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**MUSTANG
& SUPER FORDS**



▲ Saul "The Surgeon" Gutierrez of Extreme Automotive and your tech editor stuff the Tremec TR-3650 tranny back into Chris McCollum's '05 GT after installing McLeod's new RST twin-disc clutch.

Twice and Smooth

McLEOD'S TWIN-DISC CLUTCH BRIDGES THE GAP BETWEEN RACE GRAB AND STREET SMOOTHNESS FOR HIGH-HORSE, FIVE-SPEED S197s

As the S197 closes in on its third year of production, we sometimes find ourselves struggling to contain our excitement about the raging success the car has been thus far. It's amazing that despite our occasionally challenged economy, astronomical fuel prices, and the fear of a smogged-out planet, 'Stang enthusiasts remain steadfast in their loyalty, and

members of the performance aftermarket continue to develop new products for S197s that we need to let you know about as soon as we hear about them.

Such is the case with McLeod Industries' RST clutch for the S197. While dual-disc clutch systems have been on the racing scene for quite a while now, RST Series is a new twin-disc setup designed for stick-shifted S197 'Stangs pushing upward of

900 hp thanks to superchargers, turbos, and nitrous oxide.

There's no disputing the ease of shifting that's experienced with a stock single-disc hydraulic clutch. But one of the downfalls of an '05-'07 'Stang's stock clutch is that it lacks the holding power necessary for handling the serious power and torque levels that enthusiasts are now producing with Three-Valve modulars. As horsepower and torque

Text and Photos by **KJ Jones**

Horse Sense: With its recent acquisition of McLeod Industries and Hurst Shifters, B&M Racing & Performance has covered all the bases for being recognized as one of the industry's leaders in high-performance transmissions and accessories.



▲ This is the heart and soul of the RST clutch kit (PN 6911-03; \$850): two small-diameter (9 $\frac{1}{16}$ -inch), light-weight organic clutch discs and a float ring. The dual discs offer superior grip for high-horsepower applications.



▲ This is an up-close look at the float ring. This plate features small straps used for bolting it to a mounting boss on the flywheel, and it keeps the two clutch discs isolated. This float ring eliminates the annoying rattle of chattering clutch discs.



▲ Disassembly is straightforward. The McLeod clutch kit included new hardware for nearly everything, but it's important to keep the factory flywheel bolts from the stock clutch. The fasteners are reused to secure a new flywheel or the original piece if it's retained.

increase, a stock clutch doesn't have the ability to maintain that smoothness. Clutch chatter and slip eventually set in, and before you know it, your 'Stang's clutch is junk due to abnormal wear.

In the past, twin-disc clutch systems have gotten a bad rap as far as street compliance is concerned, mainly because this type of clutch is either on or off. There's basically no middle ground with a twin disc. Its direct engagement and release—as well as pedal pressure that requires the leg of King Kong—makes achieving acceptable drivability impossible.

McLeod has come to the rescue of enthusiasts who are fed up with losing performance due to OEM clutches that can't hang and eventually fail when a Pony packs a stronger punch. RST is a dual-disc clutch set featuring two 9 $\frac{1}{16}$ -inch, light-weight, organic discs and a float ring that separates them—to eliminate rattling. Their compact size promotes superior grip that's double the torque capacity of a single-disc stocker and significantly lowers the moment of inertia for better acceleration. The reduction in overall mass makes the engine and tranny rev more quickly, which is a big plus for supercharged S197s with sticks.

McLeod's Red Roberts touts a stock-like clutch pedal as one of the other key qualities of the RST twin-disc, as well as its ability to be used with an OEM flywheel if desired.

The idea of a dual-disc clutch that offers major clamping force and a clutch pedal that's easy to kick has intrigued us to the point where we need to see for ourselves whether or not it's possible.

Chris McCollum served up his Vortech S-Trim—blown, 400hp (380 lb-ft of torque) '05 Mustang GT for us to use as a test subject. Saul "The Surgeon" Gutierrez of Extreme Automotive in Canoga Park, California, went about making the clutch swap from bone-stock to McLeod's RST. Despite the addition of a second clutch disc and the float—which we discovered is somewhat challenging to bolt down against the flywheel—the operation is textbook simple. Saul completed the job in about three hours.



▲ With the negative battery cable disconnected and Chris' 'Stang safely racked, Saul begins the clutch-swap process by removing the starter, exhaust, drive-shaft, and crossmember. The shift linkage must also be disconnected prior to removing the tranny.



▲ Saul uses blue Loctite to ensure each bolt on the float ring will remain secure when the revs begin to spin. Note that we're adding McLeod's 11-inch aluminum flywheel to this installation. The RST setup can be installed with the factory flywheel retained, but we wanted as lightweight a setup as possible for Chris' blown beast, so we decided to use McLeod's wheel.



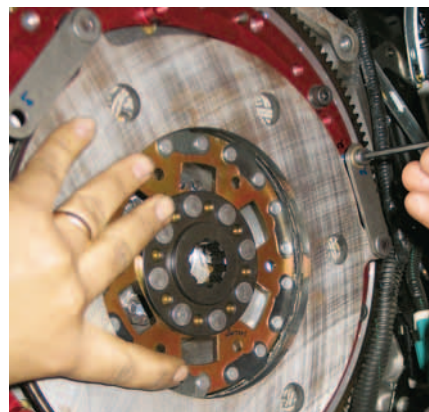
▲ The float ring's mounting ring is secured to the flywheel with 30 lb-ft of torque. The supplied Allen bolts can also be worked down with an impact gun, but it's important to adjust the gun to a moderate setting before running down the fasteners. The mounting ring and flywheel are aluminum and their threads may gall if the bolts are overtightened.



▲ With the floater's mounting ring installed, Saul sets the new aluminum flywheel in place and tightens each bolt with an impact gun. If you're working without air tools, flywheel bolts are torqued to 75 lb-ft.



▲ This is a sample of a critical bolt and washer set. The floater ring is secured to its mount in three places using an Allen bolt and two washers at each point. Installing each bolt-and-washer set in the correct hole of the floater's mounting ring is critical, as the hardware represents weight (in grams) that can affect the clutch assembly's balance and function if the pieces are installed in the wrong place.



▲ Don't try installing the floater ring without help from a buddy. The bottom disc and floater have a tendency to move around while you're trying to secure the floater's fastening hardware. Having extra hands available to keep things in place makes this process much easier.

GETTING SHAFTED...IN A GOOD WAY

With the new lightweight clutch and flywheel installed, we figured adding a one-piece aluminum driveshaft by Coast Driveline & Gear of Ventura, California, would also be a great way to enhance the zing in our test 'Stang's drivetrain.

Coast Driveline's S197 shaft (PN CD-60350; \$575) is made from T6061 aluminum and weighs 17 pounds. That's roughly half the weight of the two-piece steel units '05-'07 'Stangs

receive at the factory.

Saul "The Surgeon" Gutierrez and Coast Driveline's Mark Chuhloff installed the driveshaft in no time, and after a few weeks of road testing, car-owner Chris McCollum reports that the new aluminum unit has been flawless. "I haven't had any clearance issues with the floor or transmission tunnel, and the car revs up much quicker without any sign of vibration," Chris says.



▲ Mark Chuhloff (left) gives The Surgeon a hand putting the new one-piece shaft in place.



▲ Each S197 driveshaft kit includes this adapter hub for the pinion flange that allows perfect-fit installation of the shaft using factory bolts.



▲ Moving the emergency brake cable slightly and a few taps of the hammer on the floor near the back of the car to knock down a high spot are the only necessary chassis mods for installing the new driveshaft. When we say "taps of the hammer," we mean it. There's absolutely no need to wail on the tunnel or floor.

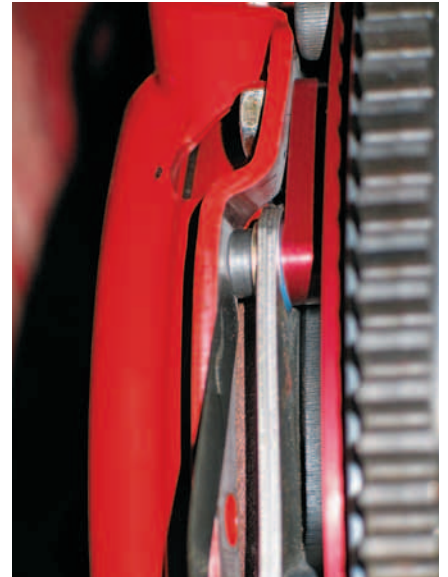
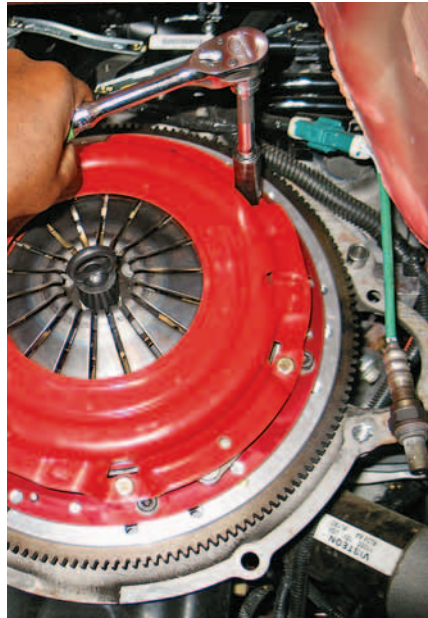




▲ Chris is a certified car guy who enjoys taking his 'Stang out on the road and "getting after it" whenever time permits. We asked him for his impressions on the RST twin-disc: "With this clutch, the pedal pressure is lighter than stock. The grab/release is perfect, and there is no clutch chatter whatsoever." **5.0**



▲ A pilot tool is included with the clutch kit. Don't hesitate putting it to use when installing a clutch, as it makes spline alignment for the transmission a cinch.



▲ We bolted down the pressure plate evenly in a star-patterned sequence, paying close attention to clearances between the pressure plate's hat and each of the mounting tabs for the floater ring.

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