5.0 MUSTANG & SUPER FORDS

BOSS 302

CALPIN AND FORD RACING BRING THE BOSS BACK WITH PLENTY POWER IN AN S197

TIRE-SHREDDING TEST DRIVES! ROUSH 427R & SHELBY GT

Lowering the Vroooom

KEITH CRAFT'S 347 AND A PERFORMANCE AUTOMATIC AODE FINALLY MAKE THEIR WAY BETWEEN THE FENDERS OF OUR PROJECT T-TOP COUPE

With chassiswork and bodywork completed on our '86 T-top project car ("Cage Match," p.176, July '06; "Damage Control," p.146, Oct. '06; "Body Beautiful," p.122, Nov. '06; and "FABulous Four-Eye," p. 130, Feb. '07), we're now ready to take the rare 'Stang's Fox-rod renovation to a new level.

The next order of business is installing the coupe's drivetrain—namely our naturally aspirated 478-flywheel horsepower Keith

Text and Photos by **KJ Jones**

Horse Sense: A word of acknowledgement to Saul "The Surgeon" Gutierrez and Extreme Automotive's owner Sean Roberts for providing us the use of their facility for this major part of the project and many others that follow. From Day One, Saul has gone above and beyond by volunteering countless hours of his after-work time to help us build our coupe. Our sincere thanks goes to The Surgeon, and many other individuals and companies that believe in what we're doing. Without all of you, the car would not be coming together as quickly—or as nicely—as it is.

Craft 347, the Performance Automatic AODE transmission, and Precision Industries' Stallion lockup torque converter we think will be the perfect combination for achieving our low-10-second/highway driveability goal.

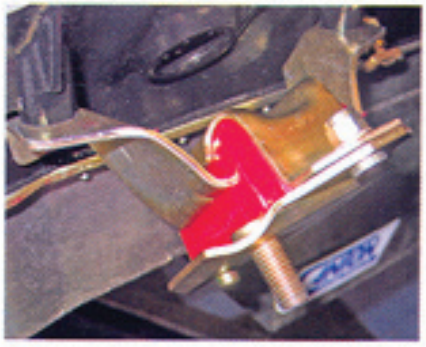
When we received the engine and transmission in June 2006, we were racing the calendar. The car had a fast-approaching date with JBA for its headers and exhaust system (more on those pieces in an upcoming installment), and the motor and tranny had to be in the car before we could go forward with the exhaust system.

Dropping a stout engine between the fenders of any 'Stang is always a monumental, almost spiritual, event that gets performance nuts amped every time. It doesn't matter whether it's a fresh, new bullet for a project car such as ours, or the result of a race team's overnight thrash. It's even more intense in NHRA Top Fuel pits, where engines are removed/rebuilt/replaced in 75 minutes—sometimes less. The process of installing a new powerplant has a certain level of excitement about it—despite the amount of work that goes into getting it done—that only a hard-core 'Stangbanger can fully understand.

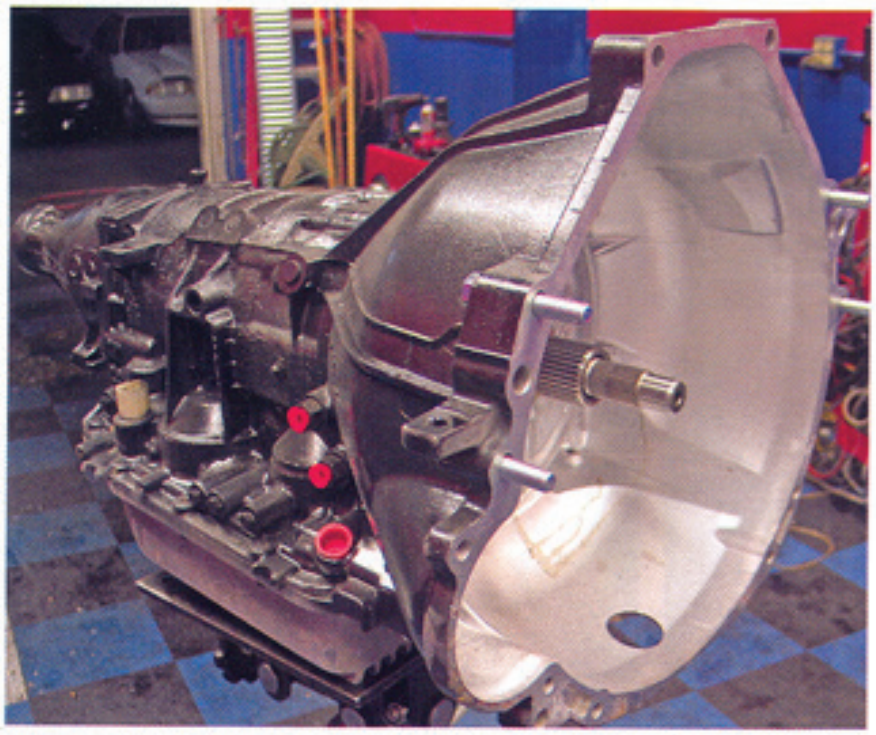
Our excitement levels rose considerably when our good friend Saul "The Surgeon" Gutierrez called to let us know "The eagle had landed!" Our Keith Craft, big-bore stroker had arrived at Extreme Automotive (for details on this engine see "Big-Bore Score," p. 58, Dec. '06). We set a time to install it, as well as PA's AODE tranny, for a few evenings later.

Adhering to our project's strict timetable has been a challenge. We've experienced great triumphs, but we've also suffered occasional setbacks. Through it all, we still feel that building this car is one of the most exciting things we've done with a Mustang in a long time. The following photos take you into the world of "dropping the drivetrain," as we experienced it with our project T-top coupe.

▲We have to give major props to the photo archives on the Four Eyed Pride Web site (www.foureyedpride.com), for this image of our coupe's original 5.0 bullet. Yes, this really is the engine in the car prior to your tech editor assuming ownership of it. This engine shot, and a few additional pictures of our T-top coupe (and rare, T-top notchbacks owned by a few other lucky 'Stangbangers), came as a surprise during one of our Internet research missions for info on the coupe's history.



▲Prior to installing the engine, we outfitted it with Energy Suspension's Hyper-Flex polyurethane 5.0 motor mounts (PN 4.1122) for '84-'95 Mustangs. We chose these mounts over solid pieces because of the street-driving plans we have for our T-top coupe. The polyurethane offers more durability than OEM rubber motor mounts, and it will be able to withstand the torque forces of the 347 without compromising ride quality.



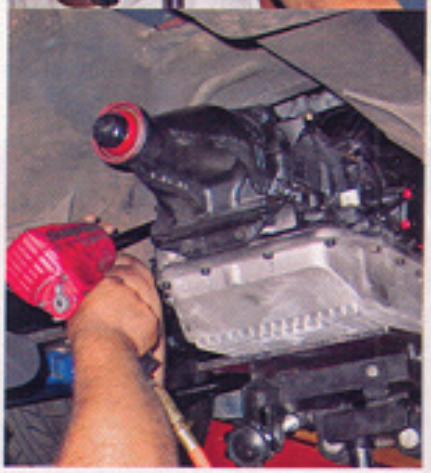
▲When you want your Mustang to be dragstrip capable and street driveable—exactly how we want ours—a transmission that can handle both driving styles is critical. While we acknowledge that a five-speed—or maybe even a six-speed—manual tranny is a good choice for this car, we opted for this AODE/4R70W Super Comp unit (PN 45102M) from Performance Automatic Racing. This transmission is prepared with both racing and the street in mind, and thus is heavy-duty. Our Super Comp trans includes an all-important, forged and hardened ⅝-inch input shaft made of 4340 non-twisted steel, Alto Red racing clutches, a heavy-duty servo, Kolene steels, a hardened sun gear, and high-performance bands. The tranny is capable of handling up to 800 horses and features a billet-aluminum, full-manual/forward-pattern valvebody with PA's Pro-Tree transbrake (for the strip), and a highway-compliant electric Overdrive that will kick the revs down and improve fuel mileage as soon as the button is pressed. The transmission was shipped without a dipstick tube. Our buddy Brian Schapiro of B&D Racing was kind enough to set us up with a new tube.

▲We're using this Stallion torque converter by Precision Industries. The 9⅝-inch converter is the way to go for a car such as ours that has 600 or more rear-wheel horsepower but requires daily driver efficiency and driveability. Precision can make 9⅝-inch converters that are capable of withstanding horsepower ranges from 0 to 1,600 depending on the design and assembly. Our Stallion converter is a multi-clutch unit (that multiplies torque at a 2.53:1 ratio compared to the 1.93:1 for a stocker), and it was made to work with the manual, WOT lockup feature of our AODE. The bright purple color on this converter comes from a temperature-sensitive paint that discolors under excessive heat or abuse, which lets us know the converter needs attention. We used a piece of sandpaper to scuff paint from the snout of the converter to ensure it seats properly in the flexplate and doesn't bind.

◀Since our 347 is 28-ounce balanced, a stock 50-ounce AODE flexplate is of no use to us. Performance Automatic offers this SFI-approved, 164-tooth replacement flexplate (PN PA26466) that's made from high-grade steel. It will accommodate the Powermaster XS Torque starter (PN 9503) that we're using to turn over the stroker.

▼Many of you have written to us and expressed interest in knowing the gear ratios for transmissions featured in our tech reports. The PA Super Comp AODE's ratios for 5.0/pushrod engines are as follows: First, 2.48:1; Second, 1.48:1; Third, 1:1; and Overdrive, 0.66. The Precision Industries Stallion converter was built with a stall speed of 3,500 rpm. Note the deep aluminum pan on the bottom of the tranny. The pan's larger capacity and fins improve the overall operation of the transmission by keeping fluid cooler.

▲We're using Advanced Technology Lubricant's synthetic automatic racing transmission lubricant (PN 810640/5-gallon bucket) to keep things slick and cool inside the coupe's tranny and converter. This is the same fluid used by several NMRA race teams, and is available, along with other ATL lubricants, to you at racers' cost, if you mention this article when you contact ATL.



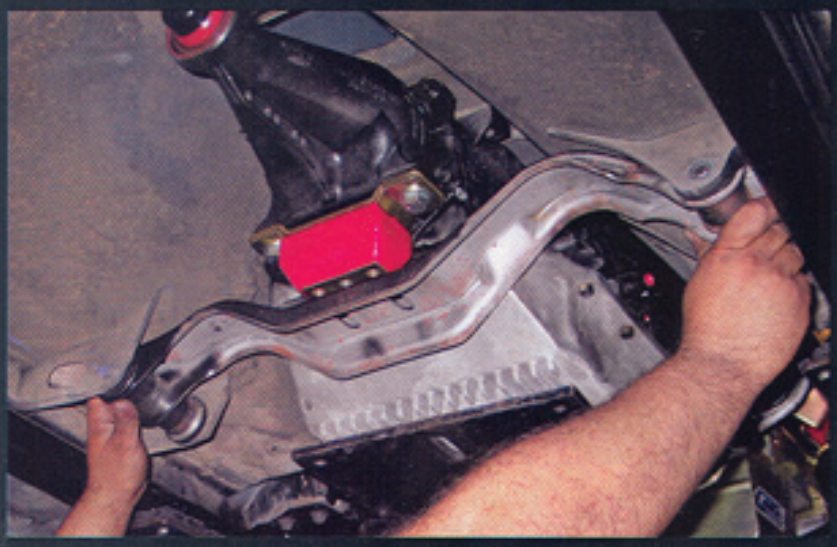
▲The T-top coupe's engine compartment has come a long way from where it started, huh? We got everything lined up, set in place, and bolted down (see Midnight Madness sidebar for info on modifying the transmission crossmember). Now our project car is ready for transport to JBA Headers, where a set of long-tubes and a full exhaust system are awaiting its arrival.

MIDNIGHT MADNESS

Just when we thought we were cruising through the final stages of our engine installation and almost finished for the night, we came upon a situation with the transmission crossmember that hadn't been considered at the outset of our project. We had to come up with a plan to rectify it in a hurry.

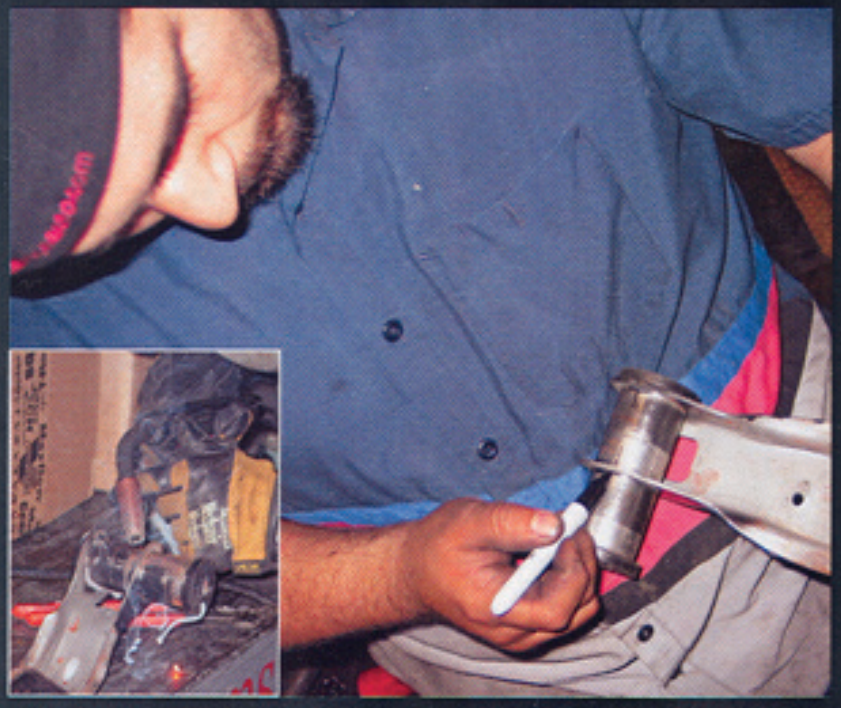
The AODE is a fairly large and long unit. While we knew the transmission crossmember would probably need to be modified (by sliding the crossmember rearward on the mounting tubes, similar to installing a Tremec tranny in a Fox), we did not know the holes in the transmission mount would extend nearly 3 inches beyond the mounting slots in the crossmember, making it basically impossible to seat the tranny.

There's a reason why we call Saul Gutierrez "The Surgeon." While it took a considerable amount of time—and ran the project much later into the early morning than we ever anticipated—Saul used the factory crossmember and a few pieces of scrap steel to create the proper platform for mounting our new transmission.



▲Check out the position of the Energy Suspension polyurethane transmission mount (PN 4.1104). We mock-fit the crossmember and discovered the slotted holes do not align with the AODE's mounting point—our coupe is an original T5 car—and needed to be modified. This was literally an eleventh-hour surprise for us, as everything with the install had been going great until we realized some fabrication was needed to complete the project.

▲The factory crossmember requires an extensive amount of modifying to get it to work with the AODE's longer tail section. In this photo, Saul uses a vise to straighten out a flap-like extension plate cut from the original crossmember. He then welds gussets to each end that triangulate and strengthen the plate, and readies it for supporting the transmission.



▲The Surgeon operates on the crossmember's mounting tubes. Each tube is moved to its farthest-backward point, then Saul marks each place where the tube must be welded. After marking the tubes, he lays a bead of weld around the tube and secures it to the crossmember to ensure that it won't move.

▲Saul bores holes through the newly fabricated extension plate, then uses an air saw to elongate the slots for the transmission mount.

▲Now that the tranny mount is properly aligned, it can be secured to the crossmember—and we can go home! **5.0**

SOURCES 5.0

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