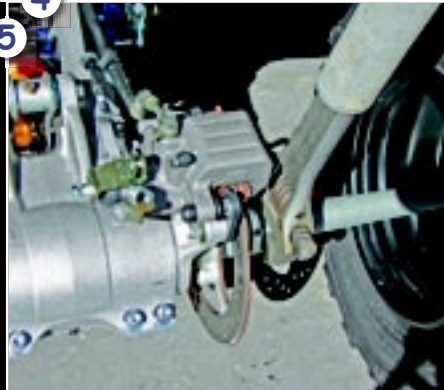
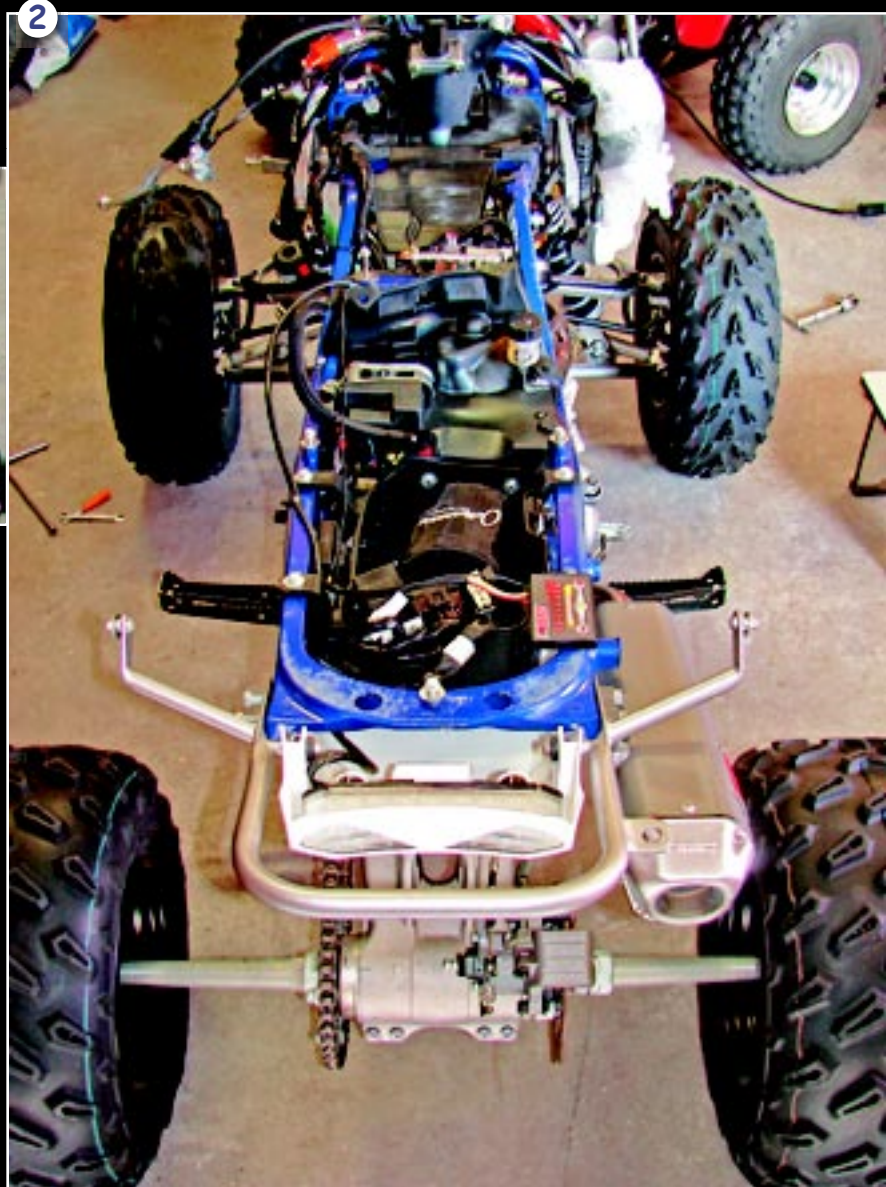


Dream raptor

With a lot of help from our advertisers, and two ATVA crew members who just wouldn't quit, we managed to build one of the best looking Raptors in Oz. She stops. She goes. And she's beautiful. What more could you want?





In the last issue of ATV ACTION we took a bone-stock Yamaha Raptor 700 and gave the already strong engine a steroid injection with a DMC dual exhaust system, DMC fuel management unit and a K&N high flow filter. These mods instantly morphed the mild mannered and well behaved Raptor into the Incredible Hulk.

Only one problem though: we soon realised the extra muscle being flexed by the Raptor's impressive 700cc engine was now reaching, if not exceeding the very limits the factory suspension was designed to deal with. That was nasty, in fact it was a downright health hazard. Oh yeah, she was fast! To remedy the problem we decided to upgrade all the suspension components, as well as add some safety features, and for good measure a bit of bling bling!

To start a project of this magnitude you'll need to allocate a considerable amount of time. In the case of the Raptor 700 it took a total of 70 hours to complete, and this is by no means the first build the crew of ATV ACTION has tackled. If anyone thinks they can start a project like this on a Friday evening with a couple of buddies, a case of coldies and have it ready to ride the next day, think again!

This is one of the biggest builds ATV ACTION has done to date and as you can see, the finished product is

Okay boys, here's exactly what we did and how we did it.

- 1: Aftermarket bootie.
- 2: Naked Raptor.
- 3: Stock rear shock versus fat Elka.
- 4: Elka shock fits snugly into place.
- 5: It will take plenty of muscle to crack the axle nut lock.



- 6: Use plenty of anti-seize on all axle splines.
- 7: Clean all bolts with a wire brush.
- 8: Use Loctite 243 on all critical bolts.
- 9: New rear end aftermarket parts bolted in smoothly.
- 10: Use a ballpeen hammer and piece of scrap aluminium to break free tapers on tie-rod ends and ball joints. Do this by striking the side of the spindle as pictured.

outstanding. Looking the part is only half the story though. Would it live up to our expectations when we climbed aboard and screwed her on? The answer was a resounding yes! We took the Raptor to Stockton dunes for a thorough shakedown and that first ride inspired confidence. The Raptor is now so easy to control that even an inexperienced rider can charge over treacherous terrain at high speed without raising a sweat.

Industry heavyweights, Hardiman ATV and Yamaha Australia kindly offered to supply the parts to turn the Raptor into a URA (Ultimate Recreational ATV). We should add at this point that without the efforts of contributing editor Scott Bentley, and the seemingly endless man-hours devoted to this project by Tireless Tony Caban (although he's looking a bit shagged at the moment) we'd still be 'thinkin' and 'drinkin'.

The extra horsepower that couldn't be fully utilised with the stock suspension has now been completely tamed by the aftermarket suspension package, allowing the Raptor to carve through corners at ballistic speeds. The only



"OUR RAPTOR 700 TOOK A TOTAL OF 70 HOURS TO COMPLETE"

PROJECT PARTS LIST

PART 1

DMC Dual Exhaust System	\$1249.00
DMC Fuel Management Module	\$399.00
K&N High Flow Filter Kit	\$209.95

PART 2

Lone Star DC4 +2 +1 MX Long Travel A-Arms in Custom Candy Blue Lower and Chrome Plated Upper	\$1749.00
Lone Star Axcaliber Axle	\$789.00
Lone Star Braided Brake Lines	\$159.95
Lone Star Billet Brake Line Clamps A Pair	\$49.95
Lone Star + 2 +1 Cro-molly Steering in Chrome Plate with anti-vibe Billet Fat Bar Mounts	\$649.00
Lone Star Billet Alloy Front Wheel Hub	\$549.00
Lone Star Billet Alloy Rear Wheel Hub	\$330.00
Lone Star Billet Sprocket Hub	\$249.00
Lone Star Billet Axle Lock Nut	\$169.00
Lone Star Billet Brake Block	\$24.95
Elka Elite Long Travel Front Shocks	\$2195.00
Elka Elite Rear Shock	\$1695.00
TAG Metal Alloy Handlebars	\$159.00
Powermadd Hand Guards and Mounts ..	\$99.00
Spider Grips	\$24.95
Braking Wave Rotors Front each	\$165.00
Braking Wave Rotor Rear	\$175.00
UM Performance Polished Alloy Radiator Grill	\$159.00
Yamaha GTYR Front Sports Bumper	\$294.92
Yamaha GTYR Nerf-Bars	\$495.43

These parts can be purchased through:
Hardiman ATV (02 4353 3622)
Yamaha Australia or your local Yamaha dealer.

BLOOD DONORS:

Yamaha Australia
Hardiman ATV
Crew Chief Tony Caban

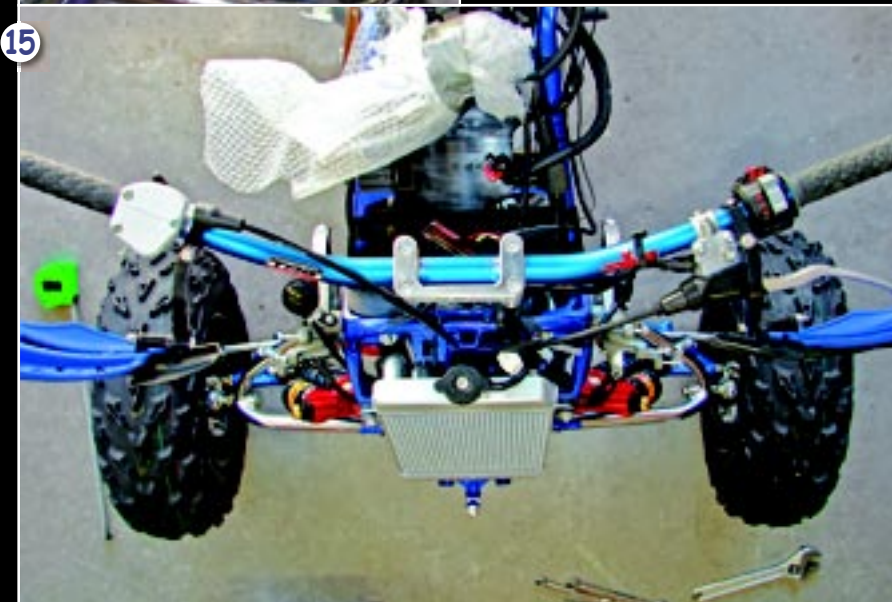
weakness was the stock tyres, and we'd change them for rubber with a more aggressive tread pattern to get more traction.

A lot of time and energy went into this project but the end result was well worth the effort. We believe this is the Ultimate Recreational Raptor and well worth the hip pocket pain for all that we gained.

TIPS TO MAKE IT EASIER

To get the ball rolling it's best to first remove all the body fenders and shrouds to allow easier access to the parts to be replaced. Jack up the Raptor and place it on a solid stand, remove the rear wheels, axle hubs, and unbolt the rear shock and linkage. Fit replacement shock in position, being careful not to damage remote reservoir when threading through frame to its forward mounting point. Apply rear brake and use a large shifting spanner to crack the axle nut. Loosen off swing-arm carrier cinch bolts. Undo axle nut, disc brake bolts, sprocket bolts and rear brake caliper (there's no need to disconnect brake line or brake drive chain).

Remove sprocket and brake disc. Proceed to slide out the axle from the bearing carrier (if axle won't budge, put axle hub nut back on axle and place a solid block of timber against end of axle and strike with large hammer). Prepare new axle by first mounting billet alloy sprocket carrier into position and then generously apply an anti-seize compound to disc carrier splines (check bearing and seals are serviceable in axle carrier before installing new axle). Slide new axle back into position and



"WE BELIEVE THIS IS THE ULTIMATE RECREATIONAL RAPTOR"

- 11: Stock front shock versus long travel Elka.
- 12: Stock A-arms versus extended aftermarket A-arms.
- 13: Greasing the front end.
- 14: Adjust pre-load on springs to set desired ride height.
- 15: It's essential to centre handlebars before carrying out front end adjustments.

refit sprocket. Replace disc holder,)-ring and locknut onto axle, bolt up new wave disc rotor. Reposition brake caliper and torque axle lock nut. Apply anti-seize to axle hub splines, set adjustable axle spacers to desired width and fit new billet hubs and lock nuts. Refit rear wheel sets.


With the quad still jacked and supported, remove front wheels and complete front suspension, including disconnecting the brake-lines. Strip down all handlebar parts including



- 16: The quad must be on level ground before proceeding with adjustments.
- 17: Use a degree gauge to measure castor.
- 18: Adjust castor via top left and right A-arm rose joints.

HALF WAY THERE

thumb throttle, brake reservoir, clutch perch and electric switches. Unbolt handlebars and steering stem and remove. Fit +2 +1 Chromolly steering stem. Mount handlebars and adjust to preferred position. Refit handlebar mounted components and adjust to suit.

Prepare long travel A-arms by lubricating stock bushes and fitting dust caps. Mount top and bottom A-arms into chassis, reinstall spindles and new billet hubs. Bolt new front wave disc rotors onto billet front hubs. Install long travel front shocks between chassis and A-arm mounting points. Remove stock tie-rod ends from tie-rods and screw on to the new longer tie-rods (note one end of each tie-rod is a left handed thread). Connect one end of tie-rod assembly to steering stem and the other to spindle. Remount front brake calipers and run +2 stainless steel brake-lines from brake reservoir to each front caliper. Top up brake reservoir with approved brake fluid and bleed brake system. Refit front wheels and lower quad back to solid ground. 

“AND NOW THE BOYS ARE LINING UP TO RIDE IT”

Adjust suspension ride height, front and rear, to best suit the type of riding you'll be doing. Applicable ride heights are set out in the manufacturer's supplied booklet.

Now for the hard part.

The following steps are crucial in setting up the front end geometry of a performance ATV. Before you start, inflate all tyres to same air pressure and chock wheels. Ensure the quad is on flat level ground.

CASTOR: Use a degree measuring gauge and place against a straight-edge between the left-hand top and bottom ball joints and take a reading (Lone Star recommends 4 degrees castor). If not within tolerance, adjust by removing top A-arm and screwing in or out the rose joints till correct settings are achieved. Repeat on the right-side A-arms.

CAMBER: Place straight edge against the outside of the left-hand front rim, resting degree gauge against straight edge, then take measurement (Lone Star recommends 2 degrees negative camber). If this measurement is out, positive or negative camber can be adjusted by screwing in or out the A-arm ball joint (when the wheels tilt outward at the top the camber is positive, when the wheels tilt inward at the top the camber is negative).

TOE IN

Take a measuring tape and measure from the ground to the centre of the front hub. Use this centre line measurement and transfer it to the face of the front and rear tyre and mark with white pen. Fully screw in steering tie-rod ends. Centralise handlebars. Using a tape, take a measurement from the side of tyre inline with white mark across to a fixed point on quad frame. Repeat on the opposite side of the quad. Now take a measurement from the centre face of left-hand front tyre to the centre face of right-hand front tyre and write down measurement. Repeat procedure on the rear face of the front tyre. Lone Star recommends 6mm toe in for the Raptor. Screw tie-rod an equal amount on both sides to achieve correct toe in (you may have two or three goes at it to get right).

HOME RUN: Remove stock bumper and replace with custom bumper. To increase safety we installed a set of Yamaha GTYR nerf bars, which is a straight forward operation thanks to the excellent instruction booklet supplied by Yamaha. The last operation is to replace the fenders and shrouds. For added bling we fitted a polished alloy radiator grill. Congratulations, job done!



19: Measure camber by placing gauge on straight edge against side of rim.

20: Use a tape to take toe-in measurements.

21: Adjust toe-in by screwing tie-rods on left and right side of quad.

22: Fit nets before installing nerf bars.