

# DUNCAN YFZ 450



*Spewing roosts is a specialty of this particular machine. It has a wide powerband with lots of meaty mid-range hit. The motor itself was left mostly stock, with the exception of a Duncan exhaust system, and some minor carb, jetting and port work. Duncan plans on spending more time getting even more power out of this potent production four-stroke in the future.*



## Race ready for the track or trail

*By the race & trail ready staff of Dirt Wheels*

As you might recall, when we took a look at one of Duncan Racing's Dream Raptors (*Dirt Wheels*, November '03) it had a who's-who list of bolt-on performance products and modifications. From its Roll Design gull wing A-arms and front end, to its long travel Elka suspension system, mated to a powerful DRI 740cc "National" kitted engine, it was a ground-shredding rocketship racer.

In total, these Duncan Racing International (DRI) modifications helped transform it from a mere pretender in the high performance ranks into a certifiable contender, both on the race track and for over-all trail riding.

#### MOVE OVER, ROVER, LET THE YFZ TAKE OVER

DRI has now set their sights on making Yamaha's new YFZ450 into an even more potent package for the serious high performance enthusiast. Built in just 30 days, the Duncan Racing YFZ450 was to be ridden in the European championship event—the 12 Hours of Pont de Vaux. DRI's European distributor, ATV World, had sent the machine to Duncan to prep it for this annual French endurance race.

Before the race, Duncan-supported racer Tavis Cain was sent out to the

Loretta Lynn National to campaign the YFZ450 in the Pro Production class. Tavis grabbed a holeshot in one moto and was close to the front of the pack in both races. After this strong debut, the quad was packed up and shipped it over for PDV.

#### EUROPE TRAVAILS

Unfortunately, Tavis and his fellow team riders, Great Britain's Paul Rowlands, and USA rider Chad Lohr,



*The biggest difference in the pro ranks is the ability to launch off mega-air jumps repeatedly with absolute confidence. The Duncan YFZ450 has had the suspension, front A-arms, and rear swingarm and linkage tweaked to stay ahead of the competition.*





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## ENGINE

Fat Boy 4 Complete Stainless  
 Steel Exhaust System .....\$499.00  
 \*Includes Free Jet Kit and Lifetime Warranty  
 DRI Flow Tested Porting & 3-Angle Valve Job.....\$495.00  
 VORTEX X10 CDI  
 Programmable Ignition.....\$399.00  
 (Includes dual curve handlebar switch)  
 Hinson Billet Clutch Basket.....\$230.00  
 Hinson Inner Hub.....\$299.00  
 Hinson 9-Plate Clutch Kit (P.plate & Clutch Pak).....\$165.00  
 Pro Design PRO FLOW Air Cleaner Kit (K&N).....\$169.95  
 Motor Oil Maxima Premium 4 10W40  
 Fuel: TRICK

\*New engine products developed or being developed: Billet Hi-Lift Camshafts, HD Valve Spring Kits w/Titanium Retainers, Big Valve Kits, High Compression Kits, Big Bore and Stroker Kits, Edelbrock Carburetor Kits

## CHASSIS

DRI Chrome  
 Front Bumper.....\$169.00  
 DRI BILLET Front Wheel Hubs.....\$ 399.00  
 Roll Design Lobo II  
 Front Suspension Kit.....\$ 2999.00  
 Kit Includes: Roll Gull Wing A-Arms, Tie Rods, ELKA Long Travel Shocks, "CROWN" Series Front Brake lines  
 Roll Design Steering Stem (cast stain less head and base).....\$ 349.00

Clamp Kit for O/S Bars.....\$ 89.95  
 TAG T-2 Oversized Handlebars.....\$ 94.50  
 GBR Steering 2.0 Damper Accessories.....\$ 425.00  
 Roll Design Swingarm (round housing design).....\$ 1295.00  
 PDV Bike was set up with Honda Rear End. Because of carrier availability & Rear Caliper Round Housing  
 Millennium R. Carrier.....\$ 269.00  
 ELKA Rear Shock.....\$ 775.00  
 TEAM Industries  
 Rear Axle.....\$ 360.00  
 TEAM Industries  
 Rear Wheel Hubs.....\$ 139.00  
 Rear Brake line "Crown Series"  
 Steel Braided.....\$ 39.95  
 Front and Rear Disc Braking Wave  
 Rotors.....\$ 130.00 ea  
 Front and Rear Brake Pads Braking.....\$ 29.95 ea.  
 Roll/IMS Cast Stainless  
 Foot pegs.....\$ 239.00  
 IMS Heel Guards.....\$ 149.95  
 IMS Fuel Tank (3.6 Gal).....\$ 225.00  
 \* First tank out of mold was hand carried to France for PDV  
 Front Tires ITP Hole shot 20x7x10.....\$ 56.00 ea  
 Rear Tires ITP Hole shot 18x11x9.....\$ 79.00 ea.  
 Front Wheel Douglas Ultimate Shamrock.....\$ 240.00 ea.  
 Rear Wheel Douglas

Ultimate Shamrock.....\$ 240.00 ea  
 Gearing 15x40 (sometimes 16x40) Tsubaki Omega O-Ring Chain

## ACCESSORIES

DRI Team Graphic/Seat Cover Kit.....\$ 119.00  
 DRI Block Off Plate.....\$ 15.95  
 Works Connection Pro/ Adjustable Perch.....\$ 129.95  
 TAG Grips.....\$ 15.95  
 Motion Pro Clutch and Throttle Cable AC Grab Bar.....\$ 44.95  
 \*Additional information: Powder Coating done Professionally by POWDER 1  
 Chrome done by Pacific Plating

## SPECIAL THANKS

Roll Design, IMS, Elka Suspension, ATV World, Powder 1, Pro Design, Team Industries, Vortex,

## PDV TEAM SPONSORS:

Main Sponsors (title): DUNCAN RACING/ATV WORLD/ ROLL DESIGN/IMS/ Douglas Wheel

European Sponsors: ATV World, Goldspeed, Dunlop pad

Associate Sponsors: Team Industries, ITP Tires, Hinson Clutches, ITP, Vortex, Temeucula.

Contributing Sponsors: Tsubaki Chains, TAG Metals, One Industries, Braking, Maxima, AC, Motion Pro, Sunstar, Ricky Stator, Works Connection, Cascade, Cycle Country, Outerwears

did not have the best of luck in France. Travis came down with a bad case of flu just before the race. While the three riders put up a valiant effort, and had worked their way up into the

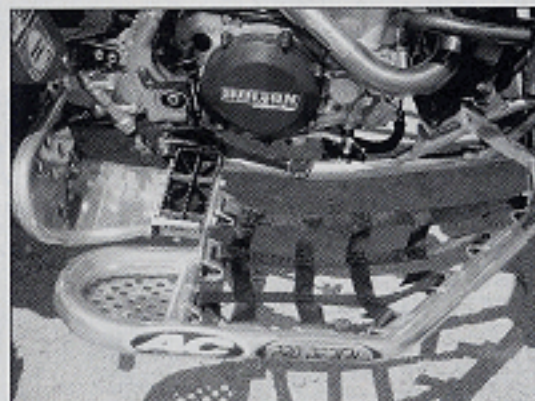
top eight after an hour's racing, a spate of mechanical ills soon dropped them back in the pack.

The first was a problem with the front brakes, which gradually faded

away. As the race progressed, another problem soon developed. The YFZ450 has had a problem with the battery system on early models. It seems it overcharges the smallish



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**Chromed AC Racing nerf bars with IMS/Roll Design extra wide footpegs and fender guards help keep the rider's feet planted solidly on the Duncan YFZ450. A Hinson Racing clutch helps keep the motor hooking up under the extreme demands of a top pro rider.**

battery, which leads to the engine running poorly not restarting, and even melting the rear fender. Four batteries were replaced at PDV before a European Yamaha technician told the team riders to ride with the lights on to alleviate the battery overcharging problem. This seemed to help a bit but the team was never really able to totally fix the battery problem at the event.

The team dropped back to 75th out of 120 riders, with one rider ill (Tavis) and one hurt (Paul Rowlands, with a hyper extended elbow). This left Chad Lohr with the daunting task of riding the machine for a total of six hours on his own. Thanks to Chad's riding and the DRI YFZ450's handling and motor work, the team was able to pull back to a strong 21st place finish.

## **SO WHAT WAS THE DRI YFZ450 LIKE TO RIDE?**

With its all-new Fat Boy 4 Stainless Steel exhaust system, DRI flow tested, three-angle valve job, and Pro Flow air cleaner kit, the YFZ450 had strong low, mid and top-end hit. In straight up drag races it easily pulled between ten and 15 quad lengths ahead of a stock YFZ450 in repeated 150-yard acceleration runs. "It's all about smoothness," says Tavis Cain. "The machine hooks up and pulls much harder with these modifications. We really haven't spent a lot of money or time on making the engine all that much faster, other than with an exhaust, some minor porting and the airbox mods.

"Another area that needs improvement, even on the YFZ450, is the clutch. We installed a Hinson Billet Clutch basket with a Hinson inner

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clutch hub and nine-plate clutch kit in the engine (stock clutch uses eight plates). Hinson offers a standard pressure plate for the clutch that allows you to run the stock clutch pack (eight plates) as well.

"I think the next thing we'll be experimenting with is different lift cams, heavy duty valve springs, high compression pistons and maybe some different carbs," says Tavis.

## **HANDLING IT ALL**

The other area to get a massive dose of modification was the front end of the YFZ450. A Roll Design Lobo 1 front suspension kit, including Roll Gull Wing -2 A-arms, tie rods, Elka long travel shocks, a Roll Design steering stem, clamp kit for oversized Tag T-2 bars, and a GBH steering damper were installed up front on the YFZ.

On the back end, a +2 longer Roll Design Swingarm with a round housing is mounted. DRI uses a single, linkage-equipped Elka long travel rear shock with ten inches of travel. The Elka shocks have preload, compression and rebound adjustments on the front and back. For the rigors of racing, a Term Industries rear axle, and rear wheel hubs were hooked up.

An IMS 3.6-gallon, large-capacity fuel tank holds enough fuel for extended rides. A set of ITT Holeshot knobbies aboard Douglas Ultimate Shamrock beadlock aluminum wheels helps get all that power to the ground.

Gearing varied between 15/40 front and back to 16/40 depending on track conditions. A host of accessories helped to round out the visuals and overall knick-knocks on this machine. A DRI team graphic kit and seat cover help with the overall look of the machine. That and the usual plethora of well-placed stickers give the quad a pure "racer" look to it.

Heavy duty Motion Pro clutch and throttle cables replace the stockers along with a twist grip throttle. Up front, a DRI chrome front bumper offers a bit more protection and stylized front end.

"Overall handling is much improved with this total package," says Tavis. "By widening the front end, and stretching it out a bit on the rear, it is a much stabler machine at high speed on the track. The gull wing A-arms allow the long travel Elka suspension to have a lot of sag but still offer major travel and a low



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*Sponsors decals are as integral a part of any pro racer's total package as a hefty bank account. Giving due recognition to all the parties that helped fund your expedition is sacrosanct in the world of racing.*

center of gravity. This gives the YFZ450 a slot car like feel on the track. You can dive inside of most competitors and outturn them with this setup, I feel," says Tavis.

"Our only major problems at the race were with the accessory front brakes which failed during the race, and a recurring problem with the battery system. Later it proved to be that the brake lines were not properly bled before the race and that contributed to their failure. We're still working on the battery problems but it appears that the YFZ450 generates a bit too much current for the smallish battery and overheats it. Running with the lights on helps a bit but we're still working on a total fix to the problem. I'm sure by the time you see this we'll have it on the web site at [duncanracing.com](http://duncanracing.com)," said Tavis.

## **OVERALL CONCLUSIONS**

The DRI YFZ450 has proven it has what it takes to make it a professional grade racer. It has a potent motor that pumps out a strong and steady stream of four-stroke torque and horsepower. The handling and suspension is first rate and with its long travel shocks and wider and longer dimensions, has a much stabler feel through the rough stuff.

While the stock YFZ450, with a simple addition of a slip-on exhaust and a few airbox mods can come alive, the Duncan Racing engine work gives it an even stronger and harder hitting motor that the extra-long-travel suspension is fully capable of handling. This is a machine that can easily win the Pro Production class with the right rider aboard. □