	LT GRN	265	Passenger Door Key Switch Signal
B	TAN	294	Door Lock Actuator Unlock Control
C	GRY	295	Door Lock Actuator Lock Control

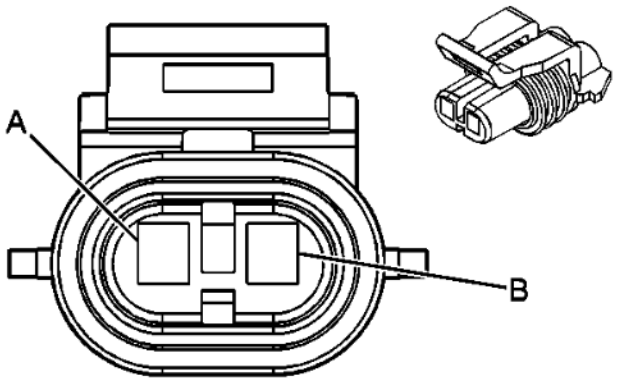
Door Contact Plate - Right C2 Terminal Identification (Door Side)



Connector Part Information		• 12041431 • 3-Way F M/P 280 (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	LT GRN	265	Passenger Door Key Switch Signal
B	TAN	294	Door Lock Actuator Unlock Control
C	GRY	295	Door Lock Actuator Lock Control

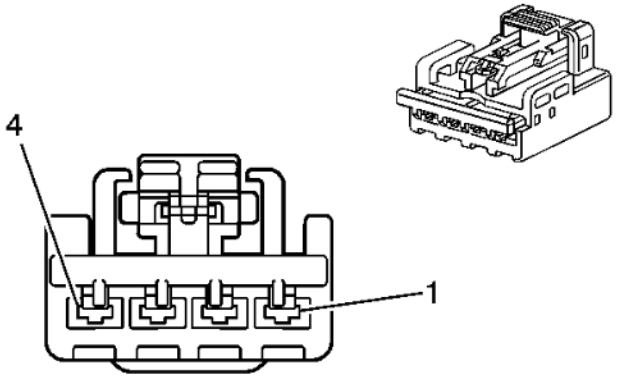
cardiagn.com

Door Lock Actuator - Cargo/Liftgate Terminal Identification, All Except Avalanche/Escalade EXT



Connector Part Information		• 12077900 • 2-Way F Metri-Pack 280 Series Sealed (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	TAN	294	Door Lock Actuator Unlock Control
B	GRY	295	Door Lock Actuator Lock Control

Driver Door Module (DDM) C1 Terminal Identification

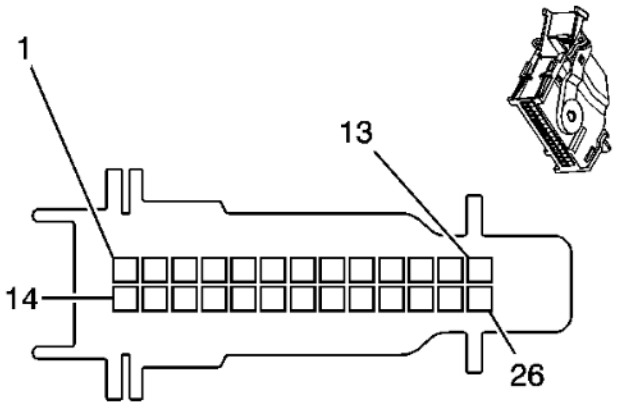


Connector Part Information		• 15411588 • 4-Way F AMP 2.8 mm Sealed (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	BRN	165	Power Window Motor Left Front Down Control
2	ORN	1240	Battery Positive Voltage

cardiagn.com

3	DK BLU	164	Power Window Motor Left Front Up Control
4	BLK	1050	Ground

Driver Door Module (DDM) C2 Terminal Identification

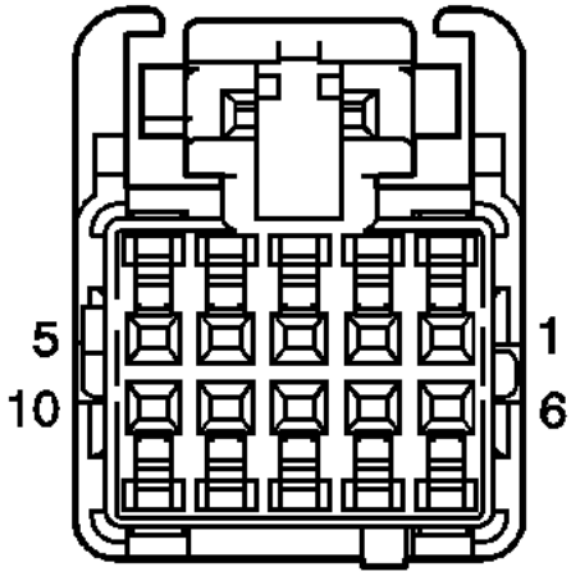


Connector Part Information		• 15398841 • 26-Way F AMP Lever Assist (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	YEL	5129	Adjustable Pedals Relay Rearward Control
2	DK BLU	536	Driver Door Key Switch Low Reference
3	BRN	1183	Left Front Door Switch Low Reference
4	DK BLU	660	Left Courtesy Lamp Control
5-9	-	-	Not Used
10	GRY	1690	Automatic Day/Night Mirror Signal
11	LT BLU	2114	Left Turn Signal Lamps Supply Voltage
12	PNK	1691	Automatic Day/Night Mirror Low Reference
13	DK BLU/ WHT	149	Courtesy Lamp Supply Voltage
14	ORN	4140	Battery Positive Voltage
15	LT GRN	262	Driver Door Key Switch Signal
16-17	-	-	Not Used
18	GRY/BLK	745	Left Front Door Ajar Switch Signal
19	-	-	Not Used
20	TAN	294	Door Lock Actuator Unlock Control
21	GRY	295	Door Lock Actuator Lock Control
22	BRN	1046	DDM Class 2 Serial Data
23	-	-	Not Used
24	LT BLU	5499	Adjustable Pedals Relay Control

cardiagn.com

25	LT BLU	5499	Adjustable Pedals Relay Control
26	PPL	5130	Adjustable Pedals Relay Forward Control

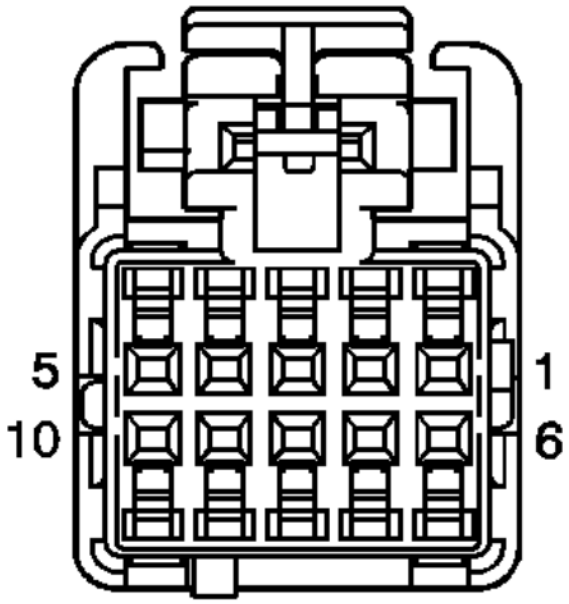
Driver Door Module (DDM) C3 Terminal Identification



Connector Part Information		• 6383393-7 • 10-Way F 0.64 mm Unsealed AMP (BLU)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	BRN/WHT	-	Left Turn Signal Low Reference
2	GRY/BLK	-	Left Turn Signal Control
3	BLK	-	Driver Mirror Heating Element Low Reference
4	PPL	-	Mirror Sensor Low Reference
5	-	-	Not Used
6	ORN/BLK	-	Left Door Exterior Courtesy Lamp Supply Voltage
7	GRY	-	Automatic Day/Night Mirror Signal
8	PNK	-	Automatic Day/Night Mirror Low Reference
9	BLK	-	Left Door Exterior Courtesy Lamp Ground
10	-	-	Not Used

Driver Door Module (DDM) C4 Terminal Identification

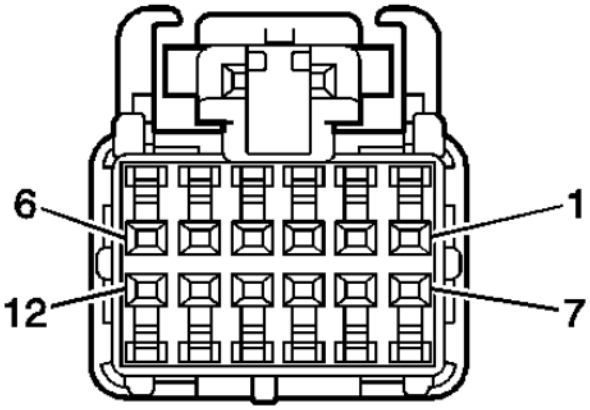
cardiagn.com



Connector Part Information		• 6383393-5 • 10-Way F 0.64 mm Unsealed AMP (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	YEL	-	Driver Folding Mirror Motor Extend Control
2	ORN	-	Mirror Heating Element Supply Voltage
3	RED	-	Driver Mirror Horizontal Position Sensor Signal
4	DK GRN	-	5-Volt Reference
5	DK BLU	-	Driver Mirror Vertical Position Sensor Signal
6	LT BLU	-	Driver Folding Mirror Motor Retract Control
7	YEL	-	Driver Mirror Right/Down Motors Common
8	LT BLU	-	Driver Mirror Motor Right Control
9	LT GRN	-	Driver Mirror Motor Down Control
10	-	-	Not Used

Driver Door Module (DDM) C5 Terminal Identification

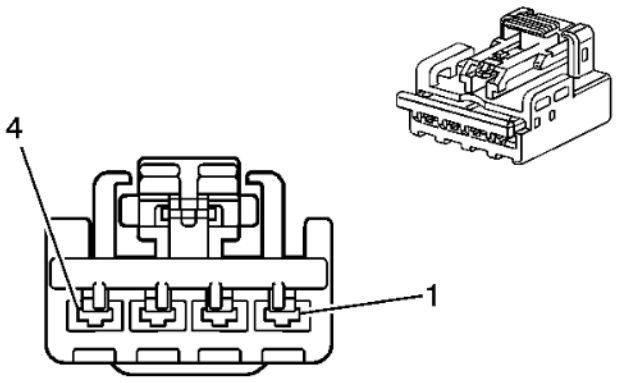
cardiagn.com



Connector Part Information		• 683394-4 • 12-Way F 0.64 mm Unsealed AMP (GRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	WHT/BLK	-	Driver Heated Seat Medium Temperature Indicator Control
2	YEL	-	Driver Heated Seat Low Temperature Indicator Control
3	GRY	-	Driver Heated Seat Back Only Mode Switch Signal
4	LT BLU	-	Memory/Heated Seat Switch Backlight
5	PNK	-	Memory 2 Switch Signal
6	TAN	-	Adjustable Pedals Forward Control
7	DK GRN	-	Driver Heated Seat High Temperature Indicator Control
8	BLK	-	Driver Heated Seat Back Only Indicator Control
9	DK BLU	-	Driver Heated Seat Temperature Switch Signal
10	RED	-	Memory 1 Switch Signal
11	BRN	-	Switch Power
12	ORN	-	Electronic Adjustable Pedals Rearward Control

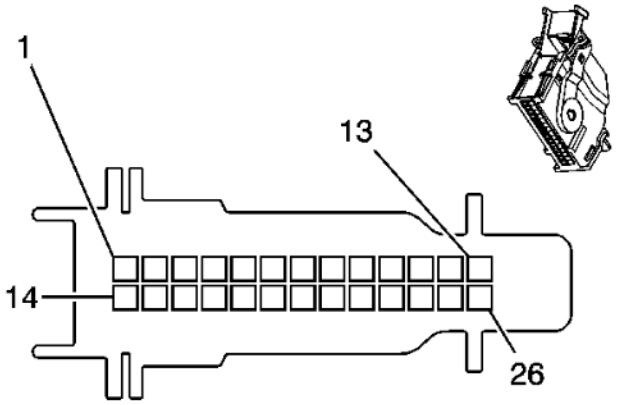
Front Passenger Door Module (FPDM) C1 Terminal Identification

cardiagn.com



Connector Part Information		• 15393410 • 4-Way F 2.8 mm Sealed AMP (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	BRN	667	Power Window Motor Right Front Down Control
2	ORN	1340	Battery Positive Voltage
3	BLK	1050	Ground
4	DK BLU	666	Power Window Motor Right Front Up Control

Front Passenger Door Module (FPDM) C2 Terminal Identification

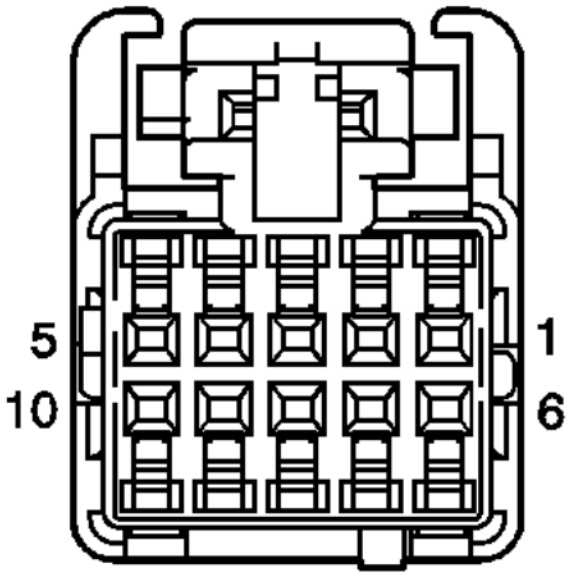


Connector Part Information		• 15398841 • 26-Way F AMP Lever Assist (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**

cardiagn.com

1-4	-	-	Not Used
5	BLK/WHT	746	Right Front Door Ajar Switch Signal
6	LT BLU	537	Passenger Door Key Switch Low Reference
7	-	-	Not Used
8	WHT	156	Courtesy Lamp Supply Voltage
9	-	-	Not Used
10	GRY	295	Door Lock Actuator Lock Control
11	TAN	294	Door Lock Actuator Unlock Control
12-13	-	-	Not Used
14	ORN	4240	Battery Positive Voltage
15-18	-	-	Not Used
19	LT BLU	661	Right Courtesy Lamp Control
20	DK GRN	1178	Right Front Door Switch Low Reference
21	-	-	Not Used
22	TAN	1047	PDM Class 2 Serial Data
23	-	-	Not Used
24	LT GRN	265	Passenger Door Key Switch Signal
25	-	-	Not Used
26	DK BLU	2115	Right Turn Signal Lamps Supply Voltage

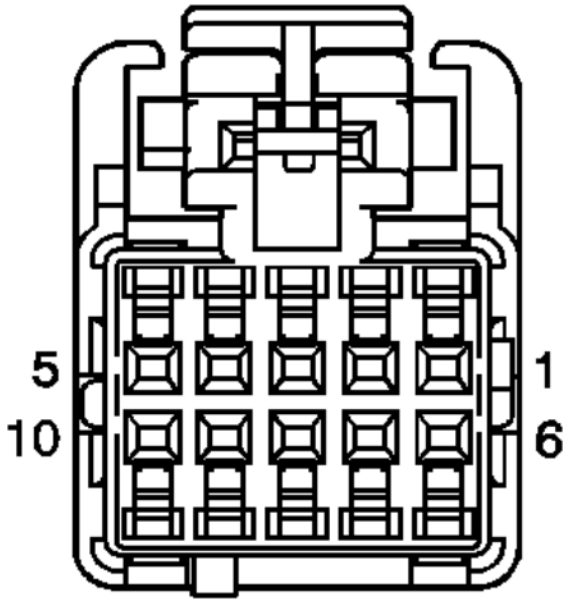
Front Passenger Door Module (FPDM) C3 Terminal Identification



cardiagn.com

Connector Part Information		• 6383393-7 • 10-Way F 0.64 mm Unsealed AMP (BLU)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	WHT/RED	-	Front Passenger Mirror Motor Right Control
2	WHT	-	Front Passenger Mirror Right/Down Motors Common
3	YEL	-	Front Passenger Folding Mirror Motor Extend Control
4	LT BLU	-	Front Passenger Folding Mirror Motor Retract Control
5	ORN/BLK	-	Right Door Exterior Courtesy Lamp Supply Voltage
6	PPL/WHT	-	Front Passenger Mirror Motor Down Control
7	ORN	-	Mirror Heating Element Supply Voltage
8	BLK	-	Mirror Heating Element Low Reference
9	BLK	-	Right Door Exterior Courtesy Lamp Ground
10	GRY/BLK	-	Right Turn Signal Control

Front Passenger Door Module (FPDM) C4 Terminal Identification

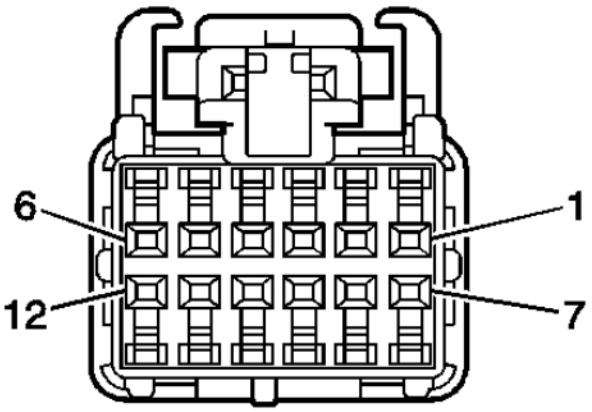


	• 6383393-5

cardiagn.com

Connector Part Information		• 10-Way F 0.64 mm Unsealed AMP (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	DK GRN	-	5-Volt Reference
2	RED	-	Front Passenger Mirror Vertical Position Sensor Signal
3	PPL	-	Mirror Sensor Low Reference
4	DK BLU	-	Front Passenger Mirror Horizontal Position Sensor Signal
5	BRN/WHT	-	Right Turn Signal Low Reference
6-10	-	-	Not Used

Front Passenger Door Module (FPDM) C5 (Passenger Heated Seat Switch) Terminal Identification

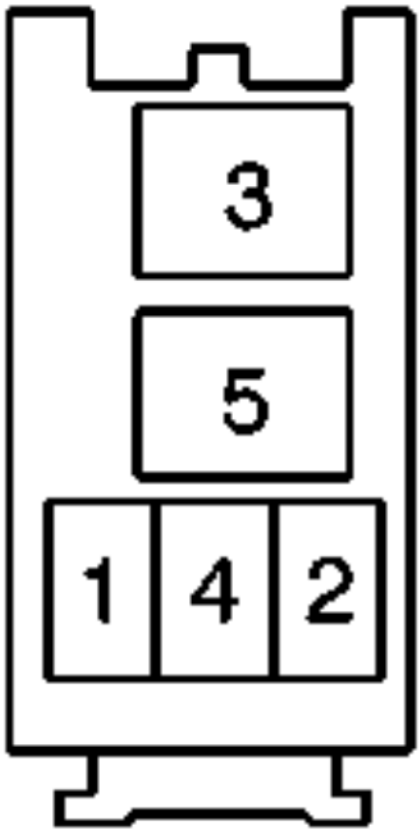


Connector Part Information		• 683394-4 • 12-Way F 0.64 mm Unsealed AMP (GRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	YEL	-	Front Passenger Heated Low Temperature Indicator Control
2	DK GRN	-	Front Passenger Heated Seat High Temperature Indicator Control
3	DK BLU	-	Front Passenger Heated Seat Temperature Switch Signal
4	GRY	-	Front Passenger Heated Seat Back Only Mode Switch Signal
5	-	-	Not Used
6	BRN	-	5-Volt Reference
7	BLK	-	Front Passenger Heated Seat Back only

cardiagn.com

			Indicator Control
8	WHT/BLK	-	Front Passenger Heated Seat Medium Temperature Indicator Control
9-11	-	-	Not Used
12	LT BLU	-	Heated Seat Switch Backlight

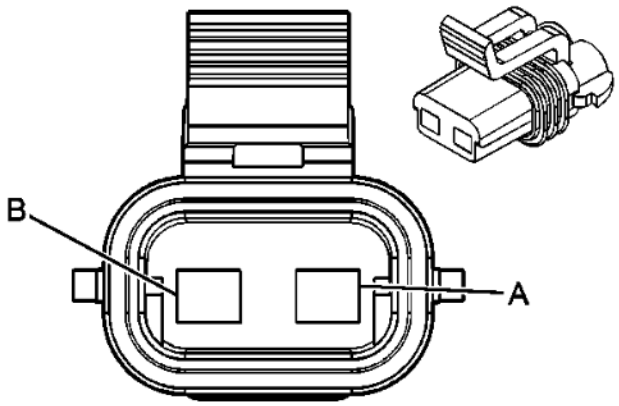
Liftgate Lock Relay Terminal Identification



cardiagn.com

Connector Part Information		• 12065978 • 5-Way F Metri-Pack 480/630 Series (GY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	WH	1304	Liftgate Lock Relay Control
2	OG	3140	Battery Positive Voltage
3	GY	295	Door Lock Actuator Lock Control
4	BK	1450	Ground
5	OG	3140	Battery Positive Voltage

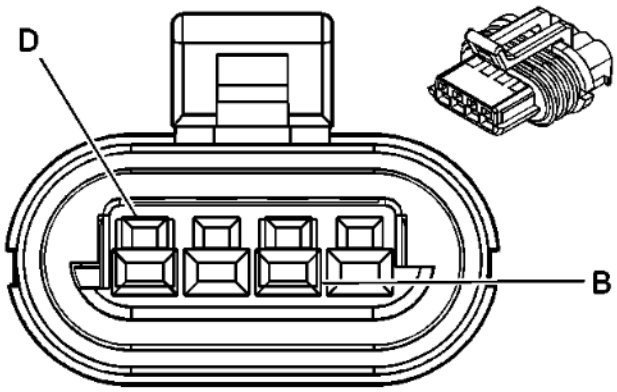
Mini Wedge (Door Jamb Switch) - Driver C1 Terminal Identification



Connector Part Information		• 15300027 • 2-Way F Metri-Pack 280 Series Sealed (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	TAN	294	Door Lock Actuator Unlock Control
B	GRY	295	Door Lock Actuator Lock Control

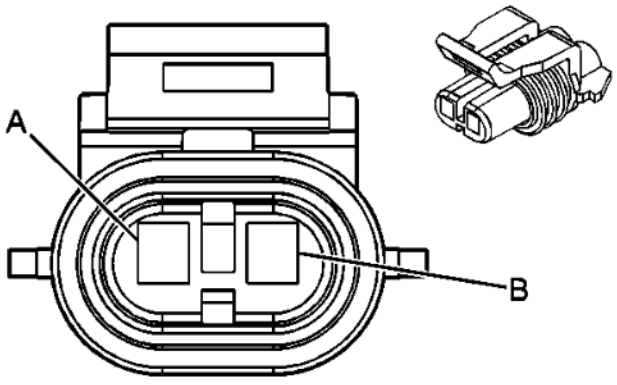
Mini Wedge (Door Jamb Switch) - Driver C2 Terminal Identification

cardiagn.com



Connector Part Information		• 15366025 • 3-Way F GT 150 SLD 3.2 X 4.0 (LT GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	-	-	Not Used
B	GRY/BLK	745	Left Front Door Ajar Switch Signal
C	-	-	Not Used
D	BRN	1183	Left Front Door Switch Low Reference

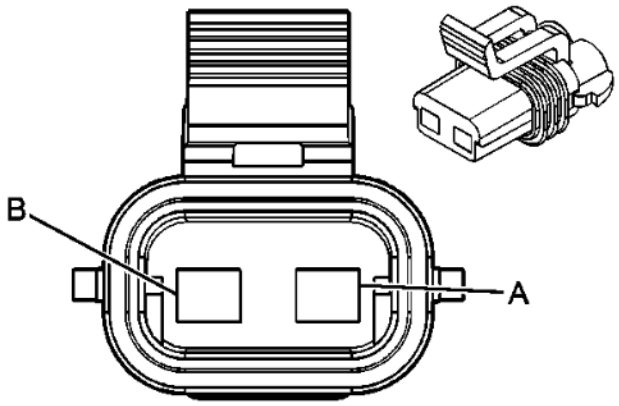
Mini Wedge (Door Jamb Switch) - Driver C3 Terminal Identification



Connector Part Information		• 12052642 • 2-Way F Metri-Pack 150 Series Sealed (LT GRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK BLU	536	Driver Door Key Switch Low Reference
B	LT GRN	262	Driver Door Key Switch Signal

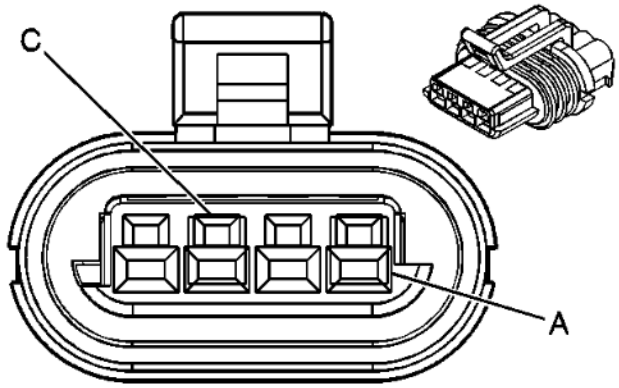
cardiagn.com

Mini Wedge (Door Jamb Switch) - Front Passenger C1 Terminal Identification



Connector Part Information		• 15300027 • 2-Way F Metri-Pack 280 Series Sealed (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	TAN	294	Door Lock Actuator Unlock Control
B	GRY	295	Door Lock Actuator Lock Control

Mini Wedge (Door Jamb Switch) - Front Passenger C2 Terminal Identification

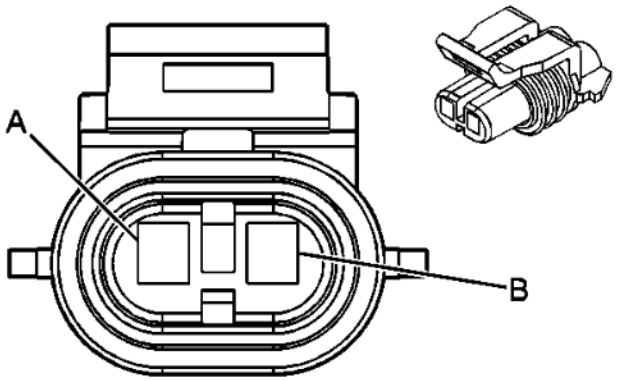


Connector Part Information		• 15366027 • 2-Way F GT 150 SLD 3.2 X 4.0 (BLU)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK GRN	1178	Right Front Door Switch Low Reference
B	-	-	Not Used
C	BLK/WHT	746	Right Front Door Ajar Switch Signal

cardiagn.com

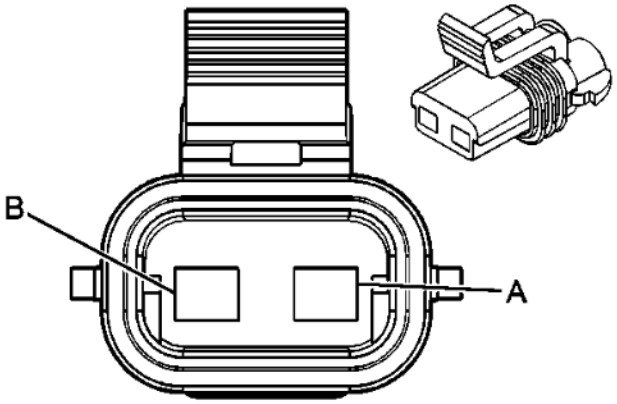
D	-	-	Not Used

Mini Wedge (Door Jamb Switch) - Front Passenger C3 Terminal Identification



Connector Part Information		• 12052642 • 2-Way F Metri-Pack 150 Series Sealed (LT GRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	LT BLU	537	Passenger Door Key Switch Low Reference
B	LT GRN	265	Passenger Door Key Switch Signal

Mini Wedge (Door Jamb Switch) - LR C1 Terminal Identification

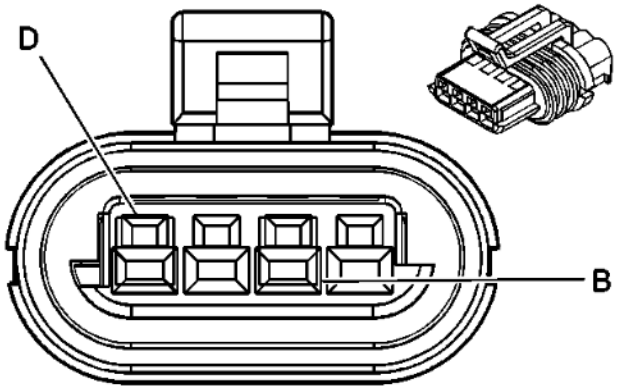


Connector Part Information		• 15300027 • 2-Way F Metri-Pack 280 Series Sealed (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	TAN	294	Door Lock Actuator Unlock Control

cardiagn.com

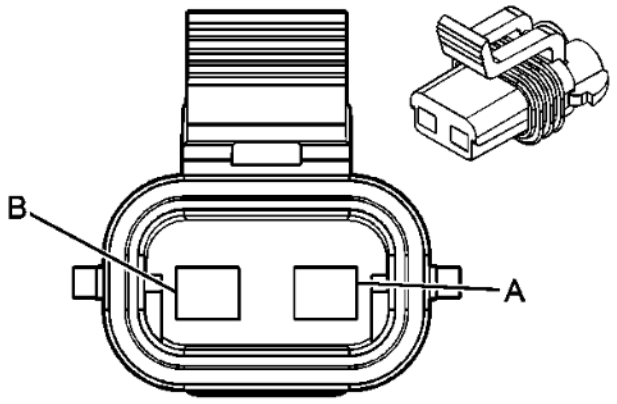
B	GRY	295	Door Lock Actuator Lock Control

Mini Wedge (Door Jamb Switch) - LR C2 Terminal Identification



Connector Part Information		• 15366025 • 2-Way F GT 150 Sealed 3.2x4.0 (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	-	-	Not Used
B	LT BLU/BLK	747	Left Rear Door Ajar Switch Signal
C	-	-	Not Used
D	BLK	1150	Ground

Mini Wedge (Door Jamb Switch) - RR C1 Terminal Identification

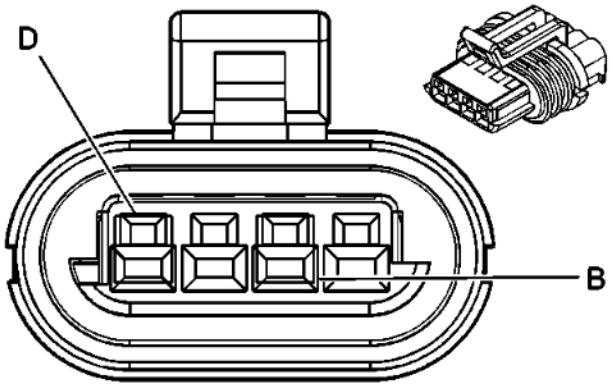


Connector Part Information	• 15300027 • 2-Way F Metri-Pack 280 Series Sealed (BLK)

cardiagn.com

Pin	Wire Color	Circuit No.	Function
A	TAN	294	Door Lock Actuator Unlock Control
B	GRY	295	Door Lock Actuator Lock Control

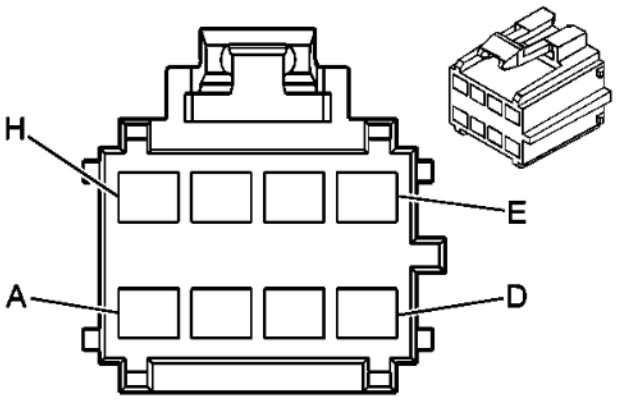
Mini Wedge (Door Jamb Switch) - RR C2 Terminal Identification



Connector Part Information		• 15366025 • 2-Way F GT 150 Sealed 3.2x4.0 (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	-	-	Not Used
B	LT BLU/ BLK	748	Right Rear Door Ajar Switch Signal
C	-	-	Not Used
D	BLK	1250	Ground

Window Switch - LR Terminal Identification

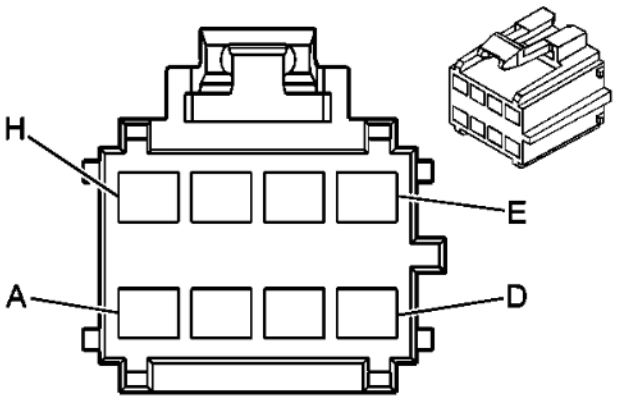
cardiagn.com



Connector Part Information		• 12191825 • 8-Way Metri-Pack 280 Series (BRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	ORN	1240	Battery Positive Voltage
B	YEL	1187	Power Window Switch Left Rear Down Signal
C	WHT	1185	Power Window Switch Left Rear Up Signal
D	LT BLU	2265	Power Window Lockout Left Rear Signal
E	BLK	1150	Ground
F	DK BLU	668	Power Window Motor Left Rear Up Control
G	BRN	669	Power Window Motor Left Rear Down Control
H	BRN/WHT	230	Instrument Panel Lamps Dimming Control

Window Switch - RR Terminal Identification

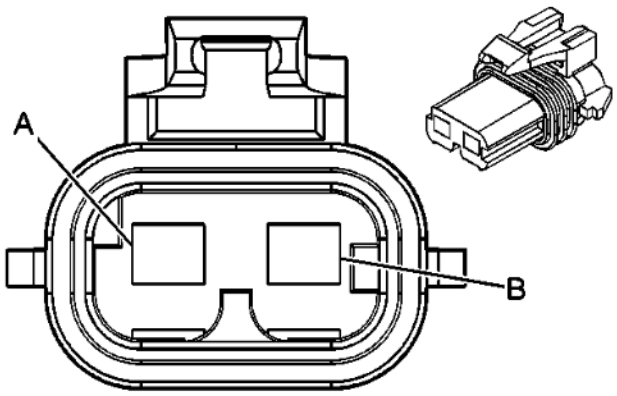
cardiagn.com



Connector Part Information		• 12191825 • 8-Way Metri-Pack 280 Series (BRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	ORN	1340	Battery Positive Voltage
B	YEL	1188	Power Window Switch Right Rear Down Signal
C	WHT	1186	Power Window Switch Right Rear Up Signal
D	LT BLU	2266	Power Window Lockout Right Rear Signal
E	BLK	1250	Ground
F	DK BLU	670	Power Window Motor Right Rear Up Control
G	BRN	671	Power Window Motor Right Rear Down Control
H	BRN/WHT	230	Instrument Panel Lamps Dimming Control

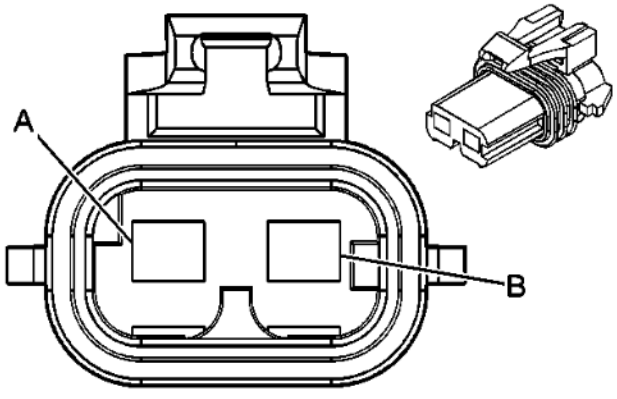
Window Motor - Driver Terminal Identification

cardiagn.com



Connector Part Information		• 12129487 • 2-Way F Metri-Pack 280 Series Flexlock Sealed (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK BLU	164	Power Window Motor Left Front Up Control
B	BRN	165	Power Window Motor Left Front Down Control

Window Motor - Front Passenger Terminal Identification

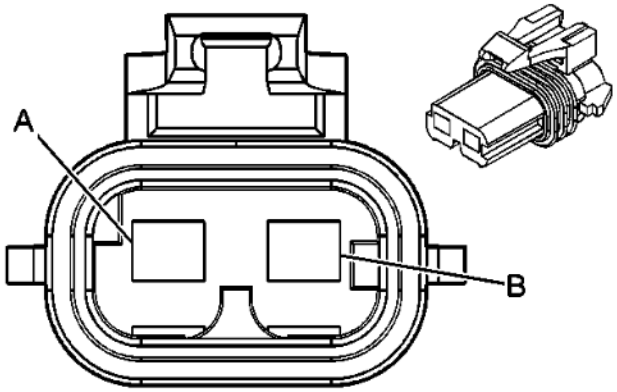


Connector Part Information		• 12129487 • 2-Way F Metri-Pack 280 Series Flexlock Sealed (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK BLU	666	Power Window Motor Right Front Up

cardiagn.com

			Control
B	BRN	667	Power Window Motor Right Front Down Control

Window Motor - LR/RR Terminal Identification



Connector Part Information		• 12129487 • 2-Way F Metri-Pack 280 Series Flexlock Sealed (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK BLU	668	Power Window Motor Left Rear Up Control (Left)
A	DK BLU	670	Power Window Motor Right Rear Up Control (Right)
B	BRN	669	Power Window Motor Left Rear Down Control (Left)
B	BRN	671	Power Window Motor Right Rear Down Control (Right)

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - DOORS

Begin the system diagnosis with the **Diagnostic System Check - Door Systems**. The Diagnostic System Check will provide the following information:

- The identification of the control module(s) which command the system.
- The ability of the control module(s) to communicate through the serial data circuit.
- The identification of any stored diagnostic trouble codes (DTCs) and their status.

cardiagn.com

The use of the Diagnostic System Check will identify the correct procedure for diagnosing the system and where the procedure is located.

DIAGNOSTIC SYSTEM CHECK - DOOR SYSTEMS

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Lack of communication may be due to a partial malfunction of the class 2 serial data circuit or due to a total malfunction of the class 2 serial data circuit. The specified procedure will determine the particular condition.

5: The presence of DTCs which begin with "U" indicate some other module is not communicating. The specified procedure will compile all the available information before tests are performed.

Diagnostic System Check - Door Systems

Step	Action	Yes	No
1	Install a scan tool. Does the scan tool power up?	Go to **Step 2**	Go to **Scan Tool Does Not Power Up** in Data Link Communications
2	1. Turn ON the ignition, with the engine OFF. 2. Attempt to establish communication with the following modules: • The driver door module • The passenger door module • The body control module • The powertrain control module • The instrument panel cluster Does the scan tool communicate with all of the modules?	Go to **Step 3**	Go to **Scan Tool Does Not Communicate with Class 2 Device** in Data Link Communications
3	**IMPORTANT:** **The engine may start during the following step. Turn OFF the engine as soon as you have observed the Crank power mode.** 1. Access the Class 2 Power Mode in the Diagnostic Circuit Check on the scan tool. 2. Rotate the ignition switch through all positions while observing the ignition switch power mode parameter.		

cardiagn.com

	Does the ignition switch parameter reading match the ignition switch position for all switch positions?	Go to **Step 4**	Go to **Power Mode Mismatch** in Body Control System
4	With the scan tool, select the Display DTCs function for each of the following modules: • The driver door module • The passenger door module • The body control module • The powertrain control module • The instrument panel cluster Does the scan tool display any DTCs?	Go to **Step 5**	Go to **Symptoms - Doors**
5	Does the scan tool display any DTCs which begin with a "U"?	Go to **Scan Tool Does Not Communicate with Class 2 Device** in Data Link Communications	Go to **Step 6**
6	Does the scan tool display B1000 for any of the modules?	Go to **Diagnostic Trouble Code (DTC) List** in Body Control System	Go to **Diagnostic Trouble Code (DTC) List**

SCAN TOOL OUTPUT CONTROLS

Body Control Module Scan Tool Output Controls

Scan Tool Output Control	Additional Menu Selection(s)	Description
Miscellaneous Test	Rear Door Lock/Unlock	The BCM actuates the door lock relay and liftgate lock when you select Lock. Rear doors and liftgate should lock. The BCM actuates the door unlock relay when you select Unlock. Rear doors and liftgate should unlock.
Miscellaneous Test	Left Rear Window	The BCM will control the left window up when you select Up. The BCM will control the left window down when you select Down.
Miscellaneous Test	Right Rear Window	The BCM will control the right window up when you select Up. The BCM will control the right window down when you select Down.

Driver Door Module and Passenger Door Module Scan Tool Output Controls

Scan Tool Output Control	Additional Menu Selection(s)	Description
Output Control	Window Up/Down	The DDM or PDM will command the window up and down

cardiagn.com

Output Control	Door Lock/Unlock Test	The DDM or PDM will command the door lock actuator to lock or unlock
Output Control	Mirror Left/Right	The DDM or PDM will command the mirror left and right
Output Control	Mirror Up/Down	The DDM or PDM will command the mirror up and down
Output Control	Mirror Heat	The DDM or PDM will command the mirror heater on and off
Output Control	Passenger Window Lockout Indicator	The DDM will command the window lockout indicator on when you select ON and turn it off when you select OFF

SCAN TOOL DATA LIST

Driver Door Module/Passenger Door Module Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine OFF/Vehicle in PARK/All Doors Closed			
Battery 1 (Low Current)	Data	Volts	12.8
Battery 2 (High Current)	Data	Volts	12.8
Boot S/W Part No.	Module Info.	Decimal	15XXXXXX
Boot S/W Suffix	Module Info.	ASCII	15XXXXXX
Cal. Module 1 Part No.	Module Info.	Decimal	15XXXXXX
Cal. Module 1 Part No.	Module Info.	ASCII	15XXXXXX
Cal. Module 2 Part No.	Module Info.	Decimal	15XXXXXX
Cal. Module 2 Part No.	Module Info.	ASCII	15XXXXXX
Door Ajar Switch	Inputs	On, Off	Off
Door Key Unlock	Inputs	Inactive/Active	Inactive
Door Lock Motor	Outputs	Idle, Lock, Unlock	Idle
Door Lock Switch	Outputs	Idle, Lock, Unlock	Idle
Driver LF Window Switch	Inputs	Idle, Up, Down, Express Down	Idle
Driver RF Window Switch	Inputs	Idle, Up, Down, Express Down	Idle
LR Window Switch	Inputs	Idle, Up, Down	Idle
Memory Switch	Inputs	Idle, Both, Memory 1, Memory 2	Idle
Mirror 5 Volt Reference	Outputs	On, Off	5 Volts
Mirror Fold Motor Current	Data	mA	0
Mirror Folding Operation	Outputs	Idle, Extend, Retract	Idle
Mirror Heater	Outputs	Inactive, Active	Inactive
Mirror Horizontal Position	Data	Volts	Varies
Mirror Motor	Outputs	Idle, Left, Right, Up, Down	Idle
Mirror Select Switch	Inputs	Neutral/Fold, Left, Right	Neutral

cardiagn.com

Mirror Switch	Inputs	Off, Up, Down, Left. Right, Extend, Retract	Off
Mirror Vertical Position	Data	Volts	Varies
Operational S/W Part No.	Module Information	Decimal	15XXXXXX
Operational S/W Suffix	Module Information	ASCII	XX
Psgr RF Window Switch	Inputs	Idle/Up/Down/Express Down	Idle
Right Rear Window Status	Inputs	Idle, Up, Down	Idle
Window Lockout Switch	Inputs	Inactive/Active	Inactive
Window Lockout LED	Outputs	On, Off	Off
Window Motor Current	Data	mA	0
Window Motor Output	Outputs	Idle, Up, Down	Idle

Body Control Module Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine OFF/Vehicle in PARK/All doors closed			
Battery Voltage	Data	Volts	Varies
Door Lock Switch	Inputs	Inactive/Active	Inactive
Door Unlock Switch	Inputs	Inactive/Active	Inactive
Key in Ignition	Inputs	Yes/No	Yes
Left Rear Door Ajar Sw.	Inputs	On/Off	Off
Right Rear Door Ajar Sw.	Inputs	On/Off	Off
Rear Door Lock Relay	Outputs	On/Off	Off
Rear Door Unlock	Outputs	On/Off	Off
Right Rear Window Up Relay	Outputs	Inactive/Active	Inactive
Right Rear Window Down Relay	Outputs	Inactive/Active	Inactive
Left Rear Window Up Relay	Outputs	Inactive/Active	Inactive
Left Rear Window Down Relay	Outputs	Inactive/Active	Inactive

SCAN TOOL DATA DEFINITIONS

The Passenger Door Module (PDM) scan tool data definitions are a brief description of each of the related parameters displayed within the scan tool data display(s) for the PDM.

Back Only Heat Indicator

This data parameter appears in two separate data-lists Inputs and Outputs. While monitoring the inputs for the PDM this parameter reflects the requested state for the back only indicator. When monitoring the outputs the parameter reflects the commanded state for the back only indicator.

Back Only Heat Mode

This data parameter reflects the operating state of the heated seat back only mode of operation. This mode

cardiagn.com

of operation is only available if the heated seat is active or on.

Backlighting Dimming Enabled

This data parameter indicates the status feature. Backlighting is the lighting from behind any text or characters on the PDM switches or faceplate.

Base Software P/N

This is the part number stored within the PDM of the base software set required to activate the PDM. This software set is often referred to as boot software.

Base Software Suffix

This suffix number is the stored indication of the revision level of the base software.

Battery 1 (Low Current)

The battery 1 (low current) parameter provides the voltage level on the battery 1 input. Battery 1 is the low current input provides the power for the PDM's microprocessors and the low current outputs.

Battery 2 (High Current)

The battery 2 (high current) parameter provides the voltage level on the battery 2 input. Battery 2 is the high current input provides the power for the PDM's high current outputs such as the power windows.

Calibration P/N

This is the part number stored within the PDM of the calibration set. The calibration software sets the operational ranges and option levels for each of the PDM's functions. This software set is often referred to as calibration software or calibration.

Calibration Suffix

This suffix number is the stored indication of the revision level of the calibration. This is often referred to as the CAL ID.

Dimming Enable

The dimming enable reflects the state of the dimming for the various indicators located on the PDM.

Dimming Potentiometer

The dimming potentiometer data parameter reflects the level of lighting, in percent for both the backlighting and indicators for the PDM.

Door Ajar Switch

cardiagn.com

This parameter reflects the current status of the door ajar switch input to the PDM.

Door Lock Motor

This parameter indicates the current status of the door lock motor.

Door Lock Switch

This parameter indicates the current status of the door lock switch.

Heat Indicator High

This data parameter appears in two separate data-lists inputs and outputs. While monitoring the inputs for the PDM this parameter reflects the requested state for the heat indicator low. When monitoring the outputs the parameter reflects the commanded state for the heat indicator low.

Heat Indicator Low

This data parameter appears in two separate data-lists inputs and outputs. While monitoring the inputs for the PDM this parameter reflects the requested state for the heat indicator low. When monitoring the outputs the parameter reflects the commanded state for the heat indicator low.

Heat Indicator Medium

This data parameter appears in two separate data-lists inputs and outputs. While monitoring the inputs for the PDM this parameter reflects the requested state for the heat indicator medium. When monitoring the outputs the parameter reflects the commanded state for the heat indicator medium.

Heated Seat Mode

This parameter indicates the status of the heated seat feature.

Right Front Window Status

This parameter indicates the status of the right front window.

Memory Switch

This data parameter provides the status of the memory switch.

Mirror 5 Volt Reference

This data parameter provides a status indication of the 5-volt reference circuit for the OSRV position sensors.

Mirror Fold Motor Current

cardiagn.com

This parameter provides the detected amount of current (in mA) that is required to perform the active mirror fold action.

Mirror Folding Operation

This parameter indicates the mirror fold operation currently in process.

Mirror Heater

This parameter indicates the operational state of the mirror heater.

Mirror Horizontal Position

This parameter provides OSRV mirror horizontal position in volts.

Mirror Motor

This parameter provides information regarding the state of operation the mirror is currently activating.

Mirror Select Switch

This parameter indicates the current mirror select switch position.

Mirror Switch Backlight

The mirror switch backlight data parameter reflects the level of backlighting, in percent for the mirror switch.

Mirror Switch Horizontal

This data parameter provides the current status of the OSRV horizontal position adjustment switch.

Mirror Switch Vertical

This data parameter provides the current status of the OSRV vertical position adjustment switch.

Mirror Vertical Position

This parameter provides OSRV mirror vertical position information in volts.

Program Software P/N

This is the part number stored indication of the revision level of the program software.

Program Software Suffix

This suffix number is the stored indication of the revision level of the program software.

cardiagn.com

Right Front Window Status

This parameter indicates the status of the right front window.

Right Rear Window Status

This parameter indicates the status of the right rear window.

Window Motor Current

This parameter indicates the active status of the window lockout feature.

Window Motor Output

This parameter reflects the state of the PDM output to the window motor.

Window Switch Backlight

The window switch backlight data parameter reflects the level of backlighting, in percent for the window switch.

DIAGNOSTIC TROUBLE CODE (DTC) LIST

Diagnostic Trouble Code (DTC) List

DTC	Diagnostic Procedure	Module(s)
B1023	**DTC B1023**	DDM/PDM
B1544	**DTC B1544, B1600, or B1605**	DDM/PDM
B1580	**DTC B1580, B1590, B1610, or B1620**	DDM/PDM
B1590	**DTC B1580, B1590, B1610, or B1620**	DDM/PDM
B1600	**DTC B1544, B1600, or B1605**	DDM/PDM
B1605	**DTC B1544, B1600, or B1605**	DDM/PDM
B1610	**DTC B1580, B1590, B1610, or B1620**	DDM/PDM
B1620	**DTC B1580, B1590, B1610, or B1620**	DDM/PDM
B1640	**DTC B1640 or B1645**	DDM/PDM
B1645	**DTC B1640 or B1645**	DDM/PDM
B1722	**DTC B1722**	DDM/PDM
B3808	**DTC B3808**	BCM
B3809	**DTC B3809**	BCM
B3819	**DTC B3819**	BCM
B3820	**DTC B3820**	BCM
B3821	**DTC B3821**	BCM
B3822	**DTC B3822**	BCM
B3823	**DTC B3823**	BCM
B3824	**DTC B3824**	BCM

cardiagn.com

B3825	**DTC B3825**	BCM

DTC B1023

Circuit Description

The switch that failed and generated this diagnostic trouble code (DTC) is part of the DDM or the PDM. When a switch is activated, the DDM/PDM then either actuates the appropriate component or sends a message over the serial data link to the appropriate module to actuate the appropriate component.

Conditions for Running the DTC

- System voltage is between 9.0 and 16 volts.
- Ignition switch is in the ON position.

Conditions for Setting the DTC

If the DDM or the PDM receives multiple inputs from a single switch at the same time for more then 160 milliseconds, the DDM/PDM sets the DTC. The following switches will set this DTC:

- The door lock switch
- The power window switch
- The window lockout switch
- The mirror select switch

Action Taken When the DTC Sets

The DDM/PDM ignores the continuous inputs from the switch. The DDM/PDM will not respond to the invalid inputs as a command for the component. The DDM/PDM will respond to all other valid switch inputs.

Conditions for Clearing the DTC

When the switch input status changes, the DDM/PDM clears this current DTC and stores the DTC as a history DTC. The history DTC will clear either after 50 ignition switch cycles without a repeated failure or in response to a scan tool command.

DTC B1023

Step	Action	Yes	No
Schematic Reference: Power Window Schematics or Door Lock/Indicator Schematics Connector End View Reference: Power Door Systems Connector End Views			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF.		

cardiagn.com

2	3. Observe the appropriate switch parameter in the input list using the scan tool. Does the scan tool display an inactive state?	Go to **Step 3**	Go to **Step 4**
3	1. Activate the switch in both directions. 2. Observe the switch parameter using the scan tool. Does the switch parameter change state?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 4**
4	Inspect for poor connections/terminal tension at the door module harness connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 6**	Go to **Step 5**
5	Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**. Did you complete the replacement?	Go to **Step 6**	-
6	1. Clear the DTCs using the scan tool. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

DTC B1544, B1600, OR B1605

Circuit Description

The Driver Door and Passenger Door modules supply battery positive voltage and ground on opposing mirror motor control circuits upon receipt of a mirror switch activation or a Class 2 message commanding mirror control, memory recall or mirror tilt in reverse functions.

Conditions for Running the DTC

- System voltage must be between 9.0-16.0 volts.
- The mirror motor control circuits must be active.

Conditions for Setting the DTC

- If the mirror motor control circuits are switched to battery voltage and the mirror motor control circuit is shorted to ground.
- If the mirror motor control circuits are switched to ground and the mirror motor control circuit is shorted to battery voltage.

cardiagn.com

Action Taken When the DTC Sets

The outside rearview mirror will not operate properly on all axes.

Conditions for Clearing the DTC

When the fault is no longer present, the door module changes the current DTC to a history DTC. The door module will clear the history DTC after 50 fault free ignition cycles, or in response to a scan tool command.

DTC B1544, B1600, or B1605

Step	Action	Yes	No
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Turn ON the ignition, with the engine OFF. 2. Activate the mirror switch in the up, down left and right positions. Does the mirror move properly with each activation?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn OFF the ignition. 2. Disconnect the mirror from the appropriate door module. 3. Turn ON the ignition, with the engine OFF. 4. Probe each of the mirror motor down, right and up/left control circuit pins at the door module one at a time with a test lamp that is connected to a good ground. Did the test lamp illuminate at any of the test points?	Go to **Step 7**	Go to **Step 4**
4	1. Connect a test lamp between the mirror motor down control circuit pin and a good ground. 2. Activate the mirror switch to the down position. Does the test lamp illuminate?	Go to **Step 5**	Go to **Step 8**
5	1. Connect a test lamp between the mirror motor right control circuit pin and a good ground. 2. Activate the mirror switch to the right position. Does the test lamp illuminate?	Go to **Step 6**	Go to **Step 8**
6	1. Connect a test lamp between the mirror motor up/left control circuit pin and a good ground. 2. Activate the mirror switch to the up and left positions.		

cardiagn.com

	Does the test lamp illuminate?	Go to **Step 7**	Go to **Step 8**
7	Inspect for poor connection at the harness connector of the appropriate door module. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems. Did you find and correct the conditions?	Go to **Step 10**	Go to **Step 9**
8	**IMPORTANT:** **Perform the set up procedure for the appropriate door module. Refer to Service Programming System (SPS) in Programming.** Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the replacement?	Go to **Step 10**	-
9	Replace the mirror. Refer to **Mirror Replacement - Power**. Did you complete the replacement?	Go to **Step 10**	-
10	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

DTC B1580, B1590, B1610, OR B1620

Circuit Description

The mirror horizontal and vertical position sensors are potentiometers. The Driver Door Module (DDM) and Passenger Door Module (PDM) provide these sensors with a 5 volt reference circuit and a low reference circuit. The DDM/PDM monitors the horizontal and vertical position sensor signal circuits which change values based on mirror position. These voltage values are used to determine mirror position and can be set into memory. When the DDM/PDM receives a memory recall request, the DDM/PDM will control the power mirror to the memory position based on the horizontal and vertical position sensor signal values.

Conditions for Running the DTC

Battery voltage must between 9.0-16.0 volts.

Conditions for Setting the DTC

The horizontal and/or vertical position sensor signal(s) are greater than 4.75 volts or less than 0.50 volts.

Action Taken When the DTC Sets

cardiagn.com

Memory movements on the malfunctioning axis are disabled.

Conditions for Clearing the DTC

When the fault is no longer present, the DDM/PDM changes the current DTC to a history DTC. The DDM/PDM will clear the history DTC after 50 fault free ignition cycles.

Diagnostic Aids

- If DTC B1580 is set by itself, the left horizontal position sensor signal circuit maybe open, shorted to ground or battery
- If DTC B1590 is set by itself, the left vertical position sensor signal circuit maybe open, shorted to ground or battery
- If DTC B1610 is set by itself, the right horizontal position sensor signal circuit maybe open, shorted to ground or battery
- If DTC B1620 is set by itself, the right vertical position sensor signal circuit maybe open, shorted to ground or battery.
- If DTCs B1580 and B1590 are both set, the left 5 volt reference or low reference circuit(s) maybe open, shorted to ground or battery.
- If DTCs B1610 and B1620 are both set, the right 5 volt reference or low reference circuit(s) maybe open, shorted to ground or battery.

DTC B1580, B1590, B1610, or B1620

Step	Action	Value(s)	Yes	No
1	Did you perform the Door Systems Diagnostic System Check?	-	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With the scan tool, observe the mirror horizontal and vertical position parameters in the Driver Door Module (DDM) and Passenger Door Module (PDM) data lists. 4. Operate both the left and right mirrors through the full range of movements. Does the scan tool indicate that the left and right mirror horizontal and vertical position parameters are within the specified range?	0.50-4.75 V	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	Is there a horizontal and vertical DTC set on the same mirror?	-	Go to **Step 6**	Go to **Step 4**
	1. Turn OFF the ignition.			

cardiagn.com

4	2. Disconnect the appropriate mirror. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the appropriate mirror position parameter. Does the scan tool indicate that the mirror position parameter is less than the specified value?	0.50 V	Go to **Step 5**	Go to **Step 8**
5	1. Turn OFF the ignition. 2. Connect a 3 amp fused jumper wire between the 5 volt reference circuit and the mirror position signal circuit of the appropriate mirror position sensor at the mirror harness connector. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the mirror position parameter. Does the scan tool indicate that the mirror position parameter is within the specified range?	4.75 - 5.25 V	Go to **Step 12**	Go to **Step 9**
6	1. Turn OFF the ignition. 2. Disconnect the appropriate mirror. 3. Turn ON the ignition, with the engine OFF. 4. Measure the voltage between the 5 volt reference circuit at the mirror harness connector and a good ground. Does the voltage measure within the specified range?	4.75 - 5.25 V	Go to **Step 7**	Go to **Step 10**
7	Measure the voltage between the 5 volt reference circuit and the low reference circuit at the mirror harness connector. Does the voltage measure within the specified range?	4.75 - 5.25 V	Go to **Step 12**	Go to **Step 11**
8	Test for a short to voltage on the mirror position signal circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 16**	Go to **Step 13**
	Test the mirror position signal circuit for an open, high resistance, short to ground or battery.			

cardiagn.com

9	Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 16**	Go to **Step 13**
10	Test the 5 volt reference circuit for an open, high resistance, short to ground or battery. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 16**	Go to **Step 13**
11	Test the low reference circuit for an open, high resistance or short to battery. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 16**	Go to **Step 13**
12	Inspect for poor connections at the harness connector of the power mirror. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 16**	Go to **Step 14**
13	Inspect for poor connections at the harness connector of the DDM/PDM. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 16**	Go to **Step 15**
14	Replace the power mirror. Refer to **Mirror Replacement - Power**. Did you complete the replacement?	-	Go to **Step 16**	-
15	Replace the DDM/PDM. Did you complete the replacement?	-	Go to **Step 16**	-
16	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	-	Go to **Step 2**	System OK

DTC B1640 OR B1645

Circuit Description

The driver door module (DDM) and passenger door module (PDM) supply battery voltage to the mirror heating element supply voltage circuit upon receipt of a class 2 message from the BCM indicating that the rear defrost system is active. The DDM and PDM also supply a constant ground for the mirror heating elements.

cardiagn.com

Conditions for Running the DTC

- System voltage between 9.0 and 16.0 volts
- Ignition switch is in the ON position

Conditions for Setting the DTC

When the DDM and PDM supply battery voltage to the mirror heating element supply voltage circuit and it's shorted to ground.

Action Taken When the DTC Sets

The DDM and PDM will ignore the class 2 message and stop supplying battery voltage on the shorted circuit.

Conditions for Clearing the DTC

When the short circuit is no longer present, the DDM/PDM will clear the current DTC and store the DTC as a history DTC. The history DTC will clear after 50 fault free ignition cycles or in response to a scan tool command.

DTC B1640 or B1645

Step	Action	Yes	No
Schematic Reference: Outside Mirror Schematics			
1	Did you perform the Door System Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Turn ON the ignition, with the engine OFF. 2. Activate the rear defroster switch. Does DTC B1640 or B1645 set as current in the DDM or PDM?	Go to **Step 3**	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems
3	1. Turn OFF the ignition. 2. Disconnect the appropriate heated mirror. 3. Turn ON the ignition, with the engine OFF. 4. Activate the rear defroster switch. Does DTC B1640 or B1645 set as current in the DDM or PDM?	Go to **Step 5**	Go to **Step 4**
4	Inspect for poor connections at the heated mirror. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 8**	Go to **Step 6**
	Inspect for poor connections at the harness connector		

cardiagn.com

5	of the appropriate door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 8**	Go to **Step 7**
6	Replace the heated mirror. Refer to **Mirror Replacement - Power**. Did you complete the replacement?	Go to **Step 8**	-
7	Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**. Did you complete the replacement?	Go to **Step 8**	-
8	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC. Does the DTC reset?	Go to **Step 2**	System OK

DTC B1722

Circuit Description

The driver door module (DDM) and passenger door module (PDM) switch the mirror fold motor control circuits to battery voltage and ground in response to mirror extend or retract command.

Conditions for Running the DTC

- Battery voltage must be between 9.0-16.0 volts.
- The ignition switch is in the ON position.
- A mirror extend or retract function must be active.

Conditions for Setting the DTC

When the DDM or PDM switch the mirror fold motor control circuits to battery voltage and ground and one of the mirror fold motor control circuits are shorted to ground, shorted to battery or open.

Action Taken When the DTC Sets

The DDM or PDM will stop suppling battery voltage and ground to the mirror fold motor and the folding mirrors will be inoperative.

Conditions for Clearing the DTC

When the fault is no longer present, the door module changes the current DTC to a history DTC. The door module will clear the history DTC after 50 fault free ignition cycles, or in response to a scan tool command.

cardiagn.com

DTC B1722

Step	Action	Value(s)	Yes	No
1	Did you perform the Door Systems Diagnostic System Check?	-	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Place the mirror select switch in the neutral/fold position. 4. Place the mirror direction switch in both the left/extend and right/retract positions. Does DTC B1722 set as a current DTC?	-	Go to **Step 3**	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems
3	1. Connect a test lamp to a good ground. 2. Backprobe both of the mirror fold motor control circuits one at a time with the test lamp. Does the test lamp illuminate at either test point?	-	Go to **Step 6**	Go to **Step 4**
4	1. Connect a test lamp to battery voltage. 2. Backprobe both of the mirror fold motor control circuits one at a time with the test lamp. Does the test lamp illuminate at either test point?	-	Go to **Step 6**	Go to **Step 5**
5	1. Disconnect the power mirror. 2. Test for continuity through the mirror fold motor and the mirror fold motor control circuits. Is there continuity?	-	Go to **Step 7**	Go to **Step 6**
6	Inspect for poor connections at the harness connector of the power mirror. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 10**	Go to **Step 8**
7	Inspect for poor connections at the harness connector of the appropriate door module. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 10**	Go to **Step 9**

cardiagn.com

8	Replace the appropriate power mirror. Refer to **Mirror Replacement - Power**. Did you complete the replacement?	-	Go to **Step 10**	-
9	**IMPORTANT:** **Perform the set up procedure for the driver door module. Refer to Service Programming System (SPS) in Programming.** Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the replacement?	-	Go to **Step 10**	-
10	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	-	Go to **Step 2**	System OK

DTC B3808

Circuit Description

The Body Control Module (BCM) internally grounds the door lock relay control circuit for the rear door lock relay when it receives a Class 2 message from the Driver Door Module (DDM) or Passenger Door Module (PDM). When the BCM grounds the door lock relay control circuit the rear door lock relay is energized and locks the rear doors.

Conditions for Running the DTC

- Battery voltage is between 9.0-16.0 volts.
- The DTC will set if the rear door lock function is active or inactive.

Conditions for Setting the DTC

The DTC will set if the door lock relay control circuit is shorted to ground or open for more then one second.

Action Taken When the DTC Sets

- If a short to ground is present on the door lock relay control circuit, the door lock relay will be energized and the rear door lock actuators will be held in the lock position and will not unlock.
- If an open condition is present on the door lock relay control circuit, the rear doors will unlock but not lock.

cardiagn.com

Conditions for Clearing the DTC

When the fault is no longer present, the BCM changes the current DTC to a history DTC. The BCM will clear the history DTC after 50 fault free ignition cycles.

Diagnostic Aids

- DTC B3808 could also set if the door lock relay winding is open.
- If both DTC B3808 and B3809 are set as current, the battery positive voltage circuit or the LOCKS fuse could be open. If the LOCKS fuse is open, the cause is most likely one of the following:
  - A short to ground in the relay battery positive voltage circuit.
  - A short to ground in the door lock actuator lock or unlock control circuits.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Listen for an audible click when the rear door lock relay operates. Command both the ON and OFF states. Repeat the commands as necessary.

3: Tests for voltage at the coil side of the rear door lock relay. The LOCKS fuse supplies power to the coil side of the rear door lock relay.

4: Verifies that the body control module is providing ground to the rear door lock relay.

5: Tests if ground is constantly being applied to the rear door lock relay.

DTC B3808

Step	Action	Yes	No
Schematic Reference: Door Lock/Indicator Schematics Connector End View Reference: Power Door Systems Connector End Views			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. With a scan tool, command the rear door lock relay ON and OFF. Does the rear door lock relay turn ON and OFF with each command?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Remove the rear door lock relay. 2. Probe the battery positive voltage circuit of the rear door lock relay with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to **Step 4**	Go to **Step 8**

cardiagn.com

4	1. Connect a test lamp between the door lock relay control circuit and the battery positive voltage circuit of the rear door lock relay. 2. With a scan tool, command the rear door lock ON and OFF. Does the test lamp turn ON and OFF with each command?	Go to **Step 9**	Go to **Step 5**
5	Does the test lamp remain illuminated without being commanded?	Go to **Step 7**	Go to **Step 6**
6	Test the door lock relay control circuit of the rear door lock relay for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 10**
7	Test the door lock relay control circuit of the rear door lock relay for a short to ground or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 10**
8	Test for an open or short to ground in the battery positive voltage circuit of the rear door lock relay. Refer to**Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 14**	Go to **Step 11**
9	Inspect for poor connections at the rear door lock relay. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 12**
10	Inspect for poor connections at the harness connector of the body control module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 13**
11	Repair the short to ground in the door lock actuator lock or unlock circuits. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 14**	-
12	Replace the rear door lock relay. Did you complete the replacement?	Go to **Step 14**	-
13	**IMPORTANT:** **Perform the set up procedure for the body control module.** Replace the body control module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 14**	-
	1. Use the scan tool in order to clear the DTCs.		

cardiagn.com

14	2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

DTC B3809

Circuit Description

The Body Control Module (BCM) internally grounds the door unlock relay control circuit for the rear door unlock relay when it receives a Class 2 message from the Driver Door Module (DDM) or Passenger Door Module (PDM). When the BCM grounds the door unlock relay control circuit the rear door unlock relay is energized and unlocks the rear doors.

Conditions for Running the DTC

- Battery voltage is between 9.0-16.0 volts.
- The DTC will set if the rear door unlock function is active or inactive.

Conditions for Setting the DTC

The DTC will set if the door unlock relay control circuit is shorted to ground or open for more then one second.

Action Taken When the DTC Sets

- If a short to ground is present on the door unlock relay control circuit, the door unlock relay will be energized and the rear door lock actuators will be held in the unlock position and will not lock.
- If an open condition is present on the door unlock relay control circuit, the rear doors will lock but not unlock.

Diagnostic Aids

- DTC B3809 could also set if the door unlock relay winding is open.
- If both DTC B3808 and B3809 are set as current, the battery positive voltage circuit or the LOCKS fuse could be open. If the LOCKS fuse is open, the cause is most likely one of the following:
  - A short to ground in the relay battery positive voltage circuit.
  - A short to ground in the door lock actuator lock or unlock control circuits.

Conditions for Clearing the DTC

When the fault is no longer present, the BCM changes the current DTC to a history DTC. The BCM will clear the history DTC after 50 fault free ignition cycles.

Test Description

cardiagn.com

The numbers below refer to the step numbers on the diagnostic table.

2: Listen for an audible click when the rear door unlock relay operates. Command both the ON and OFF states. Repeat the commands as necessary.

3: Tests for voltage at the coil side of the rear door unlock relay. The LOCKS fuse supplies power to the coil side of the rear door unlock relay.

4: Verifies that the body control module is providing ground to the rear door unlock relay.

5: Tests if ground is constantly being applied to the rear door unlock relay.

DTC B3809

Step	Action	Yes	No
Schematic Reference: Door Lock/Indicator Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. With a scan tool, command the rear door unlock relay ON and OFF. Does the rear door unlock relay turn ON and OFF with each command?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Remove the rear door unlock relay. 2. Probe the battery positive voltage circuit of the rear door unlock relay with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to **Step 4**	Go to **Step 8**
4	1. Connect a test lamp between the door unlock relay control circuit and the battery positive voltage circuit of the rear door unlock relay. 2. With a scan tool, command the rear door unlock relay ON and OFF. Does the test lamp turn ON and OFF with each command?	Go to **Step 9**	Go to **Step 5**
5	Does the test lamp remain illuminated without being commanded?	Go to **Step 7**	Go to **Step 6**
6	Test the door unlock relay control circuit of the rear door unlock relay for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 10**
	Test the door unlock relay control circuit of the rear door		

cardiagn.com

7	unlock relay for a short to ground or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 10**
8	Test for an open or short to ground in the battery positive voltage circuit of the rear door unlock relay. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 14**	Go to **Step 11**
9	Inspect for poor connections at the rear door unlock relay. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 12**
10	Inspect for poor connections at the harness connector of the body control module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 13**
11	Repair the short to ground in the door lock actuator lock or unlock control circuits. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 14**	-
12	Replace the rear door unlock relay. Did you complete the replacement?	Go to **Step 14**	-
13	**IMPORTANT:** **Perform the set up procedure for the body control module.** Replace the body control module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 14**	-
14	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

DTC B3819

Circuit Description

The Body Control Module (BCM) grounds the control side of the left rear power window up relay upon receiving a class 2 message from the Driver Door Module (DDM).

Conditions for Running the DTC

cardiagn.com

- Battery voltage is between 9.0 and 16 volts.
- The BCM has received a class 2 message from the DDM and has grounded the left rear power window relay control circuit.

Conditions for Setting the DTC

- When the BCM has grounded the left rear power window up relay control circuit and the control circuit is shorted to battery positive voltage.
- The above condition is met for 250 milliseconds.

Action Taken When the DTC Sets

The left rear power window will be inoperative from both the driver and left rear power window switches.

Conditions for Clearing the DTC

When the fault is no longer present, the BCM changes the current DTC to a history DTC. The BCM will clear the history DTC after 50 fault free ignition cycles.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Listen for an audible click when the left rear power window relay operates. Command both the ON and OFF states. Repeat the commands as necessary.

3: Tests for voltage at the coil side of the left rear power window up relay.

4: Verifies that the BCM is providing ground to the left rear power window up relay.

5: Tests if ground is constantly being applied to the left rear power window up relay.

DTC B3819

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, command the left rear power window up relay ON and OFF. Does the left rear power window up relay turn ON and OFF with each command?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
	1. Turn OFF the ignition.		

cardiagn.com

3	2. Disconnect the left rear power window switch. 3. Turn ON the ignition, with the engine OFF. 4. Probe the battery positive voltage circuit of the left rear power window switch with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to **Step 4**	Go to **Step 10**
4	1. Connect a test lamp between the control circuit of the left rear power window up relay and the battery positive voltage circuit of the left rear power window switch. 2. With a scan tool, command the left rear power window up relay ON and OFF. Does the test lamp turn ON and OFF with each command?	Go to **Step 8**	Go to **Step 5**
5	Does the test lamp remain illuminated with each command?	Go to **Step 7**	Go to **Step 6**
6	Test the control circuit of the left rear power window up relay for a short to voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
7	Test the control circuit of the left rear power window up relay for a short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
8	Inspect for poor connections at the left rear power window switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 11**
9	Inspect for poor connections at the harness connector of the Body Control Module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 12**
10	Repair the open or short to ground in the battery positive voltage circuit of the left rear power window switch. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 13**	-
11	Replace the left rear power window switch. Did you complete the replacement?	Go to **Step 13**	-
	IMPORTANT: **Perform the set up procedure for the Body Control**		

cardiagn.com

	Module.		
12	Replace the Body Control Module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 13**	-
13	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

DTC B3820

Circuit Description

The Body Control Module (BCM) grounds the control side of the left rear power window down relay upon receiving a class 2 message from the Driver Door Module (DDM).

Conditions for Running the DTC

- Battery voltage is between 9.0 and 16 volts.
- The BCM has received a class 2 message from the DDM and has grounded the left rear power window down relay control circuit.

Conditions for Setting the DTC

- When the BCM has grounded the left rear power window down relay control circuit and the control circuit is shorted to battery positive voltage.
- The above condition is met for 250 milliseconds.

Action Taken When the DTC Sets

The left rear power window will be inoperative from both the driver and left rear power window switches.

Conditions for Clearing the DTC

When the fault is no longer present, the BCM changes the current DTC to a history DTC. The BCM will clear the history DTC after 50 fault free ignition cycles.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Listen for an audible click when the left rear power window relay operates. Command both the ON and OFF states. Repeat the commands as necessary.

cardiagn.com

3: Tests for voltage at the coil side of the left rear power window down relay.

4: Verifies that the BCM is providing ground to the left rear power window down relay.

5: Tests if ground is constantly being applied to the left rear power window down relay.

DTC B3820

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, command the left rear power window down relay ON and OFF. Does the left rear power window up relay turn ON and OFF with each command?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn OFF the ignition. 2. Disconnect the left rear power window switch. 3. Turn ON the ignition, with the engine OFF. 4. Probe the battery positive voltage circuit of the left rear power window switch with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to **Step 4**	Go to **Step 10**
4	1. Connect a test lamp between the control circuit of the left rear power window down relay and the battery positive voltage circuit of the left rear power window switch. 2. With a scan tool, command the left rear power window down relay ON and OFF. Does the test lamp turn ON and OFF with each command?	Go to **Step 8**	Go to **Step 5**
5	Does the test lamp remain illuminated with each command?	Go to **Step 7**	Go to **Step 6**
6	Test the control circuit of the left rear power window down relay for a short to voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
	Test the control circuit of the left rear power window		

cardiagn.com

7	down relay for a short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
8	Inspect for poor connections at the left rear power window switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 11**
9	Inspect for poor connections at the harness connector of the Body Control Module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 12**
10	Repair the open or short to ground in the battery positive voltage circuit of the left rear power window switch. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 13**	-
11	Replace the left rear power window switch. Did you complete the replacement?	Go to **Step 13**	-
12	**IMPORTANT:** **Perform the set up procedure for the Body Control Module.** Replace the Body Control Module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 13**	-
13	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

DTC B3821

Circuit Description

Battery positive voltage is supplied to the left rear power window switch and the up and down relays through the window lockout signal circuit. If the window lockout function is disabled, the BCM supplies battery positive voltage to the switch and relays and the left rear window operates normally. If the window lockout function is enabled, the BCM will not supply battery positive voltage to the switch and relays and the left rear window will be inoperative unless it is operated from the driver power window switch.

Conditions for Running the DTC

cardiagn.com

- Battery voltage is between 9.0 and 16.0 volts.
- The window lockout function is disabled

Conditions for Setting the DTC

- The window lockout function is disabled and the window lockout signal circuit is shorted to ground.
- The above condition must be met for 250 milliseconds.

Action Taken When the DTC Sets

The left rear power window will be inoperative from both the driver and passenger power window switches.

Conditions for Clearing the DTC

When the fault is no longer present, the BCM changes the current DTC to a history DTC. The BCM will clear the history DTC after 50 fault free ignition cycles.

DTC B3821

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Disable the window lockout function. 4. With a scan tool, command the left rear power window UP and DOWN. Does the left rear power window operate UP and DOWN with each command?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn OFF the ignition. 2. Disconnect the left rear power window switch. 3. Turn ON the ignition, with the engine OFF. 4. Ensure the window lockout function is disabled. 5. Probe the window lockout signal circuit with a test lamp connected to a good ground. Does the test lamp illuminate?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 4**
4	Test the window lockout signal circuit for a short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.		

cardiagn.com

	Did you find and correct the condition?	Go to **Step 7**	Go to **Step 5**
5	Inspect for poor connections at the harness connector of the Body Control Module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	Go to **Step 6**
6	**IMPORTANT:** **Perform the set up procedure for the Body Control Module.** Replace the Body Control Module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 7**	-
7	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

DTC B3822

Circuit Description

The Body Control Module (BCM) grounds the control side of the right rear power window up relay upon receiving a class 2 message from the Driver Door Module (DDM).

Conditions for Running the DTC

- Battery voltage is between 9.0 and 16 volts.
- The BCM has received a class 2 message from the DDM and has grounded the right rear power window relay control circuit.

Conditions for Setting the DTC

- When the BCM has grounded the right rear power window up relay control circuit and the control circuit is shorted to battery positive voltage.
- The above condition is met for 250 milliseconds.

Action Taken When the DTC Sets

The right rear power window will be inoperative from both the driver and right rear power window switches.

Conditions for Clearing the DTC

cardiagn.com

When the fault is no longer present, the BCM changes the current DTC to a history DTC. The BCM will clear the history DTC after 50 fault free ignition cycles.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Listen for an audible click when the right rear power window relay operates. Command both the ON and OFF states. Repeat the commands as necessary.

3: Tests for voltage at the coil side of the right rear power window up relay.

4: Verifies that the BCM is providing ground to the right rear power window up relay.

5: Tests if ground is constantly being applied to the right rear power window up relay.

DTC B3822

Step	Action	Yes	No
Schematic Reference: Power Window Schematics Connector End View Reference: Power Door Systems Connector End Views			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, command the right rear power window up relay ON and OFF. Does the right rear power window up relay turn ON and OFF with each command?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn OFF the ignition. 2. Disconnect the right rear power window switch. 3. Turn ON the ignition, with the engine OFF. 4. Probe the battery positive voltage circuit of the right rear power window switch with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to **Step 4**	Go to **Step 10**
4	1. Connect a test lamp between the control circuit of the right rear power window up relay and the battery positive voltage circuit of the right rear power window switch. 2. With a scan tool, command the right rear power window up relay ON and OFF. Does the test lamp turn ON and OFF with each		

cardiagn.com

	command?	Go to **Step 8**	Go to **Step 5**
5	Does the test lamp remain illuminated with each command?	Go to **Step 7**	Go to **Step 6**
6	Test the control circuit of the right rear power window up relay for a short to voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
7	Test the control circuit of the right rear power window up relay for a short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
8	Inspect for poor connections at the right rear power window switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 11**
9	Inspect for poor connections at the harness connector of the Body Control Module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 12**
10	Repair the battery positive voltage circuit of the right rear power window switch. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 13**	-
11	Replace the right rear power window switch. Did you complete the replacement?	Go to **Step 13**	-
12	**IMPORTANT:** **Perform the set up procedure for the Body Control Module.** Replace the Body Control Module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 13**	-
13	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

DTC B3823

Circuit Description

cardiagn.com

The Body Control Module (BCM) grounds the control side of the right rear power window down relay upon receiving a class 2 message from the Driver Door Module (DDM).

Conditions for Running the DTC

- Battery voltage is between 9.0 and 16 volts.
- The BCM has received a class 2 message from the DDM and has grounded the right rear power window down relay control circuit.

Conditions for Setting the DTC

- When the BCM has grounded the right rear power window down relay control circuit and the control circuit is shorted to battery positive voltage.
- The above condition is met for 250 milliseconds.

Action Taken When the DTC Sets

The right rear power window will be inoperative from both the driver and right rear power window switches.

Conditions for Clearing the DTC

When the fault is no longer present, the BCM changes the current DTC to a history DTC. The BCM will clear the history DTC after 50 fault free ignition cycles.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Listen for an audible click when the right rear power window relay operates. Command both the ON and OFF states. Repeat the commands as necessary.

3: Tests for voltage at the coil side of the right rear power window down relay.

4: Verifies that the BCM is providing ground to the right rear power window down relay.

5: Tests if ground is constantly being applied to the right rear power window down relay.

DTC B3823

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, command the right rear power window down relay ON and OFF.	Go to **Testing for Intermittent**	

cardiagn.com

	Does the right rear power window down relay turn ON and OFF with each command?	**Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn OFF the ignition. 2. Disconnect the right rear power window switch. 3. Turn ON the ignition, with the engine OFF. 4. Probe the battery positive voltage circuit of the right rear power window switch with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to **Step 4**	Go to **Step 10**
4	1. Connect a test lamp between the control circuit of the right rear power window down relay and the battery positive voltage circuit of the right rear power window switch. 2. With a scan tool, command the right rear power window down relay ON and OFF. Does the test lamp turn ON and OFF with each command?	Go to **Step 8**	Go to **Step 5**
5	Does the test lamp remain illuminated with each command?	Go to **Step 7**	Go to **Step 6**
6	Test the control circuit of the right rear power window down relay for a short to voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
7	Test the control circuit of the right rear power window down relay for a short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
8	Inspect for poor connections at the right rear power window switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 11**
9	Inspect for poor connections at the harness connector of the Body Control Module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 12**
10	Repair the battery positive voltage circuit of the right rear power window switch. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 13**	-

cardiagn.com

11	Replace the right rear power window switch. Did you complete the replacement?	Go to **Step 13**	-
12	**IMPORTANT:** **Perform the set up procedure for the Body Control Module.** Replace the Body Control Module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 13**	-
13	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

DTC B3824

Circuit Description

Battery positive voltage is supplied to the right rear power window switch and the up and down relays through the window lockout signal circuit. If the window lockout function is disabled, the BCM supplies battery positive voltage to the switch and relays and the right window operates normally. If the window lockout function is enabled, the BCM will not supply battery positive voltage to the switch and relays and the right rear window will be inoperative unless it is operated from the driver power window switch.

Conditions for Running the DTC

- Battery voltage is between 9.0 and 16.0 volts
- The window lockout function is disabled

Conditions for Setting the DTC

- The window lockout function is disabled and the window lockout signal circuit is shorted to ground.
- The above condition must be met for 250 milliseconds.

Action Taken When the DTC Sets

The right rear power window will be inoperative from both the driver and passenger power window switches.

Conditions for Clearing the DTC

When the fault is no longer present, the BCM changes the current DTC to a history DTC. The BCM will clear the history DTC after 50 fault free ignition cycles.

DTC B3824

cardiagn.com

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Disable the window lockout function. 4. With a scan tool, command the right rear power window UP and DOWN. Does the right rear power window operate UP and DOWN with each command?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn OFF the ignition. 2. Disconnect the right rear power window switch. 3. Turn ON the ignition, with the engine OFF. 4. Ensure the window lockout function is disabled. 5. Probe the window lockout signal circuit with a test lamp connected to a good ground. Does the test lamp illuminate?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 4**
4	Test the window lockout signal circuit for a short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	Go to **Step 5**
5	Inspect for poor connections at the harness connector of the Body Control Module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	Go to **Step 6**
6	**IMPORTANT:** **Perform the set up procedure for the Body Control Module.** Replace the Body Control Module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 7**	-
7	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.		

cardiagn.com

	Does the DTC reset?	Go to **Step 2**	System OK

DTC B3825

Circuit Description

The body control module (BCM) internally grounds the liftgate lock relay control circuit for the liftgate lock relay when it receives a Class 2 message from the driver door module (DDM), passenger door module (PDM), or when a liftgate lock function is activated. When the BCM grounds the liftgate lock relay control circuit the liftgate lock relay is energized and locks the liftgate.

Conditions for Running the DTC

- Battery voltage is between 9.0-16.0 volts.
- The DTC will set if the liftgate lock function is active or inactive.

Conditions for Setting the DTC

The DTC will set if the liftgate lock relay control circuit is shorted to ground or open for more then one second.

Action Taken When the DTC Sets

- If a short to ground is present on the liftgate lock relay control circuit, the liftgate lock relay will be energized and the liftgate lock actuator will be held in the lock position and will not unlock.
- If an open condition is present on the liftgate lock relay control circuit, the liftgate will unlock but not lock.
- The BCM will send a Class 2 message to the DIC indicating that a fault has been detected and the DIC will display REPLACE LIFTGATE FUSE.

Conditions for Clearing the DTC

When the fault is no longer present, the BCM changes the current DTC to a history DTC. The BCM will clear the history DTC after 50 fault free ignition cycles.

Diagnostic Aids

DTC B3825 will set as current if any of the following conditions are present:

- An open ECC fuse
- An open or short to ground in the liftgate lock relay battery positive voltage circuit
- A faulty liftgate lock relay
- An open or short to ground in the liftgate lock relay control circuit
- A short to ground in the liftgate lock actuator lock control circuit will open the ECC with a lock command
- A faulty BCM

cardiagn.com

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Command both the Lock and Unlock states. Repeat the commands as necessary.

3: Tests for voltage at the coil side of the liftgate lock relay. The ECC fuse supplies power to the coil side of the liftgate lock relay.

4: Verifies that the body control module is providing ground to the liftgate lock relay.

5: Tests if ground is constantly being applied to the liftgate lock relay.

DTC B3825

Step	Action	Yes	No
Schematic Reference: Door Lock/Indicator Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Install a scan tool. 2. With a scan tool, command the rear doors to Lock and Unlock. Does the liftgate Lock and Unlock with each command?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Remove the liftgate lock relay. 2. Probe the battery positive voltage circuit of the liftgate lock relay with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to **Step 4**	Go to **Step 8**
4	1. Connect a test lamp between the liftgate lock relay control circuit and the battery positive voltage circuit of the liftgate lock relay. 2. With a scan tool, command the rear doors to Lock and Unlock. Does the test lamp turn ON and OFF with each command?	Go to **Step 9**	Go to **Step 5**
5	Does the test lamp remain illuminated without being commanded?	Go to **Step 7**	Go to **Step 6**
6	Test the liftgate lock relay control circuit of the liftgate lock relay for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 10**
	Test the liftgate lock relay control circuit of the liftgate		

cardiagn.com

7	lock relay for a short to ground or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 10**
8	Test for an open or short to ground in the battery positive voltage circuit of the liftgate lock relay. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 14**	Go to **Step 11**
9	Inspect for poor connections at the liftgate lock relay. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 12**
10	Inspect for poor connections at the harness connector of the body control module (BCM). Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 14**	Go to **Step 13**
11	Repair the short to ground in the liftgate lock actuator lock control circuit. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 14**	-
12	Replace the liftgate lock relay. Did you complete the replacement?	Go to **Step 14**	-
13	**IMPORTANT:** **Perform the set up procedure for the BCM.** Replace the BCM. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 14**	-
14	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to **Step 2**	System OK

SYMPTOMS - DOORS

IMPORTANT: The following steps must be completed before using the symptom tables.

1. Perform the **Diagnostic System Check - Door Systems** before using the Symptom Tables in order to verify that all of the following are true:
   - There are no DTCs set.
   - The control module(s) can communicate via the serial data link.
2. Review the system operation in order to familiarize yourself with the system functions. Refer to the

cardiagn.com

following system descriptions:

- **Power Windows Description and Operation**
- **Power Door Locks Description and Operation**
- **Door Ajar Indicator Description and Operation**
- **Outside Mirror Description and Operation (Power Mirrors)** and **Outside Mirror Description and Operation (Heated Mirrors)**

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the power door lock, power window and power mirror systems. Refer to **Checking Aftermarket Accessories** in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **Power Windows Inoperative - Express Down Function**
- **Power Windows Inoperative - Lockout Function**
- **Power Window Inoperative - Driver Door**
- **Power Window Inoperative - Passenger Door (Front Door)** or **Power Window Inoperative - Passenger Door (Rear Door(s))**
- **Door Ajar Indicator Malfunction**
- **Power Door Locks Inoperative (Front Door(s))** or **Power Door Locks Inoperative (Rear Door(s))**
- **Power Mirrors Inoperative**
- **Power Mirrors - Folding Inoperative**
- **Power Mirrors - Memory Functions Inoperative**
- **Mirrors - Outside Automatic Day-Night Feature Inoperative**
- **Heated Mirrors Inoperative**

POWER WINDOWS INOPERATIVE - EXPRESS DOWN FUNCTION

Power Windows Inoperative - Express Down Function

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
	Did you perform the Door Systems Diagnostic System		Go to **Diagnostic**

cardiagn.com

1	Check?	Go to **Step 2**	**System Check - Door Systems**
2	Activate the power window switch to the express down position and release the power window switch. Does the power window continue to travel downward after the power window switch is released?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Monitor the appropriate window status data parameter in the driver door input list. 3. Activate the appropriate power window switch to the express down position. Does the window status data parameter change to Express Down?	Go to **Step 4**	Go to **Step 6**
4	Is the express down function inoperative on the passenger front power window?	Go to **Step 5**	Go to **Step 6**
5	Inspect for poor connections at the passenger door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the driver door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
7	**IMPORTANT:** **Perform the set up procedure for the passenger door module. Refer to Service Programming System (SPS) in Programming.** Replace the passenger door module. Refer to **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the repair?	Go to **Step 9**	-
8	**IMPORTANT:** **Perform the set up procedure for the driver door module. Refer to Service Programming System (SPS) in Programming.** Replace the driver door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver**.Did you complete the repair?	Go to **Step 9**	-
9	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

cardiagn.com

POWER WINDOWS INOPERATIVE - LOCKOUT FUNCTION

Power Windows Inoperative - Lockout Function

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Disable the window lockout function. 2. Operate the passenger power windows from the passenger door power window switches. Do the passenger power windows operate normally?	Go to **Step 3**	Go to **Power Window Inoperative - Passenger Door (Front Door)** or **Power Window Inoperative - Passenger Door (Rear Door(s))**
3	1. Enable the window lockout function. 2. Operate the passenger power windows from the passenger door power window switches. Do the passenger power windows operate up and down?	Go to **Step 4**	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems
4	1. Install a scan tool. 2. Monitor the window lockout data parameter in the driver door module input list. 3. Place the window lockout switch in both the ON and OFF positions. Does the window lockout data parameter change accordingly?	Go to **Step 5**	Go to **Step 10**
5	Does the window lockout function for the front passenger power window operate properly?	Go to **Step 6**	Go to **Step 9**
6	1. Disable the window lockout function. 2. Disconnect the appropriate rear window switch. 3. Connect a test lamp to a good ground. 4. Probe the rear window lockout signal circuit at the rear window switch harness connector. Does the test lamp illuminate?	Go to **Step 7**	Go to **Step 11**
7	Test for a short to battery positive voltage on the rear window lockout signal circuit. Refer to **Circuit**		

cardiagn.com

	Testing and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 8**
8	Inspect for poor connections at the body control module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 12**
9	Inspect for poor connections at the passenger door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
10	Inspect for poor connections at the driver door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 14**
11	Inspect for poor connections at the rear power window switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 15**
12	**IMPORTANT:** **Perform the set up procedure for the body control module. Refer to Body Control Module (BCM) Programming/RPO Configuration in Body Control System.** Replace the body control module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	Go to **Step 16**	-
13	**IMPORTANT:** **Perform the set up procedure for the passenger door module. Refer to Service Programming System (SPS) in Programming.** Replace the passenger door module. Refer to **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the repair?	Go to **Step 16**	-
14	**IMPORTANT:** **Perform the set up procedure for the driver door module. Refer to Service Programming System (SPS) in Programming.** Replace the driver door module. Refer to **Switch Replacement - Door Lock and Side Window -**		

cardiagn.com

	Driver.Did you complete the repair?	Go to **Step 16**	-
15	Replace the rear power window switch. Refer to **Power Window Switch Replacement - Rear Door**. Did you complete the repair?	Go to **Step 16**	-
16	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

POWER WINDOW INOPERATIVE - DRIVER DOOR

Power Window Inoperative - Driver Door

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	Operate the driver power window in the UP and DOWN directions. Does the driver power window operate properly?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Monitor the driver window status data parameter in the driver door inputs list. Does the driver window status data parameter display an active state?	Go to **Step 11**	Go to **Step 4**
4	1. Monitor the driver window status data parameter in the driver door module inputs list. 2. Activate the driver power window switch in the up and down positions. Does the driver window status data parameter change accordingly?	Go to **Step 5**	Go to **Step 11**
5	1. Connect a test lamp to a good ground. 2. Backprobe the battery positive voltage circuit at connector C1 cavity 2. Does the test lamp illuminate?	Go to **Step 6**	Go to **Step 13**
	1. Disconnect the driver power window motor. 2. Connect a test lamp to a good ground. 3. Probe the power window motor up control circuit at the power window motor harness		

cardiagn.com

6	connector. 4. Activate the power window switch to the UP position. Does the test illuminate?	Go to **Step 7**	Go to **Step 9**
7	1. With the test lamp still connected to a good ground, probe the power window motor down control circuit. 2. Activate the power window switch to the DOWN position. Does the test lamp illuminate?	Go to **Step 8**	Go to **Step 10**
8	1. Connect a test lamp between the power window motor up and down control circuits. 2. Activate the power window switch to the UP and DOWN positions. Does the test lamp illuminate in both positions?	Go to **Step 12**	Go to **Step 11**
9	Test for an open or short to ground in the power window motor up control circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 11**
10	Test for an open or short to ground in the power window motor down control circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 11**
11	Inspect for poor connections at the driver door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 14**
12	Inspect for poor connections at the driver power window motor. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 15**
13	Repair the open or short to ground in the battery positive voltage circuit. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 16**	-
14	**IMPORTANT:** **Perform the set up procedure for the driver door module. Refer to Service Programming System (SPS) in Programming.**		

cardiagn.com

	Replace the driver door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver**.Did you complete the repair?	Go to **Step 16**	-
15	Replace the driver power window motor. Refer to **Window Regulator Motor Replacement - Front Door**. Did you complete the repair?	Go to **Step 16**	-
16	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER WINDOW INOPERATIVE - PASSENGER DOOR (FRONT DOOR)

Power Window Inoperative - Passenger Door (Front Door)

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Turn ON the ignition, with the engine OFF. 2. Disable the window lockout function. 3. Operate the passenger front power window in the UP and DOWN directions from the passenger switch. Does the passenger front power window operate properly?	Go to **Step 3**	Go to **Step 4**
3	Operate the passenger front power window in the UP and DOWN directions from the master switch. Does the passenger front power window operate properly from the master switch?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 5**
4	1. Install a scan tool. 2. Monitor the window lockout data parameter in the driver door module inputs list. 3. Activate the window lockout switch to both the On and OFF positions. Does the window lockout data parameter change state appropriately?	Go to **Step 5**	Go to **Step 16**
5	Monitor the passenger front window status data parameter in both the driver and passenger door module input lists. Do either passenger front window status data		

cardiagn.com

	parameters display an active state without a window switch activation?	Go to **Step 6**	Go to **Step 7**
6	Is the active switch displayed in the driver door module input list?	Go to **Step 16**	Go to **Step 15**
7	1. Monitor the passenger front window status in the passenger door module inputs list. 2. Activate the passenger power switch on the passenger door module in the up and down positions. Does the window status data parameter change accordingly?	Go to **Step 8**	Go to **Step 15**
8	1. Monitor the passenger front window status in the driver door module inputs list. 2. Activate the passenger front power window switch on the driver door module in the up and down positions. Does the window status data parameter change accordingly?	Go to **Step 9**	Go to **Step 16**
9	1. Connect a test lamp to a good ground. 2. Backprobe the battery positive voltage circuit in connector C1 cavity D at the passenger door module. Does the test lamp illuminate?	Go to **Step 10**	Go to **Step 18**
10	1. Disconnect the passenger front power window motor. 2. Connect a test lamp to a good ground. 3. Probe the power window motor up control circuit at the power window motor harness connector. 4. Activate the power window switch to the UP position. Does the test illuminate?	Go to **Step 11**	Go to **Step 13**
11	1. With the test lamp still connected to a good ground, probe the power window motor down control circuit. 2. Activate the power window switch to the DOWN position. Does the test lamp illuminate?	Go to **Step 12**	Go to **Step 14**

cardiagn.com

12	1. Connect a test lamp between the power window motor up and down control circuits. 2. Activate the power window switch to the UP and DOWN positions. Does the test lamp illuminate in both positions?	Go to **Step 17**	Go to **Step 15**
13	Test for an open or short to ground in the power window motor up control circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 15**
14	Test for an open or short to ground in the power window motor down control circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 15**
15	Inspect for poor connections at the passenger door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 19**
16	Inspect for poor connections at the driver door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 20**
17	Inspect for poor connections at the passenger front power window motor. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 21**
18	Repair the open or short to ground in the battery positive voltage circuit. Refer to **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 22**	-
19	**IMPORTANT:** **Perform the set up procedure for the passenger door module. Refer to Service Programming System (SPS) in Programming.** Replace the passenger door module. Refer to **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the repair?	Go to **Step 22**	-
20	**IMPORTANT:** **Perform the set up procedure for the driver door module. Refer to Service Programming System (SPS) in Programming.**		

cardiagn.com

	Replace the driver door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver**.Did you complete the repair?	Go to **Step 22**	-
21	Replace the passenger front power window motor. Refer to **Window Regulator Motor Replacement - Front Door**. Did you complete the repair?	Go to **Step 22**	-
22	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER WINDOW INOPERATIVE - PASSENGER DOOR (REAR DOOR(S))

Power Window Inoperative - Passenger Door (Rear Door(s))

Step	Action	Yes	No
Schematic Reference: Power Window Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Disable the window lockout function. 2. Operate the passenger rear power windows in the UP and DOWN directions from the passenger power window switches. Do the passenger rear power windows operate properly?	Go to **Step 3**	Go to **Step 4**
3	Operate the passenger rear power windows in the UP and DOWN directions from the master switches. Do the passenger rear power windows operate properly from the master switches?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 6**
4	Are both rear power windows inoperative?	Go to **Step 5**	Go to **Step 9**
5	1. Install a scan tool. 2. Monitor the window lockout data parameter in the driver door module input list. 3. Place the window lockout switch in both the ON and OFF positions. Does the window lockout data parameter change accordingly?	Go to **Step 23**	Go to **Step 24**
	1. Install a scan tool. 2. Monitor the rear window status data parameters in the driver door module inputs list.		

cardiagn.com

6	Do either of the rear window status data parameters display an active state without a rear window switch activation?	Go to **Step 24**	Go to **Step 7**
7	1. Install a scan tool. 2. Monitor the rear window status data parameters in the driver door module inputs list. 3. Activate the passenger rear power window switches on the master switch in the up and down positions. Do the rear window status data parameters change accordingly?	Go to **Step 8**	Go to **Step 24**
8	1. With a scan tool, monitor the passenger rear window status data parameters in the body control module data list. 2. Activate the passenger rear power window switches on the master switch in the up and down positions. Do the rear window status data parameters change accordingly?	Go to **Step 16**	Go to **Step 23**
9	1. Disable the window lockout function. 2. Disconnect the inoperative rear window switch. 3. Connect a test lamp to a good ground. 4. Probe the window lockout signal circuit at the rear window switch harness connector. Does the test lamp illuminate?	Go to **Step 10**	Go to **Step 18**
10	With a test lamp connected to a good ground, probe the battery positive voltage circuit at the rear power window switch harness connector. Does the test lamp illuminate?	Go to **Step 11**	Go to **Step 27**
11	1. Connect a test lamp to battery positive voltage. 2. Probe the ground circuit at the rear power window switch harness connector. Does the test lamp illuminate?	Go to **Step 13**	Go to **Step 28**
12	Probe the power window up and down signal circuits one at a time, with a test lamp that is connected to the battery positive voltage. Does the test lamp illuminate at either signal circuit?	Go to **Step 19**	Go to **Step 13**
	1. Disconnect the appropriate rear power window		

cardiagn.com

13	motor. 2. Connect the rear power window switch. 3. Connect a test lamp to a good ground. 4. Probe the power window motor up control circuit at the power window motor harness connector. 5. Activate the power window switch to the UP position. Does the test illuminate?	Go to **Step 14**	Go to **Step 21**
14	1. With the test lamp still connected to a good ground, probe the power window motor down control circuit. 2. Activate the power window switch to the DOWN position. Does the test lamp illuminate?	Go to **Step 15**	Go to **Step 22**
15	1. Connect a test lamp between the power window motor up and down control circuits. 2. Activate the power window switch to the UP and DOWN positions. Does the test lamp illuminate in both positions?	Go to **Step 26**	Go to **Step 25**
16	1. Disconnect the appropriate rear power window switch. 2. With a test lamp connected to battery positive voltage, probe the power window up signal circuit at the rear window switch harness connector. 3. Activate the appropriate rear window switch on the master switch to the UP position. Does the test lamp illuminate?	Go to **Step 17**	Go to **Step 19**
17	1. With a test lamp connected to battery positive voltage, probe the power window down signal circuit at the rear window switch harness connector. 2. Activate the appropriate rear window switch on the master switch to the DOWN position. Does the test lamp illuminate?	Go to **Step 25**	Go to **Step 20**
	Test for an open in the window lockout signal circuit. Refer to **Circuit Testing** and **Wiring Repairs** in		

cardiagn.com

18	Wiring Systems. Did you find and correct the condition?	Go to **Step 33**	Go to **Step 23**
19	Test for an open or short to ground in the power window up or down signal circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 33**	Go to **Step 23**
20	Test for an open or short to ground in the power window up or down signal circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 33**	Go to **Step 23**
21	Test for an open or short to ground in the power window motor up control circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 33**	Go to **Step 25**
22	Test for an open or short to ground in the power window motor down control circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 33**	Go to **Step 25**
23	Inspect for poor connections at the body control module (BCM). Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 33**	Go to **Step 29**
24	Inspect for poor connections at the driver door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 33**	Go to **Step 30**
25	Inspect for poor connections at the passenger rear power window switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 33**	Go to **Step 31**
26	Inspect for poor connections at the passenger rear power window motor. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 33**	Go to **Step 32**
27	Repair the open or short to ground in the battery positive voltage circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 33**	-
28	Repair the open in the rear power window switch ground circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you complete the repair?	Go to **Step 33**	-

cardiagn.com

29	**IMPORTANT:** **Perform the set up procedure for the BCM. Refer to Body Control Module (BCM) Programming/RPO Configuration in Body Control System.** Replace the BCM. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the repair?	Go to **Step 33**	-
30	**IMPORTANT:** **Perform the set up procedure for the driver door module. Refer to Service Programming System (SPS) in Programming.** Replace the driver door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver**.Did you complete the repair?	Go to **Step 33**	-
31	Replace the passenger rear power window switch. Refer to **Power Window Switch Replacement - Rear Door**. Did you complete the repair?	Go to **Step 33**	-
32	Replace the passenger rear power window motor. Refer to **Window Regulator Motor Replacement - Rear Door**. Did you complete the repair?	Go to **Step 33**	-
33	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

DOOR AJAR INDICATOR MALFUNCTION

Door Ajar Indicator Malfunction

Step	Action	Yes	No
Schematic Reference: Door Lock/Indicator Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	Open and close the driver and passenger doors one at a time while monitoring the DIC display. Do the door ajar indicators operate properly?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	Do the courtesy lamps operate properly with the opening and closing of each of the doors?	Go to **Step 4**	Go to **Courtesy Lamps Inoperative** in Lighting Systems
	IMPORTANT:		

cardiagn.com

4	**Perform the setup procedure for the instrument panel cluster.** Replace the instrument panel cluster. Refer to **Instrument Panel Cluster (IPC) Replacement** in Instrument Panel, Gages and Console.Did you complete the replacement?	Go to **Step 5**	-
5	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER DOOR LOCKS INOPERATIVE (FRONT DOOR(S))

Power Door Locks Inoperative (Front Door(s))

Step	Action	Yes	No
Schematic Reference: Door Lock/Indicator Schematics			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	Activate the door lock switches to the lock and unlock positions. Do the driver and front passenger doors lock and unlock?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	Do the door lock switches lock and unlock at least one of the front door lock actuators?	Go to **Step 4**	Go to **Step 9**
4	1. Disconnect the inoperative door lock actuator. 2. With a test lamp connected to a good ground, probe the door lock actuator lock circuit at the door lock actuator harness connector. 3. Activate a door lock switch to lock position. Does the test lamp illuminate?	Go to **Step 5**	Go to **Step 7**
5	1. With a test lamp connected to a good ground, probe the door lock actuator unlock circuit at the door lock actuator harness connector. 2. Activate a door lock switch to unlock position. Does the test lamp illuminate?	Go to **Step 6**	Go to **Step 8**
6	1. Connect a test lamp between the door lock actuator lock and unlock circuits at the door lock actuator harness connector. 2. Activate a door lock switch to both the lock and unlock positions.		

cardiagn.com

	Does the test lamp illuminate in both positions?	Go to **Step 10**	Go to **Step 9**
7	Test for an open or short to ground in the door lock actuator lock circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
8	Test for an open or short to ground in the door lock actuator unlock circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 9**
9	Inspect for poor connections at the harness connector of the appropriate door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 11**
10	Inspect for poor connections at the harness connector of the door lock actuator. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 12**
11	**IMPORTANT:** **Perform the set up procedure for the door module. Refer to Service Programming System (SPS) in Programming.** Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the repair?	Go to **Step 13**	-
12	Replace the appropriate door lock actuator. Refer to **Lock Actuator Replacement - Front Door**. Did you complete the repair?	Go to **Step 13**	-
13	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

POWER DOOR LOCKS INOPERATIVE (REAR DOOR(S))

Power Door Locks Inoperative (Rear Door(s))

Step	Action	Yes	No
Schematic Reference: Door Lock/Indicator Schematics			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
	Activate the door lock switches to the lock and unlock positions.	Go to **Testing for Intermittent**	

cardiagn.com

2	Do both rear passenger doors lock and unlock?	**Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	Is there only one door lock actuator that is inoperative?	Go to **Step 6**	Go to **Step 4**
4	Are the rear door lock actuators inoperative for both lock and unlock?	Go to **Step 8**	Go to **Step 5**
5	Do the rear door lock actuators lock?	Go to **Step 15**	Go to **Step 10**
6	1. Disconnect the inoperative door lock actuator. 2. With a test lamp connected to a good ground, probe the door lock actuator lock circuit at the door lock actuator harness connector. 3. Activate a door lock switch to lock position. Does the test lamp illuminate?	Go to **Step 7**	Go to **Step 25**
7	1. With a test lamp connected to a good ground, probe the door lock actuator unlock circuit at the door lock actuator harness connector. 2. Activate a door lock switch to unlock position. Does the test lamp illuminate?	Go to **Step 24**	Go to **Step 26**
8	1. Remove the rear door unlock relay. 2. Connect a test lamp to battery positive voltage. 3. Probe the door actuator unlock control circuit cavity in the left ID fuse block. Does the test lamp illuminate?	Go to **Step 21**	Go to **Step 9**
9	1. Install the rear door unlock relay. 2. Remove the rear door lock relay. 3. Connect a test lamp to battery positive voltage. 4. Probe the door lock actuator lock control circuit cavity in the fuse block. Does the test lamp illuminate?	Go to **Step 20**	Go to **Step 22**
10	1. Remove the rear door lock relay. 2. Connect a test lamp to a good ground. 3. Probe the battery positive voltage circuit (high current) cavity in the fuse block. Does the test lamp illuminate?	Go to **Step 11**	Go to **Step 22**
11	With the test lamp connected to a good ground, probe the lock relay control circuit cavity in the fuse block.		

cardiagn.com

	Does the test lamp illuminate?	Go to **Step 22**	Go to **Step 12**
12	1. Connect a test lamp to battery positive voltage. 2. Probe the lock relay control circuit cavity in the rear fuse block. 3. Activate a door lock switch to the lock position. Does the test lamp illuminate?	Go to **Step 13**	Go to **Step 23**
13	With the test lamp connected to battery positive voltage, probe the door lock actuator lock control circuit cavity in the fuse block. Does the test lamp illuminate?	Go to **Step 20**	Go to **Step 14**
14	1. Remove the rear door unlock relay. 2. With the test lamp connected to battery positive voltage, probe the unlock relay ground circuit cavity in the fuse block. Does the test lamp illuminate?	Go to **Step 21**	Go to **Step 22**
15	1. Remove the rear door unlock relay. 2. Connect a test lamp to a good ground. 3. Probe the battery positive voltage circuit (high current) cavity in the fuse block. Does the test lamp illuminate?	Go to **Step 16**	Go to **Step 22**
16	With the test lamp connected to a good ground, probe the unlock relay control circuit cavity in the fuse block. Does the test lamp illuminate?	Go to **Step 22**	Go to **Step 17**
17	1. Connect a test lamp to battery positive voltage. 2. Probe the unlock relay control circuit cavity in the rear fuse block. 3. Activate a door lock switch to the unlock position. Does the test lamp illuminate?	Go to **Step 18**	Go to **Step 23**
18	With the test lamp connected to battery positive voltage, probe the door lock actuator unlock control circuit cavity in the fuse block. Does the test lamp illuminate?	Go to **Step 21**	Go to **Step 19**
19	1. Remove the rear door lock relay. 2. With the test lamp connected to battery positive voltage, probe the lock relay ground circuit cavity in the fuse block.		

cardiagn.com

	Does the test lamp illuminate?	Go to **Step 20**	Go to **Step 22**
20	Inspect for poor connections at the rear door lock relay. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 32**	Go to **Step 27**
21	Inspect for poor connections at the rear door unlock relay. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 32**	Go to **Step 28**
22	Inspect for poor connections at the left ID fuse block. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 32**	Go to **Step 29**
23	Inspect for poor connections at the harness connector of the body control module (BCM). Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 32**	Go to **Step 30**
24	Inspect for poor connections at the harness connector of the door lock actuator. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 32**	Go to **Step 31**
25	Repair the open the door lock actuator lock circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 32**	-
26	Repair the open in the door lock actuator unlock circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 32**	-
27	Replace the rear door lock relay. Did you complete the repair?	Go to **Step 32**	-
28	Replace the rear door unlock relay. Did you complete the repair?	Go to **Step 32**	-
29	Replace the left ID fuse block. Did you complete the repair?	Go to **Step 32**	-
30	Replace the BCM. Refer to **Body Control Module Replacement** in Body Control System. Did you complete the repair?	Go to **Step 32**	-
31	Replace the appropriate rear door lock actuator. Refer to **Lock Actuator Replacement - Rear Door**.		

cardiagn.com

	Did you complete the repair?	Go to **Step 32**	-
32	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

POWER DOOR LOCKS INOPERATIVE - ENDGATE/LIFTGATE

Power Door Locks Inoperative - Endgate/Liftgate

Step	Action	Yes	No
Schematic Reference: Door Lock/Indicator Schematics **Connector End View Reference: Power Door Systems Connector End Views**			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	Activate the door lock switches to the lock and unlock positions. Do both rear passenger doors lock and unlock?	Go to **Step 3**	Go to **Power Door Locks Inoperative (Front Door(s))** or **Power Door Locks Inoperative (Rear Door(s))**
3	Did the liftgate lock actuator lock and unlock?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 4**
4	1. Disconnect liftgate door lock actuator. 2. With a test lamp connected to a good ground, probe the door lock actuator lock circuit at the door lock actuator harness connector. 3. Activate a door lock switch to lock position. Does the test lamp illuminate?	Go to **Step 5**	Go to **Step 7**
5	1. With a test lamp connected to a good ground, probe the door lock actuator unlock circuit at the door lock actuator harness connector. 2. Activate a door lock switch to unlock position. Does the test lamp illuminate?	Go to **Step 6**	Go to **Step 8**
6	Inspect for poor connections at the harness connector of the door lock actuator. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 10**	Go to **Step 9**
	Repair the open the door lock actuator lock circuit. Refer to **Circuit Testing** and **Wiring Repairs** in		

cardiagn.com

7	Wiring Systems. Did you find and correct the condition?	Go to **Step 10**	-
8	Repair the open in the door lock actuator unlock circuit. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 10**	-
9	Replace the liftgate door lock actuator. Refer to **Lock Actuator Replacement - Door (Cargo Door)** or **Lock Actuator Replacement - Door (Liftgate)** in Body Rear End. Did you complete the repair?	Go to **Step 10**	-
10	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

POWER MIRRORS INOPERATIVE

Power Mirrors Inoperative

Step	Action	Yes	No
Schematic Reference: Outside Mirror Schematics			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Place the mirror select switch in the left mirror position. 2. Activate the mirror position switch in the UP, DOWN, LEFT and RIGHT directions and note the operation. 3. Place the mirror select switch in the right mirror position. 4. Activate the mirror position switch in the UP, DOWN, LEFT and RIGHT directions and note the operation. Do both power mirrors operate properly?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Monitor the mirror select switch and the mirror switch data parameters. 3. Activate the mirror select switch to the left and right mirror positions. 4. Activate the mirror direction switch to the UP, DOWN, LEFT and RIGHT positions. Do all of the mirror data parameters change properly		

cardiagn.com

	with the corresponding switch activations?	Go to **Step 4**	Go to **Step 6**
4	With the scan tool command the inoperative mirror UP, DOWN, LEFT and RIGHT. Does the mirror move with the corresponding scan tool command?	Go to **Step 6**	Go to **Step 5**
5	1. Disconnect the inoperative mirror. 2. Connect a test lamp between the appropriate mirror motor control circuits for the inoperative direction(s). 3. With a scan tool, command the mirror in the inoperative direction(s). Does the test lamp illuminate with the corresponding scan tool command?	Go to **Step 7**	Go to **Step 8**
6	Inspect for poor connections at the driver door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 12**	Go to **Step 9**
7	Inspect for poor connections at the power mirror. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 12**	Go to **Step 10**
8	Inspect for poor connections at the appropriate door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 12**	Go to **Step 11**
9	**IMPORTANT:** **Perform the set up procedure for the driver door module. Refer to Service Programming System (SPS) in Programming.** Replace the driver door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver**.Did you complete the repair?	Go to **Step 12**	-
10	Replace the power mirror. Refer to **Mirror Replacement - Power**. Did you complete the repair?	Go to **Step 12**	-
	IMPORTANT: **Perform the set up procedure for the appropriate door module. Refer to Service Programming System (SPS) in Programming.**		

cardiagn.com

11	Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the repair?	Go to **Step 12**	-
12	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

POWER MIRRORS - FOLDING INOPERATIVE

Power Mirrors - Folding Inoperative

Step	Action	Yes	No
Schematic Reference: Outside Mirror Schematics			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	1. Turn ON the ignition, with the engine OFF. 2. Place the mirror select switch in the neutral fold position. 3. Activate the mirror direction switch in the left/extend and right/retract positions. Do the outside rearview mirrors extend and retract with the corresponding switch activation?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	Are both folding mirrors inoperative?	Go to **Step 4**	Go to **Step 5**
4	1. Install a scan tool. 2. Monitor the mirror select switch and the mirror switch data parameters. 3. Activate the mirror select switch left, right and neutral/fold positions. 4. Activate the left/extend and right/retract functions from the mirror switch. Do all of the data parameters change with the corresponding switch activations?	Go to **Step 5**	Go to **Step 6**
5	1. Install a scan tool. 2. With the scan tool, command the inoperative mirror to retract and extend. Does the mirror move with the corresponding scan tool command?	Go to **Step 8**	Go to **Step 7**
	Inspect for poor connections at the driver door module. Refer to **Testing for Intermittent Conditions and**		

cardiagn.com

6	**Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 12**	Go to **Step 9**
7	Inspect for poor connections at the power mirror. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 12**	Go to **Step 10**
8	Inspect for poor connections at the appropriate door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 12**	Go to **Step 11**
9	**IMPORTANT:** **Perform the set up procedure for the driver door module. Refer to Service Programming System (SPS) in Programming.** Replace the driver door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver**.Did you complete the repair?	Go to **Step 12**	-
10	Replace the power mirror. Refer to **Mirror Replacement - Power**. Did you complete the repair?	Go to **Step 12**	-
11	**IMPORTANT:** **Perform the set up procedure for the appropriate door module. Refer to Service Programming System (SPS) in Programming.** Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the repair?	Go to **Step 12**	-
12	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER MIRRORS - MEMORY FUNCTIONS INOPERATIVE

Power Mirrors - Memory Functions Inoperative

Step	Action	Value(s)	Yes	No
Schematic Reference: Outside Mirror Schematics				
1	Did you perform the Door Systems Diagnostic System Check?	-		Go to **Diagnostic System Check**

cardiagn.com

			Go to **Step 2**	**- Door Systems**
2	1. Place the mirror select switch in the left mirror position. 2. Activate the mirror position switch in the UP, DOWN, LEFT and RIGHT directions and note the operation. 3. Place the mirror select switch in the right mirror position. 4. Activate the mirror position switch in the UP, DOWN, LEFT and RIGHT directions and note the operation. Do both power mirrors operate properly?	-	Go to **Step 3**	Go to **Power Mirrors Inoperative**
3	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Monitor the memory switch data parameters. Are any of the memory switch data parameters active without a switch activation?	-	Go to **Step 5**	Go to **Step 4**
4	1. Monitor the memory switch data parameters. 2. Activate the memory 1, memory 2 and Exit switches one at a time. Do all of the memory switch data parameters change state with the corresponding switch activation?	-	Go to **Step 7**	Go to **Step 6**
5	Disconnect the memory switch. Does the memory switch data parameter change to idle?	-	Go to **Step 13**	Go to **Step 12**
6	1. Disconnect the memory switch. 2. Monitor the memory switch data parameter. 3. Connect a 3-amp fused jumper between the memory switch battery positive voltage pin and each of the memory switch signal pins, one at a time, at the driver door module. Does the memory switch data parameter change state appropriately at each test point?	-	Go to **Step 13**	Go to **Step 12**

cardiagn.com

7	With a scan tool, monitor the Mirror Horizontal and Vertical Position data parameters of the inoperative mirror while commanding the mirror to move with the mirror switch. Do the Mirror Horizontal and Vertical Position data parameters change values with the corresponding mirror movement?	-	Go to **Step 10**	Go to **Step 8**
8	1. Disconnect the inoperative mirror. 2. Measure the voltage between the mirror 5-volt reference circuit pin at the door module and a good ground. Does the voltage measure within the specified range?	4.75-5.0 V	Go to **Step 9**	Go to **Step 12**
9	1. With a scan tool, monitor the Mirror Horizontal and Vertical Position data parameters. 2. Connect a 3-amp fused jumper between the mirror 5-volt reference circuit pin and each of the horizontal and vertical position signal circuit pins at the door module one at a time. Do the Mirror Horizontal and Vertical Position data parameters display within the specified range?	4.75-5.0 V	Go to **Step 14**	Go to **Step 10**
10	1. Connect the inoperative mirror. 2. Backprobe the mirror 5-volt reference circuit with a DMM connected to a good ground. 3. Monitor the voltage displayed on the DMM while commanding the mirror to the full up, down, left and right positions with the mirror position switch. Does the measured voltage display greater than the specified value?	5.0 V	Go to **Step 14**	Go to **Step 11**
	1. Command the mirror to move with the mirror switch to the full up and full left position. 2. Press and hold the memory 1 switch until two audible tones are heard. 3. With a scan tool, monitor and record the Mirror Horizontal and Vertical Position			

cardiagn.com

11	data parameter voltage values. 4. Command the mirror to move with the mirror switch to the full down and full right position. 5. Press and release the memory 1 switch. Does the mirror recall to within 0.02 volts of the stored Mirror Horizontal and Vertical Position data parameter voltage values recorded earlier?	Within 0.2 V	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 12**
12	Inspect for poor connections at the appropriate door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 18**	Go to **Step 15**
13	Inspect for poor connections at the memory switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 18**	Go to **Step 16**
14	Inspect for poor connections at the appropriate mirror. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 18**	Go to **Step 17**
15	**IMPORTANT:** **Perform the set up procedure for the appropriate door module. Refer to Service Programming System (SPS) in Programming.** Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the repair?	-	Go to **Step 18**	-
16	Replace the memory switch. Refer to **Heated Seat Switch Replacement - Front** in Seats. Did you complete the repair?	-	Go to **Step 18**	-
17	Replace the appropriate mirror. Refer to **Mirror Replacement - Power**. Did you complete the repair?	-	Go to **Step 18**	-
18	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 2**

MIRRORS - OUTSIDE AUTOMATIC DAY-NIGHT FEATURE INOPERATIVE

cardiagn.com

Mirrors - Outside Automatic Day-Night Feature Inoperative

Step	Action	Value(s)	Yes	No
Schematic Reference: Outside Mirror Schematics **Connector End View Reference: Stationary Windows Connector End Views**				
1	Did you review the operation of the automatic day-night feature of the driver outside rearview mirror and perform the necessary inspections?	-	Go to **Step 2**	Go to **Symptoms - Doors**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the automatic day-night feature of the inside rearview mirror. 3. Cover the sensor on the mirror back, facing the front window. 4. Shine a bright light into the sensor on the mirror face, facing the rear window. Does the inside rearview mirror darken?	-	Go to **Step 3**	Go to **Mirrors - Automatic Day-Night Inoperative** in Stationary Windows
3	While shining a bright light into the sensor on the face of the inside rearview mirror, observe the driver outside rearview mirror. Does the driver outside rearview mirror darken?	-	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 4**
4	1. Turn OFF the ignition. 2. Disconnect the harness connector C2 of the Driver Door Module (DDM). 3. Turn ON the ignition, with the engine OFF. 4. Turn ON the automatic day-night feature of the inside rearview mirror. 5. Cover the sensor on the mirror back, facing the front window. 6. Shine a bright light into the sensor on the mirror face, facing the rear window. 7. Measure the voltage between the signal circuit and the low reference circuit of the driver outside rearview mirror element. Is the voltage within the specified range?	0.75-1.5 V	Go to **Step 7**	Go to **Step 5**
5	Is the voltage greater than the specified value?	1.5 V	Go to **Step 18**	Go to **Step 6**
	Measure the voltage between the signal circuit of the driver outside rearview mirror element			

cardiagn.com

6	and a good ground. Is the voltage within the specified range?	0.75-1.5 V	Go to **Step 13**	Go to **Step 12**
7	1. Turn OFF the ignition. 2. Connect the harness connector C2 of the DDM. 3. Carefully disconnect the mirror face of the driver outside rearview mirror. Refer to **Mirror Face Replacement (DL3, DR4, DL8, 5M1)**. 4. Turn ON the ignition, with the engine OFF. 5. Turn ON the automatic day-night feature of the inside rearview mirror. 6. Cover the sensor on the mirror back, facing the front window. 7. Shine a bright light into the sensor on the mirror face, facing the rear window. 8. Measure the voltage between the signal circuit and the low reference circuit of the driver outside rearview mirror element. Is the voltage within the specified range?	0.75-1.5 V	Go to **Step 14**	Go to **Step 8**
8	Is the voltage greater than the specified value?	1.5 V	Go to **Step 18**	Go to **Step 9**
9	1. Turn OFF the ignition. 2. Disconnect the harness connector C3 of the DDM. 3. Measure the resistance of the signal circuit of the driver outside rearview mirror element between the driver outside rearview mirror face and the DDM. Is the resistance less than the specified value?	3 ohms	Go to **Step 10**	Go to **Step 15**
10	Measure the resistance between the signal circuit of the driver outside rearview mirror element to a good ground. Is the resistance within the specified range?	OL	Go to **Step 11**	Go to **Step 15**
11	Measure the resistance of the low reference circuit of the driver outside rearview mirror element between the driver outside rearview mirror face and the DDM. Is the resistance less than the specified value?	3 ohms	Go to **Step 17**	Go to **Step 15**
	Test the signal circuit of the driver outside rearview mirror element for an open or short to			

cardiagn.com

12	ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find or correct the condition?	-	Go to **Step 23**	Go to **Step 16**
13	Test the low reference circuit of the driver outside rearview mirror element for an open or high resistance. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find or correct the condition?	-	Go to **Step 23**	Go to **Step 16**
14	Inspect for poor connections at the harness connector of the driver outside rearview mirror face. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find or correct the condition?	-	Go to **Step 23**	Go to **Step 19**
15	Inspect for poor connections at the harness connector of the driver outside rearview mirror. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find or correct the condition?	-	Go to **Step 23**	Go to **Step 20**
16	Inspect for poor connections at the harness connector of the inside rearview mirror. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find or correct the condition?	-	Go to **Step 23**	Go to **Step 21**
17	Inspect for poor connections at the harness connector of the DDM. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find or correct the condition?	-	Go to **Step 23**	Go to **Step 22**
18	**IMPORTANT:** **A short to voltage in the signal circuit of the driver outside rearview mirror element will cause permanent damage to both the driver outside rearview mirror and the inside rearview mirror element.** Repair the short to voltage in the signal circuit of the driver outside rearview mirror element. Refer to **Wiring Repairs** in Wiring Systems.Did you complete the repair?	-	Go to **Step 23**	-
19	Replace the driver outside rearview mirror face. Refer to **Mirror Face Replacement (DL3, DR4, DL8, 5M1)**.	-		

cardiagn.com

	Did you complete the replacement?		Go to **Step 23**	-
20	Replace the driver outside rearview mirror. Refer to **Mirror Replacement - Power**. Did you complete the replacement?	-	Go to **Step 23**	-
21	**IMPORTANT:** **Perform the calibration procedure for the inside rearview mirror. Refer to Compass Calibration and Variance Procedure in Stationary Windows.** Replace the inside rearview mirror. Refer to **Rearview Mirror Replacement** in Stationary Windows.Did you complete the replacement?	-	Go to **Step 23**	-
22	**IMPORTANT:** **Perform the setup procedure for the DDM.** Replace the DDM. Refer to **Switch Replacement - Door Lock and Side Window - Driver**.Is the replacement complete?	-	Go to **Step 23**	-
23	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 2**

HEATED MIRRORS INOPERATIVE

Heated Mirrors Inoperative

Step	Action	Yes	No
Schematic Reference: Outside Mirror Schematics			
1	Did you perform the Door Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Door Systems**
2	Verify the heated mirrors inoperative fault is present. Do the heated mirrors operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	Does the rear window defogger operate properly?	Go to **Step 4**	Go to **Symptoms - Stationary Windows**
4	1. Disconnect the appropriate mirror. 2. Start the engine. 3. Connect a test lamp between the mirror heater control and the mirror heater ground circuit pins of the appropriate door module. 4. Activate the rear window defogger switch.		

cardiagn.com

	Does the test lamp illuminate?	Go to **Step 5**	Go to **Step 6**
5	Inspect for poor connections at the harness connector of the outside rearview mirror. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the harness connector of the appropriate door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
7	Replace the appropriate outside rearview mirror. Refer to **Mirror Replacement - Power**. Did you complete the replacement?	Go to **Step 9**	-
8	**IMPORTANT:** **Perform the set up procedure for the appropriate door module. Refer to Service Programming System (SPS) in Programming.** Replace the appropriate door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger**.Did you complete the replacement?	Go to **Step 9**	-
9	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

REPAIR INSTRUCTIONS

POWER WINDOW SWITCH REPLACEMENT - REAR DOOR

Removal Procedure

1. Use a small flat-bladed tool in order to carefully pry the door power window switch from the door trim panel.
2. Disconnect the electrical connector from the switch.

cardiagn.com

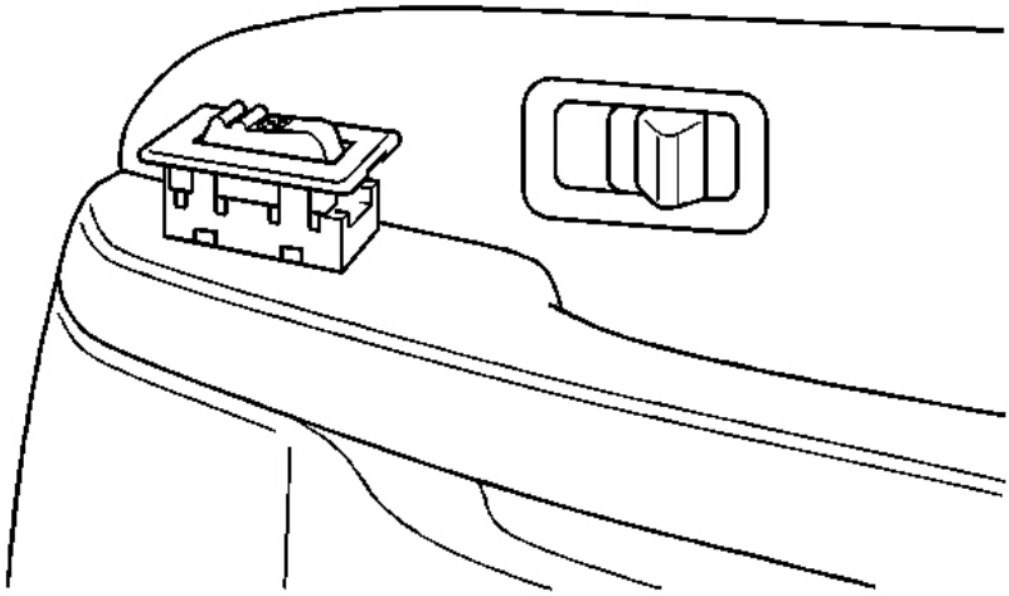


Fig. 9: Removing Rear Door Power Window Switch
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the electrical connector to the switch.
2. Install the switch to the door trim panel by pressing the switch into place until fully seated.

cardiagn.com

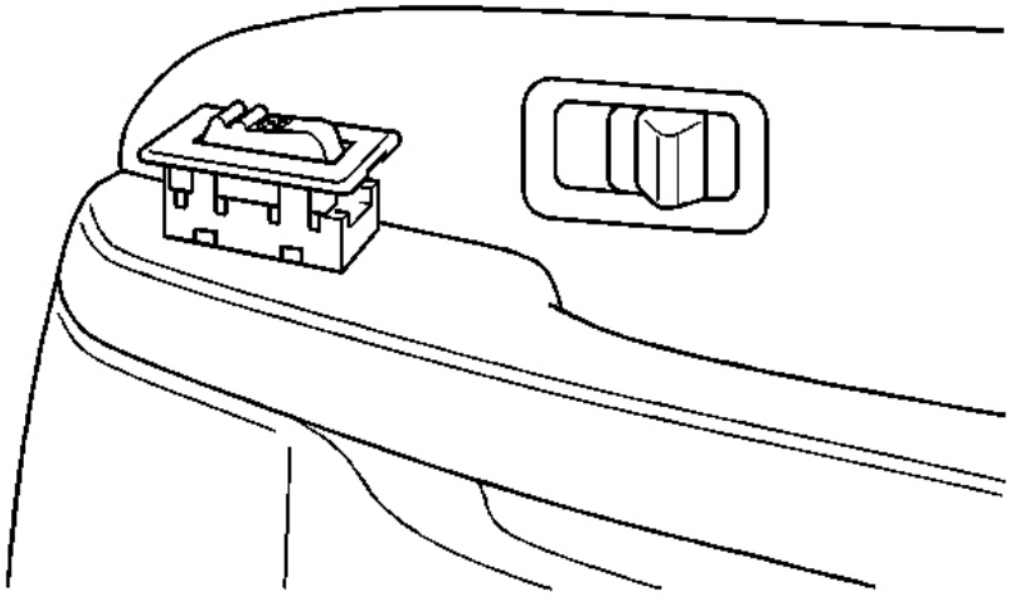


Fig. 10: Installing Rear Door Power Window Switch
Courtesy of GENERAL MOTORS CORP.

SWITCH REPLACEMENT - DOOR LOCK AND SIDE WINDOW - DRIVER

Removal Procedure

1. Remove the front door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
2. Disconnect the electrical connectors.
3. Remove the screw that retains the switch panel bezel (1) from the front door panel.

cardiagn.com

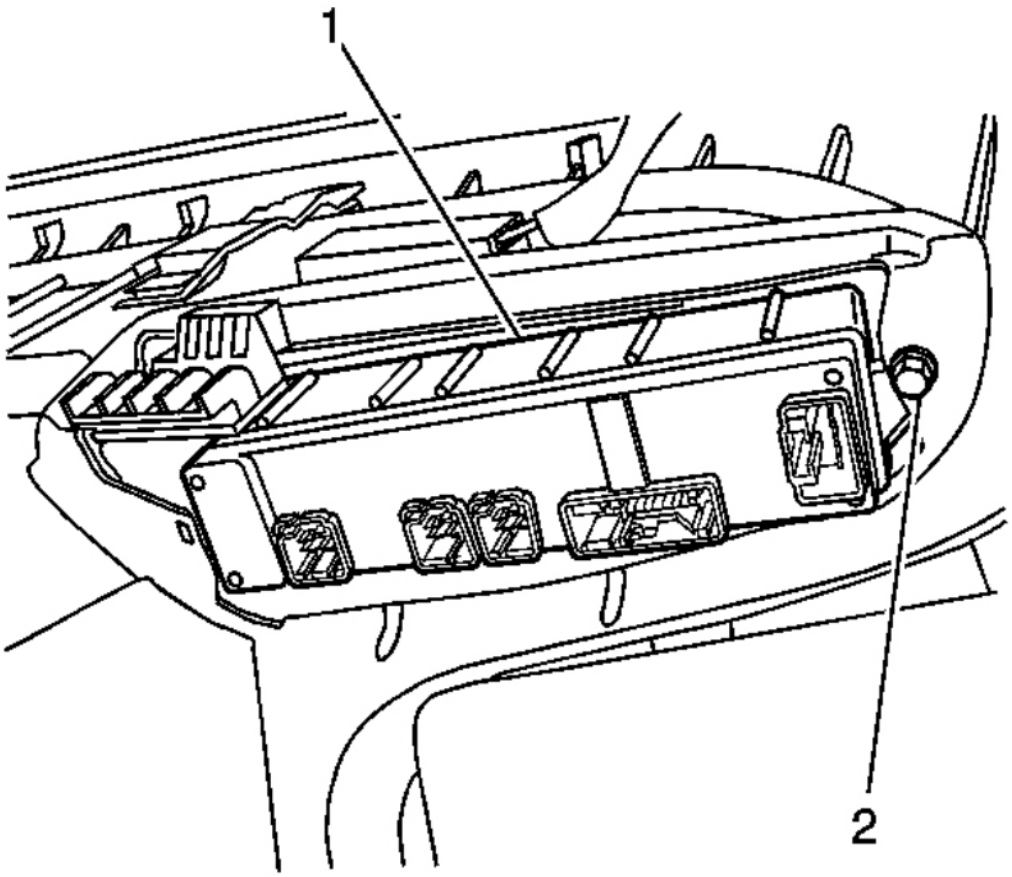


Fig. 11: Removing Screw Retaining Switch Panel Bezel (Driver Door)
Courtesy of GENERAL MOTORS CORP.

4. Remove the switch panel bezel from the door panel using a flat-bladed tool.

cardiagn.com

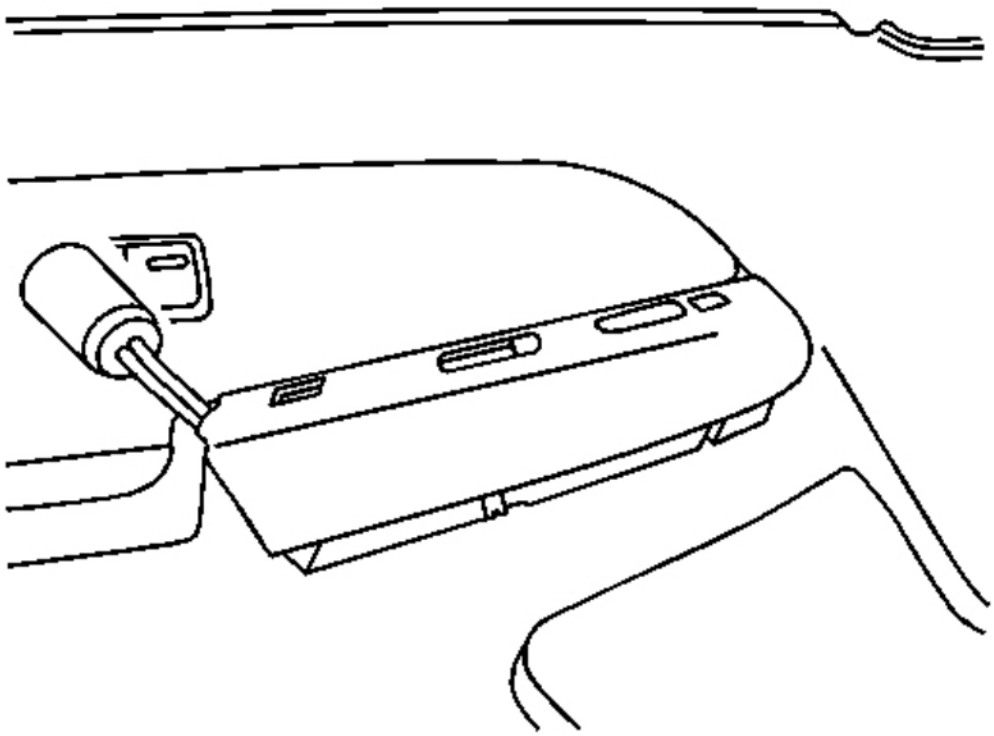


Fig. 12: Removing Switch Panel Bezel (Driver Door)
Courtesy of GENERAL MOTORS CORP.

5. Using a wide plastic flat-bladed tool, release the retaining clips on both sides of the door module.
6. Remove the door module from the switch panel bezel.

cardiagn.com

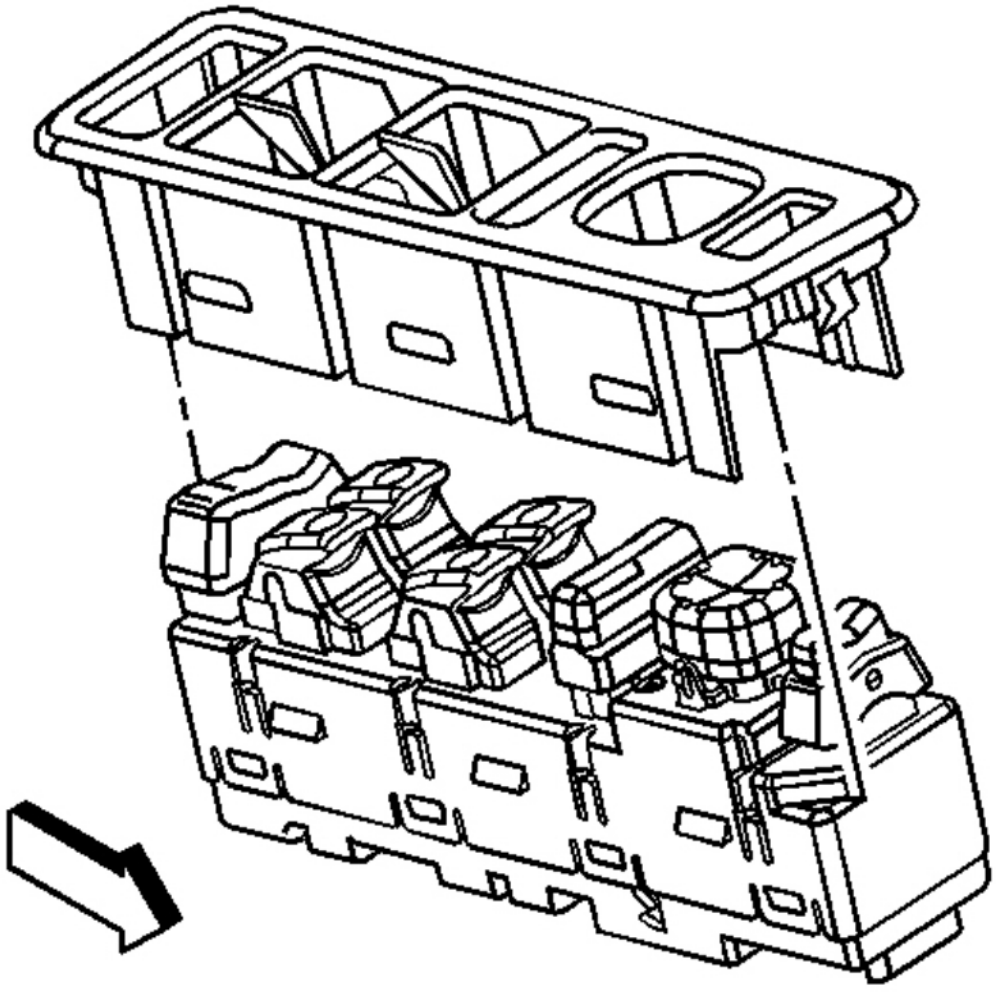


Fig. 13: Removing Door Module From Switch Panel Bezel (Driver Door)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the door module into the switch panel bezel until it snaps into place.

cardiagn.com

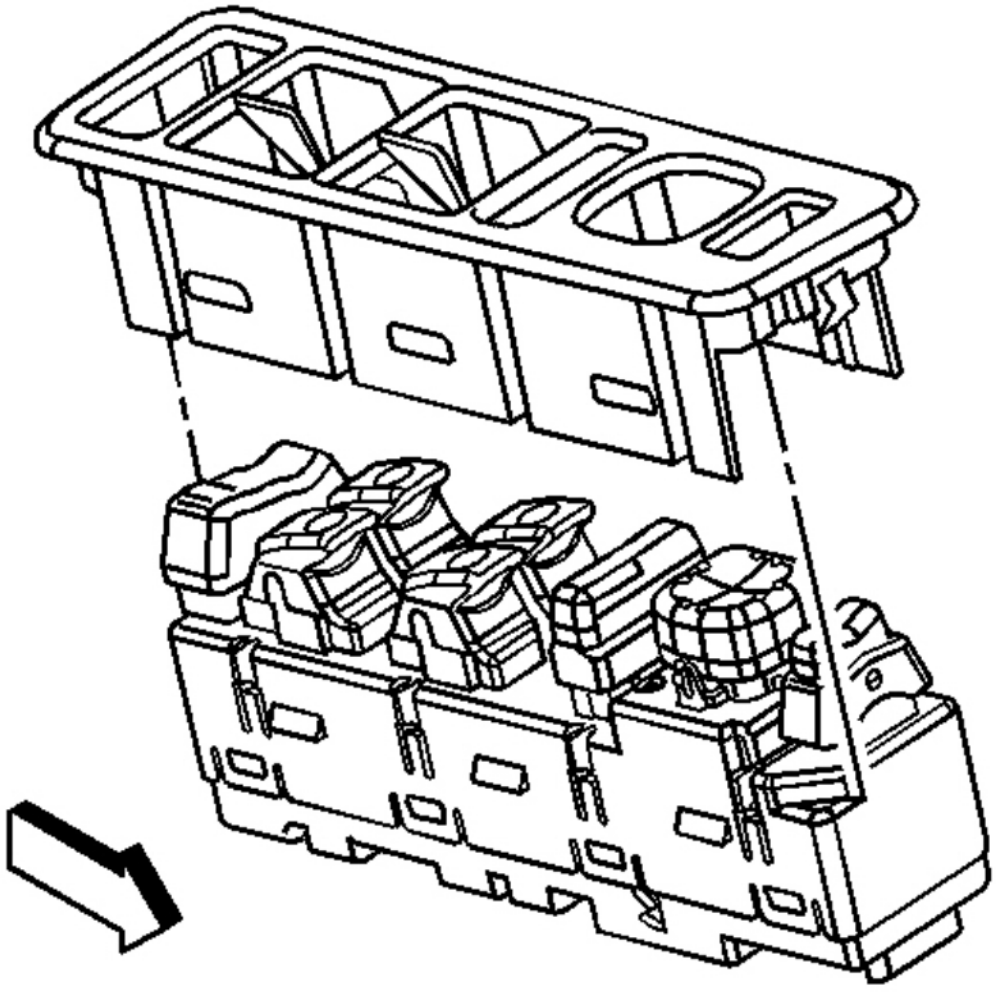


Fig. 14: Installing Door Module Into Switch Panel Bezel (Driver Door)
Courtesy of GENERAL MOTORS CORP.

2. Install the switch panel bezel and module to the door panel.

cardiagn.com

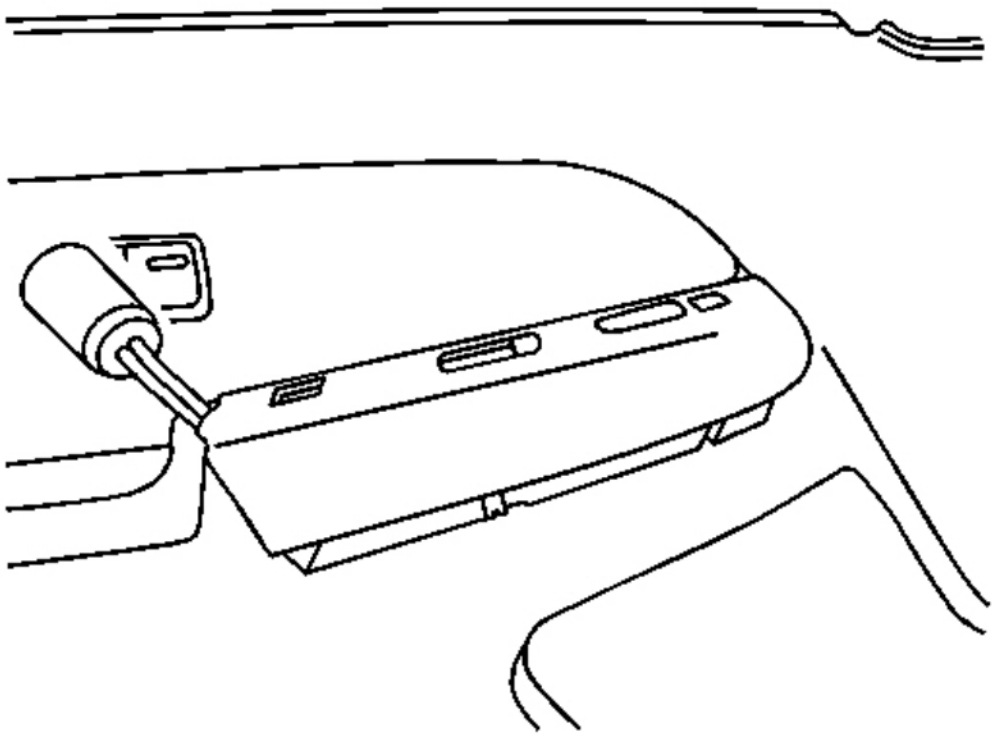


Fig. 15: Installing Switch Panel Bezel & Module (Driver Door)
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the screw that retains the switch panel bezel (1) to the front door panel.

   Tighten: Tighten the screw to 2 N.m (18 lb in).

cardiagn.com

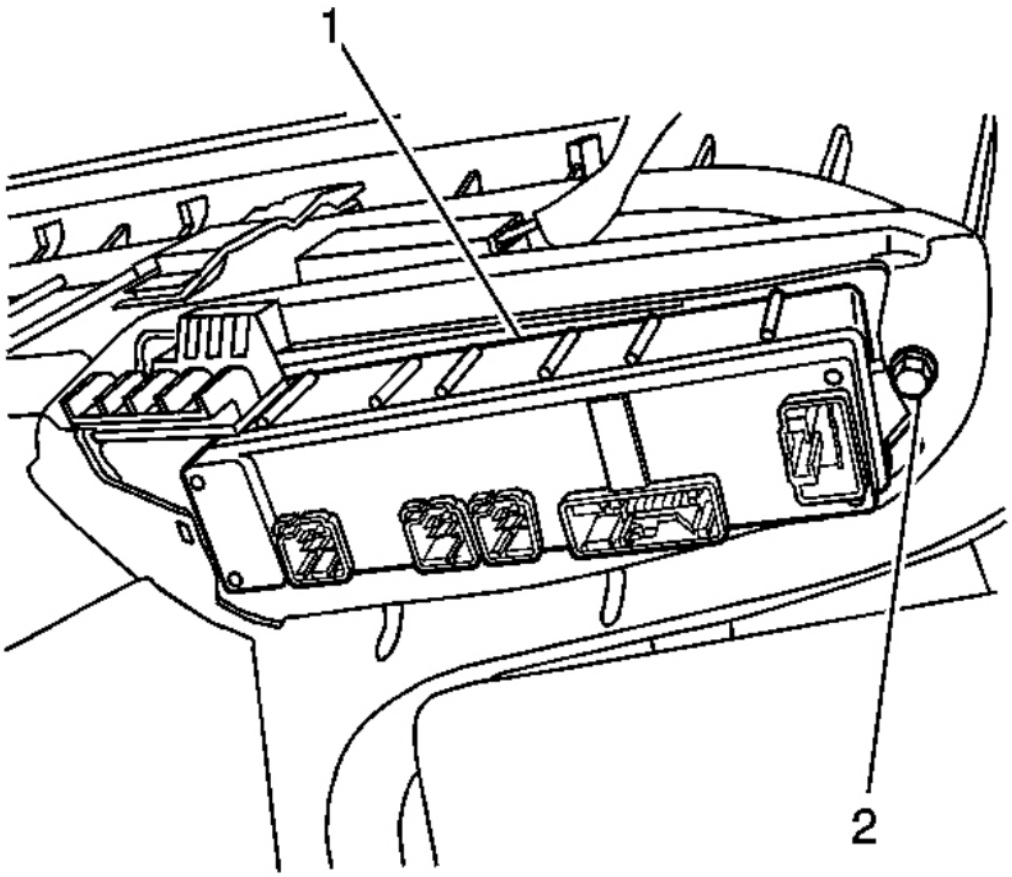


Fig. 16: Installing Screw Retaining Switch Panel Bezel (Driver Door)
Courtesy of GENERAL MOTORS CORP.

4. Connect the electrical connectors.
5. Install the front door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
6. If equipped with camper mirrors program the door module. Refer to **Service Programming System (SPS)** in Programming.

SWITCH REPLACEMENT - DOOR LOCK AND SIDE WINDOW - PASSENGER

Removal Procedure

1. Remove the front door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.

cardiagn.com

2. Remove the screw (2) that retains the switch panel bezel (1) to the front door trim panel.

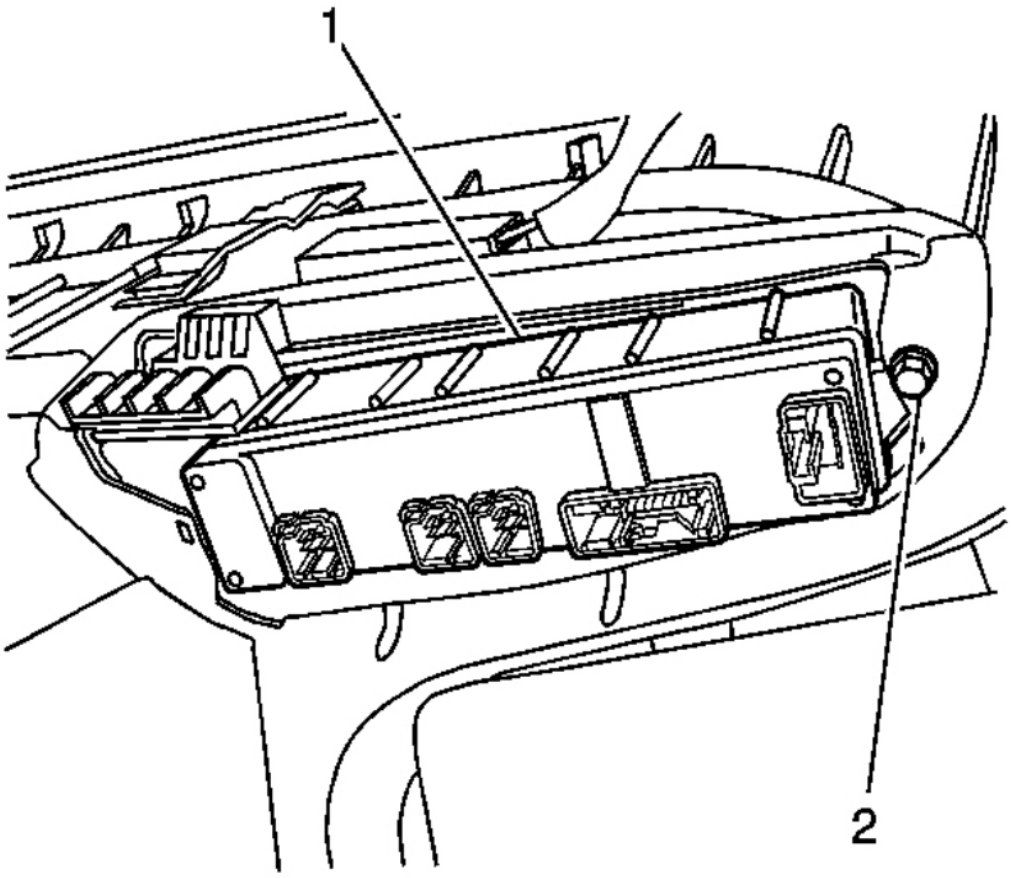


Fig. 17: Removing Screw Retaining Switch Panel Bezel (Passenger Door)
Courtesy of GENERAL MOTORS CORP.

3. Remove the switch panel bezel from the door panel using a flat-bladed tool.

cardiagn.com

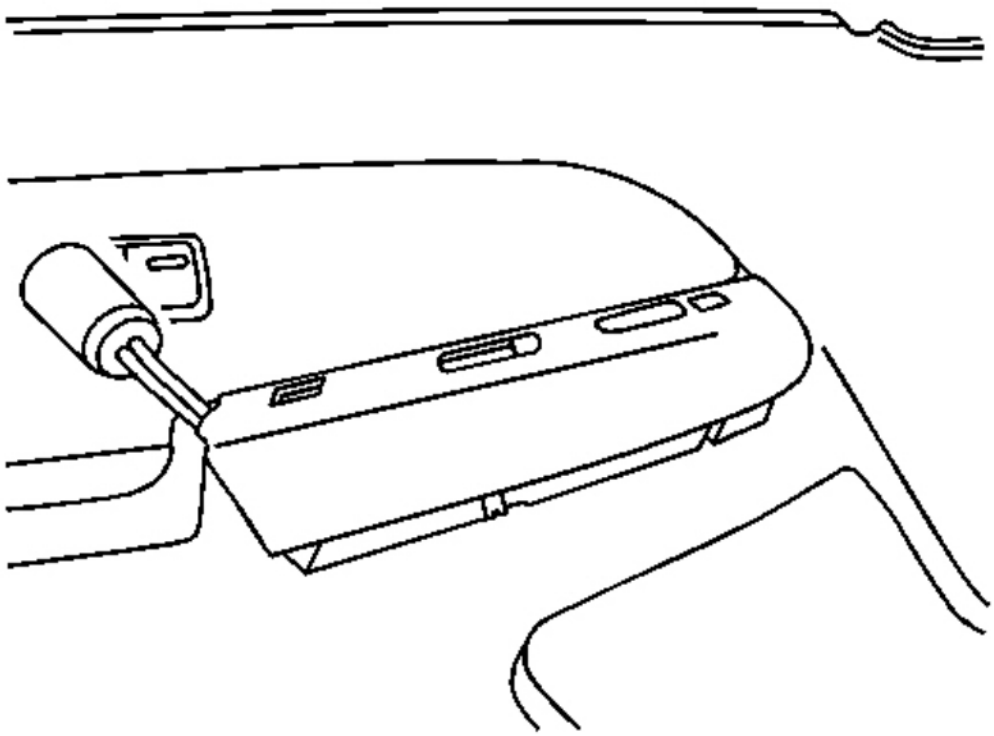


Fig. 18: Removing Switch Panel Bezel (Passenger Door)
Courtesy of GENERAL MOTORS CORP.

4. Using a wide plastic flat-bladed tool, release the retaining clips on both sides of the door module.
5. Remove the door module from the switch panel bezel.

cardiagn.com

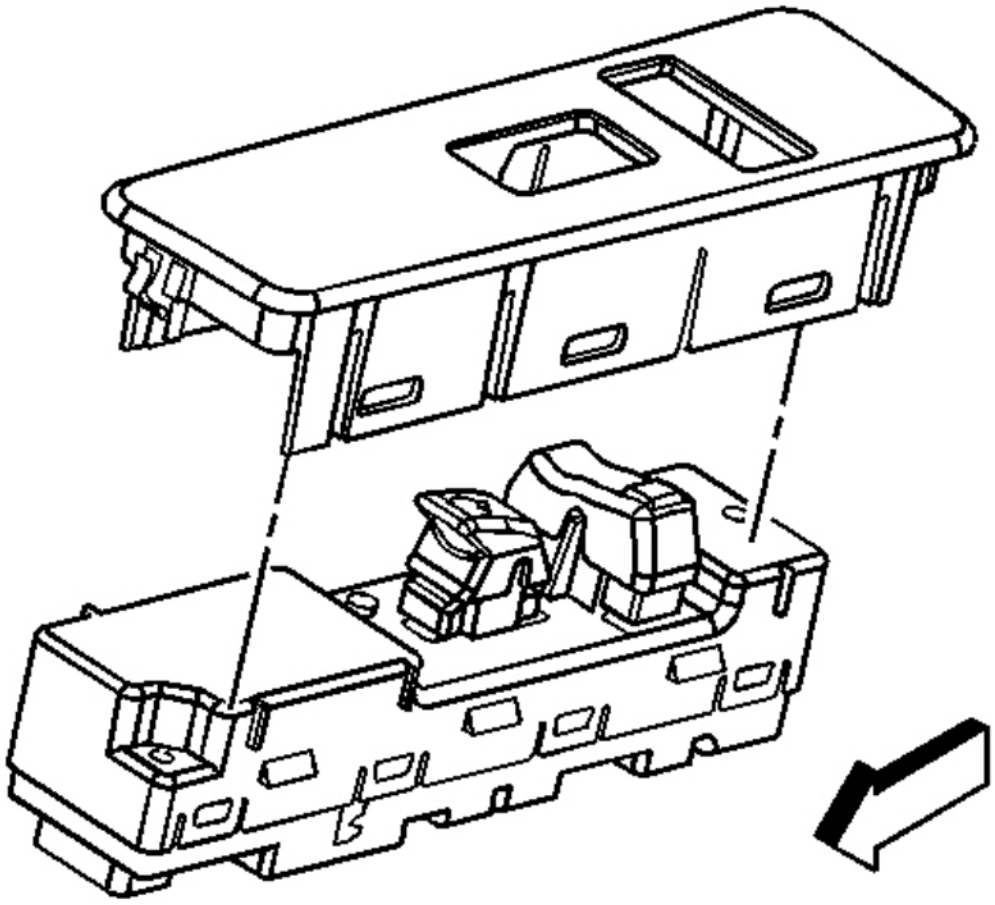


Fig. 19: Removing Door Module From Switch Panel Bezel (Passenger Door)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the door module into the switch panel bezel until it snaps into place.

cardiagn.com

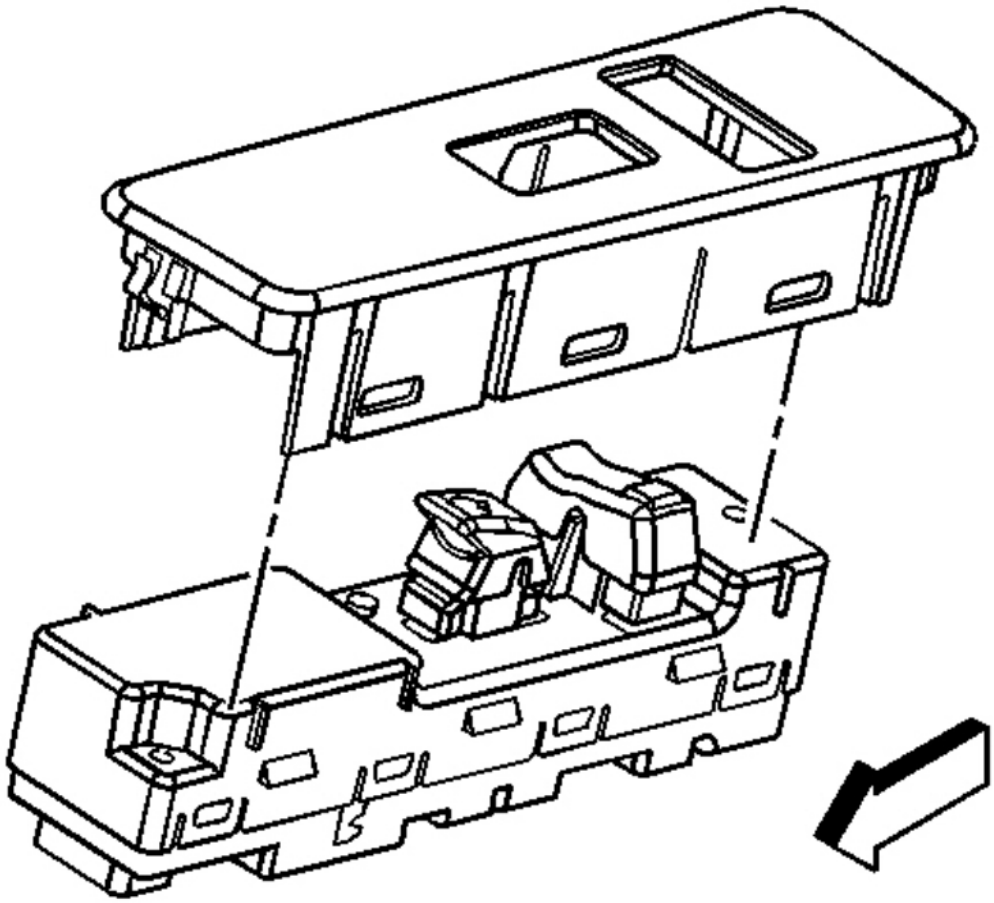


Fig. 20: Installing Door Module Into Switch Panel Bezel (Passenger Door)
Courtesy of GENERAL MOTORS CORP.

2. Install the switch panel bezel and module into the door trim panel.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the screw (2) that retains the switch panel bezel (1) to the front door trim panel.

Tighten: Tighten the screw (2) to 2 N.m (18 lb in).

cardiagn.com

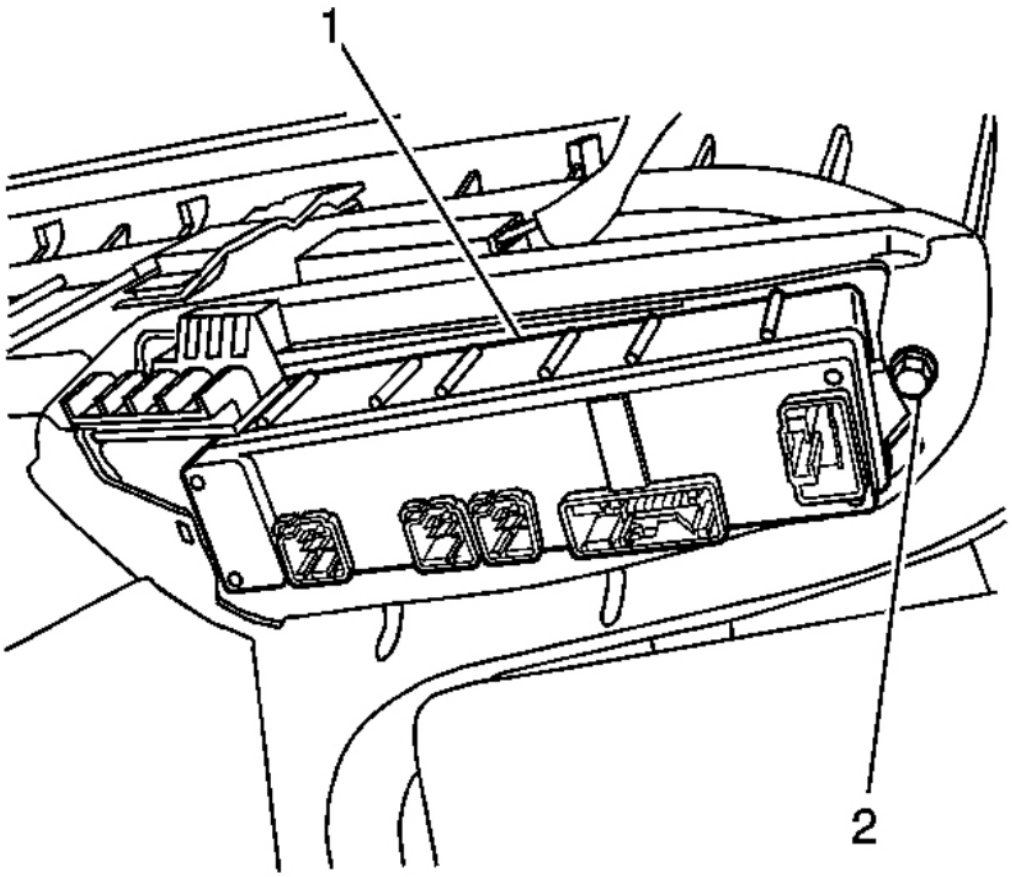


Fig. 21: Installing Screw Retaining Switch Panel Bezel (Passenger Door)
Courtesy of GENERAL MOTORS CORP.

4. Install the front door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
5. Perform the programming procedure for the Tire Pressure Monitoring system. Refer to **Control Module Setup** in Tire Pressure Monitoring.
6. Perform the programming procedure for the Keyless Entry system. Refer to **Transmitter Programming** in Keyless Entry.
7. If equipped with camper mirrors program the door module. Refer to **Service Programming System (SPS)** in Programming.

HANDLE BEZEL REPLACEMENT - INSIDE

Removal Procedure

cardiagn.com

1. Insert a flat-bladed tool between the door handle bezel and the trim panel in order to release the handle bezel tab retainers.
2. Remove the door handle bezel from the door panel.

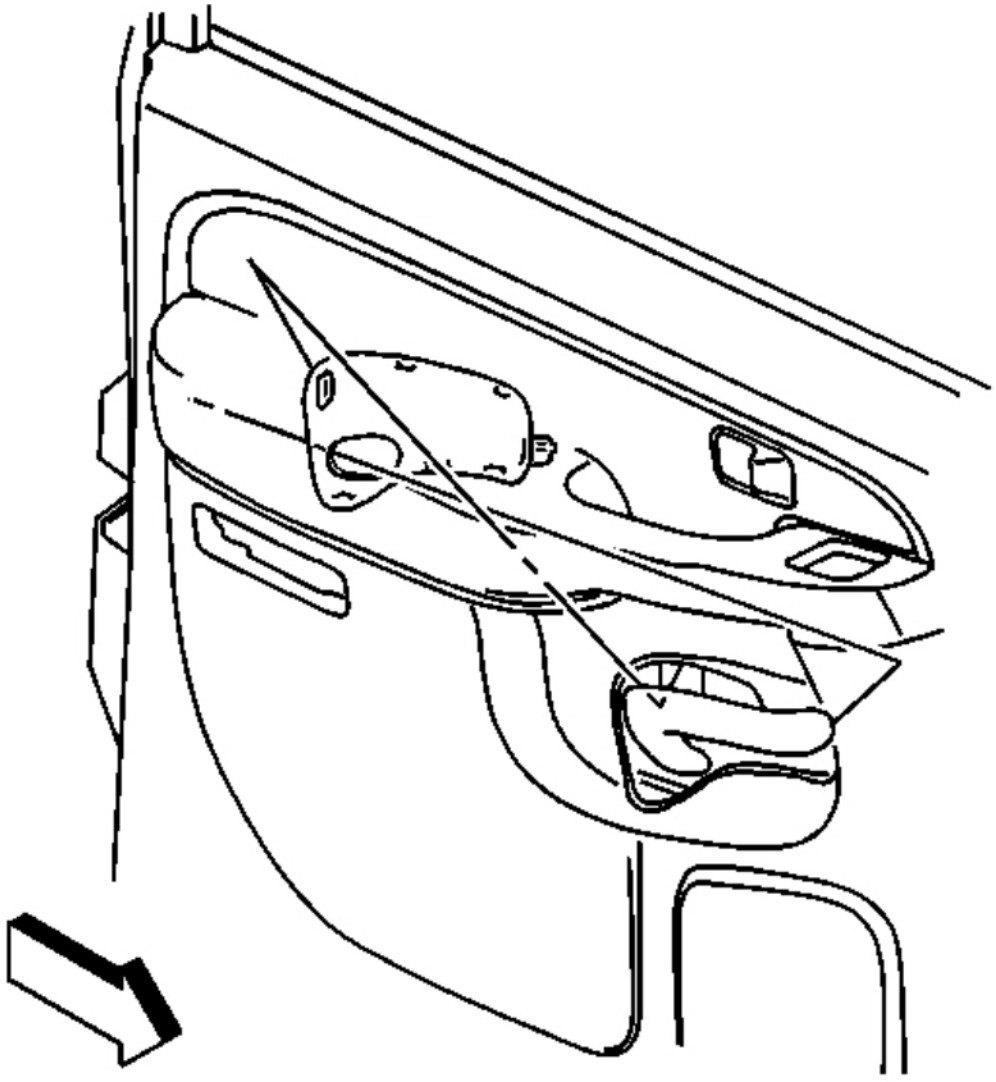


Fig. 22: Removing Inside Door Handle Bezel
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

cardiagn.com

1. Position the door handle bezel in the door trim panel.
2. Install the door handle bezel to the door panel by pressing the bezel into place until the bezel is completely seated.

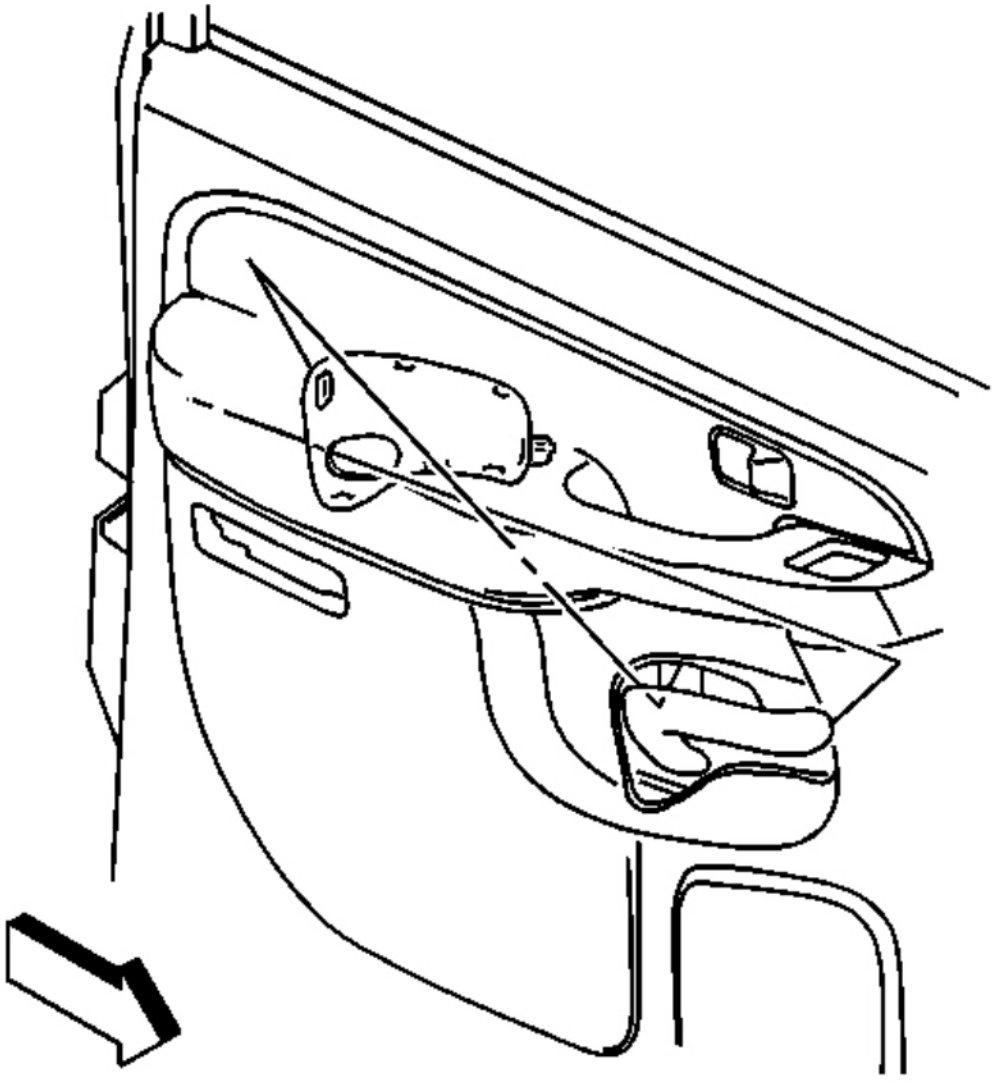


Fig. 23: Installing Inside Door Handle Bezel
Courtesy of GENERAL MOTORS CORP.

ARMREST REPLACEMENT

cardiagn.com

Removal Procedure

1. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
2. Remove the armrest retaining screws.
3. Remove the armrest from the panel.

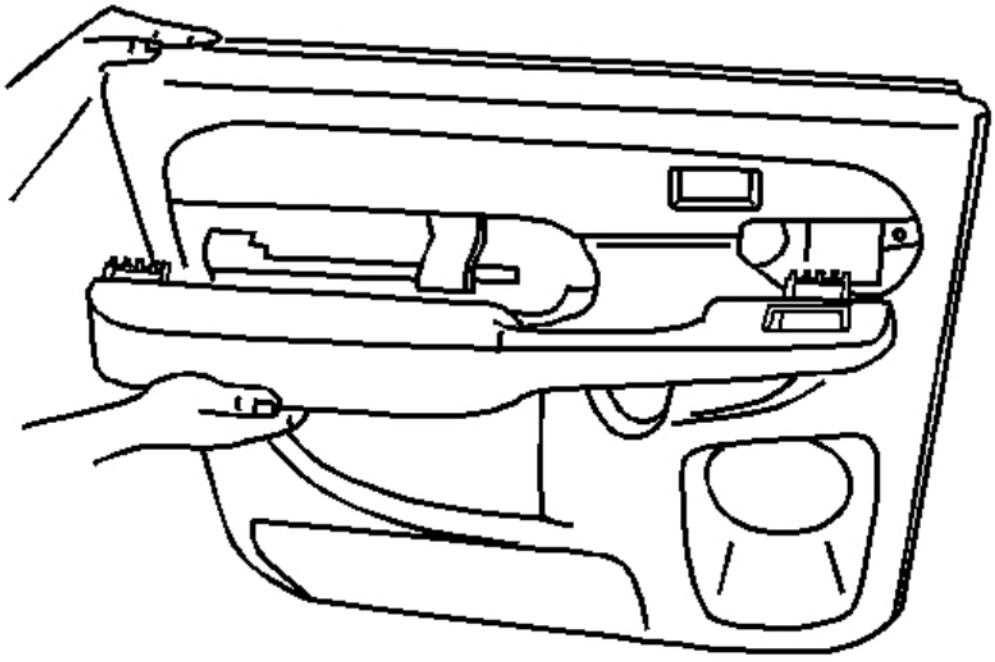


Fig. 24: Removing Armrest
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the armrest from the panel.

cardiagn.com

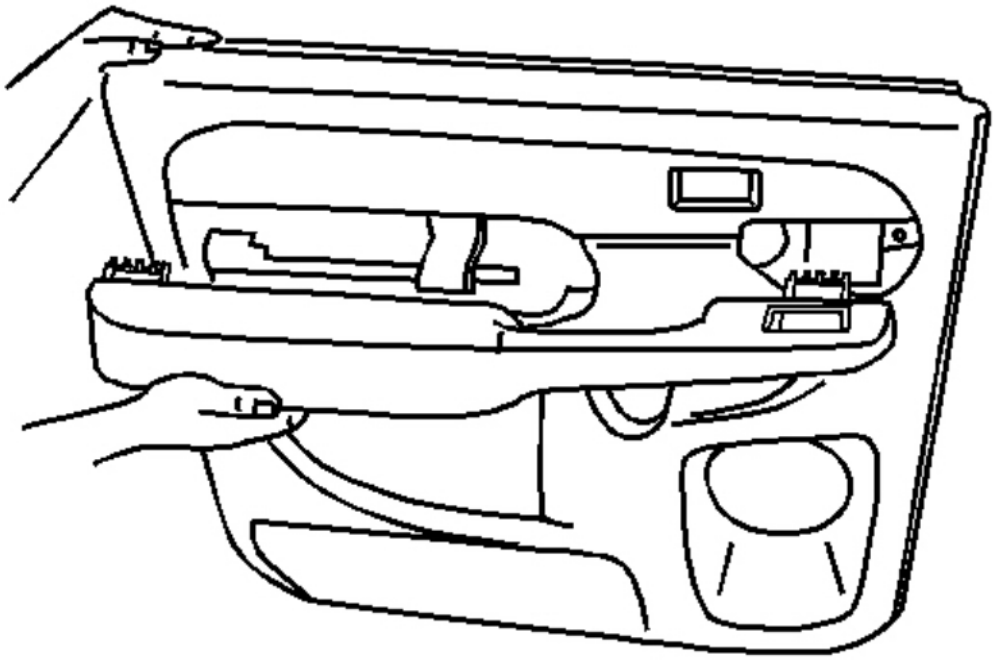


Fig. 25: Installing Armrest
Courtesy of GENERAL MOTORS CORP.

2. Install the armrest retaining screws.
3. Install the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.

WINDOW HANDLE REPLACEMENT

Tools Required

J 9886-01 Door Handle Clip Remover. See **Special Tools and Equipment**.

Removal Procedure

1. Open the door.
2. Remove the window crank handle using the **J 9886-01** . See **Special Tools and Equipment**.

   Be sure to retain the retainer clip on the back side of the handle.

cardiagn.com

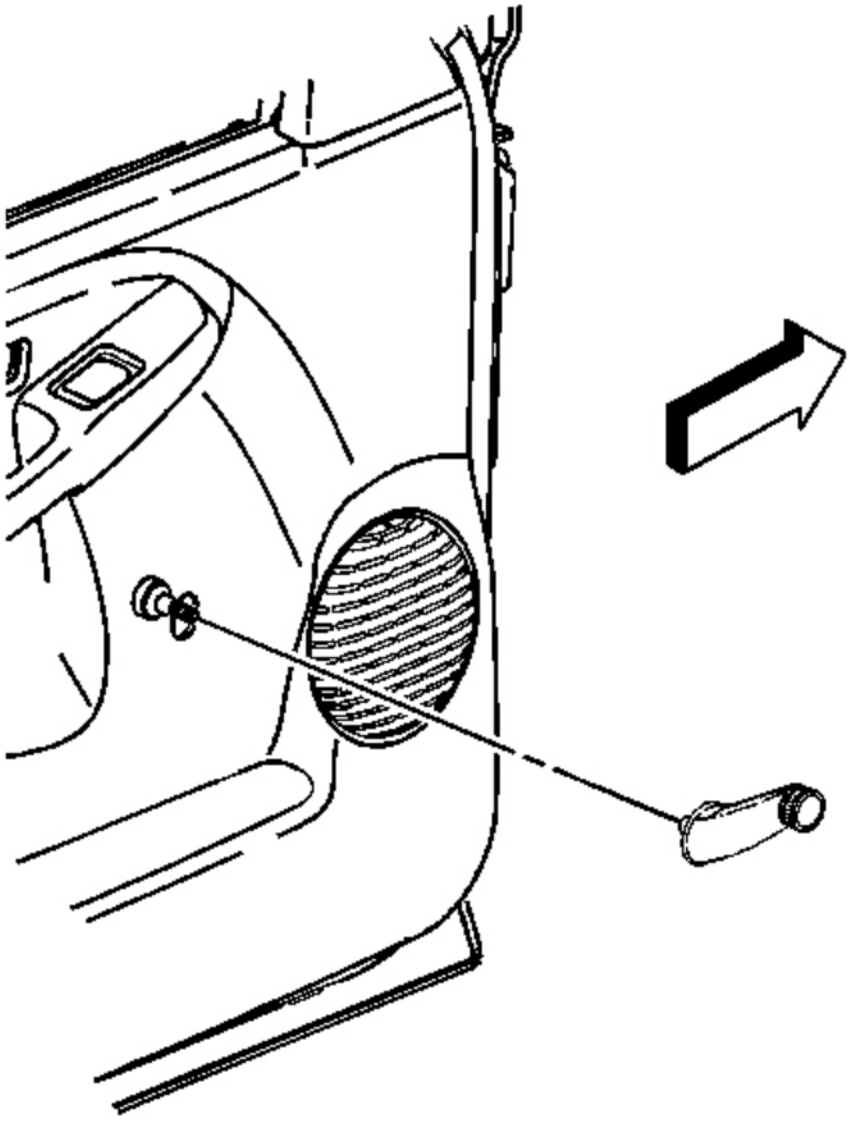


Fig. 26: Removing Window Crank Handle
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the window crank handle by pushing the handle into place. Ensure that the retainer engages.
2. Inspect the operation.

cardiagn.com

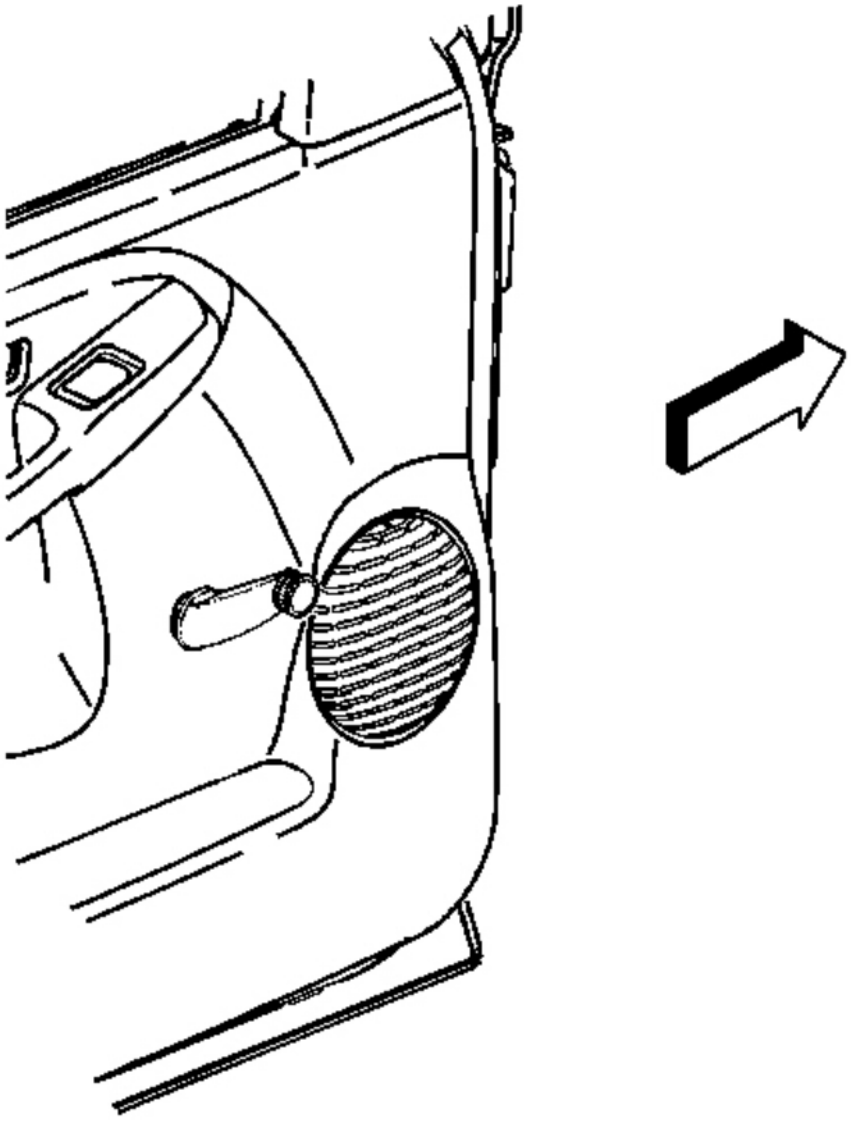


Fig. 27: Installing Window Crank Handle
Courtesy of GENERAL MOTORS CORP.

TRIM PANEL REPLACEMENT - UPPER EXTENSION

Removal Procedure

1. Open the front door.

cardiagn.com

2. Release the upper extension by pulling outward on the front edge in order to release the upper retainer clips.
3. Remove the upper extension from the trim panel by lifting up and out.

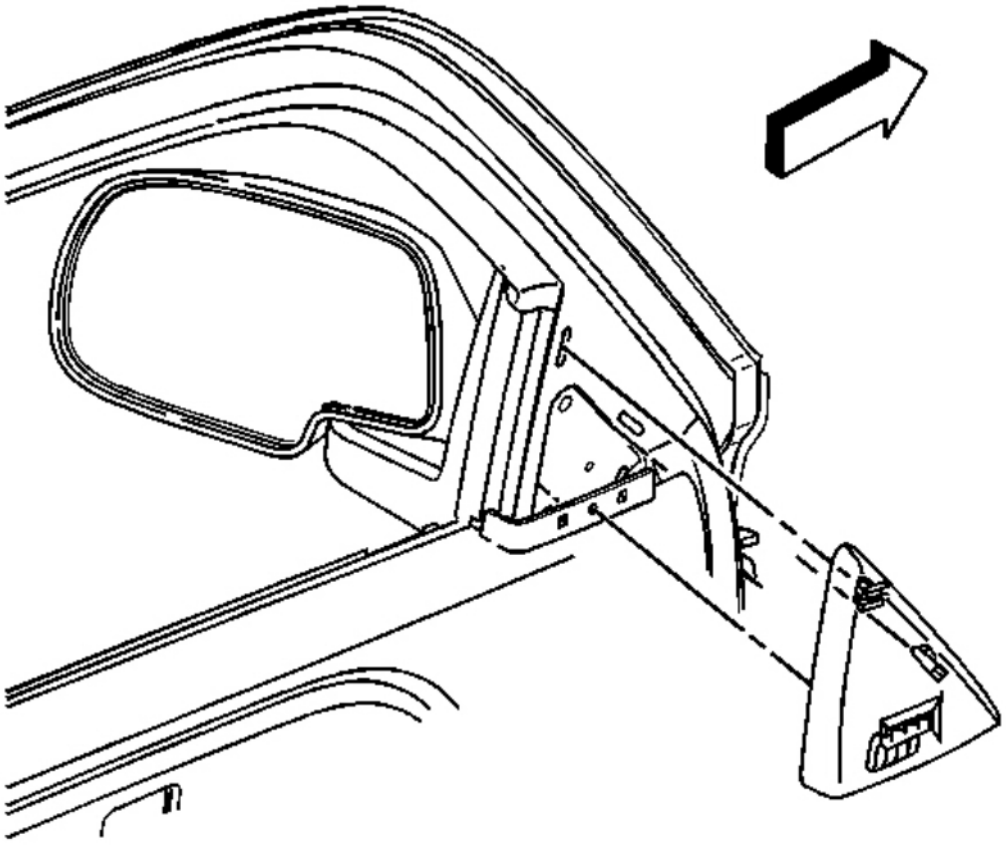


Fig. 28: Removing Upper Extension Trim Panel
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the lower retainer to the trim panel.
2. Align the upper retainer clips to the door frame.
3. Press inward on the upper extension until the clips fully engage securing the panel to the door.

cardiagn.com

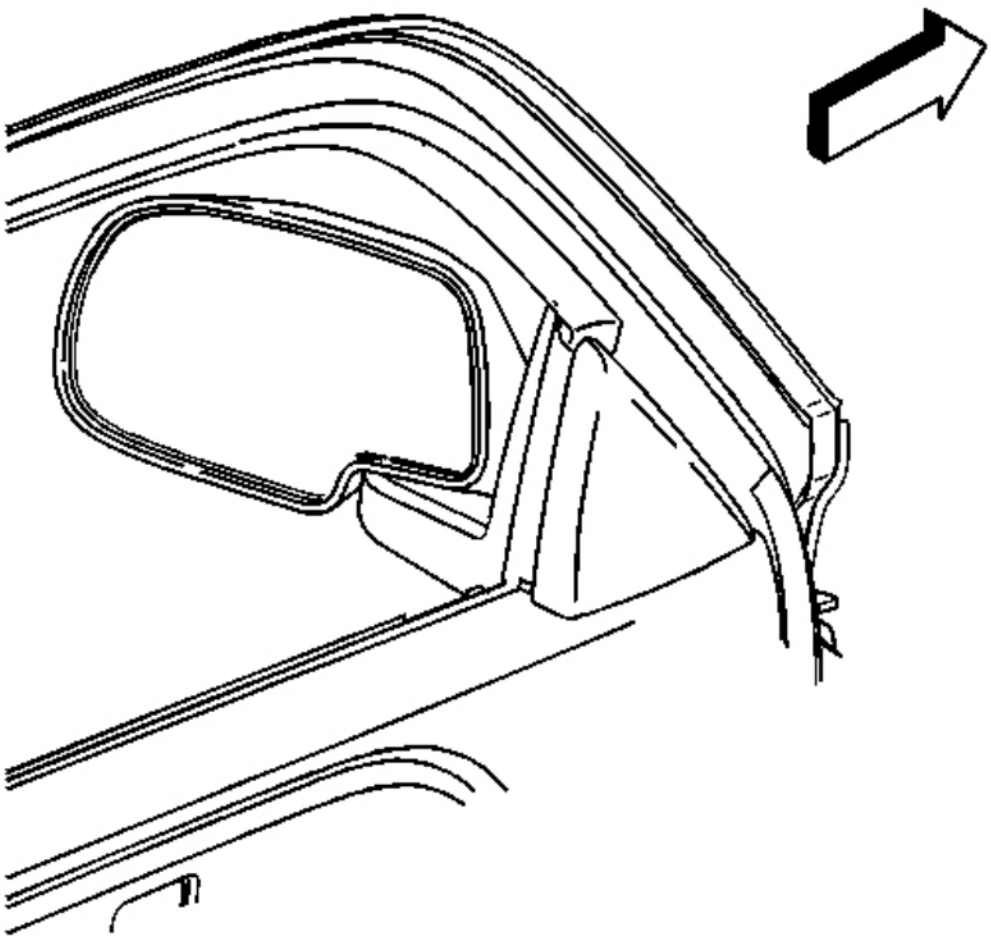


Fig. 29: Installing Upper Extension Trim Panel
Courtesy of GENERAL MOTORS CORP.

TRIM PANEL REPLACEMENT - SIDE FRONT DOOR (WITH YE9 EARLY PRODUCTION)

Removal Procedure

1. Remove the door handle bezel. Refer to **Handle Bezel Replacement - Inside**.
2. Remove the door trim panel upper extension. Refer to **Trim Panel Replacement - Upper Extension**.
3. Using a suitable flat-bladed tool, gently pry the manual lock lever from the door trim panel.
4. Remove the trim panel screws.
   - Remove the screw (2) from within the opening where the manual door lock lever resides.

cardiagn.com

- Remove the screw (3) from the opening in front of the armrest.

5. Carefully slide the trim panel up in order to release the retainers from the door.
6. Disconnect the electrical connectors.

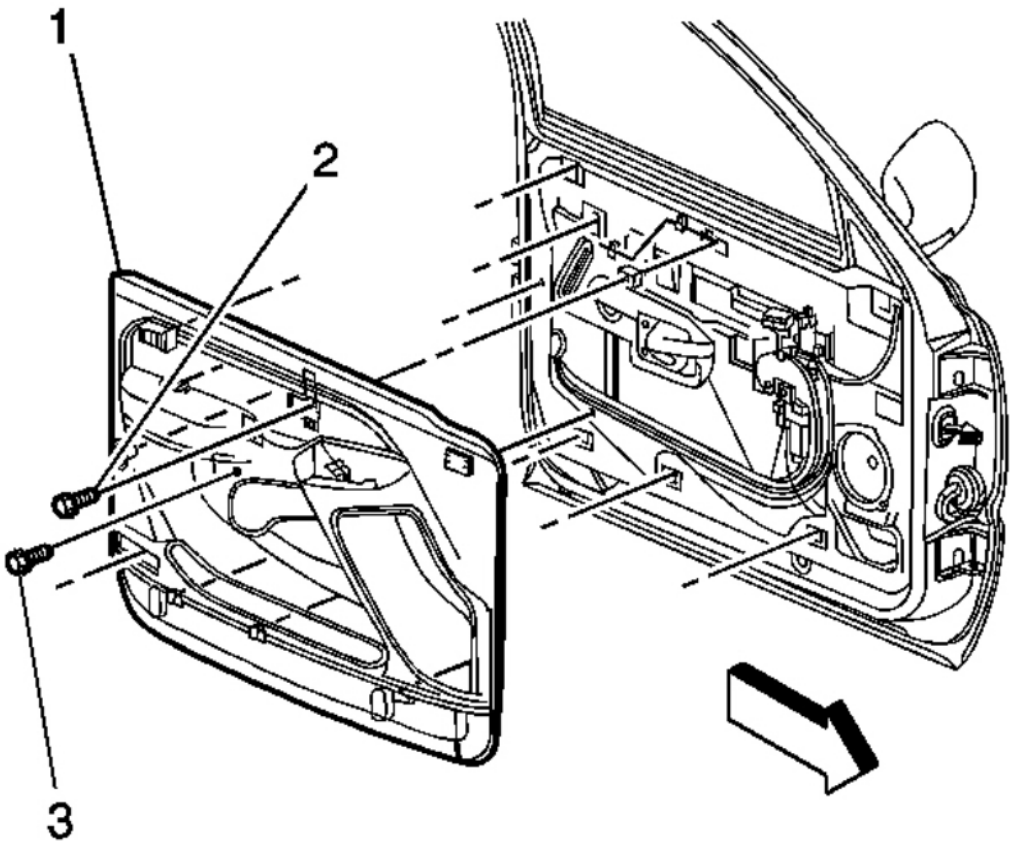


Fig. 30: Removing Side Front Door Trim Panel (With YE9 Early Production)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the electrical connectors.
2. Carefully align the panel, and slide the panel into the retainer slots in order to install the trim panel to the door.

NOTE: Refer to Fastener Notice in Cautions and Notices.

cardiagn.com

3. Install the trim panel screws (2,3).

   Tighten: Tighten the trim panel screws (2,3) to 2 N.m (18 lb in).

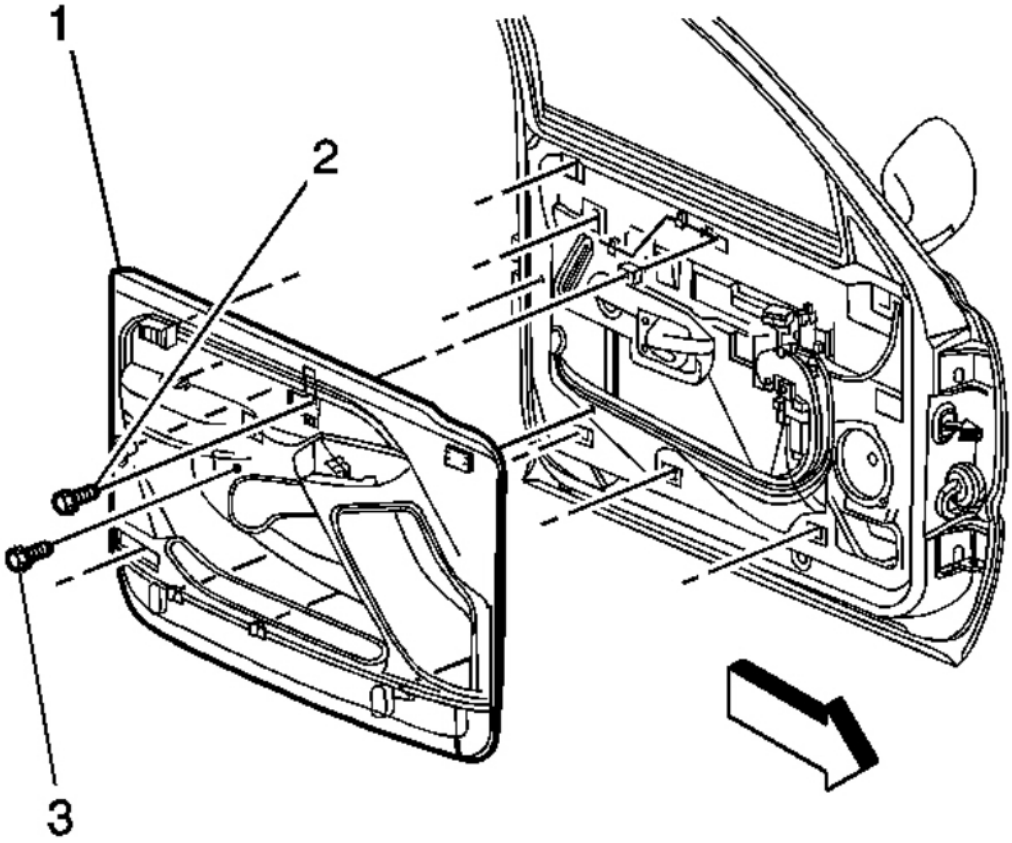


Fig. 31: Installing Side Front Door Trim Panel (With YE9 Early Production)
Courtesy of GENERAL MOTORS CORP.

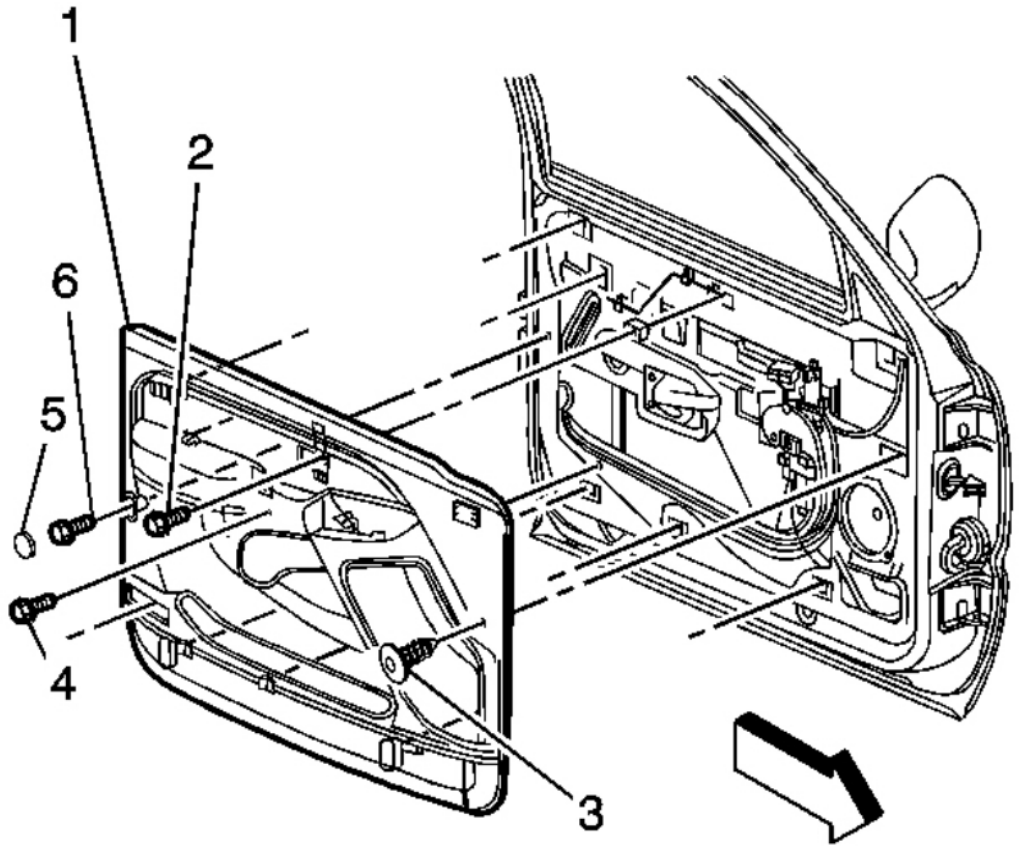
4. Install the manual lock lever to the trim panel.
   1. Align the manual lock lever to the opening in the door trim panel.
   2. Push inward until the manual lock lever is fully seated into the trim panel.
5. Install the door trim panel upper extension. Refer to **Trim Panel Replacement - Upper Extension**.
6. Install the door handle bezel. Refer to **Handle Bezel Replacement - Inside**.

TRIM PANEL REPLACEMENT - SIDE FRONT DOOR (WITH YE9 LATE PRODUCTION)

cardiagn.com

Removal Procedure

1. Remove the door handle bezel. Refer to **Handle Bezel Replacement - Inside**.
2. Remove the door trim panel upper extension. Refer to **Trim Panel Replacement - Upper Extension**.
3. Using a suitable flat-bladed tool, gently pry the manual lock lever from the door trim panel.
4. Remove the push in fastener (3) at the front edge of the door trim.
5. Remove the cap (5) covering the screw on the rear edge of the trim panel.
6. Remove the trim panel screws.
   - Remove the screw (2) from within the opening where the manual door lock lever resides.
   - Remove the screw (4) from the opening in front of the armrest.
   - Remove the screw (6) from the rear edge of the trim panel.
7. Carefully slide the trim panel (1) up in order to release the retainers from the door.
8. Disconnect the electrical connectors.



cardiagn.com

Fig. 32: Removing Side Front Door Trim Panel (With YE9 Late Production)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the electrical connectors.
2. Carefully align the trim panel (1), to the door and slide the panel into the retainer slots in order to install the trim panel to the door.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the trim panel screws (2,4,6).

   Tighten: Tighten the trim panel screws (2,4,6) to 2 N.m (18 lb in).

4. Install the screw cover (5).
5. Install the push in fastener (3).

cardiagn.com

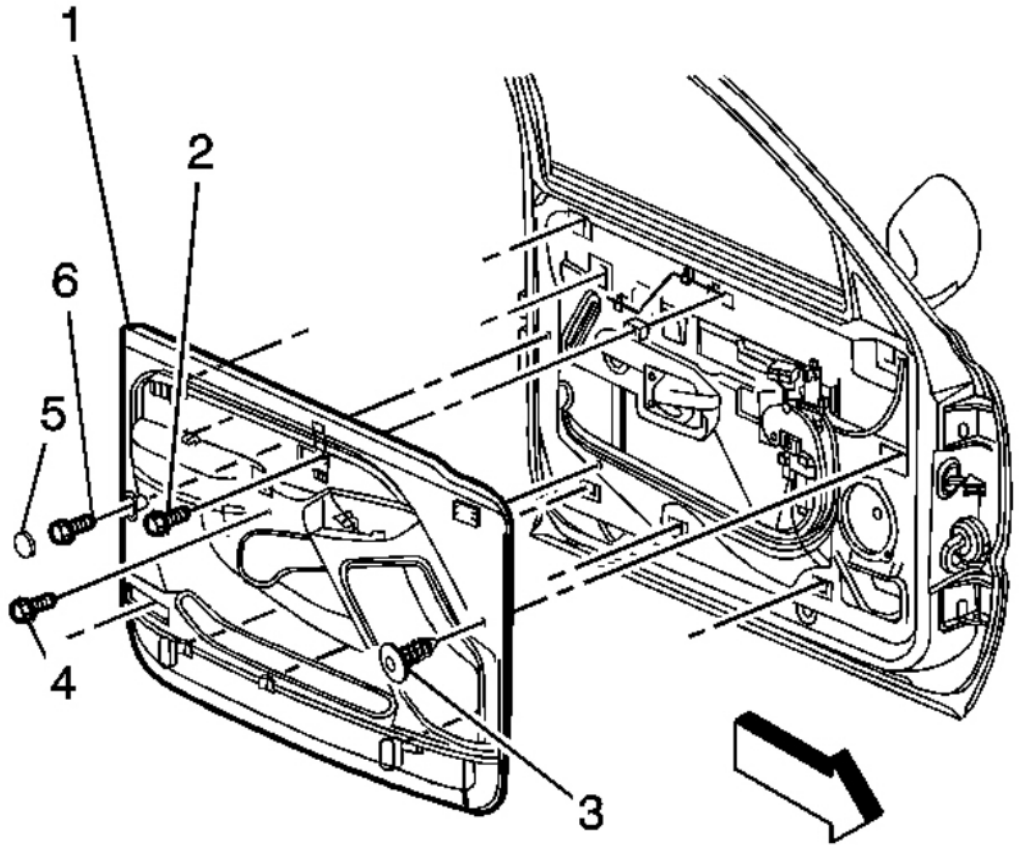


Fig. 33: Installing Side Front Door Trim Panel (With YE9 Late Production)
Courtesy of GENERAL MOTORS CORP.

6. Install the manual lock lever to the trim panel.
    1. Align the manual lock lever to the opening in the door trim panel.
    2. Push inward until the manual lock lever is fully seated into the trim panel.
7. Install the door trim panel upper extension. Refer to **Trim Panel Replacement - Upper Extension**.
8. Install the door handle bezel. Refer to **Handle Bezel Replacement - Inside**.

TRIM PANEL REPLACEMENT - SIDE REAR DOOR (TAHOE/YUKON/ESCALADE)

Removal Procedure

1. Remove the door handle bezel. Refer to **Handle Bezel Replacement - Inside**.
2. Remove the window-regulator handle, if equipped. Refer to **Window Handle Replacement**.

cardiagn.com

3. Remove the manual lock lever from the trim panel using a flat-bladed tool.
4. Remove the trim panel screws.
5. In order to remove the trim panel, slide the trim panel upward and outward in order to release the trim panel tab retainers.
6. Disconnect the electrical connectors, if necessary.

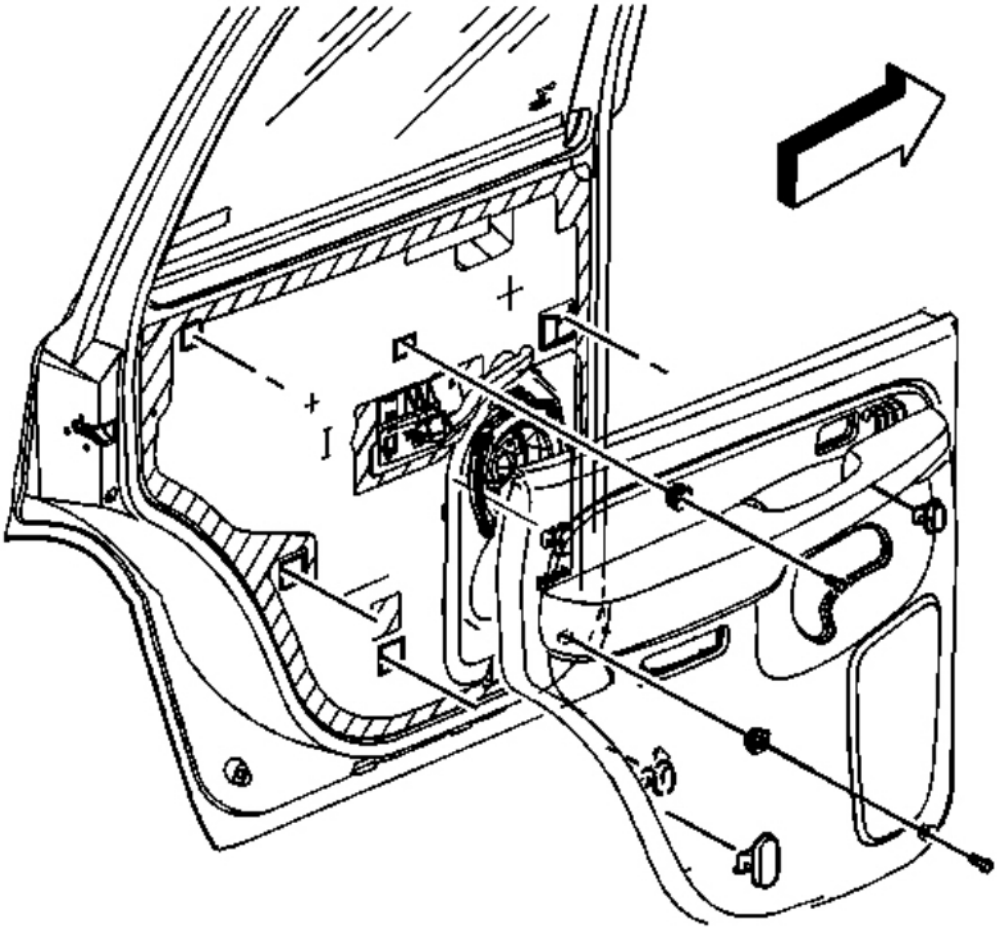


Fig. 34: Removing Side Rear Door Trim Panel (Tahoe/Yukon/Escalade)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the electrical connectors, if necessary.

cardiagn.com

Ensure that the electrical connectors are routed through the openings.

2. Align the tab retainers with the holes in the door.
3. Install the trim panel to the door by lowering the trim panel into the tab retainer holes in order to seat the retainers.

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the 2 trim panel screws.

Tighten: Tighten the 2 trim panel screws to 2 N.m (18 lb in).

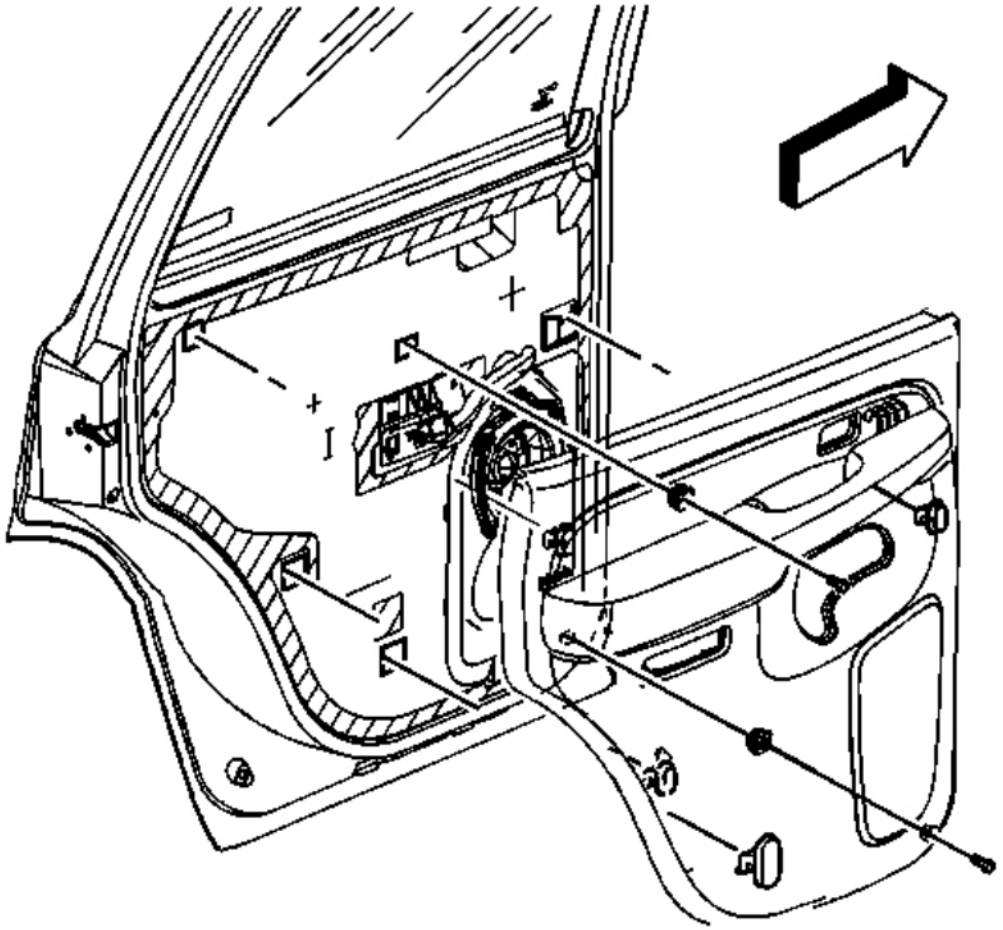


Fig. 35: Installing Side Rear Door Trim Panel (Tahoe/Yukon/Escalade)

cardiagn.com

Courtesy of GENERAL MOTORS CORP.

5. Install the manual lock lever to the trim panel by pressing the lever until the lever is completely seated.
6. Install the window-regulator handle, as necessary. Refer to **Window Handle Replacement**.
7. Install the door handle bezel. Refer to **Handle Bezel Replacement - Inside**.

TRIM PANEL REPLACEMENT - SIDE REAR DOOR (SUBURBAN/YUKON XL/AVALANCHE/ESCLD EXT)

Removal Procedure

1. Remove the door handle bezel. Refer to **Handle Bezel Replacement - Inside**.
2. Remove the window-regulator handle, if equipped. Refer to **Window Handle Replacement**.
3. Remove the manual lock lever from the trim panel using a flat-bladed tool.
4. Remove the 2 trim panel screws.
5. Remove the trim panel from the door by carefully sliding the panel upward then outward.
6. Disconnect the electrical connectors.

cardiagn.com

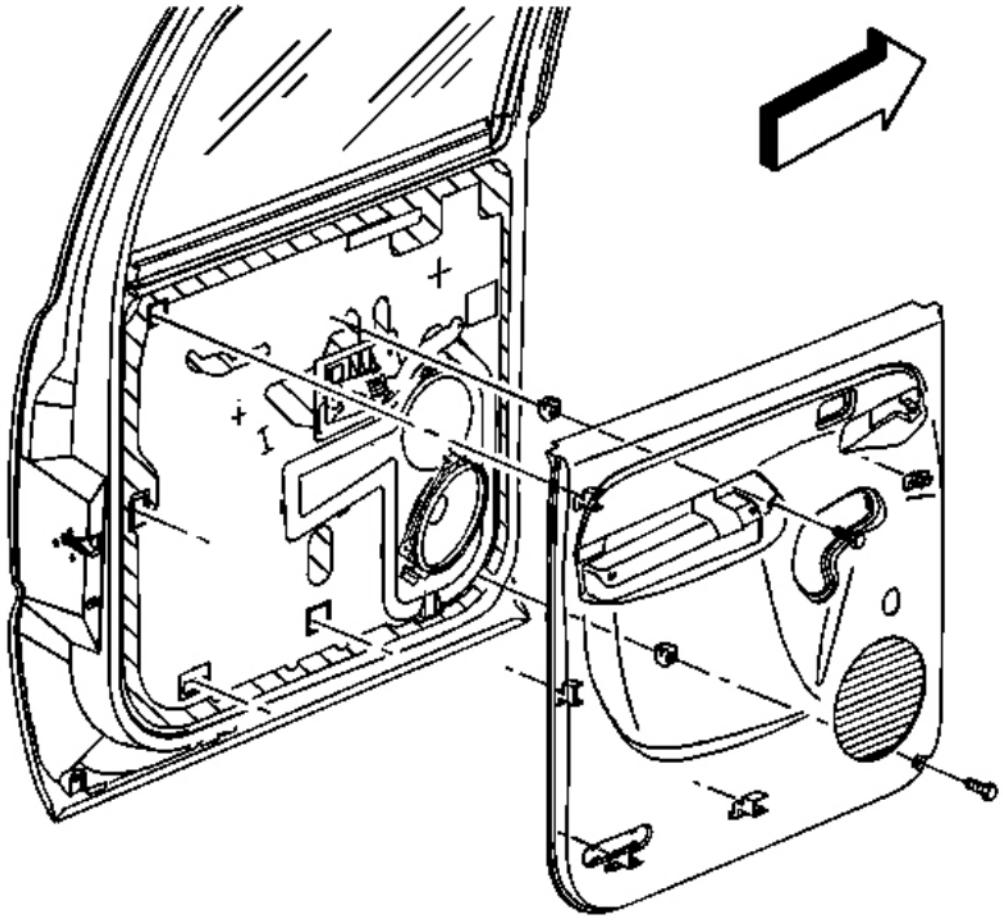


Fig. 36: Removing Side Rear Door Trim Panel (Suburban/Yukon XL/Avalanche/Escld EXT)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the electrical connectors, if necessary.
2. Align the retainers with the holes in the door.
3. Install the trim panel to the door by lowering the trim panel down into the retainer holes in order to seat the retainers.

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the trim panel screws.

cardiagn.com

Tighten: Tighten the trim panel screws to 2 N.m (18 lb in).

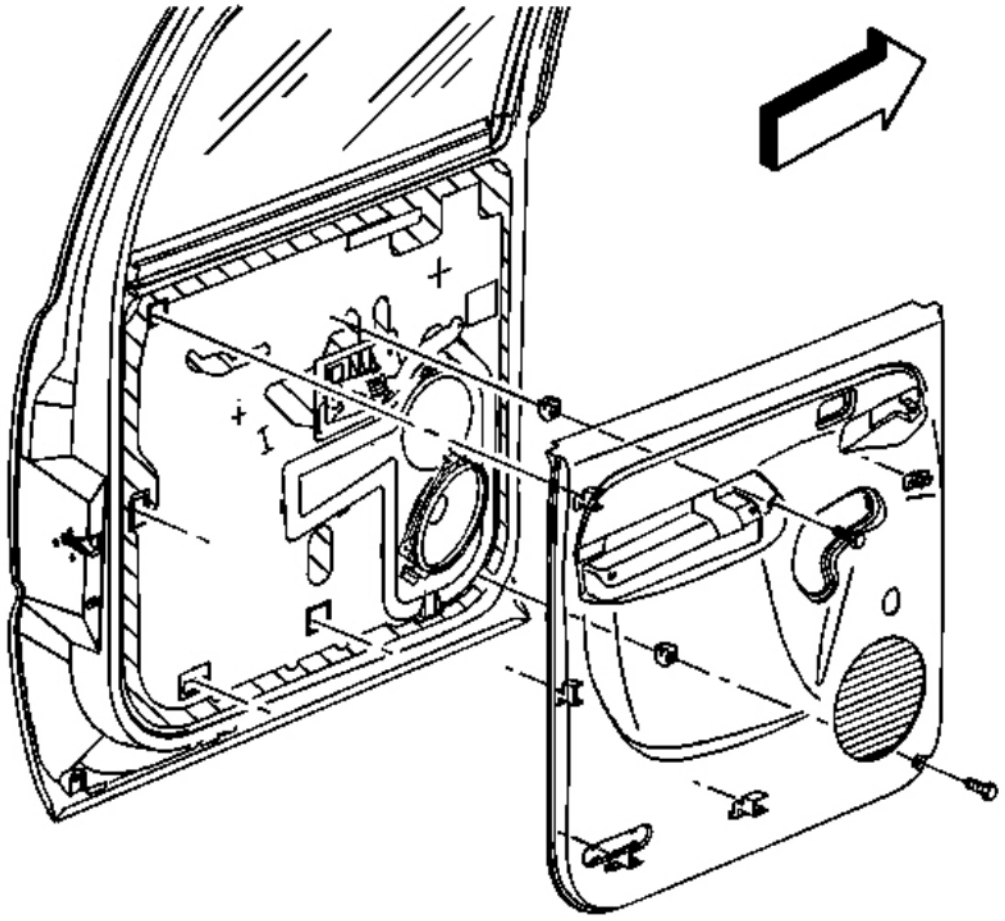


Fig. 37: Installing Removing Side Rear Door Trim Panel (Suburban/Yukon XL/Avalanche/Escld EXT)
Courtesy of GENERAL MOTORS CORP.

5. Install the manual lock lever by pressing the lever until the lever is completely seated.
6. Install the window-regulator handle, if necessary. Refer to **Window Handle Replacement**.
7. Install the door handle bezel. Refer to **Handle Bezel Replacement - Inside**.

TRIM PANEL INSERT REPLACEMENT - FRONT DOOR (ESCALADE)

Removal Procedure

cardiagn.com

1. Remove the front door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
2. Remove the door trim panel insert retaining nuts (1).
3. Remove the door trim panel insert from the panel.

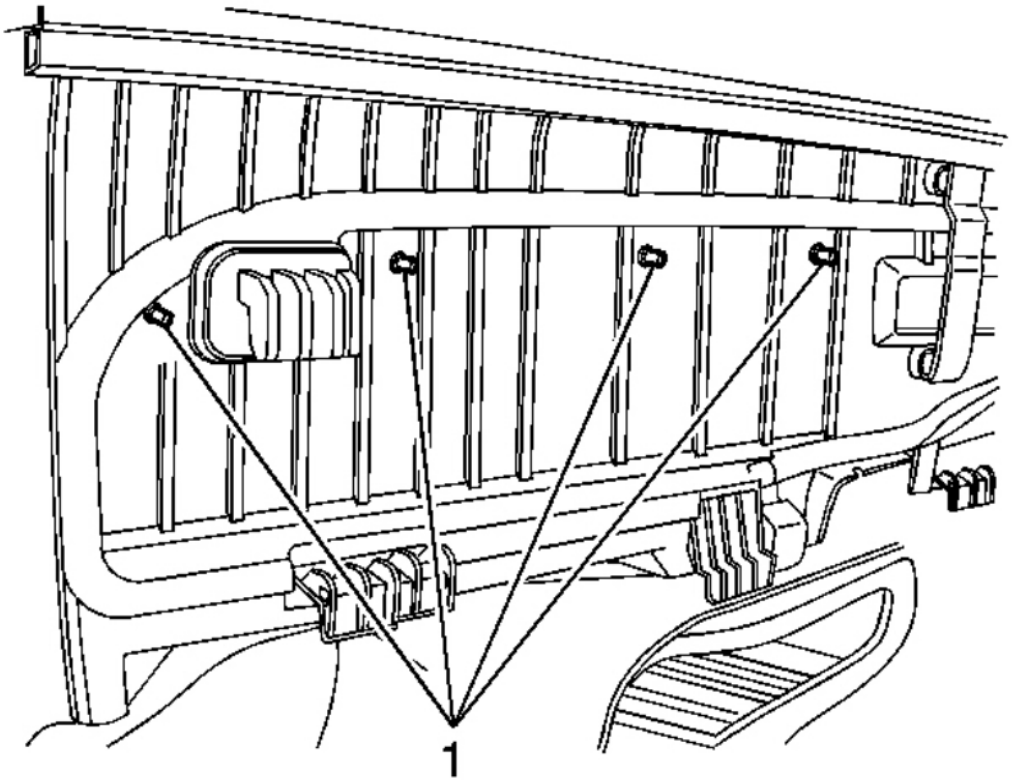


Fig. 38: Removing Front Door Trim Panel Insert Nuts (Escalade)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the door trim panel insert into the door trim panel.

NOTE: **Refer to Fastener Notice in Cautions and Notices.**

2. Install the door trim panel insert retaining nuts (1).

Tighten: Tighten the door trim panel insert retaining nuts (1) until fully driven, seated, but not stripped.

cardiagn.com

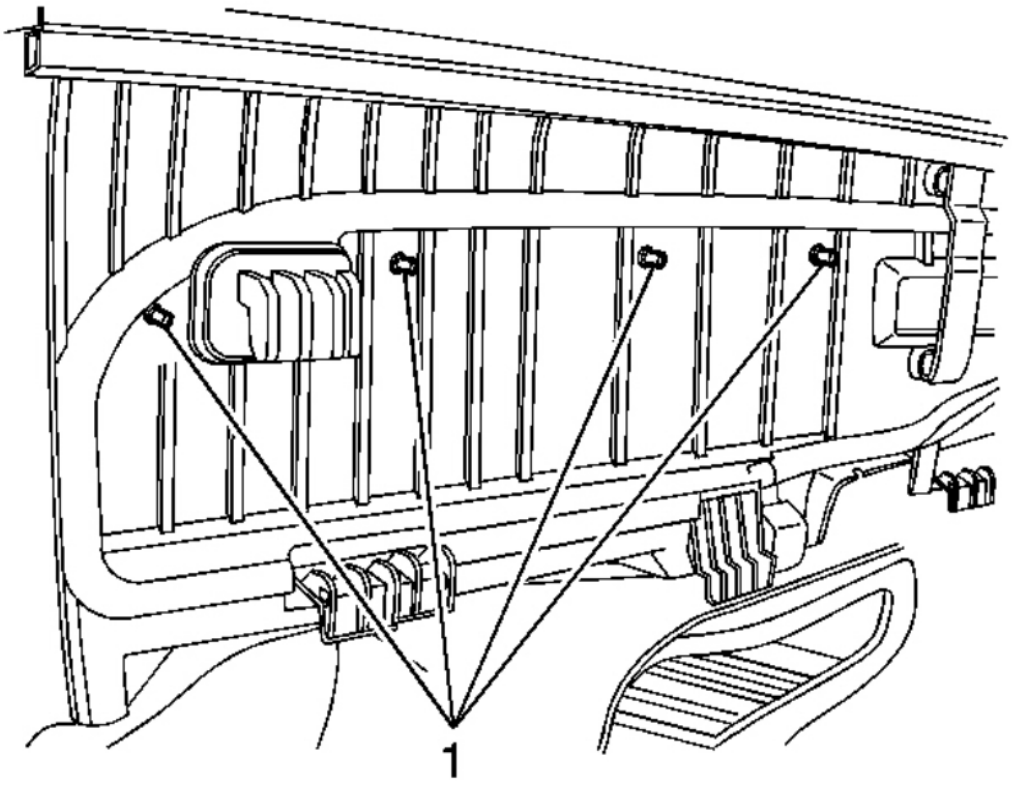


Fig. 39: Installing Front Door Trim Panel Insert Nuts (Escalade)
Courtesy of GENERAL MOTORS CORP.

3. Install the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.

TRIM PANEL INSERT REPLACEMENT - REAR DOOR (ESCALADE)

Removal Procedure

1. Remove the rear door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
2. Remove the door trim panel insert retaining nuts (1).
3. Remove the door trim panel insert from the panel.

cardiagn.com

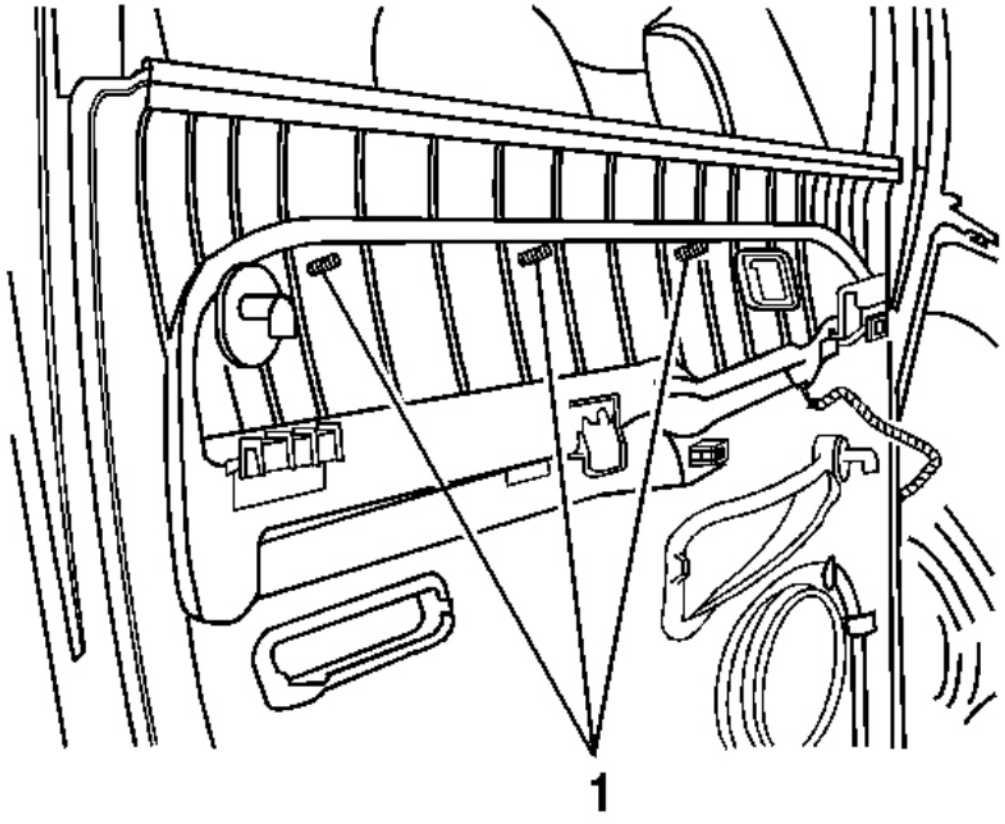


Fig. 40: Removing Rear Door Trim Panel Insert Nuts (Escalade)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the door trim panel insert into the door trim panel.

   NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the door trim panel insert retaining nuts (1).

   Tighten: Tighten the door trim panel insert retaining nuts (1) until fully driven, seated, but not stripped.

cardiagn.com

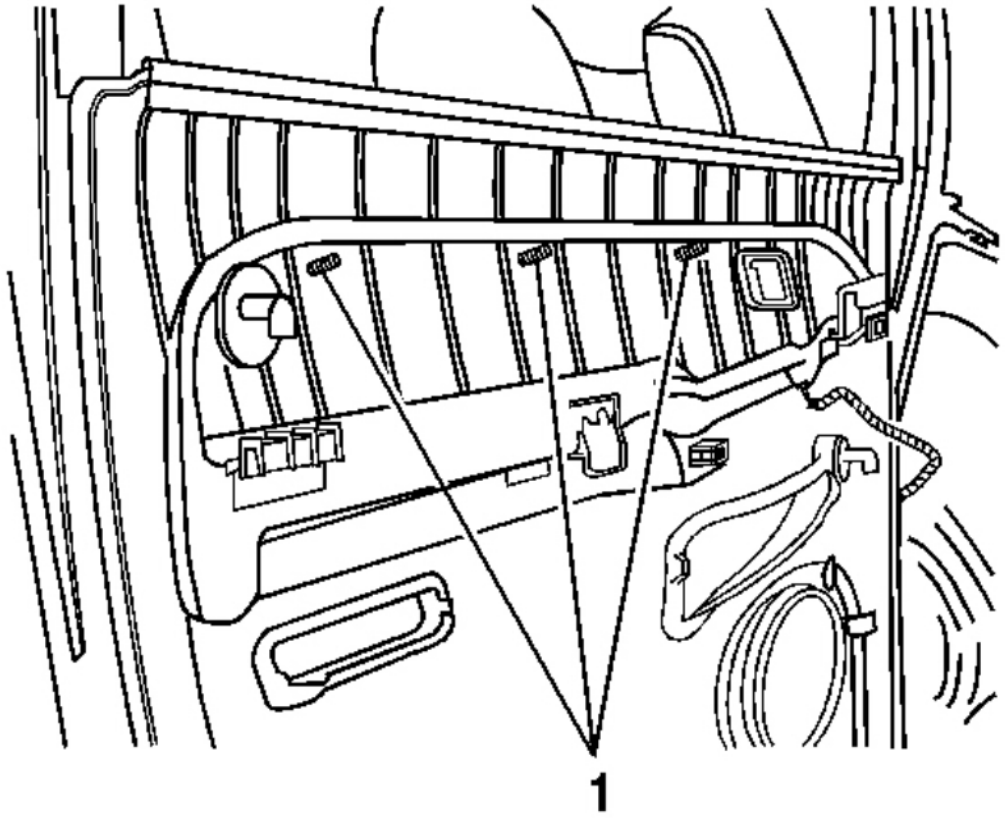


Fig. 41: Installing Rear Door Trim Panel Insert Nuts (Escalade)
Courtesy of GENERAL MOTORS CORP.

3. Install the front door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.

WATER DEFLECTOR REPLACEMENT - FRONT DOOR

Removal Procedure

1. Remove the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
2. Remove inside door handle. Refer to **Door Handle Replacement - Inside**.
3. Note location of wiring and remove through deflector.
4. Using a flat-bladed tool, separate the bond between the sealer and the door.

cardiagn.com

5. Pull the waterproof sealing tape from the deflector.
6. Remove the water deflector.

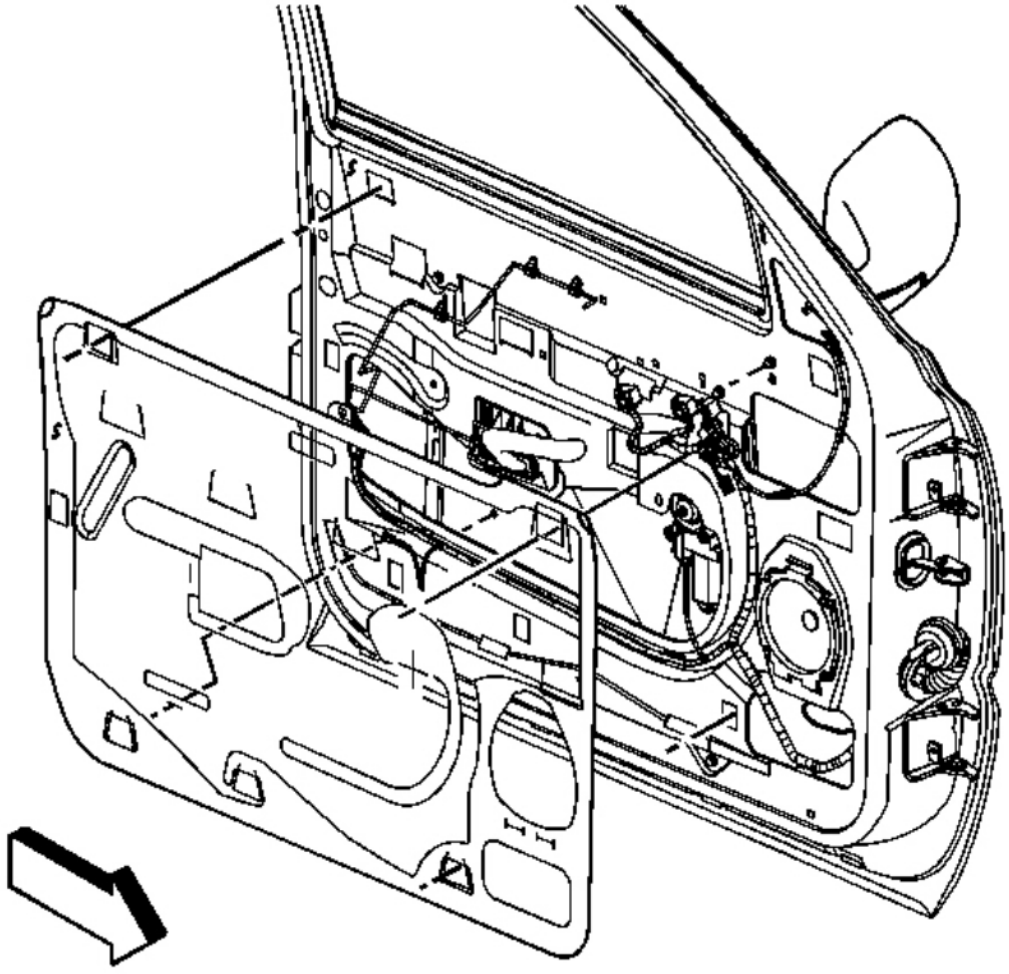


Fig. 42: Removing Front Door Water Deflector
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Using waterproof tape, or 3M® 777, or equivalent, install the water deflector to the door.

cardiagn.com

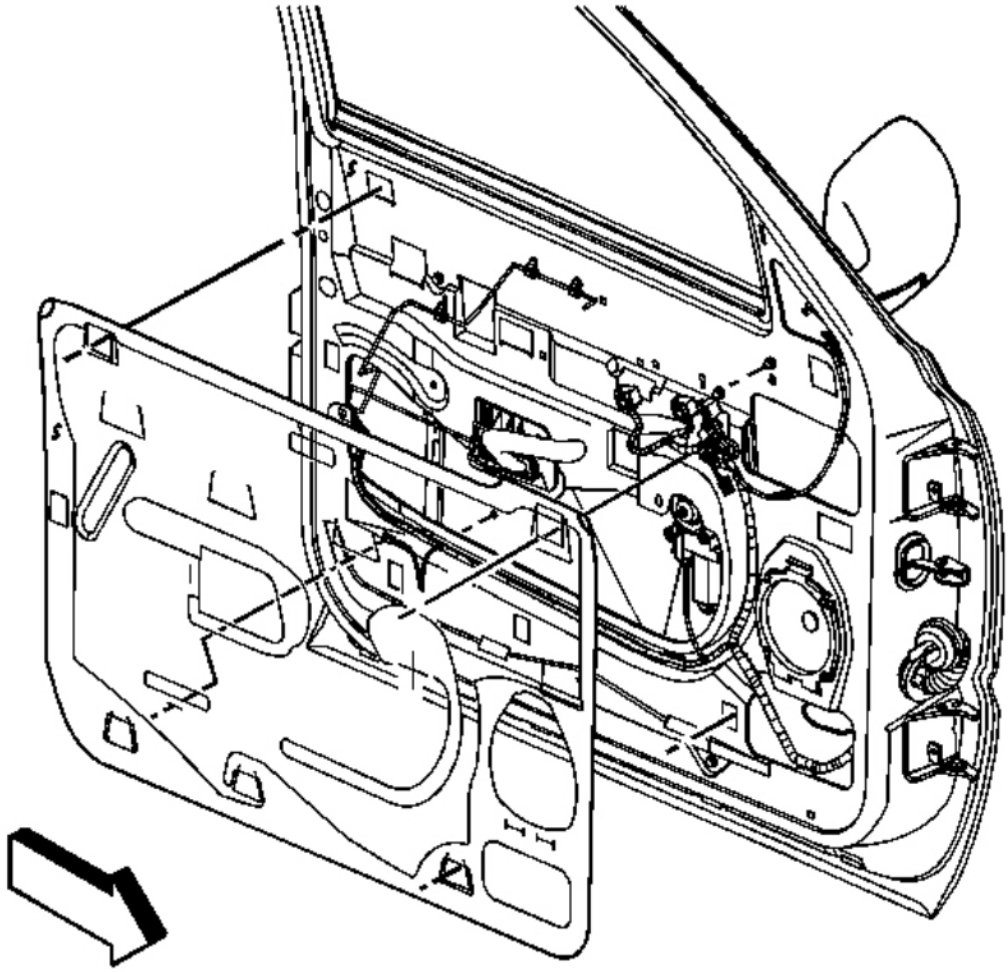


Fig. 43: Installing Front Door Water Deflector
Courtesy of GENERAL MOTORS CORP.

2. Install the trim panel to the door. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.

WATER DEFLECTOR REPLACEMENT - REAR DOOR (TAHOE/YUKON/ESCALADE)

Removal Procedure

1. Remove the trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.

cardiagn.com

2. Remove inside door handle. Refer to **Door Handle Replacement - Inside**.
3. Note location of wiring and remove through deflector.
4. Using a flat-bladed tool, separate the bond between the sealer and the door.
5. Pull the waterproof sealing tape from the deflector.
6. Remove the water deflector.

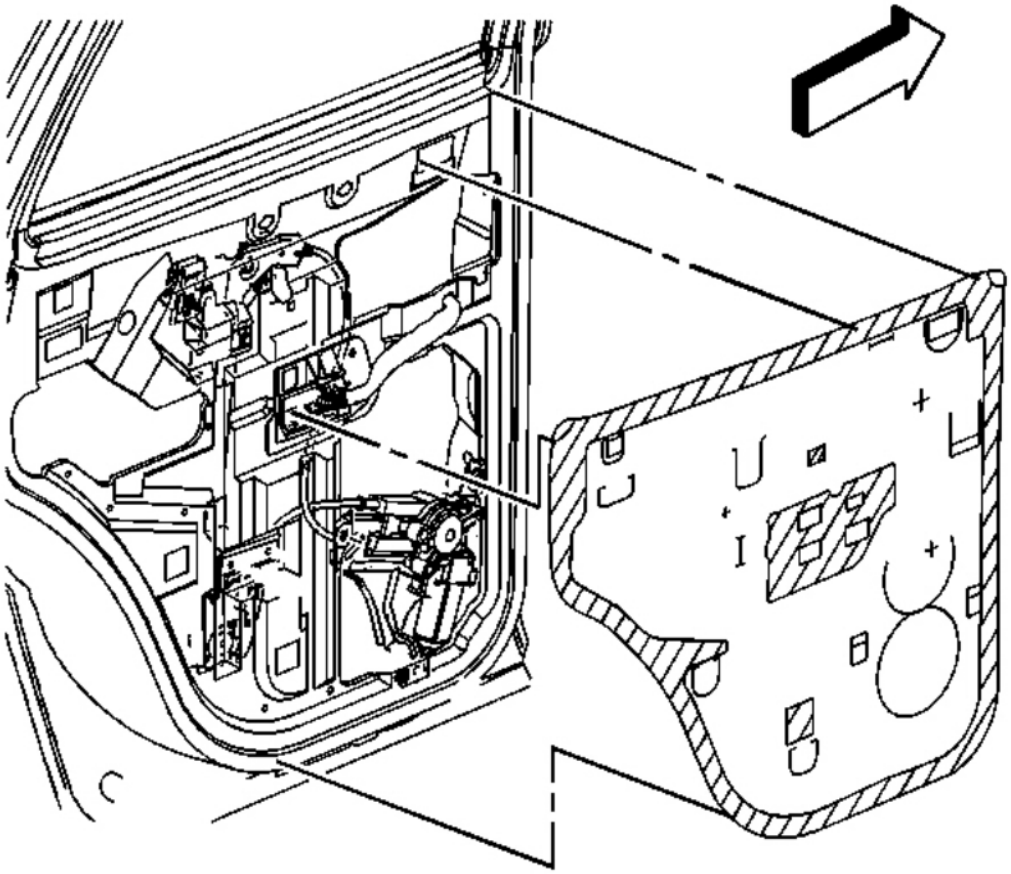


Fig. 44: Removing Rear Door Water Deflector (Tahoe/Yukon/Escalade)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the electrical connectors through the water deflector.
2. Using waterproof tape, or 3M® 777, or equivalent, install the water deflector to the door.

cardiagn.com

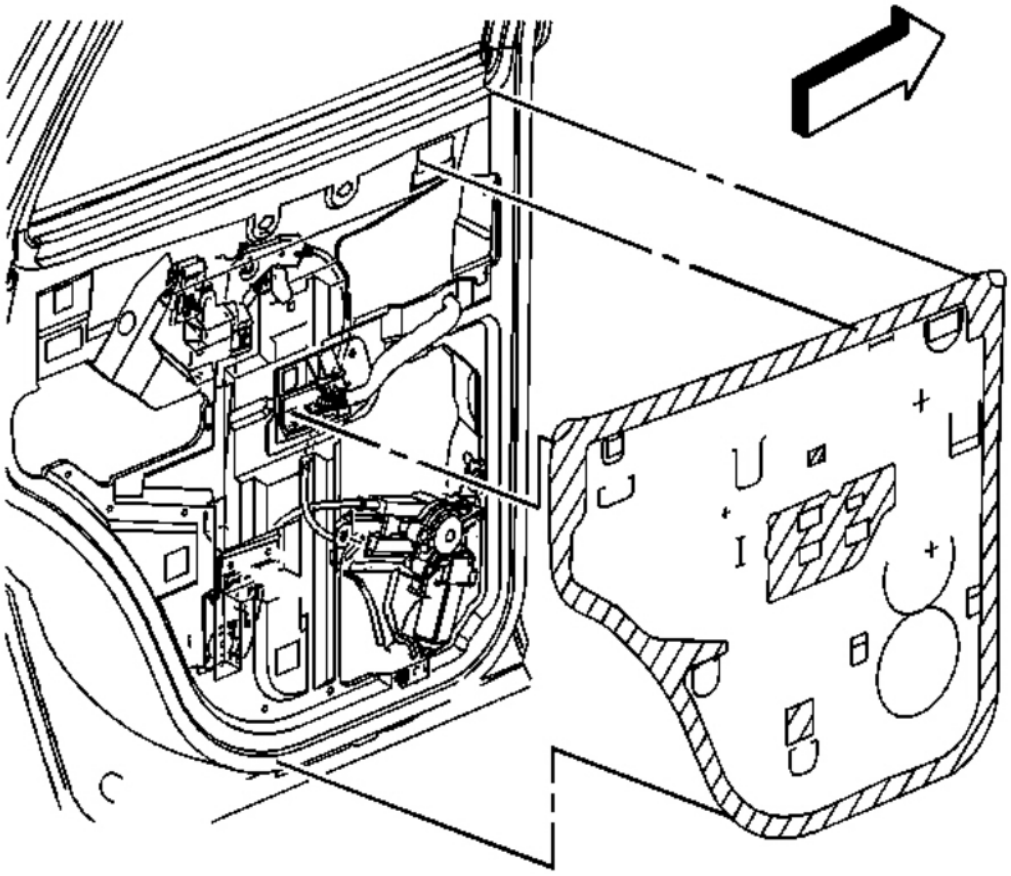


Fig. 45: Installing Rear Door Water Deflector (Tahoe/Yukon/Escalade)
Courtesy of GENERAL MOTORS CORP.

3. Install the trim panel to the door. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.

WATER DEFLECTOR REPLACEMENT - REAR DOOR (SUBURBAN/YUKON XL/AVALANCHE/ESCLD EXT)

Removal Procedure

1. Remove the trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
2. Remove inside door handle. Refer to **Door Handle Replacement - Inside**.

cardiagn.com

3. Note location of wiring and remove through deflector.
4. Using a flat-bladed tool, separate the bond between the sealer and the door.
5. Pull the waterproof sealing tape from the deflector.
6. Remove the water deflector.

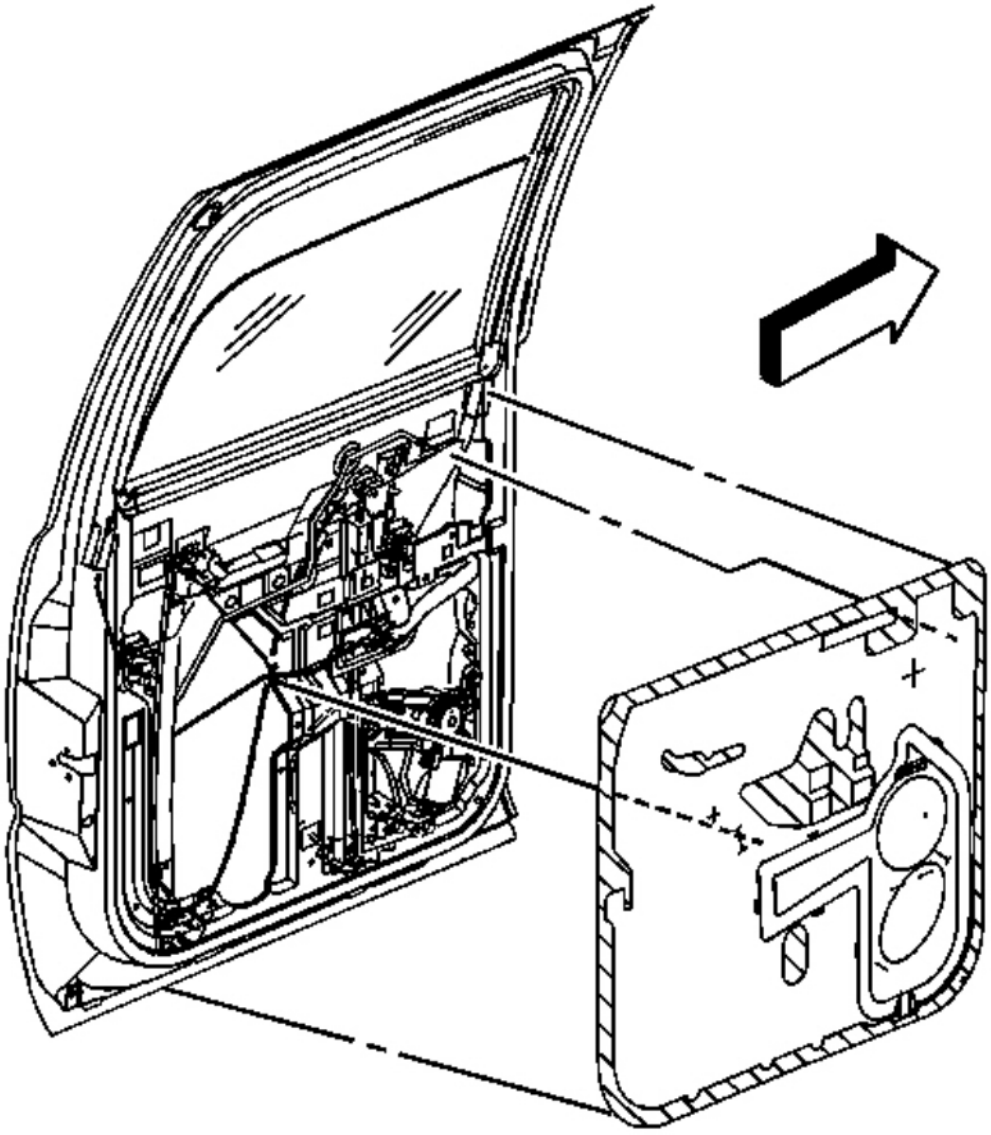


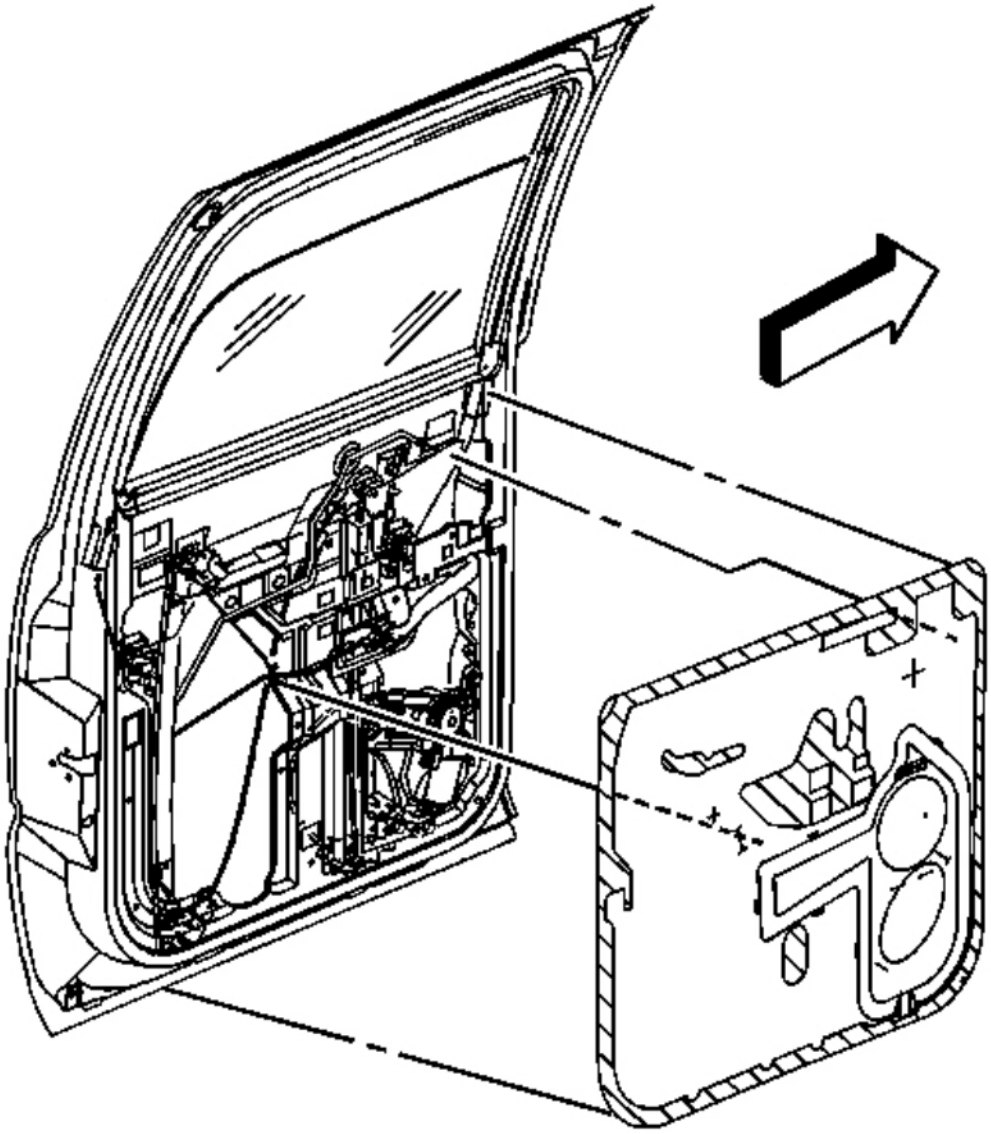
Fig. 46: Removing Rear Door Water Deflector (Suburban/Yukon XL/Avalanche/Escld EXT)

cardiagn.com

Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the electrical connectors through the water deflector.
2. Using waterproof tape, or 3M® 777, or equivalent, install the water deflector to the door.



cardiagn.com

Fig. 47: Installing Rear Door Water Deflector (Suburban/Yukon XL/Avalanche/Escld EXT)
Courtesy of GENERAL MOTORS CORP.

3. Install the trim panel to the door. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.

DOOR ADJUSTMENT

IMPORTANT: Perform this procedure only when bolt-on replacement hinges are installed.

1. Remove the door striker. Refer to **Striker Replacement - Door**.
2. Loosen the door hinge to the body side pillar bolts.
3. Adjust the door at the door hinges in the following directions:
   - Upward or downward
   - Forward or rearward
   - Inward or outward
4. Adjust the gap between the rocker panel and the door to 4.0-8.0 mm (0.16-0.31 in).

cardiagn.com

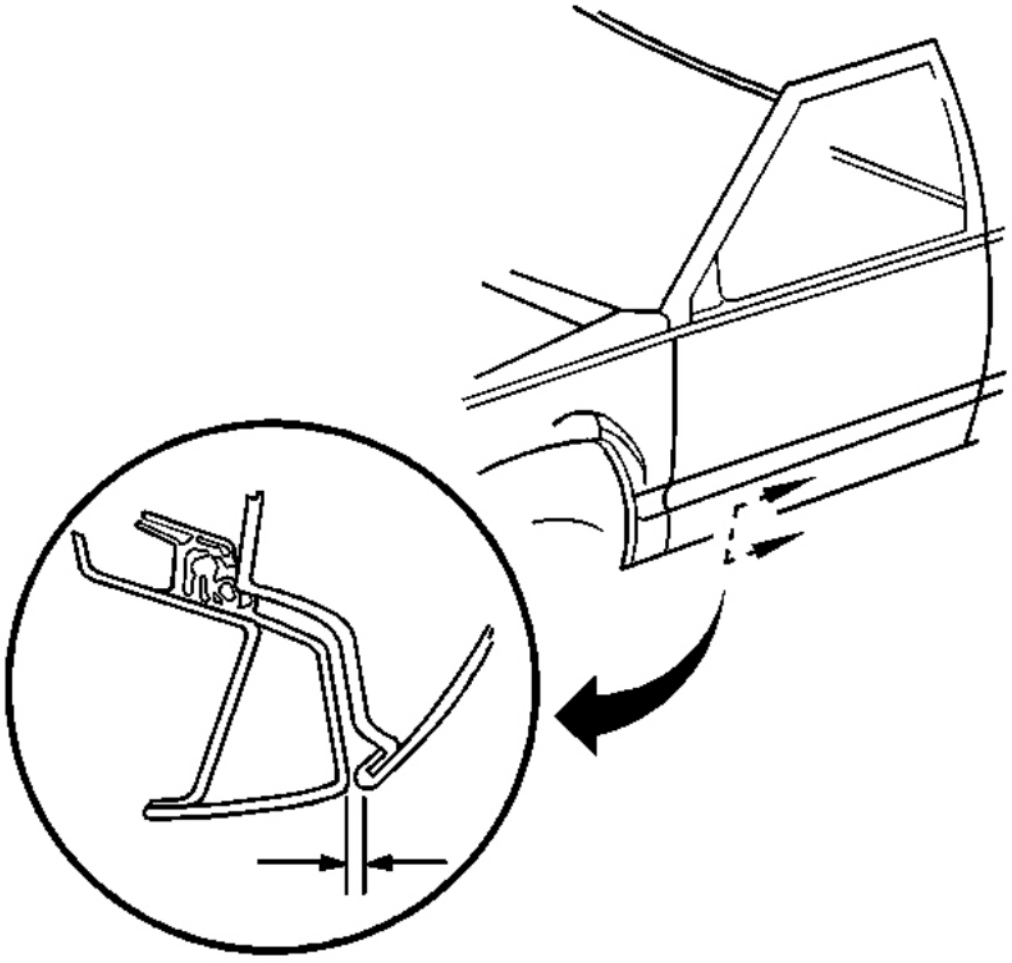


Fig. 48: Adjusting Gap Between Rocker Panel & Door
Courtesy of GENERAL MOTORS CORP.

5. Adjust the gap between the door and the roof panel to 3.0-9.0 mm (0.12-0.35 in).

cardiagn.com

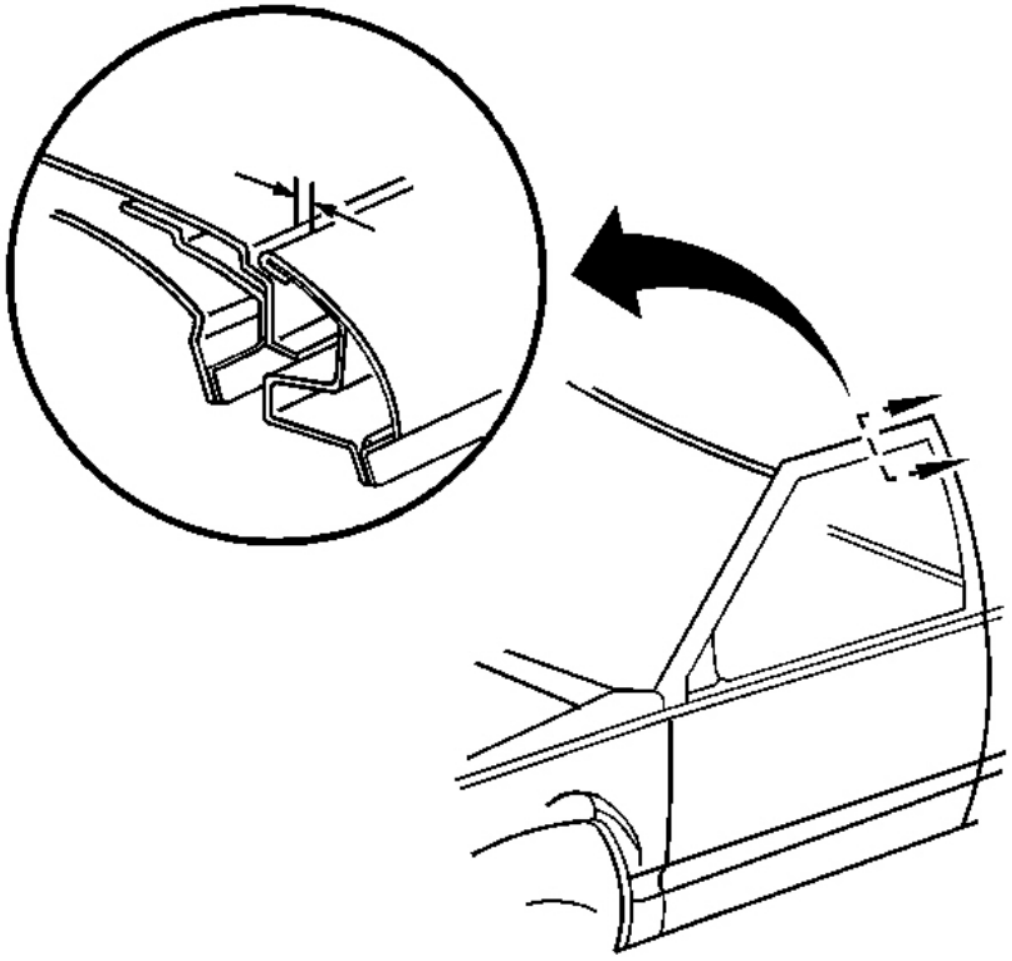


Fig. 49: Adjusting Gap Between Door & Roof Panel
Courtesy of GENERAL MOTORS CORP.

6. Adjust the gap between the rear of the door and the rear pillar to 3.0-5.0 mm (0.12-0.20 in).

cardiagn.com

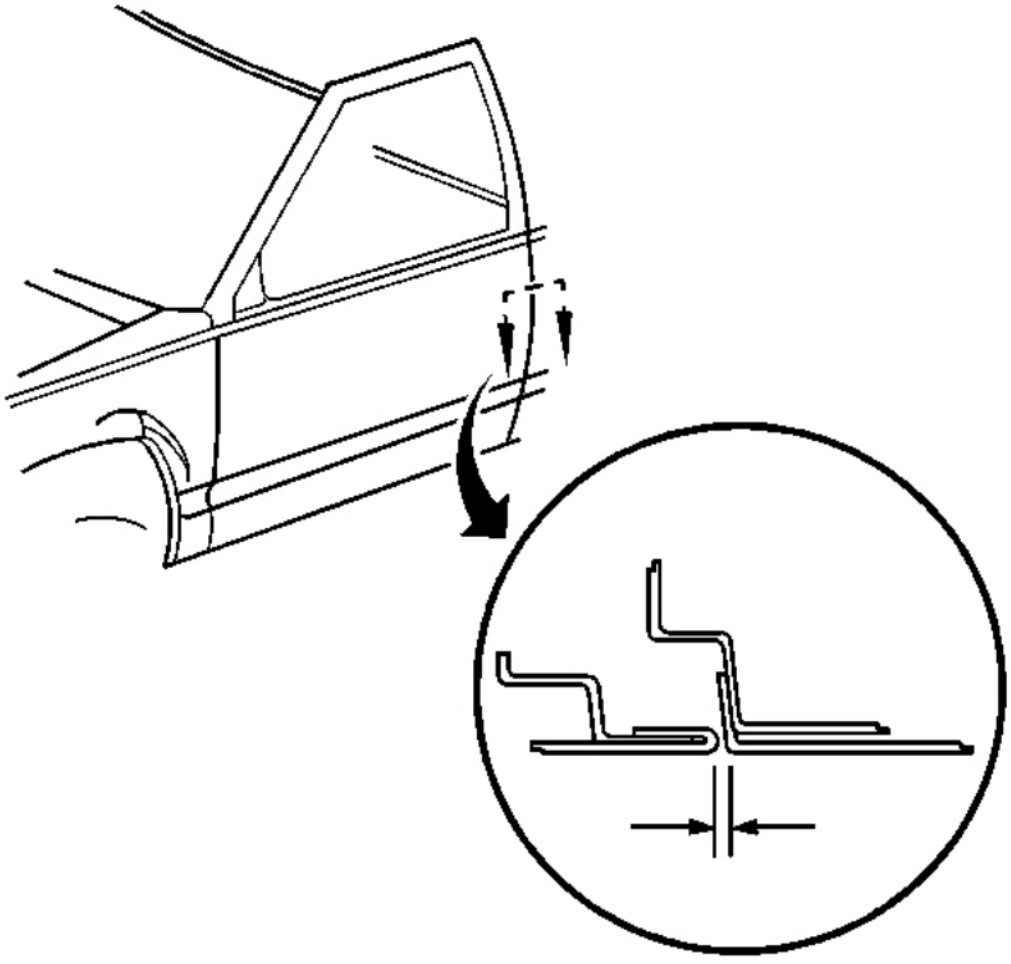


Fig. 50: Adjusting Gap Between Rear Of Door & Rear Pillar
Courtesy of GENERAL MOTORS CORP.

7. Adjust the gap between the door and the fender to 4.0-6.0 mm (0.16-0.24 in).

cardiagn.com

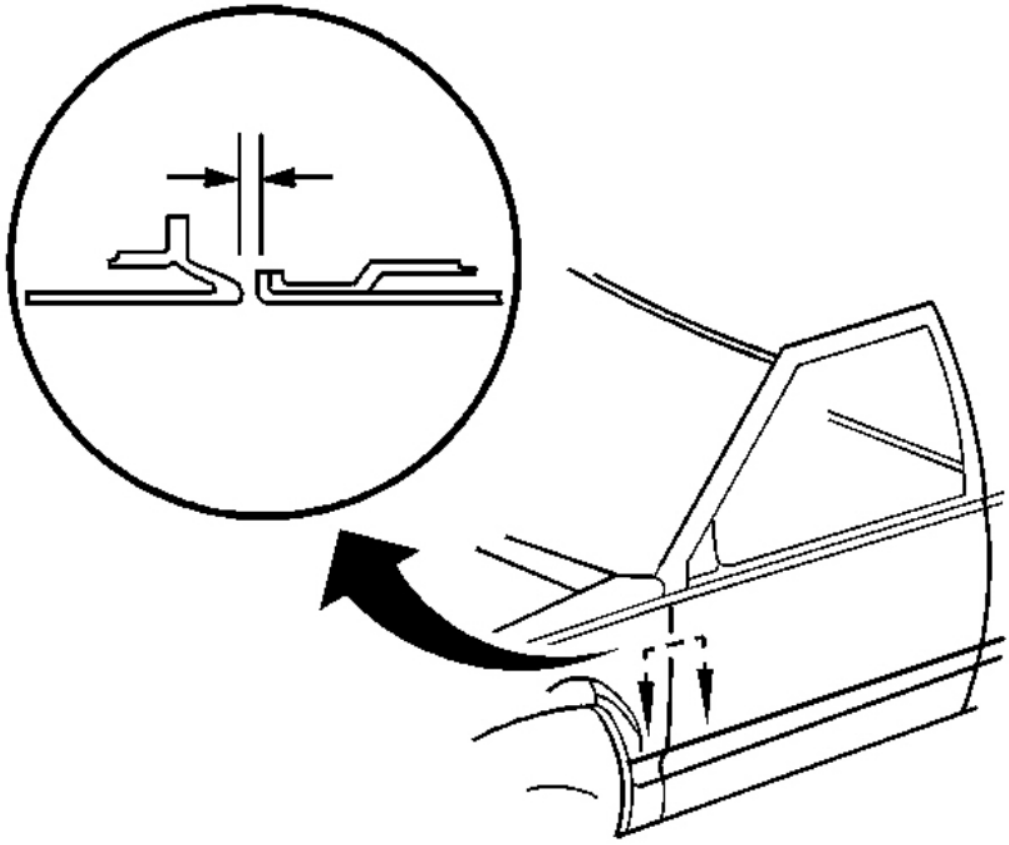


Fig. 51: Adjusting Gap Between Door & Fender
Courtesy of GENERAL MOTORS CORP.

8. Adjust the door surfaces so that the door surfaces are flush with the other panels to 1.0 mm (0.04 in).

cardiagn.com

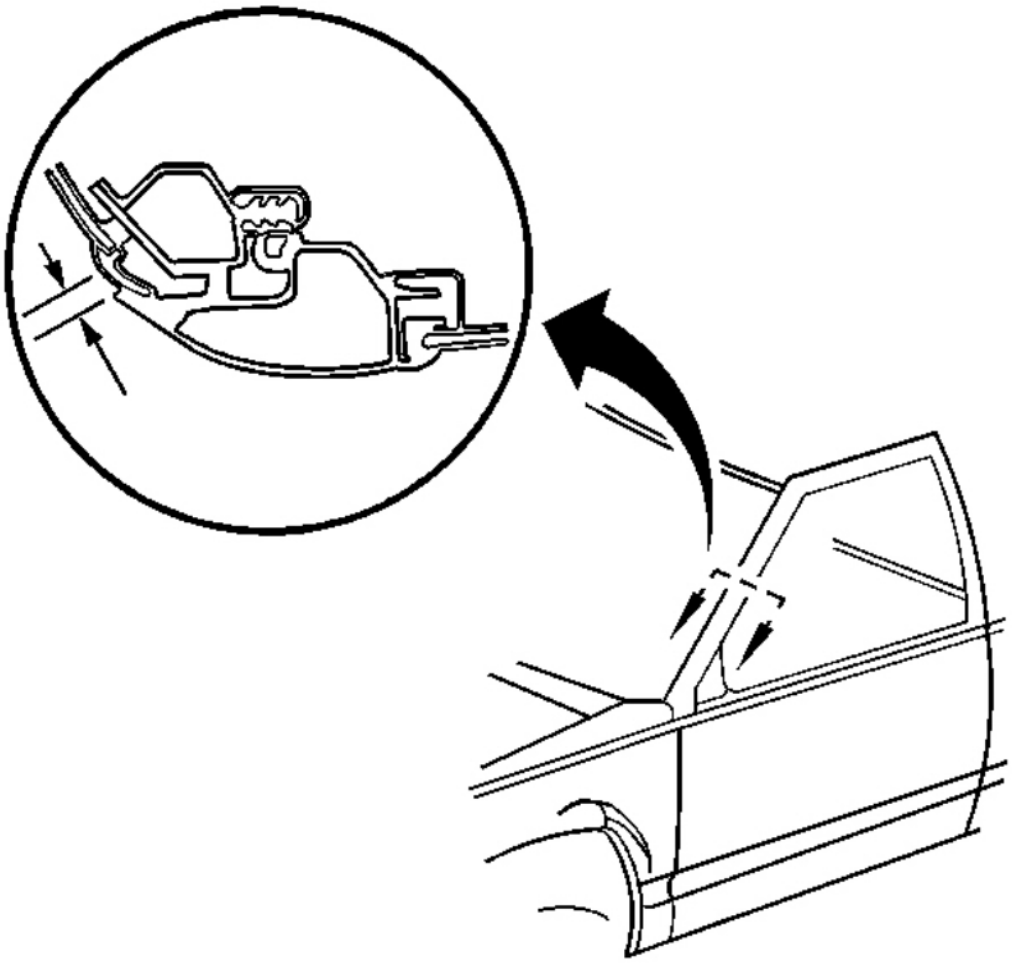


Fig. 52: Adjusting Door Surfaces
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

9. Tighten the hinge bolts.

   Tighten: Tighten the hinge bolts to 35 N.m (26 lb ft).

10. Install the door striker. Refer to **Striker Replacement - Door**.
11. Adjust the door striker, if necessary, in order to properly engage the door latch.
    1. Loosen the door striker bolts.

cardiagn.com

2. Adjust the door striker.

   Tighten: Tighten the door striker bolts to 24 N.m (18 lb ft).

DOOR REPLACEMENT - FRONT

Removal Procedure

1. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
2. Remove the mirror. Refer to **Mirror Replacement - Manual** or **Mirror Replacement - Power**.
3. Remove the window glass. Refer to **Window Replacement - Front Door**.
4. Remove the window module. Refer to **Module Replacement - Front Power Window**.
5. Remove the inside door handle. Refer to **Door Handle Replacement - Inside**.
6. Remove the outside door handle. Refer to **Door Handle Replacement - Outside**.
7. Remove the door lock actuator. Refer to **Lock Actuator Replacement - Front Door**.
8. Remove the weatherstrip from the door. Refer to **Weatherstrip Replacement - Front Door (Upper)** or **Weatherstrip Replacement - Front Door (Door Opening)**.
9. Disconnect the door wire harness. Refer to **Wiring Harness Replacement - Door**.
10. Remove the door check link bolt from the pillar side.
11. Remove the bolts from the upper door hinge and the lower door hinge.
12. With the aid of an assistant, lift the door up from the hinge pins, and remove the door from the vehicle.

cardiagn.com

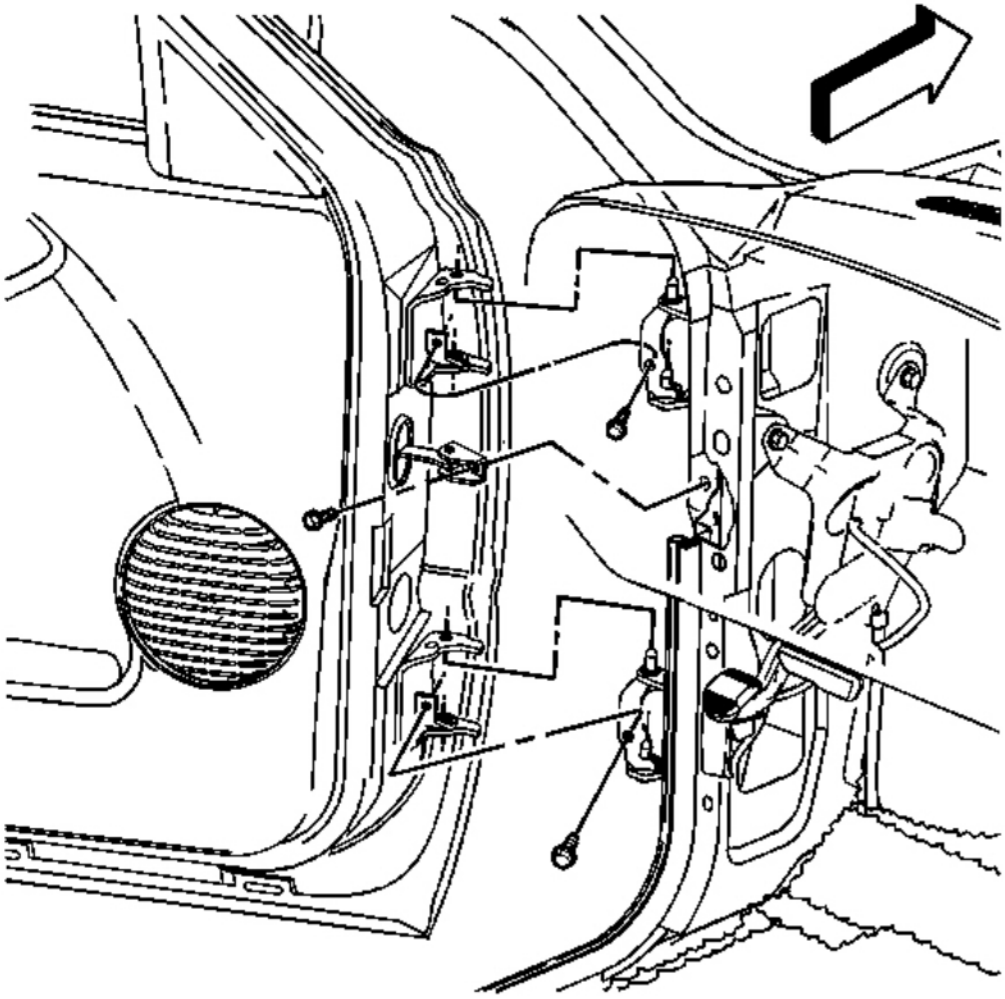


Fig. 53: Removing Front Door
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. With the aid of an assistant, install the door to the vehicle by placing the door on the hinge pins.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the bolts to the upper door hinge and the lower door hinge.

Tighten: Tighten the hinge bolts to 25 N.m (18 lb ft).

cardiagn.com

3. Install the door check link bolt to the pillar side.

   Tighten: Tighten the door check link bolt to 25 N.m (18 lb ft).

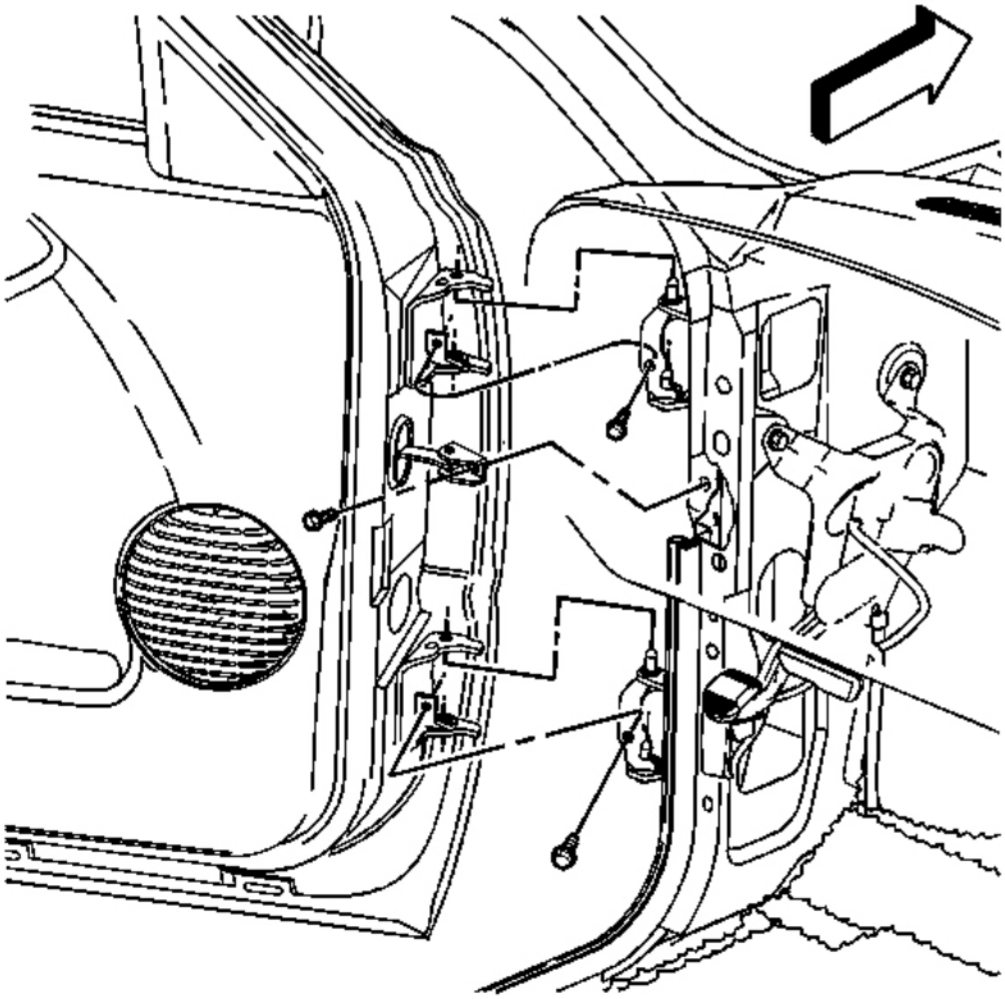


Fig. 54: Installing Front Door
Courtesy of GENERAL MOTORS CORP.

4. Connect the door wire harness. Refer to **Wiring Harness Replacement - Door**.
5. Install the weatherstrip to the door. Refer to **Weatherstrip Replacement - Front Door (Upper)** or **Weatherstrip Replacement - Front Door (Door Opening)**.
6. Install the door lock actuator. Refer to **Lock Actuator Replacement - Front Door**.

cardiagn.com

7. Install the outside door handle. Refer to **Door Handle Replacement - Outside**.
8. Install the inside door handle. Refer to **Door Handle Replacement - Inside**.
9. Install the window module. Refer to **Module Replacement - Front Power Window**.
10. Install the window glass. Refer to **Window Replacement - Front Door**.
11. Install the mirror. Refer to **Mirror Replacement - Manual** or **Mirror Replacement - Power**.
12. Install the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
13. Inspect the alignment of the door. Refer to **Door Adjustment**.

DOOR REPLACEMENT - REAR

Removal Procedure

1. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
2. Remove the window. Refer to **Module Replacement - Rear Power Window (Tahoe/Yukon/Escalade)** or **Module Replacement - Rear Power Window (Suburban/YukonXL/Avalanche/Escld EXT)**.
3. Remove the inside door handle. Refer to **Door Handle Replacement - Inside**.
4. Remove the outside door handle. Refer to **Door Handle Replacement - Outside**.
5. Remove the door lock actuator. Refer to **Lock Actuator Replacement - Rear Door**.
6. Remove the weatherstrip from the door. Refer to **Weatherstrip Replacement - Rear Door**.
7. Disconnect the door wire harness. Refer to **Wiring Harness Replacement - Door**.

cardiagn.com

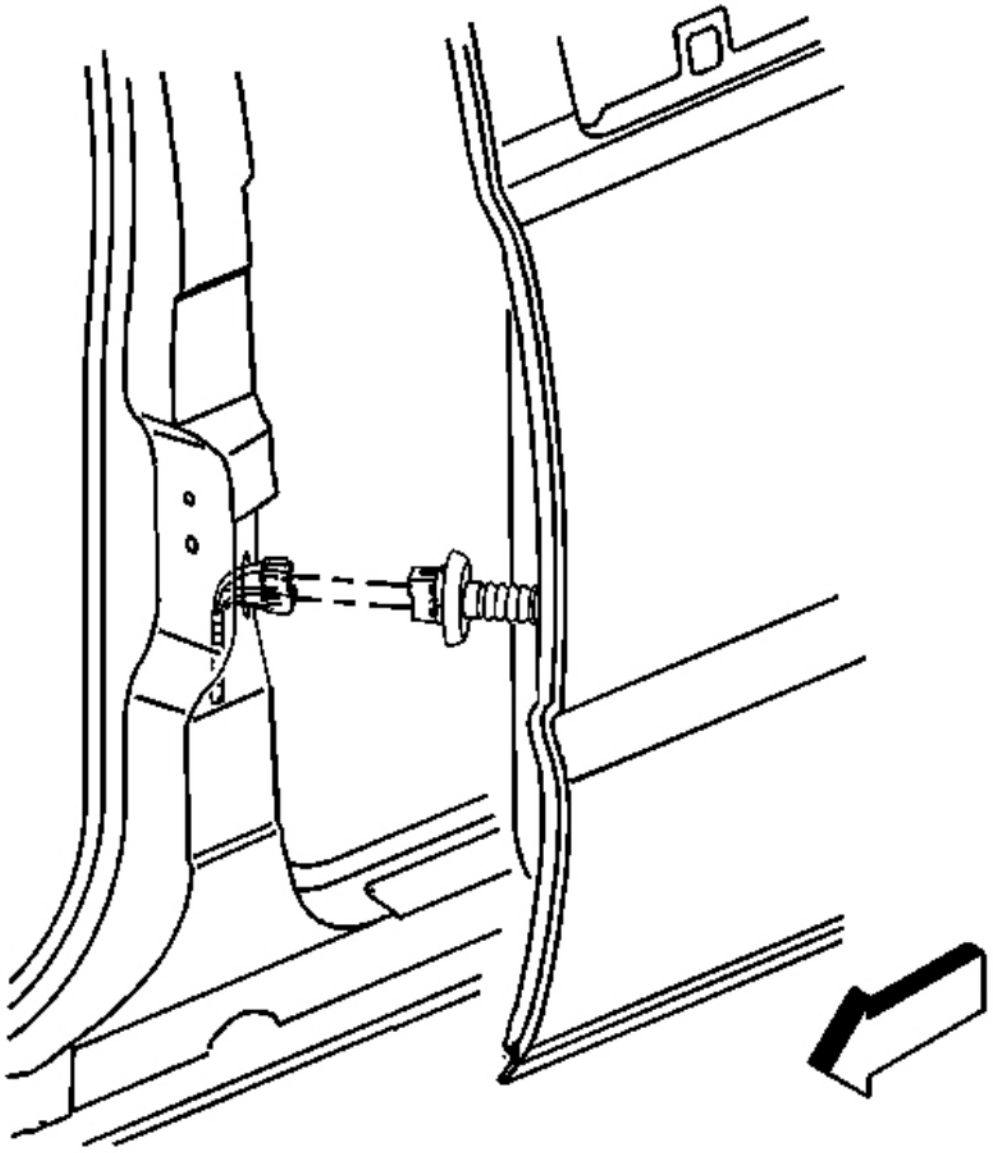


Fig. 55: Disconnecting Door Wire Harness
Courtesy of GENERAL MOTORS CORP.

8. Remove the door check link bolt from the pillar side.
9. With an assistant, remove the bolts from the upper and the lower door hinges.
10. With an assistant, lift the door up from the hinge pins and remove the door from the vehicle.

cardiagn.com

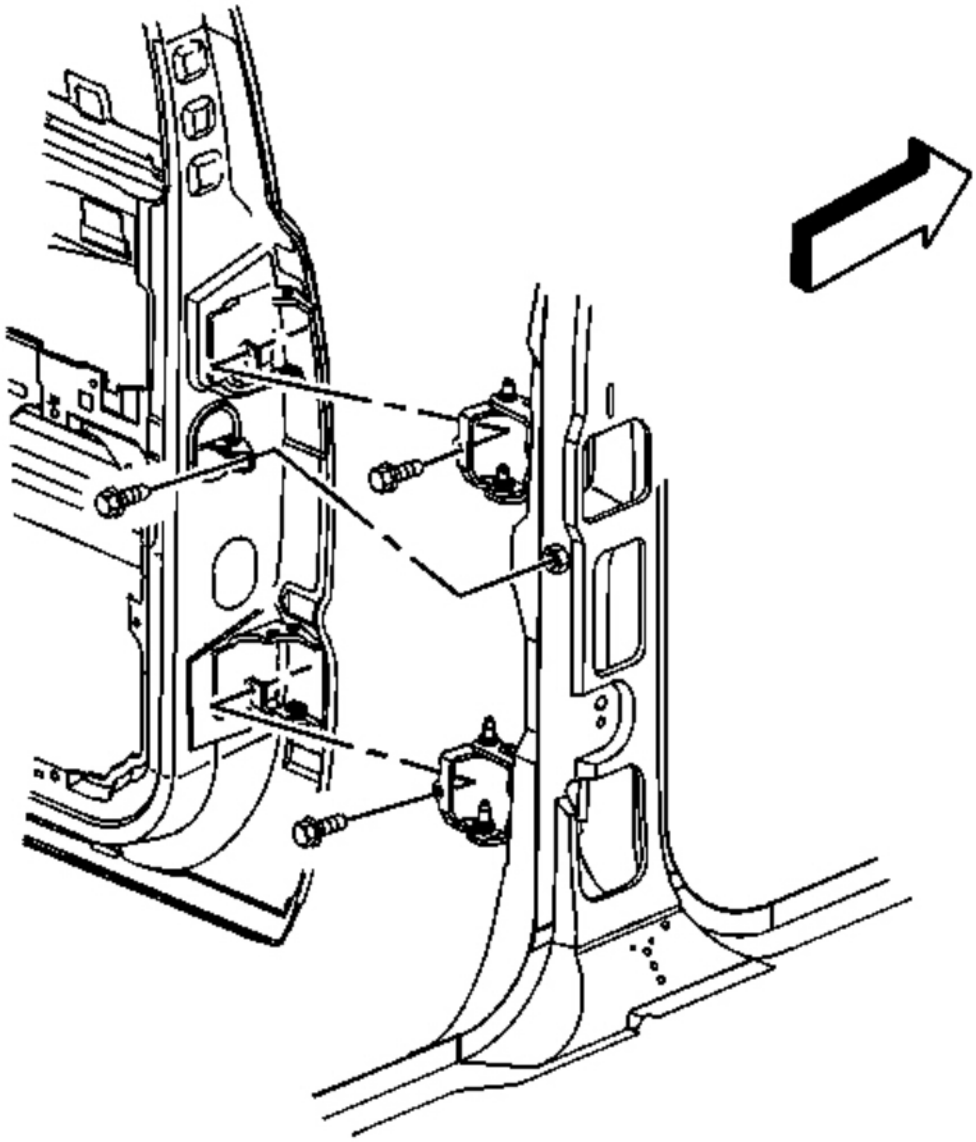


Fig. 56: Removing Rear Door
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. With an assistant install the door to the vehicle by setting the door down on the hinge pins.

cardiagn.com

NOTE: **Refer to Fastener Notice in Cautions and Notices.**

2. Install the bolts to the upper and the lower door hinges.

   Tighten: Tighten the upper and lower bolts to 24 N.m (18 lb ft).

3. Install the door check link bolt to the pillar side.

   Tighten: Tighten the door check link bolt to 24 N.m (18 lb ft).

cardiagn.com

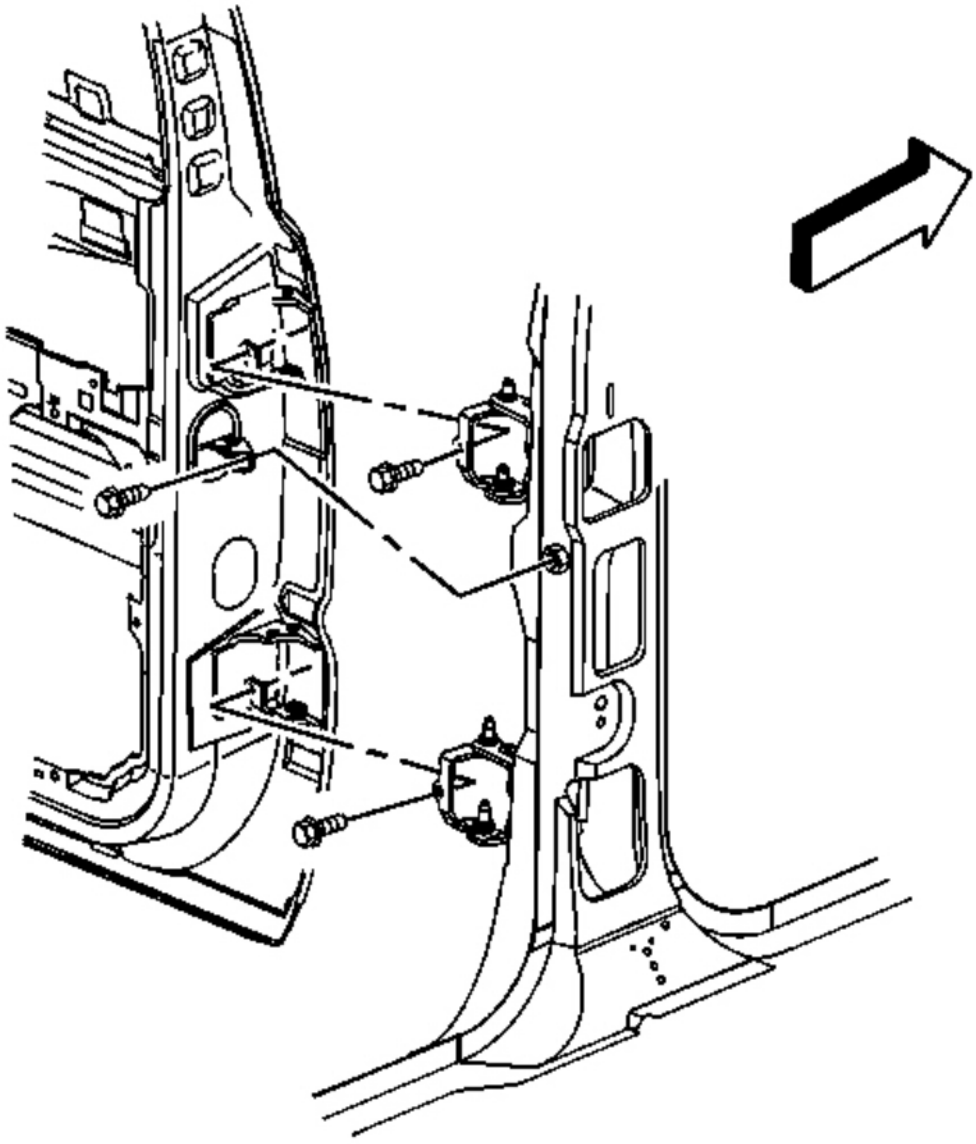


Fig. 57: Installing Rear Door
Courtesy of GENERAL MOTORS CORP.

4. Connect the door wire harness.

cardiagn.com

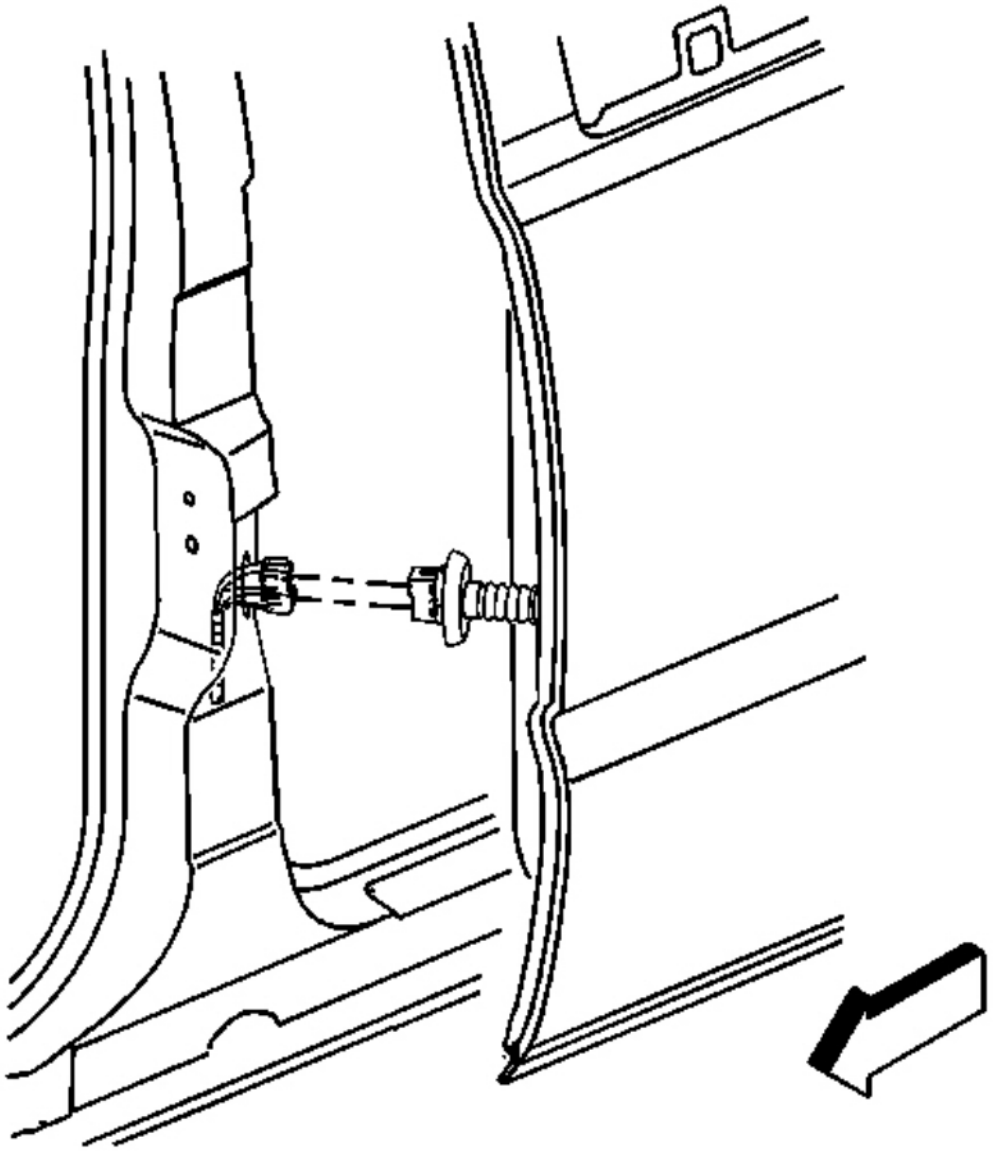


Fig. 58: Connecting Door Wire Harness
Courtesy of GENERAL MOTORS CORP.

5. Install the rear door weatherstrip. Refer to **Weatherstrip Replacement - Rear Door**.
6. Install the door lock actuator. Refer to **Lock Actuator Replacement - Rear Door**.
7. Install the outside door handle. Refer to **Door Handle Replacement - Outside**.

cardiagn.com

8. Install the inside door handle. Refer to **Door Handle Replacement - Inside**.
9. Install the window. Refer to **Module Replacement - Rear Power Window (Tahoe/Yukon/Escalade)** or **Module Replacement - Rear Power Window (Suburban/YukonXL/Avalanche/Escld EXT)**.
10. Install the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
11. Inspect the alignment of the door. Refer to **Door Adjustment**.

DOOR HINGE PIN AND BUSHING REPLACEMENT - FRONT DOOR

The door hinge pins and bushings are not replaceable. If the hinge pins or bushings are damaged, replace the door hinge as an assembly. Refer to **Hinge Replacement - Front Door - Door Side** and **Hinge Replacement - Front Door - Body Side**.

DOOR HINGE PIN AND BUSHING REPLACEMENT - REAR DOOR

The door hinge pins and bushings are not replaceable. If the hinge pins or bushings are damaged, replace the door hinge as an assembly. Refer to **Hinge Replacement - Front Door - Door Side** and **Hinge Replacement - Front Door - Body Side**.

HINGE REPLACEMENT - FRONT DOOR - DOOR SIDE

Removal Procedure

1. Remove all of the related panels and components.
2. Remove any excess sealer surrounding the existing hinge and scribe the location of the hinge on the hinge pillar.
3. Lightly hand-sand the existing hinge with 100 grit or finer sandpaper in order to locate the 4 welds that attach the hinge to the door.

IMPORTANT: Punch the center of the weld so that as much of the weld as possible is removed during the drilling.

4. Center punch each of the four weld marks on the original hinge base.

cardiagn.com

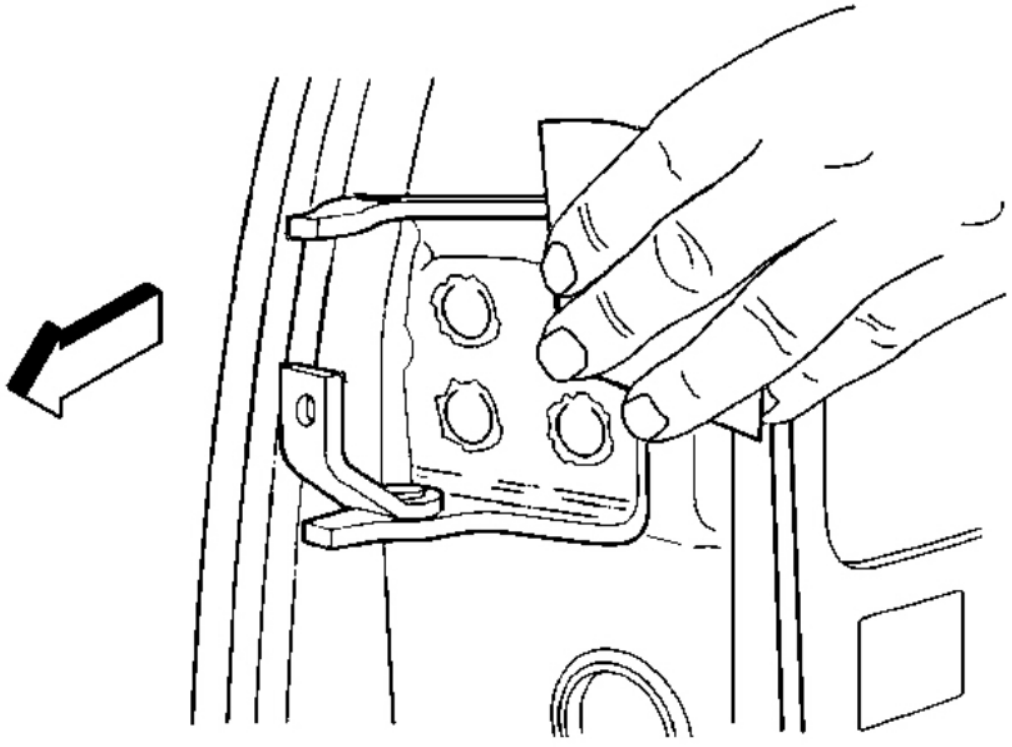


Fig. 59: Hand-Sanding Front Door Hinge (Door Side)
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not drill into the door (1).

5. Drill through the hinge base (2) only, at each punch location. Use a 13 mm (1/2 in) rotabroach hole saw (3) or equivalent.
6. Remove the hinge. If necessary, use a chisel in order to separate the hinge from the door.
7. Remove all of the remaining weld from the door surface in order to ensure a flush fit of the service hinge.

cardiagn.com

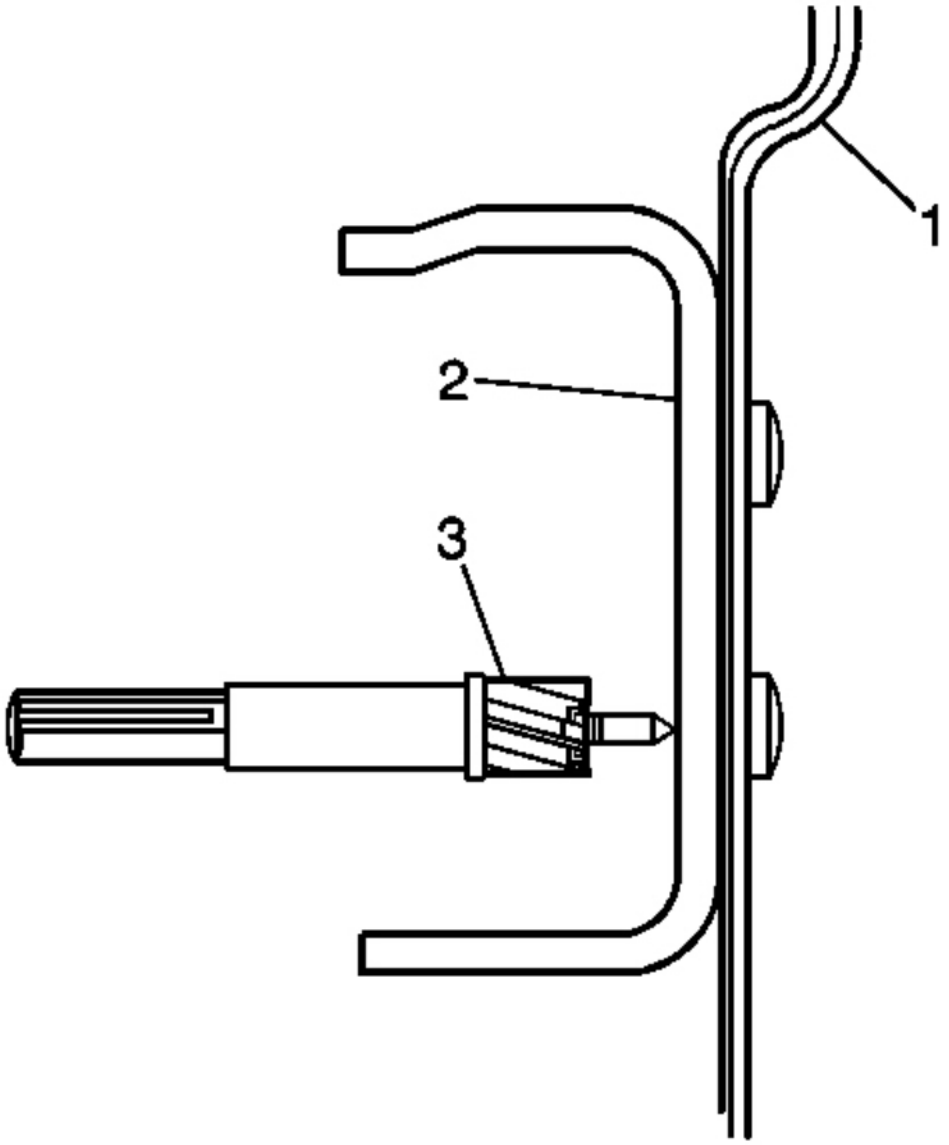


Fig. 60: Drilling Through Front Door Hinge Base (Door Side)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Repair any damage done to the door during the drilling or the removal of the hinge.
2. Clean and prepare the backing plate mounting surfaces in order to ensure a flush fit of the backing plate.

cardiagn.com

3. Position the service hinge within the scribe marks on the door.
4. Center punch each hole location on the door according to the service hinge.
5. Drill a 3 mm (1/8 in) pilot hole at each center punch location.

IMPORTANT: Drill bit must be exact size.

6. Drill an 11.5 mm (29/64 in) hole at the pilot locations.
7. Clean and prepare all of the bare metal surfaces.

cardiagn.com

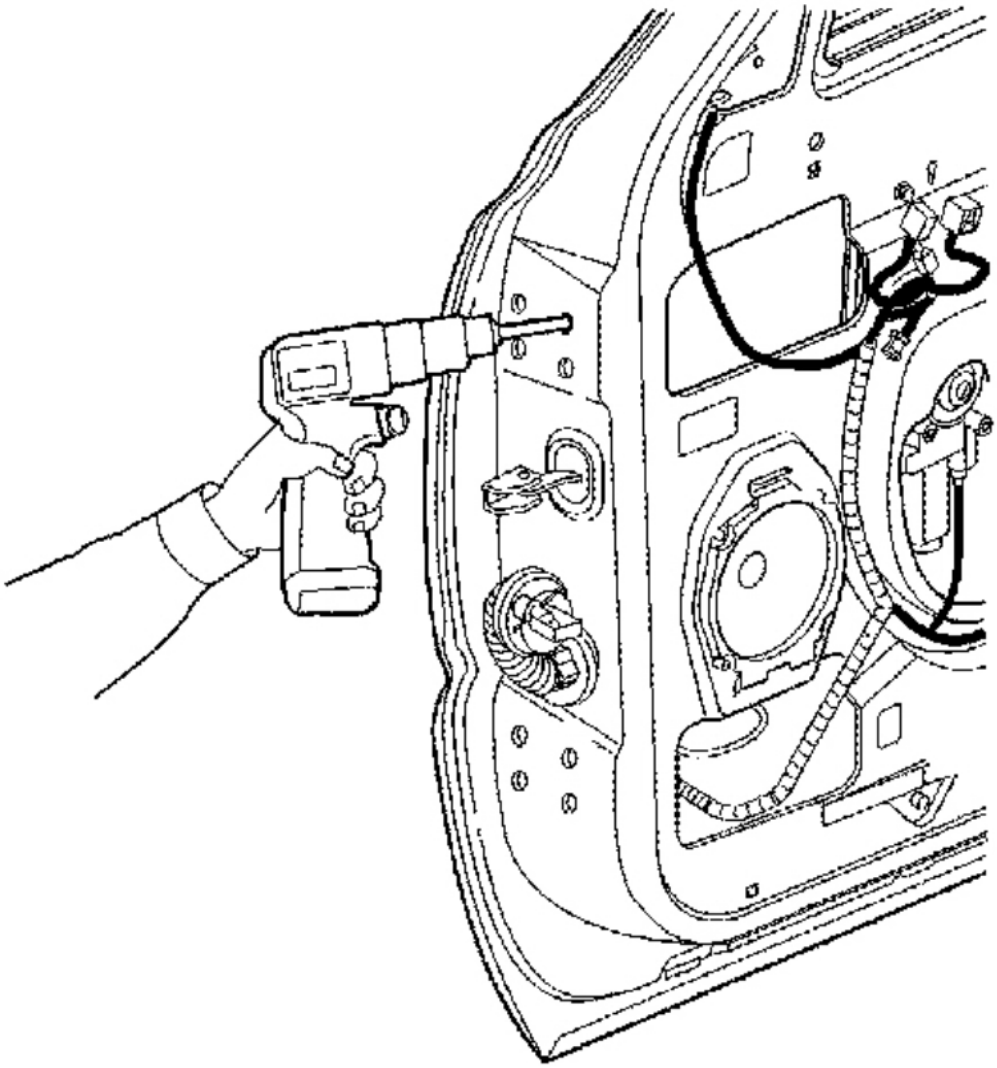


Fig. 61: Drilling Pilot Holes (Front Door - Door Side)
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Prior to refinishing, refer to the publication GM 4901M-D-2000 GM Approved Refinish Materials for recommended products. Do not combine paint systems. Refer to paint manufacturer's recommendations.

8. Apply approved anti-corrosion primer.
9. Apply a full-bodied caulk to the entire hinge mounting surface in order to ensure a proper seal.

cardiagn.com

NOTE: **Refer to Fastener Notice in Cautions and Notices.**

10. Align the hinge (1) and the backing plate (4) with the holes in the door (2) and install the bolts (3)

    Tighten: Tighten the bolts to 25 N.m (18 lb ft).

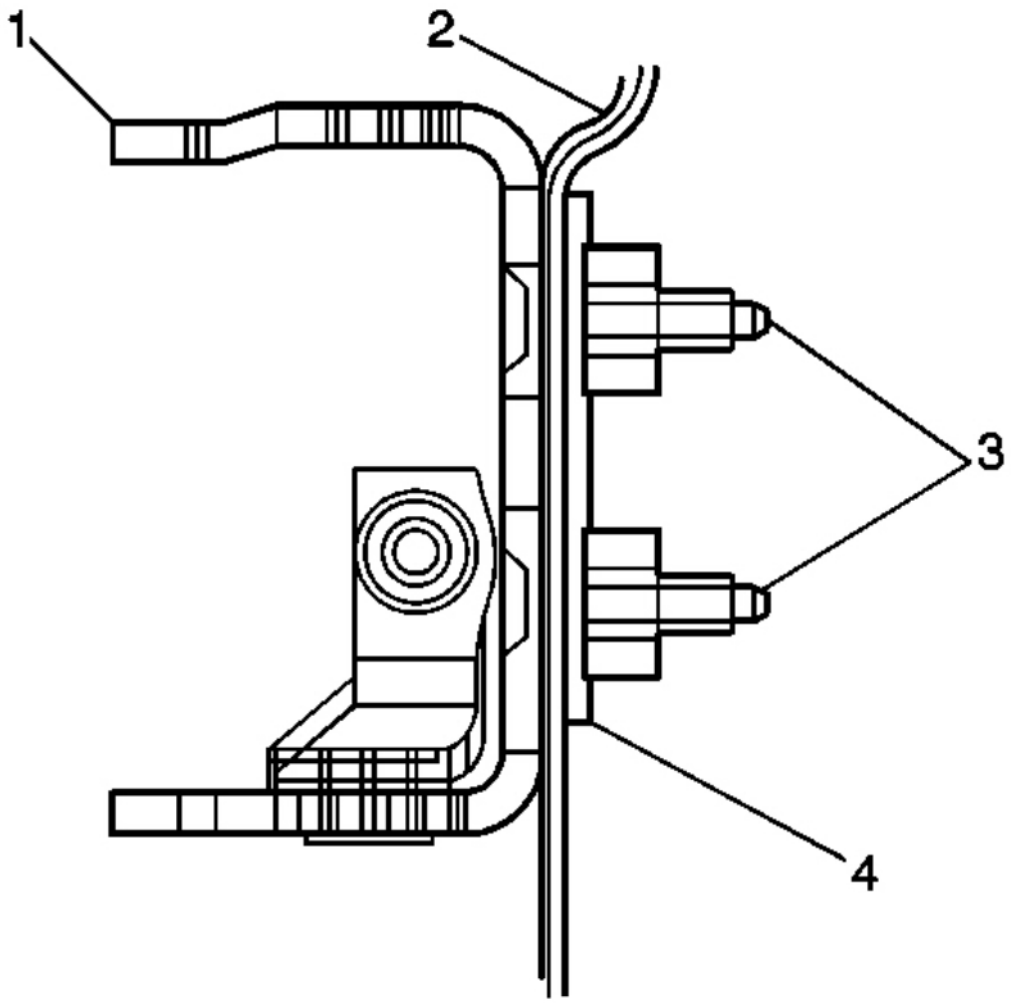


Fig. 62: Aligning Hinge & Backing Plate With Front Door Holes (Door Side)
Courtesy of GENERAL MOTORS CORP.

11. Apply the sealers.
12. Refinish the metal surfaces as necessary.

cardiagn.com

13. Install and align all of the related panels and the components.

HINGE REPLACEMENT - FRONT DOOR - BODY SIDE

Removal Procedure

1. Remove all of the related panels and components.
2. Remove any excess sealer surrounding the existing hinge and scribe the location of the hinge on the hinge pillar.
3. Lightly hand-sand the existing hinge with 100 grit or finer sandpaper in order to locate the 4 welds that attach the hinge to the pillar.

IMPORTANT: Punch the center of the weld so that as much of the weld as possible is removed during the drilling.

4. Center punch each of the four weld marks on the original hinge.

cardiagn.com

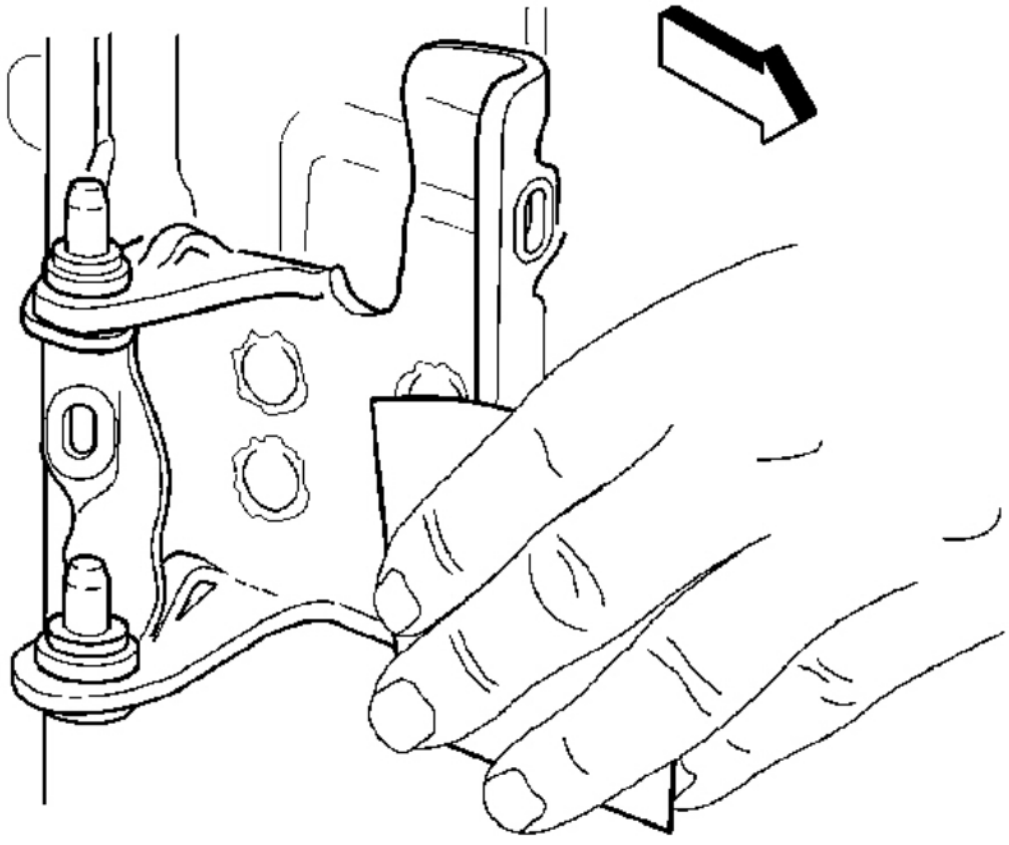


Fig. 63: Hand-Sanding Front Door Hinge (Body Side)
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not drill into the hinge pillar.

5. Drill through the hinge base only, at each punch location. Use a 13 mm (1/2 in) rotabroach hole saw or equivalent.

cardiagn.com

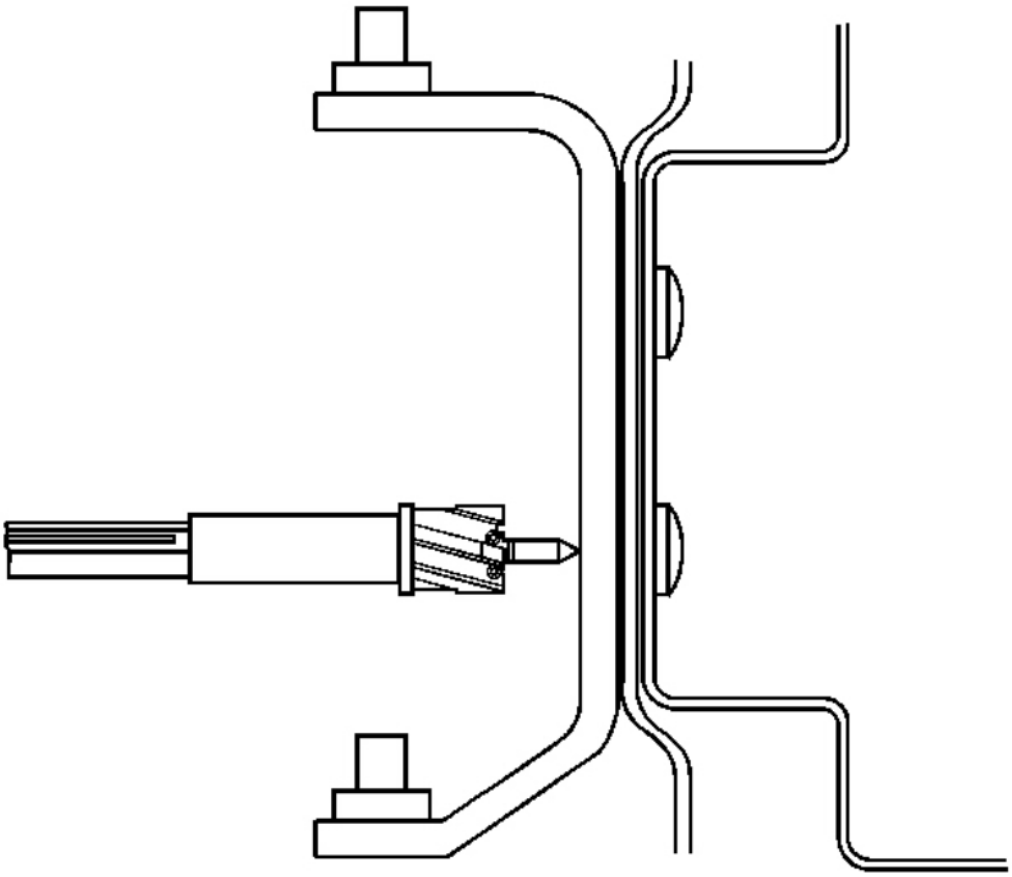


Fig. 64: Drilling Through Front Door Hinge Base (Body Side)
Courtesy of GENERAL MOTORS CORP.

6. Remove the hinge. If necessary, use a chisel in order to separate the hinge from the pillar.
7. Remove all of the remaining weld from the pillar surface in order to ensure a flush fit of the service hinge.

Installation Procedure

1. Repair any damage done to the pillar during the drilling or the removal of the hinge.
2. Position the service hinge within the scribe marks on the pillar.
3. Center punch each stud location on the hinge pillar according to the service hinge.
4. Drill a 3 mm (1/8 in) (1) pilot hole at each center punch location.

IMPORTANT: Drill bit must be exact size.

cardiagn.com

5. Drill an 11.5 mm (29/64 in) hole at the pilot locations for the studs.

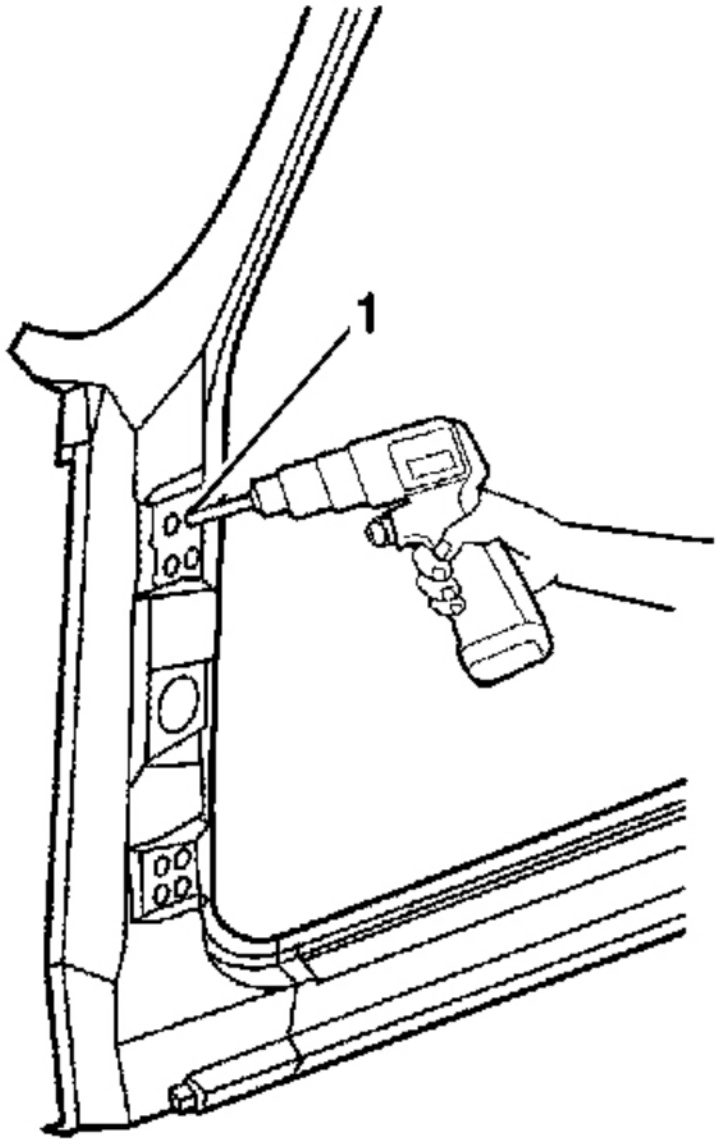


Fig. 65: Drilling Pilot Holes (Front Door - Body Side)
Courtesy of GENERAL MOTORS CORP.

6. Clean and prepare all of the bare metal surfaces.

cardiagn.com

IMPORTANT: Prior to refinishing, refer to the publication GM 4901M-D-2000 GM Approved Refinish Materials for recommended products. Do not combine paint systems. Refer to paint manufacturer's recommendations.

7. Apply approved anti-corrosion primer.
8. Feed fish wire (1), GM P/N 15017229 or the equivalent, through the hinge, the hinge stud hole and out of the conduit hole in the pillar
9. Install stud (2), GM P/N 15017230, supplied with the service hinge into the wire end. Pull the stud into position.
10. Hold the stud in position with the hinge and remove the fish wire.
11. Draw the stud (4) tight through the pillar. Use the nuts GM P/N 11516746 supplied.
12. Repeat steps 8-11 on the remaining stud locations.

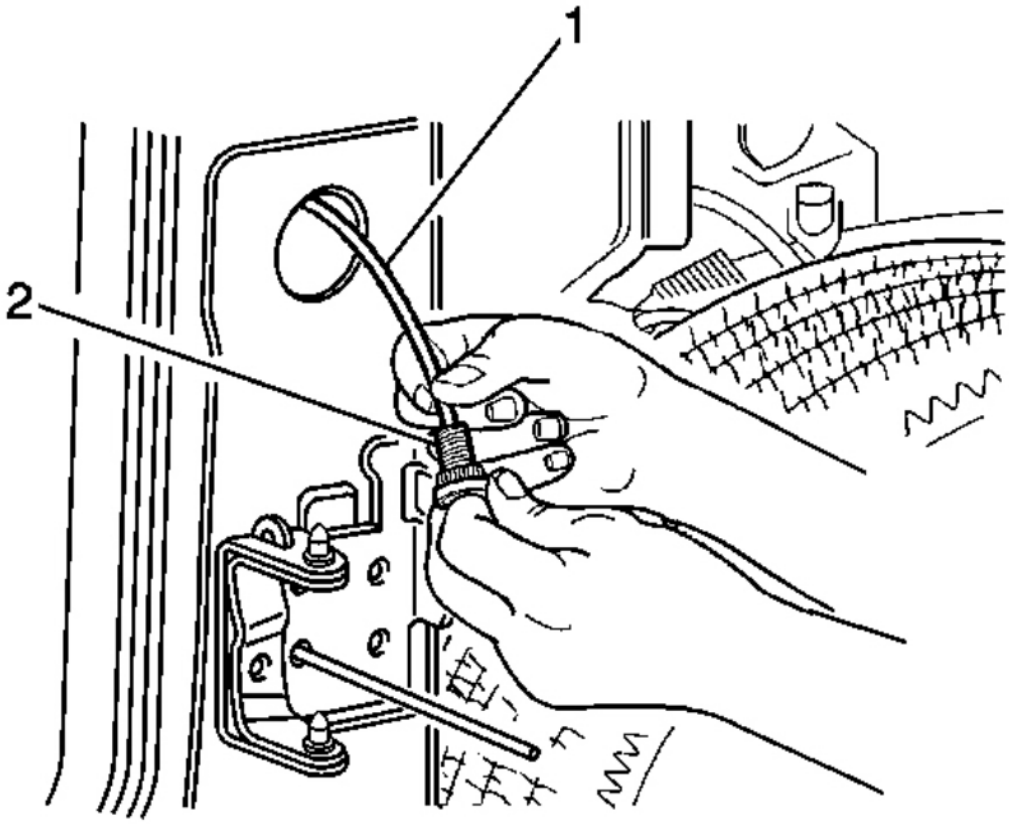


Fig. 66: Installing Studs Using Fish Wire (Front Door - Body Side)
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

13. Remove each service nut.
14. Apply a full-bodied caulk to the entire hinge mounting surface in order to ensure a proper seal.

NOTE: Refer to Fastener Notice in Cautions and Notices.

15. Install the hinge (2) to the pillar (3). Use the supplied nuts (1).

Tighten: Tighten the hinge nuts (4) to 25 N.m (18 lb ft).

cardiagn.com

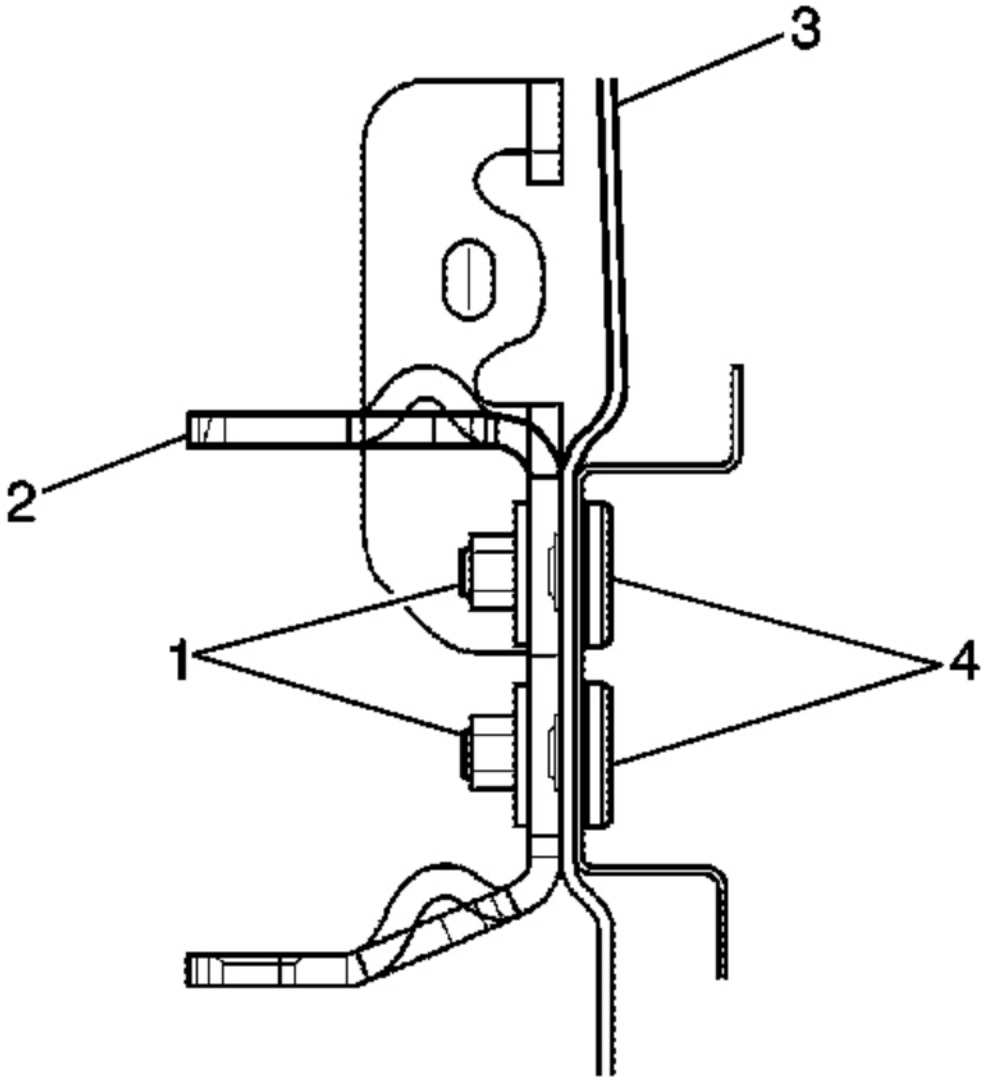


Fig. 67: Installing Front Door Hinge To Pillar (Front Door - Body Side)
Courtesy of GENERAL MOTORS CORP.

16. Clean and prepare all of the surfaces as necessary for refinishing.
17. Apply the sealers. Refinish the surfaces as necessary.
18. Install and align all of the related panels and the components.

HINGE REPLACEMENT - REAR DOOR - BODY SIDE

cardiagn.com

Removal Procedure

1. Remove all of the related panels and components.
2. Remove any excess sealer surrounding the existing hinge and scribe the location of the hinge on the hinge pillar.
3. Lightly hand-sand the existing hinge with 100 grit or finer sandpaper in order to locate the 4 welds that attach the hinge to the door.

IMPORTANT: Punch the center of the weld so that as much of the weld as possible is removed during the drilling.

4. Center punch each of the 4 weld marks on the original hinge.

cardiagn.com

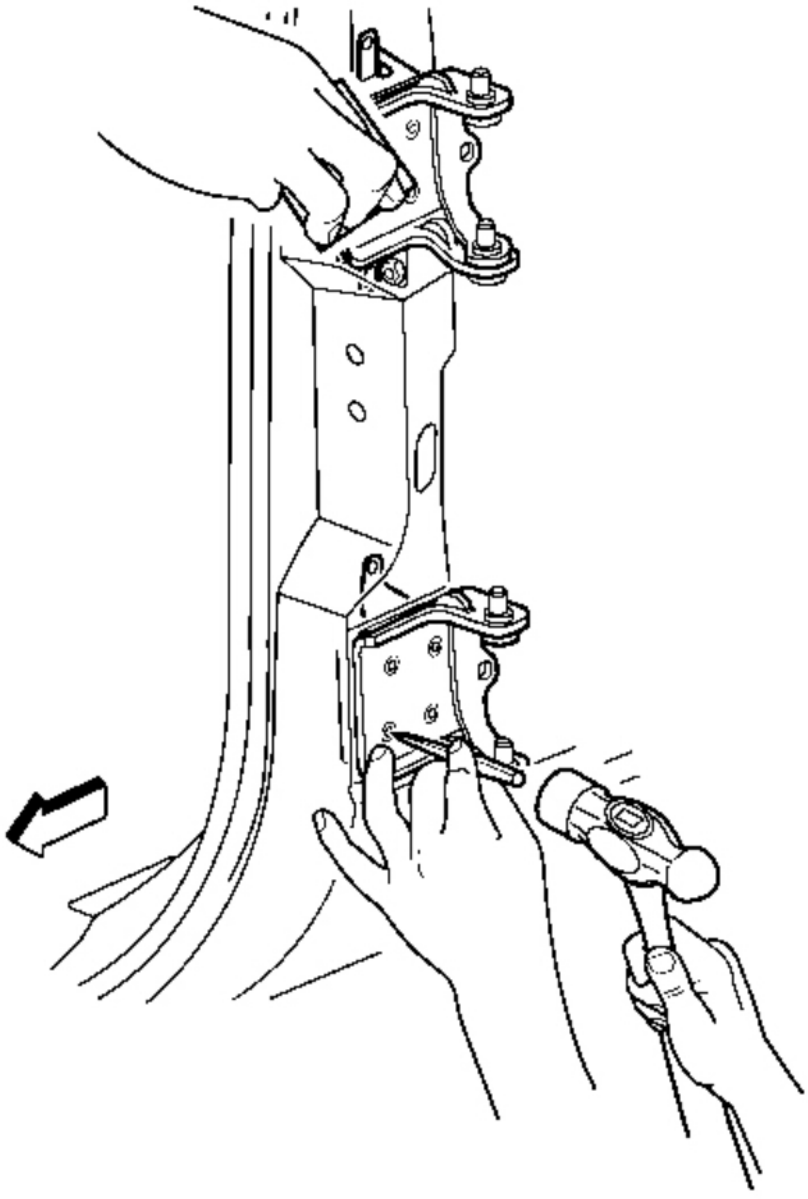


Fig. 68: Hand-Sanding & Center Punching Rear Door Hinge (Body Side)
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not drill into the hinge pillar.

cardiagn.com

5. Drill through the hinge only at each punch location. Use a 13 mm (1/2 in) rotabroach hole saw or the equivalent.

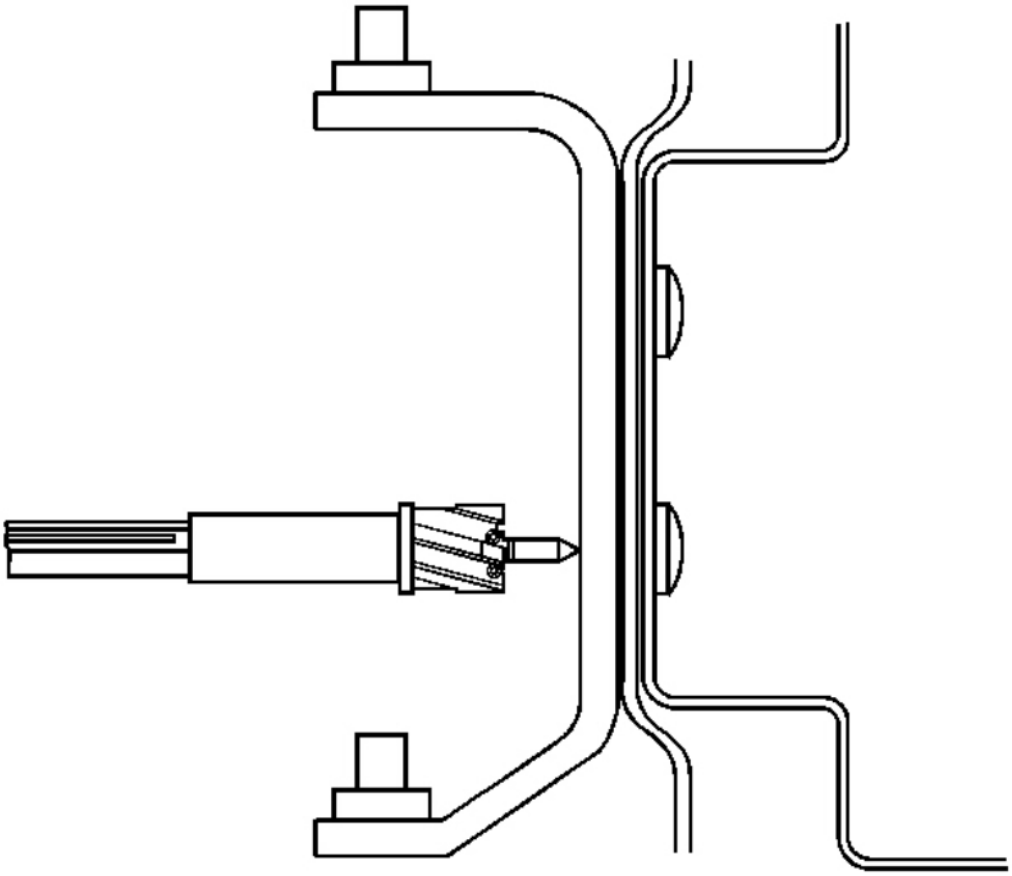


Fig. 69: Drilling Through Rear Door Hinge (Body Side)
Courtesy of GENERAL MOTORS CORP.

6. Remove the hinge. If necessary, use a chisel in order to separate the hinge from the pillar.
7. Remove all of the remaining weld from the pillar surface in order to ensure a flush fit of the service hinge.

Installation Procedure

1. Repair any damage done to the pillar during the drilling or the removal.
2. Position the service hinge within the scribe marks on the pillar.
3. Center punch each stud location on the hinge pillar according to the service hinge (1).

cardiagn.com

4. Drill a 3 mm (1/8 in) pilot hole (2) at each center punch location.

IMPORTANT: The drill bit must be the exact size.

5. Drill an 11.5 mm (29/64 in) hole at the pilot locations for the studs.

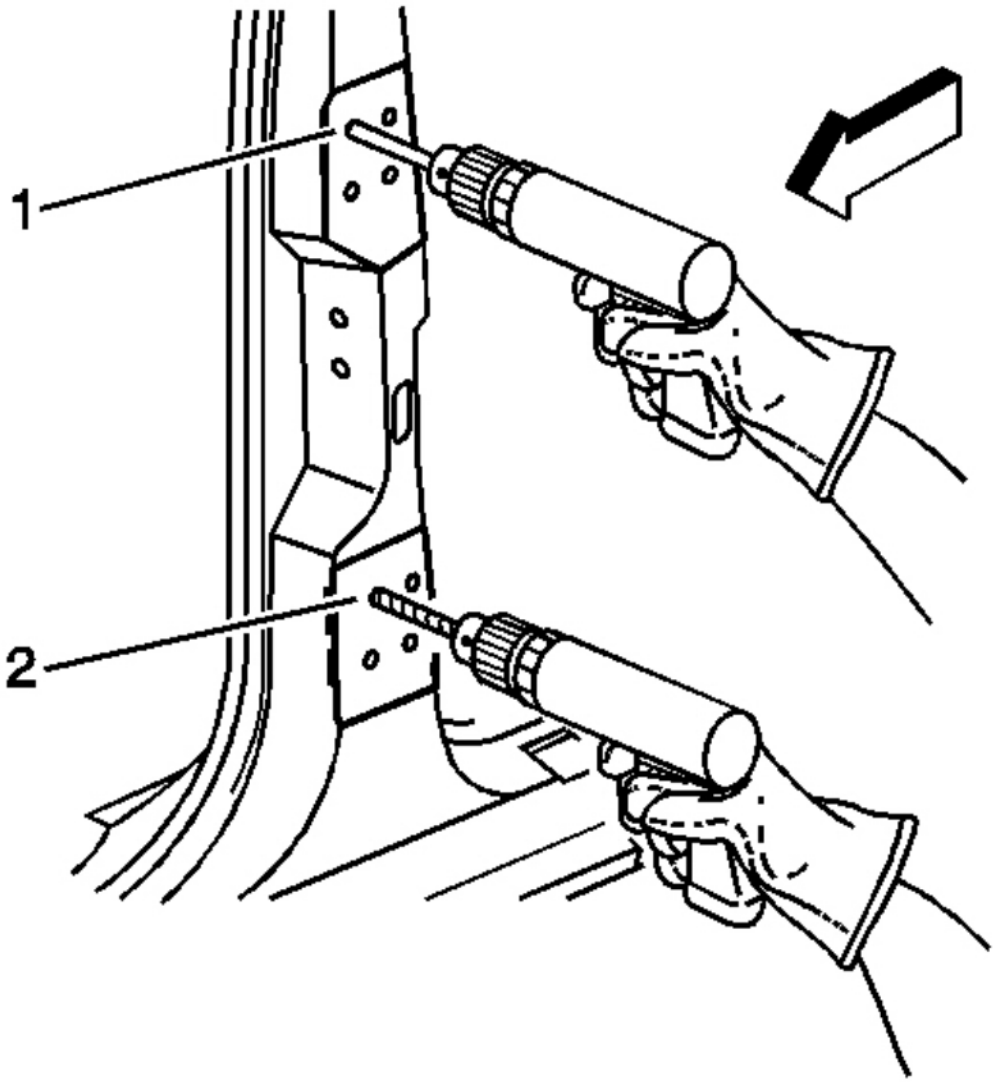


Fig. 70: Drilling Holes In Rear Door Hinge (Body Side)
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

6. Clean and prepare all of the bare metal surfaces.

IMPORTANT: Prior to refinishing, refer to the publication GM 4901M-D-2000 GM Approved Refinish Materials for recommended products. Do not combine paint systems. Refer to manufacturer's recommendations.

7. Apply an approved anti-corrosion primer.
8. Feed fish wire, GM P/N 15017229 of the equivalent, through the hinge (1), the hinge stud hole and out of the conduit hole in the pillar.

cardiagn.com

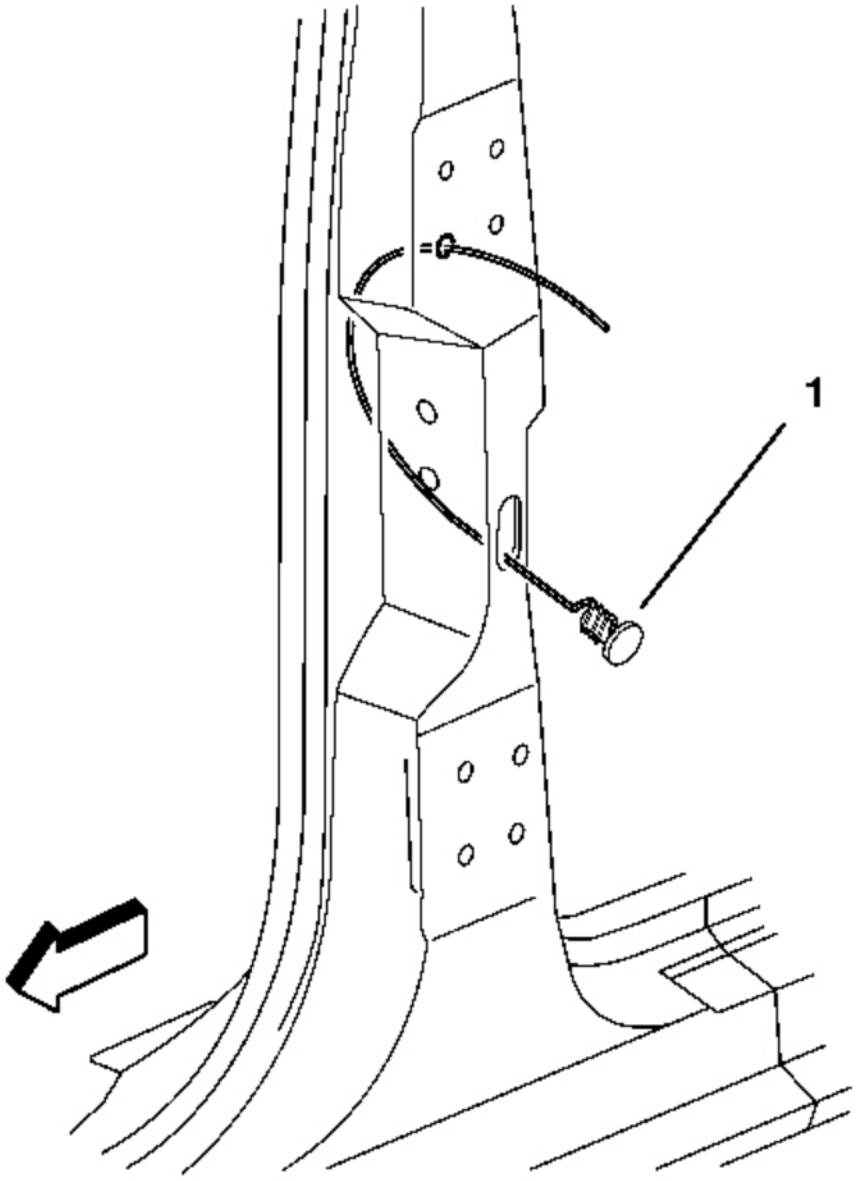


Fig. 71: Feeding Fish Wire Through Rear Door Hinge Stud Hole (Body Side)
Courtesy of GENERAL MOTORS CORP.

9. Install the stud, GM P/N 15017230, supplied with the service hinge, into the wire end. Pull the stud into position.
10. Hold the stud in position with the hinge and remove the fish wire.

cardiagn.com

11. Draw the stud (4) tight through the pillar. Use the nuts GM P/N 11516746, supplied.
12. Repeat steps 7 through 10 on the remaining stud locations.
13. Remove each service nut.
14. Apply a full-bodied caulk to the entire hinge mounting surface in order to ensure a proper seal.
15. Install the hinge (2) to the pillar (3). Use the supplied nuts (1).

cardiagn.com

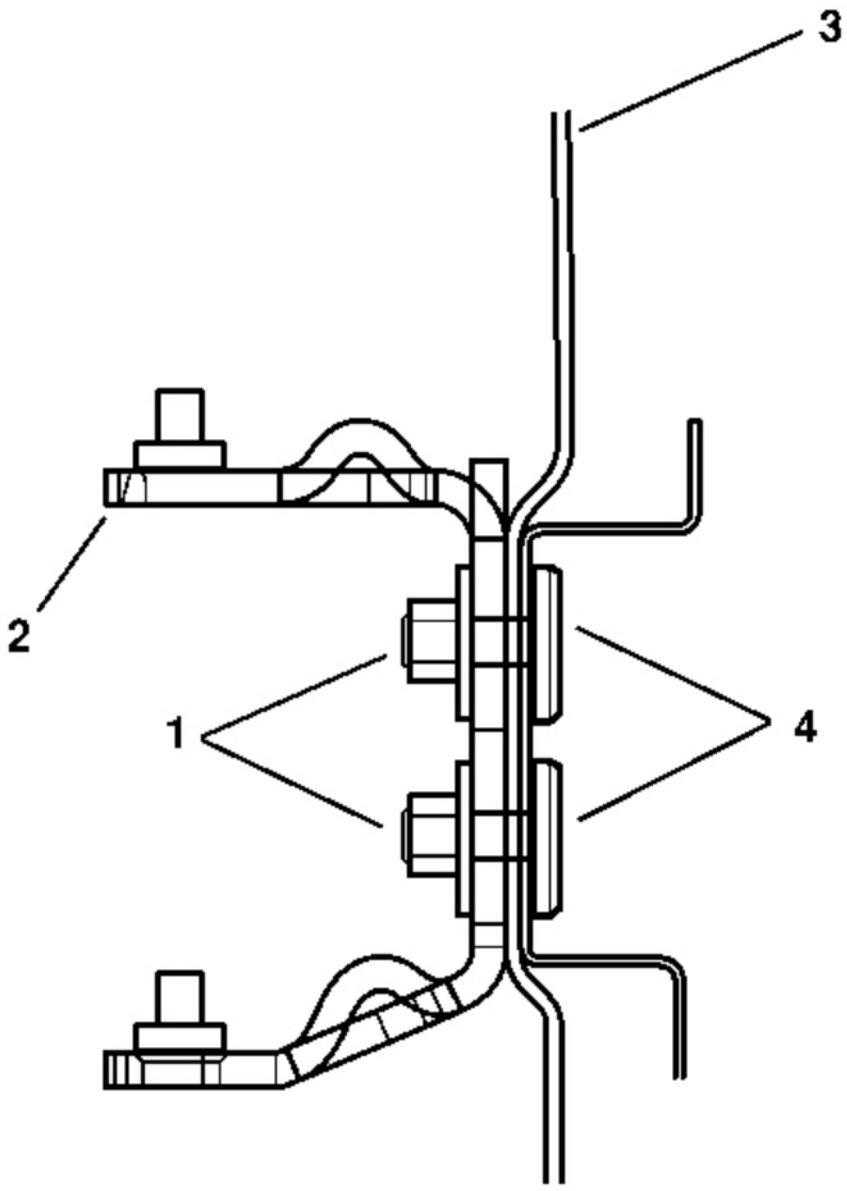


Fig. 72: Installing Rear Door Hinge To Pillar (Body Side)
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

cardiagn.com

16. Install the hinge (2) to the pillar (3). Use the supplied nuts (1).

    Tighten: Tighten the hinge nuts (4) to 25 N.m (18 lb ft).

17. Clean and prepare all of the surfaces as necessary for refinishing.
18. Apply the sealers. Refinish the surfaces as necessary.
19. Install and align all of the related panels and the components.

HINGE REPLACEMENT - REAR DOOR - DOOR SIDE

Removal Procedure

1. Remove all of the related panels and components.
2. Remove any excess sealer surrounding the existing hinge and scribe the location of the hinge on the hinge pillar.
3. Lightly hand-sand the existing hinge with 100 grit or finer sandpaper in order to locate the 4 welds that attach the hinge to the pillar.

cardiagn.com

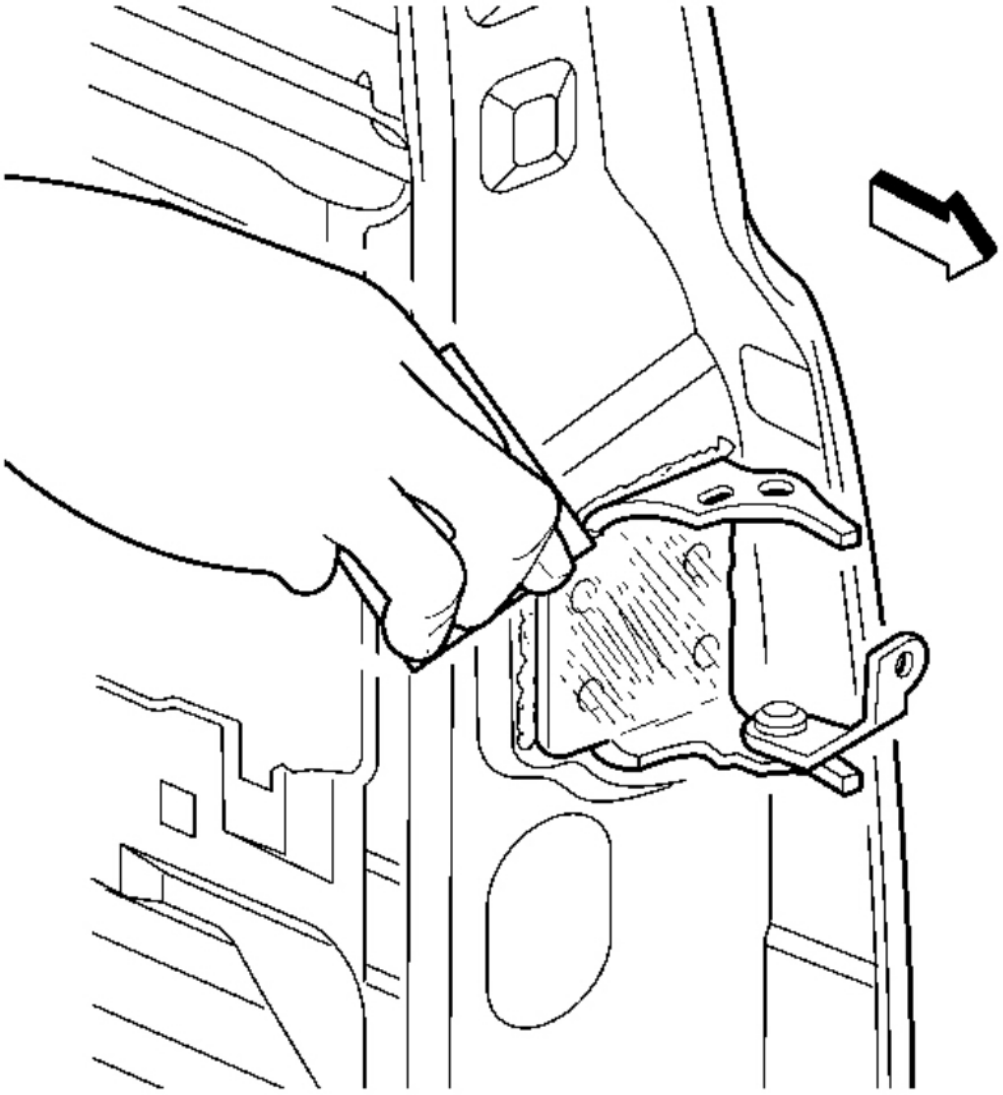


Fig. 73: Hand-Sanding Existing Rear Door Hinge (Door Side)
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: It is critical to punch the center of the weld so that as much of the weld as possible is removed during the drilling.

4. Center punch each of the 4 weld marks on the original hinge.

cardiagn.com

IMPORTANT: Do not drill into the door (1).

5. Drill through the hinge (2), at each punch location. Use a 13 mm (1/2 in) rotabroach hole saw (3) or equivalent.

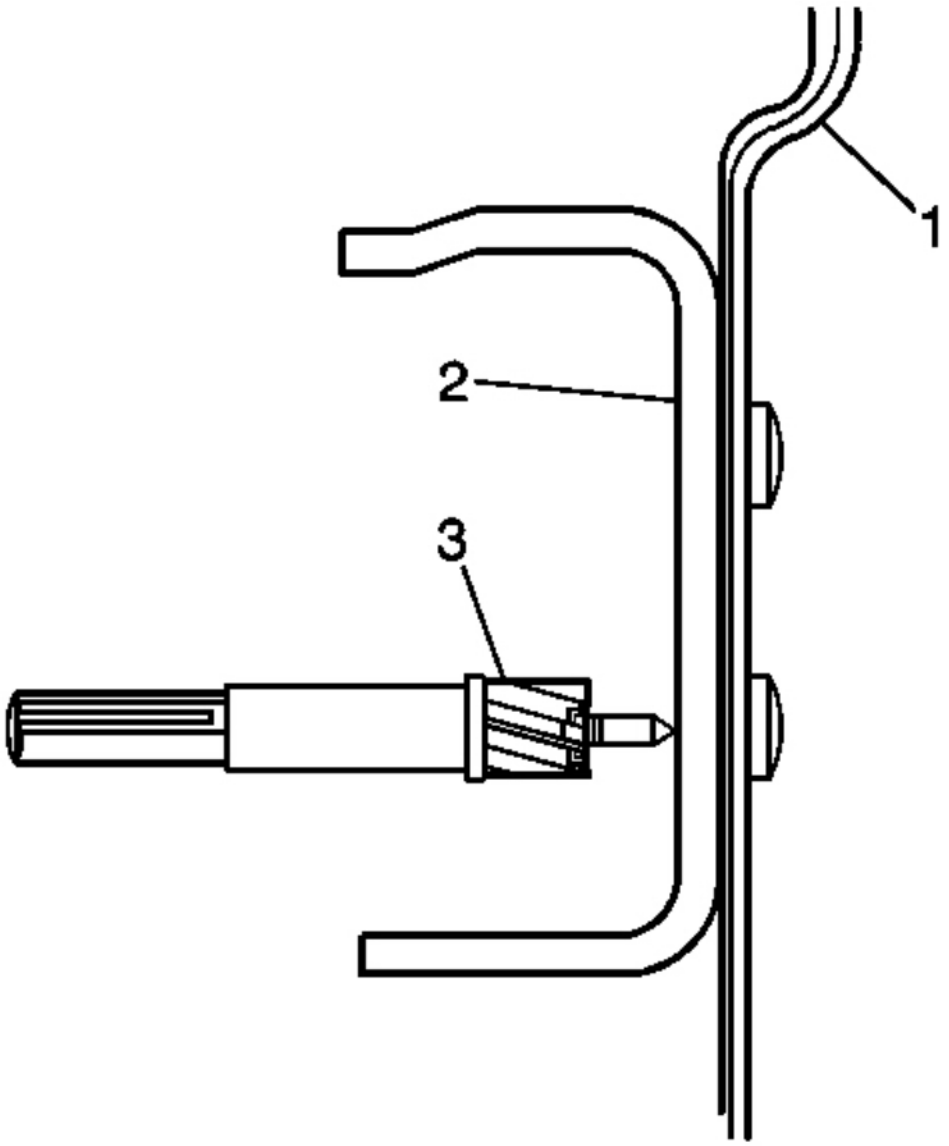


Fig. 74: Drilling Through Rear Door Hinge (Door Side)
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

6. Remove the hinge. If necessary, use a chisel in order to separate the hinge from the door.
7. Remove all of the remaining welds from the door surface in order to ensure a flush fit of the service hinge.

Installation Procedure

1. Repair any damage done to the door during the drilling or the removal of the hinge.
2. Clean and prepare the backing plate mounting surfaces in order to ensure a flush fit of the backing plate.
3. Position the service hinge within the scribe marks on the door.
4. Center punch each hole location on the door according to the service hinge.
5. Drill a 3 mm (1/8 in) pilot hole at each center punch location.

IMPORTANT: Drill bit must be exact size.

6. Drill an 11.5 mm (29/64 in) hole at the pilot locations for the studs.

cardiagn.com

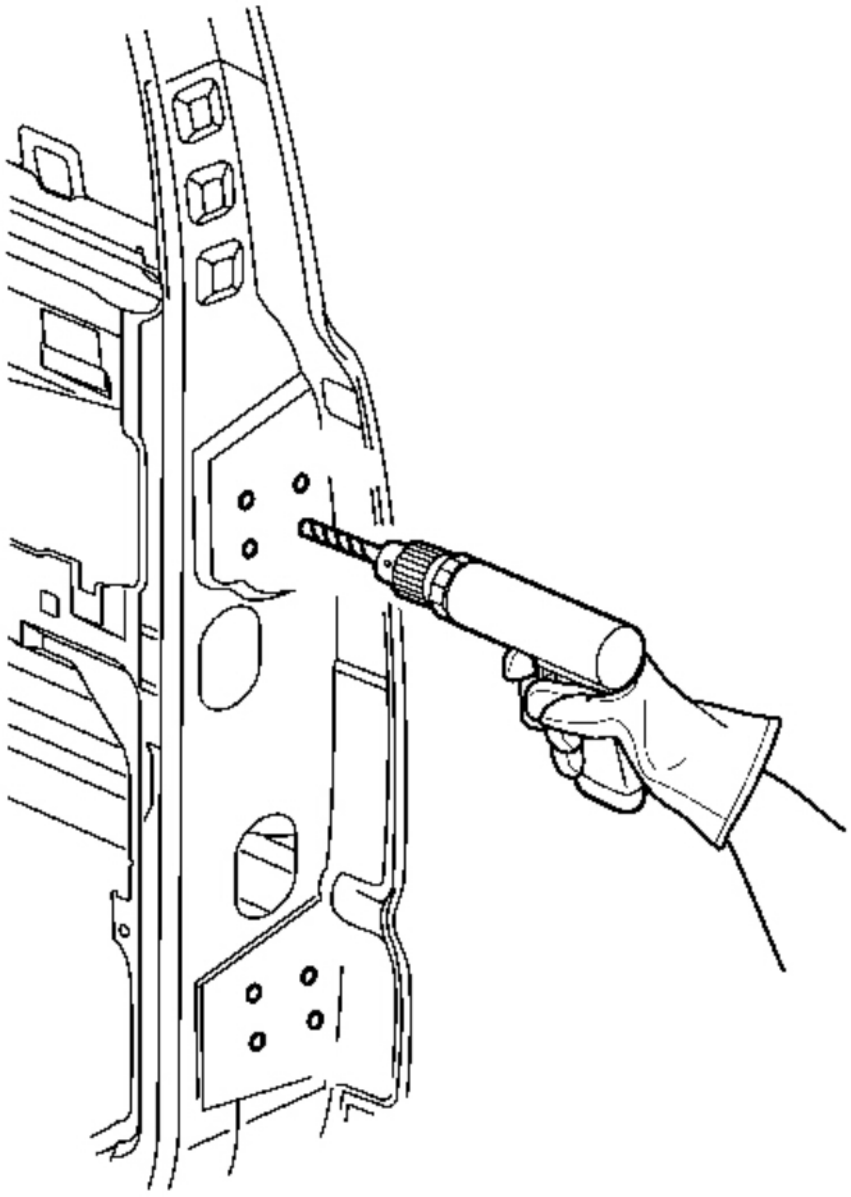


Fig. 75: Drilling Pilot Holes (Rear Door - Door Side)
Courtesy of GENERAL MOTORS CORP.

7. Clean and prepare all of the bare metal surfaces.

cardiagn.com

IMPORTANT: Prior to refinishing, refer to the publication GM 4901M-D-2000 GM Approved Refinish Materials for recommended products. Do not combine paint systems. Refer to paint manufacturer's recommendations.

8. Apply approved anti-corrosion primer.
9. Apply a full-bodied caulk to the entire hinge mounting surface in order to ensure a proper seal.

NOTE: Refer to Fastener Notice in Cautions and Notices.

10. Align the hinge (1) and the backing plate (4) with the holes in the door (2) and install the bolts (3).

Tighten: Tighten the hinge to the pillar nuts to 25 N.m (18 lb ft).

cardiagn.com

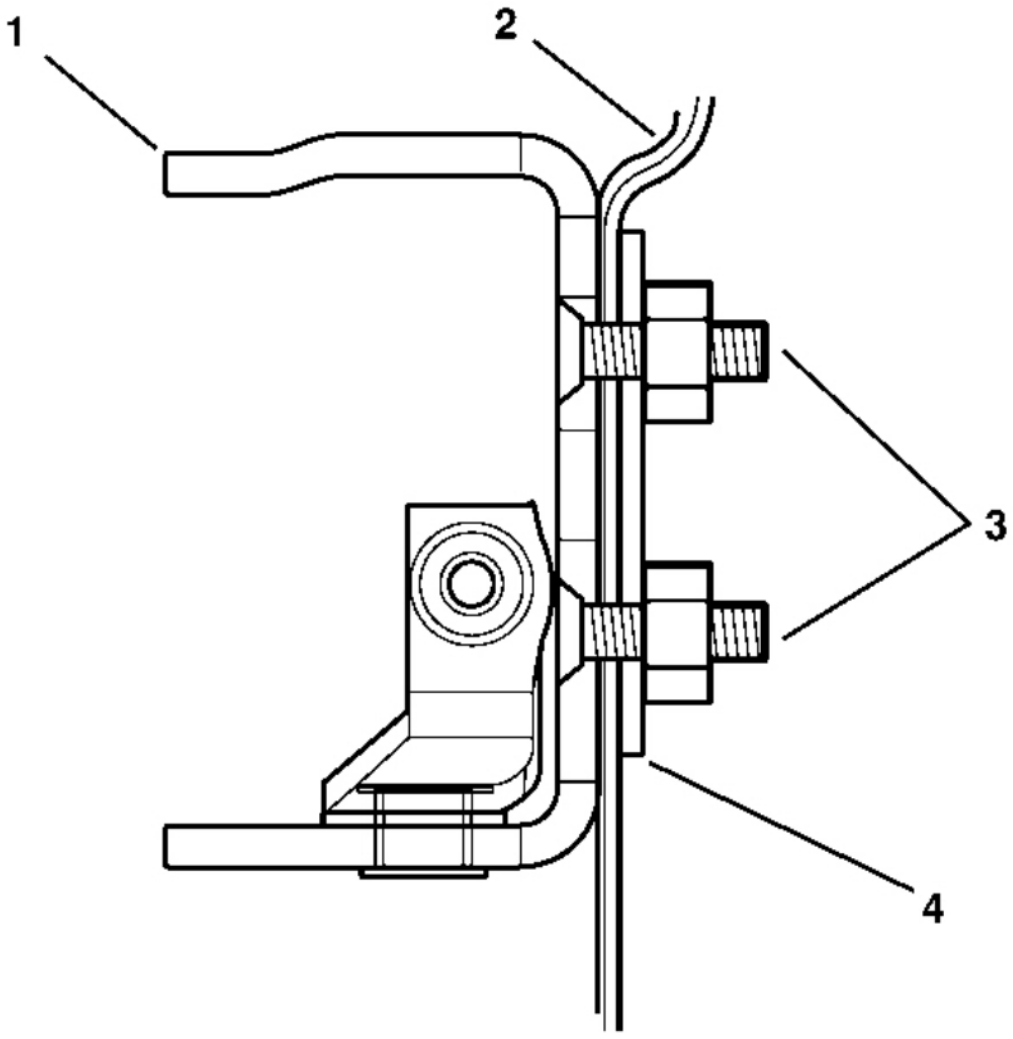


Fig. 76: Aligning Rear Door Hinge & Backing Plate With Door (Door Side)
Courtesy of GENERAL MOTORS CORP.

11. Clean and prepare all of the surfaces as necessary for refinishing.
12. Apply the sealers. Refinish the surfaces as necessary.
13. Install and align all of the related panels and the components.

DOOR CHECK LINK REPLACEMENT

Removal Procedure

cardiagn.com

1. Open the door.
2. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
3. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
4. Remove the body-side check strap bolt.
5. Remove the check strap plug.
6. Remove the door-side check strap nuts.
7. Pull the check strap from the inside of the door.

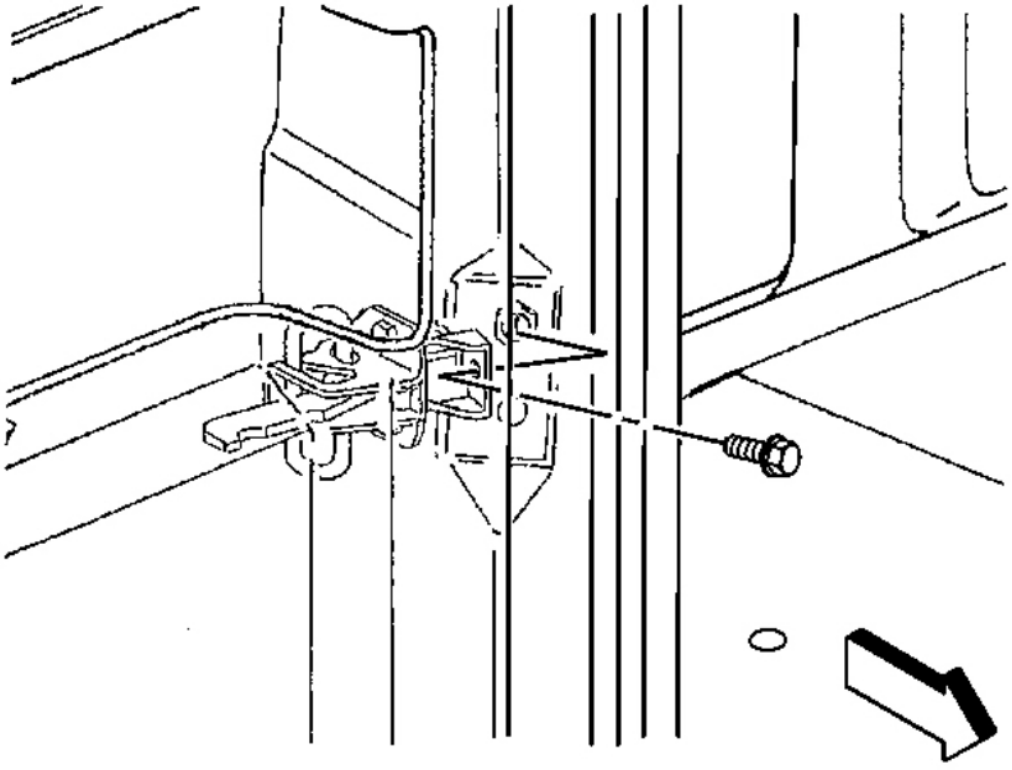


Fig. 77: Removing Body-Side Check Strap Bolt
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the check strap to the door.
2. Install the check strap to the body.

cardiagn.com

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the check strap nuts.

   Tighten: Tighten the nuts to 9 N.m (80 lb in).

4. Install the check strap bolt.

   Tighten: Tighten the bolt to 25 N.m (18 lb in).

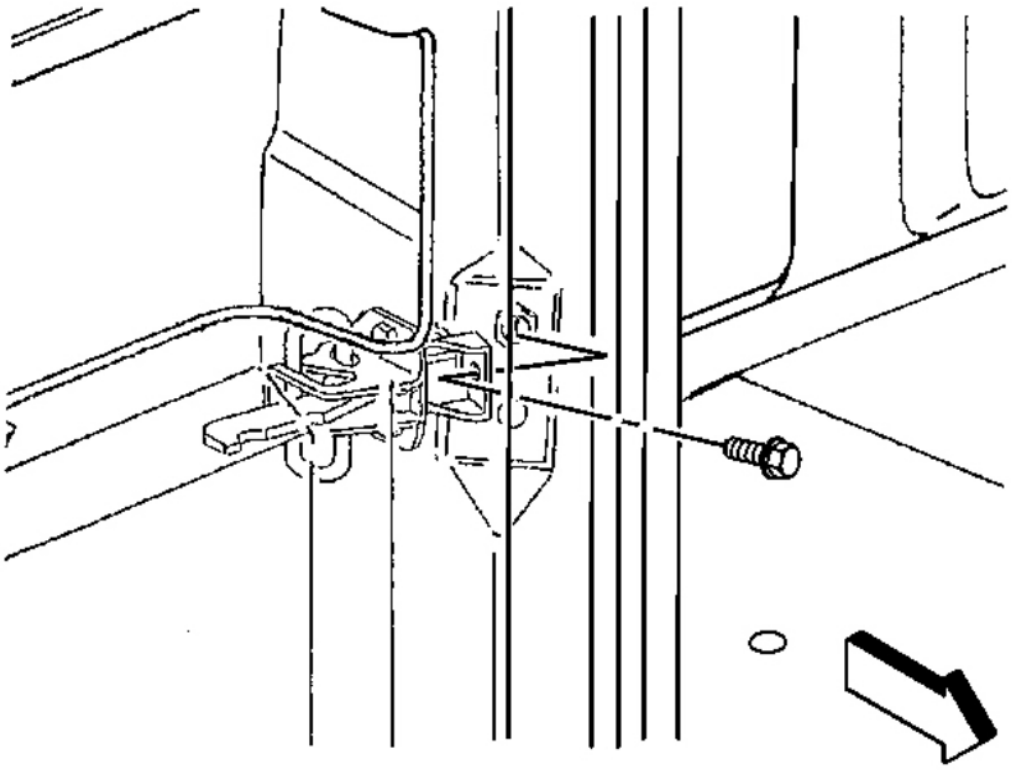


Fig. 78: Installing Check Strap Bolt
Courtesy of GENERAL MOTORS CORP.

5. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.
6. Install the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.

DOOR HANDLE REPLACEMENT - OUTSIDE

cardiagn.com

Removal Procedure

1. Remove the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)** or **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
2. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
3. Remove the outside handle rod from the rod clip.

cardiagn.com

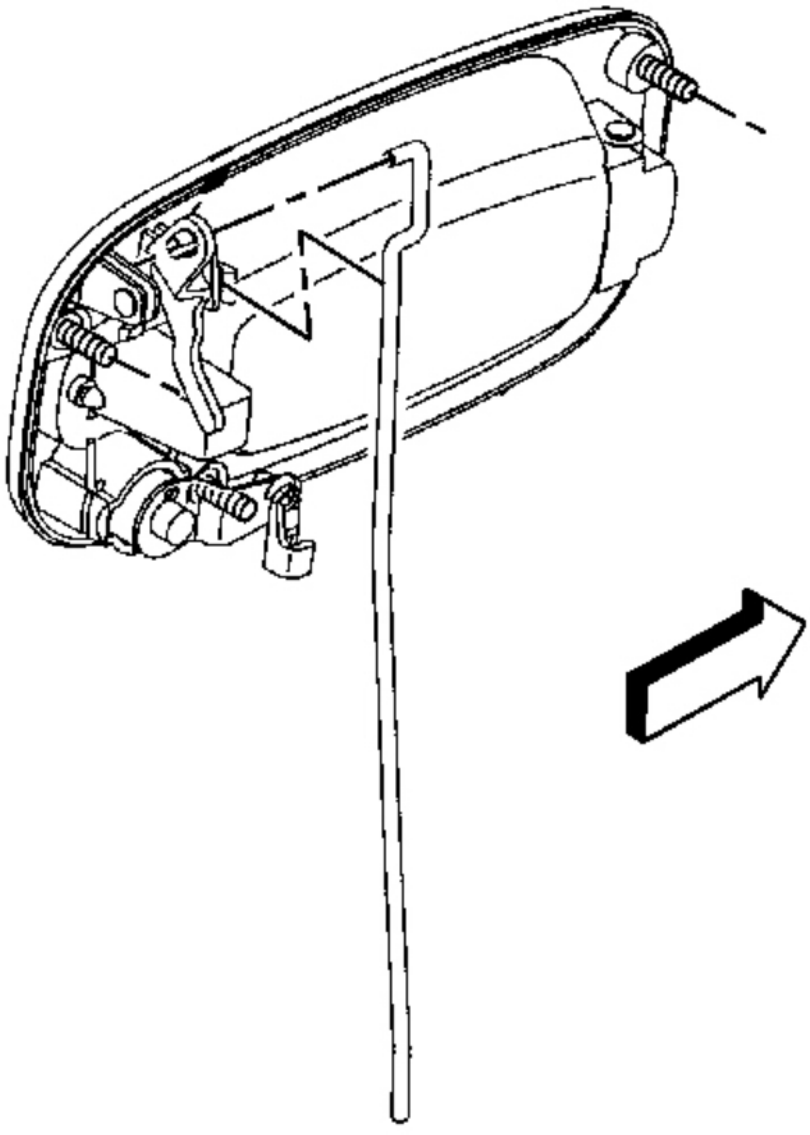


Fig. 79: Removing Outside Handle Rod From Rod Clip
Courtesy of GENERAL MOTORS CORP.

4. Remove the lock cylinder rod from the rod clip.
5. Apply masking tape across the door handle on the outside of the door to secure the handle while removing the nuts.
6. Remove the outside handle mounting nuts.

cardiagn.com

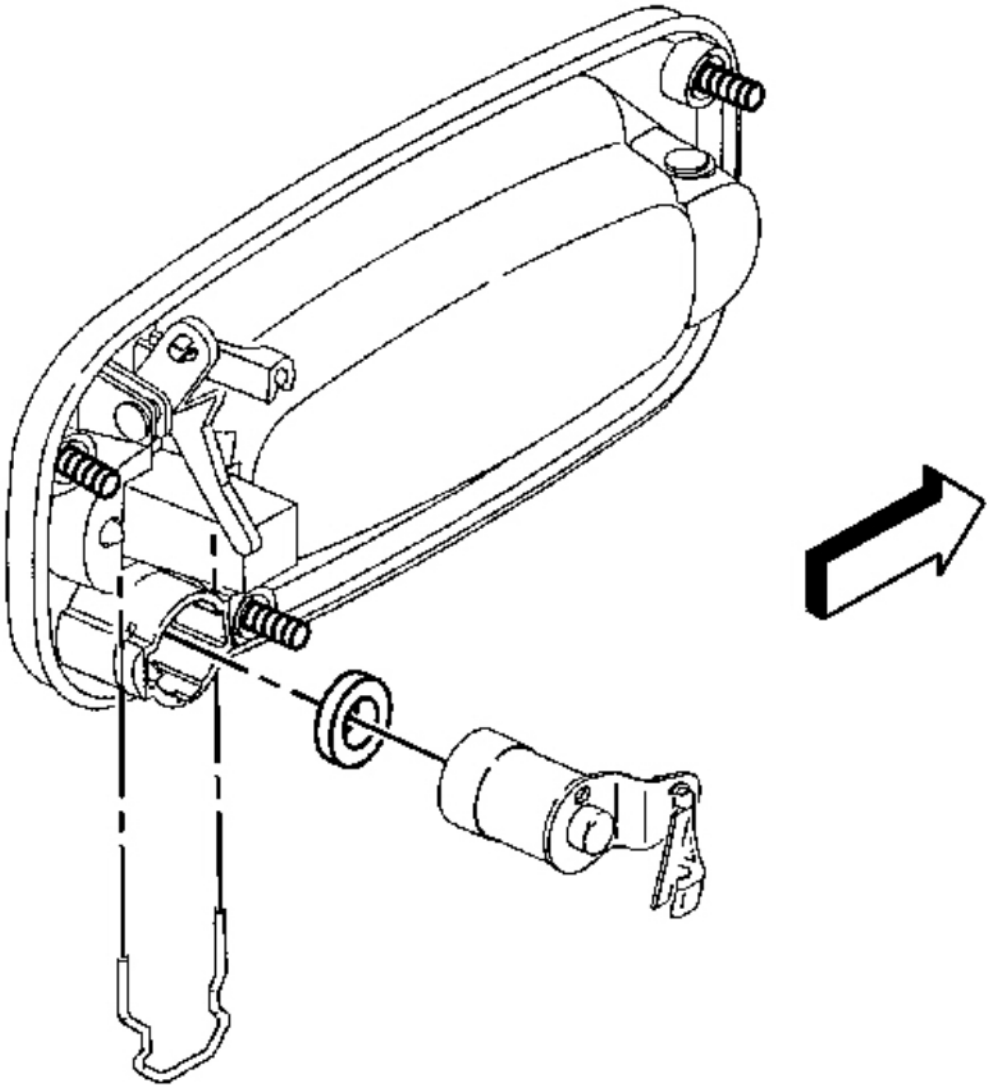


Fig. 80: Removing Lock Cylinder Rod From Rod Clip
Courtesy of GENERAL MOTORS CORP.

7. Remove the rubber cover in order to access the outboard nut.
8. Remove the door-lock cylinder from the outside handle housing.

In order to repair a binding lock cylinder, refer to **Binding Lock Cylinders**.

cardiagn.com

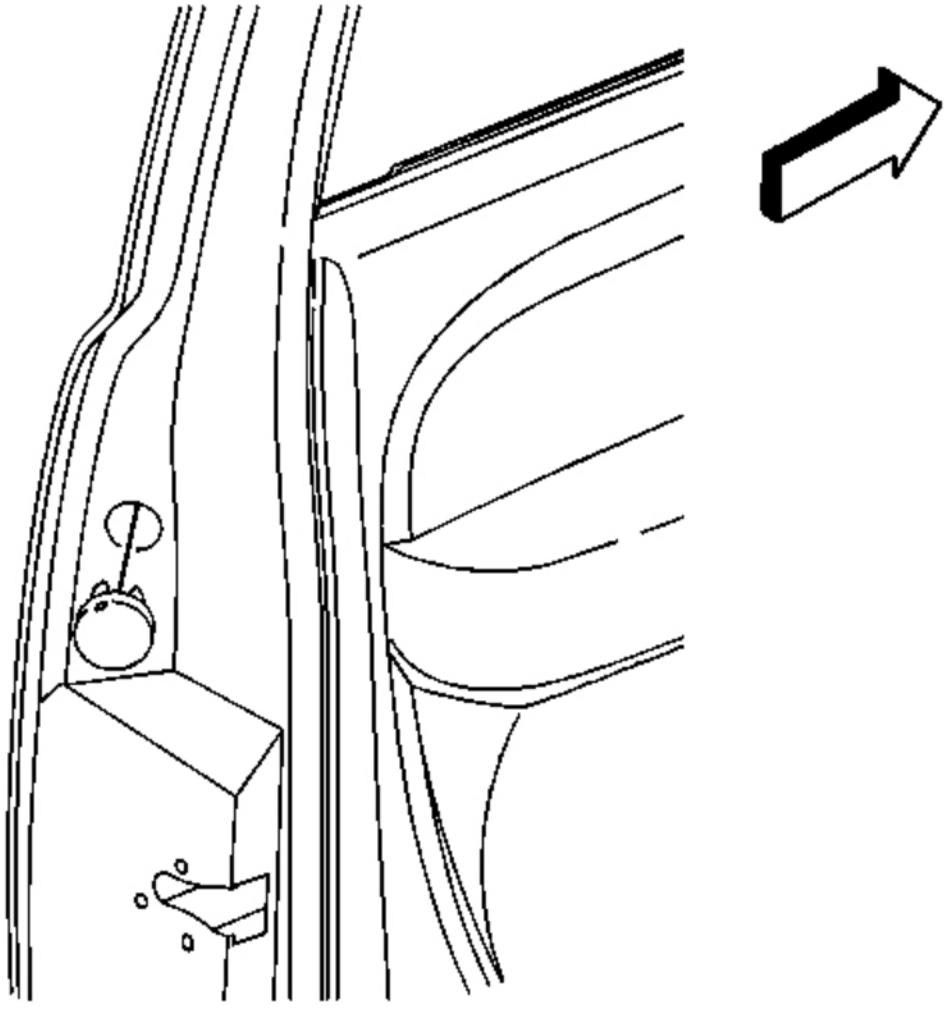


Fig. 81: Removing Rubber Cover
Courtesy of GENERAL MOTORS CORP.

9. Remove the handle.

cardiagn.com

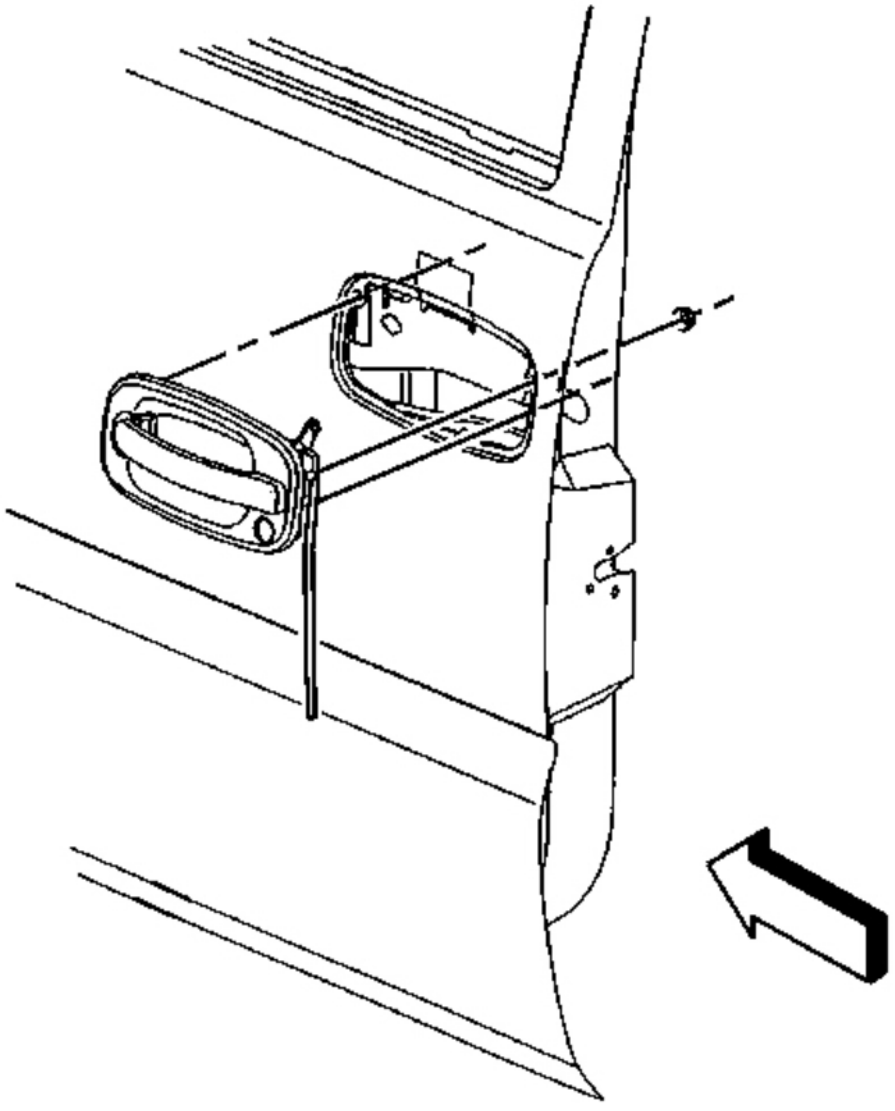


Fig. 82: Removing Outside Door Handle
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the handle to the vehicle.

cardiagn.com

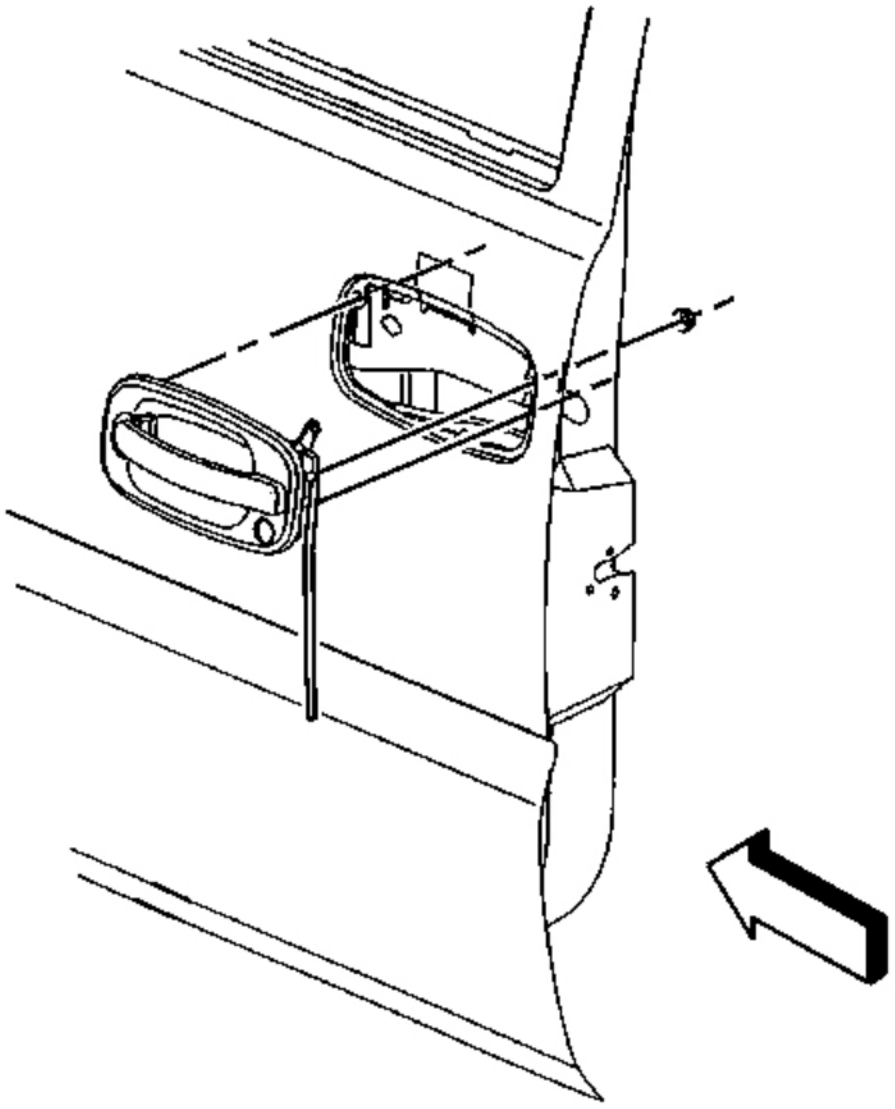


Fig. 83: Installing Outside Door Handle
Courtesy of GENERAL MOTORS CORP.

2. If the lock cylinder is replaced, apply lubricant GM P/N 12345120, Canadian P/N 726548, or equivalent, to the inside of the lock case and of the cylinder keyway.
3. Install the door-lock cylinder to the outside handle housing.

In order to code a new lock cylinder, refer to **Key and Lock Cylinder Coding** in General Information.

cardiagn.com

4. Install the lock cylinder clip to the lock cylinder rod.

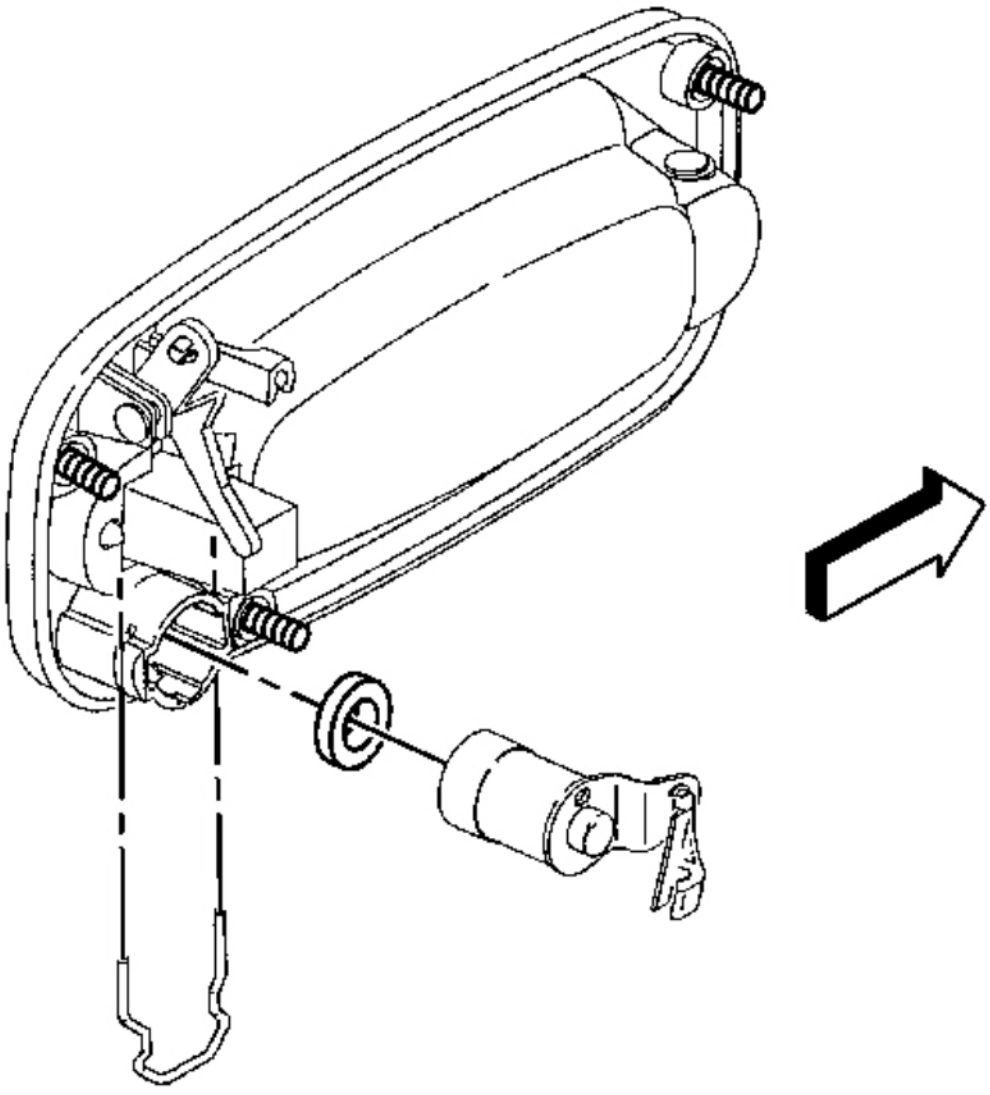


Fig. 84: Installing Lock Cylinder Clip To Rod
Courtesy of GENERAL MOTORS CORP.

5. Install the handle rod to the handle assembly clip.

cardiagn.com

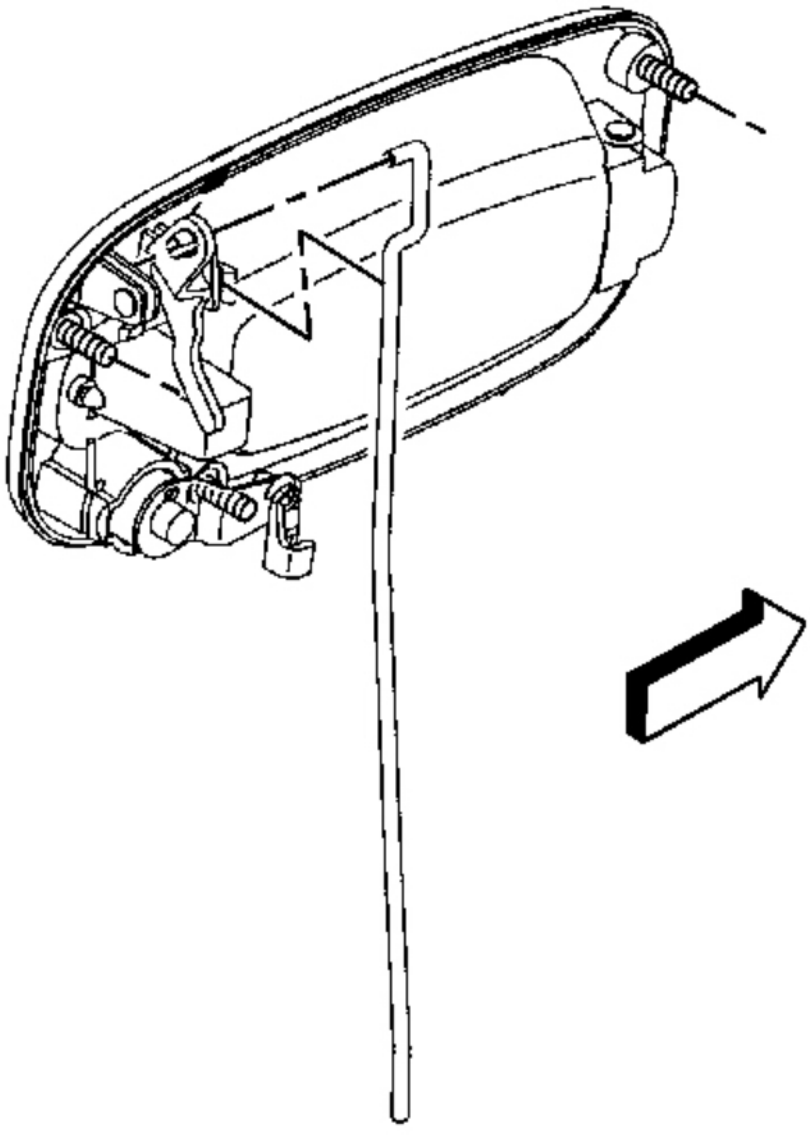


Fig. 85: Installing Handle Rod To Handle Assembly Clip
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

6. Install the outside handle mounting nuts.

cardiagn.com

Tighten: Tighten the nuts to 9 N.m (80 lb in).

7. Install the rubber cover.

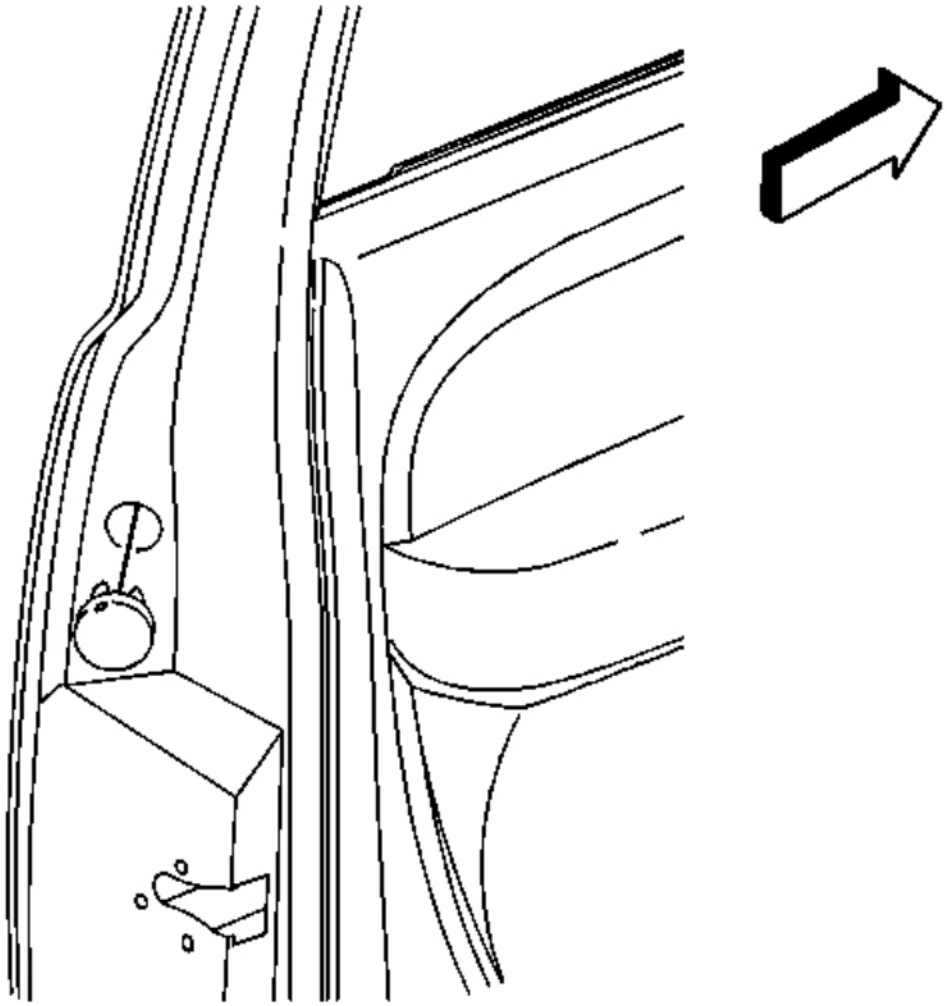


Fig. 86: Installing Rubber Cover
Courtesy of GENERAL MOTORS CORP.

8. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.
9. Install the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)** or **Trim**

cardiagn.com

Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade) or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.

DOOR HANDLE REPLACEMENT - INSIDE

Removal Procedure

1. Remove the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
2. Remove the mounting bolts from the inside door handle.
3. Slide the inside door handle forward in order to release the unit from the door.

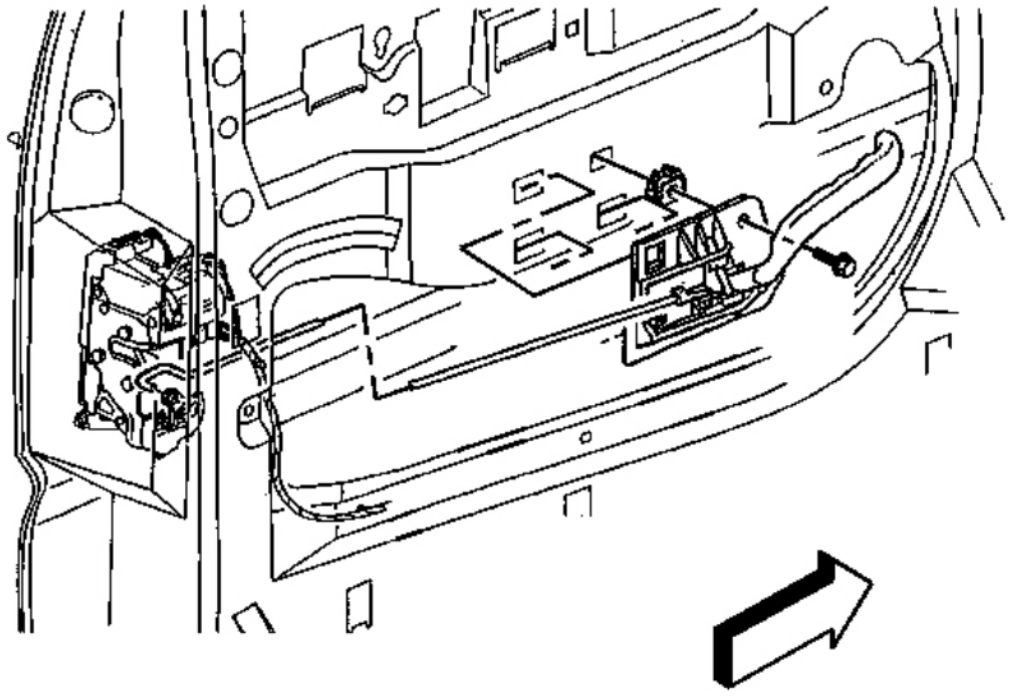


Fig. 87: Removing Mounting Bolts From Inside Door Handle
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the control rod from the inside door handle.
5. Remove the door handle assembly from the door.

cardiagn.com

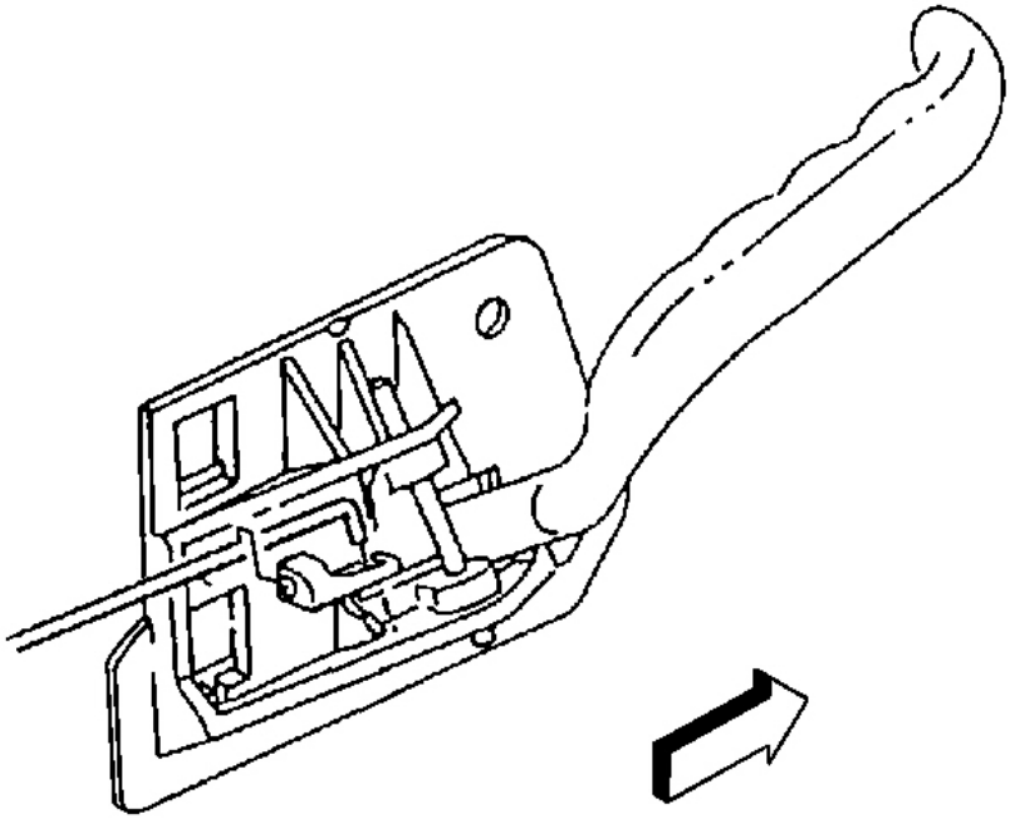


Fig. 88: View Of Control Rod To Inside Door Handle
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the control rod to the inside door handle.

cardiagn.com

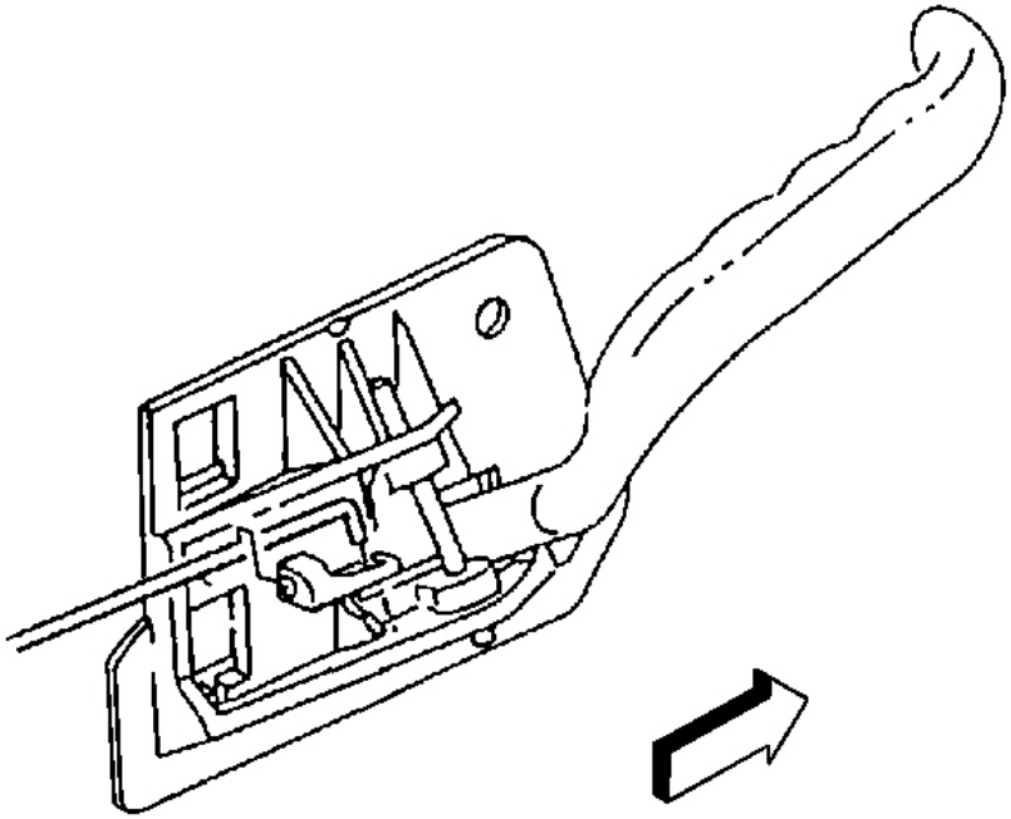


Fig. 89: View Of Control Rod To Inside Door Handle
Courtesy of GENERAL MOTORS CORP.

2. Slide the handle into place.

NOTE: **Refer to Fastener Notice in Cautions and Notices.**

3. Install the retaining bolts to the inside door handle.

Tighten: Tighten the door handle retaining bolts to 9 N.m (80 lb in).

cardiagn.com

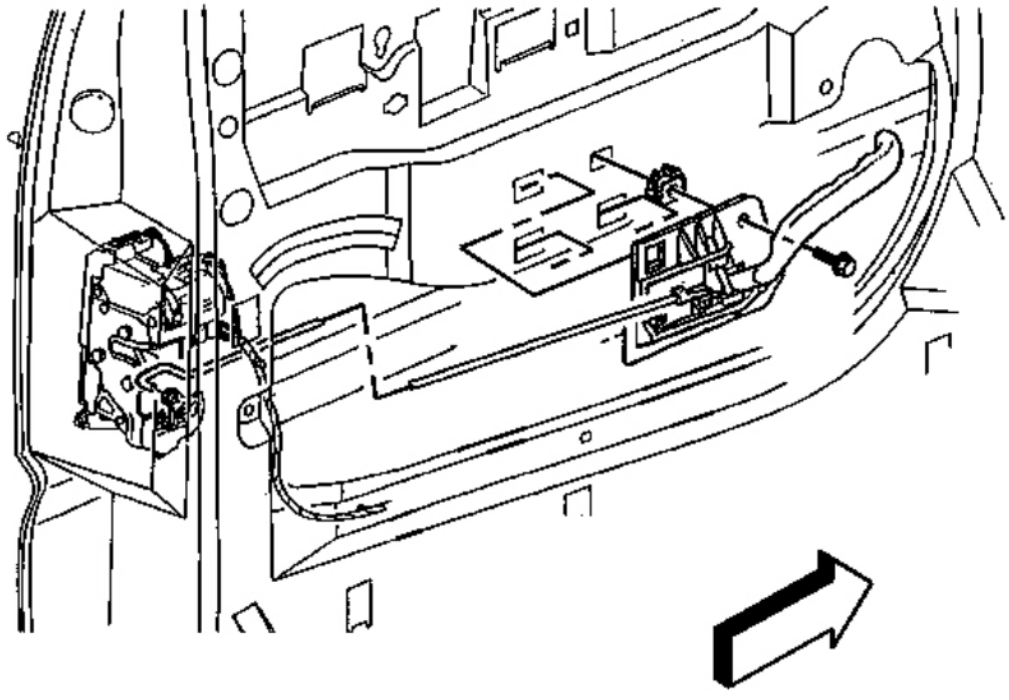


Fig. 90: Installing Retaining Bolts To Inside Door Handle
Courtesy of GENERAL MOTORS CORP.

4. Install the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.

LOCK ACTUATOR REPLACEMENT - FRONT DOOR

Removal Procedure

1. Raise the window glass.
2. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
3. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
4. Disconnect the inside door lock rod from the handle retainer clip.

cardiagn.com

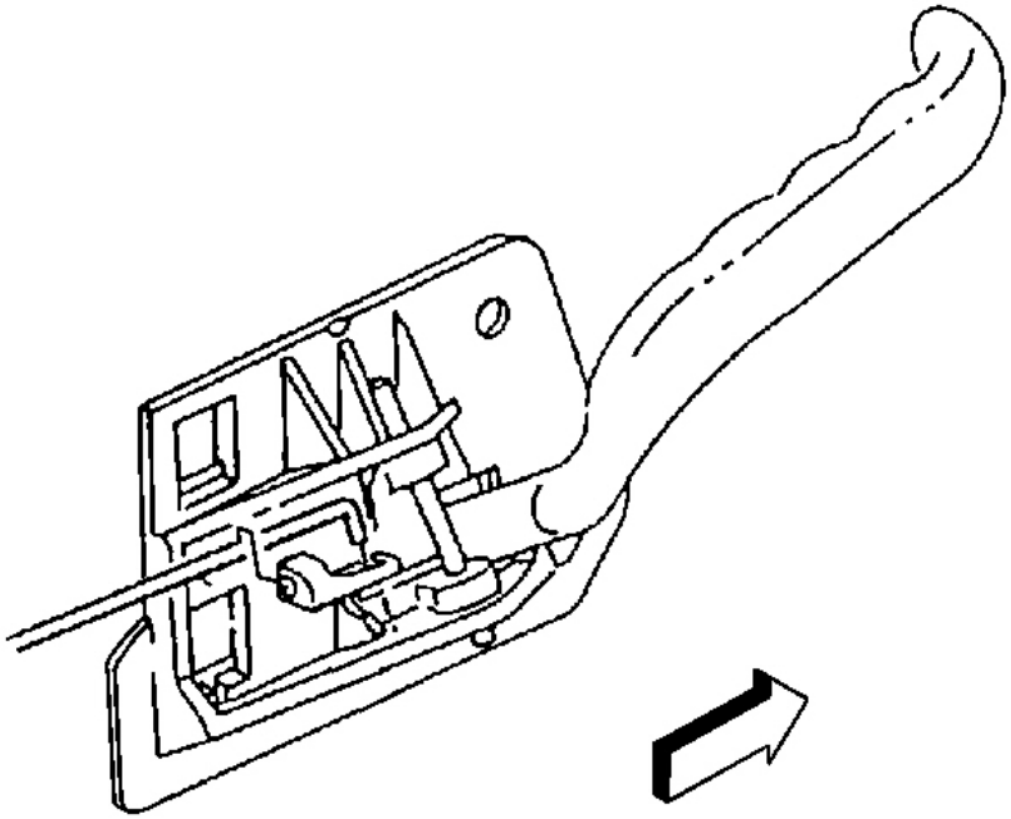


Fig. 91: View Of Control Rod To Inside Door Handle
Courtesy of GENERAL MOTORS CORP.

5. Disconnect the manual door lock rod from the door retainer clips.

cardiagn.com

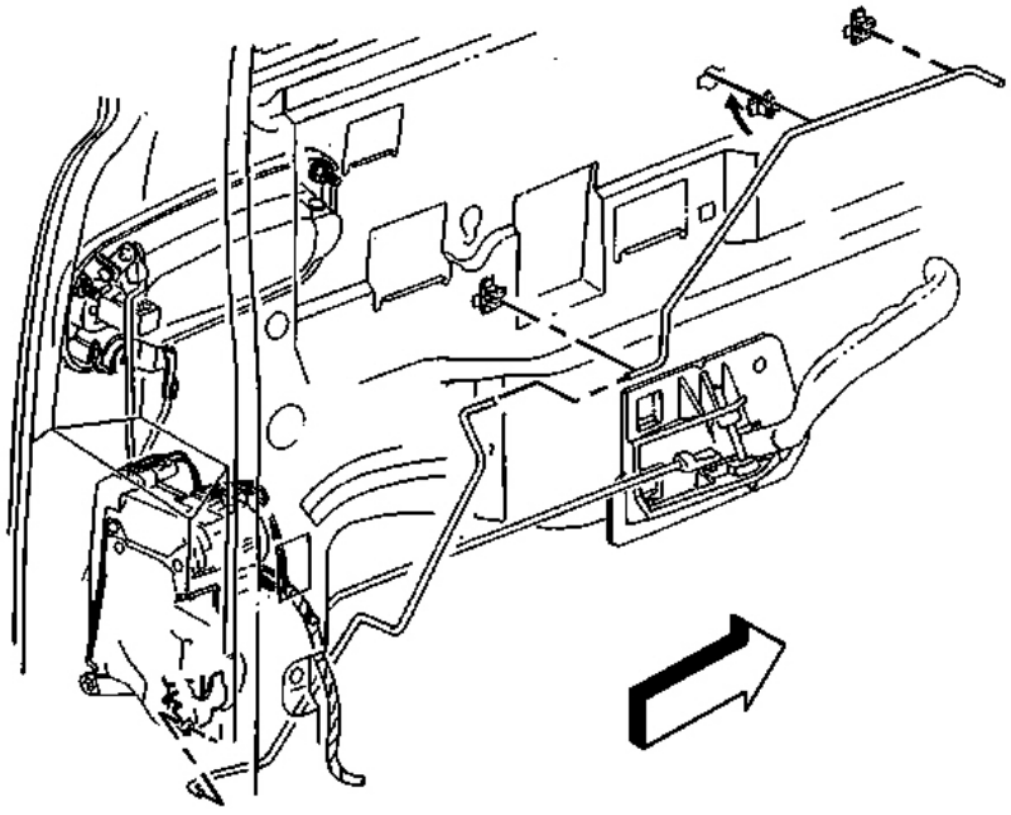


Fig. 92: Disconnecting Manual Door Lock Rod From Door Retainer Clips (Front Door)
Courtesy of GENERAL MOTORS CORP.

6. Remove the rubber plug (1) in order to disengage the outside handle rod retainer.

cardiagn.com

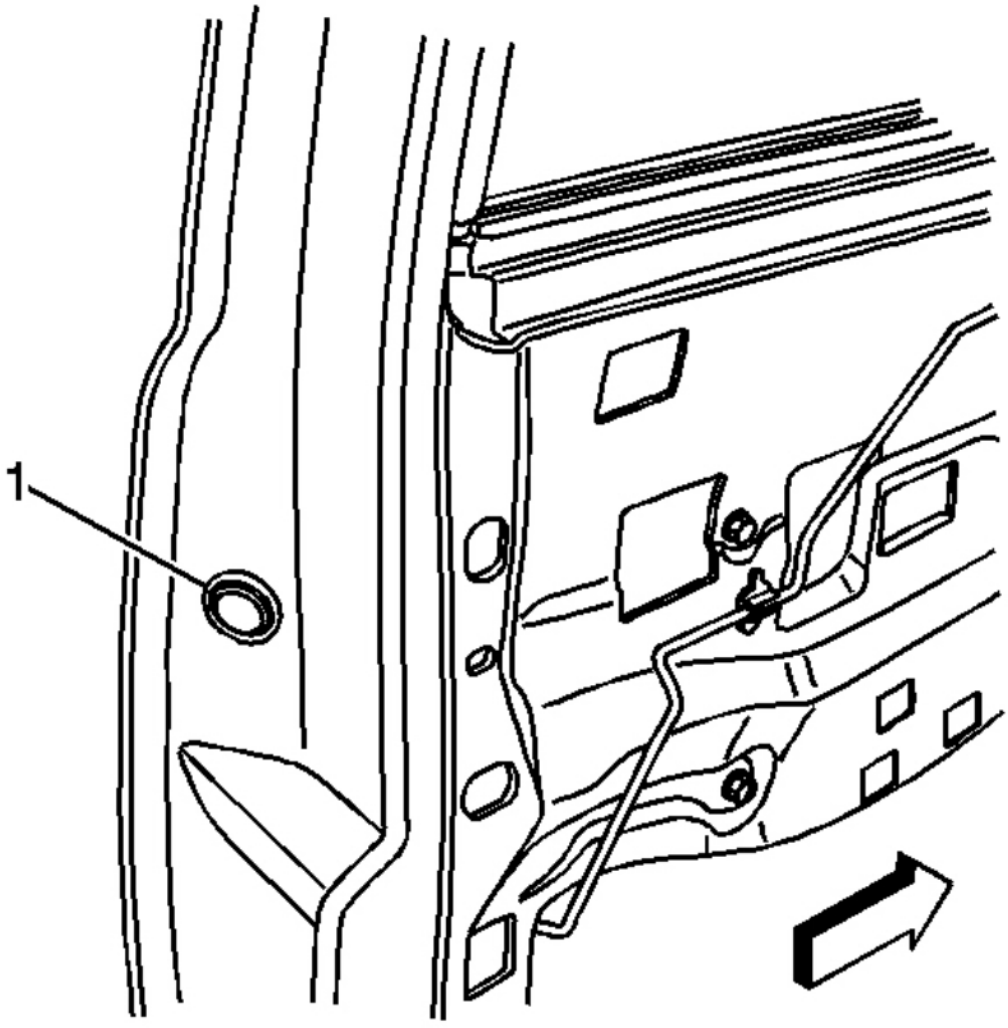


Fig. 93: Removing Rubber Plug (Front Door)
Courtesy of GENERAL MOTORS CORP.

7. Disconnect the cylinder lock rod (1).
8. Remove the bolts (2) which retain the door lock actuator to the door.

cardiagn.com

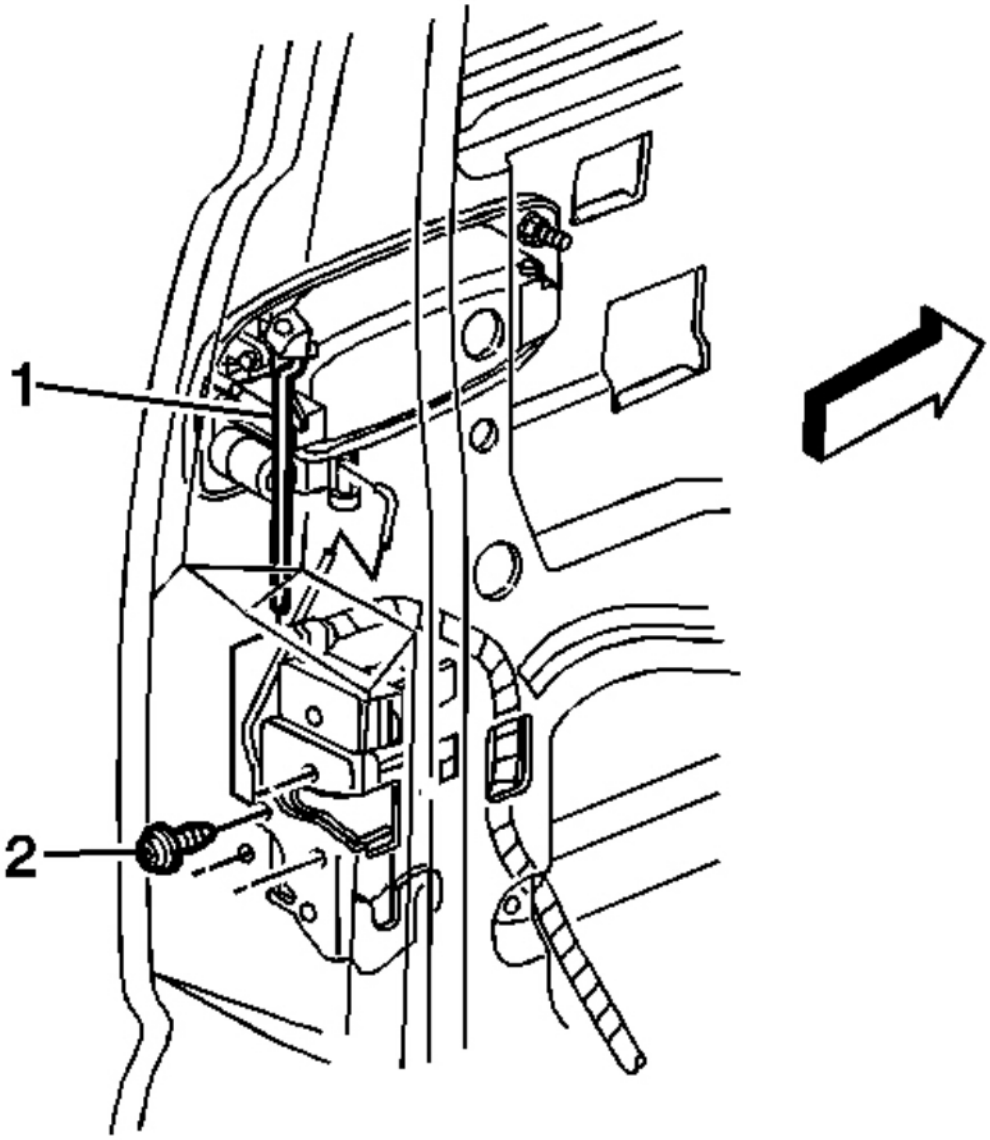


Fig. 94: Disconnecting Cylinder Lock Rod & Removing Bolts (Front Door)
Courtesy of GENERAL MOTORS CORP.

9. Remove the door lock actuator and the control rods as an assembly.
10. Disconnect the electrical connector from the door lock actuator, if equipped.
11. Remove the control rods as necessary.

cardiagn.com

Installation Procedure

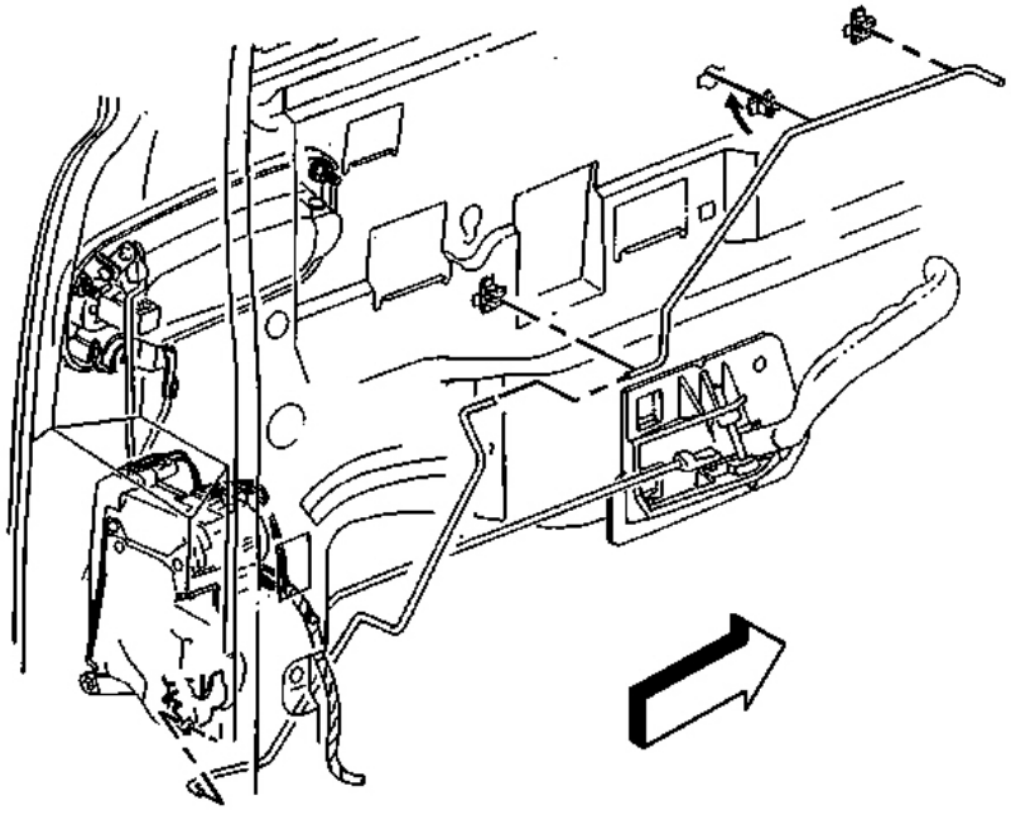
1. Install the control rods to the assembly.
2. Connect the electrical connectors to the door lock actuator, if equipped
3. Install the door lock actuator to the door.
4. Connect the control rod to the outside door handle.
5. Connect the cylinder lock rod.

NOTE: Refer to Fastener Notice in Cautions and Notices.

6. Install the bolts that retain the door lock actuator to the door.

   Tighten: Tighten the screws to 9 N.m (80 lb in).

7. Connect the manual door lock to the door retainer clips.



cardiagn.com

Fig. 95: Connecting Manual Door Lock To Retainer Clips (Front Door)
Courtesy of GENERAL MOTORS CORP.

8. Connect the control rod for the inside door handle to the lock assembly (1).

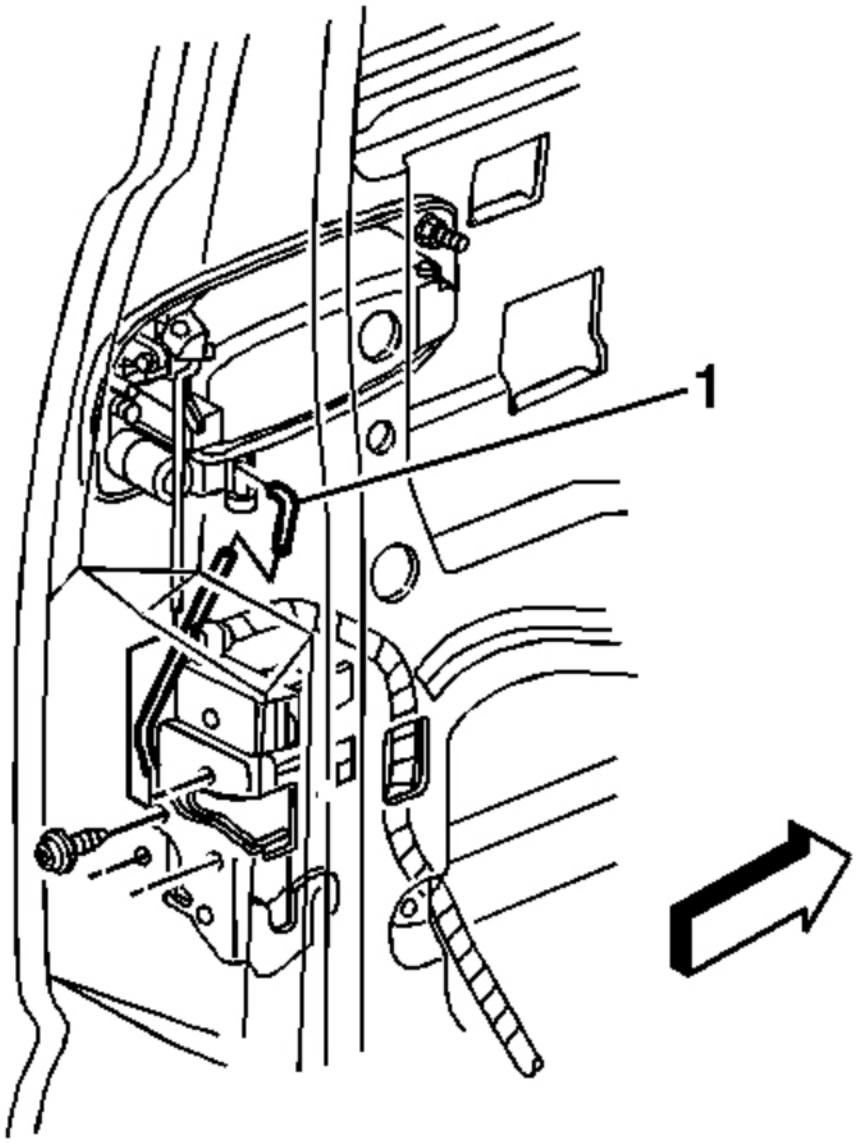


Fig. 96: Connecting Control Rod To Lock Assembly (Front Door)
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

9. Connect the inside door lock rod to the handle retainer clip.

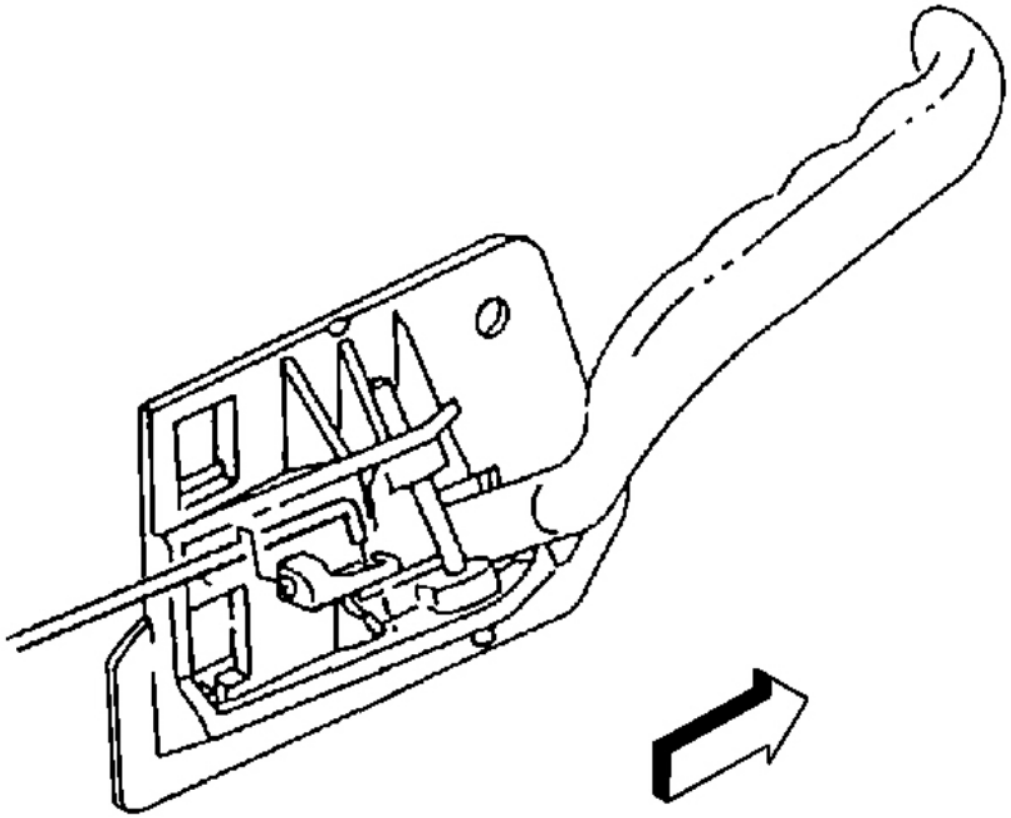


Fig. 97: View Of Control Rod To Inside Door Handle
Courtesy of GENERAL MOTORS CORP.

10. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.
11. Install the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
12. Inspect the operation of all the related components.

LOCK ACTUATOR REPLACEMENT - REAR DOOR

Removal Procedure

1. Raise the window.
2. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door**

cardiagn.com

(Tahoe/Yukon/Escalade) or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.

3. Remove the water deflector. Refer to **Water Deflector Replacement - Rear Door (Tahoe/Yukon/Escalade)** or **Water Deflector Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
4. Disconnect the inside door lock rod from the handle retainer clip.

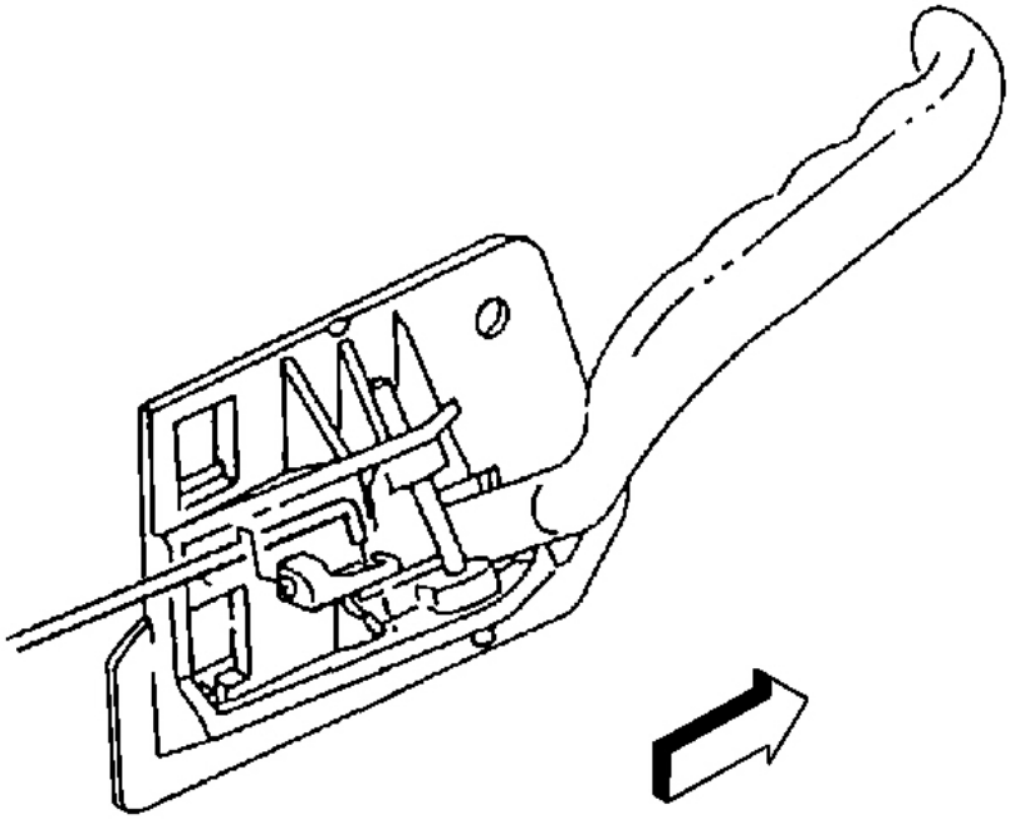


Fig. 98: View Of Control Rod To Inside Door Handle
Courtesy of GENERAL MOTORS CORP.

5. Disconnect the manual door lock rod from the door retainer clips.

cardiagn.com

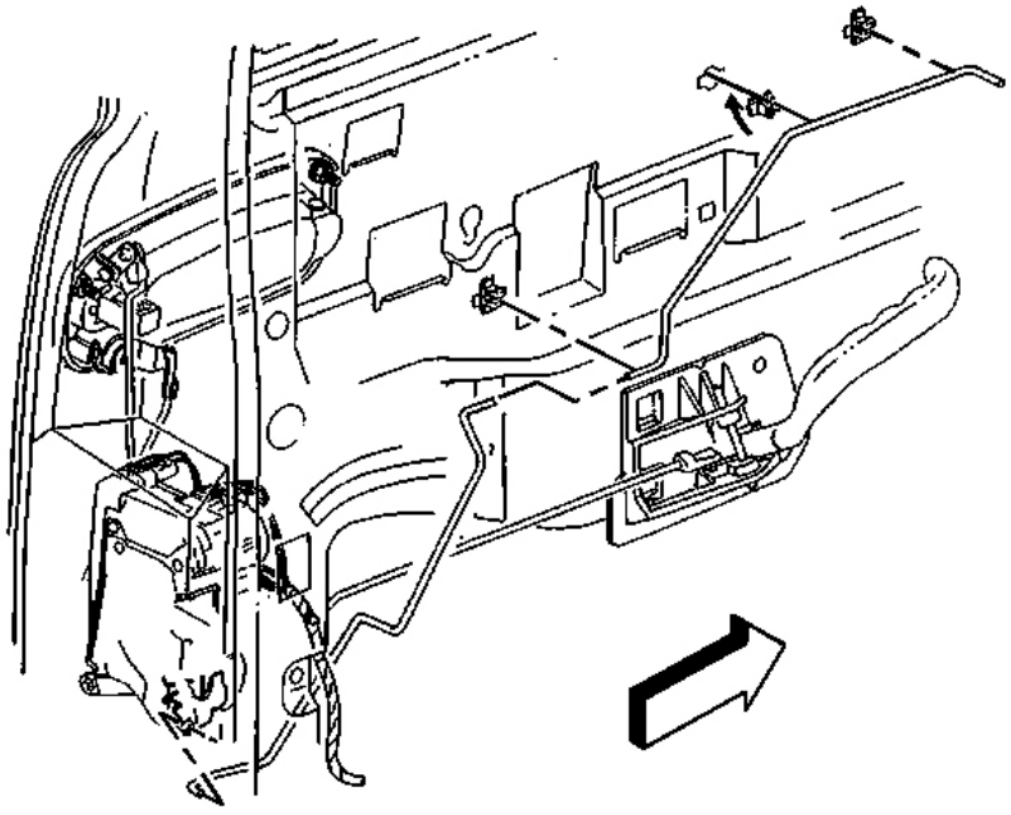


Fig. 99: Disconnecting Manual Door Lock Rod From Retainer Clips (Rear Door)
Courtesy of GENERAL MOTORS CORP.

6. Remove the rubber plug in order to disengage the outside handle rod retainer.

cardiagn.com

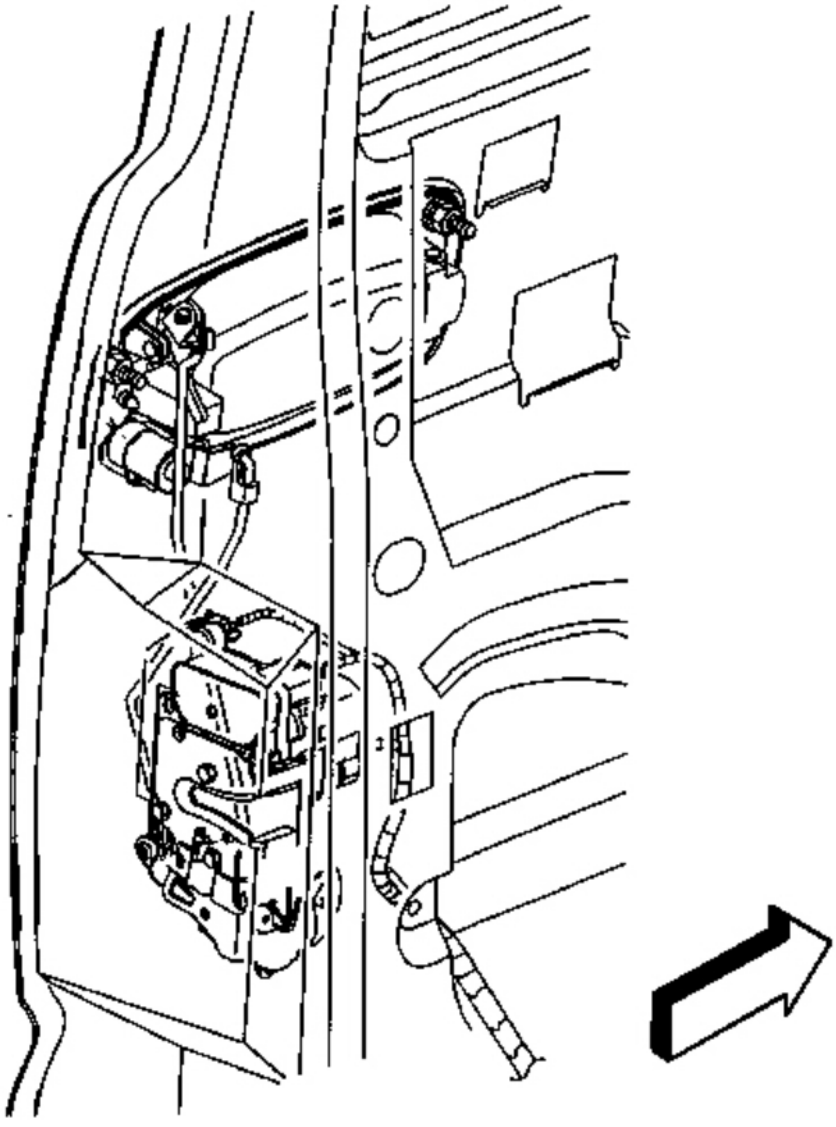


Fig. 100: Removing Rubber Plug (Rear Door)
Courtesy of GENERAL MOTORS CORP.

7. Disconnect the cylinder lock rod (1).
8. Remove the bolts (2) which retain the door lock actuator to the door.

cardiagn.com

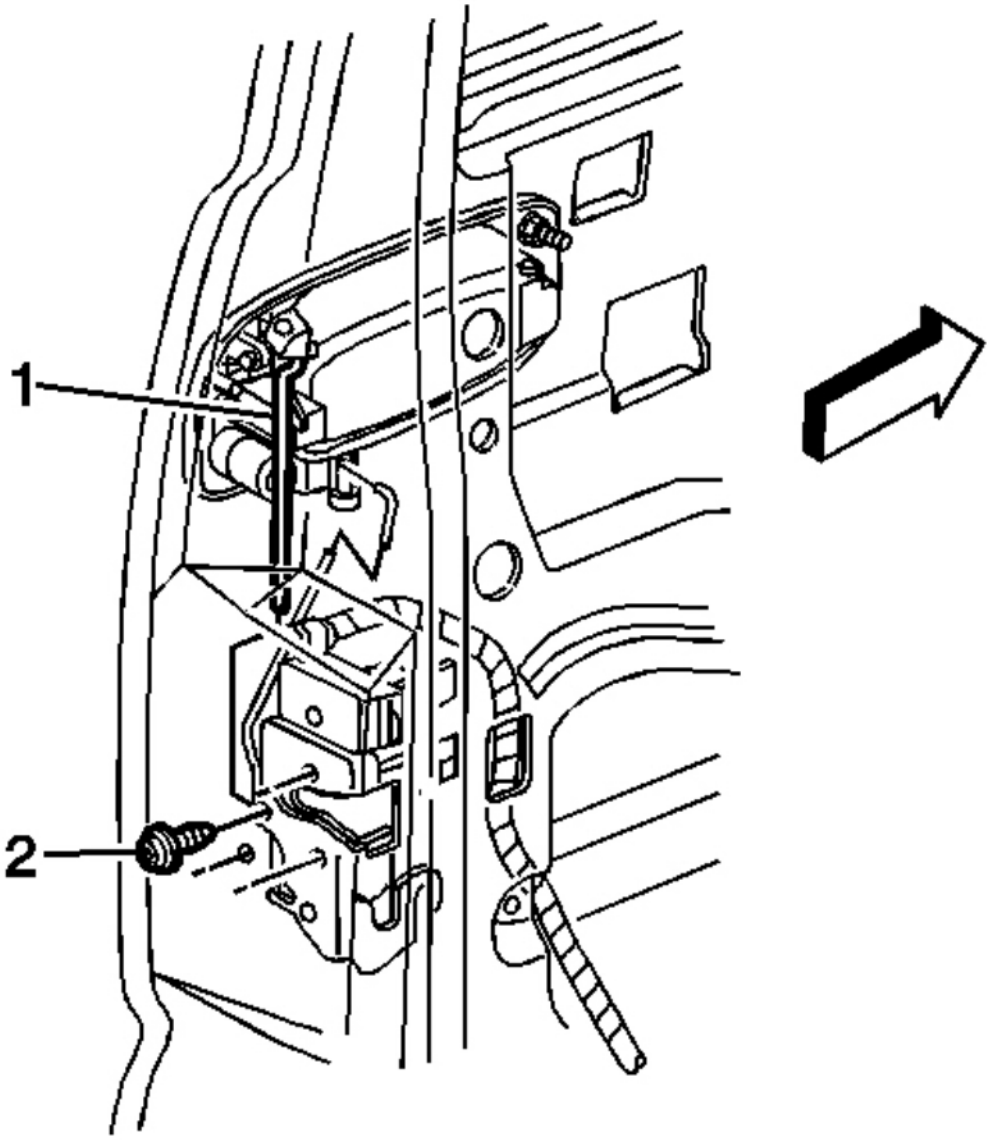


Fig. 101: Disconnecting Cylinder Lock Rod & Removing Bolts (Rear Door)
Courtesy of GENERAL MOTORS CORP.

9. Remove the door lock actuator and control rods as an assembly.
10. Disconnect the electrical connector from the door lock actuator, if equipped.
11. Remove the control rods as necessary.

cardiagn.com

Installation Procedure

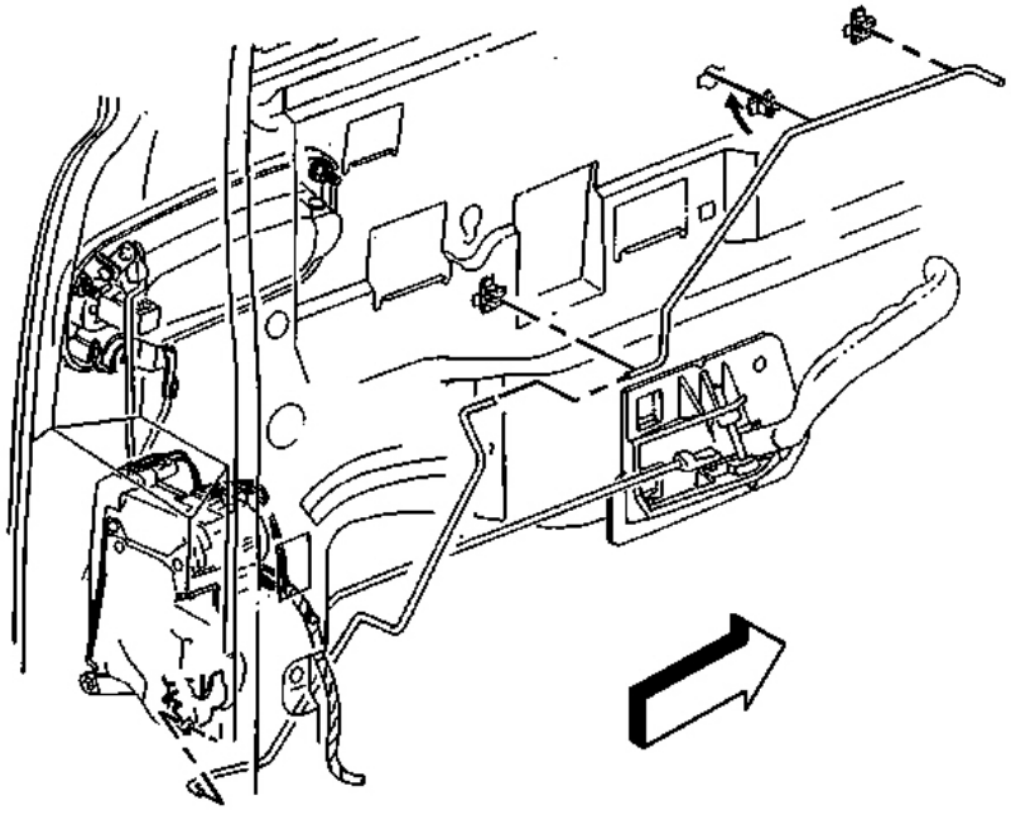
1. Install the control rods to the assembly.
2. Connect the electrical connectors to the door lock actuator, if equipped.
3. Install the door lock actuator to the door.
4. Connect the outside door handle control rod.
5. Connect the cylinder lock rod.

NOTE: Refer to Fastener Notice in Cautions and Notices.

6. Install the bolts which retain the door lock actuator to the door.

   Tighten: Tighten the screws to 9 N.m (80 lb in).

7. Connect the manual door lock to the door retainer clips.



cardiagn.com

Fig. 102: Connecting Manual Door Lock To Door Retainer Clips (Rear Door)
Courtesy of GENERAL MOTORS CORP.

8. Connect the inside door handle control rod to the lock assembly.

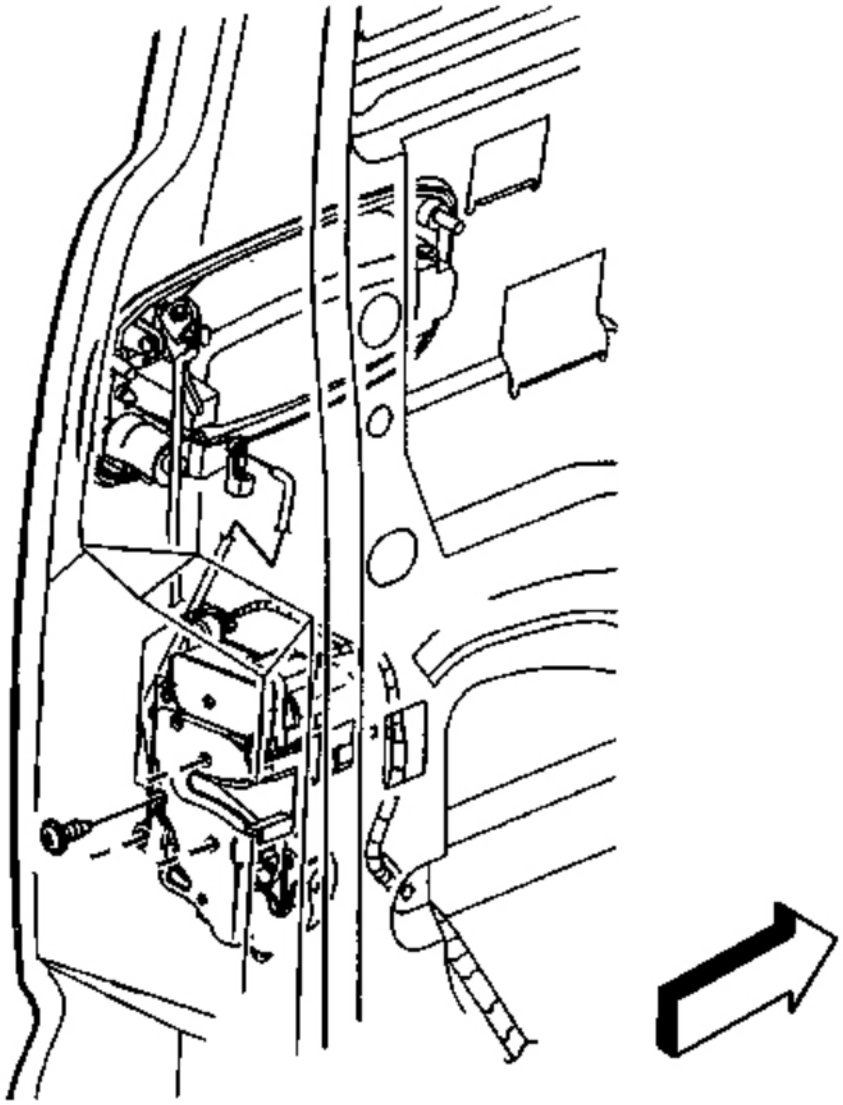


Fig. 103: Connecting Inside Door Handle Control Rod To Lock Assembly (Rear Door)
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

9. Connect the inside door lock rod to the handle retainer clip.

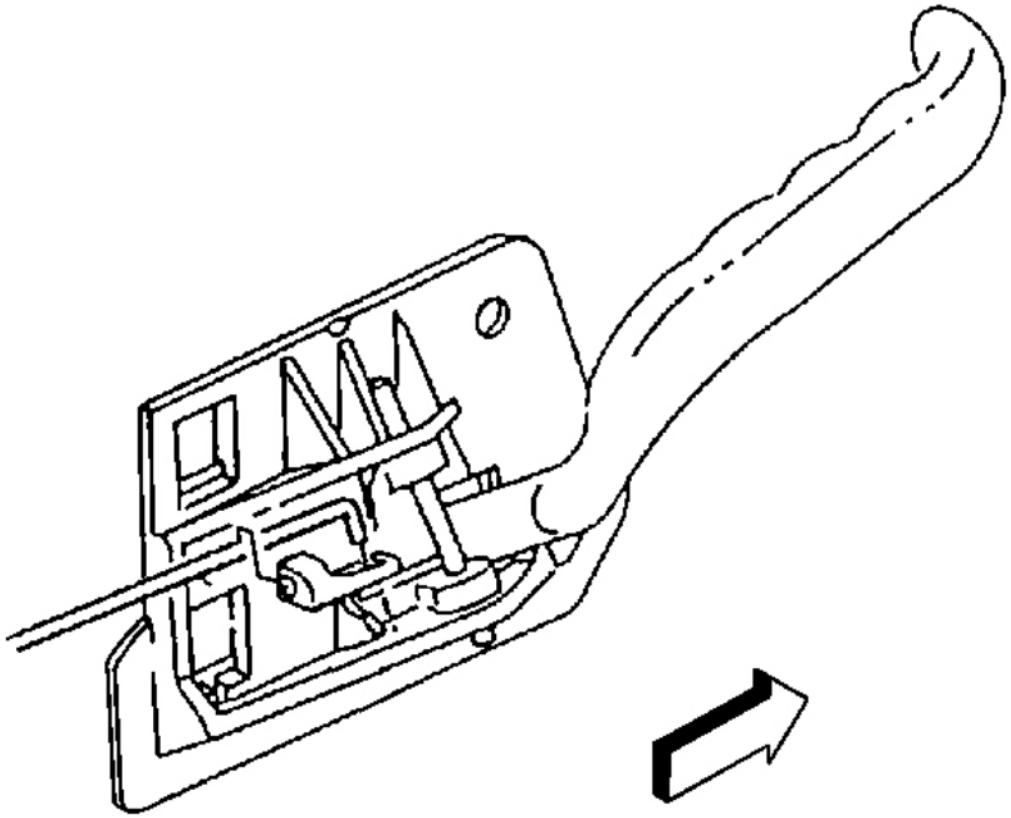


Fig. 104: View Of Control Rod To Inside Door Handle
Courtesy of GENERAL MOTORS CORP.

10. Install the water deflector. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)** or **Water Deflector Replacement - Rear Door (Tahoe/Yukon/Escalade)** or **Water Deflector Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
11. Install the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
12. Inspect the operation of all the related components.

LOCK CYLINDER REPLACEMENT - DOOR

cardiagn.com

Removal Procedure

1. Raise the window completely.
2. Remove the front door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
3. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
4. Remove the outside door handle. Refer to **Door Handle Replacement - Outside**.
5. Remove the clip that retains the lock cylinder lever to the lock cylinder.
6. Remove the lock cylinder retainer. Remove the lock cylinder from the outside door handle.

cardiagn.com

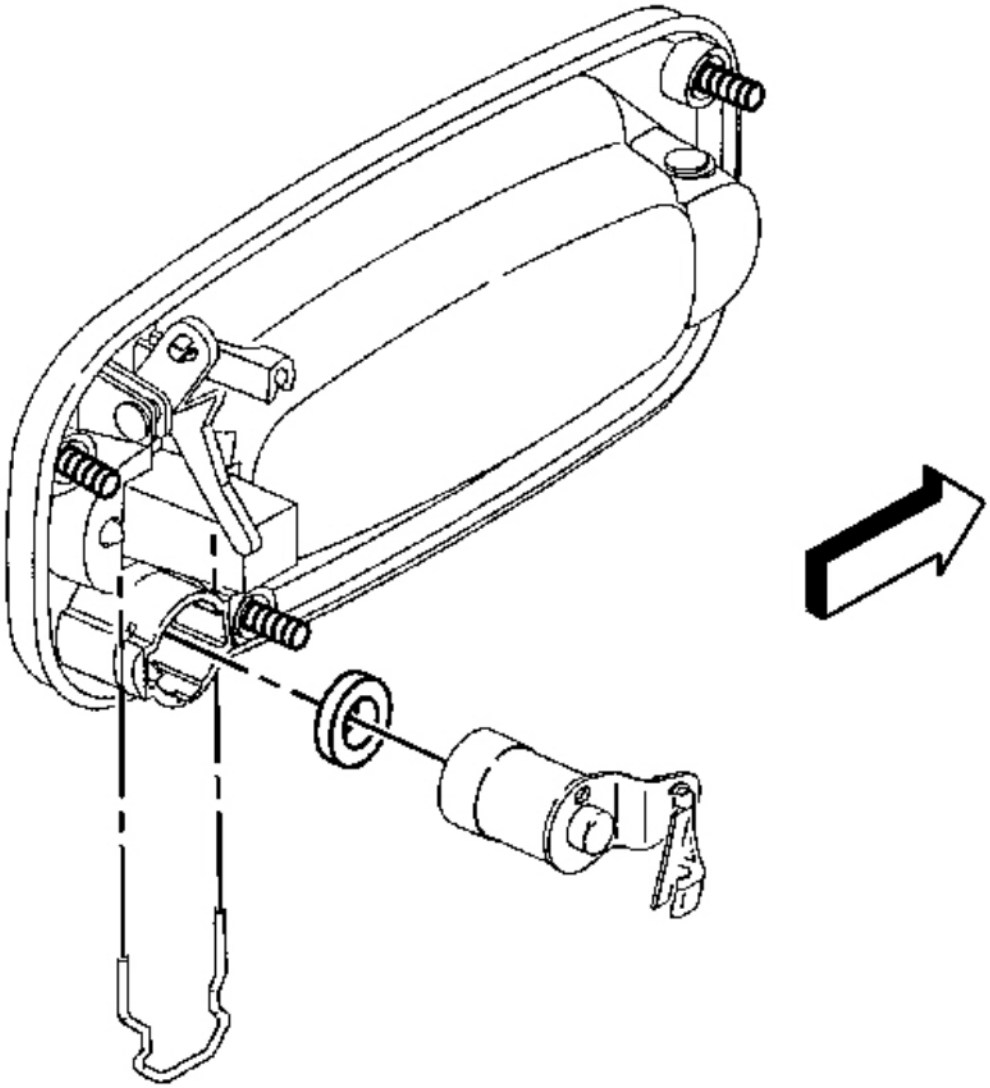


Fig. 105: Removing Door Lock Cylinder
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the lock cylinder into the outside door handle.
2. Install the clip.

cardiagn.com

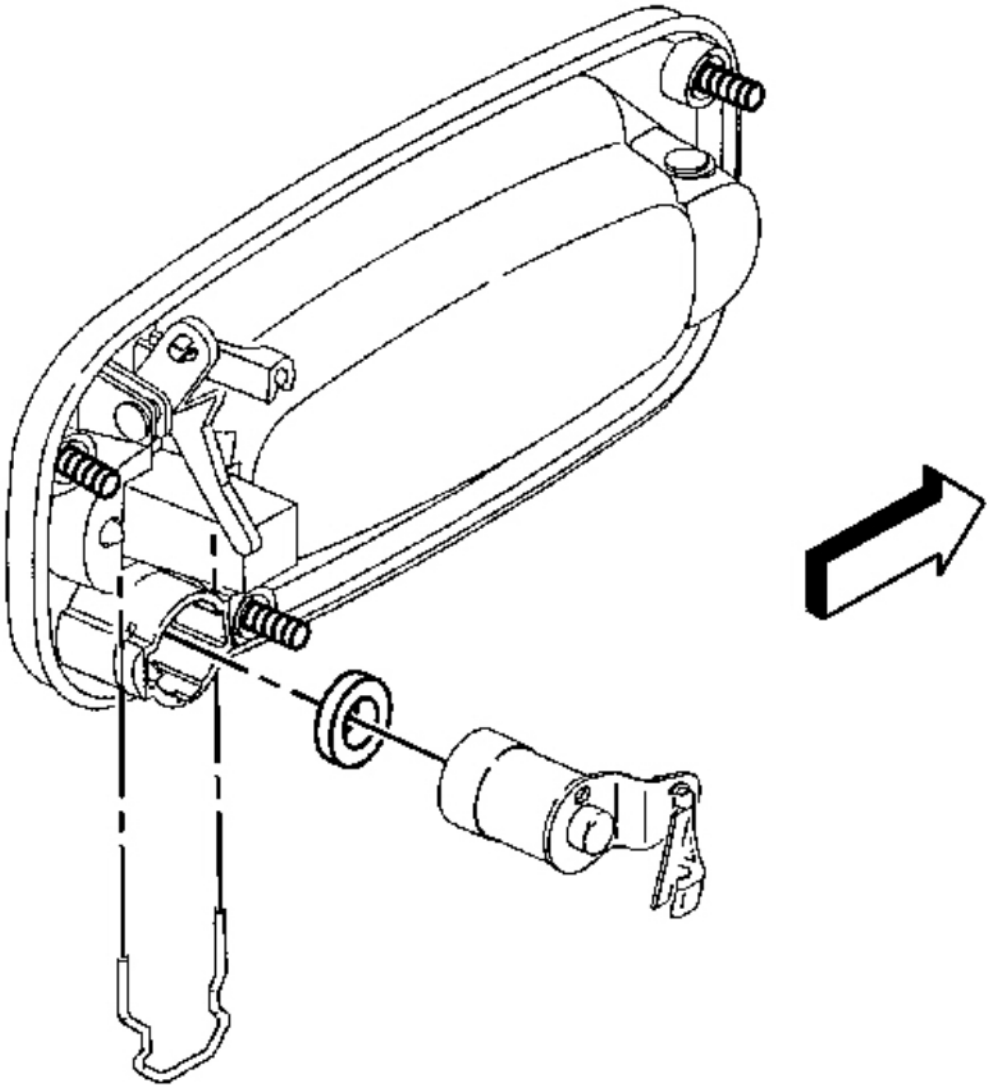


Fig. 106: Installing Door Lock Cylinder
Courtesy of GENERAL MOTORS CORP.

3. Install the outside door handle. Refer to **Door Handle Replacement - Outside**.
4. Install the front door water deflector. Refer to **Water Deflector Replacement - Front Door**.
5. Install the front door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.

cardiagn.com

BINDING LOCK CYLINDERS

In many cases, applying the proper lubrication can correct the following conditions:

- Binding or sticking door lock cylinders
- Difficulty in inserting and removing the keys

For lubricating the above components, use lubricant GM P/N 12346241 or equivalent

Do not use penetrating lubricants such as GM P/N 1052949 or WD-40®. Penetrating lubricants wash out the original lubrication. Penetrating lubricants eventually evaporate, leaving little or no lubricating material. However, when using penetrating lubricants in order to thaw or in order to loosen the lock cylinder components, refer to steps 2-4 in the procedure below for the proper methods of lubrication.

Repair lock cylinders frozen in cold weather by using the following procedure:

1. While carefully avoiding damage to the painted surfaces, apply heat to the cylinder with a heat gun.
2. Using a paper clip or a similar item, hold the door shutter open.

   Force air into the cylinders using compressed air through a blow gun attachment.

3. While holding the shutter door open, inject small amounts of a recommended lubricant into the cylinder.
4. Work the key into the cylinder repeatedly.

   Wipe away any excess lubrication from the key.

STRIKER REPLACEMENT - DOOR

Removal Procedure

IMPORTANT: If both of the door striker bolts are removed at the same time, the striker backing plate will fall into the body. This will result in additional time to perform the repair.

1. Remove the lower striker bolt.
2. Loosen the upper striker bolt enough in order to rotate the striker and the spacer (if equipped) away from the lower bolt hole.
3. Install the lower striker bolt. Tighten the lower striker bolt sufficiently in order to hold the striker backing plate in place.
4. Remove the upper striker bolt.
5. Remove the spacer, if equipped.
6. Remove the striker.

cardiagn.com

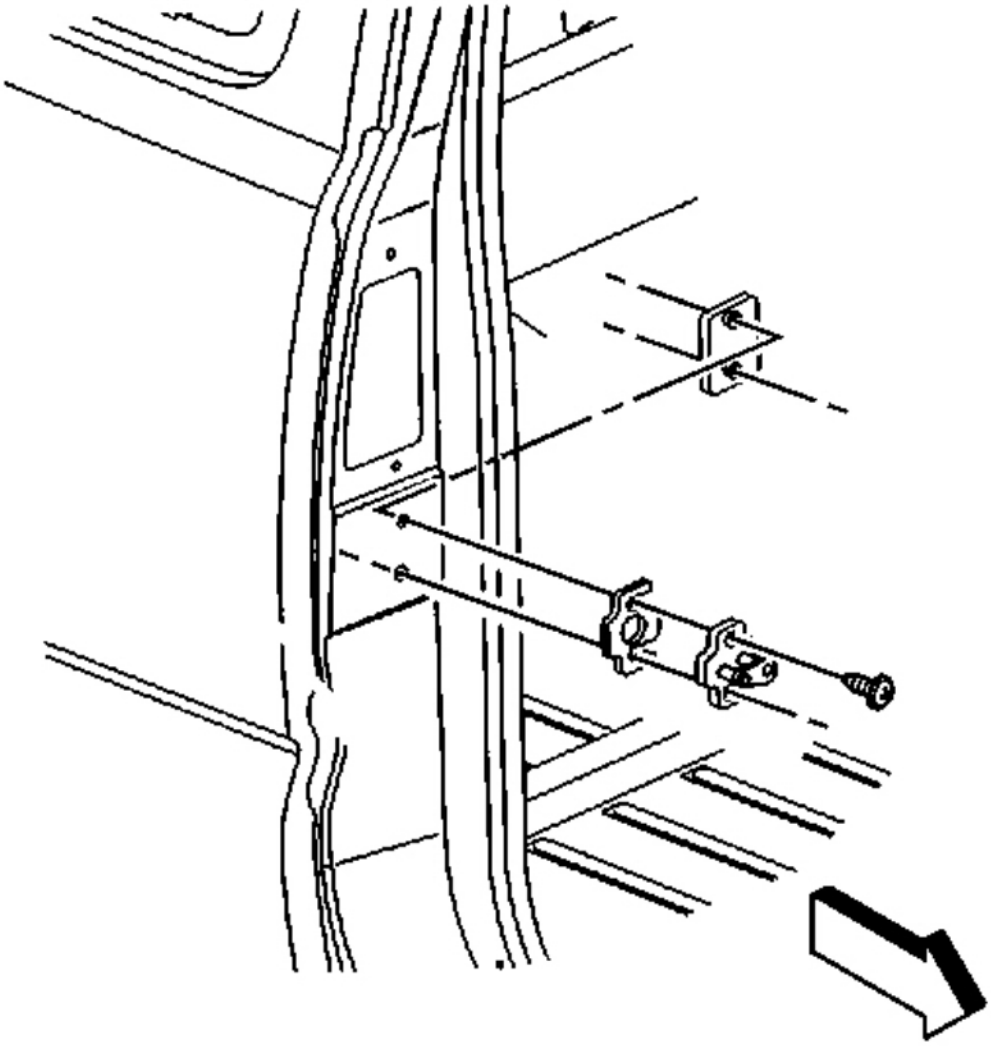


Fig. 107: Removing Door Striker
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the striker.
2. Install the spacer, if equipped.
3. Install the upper striker bolt.
4. If the striker backing plate has moved, rotate the lower striker bolt until the upper threaded hole is

cardiagn.com

properly aligned.

5. Remove the lower bolt.
6. Rotate the striker and the spacer, (if equipped) in order to align the lower threaded hole in the striker backing plate.

NOTE: Refer to Fastener Notice in Cautions and Notices.

7. Tighten the striker bolts.

Tighten: Tighten the door striker bolts to 24 N.m (18 lb ft).

cardiagn.com

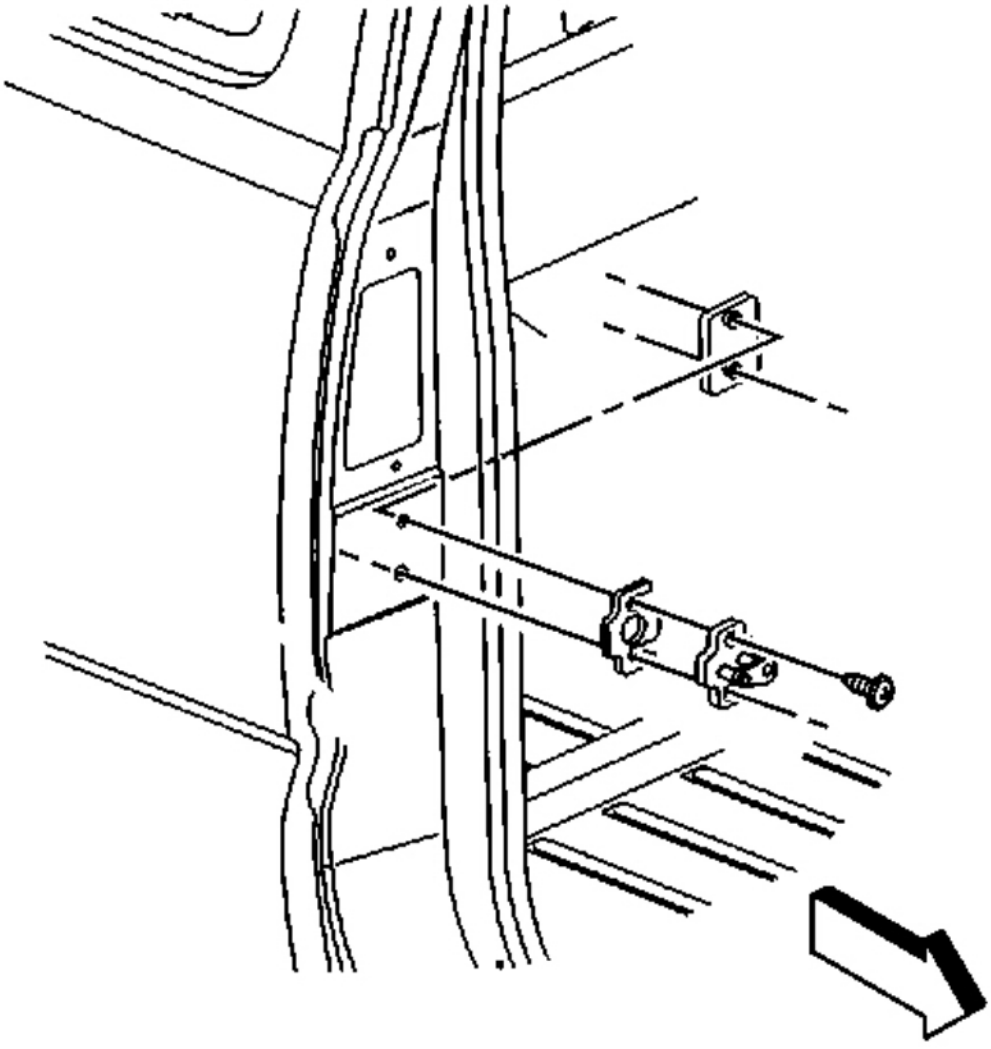


Fig. 108: Installing Door Striker
Courtesy of GENERAL MOTORS CORP.

DOOR HARDWARE LUBRICATION

The mechanical components of the door assembly receive lubrication during the assembly. If any door hardware mechanism needs additional lubrication, use multi-purpose lubricant GM P/N 12346241 or Canadian P/N 10953474 or equivalent.

WIRING HARNESS REPLACEMENT - DOOR

cardiagn.com

Removal Procedure

1. Remove the hinge pillar trim panel. Refer to **Trim Panel Replacement - Hinge Pillar** in Interior Trim.
2. Disconnect the cross car wiring harness.
3. Remove the conduit.

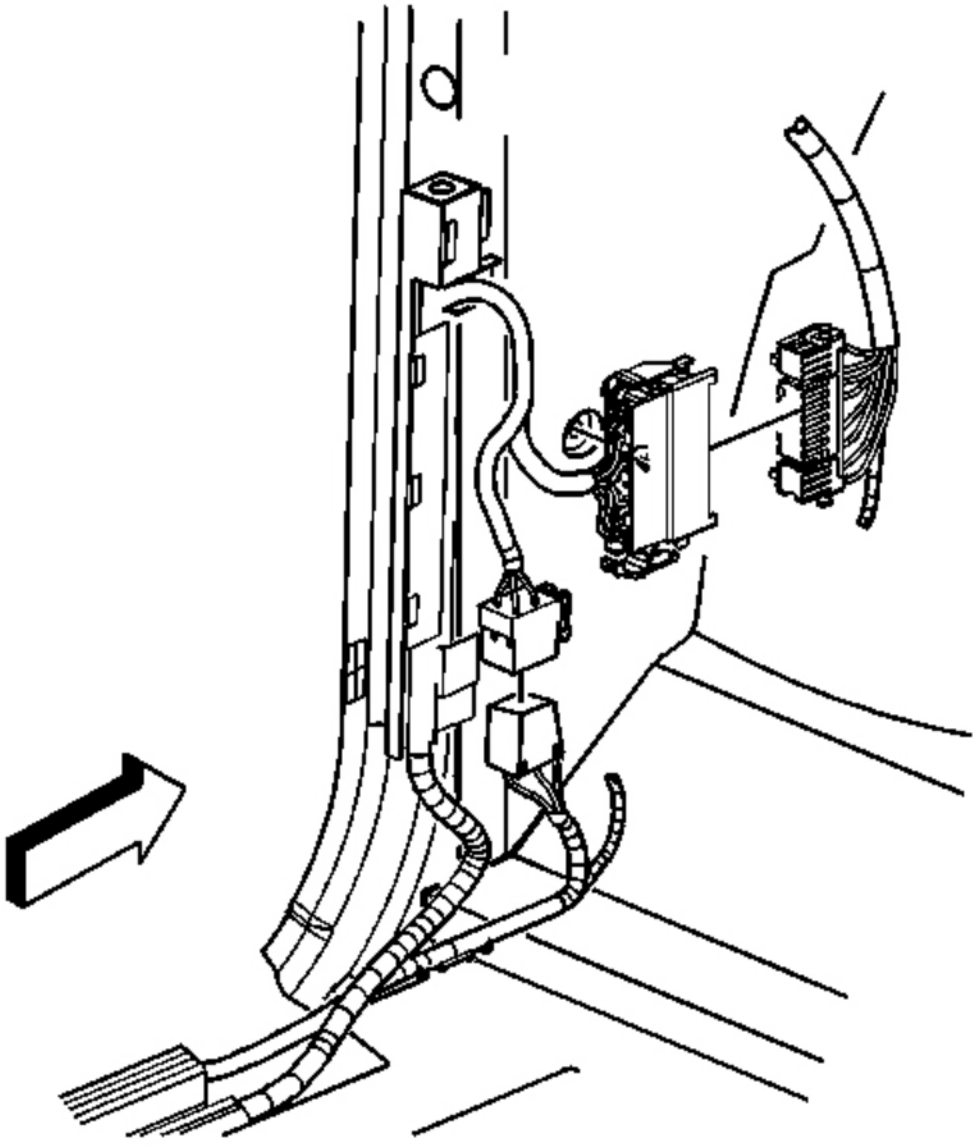


Fig. 109: Disconnecting Cross Car Wiring Harness

cardiagn.com

Courtesy of GENERAL MOTORS CORP.

4. Remove the upper trim panel extension. Refer to **Trim Panel Replacement - Upper Extension**.
5. Remove the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
6. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
7. Disconnect the following components:
   - The outside power mirror (1)
   - C203 (4)
   - P500 (5)
   - The speaker (6)
   - The power window motor (7)
   - The power lock switch (8)
   - The power window switch (9)
   - The power mirror switch (10)
   - The door lock actuator

cardiagn.com

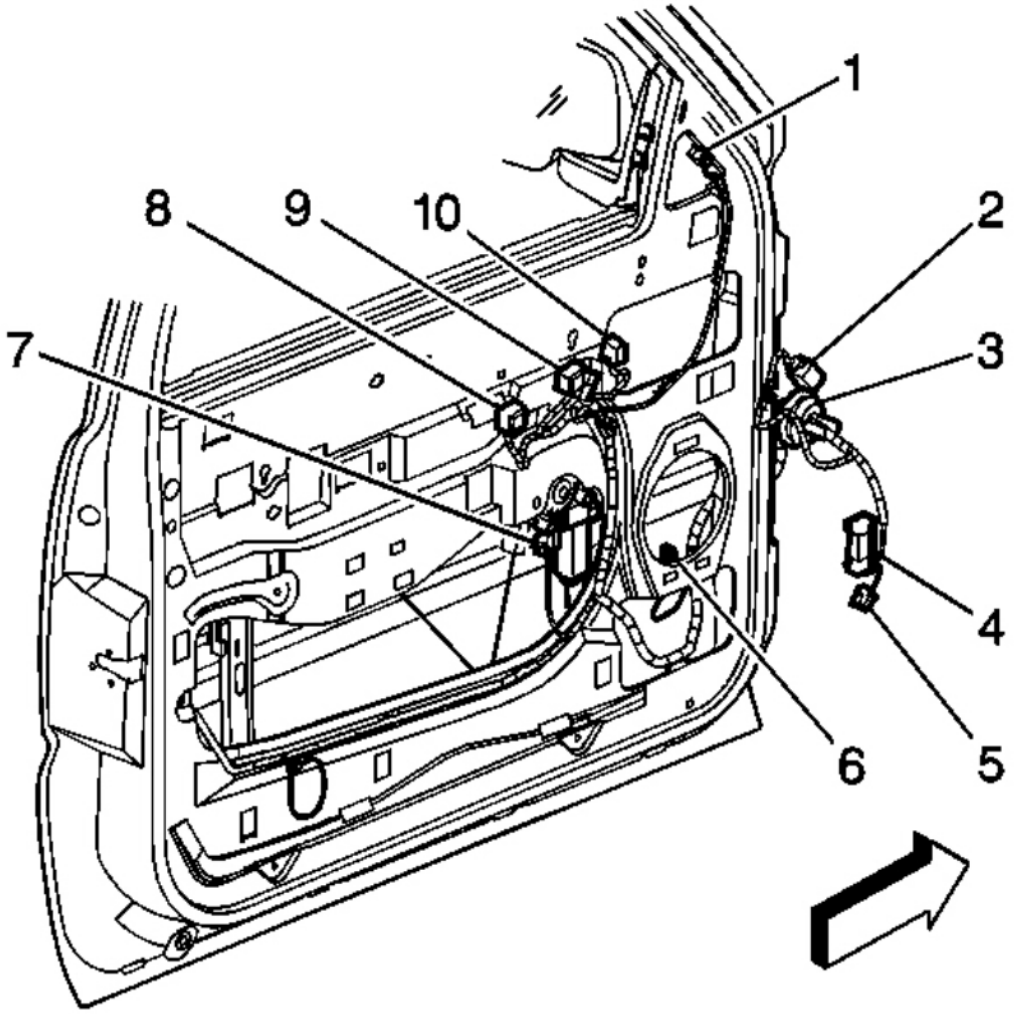


Fig. 110: Disconnecting Connectors & Removing Door Wiring Harness
Courtesy of GENERAL MOTORS CORP.

8. Remove the door wiring harness from the door by pulling the harness through the conduit (3).

Installation Procedure

1. Install the door wiring harness to the door by pulling connector 4 and connector 5 through the conduit (3).
2. Connect the following components:
   - The outside power mirror (1)
   - C203 (4)

cardiagn.com

- P500 (5)
- The speaker (6)
- The power window motor (7)
- The power lock switch (8)
- The power window switch (9)
- The power mirror switch (10)
- The door lock actuator

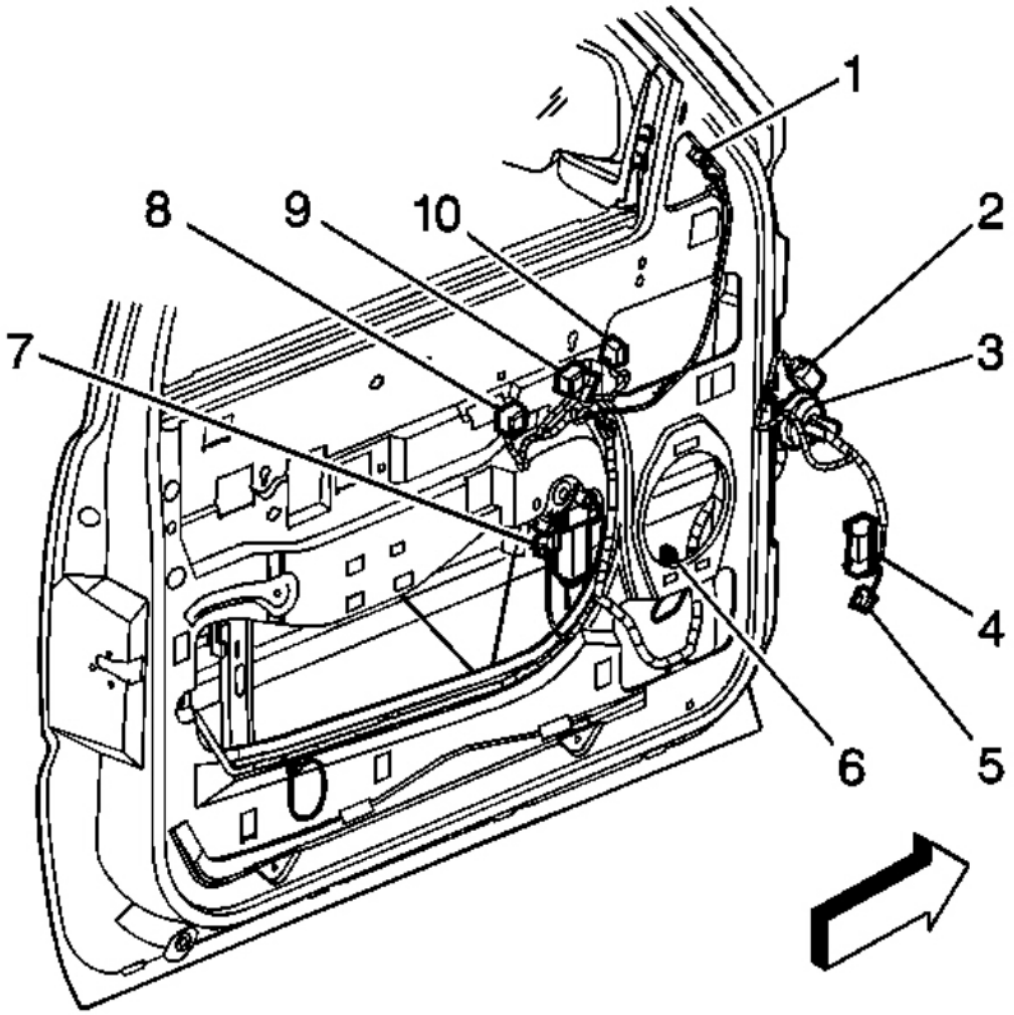


Fig. 111: Installing Door Wiring Harness & Connecting Connectors
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

3. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.
4. Install the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
5. Install the upper trim panel extension. Refer to **Trim Panel Replacement - Upper Extension**.
6. Install the conduit.
7. Connect the cross car wiring harness.

cardiagn.com

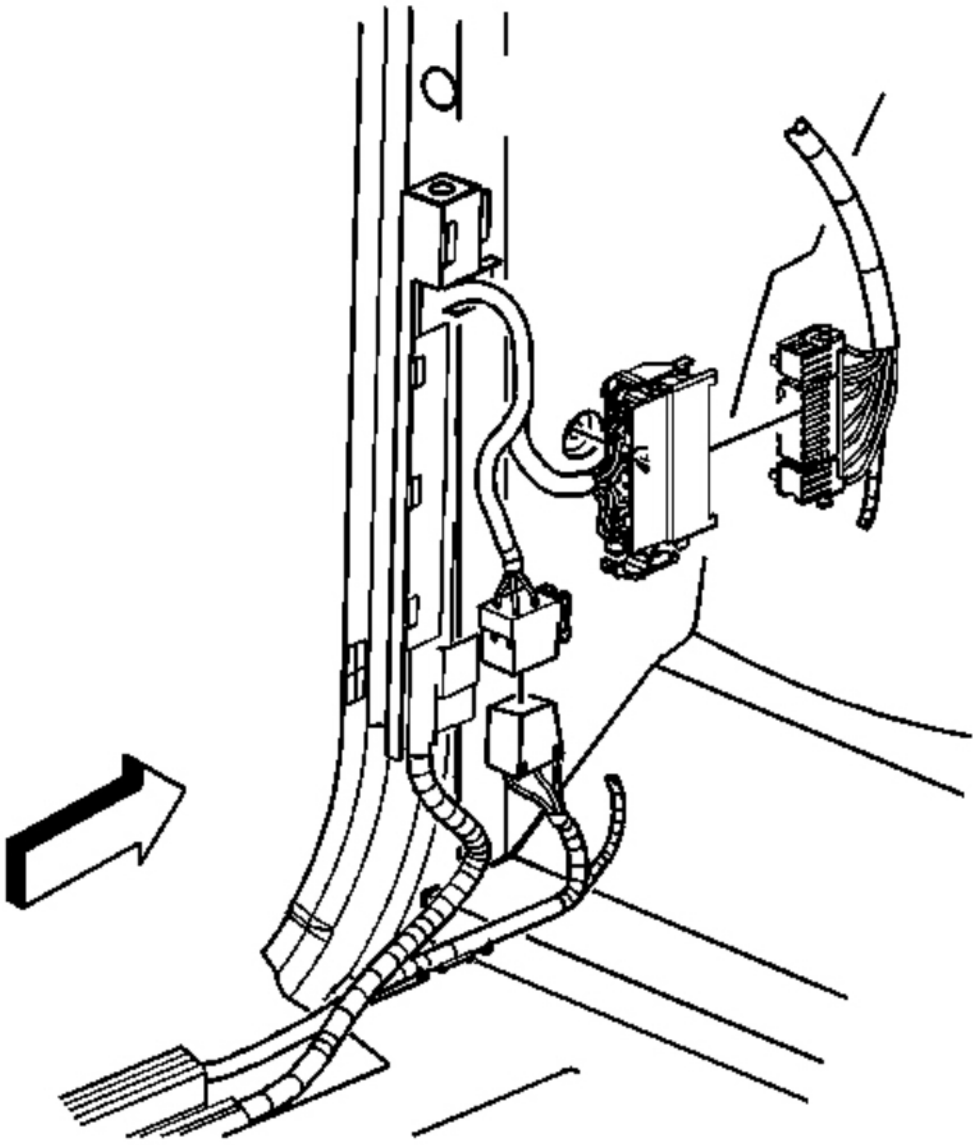


Fig. 112: Connecting Cross Car Wiring Harness
Courtesy of GENERAL MOTORS CORP.

8. Install the hinge pillar trim panel. Refer to **Trim Panel Replacement - Hinge Pillar** in Interior Trim.

MODULE REPLACEMENT - FRONT POWER WINDOW

cardiagn.com

Removal Procedure

1. Raise and support the window glass.
2. Remove the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
3. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
4. Disconnect the harness from the electric window motor assembly.
5. Remove the 2 bolts that hold the window glass to the regulator.
6. Remove the bolts from the window regulator.
7. Remove the window regulator assembly from the door by folding both sides of the window regulator assembly together.

cardiagn.com

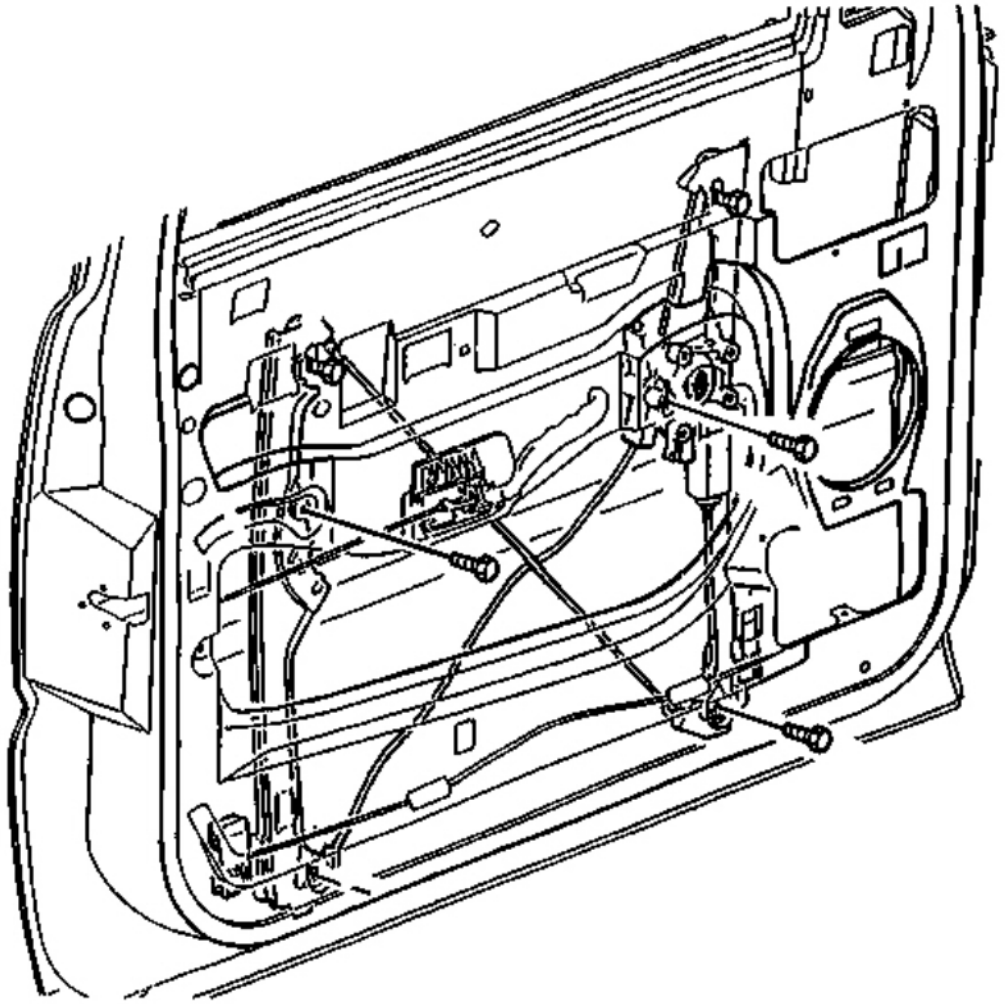


Fig. 113: Removing Front Power Window Module
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the regulator to the inside door structure. A slight twisting motion of the regulator is needed.
2. Ensure the regulator is positioned firmly in the door.

NOTE: Refer to Fastener Notice in Cautions and Notices.

IMPORTANT: Place Permatex Threadlocker, Part Number 24200, GM P/N 12345382, onto

cardiagn.com

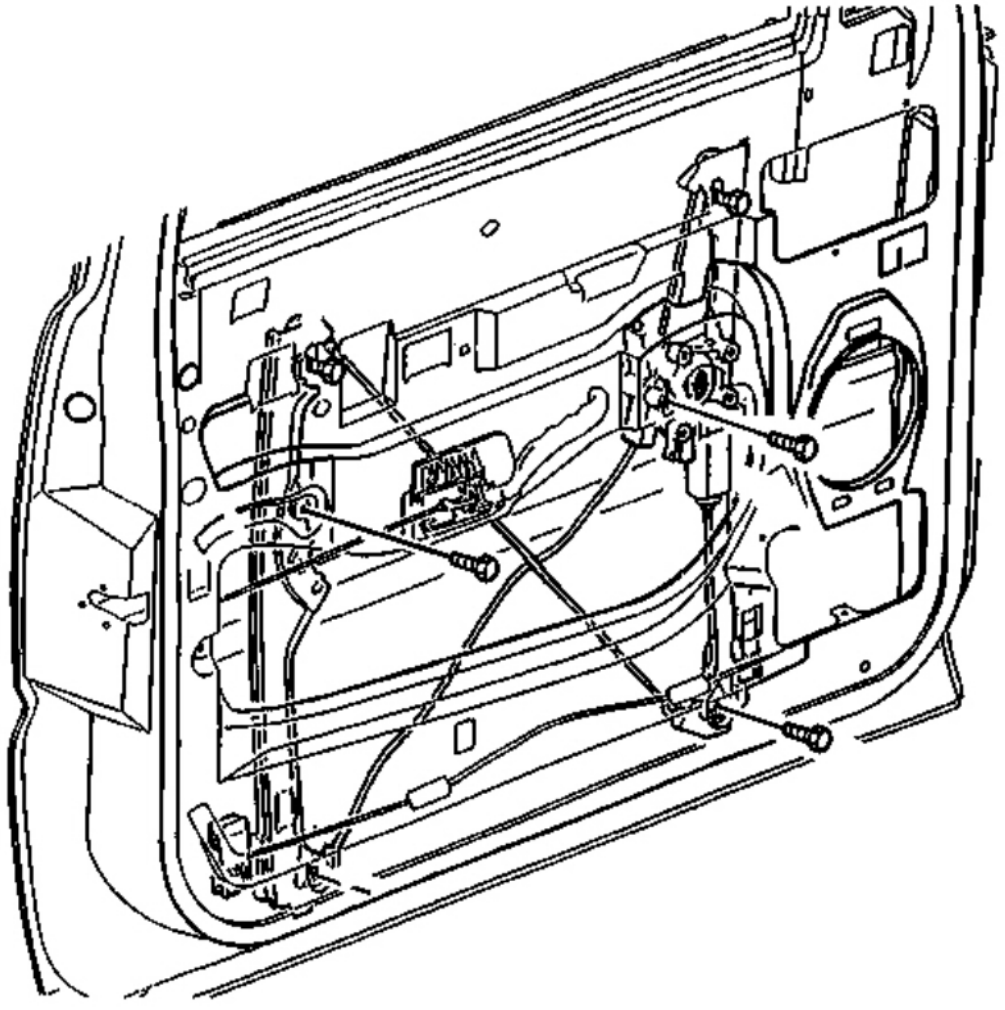
the regulator bolt threads prior to tightening.

3. Install the bolts to the window regulator.

   Tighten: Tighten the bolts to 9 N.m (80 lb in).

4. Align the window glass to the regulator.
5. Install the bolts that hold the window to the regulator.

   Tighten: Tighten the bolts to 9 N.m (80 lb in).



cardiagn.com

Fig. 114: Installing Front Power Window Module
Courtesy of GENERAL MOTORS CORP.

6. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.
7. Install the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
8. Lower the window and inspect the operation.

MODULE REPLACEMENT - REAR POWER WINDOW (TAHOE/YUKON/ESCALADE)

Removal Procedure

1. Raise and support the window glass.
2. Remove the trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
3. Remove the water deflector. Refer to **Water Deflector Replacement - Rear Door (Tahoe/Yukon/Escalade)** or **Water Deflector Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
4. Disconnect the window motor electrical connector.
5. Loosen the two window clamp bolts on the regulator.
6. Remove the bolts retaining the window regulator to the door.
7. Remove the module from the door.

cardiagn.com

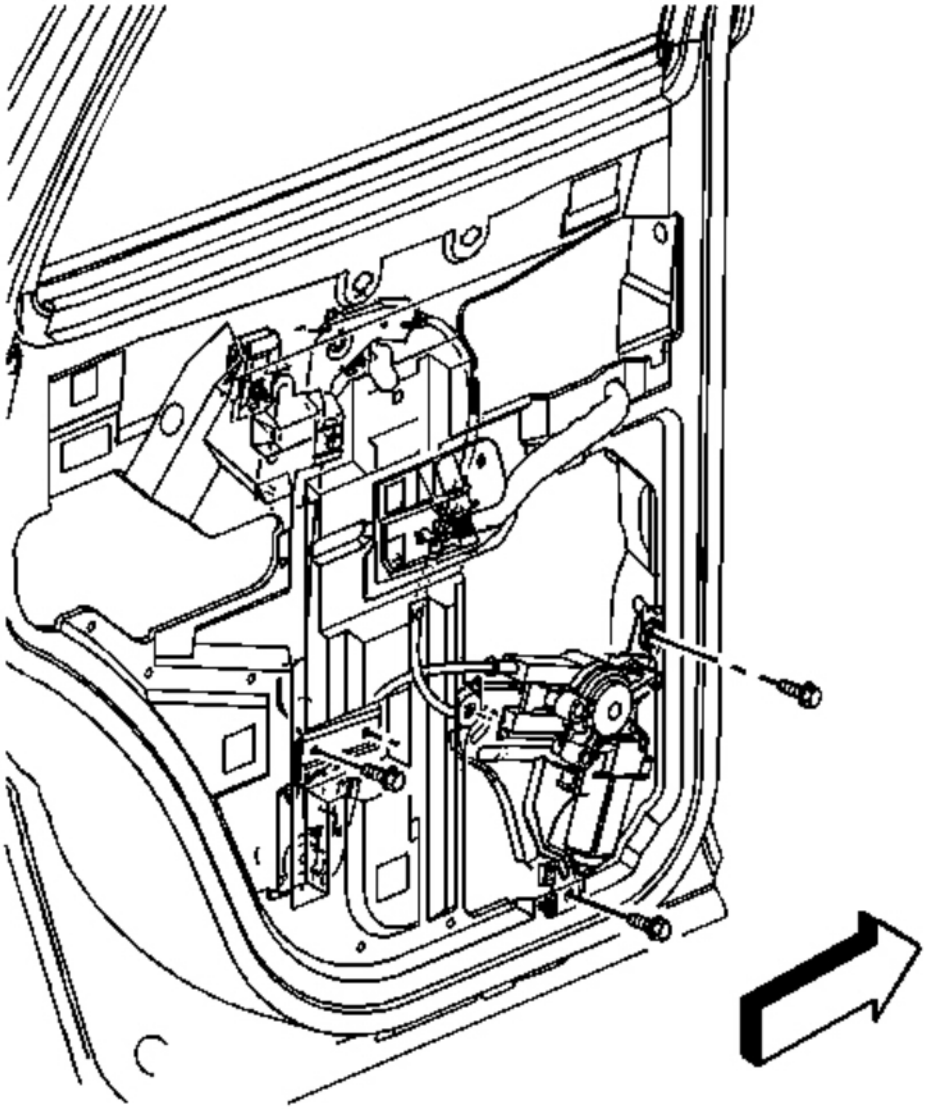


Fig. 115: Removing Rear Power Window Module (Tahoe/Yukon/Escalade)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the module to the door.

NOTE: Refer to Fastener Notice in Cautions and Notices.

cardiagn.com

2. Install the bolts retaining the regulator to the door.

   Tighten: Tighten the bolts to 9 N.m (7 lb ft).

3. Align the window to the regulator, and tighten the clamp bolts.

   Tighten: Tighten the clamp bolts to 9 N.m (7 lb ft).

4. Connect the window motor electrical connector.

cardiagn.com

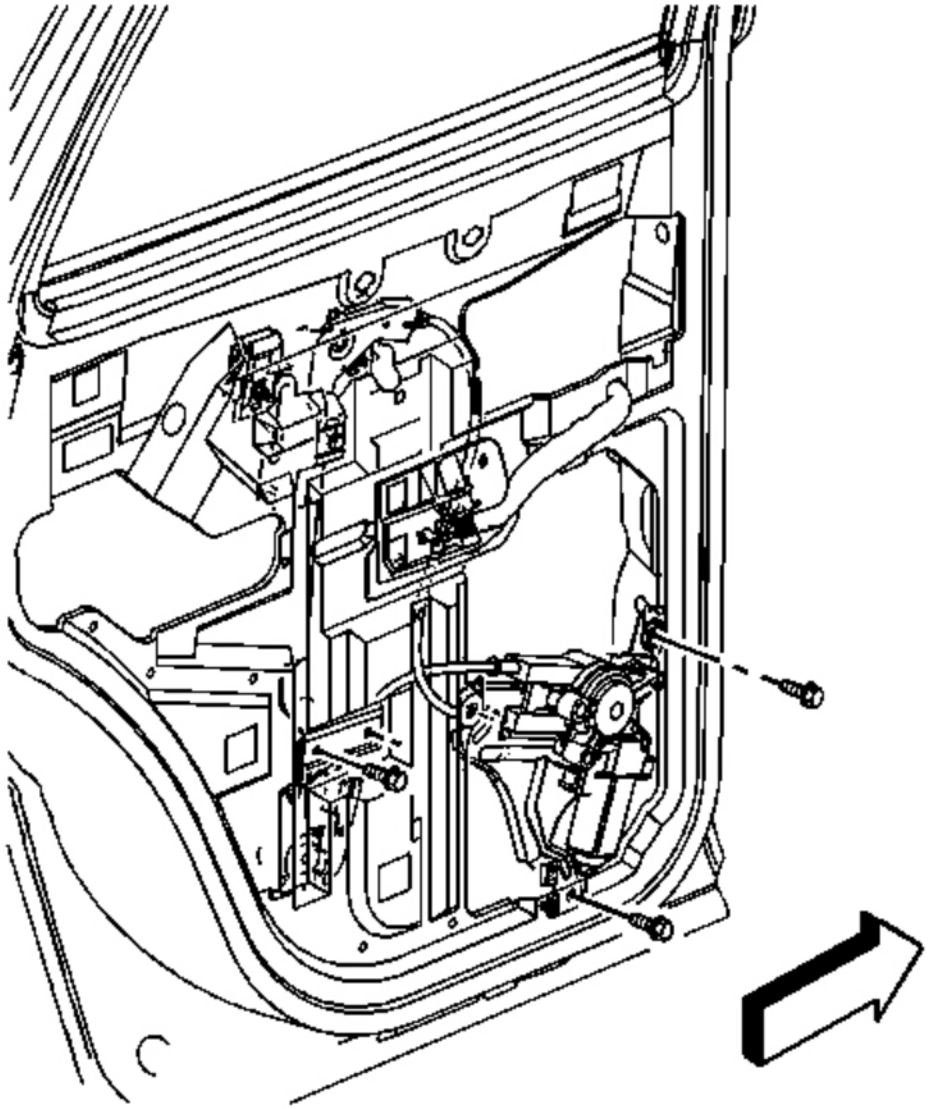


Fig. 116: Installing Rear Power Window Module (Tahoe/Yukon/Escalade)
Courtesy of GENERAL MOTORS CORP.

5. Install the water deflector. Refer to **Water Deflector Replacement - Rear Door (Tahoe/Yukon/Escalade)** or **Water Deflector Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
6. Install the trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.

cardiagn.com

MODULE REPLACEMENT - REAR POWER WINDOW (SUBURBAN/YUKONXL/AVALANCHE/ESCLD EXT)

Removal Procedure

1. Raise and support the window glass.
2. Remove the trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
3. Remove the water deflector. Refer to **Water Deflector Replacement - Rear Door (Tahoe/Yukon/Escalade)** or **Water Deflector Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
4. Disconnect the window motor electrical connector.
5. Loosen the two window clamp bolts on the regulator.
6. Remove the bolts retaining the window regulator to the door.
7. Remove the module from the door.

cardiagn.com

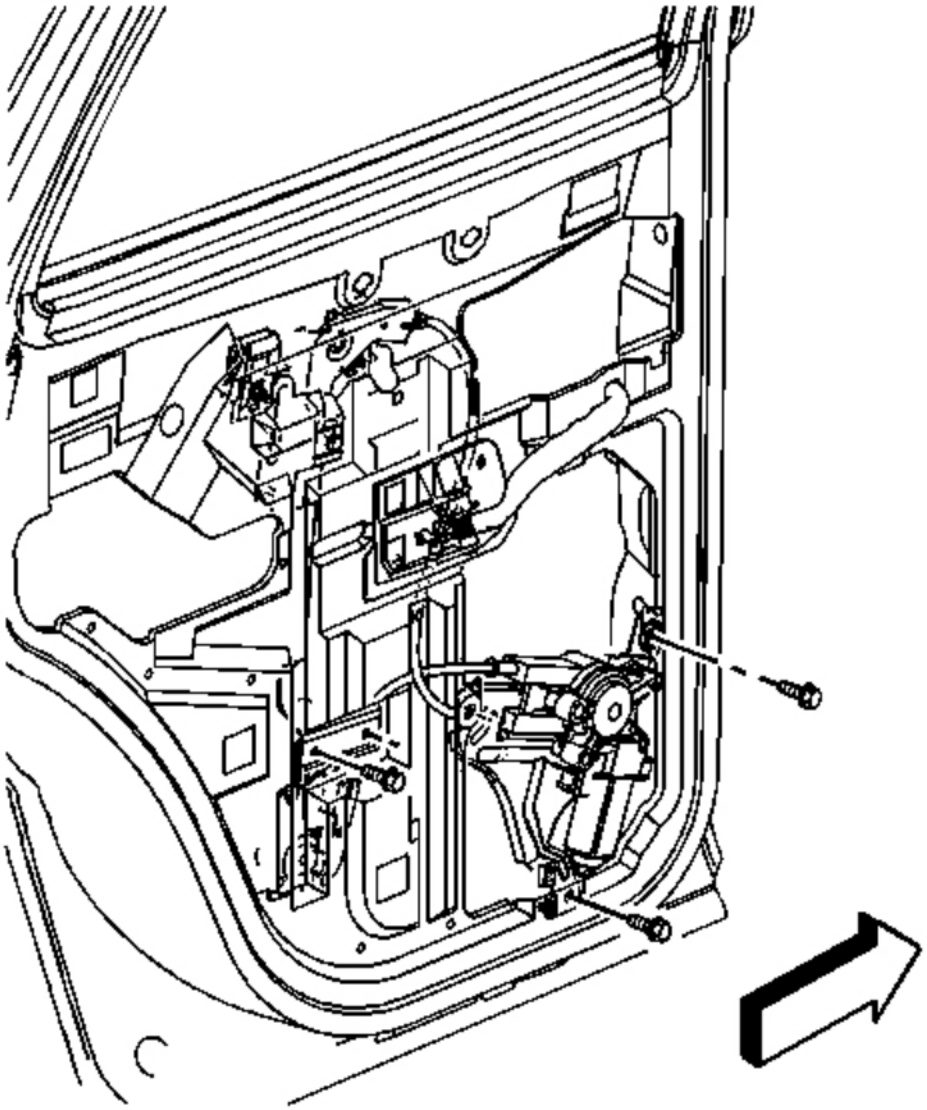


Fig. 117: Removing Rear Power Window Module (Suburban/YukonXL/Avalanche/Escld EXT)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the module to the door.

NOTE: Refer to Fastener Notice in Cautions and Notices.

cardiagn.com

2. Install the bolts retaining the regulator to the door.

   Tighten: Tighten the bolts to 9 N.m (7 lb ft).

3. Align the window to the regulator, and tighten the clamp bolts.

   Tighten: Tighten the clamp bolts to 9 N.m (7 lb ft).

4. Connect the window motor electrical connector.

cardiagn.com

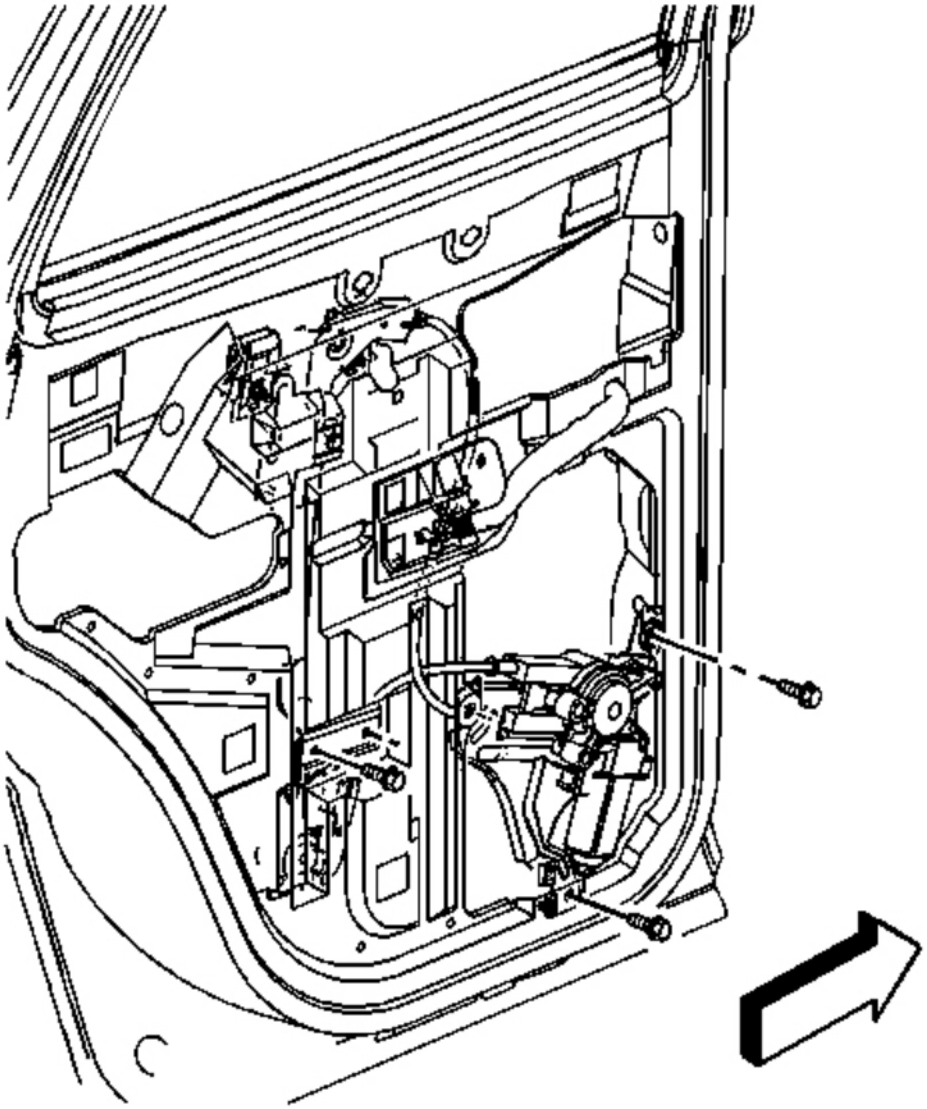


Fig. 118: Installing Rear Power Window Module (Suburban/YukonXL/Avalanche/Escld EXT)
Courtesy of GENERAL MOTORS CORP.

5. Install the water deflector. Refer to **Water Deflector Replacement - Rear Door (Tahoe/Yukon/Escalade)** or **Water Deflector Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
6. Install the trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.

cardiagn.com

WINDOW REGULATOR MOTOR REPLACEMENT - FRONT DOOR

Removal Procedure

1. Raise the window.

   If the window motor is inoperable, remove the glass window to gain access to the window motor retaining screws. Refer to **Window Replacement - Front Door**.

2. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
3. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
4. Remove the door speaker. Refer to **Speaker Replacement - Front Door** in Entertainment.
5. Support the glass.
6. Disconnect the wiring harness from the window regulator motor.
7. Remove the 3 bolts (1) from the window motor located on the front side of the motor.

cardiagn.com

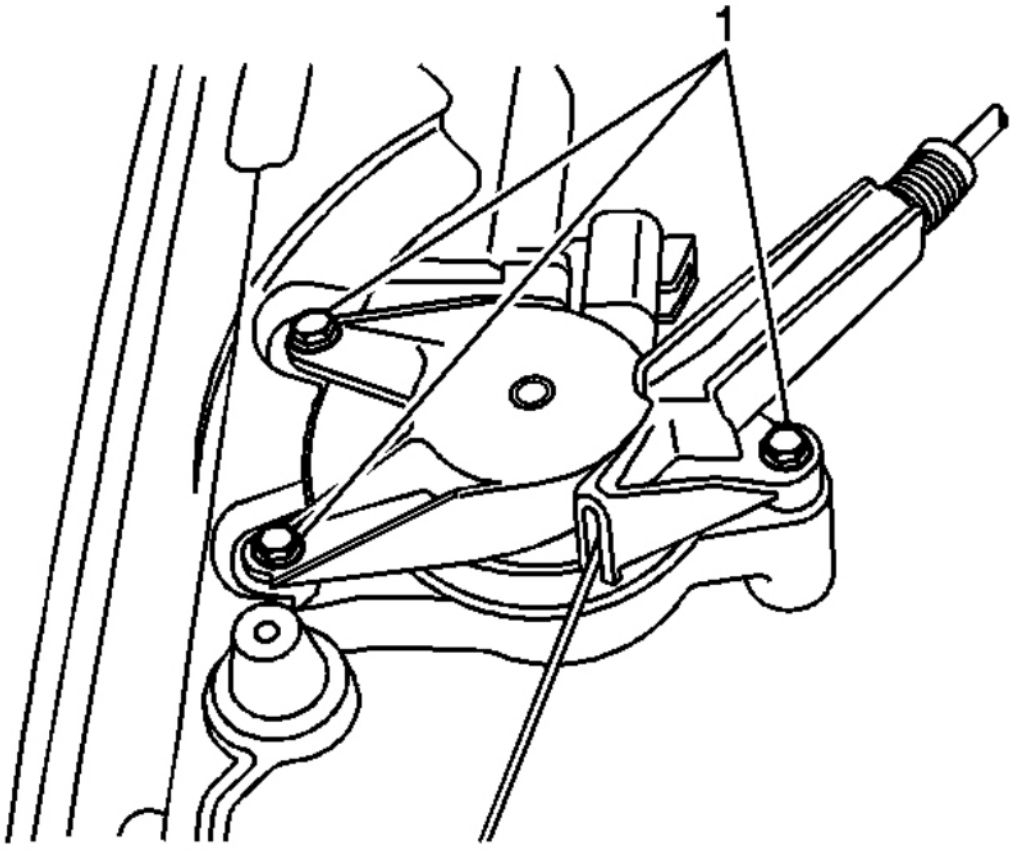


Fig. 119: Removing Bolts From Front Door Window Regulator Motor
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow the cable gear to come out of the housing. Failure will result in the cable coming off the spool.

8. Separate the motor from the cable housing by wiggling the window motor.

   Observe the orientation of the window motor.

9. Remove the motor from the window regulator assembly.

Installation Procedure

1. Install the window motor to the cable housing by wiggling it into place.

cardiagn.com

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the 3 bolts (1) to the window regulator motor.

   Tighten: Tighten the bolts to 5 N.m (44 lb in).

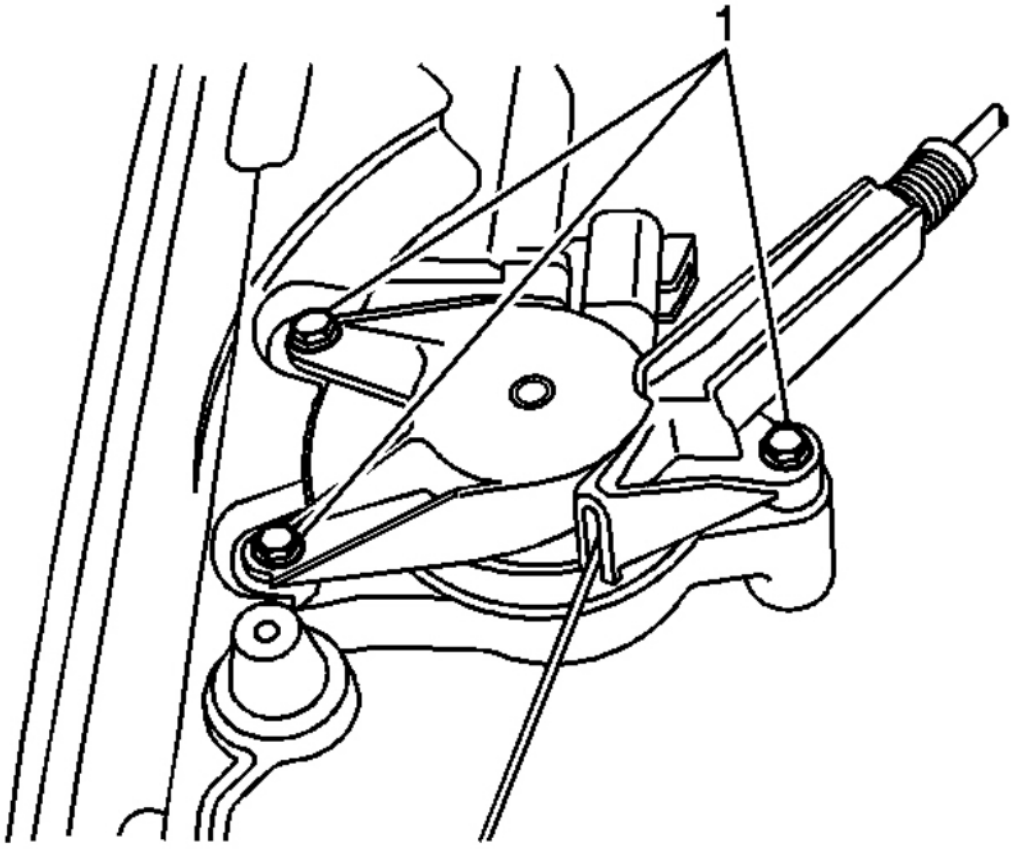


Fig. 120: Installing Bolts To Front Door Window Regulator Motor
Courtesy of GENERAL MOTORS CORP.

3. Install the glass window, if removed. Refer to **Window Replacement - Front Door**
4. Connect the wiring harness to the window regulator motor.
5. Remove the window support.
6. Connect the wire connector to the switch to inspect the operation of the window.

   After inspection disconnect the wire harness and continue the installation.

cardiagn.com

7. Install the speaker. Refer to **Speaker Replacement - Front Door** in Entertainment.
8. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.
9. Install the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.

WINDOW REGULATOR MOTOR REPLACEMENT - REAR DOOR

Removal Procedure

1. Raise the window.

   If the window motor is inoperable, remove the window to gain access to the window motor retaining screws. Refer to **Window Replacement - Rear Door (Suburban/Yukon XL/Avalanche/ Escld E)** or **Window Replacement - Rear Door (Tahoe/Yukon/Escalade)**.

2. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
3. Remove the water deflector. Refer to **Water Deflector Replacement - Rear Door (Tahoe/Yukon/Escalade)** or **Water Deflector Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
4. Remove the door speaker. Refer to **Speaker Replacement - Rear Door** in Entertainment.
5. Support the window.
6. Disconnect the wiring harness from the window regulator motor.
7. Remove the 3 bolts from the window motor located on the front side of the motor.

IMPORTANT: Do not allow the cable gear come out of the housing. A failure will result with the cable coming off the spool.

8. Separate the motor from the cable housing by wiggling the window motor.

   Observe the orientation of the window motor.

9. Remove the motor from the window regulator assembly.

cardiagn.com

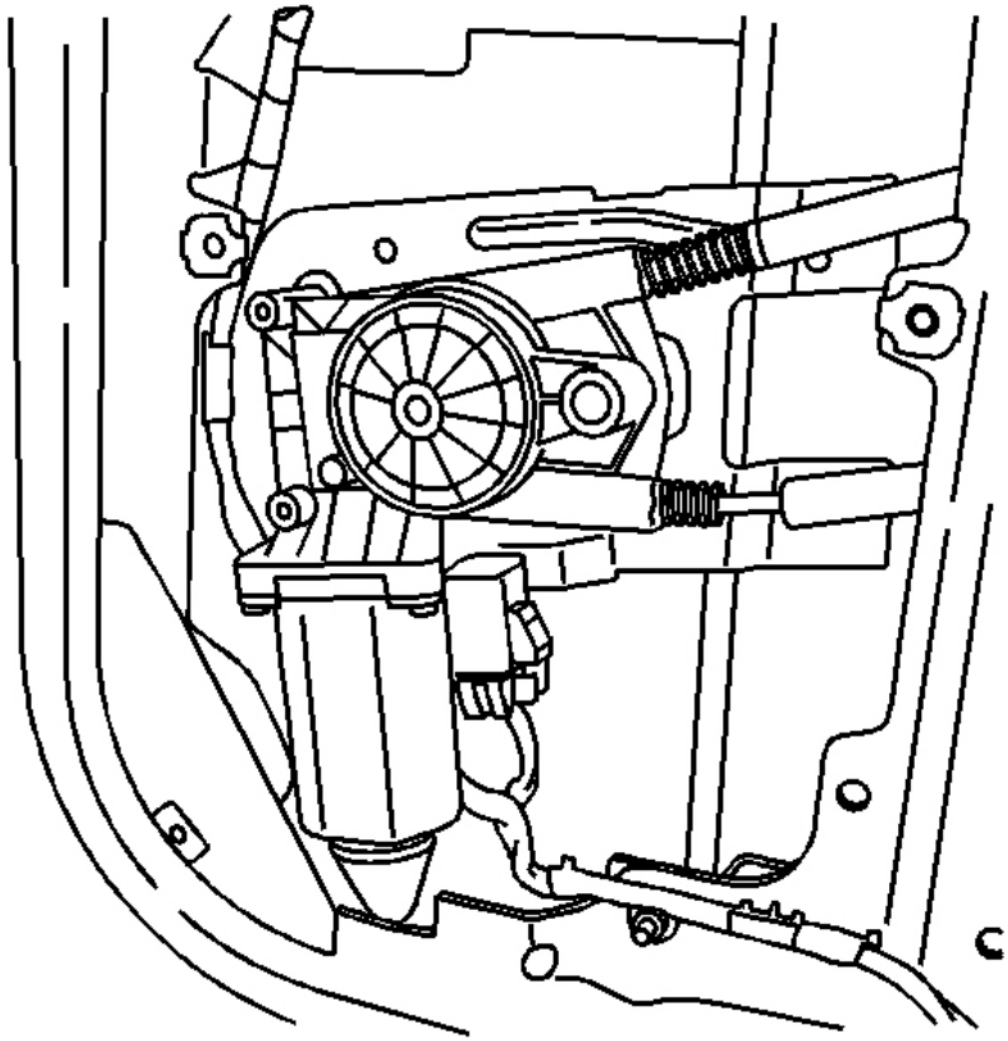


Fig. 121: Removing Rear Door Window Regulator Motor
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the motor to the cable housing by wiggling motor into place.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the 3 bolts to the window motor.

cardiagn.com

Tighten: Tighten the bolts to 5 N.m (44 lb in).

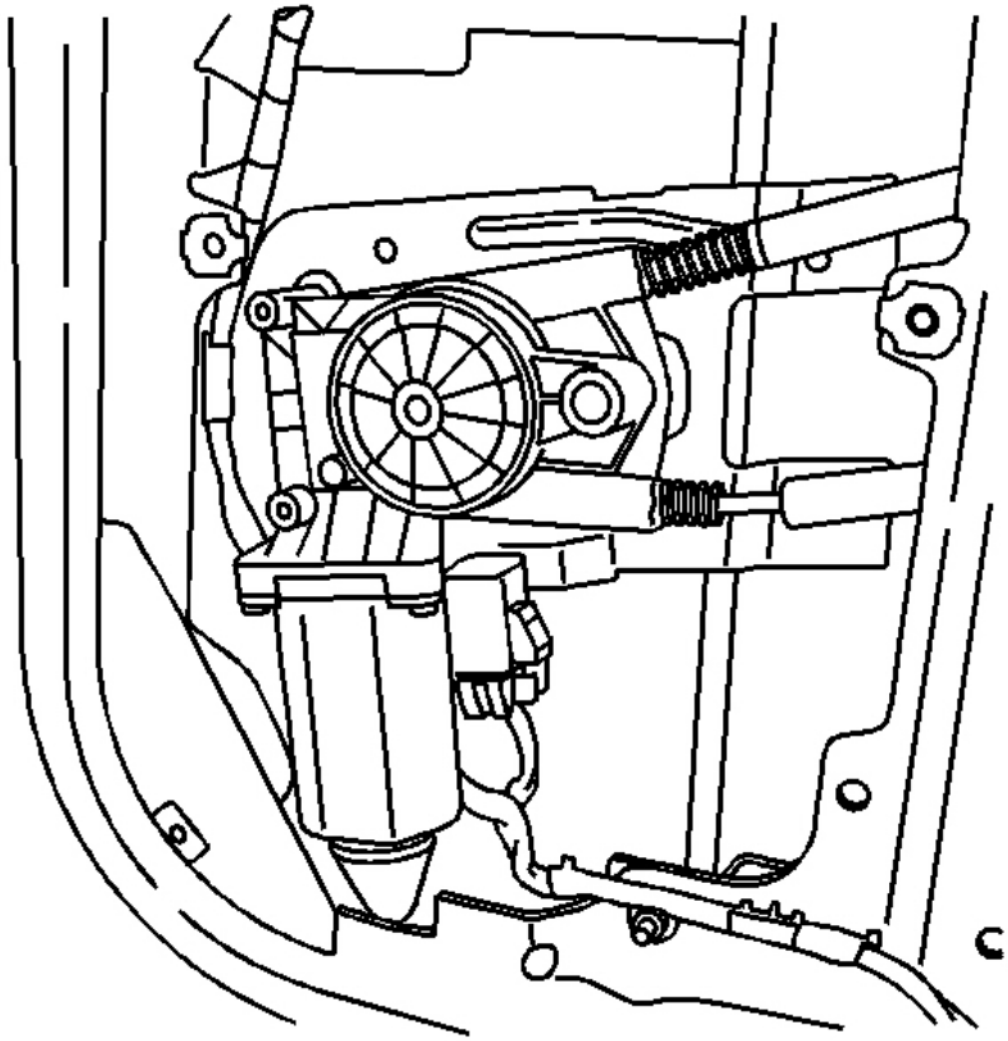


Fig. 122: Installing Rear Door Window Regulator Motor
Courtesy of GENERAL MOTORS CORP.

3. Install the window, if removed. Refer to **Window Replacement - Rear Door (Suburban/Yukon XL/Avalanche/ Escld E)** or **Window Replacement - Rear Door (Tahoe/Yukon/Escalade)**.
4. Connect the wiring harness to the window regulator motor.
5. Remove the window support.
6. Connect the wire connector to the switch to inspect the operation of the window.

cardiagn.com

7. Install the speaker. Refer to **Speaker Replacement - Rear Door** in Entertainment.
8. Install the water deflector. Refer to **Water Deflector Replacement - Rear Door (Tahoe/Yukon/Escalade)** or **Water Deflector Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
9. Install the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.

WINDOW REPLACEMENT - FRONT DOOR

Removal Procedure

1. Partially raise the window.
2. Remove the upper trim panel extension. Refer to **Trim Panel Replacement - Upper Extension**.
3. Remove the manual door-lock lever.
4. Remove the manual window handle, if equipped. Refer to **Window Handle Replacement**.
5. Remove the door switch panel, if equipped. Refer to **Switch Replacement - Door Lock and Side Window - Driver** and **Switch Replacement - Door Lock and Side Window - Passenger**.
6. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
7. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
8. Remove the front bolt attachment from the window run channel.

IMPORTANT: Do not remove the bolts.

9. Loosen the 2 retaining bolts (2) from the window assembly.
10. Remove the window glass (3) from the door by sliding the window glass out through the top.

cardiagn.com

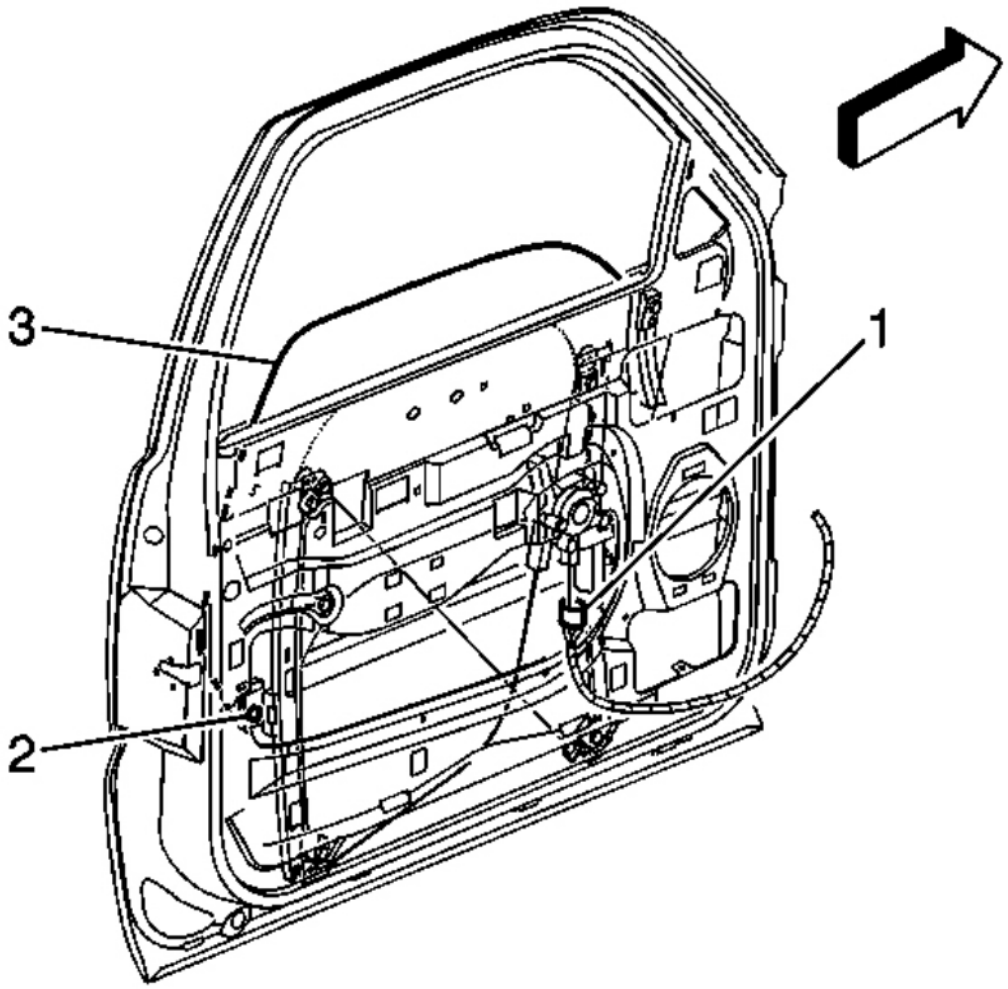


Fig. 123: Removing Front Door Window Glass
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the window glass (3) to the door.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Tighten the 2 retaining bolts (2) to the window assembly.

Tighten: Tighten the bolts to 12 N.m (9 lb ft).

cardiagn.com

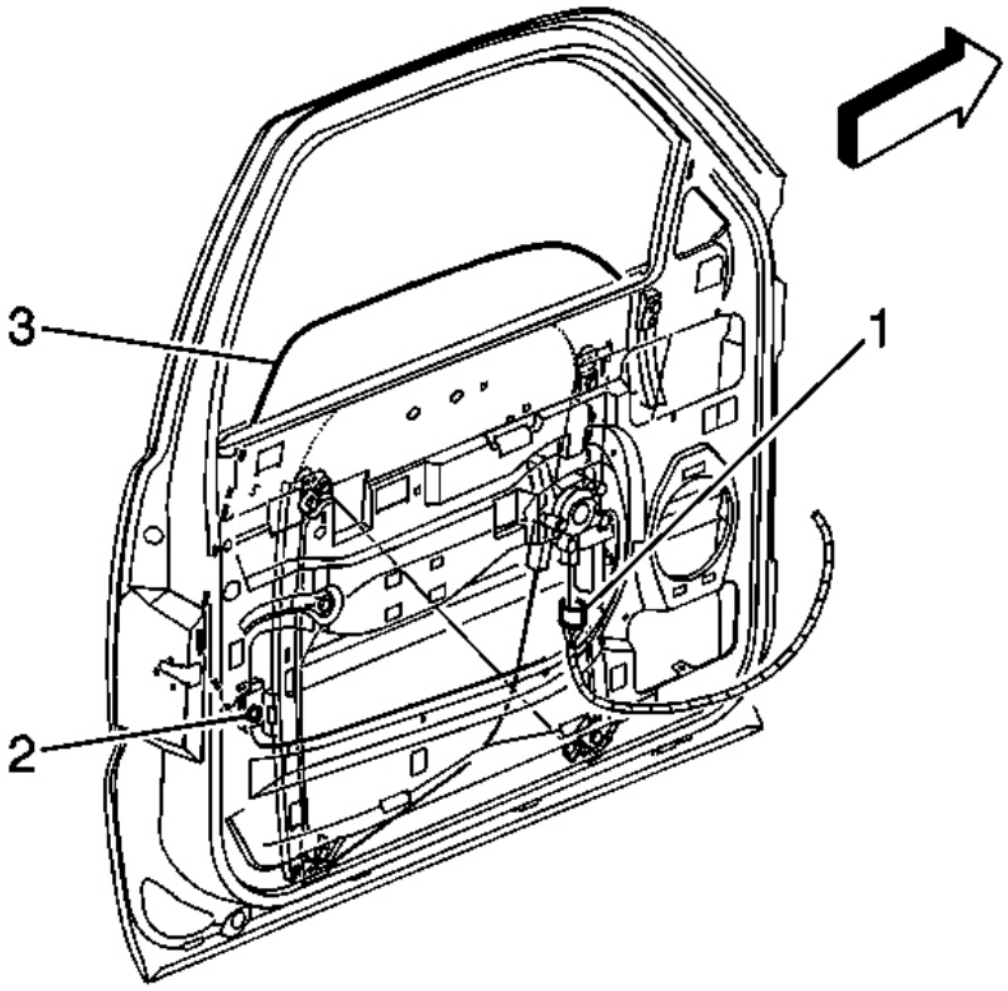


Fig. 124: Installing Front Door Window Glass
Courtesy of GENERAL MOTORS CORP.

3. Install the window run channel bolt.

   Tighten: Tighten the bolts to 9 N.m (80 lb in).

4. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.
5. Install the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
6. Install the door switch panel. Refer to **Switch Replacement - Door Lock and Side Window - Driver** and **Switch Replacement - Door Lock and Side Window - Passenger**.

cardiagn.com

7. Install the manual window handle, if equipped. Refer to **Window Handle Replacement**.
8. Install the manual door-lock lever.
9. Install the upper trim panel extension. Refer to **Trim Panel Replacement - Upper Extension**.
10. Inspect the operation of the window.

WINDOW REPLACEMENT - REAR DOOR (SUBURBAN/YUKON XL/AVALANCHE/ESCALADE)

Removal Procedure

1. Partially raise the window.
2. Remove the manual door-lock lever.
3. Remove the manual window handle, if equipped. Refer to **Window Handle Replacement**.
4. Remove the door switch panel. Refer to **Power Window Switch Replacement - Rear Door**.
5. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
6. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
7. Remove the front bolt attachment from the window run channel.
8. Loosen the retaining bolts (1) from the window assembly.
9. Remove the window glass (2) from the door by sliding the window glass out through the top.

cardiagn.com

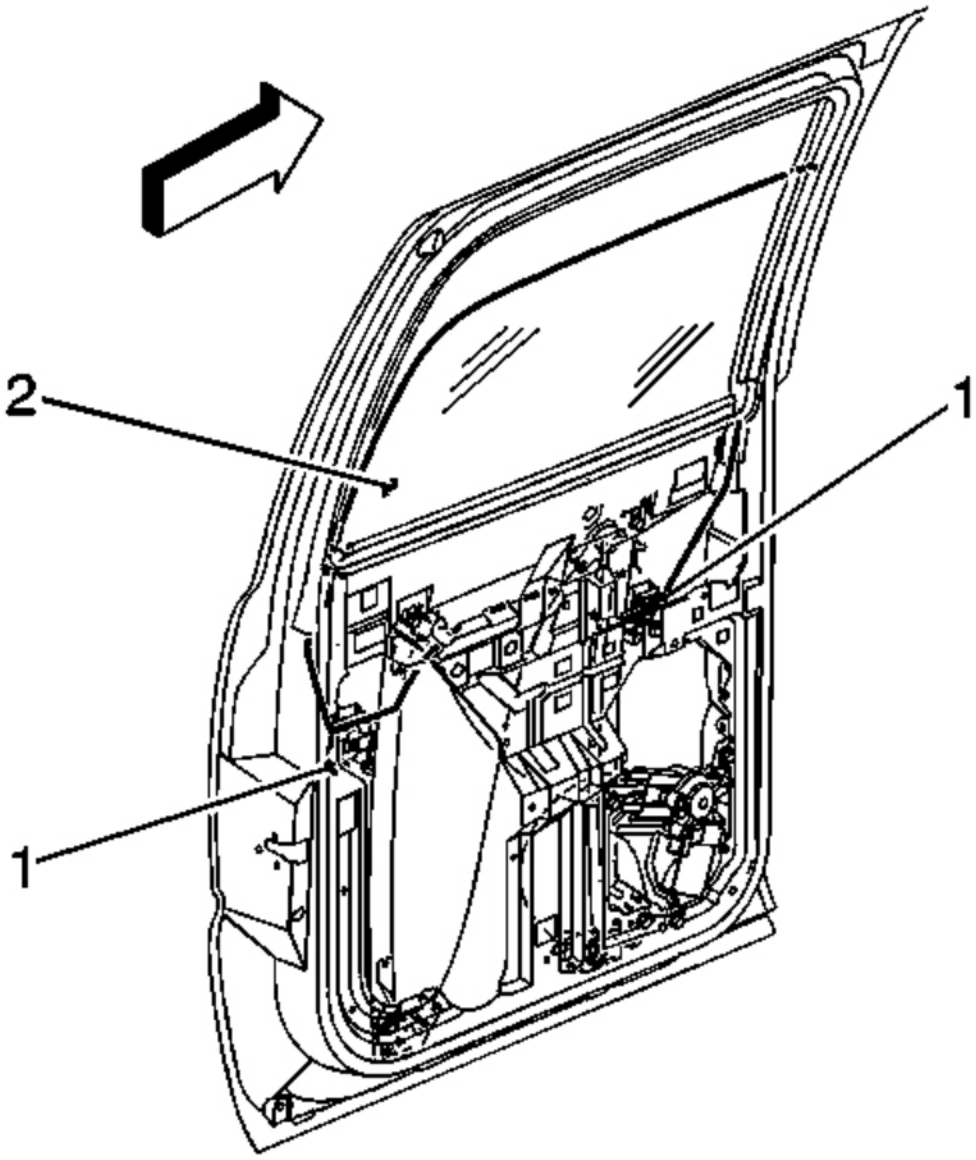


Fig. 125: Removing Rear Door Window Glass (Suburban/Yukon XL/Avalanche/Escalade)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

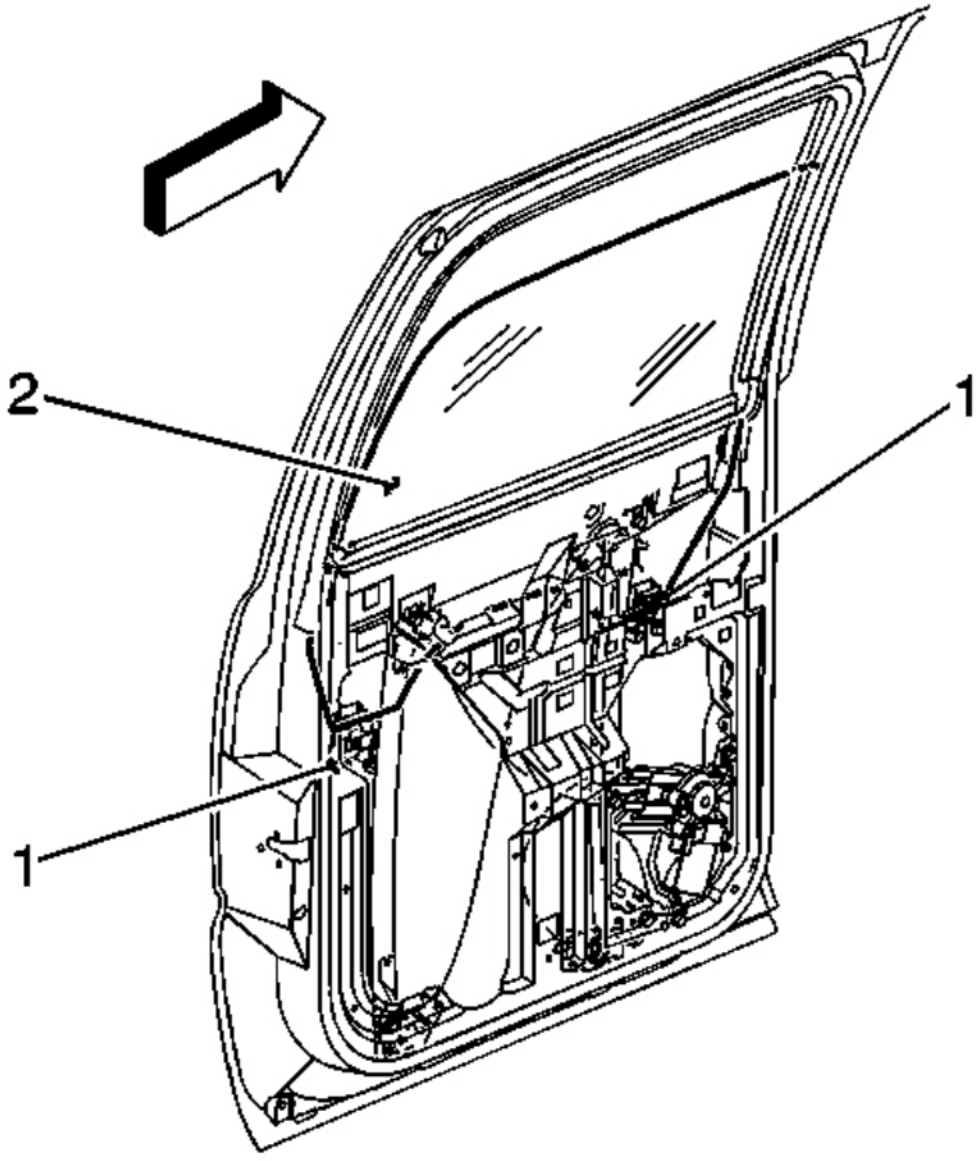
1. Install the window glass (2) to the door by sliding the window glass through the top of the door.

cardiagn.com

NOTE: **Refer to Fastener Notice in Cautions and Notices.**

2. Tighten the retaining bolts (1) to the window assembly.

   Tighten: Tighten the bolts to 12 N.m (9 lb ft).



cardiagn.com

Fig. 126: Installing Rear Door Window Glass (Suburban/Yukon XL/Avalanche/Escalade)
Courtesy of GENERAL MOTORS CORP.

3. Install the window run channel bolt.

   Tighten: Tighten the bolts to 9 N.m (80 lb in).

4. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.
5. Install the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
6. Install the door switch panel, if equipped. Refer to **Power Window Switch Replacement - Rear Door**.
7. Install the manual window handle if equipped. Refer to **Window Handle Replacement**.
8. Install the manual door-lock lever.
9. Inspect the operation of the window.

WINDOW REPLACEMENT - REAR DOOR (TAHOE/YUKON/ESCALADE)

Removal Procedure

1. Partially raise the window.
2. Remove the manual door-lock lever.
3. Remove the manual window handle, if equipped. Refer to **Window Handle Replacement**.
4. Remove the door switch panel. Refer to **Switch Replacement - Door Lock and Side Window - Driver** and **Switch Replacement - Door Lock and Side Window - Passenger**.
5. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
6. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
7. Loosen the window run channel bolt.

   IMPORTANT: Do not remove the bolt.

8. Loosen the retaining bolts (3) from the window assembly.
9. Remove the window glass (1) from the door by sliding the window glass out through the top.

cardiagn.com

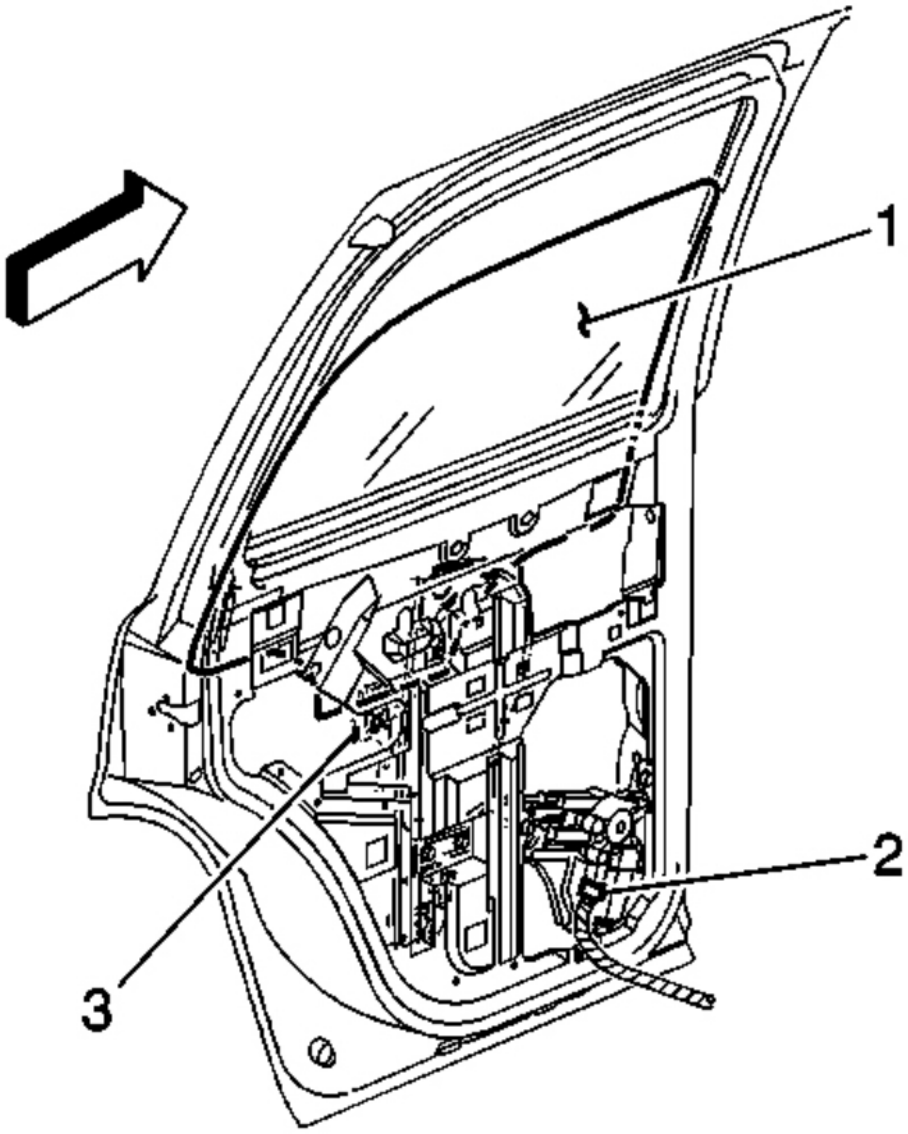


Fig. 127: Removing Rear Door Window Glass (Tahoe/Yukon/Escalade)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the window glass (1) to the door by sliding the window glass through the top of the door.

cardiagn.com

NOTE: **Refer to Fastener Notice in Cautions and Notices.**

2. Tighten the retaining bolts to the window assembly.

   Tighten: Tighten the bolts to 12 N.m (9 lb ft).

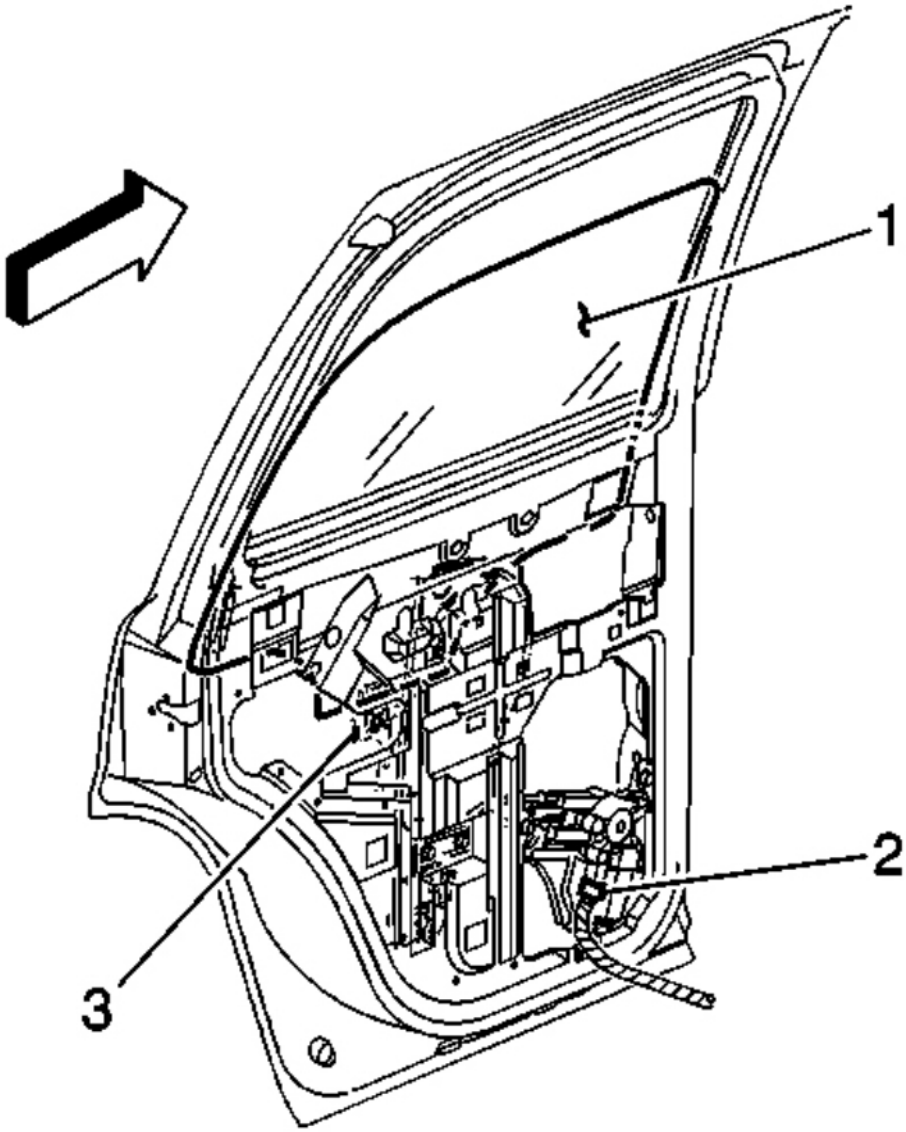


Fig. 128: Installing Rear Door Window Glass (Tahoe/Yukon/Escalade)

cardiagn.com

Courtesy of GENERAL MOTORS CORP.

3. Install the window run channel bolt.

   Tighten: Tighten the bolts to 9 N.m (80 lb in).

4. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.
5. Install the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)**.
6. Install the door switch panel. Refer to **Switch Replacement - Door Lock and Side Window - Driver** and **Switch Replacement - Door Lock and Side Window - Passenger**.
7. Install the manual window handle if equipped. Refer to **Window Handle Replacement**.
8. Install the manual door-lock lever.
9. Inspect the operation of the window.

WINDOW RUN CHANNEL REPLACEMENT - REAR DOOR

Removal Procedure

1. Remove the window. Refer to **Window Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld E)** or **Window Replacement - Rear Door (Tahoe/Yukon/Escalade)**.
2. Remove the window glass weatherstrip. Refer to **Weatherstrip Replacement - Rear Door Window**.
3. Remove the front window run channel top bolt.
4. Remove the front window run channel from the door.

cardiagn.com

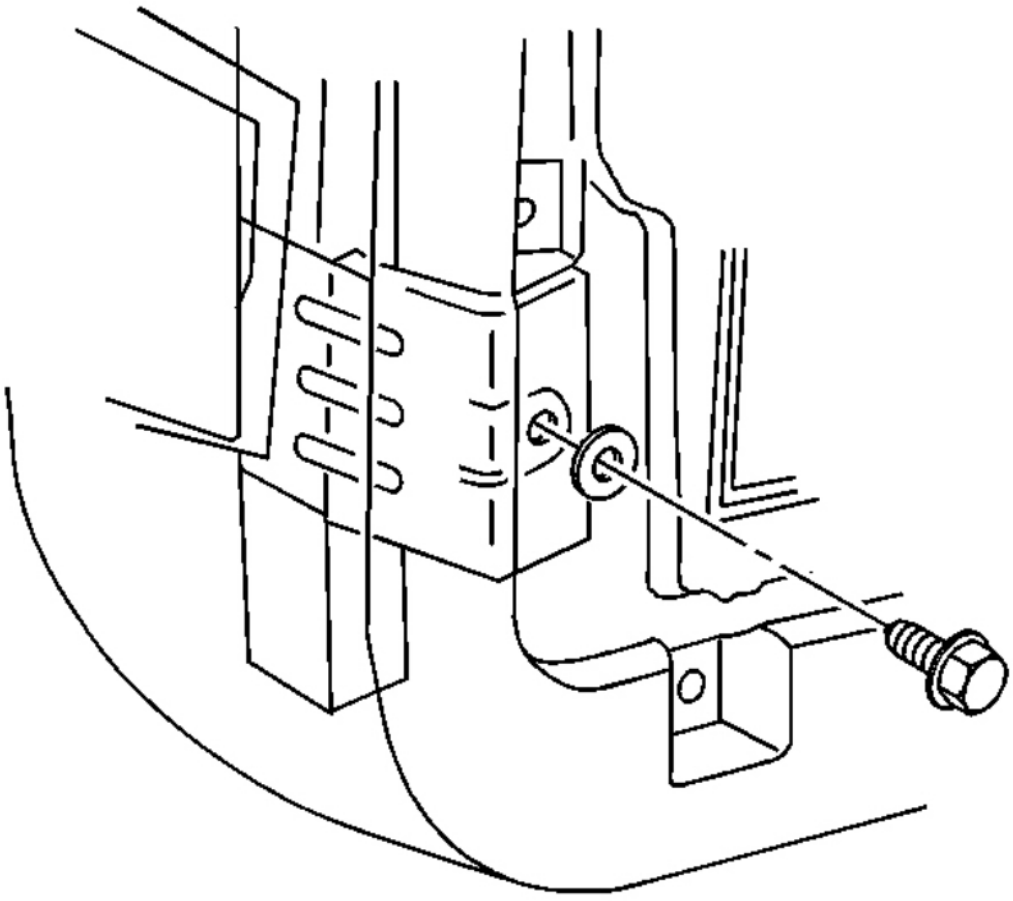


Fig. 129: Removing Front Window Run Channel Top Bolt
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the front window run channel to the door.
2. Install the front window run channel top bolt.

   Do not tighten the bolt.

cardiagn.com

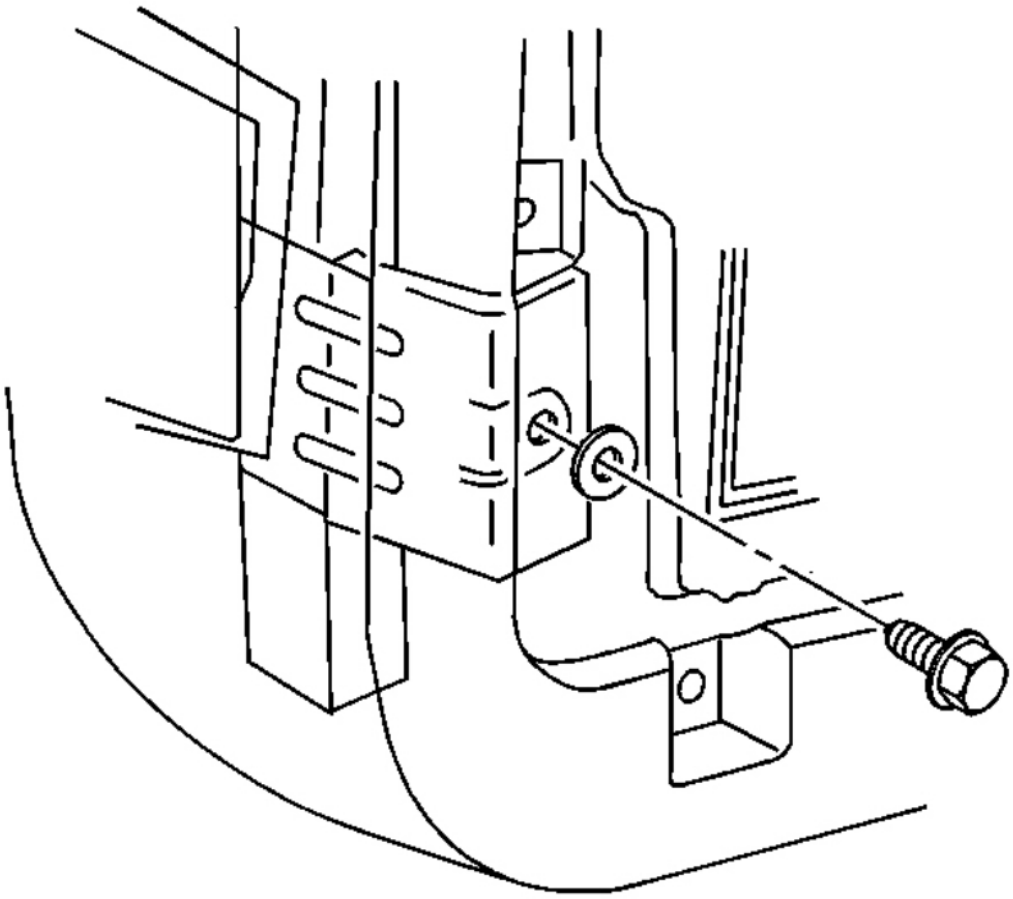


Fig. 130: Installing Front Window Run Channel Top Bolt
Courtesy of GENERAL MOTORS CORP.

3. Install the window glass weatherstrip. Refer to **Weatherstrip Replacement - Rear Door Window**.
4. Install the window. Refer to **Window Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escalade)** or **Window Replacement - Rear Door (Tahoe/Yukon/Escalade)**.

WINDOW RUN CHANNEL REPLACEMENT - FRONT DOOR

Removal Procedure

1. Remove the window. Refer to **Window Replacement - Front Door**.
2. Remove the window glass weatherstrip. Refer to **Weatherstrip Replacement - Front Door Window**.
3. Remove the window run channel bolts.

cardiagn.com

4. Remove the front and the rear window run channels from the door.

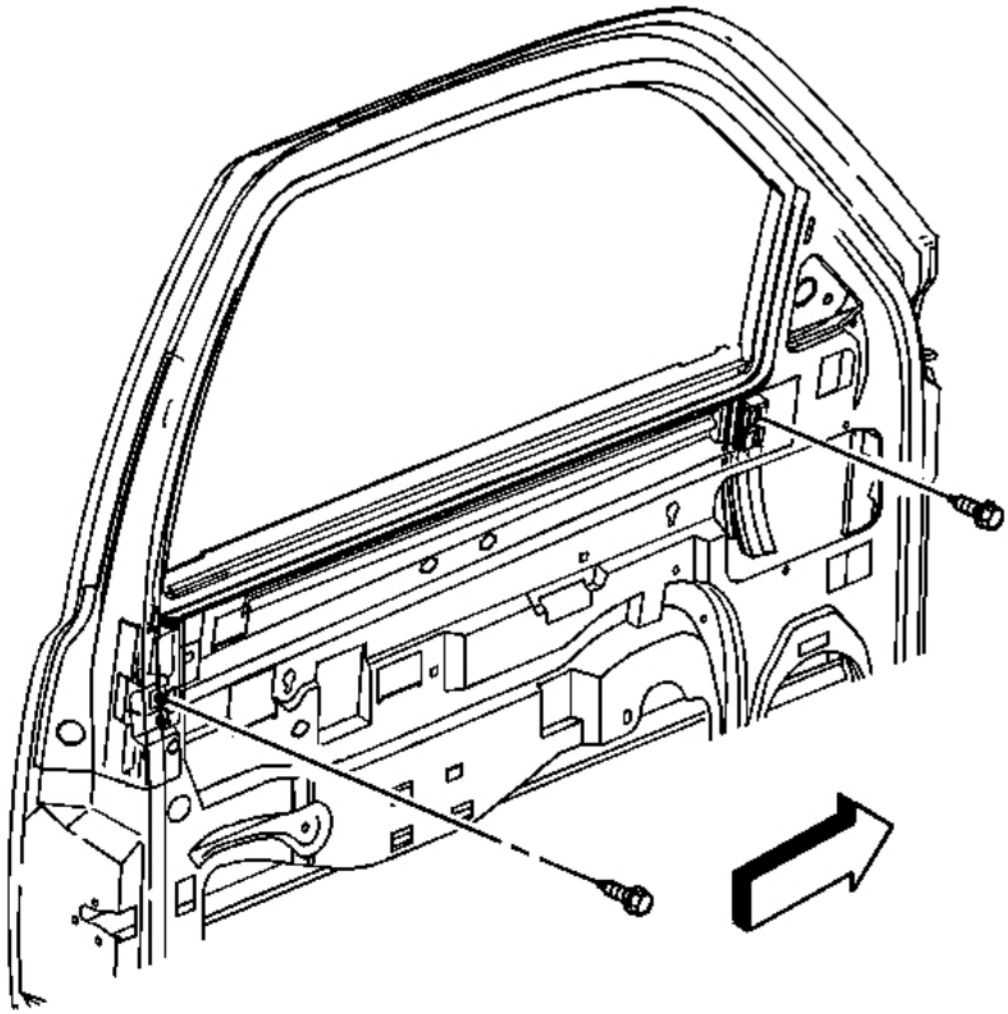


Fig. 131: Removing Front & Rear Window Run Channel Bolts
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the front and the rear window run channels to the door.

NOTE: **Refer to Fastener Notice in Cautions and Notices.**

cardiagn.com

2. Install the front and the rear window run channel bolts.

Tighten:

1. Tighten the front bolt to 9 N.m (80 lb in).
2. Tighten the rear bolt to 9 N.m (80 lb in).

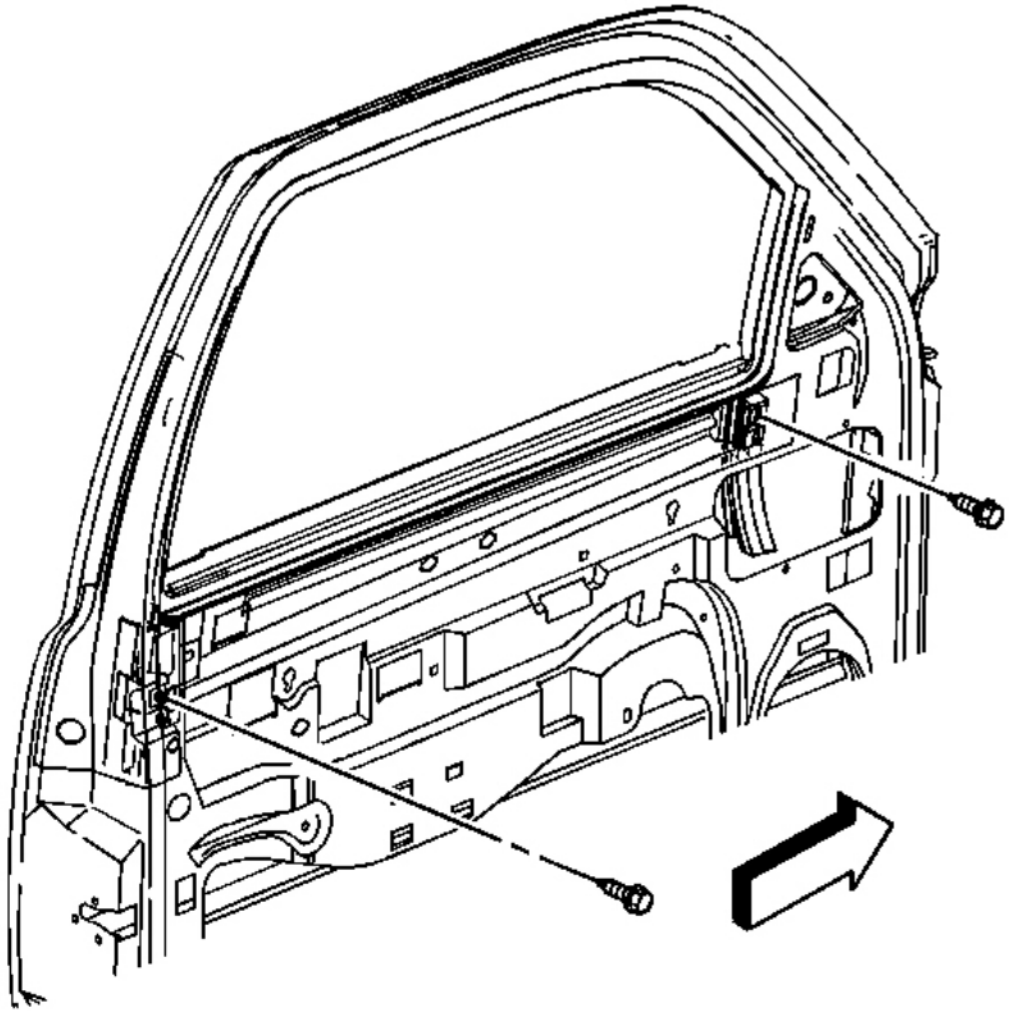


Fig. 132: Installing Front & Rear Window Run Channel Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install the window glass weatherstrip. Refer to **Weatherstrip Replacement - Front Door Window**.

cardiagn.com

4. Install the window. Refer to **Window Replacement - Front Door**.

SEALING STRIP REPLACEMENT - FRONT DOOR WINDOW BELT OUTER - FRONT

Removal Procedure

IMPORTANT: The outer belt sealing strip seals between the inner and outer door panels and the window at the belt line. The outer sealing strip is replaceable. Do not remove the inner sealing strip, because the strip is attached to the glass run channel.

1. Lower the window.
2. Remove the outside mirror. Refer to **Mirror Replacement - Manual** or **Mirror Replacement - Power**.
3. Remove the outer sealing strip from the door, lifting up on the forward end in order to unhook the rear of the strip from the window run channel.

cardiagn.com

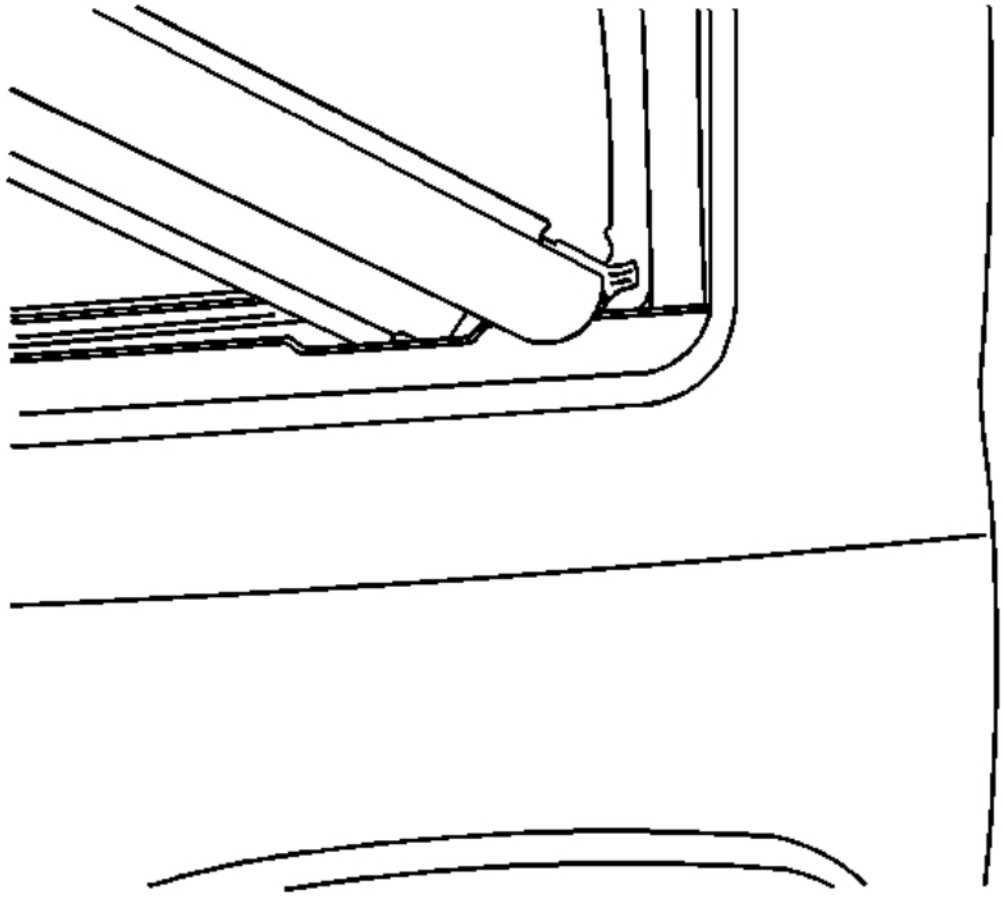


Fig. 133: Removing Front Door Window Belt Outer Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Hook the rear end of the sealing strip into the window run channel. Lower and press the strip into place.

cardiagn.com

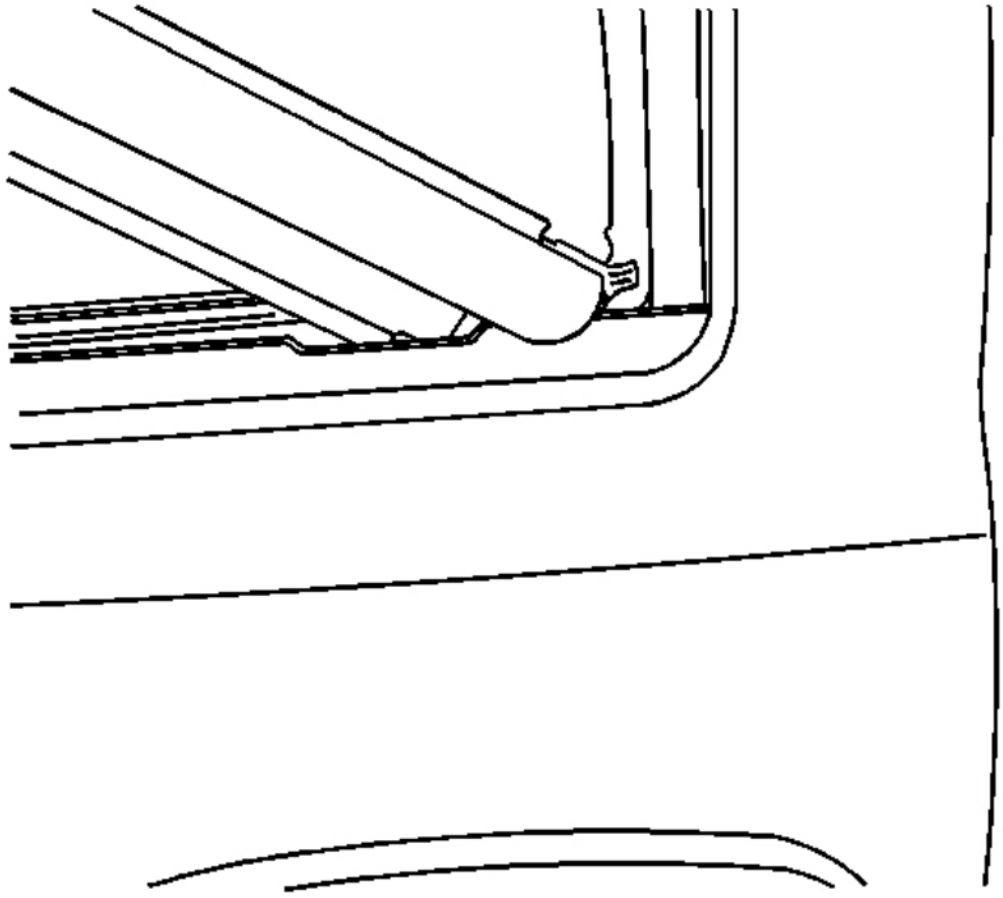


Fig. 134: Installing Front Door Window Belt Outer Sealing Strip
Courtesy of GENERAL MOTORS CORP.

2. Install the outside mirror. Refer to **Mirror Replacement - Manual** or **Mirror Replacement - Power**.
3. Raise the window.

SEALING STRIP REPLACEMENT - REAR DOOR WINDOW BELT OUTER

Removal Procedure

IMPORTANT: The outer belt sealing strip seals between the inner and outer door panels and the window at the belt line. The outer sealing strip is replaceable. Do not remove the inner sealing strip, because the strip is attached to the glass run channel.

cardiagn.com

1. Lower the window.
2. Remove the outer sealing strip from the door.

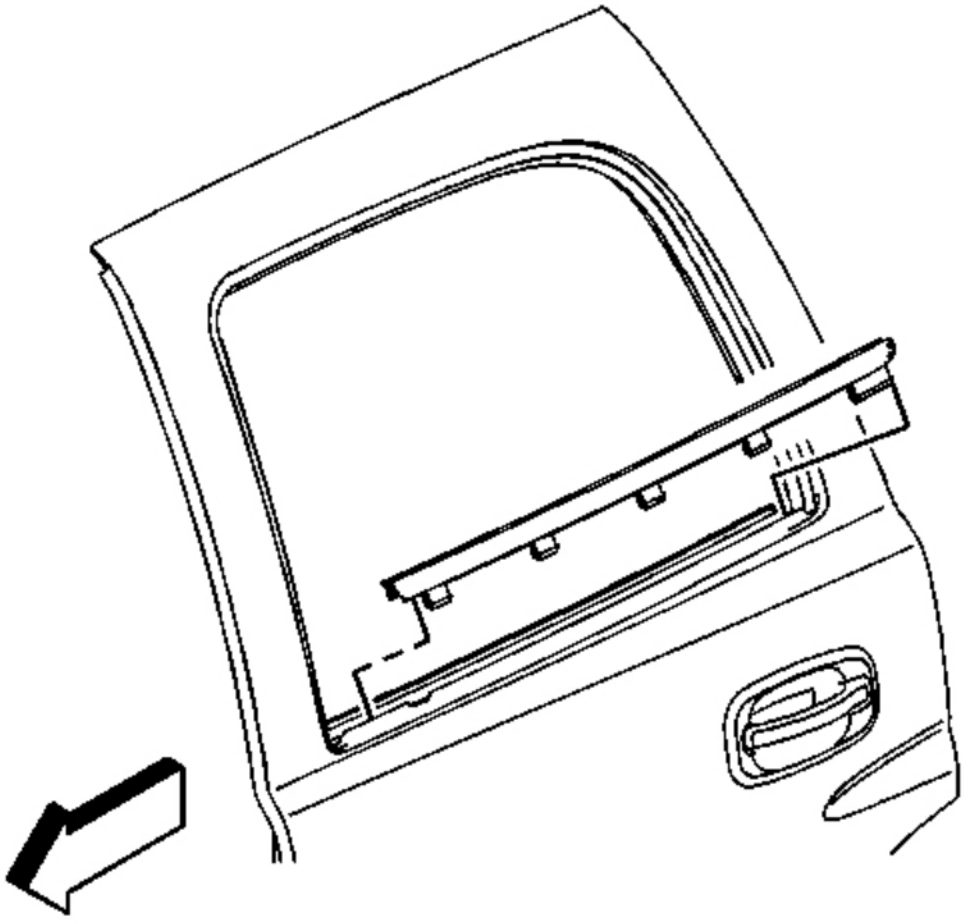


Fig. 135: Removing Rear Door Window Belt Outer Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Align the sealing strip in place. Lower and press the strip into place.
2. Raise the window.

cardiagn.com

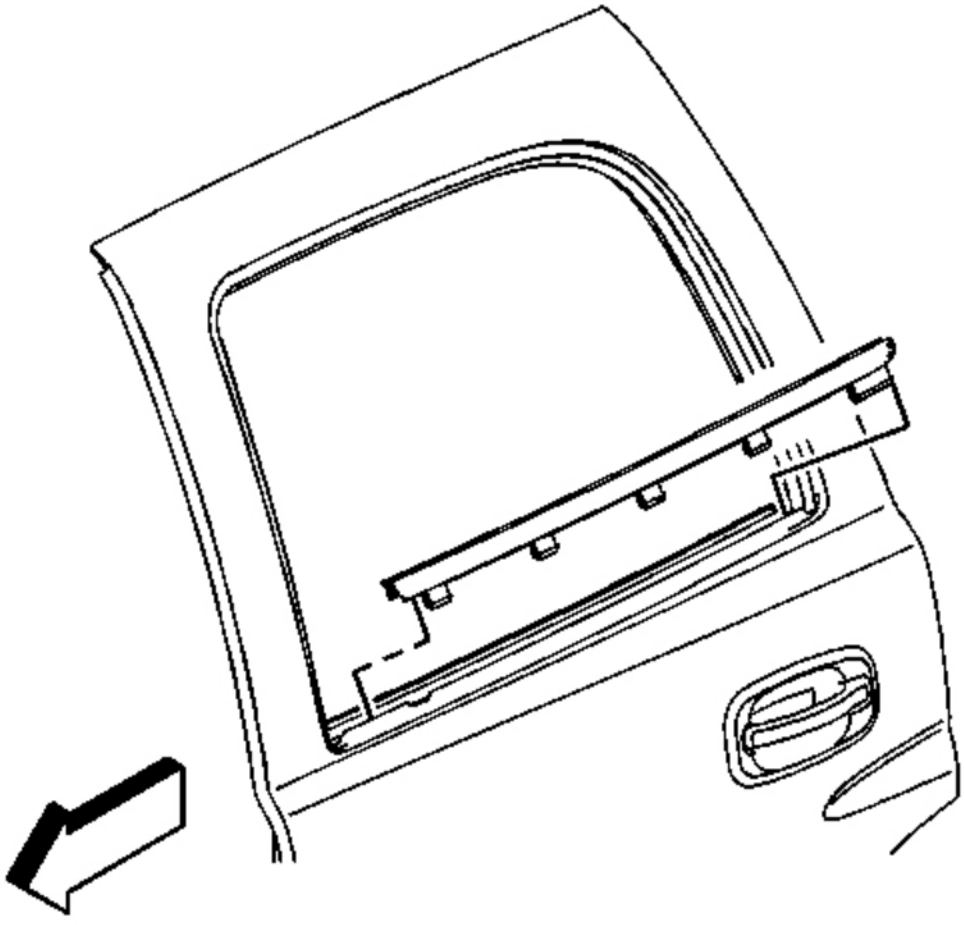


Fig. 136: Installing Rear Door Window Belt Outer Sealing Strip
Courtesy of GENERAL MOTORS CORP.

WEATHERSTRIP REPLACEMENT - FRONT DOOR (UPPER)

Removal Procedure

1. Open the door.
2. Pull the roof drip molding from the pinchweld and the windshield molding flange.

cardiagn.com

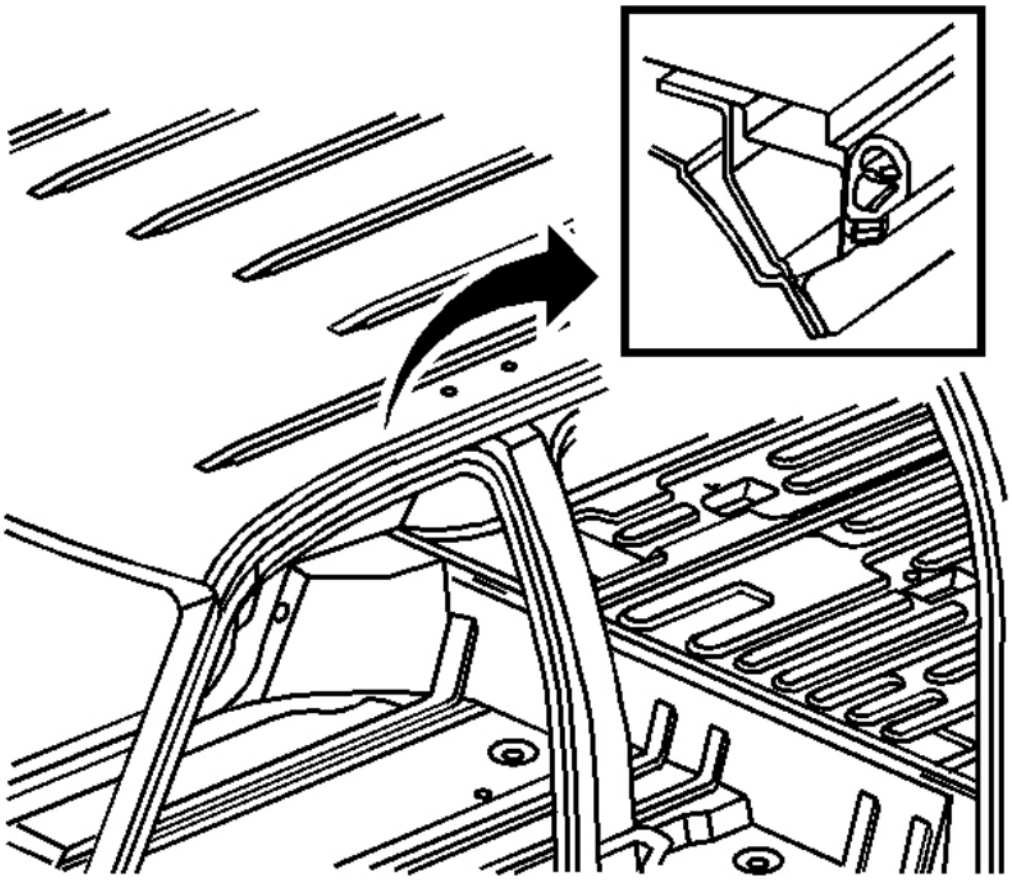


Fig. 137: Removing Front Door Weatherstrip (Upper)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the roof drip molding over the pinchweld.
2. Install the roof drip molding by pressing on the pinchweld flange until fully seated.
3. Close the door.

WEATHERSTRIP REPLACEMENT - FRONT DOOR (DOOR OPENING)

Removal Procedure

1. Open the door.
2. Remove the sill plate. Refer to **Door Sill Plate Replacement - Front** in Interior Trim.

cardiagn.com

3. Remove the hinge pillar trim panel. Refer to **Trim Panel Replacement - Hinge Pillar** in Interior Trim.
4. Remove the windshield pillar molding. Refer to **Garnish Molding Replacement - Windshield Pillar** in Interior Trim.
5. Remove the weatherstrip from the rear side door opening. Peel the unit away from channel, pulling the weatherstrip from the pinchweld flange.

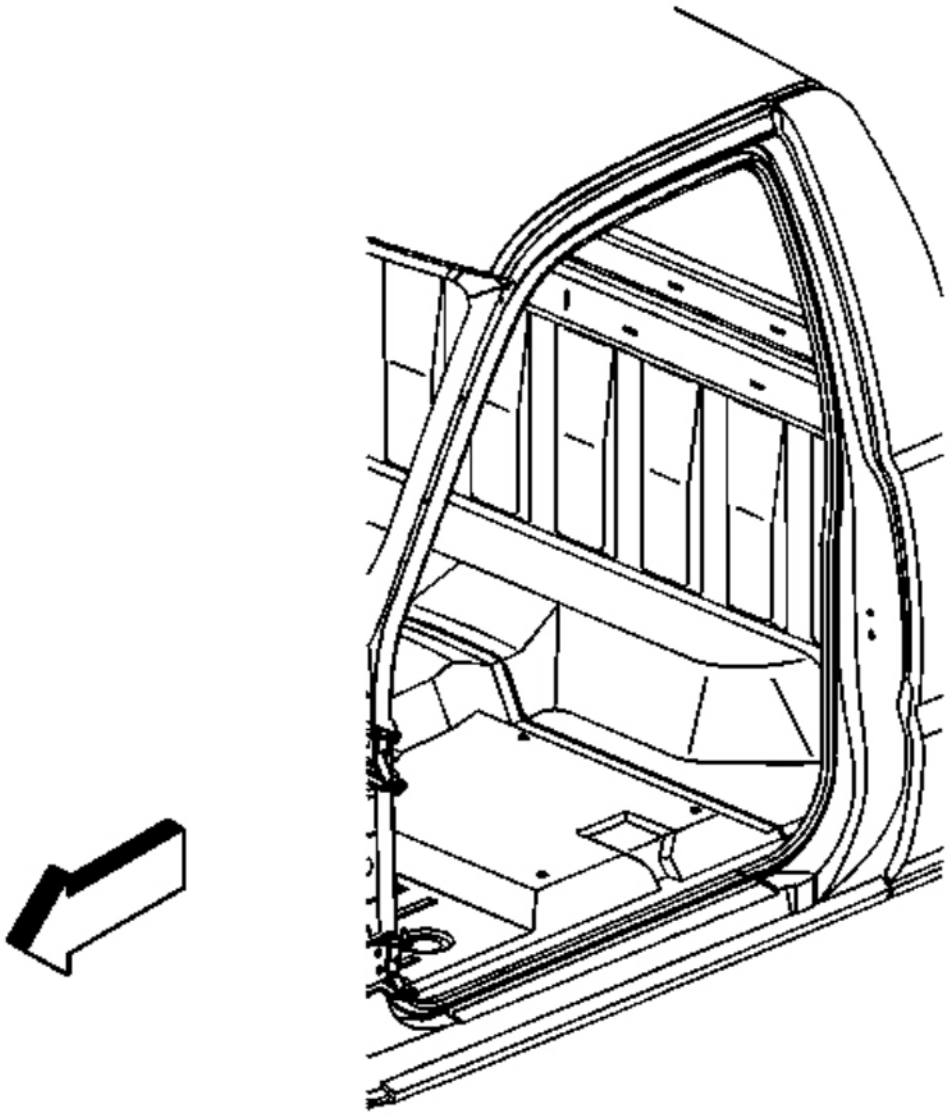


Fig. 138: Removing Front Door Weatherstrip (Door Opening)

cardiagn.com

Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the weatherstrip from the rear side door opening fully seating the weatherstrip into the channel.

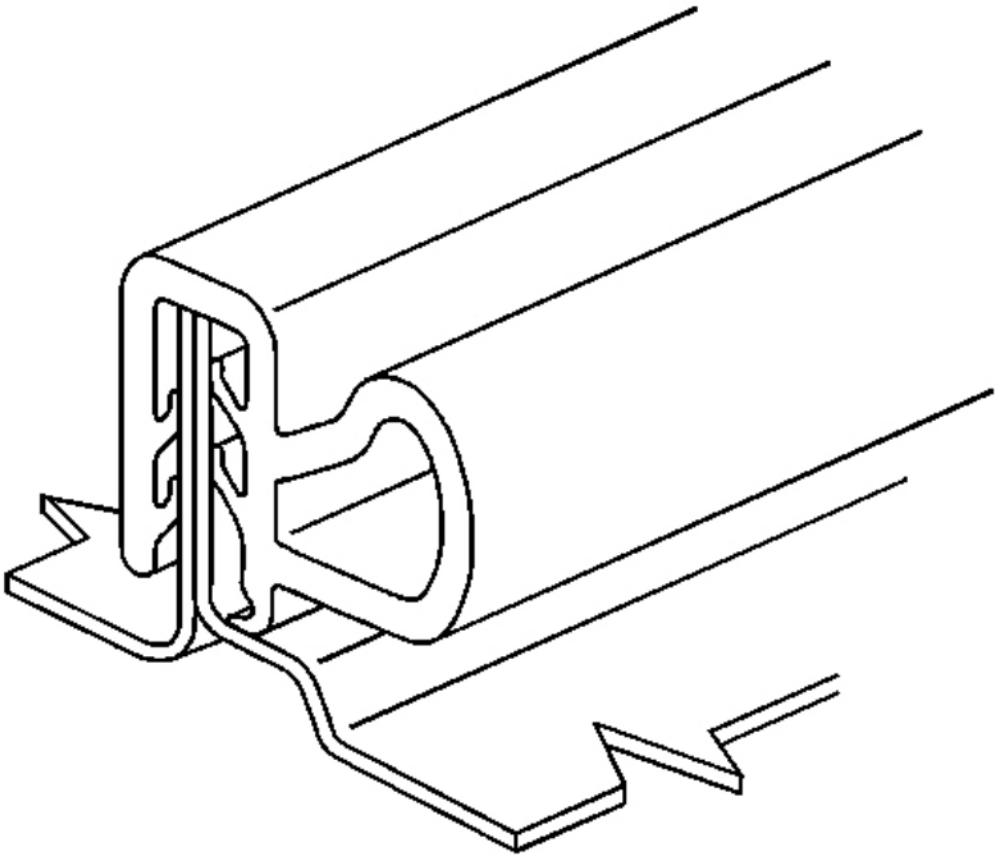


Fig. 139: Installing Front Door Weatherstrip (Door Opening)
Courtesy of GENERAL MOTORS CORP.

2. Install the windshield pillar molding. Refer to **Garnish Molding Replacement - Windshield Pillar** in Interior Trim.
3. Install the hinge pillar trim panel. Refer to **Trim Panel Replacement - Hinge Pillar** in Interior Trim.
4. Install the sill plate. Refer to **Door Sill Plate Replacement - Front** in Interior Trim.
5. Check door closing effort and seal to door fit.

cardiagn.com

WEATHERSTRIP REPLACEMENT - FRONT DOOR WINDOW

Removal Procedure

1. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
2. Remove the water deflector. Refer to **Water Deflector Replacement - Front Door**.
3. Remove the window. Refer to **Window Replacement - Front Door**.
4. Remove the screws.
5. Pull the weatherstrip from the following locations:
   - The front of the glass run channel
   - The top of the window frame flange
   - The rear of the glass run channel
6. Remove the weatherstrip from the door.

cardiagn.com

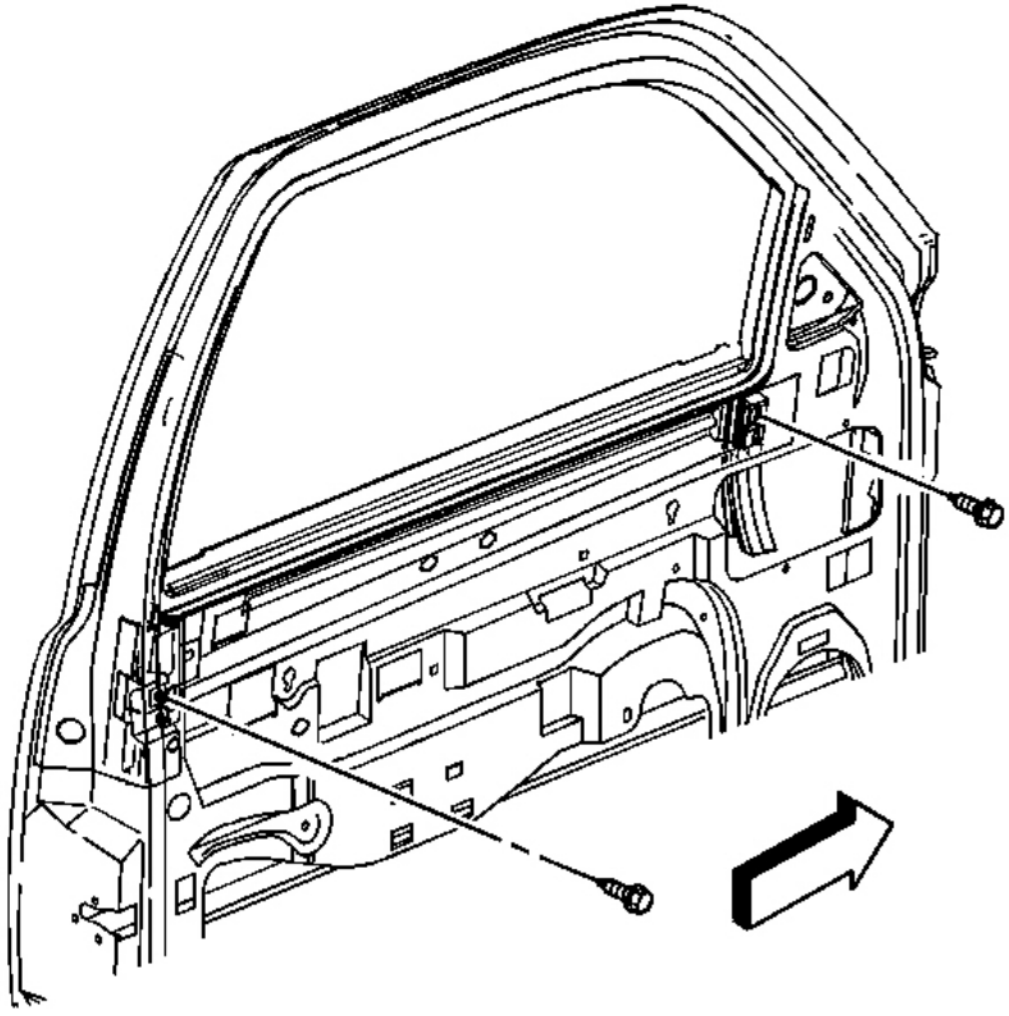


Fig. 140: Removing Front Door Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the weatherstrip to the following locations:
   - The front of the glass run channel
   - The top of the window frame flange
   - The rear of the glass run channel

cardiagn.com

NOTE: **Refer to Fastener Notice in Cautions and Notices.**

2. Install the bolts.

   Tighten: Tighten the bolts to 6 N.m (53 lb in).

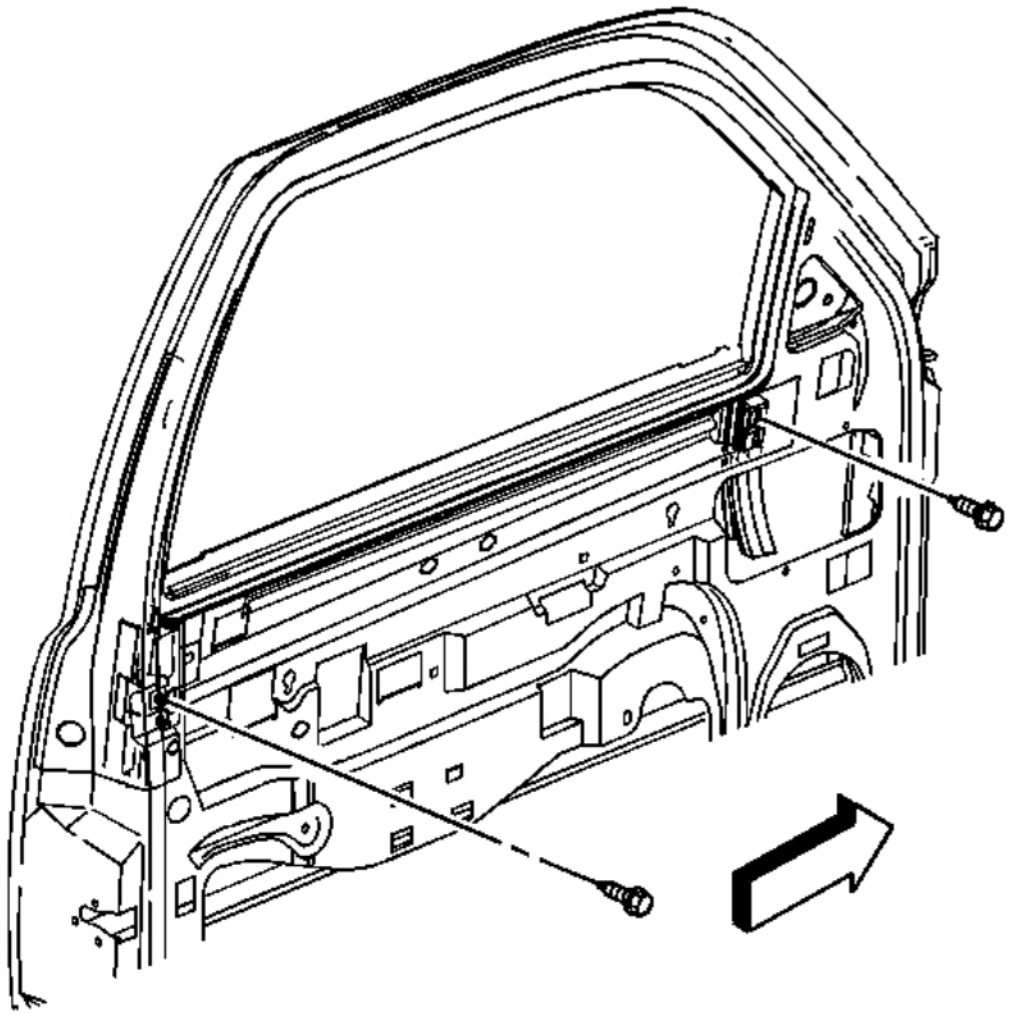


Fig. 141: Installing Front Door Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

3. Install the window. Refer to **Window Replacement - Front Door**.
4. Install the water deflector. Refer to **Water Deflector Replacement - Front Door**.

cardiagn.com

5. Install the door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)**.
6. Inspect the operation of the window.

WEATHERSTRIP REPLACEMENT - REAR DOOR WINDOW

Removal Procedure

1. Remove the window. Refer to **Window Replacement - Rear Door (Suburban/Yukon XL/Avalanche/Escld E)** or **Window Replacement - Rear Door (Tahoe/Yukon/Escalade)**.
2. Pull the weatherstrip from the front window run channel.
3. Pull the weatherstrip from the rear window run channel.
4. Pull the weatherstrip from the window frame flange.

cardiagn.com

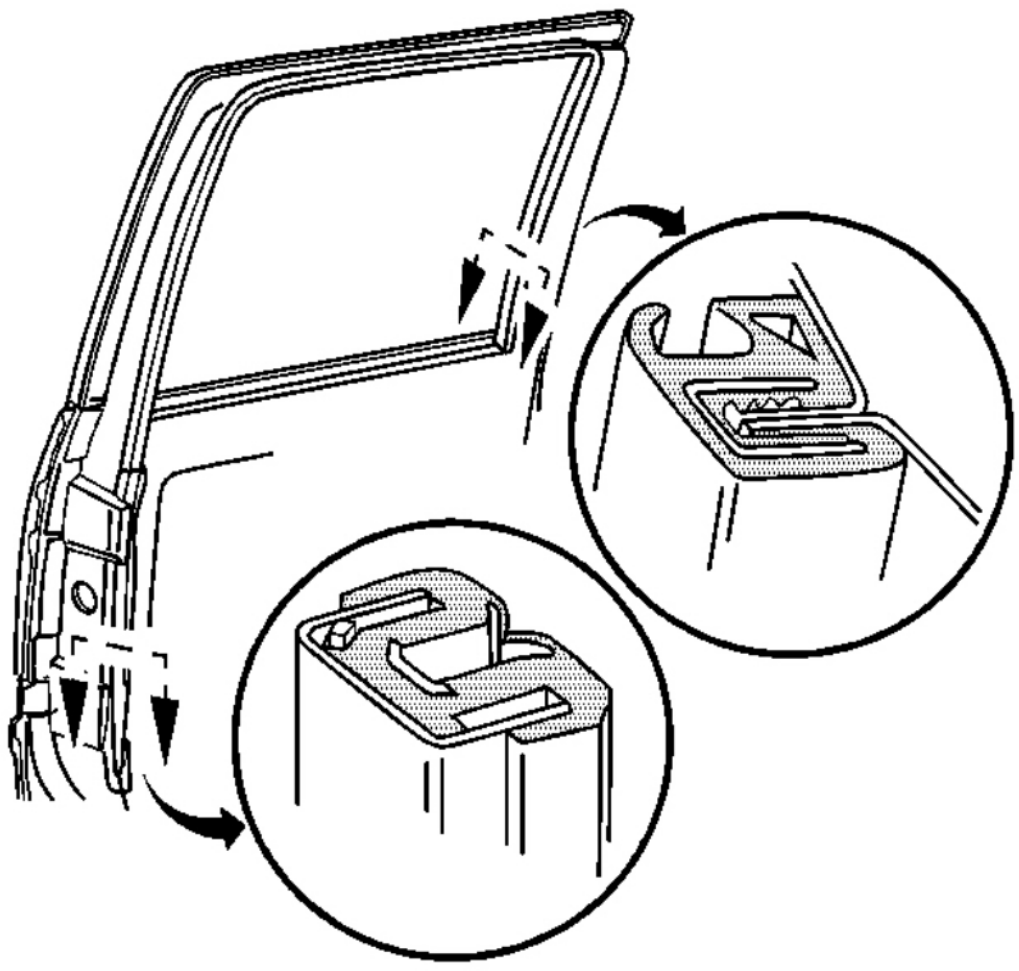


Fig. 142: Removing Rear Door Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Align the weatherstrip in the window frame flange.
2. Press the weatherstrip into the window frame flange until fully seated.
3. Press the weatherstrip into the rear window run channel until fully seated.
4. Press the weatherstrip into the front window run channel until fully seated.

cardiagn.com

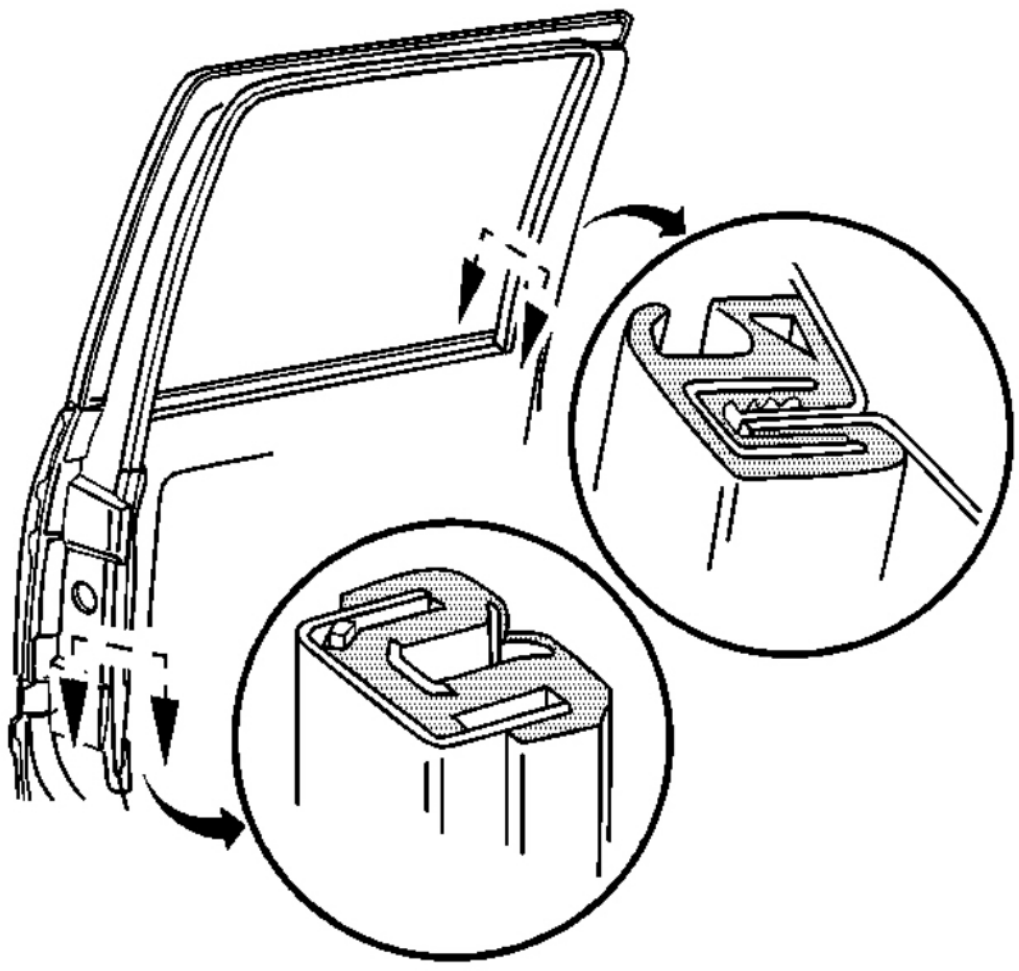


Fig. 143: Installing Rear Door Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

5. Install the window. Refer to **Window Replacement - Rear Door (Suburban/Yukon XL/Avalanche/ Escld E)** or **Window Replacement - Rear Door (Tahoe/Yukon/Escalade)**.

WEATHERSTRIP REPLACEMENT - FRONT DOOR UPPER AUXILIARY

Removal Procedure

1. Open the door.
2. Pull the roof drip molding from the pinch-weld flange and the windshield molding flange.

cardiagn.com

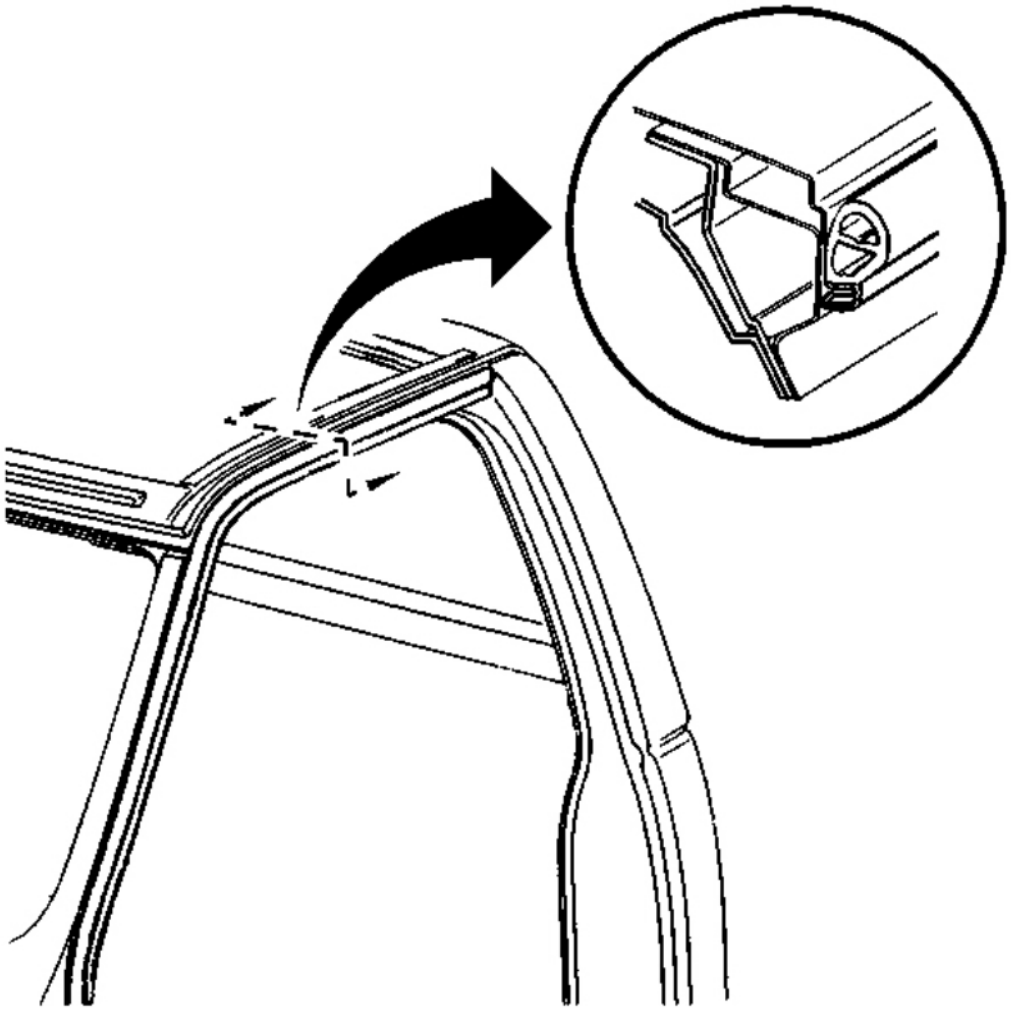


Fig. 144: Removing Front Door Upper Auxiliary Weatherstrip
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Push the roof drip molding over the pinch-weld flange.
2. Close the door.

cardiagn.com

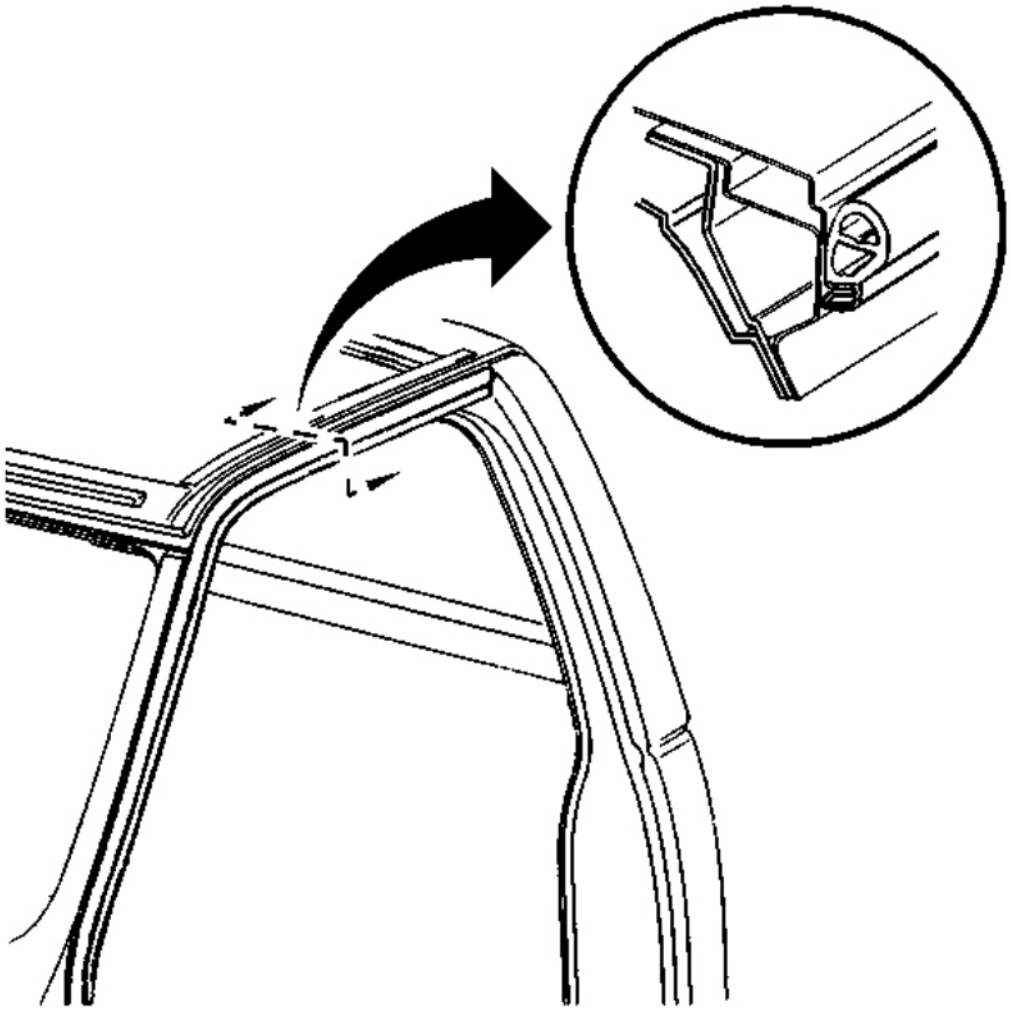


Fig. 145: Installing Front Door Upper Auxiliary Weatherstrip
Courtesy of GENERAL MOTORS CORP.

WEATHERSTRIP REPLACEMENT - REAR DOOR

Removal Procedure

1. Open the rear door.
2. Remove the rear door sill plate. Refer to **Door Sill Plate Replacement - Rear** in Interior Trim.
3. Remove the center pillar molding. Refer to **Garnish Molding Replacement - Center Pillar** in Interior Trim.

cardiagn.com

4. Remove the third pillar trim panel. Refer to **Trim Replacement - Third Pillar (Tahoe/Yukon/Escalade/Suburban)** or **Trim Replacement - Third Pillar (Avalanche/Escalade EXT)** in Interior Trim.
5. Remove the weatherstrip (1) from the door opening flange.

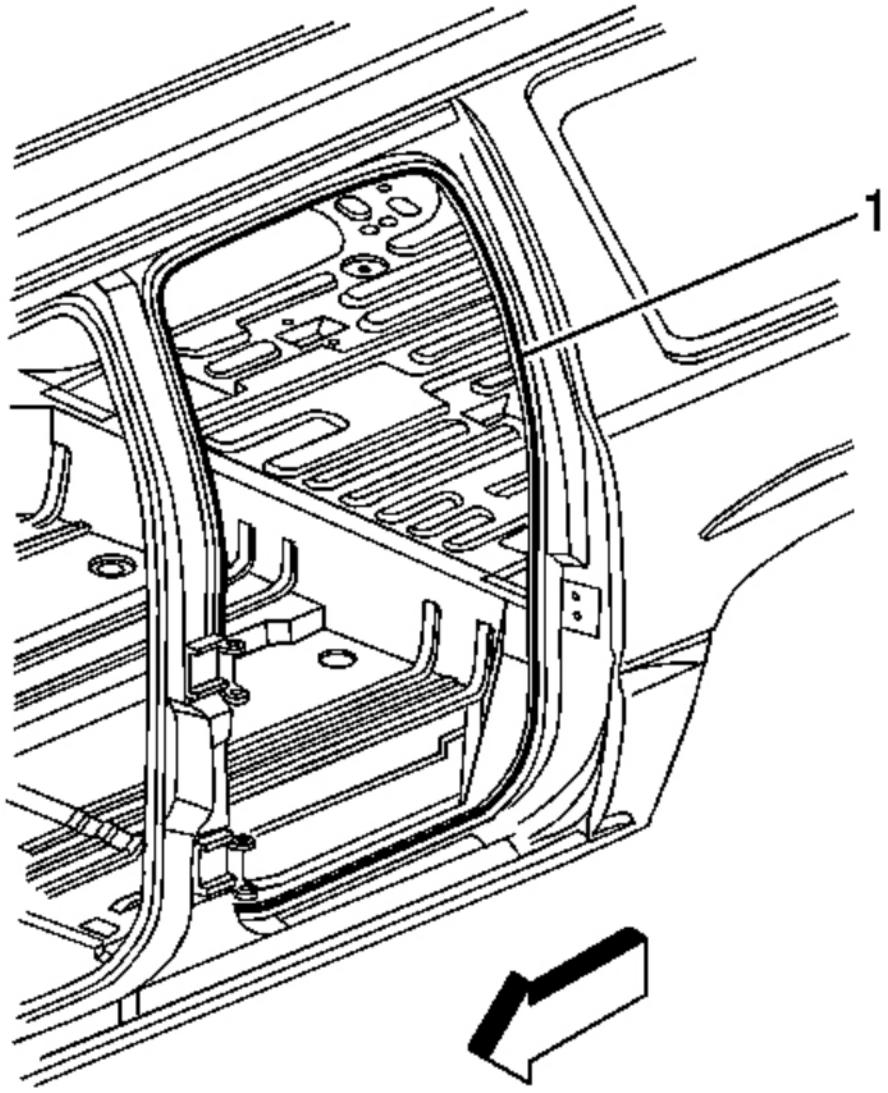


Fig. 146: Removing Rear Door Weatherstrip
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

Installation Procedure

1. Install the weatherstrip (1) to the door opening flange.

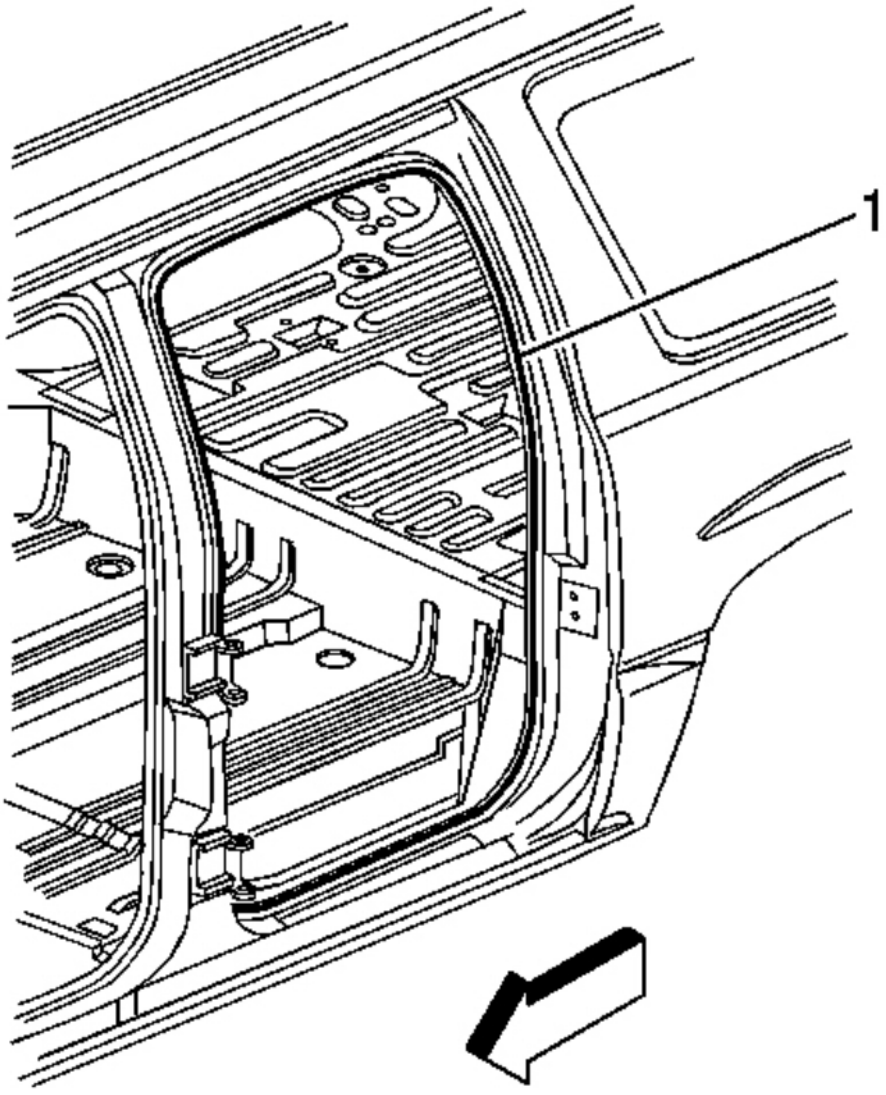


Fig. 147: Installing Rear Door Weatherstrip
Courtesy of GENERAL MOTORS CORP.

2. Install the third pillar trim panel. Refer to **Trim Replacement - Third Pillar**

cardiagn.com

(Tahoe/Yukon/Escalade/Suburban) or **Trim Replacement - Third Pillar (Avalanche/Escalade EXT)** in Interior Trim.

3. Install the center pillar molding. Refer to **Garnish Molding Replacement - Center Pillar** in Interior Trim.
4. Install the rear door sill plate. Refer to **Door Sill Plate Replacement - Rear** in Interior Trim.
5. Close the rear door.

WEATHERSTRIP REPLACEMENT - FRONT DOOR OPENING

Removal Procedure

1. Open the door.
2. Remove the sill plate. Refer to **Door Sill Plate Replacement - Front** in Interior Trim.
3. Remove the hinge pillar trim panel. Refer to **Trim Panel Replacement - Hinge Pillar** in Interior Trim.
4. Remove the windshield pillar molding. Refer to **Garnish Molding Replacement - Windshield Pillar** in Interior Trim.
5. Remove the weatherstrip from the rear side door opening. Peel the unit away from channel, pulling the weatherstrip from the pinchweld flange.

cardiagn.com

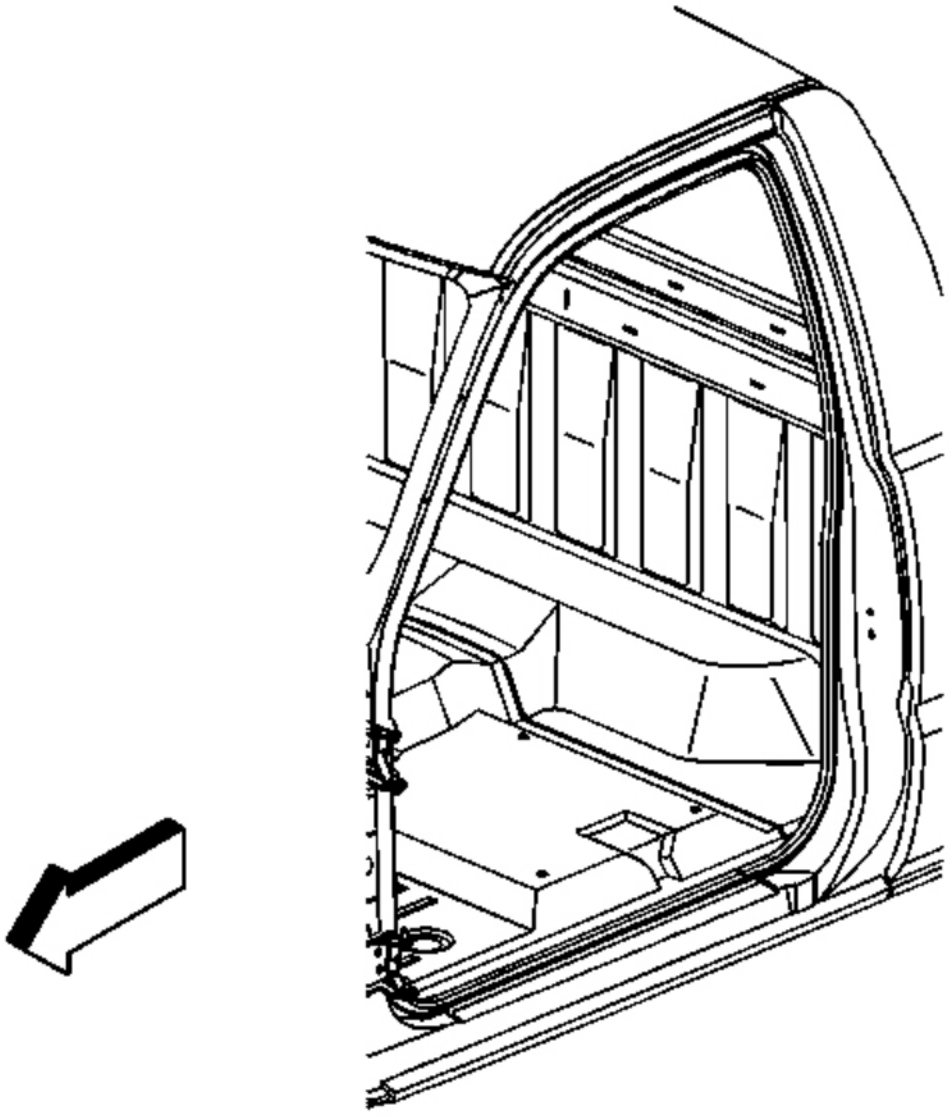


Fig. 148: Removing Front Door Opening Weatherstrip
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the weatherstrip from the rear side door opening fully seating the weatherstrip into the channel.

cardiagn.com

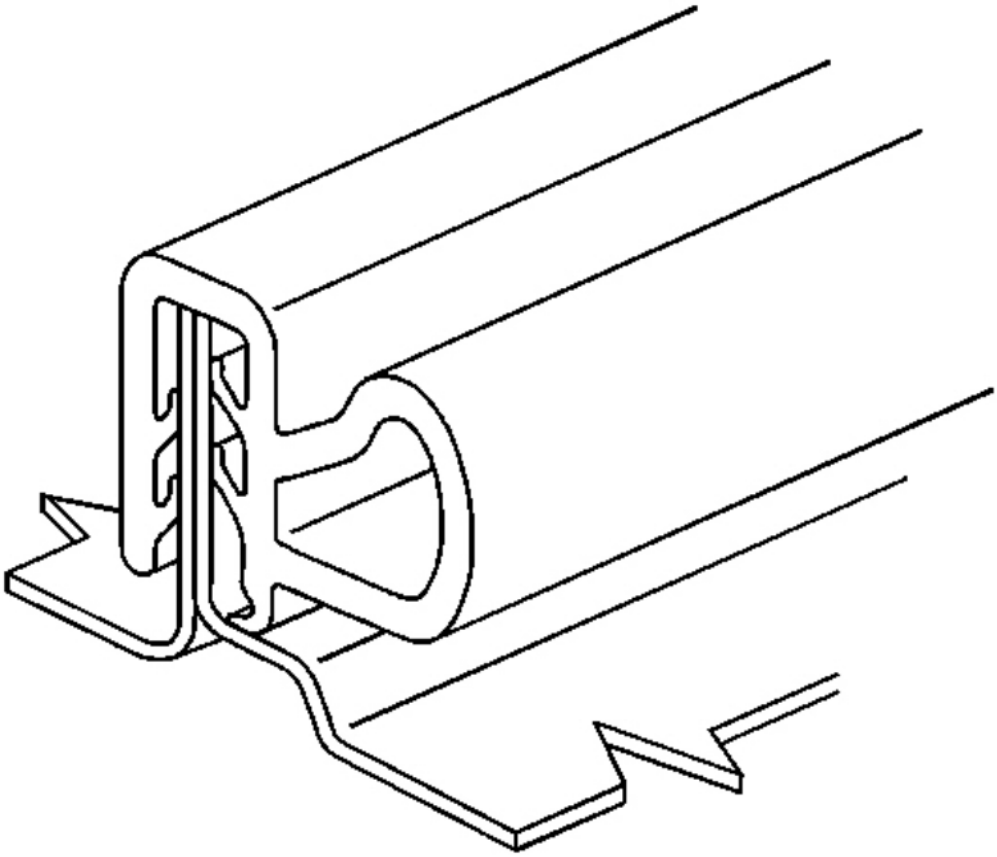


Fig. 149: Installing Front Door Opening Weatherstrip
Courtesy of GENERAL MOTORS CORP.

2. Install the windshield pillar molding. Refer to **Garnish Molding Replacement - Windshield Pillar** in Interior Trim.
3. Install the hinge pillar trim panel. Refer to **Trim Panel Replacement - Hinge Pillar** in Interior Trim.
4. Install the sill plate. Refer to **Door Sill Plate Replacement - Front** in Interior Trim.
5. Check door closing effort and seal to door fit.

MIRROR REPLACEMENT - MANUAL

Removal Procedure

1. Remove the front door trim panel upper extension. Refer to **Trim Panel Replacement - Upper Extension**.

cardiagn.com

2. Remove the nuts that retain the outside mirror to the door.
3. Remove the outside mirror from the door.

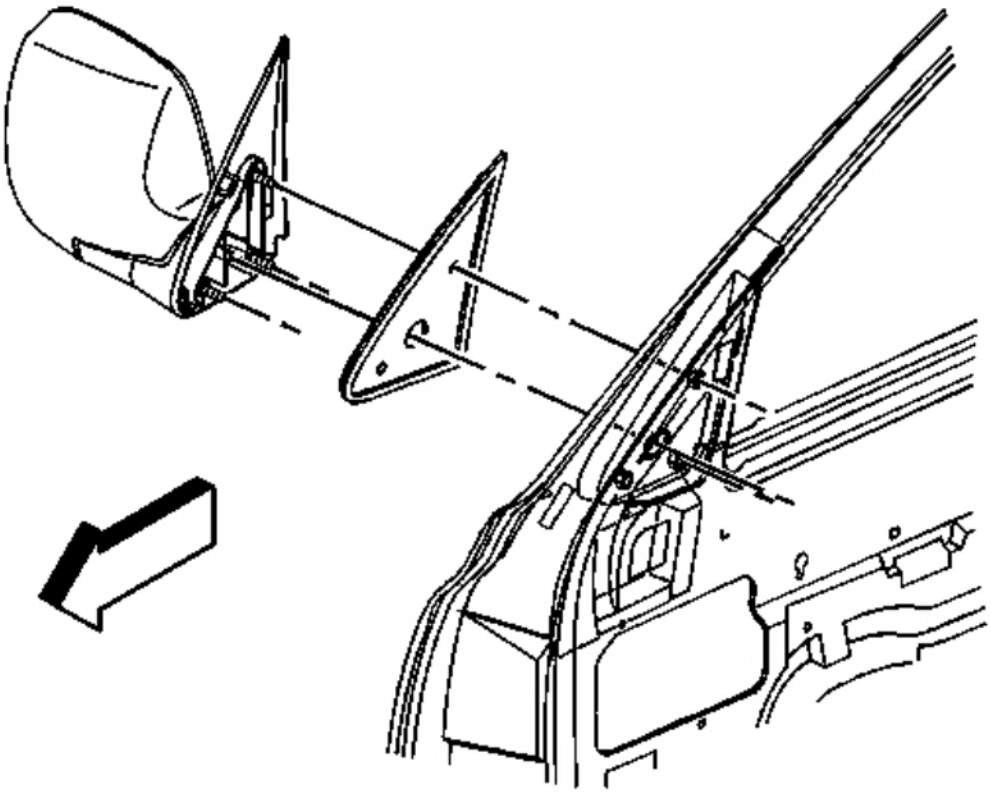


Fig. 150: Removing Manual Mirror
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the rearview mirror to the door, pressing the outside mirror into place.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the nuts in order to retain the outside mirror to the door.

Tighten: Tighten the outside rearview mirror retaining nuts to 9 N.m (80 lb in).

cardiagn.com

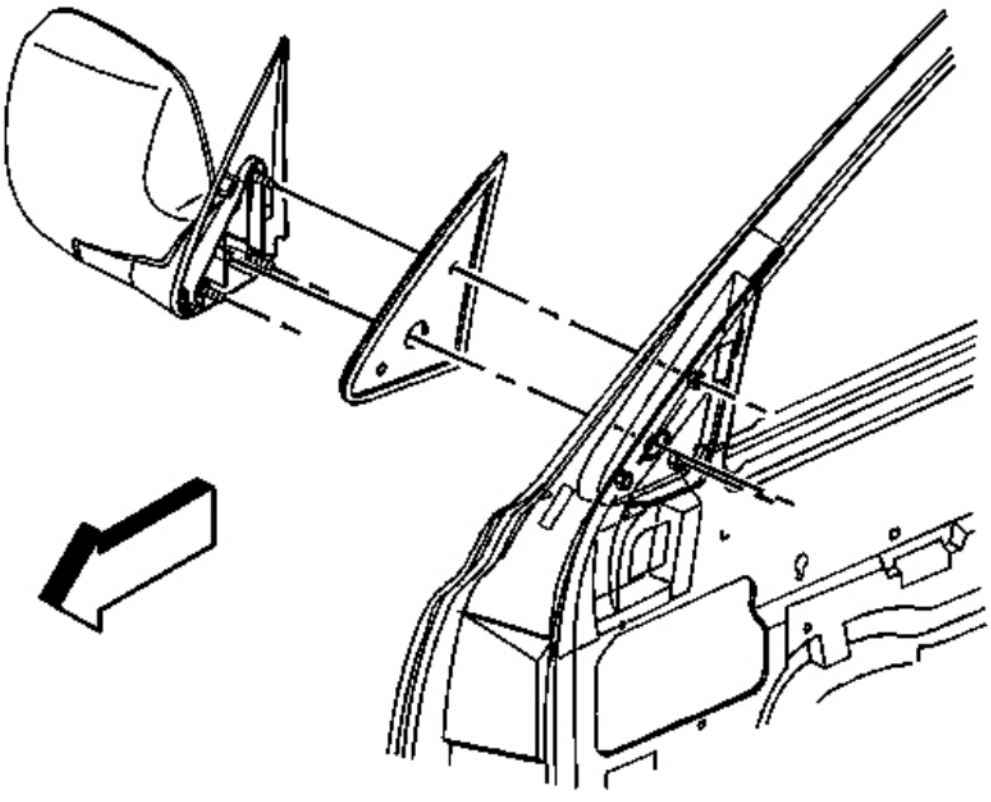


Fig. 151: Installing Manual Mirror
Courtesy of GENERAL MOTORS CORP.

3. Install the front door trim panel upper extension. Refer to **Trim Panel Replacement - Upper Extension**.

MIRROR REPLACEMENT - POWER

Removal Procedure

1. Remove the trim panel upper extension. Refer to **Trim Panel Replacement - Upper Extension**.
2. Remove the insulator, if equipped.
3. Disconnect the electrical connector.

cardiagn.com

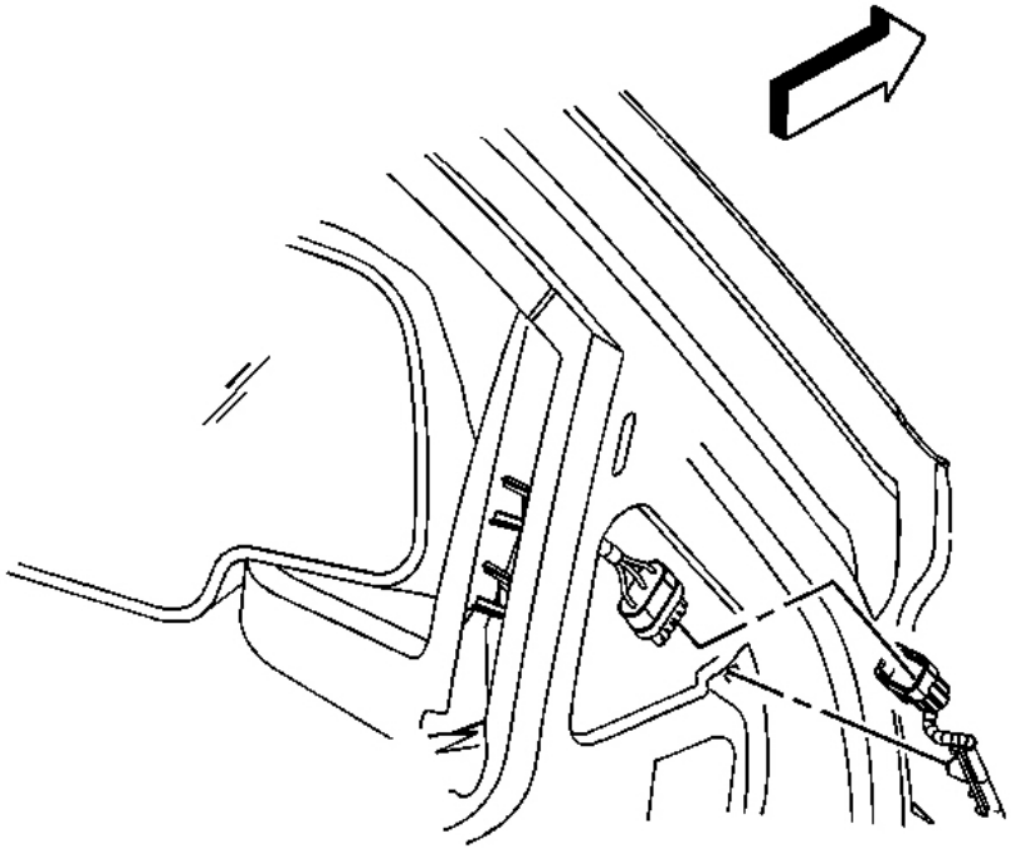


Fig. 152: Disconnecting Power Mirror Electrical Connector
Courtesy of GENERAL MOTORS CORP.

4. Remove the nuts securing the outside mirror to the door.
5. Remove the mirror from the door.

cardiagn.com

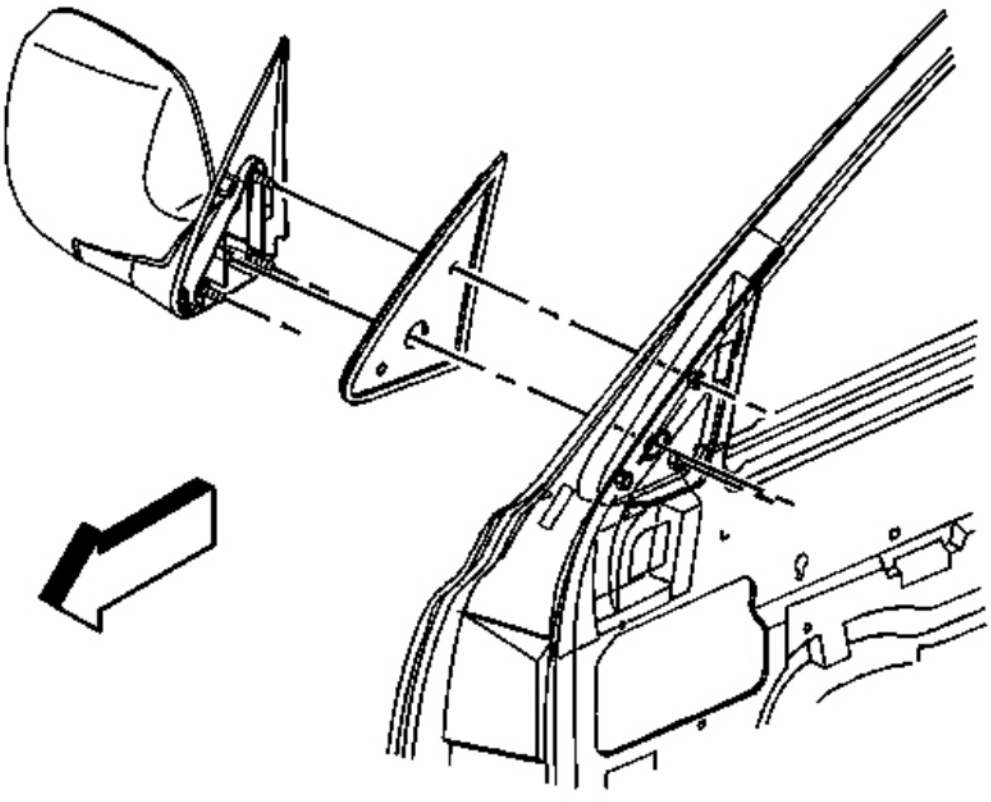


Fig. 153: Removing Power Mirror
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the outside mirror to the door. Press the mirror into place.

cardiagn.com

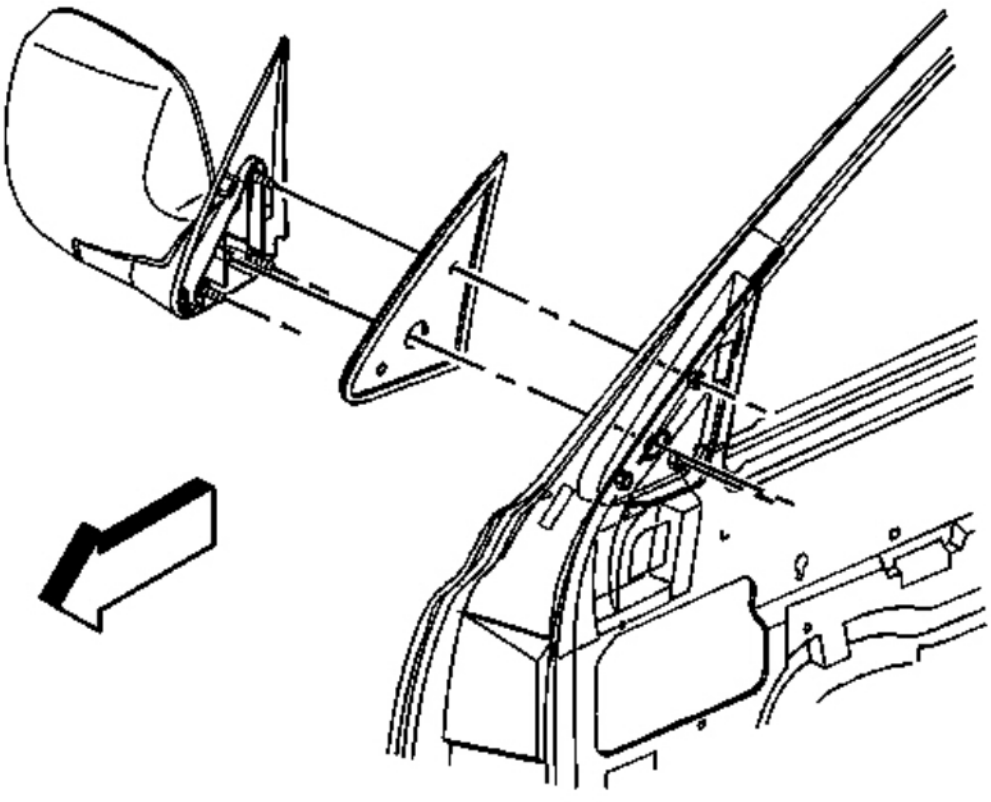


Fig. 154: Installing Power Mirror
Courtesy of GENERAL MOTORS CORP.

2. Connect the electrical connector.

cardiagn.com

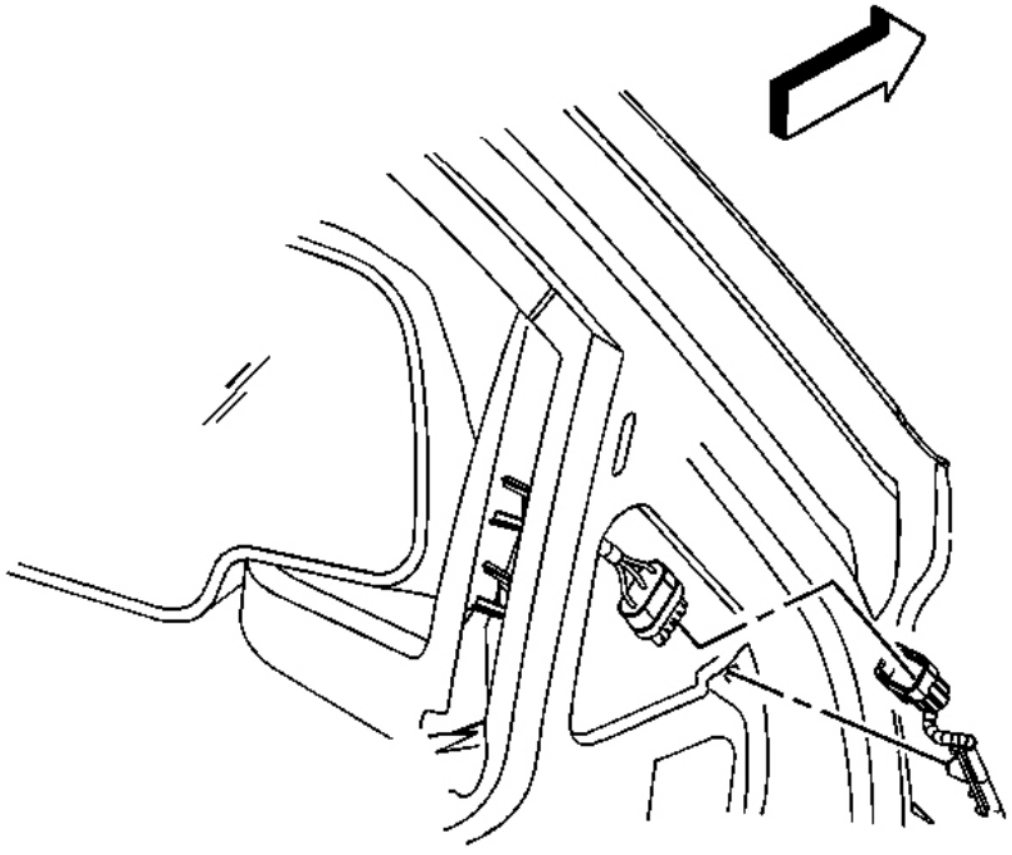


Fig. 155: Connecting Power Mirror Electrical Connector
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the nuts in order to secure the outside mirror to the door.

   Tighten: Tighten the outside mirror nuts to 9 N.m (80 lb in).

4. Install the insulator, if equipped.
5. Install the trim panel upper extension. Refer to **Trim Panel Replacement - Upper Extension**.

MIRROR FACE REPLACEMENT (DL3, DR4, DL8, 5M1)

Removal Procedure

cardiagn.com

CAUTION: When working with any type of glass or sheet metal with exposed or rough edges, wear approved safety glasses and gloves in order to reduce the chance of personal injury.

NOTE: When servicing electrochromic glass that is broken, or if glass breaks during servicing, be cautious not to spill electrochromic fluid onto vehicle. Doing so will cause damage to the vehicle.

1. Adjust the mirror face as shown in the picture to obtain access to the mirror face retention clips.
2. Position a flat-bladed tool between the back side of the mirror face and the adjuster mechanism as shown in the picture.

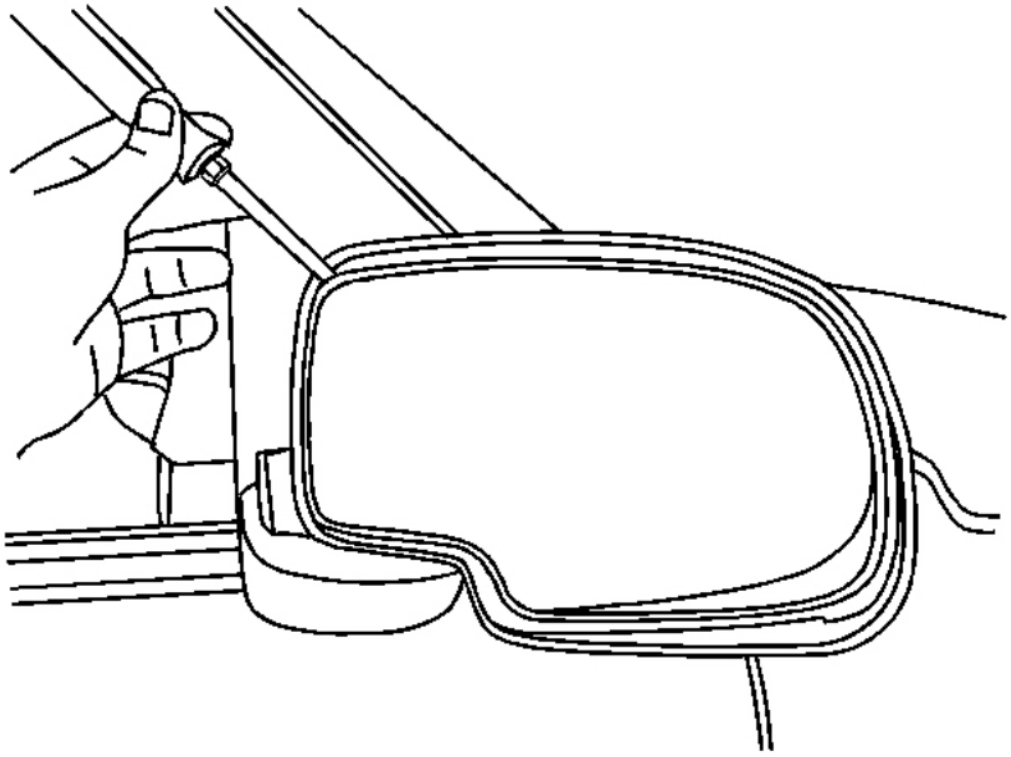


Fig. 156: Positioning Flat-Bladed Tool Between Back Side Of Mirror Face & Adjuster Mechanism
Courtesy of GENERAL MOTORS CORP.

3. Place the blade of the tool between the gasket (1) and the adjuster mechanism (2).
4. Slightly twist the blade of the tool while gently pulling the mirror face towards you in order to release the retainers (3).

cardiagn.com

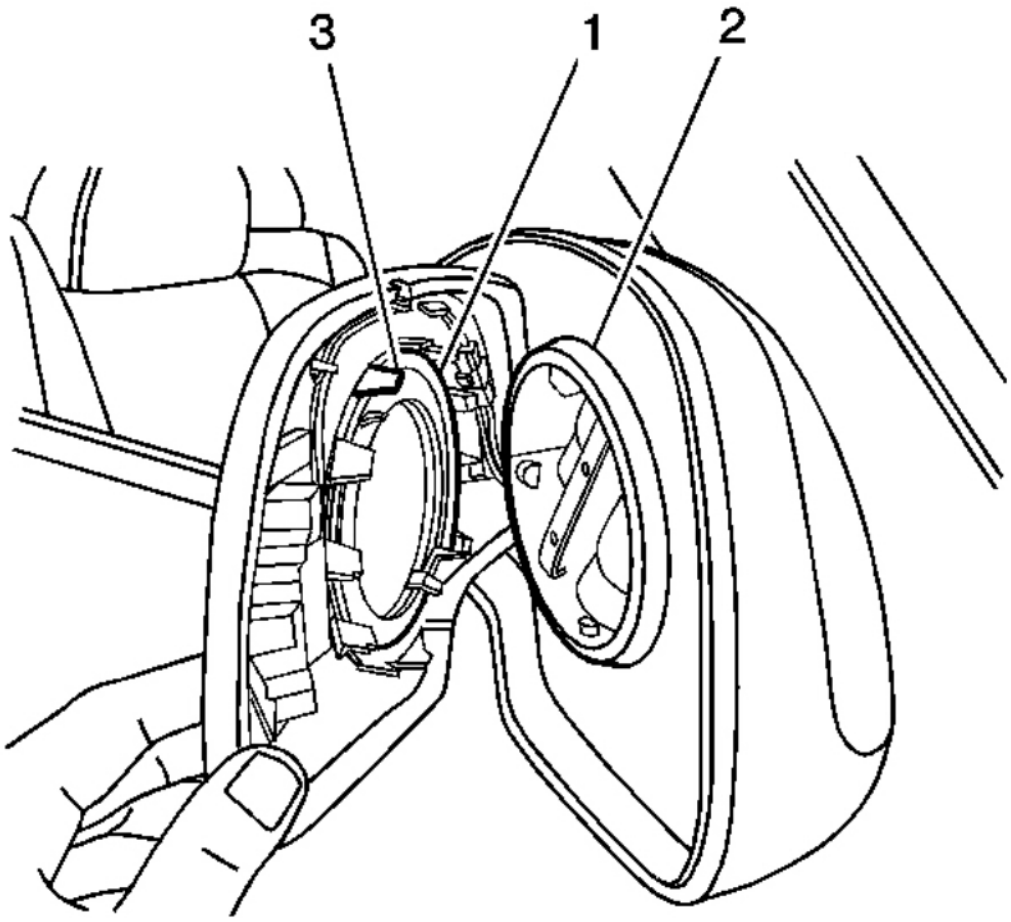


Fig. 157: Placing Tool Between Gasket & Adjuster Mechanism
Courtesy of GENERAL MOTORS CORP.

5. With the mirror face in hand, disconnect the electrical connectors.
6. Remove the mirror face from the mirror housing.
7. Inspect the adjuster mechanism for damage.

Installation Procedure

1. Inspect the components for any damage. Ensure that the mirror face has all the retention clips in place.
2. Plug in the electrical connectors to the back of the mirror.
3. Align the mirror face retention clips with the adjuster mechanism.

cardiagn.com

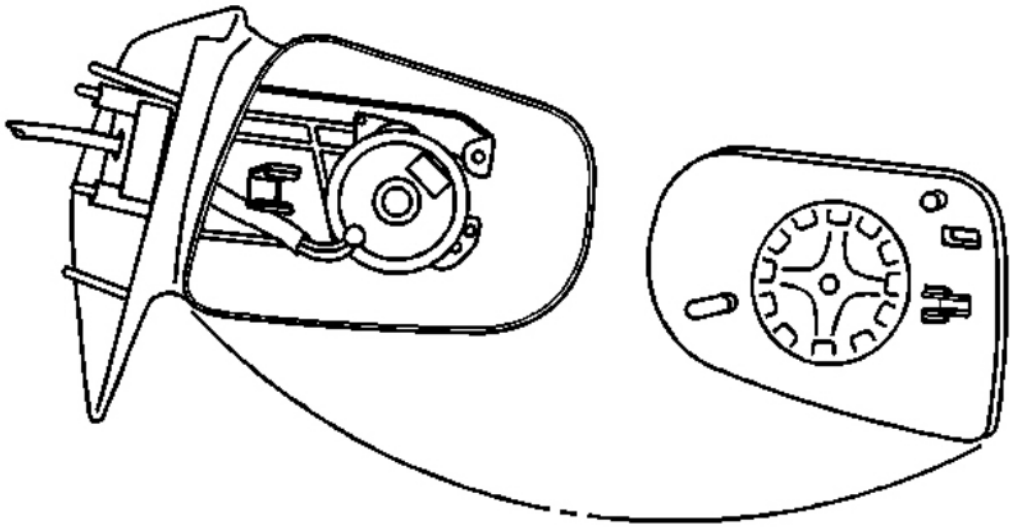


Fig. 158: Aligning Mirror Face Retention Clips With Adjuster Mechanism
Courtesy of GENERAL MOTORS CORP.

4. Gently press the mirror back into the adjuster mechanism with the palm of the hand on the center of the glass until it locks into place.
5. Inspect the operation of the mirror.

cardiagn.com

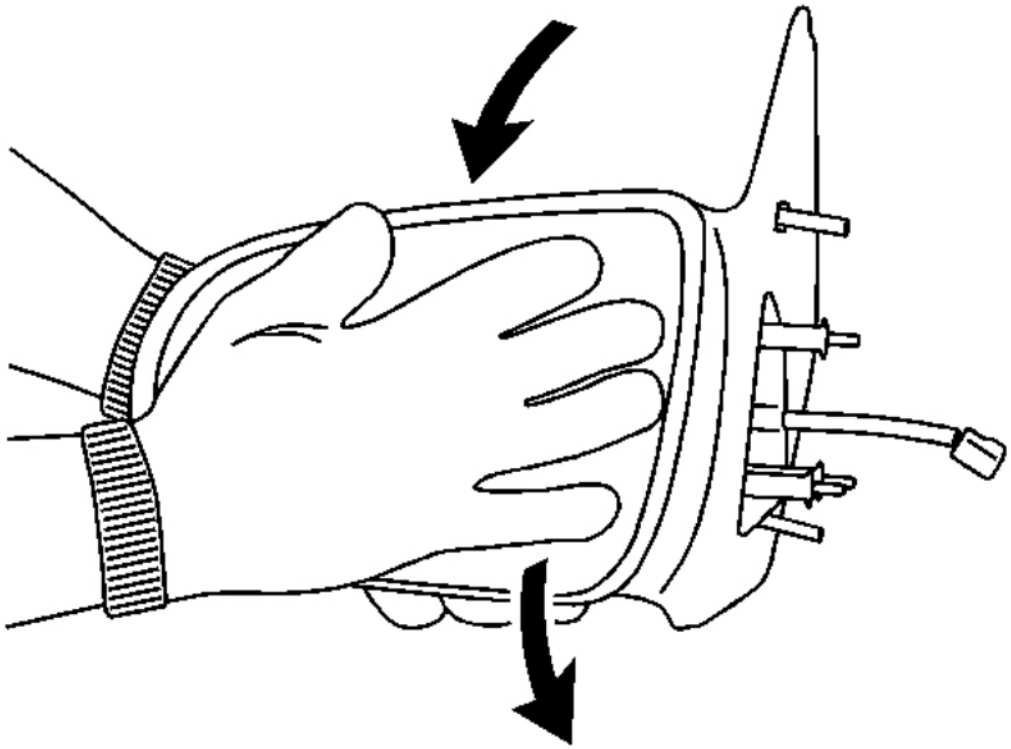


Fig. 159: Mirror Glass & Motor
Courtesy of GENERAL MOTORS CORP.

DESCRIPTION AND OPERATION

DOOR DESCRIPTION

The hinges are welded to the door and to the body. There is no adjustment to this type of hinge. The replacement hinges bolt to the door and to the body side pillar. The replacement hinges are adjustable.

POWER WINDOWS DESCRIPTION AND OPERATION

Power Window System Components

The power window system consists of the following components:

- Driver Door Module (DDM)
- Passenger Door Module (PDM)

cardiagn.com

- Body Control Module (BCM)
- RR power window switch
- Window up and window down relays in each of the rear passenger window switches
- Window lockout switch
- Reversible power window motors in each of the doors (circuit breaker protected)
- LT DOOR CB 25A (System power for left windows)
- RT DOOR CB 25A (System power for right windows)

Power Window System Controls

The power window system will operate anytime the Retained Accessory Power (RAP) system is active or when the ignition switch is in the ACCY or ON position.

The DDM contains four power window switches which are integral components. Closing any of the normally open, rocker type switches provides the DDM with a request for power window operation. The switches for the two front windows have three positions UP, Down and Express Down, while the switches for the rear windows have only two positions, UP and Down. Each of these switches and their positions is a direct input into the DDM. Upon receiving a request for power window operation, the DDM, transmits a Class 2 message indicating the switch and it's changed position.

The PDM contains a single power window switch that is an integral component. Closing of this normally open, rocker switch provides the PDM with a request for the front passenger power window operation. The switch for the front passenger window has two positions Up and Down. Each of these switch positions is a direct input to the PDM.

The two rear passenger doors have there own switches. Each of the switches contain a power window up and down relay. A switch activation alone can control the up and down functions of the rear windows. However the BCM, upon receiving a Class 2 message from the DDM, can control the set of relays which will activate the rear window motors.

Power Window Motor Operation

A permanent magnet motor operates each of the power side windows. Each motor raises or lowers the glass when the motor receives voltage. The direction the motor turns depends on the polarity of the supply voltage. The power window switches control the polarity of the supply voltage. A built-in circuit breaker protects each motor. The circuit breaker opens when the switch is depressed for a extended period of time under the following conditions:

- The window has an obstruction.
- The window is fully open or fully closed.

The circuit breaker will reset automatically as the circuit breaker cools.

Driver Power Window Operation

cardiagn.com

The switch for the driver power window has three positions UP, Down and Express Down and its position is a direct input into the DDM. Upon receiving a request for power window operation (switch activation), the DDM supplies voltage to the power window motor left front up or down circuit and grounds the opposite and the power window motor runs to move the window up or down.

Front Passenger Power Window Operation

The switch for the front passenger power window has two positions UP and Down, and its position is a direct input into the PDM. Upon receiving a request for power window operation (switch activation), the PDM supplies voltage to the power window motor right front up or down circuit and grounds the opposite and the power window motor runs to drive the window up or down.

The front passenger power window can also be controlled from the power window master switch. The power window master switch for the front passenger power window has three positions UP, Down and Express Down and its position is a direct input into the DDM. Upon receiving a request for front passenger power window operation (switch activation), the DDM transmits a Class 2 message indicating the changed switch position. When the PDM receives this message, the PDM supplies voltage to the power window motor right front up or down circuit and grounds the opposite and the power window motor runs to move the window up or down.

Rear Passenger Power Window Operation

The passenger power window switches incorporate window up and down relays. The supply side of all the window up and down relays receive voltage through the battery voltage supply circuit and the LT DOOR or RT DOOR circuit breakers respectively. The normally closed contacts of each relay is connected to ground. The load side of each of the relays are connected to either side of the power window motor through the power window up and down circuits. The relay coil feed circuits are connected to the BCM through the power window lockout control circuit and the relay control circuits are connected to the power window switches and to the BCM.

If a rear power window switch is placed in the down position, the down relay would energize and allow battery voltage to the power window motor through the power window motor down circuit. Since the opposite side of the motor is connected to the normally closed contacts of the up relay to ground through the power window motor up circuit, the window moves down. If a rear power window switch is placed in the up position, the up relay would energize and allow battery voltage to the power window motor through the power window motor up circuit. Since the opposite side of the motor is connected to the normally closed contacts of the down relay to ground through the power window motor down circuit, the window moves up.

The rear passenger power windows can also be controlled from the power window master switch. The power window master switches for the rear passenger power windows have two positions UP and Down and its position is a direct input into the DDM. Upon receiving a request for rear passenger power window operation (switch activation), the DDM transmits a Class 2 message indicating the changed switch position. When the BCM receives this message, the BCM can control the rear window up and down relays.

Express Down Operation

The express down function controls both the driver and front passenger power windows but only from the driver door power window master switch. When either the driver or front passenger window switch is momentarily depressed to the express down position, it is a direct input into the DDM. If the request was for the

cardiagn.com

driver power window, the DDM supplies voltage to the power window down circuit continuously until the power window reaches the bottom of its travel. At this point, the DDM senses an over current situation on the power window down circuit and interrupts the voltage supply. If the request was for the front passenger power window, the DDM transmits a Class 2 message indicating an express down function was requested. When the PDM receives this message, the PDM supplies voltage to the power window down circuit continuously until the power window reaches the bottom of its travel. At this point, the PDM senses an over current situation on the power window down circuit and interrupts the voltage supply.

Power Window Lockout Operation

The DDM contains a window lockout switch that is responsible for the disabling of all the passenger windows from the individual passenger window switches. When the window lockout switch is activated, the DDM transmits a Class 2 message indicating that a window lockout request has been received. When the PDM receives this message, it will disable the power window motor up and down circuits. When the BCM receives this message, it will interrupt the up and down relay coil feed voltage for both rear doors. Once activated, the lockout feature will remain in effect until the ignition switch is cycled or the DDM receives another power window lockout switch activation.

POWER DOOR LOCKS DESCRIPTION AND OPERATION

Door Lock System Components

The power door lock system consists of the following components:

- The driver door module (DDM)
- The passenger door module (PDM)
- The body control module (BCM)
- The driver information center (DIC)
- The rear door lock switch
- The door lock relay
- The door unlock relay
- The liftgate lock relay-utility vehicles with liftgate only
- The reversible door lock actuators in each of the doors and liftgate
- LOCKS 20A fuse (rear lock/unlock relay supply voltage)
- ECC 10A fuse (liftgate lock relay supply voltage)

Door Lock System Controls

The power door lock system can be controlled by any of the following:

- A power door lock or unlock switch activation
- A keyless entry transmission
- An automatic door lock function
- A delay lock function

cardiagn.com

- Door lock cylinder switch activation
- Lockout Prevention
- An airbag deployment

Driver, Passenger and Cargo Door Lock System Operation

The front power door lock switches are integral components of the driver door module (DDM) and passenger door module (PDM). The switches are two position normally open rocker switches. When placed in either the lock or unlock positions, the switches provide a direct input to the DDM or PDM. The DDM or PDM monitors these inputs and sends a Class 2 message indicating a change in the switch's respective position. Modules which activate the power door lock motors receive the Class 2 message and activate the motor in the appropriate direction to lock or unlock the vehicle's doors and liftgate. The rear door lock switch provides a lock and unlock signal to the body control module (BCM). The BCM upon receipt of a lock or unlock signal will control the rear door lock relays and also send a Class 2 message to the DDM and PDM to perform the appropriate function.

The modules which activate the power lock motors are:

- The DDM (driver door lock actuator).
- The PDM (passenger front door lock actuator).
- The BCM (both rear door lock actuators and cargo door/liftgate).

The DDM and PDM are directly connected to the respective door lock actuator through the door lock motor lock and unlock circuits. Once a door lock or unlock request has been received, the module will supply battery voltage to one side of the actuator and ground the other causing the doors to lock or unlock.

The rear passenger and cargo doors differ slightly in that they use lock and unlock relays. The relays supply and coil sides receive a constant voltage through the battery voltage supply circuit. The normally closed contacts are connected to ground and the control side is connected to the BCM. Once a door lock or unlock request has been received by the BCM, the BCM will ground the control side of the appropriate relay. This energizes the relay and allows voltage to be applied to either the door lock motor lock or unlock circuits. since the other side of the door lock actuator is connected to the normally closed contacts of the opposing relay to ground, the doors lock or unlock.

Liftgate Locking Operation

The liftgate will lock any time the vehicle is shifted out of park on vehicles equipped with an automatic transmission and at vehicle speeds exceeding 5 kph with manual transmission. This happens in conjunction with auto door locks if enabled or independently of auto door locks if the feature is disabled. This ensures that the liftgate is locked anytime the vehicle is shifted out of park or when the vehicle is in motion.

The liftgate lock relay supply and coil sides receive a constant voltage through the battery voltage supply circuit and the ECC fuse. The normally closed contact is connected to ground and the control side is connected to the body control module (BCM). A lock function will occur when a door lock switch activation, keyless entry lock transmission, auto door lock function or a liftgate lock function has been received by the BCM. The BCM will then ground the control side of the liftgate lock relay. This energizes the relay and allows voltage to be applied to the liftgate lock actuator lock control circuit. Since the other side of the liftgate lock actuator is connected to

cardiagn.com

the normally closed contacts of the door unlock relay to ground, the liftgate will lock. When an unlock function occurs the BCM will ground the control side of the unlock relay and the rear doors and liftgate will unlock.

The BCM also runs diagnostics on the liftgate lock relay control circuit and will set DTC B3825 as current and also send a Class 2 message to the DIC. The DIC will display REPLACE LIFTGATE FUSE to inform the driver that a fault has been detected in the liftgate lock circuit and that the liftgate is not locked. Faults that will set the DTC and cause the DIC to display the message could be any of the following:

- An open ECC fuse
- An open or short to ground in the liftgate lock relay battery positive voltage circuit
- A faulty liftgate lock relay
- An open or short to ground in the liftgate lock relay control circuit
- A short to ground in the liftgate lock actuator lock control circuit
- A faulty BCM

Programmable Automatic Door Locks

The automatic door lock feature can be programmed to control the door lock system. The automatic door lock feature is factory programmed to have all doors lock and unlock. For detailed instructions on programming the automatic door locks, refer to **Vehicle Personalization** in Personalization.

When the automatic door lock feature is programmed to control the door lock system, the driver door module (DDM), passenger door module (PDM) and body control module (BCM) will lock the vehicle doors if the following inputs are true:

- Ignition 1 input is active.
- All door jamb switch inputs are inactive.
- Cargo door or liftgate/liftglass ajar inputs are inactive.
- Transmission is shifted out of park.

This automatic door lock function will only occur once per ignition cycle unless, a door jamb switch input changes state to active and back to inactive. Then the DDM, PDM and BCM will lock all doors again.

Once the automatic door lock feature has locked the doors, the BCM will then unlock all the doors when the transmission is shifted into park.

Lockout Prevention

This feature prevents the locking of the driver door if the ignition key is left in the ignition lock cylinder. If a lock function occurs from any door lock switch and the body control module (BCM) senses an active state on either the left front door latch signal, secondary door latch switch signal and/or the liftgate ajar switch signal circuits and the key in ignition switch signal circuit is in the YES state, the BCM, driver door module (DDM) and passenger door module (PDM) will lock the doors and then the DDM will unlock the driver door.

Delayed Locking Operation

cardiagn.com

With any door open and a door lock switch is activated in the lock position, the driver door module (DDM), passenger door module (PDM) and the body control module (BCM) will go into a lock pending state. The BCM will also give three audible chimes. When the door is closed, the DDM, PDM and the BCM will lock the doors after approximately five seconds. This feature can be overridden by activating the door lock switch a second time and the doors will lock even with a door open.

Unlock After Air Bag Deployment

This feature will unlock all of the vehicle doors 15 seconds after an air bag deployment.

DOOR AJAR INDICATOR DESCRIPTION AND OPERATION

Door Ajar Indicator System Components

The door ajar indicator system consists of the following components:

- The driver door module (DDM)
- The passenger front door module (PDM)
- The body control module (BCM)
- The instrument panel cluster (IPC)
- The driver information center (DIC)
- The driver door ajar switch
- The passenger door ajar switch
- The left rear door ajar switch
- The right rear door ajar switch
- The liftgate ajar switch

Driver Door Ajar And Passenger Door Ajar

The DDM and PDM receive a discrete input from the respective door ajar switch to indicate the status of the door. The DDM or PDM then communicates this status to the IPC via class 2 message. The IPC, upon receipt of this class 2 message, will illuminate the appropriate door ajar message in the DIC and also send a class 2 message to the radio to activate the door ajar audible warning when the following conditions are met:

- The transmission is removed from PARK
- The vehicle speed is greater then 8.05 km/h (5 mph)

Left Rear Door Ajar And Right Rear Door Ajar

The BCM receives a discrete inputs from both the left and right rear door and liftgate ajar switches to indicate the status of the doors and liftgate. The BCM then communicates this status to the IPC via class 2 message. The IPC, upon receipt of this class 2 message, will illuminate the appropriate door ajar message in the DIC and also send a class 2 message to the radio to activate the door ajar audible warning when the following conditions are met:

cardiagn.com

- The transmission is removed from PARK
- The vehicle speed is greater then 8.05 km/h (5 mph)

OUTSIDE MIRROR DESCRIPTION AND OPERATION (POWER MIRRORS)

Power Mirror System

Power Mirror System Components

The power mirror system consists of the following components:

- The driver door module - Class 2 module with integrated switches and requires programming when replaced
- The passenger door module - Class 2 module with integrated switches, requires programming when replaced and also contains the RFA receiver
- The power mirror direction switch -Integrated into DDM and is a 4 position momentary switch that provides a signal input to the DDM for up, down, left/extend and right/retract with a mirror switch activation
- The mirror select switch - Integrated into DDM and is a 3 position switch that allows the operator to select the left or right mirror and also a neutral/fold position
- The left outside power mirror - Contains both the vertical and horizontal mirror motors and is serviced as a complete mirror assembly
- The right outside power mirror - Contains both the vertical and horizontal mirror motors and is serviced as a complete mirror assembly
- The body control module - Class 2 module that requires programming when replaced, serves as the power mode master and is the main message handler
- The DDM 10A fuse - Located in the I/P fuse block and is hot at all times
- The PDM 10A fuse - Located in the I/P fuse block and is hot at all times
- The memory switch, if equipped with memory mirrors - Supplied power by the DDM and provides a voltage signal to the DDM upon a switch activation
- The horizontal and vertical position sensors, if equipped with memory mirrors - Supplied a 5 volt and low reference by the DDM/PDM and provide a variable voltage signal to the DDM/PDM that is proportional to mirror position
- The park neutral position switch, if equipped with memory mirrors - Provides transmission gear selection information to the PCM and is used for memory recall and mirror tilt in reverse functions
- The powertrain control module, if equipped with memory mirrors - Class 2 module that requires programming when replaced and provides Class 2 message indicating transmission gear selection
- The driver Information Center (DIC), if equipped with memory mirrors - Part of the instrument cluster which is a Class 2 module that requires programming when replaced and is used to personalize the memory recall and mirror tilt in reverse functions
- Fold motor in each of the outside mirrors, if equipped with power fold mirrors - Provides extend and retract movements of the mirror and is serviced as a complete mirror assembly

cardiagn.com

Each of the outside power mirrors contains 2 reversible motors to provide horizontal and vertical movement of the mirror glass. The vertical motor operates the up and down directions and the horizontal motor operates the left and right directions. If equipped with power folding mirrors, each outside power mirror will contain a reversible fold motor to operate the extend and retract functions. Each of the mirror motors are circuit breaker protected.

Power Mirror System Controls

The power mirror switch incorporates a 3 position mirror select switch and a 4 position mirror direction switch. The mirror select switch allows the operator to select the mirror to be moved by selecting the L position for the left power mirror, selecting the R position for the right power mirror or the center which is the neutral/fold position. The mirror direction switch is a 4 position switch that allows the operator to move the selected mirror up, down, left or right. The mirror direction switch also functions as the folding mirror switch. When the selector switch is in the neutral/fold position, activate the mirror direction switch to the left to extend the mirrors and right to retract the mirrors.

Power Mirror System Operation

The power mirror switch is integrated into the DDM. The left and right mirror positions of the select switch and 4 positions of the direction switch, when active, will provide a signal to the DDM. If the selector switch is placed in the L position and the up switch is depressed, 2 signals will be supplied to the DDM. The DDM upon receipt of these signals will provide battery voltage to the mirror motor left/up control circuit and ground to the mirror motor down control circuit and the mirror will move up. The remainder of the driver mirror functions operate in the same manner as described above except the DDM will supply battery voltage and ground to the appropriate control circuits for the direction selected. If the passenger mirror is selected and a direction switch is activated, the DDM sends a class 2 message to the PDM indicating that the passenger mirror was selected and the direction to be commanded. The PDM will then supply battery voltage and ground to the appropriate control circuits for the direction selected.

Memory Mirror System

Memory Mirror System Controls

The DDM and PDM are capable of storing mirror positions and controlling the mirrors to these positions to the preferred settings of 2 different drivers. Each driver will be able to personalize the memory system by positioning the mirrors and seats to their preferred settings. Then press and hold the memory 1 or memory 2 button until an audible chime is heard and the current mirror positions will be stored into memory of the DDM and PDM. Seat position will be stored in the Driver Seat Module (DSM). Once the mirror and seat positions have been stored into memory, a momentary memory 1 or memory 2 switch activation will supply the DDM a battery voltage signal. The DDM, upon receipt of the memory switch signal, with the transmission in park or neutral, will then drive the driver mirror to the corresponding stored memory position. The DDM will also send a class 2 message to the PDM and DSM indicating that a memory switch activation occurred. The PDM will then drive the passenger mirror and the DSM will drive the driver seat to the corresponding stored memory position. The memory system can also be controlled by any of the following if programmed using the Driver Information Center (DIC) to enable/disable the features:

- Auto exit/entry seat positioning
- Mirror and seat position recall on a keyless entry unlock activation

cardiagn.com

- Mirror and seat position recall on ignition key insertion
- Mirror tilt in reverse

For further information on programming and configuration, refer to Driver Personalization in Personalization.

Memory Mirror System Operation

Mirror position is determined by both horizontal and vertical position sensors in each of the power mirrors. The DDM and PDM supplies a reference voltage and a low reference to these sensors and determines mirror position through the horizontal and vertical position signal circuits.

The memory switch receives power from the DDM through the battery supply voltage circuit and the DDM fuse. The DDM upon receipt of a memory switch signal input or an appropriate class 2 message from the BCM, the DDM and PDM will then supply battery voltage and ground to the appropriate power mirror motors through the mirror motor control circuits to move the mirrors to the predetermined positions.

Mirror Tilt in Reverse Controls

This feature is capable of tilting the left, right or both power mirrors when the transmission is placed in reverse to provide enhanced visibility during parking or backing maneuvers and is programmable through the Driver Information Center. This feature can be personalized to the needs of 2 different drivers. For further information, refer to Driver Personalization in Personalization.

Mirror Tilt in Reverse Operation

When the vehicle is placed in reverse and the appropriate class 2 message from the BCM is received by the DDM and PDM, the DDM and PDM will then supply battery voltage and ground to the appropriate power mirror motors through the mirror motor control circuits to move the mirrors to the predetermined positions. The positions that are stored can be altered by starting the engine, applying the brake, placing the vehicle in reverse and controlling both the left and right mirrors the desired positions and shifting the vehicle out of reverse. These new positions will be stored for the last memory recall that happened.

Folding Mirror System

Folding Mirror System Controls

The folding mirror system requires signals from 2 separate switches. The mirror select switch must be in the neutral/fold position and the mirror direction switch must be activated to the left/extend or right/retract positions. Both switches are integrated into the DDM and provide direct signals.

Folding Mirror System Operation

Upon receipt of the required switch inputs the DDM will supply battery voltage and ground to the mirror fold motor control circuits to perform the requested extend or retract function. The DDM will also send a class 2 message to the PDM indicating the requested function. The PDM will supply battery voltage and ground to the mirror fold motor control circuits to perform the requested extend or retract function.

cardiagn.com

OUTSIDE MIRROR DESCRIPTION AND OPERATION (HEATED MIRRORS)

Heated OSRV Mirror

On vehicles equipped with heated OSRV mirrors, the DDM and PDM controls the activation of the mirror heaters. Upon receiving a Class 2 message indicating a request for heated mirrors, the DDM, and PDM for the passenger side, will activate the mirror heater output. The mirror heaters will remain active until a new message is received indicating rear defogger is to be deactivated, either by driver input or by expiration of a calibrated timer.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Special Tools

Illustration	Tool Number/ Description
	J 9886-01 Door Handle Remover

cardiagn.com