

AF 33-5

part 1



by Steve Garrett

Available in the Opel, Saturn Vue and Chevrolet Equinox, the Aisin Warner AF 33-5 is a fully automatic 5 speed transmission and is available in both a front wheel and AWD versions (Figure 1).



Figure 1

As part of the ever changing transmission landscape, another transmission has been introduced into the General Motors lineup. Available in the Opel, Saturn Vue and Chevrolet Equinox, the Aisin Warner AF 33-5 is a fully automatic 5 speed transmission and is available in both a front wheel and AWD versions (Figure 1). Six different ranges are available:

- Park
- Reverse
- Neutral
- Drive
- L4
- L2

TRANSMISSION SPECIFICATIONS

The AF33-5 specifications are as follows:

- Transaxle type - Front wheel drive and AWD applications are available. Five-speed computer controlled with TCC.
- RPO M45 (AWD applications) RPO M09 (FWD applications).
- Manufactured in – Japan.
- Towing capacity - 2500 lbs.
- Transmission weight - 198 lbs.

- Transmission fluid type - Type T-IV (GM #88900925).
- Fluid capacity 8.2qt (7.8L).
- Pressure Taps - Line pressure.
- Gear Ratios:
 - 1st: 4.685-1
 - 2nd: 2.942-1
 - 3rd: 1.923-1
 - 4th: 1.301-1
 - 5th: 1-1
 - Rev: 3.177-1

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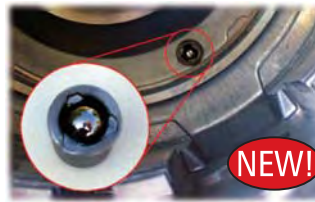
604 Differential Case Saver. (K039 & K049)

Includes a newly developed pinion shaft to resist gear welding under extreme conditions.



Mercedes 722.6 Chico Bushing Kit. (K050)

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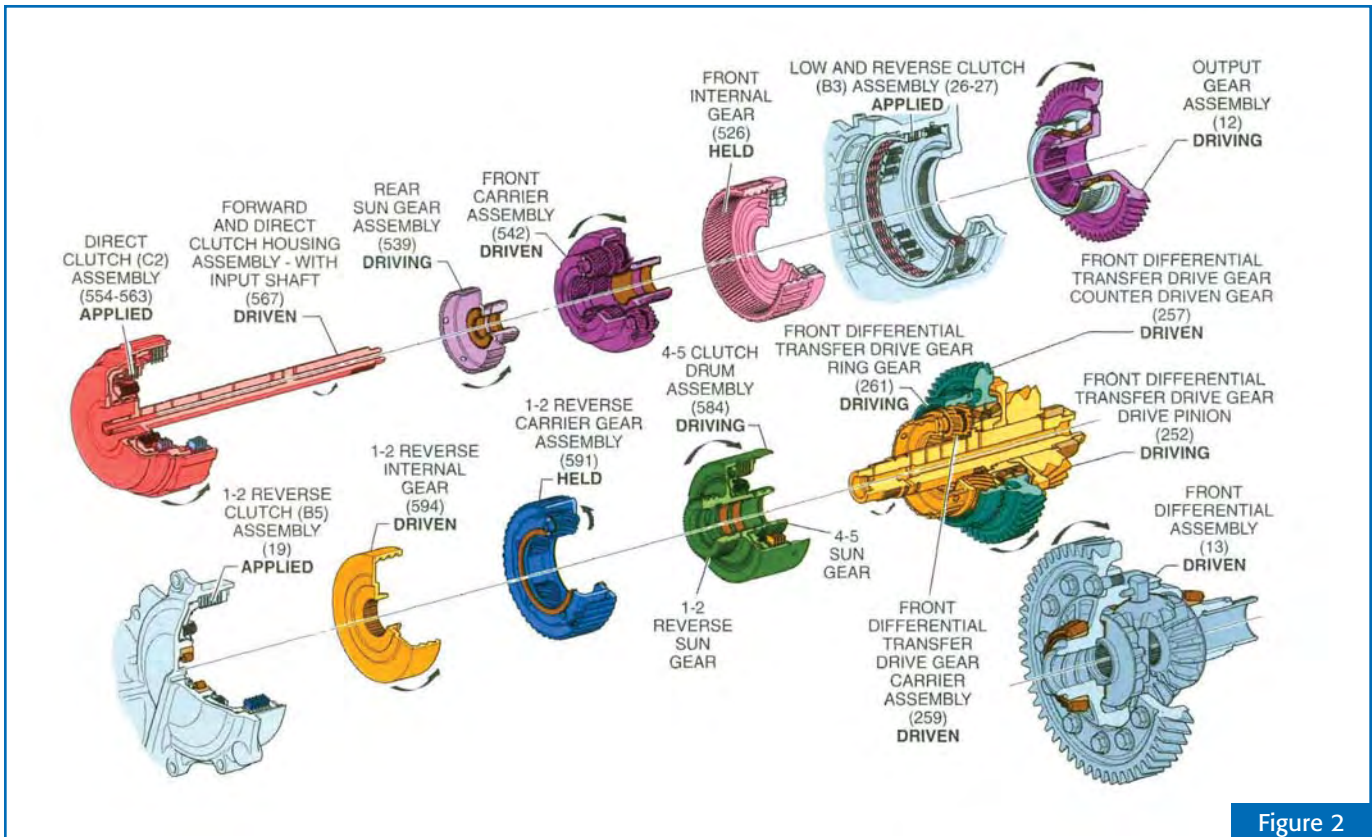


Figure 2

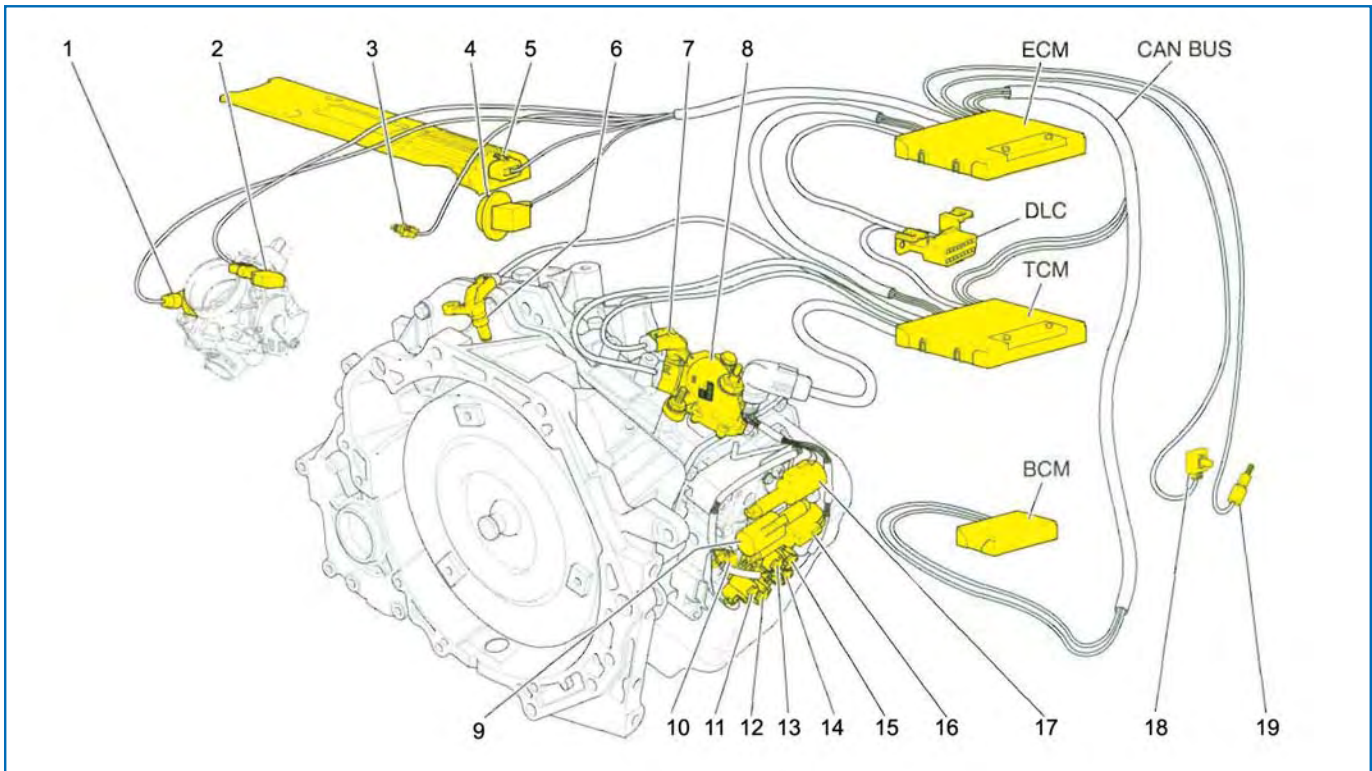
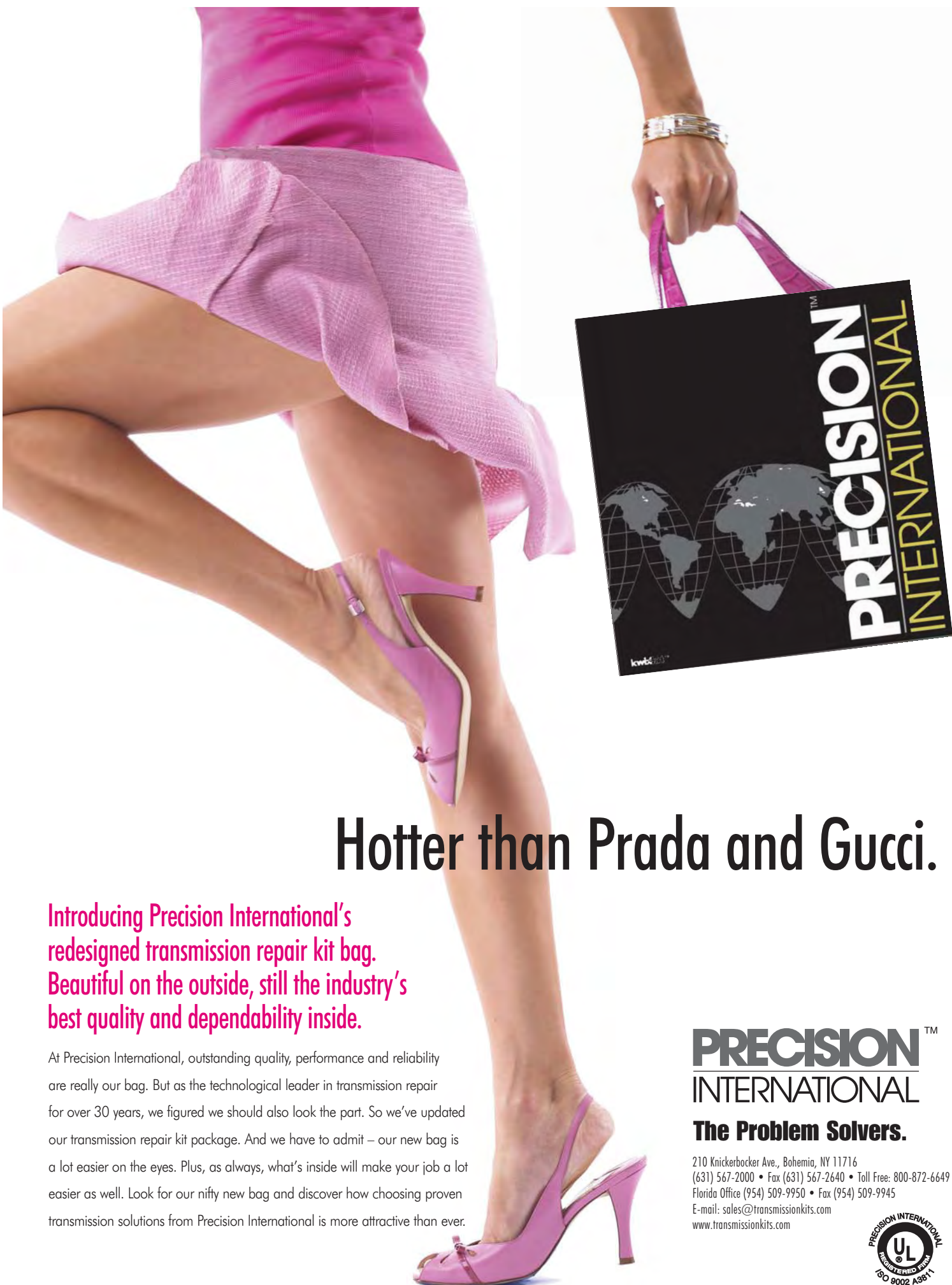


Figure 3

1. Throttle Position Sensor (TP)	10. Automatic Transmission Fluid Temperature Sensor (TFT)	15. 3-4, 4-5 Shift Solenoid Valve Assembly (S4) – Blue
2. Manifold Absolute Pressure Sensor (Map)	11. 2-3, 3-4 Shift Solenoid Valve Assembly (S2) – Light Grey	16. Shift Pressure Control Solenoid Valve Assembly (SLS) – Green
3. Engine Coolant Temperature Sensor (ECT)	12. Reverse Shift Solenoid Valve Assembly (S5) – Green	17. Lock Up Pressure Control Solenoid Valve Assembly (SLU) – Black
4. Cruise Control Information	13. Reverse, 1st Shift Solenoid Valve Assembly (S1) – Black	18. Accelerator Pedal Position Sensor (APP)
5. Engine Speed (Ignition Module)	14. 1-2, 2-3, Reverse Shift Solenoid Valve Assembly (S3) – Dark Grey	19. TCC Brake Switch



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The bolt and dipstick are located on the “INBOARD” side of the transaxle.

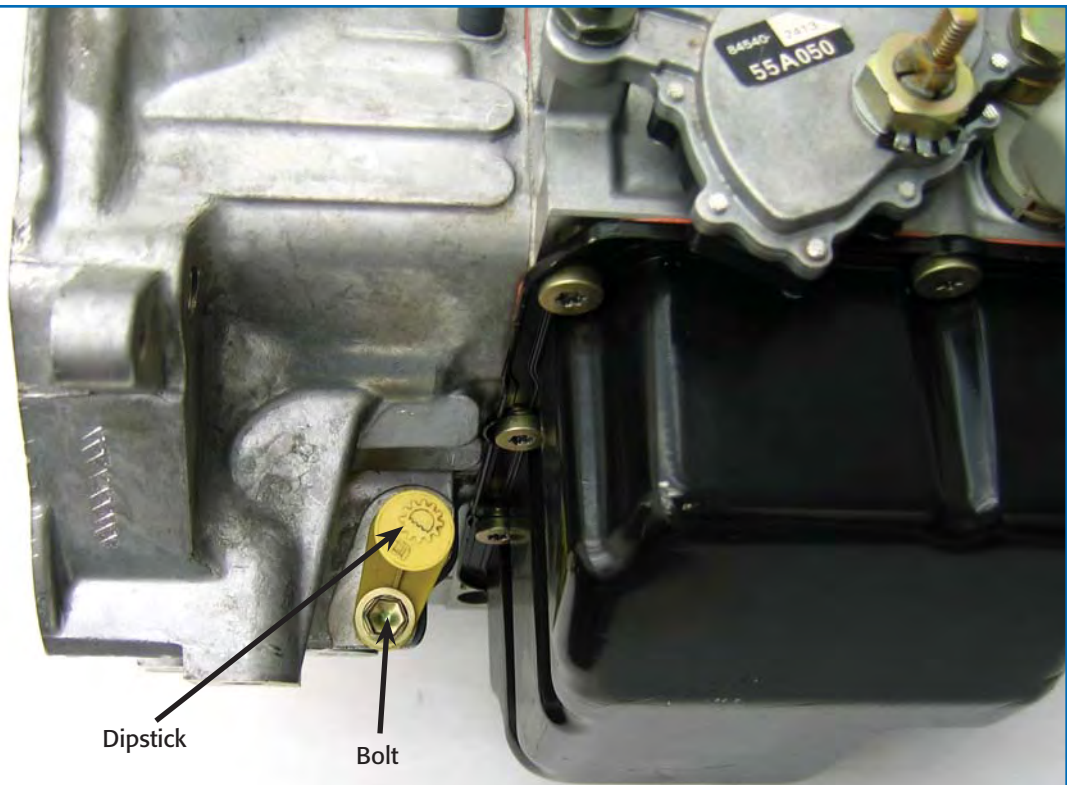


Figure 4

The major mechanical components of the Aisin Warner AF33-5 are shown in figure 2 (page 12).

The major Electrical Components are shown in figure 3 (page 12).

FLUID LEVEL CHECKING PROCEDURE (figure 4):

Like several other GM transmissions, the factory fill is designed for an “extended service interval”. As you know, many GM transmissions no longer use a dipstick, but instead use a sight plug. Although the AF33-5 does not have a dipstick tube, it does have a dipstick. The plastic dipstick is positioned in a location that one would not expect. It’s in the case and held by a bolt that must be removed to check the fluid level. The bolt and dipstick are located on the “INBOARD” side of the transaxle.

FILLING THE TRANSMISSION WITH FLUID (figure 5):

The fluid used in the AF-33-5 is TYPE T IV synthetic (GM part # 88900925). To fill the transmission with fluid you must remove the fluid

fill plug. The fluid fill plug is located next to the P/N PRNDL switch on the top of the transmission. The fluid fill plug is a hex head style plug. It is important not to confuse the fluid fill plug with the third gear band anchor bolt. The third gear band anchor bolt is located within a few inches of the fluid fill plug. If the third gear anchor bolt is removed the band will fall out of position resulting in a “NO 3RD gear” condition even if the bolt is reinstalled. If the third gear anchor bolt has been removed you will need to remove the transmission and disassemble it to reposition the band and its anchor correctly.

The fluid is designed to give up to 50,000 miles of service if the vehicle is being operated according to the severe operating schedule or for the life of the vehicle if it is being operated according to the normal operating schedule.

CHANGING THE TRANSMISSION FILTER

Changing the filter is not part of the normal fluid change procedure on the AF-33-5. Like some other GM applications the filters are designed for the life of the unit. If you choose

to change the filter use the following procedure:

- Remove the 8 pump bolts and remove the pump assembly
- Remove the second coast clutch hub/outer race and second coast clutch hub and washer
- Remove the 17 housing bolts and remove the housing
- Remove and replace the filter
- Reverse the procedure to install the new filter

Caution: Do not intermix the housing bolts and pump bolts or damage to the transmission will result. The housing bolts are 30mm long while the pump bolts are 28 mm long.

RESETTING THE FLUID LIFE MONITOR

The AF 33-5 GM applications are equipped with a fluid life monitor. The TCM calculates the fluid life and then signals the IPC when fluid life is less than 10%. The IPC will turn on the service vehicle soon lamp on some applications indicating that it is time for the fluid to be changed. In addition, the TCM will log a DTC 1868 indicating the transmission fluid requires service.

To fill the transmission with fluid you must remove the fluid fill plug. The fluid fill plug is located next to the P/N PRNDL switch on the top of the transmission.

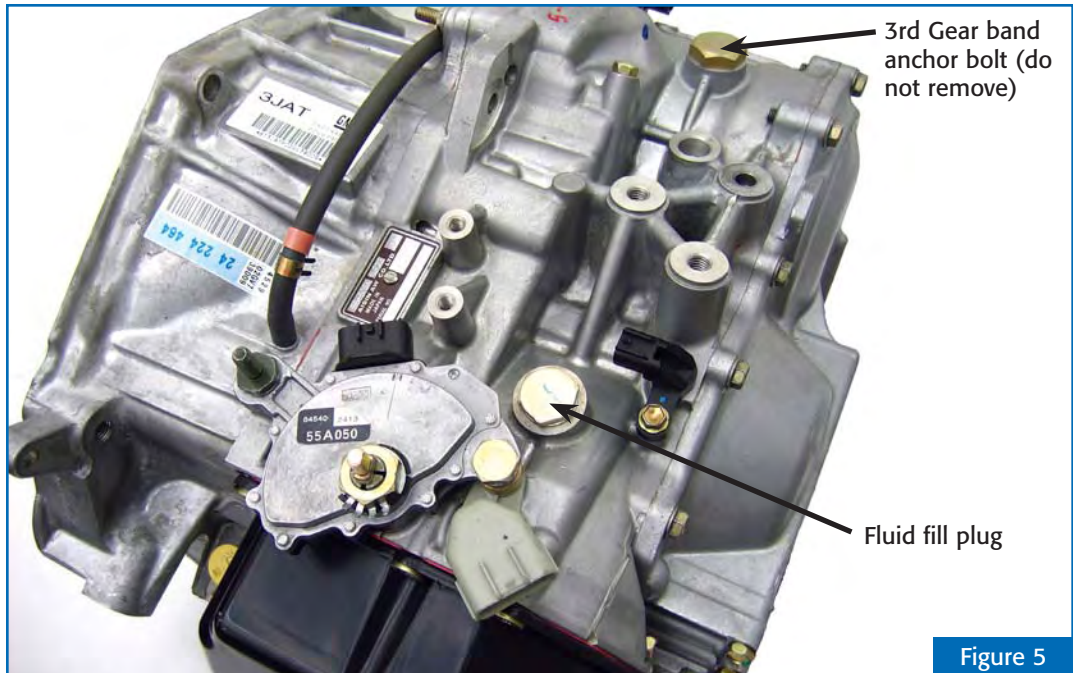


Figure 5

The illumination of the service vehicle soon lamp, when the fluid life is low, has been disable on applications that exceed the following VIN build dates. Canada/Mexico built vehicles after 4/07/05, USA built vehicles after 3/31/05.

The fluid life monitor system will need to be reset if any of the following are to occur:

- The ATF has been changed
- The transmission has been

- replaced
- The transmission has been overhauled

To reset the fluid life monitor to 100% you must use a scan tool. Well, as you can see, our time has

run short. We'll take a more detailed look at this unit next time.



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