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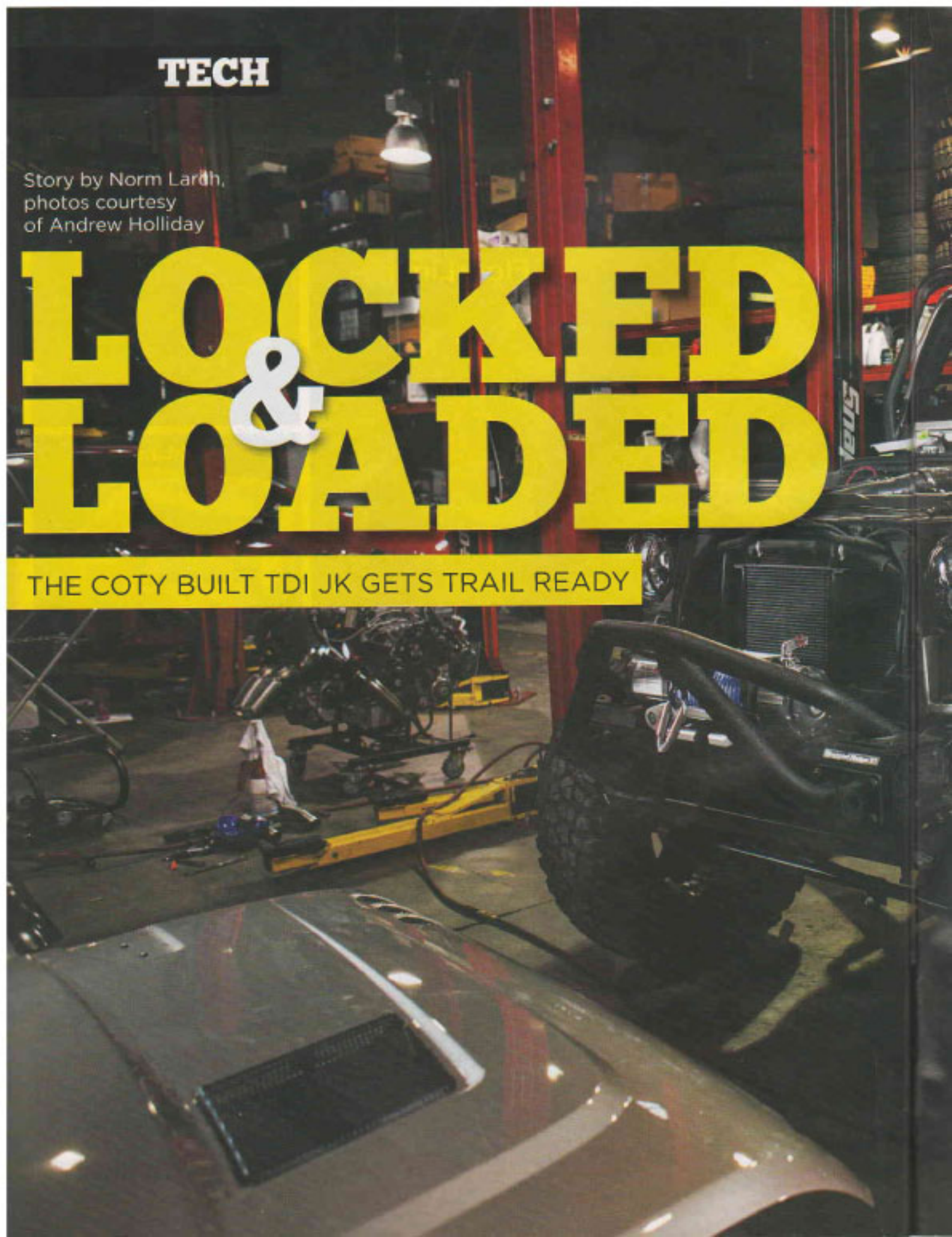
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TECH

Story by Norm Larch,
photos courtesy
of Andrew Holliday

LOCKED & LOADED

THE COTY BUILT TDI JK GETS TRAIL READY







A well-worn set of axles gets upgraded to chromoly.

Chromoly U-joints and a fresh coat of paint will do wonders.



As we pick up with the Vancouver build team at Coty Built, the progress on their 2007 TDI JK X is spooling up. Volkswagen's 2.0L TDI promises instantaneous torque delivery and throttle response, something the JK has not been praised for to date. The 2.0L TDI came to North America in a 140HP trim for the Passat and Jetta. For their JK X build, the team at Coty Built reached across the pond and sourced the European 170HP variant. This engine rolled out of the factory with larger injectors, a larger turbo and a head designed to accommodate both. Horn is confident that this little Wrangler will enjoy 220 hp and looks to realize 400 ft-lb once his team has it dialed in. Impressive numbers if the fuel efficiency can remain north of 9.8L/100km (24 mpg)!

Unlike its native Volkswagen chassis, this euro spec 2.0L TDI will not enjoy a power train outfit with low friction CV joints, smooth low profile tires and a highly evolved aero package. No, it will be delivering its torque through a gnarly set of 37-in BFG tires while pushing wind with about the same profile as a brick. To ensure a good balance of drivability and mileage, the team called on the gurus at Yukon Gear and Axle.

Kevin at Yukon knew exactly where



Auburn Gear's ECTED-Locker with Yukon 5.13 gearing getting installed front and rear.

to start. The rear 30-spline Dana 44 would receive upgraded chromoly shafts, while up front, the factory high pinion 27-spline Dana 30 would be up for a complete front chromoly axle kit with U-joints. The JK X is unique in that the factory upgraded the rear with the 30-spline Dana 44, leaving the high pinion 27-spline Dana 30 up front. Today, all JK's come with a Dana 44 standard at the rear.

This 2007 X had factory 4:10 gearing,

which would simply be mismatched with the power band of the TDI when running larger 37-in tire package. As such, Kevin recommended Yukon Gear and Axle's 5.13 ring and pinion upgrade. When tearing down the crusty OEM axles, Yukon offers a full master overhaul bearing and seal kit.

On Coty Built's 1.9L PD TDI conversion for the YJ and TJ, they have been running 33-in tires on 15- and 17-in rims. The majority of these builds ship with

New 4-in lift and long travel shocks will help get the JK off the ground.



4:56 gearing, but recently, a large turbo variant was built and 4:88 gearing was matched to the 33-in tires and the off-the-line response on the street was deemed as a perfect fit. The team is excited to see how the more powerful 2.0L feels with the 37-in tire and 5:13 gearing combination.

Over the past few seasons, while out on the trails shaking down the TDI conversion systems, the team at Coty Built have come to favour electronic lockers. The ability to disengage the front axles at the crest of a climb prior to making a blind turn has almost become a trail prerequisite. With the axles torn down, this is the right time to make this upgrade. Summit Racing was called on and the Summit team recommended Auburn Gear's ECTED-Locker. Short for Electronically Controlled Traction Enhancing Differentials. Manufactured in the USA, Auburn Gear has been a leader in the field of performance automotive differentials for over 40 years. A robust cone-clutch mechanism is the cornerstone of their design, allowing it to work as a Limited-Slip-Differential when turned off, and fully locked when turned on.

With the axles in good order, a Rugged Ridge 4-in lift kit was installed to offer appropriate wheel clearance and suspension articulation. Choosing suspension kits for

the JK platform may seem overwhelming. There are so many brands, each with their own grand claims. What Coty Built appreciates about the Rugged Ridge brand is that their systems have proven to manage higher-level trail demands, while still offering good day-to-day street driving. The rusty factory suspension arms and worn bushings were crying out for attention and attention they received. Rugged Ridges' comprehensive lift package includes bushings, springs, dampers and new stout arms, with four longer travel nitrogen charged dampers to round out the kit. With the added rolling diameter and 4-in suspension, this JK has adopted an aggressive Tonka look and feel.

With a parent company that specializes in ultra fast streetcars, it is no surprise that Coty Built took a page out of HPA Motorsports tuning book and looked at upgrading the brakes. Having an existing relationship with Baer Brakes, they were thrilled to learn that Baer had recently developed a front and rear big brake kit for the JK. The radical increase in wheel diameter, coupled with the bump in rolling mass, sparked the demand for more responsive and durable braking solutions. Now, add in the performance targets for the TDI conversion, and this upgrade was a top priority.

Baer's front system features the 6P



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The lift kit in place.



Baer Brakes made a specific big brake kit to upgrade the JK's braking performance.

6-piston caliper mounted to a 13.5-in 1-piece zinc plated rotor. This is designed as a direct bolt on for the JK, and re-uses the factory hoses. At the rear, Baer's S4 4-piston caliper is mounted to a 12.2-in 1-piece (stock size) zinc plated rotor. This system is designed to reuse the factory Jeep park brake assembly, and comes with Baer's unique Verislide brackets to allow the 4-piston caliper to float with the stock C-clip axles. Baer designed this system to fit under a 17-in wheel, so tucking them under the planned 20-in wheels won't pose an issue.

The only thing missing on this build was lighting. The company's show hauler, which covers tens of thousands of kilometres a year to meet and greet enthusiasts from coast to coast, relies on high tech lights from JW Speaker. In northern BC, where the city limits are long forgotten, you can truly encounter a black night. Horn enjoys hitting the trails at night and as such was looking for a comprehensive solution for this build.

A black face was requested for the headlights and roof top lights to offer additional attitude to function. JW Speaker offers factory replacement fitment for both the headlights and front bumper fogs. Since their entry into the market, they have made great efforts to listen to their customers and the 8700 Evo II headlights being installed are the latest evolution, where beam patterns have been enhanced and their innovative new Comfortlite TM high beam delivers additional illumination above the horizon. On the upper light bar, the TS3000s were a combination of flood and spot to give the Jeeps lighting setup even more reach in the dark.

With the front grille removed and the black lights installed, the JK is almost a throw back to a vehicle from Mel Gibson's Mad Max film. We are looking forward to the conclusion of this build and our first opportunity to get behind the wheel. Follow along in our next installment as the TDI gets buttoned up and put through its paces on the in-house 4WD rolling road simulator.



JW Speaker headlights will help light the way on dark nights.

Off-road, JW Speaker auxiliary lamps will create a bit of daylight in front of the JK.

