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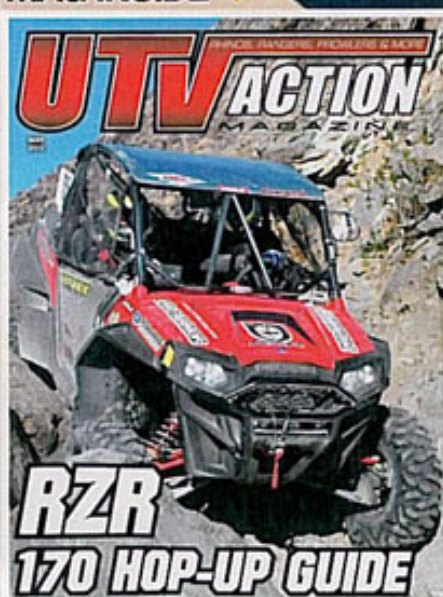
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DUNCAN RAPTOR

MAKING THE BEST BETTER

Photos by Pat Carrigan

Yamaha's Raptor 700 has had a lock on the overall performance crown among big-bore sport machines since it was introduced. It's powerful, handles well and the suspension package is one of the best available on a stock sport quad. It's great, but is there room for improvement? Definitely. Duncan Racing has made studying the Raptor's shortcomings and developing solutions an ongoing project, so when we got a chance to ride their latest project Raptor 727, we couldn't wait to see what they'd done to it.



GETTING MORE FROM THE MOTOR

The Raptor 700 is one machine that's definitely not hurting for power, but the power is concentrated in the midrange and flattens out on top. Duncan Racing offers a huge selection of performance options for the Raptor, but the 727cc National kit is the ultimate. It addresses every shortcoming in the stock 700's power delivery to make the big-bore sport machine the powerhouse it should be without compromising reliability.

In stock trim, the big Yamaha uses a mild cam and a very quiet, fairly restrictive exhaust to meet exhaust and noise emission requirements, as well as a conservative compression ratio to let it tolerate pump gas. The National kit's cam and ported, big valve head release a rush of mid to top power that's missing from the stock motor. The modified engine doesn't just pull dramatically harder; the power hangs on longer, giving the big Raptor a much broader, more usable power spread. The National kit's big-bore piston makes the 727 bottom-end power more crisp and solid than stock, even with the big mid to top power gains.

A number of performance parts

work with the core items of the National kit to give the Raptor its remarkably sharp, clean response, and they're as important for creating the broad, strong power as the cam, piston and cylinder head modifications. Duncan Racing's new Vortex X10 engine control unit (ECU) truly is the "brains of the operation" and makes the remarkable power and rideability possible. The ECU is a fuel control and ignition control unit in one, and allows fine-tuning of the fuel injection and ignition curves, just like current high-performance ECUs for cars and trucks. In

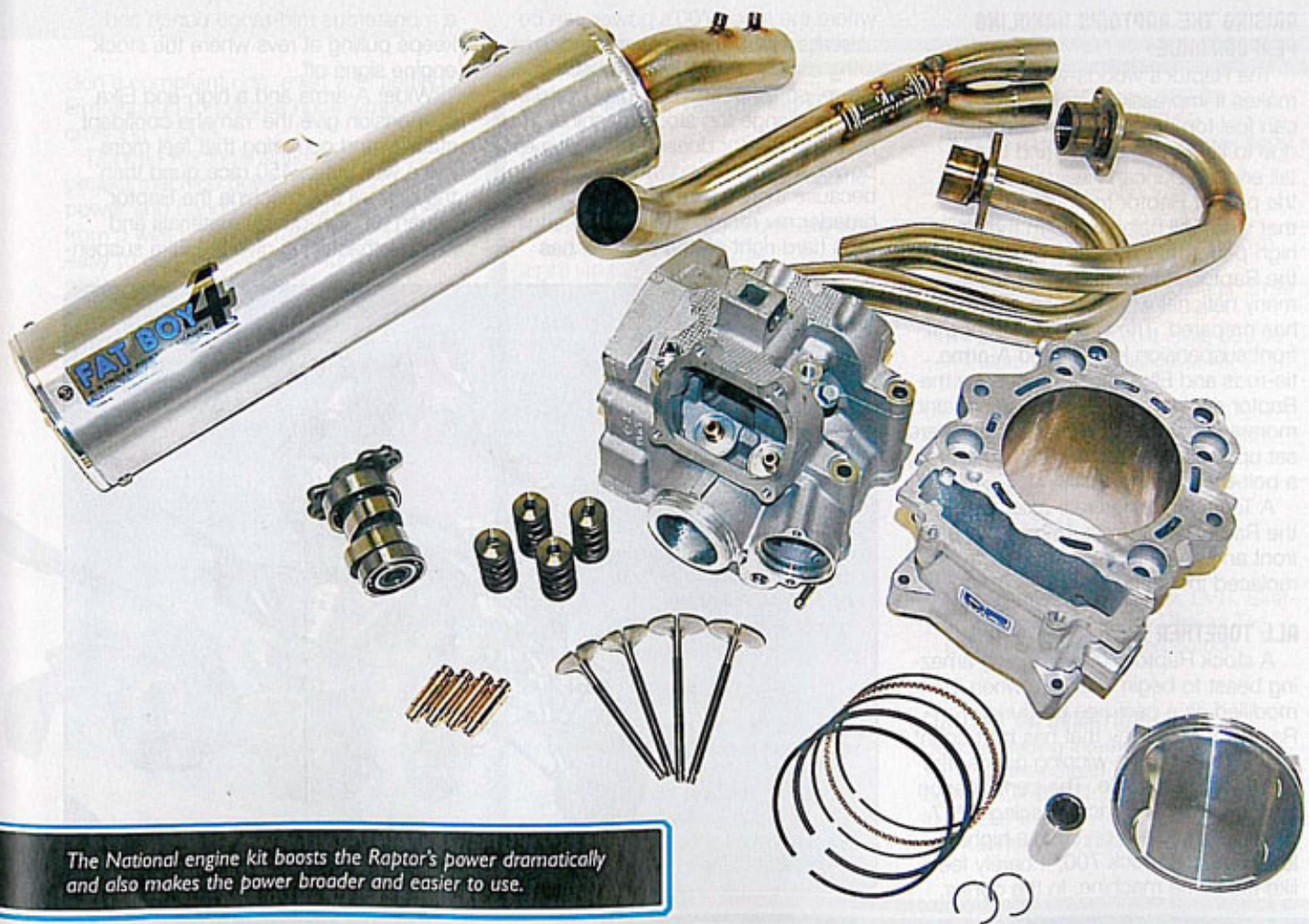
addition to easy, computer-less adjustability in the field with a screwdriver, the Vortex X10 is available with a handlebar switch that lets the rider toggle between curves. The kit's Fat Boy 4 exhaust system allows the engine to breathe freely, and it gives the Raptor an unmistakably racy tone without being annoyingly loud. The pipe, high-flow intake and fuel



Yamaha's Raptor 700 has massive potential to make more power. Duncan Racing's 727cc National kit unlocks it all.

tuner are an affordable way to step up the power of a stock Raptor.

Reliability-focused extras—like the Duncan clutch kit and Hinson clutch basket, along with the high-capacity radiator and integrated oil cooler—ready the 727 for continuous, aggressive riding, even in the dunes.



The National engine kit boosts the Raptor's power dramatically and also makes the power broader and easier to use.

The Roll Design Lobo II suspension kit's wide A-arms and Elka shocks give the Raptor a mean look, but the handling and ride are actually more forgiving than stock.



RAISING THE RAPTOR'S HANDLING PERFORMANCE

The Raptor's woods-width chassis makes it impressively agile, but the 700 can feel top heavy in hard cornering due to its narrow stance and large, tall engine. Duncan Racing wanted the project Raptor to have handling that was well balanced with the ultra-high-performance motor, so it treated the Raptor's chassis like one of the many national-winning race quads it has prepared. The Roll Design Lobo II front suspension kit included A-arms, tie-rods and Elka shocks that gave the Raptor a wider, more stable stance and more suspension travel. The shocks are set up for the longer A-arms, so it's truly a bolt-on suspension kit.

A Team Industries rear axle widened the Raptor's rear track to match the front and an Elka Stage IV rear shock replaced the stock unit.

ALL TOGETHER NOW!

A stock Raptor 700 is a pretty amazing beast to begin with, but when it's modified as a package by Duncan Racing, a company that has built countless championship-winning quads, the results are incredible. The performance and handling of Duncan Racing's 727 project machine is on such a higher level than the stock 700, it barely feels like the same machine. In the dunes,

where the stock 700's power can be absorbed by the deep sand and towering climbs, the 727 has muscle to spare, so it's possible to play on hills that challenge the stock machine. The modified Raptor doesn't only have more power, it's easier and more fun to ride because there's usable power over a broader rev range. The Duncan engine pulls hard right off the bottom, has

a monstrous mid-range punch and keeps pulling at revs where the stock engine signs off.

Wider A-arms and a high-end Elka suspension give the Yamaha confident stability and cornering that feel more like a well-setup 450 race quad than the big, tall trail machine the Raptor began as. Top-quality materials and precise machining give the Elka suspen-

Duncan Racing is known for preparing national-championship-winning race quads, but the Raptor 700 is also a personal favorite of Duncan Racing's president, Loren Duncan. He tells us developing modifications for the Raptor is an ongoing project that he's glad to be involved with, even if it means missing days at the office to go "testing." That's dedication!



Duncan Racing has built some of the most potent race quads ever, and their meticulous detailing is just as obvious on the Raptor 727 high-performance play machine.



sion a compliant ride, even with settings firm enough to tolerate huge jumps and crushing G-outs.

Duncan Racing's National-kitted 727 project machine delivers the kind of power and handling we normally expect from a well-prepared race quad, but it's easy to ride, forgiving and fun, which makes it perfect for hardcore dune and trail riders. When you're ready to release all the performance your Raptor is capable of, you'll want to build it like this project machine. □

Duncan Racing's Vortex X10 ECU allows precise tuning of the ignition curve and EFI mapping. It's a new stage in high-performance ATV tuning.



DUNCAN RACING YAMAHA RAPTOR 727

ENGINE

- DRI 727cc "National" Raptor engine kit, \$2495
- Kit includes Fat Boy 4 complete stainless exhaust system
- DRI HP4 valve-train kit includes flow-tested porting and Serdi valve seat cut, HD valve springs w/ titanium retainers, shortened guides, #294-X2 camshaft, oversized IN & EX valves
- 727cc JE big-bore 12-1 piston, cylinder, strip-bore-replate head gasket,
- Vortex X10 ECU (engine control unit), \$699
- Hinson billet clutch basket, \$249.95
- DRI DR-C37HD Clutch Kit, \$199
- Pro Design Pro Flow air-cleaner kit (K&N), \$139.95

CHASSIS

- DRI front bumper text black, \$179
- Roll Design Lobo II front suspension kit, \$2999
- Kit includes Roll Design gull-wing A-arms, tie-rods, Elka long-travel shocks, "Crown" series front brake lines
- Stage IV shock upgrade, \$325
- DRI billet front wheel hubs, \$499
- Roll Design steering stem (cast stainless head and base), \$349

- Clamp kit for O/S bars, \$89.95
- TAG T-2 handlebars, \$99.50
- GPR Low Boy steering stabilizer, \$499
- Galfer front brake rotors, \$130
- Elka Stage IV rear shock, \$1095
- Team Industries rear axle, \$449
- Steel-braided rear brake line "Crown" series, \$39.95
- IMS-Roll cast stainless footpegs, \$199
- IMS-Roll heel guards, \$179.95
- DRI billet aluminum shift lever, \$89.95
- DRI team graphic/seat-cover kit, \$119
- DRI chain guard, \$29.95
- DRI block-off plate, \$15.95
- Works Connection pro/adjustable perch, \$129.95
- Works Connection frame guards, \$59.95
- TAG grips, \$15.95

Special thanks: Roll Design, Elka Suspension, GPR, Vortex, DWT, Skat-Trak, RK, Maxima, Pro Design, Tag and Yamaha Motor Corporation

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