TJ: Output Shaft Speed (OSS) Sensor

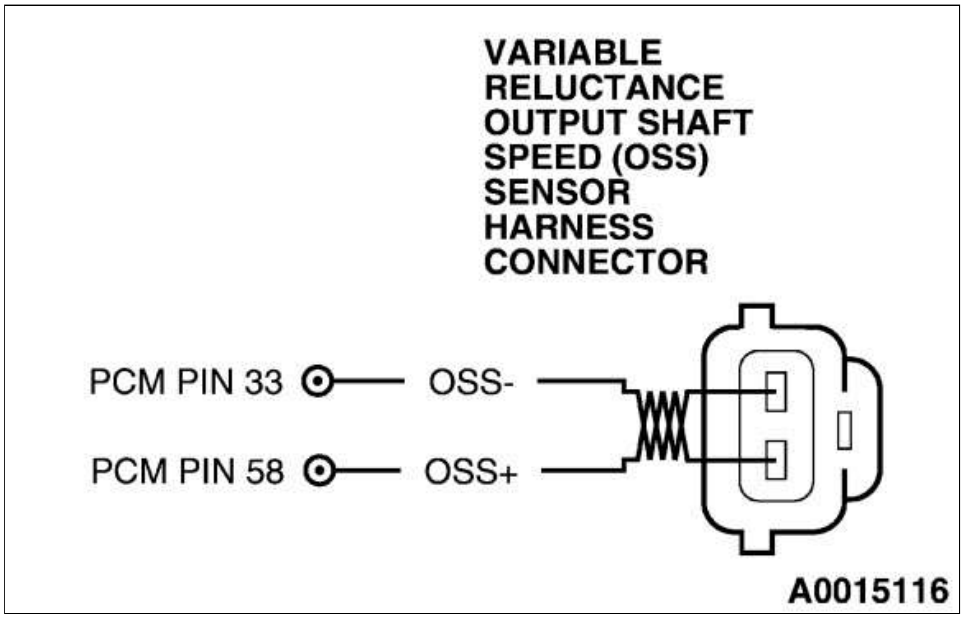
Note

This Pinpoint Test is intended to diagnose the following:

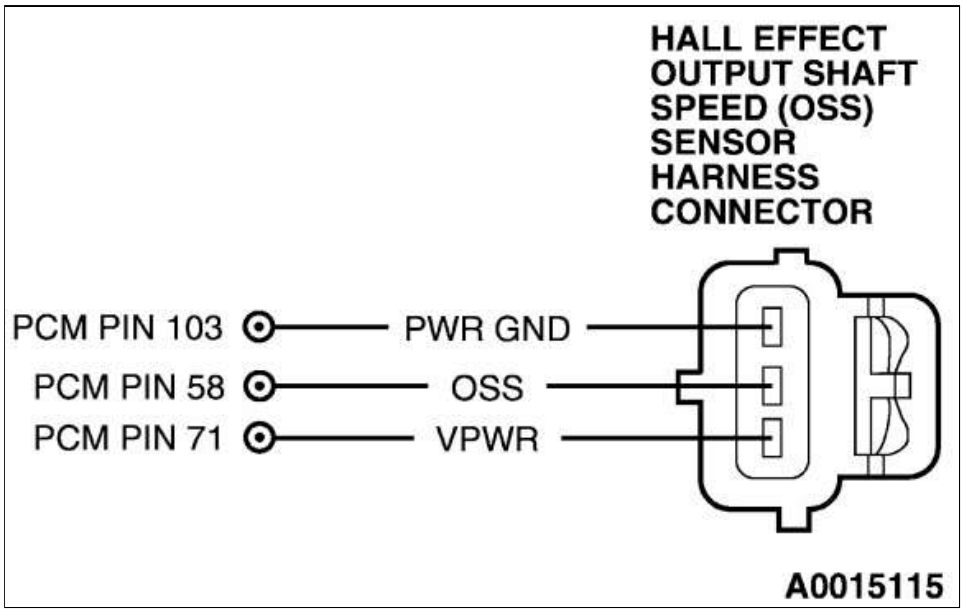
- OSS harness circuits OSS and SIG RTN
- OSS Sensor
- PCM

Pinpoint Test Schematics and Connectors

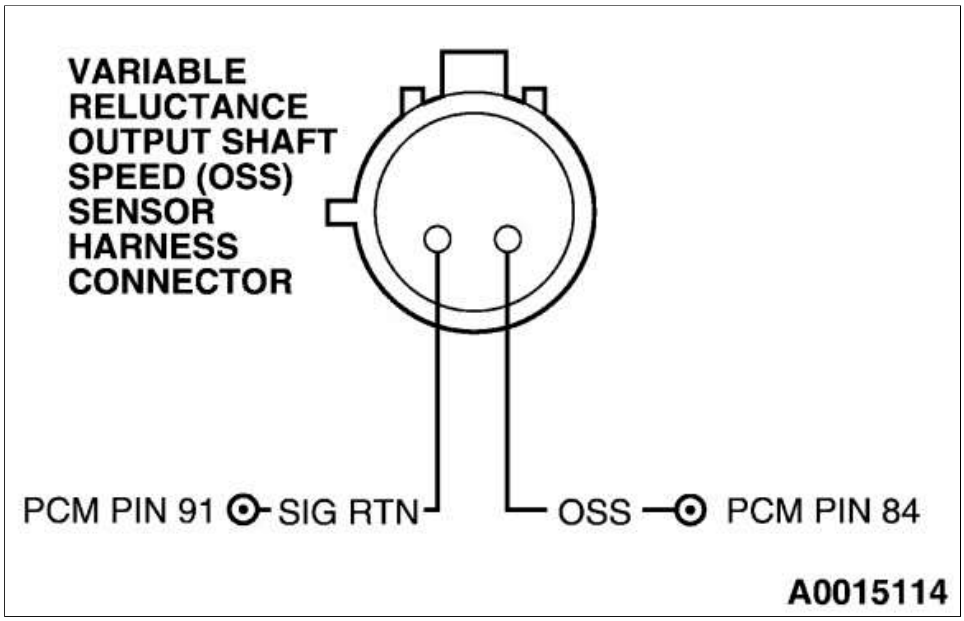
Focus (Automatic Transmission)



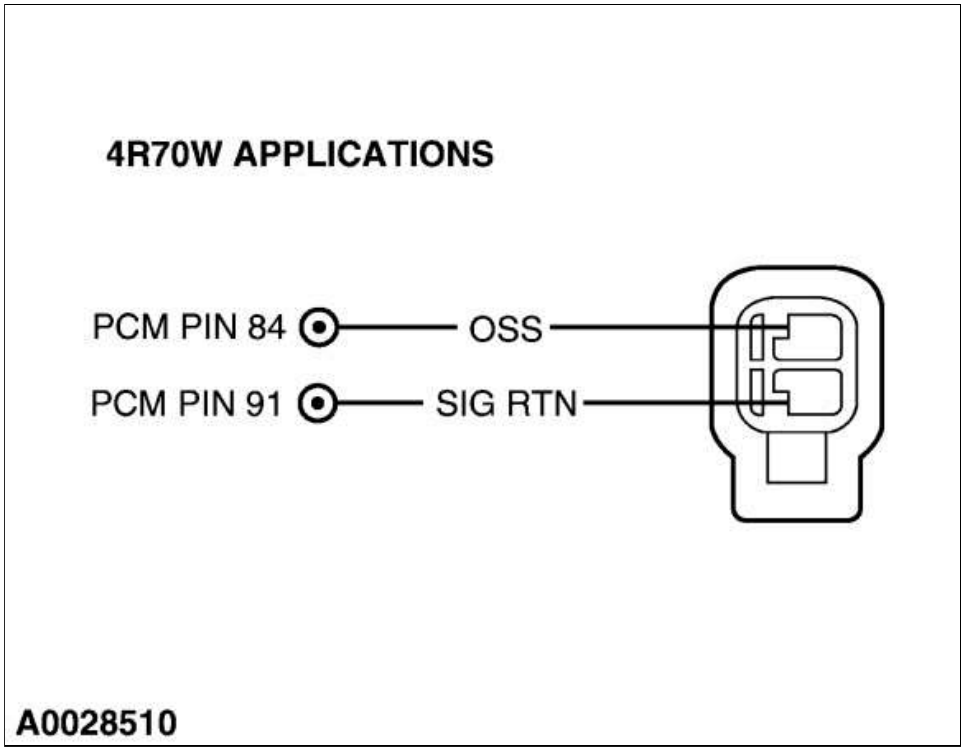
2.0L (MTX) , Focus, Cougar



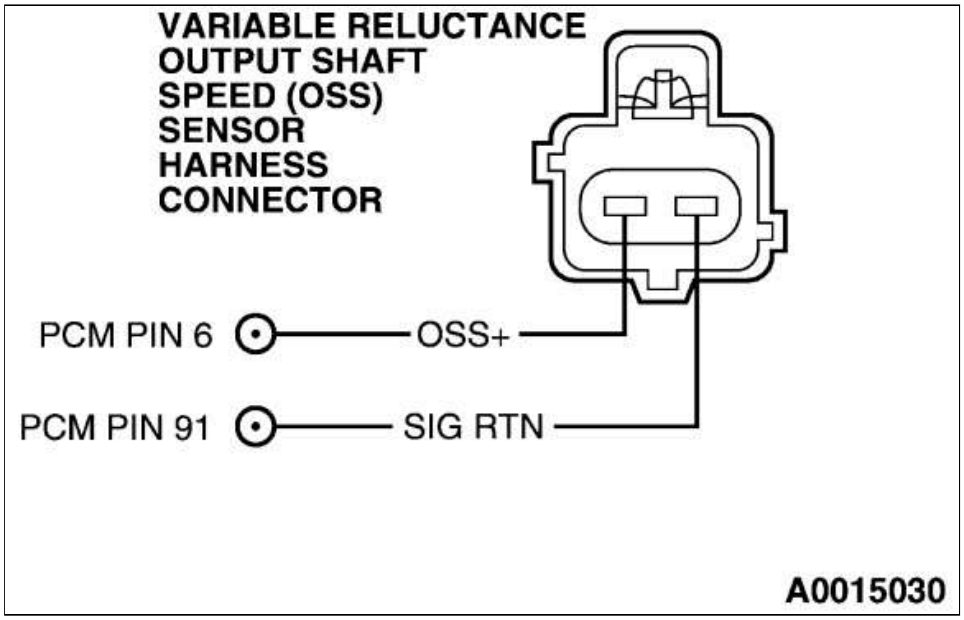
Windstar, Escape



F, E series, Expedition, Mustang, Explorer/Mountaineer



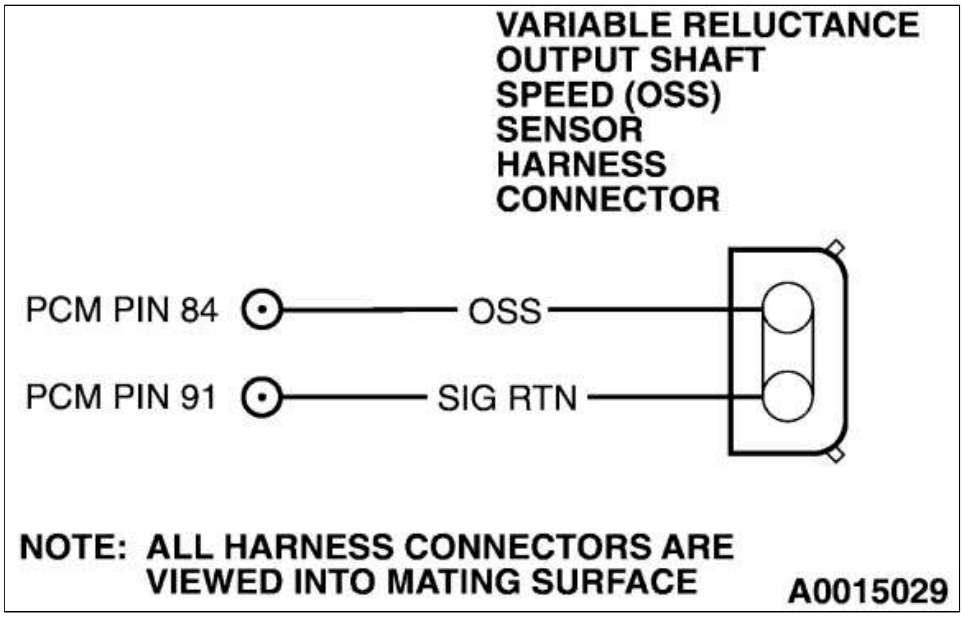
Ranger, Explorer/Mountaineer, LS6/LS8



PCM CONNECTOR PIN NUMBERS

PCM TYPE	OSS	Sig Ret
104 Pin	84	91
150 Pin	B26	B17

All Others



TJ1 DTC P0720, P0721, P0722, P0723, AND P1900: VERIFY DRIVE CYCLE

- Access the OSS PID.
- Drive vehicle.
- Through all gear ranges, shift up and down.

Does PID reading increase and decrease with engine and vehicle speed?

Yes	OSS performed as expected. GO to TJ2.
No	**For Hall Effect Type OSS:** KEY OFF. GO to TJ3. **For VR Type OSS:** GO to TJ5.

TJ2 VISUAL INSPECTION

- Disconnect OSS sensor.
- Inspect OSS harness for damage. Inspect OSS vehicle harness connector for damage and proper seating.
- If possible, complete wiggle test.

Have any problems been found?

Yes	REPAIR fault.
No	GO to Z1 for intermittent fault diagnosis.

TJ3 CHECK VPWR TO OSS SENSOR

- Key on.
- Disconnect OSS sensor.
- Measure VPWR circuit voltage at OSS sensor harness connector.

Is voltage greater than 10.5 volts?

Yes	KEY OFF. GO to TJ4.
No	KEY OFF. Repair open circuit.

TJ4 CHECK VPWR GND TO OSS SENSOR

- Measure resistance of PWR GND circuit between OSS sensor harness connector and negative battery post.

Is resistance less than 5.0 ohms?

Yes	GO to TJ5.
No	Repair open circuit.

TJ5 CHECK HARNESS FOR SHORT TO PWR

- Key on.
- Disconnect OSS sensor.
- Measure voltage between the OSS signal circuit at the OSS sensor harness connector and ground.

Is voltage less than 1.0 volt?

Yes	KEY OFF. GO to TJ6.
No	KEY OFF. REPAIR short circuit.

TJ6 CHECK HARNESS FOR OPEN

- Disconnect PCM.
- Measure resistance of the OSS signal circuit between the OSS sensor harness connector and the PCM harness connector.
- Measure resistance of the OSS SIG RTN circuit between the OSS sensor harness connector and the PCM harness connector.

Is each resistance less than 5.0 ohms?

Yes	GO to TJ7.
No	REPAIR open circuit.

TJ7 CHECK HARNESS FOR SHORT TO GROUND

- Measure resistance between OSS signal and SIG RTN circuits at the OSS sensor harness connector.
- Measure resistance between the OSS signal at the the OSS sensor harness connector and chassis ground.

Is each resistance greater than 10,000 ohms?

Yes	**For VR Type OSS:** GO to TJ8. **For Hall Effect Type OSS:** GO to TJ9.
No	REPAIR short circuit.

TJ8 CHECK RESISTANCE OF OSS SENSOR

- Measure resistance of the OSS sensor between the pins of the OSS sensor.

Is resistance between 400 and 1.1K ohms?

Yes	REPLACE PCM (REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM)).
No	REPLACE OSS sensor.

TJ9 CHECK OSS SIGNAL OUTPUT TO PCM, HALL TYPE OSS

- Disconnect PCM.
- Raise vehicle to allow rotation of the front drive wheel.
- Key on, transmission in neutral.
- Measure voltage between OSS+ and PWR GND circuits at the PCM harness connector while slowly rotating the drive wheel.

  Note: *Opposite wheel must be held stationary.*
- The voltage should rise above 5.0 volts and fall below 1.0 volts in a regular cycle. Observe several cycles.

Does the OSS output voltage rise and fall as specified?

Yes	REPLACE PCM (REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM)).
No	REPLACE OSS sensor. REFER to the workshop manual group for manual transmissions.