

2004 Cadillac SRX

2004 ACCESSORIES & EQUIPMENT Seats - SRX

2004 ACCESSORIES & EQUIPMENT**Seats - SRX****SPECIFICATIONS****FASTENER TIGHTENING SPECIFICATIONS****Fastener Tightening Specifications**

Application	Specification	
	Metric	English
Armrest Nuts	9 N.m	80 lb in
Bottom Panel Screws - Rear Seat No. 1	2 N.m	18 lb in
Front Seat Anchor Bolts	30 N.m	22 lb ft
Front Seat Retractor Nut	26 N.m	19 lb ft
Horizontal Motor Screws - Rear Seat No. 2	10 N.m	88 lb in
Latch Assembly Screw - Rear Seat No. 1	2 N.m	18 lb in
Left and Right Front Seat Upper and Lower Retractor Nuts	55 N.m	40 lb ft
Left and Right Pretensioner / Seat Belt Buckle Nut	42 N.m	31 lb ft
Left and Right Rear Shoulder Belt Retractor Bolts and Nuts	30 N.m	22 lb ft
Pivot Bolt to Front Seat Back Frame	35 N.m	26 lb ft
Pivot Cover Screws - Rear Seat No. 1	2 N.m	18 lb in
Power Recliner Motor to Seat Adjuster Nuts	10 N.m	88 lb in
Rear Seat Back Bolts	35 N.m	26 lb ft
Rear Seat Back Panel Bolts - Rear Seat No. 2	9 N.m	80 lb in
Rear Seat Belt Buckler Nuts - Rear Seat No. 1	42 N.m	31 lb ft
Rear Seat Control Module Nuts	9 N.m	80 lb in
Rear Seat Cushion Nuts	24 N.m	18 lb ft
Rear Seat Mounting Nuts	45 N.m	33 lb ft
Rear Seat Release Latch Screws	2 N.m	18 lb in
Recliner Arm Cover Screws	2 N.m	18 lb in
Recliner Motor Screws - Rear No. 2	10 N.m	88 lb in
Roller Assembly Bolt	52 N.m	38 lb ft
Roller Assembly Cover Screws	5 N.m	44 lb in
Rotation Motor Bolts - Rear No. 2	7 N.m	62 lb in

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Seat Back Frame to Recliner Bolts	52 N.m	38 lb ft
Seat Belt Guide Screw - Rear No. 1	2 N.m	18 lb in
Seat Cushion to Adjuster Assembly Nuts	9 N.m	80 lb in

SCHEMATIC AND ROUTING DIAGRAMS

DRIVER SEAT SCHEMATICS

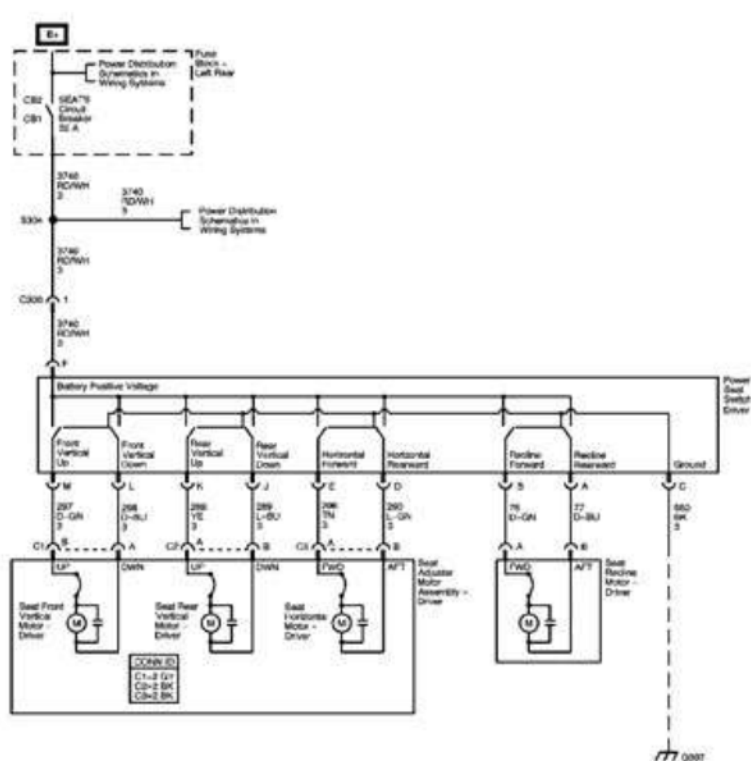


Fig. 1: Power Seat (w/o A45) Schematic
 Courtesy of GENERAL MOTORS CORP.

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Courtesy of GENERAL MOTORS CORP.

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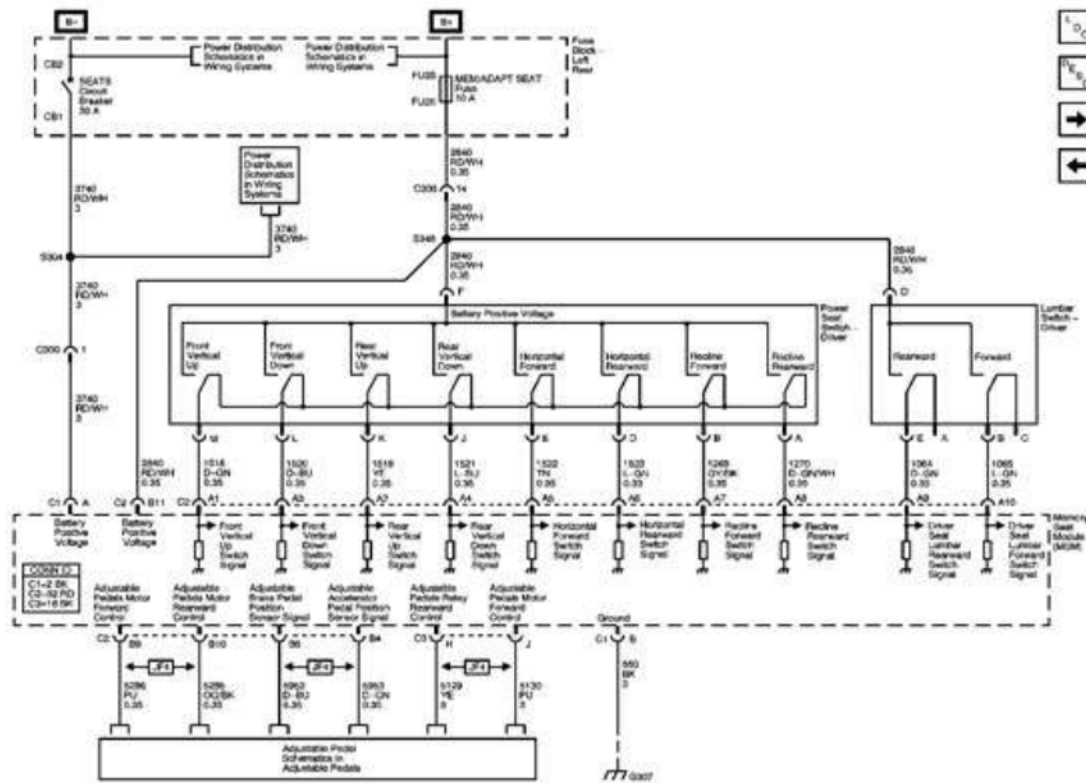


Fig. 3: Memory Seat Module Power, Ground, & Seat Adjuster Switches (A45) Schematic
 Courtesy of GENERAL MOTORS CORP.



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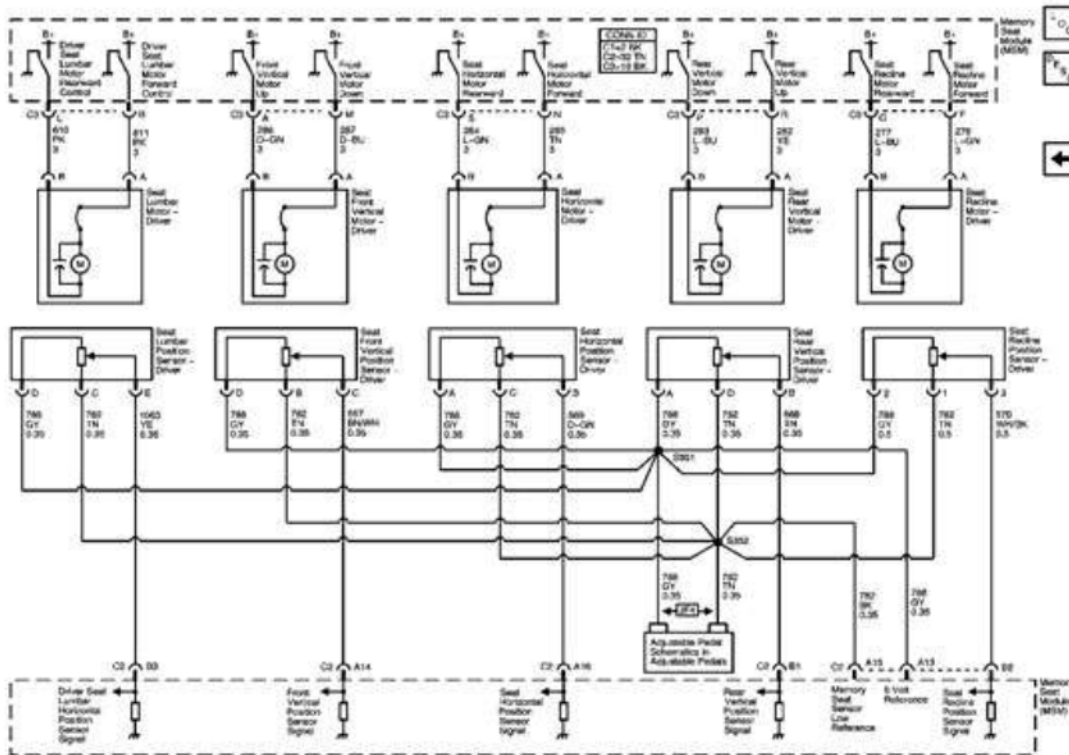


Fig. 5: Memory Seat Position Sensors & Motors (A45) Schematic
 Courtesy of GENERAL MOTORS CORP.

PASSENGER SEAT SCHEMATICS

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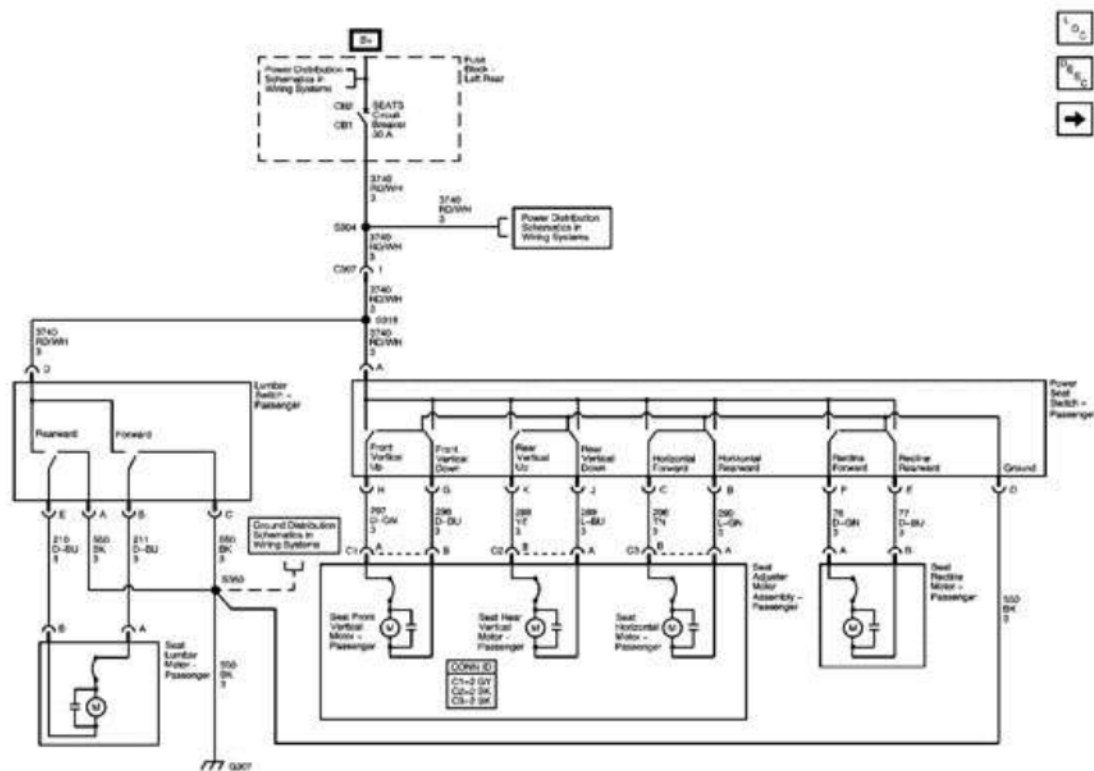
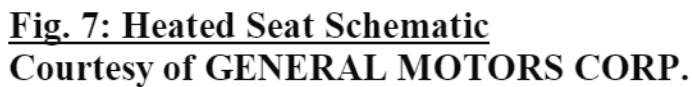


Fig. 6: Power Seat Schematic
Courtesy of GENERAL MOTORS CORP.

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REAR SEAT SCHEMATICS

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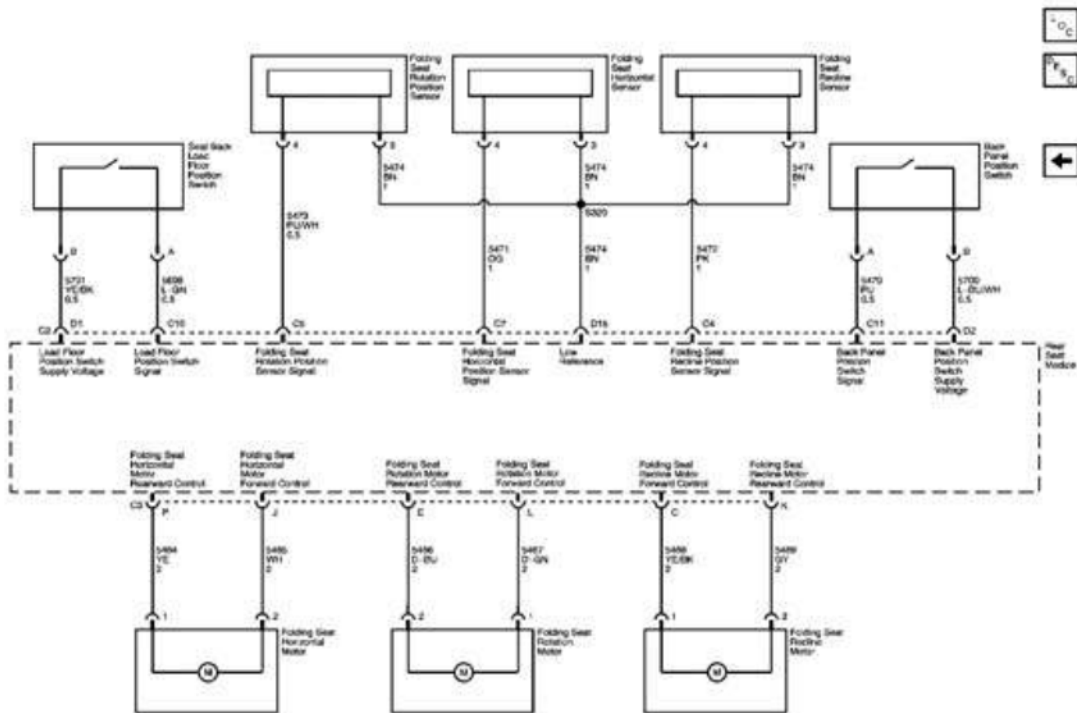


Fig. 9: Motors, Sensors, & Position Switches (AM0) Schematic
 Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

POWER SEAT SYSTEMS COMPONENT VIEWS

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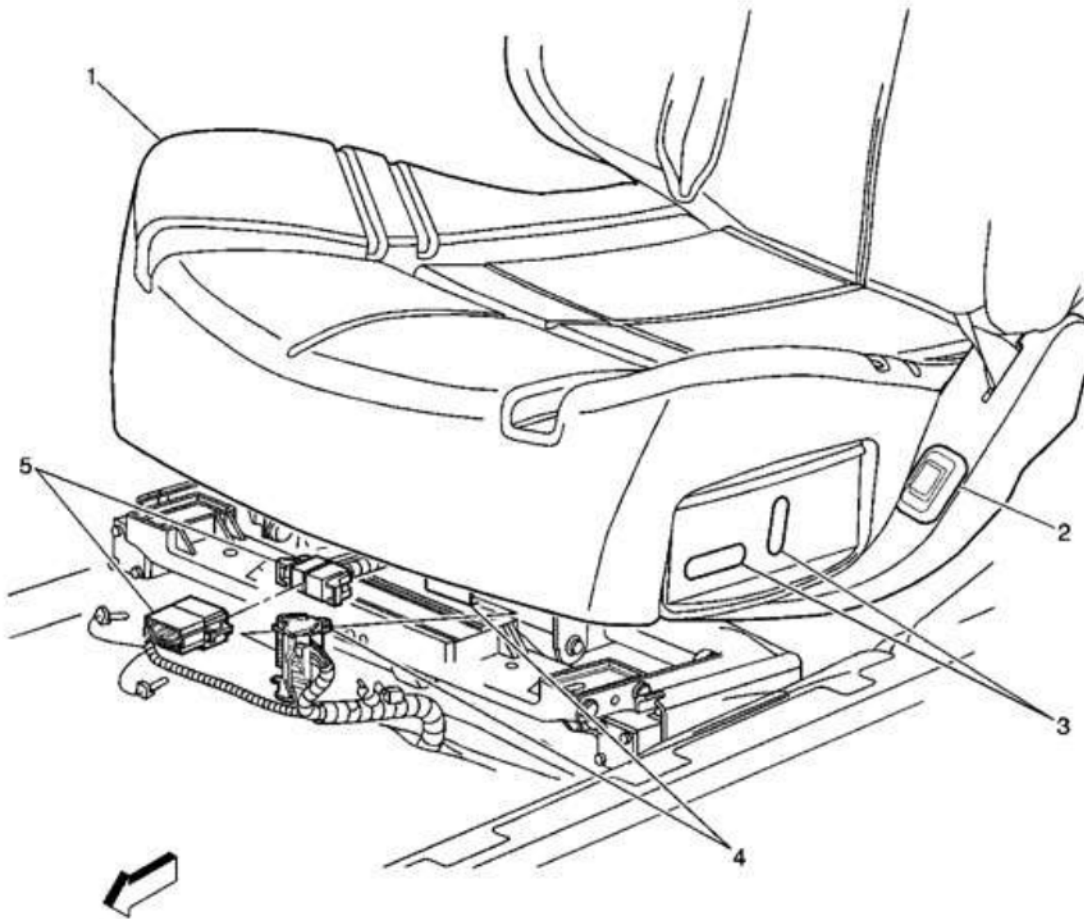


Fig. 10: Driver Seat Switches & Inlines Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 10

Callout	Component Name
1	Driver Seat Cushion
2	Seat Lumbar Switch - Driver, Passenger Similar (AL2)
3	Seat Adjuster Switch - Driver, Passenger Similar
4	C300, C307 Similar
5	C301, C306 Similar

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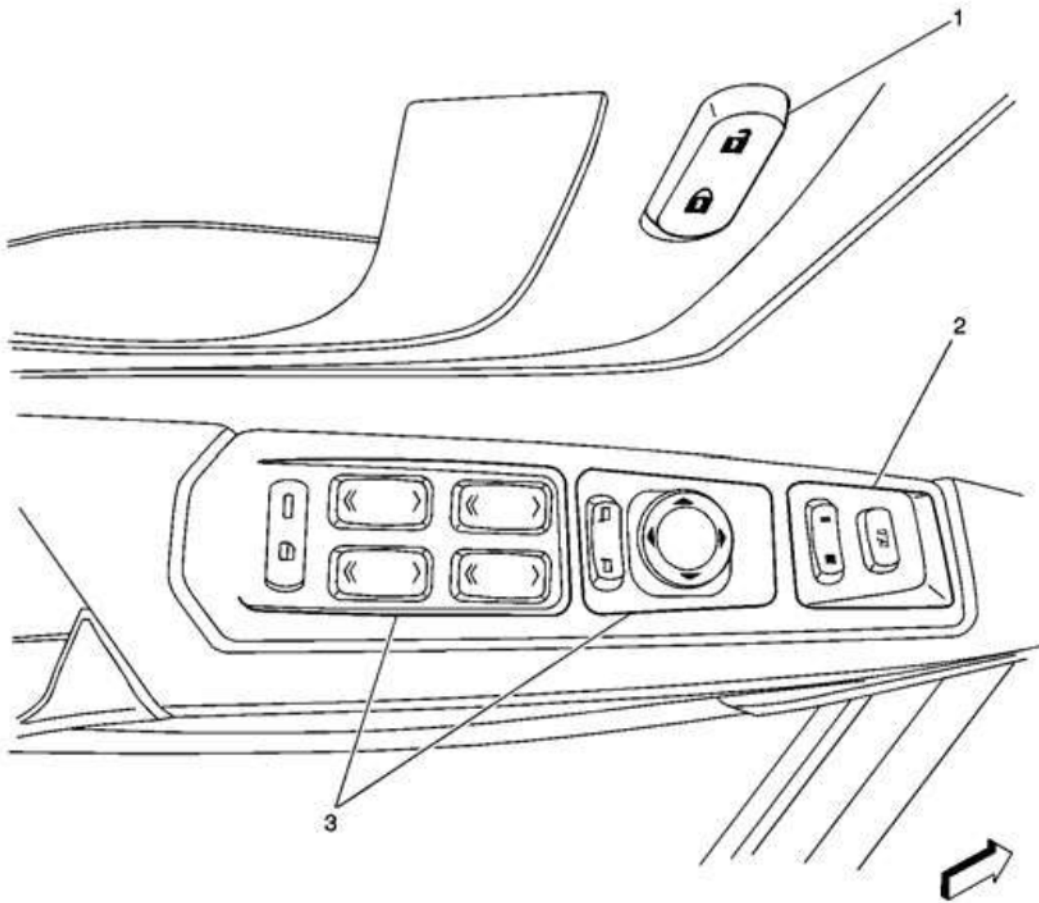


Fig. 11: Driver Door Switches Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 11

Callout	Component Name
1	Door Lock Switch - Driver, Passenger Similar
2	Memory Seat Switch (A45)
3	Driver Door Switch Assembly (DDSA)

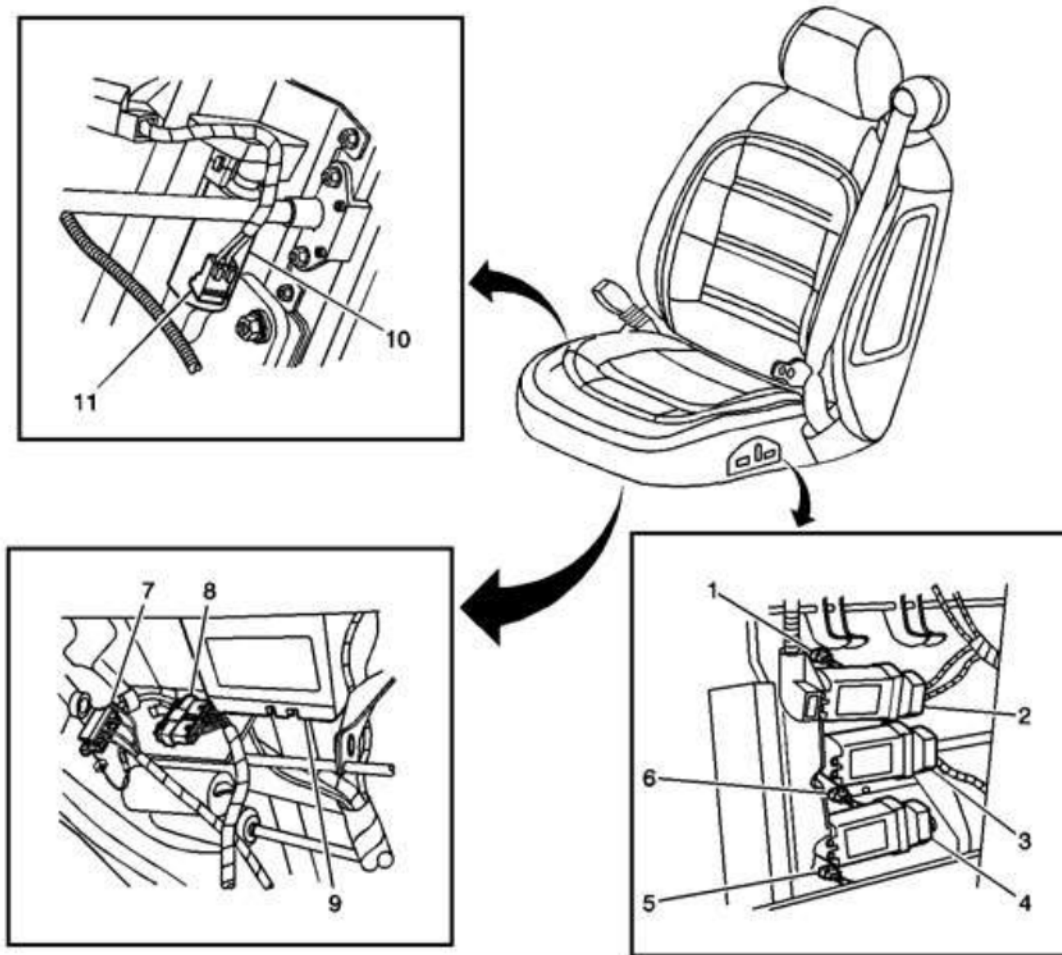


Fig. 12: Seat Motors & MSM Component View
 Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 12

Callout	Component Name
1	Seat Front Vertical Motor - Driver Connector (Passenger Similar)
2	Seat Front Vertical Motor - Driver (Passenger Similar)
3	Seat Horizontal Motor - Driver, Passenger Similar
4	Seat Rear Vertical Motor - Driver, Passenger Similar
5	Seat Rear Vertical Motor - Driver Connector, Passenger Similar
6	Horizontal Motor Connector - Driver Seat, Passenger Similar
7	C301
8	C300

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9	Memory Seat Module (MSM)
10	Seat Recline Motor
11	Seat Recline Motor Connector

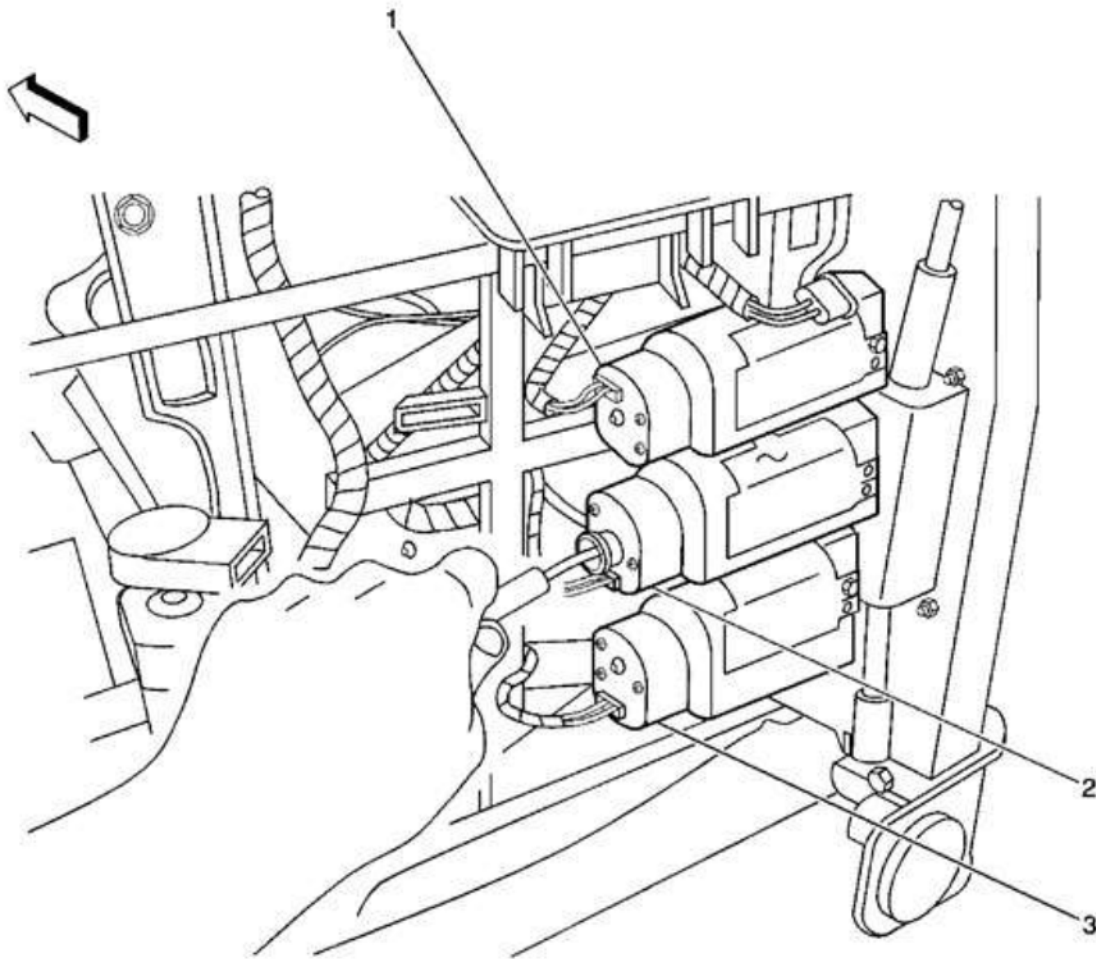


Fig. 13: Power Seat Position Sensors Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 13

Callout	Component Name
1	Seat Front Vertical Position Sensor - Driver
2	Seat Horizontal Position Sensor - Driver
3	Seat Rear Vertical Position Sensor - Driver

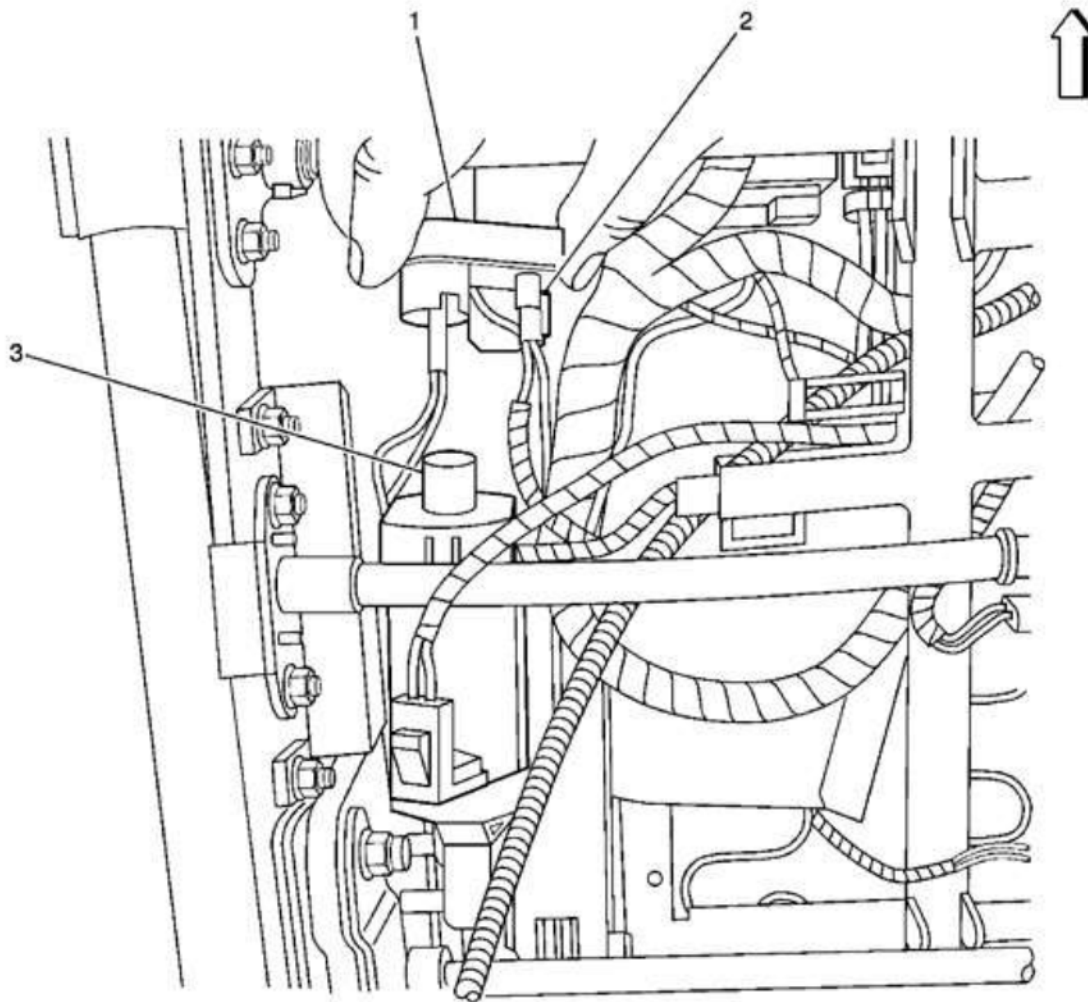


Fig. 14: Seat Recline Motor & Sensor Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 14

Callout	Component Name
1	Seat Recline Position Sensor - Driver (w/A45) (Passenger Similar)
2	Seat Recline Position Sensor - Driver Connector (Passenger Similar)
3	Seat Recline Motor - Driver (Passenger Similar)

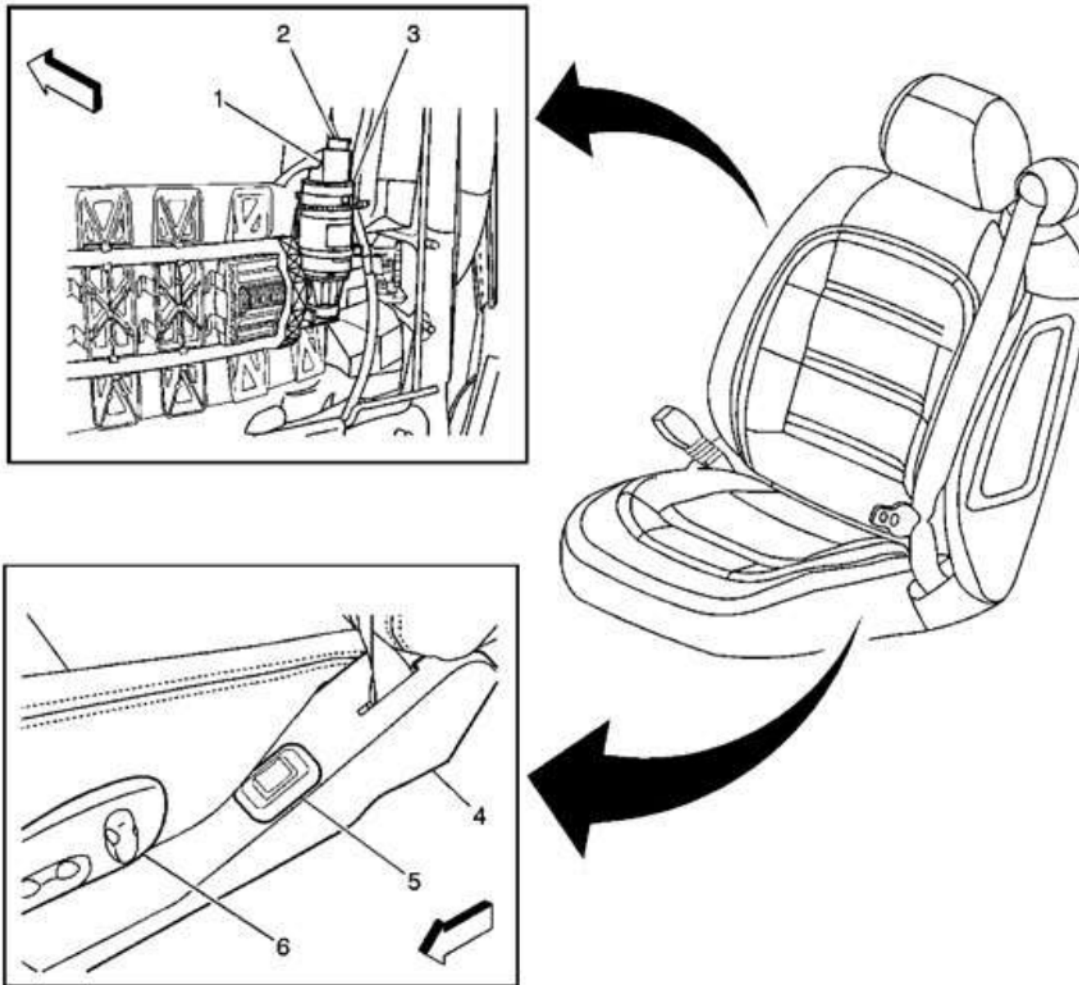


Fig. 15: Seat Lumbar Components (AL2) Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 15

Callout	Component Name
1	Seat Lumbar Position Sensor - Driver, Passenger Similar
2	Seat Lumbar Motor - Driver Connector, Passenger Similar
3	Seat Lumbar Motor - Driver, Passenger Similar
4	Seat Track Trim Panel - Driver, Passenger Similar
5	Seat Lumbar Switch - Driver, Passenger Similar
6	Seat Adjuster Switch - Driver, Passenger Similar

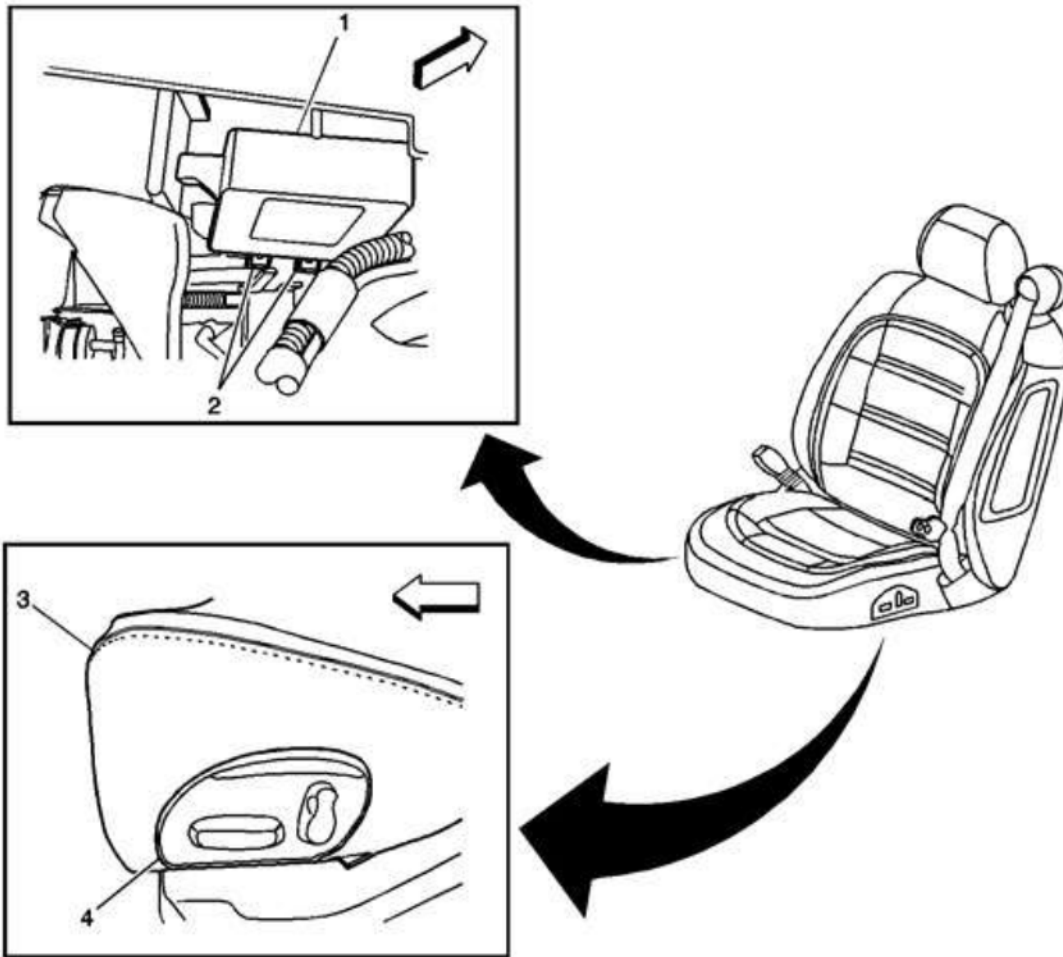


Fig. 16: Heated Seat Module & Seat Switch Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 16

Callout	Component Name
1	Heated Seat Module - Driver (KA1) (Front Passenger Similar)
2	Heated Seat Module Connectors
3	Driver Seat
4	Seat Adjuster Switch - Driver (Front Passenger Similar)

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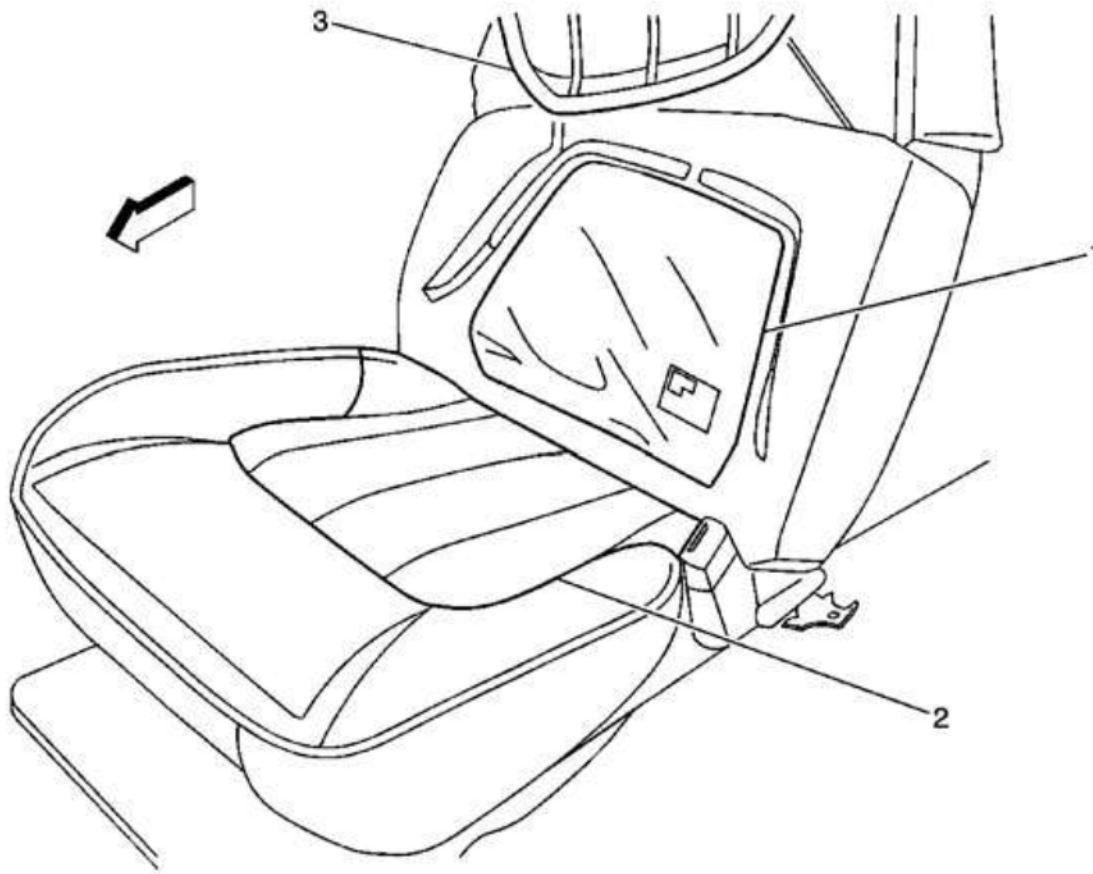


Fig. 17: Heated Seat Components
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 17

Callout	Component Name
1	Heated Seat Element - Front Passenger Seat Back (Driver Similar)
2	Heated Seat Element - Front Passenger Seat Cushion Front and Rear and Heated Seat Thermistor - Front Passenger (Under Seat Cover) (Driver Similar)
3	Seat Cover, Partially Removed

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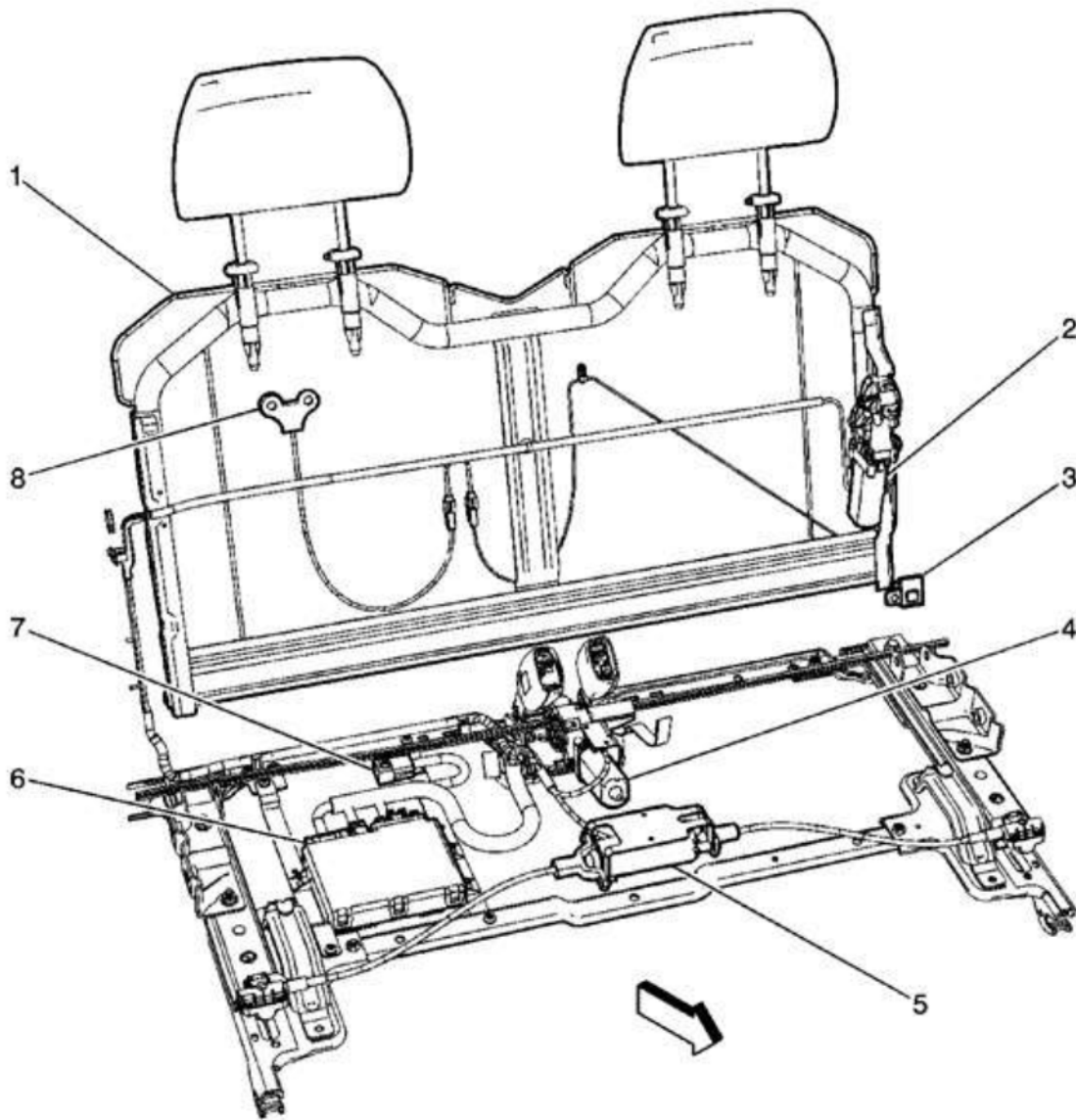


Fig. 18: Third Row Folding Seats (AM0) Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 18

Callout	Component Name
1	Third Row Seats
2	Folding Seat Rotation Motor Assembly
3	Seat Back Load Floor Position Switch
4	Folding Seat Recline Motor Assembly
5	Folding Seat Horizontal Motor Assembly

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6	Rear Seat Module
7	C311
8	Seat Back Panel Position Switch

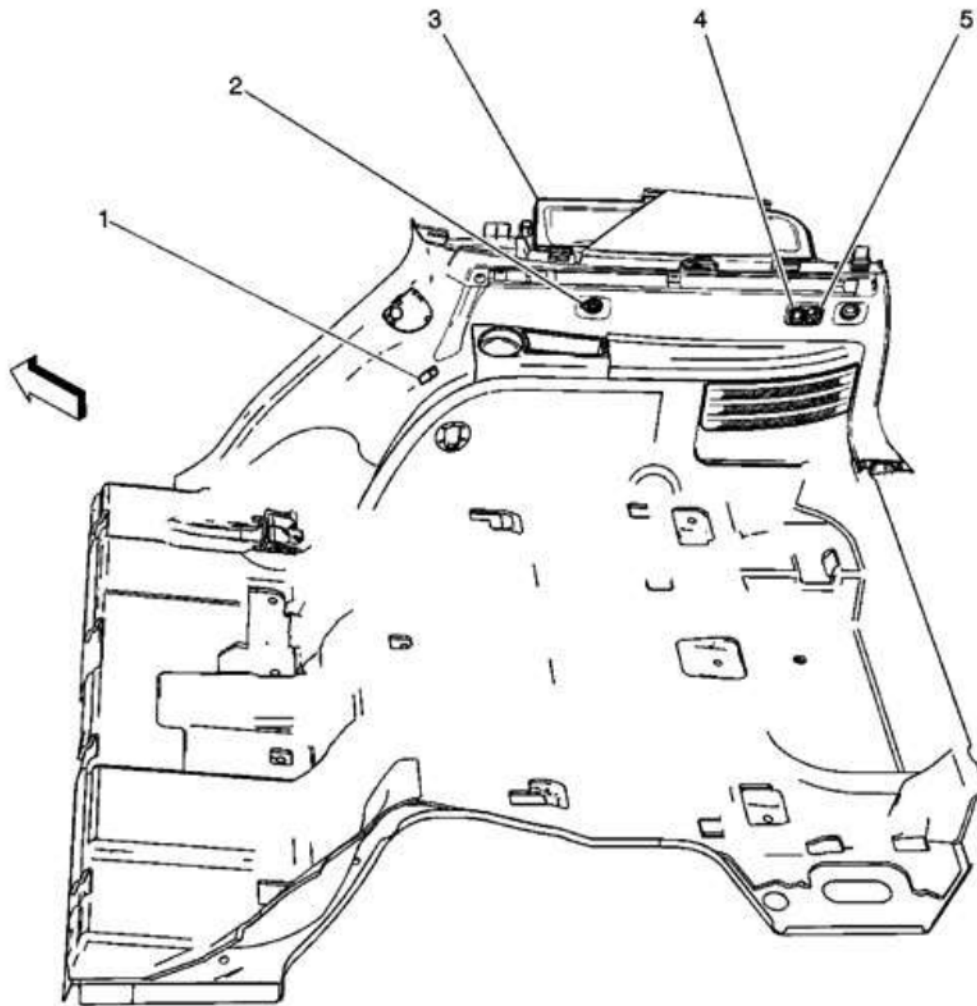


Fig. 19: Right Rear Of Cargo Area Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 19

Callout	Component Name
1	Folding Seat Stow Switch - Front (AM0)
2	Auxiliary Power Outlet - Rear
3	Storage Compartment

4	Folding Seat Recline Switch (AM0)
5	Folding Seat Stow Switch - Rear (AM0)

POWER SEAT SYSTEMS CONNECTOR END VIEWS

Folding Seat Horizontal Motor Assembly (AM0) Terminal Identification

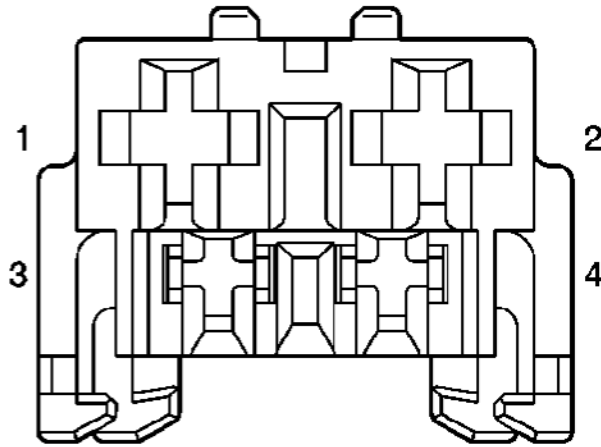
Connector Part Information		• 968182-1 • 4-Way M Amp (BK)	
Pin	Wire Color	Circuit No.	Function
1	YE	5464	Folding Seat Horizontal Motor Rearward Control
2	WH	5465	Folding Seat Horizontal Motor Forward Control
3	BN	5474	Folding Seat Position Sensor Low Reference
4	OG	5471	Folding Seat Horizontal Position Sensor Signal

Folding Seat Recline Motor Assembly (AM0) Terminal Identification

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Connector Part Information

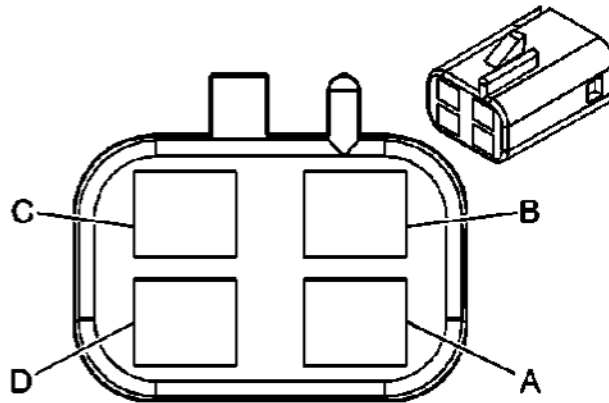
- 968182-1
- 4-Way M Amp (BK)

Pin	Wire Color	Circuit No.	Function
1	YE/BK	5468	Folding Seat Back Recline Motor Forward Control
2	GY	5469	Folding Seat Back Recline Motor Rearward Control
3	BN	5474	Folding Seat Position Sensor Low Reference
4	PK	5472	Folding Seat Recline Position Sensor Signal

Folding Seat Recline Switch (AM0) Terminal Identification

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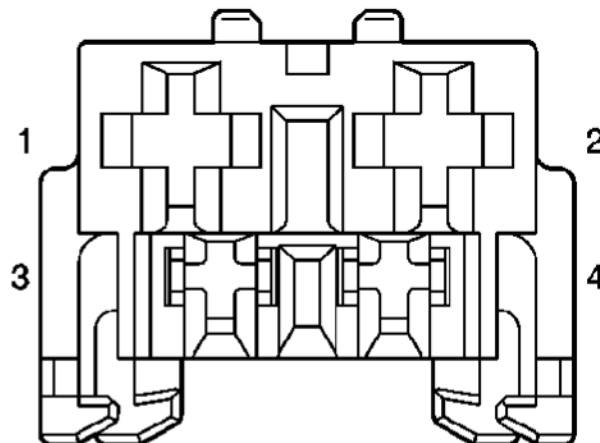


Connector Part Information

- 12047785
- 4-Way F Metri-Pack 150 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	RD/WH	4540	Battery Positive Voltage
B	-	-	Not Used
C	L-BU	5368	Folding Seat Recline Switch Signal
D	-	-	Not Used

Folding Seat Rotation Motor Assembly (AM0) Terminal Identification



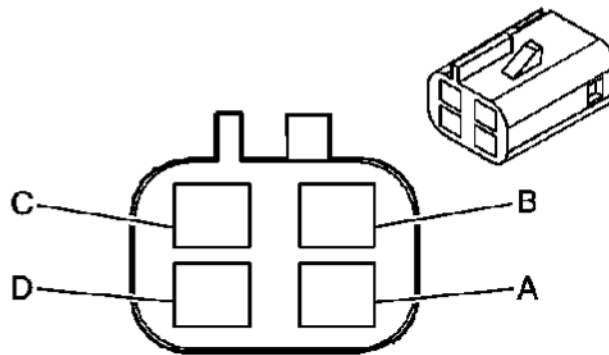
- 968182-1

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Connector Part Information		• 4-Way M Amp (BK)	
Pin	Wire Color	Circuit No.	Function
1	D-GN	5467	Folding Seat Back Rotation Motor Forward Control
2	D-BU	5466	Folding Seat Back Rotation Motor Rearward Control
3	BN	5474	Folding Seat Position Sensor Low Reference
4	PU/WH	5473	Folding Seat Rotation Position Sensor Signal

Folding Seat Stow Switch Terminal Identification - Front (AM0)

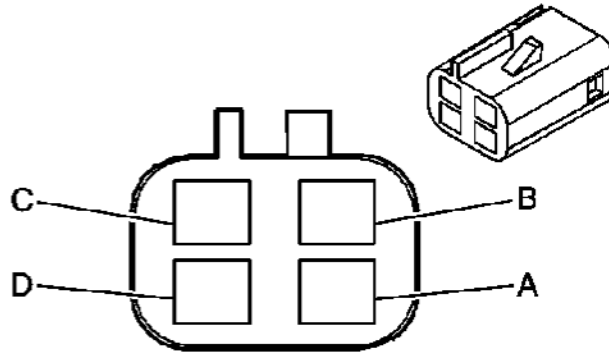


Connector Part Information		• 15419483 • 4-Way F Metri-Pack 150 Series (BK)	
Pin	Wire Color	Circuit No.	Function
A	RD/WH	4540	Battery Positive Voltage
B	-	-	Not Used
C	D-BU	5366	Folding Seat Front Stow Switch Signal
D	-	-	Not Used

Folding Seat Stow Switch Terminal Identification - Rear (AM0)

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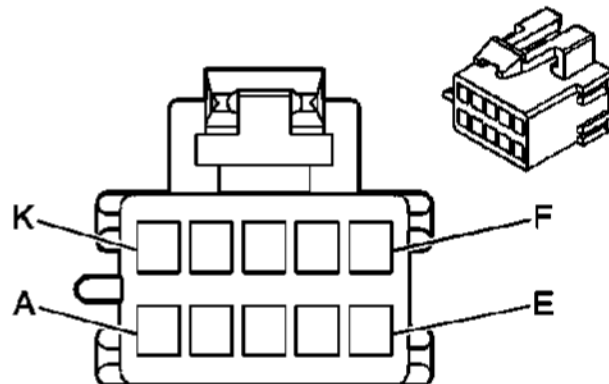


Connector Part Information

- 15419483
- 4-Way F Metri-Pack 150 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	RD/WH	4540	Battery Positive Voltage
B	-	-	Not Used
C	D-BU/WH	5367	Folding Seat Rear Stow Switch Signal
D	-	-	Not Used

Heated Seat Control Module Terminal Identification - Driver C1 (KA1)



Connector Part Information

- 12064769
- 10-Way F Metri-Pack 150 Series (WH)

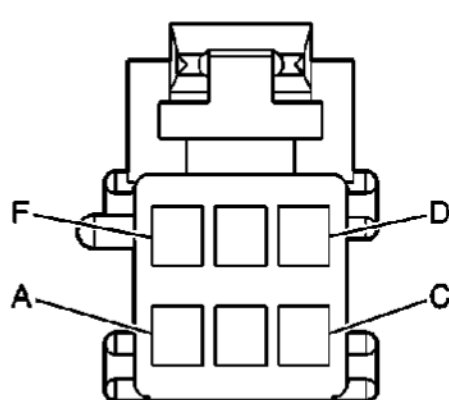
Pin	Wire Color	Circuit No.	Function

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A	RD/WH	2440	Battery Positive Voltage
B	BN	41	Ignition 3 Voltage
C	L-BU/WH	181	Heated Seat Control Module Status Signal
D	-	-	Not Used
E	PK	1501	Driver Heated Seat High/Low Signal
F-J	-	-	Not Used
K	BK	550	Ground

Heated Seat Control Module Terminal Identification - Driver C2 (KA1)

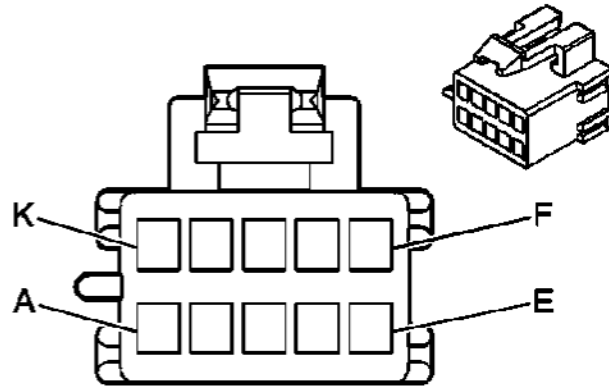


Connector Part Information		• 12064762 • 6-Way F Metri-Pack 150 Series (L-GY)	
Pin	Wire Color	Circuit No.	Function
A	YE	9529	Heated Seat Element Supply Voltage
B	-	-	Not Used
C	YE	9530	Heated Seat Element Control
D	BK/RD	9534	Heated Seat Temperature Sensor Low Reference
E	-	-	Not Used
F	BK/RD	9533	Heated Seat Temperature Sensor Signal

Heated Seat Control Module Terminal Identification - Passenger C1 (KA1)

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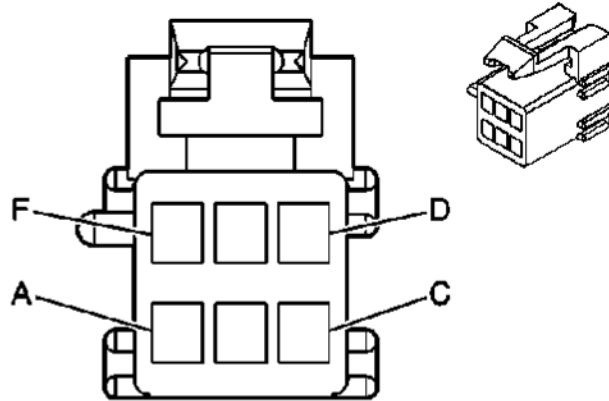


Connector Part Information		• 12064769 • 10-Way F Metri-Pack 150 Series (WH)	
Pin	Wire Color	Circuit No.	Function
A	OG	2540	Battery Positive Voltage
B	BN	41	Ignition 3 Voltage
C	L-BU/WH	2181	Passenger Heated Seat Control Module Status Signal
D	-	-	Not Used
E	PK	1503	Passenger Heated Seat High/Low Signal
F-J	-	-	Not Used
K	BK	550	Ground

Heated Seat Control Module Terminal Identification - Passenger C2 (KA1)

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Connector Part Information

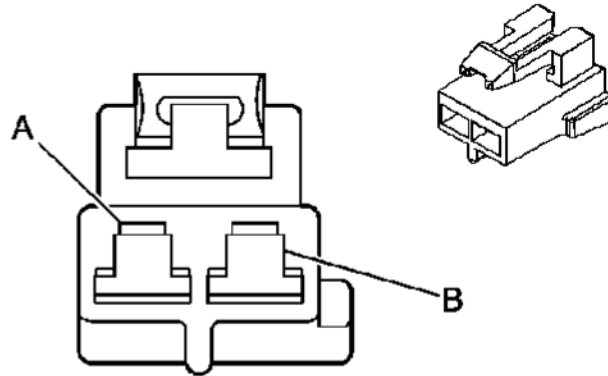
- 12064762
- 6-Way F Metri-Pack 150 Series (L-GY)

Pin	Wire Color	Circuit No.	Function
A	YE	9529	Heated Seat Element Supply Voltage
B	-	-	Not Used
C	YE	9530	Heated Seat Element Control
D	BK/RD	9534	Heated Seat Temperature Sensor Low Reference
E	-	-	Not Used
F	BK/RD	9533	Heated Seat Temperature Sensor Signal

Memory Seat Module Terminal Identification - Driver C1 (A45)

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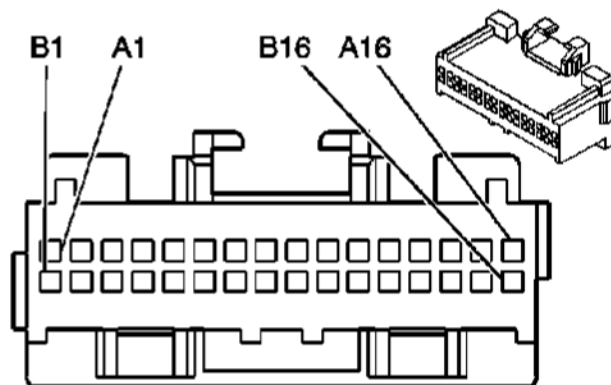


Connector Part Information

- 12064749
- 2-Way F Metri-Pack 480 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	RD/WH	3740	Battery Positive Voltage
B	BK	550	Ground

Memory Seat Module Terminal Identification - Driver C2 (A45)



Connector Part Information

- 12110113
- 32-Way F Micro-Pack 100 Series (RD)

Pin	Wire Color	Circuit No.	Function
A1	D-GN	1518	Power Seat Front Vertical Up Switch Signal

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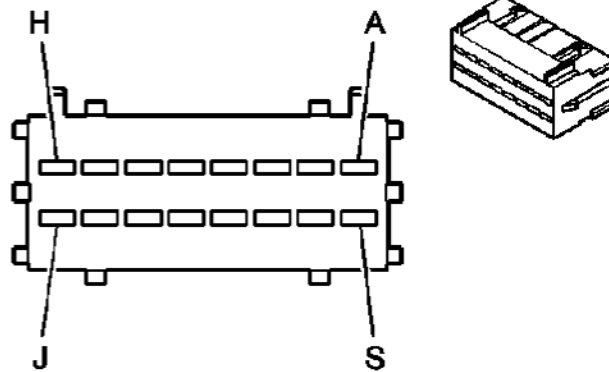
A2	YE	1519	Power Seat Rear Vertical Up Switch Signal
A3	D-BU	1520	Power Seat Front Vertical Down Switch Signal
A4	L-BU	1521	Power Seat Rear Vertical Down Switch Signal
A5	TN	1522	Power Seat Horizontal Forward Switch Signal
A6	L-GN	1523	Power Seat Horizontal Rearward Switch Signal
A7	GY/BK	1269	Power Seat Recline Forward Switch Signal
A8	D-GN/WH	1270	Power Seat Recline Rearward Switch Signal
A9	D-BU	1064	Driver Seat Lumbar Rearward Switch Signal (AL2)
A10	YE	1065	Driver Seat Lumbar Forward Switch Signal (AL2)
A11-A12	-	-	Not Used
A13	GY	788	5-Volt Reference
A14	BN/WH	557	Front Vertical Seat Motor Position Sensor Signal
A15	TN	782	Memory Seat/Mirror Sensor Low Reference
A16	D-GN	569	Horizontal Seat Motor Position Sensor Signal
B1	TN	568	Rear Vertical Seat Motor Position Sensor Signal
B2	WH/BK	570	Driver Seat Recline Motor Position Sensor Signal
B3	YE	1063	Driver Seat Lumbar Horizontal Position Sensor Signal (AL2)
B4	D-GN	5953	Adjustable Accelerator Pedal Position Sensor Signal (JF4)
B5	-	-	Not Used
B6	D-BU	5952	Adjustable Brake Pedal Position Sensor Signal

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B7-B8	-	-	Not Used
B9	PU	5286	Adjustable Pedals Motor Forward Control (JF4)
B10	OG/BK	5285	Adjustable Pedals Motor Rearward Control (JF4)
B11	RD/WH	2840	Battery Positive Voltage
B12-B13	-	-	Not Used
B14	PU	1807	Class 2 Serial Data
B15-B16	-	-	Not Used

Memory Seat Module Terminal Identification - Driver C3 (A45)



Connector Part Information

- 12129431
- 16-Way F Metri-Pack 280 Series (BK)

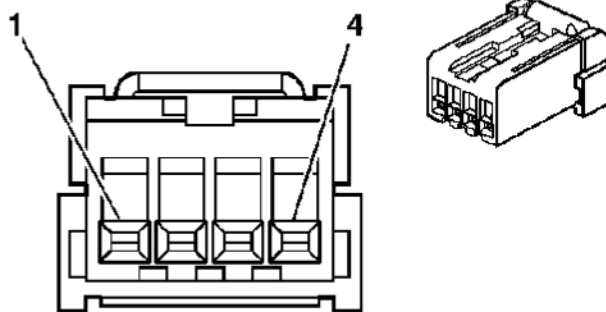
Pin	Wire Color	Circuit No.	Function
A	D-GN	286	Driver Seat Front Vertical Motor Up Control
B	D-BU	611	Driver Seat Lumbar Motor Forward Control (AL2)
C-E	-	-	Not Used
F	L-GN	276	Driver Seat Recline Motor Forward Control
G	L-BU	277	Driver Seat Recline Motor Rearward Control
H	YE	5129	Adjustable Pedals Relay Rearward

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			Control (JF4)
J	PU	5130	Adjustable Pedals Relay Forward Control (JF4)
K	-	-	Not Used
L	PK	610	Driver Seat Lumbar Motor Rearward Control (AL2)
M	D-BU	287	Driver Seat Front Vertical Motor Down Control
N	TN	285	Driver Seat Horizontal Motor Forward Control
P	L-BU	283	Driver Seat Rear Vertical Motor Down Control
R	YE	282	Driver Seat Rear Vertical Motor Up Control
S	L-GN	284	Driver Seat Horizontal Motor Rearward Control

Memory Seat Switch (A45) Terminal Identification



Connector Part Information

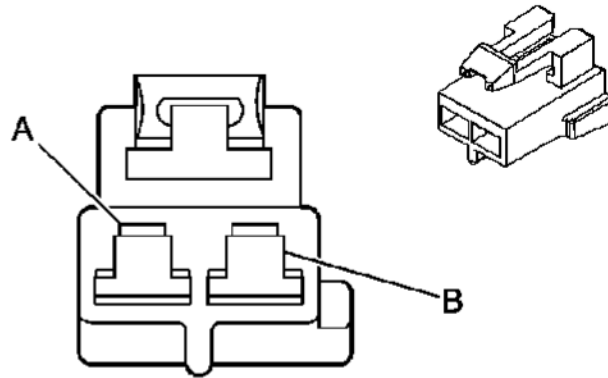
- 174966
- 4-Way F AMP Multi-Lock (BK)

Pin	Wire Color	Circuit No.	Function
1	YE	1491	Backlight Lamps Control
2	PU	616	Memory 2 Switch Signal
3	BK/WH	351	Ground
4	WH	615	Memory 1 Switch Signal

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Rear Seat Module C1 (AM0) Terminal Identification

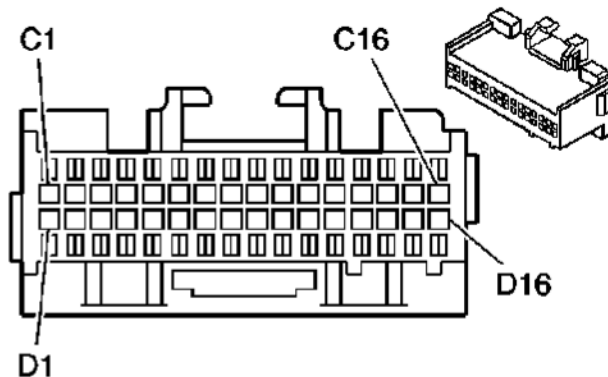


Connector Part Information

- 12064749
- 2-Way F Metri-Pack 480 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	RD/WH	140	Battery Positive Voltage
B	BK	1050	Ground

Rear Seat Module C2 (AM0) Terminal Identification



Connector Part Information

- 12110114
- 32-Way F Micro-Pack 100 Series (WH)

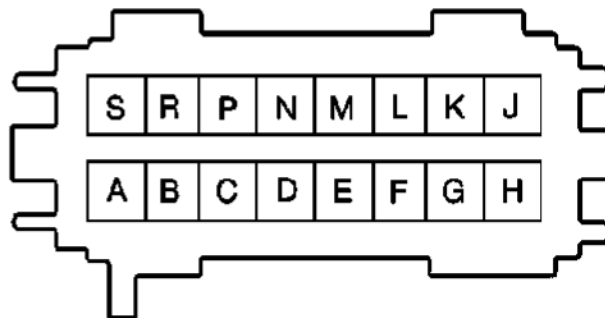
Pin	Wire Color	Circuit No.	Function
C1-C3	-	-	Not Used

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C4	PK	5472	Folding Seat Recline Position Sensor Signal
C5	PU/WH	5473	Folding Seat Rotation Position Sensor Signal
C6	-	-	Not Used
C7	OG	5471	Folding Seat Horizontal Position Sensor Signal
C8-C9	-	-	Not Used
C10	L-GN	5698	Load Floor Position Switch Signal
C11	PU	5470	Back Panel Position Switch Signal
C12	D-BU	5366	Folding Seat Front Stow Switch Signal
C13	L-BU	5368	Folding Seat Recline Switch Signal
C14	-	-	Not Used
C15	D-BU/WH	5367	Folding Seat Rear Stow Switch Signal
C16	PU	1807	Class 2 Serial Data
D1	YE/BK	5701	Load Floor Position Switch Supply Voltage
D2	L-BU/WH	5700	Back Panel Position Switch Supply Voltage
D3-D14	-	-	Not Used
D15	BN	5474	Folding Seat Position Sensor Low Reference
D16	-	-	Not Used

Rear Seat Module C3 (AM0) Terminal Identification

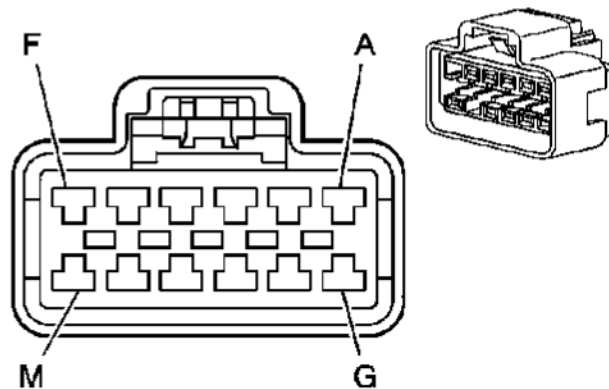


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2004 ACCESSORIES & EQUIPMENT Seats - SRX

Connector Part Information		• 16-Way F Metri-Pack 280 Series (GY)	
Pin	Wire Color	Circuit No.	Function
A-B	-	-	Not Used
C	YE/BK	5468	Folding Seat Back Recline Motor Forward Control
D	-	-	Not Used
E	D-BU	5466	Folding Seat Back Rotation Motor Rearward Control
F-H	-	-	Not Used
J	WH	5465	Folding Seat Horizontal Motor Forward Control
K	GY	5469	Folding Seat Back Recline Motor Rearward Control
L	D-GN	5467	Folding Seat Back Rotation Motor Forward Control
M-N	-	-	Not Used
P	YE	5494	Folding Seat Horizontal Motor Rearward Control
R-S	-	-	Not Used

Seat Adjuster Switch Terminal Identification - Driver (w/o A45)



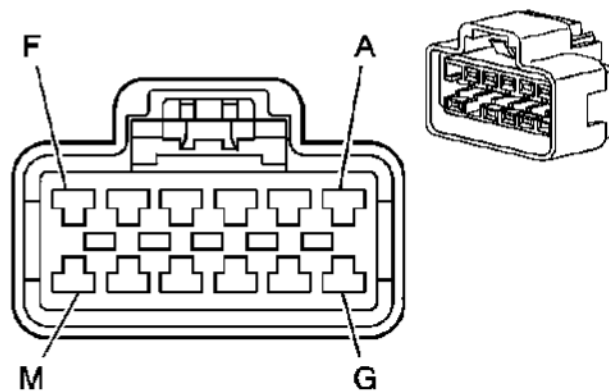
Connector Part Information		• 15326110 • 12-Way F GT 280 Series (BK)	
Pin	Wire Color	Circuit No.	Function

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2004 ACCESSORIES & EQUIPMENT Seats - SRX

A	D-BU	77	Driver Seat Recline Motor Rearward
B	D-GN	76	Driver Seat Recline Motor Forward
C	BK	550	Ground
D	L-GN	290	Driver Seat Horizontal Motor Rearward Control
E	TN	296	Driver Seat Horizontal Motor Forward Control
F	RD/WH	3740	Battery Positive Voltage
G-H	-	-	Not Used
J	L-BU	289	Driver Seat Rear Vertical Motor Down Control
K	YE	288	Driver Seat Rear Vertical Motor Up Control
L	D-BU	298	Driver Seat Front Vertical Motor Down Control
M	D-GN	297	Driver Seat Front Vertical Motor Up Control

Seat Adjuster Switch Terminal Identification - Driver (A45)



Connector Part Information

- 15326110
- 12-Way F GT 280 Series (BK)

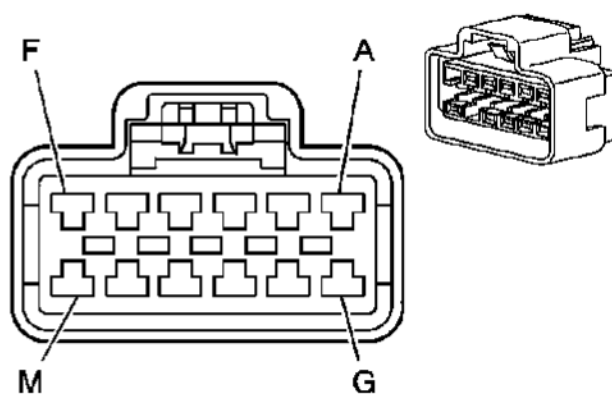
Pin	Wire Color	Circuit No.	Function
A	D-GN/WH	1270	Power Seat Recline Rearward Switch Signal

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B	GY/BK	1269	Power Seat Recline Forward Switch Signal
C	-	-	Not Used
D	L-GN	1523	Power Seat Horizontal Rearward Switch Signal
E	TN	1522	Power Seat Horizontal Forward Switch Signal
F	RD/WH	2840	Battery Positive Voltage
G-H	-	-	Not Used
J	L-BU	1521	Power Seat Rear Vertical Down Switch Signal
K	YE	1519	Power Seat Rear Vertical Up Switch Signal
L	D-BU	1520	Power Seat Front Vertical Down Switch Signal
M	D-GN	1518	Power Seat Front Vertical Up Switch Signal

Seat Adjuster Switch Terminal Identification - Passenger



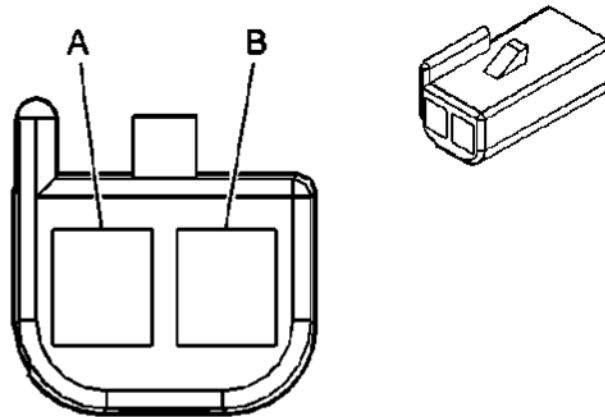
Connector Part Information		• 15326110 • 12-Way F GT 280 Series (BK)	
Pin	Wire Color	Circuit No.	Function
A	OG	3740	Battery Positive Voltage
B	L-GN	290	Passenger Seat Horizontal Motor

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			Rearward Control
C	TN	296	Passenger Seat Horizontal Motor Forward Control
D	BK	550	Ground
E	D-BU	77	Passenger Seat Recline Motor Rearward
F	D-GN	76	Passenger Seat Recline Motor Forward
G	D-BU	298	Passenger Seat Front Vertical Motor Down Control
H	D-GN	297	Passenger Seat Front Vertical Motor Up Control
J	L-BU	289	Passenger Seat Rear Vertical Motor Down Control
K	YE	288	Passenger Seat Rear Vertical Motor Up Control
L-M	-	-	Not Used

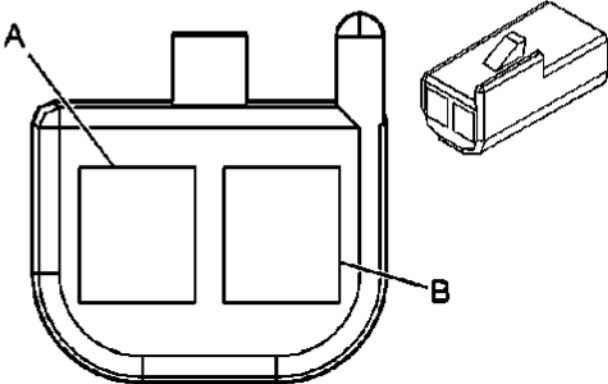
Seat Back Load Floor Position Switch (AM0) Terminal Identification



Connector Part Information		12059251 2-Way F Metri-Pack 150 Series (RD)	
Pin	Wire Color	Circuit No.	Function
A	L-GN	5698	Load Floor Position Switch Signal
B	YE/BK	5701	Load Floor Position Switch Supply

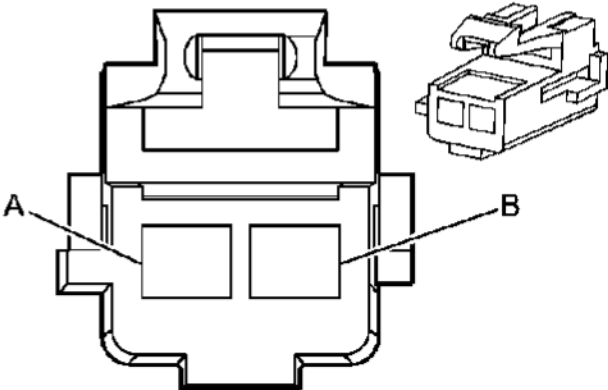
		Voltage
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Seat Back Panel Position Switch (AM0) Terminal Identification



Connector Part Information		• 12047662 • 2-Way F Metri-Pack 150 Series (BK)	
Pin	Wire Color	Circuit No.	Function
A	PU	5470	Back Panel Position Switch Signal
B	L-BU/WH	5700	Back Panel Position Switch Supply Voltage

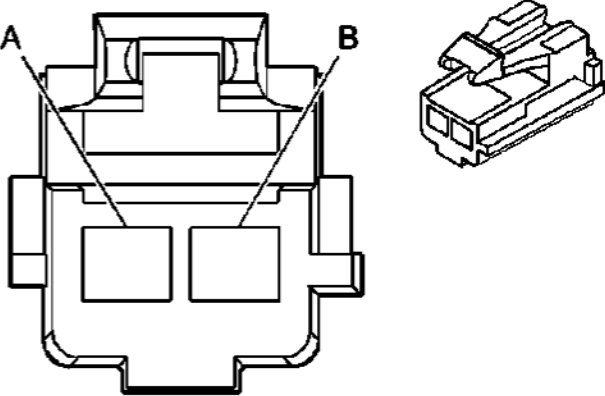
Seat Front Vertical Motor Terminal Identification - Driver



		• 12129082	
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Connector Part Information		• 2-Way F Metri-Pack 280 Series, Flexlock (GY)	
Pin	Wire Color	Circuit No.	Function
A	D-BU	287	Driver Seat Front Vertical Motor Down Control
B	D-GN	286	Driver Seat Front Vertical Motor Up Control

Seat Front Vertical Motor Terminal Identification - Passenger

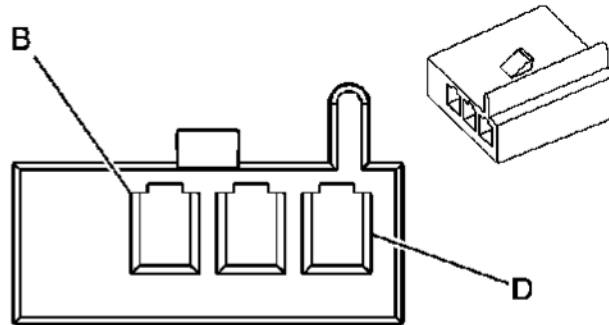
			
Connector Part Information		• 12129081 • 2-Way F Metri-Pack 280 Series, Flexlock (BK)	
Pin	Wire Color	Circuit No.	Function
A	D-GN	297	Passenger Seat Front Vertical Motor Up Control
B	D-BU	298	Passenger Seat Front Vertical Motor Down Control

Seat Front Vertical Position Sensor Terminal Identification - Driver (A45)

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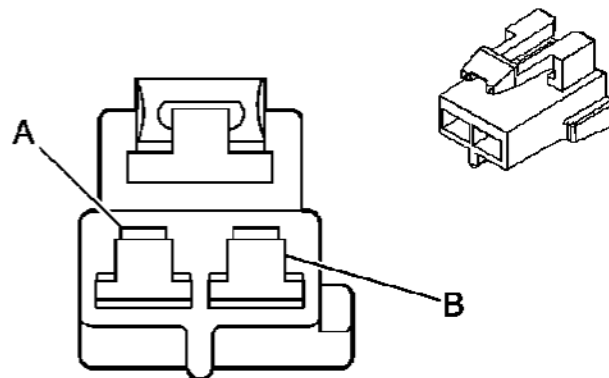


Connector Part Information

- 12059584
- 3-Way F Metri-Pack 150 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	-	-	Not Available
B	TN	782	Memory Seat/Mirror Sensor Low Reference
C	BN/WH	557	Front Vertical Seat Motor Position Sensor Signal
D	GY	788	5-Volt Reference

Seat Horizontal Motor Terminal Identification - Driver

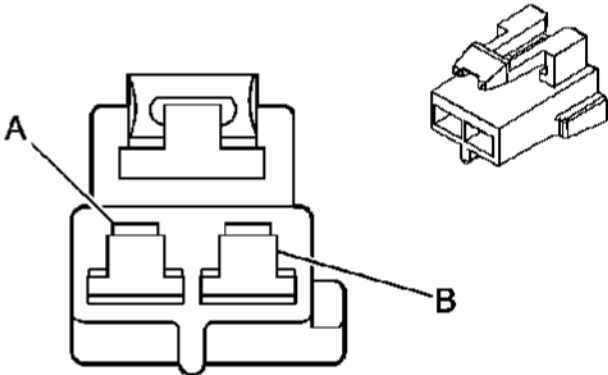


Connector Part Information

- 12064749
- 2-Way F Metri-Pack 480 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	TN	285	Driver Seat Horizontal Motor Forward Control
B	L-GN	284	Driver Seat Horizontal Motor Rearward Control

Seat Horizontal Motor Terminal Identification - Passenger



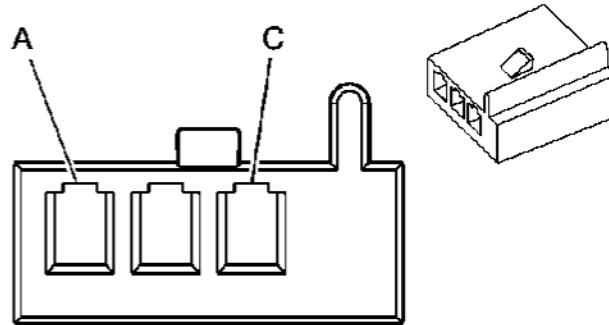
Connector Part Information		12064749 2-Way F Metri-Pack 480 Series (BK)	
Pin	Wire Color	Circuit No.	Function
A	L-GN	290	Passenger Seat Horizontal Motor Rearward Control
B	TN	296	Passenger Seat Horizontal Motor Forward Control

Seat Horizontal Position Sensor Terminal Identification - Driver (A45)

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2004 ACCESSORIES & EQUIPMENT Seats - SRX

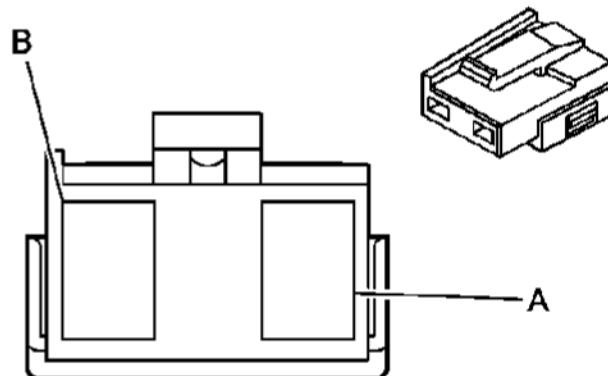


Connector Part Information

- 12059581
- 3-Way F Metri-Pack 150 Series (GY)

Pin	Wire Color	Circuit No.	Function
A	GY	788	5-Volt Reference
B	D-GN	569	Horizontal Seat Motor Position Sensor Signal
C	TN	782	Memory Seat/Mirror Sensor Low Reference
D	-	-	Not Available

Seat Lumbar Motor Terminal Identification - Driver (AL2)

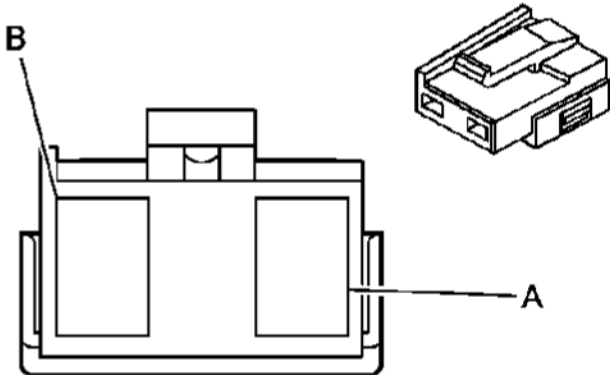


Connector Part Information

- 12015199
- 2-Way F Metri-Pack 280 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	D-BU	610	Driver Seat Lumbar Motor Rearward Control
B	PK	611	Driver Seat Lumbar Motor Forward Control

Seat Lumbar Motor Terminal Identification - Passenger (AL2)



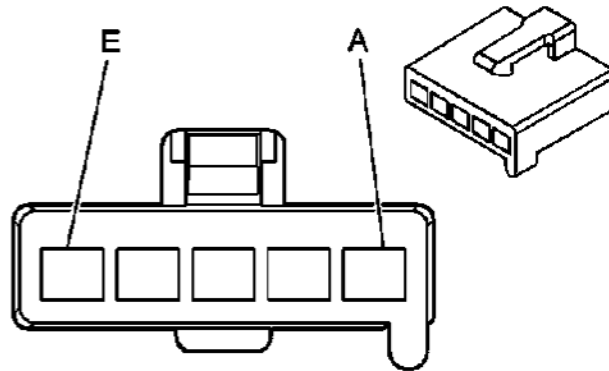
Connector Part Information		12015199 2-Way F Metri-Pack 280 Series (BK)	
Pin	Wire Color	Circuit No.	Function
A	D-BU	211	Passenger Seat Lumbar Motor Forward Control
B	WH	210	Passenger Seat Lumbar Motor Rearward Control

Seat Lumbar Switch Terminal Identification - Driver (AL2)

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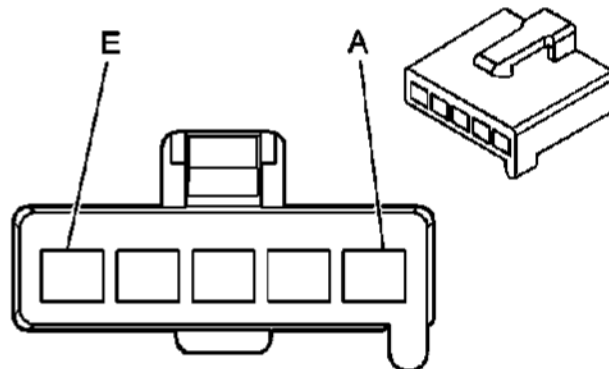


Connector Part Information

- 12041429
- 5-Way F Metri-Pack 280 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	-	-	Not Used
B	YE	1065	Driver Seat Lumbar Forward Switch Signal
C	-	-	Not Used
D	RD/WH	2840	Battery Positive Voltage
E	D-BU	1064	Driver Seat Lumbar Rearward Switch Signal

Seat Lumbar Switch Terminal Identification - Passenger (AL2)



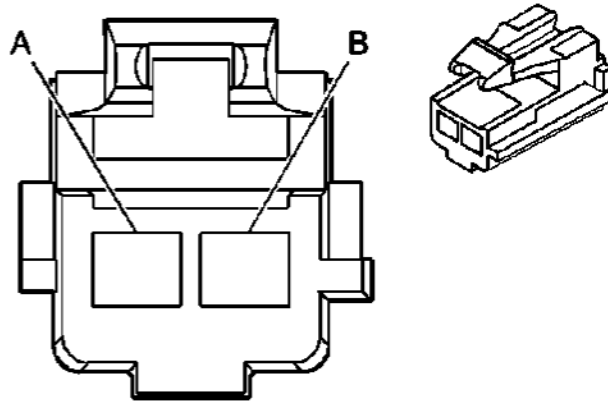
- 12041429

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Connector Part Information		• 5-Way F Metri-Pack 280 Series (BK)	
Pin	Wire Color	Circuit No.	Function
A	BK	550	Ground
B	D-BU	211	Passenger Seat Lumbar Motor Forward Control
C	BK	550	Ground
D	OG	3740	Battery Positive Voltage
E	WH	210	Passenger Seat Lumbar Motor Rearward Control

Seat Rear Vertical Motor Terminal Identification - Driver

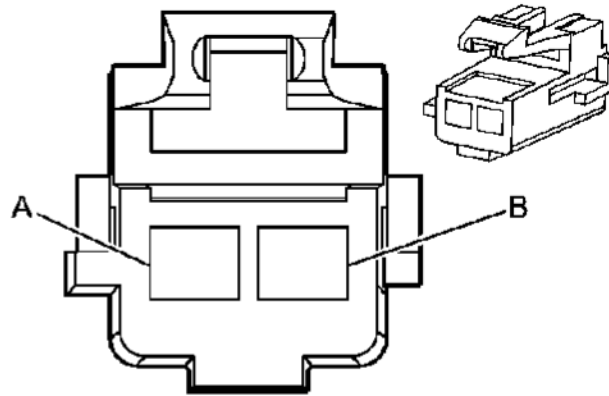


Connector Part Information		• 12129081 • 2-Way F Metri-Pack 280 Series, Flexlock (BK)	
Pin	Wire Color	Circuit No.	Function
A	YE	282	Driver Seat Rear Vertical Motor Up Control
B	L-BU	283	Driver Seat Rear Vertical Motor Down Control

Seat Rear Vertical Motor Terminal Identification - Passenger

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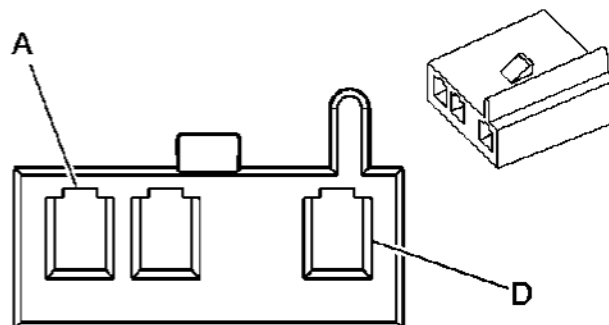


Connector Part Information

- 12129082
- 2-Way F Metri-Pack 280 Series, Flexlock (GY)

Pin	Wire Color	Circuit No.	Function
A	L-BU	289	Passenger Seat Rear Vertical Motor Down Control
B	YE	288	Passenger Seat Rear Vertical Motor Up Control

Seat Rear Vertical Position Sensor Terminal Identification - Driver (A45)



Connector Part Information

- 12059582
- 3-Way F Metri-Pack 150 Series (BU)

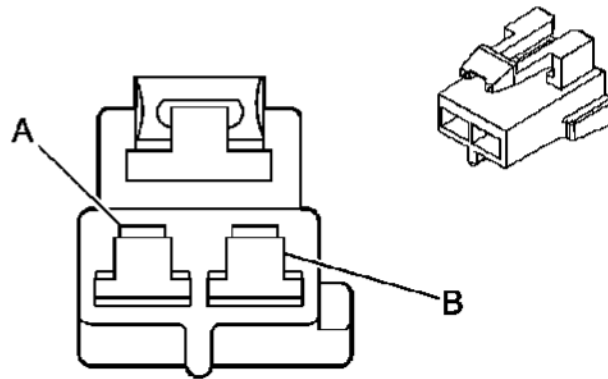
Pin	Wire Color	Circuit No.	Function

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A	GY	788	5-Volt Reference
B	TN	568	Rear Vertical Seat Motor Position Sensor Signal
C	-	-	Not Available
D	TN	782	Memory Seat/Mirror Sensor Low Reference

Seat Recline Motor Terminal Identification - Driver



Connector Part Information

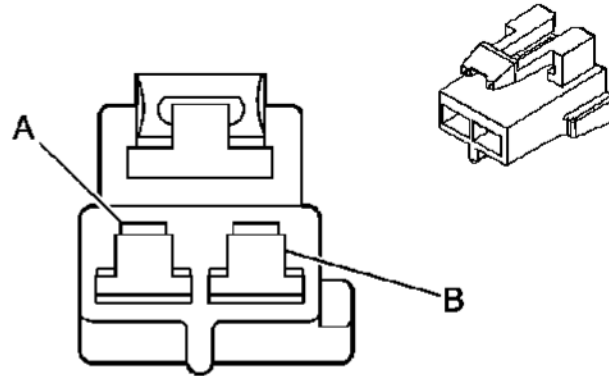
- 12064749
- 2-Way F Metri-Pack 480 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	L-GN	276	Driver Seat Recline Motor Forward Control
B	L-BU	277	Driver Seat Recline Motor Rearward Control

Seat Recline Motor Terminal Identification - Passenger

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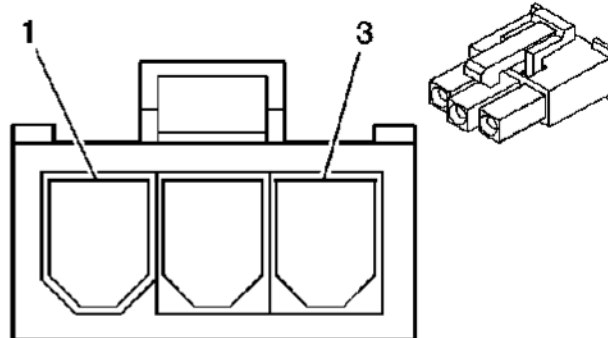


Connector Part Information

- 12064749
- 2-Way F Metri-Pack 480 Series (BK)

Pin	Wire Color	Circuit No.	Function
A	D-GN	76	Passenger Seat Recline Motor Forward Control
B	D-BU	77	Passenger Seat Recline Motor Rearward Control

Seat Recline Position Sensor Terminal Identification - Driver (A45)



Connector Part Information

- 39-01-4030
- 3-Way F Molex (NA)

Pin	Wire Color	Circuit No.	Function
1	TN	782	Memory Seat/Mirror Sensor Low

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			Reference
2	GY	788	5-Volt Reference
3	WH/BK	570	Driver Seat Recline Motor Position Sensor Signal

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - SEATS

Always begin the diagnosis by reviewing the system Description and Operation. Reviewing the Description and Operation will help you determine the correct symptom diagnostic procedure. when a malfunction exists. Reviewing the Description and Operation will also help you determine if the condition described by the customer is normal operation.

For power seats without memory (A45), refer to **Symptoms - Seats** in order to identify the correct procedure for diagnosing the system and where the procedure is located.

For seats with memory (A45), heated seats, and for the rear folding seat, begin diagnosis with the **Diagnostic System Check - Power Seat Systems**. The Diagnostic System Check will provide the following information:

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

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 - POWER SEAT 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.
- 4:** The Symptom Table will determine the correct diagnostic procedure to use.
- 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

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tests are performed.

6: This step determines if any internal controller DTCs are set.

7: This steps determines if any system voltage DTCs are set.

Diagnostic System Check - Power Seat Systems

Step	Action	Yes	No
1	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. Does the scan tool power up?	Go to Step 2	Go to <u>Scan Tool Does Not Power Up</u> in Data Link Communications
2	1. Turn ON the ignition, with the engine OFF. 2. Attempt to establish communication with the following modules: • Memory Seat Module (MSM) • Driver Door Module (DDM) • Rear Seat Module (RSM) • Rear Integration Module (RIM) • HVAC Control Module Does the scan tool communicate with all of the modules?	Go to Step 3	Go to <u>Scan Tool Does Not Communicate with Class 2 Device</u> 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. Does the ignition switch parameter reading match the ignition switch position for all		Go to <u>Power Mode Mismatch</u> in Body Control

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	switch positions?	Go to Step 4	System
4	With a scan tool, select the display DTCs function for the following modules: • Memory Seat Module (MSM) • Driver Door Module (DDM) • Rear Seat Module (RSM) • Rear Integration Module (RIM) • HVAC Control Module Does the scan tool display any DTCs?	Go to Step 5	Go to Symptoms - Seats
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 DTC B1000, B1004, B1007, or B1009?	Go to Diagnostic Trouble Code (DTC) List in Body Control System	Go to Step 7
7	Does the scan tool display DTC B1327 or B1328?	Go to Diagnostic Trouble Code (DTC) List in Engine Electrical	Go to Diagnostic Trouble Code (DTC) List

SCAN TOOL OUTPUT CONTROLS

Memory Seat Module (MSM) Scan Tool Output Controls

Scan Tool Output Control	Additional Menu Selection(s)	Description
Exit 1	Off/On	The MSM activates the previously programmed seat directional motors when you select On. The motors should move the seat to the exit position for driver 1 or until you select OFF.

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Exit 2	Off/On	The MSM activates the previously programmed seat directional motors when you select On. The motors should move the seat to the exit position for driver 2 or until you select OFF.
Front Up/Down	Down/Up	The MSM activates the seat front vertical motor when you select Up or Down. The motor should tilt the front of the seat in the up or down direction until it reaches it's end of travel.
Lumbar Forward/Rearward	Rearward/Forward	The MSM activates the lumbar motor when you select Forward or Rearward. The motor should move the lumbar support in the forward or rearward direction until it reaches it's end of travel.
Memory 1	Off/On	The MSM activates the previously programmed seat directional motors when you select On. The motors should move the seat to the memory position for driver 1 or until you select OFF.
Memory 2	Off/On	The MSM activates the previously programmed seat directional motors when you select On. The motors should move the seat to the memory position for driver 2 or until you select OFF.
Rear Up/Down	Down/Up	The MSM activates the seat rear vertical motor when you select Up or Down. The motor should tilt the rear of the seat in the up or down direction until it reaches it's end of travel.
Recline Forward/Rearward	Rearward/Forward	The MSM activates the recline motor when you select Forward or Rearward. The motor should recline the seat back cushion in the forward or rearward direction until it reaches it's end of travel.
Seat Forward/Rearward	Rearward/Forward	The MSM activates the seat horizontal motor when you select Forward or Rearward. The motor should move the entire seat in the forward or rearward direction until it reaches it's end of travel.

Rear Integration Module (RIM) Scan Tool Output Controls

Scan Tool Output Control	Additional Menu Selection(s)	Description
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Driver Heated Seat	Off/On	The RIM commands the driver heated seat module to activate the heated seat when you select ON and deactivate when you select OFF. The Driver Heated Seat Status should display On or Off as selected.
Passenger Heated Seat	Off/On	The RIM commands the passenger heated seat module to activate the heated seat when you select ON and deactivate when you select OFF. The Pass. Heated Seat Status should display On or Off as selected.

Rear Seat Module (RSM) Scan Tool Output Controls

Scan Tool Output Control	Additional Menu Selection(s)	Description
IMPORTANT: After performing Output Control tests, the folding seat will be in an unknown state and out of calibration with the RSM. Therefore, the RSM must be calibrated before the folding seat system will operate. Refer to <u>Power Folding Seat Calibration</u> .		
Horizontal Motor	Motor Test	The RSM activates the seat horizontal motor when you select Forward or Rearward. The motor should move the entire seat a short distance in the selected direction.
Recline Motor	Motor Test	The RSM activates the recline motor when you select Forward or Rearward. The motor should recline the seat back cushion a short distance in the selected direction.
Rotation Motor	Motor Test	The RSM activates the seat back rotation motor when you select Forward or Rearward. The motor should rotate the seat back a short distance in the selected direction.

SCAN TOOL DATA LIST

Memory Seat Module (MSM) Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine OFF			
8-Digit GM Part Number	ID Information	Numeric	Varies
Battery Voltage	Data	Volts	Varies
Calibration ID	ID Information	Numeric	Varies

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Current	Data	amps	0.5-8.5
Front Vertical Sensor	Sensor Data 1	A/D/Volts	0.0-255/0.0-5.0
Horizontal Sensor	Sensor Data 1	A/D/Volts	0.0-255/0.0-5.0
Lumbar Forward Status	Lumbar Info. (if equipped)	Active/Inactive	Inactive
Lumbar Forward Switch	Lumbar Info. (if equipped)	Active/Inactive	Inactive
Lumbar Horizontal Sensor	Lumbar Info. (if equipped)	A/D/Volts	0.0-255/0.0-5.0
Lumbar Rearward Status	Lumbar Info. (if equipped)	Active/Inactive	Inactive
Lumbar Rearward Switch	Lumbar Info. (if equipped)	Active/Inactive	Inactive
PROM ID	ID Information	Numeric	Varies
Rear Vertical Sensor	Sensor Data 1	A/D/Volts	0.0-255/0.0-5.0
Recline Sensor	Sensor Data 1	A/D/Volts	0.0-255/0.0-5.0
Seat Forward	Inputs and Outputs	Active/Inactive	Inactive
Seat Front Down	Inputs and Outputs	Active/Inactive	Inactive
Seat Front Up	Inputs and Outputs	Active/Inactive	Inactive
Seat Rearward	Inputs and Outputs	Active/Inactive	Inactive
Seat Rear Down	Inputs and Outputs	Active/Inactive	Inactive
Seat Rear Up	Inputs and Outputs	Active/Inactive	Inactive
Seat Recline Forward	Inputs and Outputs	Active/Inactive	Inactive
Seat Recline Rearward	Inputs and Outputs	Active/Inactive	Inactive

Driver Door Switch Assembly (DDSA) Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine OFF			
8-Digit GM Part Number	ID Information	Numeric	Varies
Battery Voltage	Data	Volts	Varies
Calibration ID	ID Information	Numeric	Varies
Julian Date of Build	ID Information	Numeric	Varies
Memory Recall Switches	Inputs	Idle Memory 1 Memory 2	Idle

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		Exit	
Prom ID	ID Information	Numeric	Varies
Year Module Built	ID Information	Numeric	Varies

Rear Integration Module (RIM) Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine OFF			
8-Digit GM Part Number	ID Information	Numeric	Varies
Battery Voltage	Data	Volts	Varies
Driver Heated Seat	Outputs	Off/On	Off
Driver Heated Seat Status	Inputs	Off/High/Low	Off
Hardware ID	ID Information	Numeric	Varies
Julian Date of Build	ID Information	Numeric	Varies
Load Shed Lvl. 1 Heated Seats	Outputs	Enable/Disabled	Disabled
Load Shed Lvl. 2 Heated Seats	Outputs	Enable/Disabled	Disabled
Passenger Heated Seat	Outputs	Off/On	Off
Passenger Heated Seat Status	Inputs	Off/High/Low	Off
PROM ID	ID Information	Numeric	Varies
Year Module Built	ID Information	Numeric	Varies

Climate Control Panel Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine OFF			
8-Digit GM Part Number	ID Information	Numeric	Varies
Calibration ID	ID Information	Numeric	Varies
Driver Heated Seat Status	Non - HVAC Data	Off/High/Low	Off
Driver Heated Seat Sw.	Non - HVAC Data	Pressed/Idle	Idle
Julian Date of Build	ID Information	Numeric	Varies
Passenger Heated Seat Status	Non - HVAC Data	Off/High/Low	Off
Pass. Heated Seat Sw.	Non - HVAC Data	Pressed/Idle	Idle
PROM ID	ID Information	Numeric	Varies
Year Module Built	ID Information	Numeric	Varies

Rear Seat Module (RSM) Scan Tool Data List

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2004 ACCESSORIES & EQUIPMENT Seats - SRX

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine OFF			
8-Digit GM Part Number	ID Information	Numeric	Varies
Back Panel Position Switch	Inputs	Active/Inactive	Active
Battery Voltage	Data	Volts	Varies
Calibrated	Data	Yes/No	Yes
Calibration ID	ID Information	Numeric	Varies
Front Stow Switch	Inputs	Active/Inactive	Inactive
Horizontal Motor	Outputs	Idle/Forward/Rearward	Idle
Horizontal Sensor	Data	Counts	0-3000
Load Floor Switch	Inputs	Active/Inactive	Inactive
Rear Stow Switch	Inputs	Active/Inactive	Inactive
Recline Motor	Outputs	Idle/Forward/Rearward	Idle
Recline Sensor	Data	Counts	0-3000
Recline Switch	Inputs	Active/Inactive	Inactive
Rotation Motor	Outputs	Idle/Forward/Rearward	Idle
Rotation Sensor	Data	Counts	0-3000
PROM ID	ID Information	Numeric	Varies

SCAN TOOL DATA DEFINITIONS

8-Digit GM Part Number

The scan tool displays the part number of the module.

Back Panel Position Switch

The scan tool displays Active/Inactive. When the folding seat is in the stowed or seated positions, the switch contacts are closed to voltage and the scan tool will display Active. When the folding seat is in a position other than the seated or stowed positions, the switch is open and the scan tool will display Inactive.

Battery Voltage

The scan tool displays 0-16 Volts. The voltage measured between the module's battery positive circuit and ground circuit.

Calibration ID

The scan tool displays a 4 digit number. This number designates the calibration or program level used in the PROM.

Current

The scan tool displays 0-127.5 amps. The amount of amps used during seat operation.

Driver Heated Seat (RIM)

The scan tool displays Off/ON. When the heated seat is on, the scan tool will display On, this parameter is the output from the RIM to the heated seat module.

Driver Heated Seat Status (CCP)

The scan tool displays Off/High/Low. When the heated seat is on, the scan tool will display the status signal from the rear integration module to the climate control panel as High or Low.

Driver Heated Seat Status (RIM)

The scan tool displays Off/High/Low. When the heated seat is on, the scan tool will display the status signal from the heated seat module to the rear integration module as High or Low.

Driver Heated Seat Sw. (CCP)

The scan tool displays Idle/Pressed. When the driver heated seat switch is pressed, the scan tool will momentarily display the switch input of the climate control panel as Pressed.

Front Stow Switch

The scan tool displays Inactive/Active. When the folding seat front stow switch is pressed, the scan tool will display the switch input to the rear seat module as Active.

Front Vertical Sensor

The scan tool displays 0-5.0 Volts or 0-255 A/D. The sensor potentiometer provides an analog voltage which varies directly with the seat front vertical position. High scan tool values (Volts or A/D) indicate that the seat front is in the up position and low values indicate that the seat front is in the down position.

Horizontal Motor (RSM)

The scan tool displays Idle/Forward/Rearward. During folding seat operation the scan tool will display Forward or Rearward, this is the direction the rear seat module is commanding the horizontal motor to move the seat.

Horizontal Sensor (MSM)

The scan tool displays 0-5.0 Volts or 0-255 A/D. The sensor potentiometer provides an analog voltage which varies directly with the seat horizontal position. High scan tool values (Volts or A/D) indicate that the seat is in the forward position and low values indicate that the seat is in the rearward position.

Horizontal Sensor (RSM)

The scan tool displays 0-3,000 Counts. The hall effect sensor provides a pulse signal with each rotation of the motor that the scan tool displays as counts. High scan tool count values indicate that the folding seat is forward for the stowed position, while low count values indicate that the folding seat is rearward for the seated position.

Julian Date of Build

The scan tool displays a 3-digit number. This number is the day of the year that the module was built.

Load Floor Switch

The scan tool displays Inactive/Active. When the folding seat back panel is in the folded position, the load floor switch contacts are closed to voltage and the scan tool will display Inactive. When the folding seat back panel is unfolded to the deployed position, the load floor switch is open and the scan tool will display Active.

Load Shed Lvl. 1 Heated Seat

The scan tool displays Disabled/Enable. During a pre-determined heavy loading condition, the driver information module (DIM) will send out a class 2 message to the rear integration module (RIM) that a load shed level 1 is in effect and the scan tool will display Enable.

Load Shed Lvl. 2 Heated Seat

The scan tool displays Disabled/Enable. During a pre-determined heavy loading condition,

the driver information module (DIM) will send out a class 2 message to the rear integration module (RIM) that a load shed level 2 is in effect and the scan tool will display Enable.

Lumbar Horizontal Sensor

The scan tool displays 0-5.0 Volts or 0-255 A/D. The sensor potentiometer provides an analog voltage which varies directly with the lumbar horizontal position. High scan tool values (Volts or A/D) indicate that the lumbar is in the forward position, while low values indicate that the lumbar is in the rearward position.

Memory Recall Switches

The scan tool displays Idle/Memory 1/memory 2/Exit. When a memory function switch is pressed, the scan tool will momentarily display the function as selected.

Passenger Heated Seat (RIM)

The Scan tool displays Off/On. When the heated seat is on, the scan tool will display On, this parameter is the output from the RIM to the heated seat module.

Passenger Heated Seat Status (RIM)

The scan tool displays Off/High/Low. When the heated seat is on, the scan tool will display the status signal from the heated seat module to the rear integration module (RIM) as High or Low.

Passenger Heated Seat Status (CCP)

The scan tool displays Off/High/Low. When the passenger heated seat switch is pressed, the scan tool will display the status signal from the rear integration module to the climate control panel as High or Low.

Pass. Heated Seat SW. (CCP)

The scan tool displays Idle/Pressed. When the passenger heated seat switch is pressed, the scan tool will momentarily display the heated seat switch input of the climate control panel as Pressed.

Personalization Option

This is the state of the personalization option as it is stored in the Dash Integration Module

(DIM). When the Personalization Option is selected, the scan tool displays the directions to activate or deactivate the personalization option. The asterisk beside the option indicates that the personalization option is activated. The personalization option is normally set to the activated state during assembly of the vehicle.

PROM ID

The scan tool displays a 4 digit number. This is the identification number of the PROM that is incorporated into the module.

Rear Stow Switch

The scan tool displays Inactive/Active. When the folding seat rear stow switch is pressed, the scan tool will display the switch input to the rear seat module as Active.

Rear Vertical Sensor

The scan tool displays 0-5.0 Volts or 0-255 A/D. The sensor potentiometer provides an analog voltage which varies directly with the seat rear vertical position. High scan tool values (Volts or A/D) indicate that the seat rear vertical is in the up position and low values indicate that the seat rear vertical is in the down position.

Recline Motor (RSM)

The scan tool displays Idle/Forward/Rearward. During folding seat operation the scan tool will display Forward or Rearward, this is the direction the rear seat module is commanding the recline motor to move the seat back.

Recline Sensor (MSM)

The scan tool displays 0-5.0 Volts or 0-255 A/D. The sensor potentiometer provides an analog voltage which varies directly with the seat recline position. High scan tool values (Volts or A/D) indicate that the seat recline is in the forward position and low values indicate that the seat recline is in the rearward position.

Recline Sensor (RSM)

The scan tool displays 0-3,000 Counts. The hall effect sensor provides a pulse signal with each rotation of the motor that the scan tool displays as counts. High scan tool count values indicate that the seat recline is in the forward position, while low count values indicate that the seat recline is in the rearward or stowed position.

Recline Switch

The scan tool displays Inactive/Active. When the folding seat recline switch is pressed, the scan tool will display the switch input to the rear seat module as Active.

Rotation Motor

The scan tool displays Idle/Forward/Rearward. During folding seat operation the scan tool will display Forward or Rearward, this is the direction the rear seat module is commanding the rotation motor to rotate the seat back.

Rotation Sensor

The scan tool displays 0-3,000 Counts. The hall effect sensor provides a pulse signal with each rotation of the motor that the scan tool displays as counts. High scan tool count values indicate that the rotation of the seat back is forward for the stowed position, while low count values indicate that the seat back rotation is rearward for the seated position.

Seat Forward - Input

The scan tool displays Inactive/Active. When the seat forward switch is activated, the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Forward - Output

The scan tool displays Inactive/Active. When the seat forward switch is activated or when a memory recall occurs, the scan tool will display Active while the output from the memory seat module is commanding the seat horizontal motor in the forward direction.

Seat Front Down - Input

The scan tool displays Inactive/Active. When the seat front down switch is activated the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Front Down - Output

The scan tool displays Inactive/Active. When the seat front down switch is activated or when a memory recall occurs, the scan tool will display Active while the output from the memory seat module is commanding the seat front vertical motor in the down direction.

Seat Front Up - Input

The scan tool displays Inactive/Active. When the seat front up switch is activated, the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Front Up - Output

The scan tool displays Inactive/Active. When the seat front up switch is activated or when a memory recall occurs, the scan tool will display Active while the output from the memory seat module is commanding the seat front vertical motor in the up direction.

Seat Lumbar Forward

The scan tool displays Inactive/Active. When the lumbar forward switch is activated, the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Lumbar Rearward

The scan tool displays Inactive/Active. When the lumbar rearward switch is activated, the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Rear Down - Input

The scan tool displays Inactive/Active. When the seat rear down switch is activated, the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Rear Down - Output

The scan tool displays Inactive/Active. When the seat rear down switch is activated or when a memory recall occurs, the scan tool will display Active while the output from the memory seat module is commanding the seat rear vertical motor in the down direction.

Seat Rear Up - Input

The scan tool displays Inactive/Active. When the seat rear up switch is activated, the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Rear Up - Output

The scan tool displays Inactive/Active. When the seat rear up switch is activated or when a memory recall occurs, the scan tool will display Active while the output from the memory seat module is commanding the seat rear vertical motor in the up direction.

Seat Rearward - Input

The scan tool displays Inactive/Active. When the seat rearward switch is activated, the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Rearward - Output

The scan tool displays Inactive/Active. When the seat rearward switch is activated or when a memory recall occurs, the scan tool will display Active while the output from the memory seat module is commanding the seat horizontal motor in the rearward direction.

Seat Recline Forward - Input

The scan tool displays Inactive/Active. When the seat recline forward switch is activated, the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Recline Forward - Output

The scan tool displays Inactive/Active. When the seat recline forward switch is activated or when a memory recall occurs, the scan tool will display Active while the output from the memory seat module is commanding the seat recline motor in the forward direction.

Seat Recline Rearward - Input

The scan tool displays Inactive/Active. When the seat recline rearward switch is activated, the scan tool will momentarily display the switch input to the memory seat module as Active.

Seat Recline Rearward - Output

The scan tool displays Inactive/Active. When the seat recline rearward switch is activated or when a memory recall occurs, the scan tool will display Active while the output from the memory seat module is commanding the seat recline motor in the rearward direction.

Year Module Built

The scan tool displays a 4 digit number. This number represents the year the module was built.

DIAGNOSTIC TROUBLE CODE (DTC) LIST

Diagnostic Trouble Code (DTC) List

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DTC	Diagnostic Procedure	Module(s)
B1336	<u>DTC B1336</u>	MSM
B1395	<u>DTC B1395</u>	RSM
B1420	<u>DTC B1420</u>	MSM
B1545	<u>DTC B1545, B1546, or B3729</u>	RSM
B1546	<u>DTC B1545, B1546, or B3729</u>	RSM
B1547	<u>DTC B1547, B1770, or B1785</u>	RSM
B1548	<u>DTC B1548, B1825, or B2375</u>	RSM
B1735	<u>DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, or B1820</u>	MSM
B1740	<u>DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, or B1820</u>	MSM
B1745	<u>DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, or B1820</u>	MSM
B1750	<u>DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, or B1820</u>	MSM
B1755	<u>DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, or B1820</u>	MSM
B1760	<u>DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, or B1820</u>	MSM
B1770	<u>DTC B1547, B1770, or B1785</u>	RSM
B1785	<u>DTC B1547, B1770, or B1785</u>	RSM
B1815	<u>DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, or B1820</u>	MSM
B1820	<u>DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, or B1820</u>	MSM
B1825	<u>DTC B1825, B1850, B1860, B2355, B2365, or B2375</u>	MSM
B1825	<u>DTC B1548, B1825, or B2375</u>	RSM
B1826	<u>DTC B1826, B1851, B1861, B2356, B2366, or B2376</u>	MSM
B1830	<u>DTC B1830, B1835, B1840 or B1845</u>	MSM
B1835	<u>DTC B1830, B1835, B1840 or B1845</u>	MSM
B1840	<u>DTC B1830, B1835, B1840 or B1845</u>	MSM
B1845	<u>DTC B1830, B1835, B1840 or B1845</u>	MSM
B2355	<u>DTC B1825, B1850, B1860, B2355, B2365, or</u>	MSM

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	<u>B2375</u>	
B2356	<u>DTC B1826, B1851, B1861, B2356, B2366, or B2376</u>	MSM
B2365	<u>DTC B1825, B1850, B1860, B2355, B2365, or B2375</u>	MSM
B2366	<u>DTC B1826, B1851, B1861, B2356, B2366, or B2376</u>	MSM
B2375	<u>DTC B1825, B1850, B1860, B2355, B2365, or B2375</u>	MSM
B2375	<u>DTC B1548, B1825, or B2375</u>	RSM
B2376	<u>DTC B1826, B1851, B1861, B2356, B2366, or B2376</u>	MSM
B2757	<u>DTC B2757, B2762, B2767, or B2772</u>	DDM
B2762	<u>DTC B2757, B2762, B2767, or B2772</u>	DDM
B2772	<u>DTC B2757, B2762, B2767, or B2772</u>	DDM
B3729	<u>DTC B1545, B1546, or B3729</u>	RSM

DTC B1336

Circuit Description

Battery positive voltage is supplied to the memory seat module (MSM) from the Seats Circuit Breaker located in the left rear fuse block. When commanded, this voltage is used by the MSM to power the seat motors through the motor control circuits. During memory recall functions and manual seat functions, the driven motor current is monitored through the motor control circuits by the MSM. When an overcurrent condition is detected, the MSM disables the sea motors in order to protect the internal MSM circuitry.

Conditions for Running the DTC

The MSM monitors for overcurrent only when the seat motors are active.

Conditions for Setting the DTC

The MSM will set DTC B1336 when the measured current exceeds 81 amps for 100 milliseconds.

Action Taken When the DTC Sets

- All memory recalls in progress are aborted.

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- The MSM will not respond to manual movements of the affected motor.

Conditions for Clearing the DTC

The MSM does not detect an overcurrent condition during seat movement.

Test Description

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

- 2: This test determines which directional motor exhibits excessive current.
- 3: This test determines if the suspect motor has an internal short to ground.
- 9: This test verifies the repair.

DTC B1336

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Power Seat Systems?	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the Current Diagnostic Trouble Codes in the Memory Seat Module Diagnostic Trouble Code list. 4. While observing the scan tool for DTCs, operate the seat switch in both directions for each directional motor. Did the scan tool display DTC B1336 for any of the seat motors?	Go to Step 3	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems
	1. Disconnect the suspect motor harness connector. 2. While observing the scan tool for DTCs,		

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3	operate the suspect motor switch in both directions. Does the scan tool display DTC B1336?	Go to Step 4	Go to Step 5
4	Test the motor control circuits of the suspect motor for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 6
5	Inspect for poor connections at the harness connector of the suspect seat motor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> 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 memory seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 8
7	Replace the suspect seat motor. Refer to <u>Seat Adjuster Motor Replacement - Horizontal</u> , <u>Seat Adjuster Motor Replacement - Vertical</u> , or <u>Power Recliner Motor Replacement - Front Seat</u> . Did you complete the replacement?	Go to Step 9	-
8	Replace the memory seat module. Refer to <u>Memory Seat Control Module Replacement</u> . Did you complete the replacement?	Go to Step 9	-
9	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

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Circuit Description

Battery positive voltage is supplied at all times to the rear seat load floor switch and the rear seat position switch by the rear seat module (RSM). The RSM monitors these battery positive voltage supply circuits for the protection of internal circuitry of the module.

DTC B1395 Device Voltage Reference Output 1 Circuit

Conditions for Running the DTC

The RSM must be powered and cannot have DTC B1327 - Battery Voltage Low as an active DTC for this DTC to set.

Conditions for Setting the DTC

This DTC will set only when the RSM detects that the device switch supply voltage is less than 3 volts.

Action Taken When the DTC Sets

- The RSM will not allow seat operation.
- If this condition occurs during seat operation, the operation will be cancelled.

Conditions for Clearing the DTC

The DTC will clear when the RSM detects that the device switch voltage is greater than 3 volts.

DTC B1395

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u>			
Connector End View Reference: <u>Power Seat Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Power Seat Systems?	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	Activate either one of the rear seat switches. Does the seat move in the commanded direction?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3

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3	Test the battery positive voltage supply circuit of the rear seat load floor switch for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 4
4	Test the signal circuit of the rear seat load floor switch for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 5
5	Test the battery positive voltage supply circuit of the rear seat back panel position switch for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 6
6	Test the signal circuit of the rear seat back panel position switch for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 7
7	Inspect for poor connections at the harness connector of the rear seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 8
8	Replace the rear seat module. Refer to <u>Seat Control Module Replacement - Rear No. 2</u> . Did you complete the replacement?	Go to Step 9	-
9	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

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Circuit Description

Battery positive voltage is supplied at all times to the seat adjuster switch and the memory seat module (MSM) through the same circuit. The MSM uses this battery voltage input to determine if battery positive voltage is applied to the seat adjuster switch.

Conditions for Running the DTC

The MSM must be powered and cannot have DTC B1327 - Battery Voltage Low as an active DTC for this DTC to set.

Conditions for Setting the DTC

This DTC will set only when the MSM detects less than 3 volts from the battery positive voltage circuit.

Action Taken When the DTC Sets

- The MSM ignores all memory recall commands.
- All manual seat functions will operate.

Conditions for Clearing the DTC

The DTC will clear when the MSM detects that the voltage from the circuit is greater than 3 volts.

DTC B1420

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Power Seat Systems?	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	Activate any one of the power seat adjuster switches. Does the seat move in the commanded direction?	Go to Step 3	Go to Step 4
3	Probe the battery positive voltage circuit of the memory seat module connector C2 Pin-B11 with a test lamp that is connected to a good		

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	ground. Does the test lamp illuminate?	Go to Step 5	Go to Step 6
4	Test all of the power seat switch signal circuits between the seat adjuster switch and the memory seat module for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 7
5	Inspect for poor connections at the harness connector of the memory seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 8
6	Repair the open in the battery positive voltage circuit of the memory seat module. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	Go to Step 9	-
7	Repair the short to ground or open in the battery positive voltage circuit of the memory seat module. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	Go to Step 9	-
8	Replace the memory seat module. Refer to <u>Memory Seat Control Module Replacement</u> . Did you complete the replacement?	Go to Step 9	-
9	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 B1545, B1546, OR B3729

Circuit Description

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When the rear folding seat stow or recline switches are pressed they send a 12 volt signal through the switch signal circuit to the rear seat module (RSM). The RSM then commands the rear folding seat to move in response to the switch inputs.

Conditions for Running the DTC

The RSM must be powered and cannot have DTC B1327 - Battery Voltage Low as an active DTC for this DTC to set.

Conditions for Setting the DTC

- If a seat switch continues to be active for 15 seconds after a motor controlled by that switch reaches the end of its travel, the switch will be considered shorted and the RSM will set a switch DTC.
- If a position sensor DTC is current and the associated switch is active for 30 continuous seconds, the switch will be considered shorted and the RSM will set a switch DTC.

Action Taken When the DTC Sets

- Motor outputs being driven in response to the failed switch will be de-activated.
- The RSM will respond to any other switch signal that has not set a DTC.

Conditions for Clearing the DTC

The DTC automatically clears when the switch circuit setting the DTC is no longer active.

Test Description

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

- 2: Checks the existing state of the third row seat switch by using the current state of the switch parameter.
- 4: When the stow recline switch is disconnected, this step determines if the switch contacts are stuck closed, or if the switch signal circuit is possibly shorted to battery voltage.

DTC B1545, B1546, or B3729

Step	Action	Yes	No
Schematic Reference: <u>Rear Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Power Seat Systems?		Go to Diagnostic System Check -

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		Go to Step 2	<u>Power Seat Systems</u>
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the appropriate stow or recline switch parameter in the Rear Seat Module data list. Does the scan tool display Active?	Go to Step 4	Go to Step 3
3	1. With a scan tool, observe the appropriate switch parameter. 2. Press the appropriate stow or recline switch. Does the switch parameter change state?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 4
4	1. Turn OFF the ignition. 2. Disconnect the appropriate rear folding seat switch harness connector. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the appropriate switch parameter in the Rear Seat Module data list. Does the scan tool display Inactive for the switch parameter?	Go to Step 7	Go to Step 5
5	Test the switch signal circuit that displays active for a short to voltage. Refer to <u>Circuit Testing Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 10	Go to Step 6
6	Inspect for poor connections at the harness connector of the rear seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 10	Go to Step 8

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7	Inspect for poor connections at the harness connector of the appropriate rear seat stow or recline switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 10	Go to Step 9
8	Replace the rear seat module. Refer to <u>Seat Control Module Replacement - Rear No. 2</u> . Did you complete the replacement?	Go to Step 10	-
9	Replace the appropriate stow or recline switch. Refer to <u>Folding Seat Switch Replacement - Rear Seat No. 2 - Rear Quarter Trim Rear</u> or <u>Folding Seat Switch Replacement - Rear Seat No.2 - Rear Quarter Trim Front</u> . 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 B1547, B1770, OR B1785

Circuit Description

Battery positive voltage is supplied to the rear seat module (RSM) from a 30-amp fuse located in the rear fuse block. When commanded, this voltage is used by the RSM to power the seat motors through there respective motor control circuits. During seat operations, the driven motor current is monitored through the motor control circuits by the RSM. When an overcurrent condition is detected, the RSM disables the seat motors in order to protect the internal RSM circuitry.

Conditions for Running the DTC

The RSM monitors for overcurrent only when the seat motors are active.

Conditions for Setting the DTC

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The RSM will set this DTC when the measured current exceeds 81 amps for 100 milliseconds.

Action Taken When the DTC Sets

- If the seat is moving when this condition occurs, the operation will be aborted.
- The RSM will not respond to all third row seat switch inputs.
- The RSM will set a history DTC.

Conditions for Clearing the DTC

- The RSM does not detect an overcurrent condition during seat movement.
- The history code will clear if the RSM does not detect an overcurrent for 100 ignition cycles.

Test Description

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

- 2: This test determines which directional motor exhibits excessive current.
- 3: This test determines if the suspect motor has an internal short to ground.
- 9: This test verifies the repair.

DTC B1547, B1770, or B1785

Step	Action	Yes	No
Schematic Reference: <u>Rear Seat Schematics</u>			
Connector End View Reference: <u>Power Seat Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Power Seat Systems?	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, clear all DTC Information in the Rear Seat Module data list. 4. With a scan tool, observe the History Diagnostic Trouble Code(s) parameter in the Rear Seat Module data list.		

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	5. While observing the scan tool for history DTCs, press either one of the stow switches. Did the RSM set a history overcurrent DTC for any of the seat motors?	Go to Step 3	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems
3	1. Disconnect the suspect motor harness connector. 2. Clear all DTC Information in the Rear Seat Module data list. 3. While observing the scan tool for history DTCs, press either one of the stow switches. Did the RSM set a history overcurrent DTC for the seat motor?	Go to Step 4	Go to Step 5
4	Test the motor control circuits of the suspect motor for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 6
5	Inspect for poor connections at the harness connector of the suspect seat motor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> 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 rear seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 9	Go to Step 8
7	Replace the suspect seat motor. Refer to <u>Horizontal Seat Motor Replacement - Rear No. 2</u>, <u>Seat Back Rotation Motor Replacement - Rear No. 2</u>, or <u>Recliner Motor Replacement - Rear No. 2</u>.		-

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	Did you complete the replacement?	Go to Step 9	
8	Replace the rear seat module. Refer to <u>Seat Control Module Replacement - Rear No. 2.</u>		-
	Did you complete the replacement?	Go to Step 9	
9	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 B1548, B1825, OR B2375**Circuit Description**

The rear seat module (RSM) monitors the position the rear folding seat motors by using hall effect position sensors which are an internal part of each motor. The RSM supplies each sensor with a 12 volt reference signal circuit and a low reference circuit. During seat operation, while the motor is active, each sensor provides the RSM with a single feedback pulse through the respective signal circuits for every rotation of the motor shaft. The RSM counts the feedback pulses from each sensor to determine seat position and end of travel limits for each of the seat motors.

Conditions for Running the DTC

- DTC B1327 - Battery Voltage Low is not current.
- The seat adjuster motor must be active.
- The RSM does not detect a stall condition on the motor being tested.

Conditions for Setting the DTC

The RSM does not detect position sensor movement or pulse signals while the adjuster motor is active. The following conditions will set this DTC:

- An open, a short to ground, or a short to battery voltage in the position sensor signal circuit.
- An open in the position sensor low reference circuit.
- An open in one the seat motor control circuits.

Action Taken When the DTC Sets

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- Current and history codes are set.
- If the seat is moving when this condition occurs, the operation will be aborted.
- While this condition exists all switch inputs will be ignored.

Conditions for Clearing the DTC

The RSM will clear the current DTC whenever a stow switch is activated and the RSM receives pulse signals from the position sensor while the motor is active.

Test Description

The number below refers to the step number on the diagnostic table.

3: This step determines if the fault is in the seat motor or motor control circuits, or, the position sensor or sensor circuits.

15: This step verifies the repair.

DTC B1548, B1825, or B2375

Step	Action	Value(s)	Yes	No
Schematic Reference: <u>Rear Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u>				
1	Did you perform the Power Seat Diagnostic System Check?	-	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe Current Diagnostic Trouble Code(s) in the Rear Seat Module data list. 4. Attempt to operate the folding seat to the stowed or seated position. Did the RSM set a current position sensor DTC?	-	Go to Step 3	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems

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3	1. With a scan tool, enter Output Controls in the Special Functions menu of the Rear Seat Module data list. 2. With a scan tool, command the motor for which the DTC set in the FORWARD or REARWARD directions. Does the motor momentarily move a short distance then stop?	-	Go to Step 4	Go to Step 6
4	1. Disconnect the suspect seat motor/position sensor assembly connector for which the DTC set. 2. Measure the voltage from the signal circuit of the sensor connector to a good ground. Does the voltage measure within the specified range?	4.50-12 V	Go to Step 5	Go to Step 7
5	Measure the voltage between the signal circuit of the sensor connector and the low reference circuit of the sensor connector. Does the voltage measure within the specified range?	4.50-12 V	Go to Step 8	Go to Step 9
6	1. Disconnect the suspect seat motor/position sensor assembly connector for which the DTC set. 2. Connect a test lamp between the motor control circuits of the connector. 3. With a scan tool, command the motor for which the DTC set in the FORWARD and REARWARD directions. Does the test lamp momentarily illuminate?	-	Go to Step 11	Go to Step 10

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7	Test the signal circuit of the position sensor for a short to ground or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 15	Go to Step 12
8	1. Turn OFF the ignition. 2. Disconnect the rear seat module harness connector C2. 3. Turn ON the ignition, with the engine OFF. 4. Test the signal circuit of the position sensor for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 15	Go to Step 11
9	Test the low reference circuit of the position sensor for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 15	Go to Step 12
10	Test the motor control circuits of the inoperative seat motor for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 15	Go to Step 12
11	Inspect for poor connections at the harness connector of the seat motor/position sensor assembly. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 15	Go to Step 13
12	Inspect for poor connections at the harness connector of the rear seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems.	-	Go to Step	

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	Did you find and correct the condition?		15	Go to Step 14
13	Replace the appropriate motor/position sensor assembly. Refer to <u>Horizontal Seat Motor Replacement - Rear No. 2</u> , <u>Seat Back Rotation Motor Replacement - Rear No. 2</u> , or <u>Recliner Motor Replacement - Rear No. 2</u> . Did you complete the replacement?	-	Go to Step 15	-
14	Replace the rear seat module. Refer to <u>Seat Control Module Replacement - Rear No. 2</u> . Did you complete the replacement?	-	Go to Step 15	-
15	IMPORTANT: After performing this diagnostic test and the electrical or component repairs have been completed, the folding seat will be in an unknown state and out of calibration with the RSM. Therefore, the RSM must be calibrated before the folding seat system will operate. Refer to <u>Power Folding Seat Calibration</u> . 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 3	System OK

DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, OR B1820

Circuit Description

When the power seat switches are pressed they send a 12-volt signal to the memory seat module (MSM). The MSM then commands the driver seat to move in response to the switch inputs.

Conditions for Running the DTC

The MSM must be powered and cannot have DTC B1327 - Battery Voltage Low as an active DTC for this DTC to set.

Conditions for Setting the DTC

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- If a seat switch continues to be active for 30 seconds after a motor controlled by that switch reaches the end of its travel, the switch will be considered shorted and the MSM will set a switch DTC.
- If a position sensor DTC is current and the associated switch is active for 30 continuous seconds, the switch will be considered shorted and the MSM will set a switch DTC.

Action Taken When the DTC Sets

- A motor output driven in response to a switch considered failed, is deactivated for both directions.
- All memory recall command are ignored.
- The MSM will respond to any other switch signal that has not set a DTC.

Conditions for Clearing the DTC

The DTC automatically clears when the switch circuit setting the DTC is no longer active.

Test Description

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

2: Checks the existing state of the driver seat switch by using the current state of the seat switch parameter. If all of the seat switch parameters display active, possibly one of the seat switch signal circuits is shorted to voltage.

4: When the seat switch is disconnected, this step determines if the seat switch contacts are stuck closed, or if one of the switch signal circuits is possibly shorted to battery voltage.

DTC B1735, B1740, B1745, B1750, B1755, B1760, B1815, or B1820

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u>			
Connector End View Reference: <u>Power Seat Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Power Seat Systems?	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the appropriate		

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	seat switch parameter in the Memory Seat Module data list.		
	Does the scan tool display Inactive?	Go to Step 3	Go to Step 4
3	1. With a scan tool, observe the appropriate seat switch parameter. 2. Activate the appropriate seat switch. Does the switch parameter change state?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 4
4	1. Turn OFF the ignition. 2. Disconnect the seat adjuster switch harness connector. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe all of the switch parameters in the Memory Seat Module data list. Does the scan tool display Inactive for all of the switch parameters?	Go to Step 7	Go to Step 5
5	Test the switch signal circuit that displays active for a short to voltage. Refer to <u>Circuit Testing Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 10	Go to Step 6
6	Inspect for poor connections at the harness connector of the memory seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> 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 seat adjuster switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 10	Go to Step 9
	Replace the memory seat module. Refer to		

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8	<u>Memory Seat Control Module Replacement.</u> Did you complete the replacement?	Go to Step 10	-
9	Replace the seat adjuster switch. Refer to <u>Seat Switch Replacement - Power.</u> 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 B1825, B1850, B1860, B2355, B2365, OR B2375

Circuit Description

The position sensor that sets this DTC is attached to the seat directional motor. It receives a 5-volt reference and low reference from the memory seat module (MSM). The sensor sends a voltage signal that varies with the movement of the seat through the signal circuit to the MSM. Then based on this voltage signal, the MSM determines the position of the seat.

Conditions for Running the DTC

The MSM must be powered and cannot have DTC B1327 - Battery Voltage Low as an active DTC for this DTC to set.

Conditions for Setting the DTC

If the MSM sees the voltage signal from this sensor as either lower than 0.25 volts or higher than 4.75 volts, the sensor will be considered out of range and the MSM will set this DTC.

Action Taken When the DTC Sets

The MSM disables all memory recall commands of the motor monitored by the sensor. The motor will respond to manual positioning commands.

Conditions for Clearing the DTC

The MSM will clear the DTC when it detects that the voltage from the sensor signal circuit is between 0.25-4.75 volts.

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Diagnostic Aids

- All position sensors use common low reference and 5-volt reference circuits.
- If the 5-volt reference circuit is shorted to voltage multiple codes will set.
- If the 5-volt reference circuit is shorted to ground multiple codes will set.
- If the sensor low reference circuit is open multiple codes will set.

Test Description

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

- 3:** Tests for the proper operation of the circuit in the low voltage range.
- 4:** Tests for the proper operation of the circuit in the high voltage range. If the fuse in the jumper opens when you perform this test, the signal circuit is shorted to ground.
- 5:** Tests for a short to voltage in the 5-volt reference circuit.
- 6:** Tests for a high resistance or an open in the sensor low reference circuit.
- 16:** This step verifies the repair.

DTC B1825, B1850, B1860, B2355, B2365, or B2375

Step	Action	Value(s)	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u>				
1	Did you perform the Diagnostic System Check - Power Seat Systems?	-	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the appropriate Sensor parameter in the Memory Seat Module Sensor data list. Does the scan tool indicate that the Sensor parameter is within the specified range?	0.25-4.75 V	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3

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3	1. Turn OFF the ignition. 2. Disconnect the appropriate sensor connector. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the Sensor parameter. Does the scan tool indicate that the Sensor parameter is less than the specified value?	2.00 V	Go to Step 4	Go to Step 10
4	1. Turn OFF the ignition. 2. Connect a 3-amp fused jumper wire between the 5-volt reference circuit of the sensor connector and the signal circuit of the sensor connector. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the appropriate Sensor parameter. Does the scan tool indicate that the Sensor parameter is greater than the specified value?	4.75 V	Go to Step 5	Go to Step 8
5	1. Disconnect the fused jumper wire. 2. Measure the voltage between the 5-volt reference circuit of the sensor connector and the low reference circuit of the sensor connector. Does the voltage measure less than the specified value?	5.50 V	Go to Step 6	Go to Step 7
6	1. Turn OFF the ignition. 2. Disconnect the negative battery cable. Refer to <u>Battery Negative Cable Disconnect/Connect Procedure</u> in Engine Electrical. 3. Measure the resistance from the low	5 ohms		

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	reference circuit of the sensor to a good ground.			
	Does the resistance measure less than the specified value?		Go to Step 12	Go to Step 11
7	Test the 5-volt reference circuit of the sensor for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 16	Go to Step 13
8	Test the 5-volt reference circuit of the sensor for a short to ground, a high resistance, or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 16	Go to Step 9
9	Test the signal circuit of the sensor for a short to ground, a high resistance, or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 16	Go to Step 13
10	Test the signal circuit of the sensor for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 16	Go to Step 13
11	1. Disconnect the memory seat module harness connector C2. 2. Test the low reference circuit of the sensor for a high resistance or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> 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 sensor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems.	-		Go to Step

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	Did you find and correct the condition?		Go to Step 16	14
13	Inspect for poor connections at the harness connector of the memory seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 16	Go to Step 15
14	Replace the appropriate seat position sensor. Refer to <u>Sensor Replacement - Seat Adjuster Motor - Horizontal</u> , <u>Sensor Replacement - Seat Adjuster Motor - Vertical</u> or <u>Power Recliner Sensor Replacement - Front</u> . Did you complete the replacement?	-	Go to Step 16	-
15	Replace the memory seat module. Refer to <u>Memory Seat Control Module Replacement</u> . 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 B1826, B1851, B1861, B2356, B2366, OR B2376

Circuit Description

The sensor that set this diagnostic trouble code (DTC) is attached to the seat directional motor it monitors. It receives a 5-volt reference and low reference from the memory seat module (MSM). The sensor sends a voltage signal that varies with the movement of the seat through the sensor signal circuit to the MSM. Then based on this voltage signal, the MSM determines the position of the seat.

Conditions for Running the DTC

- The MSM must be powered and cannot have DTC B1327 - Battery Voltage Low set as a current DTC for this DTC to set.

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- This test will run only when the motors are active.

Conditions for Setting the DTC

If the sensor signal received by the MSM from a motor being driven in a commanded direction changes by more than 10 counts or 0.2 volts in the wrong direction, the MSM will set this DTC.

Action Taken When the DTC Sets

- Current and History codes are set.
- The MSM disables the affected motor during memory recall operations.
- The affected motor will respond to manual positioning commands.

Conditions for Clearing the DTC

The MSM will clear the DTC as an active DTC, whenever a manual switch is activated and the MSM senses that the voltage from the sensor signal changes by more than 2 counts or 0.04 volts in the correct direction.

Diagnostic Aids

All position sensors use common 5-volt reference and low reference circuits.

Test Description

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

- 2:** This step checks the direction in which the volts change as the switch is activated. The voltage should increase for the forward or up position and decrease for the rearward or down position.
- 4:** This step checks the polarity of the seat position sensor wiring.
- 5:** This step checks the polarity of the seat motor wiring.
- 6:** This step checks the polarity of the seat switch wiring.

DTC B1826, B1851, B1861, B2356, B2366, or B2376

Step	Action	Value(s)	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u>				
Connector End View Reference: <u>Power Seat Systems Connector End Views</u>				
	Did you perform the Diagnostic System Check - Power Seat Systems?			Go to Diagnostic

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1		-	Go to Step 2	<u>System Check - Power Seat Systems</u>
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the appropriate Sensor parameter in the Memory Seat Module data list. 4. Activate the appropriate seat switch in the FORWARD or UP direction. Does the voltage increase?	-	Go to Step 9	Go to Step 3
3	Does the seat move in the commanded direction?	-	Go to Step 4	Go to Step 5
4	Verify that the seat position sensor wiring circuits are in the correct harness connector cavities. Did you find and correct the condition?	-	Go to Step 9	Go to Step 7
5	Verify that the seat motor wiring circuits are in the correct harness connector cavities. Did you find and correct the condition?	-	Go to Step 9	Go to Step 6
6	Verify that the seat switch wiring circuits are in the correct harness connector cavities. Did you find and correct the condition?	-	Go to Step 9	Go to Step 7
7	Inspect for poor connection at the harness connector of the memory seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 9	Go to Step 8
8	Replace the memory seat module. Refer to <u>Memory Seat Control Module Replacement</u>. Did you complete the replacement?	-	Go to Step 9	-

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9	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 B1830, B1835, B1840 OR B1845

Circuit Description

When the power seat lumbar switches are pressed they send a 12-volt signal through the lumbar switch signal circuit to the memory seat module (MSM). The MSM commands the lumbar support to move in response to the switch inputs.

Conditions for Running the DTC

The MSM must be powered and can not have DTC B1327 - Device Power 1 Circuit Low as an active DTC for this DTC to set.

Conditions for Setting the DTC

- If a seat switch circuit continues to be active for 30 seconds after a motor controlled by that switch reaches the end of its travel, the switch will be considered shorted and the MSM will set the DTC.
- If a position sensor DTC is current and the associated switch is active for 30 continuous seconds, the switch will be considered shorted and the MSM will set a switch DTC.
- A switch DTC will not set if DTC B1327 is current.

Action Taken When the DTC Sets

- A motor output driven in response to a switch considered failed, is deactivated for both directions.
- All memory recall commands are ignored.
- The MSM will respond to any other switch input that has not set a DTC.

Conditions for Clearing the DTC

The DTC automatically clears when the switch circuit setting the DTC is no longer active.

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Test Description

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

2: Checks the existing state of the driver's seat lumbar switch by using the current state of the input parameter. If all of the lumbar switch parameters display active, possibly one of the lumbar switch signal circuits is shorted to voltage.

4: When the lumbar switch is disconnected, this step determines if the switch contacts are stuck closed, or if one of the switch signal circuits is possibly shorted to voltage.

10: This step verifies the repair.

DTC B1830, B1835, B1840 or B1845

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u>			
Connector End View Reference: <u>Power Seat Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Power Seat Systems?	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the appropriate Seat Lumbar switch parameter in the Memory Seat Module data list. Does the scan tool display Inactive?	Go to Step 3	Go to Step 4
3	1. With a scan tool, observe the appropriate Seat Lumbar switch parameter. 2. Activate the suspect lumbar switch. Does the Seat Lumbar switch parameter change state?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 4
	1. Turn OFF the ignition. 2. Disconnect the lumbar switch connector. 3. Turn ON the ignition, with the engine OFF.		

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4	4. With a scan tool, observe all of the lumbar switch parameters in the Memory Seat Module data list. Does the scan tool display Inactive for all of the parameters?	Go to Step 7	Go to Step 5
5	Test the lumbar switch signal circuit that displays active 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 10	Go to Step 6
6	Inspect for poor connections at the harness connector of the memory seat 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 10	Go to Step 8
7	Inspect for poor connections at the harness connector of the lumbar 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 10	Go to Step 9
8	Replace the memory seat module. Refer to Memory Seat Control Module Replacement. Did you complete the replacement?	Go to Step 10	-
9	Replace the lumbar switch. Refer to Lumbar Switch Replacement. Did you complete the replacement?	Go to Step 10	-
10	1. Use a 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 B2757, B2762, B2767, OR B2772

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Circuit Description

The memory function switches are normally open and are wired to the driver door switch assembly (DDSA). When a memory recall switch is pressed, the switch pulls the 5-volt signal circuit from the DDSA low. The DDSA senses that a memory recall signal was pulled low and a class 2 message is sent out identifying that the circuit is active.

Conditions for Running the DTC

The DDSA must be powered and can not have DTC 1328 - Battery Voltage High or B1327- Battery Voltage Low as active DTCs for this DTC to set.

Conditions for Setting the DTC

If a memory switch signal circuit is active for more that 30 continuous seconds, the circuit will be considered shorted, and the DDSA will set this DTC.

Action Taken When the DTC Sets

The DDSA ignores the invalid switch signal from the memory function switch and will not respond to it. The DDSA will respond to all other valid switch signals.

Conditions for Clearing the DTC

The DTC automatically clears when the switch circuit setting the DTC is no longer active.

Test Description

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

2: Checks the existing state of the memory switch by using the current state of the memory switch parameter.

9: This step verifies the repair.

DTC B2757, B2762, B2767, or B2772

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> or <u>Power Door Systems Connector End Views</u> in Doors			
1	Did you perform the Diagnostic System Check - Power Seat Systems?		Go to Diagnostic System Check - Power Seat

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		Go to Step 2	<u>Systems</u>
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the Memory Recall Switches parameter in the Driver Door Switch data list. Does the scan tool display Idle?	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 memory function switch harness connector. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the Memory Recall Switches parameter. Does the scan tool display Idle?	Go to Step 6	Go to Step 4
4	Test the appropriate memory switch 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 9	Go to Step 5
5	Inspect for poor connections at the harness connector of the driver door switch assembly. 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 memory function 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 9	Go to Step 8
7	Replace the driver door switch assembly. Refer to Front Door Switch Replacement in Doors.		-

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	Did you complete the replacement?	Go to Step 9	
8	Replace the memory function switch. Refer to <u>Memory Seat Switch Replacement</u> .		-
	Did you complete the replacement?	Go to Step 9	
9	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

SYMPTOMS - SEATS

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

1. Refer to the system description and operation from the following list in order to familiarize yourself with the system functions:
 - **Power Seats System Description and Operation (Front Seat)** or **Power Seats System Description and Operation (Folding Seat)**
 - **Lumbar Support Description and Operation (w/o A45)** or **Lumbar Support Description and Operation (with A45)**
 - **Heated Seats Description and Operation**
 - **Memory Seats Description and Operation**
2. If you are diagnosing a seat with memory (A45), heated seats, or the power folding rear seat, perform the **Diagnostic System Check - Power Seat 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.

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the power seats. 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.
- Inspect the seat adjuster track for conditions which may cause binding or objects within the

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seat adjustment range which obstruct movement or interfere with wiring.

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 Seat Inoperative (w/o A45)** or **Power Seat Inoperative (with A45)**
- **Power Third Row Seat Inoperative**
- **Power Third Row Seat Recline Inoperative**
- **Memory Seat Feature Inoperative**
- **Lumbar Support Inoperative (w/o A45)** or **Lumbar Support Inoperative (with A45)**
- **Heated Seat Always On**
- **Heated Seat Inoperative**
- **Heated Seat Temperature Adjustment Inoperative**
- **Heated Seat Switch Mode Indicator Malfunction**

POWER SEAT INOPERATIVE (W/O A45)

Power Seat Inoperative (w/o A45)

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> or <u>Passenger Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> DEFINITION: One or more of the power seat functions are inoperative.			
1	Did you review the power seat system description and operation and perform the necessary inspections?	Go to Step 2	Go to <u>Symptoms - Seats</u>
2	1. Verify that the power seat inoperative complaint is present. 2. Attempt to operate all of the power seat motors through their full range of adjustment.	Go to <u>Testing for Intermittent Conditions and</u>	

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	Does the power seat system operate as described in the system description and operation?	<u>Poor Connections</u> in Wiring Systems	Go to Step 3
3	Are all of the power seat motors inoperative?	Go to Step 4	Go to Step 6
4	1. Disconnect the seat adjuster switch. 2. Connect a test lamp from the battery positive voltage circuit of the switch connector to a good ground. Does the test lamp illuminate?	Go to Step 5	Go to Step 10
5	Connect a test lamp from the battery positive voltage circuit of the switch connector to the ground circuit of the switch connector. Does the test lamp illuminate?	Go to Step 9	Go to Step 11
6	1. Disconnect the inoperative seat motor. 2. Connect a test lamp between the motor control circuits of the harness connector. 3. Operate the appropriate seat switch in both directions. Does the test lamp illuminate in both directions?	Go to Step 8	Go to Step 7
7	Test the motor control circuits for a short to ground or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> or <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 9
8	Inspect for poor connections at harness connector of the inoperative seat motor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 13
9	Inspect for poor connections at harness connector of the seat adjuster switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems.		

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	Did you find and correct the condition?	Go to Step 14	Go to Step 12
10	Repair the short to ground or open in the battery positive voltage circuit of the seat adjuster switch. Refer to <u>Wiring Repairs</u> or <u>Connector Repairs</u> in Wiring Systems. Did you complete the repair?	Go to Step 14	-
11	Repair the open in the ground circuit of the seat adjuster switch. Refer to <u>Wiring Repairs</u> or <u>Connector Repairs</u> in Wiring Systems. Did you complete the repair?	Go to Step 14	-
12	Replace the seat adjuster switch. Refer to <u>Seat Switch Replacement - Power</u> . Did you complete the replacement?	Go to Step 14	-
13	Replace the seat motor. Refer to <u>Seat Adjuster Motor Replacement - Horizontal</u> , <u>Seat Adjuster Motor Replacement - Vertical</u> , or <u>Power Recliner Motor Replacement - Front Seat</u> . Did you complete the replacement?	Go to Step 14	-
14	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER SEAT INOPERATIVE (WITH A45)

Test Description

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

8: This step tests the integrity of the signal circuits of the seat adjuster switch. If the fuse in the jumper wire opens when you perform this test, a short to ground may have occurred.

Power Seat Inoperative (with A45)

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> DEFINITION: One or more of the power seat functions are inoperative.			
1	Did you perform the Diagnostic System Check - Power Seat Systems?		Go to <u>Diagnostic System Check - Power Seat</u>

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		Go to Step 2	<u>Systems</u>
2	1. Verify that the power seat inoperative complaint is present. 2. Attempt to operate all of the power seat motors through their full range of adjustment. Does the power seat system operate as described in the system description and operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	Are all of the power seat motors inoperative?	Go to Step 4	Go to Step 7
4	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe any seat switch parameter in the Memory Seat Module (MSM) data list. 4. Operate the seat switch in the direction of the observed parameter. Does the observed seat switch parameter change state?	Go to Step 14	Go to Step 5
5	Probe the battery positive voltage circuit of the seat adjuster switch with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to Step 6	Go to Step 15
6	1. Probe any one of the seat switch signal circuits of the seat adjuster switch with a test lamp that is connected to a good ground. 2. Operate the appropriate seat switch. Does the test lamp illuminate?	Go to Step 14	Go to Step 13
	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the inoperative		

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7	seat switch parameters in the Memory Seat Module data list. 4. Operate the appropriate seat switch in both directions. Does the seat switch parameters change state in both directions?	Go to Step 9	Go to Step 8
8	1. Disconnect the seat adjuster switch. 2. Connect a 3-amp fused jumper wire between the battery voltage circuit of the harness connector and the suspect switch signal circuit of the harness connector. 3. With a scan tool, observe the appropriate seat switch parameter. Does the seat switch parameter change state?	Go to Step 13	Go to Step 10
9	1. Disconnect the inoperative seat motor. 2. Connect a test lamp between the motor control circuits of the harness connector. 3. Operate the appropriate seat switch in both directions. Does the test lamp illuminate in both directions?	Go to Step 12	Go to Step 11
10	Test the suspect switch signal circuit between the seat adjuster switch and the MSM for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> or <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 19	Go to Step 14
11	Test the motor control circuits between the MSM and the inoperative seat motor for a short to ground or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> or <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 19	Go to Step 14
	Inspect for poor connections at the harness connector of the inoperative seat motor. Refer		

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12	to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 19	Go to Step 17
13	Inspect for poor connections at the harness connector of the seat adjuster switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 19	Go to Step 16
14	Inspect for poor connections at the harness connector of the memory seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 19	Go to Step 18
15	Repair the short to ground or open in the battery positive circuit of the seat adjuster switch. Refer to <u>Wiring Repairs</u> or <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 19	-
16	Replace the seat adjuster switch. Refer to <u>Seat Switch Replacement - Power</u> . Did you complete the replacement?	Go to Step 19	-
17	Replace the inoperative seat motor. Refer to <u>Seat Adjuster Motor Replacement - Horizontal</u> , <u>Seat Adjuster Motor Replacement - Vertical</u> , or <u>Power Recliner Motor Replacement - Front Seat</u> . Did you complete the replacement?	Go to Step 19	-
18	Replace the memory seat module. Refer to <u>Memory Seat Control Module Replacement</u> . Did you complete the replacement?	Go to Step 19	-
19	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

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Test Description

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

2: This step ensures that the correct procedures are used when attempting to verify the operation of the rear folding seat. The rear seat module (RSM) must be enabled before the rear folding seat system will operate. Enabling the RSM using the remote keyless entry transmitter or the driver door/passenger door lock switch unlock sequence allows for the system to operate for 120 seconds before timing out. The RSM will restart the timing procedure after each time the recline or stow switch is pressed. Enabling the RSM by placing the ignition in either the ON or ACCESSORY positions allows for continuous operation of the folding seat system without the time out feature.

4: This step verifies if the rear seat module (RSM) is calibrated. The module must be calibrated in order for the folding seat system to operate.

6: This step determines from which stow switch the folding seat is inoperative.

10: This step checks the existing state of the back panel position switch by using the current state of the switch parameter. If the power folding seat is in a position other than the seated or stowed position, the back panel position switch should be open and the Back Panel Position Switch parameter should display Inactive.

11: This step checks the existing state of the load floor position switch by using the current state of the switch parameter. When the back panel is in the folded position the load floor position switch should be closed to voltage and the Load Floor Position Switch parameter should display Inactive.

Power Third Row Seat Inoperative

Step	Action	Value(s)	Yes	No
Schematic Reference: <u>Rear Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> DEFINITION: The power folding rear seat is inoperative from just one or both of the seat stow switches.				
1	Did you perform the Diagnostic System Check - Power Seat Systems?	-	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
	1. Enable the RSM by placing the gear selector in PARK, opening the rear liftgate or the right rear passenger			

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2	door, and performing one of the following: • Turn On the ignition, with the engine Off. • Press the remote keyless entry transmitter unlock button 3 times within 5 seconds. • Press the driver or passenger door lock switch unlock button 3 times within 5 seconds. 2. Verify that the Power Seat Inoperative - Folding Seat complaint is present. Does the power folding seat operate as described in the system description and operation?	-	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	Is the rear folding seat inoperative from both stow switches?	-	Go to Step 4	Go to Step 6
4	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the Calibrated parameter in the Rear Seat Module data list. Does the Calibrated parameter display Yes?	-	Go to Step 5	Go to <u>Power Folding Seat Calibration</u>
5	1. With a scan tool, clear all DTC Information in the Rear Seat Module data list. 2. With a scan tool, observe the History Diagnostic Trouble Code(s) list in the Rear Seat Module data list. 3. Attempt to operate the power folding seat.	-	Go to Diagnostic	

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	Did the RSM set a history overcurrent DTC?		<u>Trouble Code (DTC) List</u>	Go to Step 9
6	Is the rear folding seat inoperative from just the front stow switch?	-	Go to Step 7	Go to Step 8
7	1. Open the right rear passenger door. 2. With a scan tool, observe the Rt. Rear Door Jamb Sw. parameter in the Right Rear Door Module data list. Does the Rt. Rear Door Jamb Sw. parameter display On?	-	Go to Step 16	Go to <u>Courtesy Lamps Inoperative</u> in Lighting Systems
8	1. Open the liftgate. 2. With a scan tool, observe the Liftgate Ajar Indicator parameter in the Rear Integration Module data list. Does the Liftgate Ajar Indicator parameter display Ajar?	-	Go to Step 16	Go to <u>Liftgate Ajar Indicator Malfunction</u> in Body Rear End
9	Is the folding seat stuck in a position other than the seated or stowed positions?	-	Go to Step 10	Go to Step 11
10	With a scan tool, observe the Back Panel Position Switch parameter in the Rear Seat Module data list. Does the scan tool display Active?	-	Go to Step 14	Go to Step 11
11	With a scan tool, observe the Load Floor Switch parameter in the Rear Seat Module data list. Does the scan tool display Active?	-	Go to Step 13	Go to Step 12
12	1. With a scan tool, observe either one of the Stow Switch parameters in the Rear Seat Module data list. 2. Press the observed Stow Switch. Does the observed Stow Switch parameter display Active?	-	Go to Step 24	Go to Step 15

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13	1. Disconnect the rear seat module connector C2. 2. Verify that the seat back panel is in the folded position. 3. Measure the resistance between the load floor position switch supply voltage circuit and the load floor position switch signal circuit of the module connector. Does the resistance measure less than the specified value?	5 ohms	Go to Step 24	Go to Step 20
14	1. Disconnect the rear seat module connector C2. 2. Measure the resistance between the back panel position switch supply voltage circuit and the back panel position switch signal circuit of the module connector. Does the resistance measure less than the specified value?	5 ohms	Go to Step 22	Go to Step 19
15	1. Disconnect either one of the stow switch connectors. 2. Connect a test lamp from the battery positive voltage circuit of the switch connector to a good ground. Does the test lamp illuminate?	-	Go to Step 24	Go to Step 25
16	1. Disconnect the inoperative stow switch connector. 2. Connect a test lamp from the battery positive voltage circuit of the switch connector to a good ground. Does the test lamp illuminate?	-	Go to Step 17	Go to Step 25
	1. With a scan tool, observe the			

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17	inoperative Stow Switch parameter in the Rear Seat Module data list. 2. Connect a 3-amp fused jumper wire between the battery positive voltage circuit of the switch connector and the switch signal circuit of the connector. Does the observed Stow Switch parameter display Active?	-	Go to Step 23	Go to Step 18
18	Test the signal circuit of the inoperative stow switch for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 29	Go to Step 24
19	Test the signal circuit of the back panel position switch for a short to battery voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 29	Go to Step 24
20	Test the supply voltage circuit and the signal circuit of the load floor position switch for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 29	Go to Step 21
21	Inspect for poor connections at the harness connector of the load floor position switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 29	Go to Step 26
22	Inspect for poor connections at the harness connector of the back panel position switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems.	-		

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	Did you find and correct the condition?		Go to Step 29	Go to Step 26
23	Inspect for poor connections at the harness connector of the inoperative folding seat stow switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 29	Go to Step 27
24	Inspect for poor connections at the harness connector of the rear seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 29	Go to Step 28
25	Repair the short to ground or open in the battery positive voltage circuit of the folding seat stow switch. Refer to <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	-	Go to Step 29	-
26	Replace the folding seat back panel. Refer to <u>Seat Back Panel Replacement - Rear Seat No. 2.</u> Did you complete the replacement?	-	Go to Step 29	-
27	Replace the inoperative folding seat stow switch. Refer to <u>Folding Seat Switch Replacement - Rear Seat No. 2 - Rear Quarter Trim Rear</u> or <u>Folding Seat Switch Replacement - Rear Seat No.2 - Rear Quarter Trim Front.</u> Did you complete the replacement?	-	Go to Step 29	-
28	IMPORTANT: After the repair perform the RSM Auto Calibration procedure. Refer to <u>Power Folding Seat Calibration.</u> Replace the rear seat module. Refer to <u>Seat Control Module Replacement - Rear No. 2.</u> Did you complete the replacement?	-	Go to Step 29	-

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29	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to Step 2
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POWER THIRD ROW SEAT RECLINE INOPERATIVE

Diagnostic Aids

The power folding seat must be in the seated position before the seat back recline function will operate from the recline switch.

Test Description

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

4: This step checks the existing state of the back panel position switch by using the current state of the switch parameter. With the power folding seat in the stowed position, the back panel position switch contacts should be closed to voltage and the Back Panel Position Switch parameter should display Active.

Power Third Row Seat Recline Inoperative

Step	Action	Value(s)	Yes	No
Schematic Reference: <u>Rear Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> DEFINITION: The folding seat recline function is inoperative from the recline switch, or during seat operation the seat back will not recline to the full seated position.				
1	Did you perform the Diagnostic System Check - Power Seat Systems?	-	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	Verify that the Power Third Row Seat Recline Inoperative complaint is present. Does the power folding seat operate as described in the system description and operation?	-	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3

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3	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the Recline Switch parameter in the Rear Seat Module data list. 4. Press the folding seat recline switch. Does the Recline Switch parameter display Active?	-	Go to Step 4	Go to Step 6
4	1. Place the rear folding seat in the stowed position. 2. With a scan tool, observe the Back Panel Position Switch parameter in the Rear Seat Module data list. Does the scan tool display Active?	-	Go to Step 12	Go to Step 5
5	1. Disconnect the rear seat module connector C2. 2. Measure the resistance between the back panel position switch supply voltage circuit and the back panel position switch signal circuit of the module connector. 3. Press the pad on the back panel position switch in order to activate the switch. Does the resistance measure less than the specified value?	5 ohms	Go to Step 12	Go to Step 9
6	1. Disconnect the recline switch connector. 2. Connect a test lamp from the battery positive voltage circuit of the switch connector to a good ground. Does the test lamp illuminate?	-	Go to Step 7	Go to Step 13

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7	1. Connect a 3-amp fused jumper wire between the battery positive voltage circuit of the switch connector and the recline switch signal circuit of the switch connector. 2. With a scan tool, observe the Recline Switch parameter in the Rear Seat Module data list. Does the Recline Switch parameter display Active?	-	Go to Step 11	Go to Step 8
8	Test the recline switch signal circuit for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 17	Go to Step 12
9	Test the supply voltage circuit and the signal circuit of the back panel position switch for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 17	Go to Step 10
10	Inspect for poor connections at the harness connector of the back panel position switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 17	Go to Step 14
11	Inspect for poor connections at the harness connector of the folding seat recline switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 17	Go to Step 15
12	Inspect for poor connections at the harness connector of the rear seat module. Refer to <u>Testing for Intermittent</u>	-		

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	<u>Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?		Go to Step 17	Go to Step 16
13	Repair the open in the battery positive voltage circuit of the folding seat recline switch. Refer to <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	-	Go to Step 17	-
14	Replace the folding seat back panel position switch. Refer to <u>Seat Back Panel Replacement - Rear Seat No. 2.</u> Did you complete the replacement?	-	Go to Step 17	-
15	Replace the folding seat recline switch. Refer to <u>Folding Seat Switch Replacement - Rear Seat No. 2 - Rear Quarter Trim Rear.</u> Did you complete the replacement?	-	Go to Step 17	-
16	IMPORTANT: After the repair perform the RSM Auto Calibration procedure. Refer to <u>Power Folding Seat Calibration.</u> Replace the rear seat module. Refer to <u>Seat Control Module Replacement - Rear No. 2.</u> Did you complete the replacement?	-	Go to Step 17	-
17	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to Step 2

MEMORY SEAT FEATURE INOPERATIVE

Test Description

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

3: This step verifies that Personalization in the driver information center (DIC) is active. Memory seats cannot function if personalization turned off. A check mark after personalization indicates that it is active.

4: This step verifies that the Personalization Option in the dash integration module (DIM) is

activated. Memory seats cannot function if the option is turned off. An asterisk beside the personalization option indicates that the option is activated.

5: Turning ON the headlamps in this step eliminates the possibility of the memory function switch finding an alternative path to ground through the illumination circuit.

8: This step tests the integrity of the memory 1 switch signal circuit of the driver door switch assembly. If the fuse in the jumper wire opens when you perform this test, a short to battery voltage may have occurred.

10: This step tests the integrity of the memory 2 switch signal circuit of the driver door switch assembly. If the fuse in the jumper wire opens when you perform this test, a short to battery voltage may have occurred.

Memory Seat Feature Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> or <u>Power Door Systems Connector End Views</u> in Doors			
1	Did you perform the Diagnostic System Check - Power Seat Systems?	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	Verify that the Memory Seat Feature Inoperative complaint is present. Does the memory seat system operate as described in the system description and operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	1. Turn On the ignition, with the engine OFF. 2. Press the radio Tune/SEL button to access the main menu of the DIC. 3. With the Tune/SEL button, scroll until SETUP is highlighted. 4. Press the Tune/SEL button to access the SETUP menu. 5. With the Tune/SEL button, scroll to the Personalization menu. 6. Verify that personalization is in the		

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	active state by pressing the Tune/SEL button until a check mark appears after Personalization.		Go to <u>Driver Personalization</u> in Personalization
	Is personalization in the active state?	Go to Step 4	
4	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, navigate to the Setting Options screen by making the following selections: • Dash Integration Module • Special Functions • Set Options • Personalization Option 4. Follow the on screen instructions to verify that the Personalization Option is activated.		Go to <u>Body Control Module (BCM) Programming/RPO Configuration (RIM) or Body Control Module (BCM) Programming/RPO Configuration (DIM)</u> in Body Control System
	Is the personalization option activated?	Go to Step 5	
5	1. Turn the headlamp switch to the ON position. 2. With a scan tool, observe the Memory Recall Switches parameter in the Driver Door Switch data list. 3. Press the memory 1 button.		
	Does the scan tool display Memory 1?	Go to Step 6	Go to Step 8
6	1. With a scan tool, observe the Memory Recall Switches parameter. 2. Press the memory 2 button.		
	Does the scan tool display Memory 2?	Go to Step 7	Go to Step 10
7	1. With a scan tool, observe the Memory Recall Switches parameter. 2. Press the EXIT button.		

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	Does the scan tool display Exit?	Go to Step 15	Go to Step 14
8	1. Disconnect the memory function switch harness connector. 2. Connect a 3-amp fused jumper wire from the memory 1 switch signal circuit of the memory function switch connector to a good ground. 3. With a scan tool, observe the Memory Recall Switches parameter.		
	Does the scan tool display Memory 1?	Go to Step 9	Go to Step 11
9	1. Connect a 3-amp fused jumper wire between the memory 1 switch signal circuit of the memory function switch connector and the ground circuit of the switch connector. 2. With a scan tool, observe the Memory Recall Switches parameter.		
	Does the scan tool display Memory 1?	Go to Step 14	Go to Step 16
10	1. Disconnect the memory function switch harness connector. 2. Connect a 3-amp fused jumper wire from the memory 2 switch signal circuit of the memory function switch connector to a good ground. 3. With a scan tool, observe the Memory Recall Switches parameter.		
	Does the scan tool display Memory 2?	Go to Step 14	Go to Step 12
11	Test the memory 1 switch signal circuit of the driver door switch assembly (DDSA) for an open. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.		
	Did you find and correct the condition?	Go to Step 20	Go to Step 13
	Test the memory 2 switch signal circuit of the driver door switch assembly (DDSA) for		

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12	an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 20	Go to Step 13
13	Inspect for poor connections at the harness connector of the driver door switch assembly. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 20	Go to Step 17
14	Inspect for poor connections at the harness connector of the memory function switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 20	Go to Step 18
15	Inspect for poor connections at the harness connector of the memory seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 20	Go to Step 19
16	Repair the open in the ground circuit of the memory function switch. Refer to <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	Go to Step 20	-
17	Replace the driver door switch assembly. Refer to <u>Front Door Switch Replacement</u> in Doors. Did you complete the replacement?	Go to Step 20	-
18	Replace the memory function switch. Refer to <u>Memory Seat Switch Replacement</u> . Did you complete the replacement?	Go to Step 20	-
19	Replace the memory seat module. Refer to <u>Memory Seat Control Module Replacement</u> . Did you complete the replacement?	Go to Step 20	-
20	Operate the system in order to verify the repair.		

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Did you correct the condition?

System OK

Go to **Step 2**

LUMBAR SUPPORT INOPERATIVE (W/O A45)

Lumbar Support Inoperative (w/o A45)

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> or <u>Passenger Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> DEFINITION: One or more of the power lumbar functions are inoperative.			
1	Did you review the Lumbar Support System Description and Operation and perform the necessary inspections?	Go to Step 2	Go to <u>Symptoms - Seats</u>
2	Verify that the Lumbar Support Inoperative complaint is present, by attempting to operate the lumbar support motor through it's full range of adjustment. Does the lumbar support system operate as described in the system description and operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	1. Disconnect the lumbar switch harness connector. 2. Connect a test lamp from the battery positive voltage circuit of the switch connector to a good ground. Does the test lamp illuminate?	Go to Step 4	Go to Step 9
4	Connect a test lamp between the battery positive voltage circuit of the switch connector and the ground circuit of the switch connector. Does the test lamp illuminate?	Go to Step 5	Go to Step 10
5	1. Disconnect the lumbar motor harness connector. 2. Connect a test lamp between the motor control circuits of the harness connector. 3. Operate the lumbar switch in both directions. Does the test lamp illuminate in both		

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	directions?	Go to Step 7	Go to Step 6
6	Test the motor control circuits for a short to ground or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 13	Go to Step 8
7	Inspect for poor connections at the harness connector of the lumbar motor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 13	Go to Step 12
8	Inspect for poor connections at the harness connector of the lumbar switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 13	Go to Step 11
9	Repair the open in the battery positive voltage circuit of the lumbar switch. Refer to <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	Go to Step 13	-
10	Repair the open in the ground circuit of the lumbar switch. Refer to <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	Go to Step 13	-
11	Replace the lumbar switch. Refer to <u>Lumbar Switch Replacement</u> . Did you complete the replacement?	Go to Step 13	-
12	Replace the lumbar motor Refer to <u>Lumbar Replacement - Front Seat</u> . Did you complete the replacement?	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

LUMBAR SUPPORT INOPERATIVE (WITH A45)

Test Description

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

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7: This step tests the integrity of the signal circuits of the seat lumbar switch. If the fuse in the jumper wire opens when you perform this test, a short to ground may have occurred.

Lumbar Support Inoperative (with A45)

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> DEFINITION: One or more of the lumbar support functions are inoperative.			
1	Did you perform the Diagnostic System Check - Power Seat Systems?	Go to Step 2	Go to <u>Diagnostic System Check - Power Seat Systems</u>
2	1. Verify that the lumbar support inoperative complaint is present. 2. Attempt to operate the lumbar motor through it's full range of adjustment. Does the lumbar system operate as described in the system description and operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the Seat Lumbar Forward parameter in the Memory Seat Module data list. 4. Operate the lumbar switch in the FORWARD direction. Does the Seat Lumbar Forward parameter change state?	Go to Step 4	Go to Step 5
4	1. With a scan tool, observe the Seat Lumbar Rearward parameter in the Memory Seat Module data list. 2. Operate the lumbar switch in the REARWARD direction. Does the Seat Lumbar Rearward parameter		

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	change state?	Go to Step 8	Go to Step 7
5	Probe the battery positive voltage circuit of the lumbar switch with a test lamp that is connected to a good ground. Does the test lamp illuminate?	Go to Step 6	Go to Step 14
6	1. Disconnect the lumbar switch harness connector. 2. Connect a 3-amp fused jumper wire between the battery voltage circuit of the harness connector and the lumbar forward switch signal circuit of the harness connector. 3. With a scan tool, observe the Seat Lumbar Forward parameter. Does the Seat Lumbar Forward parameter change state?	Go to Step 12	Go to Step 9
7	1. Disconnect the lumbar switch harness connector. 2. Connect a 3-amp fused jumper wire between the battery voltage circuit of the harness connector and the lumbar rearward switch signal circuit of the harness connector. 3. With a scan tool, observe the Seat Lumbar Rearward parameter. Does the Seat Lumbar Rearward parameter change state?	Go to Step 12	Go to Step 9
8	1. Disconnect the lumbar motor harness connector. 2. Connect a test lamp between the motor control circuits of the harness connector. 3. Operate the lumbar switch in both directions. Does the test lamp illuminate in both directions?	Go to Step 11	Go to Step 10

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9	Test the suspect switch signal circuit between the lumbar switch and the memory seat module for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 18	Go to Step 13
10	Test the motor control circuits between the memory seat module and the inoperative lumbar motor for a short to ground or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 18	Go to Step 13
11	Inspect for poor connections at the harness connector of the lumbar motor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 18	Go to Step 16
12	Inspect for poor connections at the harness connector of the lumbar switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> 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 harness connector of the memory seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 18	Go to Step 17
14	Repair the short to ground or open in the battery positive circuit of the lumbar switch. Refer to <u>Wiring Repairs</u> or <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 18	-
15	Replace the lumbar switch. Refer to <u>Lumbar Switch Replacement</u> . Did you complete the replacement?	Go to Step 18	-
	Replace the lumbar motor. Refer to <u>Lumbar</u>		

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16	<u>Replacement - Front Seat.</u> Did you complete the replacement?	Go to Step 18	-
17	Replace the memory seat module. Refer to <u>Memory Seat Control Module Replacement.</u> Did you complete the replacement?	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

HEATED SEAT ALWAYS ON

Heated Seat Always On

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> or <u>Passenger Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> or <u>Body Control System Connector End Views</u> in Body Control System DEFINITION: The driver or passenger seat stays warm.			
1	Did you review the heated seat operation and perform the necessary inspection?	Go to Step 2	Go to <u>Symptoms - Seats</u>
2	Verify that the Heated Seat Always On complaint is present. Does the heated seat system operate as described in the system description and operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the appropriate Heated Seat Switch parameter in the HVAC Control Module data list. Does the Heated Seat Switch parameter display Pressed?	Go to Step 7	Go to Step 4
4	Test the heated seat control module high/low signal circuit between the rear integration module and the heated seat module for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems.		

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	Did you find and correct the condition?	Go to Step 10	Go to Step 5
5	Test the heated seat control module status signal circuit between the rear integration module and the heated seat module for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 10	Go to Step 6
6	Inspect for poor connections at the harness connector of the heated seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> 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 HVAC control module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 10	Go to Step 9
8	Replace the heated seat module. Refer to <u>Heated Seat Control Module Replacement - Front</u> . Did you complete replacement?	Go to Step 10	-
9	Replace the HVAC control module. Refer to <u>HVAC Control Module Replacement</u> in HVAC Systems - Automatic. Did you complete the replacement?	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

HEATED SEAT INOPERATIVE

Test Description

The number below refers to the step number on the diagnostic table.

7: This step tests the integrity of the heated seat switch signal from the rear integration module. This signal is a momentary 35 millisecond one shot pulse signal that is monitored through a momentary voltage change in the volt meter when the switch is pressed. In order

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to accurately recognize the change in voltage, the volt meter reading should be stable before performing this test.

Heated Seat Inoperative

Step	Action	Value(s)	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> or <u>Passenger Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> or <u>Body Control System Connector End Views</u> in Body Control System DEFINITION: This test assumes that Load Shed Level 1 or 2 Heated Seats is not Enabled.				
1	Did you review the heated seat operation and perform the necessary inspection?	-	Go to Step 2	Go to <u>Symptoms - Seats</u>
2	Verify that the heated seat inoperative complaint is present. Does the heated seat system operate as described in the system description and operation?	-	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the appropriate Heated Seat parameter in the HVAC Control Module Non-HVAC Data list. 4. Activate the suspect heated seat switch. Does the scan tool display Pressed?	-	Go to Step 4	Go to Step 21
4	1. Turn OFF the ignition. 2. Disconnect the heated seat module connector C1. 3. Turn ON the ignition, with the engine OFF. 4. Measure the voltage from the battery	10-15 V		

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	positive voltage circuit of the heated seat module to a good ground. Does the voltage measure within the specified range?		Go to Step 5	Go to Step 22
5	Measure the voltage from the battery positive voltage circuit of the heated seat module to the ground circuit of the heated seat module. Does the voltage measure within the specified range?	10-15 V	Go to Step 6	Go to Step 24
6	Measure the voltage from the ignition 3 voltage circuit of the heated seat module to a good ground. Does the voltage measure within the specified range?	10-15 V	Go to Step 7	Go to Step 23
7	1. Turn OFF the ignition. 2. Connect the heated seat control module connector C1. 3. Turn ON the ignition, with the engine OFF. 4. While measuring the voltage from the heated seat high/low signal circuit of the heated seat module to a good ground, activate the heated seat switch. Does the measured voltage momentarily change state?	-	Go to Step 9	Go to Step 8
8	1. Turn OFF the ignition. 2. Disconnect the rear integration module connector C2. 3. Turn ON the ignition, with the engine OFF. 4. Measure the voltage from the heated seat high/low signal circuit of the module connector to a good ground.	4.50-5.50 V		

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	Does the voltage measure within the specified range?		Go to Step 20	Go to Step 15
9	1. Disconnect the heated seat module connector C2. 2. Measure the resistance between the element supply voltage circuit and the element control circuit of the module connector. Does the resistance measure less than the specified value?	6 ohms	Go to Step 11	Go to Step 10
10	1. Disconnect the heated seat back connector. 2. Measure the resistance between the element supply voltage circuit and the element control circuit of the seat back heating element. Does the resistance measure less than the specified value?	6 ohms	Go to Step 19	Go to Step 18
11	IMPORTANT: If the resistance is measured with the seat still warm, the resistance may vary outside of the specified range since the thermistor resistance varies with temperature. Measure the resistance between the signal circuit of the temperature sensor and the low reference circuit of the temperature sensor. Does the resistance measure within the specified range?	850 ohms - 1150 K ohms	Go to Step 12	Go to Step 19
12	Test the element supply voltage circuit and the element control circuit between the heated seat module and the seat cushion heating element 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 30	Go to Step 13
	Test the element supply voltage circuit and			

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13	the element control circuit between the heated seat module and the seat back heating element for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 30	Go to Step 14
14	Test the temperature sensor signal circuit between the heated seat module and the temperature sensor for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 30	Go to Step 17
15	Test the heated seat high/low signal circuit between the rear integration module and the heated seat module for a short to ground or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 30	Go to Step 16
16	Test the heated seat high/low signal circuit between the rear integration module and the heated seat module for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 30	Go to Step 17
17	Inspect for poor connections at the harness connector of the heated seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 30	Go to Step 25
18	Inspect for poor connections at the harness connector of the heated seat back heating element. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 30	Go to Step 26
	Inspect for poor connections at the harness			

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19	connector of the seat cushion heating element and temperature sensor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 30	Go to Step 27
20	Inspect for poor connections at the harness connector of the rear integration module (RIM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 30	Go to Step 28
21	Inspect for poor connections at the harness connector of the HVAC control module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	-	Go to Step 30	Go to Step 29
22	Repair the short to ground or open in the battery positive voltage circuit of the heated seat module. Refer to <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	-	Go to Step 30	-
23	Repair the open in the IGN 3 voltage circuit of the heated seat module. Refer to <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	-	Go to Step 30	-
24	Repair the open in the ground circuit of the heated seat module. Refer to <u>Wiring Repairs</u> in Wiring Systems. Did you complete the repair?	-	Go to Step 30	-
25	Replace the heated seat module. Refer to <u>Heated Seat Control Module Replacement - Front</u> . Did you complete the replacement?	-	Go to Step 30	-
26	Replace the seat back heating element. Refer to <u>Seat Back Heater Element Replacement - Front</u> .	-	Go to Step	-

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	Did you complete the replacement?		30	
27	Replace the seat cushion heating element/temperature sensor. Refer to <u>Seat Cushion Heater Element Replacement - Front.</u> Did you complete the replacement?	-	Go to Step 30	-
28	IMPORTANT: After replacement of the RIM perform the set up procedure for the RIM. Refer to Body Control Module (BCM) Programming/RPO Configuration Replace the rear integration module. Refer to <u>Rear Integration Module Replacement</u> in Body Control System. Did you complete the replacement?	-	Go to Step 30	-
29	Replace the HVAC control module. Refer to <u>HVAC Control Module Replacement</u> in HVAC Systems-Automatic. Did you complete the replacement?	-	Go to Step 30	-
30	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to Step 2

HEATED SEAT TEMPERATURE ADJUSTMENT INOPERATIVE

Heated Seat Temperature Adjustment Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> or <u>Passenger Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> DEFINITION: The heated seat cushion or seat back temperature can not be controlled or adjusted. The heated seat system can be turned ON and OFF.			
1	Did you review the heated seat operation and perform the necessary inspections?	Go to Step 2	Go to <u>Symptoms - Seats</u>
2	Verify that the Heated Seat Temperature Adjustment Inoperative complaint is present. Does the heated seat system operate as	Go to <u>Testing for Intermittent Conditions and</u>	

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	described in the system description and operation?	<u>Poor Connections</u> in Wiring Systems	Go to Step 3
3	Test the heated seat element control circuit of the seat heating elements for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 6	Go to Step 4
4	Inspect for poor connections at the harness connector of the heated seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 6	Go to Step 5
5	Replace the heated seat module. Refer to <u>Heated Seat Control Module Replacement - Front</u> . Did you complete the replacement?	Go to Step 6	-
6	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

HEATED SEAT SWITCH MODE INDICATOR MALFUNCTION

Test Description

The number below refers to the step number on the diagnostic table.

4: This step tests the integrity of the heated seat control module status signal circuit. If the fuse in the jumper wire opens when you perform this test, a short to battery voltage may have occurred.

Heated Seat Switch Mode Indicator Malfunction

Step	Action	Yes	No
Schematic Reference: <u>Driver Seat Schematics</u> or <u>Passenger Seat Schematics</u> Connector End View Reference: <u>Power Seat Systems Connector End Views</u> or <u>Body Control System Connector End Views</u> in Body Control System DEFINITION: The heated seat switch mode indicator is inoperative, but the heated seat system operates OK.			
	Did you perform the Diagnostic System Check		Go to Diagnostic

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1	- Power Seat Systems?	Go to Step 2	<u>System Check - Power Seat Systems</u>
2	Verify that the Heated Seat Switch Mode Indicator Malfunction is present. Does the heated seat switch mode indicator operate as described in the system description and operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	Turn ON the ignition, with the engine OFF. Is the heated seat switch mode indicator always on?	Go to Step 7	Go to Step 4
4	1. Turn OFF the ignition. 2. Disconnect the heated seat module connector C1. 3. Turn ON the ignition, with the engine OFF. 4. Connect a 3-amp fused jumper wire from the heated seat control module status signal circuit of the heated seat module connector to a good ground. 5. Press the appropriate heated seat switch. Does the heated seat mode indicator illuminate?	Go to Step 8	Go to Step 5
5	1. Install a scan tool. 2. With a scan tool, observe the Heated Seat Status parameter in the Rear Integration Module data list. 3. Connect a 3-amp fused jumper wire from the heated seat control module status signal circuit of the heated seat module connector to a good ground. 4. Turn On the appropriate heated seat. Does the Heated Seat Status parameter display High or Low?	Go to Step 9	Go to Step 6
	Test the heated seat control module status signal		

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6	circuit between the rear integration module and the heated seat module for a high resistance or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 10
7	Test the heated seat control module status signal circuit between the rear integration module and the heated seat module for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 9
8	Inspect the for poor connections at the harness connector of the heated seat module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 11
9	Inspect the for poor connections at the harness connector of the HVAC control module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 12
10	Inspect the for poor connections at the harness connector of the rear integration module (RIM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 14	Go to Step 13
11	Replace the heated seat module. Refer to <u>Heated Seat Control Module Replacement - Front</u>. Did you complete the replacement?	Go to Step 14	-
12	Replace the HVAC control module. Refer to <u>HVAC Control Module Replacement</u> in HVAC Systems-Automatic. Did you complete the replacement?	Go to Step 14	-
	IMPORTANT:		

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13	After replacement of the RIM perform the set up procedure for the RIM. Refer to <u>Body Control Module (BCM) Programming/RPO Configuration (RIM)</u> or <u>Body Control Module (BCM) Programming/RPO Configuration (DIM)</u> in Body Control System. Replace the rear integration module. Refer to <u>Rear Integration Module Replacement</u> in Body Control System. Did you complete the replacement?	Go to Step 14	-
14	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

REPAIR INSTRUCTIONS

SEAT REPLACEMENT - BUCKET

CAUTION: Refer to SIR Caution in Cautions and Notices.

Removal Procedure

1. Disable the SIR System. Refer to SIR Disabling and Enabling Zone 7 for driver's seat or SIR Disabling and Enabling Zone 9 for passenger seat in SIR.

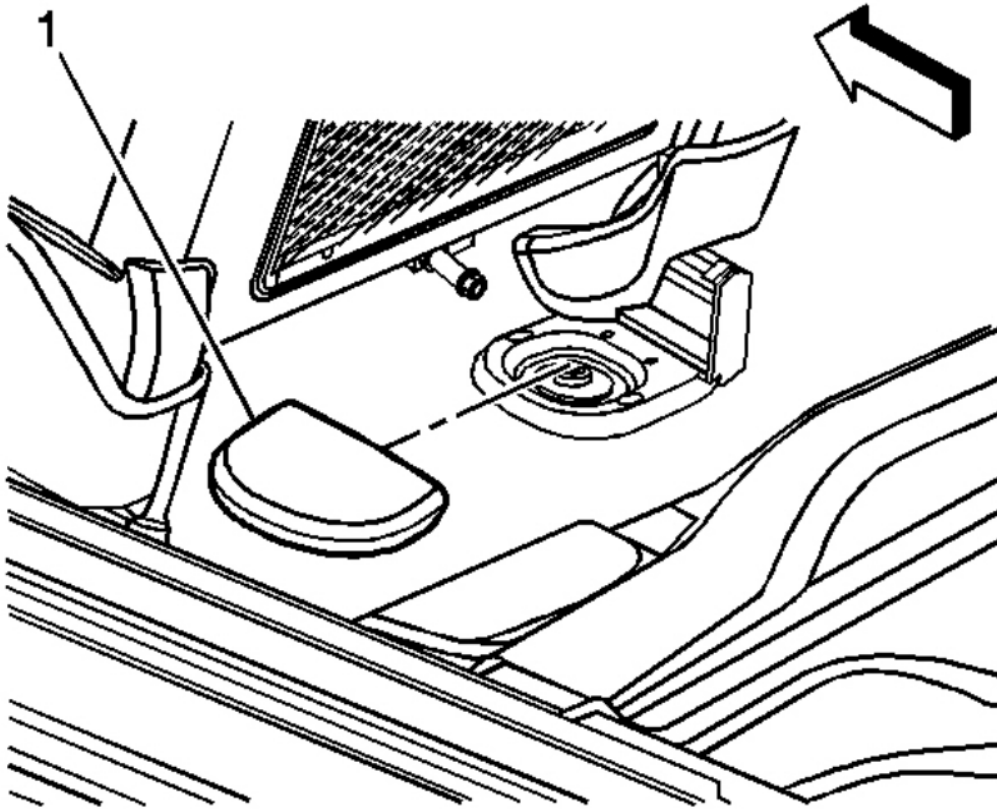


Fig. 20: View Of Seat Track Trim Cover
Courtesy of GENERAL MOTORS CORP.

2. Move the front seat forward in order to access the front seat track trim cover (1).
3. Remove the seat track trim cover (1) from the seat track.

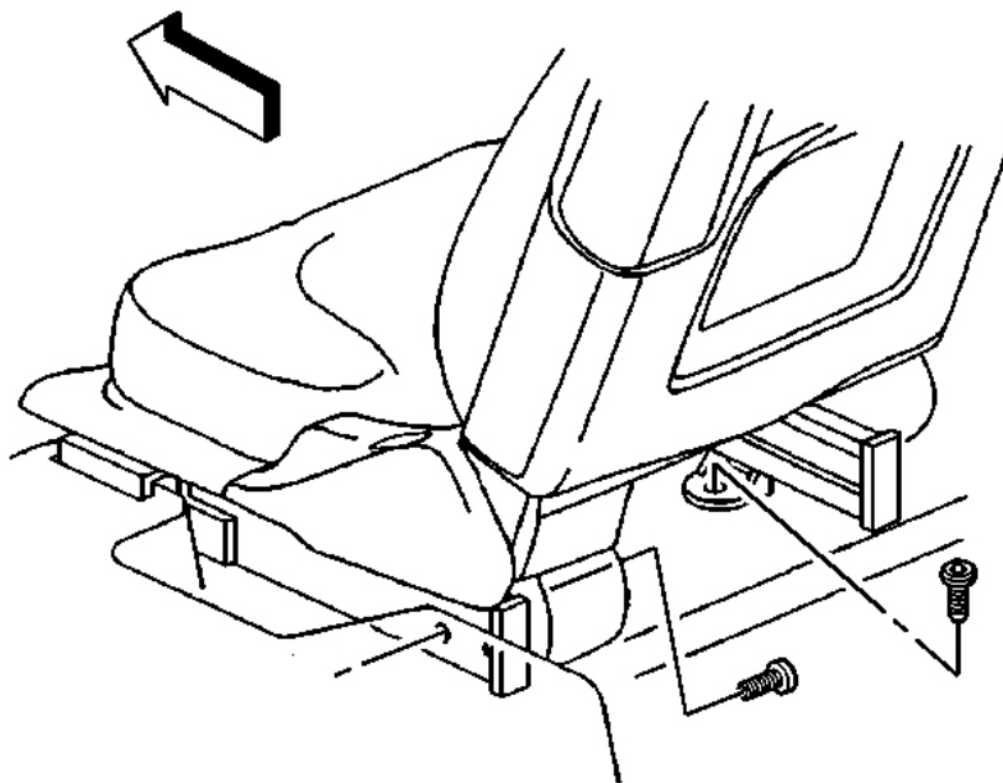


Fig. 21: View Of Seat Track Fasteners
Courtesy of GENERAL MOTORS CORP.

4. Remove the seat track fasteners from the seat track.

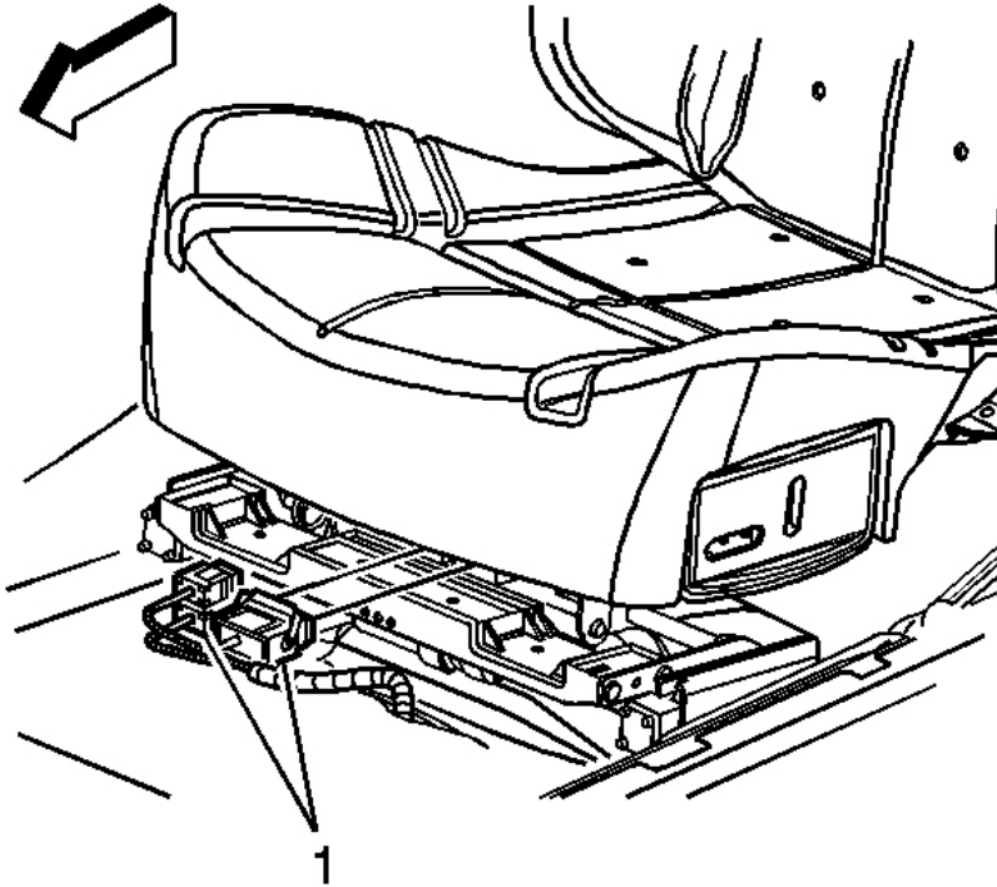


Fig. 22: View Of Bucket Seat Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

5. Disconnect the seat electrical connectors (1).
6. With the aid of an assistant, remove the seat from the vehicle.

Installation Procedure

1. With the aid of an assistant, install the seat into the vehicle.

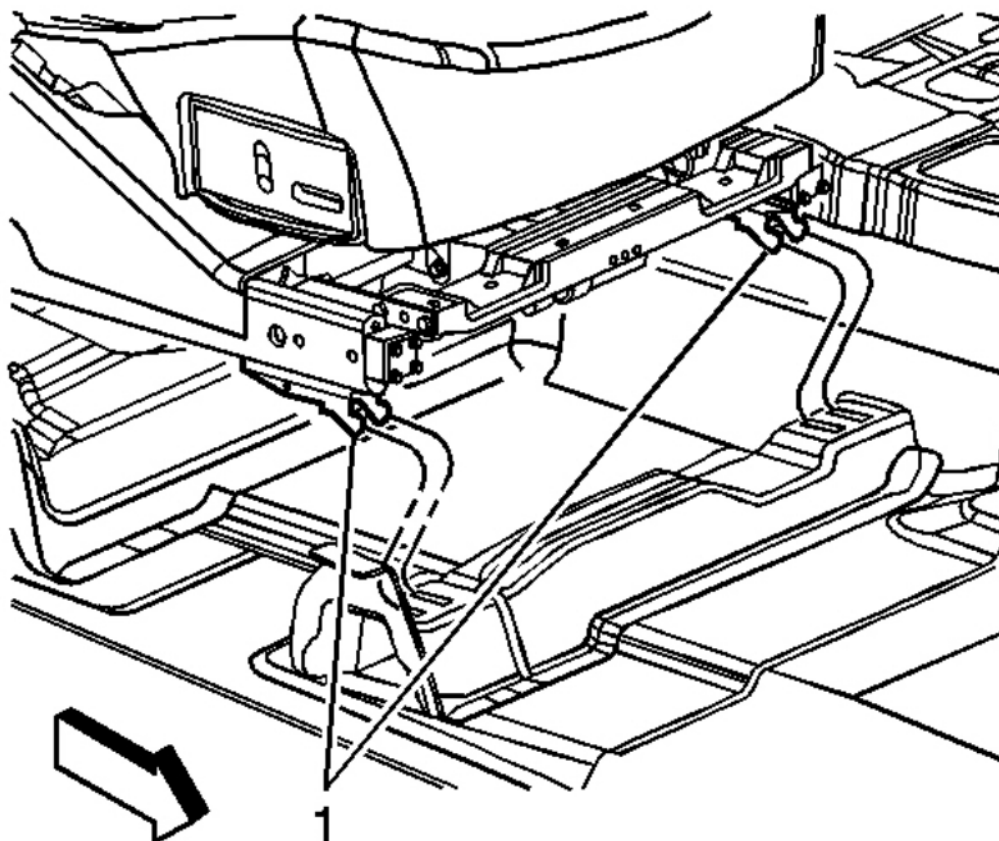


Fig. 23: View Of Bucket Seat Front Tabs
Courtesy of GENERAL MOTORS CORP.

2. Insert the front tabs (1) on the seat track into the floor.

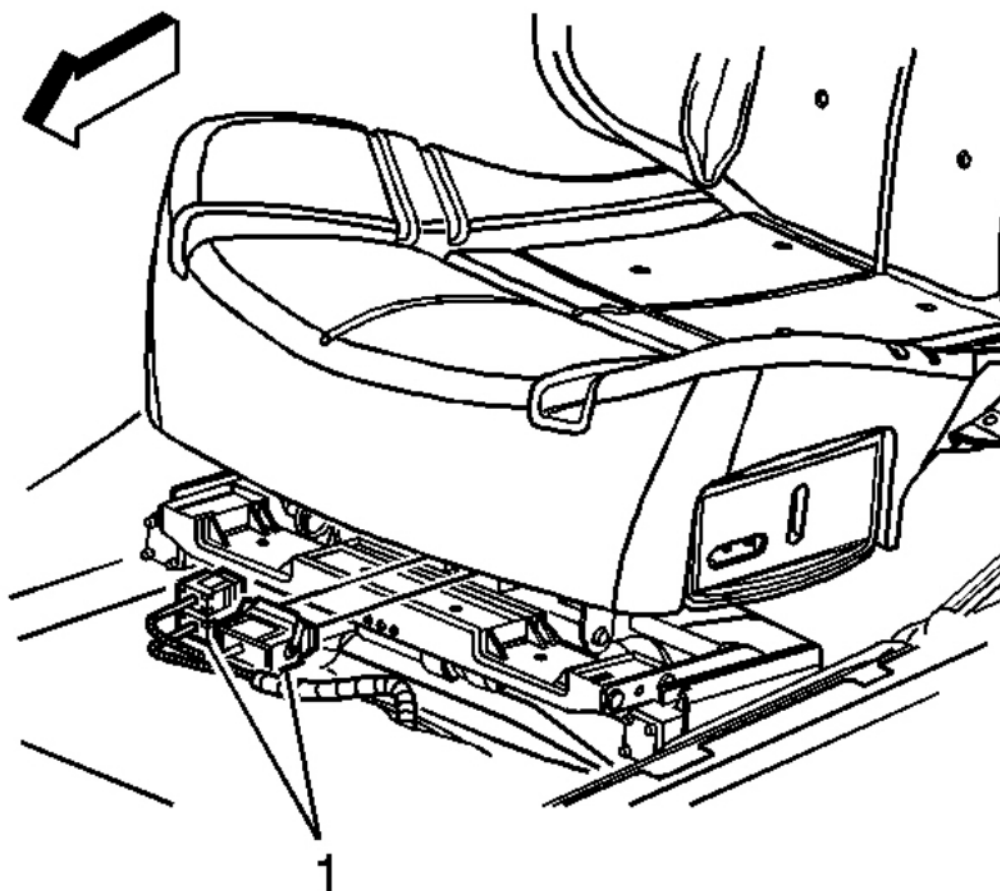


Fig. 24: View Of Bucket Seat Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

3. Connect the electrical connectors (1).

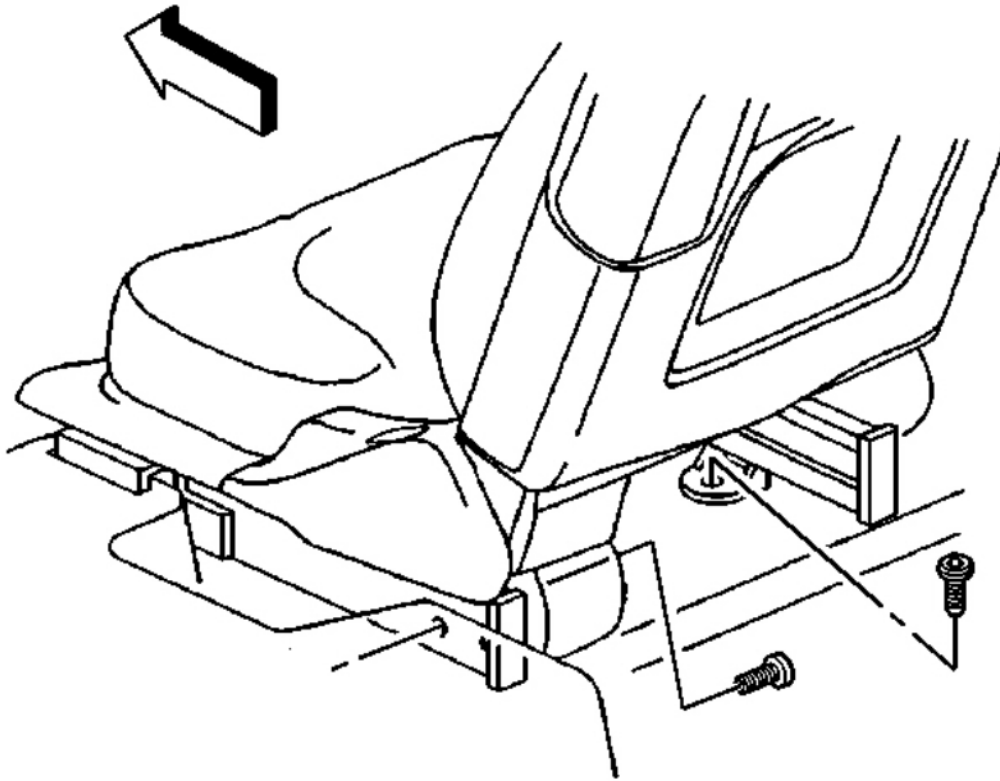


Fig. 25: View Of Seat Track Fasteners
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the seat track fasteners.

Tighten: Tighten the seat track fasteners to 30 N.m (22 lb ft).

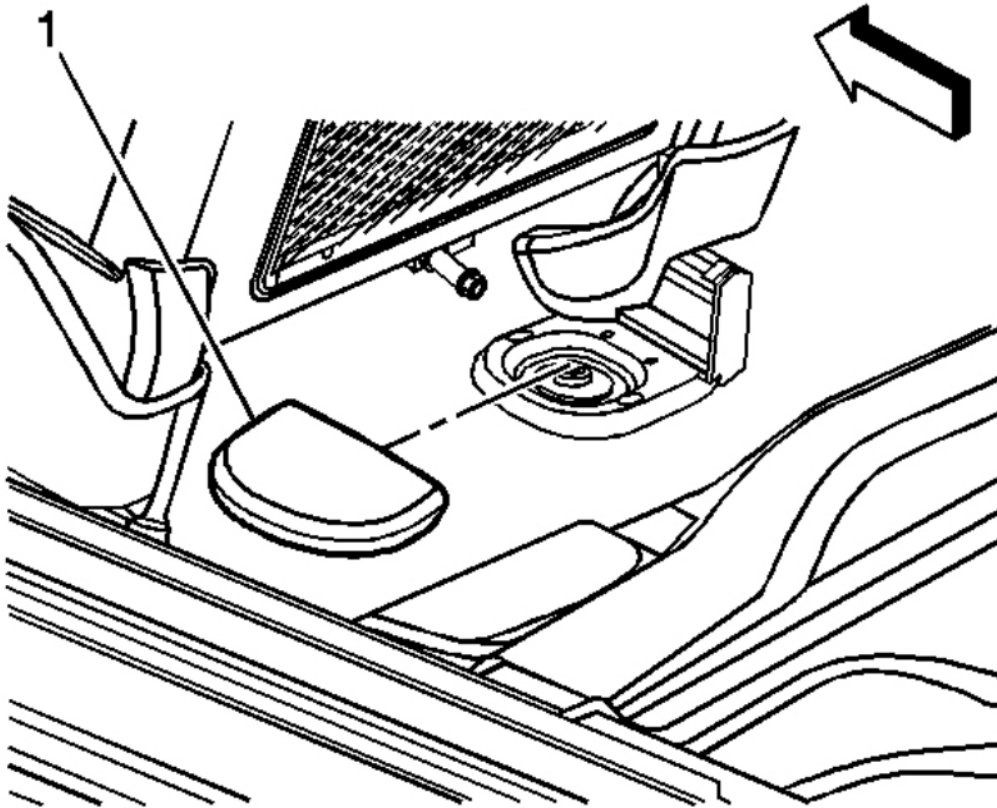


Fig. 26: View Of Seat Track Trim Cover
Courtesy of GENERAL MOTORS CORP.

5. Install the seat track trim covers (1).
6. Enable the SIR System. Refer to **SIR Disabling and Enabling Zone 7** for driver's seat or **SIR Disabling and Enabling Zone 9** for passenger seat in SIR.

SEAT CUSHION REPLACEMENT - FRONT

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Disable the SIR System. Refer to **SIR Disabling and Enabling Zone 7** driver's seat and

SIR Disabling and Enabling Zone 9 and passenger seat.

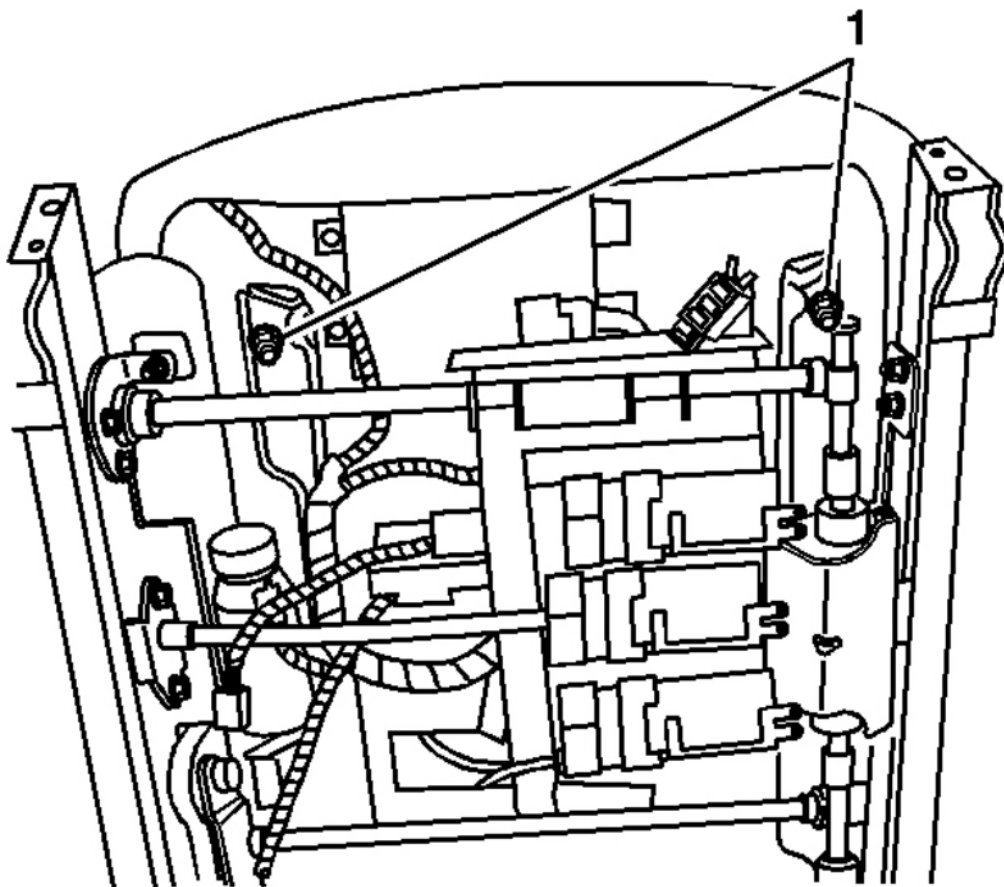


Fig. 27: Locating Front Seat Cushion Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

2. Move the seat to the full forward position.
3. Remove the retaining nuts (1) securing the seat cushion to the seat adjuster assembly.
4. Lift the front of the seat cushion upwards.
5. Remove the power seat switches. Refer to Seat Switch Replacement - Power.

NOTE: Note the correct routing of the electrical wiring. Failure to reinstall the wiring properly could result in damage to the

wiring.

6. Disconnect the wiring harness fastener and retainers securing the wiring harness to the bottom of the seat cushion frame.
7. Pull the cushion forward in order to remove the seat cushion from the seat adjuster assembly.

Installation Procedure

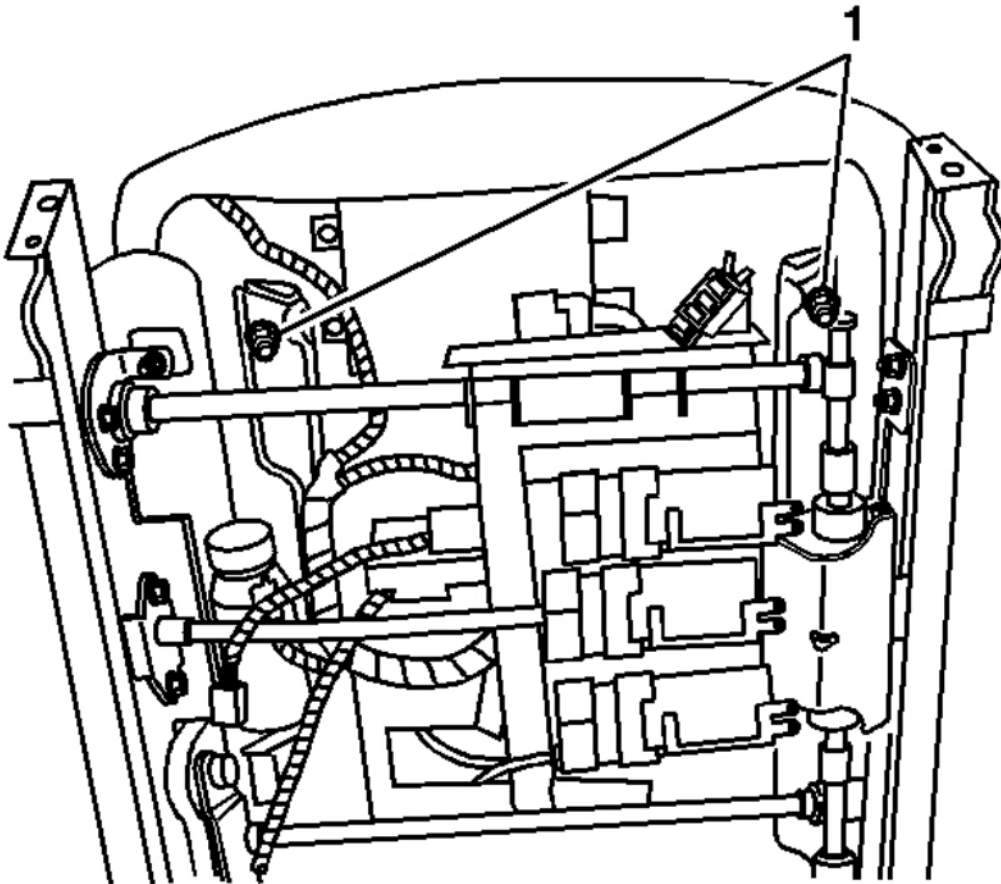


Fig. 28: Locating Front Seat Cushion Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

1. Insert the seat cushion locators, at the rear of the seat cushion frame, into the rectangular

openings in the seat adjuster assembly.

2. Secure the wiring harness to the seat cushion frame in the same position in which it was removed.
3. Install the power seat switches. Refer to **Seat Switch Replacement - Power**
4. Lower the front of the seat cushion down into position onto the seat adjuster assembly.

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

5. Install the seat cushion nuts (1).

Tighten: Tighten the nuts (1) to 10 N.m (88 lb in).

6. Enable the SIR. Refer to **SIR Disabling and Enabling Zone 7** driver's seat and **SIR Disabling and Enabling Zone 9** and passenger seat.

SEAT CUSHION COVER AND PAD REPLACEMENT - FRONT

Removal Procedure

CAUTION: Refer to **SIR Caution** in Cautions and Notices.

1. Disable the SIR System. Refer to **SIR Disabling and Enabling Zone 7** driver's seat and **SIR Disabling and Enabling Zone 9** and passenger seat.
2. Remove the seat cushion from the seat assembly. Refer to **Seat Cushion Replacement - Front**.
3. Turn the seat cushion upside down on a clean protected surface.

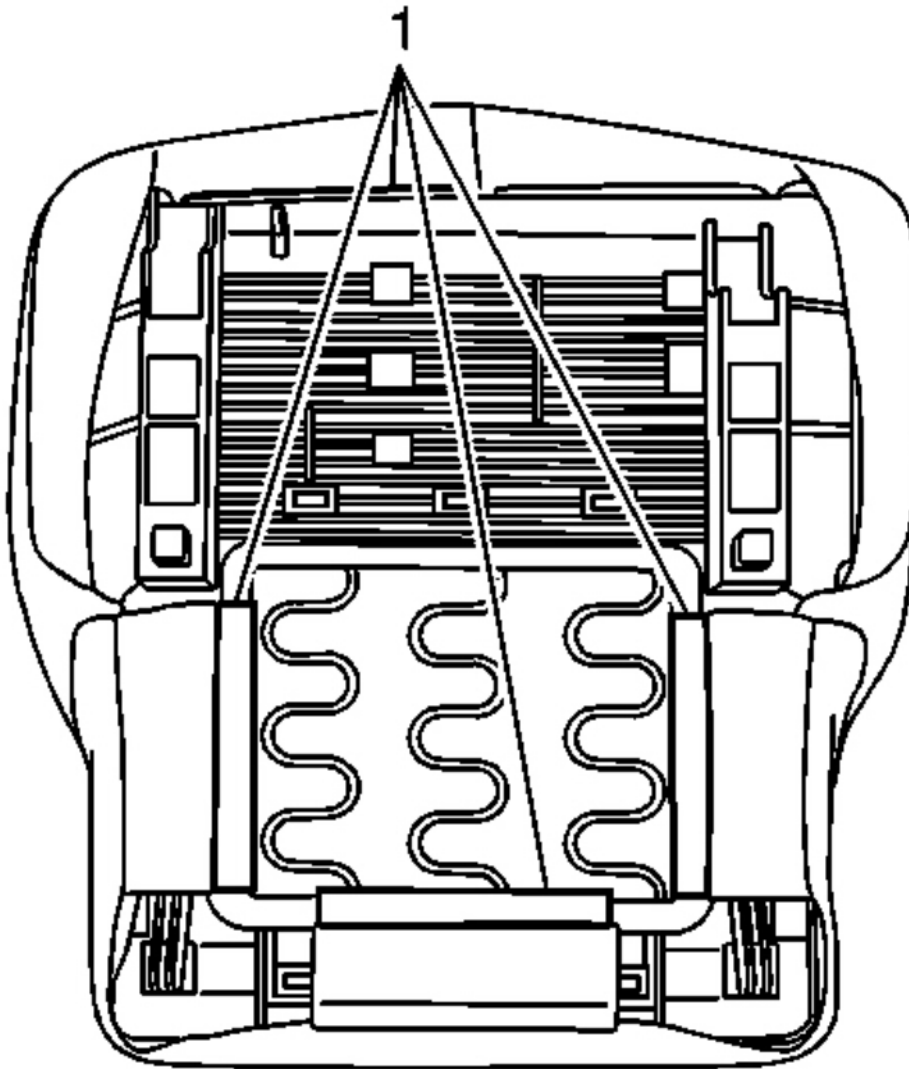


Fig. 29: Identifying Front Seat Cushion Cover J Channels
Courtesy of GENERAL MOTORS CORP.

4. Release the seat cushion cover J channels (1) from the seat cushion frame.
5. Remove the seat cushion cover (3).
6. Remove the seat cushion pad (2).

Installation Procedure

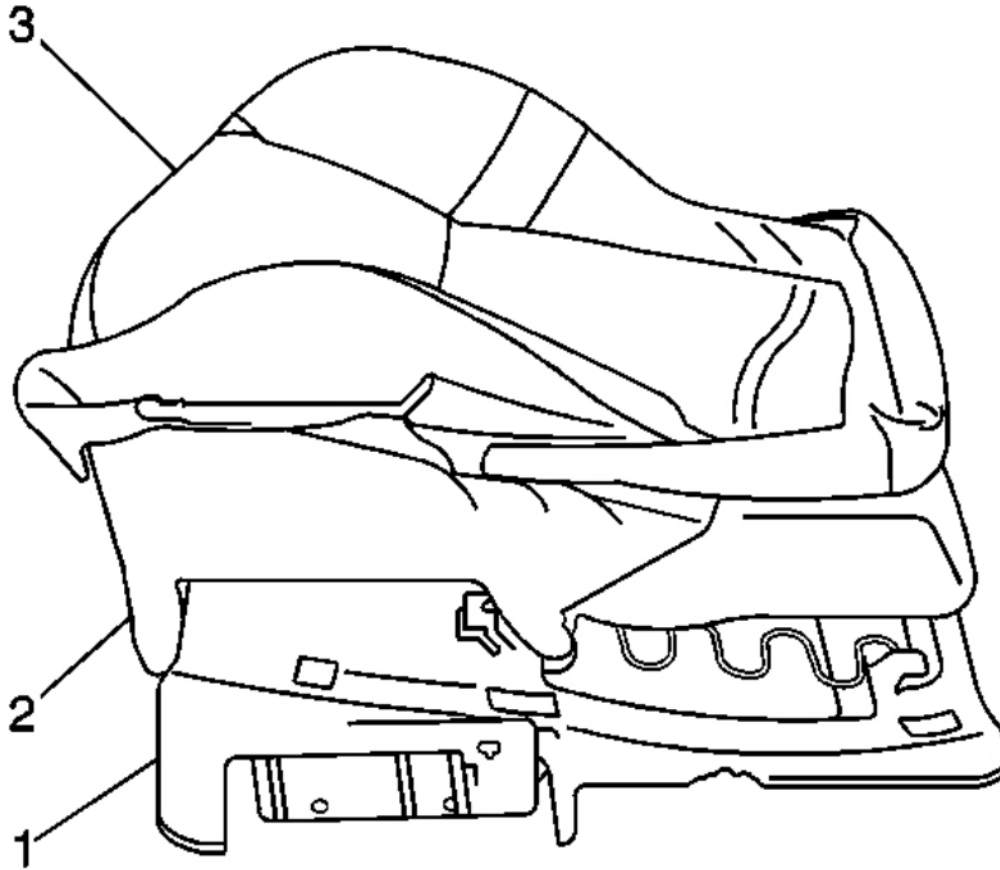


Fig. 30: Installing Seat Cushion Pad & Cover
Courtesy of GENERAL MOTORS CORP.

1. Install the seat cushion pad (2) to the seat cushion frame (1).
2. Install the seat cushion cover (3) over the seat cushion pad (2).
3. Work the seat cushion pad (2) into position so there are no wrinkles or lumps in the seat cushion cover (3).
4. Ensure the hook and loop fasteners on the seat cushion cover and the seat cushion pad are fully engaged in order to ensure proper fit of the seat cushion cover (3).
5. Turn the seat cushion assembly over.

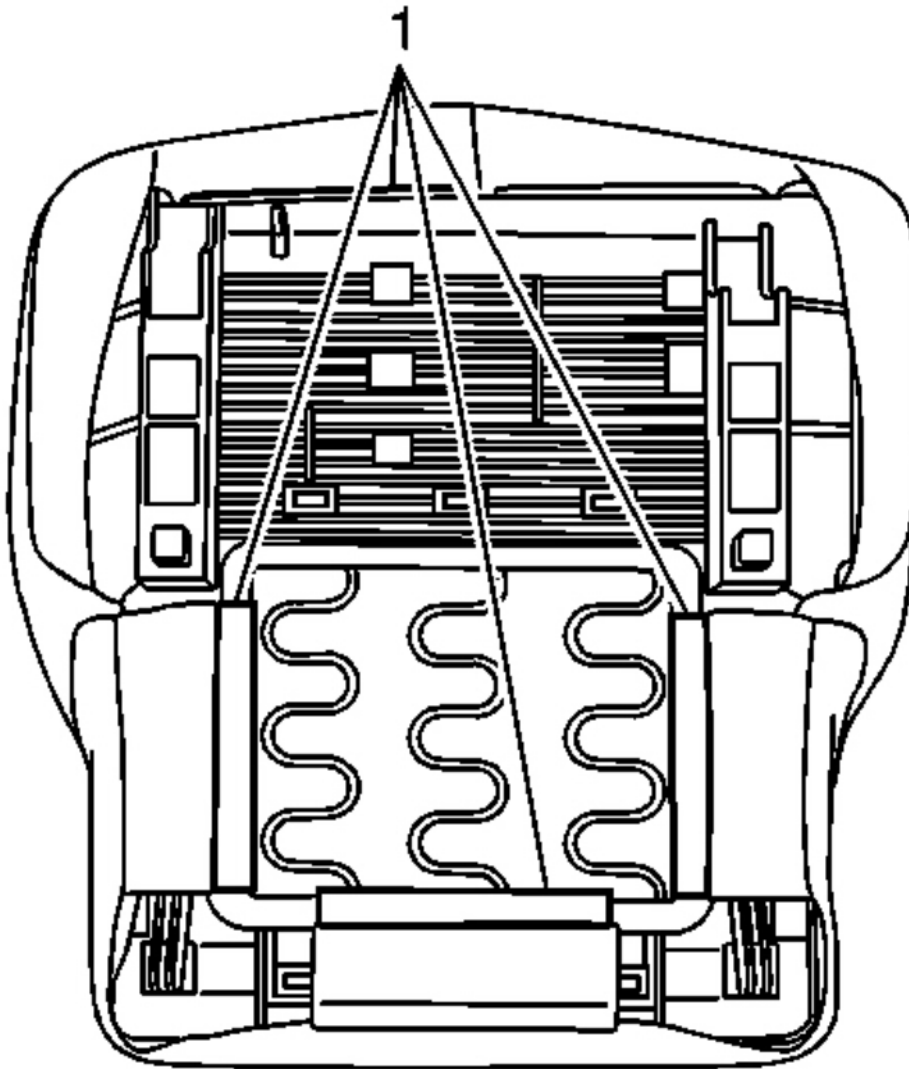


Fig. 31: Identifying Front Seat Cushion Cover J Channels
Courtesy of GENERAL MOTORS CORP.

6. Install the seat cushion cover J channels (1) to the seat cushion frame.
7. Install the seat cushion to the seat assembly. Refer to **Seat Cushion Replacement - Front**.
8. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** driver's seat and **SIR Disabling and Enabling Zone 9** and passenger seat.

SEAT BACK COVER AND PAD REPLACEMENT - FRONT**Removal Procedure**

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Remove the seat back trim. Refer to Seat Back Trim Replacement - Front.
2. Remove the head restraint. Refer to Head Restraint Replacement - Front Seat.
3. Remove the head restraint retainers. Refer to Head Restraint Retainer Replacement - Front Seat.
4. Remove the inflatable restraint side impact module. Refer to Inflatable Restraint Side Impact Module Replacement - Front in SIR.

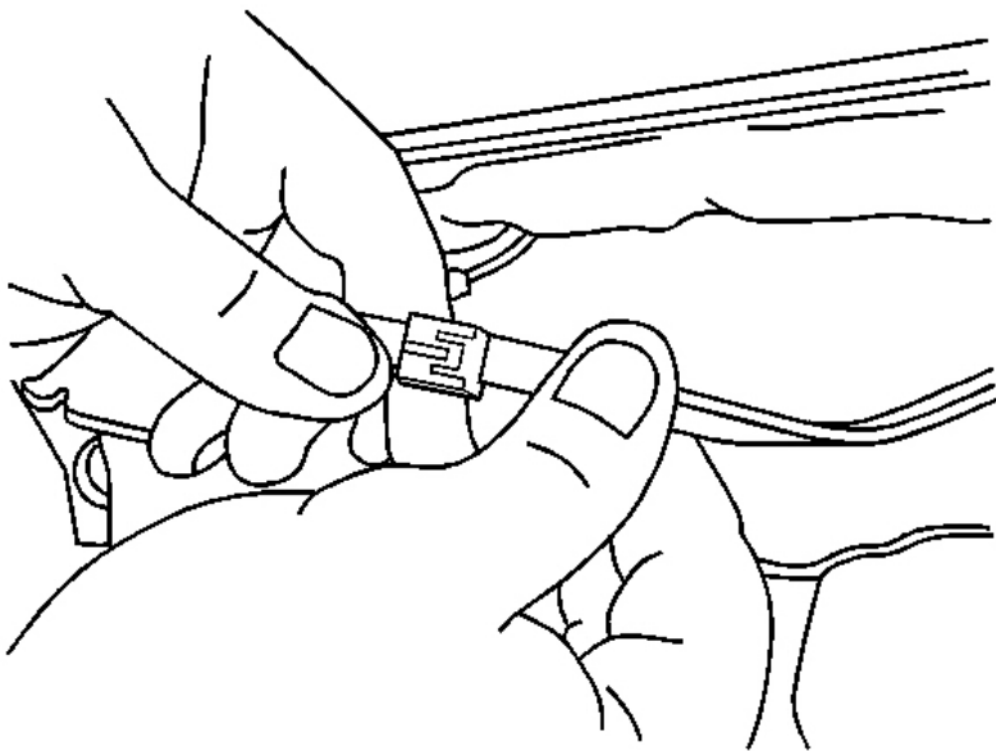


Fig. 32: View Of Heated Seat Electrical Connector

Courtesy of GENERAL MOTORS CORP.

5. Disconnect the heated seat electrical connector to the seat back.
6. Remove all of the seat back cover J channels retaining the seat back cover and pad to the seat back frame.

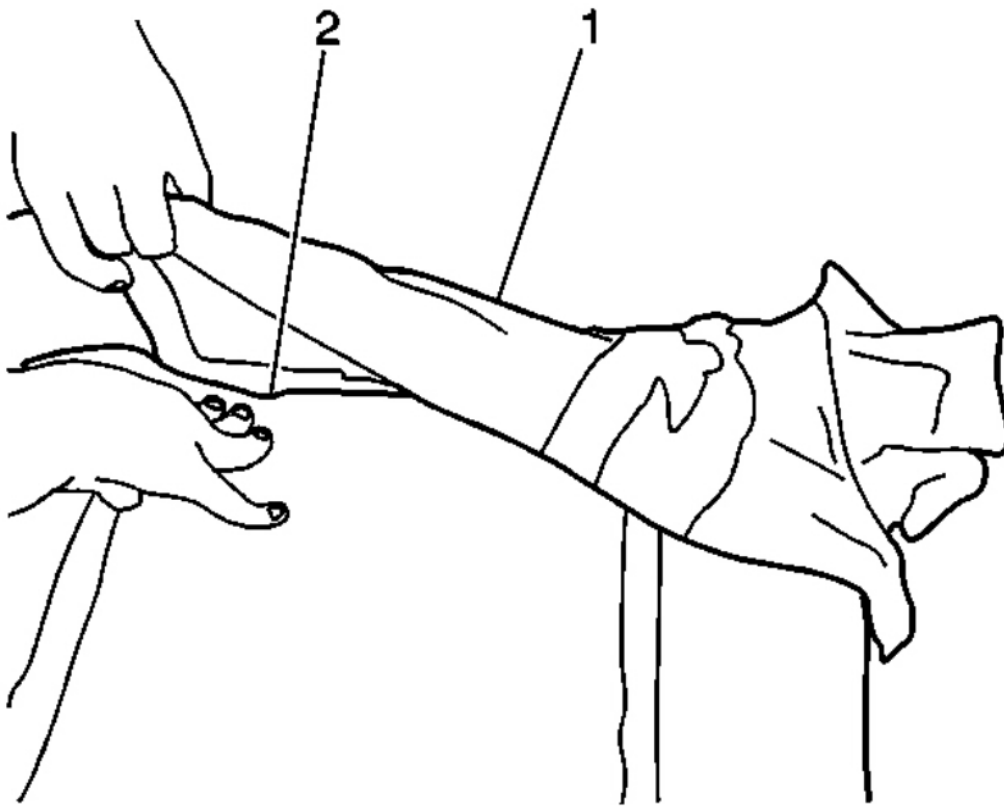


Fig. 33: View Of Front Seat Back Cover & Cushion
Courtesy of GENERAL MOTORS CORP.

7. Remove the seat cover (1) and cushion (2) from the seat back frame.
8. Remove the seat back cover (1) from the seat back cushion (2).

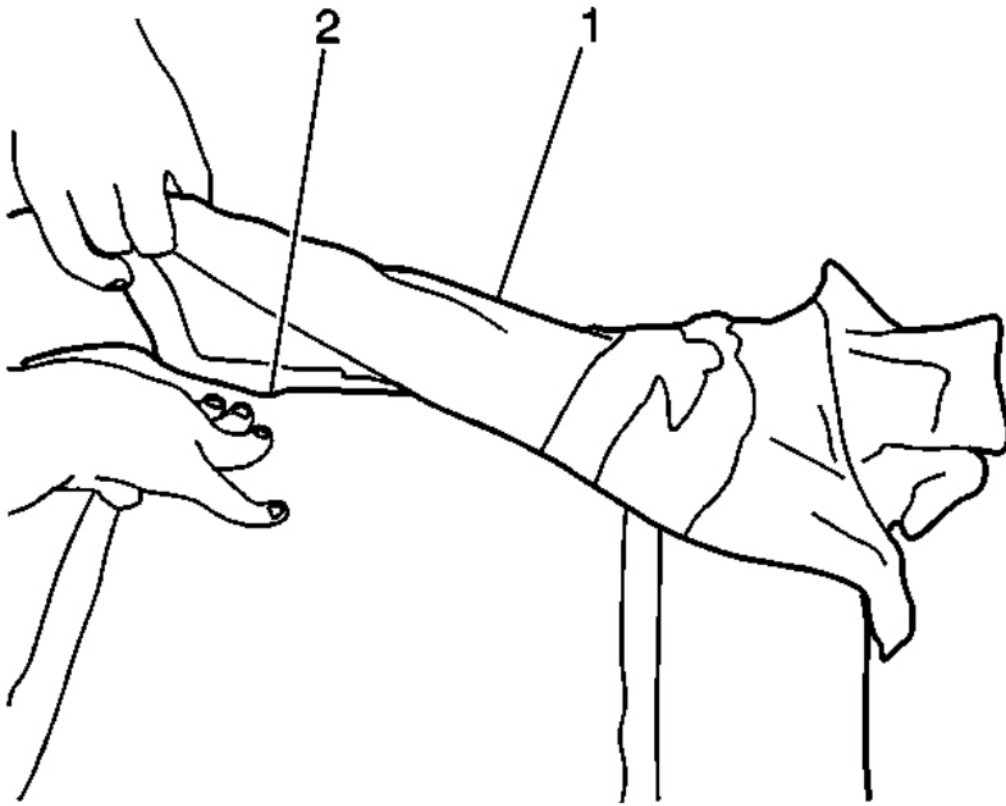


Fig. 34: View Of Front Seat Back Cover & Cushion
Courtesy of GENERAL MOTORS CORP.

1. Install the seat back cover (1) to the seat back cushion (2).
2. Position the seat back cover and pad (1,2) to the seat back frame.
3. Install the J channels to seat back frame.

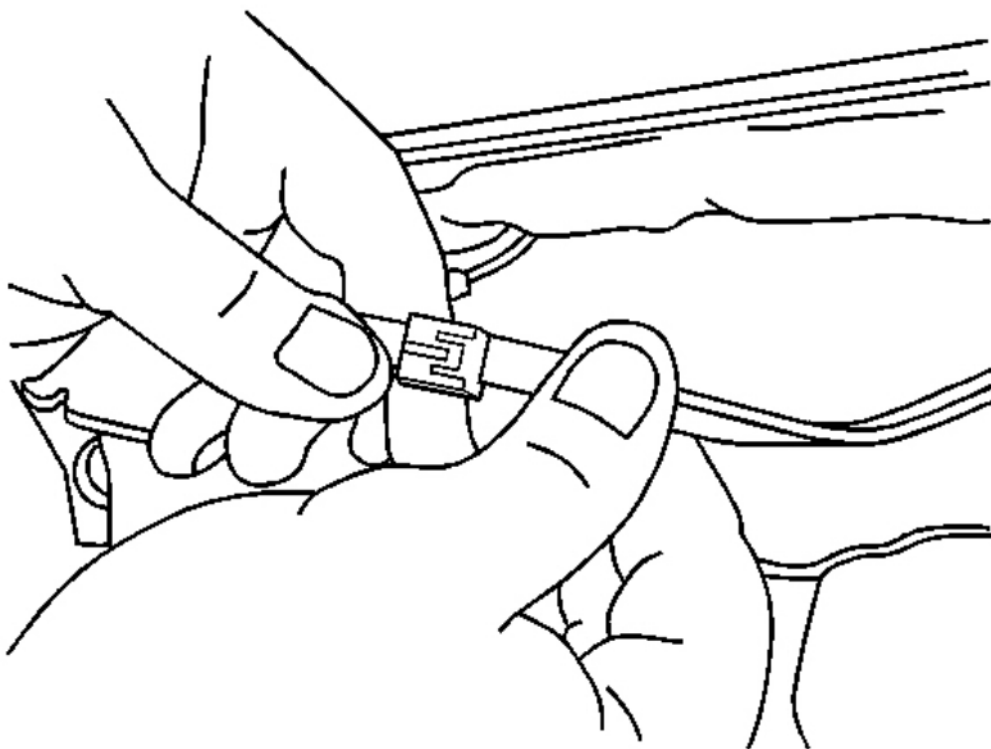


Fig. 35: View Of Heated Seat Electrical Connector
Courtesy of GENERAL MOTORS CORP.

4. Connect the heated seat electrical connectors.
5. Install the inflatable restraint side impact module. Refer to **Inflatable Restraint Side Impact Module Replacement - Front** in SIR.
6. Install the head restraint retainers. Refer to **Head Restraint Retainer Replacement - Front Seat**.
7. Install the head restraint. Refer to **Head Restraint Replacement - Front Seat**.
8. Install the seat back trim. Refer to **Seat Back Trim Replacement - Front**.

SEAT BACK FRAME REPLACEMENT - FRONT

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Remove the front bucket seat. Refer to Seat Replacement - Bucket.
2. Remove the seat cushion from seat. Refer to Seat Cushion Replacement - Front.

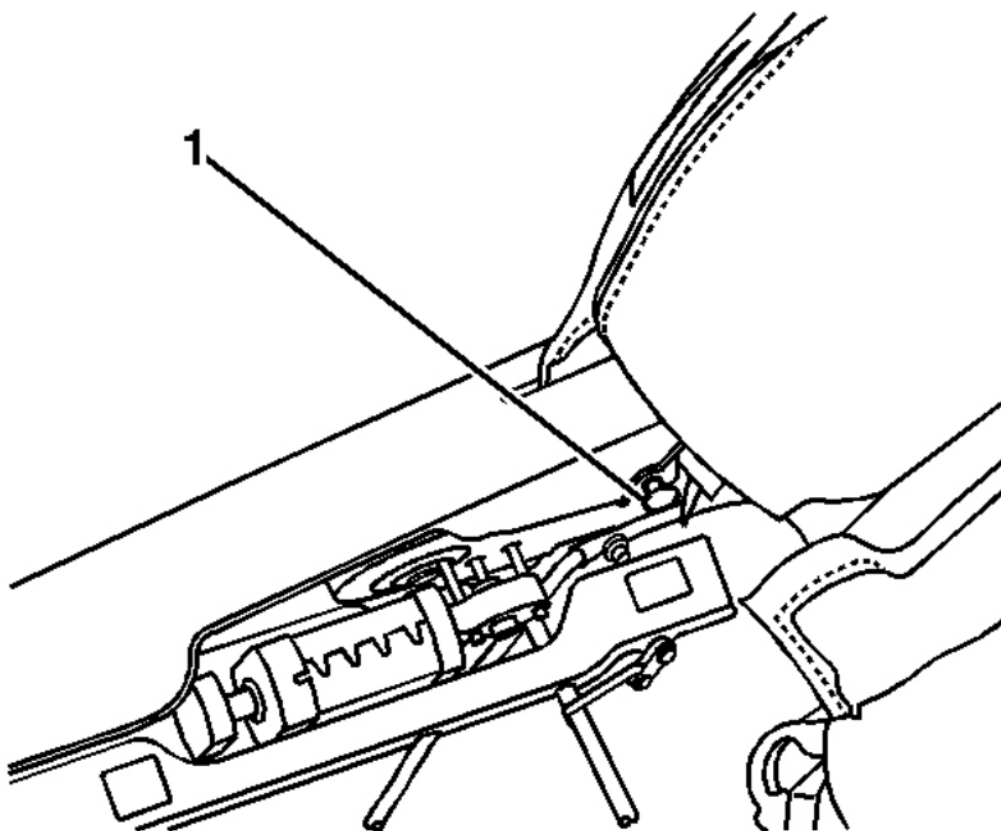


Fig. 36: Locating Trim Cover Push-In Retainer
Courtesy of GENERAL MOTORS CORP.

3. Remove the push-in retainer (1) from the trim covers.
4. Remove the trim covers.
5. Remove the seat back cover and pad. Refer to Seat Back Cover and Pad Replacement - Front.
6. Remove the front seat belt assembly. Refer to Seat Belt Replacement - Front.

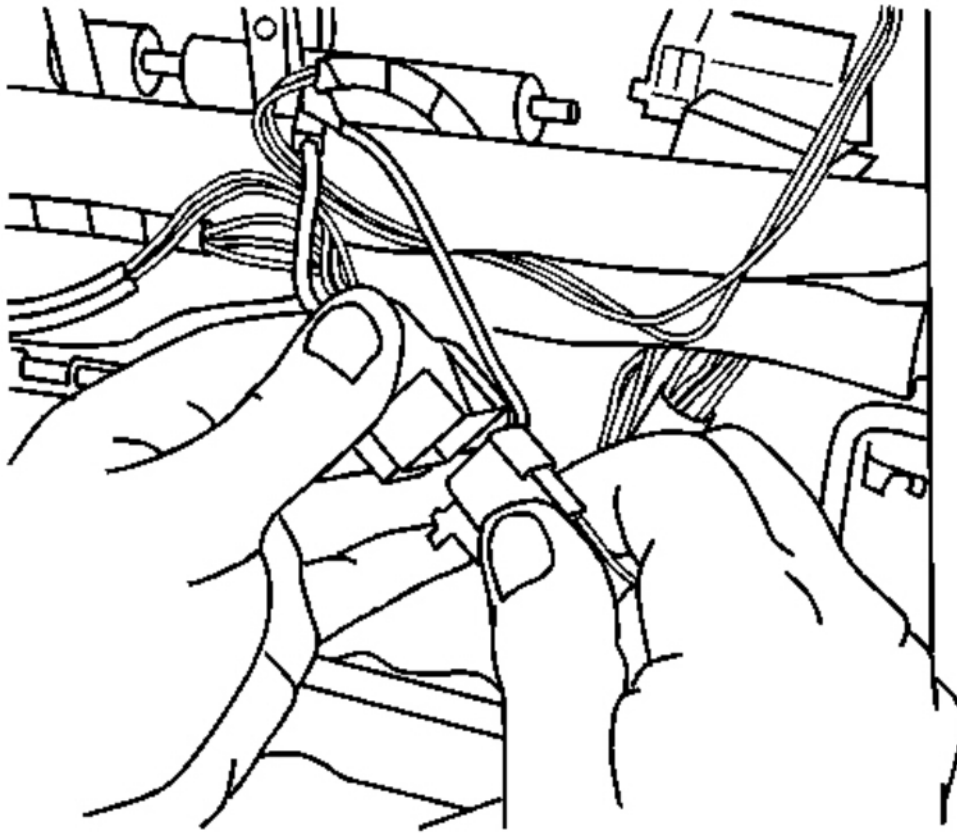


Fig. 37: View Of Seat Back Frame Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Note the electrical wiring routing during disassembly in order to ensure proper electrical wiring routing during reassembly.

7. Disconnect and remove the remaining electrical connectors are attached to the seat back frame.

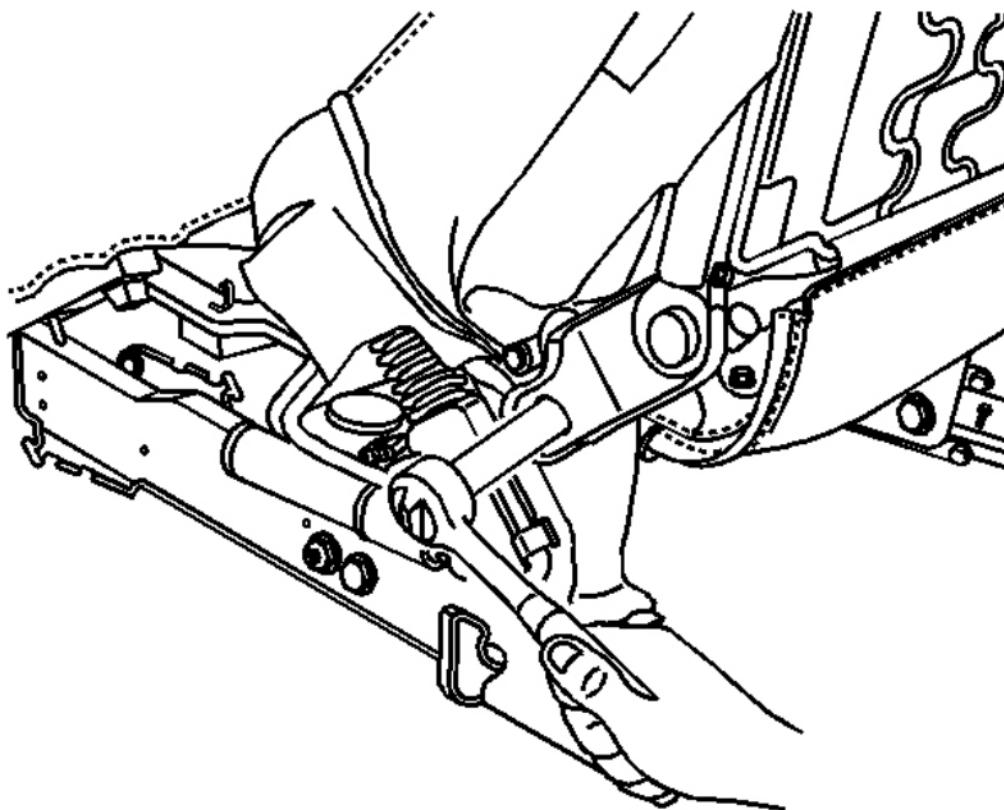


Fig. 38: Removing Seat Back Frame-To-Riser Bolt
Courtesy of GENERAL MOTORS CORP.

8. Remove the bolt retaining the seat back frame to the riser.

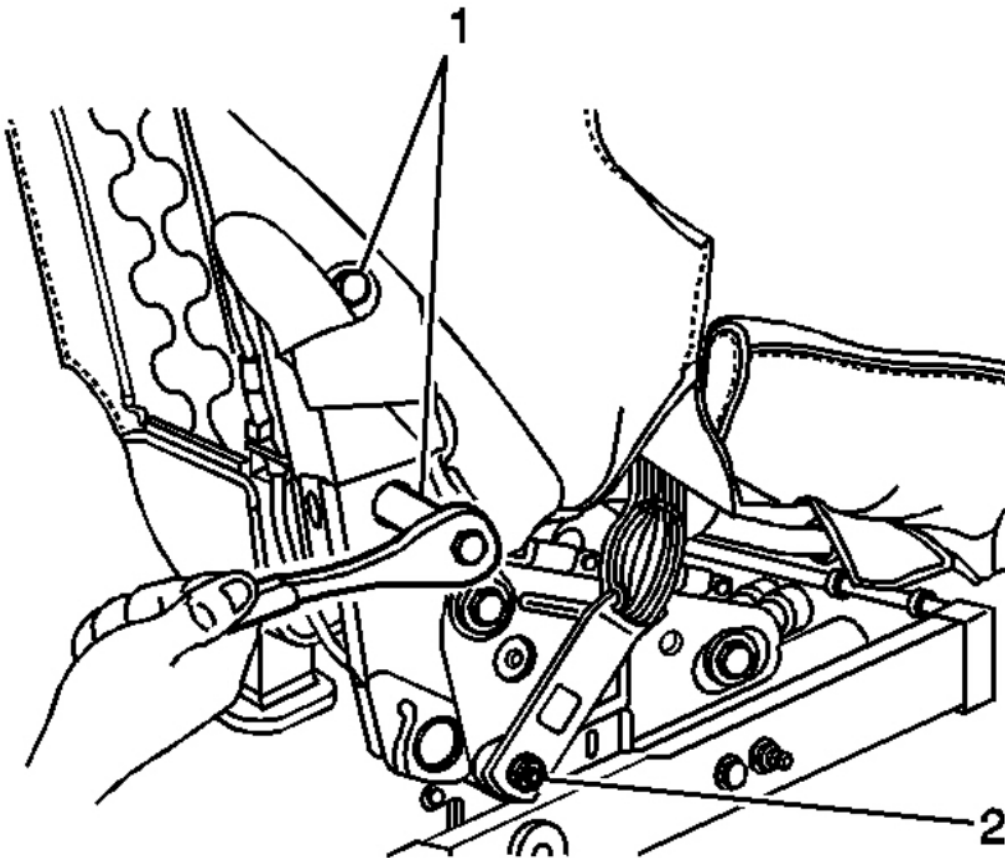


Fig. 39: Removing/Installing Seat Back Frame-To-Recliner Bolts
Courtesy of GENERAL MOTORS CORP.

9. Remove the bolts (1) retaining the seat back frame to the recliner.
10. Lift up on the seat back frame in order to disengage the seat back from the recliner.

Installation Procedure

1. Slide the seat back frame down into the recliner and align the fasteners holes.

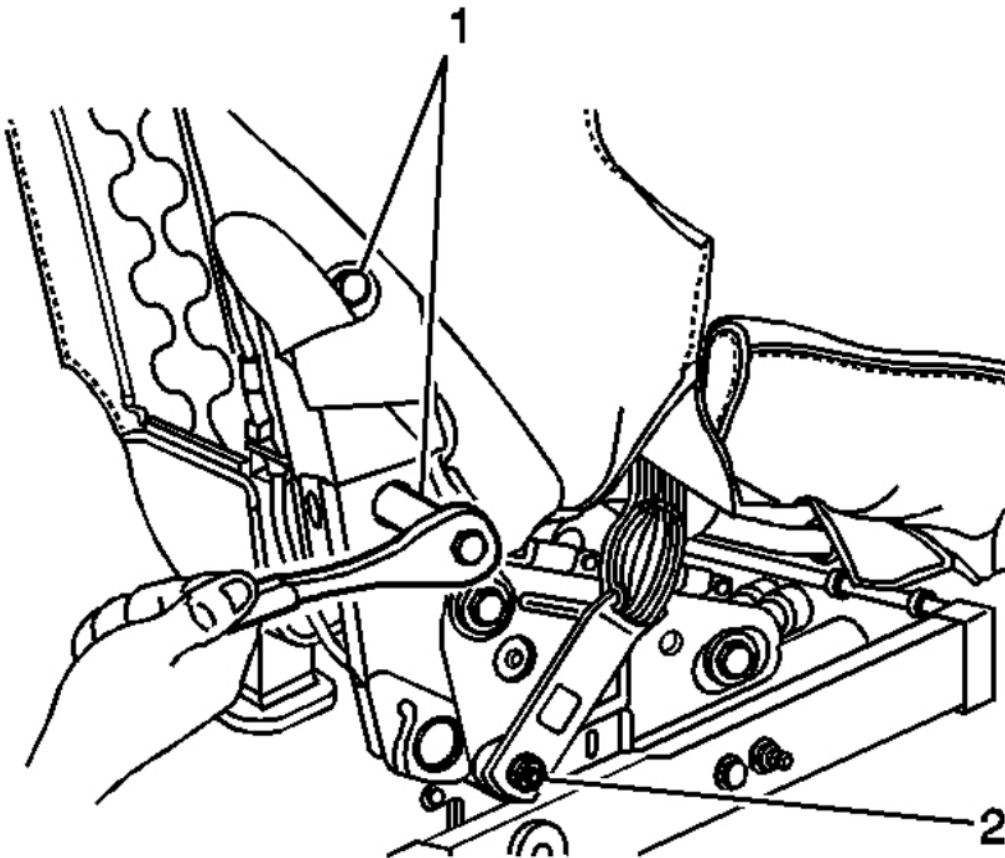


Fig. 40: Removing/Installing Seat Back Frame-To-Recliner Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the seat back to recliner bolts (1).

Tighten: Tighten the bolts to 52 N.m (38 lb ft).

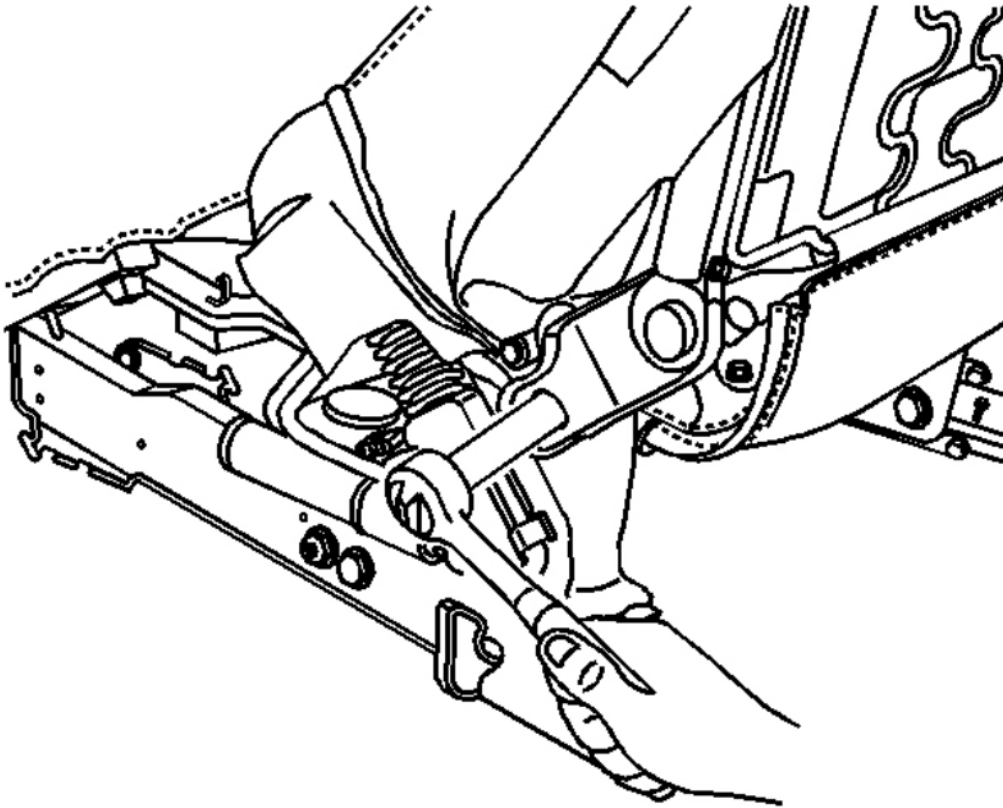


Fig. 41: Removing Seat Back Frame-To-Riser Bolt
Courtesy of GENERAL MOTORS CORP.

3. Install the seat back to riser bolt (1).

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

4. Install the front seat belt assembly. Refer to **Seat Belt Replacement - Front** .
5. Install the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Front**.
6. Install the trim covers.

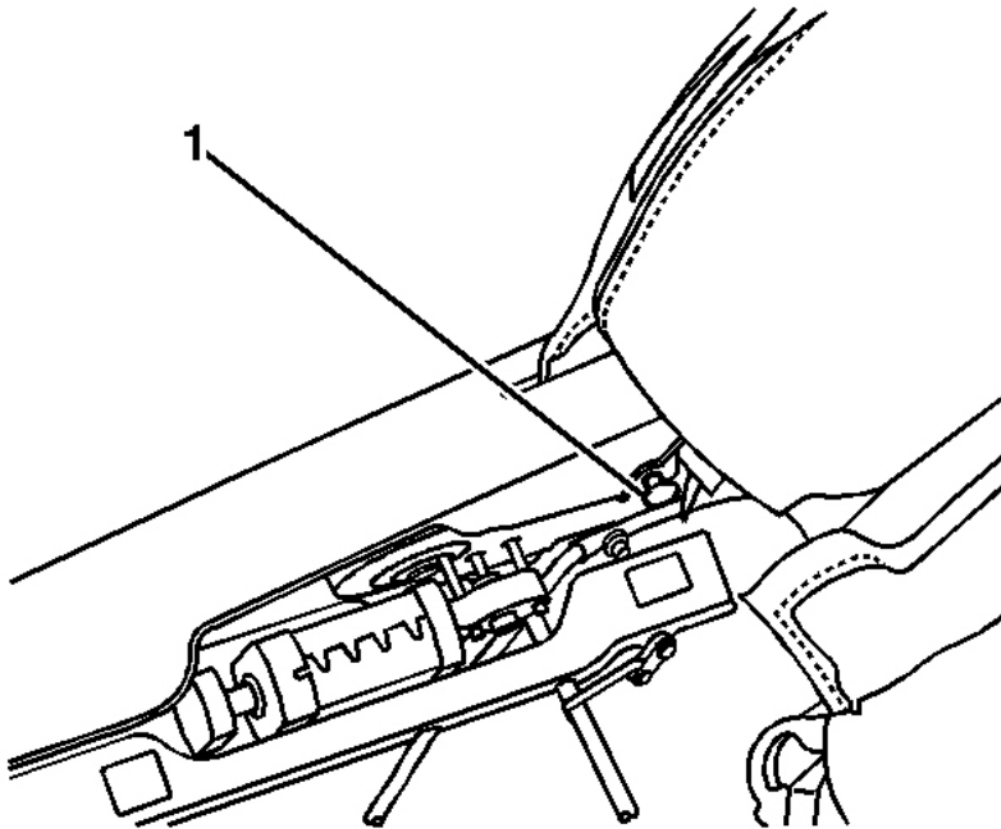


Fig. 42: Locating Trim Cover Push-In Retainer
Courtesy of GENERAL MOTORS CORP.

7. Install the push-in retainer (1) to secure the trim cover.
8. Install the front seat cushion. Refer to **Seat Cushion Replacement - Front.**

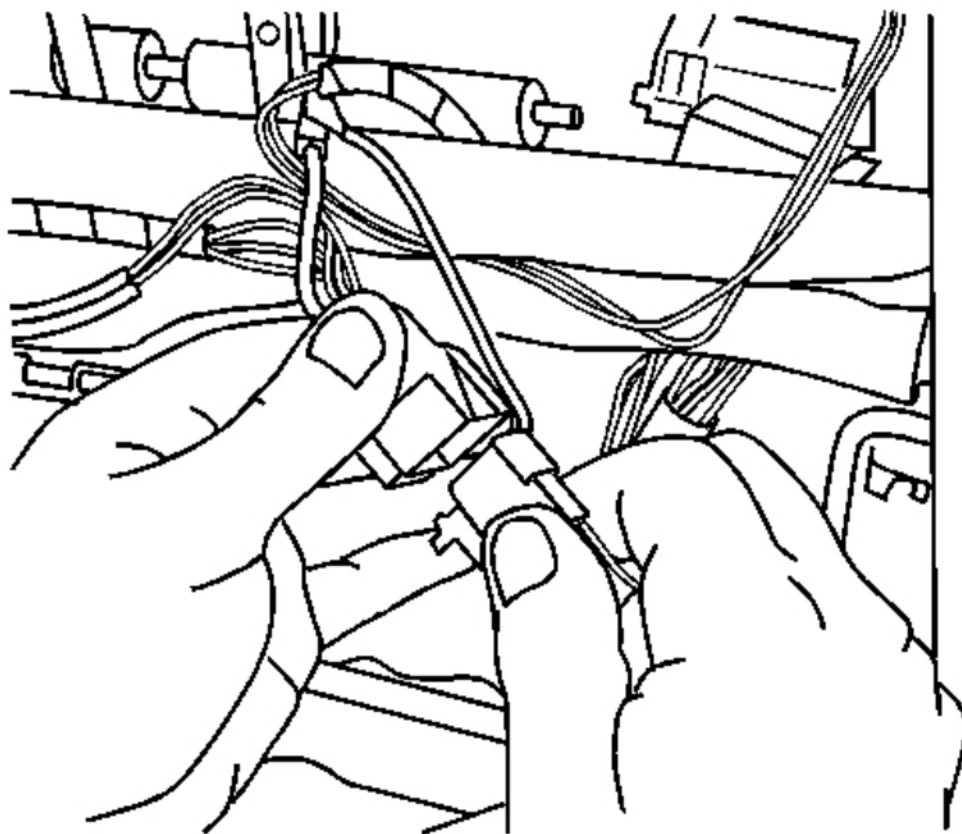


Fig. 43: View Of Seat Back Frame Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

9. Route and connect the electrical connectors to the seat back.
10. Install the front seat. Refer to **Seat Replacement - Bucket.**

SEAT BACK RECLINER REPLACEMENT - FRONT

Removal Procedure

1. Remove the seat. Refer to **Seat Replacement - Bucket.**
2. Remove the seat back frame. Refer to **Seat Back Frame Replacement - Front.**
3. Remove the seat cushion. Refer to **Seat Cushion Replacement - Front.**

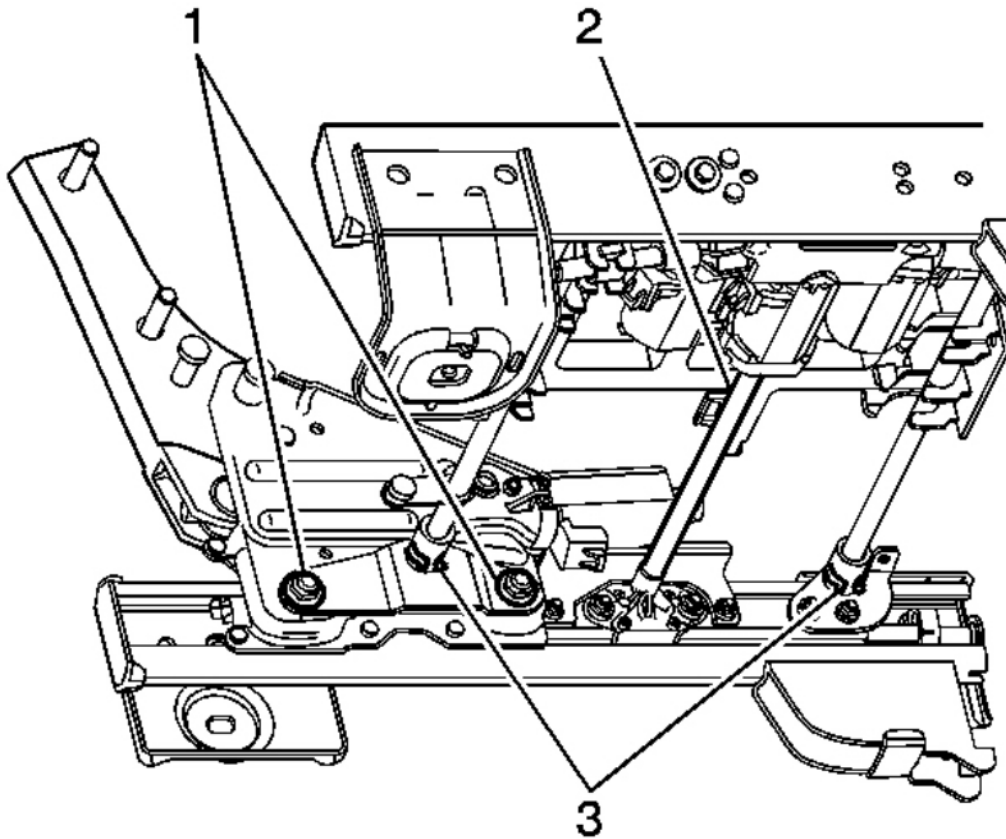


Fig. 44: View Of Seat Back Recliner Assembly
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the recliner motor electrical connectors.
5. Remove the seat axle retainers (3).
6. Pull the seat track sides apart in order to separate the seat track sides.
7. Remove the nuts (1) securing the recliner to the seat track.

Installation Procedure

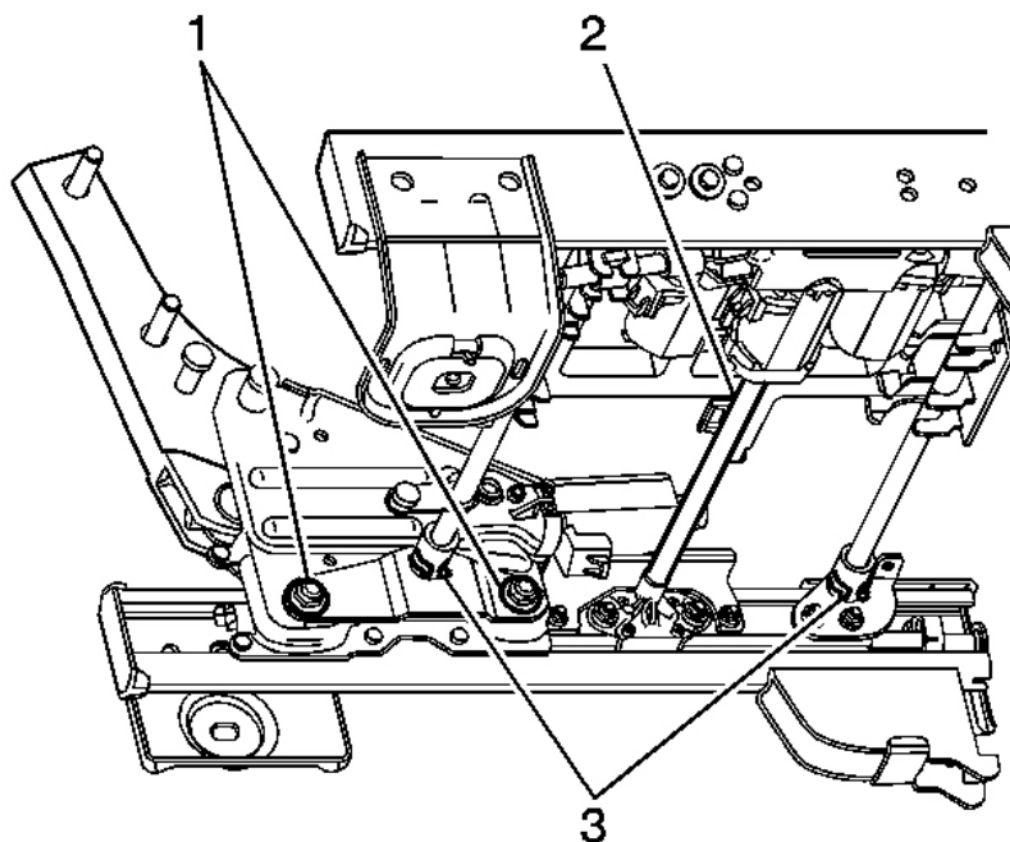


Fig. 45: View Of Seat Back Recliner Assembly
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

1. Install the nuts (1) securing the recliner to the seat track.

Tighten: Tighten the nut to 65 N.m (18 lb ft).

2. Locate the axles and the seat position drive cable (2) in order to connect the seat track sides.

IMPORTANT: Insure that the seat position motor cable is fully seated into the drive gear.

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3. Install the seat axle retainers (3).
4. Connect the recliner motor electrical connectors.
5. Install the seat cushion. Refer to **Seat Cushion Replacement - Front**.
6. Install the seat back frame. Refer to **Seat Back Frame Replacement - Front**.
7. Install the seat. Refer to **Seat Replacement - Bucket**.
8. Calibrate the seat. Refer to **Memory Seat Calibration Procedure**.

POWER RECLINER SENSOR REPLACEMENT - FRONT

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Remove the front seat. Refer to **Seat Replacement - Bucket**.

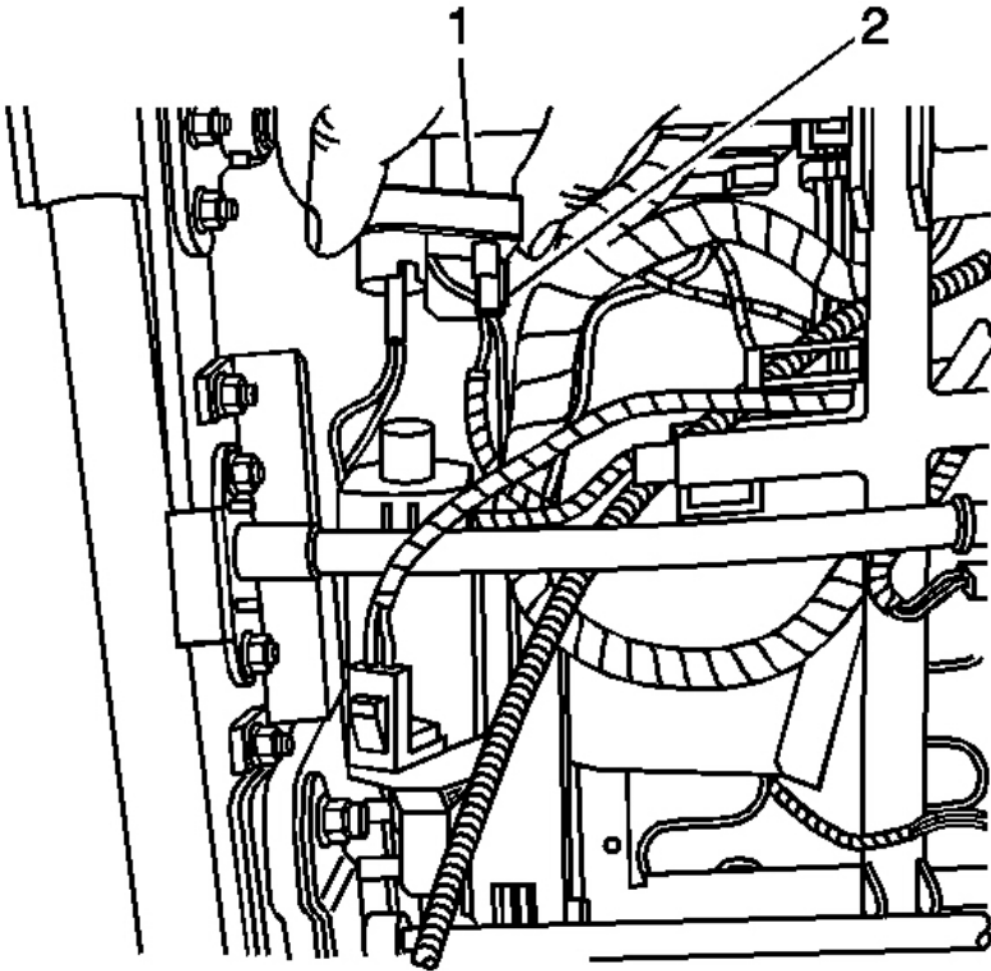


Fig. 46: View Of Front Power Recliner Sensor
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the electrical connector from the sensor (2).
3. Rotate the sensor counterclockwise and remove it (1).

Installation Procedure

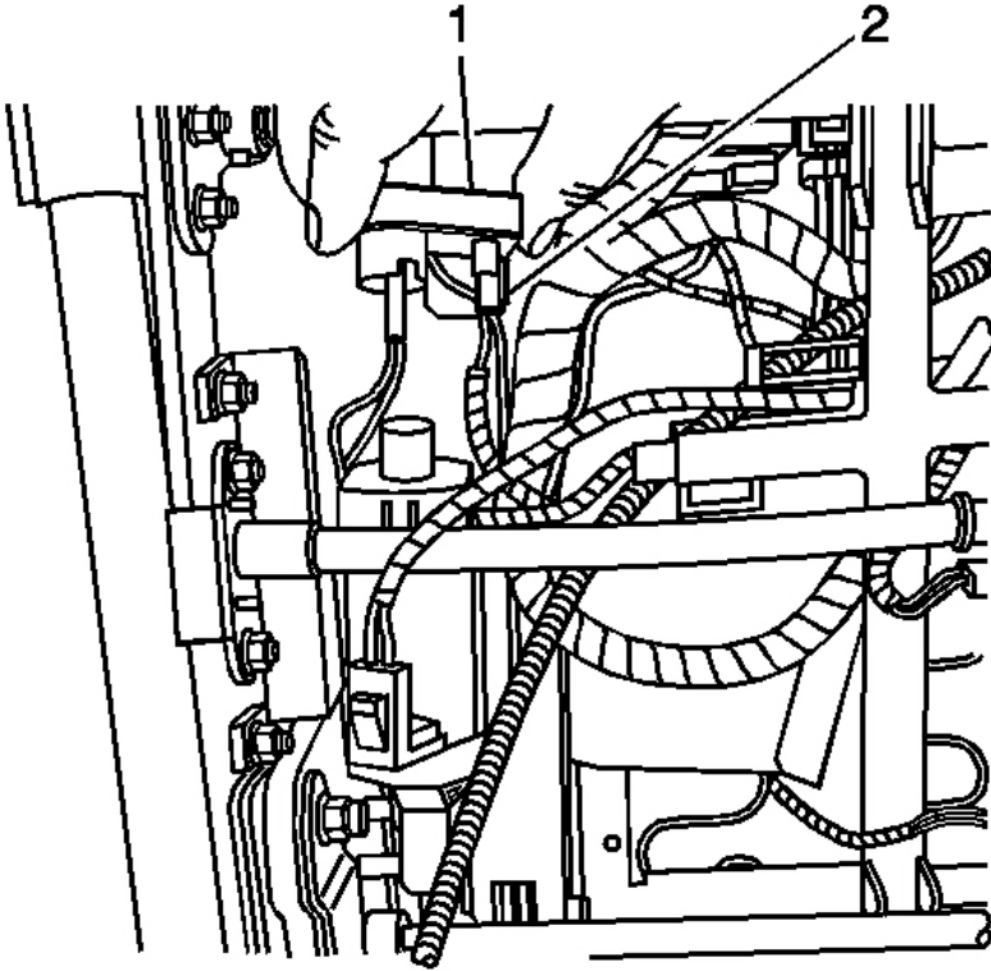


Fig. 47: View Of Front Power Recliner Sensor
Courtesy of GENERAL MOTORS CORP.

1. Install the sensor (1) in the motor and rotate it clockwise until it locks in to place.
2. Connect the electrical connector (2) to the sensor.

POWER RECLINER MOTOR REPLACEMENT - FRONT SEAT

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Remove the front bucket seat. Refer to Seat Replacement - Bucket.
2. Remove the power recliner position sensor. Refer to Power Recliner Sensor Replacement - Front.
3. Disconnect the electrical connector from the motor.

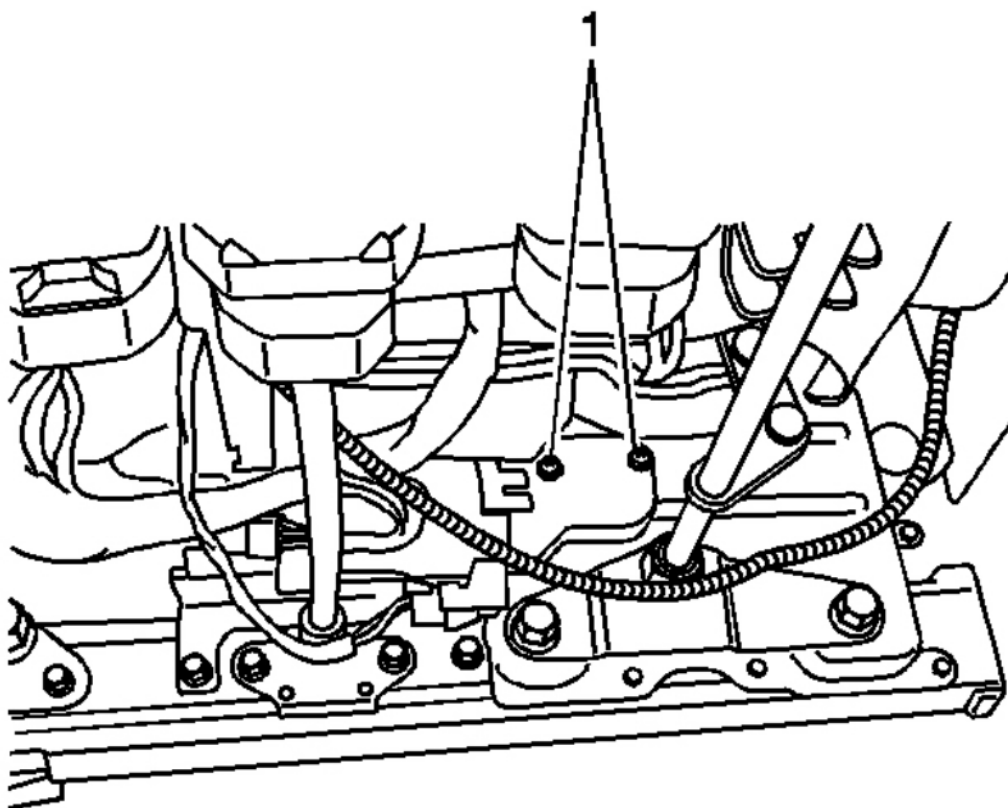


Fig. 48: View Of Recliner Motor Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

4. Remove the recliner motor retaining nuts (1).
5. Slide the motor off of the shaft.

1. Slide the recliner motor on to the shaft

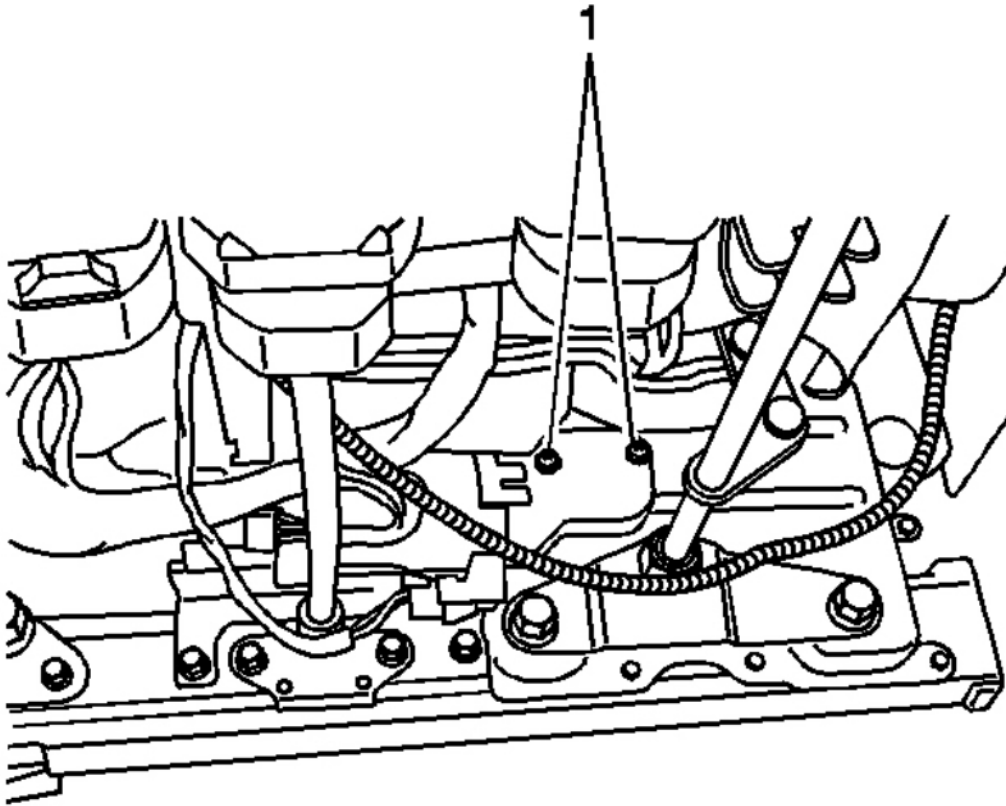


Fig. 49: View Of Recliner Motor Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the recliner motor nuts (1).

Tighten: Tighten the nuts to 10 N.m (88 lb in).

3. Install the electrical connector.
4. Install the recliner position sensor. Refer to Power Recliner Sensor Replacement - Front.

5. Install the seat into the vehicle. Refer to Seat Replacement - Bucket.

SEAT BACK TRIM REPLACEMENT - FRONT

Removal Procedure

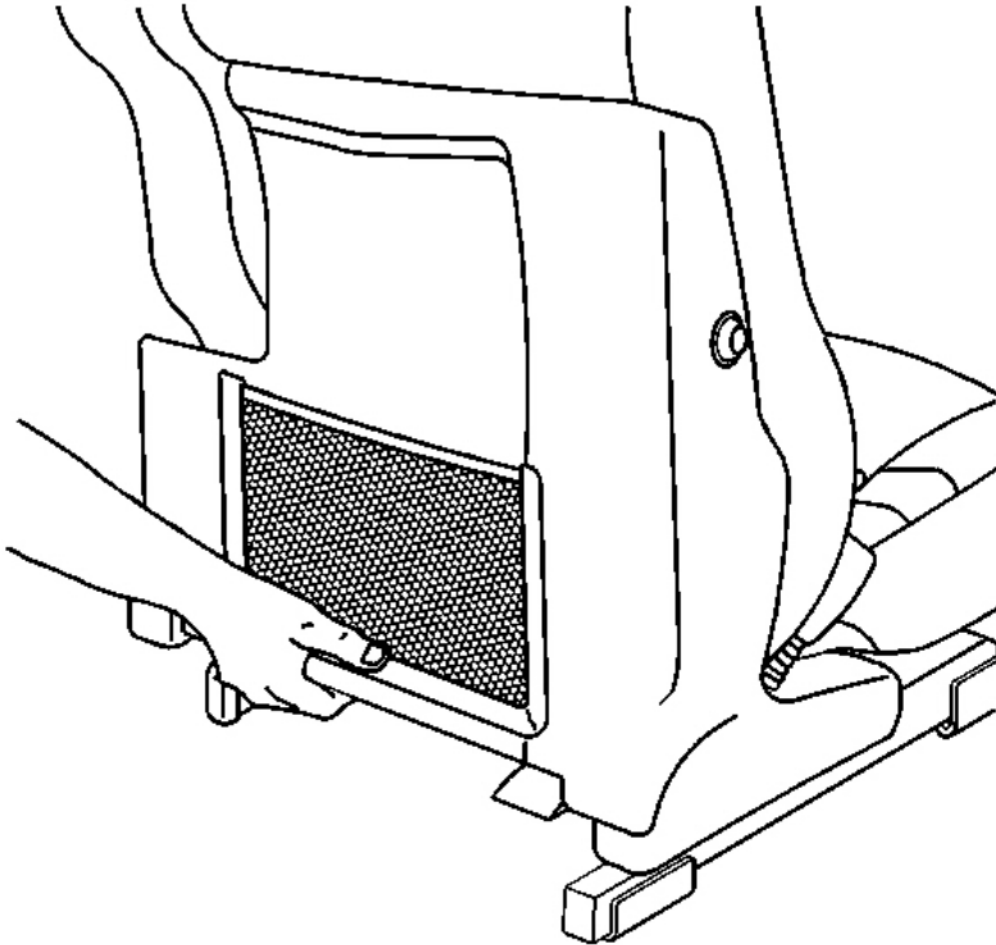


Fig. 50: View Of Front Seat Back Trim
Courtesy of GENERAL MOTORS CORP.

1. Grasp the top portion of the seat back trim panel and pull out to release the push-in fasteners.

2. Firmly lift upwards to remove the seat back trim from the seat assembly.

Installation Procedure

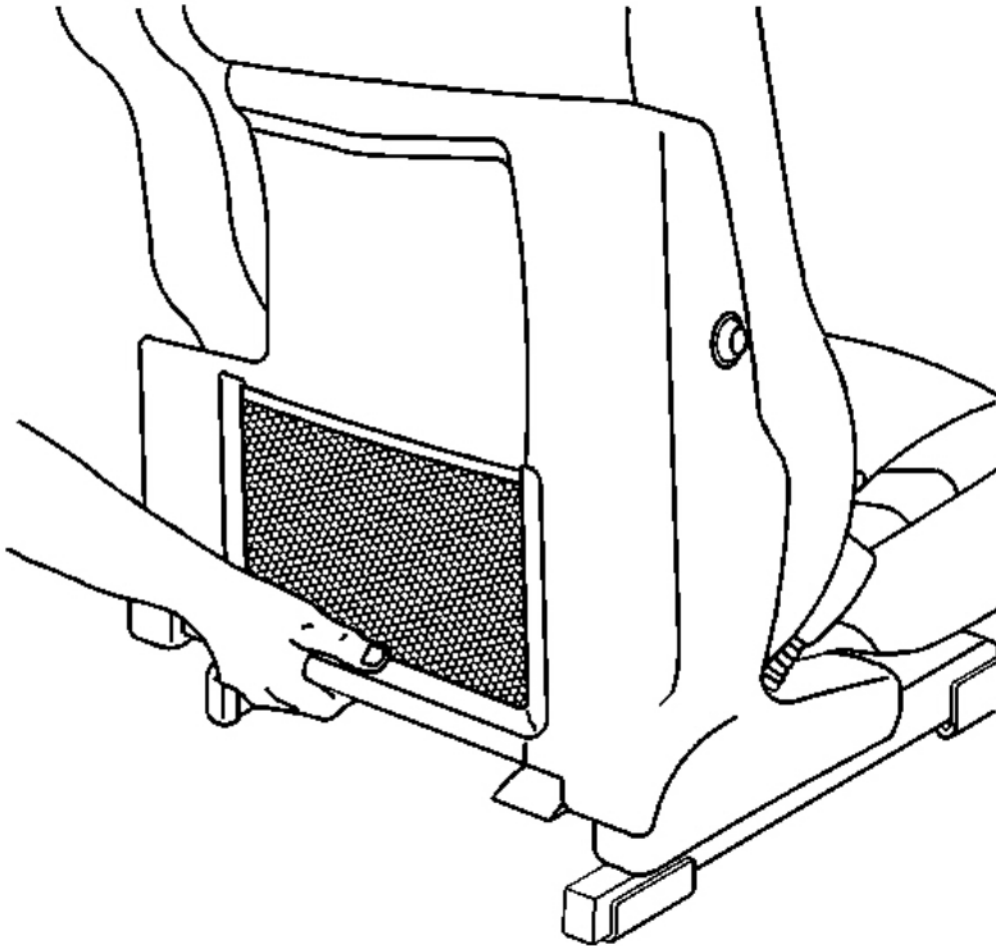


Fig. 51: View Of Front Seat Back Trim
Courtesy of GENERAL MOTORS CORP.

1. Position the lower hooks on the seat back trim panel to the seat assembly.
2. Firmly push inwards on the top of the trim cover to secure the push-in fasteners.

Removal Procedure

1. Remove the seat back trim. Refer to **Seat Back Trim Replacement - Front**.

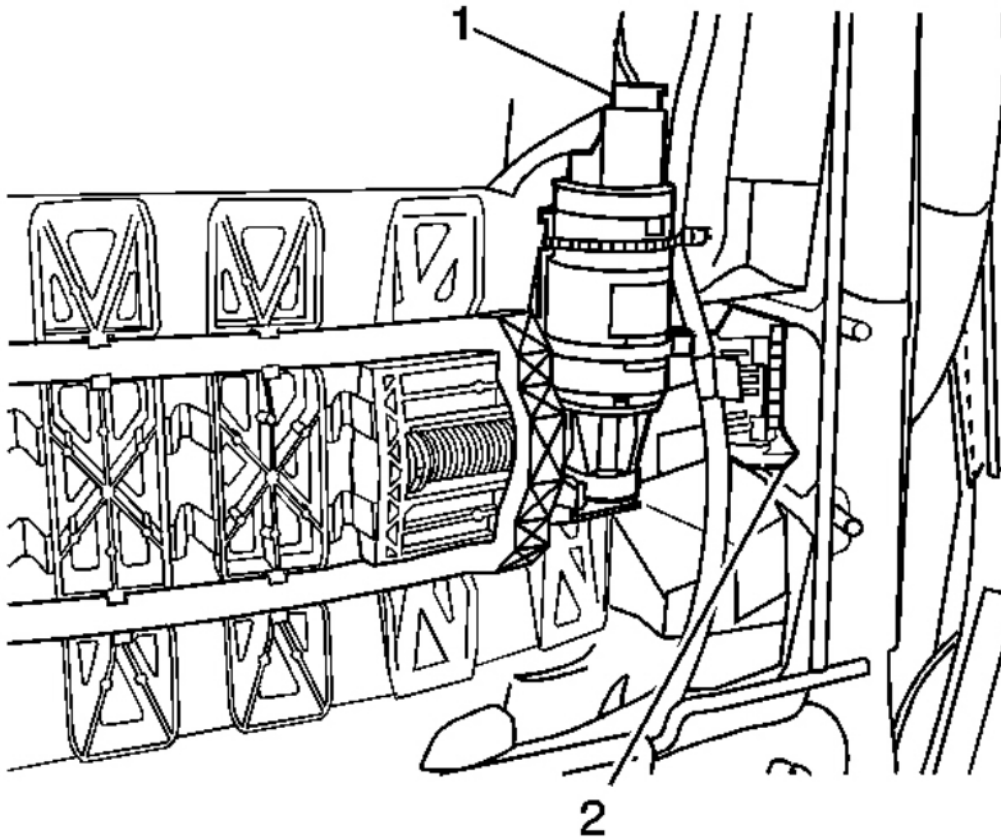


Fig. 52: View Of Lumbar Motor & Assembly
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the lumbar motor (1) electrical connector.
3. Push in on the lumbar assembly (2) and disengage the assembly from the seat frame.
4. Remove the lumbar assembly.

Installation Procedure

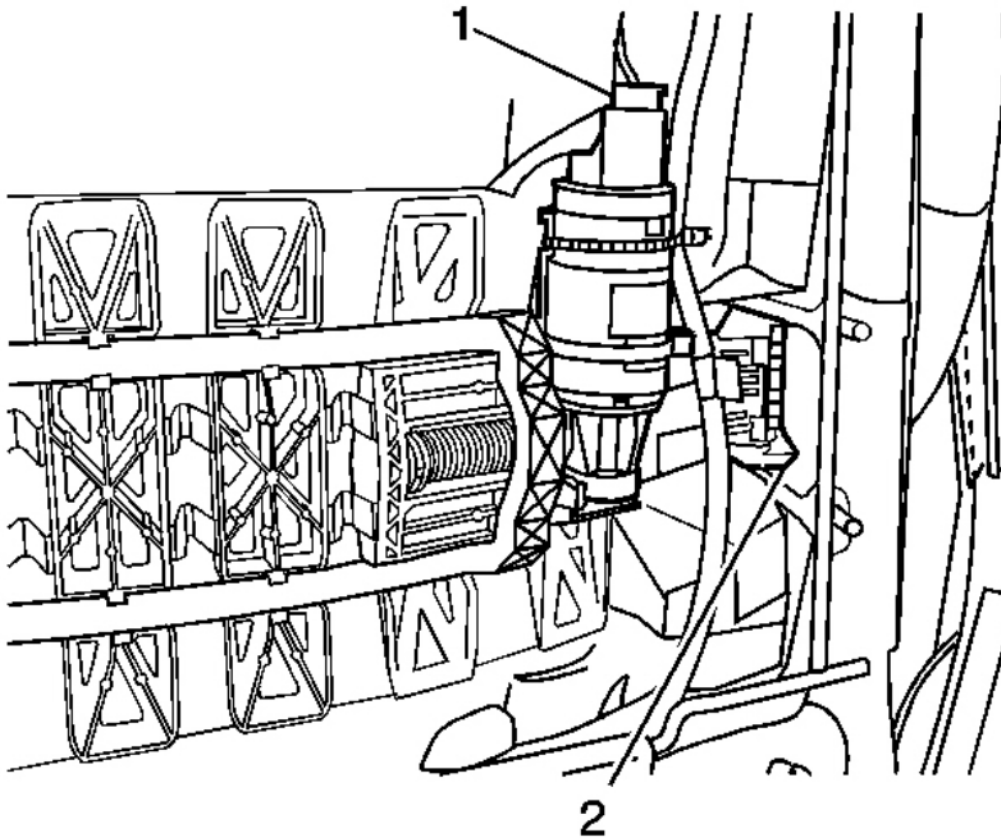


Fig. 53: View Of Lumbar Motor & Assembly
Courtesy of GENERAL MOTORS CORP.

1. Install the lumbar assembly (2) to the seat frame.
2. Connect the electrical connector (1) to the lumbar motor.
3. Install the seat back trim. Refer to **Seat Back Trim Replacement - Front.**

LUMBAR SWITCH REPLACEMENT

Removal Procedure

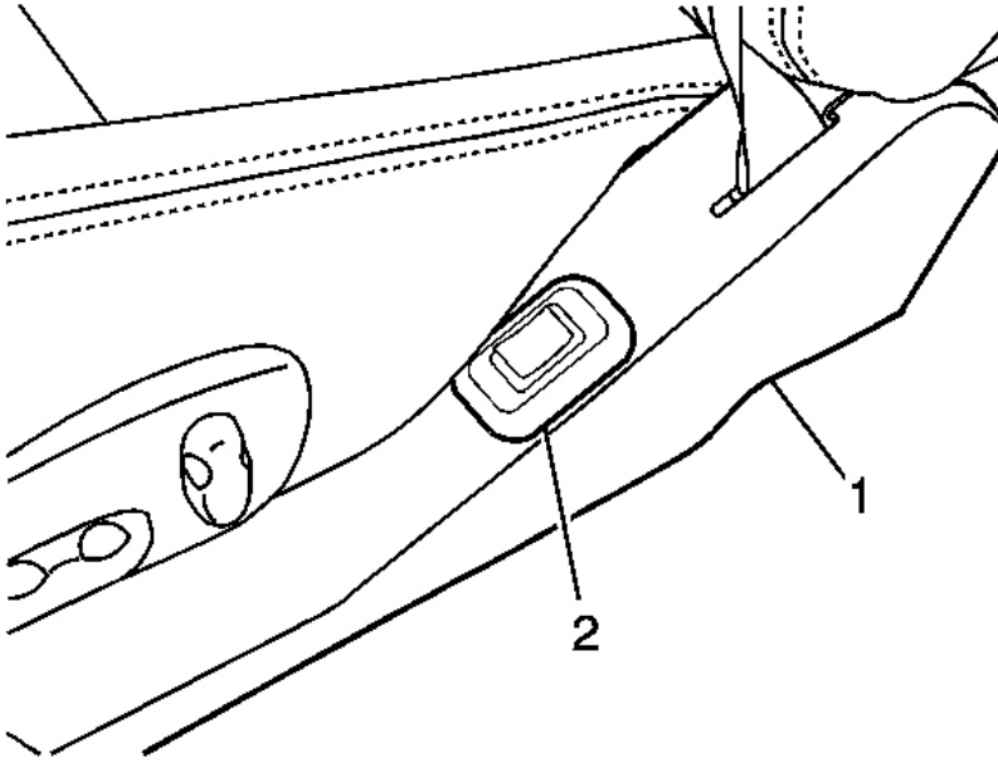


Fig. 54: View Of Seat Track Trim Cover & Lumbar Switch Electrical Connector
Courtesy of GENERAL MOTORS CORP.

1. Remove the seat track trim cover (1) from the seat.
2. Disconnect the lumbar switch (2) electrical connector.
3. Remove the lumbar switch.

Installation Procedure

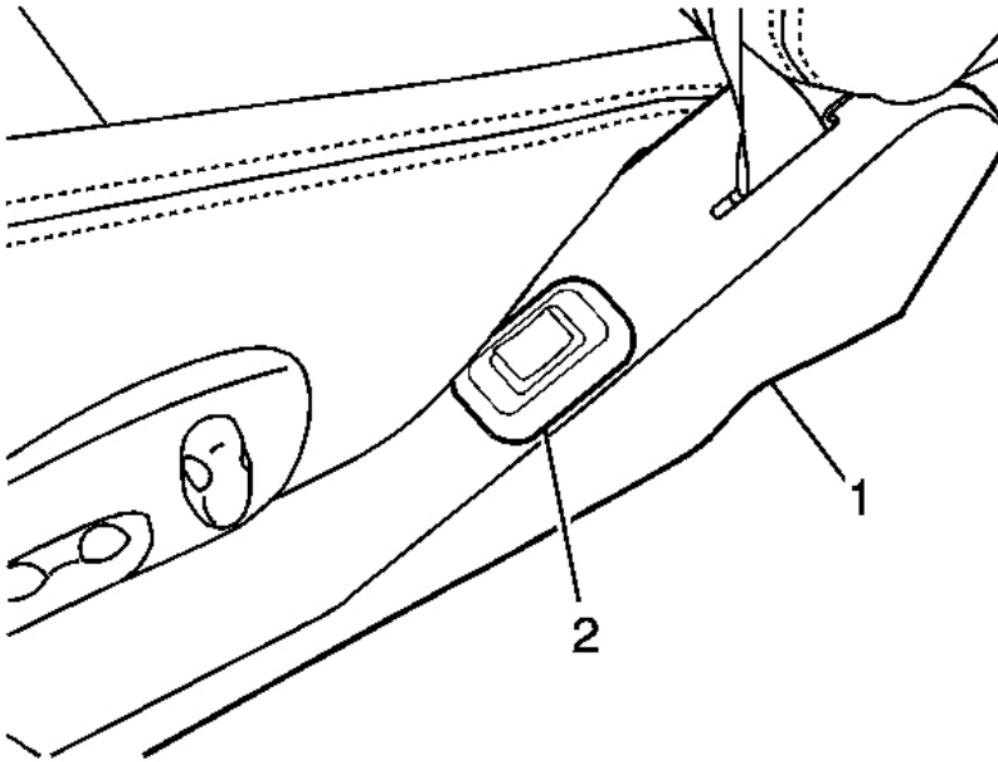


Fig. 55: View Of Seat Track Trim Cover & Lumbar Switch Electrical Connector
Courtesy of GENERAL MOTORS CORP.

1. Install the lumbar switch (2) into the seat track trim cover (1).
2. Connect the electrical connector.
3. Install the seat track trim cover to the seat.

SEAT ADJUSTER REPLACEMENT - FRONT

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Remove the front bucket seat. Refer to Seat Replacement - Bucket.
2. Remove the front seat cushion. Refer to Seat Cushion Replacement - Front.

3. Remove the seat back frame. Refer to **Seat Back Frame Replacement - Front.**

Installation Procedure

1. Install the seat back frame to the seat adjuster. Refer to **Seat Back Frame Replacement - Front**
2. Install the front seat cushion. Refer to **Seat Cushion Replacement - Front**
3. Install the front bucket seat. Refer to **Seat Replacement - Bucket**
4. If the vehicle is equipped with memory seats, calibrate the seat. Refer to **Memory Seat Calibration Procedure.**

SEAT SWITCH REPLACEMENT - POWER

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** driver's seat and **SIR Disabling and Enabling Zone 9** and passenger seat.
2. Remove the seat cushion from the adjuster track enough to gain access to the power seat switch. Refer to **Seat Cushion Replacement - Front.**

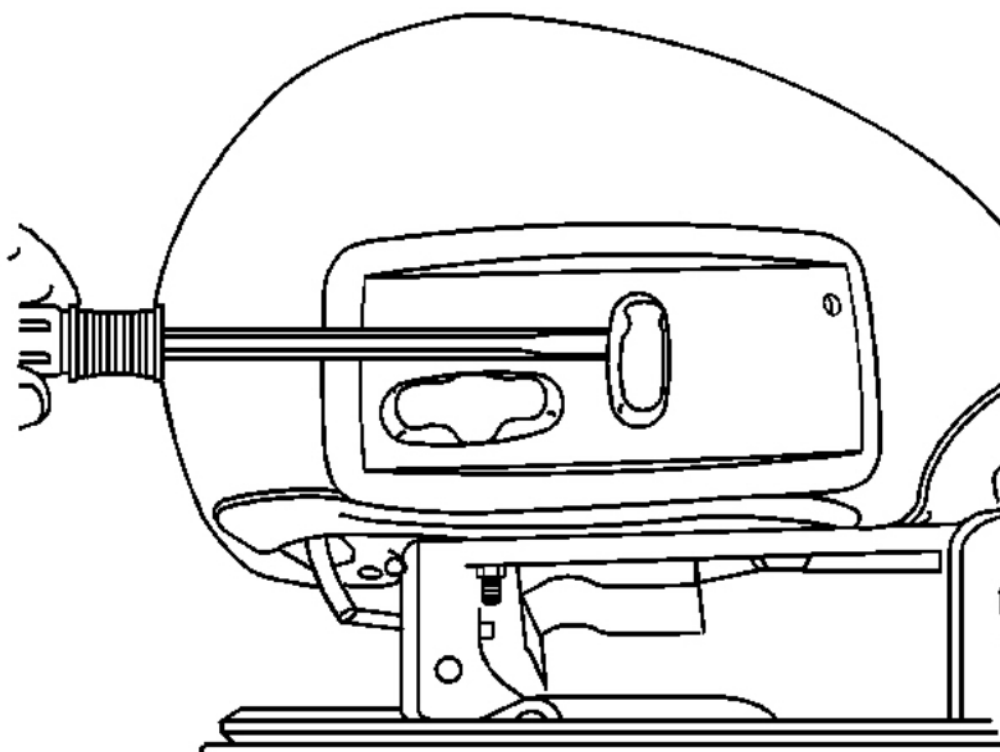


Fig. 56: Removing Power Seat Switch Knobs
Courtesy of GENERAL MOTORS CORP.

3. Remove the knobs from the switch by gently prying them off using a flat bladed tool.

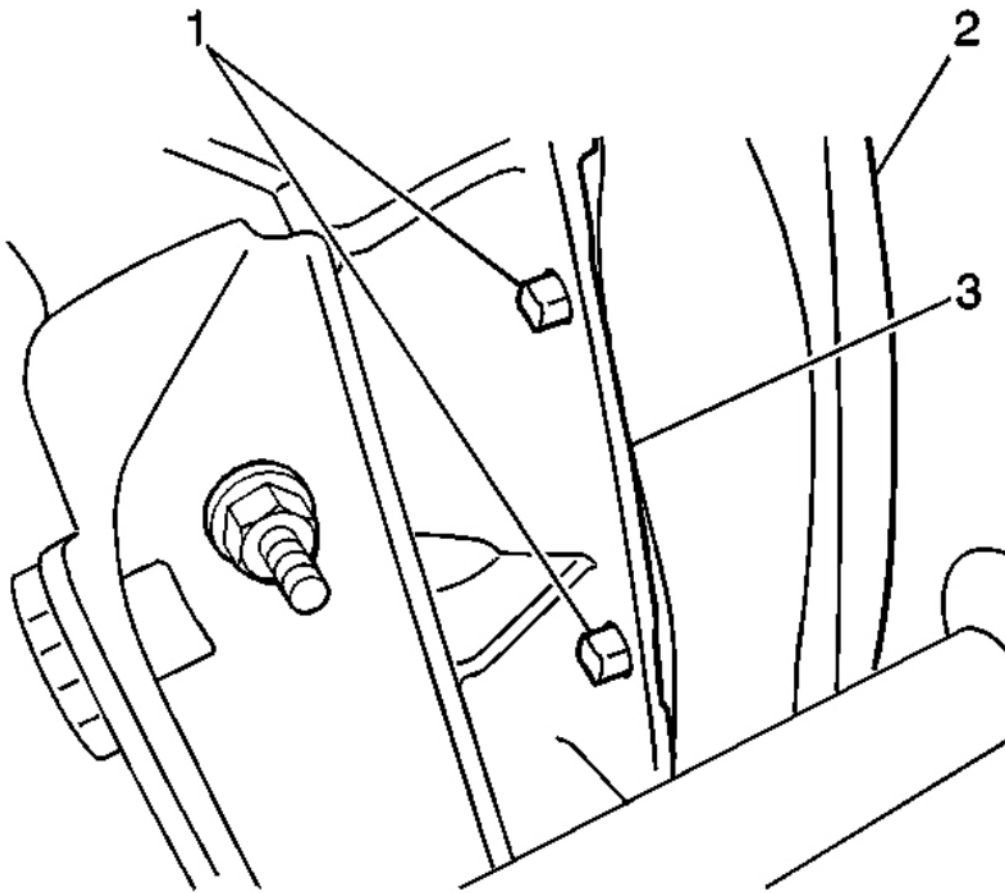


Fig. 57: Locating Power Seat Switch Bezel Retainers & Seat Cushion Frame
Courtesy of GENERAL MOTORS CORP.

4. On the underside of the seat cushion, locate the retainers (1) securing the power seat switch bezel to the seat cushion frame (3).
5. Squeeze the retainers while gently prying the bezel from the seat cushion frame.
6. Remove the power seat switch bezel.
7. Release the J channel retainers securing the seat cushion cover to the seat cushion frame in order to gain access to the power seat switch.

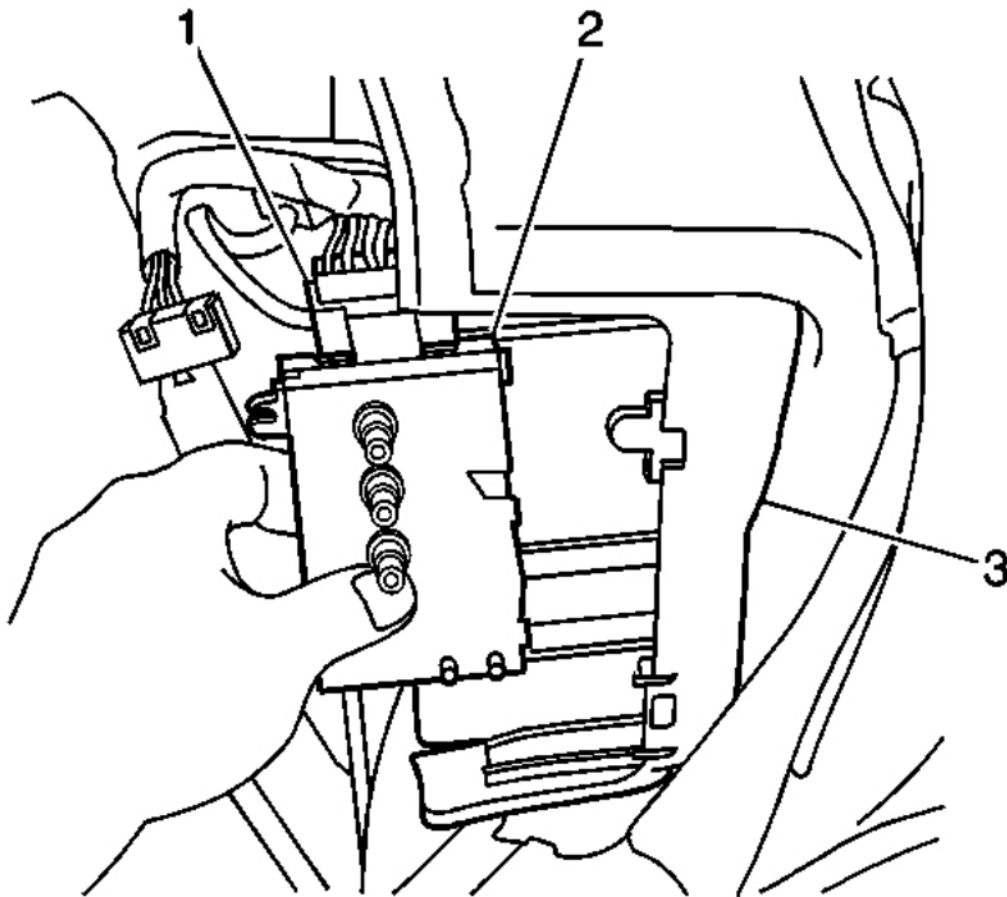


Fig. 58: View Of Power Seat Switch
Courtesy of GENERAL MOTORS CORP.

8. Remove the push-in fastener securing the power seat switch (2) to the seat cushion frame (3).
9. Slide the power seat switch (2) from the seat cushion frame (3).

NOTE: **Note the correct routing of the electrical wiring. Failure to reinstall the wiring properly could result in damage to the wiring.**

10. Disconnect the electrical connector (1) from the power seat switch.

Installation Procedure

1. Install the wiring harness in the position in which it was removed.
2. Connect the electrical connector to the power seat switch.
3. Slide the power seat switch upward into the seat cushion frame.
4. Install the push-in fastener in order to secure the power seat switch to the seat cushion frame.
5. Install the seat cushion cover over the switch.
6. Position the power seat switch bezel over the switches.
7. Engage the power seat switch bezel fasteners in order to secure the bezel to the seat cushion frame.

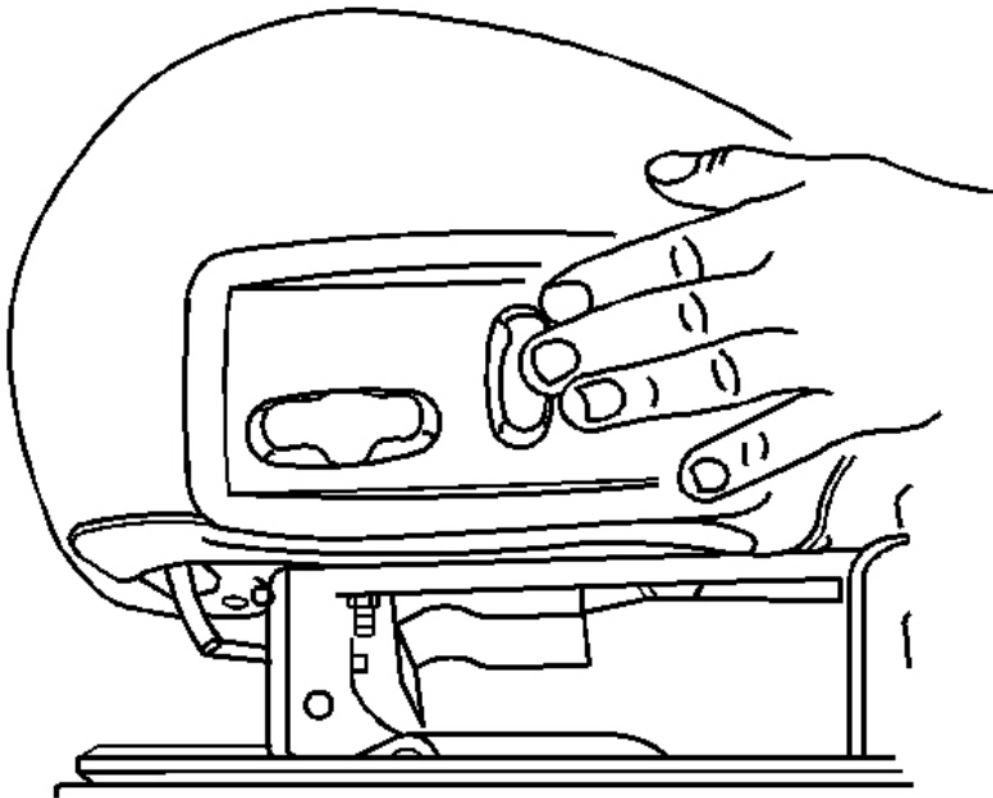


Fig. 59: Installing Power Seat Switch Knobs
Courtesy of GENERAL MOTORS CORP.

8. Install the power seat switch knobs.
9. Install the seat cushion. Refer to **Seat Cushion Replacement - Front.**
10. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** driver's seat and **SIR Disabling and Enabling Zone 9** and passenger seat.

SEAT ADJUSTER MOTOR REPLACEMENT - HORIZONTAL

Removal Procedure

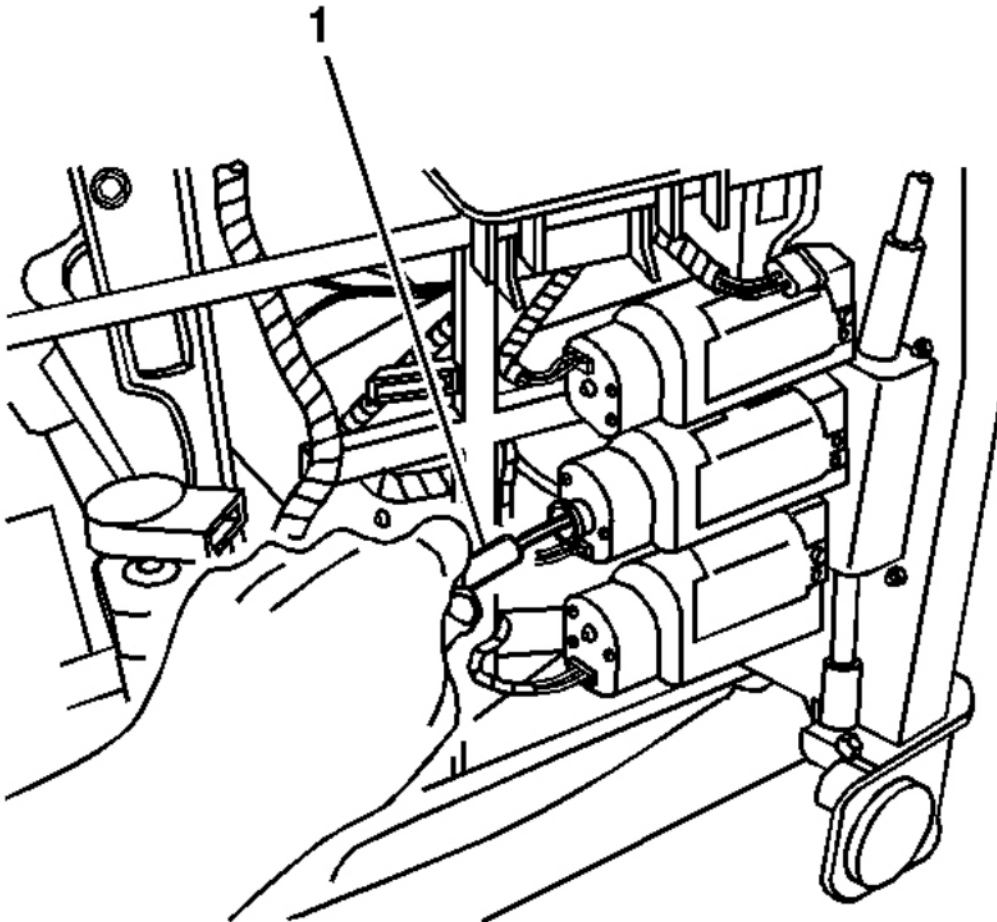


Fig. 60: View Of Seat Adjuster Drive Cable
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** or to **SIR Disabling and Enabling Zone 9** in SIR.
2. Remove the seat cushion to gain access to the horizontal seat adjuster motor. Refer to **Seat Cushion Replacement - Front**.
3. Disconnect the electrical connectors from the motor.
4. Remove the screws from the top of the adjuster motor.
5. Remove the seat adjuster drive cable (1) by pulling the cable out of the motor.
6. Remove the seat adjuster motor.
7. Remove the short drive cable from the seat adjuster.

Installation Procedure

1. Position the short drive cable into the seat adjuster.
2. Line up the square end of the cable with the motor.
3. Slide the motor on to the cable.

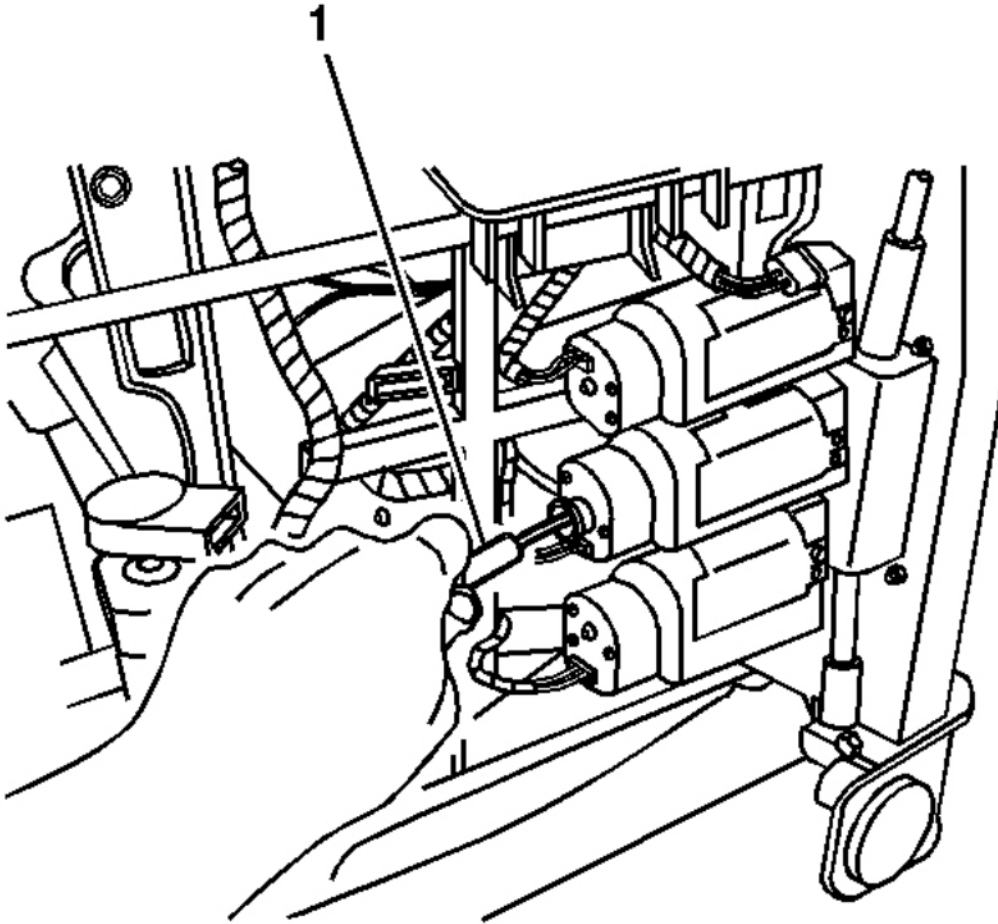


Fig. 61: View Of Seat Adjuster Drive Cable
Courtesy of GENERAL MOTORS CORP.

4. Install the long drive cable (1) into the motor.
5. Install the long cable into the seat adjuster.
6. Ensure that both cables are fully seated.

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

7. Install the motor retaining screws.

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

8. Connect the electrical connectors.
9. Install the seat cushion. Refer to **Seat Cushion Replacement - Front**.
10. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** or to **SIR Disabling and Enabling Zone 9** in SIR.
11. If the vehicle is equipped with memory seats, calibrate the seat. Refer to **Memory Seat Calibration Procedure**.

SEAT ADJUSTER MOTOR REPLACEMENT - VERTICAL

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** or to **SIR Disabling and Enabling Zone 9** in SIR.
2. Remove the seat. Refer to **Seat Replacement - Bucket**.
3. Disconnect the electrical connectors from the motor.

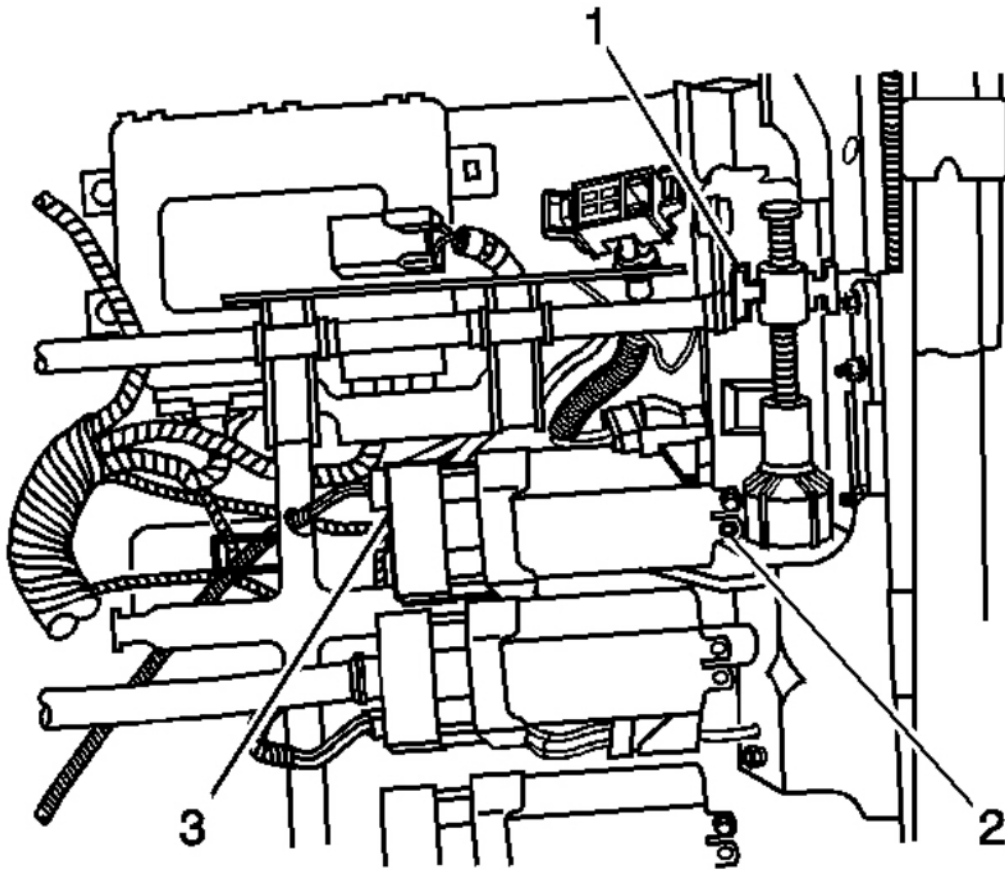


Fig. 62: View Of Vertical Seat Adjuster Motor
Courtesy of GENERAL MOTORS CORP.

4. Remove the retaining bolt (2) from the vertical seat adjuster motor.
5. Lift the motor up and release it from slot (1) in the adjuster.
6. Remove the motor.

Installation Procedure

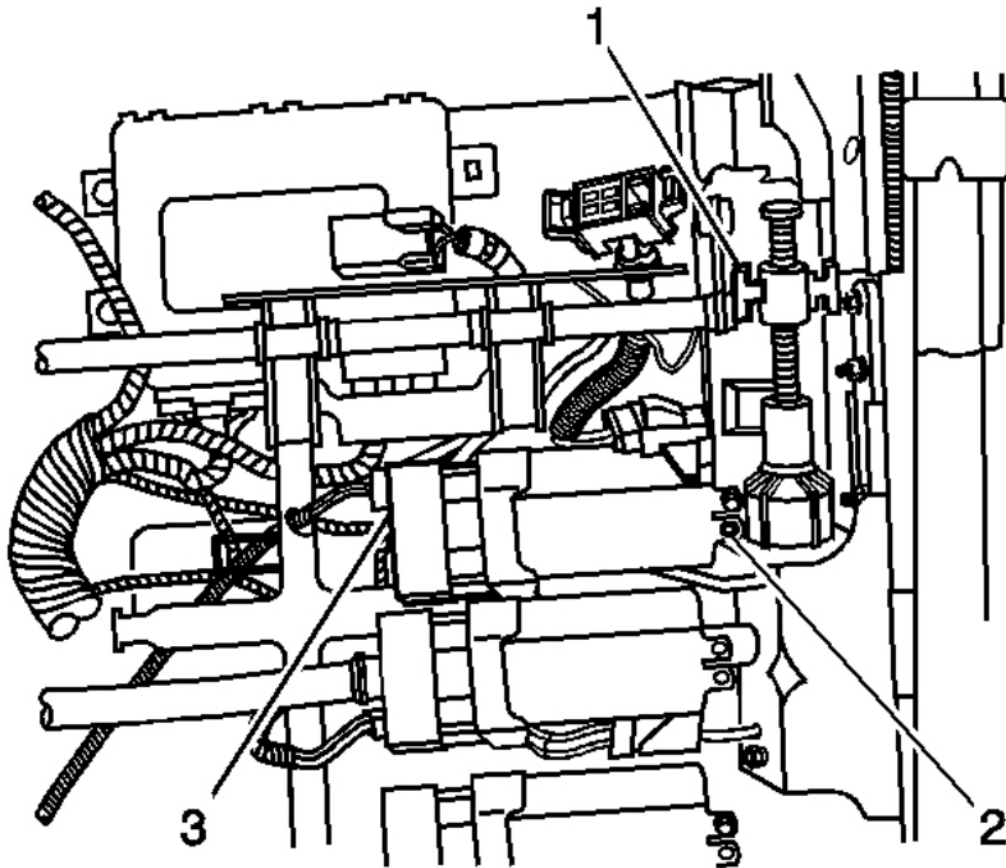


Fig. 63: View Of Vertical Seat Adjuster Motor
Courtesy of GENERAL MOTORS CORP.

1. Install the vertical seat adjuster motor into the slot (1) on the adjuster.
2. Rotate the motor down and position the motor into the seat adjuster.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the retaining bolt (2).

Tighten: Tighten the bolt to 10 N.m (88 lb in).

4. Connect the electrical connectors.

5. Install the seat. Refer to Seat Replacement - Bucket.
6. Enable the SIR system. Refer to SIR Disabling and Enabling Zone 7 or to SIR Disabling and Enabling Zone 9 in SIR.
7. If the vehicle is equipped with memory seats, calibrate the seat. Refer to Memory Seat Calibration Procedure.

DRIVE CABLE REPLACEMENT - HORIZONTAL

Removal Procedure

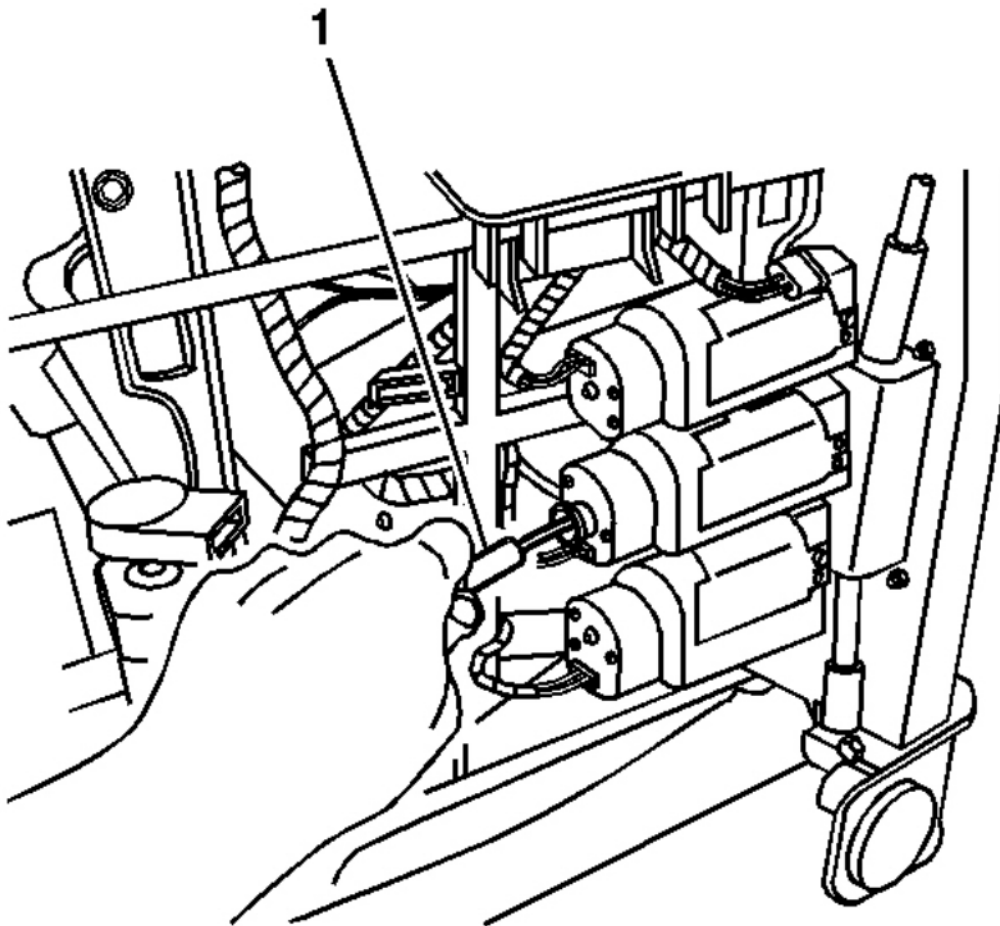


Fig. 64: View Of Seat Adjuster Drive Cable
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** or to **SIR Disabling and Enabling Zone 9** in SIR.
2. Remove the seat assembly. Refer to **Seat Replacement - Bucket**.
3. Remove the seat cushion to gain access to the horizontal seat adjuster motor. Refer to **Seat Cushion Replacement - Front**.
4. Disconnect the electrical connectors from the motor.
5. Remove the screws from the top of the adjuster motor.
6. Remove the seat adjuster drive cable (1) by pulling the cable out of the motor.
7. Remove the seat adjuster motor.
8. Remove the short drive cable from the seat adjuster.

Installation Procedure

1. Position the short drive cable into the seat adjuster.
2. Line up the square end of the cable with the motor.
3. Slide the motor on to the cable.

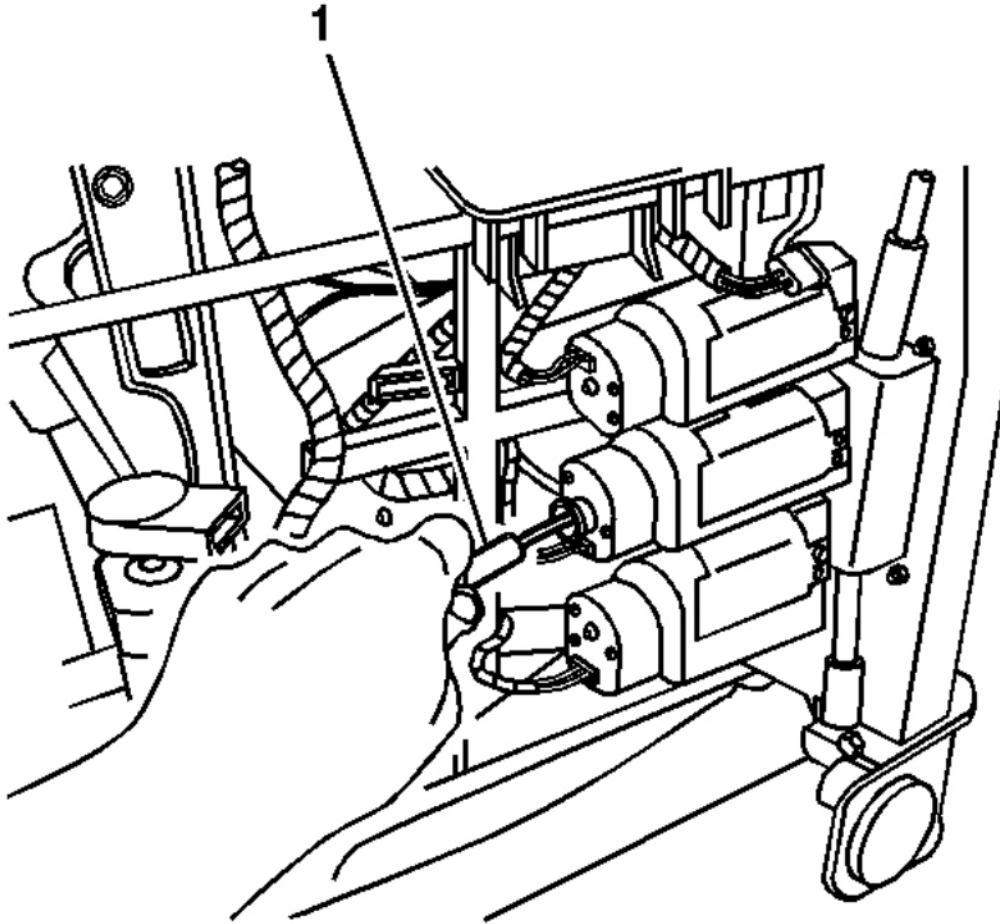


Fig. 65: View Of Seat Adjuster Drive Cable
Courtesy of GENERAL MOTORS CORP.

4. Install the long drive cable (1) into the motor.
5. Install the long cable into the seat adjuster.
6. Ensure that both cables are fully seated.

NOTE: Refer to Fastener Notice in Cautions and Notices.

7. Install the motor retaining screws.

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

8. Connect the electrical connectors.
9. Install the seat cushion. Refer to **Seat Cushion Replacement - Front**.
10. Install the seat assembly. Refer to **Seat Replacement - Bucket**.
11. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** or to **SIR Disabling and Enabling Zone 9** in SIR.
12. If the vehicle is equipped with memory seats, calibrate the seat. Refer to **Memory Seat Calibration Procedure**.

SENSOR REPLACEMENT - SEAT ADJUSTER MOTOR - VERTICAL

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** or to **SIR Disabling and Enabling Zone 9** in SIR.
2. Remove the seat. Refer to **Seat Replacement - Bucket**.

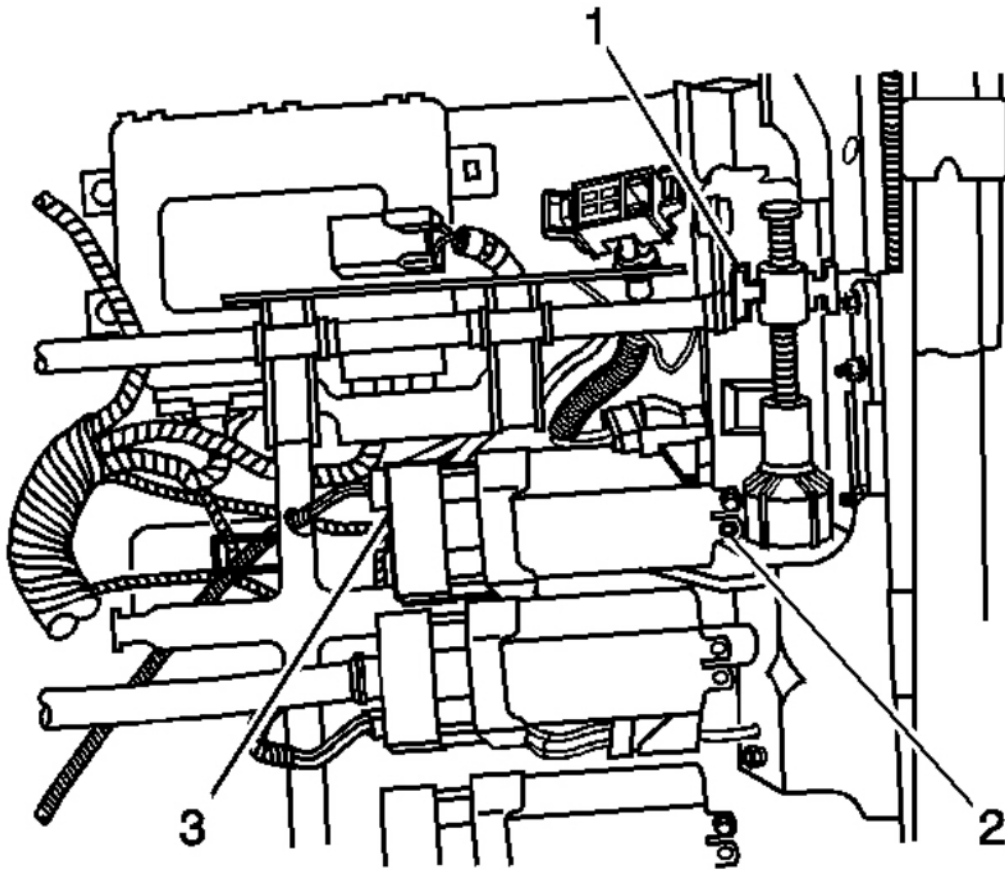


Fig. 66: View Of Vertical Seat Adjuster Motor
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the electrical connector from the seat adjuster motor sensor (3).
4. Release the tabs and remove the sensor.

Installation Procedure

1. Install the seat adjuster motor sensor to the motor.

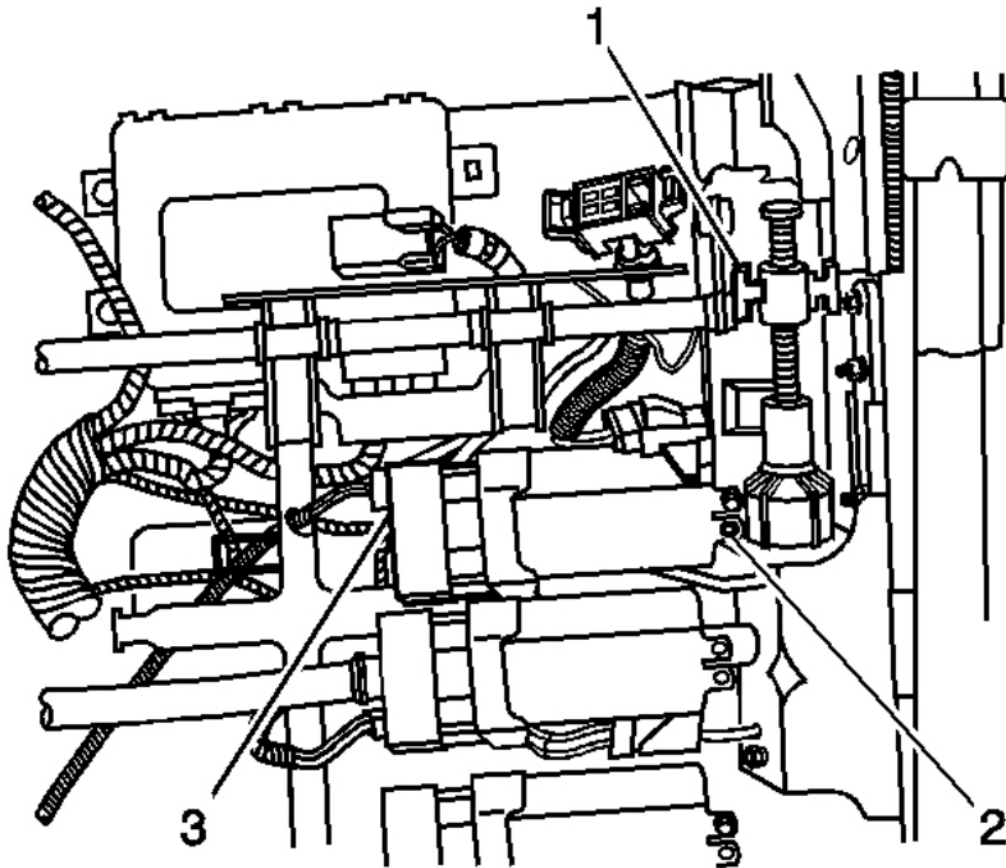


Fig. 67: View Of Vertical Seat Adjuster Motor
Courtesy of GENERAL MOTORS CORP.

2. Connect the electrical connector to the sensor (3).
3. Install the seat. Refer to **Seat Replacement - Bucket**.
4. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** for driver's seat or **SIR Disabling and Enabling Zone 9** in SIR.
5. Calibrate the seat. Refer to **Memory Seat Calibration Procedure**.

SENSOR REPLACEMENT - SEAT ADJUSTER MOTOR - HORIZONTAL

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** or to **SIR Disabling and Enabling Zone 9** in SIR.
2. Remove the seat cushion to gain access to the horizontal seat adjuster motor. Refer to **Seat Cushion Replacement - Front**.
3. Disconnect the electrical connectors from the motor.

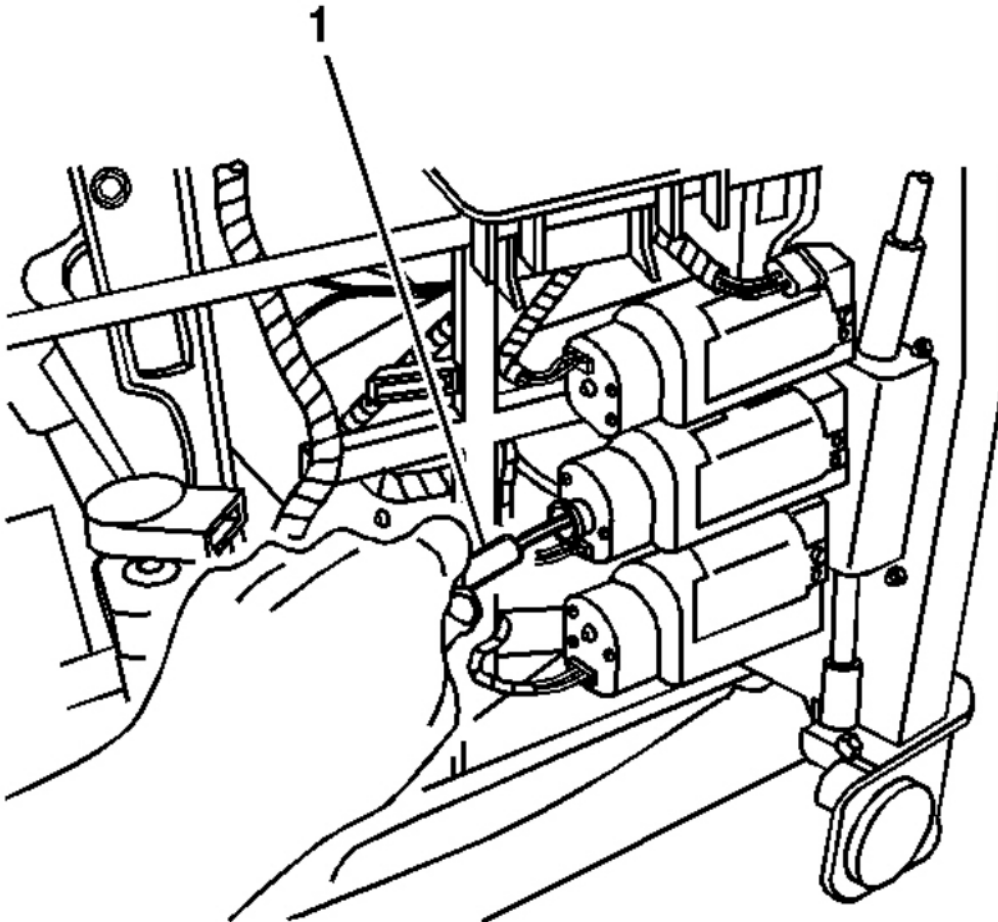


Fig. 68: View Of Seat Adjuster Drive Cable
Courtesy of GENERAL MOTORS CORP.

4. Remove the seat adjuster drive cable (1) by pulling the cable out of the motor.
5. Remove the sensor from the motor.

Installation Procedure

1. Install the sensor to the motor.
2. Line up the square end of the cable with the motor.

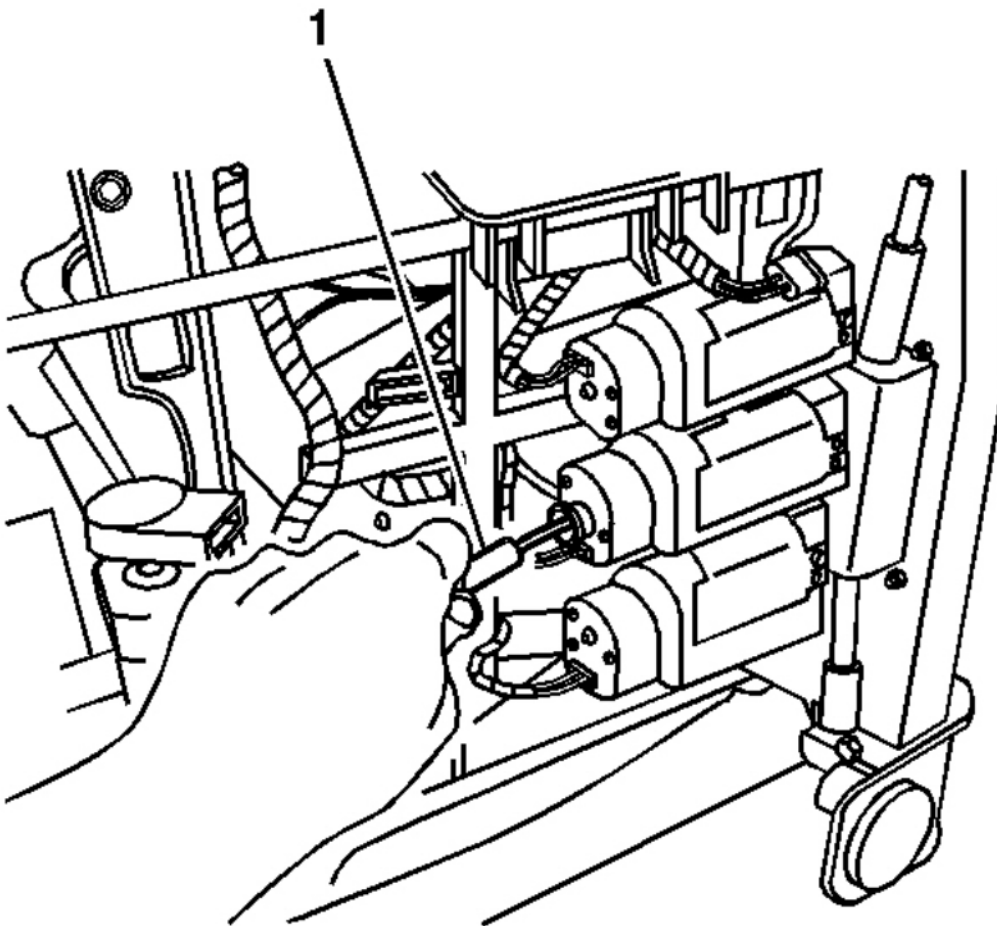


Fig. 69: View Of Seat Adjuster Drive Cable
Courtesy of GENERAL MOTORS CORP.

3. Install the long drive cable (1) into the motor.

4. Install the long cable into the seat adjuster.
5. Ensure that the cable is fully seated.
6. Connect the electrical connectors.
7. Install the seat cushion. Refer to Seat Cushion Replacement - Front.
8. Enable the SIR system. Refer to SIR Disabling and Enabling Zone 7 or to SIR Disabling and Enabling Zone 9 in SIR.
9. Calibrate the seat. Refer to Memory Seat Calibration Procedure.

MEMORY SEAT SWITCH REPLACEMENT

Removal Procedure

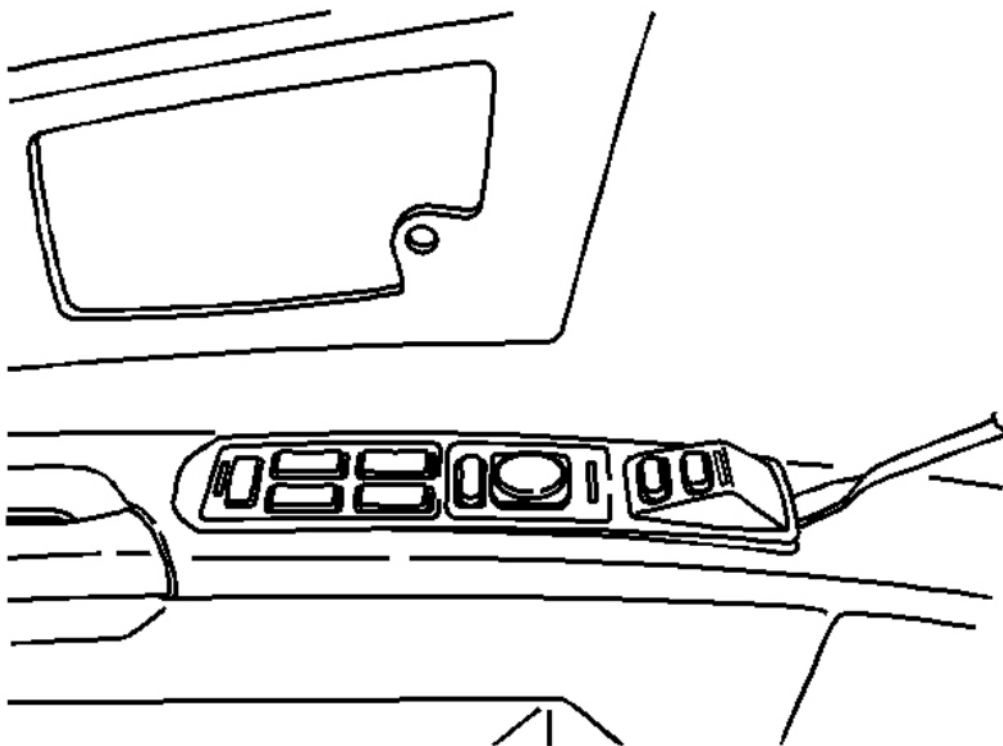


Fig. 70: Releasing Door Trim Panel Retainer
Courtesy of GENERAL MOTORS CORP.

1. Insert a flat - bladed tool under the front edge of the switch to release the retainer from the

door trim panel.

2. Disconnect the electrical connector from the lock switch.

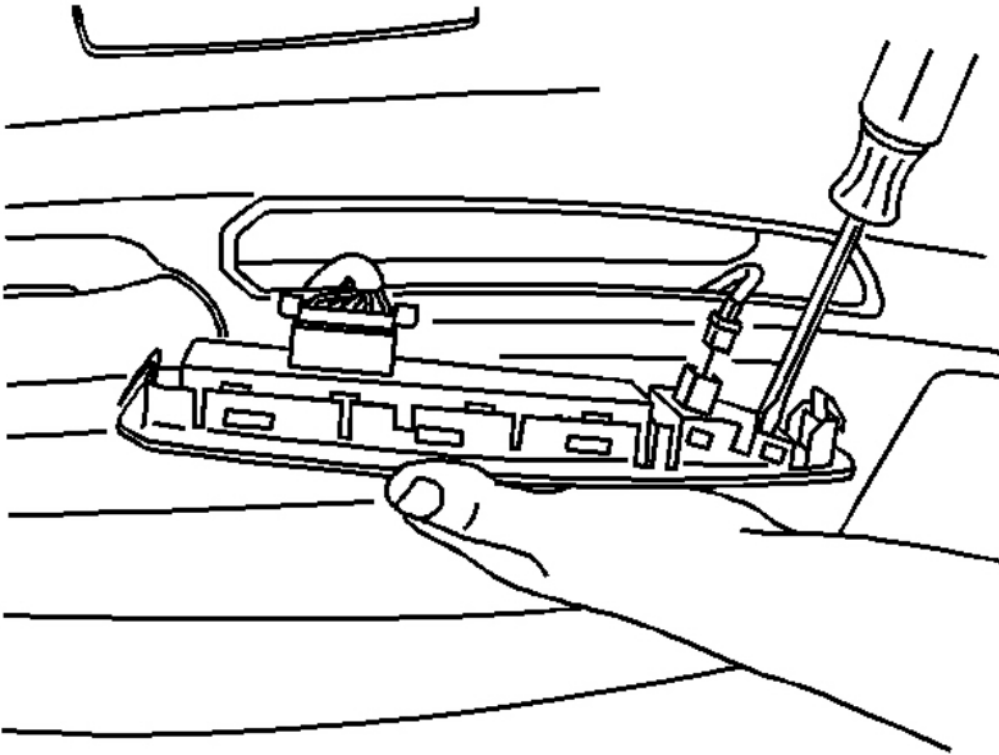


Fig. 71: Disengaging Memory Seat Switch Locking Tabs
Courtesy of GENERAL MOTORS CORP.

3. Use a flat - bladed tool to disengage the locking tabs from both sides of the switch.
4. Remove the lock switch.

Installation Procedure

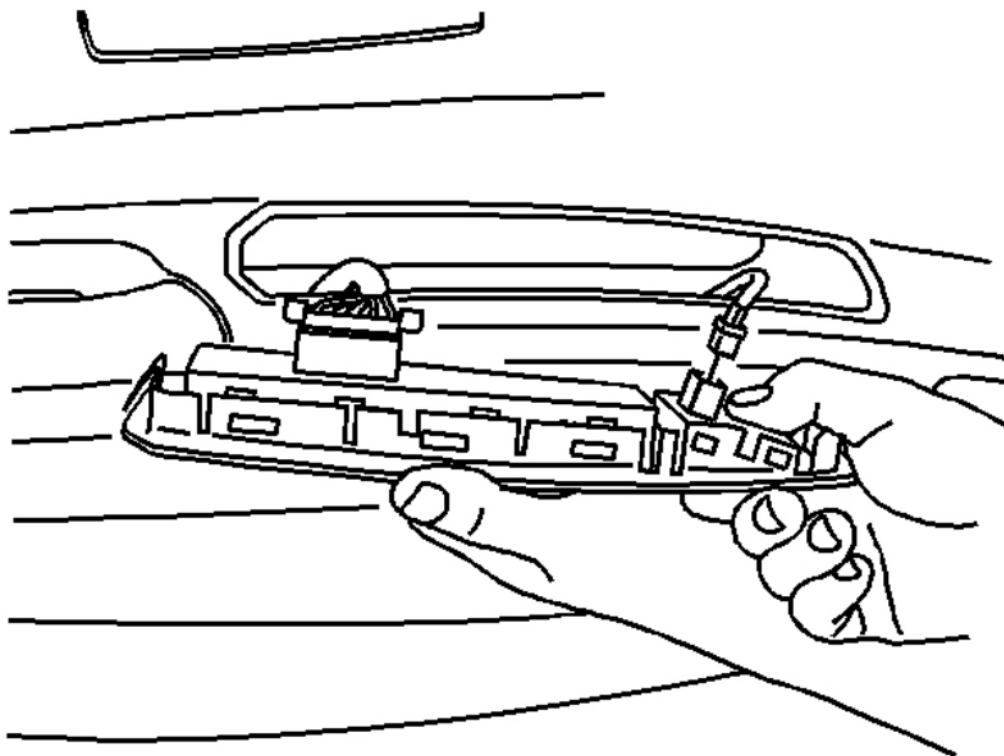


Fig. 72: View Of Door Lock Switch Electrical Connector
Courtesy of GENERAL MOTORS CORP.

1. Snap the door lock switch into the door switch bezel.
2. Connect the electrical connector.

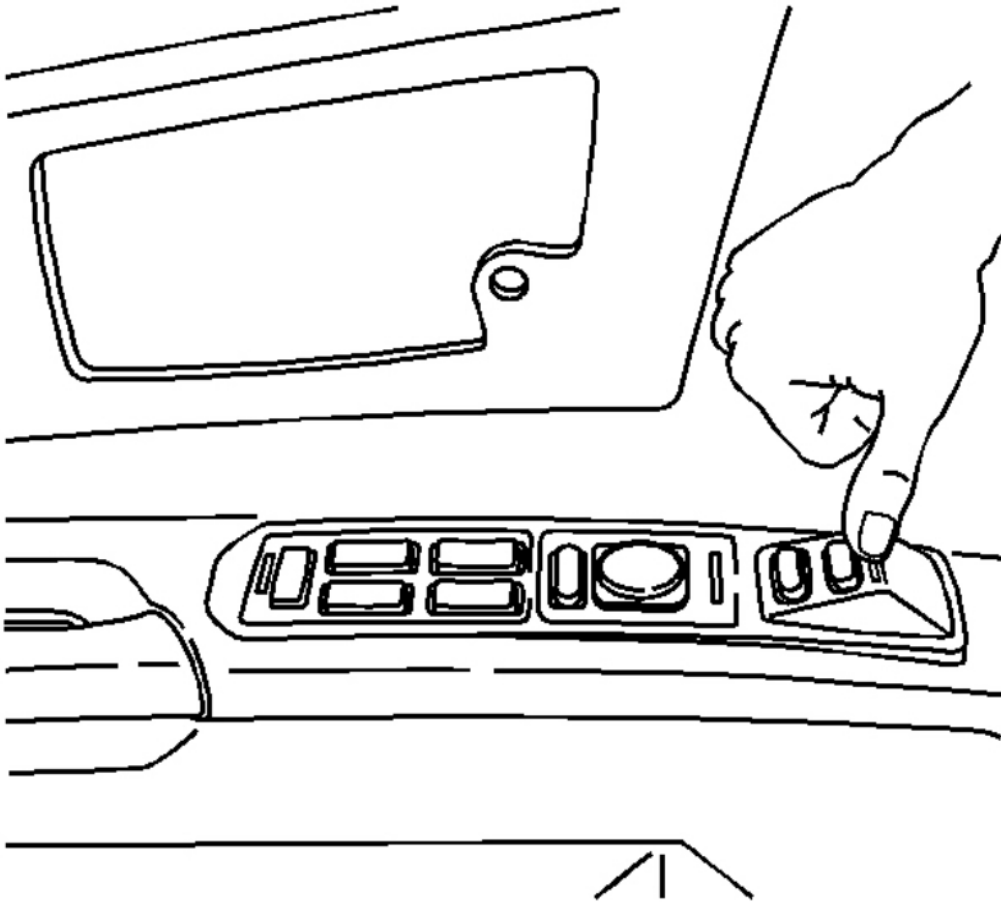


Fig. 73: Installing Door Lock Switch
Courtesy of GENERAL MOTORS CORP.

3. Insert the rear of the door lock switch into the door trim panel.
4. Press down on the front of the door lock switch to engage the switch to the door trim panel.

MEMORY SEAT CONTROL MODULE REPLACEMENT

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

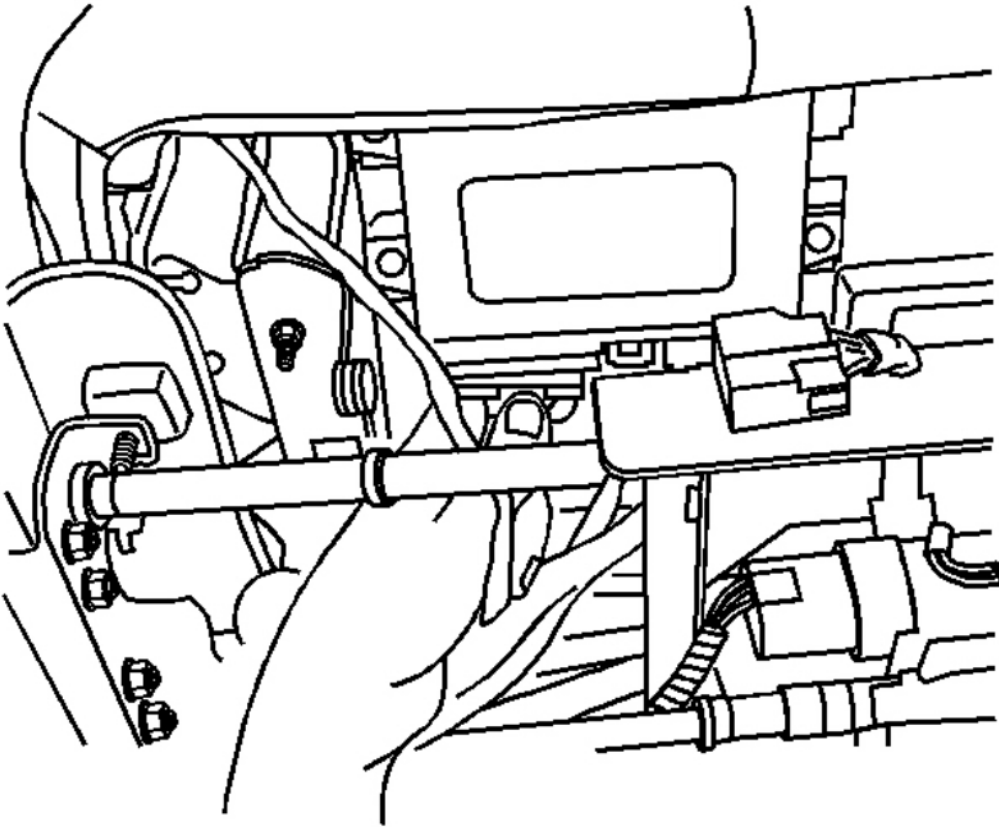


Fig. 74: View Of Heated Seat Module Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

1. Remove the front seat cushion. Refer to **Seat Cushion Replacement - Front**.
2. Disconnect the electrical connectors from the heated seat module.

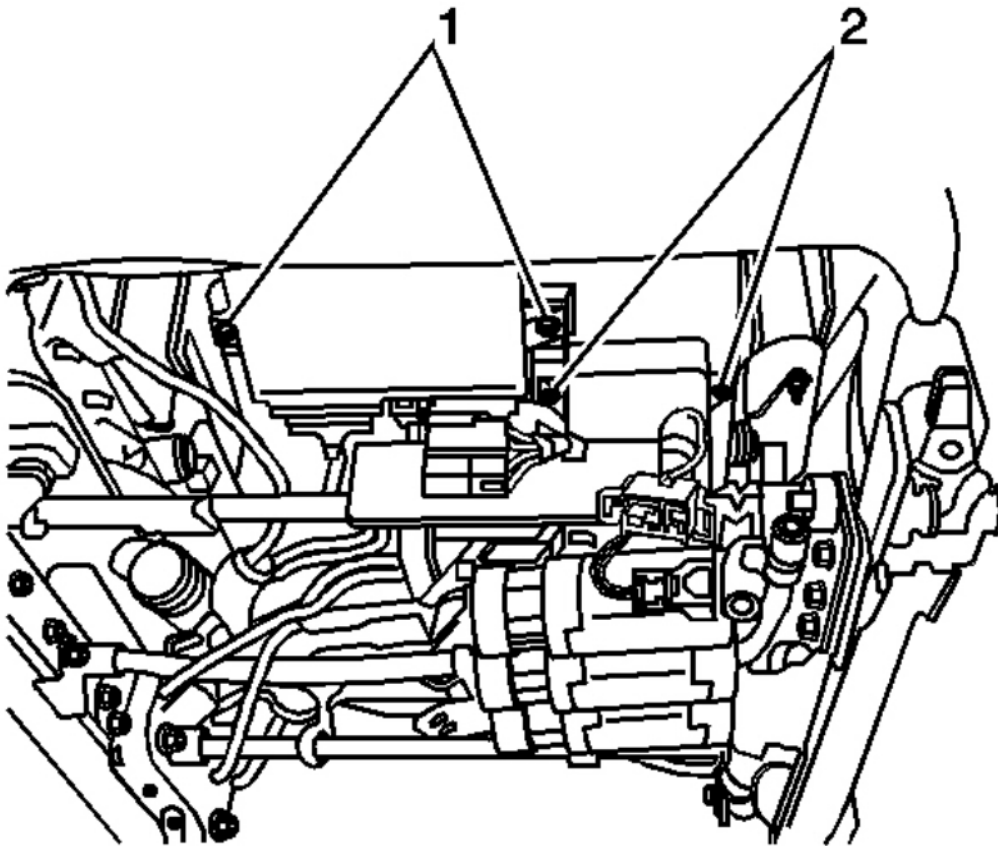


Fig. 75: Locating Memory Seat Module & Heated Seat Module Retaining Screws
Courtesy of GENERAL MOTORS CORP.

3. Remove the screws (1) retaining the memory seat module to the seat frame.
4. Remove the memory seat module.

Installation Procedure

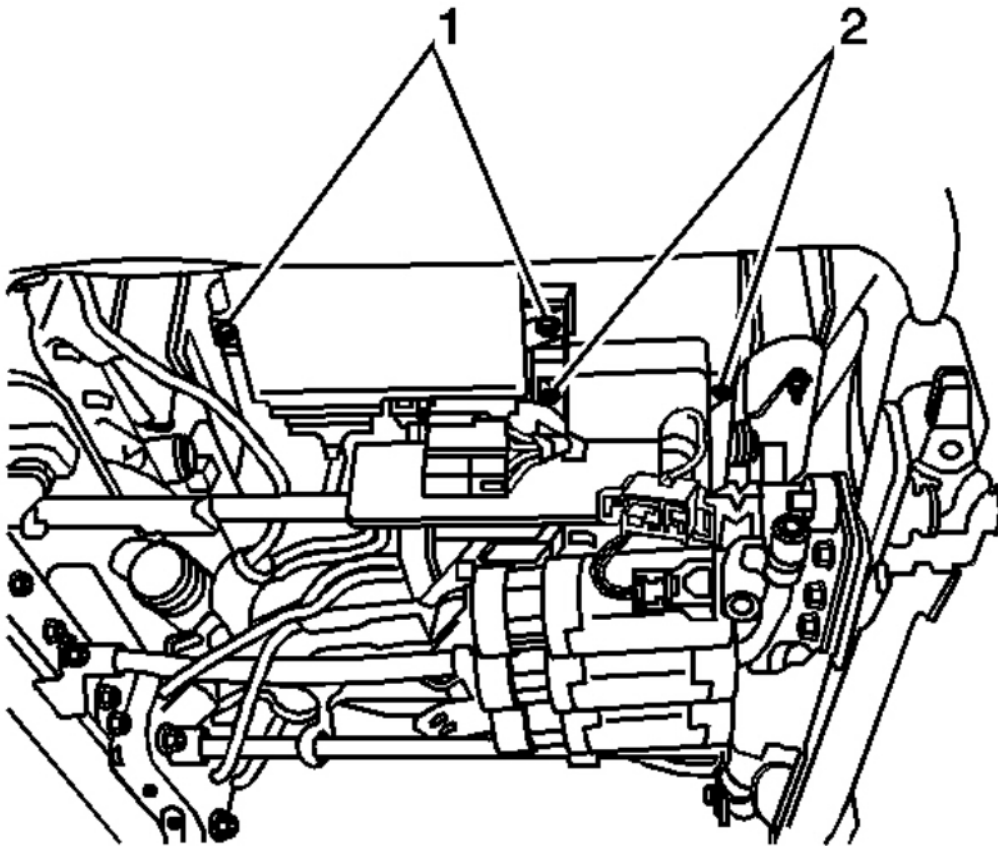


Fig. 76: Locating Memory Seat Module & Heated Seat Module Retaining Screws
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

1. Install the memory seat module and install the memory seat module screws (1).

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

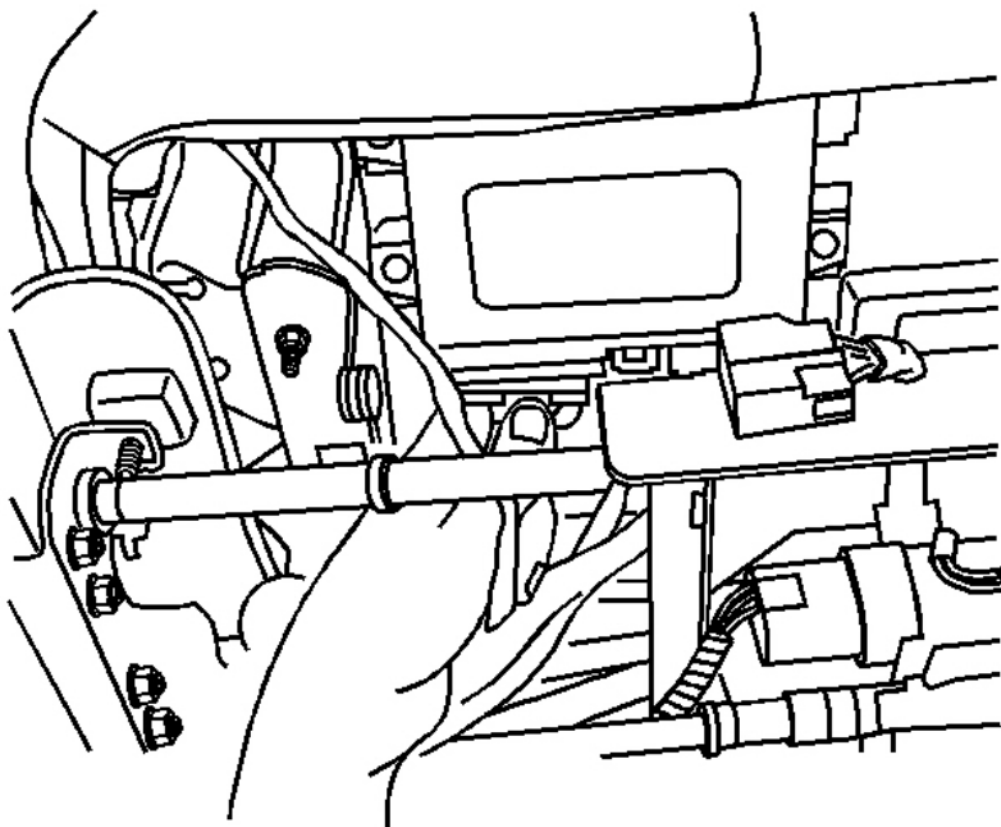


Fig. 77: View Of Heated Seat Module Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

2. Connect the electrical connections to the module.
3. Install the front seat cushion. Refer to **Seat Cushion Replacement - Front**.
4. Calibrate the memory seat module for proper adjustable pedal operation. Refer to **Adjustable Pedal Calibration** in Accessories.
5. Calibrate the seat. Refer to **Memory Seat Calibration Procedure**.

MEMORY SEAT CALIBRATION PROCEDURE

The memory seat module uses position sensor inputs to establish soft stop locations for the adjuster motors several millimeters ahead of the physical limits of the adjuster assembly. After replacing a memory seat module or adjuster components, it may be necessary to reset the adjuster

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motor soft stop locations. When the repair procedure has been completed, operate the seat adjuster switch in every direction until the seat adjuster reaches its mechanical hard stop by repeatedly pressing and releasing the switch as necessary.

HEATED SEAT SWITCH REPLACEMENT - FRONT

The Heated Seat Switches are serviced with the HVAC Control Module. Refer to **HVAC Control Module Replacement** in HVAC Systems Automatic.

SEAT BACK HEATER ELEMENT REPLACEMENT - FRONT

The heater element is not a serviceable unit. The heater element is part of the seat cover and the cover and heater element must be replaced together. Refer to **Seat Back Cover and Pad Replacement - Front**.

SEAT CUSHION HEATER ELEMENT REPLACEMENT - FRONT

The heater element is not serviced separately. The heater element is part of the seat cover, the seat cover and heater element must be replaced as an assembly. Refer to **Seat Cushion Replacement - Front**.

HEATED SEAT CONTROL MODULE REPLACEMENT - FRONT

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices

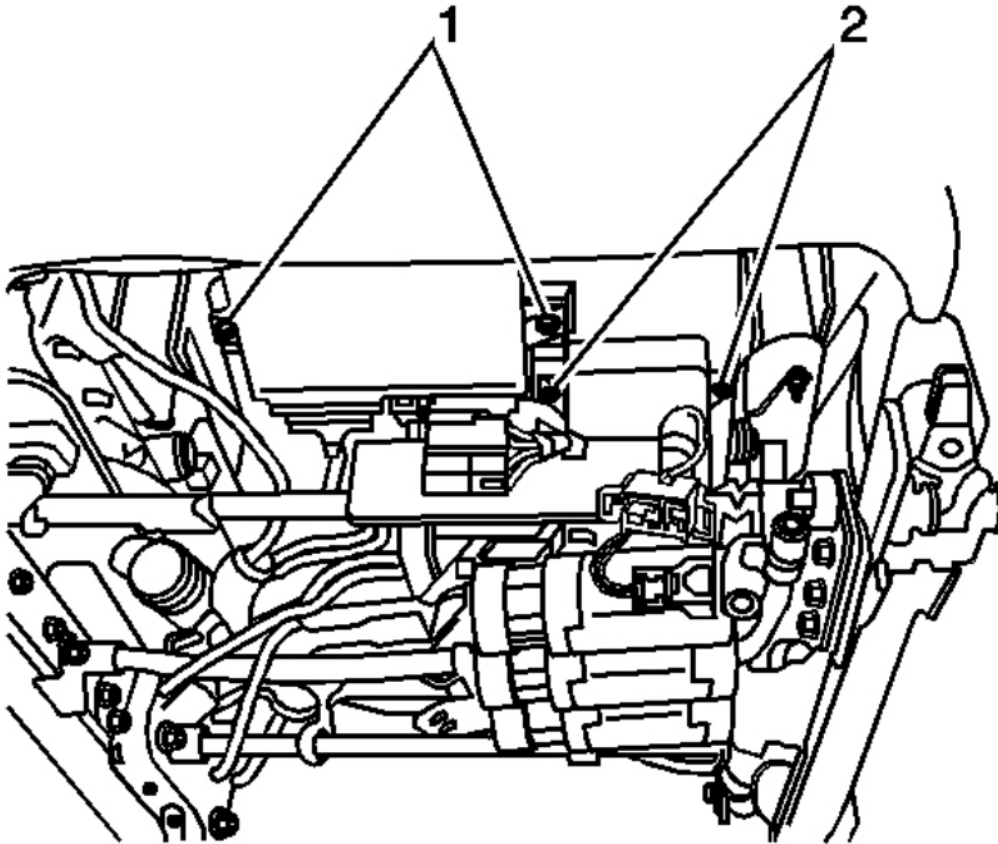


Fig. 78: Locating Memory Seat Module Retaining Screws
Courtesy of GENERAL MOTORS CORP.

1. Remove the front seat cushion. Refer to **Seat Cushion Replacement - Front**
2. Disconnect the electrical connector from the heated seat module.
3. Remove the heated seat module screws (2) and remove the module.

Installation Procedure

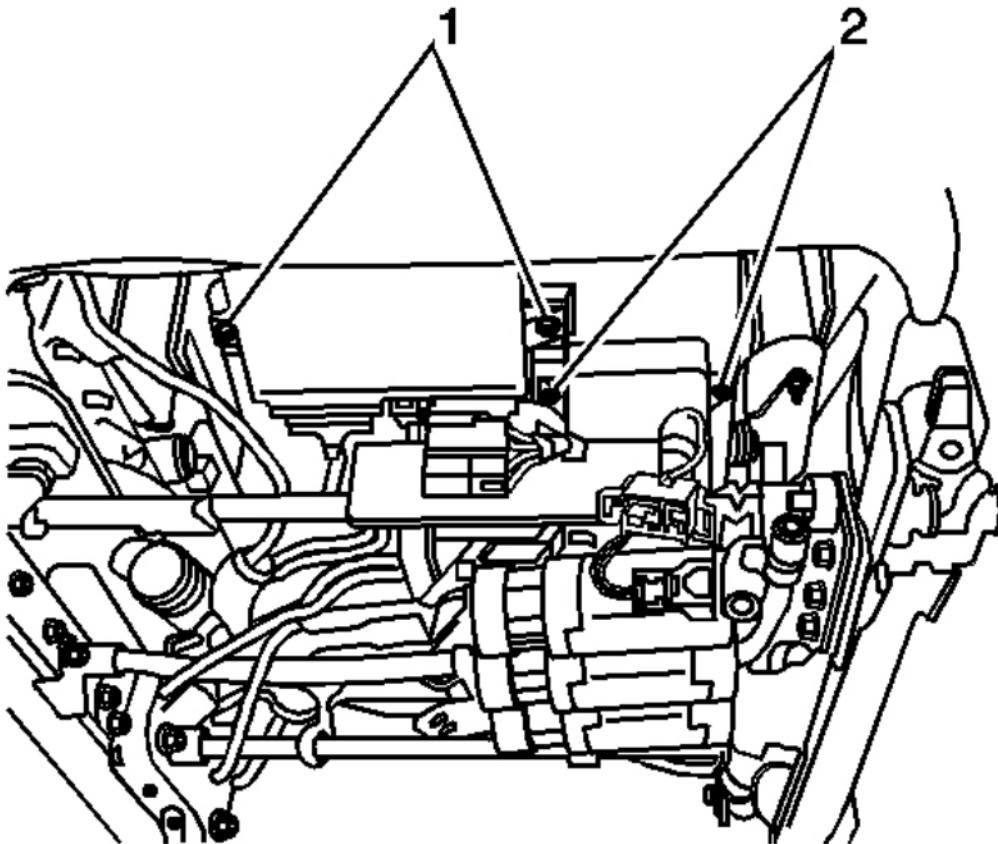


Fig. 79: Locating Memory Seat Module & Heated Seat Module Retaining Screws
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

1. Install the heated seat control module and install the retaining screws (2).

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

2. Connect the electrical connector.
3. Install the seat cushion. Refer to Seat Cushion Replacement - Front.

Removal Procedure

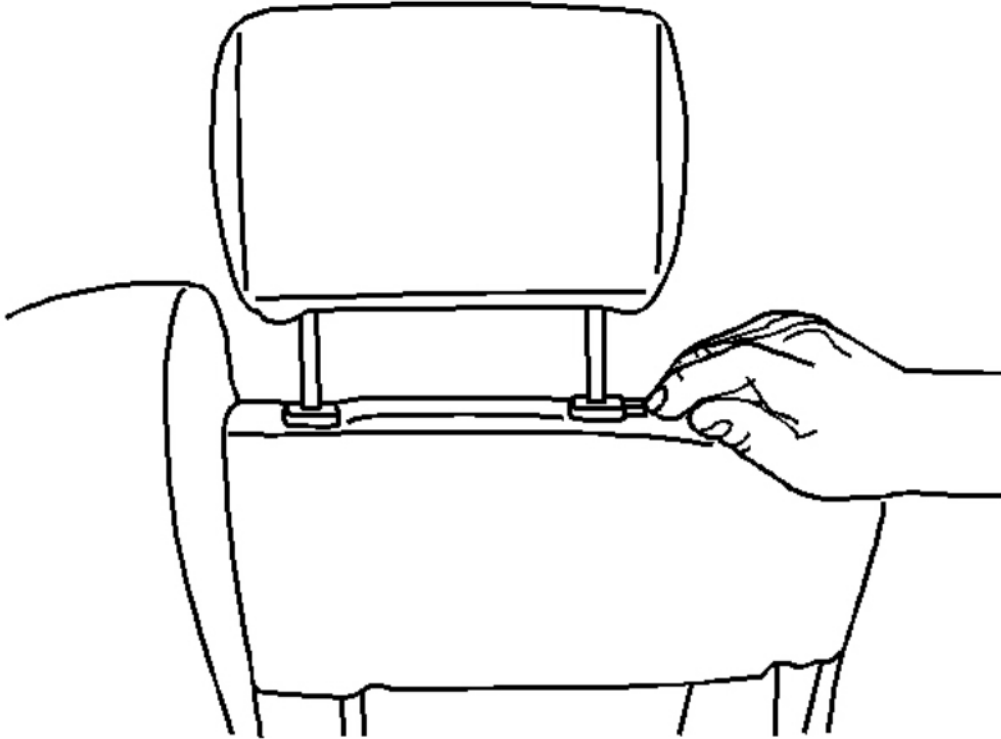


Fig. 80: View Of Head Restraint Retainer
Courtesy of GENERAL MOTORS CORP.

1. Push in the release tab on the head restraint retainer to release.
2. Pull straight up on the head restraint to remove the restraint from the retainers.

Installation Procedure

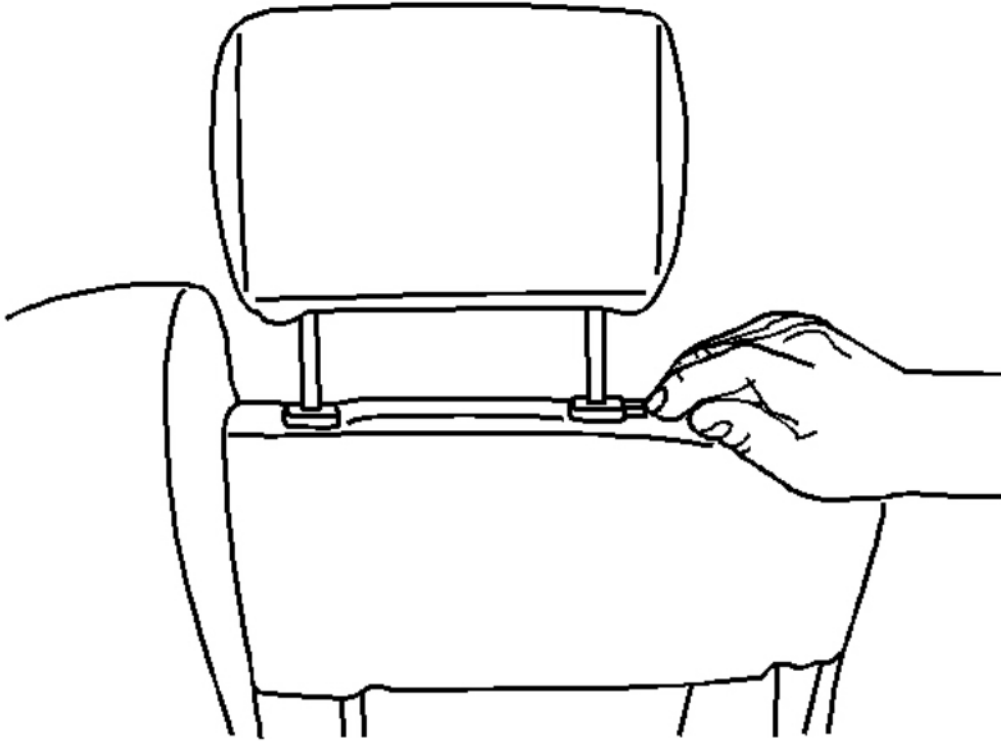


Fig. 81: View Of Head Restraint Retainer
Courtesy of GENERAL MOTORS CORP.

1. Align the head restraint shafts to the retainers.
2. Slide the head restraint down until fully seated on the top of the seat back.

HEAD RESTRAINT COVER REPLACEMENT - FRONT SEAT

Removal Procedure

1. Remove the front seat head restraint. Refer to **Head Restraint Replacement - Front Seat.**

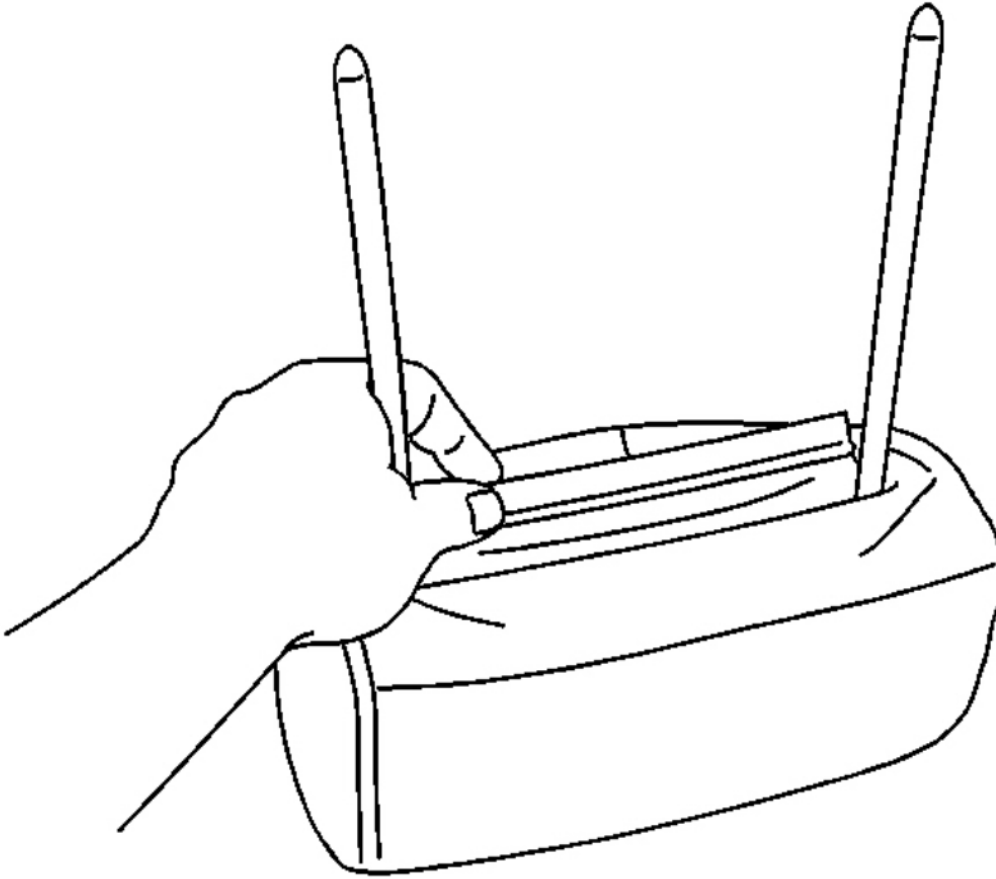


Fig. 82: View Of Head Restraint Cover
Courtesy of GENERAL MOTORS CORP.

2. Turn the head restraint upside down on a clean protected surface.
3. Release the J-Channel retainer securing the cover to the head restraint.
4. Remove the cover from the head restraint.

Installation Procedure

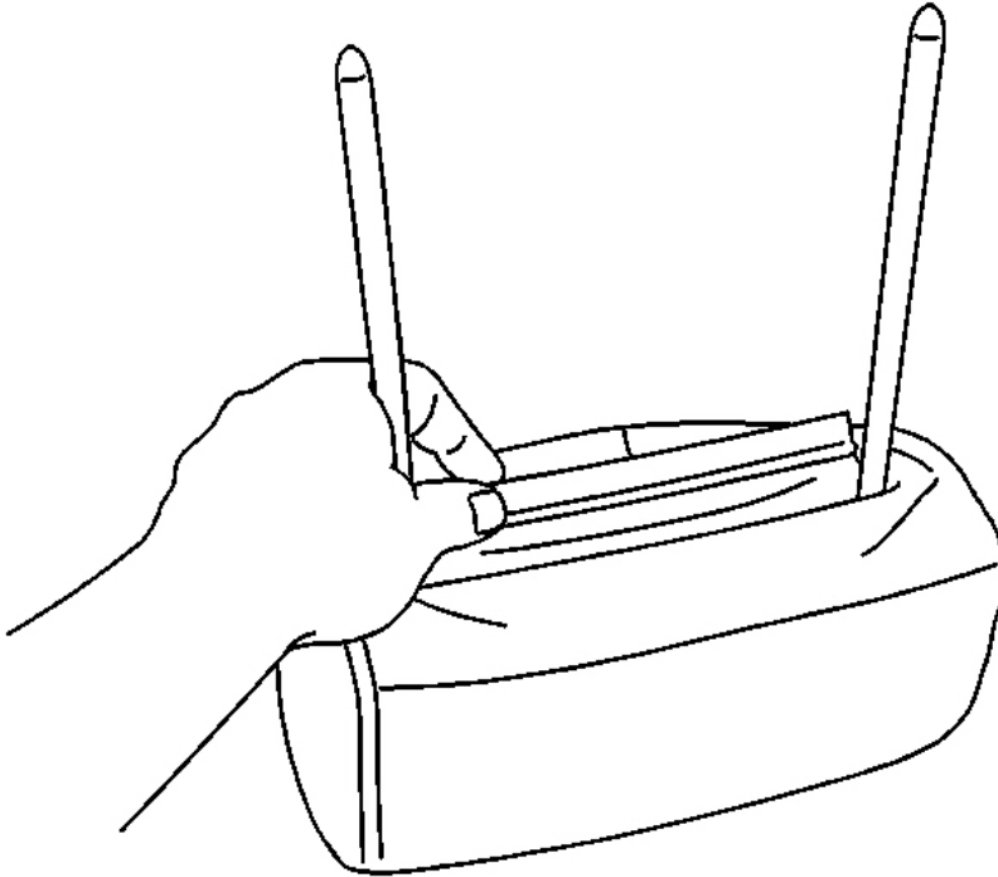


Fig. 83: View Of Head Restraint Cover
Courtesy of GENERAL MOTORS CORP.

1. Install the cover over the head restraint.
2. Close the J-channel retainer in order to secure the cover to the head restraint.
3. Ensure there are no lumps or wrinkles in the head restraint cover.
4. Install the head restraint to the seat assembly. Refer to **Head Restraint Replacement - Front Seat.**

HEAD RESTRAINT RETAINER REPLACEMENT - FRONT SEAT

Removal Procedure

1. Remove the seat back trim. Refer to **Seat Back Trim Replacement - Front.**
2. Remove the head restraint. Refer to **Head Restraint Replacement - Front Seat.**

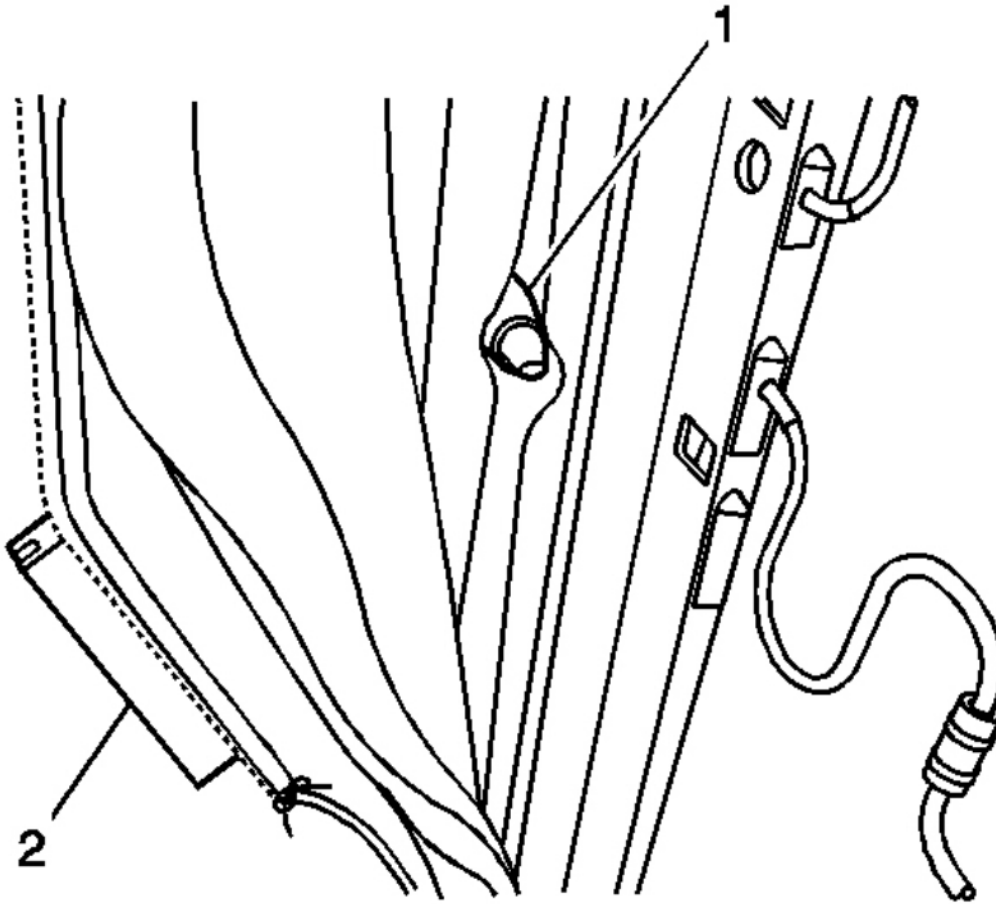


Fig. 84: View Of Head Restraint Retainer & Seat Cover J Channel
Courtesy of GENERAL MOTORS CORP.

3. Release the seat cover J channel (2) from the seat back frame.
4. Pinch the head restraint retainer (1) to release it from the seat frame.

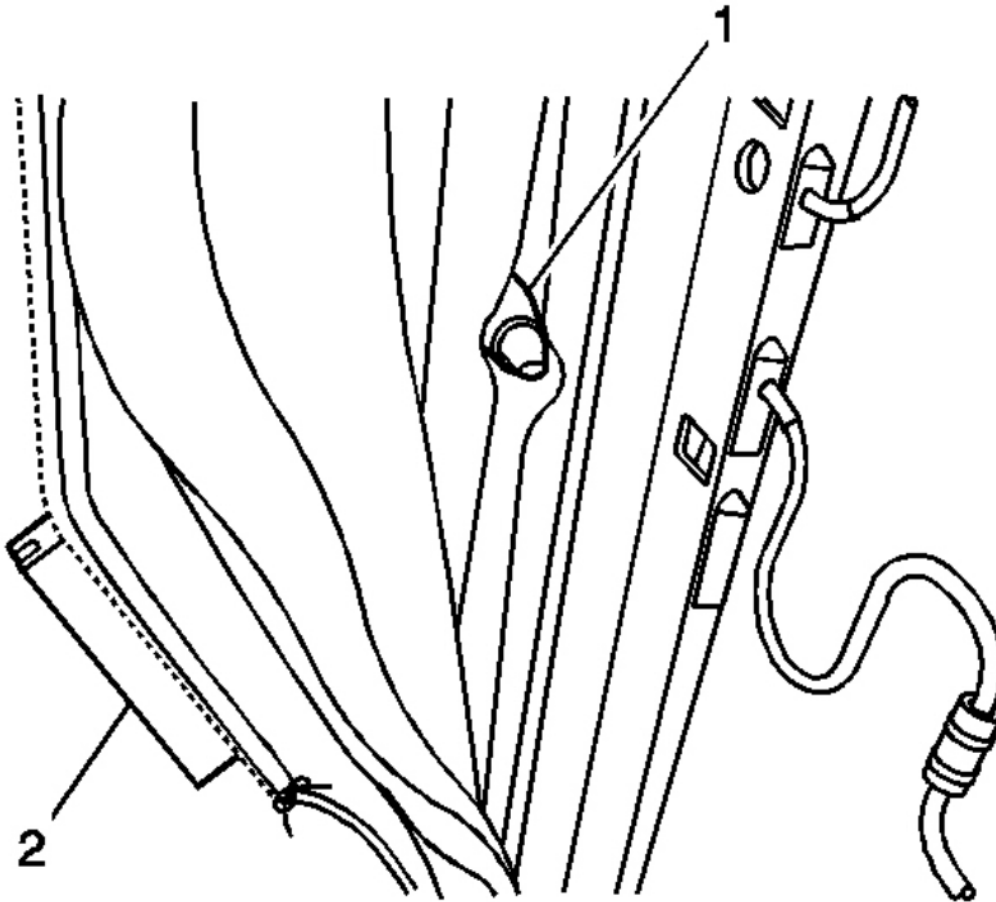


Fig. 85: View Of Head Restraint Retainer & Seat Cover J Channel
Courtesy of GENERAL MOTORS CORP.

1. Install the seat cover J channel (2) to the seat back frame.
2. Install the seat back trim. Refer to **Seat Back Trim Replacement - Front.**
3. Insert the head restraint retainer through the seat cover and into the frame.
4. Install the head restraint. Refer to **Head Restraint Replacement - Front Seat.**

SEAT REPLACEMENT - REAR NO. 1

Removal Procedure

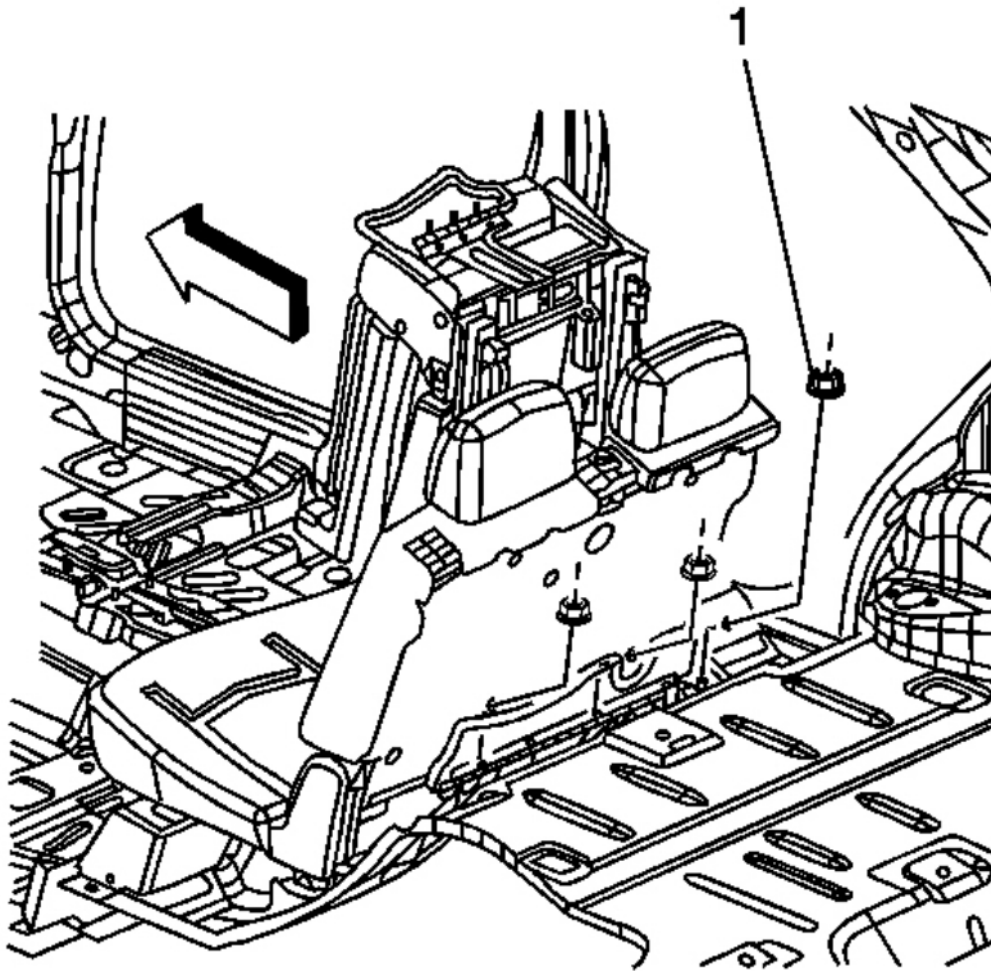


Fig. 86: View Of Rear Seat Mounting Nuts
Courtesy of GENERAL MOTORS CORP.

1. Remove the rear seat mounting nuts (1) securing the seat to the vehicle.

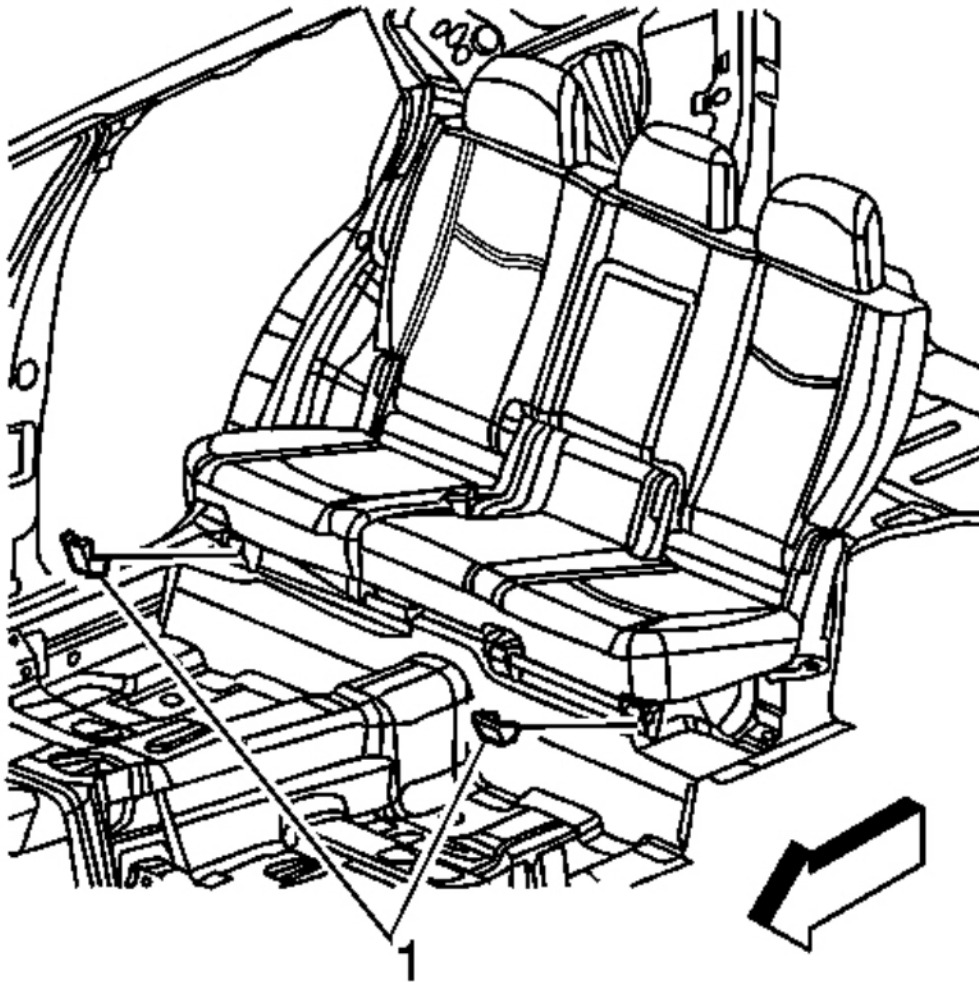


Fig. 87: View Of Rear Seat Latch Covers
Courtesy of GENERAL MOTORS CORP.

2. Remove the rear seat latch covers (1).

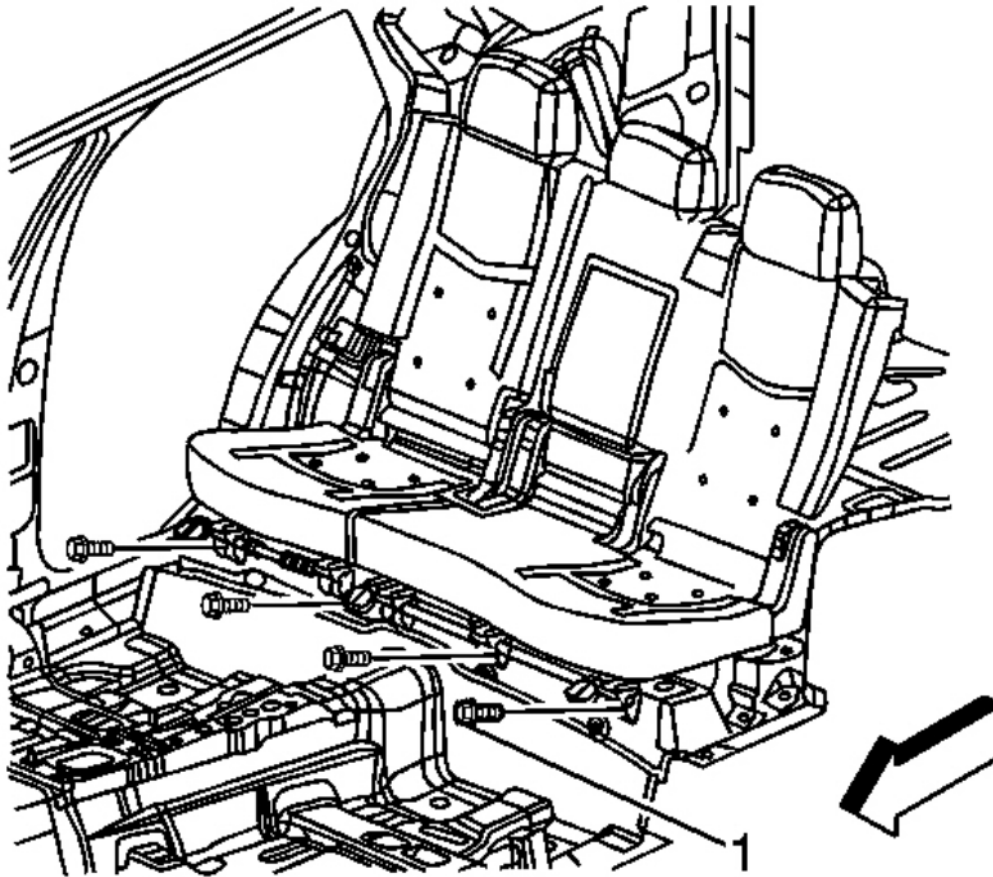


Fig. 88: View Of Rear Seat Mounting Bolts
Courtesy of GENERAL MOTORS CORP.

3. Remove the rear seat mounting bolts (1) from the front of the seat.
4. Remove the seat from the vehicle.

Installation Procedure

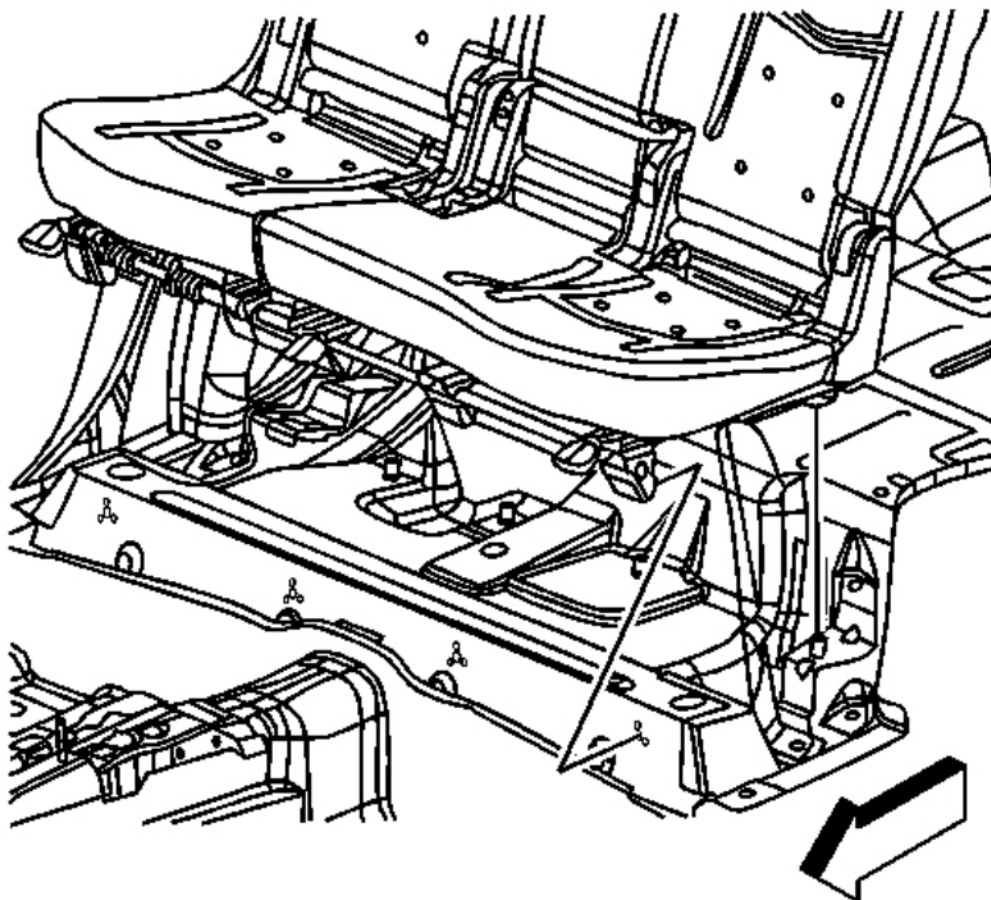


Fig. 89: Positioning Rear Seat On Floor Studs
Courtesy of GENERAL MOTORS CORP.

1. Position the seat on the floor studs.

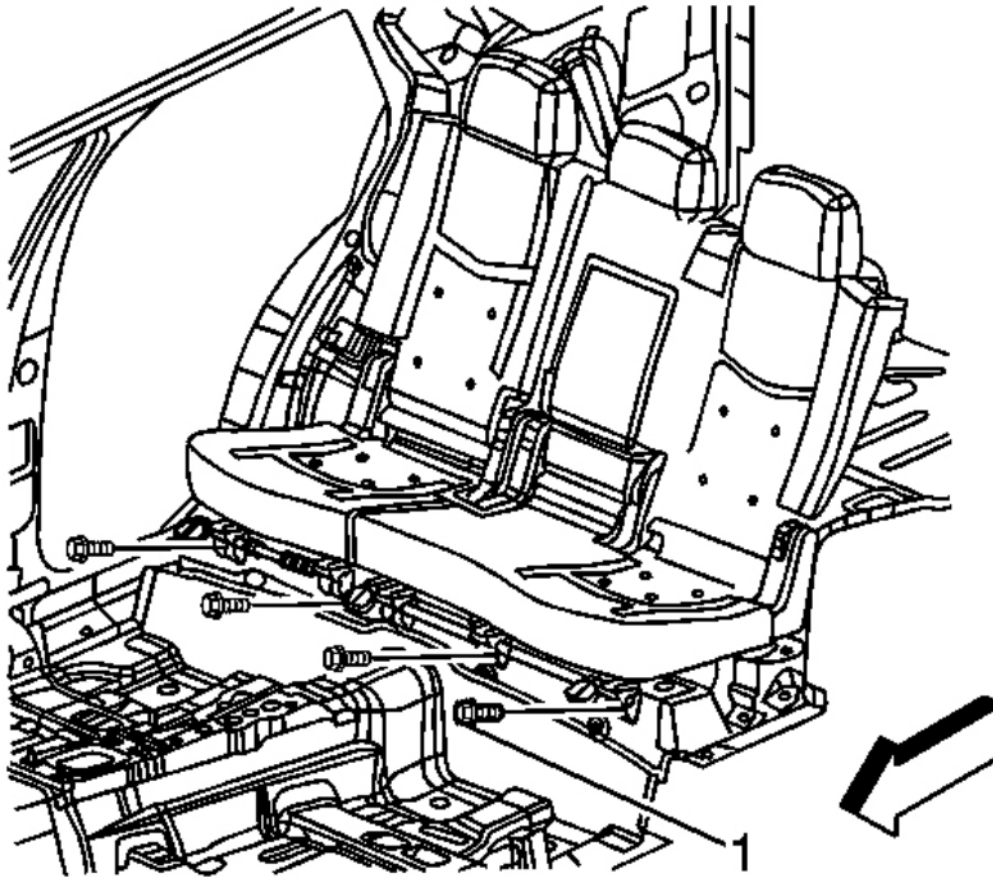


Fig. 90: View Of Rear Seat Mounting Bolts
Courtesy of GENERAL MOTORS CORP.

2. Install the rear seat nuts to the front of the seat. Do not tighten the nuts.

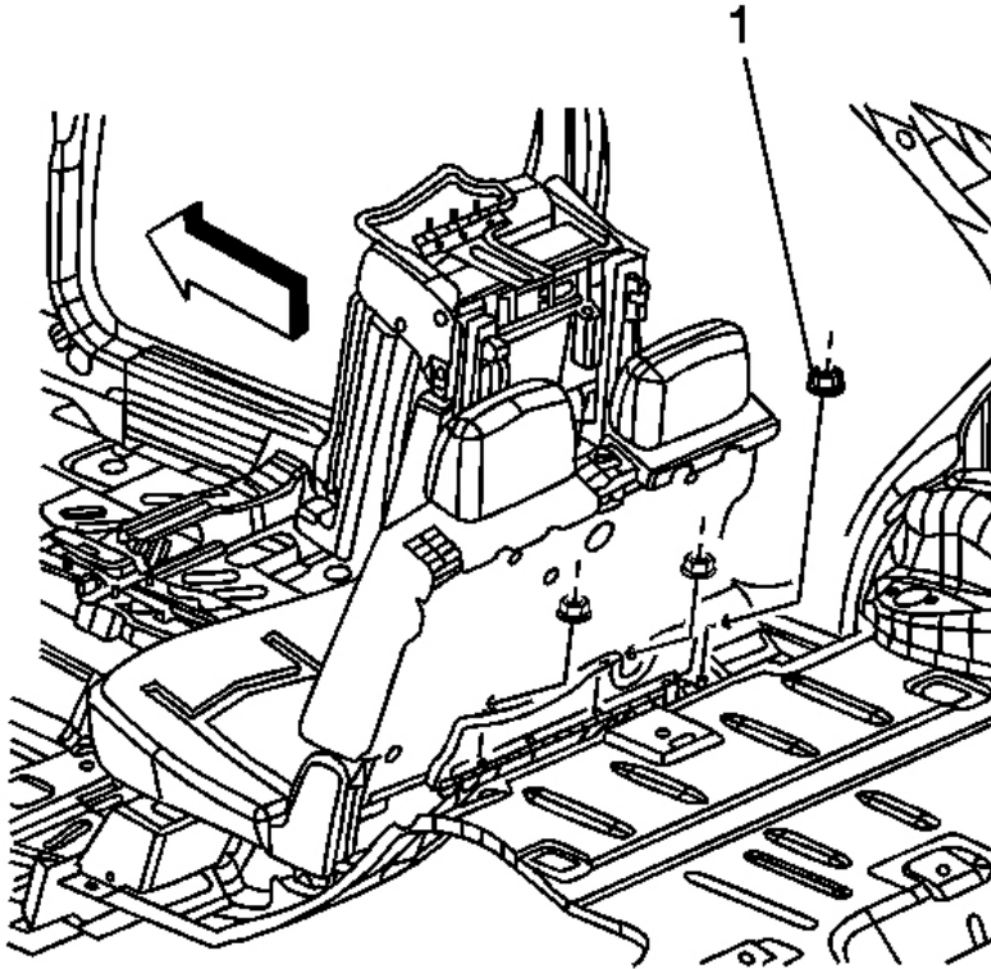


Fig. 91: View Of Rear Seat Mounting Nuts
Courtesy of GENERAL MOTORS CORP.

3. Install the rear seat nuts (1) to the rear of the seat

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the rear seat mounting nuts.

Tighten: Tighten the rear seat mounting nuts to 45 N.m (33 lb ft).

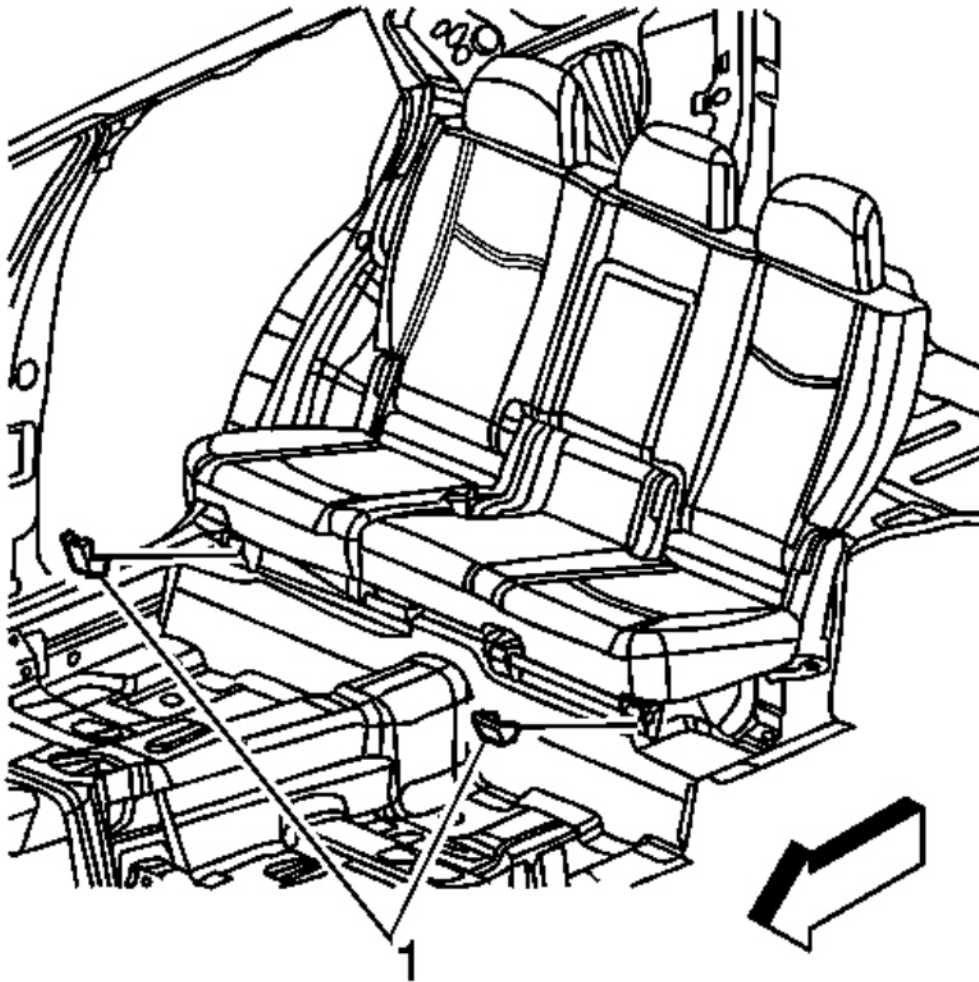


Fig. 92: View Of Rear Seat Latch Covers
Courtesy of GENERAL MOTORS CORP.

5. Install the rear seat latch covers (1).

SEAT CUSHION REPLACEMENT - REAR NO.1 - LEFT

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 1.**

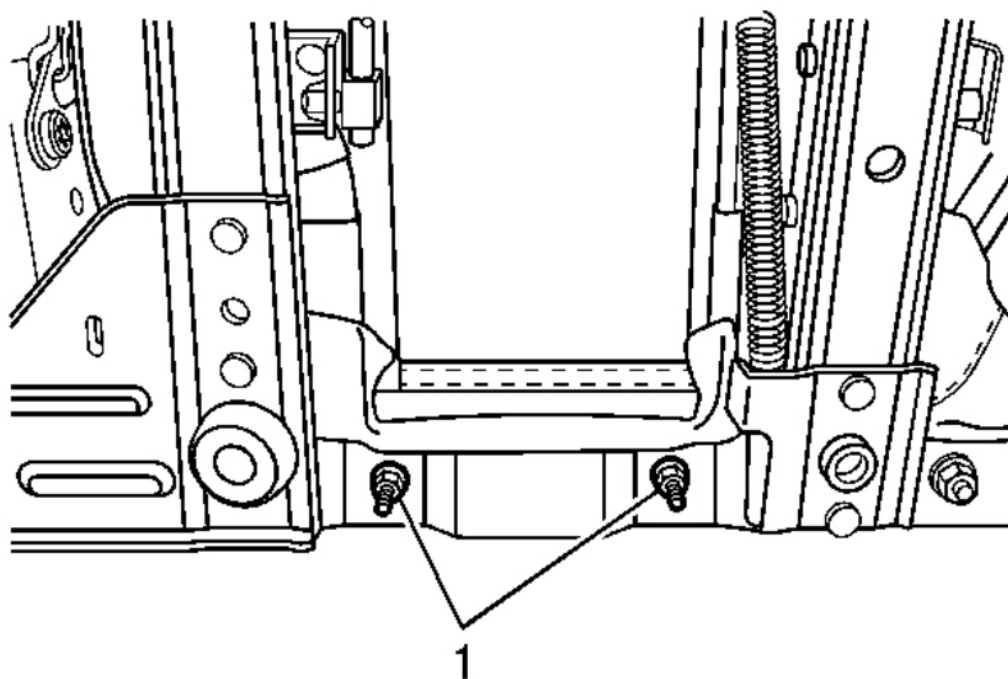


Fig. 93: Locating Rear Seat Cushion Mounting Nuts
Courtesy of GENERAL MOTORS CORP.

2. Remove the seat cushion mounting nuts (1) from the seat bottom.

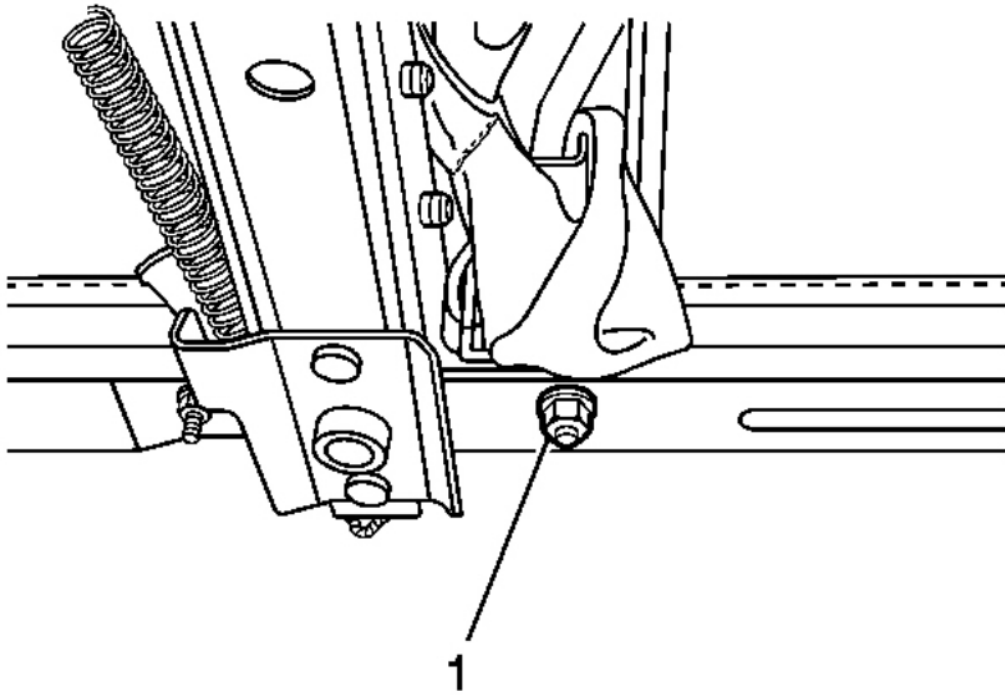


Fig. 94: View Of Seat Belt Anchor Nut
Courtesy of GENERAL MOTORS CORP.

3. Remove the seat belt anchor nut (1) from the seat frame.
4. Remove the seat cushion from the seat.

Installation Procedure

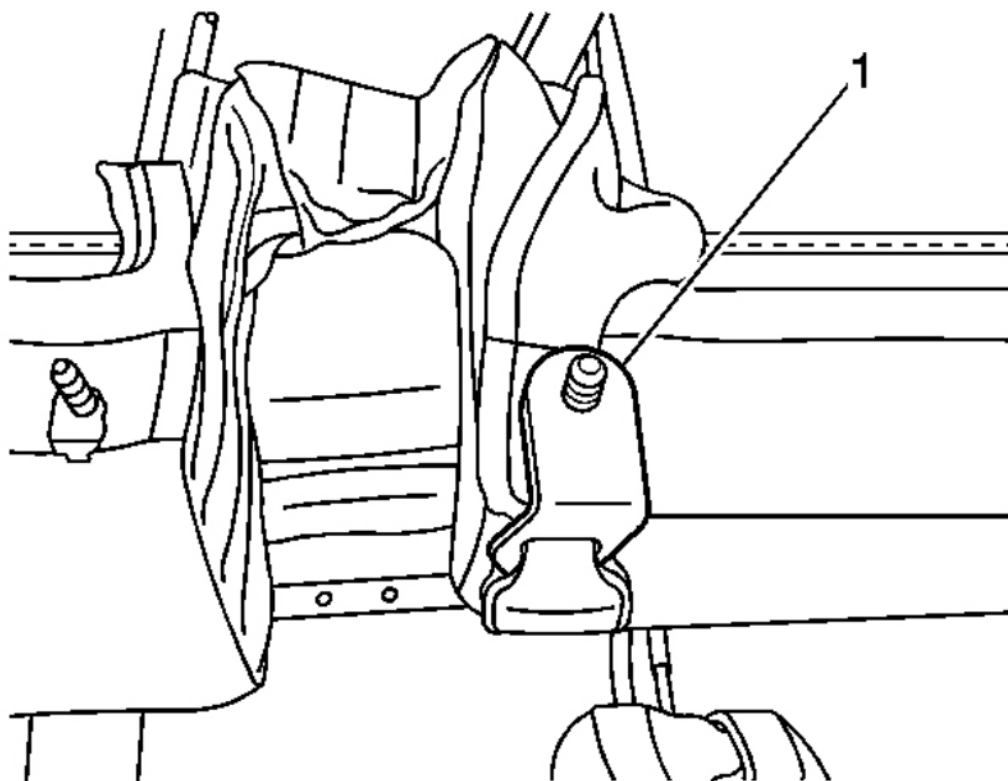


Fig. 95: Locating Seat Belt Mount

Courtesy of GENERAL MOTORS CORP.

1. Ensure the seat belt mount is in the correct location (1).
2. Install the seat cushion into the seat.

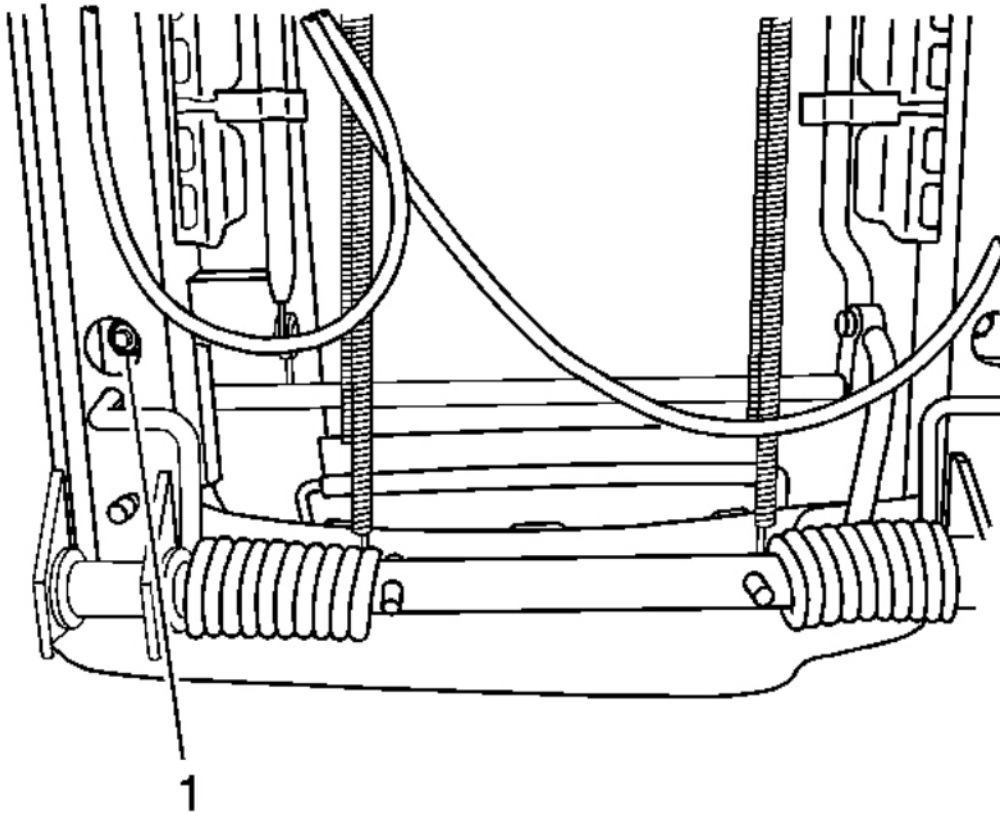


Fig. 96: Locating Rear Seat Cushion Nuts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the rear seat cushion nuts (1) securing the seat cushion to the seat frame.

Tighten: Tighten the nuts to 24 N.m (18 lb ft).

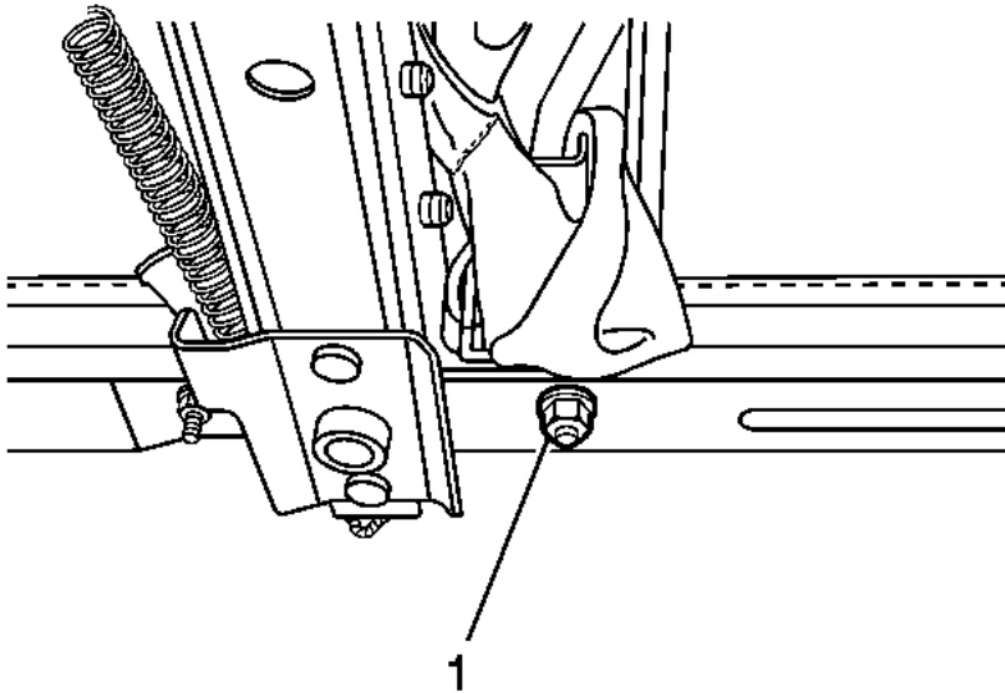


Fig. 97: View Of Seat Belt Anchor Nut
Courtesy of GENERAL MOTORS CORP.

4. Install the seat belt buckle nut (1) securing the seat cushion to the seat frame.

Tighten: Tighten the seat belt buckle nuts to 42 N.m (31 lb ft).

5. Install the seat in the vehicle. Refer to **Seat Replacement - Rear No. 1**.

SEAT CUSHION REPLACEMENT - REAR NO.1 - RIGHT

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 1**.

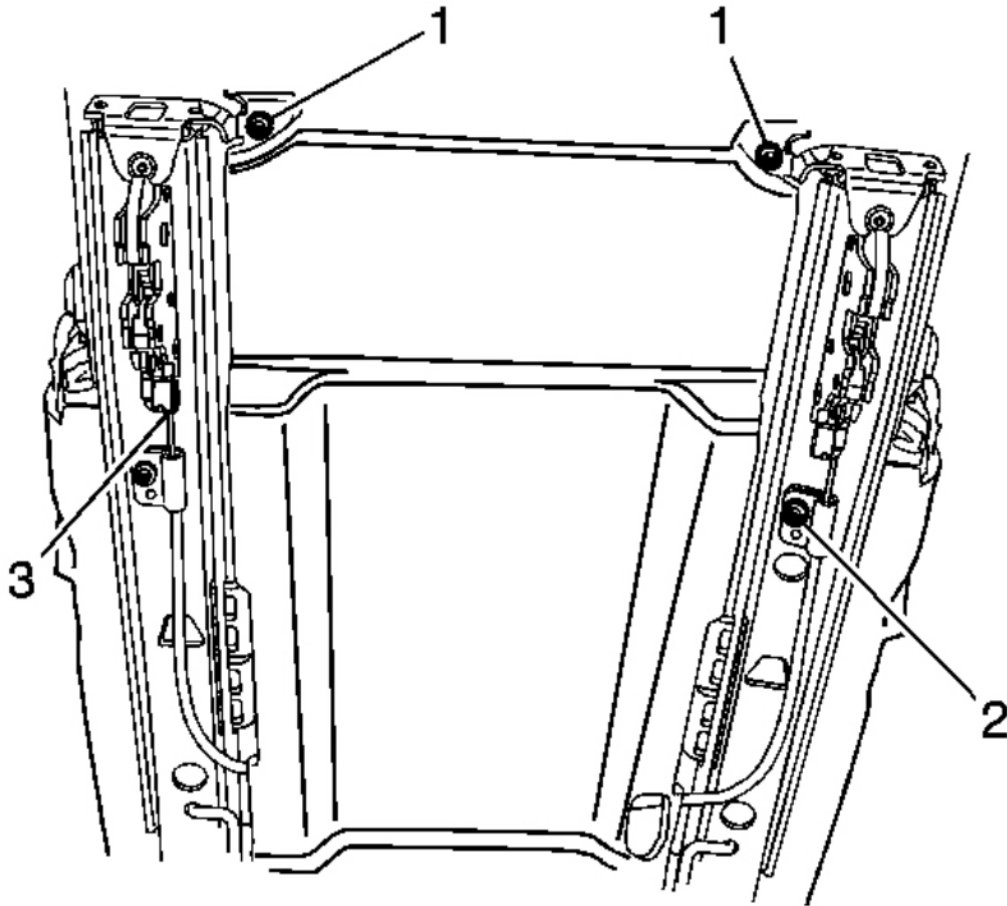


Fig. 98: View Of Seat Bottom Panel Screws
Courtesy of GENERAL MOTORS CORP.

2. Remove the seat bottom panel screws (1) from the seat bottom.

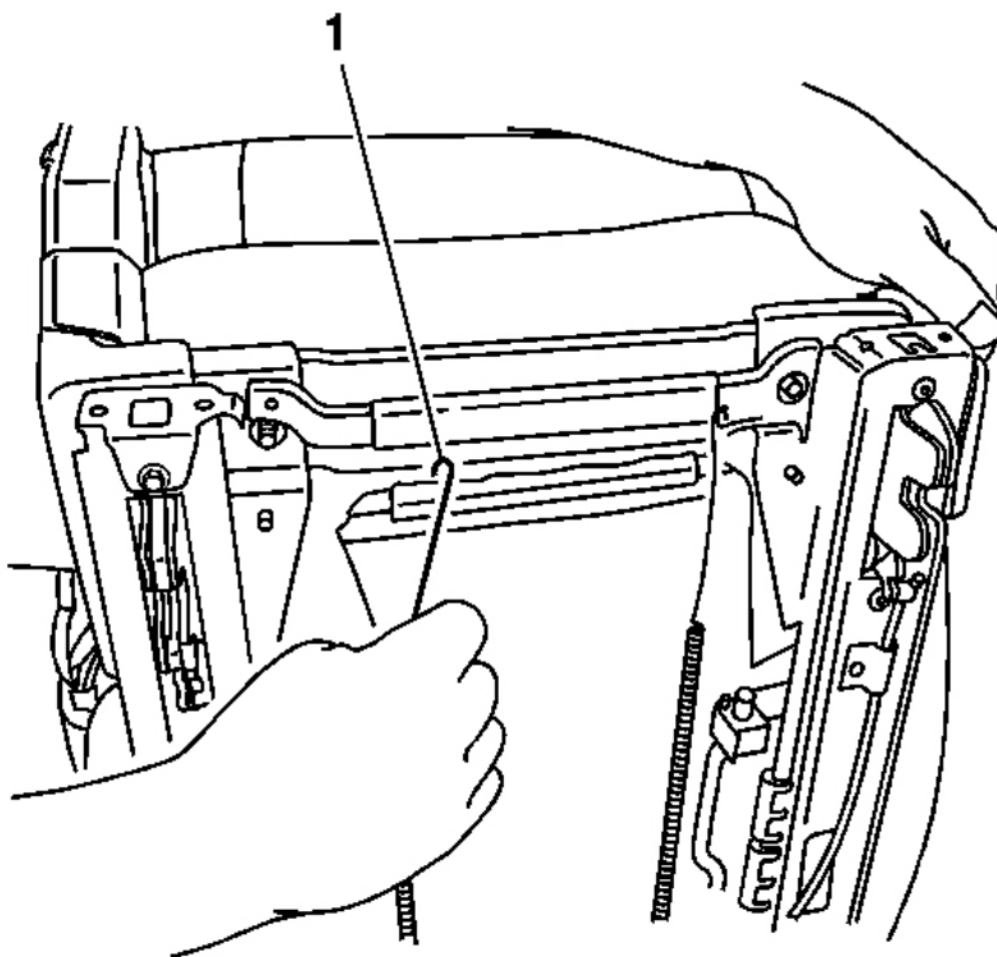


Fig. 99: View Of Seat Bottom Spring
Courtesy of GENERAL MOTORS CORP.

3. Remove the two springs (2) from the seat bottom.

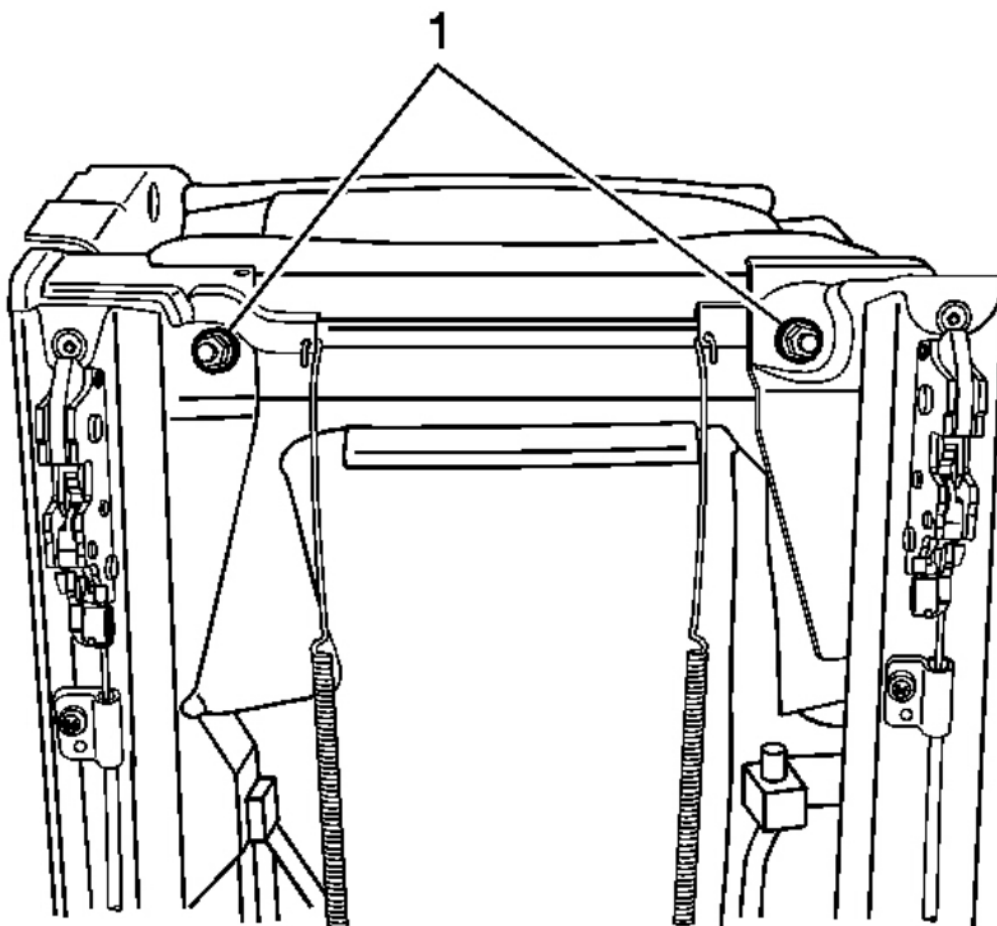


Fig. 100: View Of Seat Cushion Mounting Nuts
Courtesy of GENERAL MOTORS CORP.

4. Remove the seat cushion mounting nuts (1) from the front of the seat.

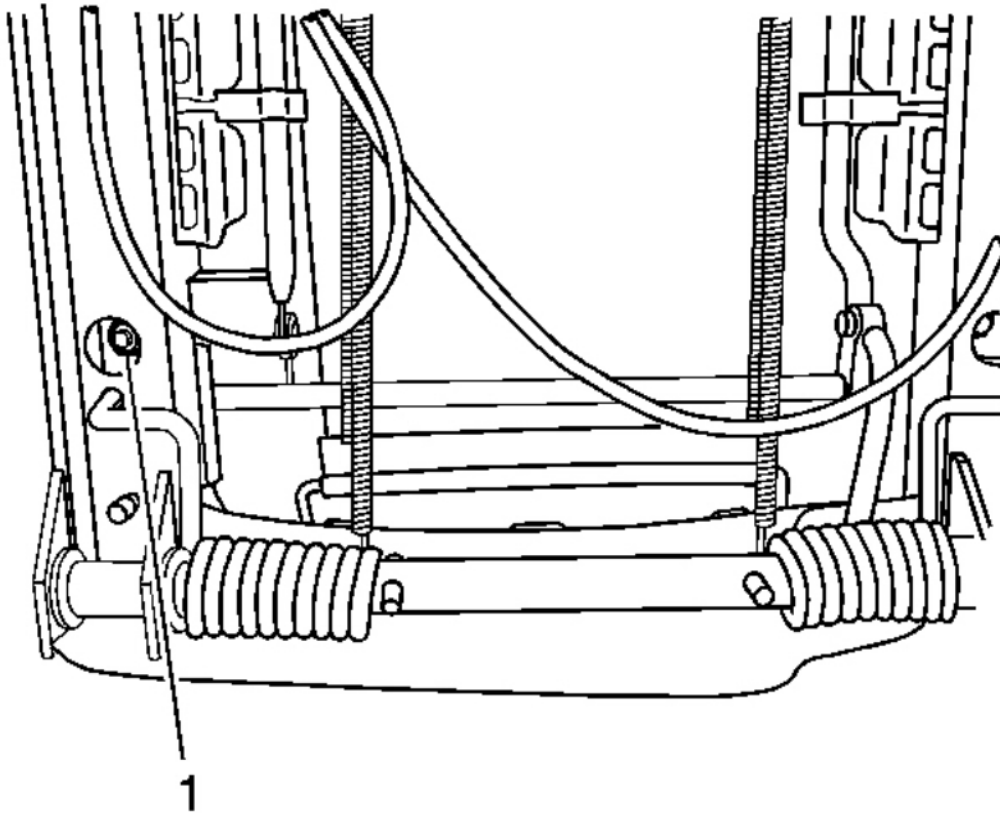


Fig. 101: Locating Rear Seat Cushion Nuts
Courtesy of GENERAL MOTORS CORP.

5. Remove the seat cushion mounting nuts (1) from the rear of the seat.
6. Remove the seat cushion from the seat.

Installation Procedure

1. Install the seat cushion into the seat.

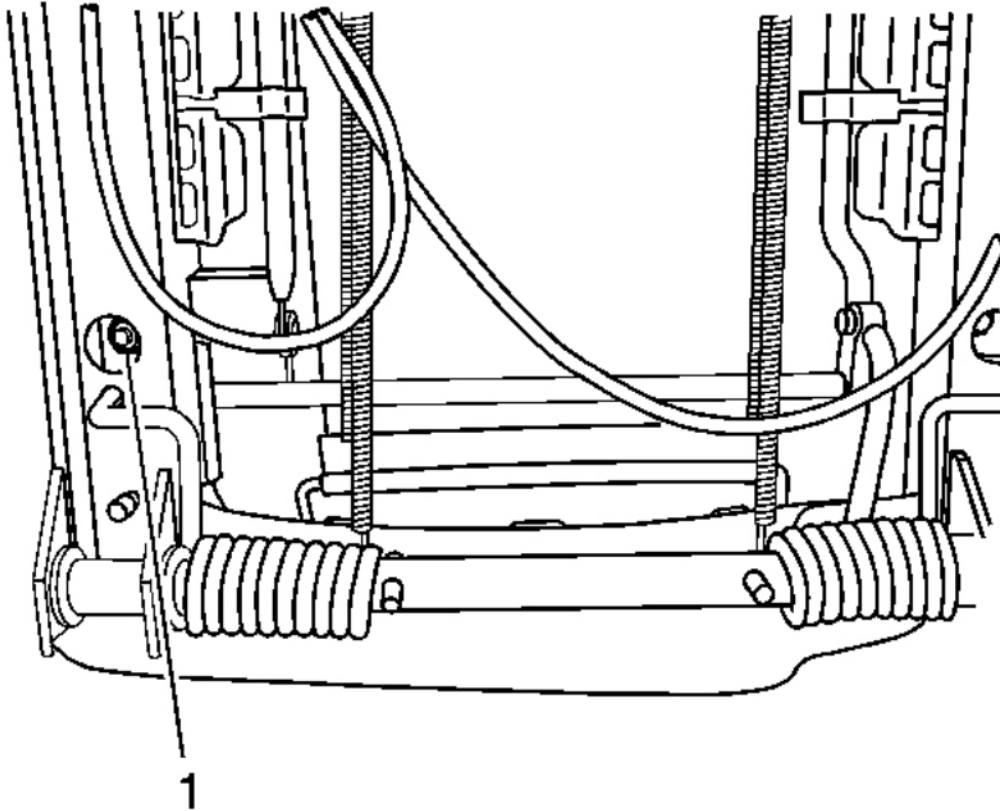


Fig. 102: Locating Rear Seat Cushion Nuts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the rear seat cushion nuts (1) securing the seat cushion to the seat frame.

Tighten: Tighten the nuts to 24 N.m (18 lb ft).

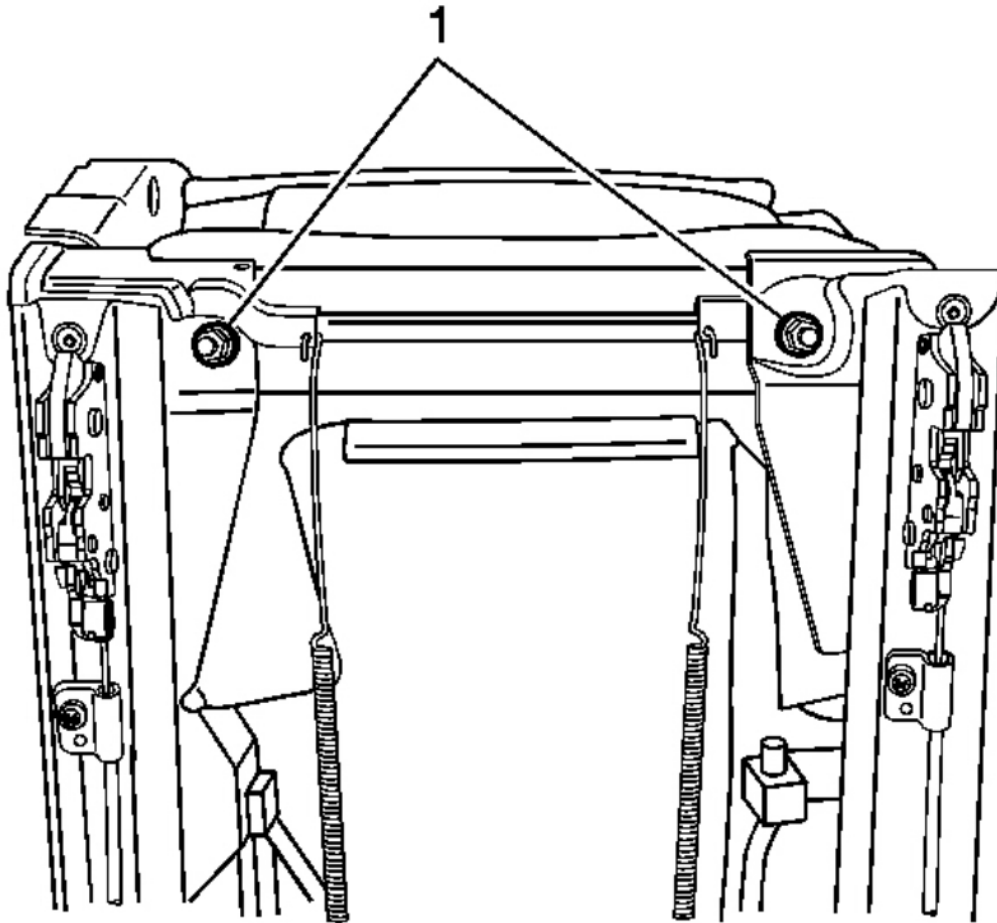


Fig. 103: View Of Seat Cushion Mounting Nuts
Courtesy of GENERAL MOTORS CORP.

3. Install the seat cushion nuts (1) securing the seat cushion to the seat frame.

Tighten: Tighten the nuts to 24 N.m (18 lb ft).

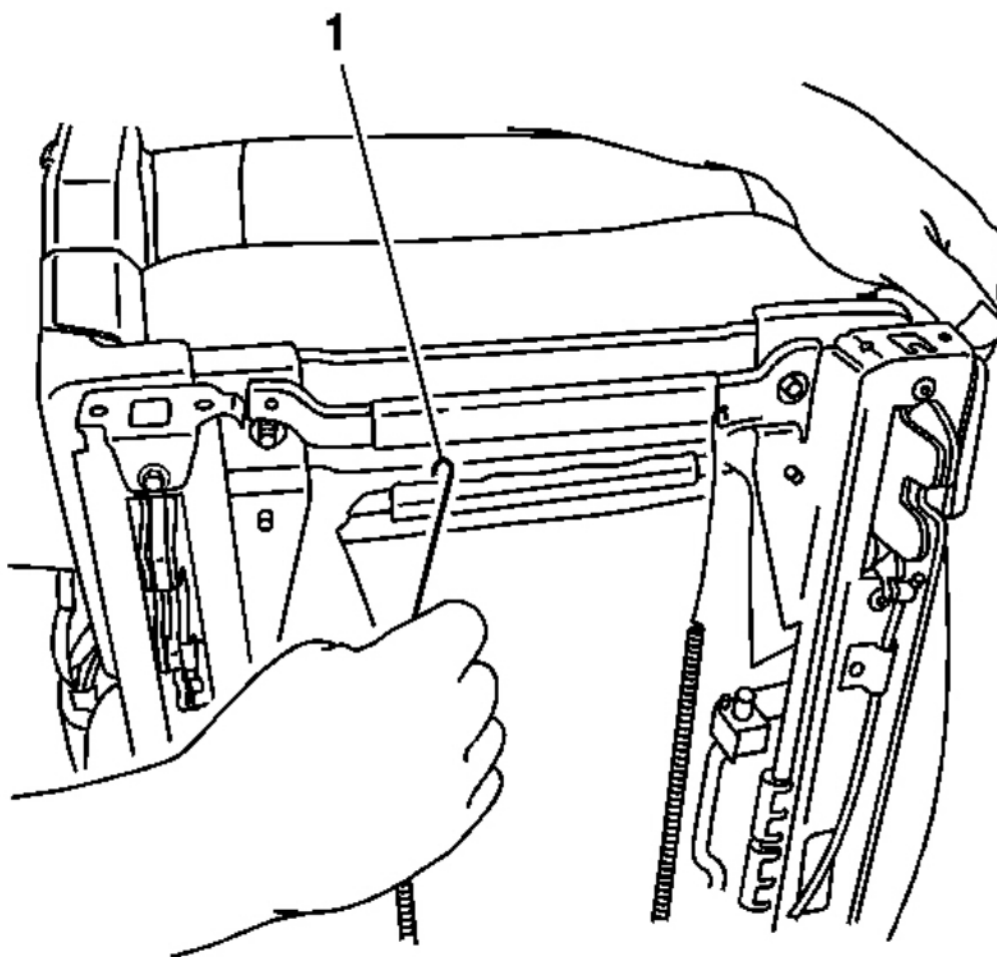


Fig. 104: View Of Seat Bottom Spring
Courtesy of GENERAL MOTORS CORP.

4. Install the two springs (1) to the seat cushion.

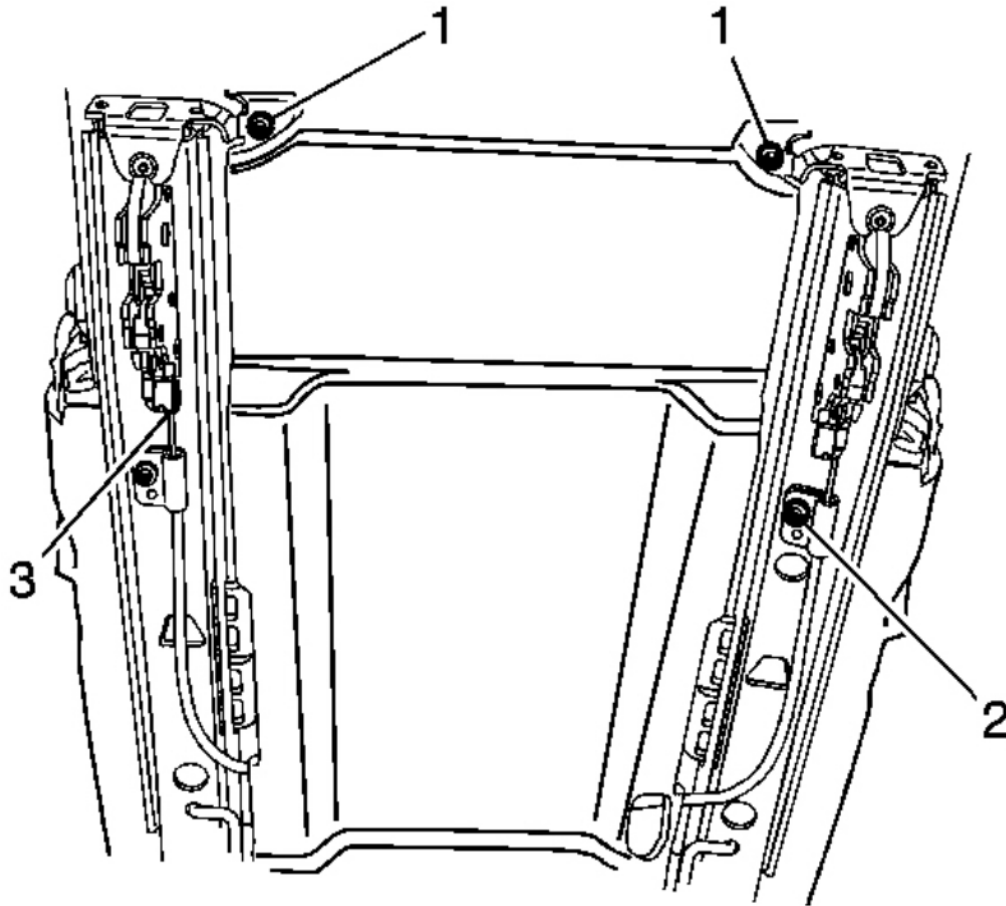


Fig. 105: View Of Seat Bottom Panel Screws
Courtesy of GENERAL MOTORS CORP.

5. Install the bottom panel screws (1) to the seat.

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

6. Install the seat in the vehicle. Refer to **Seat Replacement - Rear No. 1.**

SEAT CUSHION COVER AND PAD REPLACEMENT - REAR NO.1 - LEFT

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 1**.
2. Remove the left seat cushion. Refer to **Seat Cushion Replacement - Rear No.1 - Left**.
3. Remove the suspension spring from the bottom of the seat.

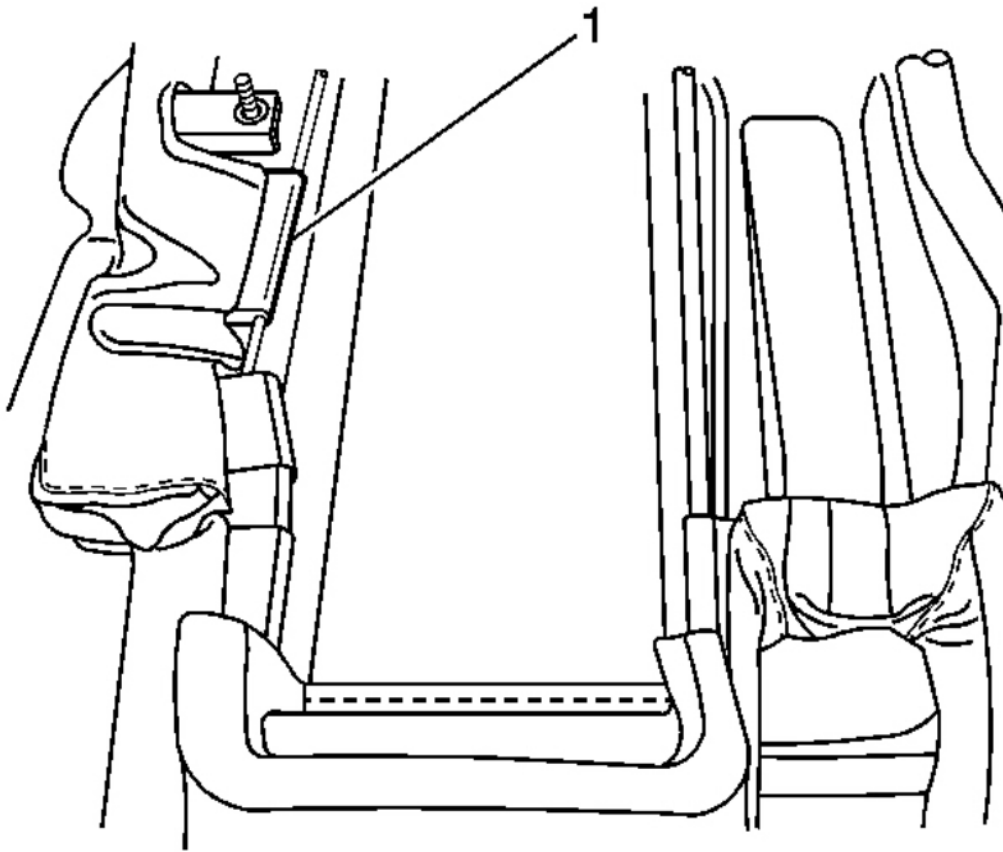


Fig. 106: Locating J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the J channel retainers (1) from around the seat.
5. Remove the seat cushion cover.

Installation Procedure

1. Install the seat cushion cover on to the seat.

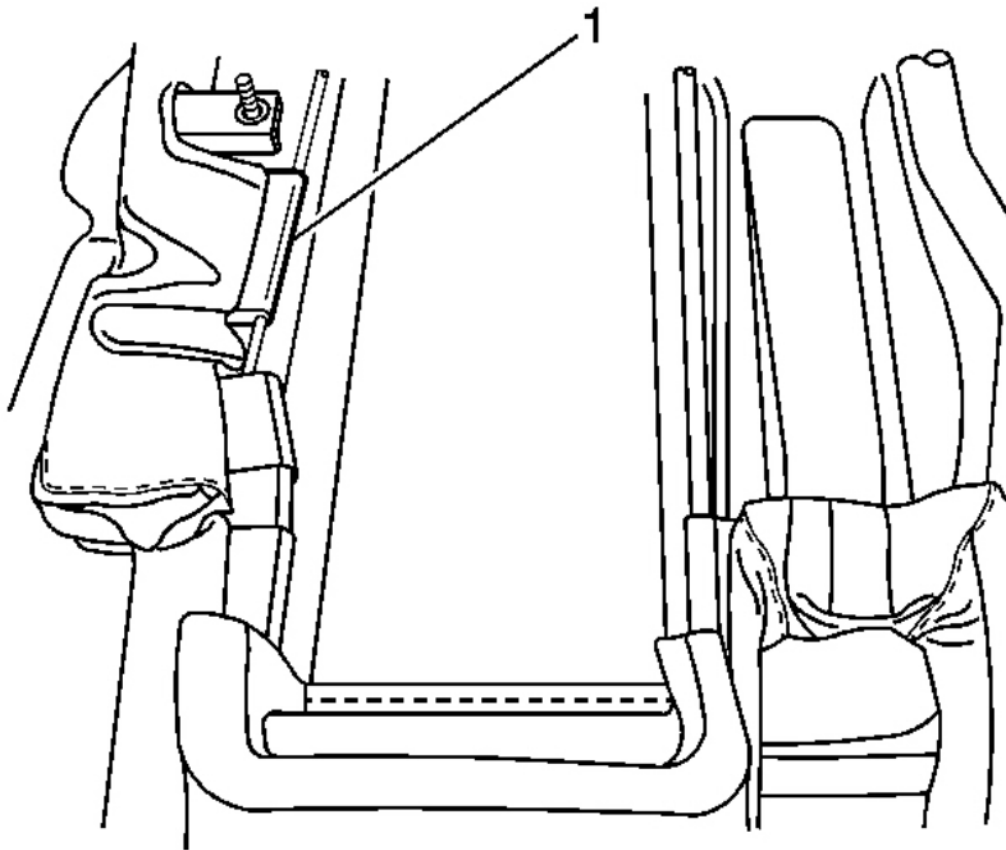


Fig. 107: Locating J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

2. Connect all J channel retainers (1).
3. Install the suspension spring from the bottom of the seat.
4. Install the left seat cushion. Refer to **Seat Cushion Replacement - Rear No.1 - Left.**
5. Install the seat in the vehicle. Refer to **Seat Replacement - Rear No. 1.**

SEAT CUSHION COVER AND PAD REPLACEMENT - REAR NO.1 - RIGHT

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 1.**
2. Remove the right seat cushion. Refer to **Seat Cushion Replacement - Rear No.1 - Right.**

3. Remove the suspension spring from the bottom of the seat.

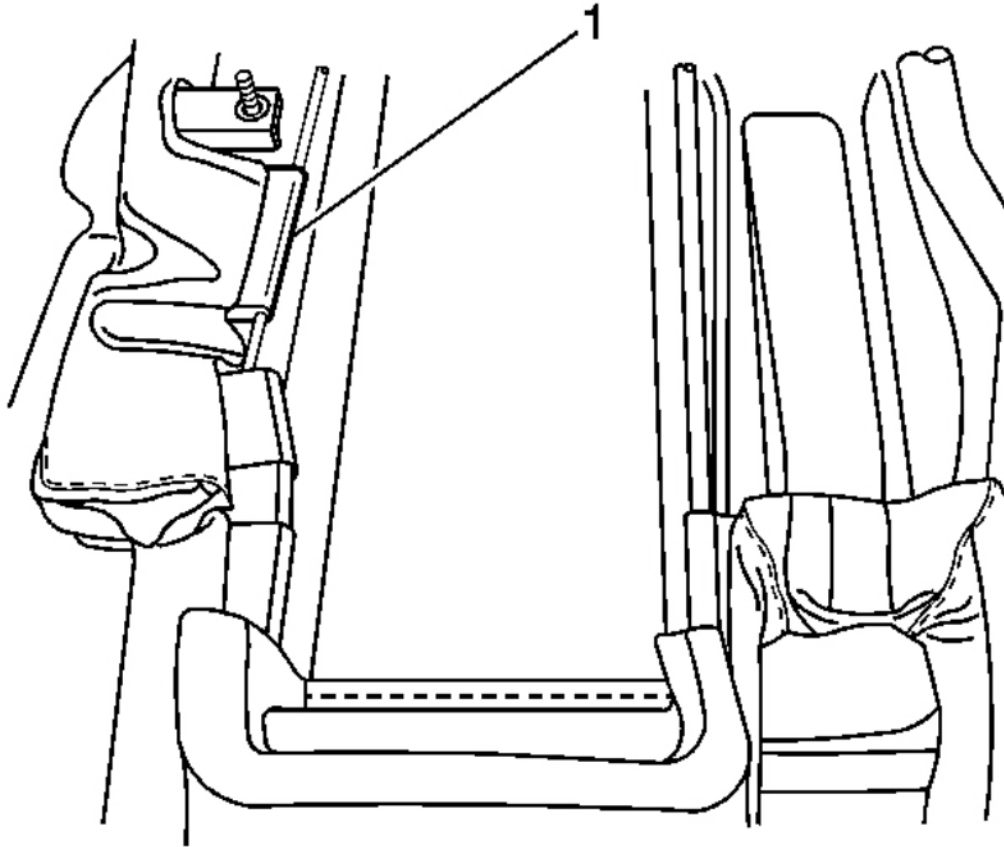


Fig. 108: Locating J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the J channel retainers (1) from around the seat.
5. Remove the seat cushion cover.

Installation Procedure

1. Install the seat cushion cover on to the seat.

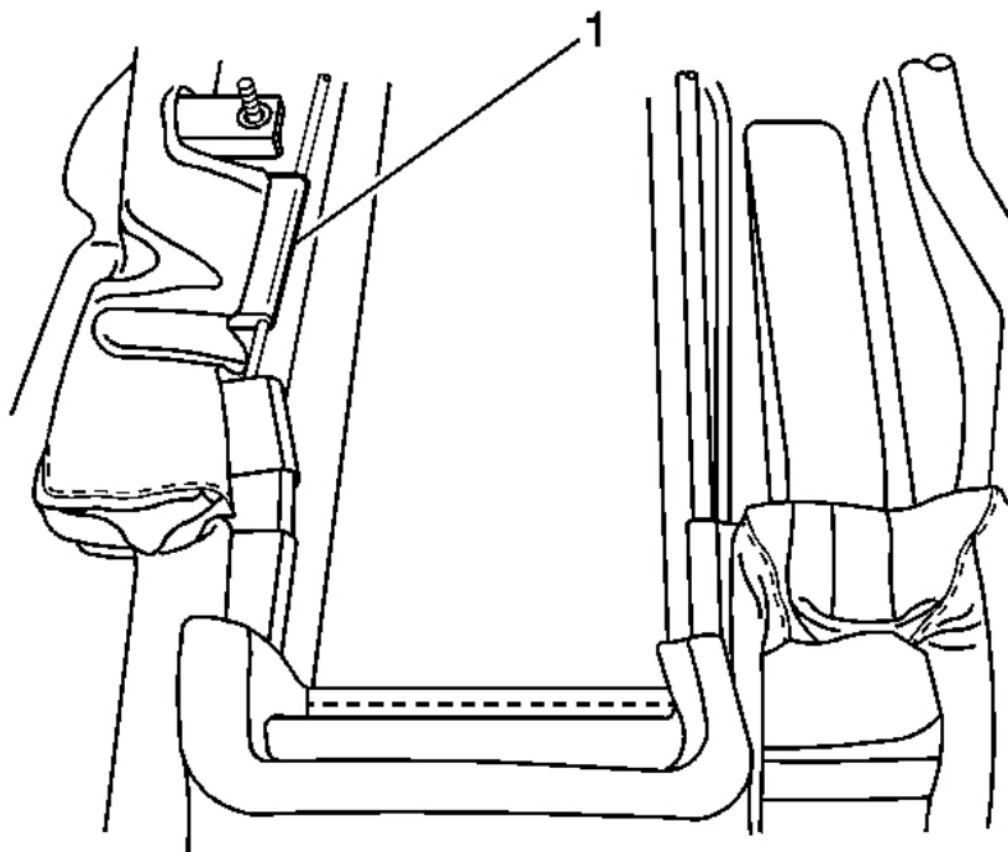


Fig. 109: Locating J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

2. Connect all J channel retainers (1).
3. Install the suspension spring from the bottom of the seat.
4. Install the right seat cushion. Refer to **Seat Cushion Replacement - Rear No.1 - Right**.
5. Install the seat in the vehicle. Refer to **Seat Replacement - Rear No. 1**.

SEAT BACK COVER AND PAD REPLACEMENT - REAR NO.1 - LEFT

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 1**.
2. Remove the head restraints. Refer to **Head Restraint Replacement - Rear No. 1**.

3. Remove the head restraint guides. Refer to **Head Restraint Guide Replacement - Rear No. 1.**
4. Remove the left seat cushion. Refer to **Seat Cushion Replacement - Rear No.1 - Left.**

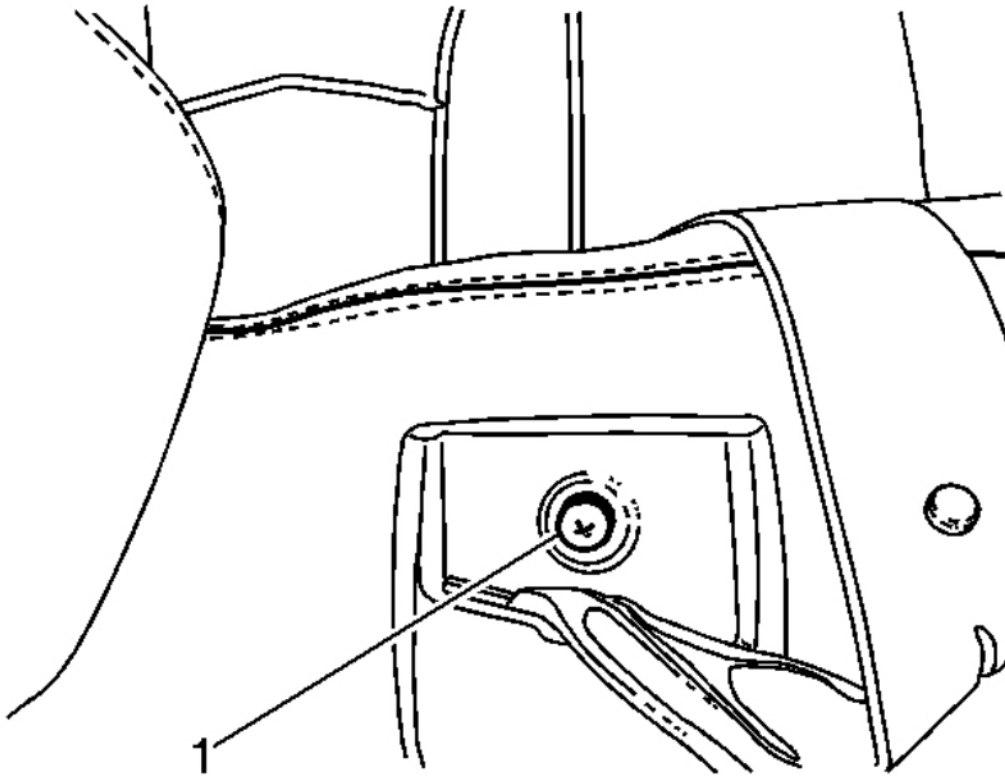


Fig. 110: Locating Seat Belt Guide Mounting Screw
Courtesy of GENERAL MOTORS CORP.

5. Remove the seat belt guide mounting screw (1).
6. Remove the seat belt guide from the seat.

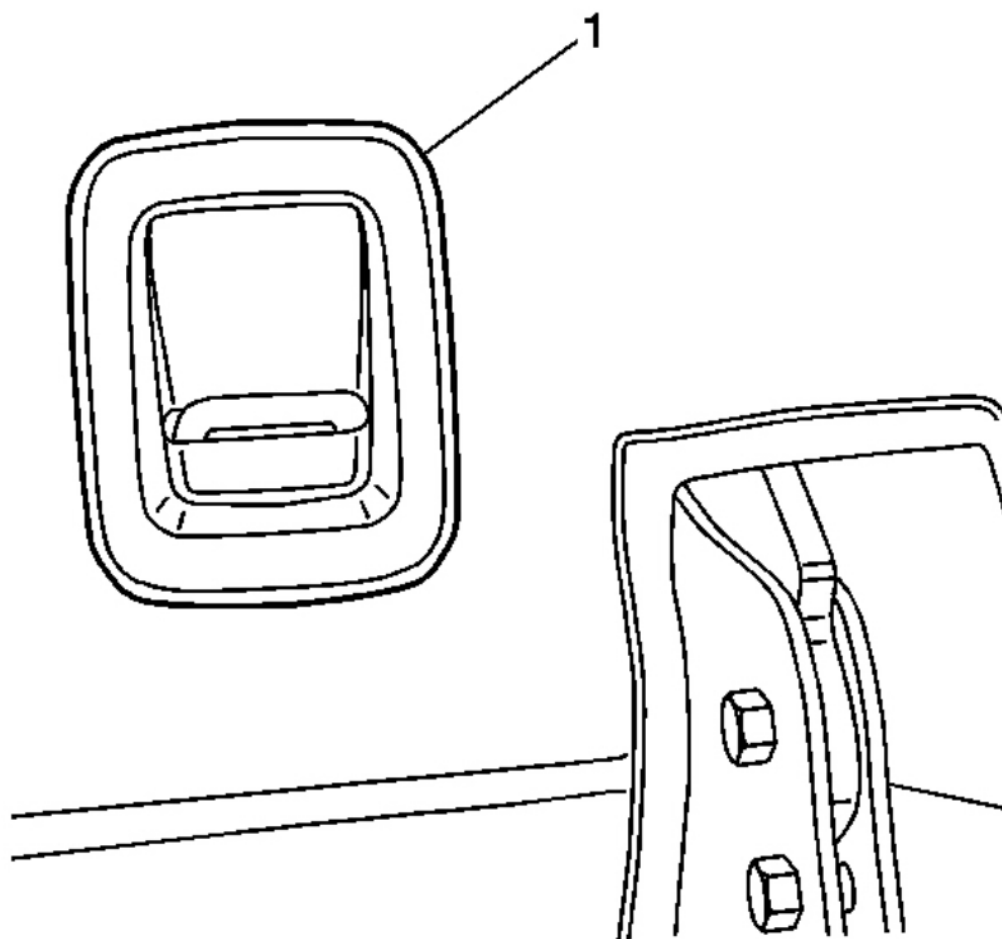


Fig. 111: View Of Child Seat Belt Anchor Bezel
Courtesy of GENERAL MOTORS CORP.

7. Remove the child seat belt anchor bezel (1) from the seat.

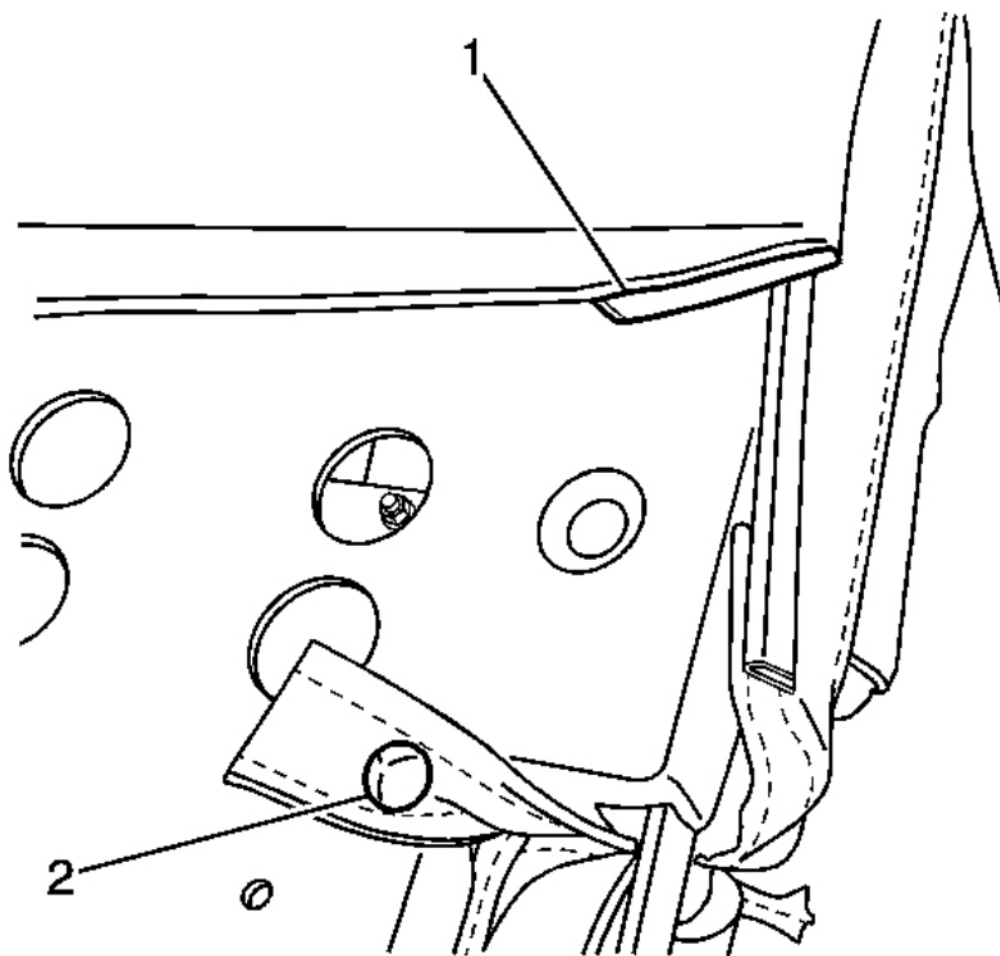


Fig. 112: View Of J Channel & Push In Retainers
Courtesy of GENERAL MOTORS CORP.

8. Disconnect the J channels retainers (1) from the side of the seat cover.
9. Remove the push in retainers (2) from the seat cover.

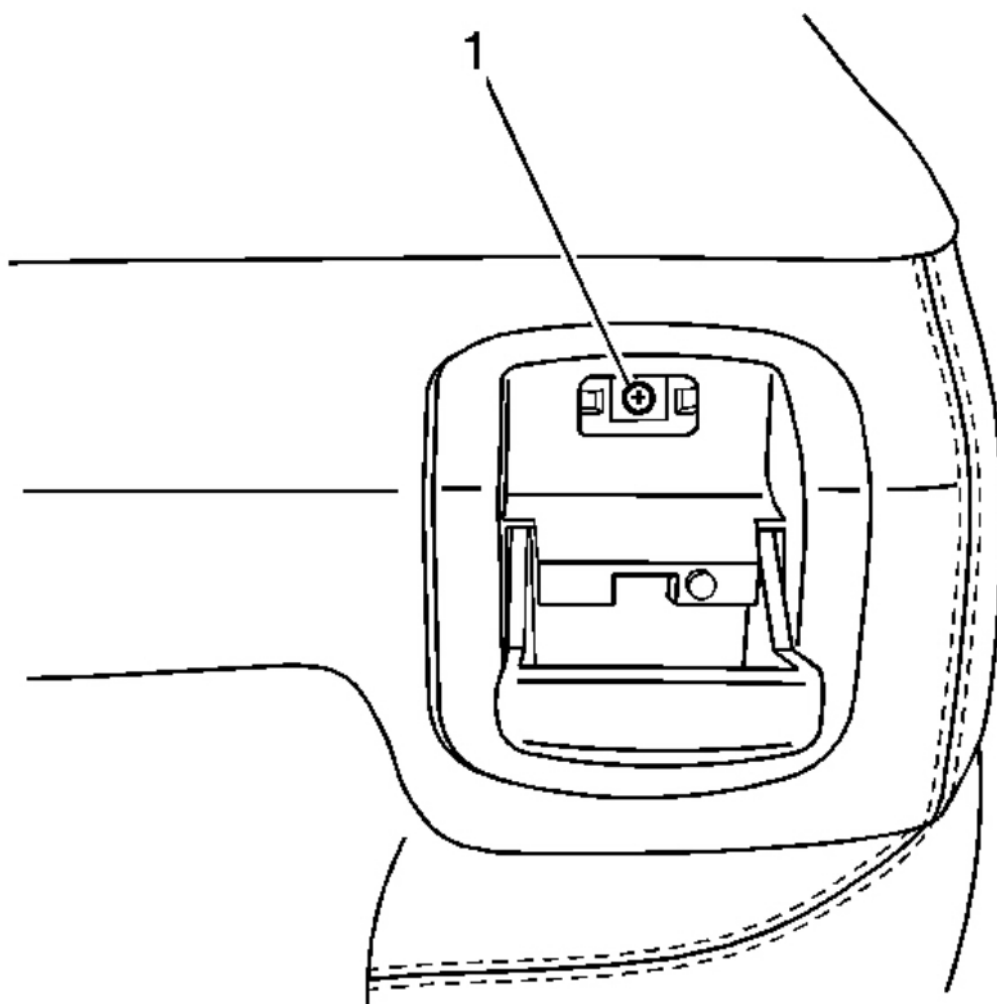


Fig. 113: View Of Seat Release Latch Screw
Courtesy of GENERAL MOTORS CORP.

10. Remove the seat release latch screw (1).
11. Remove the latch from the seat.
12. Remove the seat back cover.

Installation Procedure

1. Install the seat back cover on to the seat back.

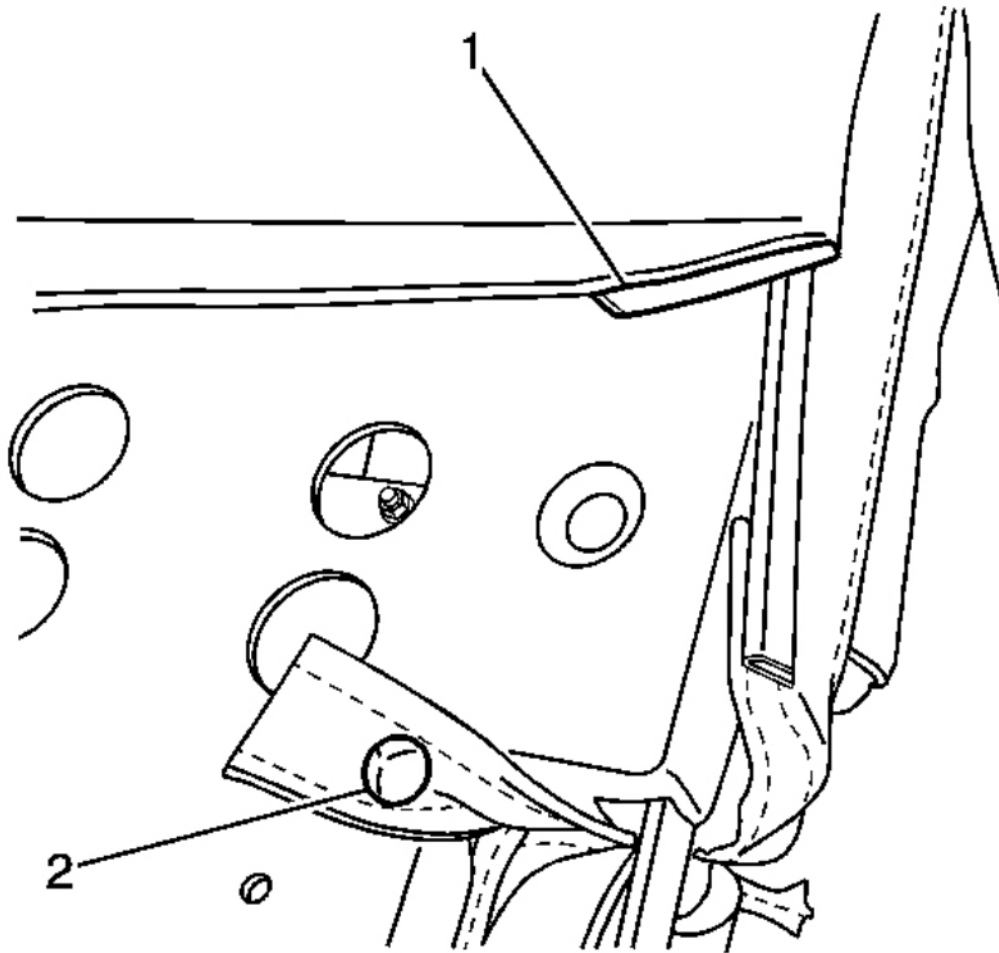


Fig. 114: View Of J Channel & Push In Retainers
Courtesy of GENERAL MOTORS CORP.

2. Install the push in retainers (2) that retain the seat cover.
3. Install the J channel retainers (1).

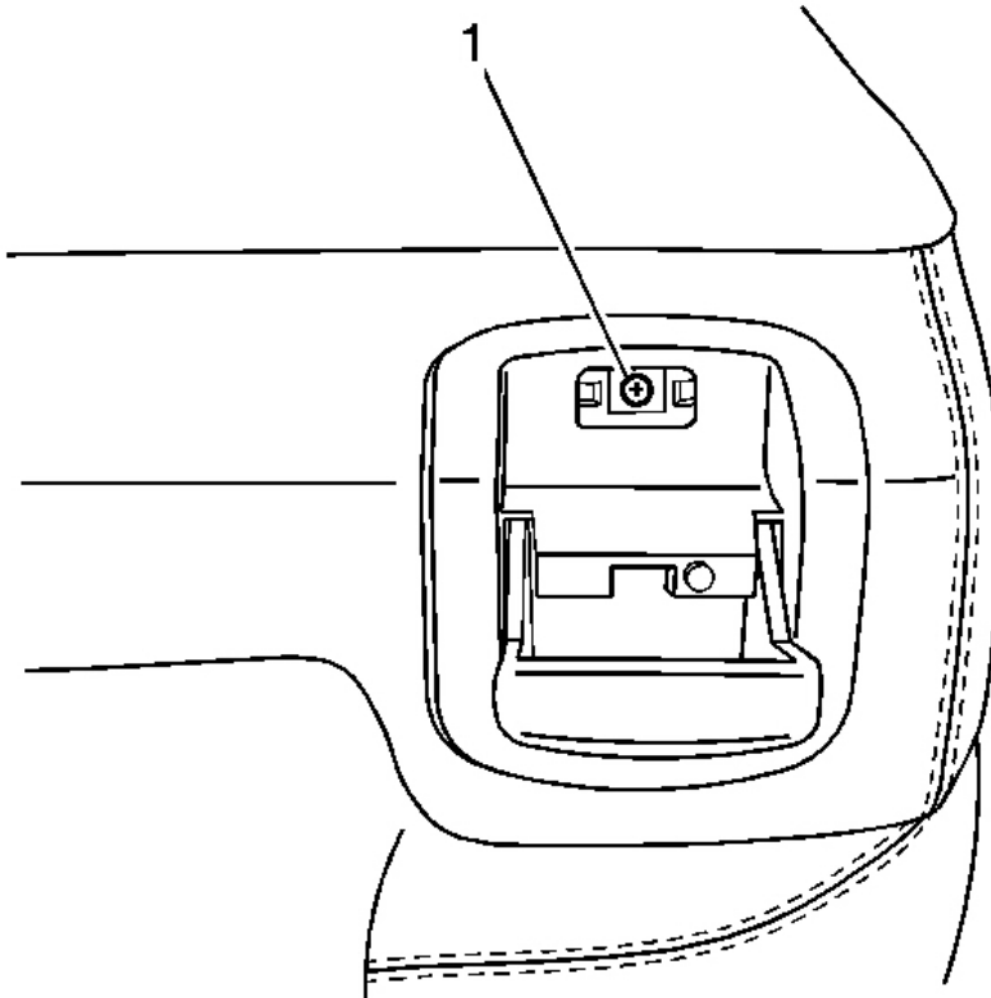


Fig. 115: View Of Seat Release Latch Screw
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the seat release latch screw (1).

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

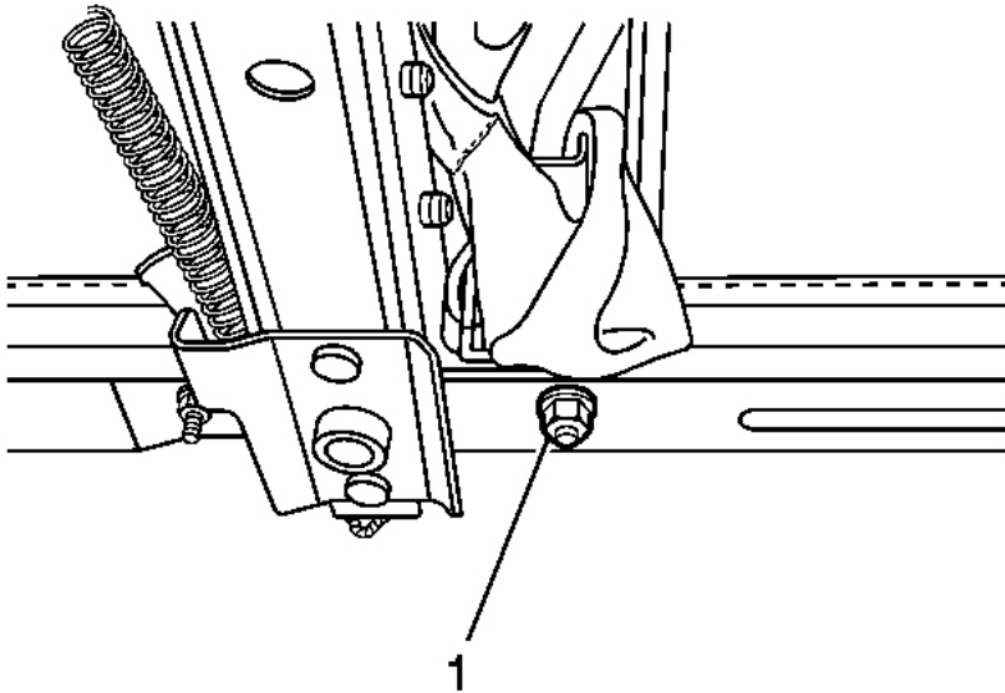


Fig. 116: View Of Seat Belt Anchor Nut
Courtesy of GENERAL MOTORS CORP.

5. Install the seat belt guide screw (1).

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

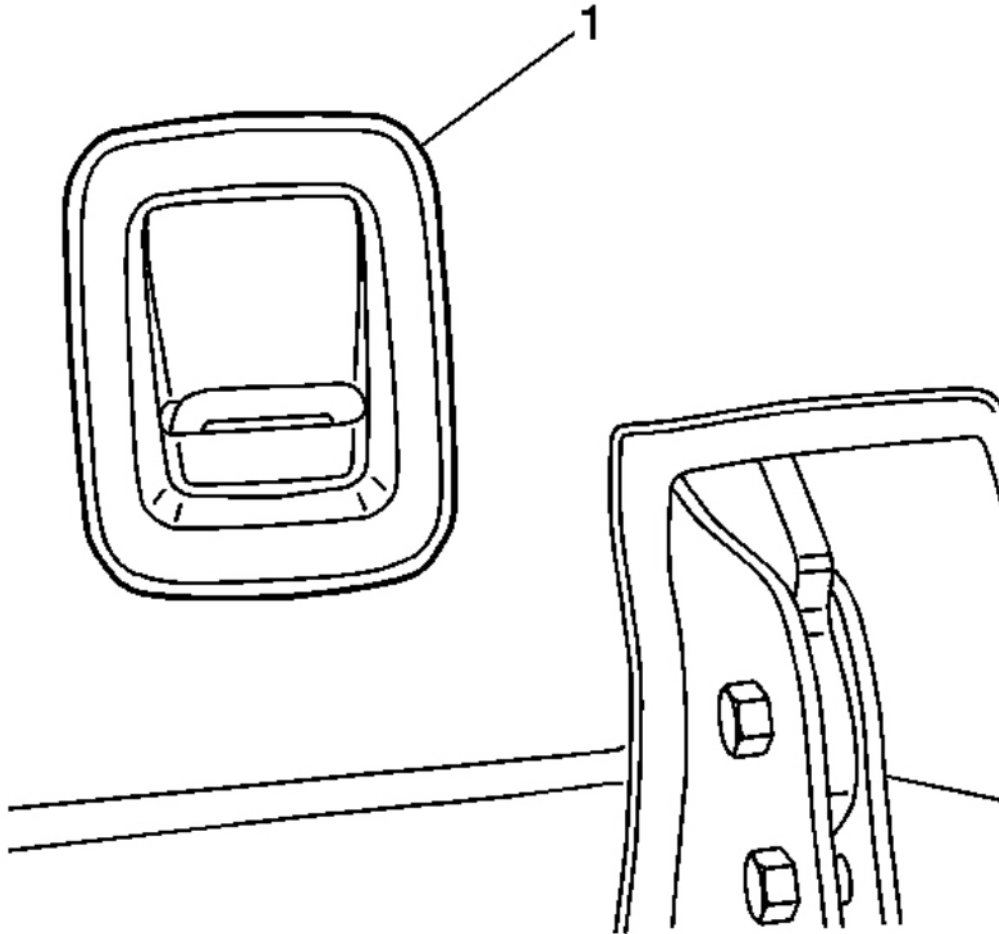


Fig. 117: View Of Child Seat Belt Anchor Bezel
Courtesy of GENERAL MOTORS CORP.

6. Install the child restraint anchor bezel (1).
7. Install the left seat cushion. Refer to **Seat Cushion Replacement - Rear No.1 - Left.**
8. Install the head restraint guides. Refer to **Head Restraint Guide Replacement - Rear No. 1.**
9. Install the head restraints. Refer to **Head Restraint Replacement - Rear No. 1.**
10. Install the seat in the vehicle. Refer to **Seat Replacement - Rear No. 1.**

Removal Procedure

1. Remove the seat from the vehicle. Refer to Seat Replacement - Rear No. 1.
2. Remove the head restraints. Refer to Head Restraint Replacement - Rear No. 1.
3. Remove the head restraint guides. Refer to Head Restraint Guide Replacement - Rear No. 1.
4. Remove the right seat cushion. Refer to Seat Cushion Replacement - Rear No.1 - Right.

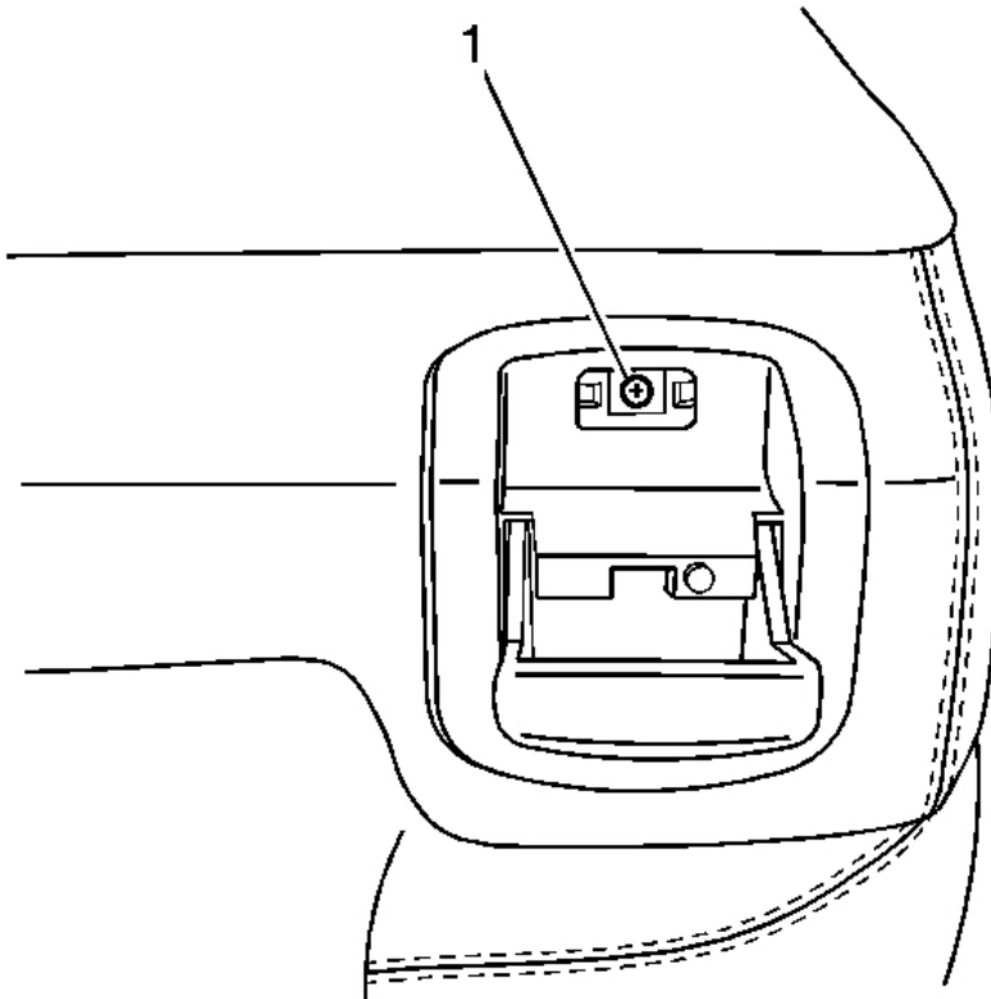


Fig. 118: View Of Seat Release Latch Screw

Courtesy of GENERAL MOTORS CORP.

5. Remove the seat release latch screw (1).
6. Disconnect the release cables.
7. Remove the latch from the seat.
8. Remove the seat back cover.

Installation Procedure

1. Install the seat back cover on to the seat back.
2. Install the seat release cable to the release latch.
3. Install the seat release latch to the seat.

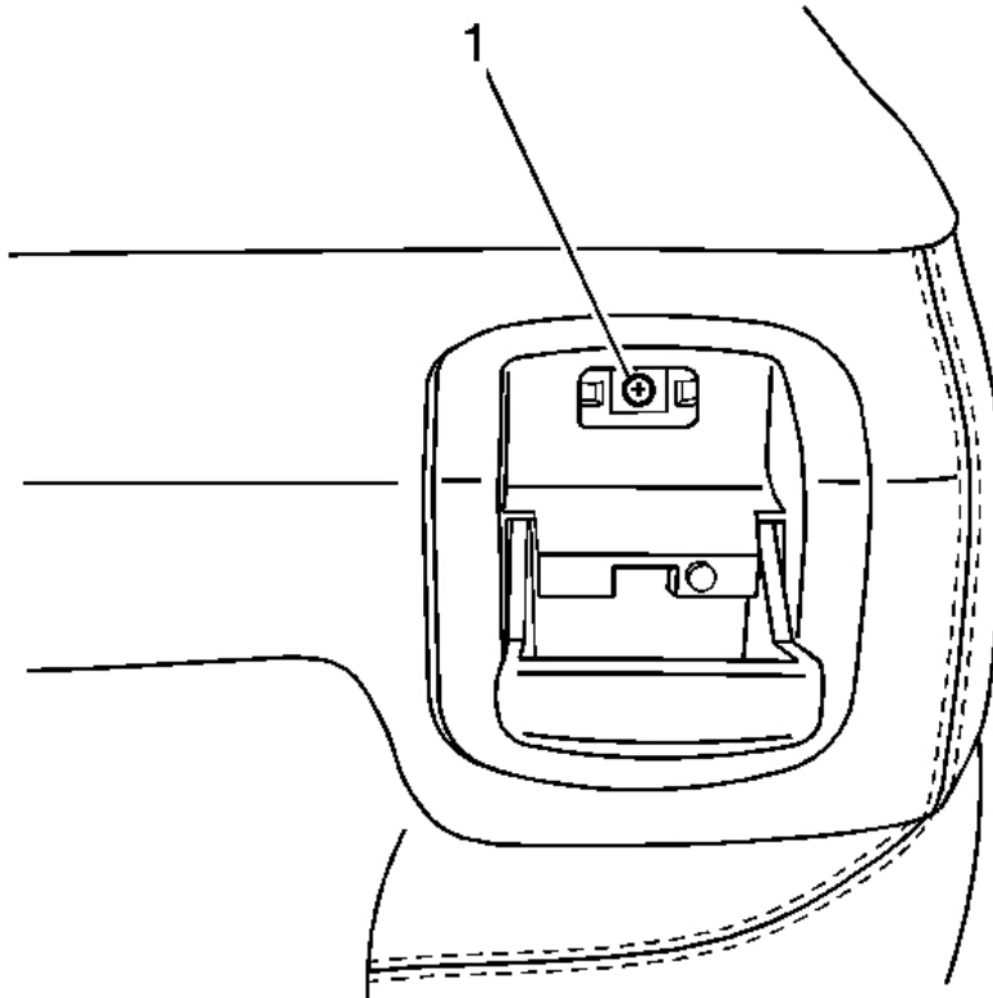


Fig. 119: View Of Seat Release Latch Screw
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the seat release latch screw (1).

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

5. Install the right seat cushion. Refer to Seat Cushion Replacement - Rear No.1 - Right.

6. Install the head restraint guides. Refer to Head Restraint Guide Replacement - Rear No. 1.
7. Install the head restraints. Refer to Head Restraint Replacement - Rear No. 1.
8. Install the seat in the vehicle. Refer to Seat Replacement - Rear No. 1.

SEAT BACK REPLACEMENT - REAR NO.1 - LEFT

Removal Procedure

1. Remove the seat from the vehicle. Refer to Seat Replacement - Rear No. 1.
2. Remove the left seat cushion. Refer to Seat Cushion Replacement - Rear No.1 - Left.

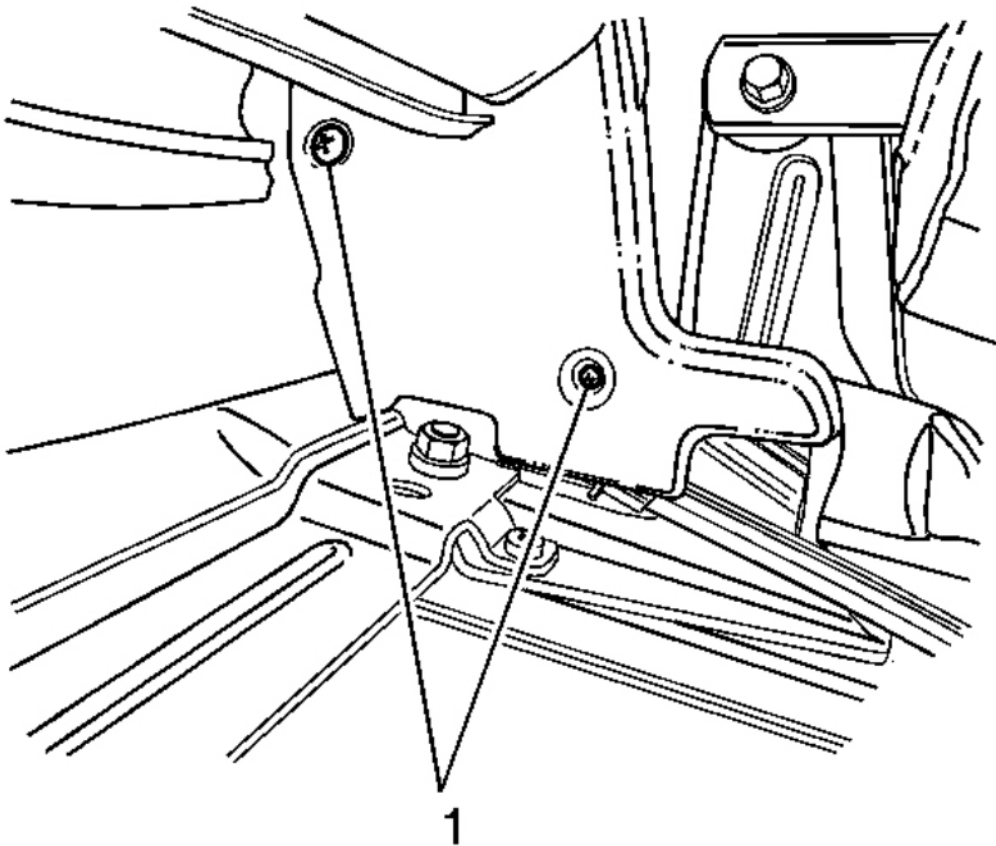


Fig. 120: View Of Pivot Trim Cover Screws

Courtesy of GENERAL MOTORS CORP.

3. Remove the pivot trim cover screws (1).
4. Remove the outer pivot covers.

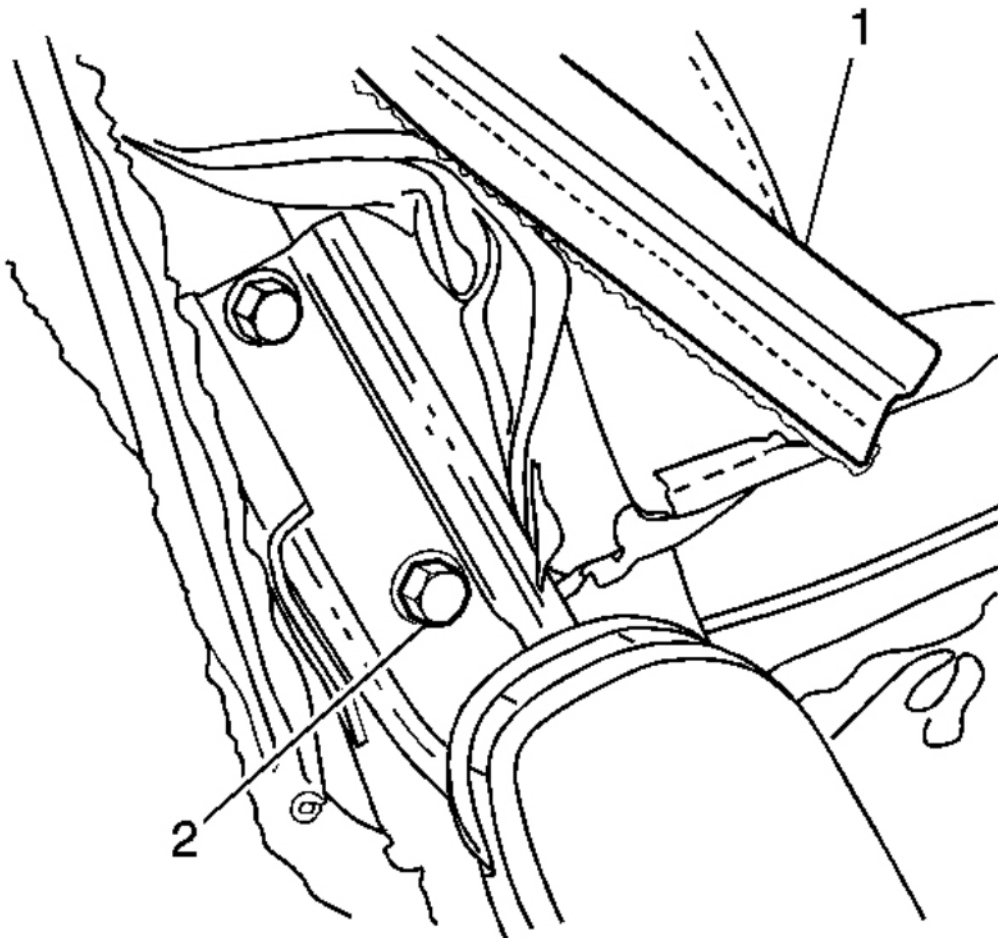


Fig. 121: View Of J Channel Retainers & Seat Back Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

5. Disconnect the J channel retainers (1).
6. Remove the seat back retaining bolts (2).
7. Remove the seat back from the seat adjuster.

Installation Procedure

1. Install the seat back on to the seat adjuster.

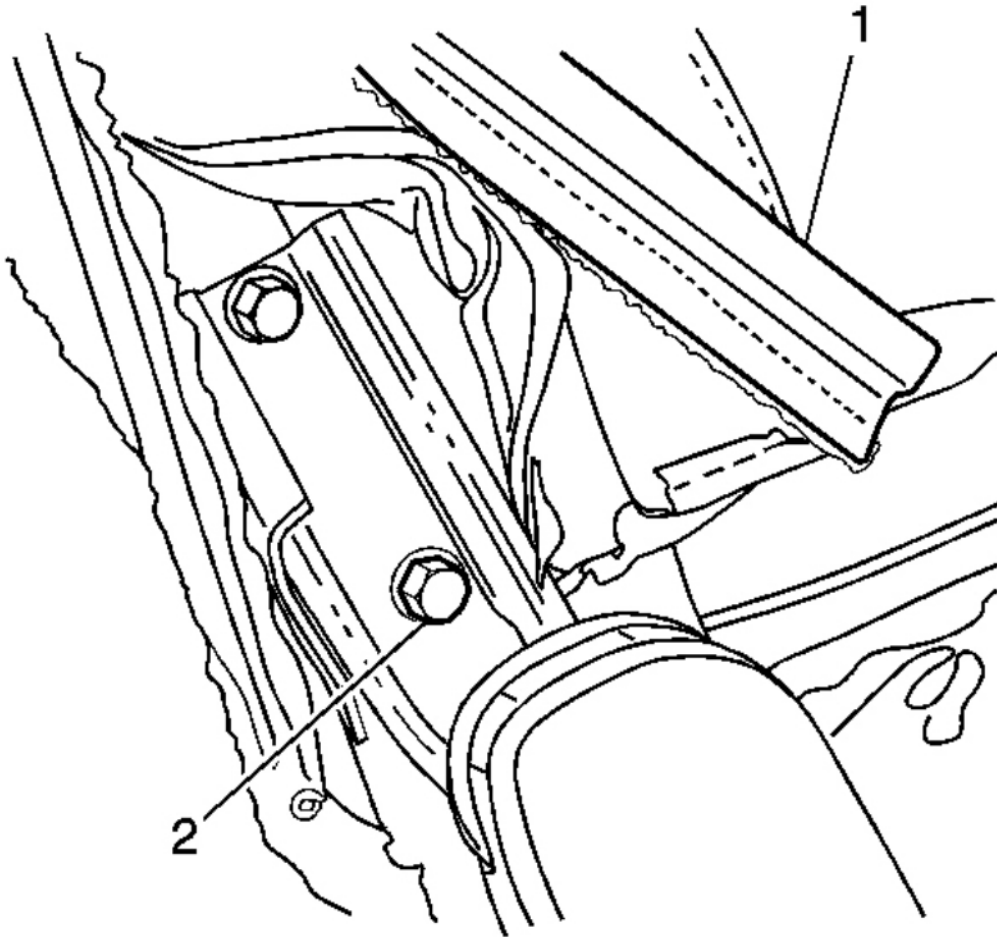


Fig. 122: View Of J Channel Retainers & Seat Back Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the seat back retaining bolts (2).

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

3. Connect the J channel retainers (1).

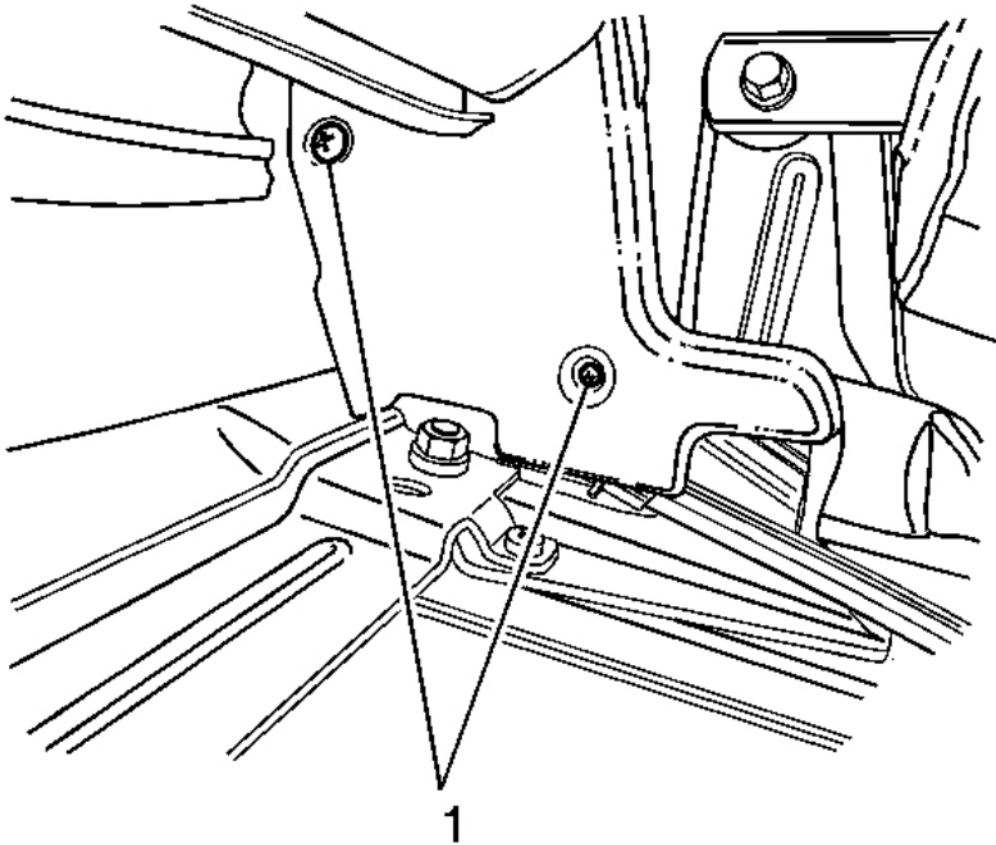


Fig. 123: View Of Pivot Trim Cover Screws
Courtesy of GENERAL MOTORS CORP.

4. Install the pivot cover screws (1).

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

5. Install the seat cushion. Refer to **Seat Cushion Replacement - Rear No.1 - Left.**
6. Install the seat into the vehicle. Refer to **Seat Replacement - Rear No. 1.**

Removal Procedure

1. Remove the seat from the vehicle. Refer to Seat Replacement - Rear No. 1.
2. Remove the right seat cushion. Refer to Seat Cushion Replacement - Rear No.1 - Right.

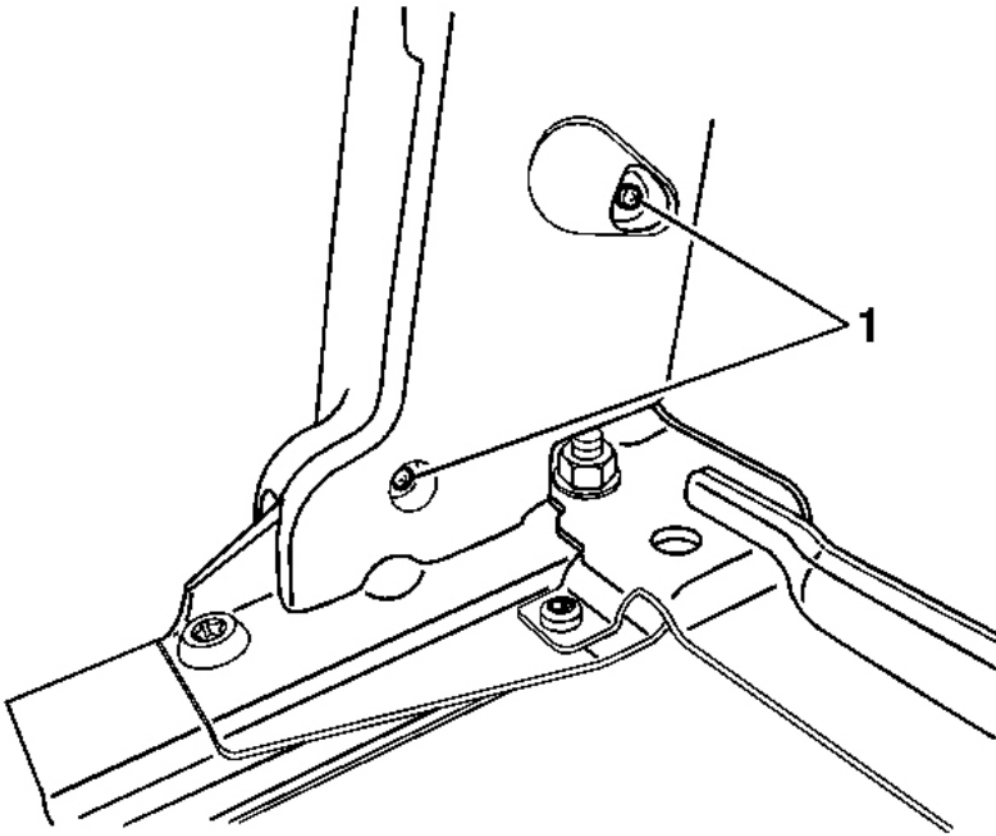


Fig. 124: Locating Pivot Trim Cover Screws
Courtesy of GENERAL MOTORS CORP.

3. Remove the pivot trim cover screws (1).
4. Remove the outer pivot covers.

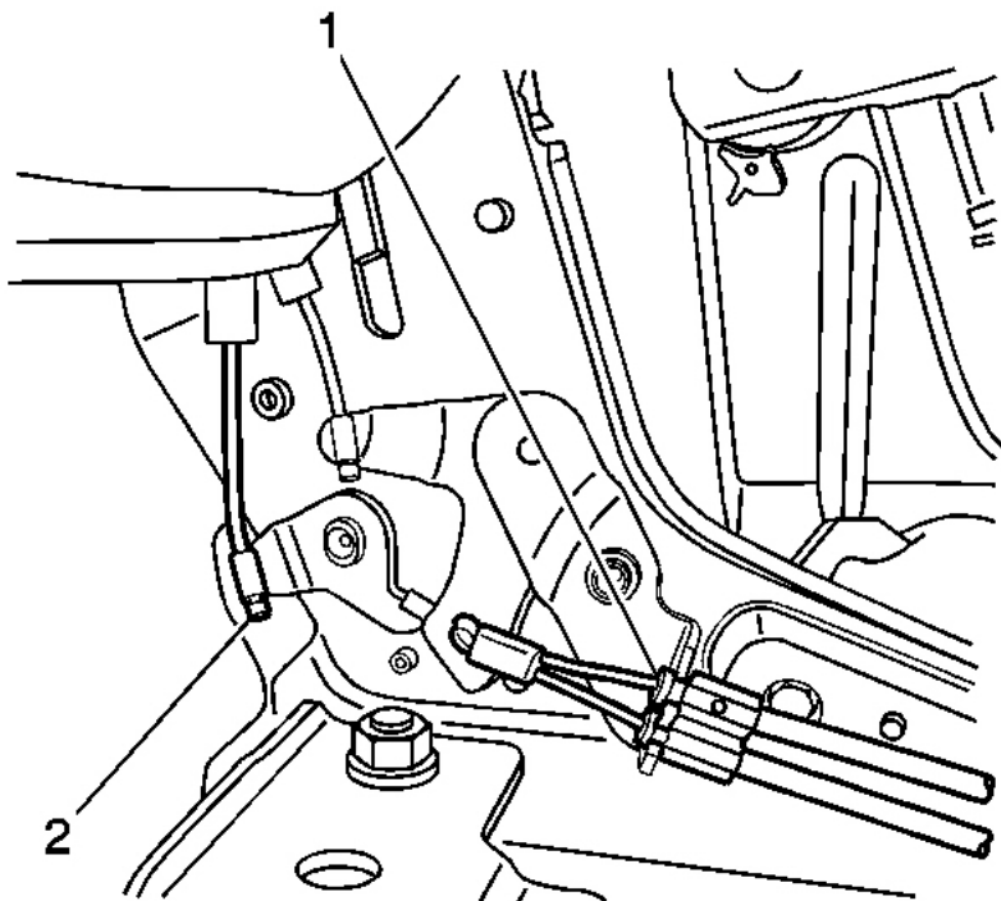


Fig. 125: View Of Seat Release Cables
Courtesy of GENERAL MOTORS CORP.

5. Disconnect the seat release cables (2) from the seat adjuster.

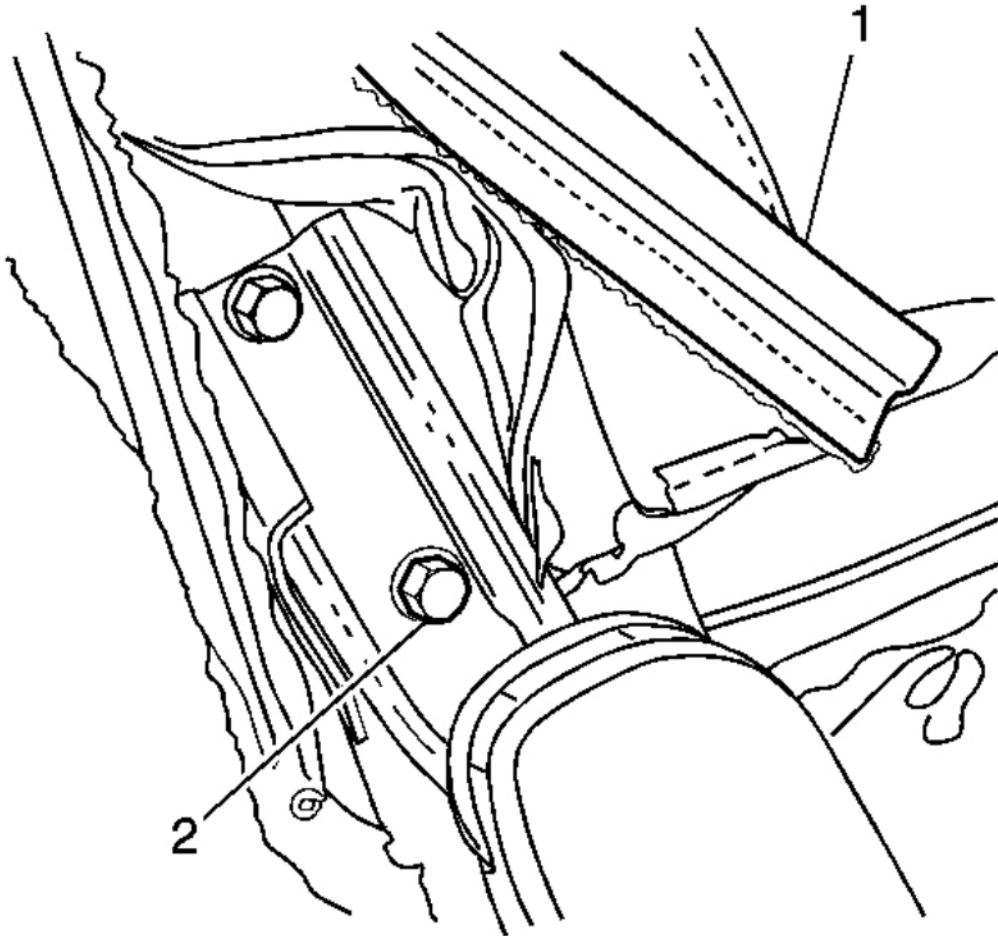


Fig. 126: View Of J Channel Retainers & Seat Back Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

6. Disconnect the J channel retainers (1).
7. Remove the seat back retaining bolts (2).

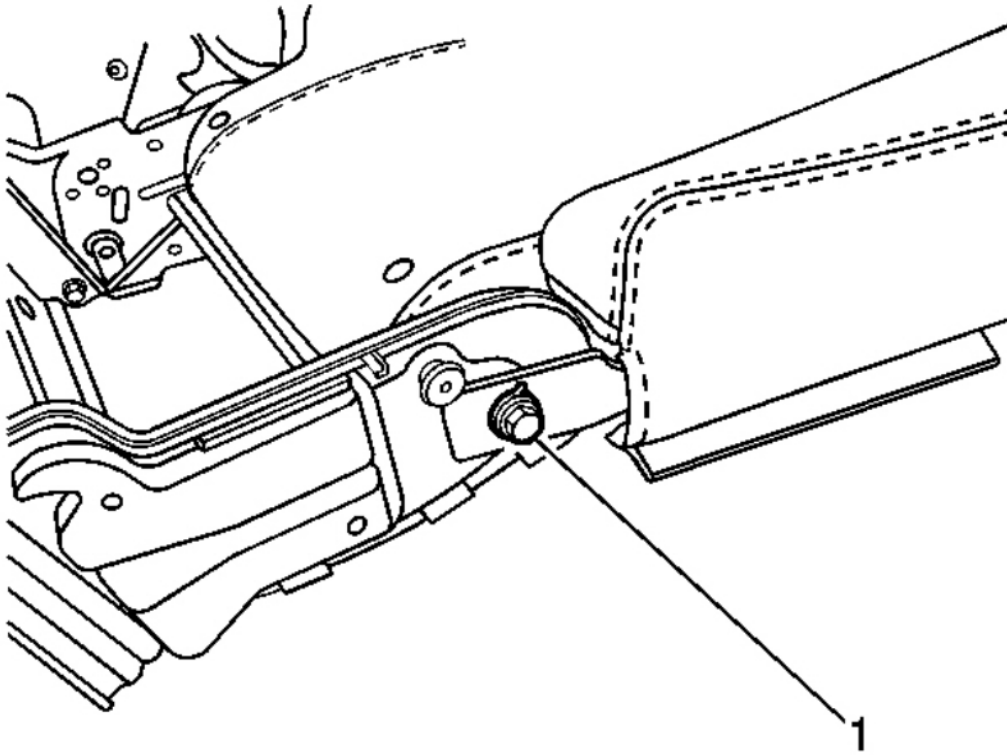


Fig. 127: Identifying Seat Back Retaining Bolt
Courtesy of GENERAL MOTORS CORP.

8. Remove the seat back retaining bolt (1).
9. Remove the seat back from the seat adjuster.

Installation Procedure

1. Install the seat back on to the seat adjuster.

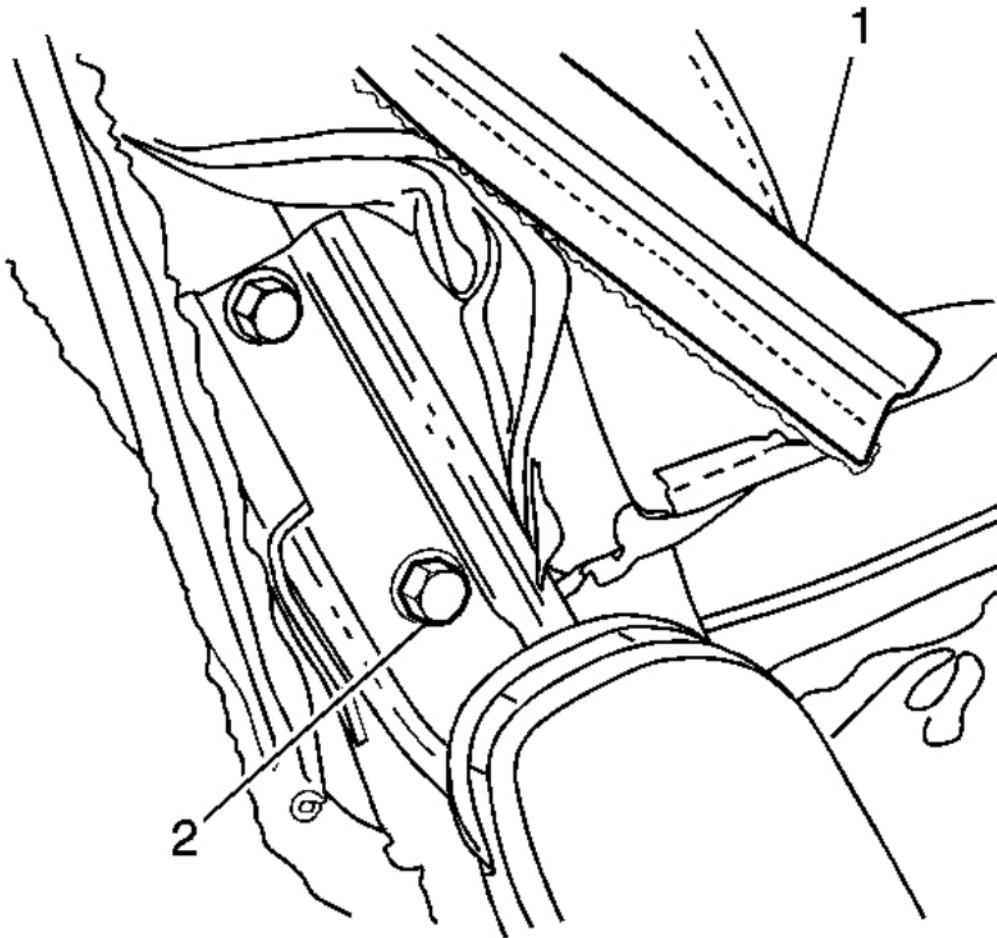


Fig. 128: View Of J Channel Retainers & Seat Back Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the seat back retaining bolts (2).

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

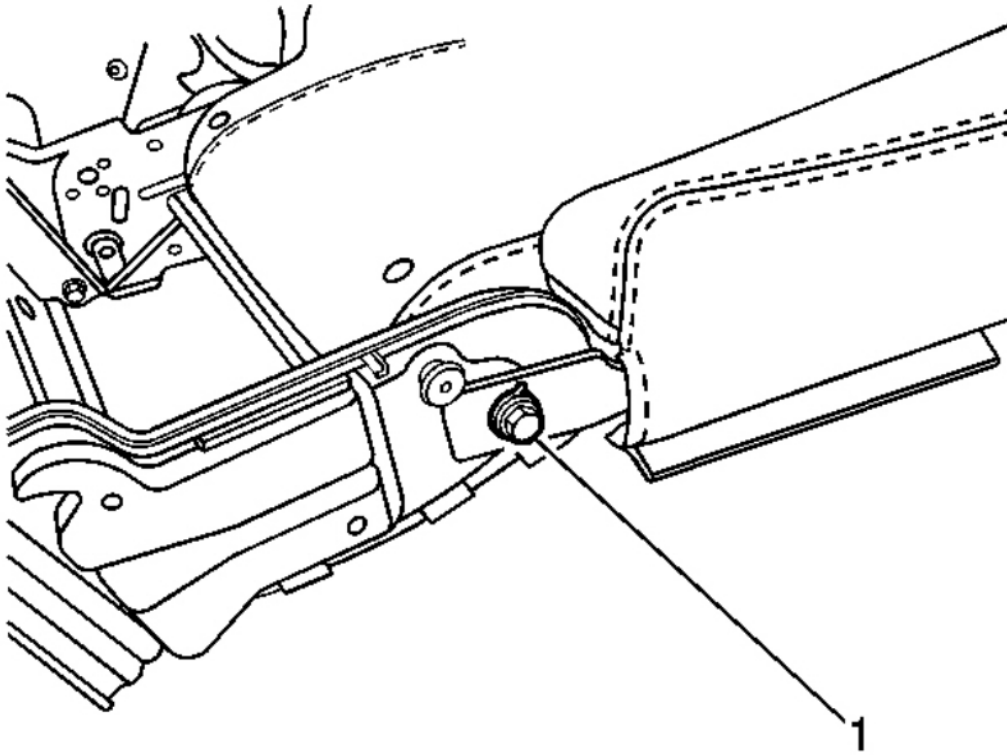


Fig. 129: Identifying Seat Back Retaining Bolt
Courtesy of GENERAL MOTORS CORP.

3. Install the seat back retaining bolt (1).

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

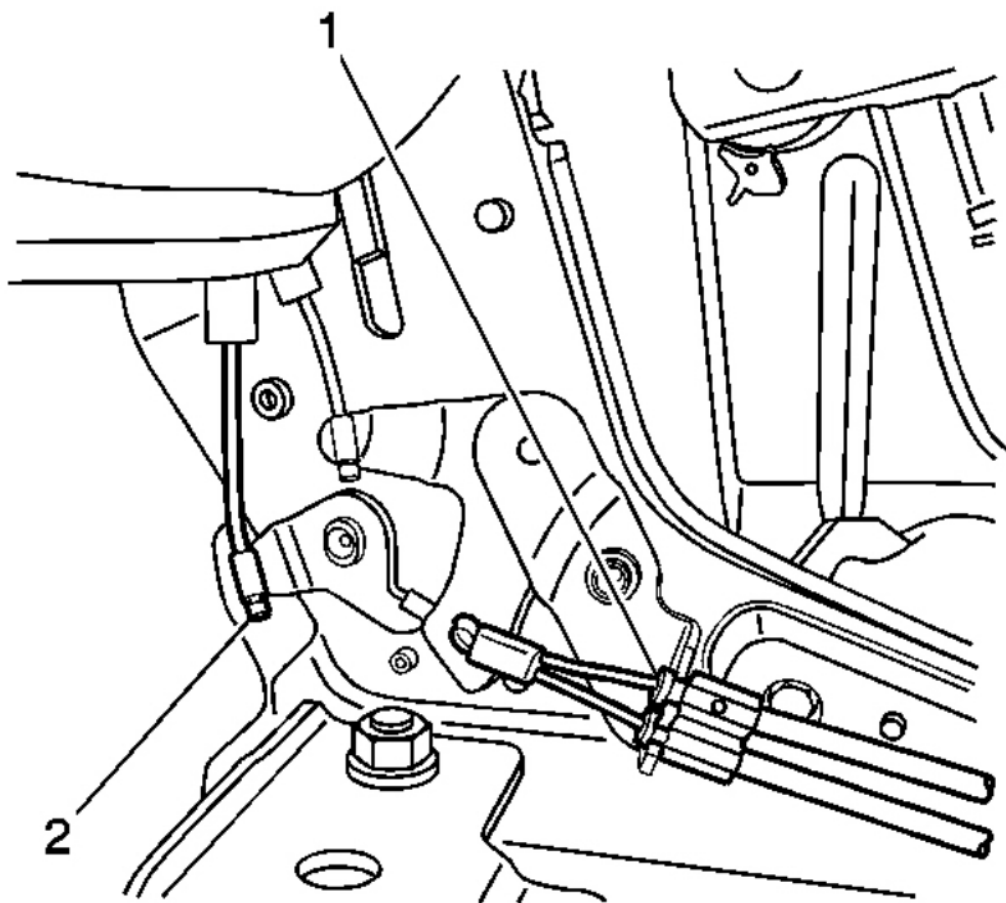


Fig. 130: View Of Seat Release Cables
Courtesy of GENERAL MOTORS CORP.

4. Connect the seat release cables (2) to the seat adjuster.

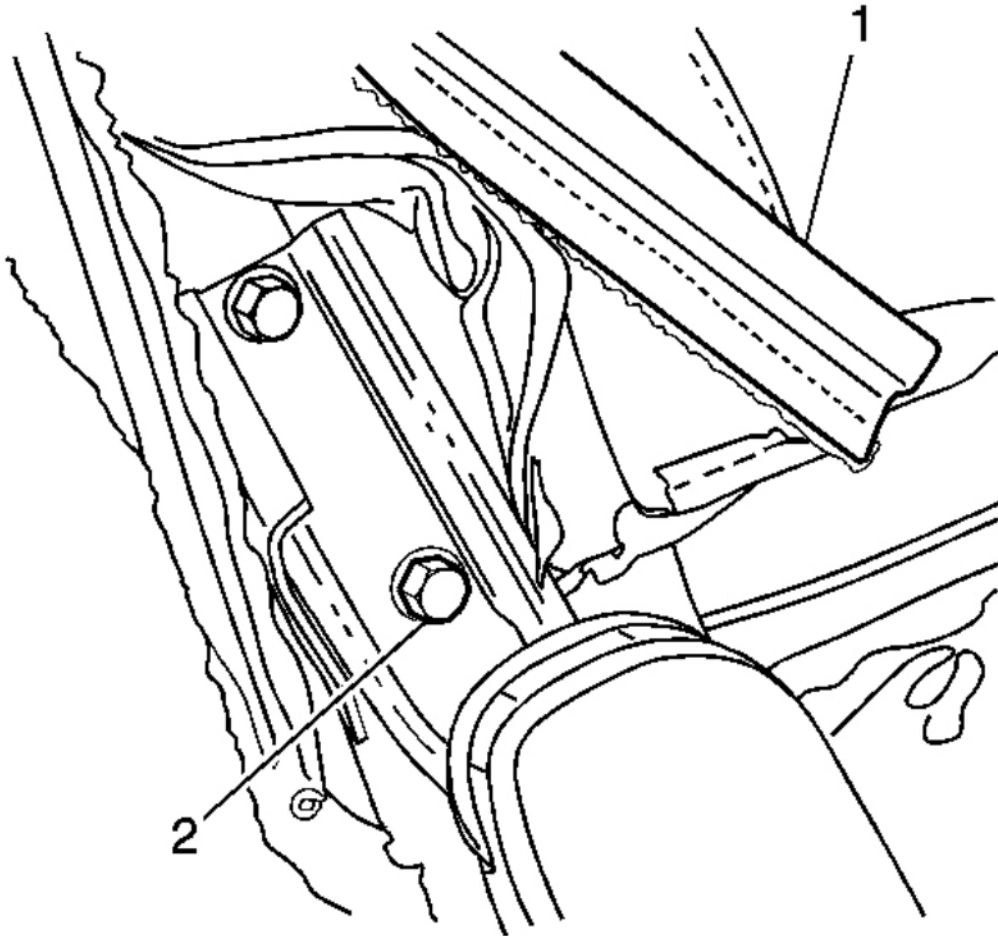


Fig. 131: View Of J Channel Retainers & Seat Back Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

5. Connect the J channel retainers (1).

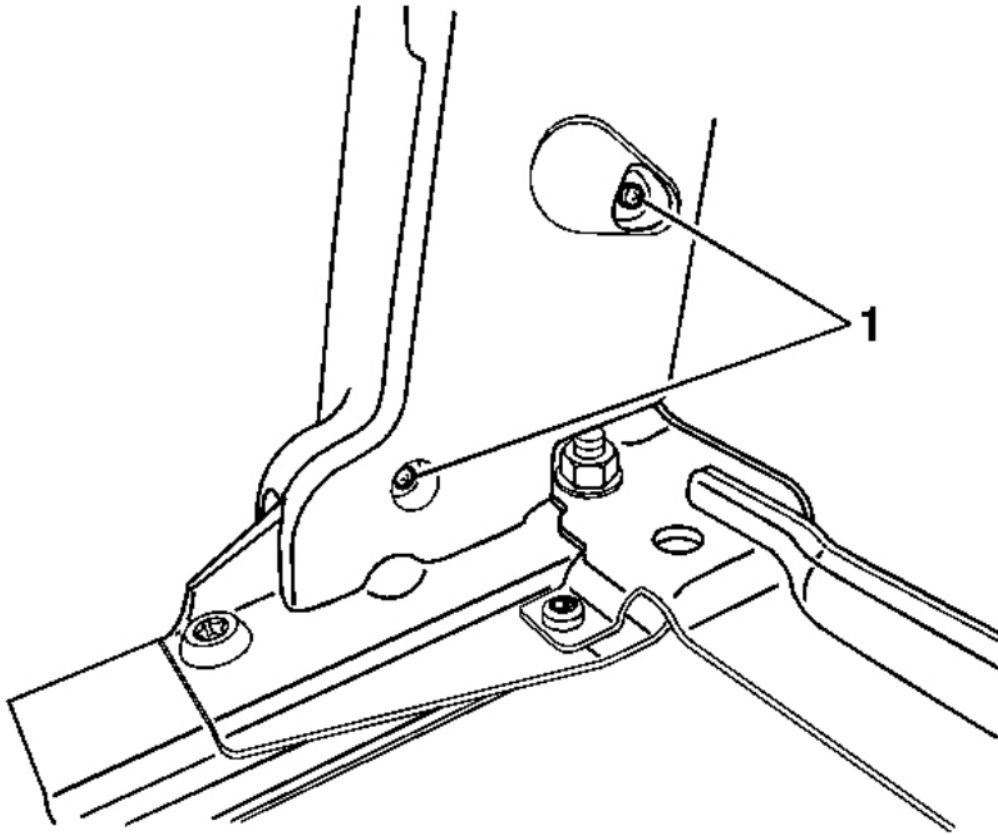


Fig. 132: Locating Pivot Trim Cover Screws
Courtesy of GENERAL MOTORS CORP.

6. Install the pivot cover screws (1).

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

7. Install the seat cushion. Refer to **Seat Cushion Replacement - Rear No.1 - Right.**
8. Install the seat into the vehicle. Refer to **Seat Replacement - Rear No. 1.**

SEAT BACK RELEASE LATCH REPLACEMENT - REAR NO. 1

Removal Procedure

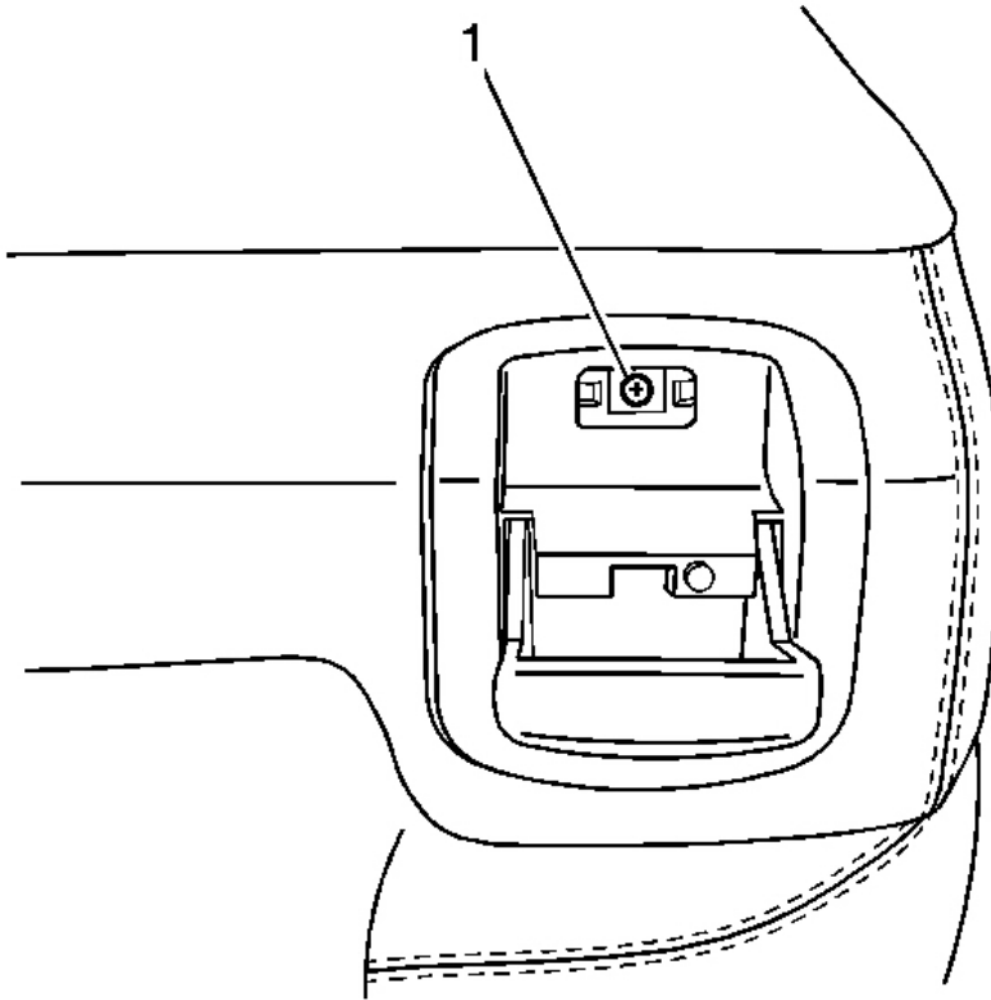


Fig. 133: View Of Seat Release Latch Screw
Courtesy of GENERAL MOTORS CORP.

1. Remove the screw (1) from the release assembly.
2. Disconnect the cable from the release assembly.
3. Remove the release assembly.

Installation Procedure

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

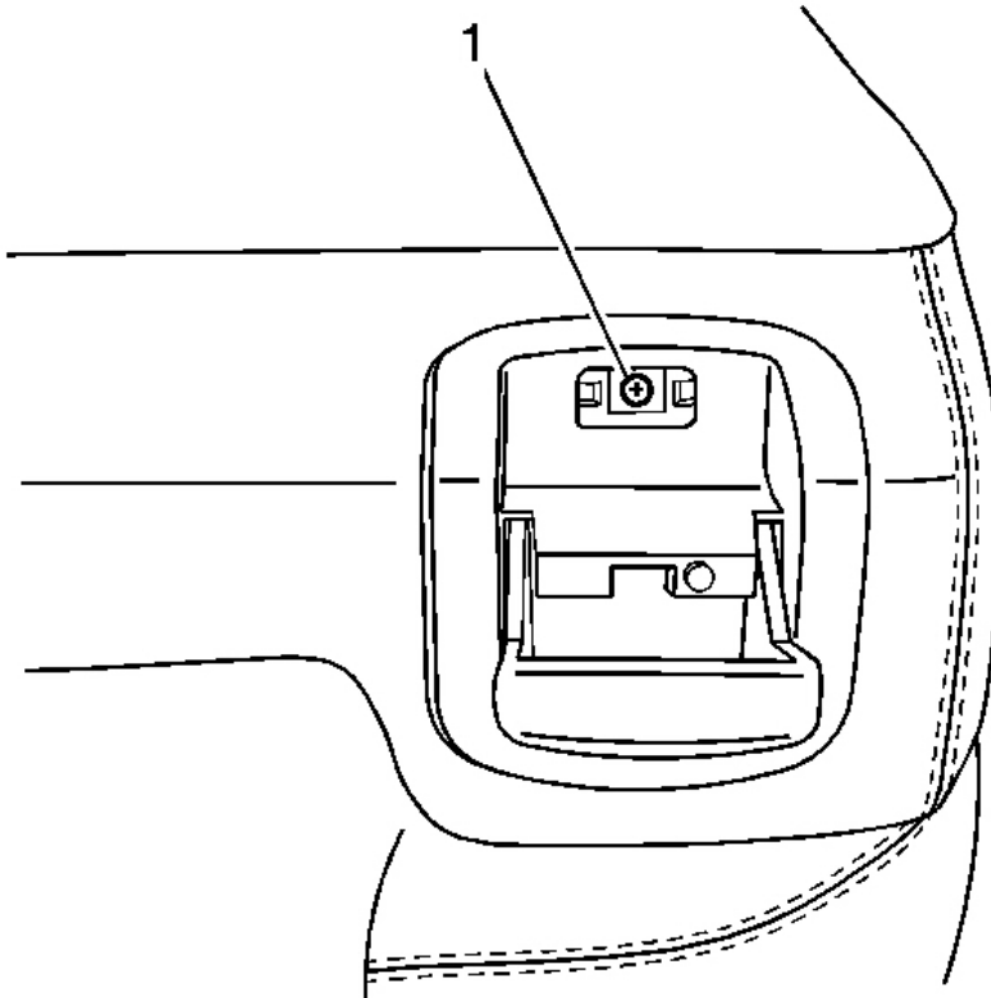


Fig. 134: View Of Seat Release Latch Screw
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the latch assembly to the seat cushion frame with the mounting screw (1).

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

Removal Procedure

1. Remove the seat. Refer to **Seat Replacement - Rear No. 1.**
2. Remove the left seat back. Refer to **Seat Back Replacement - Rear No.1 - Left.**
3. Remove the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear No.1 - Left.**
4. Remove the latch release assembly. Refer to **Seat Back Release Latch Replacement - Rear No. 1.**
5. Remove the head restraints. Refer to **Head Restraint Replacement - Rear No. 1.**
6. Remove the head restraint guides. Refer to **Head Restraint Guide Replacement - Rear No. 1.**
7. Remove the seat belt retractor assembly. Refer to **Seat Belt Retractor Replacement - No. 1 Rear Center** in Seat Belts.

Installation Procedure

1. Install the seat belt retractor assembly. Refer to **Seat Belt Retractor Replacement - No. 1 Rear Center** in Seat Belts.
2. Install the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear No.1 - Left.**
3. Install the latch release assembly. Refer to **Seat Back Release Latch Replacement - Rear No. 1.**
4. Install the head restraint guides. Refer to **Head Restraint Guide Replacement - Rear No. 1.**
5. Install the head restraints. Refer to **Head Restraint Replacement - Rear No. 1.**
6. Install the left seat back. Refer to **Seat Back Replacement - Rear No.1 - Left.**
7. Install the seat. Refer to **Seat Replacement - Rear No. 1.**

SEAT BACK FRAME REPLACEMENT - REAR NO.1 - RIGHT**Removal Procedure**

1. Remove the seat. Refer to **Seat Replacement - Rear No. 1.**
2. Remove the right seat back. Refer to **Seat Back Replacement - Rear No.1 - Right.**
3. Remove the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear No.1 - Right.**
4. Remove the latch release assembly. Refer to **Seat Back Release Latch Replacement -**

Rear No. 1.

5. Remove the head restraint. Refer to **Head Restraint Replacement - Rear No. 1.**
6. Remove the head restraint guides. Refer to **Head Restraint Guide Replacement - Rear No. 1.**

Installation Procedure

1. Install the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear No.1 - Right.**
2. Install the latch release assembly. Refer to **Seat Back Release Latch Replacement - Rear No. 1.**
3. Install the head restraint guides. Refer to **Head Restraint Guide Replacement - Rear No. 1.**
4. Install the head restraint. Refer to **Head Restraint Replacement - Rear No. 1.**
5. Install the right seat back. Refer to **Seat Back Replacement - Rear No.1 - Right.**
6. Install the seat. Refer to **Seat Replacement - Rear No. 1.**

ARMREST REPLACEMENT - REAR NO. 1

Removal Procedure

1. Move the left side of the seat in the full forward position.

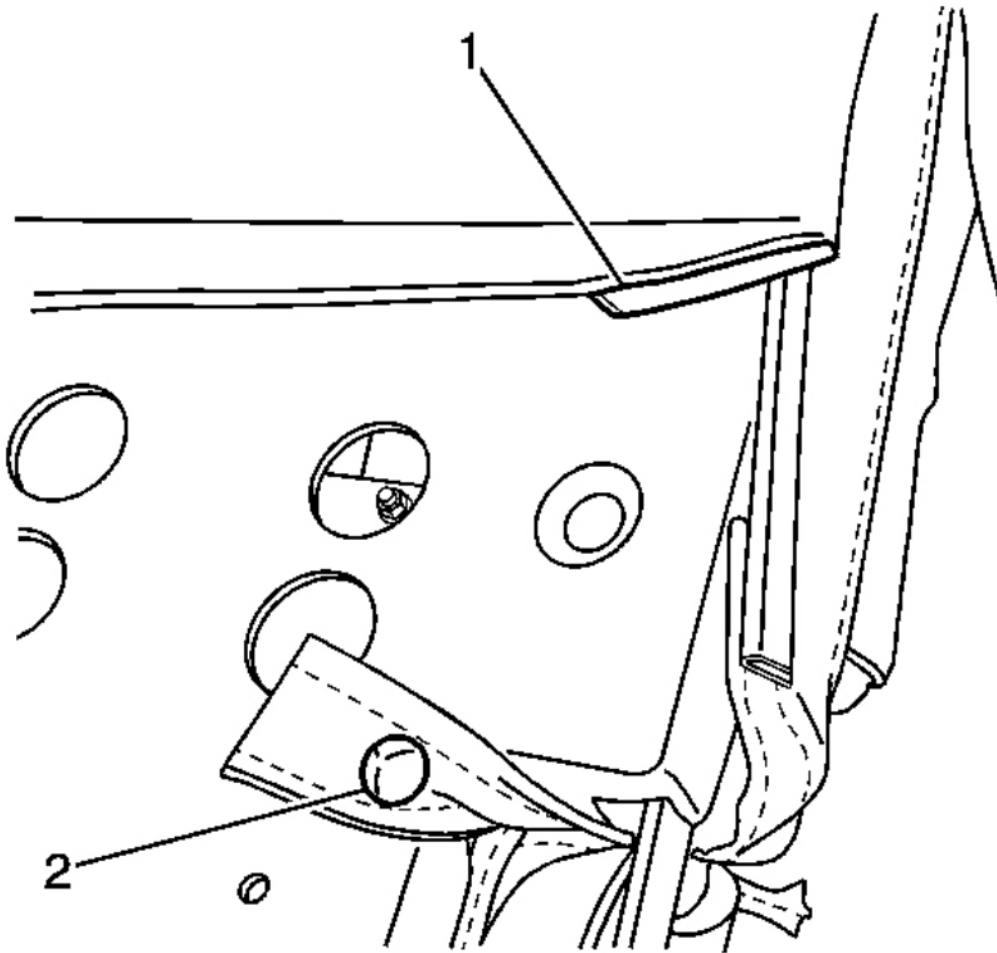


Fig. 135: View Of J Channel & Push In Retainers
Courtesy of GENERAL MOTORS CORP.

2. Release the J channel retainer (1) from the seat back.
3. Lift the seat back cover up to gain access to the armrest retainers.

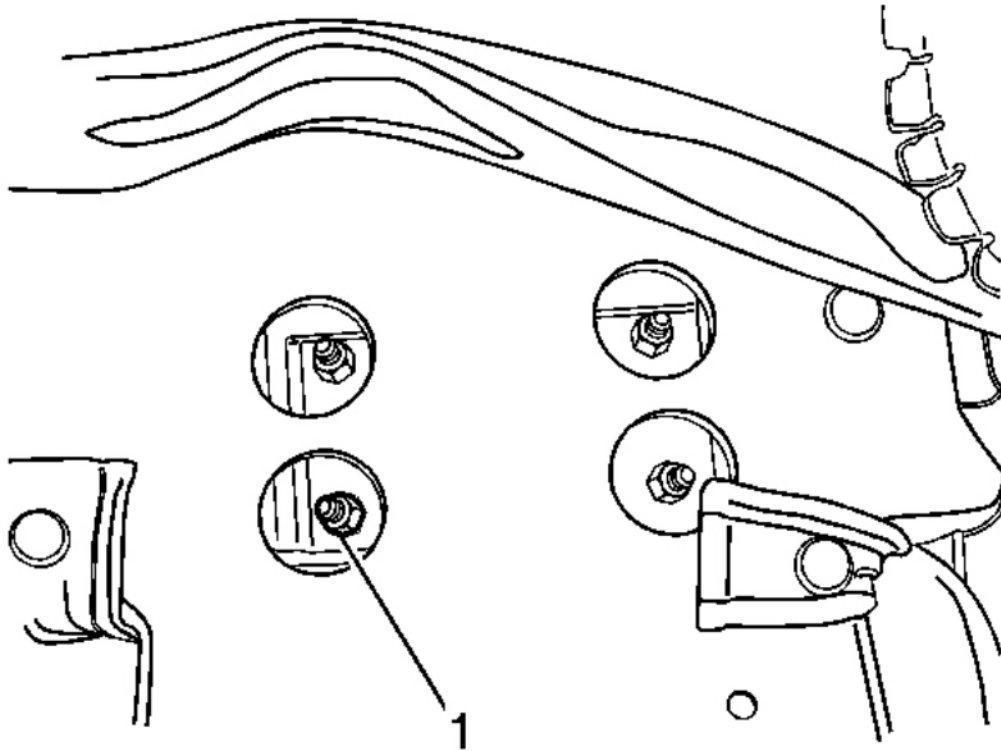


Fig. 136: View Of Armrest Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

4. Remove the armrest retaining nuts (1) from the armrest.
5. Remove the armrest from the seat.

Installation Procedure

1. Install the armrest into the seat back.

NOTE: Refer to Fastener Notice in Cautions and Notices.

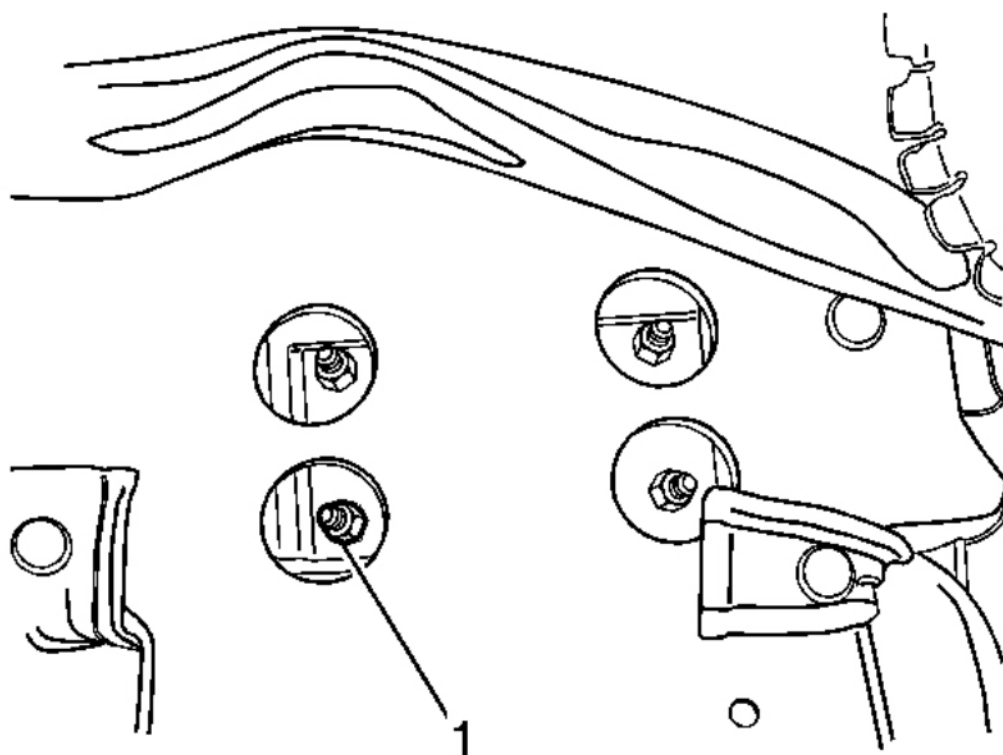


Fig. 137: View Of Armrest Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

2. Install the armrest nuts (1).

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

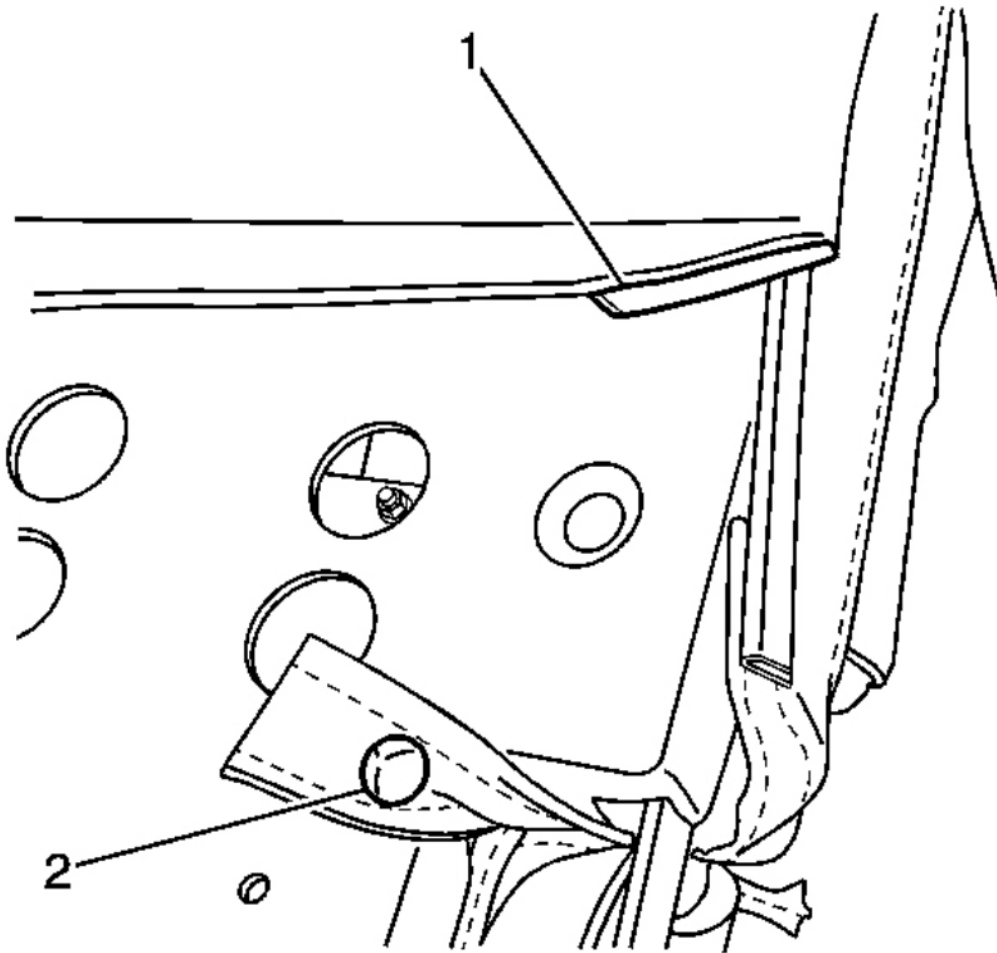


Fig. 138: View Of J Channel & Push In Retainers
Courtesy of GENERAL MOTORS CORP.

3. Install the J channel retainer (1) from the right side of the seat back.

HEAD RESTRAINT REPLACEMENT - REAR NO. 1

Removal Procedure

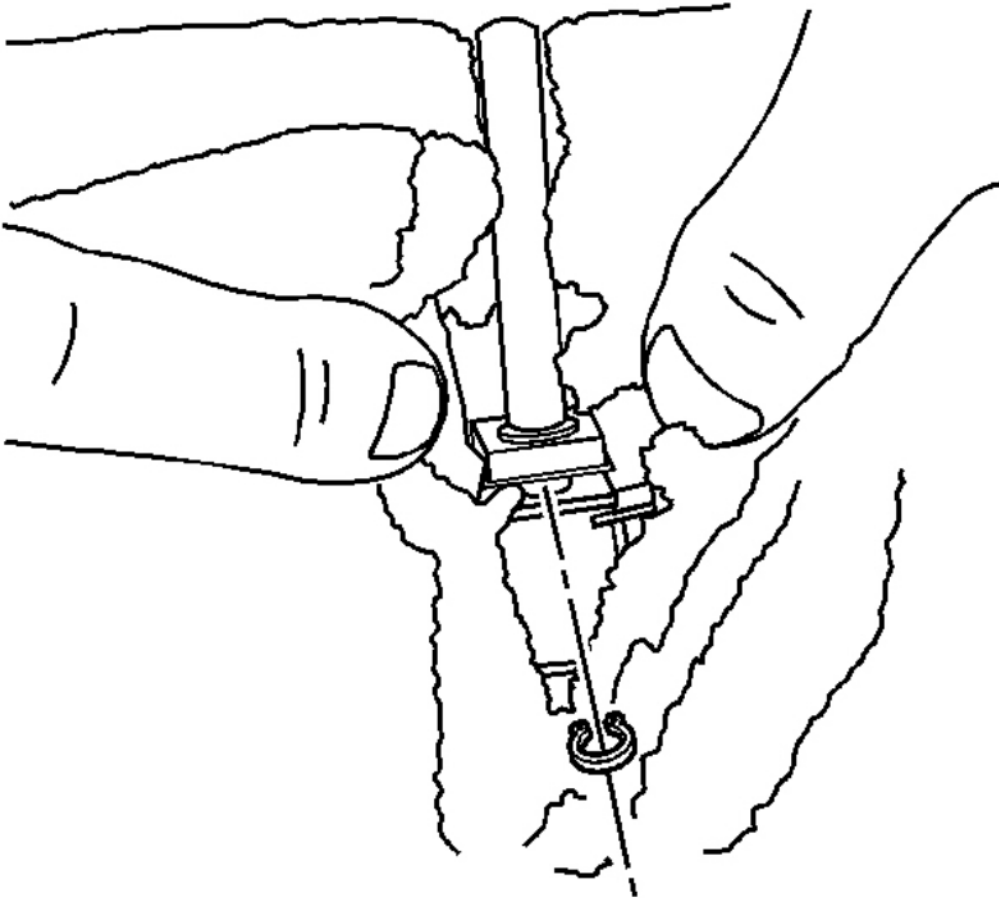


Fig. 139: Removing Head Restraint Retainer Release Tab
Courtesy of GENERAL MOTORS CORP.

1. Push in on the release tab located on the head restraint retainer (1) to remove the head restraint.
2. Remove the head restraint from the seat back.

Installation Procedure

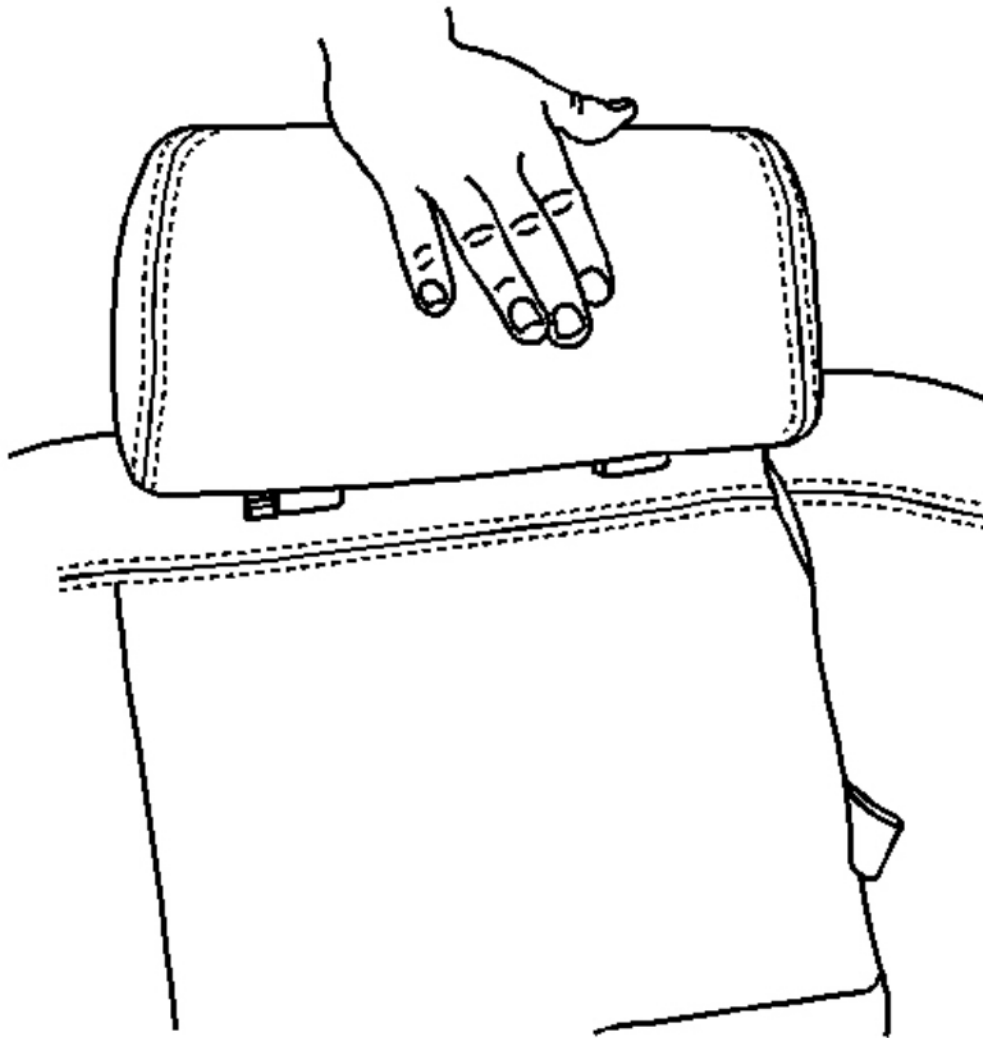


Fig. 140: Installing Head Restraint
Courtesy of GENERAL MOTORS CORP.

1. Align the rear seat head restraint to the head restraint retainers.
2. Push the heads restraint down until the head restraint is fully seated against the rear seat back.

Removal Procedure

1. Remove the rear seat. Refer to **Seat Replacement - Rear No. 1.**
2. Remove the rear seat back. Refer to **Seat Back Replacement - Rear No.1 - Left** or **Seat Back Replacement - Rear No.1 - Right.**
3. Remove the head restraints. Refer to **Head Restraint Replacement - Rear No. 1.**
4. Remove the rear seat back cover far enough to access the head restraint guides. Refer to **Seat Back Cover and Pad Replacement - Rear No.1 - Left** or **Seat Back Cover and Pad Replacement - Rear No.1 - Right.**

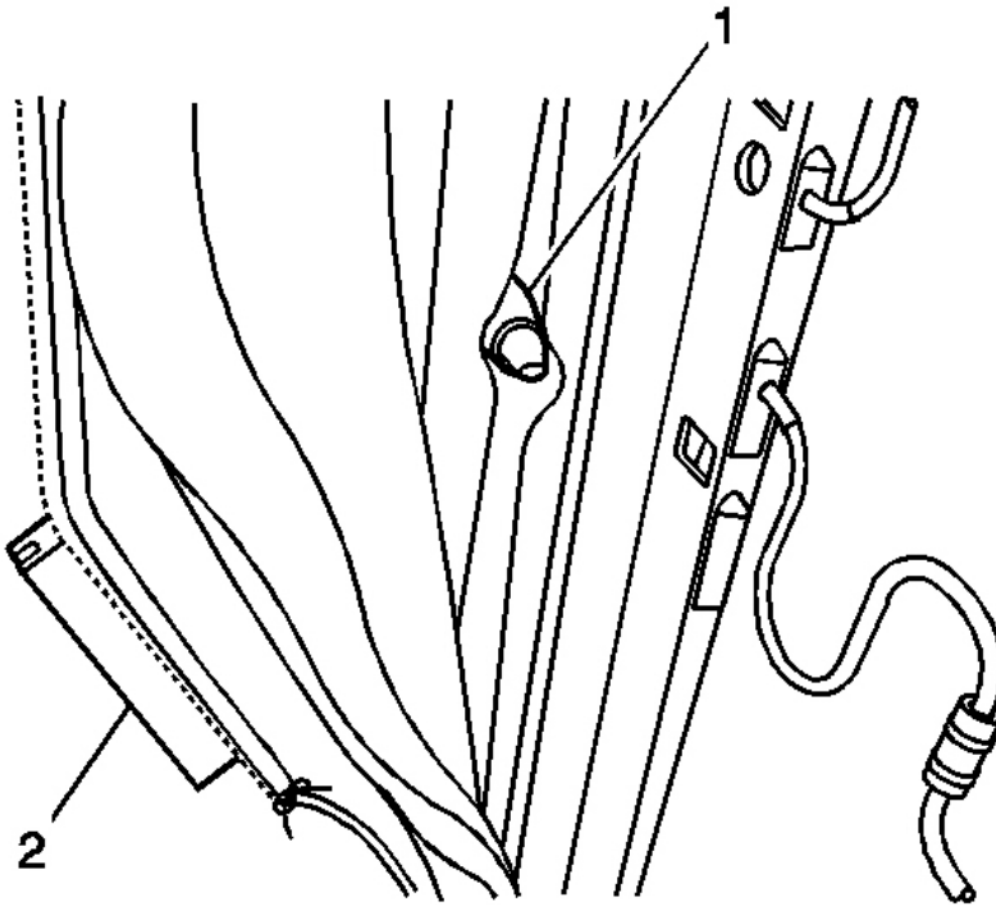


Fig. 141: View Of Head Restraint Retainer & Seat Cover J Channel
Courtesy of GENERAL MOTORS CORP.

5. Pinch the head restraint guide (1) to release it from the seat frame.
6. Remove the head restraint guide.

Installation Procedure

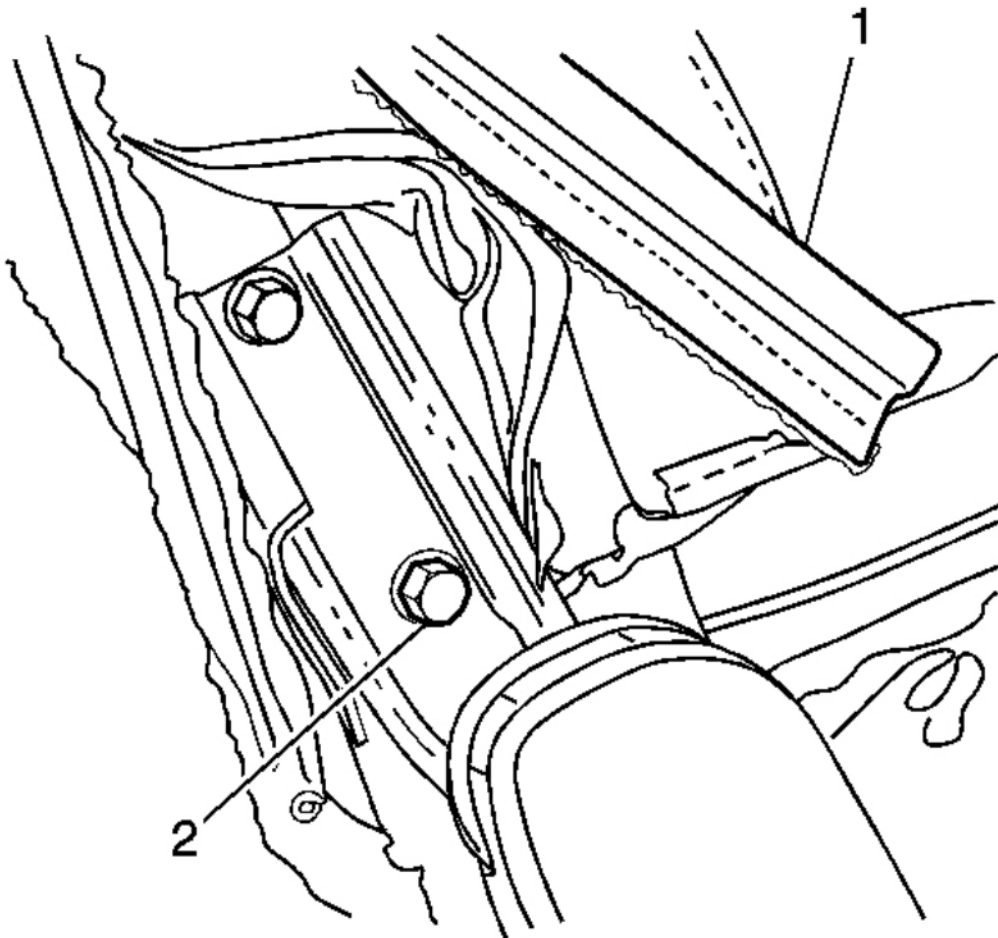


Fig. 142: View Of J Channel Retainers & Seat Back Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

1. Connect the J channel retainers (1) on the rear seat back cover.
2. Install the head restraint guides into the seat back frame.
3. Install the head restraints. Refer to **Head Restraint Replacement - Rear No. 1.**

4. Install the rear seat back. Refer to Seat Back Replacement - Rear No.1 - Left or Seat Back Replacement - Rear No.1 - Right.
5. Install the rear seat. Refer to Seat Replacement - Rear No. 1.

SEAT ADJUSTER REPLACEMENT - REAR NO. 1

Removal Procedure

1. Remove the seat from the vehicle. Refer to Seat Replacement - Rear No. 1.
2. Remove the right seat cushion. Refer to Seat Cushion Replacement - Rear No.1 - Right.
3. Remove the left seat cushion. Refer to Seat Cushion Replacement - Rear No.1 - Left.

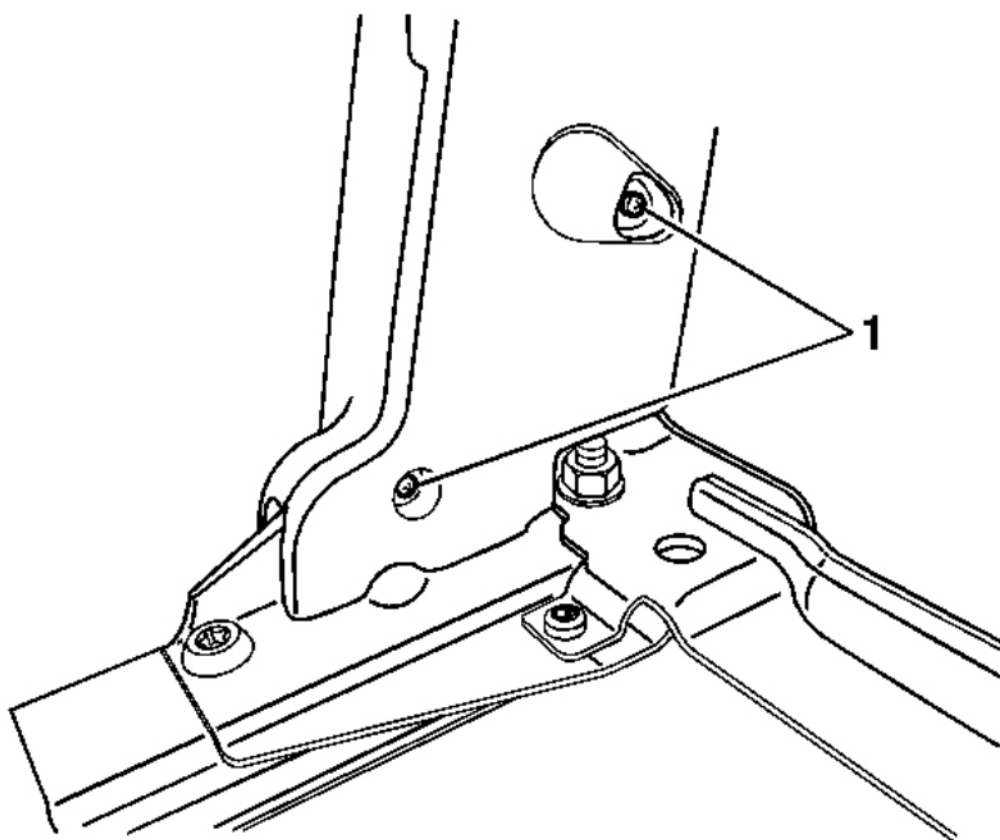


Fig. 143: Locating Pivot Trim Cover Screws
Courtesy of GENERAL MOTORS CORP.

4. Remove the pivot trim cover screws (1).
5. Remove the outer pivot covers.
6. Remove the right seat back. Refer to Seat Back Replacement - Rear No.1 - Right.
7. Remove the left seat back. Refer to Seat Back Replacement - Rear No.1 - Left.

Installation Procedure

1. Install the left seat back on to the seat adjuster. Refer to Seat Back Replacement - Rear No.1 - Left.
2. Install the right seat back on to the adjuster. Refer to Seat Back Replacement - Rear No.1 - Right.

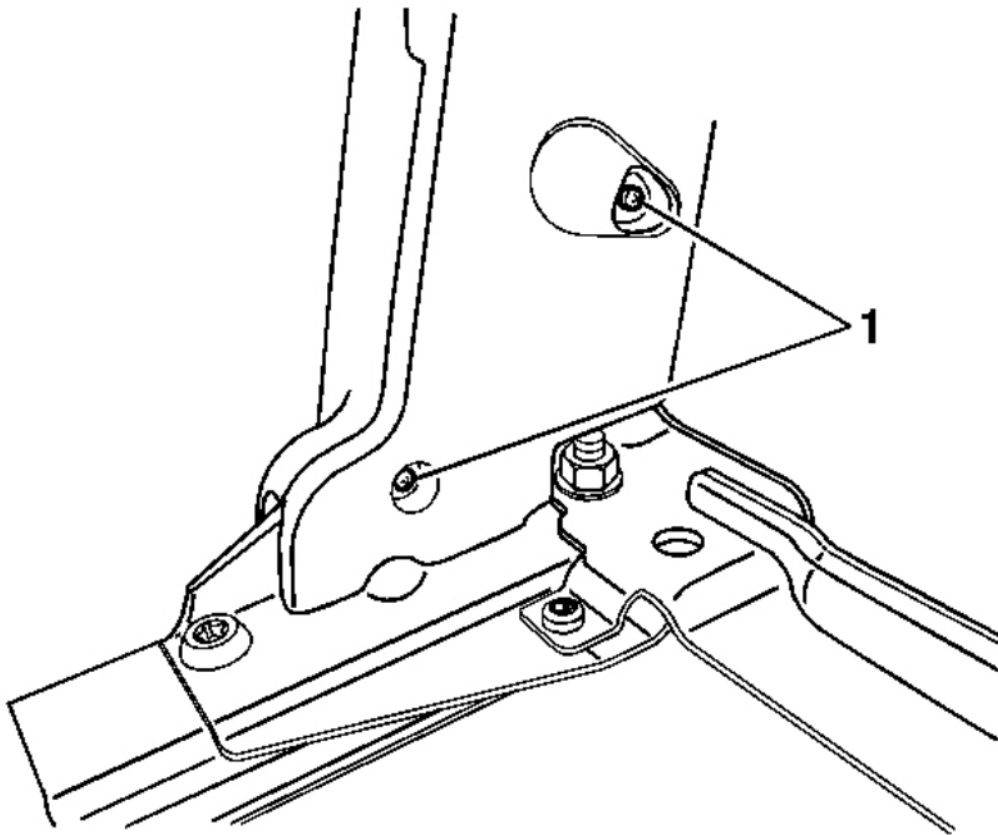


Fig. 144: Locating Pivot Trim Cover Screws

Courtesy of GENERAL MOTORS CORP.

3. Install the inner pivot covers.
4. Install the outer pivot covers.

NOTE: Refer to Fastener Notice in Cautions and Notices.

5. Install the pivot cover screws (1).

Tighten: Tighten the pivot cover screws to 2 N.m (18 lb in).

6. Install the right seat cushion. Refer to Seat Cushion Replacement - Rear No.1 - Right.
7. Install the left seat cushion. Refer to Seat Cushion Replacement - Rear No.1 - Left.
8. Install the seat into the vehicle. Refer to Seat Replacement - Rear No. 1.

SEAT REPLACEMENT - REAR NO. 2 - FOLDING

Removal Procedure

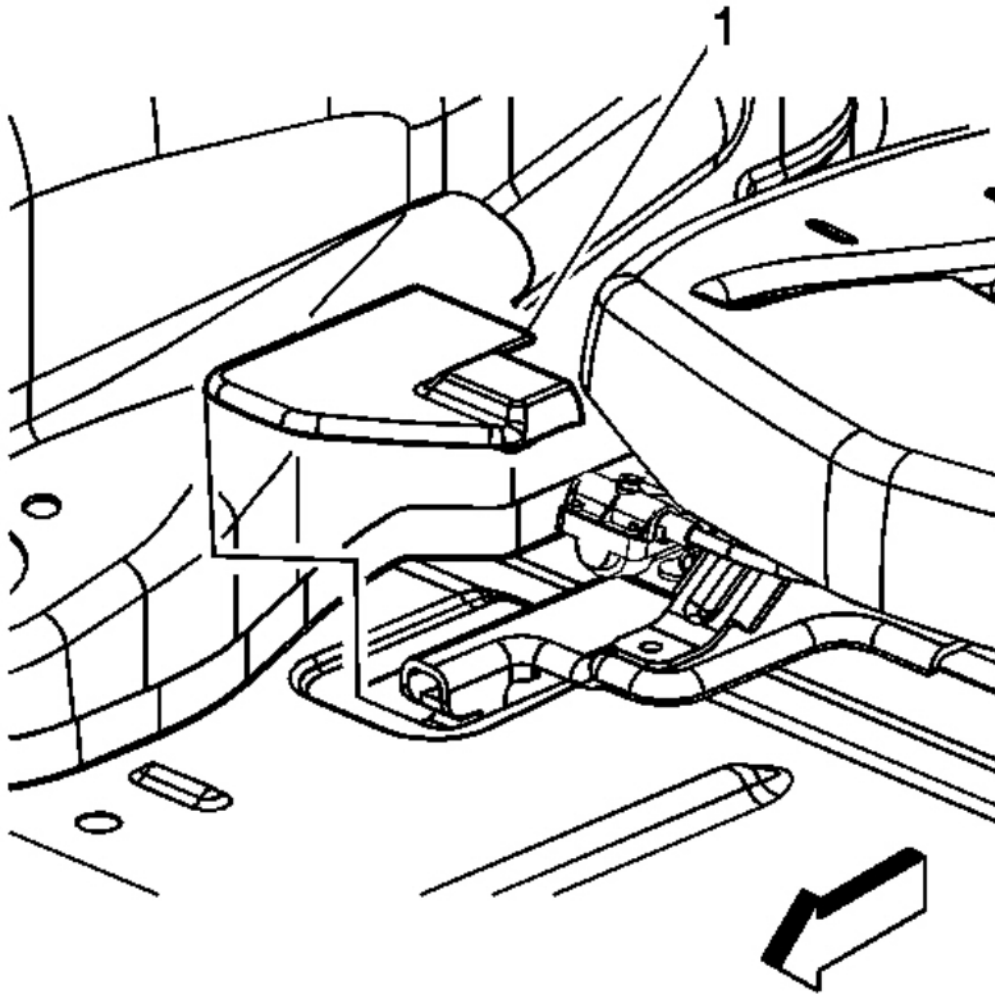


Fig. 145: View Of Rear Seat Front Track Cover
Courtesy of GENERAL MOTORS CORP.

1. Remove the rear seat track covers (1) from the front of the seat.
2. Raise the seat back to the upright position.

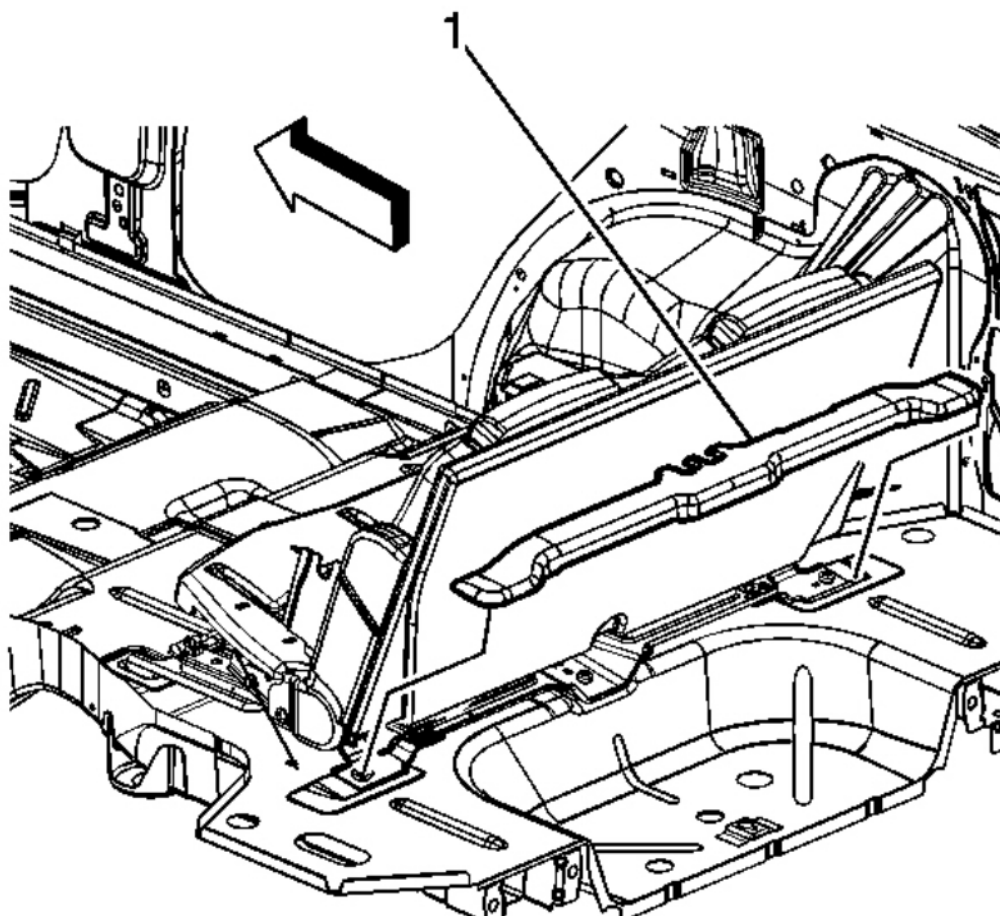


Fig. 146: View Of Rear Seat Rear Track Cover
Courtesy of GENERAL MOTORS CORP.

3. Remove the rear seat track cover (1) from the rear of the seat.

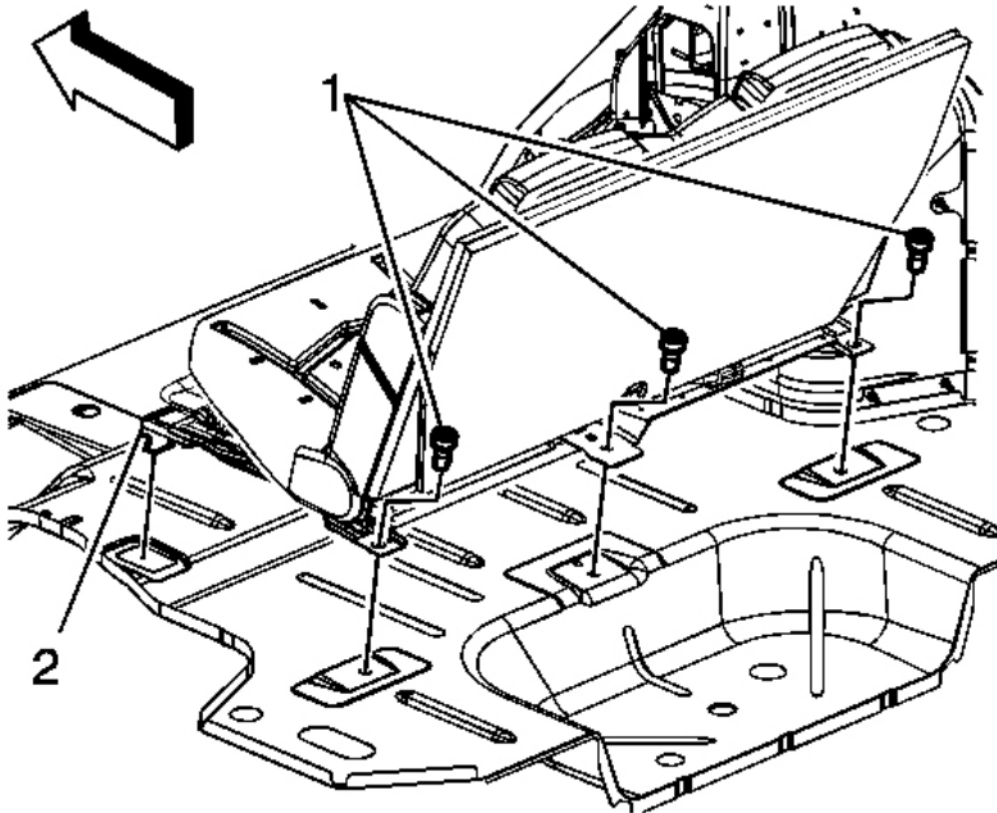


Fig. 147: Locating Rear Seat Mounting Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the rear seat mounting bolts (1) from the rear of the seat.
5. Disconnect the electrical connectors from the seat.
6. Remove the seat from the vehicle.

Installation Procedure

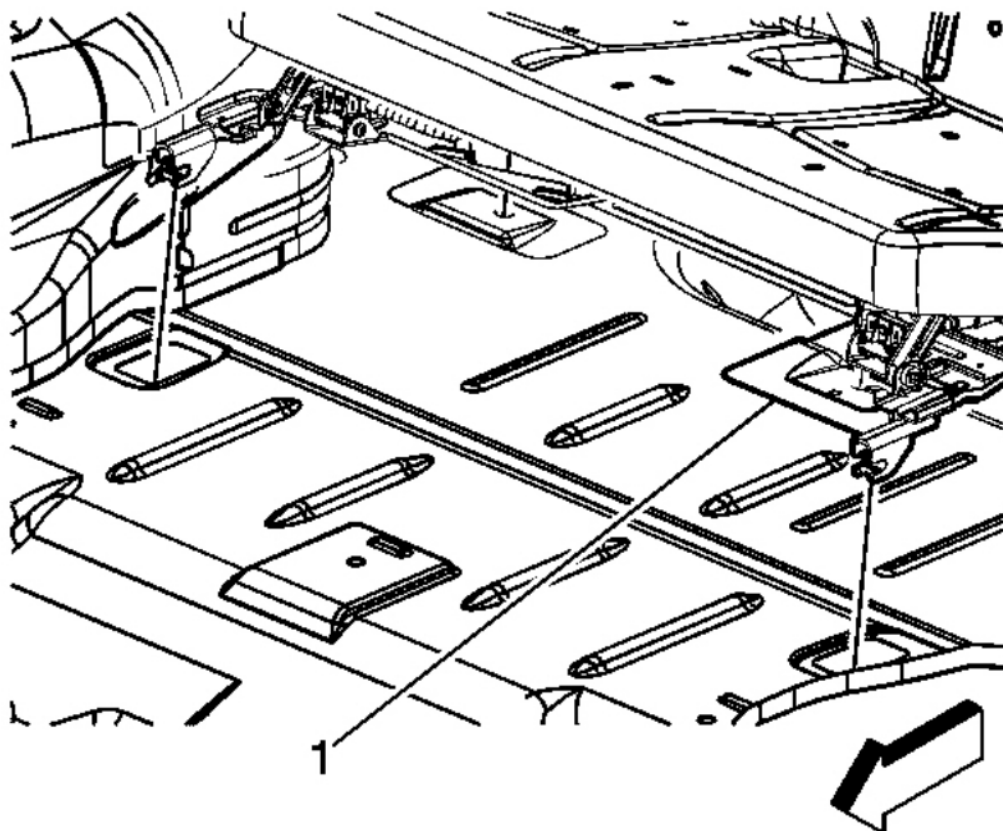


Fig. 148: Locating Rear Seat Hooks
Courtesy of GENERAL MOTORS CORP.

1. Insert the hooks (1) at the front of the seat into the slots in the floor.
2. Connect the electrical connector to the seat.

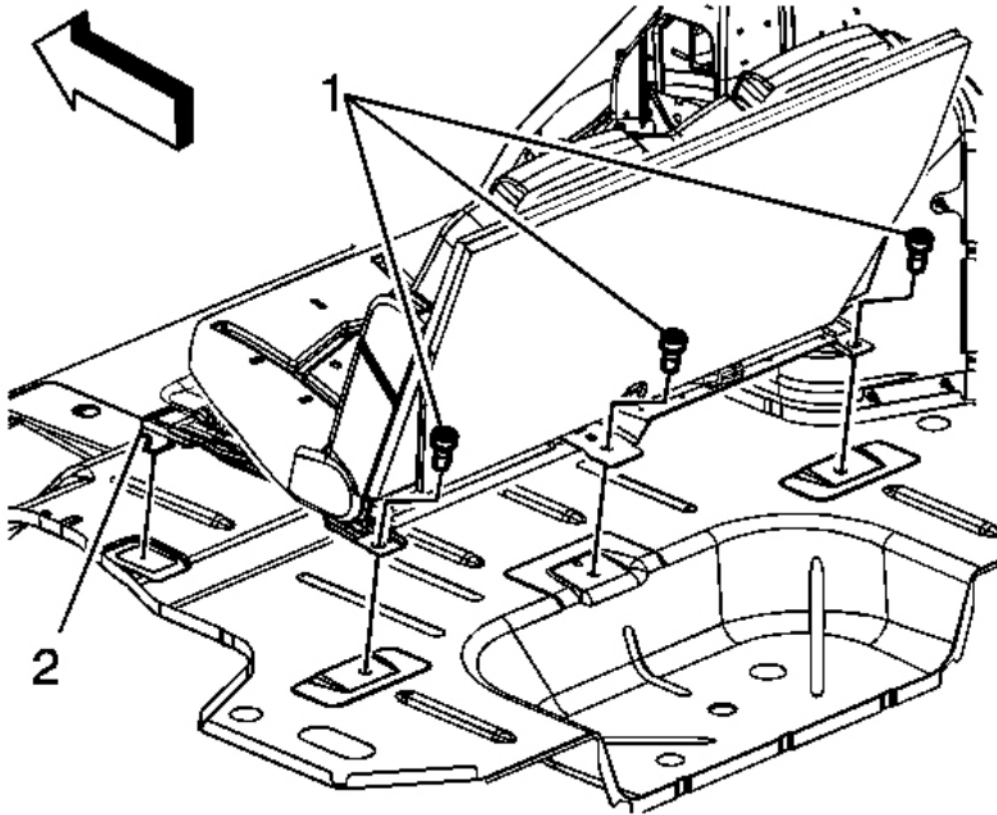


Fig. 149: Locating Rear Seat Mounting Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the rear seat mounting bolts (1).

Tighten: Tighten the mounting nuts to 45 N.m (33 lb ft).

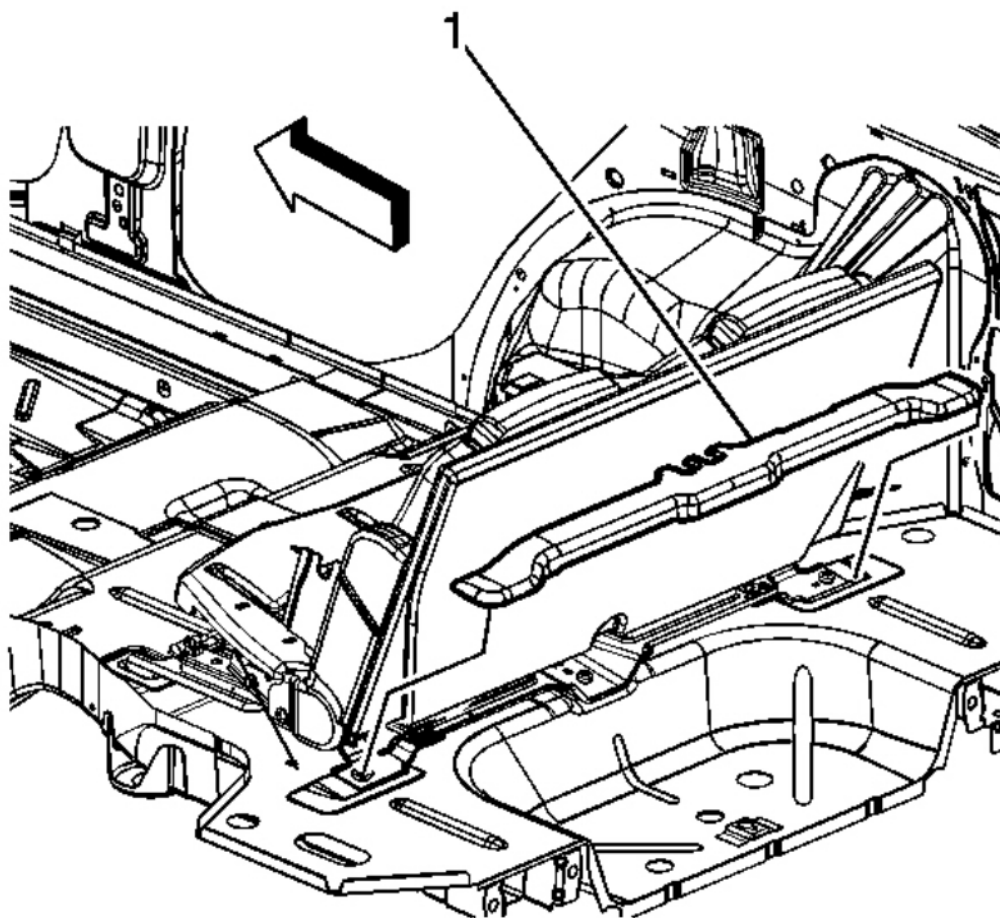


Fig. 150: View Of Rear Seat Rear Track Cover
Courtesy of GENERAL MOTORS CORP.

4. Install the seat track cover (1) to the rear of the seat track.

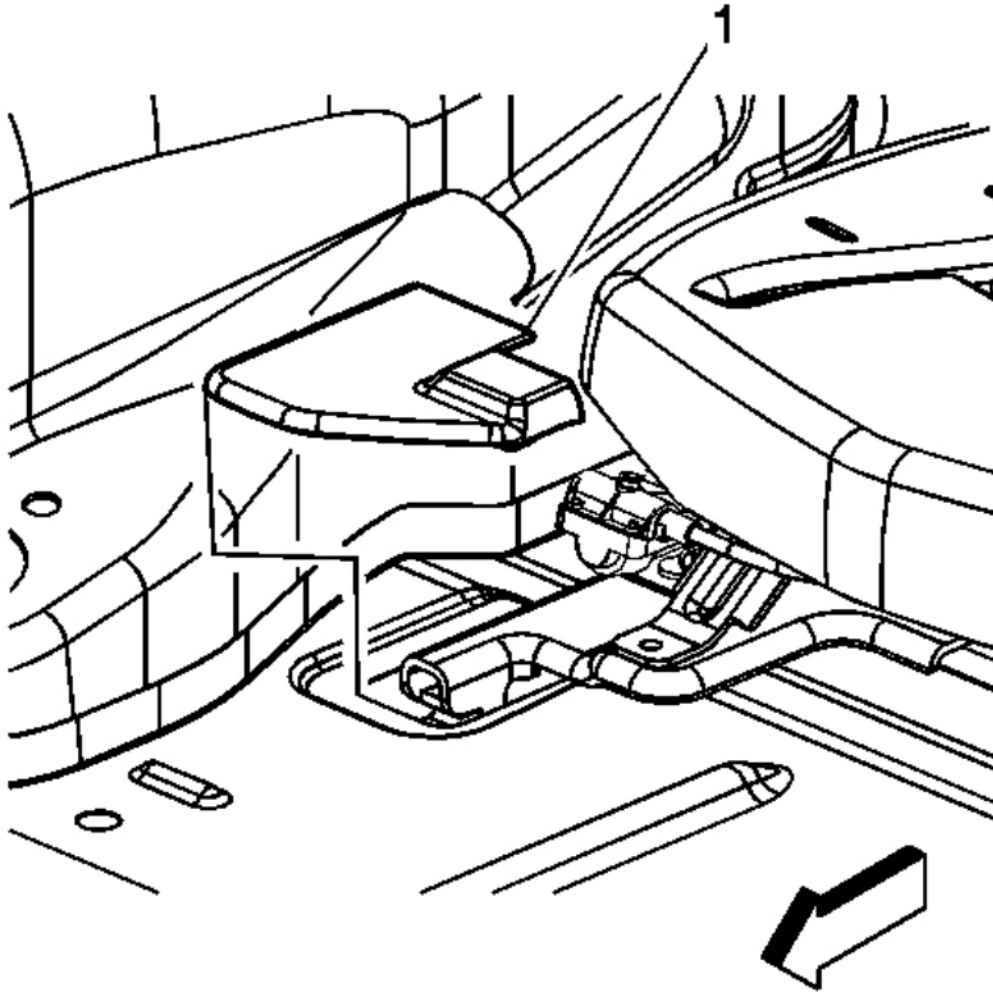


Fig. 151: View Of Rear Seat Front Track Cover
Courtesy of GENERAL MOTORS CORP.

5. Install the rear seat track covers to the front of the seat (1).
6. Calibrate the seat. Refer to **Power Folding Seat Calibration**.

SEAT CONTROL MODULE REPLACEMENT - REAR NO. 2

Removal Procedure

1. Remove the seat cushion frame. Refer to Seat Cushion Frame Replacement - Rear No. 2.

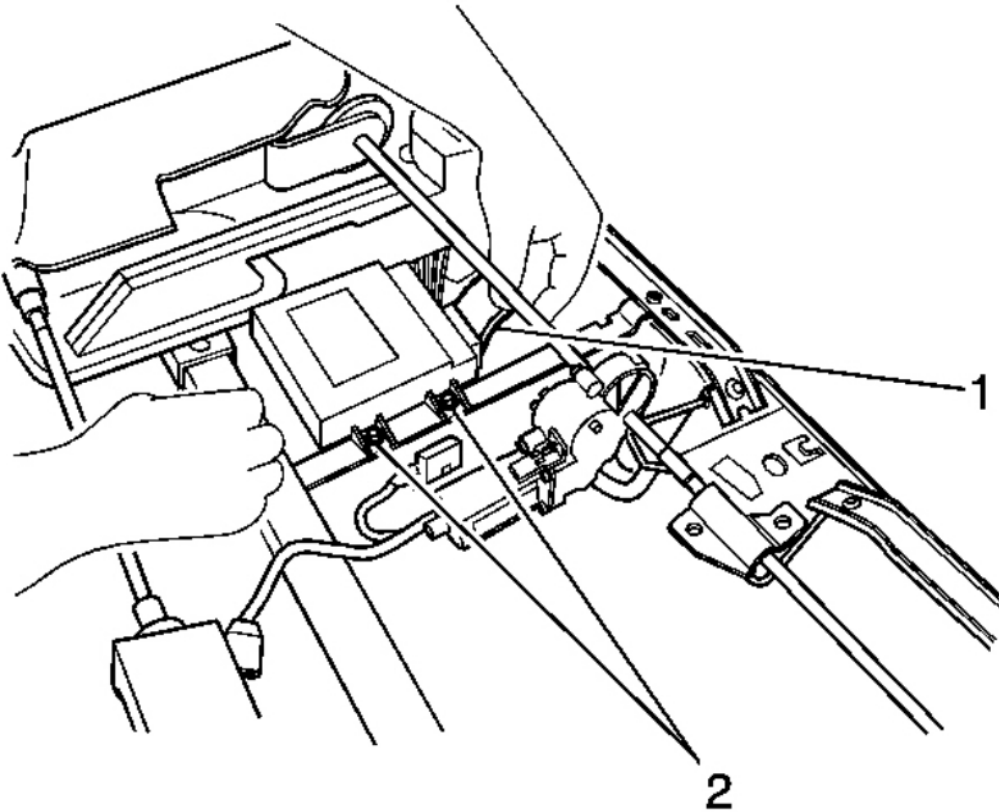


Fig. 152: View Of Seat Control Module Electrical Connector & Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the electrical connector (1) from the seat control module.
3. Remove the nuts from the control module (2).
4. Remove the module.

Installation Procedure

1. Install the seat control module on to seat adjuster.

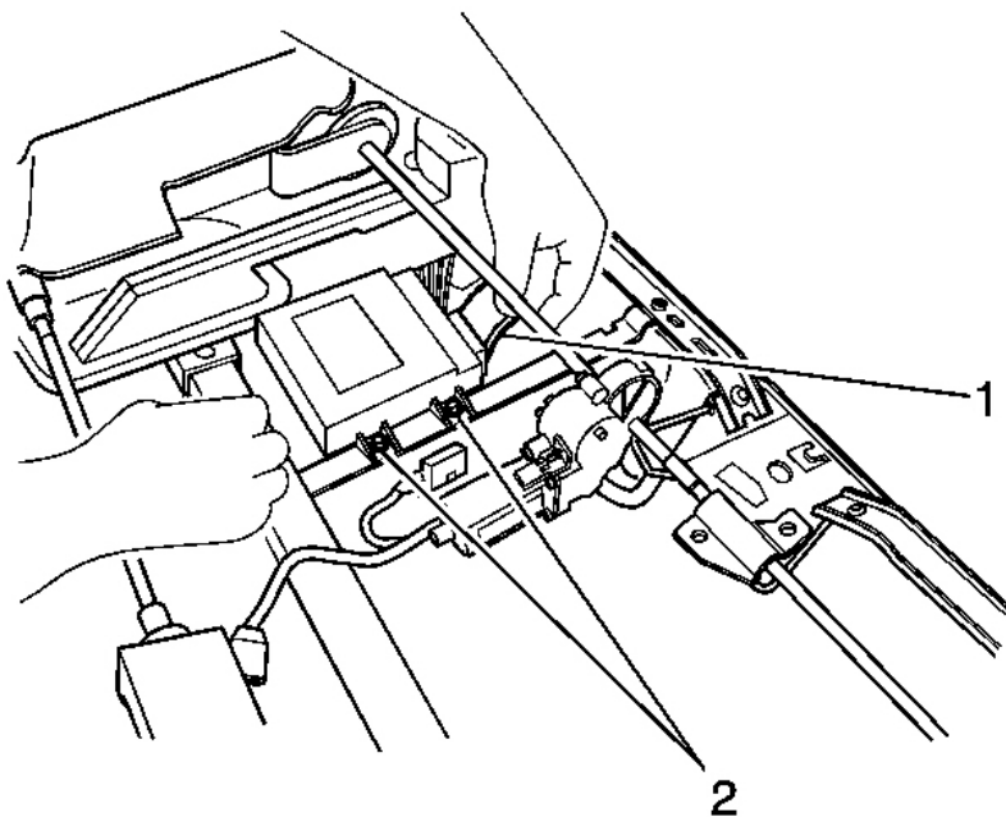


Fig. 153: View Of Seat Control Module Electrical Connector & Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the seat control module nuts (2).

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

3. Connect the electrical connector (2) to the control module.
4. Install the seat cushion frame. Refer to Seat Cushion Frame Replacement - Rear No. 2.
5. Calibrate the seat. Refer to Power Folding Seat Calibration.

POWER FOLDING SEAT CALIBRATION

The rear seat module (RSM) must be calibrated in order for the power folding seat to operate. Perform the following in order to prepare for and perform the RSM Auto Calibration.

1. The battery is fully charged.
2. The liftgate or the right rear passenger door is open.
3. Install a scan tool.
4. With a scan tool, navigate to the Auto Calibration screen by making the following selections:
 - Rear Seat Module
 - Special Functions
 - Auto Calibration
5. Follow the on screen instructions to calibrate the RSM.
6. With a scan tool, verify that the RSM is calibrated by making the following selections:
 - Rear Seat Module
 - Data Display
 - Data
7. The scan tool Calibrated parameter should display Yes.

SEAT BACK PRESENCE SENSOR REPLACEMENT - REAR NO. 2

Removal Procedure

1. Remove the seat back panel. Refer to **Seat Back Panel Replacement - Rear Seat No. 2.**

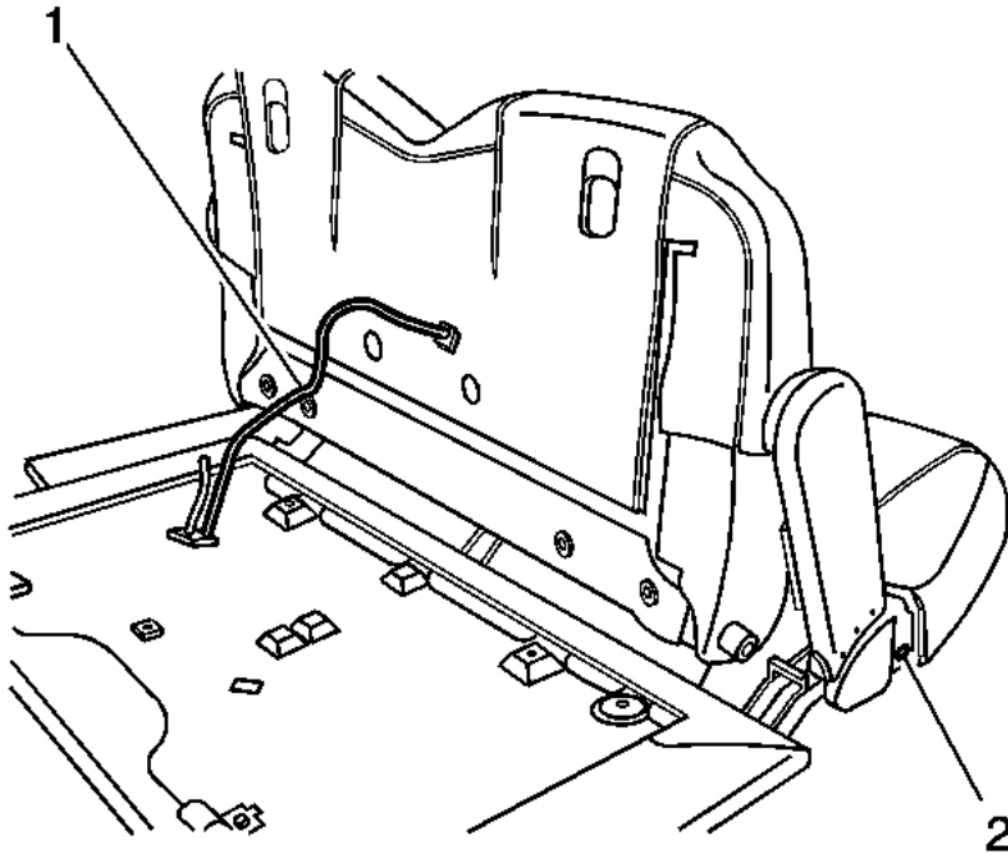


Fig. 154: View Of Seat Back Panel Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the electrical connectors (1) from the panel.
3. Remove the fasteners from the seat back presence sensor.
4. Remove the sensor.

Installation Procedure

1. Install the seat back presence sensor to the seat back panel.

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

2. Install the seat back presence sensor bolts to the seat back panel.

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

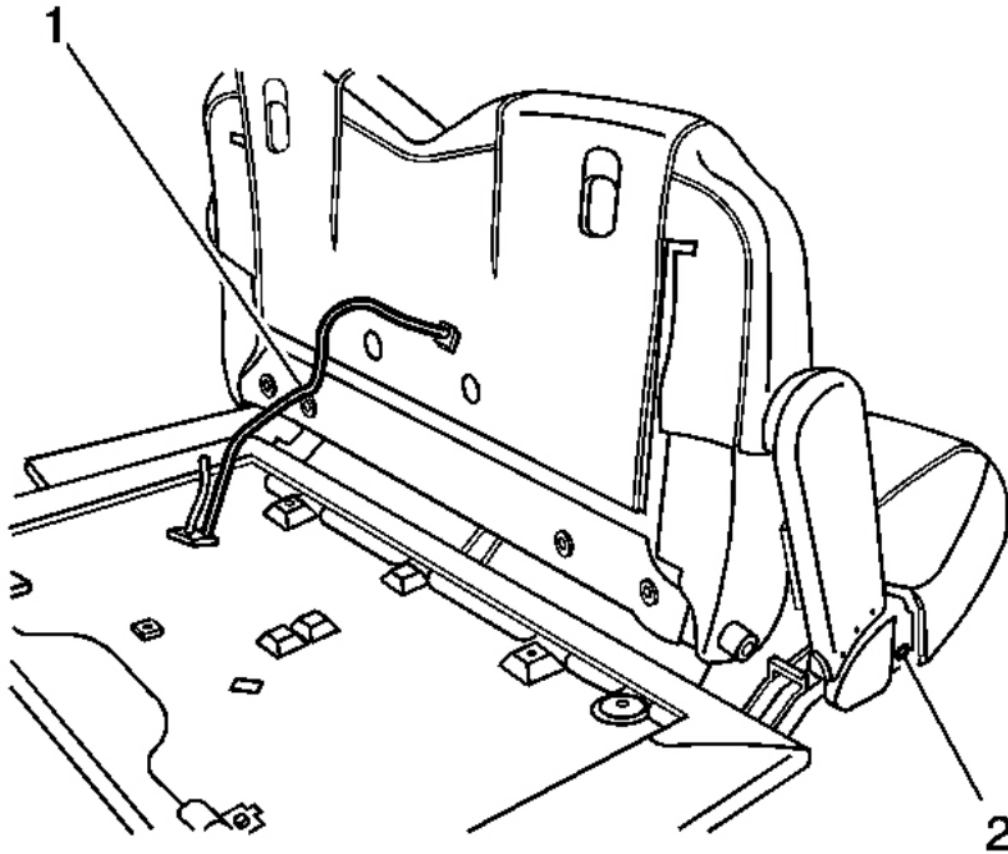


Fig. 155: View Of Seat Back Panel Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

3. Connect the electrical connectors (1) to the seat back panel.
4. Install the seat back panel. Refer to **Seat Back Panel Replacement - Rear Seat No. 2.**
5. Calibrate the seat. Refer to **Power Folding Seat Calibration.**

FOLDING SEAT SWITCH REPLACEMENT - REAR SEAT NO. 2 - REAR QUARTER TRIM REAR REAR

Removal Procedure

1. Remove the body side rear trim panel. Refer to **Trim Panel Replacement - Body Side Rear** in Body Rear End.

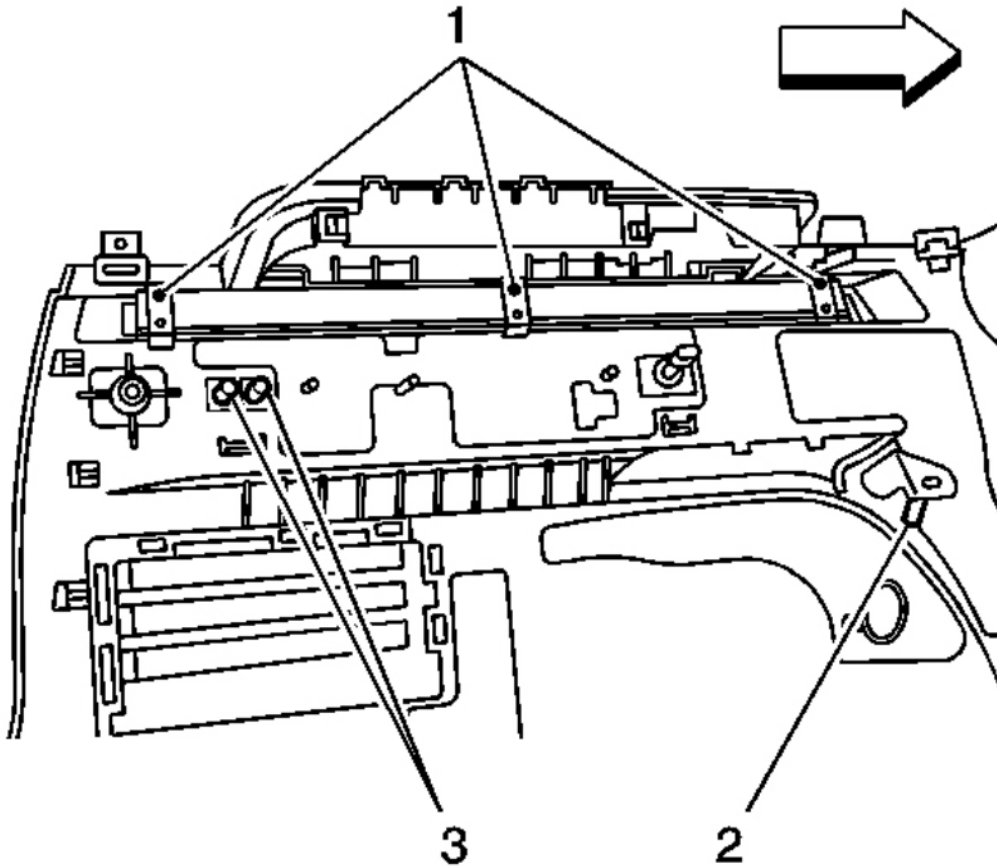


Fig. 156: Locating Folding Seat Switch
Courtesy of GENERAL MOTORS CORP.

2. Remove the folding seat switch (3) from the trim panel.

Installation Procedure

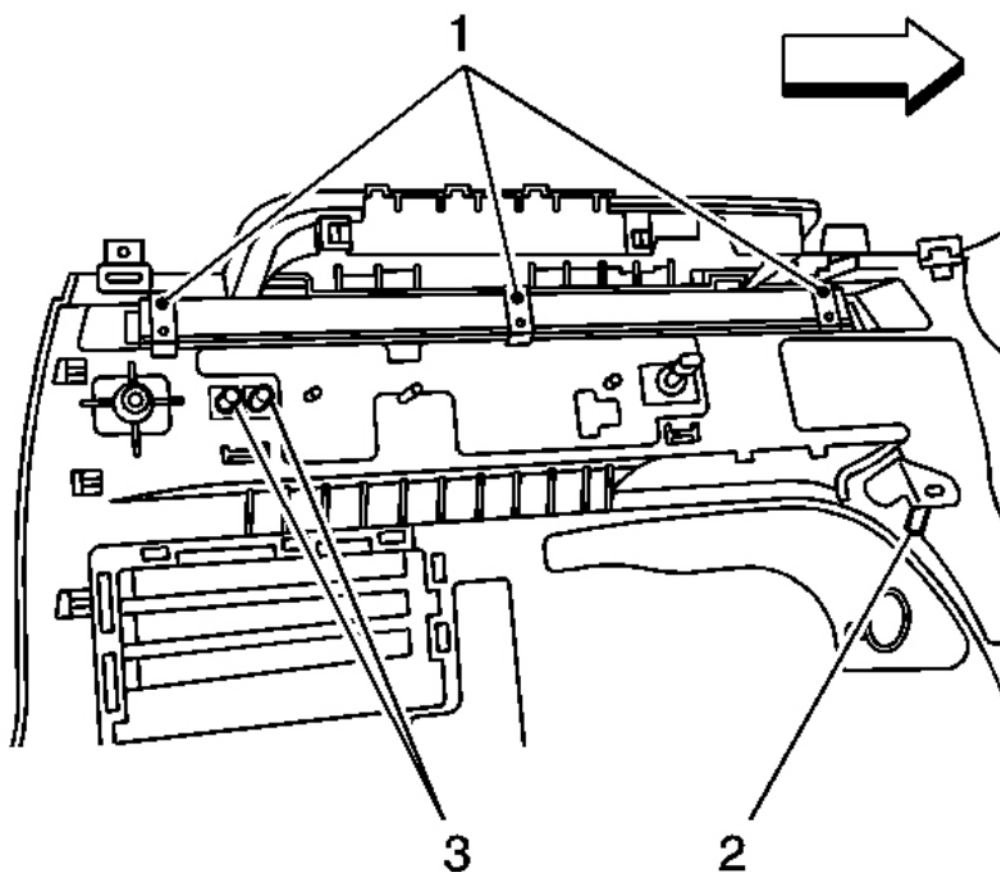


Fig. 157: Locating Folding Seat Switch
Courtesy of GENERAL MOTORS CORP.

1. Install the folding seat switch (3) to the trim panel.
2. Install the body side rear trim panel. Refer to **Trim Panel Replacement - Body Side Rear** in Body Rear End.
3. Calibrate the seat. Refer to **Power Folding Seat Calibration**.

FOLDING SEAT SWITCH REPLACEMENT - REAR SEAT NO.2 - REAR QUARTER TRIM FRONT FRONT

Removal Procedure

1. Remove the body side rear trim panel. Refer to **Trim Panel Replacement - Body Side**

Rear in Body Rear End.

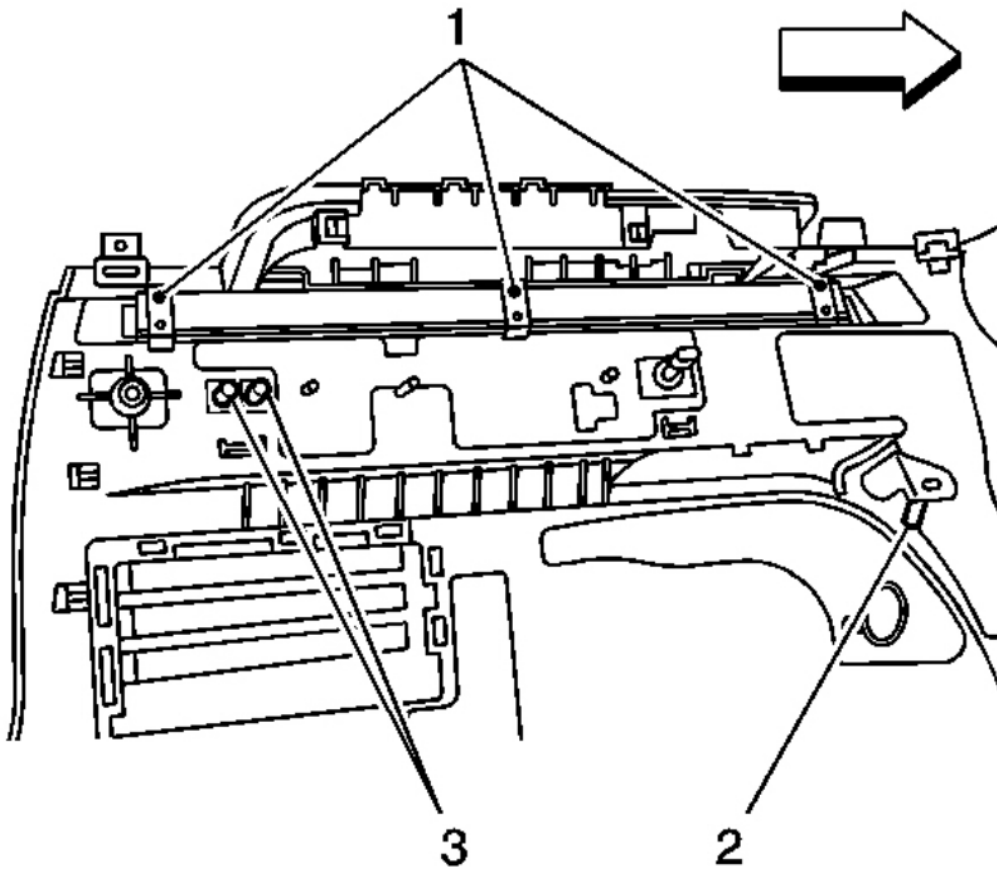


Fig. 158: Locating Folding Seat Switch
Courtesy of GENERAL MOTORS CORP.

2. Remove the folding seat switch (2) from the trim panel.

Installation Procedure

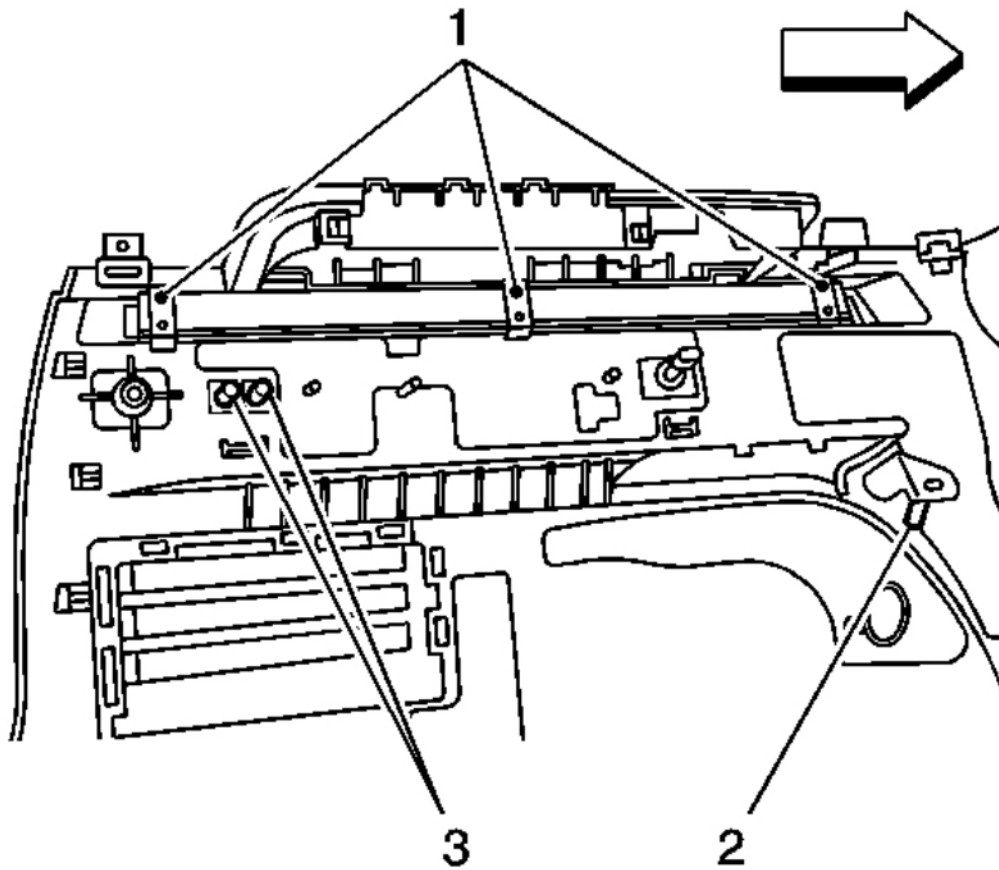


Fig. 159: Locating Folding Seat Switch
Courtesy of GENERAL MOTORS CORP.

1. Install the folding seat switch (2) to the trim panel.
2. Install the body side rear trim panel. Refer to **Trim Panel Replacement - Body Side Rear** in Body Rear End.
3. Calibrate the seat. Refer to **Power Folding Seat Calibration**.

SEAT BACK PANEL REPLACEMENT - REAR SEAT NO. 2

Removal Procedure

1. Lift the seat back panel up to access fastener covers.

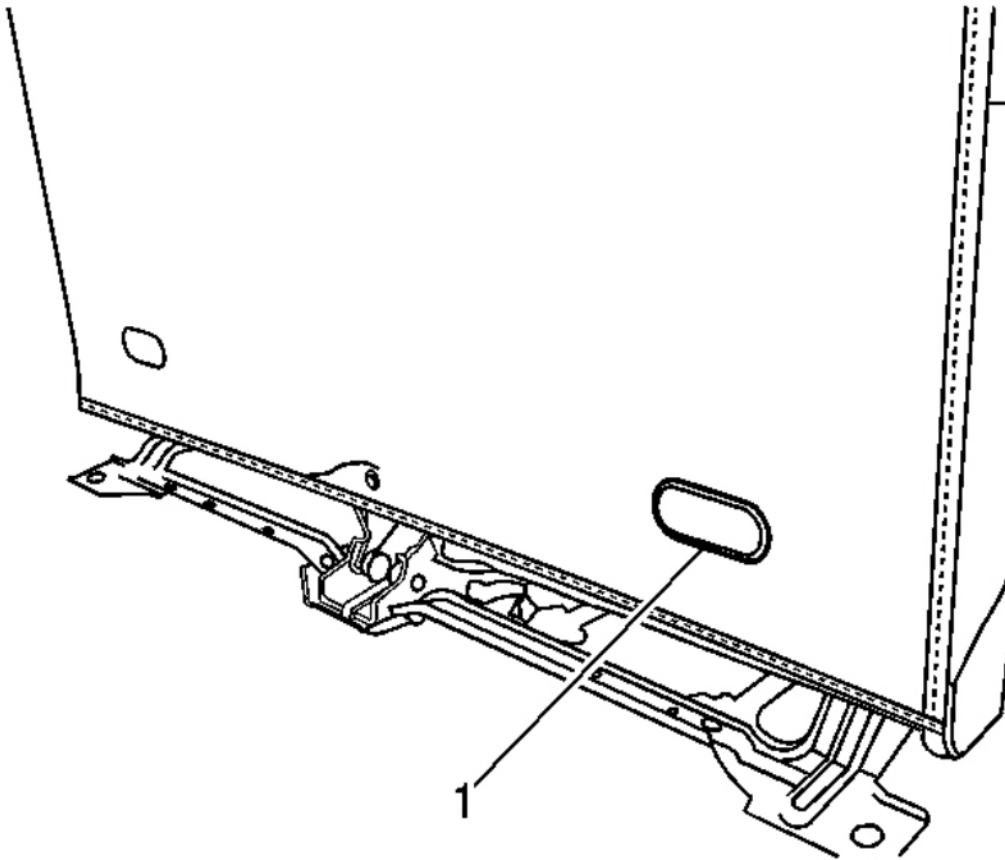


Fig. 160: View Of Seat Back Panel Fastener Covers

Courtesy of GENERAL MOTORS CORP.

2. Using a flat-bladed tool, remove the fastener covers (1) from the seat back panel.

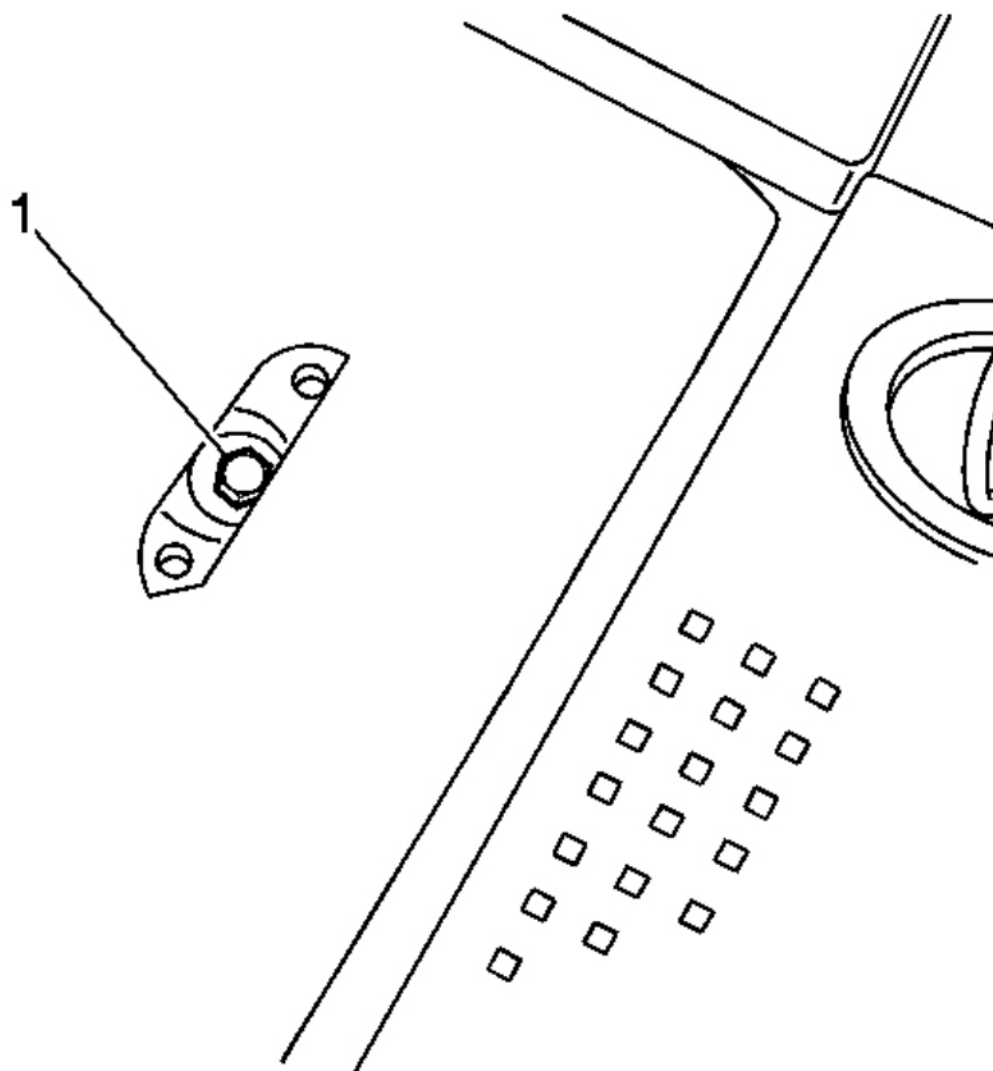


Fig. 161: View Of Seat Back Panel Bolt
Courtesy of GENERAL MOTORS CORP.

3. Remove the seat back panel bolts (1).

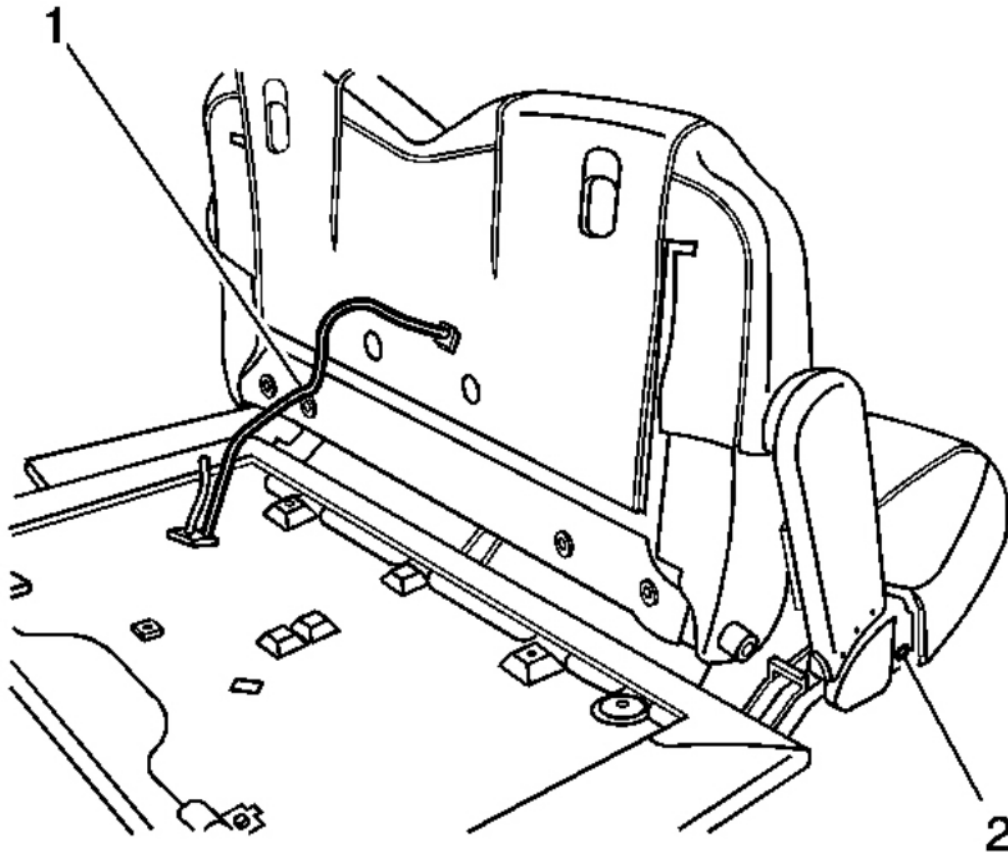


Fig. 162: View Of Seat Back Panel Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the electrical connectors (1) from the panel.
5. Remove the seat back panel.

Installation Procedure

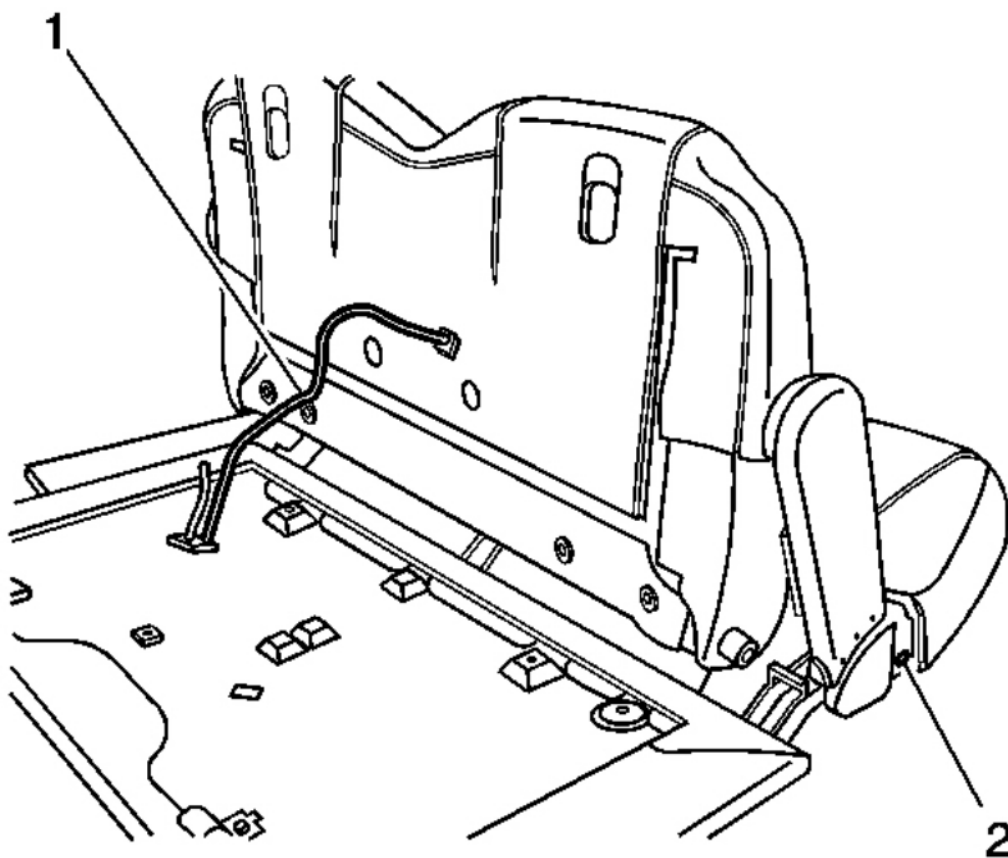


Fig. 163: View Of Seat Back Panel Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

1. Connect the electrical connectors (1) to the seat back panel.

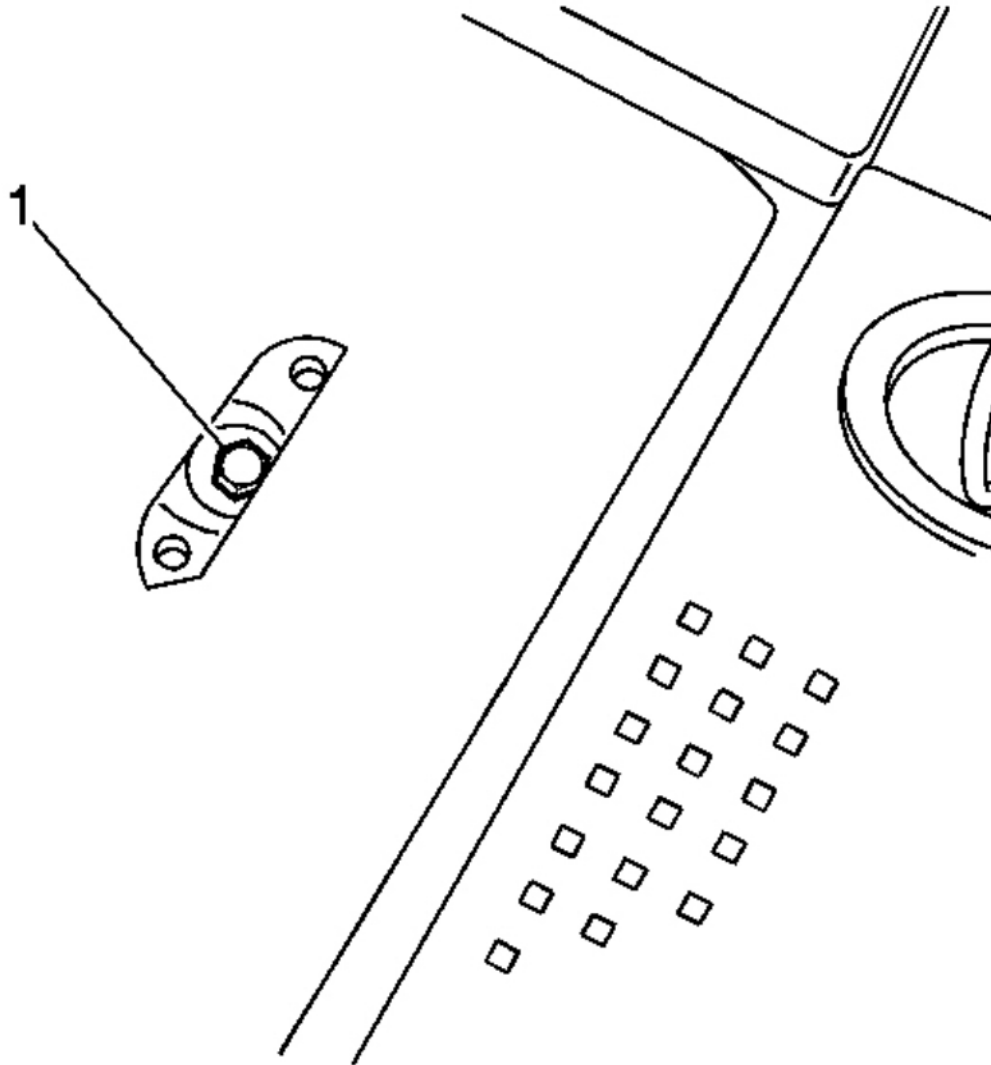


Fig. 164: View Of Seat Back Panel Bolt
Courtesy of GENERAL MOTORS CORP.

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

2. Install the seat back panel bolts (1) to the seat back.

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

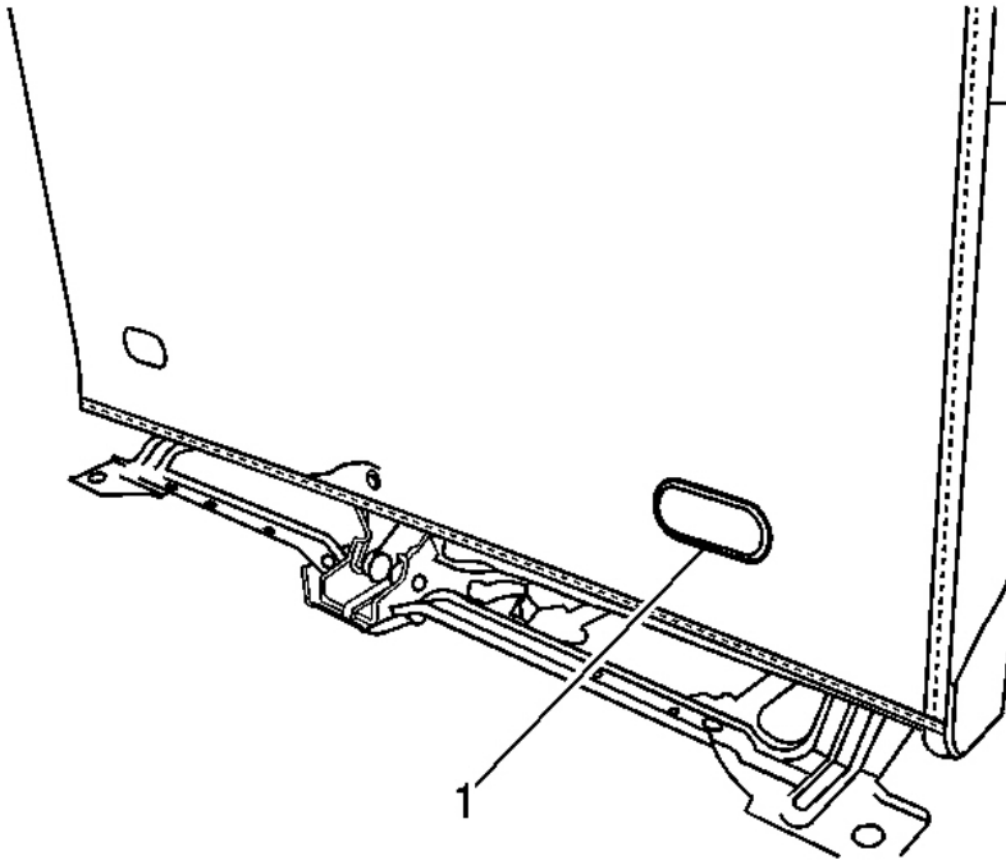


Fig. 165: View Of Seat Back Panel Fastener Covers
Courtesy of GENERAL MOTORS CORP.

3. Install the seat back panel fastener covers (1) to the seat back panel.
4. Calibrate the seat. Refer to **Power Folding Seat Calibration**.

RECLINER MOTOR REPLACEMENT - REAR NO. 2

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding**.
2. Remove the seat cushion frame. Refer to **Seat Cushion Frame Replacement - Rear No. 2**.

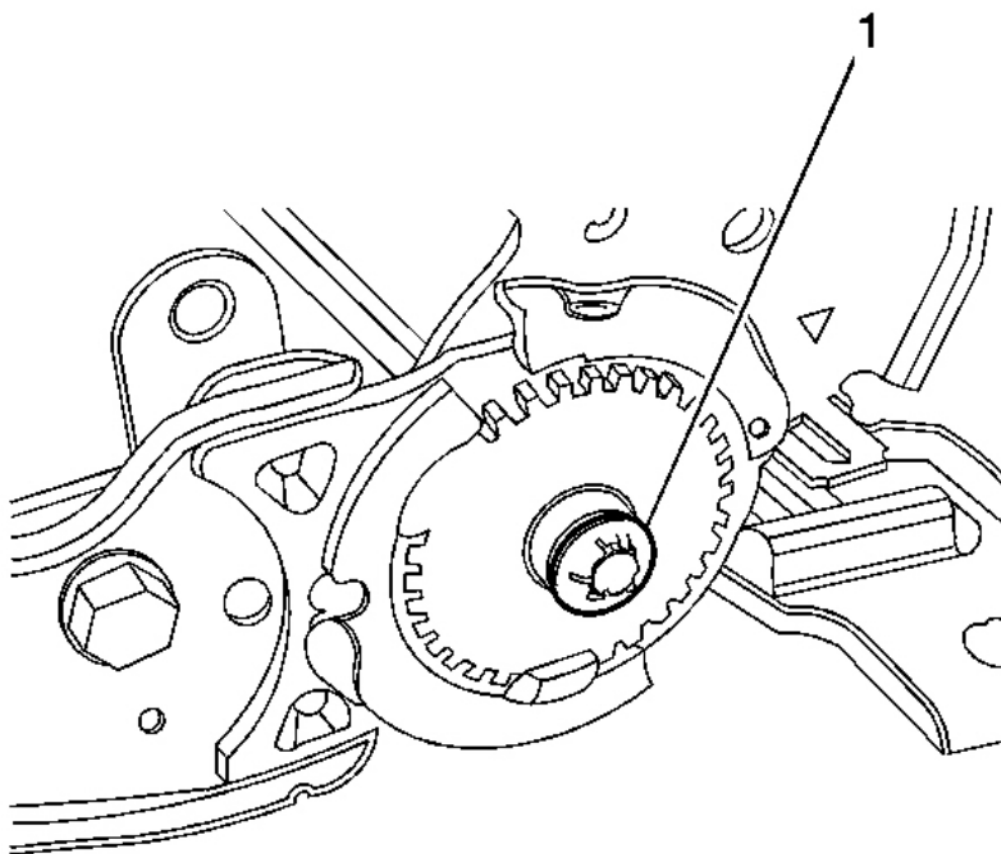


Fig. 166: View Of Recliner Motor Driveshaft Push On Retainer
Courtesy of GENERAL MOTORS CORP.

3. Remove the push on retainer (1) from the recliner motor driveshaft.
4. Disconnect the electrical connector from the motor.

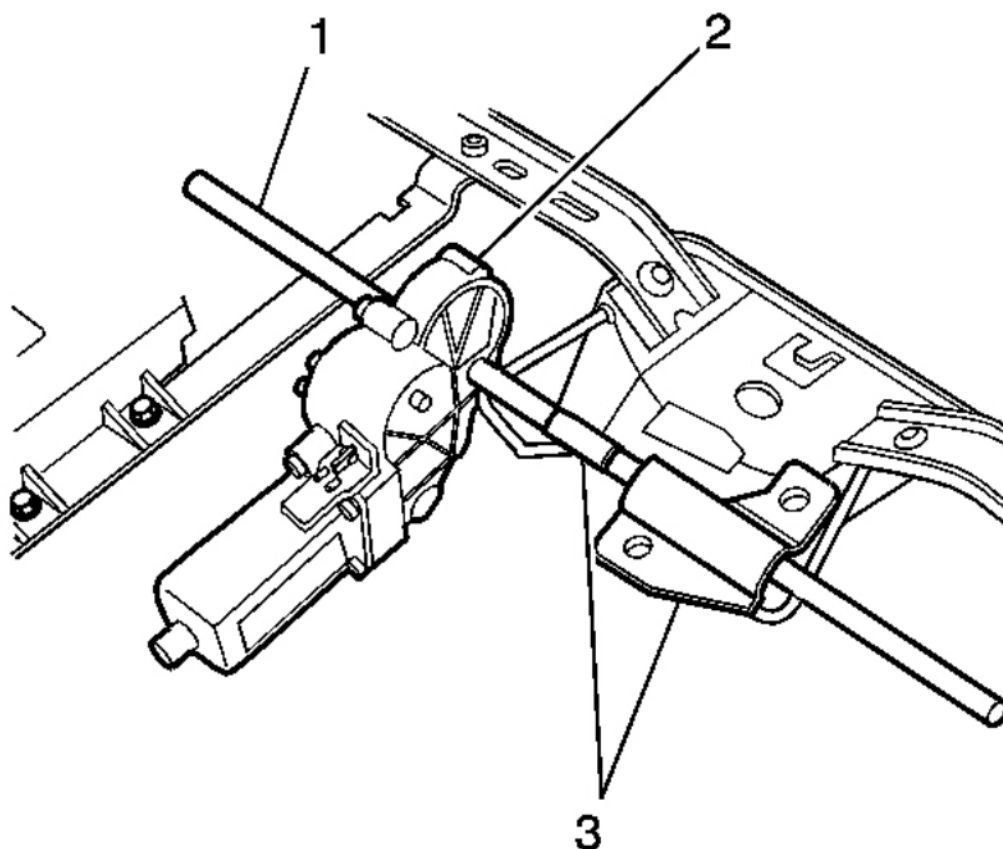


Fig. 167: View Of Recliner Motor
Courtesy of GENERAL MOTORS CORP.

5. Slide the shaft (1) out of the recliner motor (2) and bushings (3).

Installation Procedure

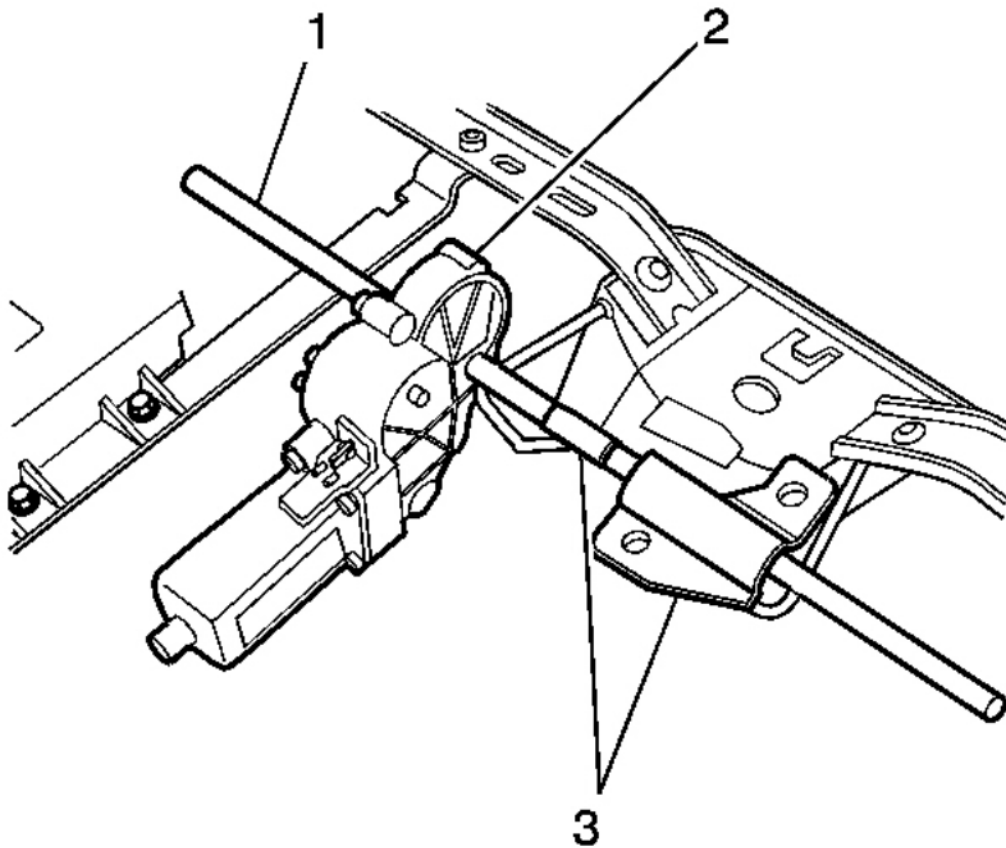


Fig. 168: View Of Recliner Motor
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Ensure that the bushings are installed facing as shown in illustration.

1. Slide the recliner motor driveshaft (1) through the recliner motor (2) and the bushings (3).
2. Connect the electrical connector to the recliner motor.

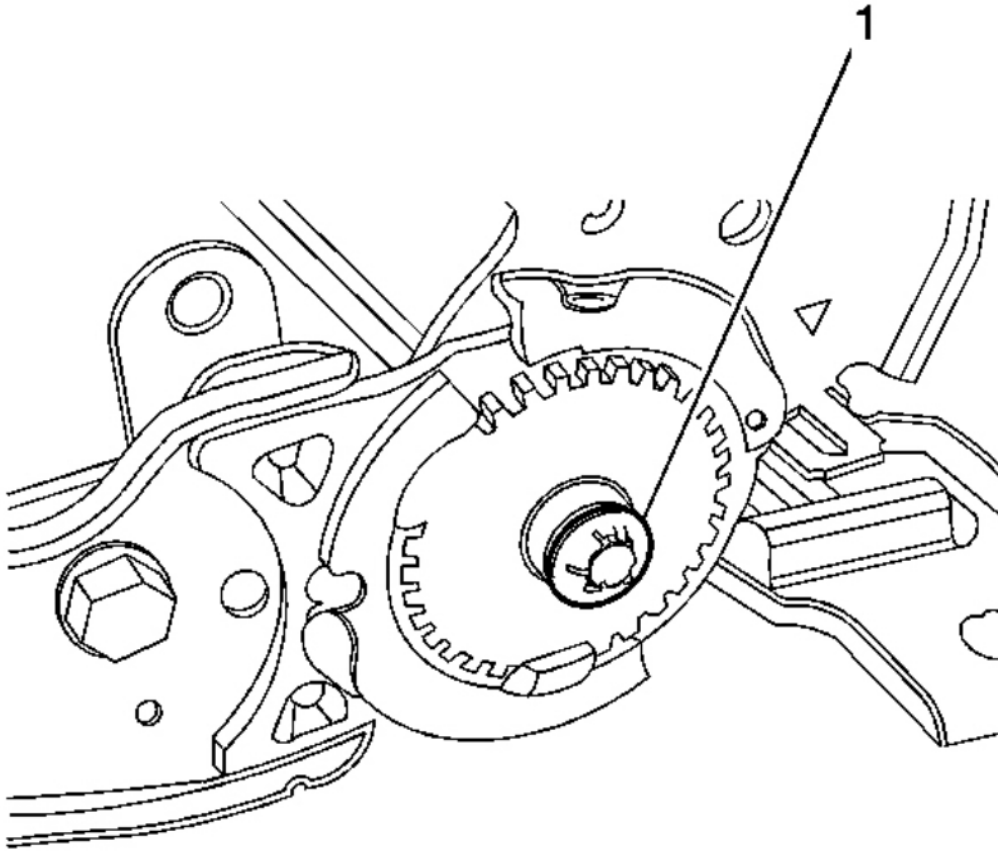


Fig. 169: View Of Recliner Motor Driveshaft Push On Retainer
Courtesy of GENERAL MOTORS CORP.

3. Install a new push on retainer (1) on the recliner motor driveshaft.
4. Install the seat cushion frame. Refer to **Seat Cushion Frame Replacement - Rear No. 2.**
5. Install the seat into the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding.**
6. Calibrate the seat. Refer to **Power Folding Seat Calibration.**

RAISING THE THIRD (REAR NO. 2) SEAT WHEN THERE IS AN ELECTRICAL FAILURE

Removal Procedure

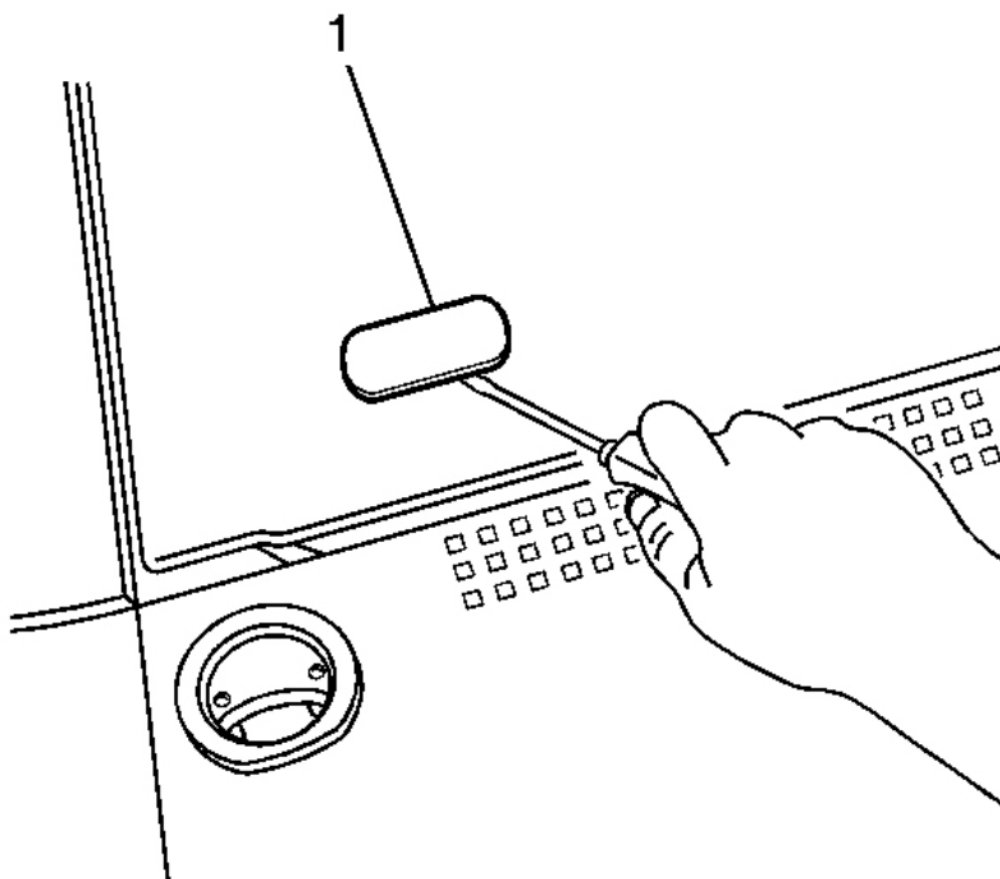


Fig. 170: View Of Seat Back Retainer Cover
Courtesy of GENERAL MOTORS CORP.

1. Using a flat-bladed tool, remove the retainer covers from the seat back (1).

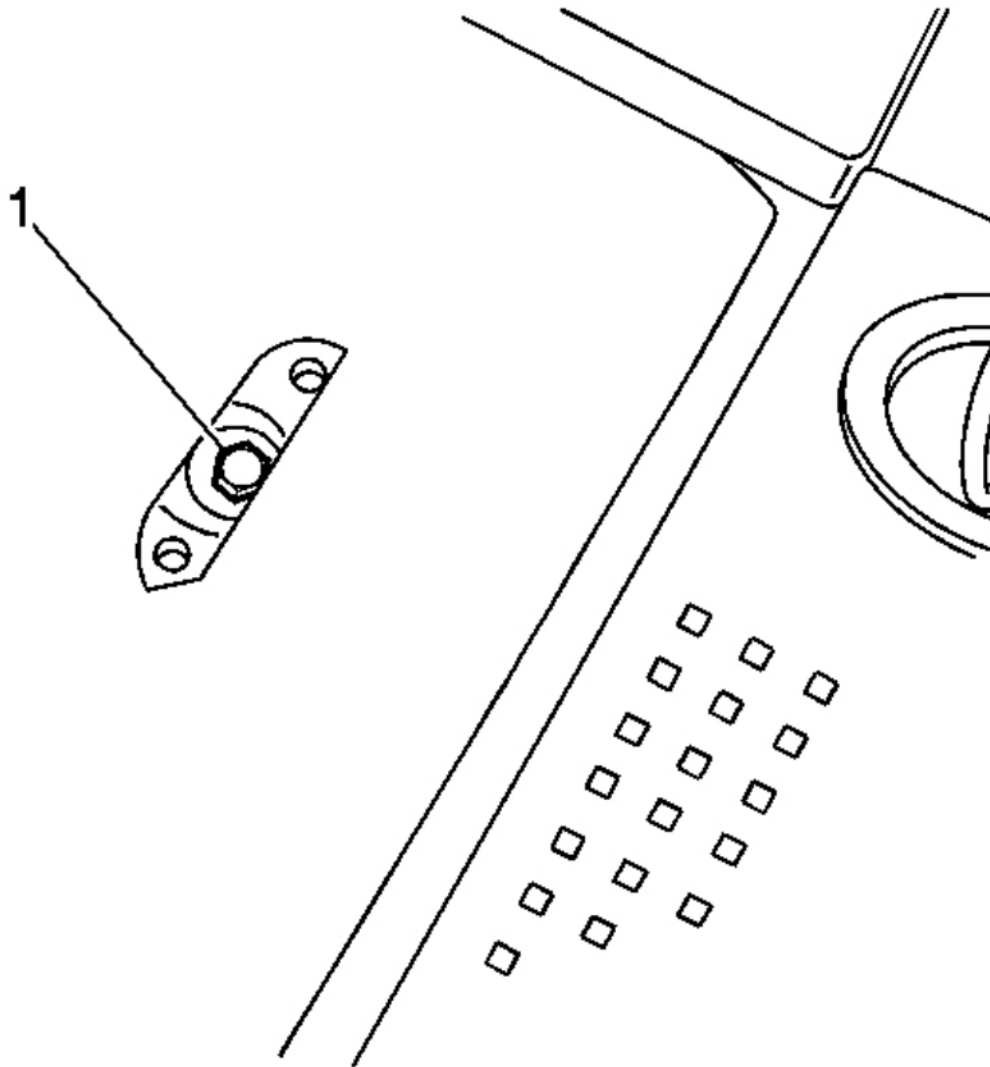


Fig. 171: View Of Seat Back Panel Bolt
Courtesy of GENERAL MOTORS CORP.

2. Remove the seat back panel bolts (1).

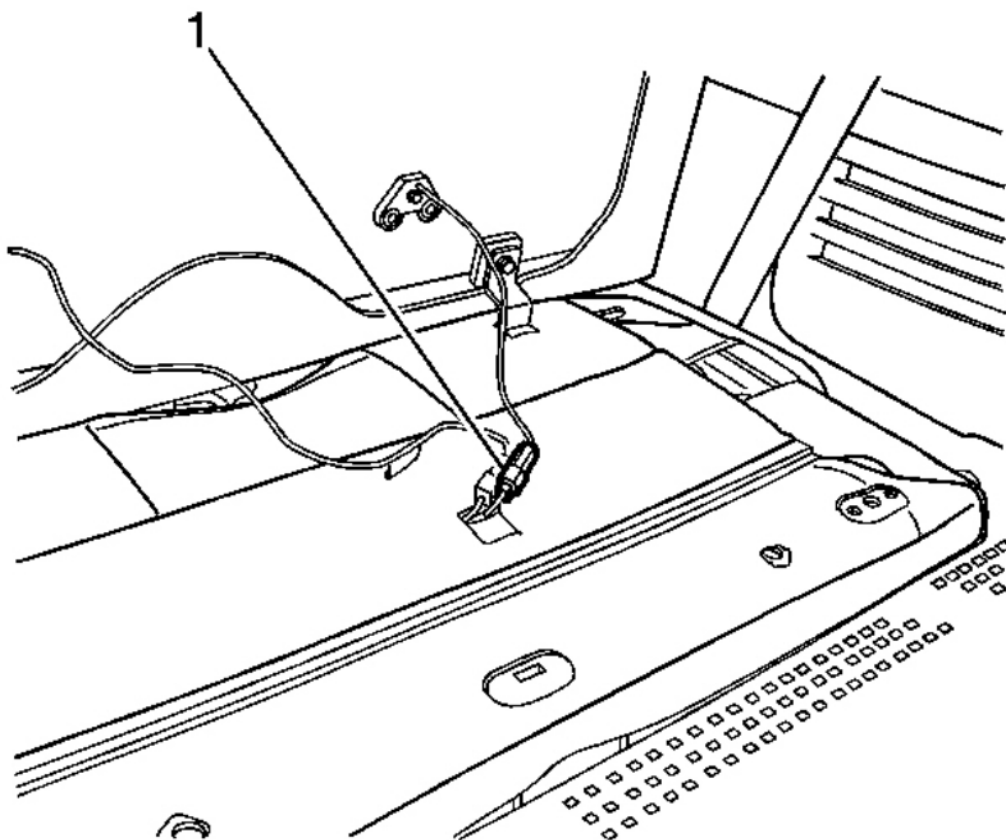


Fig. 172: View Of Seat Back Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the electrical connectors (1).

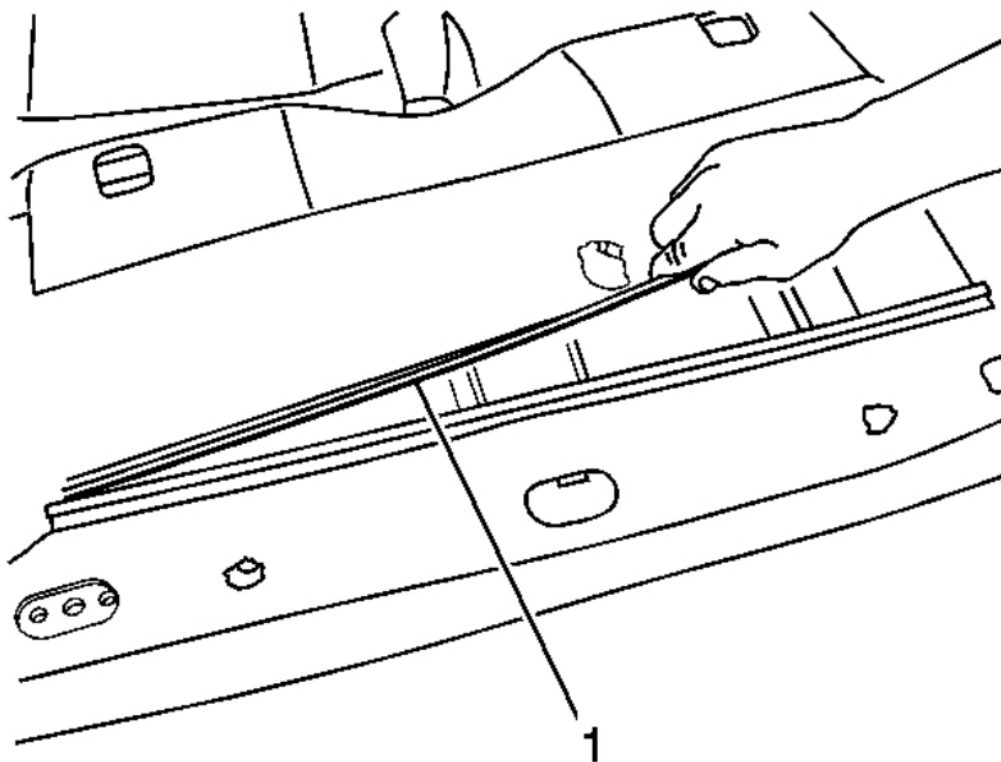


Fig. 173: View Of Side J-Channel

Courtesy of GENERAL MOTORS CORP.

4. Disconnect the seat back cover J-channel (1) sides.

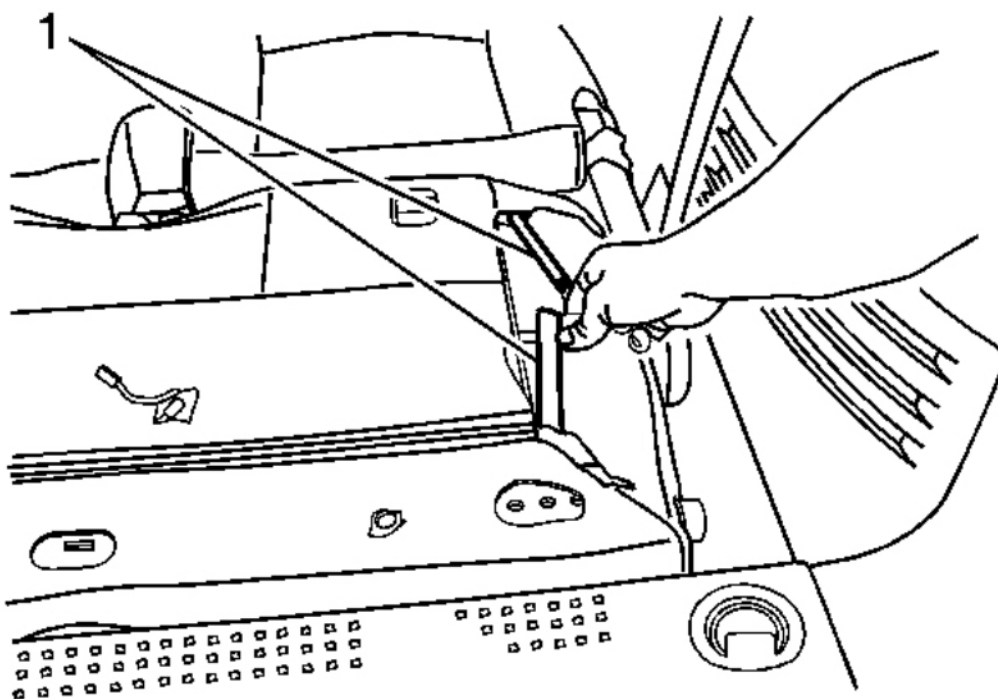


Fig. 174: View Of Seat Back Cover J-Channel
Courtesy of GENERAL MOTORS CORP.

5. Disconnect the seat back cover J-channel (1).

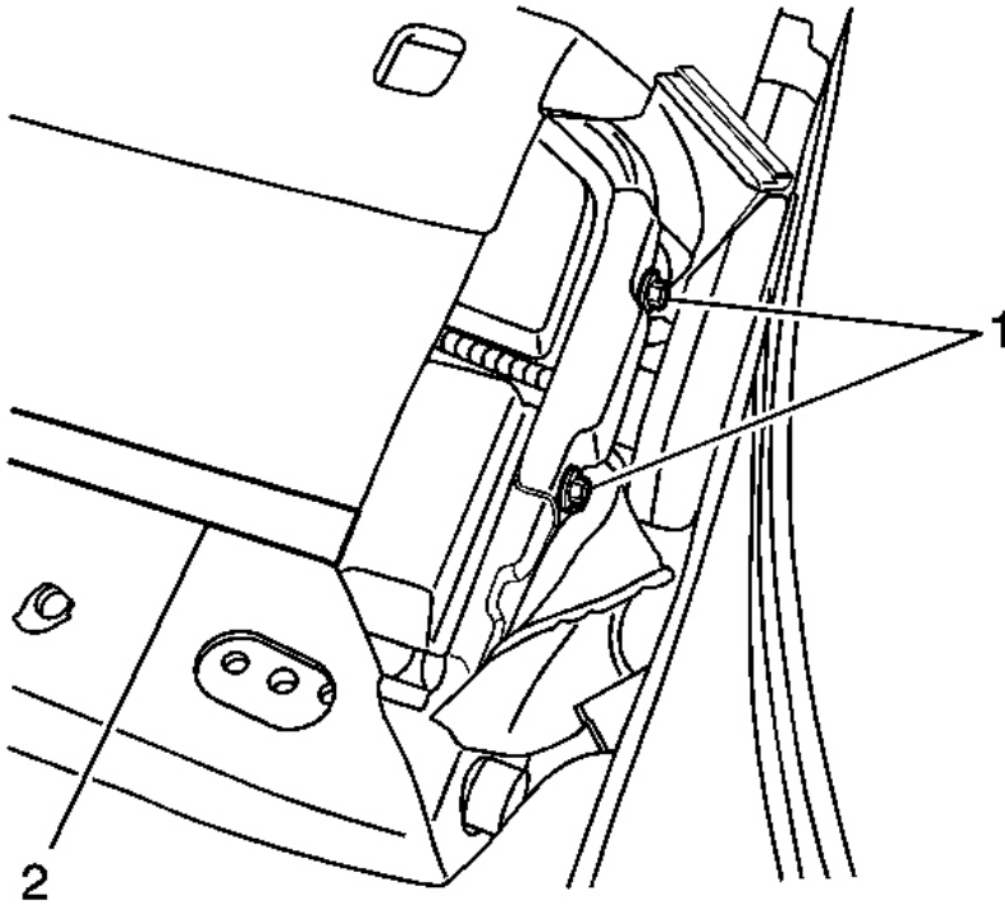


Fig. 175: Identifying Seat Back Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

6. Remove the seat back retaining bolts (1) from both sides of the seat back.
7. Carefully feed the harness through the side of the seat back as you remove the seat back.

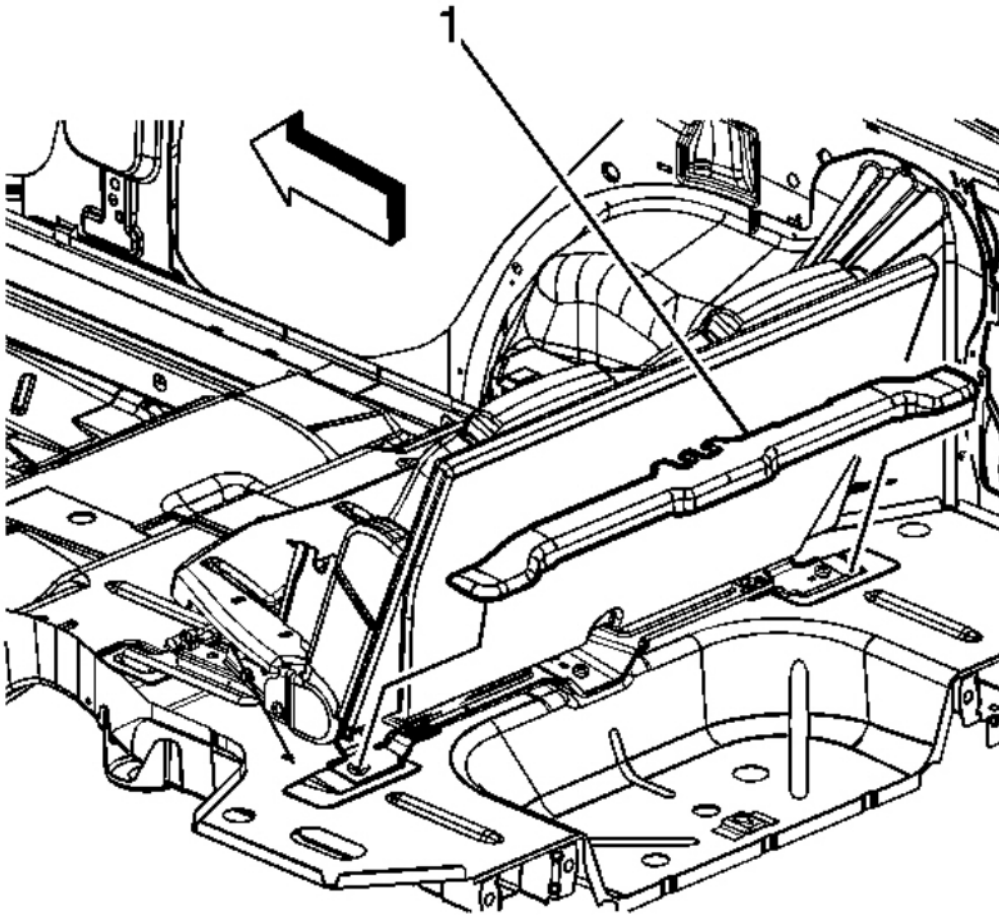


Fig. 176: View Of Rear Seat Rear Track Cover
Courtesy of GENERAL MOTORS CORP.

8. Remove the rear seat retainer cover (1).

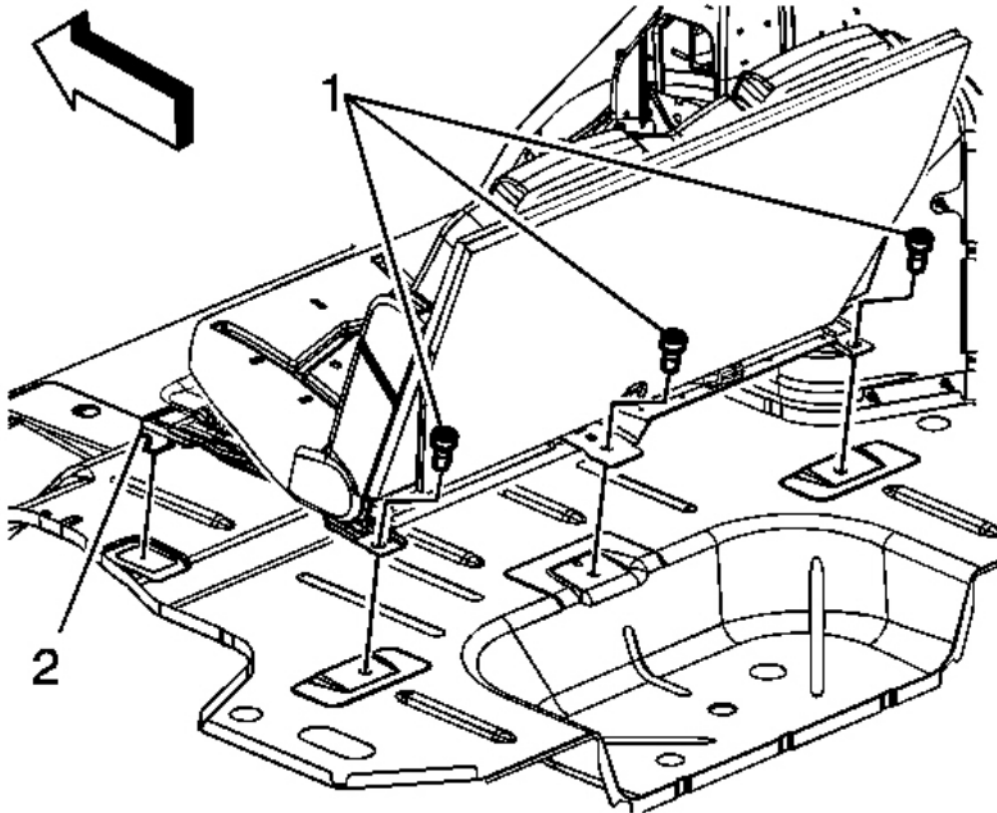


Fig. 177: Locating Rear Seat Mounting Bolts
Courtesy of GENERAL MOTORS CORP.

9. Remove the rear seat no. 2 retaining bolts (1).
10. Disconnect the electrical connectors from the rear seat.

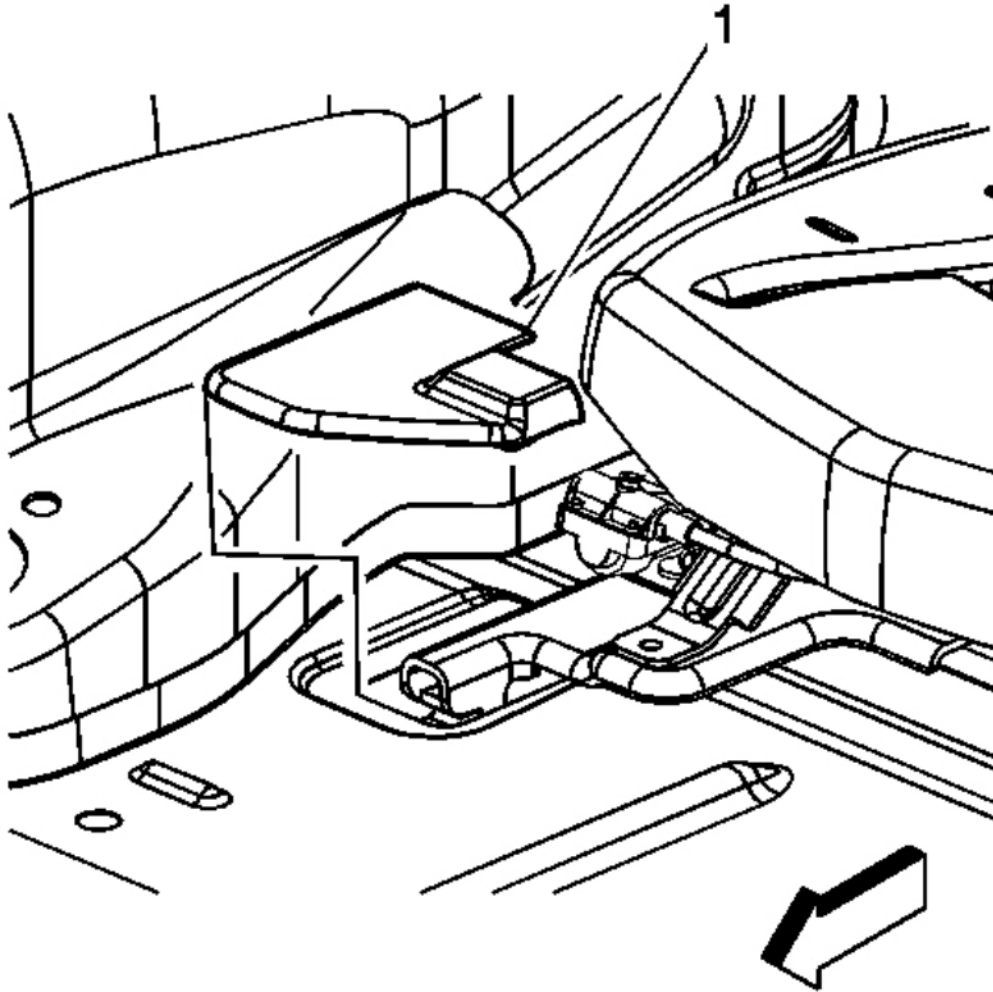


Fig. 178: View Of Rear Seat Front Track Cover
Courtesy of GENERAL MOTORS CORP.

11. Remove the seat track covers (1).
12. With the aid from an assistant, remove the rear seat.

SEAT BACK ROTATION MOTOR REPLACEMENT - REAR NO. 2

Removal Procedure

1. Remove the seat from the vehicle. Refer to Seat Replacement - Rear No. 2 - Folding.
2. Remove the rear seat back panel. Refer to Seat Back Panel Replacement - Rear Seat No. 2.
3. Remove the head restraints. Refer to Head Restraint Replacement - Rear No. 2.
4. Remove the rear seat back cover. Refer to Seat Back Cover and Pad Replacement - Rear No. 2.

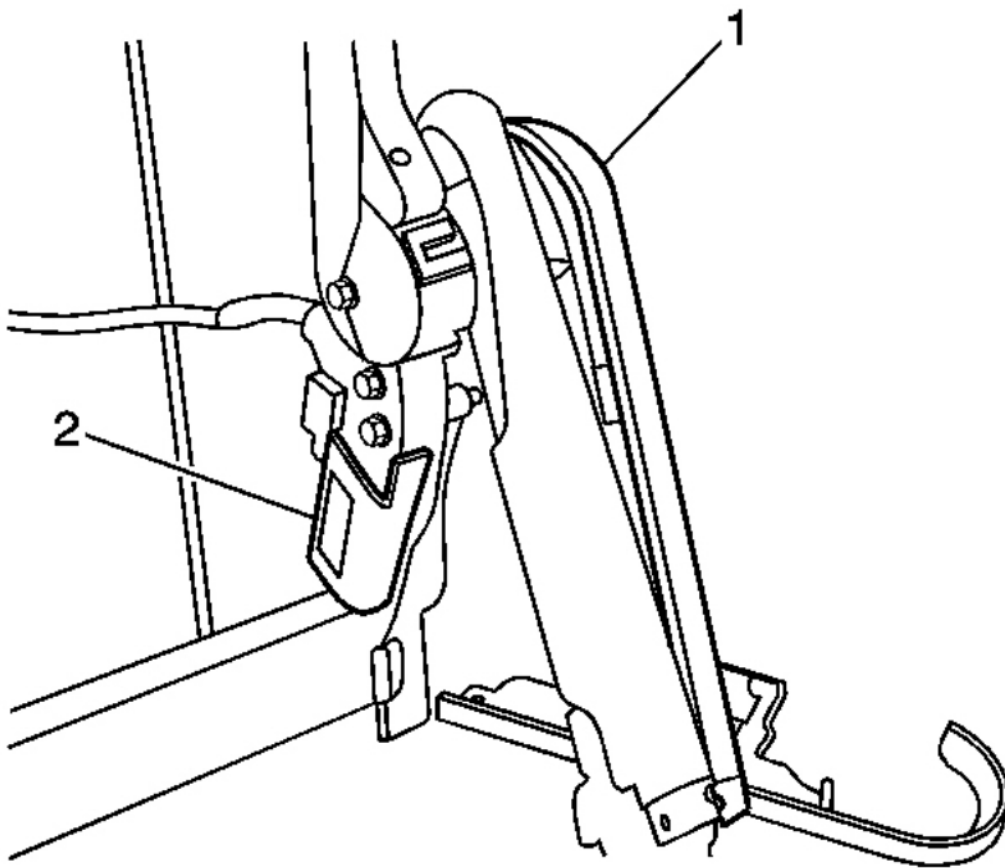


Fig. 179: View Of Inner Recliner Arm Covers
Courtesy of GENERAL MOTORS CORP.

5. Remove the inner recliner arm covers (1) from the seat back.

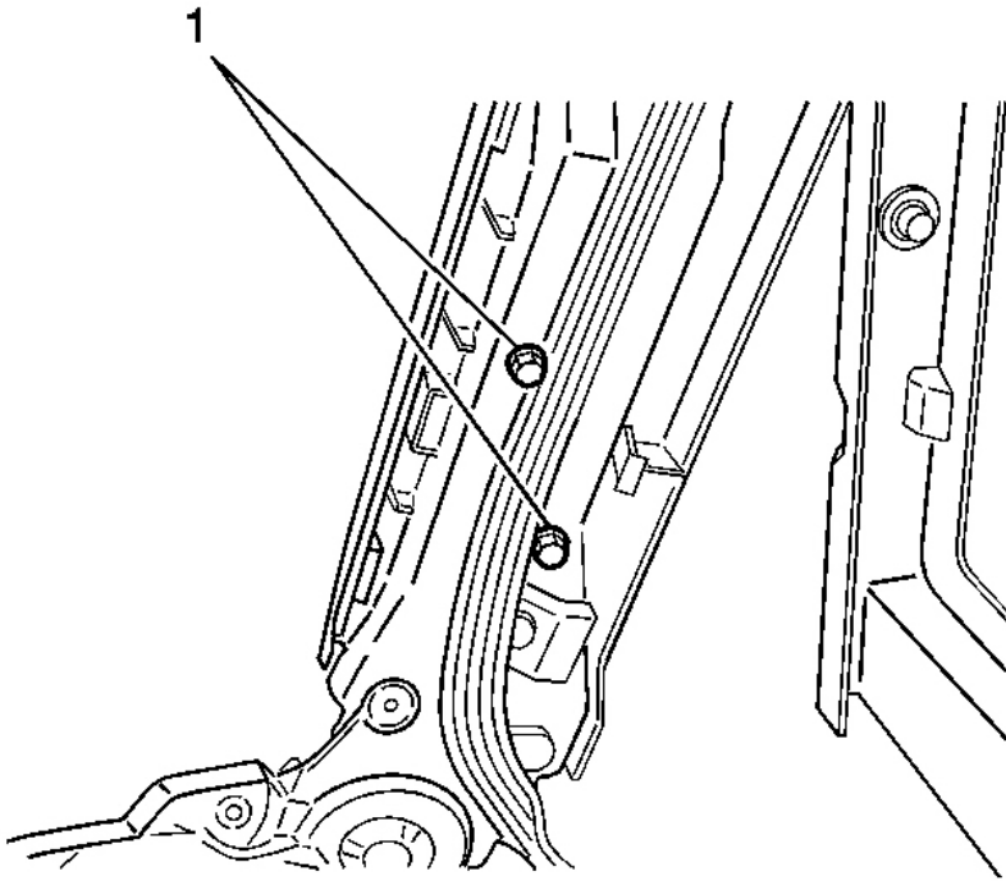


Fig. 180: View Of Outer Recliner Arm Cover Screws
Courtesy of GENERAL MOTORS CORP.

6. Remove the outer recliner arm cover screws (1).
7. Remove the outer recliner arm pivot covers.
8. Disconnect the electrical connector from the rotation motor.

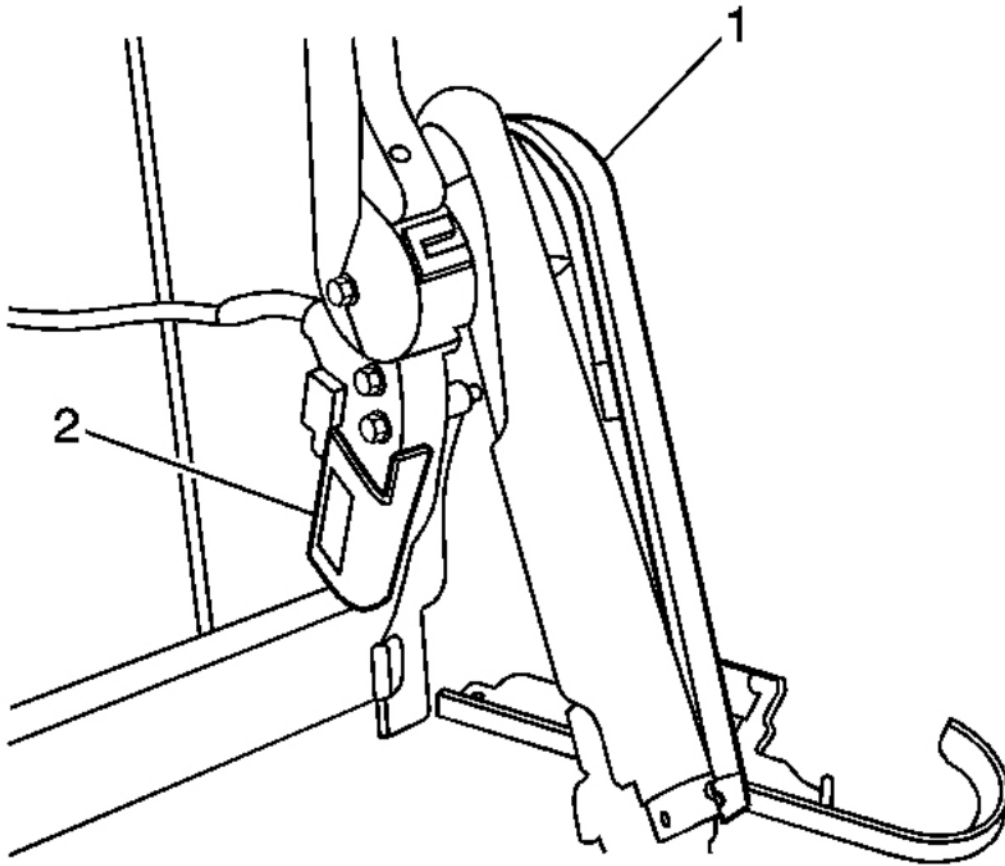


Fig. 181: View Of Inner Recliner Arm Covers
Courtesy of GENERAL MOTORS CORP.

9. Remove the rotation motor bolts (2).
10. Slide the rotation motor off of the driveshaft.

Installation Procedure

1. Slide the rotation motor on to the driveshaft.

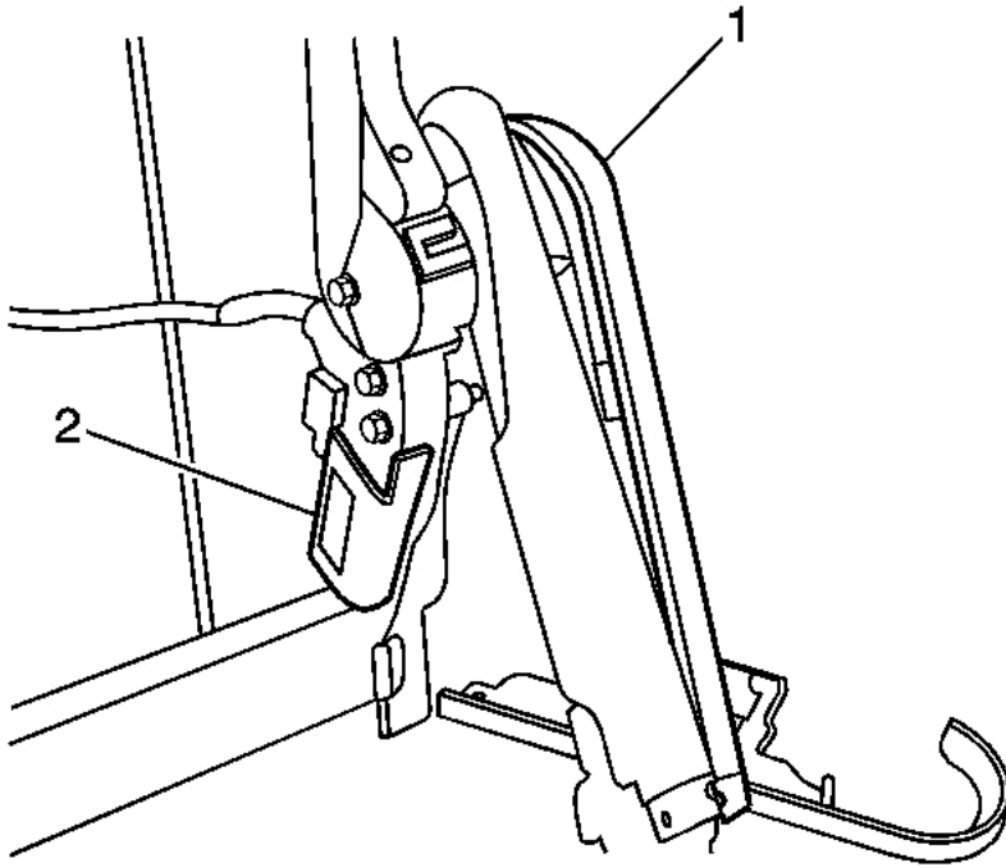


Fig. 182: View Of Inner Recliner Arm Covers
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the rotation motor mounting bolts (2).

Tighten: Tighten the bolts to 7 N.m (62 lb in).

3. Connect the electrical connector to the rotation motor.
4. Install the outer recliner arm pivot covers.

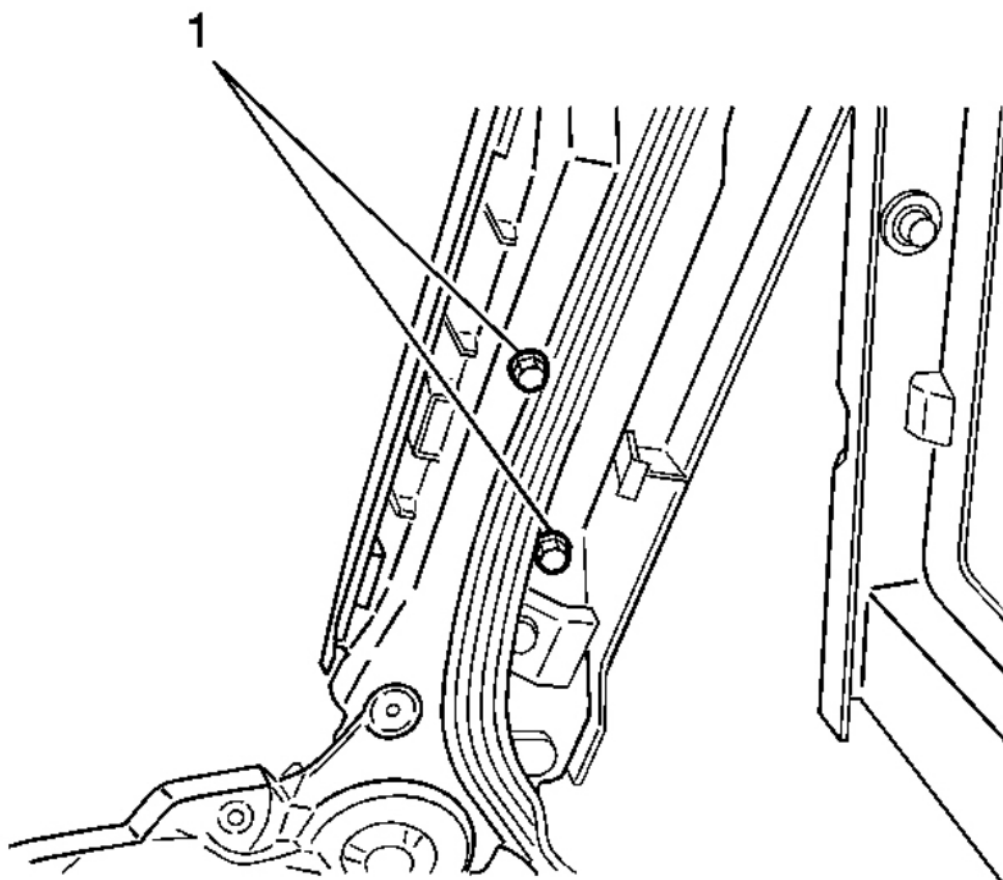


Fig. 183: View Of Outer Recliner Arm Cover Screws
Courtesy of GENERAL MOTORS CORP.

5. Install the outer recliner arm cover screws (1).

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

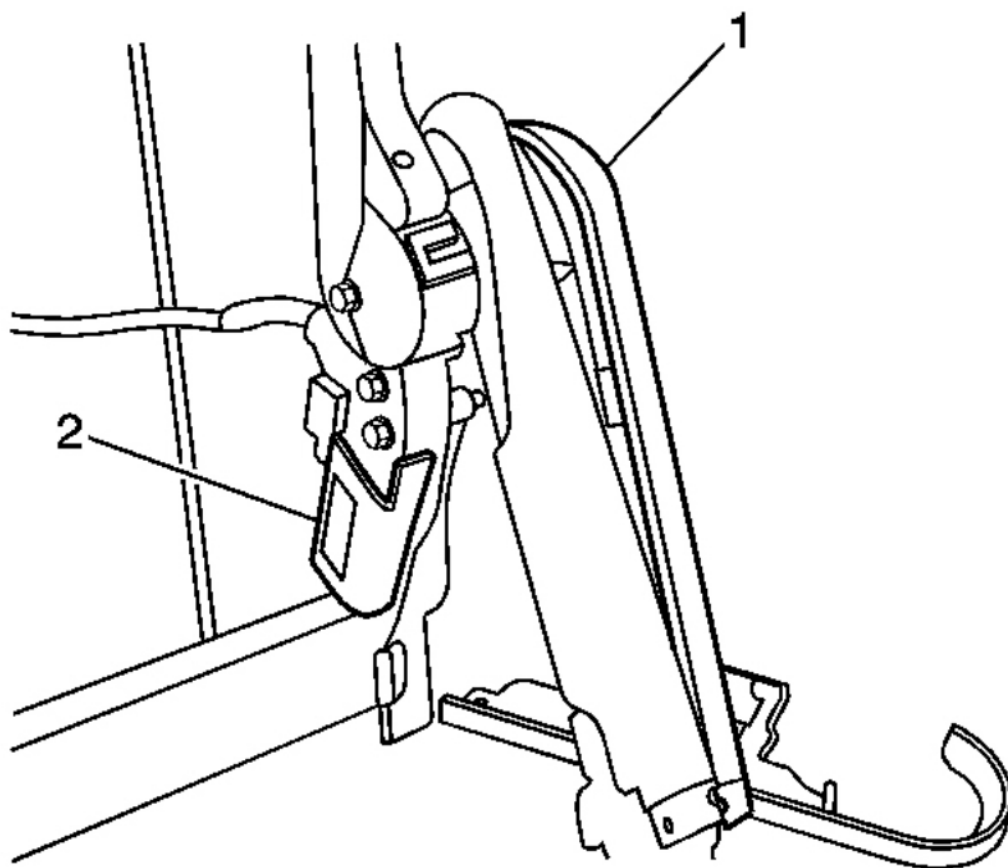


Fig. 184: View Of Inner Recliner Arm Covers
Courtesy of GENERAL MOTORS CORP.

6. Install the inner recliner arm covers (1) to the seat back.
7. Install the rear seat back cover. Refer to **Seat Back Cover and Pad Replacement - Rear No. 2.**
8. Install the head restraints. Refer to **Head Restraint Replacement - Rear No. 2**
9. Install the rear seat back panel. Refer to **Seat Back Panel Replacement - Rear Seat No. 2.**
10. Install the seat in the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding.**
11. Calibrate the seat. Refer to **Power Folding Seat Calibration.**

HORIZONTAL SEAT MOTOR REPLACEMENT - REAR NO. 2

Removal Procedure

1. Remove the seat cushion frame. Refer to Seat Cushion Frame Replacement - Rear No. 2.

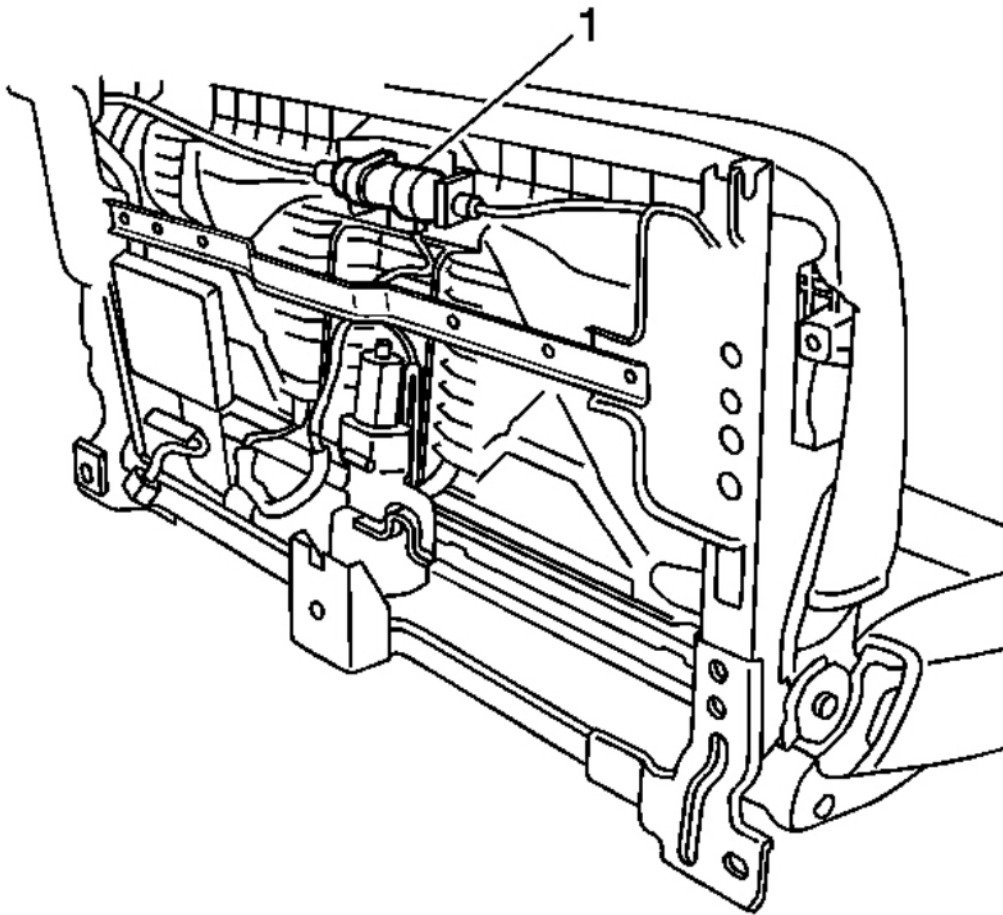


Fig. 185: View Of Horizontal Seat Motor
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the drive cables from the horizontal motor (1).
3. Disconnect the electrical connector from the motor.
4. Remove the motor.

Installation Procedure

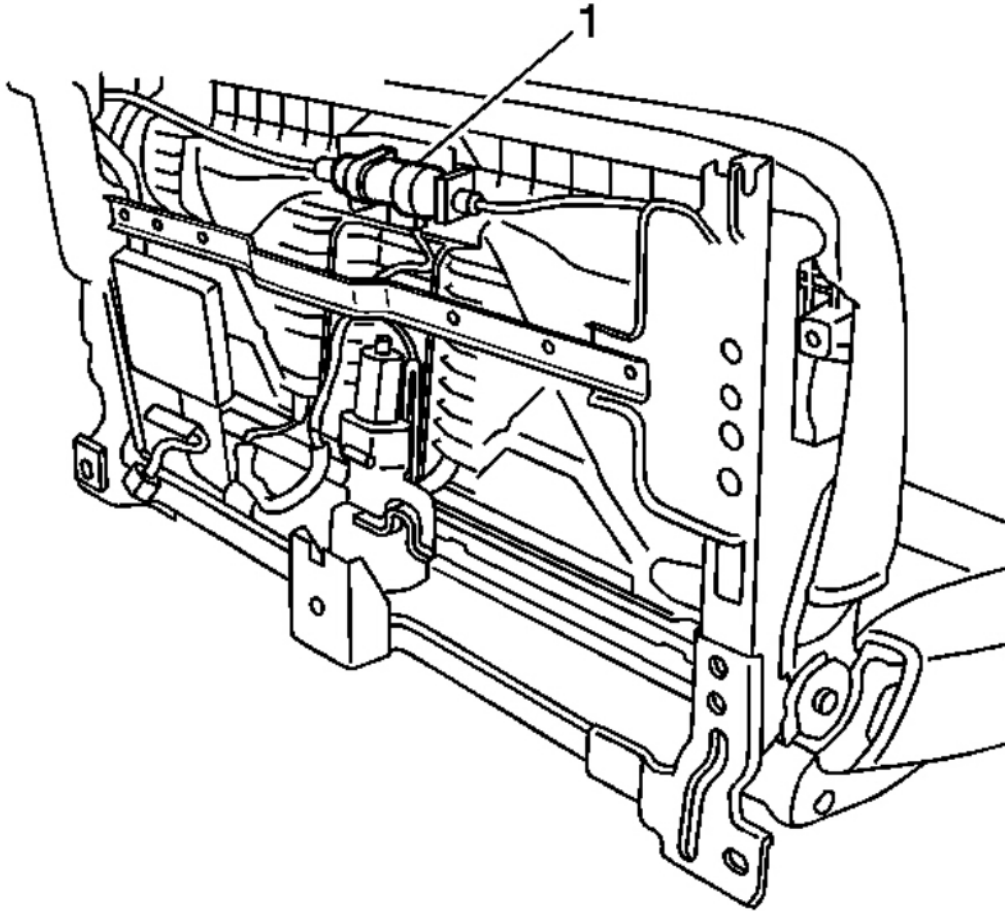


Fig. 186: View Of Horizontal Seat Motor
Courtesy of GENERAL MOTORS CORP.

1. Install the horizontal seat motor (1) to the frame.

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

2. Install the horizontal seat motor screws.

Tighten: Tighten the screws to 10 N.m (88 lb in).

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3. Install the cables into the motor.
4. Connect the electrical connector to the seat motor.
5. Install the seat cushion frame. Refer to **Seat Cushion Frame Replacement - Rear No. 2**.
6. Calibrate the seat. Refer to **Power Folding Seat Calibration**.

SEAT CUSHION COVER AND PAD REPLACEMENT - REAR NO. 2

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding**.
2. Lay the seat down on the seat back.

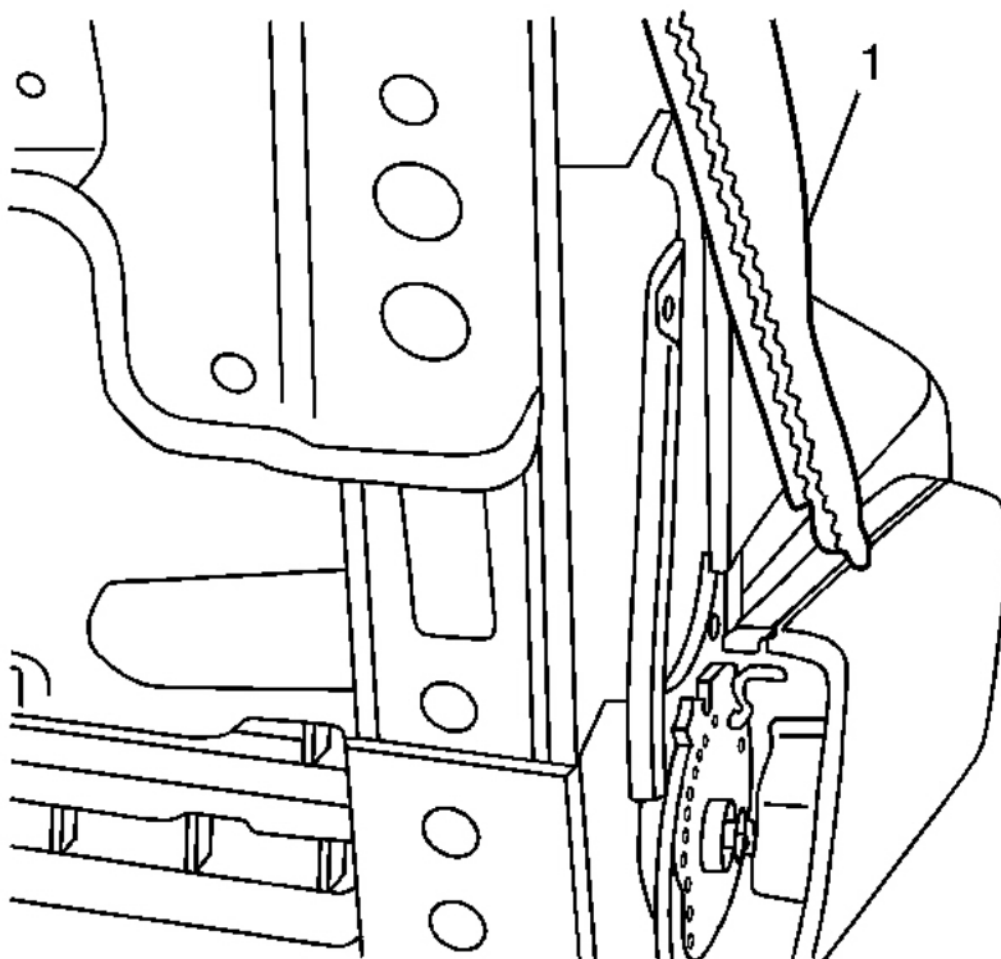


Fig. 187: Locating Side J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the J channel retainers (1) from the sides of the seat cover.

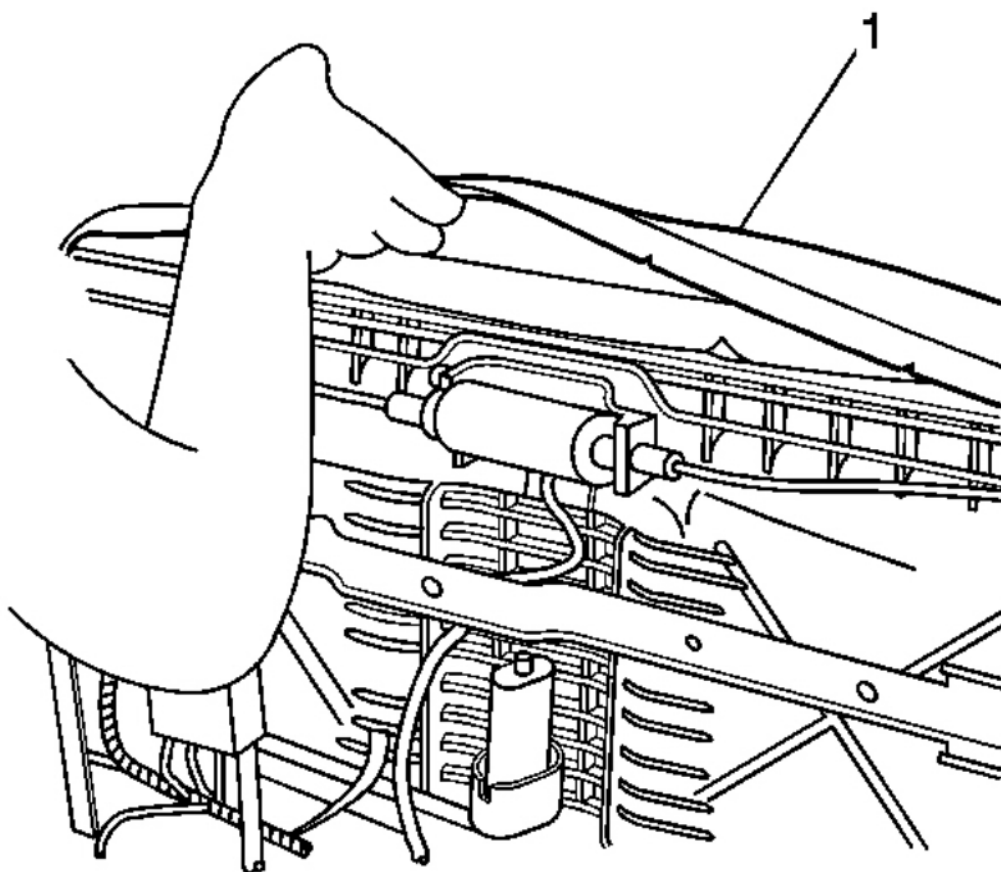


Fig. 188: Removing Seat Bottom Cover
Courtesy of GENERAL MOTORS CORP.

4. Remove the seat cover (1) from the seat bottom.

Installation Procedure

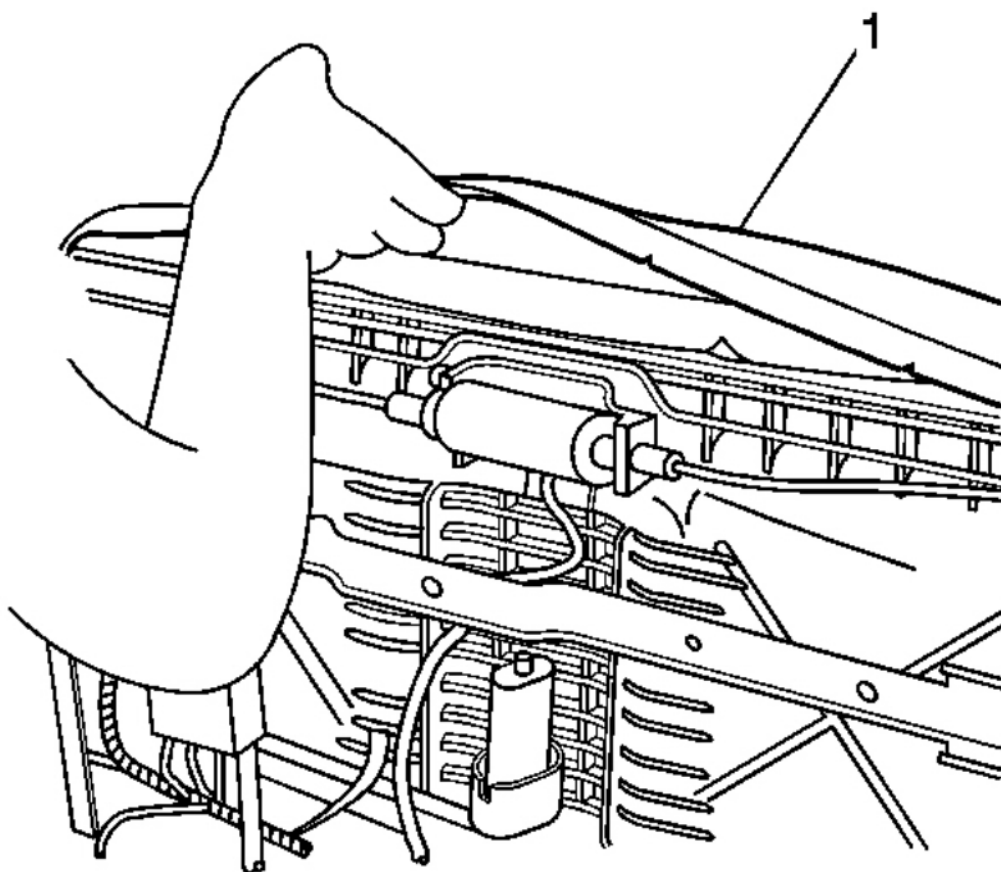


Fig. 189: Removing Seat Bottom Cover
Courtesy of GENERAL MOTORS CORP.

1. Install the seat cover (1) on to the seat bottom.

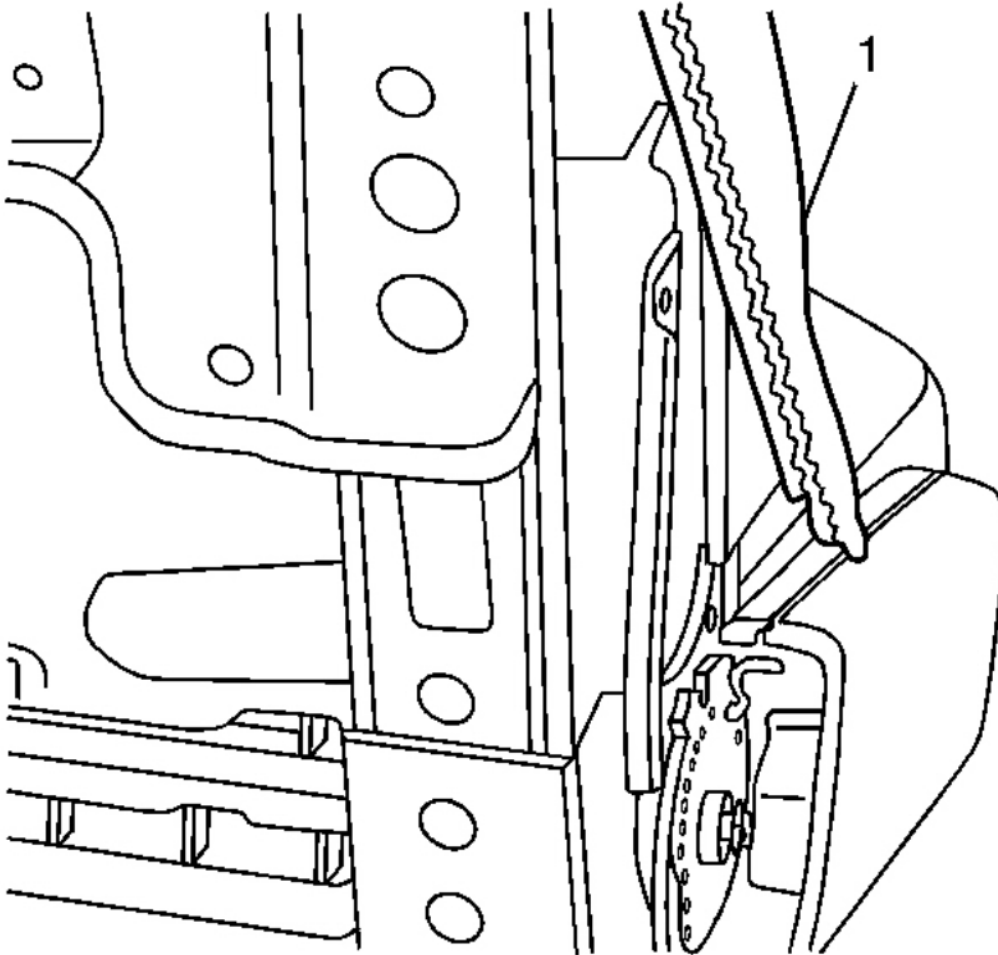


Fig. 190: Locating Side J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

2. Connect all J channel retainers (1).
3. Install the seat into the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding.**

SEAT CUSHION FRAME REPLACEMENT - REAR NO. 2

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding.**

2. Lay the seat down on the seat back.

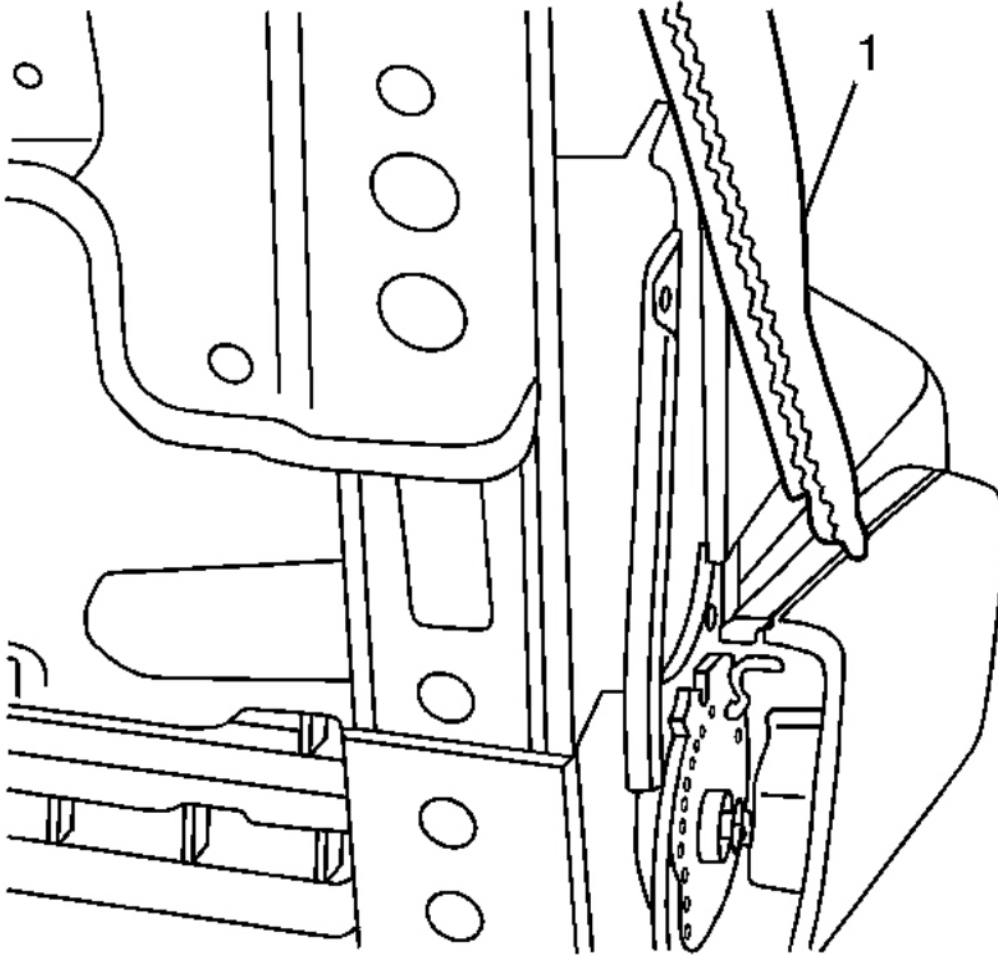


Fig. 191: Locating Side J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the J channel retainers (1) from the sides of the seat cover.

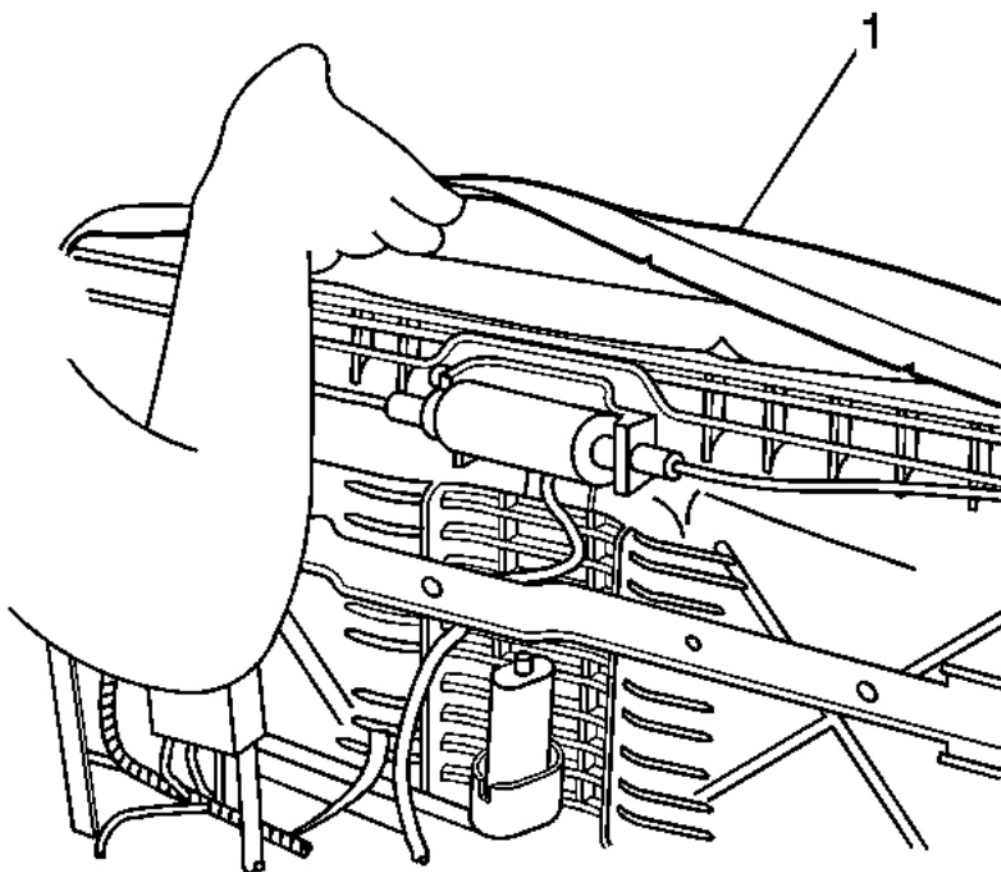


Fig. 192: Removing Seat Bottom Cover
Courtesy of GENERAL MOTORS CORP.

4. Remove the seat cover (1) from the seat bottom.

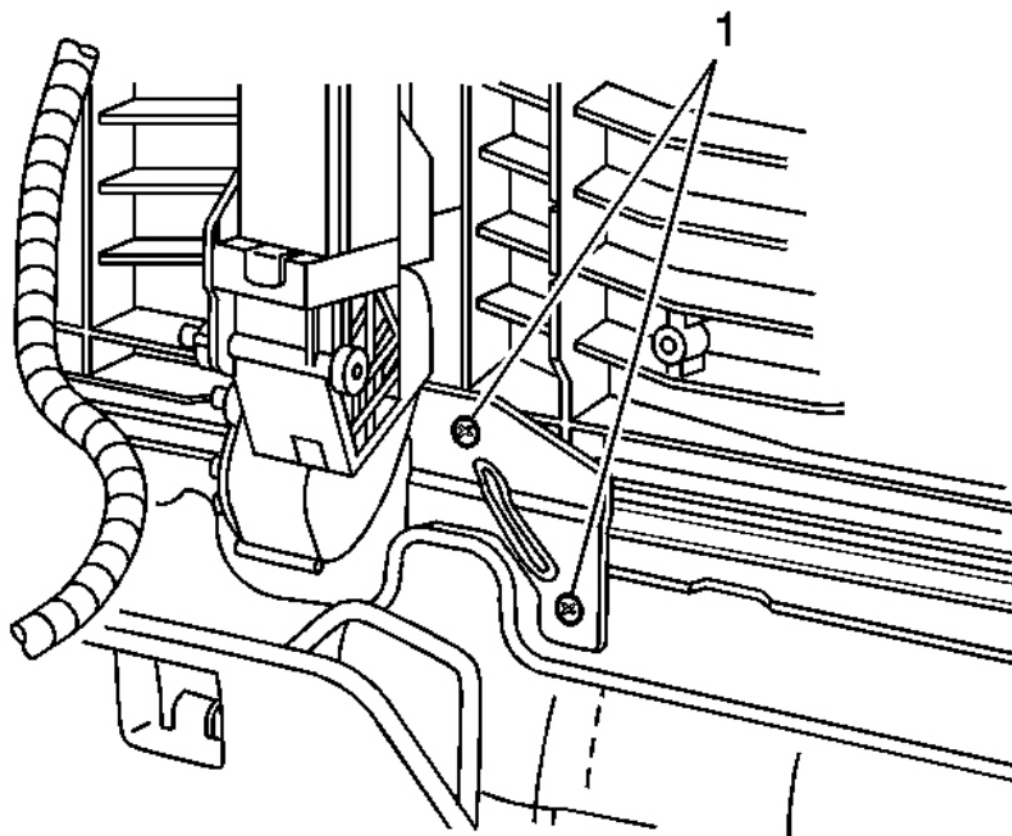


Fig. 193: Locating Recliner Motor Screws
Courtesy of GENERAL MOTORS CORP.

5. Remove the recliner motor screws (1) from the seat frame.

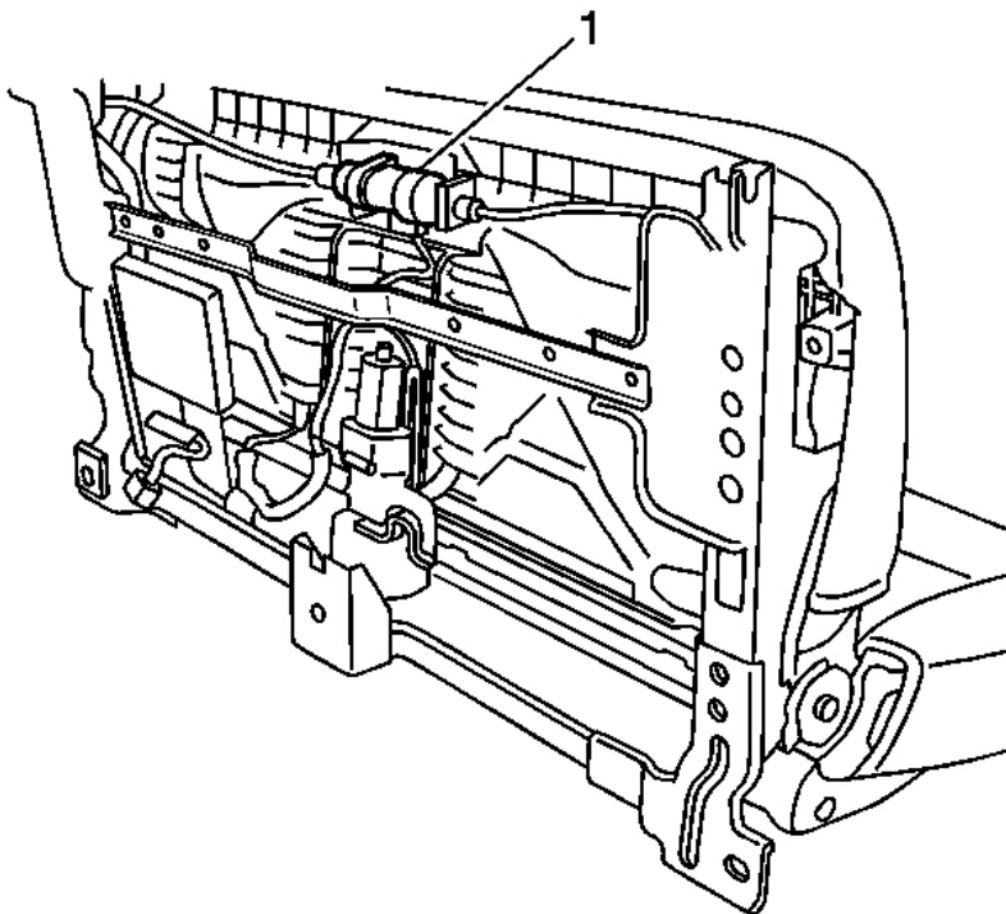


Fig. 194: View Of Horizontal Seat Motor
Courtesy of GENERAL MOTORS CORP.

6. Remove the screws from the horizontal motor (1).

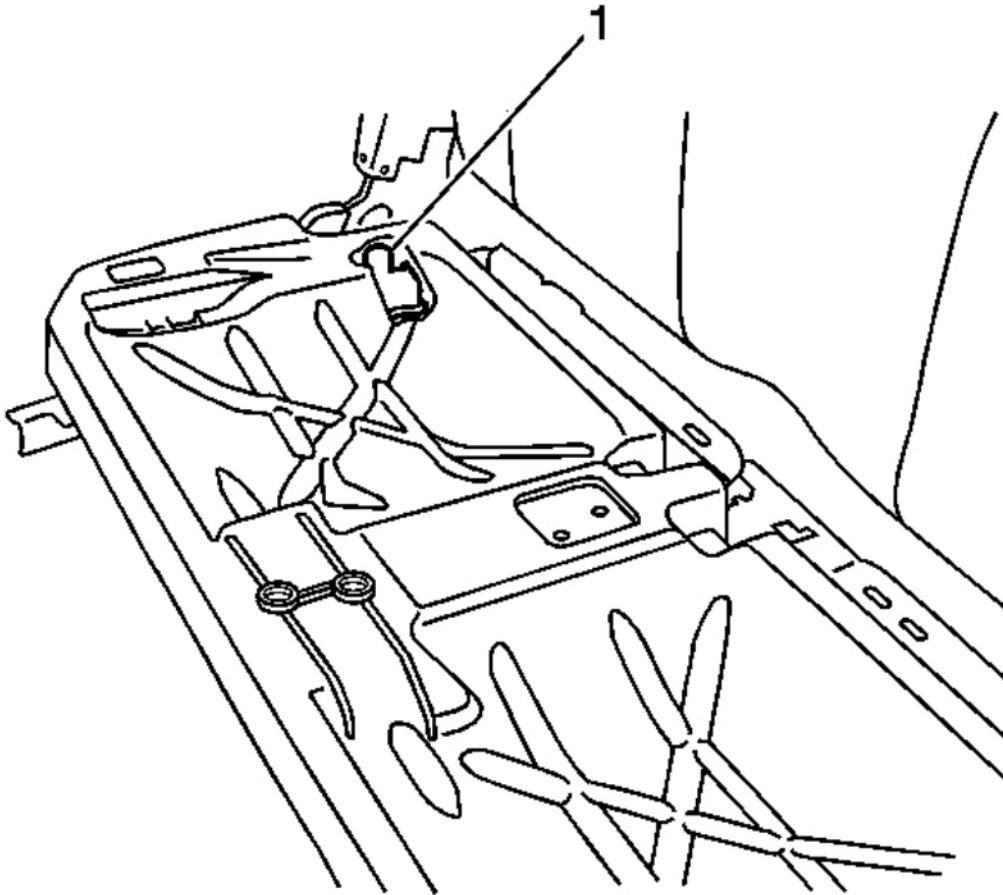


Fig. 195: View Of Seat Frame Bolts
Courtesy of GENERAL MOTORS CORP.

7. Remove the seat frame bolts (1).
8. Remove the seat frame.

Installation Procedure

1. Place the seat frame onto the seat adjuster.

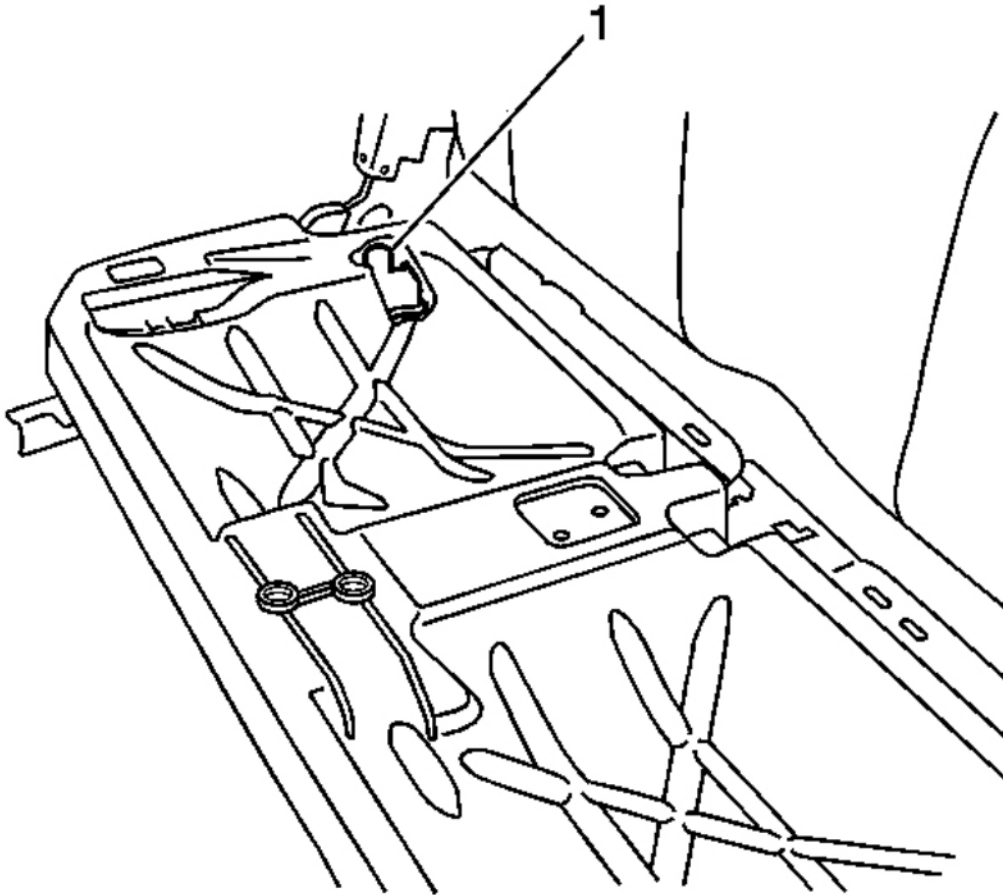


Fig. 196: View Of Seat Frame Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the seat frame retaining bolts (1).

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

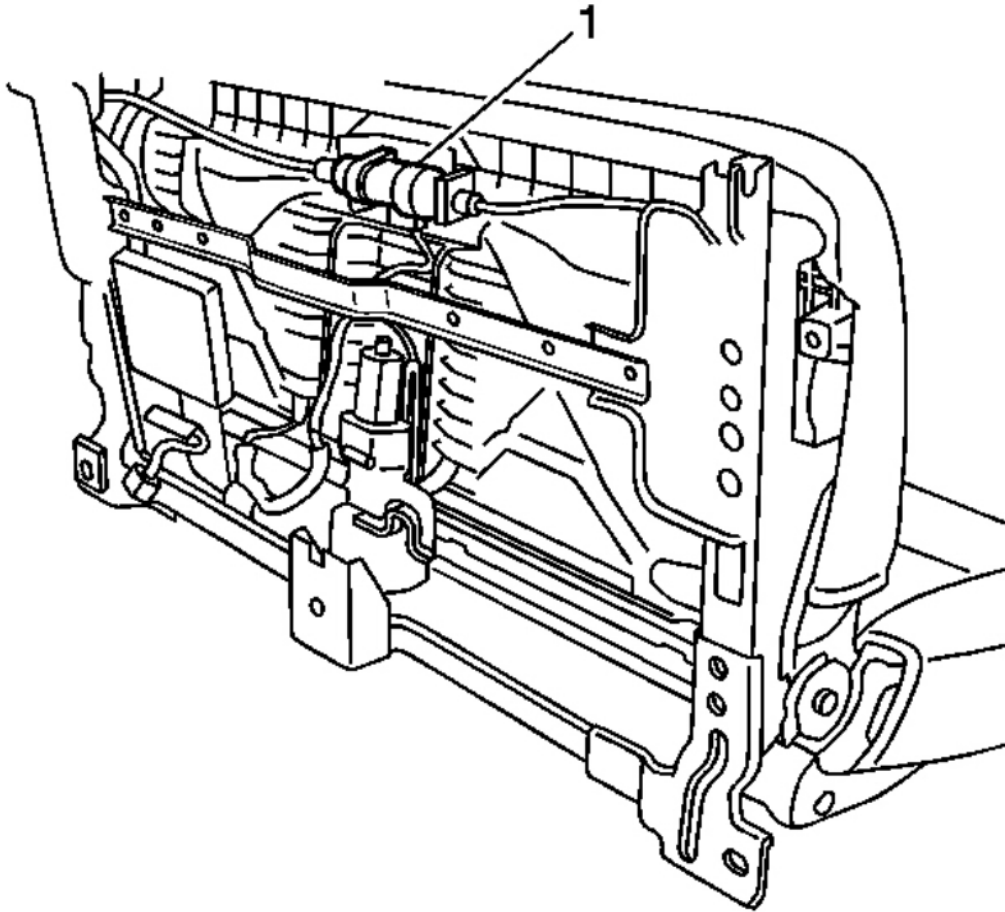


Fig. 197: View Of Horizontal Seat Motor
Courtesy of GENERAL MOTORS CORP.

3. Install the horizontal motor (1).

Tighten: Tighten the horizontal motor screws to 10 N.m (88 lb in).

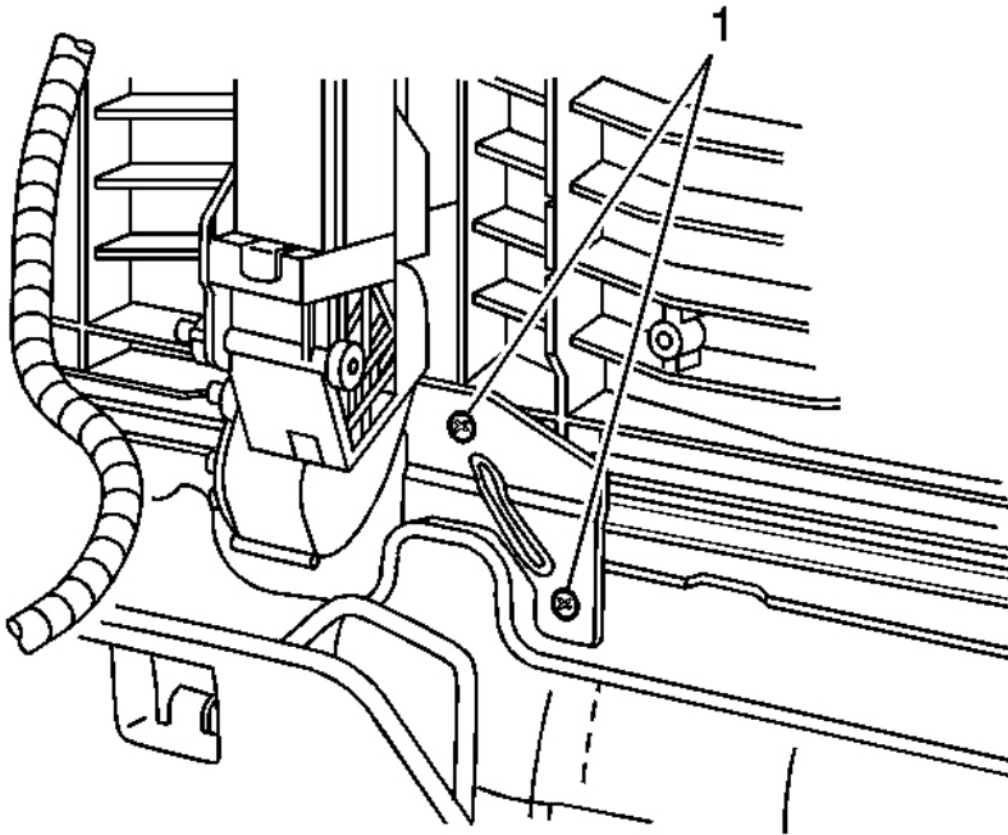


Fig. 198: Locating Recliner Motor Screws
Courtesy of GENERAL MOTORS CORP.

4. Install the recliner motor to the seat frame.

Tighten: Tighten the recliner motor screws (1) to 10 N.m (88 lb in).

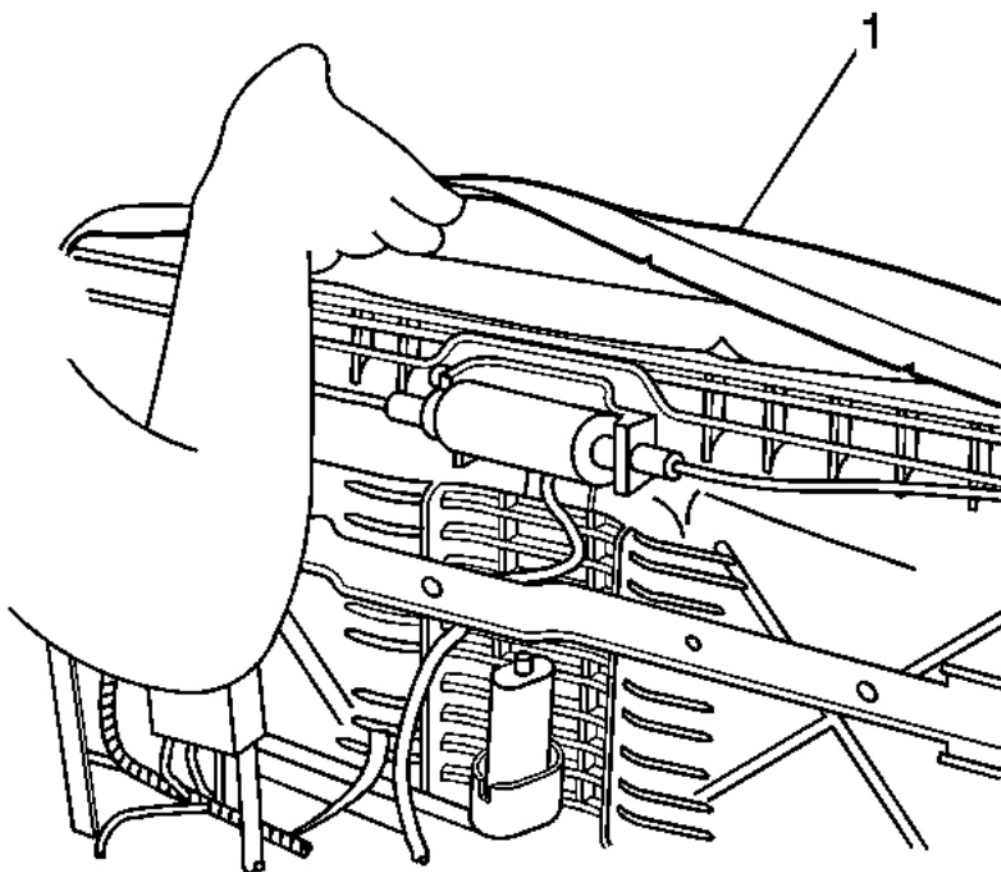


Fig. 199: Removing Seat Bottom Cover
Courtesy of GENERAL MOTORS CORP.

5. Install the seat cover (1) on to the seat bottom.

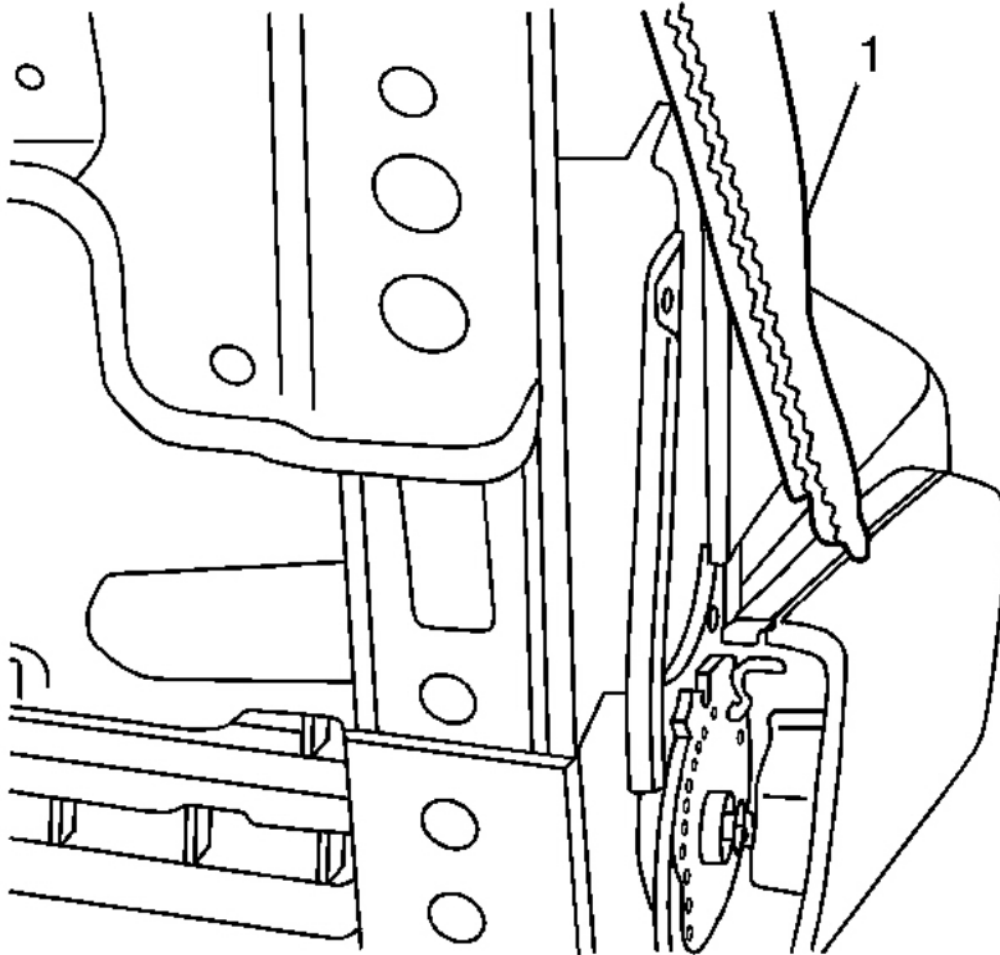


Fig. 200: Locating Side J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

6. Connect all J channel retainers (1).
7. Install the seat into the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding.**

HEAD RESTRAINT REPLACEMENT - REAR NO. 2

Removal Procedure

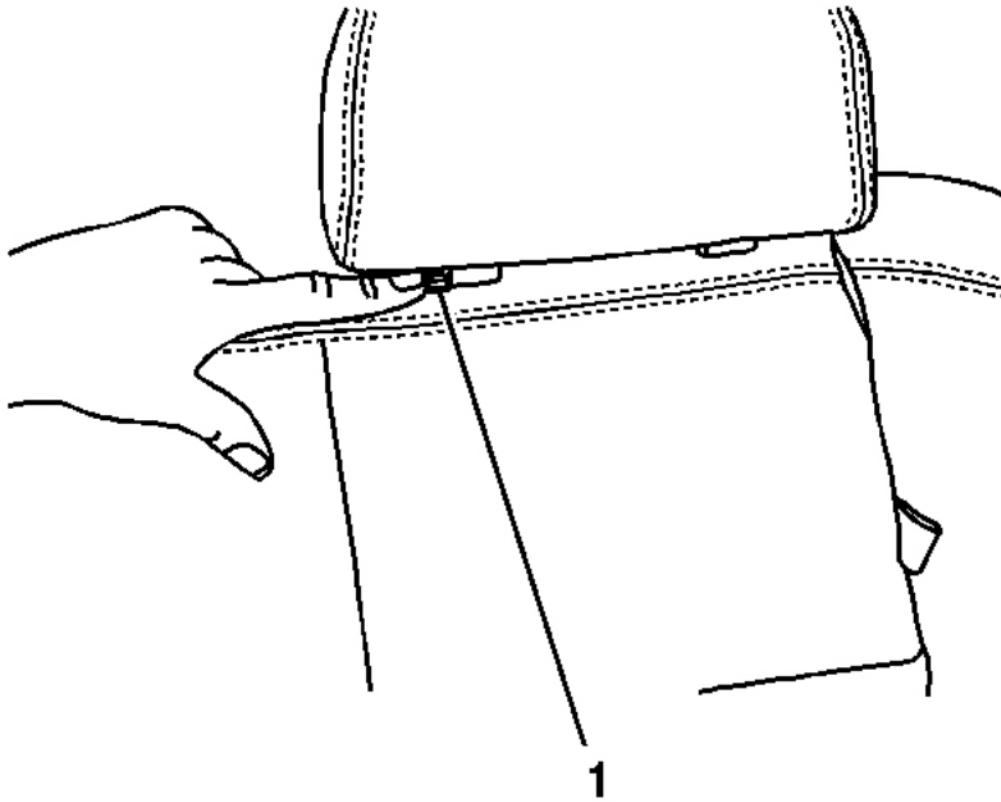


Fig. 201: Releasing Head Restraint Retainer Tab
Courtesy of GENERAL MOTORS CORP.

1. Push in on the release tab located on the head restraint retainer (1) to remove the head restraint.
2. Remove the head restraint from the seat back.

Installation Procedure

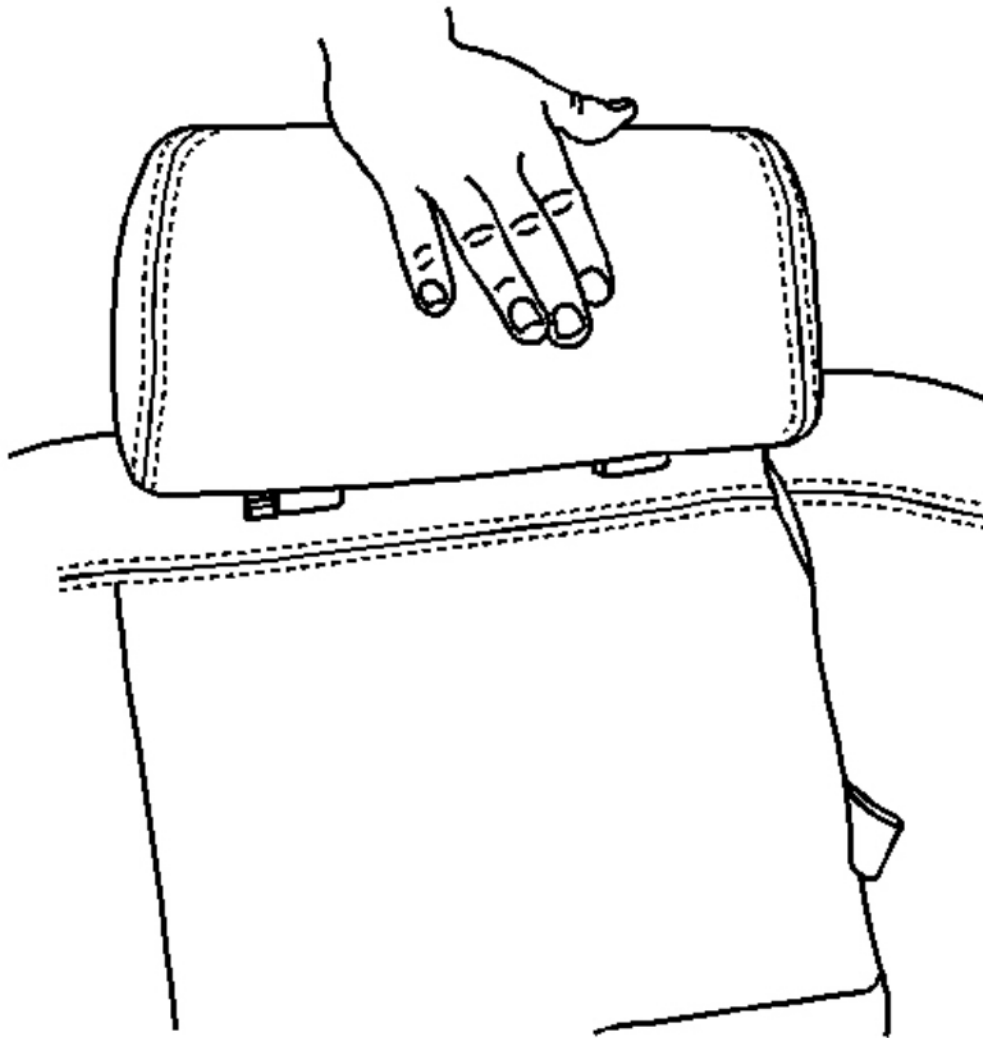


Fig. 202: Installing Head Restraint

Courtesy of GENERAL MOTORS CORP.

1. Align the rear seat head restraint to the head restraint retainers.
2. Push the heads restraint down until the head restraint is fully seated against the rear seat back.

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding.**
2. Remove the rear seat back panel. Refer to **Seat Back Panel Replacement - Rear Seat No. 2.**
3. Remove the head restraints. Refer to **Head Restraint Replacement - Rear No. 2.**

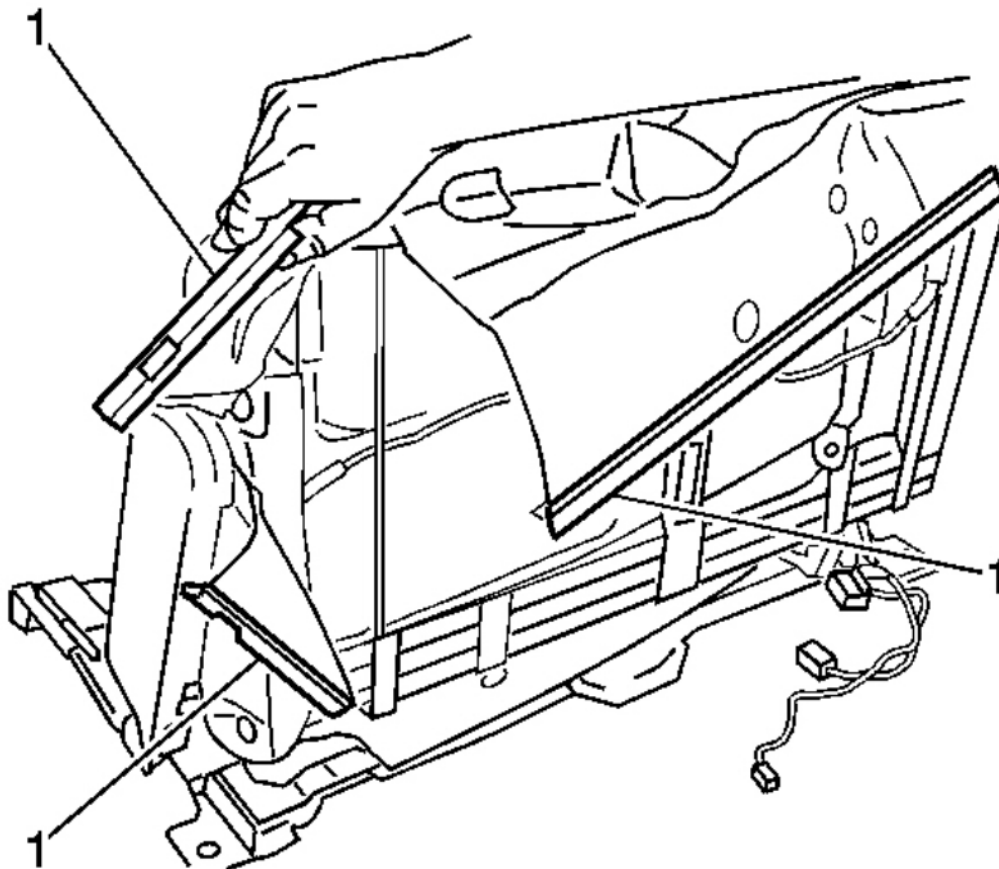


Fig. 203: Locating Seat Back J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the J channel retainers (1) from around the seat back.
5. Remove the seat back cover.

Installation Procedure

1. Install the seat back cover on to the seat.

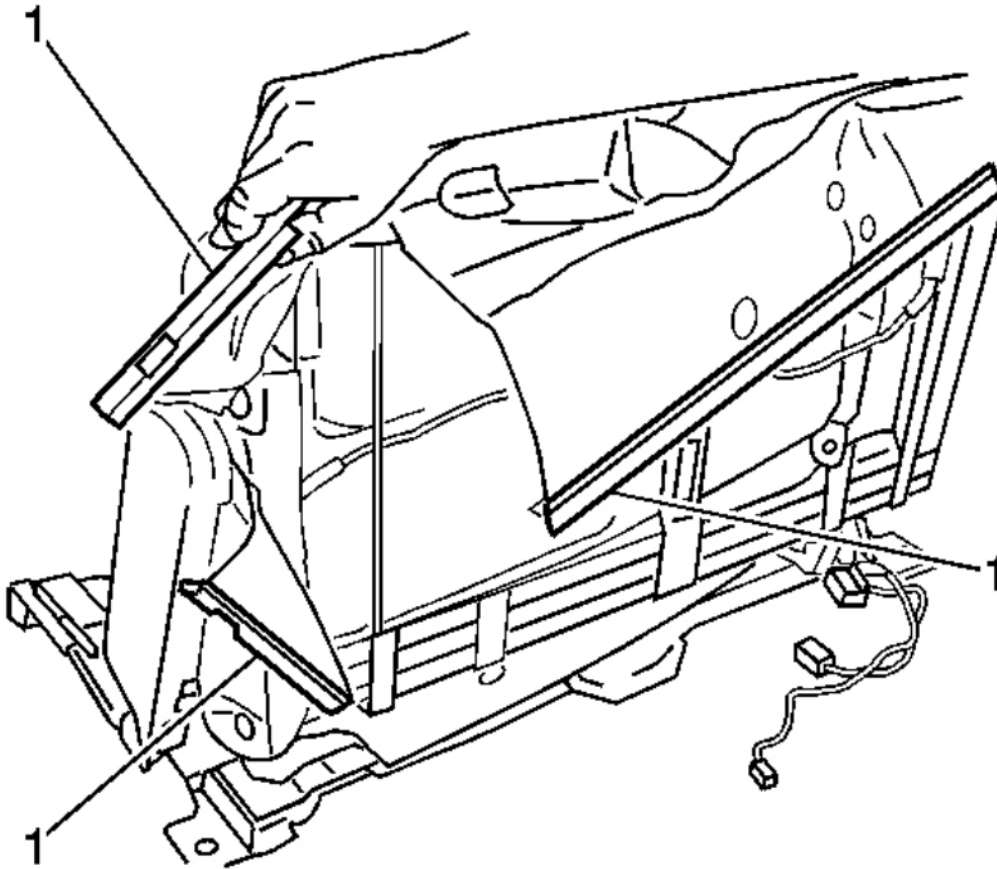


Fig. 204: Locating Seat Back J Channel Retainers
Courtesy of GENERAL MOTORS CORP.

2. Connect all J channel retainers (1).
3. Install the head restraints. Refer to **Head Restraint Replacement - Rear No. 2**
4. Install the rear seat back panel. Refer to **Seat Back Panel Replacement - Rear Seat No. 2.**
5. Install the seat in the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding.**

SEAT BACK FRAME REPLACEMENT - REAR NO. 2**Removal Procedure**

1. Remove the seat from the vehicle. Refer to Seat Replacement - Rear No. 2 - Folding.
2. Remove the rear seat back panel. Refer to Seat Back Panel Replacement - Rear Seat No. 2.
3. Remove the head restraints. Refer to Head Restraint Replacement - Rear No. 2.
4. Remove the rear seat back cover. Refer to Seat Back Cover and Pad Replacement - Rear No. 2.

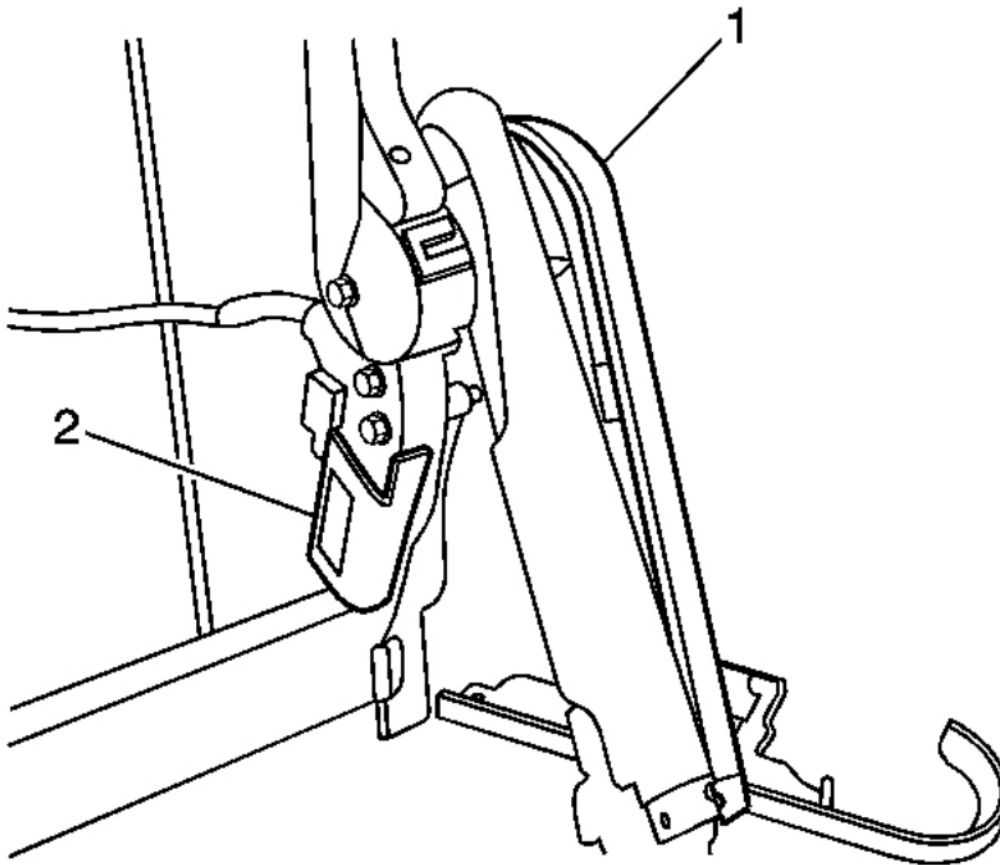


Fig. 205: View Of Inner Recliner Arm Covers
Courtesy of GENERAL MOTORS CORP.

5. Remove the inner recliner arm covers (1) from the seat back.

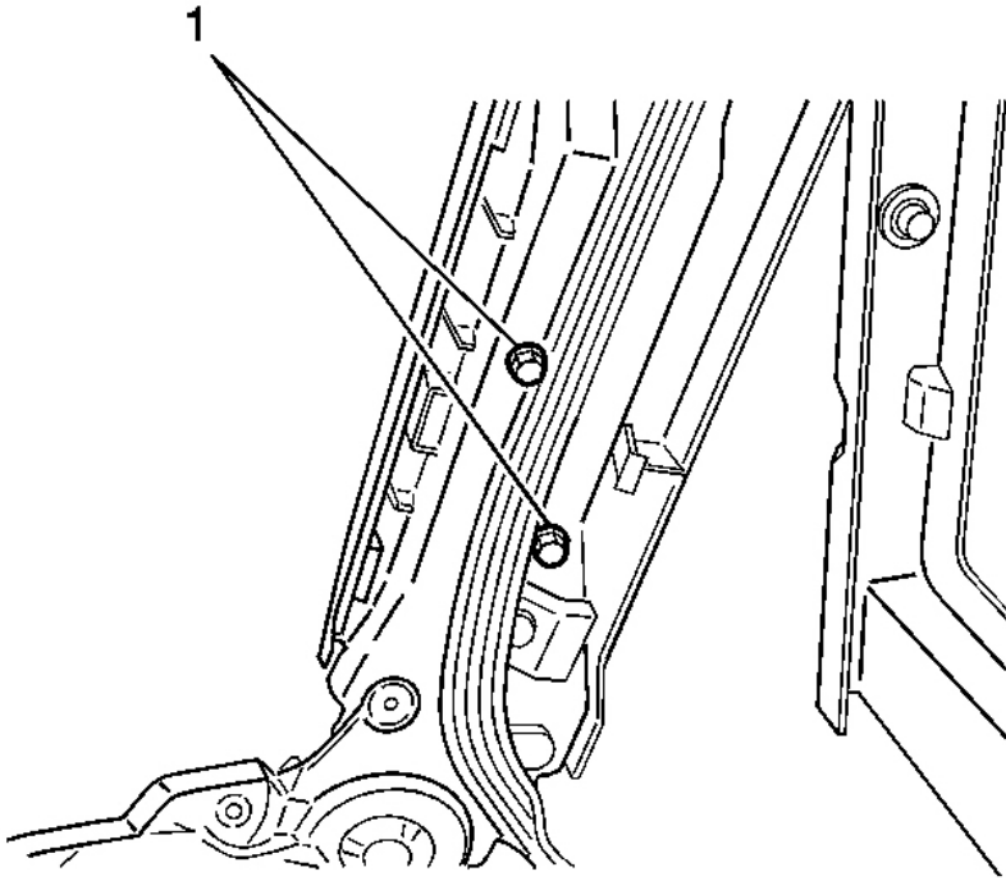


Fig. 206: View Of Outer Recliner Arm Cover Screws
Courtesy of GENERAL MOTORS CORP.

6. Remove the outer recliner arm cover screws (1).
7. Remove the outer recliner arm pivot covers.

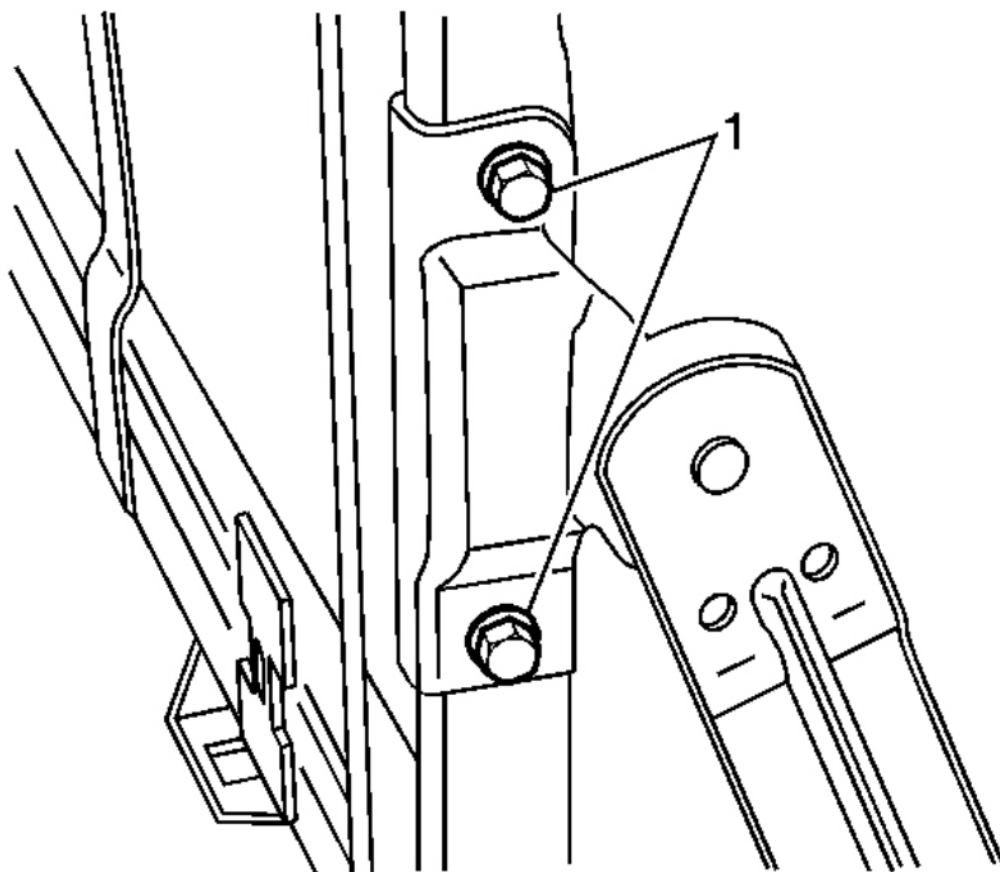


Fig. 207: Identifying Seat Back Frame Bolts
Courtesy of GENERAL MOTORS CORP.

8. Remove the seat back frame bolts (1).
9. Remove the seat back frame.

Installation Procedure

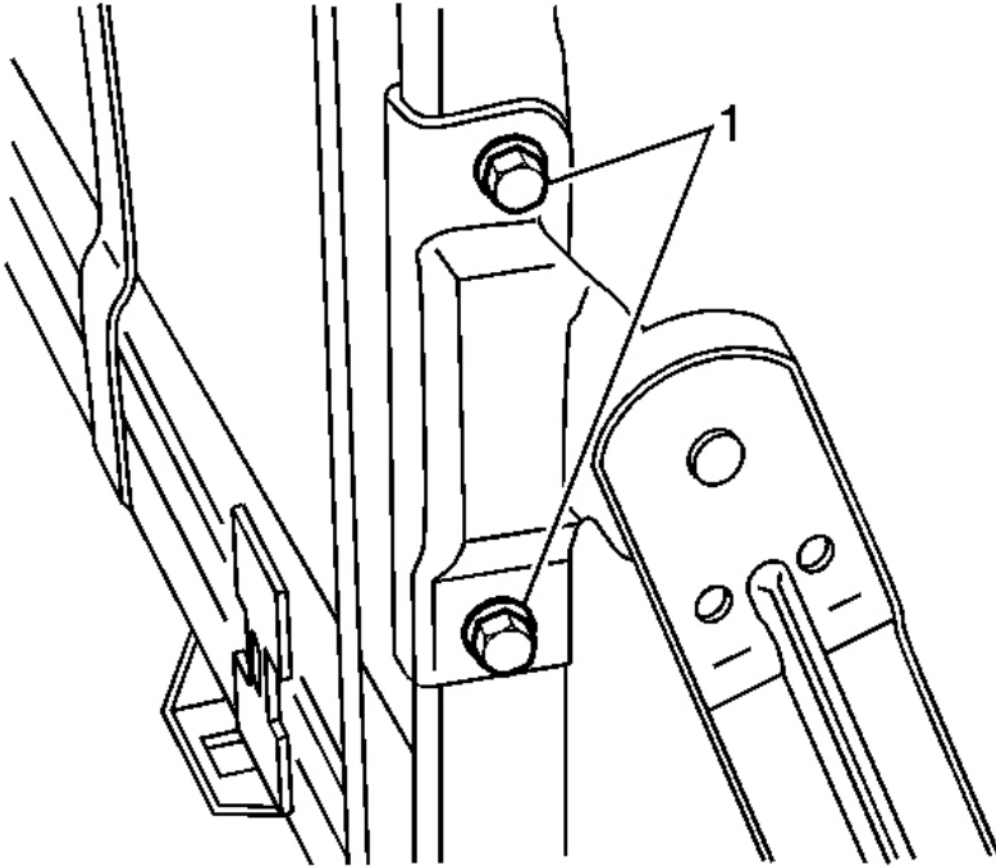


Fig. 208: Identifying Seat Back Frame Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

1. Install the seat back frame bolts (1).

Tighten: Tighten the seat back frame bolts to 35 N.m (26 lb ft).

2. Install the outer recliner arm pivot covers.

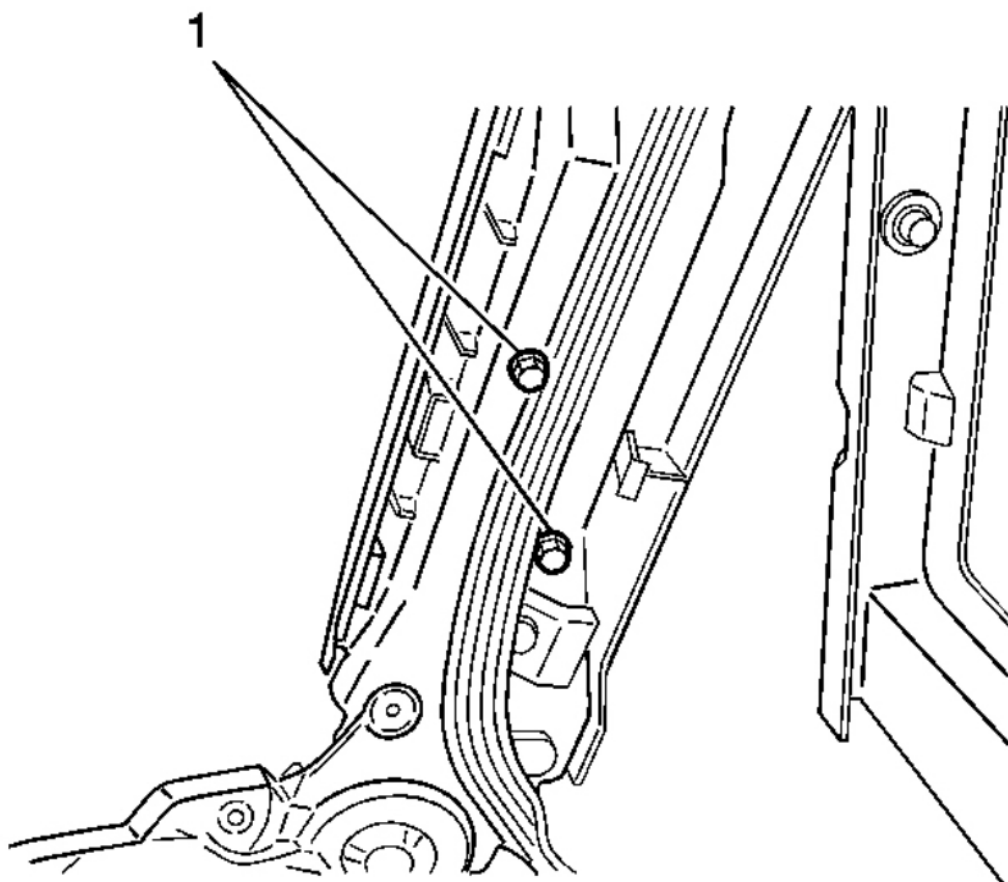


Fig. 209: View Of Outer Recliner Arm Cover Screws
Courtesy of GENERAL MOTORS CORP.

3. Install the outer recliner arm cover screws (1).

Tighten: Tighten the recliner arm cover screws to 2 N.m (18 lb in).

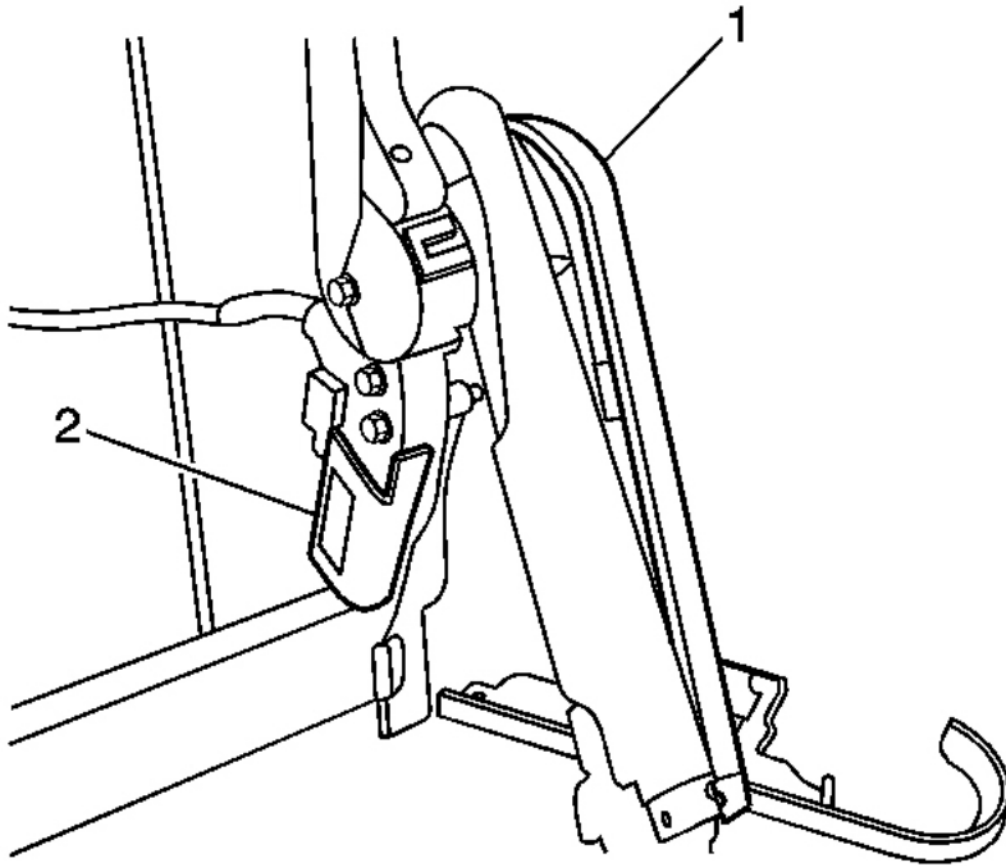


Fig. 210: View Of Inner Recliner Arm Covers
Courtesy of GENERAL MOTORS CORP.

4. Install the inner recliner arm covers (1) to the seat back.
5. Install the head restraints. Refer to **Head Restraint Replacement - Rear No. 2**
6. Install the rear seat back panel. Refer to **Seat Back Panel Replacement - Rear Seat No. 2.**
7. Install the seat in the vehicle. Refer to **Seat Replacement - Rear No. 2 - Folding.**

DESCRIPTION AND OPERATION

POWER SEATS SYSTEM DESCRIPTION AND OPERATION (FRONT SEAT)

The driver and passenger power seat systems each consist of the following components:

- Seat Adjuster Switch
- Seat Horizontal Motor
- Seat Front Vertical Motor
- Seat Rear Vertical Motor
- Seat Recline Motor
- SEATS Circuit Breaker 30 A

Seat Adjuster Switch

The seat adjuster switches provide both power and ground to the selected seat motors. Battery positive voltage is supplied at all times to the driver and passenger seat adjuster switches from the SEATS Circuit Breaker located in the left rear fuse block. Both seat adjuster switches are grounded through the switch ground circuit and G307.

Motors

All of the seat motors operate independently of each other. Each motor contains an electronic circuit breaker (PTC) that opens in the event of a circuit overload and will reset only after voltage has been removed from the circuit. There are four seat position motors. These are the horizontal motor, front vertical motor, rear vertical motor, and the seat back recline motor. The horizontal motor moves the entire seat forward and rearward. The seat vertical motors may operate independently to tilt the front or rear of the seat cushion up or down. Both motors can also run simultaneously to move the entire seat up or down. The recline motor moves the angle of the seat back forward or rearward.

Horizontal

When the seat switch is operated to move the entire seat forward, battery positive voltage is applied through the switch contacts and the horizontal motor forward control circuit to the motor. The motor is grounded through the horizontal motor rearward switch contacts and the horizontal motor rearward control circuit to the motor. The motor runs in order to drive the entire seat forward until the switch is released. Moving the entire seat rearward works similarly to moving the entire seat forward, except that battery positive voltage and ground are applied on opposite circuits causing the motor to run in the opposite direction.

Rear Vertical

When the seat switch is operated to tilt the rear of the seat cushion up, battery positive voltage is applied through the switch contacts and the rear vertical motor up control circuit to the rear

vertical motor. The motor is grounded through the down switch contacts and the rear vertical motor down control circuit to the motor. The motor runs in order to drive the rear of the seat cushion up until the switch is released. Tilting the rear of the seat cushion down works similarly to tilting the rear of the seat cushion up, except that battery positive voltage and ground are applied on opposite circuits causing the motor to run in the opposite direction.

Front Vertical

When the seat switch is operated to tilt the front of the seat cushion up, battery positive voltage is applied through the switch contacts and the front vertical motor up control circuit to the motor. The motor is grounded through the down switch contacts and the front vertical motor down control circuit to the motor. The motor runs in order to drive the front of the seat cushion up until the switch is released. Tilting the front of the seat cushion down works similarly to tilting the front of the seat cushion up, except that battery positive voltage and ground are applied on opposite circuits causing the motor to run in the opposite direction.

Entire Seat Up or Down

When the seat switch is operated in order to move the entire seat to the up position, battery positive voltage is simultaneously applied through the front and rear vertical motor up switch contacts and the front and rear vertical motor up control circuits to both vertical motors. The motors are grounded through the down switch contacts and the front and rear vertical motor down control circuits to both vertical motors. Both motors run simultaneously in order to drive the entire seat up until the switch is released. Moving the entire seat down works similarly to moving the entire seat up, except that battery positive voltage and ground are applied on the opposite circuits causing the motors to run in the opposite direction.

Recline

When the seat recline switch is operated to move the seat back forward, battery positive voltage is applied through the switch contacts and the recline motor forward control circuit to the motor. The motor is grounded through the rearward switch contacts and the recline motor rearward control circuit to the motor. The motor runs in order to move the seat back forward until the switch is released. Moving the seat back rearward works similarly to moving the seat back forward, except that battery positive voltage and ground are applied on the opposite circuits causing the motor to run in the opposite direction.

POWER SEATS SYSTEM DESCRIPTION AND OPERATION (FOLDING SEAT)

The power folding seat system consists of the following components:

- Folding Seat Front Stow Switch

- Folding Seat Rear Stow Switch
- Folding Seat Recline Switch
- Rear Seat Module (RSM)
- Rear Seat Horizontal Motor
- Rear Seat Back Rotation Motor
- Rear Seat Recline Motor
- Rear Seat Horizontal Position Sensor
- Rear Seat Back Rotation Position Sensor
- Rear Seat Recline Position Sensor
- Rear Seat Back Panel Position Switch
- Rear Seat Load Floor Position Switch
- FFSM Fuse 30 A
- FFS SW Fuse 10 A

The Class 2 serial data subsystem is also part of the power folding seat system.

Conditions for Seat Operation and Class 2 Communications

The RSM must receive Class 2 messages indicating that the following conditions have been met prior to seat operation or a chime will sound and the RSM will inhibit operation:

- The gear selector must be in the PARK position.
- The ignition can be in any power mode except CRANKING.
- Either the lift gate or the right rear door must be OPEN.
- The RSM must be enabled by pressing the UNLOCK button on either the remote keyless entry transmitter or the driver/passenger door lock switch three times within 5 seconds, or by placing the ignition in the ON or ACCESSORY position.

Enabling the RSM using the remote keyless entry transmitter or the driver/passenger door lock switch unlock sequence allows for the system to operate for two minutes before timing out. The RSM will restart the timing procedure each time the recline or stow switch is pressed. After the two minute time period expires, the RSM will discontinue operation until another keyless entry or door unlock sequence takes place. Enabling the RSM by placing the ignition in either the ON or ACCESSORY positions allows for continuous operation of the folding seat system without the time out feature.

The following conditions must also be met before the RSM will allow seat operation:

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- The folding seat back panel must be in the folded position.
- The RSM must be calibrated.
- Both headrests must be removed.
- The battery must have a sufficient charge.

If seat operation is attempted while the RSM is in the disabled mode an audible chime message will be activated signaling that one of the above conditions has not been met.

To verify that the RSM is calibrated, install a scan tool and observe the Calibrated parameter in the Rear Seat Module data list, the parameter should display Yes. If the RSM is not calibrated refer to **Power Folding Seat Calibration**.

Rear Seat Switches

There are three push button switches that are used to operate the power folding seat; front stow switch, rear stow switch, and recline switch. The front stow switch is located in the right rear quarter trim panel just behind the second row seat. The rear stow and recline switches are located in the right rear trim panel just inside the liftgate. Battery positive voltage is supplied at all times to all three switches from the FFS SW Fuse located in the left rear fuse block. The folding seat will operate only in a supervised mode, i.e. press and hold the selected switch button through the entire cycle of operation, or release the switch when the desired seat position is reached. When any folding seat switch is pressed, it sends a 12 volt signal through the switch signal circuit to the RSM. The RSM then commands the appropriate seat motors to move in response to the switch signal.

Rear Seat Module and Power and Ground

The rear seat module controls the position of the third row seat. When commanded it moves the seat from the seated position to the stowed position, or, from the stowed position to the seated position. With the seat in the seated position, the RSM can also move the angle of the seat back forward or rearward.

Battery positive voltage is supplied at all times to the module through the battery positive voltage circuit and the FFSM fuse located in the left rear fuse block. This voltage is used to power up the RSM and also to apply power to the seat motors when commanded. The RSM is grounded through the module ground circuit and G401.

Motors

The power folding rear seat has three reversible DC motors. These are the seat horizontal motor, the 180 degree rotation motor, and the recline motor. The horizontal motor moves the entire seat

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forward or rearward, the rotation motor rotates the seat back 180 degrees, and the recline motor moves the seat back forward or rearward. Each motor contains an electronic circuit breaker (PTC) that opens in the event of a circuit overload and will reset only after voltage has been removed from the circuit.

In order to decrease the stress on each motor, the RSM provides each seat motor with a soft stop that will actually stop the motor before the physical end of travel. Each motor uses a hall effect sensor to determine the position of the seat and the end of travel limits. Module self-calibration is used to determine hard stop limits during the initial power up and every tenth activation thereafter. The soft stop limits are a calibrated count from the determined hard stops.

Position Sensors

The seat position sensors are 2 wire hall effect sensors which are an internal part of each motor. The RSM supplies a separate 12 volt reference through the signal circuits to each position sensor, and a common ground through the sensor low reference circuit to each seat position sensor. During seat operation, while the seat motor is active, the position sensor provides the RSM with a single feedback pulse through the signal circuit for every rotation of the motor shaft. The RSM counts the feedback pulses from each sensor to determine the seat position, and the end of travel limits for each of the seat motors.

Seat Operation

With the seat in the seated position, and when a stow switch is pressed, battery positive voltage is applied through the switch contacts and the switch signal circuit to the RSM. In response to this signal, the RSM simultaneously applies battery positive voltage through the seat back rotation motor forward control circuit and the seat horizontal motor forward control circuit to the seat motors. The motors are grounded through the respective motor rearward control circuits. The rotation motor runs to rotate the seat back 180 degrees forward and the seat horizontal motor runs to drive the seat cushion forward until it reaches it's hard stop. After seat back rotation and seat horizontal movements are complete, the RSM then applies battery positive voltage through the recline motor rearward control circuit to the recline motor. The motor is grounded through the recline motor forward control circuit. The motor runs to recline the seat back rearward to the stow position. Moving the seat to the seated position works similarly to moving the seat to the stowed position, except battery positive voltage is applied to the opposite control circuits causing the motors to run in the opposite direction.

There are two limit switches that are involved with seat operation; load floor position switch and seat back panel position switch. Battery positive voltage is applied at all times to the switches through their respective supply voltage circuits from the RSM. The following describes how the RSM uses these limit switches during seat operation:

- The load floor switch is located in the back panel of the folding rear seat. When the back panel is placed in the folded position the load floor switch is closed. Battery positive voltage is then applied through the switch contacts and the load floor switch signal circuit to the RSM, and seat operation is allowed. In this position the Load Floor Switch scan tool parameter will display Inactive.

After the power folding rear seat is moved from the seated to the stowed position, the seat back panel is then manually unfolded and deployed over the seat cushion. With the back panel unfolded and deployed over the seat cushion, the load floor switch is now open, the Load Floor Switch scan tool parameter will display Active, and the RSM will not allow seat operation.

- The back panel position switch is located in the lower left corner of the folding rear seat back panel. When the seat back is in either the seated position or in the stowed position the switch is closed, battery positive voltage is applied through the switch contacts and the seat back position switch signal circuit to the RSM indicating that the switch is active. The RSM uses this switch input for the following purposes:
 - To determine the soft stop limits of the recline motor when the seat is in the stowed position.
 - To determine the soft stop limits for the seat back rotation motor when the back is in the seated position.
 - To determine the starting point of the seat back with the seat in the seated position.

Once the seat back starts to rotate, the seat back position switch contacts open to signal the RSM the initial starting point of the seat back. The RSM then begins to count the sensor pulses in order to set the seat back rotation travel distance.

Seat Operation Sequencing

The following describes the sequence of seat movement from the seated position to the stowed position:

- Start of 180 degree forward rotation of seat back.
- The seat back reclines forward to the upright position.
- Seat cushion moves forward to its soft stop limit.
- Seat back reclines rearward to the stowed position.
- Manually unfold and deploy the seat back panel over the seat cushion.

The following describes the sequence of seat movement from the stowed position to the seated

position:

- Manually retract and fold the seat back panel to the folded position.
- The seat back reclines forward to the upright position.
- The seat back rotates 180 degrees rearward.
- The seat back reclines rearward to it's seated position.
- The seat cushion moves rearward to it's seated position.

LUMBAR SUPPORT DESCRIPTION AND OPERATION (W/O A45)

Lumbar Support Components

The driver and passenger seat lumbar support systems each consist of the following components:

- Lumbar Switch
- Lumbar Horizontal Motor
- SEATS Circuit Breaker 30 A

Power Lumbar Switch

The power lumbar switches provide both power and ground to the lumbar motor. Battery positive voltage is supplied at all times to the driver and passenger seat lumbar switch from the SEATS Circuit Breaker located in the left rear fuse block. Both lumbar switches are grounded through the switch ground circuit and G 307.

Lumbar Motor

The lumbar support system consists of one motor that moves the lumbar support horizontally forward or rearward. The motor contains an electronic circuit breaker (PTC) that opens in the event of a circuit overload and will reset only after voltage has been removed from the circuit.

Lumbar Operation

When the lumbar switch is operated to move the lumbar support forward, battery positive voltage is applied through the switch contacts and the lumbar motor forward control circuit to the motor. The motor is grounded through the lumbar rearward switch contacts and the lumbar motor rearward control circuit to the motor. The motor runs to drive the lumbar support forward toward the occupant's back until the switch is released. Moving the lumbar support rearward works similarly to moving the lumbar support forward, except that battery positive voltage and ground are applied on opposite circuits causing the motor to run in the opposite direction.

LUMBAR SUPPORT DESCRIPTION AND OPERATION (WITH A45)

Lumbar Support Components

The driver seat lumbar support system with memory (A45) consists of the following components:

- Lumbar Switch
- Memory Seat Module (MSM)
- Lumbar Horizontal Motor
- Lumbar Horizontal Position Sensor
- SEATS Fuse 10 A

Lumbar Switch

Battery positive voltage is supplied at all times to the driver seat lumbar switch from the SEATS Fuse located in the left rear fuse block. When the lumbar switches are pressed they send a 12 volt signal to the MSM. The MSM then commands the lumbar motor to move in response to the switch signals.

Lumbar Motor

The lumbar support system consists of one motor that moves the lumbar support horizontally forward or rearward. The motor contains a electronic circuit breaker (PTC) that opens in the event of a circuit overload and will reset only after voltage has been removed from the circuit. The memory seat module provides the motor with a soft stop that will actually stop the motor just before its physical end-of-travel. This decreases the stress on the motor. If the motor reaches it's end-of-travel due a soft stop and the switch is released and pressed again, the lumbar support will move short distance farther to it's physical travel limit.

Lumbar Operation

When the lumbar switch is operated to move the lumbar support forward, battery positive voltage is applied through the switch contacts and the driver seat lumbar forward switch signal circuit to the MSM. In response to this signal, the MSM applies battery positive voltage through the lumbar motor forward control circuit and ground through the lumbar motor rearward control circuit to the motor. The motor runs to drive the lumbar support forward toward the occupant's back until the switch is released. Moving the lumbar support rearward works similarly to moving the lumbar support forward, except that battery positive voltage and ground are applied on the opposite circuits causing the motor to run in the opposite direction. The MSM also controls the lumbar horizontal motor during memory recall functions.

Position Sensors

The lumbar position sensor is a potentiometer which is attached directly to the lumbar motor. The MSM supplies a 5 volt reference voltage through the 5 volt reference circuit and ground through the low reference circuit to the lumbar position sensor. When the lumbar motor rotates, the resistance of the potentiometer varies changing the feedback voltage of the position sensor signal circuit. This voltage varies from 0.25-4.75 volts. The MSM monitors this voltage signal to determine the lumbar position.

When a memory set command is received, the MSM records the lumbar position by storing the feedback voltage from the position sensor. Then, when a memory recall command is received, the MSM moves the motor until the position sensor feedback voltage equals the feedback voltage stored in memory. The lumbar support is not involved in the easy exit function.

Memory Functions

Refer to **Memory Seats Description and Operation**.

HEATED SEATS DESCRIPTION AND OPERATION

The driver and front passenger heated seats each consist of the following components.

- Heated Seat Switch
- Heated Seat Module
- Seat Cushion Heater Element
- Seat Back Heater Element
- Temperature Sensor
- Climate Control Panel (CCP)
- Rear Integration Module (RIM)
- LF FRT HTD SEAT MOD 10 A
- RF FRT HTD SEAT MOD 10 A

Power and Ground

Battery positive voltage is supplied to both front heated seat modules from the rear fuse block IGN 3 Fuse. This voltage is used to power up the heated seat modules allowing the heated seats to operate only when the ignition switch is in the ON position. Battery positive voltage is also supplied at all times to the left front heated seat module from the LF FRT HTD SEAT MOD fuse located in the left rear fuse block and to the right front heated seat module from the RF FRT HTD SEAT MOD fuse located in the right rear fuse block. This voltage is used by the modules to supply power to the seat heating elements. Both modules are grounded through the module ground circuits and G307.

Heated Seat Operation

The driver and passenger heated seats are controlled by separate heated seat switches. Both switches are located in the CCP. When a heated seat switch is pressed, the CCP sends a class 2 message via the serial data line to the rear RIM indicating the heated seat command. In response to this signal, the RIM momentarily sends a 35 millisecond one shot pulse signal that is pulled low through the heated seat high/low signal circuit to the heated seat module. The heated seat module then applies or removes battery positive voltage through the element supply voltage circuit of the seat heating elements. The RIM then sends a class 2 message back to the CCP to either illuminate or turn off the appropriate temperature indicator.

Temperature Regulation

When the ignition is turned to the ON position, the heated seats will initialize in the OFF state. With each activation of the heated seat switch, the heated seat module will cycle the temperature setting in the following manner: HIGH, LOW, and OFF.

The heated seat system is designed in order to warm the seat cushion and seat back to approximately 42°C (107.6°F) when in the high heat position, and 37°C (98.6°F) when in the low heat position. The heated seat module monitors the seat temperature through the temperature sensor signal circuit and the temperature sensor (thermistor) that is located in the seat cushion. The temperature sensor is a variable resistor, its resistance changes as the temperature of the seat changes. When the temperature sensor resistance indicates to the heated seat module that the seat has reached the desired temperature, the module opens the ground path of the seat heating elements through the heated seat element control circuit. The module will then cycle the element control circuit open and closed in order to maintain the desired temperature.

Load Management

The ON/OFF status of the heated seats is reported to the RIM through the status output signal circuit of each heated seat module. During Heated Seats Load Shed Level 1, and the RIM recognizes that the heated seat status signal is active, it will cycle the heated seat operation 16.0 seconds ON and 4.0 seconds OFF. During Heated Seats Load Shed Level 2, the RIM will signal the heated seat module to cancel the heated seat operation and send a class 2 message to the CCP to turn off the appropriate heated seat temperature indicators.

MEMORY SEATS DESCRIPTION AND OPERATION

The memory seat system consists of the following components:

- Seat Adjuster Switch
- Memory Seat Module (MSM)

- Seat Horizontal Motor
- Seat Front Vertical Motor
- Seat Rear Vertical Motor
- Seat Recline Motor
- Seat Horizontal Position Sensor
- Seat Front Vertical Position Sensor
- Seat Rear Vertical Position Sensor
- Seat Recline Position Sensor
- Memory Function Switch
- Driver Door Switch Assembly (DDSA)
- Driver Door Module (DDM)
- SEATS Circuit Breaker 30 A
- SEATS Fuse 10 A

Personalization - Driver Information Center (DIC)

Personalization in the Setup menu of the driver information center (DIC) must be in the active state for memory seats to operate. A check mark appearing after the word Personalization on the display screen indicates that the feature is active. For more detailed information concerning programming of Personalization and other memory recall features controlled through the DIC, refer to **Driver Personalization** in Personalization

Personalization Option - Dash Integration Module (DIM)

The memory seat module cannot perform memory recall functions unless the Personalization Option is activated. The personalization option is located in the DIM. The DIM reports the personalization option setting to the MSM, as well as other receiving modules via a class 2 message each time the ignition switch is cycled to the ON position. The MSM will then store the personalization option setting and examine it before making a memory seat adjustment. The personalization option setting stored within the MSM will not change until the personalization option setting in the DIM is changed and the ignition switch is cycled to the ON position.

Seat Adjuster Switch

Battery positive voltage is supplied at all times to the seat adjuster switch from the SEATS Fuse located in the left rear fuse block. When the seat switches are pressed they send a 12 volt signal to the MSM. The MSM commands the selected seat motors to move in response to the switch signal.

MSM Power and Ground

Battery positive voltage is supplied at all times to the memory seat module through the battery positive voltage circuit from the SEATS Circuit Breaker located in the left rear fuse block. This voltage is used to power up MSM and also to apply power to the seat motors when commanded. Battery positive voltage is also supplied to the MSM from the SEATS Fuse that also supplies voltage to the seat adjuster switch. The MSM monitors this voltage circuit in order to determine if battery voltage is supplied to the seat adjuster switch. The MSM is grounded through the module ground circuit and G307.

Seat Motors

The MSM controls the movement of each of the above mentioned seat directional motors. All of the seat motors operate independently of each other. Each motor contains a electronic circuit breaker (PTC), that opens in the event of a circuit overload and will reset only after voltage has been removed from the circuit.

There are 4 motors that move the position of the seat. These are the seat horizontal motor, front vertical motor, rear vertical motor, and the recline motor. The horizontal motor moves the entire seat forward and rearward. The seat vertical motors may operate independently to tilt the front or rear of the seat cushion up or down. Both vertical motors can also run simultaneously to move the entire seat up or down. The recline motor moves the angle of the seat back forward or rearward.

All motors are reversible. For example, when the seat switch is operated to moved the entire seat forward, battery positive voltage is applied through the horizontal forward switch contacts and the power seat horizontal forward switch signal circuit to the MSM. In response to this signal, the MSM applies battery positive voltage through the driver seat horizontal motor forward control circuit to the horizontal motor. The MSM supplies ground to the motor through the driver seat horizontal motor rearward control circuit. The motor runs to drive the entire seat forward until the switch is released. Moving the entire seat rearward works similarly to moving the entire seat forward, except that battery positive voltage and ground are applied on the opposite circuits causing the motor to run in the opposite direction. All other seat motors are also powered this way.

The MSM provides each seat motor with a soft stop. The module will actually stop the motor just before the physical end-of-travel for that motor. This decreases the stress on each motor. If a motor reaches the end-of-travel due a soft stop and the seat switch is released and then activated again, the seat will move a short distance farther to it's physical travel limit.

Position Sensors

The seat position sensors are potentiometers which are either attached directly to the motor's transmission cable or are an internal part of the motor. The MSM supplies a 5 volt reference

voltage through the 5 volt reference circuit and ground through the low reference circuit to the respective seat position sensors. When the motor or cable rotates, the resistance of the potentiometer varies changing the feedback voltage of the position sensor signal circuit. This voltage varies from 0.25 volts to 4.75 volts. The MSM monitors this voltage signal to determine the position of the seat.

When a memory set command is received, the MSM records the seat position by storing the feedback voltage from each position sensor. Then, when a memory recall command is received, the MSM moves the motors until the position sensor feedback voltages equals the feedback voltages stored in memory.

Memory Functions

When a memory function switch is pressed, the associated signal circuit of the DDSA is momentarily grounded. In response to this signal, the DDSA then sends a message via the simple bus interface to the DDM indicating that a memory function signal has been received. The DDM then sends the message to the MSM via class 2 serial data line.

The current seat position may be recorded for 2 different drivers. To record a position, adjust the drivers seat to a comfortable position, then press and hold button 1 for 5 seconds, a double beep will sound each time a memory position is set. A second seat position may be programmed by repeating the above steps and pressing button 2. When the MSM receives a memory set message, the MSM records the feedback voltages from all four seat position sensors for the appropriate driver. The easy exit position is programmed by moving the seat to the desired exit position and then holding the exit button for 5 seconds. Two easy exit positions can be programmed, one for each driver. When the MSM receives a set exit message, the MSM records the feedback voltages from all four seat position sensors for the appropriate driver.

When the memory recall 1 or 2 button is pressed, a single chime is sounded through the radio in order to acknowledge the signal and the MSM receives the memory recall message. In response to this message, the MSM applies battery positive voltage to run the seat motors until the position sensor feedback voltages equal the feedback voltages stored in memory for the appropriate driver. When the EXIT button is pressed, a single chime is sounded in order to acknowledge the signal and the MSM receives the easy exit message. In response to this message, the MSM applies battery positive voltage to run the seat motors until the position sensor feedback voltages equal the feedback voltages stored in memory for the appropriate driver.

Memory recall will not work if the shift lever is out of NEUTRAL (N) or PARK (P).

Recall Personalization

2004 Cadillac SRX

2004 ACCESSORIES & EQUIPMENT Seats - SRX

When a keyless entry transmitter is used in order to unlock the vehicle doors, the transmitter sends a signal to the diversity antenna module. The module interprets the signal, then communicates the unlock command and which driver performed the command via a class 2 message over the serial data line to the appropriate modules and the MSM. The MSM will then recall any previously programmed personalization easy exit or memory seat positions. For more information concerning the programming of the personalization feature refer to **Driver Personalization** in Personalization.

Memory Inhibit/Enable

The memory seat module receives the ignition switch signal and the gear selector position via class 2 messages. When the ignition switch is in the OFF position, memory record, memory recall, personalization recall, and exit recall functions are all allowed. When the ignition switch is in the ON position and the gear selector is in the PARK position, only the recall personalization function is deactivated and all other memory functions are allowed. When the ignition switch is in the ON position and the gear selector is out of the PARK position, only memory record is allowed, all other memory seat functions are not allowed.