

# GENERAL PROCEDURES

## TRANSMISSION FLUID COOLER - BACKFLUSHING AND CLEANING

### Material

#### MATERIAL SPECIFICATION

Item	Specification
MERCON® SP Automatic Transmission Fluid XT-6-QSP	MERCON® SP

**CAUTION:** When internal damage occurs in the transmission, metal particles and clutch plate material can travel into the torque converter and the transmission fluid cooler. These contaminants are a major cause of recurring transmission concerns. To prevent further concerns, remove these contaminants from the cooler lines and install a new cooler before placing the transmission in use.

1. Install a new transmission fluid cooler if any fluid leak are indicated or a major metallic failure is indicated.
2. Using a suitable torque converter/fluid cooler cleaner, flush the fluid cooler and lines.

**NOTE:** Rubber hoses must be attached to the ends of the fluid cooler tubes, to aid in connecting them to the cleaner.

3. Connect the cleaner pressure and return lines appropriately.
  1. Connect the pressure line to the fluid cooler inlet tube.
  2. Connect the return line to the fluid cooler outlet tube.
  3. Place the outlet end of the return line in the fluid tank reservoir.

**NOTE:** Cycling the fluid pump on and off will help dislodge contaminants in the cooler system.

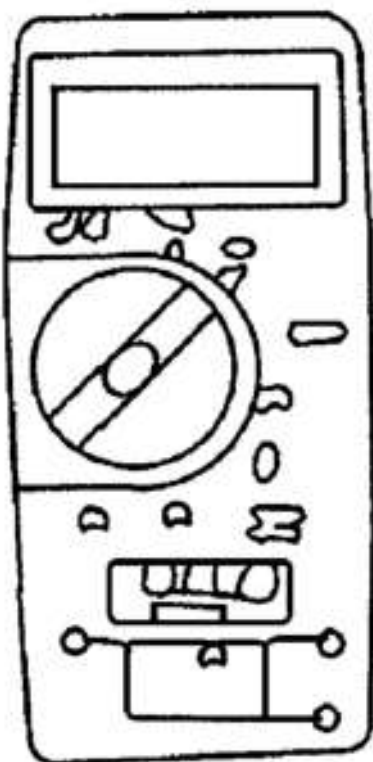
4. Switch the fluid pumps on. Allow the fluid to circulate a minimum of 5 minutes.
5. Switch the fluid pump off.
6. Disconnect the cleaner pressure line at the fluid cooler tube.
7. Using compressed air, blow through the fluid cooler inlet tube until all fluid is removed.
8. Remove the rubber hoses from the fluid cooler tubes.

## TRANSMISSION FLUID DRAIN AND REFILL

### Special Tool(s)

#### TRANSMISSION FLUID SPECIAL TOOL

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**ST1137-A**

Worldwide Diagnostic System (WDS)  
Vehicle Communication Module (VCM)  
with appropriate adapters, or equivalent scan  
tool

#### Material

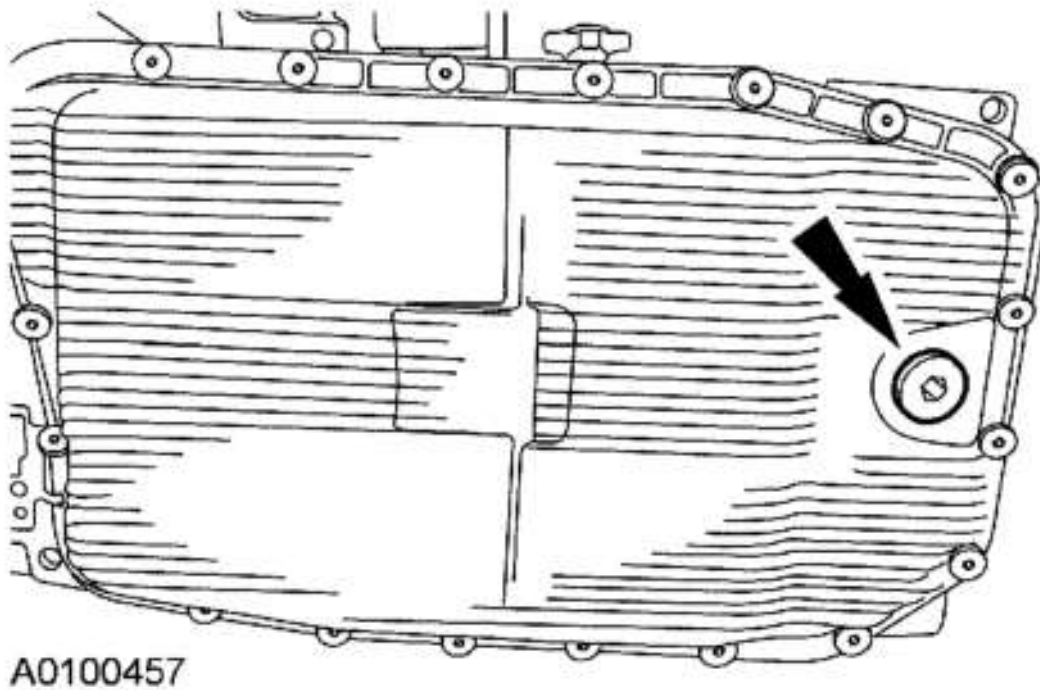
#### MATERIAL SPECIFICATION

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#### Drain

**CAUTION:** The fluid fill plug located on the side of the transmission is near the exhaust system. The exhaust will be extremely hot during this procedure. Use care when working near the exhaust and the heat shields.

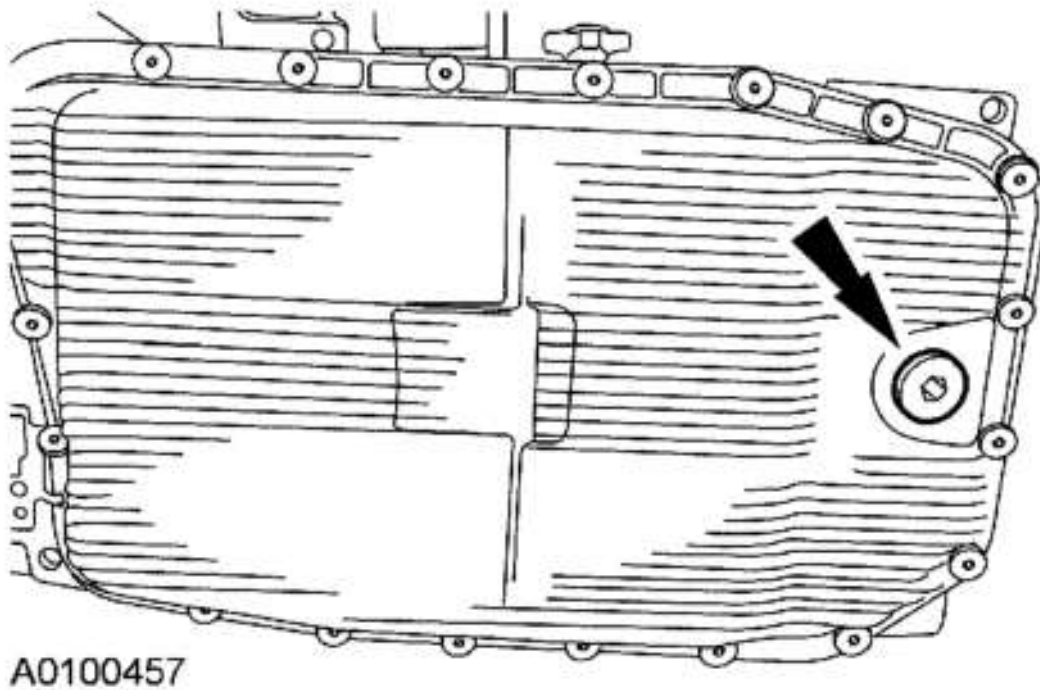
1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to **JACKING & LIFTING**.
2. Remove and discard the fluid pan drain plug and allow the fluid to drain.



**Fig. 7: Locating Fluid Pan Drain Plug**  
Courtesy of FORD MOTOR CO.

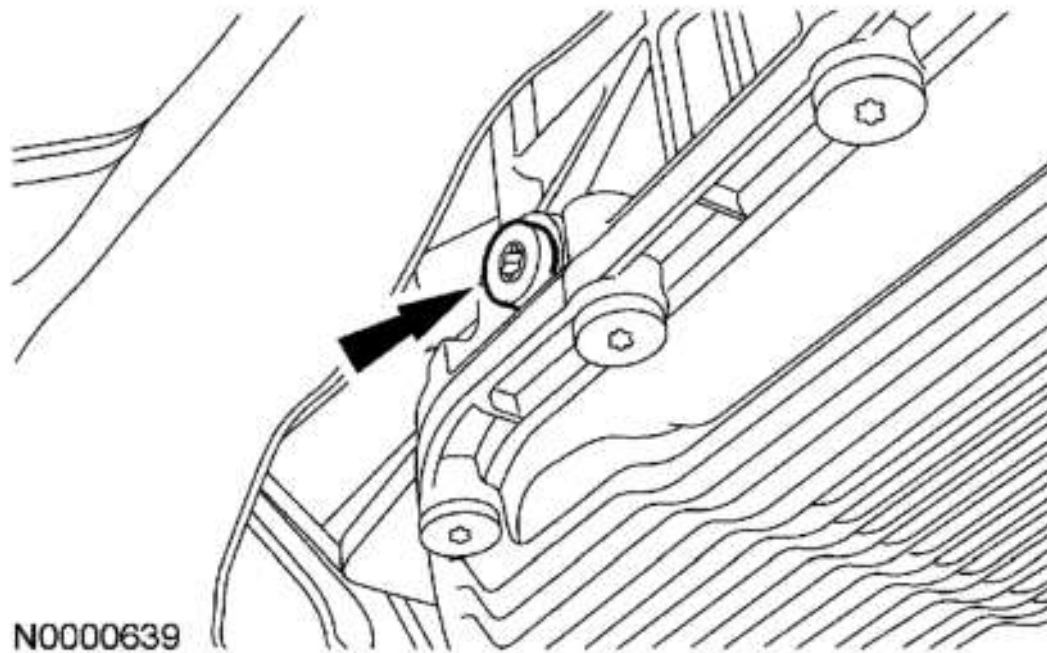
**Refill**

1. Install a new fluid pan drain plug.
  - Tighten to 8 Nm (71 lb-in).



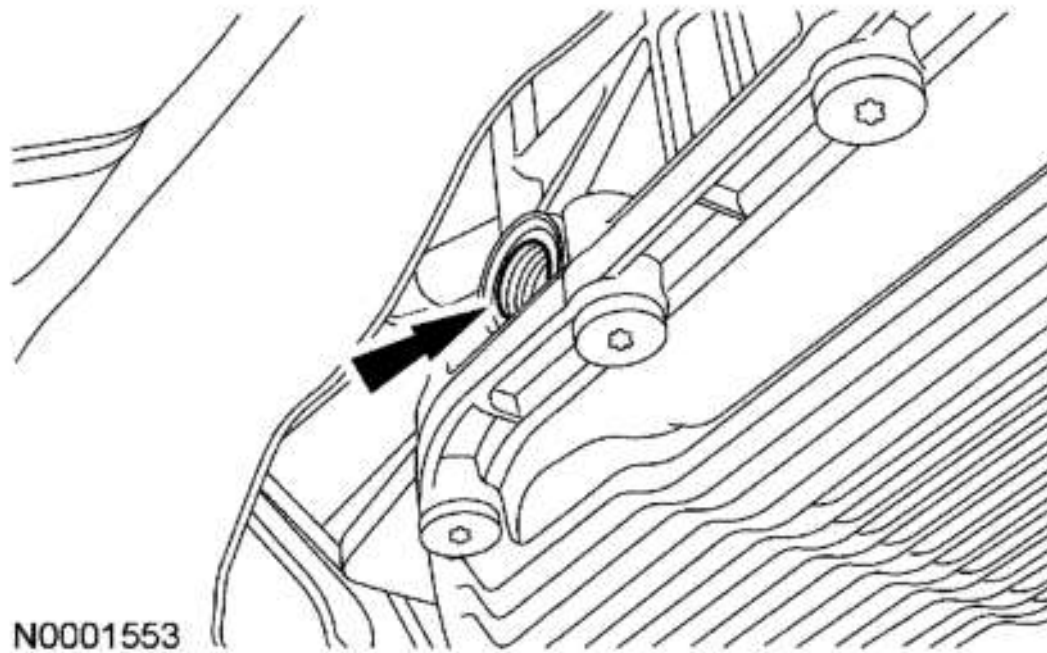
**Fig. 8: Locating Fluid Pan Drain Plug**  
Courtesy of FORD MOTOR CO.

2. Remove the fluid fill plug located on the RH rear side of the case, near the transmission electrical connector.



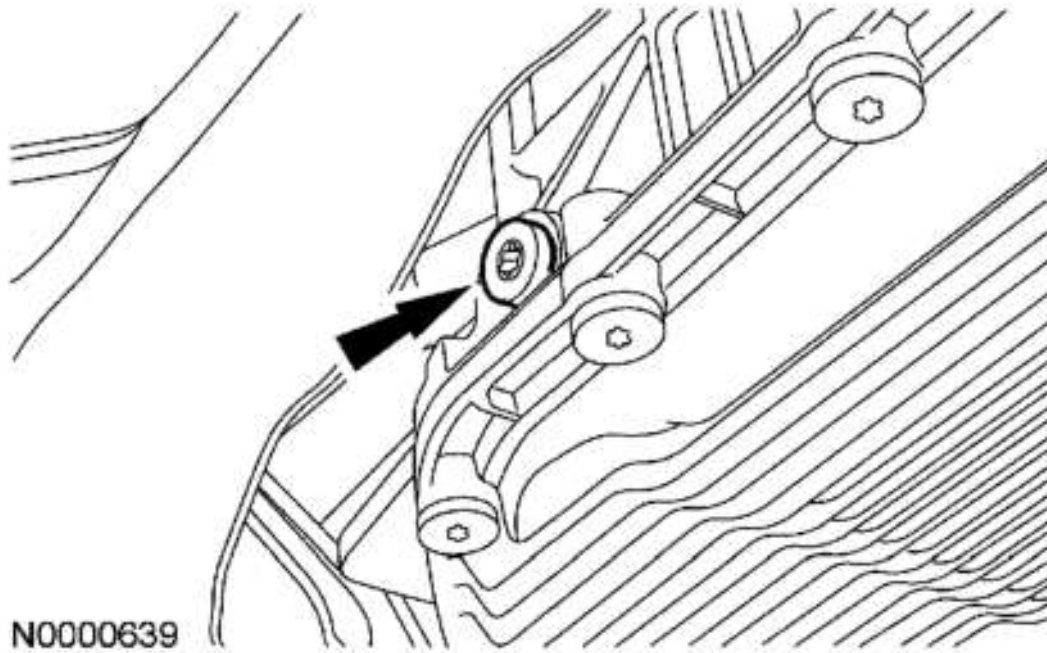
**Fig. 9: Locating Fill Plug**  
Courtesy of FORD MOTOR CO.

**CAUTION:** The use of any other transmission fluid than specified can result in the transmission failing to operate in a normal manner or transmission failure.



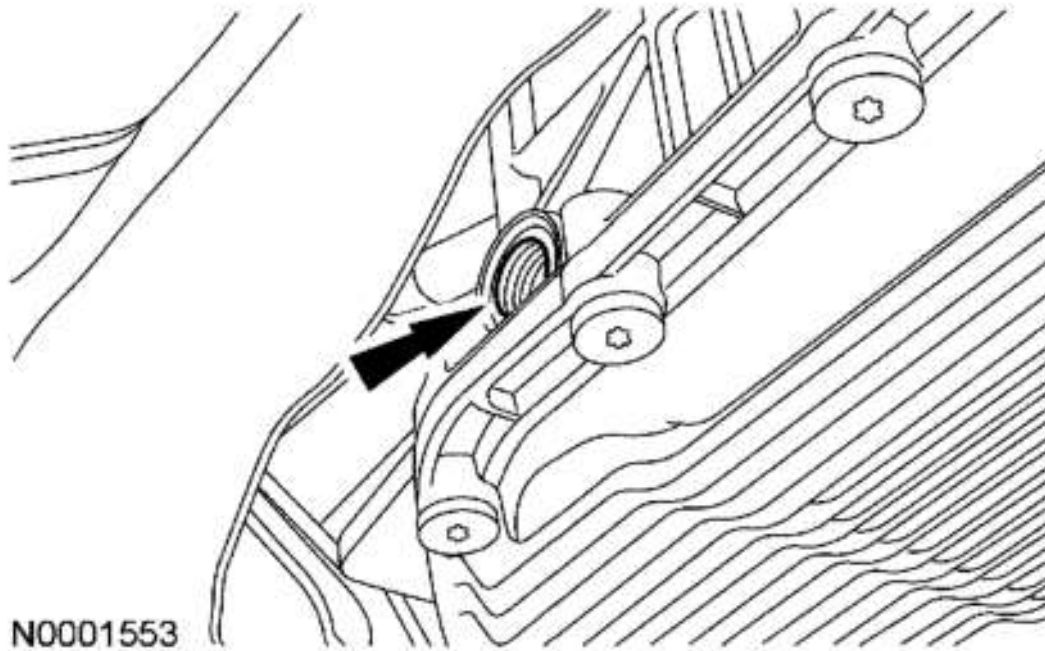
**Fig. 10: Locating Fluid Fill Plug**  
Courtesy of FORD MOTOR CO.

3. Fill the transmission.
  - Add 4.7 liters (5 quarts) of clean automatic transmission fluid to the transmission through the fluid fill hole. Stop when the fluid runs out of the bottom of the hole.
4. Install the fluid fill plug located on the RH rear side of the case, near the transmission electrical connector.
  - Tighten to 35 Nm (26 lb-ft).



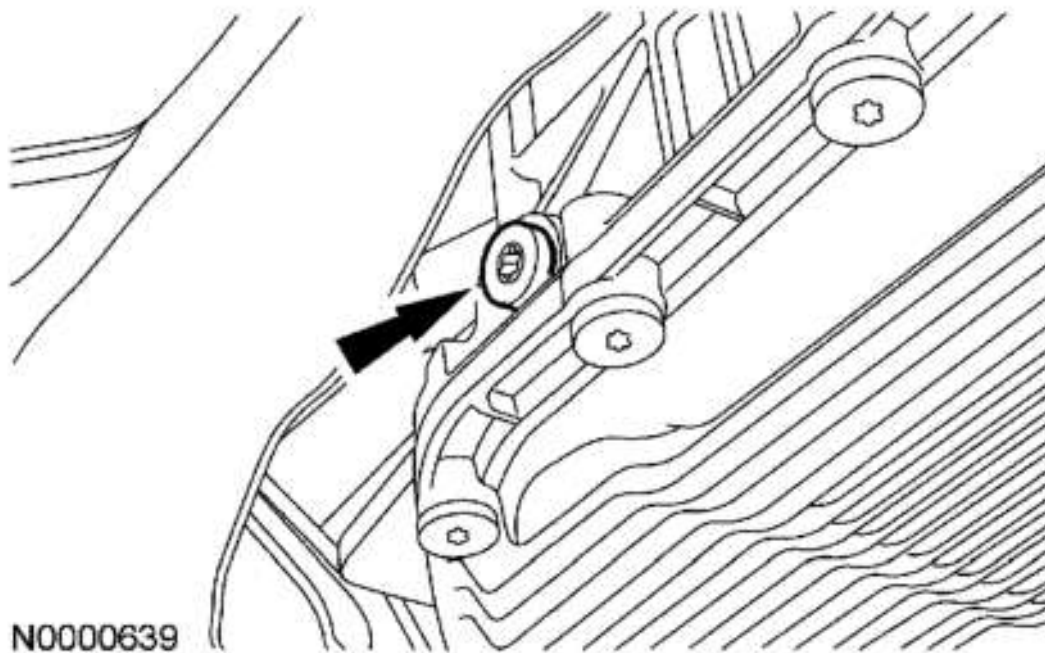
**Fig. 11: Locating Fill Plug**  
Courtesy of FORD MOTOR CO.

5. Start the engine. Move the transmission range selector lever through all the gear ranges, checking for engagements.
6. With the special tool connected, the engine idling (600-750 rpm) in PARK and the transmission temperature at 30°C-50°C (86°F-122°F), check and adjust the transmission fluid level.
7. If more fluid is needed, remove the fluid fill plug on the side of the case and fill with clean automatic transmission fluid until the fluid runs out of the bottom of the hole.



**Fig. 12: Locating Fluid Fill Plug**  
Courtesy of FORD MOTOR CO.

8. Install the fluid fill plug.
  - Tighten to 35 Nm (26 lb-ft).





**Fig. 13: Locating Fill Plug**  
Courtesy of FORD MOTOR CO.

## TORQUE CONVERTER

1. A new or remanufactured torque converter must be installed if one or more of the following statements is true:
  - A torque converter malfunction has been determined based on complete diagnostic procedures.
  - Converter stud or studs, impeller hub or bushing are damaged.
  - Discoloration (due to overheating).
  - Evidence of transmission assembly or fluid contamination due to the following transmission or converter failure modes:
    - Major metallic failure.
    - Multiple clutches or clutch plate failures.
    - Sufficient component wear which results in metallic contamination.
    - Internal torque converter contamination present. For additional information, refer to **TORQUE CONVERTER CONTAMINATION INSPECTION**.

## TORQUE CONVERTER CONTAMINATION INSPECTION

### Material

#### MATERIAL SPECIFICATION

Item	Specification
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**CAUTION: Do not use water-based cleaners or mineral spirits to clean or flush the torque converter or transmission, damage will occur. Use only clean automatic transmission fluid designated for the transmission and converter being serviced.**

1. If a new or remanufactured torque converter is not being installed, the following steps must be completed.
2. With the torque converter on a bench, pour a small amount of transmission fluid from the torque converter onto an absorbent white tissue or through a paper filter and examine the fluid.

**NOTE: The factory fill fluid is clear, the exchange fluid will be red.**

3. Observe the color and odor of the fluid. The fluid should be clear or red, not brown or black. Odor may indicate an overheating condition such as clutch disc or band failure.
4. Examine the stain on the tissue for evidence of particles (specks of any kind). Examine the fluid level indicator for signs of antifreeze (gum or varnish). If particles are present in the fluid, a new torque converter must be installed.
5. If there are no particles or contamination present, drain the remainder of the transmission fluid from the torque converter.
6. Add 1.9 liter (2 quarts) of clean automatic transmission fluid into the converter and agitate by hand.
7. Thoroughly drain the fluid.