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# RETURN OF THE TRX450R

## Bred to win

By the staff of *Dirt Wheels*

photos by Pat Carrigan

□ There is no doubt that Duncan Racing International (DRI) helps breed winners. Erin Simmons relies on the DRI team of Loren and Leonard Duncan to build and prep his AZOP championship-winning Honda TRX450R. Going fast in Grand Prix-style racing is no small feat. Having a quad ready to tackle multiple types of terrain is half the battle of competition at a pro level. Simmons is no slouch on a quad, either. Winning races requires skill, determination, quick thinking, and a sprinkle or two of talent doesn't hurt. We met with the DRI crew to test a few of their sterling builds, and Erin's performance racer made the cut.

### FIRE BREATHER

Erin needs a quad that is pro-level race-ready. Honda's TRX450R continues to compete successfully in many types of competition. The motor can handle a lot of upgrades to produce more power while retaining reliability. Loren Duncan tackles the engine tear-downs, rebuilds, machining and more for the company. He massaged the Simmons motor with DRI's National 450cc kit.

Loren used his vast experience to put together a JE piston, X22 Baja camshaft, valves with titanium retainers, valve springs, and valve guide kit that seamlessly work together. On top of that, he expertly ports and polishes the cylinder head, and machines the valve seats. He went a step further and had the crankshaft Cryoheat-treated to reduce friction and wear. The National 450cc kit also includes DRI's Fat Boy 4 complete stainless steel exhaust system. Simmons wanted the muffler custom-anodized and powdercoated.





## SIMMONS TRX450R

Duncan Racing's Fat Boy 4 full stainless steel exhaust system helps the TRX450R engine produce a great power output.



Once the top-end work was performed, the clutch was massaged. DRI uses its own clutch kit with a Hinson Racing's clutch basket topped with a DRI quick-change clutch cover. Duncan's oil cooler kit helps reduce engine heat and keeps power levels up with an assist from Maxima oil. Once the engine is completed, it's handed over to Loren's brother, Leonard, who handles chassis building. Leonard is also Simmons' mechanic and preps the race quad for each round of racing. The engine was mounted in a freshly powdercoated TRX frame after a DRI gusseting kit was welded in. Powder 1 took care of the coating. Before the rest of the 450R was put together, Leonard installed a 41mm FCR carburetor that

had a kit from DRI included. Next, a DRI-massaged Vortex X10 programmable CDI box was added. The intake system came from Pro Design with a custom-fitted K&N air filter. That finished off the power parts.

### SUPPLE SUSPENSION

We aren't surprised that Duncan installed Roll Design (RD) products on this build. Roll offers top-of-the-line suspension, steering and handling components for most ATVs. The stock steering stem was replaced with a +1-inch-taller RD anti-vibe stem. GPR's V1 steering



Simmons relies on DWT beadlock wheels, Maxxis tires and Tire Blocks for traction and flat prevention.

## PARTS & CONTACTS

### CAMPBELL RACING FABRICATION:

(435) 632-4902,  
www.campbellracingfabrication.com  
1/2-inch skid plate ..... \$110

### CRYO HEAT: www.cryoheat.com

Cryo treatment & micro polishing ..... \$375

### DOUGLAS WHEEL & TIRE:

(800) 722-3746, www.dwtracing.com  
Front & rear beadlock wheelset ..... \$749

### DUNCAN RACING: (619) 258-6309,

www.duncanracing.com  
Baja frame prep ..... \$450  
DRI National 450cc kit ..... \$2595  
FCR 41mm carburetor kit ..... \$699  
Oil cooler kit ..... \$995  
DR-C14 clutch kit ..... \$199  
DRI/D'Cor Simmons

SE graphics kit ..... N/A  
Quick-change clutch cover ..... \$199  
Parking brake block-off ..... \$14.95  
Chrome front bumper ..... \$199

Crown Series  
steel-braided brake lines:  
Front ..... \$119.95  
Rear ..... \$39.95

### ELKA SUSPENSION:

(800) 557-0552,  
www.us.elkasuspension.com  
Stage 5 front shocks ..... \$1,795  
Stage 5 rear shock ..... \$1,295  
Rear linkage ..... \$399

**FASST CO.:** (877) 306-1801,  
www.fasstco.com  
Flex handlebar ..... \$359.99  
Bar pad cover ..... \$10

**FOURWERX CARBON:** (262) 501-9696,  
www.fwcarbon.com  
Plastic hood ..... \$130

**GPR STABILIZER:** (619) 661-0101,  
www.gprstabilizer.com  
V1 ATV damper kit ..... \$549

**HESS MOTORSPORTS:**  
(940) 759-4597,  
www.hess-motorsports.com  
Rotor guard ..... \$150

**HINSON RACING:** (909) 946-2942,  
www.hinsonracing.com  
Works IH/PP clutch basket ..... \$499

**IMS PRODUCTS:** (800) 237-9906,  
www.imsproducts.com  
3.7-gal. fuel tank w/ dry brake ..... \$274.95

**MAXIMA RACING OILS:**  
(800) 345-8761, www.maximausa.com  
**MAXXIS:** www.maxxis.com, local dealer  
RAZR 2 - 21x7-10: ..... NA  
RAZR 2 - 20x11-9: ..... NA

**MOTION PRO:** (650) 594-9600,  
www.motionpro.com  
Vortex twist throttle ..... \$27.99

**OURY GRIP:** (800) 333-6879,  
www.ourygrips.com  
Waffle grip ..... \$11.99

**POWDER 1:** (619) 588-9200,  
www.powder1.com  
Powdercoat ..... \$375

**POWERMADD:** (651) 462-8465,  
www.powermadd.com  
Sentinel handguard ..... \$40  
ATV mounting kit ..... \$45

**PRO DESIGN:** (714) 534-0620,  
www.prodesignracing.com  
Pro Flow kit w/ K&N filter ..... \$169  
ATV kill switch & tether ..... \$34.95

**RENEGADE RACE FUEL:**  
(800) 733-3381,  
www.renegaderacefuel.com  
**RK EXCEL:** (760) 732-3161,  
www.rkexcelamerica.com

O-ring chain ..... \$85  
**ROLL DESIGN:** (760) 731-5920,  
www.rolldesign.com  
MX Lobo II A-arms ..... \$1595

+ 1/2-inch swingarm: N/A  
+ 1-inch steering stem ..... \$299  
Footpegs ..... \$239  
Heel nerf bars w/ heel guards ..... \$239

**RPM:** (928) 771-9363,  
www.team-rpm.com  
Dominator II axle ..... \$419  
Bearing carrier ..... \$249  
Anti-fade locknut ..... \$219

**SUNSTAR:** (937) 704-1462,  
www.sunstar-braking.com  
Powerdrive 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 programmable CDI ..... \$535  
**WORKS CONNECTION:** (530) 642-9488,  
www.worksconnection.com  
Clutch perch assembly

w/ hot start ..... \$189.95  
**ZIP:** www.zipracing.biz  
Pro Top DR seat cover ..... \$199

**SPONSORS:** B&B Auto, Antelope Slot Canyon Tours, Duncan Racing, Roll Design, Elka Suspension, Fat Boy 4 Exhaust, RK, Hinson, GPR, DWT, Faast, Works Connection, CRF

stabilizer tackles stabilization duties. Roll's MX Lobo II A-arm kit was bolted onto the frame utilizing OEM Honda spindles. This kit adds width and more wheel travel than most aftermarket A-arm manufacturers. Roll utilizes Heim joints that allow you to adjust multiple facets of the kit's alignment to match the terrain you ride in. Attached

to the arms are a set of Elka Stage 5 fully adjustable shocks.

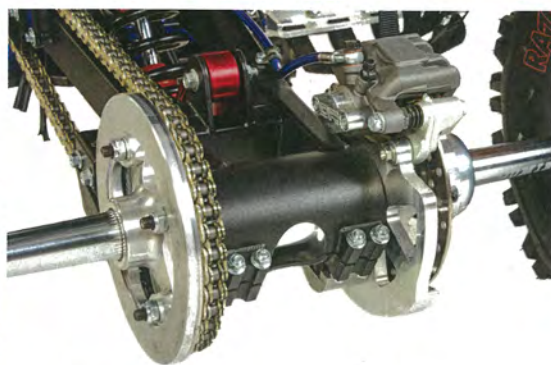
The rear end of the Honda gained the same suspension treatment. The new swingarm is a 1/2-inch longer than the stocker. Elka's remote reservoir Stage 5 shock and linkage kit found their way onto the Honda. DRI installed the Crown Series steel braid-

## SIMMONS TRX450R

*Roll Design suspension and Elka shocks provide a lot more travel compared to stock and an outstanding ride.*



*A Works Connection clutch perch has a built-in hot-start lever to get the Honda fired up. A Pro Design ATV kill switch is required for closed-course racing. Oury grips are soft and lessens the chance of getting blisters on your palms.*



*A DRI sprocket guard saves the Sunstar sprocket and RK Excel chain from getting damaged. A Hess Motorsports product protects the rear brake rotor.*



*Roll Design makes a great heel guard, footpeg and nerf bar combination. The footpeg is much wider than stock.*

ed brake lines to replace the stock ones. Leonard matched the new front width, with an RPM rear axle. The axle is very strong and allows you to change the width as required. RPM's bearing carrier and anti-fade locknut were also used.

### DETAILS MATTER

The suspension isn't the most important handling component. Every piece plays a critical part in getting an ATV to move and steer how you want it to. Mounted atop the Roll Design anti-vibe clamp is a Fasst

Company handlebar that utilizes elastomers to lessen vibrations and hard hits to the rider. Mounted to the bar on the left side is an Oury grip with a Works Connection clutch perch, hot start and lever combination next to it. You won't find

## SIMMONS TRX450R



*Elka Stage 5 shocks are connected to Roll Design's MX Lobo II kit for this Duncan Racing-built Honda TRX450R. A GPR stabilizer keeps the wheels in the right direction.*

*Loren Duncan pulled apart the entire engine and rebuilt it with their National 450cc kit. They also bolted on an oil cooler to lower engine temps.*

a control cluster for starting since the quad is kick-started. Powermadd Sentinel handguards protect the controls and Erin's digits. On the right handlebar, a Motion Pro Vortex twist throttle is preferred.

Renegade race fuel feeds the thirsty engine and is contained in a large

3.7-gallon IMS fuel tank with a dry-break quick-fill setup. Pit stops need to be fast in racing, and a dry-break setup gets the job done in less than half the time. The OEM plastics were reused with a custom-made DRI/D'Cor graphics kit that show all of Erin's sponsors, including his own father's

company, Antelope Slot Canyon Tours. Off-roading is in the Simmons family blood. The stock hood was replaced with a much more stylish FourWerx Carbon white plastic addition.

Heading downward, the stock seat was recovered with a Pro Top DR seat cover that adds a lot more grip for

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*The power output of this quad is strong yet easy to wield in the hands of experienced riders.*

Simmons' rear. On the front of the Honda sits a chrome DRI front bumper. Erin uses Roll Design nerf bars and heel guard/foot peg combos on his build for protection from other racers and great foot traction. Speaking of protection, the bottom of this Honda is covered by a 1/2-inch-thick Campbell Racing Fabrication skid plate. The rear brake rotor is guarded by a Hess Motorsports-crafted aluminum guard. One of our editors still runs that exact guard on his personal racer after two years of success. The new Sunstar rear sprocket and RK Excel chain is protected by a DRI aluminum guard.

## THE RIDE

Climbing aboard a built Honda TRX450R feels like home for us. Simmons' Duncan-built ride was no exception. Everything worked together flawlessly. That includes the DWT beadlock wheels wrapped with renowned Maxxis RAZR 2 tires and filled with Tire Blocks. Once we grabbed a handful of throttle, and the tires found traction in the dry SoCal dirt, the DRI-built motor rocketed us away. The power output

is quite potent but not overwhelming. The hit off the bottom is smooth, yet it has a much meatier midrange, and the engine continues to pull through the top end quite hard. We didn't have any wet dirt to truly feel how strong the torque down low is.

Control is key for any machine, and a motor that is as easy to use as the suspension is supple is going to be a winner. The combination of Roll Design suspension and Elka shocks has won more races and championships than we can count. Erin's Honda was able to soak up any terrain that we guided it to. Chop was soaked up, whoops were gobbled and landings were smooth. The quad corners just right for Grand Prix racing with enough clearance for rough sections, but it slides the rear controllably and easily.

Overall, Duncan Racing knocked another build out of the park and never ceases to impress. Their extensive experience is helping Erin Simmons transfer his great skills to the quad and win races! Stay tuned for more builds from their crew. □