



DIESEL CONVERSION
Specialists

406-755-8878
SALES • PARTS
INSTALLATION

2003-2007 Ford Super Duty 6.0L Conversion Information

This information is provided to you to help you make an informed decision on your conversion. More detailed information is available in our General Installation Manual, available online for \$25.00. If you have any questions do not hesitate to give us a call.

Information for all 6.0L models

The Super Duty 6.0L trucks are the easiest trucks to convert to Cummins power. No modifications to the firewall, core support or floor pan are necessary. The stock radiator, intercooler and fan shroud can all be used as is with the Cummins engine. It is also usually possible to move the transmission back just enough to use an engine driven radiator fan with our custom carrier bearing mount and still retain the stock driveshaft length. Trucks that have a lift kit that have not had drive line modifications already may be prime candidates for this option.

When you buy Diesel Conversion Specialists' parts we include year specific installation instructions. This includes wiring instructions for customers using the 12 valve 6BT or the '98.5-'02 24 valve Cummins engines, or if you would prefer, you can opt to have us do the bulk of the wiring work for you by sending in your 6.0 engine harness to be modified, as we do with the '03 and newer Cummins engines.

6.0 Automatics

5R110- These transmissions work well in the conversion. Many of our customers have used them behind a 400+ horsepower Cummins just the way they are, including the stock torque converter. You do not have to do any grinding to the bellhousing for starter clearance. Our adapter plate and custom flexplate uses the stock converter configuration, saving you from having to buy a custom dimensioned torque converter.

Currently it is recommended to use an aftermarket transmission controller with this transmission. You will need a laptop computer to work together with us to get the final shift tuning just right or load different calibrations into the controller.

We precalibrate your transmission controller according to your tire size and gear ratio as close as possible before we send you the controller.



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After you get your truck running, we plan on helping you learn how to use the laptop computer to datalog the transmission shifting and receive edited calibrations from us via e-mail. This tuning support is included in the mandatory \$250.00 pre-programming and technical support fee you will see in our kit prices. Also included in this fee are modifications to the transmission controller harness we include with the transmission controller that make installation much easier for the installer. Believe us, these services are money well spent!

Be prepared that when you first get your truck running the transmission may not shift properly and tuning can take a few days, exchanging 10 or more datalogs for edited calibrations. You also need to know that you will lose some of the tow/haul features that your transmission now has, such as higher shift points and engine braking in the tow/haul mode. Shift and torque converter lock up points are completely adjustable, making it possible to optimize your power train for your specific needs.

The tow/haul switch becomes a cancel overdrive switch only, and engine braking can only be utilized in third and fourth gears, regardless of tow/haul selection. So be prepared that the convenience of pushing the tow/haul button to toggle between "normal" and "tow/haul" will be lost with the conversion. It is still possible however, to have another calibration that you can load into the controller with your laptop whenever you wish, and we can provide tuning that has automatic downshifts with engine braking at zero percent throttle if desired.

Dodge automatics

We currently do not offer any technical support for using these transmissions.

Ford 6.0 6 speed manual

We make an adapter for the 6.0 diesel six speed. It uses the Ford 6.0 starter, so no grinding of the transmission is required for starter clearance. Ford started using this transmission design in '99, and they work well behind the Cummins. They are rated for 520 ft/lbs of torque.

The 6.0 6spd manual transmission adapter plate uses the single mass clutch with our custom flywheel. Some stock application 6.0's have a dual mass clutch, these will not work as is. If you have a dual mass clutch, we recommend using a Ford 7.3 clutch, and we can set you up with one.



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Information about parts in our kits

Adapter plates:

Our adapter plates for the 6.0 Super Duty use the stock 6.0 Ford starter. No modification is required to the transmission bellhousing. These adapter plates use either our custom flywheel or custom flexplate. The adapter plates replace the adapter already on the back of the Cummins engine, making a factory quality connection for the transmission. They are precision machined from aircraft quality aluminum.

Engine mounts:

Our motor mounts are pre-drilled for moving the transmission back and using the engine driven fan, or leaving the transmission where it is and using electric fans. We do not usually recommend using electric fans as we do hear back from a few that did and have cooling problems. It probably doesn't save you any money or time in the long run, but it is possible if you would prefer. The engine mounts are an excellent design with a bolt going all the way through the isolator, instead of relying on rubber and weak interlocking tabs to secure them to the frame crossmember.

You may be able to utilize our **custom carrier bearing mount**, which makes it possible to use your drive shafts as they are with an engine driven fan. This mount replaces your stock carrier bearing mount and moves the carrier bearing back just enough to give you room for the engine driven fan by collapsing the slip joint in your rear drive shaft. It is necessary for you to make sure you will still have enough slip in the joint when your rear suspension is compressed. Usually the rear drive shaft is fairly level in trucks that do not have a lift kit, so the drive shaft does not need to collapse very much during suspension travel. In most cases the front drive shaft on four-wheel drives will stretch enough to reach the front differential. It is necessary to move the transmission crossmember back or lengthen the slots in the mount to slide the transmission back enough to give room for the engine driven fan. Automatic trucks already have holes in the frame to move the crossmember back to accommodate the Dodge Cummins engine driven fan.



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Gauge Sending Unit Adapters (Bushing Kit):

We custom build adapters to put your Ford gauge sending units into the Cummins engine so that your stock gauges still work with the Cummins engine.

Alternator Mount:

We offer an alternator mount that allows you to use the 6.0 alternator if you would like. The advantages of using this alternator is that your indicator light will still work as it should if your charging system should fail. If you would rather use the Dodge Cummins alternator, we can provide you with an external voltage regulator kit. This kit includes a wire pigtail, a capacitor, and instructions. Common Rail applications do not need the external regulator, even with the Dodge alternator.

Exhaust manifolds:

We sell exhaust manifolds that work much better in the conversion for the 12 valve and 98.5-02 24 valve engines. These manifolds place the turbo in a better place for a/c box clearance than the stock variety, and also make exhaust and turbo oil drain connections easier as well.

For the 24 valve engines, other exhaust pieces are necessary when using our exhaust manifolds to provide an adjustable elbow connection for the downpipe.

Both of these manifolds require you to re-orient your turbo housings to allow your oil drain to be pointed down correctly. This usually requires you to heat the exhaust housing on the turbo to remove the bolts and the housing so the housing can be re-oriented. Fixing the wastegate shut is also necessary because once the turbo is re-oriented the actuator will hit the engine block. Fixing the waste gate shut does not usually have any adverse effects on the engine, but we do recommend using a boost gauge to monitor and limit boost pressures to less than 40 psi.

We also offer manifold gaskets, and new exhaust manifold to turbo studs if you would rather not try to get the studs out of your stock manifold. Also helpful is a flexible turbo drain tube that connects to the stock hose and elbow that is left in your engine block when you remove the stock drain tube connected to the turbo. If you would rather, it is possible to heat this tube up to bend and twist it to allow reconnecting it after you re-orient your turbo housings.



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Tach kit:

The tach kit consists of the **base, mount, sensor, and tach ring**. These parts are necessary to make your factory tachometer work. Providing this signal to your Ford PCM computer also is necessary for the air conditioning, factory transmission control, and transmission temperature gauge to work as well. The universal sensor and mount we make is the easiest way to supply the tach signal, since we currently do not make a mount for the stock 6.0 crank sensor.

Most 12 valve engines 94 and newer already have the tach sensor base, which is bolted to the front cover at about 11:00 to the balancer. You will have to drill and tap a hole in it for our sensor mount to bolt to it.

All 6.0 trucks require the tach ring that bolts onto the front of the Cummins crankshaft balancer, for the sensor to send the correct signal pulse to the Ford PCM that makes the tachometer work. However, those using the Common Rail engine may make a mount for their stock 6.0 sensor to read the Common Rail's toner ring if they like.

Transmission Controller:

[See the 5R110 transmission section.](#)

Air filter kit:

We sell a K&N air filter; with a pre-cleaner, pipe and hose to connect to your turbocharger. We offer two styles of air filter kits. The DCS part# 1571 positions the K&N air filter in between the passenger side battery and the radiator. This is especially the kit to use if you are using a Common Rail style turbo. Even though the passenger side intercooler tube is a bit more challenging when using this kit with a 12 valve style turbo, this kit saves you a lot of work moving the passenger side battery.

The second kit, DCS part# 1097, is mainly offered for those who would prefer more room for the air filter. It requires relocating the passenger side battery to the driver's side. This takes some fabricating skill to make the brackets to mount the passenger side battery tray and another one just like it on the driver's side, but it provides a nice roomy area for the air filter.



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A/C manifold:

This manifold bolts to the back of a '94 and newer Dodge a/c pump, making the a/c plumbing less of a challenge. All you will need to do is have some new hoses crimped between our manifold and a 99 style a/c tube at the drier (a picture of one is in our manual), and the stock line connected to your condenser.

Radiator Hose kit:

This kit includes the radiator and heater hoses that work well in the conversion and a specially bent aluminized steel lower radiator hose connector tube along with hose clamps.

Wiring Harness Services:

We can provide you 6.0 engine harness modification services that make wiring much less of a challenge. We modify your 6.0 engine harness to become a Cummins engine harness, providing your Ford PCM the signals it needs to make your factory gauges work. This service is normally included in packages for those using the 03 and newer Common Rail Cummins engines, as we do not provide wiring instructions for do-it-yourselfers for this specific engine. This service is optional for the 12 and 98.5-02 24 valve engines, as we do provide wiring instructions for these engines when you buy parts for your conversion.

Parts you will need to get on your own:

Even if you buy everything we sell, you will need to come up with a few parts on your own, such as an exhaust down pipe (usually a Dodge down pipe can be a good start), and inter-cooler tubes (again Dodge stuff can be a good start). We may be able to supply you with these, but our supply is limited at this time.

Depending on your application, you may also need a Ford gas powered truck's gas pedal, a Dodge throttle cable, and a Ford gas powered truck's cruise servo. When you order parts, we can tell you exactly what you will need; we may even be able to supply these parts for you.



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Automatic transmission equipped trucks will require a throttle position sensor. Depending on the year and what transmission your Cummins engine had on it originally, you may need to purchase a throttle position sensor, or look into other options. All 24 valve engines already have a throttle position sensor that can be used for the transmission controller.

Engines

Sometimes customers buy engines out of industrial applications. These engines may not have the correct brackets for conversion friendly accessories.

* See [General Engine Information](#) for more information.

New, rebuilt, or used engines

We have many sources to find engines. Fully dressed new or rebuilt engines cost roughly between \$10,000- \$13,000, depending on what power options you would like.

When we sell a used engine, we test cylinder compression, and we run the engine to make sure it is a good running engine so you don't have to take any of the risk involved in buying a used engine. We can often sell used 12 valve engines for as low as \$4500.00.

Considering having us doing the conversion for you?

Give us a call and find out how we can do a professional conversion on your truck for a reasonable price. We have an international airport for travel from and back to our shop, and also can help with shipping options getting a disabled truck here.