

ROAD & TRACK



**350Z
TUNER WARS**

SPEED

MAGAZINE

LIFE AT FULL THROTTLE

power play!

452-BHP

**VORTECH
MUSTANG** vs.
GREDDY RX-8 vs.
HPA AUDI TT

**Quarter-Mile in 10.1
Nismo Skyline GT-R Drive**

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42



SUPER

While most of the great sports cars in history are two-seaters, never, before the advent of aftermarket tuning, had the 2+2 been elevated to near-supercar status. Today, thanks to forced induction, a \$40,000 2+2 may out-accelerate exotics more than twice the price—and still get better fuel economy than your wife's minivan. As an added bonus, coupes offer more real-world flexibility than your typical supercar.

Enter the Audi TT, Ford Mustang and Mazda RX-8. Each represents its corner of the world in state-of-the-art coupe offerings for the masses and has attracted great aftermarket support. Sound like the makings of another great

comparison? We thought so and made a few dozen phone calls. Days later, a GReddy turbocharged RX-8, an HPA Motorsport turbocharged Audi TT 3.2 and a Vortech supercharged Ford Mustang GT were in the parking lot of local tuning house XS Engineering, waiting their turn on the chassis dynamometer, the first test in our journey toward truth. Two days of testing and more than 1200 total miles of driving impressions later, we had answers. Because these cars are so different in nature, we decided to forego our normal comparison-test points system, opting to instead place them in order of performance, from slowest to fastest.

One American, one Japanese and one German, three different visions of the ultimate 2+2

BY JACKIE LING • PHOTOS BY BARRY HATHAWAY

>>>



CARS

for the masses





GReddy

TURBOCHARGED RX-8

AT A GLANCE	 0-60: 5.8 sec	 1/4 MILE: 14.4 sec
	 SLALOM: 66.8 mph	 SKIDPAD: 0.88g
	 60-0: 168 ft	 80-0: 295 ft

The Titanium Gray RX-8 you see on these pages is a true "Joe Tuner" sample. That's because, while plastered with corporate GReddy livery and filled with seemingly half the parts in the GReddy catalog, this

car belongs to a "Joe"—in this case, owner Rob Shaw. GReddy first became involved as a sponsor but also turned benefactor when it stored and helped build the RX-8 into a SEMA Show car, while Shaw served a military tour in Korea. While the RX-8 drew supercar attention at the show, the VeilSide styling failed to excite our testers. Managing Editor Edward Loh's comments expressed a mixture of love/hate feelings, "The car looks aggressive. I like the front bumper and the leering front mount intercooler, but I wasn't particularly fond of the crazy looking hood and high deck spoiler."

Under the hood is the first turbo system offered for the RX-8 in the U.S.—on sale since March, the GReddy kit retails at a suggested price of \$4195. The kit includes a Mitsubishi T618Z turbo, a cast-iron exhaust manifold and downpipe, Type-T wastegate, polished intercooler piping, Type-31 front-mount intercooler, Airinix AY-SB air filter and the company's e-Manage piggyback ECU.

We weren't surprised that the

RX-8 took third place in performance testing. The turbocharged Renesis powerplant churned out 224 bhp at 7270 rpm and 172 lb.-ft. of torque at 5250 at the wheels. While the numbers reflect a significant increase in power, they are still less than half of what the Mustang was bringing and more than 100 down from the German hot rod.

On the straight black-top, the RX-8 was the proverbial knife in a gun fight. The GReddy RX-8's power figures meant its acceleration was underwhelming, turning in 5.8 seconds to 60 mph and 14.4 sec. in the quarter mile, both only slightly better than the 6.1 sec. and 14.6 sec. of a factory stock RX-8. The RX-8 also suffered in the braking department. GReddy had installed its beefy GREX 6-piston 355-mm front brakes, but the factory ABS had been disabled, and the RX-8 fell to both the TT and the Mustang in stopping from 80 and 60 mph. Actually, its performance was significantly worse than a stock RX-8 because of the lack of ABS and unadjusted



■ GReddy's RX-8 performed well on the street, especially as a canyon carver. Its 224 bhp and 172 lb.-ft. of torque represent big improvements over stock, but still made it the least powerful 2+2 tested.





■ Inside, a rally-style steering wheel, Sparco racing seats and 5-point harnesses hints at a serious driving machine. Out in the canyons, the RX-8's tight TEIN coilover-suspended chassis confirms our suspicions.



EDITOR'S TAKE...

Jackie Ling
CONTRIBUTOR



1. GReddy RX-8
2. HPA Audi TT
3. Vortech Mustang GT

...the most comfortable carving up and down the mountain...

front/rear brake bias. Still, Loh praised them for "a solid, mechanical feel...with no mushiness."

Road testing the GReddy RX-8 revealed the car's real talents. At 3480 lb., it had the lightest as-tested weight of the lot and showed its abilities on our winding test roads. Loh felt "the most comfortable carving up and down the mountain in the RX-8." Technical Editor Dan Barnes had similar praise, albeit dampened by an uncomfortable driving position for his 6-ft.-plus frame (the aftermarket steering wheel and seat

modifications were set up for the much-shorter owner).

The GReddy turbo kit comes on the moment you press the gas pedal. Response shows little lag, and boost comes on around 3500 rpm. Seat-of-the-pants feel says this RX-8 is quick, which made its lackluster acceleration numbers more surprising. Most of us agreed that the good handling characteristics of the RX-8 were inherent in the excellent Mazda SE3P chassis, though the addition of the TEIN Type Flex coilovers was an improvement. The

cockpit-controlled TEIN Electronic Dampening Force Controller (EDFC) was praised as an interesting innovation. "The suspension was really nice, although it seems like EDFC is mostly useful for adjusting the car to work on whatever stretch of the road you just went over," noted Barnes.

The RX-8's 66.9-mph slalom and 0.88g skidpad figures bested the Audi TT's. Still, as good as its handling and communicative chassis were, they couldn't overcome the difference in power.

The obvious choice for a favorite in this comparison would be the Audi TT. Iconic styling, all-wheel drive, a 3.8-sec 0-60, and DSG transmission leaves little to fault. But my favorite is the GReddy Mazda RX-8 because there's something to be said for an honest link between man and machine; and the RX-8 does that the best.



Vortech

SUPERCHARGED FORD MUSTANG GT

0-60: 4.5 sec	1/4 MILE: 12.9 sec
SLALOM: 68.4 mph	SKIDPAD: 0.90g
60-0: 116 ft	80-0: 206 ft

Big and brawny like a Detroit street fighter, the Vortech-supercharged Ford Mustang GT offered us a chance to see what

the aftermarket is doing with the newest version of the original pony car. A technology demonstrator, the Vortech Mustang is relatively sparse in modification compared to the RX-8. A Bassani Quiet Thunder cat-back exhaust system, Ronal wheels and simple vinyl graphics are the only exterior cues telling you this is not your average stable pony.

Pop the hood and the polished V-2 S-Trim compressor's

scroll grabs your attention. In the High Output version we tested, the compressor is teamed with Vortech's air-to-water intercooler. Also included are a Diablosport Predator 91-octane ECU reflasher, high-flow fuel injectors and a high-flow fuel pump.

Vortech delivered us the Mustang in "fun" mode with a tank full of 100 octane gas and a spark-timing map to go with it. Vortech is asking \$3890 for the standard,



non-intercooled system and \$5260 for the High Output version.

At 300 bhp, the stock V-8-powered Mustang already enjoys a 50-bhp advantage over the V-6-equipped Audi TT—the next most powerful contestant. When you fit a Vortech centrifugal supercharger, the horses mate and reproduce in large numbers; the Vortech High-Output Supercharger-equipped Mustang gallops with 452 bhp at 6290 rpm and twists the axles to the tune of 397 lb.-ft. of torque at 5120 rpm at the wheels.

Not surprisingly, this 50-plus-percent increase in horsepower makes for some impressive acceleration times. Its 0-to-60-mph time of 4.5 sec. and quarter-mile of 12.9 sec. was a stride or two better than the stock car's. Mammoth 14-in., 4-piston StopTech front brakes stop the Mustang from 60 mph in a test-best 116 feet and helped the Mustang take the 80-to-0 honors as well. A firmly planted right foot equaled go-directly-to-

jail rates of speed. With its sneering whine, the supercharger performed as advertised, with no fuss or drama. There was power everywhere on the tach, but more toward the top.

The Vortech Mustang did more than just haul butt in a straight line. Eibach Pro-Street coilovers replaced the factory shocks and springs and BMR Fabrications outfitted the Mustang with a gaggle of bracing and replacement suspension bits, including boxed subframe connectors and a tunnel brace. Together with the stickiest tires of the trio (Toyo Proxes RAs), the modifications helped the Mustang record best-in-test slalom and skidpad numbers.

Surprisingly, though, its performance in real-world driving drew mixed reactions. Many were leery of the compromises involved. "For a car this low, I was impressed with how well it handled the curves on the way to our cornering photo location," noted Loh. Both Loh

■ Under the Mustang's hood, it's all business—Vortech's High-Output blower pushes out over 450-bhp and nearly 400 lb.-ft. of torque. Inside, you'd think nothing has changed, until you floor the gas pedal.

and Barnes complained about the lack of ground clearance—a function of the tire/wheel combo, ride height and the extra bracing. At one point, Barnes actually high-centered the car on a relatively tame shoulder. Nevertheless, competition-ready handling and raw supercharged V-8 power made this bad boy the street brawler with a heavyweight champ's credentials.

>>>



HPA

AUDI TT 3.2

0-60: 3.5 sec	1/4 MILE: 12.3 sec
SLALOM: 54.7 mph	SKIDPAD: 0.84g
60-0: 119 ft	80-0: 215 ft

If the Mustang is the street savvy contestant, the HPA Audi TT 3.2 is the well-mannered gentleman. The 19-in. BBS CH wheels and sponsor logos are the only exterior modifications, but underneath the subtle suit is a German assassin.

The HPA FT400 turbo kit is based on a Garrett ball-bearing turbo with unique turbine and compressor housing castings and all-new manifolds, intercooler and piping. A head spacer plate is used to lower compression to 8.5:1 and a SMIC prom upgrade makes it all work correctly. An affordable

alternative to the twin-turbo system HPA offers for the Volkswagen R32, the kit impressed all with its OE-like integration. This particular car (a customer car) didn't have the same level of modification as the RX-8 and Mustang.

We tested the turbo TT with the front wheels on XS Engineering's 2-wheel Dynojet and the Haldex rear-drive system disabled. A 4-wheel test would have shown lower numbers. Still, the car managed impressive horsepower and torque figures of 336 bhp at 6370 rpm and 313 lb.-ft. of torque at 4950. What really got our attention was the Audi's supercar-like 3.8-sec. dash to 60 mph and a 12.3-sec. quarter-mile run, made possible by the HPA-engineered version of Audi launch control and no interruption of power during shifts

EDITOR'S TAKE...

Dan Barnes
TECHNICAL EDITOR



1. HPA Audi TT
2. Vortech Mustang GT
3. GReddy RX-8

The TT was the only one of this group without a significant fault, so there's really no other choice. If I was to start with one of these cars stock and modify it for myself, I'd go with the RX-8's brilliant chassis. What I really want is a car as fast and bulletproof as the TT with the RX-8's size and chassis and the Mustang's style and soundtrack. That would be perfect.

in Audi's Direct Shift Gearbox (DSG). Unlike the RX-8, which lost ABS and traction control because of its aftermarket mods, all electronic systems worked correctly in the TT.

The HPA-modified launch control holds engine revs at 3250 rpm, optimizing launches and, according to Loh, "is easy enough for my sister to use." But even the faultless integration of the turbocharging and launch control systems couldn't stop our editors from coming up with requests for improvement. Most of the criticisms focused on braking and handling, areas left fairly stock.

The TT was equipped with a KW Suspension-developed HPA SHS coilover system, but less-serious tires and brakes limited its effectiveness. That said, all-wheel drive and a well-tuned electronic stability program (ESP) kept the car stable through turns. The ESP program was especially useful in the canyon-carving portion of the test. Loh said, "With the ESP on, I was able to get the car a bit sideways and still not worry about an unexpected off-road trip." For Barnes, the biggest challenge in driving the TT fast was the forward location of the TT's A-pillar, which obscured his vision during turn-in when he was looking for the corner's apex.



Of the three, HPA Audi impressed us the most with its near OEM levels of fit and finish. Under the hood, the FT400 turbo kit, responsible for 336 bhp, and DSG transmission made for some very un-stock performance numbers.



**2004
GREDDY
MAZDA RX-8**
**2004
HPA
AUDI TT COUPE**
**2005
VORTECH
FORD MUSTANG GT**
List Price/Tested Price: est. \$26,875/est. \$53,595

est. \$41,500/est. \$57,550
est. \$24,995/est. \$41,870
Type: alum. rotor housings, turbo 2-rotor rotary
Internal Modifications: Greddy aluminum oil pan

iron block & alum. head, turbocharged V-6
head spacer plate for 8.5:1 compression,
lengthened timing chain
alum. block & heads, supercharged V-8
none
External Modifications: Greddy turbo system; includes T6182 turbo, intercooler, piping, Type-RS blow-off valve, Airlinx filter; Greddy SP2 exhaust system, oil catch tank, spark plugs, chrome oil fill cap, high-pressure radiator cap

HPA FT400 turbo kit; includes Garrett-based ball-bearing turbo with custom compressor and turbine housings, cast exhaust manifold, downpipe feed and intake manifold, side-mount intercooler, 70-mm downpipe, silicone piping, oil and water lines, stock exhaust with muffler bypass valve
Vortech supercharger system; includes V-2 S-Tim compressor; brackets, inlet piping, air-to-water charge cooler system; Bassani Quiet Thunder cat-back exhaust
Engine Management: Greddy e-Manage piggyback ECU, Profece-01 boost controller/gauge

high flow fuel injectors, upgraded fuel pump, reprogrammed factory ECU
Diablosport Predator ECM programmer tuned for 100 octane, 98-mm MAF meter housing, high-flow fuel injectors, 255 lph fuel pump
Horsepower (SAE): 224 bhp @ 7270 rpm

336 bhp @ 6370 rpm
452 bhp @ 6290 rpm
Torque: 172 lb-ft @ 5270 rpm

313 lb-ft @ 4950 rpm
397 lb-ft @ 5120 rpm
Redline: 8710 rpm

7240 rpm
6350 rpm
Layout: front engine/rear drive

front engine/all-wheel drive
front engine/rear drive
Wheels: RQ_JA R2-5 Mercury Silver; 19x8.5 +38et fr, 19x9.5 +44et rr

BBS CH;
Ronol Wheels LZ Eleganz;
Tires: BFGoodrich g-Force T/A KDW 245/35ZR19 93Y fr, 275/35ZR19 96Y rr

Dunlop SP Sport 9000 235/35ZR19
Toyo Proxes RA1 245/40ZR18 fr, 275/35ZR18 rr
Suspension: TEIN Type Flex coilovers, TEIN electronic damping force controller, GREX front shock tower brace

HPA SHS coilovers (460 lb/in springs)
Eibach Pro-Street coilovers; BMR Fabrication strut tower brace, A-arm support brace, boxed subframe connectors and tunnel brace
TEIN Type Flex coilovers, TEIN electronic damping force controller, GREX rear shock tower brace
HPA SHS coilovers (progressive-rate springs), Neuspeed 22mm anti-roll bar
Eibach Pro-Street coilovers; BMR Fabrication adjustable street control arms, adjustable panhard rod and upper panhard rod support
discs/calipers: GREX/Acon 6-piston fixed calipers (chromed), 355mm vented discs, GREX street pads, Earl's braided stainless brake lines

stock-dimension slotted rotors with PBR sport pads
StopTech 4-piston fixed calipers, 355-mm vented discs
discs/calipers: GREX street pads, Earl's braided stainless brake lines

stock-dimension slotted rotors with PBR sport pads
stock
Braking Aids: none

ABS
ABS
Drivetrain Modifications: none

HPA launch control, allows 3250 rpm "torque-stall" launch
Centerforce Dual-Friction clutch package
Other Modifications: Lexan engine and intake covers; Sparco Monza seats, suede interior; Prodrive harnesses, steering wheel and hub; Velside D1GT body kit, vented hood, carbon fiber GT Wing Type III, Mazda clear markers

Clanion VRX745VD, Sirius satellite radio, console-mounted AV/RCA jacks for external input, Samsung phone cradle
Vinyl Mayhem graphics, Sony Radio/CD/MP3 head unit, speakers and amp; Scosche stereo wiring
Curb weight: 3300 lb

CORNER WEIGHTS
3530 lb
CORNER WEIGHTS
3660 lb
CORNER WEIGHTS
Test weight: 3480 lb

(full tank, 195 lb driver)
3710 lb
(full tank, 195 lb driver)
4040 lb
(full tank, 195 lb driver)
Weight dist, f/r, %: 50/50

910 lb 833 lb
60/40
1157 lb 1064 lb
53/47
1068 lb 991 lb
Height: n/a in.

880 lb 852 lb
n/a in.
752 lb 736 lb
n/a in.
908 lb 888 lb
Width: 69.7 in.

73.1 in.
73.9 in.
Length: 174.3 in.

159.1 in.
187.6 in.
Wheelbase: 106.4 in.

95.6 in.
107.1 in.
Track, f/r: 58.9 in./59.3 in.

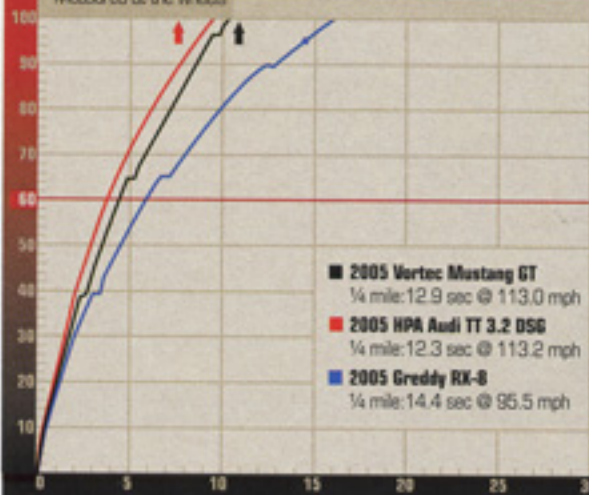
60.0 in./59.3 in.
62.3 in./62.5 in.
0-60 mph: 5.8 sec

3.8 sec
4.5 sec
0-1320 ft (1/4 mile): 14.4 sec. @ 95.5 mph

12.3 sec. @ 113.2 mph
12.9 sec. @ 113.0 mph
Braking 60-80 mph: 168 ft, 295 ft

119 ft, 215 ft
116 ft, 206 ft
200-ft skid lat. accel: 0.88g

0.84g
0.90g
700-ft slalom speed: 66.8 mph w/mild understeer

64.7 mph w/mild understeer
68.4 mph w/mild understeer
***Measured at the wheels**




When taking in the entire TT picture, one staffer said it best: "The Audi does everything it's supposed to do so well that you almost don't notice its performance as well as the others." That is little concern for any TT owner considering the transformation. How can you argue with a \$53,350 car that can run with pure-bred sports cars more than twice its price, offer OE-like tractability, and still seat four?

So, is the HPA Audi TT the undisputed winner? In our testing and driving, it turned out that way. But that's not to say the others are losers; each 2+2 brings something different to the table.

The HPA TT would be an ideal coupe for the enthusiast who has graduated into a six-figure job and needs a bit more flair than his old VW Golf. The Vortech Mustang is the logical choice for enthusiasts looking for a mix of domestic V-8 power and hi-tech modification with a nifty retro-modern wrapper. The Greddy RX-8 will still be the choice of rotary die hards, who would promptly find a way to beef up the 6 lb. of boost recommended by Greddy. Though all offer supercar characteristics for a mass-market price, and you get to take three friends along for the ride.

EDITOR'S TAKE...

Edward Loh
MANAGING EDITOR



1. HPA Audi TT
2. Vortech Mustang GT
3. Greddy RX-8

The RX-8 ruled the canyons. On the street, the Mustang left me deaf and breathless. But my choice is the Audi TT. Why? Put the gearshift in S-mode and turn off traction control. Put your left foot on the brake and right on the throttle until it passes 4200 rpm. Release the brake for sub 4-second sprints to 60 mph and 12-second quarter-mile times, all day long. Minus the stickers and yellow paint, this is the ultimate sleeper.

SUPERCARS FOR THE MASSES THREE TUNED 2+2s

