



DIESEL CONVERSION
Specialists

406-755-8878
SALES • PARTS
INSTALLATION

1999—2002 Ford 7.3 Super Duty Conversion Information

INFORMATION FOR ALL 7.3L MODELS

The Super Duty 7.3L trucks are one of the easiest trucks to convert to Cummins power. No modifications to the firewall, core support or floor pan are necessary. The stock radiator and intercooler can all be used as is with the Cummins engine, and the fan shroud usually works with only minimal modifications. In some cases, it is 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. We make this bracket available to you after you have determined your stock driveshaft has enough slip remaining for suspension travel and driveshaft compression needs.

When you buy Diesel Conversions® parts we include year specific installation instructions. This includes wiring instructions for customers using the 12-Valve 6BT or the 1998 ½ - 2002 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 7.3L engine harness to be modified, as we do with the 2003 and newer Cummins engines.

Transmissions

Ford standard transmissions

Ford 5 speed- we make adapter plates for these transmissions as long as they were behind a 7.3 diesel or a 460 big block. 95 and newer transmissions are rated for 470 ft/lbs of torque.

Ford 6 speed- we make adapters for the 7.3 and 6.0 diesel six speed. These are very good transmissions for the conversion. The 7.3 versions are a bit less expensive to use if you are planning to swap it in place of your current transmission, as they do not require a custom flywheel. We are currently working on an adapter to the V10 6 speed.



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Automatics

4R100- This is what your truck has now if it is an automatic. It is a four speed transmission. If you are planning on doing a lot of heavy pulling or adding a lot of performance upgrades to your Cummins, you may want to have your transmission beefed up, and use an aftermarket torque converter. Currently, you are required to grind out a pocket for starter clearance in the transmission bellhousing. You will need to remove enough that you will end up with a hole in the side of the bellhousing. We have done this many times and have not had any adverse effects. We recommend that you have performance upgrades done to this transmission if you will be doing heavy towing or making performance upgrades to the Cummins engine.

5R110- If you want a reliable automatic transmission in your older truck that will handle the power of the Cummins you may want to consider the 5R110. These are a 5 speed that come behind the 6.0l Fords. These transmissions are practically a bolt in replacement for the 4R100 (with the 5R110's transfer case). While the 4R100 transmissions can be beefed up to handle the power, the 5R110 can handle it as is. If you can find a good used 5R110 and transfer case cheaper than beefing up your existing tranny, it may make more sense to use the 5R110. For more information, see our [5R110 conversion document](#).

Information on parts in our kits

Adapter plates:

We have two styles of adapter plates available for the diesel version of the 4R100. If you buy yourself a Ford 6.0 diesel starter, you can use the adapter plate that does not require any grinding of the transmission. This adapter plate uses the stock Dodge Cummins flexplate and a torque converter adapter. The plate has to be tilted just 2 ½ degrees to accommodate the starter without grinding (although there is a very insignificant rib that needs just a touch of grinding just behind the starter).



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This small amount of grinding shouldn't affect any core value of your case and it most certainly will not affect the structural integrity either.)

If you have a Cummins starter already and don't mind grinding, you can use it with the appropriate plate we offer. Currently, this is the style of plate you must use with the ZF-6 speed. You will need to remove enough material just above the starter pocket in the bellhousing that you will end up with a hole in the side of the transmission. We have done this many times and have not had any adverse effects.

We recommend that you have performance upgrades done to this transmission if you will be doing heavy towing or making performance upgrades to the Cummins engine.

The adapter plates for automatic transmissions require our torque converter adapter ring along with the Dodge flexplate. Manual transmissions require the appropriate Dodge Cummins flywheel.

Our adapter plates are built out of aircraft quality aluminum. These adapters replace the existing adapter on the Cummins Engine, making a factory quality connection between the engine and the Ford transmission.

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.



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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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Bushing Kits:

Bushing kits include adapters to put your Ford gauge sending units into the Cummins engine. Most trucks of these years require custom pieces for this, so they are quite helpful.



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Alternator Mount:

We offer an alternator mount that allows you to use the 7.3 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. Common Rail applications do not need the external regulator.

Exhaust manifolds:

We sell exhaust manifolds that fit very well in the conversion for the 12 valve and 98.5-02 24 valve engines. Compared to the stock manifolds on the Dodge Cummins engines, the manifold we sell places the turbo in a much better place for a/c box clearance, and they also make exhaust and turbo oil drain connections easier as well. For the 24 valve engines, other exhaust pieces are necessary as well when using our exhaust manifolds. Using these manifolds requires re-orientation of the turbo housings for proper oil draining. This also requires fixing the waste gate shut in most cases- which does not adversely affect the engine. However we recommend using a boost gauge to avoid boost pressures over 40 psi. We also offer a flexible oil drain tube for the turbo that makes the drain tube a snap, and gaskets for the new manifold for a reasonable extra cost.

Tach kit:

The tach kit consists of the **base, mount, sensor, and tach ring**.

These parts are necessary to make your factory tachometer work since the stock 7.3 cam sensor cannot be used.

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. The tachometer signal can bypass the Ford PCM on 99-01 trucks only. This allows you to use 4 notches ground in the balancer to produce the correct signal pulse for the tach to work.



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If you have a Common Rail engine, or do not wish to do any grinding on your balancer, you can purchase our 4 tooth tach ring. Bypassing the Ford PCM will require you to do some wiring down at the Ford PCM, and if you would like cruise control you will be dealing with some other wires at this connector as well.

All trucks 2002 and newer 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.

Transmission Controller:

The Compushift controller for the 4R100 is user friendly and does not require a laptop computer. It comes with a programmer/display box that provides you the ability to make many adjustments.

If you have a laptop computer we would also recommend the **PCS controller**. This controller has a "Calibration B" function which is great for making a towing or racing calibration available with your original cancel overdrive switch.

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 your Ford pieces at the drier and evaporator.

Some other 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). 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.

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, or rebuilt engines

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

Used Engines

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 \$3500.00 (shipping is extra and is usually around \$500.00).