Servicing - Corvette

APPLICATION

TRANSMISSION APPLICATION

Application	Transmission Model (RPO Code)
Corvette	
Convertible & Coupe	Borg-Warner T56 6-Speed (MM6)
Z06	Borg-Warner T56 6-Speed (M12)

LUBRICATION

SERVICE INTERVALS

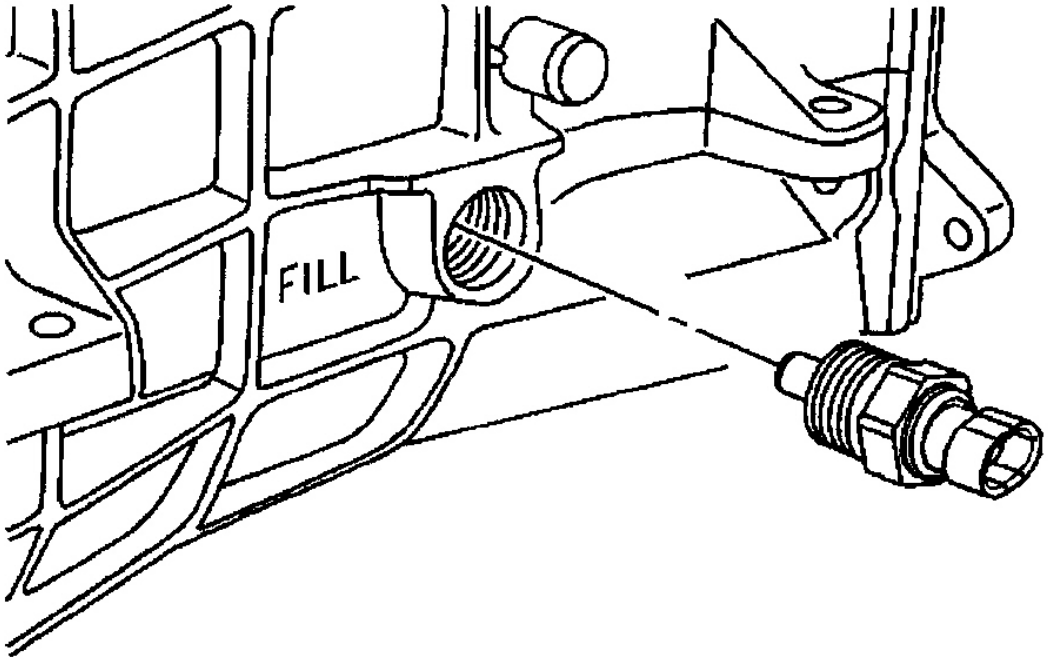
Transmission fluid replacement is not required. Check fluid level at each engine oil change. See **CHECKING FLUID LEVELS** .

CHECKING FLUID LEVELS

NOTE: Some models may be equipped with a Transmission Fluid Temperature (TFT) sensor, and is installed in place of transmission fill plug.

1. Raise and suitably support the vehicle. Ensure vehicle is level. Clean any dirt from around the fill plug or TFT sensor, if equipped. Disconnect TFT sensor harness connector if necessary. Remove the transmission fill plug (or TFT sensor) from the transmission. See **Fig. 1** .
2. Inspect the transmission fluid level. Ensure transmission fluid is even with bottom of fill plug hole. Add appropriate fluid, if necessary. See **RECOMMENDED FLUIDS** .
3. Install the transmission fill plug (or TFT sensor) to the transmission. Tighten to specification. See **TORQUE SPECIFICATIONS** . Connect TFT sensor harness connector, if necessary.
4. Lower the vehicle.

cardiagn.com



G00194990

Fig. 1: Locating Transmission Fill Hole (With TFT Sensor)
Courtesy of GENERAL MOTORS CORP.

RECOMMENDED FLUIDS

Manufacturer recommends Dexron-III(R) ATF.

FLUID CAPACITIES

TRANSMISSION FLUID CAPACITIES

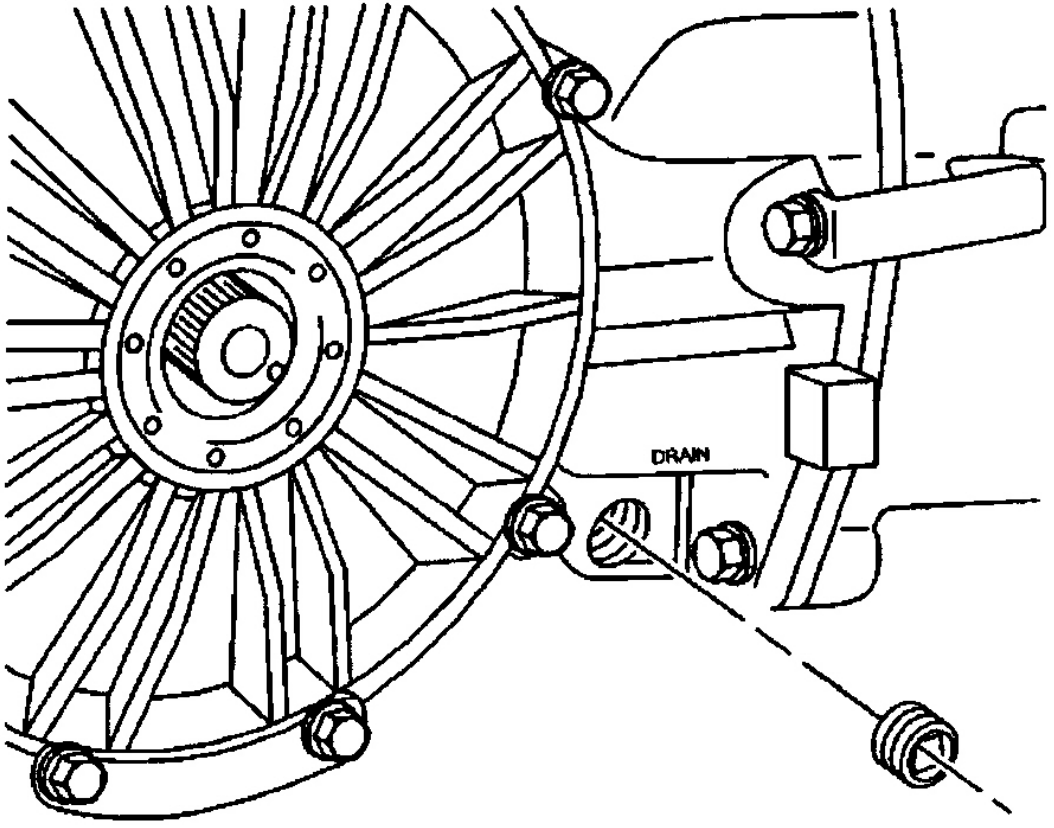
Application	(1) Qts. (L)
Corvette	4.1 (3.9)
(1) Fluid capacities listed are approximate. Always use procedure specified under **CHECKING FLUID LEVELS** when filling transmission.	

DRAINING & FILLING

1. Raise and suitably support the vehicle. Ensure vehicle is level. Clean away all dirt and debris from the transmission fluid drain plug area.
2. Remove the drain plug. See **Fig. 2** . Allow the transmission to drain. Install the transmission fluid drain plug. Tighten the transmission fluid drain plug to specification. See **TORQUE SPECIFICATIONS** .

cardiagn.com

3. Remove transmission fill plug. See **CHECKING FLUID LEVELS** . Fill transmission with appropriate fluid to proper level.
4. Install the transmission fill plug (or TFT sensor) to the transmission. Tighten to specification. See **TORQUE SPECIFICATIONS** . Connect TFT sensor harness connector, if necessary. Lower the vehicle.



G00094582

Fig. 2: Locating Transmission Drain Plug
Courtesy of GENERAL MOTORS CORP.

ADJUSTMENTS

WARNING: Vehicles are equipped with Supplemental Inflatable Restraint (SIR) system. When servicing vehicle, use care to avoid accidental air bag deployment. SIR system-related components are located in various locations throughout interior and exterior of vehicle, depending on application. Do not use electrical test equipment on or near these circuits.

cardiagn.com

If necessary, deactivate SIR system before servicing components. See AIR BAG DEACTIVATION PROCEDURES article in GENERAL INFORMATION.

SHIFT LINKAGE

1. Apply the parking brake.
2. Remove the shift control closeout boot. See **SHIFT CONTROL SHIFT CLOSEOUT BOOT** under REMOVAL & INSTALLATION.
3. Place the shifter into NEUTRAL.
4. Press down to engage the shift control neutral lock pin. See **Fig. 3** .
5. Loosen the transmission shift rod clamp bolt. See **Fig. 4** .
6. Loosen the shift control mounting bolts.
7. Check that the shift control locator (on the underside of the shift control) is installed into the shifter bracket on the side of the driveline support assembly.
8. Tighten the shift control mounting bolts to specification. See **TORQUE SPECIFICATIONS** .
9. Tighten the transmission shift rod clamp bolt to specification. See **TORQUE SPECIFICATIONS** .
10. Lift to release the shift control neutral lock pin.
11. Install the shift control closeout boot. See **SHIFT CONTROL SHIFT CLOSEOUT BOOT** under REMOVAL & INSTALLATION.
12. Release the parking brake.

cardiagn.com

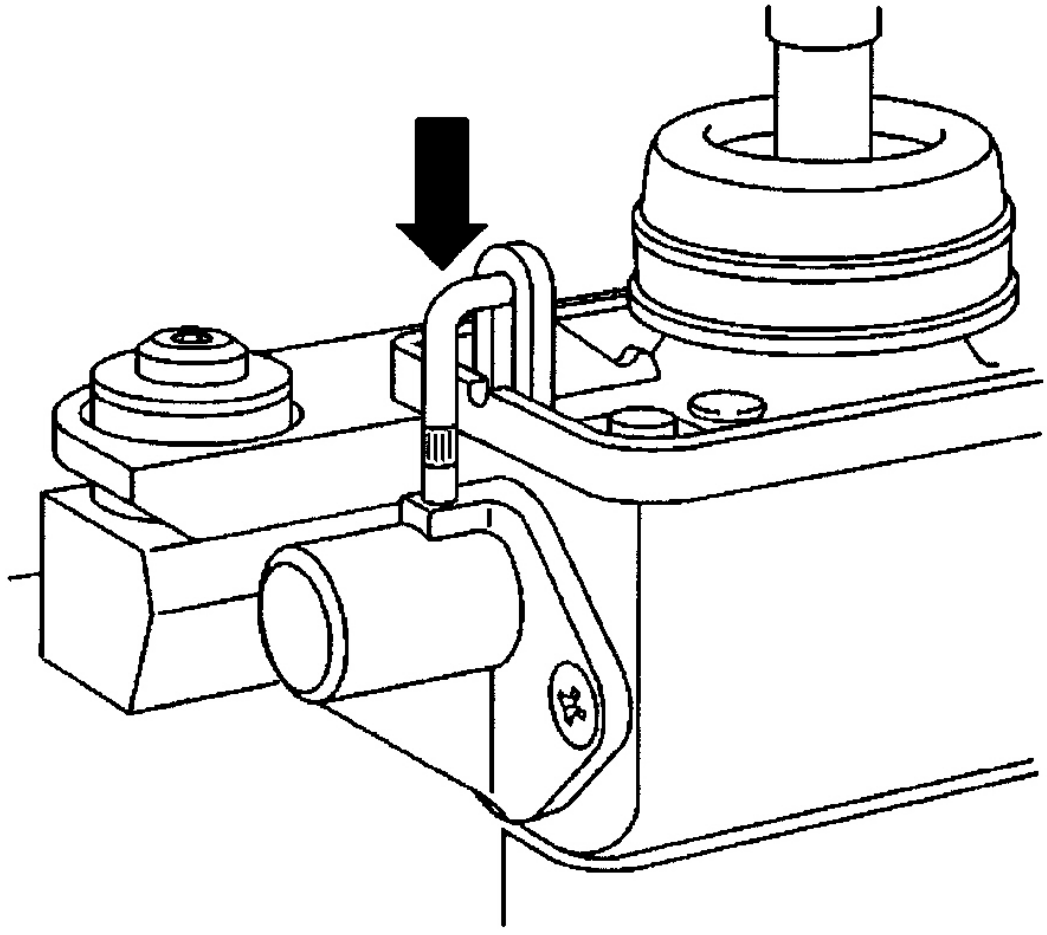


Fig. 3: Engaging/Disengaging Shift Control Neutral Lock Pin
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

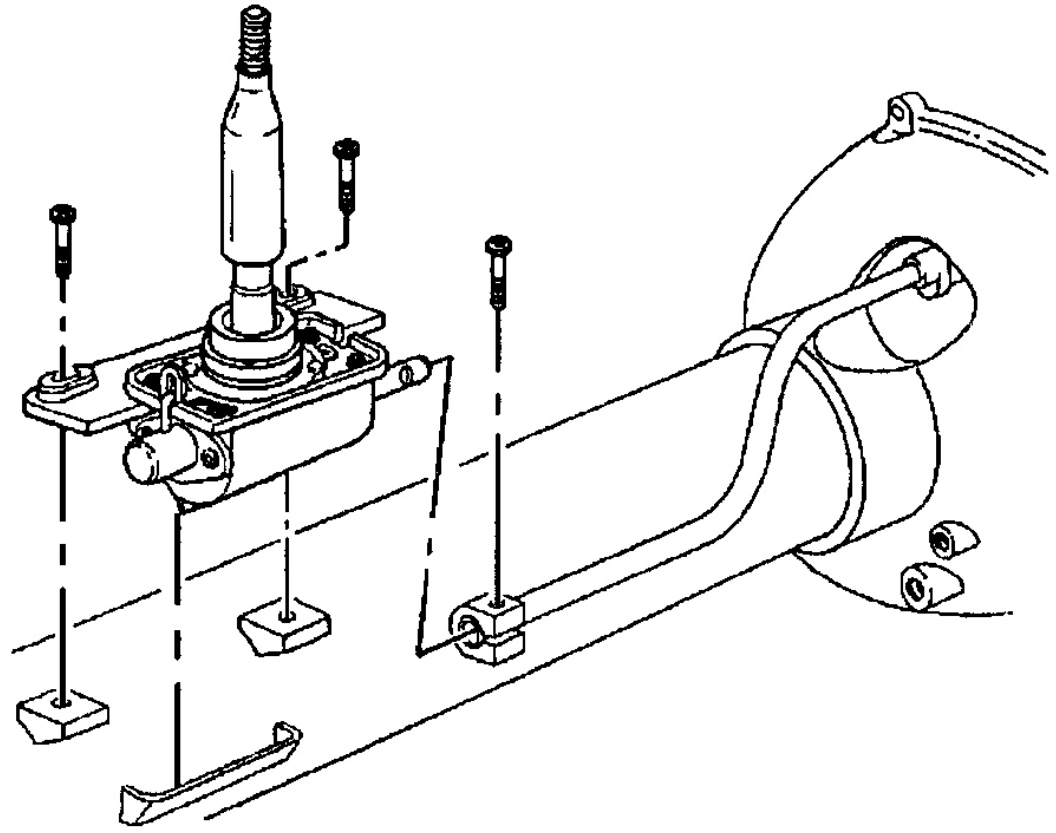


Fig. 4: Removing/Installing Shift Control Assembly
Courtesy of GENERAL MOTORS CORP.

REMOVAL & INSTALLATION

WARNING: Vehicles are equipped with Supplemental Inflatable Restraint (SIR) system. When servicing vehicle, use care to avoid accidental air bag deployment. SIR system-related components are located in various locations throughout interior and exterior of vehicle, depending on application. Do not use electrical test equipment on or near these circuits. If necessary, deactivate SIR system before servicing components. See AIR BAG DEACTIVATION PROCEDURES article in GENERAL INFORMATION.

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN

cardiagn.com

PROCEDURES article in GENERAL INFORMATION before disconnecting battery.

NOTE: **Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fasteners requiring replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use paints, lubricants, or corrosion inhibitors on fasteners or fastener joint surfaces unless specified. These coatings affect fastener torque and joint clamping force, and may damage the fastener. Use the correct tightening sequence and specifications when installing fasteners in order to avoid damage to parts and systems.**

BACK-UP LIGHT SWITCH

Removal

Raise and suitably support the vehicle. Remove the catalytic converter. Disconnect the back-up light switch harness connector. Remove the back-up light switch. See **Fig. 5** .

cardiagn.com

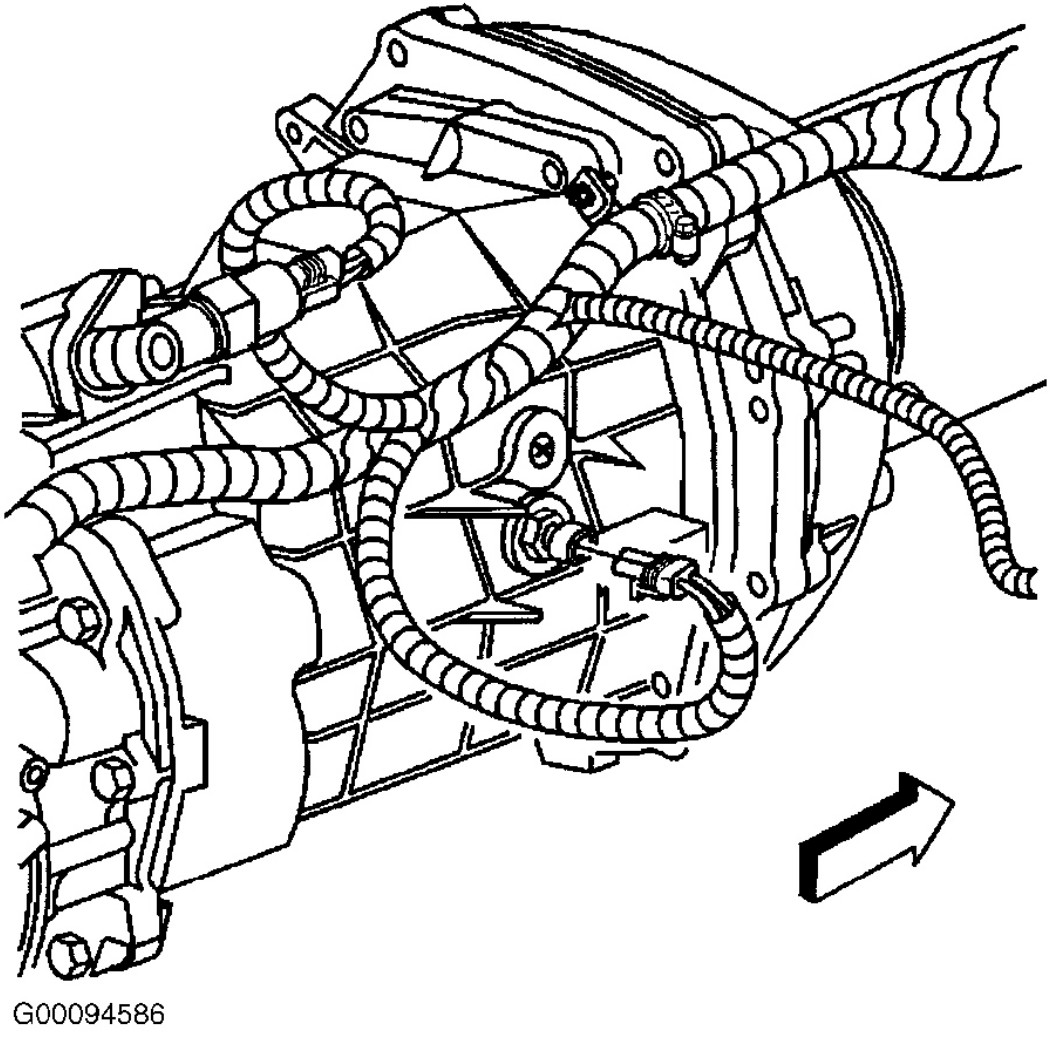


Fig. 5: Locating Back-Up Light Switch
Courtesy of GENERAL MOTORS CORP.

Installation

Install the back-up light switch. Tighten the back-up light switch to specification. See **TORQUE SPECIFICATIONS** . Connect the back-up light switch harness connector. See **Fig. 5** . Install the catalytic converter. Lower the vehicle.

GEAR SELECT/SKIP SHIFT SOLENOID

Removal

Raise and suitably support the vehicle. Disconnect the gear select solenoid harness connector. Using the Gear

cardiagn.com

Select/Reverse Lock-Out Solenoid Socket (J-41099), remove the gear select solenoid. See **Fig. 6** .

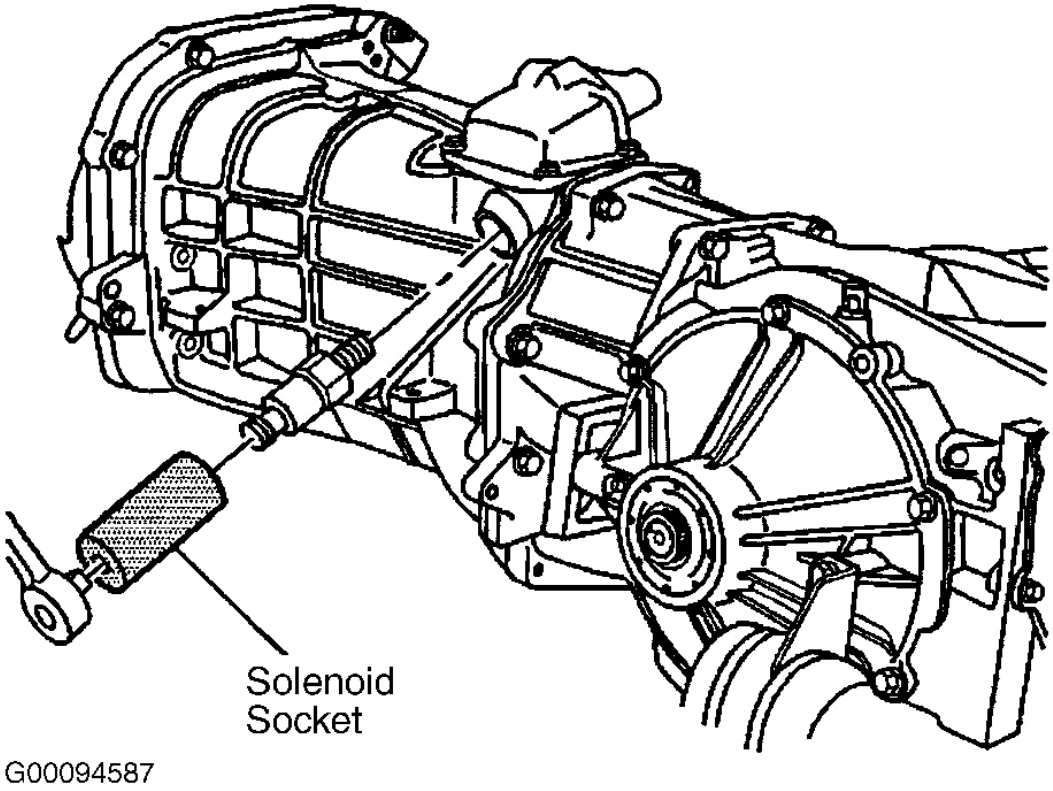


Fig. 6: Removing & Installing Gear Select/Skip Shift Solenoid
Courtesy of GENERAL MOTORS CORP.

Installation

Using the gear select/reverse lock-out solenoid socket, install the gear select/skip shift solenoid. See **Fig. 6** . Tighten the gear select/reverse lock-out solenoid to specification. See **TORQUE SPECIFICATIONS** . Connect the gear select solenoid harness connector. Lower the vehicle.

REVERSE LOCK-OUT SOLENOID

Removal

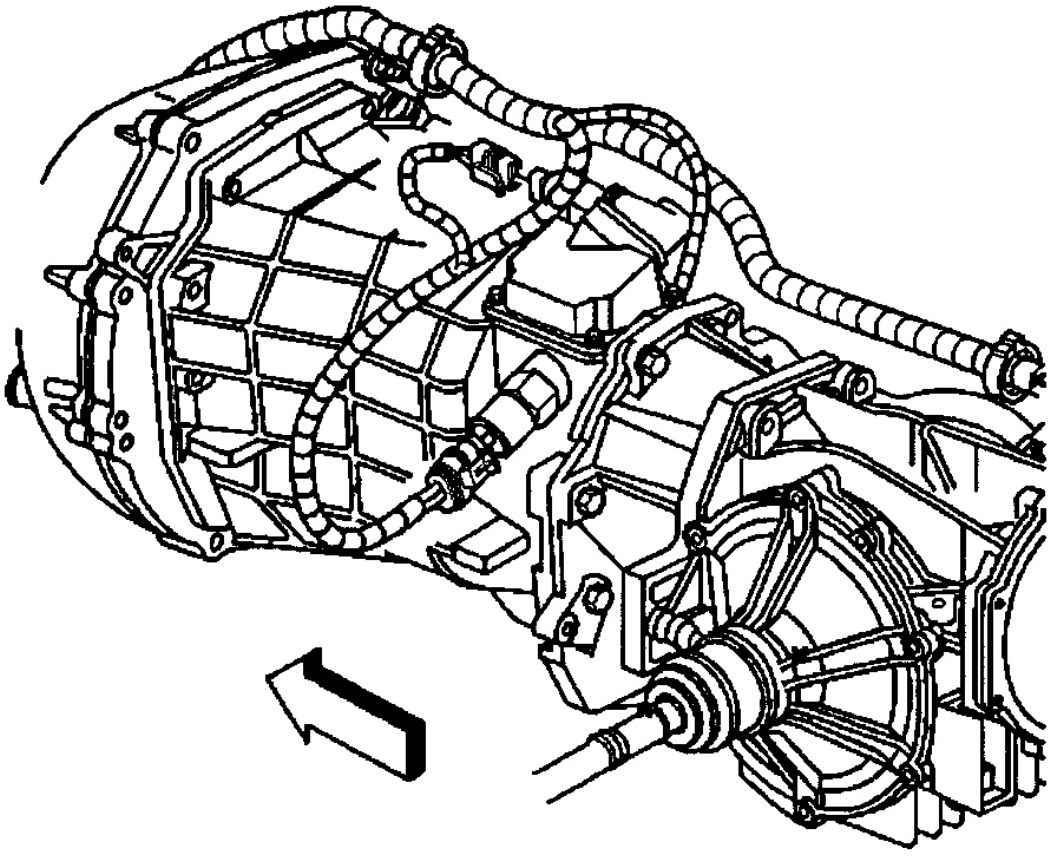
1. Disconnect the negative battery cable. Raise and suitably support the vehicle. Remove the rear tire and wheel assemblies. Remove the intermediate exhaust pipe-to-muffler bolts.
2. Tie off the mufflers to the underbody to support out of the way. Remove the rear transverse spring. See appropriate REAR article in SUSPENSION. Disconnect the wiring harness and brake pipe clip retainers from the rear suspension crossmember.

cardiagn.com

3. Position a transmission jack under the rear suspension crossmember and firmly secure the crossmember to the jack. Using hand tools ONLY, remove the rear suspension crossmember mounting nuts.

NOTE: Observe the clearance between the driveline and the driveline tunnel closeout panel.

4. Slowly lower the rear suspension crossmember, along with the attached driveline, approximately 1 1/2". Lower the rear suspension crossmember and driveline for access to the reverse lock-out solenoid.
5. Disconnect the reverse lock-out solenoid harness connector. See **Fig. 7** . Using the Gear Select/Reverse Lock-Out Solenoid Socket (J-41099), remove the reverse lock-out solenoid. See **Fig. 8** .



G00094589

Fig. 7: Identifying Reverse Lock-Out Solenoid
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

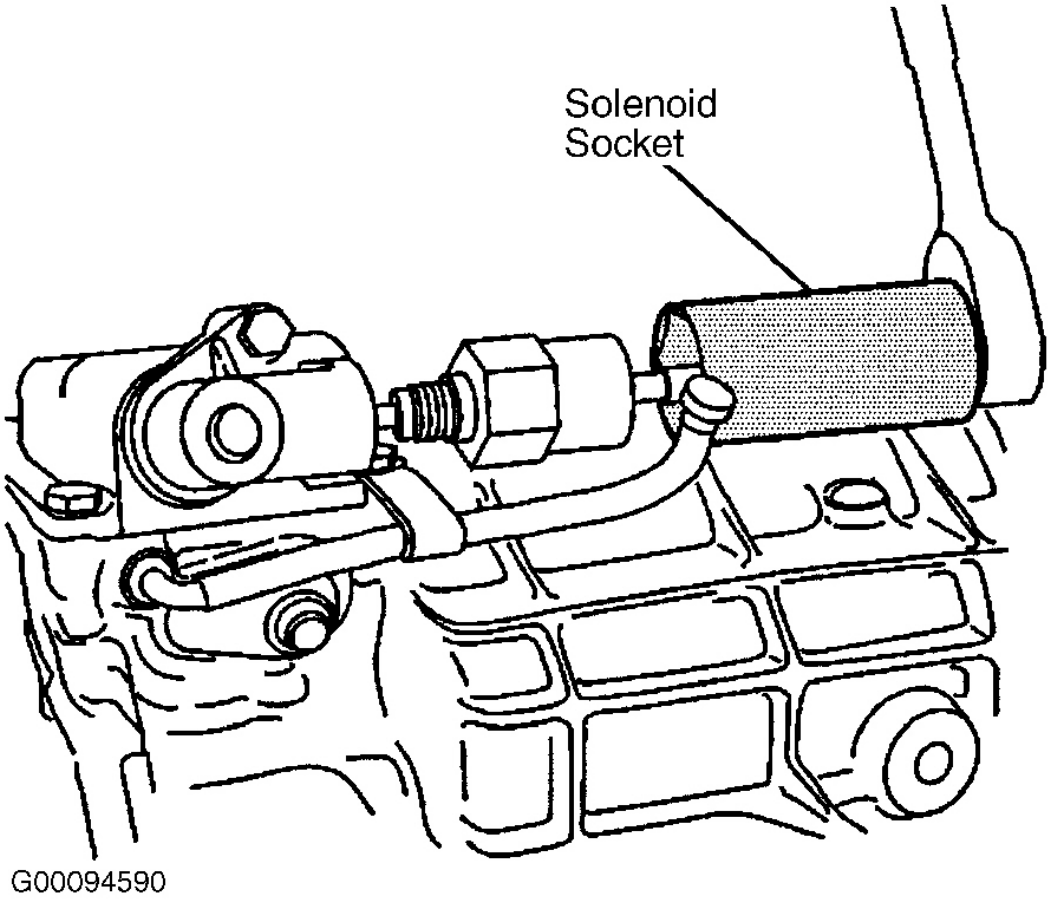


Fig. 8: Removing & Installing Reverse Lock-Out Solenoid
Courtesy of GENERAL MOTORS CORP.

Installation

1. Using the gear select/reverse lock-out solenoid socket, install the reverse lock-out solenoid. See **Fig. 8** . Tighten the reverse lock-out solenoid to specification. See **TORQUE SPECIFICATIONS** . Connect the reverse lock-out solenoid harness connector. See **Fig. 7** .
2. Slowly raise the rear suspension crossmember to seat to the vehicle frame rails. Using hand tools ONLY, install NEW rear suspension crossmember mounting nuts.
3. Tighten the rear suspension crossmember mounting nuts to specification. See **TORQUE SPECIFICATIONS** . Remove the transmission jack from the rear suspension crossmember.
4. Connect the wiring harness and brake pipe clip retainers to the rear suspension crossmember. Install the rear transverse spring. See appropriate REAR article in SUSPENSION.
5. Remove the tie-off retainers from the muffler assemblies. Install the intermediate exhaust pipe to muffler bolts. Tighten the intermediate exhaust pipe-to-muffler bolts to specification. See **TORQUE**

cardiagn.com

SPECIFICATIONS .

6. Install the rear tire and wheel assemblies. Lower the vehicle. Connect the negative battery cable. Tighten the negative battery cable bolt to specification. See **TORQUE SPECIFICATIONS** . Program the transmitters. See appropriate REMOTE KEYLESS ENTRY SYSTEMS article in ACCESSORIES & EQUIPMENT.

SHIFT CONTROL ASSEMBLY

NOTE: For removal and installation procedure, follow shift linkage adjustment procedures. See SHIFT LINKAGE under ADJUSTMENTS.

SHIFT CONTROL SHIFT CLOSEOUT BOOT

Removal

1. Remove the console. See REMOVAL & INSTALLATION in appropriate INSTRUMENT PANELS article in ACCESSORIES & EQUIPMENT.
2. Carefully pry off the shift control knob button.
3. Pry the shift control knob retainer out of the slots and remove the retainer. See **Fig. 9** .
4. Unscrew the shift control knob.
5. Grasp the sides of the shift control boot and apply light pressure in toward the shift control lever to begin to release the shift boot retaining tabs from the IP accessory trim plate.
6. Using light pressure, continue to release the remaining boot retaining tabs.
7. Lift the boot away from the trim plate and remove the boot. See **Fig. 10** .
8. Remove the IP accessory trim plate. See REMOVAL & INSTALLATION in appropriate INSTRUMENT PANELS article in ACCESSORIES & EQUIPMENT.
9. Remove the shift control closeout boot retaining nuts. See **Fig. 11** .
10. Remove the shift control closeout boot.

cardiagn.com

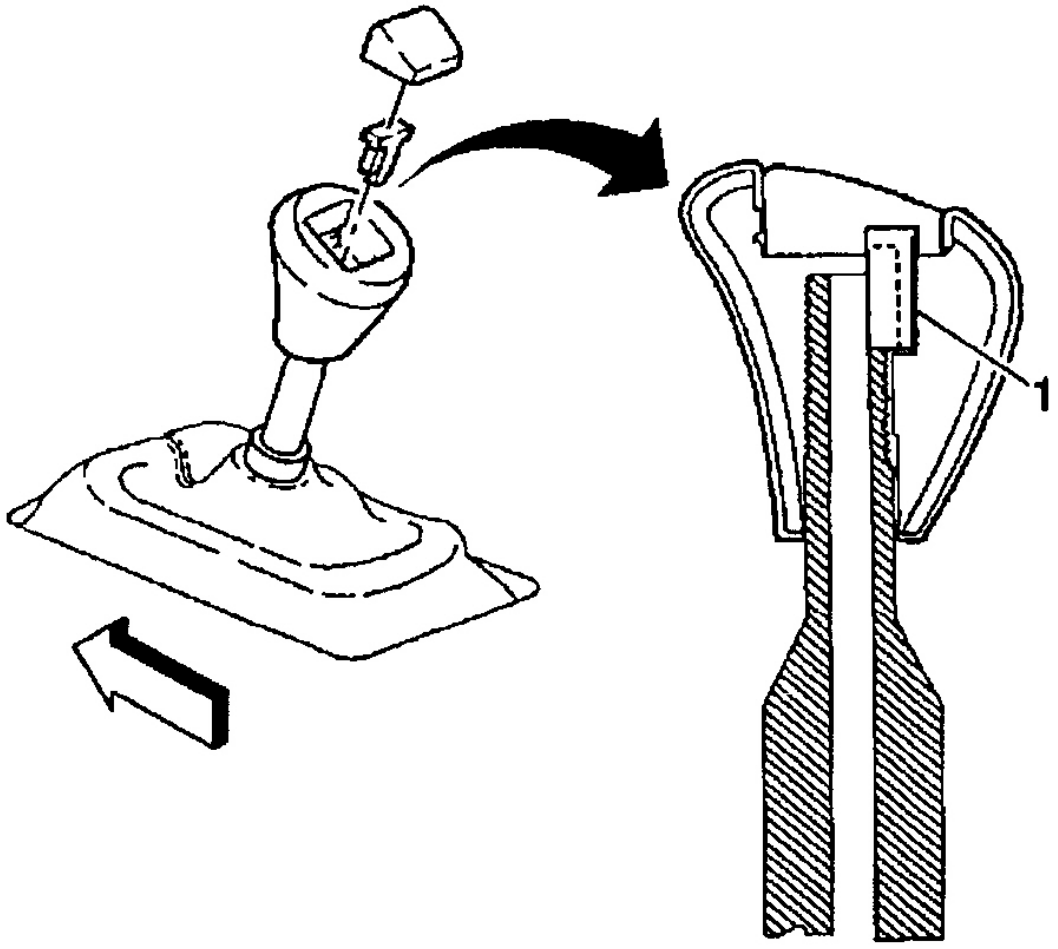
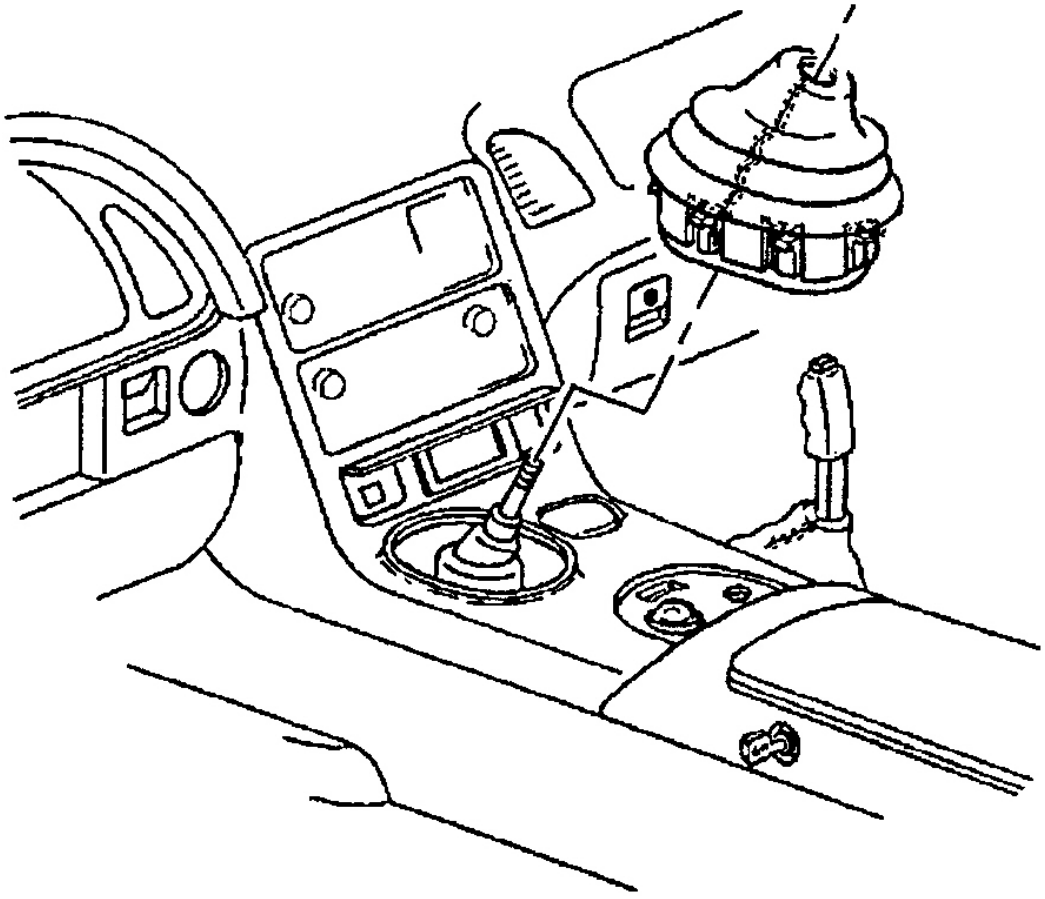


Fig. 9: Removing/Installing Shift Control Knob & Retainer
Courtesy of GENERAL MOTORS CORP.

cardiagn.com



G00056355

Fig. 10: Removing/Installing Shift Boot
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

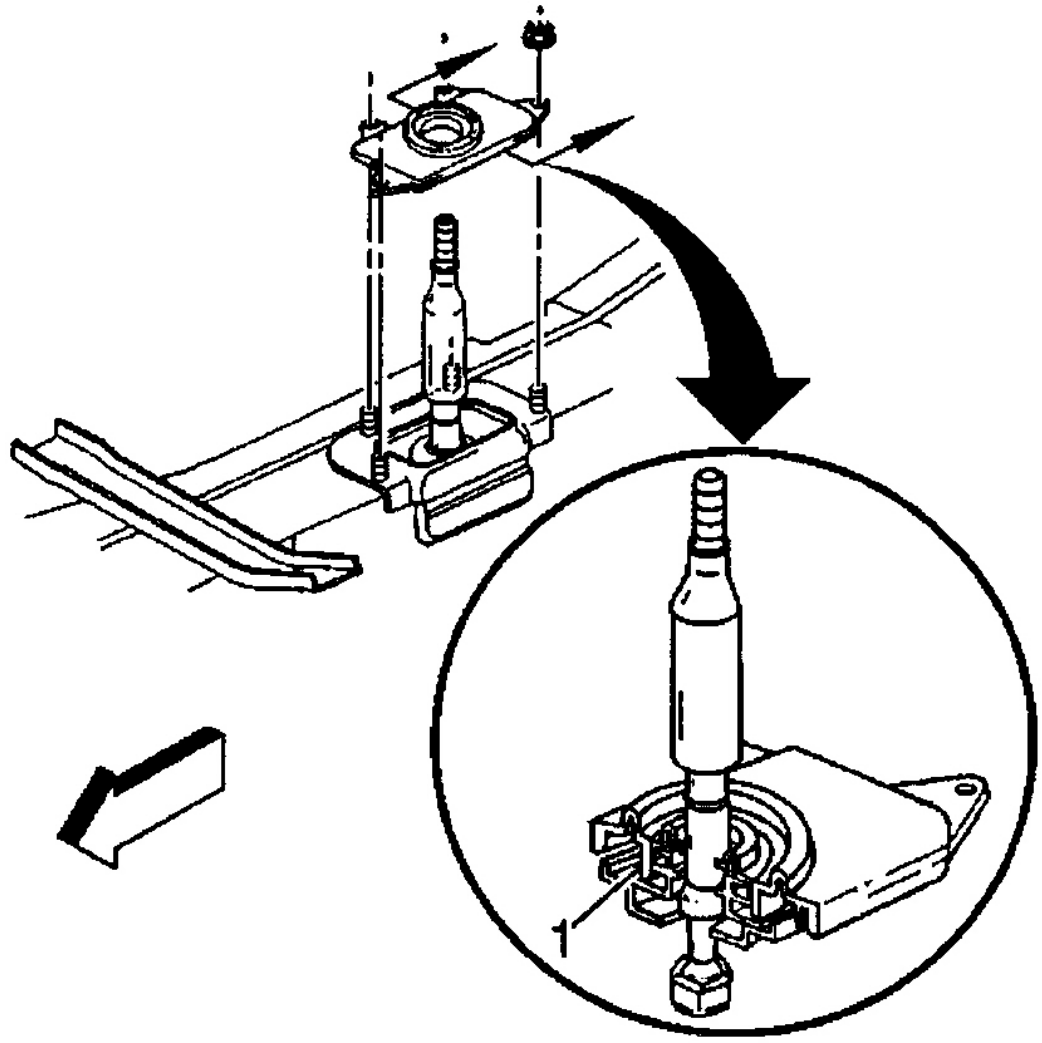


Fig. 11: Removing/Installing Shift Control Closeout Boot
Courtesy of GENERAL MOTORS CORP.

Installation

1. Install the shift control closeout boot.
2. Check that the closeout boot fully seats to the shift control lever seal and the base of the shift control assembly (1). See **Fig. 11** .
3. Install the shift control closeout boot retaining nuts. Tighten the shift control closeout boot retaining nuts to specification. See **TORQUE SPECIFICATIONS** .
4. Install the IP accessory trim plate. See REMOVAL & INSTALLATION in appropriate INSTRUMENT

cardiagn.com

PANELS article in ACCESSORIES & EQUIPMENT.

5. Install the shift control boot over the shift control lever.
6. Align the shift control boot to the IP accessory trim plate opening, then press to lock the boot retaining tabs.
7. Adjust the shape of the boot for appearance, if necessary.
8. Screw the shift control knob onto the shift control lever until the knob bottoms out.
9. Unscrew the shift control knob just enough to align the retainer slot with the slot on the shift control lever.
10. Install the shift control knob retainer (1) into the slots and seat fully.
11. Install the shift control knob button. Install the console. See REMOVAL & INSTALLATION in appropriate INSTRUMENT PANELS article in ACCESSORIES & EQUIPMENT.

SHIFT ROD

Removal

1. Remove the shift control assembly. See **SHIFT CONTROL ASSEMBLY** .
2. Remove the driveline support assembly, the transmission and the differential from the vehicle, then separate the transmission from the driveline support assembly. See appropriate CLUTCHES article.
3. Slide the transmission shift rod toward the transmission until the transmission shift shaft seats in the rear-most detent position. Placing the shift rod close to the transmission housing provides additional support for the transmission shift shaft.
4. Using a drift or punch, remove the roll pin (1) retaining the transmission shift rod to the transmission shift shaft. See **Fig. 12** .
5. Remove the transmission shift rod from the transmission shift shaft.

cardiagn.com

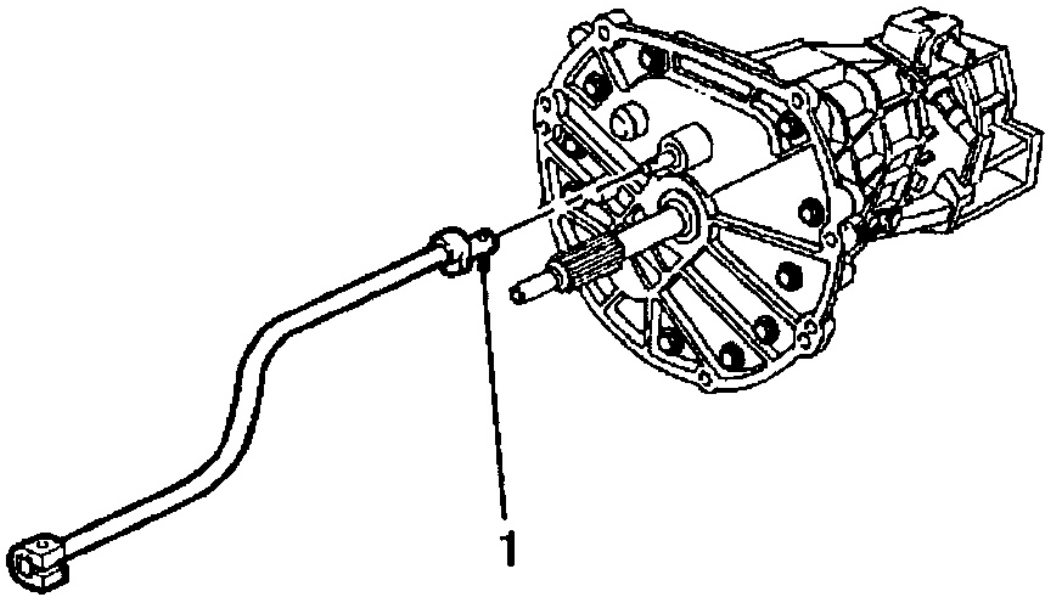


Fig. 12: Removing/Installing Shift Rod
Courtesy of GENERAL MOTORS CORP.

Installation

1. Install the transmission shift rod to the transmission shift shaft.
2. Using a drift or punch, install the roll pin (1) to retain the transmission shift rod to the shift shaft. See **Fig. 12** .
3. Pull the transmission shift rod away from the transmission to the middle detent position (NEUTRAL).
4. Install the transmission to the driveline support assembly, then install the driveline support assembly, transmission and differential to the vehicle. See appropriate CLUTCHES article.
5. Install the shift control assembly. See **SHIFT CONTROL ASSEMBLY** .

TRANSMISSION FLUID TEMPERATURE SENSOR

Removal

1. Raise and suitably support the vehicle.
2. Disconnect the transmission fluid temperature sensor electrical connector.
3. Remove the transmission fluid temperature sensor.

Installation

cardiagn.com

1. Install the transmission fluid temperature sensor. Tighten the transmission fluid temperature sensor to specification. See **TORQUE SPECIFICATIONS** .
2. Connect the transmission fluid temperature sensor electrical connector.
3. Check fluid level and fill as necessary. See **RECOMMENDED FLUIDS** and **FLUID CAPACITIES** .
4. Lower the vehicle.

VEHICLE SPEED SENSOR

Removal

Raise and support the vehicle. Remove the right side muffler assembly. Clean any dirt from around the Vehicle Speed Sensor (VSS). Disconnect the harness connector from the VSS. See **Fig. 13** . Remove the bolt retaining the VSS to the rear differential case. See **Fig. 14** . Remove the VSS from the differential case.

cardiagn.com

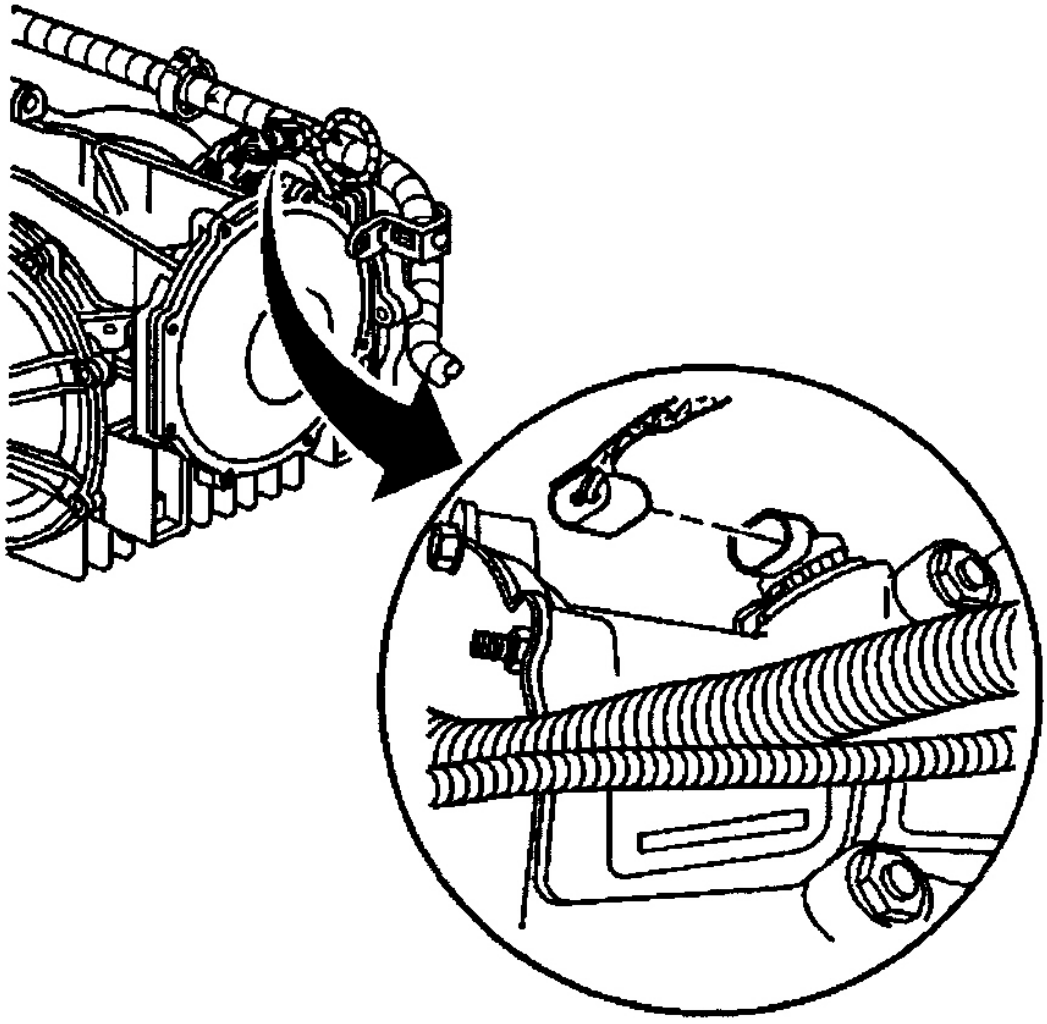


Fig. 13: Locating Vehicle Speed Sensor
Courtesy of GENERAL MOTORS CORP.

cardiagn.com

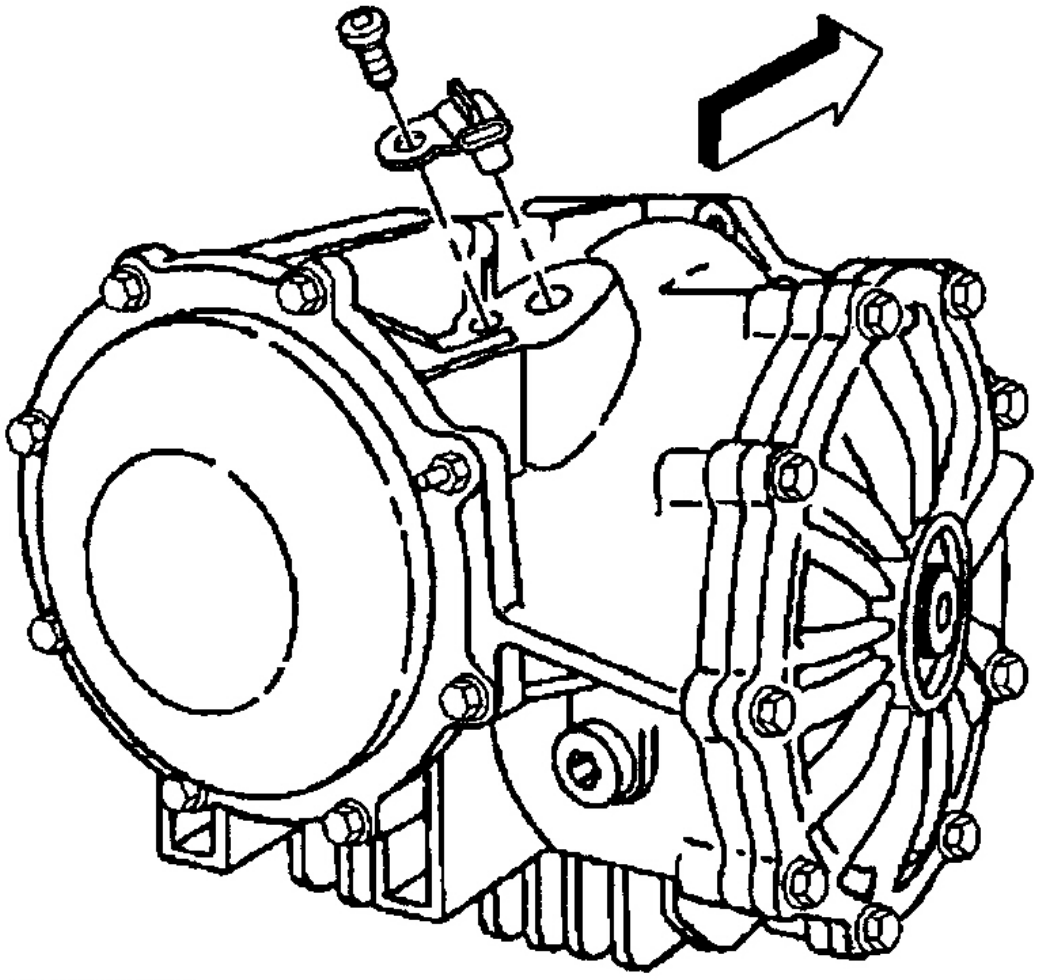


Fig. 14: Removing & Installing Vehicle Speed Sensor
Courtesy of GENERAL MOTORS CORP.

Installation

Lubricate the O-ring seal of the VSS with clean engine oil. Install the VSS into the hole on the axle case. See **Fig. 14** . Install the VSS retaining bolt the differential. Tighten the vehicle speed sensor retaining bolt to specification. See **TORQUE SPECIFICATIONS** . Connect the VSS harness connector. See **Fig. 13** . Install the right side muffler assembly. Lower the vehicle.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

cardiagn.com

Application	Ft. Lbs. (N.m)
Back-Up Light Switch	15 (20)
Drain & Fill Plugs	20 (27)
Gear Select/Reverse Lock-Out Solenoid	30 (40)
Intermediate Exhaust Pipe-To-Muffler Bolt	42 (57)
Rear Suspension Crossmember Mounting Nut	81 (110)
Reverse Lock-Out Solenoid	30 (40)
Shift Control Mounting Bolts	22 (30)
Shift Rod Clamp Bolt	22 (30)
Transmission Fluid Temperature Sensor	20 (27)
	INCH Lbs. (N.m)
Battery Cable Terminal Clamp	132 (15)
Shift Control Closeout Boot Retaining Nuts	106 (12)
Vehicle Speed Sensor Bolt	89 (10)

cardiagn.com