

# DUNCAN RACING YAMAHA RAPTOR 700

DRI's owner's ultimate duner!

Photos by Pat Carrigan

**D**id you ever wonder what it would be like to build your dream quad if cost was no object? What if you also had the opportunity to test any combination of parts and modifications to see what you personally liked, before you chose what went into your machine? That's how Loren Duncan, president of Duncan Racing International (DRI), approached building his own Yamaha Raptor 700 duner.

We got to test this very special machine, and talk to Duncan about why he chose to build the Yamaha the way he did.





# RAPTOR 700



Jumping is a whole new experience on the Duncan Raptor because the landings are so sweet.

Some of the Raptor's trick parts are hard to see, but they make a huge difference in the way the machine works. The GPR steering stabilizer absorbs steering shock before it reaches the rider.



**ATV Action:** Why did you select the 727cc National engine kit for your Raptor duner?

**Loren Duncan:** We developed the 727cc kit piece by piece, literally from the intake to the valve sizes and cam on through to the exhaust, to eliminate the shortcomings in the Raptor 700's power delivery.

I'm a big fan of the Raptor, but I felt it needed more power on the bottom and I also wanted it to pull longer and harder on top, especially for dune riding. I was looking for roll-on power like a big Harley and an engine that would keep delivering at high revs. The goal isn't just to make the Yamaha faster; I was also aiming to make it easier to ride. I know there are a lot of older guys like me out



**The Lobo II front suspension kit makes the tall Raptor low and wide. It changes the whole feel of the machine.**

there on Raptors who just want the thing to go when they gas it. I also feel the 727 kit is as large and radical as you can go with this engine with no reliability issues.

**ATV Action:** *The difference between a stock Raptor and your machine was like night and day. A stock 700 requires frequent shifting to keep pulling in the sand and the power flattens out if the engine is revved. There's rarely a need to shift the DRI Raptor. It pulls solidly off the bottom and it revs endlessly.*

**ATV Action:** *DRI offers several cams that work with the 727cc engine kit. Why did you choose the one you did?*



# RAPTOR700

## MACHINE

**Quad** .....2007 Yamaha Raptor 700  
**Built By** .....Duncan Racing, International

## ENGINE

DRI 727cc "NATIONAL" Raptor .....Engine Kit \$2795  
**Kit includes:** Fat Boy 4 Complete Stainless Exhaust System, DRI HP4 Valve Train Kit Flow Tested Porting & 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, Headgasket, Vortex EFI Interceptor

Hinson Billet Clutch Basket .....\$230  
 DRI DR-C37 HD Clutch Kit .....\$189  
 PWR High Capacity Radiator with incorporated Oil Cooler w/ Crown Custom Steel Braided Lines .....\$699  
 Pro Design PRO FLOW Air Cleaner Kit (K&N) .....\$139.95  
 Motor Oil Maxima Premium 4 10W40

**Fuel:** Sunoco STD

## CHASSIS

DRI Chrome Front Bumper .....\$179  
 Roll Design Lobo II Front Suspension Kit .....\$2999  
 Kit Includes: Roll Gull Wing A-Arms, Tie Rods, ELKA Long Travel Shocks, "CROWN" Series Front Brakelines  
 DRI BILLET Front Wheel Hubs .....\$499  
 Roll Design Steering Stem (cast stainless head and base) .....\$349  
 Clamp Kit for O/S Bars .....\$89.95  
 Universal Oversized Handlebars .....\$99.50  
 GPR Steering Stabilizer .....\$499  
 Galfer Front Brake Rotors .....\$130  
 ELKA Elite Rear Shock .....\$1045  
 TEAM Industries Rear Axle .....\$449

Rear Brakeline "Crown Series" Steel Braided .....\$39.95  
 IMS-Roll Cast Stainless .....\$199  
 IMS-Roll Heel Guards .....\$179.95  
 DRI Billet Aluminum Shift Lever .....\$89.95

## ACCESSORIES

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  
 Motion Pro CR Twist Throttle, Clutch and Throttle Cable

## DUNE WHEELS AND TIRES: FRONT/REAR

Mfg	Model	Size/Offset	Price
Douglas Wheel	Quad Rock	10x5 3B+2N	\$62.82
ITP	Sand Star	21x7x10	\$43.40
Douglas Wheel	Quad Rock	9x8 3B+5N	\$65.32
ITP	Sand Star	20x11x9	\$61.36

## NOTES

Chrome done by Pacific Plating

**TOTAL COST TO BUILD** .....\$20,000 plus

Special Thanks...Pro Design, Douglas Wheel, ITP Tires, Roll Design, IMS, Elka Suspension, GPR, Vortex, PWR, IMS-Roll Yamaha Motor Corporation

## Contact Information:

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**Loren Duncan:** The #294-X2 cam is the midrange/top cam. This engine makes lots of torque because of its size and high compression. The X2 cam brings out the top end. It, the large valves and the Fat Boy 4 exhaust let the 700 rev like a much smaller engine.

**ATV Action:** What is the Serdi valve seat cutting used by DRI?

**Loren Duncan:** Serdi is the brand name of the machine we use to cut the valve seats. Because it's so precise and creates such perfectly centered and smooth flowing seats, it's the machine used by Formula One and NASCAR engine builders.

**ATV Action:** What does the Vortex EFI Interceptor do that the stock EFI unit can't?

**Loren Duncan:** It allows full adjustability at the low, midrange and top end throttle openings in the field, using only a screwdriver. Stock fuel injection systems have a very limited ability to compensate for temperature and elevation changes. The Vortex unit lets the rider tune the machine as needed. It also helps the Raptor start easily, even with its highly modified engine.

**ATV Action:** We see you changed

the clutch and the radiator. Are these modifications wise for anyone riding a Raptor 700 in the dunes, or are they only required for the 727's greater power?

**Loren Duncan:** Anyone who really rides a Raptor 700 hard in the dunes can overheat it. With a modified engine, we definitely needed more

cooling. The stock clutch is fine for a stock engine but the 727, with about 18 more horsepower than stock, can be hard on it. The DRI clutch and Hinson basket have no problem handling the power.

**ATV Action:** We think of the Lobo II suspension kit as something cross-



DRI designed the Raptor 727 to be easier to ride than the stocker, and it is, but it's also great at blowing up dunes and humiliating lesser quads.



# RAPTOR700

country or desert racers need. How does it figure into your duner project?

**Loren Duncan:** The Raptor 700 sits higher and is heavier than a YFZ450 but its suspension is softer. I wanted the 700 to feel more like a YFZ450. Since I'm an older rider, I find I need suspension that works predictably more than younger guys do. They can cope with a machine getting out of shape. I can't.

**ATV Action:** We were impressed with how crisp the handling was. On a stock 700, you really have to get off the side of the bike to make it turn. With the Lobo II kit, the Yamaha turns much easier and feels lighter. It's also very calm as the suspension absorbs impacts and nearly impossible to bottom, unlike the stocker, which goes through its travel on big hits.

**ATV Action:** Trick steering stabilizers aren't something we see on every duner. How does the GPR unit help you in the sand?

**Loren Duncan:** Normally, I don't adjust in too much steering resistance, but the more I use the GPR stabilizer, the more valuable I find it is. The GPR damper is convenient because you can

dial in more or less resistance easily with the thumb lever on the handlebars. I add resistance for choppy areas or jumping and back it off for cruising. It makes riding the Raptor easier, which is my overall goal for the machine.

**ATV Action:** After some consideration, we feel that you've built one of the best dune machines we've ever ridden. There's really only one thing that could improve it.

**Loren Duncan:** What's that?

**ATV Action:** An ATV Action sticker. □



Loren Duncan, the owner of Duncan Racing, could have made his Raptor 727 a monster, but he built it to be easier to ride and better handling as well as faster. It's what he wanted from his machine, and he feels the modifications will please the typical Raptor 700 rider. We didn't want to give it back.