



BAJA YAMAHA YFZ450R

Taming the terrain

By the staff of Dirt Wheels

□ We are fortunate enough to find ourselves around some of the most epic ATV builds in the business, and this Baja Yamaha YFZ450R is one for our record books. Pro-Am WORCS racer Ricardo Gonzalez wanted to switch gears and race the wilds of Baja Mexico with his

team. They needed a machine built to handle a ton of abuse and last for hundreds of miles in the many different conditions that the course throws at the team. His long-time mechanic Kevin Avina was put to the test to create a Yamaha YFZ that was capable of winning in Baja.

Ricardo Gonzalez mainly competes in the WORCS races as a Pro-Am racer. He will soon become pro at the rate he is enhancing his skills.

POSSIBILITIES OF POWER

This build started with a 2018 Yamaha YFZ450R. It was stripped down to the frame and the engine was shipped off to get massaged by Duncan Racing Int. The installation of Duncan's HP4 valve train kit included head porting, SERDI valve seat machining, a billet camshaft, heavy duty valve springs, guides and a big valve kit. The DR mods didn't cease there. A custom JE piston was installed along with Duncan's aluminum overflow oil breather catch can and a Fat Boy 4 complete stainless exhaust system. They even incorporated their own clutch pack in conjunction with Hinson Racing's billet-proof basket, inner hub and pressure plate, and billet extra capacity Q/C cover. Avina installed a high-capacity/heat-sink oil cover from Zip Racing that has a sight glass built in.

Now that the engine gained extensive modifications to provide a ton of extra exhaust flow, an intake needed to find a new home on the YFZ that breathes much deeper than stock. Avina installed Fuel Custom's intake with a K&N air filter and a modified air box setup. The finishing step was to install a DR-tuned Vortex X10 ECU that controls fuel trim in three phases, and has 10 fuel and spark timing mapping selections.

Racing in the desert of Baja Mexico offers all types of terrain. The suspension was set up to handle high-speed racing, which includes natural jumps.

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Duncan Racing supplied their custom graphics kit along with a stylish front bumper.

In order to run the Yamaha for extended mileage, DR and Kevin found an impressively large fuel tank from a French company called Meca System that contracted Acerbis to create the tank. It has a dry-break setup installed on it to utilize a quick-fill gas can system to make refueling pit stops much faster. VP Race fuel fills up the gas tank to run the higher-compression motor.

SUPPLE SUSPENSION

Once the motor and power parts were mounted up on the quad, it was time to make the chassis a roller again. Avina likes to utilize Roll Design and Elka suspension on all of the team's ATV builds, and for good reason. Doug Roll is a genius when it comes to suspension setup. He exceeds expectations and works very hard to

get it right the first time. A set of Roll Design A-arms and tie-rods found their way onto the Yamaha, increasing wheel travel. Stage 5 Elka shocks were gutted and rebuilt by Roll to meet the needs of Baja. Doug will replace the inner shock cartridge with his own setup, re-valve and shim the shocks to work just right for your style of riding.

The rear of the quad has a stock swingarm and an RPM Dominator II adjustable axle. An Elka Stage 5 rear shock with Roll Design's linkage were bolted to the 450. DWT front and rear bead-lock wheels were installed. The wheels have 22-inch front and rear Maxxis RAZR 2 tires wrapped around them and are filled with Tire Blocks so flats won't slow the team down. Sunstar sprockets and a RK Excel chain transfer power from the engine to the rear axle. Now that the quad rolls, steering components could find their way on the build.

KEEP CONTROL

A +1 forward and +1 inch-taller steering stem from Roll Design bridges control from the tie-rods to the handle bar. Fasst Company provided the Flex handlebar to further smooth out the ride and cut down on vibration transfer to the team's hands. The bar gained a Honda TRX450R thumb throttle, a Works Connection clutch perch and lever, Powermadd Sentinel handguards and Oury grips.

Moving on down past the gas tank, the stock Yamaha seat was recovered by a Pro Top seat cover. The cover adds extra grip and traction. Foot traction is just as important, and Kevin relies on Rath Racing nerf bars and their monster peg setup to help Ricardo go fast. Generally, nerf bars aren't utilized in desert racing quads so rocks don't hit them and possibly dismount the racer, but Gonzalez prefers them.



Duncan Racing's Fat Boy 4 full exhaust system has a deep tone and helps promote increased power out of the engine.



Rath Racing competition nerf bars with their monster peg found a home on this machine. There is plenty foot traction available. Some Hinson components were installed as well.



A stock swingarm utilizes a Roll Design linkage to attach the Elka shock to the YFZ. An RPM Dominator II axle replaced the stock one. DR protection, Sunstar sprockets and a RK Excel chain were installed.

PARTS LIST

Campbell Racing Fabrication:

www.campbellracingfabrication.com

(435) 632-4902,

1/2-inch skid plate..... \$110

Douglas Wheel & Tire:

(800) 722-3746, www.dwtracing.com

ROK Series front bead-lock.....\$188.95

G3 Series rear bead-lock..... \$173.95

Duncan Racing:

(619) 258-6309,

www.duncanracing.com

Fat Boy 4 complete

stainless exhaust.....\$699

Engine rebuild.....\$795

Custom JE piston.....\$235

HP4 valve train kit.....\$1695

Aluminum over-flow

oil breather catch can.....\$139

Clutch kit.....\$199

"Crown Series" brake lines:

Front.....\$199

Rear.....\$39

Front bumper.....\$199

D'Cor Electric blue graphics.....\$149

D'Cor number plates.....\$89.95

Elka Suspension: (800) 557-0552,

www.us.elkasuspension.com

Stage 5 front shock.....\$1,724.99

Stage 5 rear shock.....\$1,309.99

Fasst Co.: (877) 306-1801,

www.fasstco.com

Flexx handlebar.....\$359.99

Bar pad cover.....\$10

Fourwerx Carbon: (262) 501-9696,

www.fwcarbon.com

Carbon fiber hood.....\$190

Fuel Customs: www.fuelcustoms.com

YFZ intake system.....\$325

GPR Stabilizer: (619) 661-0101,

www.gprstabilizer.com

V1 ATV damper.....\$525

Hinson Racing: (909) 946-2942,

www.hinsonracing.com

Billet proof basket.....\$259.99

Inner hub, pressure plate.....\$599.99

Billet extra capacity Q/C cover..\$159.99

Maxima Racing Oils: (800) 345-8761,

www.maximausa.com

Syn Blend Ester 10W-40...\$11.03 a quart

Brake fluid DOT 4.....N/A

Maxxis: www.maxxis.com, local dealer

RAZR 2 22x7-10 front.....\$163

RAZR 2 22x11-9 rear.....\$197

(800) 858-3333

Custom.....N/A

RK Excel: (760) 732-3161,

www.rkexcelamerica.com

520 EXW chain.....N/A

Powermadd: (651) 462-8465,

www.powermadd.com

Sentinel handguard.....\$40

ATV mounting kit.....\$45

Rath Racing: (320) 234-7223,

www.rathracing.com

Rear grab bar.....\$119.95

Competition nerf bar.....\$464.95

Roll Design: (760) 731-5920,

www.rolldesign.com

Long-travel control arms.....\$1,495

Powder coating.....\$95

+1 forward +1 tall anti vibe

steering stem.....\$299.95

Anti-vibe bar clamp.....\$99.95

Linkage.....\$100

RPM: (928) 771-9363,

www.team-rpm.com

Dominator II axle.....\$389.99

Sunstar: www.sunstar-braking.com

Power Drive countershaft

sprocket 14T.....\$23.95

Rear steel sprocket 38T.....\$34.95

Tire Blocks: (253) 973-5111,

www.ridetireblocks.com

21x7-10 kit.....\$100 a tire

20x11-9 kit.....\$137.50 a tire

Vortex Ignitions: www.vortexcdi.com

X10 ECU.....\$699

Works Connection: (530) 642-9488,

www.worksconnection.com

Engine plugs.....\$39.95

Front brake reservoir cap.....\$29.95

Zip: www.zipracing.biz

Pro Top seat cover.....\$155

Heat sink/extra capacity oil cover...\$189



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The underside of the ATV is protected by Duncan Racing and Campbell Racing Fabrication. CRF offers a 1/2-inch-thick UHMW polyethylene under-belly skid plate. The poly material slides over rocks and roots much easier than aluminum. Duncan has been generating different variations of swingarm skid plates for the Yamaha to see what will outperform the com-

petition, and this YFZ gained one of their designs. A Duncan front bumper was powdercoated black and mounted to the front of the Yamaha with their Crown Series brake lines on the front and rear. A Rath Racing rear bumper rounds out the protection parts.

BUILT TO BATTLE

Baja builds character, there is no doubt about it. You are racing often

Sponsors: Duncan Racing, Roll Design, Elka, LJV Transport, SD Truck Parts, Kano's Co, E&R Truck Service, GF Freight, Fat Boy 4 Exhausts, GPR, Fasst Co, Hinson Racing, DWT Wheels, ZIP ProTop Seat Cover, Vortex ECU, RK Chain, Rath, Tire Blocks, PEP Tuning, CRF, Black Rhino, Works Connection



The Duncan Racing-built Yamaha YFZ450R engine has plenty of power to pop the front wheels up. A Campbell Racing Fab belly skid plate and DR swingarm skid protect the bottom of the quad.

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Oury grips, Fasst Company Flex Bars, a Works Connection clutch perch and lever, and Powermadd Sentinel handguards all work great together.

times with no one around you for miles upon miles in harsh desert terrain. Later in the race, if your machine is still running, you'll be passing broken quads, dirt bikes, trucks, buggies and more. There are helicopters flying overhead tracking the leaders and relaying radio messages about downed vehicles along the hundreds of miles of course. There are massive sand washes, 2- to 5-foot deep whoops, boulders and massive silt pits to traverse. This



Duncan Racing had a seat cover made up by Pro Top. There is a lot more grip than the stock seat cover.

build had to be ready to tackle all of that for hours on end.

The first thought when we sat down on the Yamaha was, "Wow, this seat is pretty low for a desert quad." In fact, they installed a lowered subframe on the YFZ. Avina informed us that it helps the rear suspension work better when the weight is lower to the ground. We didn't argue that for a second once we ripped through the first section of whoops at almost uncom-

fortable speeds. The Roll Design and Elka setup was brilliant. It soaked up everything we pointed the wheels at.

The power was the next impressive factor. Generally, you don't want to over-build an engine for long desert races. They are required to go for well over six hours per race and built motors don't often have a long life span. Duncan Racing massaged the engine, and it was very fast, yet smooth to operate, and it held together



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Roll Design long-travel A-arms were mounted up with Elka Stage 5 shocks that were gone over and tuned by Roll Design. A GPR stabilizer helps keep the wheels pointed in the right direction. (Top right) A heat-sink/oil cover by Zip Racing was installed on the Yamaha to offer more oil capacity and cooling. Works Connection engine plugs found their way on the build.

just fine. Fortunately the Meca System fuel tank was installed that held over 5 gallons of VP fuel, because the motor certainly swallowed it as fast as the PEP tuning allowed. The stock gearing worked out just fine while running 22-inch-tall desert tires filled with Tire Blocks. The 450R felt nimble and planted wherever we took it, and the GPR steering stabilizer did a great job at keeping the Fasst Co. Flex handlebar in our hands.

FINAL THOUGHTS

Ricardo Gonzalez's "Built for Baja" Yamaha YFZ450R is one of our favorite desert builds to date. Kevin Avina put it together well, with a little help from one of our editors, and utilized years of experience to make sure it was safe to ride at a pro level. We are excited to see what the team will do with a Yamaha against a field of veteran Honda TRX450R racers in the wilds of Baja, Mexico! □



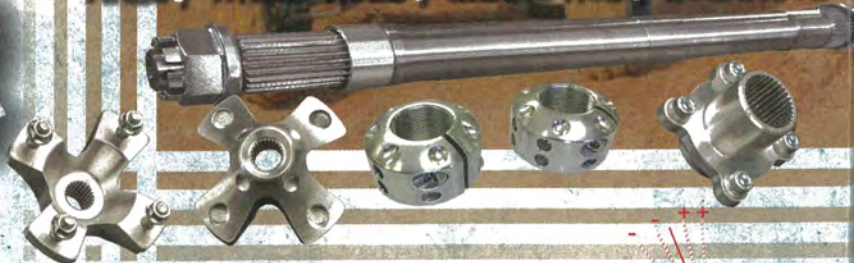
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