

When you think about it, it really is rocket science...

By the Rocket Science staff of Dirt Wheels



DUNCAN RACING SUZUKI LT-R450 QUADRACER

□ Suzuki moto-pilots already know they have a race-ready rocket in their garages. As reassuring as that is, one thing you can always count on: someone else is hard at work making their version of your race rocket even faster.

In this never-ending escalation of moto-warfare, you have to keep up on your rocket science courses just to make sure your missile is going to be competitive with all the other missiles unleashed out there.

ROCKET SCIENTISTS AT DUNCAN RACING

The experienced rocket scientists at Duncan Racing want to give your four-wheeled projectile a competitive edge over the competition. To do this

they have put their decades of knowledge gained from building a wide assortment of rocket propelled quads for racers and recreationalists alike to good use. To see for ourselves how their latest series of retro rocket mods perform, we had them bring out a fully fueled, modified, and blast-off ready LT-R450 QuadRacer to launch from our *Dirt Wheels* test gantry.

PREPARE FOR LAUNCH

Here is what was done to the test vehicle. They installed one of their 473cc National Engine kits (\$2945) on the machine. This bigger bore engine kit gives the machine an extra 23cc displacement and includes a complete Fat Boy exhaust system. It uses a 98mm JE Piston (standard bore is 95.5mm) with a stock stroke (62.8) motor.

The big bore Duncan engine kit

also uses an HP4 valve train kit and comes with DRI (Duncan Racing International) porting, a Serdi valve seat kit, a high output bottom-midrange camshaft, a big valve kit, shortened valve guides, a heavy duty valve spring kit, a Vortex EFI Interceptor, and complete tuning instructions and tech support.

"We recommend our big bore (473cc) 13:1 compression cylinder, and that our strip-bore-replate process be done to the cylinder," says Duncan founder Loren Duncan. "The 98mm big bore kit is the largest piston that can be safely put in the stock cylinder and still be used with the Nikasil plating. If a larger piston is used, the cylinder flange/skirt will crack, so we don't recommend going larger than this with this engine."

When asked why he likes to stick with the Nikasil lining, Loren replied, "The Nikasil plating offers maximum performance, reliability and engine cooling. It is unadvisable to install a steel big bore sleeve in the Suzuki LT R450."

FUELISH THOUGHTS

"On stock motors, you can run pump fuel," says Loren. "But with engines running higher 12:1 compression and up, you should run race fuel. We like 105-112 octane. Something like C-12 race fuel is an excellent choice," adds Duncan. "We feel we are getting right around an 18 hp gain with our 473cc kit for the QuadRacer, with lots of bottom and mid-range torque, making it pull much harder off the corners," claims Loren.

For the airbox, Duncan likes to use a Pro Flow air cleaner kit with custom K&N Filter and Outerwear, with the airbox lid off. When it comes to the fuel injection system, the Duncan LT-R473 uses one of their Vortex Interceptor EFI systems (included in the National Kit). DRI does not offer technical assistance for any EFI remapping kits other than the Vortex Interceptor kits.

CORE ISSUES

Customer must send in their cylinder, head assembly (with lifters) and camshafts. The camshafts supplied in HP4 and National Kits are billet (no core required) but the OEM camshaft sprockets must be removed from stock camshafts and installed on the new billets. This process is very technical and requires a special fixture to properly index the sprockets. In other words...let them do it for you. Standard delivery time for this process: four to six weeks.



DUNCAN LT-R450

▲ The field of rocket science has led the technicians at Duncan Racing to develop a new line of blast-off products for the Suzuki LT-R450 QuadRacer. Lift-off is planned for any track or trail near you.

Duncan Racings opts to use a 98mm big bore kit on their Suzuki 450 engine kit because they feel it is the largest piston that can be safely put in the stock cylinder and still be used with the Nikasil plating. ➤

ALTERNATIVE ENGINE KIT

Duncan Racing also offers a Suzuki LT-R450 Stage 2 bolt-on engine kit which sells for \$1099. It includes a complete Fat Boy 4 Exhaust System (with STD Muffler), Vortex EFI Interceptor, Pro Flow air cleaner kit (Pro Flow flange, K&N, Outerwear), and DRI graphics and seat cover kit. They claim this kit offers a more modest power gain of eight-plus horsepower.

If just looking better is your first goal, Duncan offers their Suzuki LT-R450 graphics and seat cover kit for \$129.95. It comes in a white/blue or yellow/blue combo.

SUSPENSION, CHASSIS & WHEEL & TIRE IMPROVEMENTS

Our newly outfitted Duncan rocketship also had an impressive array of state-of-the-art suspension and handling components installed on it, including a long-travel set of Roll/IMS



A-arms, Elka Elite shocks, and IMS/Roll steering stem, handlebars, nerfs, footpegs, heelguards, and bumpers and grab bars.

This was a machine that not only looked fast, it was designed to handle the increase speed factors with much better suspension action, and greatly improved overall handling and hookup. A set of ITP Holeshots MXR4 18x10-8 tires on back with ITP Beadlock aluminum wheels offered superior traction, while a set of ITP Holeshots 20x6-10 knobs with ITP Beadlocks got the call up front.

RIDE REVIEW

Once we fired up our rocketship racer on the *Dirt Wheels* launching pad we could tell this machine was meant for orbital flight. It rockets out of corners with a much meatier hookup and stronger acceleration. You could easily keep it a gear high and have it pull strongly to the next turn.

The overall handling and steering were first rate and the machine turns when and where you want it to. It still sits low to the ground, even with the longer travel Elka shocks and wider Roll/IMS A-arms. It holds a tight inside



With the IMS/Roll Design front A-arms and Elka long-travel suspension at both ends, the DRI LT473 has the handling chops to handle the increase in useable horsepower and torque.

DUNCAN



We really liked the effect of the blue anodized pipe and muffler. You can get the Duncan pipes anodized in several different colors.

DUNCAN RACING SPEC SHEET

Machine.....2007 Suzuki LTR 450
 Motor.....Bore 95.50
 Stroke.....62.8
 Exhaust.....Complete Fat Boy National system \$649.00
 Blue color upgrade add.....\$129.00
 Head Modifications.....DRI HP4 Kit \$1650.00

Includes: DRI porting, Serdi valve seat cut, billet #34 camshafts, HD Valves springs, shortened valve guides, oversized in & EX valves

Piston.....JE Forged 13.5-1 \$225
 Crank.....Stock with Knife Rod installed Rod/Knife rod \$ 225.00 install additional
 Ignition/timing/EFI Controller VORTEX Interceptor \$ 329.00

Airbox/filter....Pro Flow Air Cleaner kit
 Fuel.....VP C12
 Oil.....Maxima Premium 4

DRIVE SYSTEM

Clutch basket.....Hinson Billet \$230
 Clutch Kit.....DR-C45 \$199.00
 Clutch Cover/DR/Hinson.....\$199.00
 Gearing f/r.....14x36

FRONT END

A-arms.....Roll Design Lobo II Front suspension kit \$2995.00

Includes: Roll α-arms, tie rods, Elka shocks, Crown steel braided brake lines *additional charge for Trax shock upgrade must call Elka

Front shocks/wheel travel.....Elka Spindles.....Stock
 Steering stem.....Roll Design \$349.00
 Steering stabilizer.....Elka S3 \$425.00

REAR END

Swingarm/length.....stock
 Rear axle/width/carrier.....TEAM axle \$399 49"

TIRES/WHEELS/HUBS

Tires f/r.....ITP MX R6
 Tire sizes f/r.....20-6-10 \$64.95 ea./
 18-10-8 \$66.95 ea.

Wheels f/r.....Douglas Ultimate beadlock
 Wheels from \$212.00

Hubs.....stock

BRAKES

Calipers f/r.....Stock

Pads f/r.....Galfer 29.95 ea.

Brake lines.....Crown Series

Front.....\$109.95

Rear.....\$39.95

Brake fluid.....Maxima 550

HANDLEBARS/CONTROLS

Handlebars.....Universal \$ 99.95

Throttle.....Thumb

Clutch lever.....Works Connection \$129.95

Cables.....Motion Pro

Grips.....TAG \$15.95

Tether kill switch.....Pro Design \$ 34.95

MISCELLANEOUS

Nerf bars.....IMS-Roll \$199.95

Heel guards.....IMS-Roll \$ 159.95

Front bumper.....DR Chrome \$ 169.00

Seat.....Stock with DR/one seat cover

Body plastic.....Stock cut by DR

Footpegs.....IMS-Roll \$ 199.00

OTHER SPECIAL SETUPS.....DR/ONE

Graphic & Seat Cover Kit \$129.95

DR Block Off Plate.....\$ 14.95

DR Chain Guard.....\$29.95

Main sponsor/Builder.....Duncan Racing International Inc.

Co-Sponsors.....Roll Design, Elka, ITP, Douglas Wheel, Vortex, Pro Design, Escondido Cycle

Test Rider.....Jonathon Gauger



A Vortex Interceptor EFI fuel management system is used by Duncan Racing to get more efficient fuel intake for the Suzuki's standard fuel injection.



An Elka steering damper helps to tame the high-speed swap out of the handlebars. It is fully adjustable and rebuildable.



A Pro Design air filter and Outerwear cover helps to provide a steady supply of clean air to the DRI motor.

line when needed but can carve the outside easily with full on powerslides at your command.

Duncan's Vortex EFI system worked well and contributes to the smooth power output of the bigger bore engine. We ran it hard and it never coughed, sputtered or missed

a beat during our test.

Overall, the increase in power, improved handling, and extra smooth Elka suspension action made the ride on our LT-R450 a joyful blastoff experience. This is one smooth, roman candle rocketship that you can throttle up, knowing it isn't going to blow sky high. □