Leakage Inspection

Special Tool(s)

 ST1300-A	100W/12 Volt DC UV Lamp 164-R0751 or equivalent

Material

Item	Specification
Dye-Lite® ATF/Power Steering Fluid Leak Detection Dye 164-R3701 (Rotunda)	—
MERCON® V Automatic Transmission Fluid XT-5-QM (or XT-5-QMC) (US); CXT-5-LM12 (Canada)	MERCON® V

Leak Check Test with a Black Light

Dye-Lite® ATF/Power Steering Fluid Leak Detection Dye 164-R3701 (Rotunda) is used to detect a transmission fluid leak.

1. Add dye to the transmission fluid. Use one 30.0 ml (1 oz) of dye solution for every 3.8L (4 qt) of transmission fluid.

2. Start and run the engine until the transmission reaches its normal operating temperature. Using the 100W/12 Volt DC UV Lamp, observe the back of the cylinder block and top of the torque converter housing for evidence of fluid leakage. Raise the vehicle on a hoist and run the engine at a fast idle, then at a normal idle, occasionally shifting to the DRIVE and REVERSE position to increase pressure within the transmission. Observe the front of the flexplate, back of the cylinder block (in as far as possible), inside the torque converter housing and the entire case until fluid leakage is evident and the probable source of leakage can be determined.

External Fluid Leaks

Leak Path	Possible Source
Leaks at the transmission fluid pan to case	• Transmission fluid pan bolts not tightened to specification. • Transmission fluid pan gasket damaged. • Transmission case pan rail damaged.
Transmission fluid cooler tubes or fittings leaking	• Transmission fluid cooler tube(s), cooler tube fitting(s) damaged. Refer to Section 307-02 . • Transmission fluid cooler tube nut-to-case fitting damaged. Refer to Section 307-02 . • Transmission case damage at cooler tube fitting. •
Transmission fluid cooler tube nut-to-case fitting leaking	• Damaged or missing O-ring seals. Refer to Section 307-02 . • Transmission fluid cooler tube fitting(s) not tightened to specifications. Refer to Section 307-02 .

Leaks at the transmission fluid cooler	• Transmission fluid cooler damage. Refer to Section 307-02 . • Transmission fluid cooler tube fitting(s) damaged or not tightened to specifications. Refer to Section 307-02 .
Leaks at external sensors	• Damaged or missing O-ring seals. • Screw not tightened to specification.
Leaks at the manual control lever seal	• Damaged or missing control lever seal.
Leaks at the solenoid body harness connector	• Solenoid body harness connector O-ring seal(s), either on the harness end or the solenoid body, damaged or missing.
Transmission fluid leakage in torque converter area	• For possible sources, refer to Fluid Leakage in Torque Converter Area Chart.

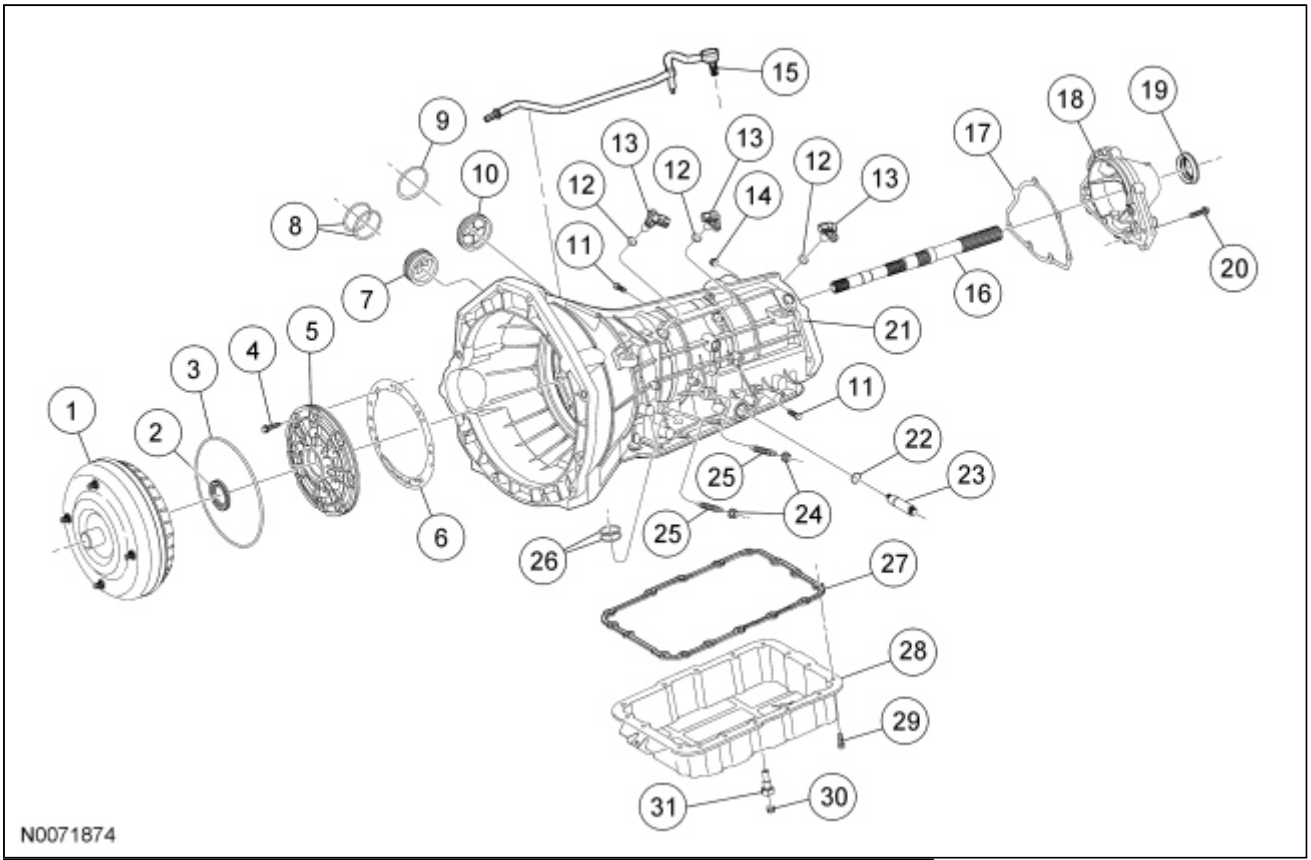
External Sealing

NOTICE: **Do not try to stop a transmission fluid leak by increasing the torque of bolts and screws beyond specification. This may cause damage to the transmission case threads.**

The transmission has the following parts to prevent external fluid leakage:

- Gaskets
- Lip-type seals
- O-ring seals
- Seal rings
- Seal grommets
- Seal washers
- Thread sealant

External Sealing



Item	Part Number	Description

1	7902	Torque converter assembly
2	7A248	Seal assembly — front transmission fluid pump
3	7A248	Seal — front transmission fluid pump
4	W704892-S300	Screw and washer assembly (8 required)
5	7G187	Transmission fluid pump
6	7A136	Gasket — transmission fluid pump
7	7D027	Cover — Overdrive (O/D) servo
8	W703119-S300	Seals — O/D servo cover (2 required)
9	W702969-S300	Seal — intermediate servo cover
10	7D027	Cover — intermediate servo
11	390318-S2	Plugs — pipe (2 required)
12	W702981-S300	O-ring seals — sensor-to-case (3 required)
13	7H103	Sensor assemblies — (3 required)
14	6026	Plug — case
15	7034	Vent assembly
16	7060	Shaft — output
17	7086	Gasket — extension housing
18	7A039	Extension housing assembly
19	7052	Seal — extension housing
20	W500311-S309	Screw — extension housing (7 required)
21	7005	Transmission case assembly
22	7B498	Seal — manual control lever
23	7A256	Manual control lever
24	7C492	Screws — band adjuster (2 required)
25	71000-S100	Nuts — band adjuster (2 required)
26	W705928-S300	O-ring seals (2 required)
27	7A191	Gasket — transmission fluid pan
28	7A194	Transmission fluid pan
29	W500213-S309	Screw — fluid pan (16 required)
30	W704999	Plug — short hex
31	7A101	Plug — fluid drain

External Sealing

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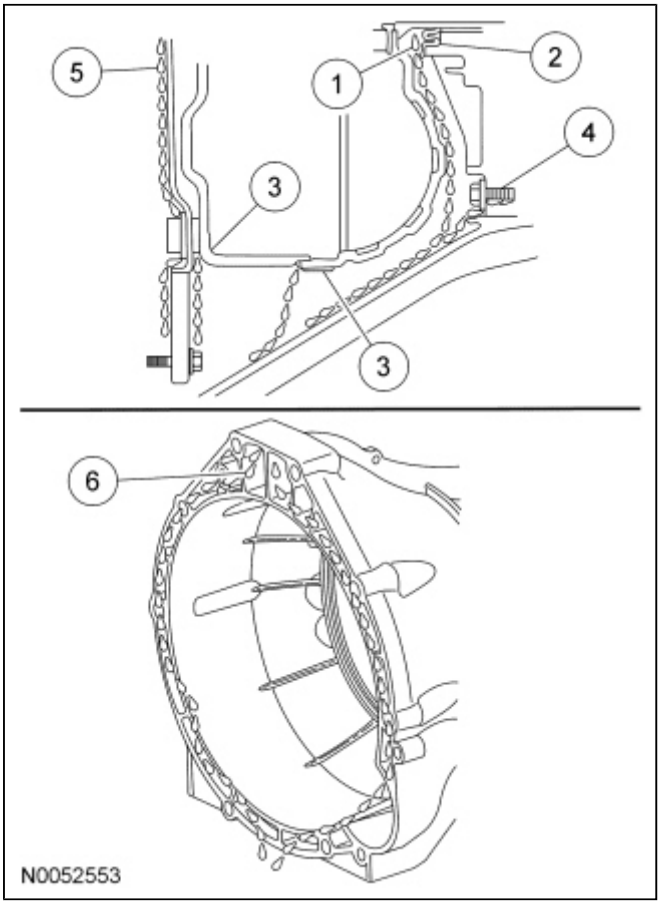
- Lip-type seals
- O-ring seals
- Seal rings
- Seal grommets
- Seal washers
- Thread sealant

Fluid Leakage in Torque Converter Area

Fluid leakage at the front of the transmission, as evidenced by fluid around the torque converter housing part of the case, may have several sources. By careful observation, it is possible in many instances to pinpoint the source of the leak before removing the transmission from the vehicle.

The paths, which the fluid takes to reach the bottom of the torque converter housing part of the case, are shown in the illustration. The 6 numbers in the illustration correspond with the 6 flow path steps.



Leak Path	Symptom	Possible Source
1, 2 and 4	Leak at the front of the transmission	Pump lip seal
1, 2 and 4	Leak at the front of the transmission	Converter hub weld
1, 2 and 4	Leak at the front of the transmission	External pump seal (large)
1, 2 and 4	Leak at the front of the transmission	Pump-to-case screws
1, 2 and 4	Leak at the front of the transmission	Pump gasket
3	Leak at the front of the transmission	Torque converter seal weld
3	Leak at the front of the transmission	Torque converter stud
5	Leak at the front of the transmission	Engine oil leak; rear main seal
5	Leak at the front of the transmission	Engine valve cover
5	Leak at the front of the transmission	Oil galley
5	Leak at the front of the transmission	Engine oil pressure sensor
6	Leak between engine and transmission case	Venting