

RACE PAGES

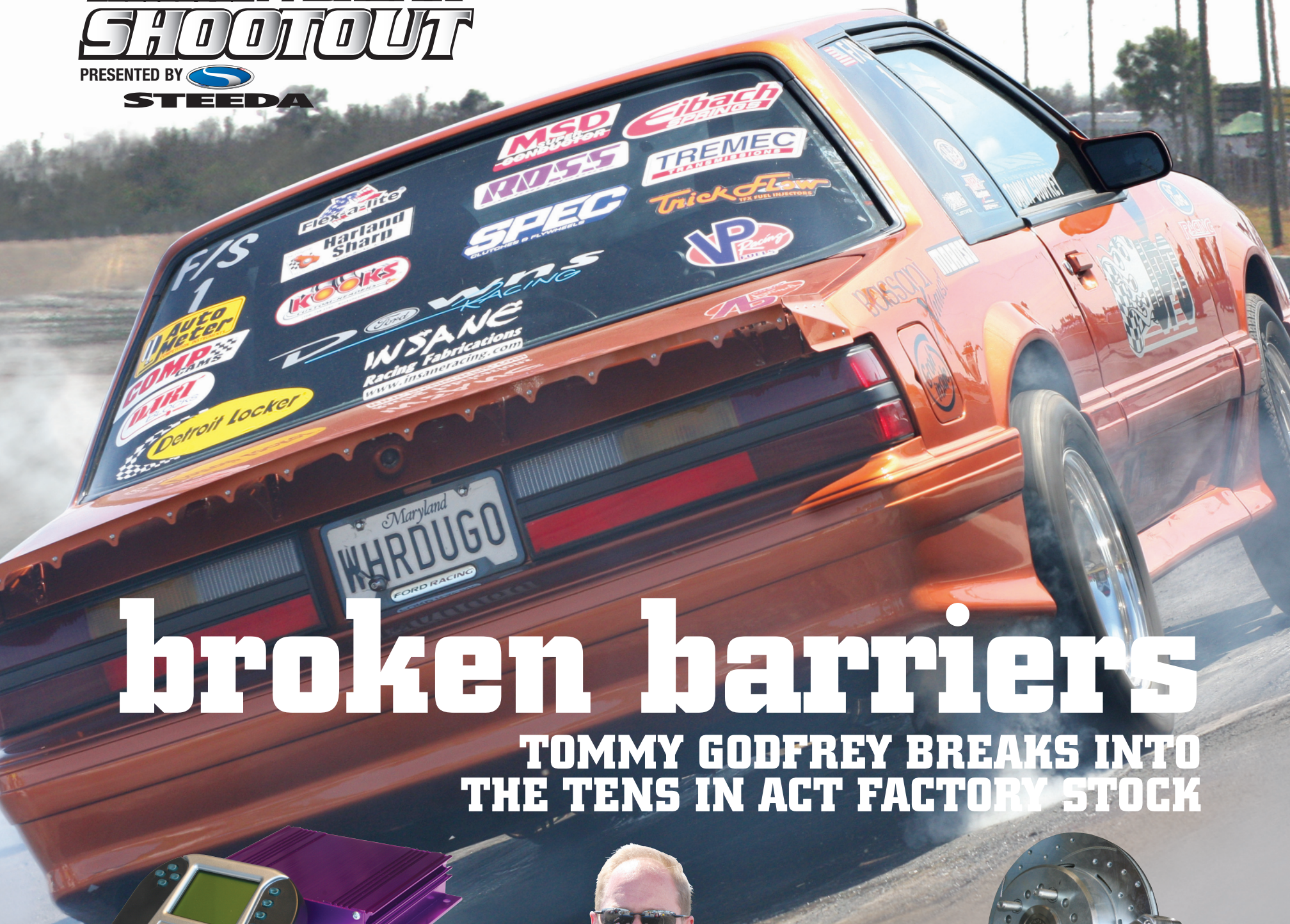
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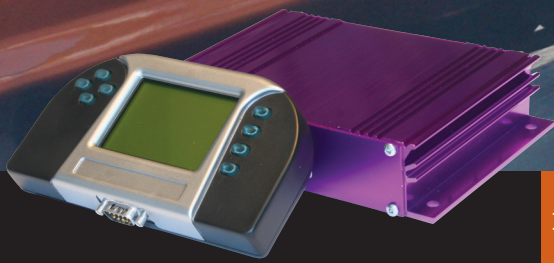
16th ANNUAL
NITTO
NMRA  **SPRING**
BREAK
SHOOTOUT
PRESENTED BY 
STEEDA

PR MEDIA
STREET. STRIP. DRAG.



broken barriers

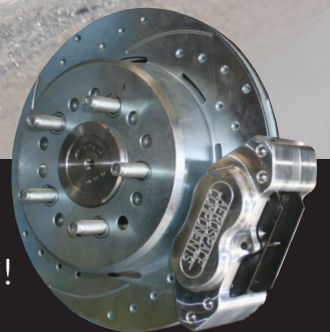
TOMMY GODFREY BREAKS INTO THE TENS IN ACT FACTORY STOCK



> The Good Kind of PMS



> Factory Stock Mach



> Whoa Nelly!

on a dime

>> AEROSPACE COMPONENTS HELPS US REIGN IN WARHORSE

In drag racing, the major emphasis is on going fast. Always on racers' minds is making a metric crampton of horsepower; choosing the right suspension setup; getting the chassis lighter and stiffer, and anything that will lower their ET and increase trap speeds. However, what often isn't foremost in the mind of an adrenaline junky, is how to safely slow the car down once the pass is complete.

However, Warhorse is being designed as a street-strip car.

Choosing the proper brake setup isn't difficult, but it does require some thought into what exactly you are asking of your brakes. First let's break down how your brakes work. We all know that the brake pad clamps the rotor, and slows it the rotor (and consequently the wheel, tire, and the car) through friction. The byproduct of that friction is heat, and that is the main demon that engineers battle when designing a braking system. A traditional drag racing brake setup is designed with two major parameters in mind—bringing the car to a safe stop from triple-digit trap speeds (once in a heat cycle), and weight-savings. With those two design parameters, the current generation of lightweight-caliper, solid, thinner-rotor race brakes has evolved into a highly specialized, highly-effective system. If Warhorse, our '90 LX project car, were a trailored strip-only car, we'd call Aerospace Components and order up their lightest drag kits. However, Warhorse is being designed as a street-strip car that is not only going to drive itself to and from the track, but also haul a little tagalong filled with tires, tools, a pop-up canopy, and cooler. Thankfully, Aerospace Components makes a "street" kit for the front and rear of Foxbody Mustangs, that will not only drastically improve our stopping power over the tired stock pieces, but will shave quite a bit of unsprung weight off of the car as well. An additional benefit is they look absolutely gorgeous peeking through the spokes of our Weld Racing Weldstar R/T wheels. With our goals in mind, we called the techs over at Aerospace and told them what we had and what our goals were and they were extremely knowledgeable and helpful in getting us lined up with the proper part numbers.



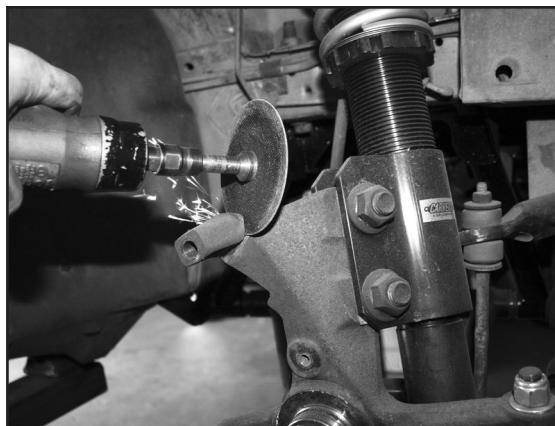
>> Both the front and rear kits feature billet aluminum brake calipers. The rear caliper shown here is a four-piston design, and the fronts are a floating two-piston design.



FRONT BRAKE KIT

For the front of the car, Aerospace Components offers seven different kit designs for the 1979-'93 Mustang, all of which are available in both four-lug and five-lug in versions, for a total of 14 combinations. We decided to go with the Pro Street kit, with two-piston floating calipers and drilled and slotted rotors. For our application, we went with the AC-320VRDSP kit in particular, which also moves the front wheels in 1/4-inch. The calipers in the kit are Aerospace's two-piston floating caliper design, made from billet aluminum for both weight

savings and strength. These calipers have quite a bit of clamping ability and will serve us well on both the street and at the dragstrip. The rotors in the kit are 11-3/4-inch diameter—which will give us no troubles with 15-inch wheels—0.81-inch-thick vented rotors, which have been drilled to reduce weight, slotted to prevent any gas buildup under hard braking, and zinc-plated for corrosion resistance and durability. The rotor hubs included in the kit are made from billet aluminum with screw-in dust caps, and come with 3-inch long 1/2"-20 screw-in wheel studs. The mounting



>> The front brakes only require minor work to the stock spindle. Here you can see the "ears" which the stock calipers mounted to being taken off, since they now serve as nothing more than Normandy beach obstacles.



>> Besides cutting the ears off the stock front spindle, the only other modifications necessary are drilling out the dust shield holes with a 5/16 drill bit, and then running a 3/8-16 tap through the holes, to mount the new caliper bracket.

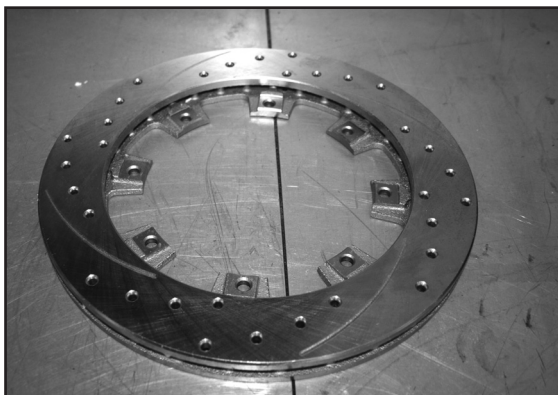
bracket is made of a beefy plate of solid billet aluminum that is exceptionally strong and lightweight, and all of the mounting hardware is heavy-duty Grade-8 goodness. The front kit also comes with new wheel bearings, grease seals and meets all of the NHRA and IHRA requirements. Additionally, the pads included with the kit aren't just an afterthought, but rather are high-performance pieces from Hawk Performance.

The front brake kits aren't direct bolt-on-and-go pieces—modification of the stock spindle is required. However, it's nothing a sawzall and power drill can't make short work of. First, you have to cut the "ears"—where the OEM caliper was mounted—off of the spindle. After completing that, it's just a matter of drilling out the OEM dust-cover mounting holes and then retapping them, for the bolts to mount the new caliper bracket. Chucking up a 5/16ths drill bit in our hand drill, we bored the holes in no-time flat. Then we cut a new set of threads in our freshly-drilled holes with a 3/8-16 tap. Once that was complete, it was just a matter of assembling all the supplied parts and checking all of the clearances. While it can sound intimidating, it was really a rather simple process.

Our Moser 9-inch came with New Big Ford ends, and that made the kit an easy bolt on-proposition.

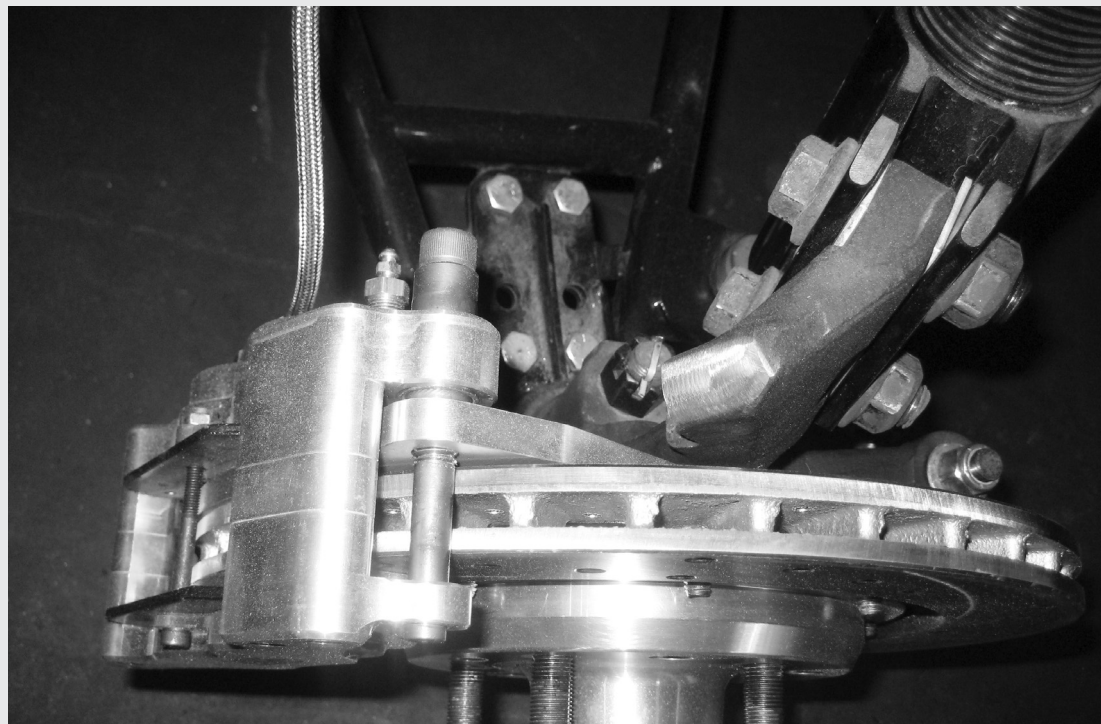
REAR BRAKE KIT

For the rear, Aerospace again offers seven different kits, including a standard drag race kit, a dual-caliper drag race kit, two variations of the Pro Street kit, and three versions of the Pro Street kit that include a parking brake. All of the kits are available to fit a variety of eight different housing ends, five of which are Ford designs. So whether you have a stock four- or five-lug 8.8 with C-clips, C-clip eliminators, or a nine-inch (new or old), Aerospace makes a kit that will fit. Our Moser 9-inch came with New Big Ford ends, and that made the kit an easy bolt on-proposition. The kit we ordered was AC-520VRPB1—the Pro Street Parking Brake Kit with Drilled/Slotted and Plated Rotors. Since this car is going to be weekend cruiser in addition to a badass at the track, we opted for the parking brake. Why forgo the finer things for a slight weight savings, right?



>> The front rotor and hub is a two-piece design. Just like in the back, we went with a vented rotor, that has been drilled for weight savings and slotted to eliminate any gas buildup under heavy braking.

Solid vs. Vented—What's the Diff?



One of the major differences between the "Drag Race" kits and the "Street" kits is the rotor design. The drag race kit uses thinner, solid rotors which weigh less than the thicker, vented rotors in the street kits. What's the difference? Well, looking at the photo above, you can see that the vented rotor is essentially a pair of solid rotors stacked with vanes between them. Those vanes help generate airflow which helps dissipate built up heat encountered in street driving. The additional mass also increases the amount of heat energy the rotor can absorb before it starts to overheat the pads. When you overheat the pads, fluid boils, and pads glaze over—severely reducing the braking system's effectiveness.

A drag race kit's solid rotor is designed to be able to properly function bringing you to a safe speed in one large burst of deceleration, with ample cooldown time between cycles (like driving back to the pits and/or sitting in the staging lanes) and don't dissipate heat anywhere near as efficiently as the vented rotor, which, if used in street driving could quickly lead to overheated and ineffective brakes.

So leave the drag brakes to the cars that ride to the track on a trailer. If your car is a street car, take the minor weight hit, and run vented brakes on the street.



>> Aerospace also included their stainless steel braided brake lines. They are much stronger and firmer than the standard rubber hose and are available in a number of direct-fit or universal applications.

The calipers included in the kit are also aluminum, but unlike the fronts, they pack four pistons for a ton of bite. The rotor used in the kit is a 12-inch diameter, 0.81-inch thick vented rotor that, like the fronts, have been drilled, slotted and zinc-coated. The rotor and hat are all one piece in the rear kit, and the parking brake assembly fits into the inside of the rotor hat in a drum-style setup. Like the front, the mounting brackets are made from billet aluminum, and Grade 8 hardware is used throughout. High-performance Hawk-brand brake pads are utilized in the rear kit, as well. Since we had the rearend out, and on the bench, installation of the kit was a breeze and was as easy as assembling Legos.

Since we had the rearend out, and on the bench, installation of the kit was a breeze and was as easy as assembling Legos.



>> The rear kit came with everything we needed to bolt the setup onto our Moser 9-inch housing with New Big Ford ends—however Aerospace makes applications to fit nine different housing ends.

BRAKE LINES AND MASTER CYLINDER

To properly push the required amounts brake fluid to the fluid-hungry two- and four-piston calipers, the Aerospace techs recommended we go with a manual brake conversion, which Aerospace offers in handy complete kit form. It includes a lightweight 1-1/8-inch bore Master cylinder fitted with brass outlet fittings, a billet aluminum master cylinder

adapter plate, and an adjustable master cylinder pushrod kit. With the conversion to the manual brake system, we also eliminated the need for a proportioning valve.

Aerospace also included their D.O.T.-approved stainless-steel brake lines for the front and rear. Far superior to the standard rubber hoses, Aerospace makes the lines in a number of direct-fit replacements, as well as a universal-fit kit, in case you have some off-the-wall, non-standard setup.

With everything all hooked up, all that's left for us to do is pour in some Aerospace-recommended DOT-4 (or DOT 5.1) brake fluid (Aerospace cautions to never use Silicone-based DOT-5 fluid), bleed the system and following the instructions to properly adjust the bias of the new manual master cylinder, and we're all set! ■



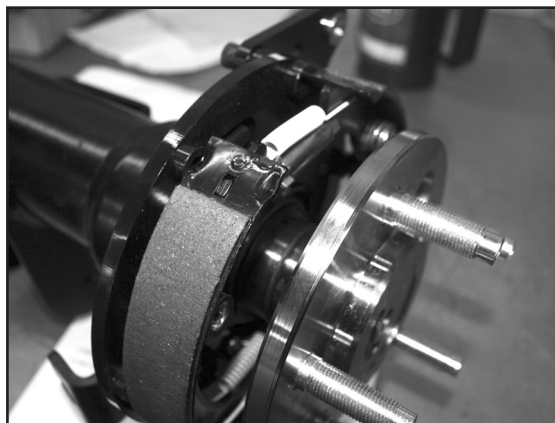
>> We went with a manual brake conversion kit. It included a 1-1/8-inch bore master cylinder, the adapter plate, and the pushrod assembly. The conversion eliminates the need for a proportioning valve, instead, allowing adjustment of bias in the pushrod.



>> With everything bolted up and ready to go, it's almost a shame to hide such beautiful parts behind a set of wheels. At least you can still see the billet calipers through the spokes.



>> Like the front rotor, the rear disc is vented, drilled, slotted and zinc-plated. However, unlike the front rotor, the rotor and hub are one single unit, so they both need to be replaced at once.



>> Since this is going to be a street car and not a trailer queen, we opted for the parking brake option with the rear kit. It utilizes the inside of the rear rotor hat as the drum in a drum-brake setup.

SOURCE

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