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Well, here she is, our Project Power Stroke Resurrection build has come to a completion. Over the past five issues we've taken this old worn out beaten up work truck and transformed it into the ultimate little street driven muscle truck you're looking at now. Who would've thought that the old 220,000 mile XL Model F250 we bought last year for \$3,500 could turn out this nice. The right combination of aftermarket performance parts and some nice cosmetic upgrades turned that old junker into a truck we think just about anyone would be happy to cruise around in.

The initial plan with the build was to show readers that while the 7.3L Power Stroke has long been retired, the aftermarket upgrades for these trucks is vast and can keep these trucks running with just about anything on the road today. Cosmetic changes involved new wheels and tires, a front-end upgrade, Cervinis cowl hood, AgriCover Lorado tonneau, 2-inch rear drop suspension and new layer of two tone paint.

In the performance department we've added an AFE cold air intake, Hypermax 5-inch exhaust system, Hypermax H2E turbocharger, Hypermax

Stage 2 injectors, DP Tuner multi-position F6 chip, ITP Diesel fuel system with an AirDog FP-100 lift pump, Autometer gauges, ARP head studs and a Terminator Engineering Dual High Pressure Oil System.

In this final installment of the build we look at the drive train, transmission and rear differential in particular.

JOHN WOOD TRANSMISSION

When we first purchased this truck, it had 221,000 original miles on it, all of which had been put on by the original owner, a Goodyear Tire store in Montana. We were lucky enough to find this truck along with all the service records, right down every single oil change invoice. After going through the whole stack of receipts and never seeing anything about a transmission swap, we called up the shop we'd bought it from to confirm that after all those miles the trans had never been replaced. Sure enough, they informed us that the tranny had never been removed from the truck, just serviced religiously every 30,000 miles.

While that may seem tough to

believe, as stock transmissions have never been known for their strength and reliability, these guys really took care of it. While it still shifted great and seemed to be working fine, it didn't take long after we started adding some horsepower for it to start slipping the converter and blowing past shift points. With the new injectors, turbo, and chip upgrades and 10,000 hard miles, it was time for some upgrades.

We've dealt with John Wood Automotive in the past and have had great success with his parts and service, so naturally he was a first choice when it came time to build a transmission for this truck. Based out of Holtville, CA, John Wood focuses primarily on the Ford 4R100 and E4OD transmissions. Through years of experience and literally thousands of tranny builds, it's safe to say John knows the Ford transmission as good as anyone in the business. Whether building a transmission that can stand up to the abuse of heavy towing under extreme desert heat or the thrashing a transmission can be subjected to at the race or sled pulling tracks, John Wood Automotive can build to suit and survive.

With plans for this truck consisting of just your average daily driving conditions with a few weekends at the drag strip tossed in there for good measure, we contacted John and talked things over. We told him what we'd added to the truck performance wise,

This is what our little PSD Resurrection project truck looked like when we picked it up from its original owner last summer. It was actually in pretty decent shape for the mileage and abuse it had been put through before we saved it from the salvage yard.



0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

PART 5

RESURRECTION

FROM DEDICATED WORK TRUCK TO HARDCORE STREET TRUCK

BY JACOB WHITE



PSD RESURRECTION

FROM DEDICATED WORK TRUCK TO HARDCORE STREET TRUCK

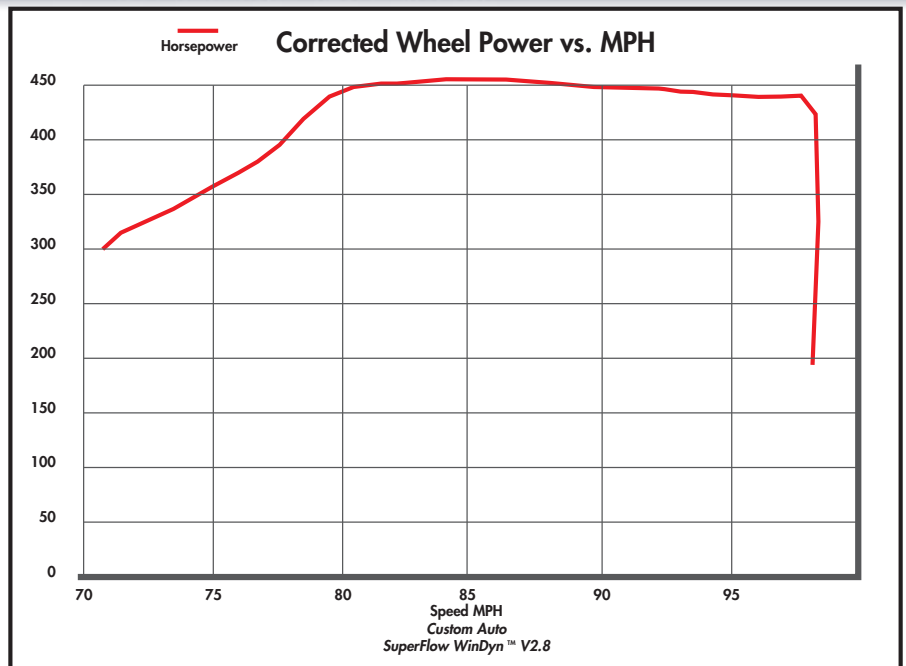
PART 5

what we expected from the truck. He suggested that due to the trucks light weight and somewhat traction limited situation being 2wd and all, that his basic Stage One transmission would be more than enough to handle the abuse and horsepower we'd subject it to.

The Stage One transmission from John Wood consists of upgraded clutch packs for each individual gear, his custom built and tuned valve body, a billet triple-disc torque converter, steel overdrive planetary, and a billet input shaft, along with some other modifications he's designed himself that he'd rather keep hush-hush about. All these upgraded pieces would be more than enough to support and plant all the power we'd be making in this little truck, all while improving efficiency and hopefully even improving fuel mileage. We should note that John offers a couple different stages of transmission builds from standard overhauls for stock trucks, all the way up to transmission outfitted with full billet pieces to withstand up to 1,200 horsepower.

After getting our stock transmission removed from the truck, it was easy to see where all our problems had been coming from. Metal filings in the transmission pan, a couple of metal parts clunking around in the factory torque converter, and even a pretty serious leak coming from the pump in the front of the transmission told us this stock tranny had definitely had enough and was ready for retirement.

With the new John Wood Stage One installed in the truck, we decided we'd be best off replacing the factory transmission cooler with a new one while we were at it. With all the metal particles floating around in that factory transmission pan, we didn't dare risk the chance of having those same metal filings left in original trans cooler and lines find their way into our newly built transmission and potentially causing problems. We replaced the cooler with a factory unit we picked up at the Ford dealer and made sure to flush the lines before bolting them back up to the transmission. We also installed a PML



(above left) This is the new Stage One transmission all cleaned up and ready for install. John Wood has quickly become one of the best in the

business when it comes to building a reliable Ford transmission you can put through its paces, regardless of whether it's in a tow rig or weekend race truck.

(above right) The old factory torque converter has held up pretty well, considering it had more than 230,000 miles on it at the time we replaced it. The horsepower we've added to the truck proved to be too much for it, however. So it will be replaced with this much more efficient and stronger triple disc unit from John Wood.

(bottom) For our Stage One transmission John Wood replaced the factory input shaft with a much stronger billet steel piece. The aftermarket billet piece will stand up to quite a bit more horsepower and stress.

PSD RESURRECTION

PART 5

FROM DEDICATED WORK TRUCK TO HARDCORE STREET TRUCK

Transmission pan, which offers some added fluid capacity, added cooling fins, and a much better look.

After the first few miles of driving the truck with the newly built transmission it was easy to understand why those factory transmissions are referred to as 'slush boxes'. Man, the improvement in shifting quality, converter lock-up and just overall drivability is incredible. Between the calibrations John puts into his valve bodies and the tuning from DP Tuner, you'd be hard pressed to find a better operating transmission. Shifting strategies are some of the best we've ever seen in an aftermarket upgraded transmission. The shifts are crisp and firm, but not harsh. Quick and tight, all while keep the jerk and clunks between shifts and lock-up non-existent. Not only are our transmission temperatures running cooler due to the increased efficiency of the triple disc converter, we did see a pretty significant improvement in our highway cruising fuel mileage. We never thought we'd see the day where a diesel powered truck with over 230,000 miles on it would see 20-plus mpg, but this one will do it, no problem.

When we first purchased the truck, we made sure to get it on the local SuperFlow dynamometer at Custom Auto in Idaho Falls, ID so we'd have some baseline numbers to compare with our numbers after all the upgrades we finished up. So once the new transmission was in and we could finally plant the horsepower we were making, we headed back over to Custom Auto for some dyno testing. After everything was said and done, the list of aftermarket parts we've bolted onto the truck came up to a pretty solid performing 450 rear wheel horsepower, not too shabby for an old worn out truck, huh? Especially considering that in stock form it put down a measly 181hp. That's around 275 added horsepower, measured at the tires, where it counts.

EATON TRUE TRAC DIFFERENTIAL

With the new transmission finally able to throw some horsepower to



(above left) Here you can plainly see the stress and extreme heat markings on the factory torque converter. A slipping converter can really affect fuel mileage, towing ability and overall daily driving.

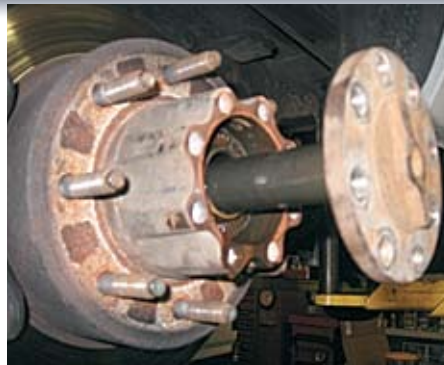
(above right) We removed the factory transmission pan on our new John Wood transmission to replace it with a deeper pan from PML Covers. With the pan off you can see the transmission valve body. Wood has spent a lot of time perfecting his valve body calibrations to ensure your transmission will shift properly and precisely.



We opted to install some nice aftermarket PML differential and transmission pans while we had everything apart. The added fluid capacity and exterior cooling fins will really help out fluid temperatures, not to mention the improved looks over the stock pieces.

ADVERTISER INDEX

ADVERTISER/WEB	PAGE #
Allied Exhaust Systems	39
AMSOIL, Inc.	3
www.amsoil.com	
Automotive Racing Products	53
www.arpdiesel.com	
BD Power	15
www.bd-power.com	
Bean's Diesel Performance	15
www.beansdieselperformance.com	
Buck Stop Truckware	42
www.buckstop.biz	
CompetitionDiesel.com	47
www.competitiondiesel.com	
Cyclone Diesel Performance	56
www.cyclonediesel.com	
Diesel Performance Parts Inc.	13
www.dieselperformanceparts.com	
Diesel Power Products	39
www.dieselpowerproducts.com	
DP Tuner	33
www.dp-tuner.com	
Dynomite Diesel Performance	5
www.dynomitediesel.com	
Eaton Performance Differentials	43
www.eatonperformance.com	
Evans Cooling Systems	42
www.evanscooling.com	
Geno's Garage	46
www.genosgarage.com	
Gold Eagle Company	11
www.goldeagle.com	
Gomer's Warehouse Distributing	27
www.usdieselparts.com	
Green Fuels America, Inc.	46
www.greenfuelsamerica.com	
High Tech Turbo	32
www.htturbo.com	
Hypermax Engineering	42
www.gohypermax.com	
Iron Bull Bumpers	49
KLM Performance, Inc.	2
www.klmpower.com	
Level 10 Products	43
www.Levelten.com	
MADS Electronics	21
www.madselectronics.com	
Mag-Hytec	33
www.mag-hytec.com	
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www.mambawheels.com	
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www.mbrp.com	
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PDR Diesel Performance	8
www.pdrdiesel.com	
Performance Systems Manufacturing LLC	48
www.psmdiesel.com	
Precision Bodyline	53
www.longbedmegacab.com	
ProSport Gauges	49
www.prosportgauges.com	
Pure Diesel Power	51
www.puredieselpower.com	
Rock Auto, LLC	47
www.rockauto.com	
SEMA	55
www.semashow.com	
Snap-on Incorporated	14
www.snapon.com	
Standard Transmission & Gear Co.	18
standardtransmission.com	
Sun Coast Converters Inc.	47
www.suncoastdiesel.com	
Superchips	35
www.superchips.com	
Supertanks LLC DBA Titan Fuel Tanks	33
www.titanfuel tanks.com	
Throttle Down Kustoms	51
www.throttledownkustoms.com	
Transfer Flow, Inc.	9
www.transferflow.com	
Vulcan Diesel Performance	48
www.vulcanperformance.com	
Xtreme Diesel Performance	19
www.xtremediesel.com	
Zoom Performance Products	34
www.zoomperformance.com	



(above left) With the rear differential cover removed, you can see the factory ring and pinion gears along with the factory limited slip differential that quit working miles ago. Installing the new Eaton differential will ensure power will be sent to both rear tires when needed. Good bye one wheel peel.

(above right) To remove the rear differential unit, you must first remove the axle shafts. This is done by removing the bolts around the outer hubs and pulling the shafts outwards.



The factory rear differential unit will be replaced with the new Eaton True Trac, but we opted to reuse the factory ring gear as it still appeared to be in good shape. If you're contemplating re-gearing your truck to a higher or lower gear ratio, now is the time to do it.

the rear tires it was apparent that the factory open rear differential was not going to cut it. One wheel burnouts and constantly spinning a tire when you'd lay into the throttle got old quick, as the wasted potential of this truck on the street was a real downer. Something needed to be done to ensure we could transfer power to both tires, helping plant the power to the power and get this truck running down the road and drag strip like it should.

And while a locking differential offers

good forward momentum and traction, it leaves something to be desired on a daily driver, as a fully locked differentially will constantly be scrubbing the inside tire around corners and tight turns, not something we're fond of. Especially on a daily driver truck such as this, we needed something a little more street friendly, something like the factory limited slip differential could offer.

While we looked at the OEM style limited slip, we wanted something that could handle some horsepower

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PSD RESURRECTION PART 5
FROM RESCUED WORN TRUCK TO HARDWORKING STREET TRUCK



The new Eaton True Trac differential may look much like the factory unit we're removing, but on the inside it is really quite different. No more worn-out clutch packs.



After installing the old ring gear onto our new True Trac we needed to check the backlash and gear lash to assure proper alignment of the new differential. After marking a few teeth with some yellow paint and turning the driveline a few times, we were pleased to see that we lucked out and the factory shims lined our new differential up perfectly.

and torque without worry of slipping clutches when we wanted to get a little aggressive on the throttle.

The Eaton True Trac differential seemed to be just what we looking for with its internal gear sets and limited slip qualities, we'd be able to daily drive all we wanted without scrubbing tires and still have the solid lockup under heavy acceleration. Sending equal amounts of power to each tire really relieved our traction issues and now the truck can accelerate without issue.

Installing the True Trac differential was all that tough, but we would recommend having a quality shop make the swap for you, as there are some specialty tools and some pretty precise measurements needed to ensure it is set-up correctly. Swapping your factory ring gear over to the new differential and adjusting your back lash and gear travel to the correct

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specs is very important to the durability of your rear-end. We also installed a PML Differential Cover on our truck while we had everything disassembled for an extra little fluid capacity and their stylish looks, it also matches the transmission pan we installed to a tee.

So there it is, the completion of our 7.3L Power Stroke build-up, hopefully these past couple articles have shown you just how big the aftermarket really is for these older Ford diesels. While they may not make horsepower as easily as the newer trucks on the road, it can still be done, it just takes the proper combination of parts, couple weekends in the garage, and some tools. We turned an old \$3,500 work truck in to a pretty impressive little street truck, something with some power under the hood with the style to go with it. **DT**

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