2004 ACCESSORIES & EQUIPMENT

Seats - C/K SUV

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Armrest Bolts	9 N.m	80 lb in
Armrest Trim Cover Screws	2 N.m	18 lb in
Bench Seat Back Frame Bolts	53 N.m	39 lb ft
Bench Seat Grab Handle Bolts	30 N.m	22 lb ft
Bench Seat Rear Riser Latch Bolts	53 N.m	39 lb ft
Cushion Front Nuts	21 N.m	15 lb ft
Cushion Side Bolts	35 N.m	26 lb ft
Folding Head Restraint Assembly Bolts	7 N.m	61 lb in
Front Recliner Attachment Bolts	53 N.m	39 lb ft
Front Seat Belt Buckle Nut	53 N.m	39 lb ft
Hinge Assembly Bolts	7 N.m	61 lb in
Inboard Pivot Bolt	35 N.m	26 lb ft
Latch Cover Screws	2 N.m	18 lb in
Lumbar Switch Screws	2 N.m	18 lb in
Memory Module Screws	3 N.m	26 lb in
Outboard Pivot Bolt	35 N.m	26 lb ft
Outboard Seat Belt Anchor Bolt	53 N.m	39 lb ft
Outboard Seat Belt Anchor Nut	53 N.m	39 lb ft
Power Seat Switch Bezel Screws	2 N.m	18 lb in
Power Seat Switch Screws	2 N.m	18 lb in
Rear Heated Seat Switch Screw	1.6 N.m	14 lb in
Rear Seat Back Latch Bolt	45 N.m	33 lb ft
Rear Seat Back Latch Screw	25 N.m	18 lb ft
Recliner Arm Attachment Bolts	53 N.m	39 lb ft
Recliner/Release Handle Screws	2 N.m	18 lb in
Recliner Screw	10 N.m	89 lb in
Seat Back Folding Mechanism Bolts	21 N.m	15 lb ft
Seat Back Side Bolts	35 N.m	26 lb ft
Seat Belt Tower Cover Screw	1.9 N.m	17 lb in
Seat Front Retaining Nuts	55 N.m	41 lb ft

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Seat Rear Retaining Bolts	55 N.m	41 lb ft
Trim Panel Screws	2 N.m	18 lb in

SCHEMATIC AND ROUTING DIAGRAMS

DRIVER SEAT SCHEMATICS

Refer to Memory Systems and Power Seats in System Wiring Diagrams .

PASSENGER SEAT SCHEMATICS

Refer to Power Seats in System Wiring Diagrams .

REAR SEAT SCHEMATICS

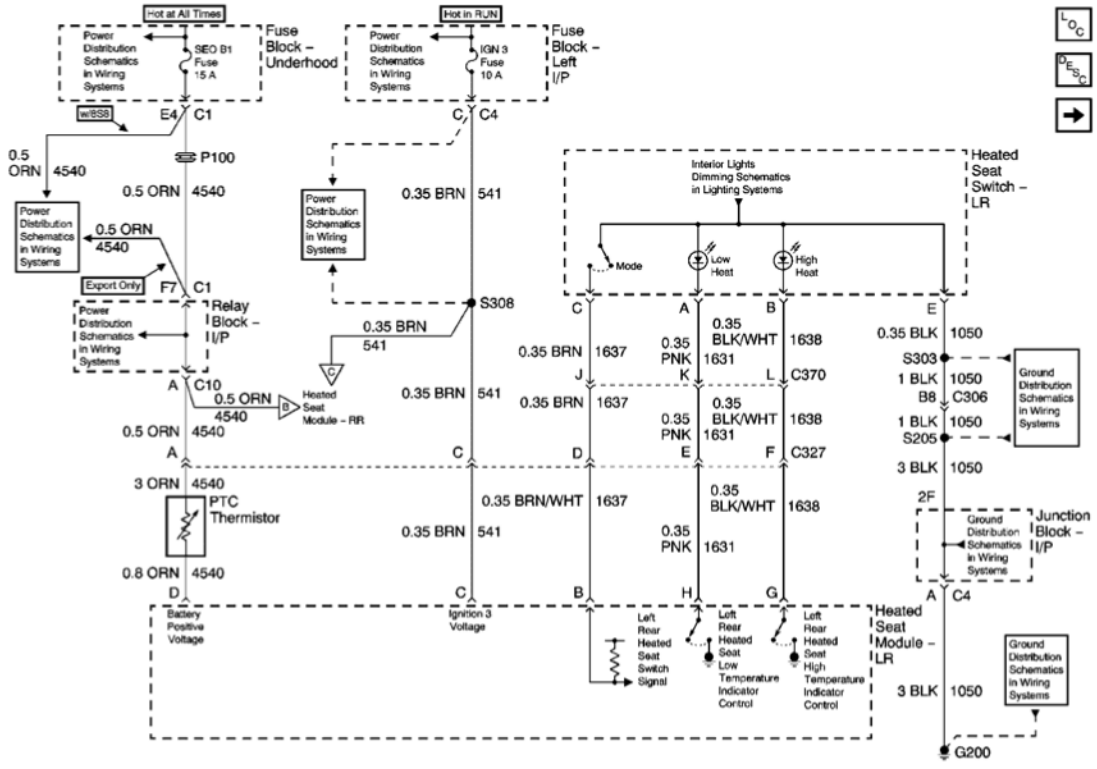


Fig. 1: Rear Heated Seats Schematic - 1 Of 3
Courtesy of GENERAL MOTORS CORP.

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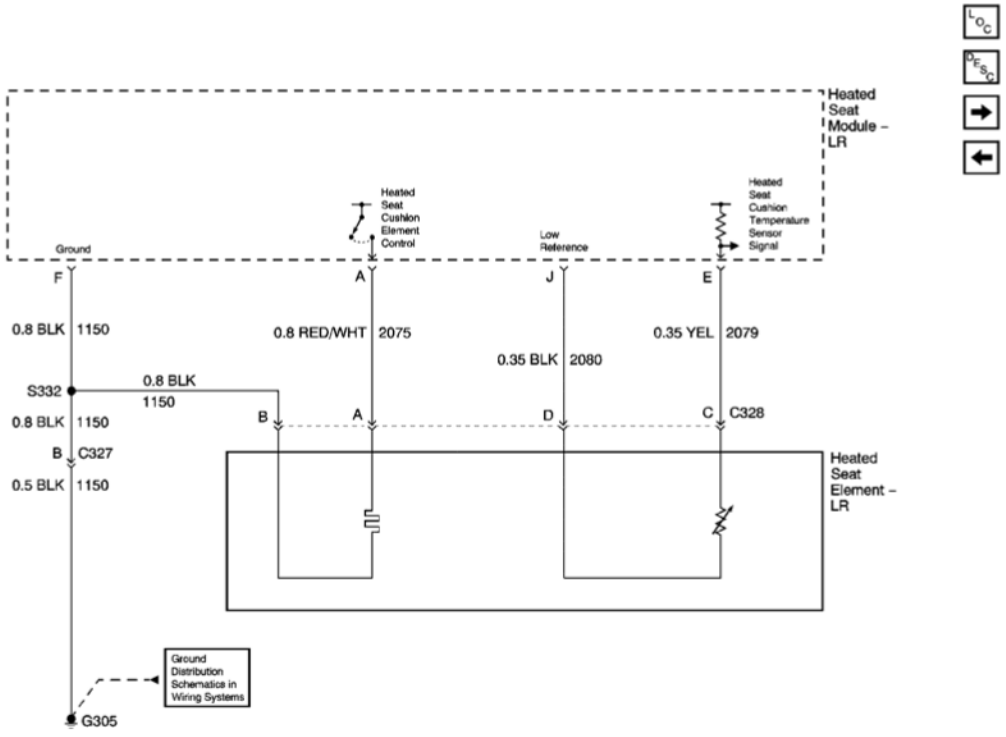


Fig. 2: Rear Heated Seats Schematic - 2 Of 3
Courtesy of GENERAL MOTORS CORP.

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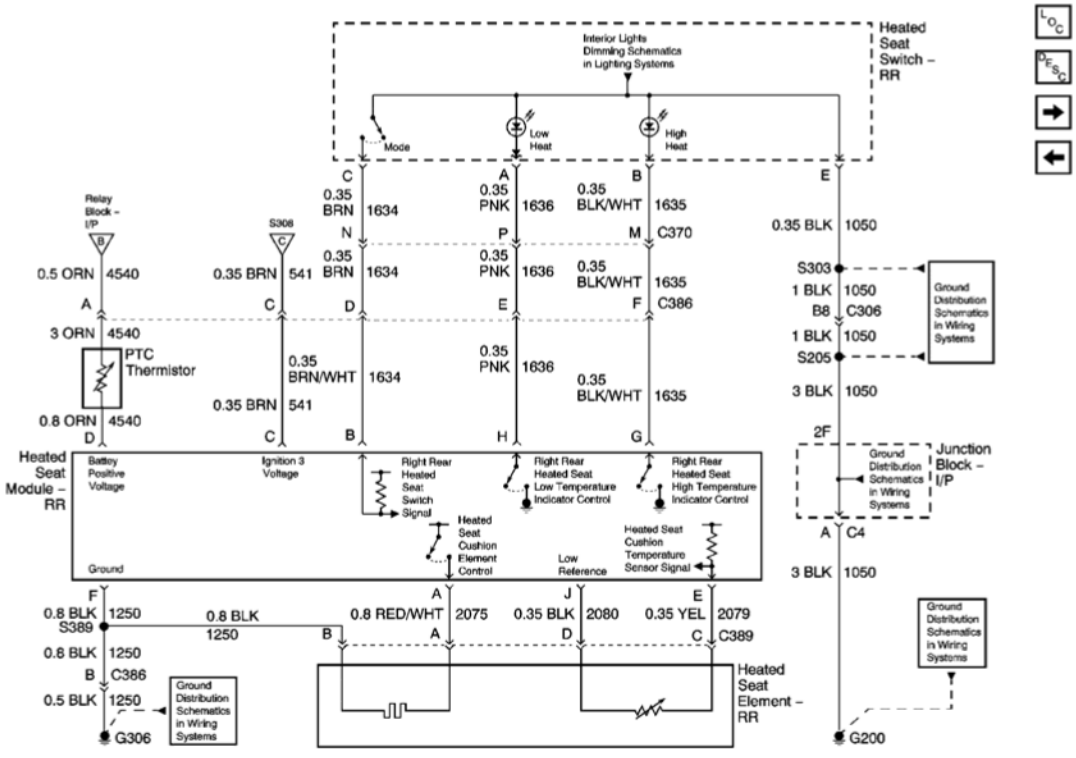


Fig. 3: Rear Heated Seats Schematic - 3 Of 3
Courtesy of GENERAL MOTORS CORP.

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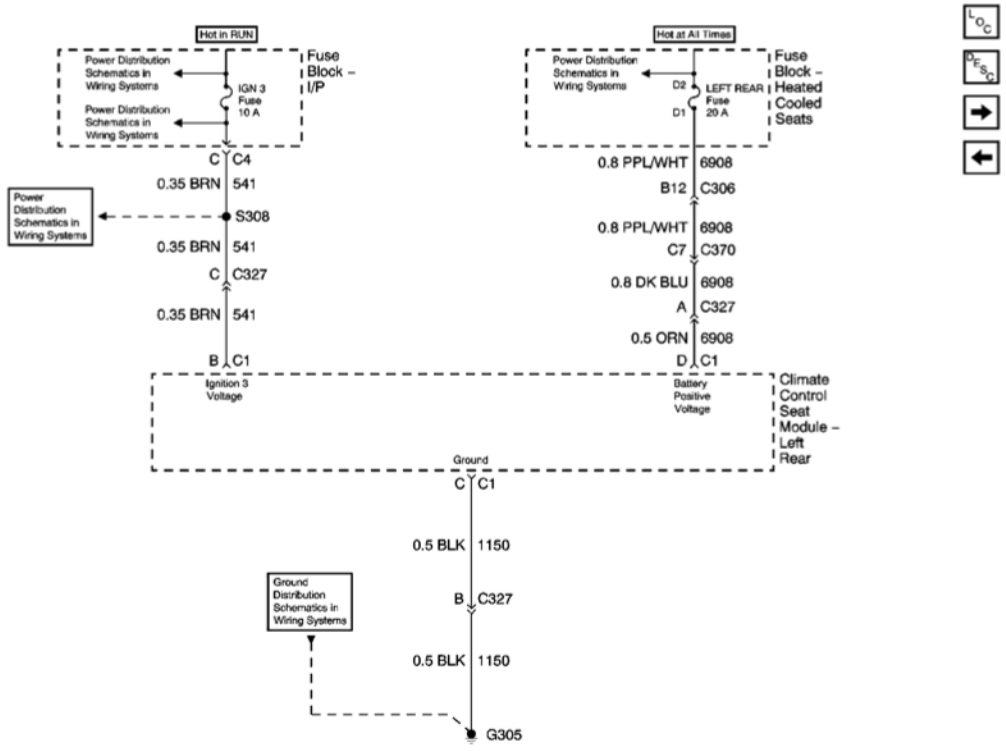


Fig. 4: Left Rear Schematic (ULT) - 1 Of 4
Courtesy of GENERAL MOTORS CORP.

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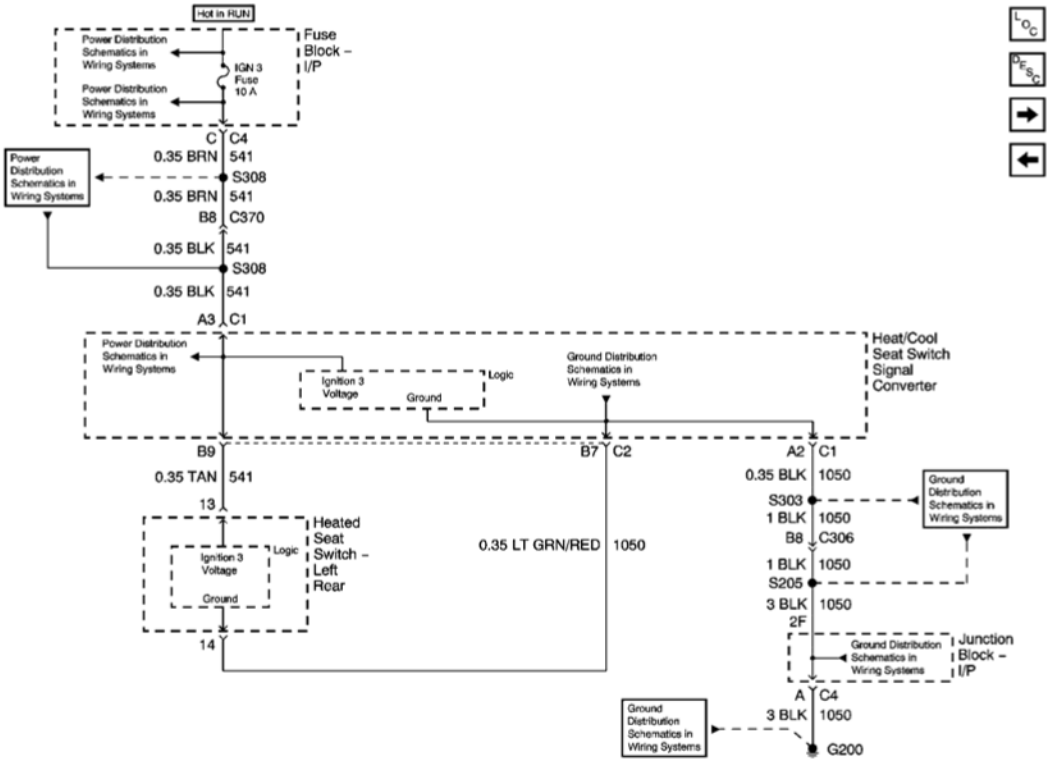


Fig. 5: Left Rear Schematic (ULT) - 2 Of 4
Courtesy of GENERAL MOTORS CORP.

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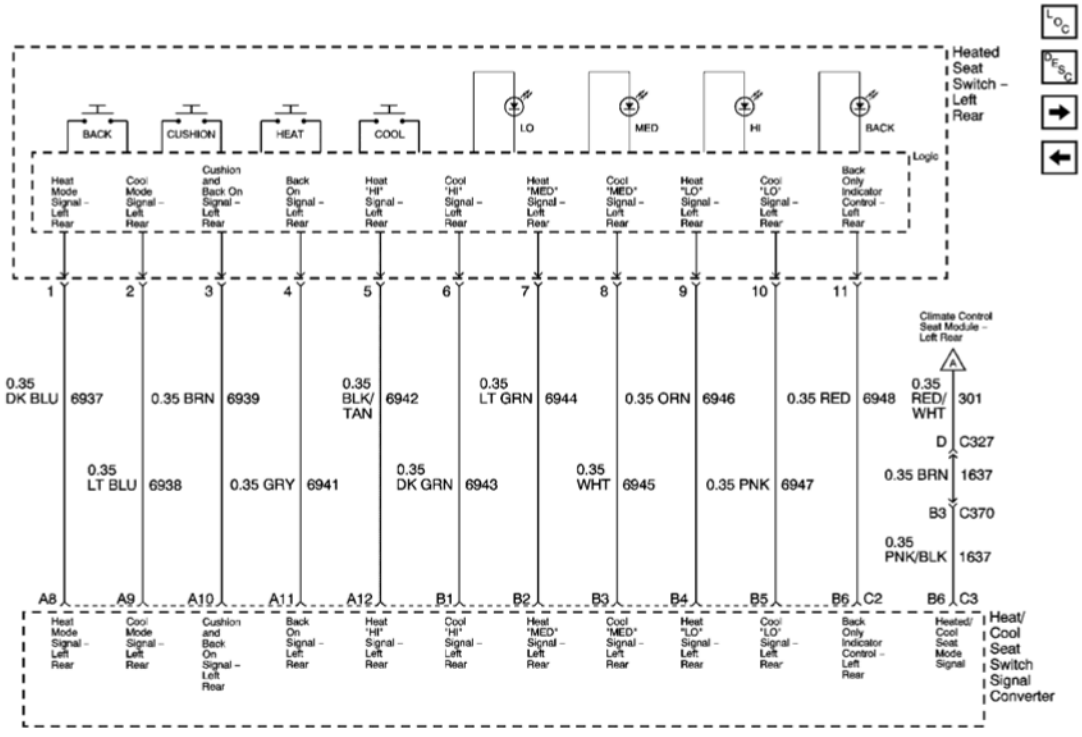


Fig. 6: Left Rear Schematic (ULT) - 3 Of 4
Courtesy of GENERAL MOTORS CORP.

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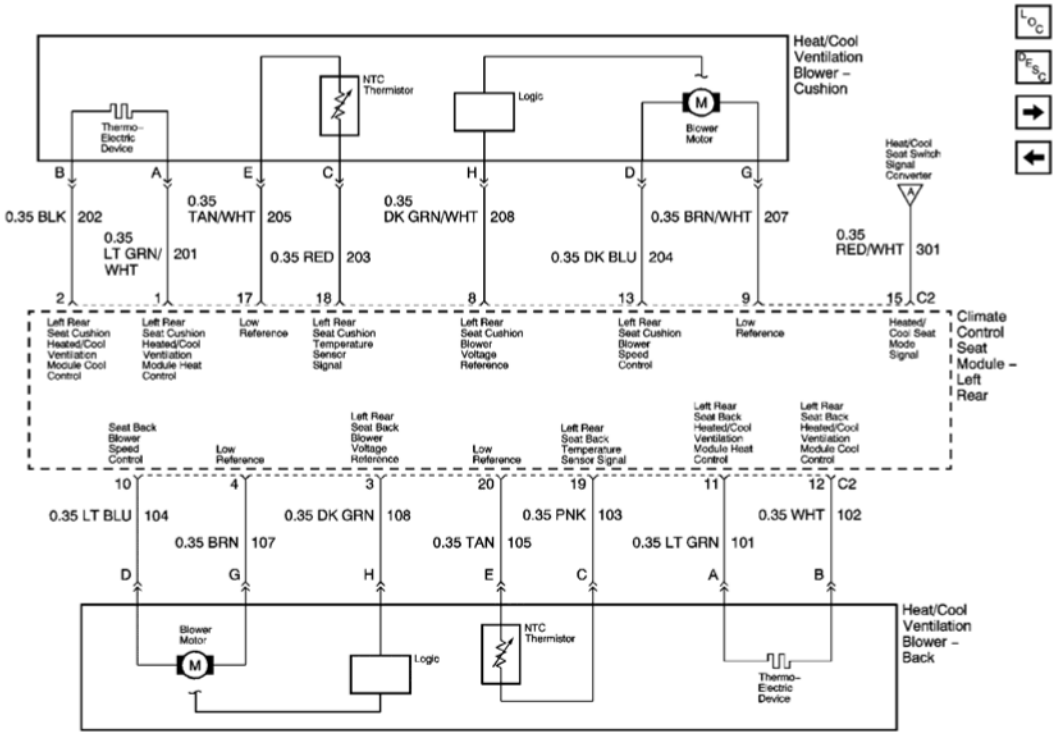


Fig. 7: Left Rear Schematic (ULT) - 4 Of 4
Courtesy of GENERAL MOTORS CORP.

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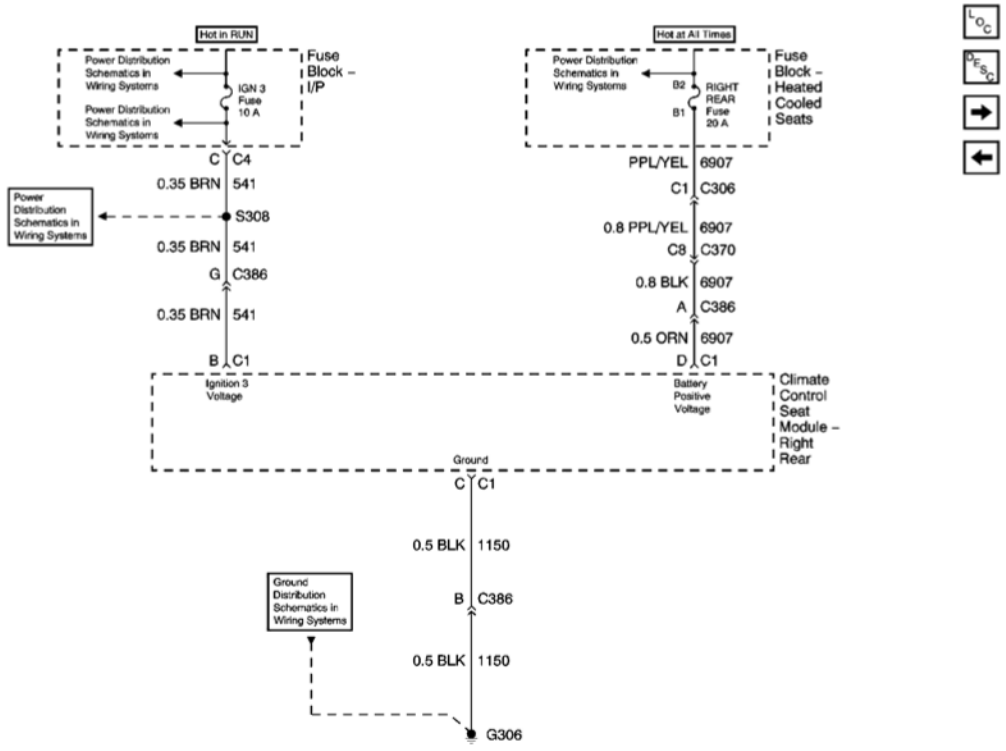


Fig. 8: Right Rear Schematic (ULT) - 1 Of 4
Courtesy of GENERAL MOTORS CORP.

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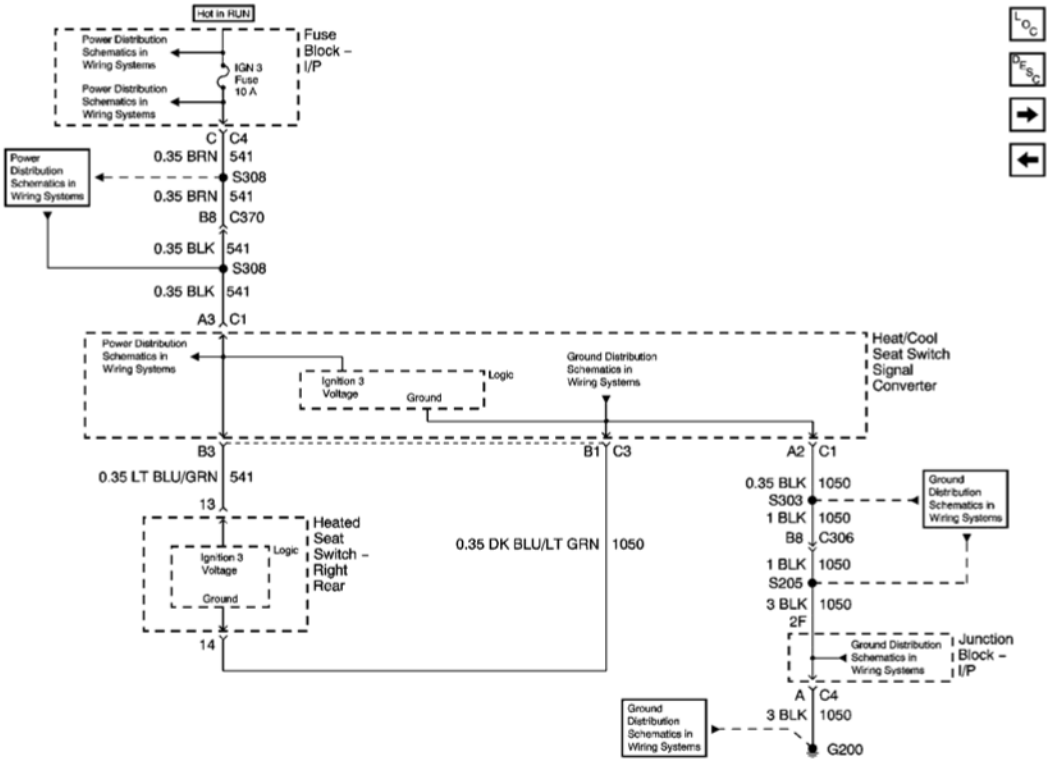


Fig. 9: Right Rear Schematic (ULT) - 2 Of 4
Courtesy of GENERAL MOTORS CORP.

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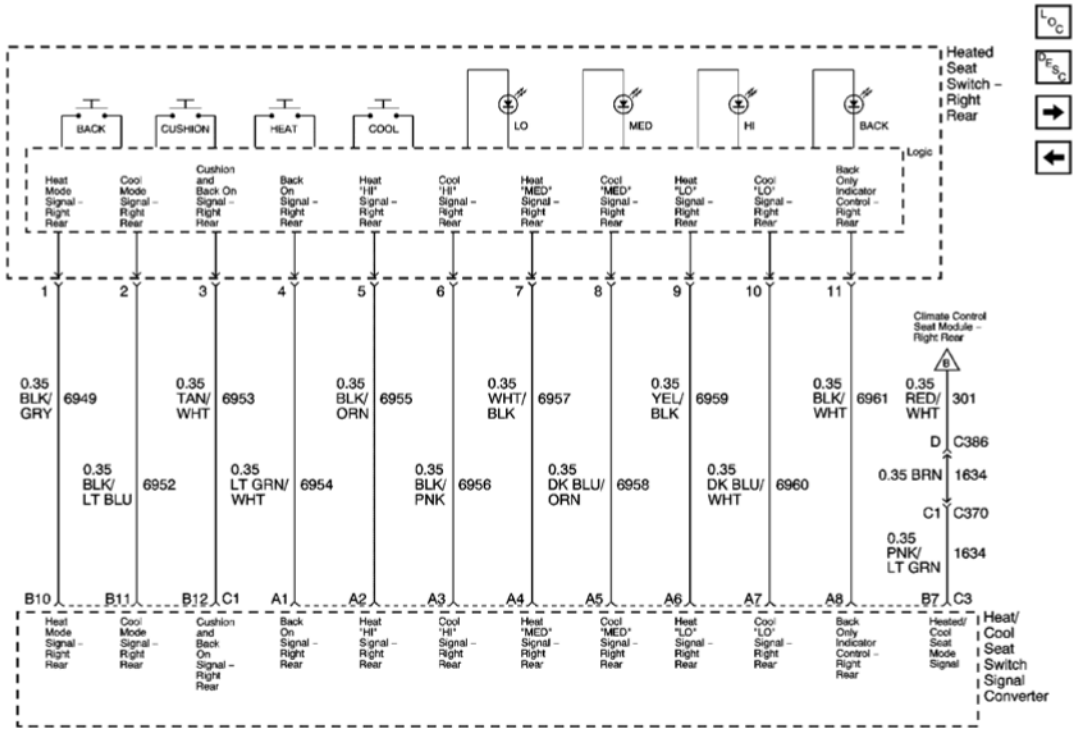


Fig. 10: Right Rear Schematic (ULT) - 3 Of 4
Courtesy of GENERAL MOTORS CORP.

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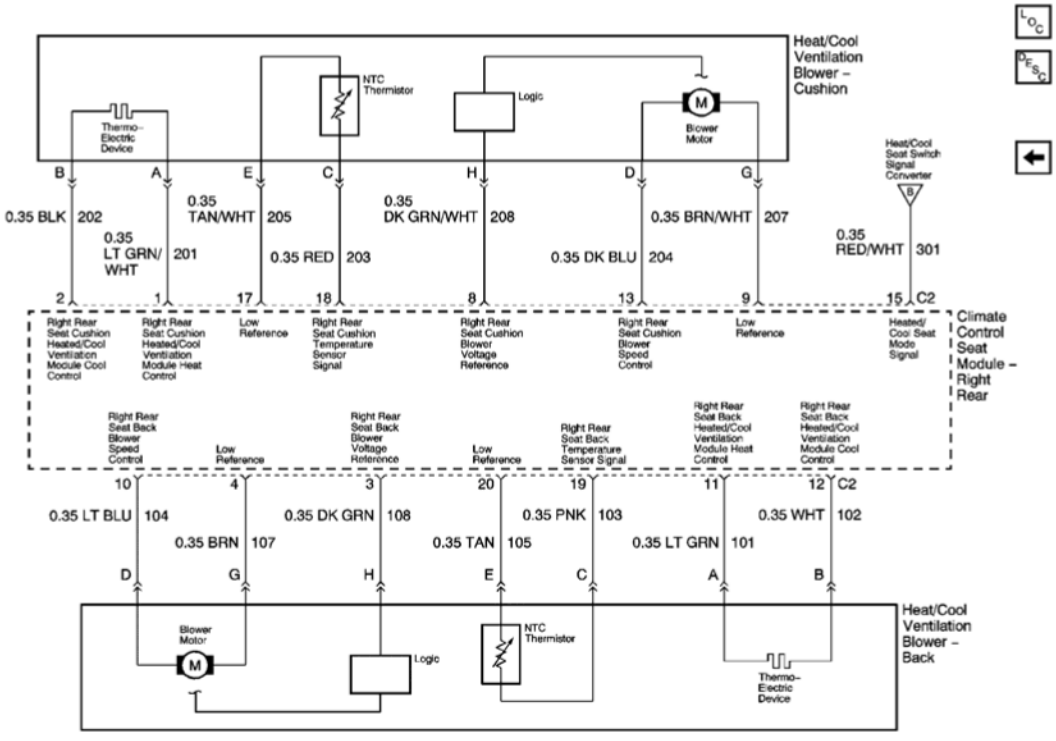


Fig. 11: Right Rear Schematic (ULT) - 4 Of 4
Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

POWER SEAT SYSTEMS COMPONENT VIEWS

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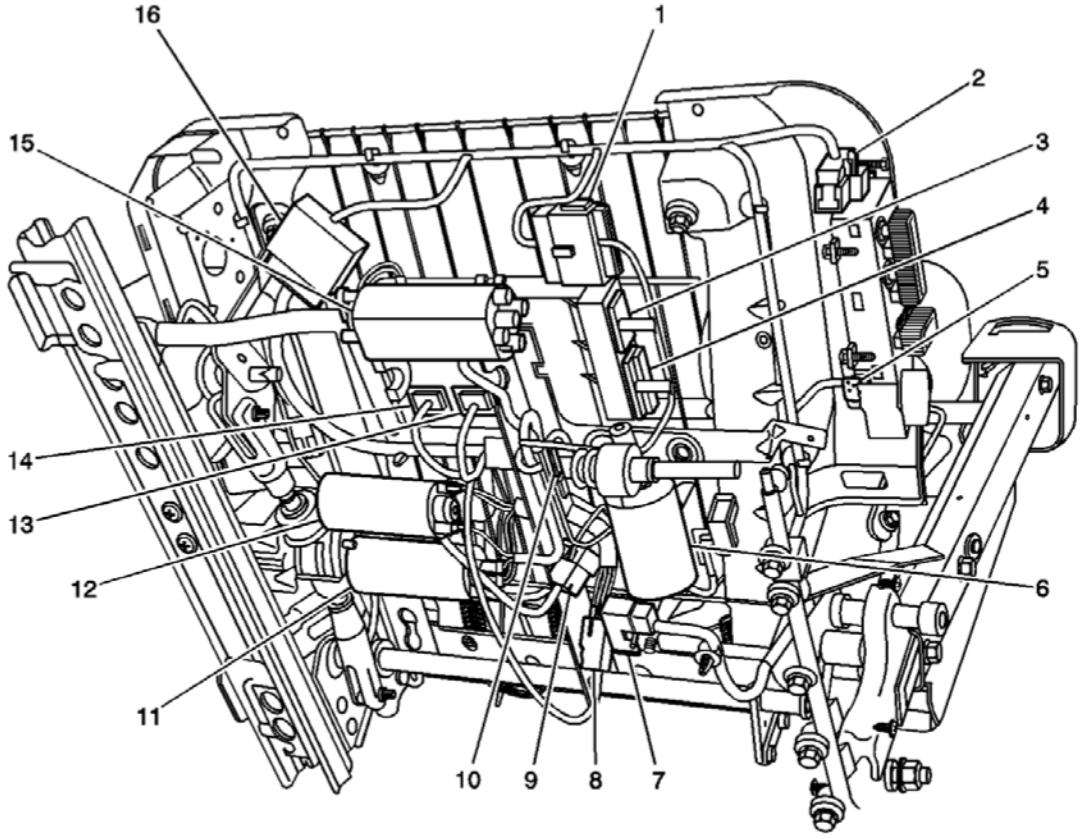


Fig. 12: Driver Seat Component View (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 12

Callout	Component Name
1	C321
2	Seat Adjuster Switch - Driver
3	Memory Seat Module - C4
4	Memory Seat Module - C3
5	Seat Bolster/Lumbar Switch - Driver
6	Seat Recliner Motor - Driver
7	C305
8	C323
9	C325
10	C322
11	Seat Rear Vertical Motor - Driver
12	Seat Front Vertical Motor - Driver
13	Memory Seat Module - C2

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14	Memory Seat Module - C1
15	Seat Horizontal Motor - Driver
16	C320

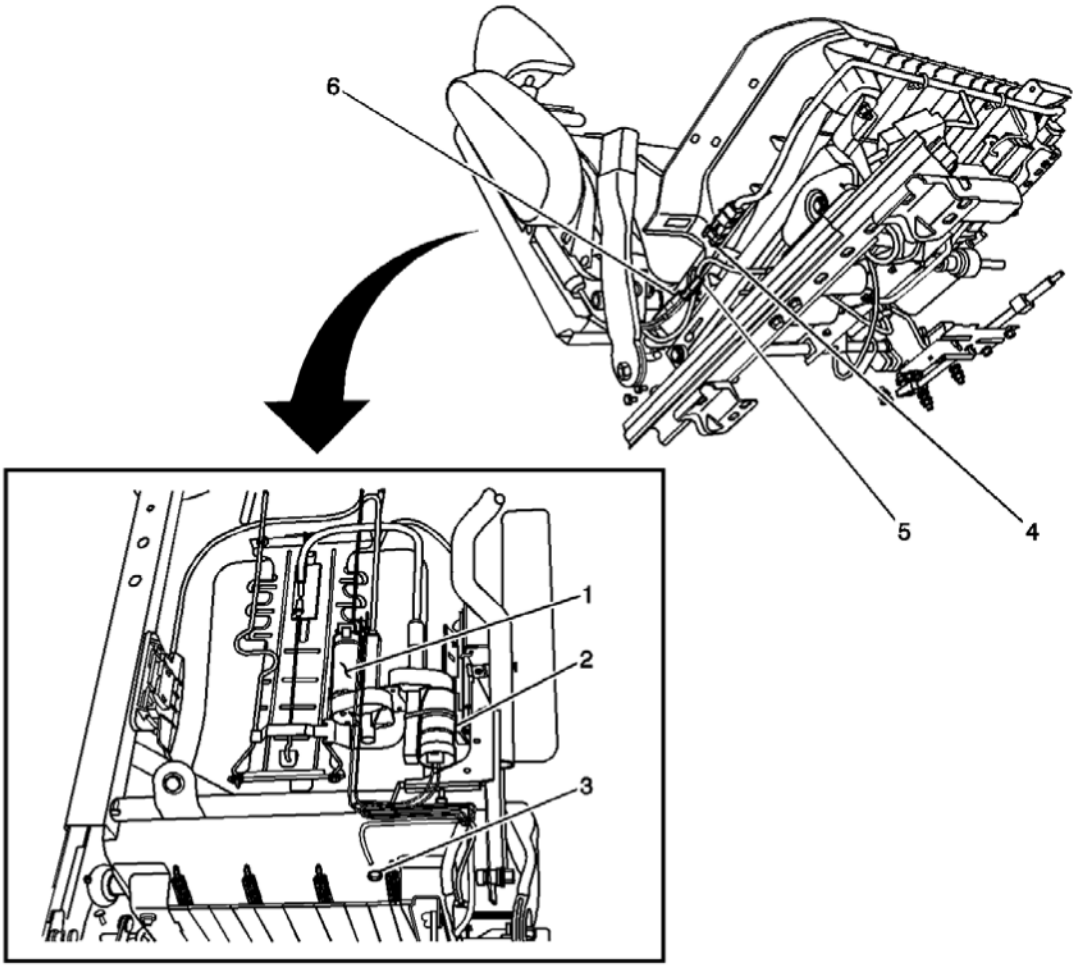


Fig. 13: Driver Seat Component View (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 13

Callout	Component Name
1	Seat Bolster Motor - Driver
2	Seat Lumbar Motor - Driver
3	Heated Seat Element - Driver Cushion
4	C324
5	Seat Belt Switch Connector
6	Heated Seat Element - Driver Cushion Connector

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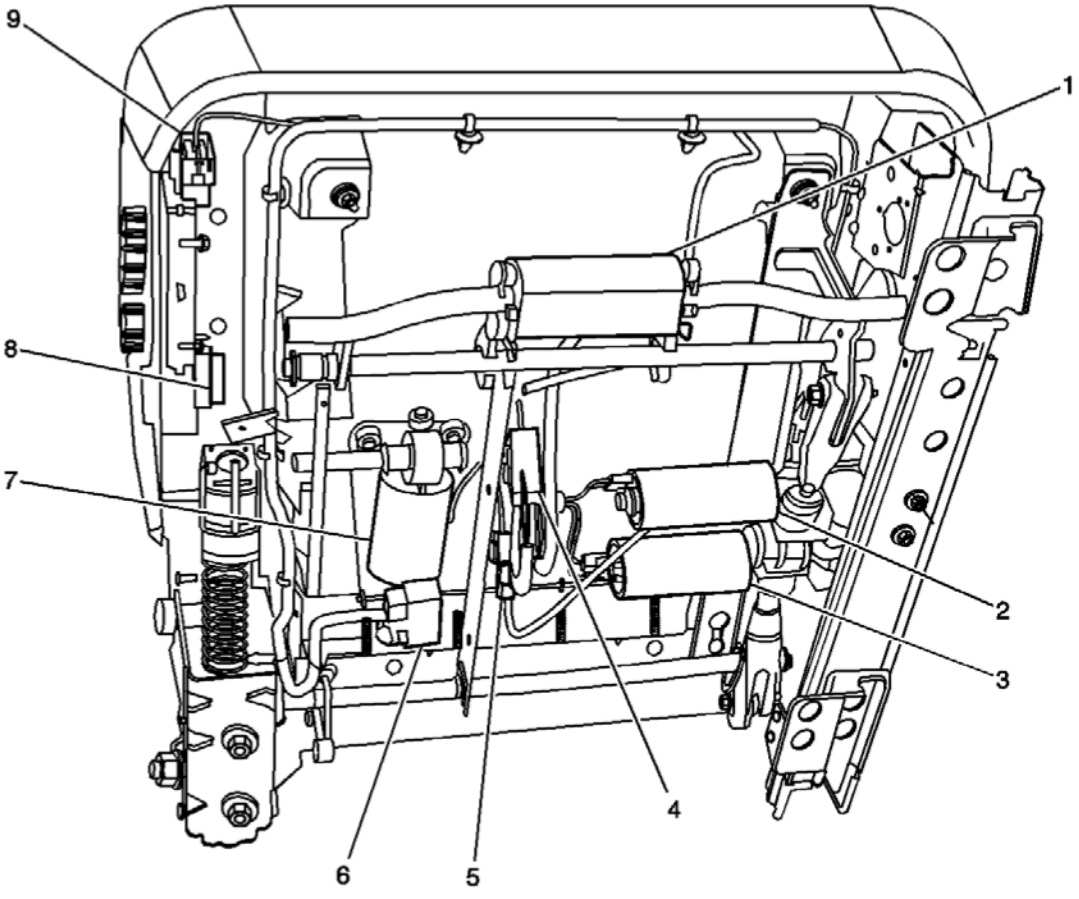


Fig. 14: Front Passenger Seat Component View (1 Of 2) (w/ AN3)
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 14

Callout	Component Name
1	Seat Horizontal Motor - Front Passenger
2	Seat Front Vertical Motor - Front Passenger
3	Seat Rear Vertical Motor - Front Passenger
4	C388
5	C326
6	C399
7	Seat Recliner Motor - Front Passenger
8	Seat Adjuster Switch - Front Passenger
9	Seat Adjuster Switch Connector

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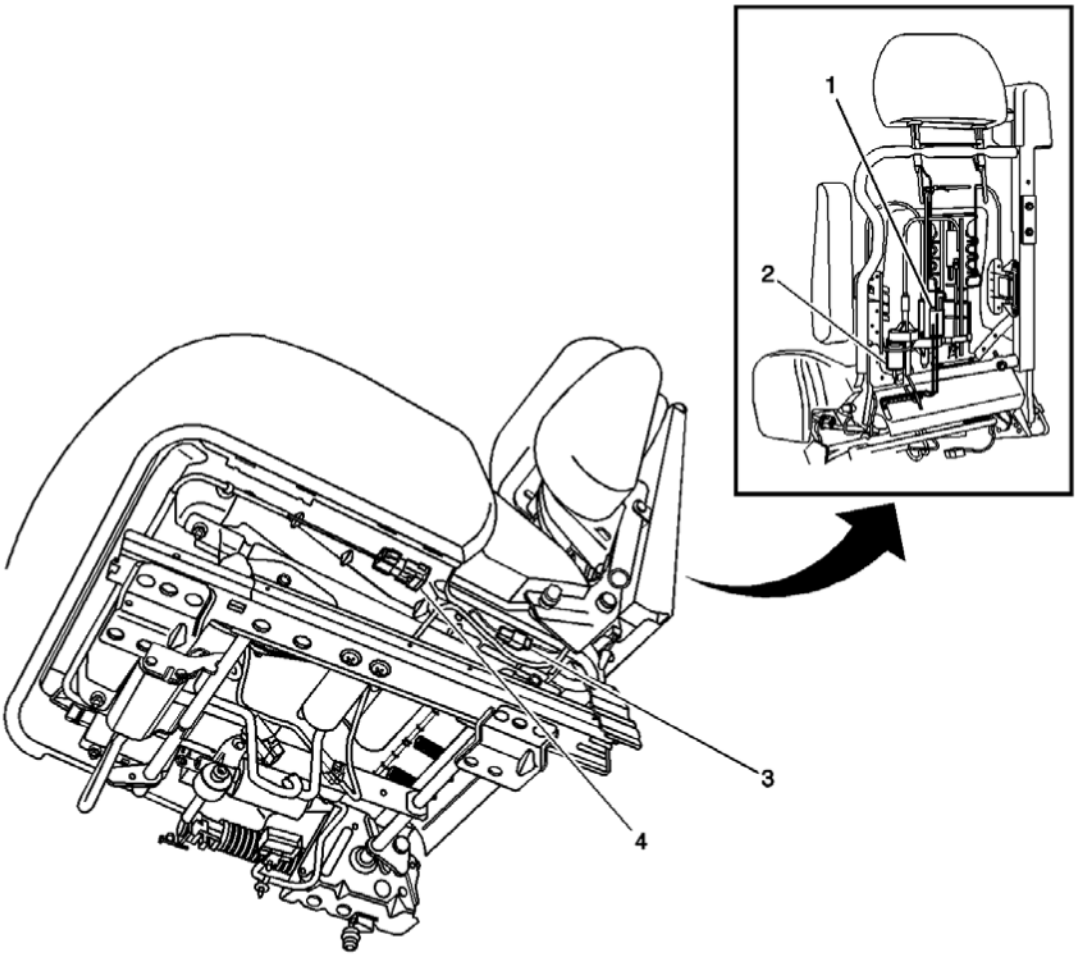


Fig. 15: Front Passenger Seat Component View (2 Of 2) (w/ AN3)
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 15

Callout	Component Name
1	Seat Bolster Motor - Front Passenger
2	Seat Lumbar Motor - Front Passenger
3	Heated Seat Element - Front Passenger Cushion Connector
4	C329

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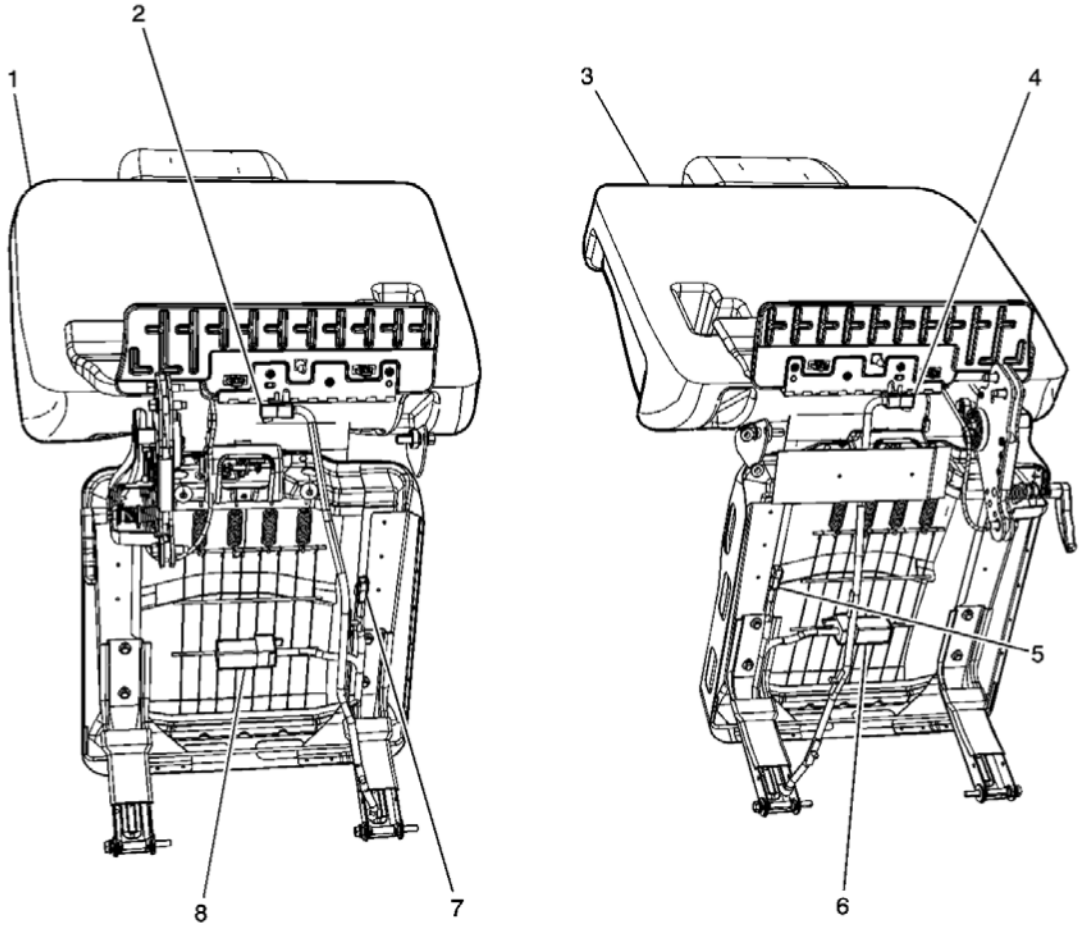


Fig. 16: Under Rear Seats Component View (w/KA6)
Courtesy of GENERAL MOTORS CORP.

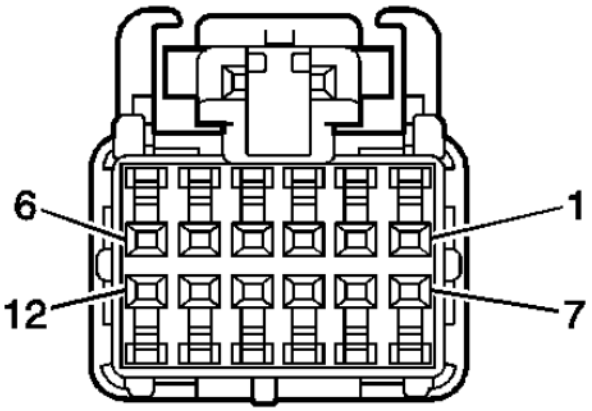
Callouts For Fig. 16

Callout	Component Name
1	RR Seat
2	C327
3	RR Seat
4	C386
5	C389
6	Heated Seat Module-RR
7	C328
8	Heated Seat Module-LR

POWER SEAT SYSTEMS CONNECTOR END VIEWS

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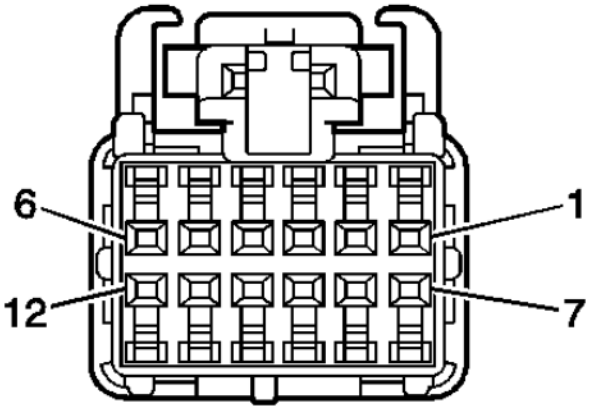
Driver Door Module (DDM) - C5 (Memory/Heated Seat Switch - Driver) Connector End View



Connector Part Information		• 6383393-4 • 12-Way F Amp 0.64 mm Unsealed (GRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	WHT/BLK	-	Medium Heat Indicator Control
2	YEL	-	Low Heat Indicator Control
3	GRY	-	Back Only Select
4	LT BLU	-	Memory/Heated Seat Backlight
5	PNK	-	Memory 2 Switch Signal
6	TAN	-	Adjustable Pedals Motor Forward Control (JF4)
7	DK GRN	-	High Heat Indicator Control
8	BLK	-	Back Only Indicator
9	DK BLU	-	Back and Cushion Select
10	RED	-	Memory 1 Switch Signal
11	BRN	-	Memory/Heated Switch Supply Voltage
12	ORN	-	Adjustable Pedals Motor Rearward Control (JF4)

Front Passenger Door Module (FPDM) - C5 (Heated Seat Switch - Front Passenger) Connector End View

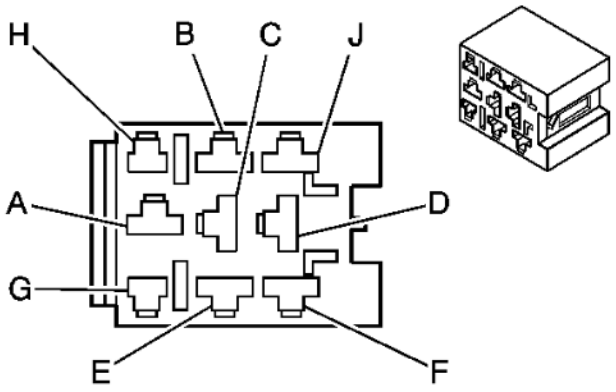
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Connector Part Information		• 6383393-4 • 12-Way F Amp 0.64 mm Unsealed (GRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	YEL	-	Low Heat Indicator Control
2	GRN	-	High Heat Indicator Control
3	DK BLU	-	Back and Cushion Select
4	GRY	-	Back Only Select
5	-	-	Not Used
6	BRN	-	Memory/Heated Seat Switch Supply Voltage
7	BLK	-	Back Only Indicator Control
8	WHT/BLK	-	Medium Heat Indicator Control
9-11	-	-	Not Used
12	LT BLU	-	Heated Seat Switch Backlight

Heated Seat Control Module - LR Connector End View

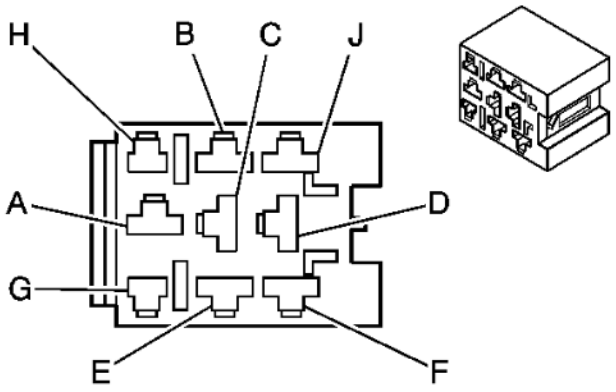
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Connector Part Information		• 15339007 • 9-Way F Metri-Pack 280, 630 Series (BRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	RED/WHT	2075	Heated Seat Cushion Element Control
B	BRN/WHT	1637	Left Rear Heated Seat Switch Signal
C	BRN	541	Ignition 3 Voltage
D	ORN	4540	Battery Positive Voltage
E	YEL	2079	Heated Seat Cushion Temperature Sensor Signal
F	BLK	1150	Ground
G	BLK/WHT	1638	Left Rear Heated Seat High Temperature Indicator Control
H	PNK	1631	Left Rear Heated Seat Low Temperature Indicator Control
J	BLK	2080	Low Reference

Heated Seat Control Module - RR Connector End View

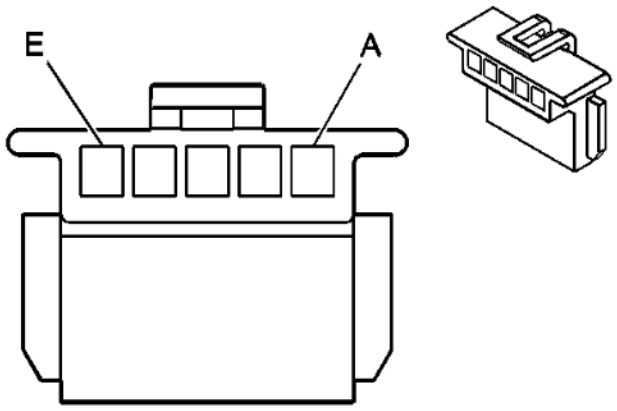
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Connector Part Information		• 15339007 • 9-Way F Metri-Pack 280, 630 Series (BRN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	RED/WHT	2075	Heated Seat Cushion Element Control
B	BRN/WHT	1634	Right Rear Heated Seat Switch Signal
C	BRN	541	Ignition 3 Voltage
D	ORN	4540	Battery Positive Voltage
E	YEL	2079	Heated Seat Cushion Temperature Sensor Signal
F	BLK	1250	Ground
G	BLK/WHT	1635	Right Rear Heated Seat High Temperature Indicator Control
H	PNK	1636	Right Rear Heated Seat Low Temperature Indicator Control
J	BLK	2080	Low Reference

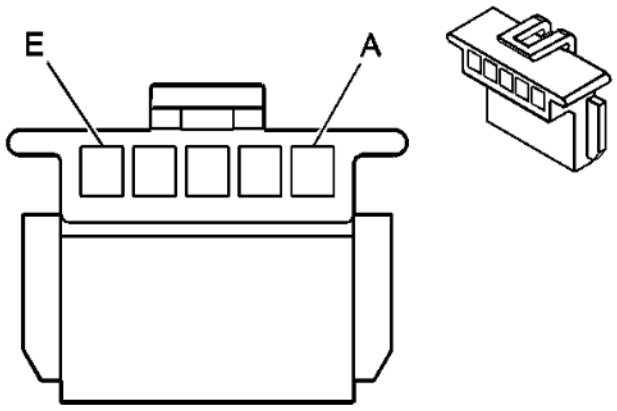
Heated Seat Switch - RR Connector End View

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Connector Part Information		• 12124997 • 5-Way F (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	PNK	1636	Right Rear Heated Seat Low Indicator Control
B	BLK/WHT	1635	Right Rear Heated Seat High Indicator Control
C	BRN	1634	Right Rear Heated Seat Switch Signal
D	BRN/WHT	230	Instrument Panel Lamps Dimming Control
E	BLK	1050	Ground

Heated Seat Switch - LR Connector End View

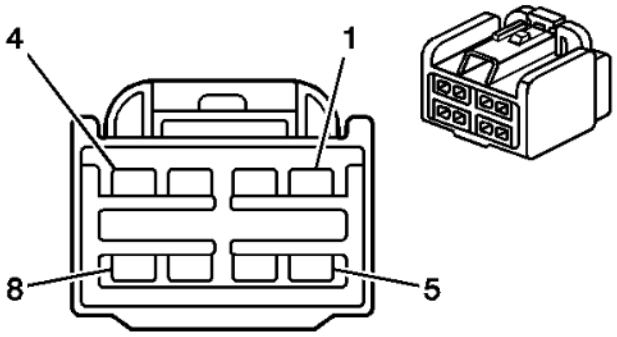


Connector Part Information	• 12124997

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		• 5-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	PNK	1631	Left Rear Heated Seat Low Indicator Control
B	BLK/WHT	1638	Left Rear Heated Seat High Indicator Control
C	BRN	1637	Left Rear Heated Seat Switch Signal
D	BRN/WHT	230	Instrument Panel Lamps Dimming Control
E	BLK	1050	Ground

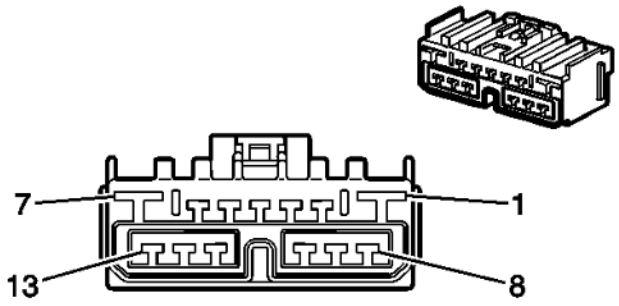
Memory Seat Module - Driver C1 Connector End View



Connector Part Information		• 7283-5560-40 • 8-Way F Yazaki 2.8 mm Unsealed (LT GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	LT GRN	276	Driver Seat Recline Motor Forward Control
2	LT BLU	277	Driver Seat Recline Motor Rearward Control
3	TAN	285	Driver Seat Horizontal Motor Forward Control
4	LT GRN	284	Driver Seat Horizontal Motor Rearward Control
5	LT BLU	283	Driver Seat Rear Vertical Motor Down Control
6	YEL	282	Driver Seat Rear Vertical Motor Up Control
7	DK BLU	287	Driver Seat Front Vertical Motor Down Control
8	DK GRN	286	Driver Seat Front Vertical Motor Up Control

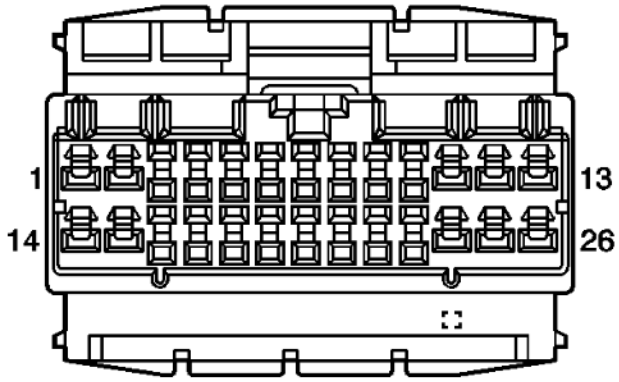
Memory Seat Module - Driver C2 Connector End View

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Connector Part Information		• 7283-5625-40 • 13-Way F Yazaki Hybrid Unsealed (LT GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	ORN	1440	Battery Positive Voltage
2-3	-	-	Not Used
4	DK BLU	611	Driver Seat Lumbar Motor Forward Control
5	PNK	610	Driver Seat Lumbar Motor Rearward Control
6	-	-	Not Used
7	BLK	1150	Ground
8	-	-	Not Used
9	YEL	1257	Driver Seat Torso Bolster In Control
10	PPL	1258	Driver Seat Torso Bolster Out Control
11-13	-	-	Not Used

Memory Seat Module - Driver C3 Connector End View

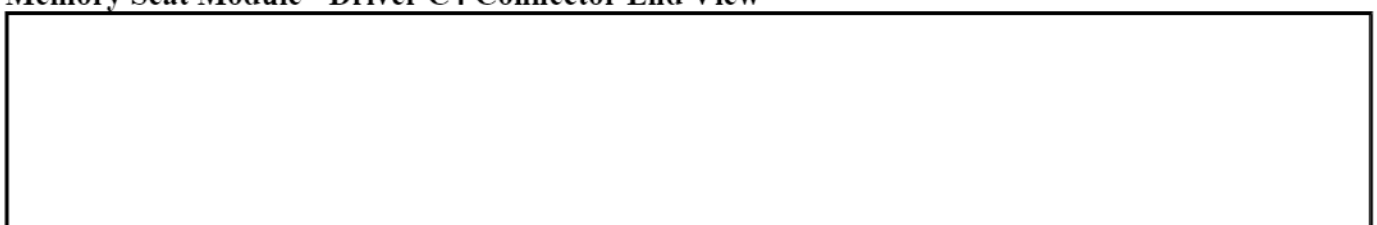


Connector Part Information	• 174516-2

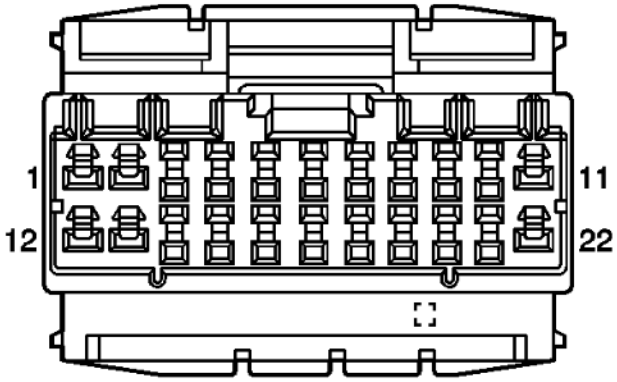
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		• 26-Way F Amp Hybrid (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	RED/WHT	2077	Heated Seat Cushion Element Supply Voltage - w/KA7
2-3	-	-	Not Used
4	TAN	2408	Driver Seat Lumbar Motor Rearward Control
5	GRY/RED	5702	Driver Seat Torso Bolster Out Switch Signal
6	DK GRN/ WHT	1270	Power Seat Recline Rearward Switch Signal
7	-	-	Not Used
8	LT GRN	1523	Power Seat Horizontal Rearward Switch Signal
9	LT BLU	1521	Power Seat Rear Vertical Down Switch Signal
10	DK BLU	1520	Power Seat Front Vertical Down Switch Signal
11	-	-	Not Used
12	WHT	5287	Voltage Reference
13	WHT	570B	Driver Seat Recline Motor Position Sensor Voltage Reference
14	BRN	2432	Driver Heated Seat Back Element Supply Voltage-w/KA7
15-16	-	-	Not Used
17	YEL	2407	Driver Seat Lumbar Motor Forward Switch Signal
18	WHT/RED	5701	Driver Seat Torso Bolster in Switch Signal
19	GRY/BLK	1269	Power Seat Recline Forward Switch Signal
20	-	-	Not Used
21	TAN	1522	Power Seat Horizontal Forward Switch Signal
22	YEL	1519	Power Seat Rear Vertical Up Switch Signal
23	DK GRN	1518	Power Seat Front Vertical Up Switch Signal
24	ORN	1540	Switch Voltage Supply
25	BRN/WHT	5288	Low Reference
26	BLK	570A	Low Reference

Memory Seat Module - Driver C4 Connector End View



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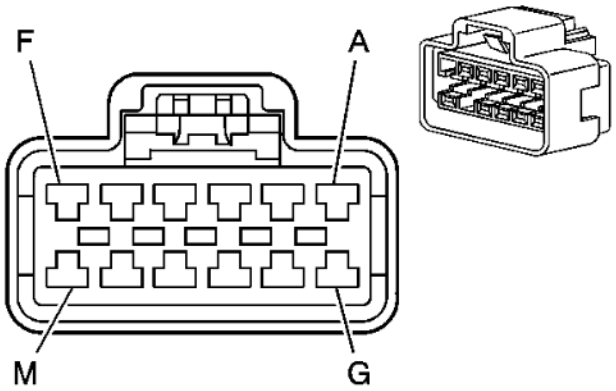


Connector Part Information		• 174515-6 • 22-Way F Amp Hybrid (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	LT BLU	2433	Passenger Heated Seat Back Element Control - w/KA7
2	PNK	2480	Heated Seat Cushion Element Control - w/KA7
3	BRN/WHT	557	Front Vertical Seat Motor Position Sensor Signal
4	DK GRN	569	Horizontal Seat Motor Position Sensor Signal
5	YEL	1063	Driver Seat Lumbar Horizontal Position Sensor Signal
6	PPL	5700	Driver Seat Torso Bolster Position Sensor Signal
7	-	-	Not Used
8	DK BLU	2425	Driver Heated Seat Back Temperature Sensor Signal - w/KA7
9	BRN/WHT	1048	SCM (Seat) Class 2 Serial Data
10	-	-	Not Used
11	DK BLU	2479	Passenger Heated Seat Element Supply Voltage - w/KA7
12	PPL	2424	Driver Heated Seat Back Element Control - w/KA7
13	LT GRN	2078	Heated Seat Cushion Element Control - w/KA7
14	TAN	568	Rear Vertical Seat Motor Position Sensor Signal
15	-	-	Not Used
			Driver Seat Recline Motor Position Sensor

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16	BLK/WHT	570	Signal
17	PNK	5289	Adjustable Pedals Position Sensor Signal
18	-	-	Not Used
19	DK BLU	5475	Front Passenger Heated Seat Back Temperature Signal
20-21	-	-	Not Used
22	DK BLU	2479	Passenger Heated Seat Element Supply Voltage

Seat Adjuster Switch - Driver Connector End View (AN3)

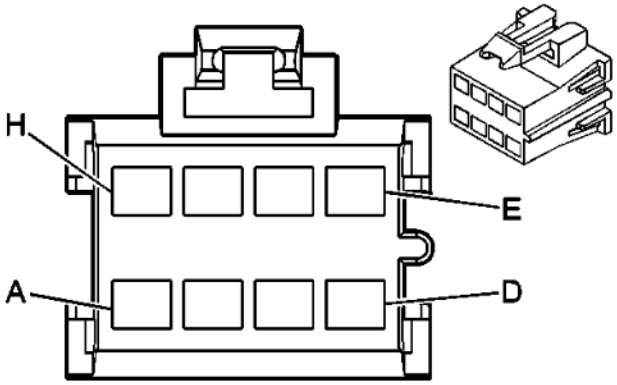


Connector Part Information		• **15326110** • **12-Way F GT 280 Series (BLK)**	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK GRN/ WHT	1270	Power Seat Recline Rearward Switch Signal
B	GRY/BLK	1269	Power Seat Recline Forward Switch Signal
C	-	-	Not Used
D	LT GRN	1523	Power Seat Horizontal Rearward Switch Signal
E	TAN	1522	Power Seat Horizontal Forward Switch Signal
F	ORN	1540	Battery Positive Voltage - Memory Seat Module
	ORN	1540	Battery Positive Voltage - Lumbar/Bolster Switch
G-H	-	-	Not Used
J	LT BLU	1521	Power Seat Rear Vertical Down Switch Signal

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K	YEL	1519	Power Seat Rear Vertical Up Switch Signal
L	DK BLU	1520	Power Seat Front Vertical Down Switch Signal
M	DK GRN	1518	Power Seat Front Vertical Up Switch Signal

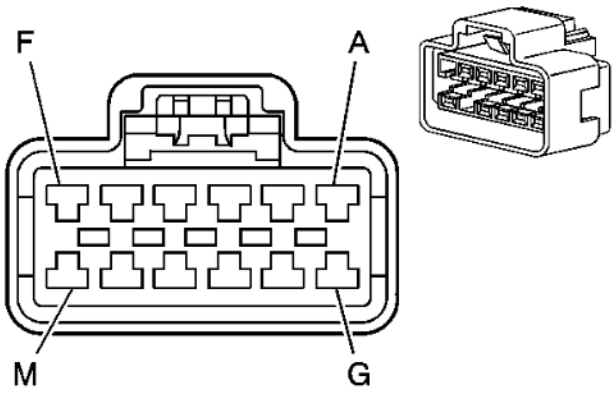
Seat Adjuster Switch - Driver Connector End View (AG2)



Connector Part Information		• 12064998 • 8-Way F Metri-Pack 280 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK GRN/	286	Driver Seat Front Vertical Motor Up Control
B	DK BLU	287	Driver Seat Front Vertical Motor Down Control
C	YEL	282	Driver Seat Rear Vertical Motor Up Control
D	LT BLU	283	Driver Seat Rear Vertical Motor Down Control
E	BLK	1150	Ground
F	LT GRN	284	Driver Seat Horizontal Motor Rearward Control
G	TAN	285	Driver Seat Horizontal Motor Forward Control
H	ORN	1440	Battery Positive Voltage

Seat Adjuster Switch - Front Passenger Connector End View

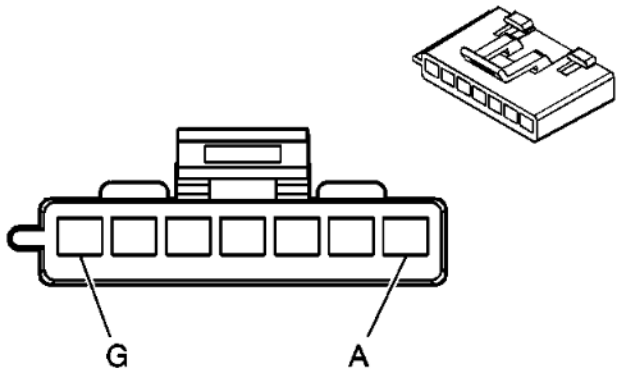
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Connector Part Information		• 15326110 • 12-Way F GT 280 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	ORN	1440	Battery Positive Voltage
B	LT GRN	290	Passenger Seat Horizontal Motor Rearward Control
C	TAN	296	Passenger Seat Horizontal Motor Forward Control
D	BLK	1250	Ground
E	DK BLU	77	Passenger Seat Recline Motor Rearward
F	DK GRN	76	Passenger Seat Recline Motor Forward
G	DK BLU	298	Passenger Seat Front Vertical Motor Down Control
H	DK GRN	297	Passenger Seat Front Vertical Motor Up Control
J	LT BLU	289	Passenger Seat Rear Vertical Motor Down Control
K	YEL	288	Passenger Seat Rear Vertical Motor Up Control
L-M	-	-	Not Used

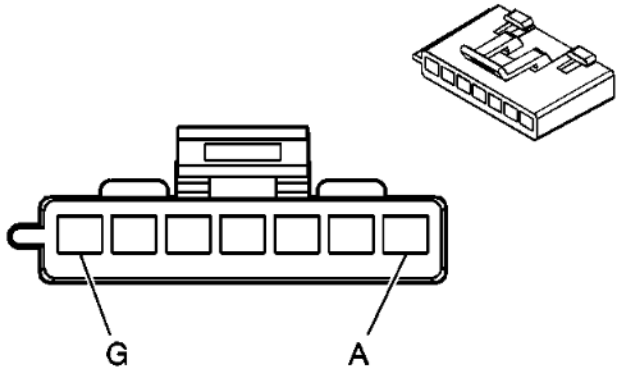
Lumbar/Bolster Switch - Driver Connector End View

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Connector Part Information		• 12052854 • 7-Way F GT 280 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	ORN	1540	Battery Positive Voltage
B	WHT/RED	5701	Driver Seat Torso Bolster in Switch Signal
C-D	-	-	Not Used
E	TAN	2408	Driver Seat Lumbar Motor Rearward Switch Signal
F	YEL	2407	Driver Seat Lumbar Motor Forward Switch Signal
G	GRY/RED	5702	Driver Seat Torso Bolster Out Switch Signal

Lumbar/Bolster Switch - Front Passenger Connector End View

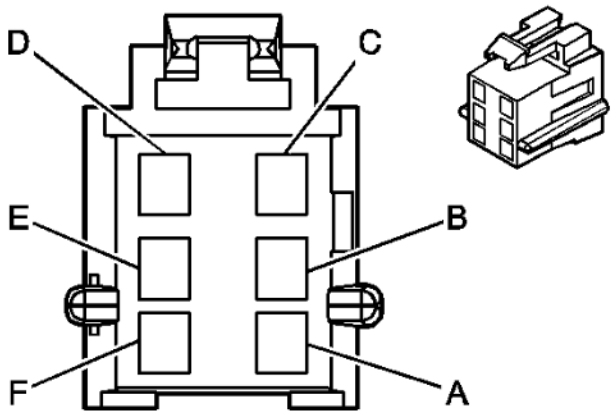


Connector Part Information		• 12052854 • 7-Way F Metri-Pack 280 Series (BLK)	

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Pin	Wire Color	Circuit No.	Function
A	ORN	1440	Battery Positive Voltage
B	DK BLU	2462	Passenger Seat Bolster Motor Forward Control
C	BLK	1250	Ground
D	-	-	Not Used
E	DK BLU	211	Passenger Seat Lumbar Motor Forward Control
F	WHT	210	Passenger Seat Lumbar Motor Rearward Control
G	LT BLU	2427	Passenger Seat Bolster Motor Rearward Control

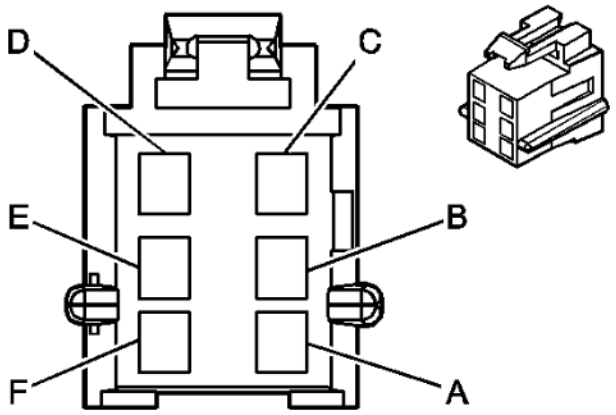
Seat Lumbar Motor/Position Sensor - Driver Connector End View



Connector Part Information		• 12064752 • 6-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	PNK	610	Driver Seat Lumbar Motor Rearward Control
B	DK BLU	611	Driver Seat Lumbar Motor Forward Control
C	WHT	5287	Voltage Reference
D	BRN/WHT	5288	Low Reference
E	YEL	1063	Driver Seat Lumbar Horizontal Position Sensor Signal
F	-	-	Not Used

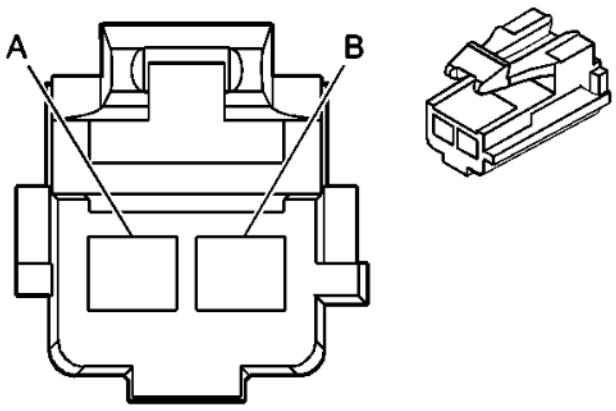
Seat Bolster Motor/Position Sensor - Driver Connector End View

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Connector Part Information		• 12064752 • 6-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	YEL	1257	Driver Seat Torso Bolster in Control
B	PPL	1258	Driver Seat Torso Bolster Out Control
C	WHT	5287	Voltage Reference
D	BRN/WHT	5288	Low Reference
E	PPL	5700	Driver Seat Torso Bolster Position Sensor Signal
F	-	-	Not Used

Seat Recliner Motor - Driver Connector End View

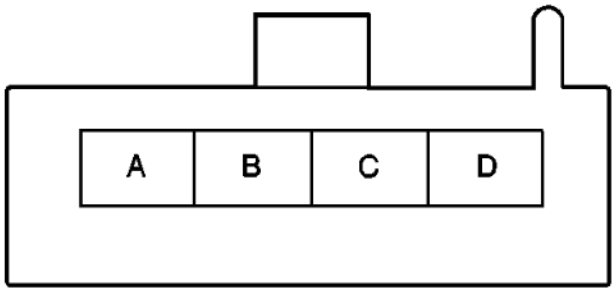


Connector Part Information	• 12129082 • 2-Way F Metri-Pack 150 Series (BLK)

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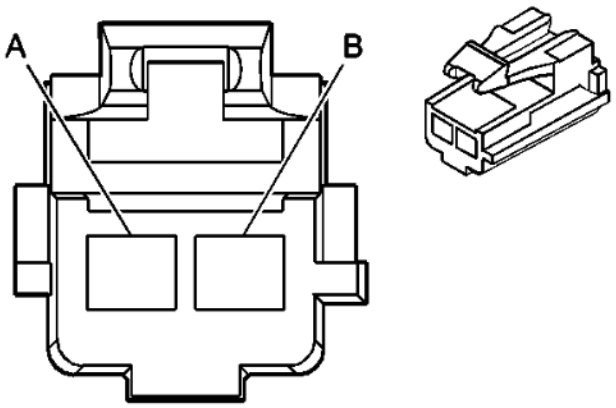
Connector Part Information		• 2-Way F Metri-Pack 280 Series (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	LT BLU	277	Driver Seat Recline Motor Rearward Control
B	LT GRN	276	Driver Seat Recline Motor Forward Control

Seat Recliner Motor Position Sensor - Driver Connector End View



Connector Part Information		• 12059584 • 3-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	-	-	Not Used
B	BLK	570C	Low Reference
C	BLK/WHT	570	Driver Seat Recline Position Sensor Signal
D	WHT	570D	5-Volt Reference

Seat Recliner Motor - Front Passenger Connector End View

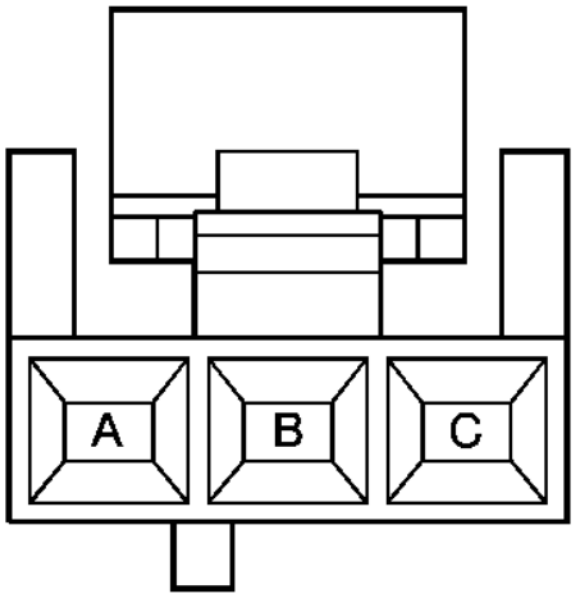


• 12129082

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Connector Part Information		• 2-Way F Metri-Pack 280 Series (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK BLU	77	Front Passenger Seat Recline Motor Rearward Control
B	DK GRN	76	Front Passenger Seat Recline Motor Forward Control

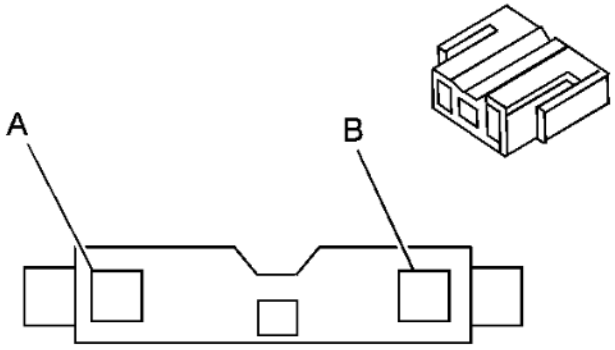
Seat Front Vertical Motor Position Sensor - Driver Connector End View



Connector Part Information		• 104257-2 • 3-Way F Amp (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	RED	940	5-Volt Reference
B	LT BLU	557	Front Vertical Seat Motor Position Sensor Signal
C	BLK	950	Low Reference

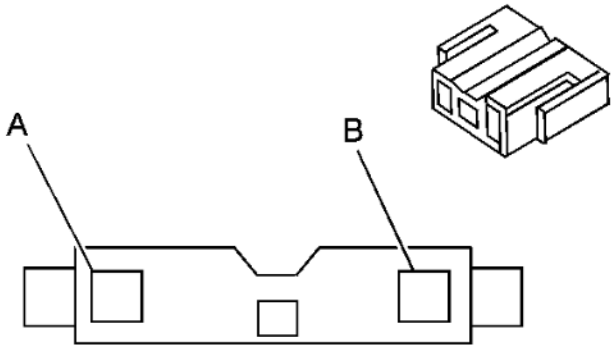
Seat Front Vertical Motor - Driver Connector End View

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Connector Part Information		• 12052109 • 2-Way F M/P 280 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	BLK	287	Driver Seat Front Vertical Motor Down Control
B	RED	286	Driver Seat Front Vertical Motor Up Control

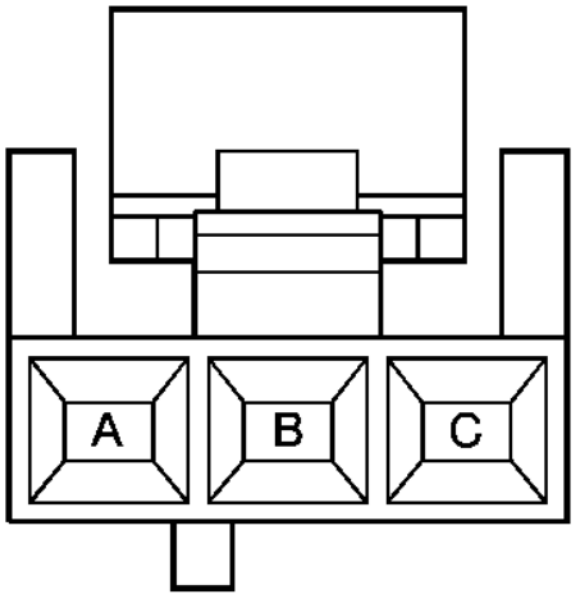
Seat Front Vertical Motor - Front Passenger Connector End View



Connector Part Information		• 12052109 • 2-Way F M/P 280 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	RED	1518	Power Seat Front Vertical Up Switch Signal
B	BLK	1520	Power Seat Front Vertical Down Switch Signal

Seat Horizontal Motor Position Sensor - Driver Connector End View

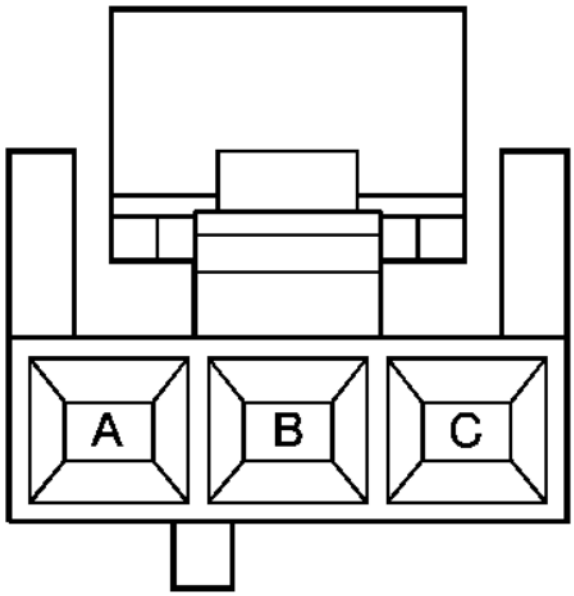
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Connector Part Information		• 104257-2 • 3-Way F Amp (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	RED	940	5-Volt Reference
B	LT BLU	569	Horizontal Seat Motor Position Sensor Signal
C	BLK	950	Low Reference

Seat Rear Vertical Motor Position Sensor - Driver Connector End View

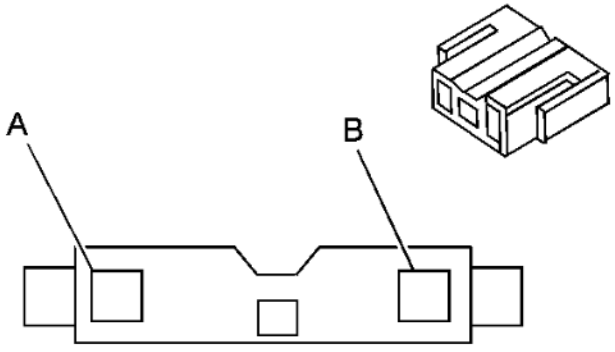
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Connector Part Information		• 104257-2 • 3-Way F M/P 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	RED	940	5-Volt Reference
B	LT BLU	568	Rear Vertical Seat Motor Position Sensor Signal
C	BLK	950	Low Reference

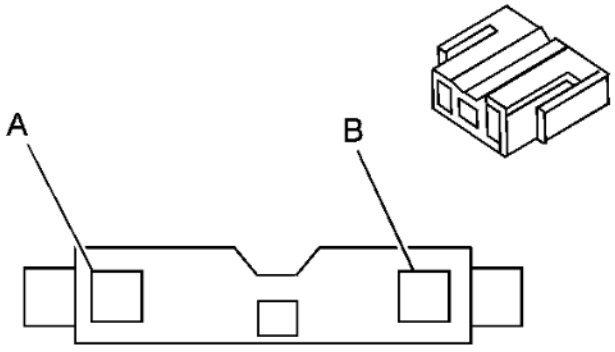
Seat Rear Vertical Motor - Driver Connector End View

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Connector Part Information		• 12129082 • 2-Way F M/P 280 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	BLK	283	Driver Seat Rear Vertical Motor Down Control
B	RED	282	Driver Seat Rear Vertical Motor Up Control

Seat Rear Vertical Motor - Front Passenger Connector End View



Connector Part Information		• 12129082 • 2-Way F M/P 280 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	RED	1519	Power Seat Rear Vertical Up Switch Signal
B	BLK	1521	Power Seat Rear Vertical Down Switch Signal

DIAGNOSTIC INFORMATION AND PROCEDURES

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DIAGNOSTIC STARTING POINT - SEATS

Begin memory and heated seat system 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: The lack of communication may be caused by a partial or a total malfunction of the class 2 serial data circuit. The specified procedure will determine the particular condition.

4: If no DTCs are present refer to the symptom list in Symptoms in order to 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 collect all the available information before tests are performed.

Diagnostic System Check - Power Seat Systems

Step	Action	Yes	No
1	Install a scan tool. Does the scan tool power up?	Go to **Step 2**	Go to **Scan Tool Does Not Power Up** in Data Link Communications
2	1. Turn ON the ignition, with the engine OFF. 2. Attempt to establish communication with the following control modules: • Powertrain control module • Body control module • Driver door module • Passenger door module • Driver seat module Does the scan tool communicate with the listed control modules?	Go to **Step 3**	Go to **Scan Tool Does Not Communicate with Class 2 Device** in Data Link Communications
	IMPORTANT:		

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3	**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 switch positions?	Go to **Step 4**	Go to **Power Mode Mismatch** in Body Control System
4	Select the display DTCs function on the scan tool for the following control modules: • Powertrain control module • Body control module • Driver door module • Passenger door module • Driver seat 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?	Go to **Diagnostic Trouble Code (DTC) List** in Body Control System	Go to **Step 7**
7	Does the scan tool display DTC P0562 or P0563?	Go to **Diagnostic Trouble Code (DTC) List** in Engine Electrical	Go to **Diagnostic Trouble Code (DTC) List**

SCAN TOOL DATA LIST

Driver Seat Module Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Power Seat Operating Conditions: Ignition Off Heated Seat Operating Conditions: Engine Running			

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Battery Voltage	Input/Output	Volts	12-14
Driver Heated Seat Status	Input/Output	Off/Low/Med/High	Off
Driver Seat Heat Zone	Input/Output	Off/Back Only/Back and Cushion	Off
Drvr. Seat Heat Sensor	Sensor Data	Volts	0.0-5.0
Front Vertical Downward Switch	Input/Output	Active/Inactive	Inactive
Front Vertical Motor Downward	Input/Output	Active/Inactive	Inactive
Front Vertical Motor Upward	Input/Output	Active/Inactive	Inactive
Front Vertical Position	Sensor Data	Counts	0.0-65535
Front Vertical Upward Switch	Input/Output	Active/Inactive	Inactive
Horizontal Forward Switch	Input/Output	Active/Inactive	Inactive
Horizontal Lumbar Position	Sensor Data	Counts	0.0-65535
Horizontal Motor Forward	Input/Output	Active/Inactive	Inactive
Horizontal Motor Rearward	Input/Output	Active/Inactive	Inactive
Horizontal Position	Sensor Data	Counts	0.0-65535
Horizontal Rearward Switch	Input/Output	Active/Inactive	Inactive
Lumbar Forward Switch	Input/Output	Active/Inactive	Inactive
Lumbar Motor Forward	Input/Output	Active/Inactive	Inactive
Lumbar Motor Rearward	Input/Output	Active/Inactive	Inactive
Lumbar Rearward Switch	Input/Output	Active/Inactive	Inactive
Mem 1 Front Vertical Value	Memory Data	Counts	0.0-65535
Mem 1 Horizontal Value	Memory Data	Counts	0.0-65535
Mem 1 Rear Vertical Value	Memory Data	Counts	0.0-65535
Mem 1 Recline Value	Memory Data	Volts	0.0-5.0
Mem 2 Front Vertical Value	Memory Data	Counts	0.0-65535
Mem 2 Horizontal Value	Memory Data	Counts	0.0-65535
Mem 2 Rear Vertical Value	Memory Data	Counts	0.0-65535
Mem 2 Recline Value	Memory Data	Volts	0.0-5.0
Passenger Heated Seat Status	Input/Output	Off/Low/Med/High	Off
Psgr. Seat Heat Sensor	Sensor Data	Volts	0.0-5.0
Psgr. Seat Heat Zone	Input/Output	Off/Back Only/Back and Cushion	Off
Rear Vertical Downward Switch	Input/Output	Active/Inactive	Inactive
Rear Vertical Motor Downward	Input/Output	Active/Inactive	Inactive
Rear Vertical Motor Upward	Input/Output	Active/Inactive	Inactive
Rear Vertical Position	Sensor Data	Counts	0.0-65535
Rear Vertical Upward Switch	Input/Output	Active/Inactive	Inactive
Recline Forward Switch	Input/Output	Active/Inactive	Inactive
Recline Motor Forward	Input/Output	Active/Inactive	Inactive
Recline Motor Rearward	Input/Output	Active/Inactive	Inactive
Recline Position	Sensor Data	Volts	0.0-5.0

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Recline Rearward Switch	Input/Output	Active/Inactive	Inactive
Software Design Suffix	Module Information	Numeric	Varies
Software Part Number	Module Information	Numeric	Varies
Torso Inward Switch	Input/Output	Active/Inactive	Inactive
Torso Motor Inward	Input/Output	Active/Inactive	Inactive
Torso Motor Outward	Input/Output	Active/Inactive	Inactive
Torso Outward Switch	Input/Output	Active/Inactive	Inactive
Torso Position	Sensor Data	Counts	0.0-65535
Vertical Lumbar Position	Sensor Data	Counts	0.0-65535

Driver Door Module Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Power Seat Operating Conditions: Ignition Off Heated Seat Operating Conditions: Engine Running			
Back Only Heat Indicator	Inputs	On/Off	Off
Back Only Heat Indicator	Outputs	On/Off	Off
Back Only Heat Switch	Inputs	Active/Inactive	Inactive
Heat Indicator High	Inputs	On/Off	Off
Heat Indicator High	Outputs	Active/Inactive	Inactive
Heat Indicator Low	Inputs	On/Off	Off
Heat Indicator Low	Outputs	On/Off	Off
Heat Indicator Medium	Inputs	On/Off	Off
Heat Indicator Medium	Outputs	On/Off	Off
Heated Seat Switch	Inputs	Active/Inactive	Inactive
Memory Switch	Inputs	Memory 1/Memory 2/Both/Idle	Idle

Passenger Door Module Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Engine Running			
Back Only Heat Indicator	Inputs	On/Off	Off
Back Only Heat Indicator	Outputs	On/Off	Off
Back Only Heat Switch	Inputs	Active/Inactive	Inactive
Heat Indicator High	Inputs	On/Off	Off
Heat Indicator High	Outputs	On/Off	Off
Heat Indicator Low	Inputs	On/Off	Off
Heat Indicator Low	Outputs	On/Off	Off
Heat Indicator Medium	Inputs	On/Off	Off
Heat Indicator Medium	Outputs	On/Off	Off
Heated Seat Switch	Inputs	Active/Inactive	Inactive

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SCAN TOOL DATA DEFINITIONS

Driver Seat Module

Battery Voltage

The scan tool displays the voltage level of the battery voltage supply circuit to the driver seat module.

Driver Heated Seat Status

The scan tool displays Off, High, Med, or Low depending on the current heat level operating mode.

Drvr. Seat Heat Sensor

The scan tool displays 0.0-5.0 volts. The voltage displayed is an input to the driver seat module from the driver seat heat sensor.

Driver Seat Heat Zone

The scan tool displays Off, Back Only, or Back and Cushion depending on the current heat zone operating mode.

Front Vertical Downward Switch

The scan tool displays Active or Inactive. When the front vertical adjuster switch is operated in the downward direction the scan tool displays Active.

Front Vertical Motor Downward

The scan tool displays Active or Inactive. Whenever the front vertical adjuster motor is commanded to move the front of the seat downward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Front Vertical Motor Upward

The scan tool displays Active or Inactive. Whenever the front vertical adjuster motor is commanded to move the front of the seat upward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Front Vertical Position

The scan tool displays 0-65535 counts. The counts displayed are calculated by the driver seat module using the signal circuit input from the front vertical seat position sensor.

Front Vertical Upward Switch

The scan tool displays Active or Inactive. When the front vertical adjuster switch is operated in the

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upward direction the scan tool displays Active.

Horizontal Forward Switch

The scan tool displays Active or Inactive. When the horizontal seat adjuster switch is operated in the forward direction the scan tool displays Active.

Horizontal Lumbar Position

The scan tool displays 0-65535 counts. The counts displayed are calculated by the driver seat module using the signal circuit input from the lumbar support position sensor.

Horizontal Motor Forward

The scan tool displays Active or Inactive. Whenever the horizontal adjuster motor is commanded to move the seat forward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Horizontal Motor Rearward

The scan tool displays Active or Inactive. Whenever the horizontal adjuster motor is commanded to move the seat rearward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Horizontal Position

The scan tool displays 0-65535 counts. The counts displayed are calculated by the driver seat module using the signal circuit input from the horizontal seat position sensor.

Horizontal Rearward Switch

The scan tool displays Active or Inactive. When the horizontal seat adjuster switch is operated in the rearward direction the scan tool displays Active.

Lumbar Forward Switch

The scan tool displays Active or Inactive. When the lumbar switch is operated in the forward direction the scan tool displays Active.

Lumbar Motor Forward

The scan tool displays Active or Inactive. Whenever the lumbar adjuster motor is commanded to move the lumbar support forward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Lumbar Motor Rearward

The scan tool displays Active or Inactive. Whenever the lumbar adjuster motor is commanded to move

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the lumbar support rearward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Lumbar Rearward Switch

The scan tool displays Active or Inactive. When the lumbar switch is operated in the rearward direction the scan tool displays Active.

Mem 1 Front Vertical Value

The scan tool displays 0-65535 counts. The value displayed is the front vertical seat position sensor counts stored by the driver seat module as the memory 1 position setting.

Mem 1 Horizontal Value

The scan tool displays 0-65535 counts. The value displayed is the horizontal seat position sensor counts stored by the driver seat module as the memory 1 position setting.

Mem 1 Rear Vertical Value

The scan tool displays 0-65535 counts. The value displayed is the rear vertical seat position sensor counts stored by the driver seat module as the memory 1 position setting.

Mem 1 Recline Value

The scan tool displays 0.0-5.0 volts. The value displayed is the recline position sensor signal voltage stored by the driver seat module as the memory 1 position setting.

Mem 2 Front Vertical Value

The scan tool displays 0-65535 counts. The value displayed is the front vertical seat position sensor counts stored by the driver seat module as the memory 2 position setting.

Mem 2 Horizontal Value

The scan tool displays 0-65535 counts. The value displayed is the horizontal seat position sensor counts stored by the driver seat module as the memory 2 position setting.

Mem 2 Rear Vertical Value

The scan tool displays 0-65535 counts. The value displayed is the rear vertical seat position sensor counts stored by the driver seat module as the memory 2 position setting.

Mem 2 Recline Value

The scan tool displays 0.0-5.0 volts. The value displayed is the recline position sensor signal voltage stored by the driver seat module as the memory 2 position setting.

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Passenger Heated Seat Status

The scan tool displays Off, High, Med, or Low depending on the current heat level operating mode.

Psgr. Seat Heat Sensor

The scan tool displays 0.0-5.0 volts. The voltage displayed is an input to the driver seat module from the passenger seat heat sensor.

Psgr. Seat Heat Zone

The scan tool displays Off, Back Only, or Back and Cushion depending on the current heat zone operating mode.

Rear Vertical Downward Switch

The scan tool displays Active or Inactive. When the rear vertical adjuster switch is operated in the downward direction the scan tool displays Active.

Rear Vertical Motor Upward

The scan tool displays Active or Inactive. Whenever the rear vertical adjuster motor is commanded to move the rear of the seat upward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Rear Vertical Motor Downward

The scan tool displays Active or Inactive. Whenever the rear vertical adjuster motor is commanded to move the rear of the seat downward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Rear Vertical Position

The scan tool displays 0-65535 counts. The counts displayed are calculated by the driver seat module using the signal circuit input from the rear vertical seat position sensor.

Rear Vertical Upward Switch

The scan tool displays Active or Inactive. When the rear vertical adjuster switch is operated in the upward direction the scan tool displays Active.

Recline Forward Switch

The scan tool displays Active or Inactive. When the recline switch is operated in the forward direction the scan tool displays Active.

Recline Motor Forward

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The scan tool displays Active or Inactive. Whenever the recline adjuster motor is commanded to move the seat back forward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Recline Motor Rearward

The scan tool displays Active or Inactive. Whenever the recline adjuster motor is commanded to move the seat back rearward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Recline Position

The scan tool displays 0.0-5.0 volts. The voltage displayed is an input to the driver seat module from the recline position sensor.

Recline Rearward Switch

The scan tool displays Active or Inactive. When the recline switch is operated in the rearward direction the scan tool displays Active.

Software Design Suffix

The scan tool displays the version of the software part number in the driver seat module.

Software Part Number

The scan tool displays the software identification number in the driver seat module.

Torso Inward Switch

The scan tool displays Active or Inactive. When the torso switch is operated in the inward direction the scan tool displays Active.

Torso Motor Inward

The scan tool displays Active or Inactive. Whenever the torso adjuster motor is commanded to move the torso bolster inward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Torso Motor Outward

The scan tool displays Active or Inactive. Whenever the torso adjuster motor is commanded to move the torso bolster outward, due to a manual switch input or a memory recall function, the scan tool displays Active.

Torso Outward Switch

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The scan tool displays Active or Inactive. When the torso switch is operated in the outward direction the scan tool displays Active.

Torso Position

The scan tool displays 0-65535 counts. The counts displayed are calculated by the driver seat module using the signal circuit input from the torso bolster position sensor.

Vertical Lumbar Position

The scan tool displays 0-65535 counts. The counts displayed are calculated by the driver seat module using the signal circuit input from the lumbar support position sensor.

Driver Door Module

Back Only Heat Indicator

The scan tool displays On or Off. The scan tool displays the current status of the heated seat back only operating mode determined by the heated seat switch signal circuit inputs to the driver door module.

Back Only Heat Indicator

The scan tool displays On or Off. Whenever the heated seat back only indicator is commanded on by the driver door module the scan tool displays On.

Back Only Heat Switch

The scan tool displays Active or Inactive. When the heated seat back switch is pressed the scan tool displays Active.

Heat Indicator High

The scan tool displays On or Off. The scan tool displays the current status of the high heat operating mode determined by the heated seat switch signal circuit inputs to the driver door module.

Heat Indicator High

The scan tool displays On or Off. Whenever the high heat indicator is commanded on by the driver door module the scan tool displays On.

Heat Indicator Low

The scan tool displays On or Off. The scan tool displays the current status of the low heat operating mode determined by the heated seat switch signal circuit inputs to the driver door module.

Heat Indicator Low

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The scan tool displays On or Off. Whenever the low heat indicator is commanded on by the driver door module the scan tool displays Off.

Memory Switch

The scan tool displays Memory 1, Memory 2, Both, or Idle. The scan tool displays the current memory switch status determined by the memory 1 and memory 2 signal circuit inputs to the driver door module.

Heat Indicator Medium

The scan tool displays On or Off. The scan tool displays the current status of the medium heat operating mode determined by the heated seat switch signal circuit inputs to the driver door module.

Heat Indicator Medium

The scan tool displays On or Off. Whenever the medium heat indicator is commanded on by the driver door module the scan tool displays On.

Heated Seat Switch

The scan tool displays Active or Inactive. When the heated seat cushion switch is pressed the scan tool displays Active.

Passenger Door Module

Back Only Heat Indicator

The scan tool displays On or Off. The scan tool displays the current status of the heated seat back only operating mode determined by the heated seat switch signal circuit inputs to the passenger door module.

Back Only Heat Indicator

The scan tool displays On or Off. Whenever the heated seat back only indicator is commanded on by the passenger door module the scan tool displays On.

Back Only Heat Switch

The scan tool displays Active or Inactive. When the heated seat back switch is pressed the scan tool displays Active.

Heat Indicator High

The scan tool displays On or Off. The scan tool displays the current status of the high heat operating mode determined by the heated seat switch signal circuit inputs to the passenger door module.

Heat Indicator High

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The scan tool displays On or Off. Whenever the high heat indicator is commanded on by the passenger door module the scan tool displays On.

Heat Indicator Low

The scan tool displays On or Off. The scan tool displays the current status of the low heat operating mode determined by the heated seat switch signal circuit inputs to the passenger door module.

Heat Indicator Low

The scan tool displays On or Off. Whenever the low heat indicator is commanded on by the passenger door module the scan tool displays On.

Heat Indicator Medium

The scan tool displays On or Off. The scan tool displays the current status of the medium heat operating mode determined by the heated seat switch signal circuit inputs to the passenger door module.

Heat Indicator Medium

The scan tool displays On or Off. Whenever the medium heat indicator is commanded on by the passenger door module the scan tool displays On.

Heated Seat Switch

The scan tool displays Active or Inactive. When the heated seat cushion switch is pressed the scan tool displays Active.

DIAGNOSTIC TROUBLE CODE (DTC) LIST

Diagnostic Trouble Code (DTC) List

DTC	Diagnostic Procedure	Modules
B1770	DTC B1770, B1775, B1780, B1785, B1790, B1805, or B2415	DSM
B1775	DTC B1770, B1775, B1780, B1785, B1790, B1805, or B2415	DSM
B1780	DTC B1770, B1775, B1780, B1785, B1790, B1805, or B2415	DSM
B1785	DTC B1770, B1775, B1780, B1785, B1790, B1805, or B2415	DSM
B1790	DTC B1770, B1775, B1780, B1785, B1790, B1805, or B2415	DSM
B1805	DTC B1770, B1775, B1780, B1785, B1790, B1805, or B2415	DSM
B1825	DTC B1825	DSM
B1850	DTC B1850, B1860, B1960, B2355, B2365, or B2375	DSM
B1860	DTC B1850, B1860, B1960, B2355, B2365, or B2375	DSM
B1960	DTC B1850, B1860, B1960, B2355, B2365, or B2375	DSM
B2355	DTC B1850, B1860, B1960, B2355, B2365, or B2375	DSM
B2365	DTC B1850, B1860, B1960, B2355, B2365, or B2375	DSM
B2375	DTC B1850, B1860, B1960, B2355, B2365, or B2375	DSM

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B2415	**DTC B1770, B1775, B1780, B1785, B1790, B1805, or B2415**	DSM
B2425	**DTC B2425 or B2430**	DSM
B2430	**DTC B2425 or B2430**	DSM
B2435	**DTC B2435 or B2440**	DSM
B2440	**DTC B2435 or B2440**	DSM
B3941	**DTC B3941**	DSM
B3962	**DTC B3962**	DSM

DTC B1770, B1775, B1780, B1785, B1790, B1805, OR B2415

Circuit Description

The seat adjuster motors are controlled by the driver seat module through the adjuster motor control circuits. In an inactive state both of the motor control circuits are grounded within the driver seat module. In an active state the driver seat module switches the appropriate motor control circuit to battery positive voltage. The direction of the adjuster motor rotation is determined by which of the motor control circuits is switched to battery positive voltage while the other remains grounded. During adjuster motor operation the driver seat module also monitors the current flow through the motor control circuits.

Conditions for Running the DTC

The system voltage must be between 9-16 volts.

Conditions for Setting the DTC

The motor control circuit monitored by the driver seat module is determined to be shorted to ground, battery positive voltage, or open.

Action Taken When the DTC Sets

- The seat motor with a current status DTC will be disabled.
- When the fault is no longer present a history status DTC will be stored, and motor operation will be restored.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present the DTC will be a history status code.
- The history DTC will be cleared after 100 error free ignition cycles, or by using the scan tool clearing DTCs feature.

DTC B1770, B1775, B1780, B1785, B1790, B1805, or B2415

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**			

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1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the appropriate seat adjuster motor connector. 2. Connect a test lamp across the adjuster motor control circuit terminals in the harness connector. 3. Operate the appropriate seat adjuster switch in both directions. Does the test lamp illuminate when the switch is activated in both directions?	Go to **Step 5**	Go to **Step 4**
4	Test the motor control circuits for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** 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 adjuster motor connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the harness connector of the driver seat module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
7	Replace the appropriate adjuster motor assembly. Refer to **Seat Adjuster Motor Replacement - Front**. Did you complete the replacement?	Go to **Step 9**	-
8	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. 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. Does the DTC reset?	Go to **Step 3**	System OK

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DTC B1825

Circuit Description

The seat recline motor is equipped with a potentiometer type position sensor used by the driver seat module to determine the position of the seat back. The motor position sensor is supplied with 5-volt reference and ground circuits from the driver seat module. The position sensor signal circuit is referenced from ground within the driver seat module. The signal voltage monitored by the driver seat module ranges from 0.39-4.58 volts and is determined by the wiper location on the resistor within the motor position sensor. The position sensor circuit voltage level is used by the driver seat module to determine the position of the seat back when storing or recalling memory position settings.

Conditions for Running the DTC

The system voltage must be between 9-16 volts.

Conditions for Setting the DTC

The recline motor position sensor signal circuit voltage level to the driver seat module is not within the 0.39-4.58 volt range.

Action Taken When the DTC Sets

The recline motor will not function during memory or exit position recall operation.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present the DTC will be a history status code.
- The history DTC will be cleared after 100 error free ignition cycles, or by using the scan tool clearing DTCs feature.

Diagnostic Aids

A short to voltage on a sensor signal circuit or an open ground may effect other sensors using common 5-volt reference and ground circuits causing the following DTCs to set:

- B2435
- B2440
- B3606

Test Description

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

3: Tests for the proper operation of the signal circuit in the low voltage range.

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4: Tests for the proper operation of the signal circuit in the high voltage range.

5: Tests for a short to voltage in the 5-volt reference circuit.

DTC B1825

Step	Action	Values	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**				
1	Did you perform the Power Seat Systems Diagnostic System Check?	-	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	1. Install a scan tool. 2. With a scan tool, observe the Recline Position Sensor parameter in the driver seat module Sensor Data list. Is the Recline Position Sensor parameter within the specified range?	0.39-4.58 V	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the recline motor position sensor. 2. With a scan tool, observe the Recline Position Sensor parameter. Is the Recline Position Sensor parameter less than the specified value?	0.39 V	Go to **Step 4**	Go to **Step 8**
4	1. Connect a 3-ampere fused jumper wire between the signal circuit of the recline position sensor and the 5-volt reference circuit of the recline position sensor. 2. With a scan tool, observe the Recline Position Sensor parameter. Is the Recline Position Sensor parameter greater than the specified value?	4.58 V	Go to **Step 5**	Go to **Step 7**
5	1. Disconnect the fused jumper wire. 2. Measure the voltage between the 5-volt reference and the signal circuit of the recline position sensor. Is the voltage greater than the specified value?	5 V	Go to **Step 6**	Go to **Step 10**
	Test the 5-volt reference circuit of the recline position sensor for a short to voltage. Refer to			

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6	**Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 15**	Go to **Step 12**
7	Test the 5-volt reference circuit of the recline position sensor for one of the following conditions: • A short to ground • A high resistance • An open Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 15**	Go to **Step 9**
8	Test the signal circuit of the recline position sensor for a short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 15**	Go to **Step 12**
9	Test the signal circuit of the recline position sensor for one of the following conditions: • A short to ground • A high resistance • An open Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 15**	Go to **Step 12**
10	Test the low reference circuit of the recline position sensor for one of the following conditions: • A high resistance • An open Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 15**	Go to **Step 11**
	Inspect for poor connections at the harness connector of the recline position sensor. Refer to **Testing for Intermittent Conditions and Poor**			

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11	**Connections** and to **Connector Repairs** 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 driver seat module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 15**	Go to **Step 14**
13	Replace the recline position sensor. Did you complete the replacement?	-	Go to **Step 15**	-
14	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Did you complete the replacement?	-	Go to **Step 15**	-
15	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC. Does the DTC reset?	-	Go to **Step 2**	System OK

DTC B1850, B1860, B1960, B2355, B2365, OR B2375

Circuit Description

The driver seat module monitors the positions of most of the seat adjuster motors using hall effect type position sensors. The hall effect position sensors are supplied with battery positive reference and ground circuits from the driver seat module. The position sensor signal circuits are supplied battery positive voltage through a resistor then monitored within the driver seat module. During adjuster motor operation the hall effect position sensor provides a single pulse for every adjuster motor shaft rotation. The driver seat module counts the pulses from the position sensor signal circuits to determine the adjuster motor positions when storing or recalling memory seat position settings.

Conditions for Running the DTC

The system voltage must be between 9-16 volts.

Conditions for Setting the DTC

The driver seat module does not detect position sensor movement during adjuster motor operation.

Action Taken When the DTC Sets

- The affected seat adjuster motor will operate approximately 1 revolution and stop each time the adjuster switch is activated.
- The memory recall functions for the seat motor with a current status DTC will be disabled.

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- When the fault is no longer present a history status DTC will be stored, and memory operation will be restored.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present the DTC will be a history status code.
- The history DTC will be cleared after 100 error free ignition cycles, or by using the scan tool clearing DTCs feature.

Test Description

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

3: During this test the driver seat module must see an active switch input before power will be supplied the position sensor.

4: During this test the driver seat module must see an active switch input before power will be supplied the position sensor.

5: During this test the driver seat module must see an active switch input before power will be supplied the position sensor.

DTC B1850, B1860, B1960, B2355, B2365, or B2375

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**			
1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the position sensor connector to the motor for which the DTC has set. 2. Connect a DMM from the positive voltage reference circuit terminal in the position sensor harness connector to a good ground. 3. Press the adjuster switch in either direction. Does the DMM display battery voltage when the adjuster switch is pressed?	Go to **Step 4**	Go to **Step 6**
	1. Connect a DMM from the positive voltage		

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4	reference circuit terminal to the low reference circuit terminal in the position sensor harness connector. 2. Press the adjuster switch in either direction. Does the DMM display battery voltage when the adjuster switch is pressed?	Go to **Step 5**	Go to **Step 7**
5	1. Connect a DMM from the signal circuit terminal to the low reference circuit terminal in the position sensor harness connector. 2. Press the adjuster switch in either direction. Does the DMM display battery voltage when the adjuster switch is pressed?	Go to **Step 9**	Go to **Step 8**
6	Test the position sensor positive voltage reference circuit for the following conditions: • Open • Short to ground • Short to voltage Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 10**
7	Test the position sensor low reference circuit for an open or short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 10**
8	Test the position sensor signal circuit for the following conditions: • Open • Short to ground • Short to voltage Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 10**
9	Inspect for poor connections at the adjuster motor connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems.		

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	Did you find and correct the condition?	Go to **Step 13**	Go to **Step 11**
10	Inspect for poor connections at the harness connector of the driver seat module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 13**	Go to **Step 12**
11	Replace the appropriate adjuster motor assembly. Refer to **Seat Adjuster Motor Replacement - Front** or **Lumbar Replacement - Front Seat**. Did you complete the replacement?	Go to **Step 13**	-
12	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Did you complete the replacement?	Go to **Step 13**	-
13	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC. Does the DTC reset?	Go to **Step 3**	System OK

DTC B2425 OR B2430

Circuit Description

The driver and passenger seat heaters are controlled by the driver seat module. Power is supplied to the driver seat cushion and back heater elements through individual voltage supply circuits. Power is supplied to the passenger seat cushion and back heater elements through a common voltage supply circuit. All of the driver and passenger seat heater elements are grounded by the driver seat module through individual low side drive control circuits. The heater element control circuits are pulse width modulated to ground by the driver seat module in order to control the seat temperatures by regulating the current flow through the heater elements.

Conditions for Running the DTC

The system voltage must be between 9-16 volts.

Conditions for Setting the DTC

The driver seat module determines by monitoring the heater element control circuits that a short to voltage, short to ground, or open condition exists.

Action Taken When the DTC Sets

- The heated seat with a current status DTC will be disabled.
- Both heated seats may be disabled.
- When the fault is no longer present a history status DTC will be stored, and heated seat operation will be restored.

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Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present the DTC will be a history status code.
- The history DTC will be cleared after 100 error free ignition cycles, or by using the scan tool clearing DTCs feature.

DTC B2425 or B2430

Step	Action	Values	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**				
1	Did you perform the Power Seat Diagnostic System Check?	-	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present. Does the system operate normally?	-	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the driver seat module connectors containing the voltage supply and control circuits to the affected seat. 2. Using a DMM test for voltage at the heater element control circuit terminals in the harness connector. Refer to **Circuit Testing** in Wiring Systems. Is voltage present on either of the heater element control circuits?	-	Go to **Step 7**	Go to **Step 4**
4	Using a DMM test for continuity to ground at the heater element control circuit terminals in the driver seat module harness connector. Refer to **Circuit Testing** in Wiring Systems. Is continuity to ground present on either of the heater element control circuits?	-	Go to **Step 8**	Go to **Step 5**
5	Using a DMM measure the resistance through the seat heater elements from the voltage supply circuit terminal to each of the control circuit terminals in the memory seat module harness connectors. Refer to **Circuit Testing** in Wiring Systems.	1.5-5.5 ohms		

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	Are the measurements within the specified values?		Go to **Step 10**	Go to **Step 6**
6	Test the voltage supply and control circuits to the affected heater element for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 13**	Go to **Step 9**
7	Repair the voltage supply or control circuit to the affected heater element for a short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Is the repair complete?	-	Go to **Step 13**	-
8	Repair the voltage supply or control circuit to the affected heater element for a short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Is the repair complete?	-	Go to **Step 13**	-
9	Inspect for poor connections at the heater element connectors. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 13**	Go to **Step 11**
10	Inspect for poor connections at the driver seat module connectors. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 13**	Go to **Step 12**
11	Replace the affected seat heater element. Is the repair complete?	-	Go to **Step 13**	-
12	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Is the repair complete?	-	Go to **Step 13**	-
13	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC. Does the DTC reset?	-	Go to **Step 3**	System OK

DTC B2435 OR B2440

Circuit Description

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The driver seat module relies on inputs from thermistors installed in the driver and passenger seat backs to control heated seat temperatures. The thermistors are 2-wire sensors supplied with a 5-volt referenced signal circuit and low reference circuit from the driver seat module. Resistance through the thermistors varies with temperature causing the heated seat sensor signal circuit voltage levels to decrease as the seat back temperatures rise.

Conditions for Running the DTC

- The system voltage must be between 9-16 volts.
- The heated seat is in an active state.

Conditions for Setting the DTC

- The heated seat sensor signal circuit voltage to the driver seat module is greater than 4.94 volts for 30 seconds or more.
- The heated seat sensor signal circuit voltage to the driver seat module is less than 0.078 volts for 30 seconds or more.
- The heated seat sensor signal circuit input to the driver seat module indicates that the desired seat temperature has not been reached within 30 minutes after activation.

Action Taken When the DTC Sets

- The heated seat with a current status DTC will be disabled.
- When the fault is no longer present a history status DTC will be stored, and heated seat operation will be restored.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present the DTC will be a history status code.
- The history DTC will be cleared after 100 error free ignition cycles, or by using the scan tool clearing DTCs feature.

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 high voltage range.

4: Tests for the proper operation of the circuit in the low voltage range. If the fuse in the jumper opens upon performing this test, the signal circuit has a short to voltage.

DTC B2435 or B2440

Step	Action	Values	Yes	No
Schematic Reference: Driver Seat Schematics and Passenger Seat Schematics Connector End View Reference: Power Seat Systems Connector End Views				

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1	Did you perform the Power Seat Diagnostic System Check?	-	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	1. Install a scan tool. 2. Start the engine. 3. Turn the heated seat ON. 4. With a scan tool, observe the Heated Seat Sensor parameter in the data list for the driver seat module. Does the scan tool indicate that the heated seat sensor parameter is within the specified range?	0.078-4.94 V	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 heated seat back 4-way connector. 3. Start the engine. 4. Turn the heated seat ON. 5. With a scan tool, observe the Heated Seat Sensor parameter. Is the Heated Seat Sensor parameter greater than the specified value?	4.5 V	Go to **Step 4**	Go to **Step 5**
4	1. Turn OFF the ignition. 2. Connect a 3-ampere fused jumper wire between the signal circuit of the heated seat sensor and the low reference circuit of the heated seat sensor. 3. Start the engine. 4. Turn the heated seat ON. 5. With a scan tool, observe the Heated Seat Sensor parameter. Is the Heated Seat Sensor parameter less than the specified value?	0.5 V	Go to **Step 8**	Go to **Step 6**
5	Test the signal circuit of the heated seat sensor 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 12**	Go to **Step 9**
	Test the signal circuit of the heated seat sensor for one of the following conditions:			

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6	• A short to voltage • A high resistance • An open Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 12**	Go to **Step 7**
7	Test the low reference circuit of the heated seat sensor for one of the following conditions: • A high resistance • An open Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 12**	Go to **Step 9**
8	Inspect for poor connections at the harness connector of the heated seat sensor. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 12**	Go to **Step 10**
9	Inspect for poor connections at the harness connectors of the driver 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 12**	Go to **Step 11**
10	Replace the seat back heater element. Did you complete the replacement?	-	Go to **Step 12**	-
11	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Did you complete the replacement?	-	Go to **Step 12**	-
12	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC. Does the DTC reset?	-	Go to **Step 2**	System OK

DTC B3941

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Circuit Description

The driver and passenger seat heaters are controlled by the driver seat module. Power is supplied to the driver seat cushion and back heater elements through individual voltage supply circuits. Power is supplied to the passenger seat cushion and back heater elements through a common voltage supply circuit. All of the driver and passenger seat heater elements are grounded by the driver seat module through individual low side drive control circuits. The heater element control circuits are pulse width modulated to ground by the driver seat module in order to control the seat temperatures by regulating the current flow through the heater elements.

Conditions for Running the DTC

The system voltage must be between 9-16 volts.

Conditions for Setting the DTC

The driver seat module determines that one of the seat heater element voltage supply circuits is shorted to ground.

Action Taken When the DTC Sets

- Both heated seats will be disabled.
- When the fault is no longer present a history status DTC will be stored, and heated seat operation will be restored.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present the DTC will be a history status code.
- The history DTC will be cleared after 100 error free ignition cycles, or by using the scan tool clearing DTCs feature.

DTC B3941

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics and Passenger Seat Schematics Connector End View Reference: Power Seat Systems Connector End Views			
1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
	1. Disconnect the driver seat module connectors containing the voltage supply and control		

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3	circuits to the seat heater elements. 2. Using a DMM test for continuity to ground at the heater element supply circuit terminals in the harness connectors. Refer to **Circuit Testing** in Wiring Systems. Is continuity to ground present on any of the heater element supply circuits?	Go to **Step 4**	Go to **Step 6**
4	1. Disconnect the affected seat heater element connector. 2. Test the heater element voltage supply circuit for a short to ground. Refer to **Circuit Testing** and to **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 seat heater element harness connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the driver seat module harness connectors. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
7	Replace the seat heater element. Refer to **Seat Back Heater Element Replacement - Front** or **Seat Cushion Heater Element Replacement - Front**. Did you complete the replacement?	Go to **Step 9**	-
8	Replace the seat module. Refer to **Memory Seat Control Module Replacement**. 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 B3962

Circuit Description

The seat adjuster motors are controlled by the driver seat module through the adjuster motor control circuits. In an inactive state both of the motor control circuits are grounded within the driver seat module. In an active state

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the driver seat module switches the appropriate motor control circuit to battery positive voltage. The direction of the adjuster motor rotation is determined by which of the motor control circuits is switched to battery positive voltage while the other remains grounded. During adjuster motor operation the driver seat module also monitors the current flow through the motor control circuits.

Conditions for Running the DTC

The system voltage must be between 9-16 volts.

Conditions for Setting the DTC

A motor control circuit current monitored by the driver seat module is determined to be shorted to ground.

Action Taken When the DTC Sets

- The driver seat module will disable the affected adjuster motor.
- When the fault is no longer present, a history DTC will be stored in the driver seat module and motor operation will be restored.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present the DTC will be a history status code.
- The history DTC will be cleared after 100 error free ignition cycles, or by using the scan tool clearing DTCs feature.

Diagnostic Aids

When an adjuster motor control circuit is shorted to ground the driver seat module will also set a DTC for the affected motor.

DTC B3962

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**			
1	Did you perform the Power Seat Systems Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Attempt to operate all of the seat adjuster motors through the full range of adjustment. Do all of the seat adjuster motors operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
	1. Disconnect the appropriate seat adjuster motor connector.		

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3	2. Connect a test lamp across the adjuster motor control circuit terminals in the harness connector. 3. Operate the appropriate seat adjuster switch in both directions. Does the test lamp illuminate when the switch is activated in both directions?	Go to **Step 5**	Go to **Step 4**
4	Test the motor control circuits for a short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** 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 adjuster motor connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the harness connector of the driver seat module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
7	Replace the appropriate adjuster motor assembly. Refer to **Seat Adjuster Replacement - Front (Manual)** or **Seat Adjuster Replacement - Front (Power)**. Did you complete the replacement?	Go to **Step 9**	-
8	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Did you complete the replacement?	Go to **Step 9**	-
9	1. Use the scan tool in order to clear the DTCs. 2. Operate the system in order to verify the repair. 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. Perform the **Diagnostic System Check - Power Seat Systems** before using the symptom tables in order to verify that all of following are true:
   - There are no DTCs set.
   - The control modules can communicate via the serial data link.
2. Refer to the following system descriptions in order to familiarize yourself with the system functions:

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- **Power Seats System Description and Operation**
- **Lumbar Support Description and Operation**
- **Heated/Cooled Seats Description and Operation**
- **Heated Seats Description and Operation (Front)**
- **Memory Seats Description and Operation**

Visual/Physical Inspection

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

Intermittent

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

Symptom List

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

- **Power Seat Inoperative (w/Memory)** or **Power Seat Inoperative (w/o Memory)**
- **Power Seat Does Not Move Forward/Rearward (w/Memory)** or **Power Seat Does Not Move Forward/Rearward (w/o Memory)**
- **Power Seat Does Not Tilt Forward (w/Memory)** or **Power Seat Does Not Tilt Forward (w/o Memory)**
- **Power Seat Does Not Tilt Rearward (w/Memory)** or **Power Seat Does Not Tilt Rearward (w/o Memory)**
- **Power Seat Does Not Recline (w/Memory)** or **Power Seat Does Not Recline (w/o Memory)**
- **Memory Seat Feature Inoperative**
- **Lumbar Support Inoperative (w/Memory)** or **Lumbar Support Inoperative (w/o Memory)**
- **Heated/Cooled Seats Inoperative**
- **Heated/Cooled Seat Switch Indicator Malfunction**
- **Heated Seat Always On**
- **Heated Seat Inoperative**
- **Heated Seat Always On - Rear**
- **Heated Seat Inoperative - Rear**

POWER SEAT INOPERATIVE (W/MEMORY)

Power Seat Inoperative (w/Memory)

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Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views** DEFINITION: All of the seat adjuster motors are inoperative, the lumbar and bolster motors may also be inoperative.			
1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Observe the Seat Adjuster Switch parameters in the driver seat module Input/Output data list. Do all of the Seat Adjuster Switch parameters display Active?	Go to **Step 7**	Go to **Step 4**
4	Operate the seat adjuster switches in both directions. Does the scan tool display the correct switch status parameters in relation to the actual switch positions?	Go to **Step 9**	Go to **Step 5**
5	1. Disconnect the seat adjuster switch connector. 2. Using a DMM test for battery voltage at the switch supply voltage circuit terminal in the harness connector. Is battery voltage present on the switch supply voltage circuit?	Go to **Step 8**	Go to **Step 6**
6	Test the switch supply voltage circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 12**	Go to **Step 9**
7	1. Disconnect the seat adjuster switch connector. 2. Test the active switch signal circuit for a short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 12**	Go to **Step 9**
8	Inspect for poor connections at the seat adjuster switch connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems.		

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	Did you find and correct the condition?	Go to **Step 12**	Go to **Step 10**
9	Inspect for poor connections at the driver seat module connectors. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 12**	Go to **Step 11**
10	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power** Is the repair complete?	Go to **Step 12**	-
11	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Is the repair complete?	Go to **Step 12**	-
12	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER SEAT INOPERATIVE (W/O MEMORY)

Power Seat Inoperative (w/o Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics and **Passenger Seat Schematics** **Connector End View Reference: Power Seat Systems Connector End Views** DEFINITION: All of the seat adjuster motors are inoperative, the lumbar and bolster motors may also be inoperative.			
1	Did you review the Power Seats System Description and Operation?	Go to **Step 2**	Go to **Symptoms - Seats**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the seat adjuster switch connector. 2. Connect a test lamp from the battery voltage supply circuit terminal in the harness connector to a good ground. Does the test lamp illuminate?	Go to **Step 4**	Go to **Step 5**
4	Connect a test lamp from the battery voltage supply circuit terminal to the ground circuit terminal in the seat adjuster switch harness connector. Does the test lamp illuminate?	Go to **Step 7**	Go to **Step 6**
5	Repair the battery voltage supply circuit for an open or short to ground. Refer to **Wiring Repairs** in Wiring Systems. Is the repair complete?	Go to **Step 9**	-

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6	Repair the ground circuit for an open or high resistance. Refer to **Wiring Repairs** in Wiring Systems. Is the repair complete?	Go to **Step 9**	-
7	Inspect for poor connections at the seat adjuster switch harness connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
8	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power**. Is the repair complete?	Go to **Step 9**	-
9	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER SEAT DOES NOT MOVE FORWARD/REARWARD (W/MEMORY)

Power Seat Does Not Move Forward/Rearward (w/Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**			
1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Observe the Horizontal Forward and Rearward Switch parameters in the driver seat module Input/Output data list. Do either of the Horizontal Switch parameters display Active?	Go to **Step 4**	Go to **Step 5**
4	Disconnect the seat adjuster switch connector. Do both of the Horizontal Switch parameters display Inactive?	Go to **Step 12**	Go to **Step 9**
5	Operate the horizontal forward switch. Does the scan tool display the horizontal forward switch as Active?	Go to **Step 6**	Go to **Step 7**
6	Operate the horizontal rearward switch. Does the scan tool display the horizontal rearward		

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	switch as Active?	Go to **Step 13**	Go to **Step 8**
7	1. Disconnect the seat adjuster switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the horizontal forward switch signal circuit terminal in the harness connector. Does the scan tool display the horizontal forward switch as Active?	Go to **Step 12**	Go to **Step 10**
8	1. Disconnect the seat adjuster switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the horizontal rearward switch signal circuit terminal in the harness connector. Does the scan tool display the horizontal rearward switch as Active?	Go to **Step 12**	Go to **Step 11**
9	Test the active horizontal switch signal circuit for a short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
10	Test the horizontal forward switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
11	Test the horizontal rearward switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
12	Inspect for poor connections at the seat adjuster switch harness connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 14**
13	Inspect for poor connections at the driver seat module harness connectors. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 15**
14	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power**. Is the repair complete?	Go to **Step 16**	-
15	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Is the repair complete?	Go to **Step 16**	-

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16	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER SEAT DOES NOT MOVE FORWARD/REARWARD (W/O MEMORY)

Power Seat Does Not Move Forward/Rearward (w/o Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics and Passenger Seat Schematics Connector End View Reference: Power Seat Systems Connector End Views			
1	Did you review the Power Seat System Description and Operation and perform the necessary inspections?	Go to **Step 2**	Go to **Symptoms - Seats**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the horizontal adjuster motor connector. 2. Connect a test lamp between the horizontal motor control circuit terminals in the harness connector. 3. Operate the horizontal adjuster switch in both directions. Does the test lamp illuminate when the switch is operated in both directions?	Go to **Step 6**	Go to **Step 4**
4	Test the horizontal motor control circuits for an open or short to ground. Refer to **Circuit Testing** and to **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 seat adjuster switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the horizontal adjuster motor. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
7	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power**. Is the repair complete?	Go to **Step 9**	-
	Replace the horizontal adjuster motor. Refer to **Seat Adjuster Replacement - Front (Manual)** or **Seat**		

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8	**Adjuster Replacement - Front (Power)**. Is the repair complete?	Go to **Step 9**	-
9	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER SEAT DOES NOT TILT FORWARD (W/MEMORY)

Power Seat Does Not Tilt Forward (w/Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**			
1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Observe the Front Vertical Up and Down Switch parameters in the driver seat module Input/Output data list. Do either of the Front Vertical Switch parameters display Active?	Go to **Step 4**	Go to **Step 5**
4	Disconnect the seat adjuster switch connector. Do both of the Front Vertical Switch parameters display Inactive?	Go to **Step 12**	Go to **Step 9**
5	Operate the front vertical up switch. Does the scan tool display the front vertical up switch as Active?	Go to **Step 6**	Go to **Step 7**
6	Operate the front vertical down switch. Does the scan tool display the front vertical down switch as Active?	Go to **Step 13**	Go to **Step 8**
7	1. Disconnect the seat adjuster switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the front vertical up switch signal circuit terminal in the harness connector. Does the scan tool display the front vertical up switch as Active?	Go to **Step 12**	Go to **Step 10**

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8	1. Disconnect the seat adjuster switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the front vertical down switch signal circuit terminal in the harness connector. Does the scan tool display the front vertical down switch as Active?	Go to **Step 12**	Go to **Step 11**
9	Test the active front vertical switch signal circuit for a short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
10	Test the front vertical up switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
11	Test the front vertical down switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
12	Inspect for poor connections at the seat adjuster switch harness connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 14**
13	Inspect for poor connections at the driver seat module harness connectors. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 15**
14	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power**. Is the repair complete?	Go to **Step 16**	-
15	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Is the repair complete?	Go to **Step 16**	-
16	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER SEAT DOES NOT TILT FORWARD (W/O MEMORY)

Power Seat Does Not Tilt Forward (w/o Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics and Passenger Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**			

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1	Did you review the Power Seats System Description and Operation and perform the necessary inspections?	Go to **Step 2**	Go to **Symptoms - Seats**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the front vertical adjuster motor connector. 2. Connect a test lamp between the front vertical motor control circuit terminals in the harness connector. 3. Operate the front vertical adjuster switch in both directions. Does the test lamp illuminate when the switch is operated in both directions?	Go to **Step 6**	Go to **Step 4**
4	Test the front vertical motor control circuits for an open or short to ground. Refer to **Circuit Testing** and to **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 seat adjuster switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the front vertical adjuster motor. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
7	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power**. Is the repair complete?	Go to **Step 9**	-
8	Replace the front vertical adjuster motor. Refer to **Seat Adjuster Replacement - Front (Manual)** or **Seat Adjuster Replacement - Front (Power)**. Is the repair complete?	Go to **Step 9**	-
9	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

POWER SEAT DOES NOT TILT REARWARD (W/MEMORY)

Power Seat Does Not Tilt Rearward (w/Memory)

Step	Action	Yes	No

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Schematic Reference: Driver Seat Schematics
Connector End View Reference: Power Seat Systems Connector End Views

1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Observe the rear Vertical Up and Down Switch parameters in the driver seat module Input/Output data list. Do either of the Rear Vertical Switch parameters display Active?	Go to **Step 4**	Go to **Step 5**
4	Disconnect the seat adjuster switch connector. Do both of the Rear Vertical Switch parameters display Inactive?	Go to **Step 12**	Go to **Step 9**
5	Operate the rear vertical up switch. Does the scan tool display the rear vertical up switch as Active?	Go to **Step 6**	Go to **Step 7**
6	Operate the rear vertical down switch. Does the scan tool display the rear vertical down switch as Active?	Go to **Step 13**	Go to **Step 8**
7	1. Disconnect the seat adjuster switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the rear vertical up switch signal circuit terminal in the harness connector. Does the scan tool display the rear vertical up switch as Active?	Go to **Step 12**	Go to **Step 10**
8	1. Disconnect the seat adjuster switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the rear vertical down switch signal circuit terminal in the harness connector. Does the scan tool display the rear vertical down switch as Active?	Go to **Step 12**	Go to **Step 11**
	Test the active rear vertical switch signal circuit for a		

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9	short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
10	Test the rear vertical up switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
11	Test the rear vertical down switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
12	Inspect for poor connections at the seat adjuster switch harness connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 14**
13	Inspect for poor connections at the driver seat module harness connectors. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 15**
14	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power**. Is the repair complete?	Go to **Step 16**	-
15	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Is the repair complete?	Go to **Step 16**	-
16	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER SEAT DOES NOT TILT REARWARD (W/O MEMORY)

Power Seat Does Not Tilt Rearward (w/o Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics and Passenger Seat Schematics Connector End View Reference: Power Seat Systems Connector End Views			
1	Did you review the Power Seats System Description and Operation and perform the necessary inspections?	Go to **Step 2**	Go to **Symptoms - Seats**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
	1. Disconnect the rear vertical adjuster motor connector.		

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3	2. Connect a test lamp between the rear vertical motor control circuit terminals in the harness connector. 3. Operate the rear vertical adjuster switch in both directions. Does the test lamp illuminate when the switch is operated in both directions?	Go to **Step 6**	Go to **Step 4**
4	Test the rear vertical motor control circuits for an open or short to ground. Refer to **Circuit Testing** and to **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 seat adjuster switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the rear vertical adjuster motor. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
7	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power**. Is the repair complete?	Go to **Step 9**	-
8	Replace the rear vertical adjuster motor. Refer to **Seat Adjuster Replacement - Front (Manual)** or **Seat Adjuster Replacement - Front (Power)**. Is the repair complete?	Go to **Step 9**	-
9	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER SEAT DOES NOT RECLINE (W/MEMORY)

Power Seat Does Not Recline (w/Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**			
1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present.	Go to **Testing for Intermittent Conditions and**	

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	Does the system operate normally?	**Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Observe the Recline Forward and Rearward Switch parameters in the driver seat module Input/Output data list. Do either of the recline switch parameters display Active?	Go to **Step 4**	Go to **Step 5**
4	Disconnect the seat adjuster switch connector. Do both of the Recline Switch parameters display Inactive?	Go to **Step 12**	Go to **Step 9**
5	Operate the recline forward switch. Does the scan tool display the recline forward switch as Active?	Go to **Step 6**	Go to **Step 7**
6	Operate the recline rearward switch. Does the scan tool display the recline rearward switch as Active?	Go to **Step 13**	Go to **Step 8**
7	1. Disconnect the seat adjuster switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the recline forward switch signal circuit terminal in the harness connector. Does the scan tool display the recline forward switch as Active?	Go to **Step 12**	Go to **Step 10**
8	1. Disconnect the seat adjuster switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the recline rearward switch signal circuit terminal in the harness connector. Does the scan tool display the recline rearward switch as Active?	Go to **Step 12**	Go to **Step 11**
9	Test the active recline switch signal circuit for a short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
10	Test the recline forward switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
11	Test the recline rearward switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and		

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	to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 13**
12	Inspect for poor connections at the seat adjuster switch harness connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 14**
13	Inspect for poor connections at the driver seat module harness connectors. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 16**	Go to **Step 15**
14	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power**. Is the repair complete?	Go to **Step 16**	-
15	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Is the repair complete?	Go to **Step 16**	-
16	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

POWER SEAT DOES NOT RECLINE (W/O MEMORY)

Power Seat Does Not Recline (w/o Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics and Passenger Seat Schematics Connector End View Reference: Power Seat Systems Connector End Views			
1	Did you review the Power Seats System Description and Operation and perform the necessary inspections?	Go to **Step 2**	Go to **Symptoms - Seats**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the recline adjuster motor connector. 2. Connect a test lamp between the recline motor control circuit terminals in the harness connector. 3. Operate the recline adjuster switch in both directions. Does the test lamp illuminate when the switch is operated in both directions?	Go to **Step 6**	Go to **Step 4**
	Test the recline motor control circuits for an open or		

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4	short to ground. Refer to **Circuit Testing** and to **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 seat adjuster switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the recline adjuster motor. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
7	Replace the seat adjuster switch. Refer to **Seat Switch Replacement - Power**. Is the repair complete?	Go to **Step 9**	-
8	Replace the recline adjuster motor. Refer to **Seat Adjuster Replacement - Front (Manual)** or **Seat Adjuster Replacement - Front (Power)**. Is the repair complete?	Go to **Step 9**	-
9	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

MEMORY SEAT FEATURE INOPERATIVE

Memory Seat Feature Inoperative

Step	Action	Values	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views** DEFINITION: One or more of the memory recall functions are inoperative.				
1	Did you perform the Power Seat Diagnostic System Check?	-	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Attempt to set and recall memory 1, memory 2, and exit seat position settings. Does the system operate normally?	-	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Observe the Memory Switch parameter in the driver door module Inputs data list. 3. Press the memory 1 switch.	-		

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	Does the scan tool display the memory 1 switch as Active only while the switch is pressed?		Go to **Step 4**	Go to **Step 6**
4	1. Observe the Memory Switch parameter in the driver door module Inputs data list. 2. Press the memory 2 switch. Does the scan tool display the memory 2 switch as Active only while the switch is pressed?	-	Go to **Step 5**	Go to **Step 7**
5	1. Observe the Memory Switch parameter in the driver door module Inputs data list. 2. Press the EXIT switch. Does the scan tool display the EXIT switch as Active only while the switch is pressed?	-	Go to **Step 12**	Go to **Step 8**
6	1. Disconnect the memory switch connector from the driver door module. 2. Using a DMM, test the resistance through the memory switch from the switch supply voltage circuit terminal to the memory 1 switch signal circuit terminal in the pigtail connector. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. 3. Press the memory 1 switch. Is the resistance less than the specified value only while the switch is pressed?	0.5 ohms	Go to **Step 13**	Go to **Step 11**
7	1. Disconnect the memory switch connector from the driver door module. 2. Using a DMM, test the resistance through the memory switch from the switch supply voltage circuit terminal to the memory 2 switch signal circuit terminal in the pigtail connector. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. 3. Press the memory 2 switch.	0.5 ohms		

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	Is the resistance less than the specified value only while the switch is pressed?		Go to **Step 13**	Go to **Step 11**
8	1. Disconnect the memory switch connector from the driver door module. 2. Using a DMM, test the resistance through the memory switch from the switch supply voltage circuit terminal to the memory 1 switch signal circuit terminal in the pigtail connector. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. 3. Press the EXIT switch. Is the resistance less than the specified value?	0.5 ohms	Go to **Step 9**	Go to **Step 11**
9	1. Using a DMM, test the resistance through the memory switch from the switch supply voltage circuit terminal to the memory 2 switch signal circuit terminal in the pigtail connector. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. 2. Press the EXIT switch. Is the resistance less than the specified value only while the switch is pressed?	0.5 ohms	Go to **Step 10**	Go to **Step 11**
10	Test the memory switch signal circuits in the switch harness for a short to ground or voltage. Refer to **Circuit Testing** in Wiring Systems. Are either of the switch signal circuits shorted to ground or voltage?	-	Go to **Step 14**	Go to **Step 13**
11	Inspect for poor connections at the memory switch connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to**Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 17**	Go to **Step 14**
12	Inspect for poor connections at the driver seat module connectors. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 17**	Go to **Step 15**

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13	Inspect for poor connections at the driver door module connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 17**	Go to **Step 16**
14	Replace the memory switch. Refer to **Heated Seat Switch Replacement - Front**. Is the repair complete?	-	Go to **Step 17**	-
15	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Is the repair complete?	-	Go to **Step 17**	-
16	Replace the driver door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** in Doors. Is the repair complete?	-	Go to **Step 17**	-
17	Operate the memory seat system to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 3**

LUMBAR SUPPORT INOPERATIVE (W/MEMORY)

Lumbar Support Inoperative (w/Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**			
1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Observe the Lumbar and Torso Switch parameters in the driver seat module Input/Output data list. Do any of the Lumbar or Torso Switch parameters display Active?	Go to **Step 4**	Go to **Step 5**
4	Disconnect the lumbar adjuster switch connector. Do all of the Lumbar or Torso Switch parameters		

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	display Inactive?	Go to **Step 18**	Go to **Step 13**
5	1. Observe the Lumbar Forward Switch parameter in the driver seat module Input/Output data list. 2. Operate the lumbar forward switch. Does the scan tool display the lumbar forward switch as active?	Go to **Step 6**	Go to **Step 9**
6	1. Observe the Lumbar Rearward Switch parameter in the driver seat module Input/Output data list. 2. Operate the lumbar rearward switch. Does the scan tool display the lumbar rearward switch as active?	Go to **Step 7**	Go to **Step 10**
7	1. Observe the Torso Inward Switch parameter in the driver seat module Input/Output data list. 2. Operate the torso inward switch. Does the scan tool display the torso inward switch as active?	Go to **Step 8**	Go to **Step 11**
8	1. Observe the Torso Outward Switch parameter in the driver seat module Input/Output data list. 2. Operate the torso outward switch. Does the scan tool display the torso outward switch as active?	Go to **Step 19**	Go to **Step 12**
9	1. Disconnect the lumbar switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the lumbar forward switch signal circuit terminal in the harness connector. Does the scan tool display the lumbar forward switch as Active?	Go to **Step 18**	Go to **Step 14**
10	1. Disconnect the lumbar switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the lumbar rearward switch signal circuit terminal in the harness connector. Does the scan tool display the lumbar rearward switch as Active?	Go to **Step 18**	Go to **Step 15**
	1. Disconnect the lumbar switch connector.		

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11	2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the torso inward switch signal circuit terminal in the harness connector. Does the scan tool display the torso inward switch as Active?	Go to **Step 18**	Go to **Step 16**
12	1. Disconnect the lumbar switch connector. 2. Connect a fused jumper wire from the battery voltage supply circuit terminal to the torso outward switch signal circuit terminal in the harness connector. Does the scan tool display the torso outward switch as Active?	Go to **Step 18**	Go to **Step 17**
13	Test the active lumbar or torso switch signal circuit for a short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 19**
14	Test the lumbar forward switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 19**
15	Test the lumbar rearward switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 19**
16	Test the torso inward switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 19**
17	Test the torso outward switch signal circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 19**
18	Inspect for poor connections at the harness connector of the lumbar switch assembly. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 20**
19	Inspect for poor connections at the harness connector of the driver seat module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 22**	Go to **Step 21**

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20	Replace the lumbar switch assembly. Refer to **Lumbar Switch Replacement**. Did you complete the replacement?	Go to **Step 22**	-
21	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Did you complete the replacement?	Go to **Step 22**	-
22	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

LUMBAR SUPPORT INOPERATIVE (W/O MEMORY)

Lumbar Support Inoperative (w/o Memory)

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics and **Passenger Seat Schematics** **Connector End View Reference: Power Seat Systems Connector End Views**			
1	Did you review the Lumbar System Description and Operation and perform the necessary inspections?	Go to **Step 2**	Go to **Symptoms - Seats**
2	Verify the fault is present. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the inoperative lumbar or torso motor connector. 2. Connect a test lamp between the motor control circuit terminals in the harness connector. 3. Operate the appropriate switch in both directions. Does the test lamp illuminate when the switch is operated in both directions?	Go to **Step 6**	Go to **Step 4**
4	Test the motor control circuits for an open or short to ground. Refer to **Circuit Testing** and to **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 lumbar switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
6	Inspect for poor connections at the inoperative lumbar or torso motor. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**

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7	Replace the lumbar switch. Refer to **Lumbar Switch Replacement**.	Go to **Step 9**	-
8	Replace the lumbar support/torso bolster motor assembly. Refer to **Lumbar Replacement - Front Seat**. Is the repair complete?	Go to **Step 9**	-
9	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

HEATED/COOLED SEATS INOPERATIVE

Heated/Cooled Seats Inoperative

Step	Action	Values	Yes	No
Schematic Reference: Driver Seat Schematics, **Passenger Seat Schematics**, and **Rear Seat Schematics** DEFINITION: One or more of a heated/cooled seat function is inoperative but the switch indicators operate normal.				
1	Did you review the Heated/Cooled Seats Description and Operation and perform the necessary inspections?	-	Go to **Step 2**	Go to **Symptoms - Seats**
2	Verify the fault is present. Does the system operate normally?	-	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn the ignition ON. 2. Operate the heat/cool seat switch in all of the operating modes and temperature levels. Do the heat/cool seat switch indicators operate normally?	-	Go to **Step 4**	Go to **Heated/Cooled Seat Switch Indicator Malfunction**
4	Do either of the blower motors operate for at least 4 seconds?	-	Go to **Step 7**	Go to **Step 5**
5	1. Using a DMM, measure the voltage of the mode signal circuit to the CCSM by backprobing the terminal in the body harness to seat harness inline connector. 2. Start the engine. 3. Operate the heat/cool seat switch through all of the operating modes. Does the mode signal circuit voltage begin	-		

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	at battery positive in OFF and change each time the next operating mode is selected?		Go to **Step 9**	Go to **Step 6**
6	1. Turn the ignition OFF. 2. Disconnect the signal converter connector C3. 3. Using a DMM, measure the mode signal circuit voltage from the affected CCSM at the harness connector terminal. 4. Turn the ignition ON. Is the circuit voltage at or near the specified value?	12 V	Go to **Step 31**	Go to **Step 8**
7	1. Cycle the ignition OFF and ON. 2. Operate the seat in the high heat mode and quickly switch to back only operation. Does the back only heat mode operate normally for more than 1 minute?	-	Go to **Step 12**	Go to **Step 13**
8	Test the mode signal circuit for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 9**
9	1. Disconnect the CCSM connector C1. 2. Connect a test lamp from the battery voltage supply circuit terminal in the harness connector to a good ground. Does the test lamp illuminate?	-	Go to **Step 10**	Go to **Step 28**
10	Connect a test lamp from the ignition voltage supply circuit terminal in the CCSM harness connector to a good ground. Does the test lamp illuminate?	-	Go to **Step 11**	Go to **Step 29**
11	Connect a test lamp from battery voltage to the ground circuit terminal in the CCSM harness connector. Does the test lamp illuminate?	-	Go to **Step 32**	Go to **Step 30**
	1. Cycle the ignition OFF and ON.			

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12	2. Operate the seat in the high cool mode. Does the seat cushion blower motor operate for at least several seconds?	-	Go to **Step 14**	Go to **Step 18**
13	1. Cycle the ignition OFF and ON. 2. Operate the seat in the high cool mode. Does the seat back blower motor operate for at least several seconds?	-	Go to **Step 16**	Go to **Step 20**
14	1. Disconnect the seat cushion heat/cool ventilation blower harness connector. 2. Measure the resistance through the seat cushion TED from the heat and cool control circuit terminals in the ventilation module connector. Is the resistance within the specified values?	0.5-7 ohms	Go to **Step 15**	Go to **Step 33**
15	Measure the resistance through the seat cushion temperature sensor from the heat and cool control circuit terminals in the ventilation module connector. Is the resistance within the specified values?	500 ohms-10K ohms	Go to **Step 22**	Go to **Step 33**
16	1. Disconnect the seat back heat/cool ventilation blower harness connector. 2. Measure the resistance through the seat back TED from the heat and cool control circuit terminals in the ventilation blower connector. Is the resistance within the specified values?	0.5-7 ohms	Go to **Step 17**	Go to **Step 34**
17	Measure the resistance through the seat back temperature sensor from the heat and cool control circuit terminals in the ventilation blower connector. Is the resistance within the specified values?	500 ohms-10K ohms	Go to **Step 23**	Go to **Step 34**
	1. Cycle the ignition OFF and ON.			

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18	2. Using a DMM, measure the voltage between the blower motor control and low reference circuits by back probing the terminals in the seat cushion heat/cool ventilation blower harness connector. 3. Operate the seat in the high cool mode. Is the voltage greater than the specified value?	4 V	Go to **Step 19**	Go to **Step 24**
19	1. Cycle the ignition OFF and ON. 2. Disconnect the seat cushion heat/cool ventilation blower connector. 3. Using a DMM, measure the voltage at the blower motor logic voltage circuit terminal in the harness connector. Is the voltage at or near the specified value?	12 V	Go to **Step 33**	Go to **Step 25**
20	1. Cycle the ignition OFF and ON. 2. Using a DMM, measure the voltage between the blower motor control and low reference circuits by back probing the terminals in the seat back heat/cool ventilation blower harness connector 3. Operate the seat in the high cool mode. Is the voltage greater than the specified value?	4 V	Go to **Step 21**	Go to **Step 26**
21	1. Cycle the ignition OFF and ON. 2. Disconnect the seat back heat/cool ventilation blower connector. 3. Using a DMM, measure the voltage at the blower motor logic voltage circuit terminal in the harness connector. Is the voltage at or near the specified value?	12 V	Go to **Step 34**	Go to **Step 27**

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22	Test the seat cushion TED control and temperature sensor circuits from the CCSM to the seat cushion ventilation blower connector for opens or shorts to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 32**
23	Test the seat back TED control and temperature sensor circuits from the CCSM to the seat back ventilation blower connector for opens or shorts to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 32**
24	Test the seat cushion blower control and low reference circuits from the CCSM to the seat cushion ventilation blower connector for opens or shorts to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 32**
25	Test the seat cushion blower logic voltage circuit from the CCSM to the seat cushion ventilation blower connector for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 32**
26	Test the seat back blower control and low reference circuits from the CCSM to the seat cushion ventilation blower connector for opens or shorts to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 32**
27	Test the seat back blower logic voltage circuit from the CCSM to the seat cushion ventilation blower connector for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 32**
28	Repair the battery voltage supply circuit to the CCSM for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems.	-		

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	Is the repair complete?		Go to **Step 39**	-
29	Repair the ignition voltage supply circuit to the CCSM for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Is the repair complete?	-	Go to **Step 39**	-
30	Repair the CCSM ground circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Is the repair complete?	-	Go to **Step 39**	-
31	Inspect for poor connections at the heat/cool seat switch signal converter. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 35**
32	Inspect for poor connections at the CCSM. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 36**
33	Inspect for poor connections at the seat cushion ventilation blower connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 37**
34	Inspect for poor connections at the seat back ventilation blower connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 39**	Go to **Step 38**
35	Replace the heat/cool seat switch signal converter. Refer to **Module Replacement - Ventilation Heat and Cool - Seat Cushion**. Is the repair complete?	-	Go to **Step 39**	-
36	Replace the CCSM. Refer to **Module Replacement - Seat Climate Control - Front Seat** or to **Module Replacement - Seat Climate Control - Rear Seat**. Is the repair complete?	-	Go to **Step 39**	-
	Replace the heat/cool seat cushion ventilation blower. Refer to **Blower**			

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37	**Replacement - Ventilation Heat and Cool - Front Seat Cushion** or to **Blower Replacement - Ventilation Heat and Cool - Rear Seat Cushion**. Is the repair complete?	-	Go to **Step 39**	-
38	Replace the heat/cool seat back ventilation blower. Refer to **Blower Replacement - Ventilation Heat and Cool - Front Seat Back** or to **Blower Replacement - Ventilation Heat and Cool - Rear Seat Back**. Is the repair complete?	-	Go to **Step 39**	-
39	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 3**

HEATED/COOLED SEAT SWITCH INDICATOR MALFUNCTION

Heated/Cooled Seat Switch Indicator Malfunction

Step	Action	Values	Yes	No
Schematic Reference: Driver Seat Schematics, **Passenger Seat Schematics**, and **Rear Seat Schematics** DEFINITION: One or more heat/cool seat switch indicators are inoperative and the related heat/cool seat function may or may not operate.				
1	Did you review the Heated/Cooled Seats Description and Operation and perform the necessary inspections?	-	Go to **Step 2**	Go to **Symptoms - Seats**
2	Verify the fault is present. Does the system operate normally?	-	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	Are all of the indicators on the affected switch inoperative?	-	Go to **Step 4**	Go to **Step 5**
4	Do the heat/cool seat functions operate?	-	Go to **Step 6**	Go to **Step 7**
5	Does the heat/cool seat function of the affected indicator operate?	-	Go to **Step 9**	Go to **Step 10**
6	1. Disconnect the heat/cool seat switch connector. 2. Test the heat/cool seat switch ground circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems.	-		

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	Did you find and correct the condition?		Go to **Step 17**	Go to **Step 13**
7	1. Disconnect the heat/cool seat switch connector. 2. Turn the ignition ON. 3. Test the ignition voltage supply circuit to the heat/cool seat switch for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 17**	Go to **Step 13**
8	1. Turn the ignition OFF. 2. Connect the heat/cool seat switch. 3. Turn the ignition ON. 4. Using a DMM, test the voltage of the heat select switch signal circuit by back probing the terminal in the switch connector. 5. Press and hold the heat select switch. Is the voltage at or near the specified value?	12 V	Go to **Step 14**	Go to **Step 13**
9	1. Using a DMM, test the voltage of the indicator control circuit by back probing the terminal in the switch connector. 2. Turn the ignition ON. 3. Operate the system in a mode which the indicator would normally be illuminated. Is the voltage at or near the specified value?	12 V	Go to **Step 13**	Go to **Step 11**
10	1. Using a DMM, test the voltage of the affected switch signal circuit by back probing the terminal in the switch connector. 2. Turn the ignition ON. 3. Press and hold the affected switch. Is the voltage at or near the specified value?	12 V	Go to **Step 12**	Go to **Step 13**
11	Test the indicator control circuit for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 17**	Go to **Step 14**
	Test the switch signal circuit for an open or short			

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12	to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 17**	Go to **Step 14**
13	Inspect for poor connections at the heat/cool seat switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 17**	Go to **Step 15**
14	Inspect for poor connections at the signal converter. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 17**	Go to **Step 16**
15	Replace the heat/cool seat switch. Refer to **Heated and Cooled Seat Switch Replacement (Front-Platinum Models)** or **Heated and Cooled Seat Switch Replacement (Rear-Platinum Models)**. Is the repair complete?	-	Go to **Step 17**	-
16	Replace the signal converter. Refer to **Module Replacement - Ventilation Heat and Cool - Seat Cushion**. Is the repair complete?	-	Go to **Step 17**	-
17	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 3**

HEATED SEAT ALWAYS ON

Heated Seat Always On

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics and Passenger Seat Schematics Connector End View Reference: Power Seat Systems Connector End Views			
1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Operate the heated seat system. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Install a scan tool. 2. Display the Heated Seat Status parameter in the driver seat module Input/Output data list. 3. Start the engine.		

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	Does the scan tool display the Heated Seat Status parameter as Off?	Go to **Step 6**	Go to **Step 4**
4	Display the Heated Seat Mode parameter in the door module Inputs data list. Does the scan tool display the Heated Seat Mode parameter as OFF?	Go to **Step 6**	Go to **Step 5**
5	1. Turn OFF the ignition. 2. Disconnect the heated seat switch connector to the door module. 3. Start the engine. Does the scan tool display the Heated Seat Mode parameter as OFF?	Go to **Step 7**	Go to **Step 8**
6	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Is the repair complete?	Go to **Step 9**	-
7	Replace the heated seat switch. Refer to **Heated Seat Switch Replacement - Front**. Is the repair complete?	Go to **Step 9**	-
8	Replace the door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger** in Doors. Is the repair complete?	Go to **Step 9**	-
9	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

HEATED SEAT INOPERATIVE

Heated Seat Inoperative

Step	Action	Yes	No
Schematic Reference: Driver Seat Schematics and **Passenger Seat Schematics** **Connector End View Reference: Power Seat Systems Connector End Views**			
1	Did you perform the Power Seat Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Power Seat Systems**
2	Operate the heated seat system. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
	1. Install a scan tool.		

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3	2. Start the engine. 3. Display the Heated Seat Status and Zone parameters in the driver seat module Input/Output data list. 4. Operate the heated seat switch in all modes. Does the scan tool display the correct heated seat parameters in relation to heated seat switch operation?	Go to **Step 8**	Go to **Step 4**
4	1. Display the heated seat switch parameters in the door module Inputs data list. 2. Press the head seat switches while observing the scan tool parameters. Does the scan tool display the heated seat switches as active while the switches are pressed?	Go to **Step 5**	Go to **Step 6**
5	Do the heated seat switch indicators operate normally?	Go to **Step 13**	Go to **Step 12**
6	1. Disconnect the heated seat switch harness connector to the door module. 2. Test the resistance through the heated seat switch from the voltage supply circuit terminal to the back only select switch signal circuit terminal while operating the heat level switch. Does the back only select switch have continuity only when pressed?	Go to **Step 7**	Go to **Step 10**
7	Test the resistance through the heated seat switch from the voltage supply circuit terminal to the back/cushion select switch signal circuit terminal while operating the back/cushion select switch. Does the back/cushion select switch have continuity only when pressed?	Go to **Step 12**	Go to **Step 10**
8	1. Disconnect the inoperative seat heater element connector. 2. Connect a test lamp from the voltage supply circuit terminal to the control circuit terminal in the harness connector. 3. Operate the seat back and cushion switch to the high mode. Does the test lamp illuminate?	Go to **Step 11**	Go to **Step 9**
9	Test the seat heater element voltage supply and ground circuits in the seat harness for an open or short to ground. Refer to **Circuit Testing** and to **Wiring**		

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	Repairs in Wiring Systems. Did you find and correct the condition?	Go to **Step 18**	Go to **Step 13**
10	Inspect for poor connections at the heated seat switch harness connector to the door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 18**	Go to **Step 14**
11	Inspect for poor connections at the heated seat element connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 18**	Go to **Step 15**
12	Inspect for poor connections at the door module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 18**	Go to **Step 16**
13	Inspect for poor connections at the driver seat module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 18**	Go to **Step 17**
14	Replace the heated seat switch. Refer to **Heated Seat Switch Replacement - Front**. Is the repair complete?	Go to **Step 18**	-
15	Replace the inoperative heated seat element. Refer to **Seat Back Heater Element Replacement - Front** or to **Seat Cushion Heater Element Replacement - Front**. Is the repair complete?	Go to **Step 18**	-
16	Replace the door module. Refer to **Switch Replacement - Door Lock and Side Window - Driver** or **Switch Replacement - Door Lock and Side Window - Passenger** in Doors. Is the repair complete?	Go to **Step 18**	-
17	Replace the driver seat module. Refer to **Memory Seat Control Module Replacement**. Is the repair complete?	Go to **Step 18**	-
18	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

HEATED SEAT ALWAYS ON - REAR

Heated Seat Always On - Rear

Step	Action	Yes	No

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Schematic Reference: Rear Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**			
1	Did you review the Heated Seats Description and Operation and perform the necessary inspections?	Go to **Step 2**	Go to **Heated Seats Description and Operation (Front)**
2	Operate the rear heated seat system. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	Disconnect the heated seat control module connector. Does the heated seat element still operate?	Go to **Step 4**	Go to **Step 5**
4	Repair the seat heater element supply circuit for a short to voltage. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 6**	-
5	Replace the heated seat control module. Is the repair complete?	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 INOPERATIVE - REAR

Heated Seat Inoperative - Rear

Step	Action	Values	Yes	No
Schematic Reference: Rear Seat Schematics **Connector End View Reference: Power Seat Systems Connector End Views**				
1	Did you review the Heated Seats Description and Operation and perform the necessary inspections?	-	Go to **Step 2**	Go to **Symptoms - Seats**
2	Operate the rear heated seat system. Does the system operate normally?	-	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the heated seat control module connector. 2. Connect a test lamp from the ignition voltage supply circuit terminal in the harness connector to ground. 3. Turn the ignition ON.	-		

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	Does the test lamp illuminate?		Go to **Step 4**	Go to **Step 11**
4	Connect a test lamp test from the battery voltage supply circuit terminal in the heated seat control module harness connector to ground. Does the test lamp illuminate?	-	Go to **Step 5**	Go to **Step 12**
5	Connect a test lamp from battery voltage to the ground circuit terminal in the heated seat control module harness connector. Does the test lamp illuminate?	-	Go to **Step 6**	Go to **Step 13**
6	1. Connect a test lamp from battery voltage to the heated seat switch signal circuit terminal in the heated seat control module harness connector. 2. Press and release the heated seat switch. Does the test lamp illuminate only while the heated seat switch is pressed?	-	Go to **Step 7**	Go to **Step 14**
7	Connect a fused jumper wire from battery voltage to the high indicator control circuit terminal in the heated seat control module harness connector. Does the heated seat switch high indicator illuminate?	-	Go to **Step 8**	Go to **Step 16**
8	Connect a fused jumper wire from battery voltage to the low indicator control circuit terminal in the heated seat control module harness connector. Does the heated seat switch low indicator illuminate?	-	Go to **Step 9**	Go to **Step 17**
9	Test the resistance through the heated seat thermistor from the heated seat control module harness connector. Refer to **Circuit Testing** in Wiring Systems. Is the resistance within the specified values?	7K-12K ohms	Go to **Step 10**	Go to **Step 18**
10	Test the resistance through the seat cushion heater element from the heated seat control module harness connector. Is the resistance less than the specified value?	5 ohms	Go to **Step 23**	Go to **Step 18**
11	Repair the ignition voltage supply circuit to the heated seat control module for an open or short to ground. Refer to **Wiring Repairs** and to **Connector Repairs** in Wiring Systems. Is the repair complete?	-	Go to **Step 25**	-
	Repair the battery voltage supply circuit to the heated seat control module for an open or short			

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12	to ground. Refer to **Wiring Repairs** and to **Connector Repairs** in Wiring Systems. Is the repair complete?	-	Go to **Step 25**	-
13	Repair the heated seat control module ground circuit for an open or high resistance. Refer to **Wiring Repairs** and to **Connector Repairs** in Wiring Systems. Is the repair complete?	-	Go to **Step 25**	-
14	1. Disconnect the heated seat switch connector. 2. Test the heated seat switch signal circuit for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 25**	Go to **Step 15**
15	Test the heated seat switch ground circuit for an open or high resistance. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 25**	Go to **Step 19**
16	1. Disconnect the heated seat switch connector. 2. Test the heated seat switch high indicator control circuit for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 25**	Go to **Step 19**
17	1. Disconnect the heated seat switch connector. 2. Test the heated seat switch low indicator control circuit for an open or short to ground. Refer to **Circuit Testing** and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 25**	Go to **Step 19**
18	1. Disconnect the seat cushion heater element connector. 2. Test the seat cushion heater element and thermistor circuits from the heated seat control module connector to the seat cushion heater element connector for an open or short to ground. Refer to **Circuit**	-		

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	Testing and to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?		Go to **Step 25**	Go to **Step 21**
19	Inspect for poor connections at the heated seat switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 25**	Go to **Step 20**
20	Replace the heated seat switch. Refer to **Heated Seat Switch Replacement - Rear**. Is the repair complete?	-	Go to **Step 25**	-
21	Inspect for poor connections at the seat cushion heater element connector. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 25**	Go to **Step 22**
22	Replace the seat cushion heater element. Refer to **Seat Cushion Heater Replacement - Rear**. Is the repair complete?	-	Go to **Step 25**	-
23	Inspect for poor connections at the heated seat control module. Refer to **Testing for Intermittent Conditions and Poor Connections** and to **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 25**	Go to **Step 24**
24	Replace the heated seat control module. Is the repair complete?	-	Go to **Step 25**	-
25	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 3**

SEAT - MANUAL ADJUSTER DOES NOT UNLOCK

Seat - Manual Adjuster Does Not Unlock

Problem	Action
The locking wire is too loose or is disconnected.	Tighten the locking wire enough to allow the locking bar to disengage from the lock slots in the adjuster lower channel when the lock control lever is activated.
The adjuster locking bar is sticking or binding.	• Lubricate the locking bar pivot. • Eliminate the cause of the binding. • Replace the seat adjuster. Refer to **Seat Adjuster Replacement - Front (Manual)** or **Seat Adjuster Replacement - Front (Power)**.

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SEAT - MANUAL ADJUSTER DOES NOT LOCK

Seat - Manual Adjuster Does Not Lock

Problem	Action
The locking wire is too tight.	Loosen the locking wire tension enough to permit full engagement of the locking bar in the locking slots of the adjuster lower channel.
The adjuster locking bar spring is disconnected or broken.	• Connect the locking bar spring. • Install a new locking bar spring.
The adjuster locking bar is sticking or binding.	• Lubricate the locking bar pivot. • Eliminate the cause of the binding. • Replace the seat adjuster. Refer to **Seat Adjuster Replacement - Front (Manual)** or **Seat Adjuster Replacement - Front (Power)**.

SEAT - HARD TO MOVE FORWARD AND REARWARD

Seat - Hard to Move Forward and Rearward

Problem	Action
The adjusters are not properly lubricated.	Lubricate the channels with Lubriplate, or the equivalent.
The adjusters are binding because the channels are bent or damaged.	Replace the seat adjuster.
The adjusters are not in parallel alignment with each other.	Move one adjuster forward or rearward as necessary in order to align the adjusters.

REPAIR INSTRUCTIONS

SEAT REPLACEMENT - FRONT BUCKET

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

1. If equipped with side air bags, disable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** and **SIR Disabling and Enabling Zone 9** in SIR.
2. Move the seat to the full rearward position. Remove the front seat nut cover (3), if equipped.
3. Remove the seat retaining front nuts (2).
4. Move the seat to the full forward position in order to remove the seat retaining rear bolts (1).
5. Disconnect the electrical harness, if equipped.
6. Remove the seat from the vehicle.

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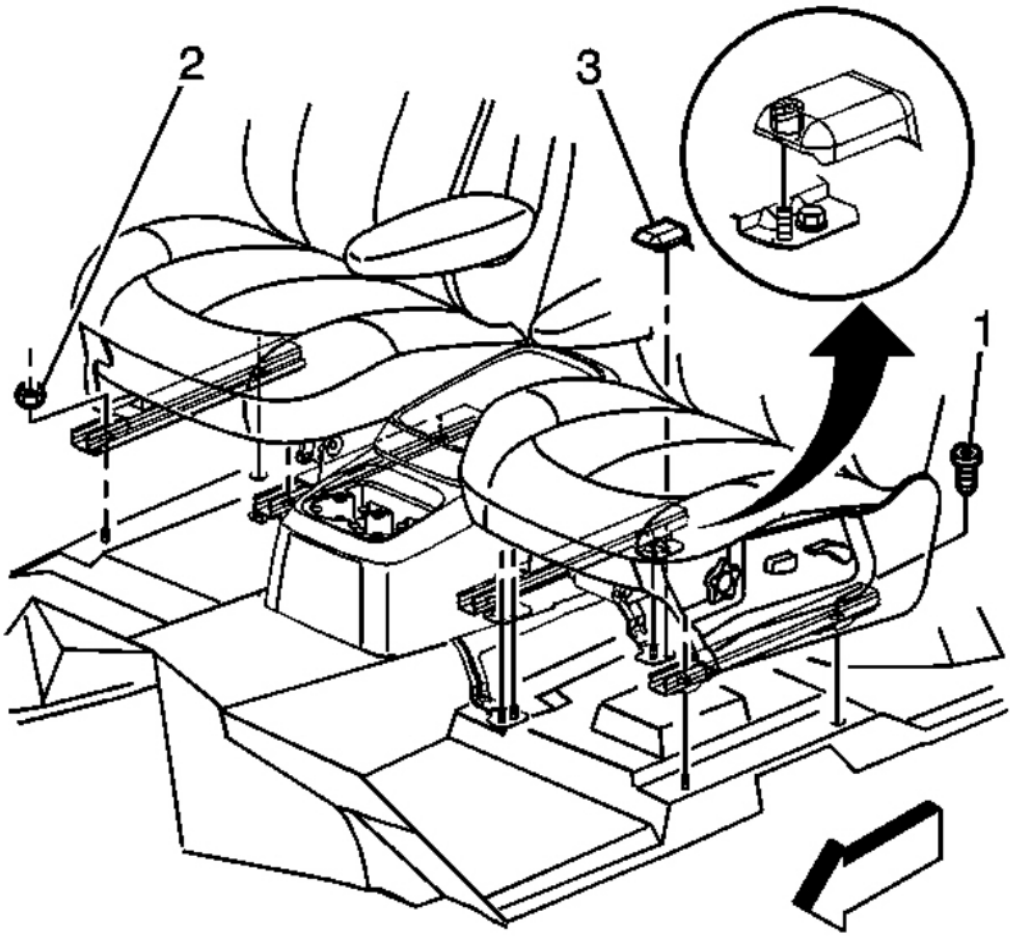


Fig. 17: View Of Front Bucket Seat
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the seat in the vehicle.
2. Connect the electrical harness, if equipped.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Move the seat to the full forward position in order to install the seat retaining rear bolts (1).

Tighten: Tighten the retaining rear bolts to 55 N.m (41 lb ft).

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4. Install the front seat adjuster bolt cover (3), if equipped.
5. Move the seat to the full rearward position and install the seat retaining front nuts (2).

   Tighten: Tighten the nuts to 55 N.m (41 lb ft).

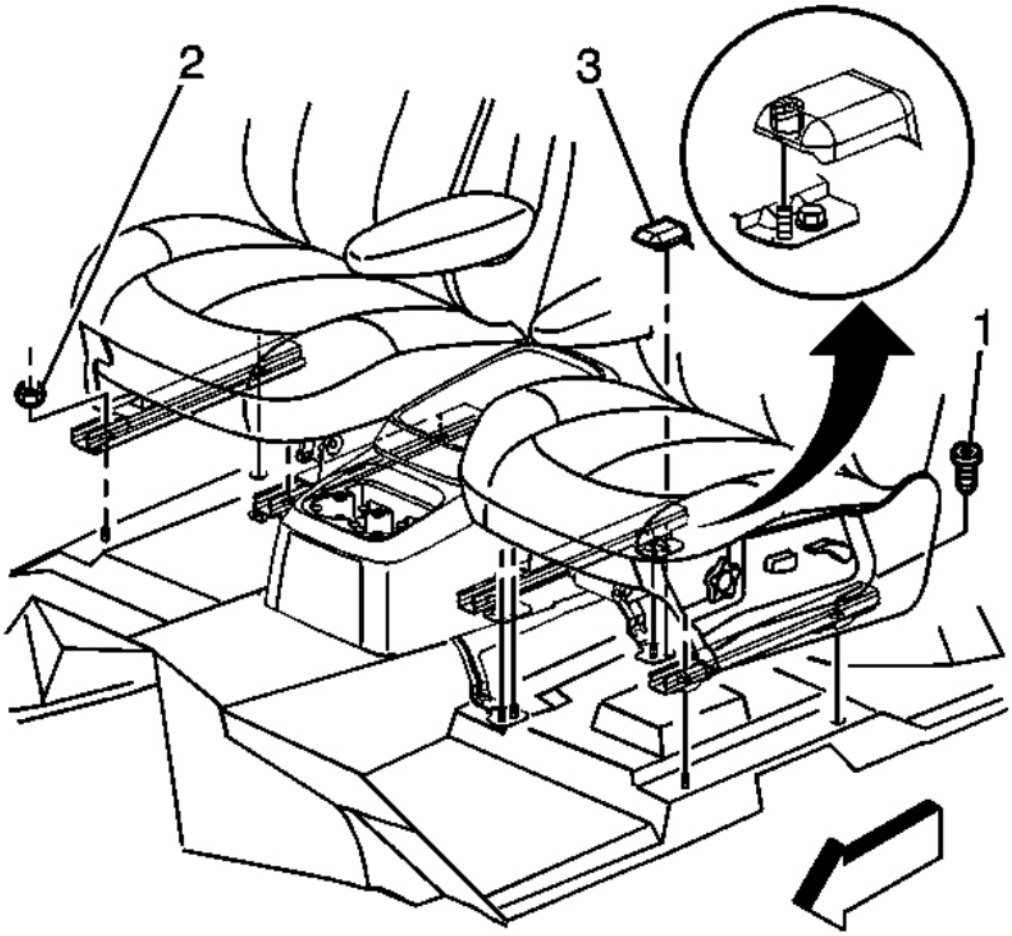


Fig. 18: View Of Front Bucket Seat
Courtesy of GENERAL MOTORS CORP.

6. If equipped with side air bags, enable the SIR system. Refer to **SIR Disabling and Enabling Zone 7** and **SIR Disabling and Enabling Zone 9** in SIR.

SEAT REPLACEMENT - CENTER

Removal Procedure

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1. Remove the front left and right bucket seats. Refer to **Seat Replacement - Front Bucket**.
2. Remove the center seat.

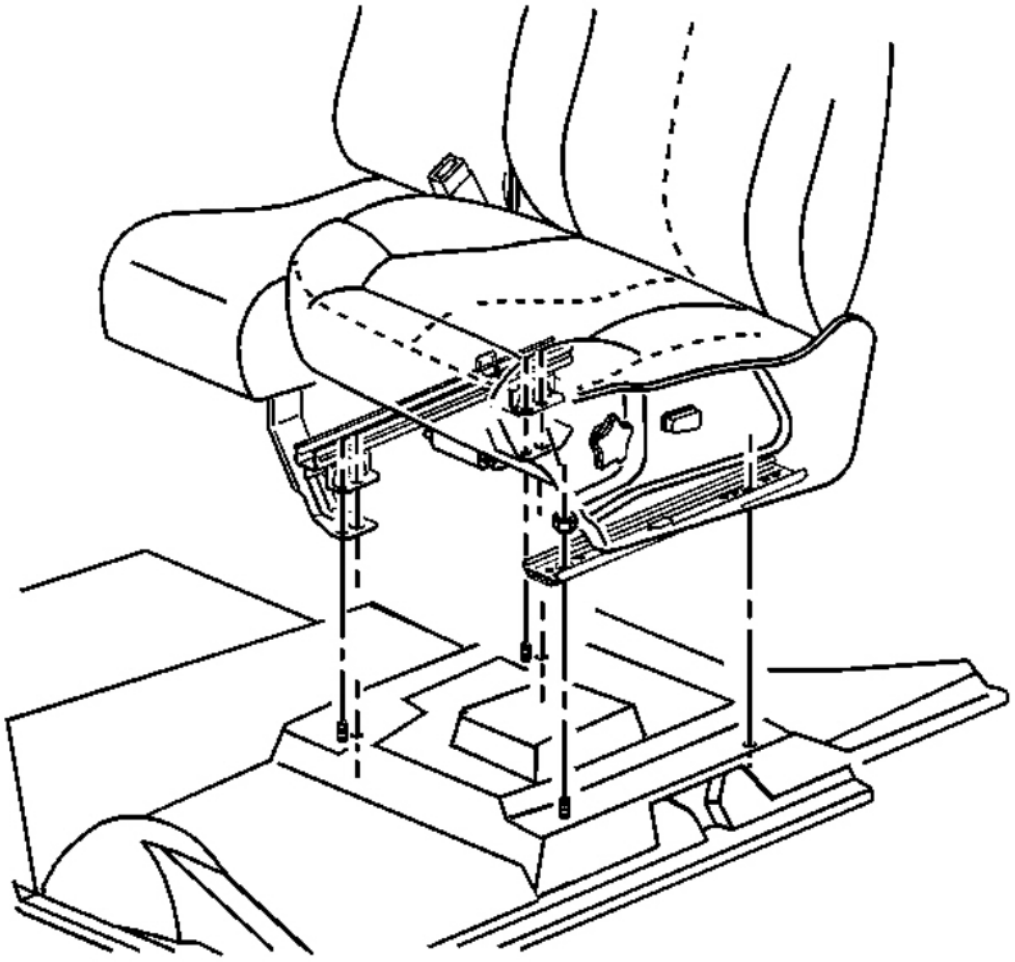


Fig. 19: View Of Center Seat
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the front center seat on top of the floor locating studs.

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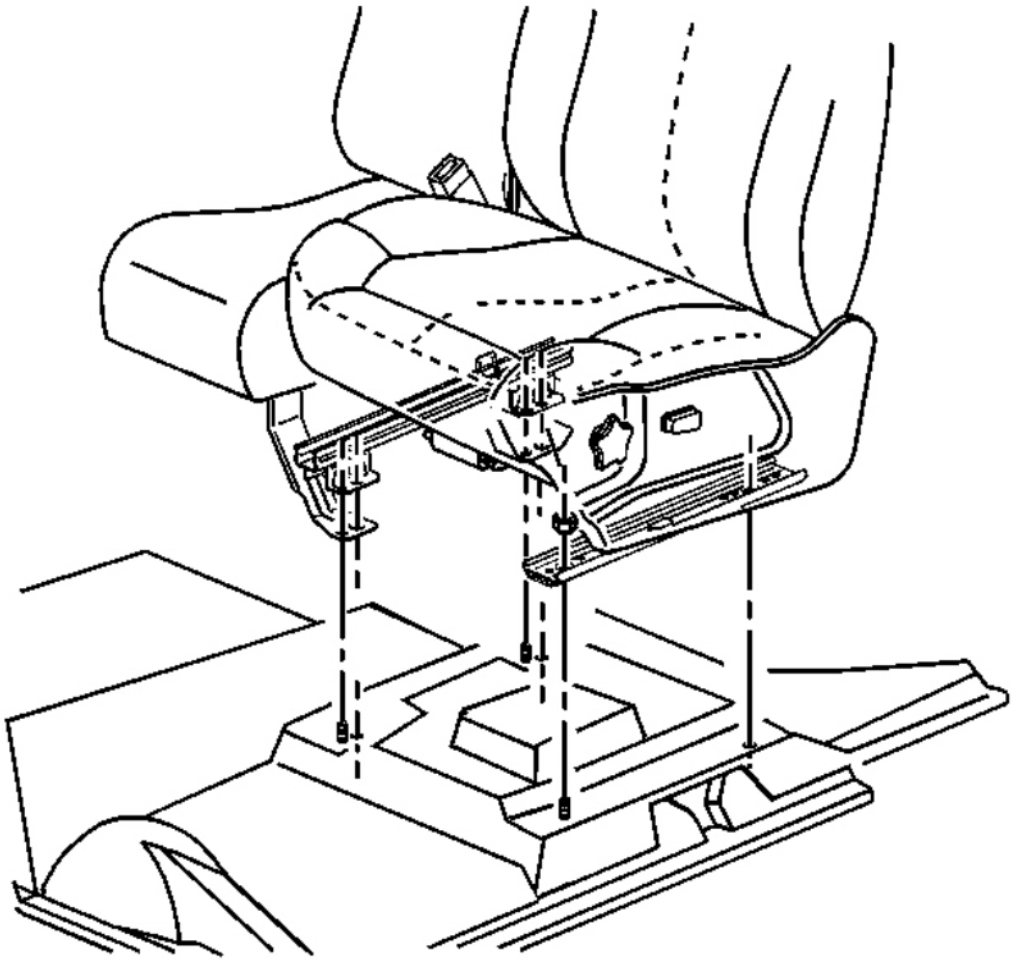


Fig. 20: View Of Center Seat
Courtesy of GENERAL MOTORS CORP.

2. Install the front left and right bucket seats. Refer to **Seat Replacement - Front Bucket**.

SEAT CUSHION FRAME REPLACEMENT - FRONT

Removal Procedure

1. Remove the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
2. Remove the seat cushion trim cover and pad. Refer to **Seat Cushion Trim Cover and Pad Replacement**.
3. Remove the following components from the seat cushion frame:

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- The frame springs (1)
- The frame suspension (2)
- The plastic retainers (3)

4. Remove the seat cushion frame from the vehicle.

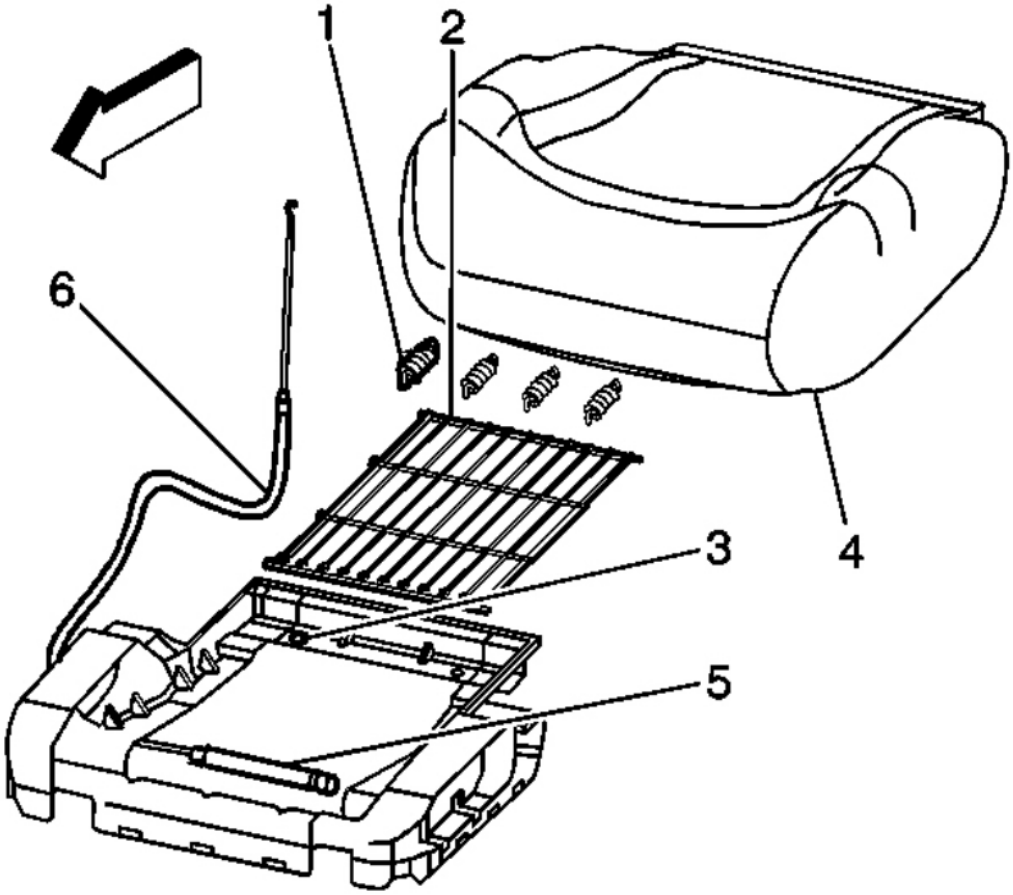


Fig. 21: View Of Lumbar Cable And Front Seat Cushion Frame Components
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the following components to the seat cushion frame:
   - The plastic retainers (3)
   - The frame suspension (2)

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- The frame springs (1)

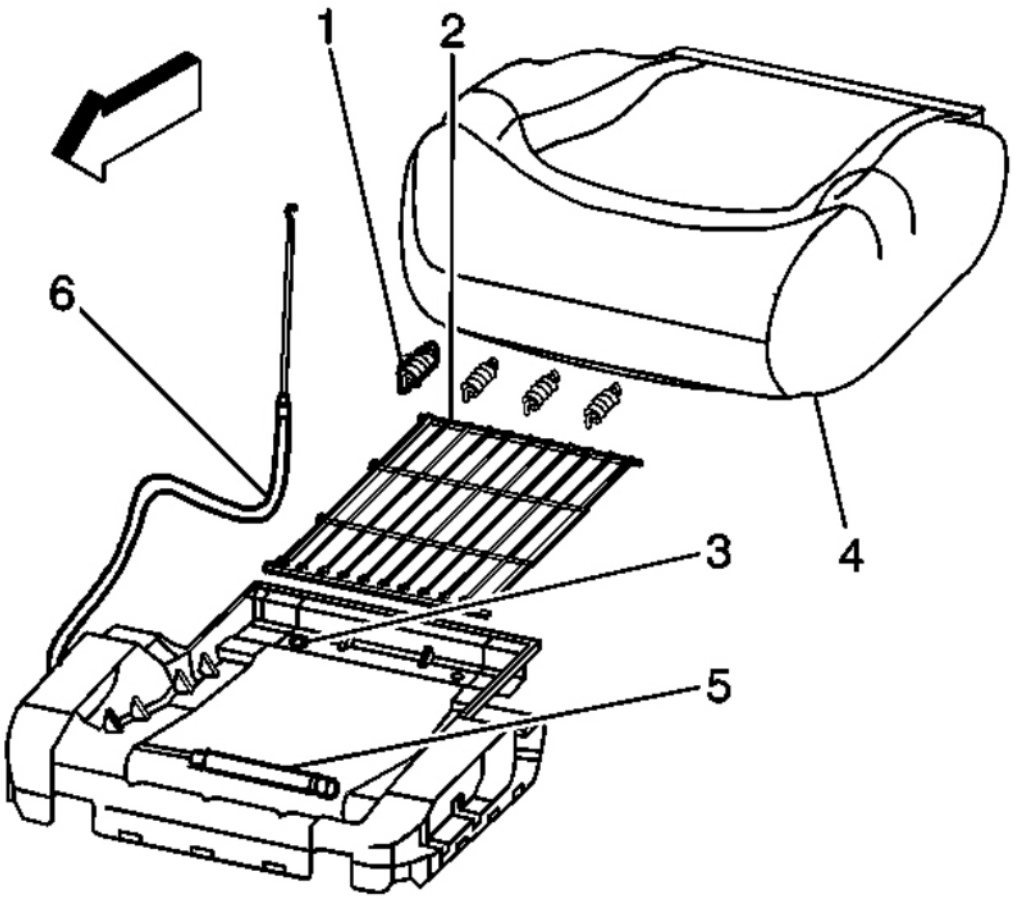


Fig. 22: View Of Lumbar Cable And Front Seat Cushion Frame Components
Courtesy of GENERAL MOTORS CORP.

2. Install the seat cushion trim cover and pad. Refer to **Seat Cushion Trim Cover and Pad Replacement**.
3. Install the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
4. Re-zero the inflatable restraint passenger presence system. Refer to **Passenger Presence System Rezeroing Procedure** in SIR.

SEAT CUSHION TRIM COVER AND PAD REPLACEMENT

Removal Procedure

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1. Remove the front nuts (2) on the underside of the seat cushion.

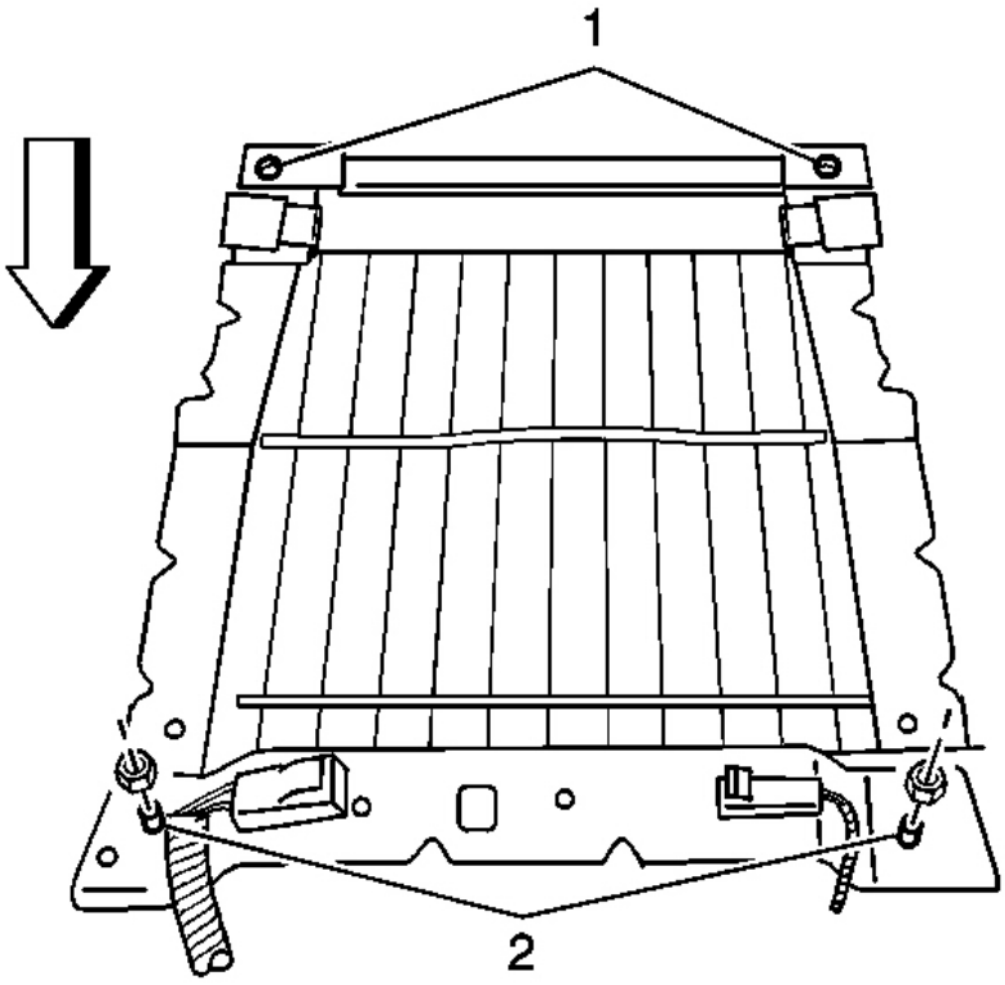


Fig. 23: View Of Seat Cushion Front Nuts & Rear Plastic Holders
Courtesy of GENERAL MOTORS CORP.

2. Remove the front seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
3. Unsnap the lumbar cable (6). Disconnect the lumbar wire harness if equipped with power lumbar.

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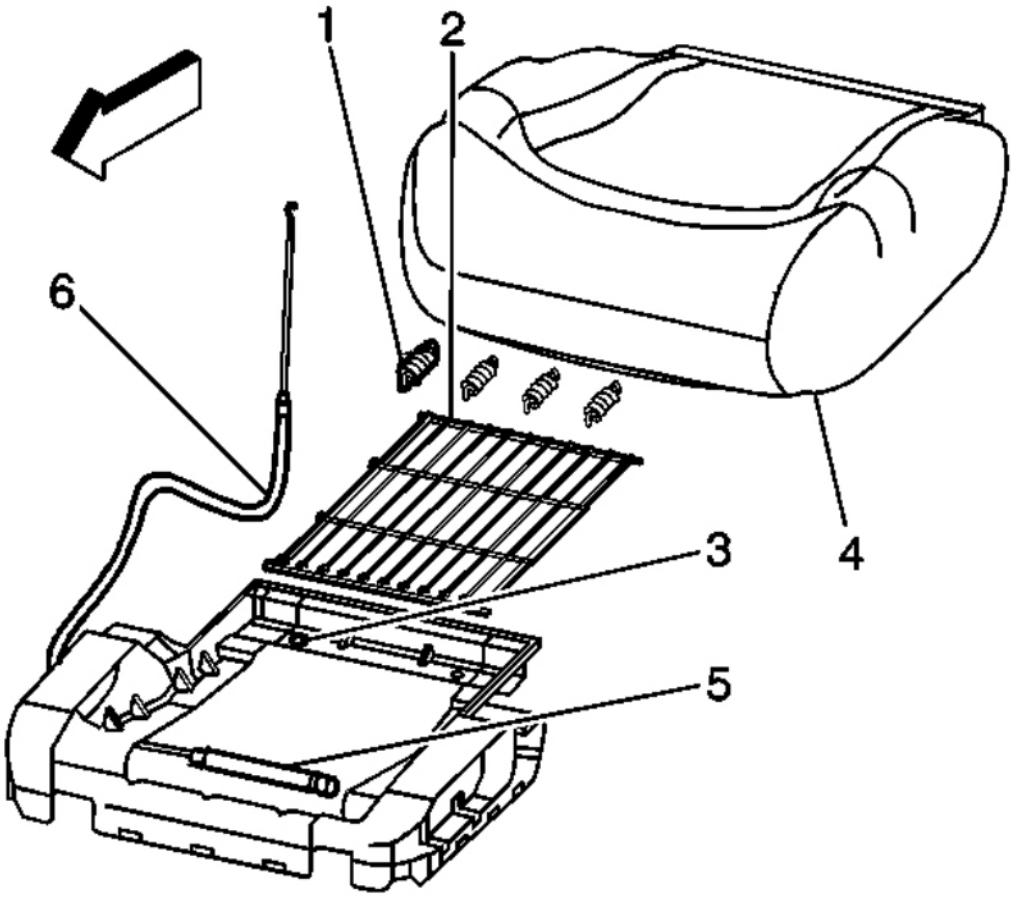


Fig. 24: View Of Lumbar Cable And Front Seat Cushion Frame Components
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the electrical connectors.
5. Remove the pressure sensor (2) from the front passenger seat frame, if equipped with the Inflatable Restraint Passenger Presence System.

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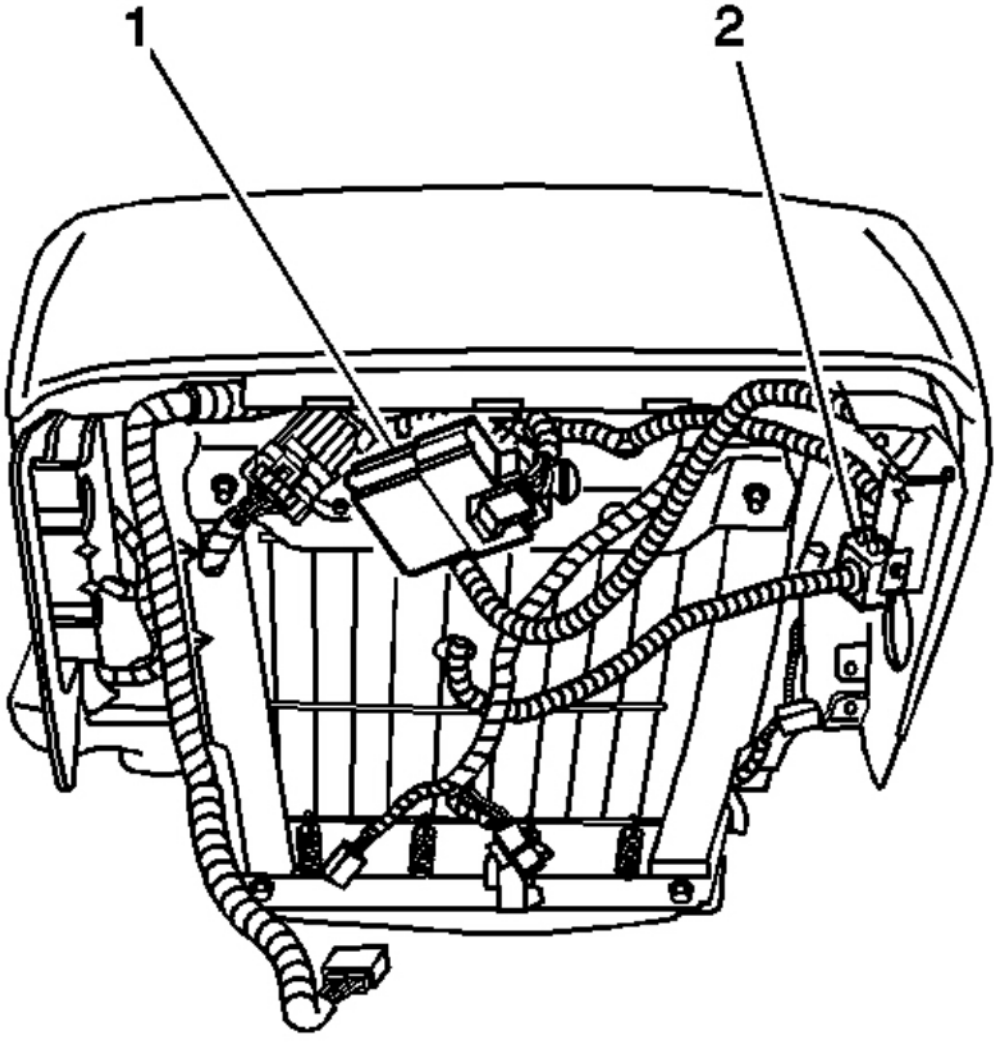


Fig. 25: View Of Electronic Control Unit & Pressure Switch
Courtesy of GENERAL MOTORS CORP.

6. Lift the seat cushion up off the rear plastic holders (1) on the underside of the seat cushion, and pull forward.

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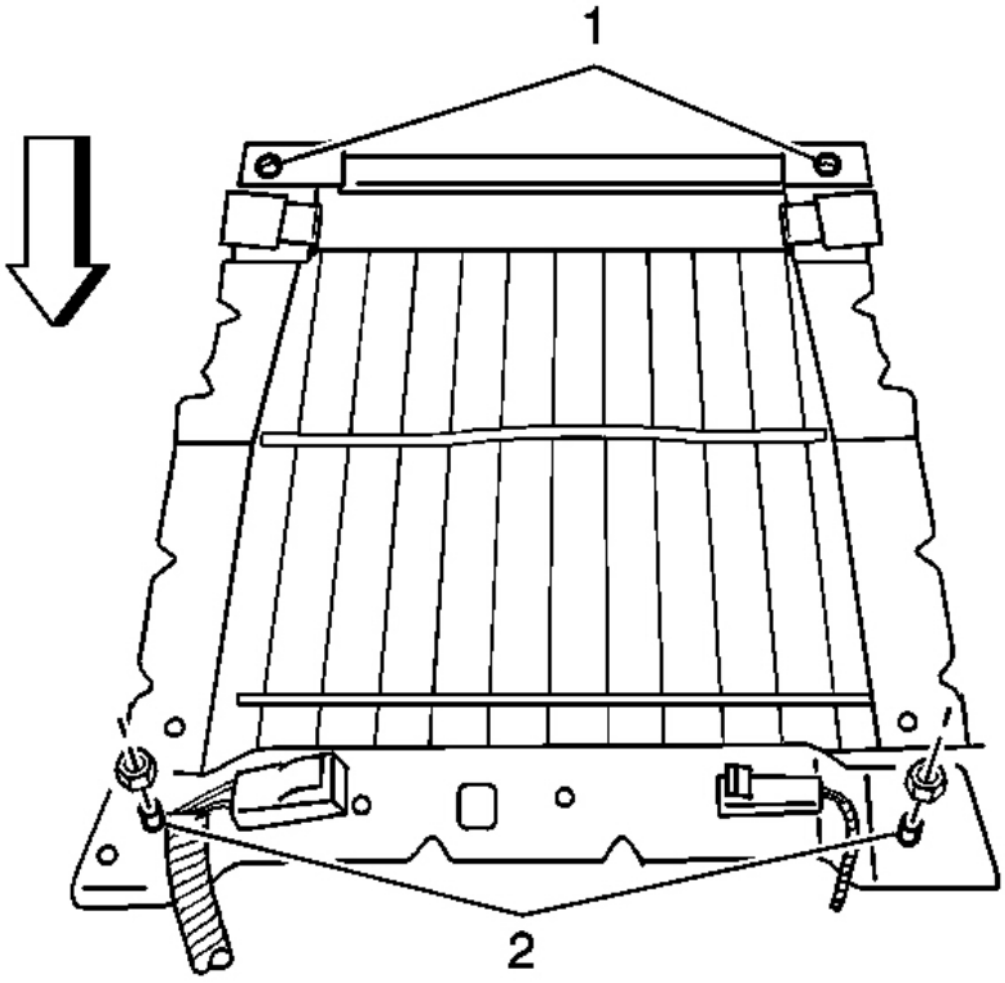


Fig. 26: View Of Seat Cushion Front Nuts & Rear Plastic Holders
Courtesy of GENERAL MOTORS CORP.

7. Remove the seat switch bezel. Refer to **Seat Switch Bezel Replacement**.
8. Remove the lumbar actuator (5).

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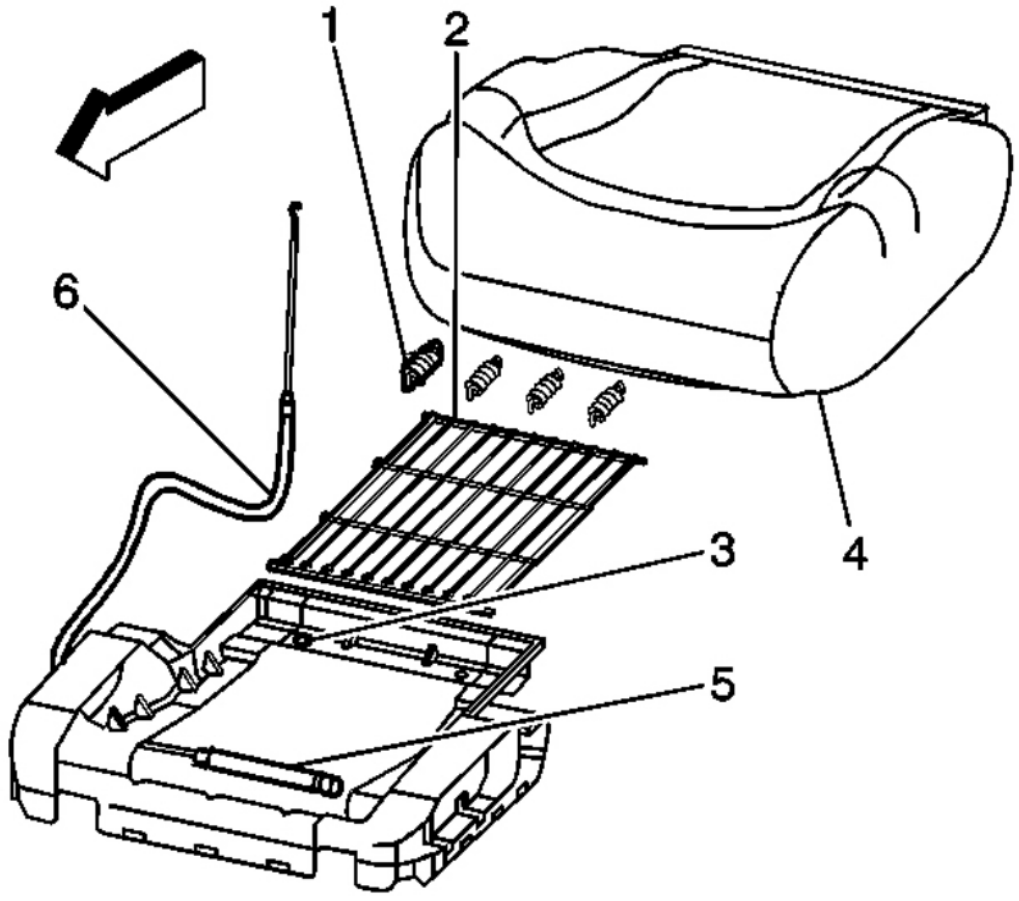


Fig. 27: View Of Lumbar Cable And Front Seat Cushion Frame Components
Courtesy of GENERAL MOTORS CORP.

9. Unclip the seat trim cover from the seat cushion frame.

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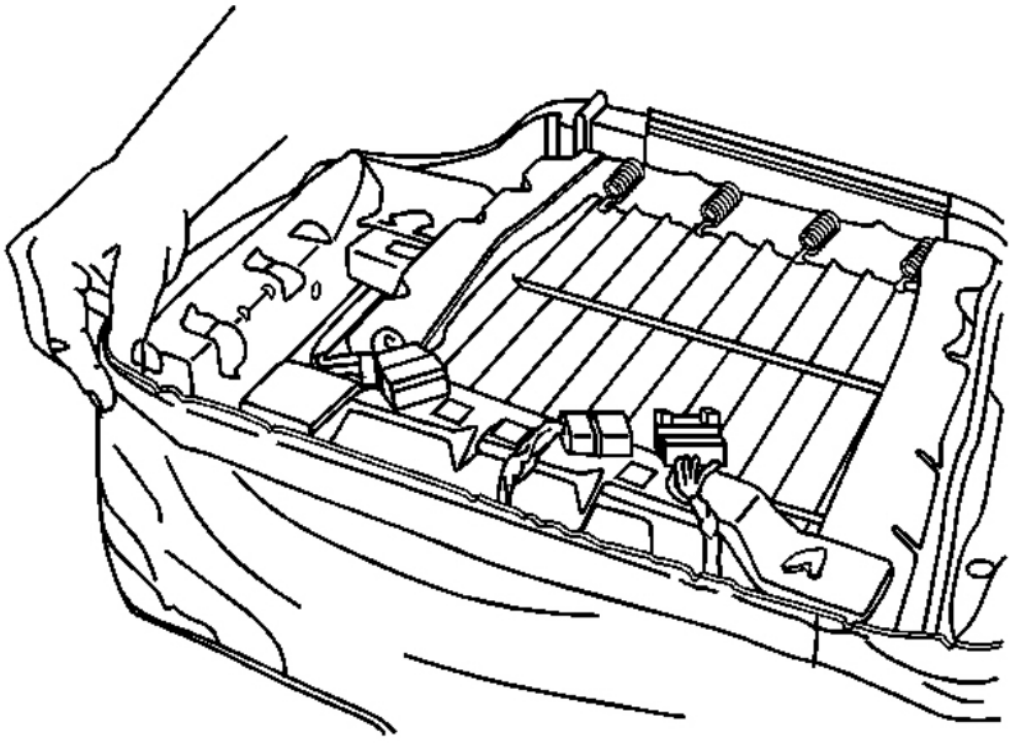


Fig. 28: Unclipping Seat Trim Cover
Courtesy of GENERAL MOTORS CORP.

10. Using a side motion, carefully separate the seat cushion trim cover from the seat cushion pad.

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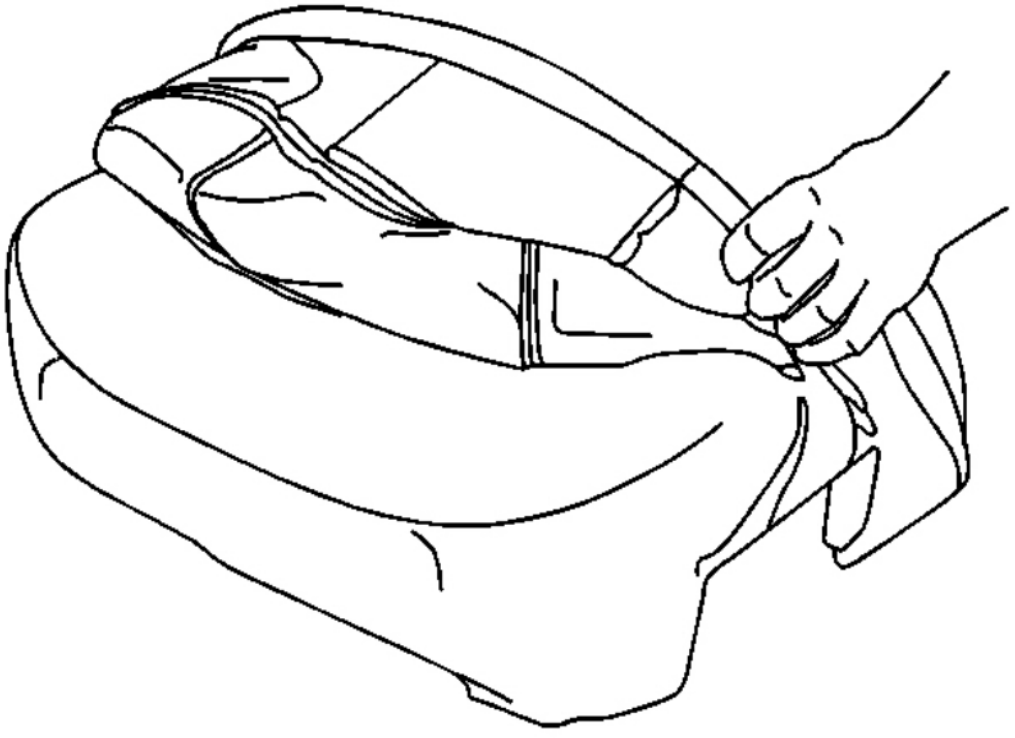


Fig. 29: Separating Seat Cushion Trim Cover From Pad
Courtesy of GENERAL MOTORS CORP.

CAUTION: Replace the passenger presence system as a complete assembly to prevent possible injury to the occupant. The bladder, the pressure sensor, the seat cushion, and the control module are assembled and calibrated as a unit. Using only some of the components in the service kit will cause the passenger presence system to operate improperly.

11. If replacing the front passenger seat cushion you must also replace the Inflatable Restraint Passenger Presence System. Refer to **Inflatable Restraint Passenger Presence System Replacement - Front** in SIR.
12. Remove the pad from the seat cushion frame.
13. Remove the seat cushion heater element, if equipped. Refer to **Seat Cushion Heater Element Replacement - Front**.

Installation Procedure

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1. Install the seat cushion heater element, if equipped. Refer to **Seat Cushion Heater Element Replacement - Front**.
2. Install the Inflatable Restraint Passenger Presence System. Refer to **Inflatable Restraint Passenger Presence System Replacement - Front** in the SIR.
3. Install the seat cushion pad to the seat cushion frame.
4. Using a side motion, carefully pull the seat cushion cover onto the frame pad.

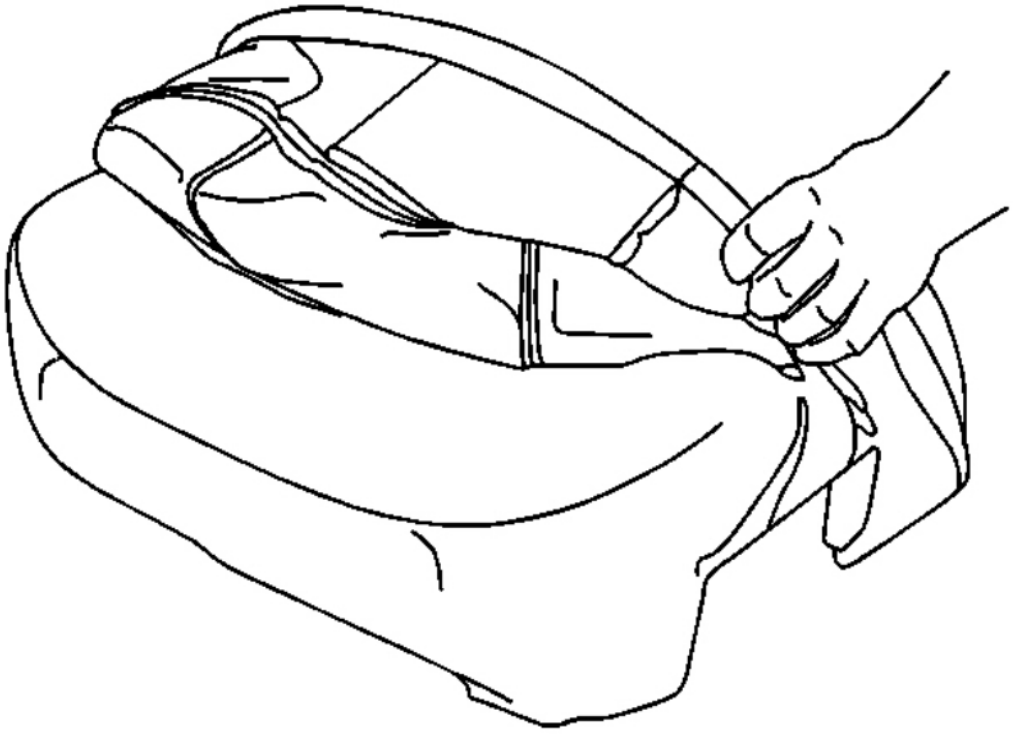


Fig. 30: Pulling Seat Cushion Cover Onto Frame Pad
Courtesy of GENERAL MOTORS CORP.

5. Attach the seat trim cover to the seat cushion frame.

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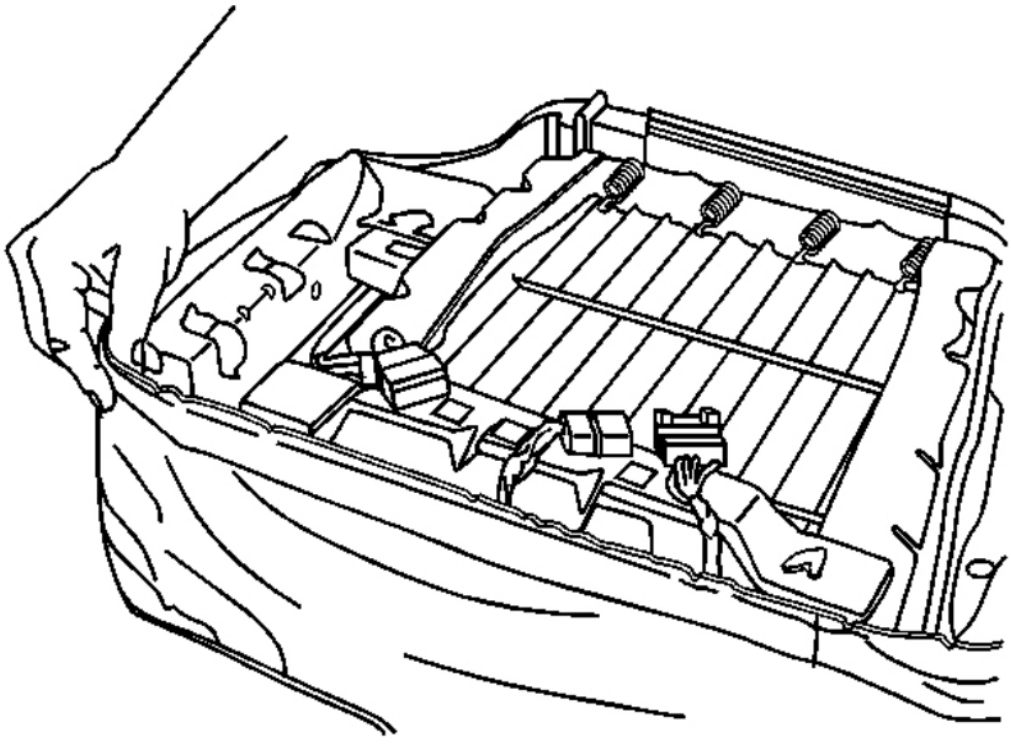


Fig. 31: Attaching Seat Trim Cover
Courtesy of GENERAL MOTORS CORP.

6. Install the lumbar actuator (5).

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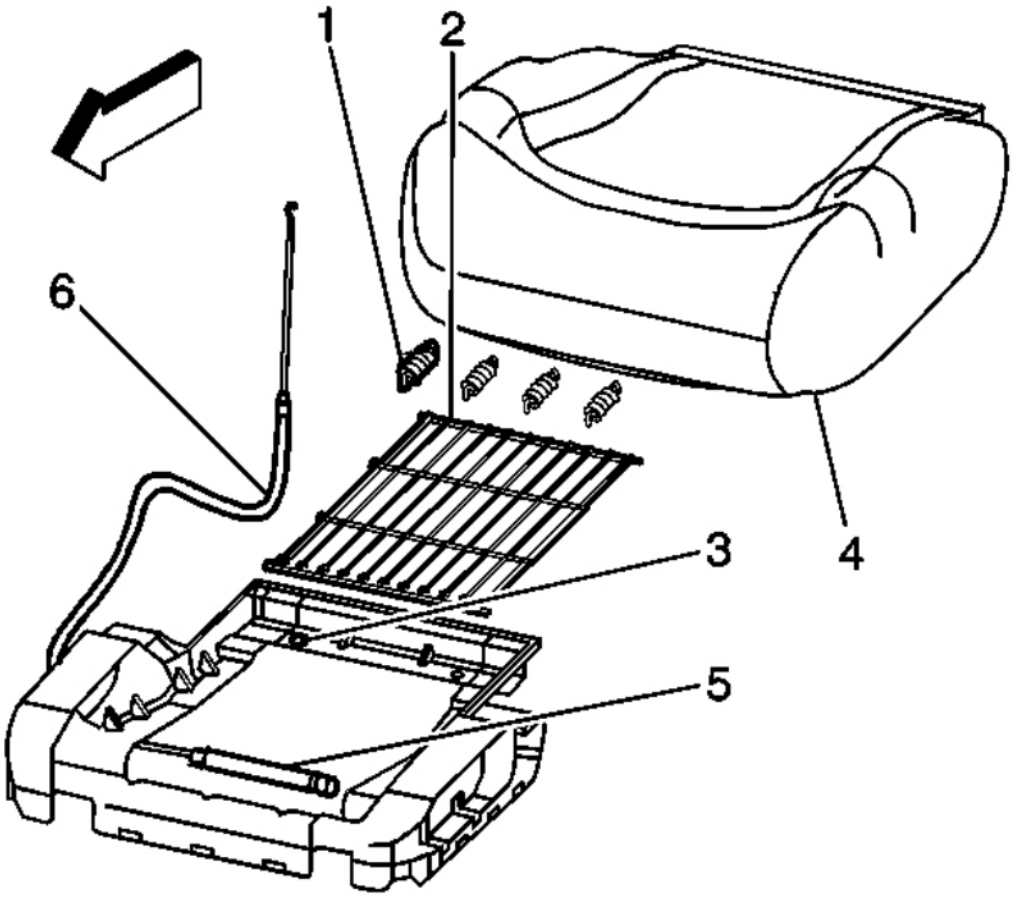


Fig. 32: View Of Lumbar Cable And Front Seat Cushion Frame Components
Courtesy of GENERAL MOTORS CORP.

7. Install the seat switch bezel. Refer to **Seat Switch Bezel Replacement**.
8. Place the cushion on the rear plastic holders (1) on the underside of the seat cushion, and push rearward.

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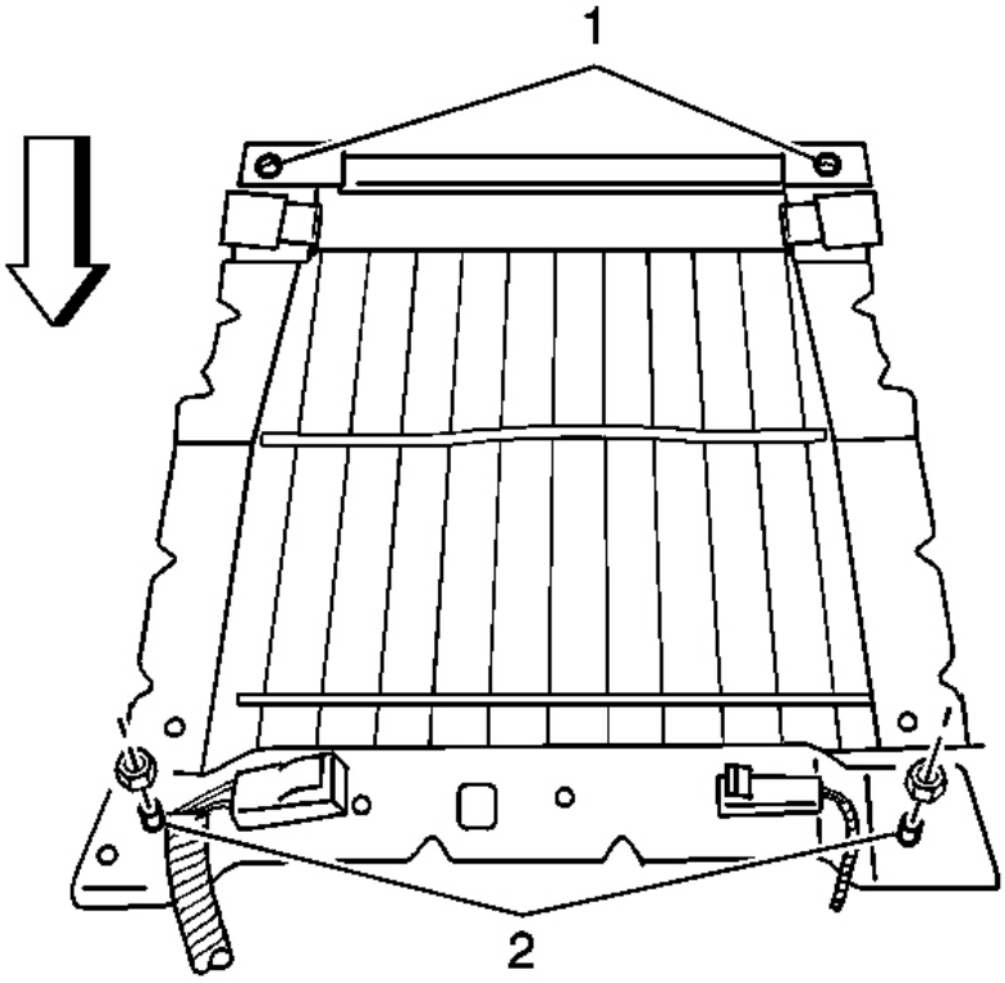


Fig. 33: View Of Seat Cushion Front Nuts & Rear Plastic Holders
Courtesy of GENERAL MOTORS CORP.

9. Connect the lumbar cable to the underside of the seat cushion (6). Connect the lumbar wire harness, if equipped with power lumbar.

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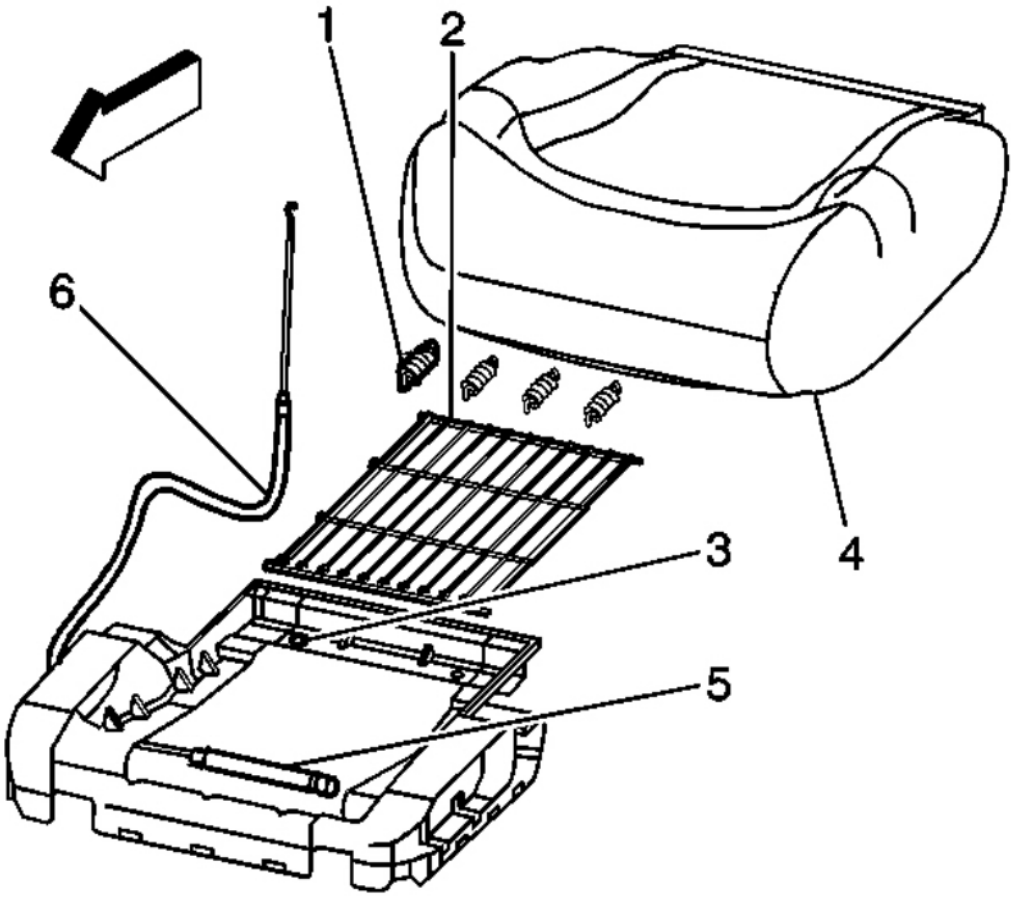


Fig. 34: View Of Lumbar Cable And Front Seat Cushion Frame Components
Courtesy of GENERAL MOTORS CORP.

10. Install the pressure sensor (2) to the front passenger seat frame, if equipped with the Inflatable Restraint Passenger Presence System.
11. Connect the electrical connectors.

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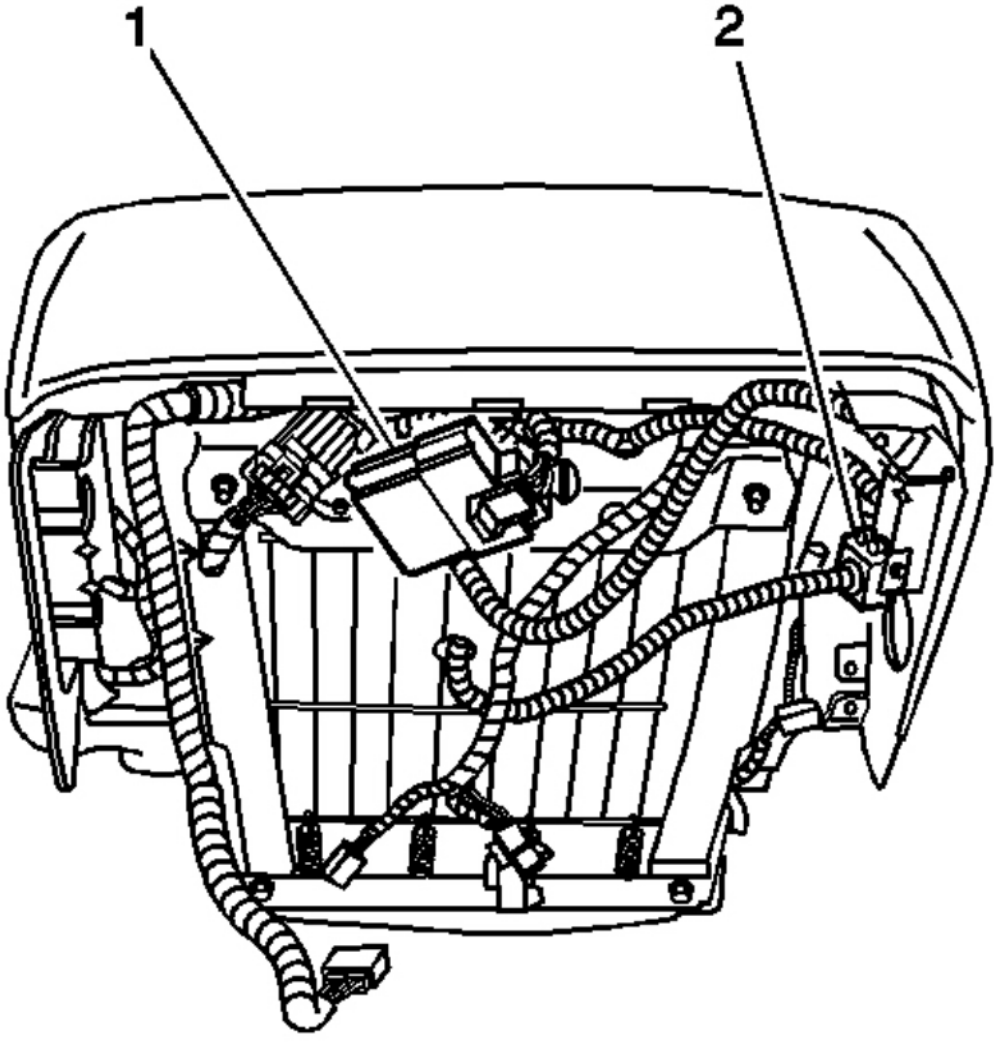


Fig. 35: View Of Electronic Control Unit & Pressure Switch
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

12. Install the front nuts (2) onto the studs on the underside of the cushion.

Tighten: Tighten the nuts to 21 N.m (15 lb ft).

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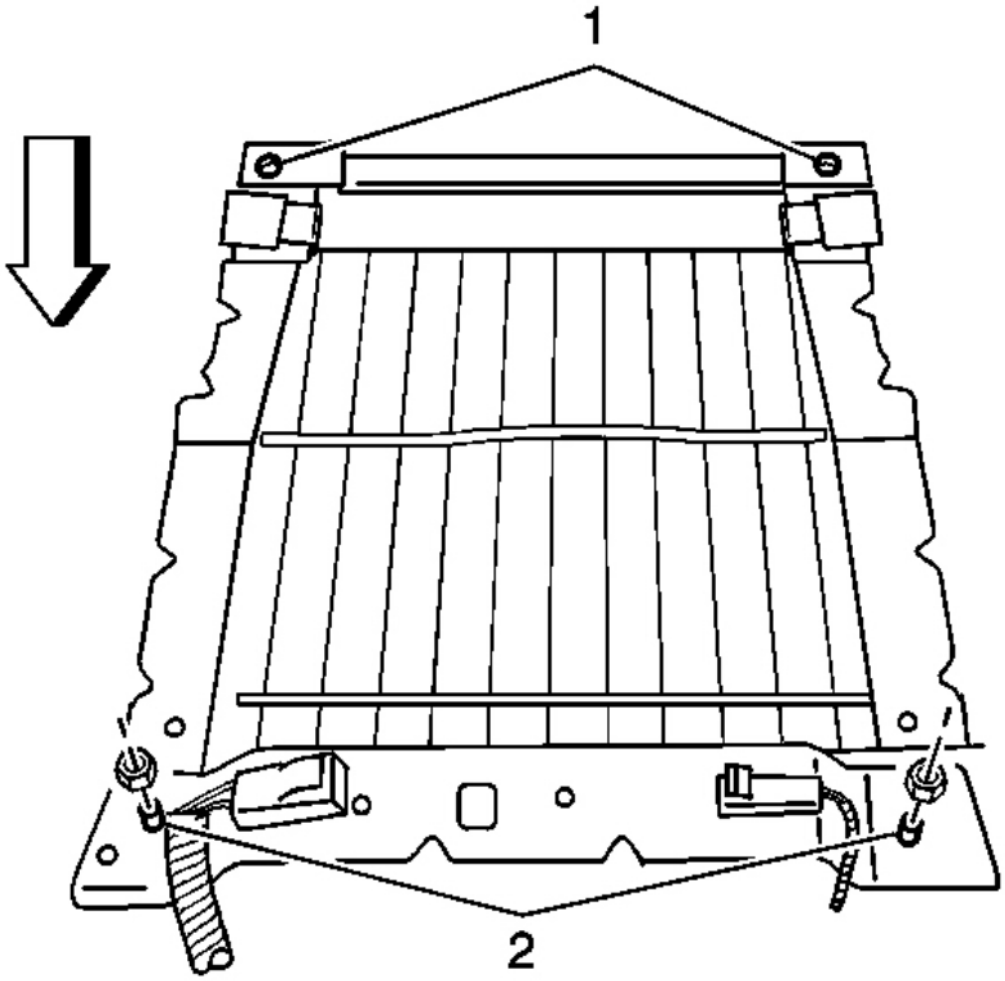


Fig. 36: View Of Seat Cushion Front Nuts & Rear Plastic Holders
Courtesy of GENERAL MOTORS CORP.

13. Install the front seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
14. Re-zero the Inflatable Restraint Passenger Presence System. Refer to **Passenger Presence System Rezeroing Procedure** in SIR.

SEAT BACK COVER AND PAD REPLACEMENT - FRONT (W/O ULT)

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

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1. If equipped with side air bags, disable the air bag module. Refer to **SIR Disabling and Enabling Zone 7** or **SIR Disabling and Enabling Zone 9** in SIR.
2. Remove the head restraint. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
3. Remove the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
4. Remove the nut from the lower seat belt anchor.
5. Disengage the J-strip retainer on the bottom of the seat back cover.
6. Disconnect the heater seat element connector, if equipped.

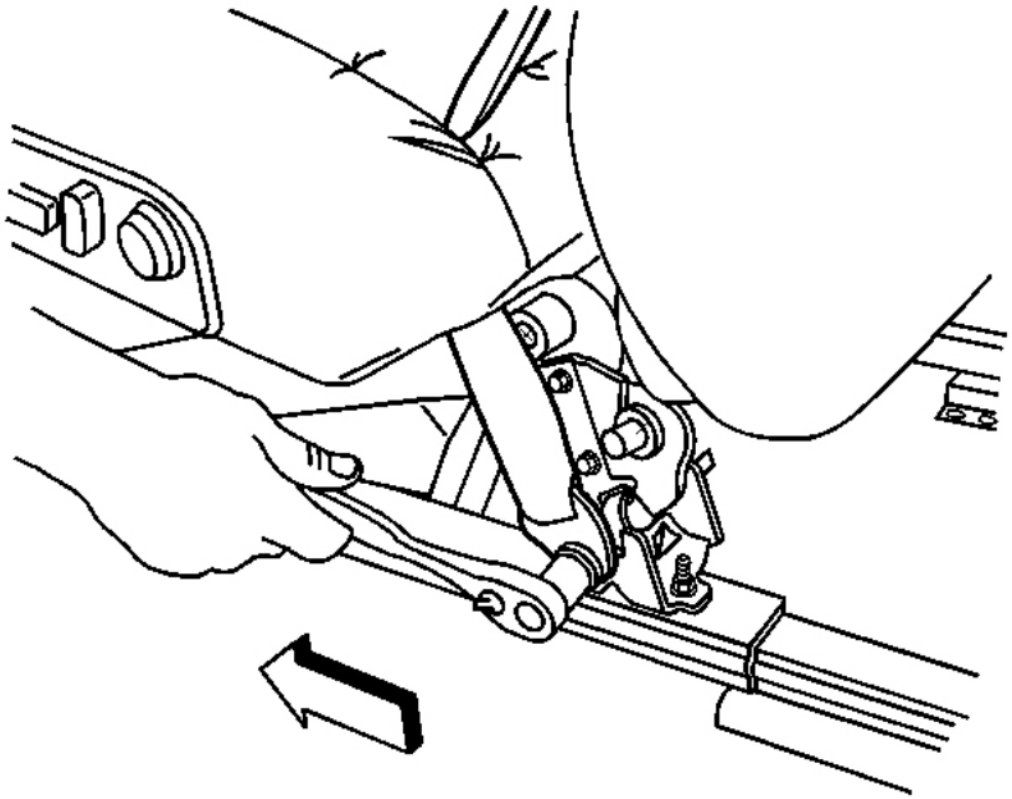


Fig. 37: Removing Lower Seat Belt Anchor Nut
Courtesy of GENERAL MOTORS CORP.

7. Using a side motion, carefully lift the seat back cover partially off the foam pad in order to access the arm rest clip.

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8. Remove the armrest, if equipped. Refer to **Armrest Replacement - Front Seat**.
9. Using a flat-bladed tool lift the seat cover over the air bag cover.
10. Remove the seat cover to the top of the seat.

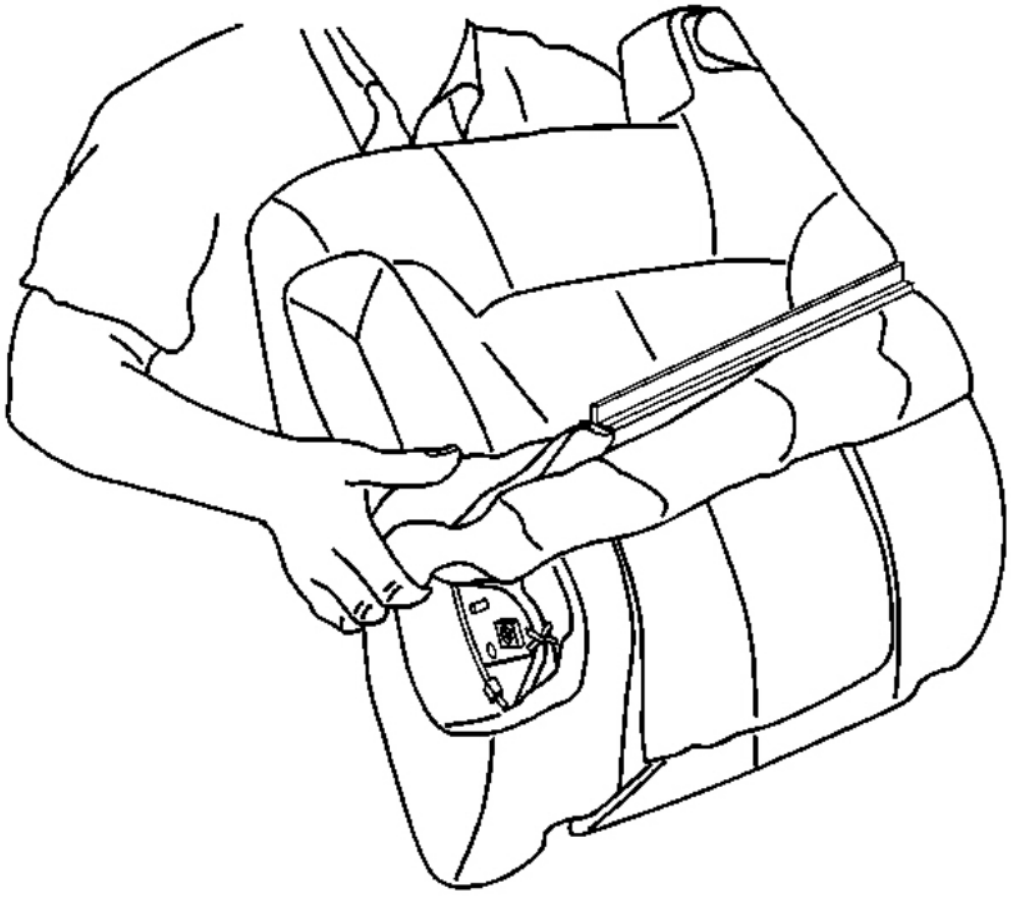


Fig. 38: Lifting Seat Back Cover Partially Off Foam Pad
Courtesy of GENERAL MOTORS CORP.

11. Disengage the panel fasteners in order to remove the rear cardboard panel.

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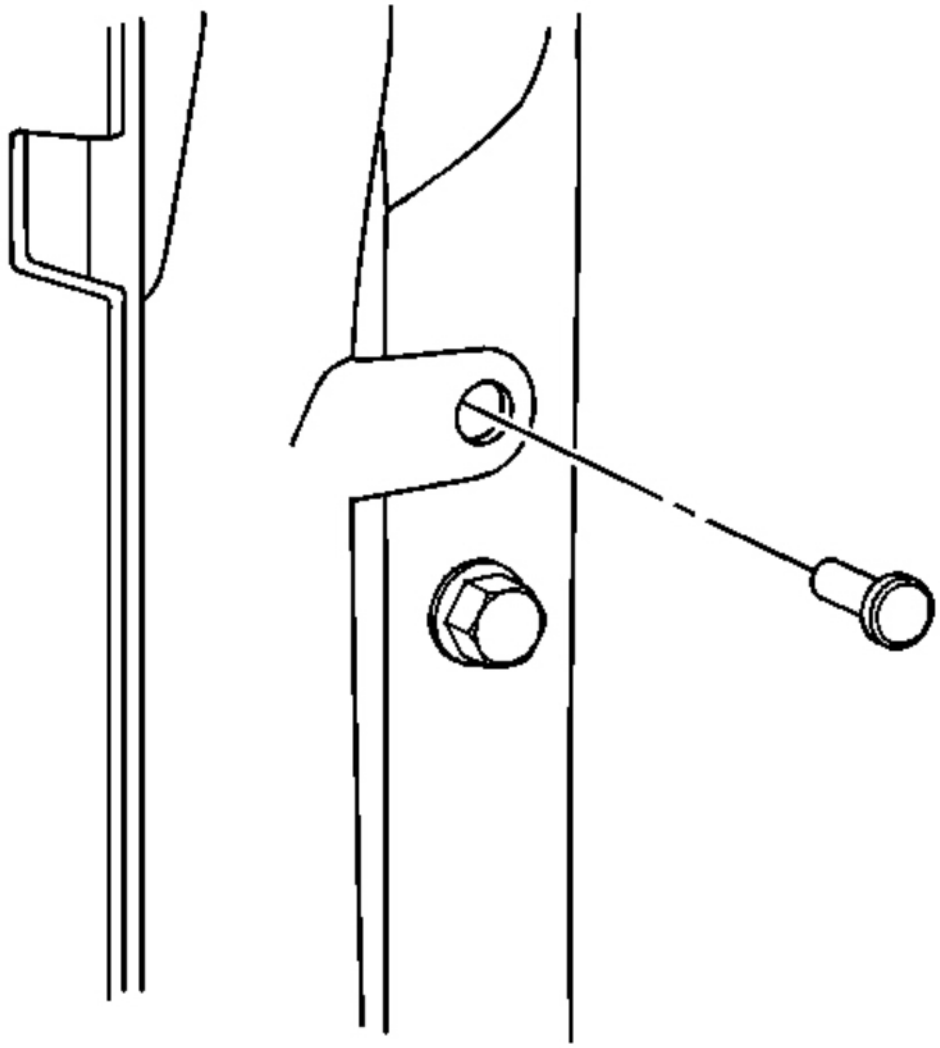


Fig. 39: View Of Seat Belt Tower Cover/Panel Bolt
Courtesy of GENERAL MOTORS CORP.

12. Unclip the head restraint retainers. Refer to **Head Restraint Retainer Replacement - Front Seat**.
13. Remove the bolts which retain the seat belt tower cover.
14. Remove the seat belt tower cover.

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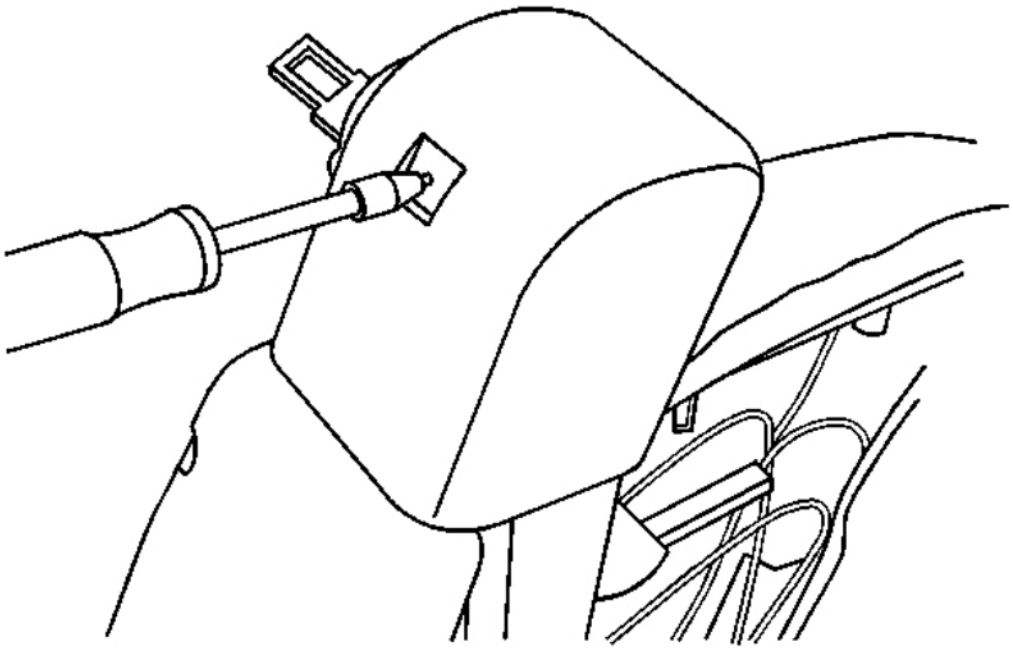


Fig. 40: Locating Retractor Tower Retaining Screw
Courtesy of GENERAL MOTORS CORP.

15. Pull the seat belt and the seat belt bezel through the opening in the seat cover.
16. Lift the remainder of the seat back cover off the foam pad.
17. Carefully remove the foam pad from the frame.

Installation Procedure

1. Attach the foam pad to the frame.
2. Install the seat belt tower.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the bolts which retain the seat belt tower cover.

Tighten: Tighten the bolts to 1.9 N.m (17 lb in).

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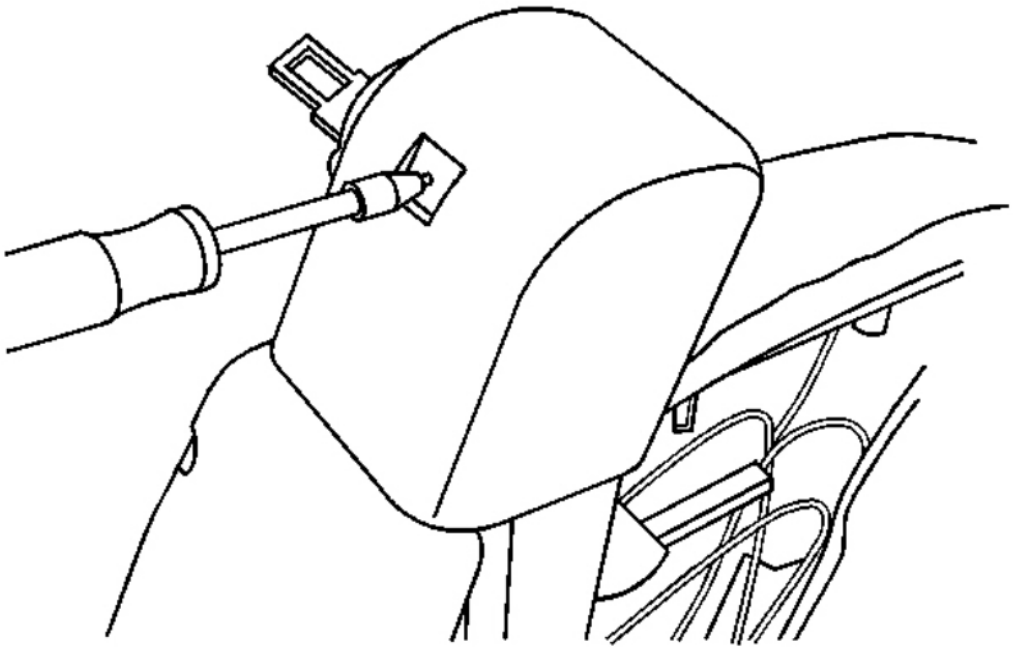


Fig. 41: Locating Retractor Tower Retaining Screw
Courtesy of GENERAL MOTORS CORP.

4. Install the rear cardboard panel. Engage the panel fasteners.

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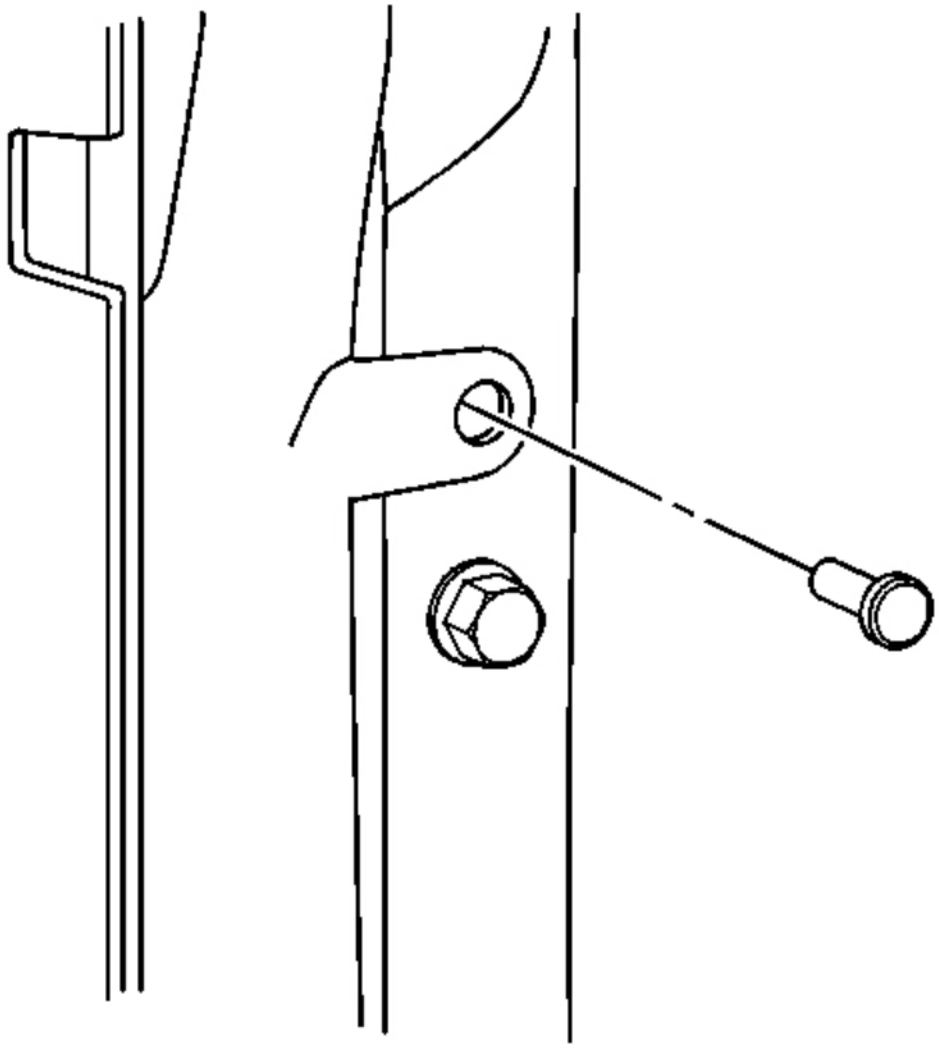


Fig. 42: View Of Seat Belt Tower Cover/Panel Bolt
Courtesy of GENERAL MOTORS CORP.

5. Install the seat back cover partially onto the top of the frame.
6. Feed the seat belt and the seat belt bezel through the tower opening.
7. Install the arm rest clip.
8. Pull the rest of the cover down using a side-to-side motion.

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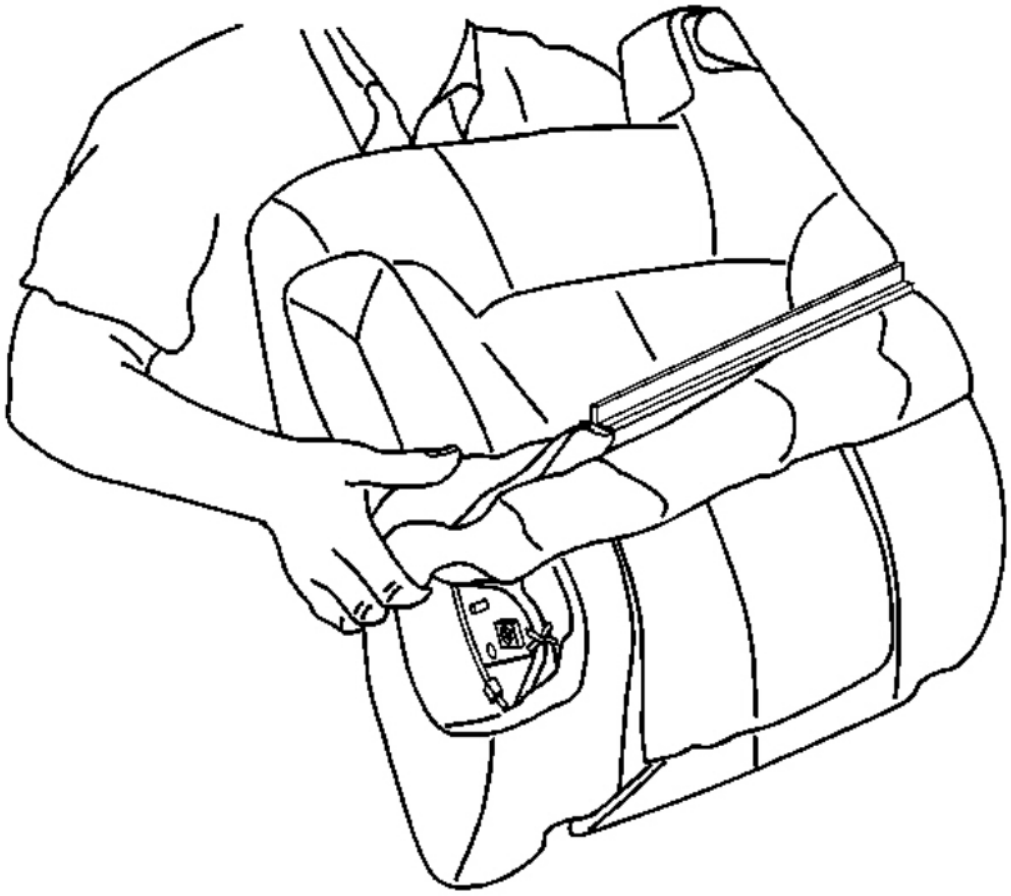


Fig. 43: Installing Seat Back Cover Onto Frame
Courtesy of GENERAL MOTORS CORP.

9. Install the armrests, if equipped. Refer to **Armrest Replacement - Front Seat**.
10. Install the head restraint retainers. Refer to **Head Restraint Retainer Replacement - Front Seat**.
11. Fit the seat cover around the air bag cover.
12. Install the nut to the lower seat belt anchor.

Tighten: Tighten the nut to 53 N.m (39 lb ft).

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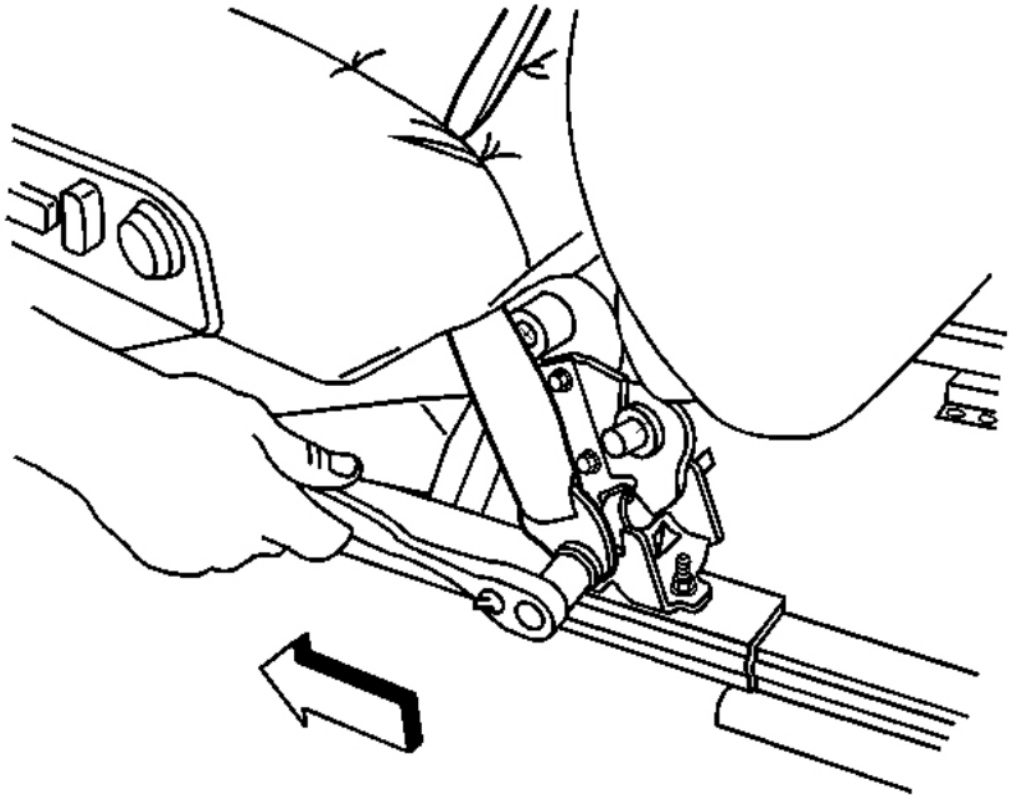


Fig. 44: Installing Lower Seat Belt Anchor Nut
Courtesy of GENERAL MOTORS CORP.

13. Install the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
14. Install the head restraints. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
15. Push on the seat cover. Ensure that the cover is retained by the Velcro® in the seat cushion.
16. Connect the J-strip at the bottom of the seat.
17. If equipped with side air bags, enable the air bag module. Refer to **SIR Disabling and Enabling Zone 7** or **SIR Disabling and Enabling Zone 9** in SIR.

SEAT BACK COVER AND PAD REPLACEMENT - FRONT (W/ULT)

Removal Procedure

CAUTION: Refer to SIR Caution in Cautions and Notices.

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1. If equipped with side air bags, disable the air bag module. Refer to **SIR Disabling and Enabling Zone 7** or **SIR Disabling and Enabling Zone 9** in SIR.
2. Remove the head restraint. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
3. Remove the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
4. Remove the nut from the lower seat belt anchor.

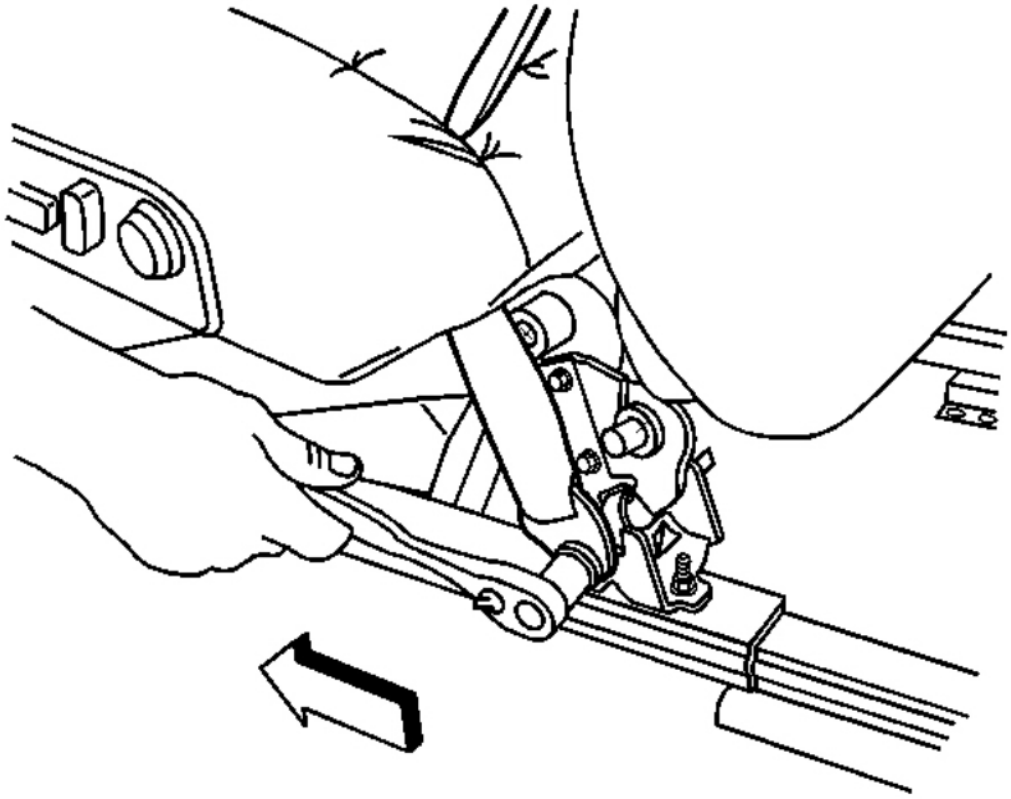


Fig. 45: Removing Lower Seat Belt Anchor Nut
Courtesy of GENERAL MOTORS CORP.

5. Disengage the J-strip retainer on the bottom of the seat back cover.
6. Using a side motion, carefully lift the seat back cover partially off the foam pad in order to access the arm rest clip.

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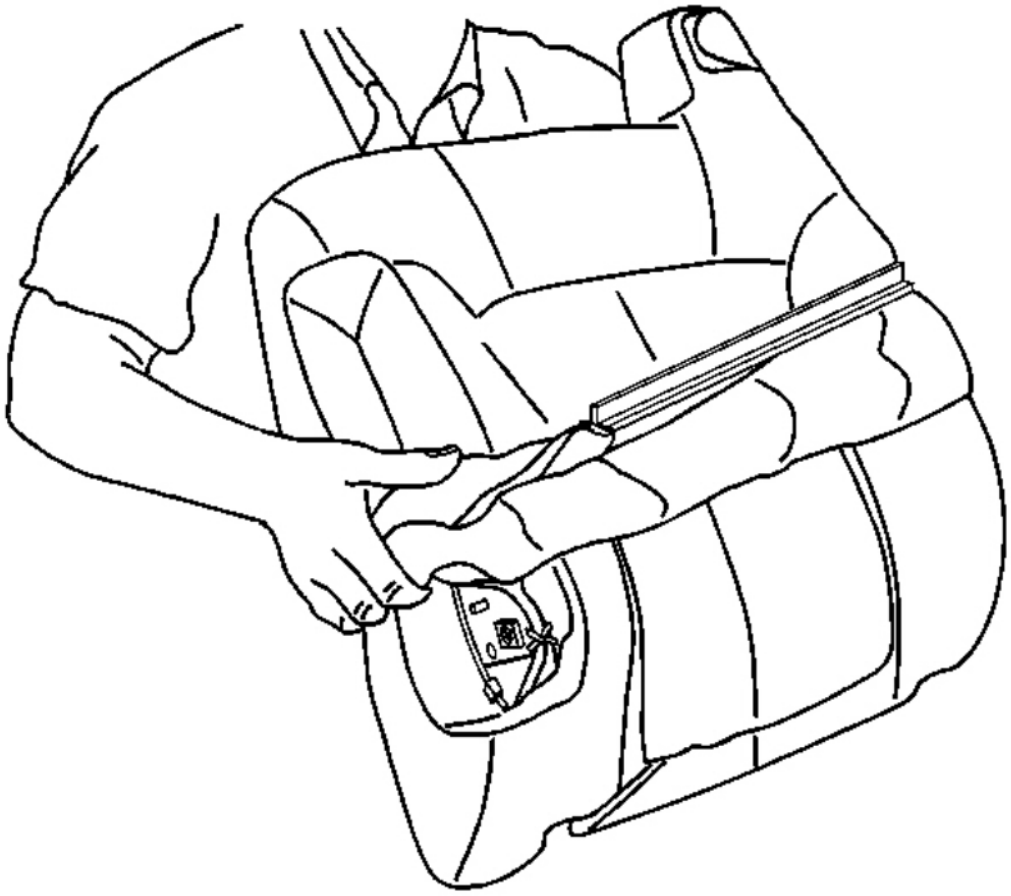


Fig. 46: Lifting Seat Back Cover Partially Off Foam Pad
Courtesy of GENERAL MOTORS CORP.

7. Remove the armrest, if equipped. Refer to **Armrest Replacement - Front Seat**.
8. Pull the cover to one side releasing the oki fastener (1).

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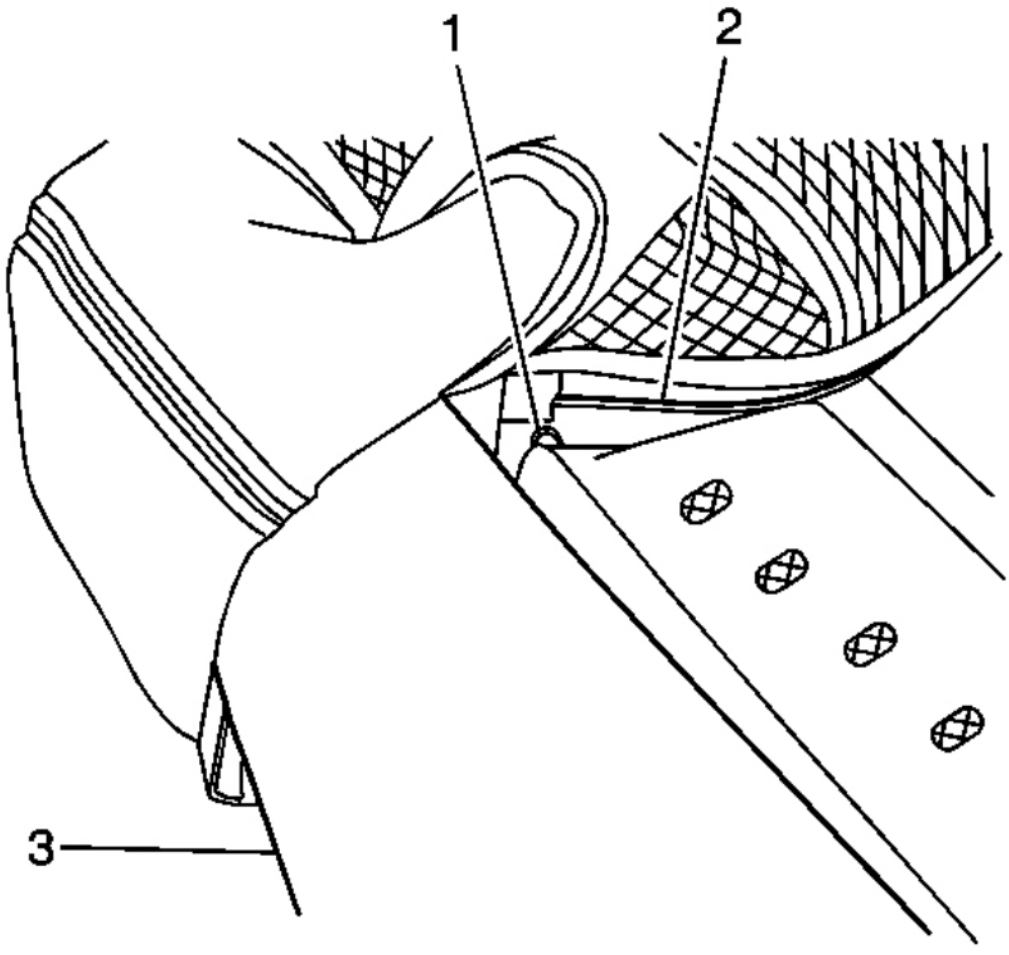


Fig. 47: Releasing Oki Fastener By Pulling Cover To Side
Courtesy of GENERAL MOTORS CORP.

9. Release all remaining oki fasteners (2).

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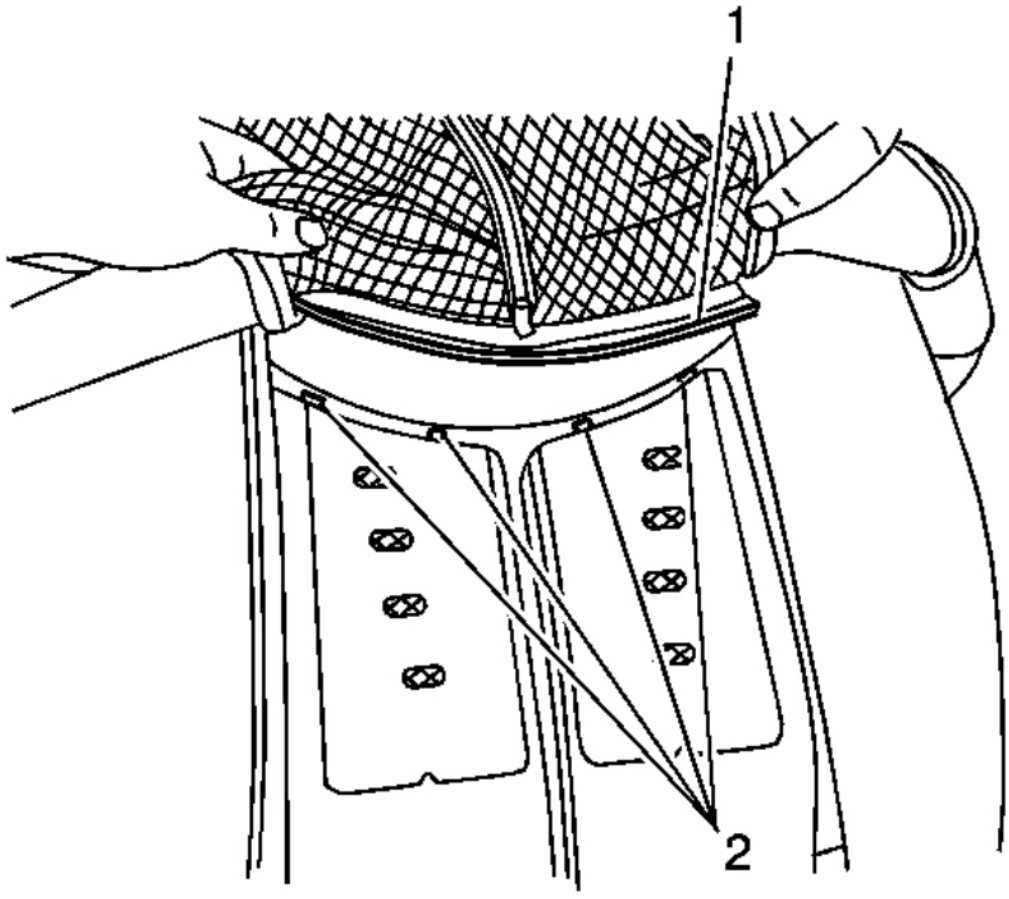


Fig. 48: Releasing Remaining Oki Fasteners
Courtesy of GENERAL MOTORS CORP.

10. Using a flat-bladed tool lift the seat cover over the air bag cover.
11. Remove the seat cover to the top of the seat.
12. Disengage the panel fasteners in order to remove the rear cardboard panel.

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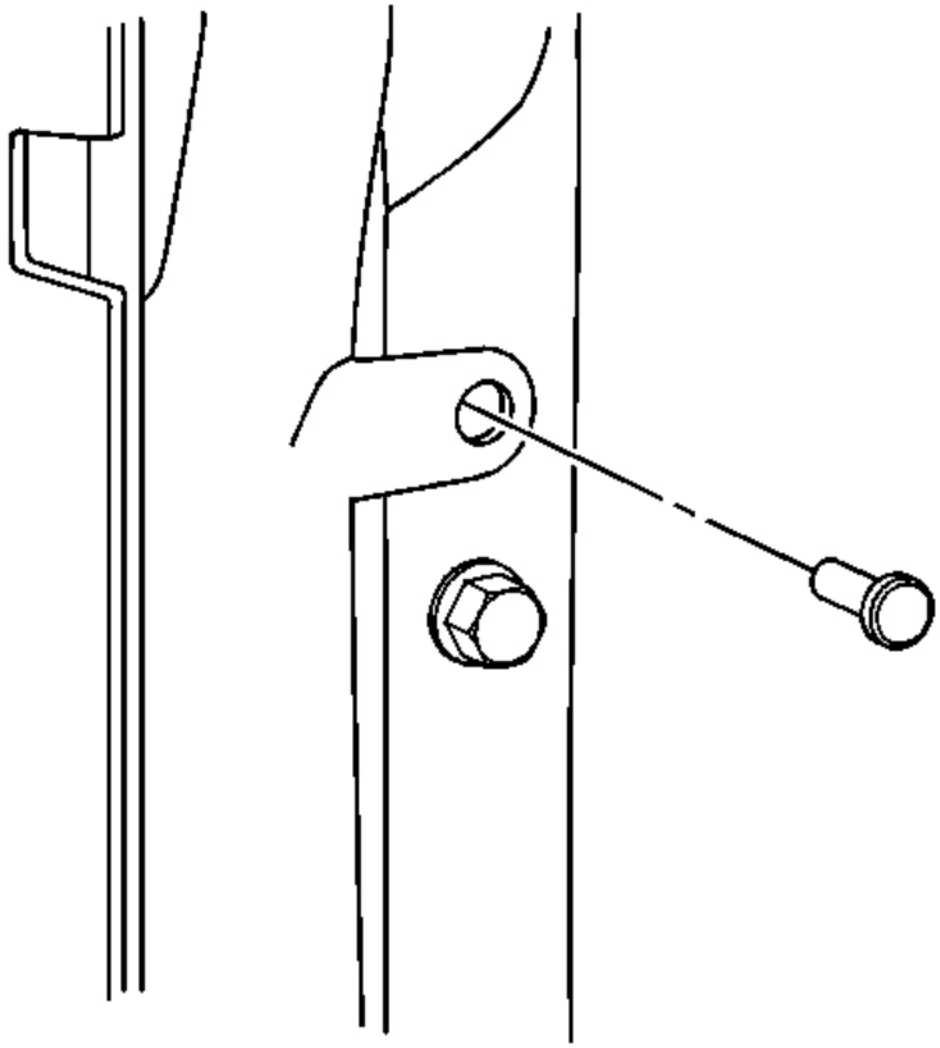


Fig. 49: View Of Seat Belt Tower Cover/Panel Bolt
Courtesy of GENERAL MOTORS CORP.

13. Unclip the head restraint retainers. Refer to **Head Restraint Retainer Replacement - Front Seat**.
14. Remove the bolts which retain the seat belt tower cover.
15. Remove the seat belt tower cover.

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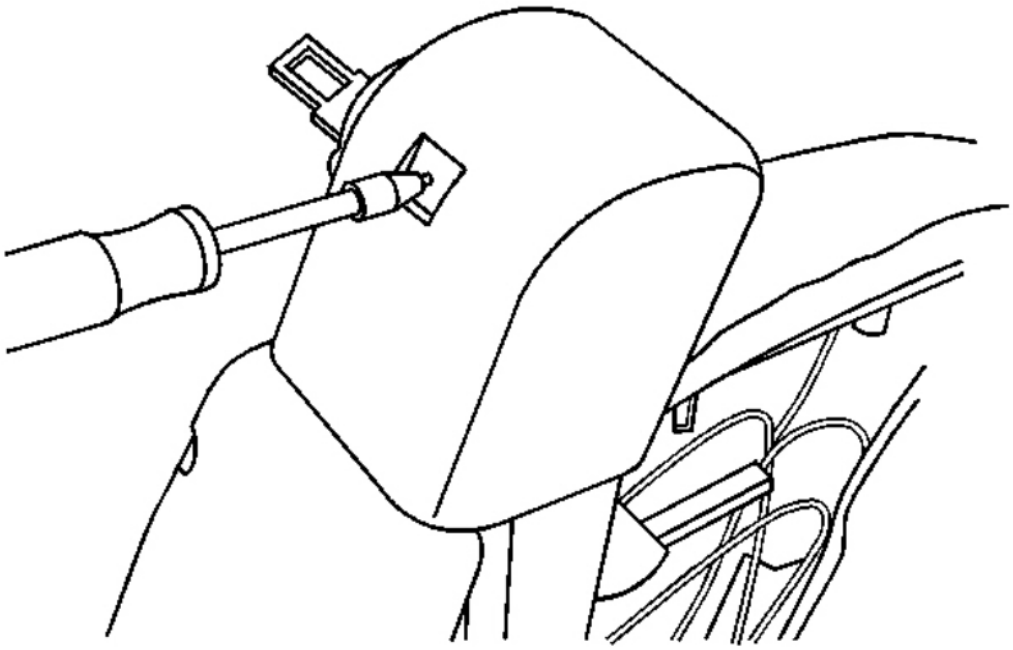


Fig. 50: Locating Retractor Tower Retaining Screw
Courtesy of GENERAL MOTORS CORP.

16. Pull the seat belt and the seat belt bezel through the opening in the seat cover.
17. Lift the remainder of the seat back cover off the foam pad.
18. Carefully remove the foam pad from the frame.

Installation Procedure

1. Attach the foam pad to the frame.
2. Install the seat belt tower.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the bolts which retain the seat belt tower cover.

Tighten: Tighten the bolts to 1.9 N.m (17 lb in).

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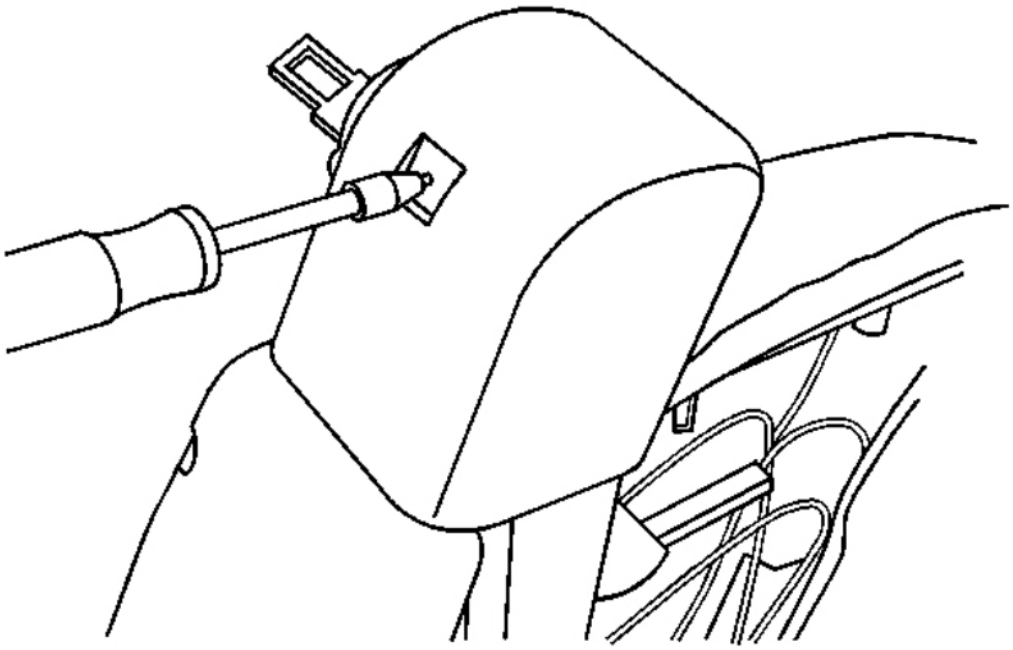


Fig. 51: Locating Retractor Tower Retaining Screw
Courtesy of GENERAL MOTORS CORP.

4. Install the rear cardboard panel. Engage the panel fasteners.

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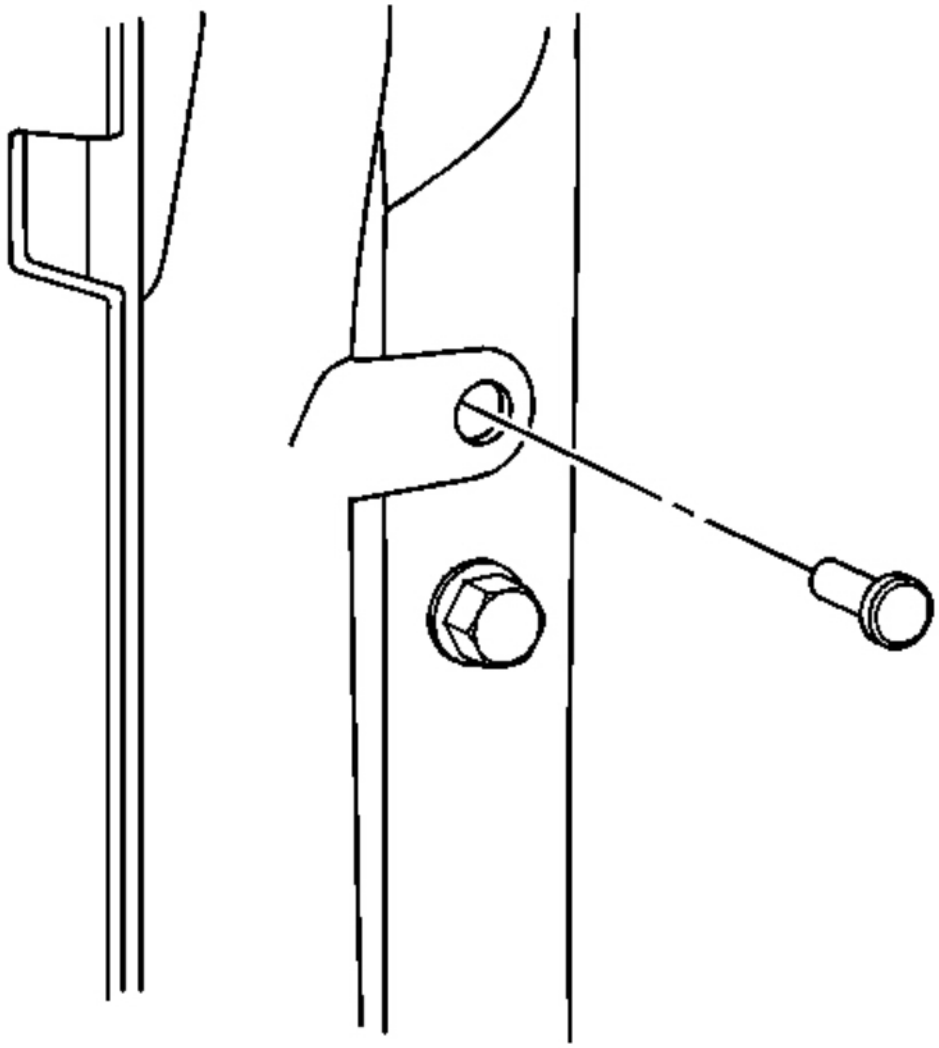


Fig. 52: View Of Seat Belt Tower Cover/Panel Bolt
Courtesy of GENERAL MOTORS CORP.

5. Install the seat back cover partially onto the top of the frame.
6. Feed the seat belt and the seat belt bezel through the tower opening.
7. Install the arm rest clip.
8. Pull the rest of the cover down using a side-to-side motion.

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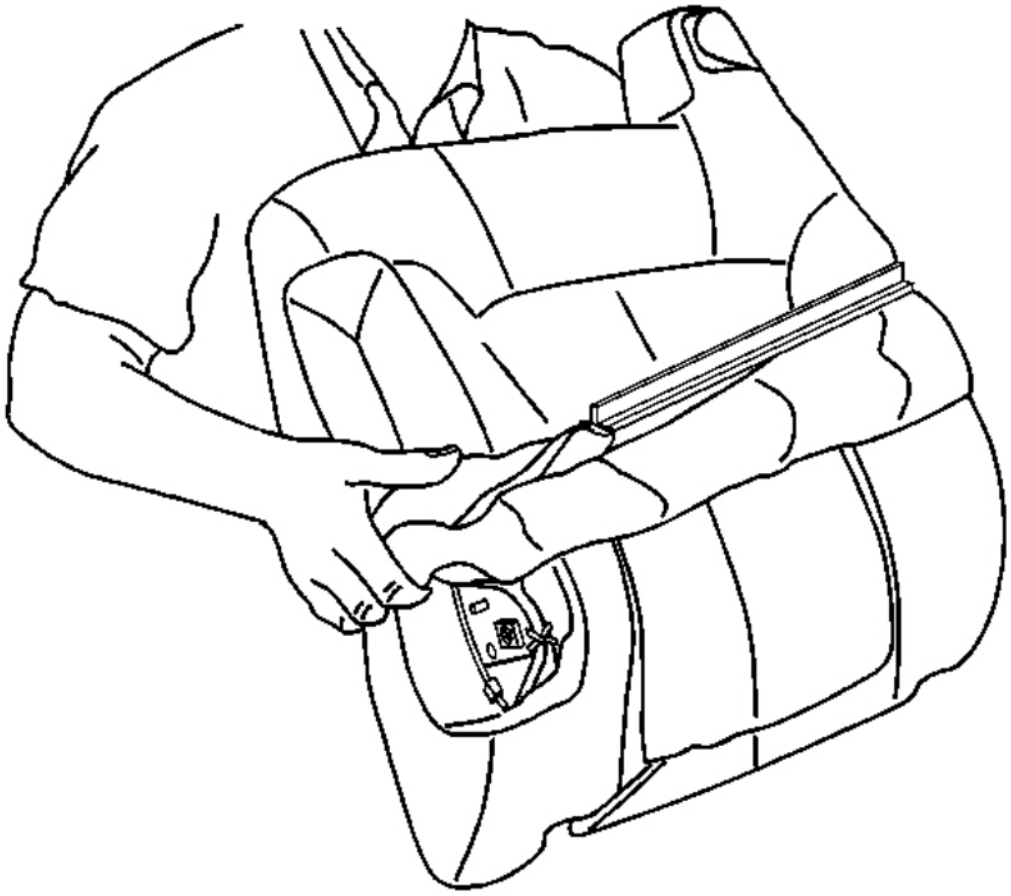


Fig. 53: Installing Seat Back Cover Onto Frame
Courtesy of GENERAL MOTORS CORP.

9. Secure all the oki fasteners (2).

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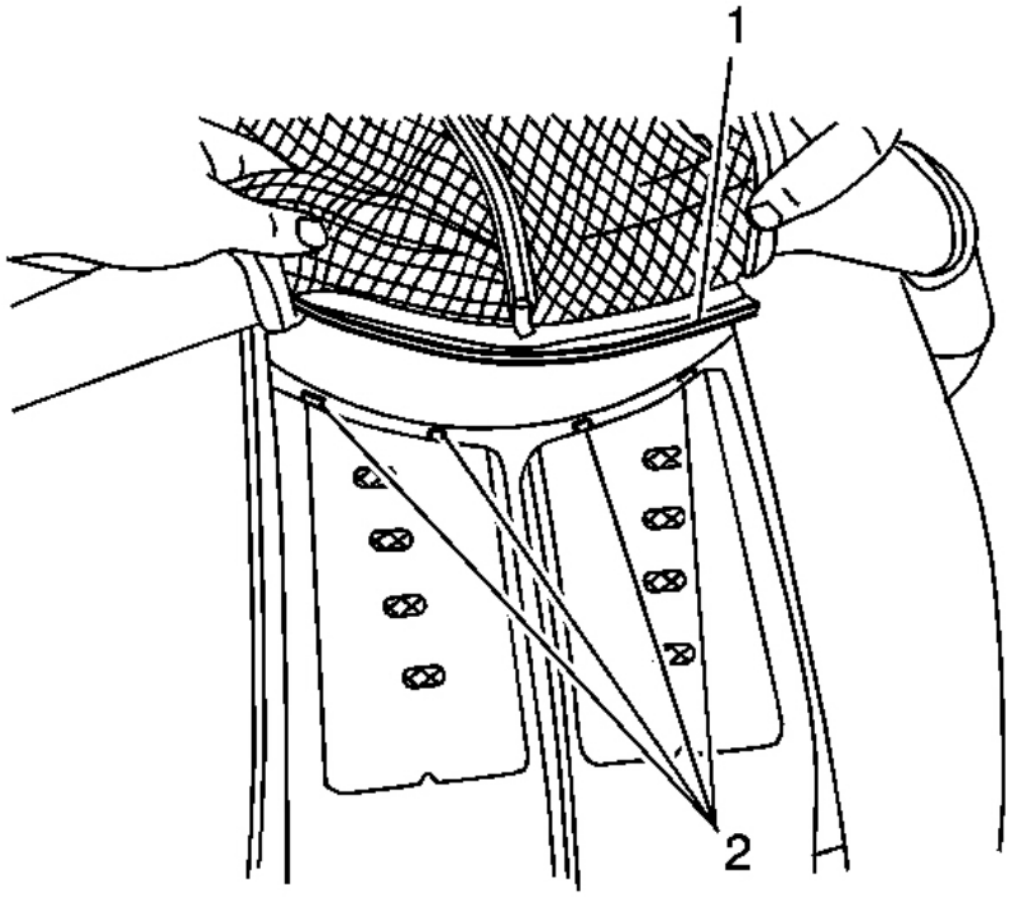


Fig. 54: Securing Oki Fasteners
Courtesy of GENERAL MOTORS CORP.

10. Install the armrests, if equipped. Refer to **Armrest Replacement - Front Seat**.
11. Install the head restraint retainers. Refer to **Head Restraint Retainer Replacement - Front Seat**.
12. Fit the seat cover around the air bag cover.
13. Install the nut to the lower seat belt anchor.

Tighten: Tighten the nut to 53 N.m (39 lb ft).

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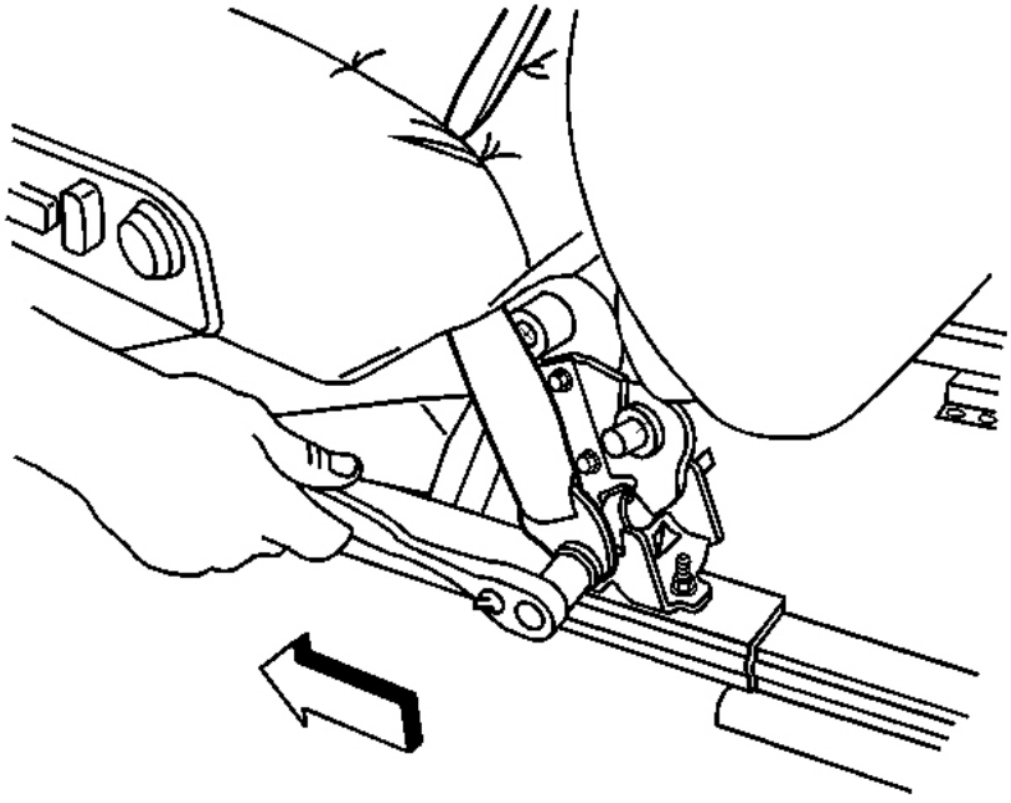


Fig. 55: Installing Lower Seat Belt Anchor Nut
Courtesy of GENERAL MOTORS CORP.

14. Install the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
15. Install the head restraints. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
16. Push on the seat cover. Ensure that the cover is retained by the Velcro® in the seat cushion.
17. Connect the J-strip at the bottom of the seat.
18. If equipped with side air bags, enable the air bag module. Refer to **SIR Disabling and Enabling Zone 7** or **SIR Disabling and Enabling Zone 9** in SIR.

SEAT BACK FRAME REPLACEMENT - FRONT

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Front Bucket**.
2. Remove the head restraint and guides. Refer to **Head Restraint Replacement (Cadillac)** or **Head**

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Restraint Replacement (Non-Cadillac) or **Head Restraint Replacement (Folding)**.

3. Remove the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
4. Disconnect the lumbar cable (6) underneath the seat cushion (disconnect the lumbar wire harness if equipped with power lumbar).

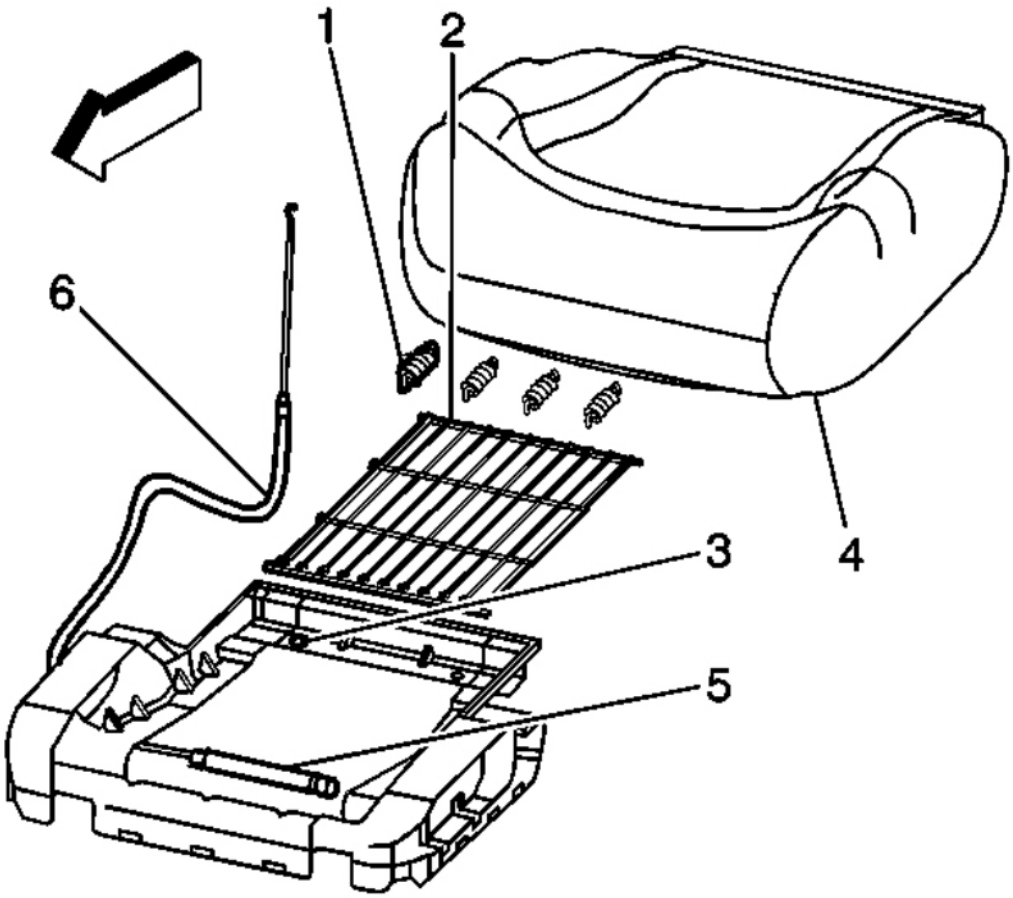


Fig. 56: View Of Lumbar Cable And Front Seat Cushion Frame Components
Courtesy of GENERAL MOTORS CORP.

5. Remove the seat back trim cover and pad. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)** or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.
6. Remove the lumbar assembly (or power lumbar/bolster assembly if equipped). Refer to **Lumbar Replacement - Front Seat**.
7. Remove the seat belt retractor. Refer to **Seat Belt Retractor Replacement - Left Front** or **Seat Belt Retractor Replacement - Right Front** in Seat Belts.

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8. Remove the inboard pivot bolt (1).
9. Remove the recliner arm attachment bolts (2).

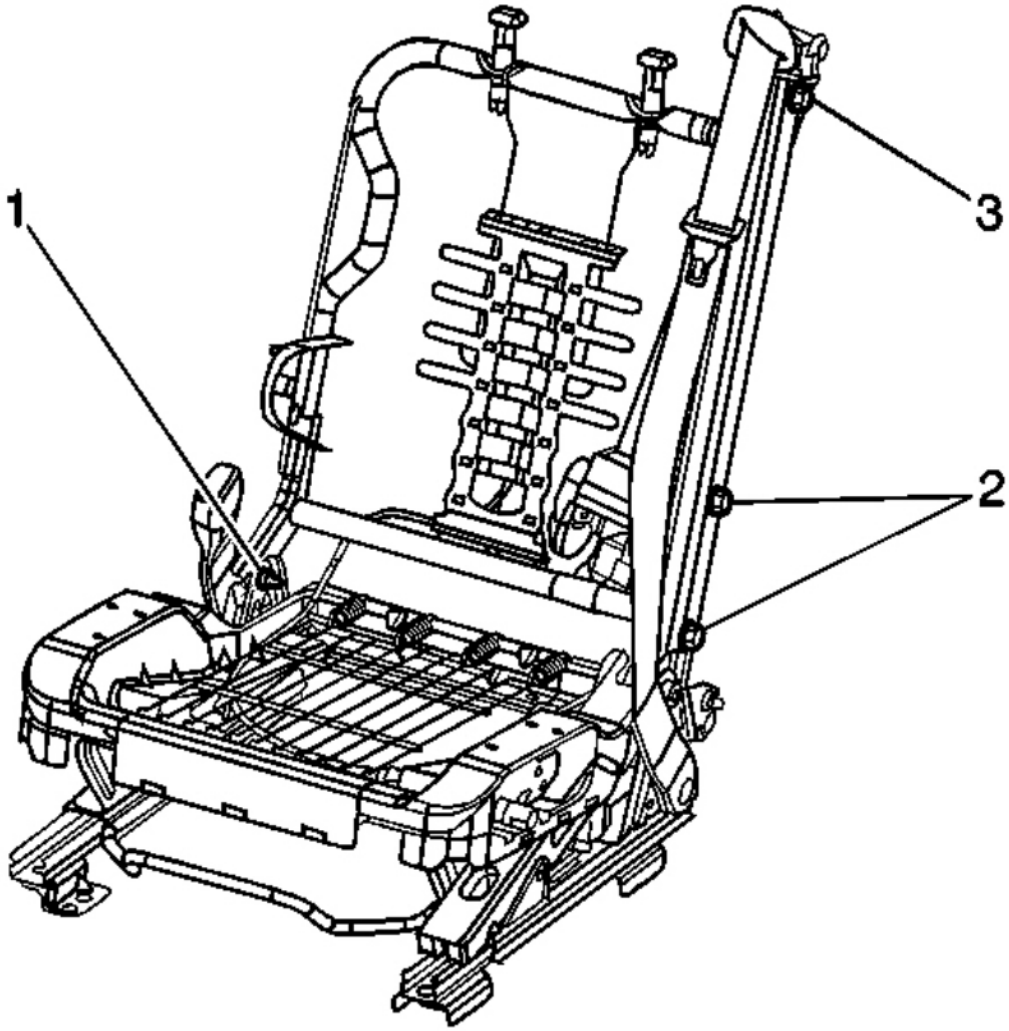


Fig. 57: View Of Inboard Pivot Bolt & Recliner Arm Attachment Bolts
Courtesy of GENERAL MOTORS CORP.

10. Remove the frame from the vehicle.
11. Transfer all necessary components to the new seat back frame.

Installation Procedure

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1. Position the seat back frame on the seat.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the recliner arm attachment bolts (2).

   Tighten: Tighten the bolts to 53 N.m (39 lb ft).

3. Install the inboard pivot bolt (1).

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

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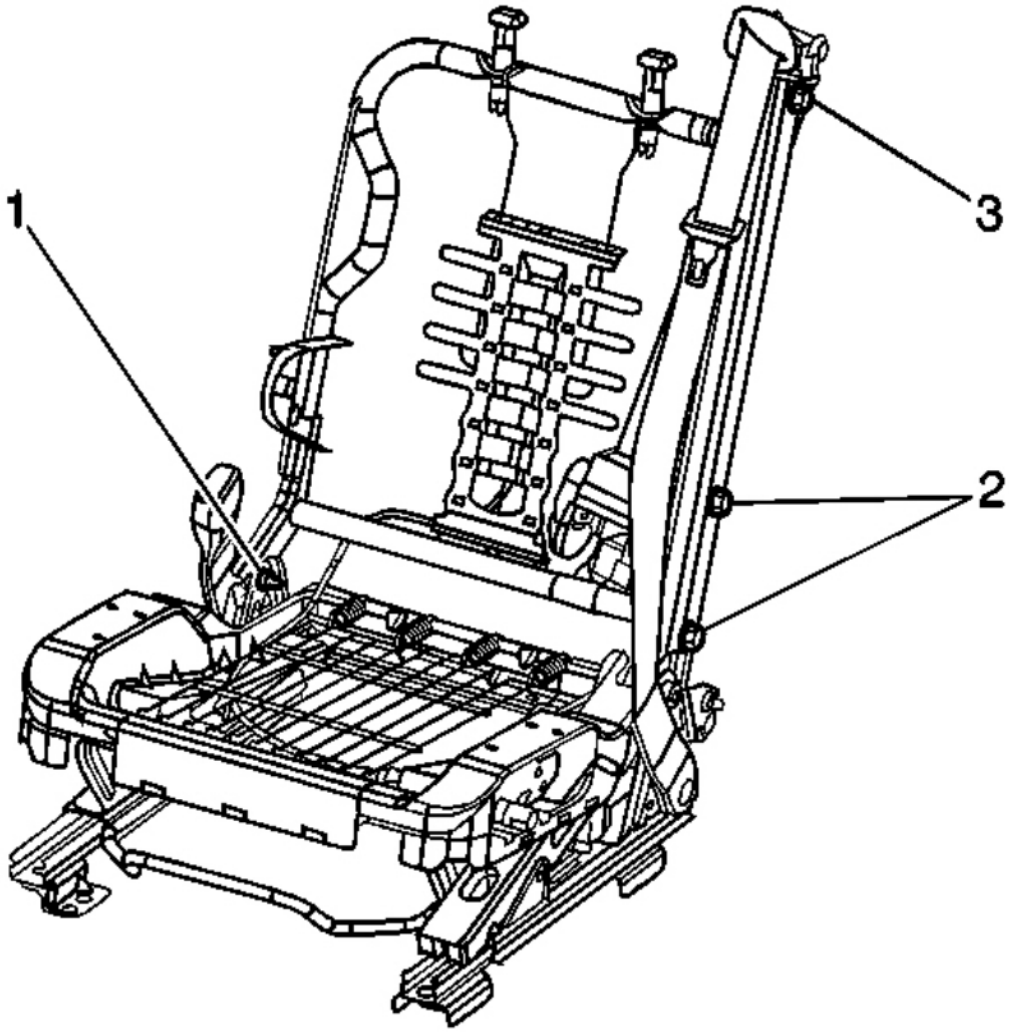


Fig. 58: View Of Inboard Pivot Bolt & Recliner Arm Attachment Bolts
Courtesy of GENERAL MOTORS CORP.

4. Install the seat belt retractor. Refer to **Seat Belt Retractor Replacement - Left Front** or **Seat Belt Retractor Replacement - Right Front** in Seat Belts.
5. Install the lumbar assembly (or power lumbar/bolster assembly if equipped). Refer to **Lumbar Replacement - Front Seat**.
6. Install the seat back trim cover and pad. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)** or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.
7. Connect the lumbar cable (6) underneath the seat cushion (disconnect the wire harness if equipped with

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power lumbar).

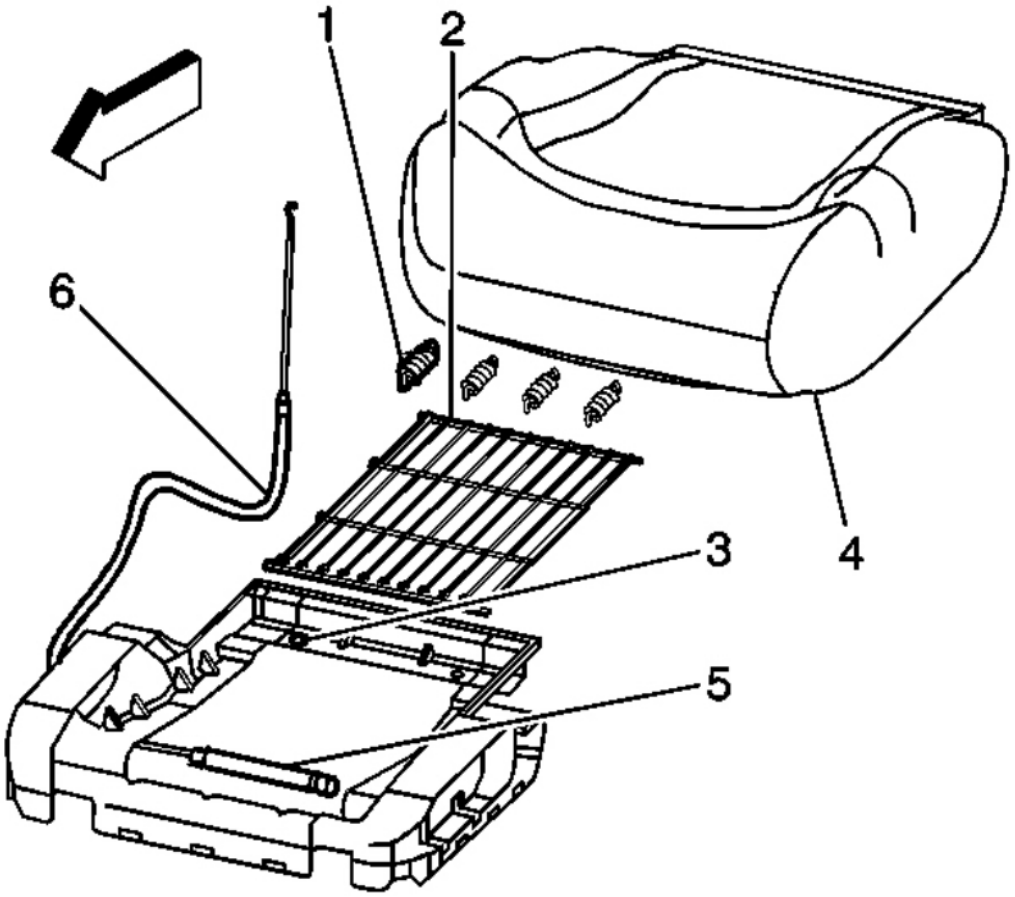


Fig. 59: View Of Lumbar Cable And Front Seat Cushion Frame Components
Courtesy of GENERAL MOTORS CORP.

8. Install the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
9. Install the head restraint and guides. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
10. Install the seat into the vehicle. Refer to **Seat Replacement - Front Bucket**.

SEAT BACK HINGE/RECLINER MECHANISM REPLACE - FRONT

Removal Procedure

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

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2. Remove the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
3. Remove the seat cushion frame. Refer to **Seat Cushion Frame Replacement - Front**.
4. Remove the seat back frame. Refer to **Seat Back Frame Replacement - Front**.
5. Remove the outboard pivot bolt.

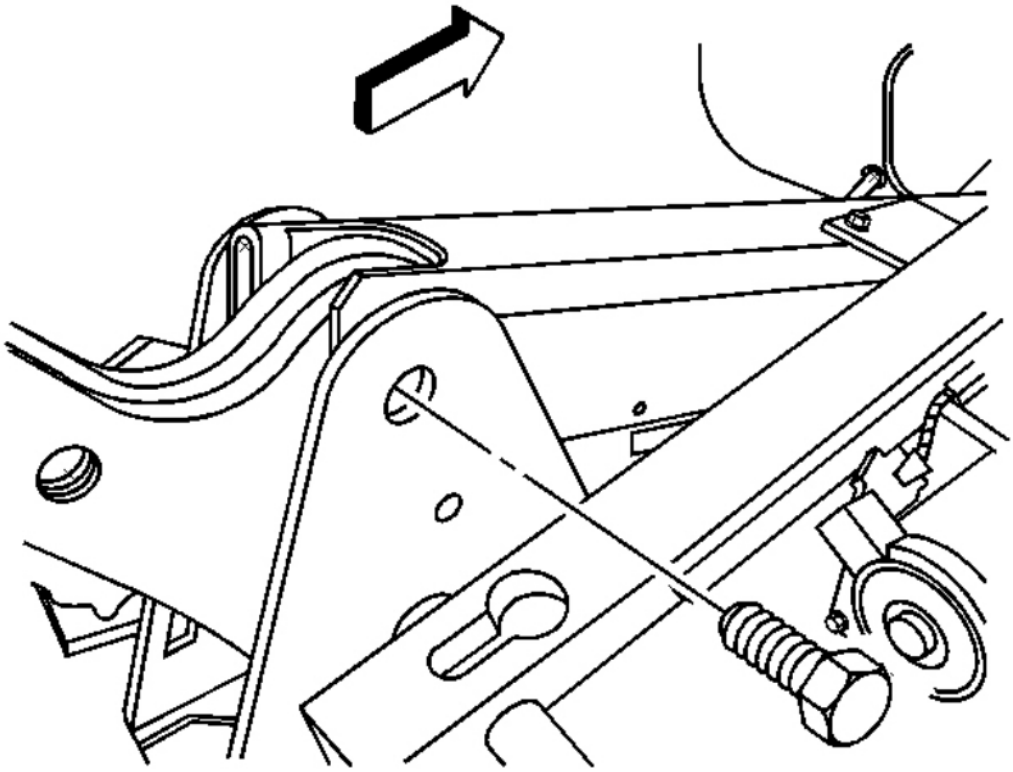


Fig. 60: View Of Outboard Pivot Bolt
Courtesy of GENERAL MOTORS CORP.

6. Remove the bolts holding the seat back folding mechanism.

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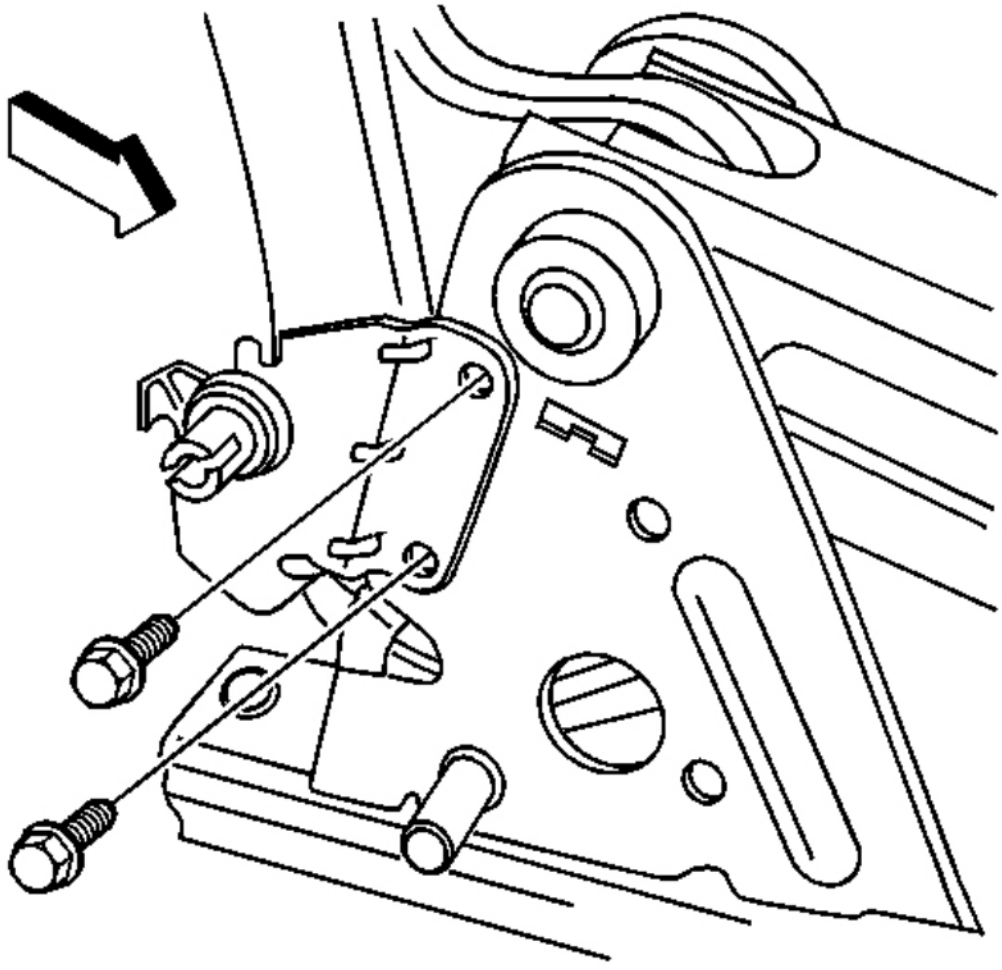


Fig. 61: View Of Seat Back Folding Mechanism & Bolts
Courtesy of GENERAL MOTORS CORP.

7. Unsnap the recliner cable (1) from the folding mechanism (3).
8. Remove the front recliner attachment bolts (4).
9. Remove the recliner screw (5).

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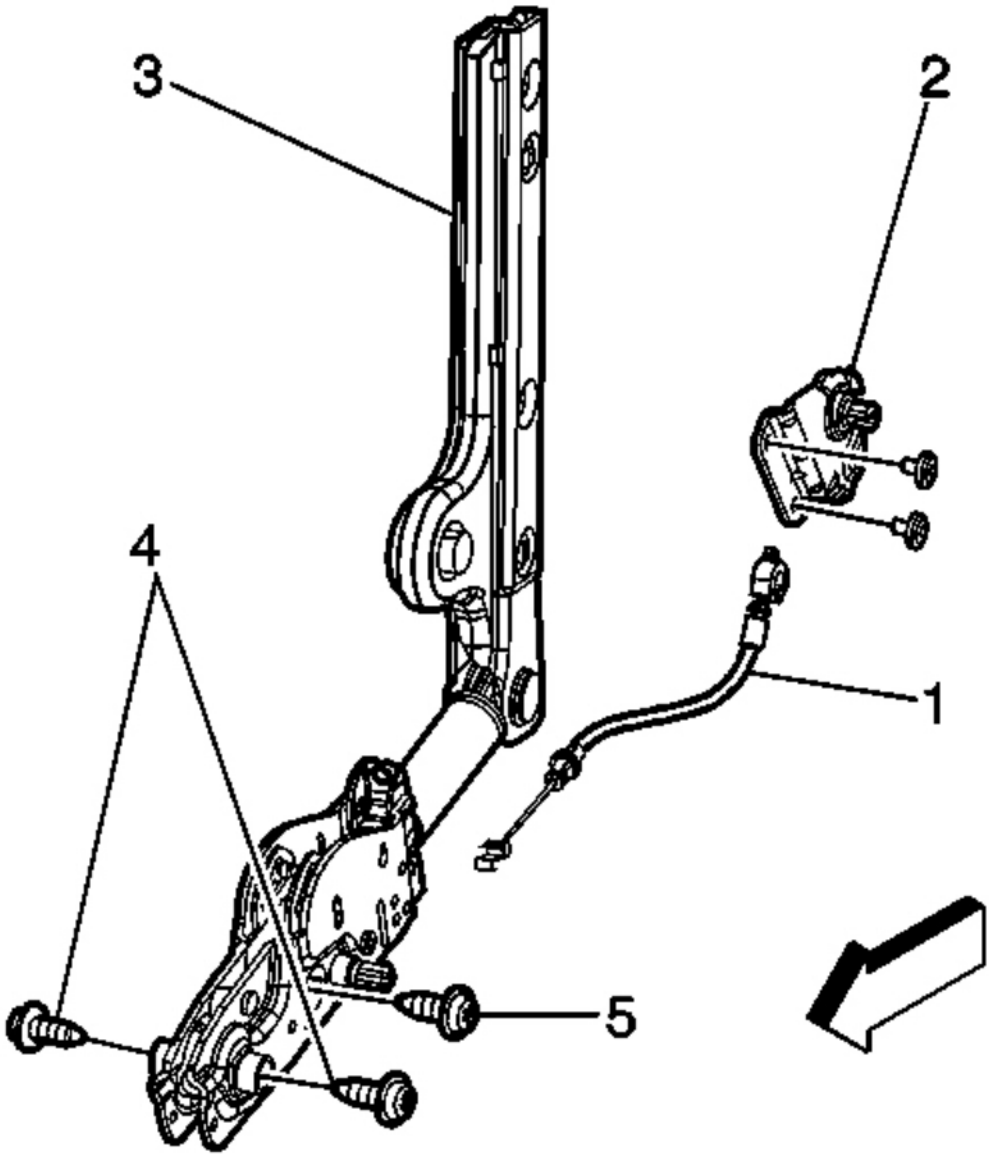


Fig. 62: View Of Front Recliner Cable, Folding Mechanism & Bolts/Screws
Courtesy of GENERAL MOTORS CORP.

10. Remove the U-channel (1).

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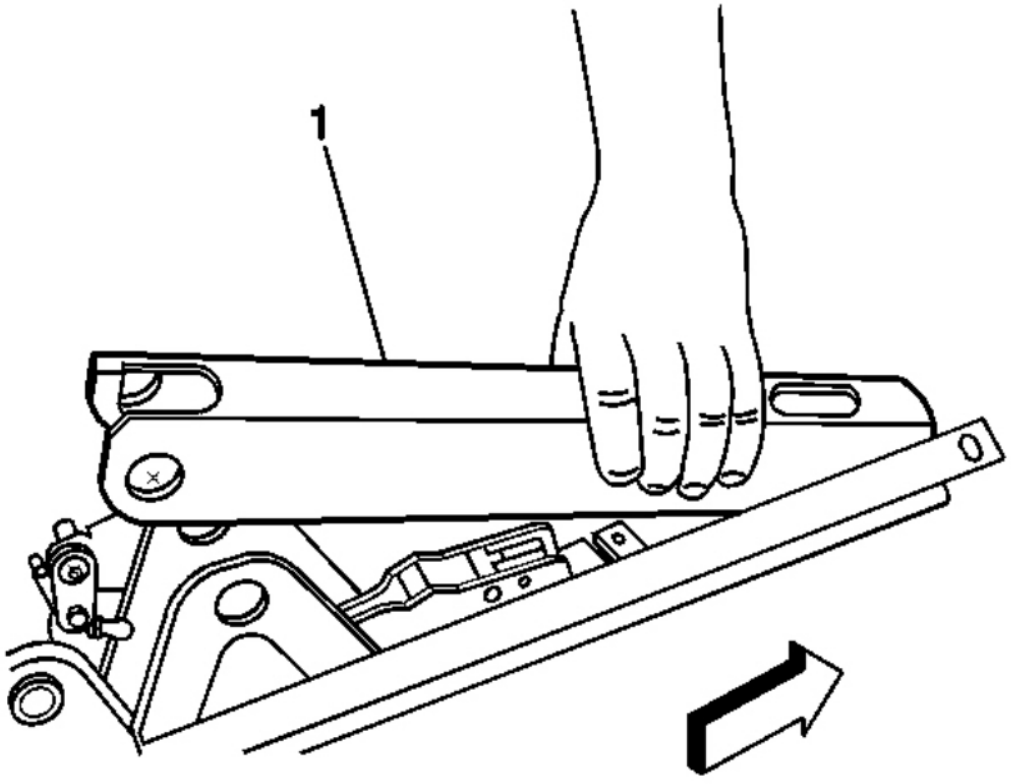


Fig. 63: View Of U-Channel
Courtesy of GENERAL MOTORS CORP.

11. Remove the drive cable, if equipped with a power recliner.
12. Disconnect the recliner cable from the recliner mechanism.
13. Remove the recliner from the seat frame.

Installation Procedure

1. Attach the recliner cable to the recliner mechanism.
2. Install the drive cable, if equipped with a power recliner.
3. Install the U-channel (1).

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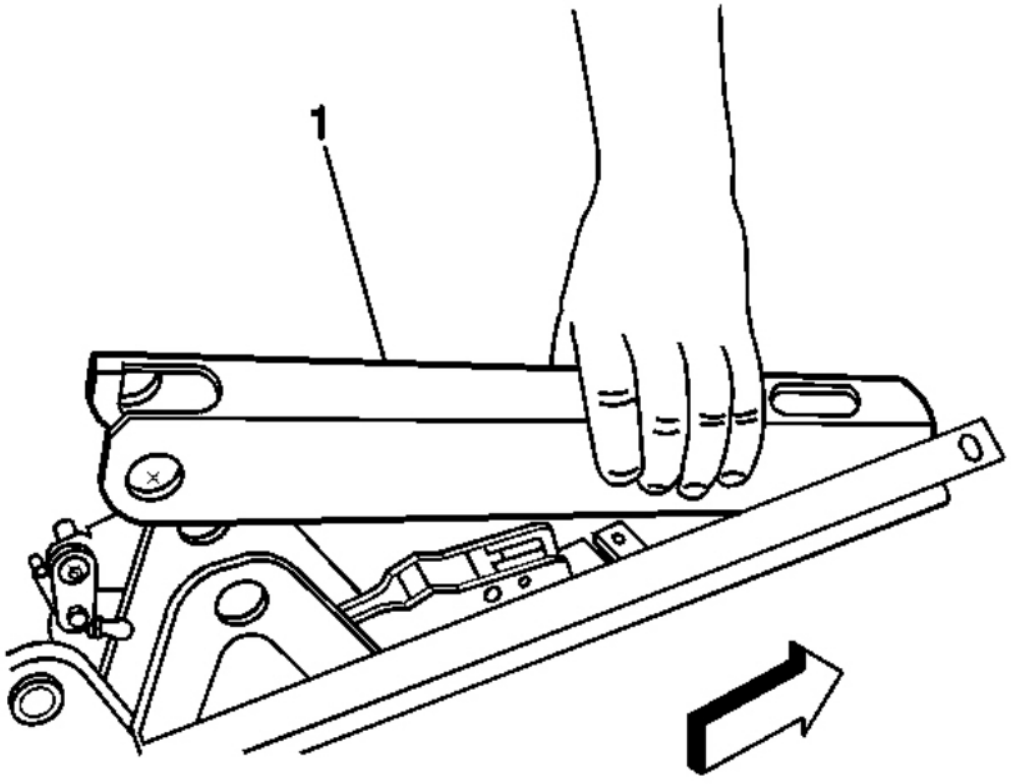


Fig. 64: View Of U-Channel
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the recliner screw (5).

   Tighten: Tighten the screw to 10 N.m (89 lb in).

5. Install the front recliner attachment bolts (4).

   Tighten: Tighten the bolts to 53 N.m (39 lb ft).

6. Attach the recliner cable (1) to the folding mechanism (3).

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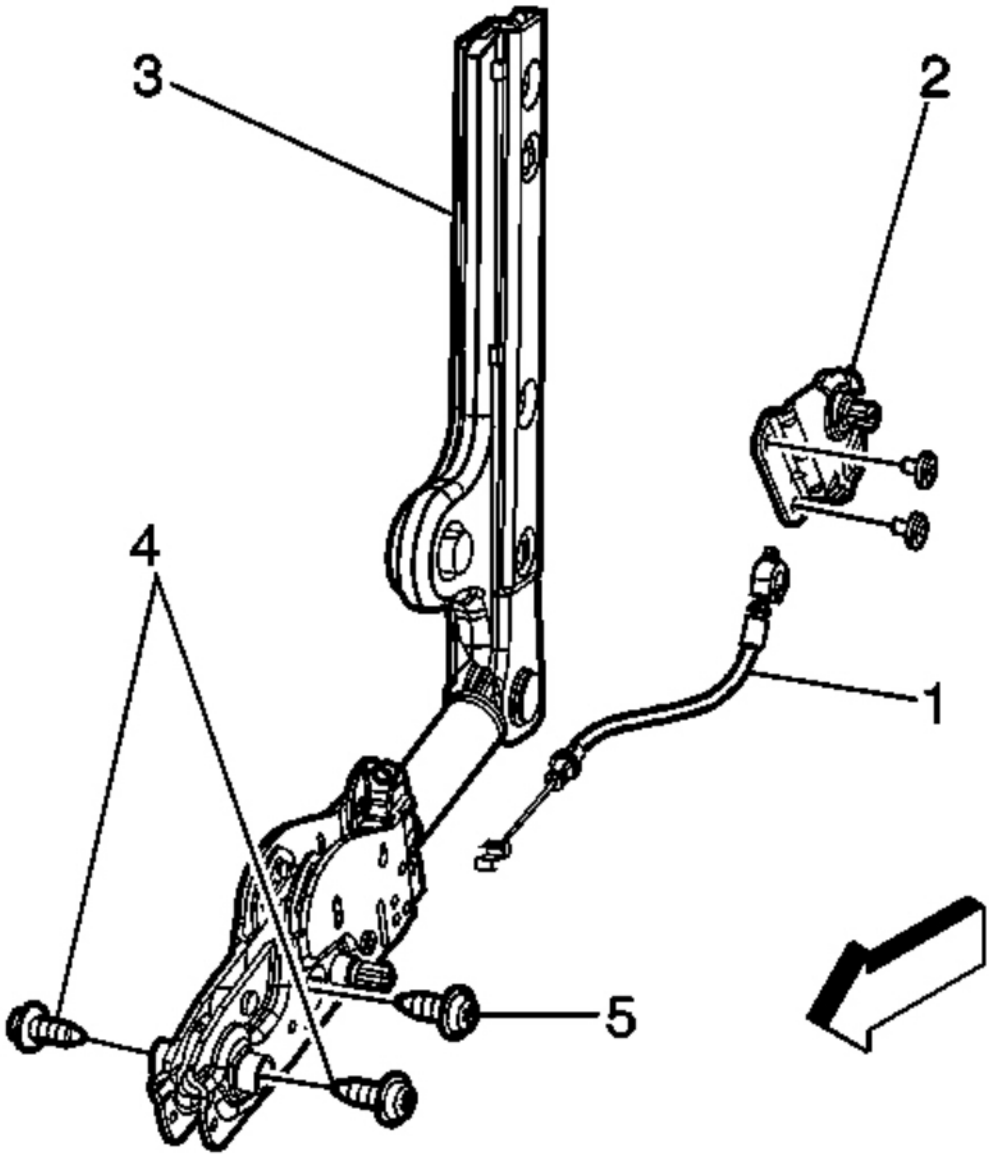


Fig. 65: View Of Front Recliner Cable, Folding Mechanism & Bolts/Screws
Courtesy of GENERAL MOTORS CORP.

7. Attach the bolts holding the seat back folding mechanism.

   Tighten: Tighten the bolts to 21 N.m (15 lb ft).

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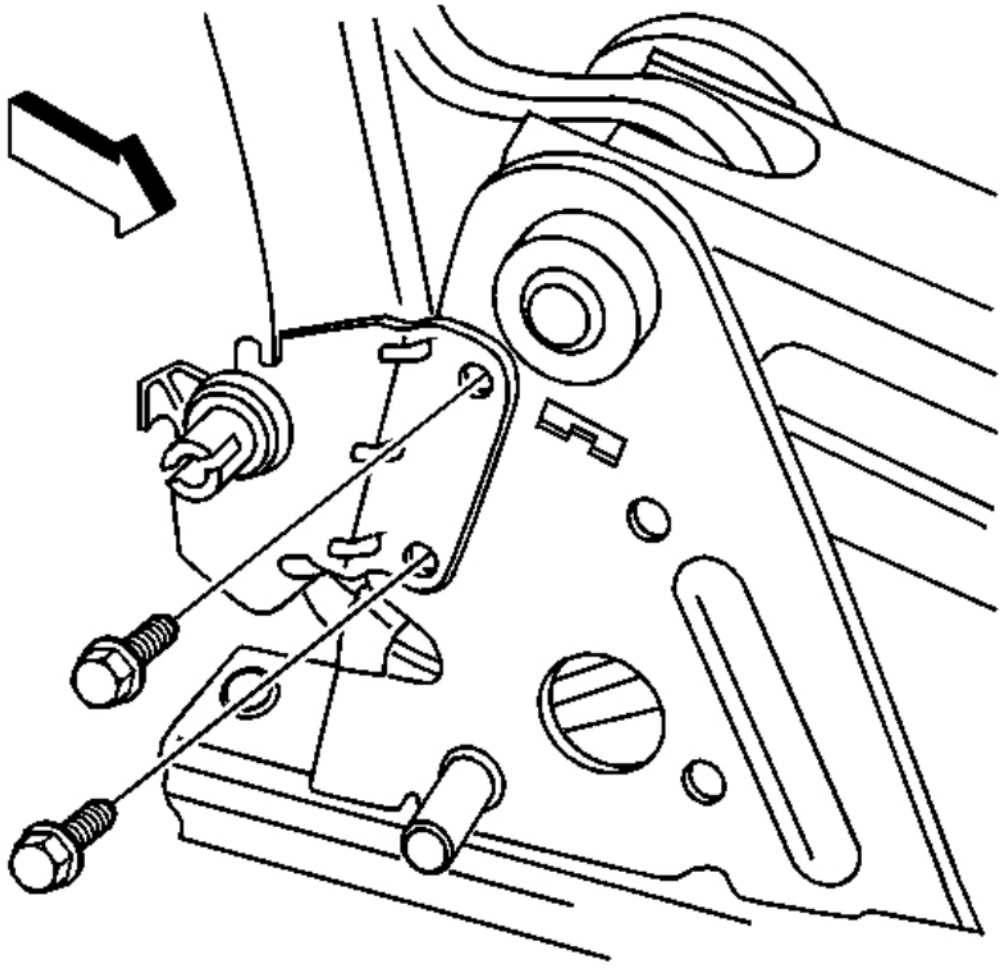


Fig. 66: View Of Seat Back Folding Mechanism & Bolts
Courtesy of GENERAL MOTORS CORP.

8. Install the outboard pivot bolt.

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

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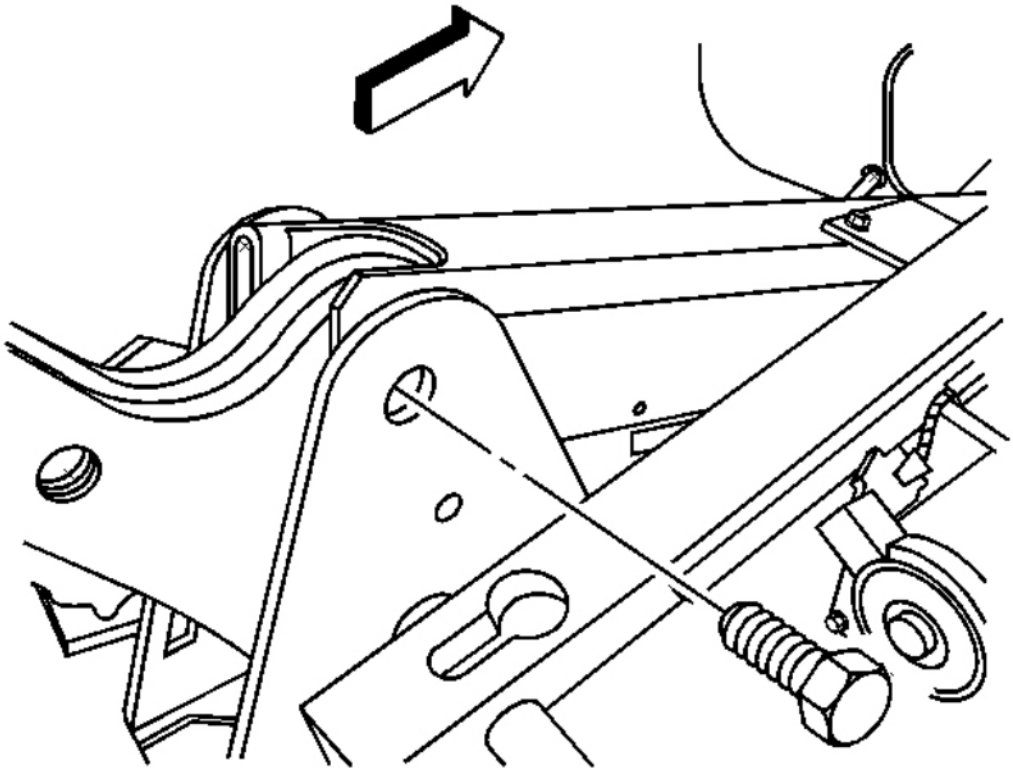


Fig. 67: View Of Outboard Pivot Bolt
Courtesy of GENERAL MOTORS CORP.

9. Install the seat back frame. Refer to **Seat Back Frame Replacement - Front**.
10. Install the seat cushion frame. Refer to **Seat Cushion Frame Replacement - Front**.
11. Install the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
12. Install the front seat in the vehicle. Refer to **Seat Replacement - Front Bucket**.

SEAT BACK RECLINER HANDLE REPLACEMENT - FRONT

Removal Procedure

1. Remove the screw retaining the recliner handle to the trim panel.
2. Remove the recliner handle.

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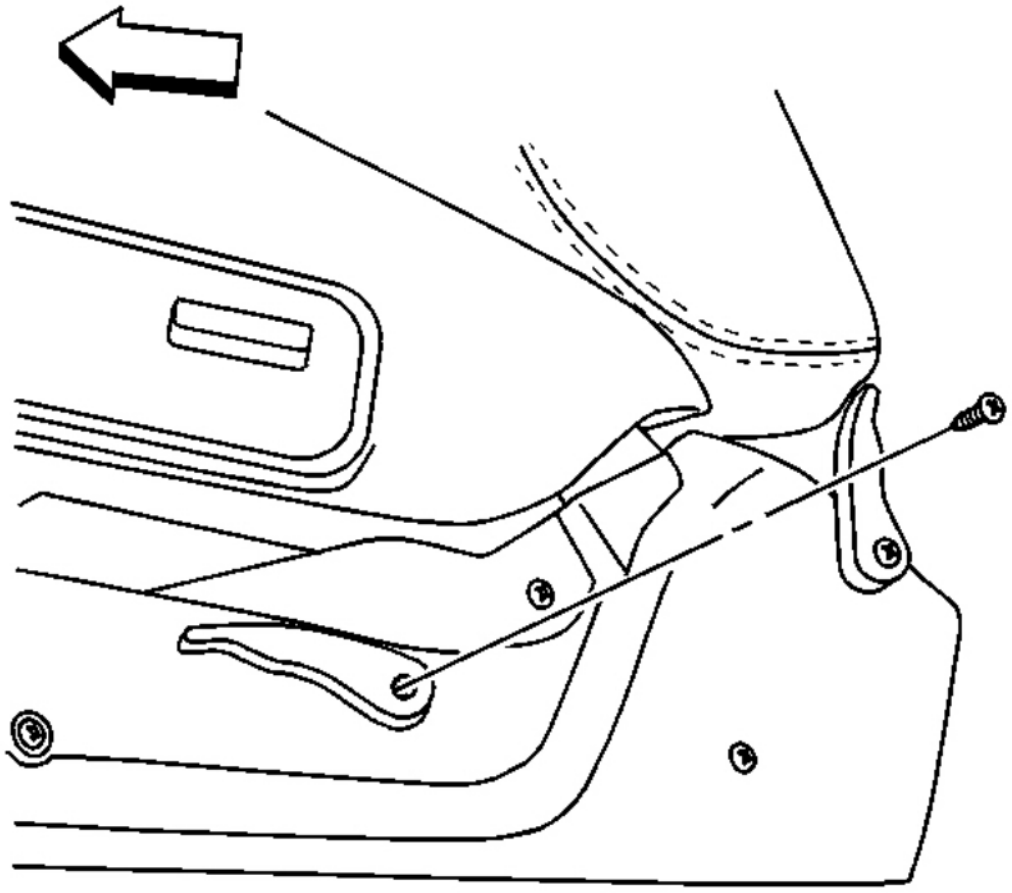


Fig. 68: View Of Front Seat Back Recliner Handle
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the recliner handle on the side shield.

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

2. Install the screw retaining the recliner handle to the trim panel.

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

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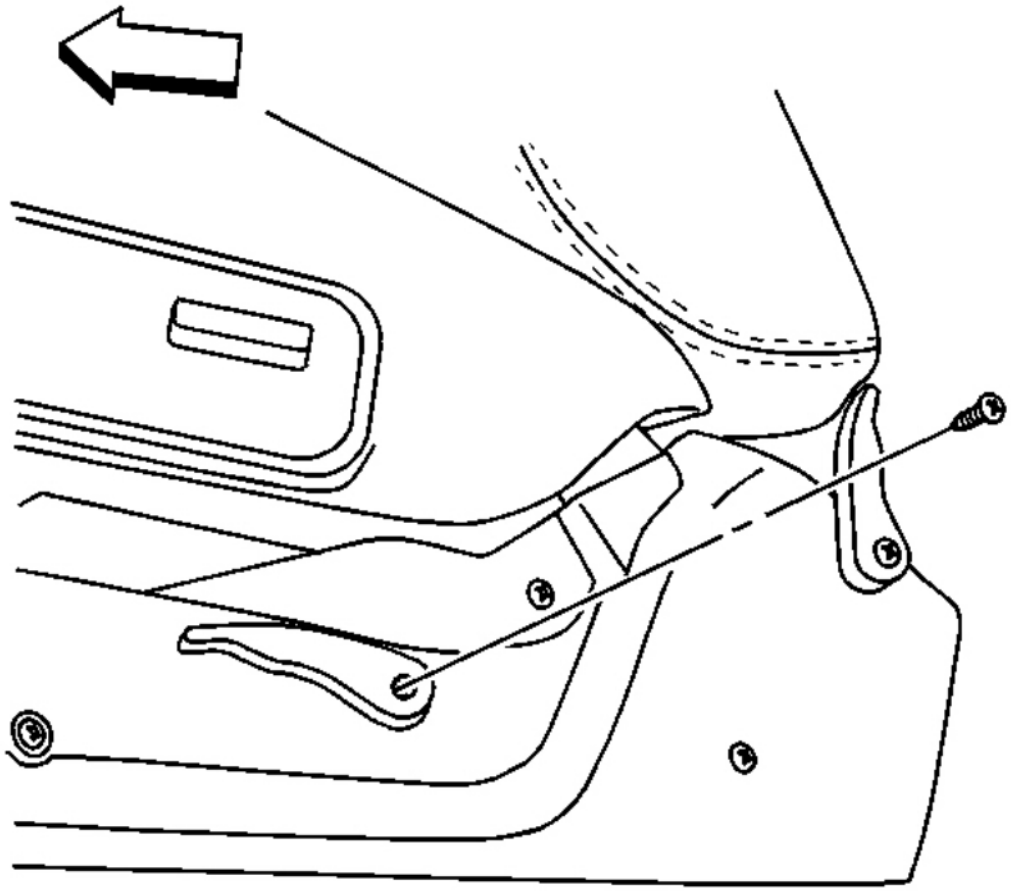


Fig. 69: View Of Front Seat Back Recliner Handle
Courtesy of GENERAL MOTORS CORP.

LUMBAR REPLACEMENT - FRONT SEAT

Tools Required

J 34940 Rivet Gun. See **Special Tools and Equipment**.

Removal Procedure

1. Remove the front seat from the vehicle. Refer to **Seat Replacement - Front Bucket**.
2. Remove the head restraint and guides. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
3. Remove the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Front (W/O**

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ULT) or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.

4. Drill out the rivet holes on the bolster paddles (1).

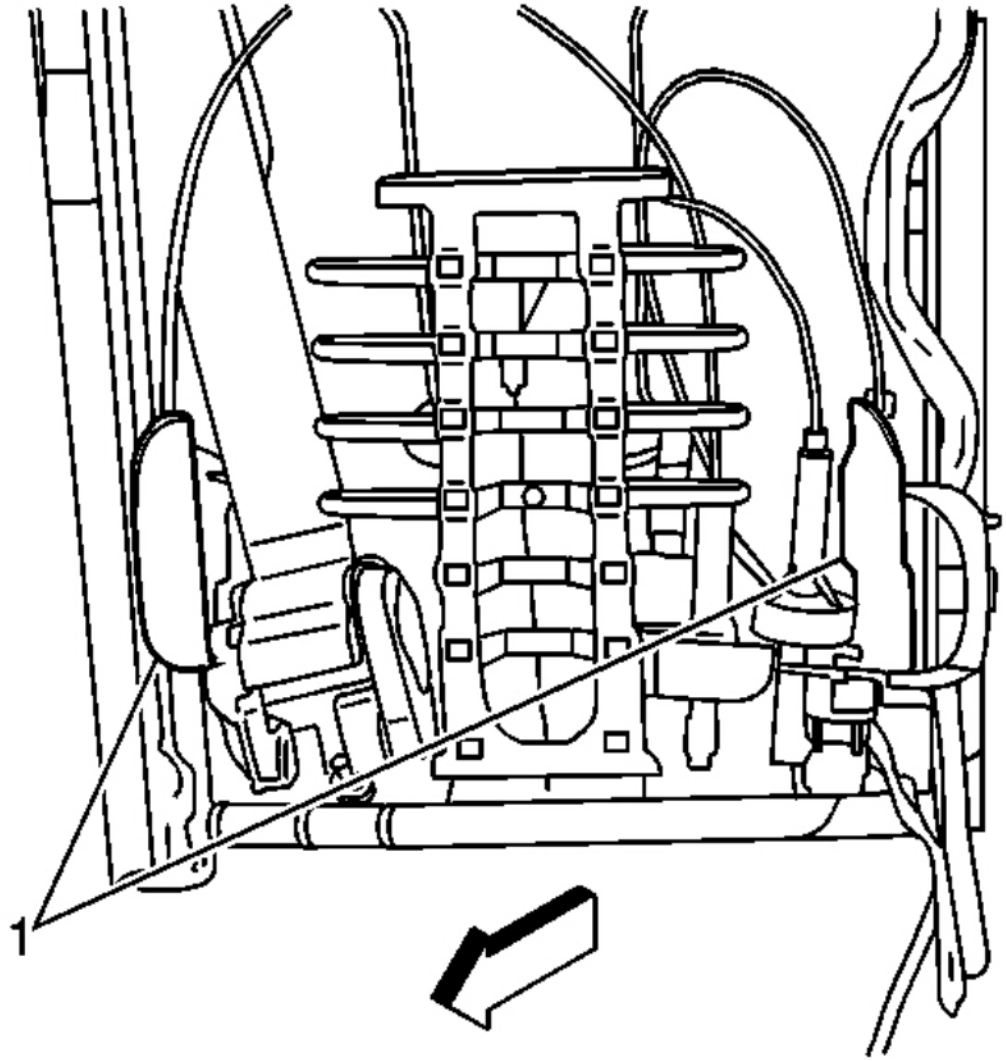


Fig. 70: View Of Bolster Paddles
Courtesy of GENERAL MOTORS CORP.

5. Detach the lumbar clip from the top of the seat frame.

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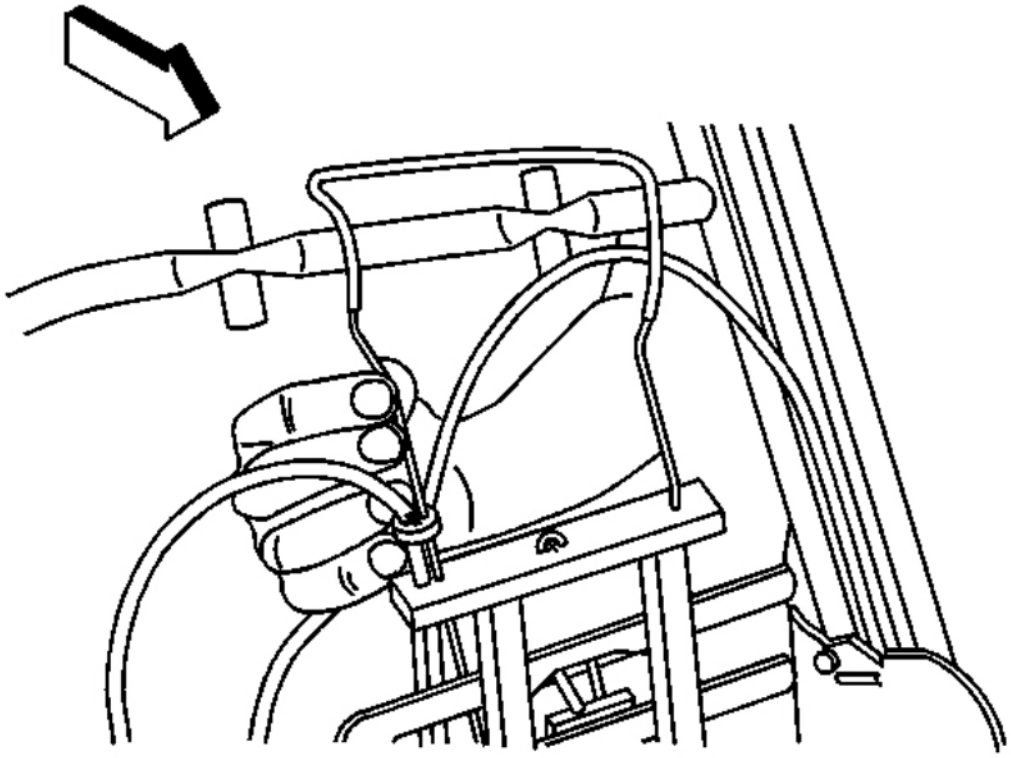


Fig. 71: Detaching Lumbar Clip From Top Of Seat Frame
Courtesy of GENERAL MOTORS CORP.

6. Remove the lumbar wire from the bottom of the seat frame.
7. Disconnect the electrical connectors to the motors.
8. Remove the power lumbar/bolster assembly from the seat.

Installation Procedure

1. Position the power lumbar/bolster assembly on the seat.
2. Connect the electrical connectors to the motors.
3. Fasten the lumbar wire at the bottom of the frame.
4. Attach the lumbar clip onto the top of the seat frame.

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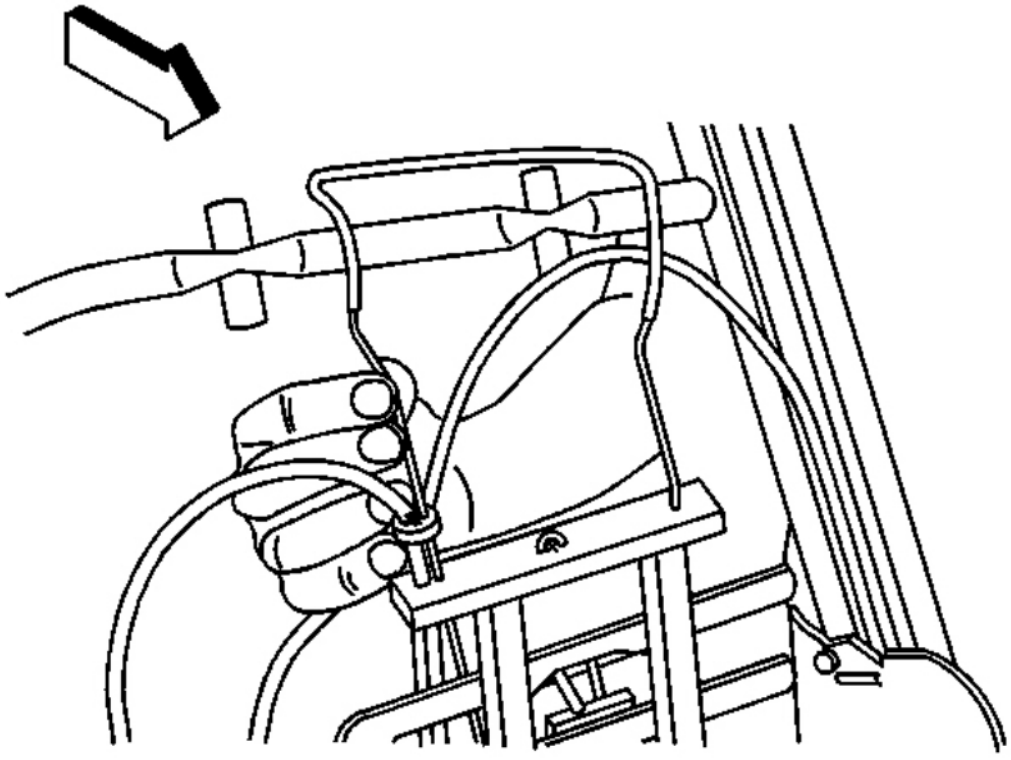


Fig. 72: Attaching Lumbar Clip Onto Top Of Seat Frame
Courtesy of GENERAL MOTORS CORP.

5. Install the rivets to secure the bolster paddles (1).

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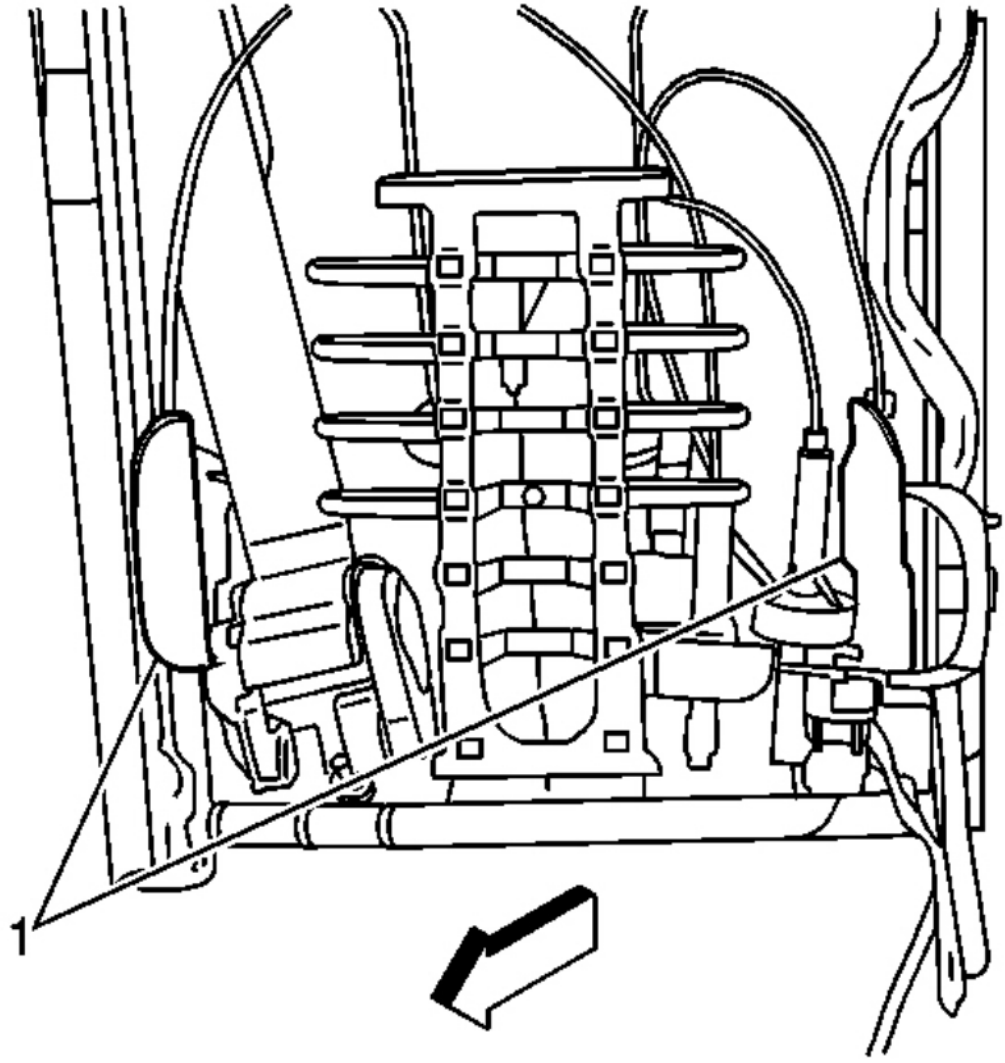


Fig. 73: View Of Bolster Paddles
Courtesy of GENERAL MOTORS CORP.

6. Install the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)** or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.
7. Install the head restraint and guides. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
8. Install the seat in the vehicle. Refer to **Seat Replacement - Front Bucket**.

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LUMBAR SWITCH REPLACEMENT

Removal Procedure

1. Remove the power seat switch bezel containing the lumbar switch (1) from the seat. Refer to **Seat Switch Bezel Replacement**.
2. Remove the lumbar switch screws from the power seat switch bezel.
3. Remove the lumbar switch.

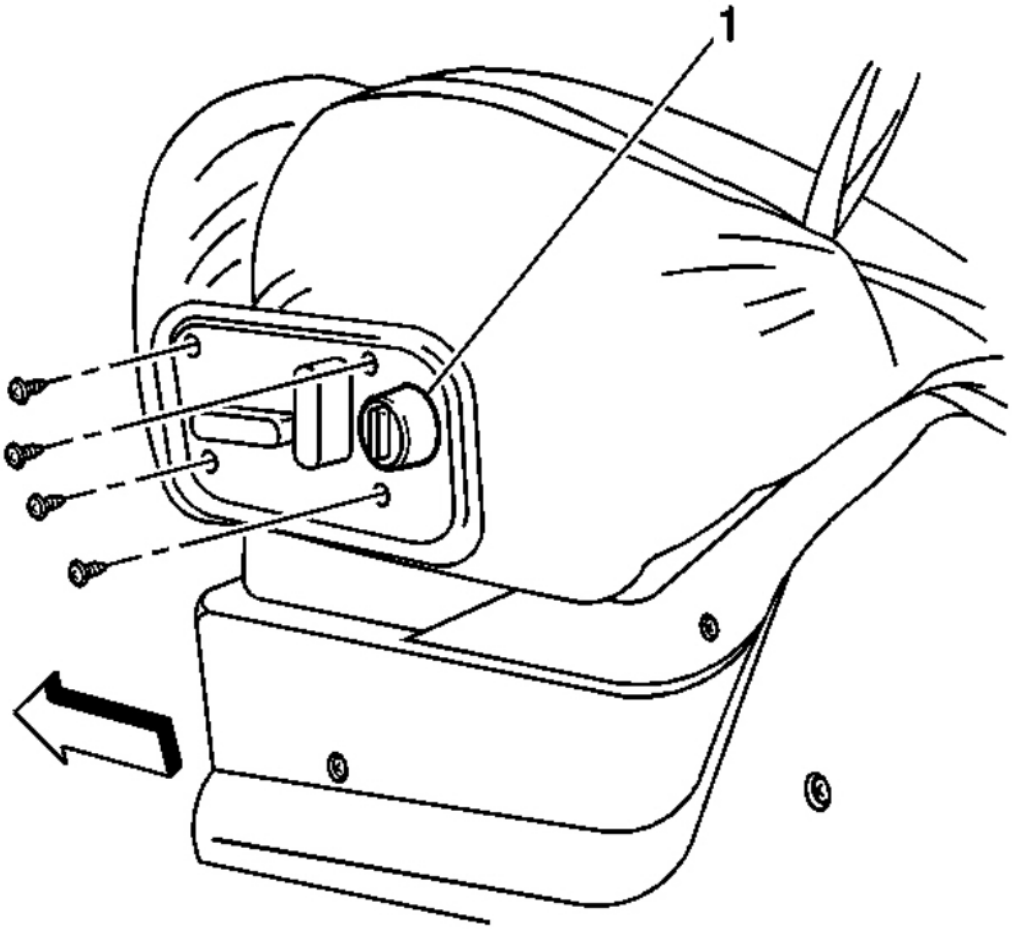


Fig. 74: View Of Lumbar Switch & Power Seat Switch Bezel
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

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1. Install the lumbar switch to the power seat switch bezel.

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

2. Install the lumbar switch screws.

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

3. Install the power seat switch bezel (1) to the seat. Refer to **Seat Switch Bezel Replacement**.

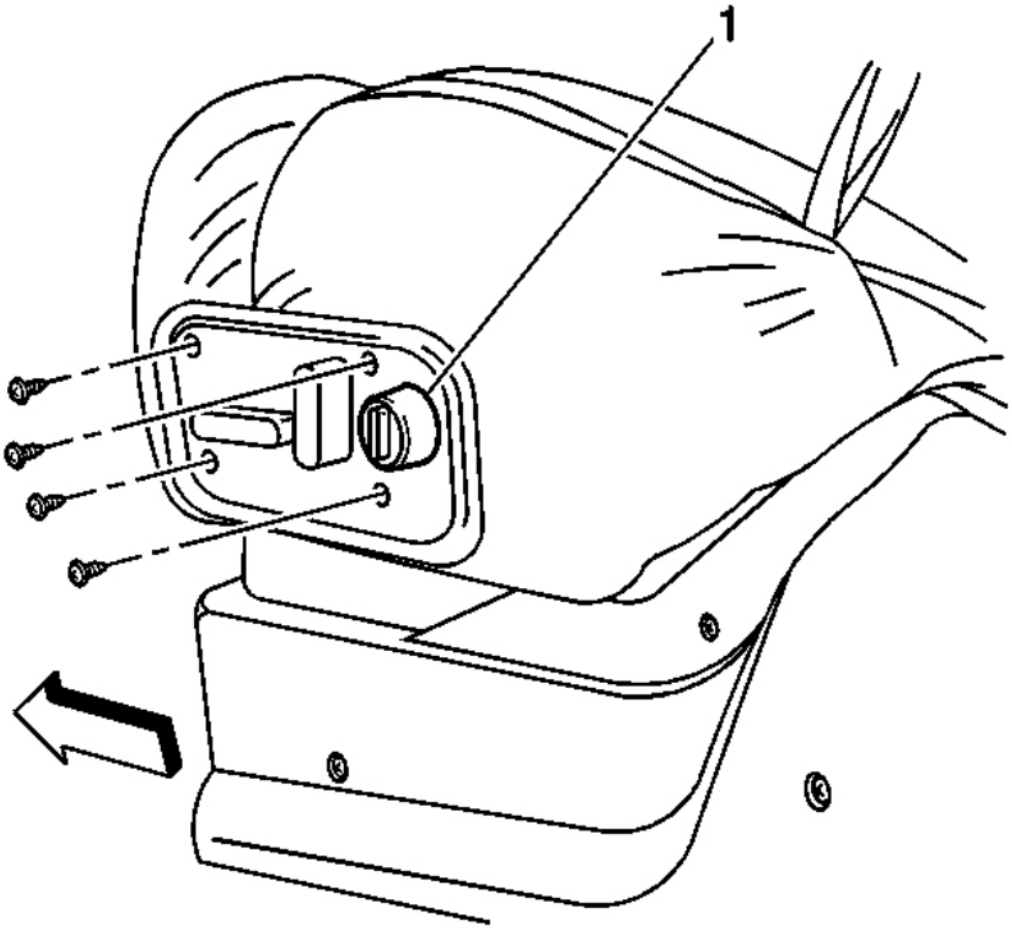


Fig. 75: View Of Lumbar Switch & Power Seat Switch Bezel
Courtesy of GENERAL MOTORS CORP.

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SEAT ADJUSTER REPLACEMENT - FRONT (MANUAL)

Removal Procedure

1. Remove the front seat from the vehicle. Refer to **Seat Replacement - Front Bucket**.
2. Remove the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
3. Remove the seat cushion frame. Refer to **Seat Cushion Frame Replacement - Front**.
4. Remove the seat back frame. Refer to **Seat Back Frame Replacement - Front**.
5. Remove the seat back hinge/recliner mechanism. Refer to **Seat Back Hinge/Recliner Mechanism Replace - Front**.
6. Remove the seat adjuster track cover. Refer to **Seat Adjuster Track Cover Replacement - Front**.
7. Remove the inboard seat belt buckle and nut (1).

   Disconnect the electrical connection (2).

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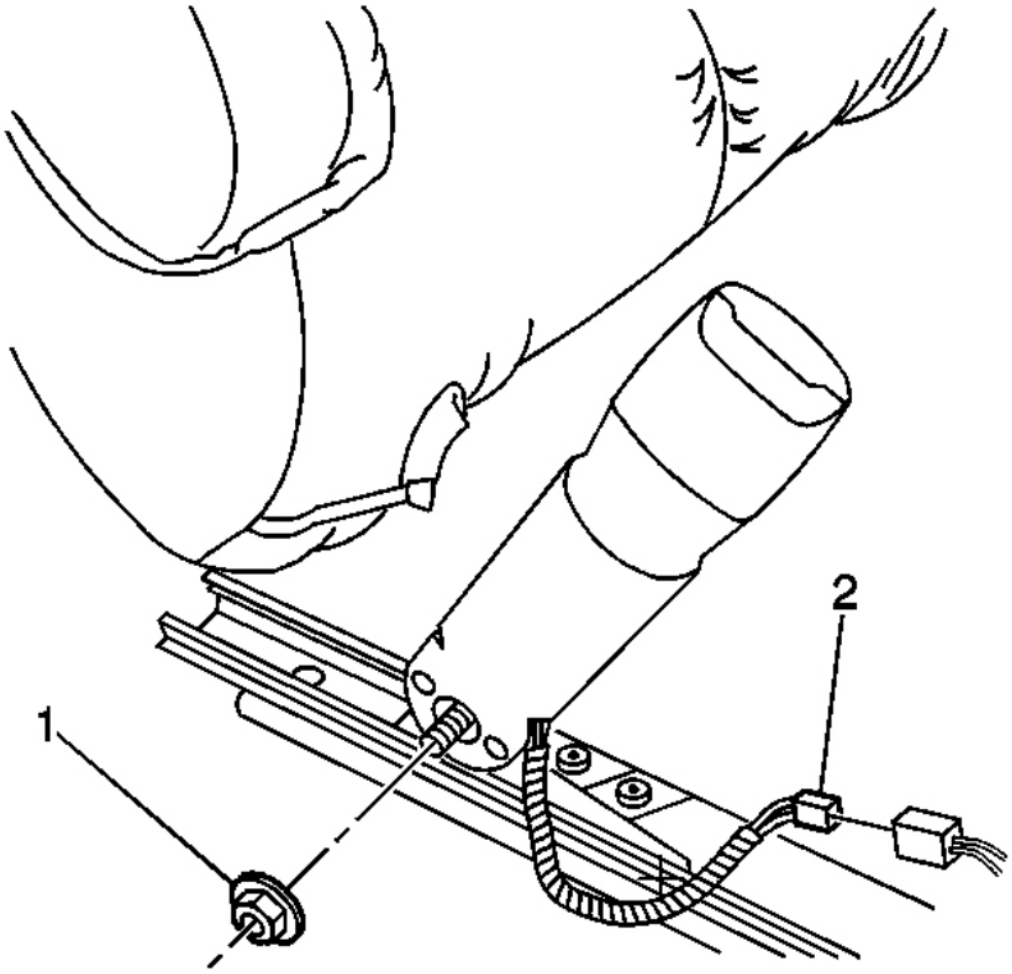


Fig. 76: View Of Seat Belt Buckle, Nut & Electrical Connection
Courtesy of GENERAL MOTORS CORP.

8. Remove the bar (1) from the adjuster tracks (2). Straighten the tabs in order to remove the bar.
9. Remove the cross brace (3).
10. Remove the EZ entry rod (4), if equipped with the EZ entry feature.
11. Remove the cushion tilt mechanism, if equipped.

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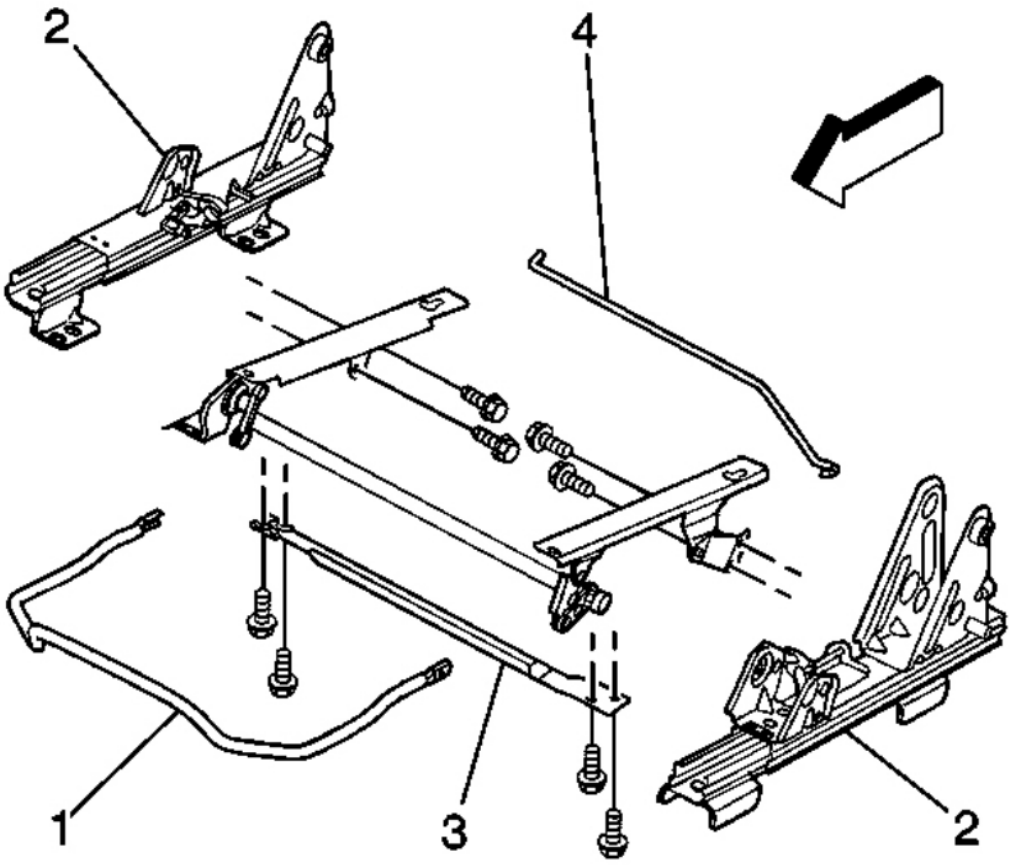


Fig. 77: View Of Front Seat Adjuster Components (Manual)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the cushion tilt mechanism, if equipped.
2. Install the EZ entry rod (4), if equipped with the EZ entry feature.
3. Install the cross brace (3).
4. Install the bar (1) onto the racks (2). Bend the tabs in order to secure the bar.

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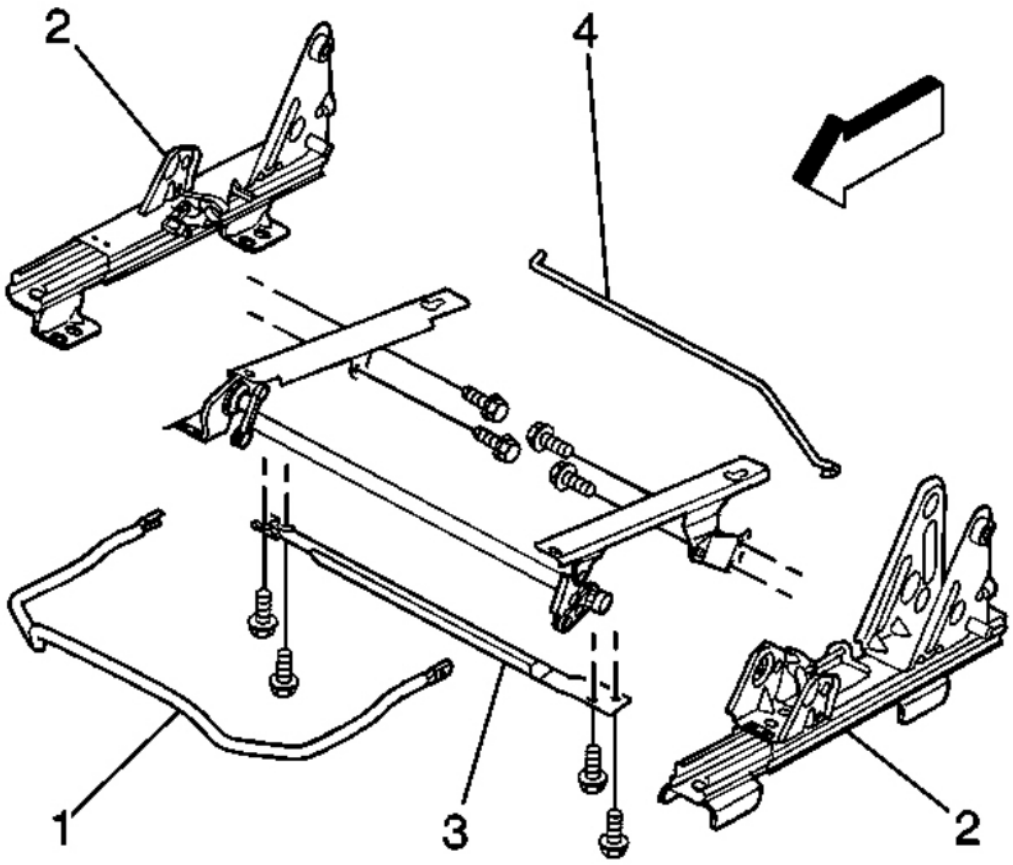


Fig. 78: View Of Front Seat Adjuster Components (Manual)
Courtesy of GENERAL MOTORS CORP.

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

5. Install the inboard seat belt buckle and nut (1).

   Tighten: Tighten the nut to 53 N.m (39 lb ft).

6. Connect the electrical connection (2).

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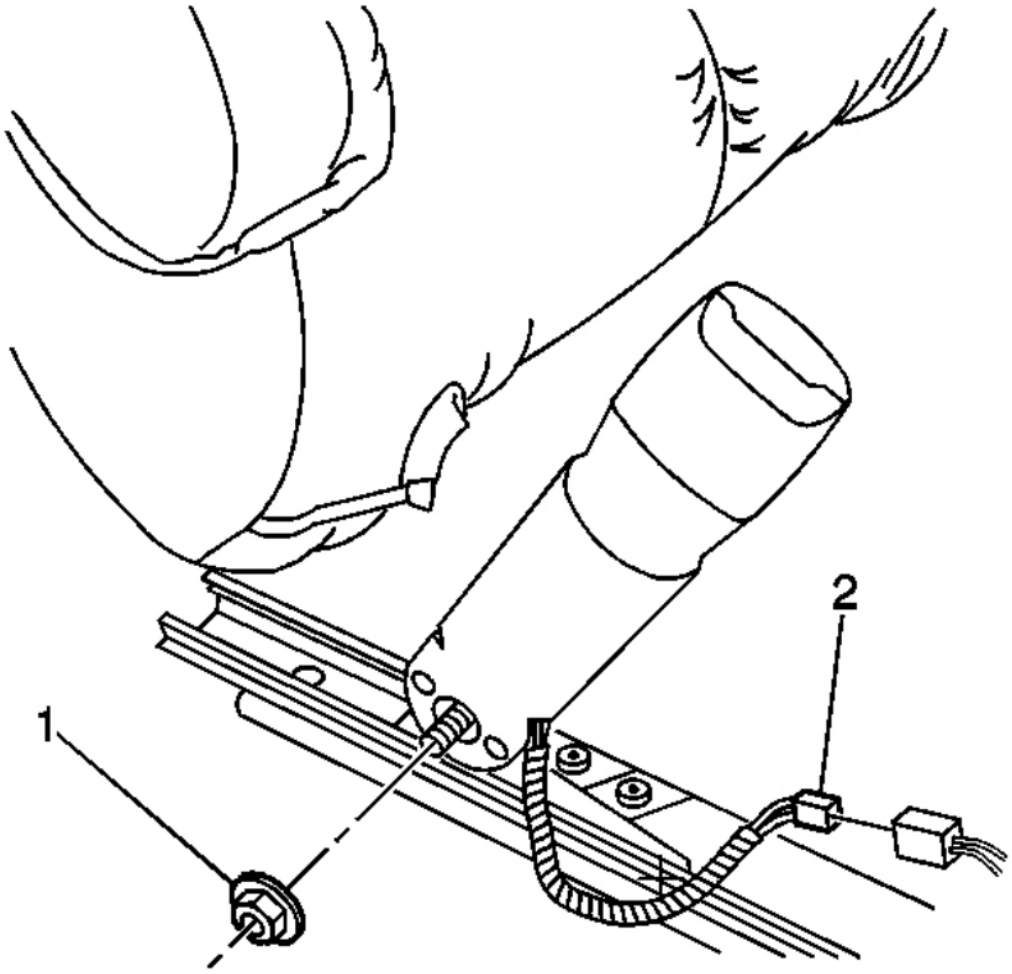


Fig. 79: View Of Seat Belt Buckle, Nut & Electrical Connection
Courtesy of GENERAL MOTORS CORP.

7. Install the seat adjuster track cover. Refer to **Seat Adjuster Track Cover Replacement - Front**.
8. Install the seat back hinge/recliner mechanism. Refer to **Seat Back Hinge/Recliner Mechanism Replace - Front**.
9. Install the seat back frame. Refer to **Seat Back Frame Replacement - Front**.
10. Install the seat cushion frame. Refer to **Seat Cushion Frame Replacement - Front**.
11. Install the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
12. Install the front seat in the vehicle. Refer to **Seat Replacement - Front Bucket**.

SEAT ADJUSTER REPLACEMENT - FRONT (POWER)

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Removal Procedure

1. Remove the front seat from the vehicle. Refer to **Seat Replacement - Front Bucket**.
2. Remove the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
3. Remove the seat cushion frame from the seat adjuster. Refer to **Seat Cushion Frame Replacement - Front**.
4. Remove the inboard seat belt buckle and nut (1).

   Disconnect the electrical connection (2).

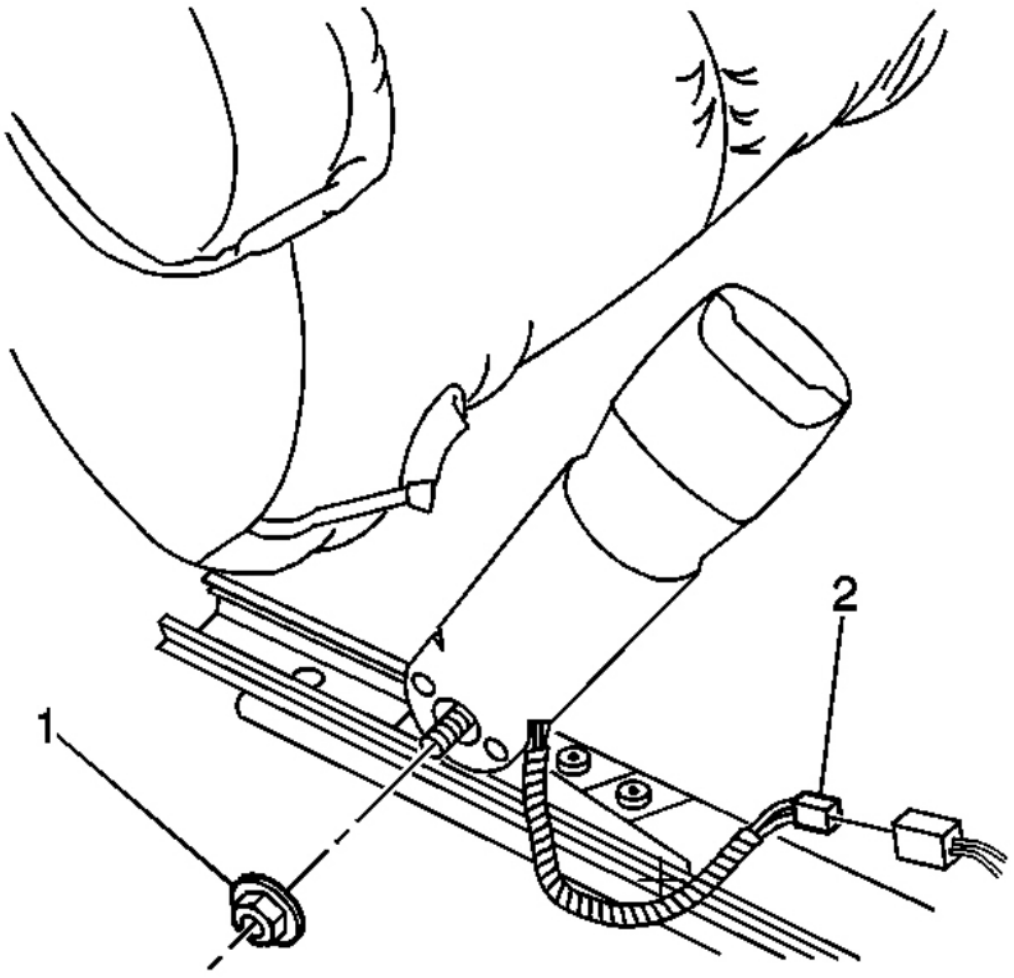


Fig. 80: View Of Seat Belt Buckle, Nut & Electrical Connection
Courtesy of GENERAL MOTORS CORP.

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5. Remove the seat back frame from the seat adjuster. Refer to **Seat Back Frame Replacement - Front**.
6. Remove the seat back hinge/recliner mechanism. Refer to **Seat Back Hinge/Recliner Mechanism Replace - Front**.
7. Remove the seat adjuster track cover. Refer to **Seat Adjuster Track Cover Replacement - Front**.
8. Remove the memory module, if equipped. Refer to **Memory Seat Control Module Replacement**.

Installation Procedure

1. Install the memory module, if equipped. Refer to **Memory Seat Control Module Replacement**.

   NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the inboard seat belt buckle and nut (1).

   Tighten: Tighten the nut to 53 N.m (39 lb ft).

3. Connect the electrical connection (2).

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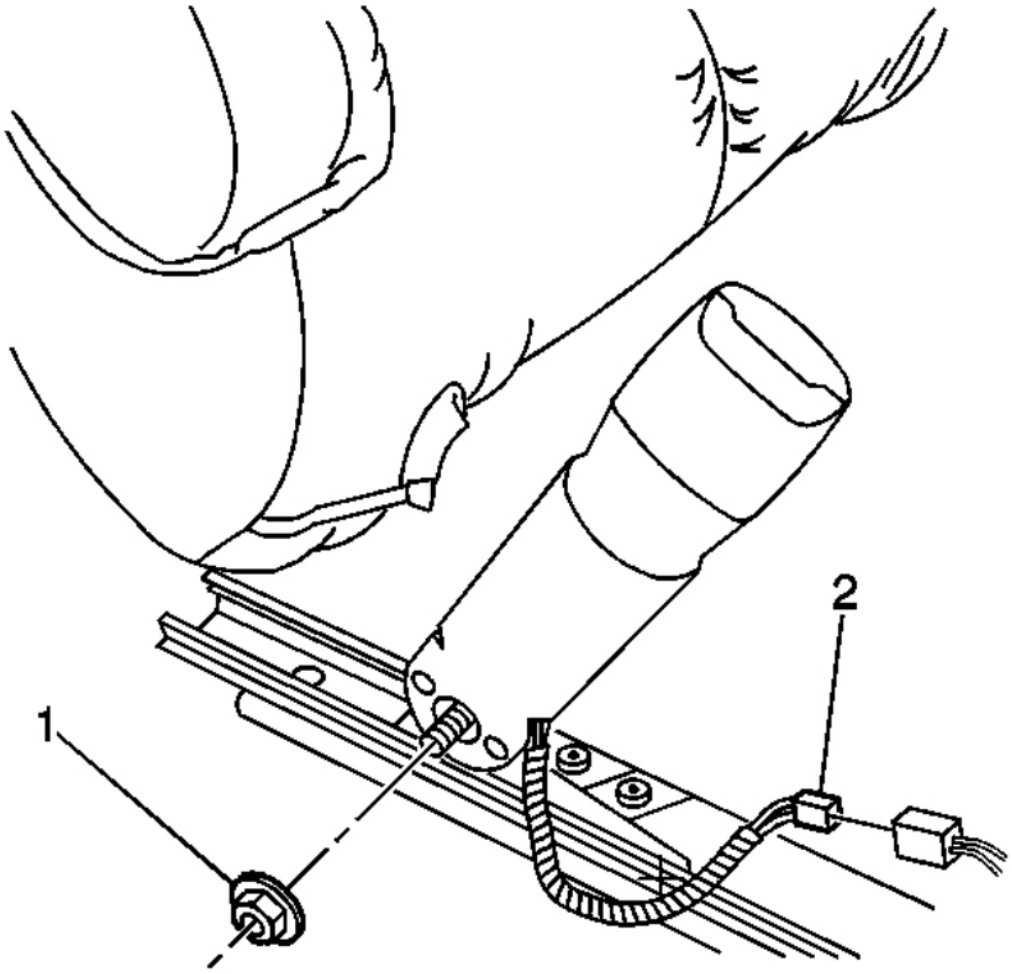


Fig. 81: View Of Seat Belt Buckle, Nut & Electrical Connection
Courtesy of GENERAL MOTORS CORP.

4. Install the seat adjuster track cover. Refer to **Seat Adjuster Track Cover Replacement - Front**.
5. Install the seat back hinge/recliner mechanism. Refer to **Seat Back Hinge/Recliner Mechanism Replace - Front**.
6. Install the seat back frame to the seat adjuster. Refer to **Seat Back Frame Replacement - Front**.
7. Install the seat cushion frame to the seat adjuster. Refer to **Seat Cushion Frame Replacement - Front**.
8. Install the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
9. Install the seat in the vehicle. Refer to **Seat Replacement - Front Bucket**.
10. If the vehicle is equipped with memory seats, calibrate the seat. Refer to **Memory Seat Calibration**

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Procedure.

SEAT ADJUSTER TRACK COVER REPLACEMENT - FRONT

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Front Bucket**.
2. Unsnap the front tabs, then the rear tabs of the track cover.
3. Remove the track cover from the vehicle.

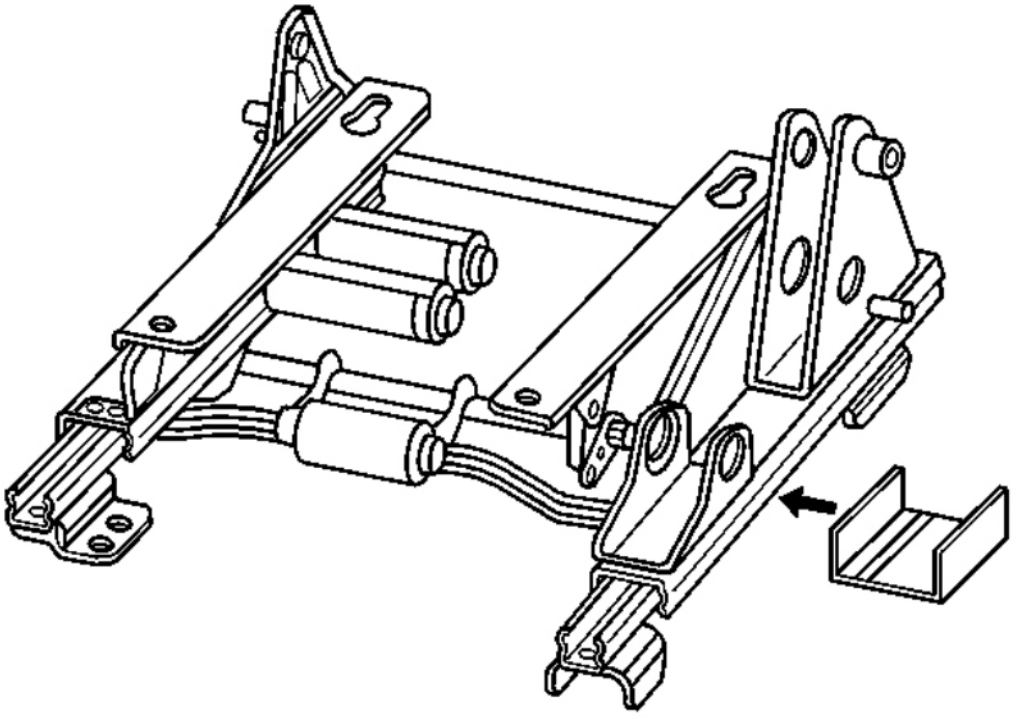


Fig. 82: View Of Front Seat Adjuster Track Cover
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the track cover on the seat.
2. Snap on the rear tabs, then the front tabs of the track cover.

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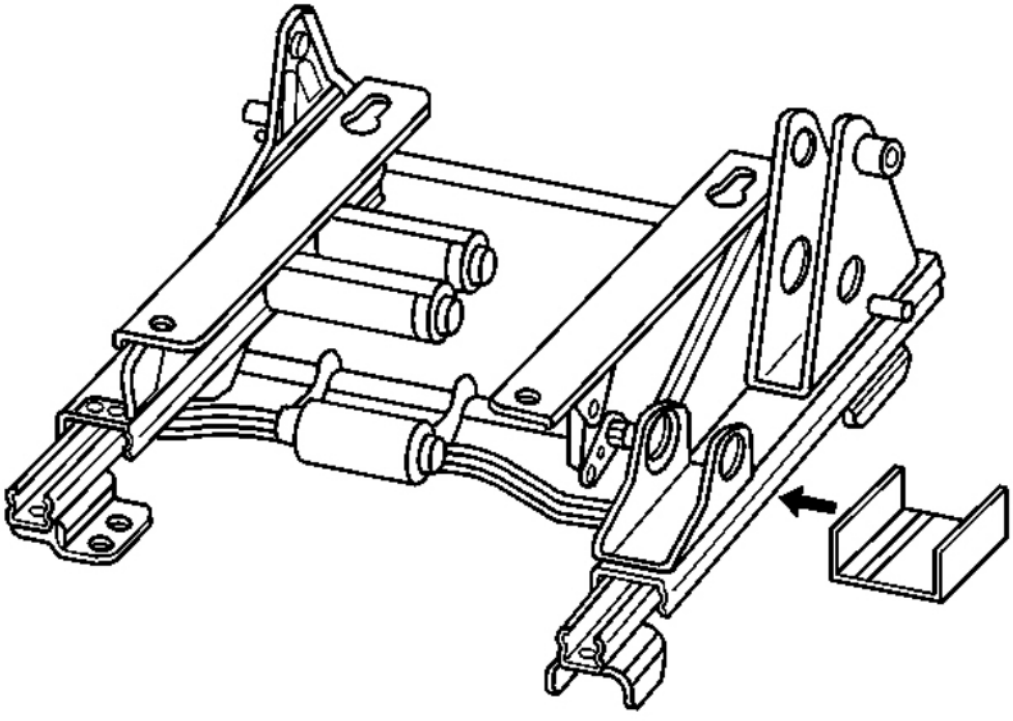


Fig. 83: View Of Front Seat Adjuster Track Cover
Courtesy of GENERAL MOTORS CORP.

3. Install the seat in the vehicle. Refer to **Seat Replacement - Front Bucket**.

SEAT ADJUSTER MOTOR REPLACEMENT - FRONT

The seat adjuster motors can not be replaced individually. Therefore if any motor has failed, the seat adjuster needs to be replaced as an assembly. Refer to **Seat Adjuster Replacement - Front (Manual)** or **Seat Adjuster Replacement - Front (Power)**.

SEAT SWITCH REPLACEMENT - POWER

Removal Procedure

1. Remove the power seat switch bezel from the seat. Refer to **Seat Switch Bezel Replacement**.

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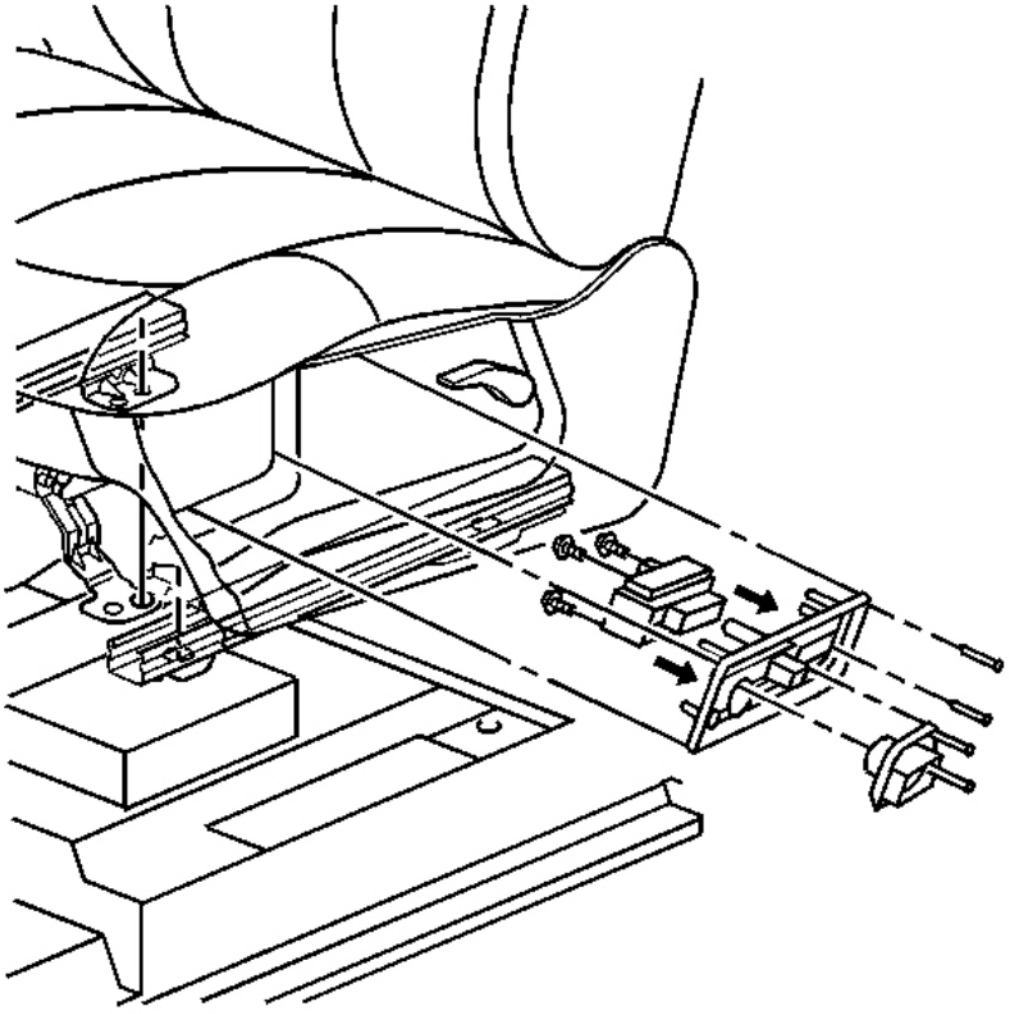


Fig. 84: View Of Seat Switch Bezel
Courtesy of GENERAL MOTORS CORP.

2. Remove the power seat switch to bezel screws.
3. Remove the power seat switch.

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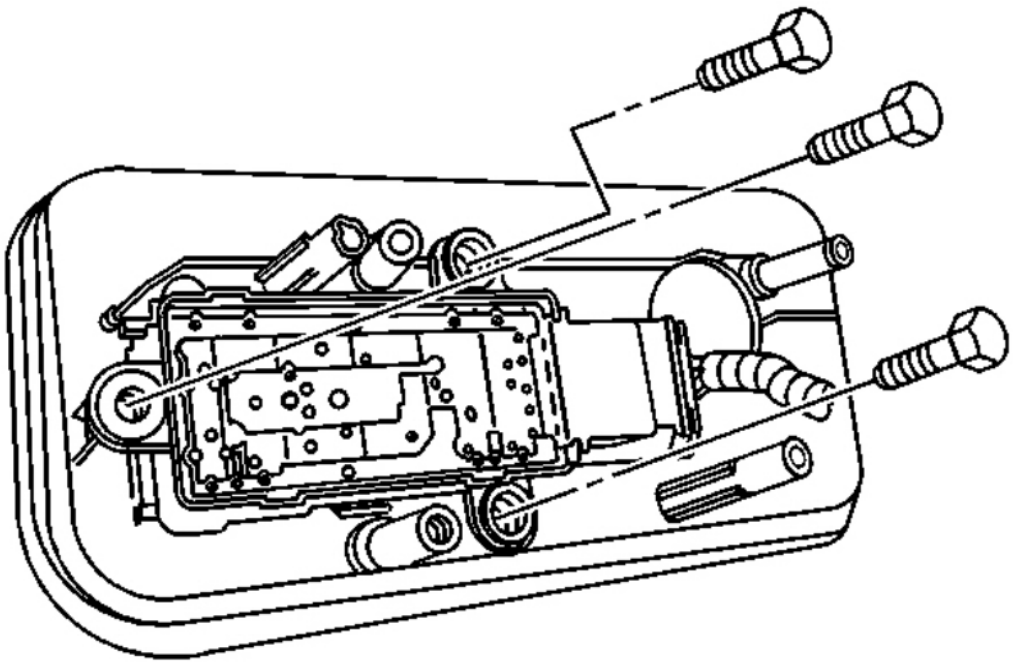


Fig. 85: View Of Power Seat Switch & Screws
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

NOTE: Refer to Fastener Notice in Cautions and Notices.

1. Install the power seat switch to bezel screws.

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

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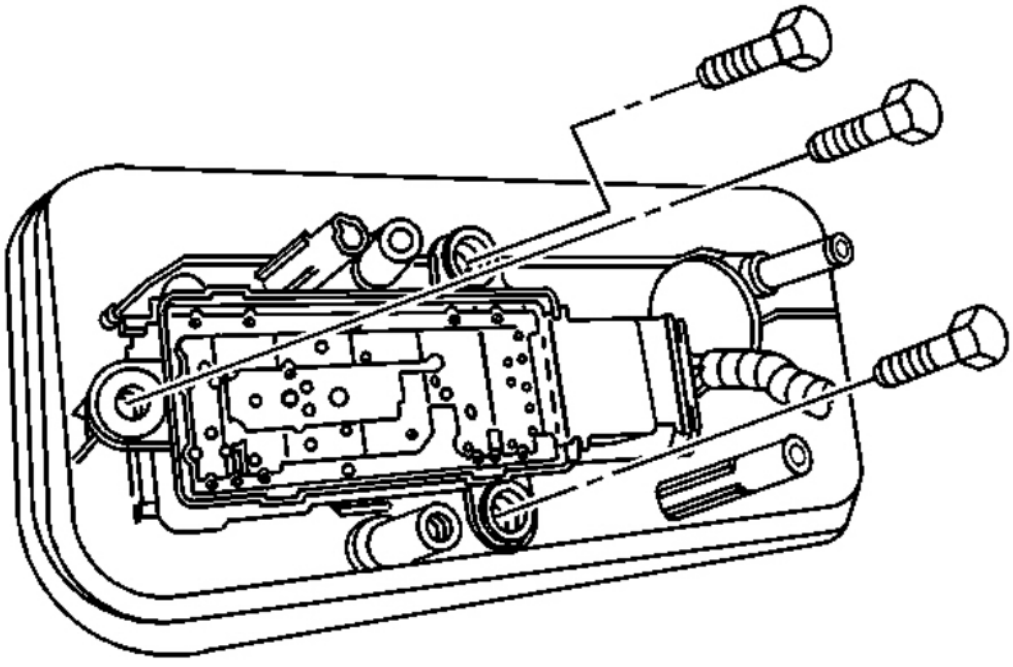


Fig. 86: View Of Power Seat Switch & Screws
Courtesy of GENERAL MOTORS CORP.

2. Install the power seat switch bezel to the seat. Refer to **Seat Switch Bezel Replacement**.

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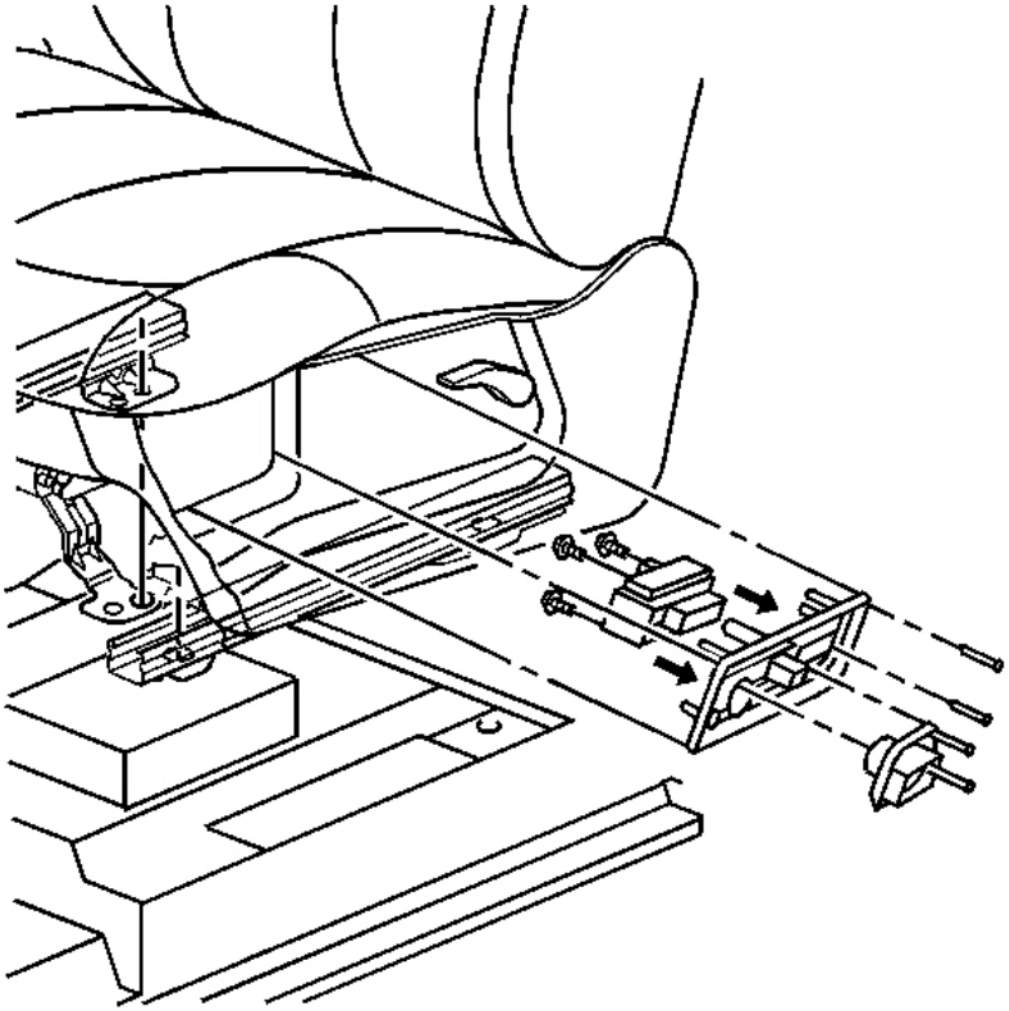


Fig. 87: View Of Seat Switch Bezel
Courtesy of GENERAL MOTORS CORP.

SEAT SWITCH BEZEL REPLACEMENT

Removal Procedure

1. Remove the screws retaining the power seat switch bezel.
2. Disconnect the electrical connectors.
3. Remove the lumbar support switch.
4. Remove the power seat adjuster switch assembly.

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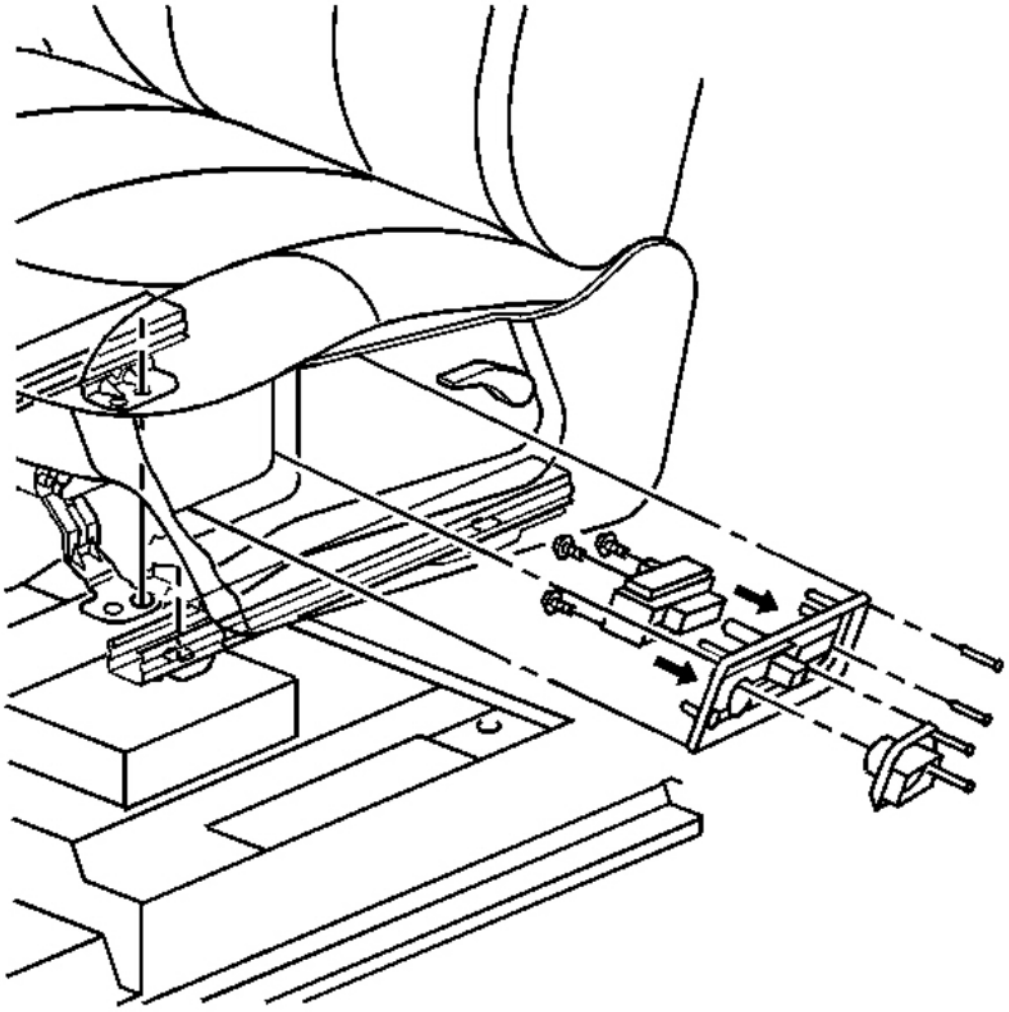


Fig. 88: View Of Seat Switch Bezel
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the power seat adjuster switch assembly to the seat switch bezel.
2. Install the lumbar support switch to the seat switch bezel.
3. Connect the electrical connectors.

NOTE: Refer to Fastener Notice in Cautions and Notices.

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4. Install the screws retaining the power seat switch bezel.

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

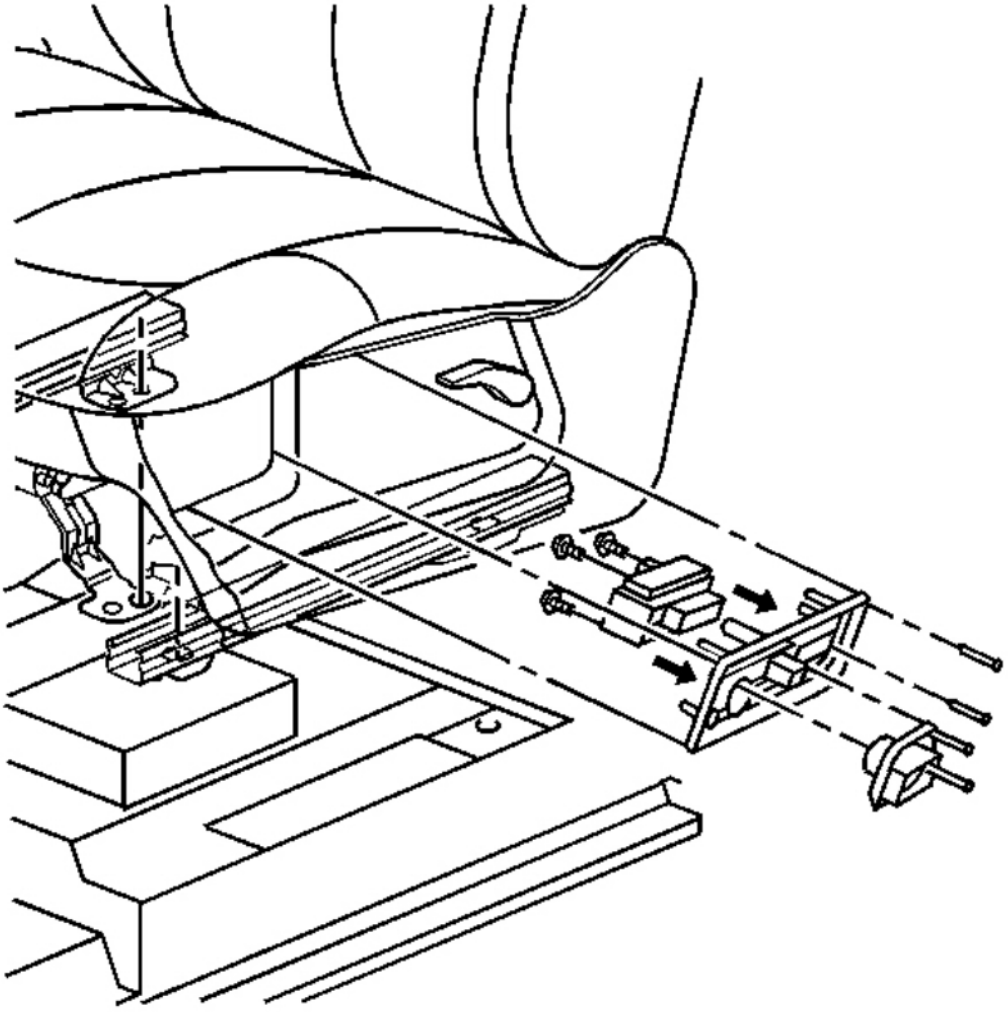


Fig. 89: View Of Seat Switch Bezel
Courtesy of GENERAL MOTORS CORP.

MEMORY SEAT SWITCH REPLACEMENT

Removal Procedure

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1. Remove the front door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)** in Doors.
2. Disconnect the electrical connector.
3. Release the front seat memory switch assembly retaining clips in order to remove the switch.
4. Remove the front seat memory switch assembly.

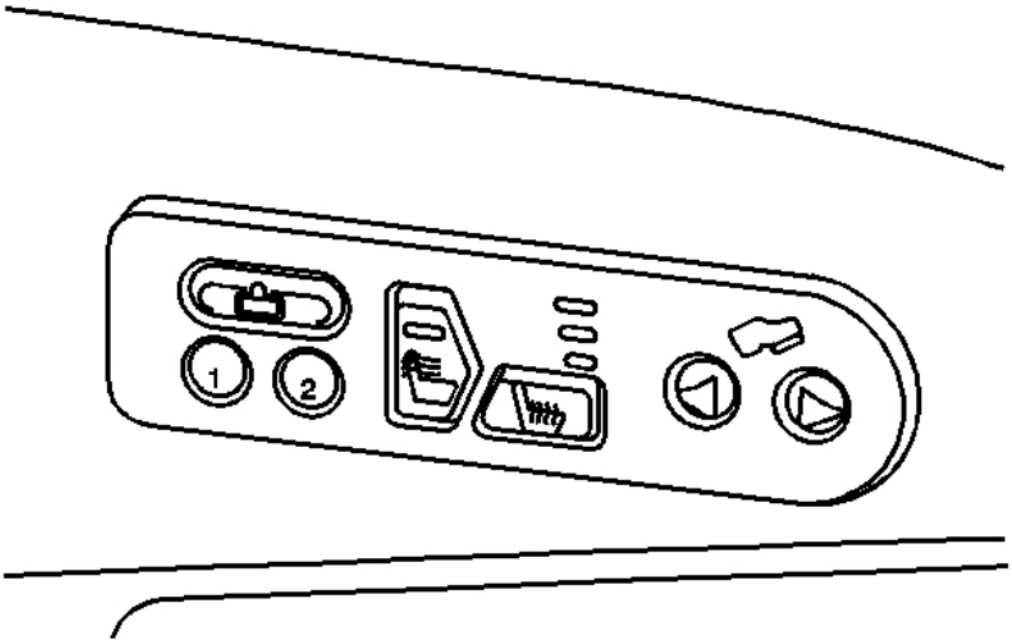


Fig. 90: View Of Front Seat Switch Assembly
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the front seat memory switch assembly to the front trim panel by pressing into place until fully seated.

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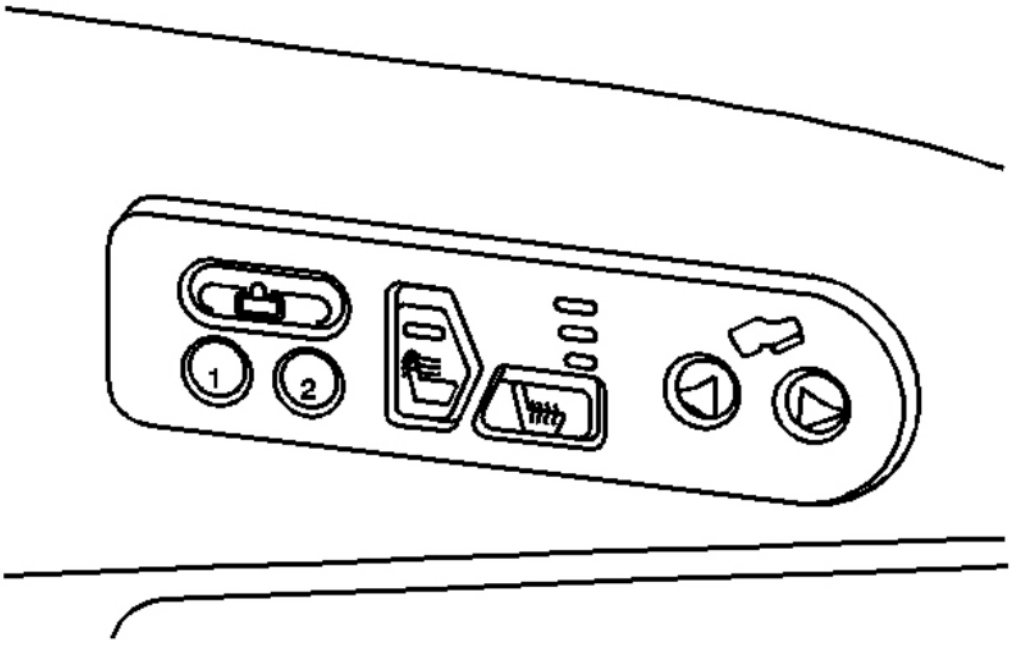


Fig. 91: View Of Front Seat Switch Assembly
Courtesy of GENERAL MOTORS CORP.

2. Connect the electrical connector to the front seat memory switch assembly.
3. Install the front trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)** in Doors.

MEMORY SEAT CONTROL MODULE REPLACEMENT

Removal Procedure

1. Remove the seat cushion. Refer to **Seat Cushion Frame Replacement - Front**.
2. Disconnect the upper electrical harness connectors (3).
3. Remove the module (2) retaining screws (1).

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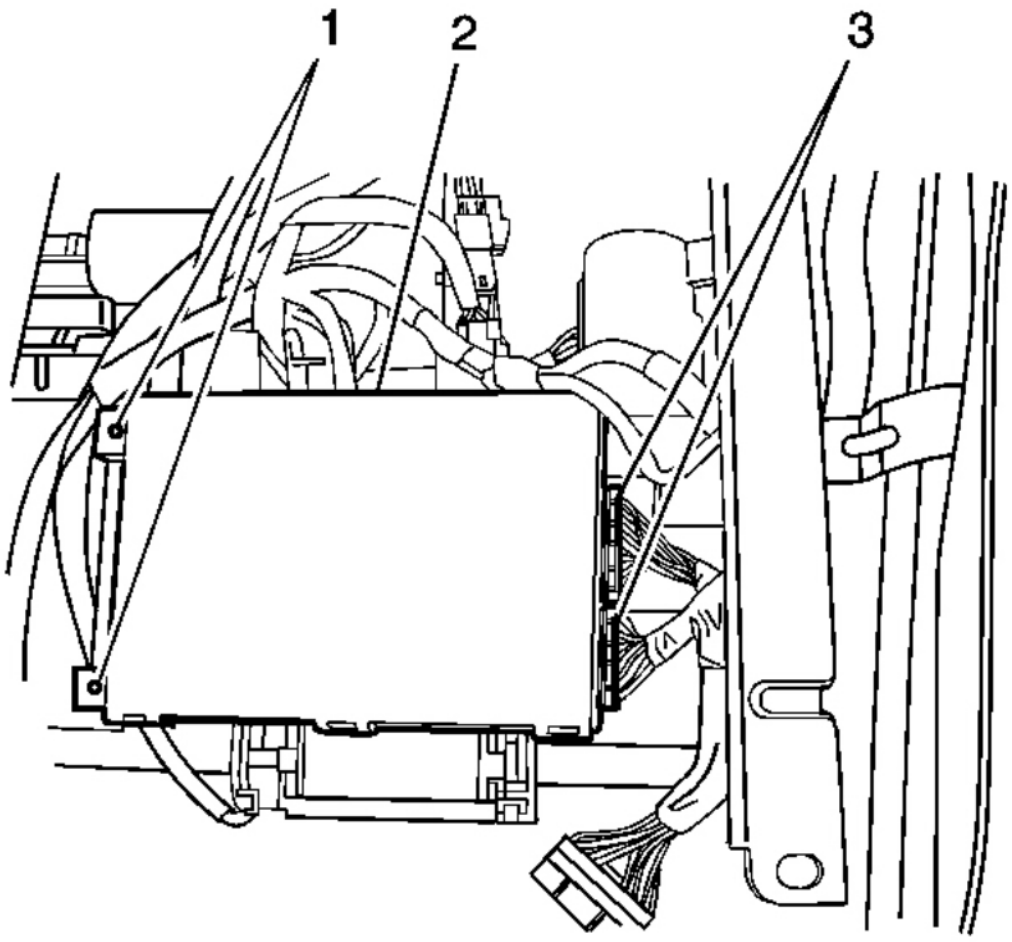


Fig. 92: View Of Memory Seat Control Module Retaining Screws & Upper Electrical Harness Connector
Courtesy of GENERAL MOTORS CORP.

4. Slide the module to the right to disengage the lower retainers.
5. Disconnect the lower electrical harness connectors (2).
6. Remove the module from the vehicle.

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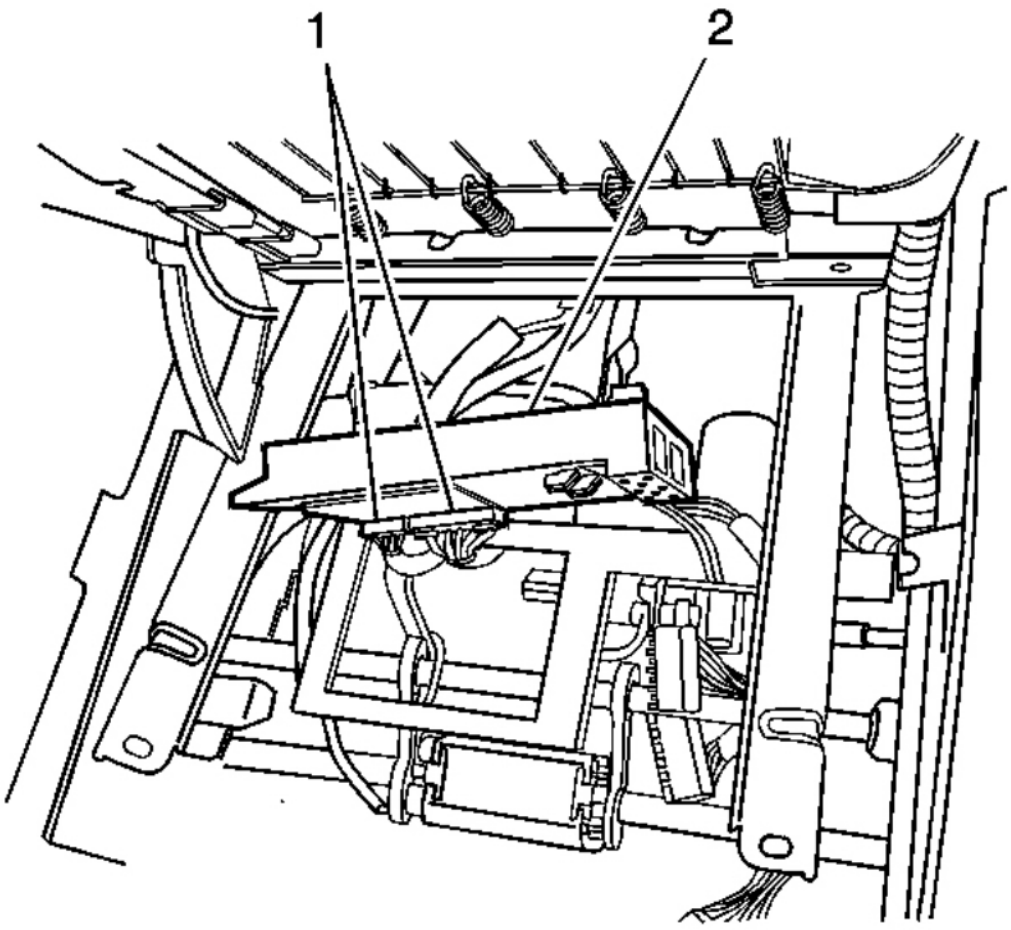


Fig. 93: View Of Memory Seat Control Module & Lower Electrical Harness Connectors
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the module into the vehicle.
2. Connect the lower electrical harness connectors (2).

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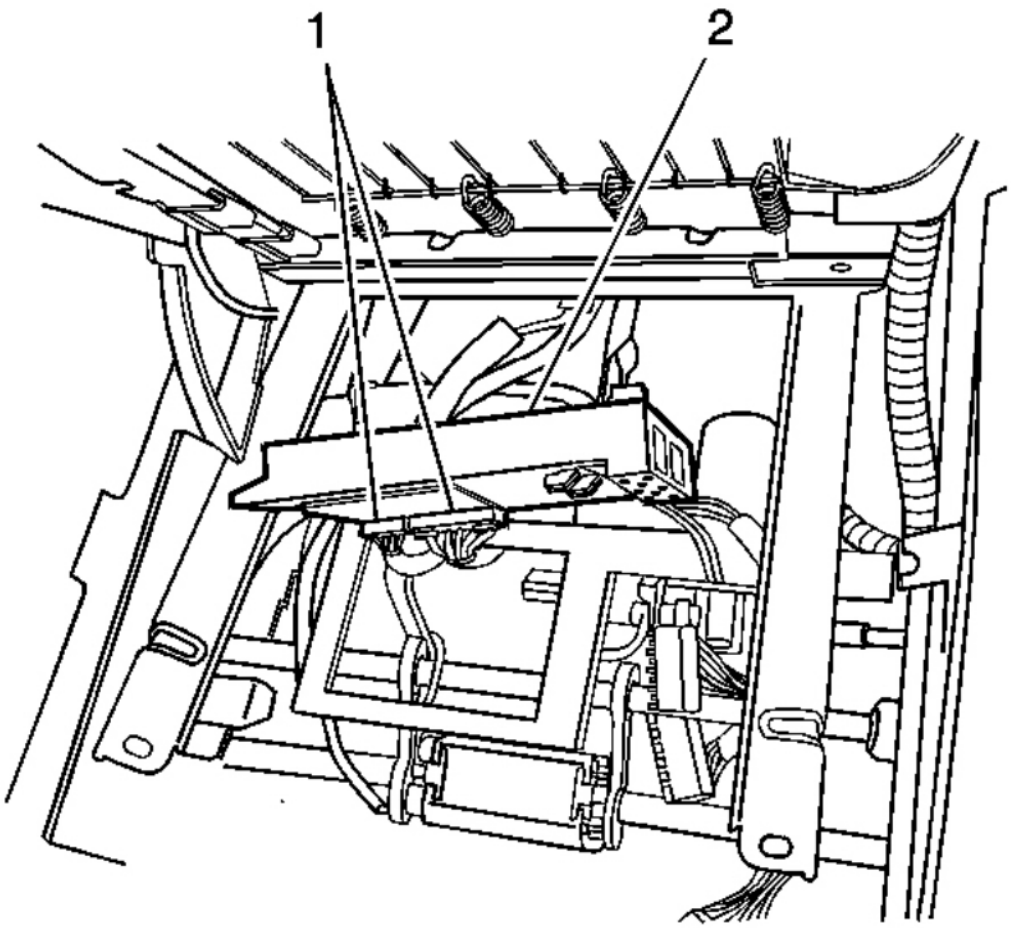


Fig. 94: View Of Memory Seat Control Module & Lower Electrical Harness Connectors
Courtesy of GENERAL MOTORS CORP.

3. Slide the module (2) to the left to engage the lower retainers.

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the module retaining screws (3).

Tighten: Tighten the screws to 3 N.m (26 lb in).

5. Connect the upper electrical harness connectors (3).

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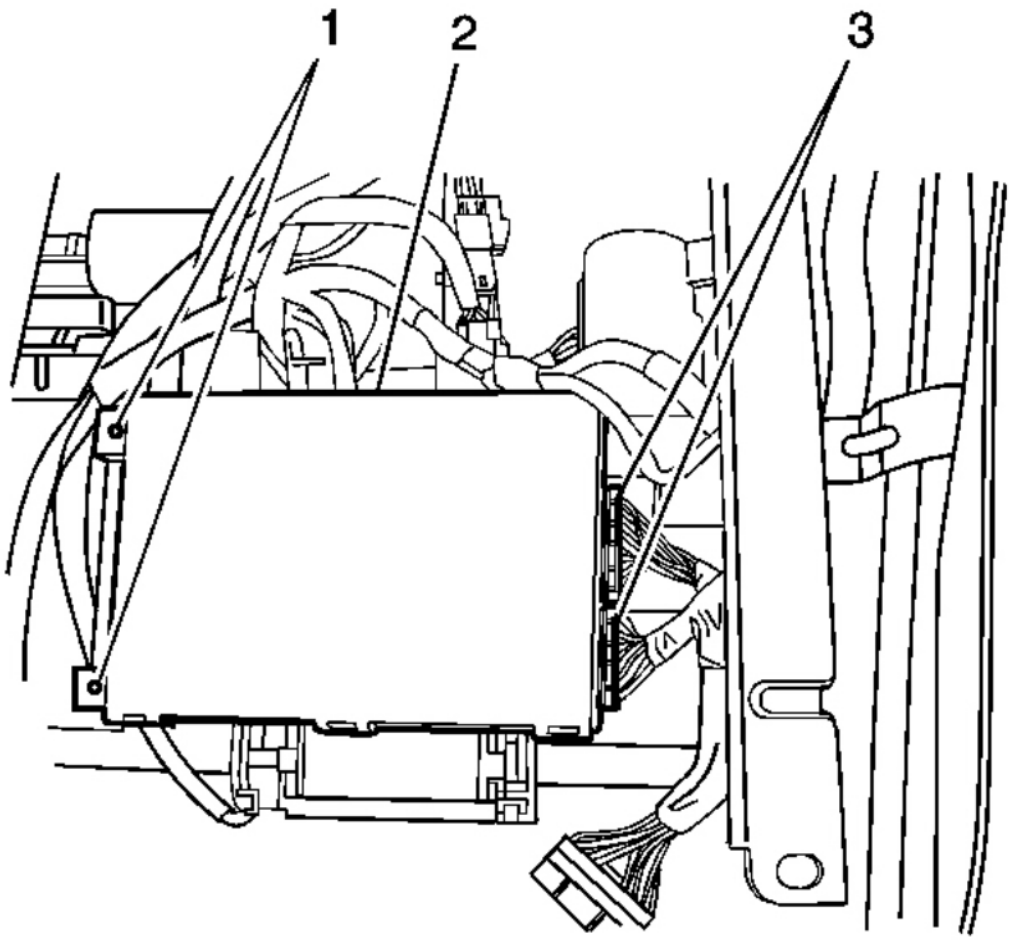


Fig. 95: View Of Memory Seat Control Module Retaining Screws & Upper Electrical Harness Connector
Courtesy of GENERAL MOTORS CORP.

6. Install the seat cushion. Refer to **Seat Cushion Frame Replacement - Front**.
7. If a new memory seat module was installed, 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 motor soft stop locations. When the repair procedure has been completed, operate the seat adjuster switch in every direction until the seat adjuster reaches

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its mechanical hard stop by repeatedly pressing and releasing the switch as necessary.

HEATED SEAT SWITCH REPLACEMENT - FRONT

Removal Procedure

1. Remove the front door trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)** in Doors.
2. Disconnect the electrical connector.
3. Release the retaining clips for the front seat heater switch assembly in order to remove the switch.
4. Remove the front seat heater switch assembly.

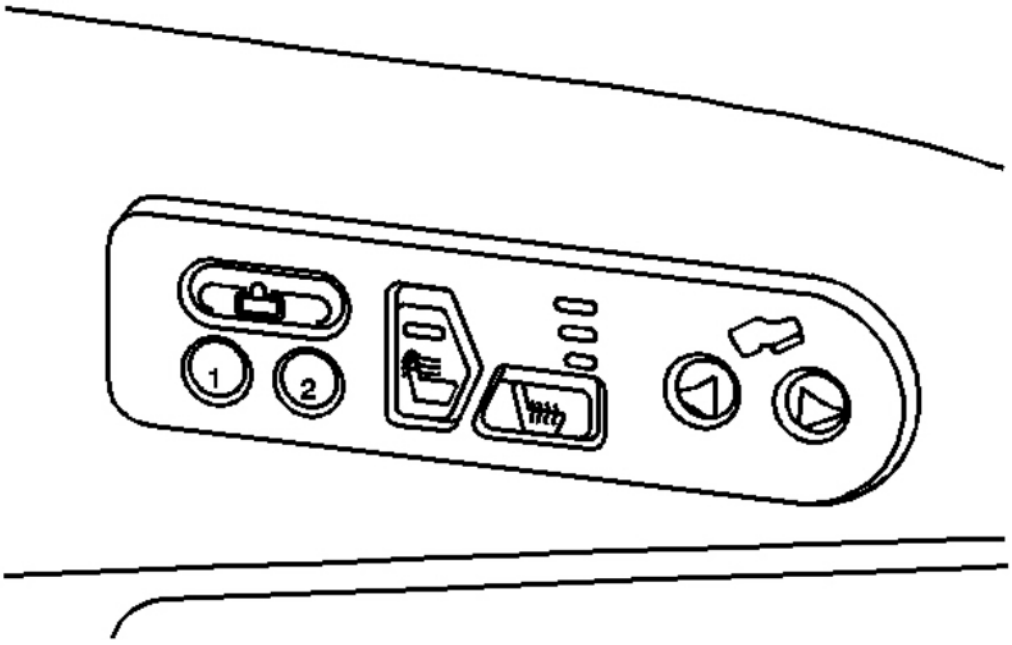


Fig. 96: View Of Front Seat Switch Assembly
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the front seat heater switch assembly to the front trim panel by pressing the switch into place until the switch is completely seated.

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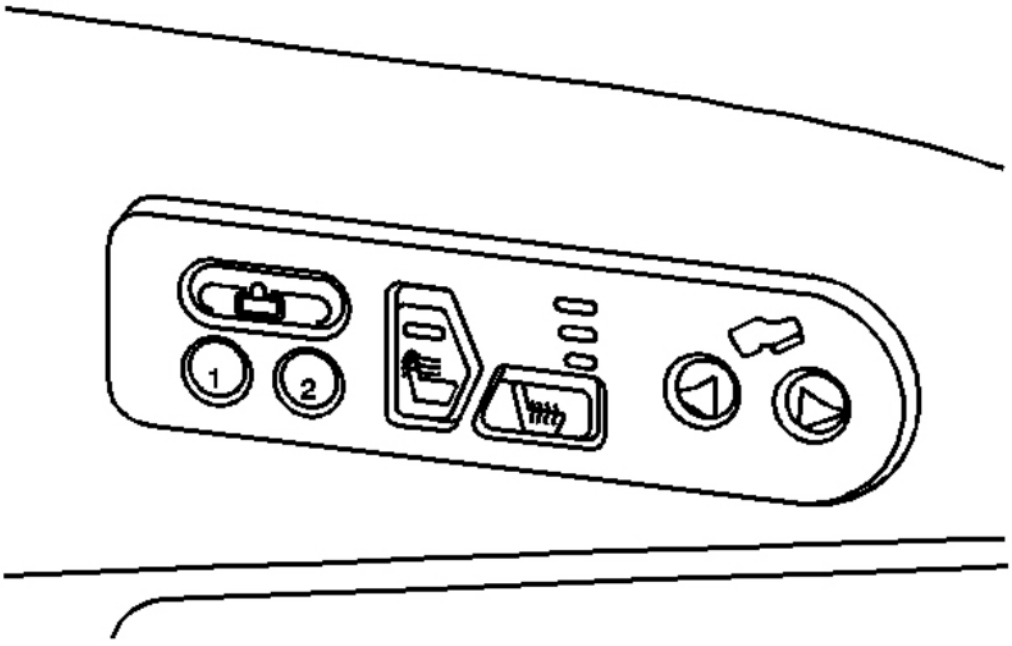


Fig. 97: View Of Front Seat Switch Assembly
Courtesy of GENERAL MOTORS CORP.

2. Connect the electrical connector to the front seat heater switch assembly.
3. Install the front trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)** in Doors.

HEATED AND COOLED SEAT SWITCH REPLACEMENT (FRONT-PLATINUM MODELS)

Removal Procedure

1. Remove the floor console bezel. Refer to **Bezel Replacement - Floor Console (Non-Luxury Upper)** or **Bezel Replacement - Floor Console (Luxury Upper)** .
2. Remove the 4 retaining screws (1).
3. Remove the switch assembly from the console bezel.

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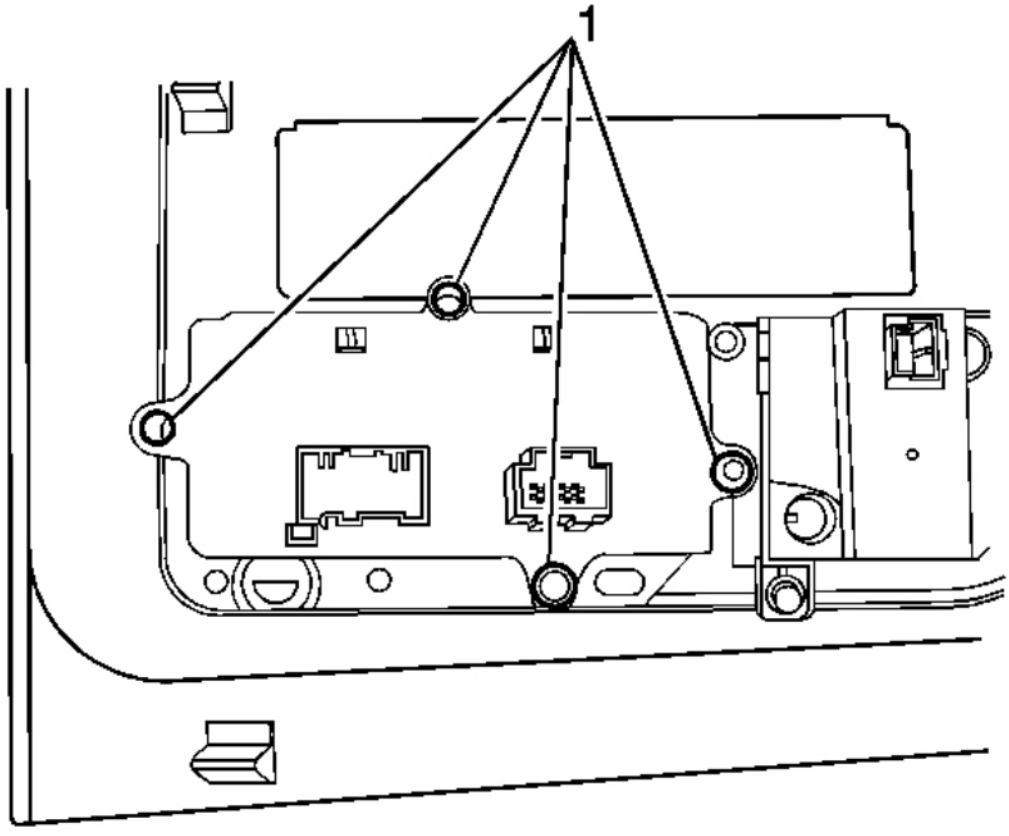


Fig. 98: View Of Heated & Cooled Seat Switch Assembly Retaining Screws (Front-Platinum Models)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the switch assembly to the bezel.

   NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the 4 retaining screws (1).

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

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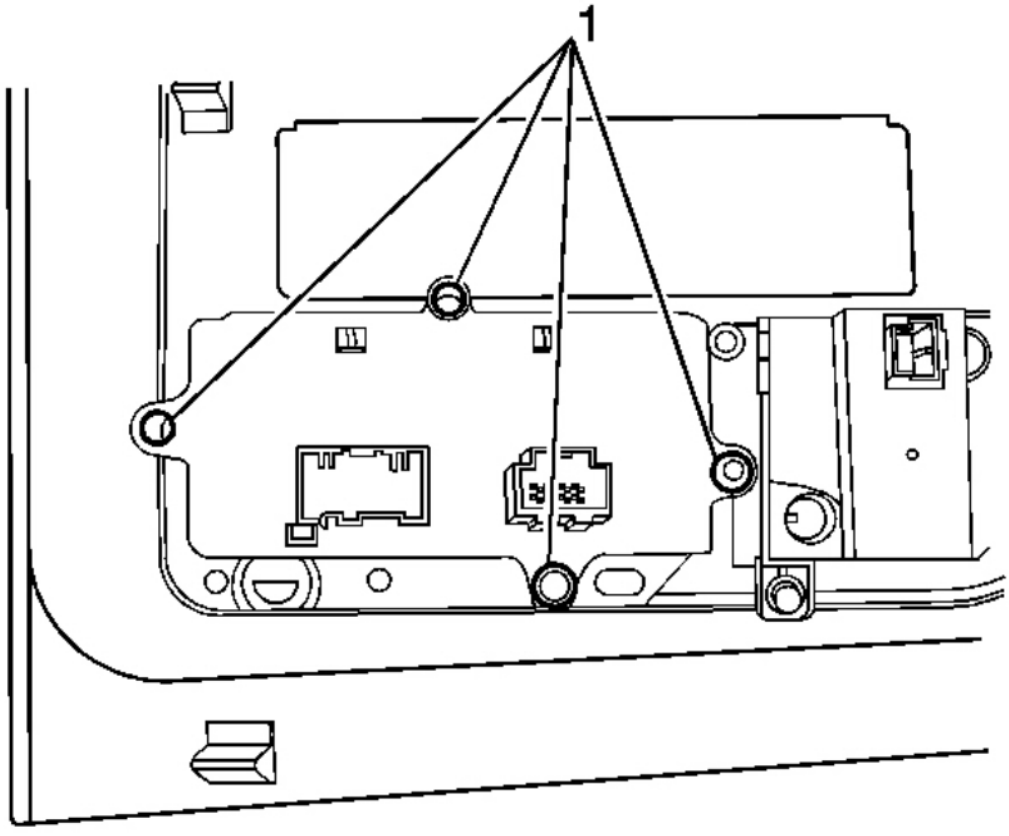


Fig. 99: View Of Heated & Cooled Seat Switch Assembly Retaining Screws (Front-Platinum Models)
Courtesy of GENERAL MOTORS CORP.

3. Install the floor console bezel. Refer to **Bezel Replacement - Floor Console (Non-Luxury Upper)** or **Bezel Replacement - Floor Console (Luxury Upper)** .

HEATED AND COOLED SEAT SWITCH REPLACEMENT (REAR-PLATINUM MODELS)

Removal Procedure

1. Insert a flat bladed tool on either side of the switch in order to pry outwards.
2. Pull the switch out to gain access to the wire connector.
3. Disconnect the wire connector.

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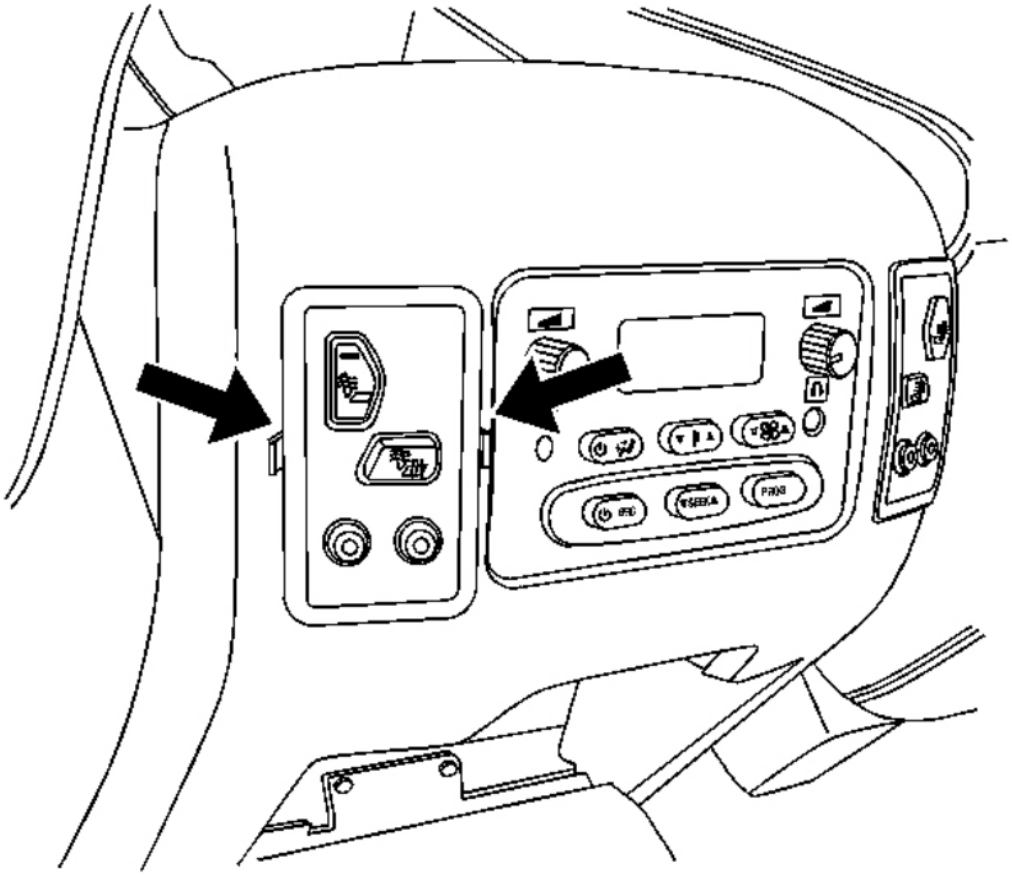


Fig. 100: View Of Heated & Cooled Seat Switch (Rear-Platinum Models)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the wire connector to the switch.
2. Install the switch into the opening until it clicks in places.

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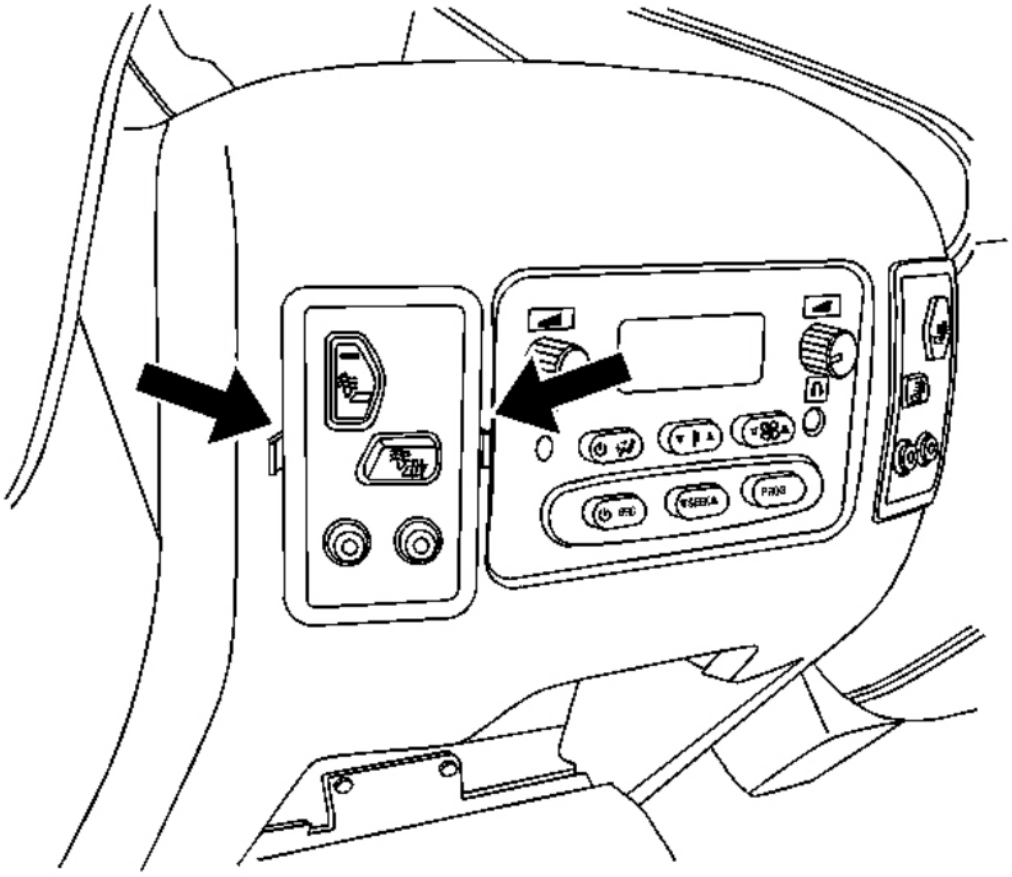


Fig. 101: View Of Heated & Cooled Seat Switch (Rear-Platinum Models)
Courtesy of GENERAL MOTORS CORP.

SEAT BACK HEATER ELEMENT REPLACEMENT - FRONT

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Front Bucket**.
2. Remove the seat back trim cover. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)** or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.
3. Peel the seat back heater off the foam pad.

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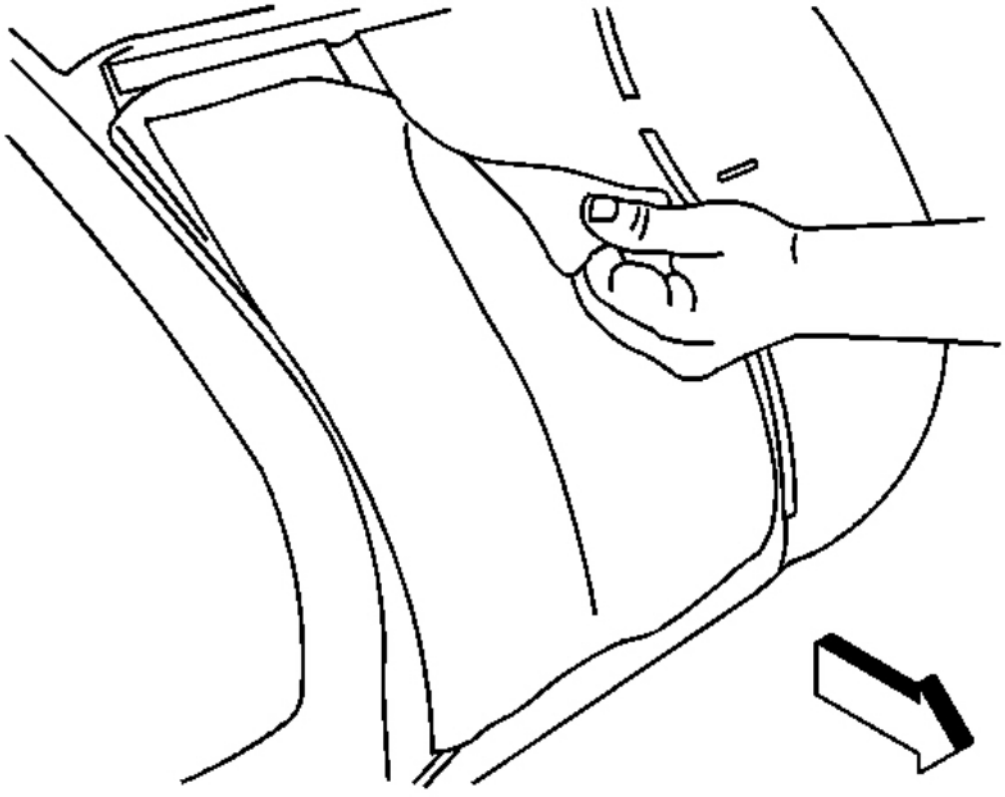


Fig. 102: Peeling Front Seat Back Heater Element Off Foam Pad
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the seat back heater harness.

Installation Procedure

1. Connect the seat back heater harness.
2. Install the seat back heater.

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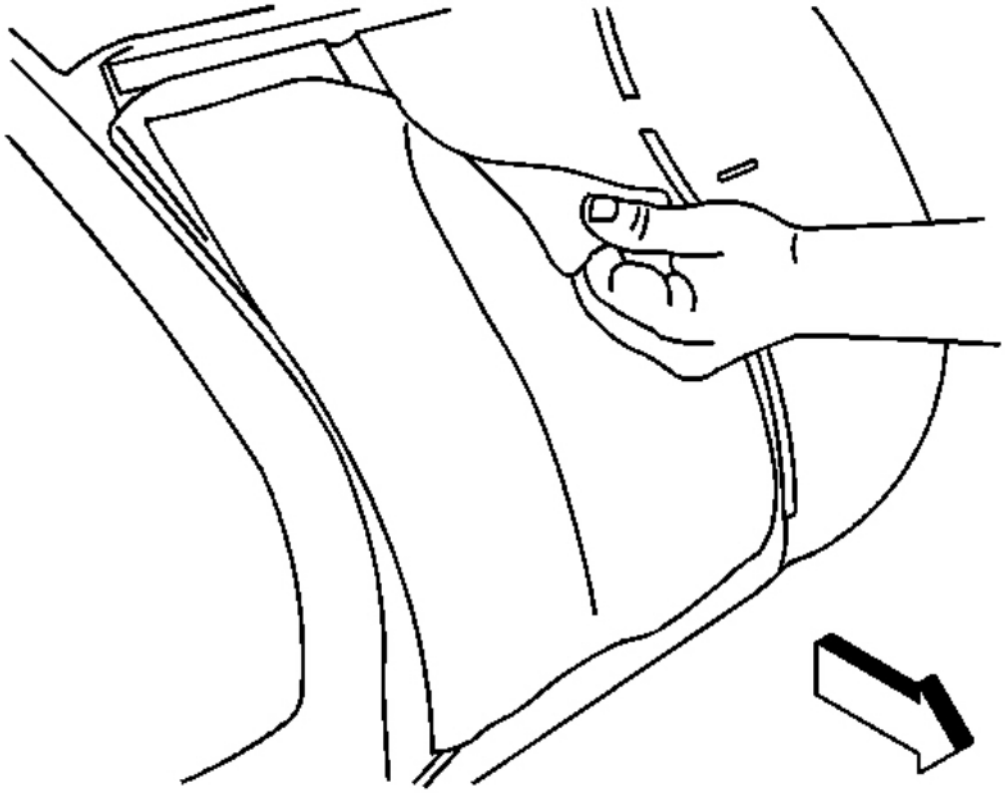


Fig. 103: Installing Front Seat Back Heater Element
Courtesy of GENERAL MOTORS CORP.

3. Install the seat back trim cover. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)** or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.
4. Install the seat in the vehicle. Refer to **Seat Replacement - Front Bucket**.

SEAT CUSHION HEATER ELEMENT REPLACEMENT - FRONT

Removal Procedure

CAUTION: If the passenger seat cushion foam is damaged when you remove the heater element, replace the passenger presence system in order to prevent personal injury.

1. Remove the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
2. Remove the seat cushion trim cover. Refer to **Seat Cushion Trim Cover and Pad Replacement**.

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3. Peel the seat cushion heater off of the pad.

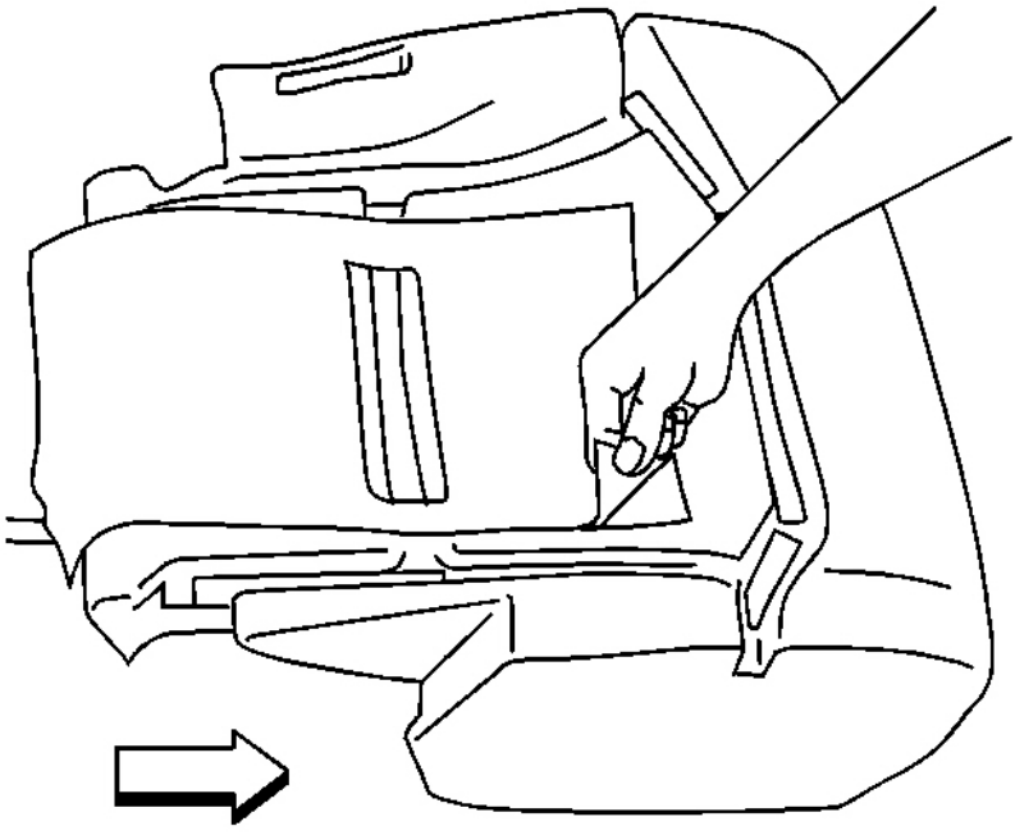


Fig. 104: Peeling Seat Cushion Heater Off Pad
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the seat cushion heater wiring harness.

Installation Procedure

1. Replace the inflatable restraint passenger presence system if the passenger seat cushion foam is damaged. Refer to **Inflatable Restraint Passenger Presence System Replacement - Front** in SIR.
2. Connect the cushion heater wiring harness.
3. Install the seat cushion heater.

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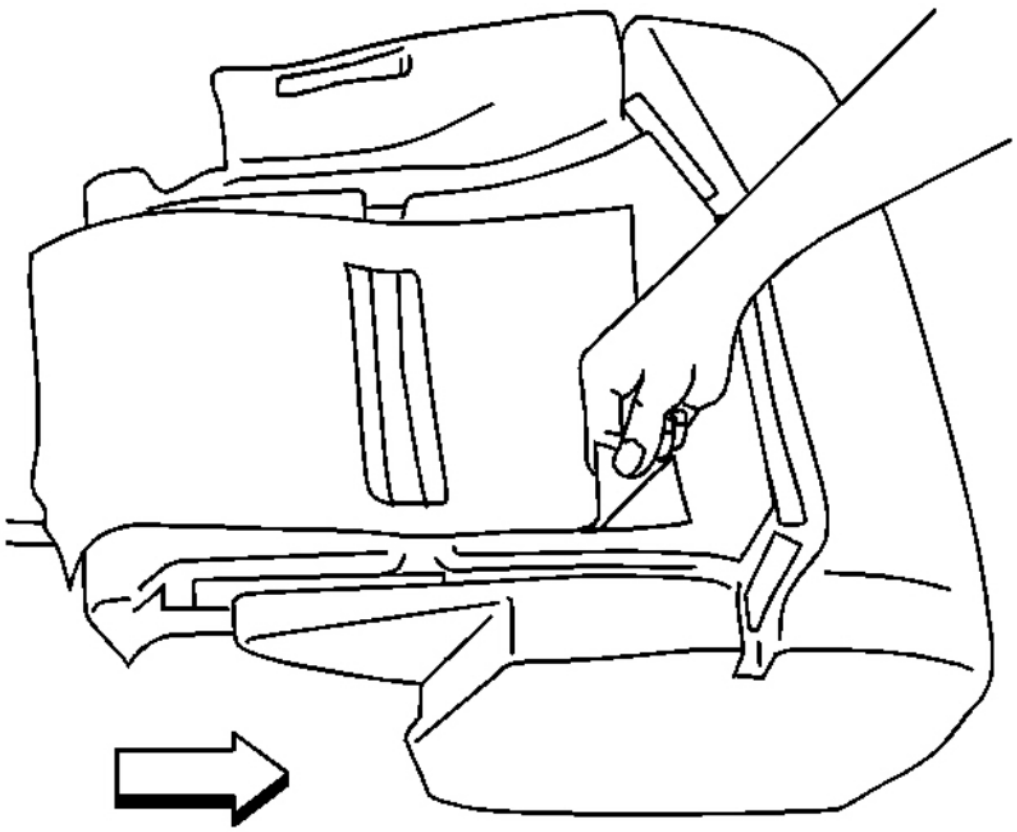


Fig. 105: Installing Seat Cushion Heater
Courtesy of GENERAL MOTORS CORP.

4. Install the seat cushion trim cover. Refer to **Seat Cushion Trim Cover and Pad Replacement**.
5. Install the seat trim panel. Refer to **Trim Panel Replacement - Front Seat**.
6. Re-zero the inflatable restraint passenger presence system for the front passenger seat. Refer to **Passenger Presence System Rezeroing Procedure** in SIR.

MODULE REPLACEMENT - SEAT CLIMATE CONTROL - FRONT SEAT

Removal Procedure

1. Remove the front seat cushion assembly. Refer to **Seat Cushion Frame Replacement - Front**.
2. Disconnect the climate control module electrical connectors.
3. Remove the screw (1) retaining the module bracket to the seat cushion frame.
4. Remove the bracket and module assembly from the cushion assembly.

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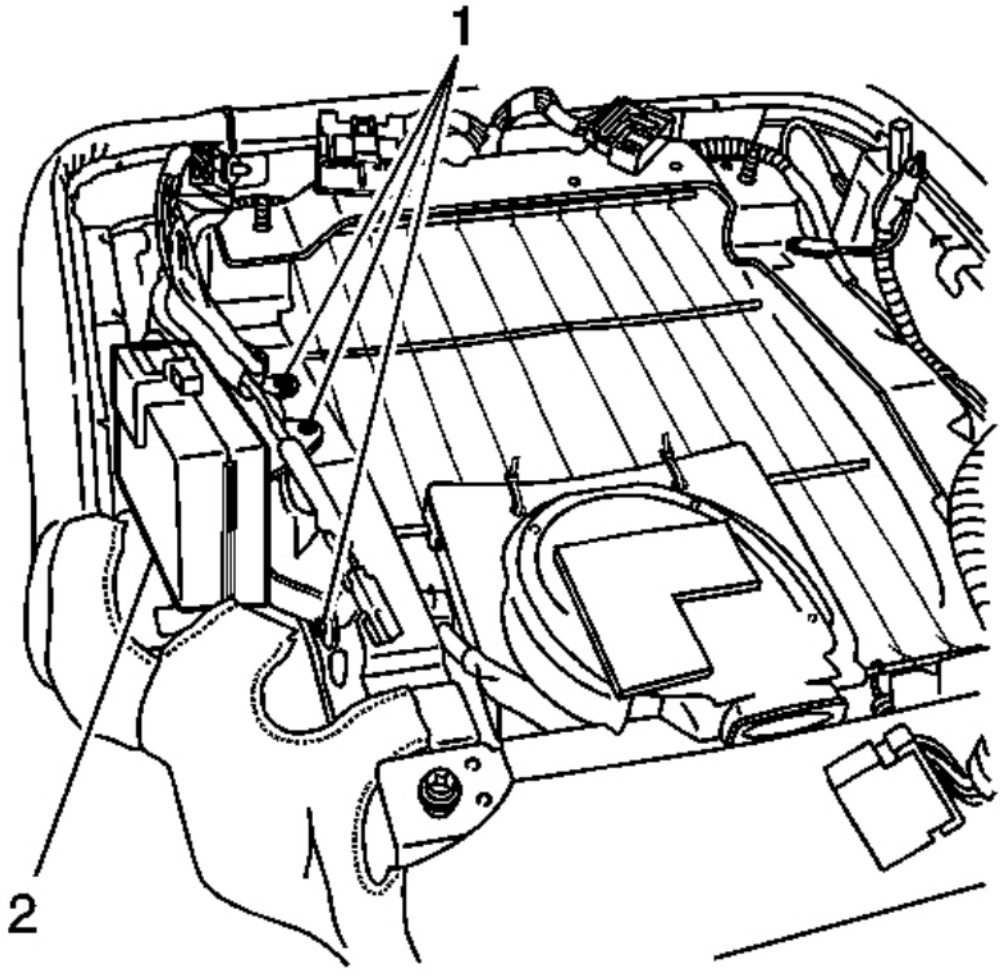


Fig. 106: View Of Seat Climate Control Module Bracket & Screw
Courtesy of GENERAL MOTORS CORP.

5. Remove the screws (1) retaining the module (2) to the module bracket (3).

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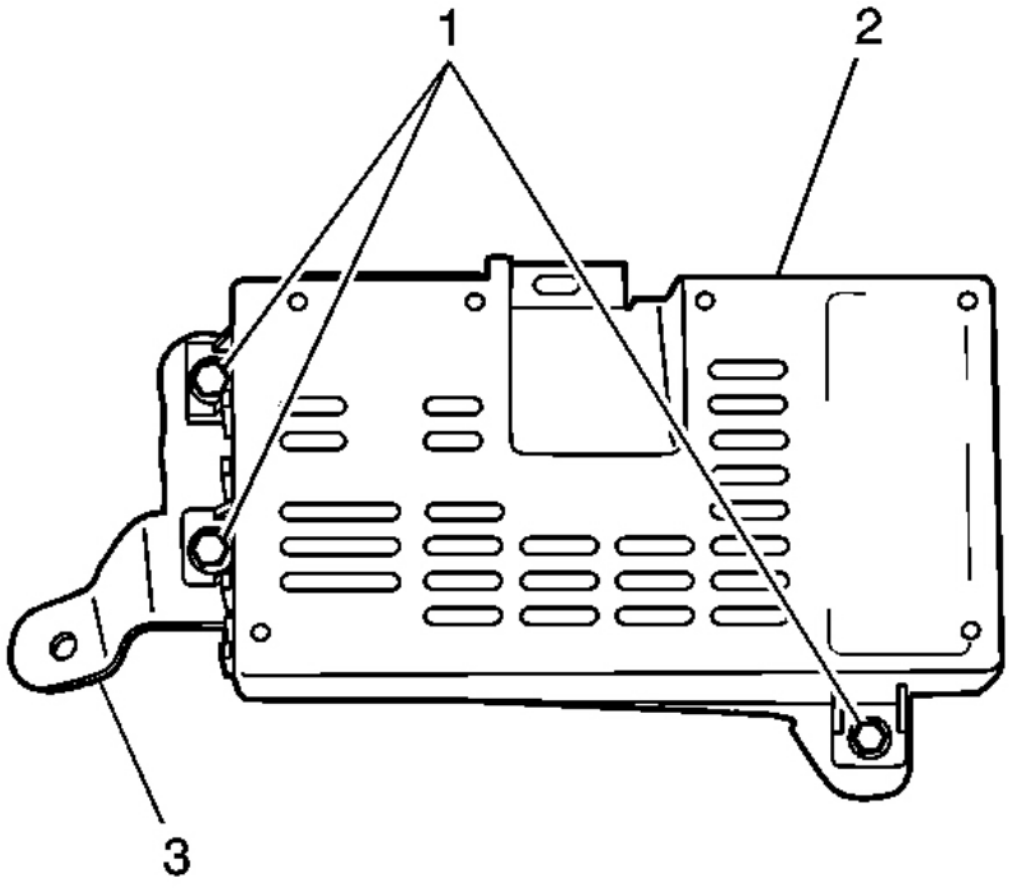


Fig. 107: View Of Seat Climate Control Module & Screws
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the module (2) to the bracket (3).

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

2. Install the screws (1).

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

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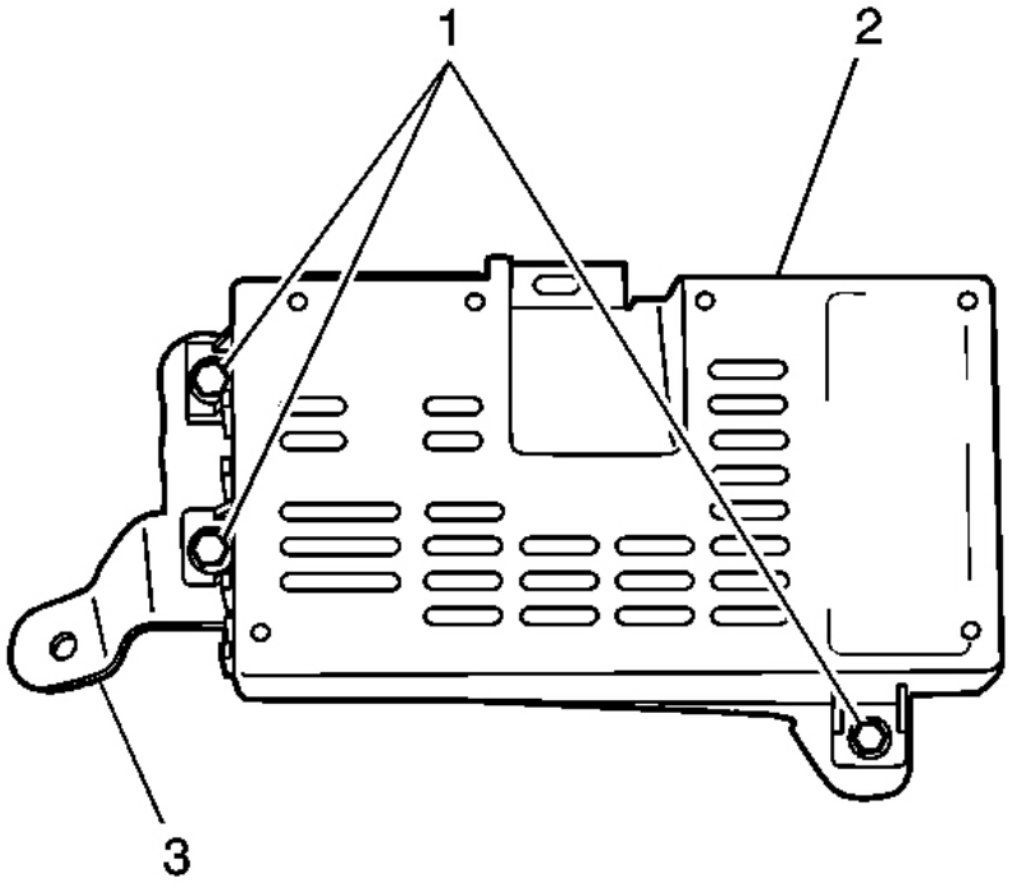


Fig. 108: View Of Seat Climate Control Module & Screws
Courtesy of GENERAL MOTORS CORP.

3. Position the module and bracket assembly to the seat cushion frame.
4. Install the screws (1).

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

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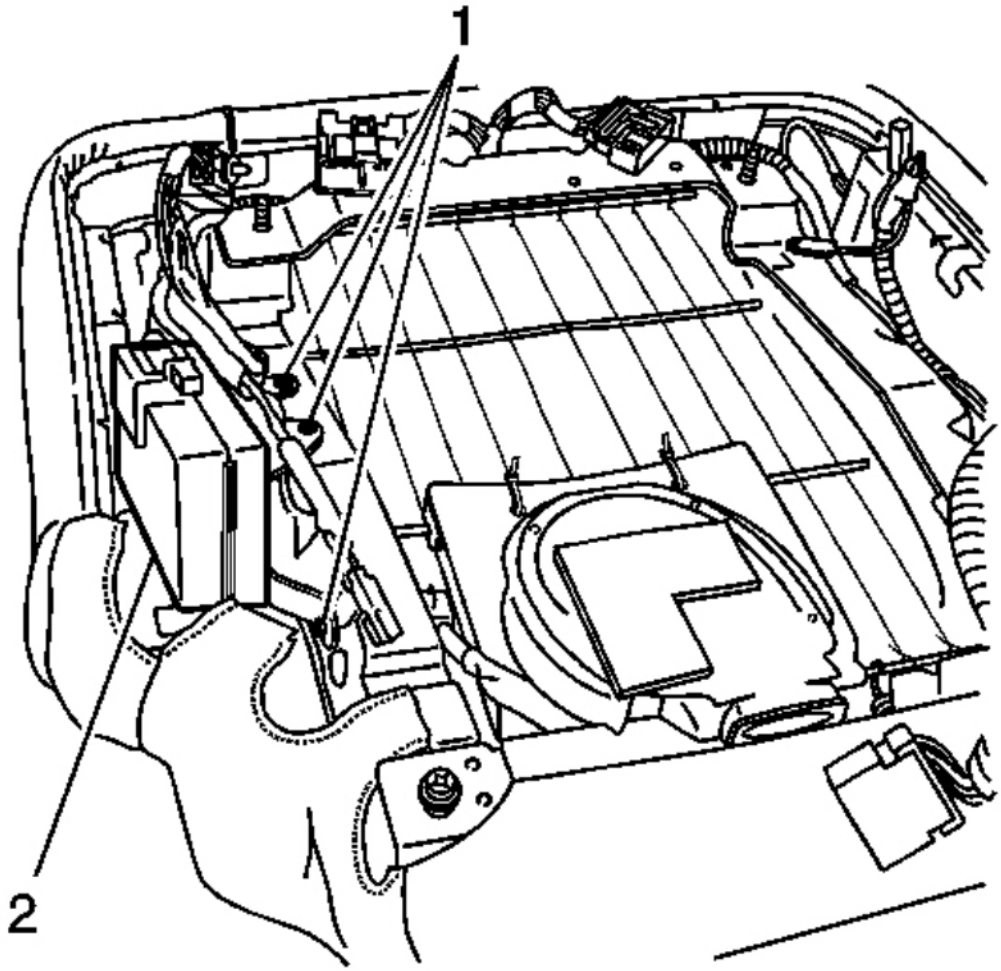


Fig. 109: View Of Seat Climate Control Module Bracket & Screw
Courtesy of GENERAL MOTORS CORP.

5. Connect the climate control module electrical connector.
6. Install the front seat cushion. Refer to **Seat Cushion Frame Replacement - Front**.

FILTER REPLACEMENT - FRONT SEAT CUSHION

Removal Procedure

1. Remove the seat cushion. Refer to **Seat Cushion Frame Replacement - Front**.
2. Remove the filter (2) from the module.

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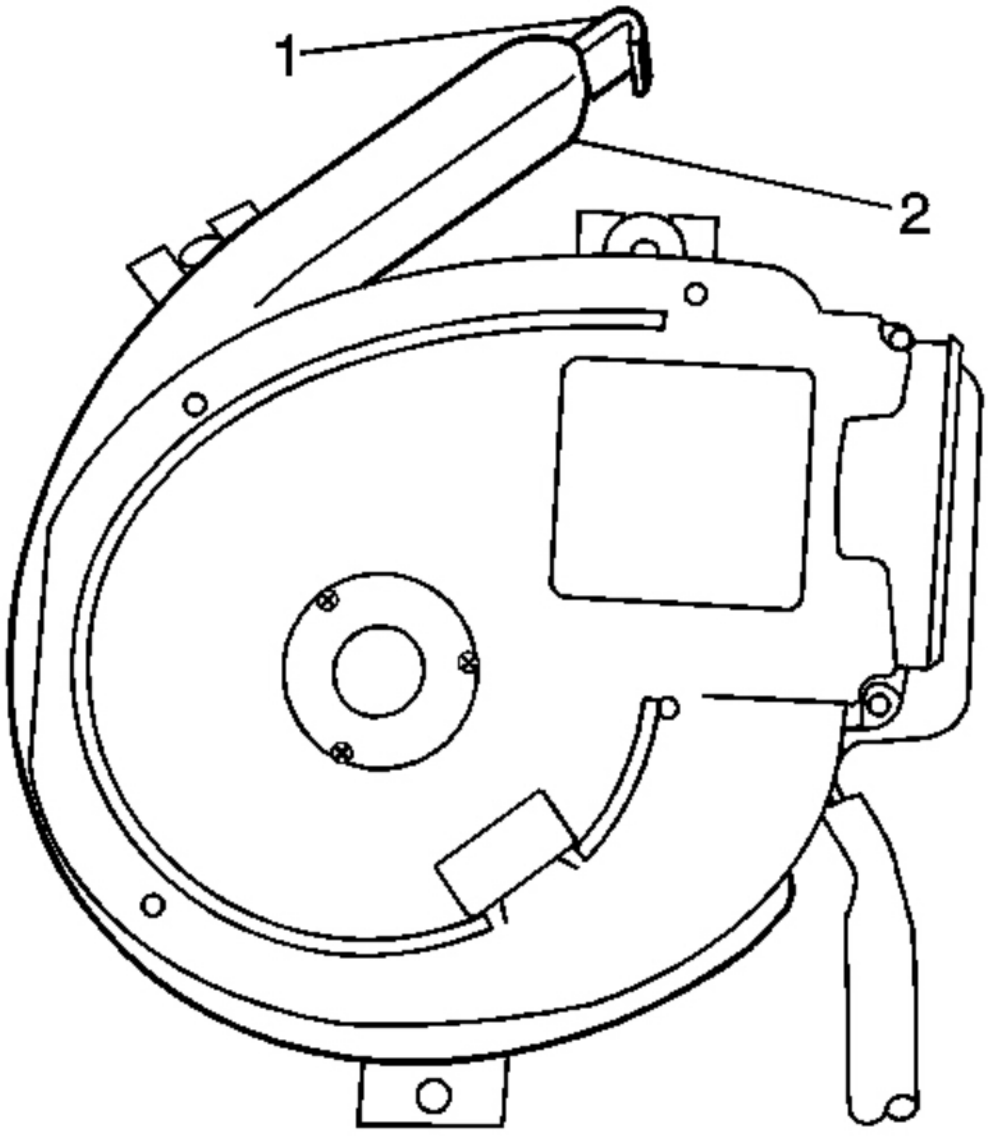


Fig. 110: View Of Seat Filter
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the filter (2) from the module.

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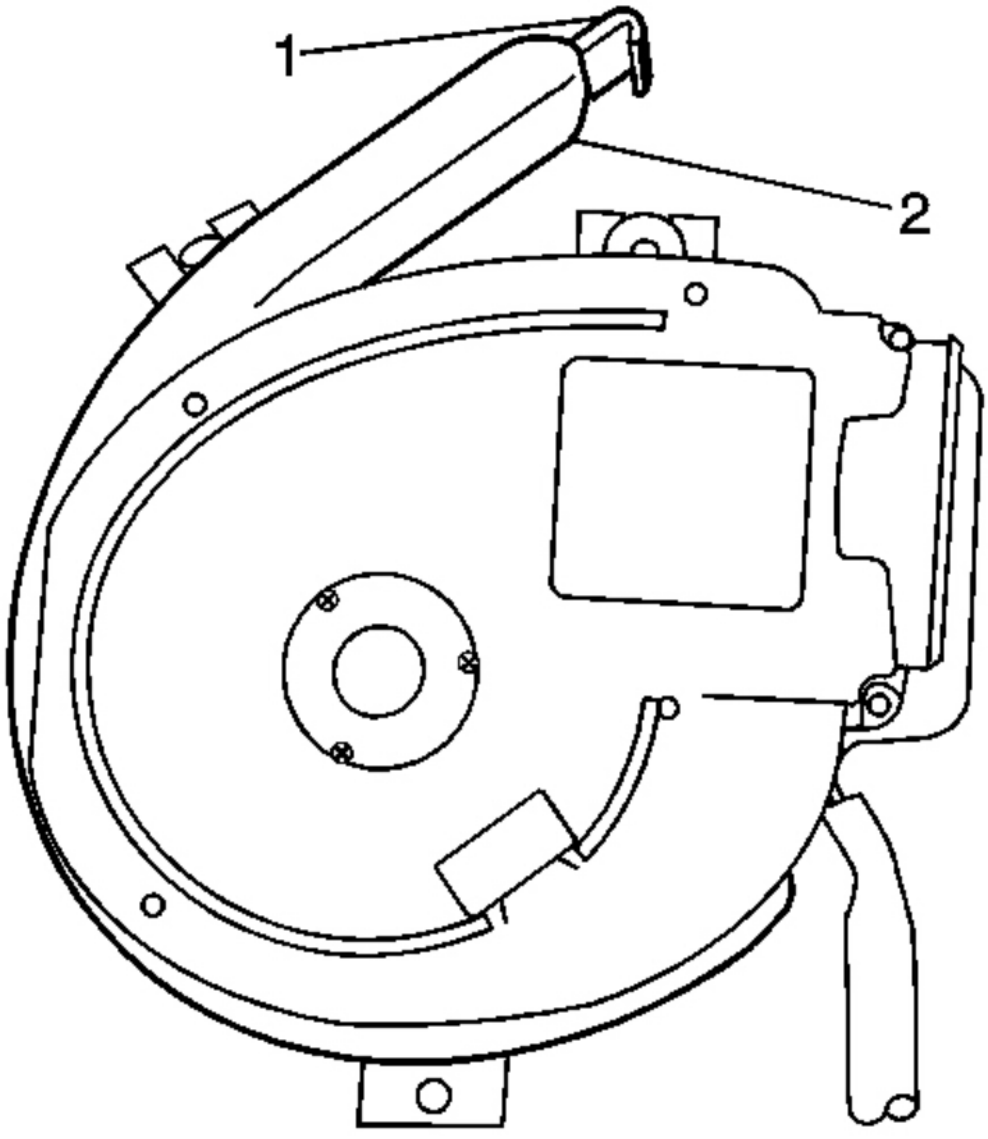


Fig. 111: View Of Seat Filter
Courtesy of GENERAL MOTORS CORP.

2. Remove the seat cushion. Refer to **Seat Cushion Frame Replacement - Front**.

FILTER REPLACEMENT - FRONT SEAT BACK

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Removal Procedure

1. Remove the seat back trim cover. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)** or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.
2. Remove the cardboard backer from the seat back frame.
    1. Use a razor blade, cut the adhesive securing the seat back foam to the cardboard.
    2. Lift the foam back foam over the head restraint tubes in the seat back frame.
    3. Remove the push-pin fasteners (1) securing the blower duct to the cardboard backer (2).
    4. Remove the cardboard backer from the seat back frame.

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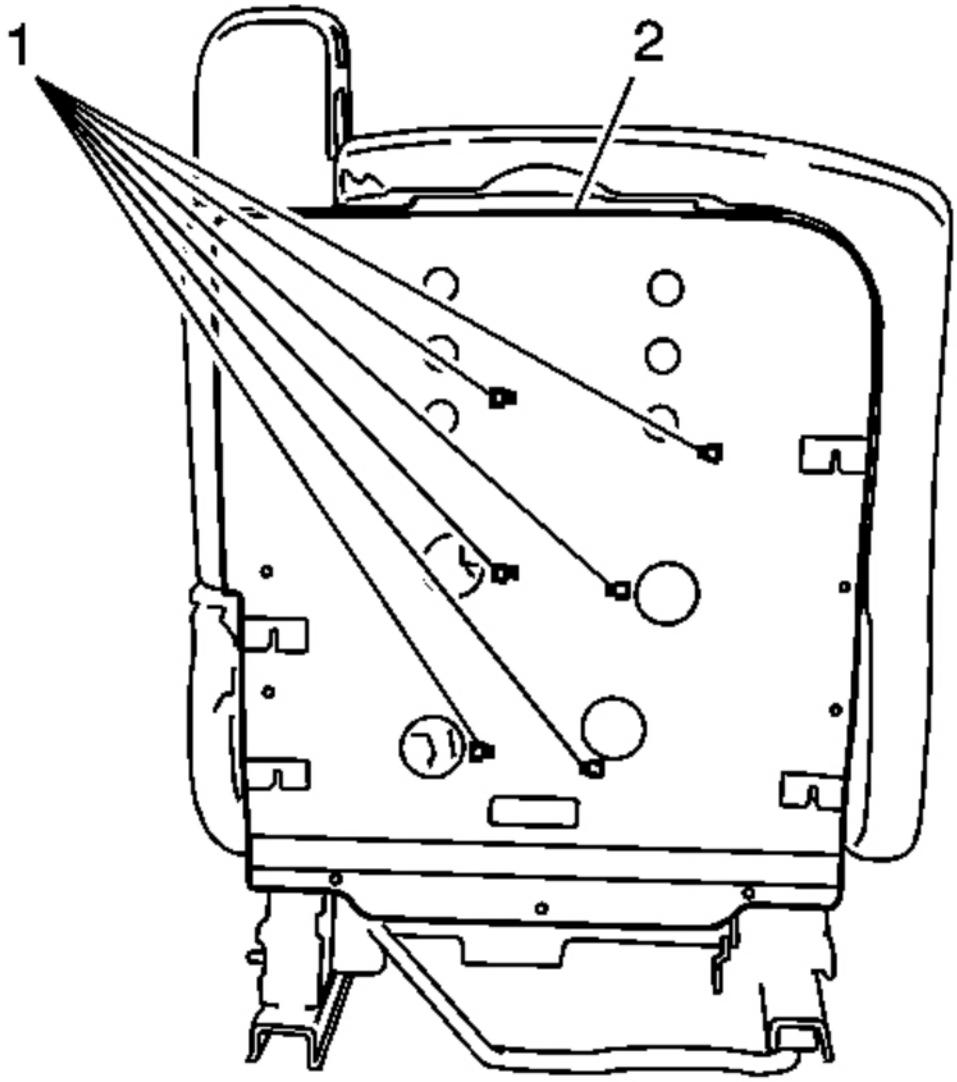


Fig. 112: View Of Cardboard Backer & Push-Pin Fasteners
Courtesy of GENERAL MOTORS CORP.

3. Remove the filter (2) from the ventilation heat and cool blower.

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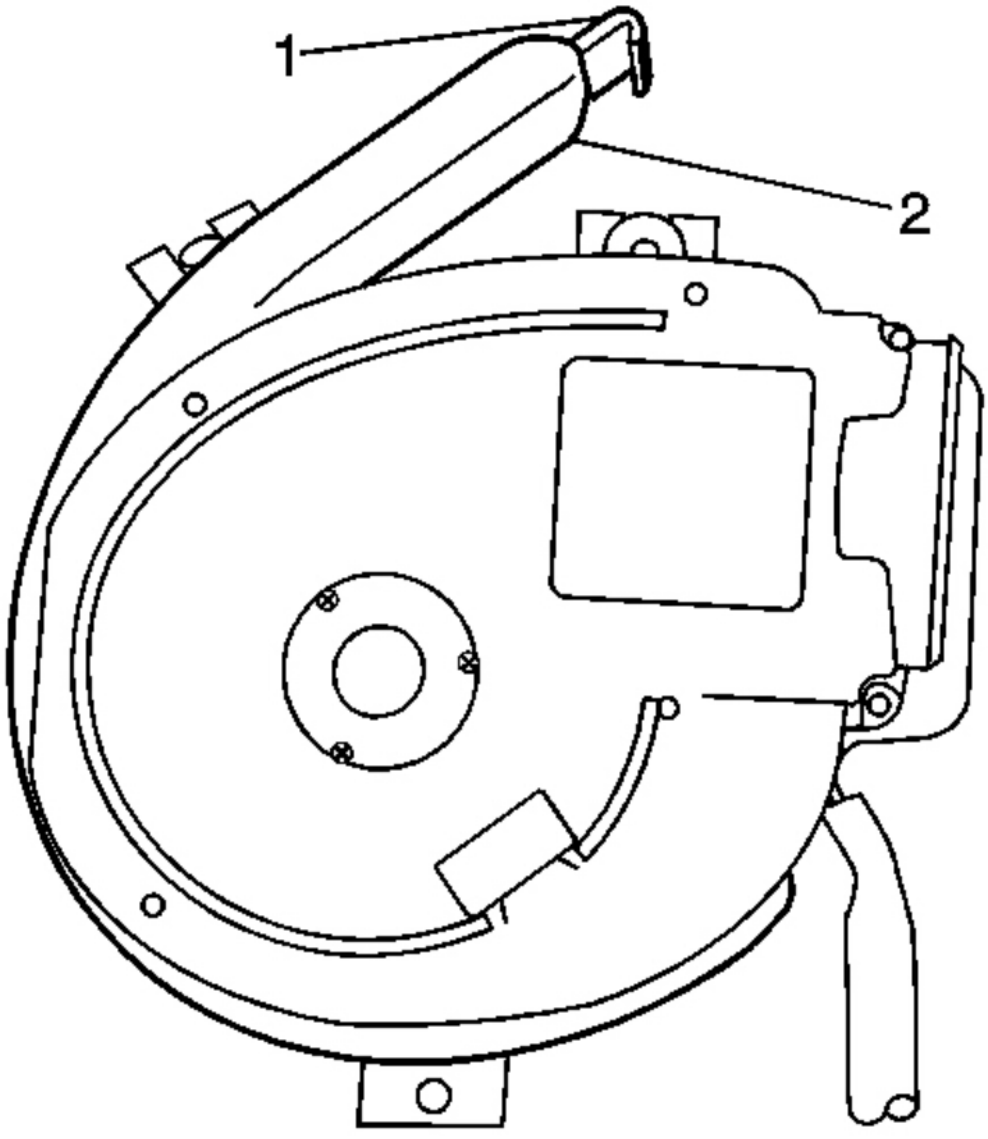


Fig. 113: View Of Seat Filter
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the filter (2) to the ventilation heat and cool blower.

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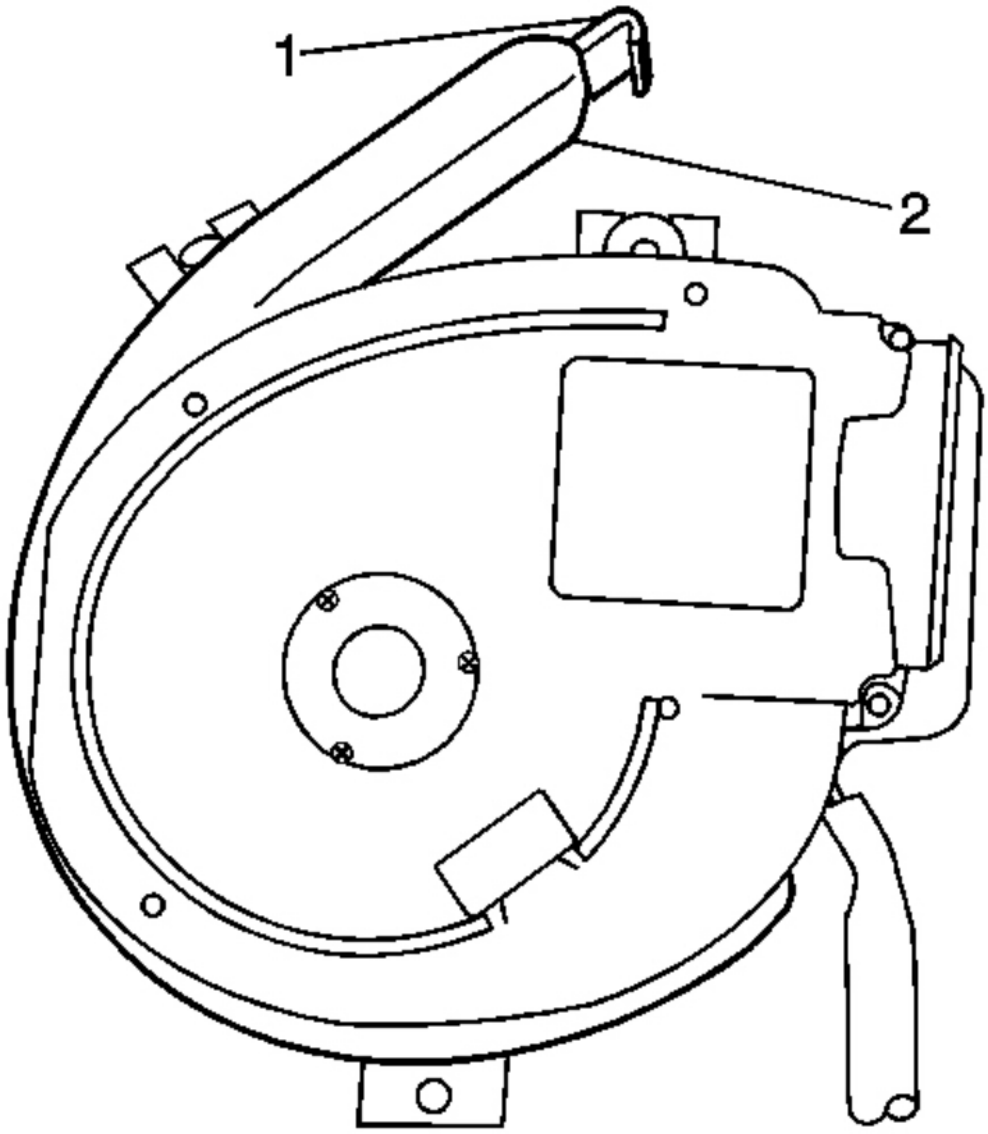


Fig. 114: View Of Seat Filter
Courtesy of GENERAL MOTORS CORP.

2. Install the seat back cardboard panel.
    1. Position the cardboard backer to the seat back frame.
    2. Install the push-pin fasteners (1) to secure the ventilation heat and cool blower duct.

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3. Position the seat back foam over the head restraint tubes.
4. Glue the seat back foam in the same locations as it was removed during the removal process.

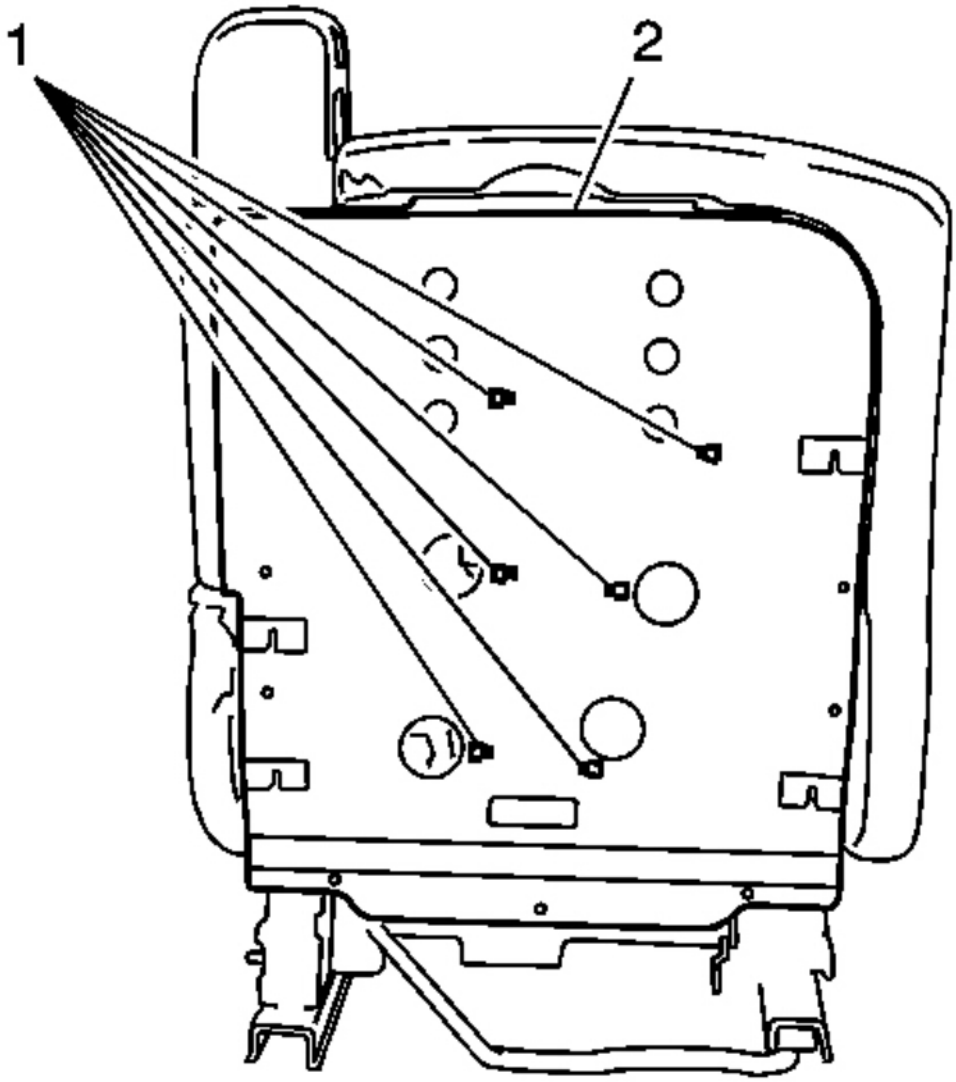


Fig. 115: View Of Cardboard Backer & Push-Pin Fasteners
Courtesy of GENERAL MOTORS CORP.

3. Install the seat back trim cover. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)** or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.

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BLOWER REPLACEMENT - VENTILATION HEAT AND COOL - FRONT SEAT CUSHION

Removal Procedure

1. Remove the seat cushion. Refer to **Seat Cushion Frame Replacement - Front**.
2. Disconnect the blower electrical connector.
3. Cut the tie straps (1) securing the blower bracket to the seat cushion frame.
4. Remove the blower and bracket assembly from the seat cushion.

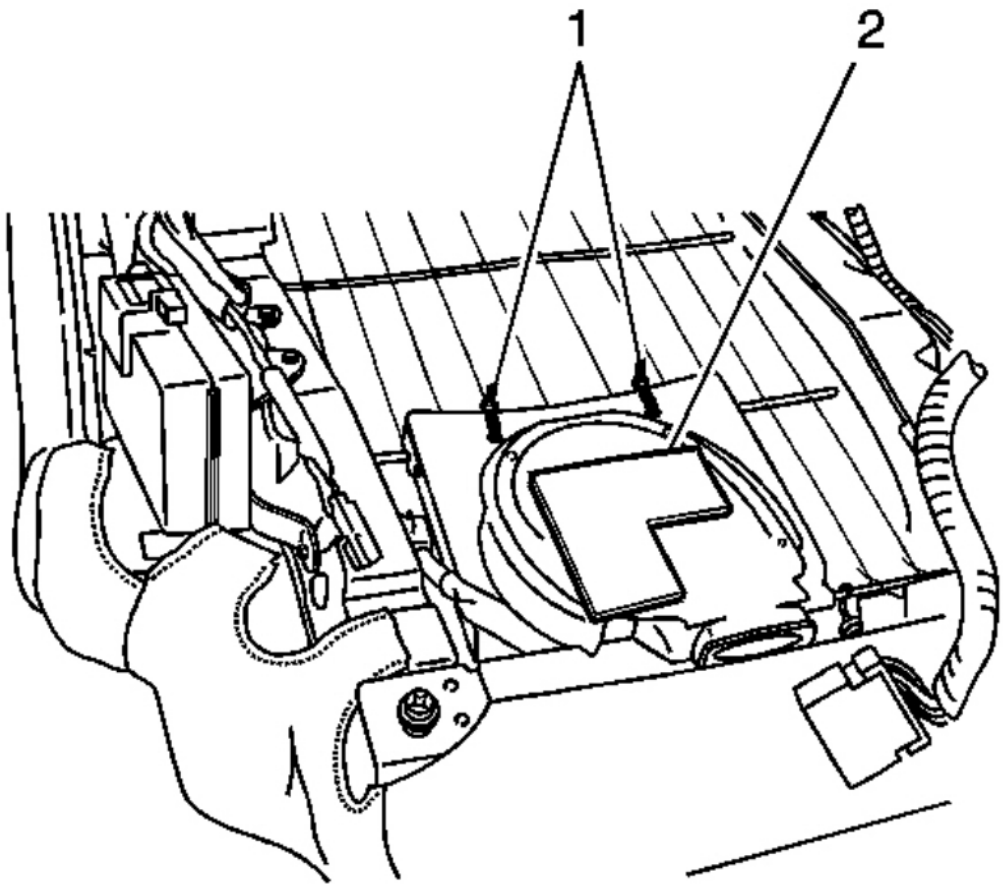


Fig. 116: View Of Tie Straps Securing Blower Bracket To Seat Cushion Frame
Courtesy of GENERAL MOTORS CORP.

CAUTION: Eye protection must be worn when drilling rivets to reduce the chance of personal injury.

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5. Drill the rivets (2) retaining the blower (3) to the bracket (1).
6. Remove the blower from the bracket.

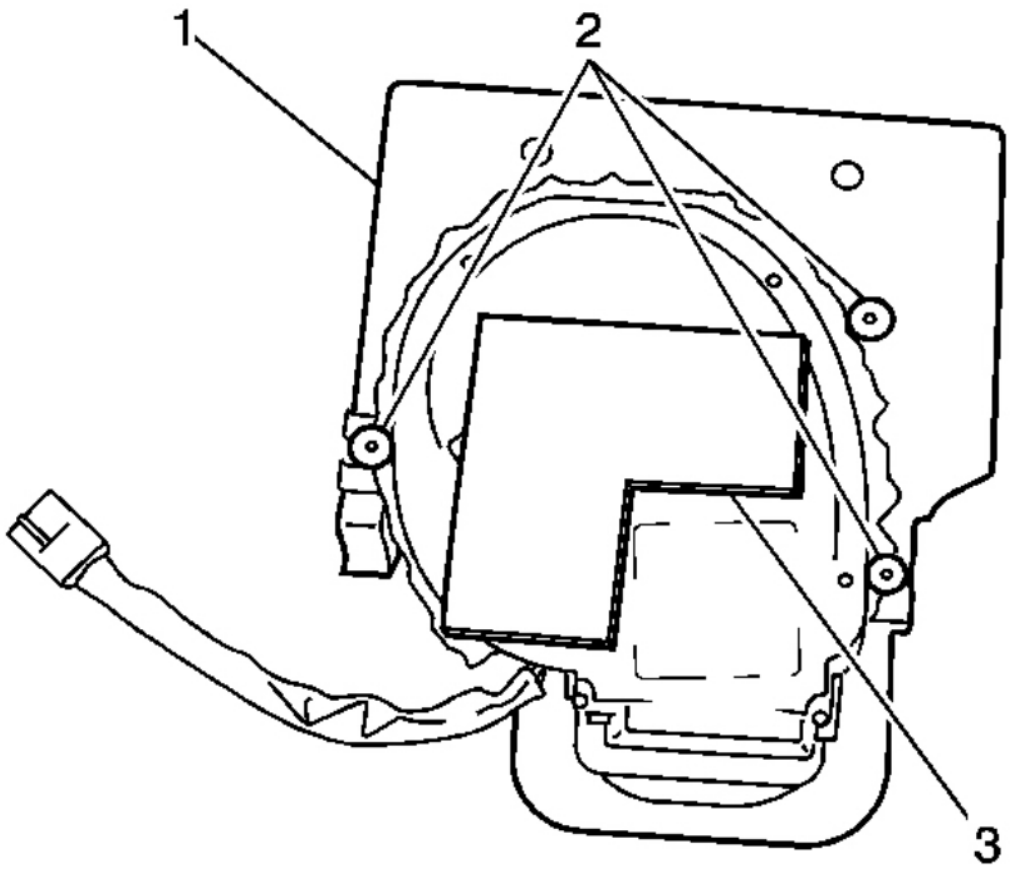


Fig. 117: View Of Ventilation Heat & Cool Blower, Bracket & Rivets (Front Seat Cushion)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the blower (3) to the bracket (1).
2. Install rivets (2) to secure the blower to the bracket.

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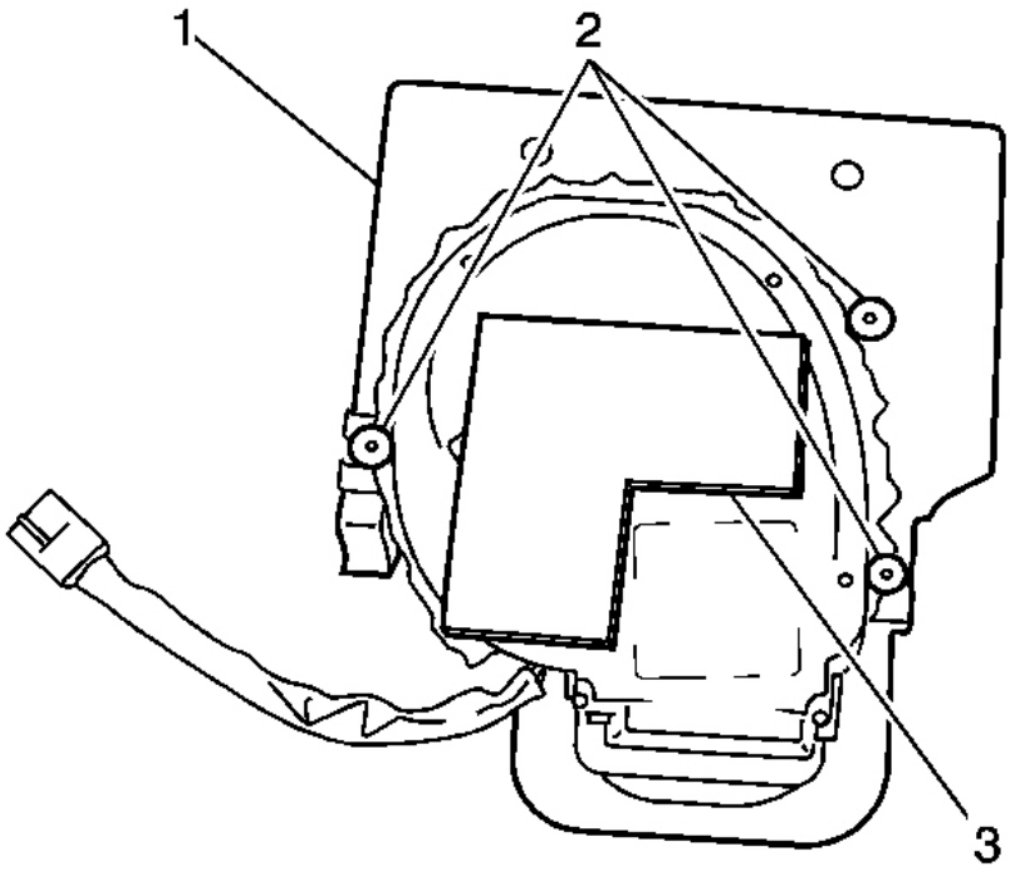


Fig. 118: View Of Ventilation Heat & Cool Blower, Bracket & Rivets (Front Seat Cushion)
Courtesy of GENERAL MOTORS CORP.

3. Align the blower and bracket assembly to the seat cushion frame.
4. Secure the bracket to the frame using tie straps in the same position they were removed.

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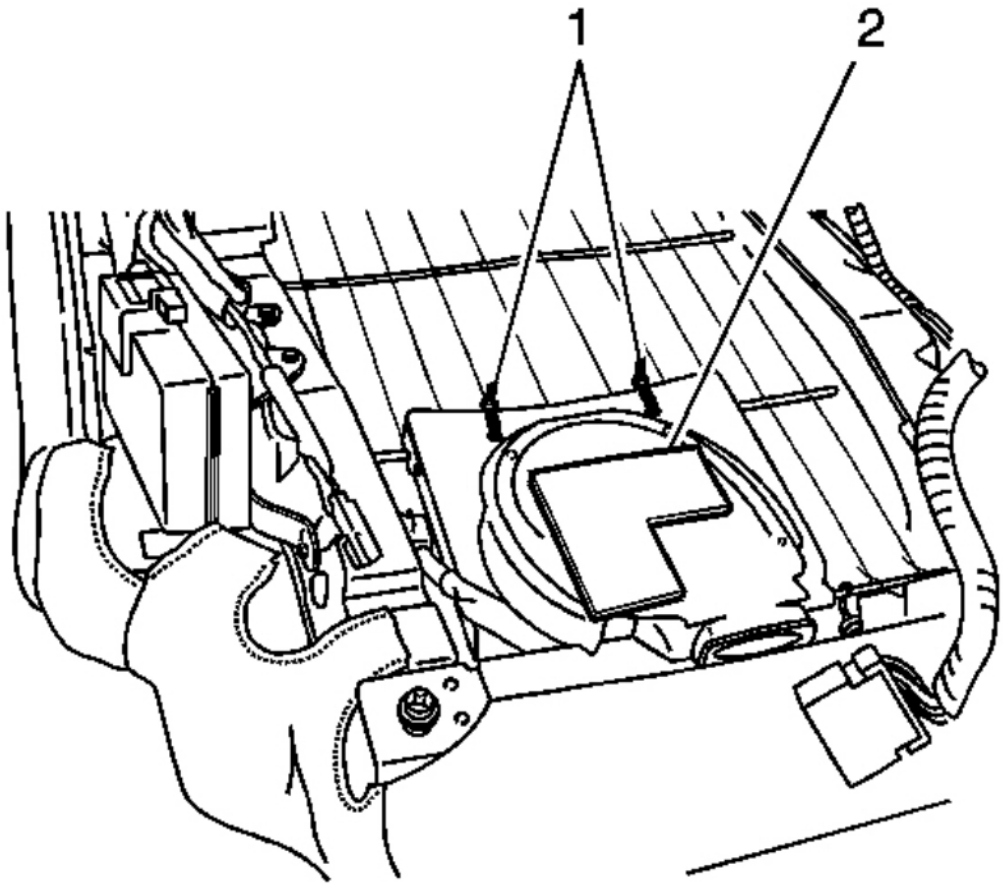


Fig. 119: View Of Tie Straps Securing Blower Bracket To Seat Cushion Frame
Courtesy of GENERAL MOTORS CORP.

5. Connect the blower electrical connector.
6. Install the seat cushion. Refer to **Seat Cushion Frame Replacement - Front**.

BLOWER REPLACEMENT - VENTILATION HEAT AND COOL - FRONT SEAT BACK

Removal Procedure

1. Remove the seat back trim cover. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)** or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.
2. Remove the cardboard backer from the seat back frame.
    1. Use a razor blade and cut the adhesive securing the seat back foam to the cardboard.

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2. Lift the foam back foam over the head restraint tubes in the seat back frame.
3. Remove the push-pin fasteners (1) securing the blower duct to the cardboard backer (2).
4. Remove the cardboard backer from the seat back frame.

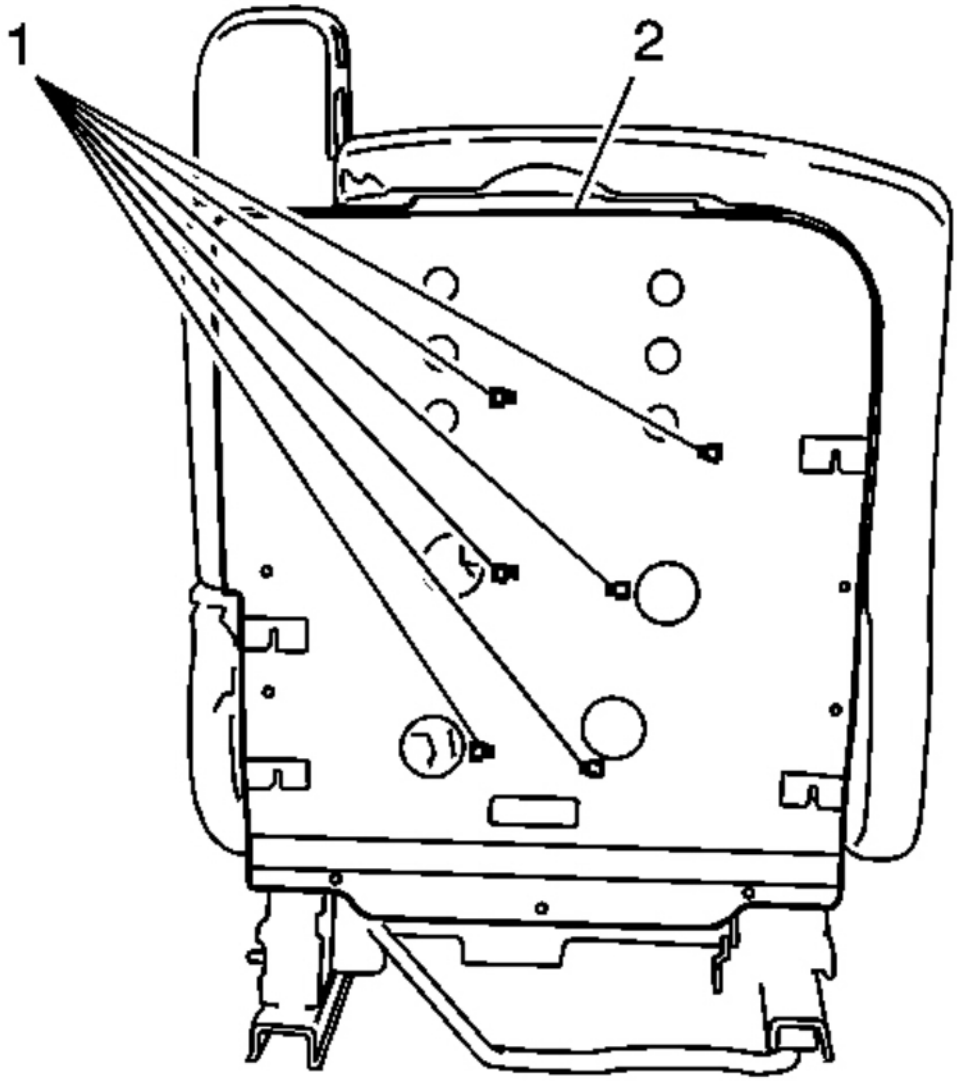


Fig. 120: View Of Cardboard Backer & Push-Pin Fasteners
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the ventilation heat and cool blower electrical connector.

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CAUTION: Eye protection must be worn when drilling rivets to reduce the chance of personal injury.

4. Drill the rivets (1) retaining the ventilation heat and cool blower to the seat back frame.
5. Cut the tie strap (2) securing the ventilation heat and cool blower to the seat back frame.
6. Remove the ventilation heat and cool blower from the seat frame.

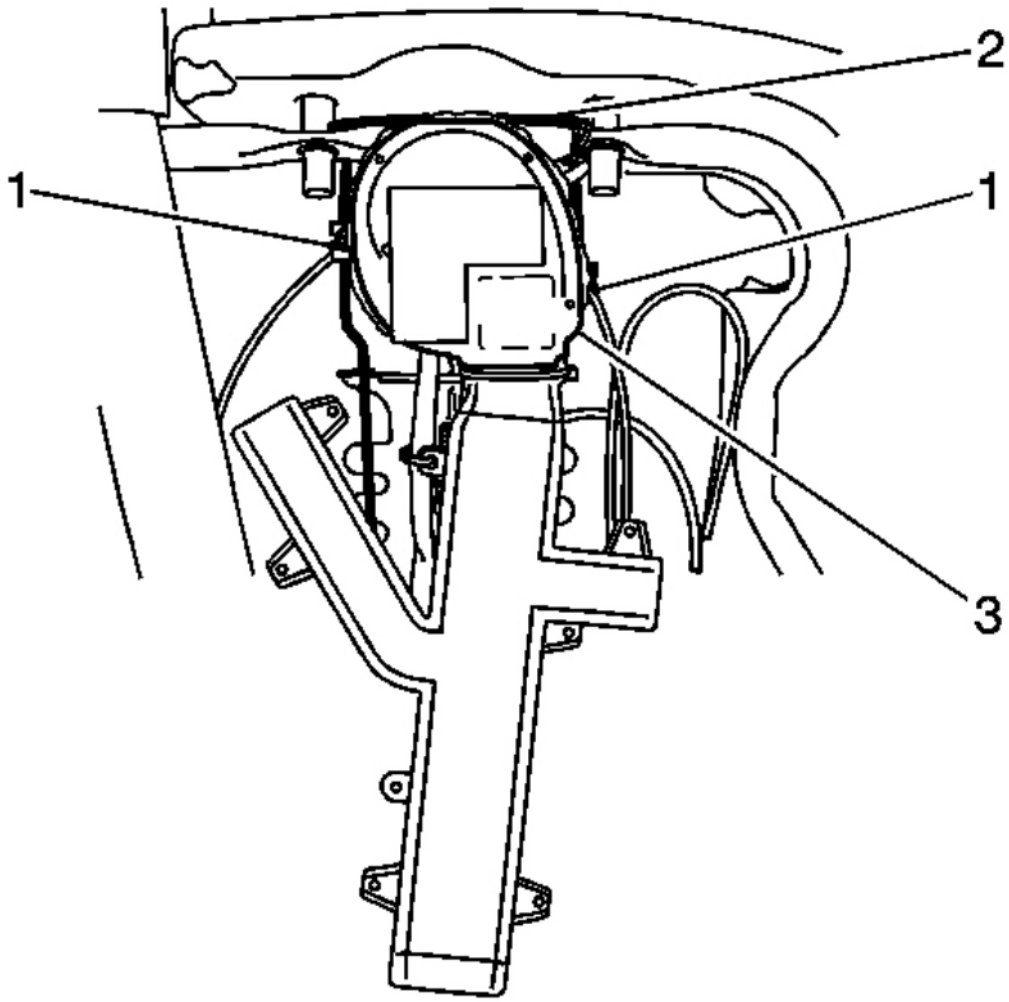


Fig. 121: View Of Ventilation Heat & Cool Blower, Rivets & Tie Strap (Front Seat Back)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

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1. Position the ventilation heat and cool blower to the seat back frame.
2. Install a tie strap (2) in the same position as the one removed during removal.
3. Install two rivet (1) to secure the ventilation heat and cool blower (3) to the seat back frame.

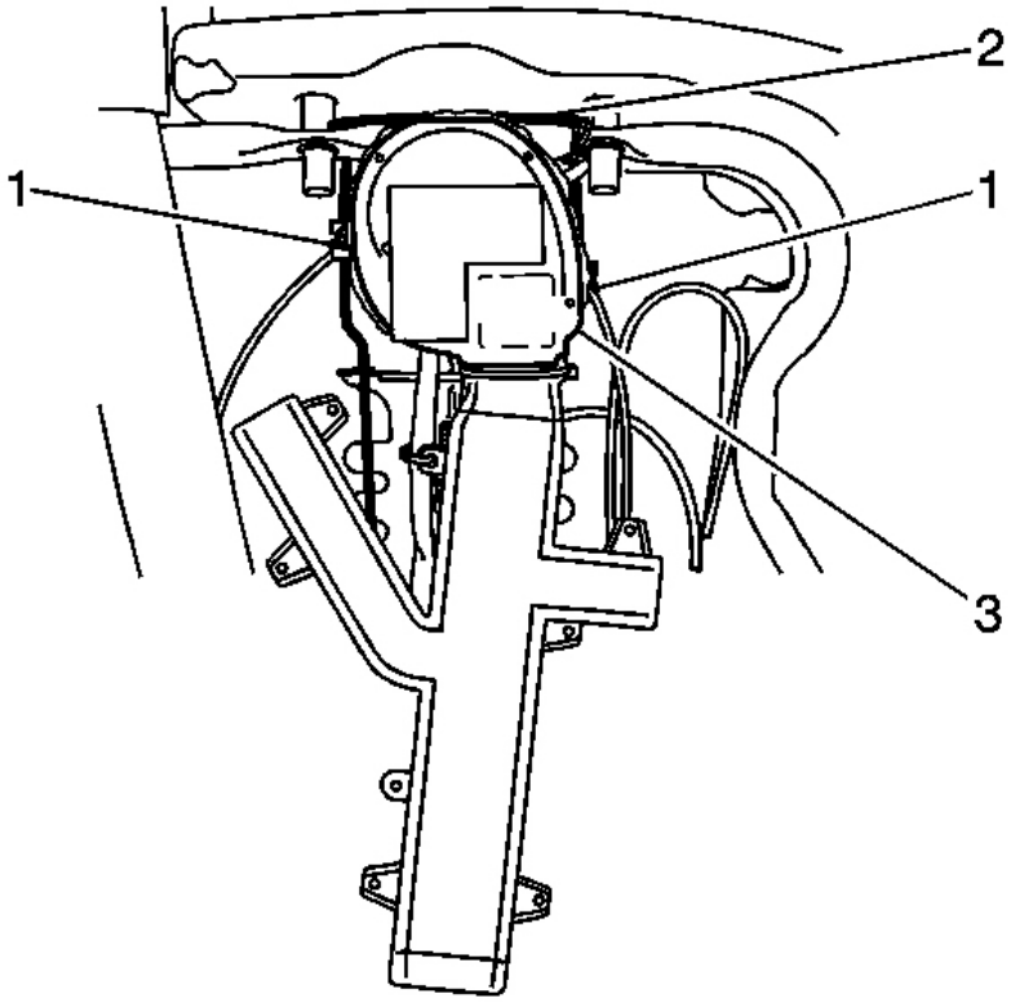


Fig. 122: View Of Ventilation Heat & Cool Blower, Rivets & Tie Strap (Front Seat Back)
Courtesy of GENERAL MOTORS CORP.

4. Connect the ventilation heat and cool blower electrical connector.
5. Install the seat back cardboard panel.
    1. Position the cardboard backer to the seat back frame.

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2. Install the push-pin fasteners (1) to secure the ventilation heat and cool blower duct.
3. Position the seat back foam over the head restraint tubes.
4. Glue the seat back foam in the same locations as it was removed during the removal process.

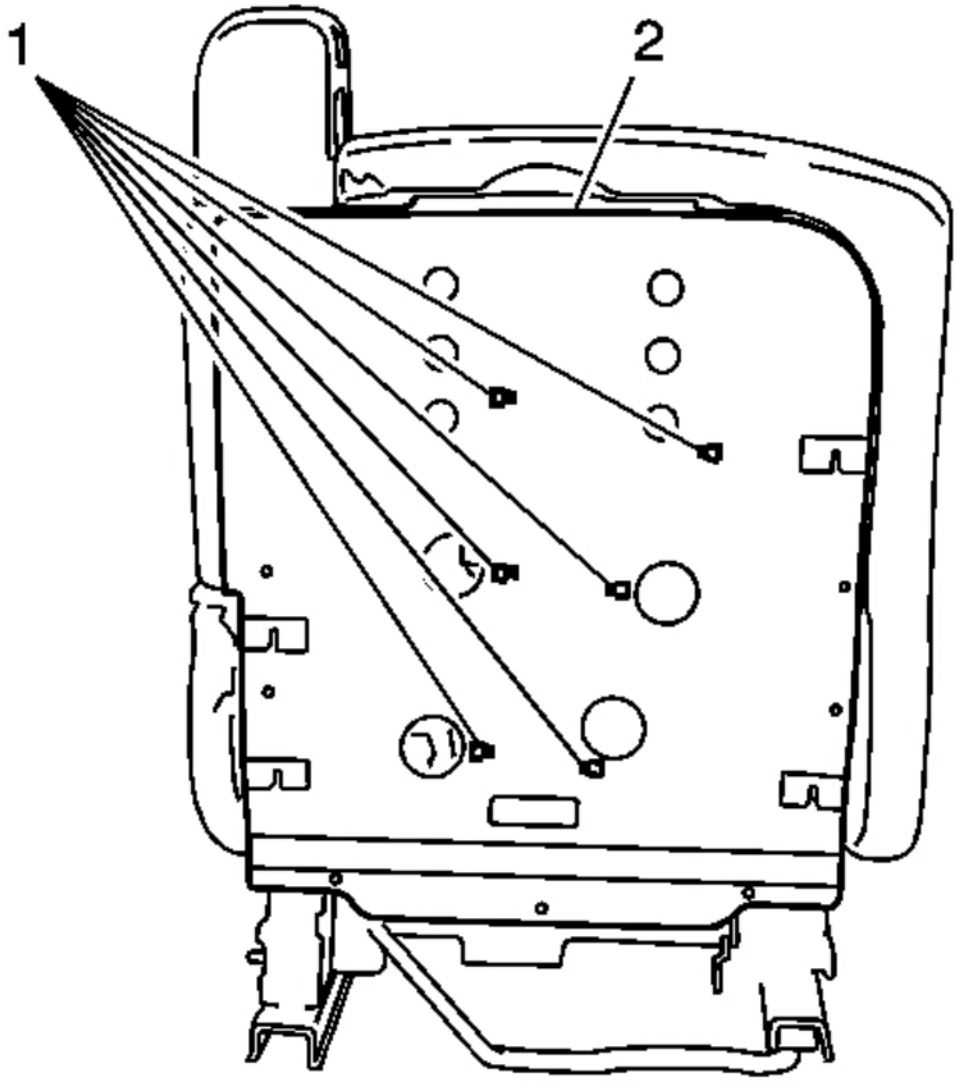


Fig. 123: View Of Cardboard Backer & Push-Pin Fasteners
Courtesy of GENERAL MOTORS CORP.

6. Install the seat back trim cover. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)**

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or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.

MODULE REPLACEMENT - VENTILATION HEAT AND COOL - SEAT CUSHION

Removal Procedure

1. Remove the console cup holder assembly. Refer to **Cupholder Replacement (Non-Luxury)** or **Cupholder Replacement (Luxury)** or **Cupholder Replacement (Rear)** or **Cupholder Replacement (Platinum)** .
2. Remove the wire connector (2) from the bracket.
3. Slide the module forward in car.
4. Disconnect the wire connectors (1).
5. Remove the module from the bracket.

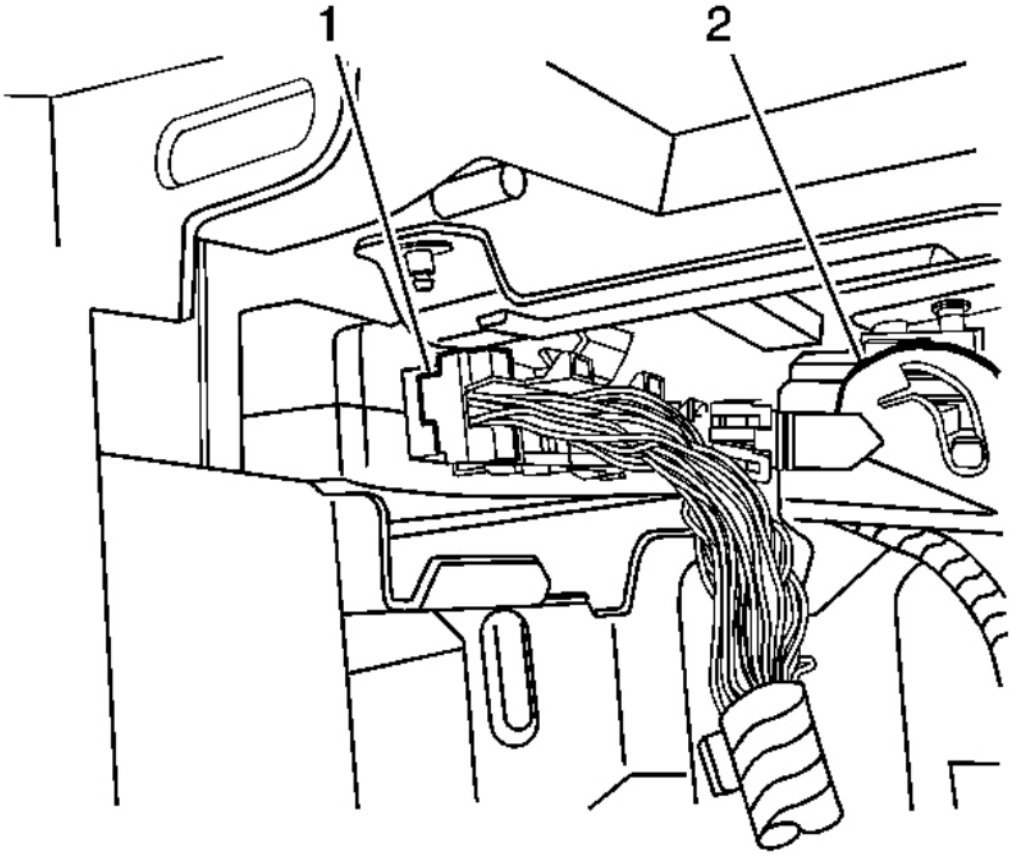


Fig. 124: View Of Ventilation Heat & Cool Module Wire Connectors (Seat Cushion)

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Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the wire connectors (1) to the module.
2. Slide the module rearwards till it clicks in place.
3. Install the wire connector (2) to the bracket.

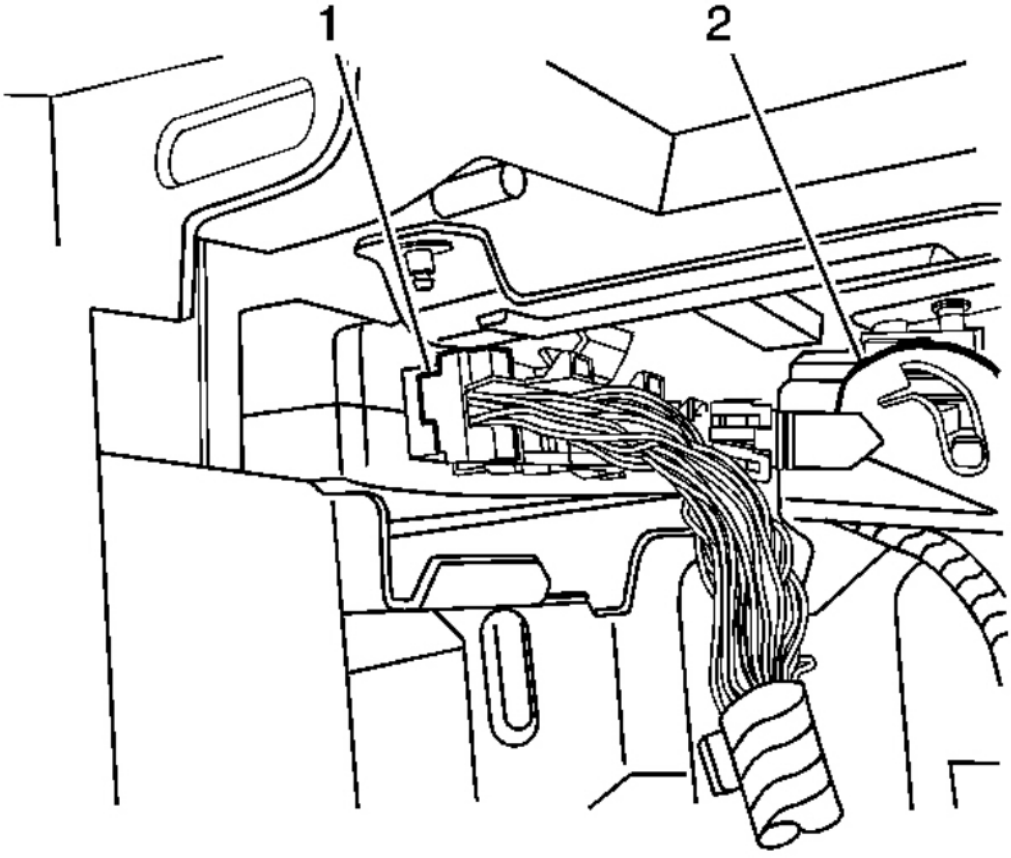


Fig. 125: View Of Ventilation Heat & Cool Module Wire Connectors (Seat Cushion)
Courtesy of GENERAL MOTORS CORP.

4. Install the console cup holder assembly. Refer to **Cupholder Replacement (Non-Luxury)** or **Cupholder Replacement (Luxury)** or **Cupholder Replacement (Rear)** or **Cupholder Replacement (Platinum)** .

HEAD RESTRAINT REPLACEMENT (CADILLAC)

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Removal Procedure

1. Pull the head restraint to the full height position.
2. Insert a pointed tool into the access hole (1) and press inwards.
3. Pull the head restraint from the seat.

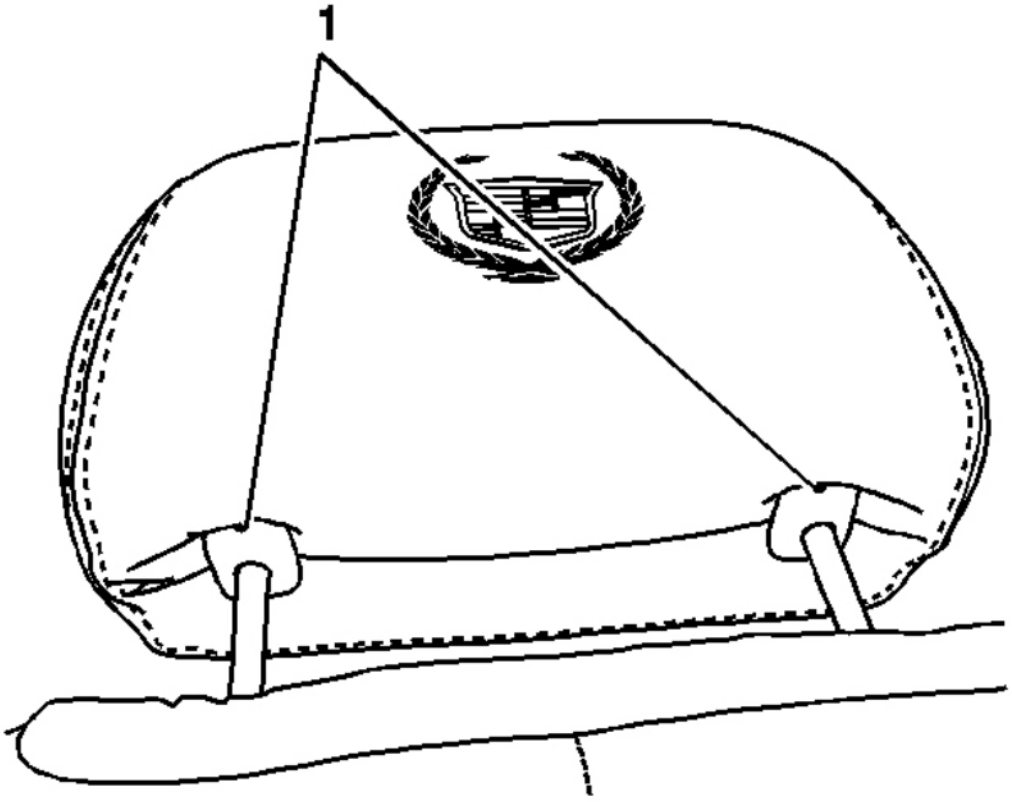


Fig. 126: View Of Headrest (Cadillac)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the head restraint by pushing down on restraint until the restraint is fully seated.
2. To ensure the head restraint is fully seated pull the head restraint up to the full upward position.

   The head restraint must not come off the restraint rod.

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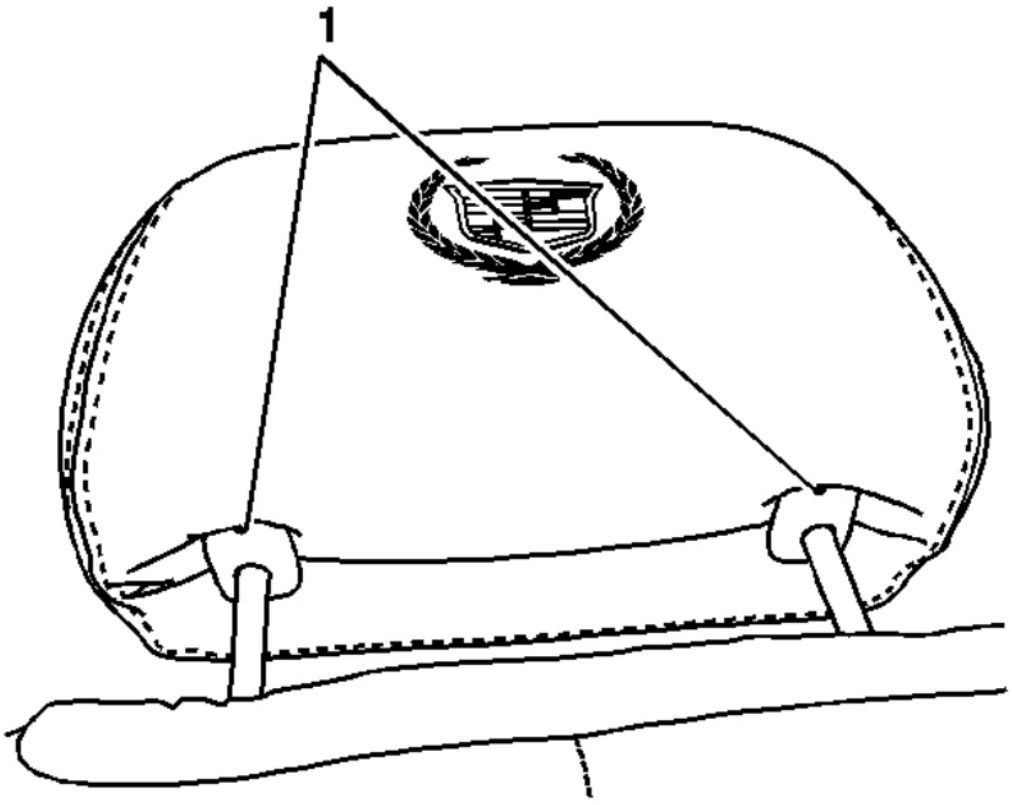


Fig. 127: View Of Headrest (Cadillac)
Courtesy of GENERAL MOTORS CORP.

HEAD RESTRAINT REPLACEMENT (NON-CADILLAC)

Removal Procedure

1. Raise the head restraint (1) to the full up position.
2. Insert a paper clip or a similar tool in the hole at the side edges of the head restraint retainers.
3. Press in on the tool in order to release the retainer clips (2).
4. Lift the head restraint from the retainers.

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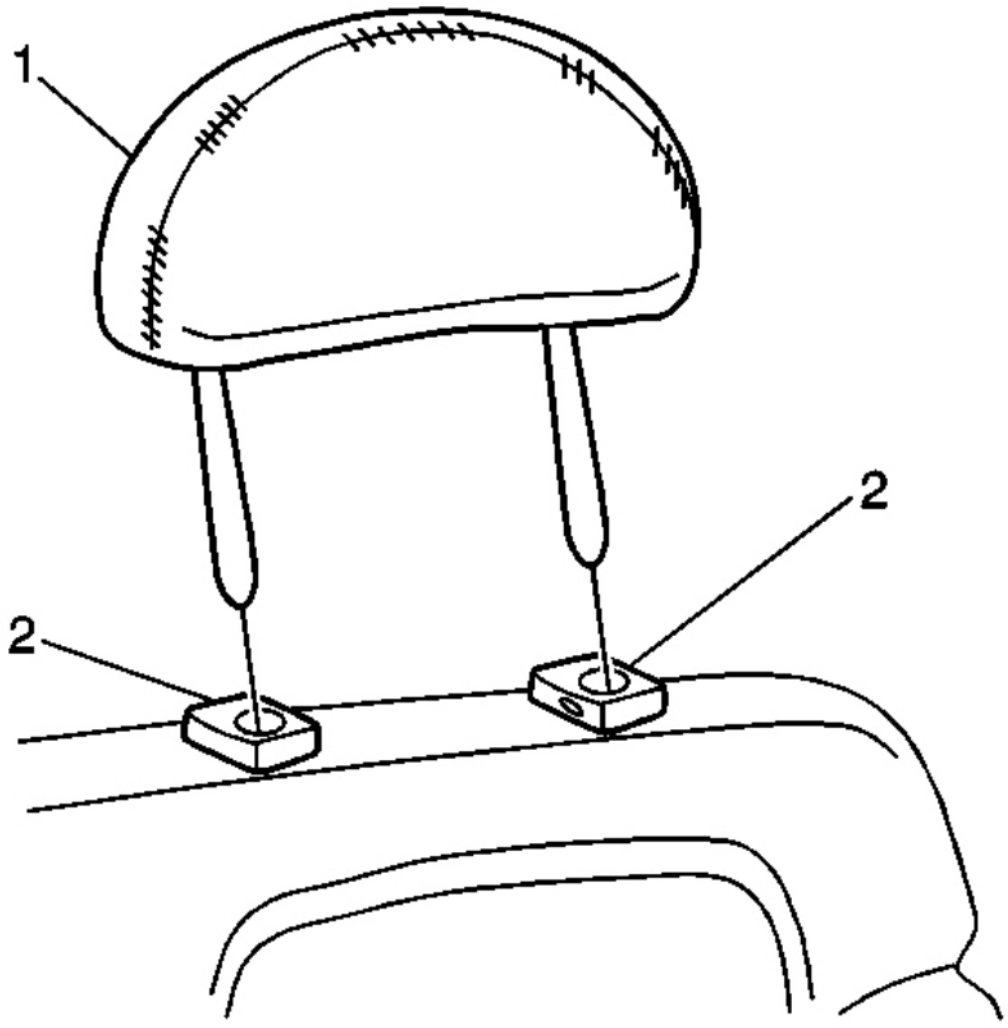


Fig. 128: View Of Headrest (Non-Cadillac)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the head restraint (1) into the retainers.
2. Push the head restraint to the full down position.
3. Pull up in order to ensure that the head restraint engages with the head restraint retainers (2).

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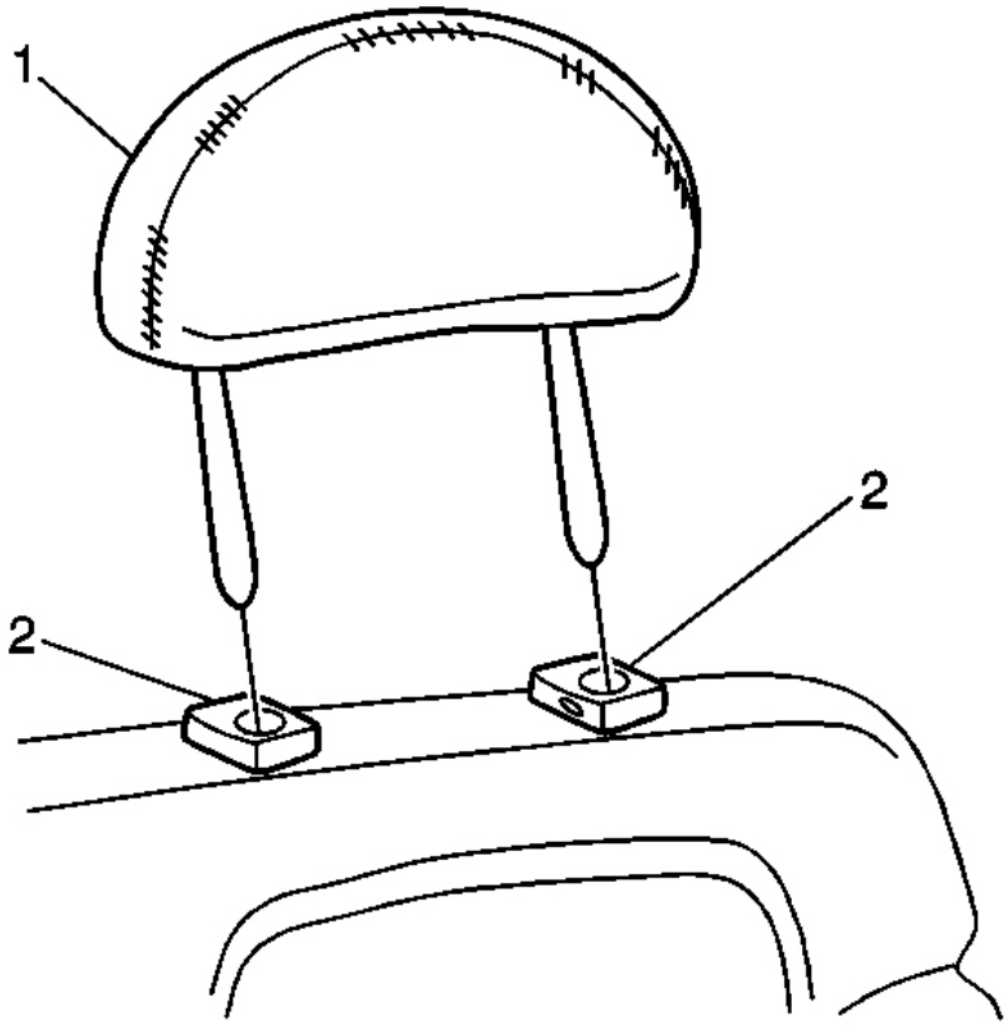


Fig. 129: View Of Headrest (Non-Cadillac)
Courtesy of GENERAL MOTORS CORP.

HEAD RESTRAINT REPLACEMENT (FOLDING)

The folding headrest cannot be replaced separately. Therefore if the folding mechanism has failed, the seat back frame needs to be replaced. Refer to **Seat Back Frame Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Back Frame Replacement - Rear (Bench)**.

HEAD RESTRAINT RETAINER REPLACEMENT - FRONT SEAT

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Removal Procedure

1. Slide up the seat back trim cover in order to gain access to the rear cardboard panel fasteners. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)Seat Back Cover and Pad Replacement - Front (W/ULT)**.
2. Remove the panel fasteners. Pull back the panel in order to gain access to the bushings.

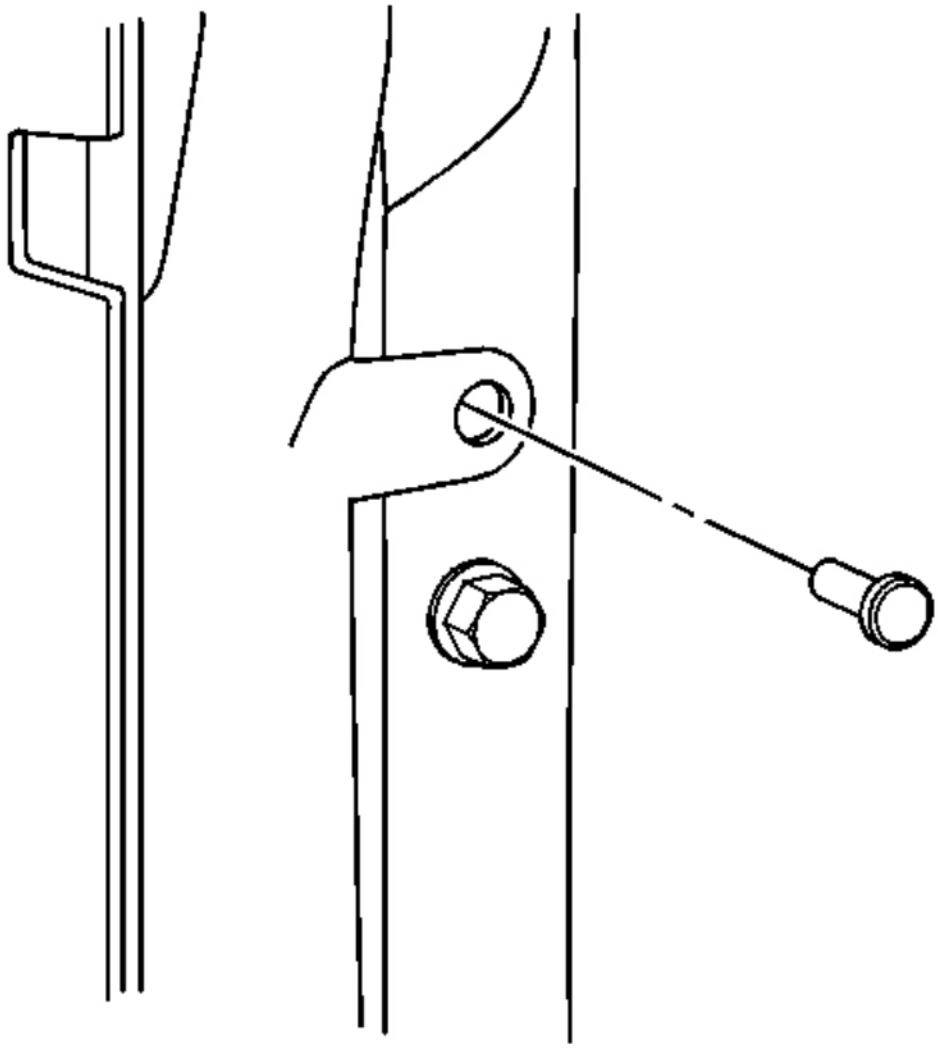


Fig. 130: View Of Seat Belt Tower Cover/Panel Bolt
Courtesy of GENERAL MOTORS CORP.

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3. Remove the head restraint retainers from the seat back frame by squeezing the retaining tabs together at the base of the guide(s) and lifting up.

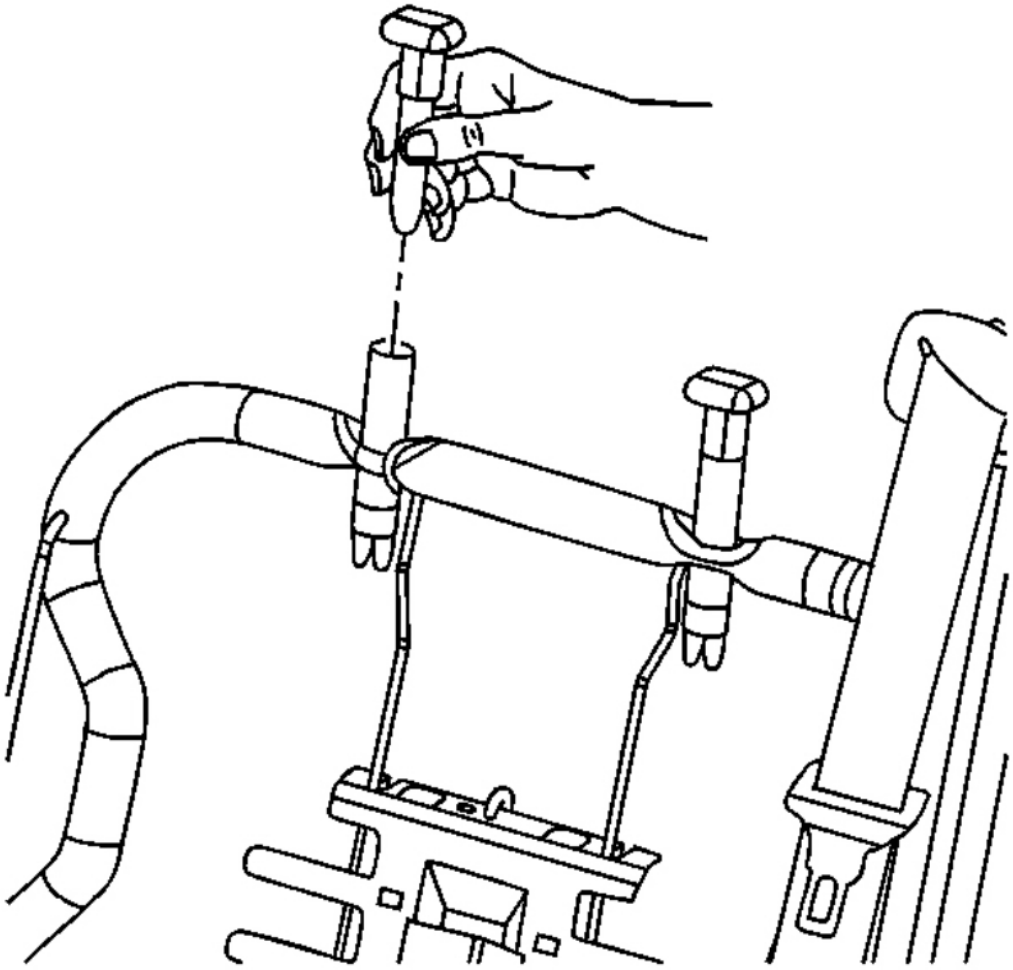


Fig. 131: View Of Head Restraint Retainers
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the head restraint retainers by pressing into the seat back frame until the retaining tabs snap into place at the bottom of the frame opening.

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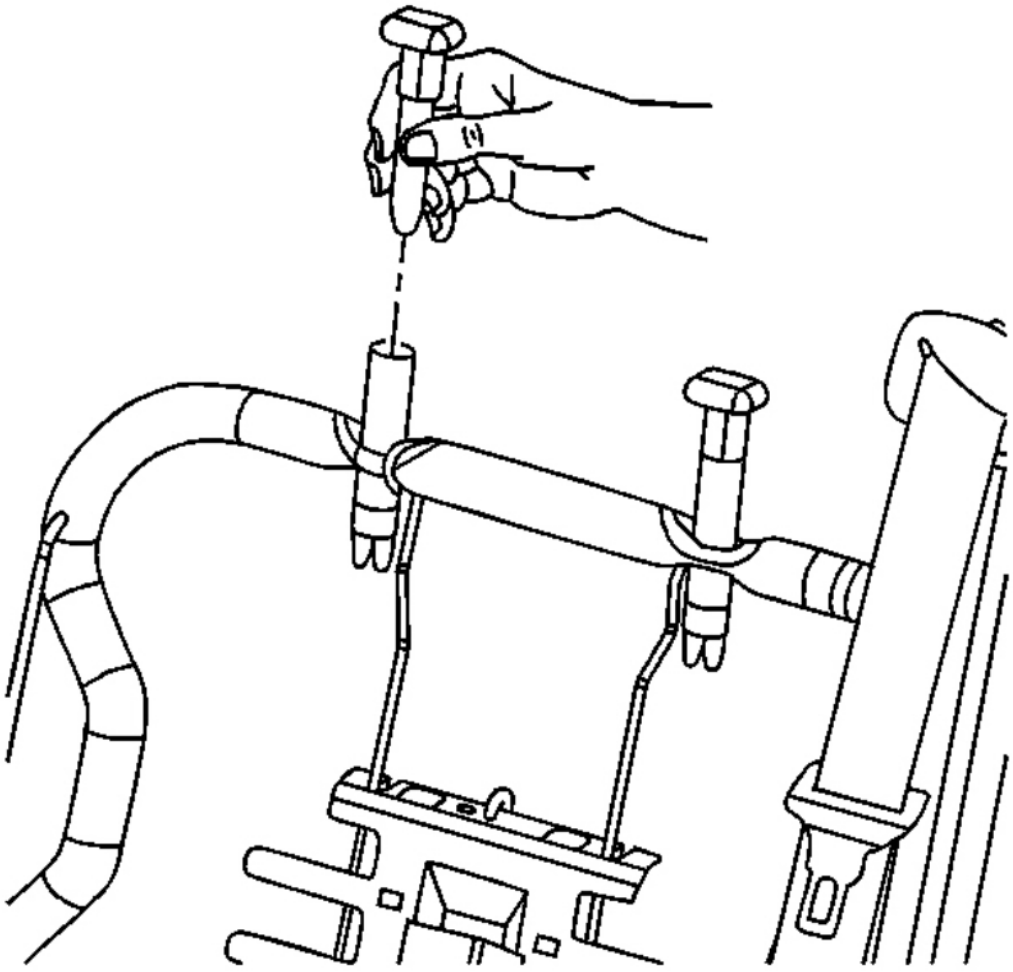


Fig. 132: View Of Head Restraint Retainers
Courtesy of GENERAL MOTORS CORP.

2. Position the cardboard panel to the seat back frame and install the panel fasteners.

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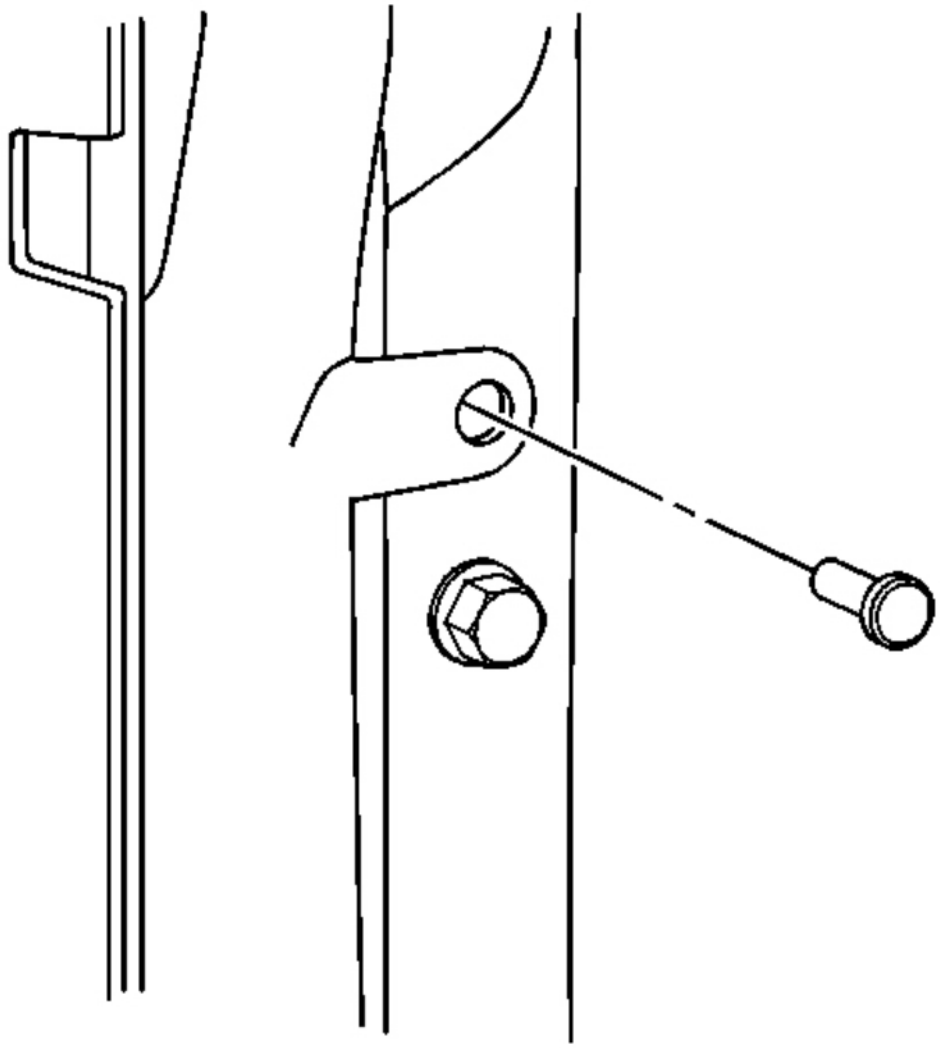


Fig. 133: View Of Seat Belt Tower Cover/Panel Bolt
Courtesy of GENERAL MOTORS CORP.

3. Install the seat back trim cover. Refer to **Seat Back Cover and Pad Replacement - Front (W/O ULT)** or **Seat Back Cover and Pad Replacement - Front (W/ULT)**.

ARMREST REPLACEMENT - FRONT SEAT

Removal Procedure

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1. Set the front seat back in the forward position.
2. Separate the J-clip at the bottom of the seat using a flat bladed tool.
3. Remove the 2 push pins at the bottom retaining the seat back cover to the card board.
4. From the back of the front seat, disconnect the heating element wire connector, if equipped.
5. Role up the seat cover up to the bottom of the arm rest.
6. Recline the seat.
7. From the front of the seat move the seat cushion away from the seat frame to gain access to the arm rest clip.
8. Remove the rubber band from the clip.
9. Remove the clip from the seat frame.
10. Remove the arm rest by pulling outwards.

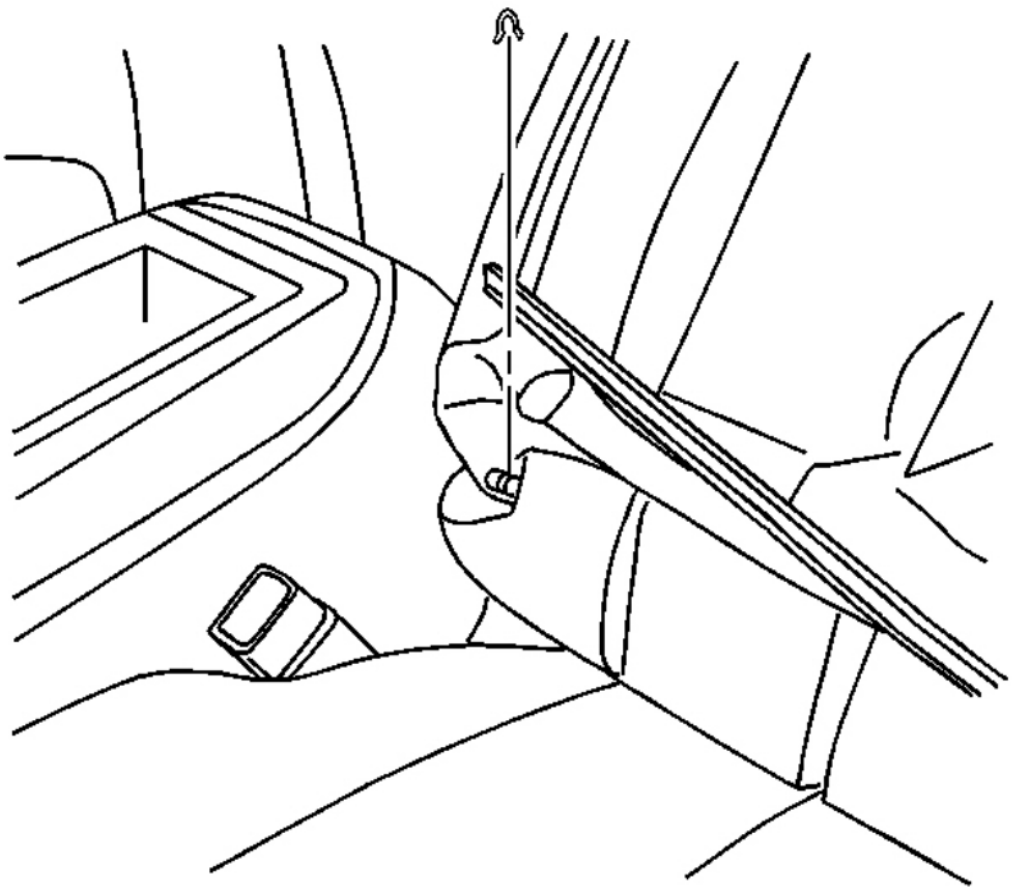


Fig. 134: View Of Armrest Clip

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Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the clip in the slot of the seat frame.
2. Install the rubber band on the clip to retain it in place.

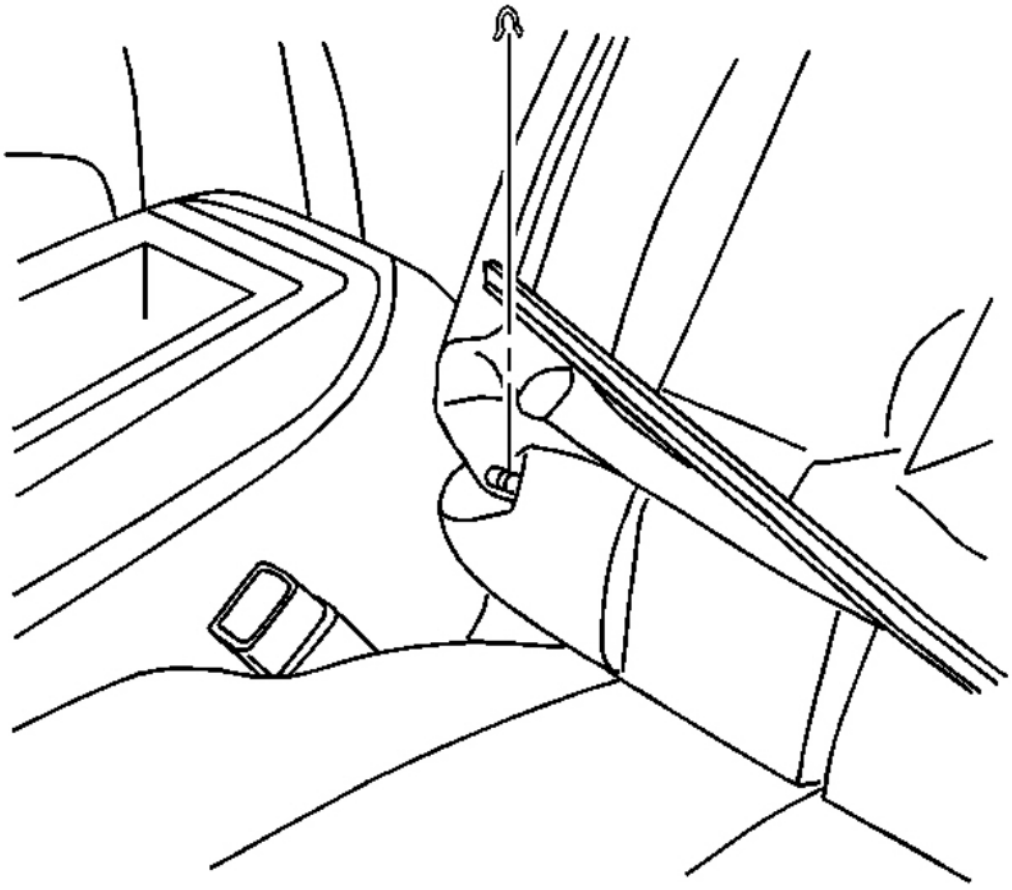


Fig. 135: View Of Armrest Clip
Courtesy of GENERAL MOTORS CORP.

3. Fold down the seat cover.
4. Install the arm rest by pressing in until it is fully seated.
5. Connect the heating element wire connector.
6. Set the front seat back in the forward position.

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7. Pull down on the seat cover in order to install the 2 push pins retaining the seat back to the card board.
8. Connect the J-clip at the bottom of the seat.
9. Push on the seat back cover to ensure the cover is held in place by the velcro.

CUPHOLDER REPLACEMENT - FRONT SEAT

Removal Procedure

1. Remove the center seat. Refer to **Seat Replacement - Center**.

CAUTION: Eye protection must be worn when drilling rivets to reduce the chance of personal injury.

2. Remove the rivets (1) retaining the cupholder from the bottom of the center seat.
3. Remove the cupholder.

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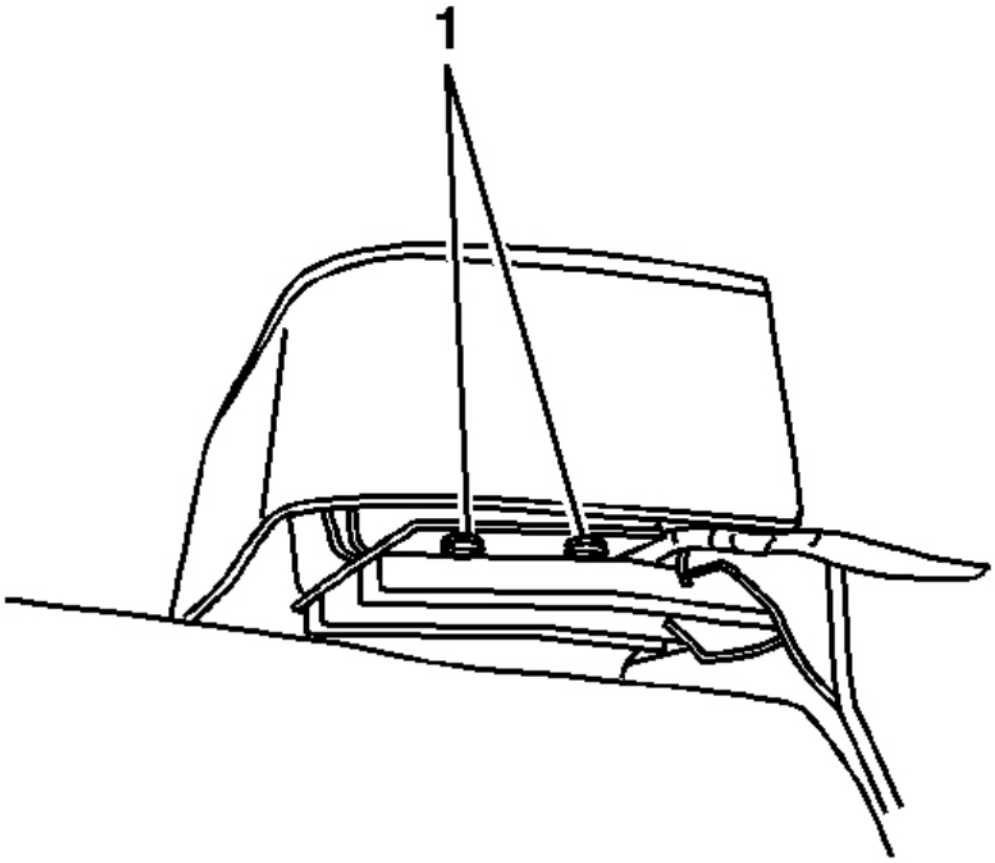


Fig. 136: View Of Cupholder Rivets
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the cupholder.
2. Install the rivets (1) retaining the cupholder to the bottom of the center seat.

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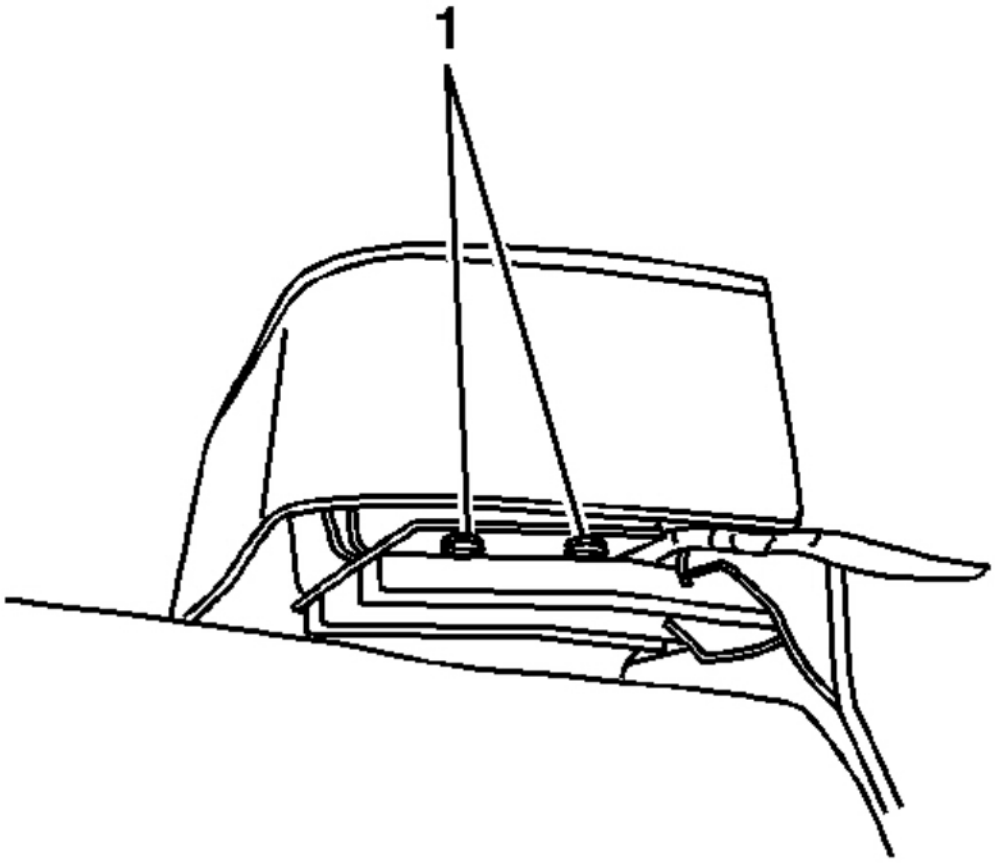


Fig. 137: View Of Cupholder Rivets
Courtesy of GENERAL MOTORS CORP.

3. Install the center seat. Refer to **Seat Replacement - Center**.

TRIM PANEL REPLACEMENT - FRONT SEAT

Removal Procedure

1. Ensure the seat is in the full upward position.
2. Remove the screws retaining the seat back release handle and the seat recliner handle, if equipped.
3. Remove the trim panel (1) by pulling outward in order to disengage the retaining clip.
4. Remove the trim panel from the seat.

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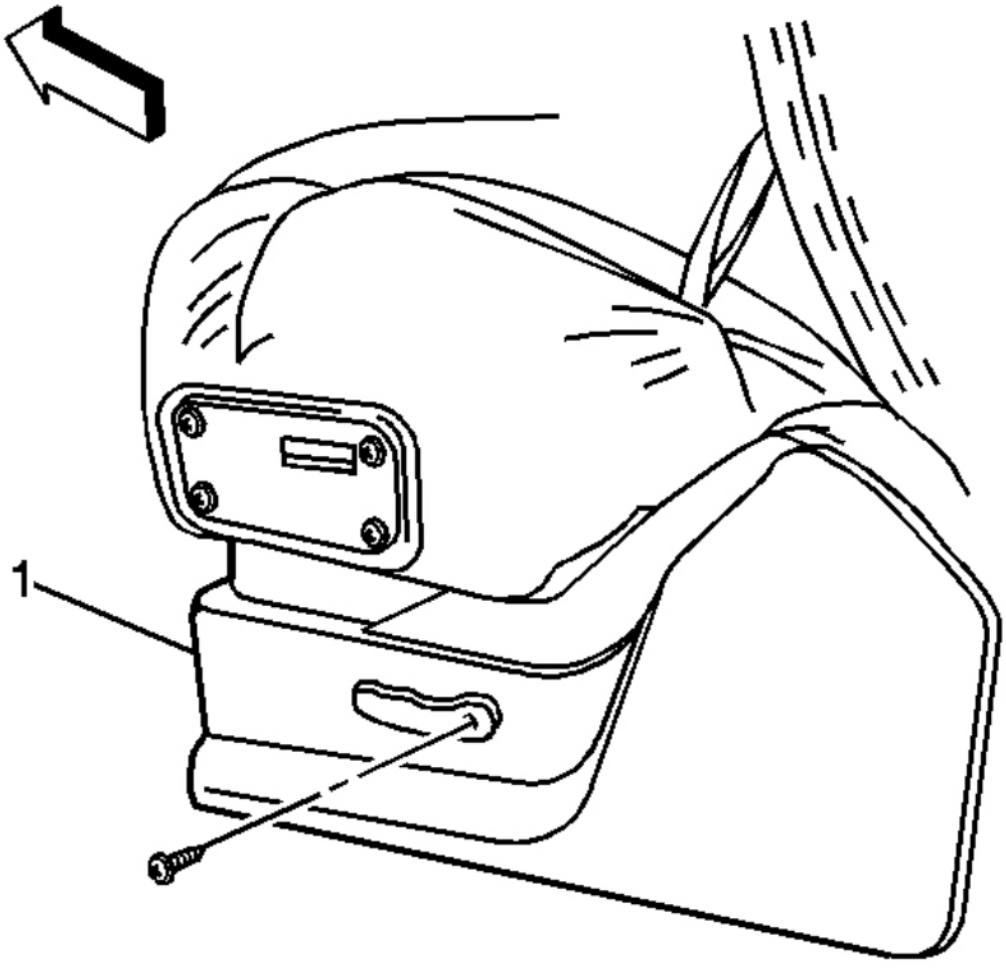


Fig. 138: View Of Front Seat Trim Panel
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the trim panel on the seat from the front to the back.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Instal the trim panel (1) to the seat by pushing in until the retaining clips are locked in place.
3. Install the screws retaining the seat back release handle and the seat recliner handle to the seat, if removed.

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

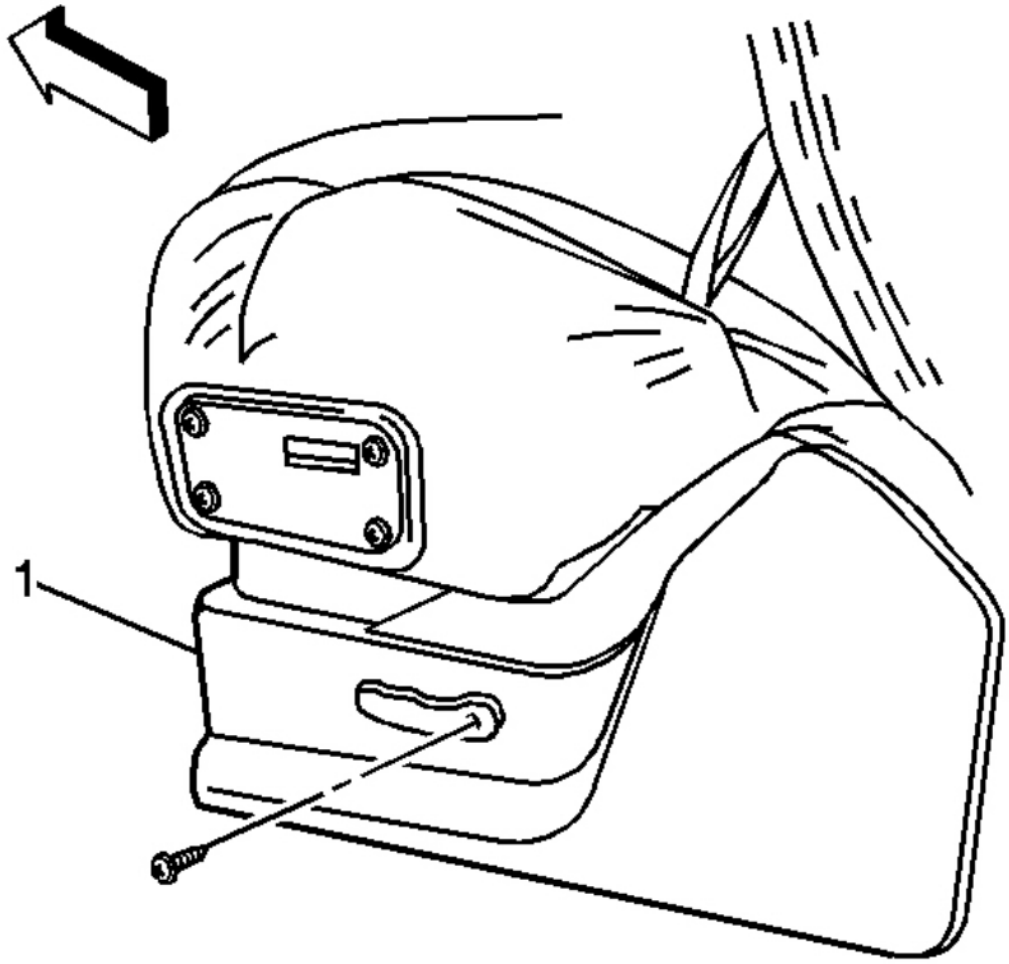


Fig. 139: View Of Front Seat Trim Panel
Courtesy of GENERAL MOTORS CORP.

SEAT REPLACEMENT - REAR NO. 1 (60/40 SPLIT)

Removal Procedure

1. Remove the front and the rear leg trim covers.
2. Remove the seat back recliner handle screw from the trim panel, if equipped.
3. Remove the jack assembly, if required.

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4. Remove the covers in order to access the seat bolts.
5. Disconnect the electrical connectors, if equipped.
6. Remove the seat retaining bolts.
7. Remove the seat from the vehicle.

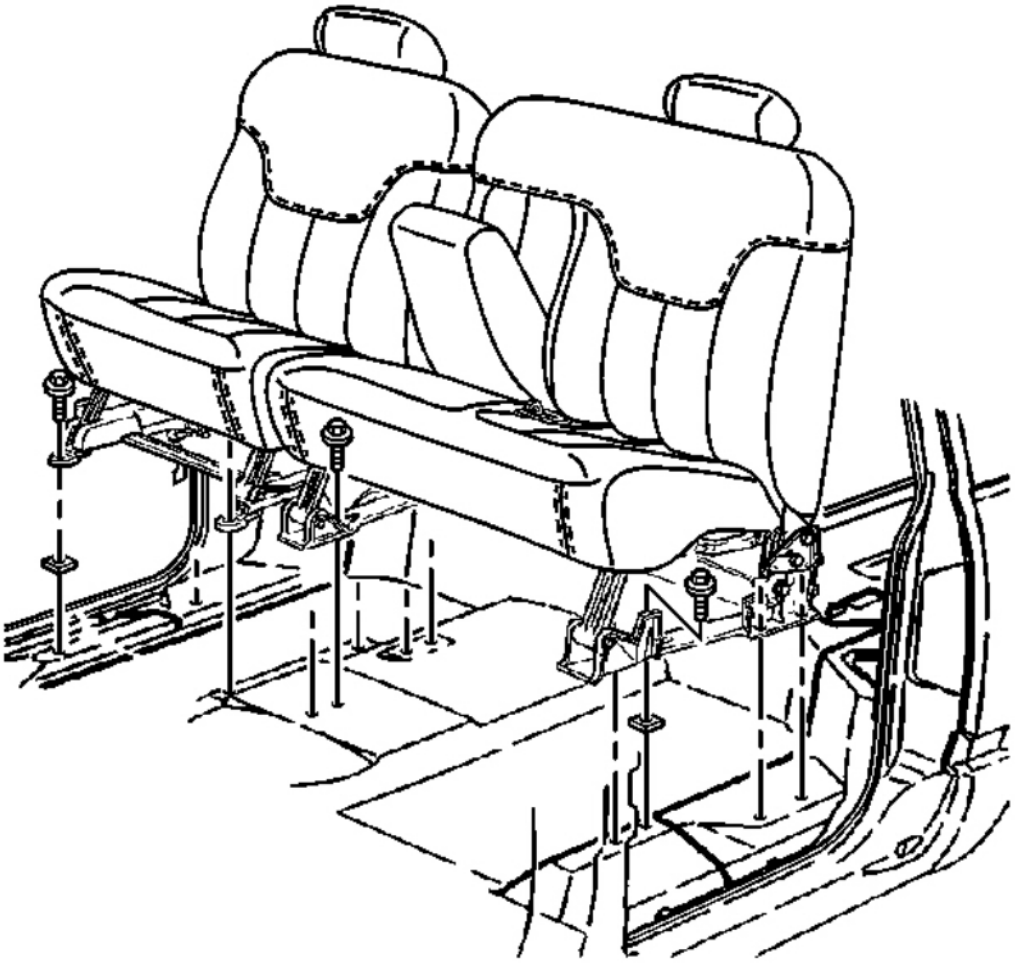


Fig. 140: View Of Rear No. 1 Seat (60/40 Split)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the seat into the vehicle.

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

2. Install the seat retaining bolts.

   Tighten: Tighten the bolts to 55 N.m (41 lb ft).

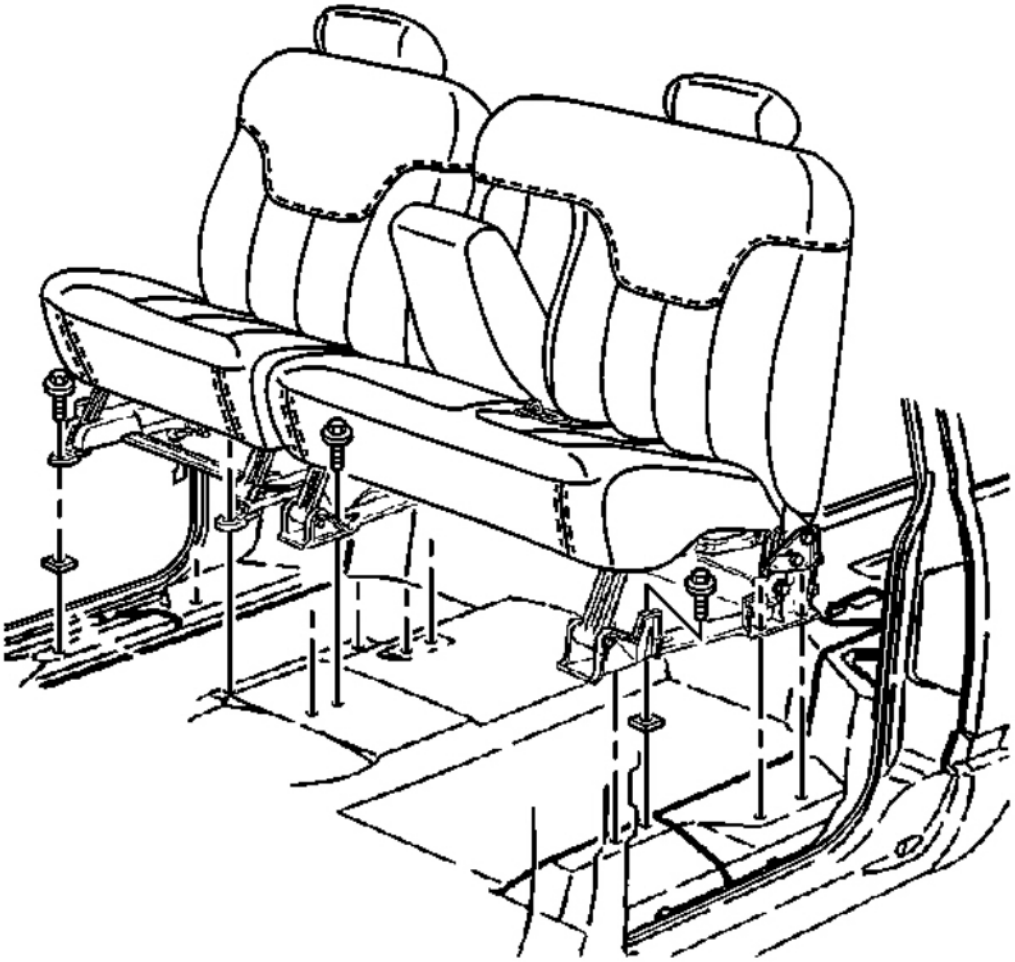


Fig. 141: View Of Rear No. 1 Seat (60/40 Split)
Courtesy of GENERAL MOTORS CORP.

3. Connect the electrical connectors, if equipped.
4. Install the jack assembly, if removed.
5. Install the covers to the seat bolts.

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6. Install the seat back recliner handle screw, if removed.

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

7. Install the front and the rear leg trim covers.

SEAT REPLACEMENT - REAR NO. 1 (BUCKET)

Removal Procedure

1. Remove the front and the rear leg trim covers.
2. Remove the covers in order to access the seat bolts.
3. Disconnect the electrical connectors, if equipped.
4. Remove the seat retaining bolts.
5. Remove the seat from the vehicle.

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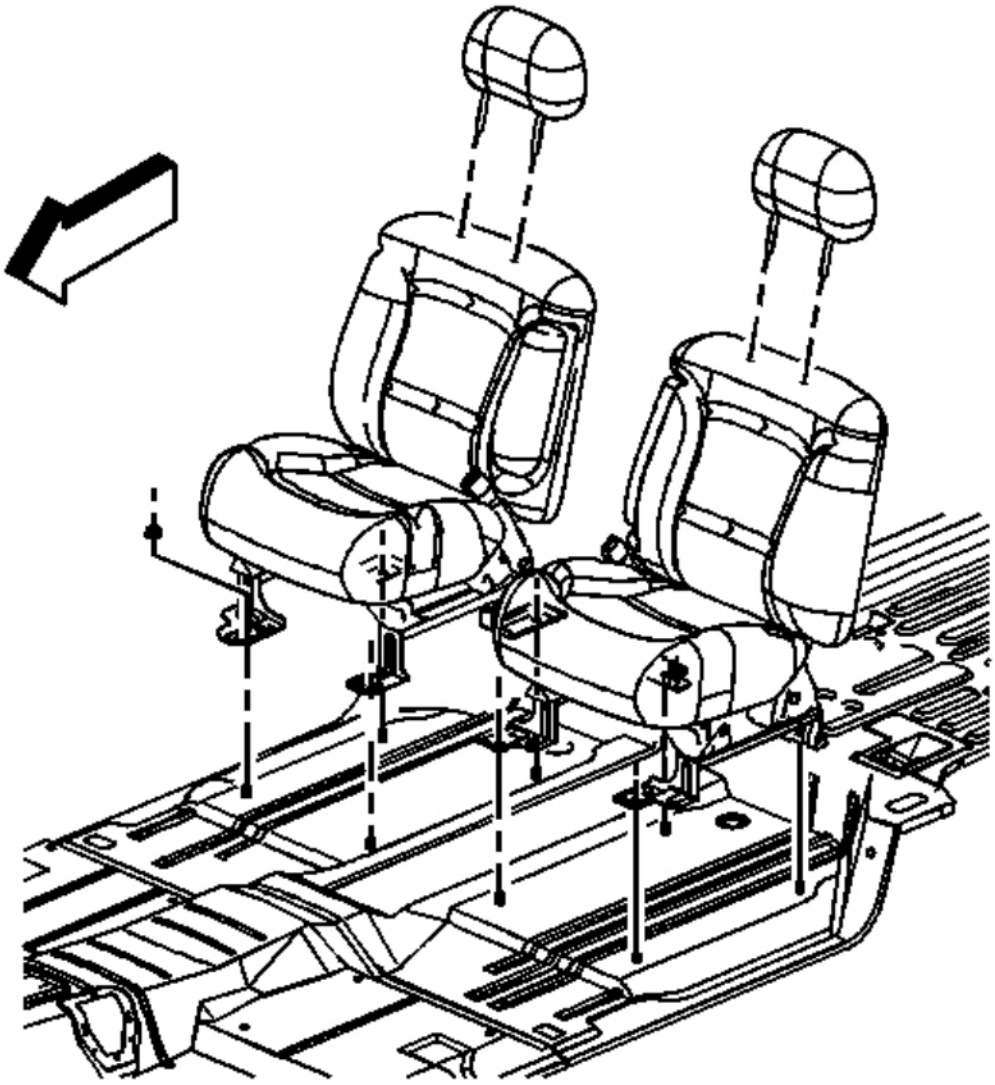


Fig. 142: View Of Rear No. 1 Seat (Bucket)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the seat into the vehicle.

NOTE: Refer to Fastener Notice in Cautions and Notices.

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2. Install the seat retaining bolts.

   Tighten: Tighten the bolts to 55 N.m (41 lb ft).

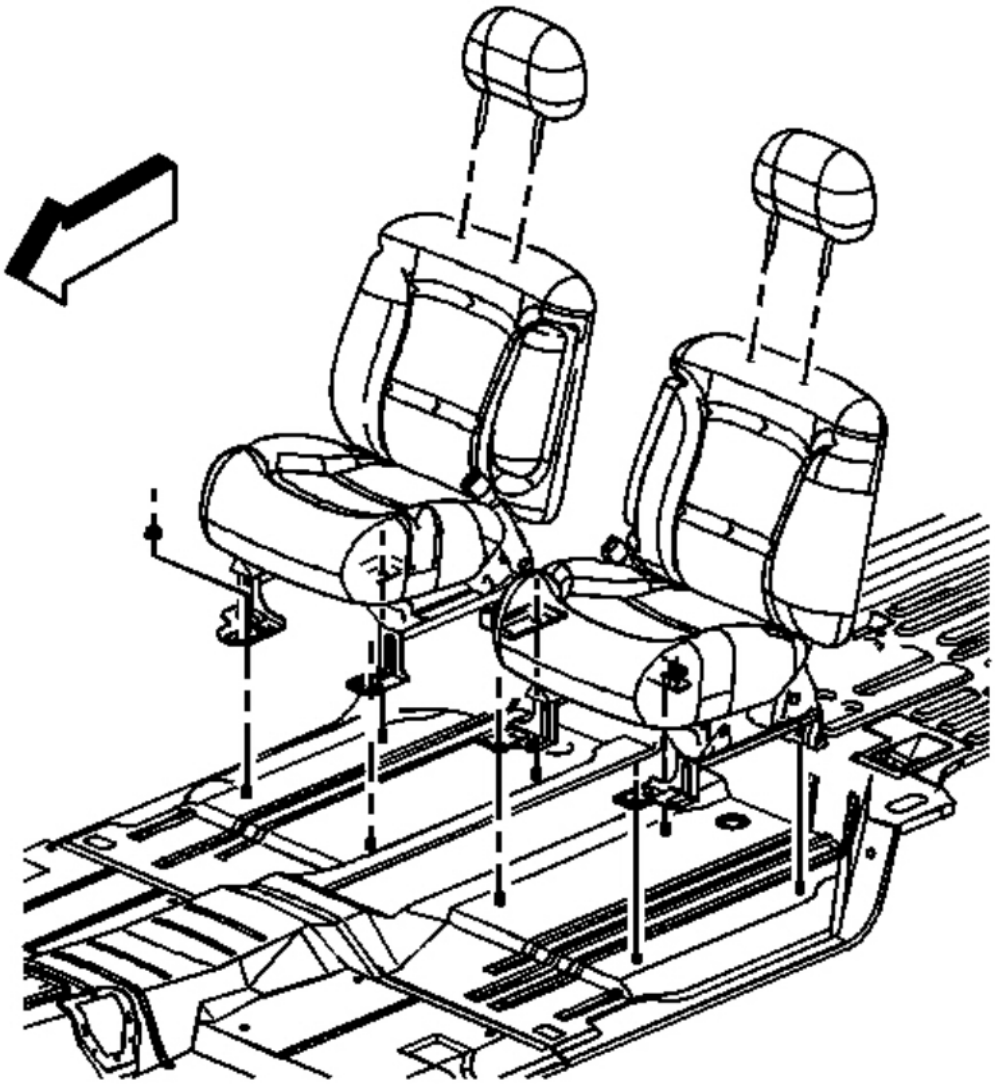


Fig. 143: View Of Rear No. 1 Seat (Bucket)
Courtesy of GENERAL MOTORS CORP.

3. Connect the electrical connectors, if equipped.

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4. Install the covers to the seat bolts.
5. Install the front and the rear leg trim covers.

SEAT CUSHION FRAME REPLACEMENT - REAR (60/40 SPLIT - 50/50 SPLIT)

Removal Procedure

1. Remove the seat cushion trim cover (8) and the pad (7). Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and Pad Replacement - Rear (Bench)**.

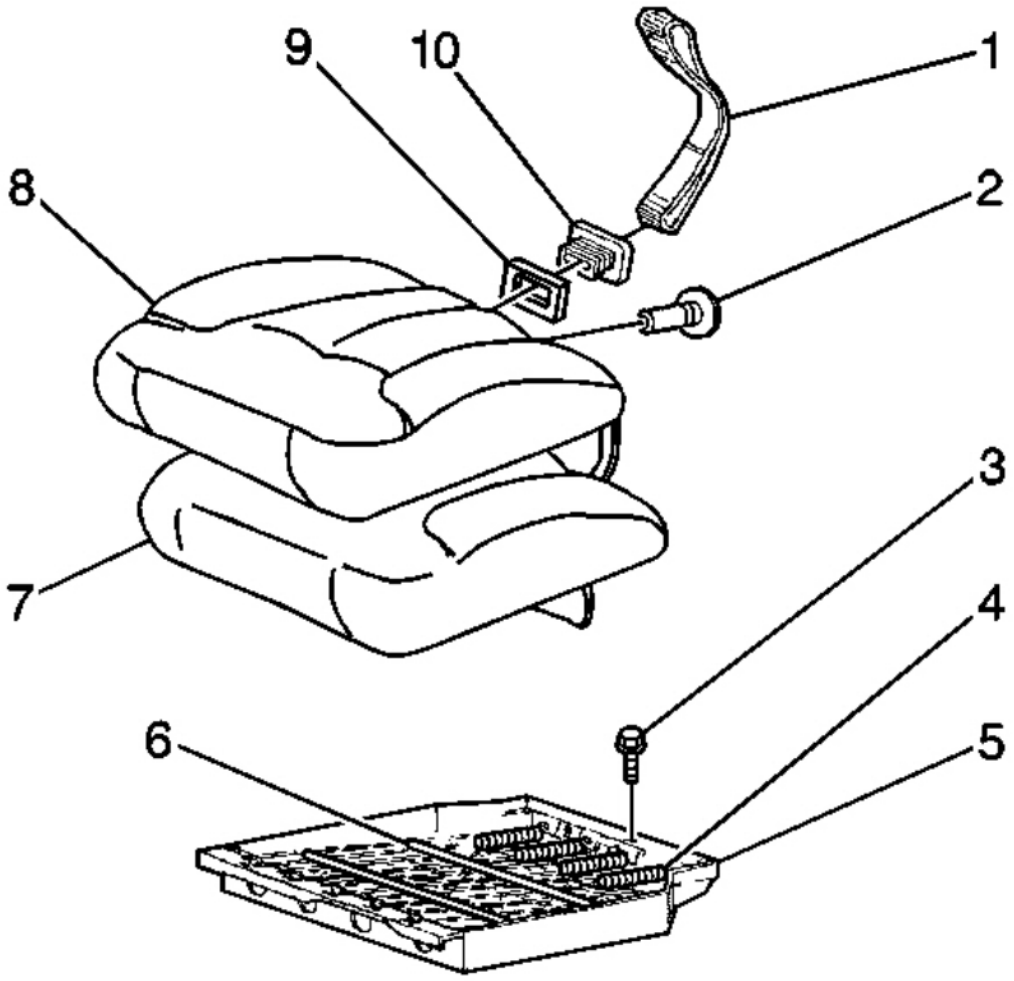


Fig. 144: View Of Seat Cushion Frame Components

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Courtesy of GENERAL MOTORS CORP.

2. Remove the bolts from the hinge assembly, if equipped with folding seats.

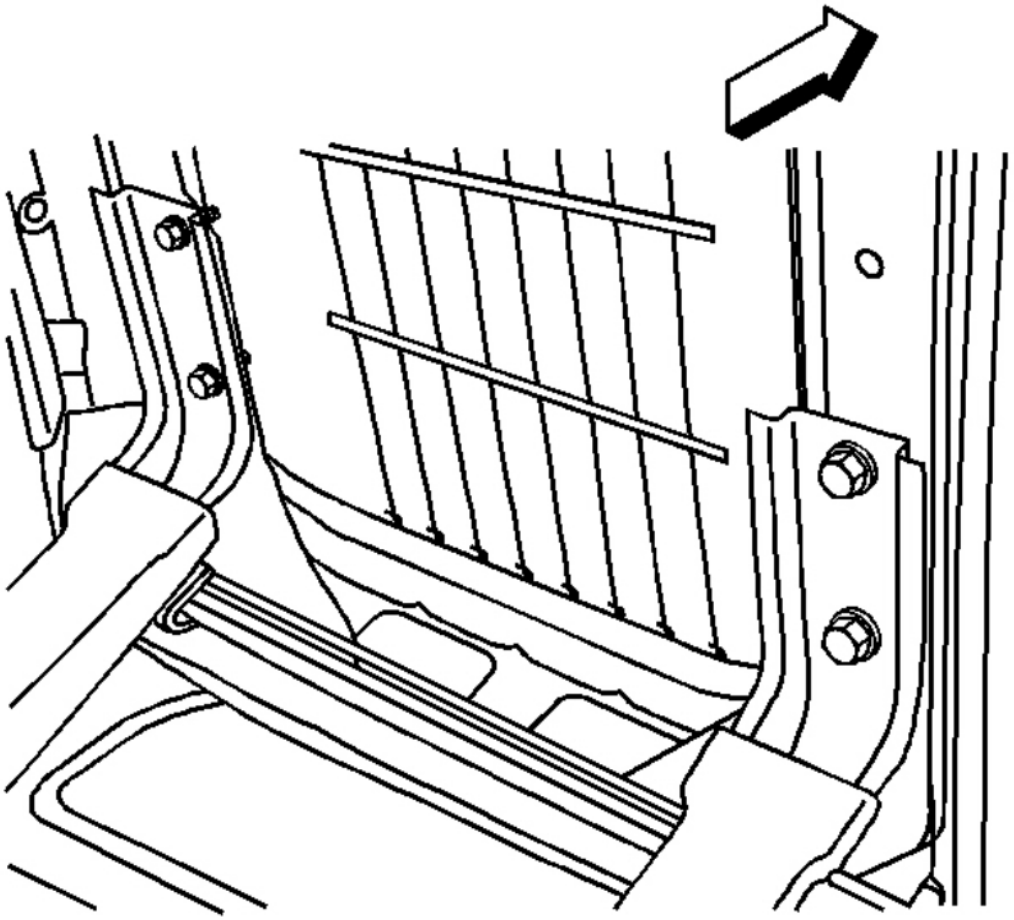


Fig. 145: View Of Hinge Assembly Bolts
Courtesy of GENERAL MOTORS CORP.

3. Remove the seat cushion frame (5).

Installation Procedure

1. Install the seat cushion frame (5).

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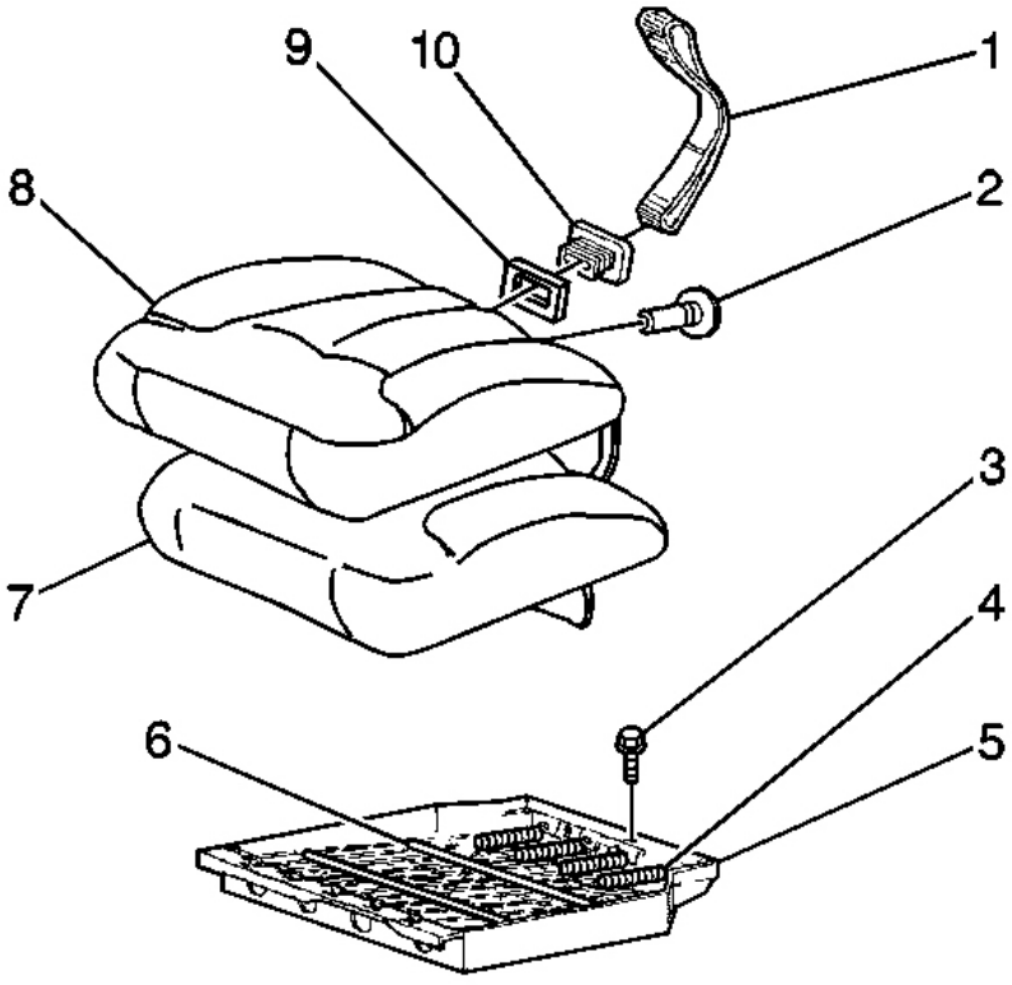


Fig. 146: View Of Seat Cushion Frame Components
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the bolts to the hinge assembly, if removed.

Tighten: Tighten to 7 N.m (61 lb in).

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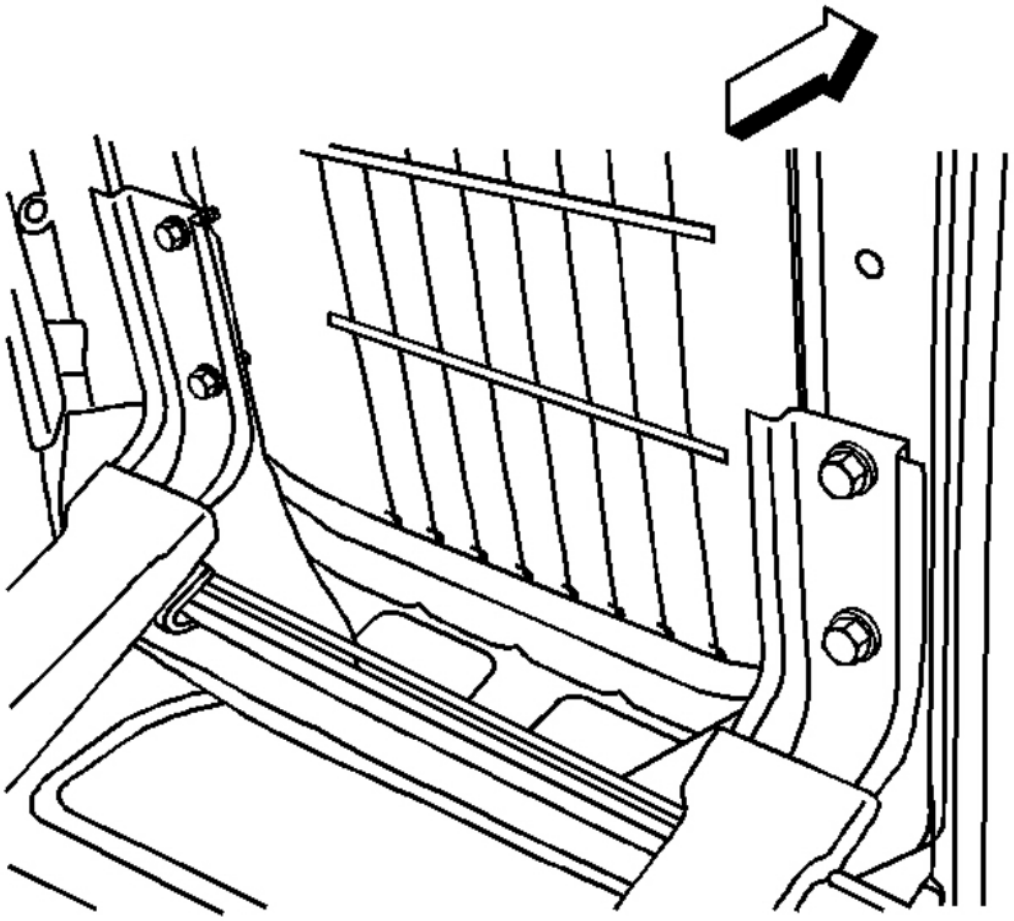


Fig. 147: View Of Hinge Assembly Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install the seat cushion trim cover (8) and the pad (7). Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and Pad Replacement - Rear (Bench)**.

SEAT CUSHION FRAME REPLACEMENT - REAR (BENCH)

Removal Procedure

1. Remove the seat cushion and cover. Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and Pad Replacement - Rear (Bench)**.
2. Remove the bolt (1) from the seat belt anchor.

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3. Remove the bolt (2) from the hinge assembly.

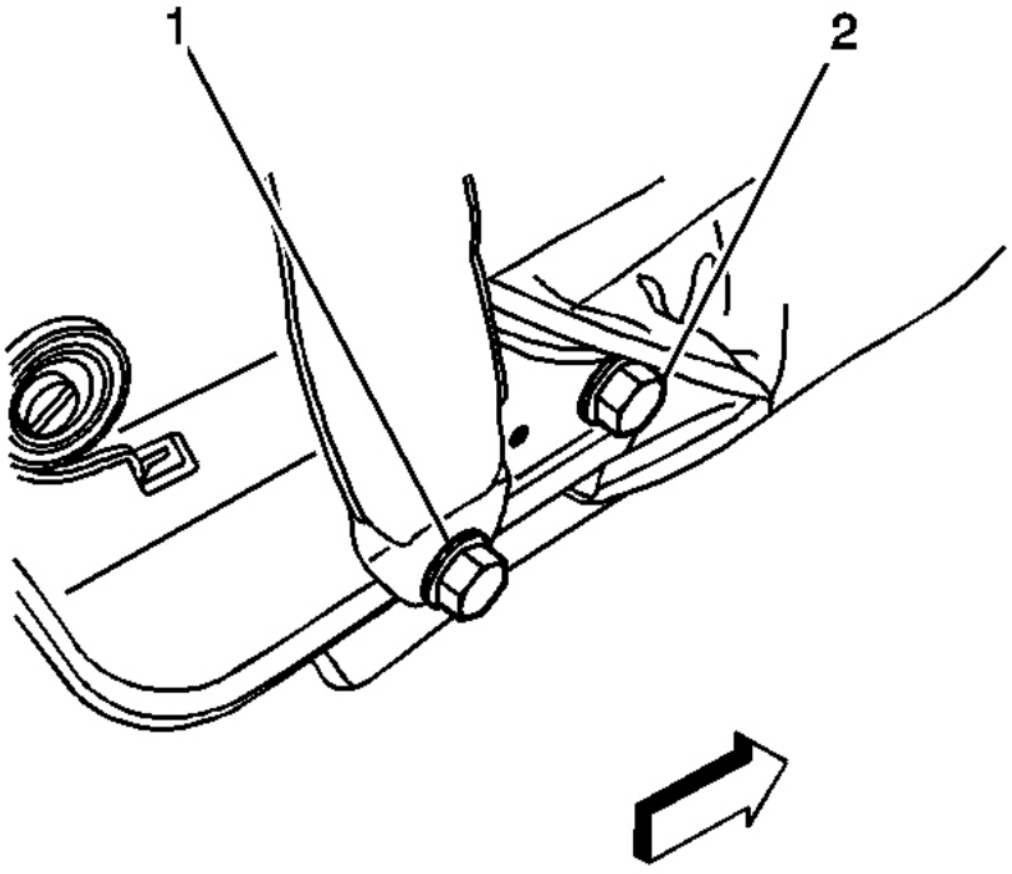


Fig. 148: View Of Seat Belt Anchor & Hinge Assembly Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the seat cushion frame.
5. Transfer all necessary parts over to the new cushion frame.

Installation Procedure

1. Install the seat cushion frame.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the bolt (2) to the hinge assembly.

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Tighten: Tighten the hinge bolt to 53 N.m (39 lb ft)

3. Install the bolt (1) to the seat belt anchor.

   Tighten: Tighten the seat belt anchor bolt to 53 N.m (39 lb ft)

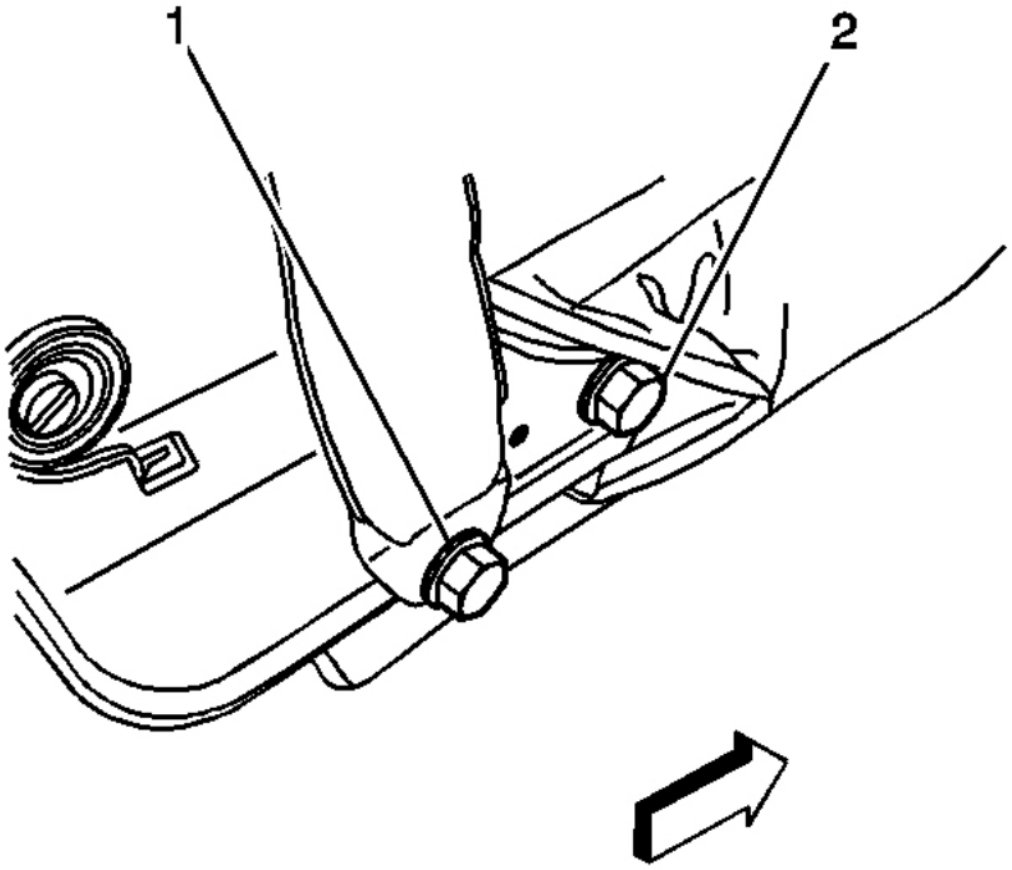


Fig. 149: View Of Seat Belt Anchor & Hinge Assembly Bolts
Courtesy of GENERAL MOTORS CORP.

4. Install the seat cushion and cover. Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and Pad Replacement - Rear (Bench)**.

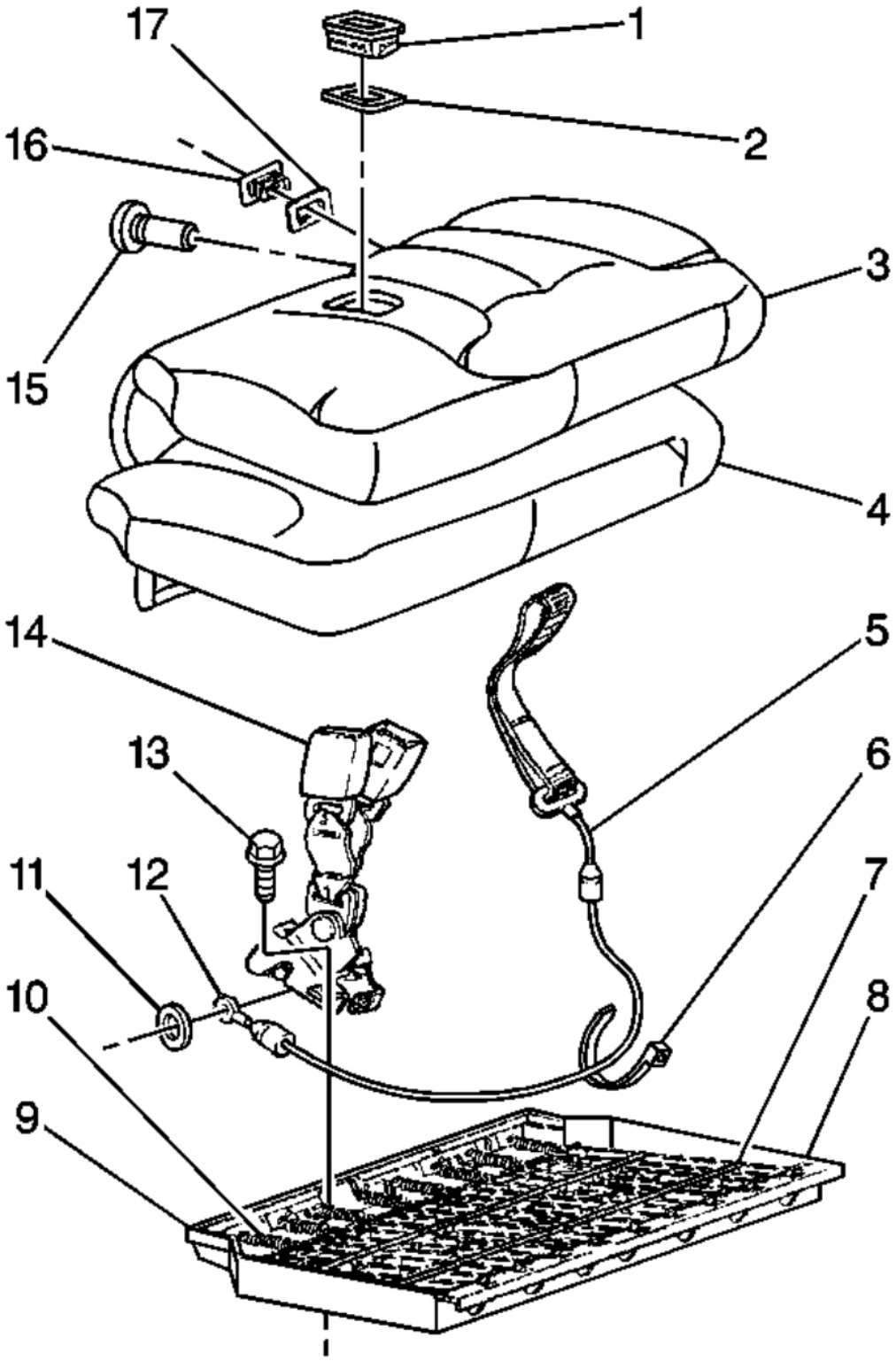
SEAT CUSHION COVER AND PAD REPLACEMENT - REAR (60/40 SPLIT - 50/50 SPLIT)

Removal Procedure

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1. Remove the rear passenger seat from the vehicle. Refer to **Seat Replacement - Rear No. 1 (60/40 Split)** or **Seat Replacement - Rear No. 1 (Bucket)**, **Seat Replacement - Rear No. 2** or **Seat Replacement - Rear No. 2 - 50-50**.
2. Remove the rear passenger seat riser.
3. Remove the seat cushion plastic cover from the seat cushion frame.
4. Remove the hog rings and/or the J-clips from the rear edge of the seat cushion cover (3).
5. Disconnect the rear heater connector, if equipped.
6. Remove the seat belt buckles, if required. Refer to **Seat Belt Buckle Replacement - Rear** or **Seat Belt Buckle Replacement - No. 2 Rear (60/40 Split - 50/50 Split)** or **Seat Belt Buckle Replacement - No. 2 Rear (Bench)** in Seat Belts.
7. Remove all of the remaining hog rings, and/or the J-clips that are retaining the seat cushion cover (3) to the seat cushion frame (8).
8. Release the hook, and the loop-strips that are retaining the seat cushion cover to the foam pad (4).
9. Remove the center screw retaining the latch cover.
10. Remove the seat cushion cover from the foam pad.

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Fig. 150: Rear Seat Cushion Cover, Frame & Foam Pad
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the seat cushion cover to the foam pad.

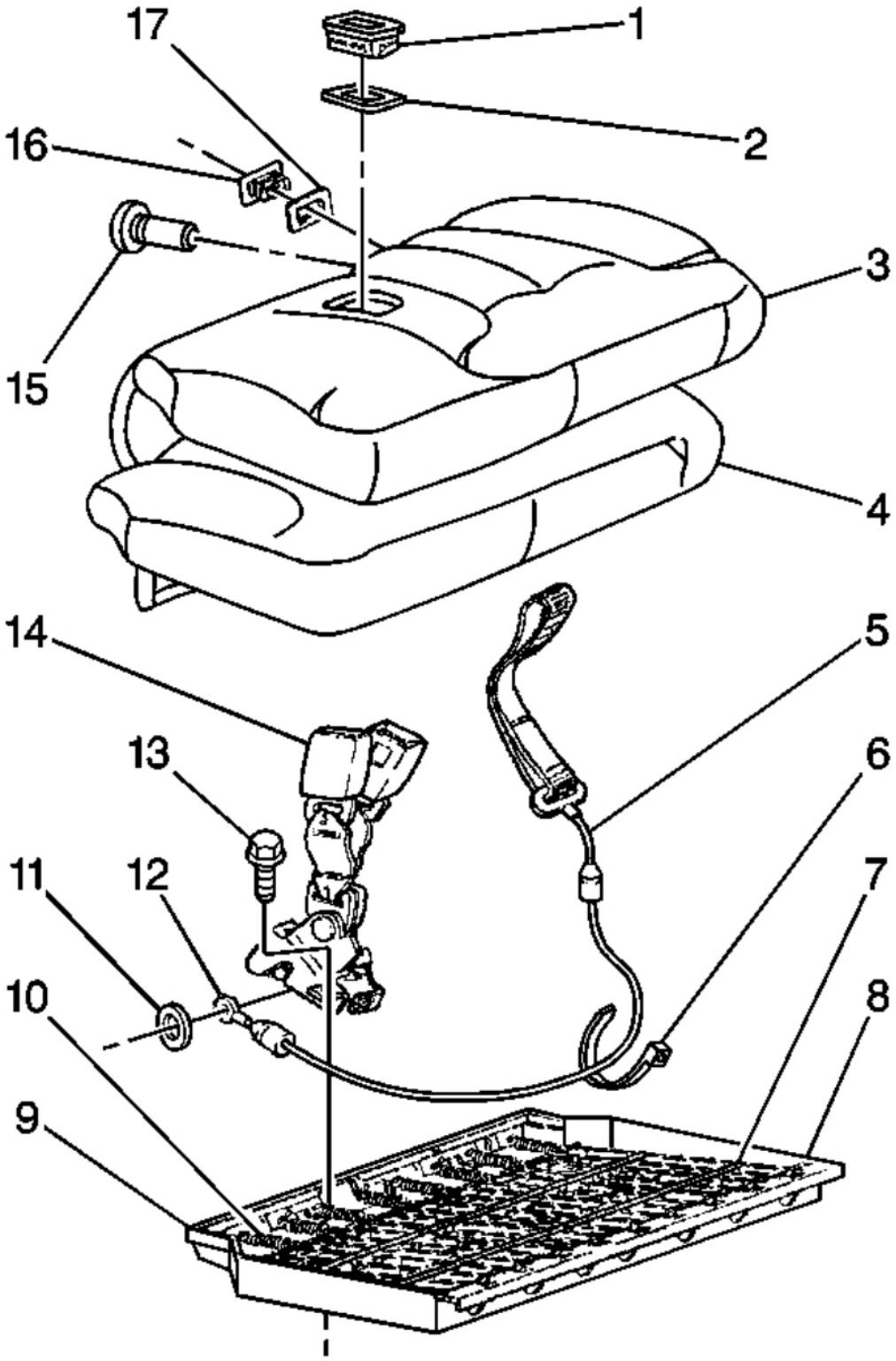
NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the center screw retaining the latch cover.

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

3. Engage the hook, and the loop-strips that are retaining the seat cushion cover (3) to the foam pad (4).
4. Install the seat buckles, if removed. Refer to **Seat Belt Buckle Replacement - Rear** or **Seat Belt Buckle Replacement - No. 2 Rear (60/40 Split - 50/50 Split)** or **Seat Belt Buckle Replacement - No. 2 Rear (Bench)** in Seat Belts.
5. Connect the rear heater connector, if equipped.
6. Install the hog rings, and/or the J-clips in order to retain the seat cushion cover to the seat cushion frame (8).
7. Install the seat cushion plastic cover to the seat cushion frame.
8. Install the rear passenger seat risers.

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Fig. 151: Rear Seat Cushion Cover, Frame & Foam Pad
Courtesy of GENERAL MOTORS CORP.

9. Install the rear passenger seat to the vehicle. Refer to **Seat Replacement - Rear No. 1 (60/40 Split)** or **Seat Replacement - Rear No. 1 (Bucket)**, **Seat Replacement - Rear No. 2** or **Seat Replacement - Rear No. 2 - 50-50**.

SEAT CUSHION COVER AND PAD REPLACEMENT - REAR (BENCH)

Removal Procedure

1. Remove the rear seat from the vehicle. Refer to **Seat Replacement - Rear No. 2**.
2. Remove the J-Clips from the back of the seat.
3. Remove the bolts (2) from the grab handle (1).

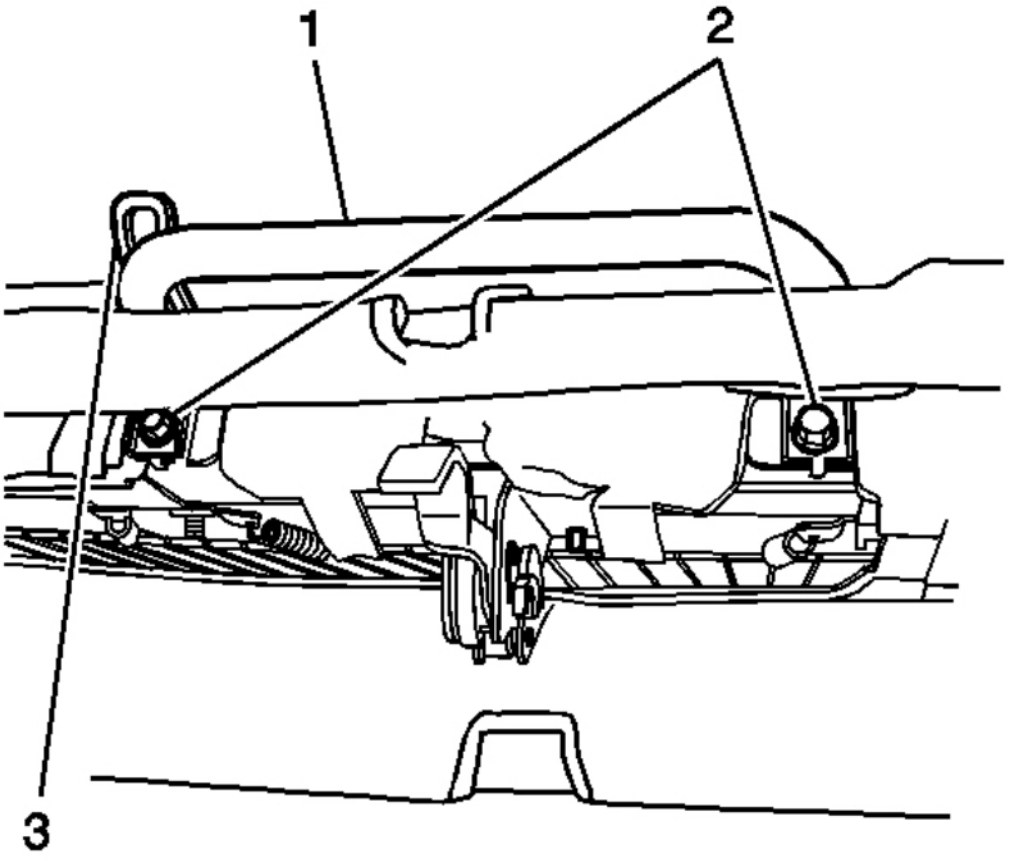


Fig. 152: View Of Grab Handle & Bolts

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Courtesy of GENERAL MOTORS CORP.

4. Remove the support rod (1) from the bottom of the seat.

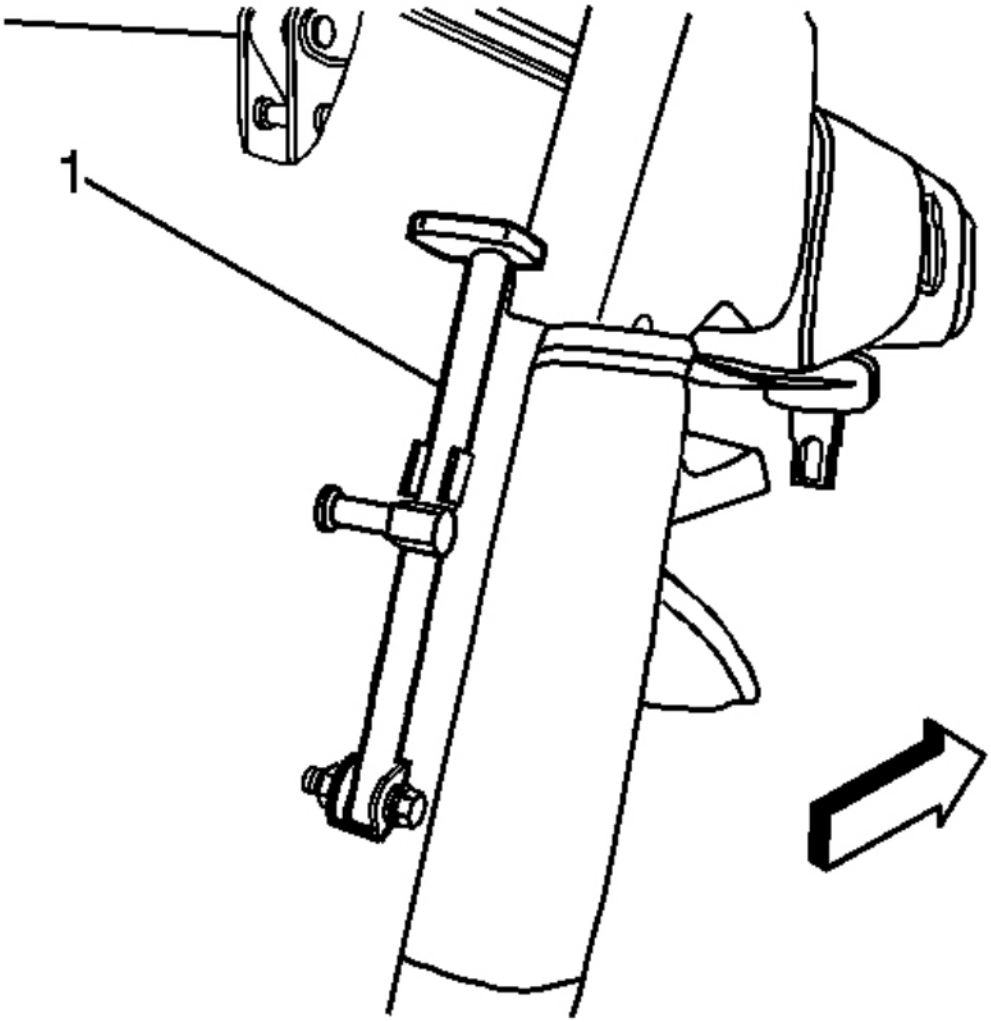


Fig. 153: View Of Support Rod
Courtesy of GENERAL MOTORS CORP.

5. Loosen the bolts (1) on the roller assembly (2) but do not remove.

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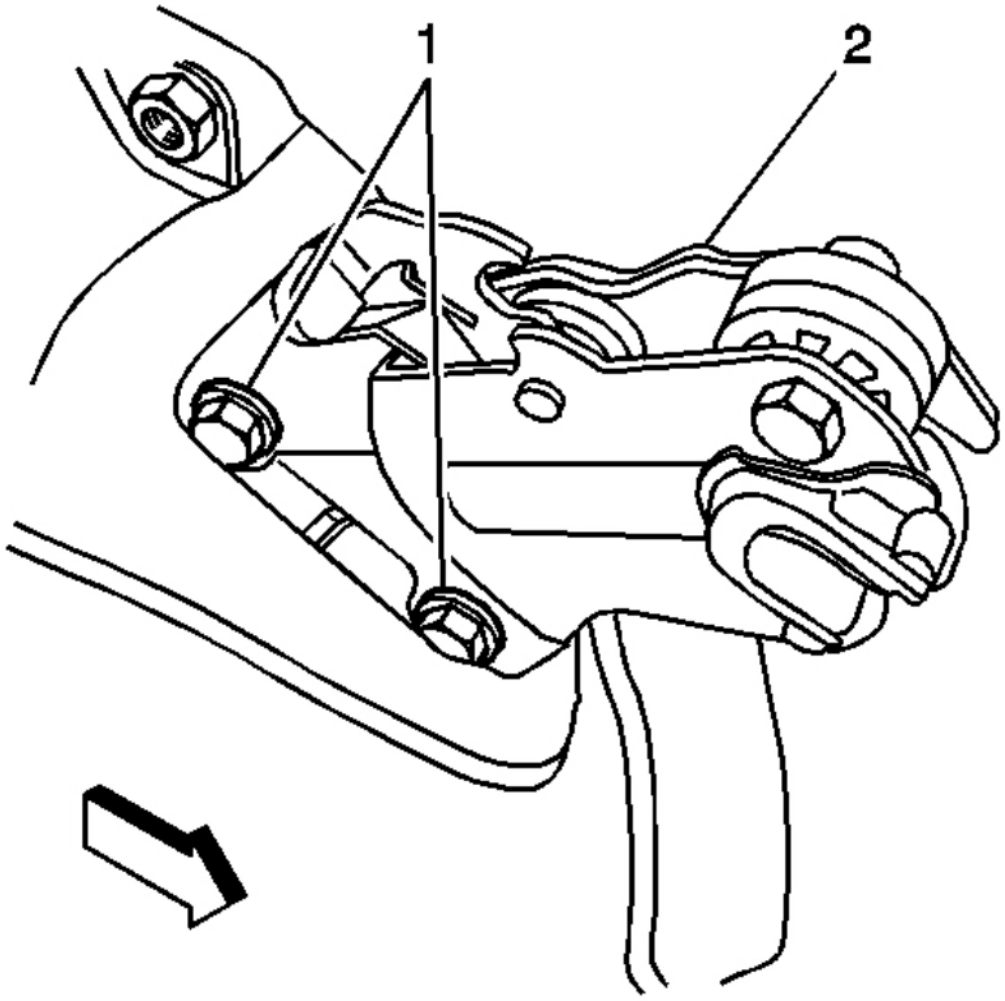


Fig. 154: View Of Roller Assembly & Bolts
Courtesy of GENERAL MOTORS CORP.

6. Remove the seat cushion cover and pad from the seat frame.

Installation Procedure

1. Install the seat cushion cover and pad to the seat frame.

NOTE: Refer to Fastener Notice in Cautions and Notices.

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2. Install the bolts (1) on the roller assembly (2).

   Tighten: Tighten the bolts to 53 N.m (39 lb ft).

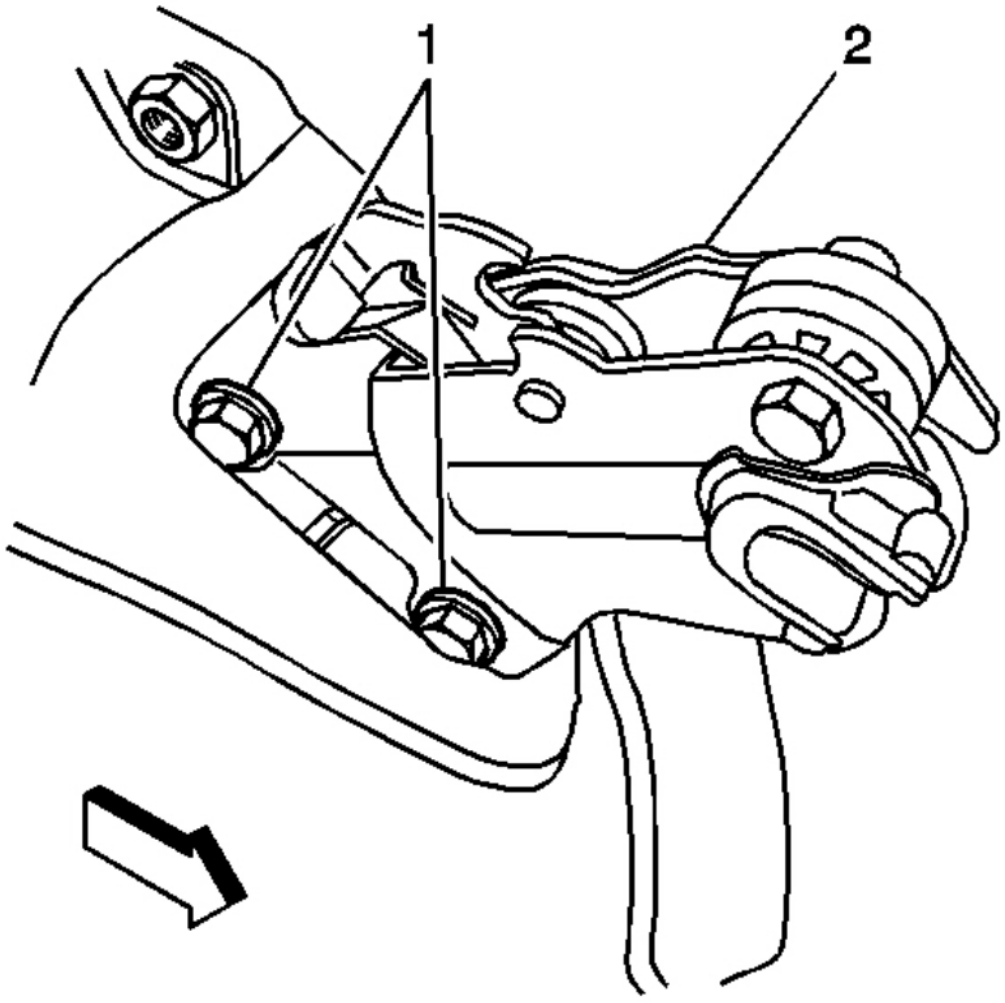


Fig. 155: View Of Roller Assembly & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install the support rod (1) to the bottom of the seat.

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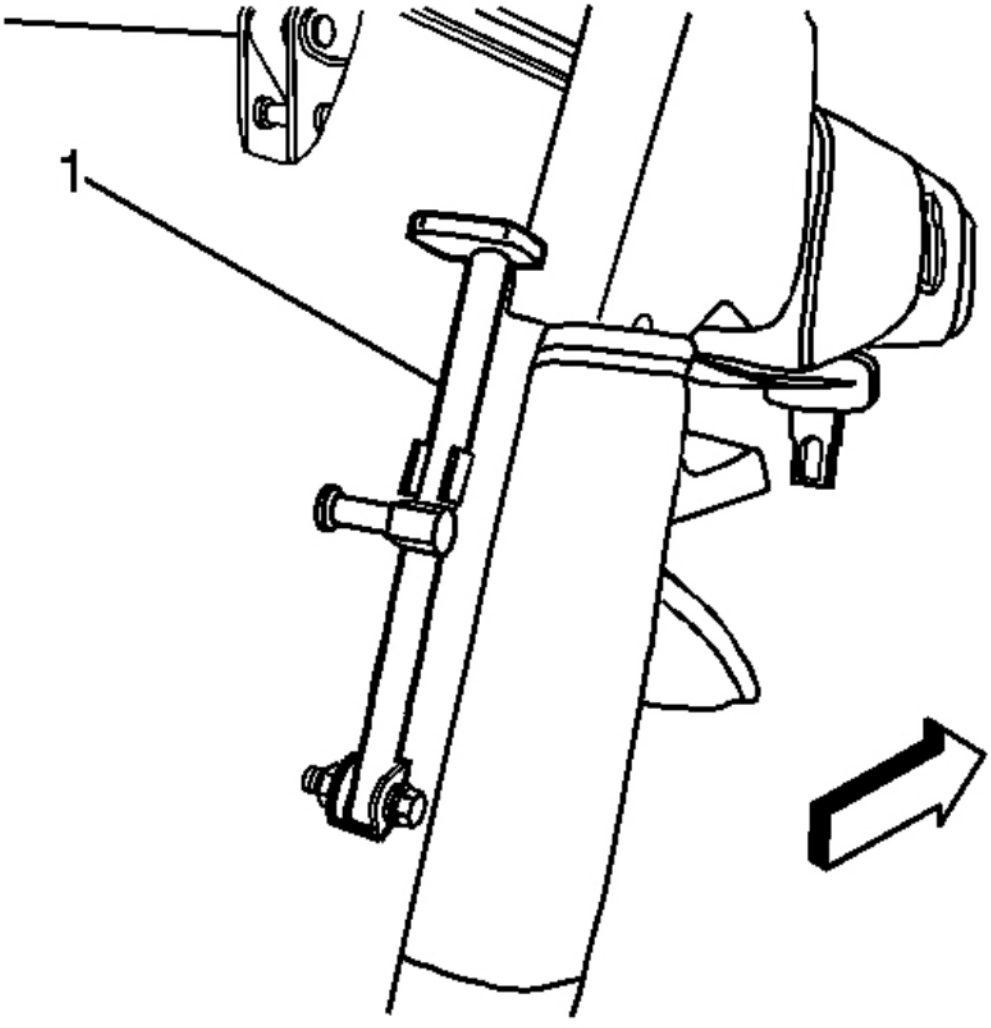


Fig. 156: View Of Support Rod
Courtesy of GENERAL MOTORS CORP.

4. Install the bolts (2) to the grab handle (1).

   Tighten: Tighten the bolts to 30 N.m (22 lb ft).

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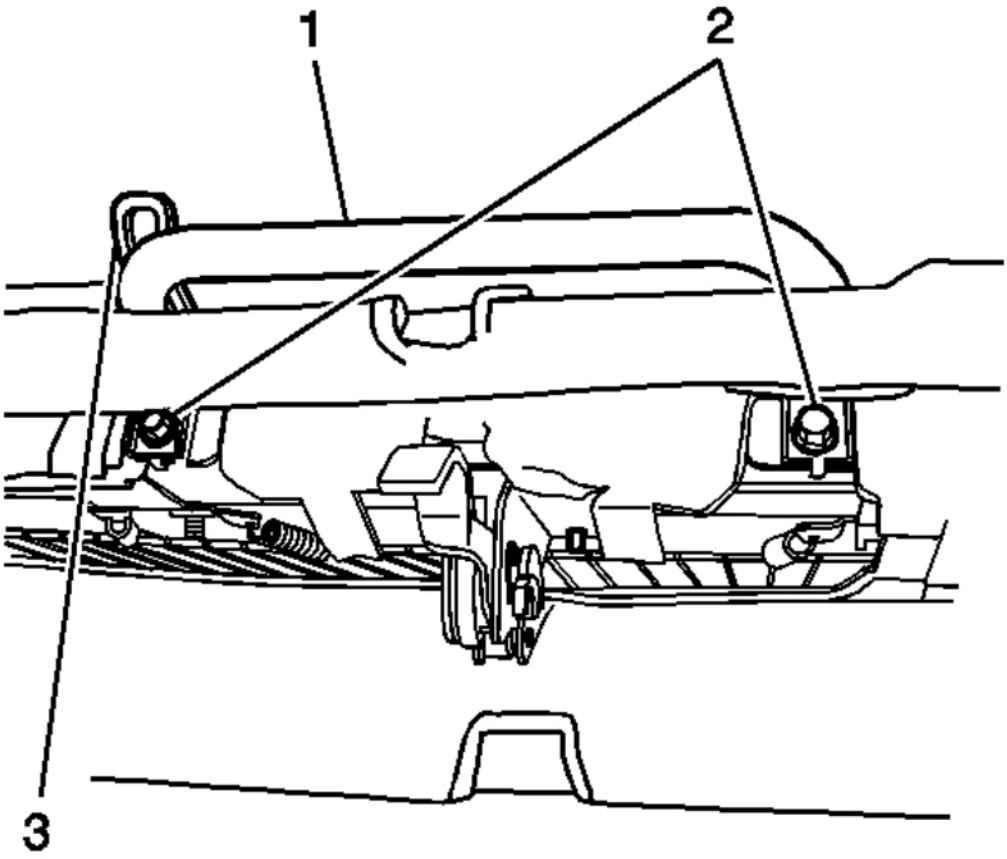


Fig. 157: View Of Grab Handle & Bolts
Courtesy of GENERAL MOTORS CORP.

5. Install the J-Clips on the back of the seat.
6. Install the rear seat to the vehicle. Refer to **Seat Replacement - Rear No. 2**.

SEAT BACK COVER AND PAD REPLACEMENT - REAR (50/50 SPLIT - 60/40 SPLIT)

Removal Procedure

1. Remove the rear seat from the vehicle. Refer to **Seat Replacement - Rear No. 1 (60/40 Split)** or **Seat Replacement - Rear No. 1 (Bucket)**, **Seat Replacement - Rear No. 2** or **Seat Replacement - Rear No. 2 - 50-50**.
2. Remove the seat back folding cover, if necessary. Refer to **Seat Back Cover Replacement - Rear Folding**.

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3. Remove the armrest from the seat back, if equipped. Refer to **Armrest Replacement - Rear Seat (Bucket)** or **Armrest Replacement - Rear Seat (60/40 Split)**.
4. Remove the head restraints (1) from the seat back. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
5. Remove the seat back plastic cover (10) from the seat back frame, if equipped.
6. Release the J-clips from the seat back cover.
7. Release the hook and loop strips retaining the seat back cover (2) to the foam pad (12).
8. In order to ease removal, place a piece of cardboard between the seat back cover and the foam pad.
9. Working from side to side, carefully lift the seat back cover from the foam pad.

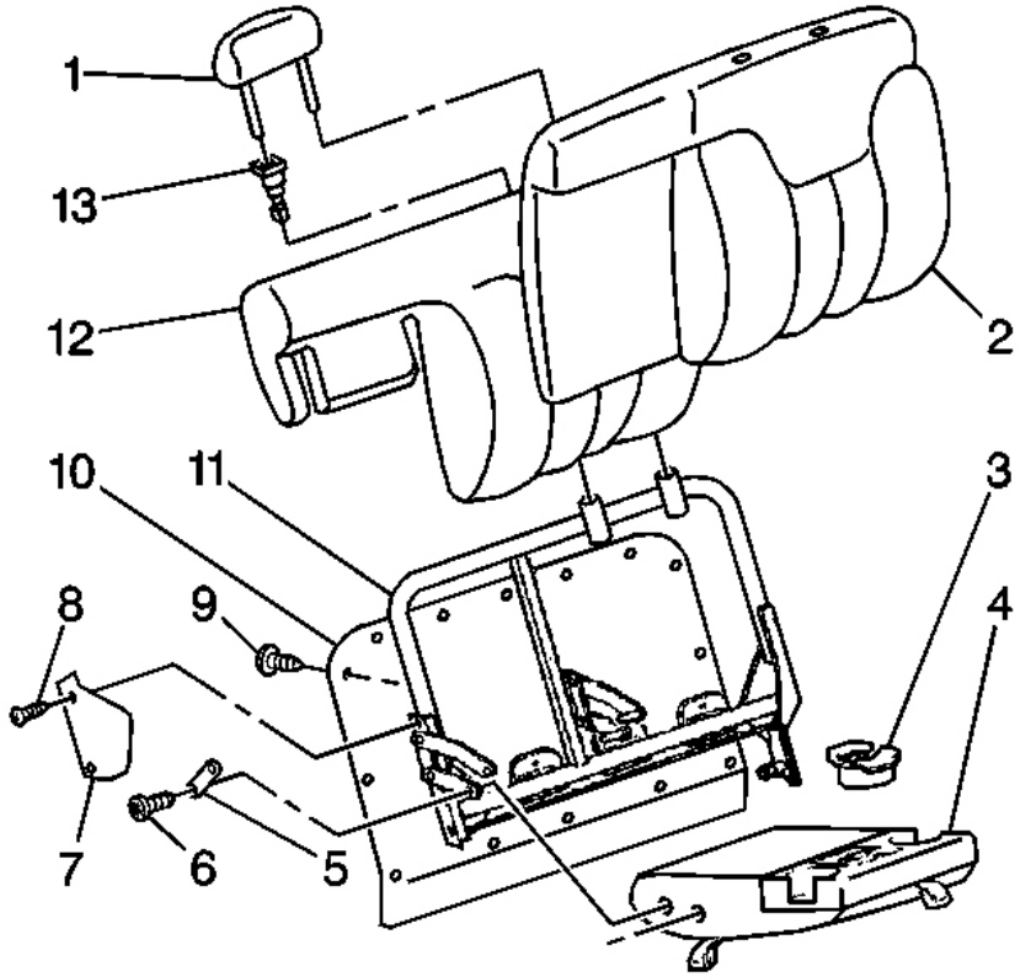


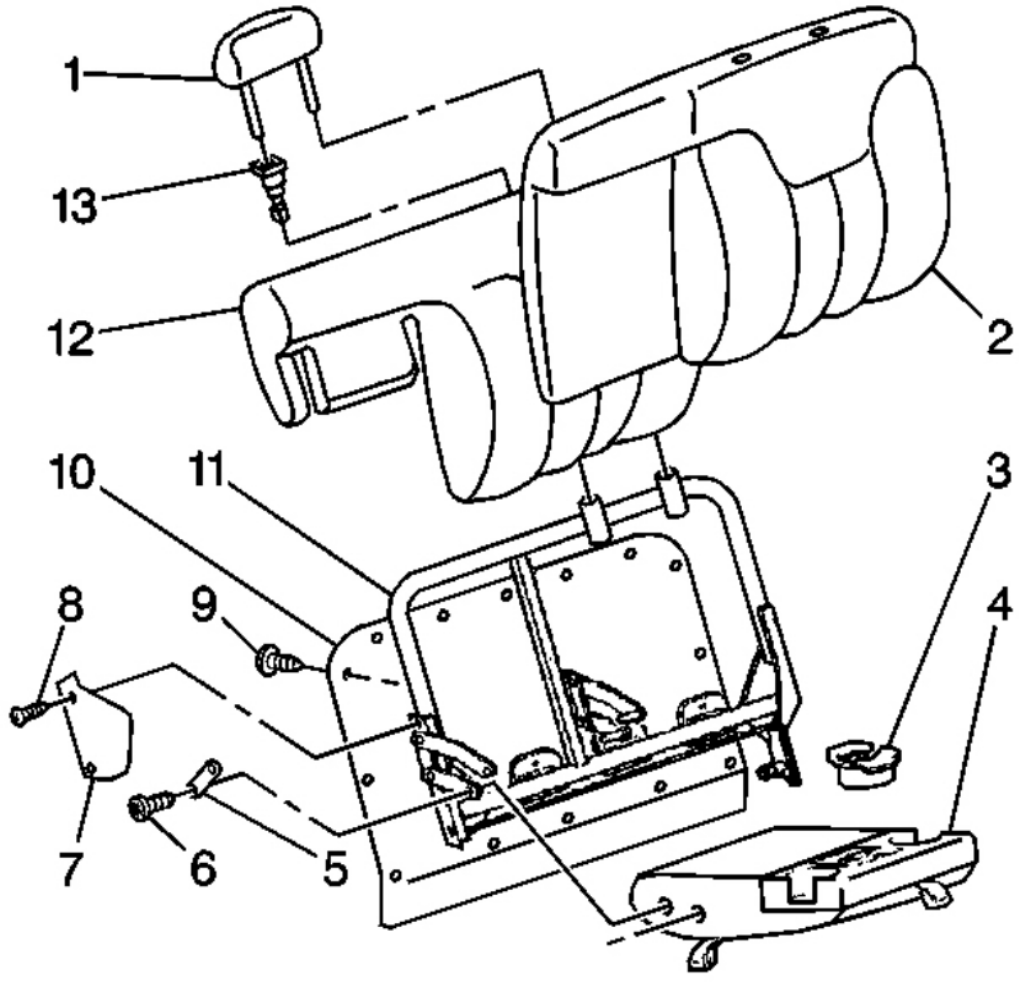
Fig. 158: View Of Seat Back Cover & Pad Components

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Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Working from side to side, carefully install the seat back cover over the foam pad.
2. Remove the cardboard from between the seat back cover and the foam pad.
3. Engage the hook, and the loop strips that retain the seat back cover (2).
4. Engage the J-clips that retain the seat back cover.
5. Install the seat back plastic cover (10) to the seat back frame, if equipped.
6. Install the head restraints (1) to the seat back. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.



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Fig. 159: View Of Seat Back Cover & Pad Components
Courtesy of GENERAL MOTORS CORP.

7. Install the armrest to the seat back, if removed. Refer to **Armrest Replacement - Rear Seat (Bucket)** or **Armrest Replacement - Rear Seat (60/40 Split)**.
8. Install the seat back folding cover, if removed. Refer to **Seat Back Cover Replacement - Rear Folding**.
9. Install the rear seat to the vehicle. Refer to **Seat Replacement - Rear No. 1 (60/40 Split)** or **Seat Replacement - Rear No. 1 (Bucket)**, **Seat Replacement - Rear No. 2** or **Seat Replacement - Rear No. 2 - 50-50**.

SEAT BACK COVER AND PAD REPLACEMENT - REAR (BENCH)

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 2**.
2. Remove the headrests. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
3. Remove the side trim plate and screws (1).

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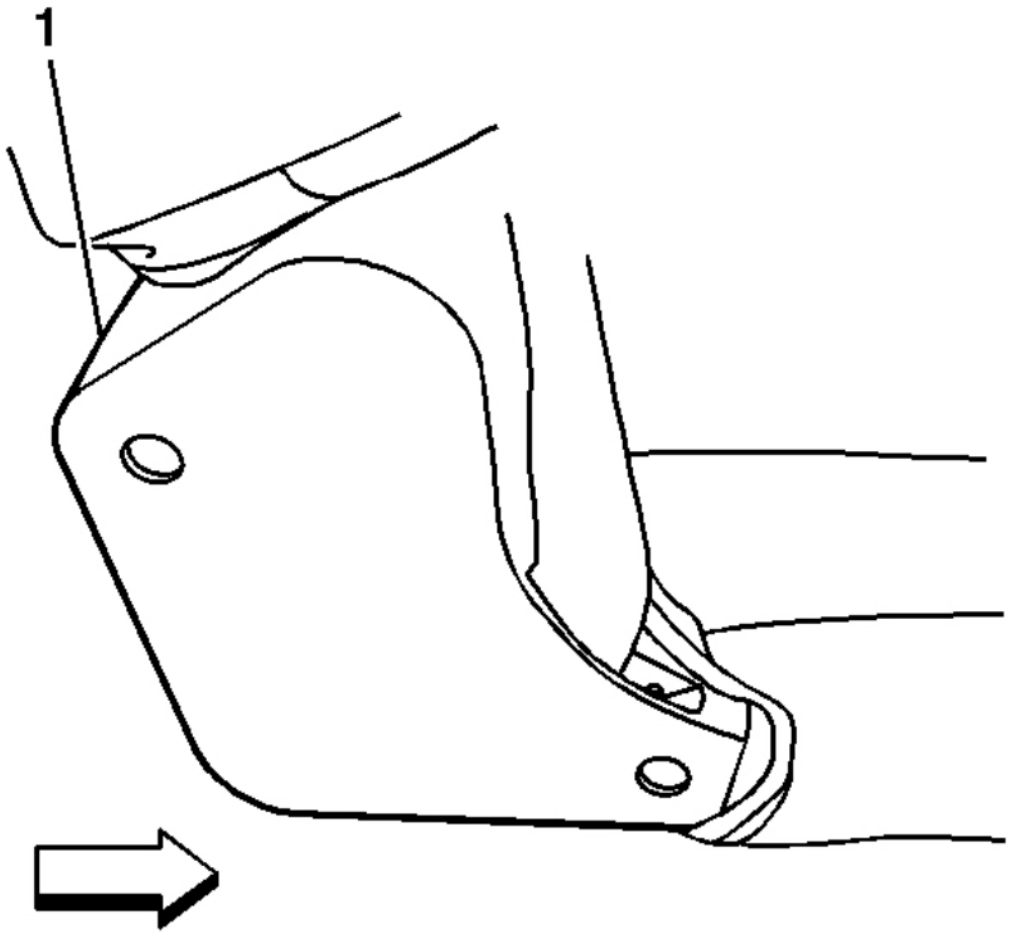


Fig. 160: View Of Side Trim Plate
Courtesy of GENERAL MOTORS CORP.

4. Remove the seat belt anchor bolt (1).

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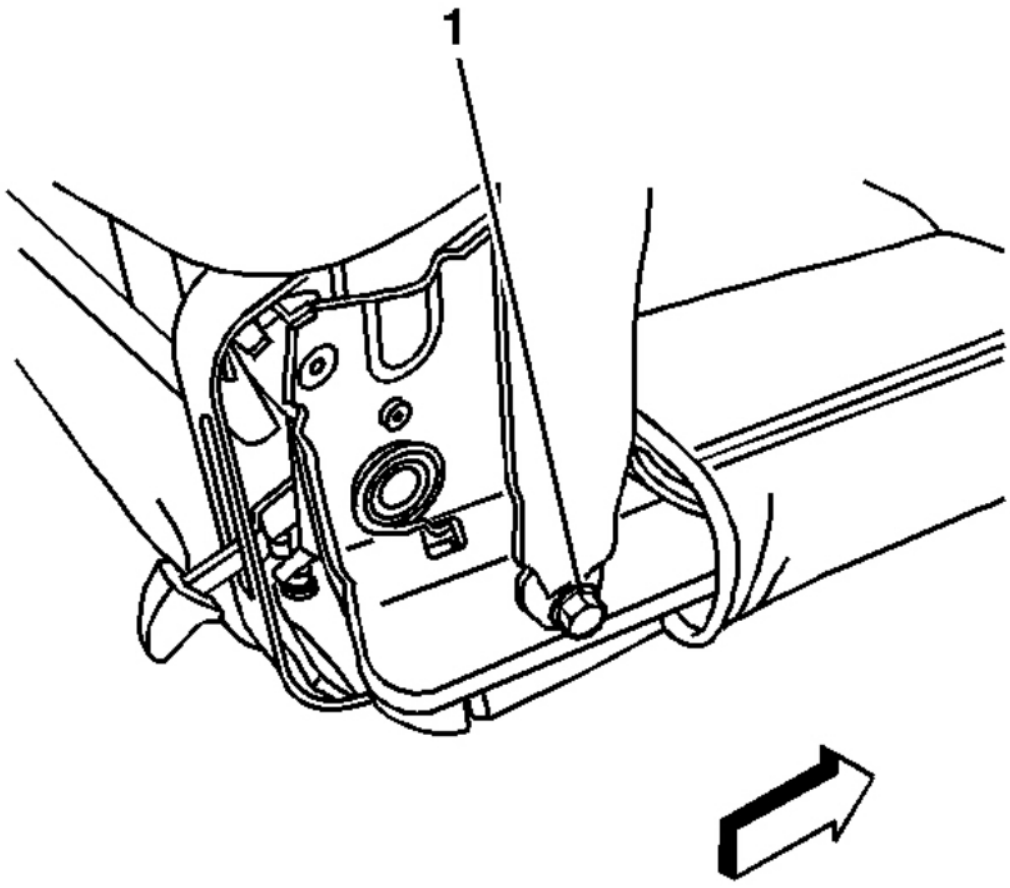


Fig. 161: View Of Seat Belt Anchor Bolt
Courtesy of GENERAL MOTORS CORP.

5. Remove the plastic seat belt guides (1).

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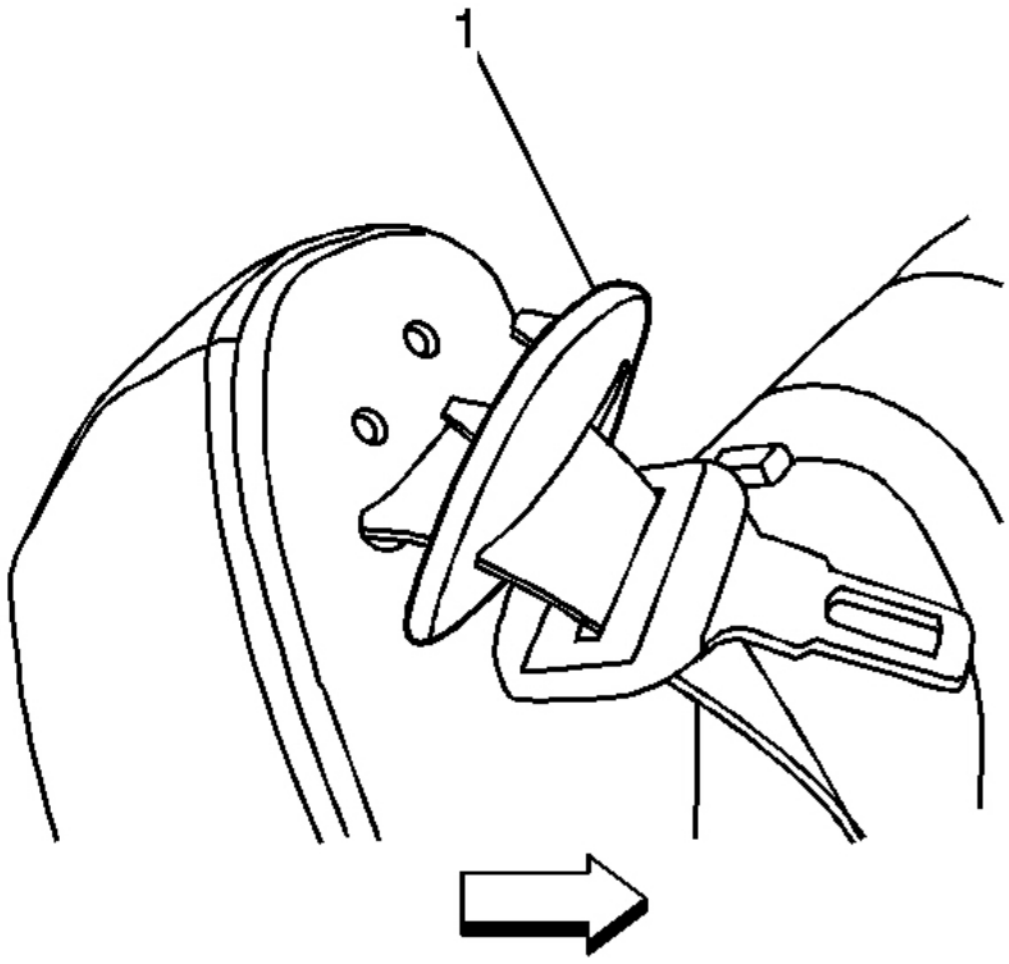


Fig. 162: View Of Seat Belt Guide
Courtesy of GENERAL MOTORS CORP.

6. Release the J-Clips from the trim.
7. Remove the plastic pushpin (1) from the side seat belt guide.

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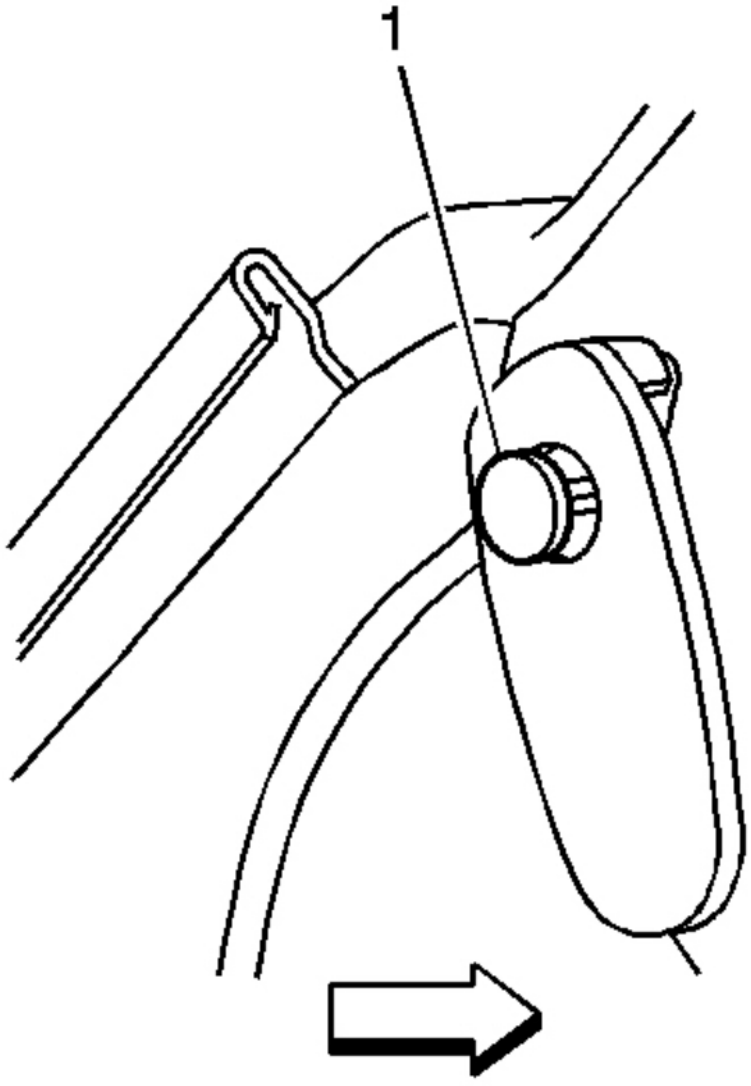


Fig. 163: View Of Side Seat Belt Guide Pushpin
Courtesy of GENERAL MOTORS CORP.

8. Remove the head restraint retainers.
9. Remove the seat back cover and pad from the frame.

Installation Procedure

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1. Install the seat back cover and pad to the frame.
2. Install the head restraint retainers.
3. Install the plastic pushpin (1) into the side seat belt guide.

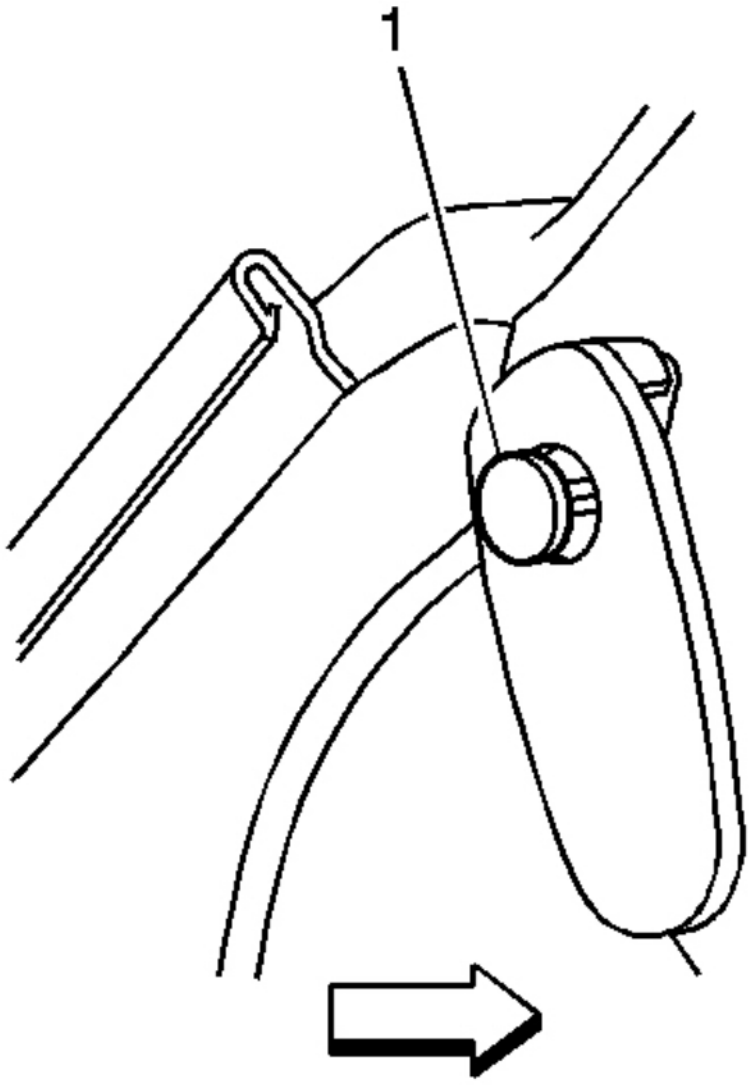


Fig. 164: View Of Side Seat Belt Guide Pushpin
Courtesy of GENERAL MOTORS CORP.

4. Connect the J-clips to the trim.

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5. Install the plastic seat belt guides (1).

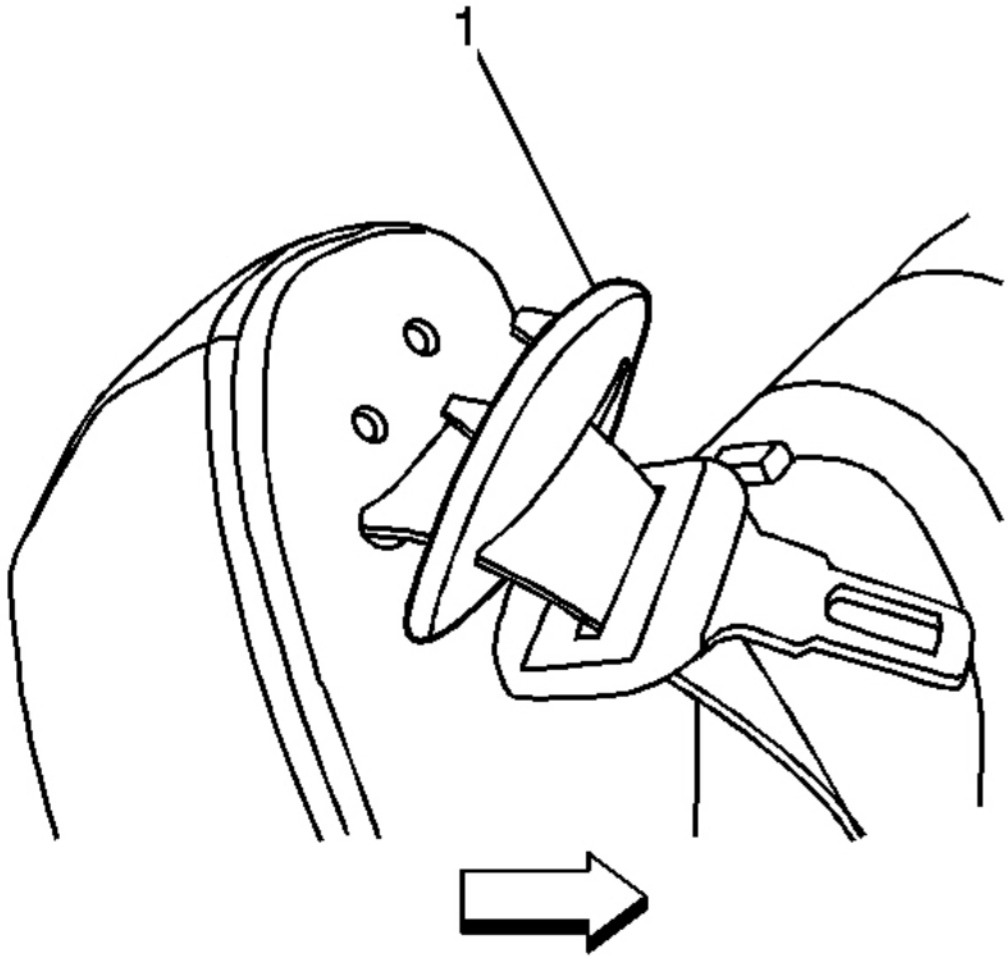


Fig. 165: View Of Seat Belt Guide
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

6. Install the seat belt anchor bolt (1).

Tighten: Tighten the bolt to 53 N.m (39 lb ft).

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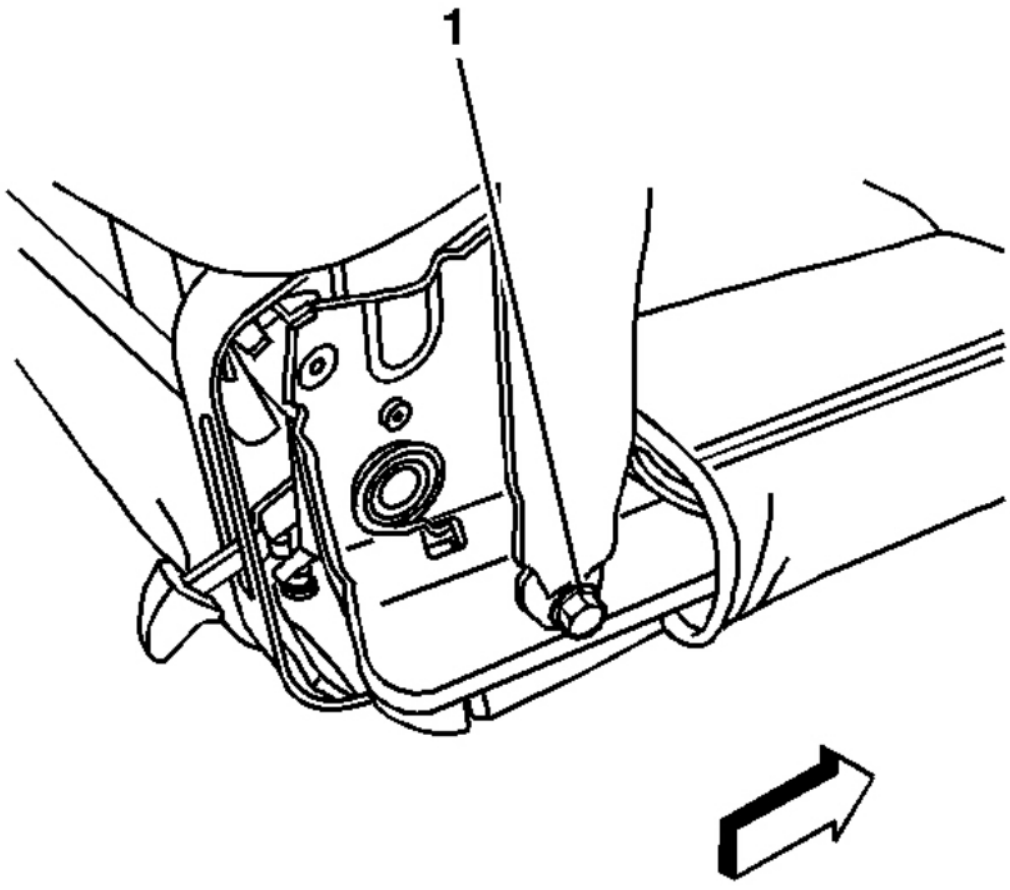


Fig. 166: View Of Seat Belt Anchor Bolt
Courtesy of GENERAL MOTORS CORP.

7. Install the side trim plate and screws (1).

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

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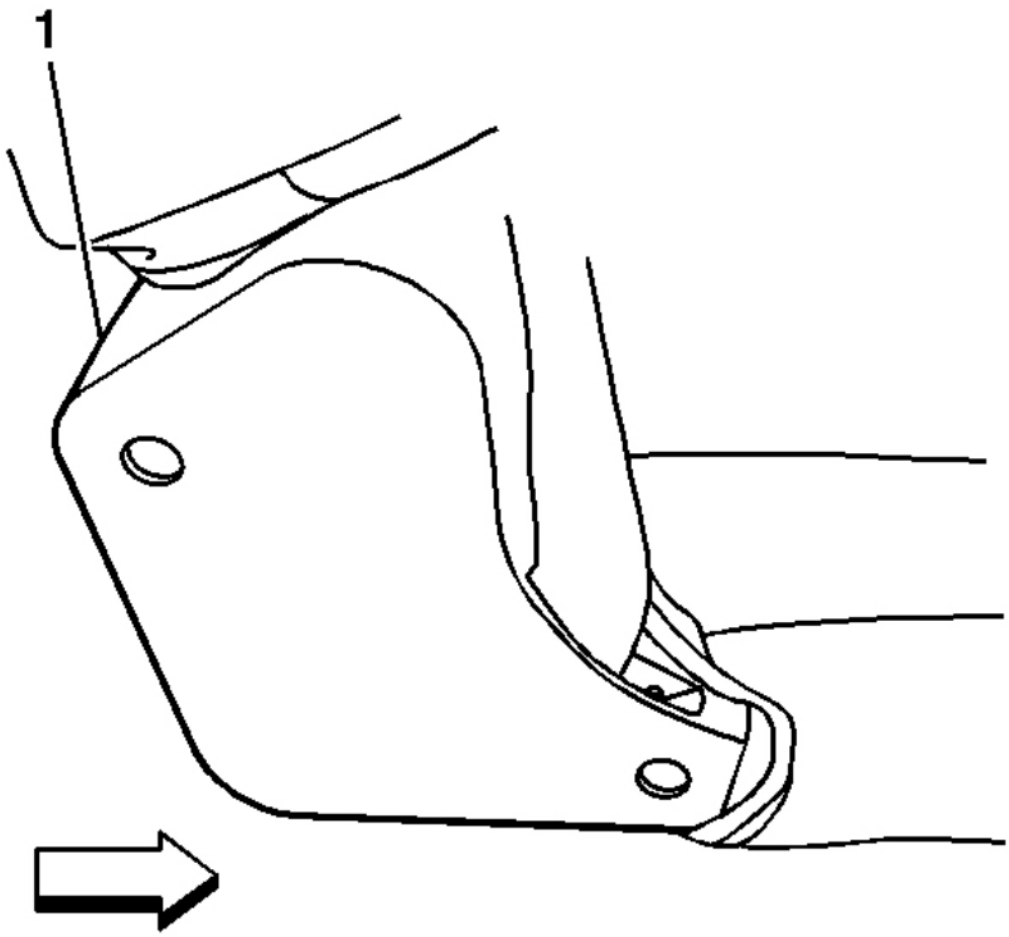


Fig. 167: View Of Side Trim Plate
Courtesy of GENERAL MOTORS CORP.

8. Install the headrests. Refer to **Head Restraint Replacement (Cadillac)** or **Head Restraint Replacement (Non-Cadillac)** or **Head Restraint Replacement (Folding)**.
9. Install the seat to the vehicle. Refer to **Seat Replacement - Rear No. 2**.

SEAT BACK FRAME REPLACEMENT - REAR (60/40 SPLIT - 50/50 SPLIT)

Removal Procedure

1. Remove the seat from the vehicle. Refer to **Seat Replacement - Rear No. 1 (60/40 Split)** or **Seat Replacement - Rear No. 1 (Bucket)**, **Seat Replacement - Rear No. 2** or **Seat Replacement - Rear No. 2 - 50-50**.

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2. Remove the armrest, if equipped. Refer to **Armrest Replacement - Rear Seat (Bucket)** or **Armrest Replacement - Rear Seat (60/40 Split)**.
3. Partially remove the seat-back cover in order to gain access to the retaining bolts. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.
4. Remove the bolts from the seat-back frame.
5. Remove the seat-back frame (4) from the seat back cushion frame.

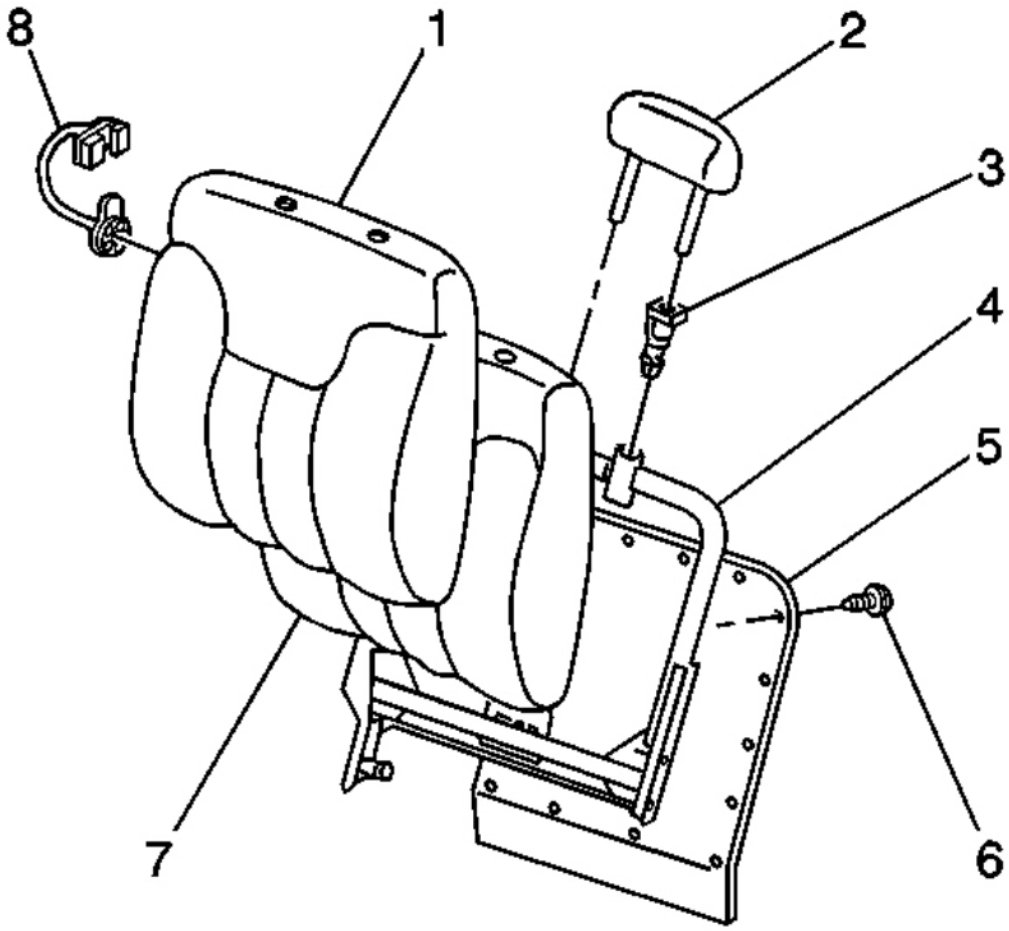


Fig. 168: View Of Seat Back Frame Components
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

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1. Install the seat-back frame (4) to the seat cushion frame.

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

2. Install the bolts which retain the seat-back frame to the seat cushion frame.

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

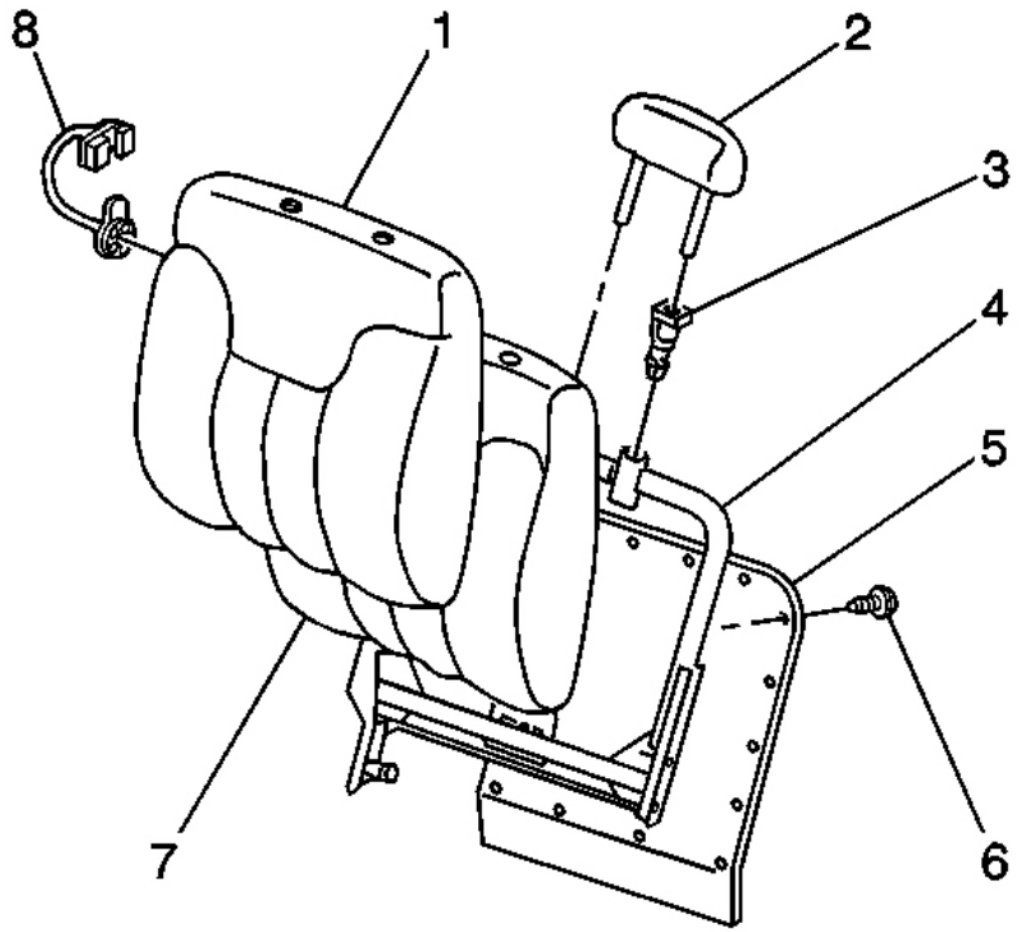


Fig. 169: View Of Seat Back Frame Components
Courtesy of GENERAL MOTORS CORP.

3. Install the seat-back cover. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.

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4. Install the armrest to the seat back. Refer to **Armrest Replacement - Rear Seat (Bucket)** or **Armrest Replacement - Rear Seat (60/40 Split)**.
5. Install the seat to the vehicle. Refer to **Seat Replacement - Rear No. 1 (60/40 Split)** or **Seat Replacement - Rear No. 1 (Bucket)**, **Seat Replacement - Rear No. 2** or **Seat Replacement - Rear No. 2 - 50-50**.

SEAT BACK FRAME REPLACEMENT - REAR (BENCH)

Removal Procedure

1. Remove the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.
2. Remove the bolts (1) that retain the seat back frame to the hinge assembly.
3. Remove the seat back frame.

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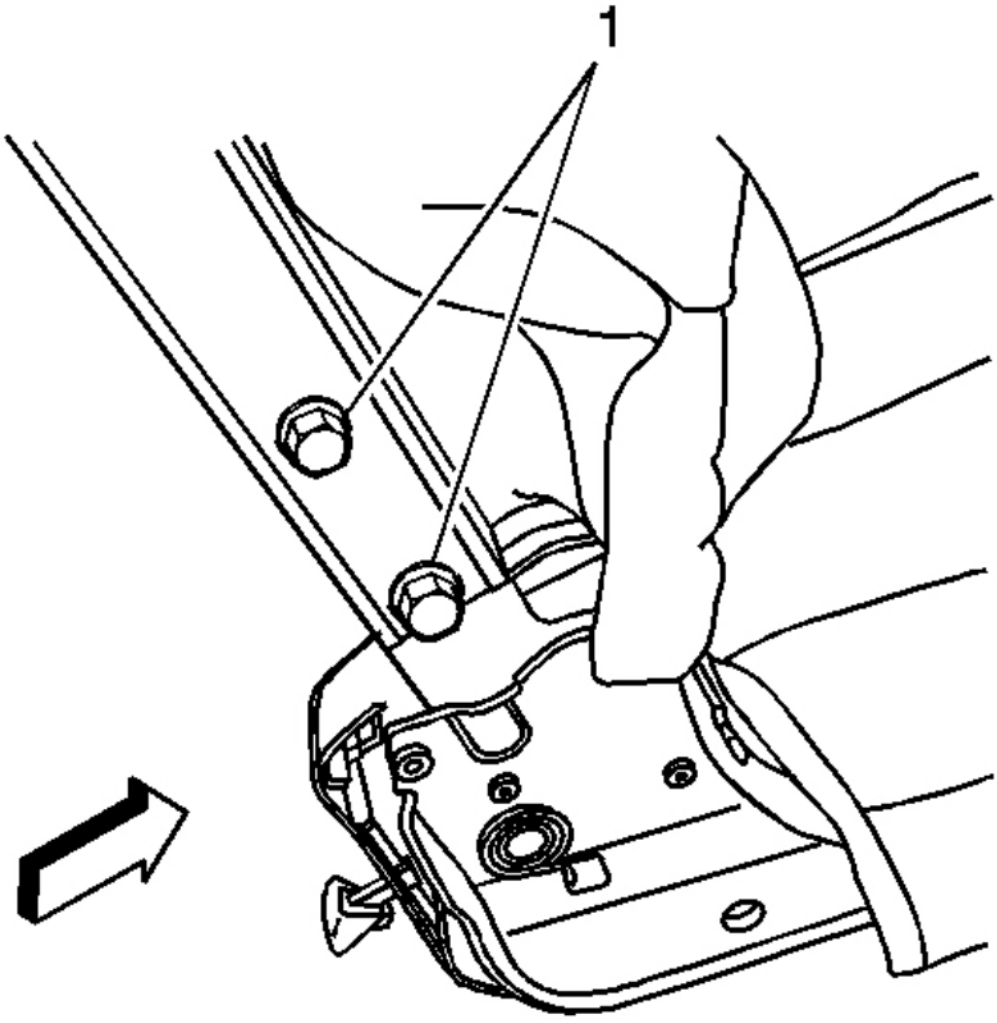


Fig. 170: View Of Seat Back Frame Bolts
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the seat back frame.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the bolts (1) and retain the seat back frame to the hinge assembly.

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Tighten: Tighten the bolts to 53 N.m (39 lb ft).

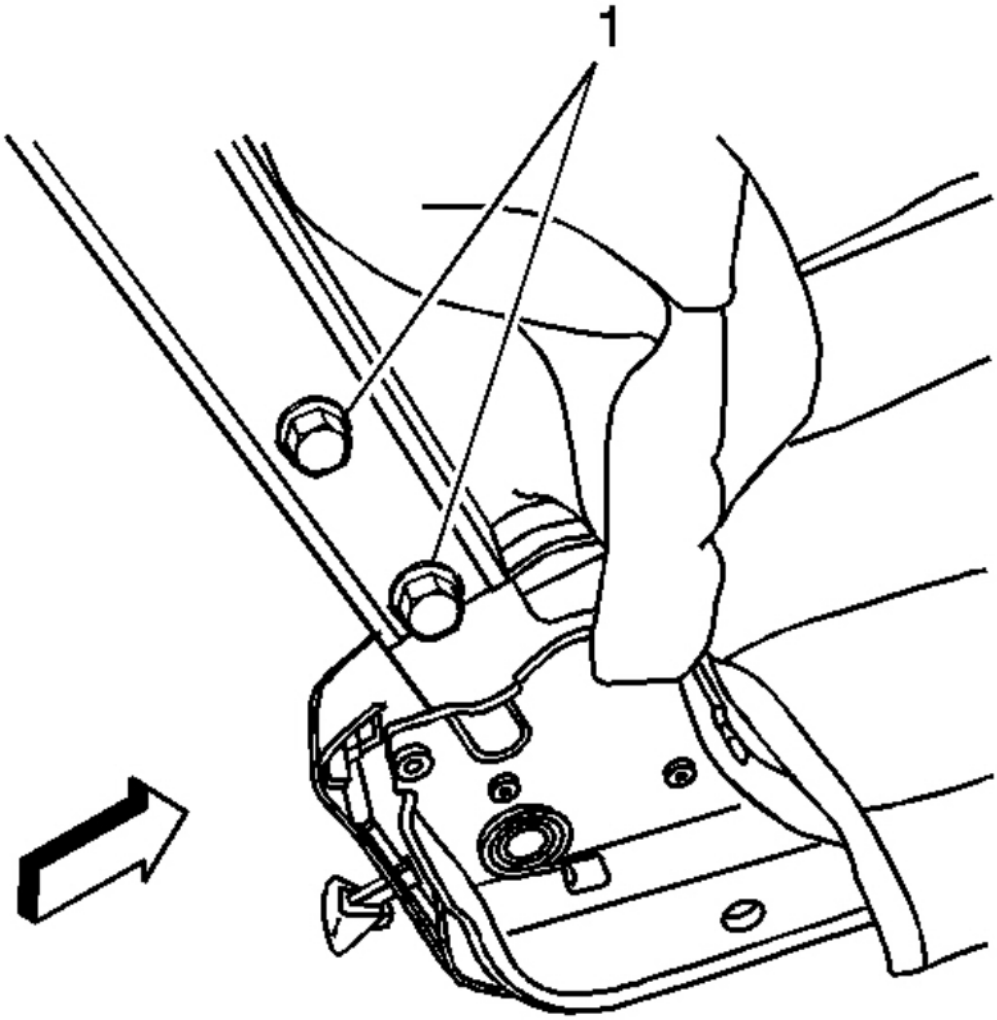


Fig. 171: View Of Seat Back Frame Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.

SEAT BACK COVER REPLACEMENT - REAR FOLDING

Tools Required

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J 34940 Rivet Gun. See **Special Tools and Equipment**.

Removal Procedure

1. Fold the seat forward.
2. Remove the rivets using a small bit drill.
3. Remove the rear folding seat panel.

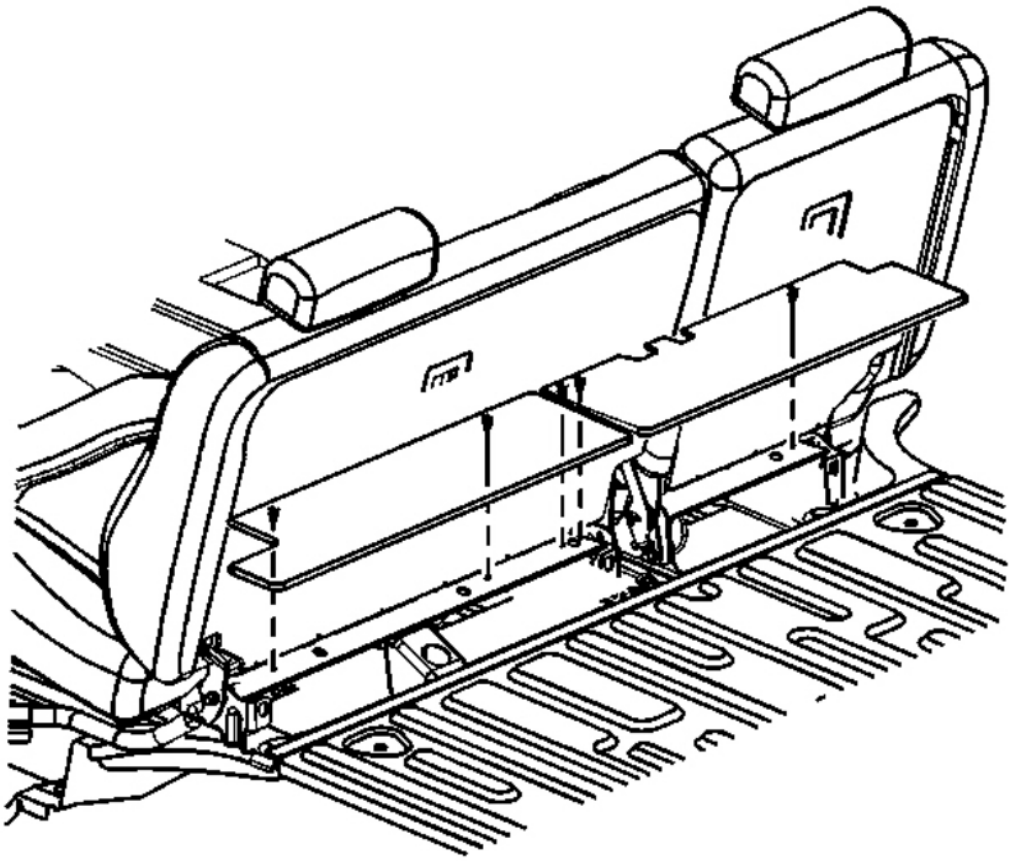


Fig. 172: View Of Rear Folding Seat Panel
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the rear folding seat panel.
2. Install new rivets.

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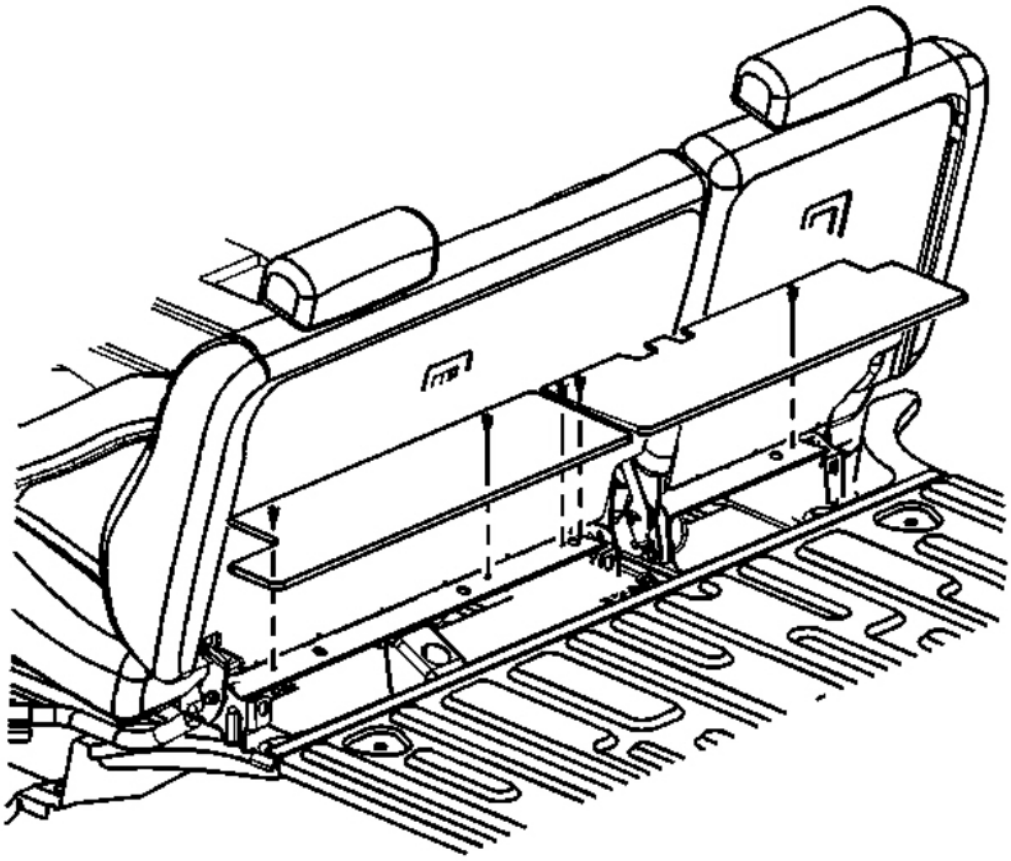


Fig. 173: View Of Rear Folding Seat Panel
Courtesy of GENERAL MOTORS CORP.

SEAT BACK LATCH REPLACEMENT - REAR

Removal Procedure

1. Remove the rear seat from the vehicle. Refer to **Seat Replacement - Rear No. 1 (60/40 Split)** or **Seat Replacement - Rear No. 1 (Bucket)**.
2. Remove the armrest, if equipped. Refer to **Armrest Replacement - Rear Seat (Bucket)** or **Armrest Replacement - Rear Seat (60/40 Split)**.
3. Remove the seat back cover. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.
4. Remove the bolts (1, 2) that retain the latch assembly to the seat frame.
5. Remove the screw (3) that retains the latch assembly to the seat frame.

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6. Unsnap the recliner cables from the folding mechanism.
7. Remove the seat back latch assembly from the seat frame.

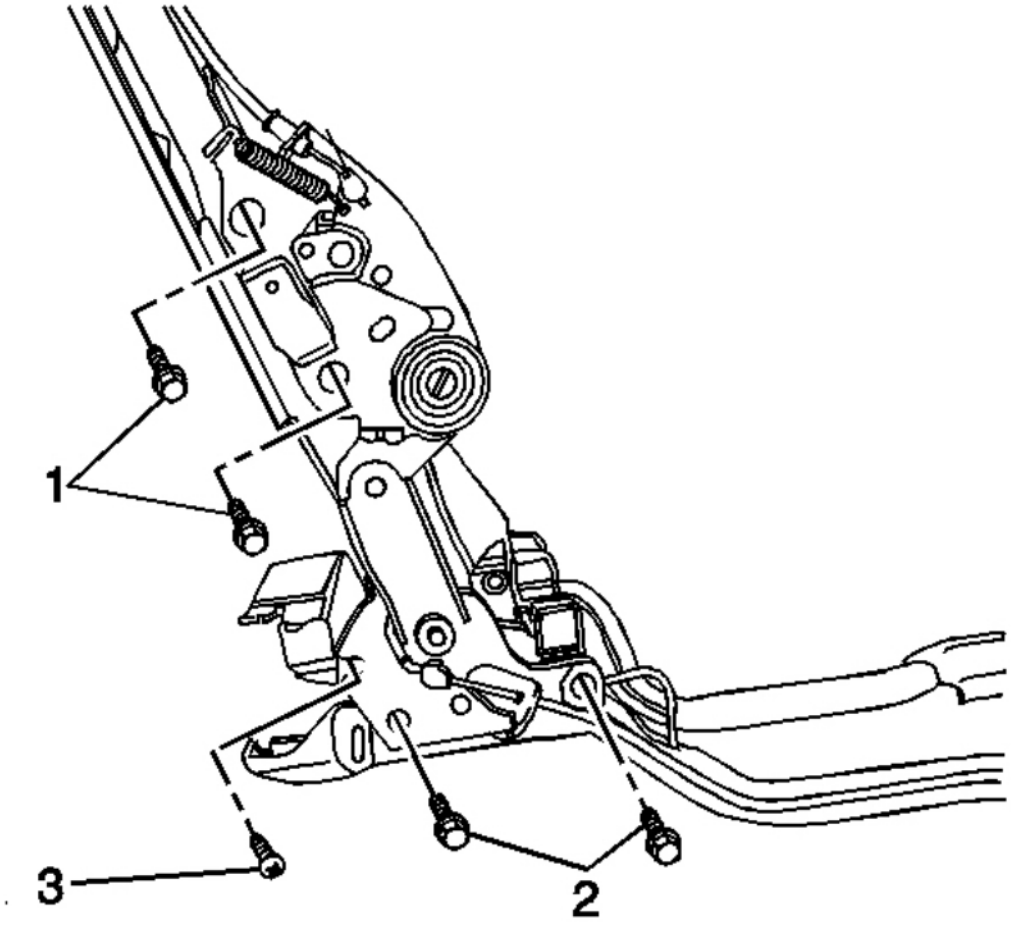


Fig. 174: View Of Latch Assembly Bolts & Screws
Courtesy of GENERAL MOTORS CORP.

8. Remove the spacer (2) from the latch assembly, if equipped.
9. Remove the seat belt guide (1) from the latch assembly, if equipped.

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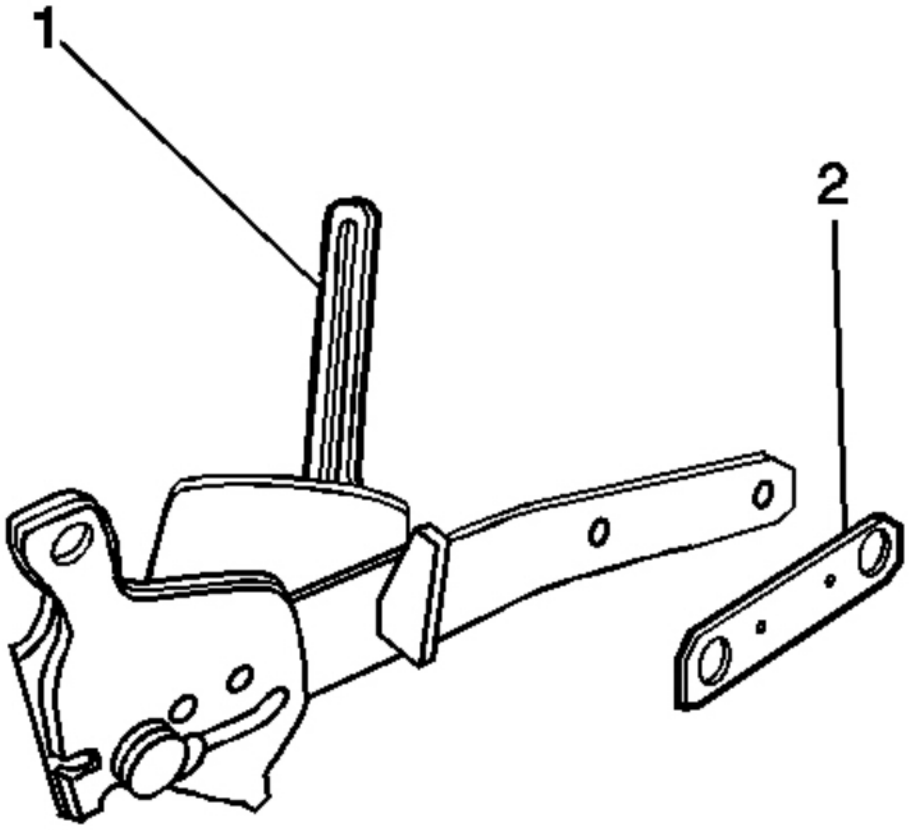


Fig. 175: View Of Latch Assembly Spacer & Seat Belt Guide
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the seat belt guide (1) to the latch assembly, if removed.
2. Install the spacer (2) to the latch assembly, if removed.

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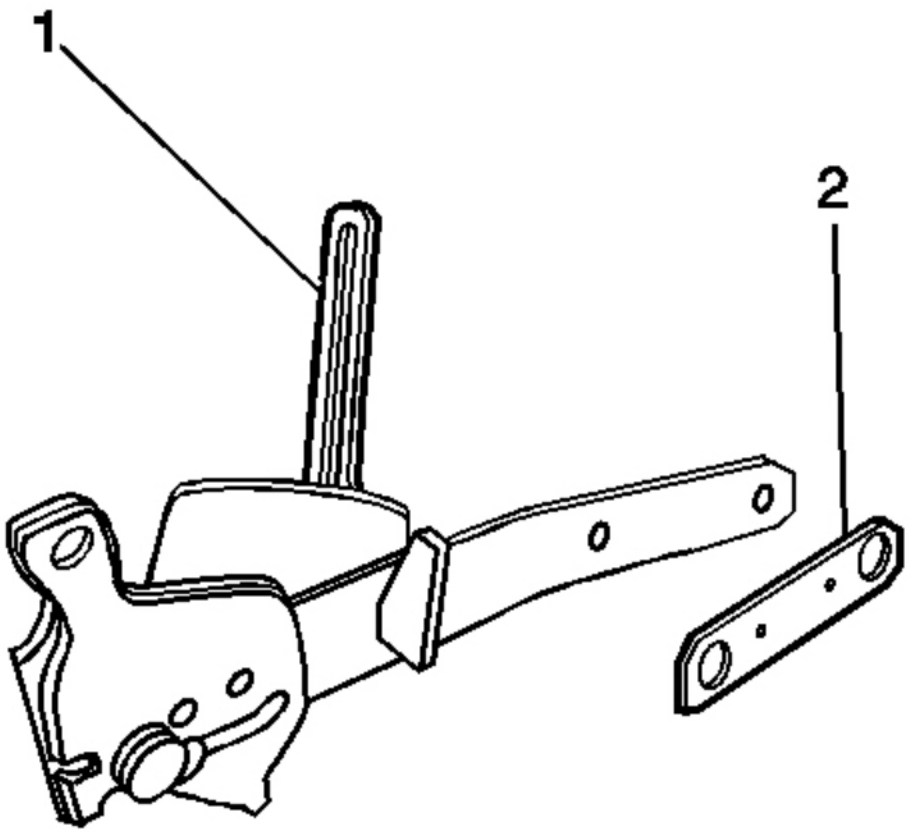


Fig. 176: View Of Latch Assembly Spacer & Seat Belt Guide
Courtesy of GENERAL MOTORS CORP.

3. Install the seat back latch assembly to the seat frame.
4. Attach the recliner cables to the folding mechanism.

NOTE: Refer to Fastener Notice in Cautions and Notices.

5. Install the bolts (1, 2) that retain the latch assembly to the seat frame.

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

6. Install the screw (3) that retains the latch assembly to the seat frame.

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

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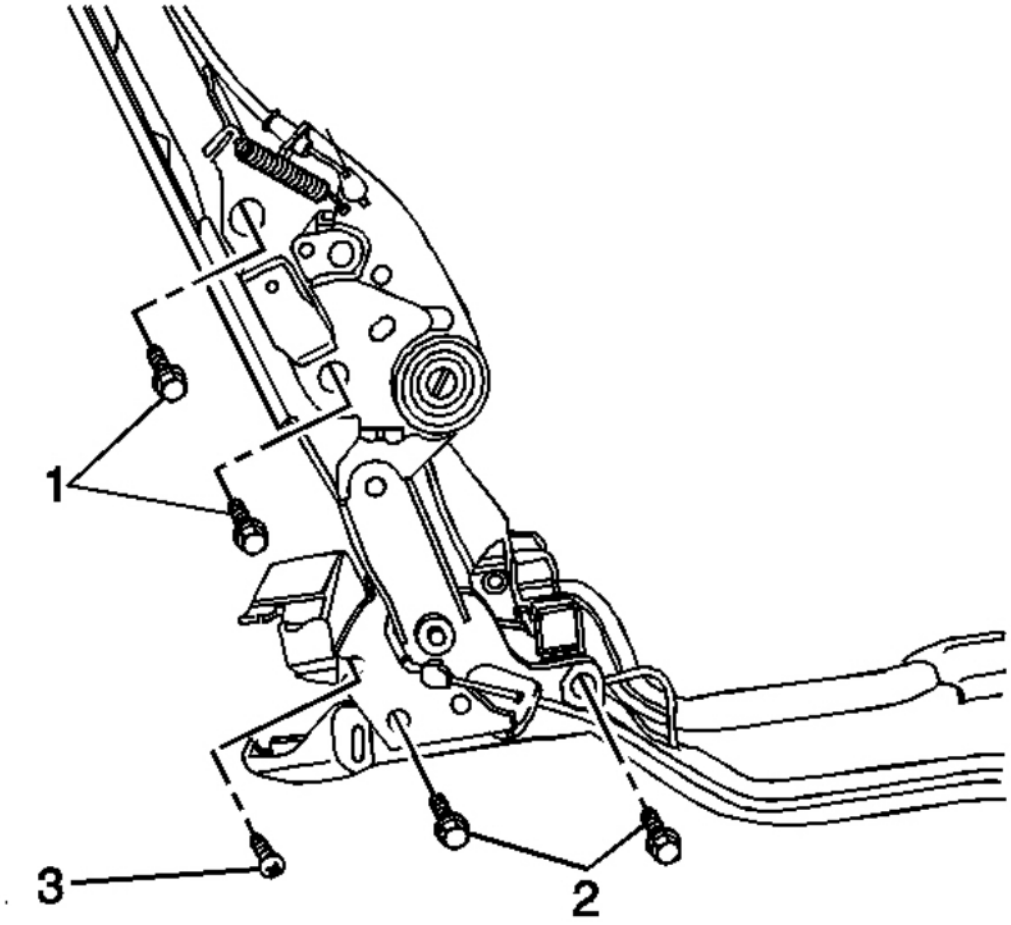


Fig. 177: View Of Latch Assembly Bolts & Screws
Courtesy of GENERAL MOTORS CORP.

7. Install the seat back cover. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.
8. Install the armrest, if equipped. Refer to **Armrest Replacement - Rear Seat (Bucket)** or **Armrest Replacement - Rear Seat (60/40 Split)**.
9. Install the rear seat to the vehicle. Refer to **Seat Replacement - Rear No. 1 (60/40 Split)** or **Seat Replacement - Rear No. 1 (Bucket)**.

HEATED SEAT SWITCH REPLACEMENT - REAR

Removal Procedure

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1. Remove the center console end panel. Refer to **Center Console End Panel Replacement** in Instrument Panel, Gages, and Console.
2. Disconnect the electrical connector.
3. Remove the seat heater switch retaining screws.
4. Remove the switch from the vehicle.

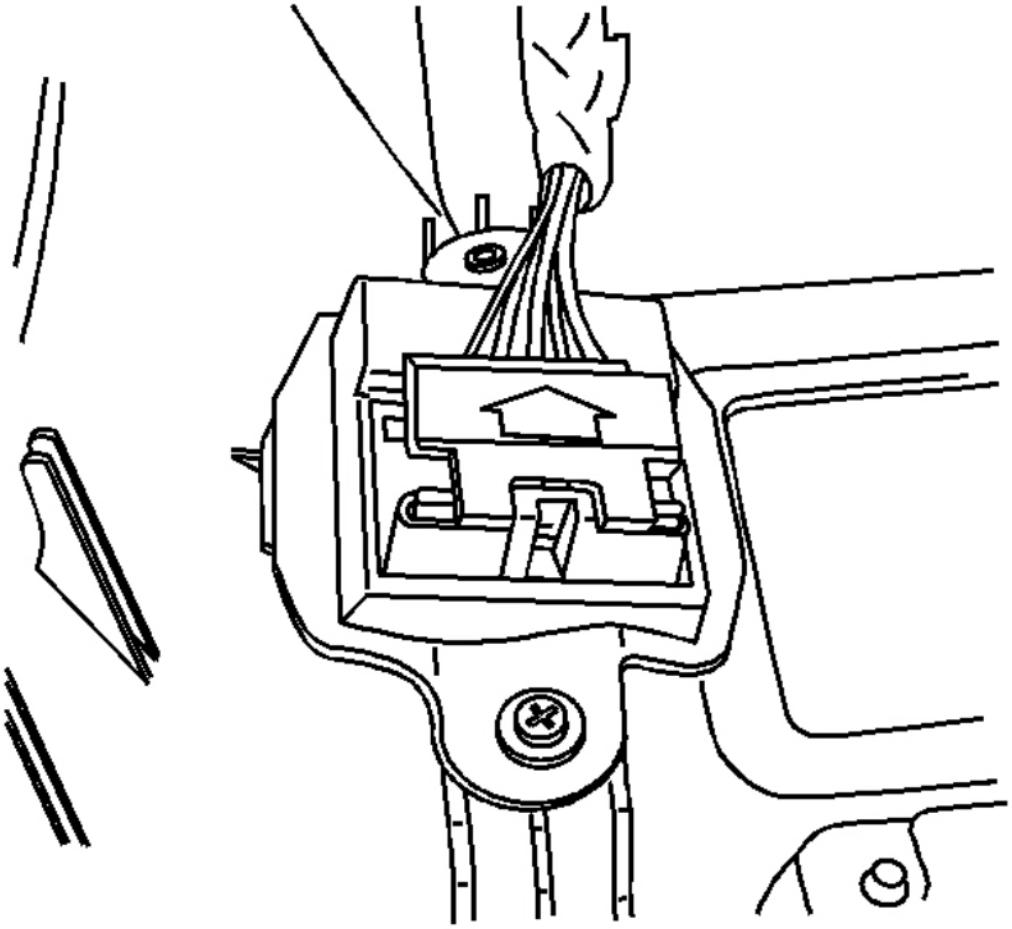


Fig. 178: View Of Rear Heated Switch Electrical Connector
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the switch to the console panel.

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NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the retaining screw.

   Tighten: Tighten the screws to 1.6 N.m (14 lb in).

3. Connect the electrical connector.

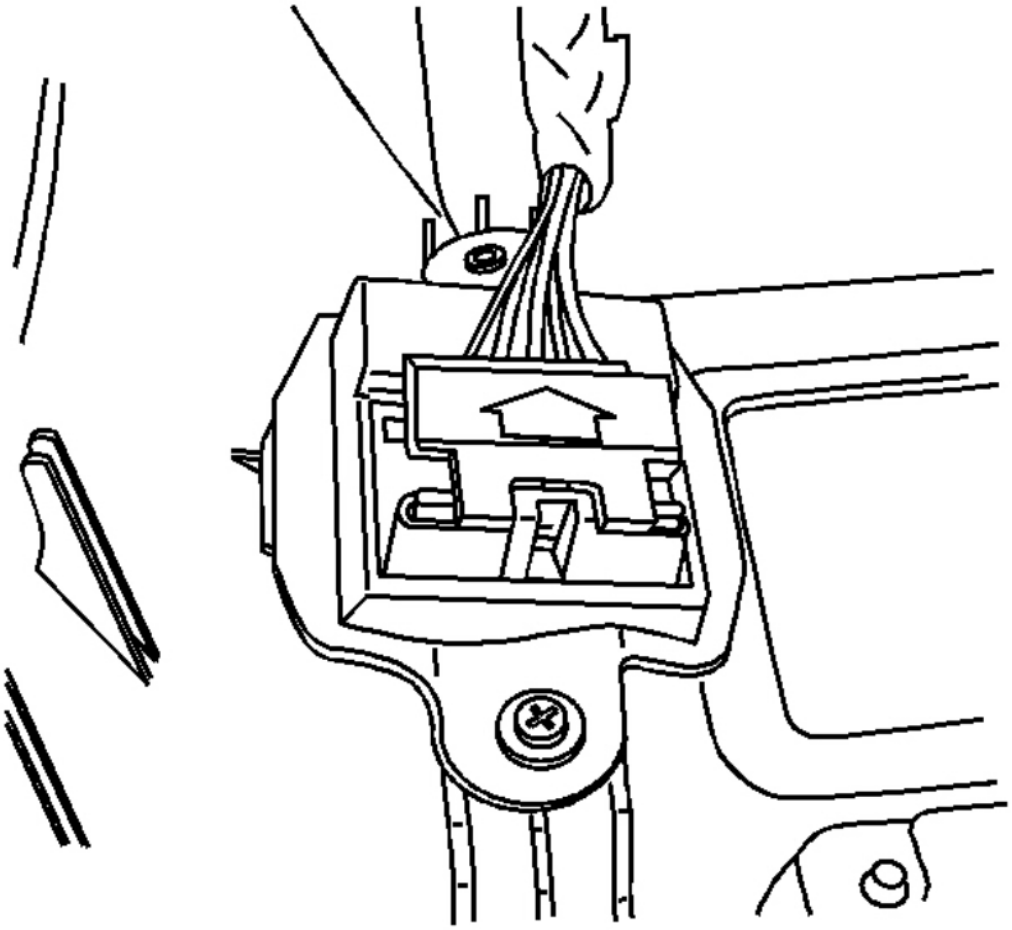


Fig. 179: View Of Rear Heated Switch Electrical Connector
Courtesy of GENERAL MOTORS CORP.

4. Install the center console end panel. Refer to **Center Console End Panel Replacement** in Instrument Panel, Gages, and Console.

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SEAT CUSHION HEATER REPLACEMENT - REAR

Removal Procedure

1. Remove the seat cushion trim cover. Refer to **Seat Cushion Trim Cover and Pad Replacement**.
2. Peel the seat cushion heater off of the pad.

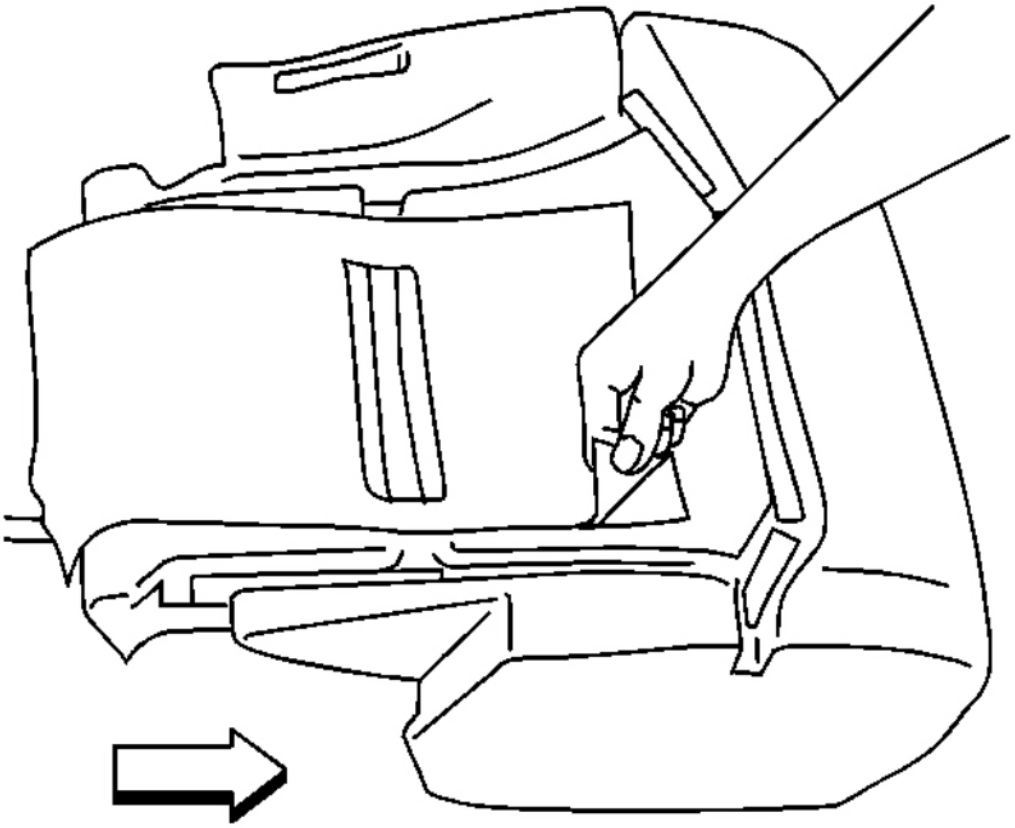


Fig. 180: Peeling Seat Cushion Heater Off Pad
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the seat cushion heater wiring harness.

Installation Procedure

1. Connect the cushion heater wiring harness.
2. Install the seat cushion heater.

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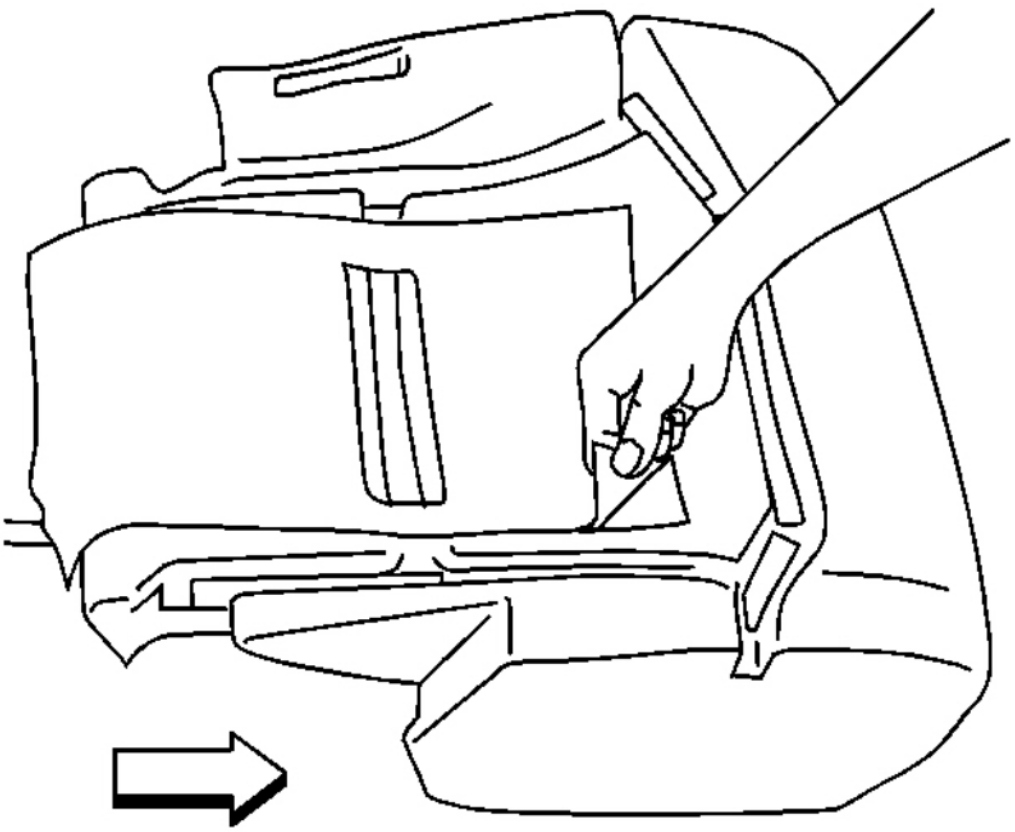


Fig. 181: Installing Seat Cushion Heater
Courtesy of GENERAL MOTORS CORP.

3. Install the seat cushion trim cover. Refer to **Seat Cushion Trim Cover and Pad Replacement**.

MODULE REPLACEMENT - SEAT CLIMATE CONTROL - REAR SEAT

Removal Procedure

1. Position the seat cushion in the forward position.
2. Release the seat cushion trim cover J channel along the lower edge of the trim cover. Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and Pad Replacement - Rear (Bench)**.
3. Disconnect electrical connections (3) from the seat climate control module (1).
4. Note the location of the tie straps (2) securing the climate control module.
5. Remove the tie straps (2) securing the module to the seat cushion frame.

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6. Remove the module from the seat cushion frame.

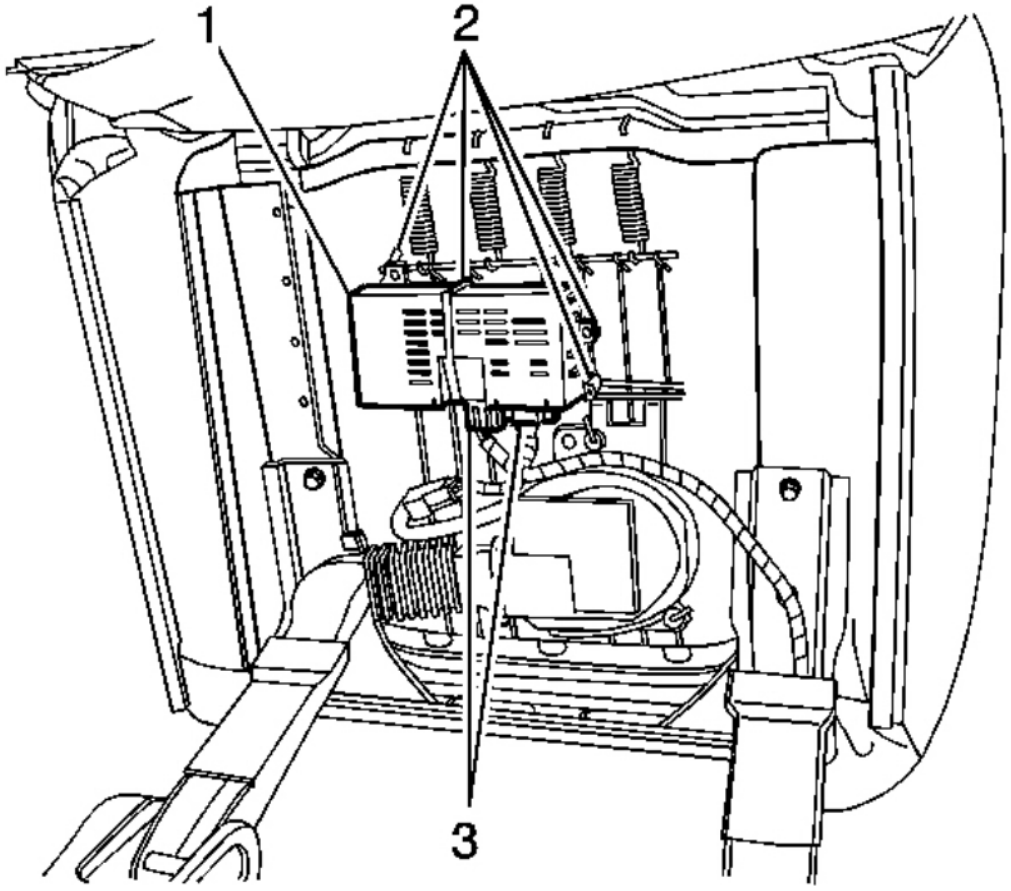


Fig. 182: View Of Seat Climate Control Module, Electrical Connections & Tie Straps
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the climate control module (1) to the seat cushion frame.
2. Secure the climate control module (1) using tie straps (2) in the same locations as noted during the removal.
3. Connect the electrical connections (3) to the climate control module (1).

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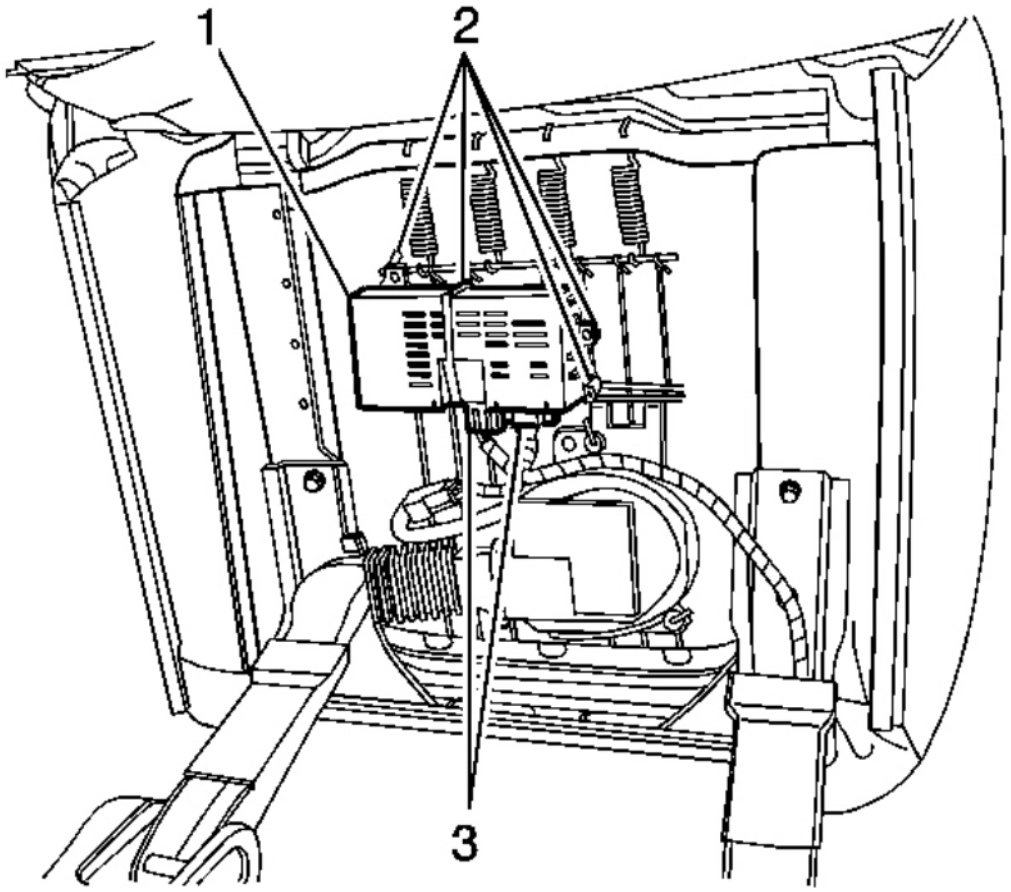


Fig. 183: View Of Seat Climate Control Module, Electrical Connections & Tie Straps
Courtesy of GENERAL MOTORS CORP.

4. Secure the seat cushion trim cover J channel. Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and Pad Replacement - Rear (Bench)**.
5. Reposition the seat cushion to the original position.

FILTER REPLACEMENT - REAR SEAT CUSHION

Removal Procedure

1. Position the seat cushion in the up forward position.
2. Release the seat cushion trim cover J channel along the lower edge of the trim cover. Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and Pad Replacement - Rear (Bench)**.

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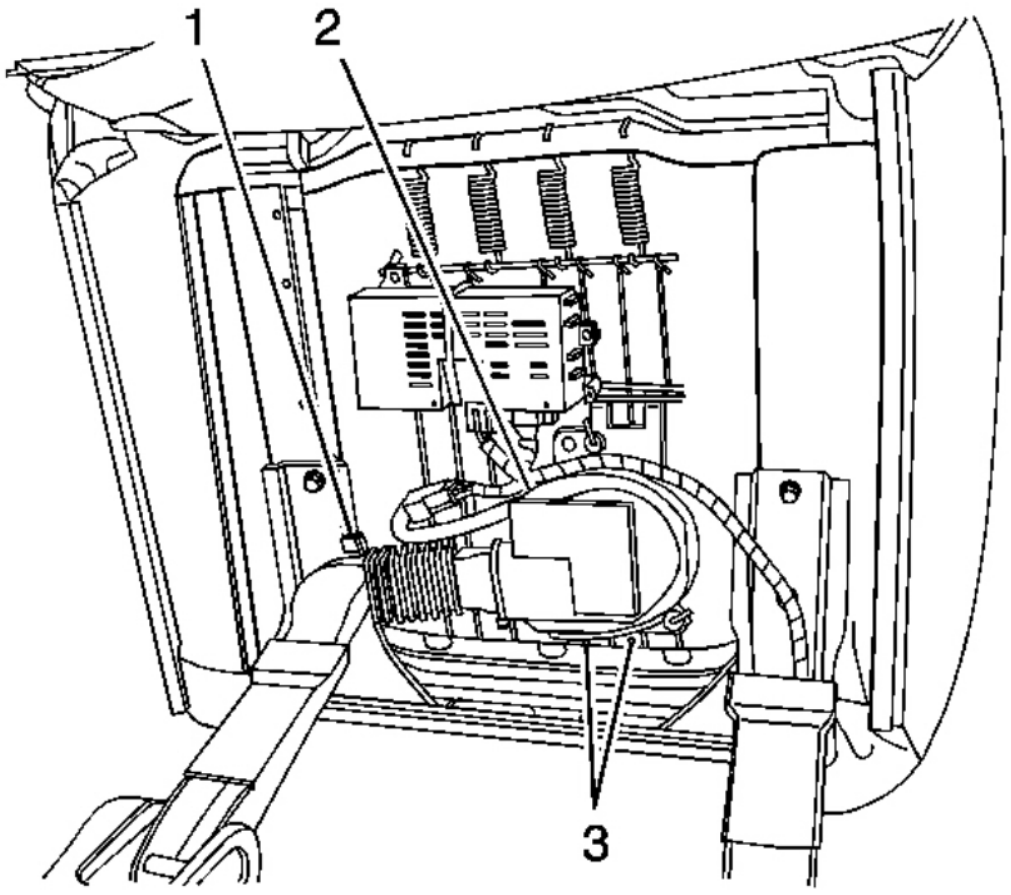


Fig. 184: View Of Ventilation Heat & Cool Blower/Bracket, Clip & Tie Straps
Courtesy of GENERAL MOTORS CORP.

3. Remove the filter (2) from the blower.

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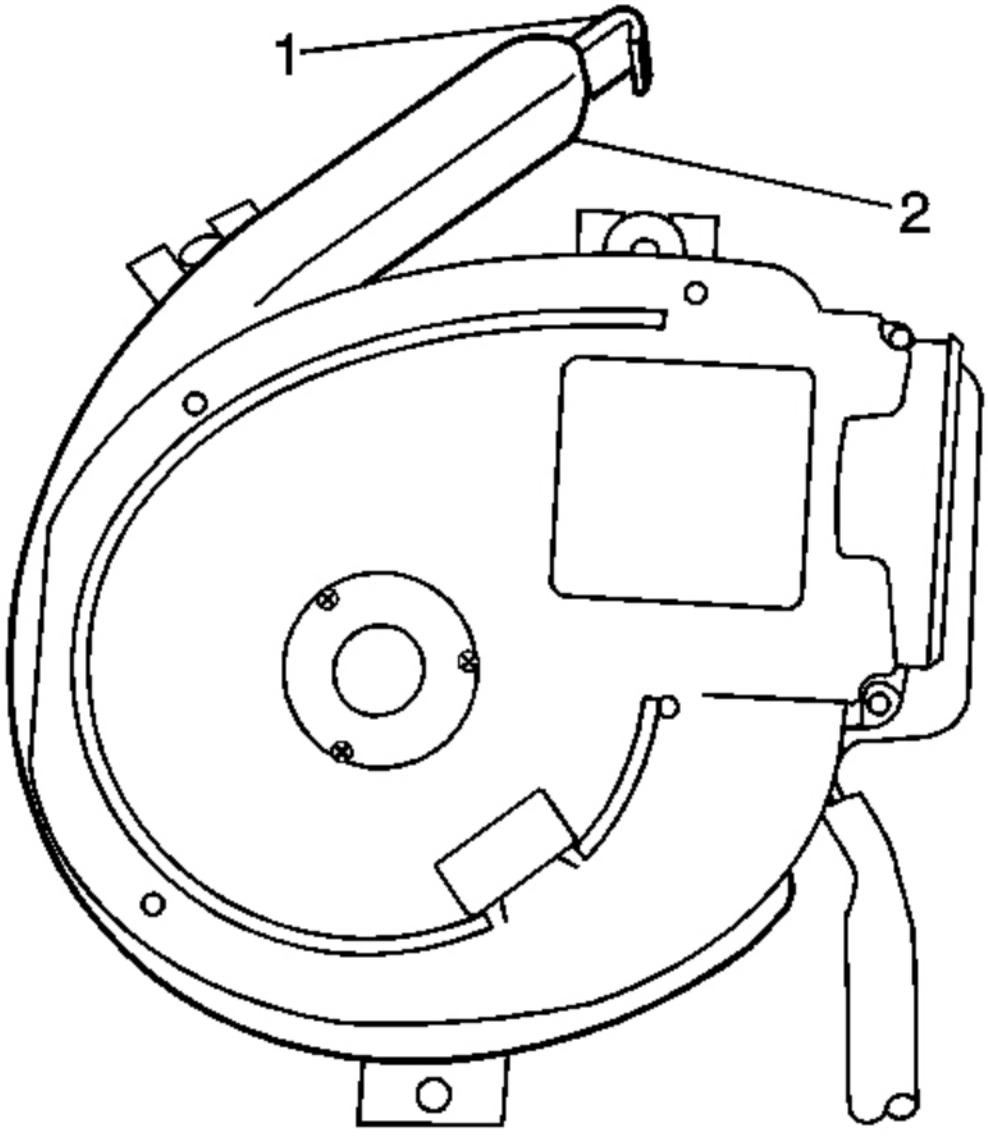


Fig. 185: View Of Seat Filter
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the filter (2) to the blower.

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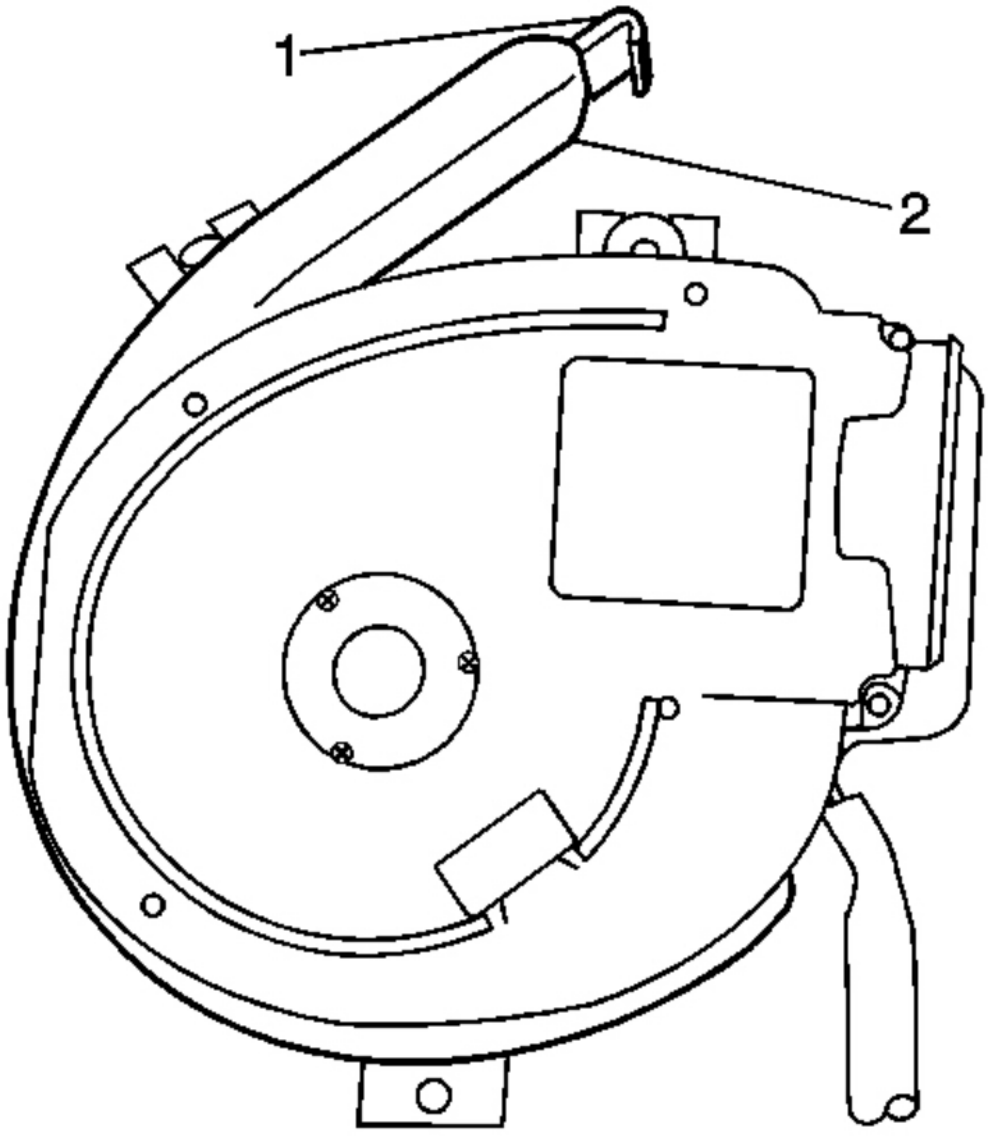


Fig. 186: View Of Seat Filter
Courtesy of GENERAL MOTORS CORP.

2. Secure the seat cushion trim cover J channel. Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and Pad Replacement - Rear (Bench)**.
3. Position the seat cushion to its original position.

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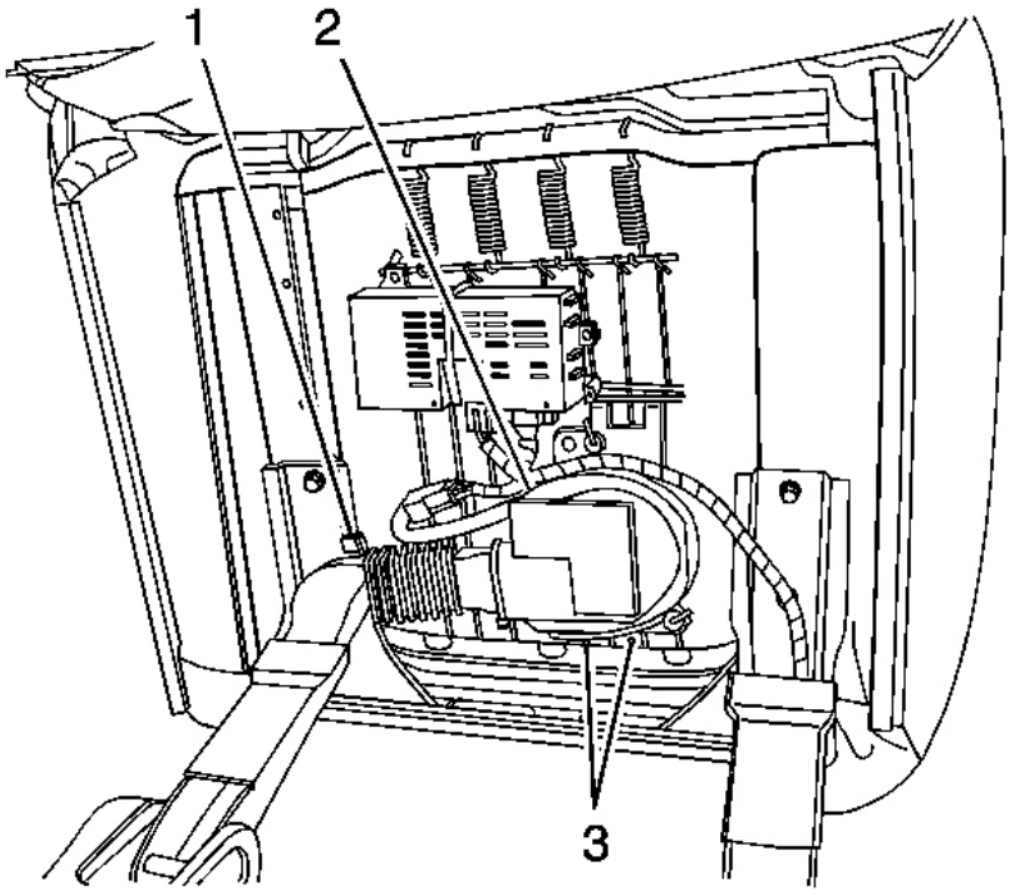


Fig. 187: View Of Ventilation Heat & Cool Blower/Bracket, Clip & Tie Straps
Courtesy of GENERAL MOTORS CORP.

FILTER REPLACEMENT - REAR SEAT BACK

Removal Procedure

1. Remove the ventilation heat and cool blower assembly. Refer to **Blower Replacement - Ventilation Heat and Cool - Rear Seat Back**.

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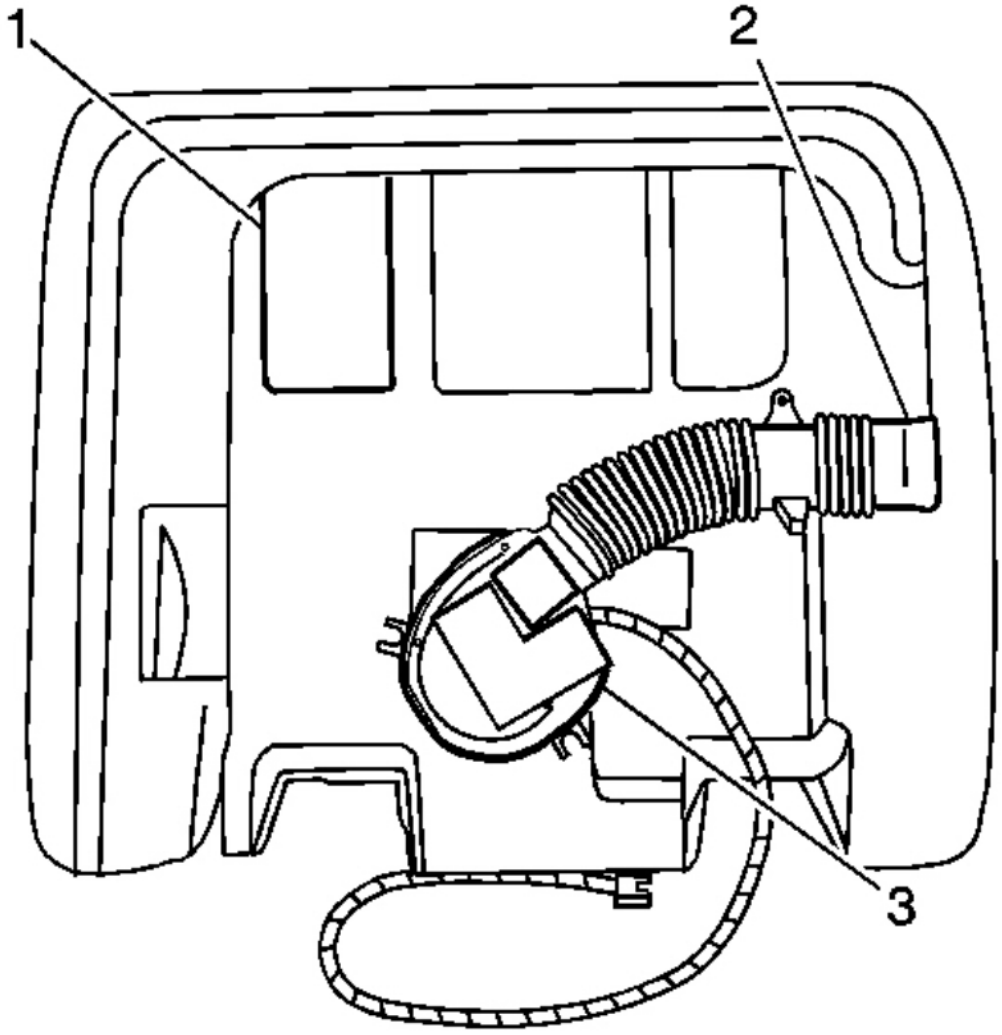


Fig. 188: View Of Ventilation Heat & Cool Blower Assembly, Duct & Seat Back Foam
Courtesy of GENERAL MOTORS CORP.

2. Remove the filter (2) from the blower.

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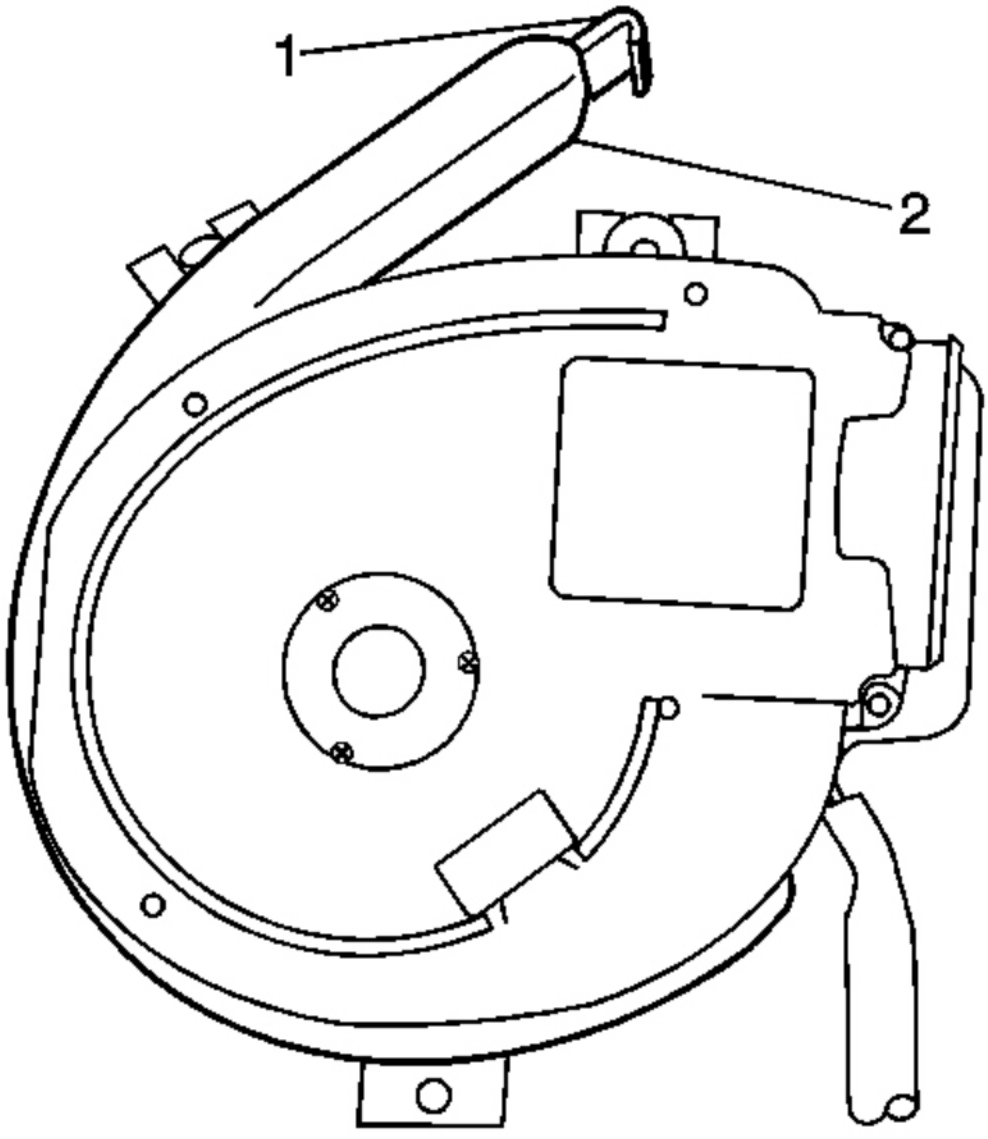


Fig. 189: View Of Seat Filter
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the filter (2) to the blower.

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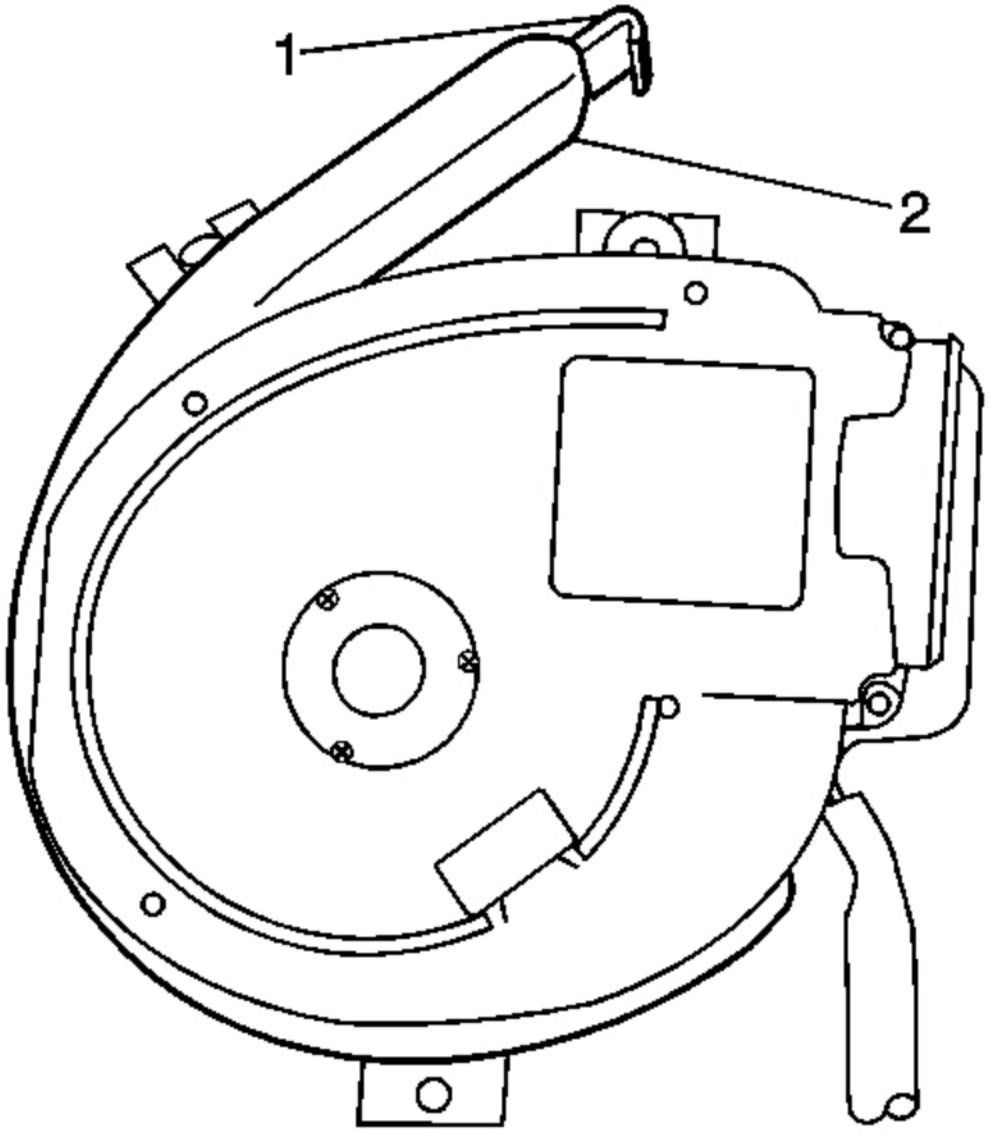


Fig. 190: View Of Seat Filter
Courtesy of GENERAL MOTORS CORP.

2. Install the ventilation heat and cool blower assembly. Refer to **Blower Replacement - Ventilation Heat and Cool - Rear Seat Back**.
3. Position the seat cushion to its original position.

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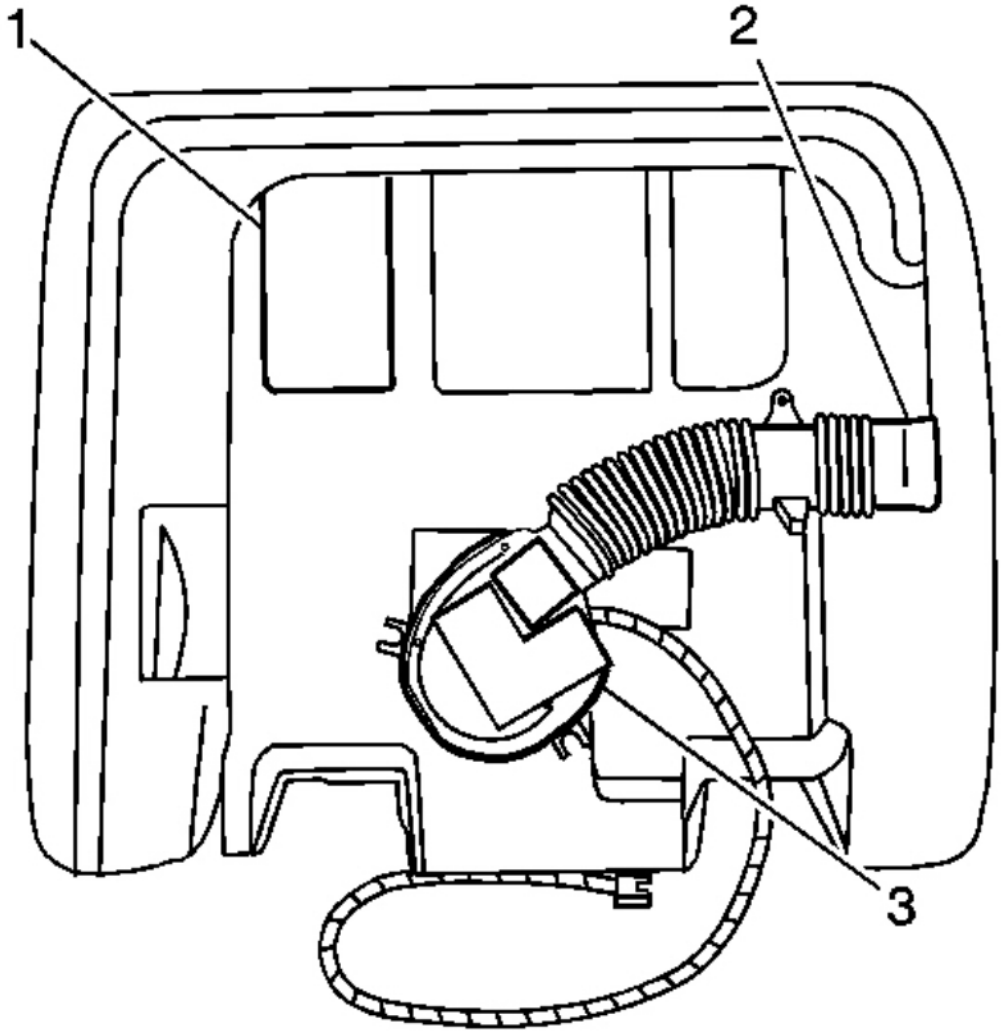


Fig. 191: View Of Ventilation Heat & Cool Blower Assembly, Duct & Seat Back Foam
Courtesy of GENERAL MOTORS CORP.

BLOWER REPLACEMENT - VENTILATION HEAT AND COOL - REAR SEAT CUSHION

Removal Procedure

1. Position the seat cushion in the forward position.
2. Release the seat cushion trim cover J channel along the lower edge of the trim cover. Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and**

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Pad Replacement - Rear (Bench).

3. Disconnect electrical connections from the ventilation heat and cool blower.
4. Note the location of the tie straps securing the ventilation heat and cool blower bracket to the seat cushion.
5. Remove the tie straps (3) retaining the ventilation heat and cool blower and bracket assembly to the seat cushion.
6. Remove the clip (1) securing the duct to the seat cushion frame.
7. Remove the ventilation heat and cool blower and bracket (2) from the seat cushion frame.

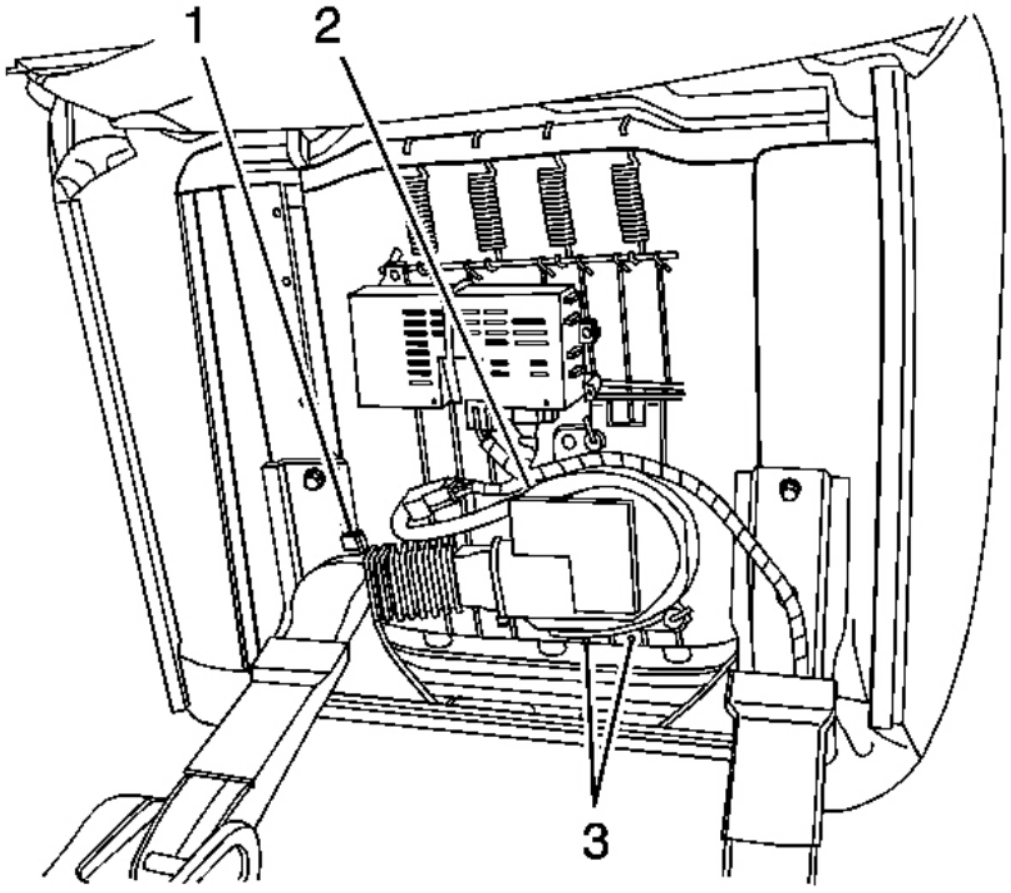


Fig. 192: View Of Ventilation Heat & Cool Blower/Bracket, Clip & Tie Straps
Courtesy of GENERAL MOTORS CORP.

CAUTION: Eye protection must be worn when drilling rivets to reduce the

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chance of personal injury.

8. Drill the rivets (1) securing ventilation heat and cool blower (3) to the bracket (2).

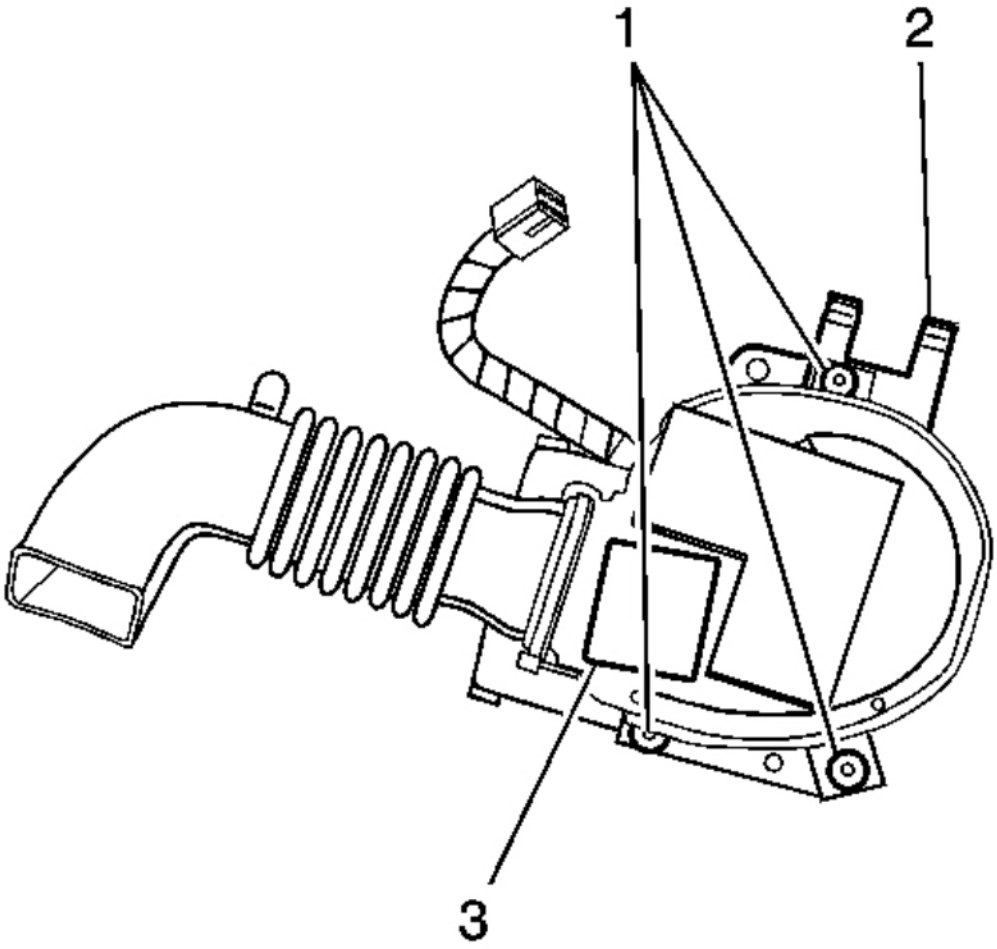


Fig. 193: View Of Ventilation Heat & Cool Blower, Bracket & Rivets
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the ventilation heat and cool blower (3) to the bracket (2).
2. Secure the ventilation heat and cool blower (3) to the bracket (2) using rivets (1).

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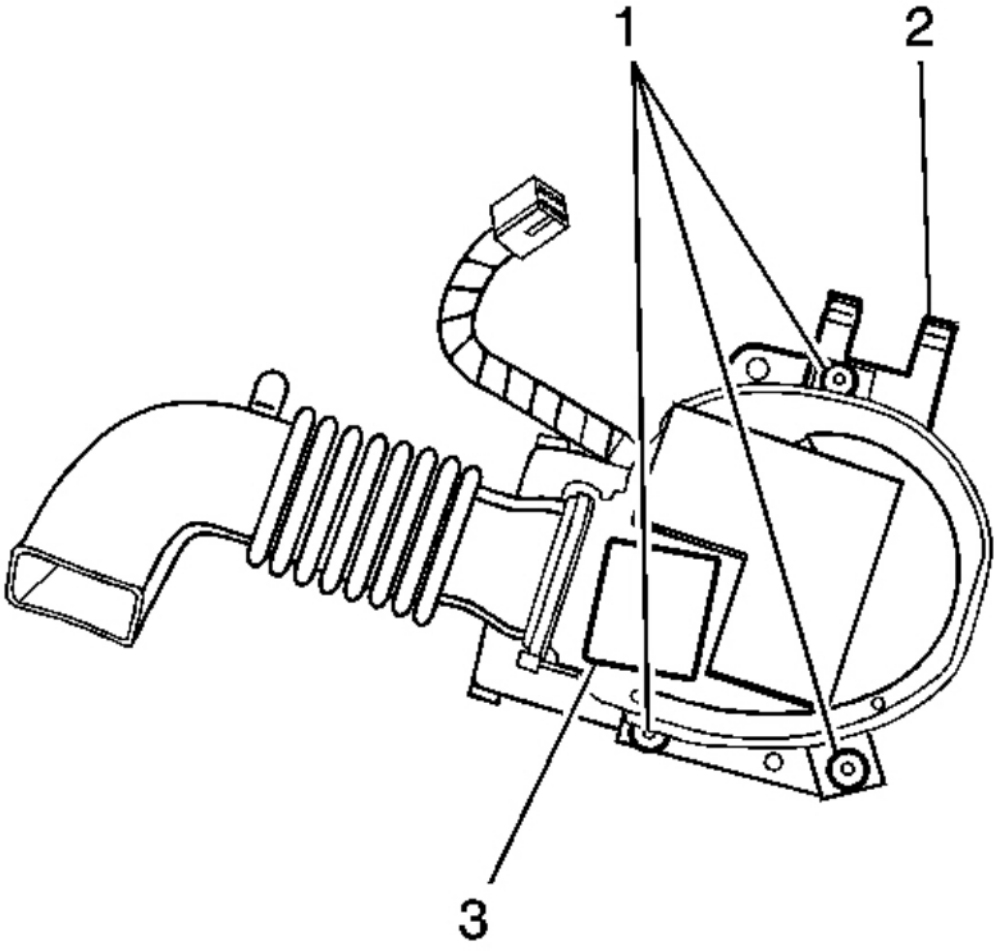


Fig. 194: View Of Ventilation Heat & Cool Blower, Bracket & Rivets
Courtesy of GENERAL MOTORS CORP.

3. Position the ventilation heat and cool blower and bracket assembly (2) to the seat cushion frame.
4. Secure the duct using the clip (1) removed during the removal procedure.
5. Install tie straps (3) to retain ventilation heat and cool blower and bracket to the seat cushion frame as noted in the removal procedure.
6. Connect the electrical connector to the ventilation heat and cool blower (2).

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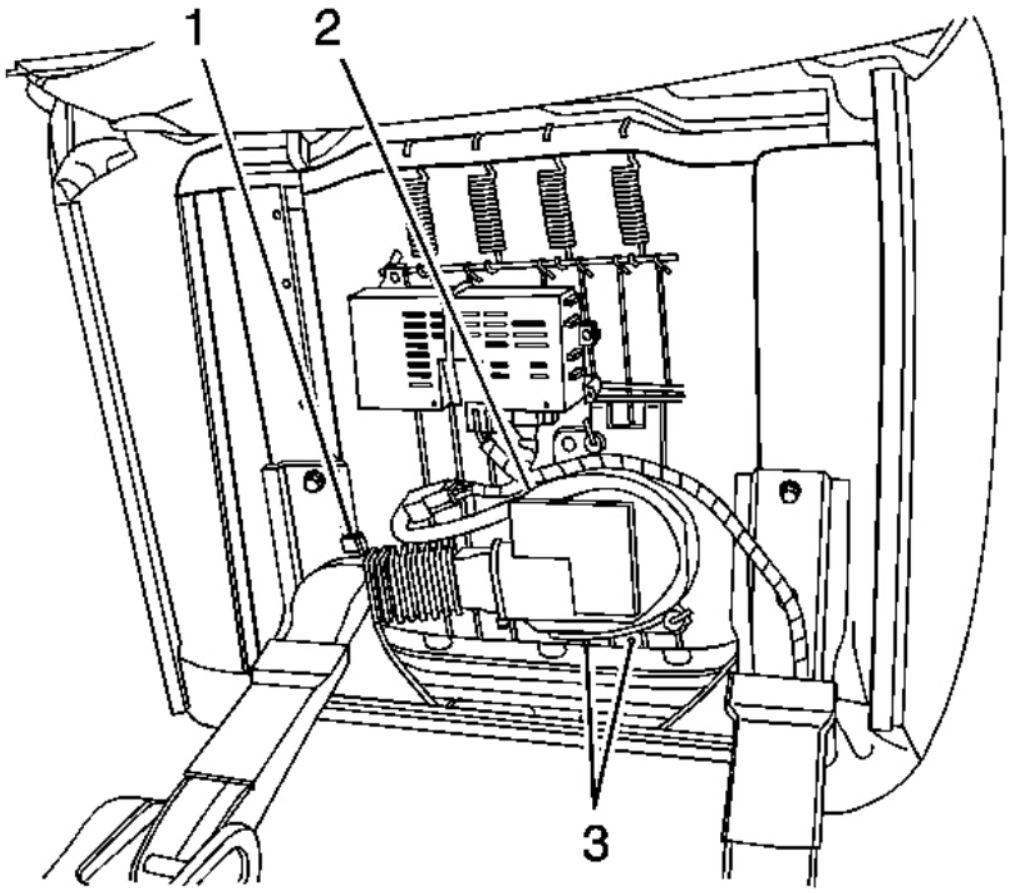


Fig. 195: View Of Ventilation Heat & Cool Blower/Bracket, Clip & Tie Straps
Courtesy of GENERAL MOTORS CORP.

7. Secure the seat cushion trim cover J channel. Refer to **Seat Cushion Cover and Pad Replacement - Rear (60/40 Split - 50/50 Split)** or **Seat Cushion Cover and Pad Replacement - Rear (Bench)**.

BLOWER REPLACEMENT - VENTILATION HEAT AND COOL - REAR SEAT BACK

Removal Procedure

1. Remove the rear seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.
2. Carefully pull the ventilation heat and cool blower (3) away from the seat back foam to release the hook and loop material.
3. Pull the duct (2) out of the opening in the seat back foam (1).

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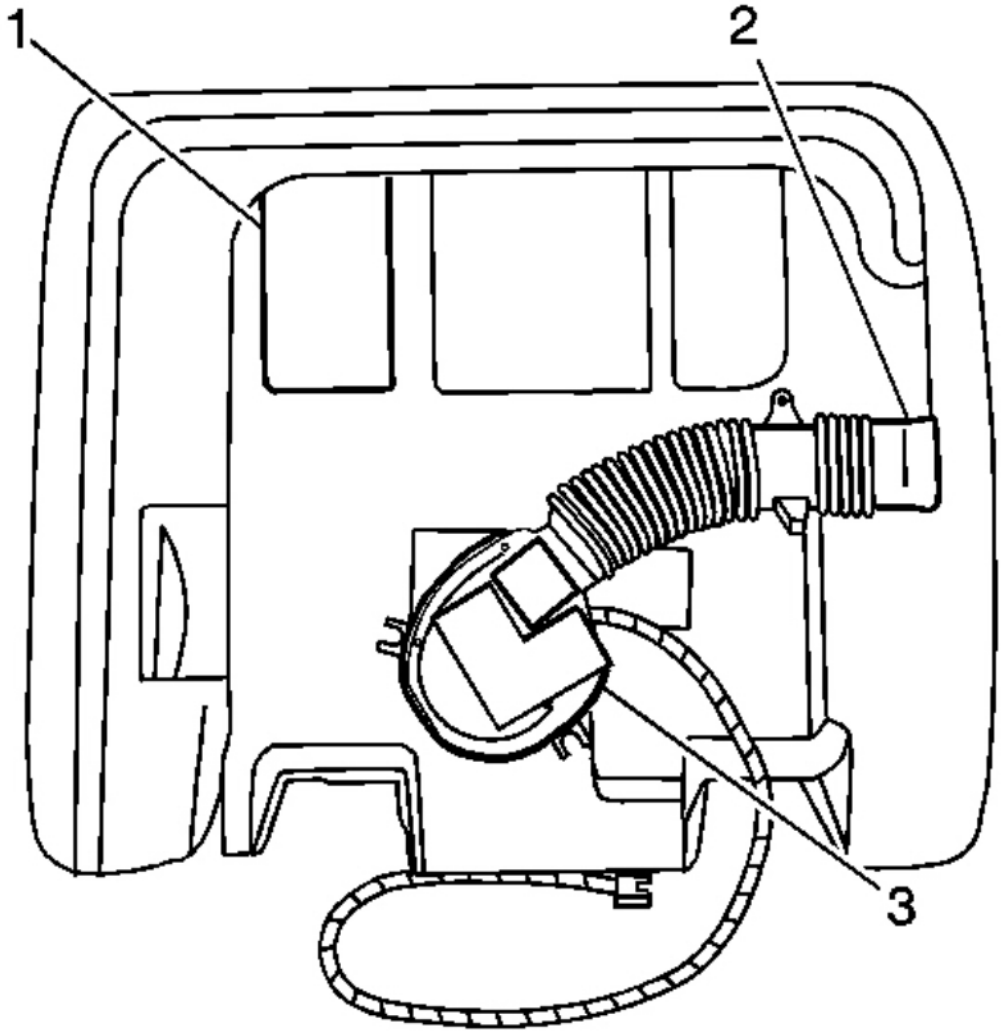


Fig. 196: View Of Ventilation Heat & Cool Blower Assembly, Duct & Seat Back Foam
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Position the ventilation heat and cool blower assembly (3) to the seat back foam.
2. Align the duct (2) to the opening in the seat back foam.
3. Push the ventilation heat and cool blower assembly (3) into the seat back foam (1) in order to secure the ventilation heat and cool blower to the hook and loop material.

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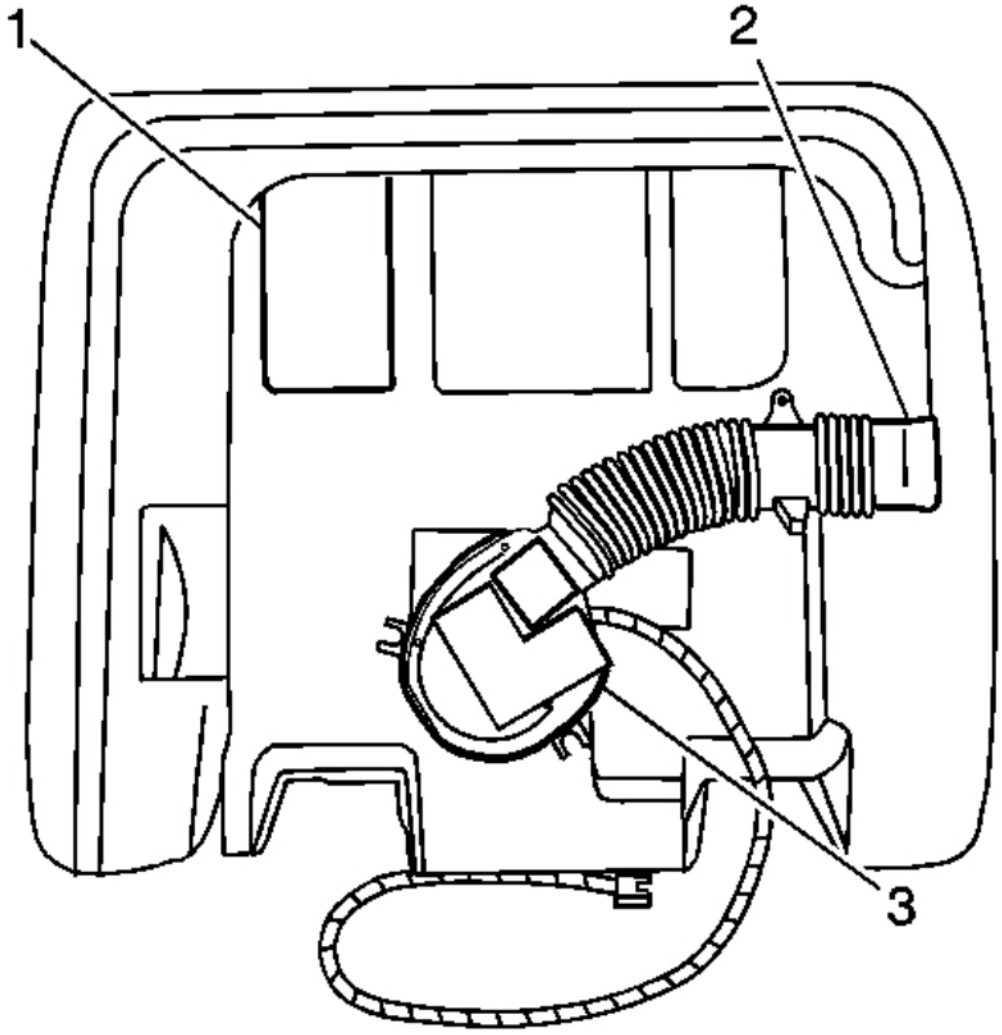


Fig. 197: View Of Ventilation Heat & Cool Blower Assembly, Duct & Seat Back Foam
Courtesy of GENERAL MOTORS CORP.

4. Install the rear seat cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.

ARMREST REPLACEMENT - REAR SEAT (BUCKET)

Removal Procedure

1. Separate the J-clip at the bottom of the seat using a flat bladed tool.

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2. Remove the 2 push pins at the bottom retaining the seat back cover to the card board.
3. From the back of the front seat, disconnect the heating element wire connector, if equipped.
4. Role up the seat cover up to the bottom of the arm rest.
5. Recline the seat.
6. From the front of the seat move the seat cushion away from the seat frame to gain access to the arm rest clip.
7. Remove the rubber band from the clip.
8. Remove the clip from the seat frame.
9. Remove the arm rest by pulling outwards.

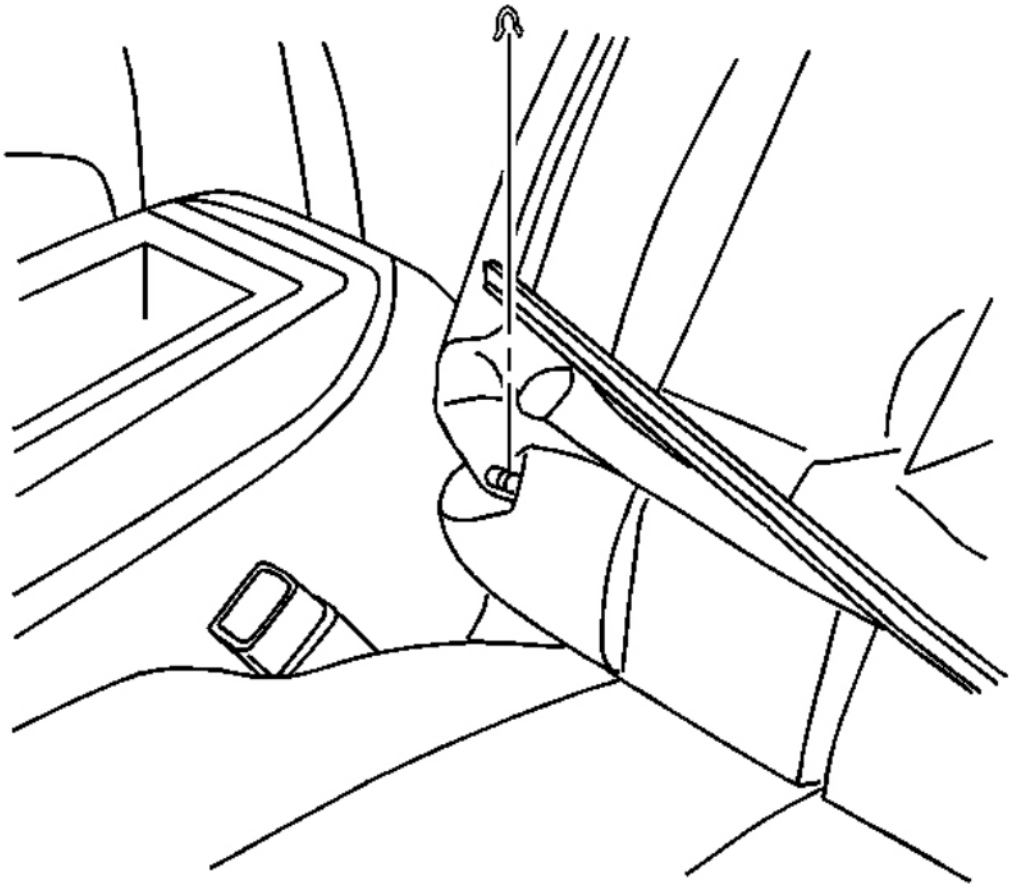


Fig. 198: View Of Armrest Clip
Courtesy of GENERAL MOTORS CORP.

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Installation Procedure

1. Install the clip in the slot of the seat frame.
2. Install the rubber band on the clip to retain it in place.

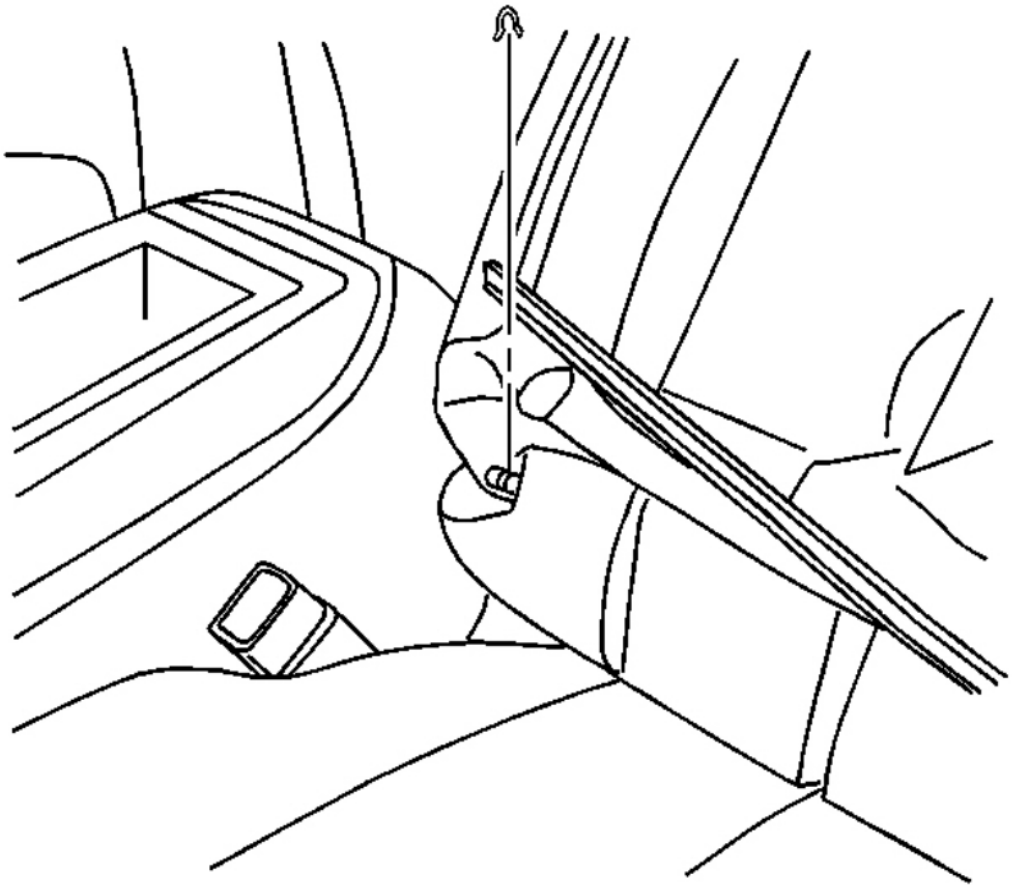


Fig. 199: View Of Armrest Clip
Courtesy of GENERAL MOTORS CORP.

3. Fold down the seat cover.
4. Install the arm rest by pressing in until it is fully seated.
5. Connect the heating element wire connector.
6. Pull down on the seat cover in order to install the 2 push pins retaining the seat back to the card board.
7. Connect the J-clip at the bottom of the seat.
8. Push on the seat back cover to ensure the cover is held in place by the velcro.

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ARMREST REPLACEMENT - REAR SEAT (60/40 SPLIT)

Removal Procedure

1. Remove the cover to gain access to the center armrest bolts, if equipped.
2. Remove the bolts that retain the center armrest to the seat frame.
3. Remove the center arm rest from the vehicle.

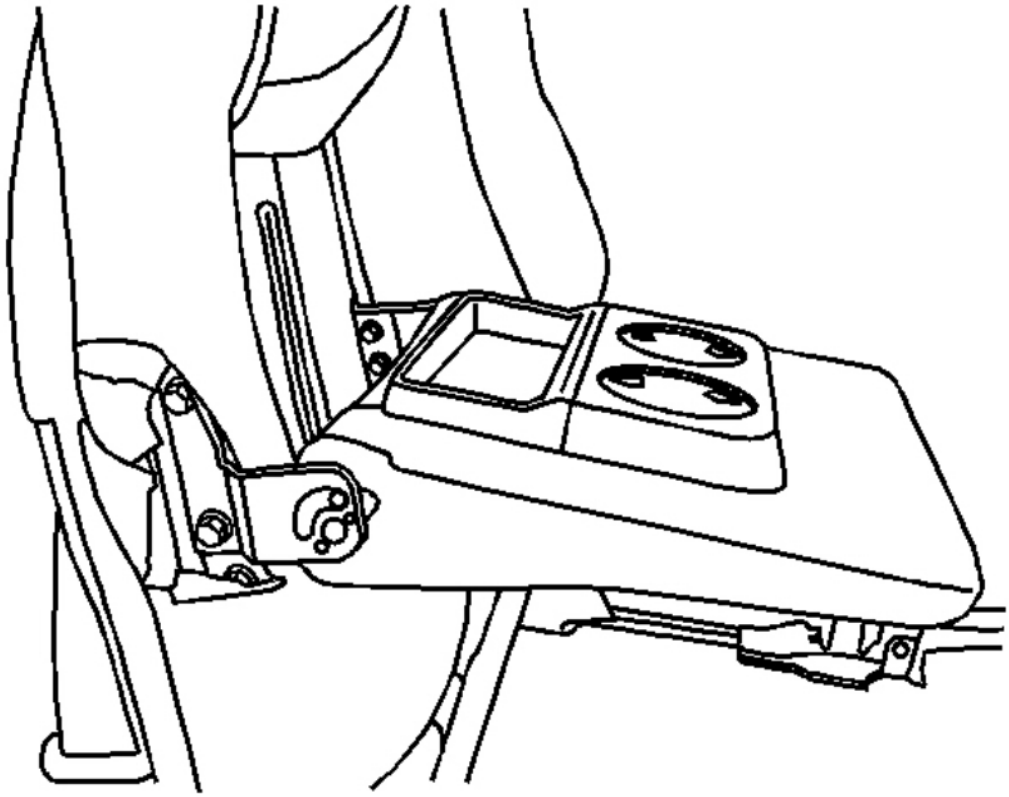


Fig. 200: View Of Center Armrest
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the center armrest to the seat frame.

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

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2. Install the bolts to the center armrest.

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

3. Install the cover to the center armrest, if removed.

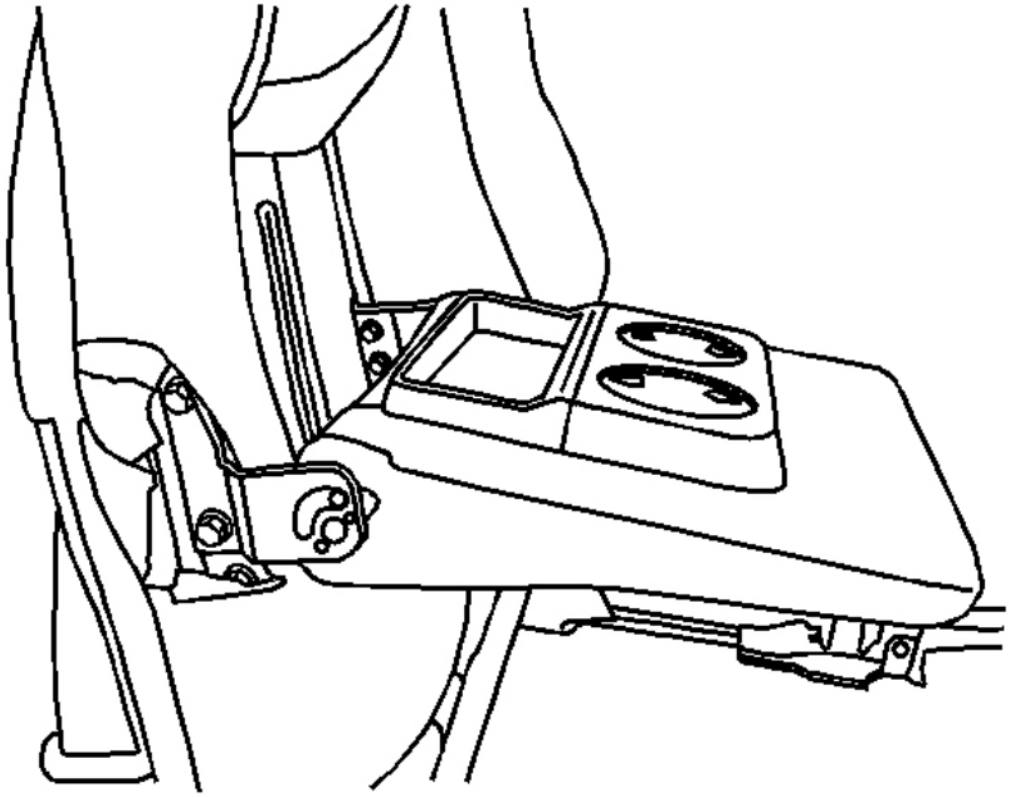


Fig. 201: View Of Center Armrest
Courtesy of GENERAL MOTORS CORP.

HEAD RESTRAINT RELEASE CABLE REPLACEMENT - REAR NO. 1

Removal Procedure

1. Remove the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.
2. Unclip the cable end (1) off of the seat back latch.
3. Remove the cable from the seat back latch.

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1. Squeeze the cable retainer tabs (2) together.
2. Pull the cable from the seat back latch.

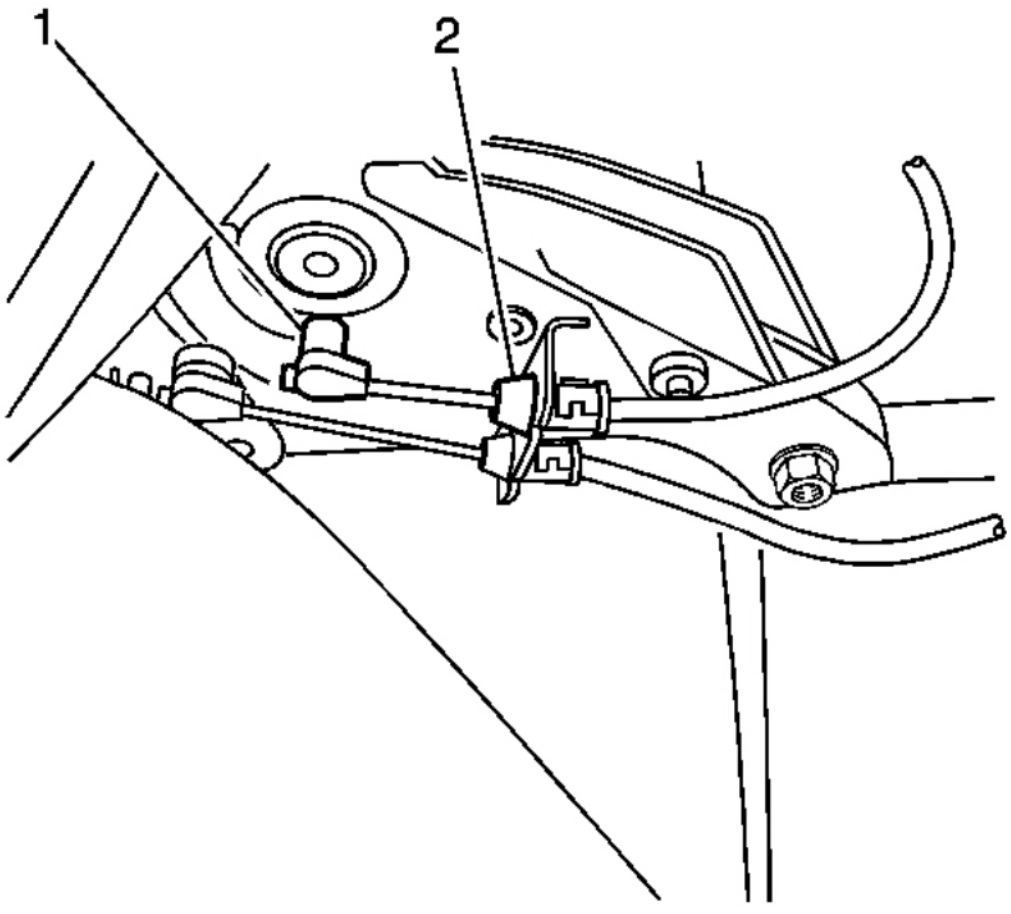


Fig. 202: Removing Head Restraint Release Cable End From Seat Back Latch
Courtesy of GENERAL MOTORS CORP.

4. Unclip the cable end (1) from the head restraint release mechanism.
5. Remove the cable from the head restraint release mechanism.
    1. Squeeze the cable retainer tabs (2) together.
    2. Pull the cable from the head restraint release mechanism.

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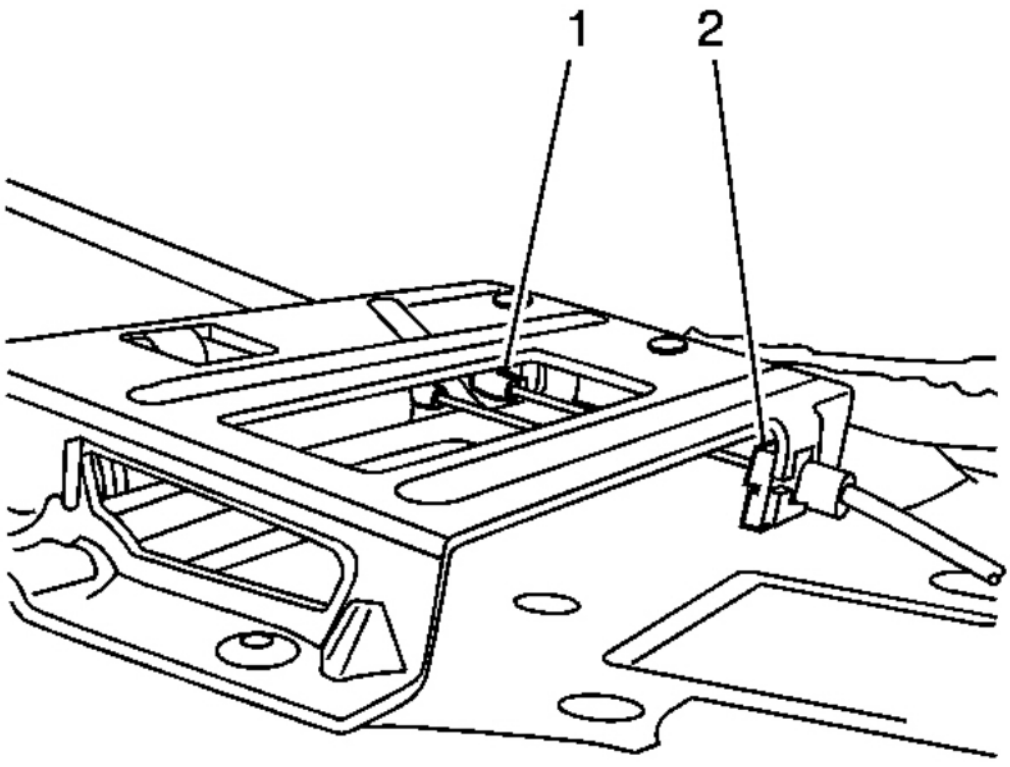


Fig. 203: Removing Head Restraint Release Cable End From Release Mechanism
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Push the cable into the hole in the head restraint release mechanism.
2. Ensure the retainer tabs fully extend to secure the cable to the head restraint mechanism.
3. Clip the cable end onto the head restraint mechanism.

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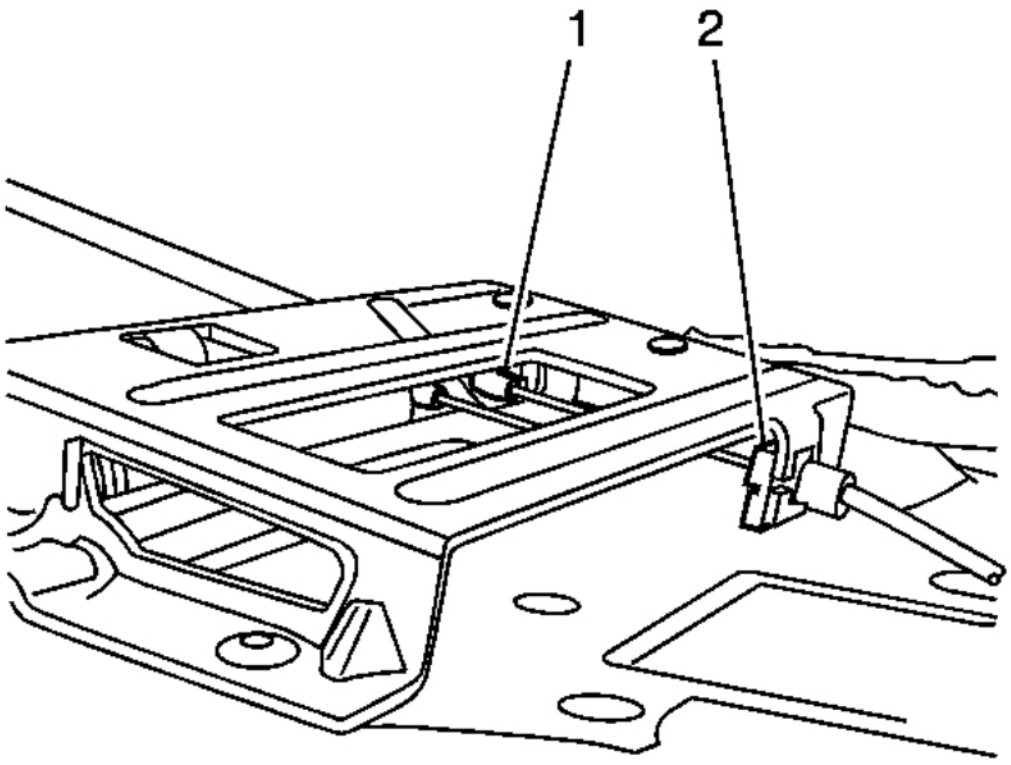


Fig. 204: Installing Head Restraint Release Cable End To Release Mechanism
Courtesy of GENERAL MOTORS CORP.

4. Push the cable end into the hole in the seat back latch.
5. Ensure the retainer tabs fully extend to secure the cable to the seat back latch.
6. Clip the cable end onto the seat back latch.

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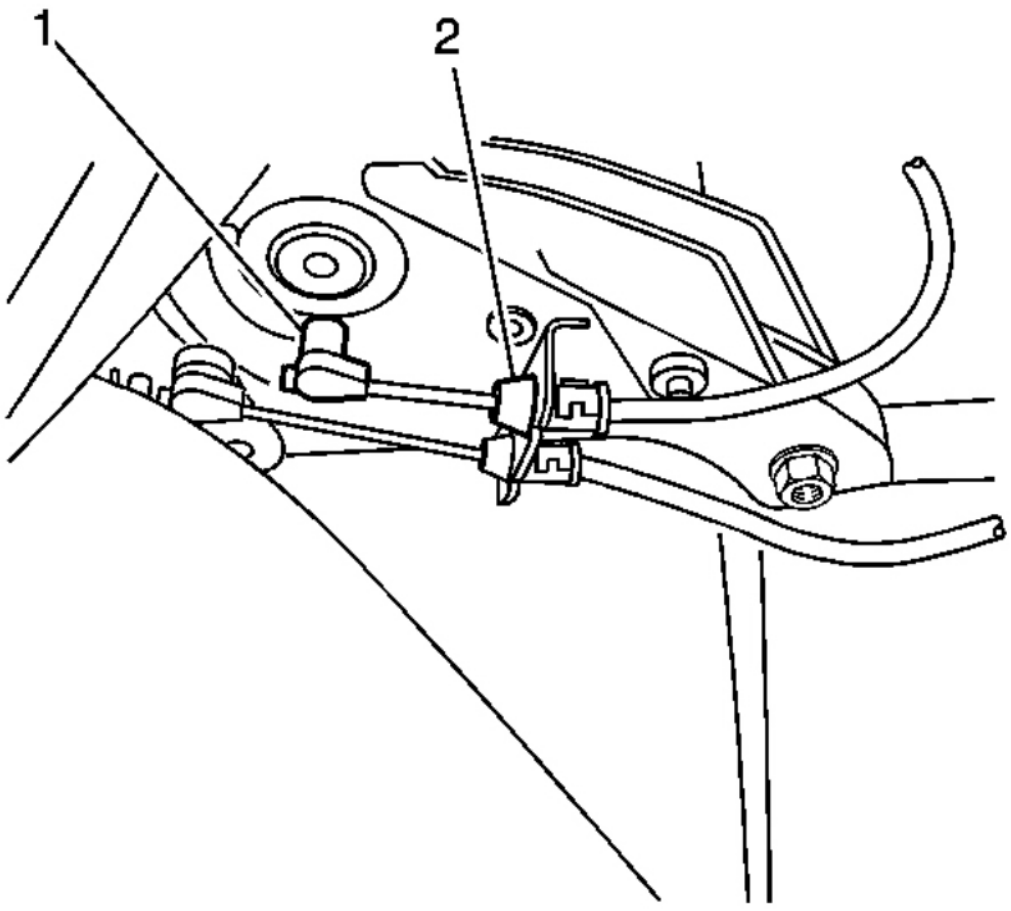


Fig. 205: Installing Head Restraint Release Cable End To Seat Back Latch
Courtesy of GENERAL MOTORS CORP.

7. Install the seat back cover and pad. Refer to **Seat Back Cover and Pad Replacement - Rear (50/50 Split - 60/40 Split)** or **Seat Back Cover and Pad Replacement - Rear (Bench)**.

SEAT REPLACEMENT - REAR NO. 2

Removal Procedure

1. Pull up on the handle at the rear of the seat.
2. Lift the seat up and out of the floor rails.
3. Remove the seat from the vehicle.

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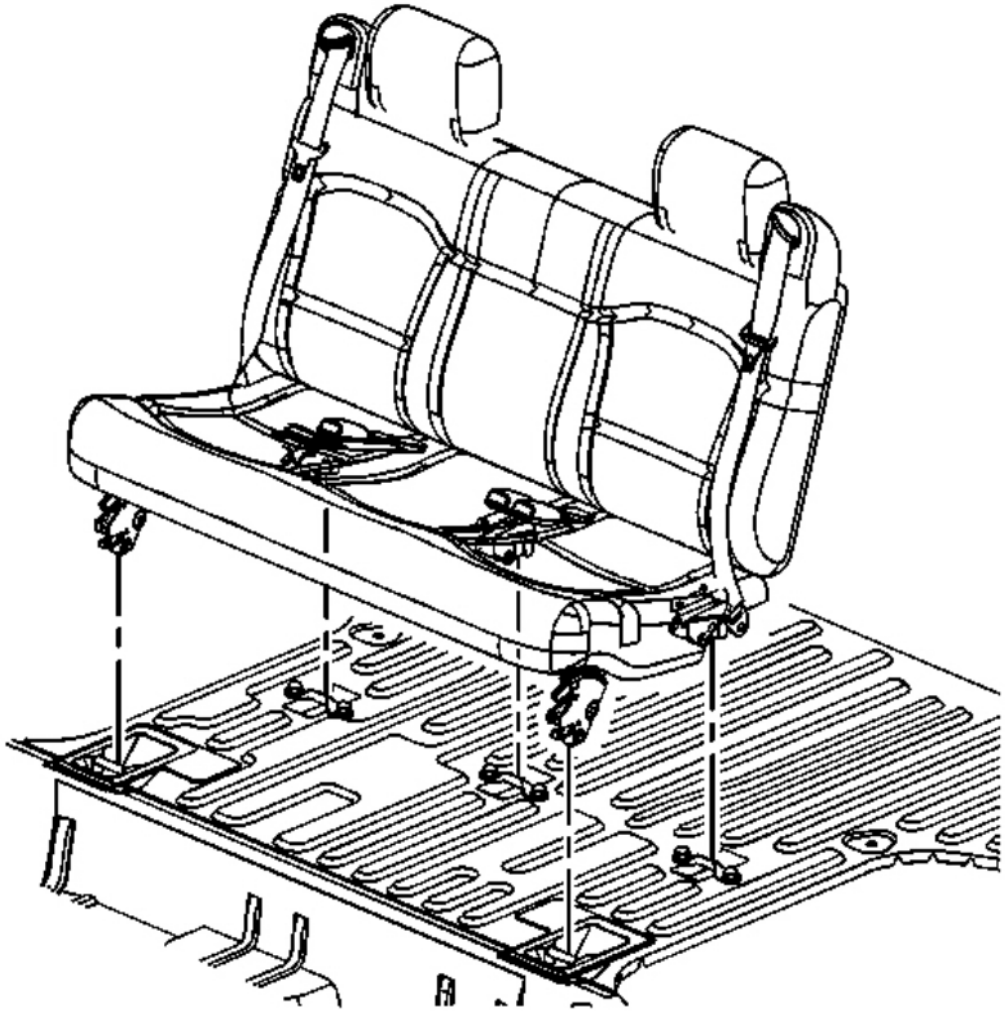


Fig. 206: View Of Rear No. 2 Seat
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the seat into the vehicle.
2. Align the seat attaching points with the slots in the floor rail.
3. Roll the seat back and down in order to secure the seat into place.

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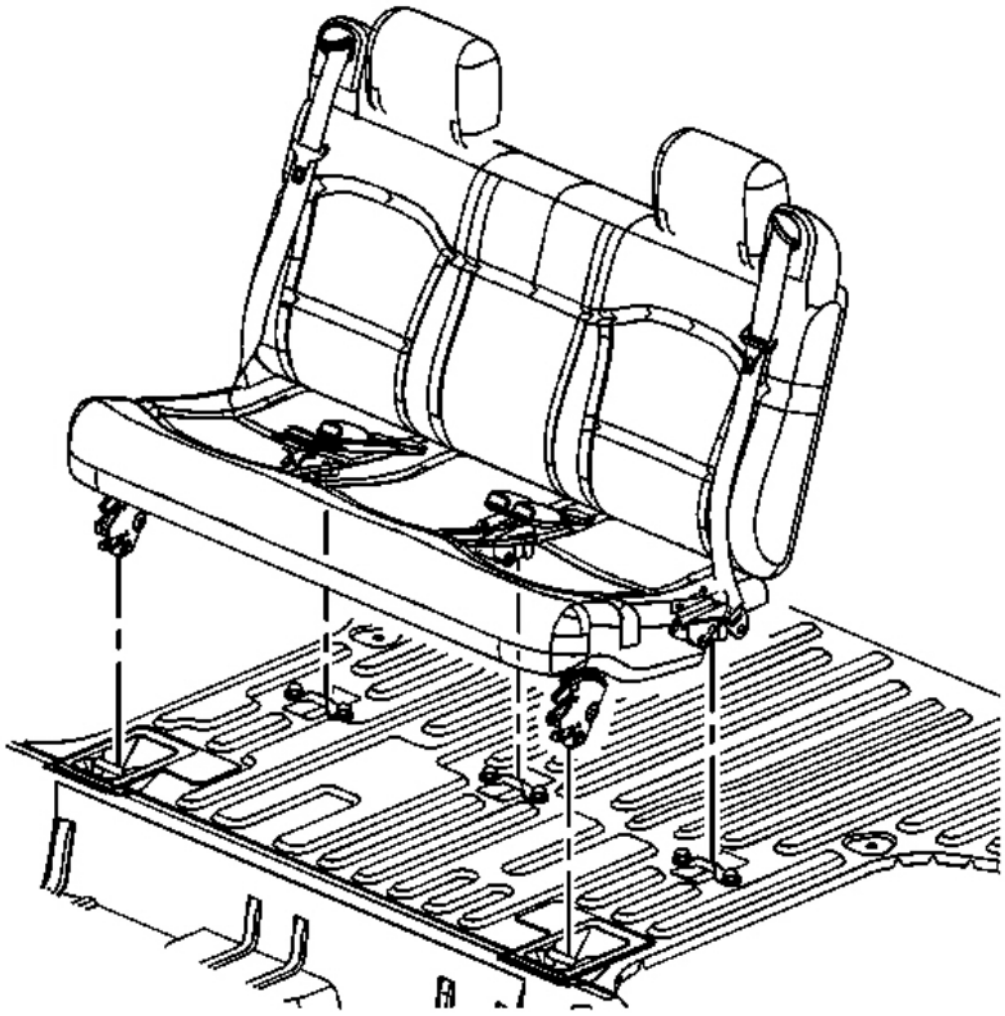


Fig. 207: View Of Rear No. 2 Seat
Courtesy of GENERAL MOTORS CORP.

SEAT REPLACEMENT - REAR NO. 2 - 50-50

Removal Procedure

1. Pull up on the handle at the rear of the seat.
2. Lift the seat up and out of the floor rails.
3. Remove the seat from the vehicle.

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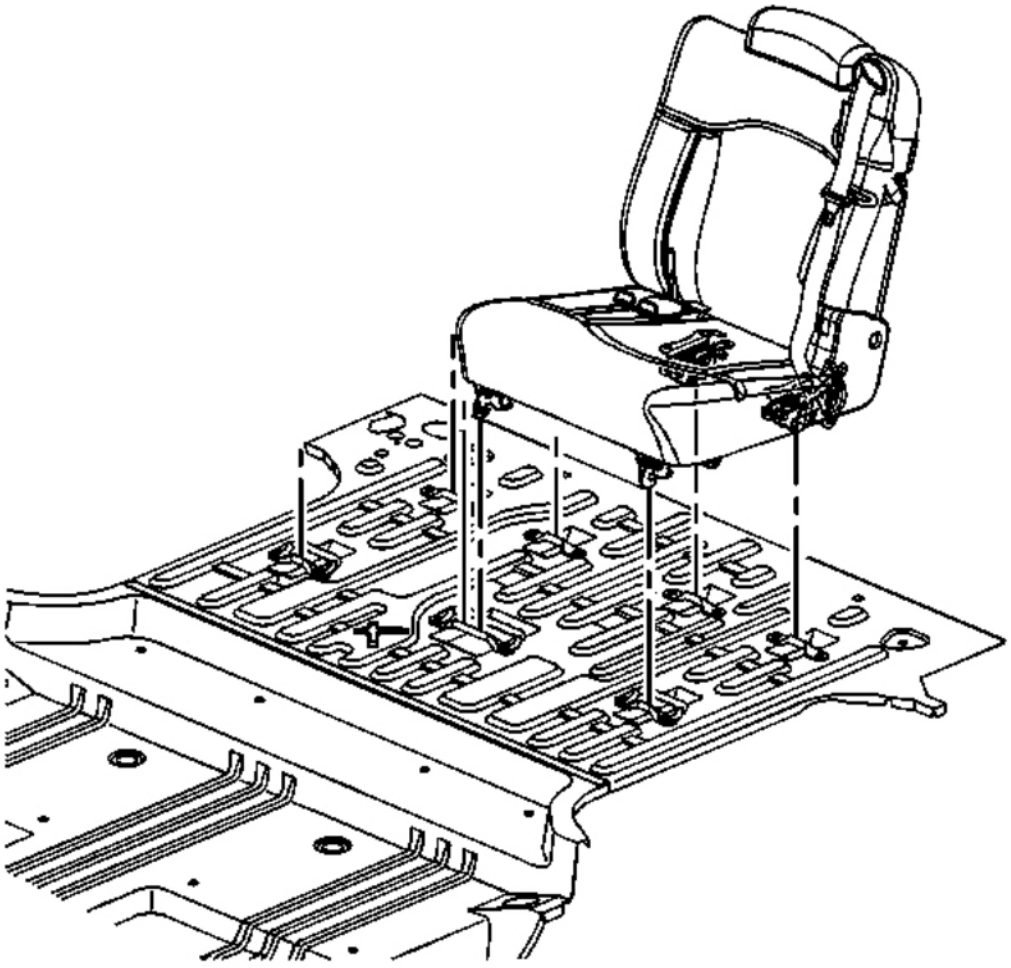


Fig. 208: View Of Rear No. 2 Seat (50-50)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the seat into the vehicle.
2. Align the seat attaching points with the slots in the floor rail.
3. Roll the seat back and down in order to secure the seat into place.

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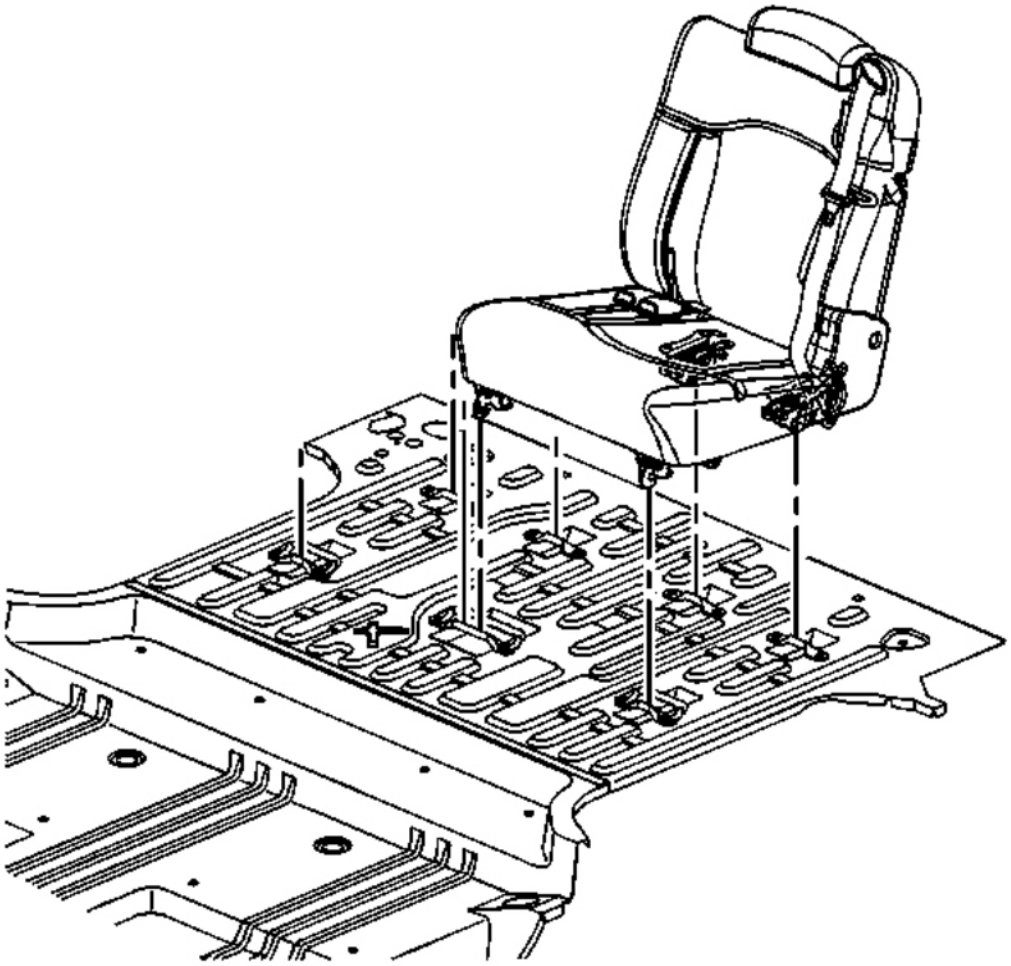


Fig. 209: View Of Rear No. 2 Seat (50-50)
Courtesy of GENERAL MOTORS CORP.

SEAT RISER LATCH ASSEMBLY REPLACEMENT - REAR NO. 2 (BENCH FRONT LATCH)

Removal Procedure

1. Disengage the velcro strips (1) to gain access to the riser bolts

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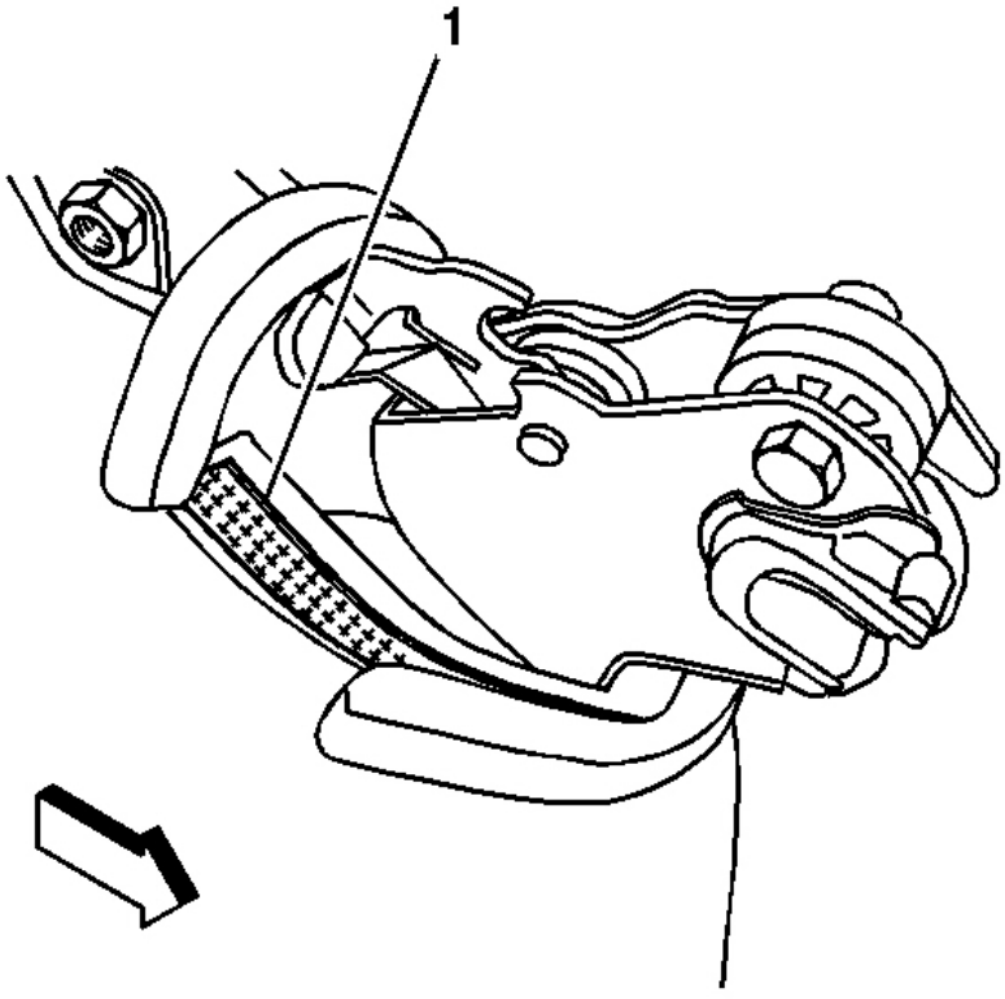


Fig. 210: View Of Velcro Strips
Courtesy of GENERAL MOTORS CORP.

2. Remove the bolts (1) that retain the front riser (2) to the cushion frame.

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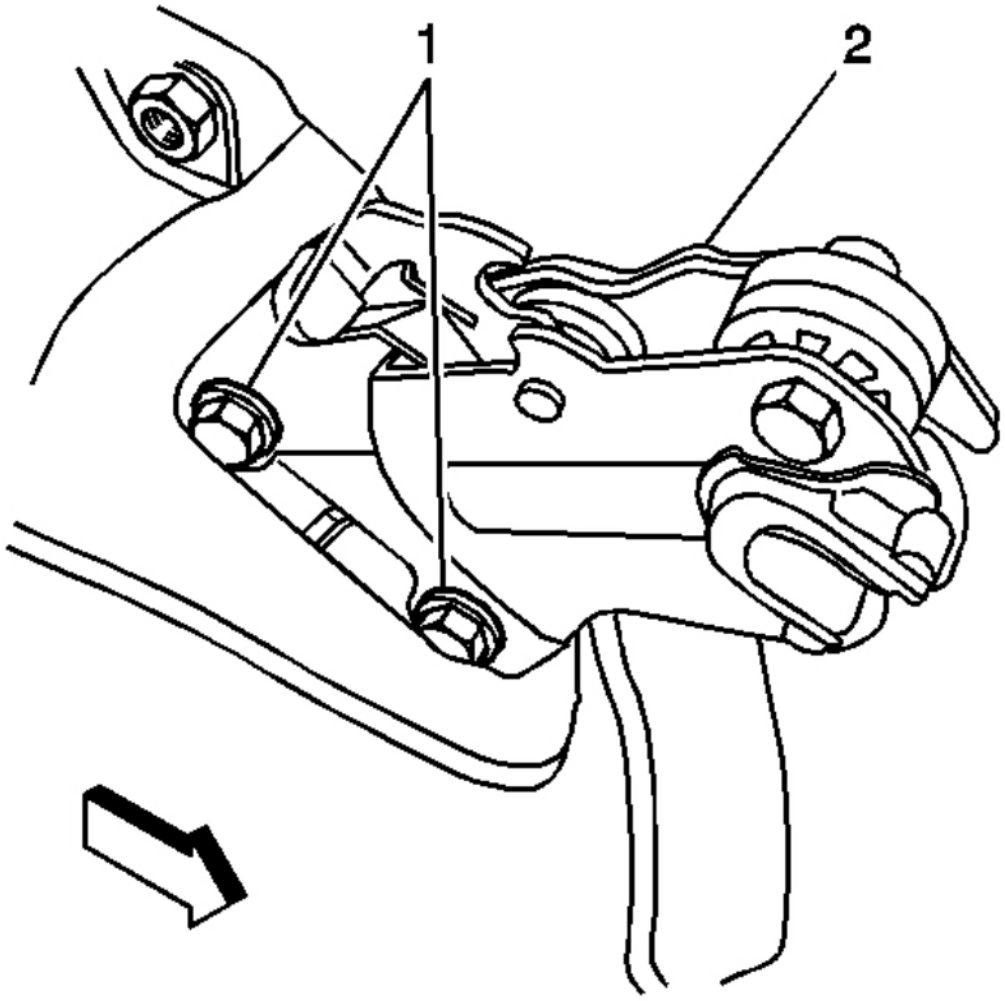


Fig. 211: View Of Front Riser & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the cable (1) from the riser assembly.

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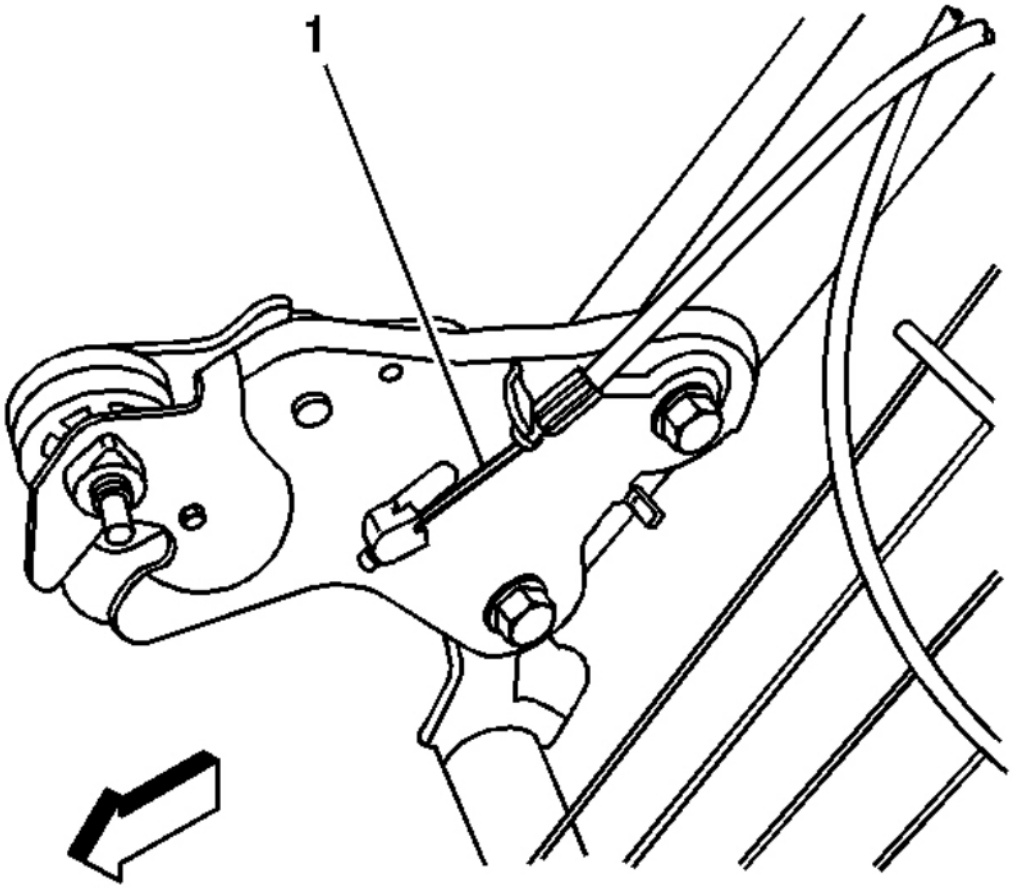


Fig. 212: View Of Rear Seat Riser Assembly Cable
Courtesy of GENERAL MOTORS CORP.

4. Remove the riser assembly from the seat frame.

Installation Procedure

1. Install the riser assembly to the seat frame.
2. Connect the cable (1) to the riser assembly.

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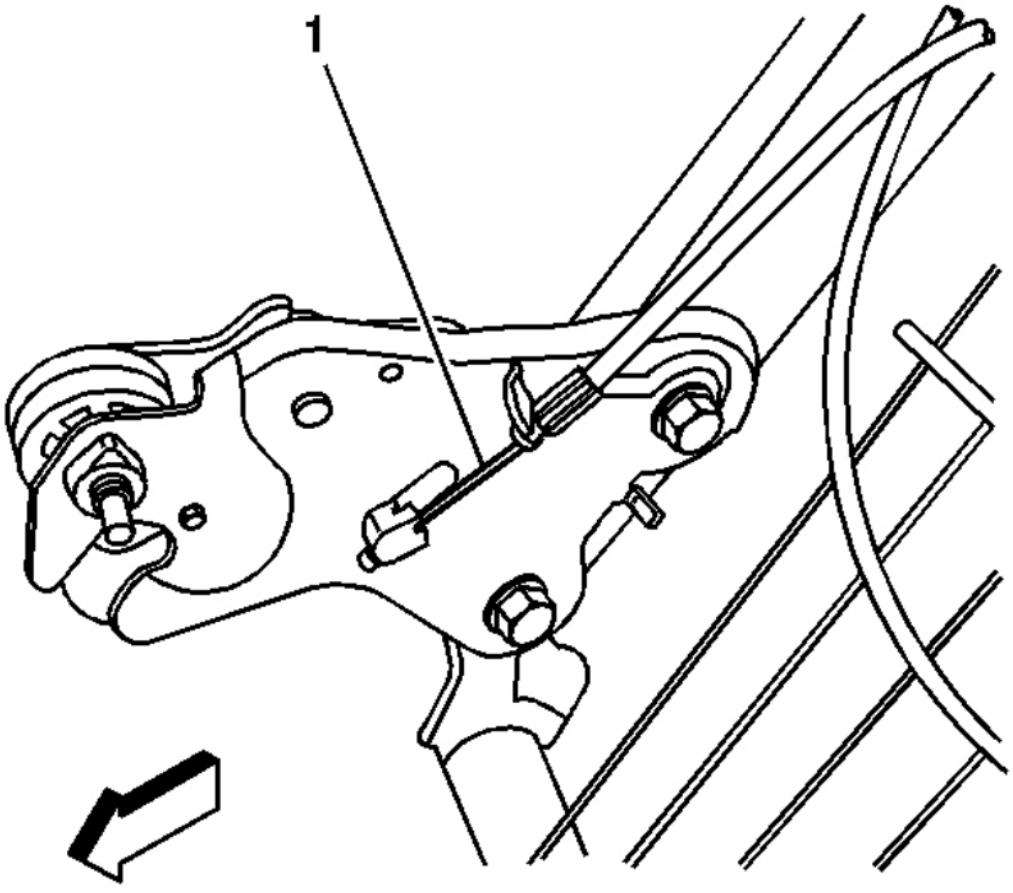


Fig. 213: View Of Rear Seat Riser Assembly Cable
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the bolts (1) that retain the front riser (2) to the cushion frame.

   Tighten: Tighten the bolts to 53 N.m (39 lb ft).

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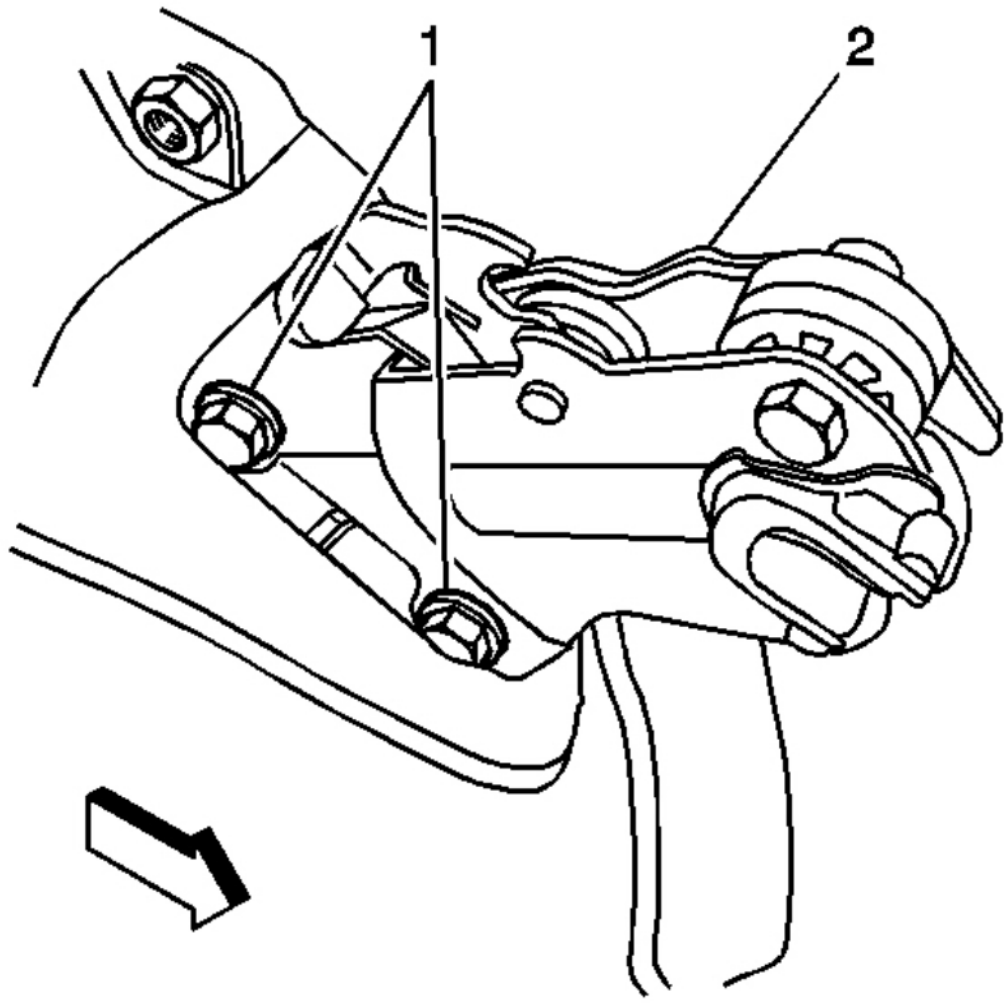


Fig. 214: View Of Front Riser & Bolts
Courtesy of GENERAL MOTORS CORP.

4. Engage the velcro strips (1).

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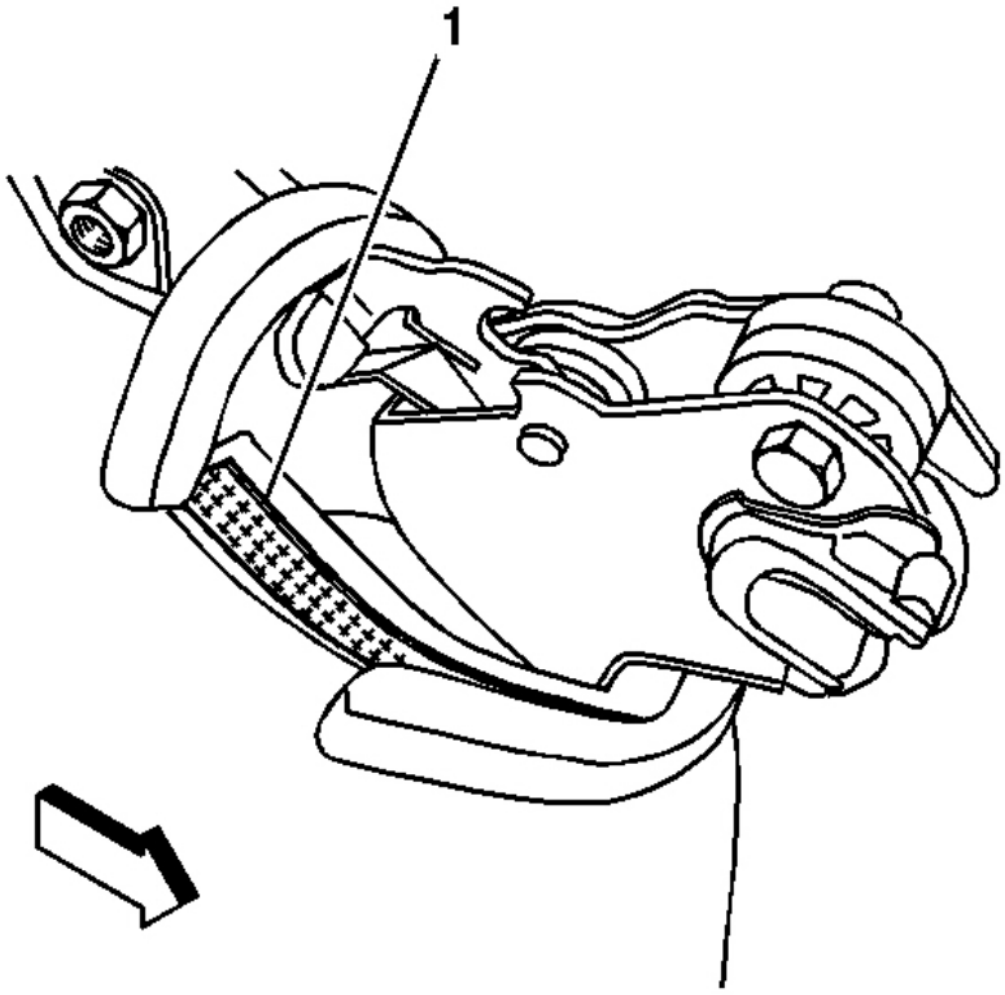


Fig. 215: View Of Velcro Strips
Courtesy of GENERAL MOTORS CORP.

SEAT RISER LATCH ASSEMBLY REPLACEMENT - REAR NO. 2 (BENCH REAR LATCH)

Removal Procedure

1. Disengage the J-Clips on the back of the seat cushion frame in order to gain access to the bolts.
2. Remove the bolts (1) from the rear seat riser assembly (2).
3. Disconnect the cable (3) from the riser assembly.
4. Remove the riser assembly from the seat frame.

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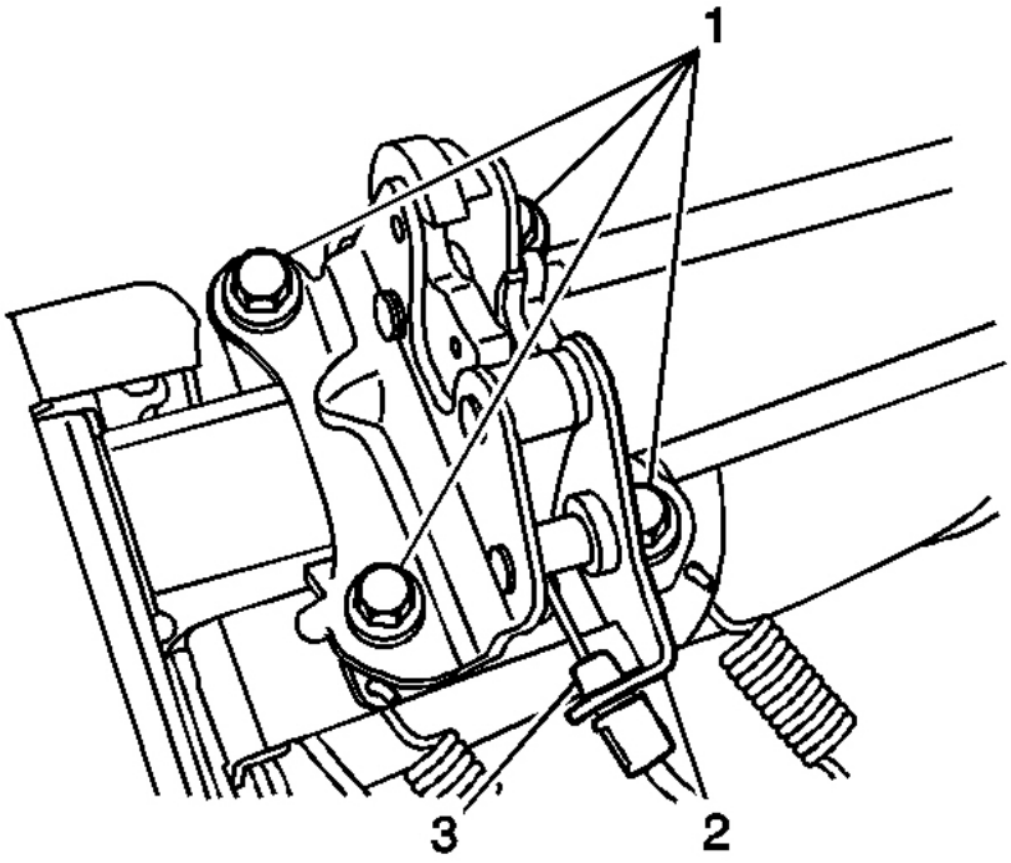


Fig. 216: View Of Rear Seat Riser Assembly, Bolts & Cable
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the riser assembly to the seat frame.
2. Connect the cable (3) to the riser assembly.

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

3. Install the bolts (1) that retain the rear riser assembly (2) to the cushion frame.

   Tighten: Tighten the bolts to 53 N.m (39 lb ft).

4. Engage the J-Clips on the back of the seat cushion frame.

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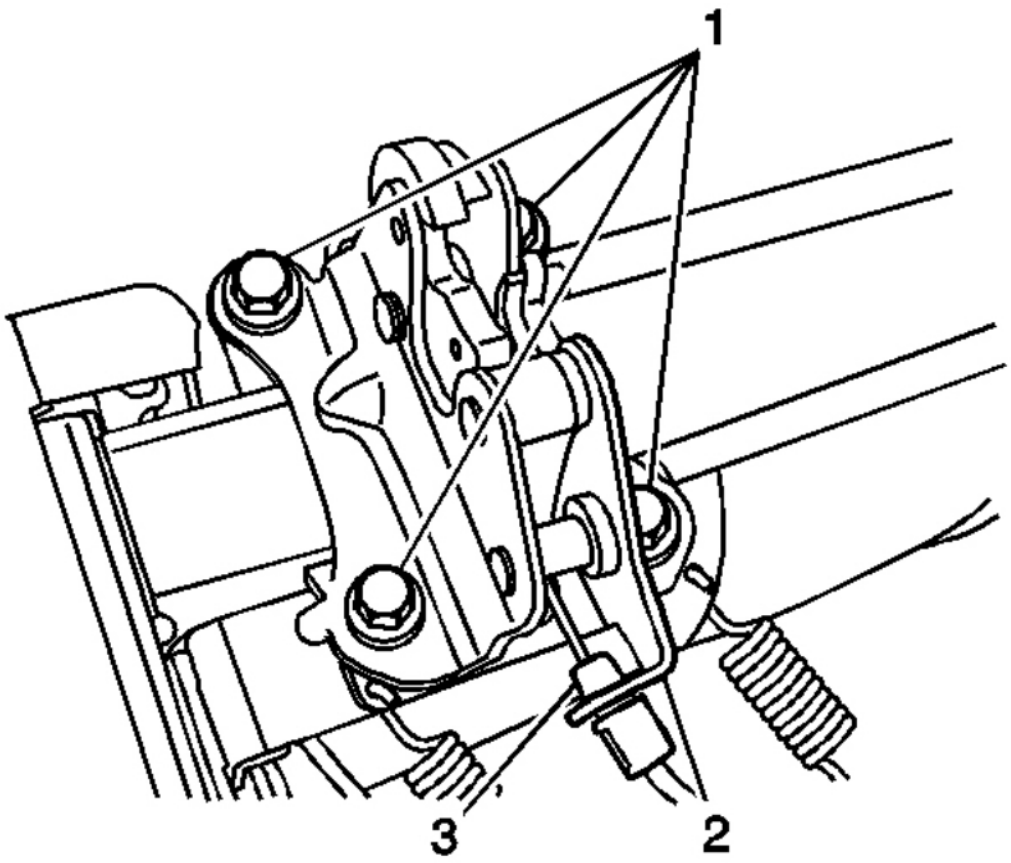


Fig. 217: View Of Rear Seat Riser Assembly, Bolts & Cable
Courtesy of GENERAL MOTORS CORP.

DESCRIPTION AND OPERATION

POWER SEATS SYSTEM DESCRIPTION AND OPERATION

Power Seat System Operation

There are 2 options of power seat systems available in full size trucks. The 6 way driver and passenger power seats, and 8 way driver and passenger power seats with driver memory. For the driver memory seat operation refer to **Memory Seats Description and Operation**. Power seats without memory are completely controlled through the power seat switch. Battery voltage is supplied to the power seat switch through the power seat circuit breaker. While the seat adjuster switches are in an inactive state the switch contacts are closed to the power seat switch ground circuit. When a power seat switch is pressed to an active state the switch contact is closed to the battery voltage supply circuit. Each seat adjuster motor is controlled by the power seat switch

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through 2 motor control circuits. The seat adjuster motors are bidirectional and the direction of adjuster motor rotation is determined by which of the adjuster motor control circuits is switched to battery voltage while the other remains grounded.

LUMBAR SUPPORT DESCRIPTION AND OPERATION

Lumbar Support/Torso Bolster System Components

The lumbar support/torso bolster system for the driver and passenger consists of the following components:

- Driver and passenger lumbar support/torso bolster switches
- Driver and passenger lumbar support/torso bolster motor assemblies
- Driver seat module
- Memory select switch
- Driver door module
- SEAT 30A circuit breaker

Lumbar Support/Torso Bolster System Operation

The power lumbar support/torso bolster system is only available with the driver memory, 8 way power seats option. The driver seat lumbar and torso adjuster motors are controlled through the driver seat module, while the passenger seat lumbar and torso adjuster motors are controlled directly through the lumbar support/torso bolster adjuster switch.

The driver seat module supplies the driver seat lumbar support/torso bolster adjuster switch assembly with a battery positive reference voltage. While the switches are in an inactive state the switch contacts are closed to the switch ground circuit. When a switch is pressed to an active state the switch contact is closed to the reference voltage circuit. Battery voltage on a switch signal circuit indicates to the driver seat module the switch status is active. Each seat adjuster motor is controlled by the driver seat module through 2 motor control circuits. While the seat adjuster motors are in an inactive state the motor control circuits are closed to ground circuit contacts within the driver seat module. The driver seat module operates the seat adjuster motors by switching one of a motor's control circuits to battery voltage. The seat adjuster motors are bidirectional and the direction of adjuster motor rotation is determined by which of the adjuster motor control circuits is switched to battery voltage while the other remains grounded.

The seat adjuster motors are equipped with internal position sensors. The adjuster motor position sensors are monitored by the driver seat module and are used to determine the seat position when storing or recalling memory settings. The lumbar and torso adjuster motors use hall effect type position sensors. The hall effect position sensors are supplied with battery positive reference and ground circuits from the driver seat module. The position sensor signal circuits are supplied battery positive voltage through a resistor them monitored within the driver seat module. During adjuster motor operation the hall effect position sensor provides a single pulse for every revolution of the adjuster motor shaft. The driver seat module counts the pulses from the position sensor signal circuits to determine the adjuster motor positions when storing or recalling memory seat position settings.

Battery voltage is supplied to the passenger seat lumbar support/torso bolster switch through the SEAT 30A

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circuit breaker. While the switches are in an inactive state the switch contacts are closed to the switch ground circuit. When a switch is pressed to an active state the switch contact is closed to the battery voltage supply circuit. Each motor is controlled by the power seat switch through 2 motor control circuits. The motors are bidirectional and the direction of motor rotation is determined by which of the motor control circuits is switched to battery voltage while the other remains grounded.

HEATED/COOLED SEATS DESCRIPTION AND OPERATION

The driver, front passenger, and second row passenger heat/cool seat system consists of the following components:

- Driver and front passenger heat/cool seat switch assembly
- Left rear passenger heat/cool seat switch
- Right rear passenger heat/cool seat switch
- Heat/cool seat system signal converter

Each of the heated/cooled seats consist of the following components:

- Heat/cool seat cushion ventilation blower
- Heat/cool seat back ventilation blower
- Climate control seat module

System Operation

The heat/cool seat system operating modes are as follows:

- Back only high heat
- Back only medium heat
- Back only low heat
- Back and cushion high heat
- Back and cushion medium heat
- Back and cushion low heat
- Back and cushion high cool
- Back and cushion medium cool
- Back and cushion low cool

Pressing the heat or cool switches will activate the system to the back and cushion high heat or high cool modes only. After a seat has been turned on in the heat or cool modes pressing the seat cushion or seat back switches will reduce the temperature setting one level from high to medium, low, and off. The seat back only will operate in the heat modes only and when attempting to operate the seat back only in the cool mode the seat back indicator will flash for several seconds and the system will default to the back and cushion mode.

The heat/cool seat system functions independently of the memory seat system and none of it's components communicate over the class 2 serial data circuit. The heat/cool seat switch assemblies are supplied with ignition

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voltage, ground, and illumination circuits. The switch assemblies interface with the signal converter through the switch signal and the indicator control circuits. The heat/cool seat switches are 12-volt inputs to the signal converter which processes the multiple switch inputs from each of the seat switch assemblies and converts them to 4 pulse width modulation (PWM) mode signal circuits, one for each of the heated/cooled seat assemblies. Besides suppling the climate control seat modules with PWM mode signal circuits, the signal converter also uses the processed switch inputs to control the switch indicator LEDs through the indicator control circuits. The PWM mode signal circuits are referenced from battery voltage within the climate control seat modules and the PWM duty cycle is determined by the frequency that the signal converter drives the circuit low.

Each heated/cooled seat is controlled by a climate control seat module (CCSM) located under the seat cushion. The CCSM is supplied with battery voltage, ignition voltage, ground, and a mode signal circuit. All heat/cool seat modes will operate with the ignition on without the engine running, although due to the high current draw inconsistent operation could occur. When verifying a customer concern doing so with a fully charged battery and the engine running will provide the most consistent results. The CCSM controls heat/cool seat ventilation blowers located under the seat cushion and behind the seat back. The ventilation blowers are self contained electronic air conditioners consisting of a blower motor with an inlet air filter, thermal electric device (TED), temperature sensor, and waste air duct. The air flow from the blower is divided into 2 streams and directed across both sides of the TED, one side into vent passages through the seat foam and the other out the waste air duct.

While the system is operating in either the heat or cool modes both heated and cooled air is generated as it passes across the TED. When voltage is applied to a TED, one side releases energy as heat, while the opposite side absorbs energy and gets cold. The supply voltage to the TEDs is controlled by the CCSM and the polarity determines which side gets hot or cool. When the polarity of the current flow to the TEDs is switched, the hot and cool sides of the TED reverse. The CCSM monitors the temperature of the air flow into the seat foam and continuously adjusts the blower speed and TED temperature by regulating the current flow through each component. The CCSMs rely on inputs from temperature sensors located in the ventilation blowers near the TEDs to control seat temperatures. The thermistors are 2 wire sensors supplied with a 5-volt referenced signal circuit and a low reference circuit from the CCSM. Resistance through the thermistors varies with temperature causing the heated seat sensor signal circuit voltage levels to decrease as the TED temperatures rise.

HEATED SEATS DESCRIPTION AND OPERATION (FRONT)

Heated Seat Components

The heated seat system consists of the following components:

- Driver and passenger heated seat switches
- Driver and passenger seat back heater elements
- Driver and passenger seat cushion heater elements
- Driver and passenger seat back temperature sensors
- Driver seat module
- Driver door module
- Passenger door module

Heated Seat System Operation

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The driver and passenger heated seats have 2 heat zone operating modes with 3 heat level modes and will operate only while the engine is running. The heat zones are determined by which of the 2 heated seat buttons are pressed, while the heat level is determined by the number of times they are pressed. Pressing the seat cushion button 1 time will activate the seat back and cushion heater elements in the high mode. Each time the seat cushion button is pressed the seat back and cushion heat level is reduced from high to medium, low, and off. Pressing the heated seat back button 1 time will activate only the seat back heater element in the high mode. Each time the seat back button is pressed the seat back heat level is reduced from high to medium, low, and off. During heated seat operation the heat zone operating mode may be changed without affecting the current heat level mode.

The heated seat switches are momentary contact switches and are inputs to the driver and passenger door modules. Battery voltage is supplied to the switch assembly from the door module, and when a heated seat switch is pressed and released a brief switch signal voltage is supplied to the door module. Whenever the door module receives an active heated seat switch input, the next heated seat operating mode is determined by whatever the current mode may be. The seat heater elements are controlled by the driver seat module using inputs from the door modules through Class 2 serial data circuit messages. The driver seat module controls the voltage supply and the ground circuits to the seat heater elements. When a heated seat function is commanded active, the seat module will switch battery voltage to the heater element supply circuits, and ground is provided through low side drive control circuits.

During heated seat operation both the seat back and cushion heater elements are supplied battery voltage. The seat module grounds the appropriate control circuits for back only or back and cushion heating modes, and opens or closes the active control circuits as necessary in order to maintain the desired seat temperature. The seat module relies on inputs from thermistors located in the driver and passenger seat backs to control heated seat temperatures. The thermistors are 2 wire sensors supplied with a 5-volt referenced signal circuit and a low reference circuit from the seat module. Resistance through the thermistors varies with temperature causing the heated seat sensor signal circuit voltage levels to decrease as the seat back temperatures rise. The seat modules allow heated seat operation only while the engine is running which is determined by a Class 2 serial data circuit message from the powertrain control module.

MEMORY SEATS DESCRIPTION AND OPERATION

Memory Seat System Components

The memory seat system consists of the following components:

- Power seat switch assembly
- Memory recall switch assembly
- Horizontal adjuster motor
- Front vertical adjuster motor
- Rear vertical adjuster motor
- Recline adjuster motor
- Driver seat module
- Driver door module
- SEAT 30A circuit breaker

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Memory Seat System Description

Battery voltage is supplied to the driver seat module through the power seat circuit breaker. The driver seat module supplies the seat adjuster switch assembly with a battery positive reference voltage. While the seat adjuster switches are in an inactive state the switch contacts are closed to the adjuster switch ground circuit. When a seat adjuster switch is pressed to an active state the switch contact is closed to the reference voltage circuit. Battery voltage on a switch signal circuit indicates to the driver seat module the switch status is active.

Each seat adjuster motor is controlled by the driver seat module through 2 motor control circuits. While the seat adjuster motors are in an inactive state the motor control circuits are closed to ground circuit contacts within the driver seat module. The driver seat module operates the seat adjuster motors by switching one of a motor's control circuits to battery voltage. The seat adjuster motors are bidirectional and the direction of adjuster motor rotation is determined by which of the adjuster motor control circuits is switched to battery voltage while the other remains grounded.

Memory Set/Recall Operation

The seat adjuster motors are equipped with internal position sensors. The adjuster motor position sensors are monitored by the driver seat module and are used to determine the seat position when storing or recalling memory settings. The horizontal, front vertical, and rear vertical adjuster motors use hall effect type position sensors. The hall effect position sensors are supplied with battery positive reference and ground circuits from the driver seat module. The position sensor signal circuits are supplied battery positive voltage through a resistor them monitored within the driver seat module. During adjuster motor operation the hall effect position sensor provides a single pulse for every revolution of the adjuster motor shaft. The driver seat module counts the pulses from the position sensor signal circuits to determine the adjuster motor positions when storing or recalling memory seat position settings.

The recline adjuster motor is equipped with a potentiometer type position sensor. The recline motor position sensor is supplied with it's own 5-volt reference and ground circuits from the driver seat module. The recline position sensor signal circuit is referenced from ground within the driver seat module. The signal voltage monitored by the driver seat module ranges from 0.39 - 4.58 volts and is determined by the wiper location on the resistor within the recline motor position sensor. The recline motor position sensor signal circuit voltage level is used by the driver seat module to determine the seat recline position when storing or recalling memory seat position settings.

The memory recall switch assembly on the driver's door provides inputs to the driver door module. Battery voltage is supplied to the memory recall switch assembly from the driver door module. When a RCL 1, RCL 2, or EXIT switch is pressed, the switch contacts close the appropriate switch signal circuit to the battery voltage supply circuit within the memory recall switch assembly. When the driver door module receives active switch signals from the memory recall switch assembly, the appropriate commands are sent to the driver seat module using the Class 2 Serial Data circuit.

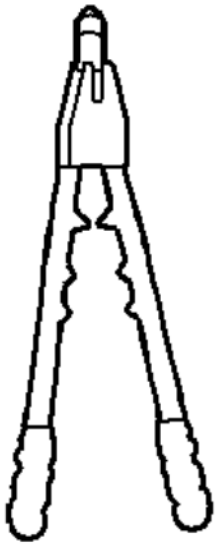
Memory seat recall operation is allowed only with the transmission selector lever in the PARK position while the ignition is on. The transmission selector lever position data is provided to the driver seat module by a message through the Class 2 Serial Data circuit.

SPECIAL TOOLS AND EQUIPMENT

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SPECIAL TOOLS

Special Tools

Illustration	Tool Number/ Description
	J 34940 Rivet Gun

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