

2014 TRANSMISSION

Automatic Transmission - 6T75 (M7V M7X) - Repair Instructions - On Vehicle - Acadia, Enclave And Traverse

REPAIR INSTRUCTIONS - ON VEHICLE

MANUAL SHIFT DETENT LEVER WITH SHAFT POSITION SWITCH ASSEMBLY REPLACEMENT

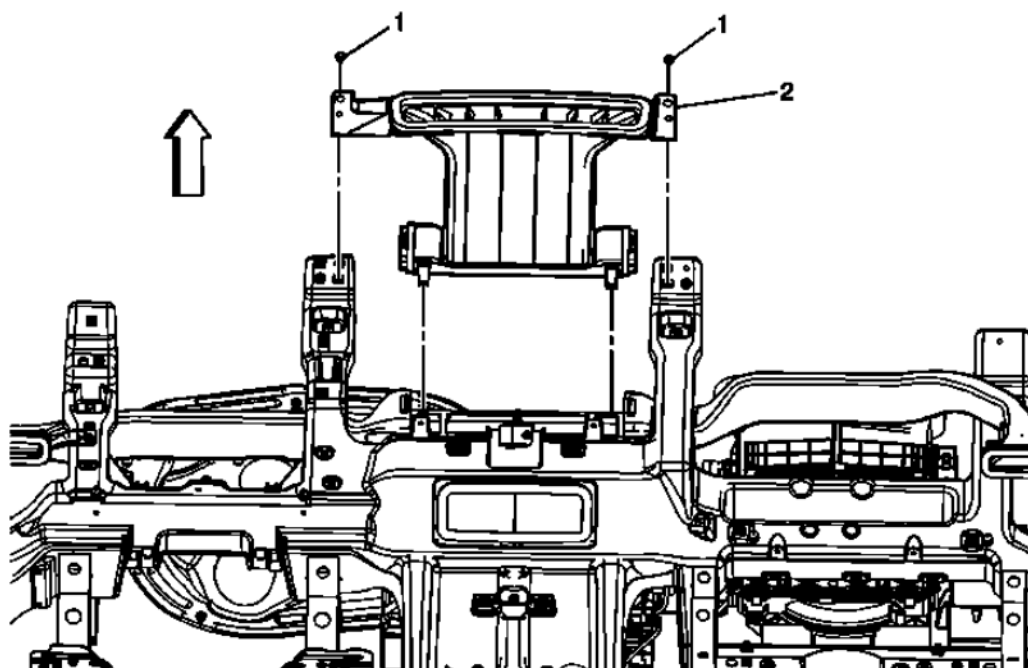


Fig. 1: Identifying Manual Shift Detent Lever & Shaft Position Switch Assembly
Courtesy of GENERAL MOTORS COMPANY

Manual Shift Detent Lever with Shaft Position Switch Assembly Replacement

Callout	Component Name
Preliminary Procedures	
1. Remove the transmission range selector lever. Refer to <u>Automatic Transmission Range Selector Lever Replacement</u>. 2. Remove the lower control valve body. Refer to <u>Control Valve Lower Body and Upper Body Replacement</u>.	
	Manual Shaft Detent Lever Pin
	CAUTION:

2014 GMC Acadia Denali

2014 TRANSMISSION Automatic Transmission - 6T75 (M7V M7X) - Repair Instructions - On Vehicle - Acadia, Enclave And Traverse

1	Use J 41229 to install the manual shaft pin at the correct height in order to properly secure the manual shaft. If you install the pin too deep, the case bore may crack. • Use a small nail puller to remove the pin. Discard the pin, it is not reusable. • Use DT-41229 Manual Shaft Pin Installer to install the pin. Inspect that the pin installed height is within 6.5 mm-7.5 mm (0.25 in-0.30 in). Special Tools DT 41229 Manual Shaft Pin Installer
2	Manual Shaft Detent Lever Assembly (With Shift Position Switch) Procedure • Removal: Partly lower the manual shaft detent lever assembly (w/shift position switch) in order to rotate the detent lever and disconnect the park actuator rod. Then fully remove the manual shaft detent lever assembly from the transmission case. • Installation: Partly install the manual shaft detent lever assembly (w/shift position switch). Rotate the detent lever and connect the park actuator rod. Then fully install the manual shaft detent lever assembly in the transmission case. • Lubricate the manual shaft with automatic transmission fluid (ATF) to prevent damage to the manual shift shaft seal. TIP: Do not pull the park actuator rod end out beyond the machined oil passage surface in the case. A no park condition will exist if the park pawl actuator assembly is pulled out of the transmission too far and the actuator rod disengages from the park pawl. The transmission assembly will require disassembly to re-install the actuator rod over the park pawl.

TRANSMISSION CONTROL LEVER KNOB REPLACEMENT (ACADIA)

Removal Procedure

1. Apply the parking brake.
2. Remove the floor console left extension panel. Refer to **Front Floor Console Extension Panel Replacement - Left Side (Acadia)** .
3. Disconnect the transmission tap up/tap down switch electrical connector (1).

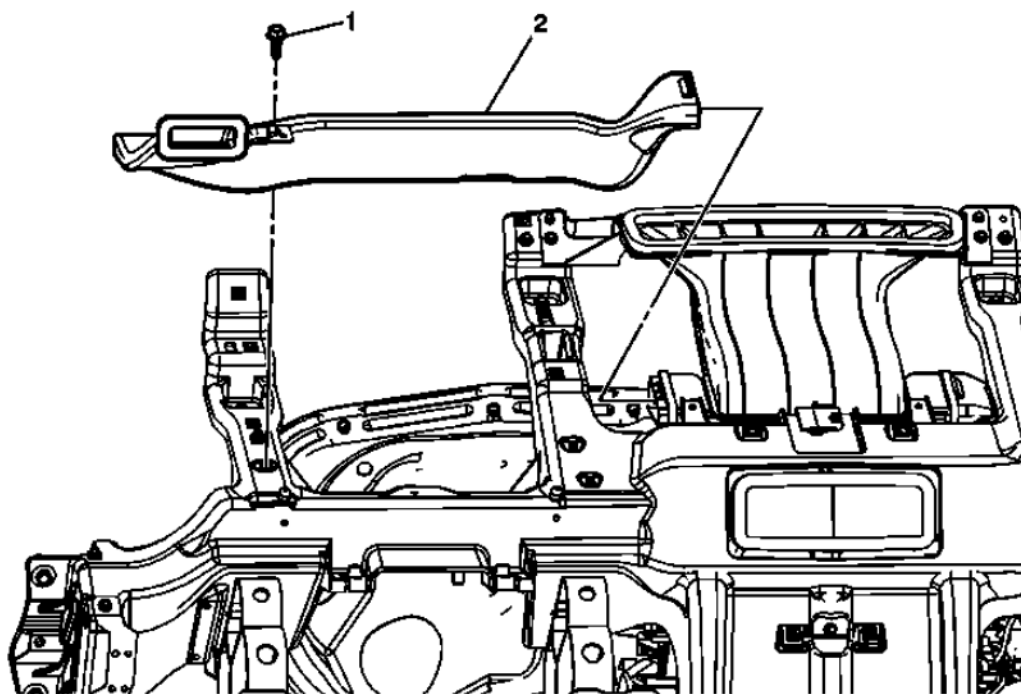


Fig. 2: View Of Transmission Tap Up/Tap Down Switch Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

4. Rotate the key to the RUN position, however do NOT start the vehicle.
5. Move the transmission shift control lever rearward.
6. For vehicles with push-to-release style solenoid, carefully insert a small flat-bladed tool between the trim ring (2) and the shift knob. Apply careful downward pressure to the shift knob trim ring to separate the trim ring from the shift knob. The trim ring will drop down approximately 13.0 mm (0.5 in) exposing the shift knob retaining screw.

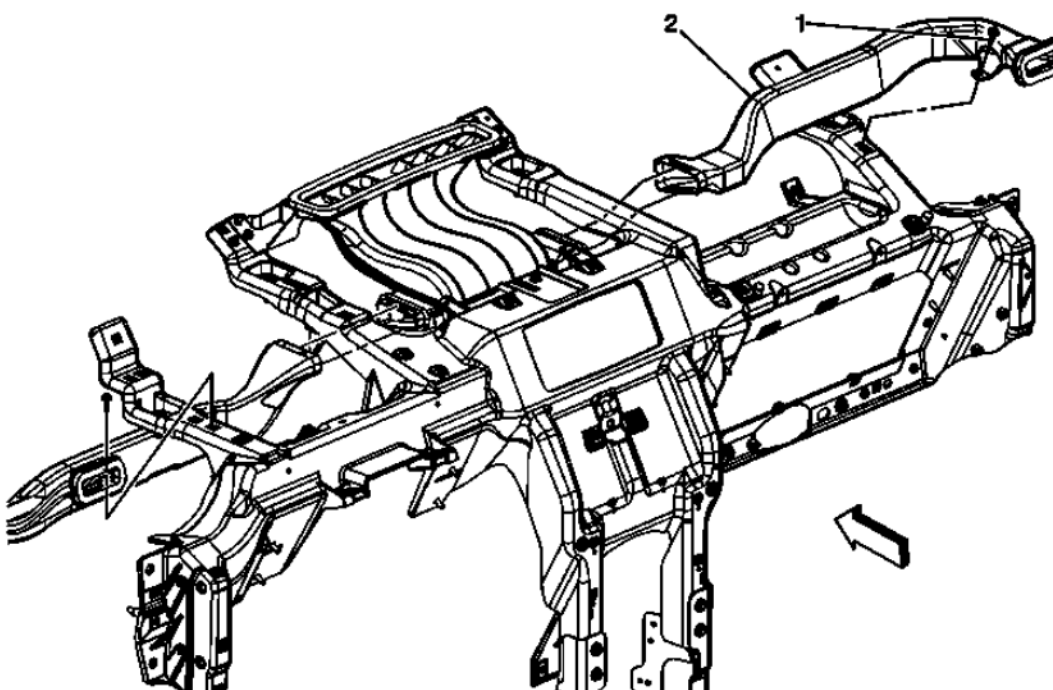


Fig. 3: Identifying Shift Control Knob Screw And Trim Ring
Courtesy of GENERAL MOTORS COMPANY

7. For vehicles with pull-to-release style solenoid, carefully apply downward pressure to the shift knob trim ring to separate the trim ring from the shift knob. The trim ring will drop down approximately 13.0 mm (0.5 in) exposing the shift knob retaining screw.
8. Remove the shift control knob screw (1) from the shift control knob.
9. Remove the shift control knob (1) from the shift control lever.

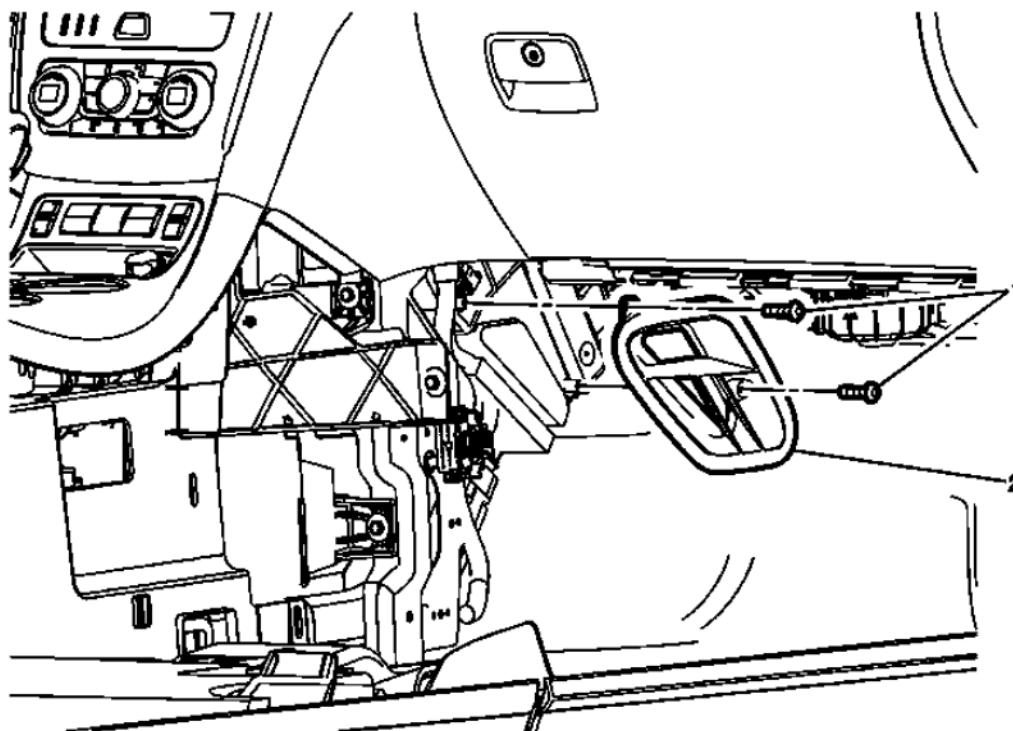


Fig. 4: View Of Shift Control Knob
Courtesy of GENERAL MOTORS COMPANY

NOTE: Carefully guide the transmission tap up/tap down switch electrical harness and connector past the shift control indicator while removing the shift control knob.

Installation Procedure

1. For vehicles with push-to-release style solenoid, apply lubricant GM P/N 88861426 (Canadian P/N 88861442) to the tip of the shift control lever. Otherwise, proceed to step 2.
2. Install the shift control knob (1) to the shift control lever.

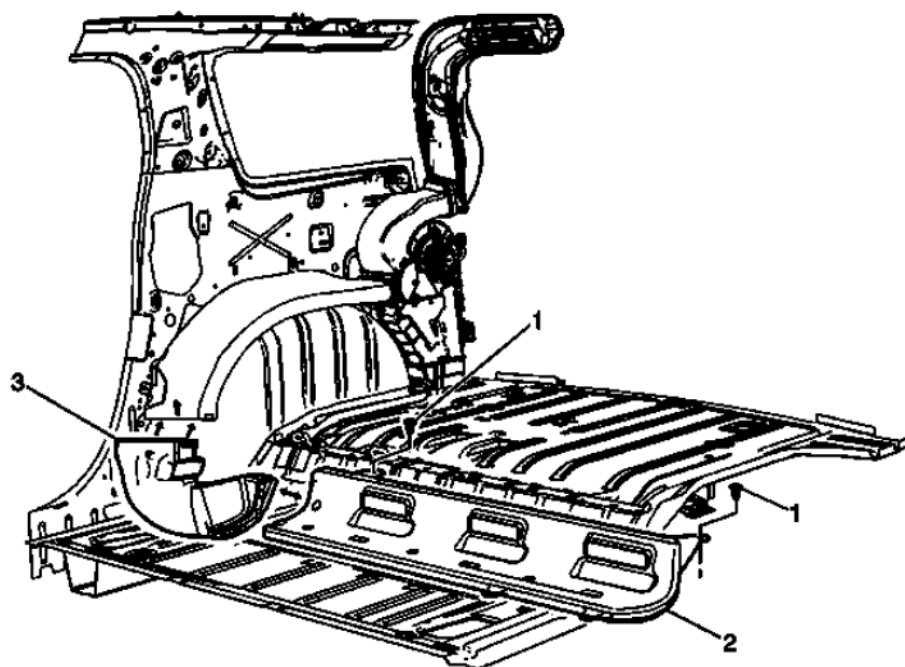


Fig. 5: View Of Shift Control Knob
Courtesy of GENERAL MOTORS COMPANY

NOTE: Carefully guide the transmission tap up/tap down switch electrical harness and connector past the shift control indicator while installing the shift control knob.

3. Install the control knob screw (1) and tighten to 4 N.m (35 lb in).

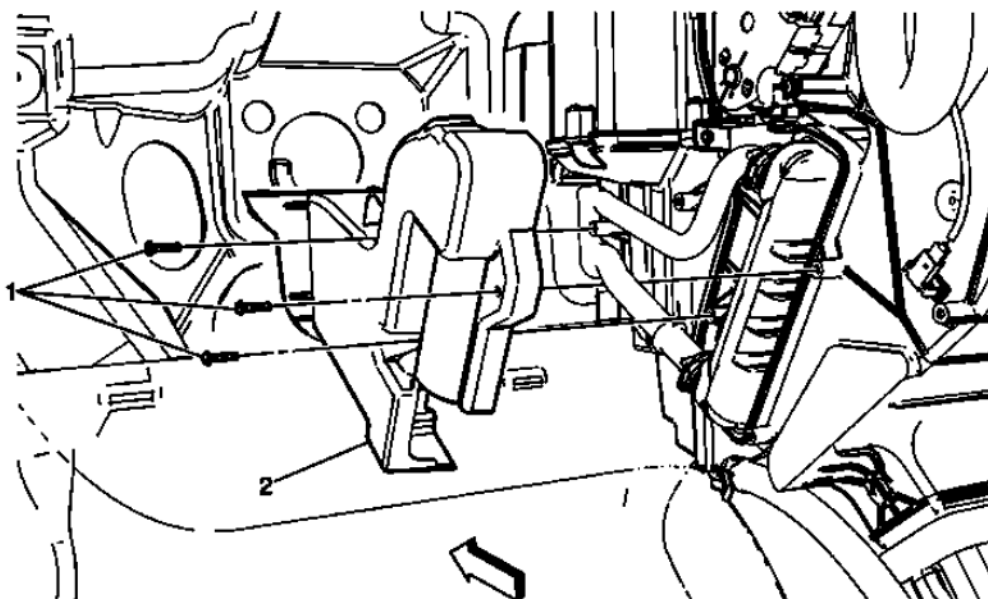


Fig. 6: Identifying Shift Control Knob Screw And Trim Ring
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

4. Lift the shift control knob trim ring (2) up to the shift control knob until a click sound is heard indicating the trim ring is secured to the shift knob.
5. Place the shift control lever in the PARK position.
6. Rotate the key to the off position.
7. Connect the transmission tap up/tap down switch electrical connector (1).

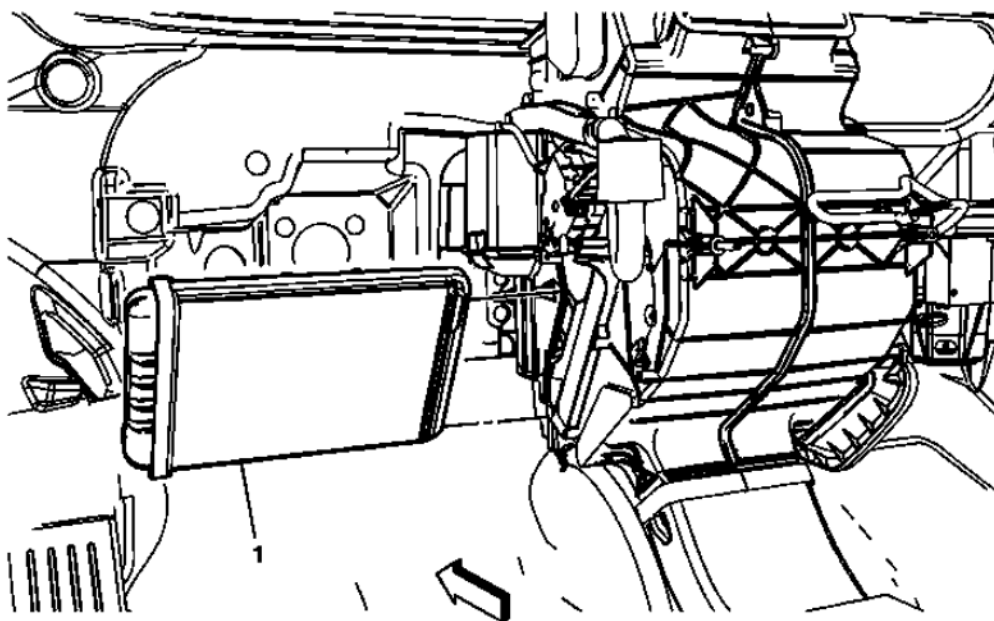


Fig. 7: View Of Transmission Tap Up/Tap Down Switch Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

8. Check for proper operation of the shift control through all gear ranges.
9. Install the floor console left extension panel. Refer to **Front Floor Console Extension Panel Replacement - Left Side (Acadia)** .
10. Release the parking brake.

TRANSMISSION CONTROL LEVER KNOB REPLACEMENT (ENCLAVE)

Removal Procedure

1. Apply the parking brake.
2. Remove the floor console left extension panel. Refer to **Front Floor Console Extension Panel Replacement - Left Side (Enclave)** .
3. Disconnect the transmission tap up/tap down switch electrical connector (1).

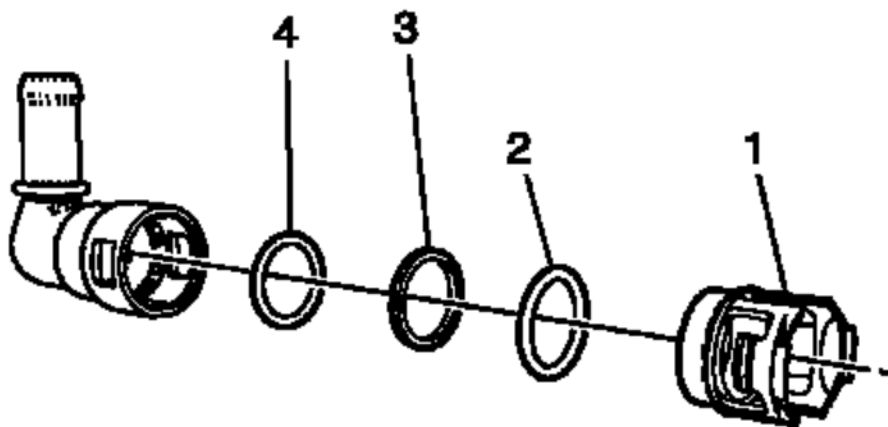


Fig. 8: Identifying Transmission Tap Up/Tap Down Switch Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

4. Rotate the key to the RUN position, however do NOT start the vehicle.
5. Move the transmission shift control lever rearward.
6. For vehicles with push-to-release style solenoid, carefully insert a small flat-bladed tool between the trim ring (2) and the shift knob. Apply careful downward pressure to the shift knob trim ring to separate the trim ring from the shift knob. The trim ring will drop down approximately 13.0 mm (0.5 in) exposing the shift knob retaining screw.

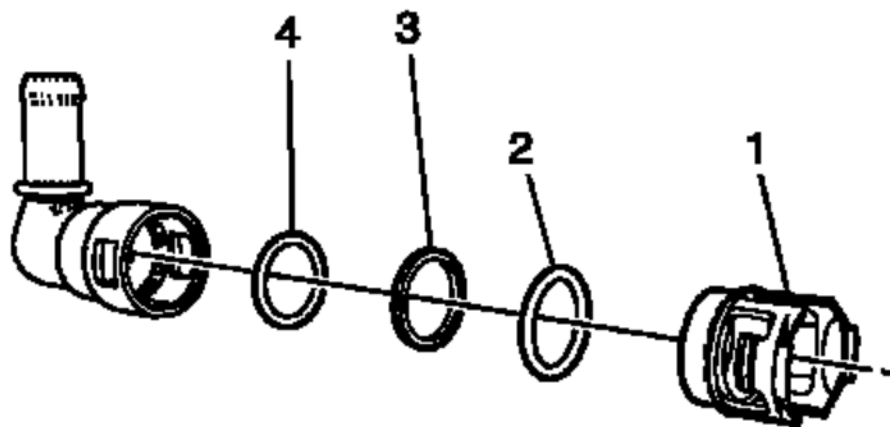


Fig. 9: Identifying Shift Control Knob Screw
Courtesy of GENERAL MOTORS COMPANY

7. For vehicles with pull-to-release style solenoid, carefully apply downward pressure to the shift knob trim ring to separate the trim ring from the shift knob. The trim ring will drop down approximately 13.0 mm (0.5 in) exposing the shift knob retaining screw.
8. Remove the shift control knob screw (1) from the shift control knob.
9. Remove the shift control knob (1) from the shift control lever.

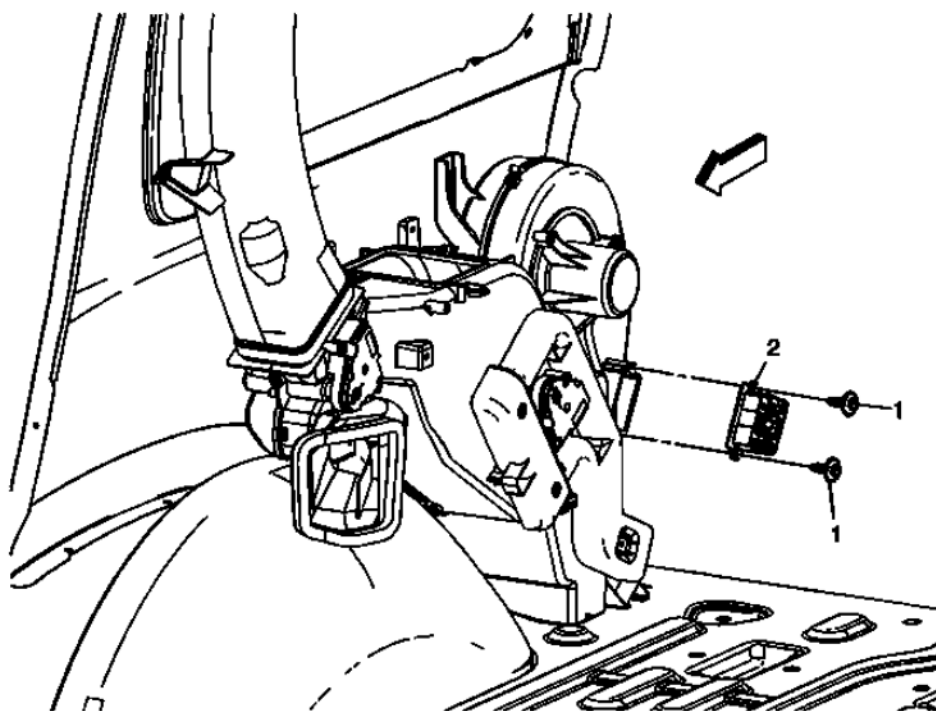


Fig. 10: Identifying Shift Control Knob
Courtesy of GENERAL MOTORS COMPANY

NOTE: Carefully guide the transmission tap up/tap down switch electrical harness and connector past the shift control indicator while removing the shift control knob.

Installation Procedure

1. For vehicles with push-to-release style solenoid, apply lubricant GM P/N 88861426 (Canadian P/N 88861442) to the tip of the shift control lever. Otherwise, proceed to step 2.
2. Install the shift control knob (1) to the shift control lever.

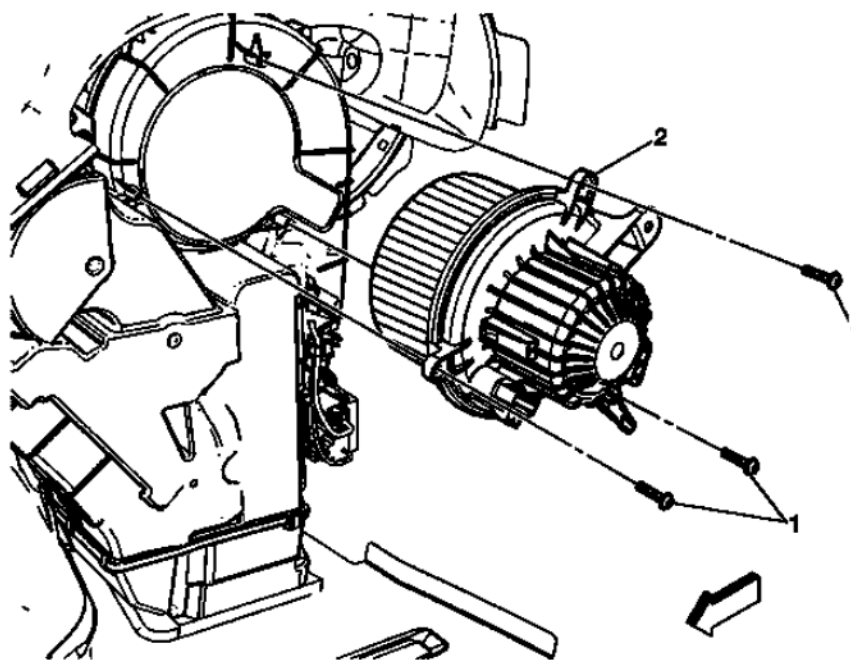


Fig. 11: Identifying Shift Control Knob
Courtesy of GENERAL MOTORS COMPANY

NOTE: Carefully guide the transmission tap up/tap down switch electrical harness and connector past the shift control indicator while installing the shift control knob.

3. Install the control knob screw (1) and tighten to 4 N.m (35 lb in).

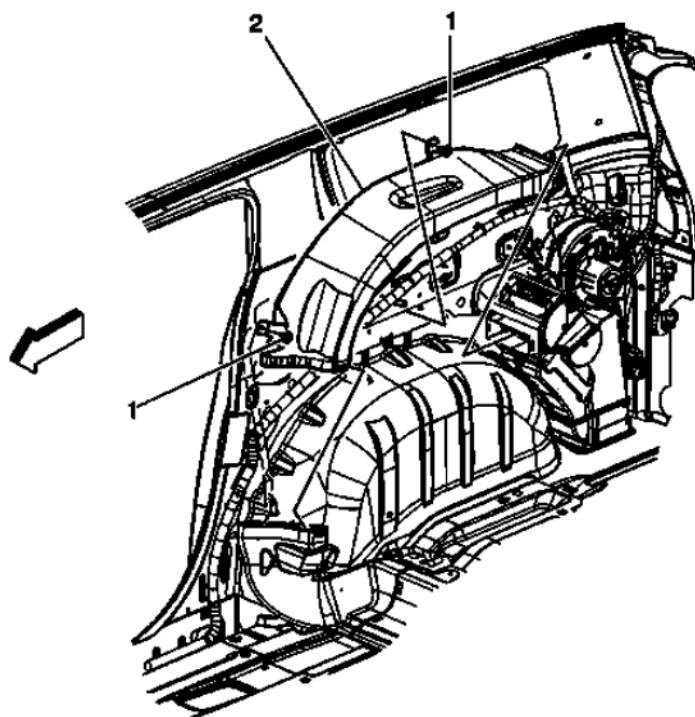


Fig. 12: Identifying Shift Control Knob Screw
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

4. Lift the shift control knob trim ring (2) up to the shift control knob until a click sound is heard indicating the trim ring is secured to the shift knob.
5. Place the shift control lever in the PARK position.
6. Rotate the key to the off position.
7. Connect the transmission tap up/tap down switch electrical connector (1).

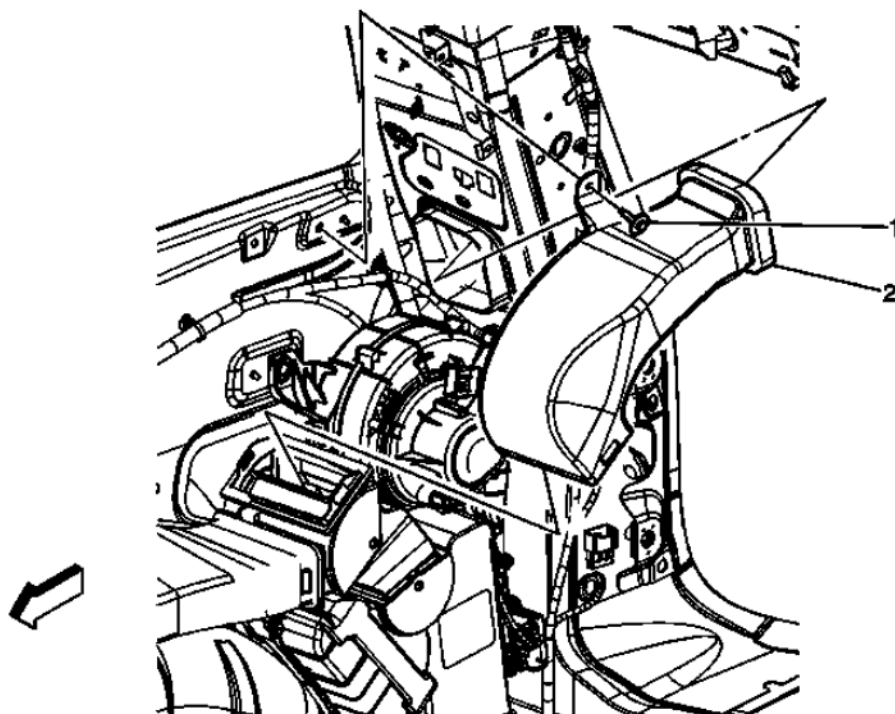


Fig. 13: Identifying Transmission Tap Up/Tap Down Switch Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

8. Check for proper operation of the shift control through all gear ranges.
9. Install the floor console left extension panel. Refer to **Front Floor Console Extension Panel Replacement - Left Side (Enclave)** .
10. Release the parking brake.

TRANSMISSION CONTROL LEVER KNOB REPLACEMENT (TRAVERSE)

Removal Procedure

1. Apply the parking brake.
2. Remove the floor console left extension panel. Refer to **Front Floor Console Extension Panel Replacement - Left Side (Traverse)** .
3. Disconnect the transmission tap up/tap down switch electrical connector (1).

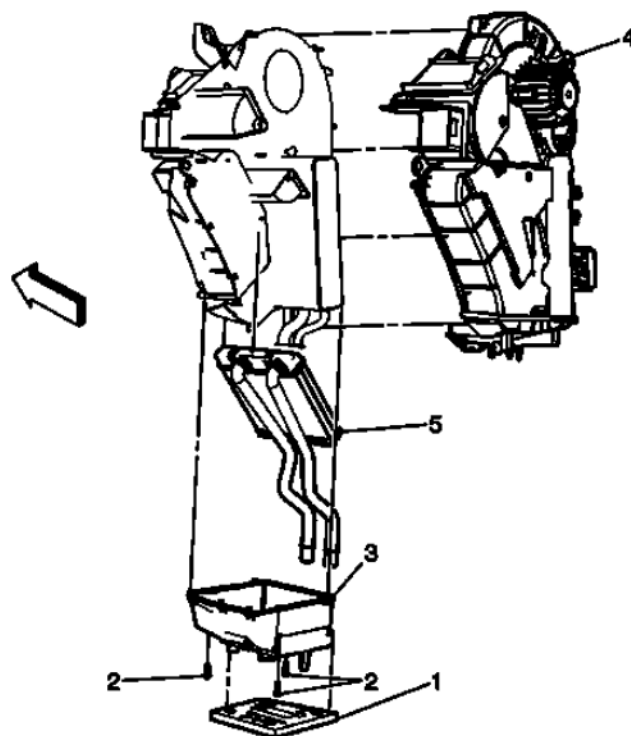


Fig. 14: Identifying Transmission Tap Up/Tap Down Switch Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

4. Remove the tap up/tap down switch electrical wire harness (1) from the wire harness retaining features on the shift control handle and shift control base.

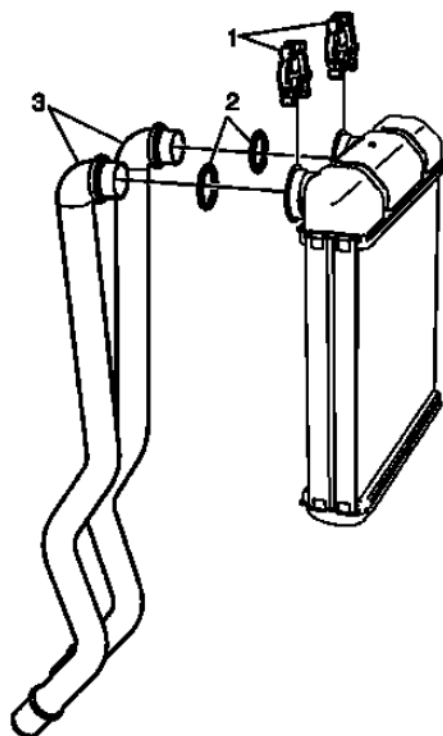


Fig. 15: Identifying Transmission Tap Up/Tap Down Switch Electrical Harness
Courtesy of GENERAL MOTORS COMPANY

NOTE: Pay attention to the tap up/tap down switch electrical wire harness routing for later reinstallation.

5. Rotate the key to the RUN position, however do NOT start the vehicle.
6. Move the transmission shift control lever rearward.
7. Carefully apply downward pressure to the shift knob trim ring to separate the trim ring from the shift knob. The trim ring will drop down approximately 13.0 mm (0.5 in) exposing the shift knob retaining screw.

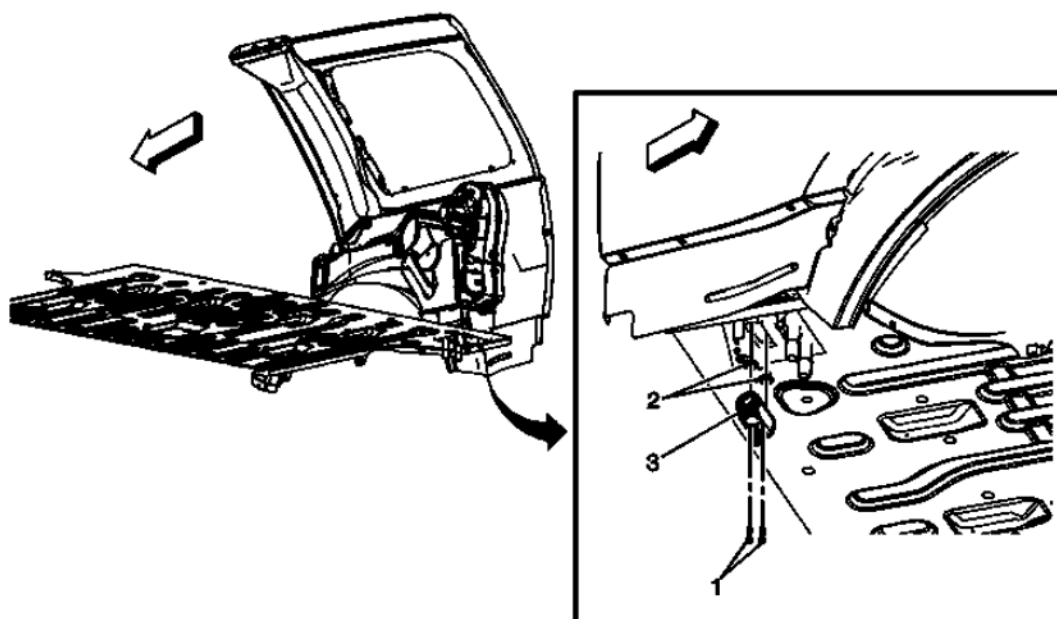


Fig. 16: Identifying Shift Control Knob Screw
Courtesy of GENERAL MOTORS COMPANY

8. Remove the shift control knob screw (1) from the shift control knob.
9. Remove the shift control knob (1) from the shift control lever.

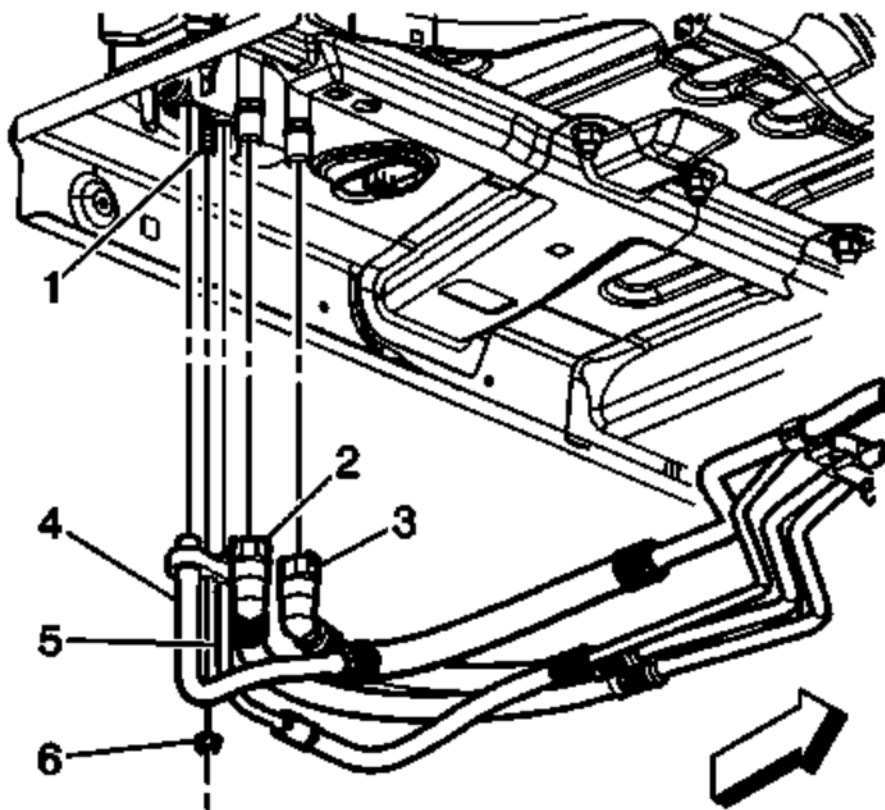


Fig. 17: Identifying Shift Control Knob

Courtesy of GENERAL MOTORS COMPANY

NOTE: Carefully guide the transmission tap up/tap down switch electrical harness and connector past the shift control indicator while removing the shift control knob.

Installation Procedure

1. Install the shift control knob (1) to the shift control lever.

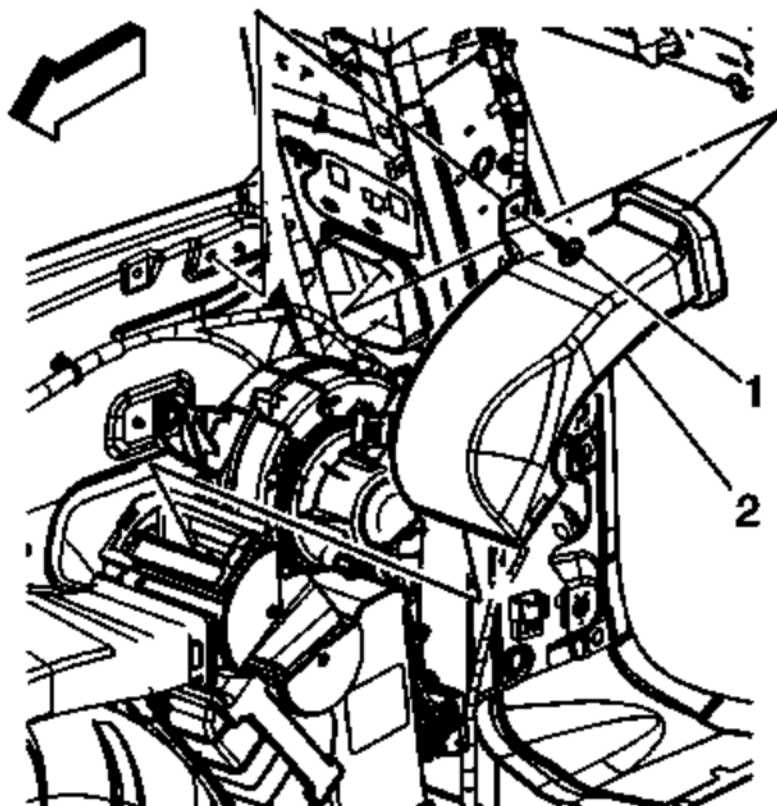


Fig. 18: Identifying Shift Control Knob

Courtesy of GENERAL MOTORS COMPANY

NOTE: Carefully guide the transmission tap up/tap down switch electrical harness and connector past the shift control indicator while installing the shift control knob.

2. Install the control knob screw (1).

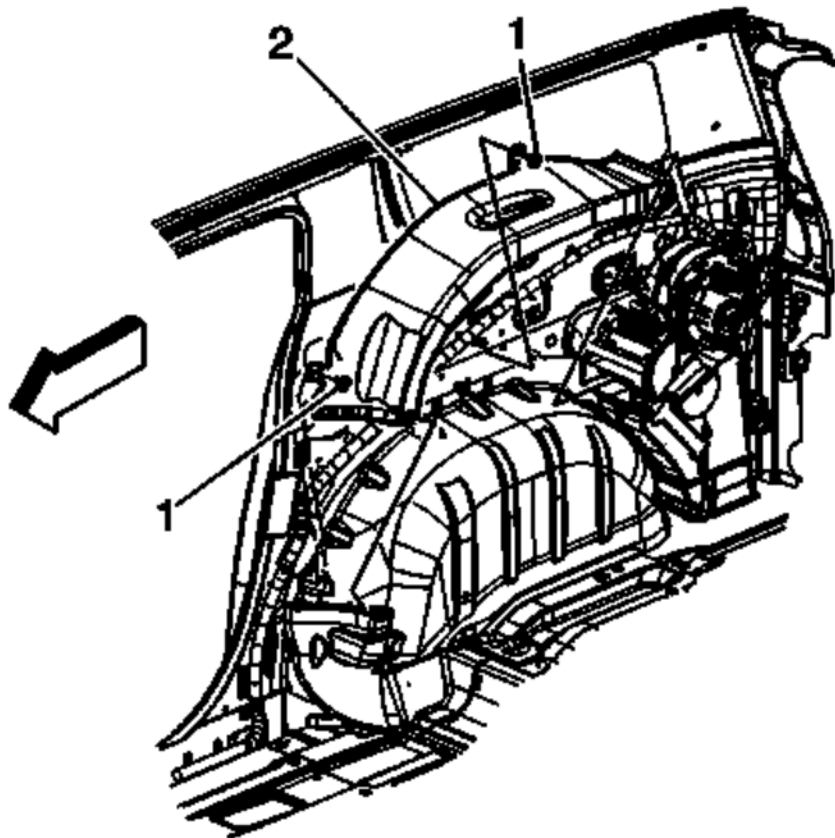


Fig. 19: Identifying Shift Control Knob Screw
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

Tighten

Tighten the screw to 4 N.m (35 lb in).

3. Lift the shift control knob trim ring (2) up to the shift control knob until a click sound is heard indicating the trim ring is secured to the shift knob.
4. Install the tap up/tap down switch electrical wire harness (1) to the wire harness retaining features on the shift control handle and shift control base.

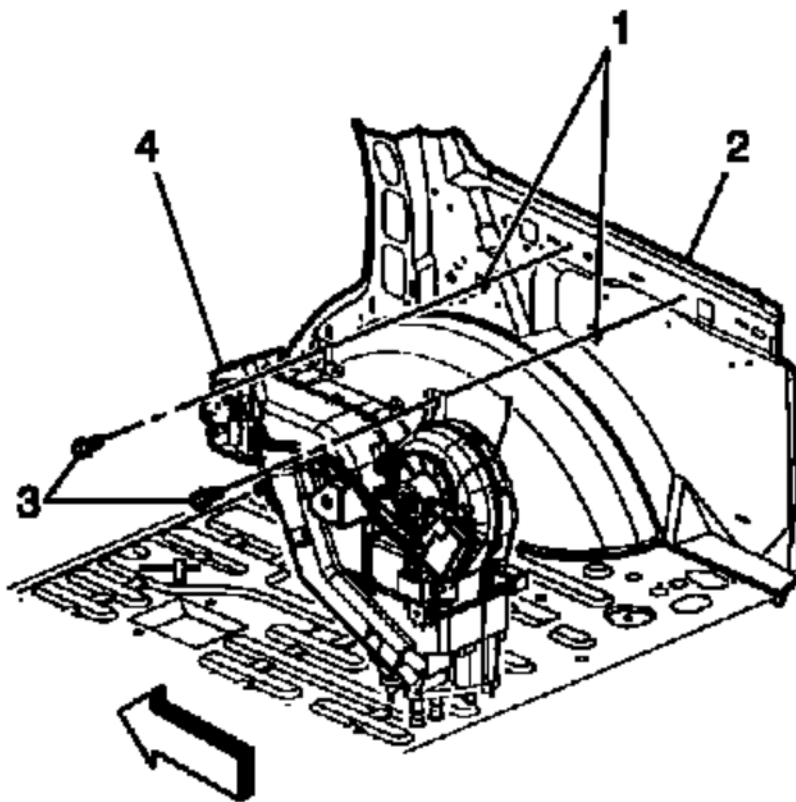


Fig. 20: Identifying Transmission Tap Up/Tap Down Switch Electrical Harness
Courtesy of GENERAL MOTORS COMPANY

5. Place the shift control lever in the PARK position.
6. Rotate the key to the off position.
7. Connect the transmission tap up/tap down switch electrical connector (1).

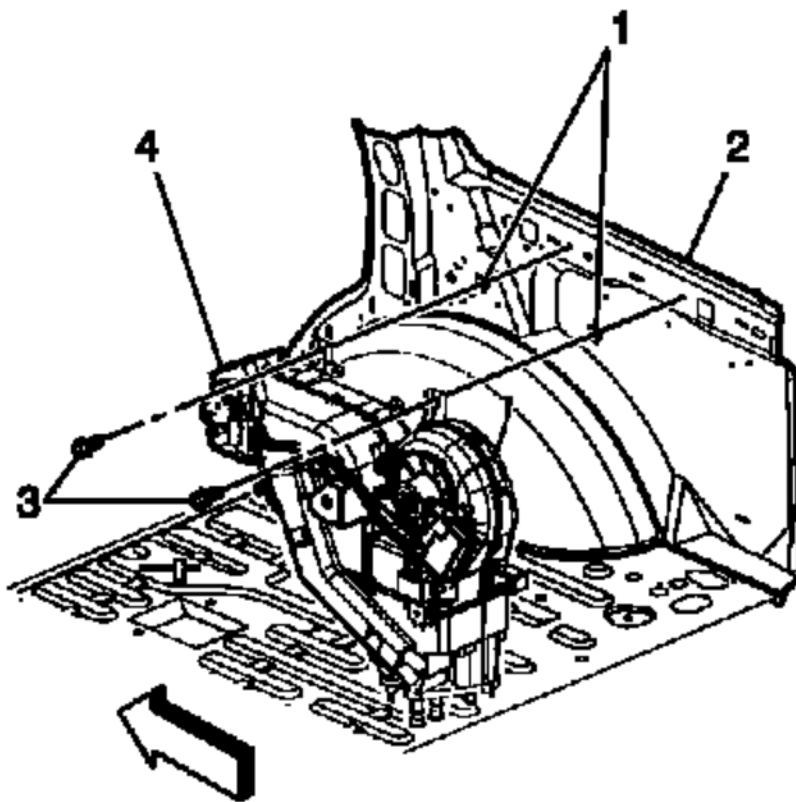


Fig. 21: Identifying Transmission Tap Up/Tap Down Switch Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

8. Check for proper operation of the shift control through all gear ranges.
9. Install the floor console left extension panel. Refer to **Front Floor Console Extension Panel Replacement - Left Side (Traverse)** .
10. Release the parking brake.

AUTOMATIC TRANSMISSION CONTROL INDICATOR REPLACEMENT (ACADIA)

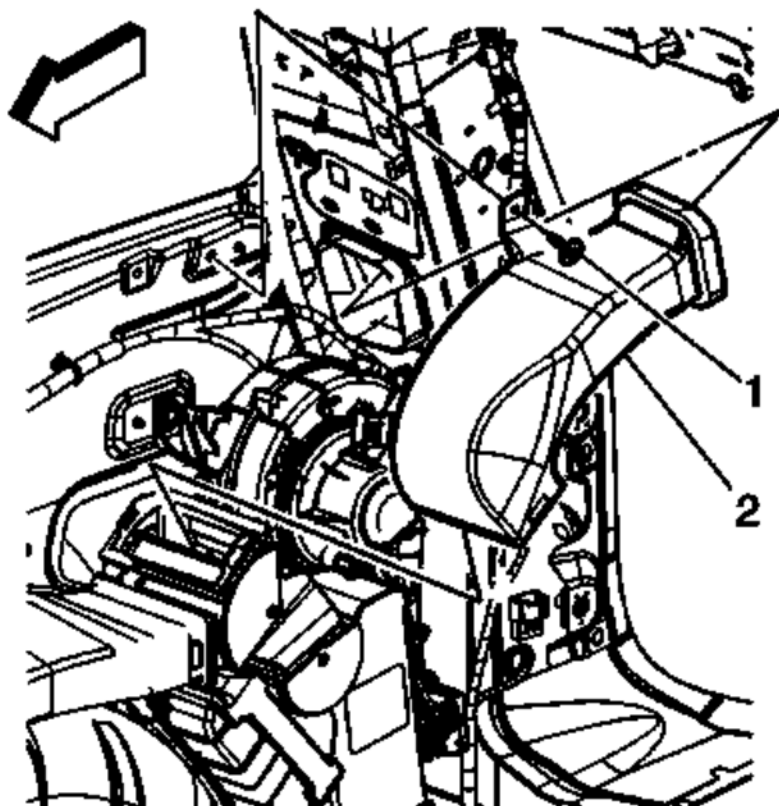


Fig. 22: View Of Automatic Transmission Control Indicator
 Courtesy of GENERAL MOTORS COMPANY

Automatic Transmission Control Indicator Replacement (Acadia)

Callout	Component Name
Preliminary Procedures	
1. Remove the console trim plate. Refer to Front Floor Console Cover Replacement .	
2. Remove the shift knob. Refer to Transmission Control Lever Knob Replacement (Acadia) .	
1	Automatic Transmission Shift Control Indicator Lamp TIP: Rotate the lamp socket one eighth turn counterclockwise to remove or clockwise to install.
2	Automatic Transmission Tap Up/Tap Down Switch Electrical Harness Connector. TIP: Slide the harness connector forward off of the retainer.
3	Automatic Transmission Shift Control Indicator TIP: Release the front two shift indicator retaining tabs then lift and remove the indicator from the rear two retaining tabs.

AUTOMATIC TRANSMISSION CONTROL INDICATOR REPLACEMENT (ENCLAVE)

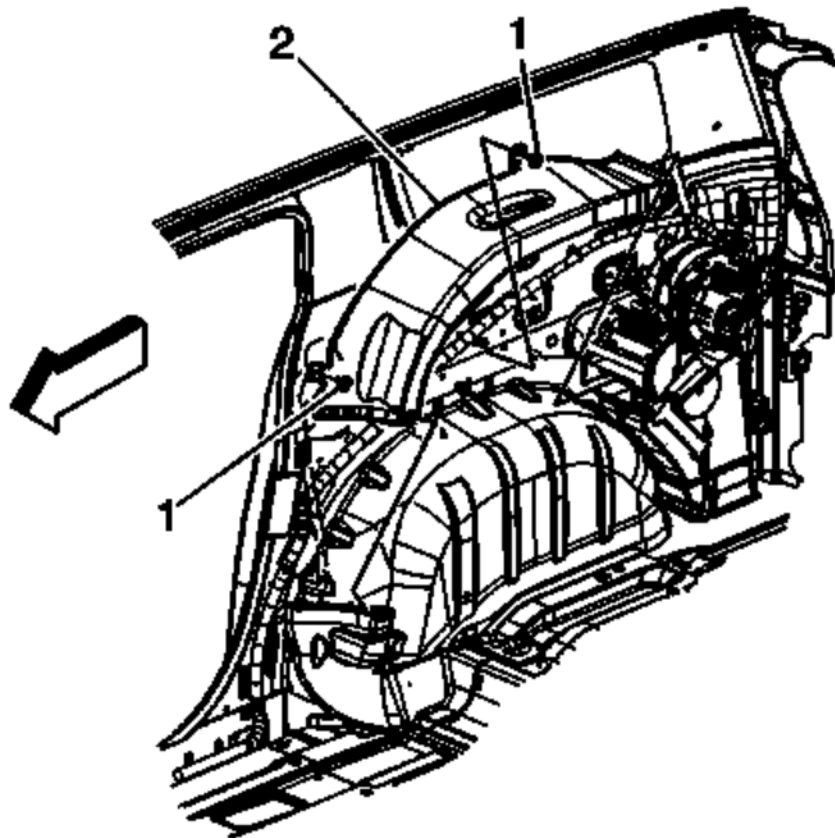


Fig. 23: Identifying Automatic Transmission Control Indicator (Enclave)
 Courtesy of GENERAL MOTORS COMPANY

Automatic Transmission Control Indicator Replacement (Enclave)

Callout	Component Name
Preliminary Procedures	
1. Remove the console trim plate. Refer to Front Floor Console Cover Replacement . 2. Remove the shift knob. Refer to Transmission Control Lever Knob Replacement (Enclave) .	
1	Automatic Transmission Shift Control Indicator Lamp TIP: Rotate the lamp socket one eighth turn counterclockwise to remove or clockwise to install.
2	Automatic Transmission Tap Up/Tap Down Switch Electrical Harness Connector. TIP: Slide the harness connector forward off of the retainer.
3	Automatic Transmission Shift Control Indicator TIP: Release the front two shift indicator retaining tabs then lift and remove the indicator from the rear two retaining tabs.

AUTOMATIC TRANSMISSION CONTROL INDICATOR REPLACEMENT (TRAVERSE)

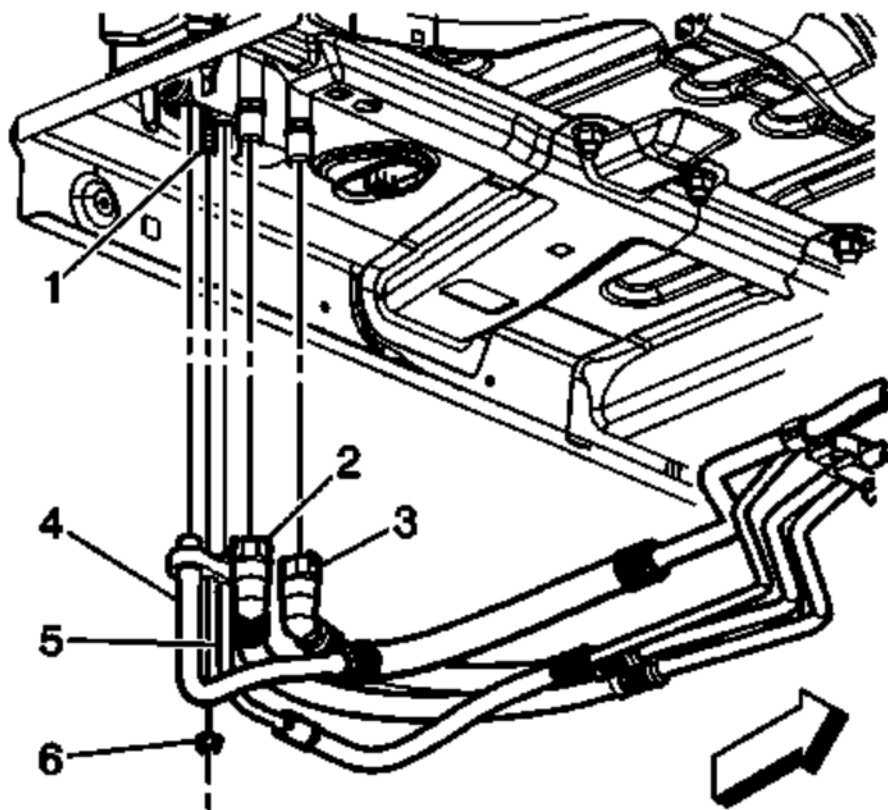


Fig. 24: Locating Automatic Transmission Control Indicator
 Courtesy of GENERAL MOTORS COMPANY

Automatic Transmission Control Indicator Replacement (Traverse)

Callout	Component Name
Preliminary Procedures	
1. Remove the console trim plate. Refer to Front Floor Console Cover Replacement .	
2. Remove the shift knob. Refer to Transmission Control Lever Knob Replacement (Traverse) .	
1	Automatic Transmission Shift Control Indicator Lamp TIP: Rotate the lamp socket one eighth turn counterclockwise to remove or clockwise to install.
2	Automatic Transmission Tap Up/Tap Down Switch Electrical Harness Connector TIP: Slide the harness connector forward off of the retainer.
3	Automatic Transmission Shift Control Indicator TIP: Release the front two shift indicator retaining tabs then lift and remove the indicator from the rear two retaining tabs.

TRANSMISSION CONTROL REPLACEMENT (ACADIA)

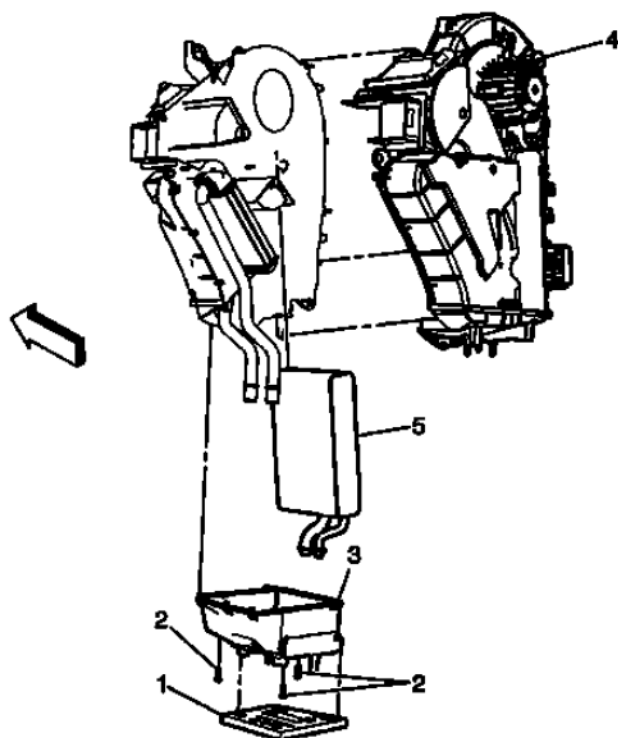


Fig. 25: Identifying Automatic Transmission Control
Courtesy of GENERAL MOTORS COMPANY

Transmission Control Replacement (Acadia)

Callout	Component Name
Preliminary Procedure	
Remove the console trim plate. Refer to Front Floor Console Cover Replacement .	
1	Automatic Transmission Range Select Lever Cable
2	Automatic Transmission Range Select Lever Cable Retainer
3	Automatic Transmission Control Nut (Qty: 4) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 25 N.m (18 lb ft)
4	Automatic Transmission Control Bolt (Qty: 4)
5	Automatic Transmission Control Procedure 1. Disconnect the transmission control electrical connector. 2. For vehicles with push-to-release style solenoid, apply lubricant GM P/N 88861426

(Canadian P/N 88861442) to the tip of the shift control lever.

TRANSMISSION CONTROL CLEANING AND INSPECTION

1. Remove the necessary trim panels to access the shift control internal components. Refer to the appropriate interior trim procedures.

NOTE: Do not use any solvent based cleaning products. These products will destroy the materials and/or components in the shift control assembly. Only use Leather, Vinyl and Plastic Cleaner GM P/N 88861401 (Canadian P/N 88861409) or equivalent.

2. Protect the floor carpet panels on both sides of the console base with absorbent towels to prevent staining from the liquid cleaner.
3. Clean all external shift control components including the shifter handle, bezel and the moving shift lever closeout panel.
4. Locate the stepped selector section (1) and detent spring (2) within the shifter assembly.

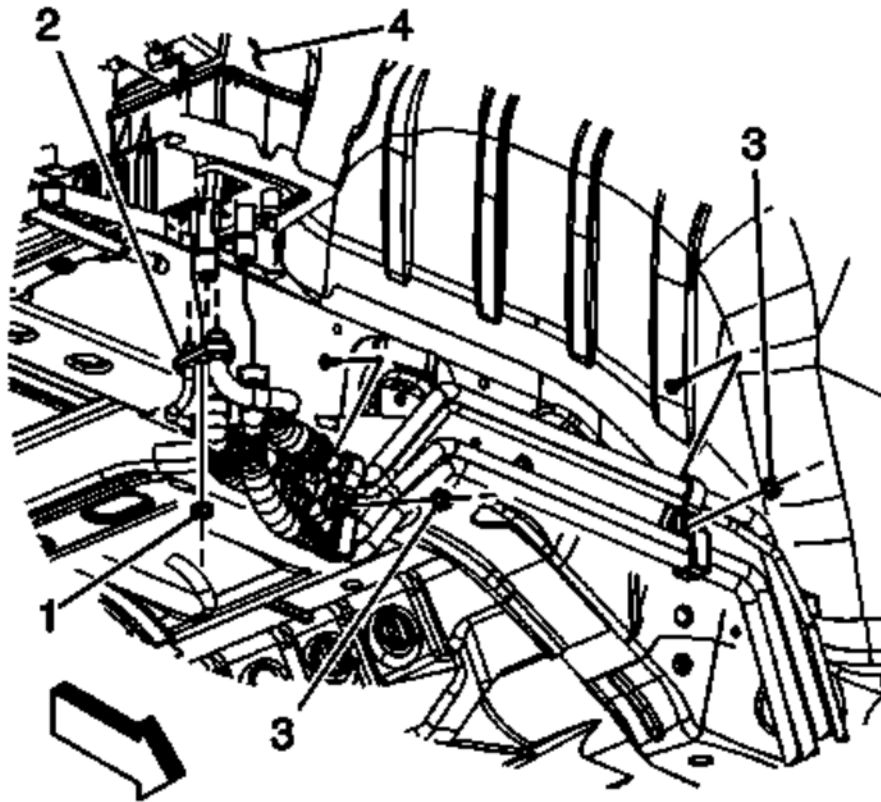


Fig. 26: Stepped Selector Section And Detent Spring
Courtesy of GENERAL MOTORS COMPANY

5. Clean all surfaces of the stepped selector section and detent spring within the shifter assembly that are sticking or binding. Use a small brush to completely clean the working surfaces of the stepped selector and detent spring to remove any foreign material.

NOTE: Do not spray the cleaner directly at any of the electrical components.

NOTE: It may be necessary to move the shifter from park in order to completely clean all surfaces of stepped selector or detent spring.

6. After thoroughly cleaning the components, wipe off the remaining cleaner with an absorbent towel.
7. Use of low pressure compressed air may be used to assist in drying the components and surrounding area. Using care not to spread the cleaner onto other interior components.
8. Verify the operation of the mechanical and electrical components after cleaning.
9. Install the interior trim panels. Refer to the appropriate interior trim procedures.
10. Thoroughly inspect the shift control, console area and carpet for left over cleaner. Remove excess cleaner, if necessary.

AUTOMATIC TRANSMISSION RANGE SELECTOR LEVER REPLACEMENT

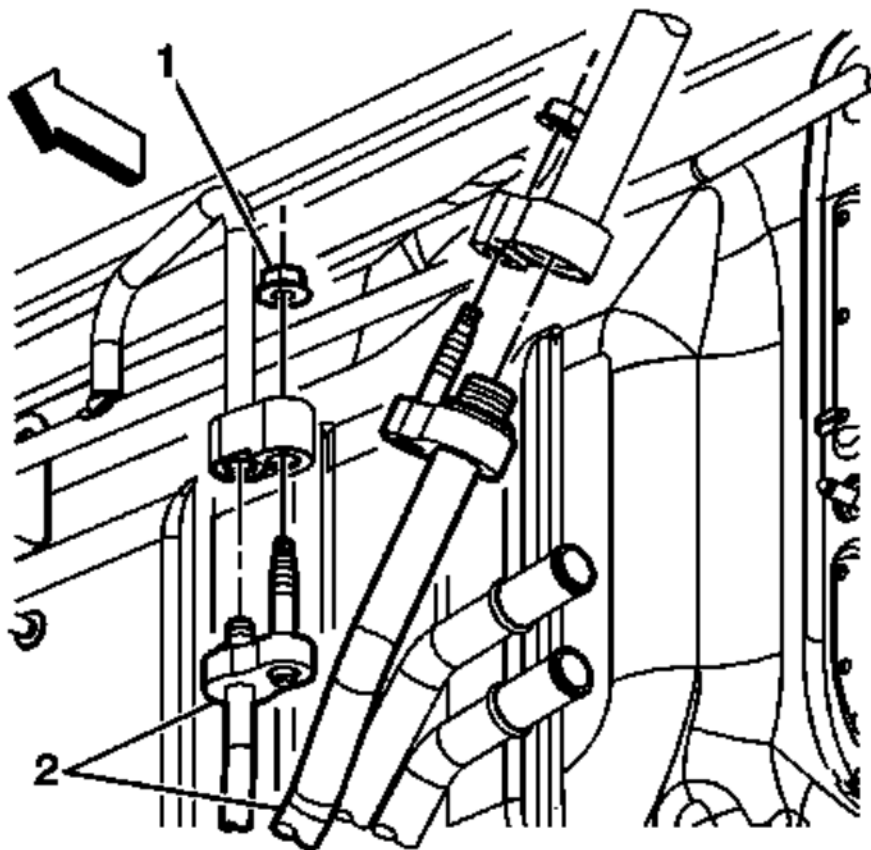


Fig. 27: Identifying A/T Range Selector Lever Components
Courtesy of GENERAL MOTORS COMPANY

Automatic Transmission Range Selector Lever Replacement

Callout	Component Name
Preliminary Procedures - Set the park brake and chock the wheels. - Disconnect the range selector cable from the range selector lever.	
1	Transmission Range Selector Lever Nut WARNING: Hold the transmission range selector lever while removing or installing the lever retaining nut. Failure to hold the lever can cause damage to the transmission internal park system components which could allow the vehicle to roll when placed in the park position. CAUTION: Refer to <u>Fastener Caution</u> . Tighten 20 N.m (15 lb ft)
2	Transmission Range Selector Lever

RANGE SELECTOR LEVER CABLE REPLACEMENT

Removal Procedure

- Apply the parking brake and chock the wheels.
- Remove the floor console left extension panel. Refer to **Front Floor Console Extension Panel Replacement - Left Side (Acadia)** , **Front Floor Console Extension Panel Replacement - Left Side (Enclave)** and **Front Floor Console Extension Panel Replacement - Left Side (Traverse)** .
- Disconnect the transmission range selector lever cable terminal (1) from the shift lever pin.

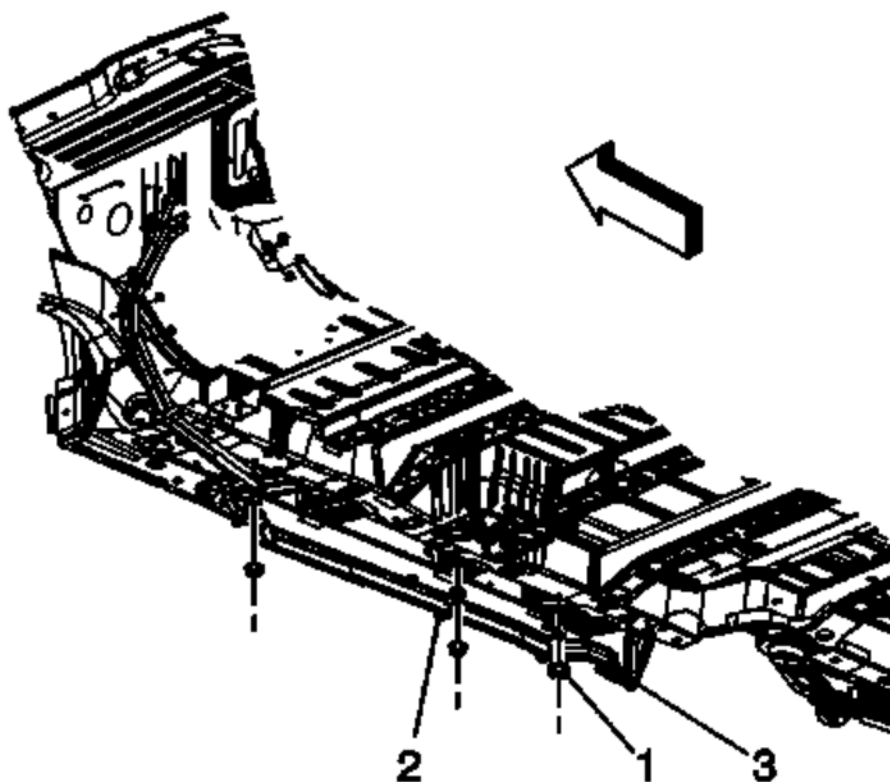


Fig. 28: Identifying Transmission Range Selector Lever Cable Terminal And Retainer
Courtesy of GENERAL MOTORS COMPANY

4. Release the transmission range selector lever cable retainer (2) and remove the transmission range selector cable from the transmission control lever base.
5. Disconnect the transmission range selector lever cable terminal (3) from the transmission manual shift lever (4).

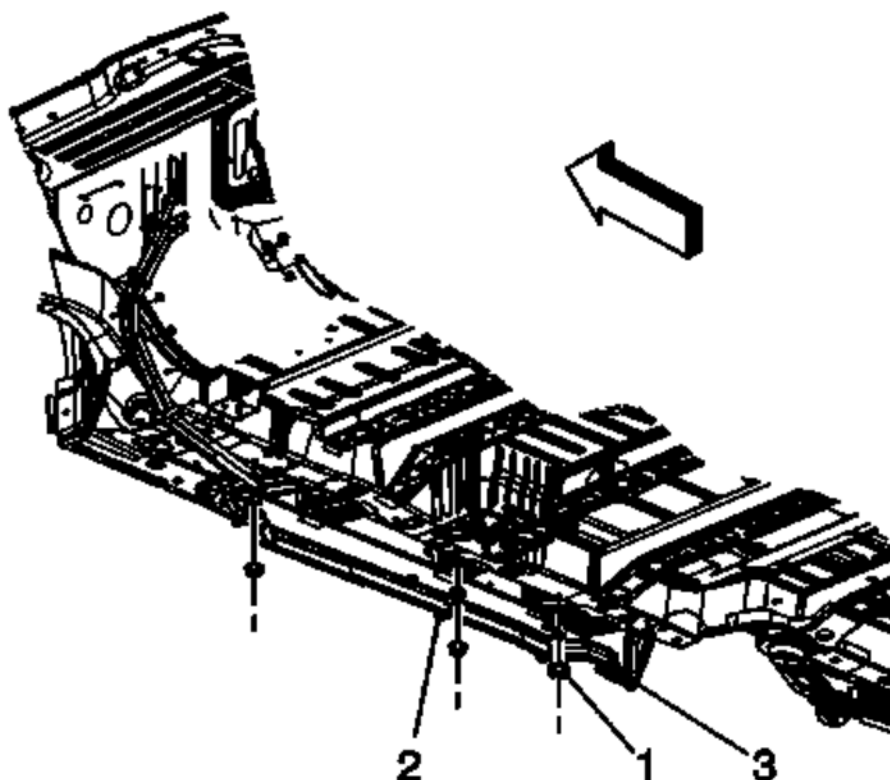


Fig. 29: View Of Transmission Range Selector Lever Cable Terminal & Lever
Courtesy of GENERAL MOTORS COMPANY

6. Press the locking tabs inward in order to release the transmission range selector lever cable (1) from the cable bracket (2).
7. Remove the transmission range selector lever cable grommet (5) from the cowl panel.
8. Remove the transmission range selector lever cable from the vehicle.

Installation Procedure

1. Install the transmission range selector lever cable to the vehicle.

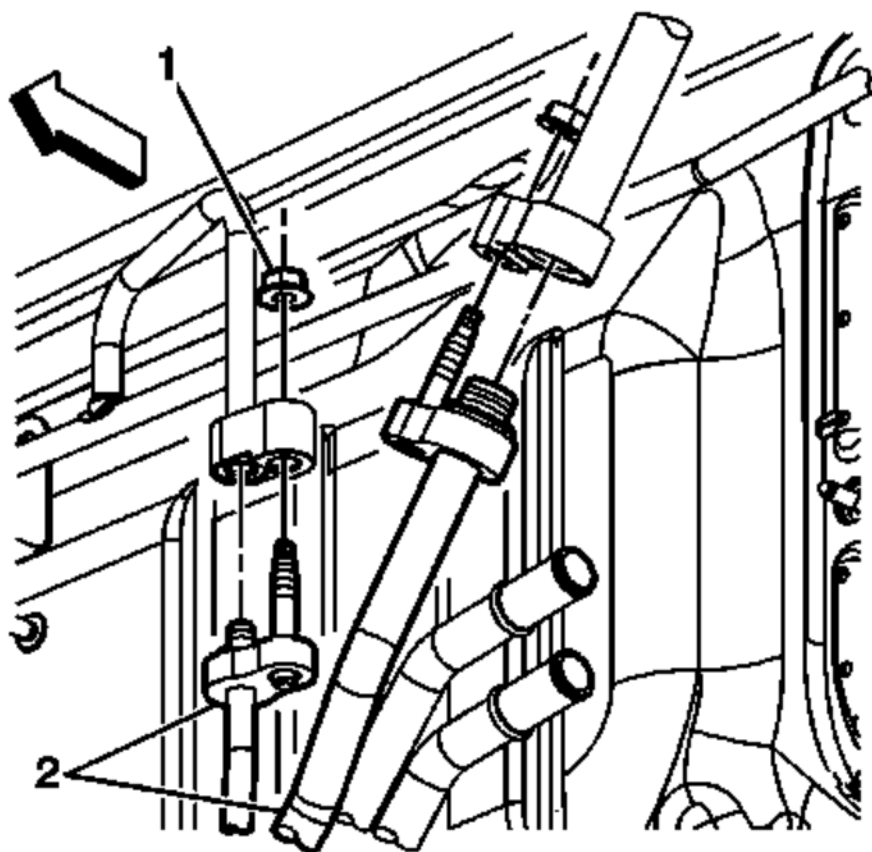


Fig. 30: View Of Transmission Range Selector Lever Cable Terminal & Lever
Courtesy of GENERAL MOTORS COMPANY

2. Install the transmission range selector lever cable grommet (5) to the cowl panel.
3. Install the transmission range selector lever cable (1) to the cable bracket (2).
4. Connect the transmission range selector lever cable terminal (3) to the transmission manual shift lever (4).

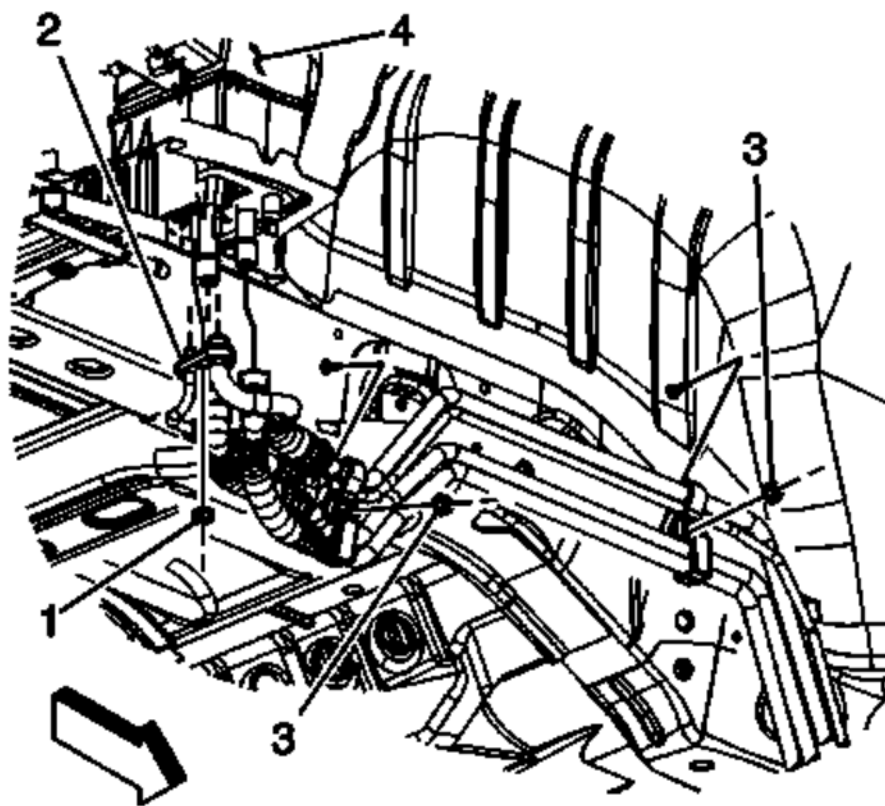


Fig. 31: Identifying Transmission Range Selector Lever Cable Terminal And Retainer
 Courtesy of GENERAL MOTORS COMPANY

5. Install the transmission range selector lever cable to the transmission control lever base. Insure the cable retainer (2) is fully secured to the transmission control lever base.
6. Connect the transmission range selector lever cable terminal (1) to the shift lever pin.
7. Install the floor console left extension panel. Refer to **Front Floor Console Extension Panel Replacement - Left Side (Acadia)** , **Front Floor Console Extension Panel Replacement - Left Side (Enclave)** and **Front Floor Console Extension Panel Replacement - Left Side (Traverse)** .
8. Adjust the automatic transmission range selector lever cable. Refer to **Range Selector Lever Cable Adjustment**.
9. Release the parking brake.

RANGE SELECTOR LEVER CABLE ADJUSTMENT

1. Set the park brake and chock the wheels.

WARNING: The automatic transaxle range selector cable is made out of two cable sections. After initial connection never separate the two metal couplings from one another. Integrity of the connection of the two

metal couplings will be lost if separation of the two metal couplings occurs. When servicing the transaxle remove the cable at the automatic transaxle range selector lever and at the automatic transaxle range selector cable bracket. If either section of the cable needs to be replaced, replace both of the cable sections. Loss of connection integrity of the two metal couplings can cause loss of transaxle shift control which could result in personal injury.

NOTE: Adjust the automatic transmission range selector cable while the transmission and the gear selector are in the Park position only. Failure to do so may cause mis-adjustment.

2. Verify the transmission range select lever is in the park position.
3. Verify the transmission manual shift lever is in the park position.
4. Release the range select cable adjuster clip.

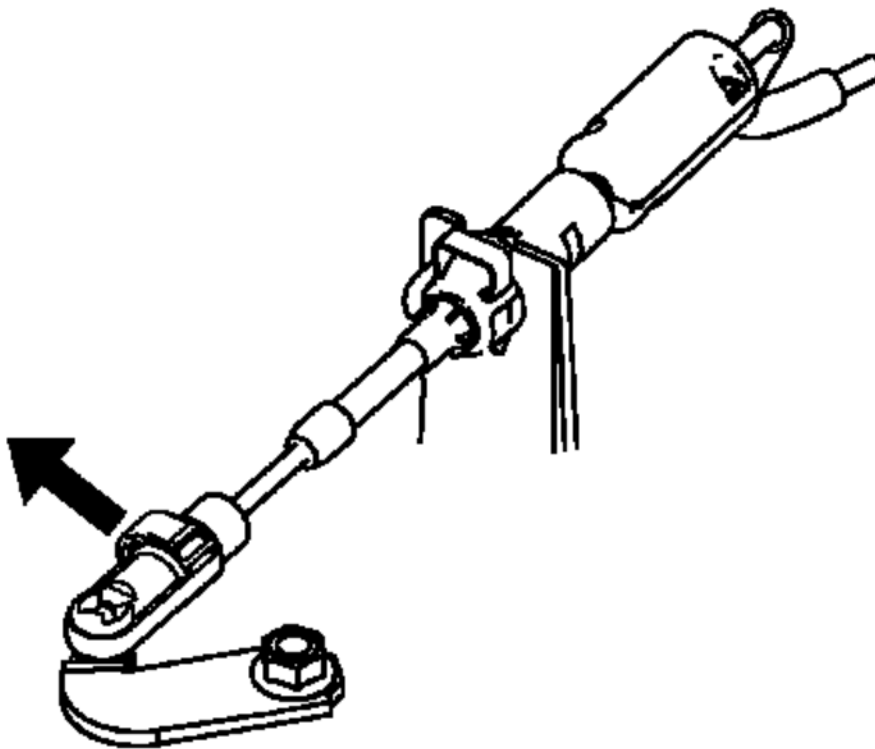


Fig. 32: Identifying Range Select Cable Adjuster Clip (Release)
Courtesy of GENERAL MOTORS COMPANY

5. Slide the two halves of the range select cable together until all free play is removed.



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Fig. 34: Identifying Range Select Cable Adjuster Clip (Lock)
Courtesy of GENERAL MOTORS COMPANY

7. Pull both halves of the range select cable in opposite directions to verify the cable adjuster is secured.
8. Check the transmission range select lever in all gear selections for proper operation.

RANGE SELECTOR LEVER CABLE BRACKET REPLACEMENT

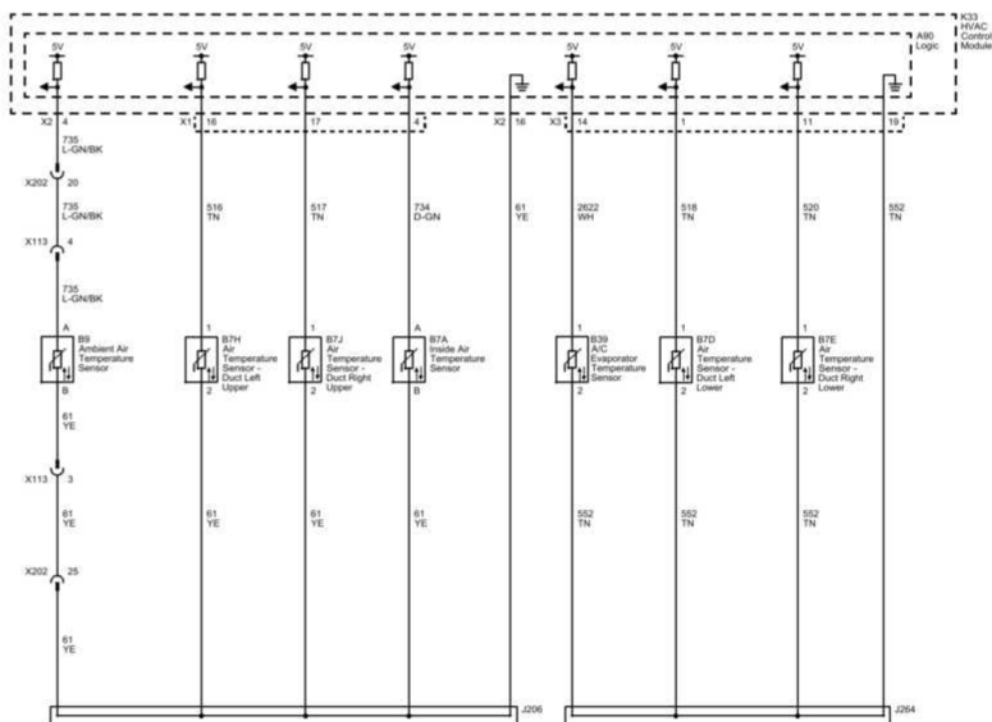


Fig. 35: View Of Range Selector Lever Cable & Bracket
 Courtesy of GENERAL MOTORS COMPANY

Range Selector Lever Cable Bracket Replacement

Callout	Component Name
Preliminary Procedures 1. Set the park brake and chock the wheels. 2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.	
1	Transmission Range Selector Lever Cable TIP: For additional information on disconnecting the range selector lever cable from the bracket or lever, refer to Range Selector Lever Cable Replacement .
2	Transmission Range Selector Lever Cable Bracket Bolt CAUTION: Refer to Fastener Caution . Tighten 25 N.m (18 lb ft)
3	Transmission Range Selector Lever Cable Bracket Procedure

Adjust the range selector cable. Refer to **Range Selector Lever Cable Adjustment**.

TRANSMISSION FLUID DRAIN AND FILL

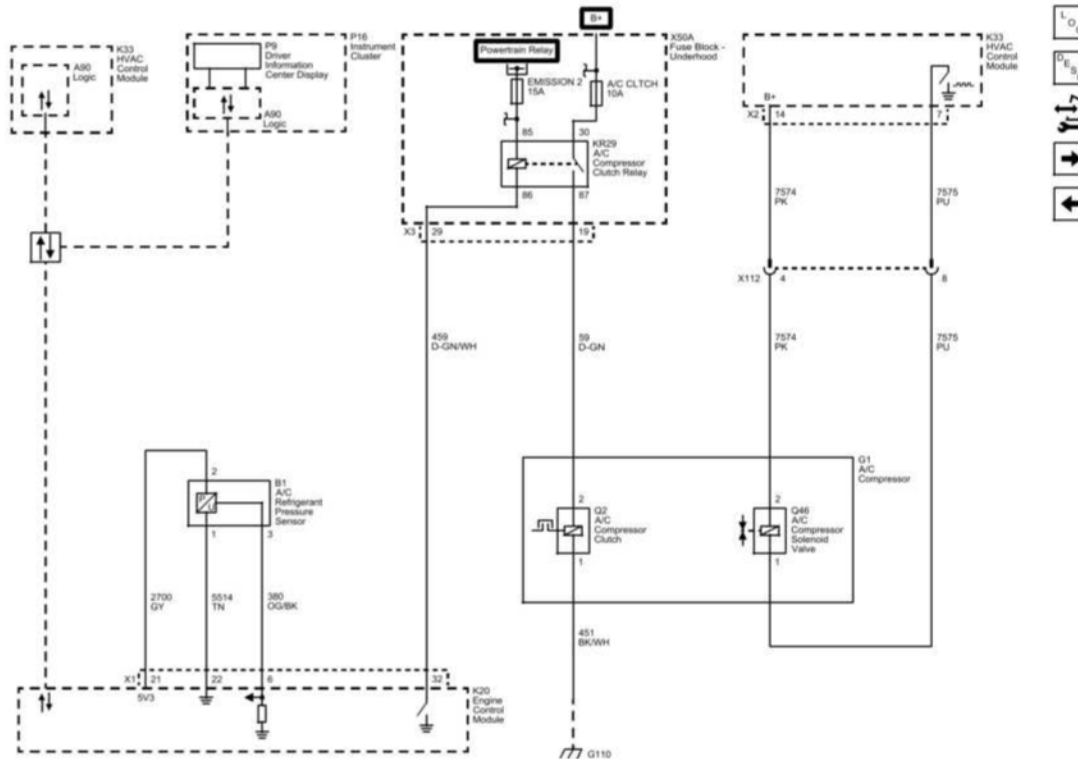


Fig. 36: Identifying Fluid Level Indicator & Drain Plug
Courtesy of GENERAL MOTORS COMPANY

Transmission Fluid Drain and Fill

Callout	Component Name
Preliminary Procedure Raise the vehicle. Refer to Lifting and Jacking the Vehicle .	
1	Fluid Drain Plug CAUTION: Refer to Fastener Caution. TIP: Place a drain pan capable of containing more than 5 quarts of fluid under the transmission before removing the plug to drain the fluid. Tighten 12 N.m (106 lb in)
	Fluid Level Indicator

2

- Transmission will require approximately 5 quarts of fluid.
- Fill the transmission with fluid. Refer to **Transmission Fluid Level and Condition Check**.

AUTOMATIC TRANSMISSION FLUID PRESSURE TEST HOLE PLUG REPLACEMENT

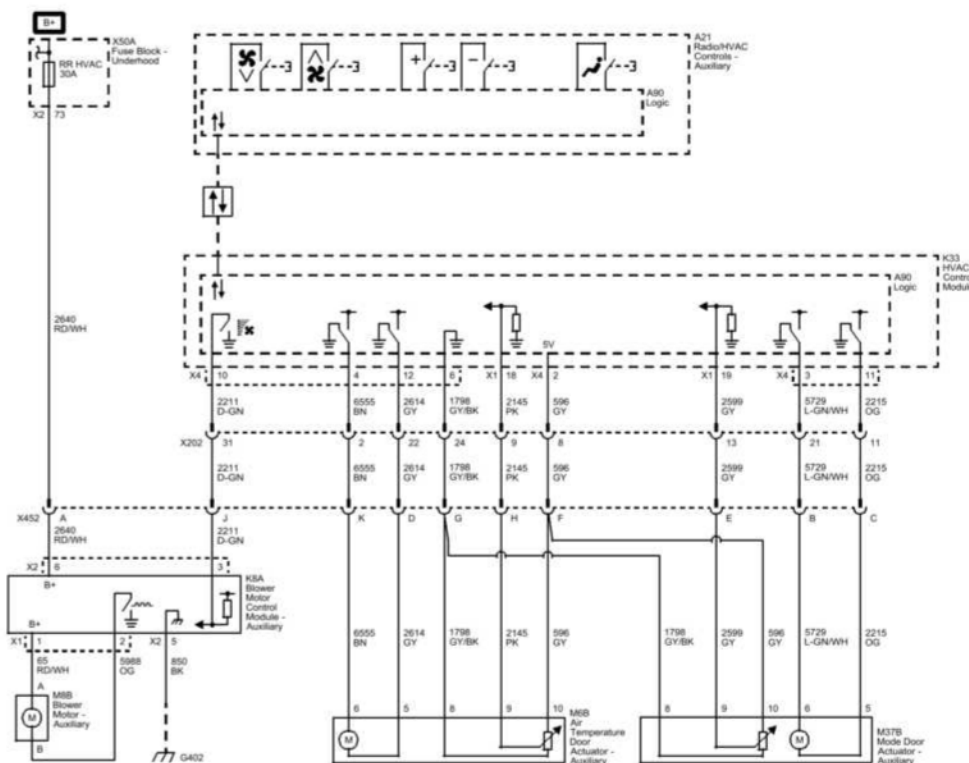


Fig. 37: Identifying Automatic Transmission Fluid Pressure Test Hole Plug
Courtesy of GENERAL MOTORS COMPANY

Automatic Transmission Fluid Pressure Test Hole Plug Replacement

Callout	Component Name
Preliminary Procedure	
Raise the vehicle. Refer to Lifting and Jacking the Vehicle .	
1	Fluid Pressure Test Plug CAUTION: Refer to Fastener Caution. Tighten 12 N.m (106 lb in)

FRONT WHEEL DRIVE SHAFT SEAL REPLACEMENT - LEFT SIDE

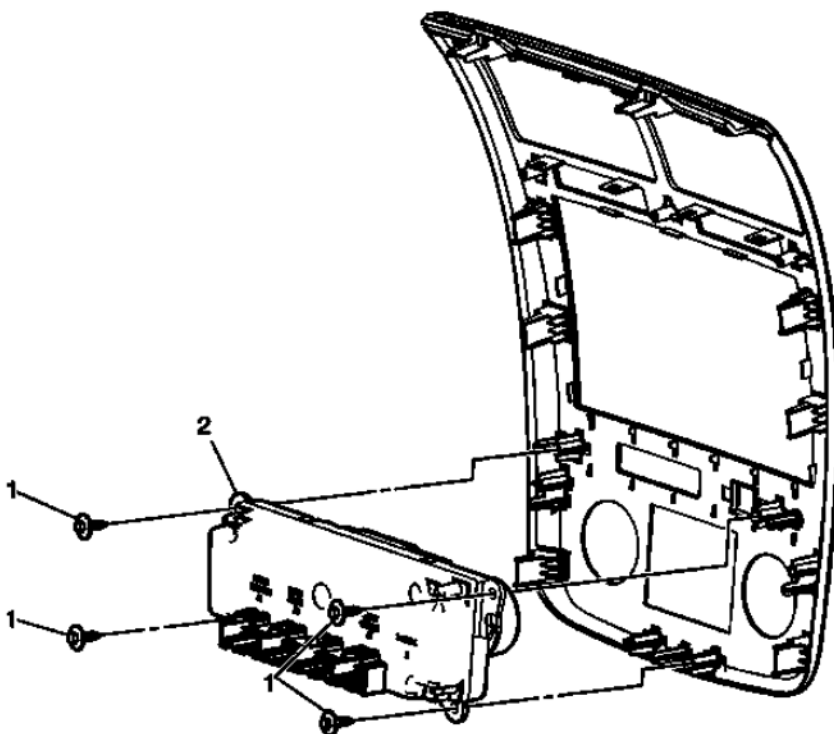


Fig. 38: View Of Front Wheel Drive Shaft Oil Seal - Left Side
Courtesy of GENERAL MOTORS COMPANY

Front Wheel Drive Shaft Seal Replacement - Left Side

Callout	Component Name
Preliminary Procedures	
1. Raise the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the left wheel drive shaft. Refer to Front Wheel Drive Shaft Replacement .	
1	Left Front Wheel Drive Shaft Oil Seal NOTE: For seal removal use J 6125-1B slide hammer with J 23129 universal seal remover. NOTE: Use the flat side of J 46629-A seal installer to seat the seal to the case surface. Special Tools • J 6125-1B Slide Hammer • J 8092 Driver Handle

- J 23129 Universal Seal Remover
- J 46629-A Seal Installer

FRONT WHEEL DRIVE SHAFT SEAL REPLACEMENT - RIGHT SIDE (FRONT WHEEL DRIVE)

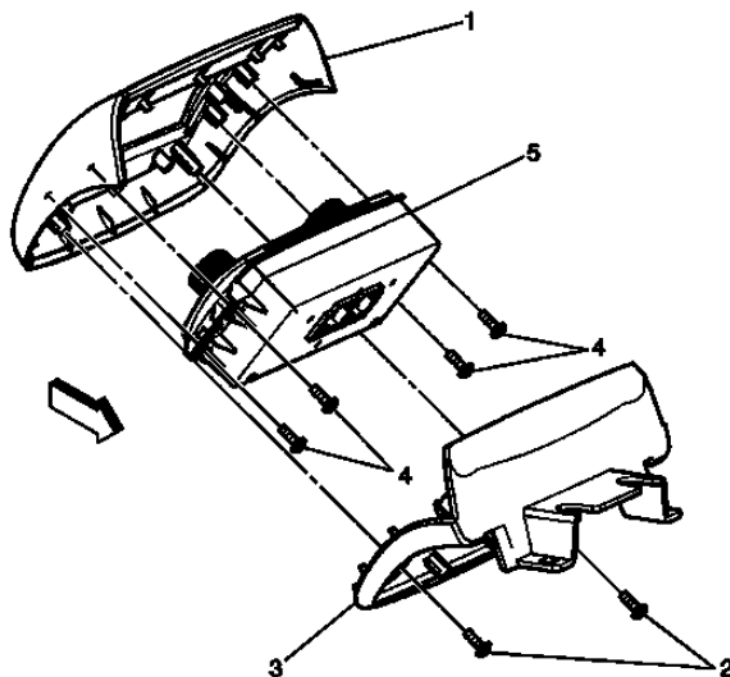


Fig. 39: Identifying Front Wheel Drive Shaft Oil Seal - Right Side
Courtesy of GENERAL MOTORS COMPANY

Front Wheel Drive Shaft Seal Replacement - Right Side (Front Wheel Drive)

Callout	Component Name
Preliminary Procedures 1. Raise the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the intermediate drive shaft. Refer to Front Wheel Drive Intermediate Shaft Replacement .	
1	Right Front Wheel Drive Shaft Oil Seal NOTE: For seal removal use J 6125-1B slide hammer with J 23129 universal seal remover. NOTE: Use the open side of J 46629-A seal installer to avoid seal lip damage and to install the seal to the proper depth.

Special Tools

- J 6125-1B Slide Hammer with Adapter
- J 8092 Driver Handle
- J 23129 Universal Seal Remover
- J 46629-A Seal Installer

MANUAL SHIFT SHAFT AND SEAL REPLACEMENT

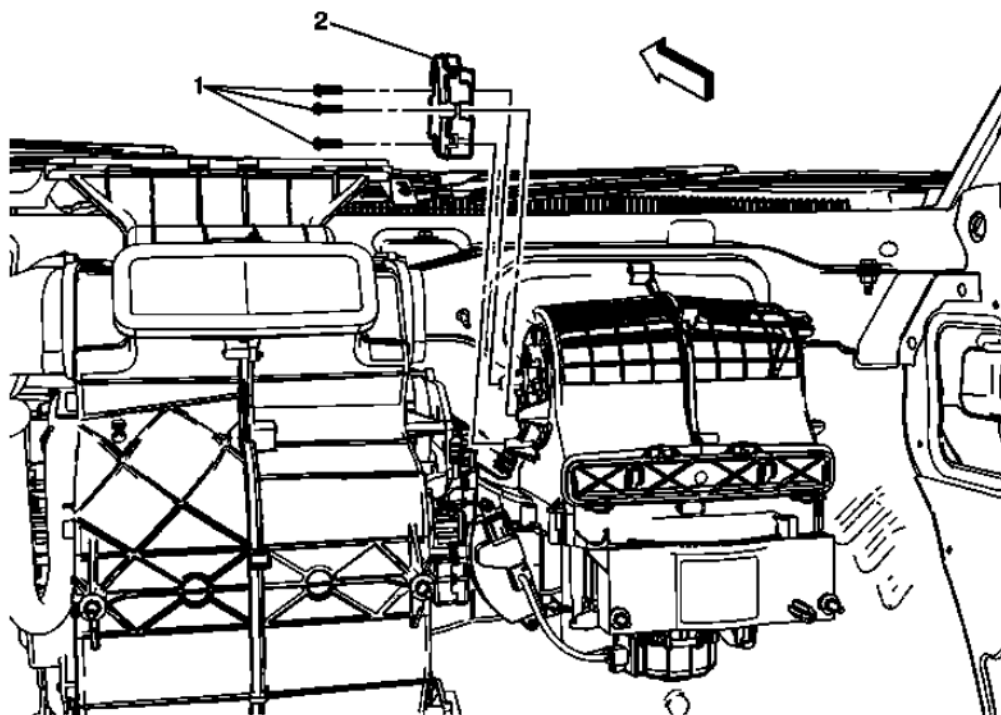


Fig. 40: Identifying Manual Shift Shaft & Seal
Courtesy of GENERAL MOTORS COMPANY

Manual Shift Shaft and Seal Replacement

Callout	Component Name
Preliminary Procedures	
1. Remove the air cleaner assembly. Refer to <u>Air Cleaner Assembly Replacement</u> . 2. Remove the manual shaft and position switch assembly. Refer to <u>Manual Shift Detent Lever with Shaft Position Switch Assembly Replacement</u>.	
	Manual Shift Shaft Seal
	Procedure

1

- For seal removal use **J 45201** cooler line seal remover.
- For seal installation use **J-46626** seal installer.
- Lubricate the manual shaft with ATF to prevent damage to the manual shift shaft seal.

Special Tools

- **J 45201** Cooler Line Seal Remover
- **J-46626** Seal Installer

CONTROL VALVE BODY COVER REPLACEMENT

Removal Procedure

1. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection**.
2. Remove the air cleaner assembly. Refer to **Air Cleaner Assembly Replacement**.
3. Remove the oil cooler inlet hose (1) from the retainer on the control valve body cover.

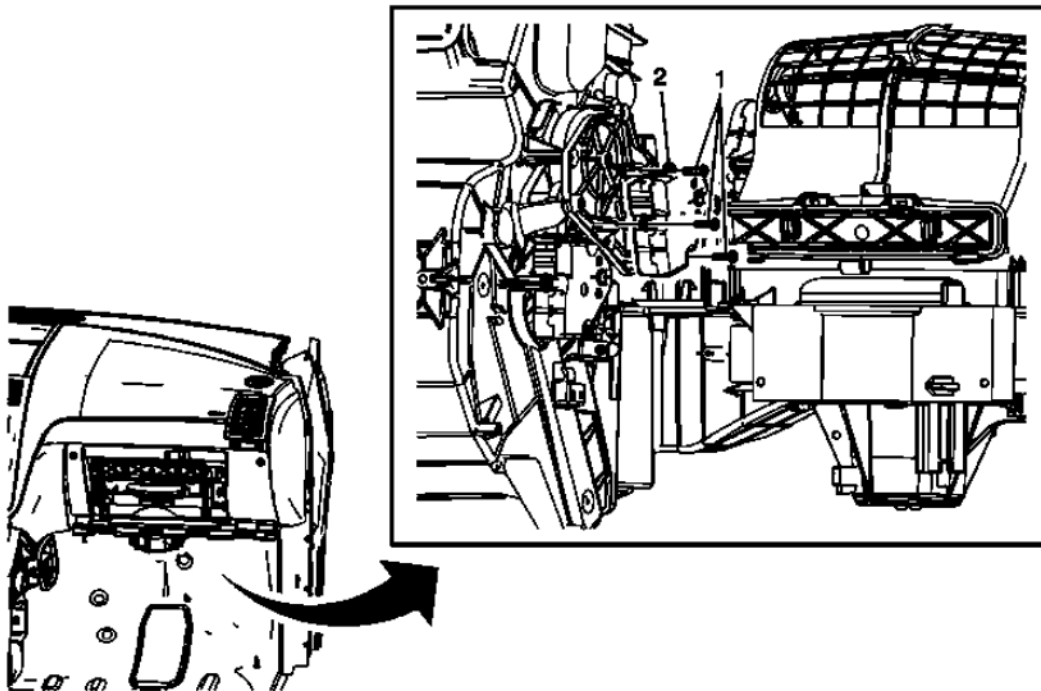


Fig. 41: Identifying Oil Cooler Hoses & Retainer Nuts
Courtesy of GENERAL MOTORS COMPANY

4. Remove the oil cooler outlet hose retainer nut (5) from the control valve body cover.
5. Remove the oil cooler outlet hose (4) from the retainer on the control valve body cover.

6. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
7. Drain the transmission. Refer to **Transmission Fluid Drain and Fill**.
8. Remove the wire harness retainer (2) from the control valve body cover stud.

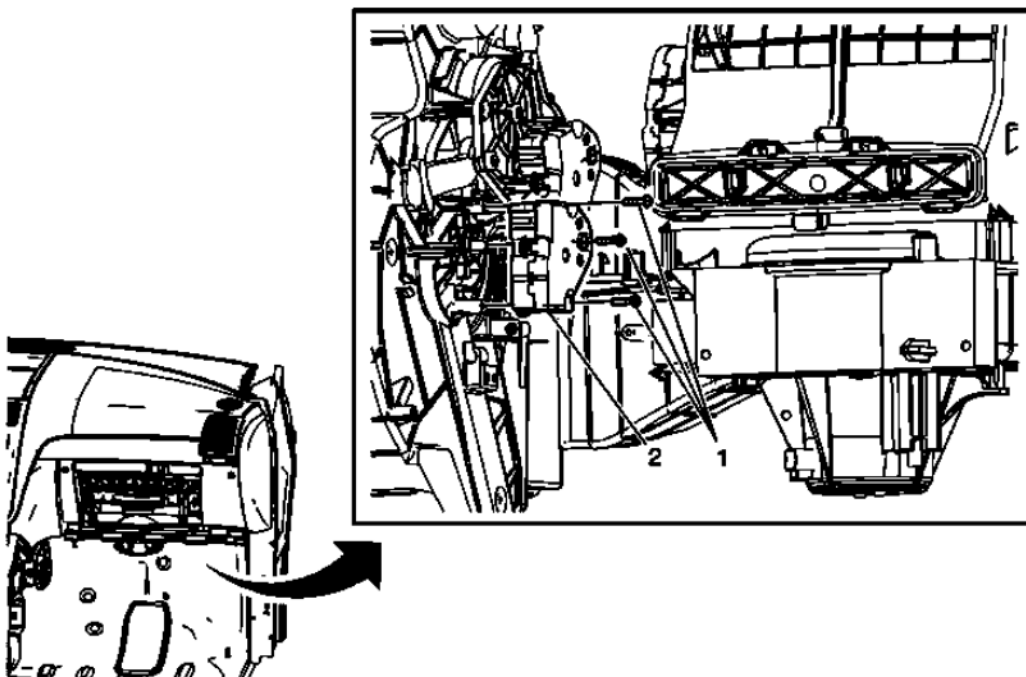


Fig. 42: Identifying Wire Harness Retainer & TCM Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

9. Disconnect the control valve body transmission control module (TCM) electrical connector (1).
10. Remove the 2 control valve body cover studs M6 x 30.

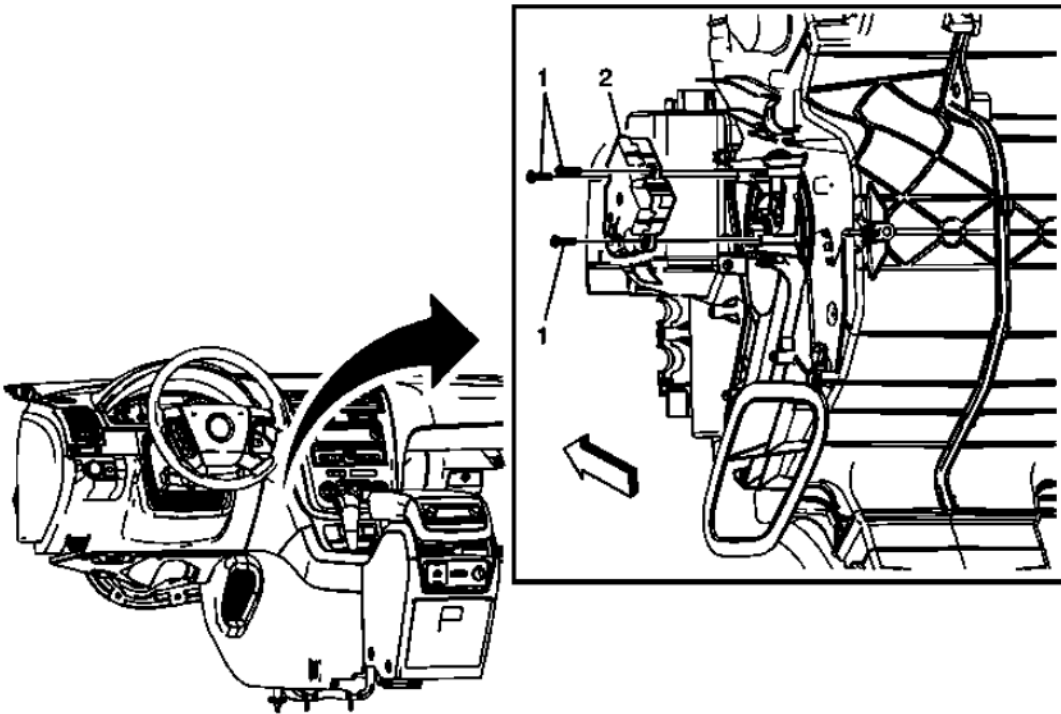


Fig. 43: Identifying Control Valve Body Cover Studs & Bolts
Courtesy of GENERAL MOTORS COMPANY

11. Remove the 12 control valve body cover bolts M6 x 30.
12. Support the transmission with a transmission jack.
13. Using the transmission jack raise the transmission to gain clearance for removal of the control valve body cover.
14. Remove the control valve body cover.
15. Remove the control valve body cover gasket.
16. Remove all traces of the old gasket material. Clean the transmission case and control valve body cover gasket surfaces.

CAUTION: Support the control solenoid valve assembly around the connector when removing the seal. Excessive pulling force can damage the internal electrical connections.

17. Remove the control valve body cover wiring connector hole seal from the TCM.

Installation Procedure

1. Install the control valve body cover wiring connector hole seal.

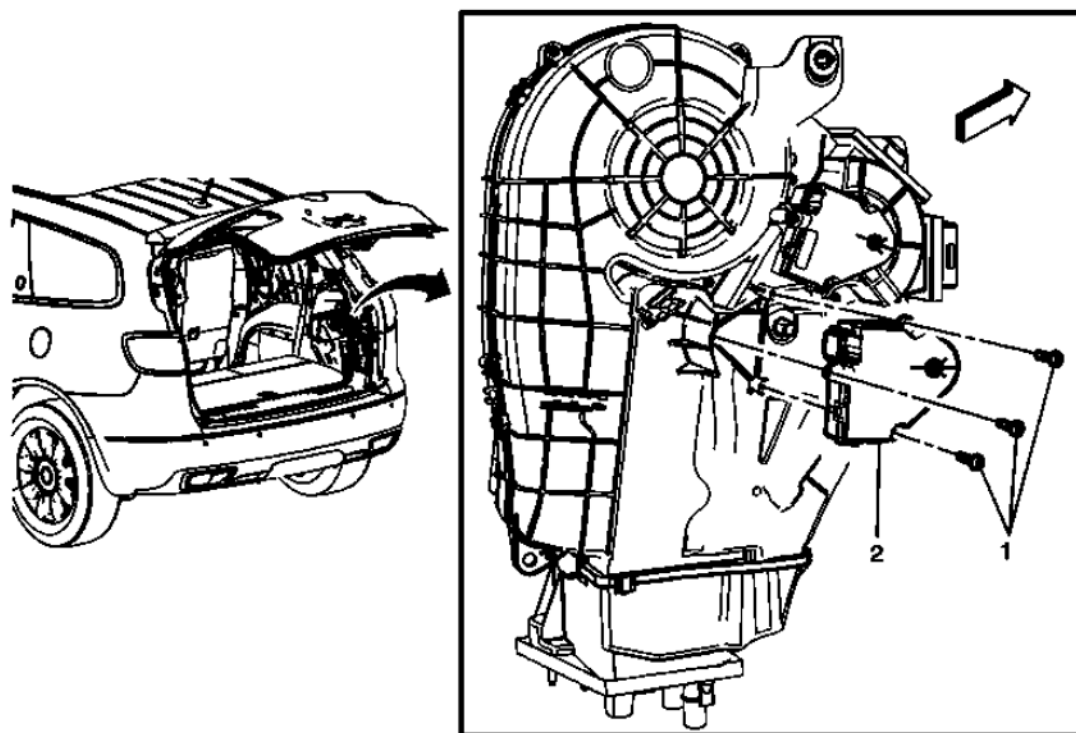


Fig. 44: Identifying Control Valve Body Cover Bolts Torque Sequence
Courtesy of GENERAL MOTORS COMPANY

NOTE: The holes in the control valve body cover wiring connector hole seal must face toward the control solenoid valve assembly. If the holes face toward the valve body cover, there is a potential for a leak around the seal.

2. Install the control valve body cover gasket to the control valve body cover.
3. Install the control valve body cover.
4. Lower the transmission and remove the transmission jack.
5. Install the 12 control valve body cover bolts (1) M6 x 30.

CAUTION: Refer to Fastener Caution .

NOTE: Install all control valve body cover bolts and studs by hand then torque all bolts and studs in sequence.

Tighten

Tighten the bolts in sequence to 12 N.m (106 lb in).

6. Install the 2 control valve body cover studs (2) M6 x 30.

Tighten

Tighten the studs in sequence to 12 N.m (106 lb in).

7. Connect the control valve body TCM electrical connector (1).

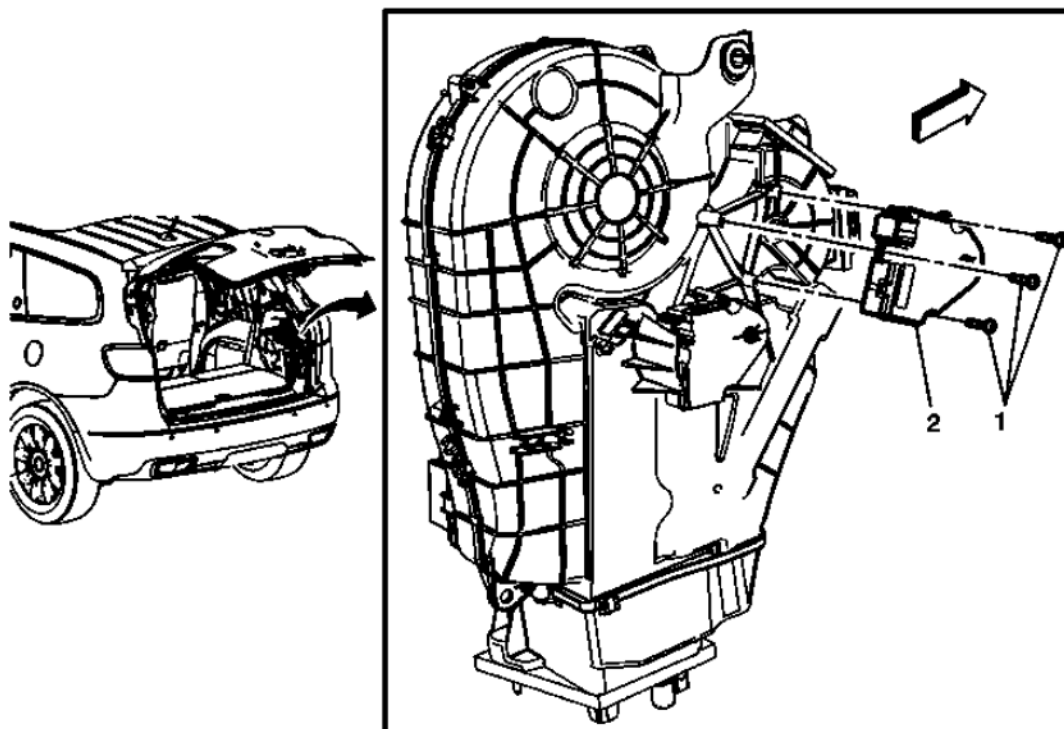


Fig. 45: Identifying Wire Harness Retainer & TCM Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

8. Install the wire harness retainer (2) to the control valve body cover stud.

Tighten

Tighten the nut to 12 N.m (106 lb in).

9. Lower the vehicle.
10. Install the oil cooler outlet hose (4) to the retainer on the control valve body cover.

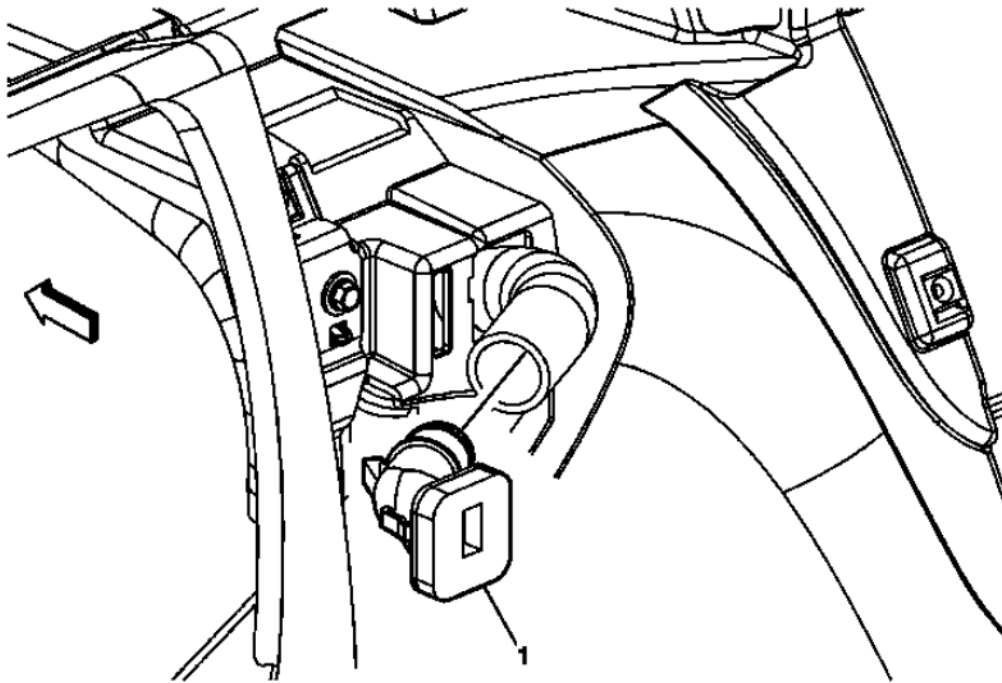


Fig. 46: Identifying Oil Cooler Hoses & Retainer Nuts
Courtesy of GENERAL MOTORS COMPANY

11. Install the oil cooler outlet hose retainer nut (5) to the control valve body cover.

Tighten

Tighten the nut to 12 N.m (106 lb in).

12. Install the oil cooler inlet hose (1) to the retainer on the control valve body cover.
13. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection**.
14. Fill the transmission. Refer to **Transmission Fluid Drain and Fill**.
15. Check for leaks.

CONTROL SOLENOID VALVE AND TRANSMISSION CONTROL MODULE ASSEMBLY REPLACEMENT

Removal Procedure

1. Remove the control valve body cover. Refer to **Control Valve Body Cover Replacement**.
2. Disconnect the input speed sensor electrical connector (1).

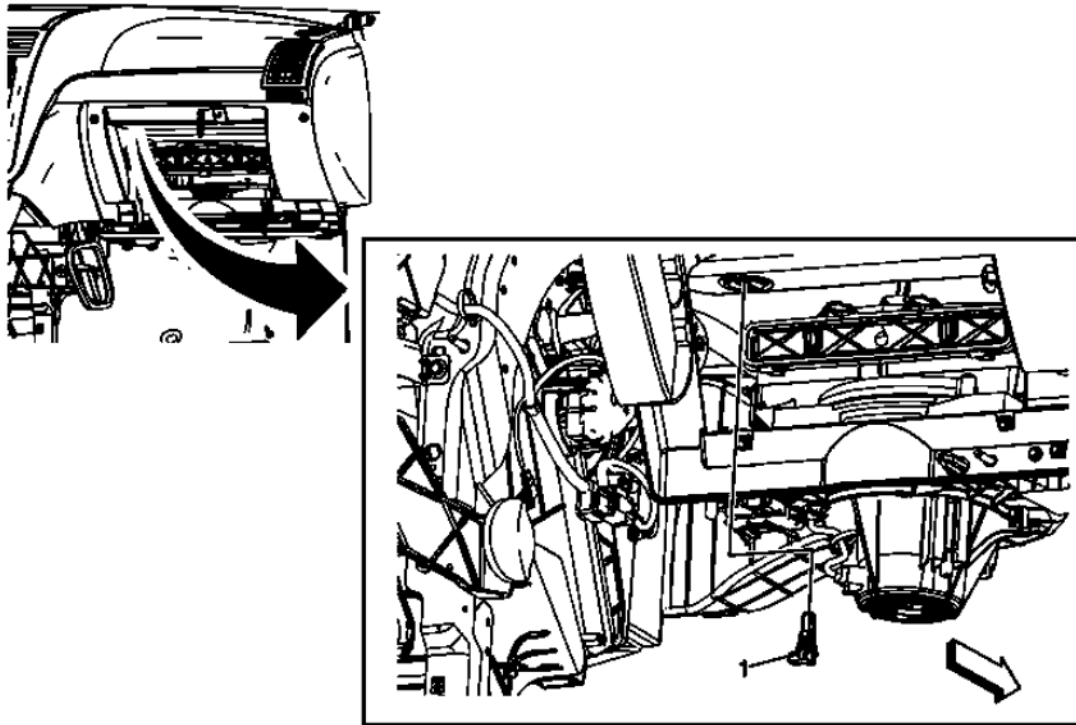


Fig. 47: Identifying Input Speed Sensor
Courtesy of GENERAL MOTORS COMPANY

3. Disconnect the output speed sensor electrical connector (2).
4. Disconnect the shift position switch electrical connector (3).
5. Remove the 4 control valve body bolts (1) M6 x 80.

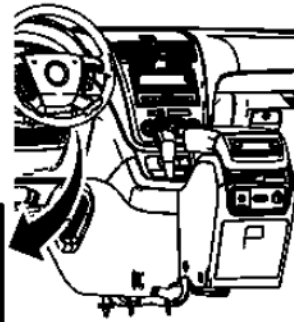
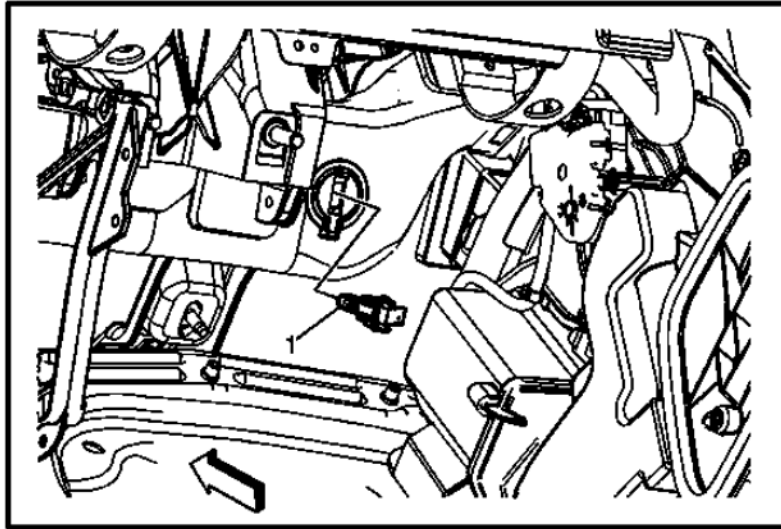


Fig. 48: Identifying Control Valve Body Bolts
Courtesy of GENERAL MOTORS COMPANY

6. Position the control solenoid valve spring (8) to the side. Spring will be released with the removal of the control valve body assembly.
7. Remove the 2 control valve body bolts (4) M6 x 65.
8. Remove the control valve body bolt (3) M6 x 42.
9. Remove the 3 control valve body bolts (2) M6 x 95.
10. Remove the control valve body bolt (7) M6 x 55.
11. Remove the control solenoid valve body and transmission control module (TCM) assembly (5).
12. Remove the control solenoid valve assembly filter plate (6).

CAUTION: Use care when removing or installing the filter plate assembly. A broken or missing retaining tab may not adequately secure the filter plate to the control solenoid valve assembly, resulting in possible damage or contamination.

- Discard the filler plate. It is not reusable.
- Inspect the upper channel plate bolt holes for damage, peening or burnelling. Any damage around the bolt holes near the pressure control switch (PCS) feed holes could cause leakage around the PCS seals. Replace the upper channel plate as necessary.

Installation Procedure

1. Install a NEW control solenoid valve assembly filter plate (1).

CAUTION: Use care when removing or installing the filter plate assembly. A broken or missing retaining tab may not adequately secure the filter plate to the control solenoid valve assembly, resulting in possible damage or contamination.

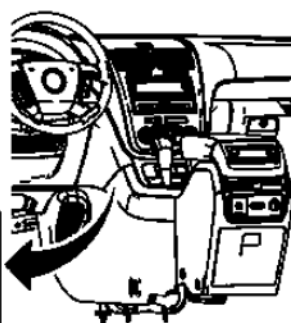
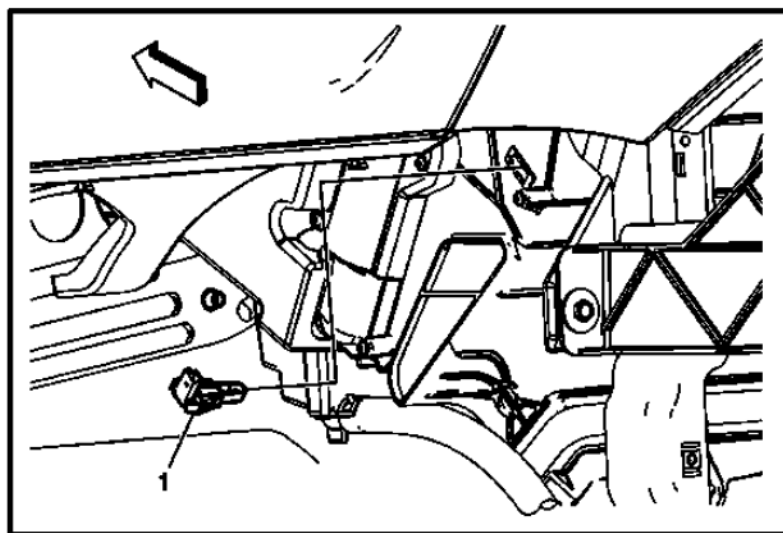


Fig. 49: Identifying Control Solenoid Valve Assembly Filter Plate
Courtesy of GENERAL MOTORS COMPANY

2. Install the control solenoid valve body and TCM assembly (5).

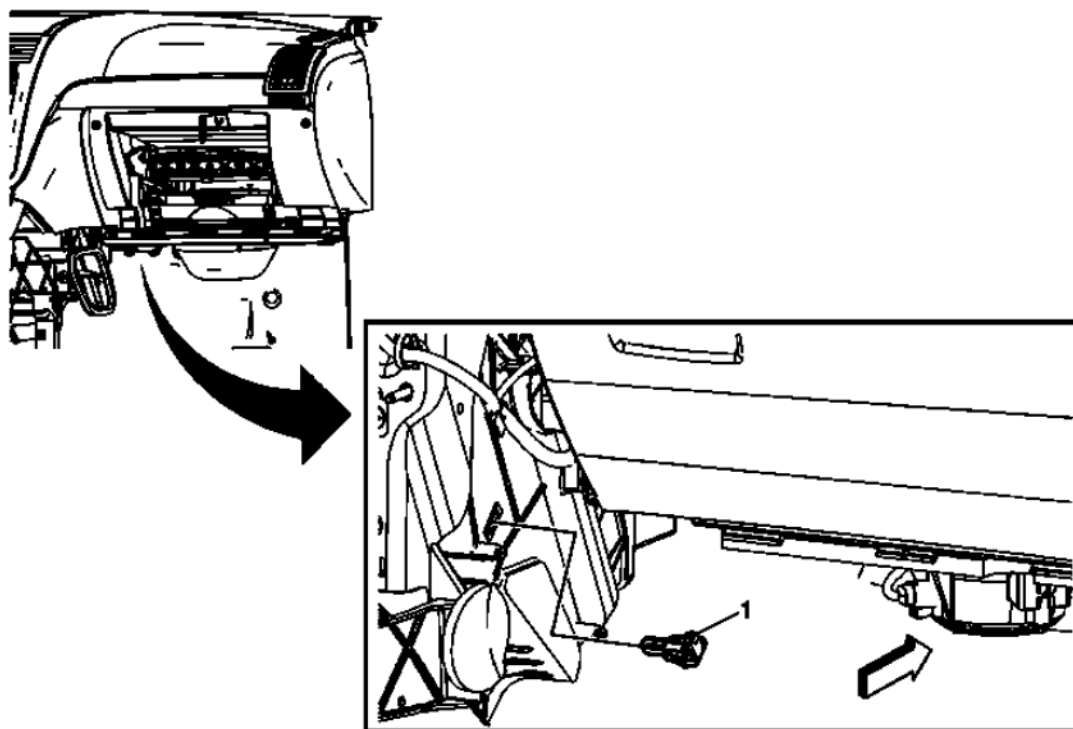


Fig. 50: Identifying Control Valve Body Bolts Torque Sequence
Courtesy of GENERAL MOTORS COMPANY

3. Rotate the control solenoid valve spring (7) into position.
4. Hand tighten the following fasteners.

CAUTION: Refer to Fastener Caution .

NOTE: Install all bolts before tightening, then tighten in specified sequence.

1. The 4 control valve body bolts (1) M6 x 80.
2. The control valve body bolt (6) M6 x 55.
3. The 3 control valve body bolts (2) M6 x 95.
4. The control valve body bolt (3) M6 x 42.
5. The 2 control valve body bolts (4) M6 x 65.
5. Tighten the bolts (1, 2, 3, 4, 6) in the specified sequence to 12 (106 lb in).
6. Connect the input speed sensor electrical connector (1).

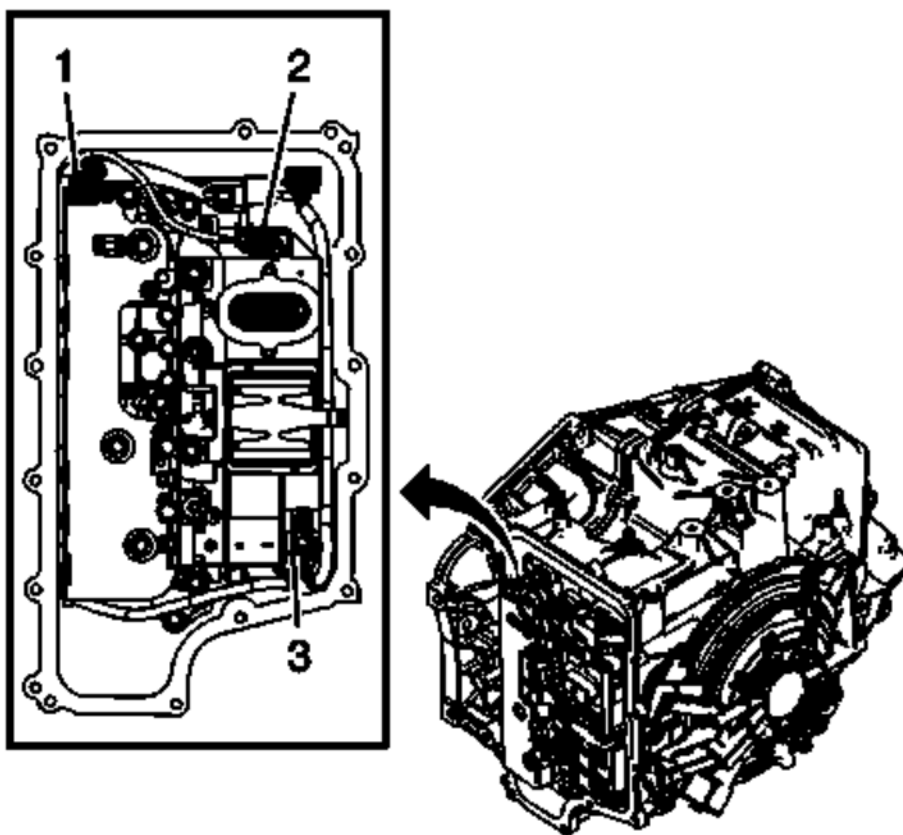


Fig. 51: Identifying Electrical Connectors

Courtesy of GENERAL MOTORS COMPANY

7. Connect the output speed sensor electrical connector (2).
8. Connect the shift position switch electrical connector (3).
9. Install the control valve body cover. Refer to **Control Valve Body Cover Replacement**.
10. If a NEW TCM has been installed into the vehicle, the NEW module needs to be reprogrammed. Refer to **Service Programming System (SPS)** .
11. Perform the Reset Transmission Adapts. Refer to **Reset Transmission Adapts** .

NOTE:

The Reset Transmission Adapts procedure must be performed when one of the following repairs have been made to the vehicle. Failure to perform the procedure after one of the following repairs may result in poor transmission performance, as well as transmission DTCs being set:

- Transmission internal service/overhaul
- Valve body repair or replacement
- Control solenoid valve assembly replacement
- TCM software/calibration update

- 54

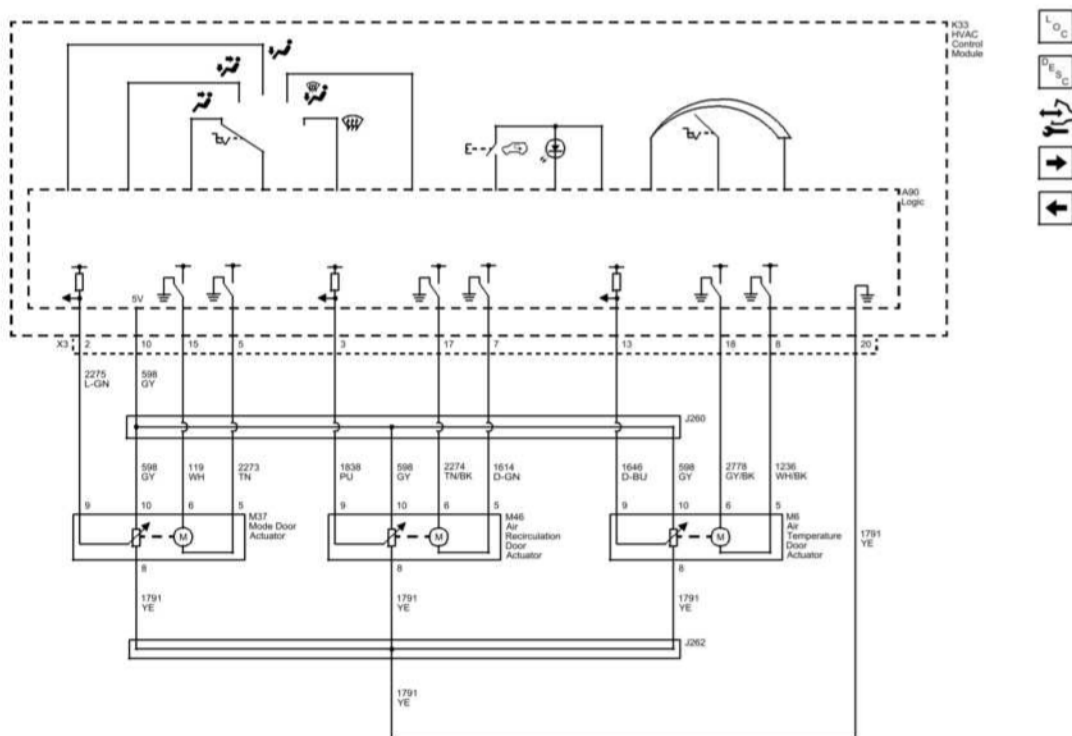


Fig. 53: Identifying Control Valve Body Bolts
Courtesy of GENERAL MOTORS COMPANY

6. Position the control solenoid valve spring (8) to the side. Spring will be released with removal of lower control valve body.
7. Remove the 2 control valve body bolts (4) M6 x 65.
8. Remove the control valve body bolt (3) M6 x 42.
9. Remove the 3 control valve body bolts (2) M6 x 95.
10. Remove the control valve body bolt (7) M6 x 55.
11. Remove the control solenoid valve body and transmission control module (TCM) assembly (5).
12. Remove the control solenoid valve body assembly filter plate (6).

CAUTION: Use care when removing or installing the filter plate assembly. A broken or missing retaining tab may not adequately secure the filter plate to the control solenoid valve assembly, resulting in possible damage or contamination.

- Discard the filler plate. It is not reusable.
- Inspect the pressure switch manifold seals for damage or contamination. Replace the control solenoid valve assembly as necessary.
- Inspect the upper channel plate bolt holes for damage, peening or burnelling. Any damage around

the bolt holes near the PCS switch feed holes could cause leakage around the PCS switch seals.
Replace the upper channel plate as necessary.

13. Remove the 8 control valve body bolts (2) M6 x 65.

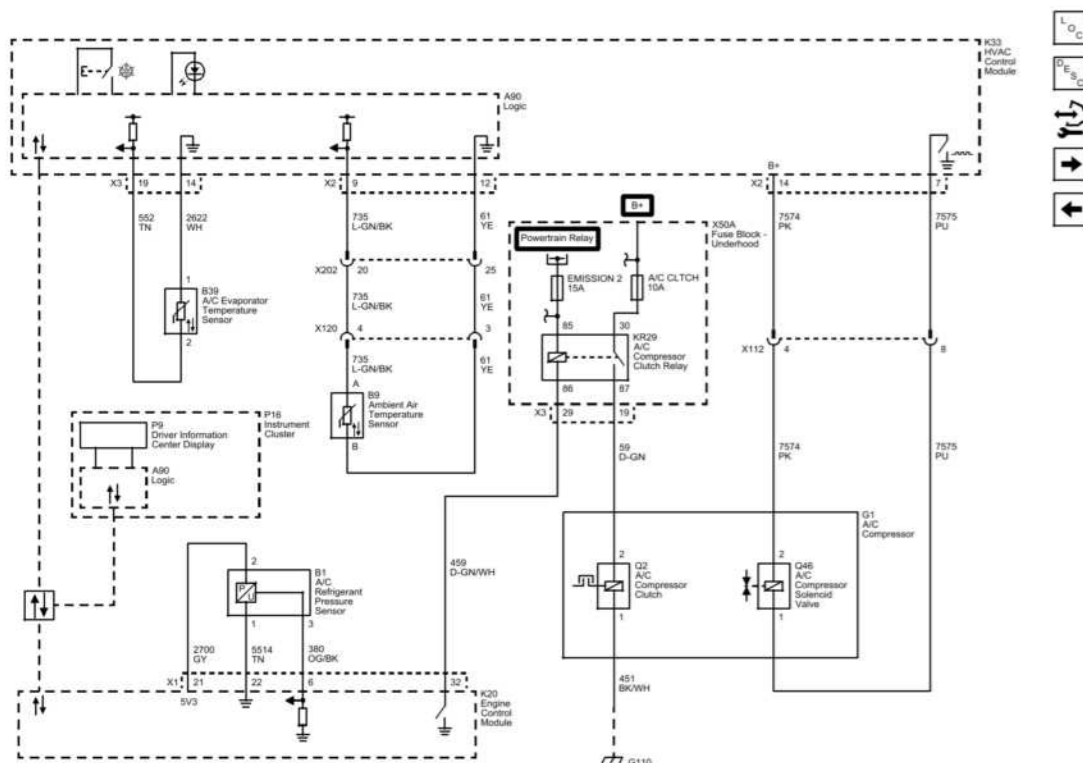


Fig. 54: Identifying Control Valve Body Bolts
Courtesy of GENERAL MOTORS COMPANY

14. Remove the 2 control valve body bolts (1) M6 x 55.
15. Remove the manual shaft detent assembly (3).
16. Remove the control valve body assembly (4).
17. The control solenoid valve spring can now be fully removed from the lower control valve body assembly.
18. Remove the 1-2-3-4 clutch fluid passage seal (5).

NOTE: The clutch fluid passage seal is not reusable.

Installation Procedure

1. Install a NEW 1-2-3-4 clutch fluid passage seal (3).

Fig. 55: Identifying Control Valve Body Components
Courtesy of GENERAL MOTORS COMPANY

NOTE: The clutch fluid passage seal is not reusable.

2. Install the control valve body assembly (1).

NOTE: Ensure the control solenoid valve spring is attached to the lower control valve body assembly.

NOTE: Align the manual valve (2) to the detent lever assembly while installing the lower control valve body assembly.

3. Install the manual shaft detent assembly (2).

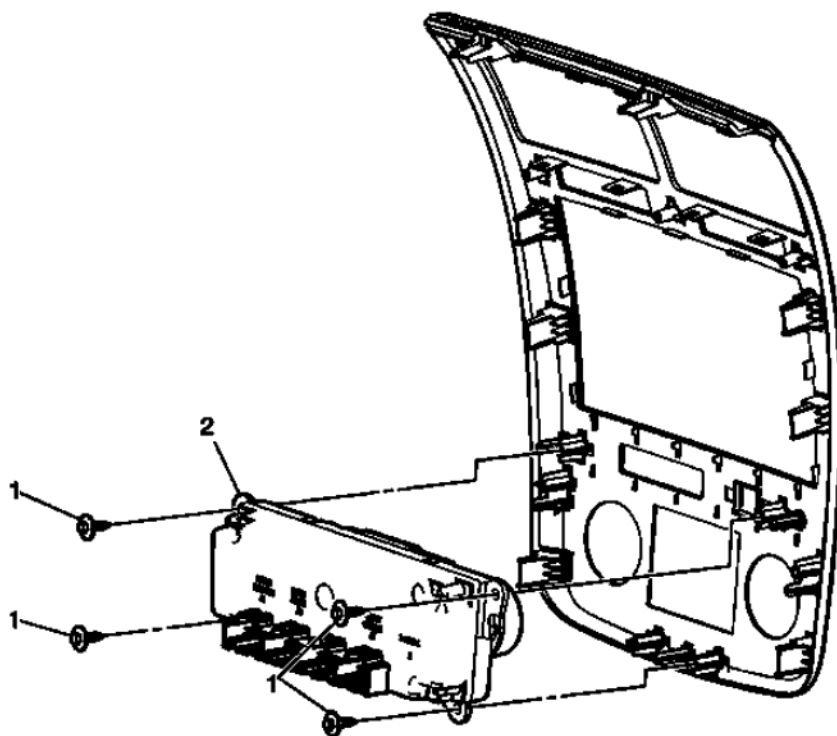


Fig. 56: Identifying Control Valve Body Bolts Torque Sequence
Courtesy of GENERAL MOTORS COMPANY

NOTE: Ensure proper alignment of the detent assembly to the detent lever assembly with position switch while tightening the bolt. The detent assembly can move and hit the valve body assembly that could cause improper engagement with the detent lever assembly.

4. Install the 8 control valve body bolts (1) M6 x 65 and tighten to 12 N.m (106 lb in).

CAUTION: Refer to Fastener Caution .

NOTE: Install all bolts before tightening, then tighten in specified sequence.

5. Install the 2 control valve body bolts (3) M6 x 55 and tighten to 12 N.m (106 lb in).
6. Install a NEW control solenoid valve assembly filter plate (1).

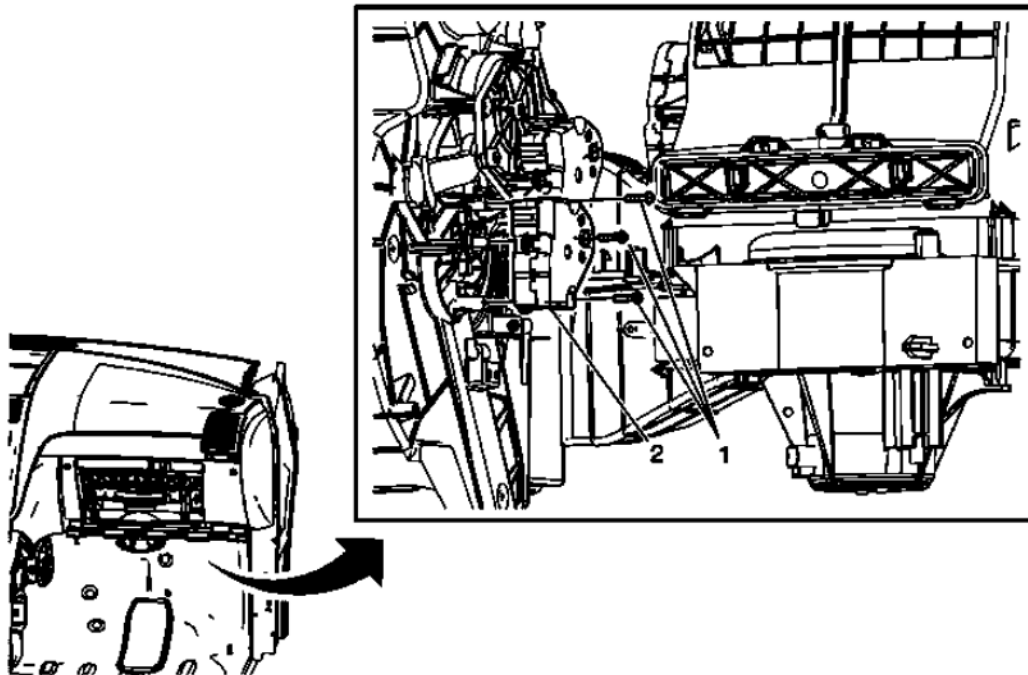


Fig. 57: Identifying Control Solenoid Valve Assembly Filter Plate
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Use care when removing or installing the filter plate assembly. A broken or missing retaining tab may not adequately secure the filter plate to the control solenoid valve assembly, resulting in possible damage or contamination.

7. Install the control solenoid valve body and TCM assembly (5).

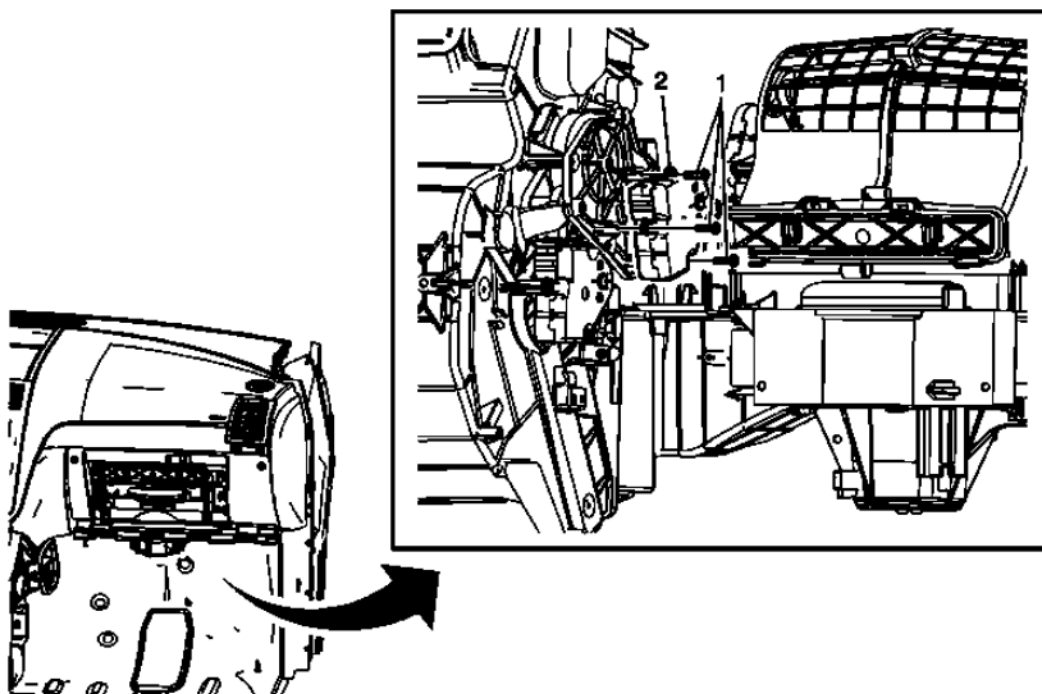


Fig. 58: Identifying Control Valve Body Bolts Torque Sequence
Courtesy of GENERAL MOTORS COMPANY

8. Rotate the control solenoid valve spring (7) into position.
9. Install the 4 control valve body bolts (1) M6 x 80.

NOTE: Install all bolts before tightening, then tighten in specified sequence.

10. Install the control valve body bolt (6) M6 x 55.
11. Install the 3 control valve body bolts (2) M6 x 95.
12. Install the control valve body bolt (3) M6 x 42.
13. Install the 2 control valve body bolts (4) M6 x 65.
14. Connect the input speed sensor electrical connector (1).

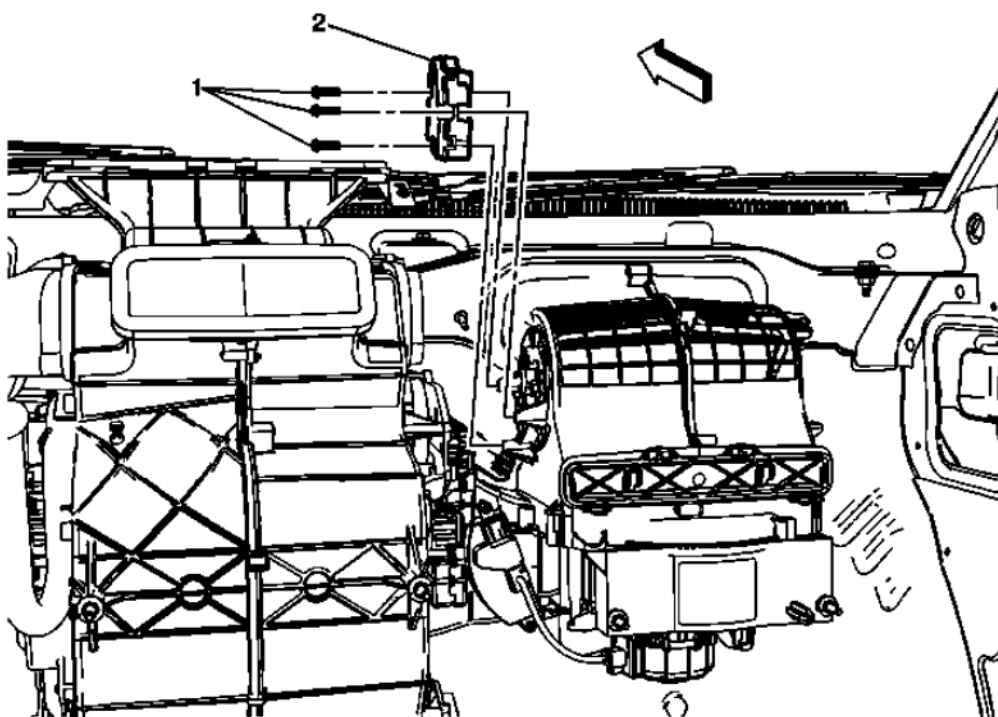


Fig. 59: Identifying Electrical Connectors
Courtesy of GENERAL MOTORS COMPANY

15. Connect the output speed sensor electrical connector (2).
16. Connect the shift position switch electrical connector (3).
17. Install the control valve body cover. Refer to **Control Valve Body Cover Replacement**.
18. For transmission control module programming and setup. Refer to **Control Module References**.
19. Perform the Reset Transmission Adapts. Refer to **Reset Transmission Adapts**.

NOTE: After an internal transmission repair or internal part replacement the Reset Transmission Adapts procedure should be performed.

OUTPUT SPEED SENSOR REPLACEMENT

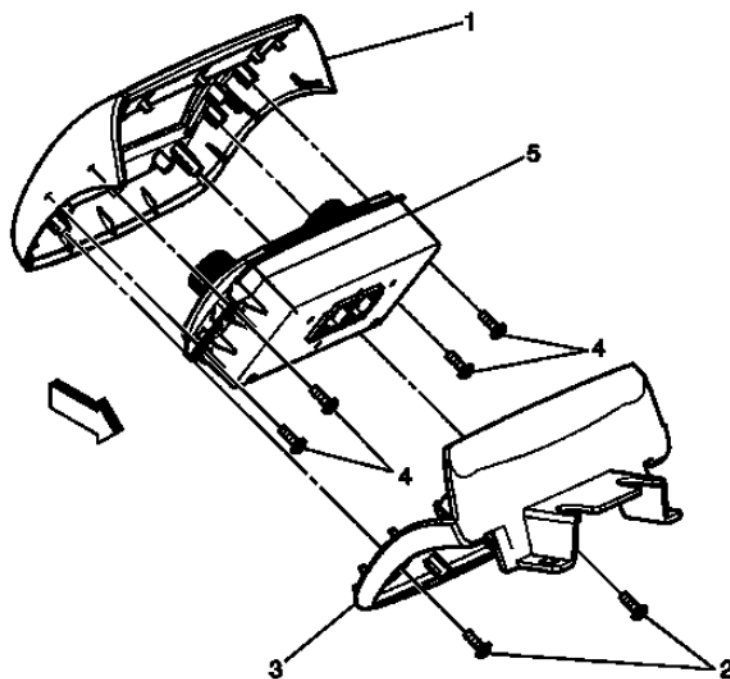


Fig. 60: View Of Output Speed Sensor
Courtesy of GENERAL MOTORS COMPANY

Output Speed Sensor Replacement

Callout	Component Name
Preliminary Procedures	
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the control valve lower body and upper body. Refer to Control Valve Lower Body and Upper Body Replacement.	
1	Output Speed Sensor Bolt M6 x 25 CAUTION: Refer to Fastener Caution . Tighten 12 N.m (106 lb in)
2	Output Speed Sensor Procedure Perform the Reset Transmission Adapts. Refer to Reset Transmission Adapts . TIP: After an internal transmission repair or internal part replacement the Reset Transmission Adapts procedure should be performed.

INPUT SPEED SENSOR REPLACEMENT

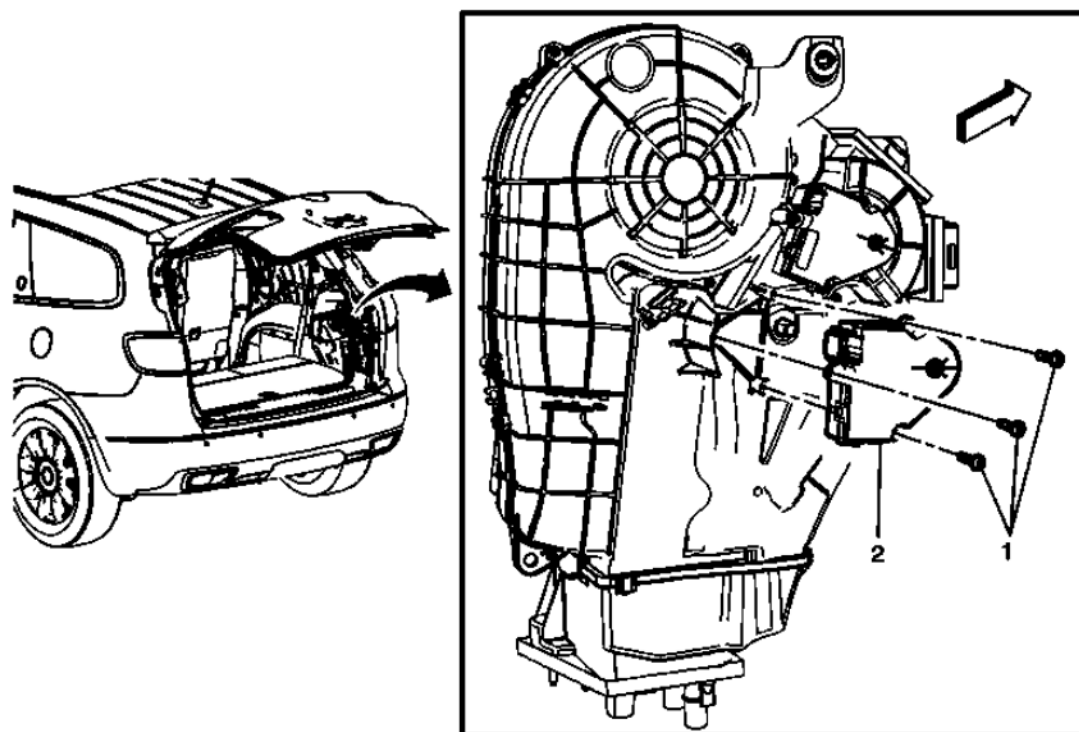


Fig. 61: View Of Input Speed Sensor
 Courtesy of GENERAL MOTORS COMPANY

Input Speed Sensor Replacement

Callout	Component Name
Preliminary Procedures 1. Remove the control valve body cover. Refer to Control Valve Body Cover Replacement. 2. Remove the left transmission mount bracket. Refer to Transmission Mount Bracket Replacement - Left Side.	
1	Input Speed Sensor (ISS) Wire Harness Procedure Attach DT-47734 speed sensor harness tether to the ISS electrical connector locking tab before removal of old ISS to assist in installation of the new ISS. Special Tools DT-47734 Speed Sensor Harness Tether For equivalent regional tools, refer to Special Tools .
	Input Speed Sensor Bolt M6 x 25 CAUTION: Refer to Fastener Caution .

2	Procedure Apply threadlocker GM P/N 12345382 (Canadian P/N 10953489) or equivalent to the input speed sensor bolt. Tighten 9 (80 lb in)
3	Input Speed Sensor Procedure Perform the Reset Transmission Adapts. Refer to <u>Reset Transmission Adapts</u> . NOTE: After an internal transmission repair or internal part replacement the Reset Transmission Adapts procedure should be performed.
4	Input Speed Sensor Seal

INPUT SPEED SENSOR SEAL REPLACEMENT

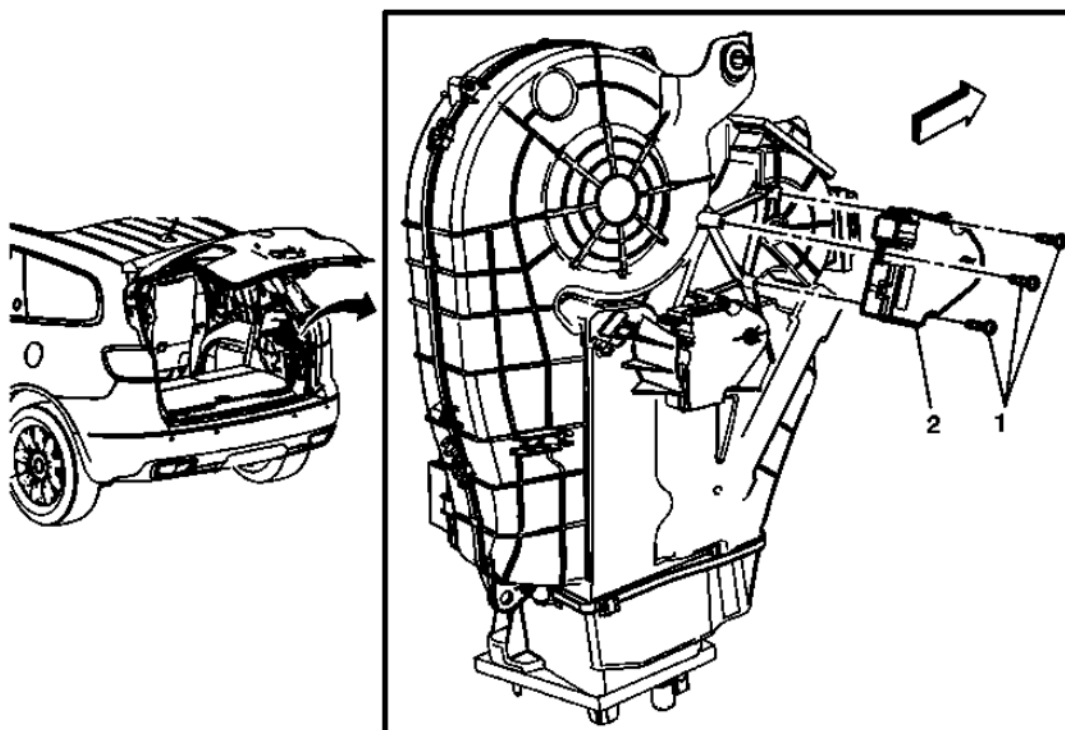


Fig. 62: Identifying Input Speed Sensor Components
 Courtesy of GENERAL MOTORS COMPANY

Input Speed Sensor Seal Replacement

Callout	Component Name
Preliminary Procedures	

2014 GMC Acadia Denali

2014 TRANSMISSION Automatic Transmission - 6T75 (M7V M7X) - Repair Instructions - On Vehicle - Acadia, Enclave And Traverse

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Drain the transmission, refill when repair is completed. Refer to **Transmission Fluid Drain and Fill**.
3. Remove the left transmission mount bracket. Refer to **Transmission Mount Bracket Replacement - Left Side**.

1	Input Speed Sensor Bolt M6 x 25 CAUTION: Refer to <u>Fastener Caution</u> . Procedure Apply threadlocker GM P/N 12345382 (Canadian P/N 10953489) or equivalent to the input speed sensor bolt. Tighten 9 N.m (80 lb in)
2	Input Speed Sensor (ISS) Procedure Pull the ISS out of the case cover just far enough to gain access to the ISS seal.
3	Input Speed Sensor Seal Procedure • Remove the ISS seal by pulling it over the end of the ISS base. • Install the new ISS Seal by gently stretching it over the ISS base. Overstretching the seal will cause it to not seal properly. The seal is coated with a dry lubricant. If the coating is missing, lubricate the seal with automatic transmission fluid prior to installation.

TRANSMISSION MOUNT BRACKET REPLACEMENT - LEFT SIDE

Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Support the transmission with a transmission jack.
3. Remove the transmission mount nuts (1, 2).

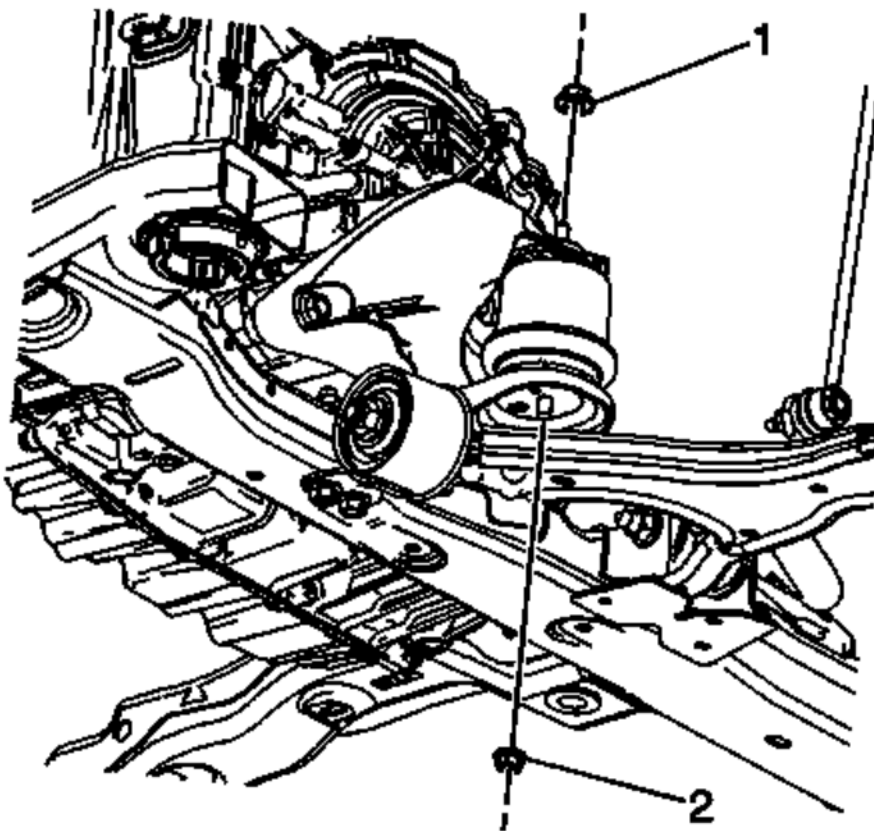


Fig. 63: Identifying Transmission Mount Nuts
Courtesy of GENERAL MOTORS COMPANY

4. Remove the transmission mount bracket bolts (1, 2).

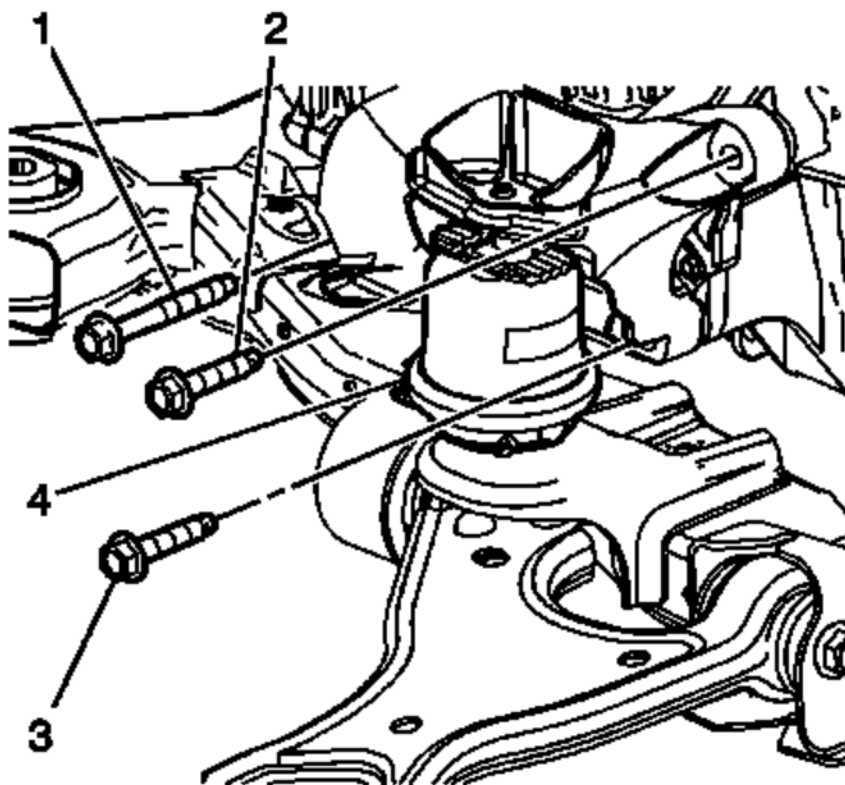


Fig. 64: View Of Transmission Mount Bracket Bolts
Courtesy of GENERAL MOTORS COMPANY

5. Using the transmission jack, lift the transmission just enough to gain clearance for tilting the transmission mount.
6. Remove the transmission mount bracket bolt (3).
7. Remove the transmission mount (2) and bracket (1) from the vehicle.

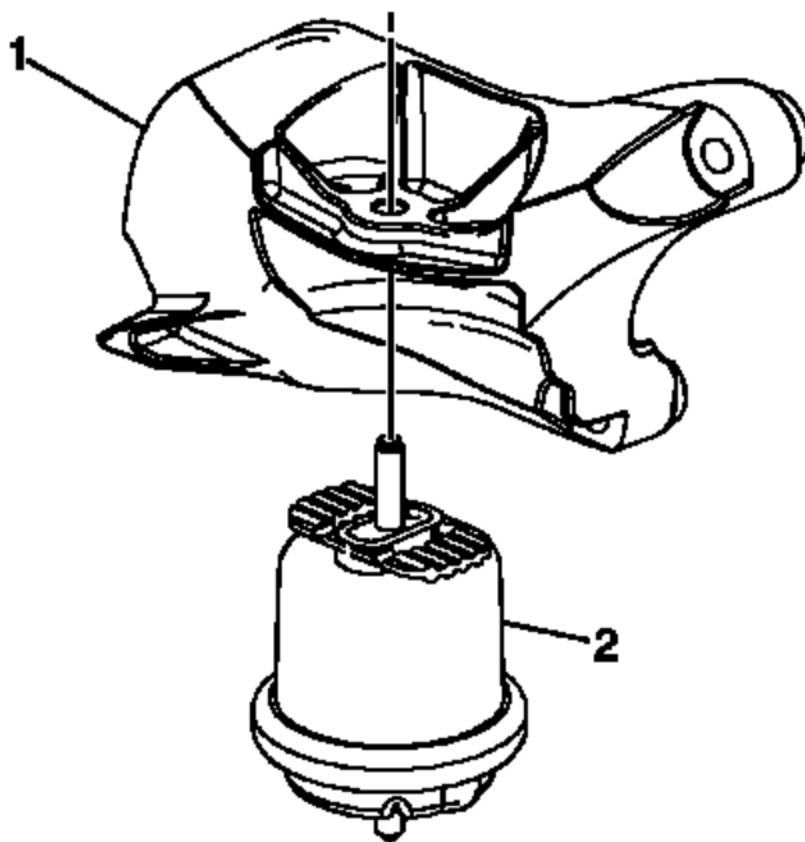


Fig. 65: Identifying Transmission Mount & Bracket
Courtesy of GENERAL MOTORS COMPANY

Installation Procedure

1. Install the transmission mount (2) and bracket (1) to the vehicle.

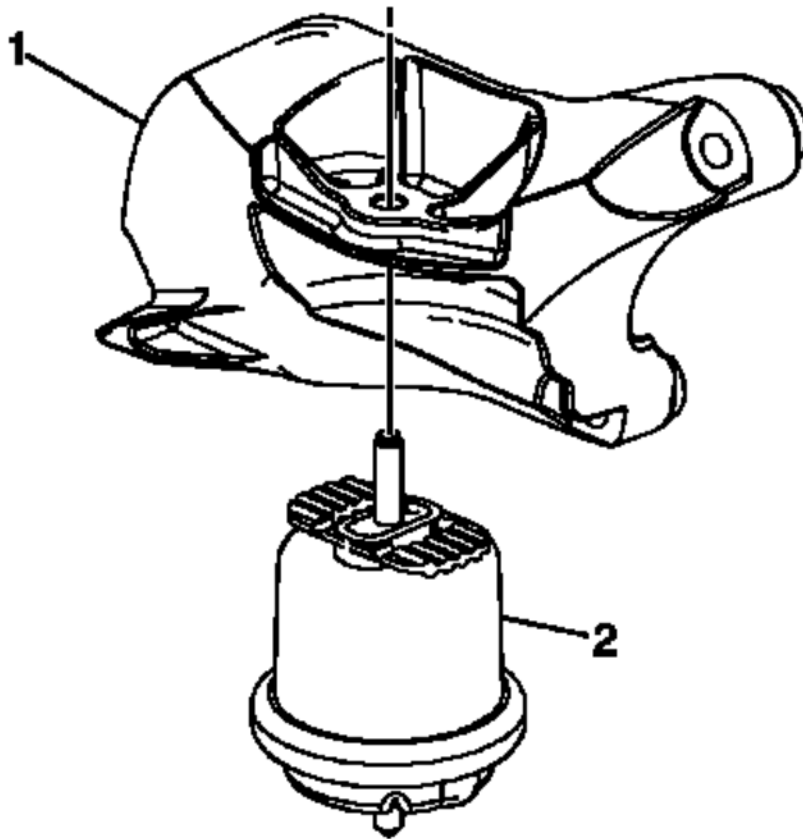


Fig. 66: Identifying Transmission Mount & Bracket
Courtesy of GENERAL MOTORS COMPANY

2. Install the transmission mount bracket bolt (3) and tighten to 90 N.m (66 lb ft).

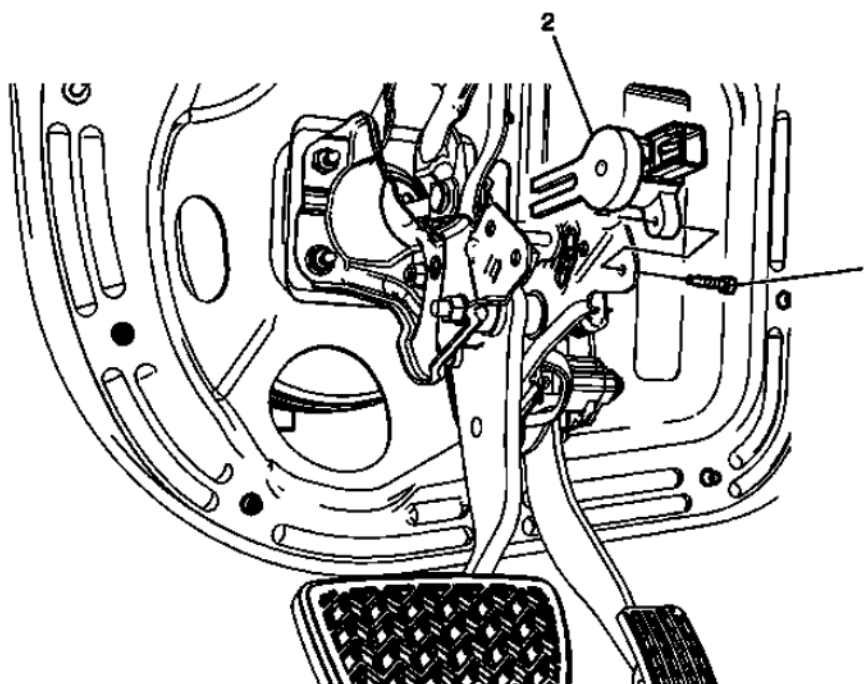


Fig. 67: View Of Transmission Mount Bracket Bolts
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

3. Install the transmission mount bracket bolt (1) and tighten to 90 N.m (66 lb ft).
4. Using the transmission jack, lower the transmission until the transmission mount bracket rests on the transmission mount.
5. Install the transmission mount bracket bolt (2) and tighten to 90 N.m (66 lb ft).
6. Remove the transmission jack.
7. Install the transmission mount nut (2) and tighten to 75 N.m (55 lb ft).

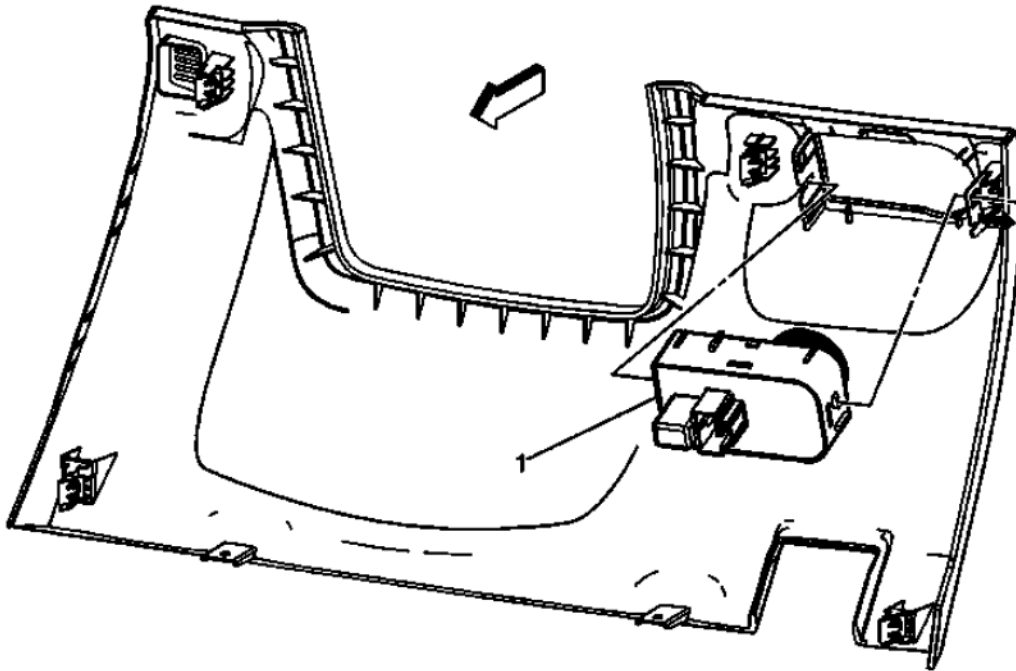


Fig. 68: Identifying Transmission Mount Nuts
Courtesy of GENERAL MOTORS COMPANY

8. Install the transmission mount nut (1) and tighten to 90 N.m (66 lb ft).
9. Lower the vehicle

TRANSMISSION BRACE REPLACEMENT

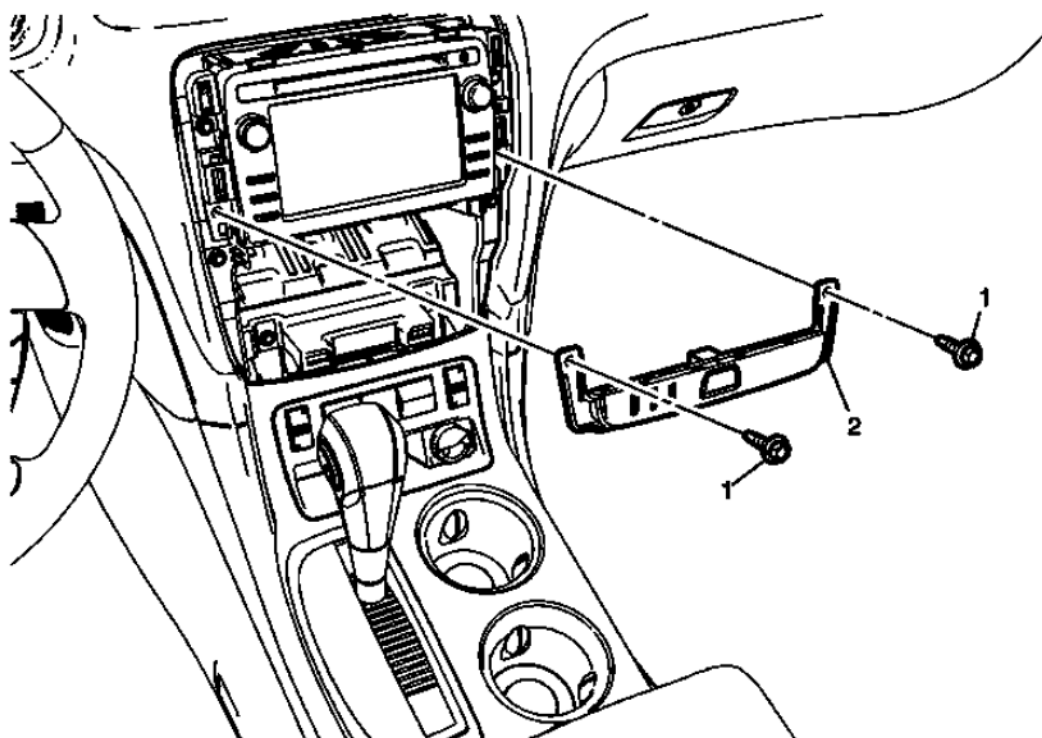


Fig. 69: Identifying Transaxle Brace
 Courtesy of GENERAL MOTORS COMPANY

Transmission Brace Replacement

Callout	Component Name
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the right and left catalytic converters. Refer to Catalytic Converter Replacement - Left Side and Catalytic Converter Replacement - Right Side. 3. Support the transaxle with a transaxle jack.	
1	Rear Transaxle Brace Bolt CAUTION: Refer to Fastener Caution . Tighten 50 N.m (37 lb ft)
2	Rear Transaxle Brace Bolt Tighten 50 N.m (37 lb ft)
3	Rear Transaxle Brace

TRANSMISSION MOUNT REPLACEMENT - LEFT SIDE**Removal Procedure**

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Support the transmission with a transmission jack.
3. Remove the transmission mount nuts (1, 2).

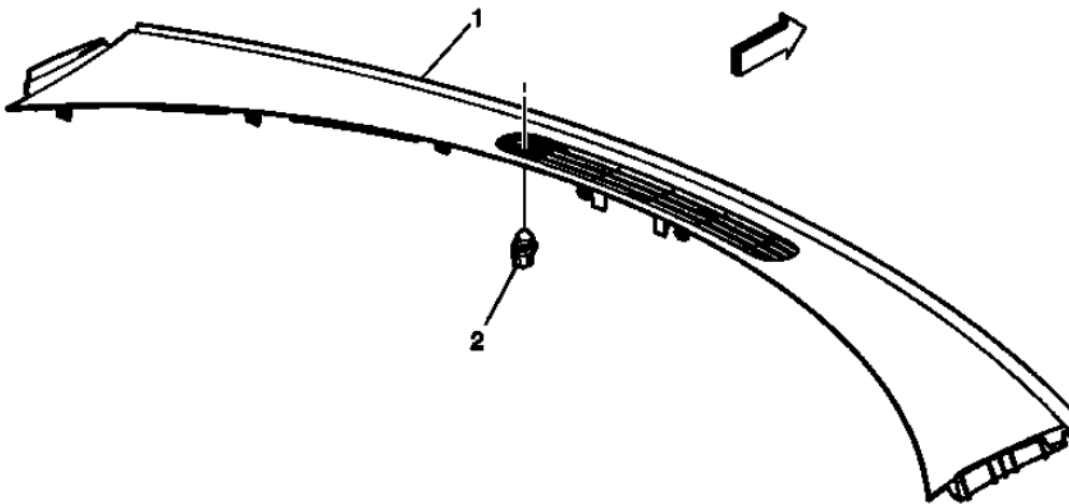


Fig. 70: Identifying Transmission Mount Nuts
Courtesy of GENERAL MOTORS COMPANY

4. Remove the transmission mount bracket bolts (1, 2).

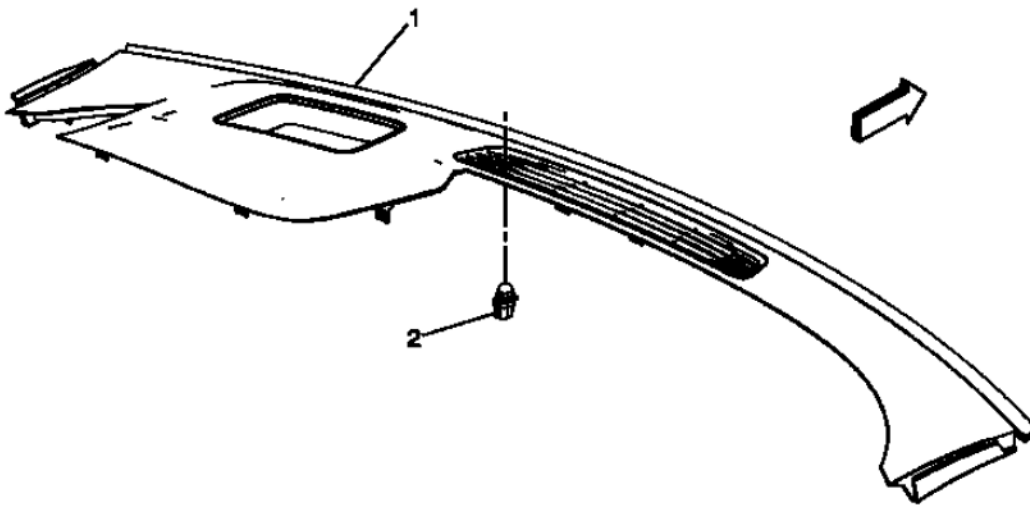


Fig. 71: View Of Transmission Mount Bracket Bolts
Courtesy of GENERAL MOTORS COMPANY

5. Using the transmission jack, lift the transmission just enough to gain clearance for tilting the transmission mount.
6. Remove the transmission mount bracket bolt (3).
7. Remove the transmission mount (2) and bracket (1) from the vehicle.

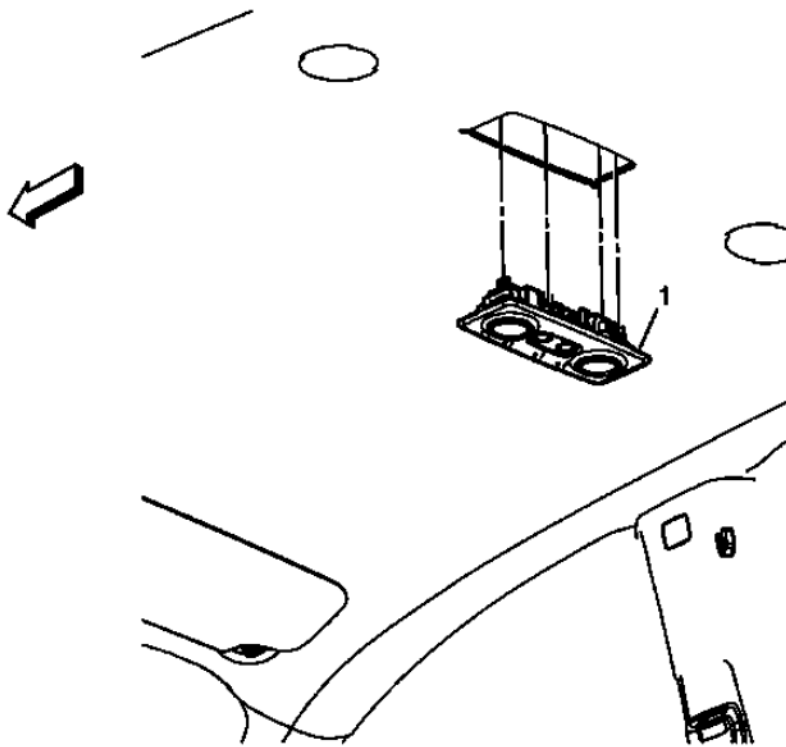


Fig. 73: Identifying Transmission Mount & Bracket
Courtesy of GENERAL MOTORS COMPANY

2. Install the transmission mount bracket bolt (3) and tighten to 90 N.m (66 lb ft).

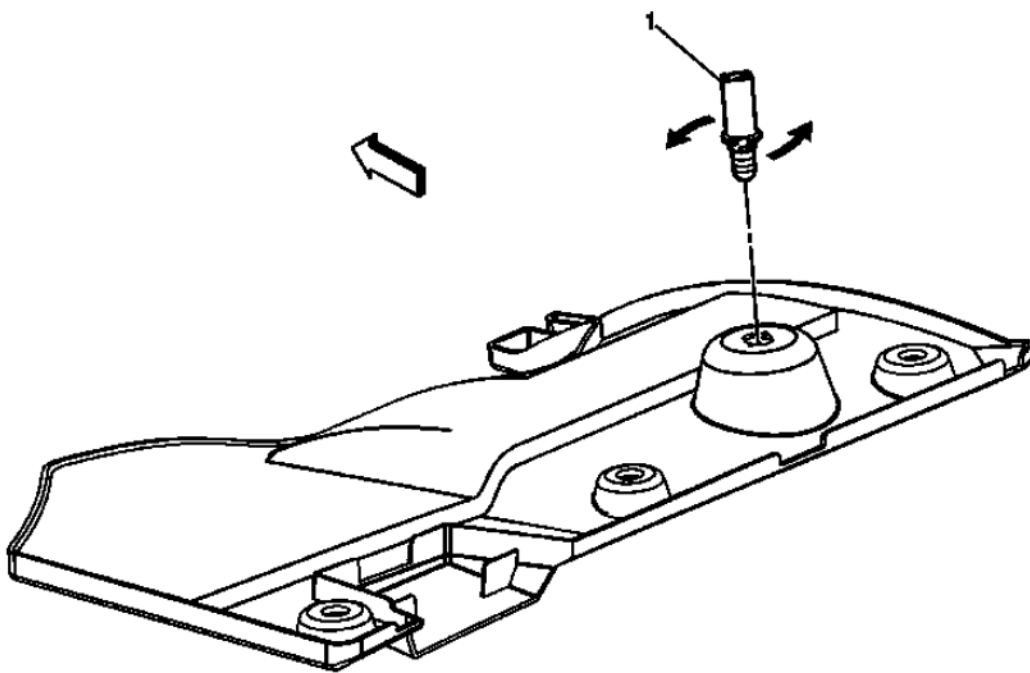


Fig. 74: View Of Transmission Mount Bracket Bolts
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

3. Install the transmission mount bracket bolt (1) and tighten to 90 N.m (66 lb ft).
4. Using the transmission jack, lower the transmission until the transmission mount bracket rests on the transmission mount.
5. Install the transmission mount bracket bolt (2) and tighten to 90 N.m (66 lb ft).
6. Remove the transmission jack.
7. Install the transmission mount nut (2) and tighten to 75 N.m (55 lb ft).

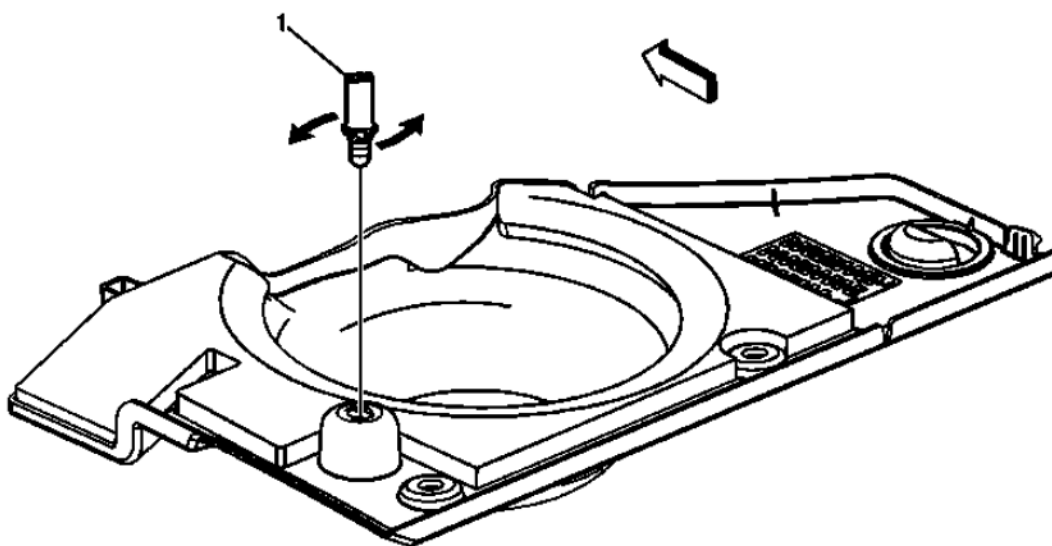


Fig. 75: Identifying Transmission Mount Nuts
Courtesy of GENERAL MOTORS COMPANY

8. Install the transmission mount nut (1) and tighten to 90 N.m (66 lb ft).
9. Lower the vehicle

TRANSMISSION REPLACEMENT (ALL WHEEL DRIVE)

Removal Procedure

1. Remove the air cleaner assembly. Refer to [Air Cleaner Assembly Replacement](#) .
2. Remove the wire harness retainer (2) from the control valve body cover stud.

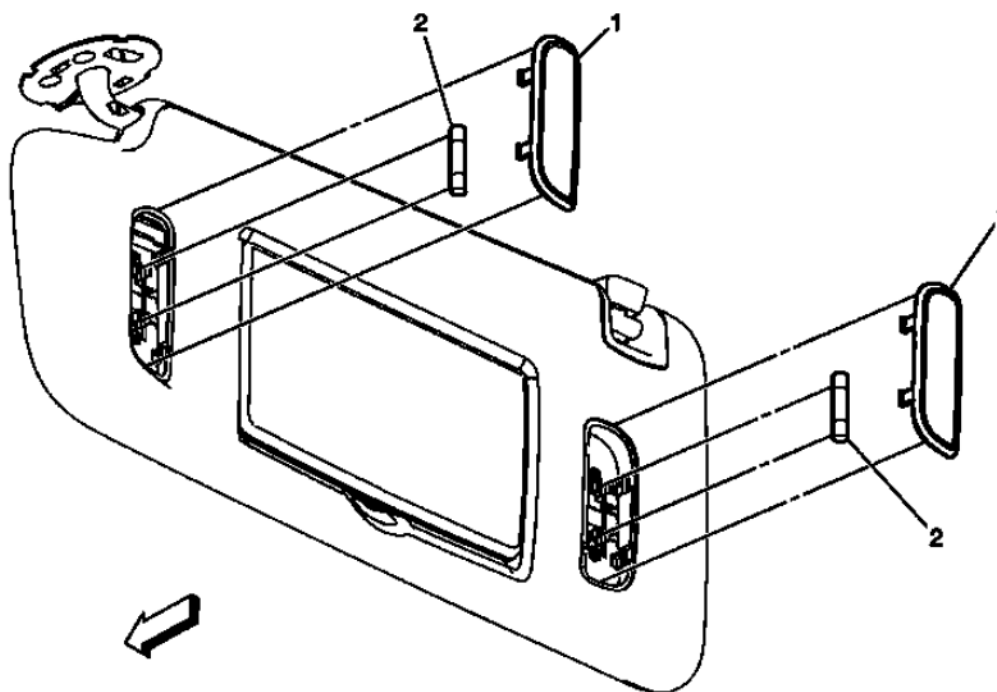


Fig. 76: Identifying Wire Harness Retainer & TCM Electrical Connector
 Courtesy of GENERAL MOTORS COMPANY

3. Disconnect the control valve body transmission control module (TCM) electrical connector (1).
4. Disconnect the transmission range selector lever cable terminal (3) from the transmission manual shift lever (4).

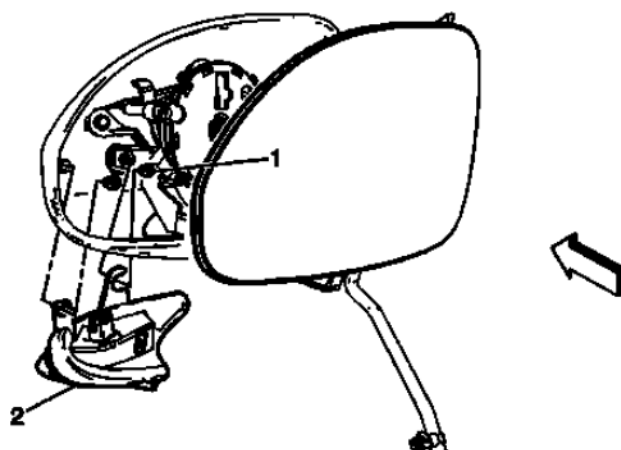


Fig. 77: View Of Transmission Range Selector Lever Cable Terminal & Lever
 Courtesy of GENERAL MOTORS COMPANY

5. Press the locking tabs inward in order to release the transmission range selector lever cable (1) from the

cable bracket (2).

6. Release the transmission fluid cooler inlet pipe retainer from the transmission control valve body cover.

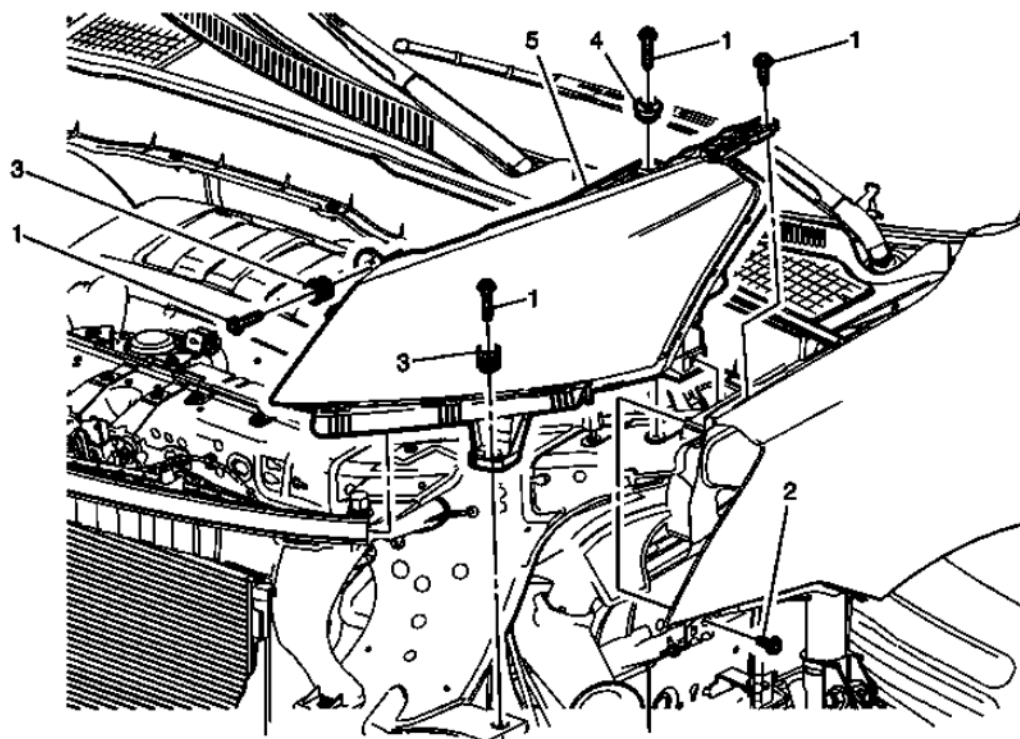


Fig. 78: Identifying Oil Cooler Hoses & Retainer Nuts
 Courtesy of GENERAL MOTORS COMPANY

7. Remove the transmission fluid cooler inlet pipe nut (2).
8. Remove the transmission fluid cooler inlet pipe (1) and seal from the transmission.
9. Remove the oil cooler outlet pipe retainer nut (5) and retainer from the transmission control valve body cover.
10. Remove the transmission fluid cooler outlet pipe nut (3).
11. Remove the transmission fluid cooler outlet pipe (4) and seal from the transmission.
12. Plug and/or cap both fluid cooler pipes and transmission to prevent contamination.
13. Remove the upper transmission to engine bolts (1, 2).

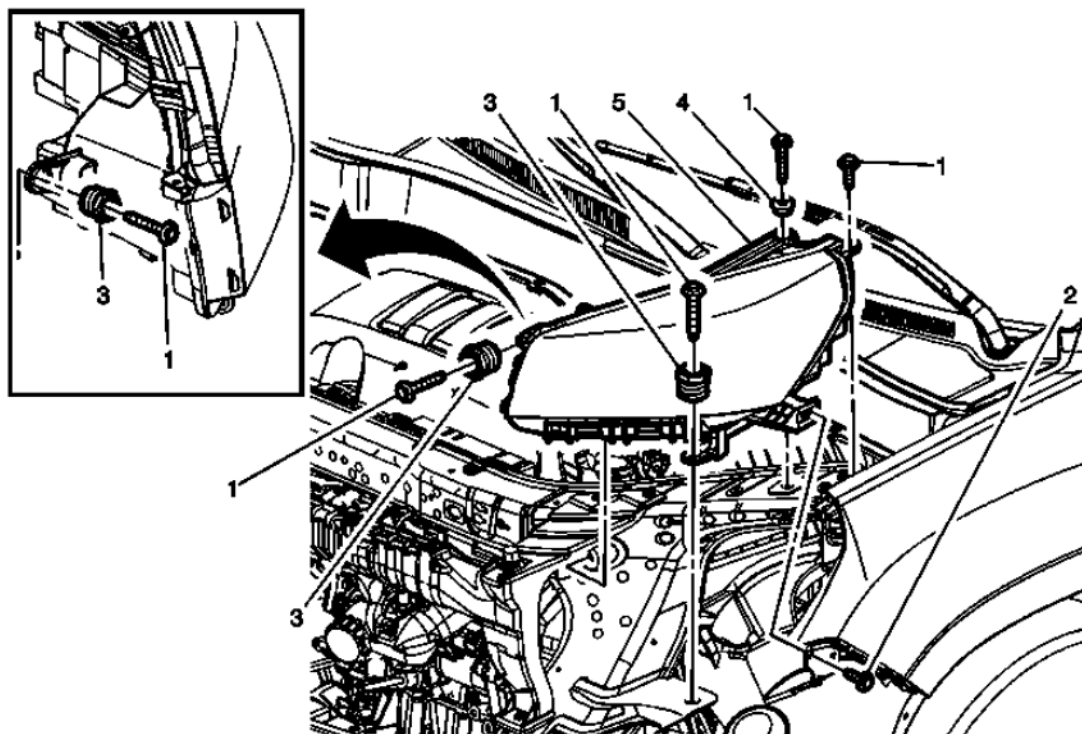


Fig. 79: Identifying Upper Transmission To Engine Bolts
Courtesy of GENERAL MOTORS COMPANY

14. Install the engine support fixture. Refer to **Engine Support Fixture** .
15. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
16. Remove the frame. Refer to **Drivetrain and Front Suspension Frame Replacement** .
17. Disconnect the left wheel drive shaft from the transmission. Refer to **Front Wheel Drive Shaft Replacement** .
18. Remove the transfer case. Refer to **Transfer Case Assembly Replacement** .

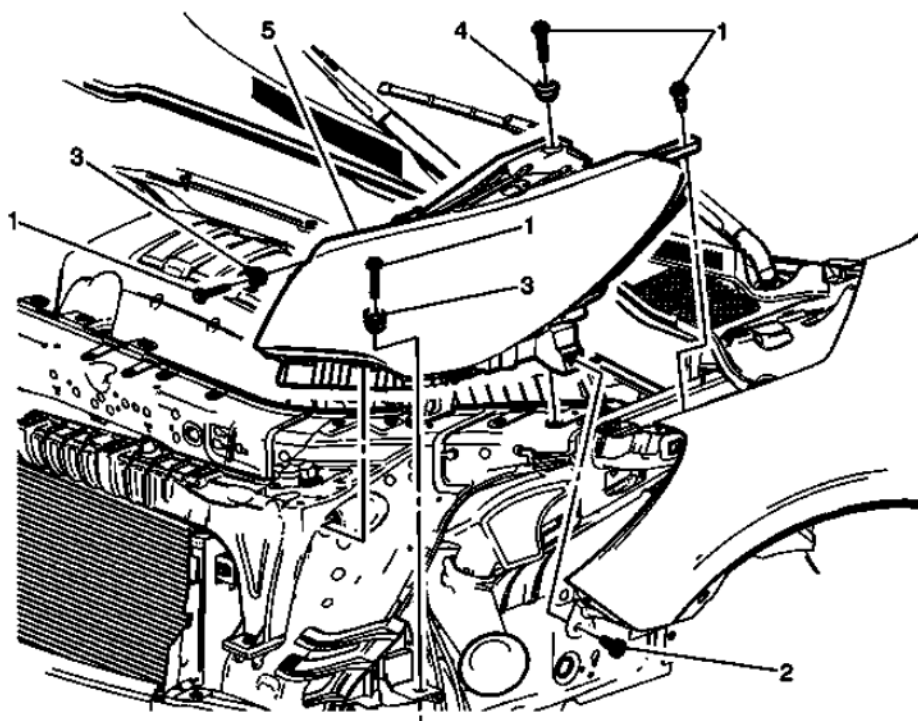


Fig. 80: Identifying Transfer Case
Courtesy of GENERAL MOTORS COMPANY

19. Remove the left transmission mount bracket from the transmission. Refer to **Transmission Mount Bracket Replacement - Left Side**.
20. Remove the starter. Refer to **Starter Replacement**.

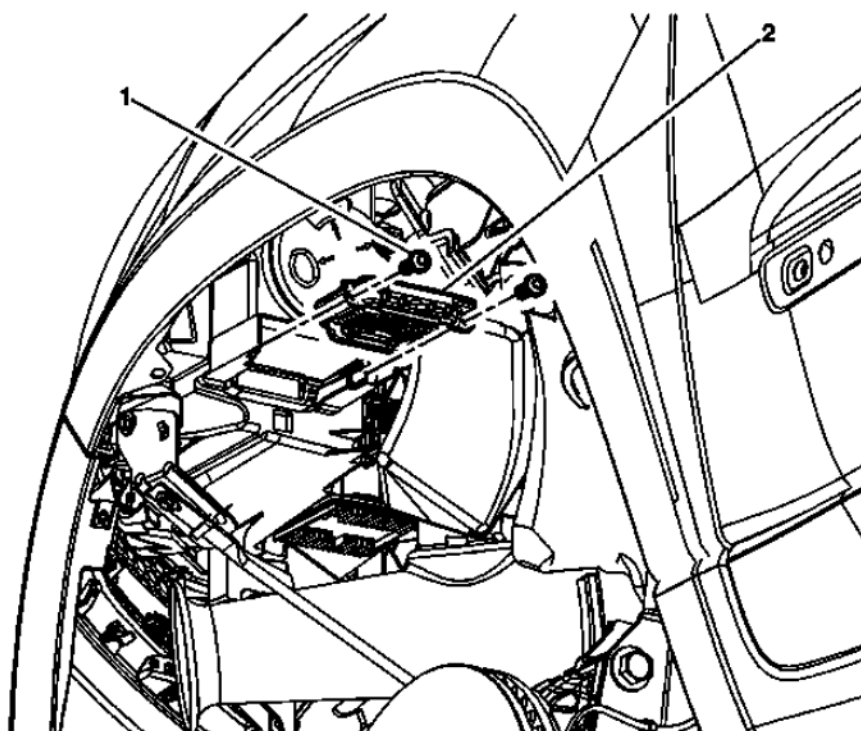


Fig. 81: View Of Torque Converter To Flywheel Bolts
Courtesy of GENERAL MOTORS COMPANY

21. Mark the relationship of the flywheel to the torque converter for reassembly.
22. Remove the 4 torque converter to flywheel bolts (1).
23. Use a transmission jack in order to support the transmission.
24. Remove the remaining transmission bolts (2-4).

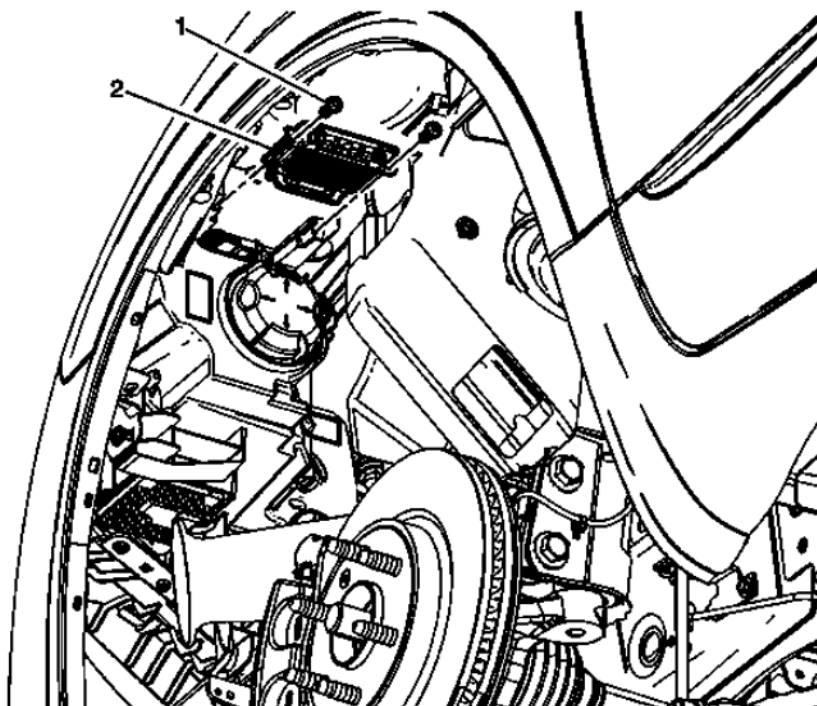


Fig. 82: Identifying Transmission Bolts
Courtesy of GENERAL MOTORS COMPANY

25. Separate the transmission from the engine.
26. Lower the transmission with the transmission jack far enough to remove the transmission.
27. Flush the transmission cooler lines. Refer to **Transmission Fluid Cooler Flushing and Flow Test** .

Installation Procedure

1. Raise the transmission with the transmission jack and position the transmission to the engine.
2. Install the transmission bolts (2-4).

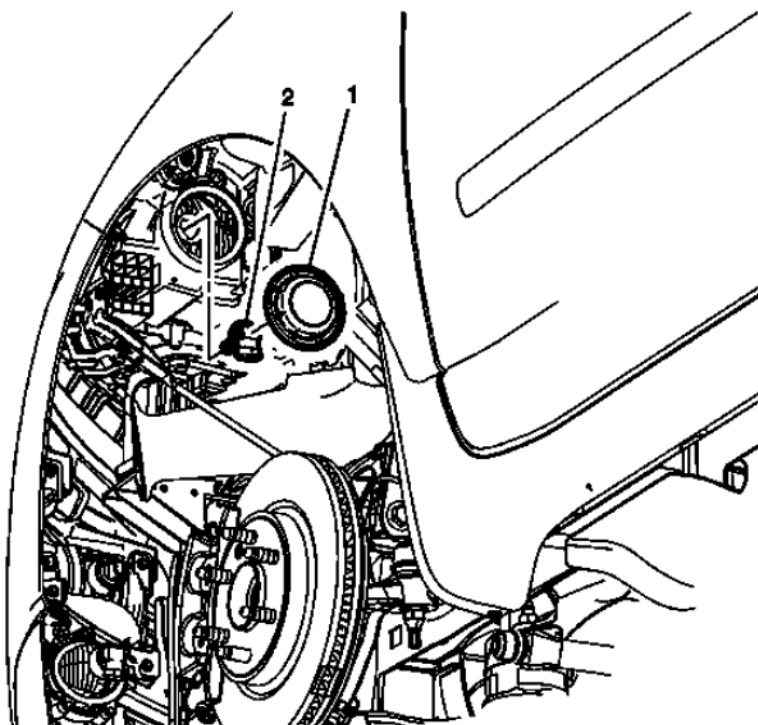


Fig. 83: Identifying Transmission Bolts
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

Tighten

Tighten bolt (2) to 75 N.m (55 lb ft).

Tighten

Tighten bolts (3) and (4) to 58 N.m (43 lb ft).

3. Remove the transmission jack.
4. Install the 4 torque converter to flywheel bolts (1).

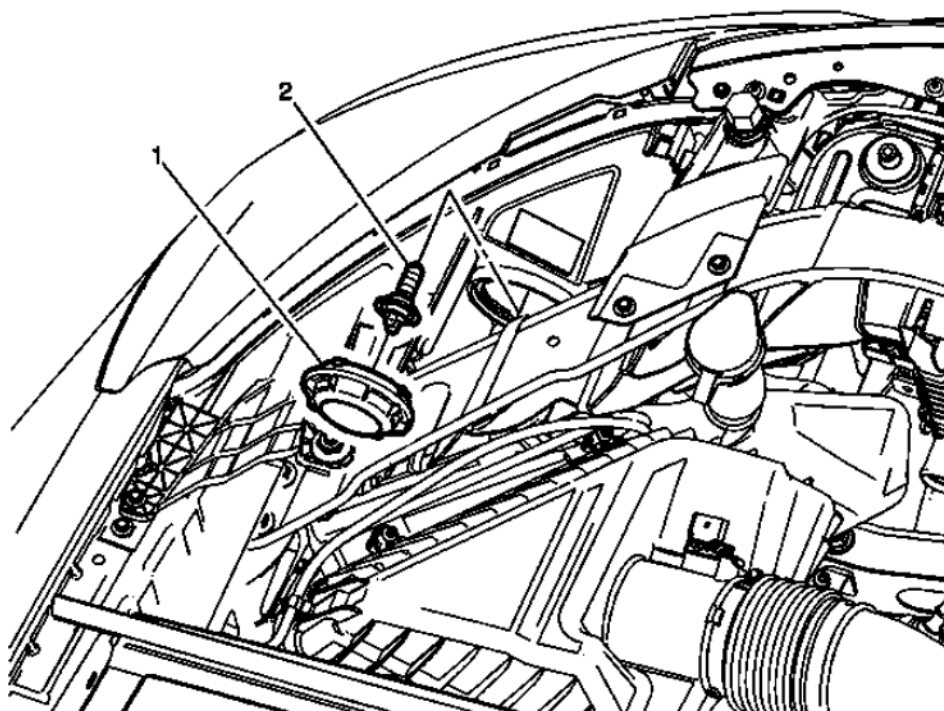


Fig. 84: View Of Torque Converter To Flywheel Bolts
Courtesy of GENERAL MOTORS COMPANY

Tighten

Tighten the bolts to 62 N.m (46 lb ft).

5. Install the starter. Refer to **Starter Replacement** .
6. Install the left transmission mount bracket to the transmission. Refer to **Transmission Mount Bracket Replacement - Left Side**.
7. Install the transfer case. Refer to **Transfer Case Assembly Replacement** .

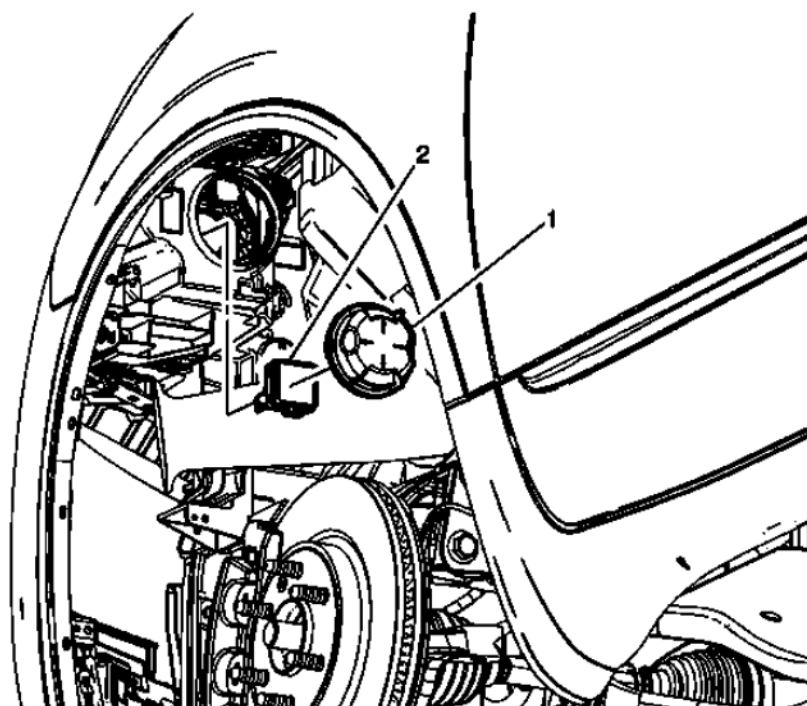


Fig. 85: Identifying Transfer Case
Courtesy of GENERAL MOTORS COMPANY

8. Install the left wheel drive shaft to the transmission. Refer to **Front Wheel Drive Shaft Replacement** .
9. Install the frame. Refer to **Drivetrain and Front Suspension Frame Replacement** .
10. Lower the vehicle.
11. Remove the engine support fixture.
12. Install the upper transmission to engine bolt (1, 2).

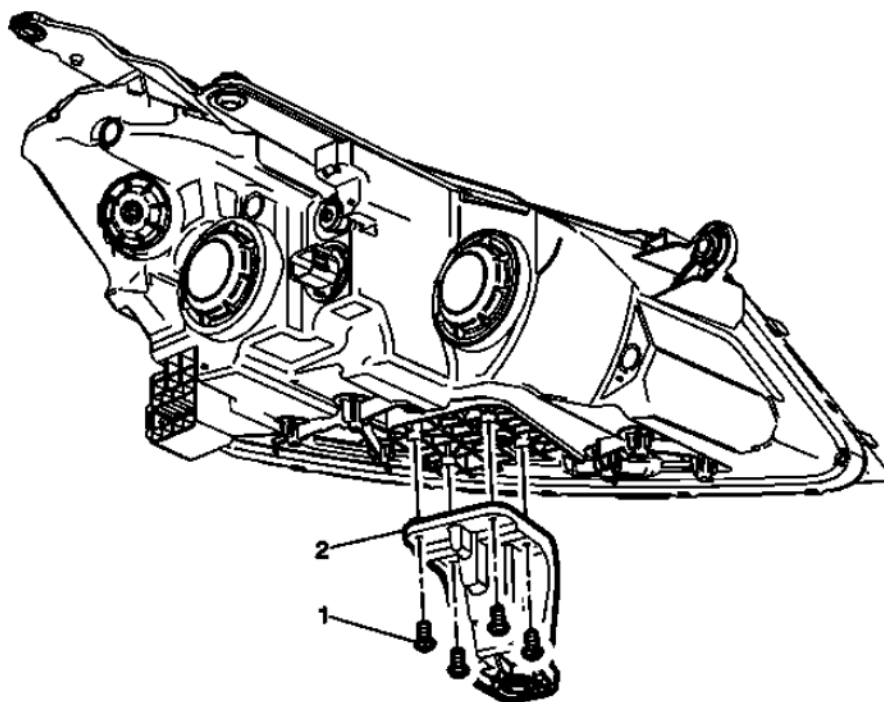


Fig. 86: Identifying Upper Transmission To Engine Bolts
Courtesy of GENERAL MOTORS COMPANY

Tighten

Tighten the bolts (1) and (2) to 58 N.m (43 lb ft).

13. Install the transmission fluid cooler outlet pipe (4) and seal to the transmission.

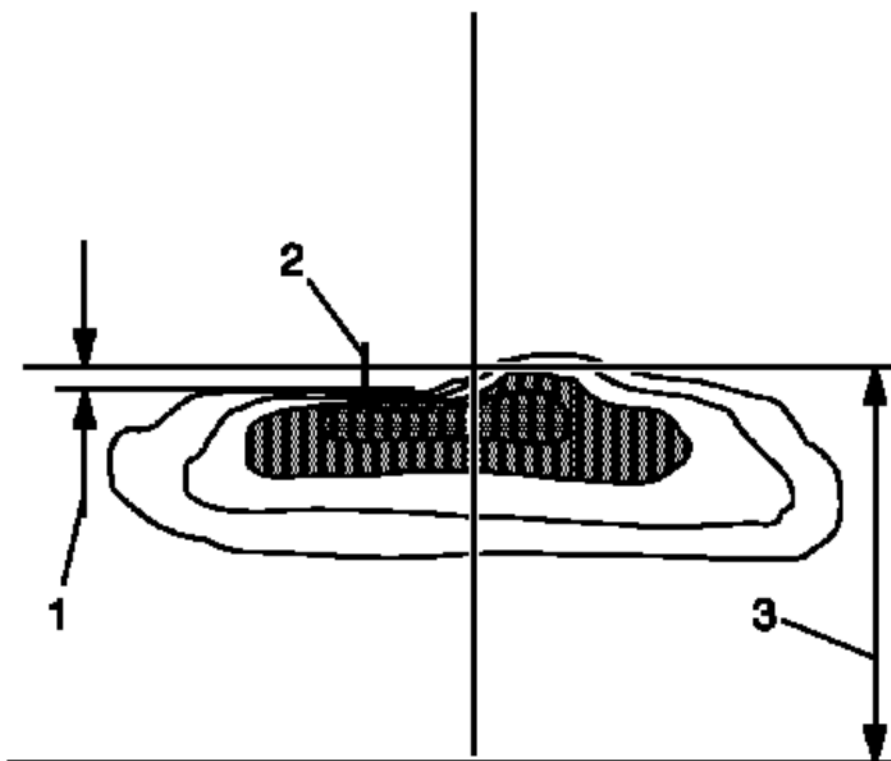


Fig. 87: Identifying Oil Cooler Hoses & Retainer Nuts
 Courtesy of GENERAL MOTORS COMPANY

14. Install the transmission fluid cooler outlet pipe nut (3).

Tighten

Tighten the nut to 22 N.m (16 lb ft).

15. Install the oil cooler outlet pipe retainer and nut (5) to the transmission control valve body cover.

Tighten

Tighten the nut to 12 N.m (106 lb in).

16. Install the transmission fluid cooler inlet pipe (1) and seal to the transmission.
17. Install the transmission fluid cooler inlet pipe nut (2).

Tighten

Tighten the nut to 22 N.m (16 lb ft).

18. Install the transmission fluid cooler inlet pipe retainer to the transmission control valve body cover.
19. Install the transmission range selector lever cable (1) to the cable bracket (2).

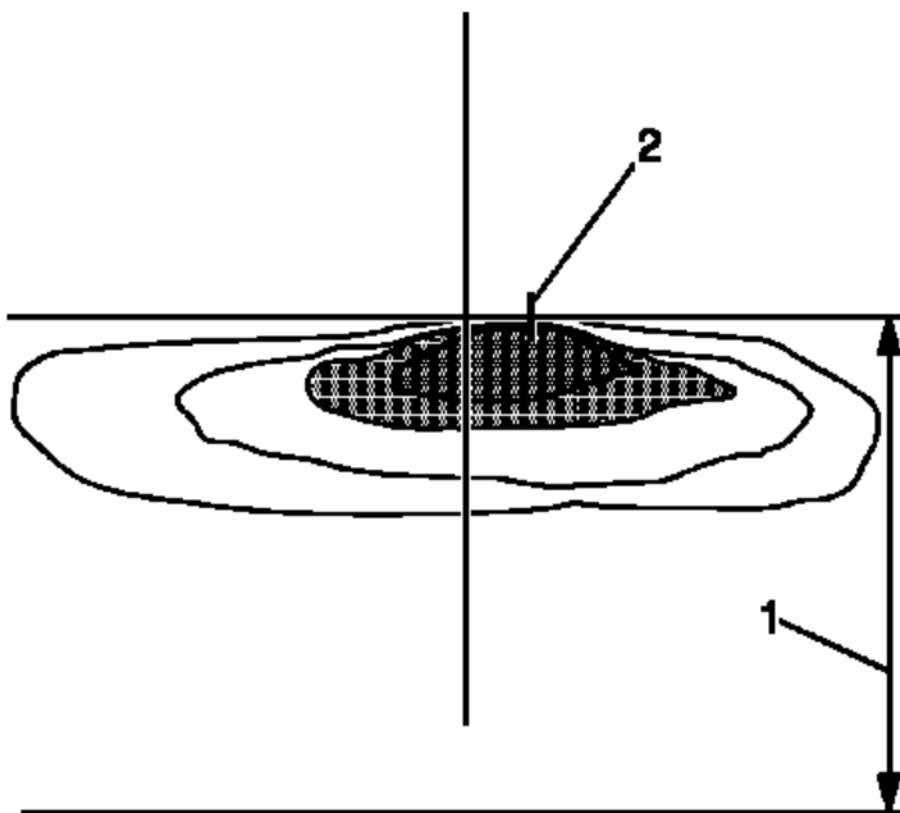


Fig. 88: View Of Transmission Range Selector Lever Cable Terminal & Lever
Courtesy of GENERAL MOTORS COMPANY

20. Connect the transmission range selector lever cable terminal (3) to the transmission manual shift lever (4).
21. Connect the control valve body TCM electrical connector (1).

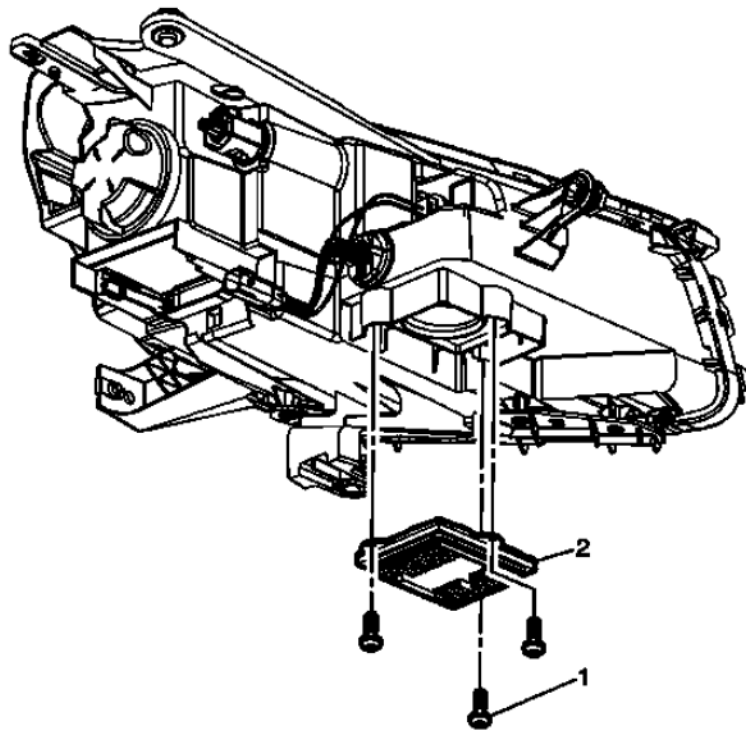


Fig. 89: Identifying Wire Harness Retainer & TCM Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

22. Install the wire harness retainer (2) to the control valve body cover stud.

Tighten

Tighten the nut to 12 N.m (106 lb in).

23. Adjust the automatic transmission range selector lever cable. Refer to **Range Selector Lever Cable Adjustment**.
24. Verify the proper fluid level of the transmission. Refer to **Transmission Fluid Level and Condition Check**.
25. Install the air cleaner assembly. Refer to **Air Cleaner Assembly Replacement**.
26. If a NEW TCM has been installed into the vehicle, the NEW module needs to be reprogrammed. Refer to **Service Programming System (SPS)**.
27. Perform the Reset Transmission Adapts. Refer to **Reset Transmission Adapts**.

NOTE: The Reset Transmission Adapts procedure must be performed when one of the following repairs have been made to the vehicle. Failure to perform the procedure after one of the following repairs may result in poor transmission performance, as well as transmission DTCs being set:

- Transmission internal service/overhaul

- Valve body repair or replacement
- Control solenoid valve assembly replacement
- TCM software/calibration update
- Any service in response to a shift quality concern

28. Road test the vehicle.

TRANSMISSION REPLACEMENT (FRONT WHEEL DRIVE)

Removal Procedure

1. Remove the air cleaner assembly. Refer to [Air Cleaner Assembly Replacement](#).
2. Remove the wire harness retainer (2) from the control valve body cover stud.

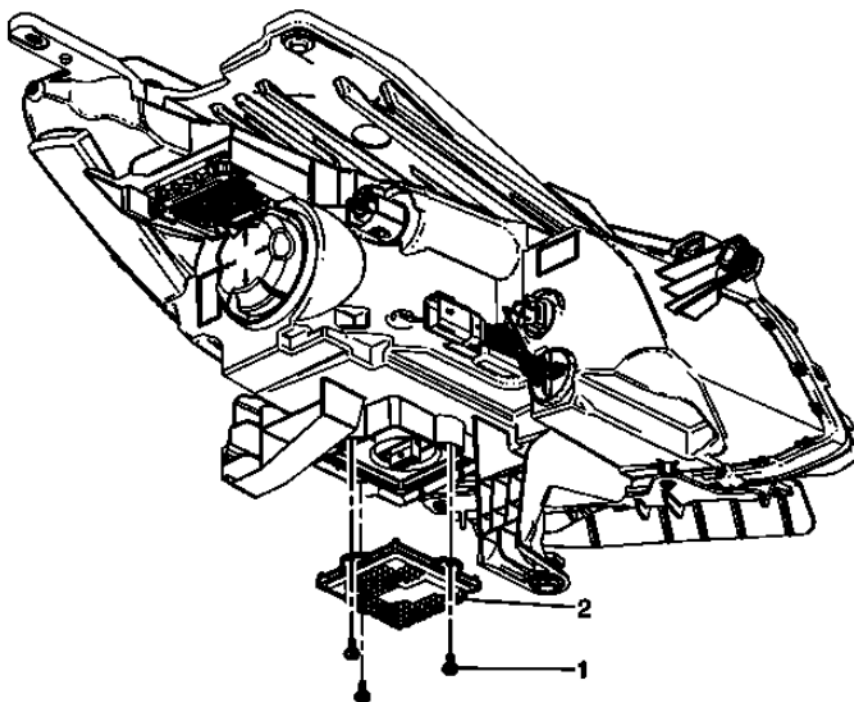


Fig. 90: Identifying Wire Harness Retainer & TCM Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

3. Disconnect the control valve body transmission control module (TCM) electrical connector (1).
4. Disconnect the transmission range selector lever cable terminal (3) from the transmission manual shift lever (4).

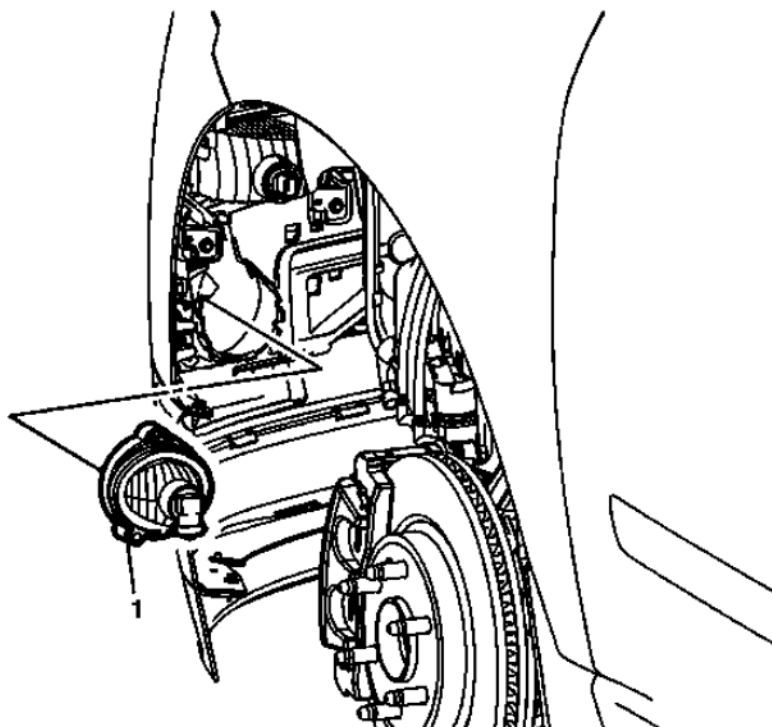


Fig. 91: View Of Transmission Range Selector Lever Cable Terminal & Lever
Courtesy of GENERAL MOTORS COMPANY

5. Press the locking tabs inward in order to release the transmission range selector lever cable (1) from the cable bracket (2).
6. Release the transmission fluid cooler inlet pipe retainer from the transmission control valve body cover.

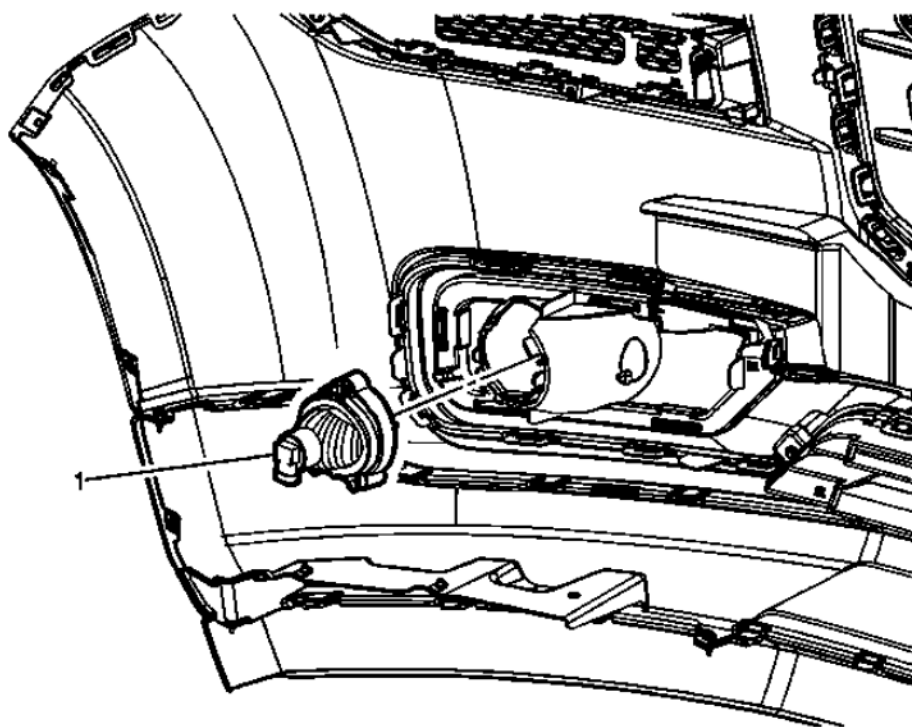


Fig. 92: Identifying Oil Cooler Hoses & Retainer Nuts
Courtesy of GENERAL MOTORS COMPANY

7. Remove the transmission fluid cooler inlet pipe nut (2).
8. Remove the transmission fluid cooler inlet pipe (1) and seal from the transmission.
9. Remove the oil cooler outlet pipe retainer nut (5) and retainer from the transmission control valve body cover.
10. Remove the transmission fluid cooler outlet pipe nut (3).
11. Remove the transmission fluid cooler outlet pipe (4) and seal from the transmission.
12. Plug and/or cap both fluid cooler pipes and transmission to prevent contamination.
13. Remove the upper transmission to engine bolts (1, 2).

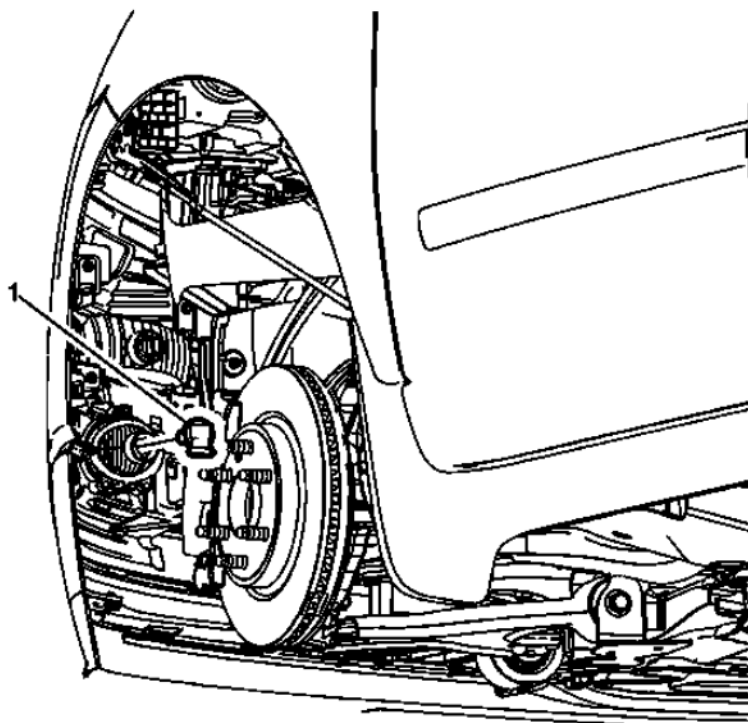


Fig. 93: Identifying Upper Transmission To Engine Bolts
Courtesy of GENERAL MOTORS COMPANY

14. Install the engine support fixture. Refer to **Engine Support Fixture** .
15. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
16. Remove the frame. Refer to **Drivetrain and Front Suspension Frame Replacement** .
17. Disconnect the left wheel drive shaft from the transmission. Refer to **Front Wheel Drive Shaft Replacement** .
18. Remove the intermediate drive shaft. Refer to **Front Wheel Drive Intermediate Shaft Replacement** .
19. Remove the transmission brace bolts.

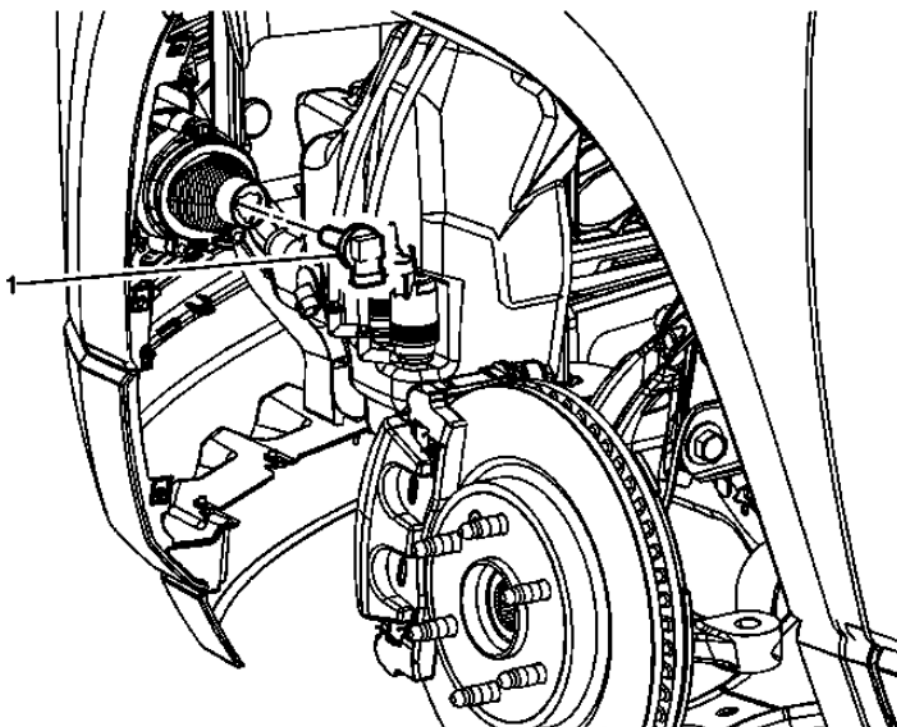


Fig. 94: Identifying Transmission Brace Bolts
Courtesy of GENERAL MOTORS COMPANY

20. Remove the transmission brace.
21. Remove the left transmission mount bracket from the transmission. Refer to **Transmission Mount Bracket Replacement - Left Side**.
22. Remove the starter. Refer to **Starter Replacement**.

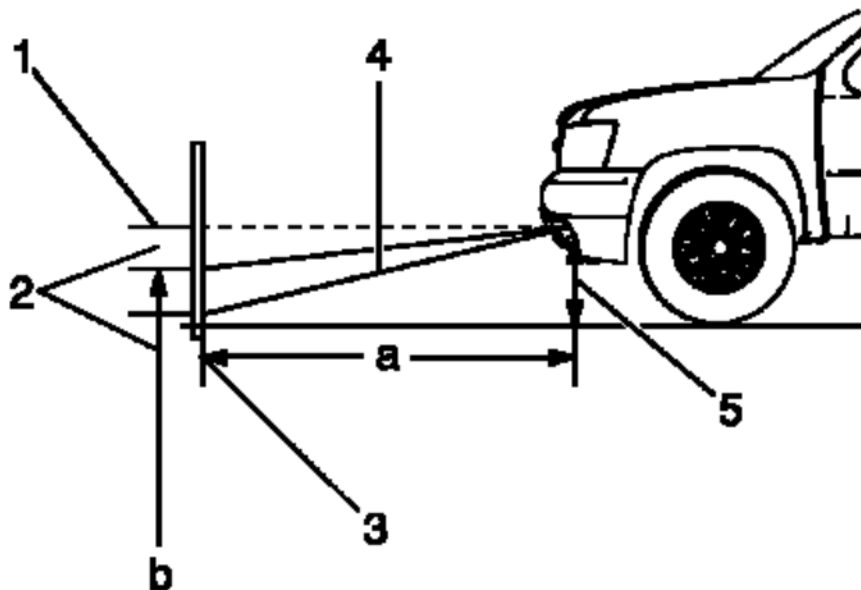


Fig. 95: View Of Torque Converter To Flywheel Bolts
 Courtesy of GENERAL MOTORS COMPANY

23. Mark the relationship of the flywheel to the torque converter for reassembly.
24. Remove the 4 torque converter to flywheel bolts (1).
25. Use a transmission jack in order to support the transmission.
26. Remove the flywheel inspection cover bolts (2, 3).

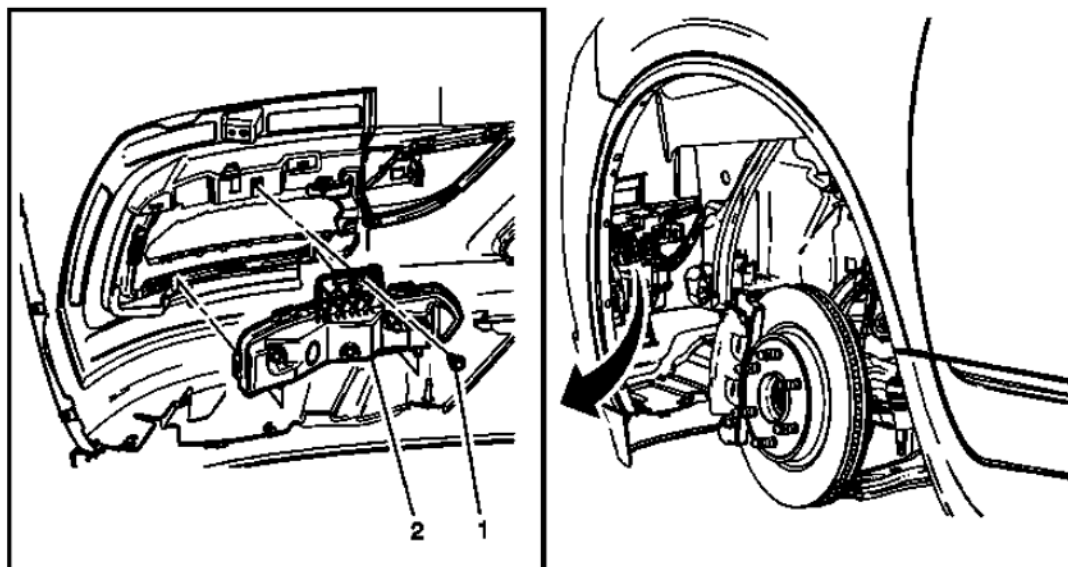


Fig. 96: Identifying Transmission Bolts
Courtesy of GENERAL MOTORS COMPANY

27. Remove the flywheel inspection cover (1).
28. Remove the remaining transmission bolts (4).
29. Separate the transmission from the engine.
30. Lower the transmission with the transmission jack far enough to remove the transmission.
31. Flush the transmission cooler lines. Refer to **Transmission Fluid Cooler Flushing and Flow Test** .

Installation Procedure

1. Raise the transmission with the transmission jack and position the transmission to the engine.
2. Install the transmission bolts (2, 3-4).

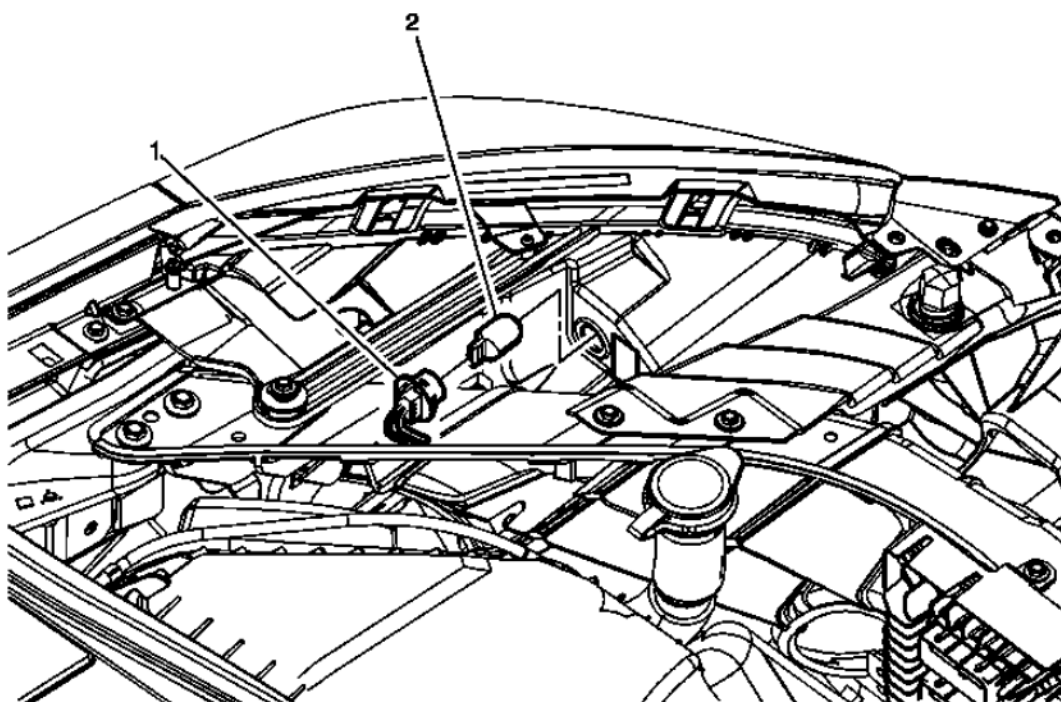


Fig. 97: Identifying Transmission Bolts
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

Tighten

Tighten bolt (2) to 75 N.m (55 lb ft).

Tighten

Tighten bolts (3) and (4) to 58 N.m (43 lb ft).

3. Install the flywheel inspection cover (1).
4. Install the flywheel inspection cover bolts (2, 3).

Tighten

Tighten the bolt to 75 N.m (55 lb ft).

5. Remove the transmission jack.
6. Install the 4 torque converter to flywheel bolts (1).

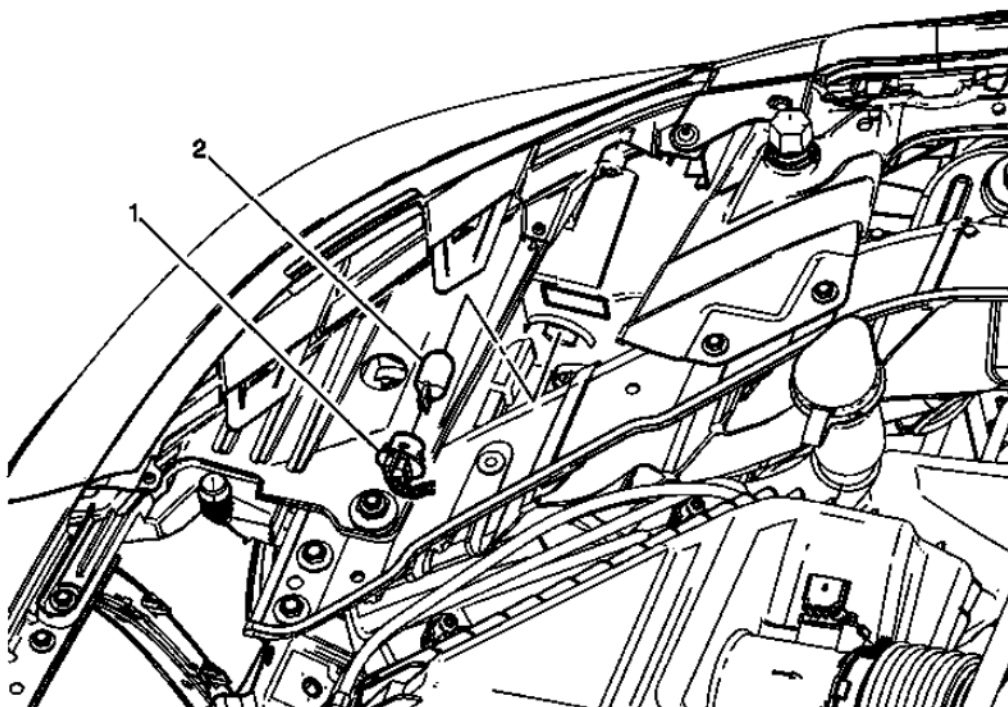


Fig. 98: View Of Torque Converter To Flywheel Bolts
Courtesy of GENERAL MOTORS COMPANY

Tighten

Tighten the bolts to 62 N.m (46 lb ft).

7. Install the starter. Refer to **Starter Replacement** .
8. Install the left transmission mount bracket to the transmission. Refer to **Transmission Mount Bracket Replacement - Left Side**.
9. Install the transmission brace.

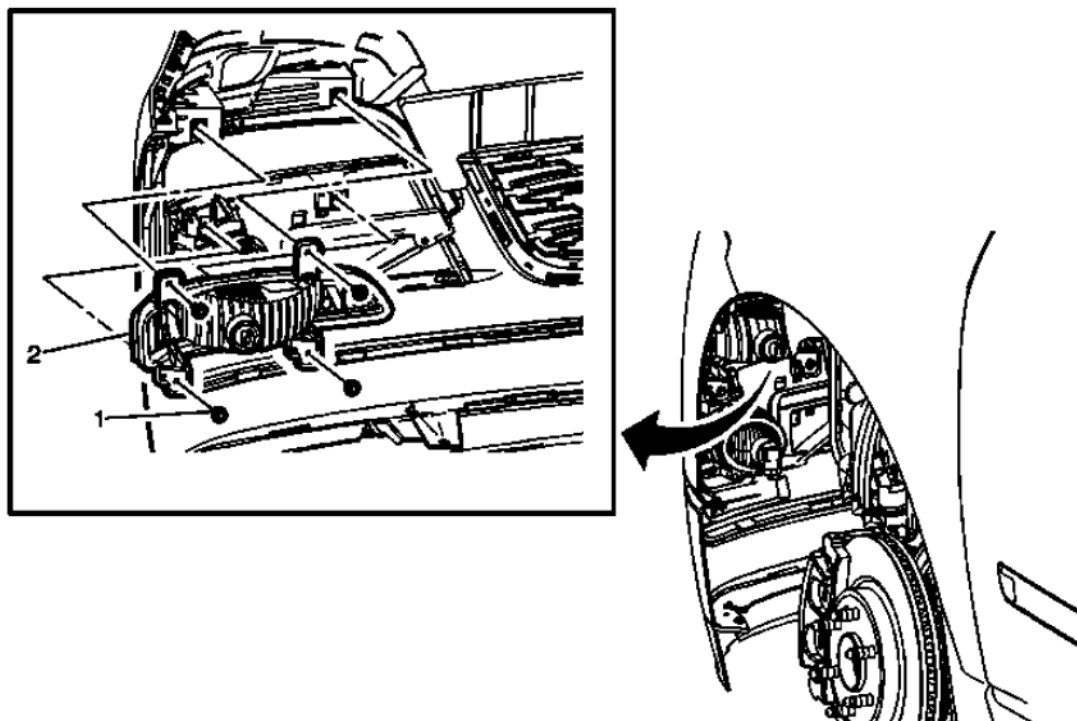


Fig. 99: Identifying Transmission Brace Bolts
Courtesy of GENERAL MOTORS COMPANY

10. Install the transmission brace bolts.

Tighten

Tighten the bolt/stud to 50 N.m (37 lb ft).

11. Install the intermediate drive shaft. Refer to **Front Wheel Drive Intermediate Shaft Replacement** .
12. Install the left wheel drive shaft to the transmission. Refer to **Front Wheel Drive Shaft Replacement** .
13. Install the frame. Refer to **Drivetrain and Front Suspension Frame Replacement** .
14. Lower the vehicle.
15. Remove the engine support fixture.
16. Install the upper transmission to engine bolt (1, 2).

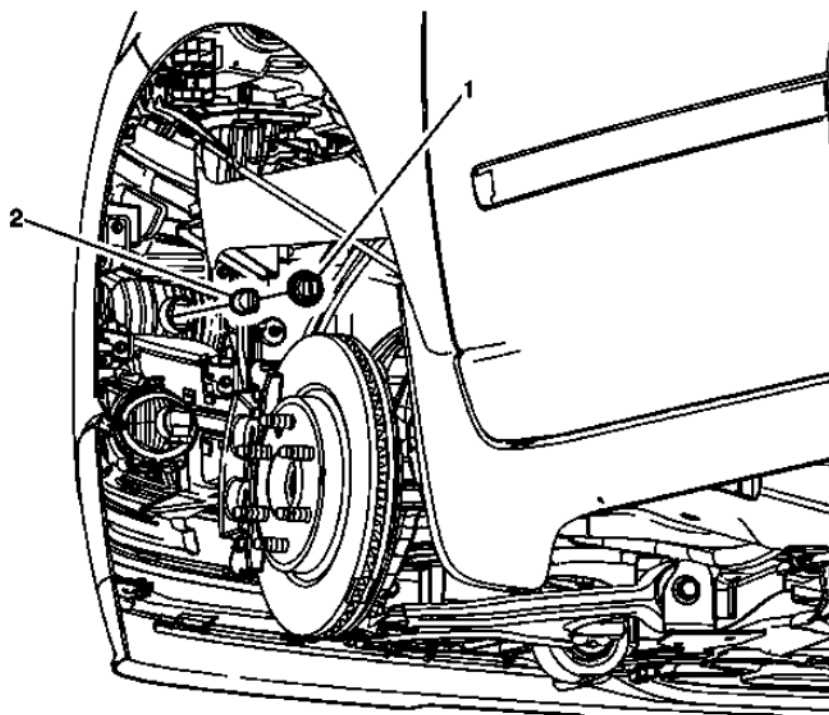


Fig. 100: Identifying Upper Transmission To Engine Bolts
Courtesy of GENERAL MOTORS COMPANY

Tighten

Tighten the bolts (1 and 2) to 58 N.m (43 lb ft).

17. Install the transmission fluid cooler outlet pipe (4) and seal to the transmission.

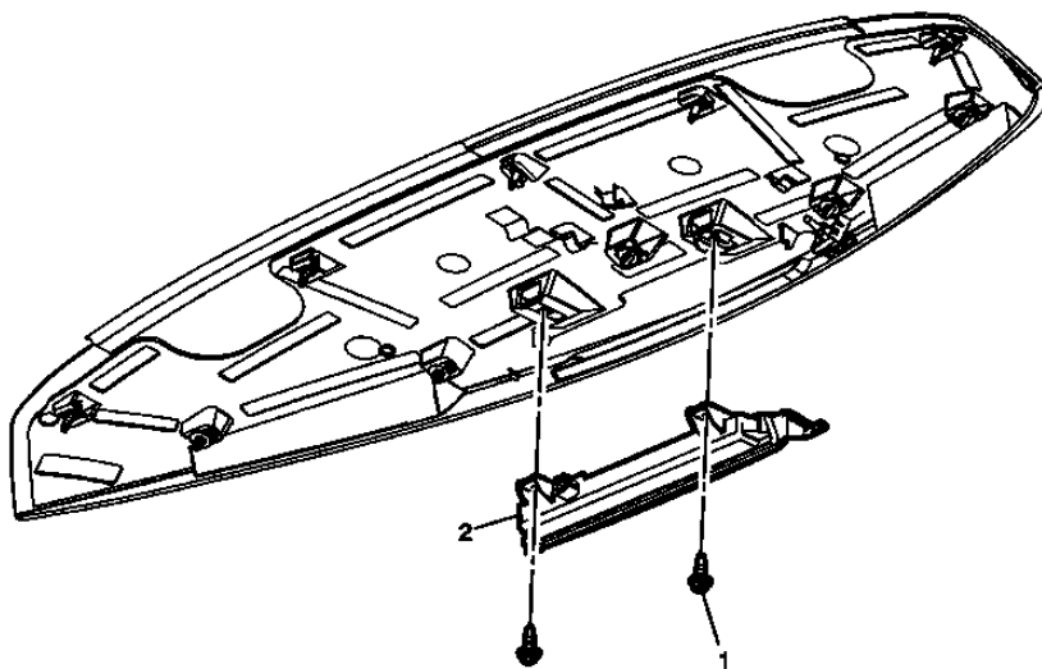


Fig. 101: Identifying Oil Cooler Hoses & Retainer Nuts
Courtesy of GENERAL MOTORS COMPANY

18. Install the transmission fluid cooler outlet pipe nut (3).

Tighten

Tighten the nut to 22 N.m (16 lb ft).

19. Install the oil cooler outlet pipe retainer and nut (5) to the transmission control valve body cover.

Tighten

Tighten the nut to 12 N.m (106 lb in).

20. Install the transmission fluid cooler inlet pipe (1) and seal to the transmission.

21. Install the transmission fluid cooler inlet pipe nut (2).

Tighten

Tighten the nut to 22 N.m (16 lb ft).

22. Install the transmission fluid cooler inlet pipe retainer to the transmission control valve body cover.

23. Install the transmission range selector lever cable (1) to the cable bracket (2).

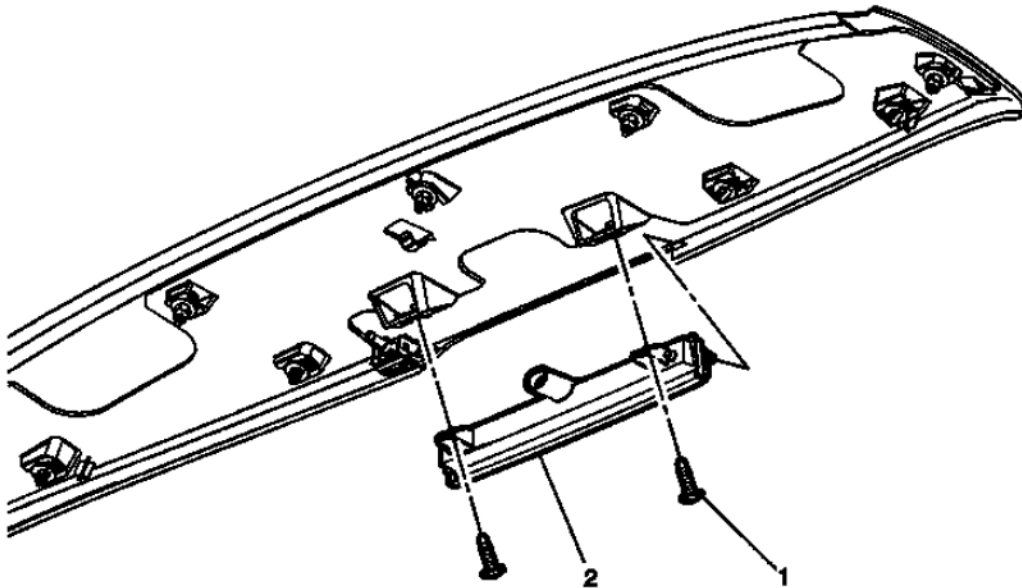


Fig. 102: View Of Transmission Range Selector Lever Cable Terminal & Lever
Courtesy of GENERAL MOTORS COMPANY

24. Connect the transmission range selector lever cable terminal (3) to the transmission manual shift lever (4).
25. Connect the control valve body TCM electrical connector (1).

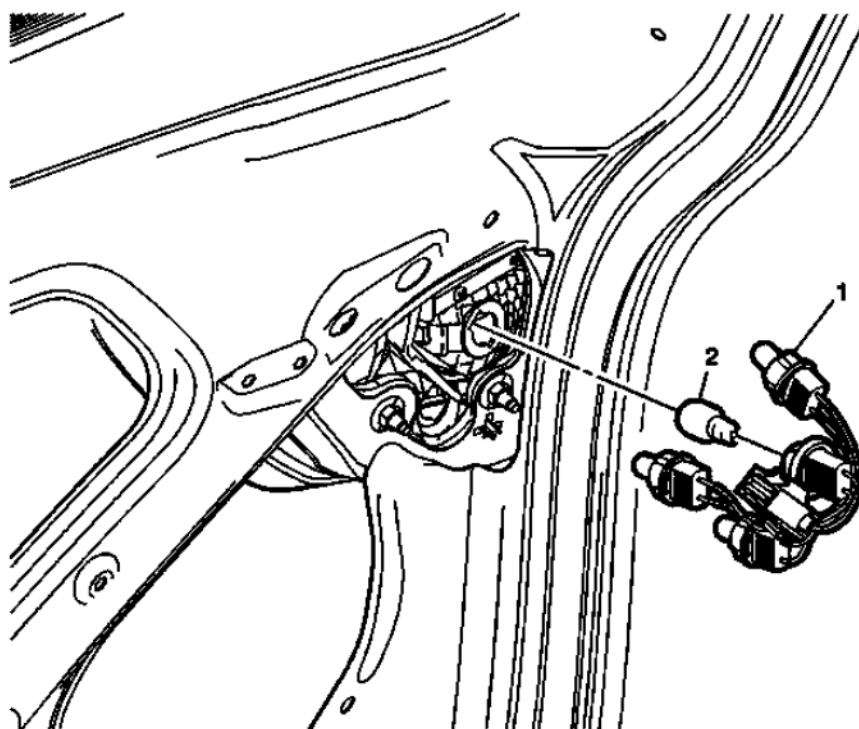


Fig. 103: Identifying Wire Harness Retainer & TCM Electrical Connector
 Courtesy of GENERAL MOTORS COMPANY

26. Install the wire harness retainer (2) to the control valve body cover stud.

Tighten

Tighten the nut to 12 N.m (106 lb in).

27. Adjust the automatic transmission range selector lever cable. Refer to **Range Selector Lever Cable Adjustment**.
28. Verify the proper fluid level of the transmission. Refer to **Transmission Fluid Level and Condition Check**.
29. Install the air cleaner assembly. Refer to **Air Cleaner Assembly Replacement**.
30. If a NEW TCM has been installed into the vehicle, the NEW module needs to be reprogrammed. Refer to **Service Programming System (SPS)**.
31. Perform the Reset Transmission Adapts. Refer to **Reset Transmission Adapts**.

NOTE: The Reset Transmission Adapts procedure must be performed when one of the following repairs have been made to the vehicle. Failure to perform the procedure after one of the following repairs may result in poor transmission performance, as well as transmission DTCs being set:

- Transmission internal service/overhaul

2014 GMC Acadia Denali

2014 TRANSMISSION Automatic Transmission - 6T75 (M7V M7X) - Repair Instructions - On Vehicle - Acadia, Enclave And Traverse

- Valve body repair or replacement
- Control solenoid valve assembly replacement
- TCM software/calibration update
- Any service in response to a shift quality concern

32. Road test the vehicle.