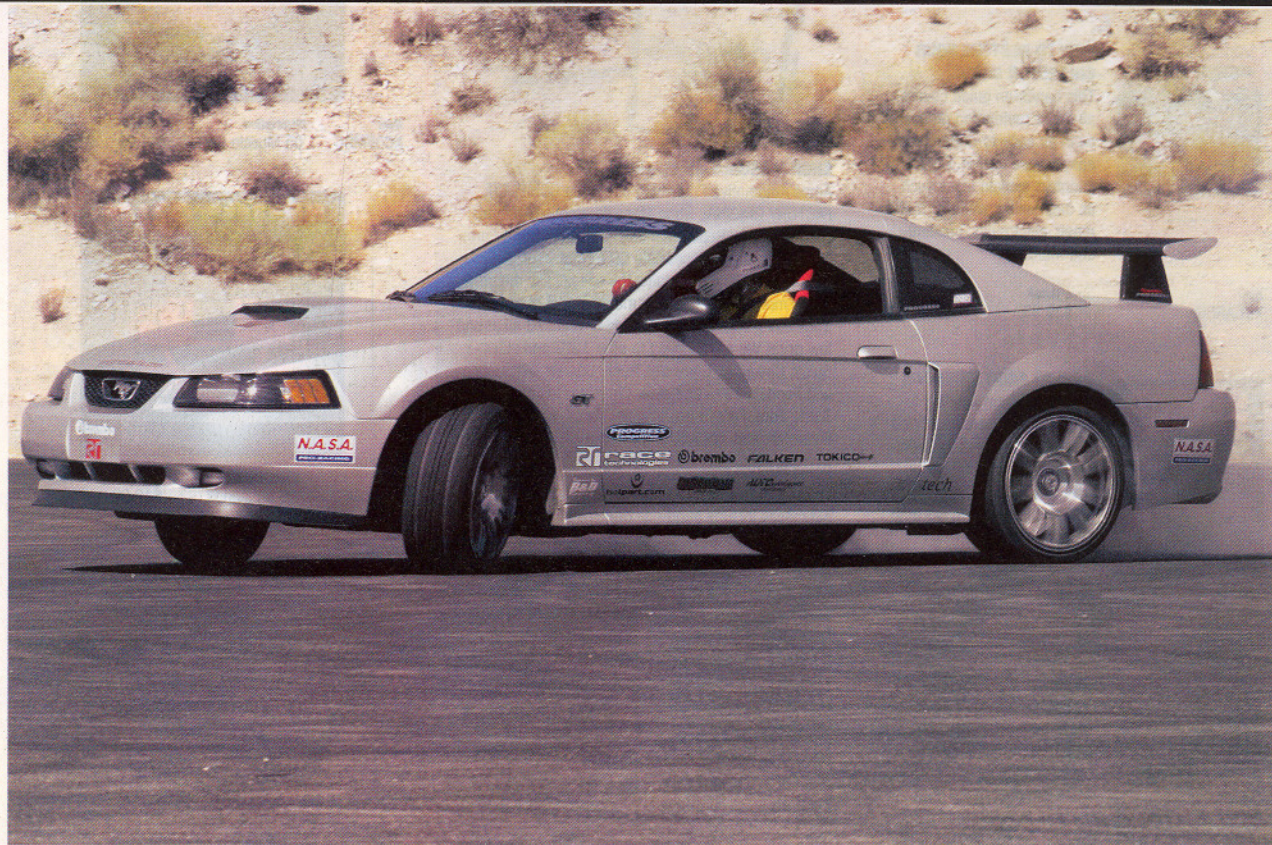


■ TEXT AND PHOTOGRAPHY BY ERIC EIKENBERRY

GET SET...DRIFT!

MUSTANG ENTHUSIAST BOLDLY GOES WHERE NO *MUSTANG MAGAZINE* HAS GONE BEFORE—BUILD A PONYCAR CAPABLE OF SMACKING THE IMPORTS ON THEIR HOME TURF



MOST PEOPLE I MEET LOOK AT THIS CAR AND SHAKE THEIR HEADS IN WONDER WHEN I EXPLAIN THAT, WITH THE HELP OF THE MUSTANG AFTERMARKET, *MUSTANG ENTHUSIAST* MAGAZINE IS ATTEMPTING TO BUILD ONE OF THE FIRST, COMPLETE SN-95 DRIFT-SPECIALIZED MUSTANGS ON THE PLANET.

"If you build it, you can drift it," a little voice whispered in my head months ago. My fairly logical reasoning stood that, since the pony already had a capable engine and drivetrain, yet needed vast improvements in suspension, brakes, wheels, tires, and seats, why not attempt something never before seen by the import tuning crowd? Could we use common bolt-on pieces and be competitive in this up-and-coming motorsports segment?

We aim to find out....

CRITICAL UNDERPINNINGS

There are both good and bad areas in the Mustang's aged chassis. First, the good news. Since the basic underpinnings have been around since 1974 (we're excluding, of course, the new S197 cars), we already know how to fix the problem areas. Front and rear spring rates, too-soft

shocks, ride height, and the flexible rear control arms all contribute to a less-than-secure grip on terra firma. The bad news is, since the basic underpinnings have been around since 1974, everyone sells a slightly different version of the truth. In reality, the suspension upgrade aftermarket is a spin doctor's dream. Here on the West Coast it's possible to imagine a traveling medicine doctor selling cure-

all parts for the Mustang from the back of a covered wagon.

It was clear that we'd have to proceed carefully.

In our early search for suspension components to build our drift Mustang, we discovered that the folks at Progress Technology had already started focusing on this motorsports segment with the GT suspension demo car.





The Progress suspension is a vast improvement over the factory's efforts in terms of performance and appearance.

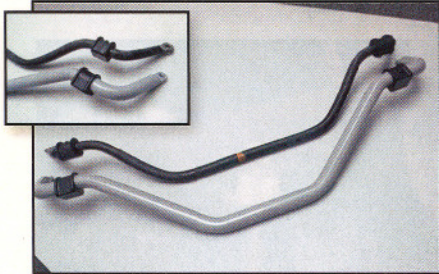
Enter the white hat guys of The Progress Group, Inc. in Anaheim, California. Progress Technology had one important advantage over their competition (two, if you count not laughing at me when I first called them)—they'd already built their own Mustang GT suspension demo car and attempted drifting with it. As Jeff Cheechov explained, "We designed our suspension to be predictable, offering increased performance at a reasonable cost."

units, and incorporate greasable "axially ported" poly bushings that allow twist but minimize lateral movement.

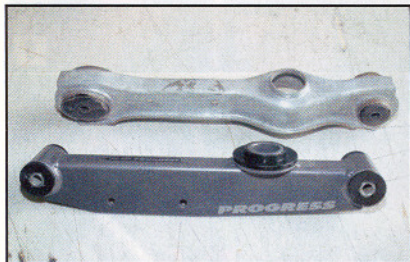
Bingo! We have a winner! Progress Technology's 35mm front and 29mm rear anti-sway bars offer the promise of better roll control and less weight. Additionally, their rear aluminum lower control arms promised to save an extra 30 percent of the weight of the factory steel control arms while adding strength. The greasable "axially ported" polyurethane bushings allow twist, yet prevent unwanted side-to-side play. Most impressive was their claim of .95g of lateral grip when combined with lightweight wheels and sticky BFG tires. This is exactly what we wanted.

Compared to the Mustang's original springs, it's clear that the Progress springs are animals of a different stripe.

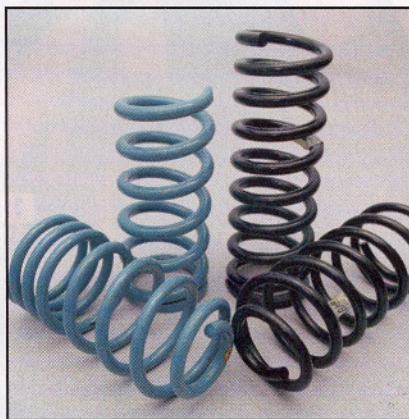
"We designed it so the rear spring is already compressed to the 300 lb range at ride height," says Cheechov.



Progress Technology manufactures anti-sway bars that both deliver on improved roll control while reducing weight.



Rear aluminum control arms from Progress Technology offer a significant weight savings over the stock steel



The Progress spring package delivers a fairly high front rate of 725 lb/in, and a 200-300 lb/in progressively wound rear spring.

Although our Ford Motorsport C-rate springs offered a significant visual improvement over the standard GT fare, we knew we had to take our spring package one step farther.

Prior to the installation of the Progress kit, we had tried the Ford Motorsport "C" rate performance lowering springs which, at 650 lb/in in the front and 200 to 300 lb/in in the rear, have been referred to as the "factory 4x4 delete option." This alludes to the fact that all recent Mustang offerings have been delivered with a ride height more comparable to a Ford Ranger pickup than the new GT sports car. These had lowered the GT approximately one inch, front and rear, and were similar in feel to the limited edition Bullitt springs. Since image carries a lot of weight in drifting competition circles, our car needed to look the part and, while the "C" springs were a step in the right direction, they were more like a baby's step than the Paul Bunyon effort we needed.



Nothing signals aggressive intent like the 2000 Cobra R wing. This replica from Brother's Performance is fiberglass with a carbon fiber upper layer for awesome looks and an affordable price.

1 Raise the car, remove the front and rear tires, and support the axle with a pair of jack stands as shown. If you don't have access to a shop with a lift, you can support the car on two smaller jackstands and use a floor jack under the rear differential.

2 Remove the bolts securing the quad shocks to the frame. Also remove the lower shock bolts from the axle. Slide the ABS sensor wire on the control arm out of its bracket to avoid damaging the wires when the axle is lowered later.

3 Loosen the lower control arm bolts. The mufflers fit tight against the area where you'll need to place

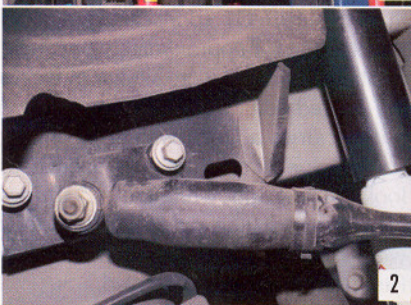
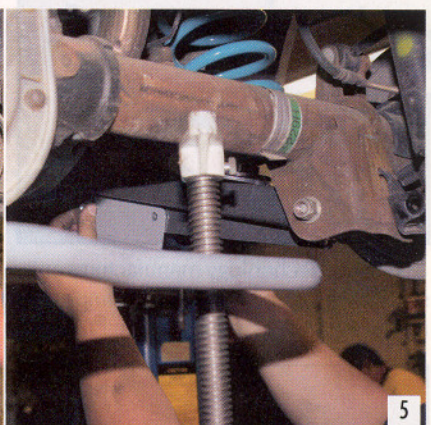
your hands while removing the chassis-side bolts, so remember to allow the exhaust some time to cool off before beginning. Removing one or two of the rubber exhaust hangers will allow you to push the exhaust far enough to one side to remove the bolts. Lower the axle enough to alleviate the tension on the rear springs completely, then remove the springs. Remove the lower control arm bolts and control arms and anti-sway bar as one unit.

4 Install the new lower control arms. Note the use of a pry bar to ease the mufflers aside so the bolt can be reinstalled. Also note the new polyurethane spring

cushion on the control arm. This part is included with the kit and, in our opinion, the increase in noise and additional drop gained by leaving it off isn't worth it. Use it.

5 Bolt on the new hollow rear bar using the supplied new hardware.

6 Above the pinion, attached to the body with three bolts, is the old pinion snubber. Remove it from the car and detach the blocky rubber piece from the mount. Install the new polyurethane piece and reinstall the mount to the body.

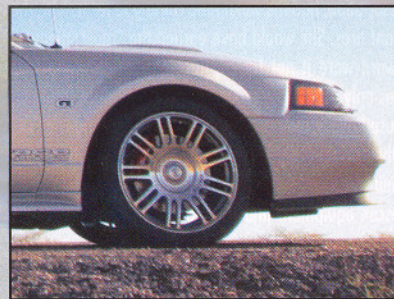


NEXT UP...ROLLING STOCK

After the suspension, and just about equal with a functional limited-slip differential, drift competitors will tell you that tire choice can make a tremendous difference in just how well a car can be controlled while drifting. Street tires are mandated at these events because of their affordability (the life of the rear tires is obviously quite short) and smoother breakaway characteristics.



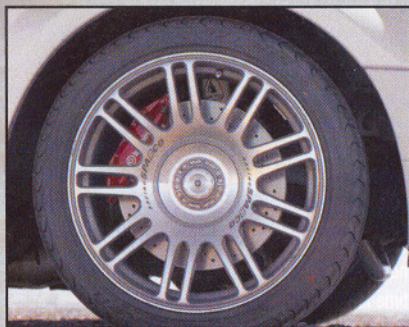
Due to a severe clearance issue with our planned front brake upgrade, not only did we need different tires, we needed different rims as well. While I'd like to say that every part installed exactly as planned, the truth is, I shot myself in the foot with my initial choice of 18-inch Bullitt rims. Luckily the bloodshed was only monetary, and Discount Tire Direct's headquarters is located just several hours drive east in Phoenix, Arizona. Jeremy Ward, a performance tire and wheel specialist and avid drifting enthusiast, was on hand at the eleventh hour with a selection of Racing Sparco wheels, which not only fit perfectly over the brakes, but looked stunning in the process.



Racing Sparco is a high quality, rally racing-inspired wheel line that offers lightweight, high-strength wheels for an incredible range of bolt patterns and offsets. Jeremy and I poured over specs before settling on an 18x8.5 front rim with a 22mm offset, and an 18x9.5

rear rim with a 22mm offset (which helps to fill the rear wheel arches without the use of a heavy spacer). This particular multi-spoke wheel has a brilliantly reflective machined face, with gunmetal-gray metallic paint on the inside of the spokes and wheel.

The lugs are recessed into a "cup" in the center of the wheel (to save weight) and are covered by a bolt-on aluminum center cap. This provides the smooth looking "dish" in the center and is reminiscent of the Formula One single-nut designs. On the car the spacing is excellent, filling the wheel arches to the lip without requiring us to "roll the edges" for clearance.



Discount Tire Direct also provided, courtesy of Falken Tires, a set of Azenis ST-115 tires in our unusual requested sizes. At the front we've installed 235/40-18 tires, and at the rear only a 265/35-18. Believe it or not, this is even considered to be "very wide" by the established drifting community. The stock 245/45-17 Goodyear Eagle GS tires come on 17x9 five-spoke wheels, either in an attractive silver painted finish or, as on this car, the "Bright Chrome" finish. In researching available sizes, I learned that the 235 and 245 tires place essentially the same width of contact patch on the road, with the 235's sidewalls being more "squared" to the rim than the bulging sidewalls of the 245s. This trick will quicken the steering response due to less sidewall flex. The only trade off is that the tires are slightly shorter than the 245s they replace. Knowing that we'll need a shorter rear gearing anyway, this is not a problem. We also plan to test, in the near future, a set of BF Goodrich tires, as witnessed on the Progress Technology demo car, in order to verify their skidpad claims.

The Falken Azenis ST-115 tire is one of their high-performance all-season models. It offers a design that effectively clears water while still offering large tread

blocks for great traction. As Falken is a major sponsor of several U.S. professional drifting teams, this tire has been repeatedly proven effective in this form of severe abuse, and is capable of withstanding the repeated, tire-smoking drifts that spectators love to see. Discount Tires Direct was even able to schedule me in to one of their local stores in Scottsdale on a Saturday afternoon



for the mounting and balancing.

Incredibly, this level of service wasn't just reserved for "journalists on a mission." While I was at the shop I watched as my work required absolutely no disruption to their regular customers. Should you happen to be unavailable to travel to Discount Tires Direct, they can ship tires mounted and balanced to your door from their Web site (www.tires.com). Without their help we would have been unable to meet our testing deadline the following Monday. Thanks guys!



ALIGNMENT ISSUES

A lowered Mustang can exhibit some mighty strange handling traits. As the chassis drops closer to the ground, the angle of the front control arms actually begins to point upwards from the mounting points on the cross-member to the ball-joint and spindle. A line drawn through each control arm, meeting under the center of the vehicle, defines the Roll Center for those components. A severely lowered SN-95 car can actually have a front roll center point below ground! This point acts like a giant lever for the weight to compress the springs and anti-sway bars. The lower the car, the greater the spring and bar rates required to prevent

excessive body roll.

Another trait is bumpsteer. As the chassis is lowered, the angle of the front control arms compared to the steering tie rods changes, which induces unwanted steering inputs as the wheel rolls over bumps. At best it is tolerable. At worst, under heavy braking when the suspension dives forward, the bump steer from tire ruts can virtually throw the car into the next lane. We knew and expected these traits would appear, but wanted to wait until after initial testing to identify problem areas and work to correct them properly.



AT THE TRACK

In the interest of objective journalism, we called the Drift Association, LLC, a Southern California company that has been organizing drift events in this region for several years. Naaki Kobayashi, the vice president of the company, managed to line up, on short notice, Hiro Sumida, Yoshie Shuyama, and D1 star Alex Pfeiffer, and a selection of three drift competition cars. Ryan Flaherty, national chairman of NASA, and a long-time Mustang racing enthusiast called in a few favors and managed to secure a pad at the Willow Springs International Raceway in Rosamond, California, for an afternoon of tire abuse and testing. We wanted to know, from these experts, if we'd succeeded in our mission. The answer, as it turned out, is both yes and no.

On the street the Progress suspension and Falken tires are flawless, offering a vastly improved level of grip, tight control, and buttery-smooth breakaway when pushed over the edge. In my opinion, this is how Ford should deliver EVERY Mustang it builds and to heck with the lawyer's opinions of how people might hurt themselves with the car.

The car has become completely controllable, even over the worst mid-corner bumps that the California Department of Transportation thinks is suitable for the Los Angeles area freeways. A setting of "3" on the Tokico shocks works fantastic on the city streets, with "2" working better on the bumpy-bumpy-bumpy pavement of the highway system. East of Cabazon on I-10, the system can be cranked to "4" or "5" in just a few seconds, enabling finite control of the body motion at speeds which cannot be published (in case there's a California Highway Patrol officer reading this). Suffice it to say that, on the road, we were unable to detect any shortcomings with the Progress/Tokico/Falken package.

On the drift pad though, it was a different story. The increase in rear grip meant that the cornering speeds had also increased dramatically. Because of time constraints, and the fact that the car had

already been aligned when lowered initially, we did not re-align the front end. We also did not have the time to install the fully adjustable camber/caster plates and rear heavy-duty upper control arms from J&M Products (www.hotpart.com), but that's coming up, so stay tuned. Without increasing the negative camber from the -.5 degree stock specification, the front tire complained loudly as we understeered the car around the pad. Slowing down when entering the corner, then mashing the gas could provoke the rear to step out, but the speeds were generally lower than what the drifters wanted to achieve with the car's horsepower. The E-brake technique was also successful, but without additional front grip we were unable to play with other styles. It is possible that a later increase in rear tire pressure, or a decrease in tire size to a 245/40-18 in the back, would help us achieve higher speed drifting.

A call to Jeff at Progress Technology netted us a camber setting of -2.5 degrees, which we will try as soon as the camber/caster plates are installed. The front body roll was noted by all, but did not seem to concern the drifters because, as Alex put it, "You need some body roll to initiate the weight transfer necessary to bring the back end around."

Bumpsteer was not as bad as anticipated, but the installation of the camber/caster plates will require the addition of a "bump steer correction kit" from a supplier such as BBK or Steeda.

Another contributing factor to the rear tires' newfound love of grip is the fiberglass and carbon fiber Cobra R rear wing from Brother's Performance (www.brothersperformance.com). Molded off of a genuine Ford piece, this visual exclamation point offers real downforce that is apparent even at freeway speeds. The upper edge is coated with two layers of carbon fiber weave under a gloss gel coat, providing "the look" without the cost. For the price of \$299, it's an absolute steal of a deal. It is so effective that it might increase grip even at the drifting speeds we saw at the track.

I was able to drift the car a few times pretty well,

or so I thought until Hiro climbed into the driver's seat. After a few initially slow passes to get a feel for the car, he launched down the short straight on the hill-side of the course, then floated the car through a beautiful, long smoky drift around the corner. Alex was also able to drift the beast, but noted that the lack of front grip and steering angle limited how much the car was truly capable of performing. He hinted that this could be the beginning of a seriously fun drift car, with the torque from the engine being his favorite part of the experience.

Yoshi, the ladies drifting instructor for Drift Association, had the worst time coming to terms with the front tires. She would have earned the "most spinouts" award were it not for my feeble attempts. Since this was only my second time sliding around in this manner, I used every moment to soak up the techniques of the other drivers. We didn't have the opportunity to run their machines because of track regulations for fire and rescue equipment and staff, but will definitely have a better report of their capabilities after the upcoming Drift Day event at the California Speedway in Fontana, California, in a few weeks.

So now the car is fast, and handles terrific, but can't drift as easily as we'd like. We're in the middle of a steep learning curve, but climbing fast. Alex's recommendations were, "Front grip, more steering angle, more power, and a more positive locking differential".

We've got our blueprint in hand, now back to the shop!

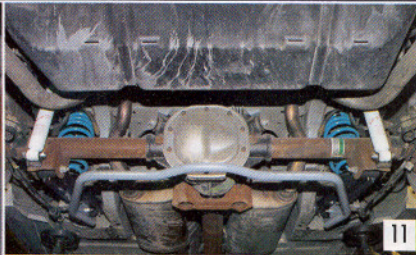
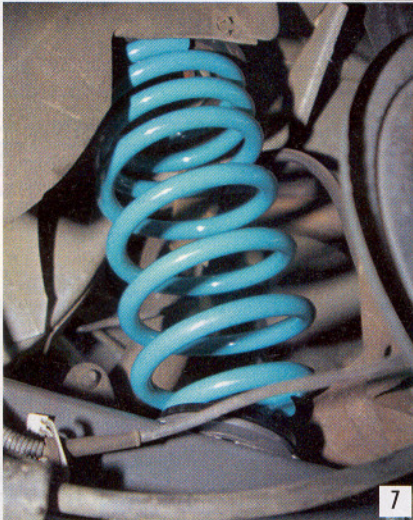
WHAT'S NEXT?

Stay tuned to our next issue as we chase front grip with camber/caster plates, a better alignment, and stickier front tires from Falken. We'll show you just how easy it is to install Brembo Cobra R braking power, and competition-grade RaceTech seats. We'll also be showing photos from the car's first drift event! Follow along as we take on the imports...on their turf.

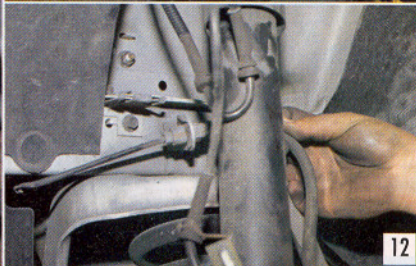
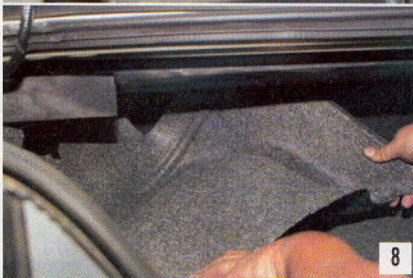
THE DAMPENING QUOTIENT

Tokico has long been a major player in the performance strut and shock market, and their Illumina brand has to rank near the top of the list when factors such as cost and quality are considered. This design offers five choices of rebound and dampening levels adjusted simultaneously via a slotted shaft in the top of the strut. Each adjustment provides a noticeable difference in the car's character, from

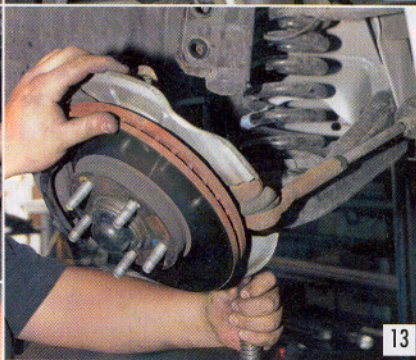
luxury-car smooth to sports-car stiff. When coupled with a well-designed set of springs, the car becomes a different animal. I had thought that there was a brake pull with the stock brakes, as if one caliper was hanging up in the bore. Turns out the problem was shock related, and completely disappeared after the Tokicos were installed.



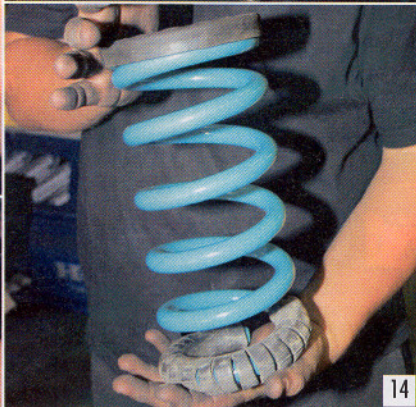
No one can do this alone, and we have to thank all of the sponsors who have embraced this project.



9 Using a pair of vice grips and an open-end box wrench, remove the upper shock mount bolt on each side. Under the car, remove the lower shock bolt again and remove the old shock.



10 Installation of the new Tokico Illumina shocks is the reverse of removal. Place the red number cap onto the top of the shaft after you've tightened the upper bolt. Progress Technology recommends an initial setting of "3"—front and rear—for street driving. If you plan on frequent shock adjustments, you can trim a small hole in the trunk panels for easier access. Reinstall the rear trunk panels.



Reattach the quad shock-to-frame mounting bolts. Check all bolts and torque to factory specifications, reattach any exhaust mounts removed earlier, and grease the front and rear polyurethane bushing with a grease gun until just a little bit of grease is visible at the sides of the bushings.

11 Your rear suspension is now complete.

12 Moving to the front, begin by unclipping the ABS sensor line from its retaining point on the inner fender.

13 Remove the two bolts which hold the brake caliper assembly to the spindle. The brake caliper will sit quite nicely on top of the upper spring perch on the crossmember. Remove the bolts securing the sway bar popsicle to the sway bar. Remove the two large bolts that secure the bottom of the front strut to the spindle.

7 Install the new springs. You will now have to lower the car to gain access to the upper shock mount bolts in the trunk. Temporarily place the lower shock bolts back into their holes and remove the jackstands from under the axle.

8 At the front edge of the interior trunk side panels, there is a metal retaining clip that needs to be pulled loose with a screwdriver or pliers. Remove the inner trunk liners by pulling out from the bottom.

14 Remove the upper strut mounting bolt and strut. Carefully pry the spring out of its lower perch. Note that, even with the A-arm at full drop there will be some tension remaining in the factory spring. Since our car was already equipped with a performance spring, which was shorter than stock, there was no tension on this particular one, making this install that much easier. You will need to transfer the coil spring cushions from the bottom and top of the old spring to the new Progress springs.

SOURCES

Progress Group, Inc.

(714) 575-1193

www.progressauto.com

Tokico USA

(310) 898-3080

www.tokicogasshocks.com

J&M Products

(805) 239-1558

www.hotpart.com

Brother's Performance

(909) 735-8880

www.brothersperformance.com

B&D Racing

(818) 992-FAST

www.bdracing.net

Falken Tire Co.

(800) 723-2553

www.falkentire.com

Discount Tires Direct

(800) 707-8473

www.tires.com

Drift Association, LLC.

(818) 216-7017

www.driftday.com

Drifting2.0

(714) 534-8421

www.drifting2.com

Falken Tire Drift Showoff

(310) 782-0500

www.driftshowoff.com

Battle Version

(909) 595-5507

www.battleversion.com

National Auto Sport Association

(510) 232-NASA

www.nasaproracing.com

www.usdrift.com

Auto Indulgence, Inc.

(310) 530-6716

www.autoi.com

Willow Springs International Raceway

(661) 256-2471

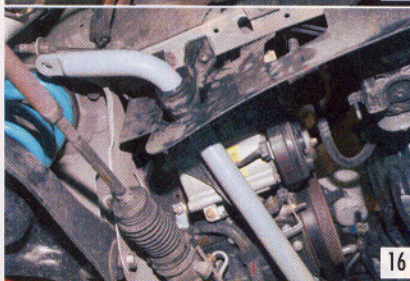
www.willowspringsraceway.com



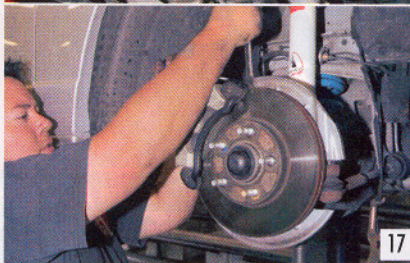
We would like to thank Naoki Kobayashi (not pictured), Yoshie Shuyama and Hiro Sumida of Drift Association, LLC, and Alex Pfeiffer of Battle Version for their time and assistance with this project.



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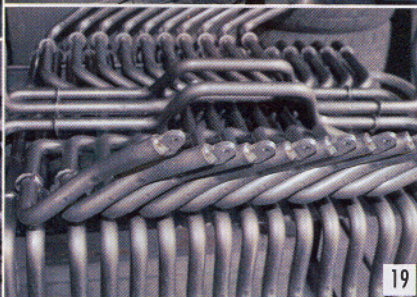
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19

15 Install the new Tokico strut. Attach and tighten the lower strut-to-spindle bolts and torque to approximately 140 lb-ft. Repeat steps 13-16 for the opposite side.

16 Remove the sway bar mounting nuts from their studs on the frame rail and remove the front sway bar. Apply the included grease to the new polyurethane bushing and install on the new sway bar. Swap the bushing brackets from the old bar to the new one and reinstall the bar. Reinstall the sway bar popsicle mounts to the bar and to the lower control arms. It will be necessary to use a jack to compress the lower control arm in order to get the popsicles back into the control arm holes.

17 Reattach the brake calipers to the spindle and torque the

bolts to specs. Reattach the ABS sensor wire to its clip on the inner fender wall.

Reinstall your wheels and tires, lower the car to the ground, then, using a small flat-blade screwdriver set the front struts to "3" to match the rears.

18 When complete, your front assembly should look like this. Note that in this photo the ABS wire has still NOT been clipped into its proper place on the inner fender wall.

19 Progress offers this same package for all year Mustangs from 1979 up to 2004. All components are fabricated at their shop in Anaheim with the exception of the Tokicos. ■