



# Technical Service Information

## **FORD 5R44E/5R55E INTERMEDIATE SHAFT SENSOR ADDED AND NEW TRANSMISSION FOR 2001**

**CHANGE:** Beginning at the start of production for 2001, Ford Motor Co. has implemented a new model transmission with the designation 5R44E, which is a five speed transmission that replaces the previous design 4R44E unit. This new 5R44E model transmission, as well as the 5R55E transmission, has an added Intermediate Shaft Speed (ISS) sensor (See Figure 1). There was also changes to the PCM strategy that now includes Shift Adaptive Pressure Control Strategy. The new 5R44E transmission will be found in 2001 Rangers with 2.3L and 3.0L engines, and the new design 5R55E transmission will be found in Ranger, Explorer with 4.0L engines.

**REASON:** New transmission added to commonize transmission models, and new Intermediate Shaft Speed (ISS) sensor added for the new PCM Shift Adaptive Pressure Control Strategy.

### **PARTS AFFECTED:**

- (1) TRANSMISSION CASE - New transmission case casting and machining to accommodate the added Intermediate Shaft Sensor (ISS), as shown in Figure 1.
- (2) INTERMEDIATE SHAFT SPEED SENSOR - Additional information for the PCM to determine various incremental pressure changes needed to minimize the difference between the actual and ideal shift times for Shift Adaptive Pressure Control Strategy.
- (3) SUN SHELL - Now manufactured with windows and used to trigger the added Intermediate Shaft Speed (ISS) sensor, as shown in Figure 2.
- (4) POWERTRAIN CONTROL MODULE - Operational changes that includes Shift Adaptive Electronic Pressure Control Strategy.

### ***Shift Adaptive Electronic Pressure Control Strategy***

This strategy allows for improved control over the transmission shift events. Based on various input signals, the strategy calculates an actual shift time and compares it to an ideal shift time. Once the vehicle is up to operating temperature, incremental pressure changes are made to minimize the difference between actual and ideal shift times. Over time the adaptive learning process will fully update Keep Alive Memory (KAM). The more varied the driving habits the longer the update will take. However, the adaptive learning process will also be more complete. Adaptive pressure control strategy is capable of adapting upshifts, closed throttle downshifts and garage shifts.

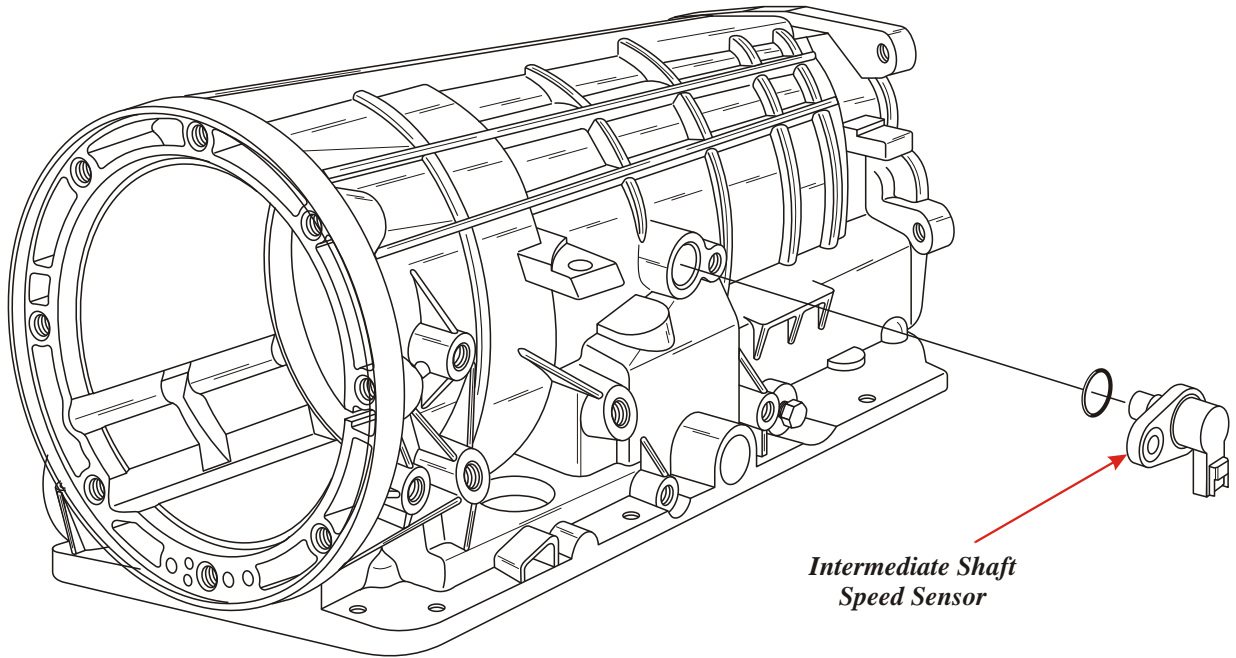
***If for any reason the vehicle loses power to the Keep Alive Memory (KAM), the transmission will return to its pre-set level. Reasons for this happening are battery disconnected or fully discharged, PCM disconnected while the battery is still connected, or updated calibration programmed into the PCM.***

### **INTERCHANGEABILITY:**

***None*** of the parts listed above are interchangeable with the previous design level parts. For diagnosis of Intermediate Shaft Speed sensor, refer to Figure 3.

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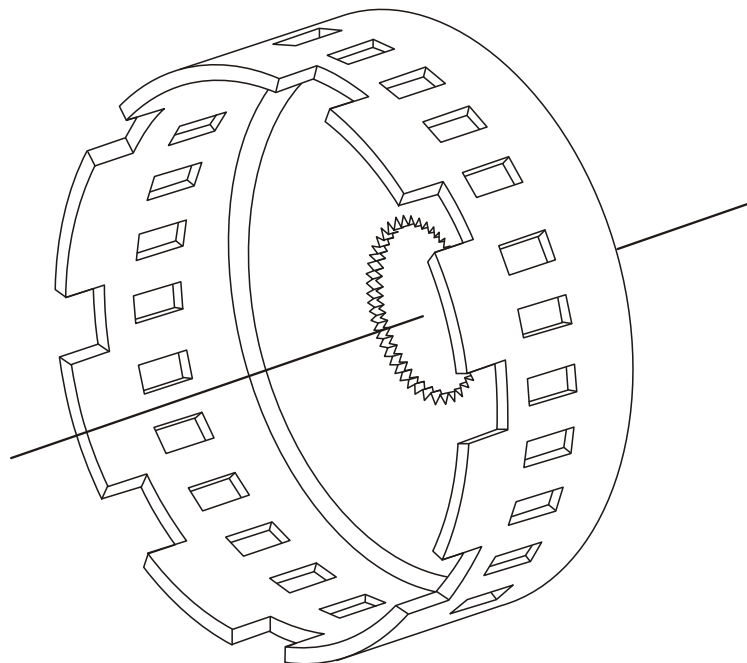
## NEW CASE AND SPEED SENSOR



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Figure 1

## NEW SUN GEAR SHELL



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Figure 2

## 5R44E/5R55E ADDED DIAGNOSTICS AND TROUBLE CODE CHART

DTC	DESCRIPTION	SYMPTOM	POSSIBLE CAUSES
P0791	ISS Sensor Failure (Signal Loss)	Harsh 2-3 Shifts	ISS Sensor or Wiring
P0794	ISS Sensor Signal Intermittent	Harsh 2-3 Shifts	ISS Sensor or Wiring
P1636	SSx ISIG Communication Error	None	Replace PCM

*Intermediate Shaft Speed Sensor  
325-485 Ohms Resistance @ 20°C (70°F)*

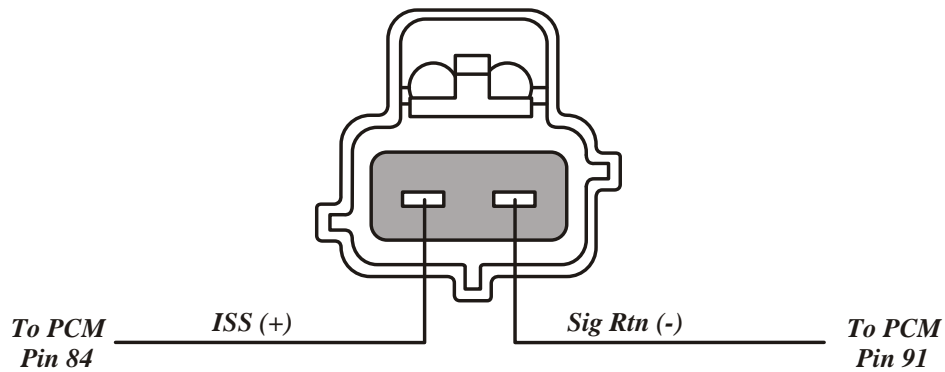


Figure 3