

tech review

>> RAM CLUTCH PROVIDES US WITH THE HIGH-RPM 'FIX' ON THIS 2011 MUSTANG GT

Perhaps the greatest news for the 2011 Mustang GT is the introduction of the 5.0-liter Modular "Coyote" engine, but there was also a switch from a Tremec-sourced transmission to a Getrag 5-speed manual transmission. Unlike the Tremec, the Getrag employs a 23-spline input shaft, the same number of splines used on the old Pinto 4-speed. Meanwhile, Tremec is busy readying an aftermarket version with either a 10- or 26-spline input. Just like last year, the Shelby GT500 has exclusivity on the 26-spline Tremec 6060 double-overdrive transmission, and Mustang GT owners are left with the standard 5-speed box. But all is not rosy. On early production 2011 GTs, the pressure plate fails to re-engage if the transmission is shifted at 6,000RPM or more. Ford is working on a fix for this glitch, but when the retro-fit will begin is anyone's guess. If high-RPM is your avatar and your seal, you'll soon be swapping out the OEM pieces for an aftermarket replacement like this one.

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This brings us to LaMotta's Performance, a Ford performance shop located in Longwood, Florida. Coincidentally, Jake LaMotta's wife owns this particular 5.0 and he evaluated it at Bradenton Motorsports Park. When we arrived, he'd already removed the transmission, linkages, drive shaft, hydraulic line, starter motor, upper and lower engine braces, and the cross-member. "I'm on a deadline," he said with a wink. "I've had my wife's car apart for three weeks and she's getting



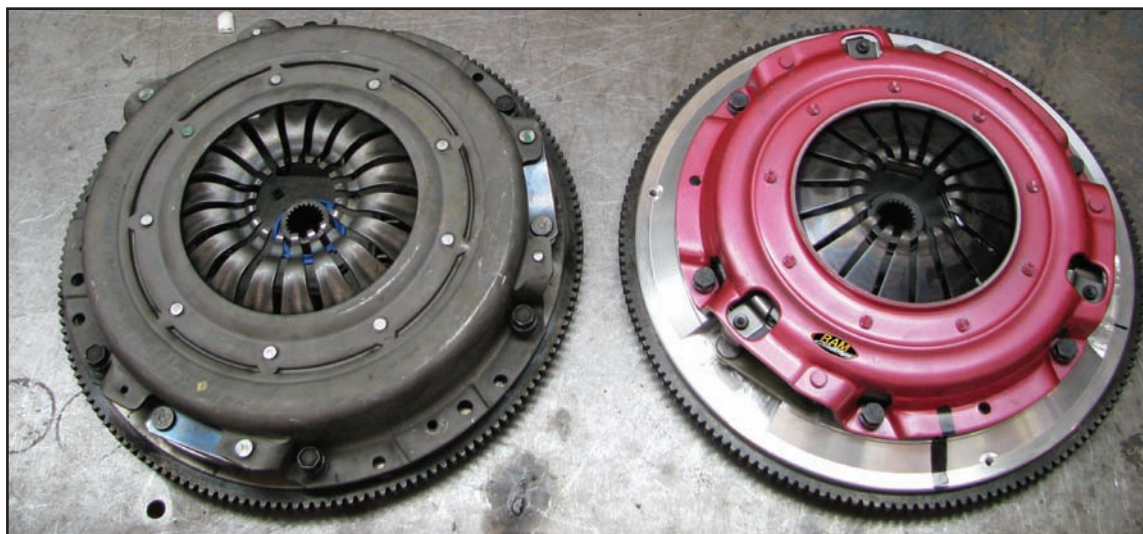
>> If your 2011 Mustang GT is an early production number, it will be equipped with an 11-inch, single-disc pressure plate and clutch disc assembly on an iron flywheel. This clutch works satisfactorily until engine speed surpasses 6,000RPM. After reaching that plateau, the clutch hangs up and the pressure plate will not return. Jake began by removing the stock pressure plate and the flywheel.



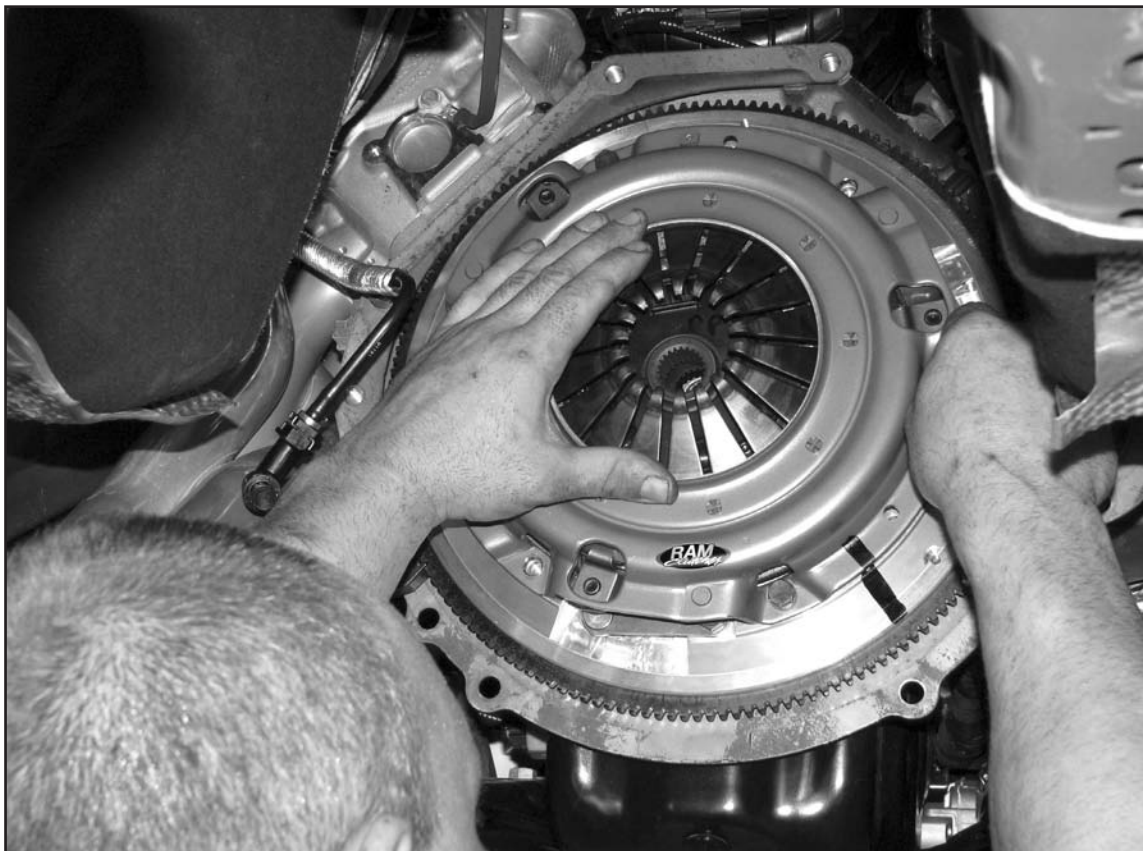
anxious about it." At the drag strip, he'd discovered that the OE 11-inch single-disc clutch would not re-engage, thus making gear changes at high engine speed an awkward if not impossible task. Dearborn insiders first suggested that he install the clutch pedal assembly from a GT500, presumably

for its improved push angle. The bigger issue is that he still could not achieve enough travel in the clutch to have it disengage cleanly at higher rpm.

LaMotta persisted, and at the behest of Ford, he contacted RAM Clutches for a feasible solution. RAM was already ahead of



>> Difference in the pressure plate diameter of Ford compared to the RAM unit is quite evident. Though just 9.5-inches in diameter, the RAM dual-disc set-up provides a torque capacity of 800 lb-ft. Pedal pressure is equal to that of the OE part.



>> You need to align the discs, floater and pressure plate by hand. A couple of bolts hold the assembly loosely in place as LaMotta inserted the pilot shaft, squared-up the discs, and tensioned the pressure plate bolts to 30lb-ft.

the curve on the pressure plate, clutch material, and aluminum flywheel he needed. RAM's approach was to use their Force 9.5-inch dual disc, consisting of pressure plate, dual clutch discs, an intermediate floater plate, and an aluminum flywheel. Since Mustangs employ hydraulic clutch "linkage" that is not manually adjustable, the set-up height of the clutch must be correct for the slave cylinder to properly disengage the clutch. Accordingly, RAM needed two critical dimensions before they could finalize this particular design: the distance of the crankshaft flange from the rear of the cylinder block and the

depth of the bell housing. For the depth of the bell, there are two accepted methods of measurement: if the transmission is still on the housing, measure from the block mating face of the bell housing to the face of the fully retracted bearing slave. The alternative is to measure the depth of the bell housing and then from the face of the transmission to the face of the fully retracted bearing slave. These measurements tell how much space is available to fit the replacement clutch assembly.

RAM measured the height of the factory clutch at 2.950 inches. They also found that the Ford bell housing depth



>> This simple but critical wedge bolts to the block and situates between the ring gear teeth of the flywheel preventing it from turning while bolts are being removed or tightened.



>> It took two big guys to wrestle the transmission back into place. The extension jack gave support while LaMotta tightened the bottom bellhousing bolts. Aftermarket exhaust headers on this car take up more room than the OE exhaust and made the job a little tougher.



>> With the big job completed, attention turned to hooking up the ancillaries such as these Medusa-like wire bundles and reattaching the clutch hydraulics. LaMotta followed this with the re-installation of the shift linkage, starter motor, the drive-shaft center support bearing, the featherweight aluminum cross-member, the front U-joint flange, the lower and upper chassis braces, and the rear U-joint flange.

required a spacer to correctly position the slave cylinder for the factory clutch. Since the twin-disc RAM clutch is taller by about the thickness of the spacer, RAM's answer was to omit the spacer, which allows for a 0.600-inch bearing pre-load and plenty of forward movement on the bearing slave to properly disengage the clutch. LaMotta spent about two hours putting the parts back into the car. Then he washed his hands thoroughly, turned the key and tried the clutch for engagement. Perfect. The lever slipped right in gear without a whimper. With that, he assumed the position and headed for the highway. Scant minutes later, he returned and with a smile on face. "I beat on it, I did. The clutch didn't hang up and the transmission shifted beautifully." Sounds like a worthy upgrade to us! ■

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[source]

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