

DIESEL POWER

THE WORLD'S LARGEST DIESEL MAGAZINE

1966 Ford Bronco - Buckin' Bronco

4BT Cummins-Powered Ford Bronco

David Kennedy –

Jun 1, 2008

Photographers: David Kennedy



When you set out to build a vehicle that will take you anywhere you want to go, you end up needing a lot of heavy-duty and specialized parts. First, you decide what size and style of vehicle you need, and then decide on how big of a tire to run. From there, the rest of the components are dictated by how strong, comfortable, and capable you want your all-terrain vehicle to be.

Why an Old Bronco?

Jon and Rhonda Barricklow, of JB Custom Fabrication in Salem, Oregon, wanted a vehicle that would take them camping, hunting, and off-roading all over the northwest U.S. Their vehicle of choice was a '66 [Ford Bronco](#), but trust us when we say that this vehicle is now more a creation of JB Custom Fabrication than it is a Ford. The '66 Bronco station wagon body was shortened 42 inches and covered in an exoskeleton cage. Evidently, sheet metal is overrated for off-

roading. Rhonda completely reworked the Bronco's cab, basically rebuilding the body from a rusty shell. When she was done, she covered her exquisite craftsmanship in a coating of RM Diamont single-stage matte black urethane paint to give their Bronco its sinister look.





It's All About the Engine

The 3.9L Cummins four-cylinder came from an old bread delivery truck. Actually, the 4BT engine showed up at Jon's shop still cradled in the front half of the P30 truck chassis that it was originally installed in. The engine received some minor tweaks to the injection pump and injectors to increase the power output without making the engine smoke. The Holset turbo was fitted with a 12cm turbine hosing, and the air intake was made from 4-inch diameter aluminum tubing capped with a K&N air filter. The exhaust runs out a 3-inch downpipe and is routed up through a 4-inch chrome-plated stack that stands up behind the cab. In addition to the power

upgrades, the 4BT also drives a Bendix air compressor (for airing up tires) and a Vickers hydraulic pump that Jon uses to run the Bronco's hydraulic ram-assisted power steering.



GEARED TO CRAWL

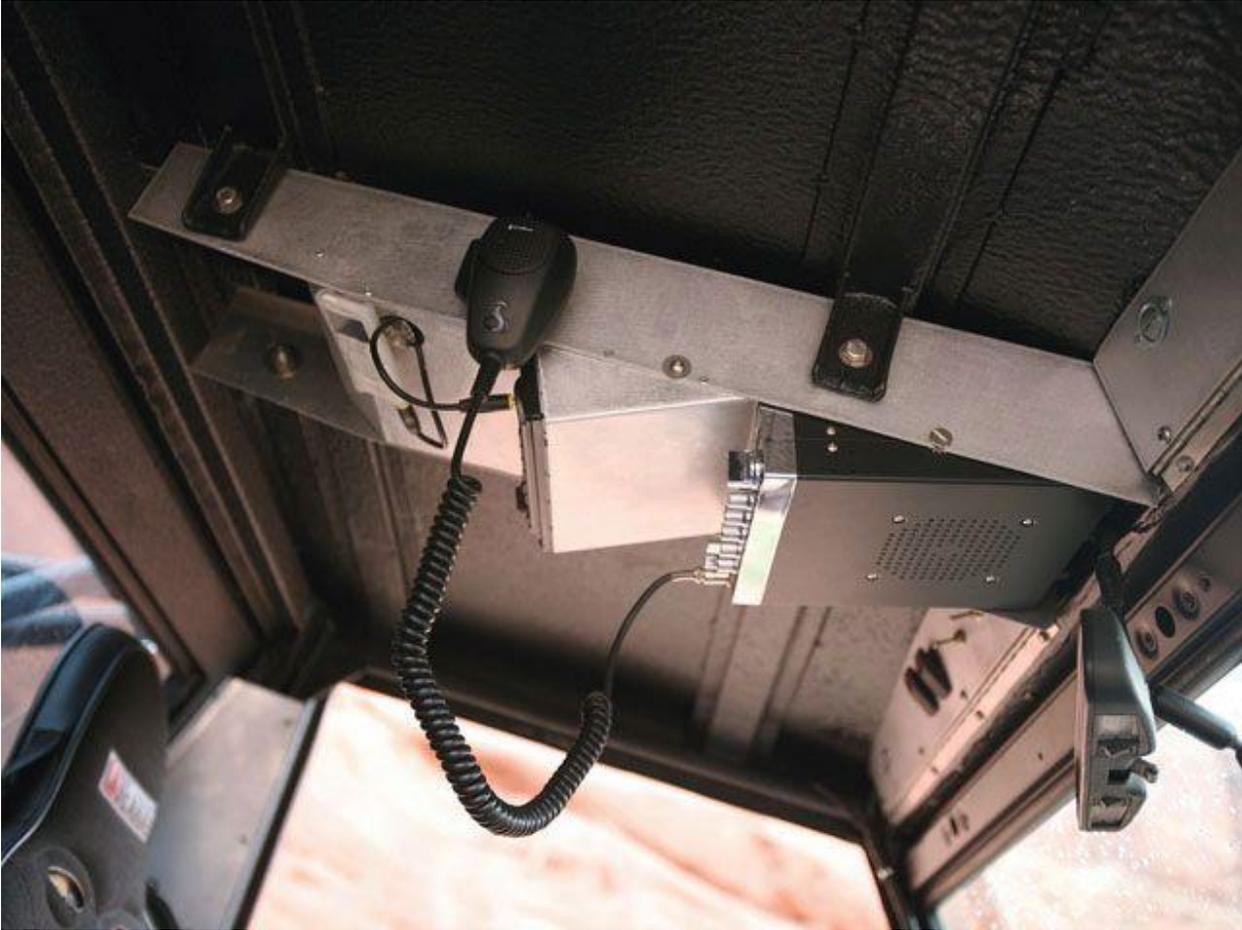
Jon's Bronco has enough gearing to make a farm tractor jealous. Behind the Cummins engine Jon swapped in a ZF five-speed manual transmission that's mated to an aftermarket Stak transfer case made specifically for early Broncos. The ZF transmission has a First gear ratio of 5.72:1 and an Overdrive ratio of 0.67:1. When coupled to the three-speed Stak transfer case with a 4.33:1 low range, 1:1 direct drive, and a 0.79:1 overdrive, Jon has almost infinite gearing options. Why so many gears to choose from? Simple, Jon's Bronco also runs a set of Mercedes Unimog 404 axles that have an effective drive ratio of 7.56:1. With axle gears that low, John needed double overdrive just to get the Bronco up to highway speed. Plus, the low gearing (down to 187:1) gives Jon amazing control of the Bronco as he crawls over radical off-road obstacles.



Driving a diesel-powered Bronco off-road with 39.5-inch tires is kind of like having your own personal Bigfoot. With the low gearing, front and rear locking differentials, and enormous ground clearance, the little Bronco will go anywhere the driver is brave enough to take it. For our test drive, the tires were aired-down to 20 psi and we crept our way up and over rock ledges and straddled boulders that only the Unimog axle's portal hub design would allow. With the doors off, the driver's visibility was impressive. The 4BT engine churned away unfazed by the mass that it was moving. Getting on the throttle brought a quick response that you just don't get out of an electronically controlled diesel. With the air filter poking prominently up through the hood, you can really hear the turbo drawing in the fresh air. What a ride!



















DIESELPOWER

THE WORLD'S LARGEST DIESEL MAGAZINE