

Abuse Protection Solenoid Replacement Procedure

Required Components:

1. New solenoid
2. Transmission filter *replace only if tractor has greater than 20 hours
3. Transmission pan gasket *replace only if stock gasket cannot be reused
4. DEXRON®VI transmission fluid (approx. 3 quarts)

Required Tools:

1. 2.5mm Allen wrench
2. 13mm socket with appropriate ratchet
3. Fluid removal/recovery system if fluid is going to be reused

Removal Procedure

Disconnect the battery from the vehicle prior to performing this procedure.

Warning: When the transmission is at operating temperatures, take necessary precautions when removing the pan, to avoid being burned by draining fluid.

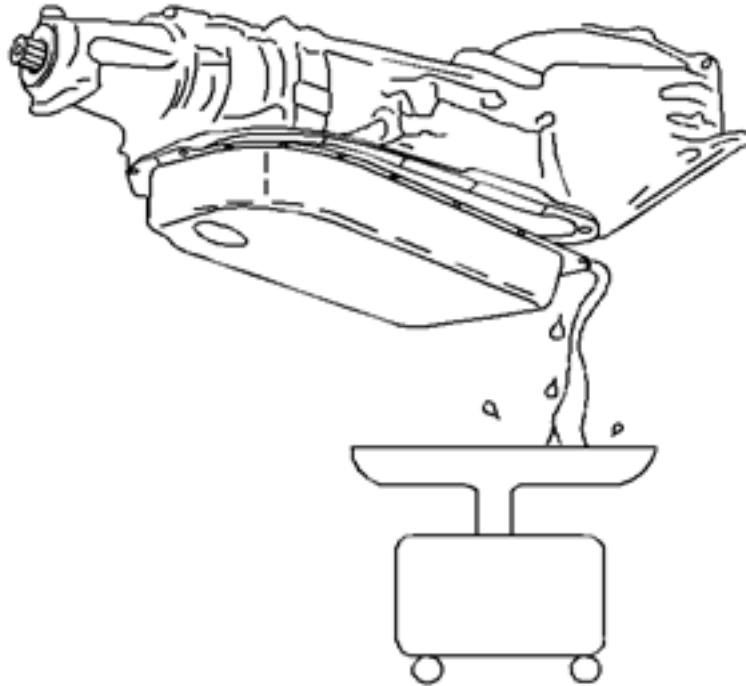


Figure 1

1. Raise and support the vehicle.

NOTE: The fluid can be reused after this procedure unless it smells burnt or is discolored. If a recovery system is available, remove and store the fluid. Remove the pan bolts and skip to step 6.

2. On some vehicles an exhaust heat shield may need to be removed to access the pan bolts. Remove this if necessary.
3. Place a drain pan under the transmission oil pan.
4. Remove the oil pan bolts from the front and sides of the pan only.
5. Loosen the rear oil pan bolts approximately 4 turns.
6. Lightly tap the oil pan with a rubber mallet in order to loosen the pan to allow the fluid to drain.

7. Remove the remaining oil pan bolts. **Reference Figure 2.**

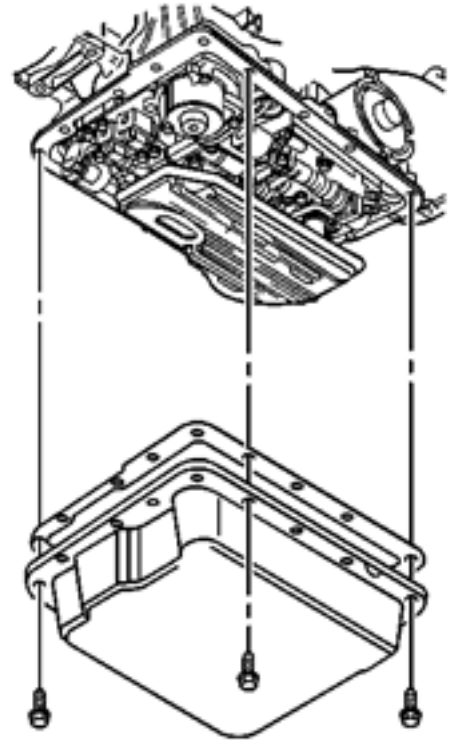


Figure 2

8. Remove the oil pan and gasket. **Reference Figure 3.**

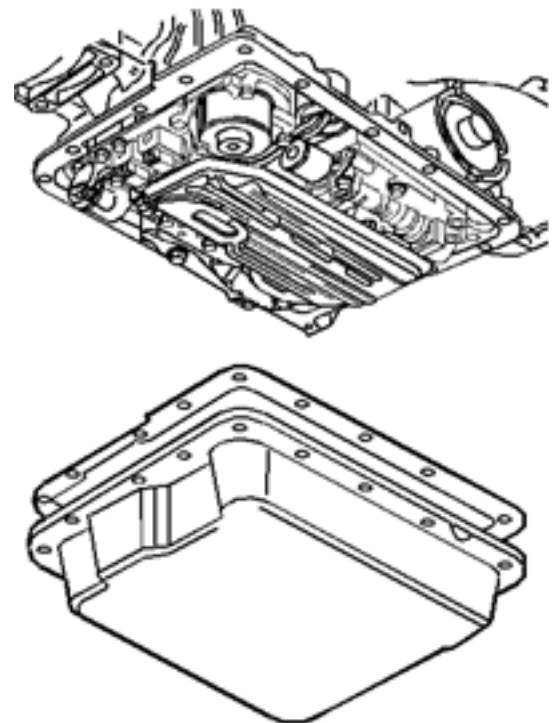


Figure 3

9. Grasp filter firmly while pulling down with a twisting motion in order to remove the filter. **Reference Figure 4.**

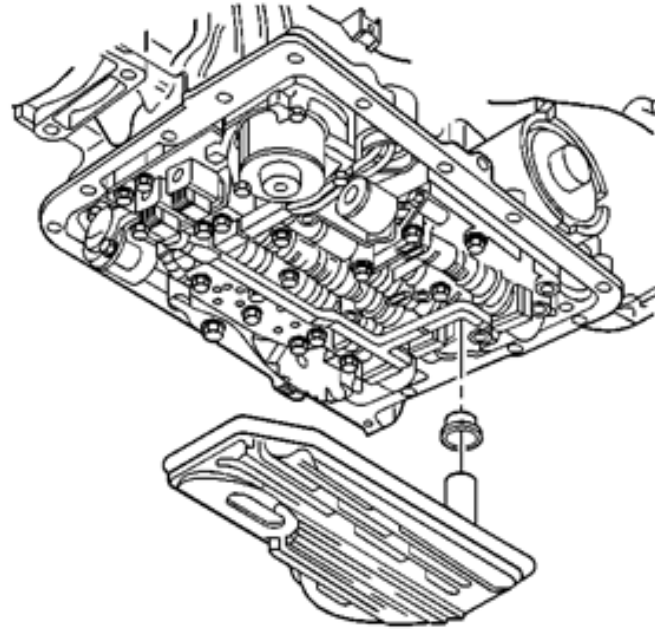


Figure 4

10. If the filter is going to be replaced, remove the filter seal. The filter seal may be stuck in the pump; if necessary, carefully use pliers or another suitable tool to remove the seal. **Reference Figure 5.**
11. Discard the seal.
12. Inspect the fluid color.
13. Clean the transmission case and the oil pan gasket surfaces with solvent, and air dry. You must remove all traces of the old gasket material.

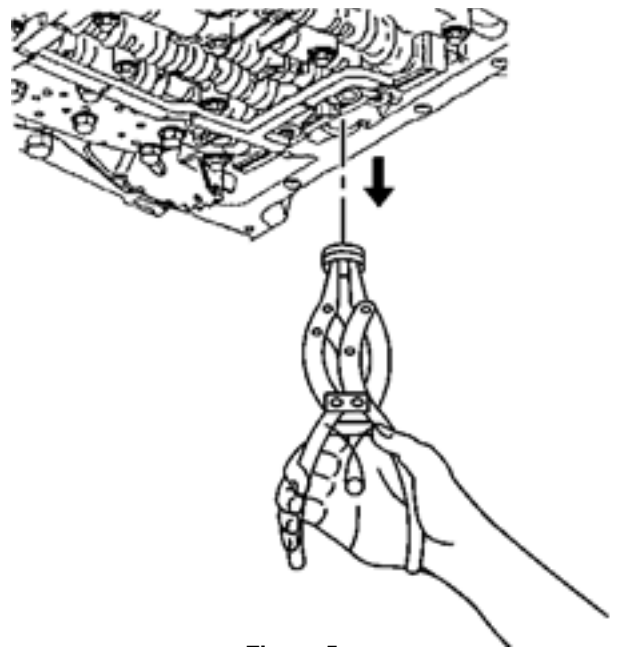


Figure 5

IDENTIFY SOLENOID TO REPLACE

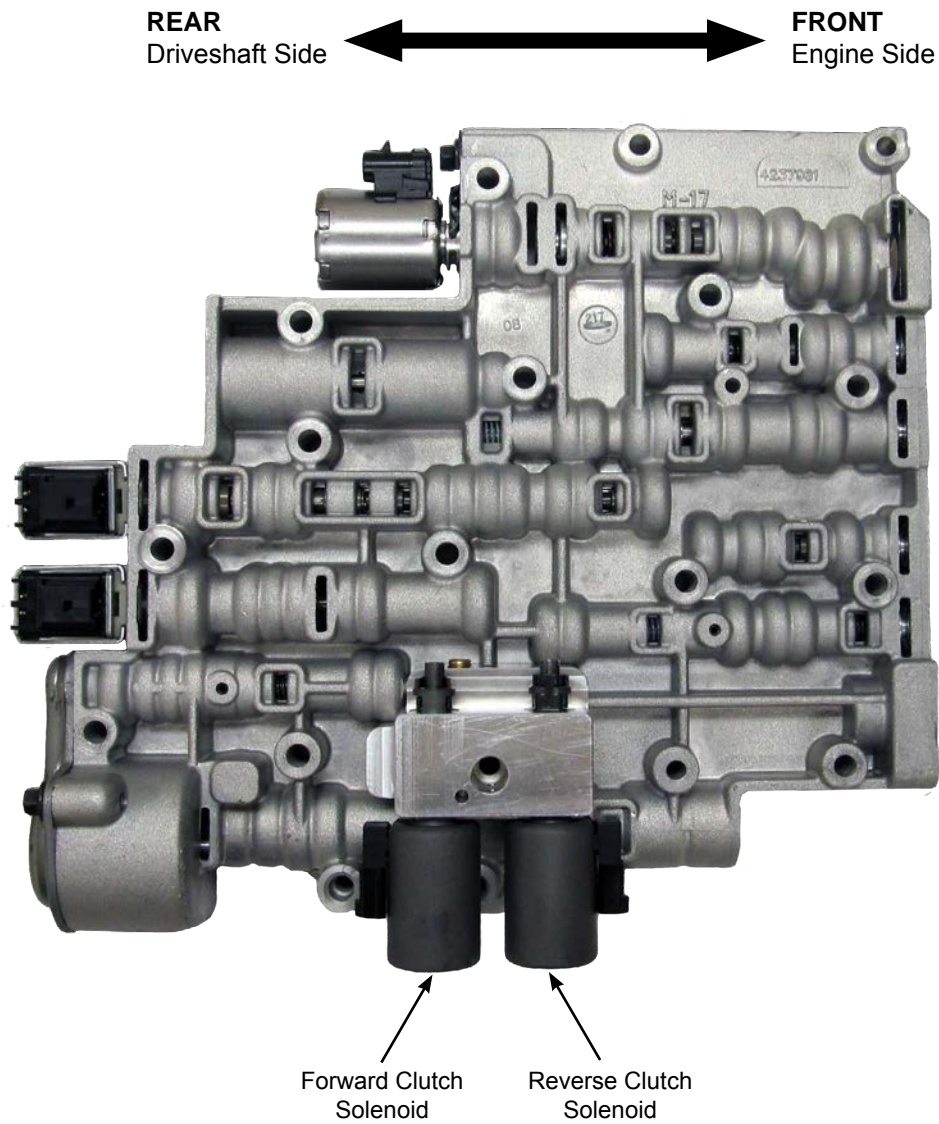


Figure 6

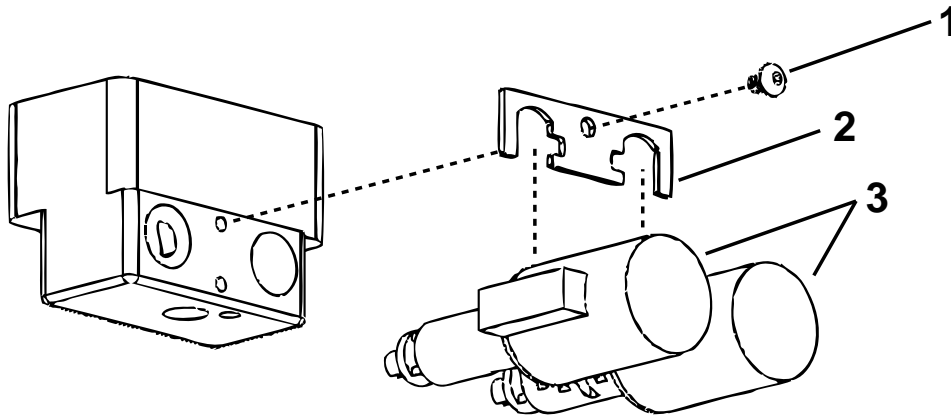


Figure 7

FOLLOW THESE STEPS IN ORDER

14. Remove the M4x0.7x6mm BHCS (#1) and (2) solenoids (#3) along with solenoid clamp (#2).
Note: Harness should not be removed from solenoids at this point. **Reference Figure 7.**
15. It is extremely difficult to remove the harness from the solenoid. In situations where the solenoid is going to be replaced with a new solenoid, we recommend cutting the tab on the solenoid to remove the harness. **Reference Figure 8 and 9.**



Figure 8

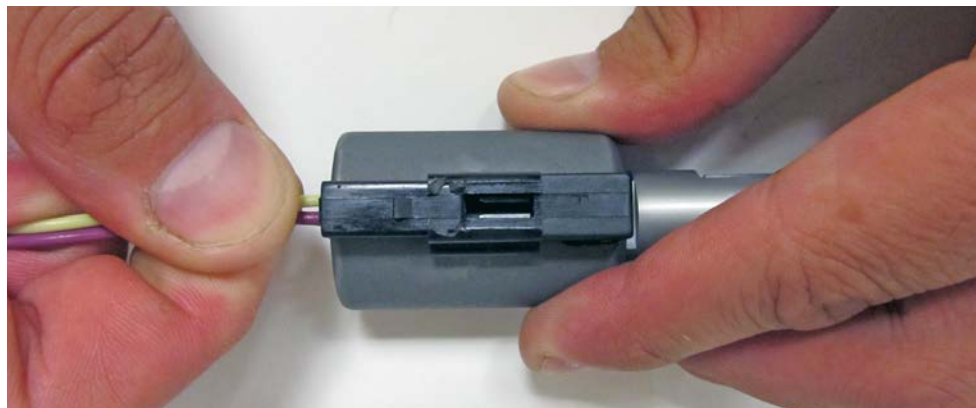


Figure 9

NOTE: Excessive force may remove wires from their terminals. Pliers or equivalent tool may be necessary.

INSTALLATION PROCEDURE

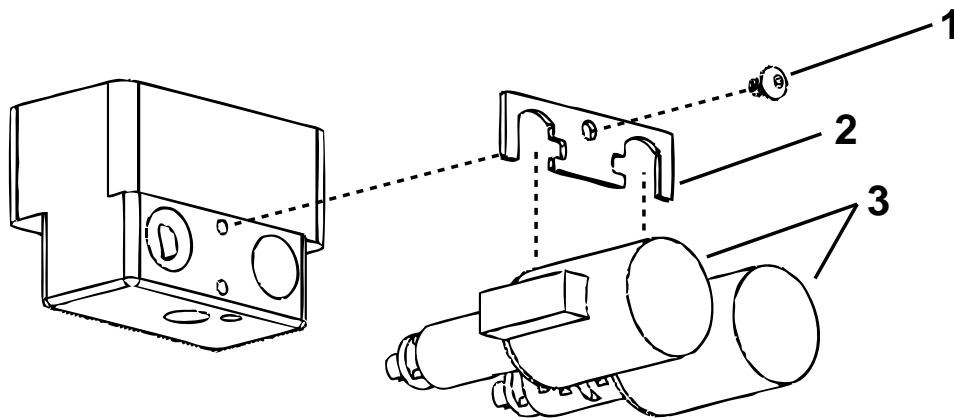


Figure 10

1. Insert the solenoid clamp (#1) around both solenoids (#3). **Reference Figure 10.**
2. Install both solenoids into the block simultaneously using M4x0.7x6mm BHCS (#1). **Reference Figure 10.**

2. Coat the new filter seal with automatic transmission fluid.
3. Install the new filter seal into the transmission case. Tap the seal into place using a suitable size socket. **Reference Figure 11.**
4. Install the new filter into the case.

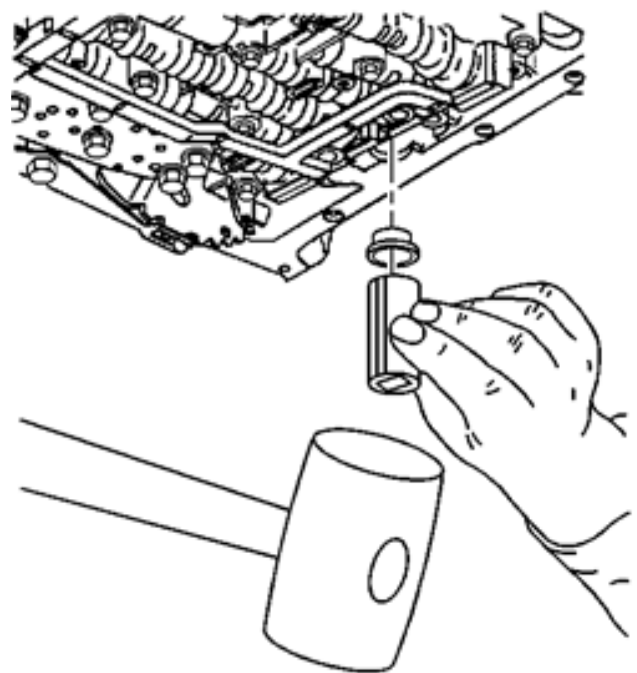


Figure 11

5. Install the oil pan and a new gasket. **Reference Figure 12.**

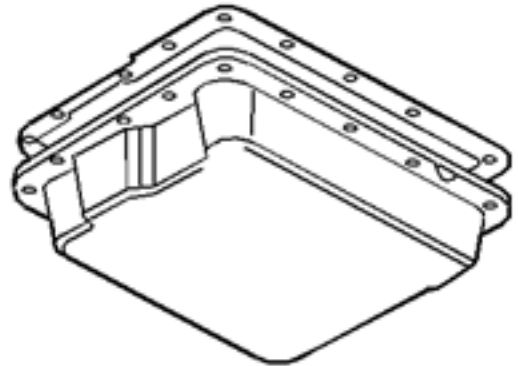
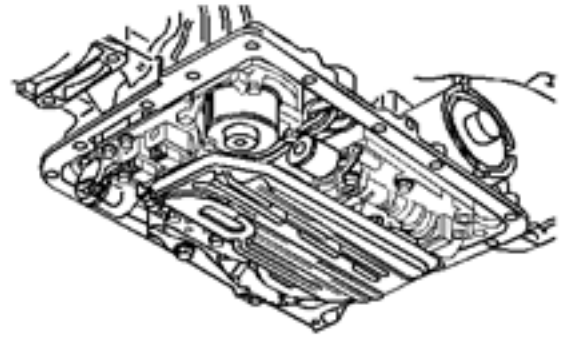


Figure 12

6. Install the oil pan bolts and tighten alternately and evenly to 11 Nm (97 lb in). **Reference Figure 13.**
7. If previously removed, reinstall the exhaust heat shield.
8. Lower the vehicle.
9. Fill the transmission to the proper level with DEXRON®VI transmission fluid. Refer to Transmission Fluid Level and Condition Check and Fluid Capacity Specifications.
10. Check the COLD fluid level reading for initial fill only.
11. Inspect the oil pan gasket for leaks.
12. Test drive vehicle and verify proper transmission operation.
13. Check fluid level when transmission is at operating temperature.

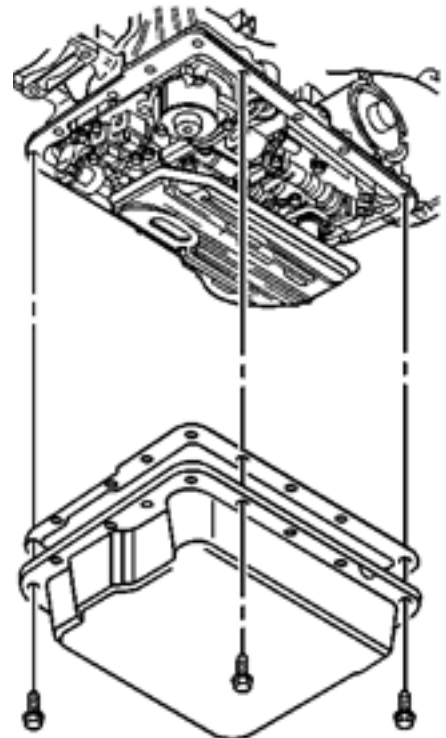


Figure 13

TECHNICIANS NOTE:

To properly check fluid level:

1. Start the engine and operate the vehicle for 15 minutes or until the transmission fluid reaches an operating temperature of 82 - 93°C (180 - 200°F) .
2. Park the vehicle on a level surface.
3. With your foot on the brake, move the shift lever through each gear range. Pause for about 3 seconds in each range, ending in NEUTRAL.
4. Apply the parking brake and let the engine idle for 3 minutes.
5. Remove the transmission fluid level indicator. Wipe the indicator clean. Insert the indicator fully into the tube.
6. Wait 3 seconds and remove the indicator.
7. Read both sides of the indicator. The fluid must be within the hot cross-hatched area using the lowest level reading.