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**New Parts for '96!**

**SUPER FORD**

# **SUPER FORD**

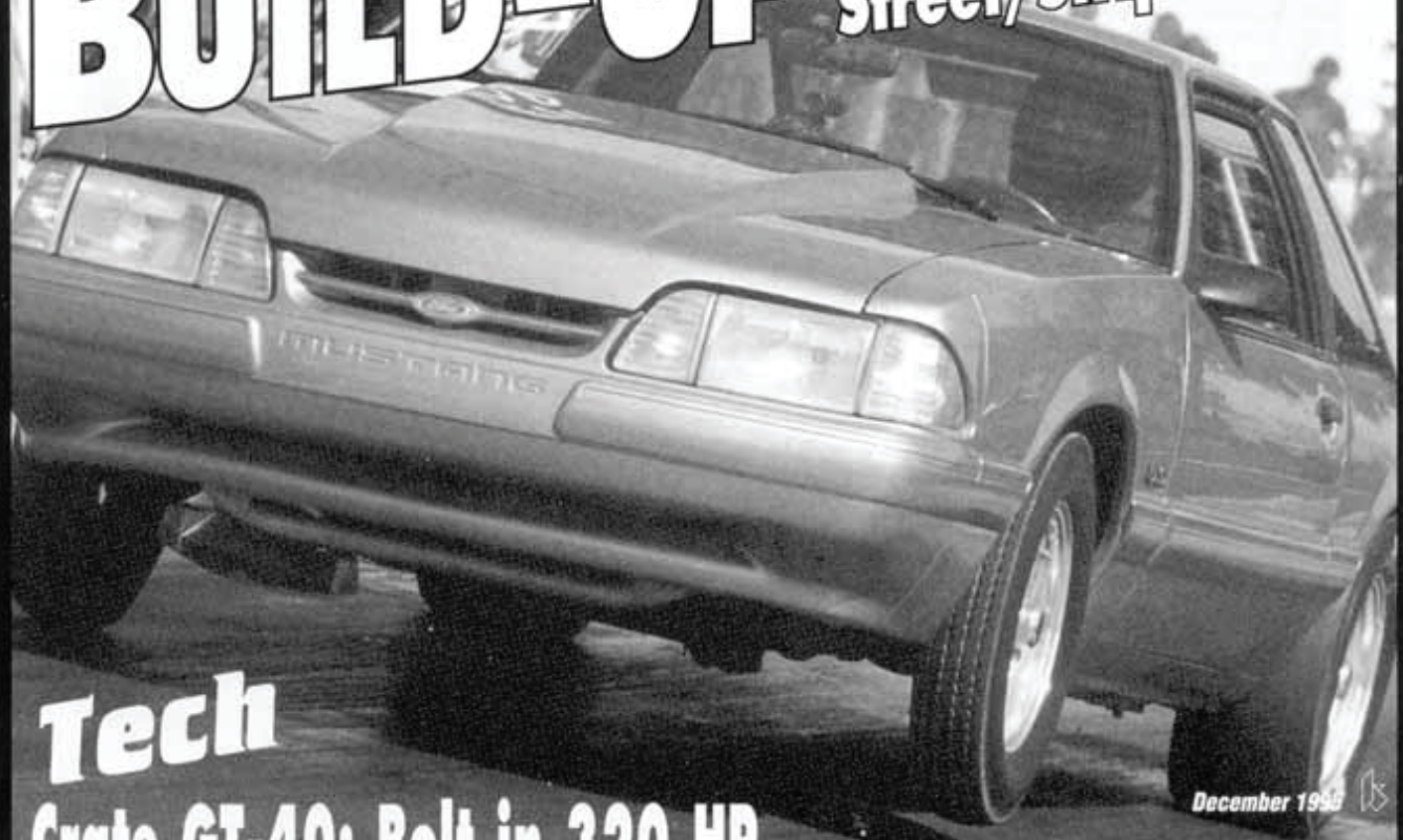
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December 1995

**Tech**

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# Maximum Overdrive

Precision Industries' AOD upgrades make traction the issue

by Mark Houlahan  
photography by Chuck James and Mark Houlahan

To come right out and say it, Ford's Automatic Overdrive transmission hasn't been held in high regard among the go-fast 5.0 crowd. Early engineering problems, a lack of lubrication, poor gear ratios, a lack of low-end torque capacity and that coyote-ugly stock shifter were but a few of the less than redeeming qualities of the primeval AOD.

Ford has admitted the AOD was never meant to be a performance transmission. GM, on the other hand, installed the 200R4 and 700R4 transmissions behind performance cars like the 'Vette, Buick GN and Camaro/Firebird for years with great gear ratios and gobs of torque capacity. But Ford sat around on its thumbs, sticking the mom-and-pop AOD from the Crown Vic/Town Car into the '84 Mustang when ordered with central fuel injection; itself another performance joke. The only hot rod concessions were a different valve body and converter.

Over the years the AOD has constantly been refined by Ford, but has never been a drag strip favorite. In '94 the AOD was upgraded with better lubrication, better valve body calibrations and electronic controls (AOD-E), but Ford surrendered in '96 by sticking the much different 4R70W Mark VIII autobox in the 4.6 Mustang. With the 4R70W offering great gear ratios, tons of torque capacity and retaining the overdrive

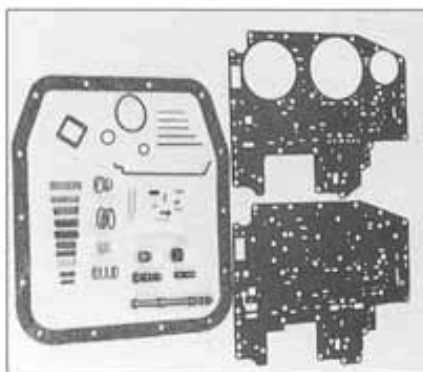


Our test car is a 1990 5.0 LX with Crawford-ported stock heads with GT-40 valves, an Edelbrock Performer 5.0 intake, a BBK 70mm throttle body, Pro-M Bullet 75mm mass air, a Crane 2031 camshaft, 1.7 roller rocker arms, Texas Turbo long-tube headers, and 3.73 gears. Its previous best ET with the stock AOD was 13.94 at 101.18 mph.

for CAFE, Ford finally has an auto trans that can live with a blower or nitrous.

But what about those pre-'96 owners who bought into the 5.0 frenzy, some not knowing better, some wanting a challenge, by purchasing an AOD or AOD-E equipped Mustang?

Your first choice is an AOD shift kit.



Folks like to say the valve body is an automatic transmission's brain. If so, then Precision Industries valve body shift kit is a brain transplant. Positive, tire-barking shifts make this kit a natural performance upgrade — we didn't even recognize our car when we drove it for the first time.

Some of these are good, some not so good, but a plain shift kit doesn't really do the trick for a high-performance AOD. A stronger



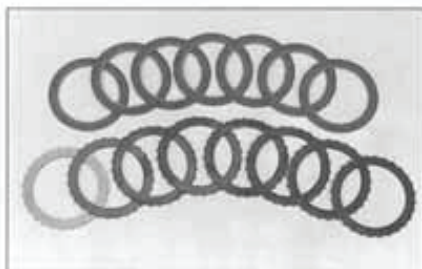
The 9.5-inch Stallion lock-up converter uses a one piece front cover CNC-machined from billet steel. It reduces converter wobble (limiting run out) and rotating mass. Instead of the typical, weak, welded tabs, the billet cover uses mounting ears whittled right out of the cover material. Button-head fasteners are then threaded in and tacked to the ears for mounting studs instead of threaded hole and bolt/lock washers. Each converter is custom made for your Mustang, 'Bird or F-series with stall speeds ranging from 2200 to 4000 rpm.



While not trick, the "A" servo from the Thunderbird Super Coupe AOD is a standard upgrade item everyone, including Precision Industries, uses to apply more clamping force on the overdrive band.



With more clamping force comes a need for increased holding force. This is supplied by a 1 3/4-inch, Kevlar-lined overdrive band in place of the stocker.



The direct clutch pack is upgraded with a seven clutch disk pack utilizing Kolene steel plates. The extra plates reduce an automatic transmission's greatest enemy — heat.

input shaft, a high-stall torque converter, beefed clutch packs, heavy-duty bands and other items are necessary for the sort of strip performance we are looking for.

We want to warn you an AOD buildup is not cheap. With converter prices in the \$600 range, and other parts \$100-\$200 each, a well-built street/strip AOD costs around \$1500. You can stick a Tremec under your car for that, but popping a five-speed in place of your AOD isn't going to win any points with the "challenge" crowd. Besides, just think of the grins when you toast that big mouth at the track and then drive home without your right arm ever leaving your girlfriend's shoulders.

To illustrate the new AOD parts availability situation, our '90 LX AOD, with a previously installed Ford Motorsport wide-ratio kit, was shipped to Precision Industries in Bartlett, Tennessee, for upgrading. Using their own parts, some from TransGo and other shops, Precision transformed our weak-kneed stocker into a street/strip warrior. Some of the steps involved were clearing the front pump, installing a babbit

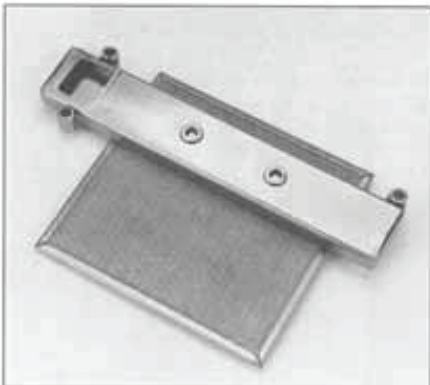
pump bushing, adding a seven-disk direct clutch pack, plus installing a Kevlar OD band, racing filter and shift kit, along with eliminating the converter drain back and cut-back on the 2-3 shifts. Adding the A servo and other goodies are done in-house to every transmission. We also had a seven-tooth output shaft fitted to correct speedometer error caused by our 3.73 gears and left in our previously-installed wide-ratio kit.

Is all this worth the money? Let's just say an aftermarket high-stall torque converter is one of the best performance parts you can install in an automatic Mustang — next to a rear-end gears, a supercharger or nitrous. When the stall speed is matched to your gearing and camshaft selection, the converter can drop as much as .5 off your ET. That's a tremendous gain for a part that can't throw a belt or need to be refilled after three passes.

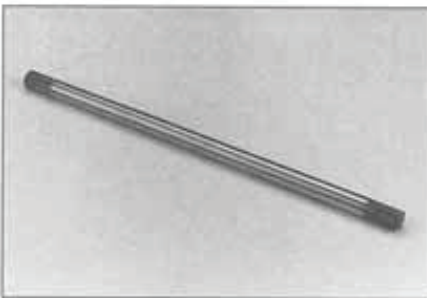
As for convenience, the converter and input shaft slides right in with the trans out of the car, and the shift kit and filter are both driveway/weekend jobs. But if your AOD is toast, and you're about to rebuild it anyway (which can run into the \$600-\$700 range just for a stocker) save the pennies and go full boogie. You won't be disappointed and

you won't need to put a zipper on the trans either. If any of you are still not sold and have visions of that Tremec or World Class T-5 floating around in your head, ask any racer which is more consistent, manual or auto trans. The answer will come up auto every time.

Unfortunately, the incessant Florida rains kept us away from the drag strip and a proper test session. After three tries we voted to run for cover and report back in a future issue. On the street, however, our LX feels like a completely different animal; an animal that likes to break the tires loose.



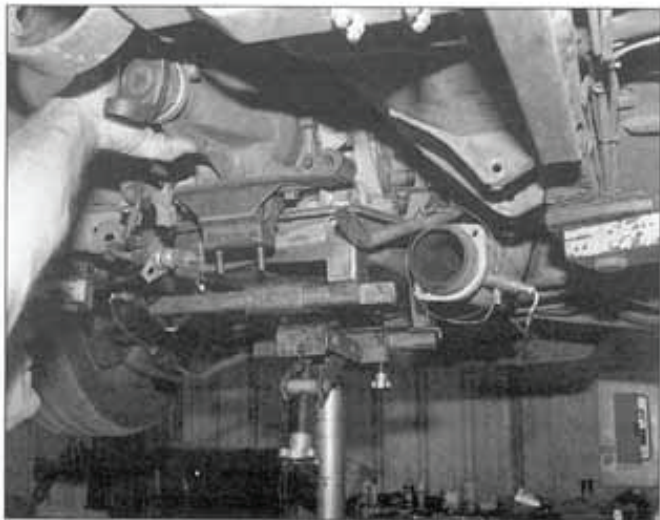
Definitely trick is Precision Industries' custom racing AOD oil filter. Terry Hedrick of Precision said they found oil crossleaked at the valve body separator plates due to filter restriction. The stock filter uses Dacron fiber, while the racing filter features a high-flow wire mesh and a dichromate mounting bracket.



Any AOD coupled to serious torque should have a heavy-duty input shaft. Precision's billet steel input shaft is heat treated to prevent snapping when the transmission bangs into third gear, when shaft stress is greatest. Combining Precision's shaft and torque converters retains converter lock-up for fuel economy, and will allow use of a stock input shaft in an emergency.



Installation of our street/strip trans was a simple swap job, requiring the removal of the H-pipe and little else. Dennis Ramsey, owner of Ramsey's Auto Service, worked the wrenches for us.



With the H-pipe down and the crossmember removed, there is room to disconnect the speedo gear, cooler lines, neutral switch, shift linkage, and driveshaft. After removing the starter and bellhousing bolts a transmission jack was used to bring the transmission down safely. If you're working at home, a floor jack will do the job, provided you use a transmission jack "head" on your floor jack to correctly hold and chain the transmission to the jack.

## SVO Wide Ratio Kit

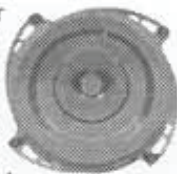
As a footnote to our AOD experiences, SVO's Wide Ratio/Upgrade Kit (PN M-7398-D) is another option worth considering. Although billed as a wide-ratio kit, the new heavy-duty gears, six-plate high clutch, wide OD band and other parts may be better thought of as a "low-gear" kit. By lowering first gear from 2.40 to 2.84, and second gear from 1.47 to 1.55, the Wide Ratio kit is like installing 3.73 gears in place of 3.55s. Yes, the ratios are farther apart, but first gear and second gears are lower, and that gets you out of the hole and accelerating faster. Top gear is unaffected for quiet cruising performance and acceptable fuel economy, something a deep set of rear axle gears can't do.

At a listed \$655.95, the Wide Ratio set is not cheap; but you should significantly better list price by shopping, and the results are more than just noticeable.

## 9.5" Stallion

### Ford AOD, AODE & E4OD Converters

Precision Industries introduces their new 9.5" Stallion Converter for all 1994 and later Mustangs and Thunderbirds. The new Stallion can be used with stock, supercharged or nitrous engines, your vehicle remains completely streetable. Tests show improved E.T. up to 1/2 second and 60 foot time up to 2/10 second.



Every Stallion is custom built with Precision Industries' trademark one-piece steel billet front cover exclusively for your personal application and comes with a two year unconditional warranty.



Stalls available from 2,400 to 5,800 and can be shipped within three working days. No cooler is required for this easy bolt-on installation and the Stallion will not void your factory warranty.

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WORKS LIKE IT OR  
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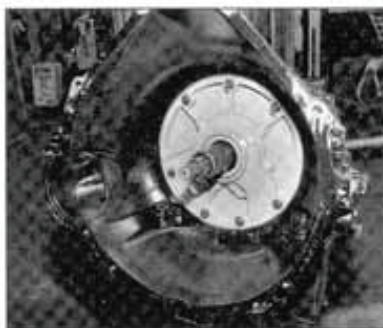
Tech Department (901) 466-0267

FAX (901) 466-0283

<http://www.converter.com>



## Maximum Overdrive



Our new Precision Industries AOD awaits installation. Here we have installed our speedo gear, neutral switch and input shaft.



Dennis fitted the Stallion converter onto the input shaft and front pump hub, watching for complete engagement before attempting to install the fresh AOD into our LX.



After snaking our new Precision Industries AOD past our not-so-helpful long-tube headers, Dennis bolted everything back into place while we dreamed of lower ETs.



It never fails that when you're doing one job, you find something else to do, too. While our 5.0 was up in the air, Dennis fixed a nagging oil cooler leak for us.



While Florida's monsoon season kept the strip at bay, we had plenty of fun with our new found power on the street. Running a Crane "Cobra" cam, our LX used to bog badly on the 2-3 shift and shift before the cam's powerband. Now, with the new converter and shift kit, the higher stall gets you into the cam's powerband immediately and keeps you there. Driving around with your foot out of the converter yields an almost stock feel, except for

the firmer shift. But on several occasions, whether it was an impromptu light-to-light sprint, or just getting around one of our local geriatric "jammer" cars, once we were into the converter it was time to hold on. It's really like having a transmission with a split personality. In foul weather, or if the Mrs. needs to run to the store, it won't scare your lunch out of you, but when your time comes and the light turns green, the power is all there in spades.

## Parts and Prices

|                               |          |
|-------------------------------|----------|
| Torque Converter              | \$695.00 |
| Input Shaft                   | \$174.80 |
| Shift Kit                     | \$149.95 |
| Kevlar Band                   | \$30.18  |
| Kolene Steel, Blue Clutch Kit | \$160.50 |
| A Servo Kit                   | \$69.95  |
| AOD Racing Filter             | \$69.95  |

### Complete AODs

|                            |           |
|----------------------------|-----------|
| Street AOD (w/o converter) | \$1254.70 |
| Hi-Po AOD (w/o converter)  | \$1534.70 |

## Sources

Precision Industries  
80 Pierce Road  
Oakland, TN 38060  
(901) 466-0267  
(800) 649-7866 order line  
FAX (901) 466-0283

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