

# Introducing Ford's 6R80 and 6R60



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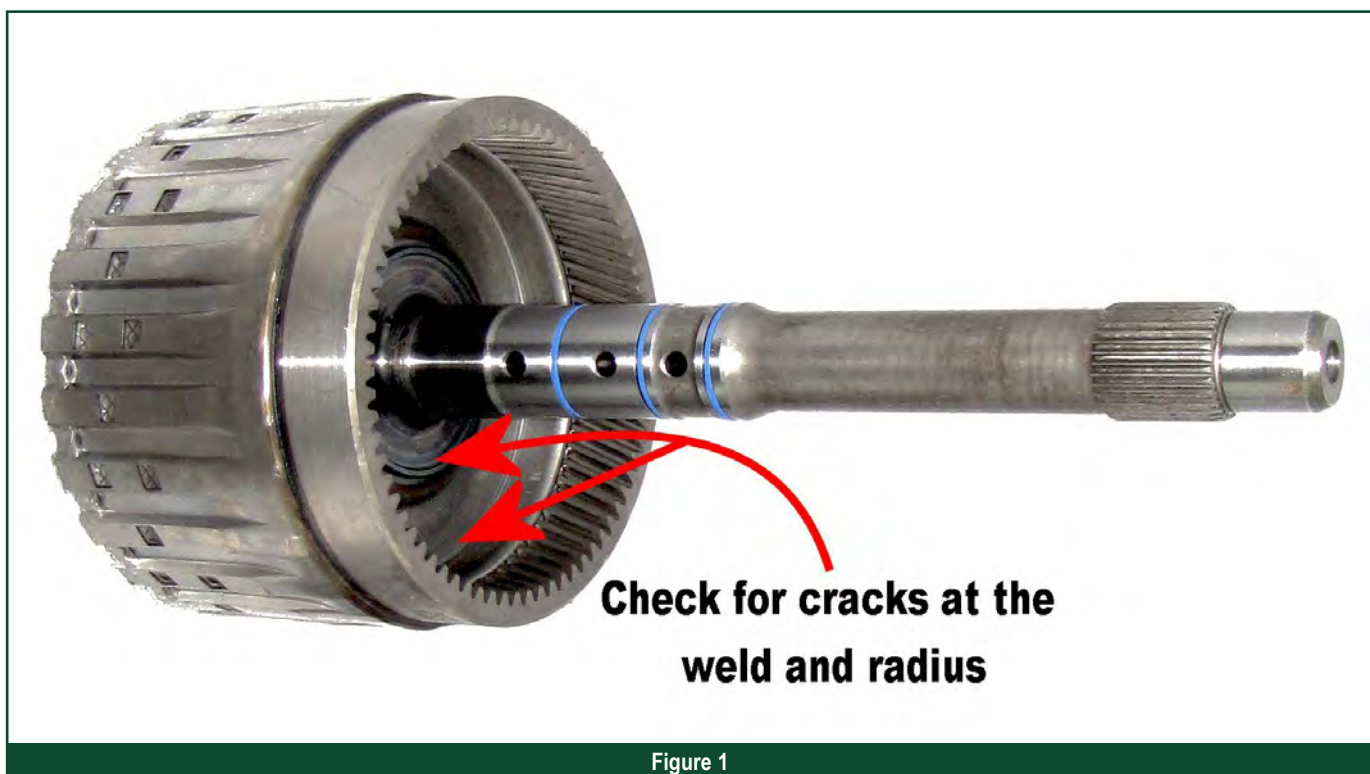


Figure 1

**F**ord's 6R60/80 are becoming a common sight in shops these days. Ford started installing these rear wheel drive six speeds in 2006. They appear in Ford Expeditions, Explorers, and Mustangs, and the Lincoln counterparts, Navigator and Mountaineer. This transmission is a ZF 6HP26 design, built by Ford under license from ZF.

In this issue, we're going to look at some of the details of these transmissions. The information we'll cover applies to Ford- and European-built units, with a few exceptions: European-built units use different strategies, fluids, friction material, and may have different clutch clearance specifications.

## E Clutch

The E drum provides power input for fourth, fifth, and sixth gears.

The E clutches, drum, and stator support bushings tend to present problems in these transmissions. When the E clutch or drum fails, it can cause shift complaints and codes in fourth, fifth, and sixth. Always check the drum for cracks at the weld and the internal radius (figure 1).

The E clutch drum and pump cover are produced in multiple configurations. If you need to replace the E clutch drum or pump cover, always match up the original and replacement parts to make sure they're correct.

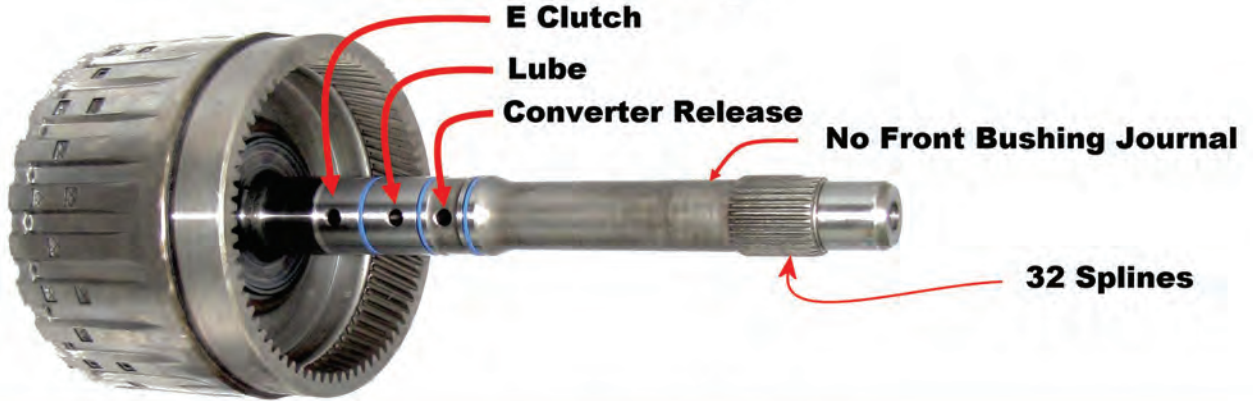
The E drum will have either two

or three sealing rings (figure 2). The three-ring drum doesn't use a front stator support bushing; the two-ring drum does (figure 2 & 3). All drums and pump covers have a rear stator support bushing. The stator support bushings and shafts come in different journal diameters, 6R80 09-up have 32 splines and 6R60/75 06-up have 27 splines, and turbine spline count can vary.

## Pump Covers

The two-ring drum uses the front stator bushing to seal the converter clutch release oil circuit. If the front stator bushing has excessive clearance it can lose torque converter clutch release pressure. This may cause the

# 6R80 09-Up



# 6R60/75 06-Up



Figure 2

## Bushing for 6R60/75 06-Up



Figure 3

## No Bushing for 6R80 09-Up

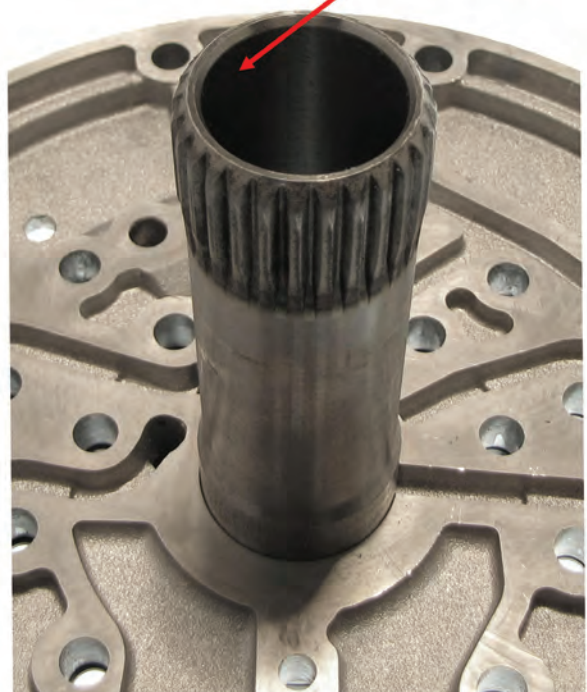


Figure 3A



**The rear stator bushing serves as the seal for the E clutch circuit on both two- and three-ring shafts. With the bushing providing the seal, bushing to shaft journal tolerances become critical.**

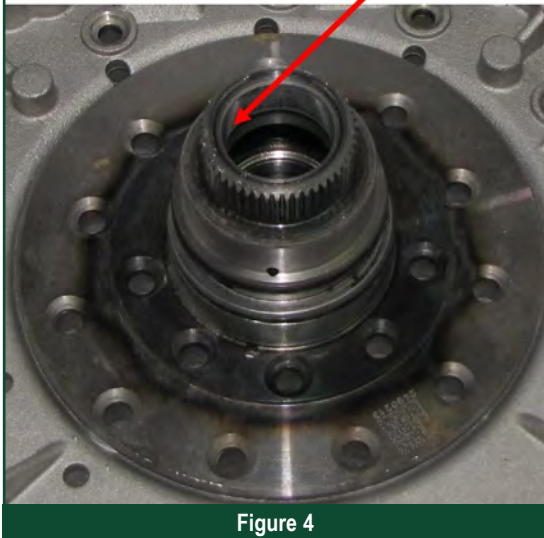


Figure 4

TCC to drag down or stall the engine when hot.

The rear stator bushing serves as the seal for the E clutch circuit on both two- and three-ring shafts. With the bushing providing the seal, bushing to shaft journal tolerances become critical. Excessive rear stator bushing clearance can cause the E clutch to slip and set codes in fourth, fifth, and sixth gears (figure 4).

### Clutch Clearances

\* The clearance data applies to Ford vehicles only (figure 5).

### Driveability Complaints

Ford has several programming updates for these transmissions. Make sure the PCM has the latest programming when addressing any driveability symptoms.

This is a fully synchronous transmission; factory fluid and materials are recommended for good shift quality.

### Bridge Seal Complaints

The bridge seal between the valve body and pump is known to blow out. This can cause a variety of low line pressure symptoms, delayed engagements, or cause the transmission to fall out of gear. These symptoms generally come with gear ratio or solenoid performance codes.

Start by confirming the transmission fluid level is correct. Make sure the control module has the latest programming. If the pan and fluid are clean, remove the valve body and inspect

Ford Clutch Clearance's				
Clutch A			Clutch B	
4 plates	.020-.038		4 plates	.010-.045
5 plates	.030-.043		5 plates	.020-.055
Clutch C			Clutch D	
4 plates	.020-.037		4 plates	.030-.055
5 plates	.020-.055		5 plates	.040-.065
			7 plates	.080-.110
Clutch E				
6 plates	.010-.030	6R60		
	.020-.038	6R80		

Figure 5

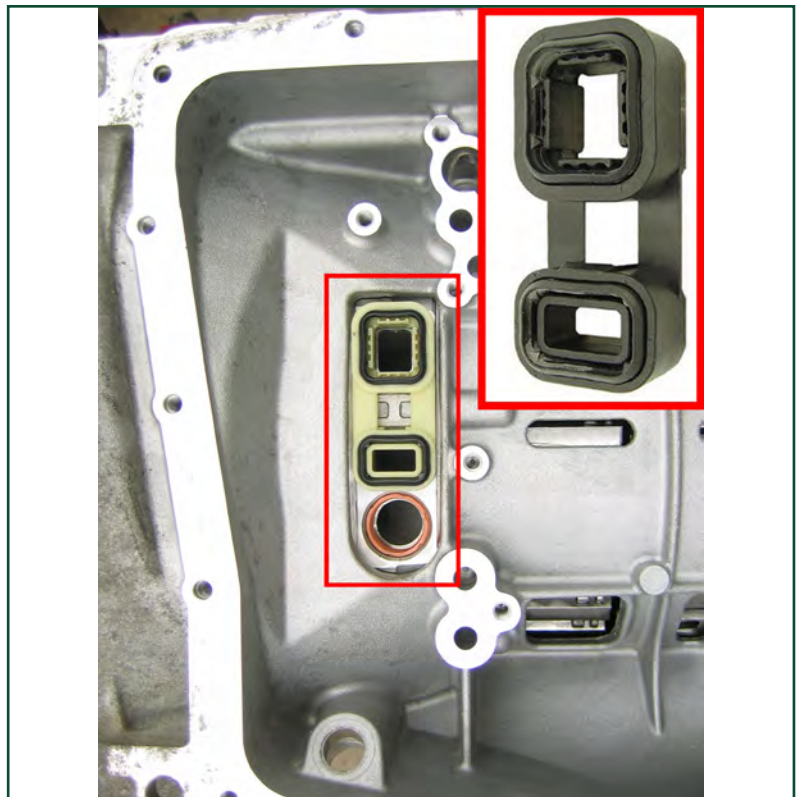


Figure 6

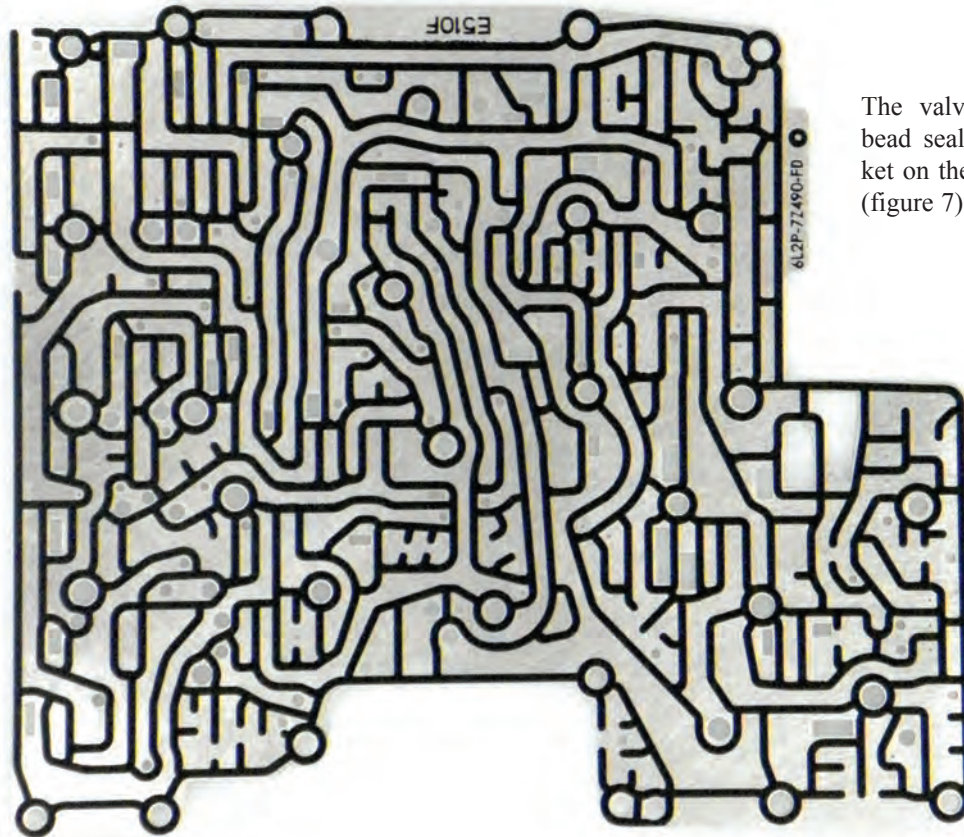
the bridge seal (figure 6).

### Valve Body Repair

The valve body uses a bead seal laminated gasket on the separator plate (figure 7). Always replace the separator plate during valve body repairs to avoid leaks. Most suppliers stock replacement separator plates.

As with any modern PWM valve body, these valve bodies aren't immune from wear and solenoid problems. Aftermarket parts are becoming available to repair common conditions.

The Ford 6R60/80 are relatively simple transmissions. The key to a successful repair is to make sure you're familiar with the differences between units and make sure you're using the right parts.



The valve body uses a bead seal laminated gasket on the separator plate (figure 7).

Figure 7

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