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2005 FORD Five Hundred OEM Service and Repair Workshop Manual

Go to manual page

PCM (powertrain control module) P0C27:00	Electric/Auxiliary Transmission Fluid Pump 'A' Motor Current Low: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump communication is OK, the frequency is between 125 Hz and 175 Hz, but a low current is detected (10% to 15% duty cycle). Possible causes are a low transmission fluid level or leaking pump seals.
PCM (powertrain control module) P175A:00	Transmission Fluid Over Temperature Condition - Electric Transmission Fluid Pump Disabled: No Sub Type Information	This DTC (diagnostic trouble code) sets if the auxiliary pump communication is OK, the frequency is between 130 Hz and 170 Hz, but an over temperature condition is detected (30% to 34% duty cycle). This DTC (diagnostic trouble code) can be caused by high transmission fluid temperatures.

Possible Sources

- Low transmission fluid level
- Transmission fluid auxiliary pump seals
- Transmission fluid auxiliary pump

F1 CHECK THE TRANSMISSION FLUID LEVEL

- Check the transmission fluid level.
  REFER to: Transmission Fluid Level Check(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, General Procedures).

Is the transmission fluid level correct?

Yes	GO to F2

No	CORRECT the transmission fluid to the proper level, clear the DTC (diagnostic trouble code) and road test the vehicle. If the DTC (diagnostic trouble code) returns, GO to F2

F2 CHECK THE PCM (POWERTRAIN CONTROL MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, retrieve all diagnostic trouble codes (DTCs) from the PCM (powertrain control module) .

Is DTC (diagnostic trouble code) P0B0D, P0C27 and/or P175A present?

F5 CHECK THE TRANSMISSION FLUID AUXILIARY PUMP SEALS

- Drain the transmission fluid and remove the transmission fluid pan.
  REFER to: Transmission Fluid Pan, Gasket and Filter(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).
- Remove the transmission fluid auxiliary pump tube and inspect the seals.

Are the transmission fluid auxiliary pump seals OK?

Yes	INSTALL a new transmission fluid auxiliary pump. REFER to: Transmission Fluid Auxiliary Pump (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

No	INSTALL new seals on the transmission fluid auxiliary pump tube. REFER to: Transmission Fluid Auxiliary Pump (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

F6 CHECK FOR TRANSMISSION OVER TEMPERATURE DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, retrieve all continuous memory diagnostic trouble codes (CMDTCs) from the PCM (powertrain control module) .

Is DTC (diagnostic trouble code) P0218 and/or P1783 present?

Yes	RESOLVE those diagnostic trouble codes (DTCs) first. REFER to the DTC (diagnostic trouble code) chart.

No	GO to F7

F7 RECHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) P175A

- Allow the transmission to cool.
- Ignition ON.
- Using a diagnostic scan tool, clear all diagnostic trouble codes (DTCs) from the PCM (powertrain control module) .

PCM (powertrain control module) P0748:00	Pressure Control Solenoid 'A' Electrical: No Sub Type Information	This DTC (diagnostic trouble code) illuminates the wrench light in conjunction with P0960, P0962 and/or P0963. Resolve the more specific DTC (diagnostic trouble code) first.
PCM (powertrain control module) P0960:00	Pressure Control Solenoid 'A' Control Circuit/Open: No Sub Type Information	This DTC (diagnostic trouble code) indicates an open circuit in the LPC (line pressure control) solenoid circuit.
PCM (powertrain control module) P0961:00	Pressure Control Solenoid 'A' Control Circuit Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) indicates an LPC (line pressure control) solenoid fault, but the fault did not last long enough to set a more specific DTC (diagnostic trouble code) .
PCM (powertrain control module) P0962:00	Pressure Control Solenoid 'A' Control Circuit Low: No Sub Type Information	This DTC (diagnostic trouble code) indicates a short to ground in the LPC (line pressure control) solenoid circuit.
PCM (powertrain control module) P0963:00	Pressure Control Solenoid 'A' Control Circuit High: No Sub Type Information	This DTC (diagnostic trouble code) indicates a short to power in the LPC (line pressure control) solenoid circuit.
PCM (powertrain control module) P2669:00	Actuator Supply Voltage 'B' Circuit/Open: No Sub Type Information	This DTC (diagnostic trouble code) indicates an open circuit in the transmission solenoid power control 2 (TSPC2) circuit.
PCM (powertrain control module) P2760:00	Torque Converter Clutch Pressure Control Solenoid Intermittent: No Sub Type Information	This DTC (diagnostic trouble code) indicates a TCC (torque converter clutch) solenoid fault, but the fault did not last long enough to set a more specific DTC (diagnostic trouble code) .
PCM (powertrain control module) P2769:00	Torque Converter Clutch Circuit Low: No Sub Type Information	This DTC (diagnostic trouble code) indicates a short to ground in the TCC (torque converter clutch) solenoid circuit.
PCM (powertrain control module) P2770:00	Torque Converter Clutch Circuit High: No Sub Type Information	This DTC (diagnostic trouble code) indicates a short to power in the TCC (torque converter clutch) solenoid circuit.

Possible Sources

Positive Lead	Measurement / Action	Negative Lead
C168A-11	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to G3

No	REPAIR the short to ground.

G3 CHECK THE SOLENOID CONTROL CIRCUIT FOR AN OPEN

- For the TCC (torque converter clutch) solenoid, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-25	Ω	C1232T-33

- For the LPC (line pressure control) solenoid, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-24	Ω	C1232T-20

Is the resistance less than 3 ohms on the suspect circuit?

Yes	GO to G4

- For the LPC (line pressure control) solenoid, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-24	V	Ground

Is any voltage present on the suspect circuit?

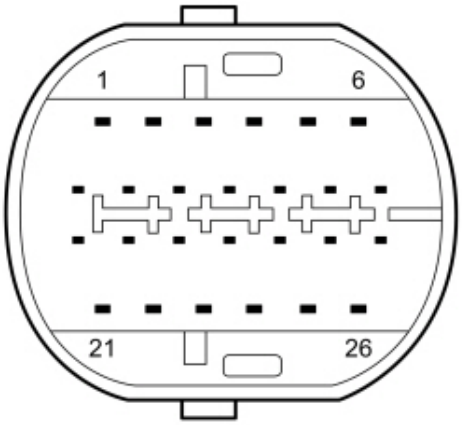
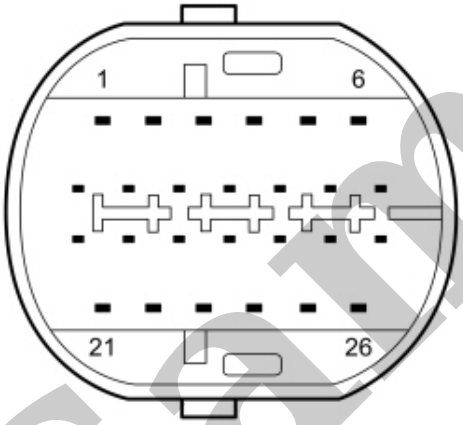
Yes	REPAIR the short to power.

No	GO to G6

G6 CHECK THE TRANSMISSION INTERNAL WIRING HARNESS CIRCUITS FOR AN OPEN

- Ignition OFF.
- Drain the transmission fluid and remove the transmission fluid pan.
  REFER to: Transmission Fluid Pan, Gasket and Filter(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).
- Disconnect TCC (torque converter clutch) solenoid C1841 .
- Disconnect LPC (line pressure control) solenoid C1840 .
- For the TCC (torque converter clutch) solenoid, measure:

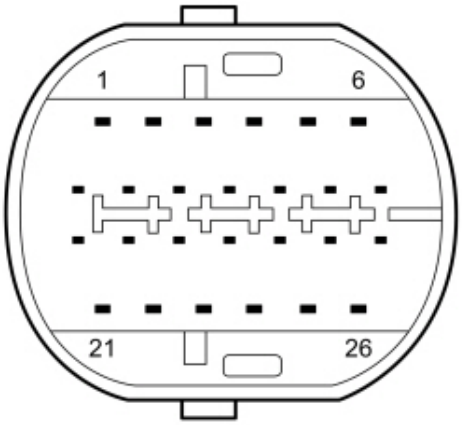
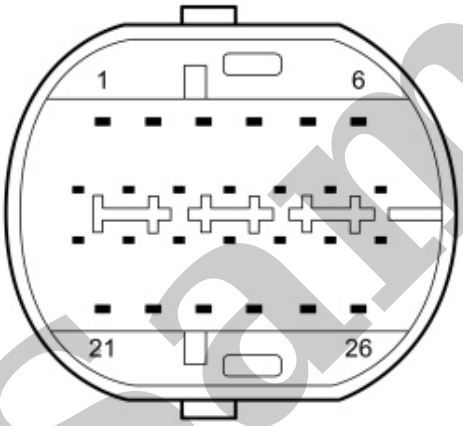
Positive Lead	Measurement / Action	Negative Lead

 E275612 Transmission component side, pin 11	Ω	C1840-1
 E275612 Transmission component side, pin 24	Ω	C1840-2

Are the resistances less than 3 ohms on the suspect circuits?

Yes	GO to G7

No	INSTALL a new transmission internal wiring harness (both pieces). REFER to: Transmission Internal Wiring Harness (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

	Action	Lead
 E275612 Transmission component side, pin 11	Ω	Ground
 E275612 Transmission component side, pin 24	Ω	Ground

Are the resistances greater than 10,000 ohms on the suspect circuits?

Yes	GO to G8

No	INSTALL a new transmission internal wiring harness (both pieces). REFER to: Transmission Internal Wiring Harness (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

- For the LPC (line pressure control) solenoid, measure

Positive Lead	Measurement / Action	Negative Lead
C1840-1	Ω	C1232T-1

Is the resistance less than 3 ohms on the suspect circuit?

Yes	INSTALL a new solenoid. REFER to: Shift Solenoids (SS) (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

No	There is a terminal fitment issue. REPAIR any loose, damaged or bent terminals.

PINPOINT TEST H : PARK LOCK PAWL SOLENOID

Refer to Wiring Diagrams Cell 30for schematic and connector information.
Normal Operation and Fault Conditions The park lock pawl solenoid is used to keep the vehicle out of park during stay in neutral mode, and during stop-start events. When the engine is running, hydraulic pressure from the A, C, D or F clutches can keep the system out of park. When the park lock pawl solenoid is energized, the solenoid pin is extended, locking the park lock pawl valve either in the park position or out of the park position. **DTC Fault Trigger Conditions**

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P07E4:00	Unable to Engage Park: No Sub Type Information	This DTC (diagnostic trouble code) indicates the PCM (powertrain control module) commanded park, but the movement timed out and the TR (transmission range) sensor does not read park. There are no TR (transmission range) sensor circuit faults.
PCM (powertrain control module)	Stuck in Park: No Sub Type Information	This DTC (diagnostic trouble code) indicates the PCM (powertrain control module) commanded movement out of

No	If no diagnostic trouble codes (DTCs) are set, but a symptom is present, REFER to: Diagnosis By Symptom (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing). If there are no diagnostic trouble codes (DTCs) and no symptoms present, the system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or terminal issues.

H2 CONFIRM PARK IS NOT MANUALLY OVERRIDDEN

- Access the PCM (powertrain control module) and monitor the TR_PARK_STAT (Transmission Park Position Sensor Status) PID (parameter identification)

Does PID (parameter identification) TR_PARK_STAT indicate the transmission is in mechanical Park override?

Yes	Remove the transmission from mechanical Park override. REFER to: Transmission Park by Wire Manual Release (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80, General Procedures).

No	GO to H4

H3 CHECK LINE PRESSURE

NOTE

The shift-by-wire variant of the 10R transmission uses hydraulic pressure to move the park lock pawl valve out of park.

- Carry out the line pressure test.
  REFER to: Special Testing Procedures(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing).

Is line pressure within specification?

Yes	GO to H4