



## Technical Bulletin #935

**Transmission:** AX4N, 4F50N & AX4S

**Subject:** Torque converter clutch not engaging and/or DTC P0741 or P1744

**Application:** 1996-2003 Taurus & Windstar, 1996-2002 Continental, 1996-2003 Sable

**Issue Date:** July, 2005

# AX4N, 4F50N & AX4S

## Torque Converter Clutch Not Engaging and/or DTC P0741 or P1744

### Issue

Torque converter clutch not engaging when commanded and/or Diagnostic Trouble Codes (DTC) P0741 or P1744 stored in memory.

### Action

Use a scan tool (NGS/WDS) to monitor PID's to help determine steps to take for service. Refer to the following Diagnostic Procedure for details.

### Service Procedure

The torque converter clutch may not engage if one or more of the following conditions exist:

- Stuck converter regulator valve
- Stuck solenoid regulator valve
- Stuck bypass clutch control valve
- Stuck pressure failsafe valve
- Pump bore ring groove depth incorrect
- Worn pump shaft or damaged pump shaft seals
- Pump shaft internal sleeve loose (rattles)
- Turbine shaft seals damaged or missing
- Incorrect Torque Converter Clutch (TCC) solenoid
- TCC solenoid mechanically stuck or electrically inop
- Damaged internal wiring harness
- Incorrect gear ratio (wrong sprockets)
- Damaged or worn stator support
- Worn torque converter hub bushing
- Torque converter clutch worn or damaged

Use a scan tool (NGS/WDS) to monitor the following PID's:

- TCC = Commanded duty cycle for TCC solenoid
- TCCMACT = Actual slip across the TCC, measured in RPM
- RPM = Actual engine speed
- TSS\_SRC = Actual turbine shaft speed
- TCCRAT = Speed/Gear ratio of torque converter/transaxle

**NOTE: If "TCCRAT" PID data is incorrect, the incorrect transaxle or drive & driven sprockets have been installed in the vehicle.**

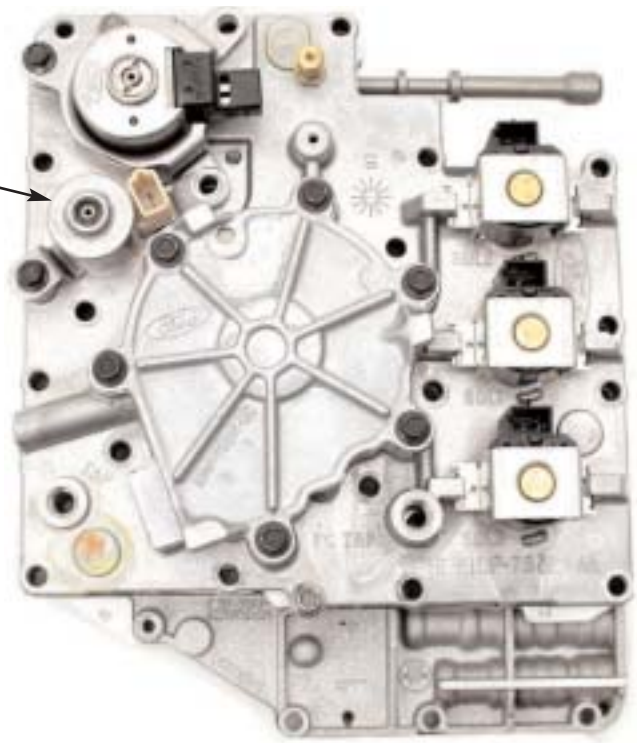
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1. For DTC P0741 and P1744, perform Pinpoint test “C” in Section 307-01 of the appropriate Taurus/Sable, Windstar or Continental Workshop Manual and refer to TCC Solenoid Resistance Chart (Fig. 1) for correct TCC resistance.
2. Also refer to “Diagnosis by Symptom” Routines 240 and 340 in Section 307-01 of the appropriate Taurus/Sable, Windstar or Continental Workshop Manual.
3. Remove lower pan of the transaxle and check for excessive debris in the pan.
4. Remove the main control cover, main control and pump shaft.
5. Check for pump shaft wear or damaged seals.
6. Inspect the internal wiring harness for damage.
7. Inspect and clean the main control and make sure all valves move freely. Specifically, converter regulator valve, solenoid regulator valve, bypass clutch control valve or pressure failsafe valve (refer to Fig. 2 for AX4N and Fig. 3 for AX4S).
8. Measure depth of groove in the pump bore ring (Fig. 4).
9. If cause for condition has not yet been identified, remove the transaxle and inspect the outer surface of the stator support for damage (Fig. 5).
10. Inspect torque converter hub bushing for wear.
11. Inspect turbine shaft seals.
12. To verify the condition has been corrected, the drive cycle must be performed at least five (5) times (for drive cycle procedure refer to the appropriate Workshop Manual Section 307-01). The PCM will not set a torque converter clutch code until it fails engage five (5) consecutive times.

## Torque Converter Clutch Solenoid Resistance

Taurus/Sable	1986-1990		20-40 ohms
Continental	1988-1990		20-40 ohms
Taurus/Sable	1991		21-36 ohms
Continental	1991-1996		0.98-1.6 ohms
Taurus/Sable	1992-1997		0.98-1.6 ohms
Windstar	1995-1998	Thru (9-8-97)	0.98-1.6 ohms
Continental	1997-2002		13-24 ohms
Taurus/Sable	1998-2003		13-24 ohms
Windstar	1998-2003	(9-9-97) and Beyond	13-24 ohms

Torque  
Converter  
Clutch



**Fig. 1: Torque Converter Clutch Solenoid Resistance Chart**

AX4N/4F50N

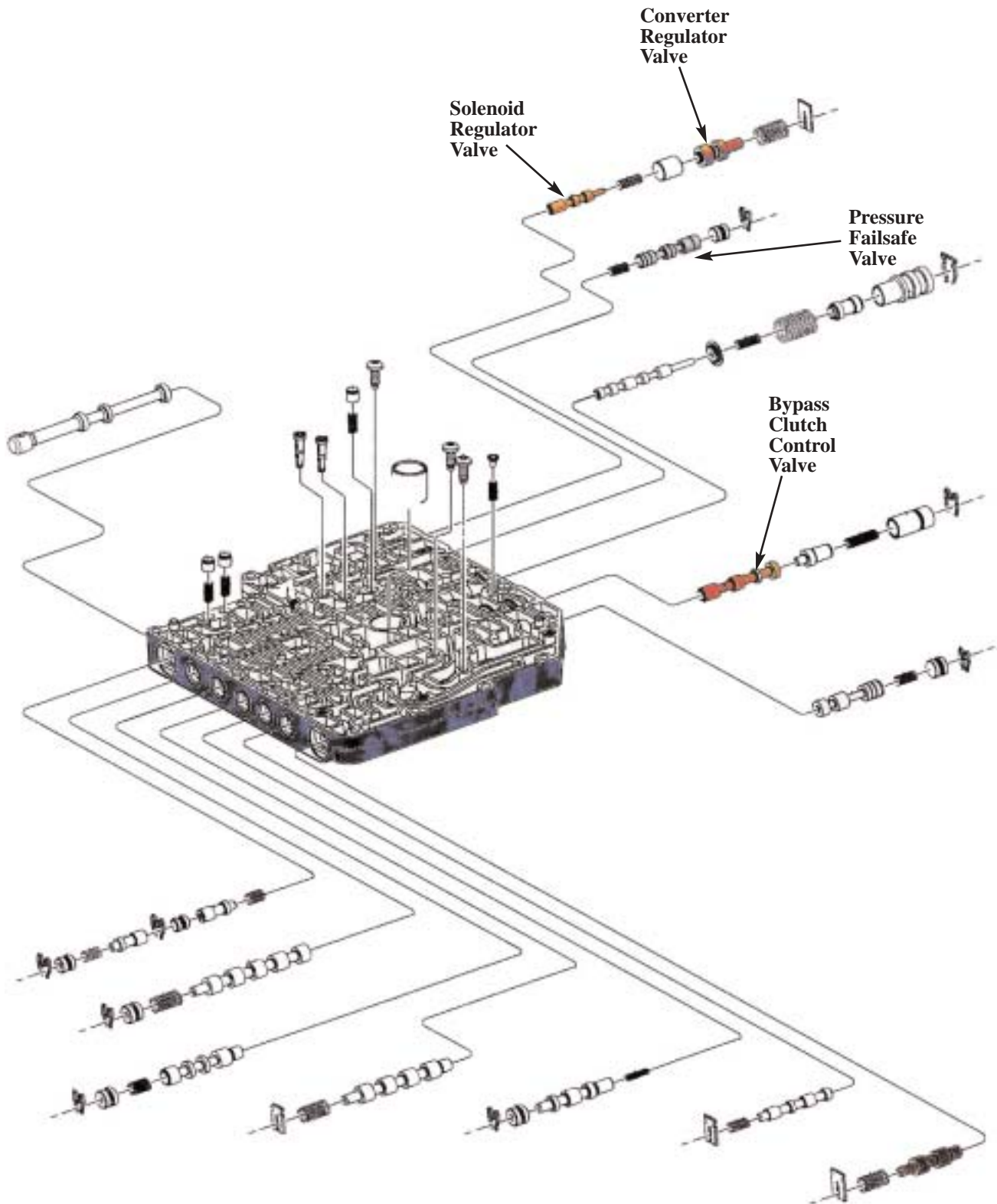
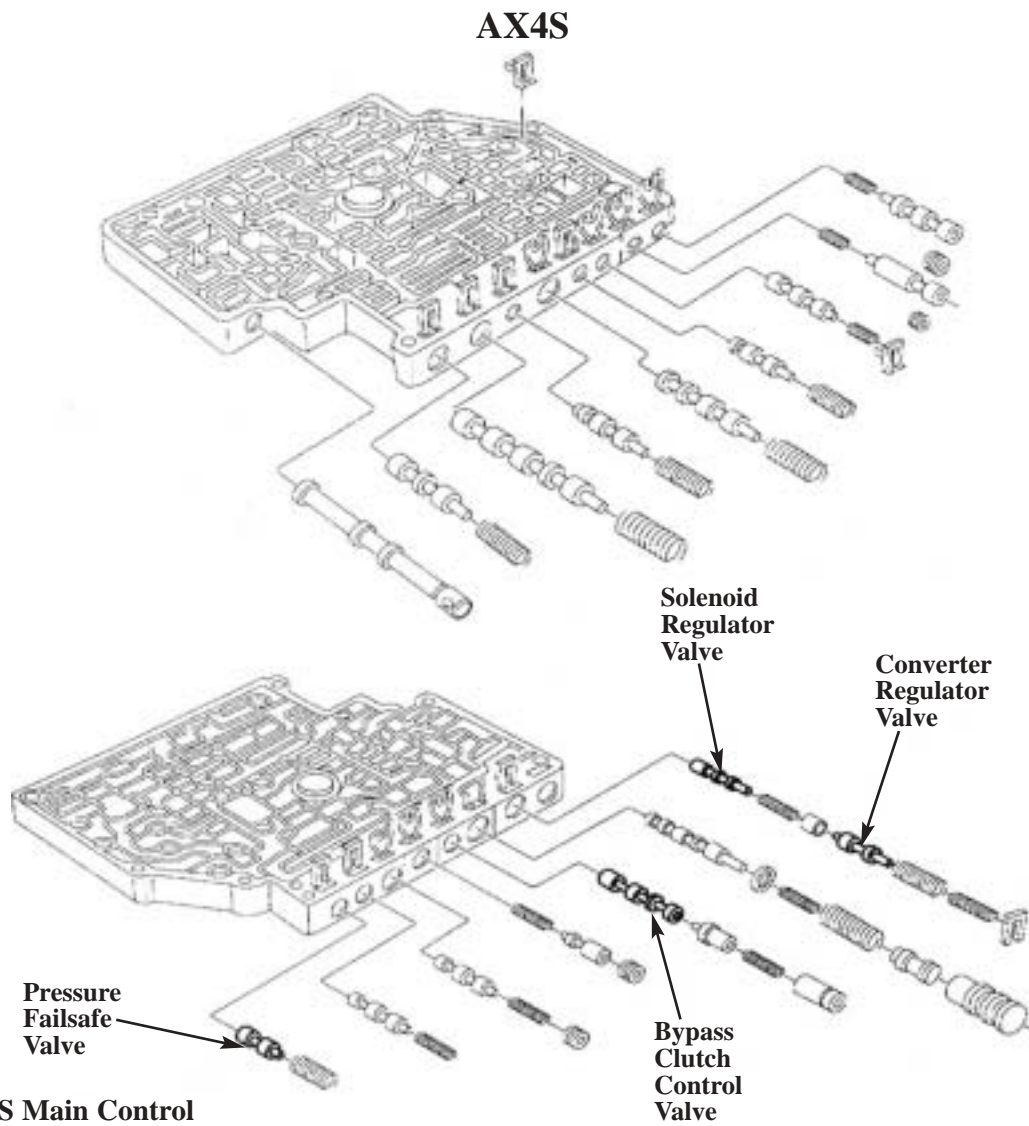
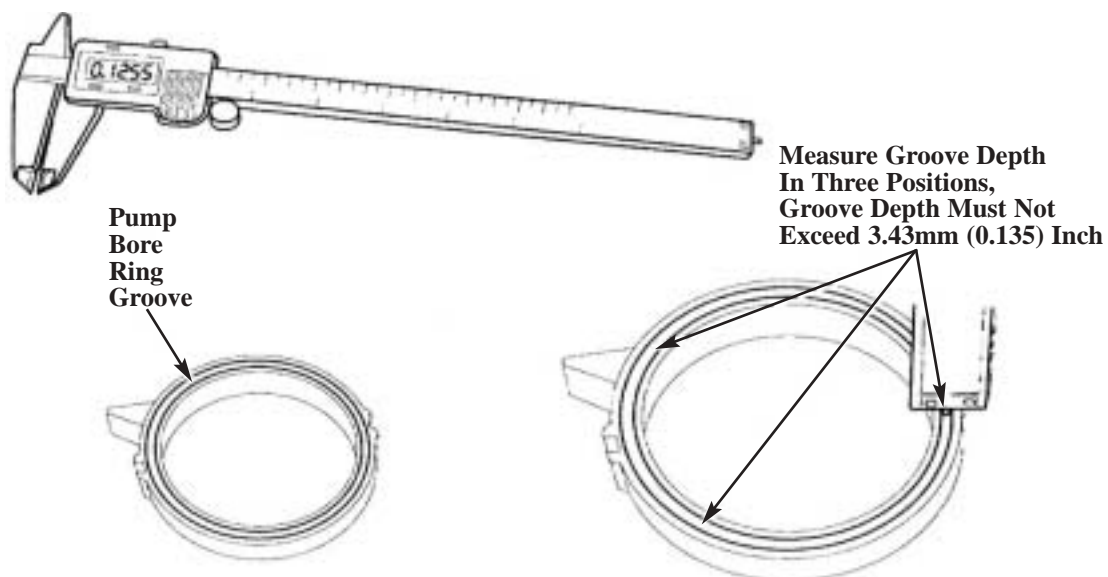


Fig. 2: AX4N/4F50N Main Control



**Fig. 3: AX4S Main Control**



**Fig. 4: Measuring Pump Bore Ring Groove**



**Fig. 5: Inspecting Stator Support For Damage**