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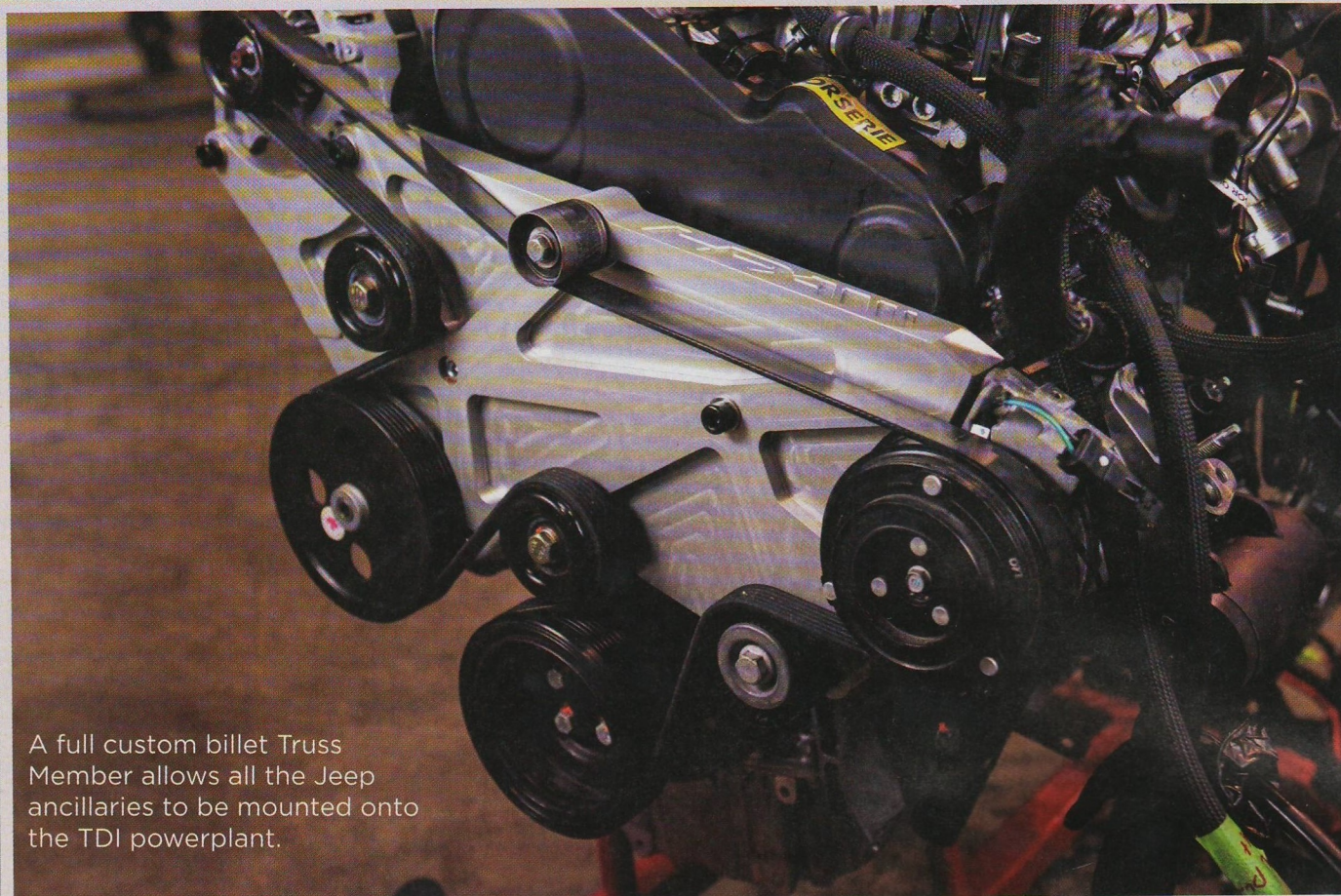


FEATURE

Marriage Made in Heaven

COTY BUILT JK GETS A TDI HEART

Story by Norm Larch, photos courtesy of Andrew Holliday



A full custom billet Truss Member allows all the Jeep ancillaries to be mounted onto the TDI powerplant.

One of the main lures of the Jeep is how it can be transformed to meet the needs of its owner. This brand embraces all extremes, from tubular rock crawlers to outback expedition rigs to soccer mom duties.

When we caught up with Marcel Horn of Coty Built, he expressed a similar sentiment as to why people look towards diesel as a power plant. "We have requests to supply engine conversion kits for extreme outback usage where adventurers are taking their Jeeps deep into the jungles of South America where fuel is hard to come by. We also have retired Vets that spent their entire life surrounded by Jeeps and look for an ultra economical commuter that can still tackle the trails on weekends. The Volkswagen TDI can be calibrated for extreme fuel economy or for a more potent torque output that will attack deep mud and steep inclines. The flexibility of the newer Volkswagen TDI engine control module is what makes TDI a perfect match for Jeep as it can cater to nearly any enthusiast wishes."

Coty Built is in their final stages of

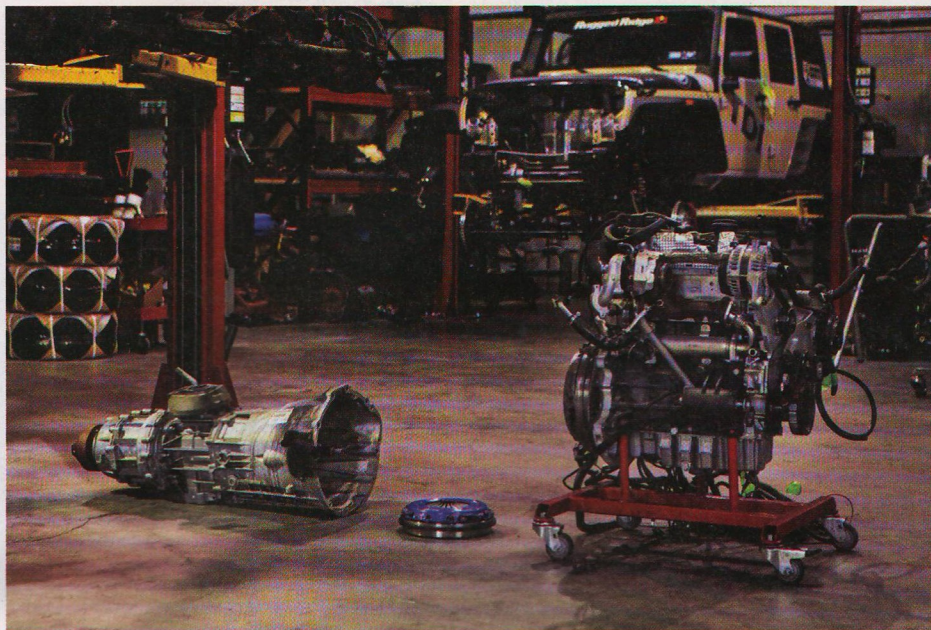


Heavy-duty engine mounts provide lots of strength and mount straight to the Jeep's standard mount locations.

releasing the JK and JKU program, which is anchored by the 2009 to 2014 2.0L Volkswagen TDI. On the engine stand, this engine has a massive girth but without the weight penalty. Unlike the 1.9PD (Pump Duse) TDI used in the Coty Built YJ/TJ and XJ applications, the current 2.0L TDI has adopted a common rail design. As such, it uses a belt driven high-pressure fuel pump to feed the injectors. The alu-

minum head uses a cross flow design with two intake ports and two exhaust ports per cylinder and 16 valves driven by dual camshafts. Volkswagen created this evolution of the TDI to reduce acoustics and improve consumption while delivering more performance.

Horn states that in Europe, the 1,633 kg (3,600 lb) Volkswagen Passat variant received a 170 hp version where here in



The lovely couple being married by a Spec high performance clutch.

North America all versions are 140 hp and 236 ft-lb stock.

At the heart of the Coty Built conversion package is their unique Truss Member concept which houses the OEM Jeep engine accessories and belt drive in their near factory locations allowing them to be driven off the TDI motor thus limiting the conversion requirements to a VW long block and gas pedal. This system simplifies the general under hood architecture of the conversion and keeps things straightforward for field service and vehicle maintenance. The Truss Member, when conceived for the 1.9PD TDI, also served as the engine mount as it replaced the Volkswagen accessory bracket streamlining the installation.

Coty Built creatively adapted their original Truss Member concept to accommodate the OEM Volkswagen belt driven fuel pump found on the 2.0TDI and with their updated Truss design, they were successful in pushing the Jeep engine accessories out in front of the engine. With the old 1.9PD TDI package, builders would weld on mounting pedestals to the Jeep for the truss to sit down on. With the JK 2.0TDI solution, a pair of bolt in mounts is used to fix the TDI engine to the original frame mounts allowing for an installation that requires no welding.

With Coty Built's transmission bell housing adapter, the Jeep flywheel

and clutch are retained and the factory driveline geometry is not manipulated. This is good news for anyone with sights beyond the TDI conversion, as most every aftermarket upgrade will not be impacted. Original adapter plates were water jet cut and profiled on the CNC mill. Today the popular applications are cast aluminum; increasing production capacity and reducing material waste.

Horn states that there are only two alterations to the Jeep's hardware required. The Jeep transmission bell housing needs to be clearanced to accommodate the Volkswagen starter. The installer needs only basic hand tools to cut a notch in the bell housing and install the supplied cover plate. Secondly, the factory Jeep fuel system needs to be converted from a return-less system to a return. This requires the fuel tank to be lowered, a fuel line pulled to the back and the fuel pump housing altered, then the tank reinstalled.

Coty Built's parent company HPA Motorsports has relied on Spec clutches for all its twin turbo Volkswagen/Audi builds and a call into Spec was made to upgrade the Jeep clutch. Spec has a great range of friction materials that increase grip for the anticipated bump in torque without losing the OEM pedal feel.

With the return fuel lines plumbed and the gearbox clearanced, the Jeep flywheel, Spec clutch and NSG370 6-speed



COTY
built

Bring your Jeep into the 21st Century with a vibration-free, light-weight, durable, VW TDI diesel conversion.

30+ MPG
260+ FT.LBS TQ
160+ HP
355 LBS

The Coty Built *Truss Member* retains all domestic Jeep belt driven accessories and the *Transmission Adapter Kit* keeps all Jeep hardware and geometry from the gearbox back.

Installation packages available for TJ, YJ, JK and XJ chassis.

TDI DIESEL CONVERSIONS



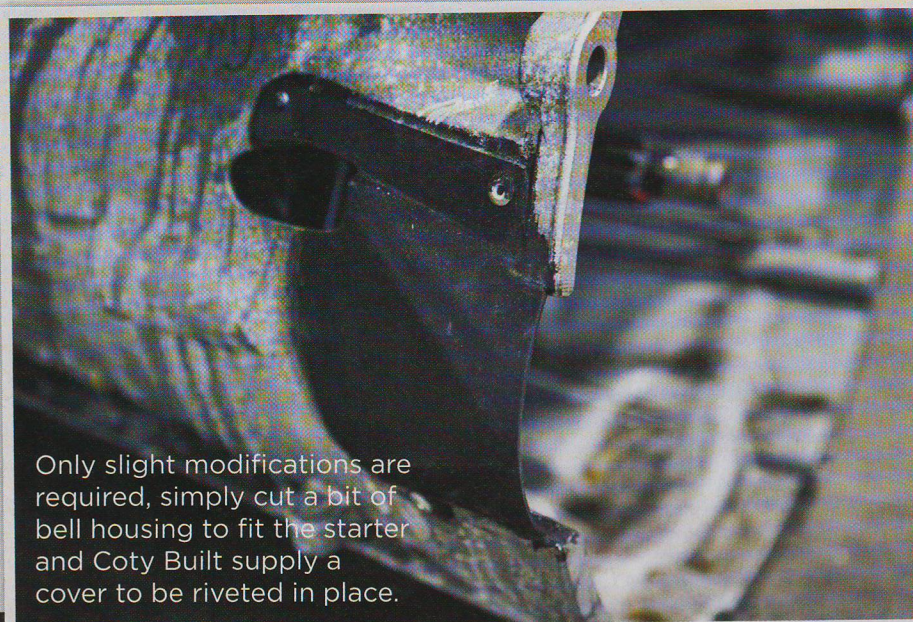
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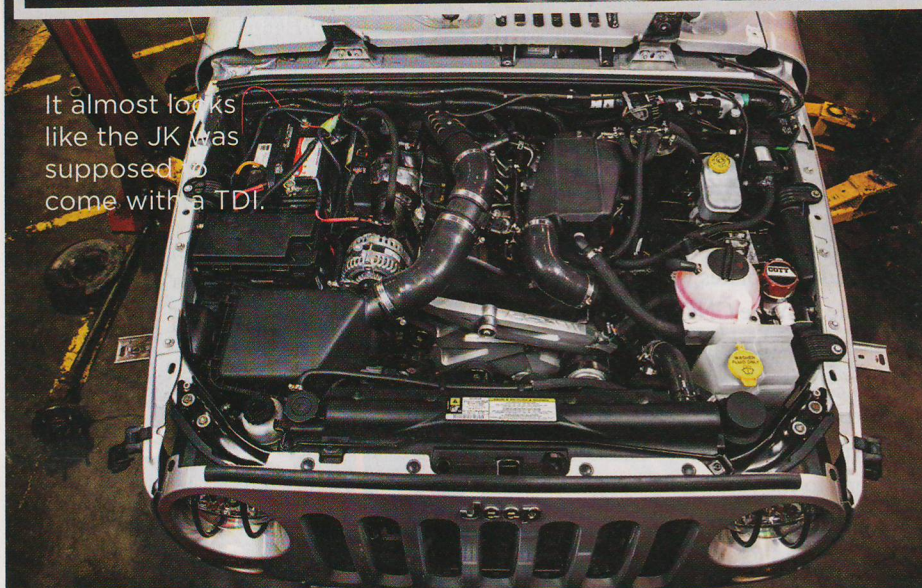
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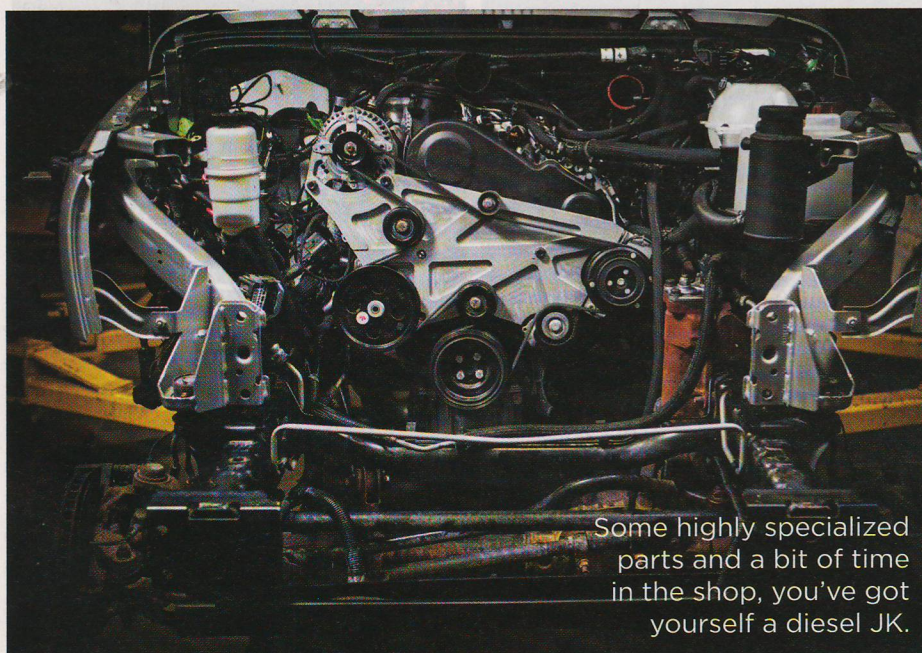
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Only slight modifications are required, simply cut a bit of bell housing to fit the starter and Coty Built supply a cover to be riveted in place.



It almost looks like the JK was supposed to come with a TDI.



Some highly specialized parts and a bit of time in the shop, you've got yourself a diesel JK.

gearbox are mounted onto the 2.0TDI. Coty Built has prepared a plug and play electrical harness, which is tied into the JK's chassis. The entire power plant assembly is hoisted up and positioned in place and the factory engine mount bolts secure the TDI and transmission back in place.

For this build, Coty Built brought in the 170 hp engine from Europe and is preparing it for life in the BC backcountry. As such, this rig is slated to see some big tires, tall gearing and a lot of trail ready parts. The team will omit the Catalytic converter as they look for maximum performance from the 2.0L. Sights are set on 400 ft-lb of torque; we will see in time if this is realizable. The factory TDI applications used a large front mounted air-to-air intercooler. Horn states that with a typical 120 kmh max highway speed, the TDI was better served with an ultra short boost track cooled by a liquid cooled after-cooler. Throttle response will be instantaneous and air intake temps will be better controlled in off highway usage where air speed over the front grill is minimal - unless you live out in the open plains. With the package installed, the factory Jeep engine bay peripherals are all still in place and the package uses all the available real-estate. It looks near factory and it's also clear why this would not be an ideal fit for the smaller TJ and YJ engine bays.

Horn hopes that engine and conversion hardware will set a builder back around \$10,000 once the JK program materializes. It has proven to be a good value for the YJ/TJ owners where fuel consumption drops by 2/3rds.

The facility in Langley BC features in-house fabrication, a CNC machine shop, All-Wheel-Drive dyno and a full staff capable of tackling almost any task put before them. Good thing as there will be a mountain of parts and upgrades thrown at this JK outside of the TDI conversion to prepare it for the 2015 Easter Jeep Safari in Moab, UT.

Follow along in our next issue as we continue with the trail prep of the TDI Wrangler.