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**FEATURE**

STORY BY BUDD STANLEY,  
PHOTOS COURTESY OF COTY BUILT


# The **TDI** **JEEP**

The Replacement  
For Displacement





Horn built his YJ to work in all conditions,  
especially snow.




Replacing the tired old AMC 258 inline-six is this 1.9L VW turbo diesel.

The last time a Volkswagen engine found its way into a Chrysler product was the popular little rebadged Dodge Omni and Plymouth Horizon twins. These were based off a Simca (then owned by Chrysler) hatchback in Europe that used the 1.7-litre four banger and 4-speed transmission from the first generation Golf. Ironically, Chrysler brought the platform over to challenge the high sales of the VW Rabbit, which used the very same drivetrain. Fast forward a couple decades and I stumbled across something I never thought I would see, a Jeep Wrangler YJ sporting a 1.9L Volkswagen TDI power-plant.

The idea came in an interesting way to Marcel Horn, the founder of HPA Motorsports, a Volkswagen specialist tuner. Racing VW's and Audi's all over North America was fun, however, he couldn't strap his kids in with him to join in on the pastime. That's when he noticed how much fun they had driving around in their little electric powered ride-on Jeep. The light bulb switched on and all of a sudden, the racer was about to be christened into the wheeler community. While over at a friends house not soon after, he noticed the nose of a Jeep Wrangler YJ peeking out from behind a barn, and instantly, the gears started to spin in the gearhead's mind, and a plan was brewing.

He picked up the aging YJ for a song and immediately set about prepping it for a life of outdoor family fun. The tired old 2.5 four-cylinder was the first thing that needed attention and Horn being a Volkswagen specialist, you know where this is heading. He had a 1.9L TDI engine that had been sitting in the corner of his shop for several years and it was begging to be thrown back into service. Discarded from a Beetle and dropped into a Jeep, Horn had the shop mill up some mounts, a bell housing and flywheel adapter, some piping connectors, Bob's your uncle, and Horn is wheeling his YJ into the woods with the kids in the back. He was also sipping diesel at 30+ mpg and getting a mountain more torque.

Being a VW guy and having access to everything needed was ideal, but Horn



The TDI's 275 pound-foot of torque and lightweight makes climbing hills a breeze.

The TDI may be more efficient but Horn is still a power freak, tweaking the little 1.9L to be even more ferocious.



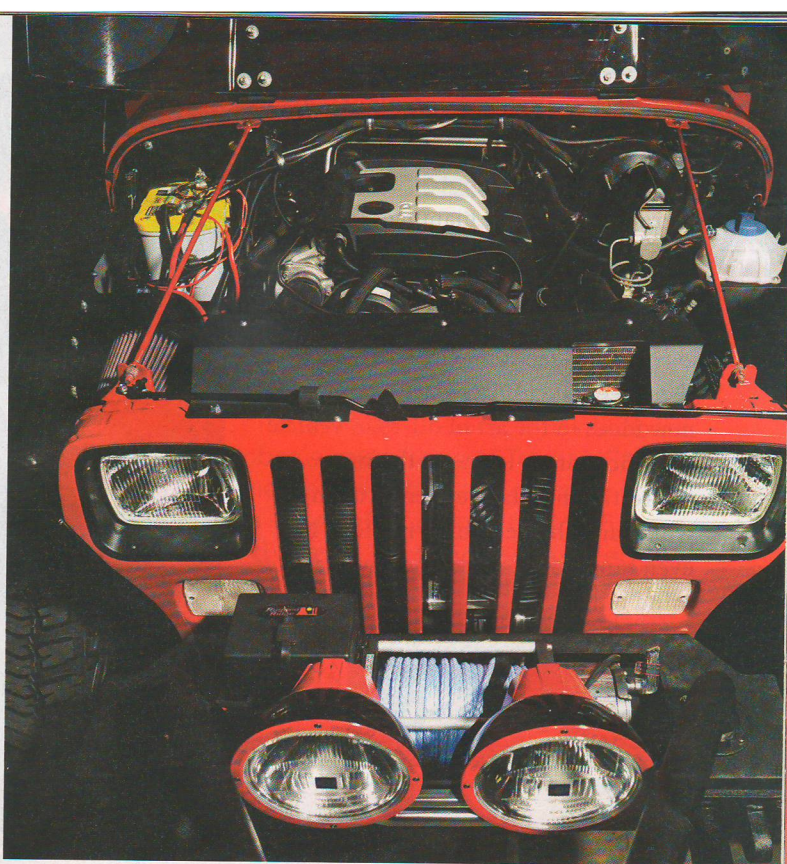
explains that the TDI direction was the best option for several different reasons. He was getting much better performance out of the power-plant, as the torquey diesel is ideal when you need slow linear power. Being a VW tuner, he's also able to extract a fair amount of power out of the little 1.9L, to the tune of 165-horsepower and 260-pounds-foot and even had it as high as 289 when playing on the dyno. The common route of easy power by dumping in a V-8 loads up the front and unbalances the weight distribution, whereas the little TDI weights 25 kilograms (55-pounds) lighter than the 2.5L AMC four-cylinder. Then, of course, there are the obvious benefits of fuel efficiency. Wheeling is never going to be kind to the pocketbook when you start working up the gearing, but the efficiency of the TDI allows for less cost and longer time and range on the trails.

With his obvious connections in the aftermarket world, calls were made to Rugged Ridge, the ideal partner due to their extensive catalogue of Jeep hardware to upgrade the versatility and protection aspects of the YJ. A Garvin Track Rack, Guard Rails and Bumper System were added to protect the body and make the YJ expedition ready with its newfound efficiency. Metal Cloak fenders open up the wheel wells to accept the big 35-inch Goodyear Wranglers that are called upon to handle the traction side of the equation.

What started as a way to allow his whole family to come out and enjoy the gearhead lifestyle at his side, the TDI Jeep has now opened itself up into a business venture. The result has been the formation of Coty Built, a division under the HPA Motorsports banner that now concentrates solely on TDI conversions for Jeep products. The modular layouts of the entire Jeep brand makes the conversion an ease to create duplicates for everything from the YJ, TJ, XK and even the JK.

To field test the durability and usability of the conversion, Horn has taken the oil burning YJ to the slick rocks of Moab, the sand dunes of the Oregon coast and the deep snow of BC's mountains. The report: the powerful low-end torque conquered the steepes in Moab beautifully, powered through the deep suction of Oregon's sands and is a joy to drive in the snow.

With the tough job of R&D completed, Coty Built now offer three different stage kits to help you do to your Jeep what Horn has accomplished with his. These stages focus on giving the do-it-yourself-er all the parts required so they don't have to do any of the engineering or machining. Simply supply a TDI engine, ECU and throttle pedal, weld and bolt on the kit and you're good to go. The kit includes a front truss that allows you to mount all the standard Jeep ancillaries to the VW engine, lowering costs and keeping everything simple. Engine mounts, tensioners and belts and fasteners make up the first stage, while the second stage mates everything together with a Bell-housing and Crankshaft adapter, coolant relocation adapter and exhaust downpipe. The third stage includes an Air-to-Water Intercooler, K&N intake and high performance radiator to boost the efficiency of the cooling. If you are not one to get your hands dirty, Coty Built will do the work for you and there are many performance upgrades available.



The TDI is packaged so nicely, you'd think it was meant to be there.

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The pairing of a VW diesel with a Jeep Wrangler is an odd match to say the least, but there is obviously an itch there that Jeep, as a manufacturer, has managed to ignore for far too long. Coming from a performance sport compact car background myself, it's awesome to see someone also jump into the wheeling culture, and bring fresh new ideas to the art of off-road vehicle modification. It is one of the more interesting builds I've seen in a long while, and the best thing is, Horn has even more ideas working away in that mind of his.

## SPECS:

### ENGINE:

Coty Built TDI Conversion  
1.9L TDI 4-cylinder PD Turbo Diesel motor (2005 beetle)  
HPA Air-to-Water Intercooler System  
HPA Power Flash = 190 horsepower, 260 foot-pounds torque

### POWERTRAIN:

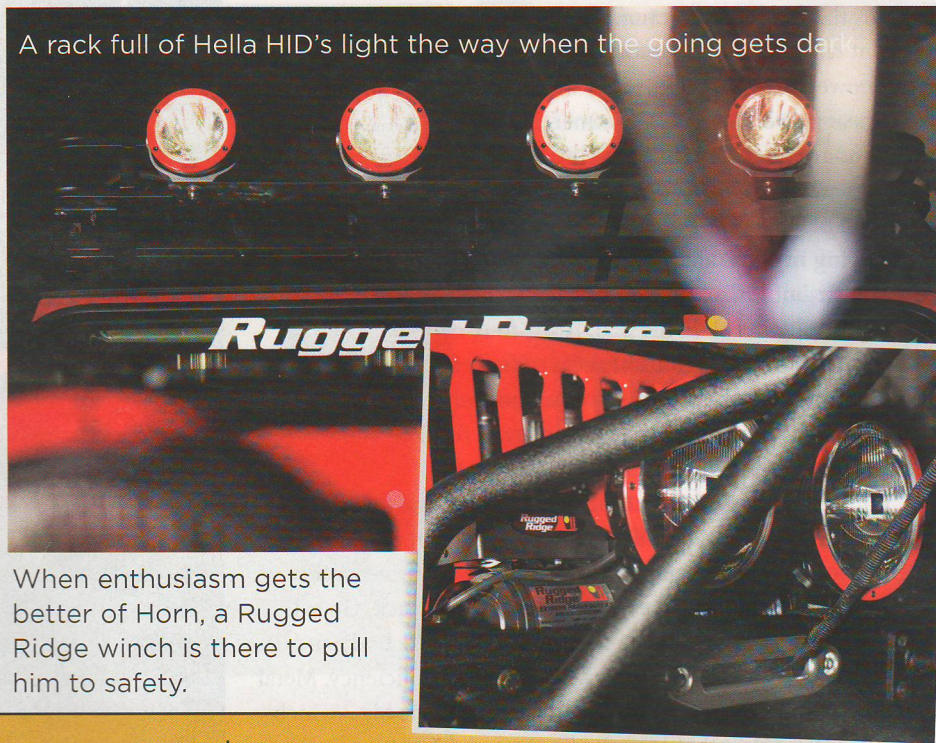
Rebuilt Jeep AX-5 gearbox  
SPEC Stage 3+ clutch disk and pressure plate  
Rugged Ridge Slip Yoke Eliminator  
Rugged Ridge Rear CV Driveshaft  
Alloy USA Dana 30 27-Spline Front Axles  
Alloy USA Dana 35 27-Spline Rear Axles  
Precision Gear 4.10 Ring and Pinion Set  
Eaton True Trac Dana 30 Front Differential  
Eaton ELocker Dana 35 Rear Differential  
Magnaflow 2.5-inch cat back exhaust

### BODY:

Rugged Ridge XHD Front Bumper and Stinger  
Rugged Ridge Gas Tank Skid Plate  
Rugged Ridge Steering Box Skid Plate  
Rugged Ridge 8500 synthetic rope winch  
MTS 20 gallon fuel tank  
Garvin Swing Away rear bumper  
Garvin Trail Rack and Accessory Brackets  
Garvin Expedition Roof Rack  
MetalCloak Overline Tube Fenders  
MetalCloak Overline 6-inch flat flares  
MetalCloak corner guards

A rack full of Hella HID's light the way when the going gets dark.

When enthusiasm gets the better of Horn, a Rugged Ridge winch is there to pull him to safety.



MetalCloak rocker rails  
BRTech smoked acrylic hood

### CHASSIS:

Rugged Ridge ORV 4-inch Lift Kit  
Rugged Ridge Drop Pitman Arm  
Rugged Ridge HD Tie Rod/Drag Link Kit

### WHEELS/TIRES:

Pro Comp 8128 Wheels: 17 x 8.5  
Goodyear Wrangler MR/R with Kevlar: 35 x 12.5

### LIGHTING:

Hella Rallye 4000 Xenon Lamps  
Hella Rallye 4000xi Driver Lamps  
Hella Micro 70 LED lamps  
Hella H4 Euro Headlamps  
Rugged Ridge LED Taillights  
Crown Clear Signal Lamps

### INTERIOR:

Corbeau CR1 front bucket seats  
Corbeau Baja rear 40-inch bench seat  
Rugged Ridge Center Console  
Rugged Ridge Overhead Speaker Box  
Rugged Ridge Floor Mats

### ACCESSORIES:

Blitz 5 gallon Steel Fuel Cans  
Sony DSX-S300BTX Digital Music Receiver  
Coleman Steel Belted Cooler  
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