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MUSCLE BEACH

PRO DYNO BATTLE AT THE BEACH
COMPETITION COMBINED AMAZING BUILDS
AND A LOT OF HORSEPOWER

TEXT MICHAEL JOHNSON > PHOTOS AUTHOR

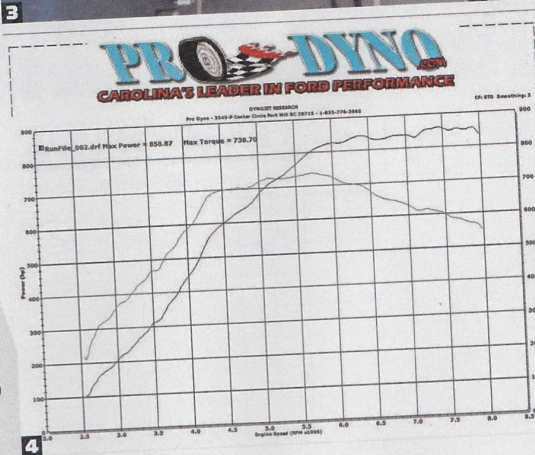
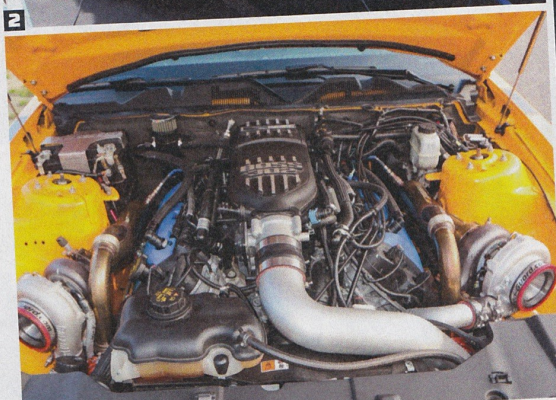
When it comes to Mustangs, we don't buy them to sit in the garage and collect dust. We buy them to collect horsepower to tear up the streets or the nearest dragstrip, or to take them open tracking. Regardless of where we want to exercise them, there's one common denominator: horsepower. We want to make a lot, and we want to put it to the ground.

Our *Muscle Mustangs & Fast Fords* Pro Dyno Battle at the Beach competition is an opportunity for Mustang enthusiasts to go up against other Mustangs in a fight for horsepower supremacy. We try to include all power adder and engine combinations, but sometimes, because of mechanical attrition, we are not always able to get them all in. For the Battle at the Beach, we usually pick 12 cars because we know some won't be able to make it. So even if a couple aren't able to make it, we still have a solid 10 cars.

For this year's competition, we had more attrition than usual. Days before the competition we had wastegate failures and blown head gaskets, and one competitor's college professor wouldn't let him out of a test the day before the competition. That meant he wouldn't make it to Myrtle Beach until after the Battle at the Beach. Because of this, we were down to eight competitors, which is still a good number.

We had most of the major power adder companies involved, along with being able to cover both pushrod and modular powerplants. We had centrifugal superchargers, positive displacement combinations, and also turbocharged combinations. We were able to include a few Fox Mustangs with both pushrod and Coyote-swap combinations, and the usual S197 and GT500 iterations.

We had a great competition, and in the end, Austin Holley and his 2013 Boss 302 came out victorious. His Boss 302 features an Armageddon Turbo Systems' twin-turbocharger kit, with all the necessary support systems, and a Freddy Brown Performance 4R70W transmission with a Circle D converter. With a stock long-block, Holley's Boss made over 850 hp on Pro Dyno's portable dyno to take the win.



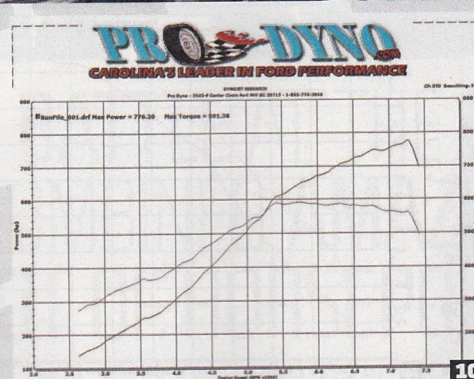
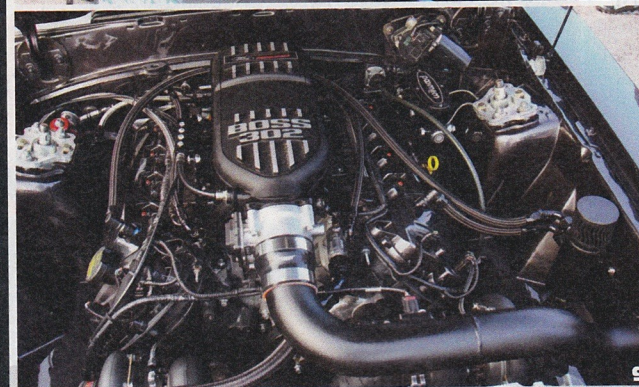
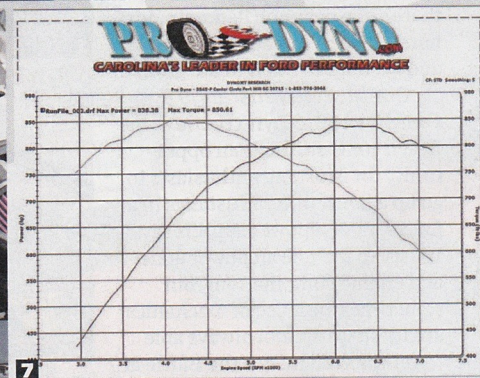
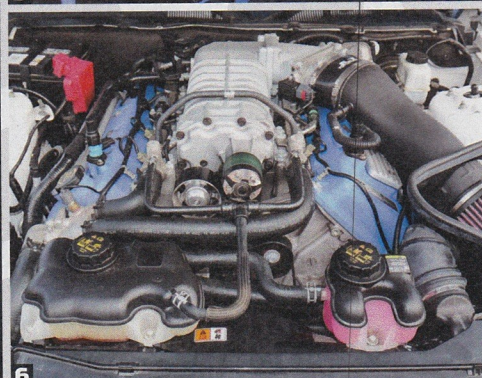
2013 BOSS 302: AUSTIN HOLLEY

1. Even before attrition settled into the Pro Dyno Battle at the Beach competition, Austin Holley and his 2013 Boss 302 was one of the favorites. Mustang Week's Mike Clay gave us the heads-up on Holley and his Boss, and once we checked out the car we knew it was a worthy competitor.
2. Bringing a Boss 302 with an Armageddon Turbo Systems twin kit into a dyno competition would yield great results every time, but by making 858 hp on Pro Dyno's portable Dynojet, Austin Holley was the winner this time. His Boss served as Armageddon's R&D car for the company's Mustang turbo system. His Boss was the first kit produced for the Mustang market.
3. With a stock long-block, aside from Triangle Speed Shop oil pump gears, the aforementioned twin turbochargers utilizing a Kooks exhaust, and an Aaron Lail tune, Austin Holley's Boss is a well-sorted machine. The car gets 16.5 mpg, even on E85, so it is equally at home on the street as on the track or dyno, and its performance at the Battle at the Beach proves it.
4. We saw Austin Holley at every venue during the week, which proved the car's street-worthiness. He put down the most horsepower to win the 2017 Battle at the Beach.

2013 SHELBY GT500 JUSTIN YOUNG

5. Justin Young, the man behind Mod Motor Mustangs, and his 2013 Shelby GT500 are exactly what we look for in a Battle at the Beach competitor. He regularly exercises his GT500 both at the dragstrip, including half-mile and standing-mile top speed events. Plus, his Mod Motor Mustangs following has a lot of Mustang fans watching his every move. Having Young in the Battle at the Beach made too much sense.
6. Young didn't disappoint, either. His GT500 is a work of mechanical art. Featuring a built 5.8L engine with Darton sleeves, a GT500 crank, I-Beam connecting rods, Manley pistons, and billet oil pump gears, the stock crank is double-keyed, with an Innovators West harmonic balancer out front. The heads are untouched, but Comp Cams custom cams are in place with Accufab primary and secondary timing chains, Ford GT secondary gears, and more Accufab pieces in the billet crank gear and sprocket.
7. The supercharger and supporting cooling components remain largely stock. The engine plays host to the factory intercooler core, the untouched lower intake, and the ported factory TVS supercharger. However, the rest of the intake tract was heavily modified with a Power by the Hour XBA inlet, a 168mm throttle-body, a 1320 Junkie Performance 149mm intake tube, and a PMAS 149mm mass air meter. His GT500 features a return-style fuel system with ID1300 fuel injectors and triple Walbro fuel pumps. In a recent attempt to reduce inlet temps, Young added an air-to-water tank in the trunk.

Since his car is built more for half-mile and standing-mile racing, his GT500 has a 2.73 gear in it. To keep wheel speed down, Pro Dyno's Dan DeSio kept the car in third gear on the dyno. For all his hard work, Young's GT500 made 838 hp on Pro Dyno's Dynojet.



1991 MUSTANG LX ERIK McDONALD

8. One car we didn't have any experience with prior to the Battle at the Beach was Erik McDonald's 1991 coupe. He owns Midway Mustang, a Mustang parts outlet in De Witt, Iowa. Therefore, he has access to a lot of parts and pieces with which to build a Mustang. The Mustang that McDonald chose to build is this 1991 Mustang LX coupe. He isn't really sure of the car's color but says it is close to a dark shadow gray. Either way, we were super-jelous once we saw the car in person.
9. We were glad to have McDonald's Fox coupe in the competition. With a turbocharged Coyote engine under the hood, it was the perfect candidate. The engine is a stock 2014 GT Coyote with CG Fabrication hot side tubing and a custom cold side arrangement. The turbochargers are Precision 67mm examples, and behind the powerplant are a Tremec T56 with a McLeod RXT clutch, and a built IRS with Driveshaft Shop Level 5 axles and 3.55 gears.
10. McDonald told us he literally finished the car days before the Battle at the Beach, but he must have finished it right because all he needed was one hit on the dyno. McDonald knew the car gave it everything it had on the first pass by turning over the coupe's True Forged wheels to the tune of 776 hp on the Pro Dyno portable Dynojet.

1989 MUSTANG LX JEFFREY MILLER

11. When it comes to dyno competitions, pushrod combinations have a hard time keeping up. The Four-Valve Terminators, Coyotes, and GT500s of the world have taken over competitions such as our Battle at the Beach. However, that doesn't mean we are going to forget about the girl that brought us to the dance. We love good old-fashioned pushrods, especially when a centrifugal supercharger is shoving air into the combustion chambers.
12. From Howell, New Jersey, Jeffrey Miller's 1989 Mustang LX notch (since he's from Jersey) presented us an opportunity to showcase a Vortech supercharged 363-inch pushrod combination. The engine was built by Majerus Garage's Jamey Swanson and features a Scat crank, RaceTec pistons, Eagle connecting rods, and a Brian "Freezy" Friedentag custom cam. A Melling oil pump provides the engine its lifeblood, while a Canton pan contains everything down below.
13. Jamey Swanson also handled the massaging of Trick Flow Twisted Wedge heads, which play host to a Holley SystemeMAX intake with an Accufab 70mm throttle-body. All Out Automotive's Kris Mustaccio tunes the combination using a Holley HP EFI system, 60-lb/hr injectors, and an Aeromotive Stealth fuel system. Miller's power adder of choice is a Vortech V7-YSi trim supercharger, shoving 18 pounds of boost into the Twisted Wedge heads thanks to a 3.12-inch upper pulley. An MSD ignition lights the candles, while BBK long-tube headers and X-pipe work with a Flowmaster after-cat to evacuate the exhaust.

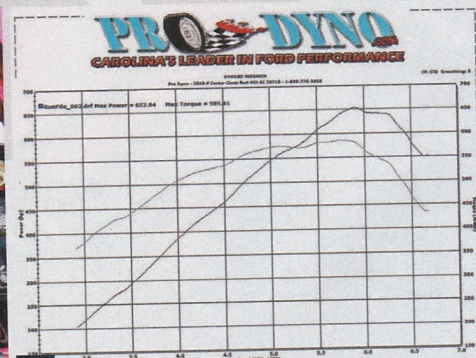
Miller's notch follows the recipe for a Jersey street car with its stroked small-block and a Vortech hanging off the side. Furthermore, the combination made about what is usual for a Jersey street car: 652 hp at the wheels.



11



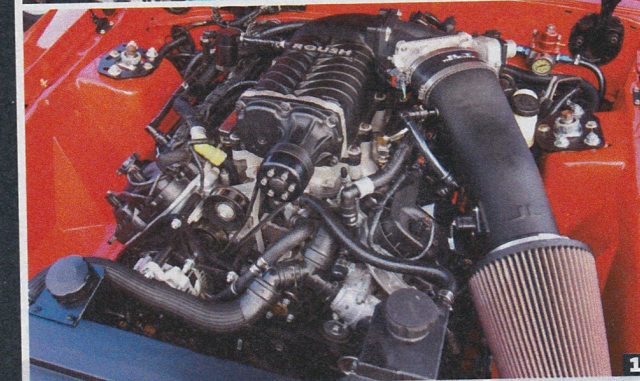
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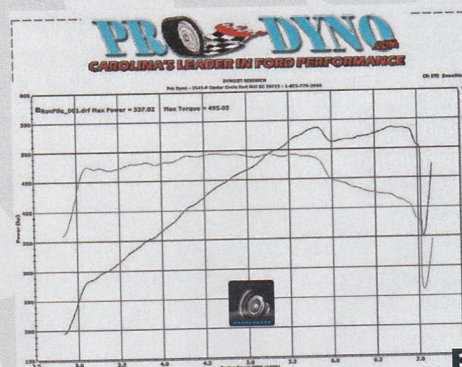
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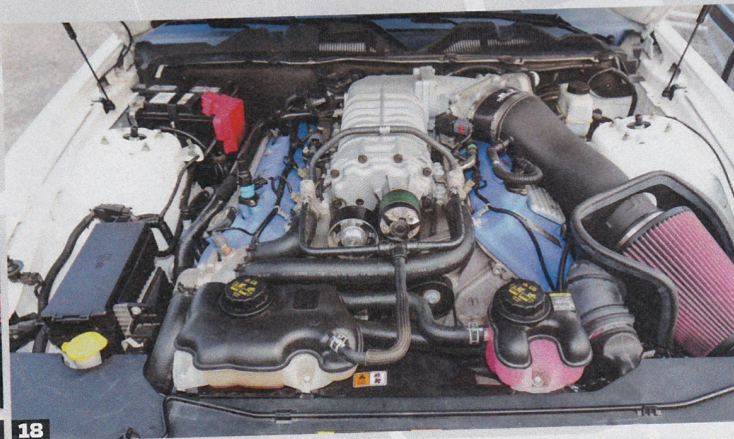
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1989 MUSTANG LX DUSTIN IVEY

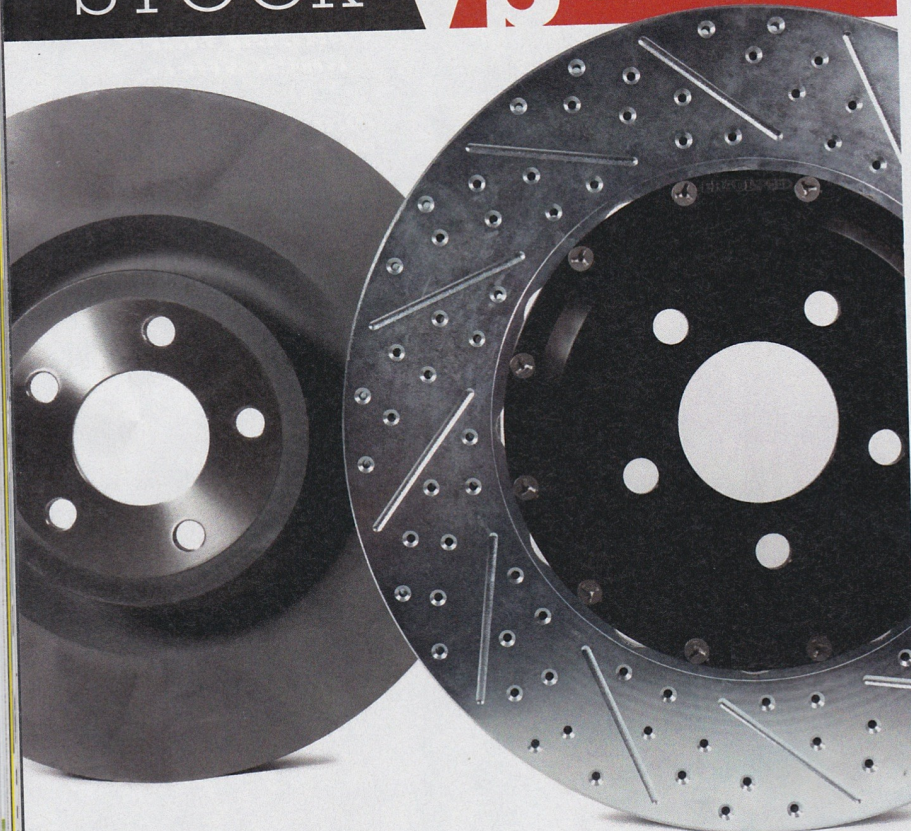
14. When we put together the Battle at the Beach, we try to have representation from each engine and power adder combination. Leading up to the competition, we didn't have a Roush combination in the mix, so we contacted Dustin Ivey to see if he was interested in getting in on the fun. Although his Coyote-swap Fox coupe has been together for over a year, he wanted to get the combination tuned before agreeing to enter. Fortunately for us, the tuned worked out, and Ivey was in.
15. Ivey's 1989 Mustang LX coupe features a 2012 Coyote engine with Tri-angle Speed Shop billet oil pump gears, a Walbro fuel pump, a VS Racing regulator, and 80-lb/hr injectors. He used BBK Performance Coyote-swap headers, a custom X-pipe, and Borla Stinger mufflers. The cherry on top was the Roush TVS 2.3L supercharger. Behind the Coyote-swap combination are a Tremec T56 with a 26-spline input shaft, a Spec Stage 3 clutch, and an aluminum driveshaft.
16. Ivey had Bob Kurgan go over the tune prior to the Battle at the Beach. On 10 pounds of boost, the combination made 537 hp on Pro Dyno's portable Dynojet.



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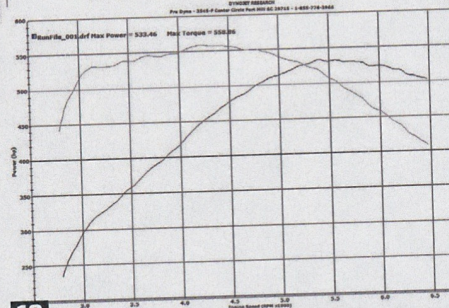
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PRO DYNO
CAROLINA'S LEADER IN FORD PERFORMANCE



19

2011 SHELBY GT500 DANNY TAYLOR

17. The latest Shelby GT500s are ideal for dyno competitions. First, they make really good power right out of the box. Second, their horsepower ceiling is higher than little brother GTs. Third, they already have a supercharger from the factory so GT500 owners are ahead of the curve from the onset. For those reasons, GT500s tend to do well in dyno competitions.

18. Danny Taylor's 2011 Shelby GT500 left the factory with an aluminum block 5.4L Four-Valve engine producing 550 hp at the crank. He outfitted his Shelby with a JLT Performance 123mm cold air intake, Kooks 1 7/8-inch long-tube headers with the corresponding X-pipe, a Ford Performance/Borla Stinger axle-back exhaust, a Metco 2.6-inch upper pulley and 90mm idler, an Innovators West 10-percent overdrive balancer, and a Rick Erdman (Amazon Tuning Solutions) tune.

19. Taylor's GT500 represents many Shelby owners who perform the same upgrades to arrive at more power at the wheels. When it was all said and done on Pro Dyno's portable Dynojet, the GT500 made 533 hp at the wheels.

2000 MUSTANG GT TIMOTHY ARNOLD

20. Unlike Shelby GT500s, which are tailor-made for dyno competitions, Two-Valve Mustangs are the total opposite. Introduced into the Mustang lineup in 1996, the Two-Valve engine hit the streets with a tire-shredding 215 hp. For 1998,

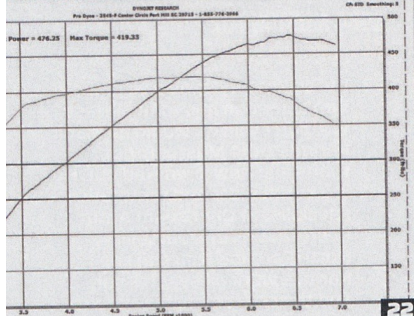


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PRO DYNO

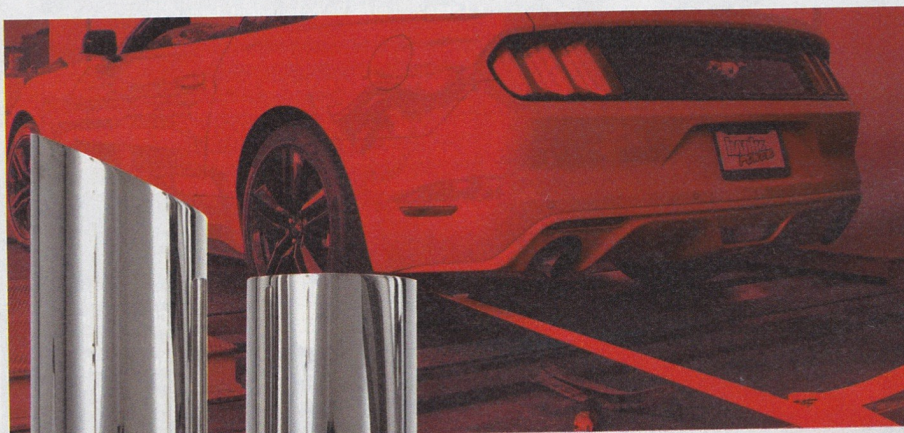
FLORIDA'S LEADER IN FORD PERFORMANCE



power was bumped to 225, and then 260 for 1999-2004 New Edge Mustang GTs (265 hp for 2001 Bullitts).

1. When it comes to Timothy Arnold's 2000 Mustang GT, he traded a Ford F-150 for the car and has steadily built it into the stellar street car you see here. One of the things Arnold likes best is the Bright Atlantic blue paint applied by Melvin Shanteau.
2. What we like best about his car is the ProCharger-blown Two-Valve under the hood. DAM Racing Engines built the engine using a 1997 Romeo block, a Scat crank and rods, Probe pistons, and an 8.9:1 compression ratio. The 302-inch engine benefits from Ford Performance oil pump gears, an MMR windage tray, and ARP hardware throughout. Ported and polished Windsor heads reside up top, with Cushman Motorsports cams within. An Edelbrock Victor Jr. intake replaces the factory plastic intake manifold and uses a Professional Products 75mm throttle-body, 60-lb/hr injectors, and an On3 Performance fuel pressure regulator.

The ProCharger Arnold uses is a D-15C supercharger, and that is augmented by a 100hp shot of nitrous. The exhaust consists of Kooks long-tube headers, a BBK Performance X-pipe, and a Borla cat-back using Atak mufflers. The combination is tuned by PSI Speed's Frank Soldridge using the stock computer, while behind the built Two-Valve is a Dave Jones-built 4R70W automatic transmission with an FTI stall converter, a Derale cooler, a Performance Automatic shift kit, and a Hurst shifter. On 12 pounds of boost, Arnold's 2000 GT made 476 hp on Pro Dyno's portable Dynojet.



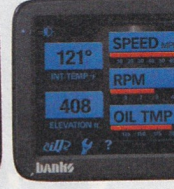
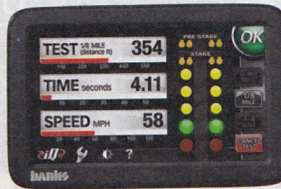
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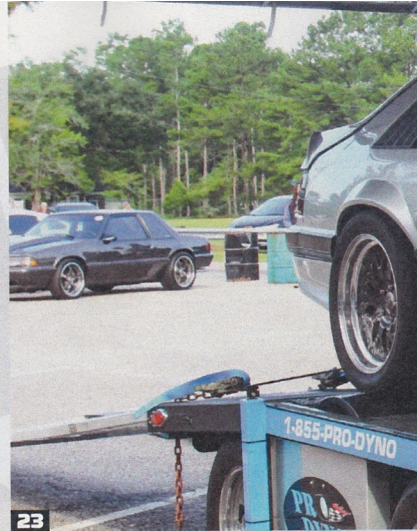
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1984 MUSTANG GT MANIR KARIM

23. Unfortunately, in every competition someone has to finish last. We didn't think it would be Manir Karim's 1984 Mustang, but that's just how it worked out. He is a custom car and restoration specialist at Our Dream Auto Restorations in Mooreville, North Carolina. You can see Karim's work all over his car, and the craftsmanship speaks for itself.

24. Karim's Mustang features a 357-inch Windsor with a stock crank, H-beam connecting rods, SRP pistons, a Ford Performance F303 cam, a Melling oil pump, and a Fox swap oil pan. Ford Performance aluminum heads live up top with a Trick Flow intake bolted on to tie everything together. Custom turbo headers lead into a Y-pipe, then to MAC Flowpath mufflers. Turbo headers are needed because Karim's Mustang uses a Master Power 72mm single turbo with a Stinger Performance PIMPX engine management system with Wes Kiser on the keyboard.

25. All that sounds like it would make great power, but Karim's Mustang seemed to suffer from a failed wastegate at the Battle at the Beach. During dyno passes, it didn't seem like the combination came up on boost at all, and a quick test-drive by Karim confirmed that theory. With zero boost, his Mustang made 351 hp at the wheels on Pro-Dyno's portable Dynojet.



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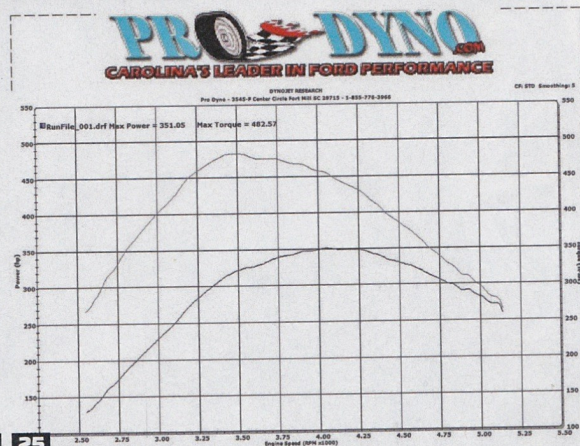
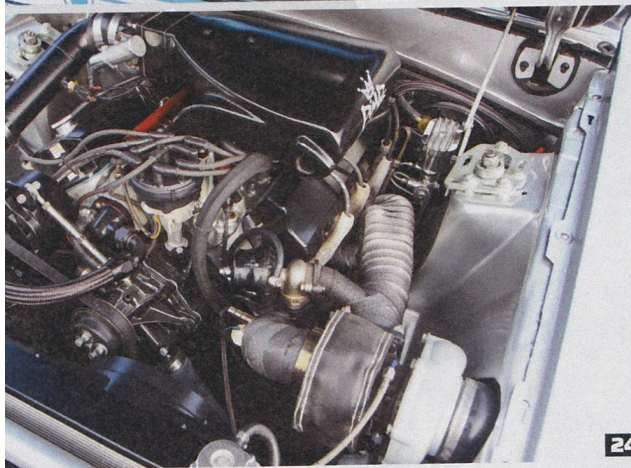
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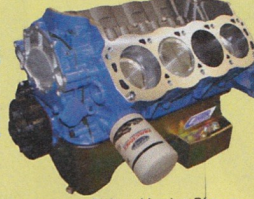
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