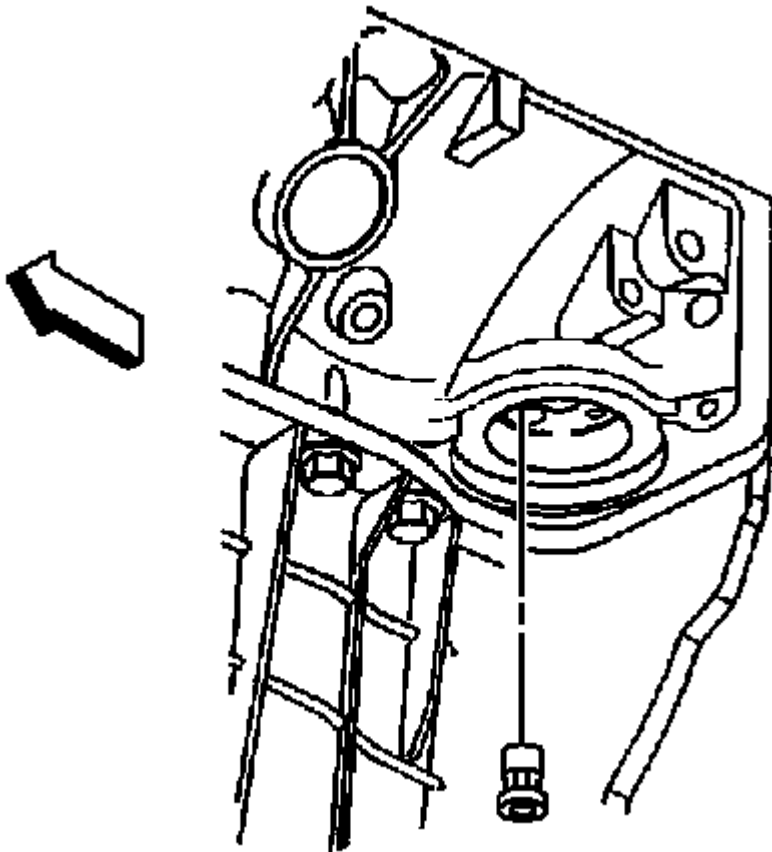


## Oil Filter Bypass Valve Replacement

### Removal Procedure

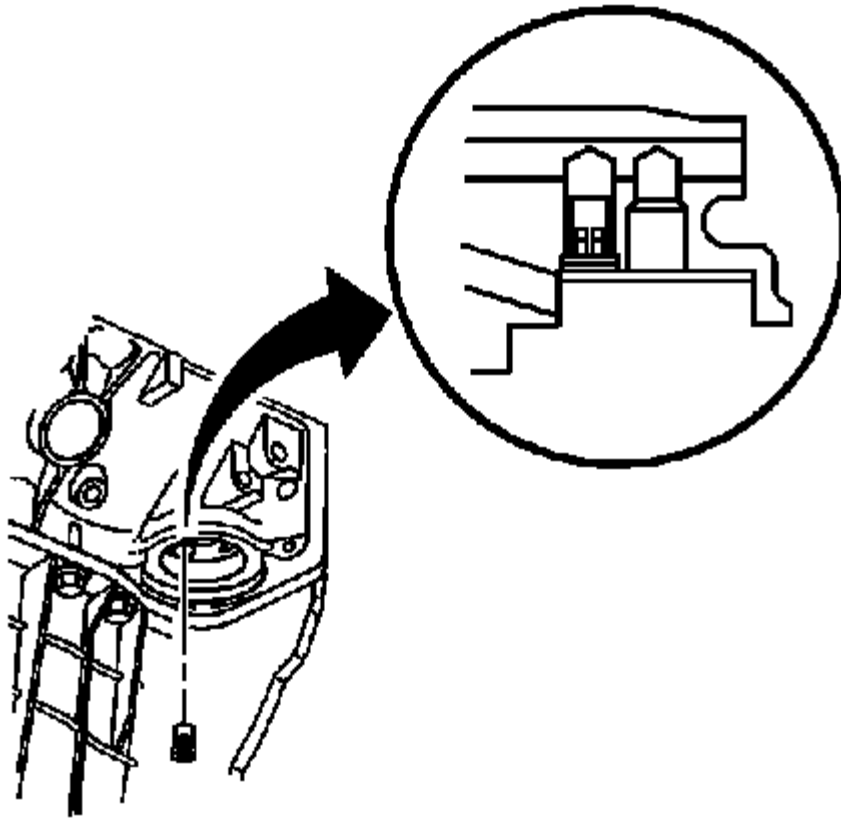
1. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
2. Position a suitable container to catch the engine oil.
3. Remove the oil filter.
4. Remove the oil filter adapter. Refer to **Oil Filter Adapter Replacement**.



**Fig. 133: Removing Oil Filter Bypass Valve**  
Courtesy of GENERAL MOTORS CORP.

5. Using a suitable prying tool remove the oil filter bypass valve.
6. Clean and inspect valve bore for damage.

### Installation Procedure



**Fig. 134: Installing Oil Filter Bypass Valve**  
Courtesy of GENERAL MOTORS CORP.

**CAUTION: Refer to Safety Glasses Caution in Cautions and Notices.**

1. Install a NEW oil filter bypass valve using the following procedure:
  1. Use a brass drift that is the same diameter as the outside diameter of the oil filter bypass valve.
  2. Install the oil filter bypass valve into the oil gallery bore until slightly below flush with the surface of the engine block.
  3. Using a pointed punch, stake the engine block area around the oil filter bypass valve.

Stake in 3 locations 120 degrees apart.

2. Install the oil filter adapter. Refer to **Oil Filter Adapter Replacement**.
3. Install the oil filter. Refer to **Engine Oil and Oil Filter Replacement**.
4. Lower the vehicle.

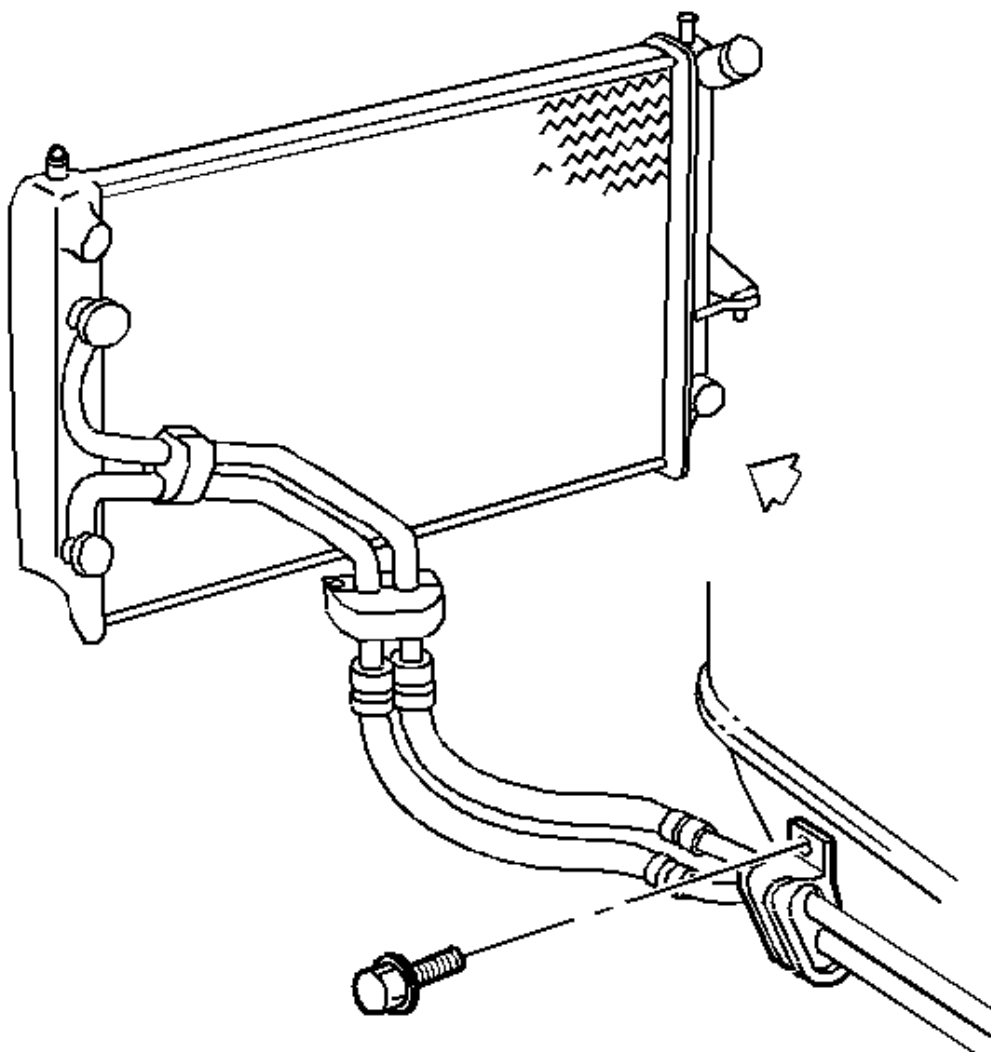
#### **Oil Pan Replacement**

## 2005 Chevrolet Astro

2005 ENGINE Engine Mechanical - 4.3L - Astro & Safari

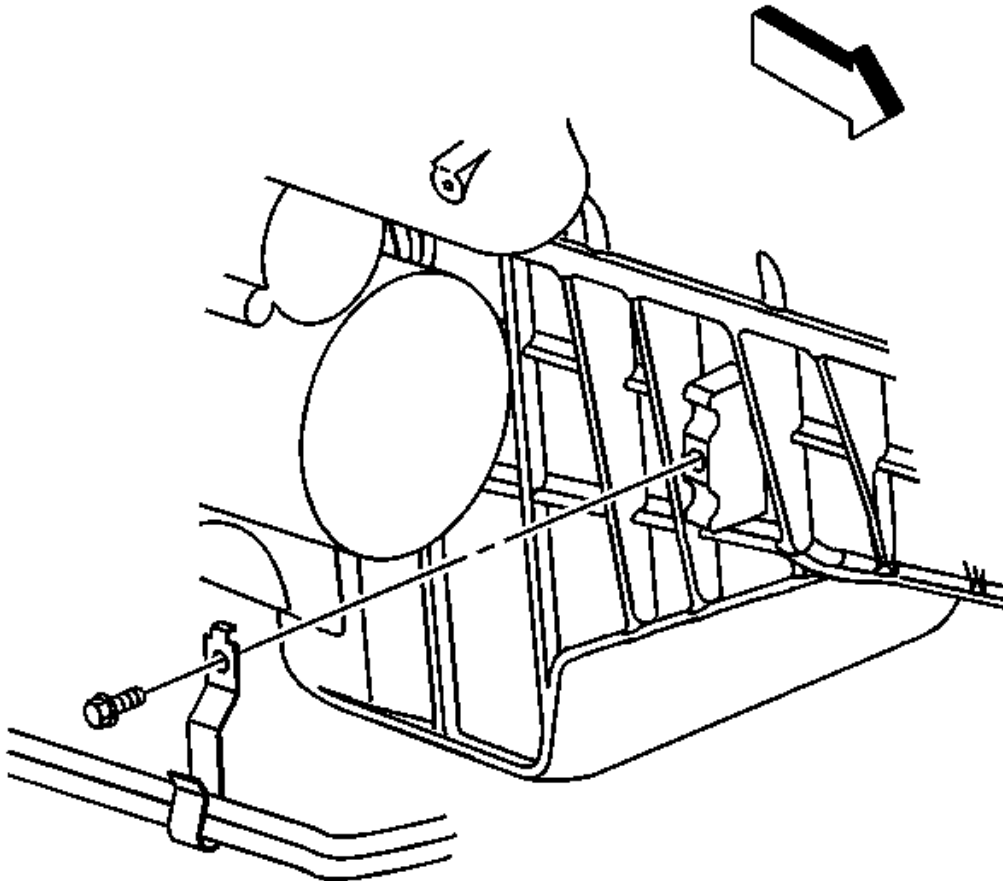
### Removal Procedure

1. Disconnect the battery negative cable. Refer to **Battery Negative Cable Disconnect/Connect Procedure** in Engine Electrical.
2. Remove the oil level indicator.
3. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
4. Remove the oil pan drain plug and drain the engine oil into a suitable container.
5. Remove the oil filter.



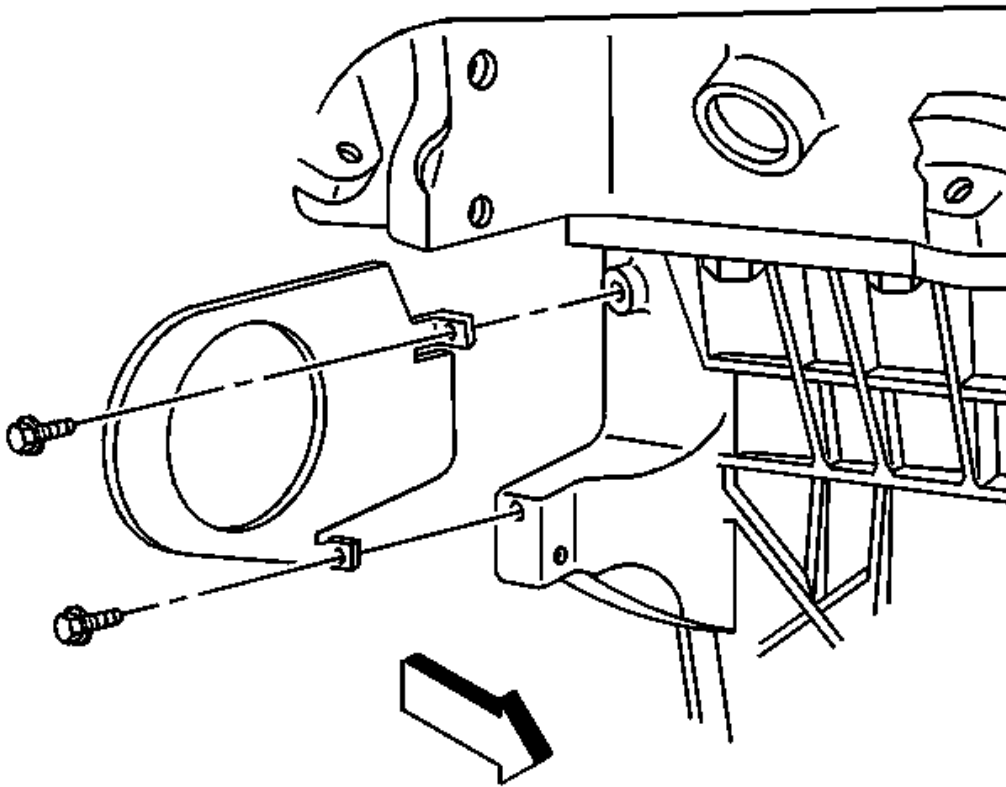
**Fig. 135: Locating Oil Cooler Pipes Bracket Retaining Bolt**  
Courtesy of GENERAL MOTORS CORP.

6. Remove the bolt holding the oil cooler pipes bracket to the oil pan.
7. Remove the oil filter adapter. Refer to **Oil Filter Adapter Replacement**.



**Fig. 136: Identifying Starter Wiring Harness & Transmission Cooler Pipes Bracket Retaining Bolt**  
Courtesy of GENERAL MOTORS CORP.

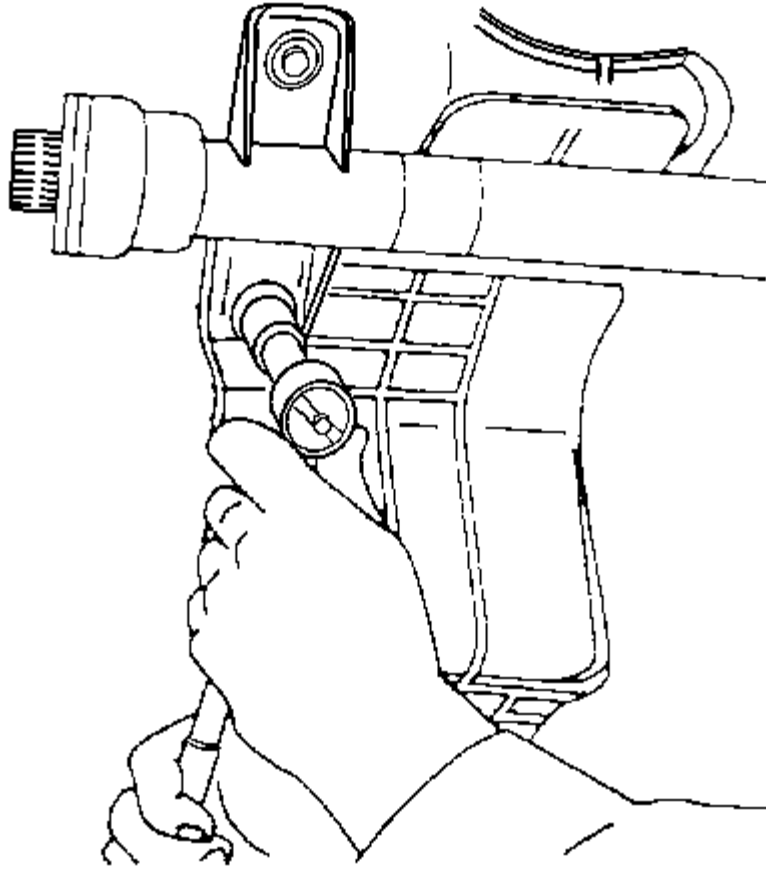
8. Remove the bolt holding the bracket for the starter wiring harness and the transmission cooler pipes.
9. Remove the crankcase position (CKP) sensor wiring harness from the retainer.
10. Remove the starter. Refer to **Starter Motor Replacement** in Engine Electrical.



**Fig. 137: View Of Transmission Cover**  
Courtesy of GENERAL MOTORS CORP.

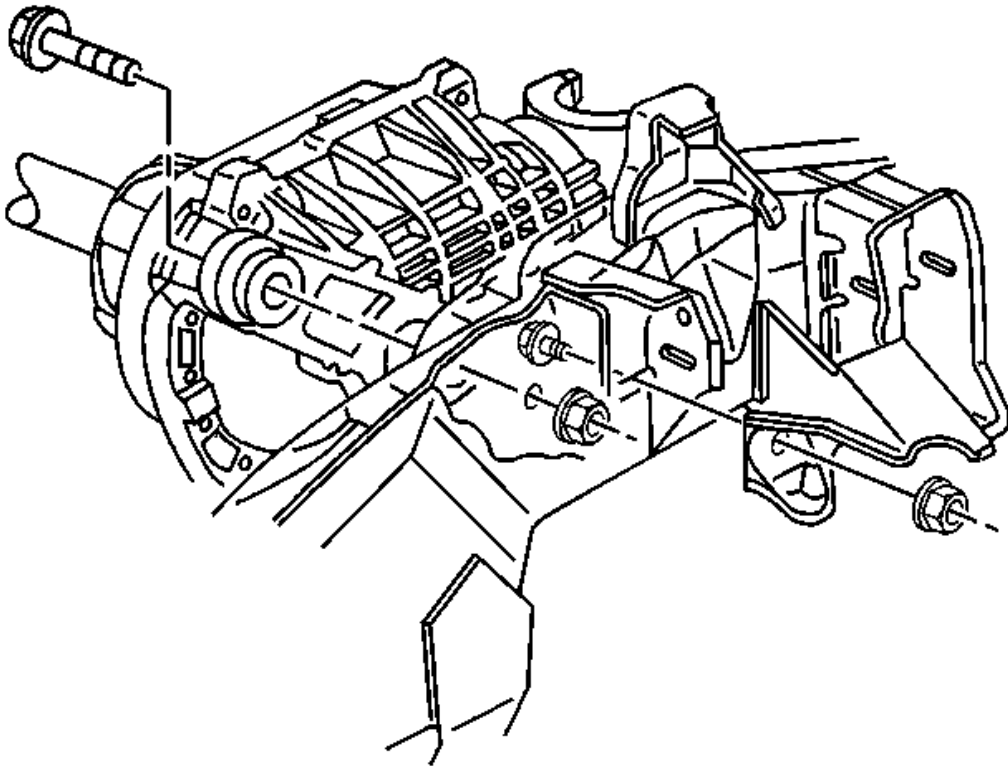
**IMPORTANT: Make sure NOT to break the cover rails.**

11. Remove the transmission cover.



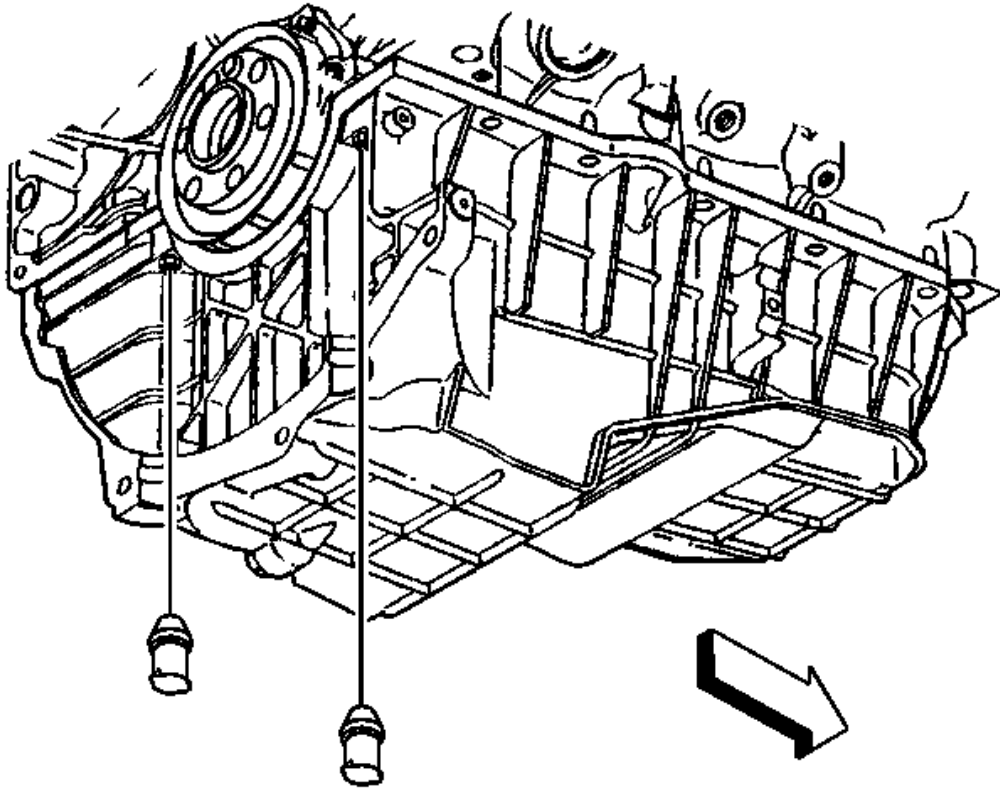
**Fig. 138: View Of Inner Axle Shaft Housing**  
Courtesy of GENERAL MOTORS CORP.

12. Remove the inner axle shaft housing support bracket to the frame nuts and the washers (AWD only).



**Fig. 139: Locating Upper & Lower Front Differential Carrier Mounting Nuts**  
Courtesy of GENERAL MOTORS CORP.

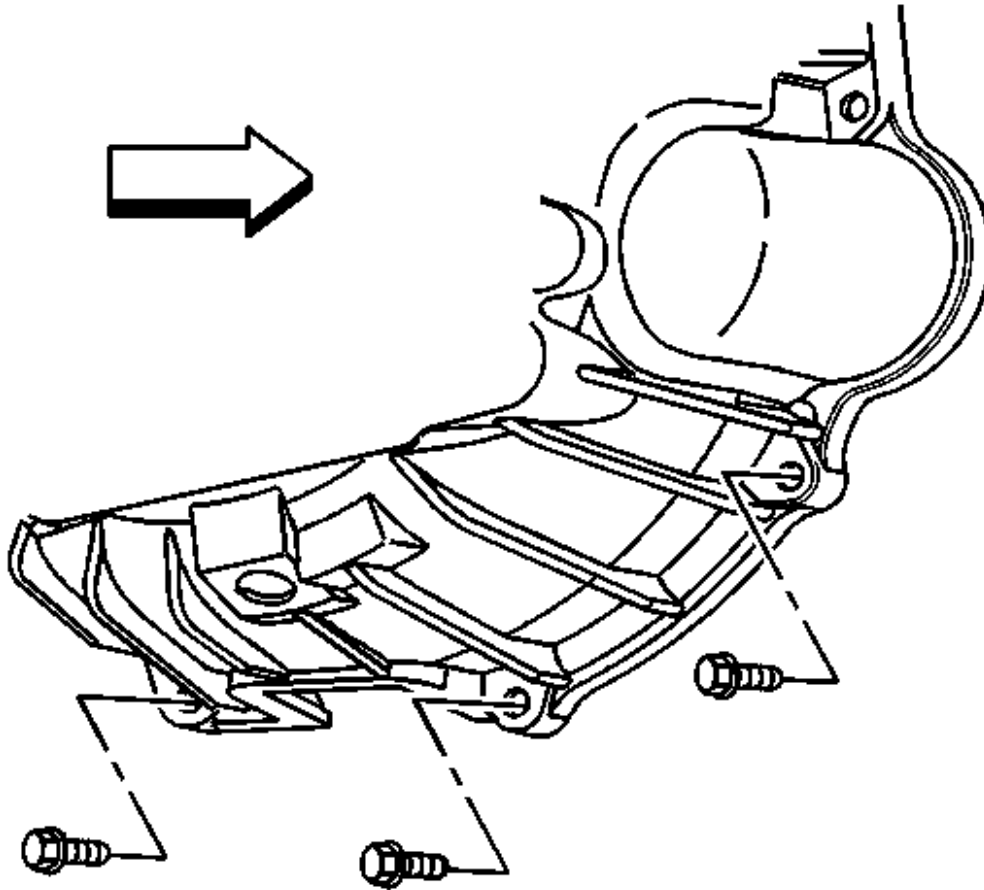
13. Remove the front differential carrier upper and lower mounting nuts and bolts (AWD only).
14. Lower the front differential carrier assembly only enough for removal of the oil pan.



**Fig. 140: Expanded View Of Oil Pan Rear Nuts Access Plugs**  
Courtesy of GENERAL MOTORS CORP.

15. Remove the access plugs for the oil pan rear nuts.

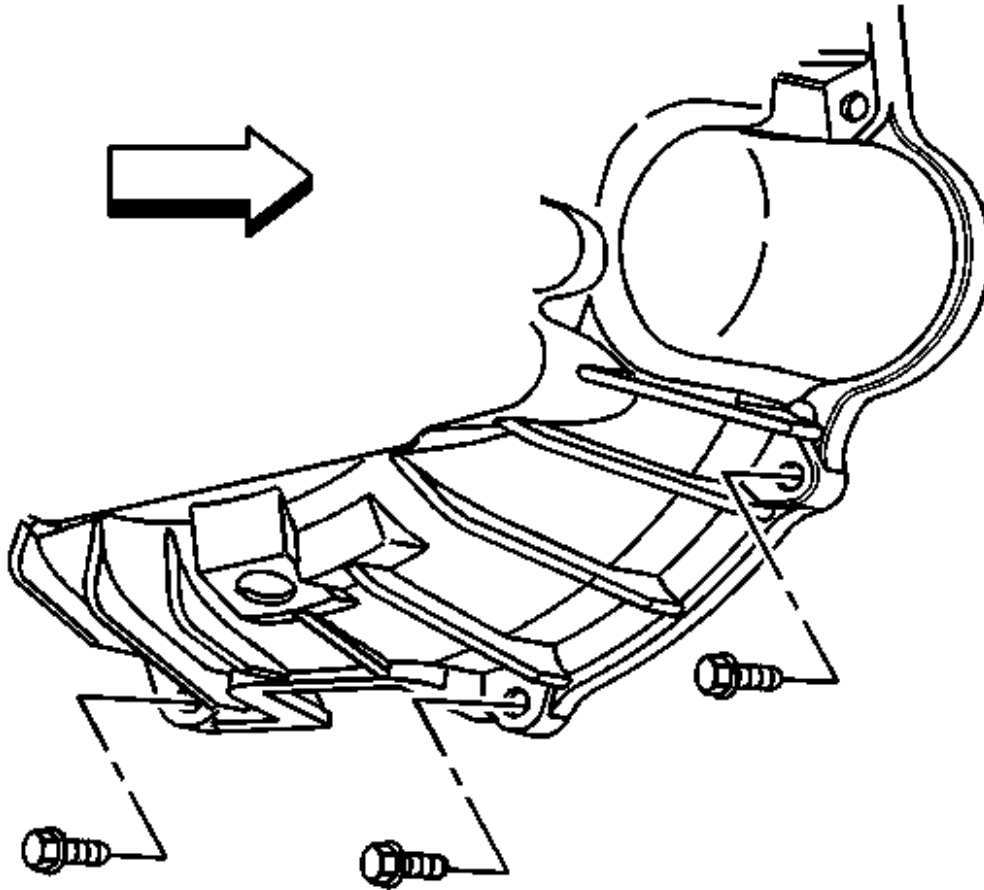




**Fig. 141: Identifying Transmission To Oil Pan Bolts**  
Courtesy of GENERAL MOTORS CORP.

16. Remove the transmission to oil pan bolts.
17. Remove the oil pan from the engine. Refer to **Oil Pan Removal**.
18. Clean all sealing surfaces on the engine and the oil pan. Refer to **Oil Pan Cleaning and Inspection**.

**Installation Procedure**



**Fig. 142: Identifying Transmission To Oil Pan Bolts**

Courtesy of GENERAL MOTORS CORP.

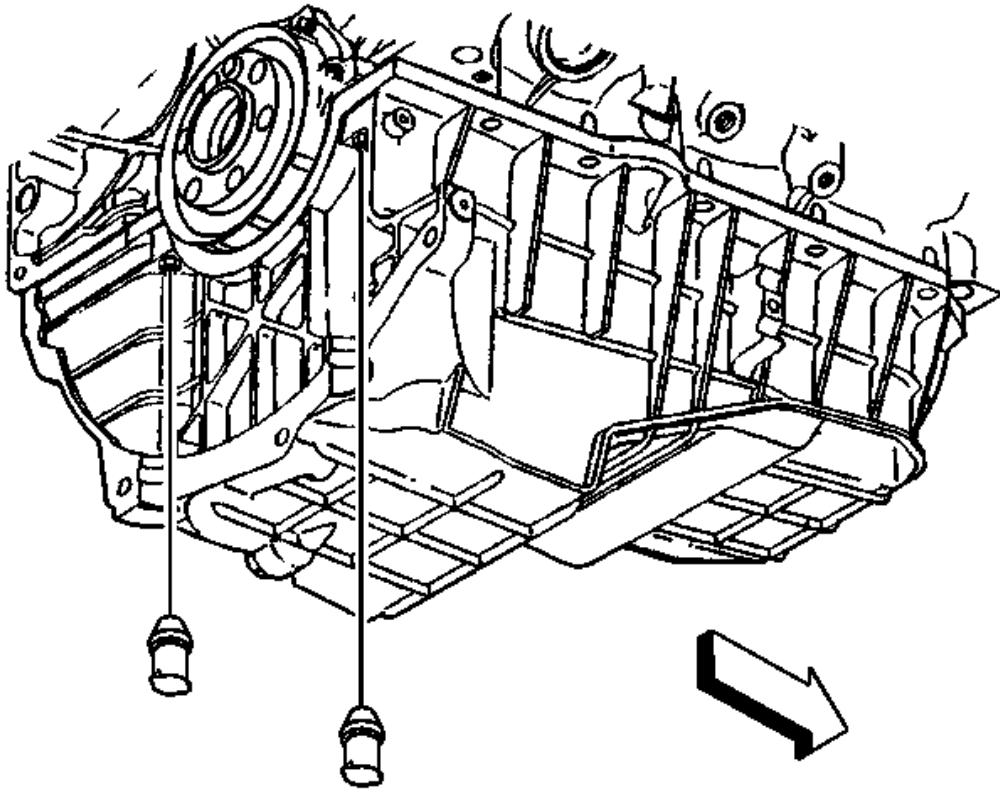
**NOTE:** Any time the transmission and the engine oil pan are off of the engine at the same time, install the transmission before the oil pan. This is to allow for the proper oil pan alignment. Failure to achieve the correct oil pan alignment can result in transmission failure.

1. Install the oil pan to the engine. Refer to **Oil Pan Installation**.

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

2. Install the transmission to oil pan bolts and nuts.

**Tighten:** Tighten the bolts to 47 N.m (35 lb ft).



**Fig. 143: Expanded View Of Oil Pan Rear Nuts Access Plugs**  
Courtesy of GENERAL MOTORS CORP.

3. Install the access plugs for the oil pan rear nuts.
4. Position the front differential carrier assembly.
5. Install the carrier upper and lower mounting bolts and nuts (AWD only). Refer to **Differential Carrier Assembly Replacement** in Front Drive Axle.
6. Install the inner axle shaft housing support bracket to frame washers and nuts (AWD only). Refer to **Differential Carrier Assembly Replacement** in Front Drive Axle.