

SIX TO V-8 SWAP: ENGINE AND DRIVETRAIN

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Convert From Six to Eight



In the past two issues of *Mustang Monthly*, we've shown how to swap V-8 power into a vintage six-cylinder Mustang. In the Feb. issue, we began by building a dependable 280-horse 289 small-block from Trans Am Racing. Last month, we prepared the chassis for V-8 power with new Grab-A-Track suspension components and Stainless Steel front disc brakes from Mustangs Plus.

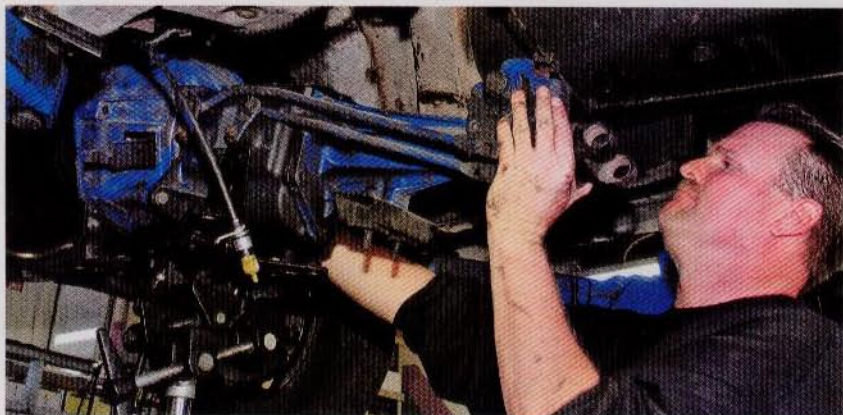
This month, we're wrapping up our six-to-eight swap with the heart of the matter: the drivetrain, which includes the 289, a Tremec T5 five-speed transmission, and an 8-inch, 3.55:1 limited-slip rearend from Randy's Ring & Pinion. The result

is a classic Mustang that's fun to drive every day.

Converting a six-cylinder Mustang to a V-8 should never be thought of as only an engine swap. You have to think of it as a complete package that's going to be safe and reliable with upgraded chassis components, better brakes, and a driveline that can withstand the increase in power. With our Grab-A-Track suspension and Stainless Steel front disc brakes installed in Carolyn Chenore's '67 T-code hardtop, we're going to remove the worn-out 200ci six, 3.03 three-speed manual transmission, and 7 $\frac{1}{2}$ -inch integral carrier rear axle in order to make way for the more powerful V-8 driveline.

In this final segment of our six-cylinder to V-8 conversion, our '67 Mustang gets its 289 drivetrain

text and images by Jim Smart



Before getting the V-8 power in, we have to get the six-cylinder out. Removal of the six-cylinder powertrain is straightforward. We begin by disconnecting and removing the battery, cutting off the exhaust system, draining the fuel tank, disconnecting the fuel lines and clutch linkage, draining all fluids, removing the driveshaft, disconnecting the parking brake cables, removing the starter, and dropping the transmission. You may also pull out the engine and transmission through the top as an assembly to save time. We dropped the transmission out through the bottom to ease storage concerns.

HOW-TO OF THE MONTH

Convert From Six to Eight

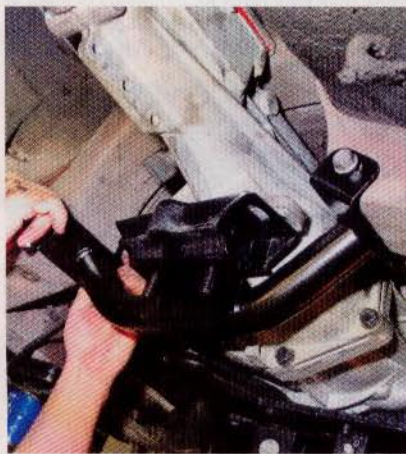
FROM FLYWHEEL TO DIFFERENTIAL (CONT'D)



When we embarked on our six-to-eight conversion, we wanted to examine as many transmission crossmembers as possible. From left to right are the Ron Morris Performance (lean and clean), the JBA Performance (perfect fit for a Mustang with a JBA exhaust system), and the time-proven crossmember from California Pony Cars (solid and dependable). Which crossmember you choose depends on fit and clearance issues. Not all of these will fit your application, but it's good to have a choice.



JMC Motorsports has a transmission crossmember designed for the Tremeck TKO transmissions. The rugged powdercoated design can handle just about anything you throw at it.



The T5 crossmember from California Pony Cars has been on the market the longest, dating back to the early '90s. It is a time-proven piece that fits most applications, although any installation can get tricky when we add custom exhaust systems and other accessories the crossmembers weren't designed for.

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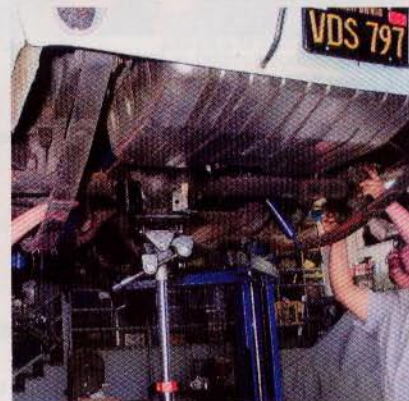
LIMITED SLIP

JMC Motorsports provided us with a used 8-inch rearend from a '68 Mustang, perfect for our swap. Used 8-inch cores are becoming harder to find. However, there are many sources. Currie Enterprises can build you a new 8-inch axle housing and differential. If used is more to your liking, check with Mustangs Etc. or Memory Lane Salvage for a rebuildable core.

Randy's Ring & Pinion provided us with a complete 3.55:1 ring-and-pinion rebuild kit, including bearings, seals, gaskets, O-ring, shims, and more. We enlisted the help of Jason Hughes of Hughes Differential Systems in San Diego to freshen up our tired 8-inch chunk. When Jason knocked the differential apart, he found 3.55:1 gears and a peg-leg arrangement that was rebuilt not long ago. He saved the gears for another project and built our differential with a new limited-slip and 3.55:1 gears from Randy's.



John Da Luz fits our 28-spline axles with new bearings for like-new reliability.



Here, Dave and Jeff pull the 7/4-inch light-duty six-cylinder rear axle and worn-out four-leaf springs.



When you're building a daily driver, don't spend much time on cosmetic detail. We blasted this rearend with Simple Green and a scrub brush, then nailed it with a sander and Eastwood's Black Satin paint.



In preparation for the 8-inch rear-axle housing, the five-leaf mid-eye springs are installed.

HOW-TO

Convert From Six to Eight

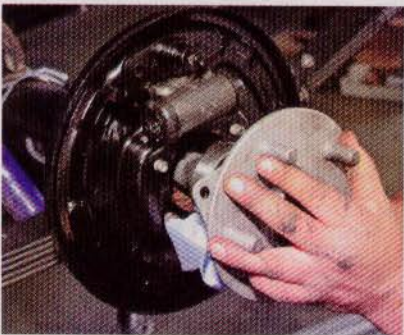
LIMITED SLIP (CONT'D)



The fresh 8-inch housing is installed without the heavy 3.55:1 third member to save weight during installation. Jeff secures the leaf springs and installs new U-bolts with media-blasted and painted spring plates. We have opted for Grab-A-Trak gas shocks in all four corners for smooth ride and crisp handling.



JMC Motorsports uses Permatex's The Right Stuff to seal between the differential and axle housing. Jeff opts for The Right Stuff on both sides of the gasket and around the studs. Nylon-lined locknuts secure the third member.



Jeff installs new axle seals and lubricates them with engine-assembly lube before installing the axles. New axle bearings afford added security and long life.

JBA MEANS FIT

JBA Performance Exhaust provided us with everything from the exhaust valves to the exhaust tips. The titanium-coated shorty headers look subtle and all-business, plus they provide exceptional clearance on both sides of the engine. During our installation of JBA's EVOL exhaust system, we were pleasantly surprised at how well this system fit. The H-pipe package has provisions for O-rings for those with fuel-injected power, and if not, plugs for the bungs to keep exhaust gasses inside.

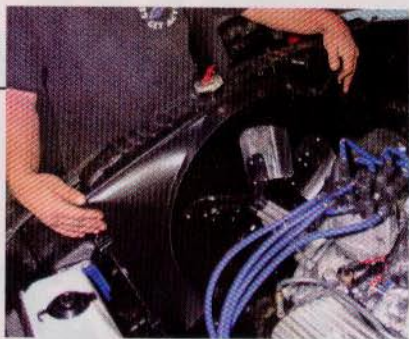
What surprised us most was not having to hire an exhaust shop to install this system. We did run into one clearance issue with the left-hand tailpipe. It needed a slight bend, performed at a local exhaust shop, to clear the fuel tank. We're pretty convinced the tailpipes are also designed for a late-model Fox-body Mustang because one of the pipes needed a pinch of custom bending to fit. Outside of the one tailpipe, the system was a virtual bolt-on.



What impressed us most about the JBA system wasn't sound or looks, it was fit. We wanted turn-down exhaust tips we could hide behind the rear valance. We did have to bend the left-hand tailpipe for a perfect fit.

JMC MOTORSPORTS HYDRAULIC CLUTCH

Regarding Mustang's equalizer-bar clutch linkage early in the '60s, this flimsy bellcrank design fails all too often. JMC Motorsports does away with it with an innovative hydraulic clutch kit that's easy to install and a pleasure to use, as we learned on our six-to-eight project car. All you need is a '79-'95 5.0L bellhousing, clutch fork, and block plate.



KEEPING IT COOL

Whenever you step up to V-8 power, you're going to need the cooling capacity to support it. At the very minimum, you need the Scott Drake 24-inch, four-row core desert-cooler radiator from Mustangs Plus along with a fan shroud to improve air velocity. If your budget will allow more, opt for a Griffin 24-inch aluminum radiator, also available from Mustangs Plus. If originality is important, paint the Griffin radiator satin black and continue to enjoy the cool of aluminum. A Flex-A-Lite stainless steel flex fan works wonderfully and quietly in place of your Mustang's original steel fan. These upgrades, coupled with a high-flow water pump, will help keep your engine cool on the hottest days.

ROLLING ON NEW WHEELS

With the upgrade to V-8 power comes an important decision about wheels. You can switch to five-lug steel wheels and simply swap tires. You can also step up to something even more radical and attractive from the aftermarket. Because Carolyn wanted to keep her Mustang more stock in appearance, she opted for 14x5½-inch '67 styled-steel wheels from Scott Drake Enterprises. These wheels, available from JMC Motorsports, were an easy swap because her relatively-new, white-sidewall 195/70/14 radial tires were ready for thousands of miles of use. Styled-steel wheels made her once utilitarian six-cylinder Mustang distinctive and elegant.

