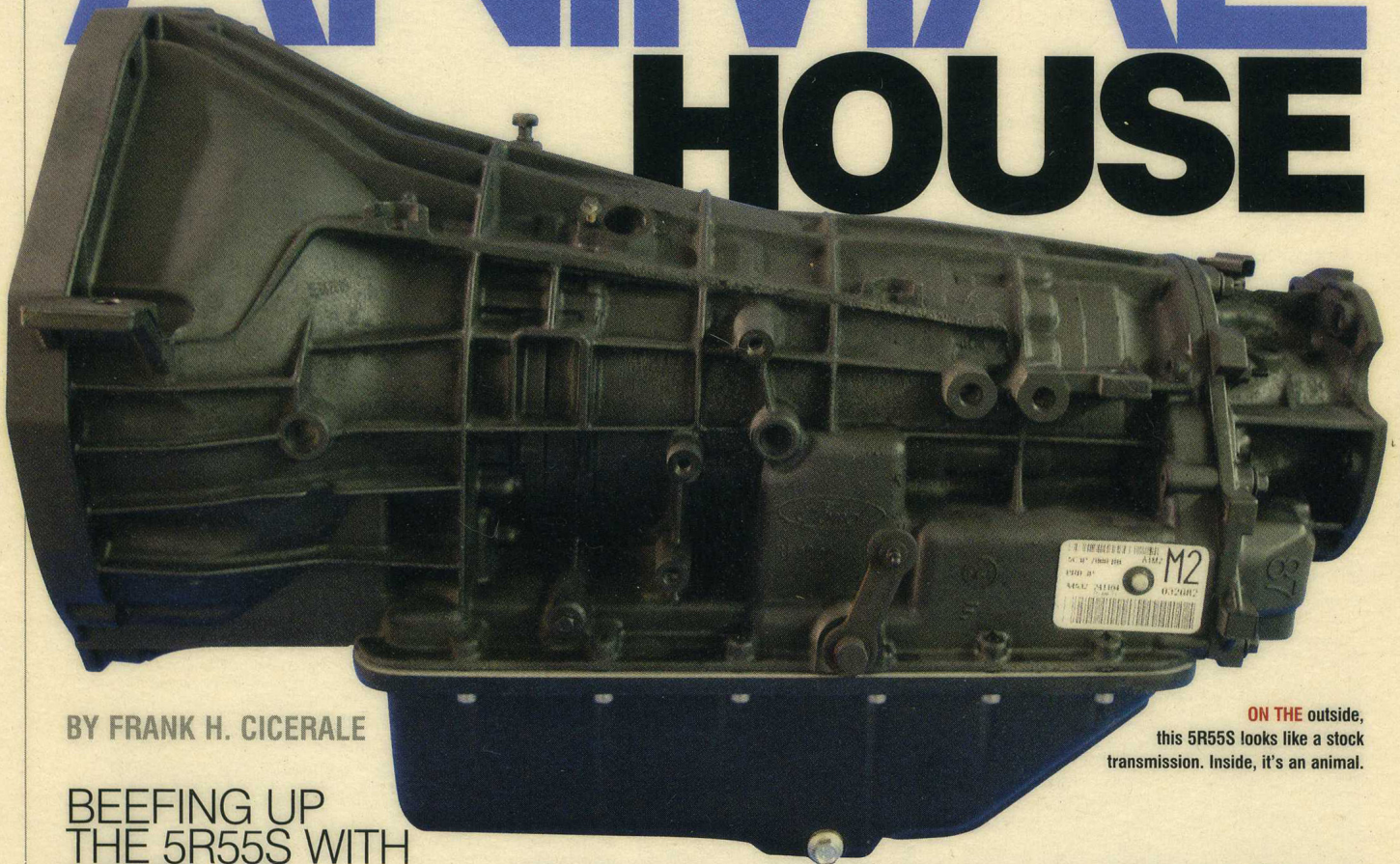


ANIMAL HOUSE



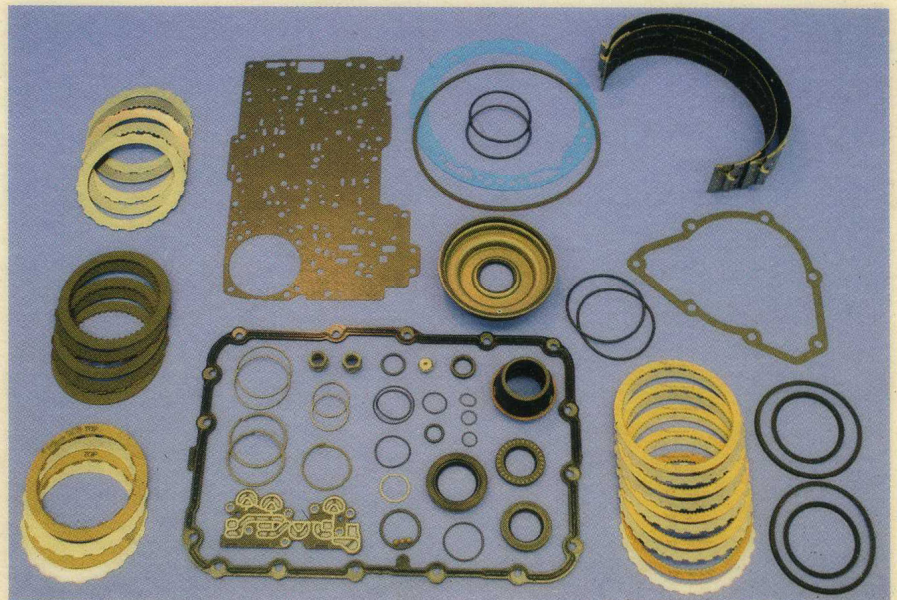
BY FRANK H. CICERALE

ON THE outside, this 5R55S looks like a stock transmission. Inside, it's an animal.

BEEFING UP THE 5R55S WITH LEVEL 10 TRANSMISSION'S PTS ANIMAL KIT.

FORD HIT the ball out of the park when it developed the 5R55S automatic tranny for the S197 Mustang. Instead of the normal three gears with an overdrive to knock down the rpm, the 5R55S showcases four forward gears and an overdrive gear, making it a five-speed automatic. For the performance-minded folks, the five-speed sports a super-low 3.25:1 First gear for brisk

RIGHT: Level 10's PTS Animal transmission kit for the 5R55S five-speed automatic transmission comes with some serious hardware. The kit comes with everything needed for an easy rebuild and showcases upgraded Animal clutches and bands among other parts and pieces.



acceleration. This makes it easier to aggressively move the Mustang's increased weight.

As is the case with most automatic transmissions, making one live behind a juiced-up powerplant requires upgraded components that not only improve reliability, but also allow the transmission to accept and distribute all of the engine's power to the rear wheels. Enter Level 10 Transmission's PTS Animal transmission kit.

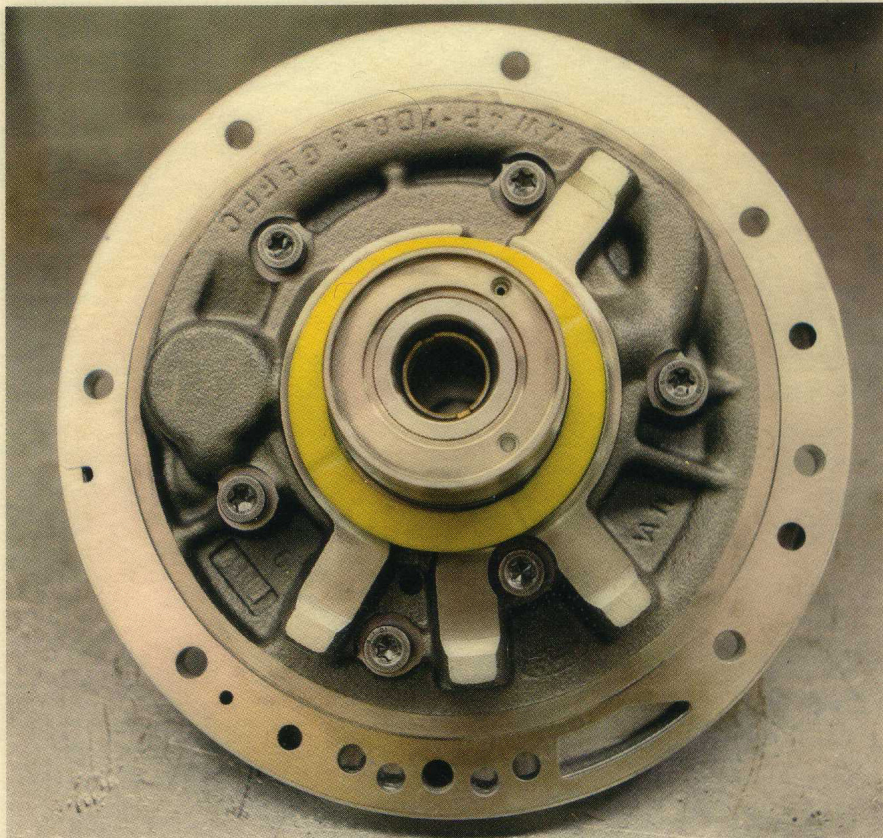
According to Pat Barrett, owner of Level 10, a kit of this type is needed to get the most power from the engine to the ground. "The PTS Animal transmission kit is designed to calibrate the transmission to work with a modified or supercharged engine," he says. "The kit changes the factory slushbox-type shifts to firm, yet not harsh, shifts at light throttle, and firmer shifts when the throttle is held wide open."

“THE DIFFERENCE BETWEEN THE CLUTCHES AND BANDS IS THAT THE STOCK PARTS GIVE YOU LUXURY-SOFT SHIFTS.”

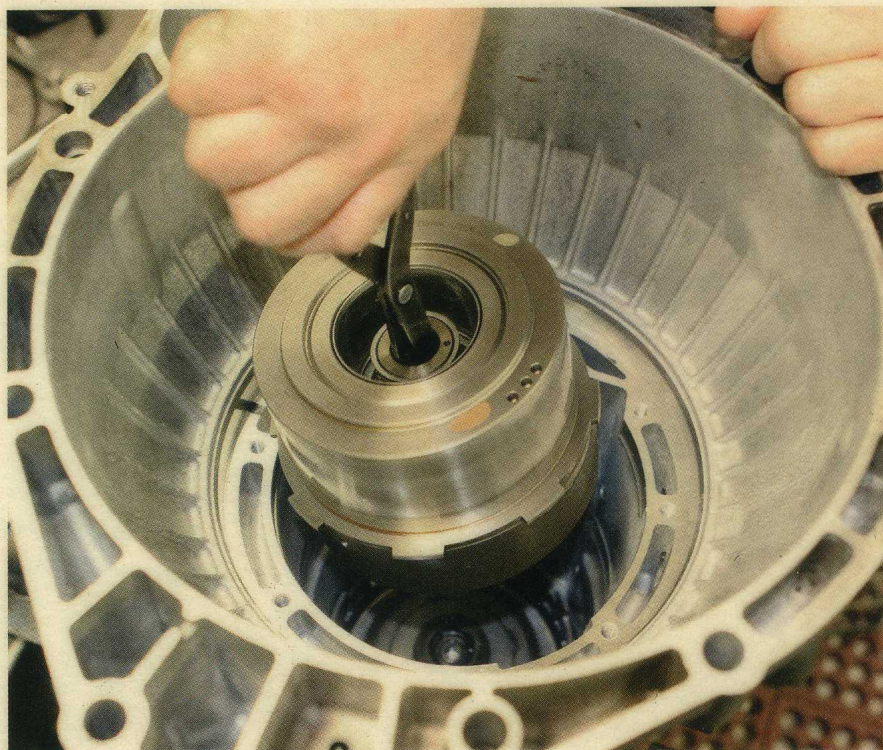
Having already developed a PTS kit for diesel-equipped Ford trucks, Level 10 saw the need for a transmission kit that would enable the 5R55S to live behind a supercharged or otherwise-modified Three-Valve. According to Barrett, there's much more to this kit than just the hardware. "The kit comes with Animal clutches and bands, along with a new pump, converter, and solenoid," he says. "The most important part of the kit, however, is the tuner that comes with a new calibration for the transmission."

With older-style transmissions, improving the tranny's shifting ability was handled manually via a valvebody rerouting the trans fluid as needed. With the new electronically controlled transmissions, improving the transmission's shift characteristics is done by changing the calibration for the trans via the ECM.

"The factory transmission is calibrated for soft, lazy shifts," Barrett says. "The calibration is so close that any modifications to the engine's power output causes the transmission to slip. The 5R55S needs calibration of the ECM, transmission, and torque converter to get the power to the wheels. Without combining the engine management to the transmission calibration, you won't have success with getting the car to use all of the available power you've put into it."



THE KIT comes with Level 10's PTS Super Pump, which replaces the factory pump. The unit pumps more transmission fluid throughout the case, allowing the trans to run cooler and last longer.



DISASSEMBLY AND reassembly are fairly straightforward. The transmission is gutted, leaving the case stark empty. The trans is then reassembled with the new clutches and bands installed.

In addition to coming with a calibration change for the transmission, the kit also includes upgraded clutches, bands, and Level 10's PTS billet torque converter, PTS Super Pump, and PTS Super Solenoid.

The improved shift characteristics are attributed to the new calibration, which works well with the Super Solenoid. This solenoid is an upgraded component that allows the converter to lock up sooner, along with utilizing the calibrations firmer shift characteristics. The factory converter will allow only a certain amount of torque and power through it. Any more power than the converter is set up to handle is bled off by the converter slipping. Thus, heat in the converter and the trans fluid is built, and power output and reliability is hurt. The converter is upgraded to lock up quicker and utilize the extra power present without bleeding it off. Also helping reliability by improving fluid flow through the transmission is the Super Pump. This pump

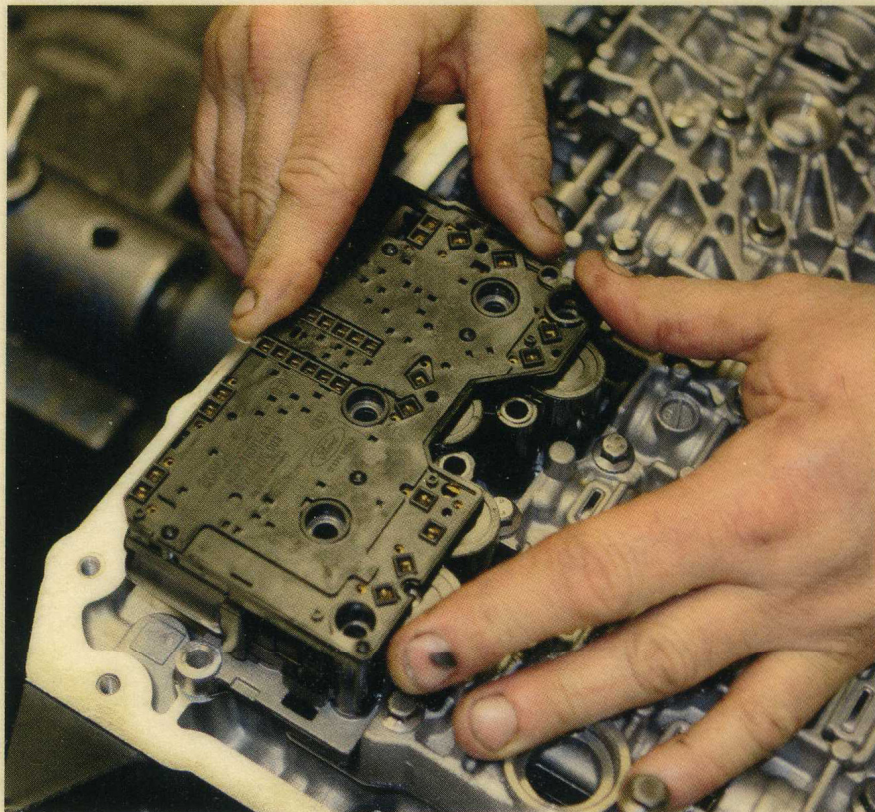
AS IS THE CASE WITH MOST AUTOMATIC TRANSMISSIONS, MAKING ONE LIVE BEHIND A JUICED-UP POWERPLANT REQUIRES UPGRADED COMPONENTS.

supplies more trans fluid than the stock pump, meaning the trans will run cooler and live longer.

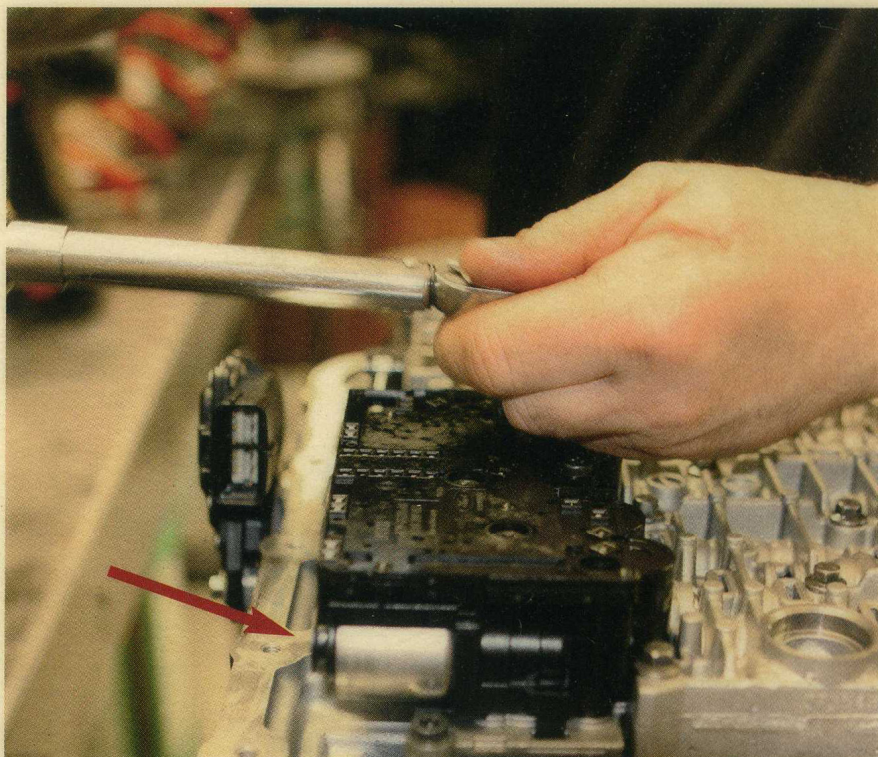
Other major components to the kit are the internal clutches and bands, as well as the converter. "The difference between the clutches and bands is that the stock parts give you luxury-soft shifts," Barrett says. "The Animal clutches and bands can hold up to three times more power than the factory pieces are rated for, giving you the ability to get more power to the tires while letting the trans operate at a higher reliability level."

The converter is also a trick piece. According to Barrett, the factory torque converter has a drive plate that is bolted to the torque converter. It's the drive plate that's bolted to the flywheel, and not the converter itself. What this means is that a high-priced specialty tool is needed to align the plate to the torque converter. In addition, this is an inherent weakness in that the drive plate is prone to breakage, as well as being difficult to align.

The Animal kits' billet converter not only stands up to more power and works with the rest of the components with the kit, but it bolts directly to the flywheel without the use of the



THE VALVEBODY for the 5R55S is electronically controlled via connections and wiring to the ECM. To alter the shift characteristics of the transmission, changes need to be made to the calibration of the trans, along with the installation of the kit's Super Solenoid in place of the factory solenoid.



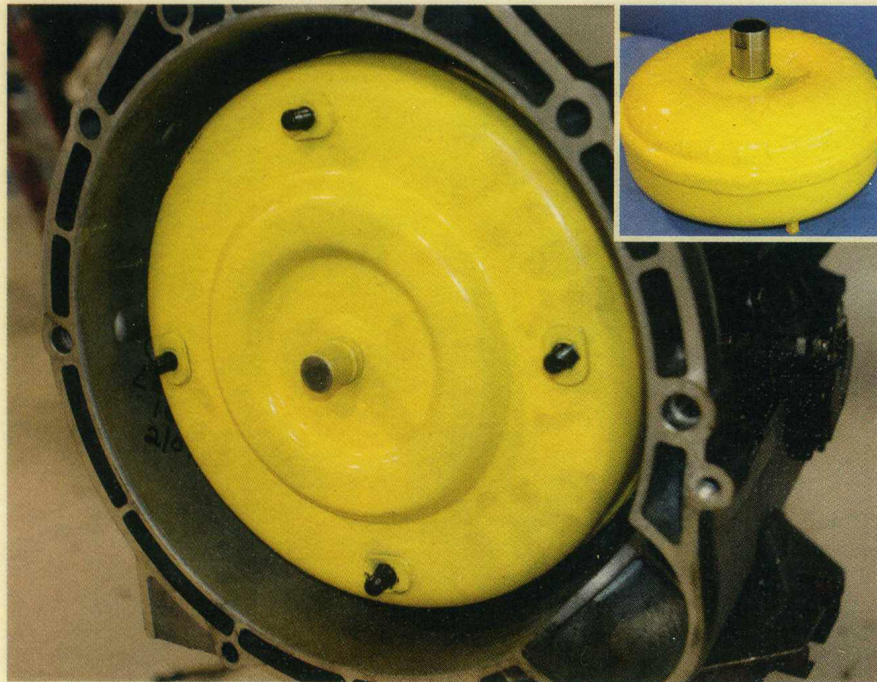
THE CREW at Level 10 found it was easier to install the Super Solenoid (arrow) before they installed the valvebody. The Super Solenoid works in conjunction with the new trans calibration to firm up shifts at both part and full throttle.

drive plate. This means installing the converter is an easy and knuckle-saving procedure.

The other item of interest is the process of breaking in the transmission after the kit is installed. "With this kit and the way the tune for the transmission is changed, you can't just start the car up and go blasting around," Barrett says. "After you upload the tune, you need to disconnect the battery for five minutes or so. After you hook it back up, start the car, get

everything up to operating temperature, then take the car around at light throttle and perform 20 1-2, 2-3, 3-4, and 4-5 shift cycles. Once you've done that, the bands and clutches have seated and are worn in correctly, and you can let it rip."

To get a better idea of what goes into rebuilding a stock 5R55s transmission with the PTS Animal kit, we cruised up to Level 10 and tagged along as the crew there rebuilt a 5R55S. **///**



THE PTS billet torque converter that comes with the kit improves the efficiency and reliability of the transmission, and its mounting point decreases the chance of breakage while facilitating an easy installation. Instead of mounting to a drive plate as the factory converter does, the PTS converter bolts directly to the flywheel.



A TRANS jack and a lift make removing and installing the transmission easy. The bright-yellow PTS converter sticks out easily when compared to the flat black transmission case. Although it does not come with the kit, the deep-sump trans pan from Level 10 is a good investment.



ARGUABLY THE most important component of the PTS Animal kit is the SCT tuner that comes loaded with a new calibration for the transmission. The calibration changes the shift characteristics for the trans within the ECM. One important note: Before you stomp the gas pedal to the floor, run the trans through 20 or so light-throttle shifts to break in the new trans components.

ALL THE RIGHT PIECES

Level 10's PTS Animal transmission kit for the 5R55S tranny comes with just about everything needed to make the trans stand up to the most vicious of Three-Valves. Below is a complete list of parts and pieces that come with the kit.

- PTS Animal Clutches and Bands
- PTS Billet Torque Converter
- PTS Super Pump
- PTS Super Solenoid
- SCT Tuner with Transmission Calibration

5R55S GEAR RATIOS

First Gear:	3.250
Second Gear:	2.440
Third Gear:	1.550
Fourth Gear:	1.000
Fifth Gear:	0.750

SOURCE

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