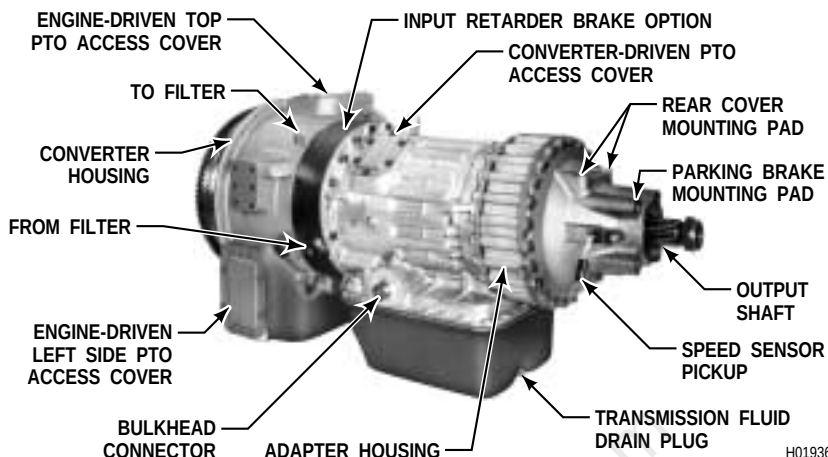


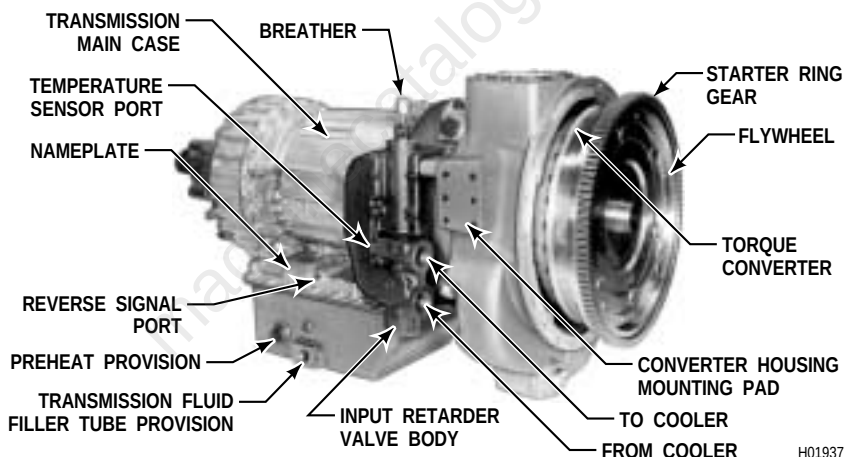


Mechanic's Tips

HT, HTB, CLT, CLBT 700 Series
Electronic Control Transmissions



Model HT 755DR Transmission — Left-Rear View (With Input Retarder)



Model HT 755DR Transmission — Right-Front View (With Input Retarder)

- The auxiliary filter must have at least a 40-micron filter element or finer and a maximum filter pressure drop of 2 psi (14 kPa) at 15 gpm (57 liters/minute) at 180°F (82°C). The maximum external circuit pressure drop must not exceed 30 psi (207 kPa) at 15 gpm (57 liters/minute) at operating temperature, in **D (Drive)** at full throttle stall.
- The following auxiliary filters are recommended:

Table 1–6. Auxiliary Filter Recommendations

Filter Assembly	Filter Element
Allison 29510921*	Allison 29510918*
AC PM 13-16	PF 897
AC PM 16-1	PF141
FX 11583	HF6520
Fram HP 1-1	HP 1 or AC HD 222
Purolator OF-15C-1	OF-2C-1
Purolator 20-10	PER-20
* High-efficiency filter and element are available from your authorized Allison distributor. Ref: SIL 12-TR-93 (latest revision)	

1–12. BREATHER

a. Location and Purpose. The breather is located on top of the transmission housing. The breather prevents air pressure buildup within the transmission and its passage must be kept clean and open.

b. Maintenance. The amount of dust and dirt encountered will determine the frequency of breather cleaning. Use care when cleaning the transmission. **DO NOT SPRAY STEAM, WATER, OR CLEANING SOLUTION DIRECTLY AT THE BREATHER.** Spraying steam, water, or cleaning solution directly at the breather can force the water or cleaning solution into the transmission.

c. Replacement. Always use a wrench of the proper size to remove or replace the breather. Pliers or a pipe wrench can crush or damage the stem and produce metal chips which could enter the transmission. Tighten the breather to 9–12 lb ft (12–16 N·m).

1–13. TRANSMISSION STALL TEST AND NEUTRAL COOL-DOWN CHECK



WARNING: When conducting a transmission stall test, the vehicle must be prevented from moving. Apply the parking brake and service brakes and block the vehicle securely. Warn personnel to keep clear of the vehicle and its travel path. Failure to do so can cause serious injury.

c. Neutral Cool-Down Check Procedure. The neutral cool-down check determines if the transmission fluid cools following an engine load condition. Perform this check immediately after the engine speed has been recorded in the stall test.

- Record the converter-out temperature.
- With the transmission remaining in Neutral, run the engine at 1200–1500 rpm for two minutes to cool the transmission fluid.
- At the end of two minutes, record the converter-out temperature.

d. Results.



NOTE:

Environmental conditions, such as ambient temperature, altitude, engine accessory loss variations, etc., affect the power input to the converter. Under such conditions, a stall speed deviation within ± 150 rpm of specification can be accepted as within normal range.

If engine stall speed is more than 150 rpm below the stall speed specified by the engine manufacturer, an engine problem is indicated, such as need for tune-up.

If engine stall speed is more than 150 rpm above specification, a transmission problem is indicated, such as slipping clutches, cavitation, or torque converter failure. Refer to Section 2–6 for the applicable service manual number.

An extremely low stall speed, such as 33 percent of the specified engine stall rpm, during which the engine does not smoke, could indicate a freewheeling stator.

If the engine stall speed conforms to specification, but the transmission fluid overheats, refer to the cool-down check. If the transmission fluid does not cool during the two-minute cool-down check, a stuck stator can be indicated.

If the engine stall speed conforms to specification and the cool-down check shows that transmission fluid cools properly, refer to Troubleshooting Manual TS2712EN.

5-6. CONNECTING INPUT RETARDER CONTROL

- Place the operator's control at the OFF (disengaged) position.
- Check the input retarder control valve. The valve is spring-loaded to retract into the valve body when the retarder is OFF. Lift the valve upward, to the ON position, to check for the full travel of 1.5 inches (38 mm) from OFF to ON position.
- Release the valve, permitting the spring to retract the valve. Be sure the valve is fully retracted.
- Adjust the linkage so that rod end or clevis registers with the pin hole in the retarder valve. Connect the linkage to the retarder valve and check the operation of the valve. The valve must be fully extended when the operator's control is at ON.
- The valve must be fully retracted when the control is at OFF.



NOTE:

Failure to ensure a full off stroke will result in low vehicle power and transmission overheating. Failure to ensure a full on stroke will result in less than rated retarder performance.

5-7. CONNECTING OUTPUT RETARDER CONTROL

The output retarder (when used) is connected to the vehicle braking system by an air supply line.

- Connect the air supply hose fitting to the retarder control valve. Tighten the fitting to 7–10 lb ft (10–13 N·m).

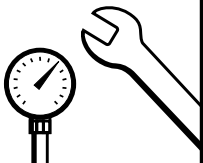
5-8. CONNECTING POWER TAKEOFF CONTROLS

- If not previously installed, mount the PTO on the transmission. Refer to Paragraph 3-3 for instructions.
- Connect controls to the PTO. Check for proper operation of the controls.
- Check cable or linkage rod routing. Kinks, sharp bends, and close proximity of the cable to exhaust pipes or manifold must be avoided. Rods or linkage must not rub or interfere with adjacent parts.



CAUTION: PTOs using main transmission oil pressure to apply the PTO must have main pressure dead-headed at the PTO control valve when not in use.

- Couple the PTO output to its driven equipment. Check couplings or universal joints for proper assembly and alignment.

	CHECKS AND ADJUSTMENTS	SECTION VI
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6-1. INSTALLATION CHECKLIST



Use this list after transmission installation. As items are checked, mark them off this list.

• Torque Values

- ☐ Flexplate bolts — 96–115 lb ft (131–155 N·m)
- ☐ Transmission-to-engine bolts*
- ☐ Transmission-to-frame or mounting bolts*
- ☐ Input flange nut — 450–550 lb ft (611–745 N·m)
- ☐ Output flange nut — 600–800 lb ft (814–1084 N·m)
- ☐ Companion flange or universal joint bolts*
- ☐ Speedometer cable nut — 52 lb in. (6 N·m)
- ☐ Speedometer body — 45–50 lb ft (62–67 N·m)
- ☐ Hydraulic lines-to-transmission — 40–50 lb ft (55–67 N·m) max
- ☐ Cooler lines to and from retarder — 50–59 lb ft (68–79 N·m)
- ☐ Drain plug — 15–20 lb ft (20–27 N·m)
- ☐ Speed sensor bolt — 20–23 lb ft (28–31 N·m)
- ☐ PTO mounting bolts* (if PTO used)
- ☐ Reverse signal switch to transmission, if so equipped
- ☐ 48–60 lb in. (5.5–6.7 N·m)
- ☐ Parking brake bolts to transmission — 117–140 lb ft (159–189 N·m)
- ☐ Center bolt external filter — 75 lb in. (8.5 N·m)

• Cooler Fluid Lines and Air Hose

- ☐ No Leaks
- ☐ Connection Tightness
- ☐ Correct Routing

* Tighten to vehicle manufacturer's recommendation

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Allison CLBT 700 + CLT 700 + HT 741 + HT 748 Transmission Service Manual

Allison CLBT 700, CLT 700, HT 741, HT 748 transmission service manual with removal, installation and adjustment procedures. Instant PDF download.

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