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2005 FORD Excursion OEM Service and Repair Workshop Manual

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	, CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, General Procedures).

No	GO to Z2

Z2 ROAD TEST THE VEHICLE AND RECHECK THE PCM (POWERTRAIN CONTROL MODULE) FOR DTC (DIAGNOSTIC TROUBLE CODE) P1636

- Road test the vehicle.
- Ignition OFF.
- Road test the vehicle a second time.
- Using a diagnostic scan tool, carry out the KOEO (key on, engine off) and KOER (key on, engine running) PCM (powertrain control module) self-tests.

Is DTC (diagnostic trouble code) P1636 present in the PCM (powertrain control module) ?

Yes	 Guided Routine available in the on-line Workshop Manual. After programming the new PCM (powertrain control module) , CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, General Procedures).

No	The fault is not present at this time.

PINPOINT TEST AA : P163E, P163F

Normal Operation and Fault Conditions

	Guided Routine available in the on-line Workshop Manual. After programming the new PCM (powertrain control module) , CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, General Procedures).

No	The fault is not present at this time. It might have been caused by an incorrect or corrupted calibration.

PINPOINT TEST AB : P1705

Normal Operation and Fault Conditions

The PCM (powertrain control module) only runs the KOEO (key on, engine off) and KOER (key on, engine running) self-tests when it confirms the vehicle is in park or neutral.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P1705:00	Transmission Range Circuit Not Indicating Park/Neutral During Self Test: No Sub Type Information	This DTC (diagnostic trouble code) indicates the TR (transmission range) sensor did not show park or neutral during a KOEO (key on, engine off) or KOER (key on, engine running) PCM (powertrain control module) self-test.

Possible Sources

- Carrying out a PCM (powertrain control module) self-test with the vehicle in gear
- TR (transmission range) sensor
- Park system components
- PCM (powertrain control module) fault

AB1 CHECK THE PCM (POWERTRAIN CONTROL MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Select PARK.

No	RESOLVE the Gear Selector > Inoperative symptom. REFER to: External Controls - Vehicles With: Column Shift (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing). REFER to: External Controls - Vehicles With: Console Shift (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing).

AB4 CHECK THE TR (TRANSMISSION RANGE) SENSOR FOR PROPER INSTALLATION

- 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).
- Inspect the TR (transmission range) sensor and manual shaft for proper installation. Make sure the roll pin is completely installed in the TR (transmission range) sensor. Make sure detent spring is properly installed. Check all components for damage or binding.
  REFER to: Transmission Range (TR) Sensor(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).
- Check the park lock pawl solenoid for the pin being stuck extended.
  REFER to: Park Lock Pawl Solenoid(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).
- Inspect the park pawl, park pawl actuator rod, and park lock pawl valve. Make sure each component is properly installed and free of damage or binding.

Are all TR (transmission range) sensor and park components properly installed and free of damage or binding?

Yes	INSTALL a new TR (transmission range) sensor. REFER to: Transmission Range (TR) Sensor (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

No	REPAIR or INSTALL new components as necessary.

AB5 RECHECK THE PCM (POWERTRAIN CONTROL MODULE) FOR DTC (DIAGNOSTIC TROUBLE CODE) P1705

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P1706:00	High Vehicle Speed Observed in Park: No Sub Type Information	This DTC (diagnostic trouble code) indicates the TR (transmission range) sensor reported the vehicle was in park while the vehicle was moving above a speed where park would be commanded. This would cause the park pawl to ratchet, which could damage the park pawl.

Possible Sources

- Clutch stuck off fault
- Hydraulic control fault
- Unintended PCM (powertrain control module) reset
- PCM (powertrain control module) fault

AC1 CHECK THE PCM (POWERTRAIN CONTROL MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the KOEO (key on, engine off) and KOER (key on, engine running) PCM (powertrain control module) self-tests.

Are any power supply, internal module, TR (transmission range) sensor, clutch fault, or gear engagement fault diagnostic trouble codes (DTCs) present?

Yes	RESOLVE those diagnostic trouble codes (DTCs) first. REFER to the DTC (diagnostic trouble code) Chart.
No	GO to AC2

AC2 CHECK THE GSM (GEAR SHIFT MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the GSM (gear shift module) self-test.

Are any diagnostic trouble codes (DTCs) present in the GSM (gear shift module) ?

Yes	RESOLVE those diagnostic trouble codes (DTCs). REFER to: External Controls - Vehicles With: Column Shift (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing). REFER to: External Controls - Vehicles With: Console Shift

	(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing).

No	GO to AC5

AC5 INSPECT THE TRANSMISSION PARK SYSTEM COMPONENTS

- Remove the main control valve body.
  REFER to: Main Control Valve Body(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).
- Remove the transmission fluid auxiliary pump.
  REFER to: Transmission Fluid Auxiliary Pump(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).
- Inspect the park pawl and the park lock teeth on planetary carrier No. 4. Make sure the park lock teeth are not worn or damaged.
- Inspect the park pawl, park pawl actuator rod, TR (transmission range) sensor, and park return spring. Make sure all components are properly installed and free of damage.
- Remove and inspect the park lock pawl solenoid. Make sure the pin is not stuck.
  REFER to: Park Lock Pawl Solenoid(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).
- Remove and inspect the park lock pawl valve. If the valve or bore is damaged, INSTALL a new main control valve body.
  REFER to: Main Control Valve Body(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Overhaul).

Are any transmission park components worn, damaged, or improperly installed?

Yes	INSTALL new components as necessary.

No	GO to AC6

AC6 RECHECK THE PCM (POWERTRAIN CONTROL MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear all diagnostic trouble codes (DTCs) from the PCM (powertrain control module) .
- Access the PCM (powertrain control module) and monitor the TR_PARK_STAT (Transmission Park Position Sensor Status) PID (parameter identification)

Possible Sources

- Transmission fluid temperature outside of self-test range
- TFT (transmission fluid temperature) sensor fault
- PCM (powertrain control module) fault

AD1 CHECK THE TRANSMISSION FLUID TEMPERATURE

- Ignition ON.
- Access the PCM (powertrain control module) and monitor the TFT (Transmission Fluid Temperature) (Deg C) PID (parameter identification)

Does PID (parameter identification) TFT show between -1°C (30°F) and 120°C (248°F)?

Yes	GO to AD2

No	If the monitored temperature is plausible, either warm the transmission fluid temperature or let it cool into self-test range, then GO to AD2 If the monitored temperature is not plausible, GO to Pinpoint Test B

AD2 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the DTC (diagnostic trouble code) from the PCM (powertrain control module) .
- Ignition OFF.
- Ignition ON.
- Using a diagnostic scan tool, carry out the KOEO (key on, engine off) and KOER (key on, engine running) PCM (powertrain control module) self-tests.

Is DTC (diagnostic trouble code) P1711 present in the PCM (powertrain control module) ?

Yes	 Guided Routine available in the on-line Workshop Manual. After programming the new PCM (powertrain control module) , CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download

REFER to: Preliminary Inspection(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing).

Does the transmission fluid condition indicate excessive wear?

Yes	Overhaul the transmission. REFER to: Transmission (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Overhaul). Carry out the transmission fluid cooler backflushing and cleaning procedure. REFER to: Transmission Fluid Cooler - Backflushing and Cleaning - Vehicles With: Transmission Fluid Heat Exchanger (307-02A Transmission Cooling - 10-Speed Automatic Transmission – 10R80, General Procedures). REFER to: Transmission Fluid Cooler - Backflushing and Cleaning - Vehicles With: Transmission Fluid Heat Exchanger (307-02A Transmission Cooling - 10-Speed Automatic Transmission – 10R80, General Procedures).
No	GO to AE2

AE2 CHECK FOR SIGNS OF INTERNAL TRANSMISSION DAMAGE

- Using a diagnostic scan tool, clear the DTC (diagnostic trouble code) from the PCM (powertrain control module) .
- Road test the vehicle. Pay close attention for any noise, transmission engagement, or shifting concerns.
- Using a diagnostic scan tool, carry out the PCM (powertrain control module) self-test.

Are any gear engagement or clutch fault diagnostic trouble codes (DTCs) present, or are any noise, engagement, or shifting concerns present?

Yes	Overhaul the transmission. REFER to: Transmission (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Overhaul). Carry out the transmission fluid cooler backflushing and cleaning procedure. REFER to: Transmission Fluid Cooler - Backflushing and Cleaning - Vehicles With: Transmission Fluid Heat Exchanger (307-02A Transmission Cooling - 10-Speed Automatic Transmission – 10R80, General Procedures). REFER to: Transmission Fluid Cooler - Backflushing and Cleaning - Vehicles With: Transmission Fluid Heat Exchanger (307-02A Transmission Cooling - 10-Speed Automatic Transmission – 10R80, General Procedures).

No	The fault is not present at this time and may be intermittent.

PINPOINT TEST AG : P2700, P2701, P2702, P2703, P2704, 2705

Normal Operation and Fault Conditions

The PCM (powertrain control module) monitors clutch applications. It sets a DTC (diagnostic trouble code) if it detects a non-electrical fault that causes a clutch to fail to apply and/or release properly.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P2700:00	Transmission Friction Element 'A' Apply Time Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) illuminates the wrench light in conjunction with either P0751 or P0752. Resolve the more specific DTC (diagnostic trouble code) first.
PCM (powertrain control module) P2701:00	Transmission Friction Element 'B' Apply Time Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) illuminates the wrench light in conjunction with either P0756 or P0757. Resolve the more specific DTC (diagnostic trouble code) first.
PCM (powertrain control module) P2702:00	Transmission Friction Element 'C' Apply Time Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) illuminates the wrench light in conjunction with either P0761 or P0762. Resolve the more specific DTC (diagnostic trouble code) first.
PCM (powertrain control module) P2703:00	Transmission Friction Element 'D' Apply Time Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) illuminates the wrench light in conjunction with either P0766 or P0767. Resolve the more specific DTC (diagnostic trouble code) first.
PCM (powertrain control module) P2704:00	Transmission Friction Element 'E' Apply Time Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) illuminates the wrench light in conjunction with either P0771 or P0772. Resolve the more specific DTC (diagnostic trouble code) first.

	P0766 or P0767 are set, resolve those first. Otherwise, check the D clutch for a slipping or a harsh apply condition. REFER to: D Clutch (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing). For P2704, if either DTC (diagnostic trouble code) P0771 or P0772 are set, resolve those first. Otherwise, check the E clutch for a slipping or a harsh apply condition. REFER to: E Clutch (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing). For P2705, if either DTC (diagnostic trouble code) P2707 or P2708 are set, resolve those first. Otherwise, check the F clutch for a slipping or a harsh apply condition. REFER to: F Clutch (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing).

No	The fault is not present at this time and may be intermittent.

PINPOINT TEST AH : P27B2, P27B3, P27B4, P27B5, P27B6

Normal Operation and Fault Conditions

The PCM (powertrain control module) monitors the TSS (turbine shaft speed) , OSS (output shaft speed) , ISSA and ISSB sensors to verify the achieved gear matches the selected gear. If the PCM (powertrain control module) detects a reverse gear when a forward gear is selected, a forward gear when reverse is selected, an incorrect gear ratio or a mismatch between speed sensors, it will set a DTC (diagnostic trouble code) .

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P27B2:00	Internal Control Module Transmission Range Control Performance: No Sub Type Information	This DTC (diagnostic trouble code) indicates a mismatch between the commanded gear range and the achieved gear range while entering or exiting park.