

The Diesel Techs

2009-2019 Cummins EGR

Tools & Supplies Required

- ☐ Coolant
- ☐ Penetrating Lube
- ☐ Teflon Tape
- ☐ Grease
- ☐ 8mm Socket
- ☐ 10mm Socket
- ☐ 11mm Deep Socket
- ☐ 13mm Socket
- ☐ 15mm Socket
- ☐ Flat Head Screwdriver
- ☐ Razor
- ☐ 6mm Allenkey
- ☐ Torque Wrench
- ☐ Pliers
- ☐ Pry Bar
- ☐ 15mm Stubby Wrench
- ☐ 16mm Wrench
- ☐ 1 Inch Wrench
- ☐ 3" Extension
- ☐ 1/2" Ratchet
- ☐ 3/8" Ratchet

Disclaimer: This kit is designed for **OFFROAD RACE USE ONLY**. It is not intended, and should not be used for street driven vehicles. Installing this kit **will** void your factory warranty and can potentially cause damage if installed incorrectly. Read these instructions, then read them again before touching your tools. We urge you to have your work done by a professional.

We will not be held liable for any damage caused to your truck from the installation of this product.

Step 1: Remove (x4) bolts holding the top plastic cover on using an 8mm socket. Pull the dipstick out and proceed to take the cover off. Once you have removed the top cover put the dipstick back into place to ensure no debris falls down the tube.



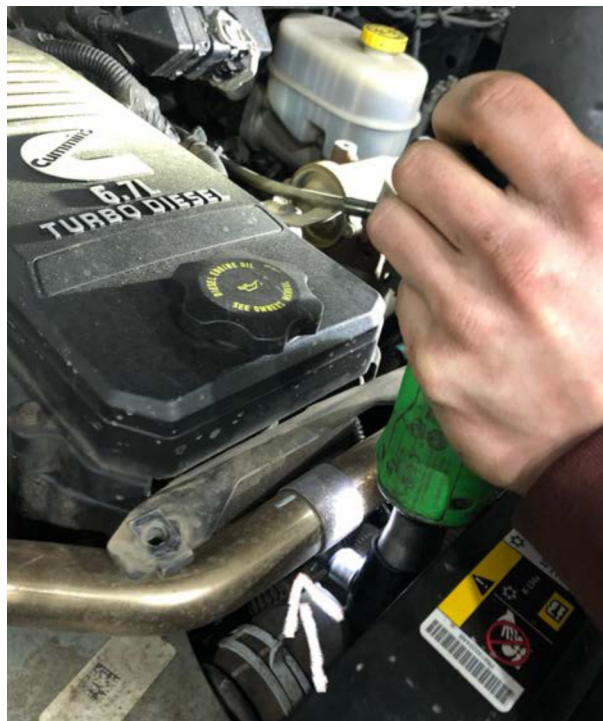
Step 2: Go ahead and disconnect the grey and brown connectors from the EGR valve and temperature sensor.



Step 4: Once the EGR is disconnected, remove (x4) bolts holding the EGR Valve on top of the intake horn using a 10mm socket.



Step 5: Next, is (1x) One 8mm bolt directly in-line with the oil cap in between the EGR cross over the tube and the radiator hose. As seen in the photo below, use your ratchet to press down on the rad hose to get in. This one is a bit tough to get at!



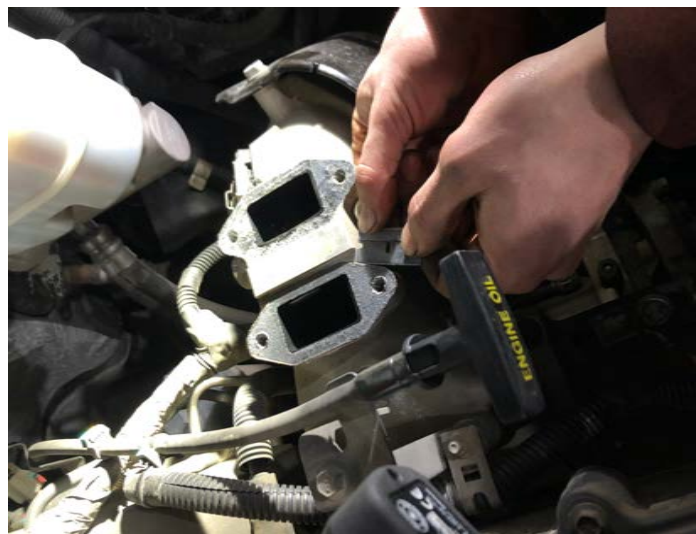
Step 6: Now, on the far left side of the EGR crossover tube undo the v-band clamp using an 11mm Deep Socket.



Proceed to break the clamp free with a flat head screwdriver and put back out of the way.

Step 7: Remove the EGR Valve plus crossover tube and set it aside, make sure you don't let the metal round tube gasket fall off.

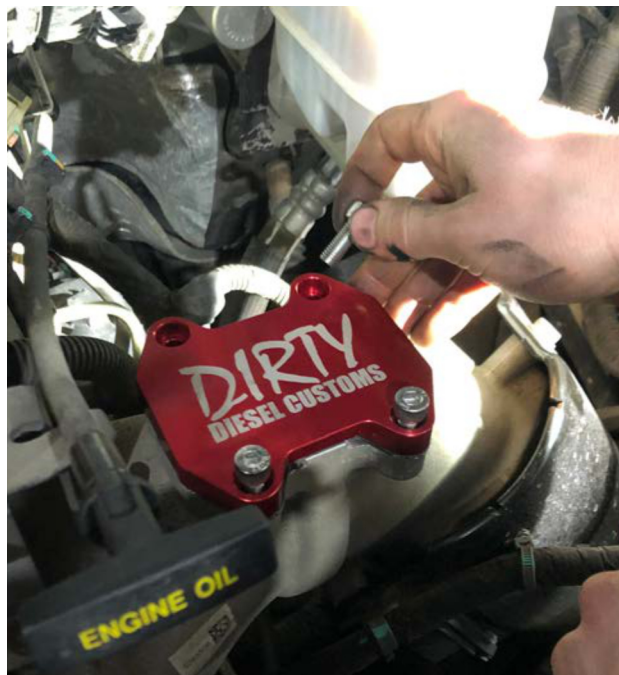
Step 8: Use a razor blade and clean off the surface where the EGR valve was sitting. Make sure you don't let the gasket material fall into the intake horn!



Step 9: Once the surface is as clean as possible, place both new gaskets on with the larger Aluminum anodized plate using the socket head bolts provided.



Step10: Place the Logo side of the plate up, with the gasket on your intake horn and use a **6mm Allen Head** to **Torque to 18ft-lb**

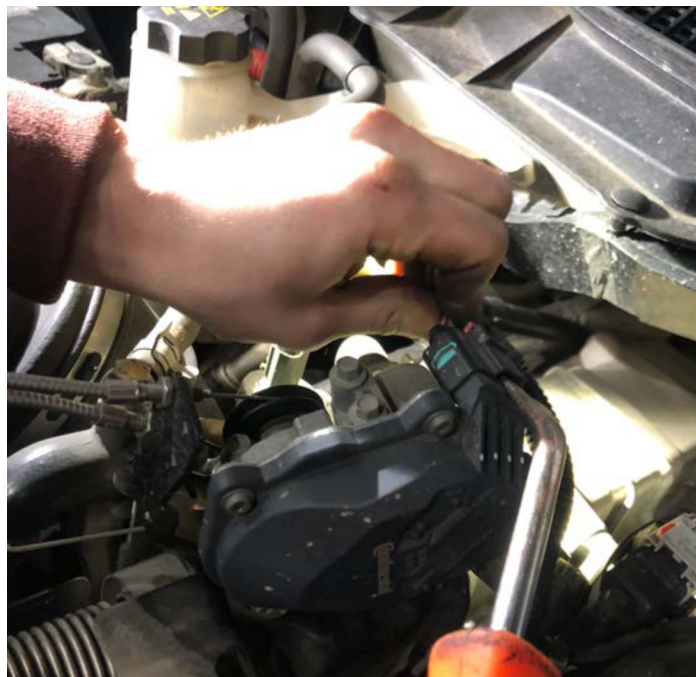


Step 11: Unplug the **BROWN** Exhaust Back Pressure Sensor



Note: 2008-2012 Trucks will have this sensor on the Thermostat Housing and it can be left alone.

Step 12: Unplug the **Black Plug** off the EGR Cooler Servo Assembly.



Step 13: Now that the EGR Crossover Pipe is off, you can now get the clamp off that you loosened earlier.

Step 14: Use your pliers to remove the hose clamp from the crankcase vent on the valve cover.
Unbolt the tube from the side of the EGR and save the piping.



Step 15: Remove the intake tube and smaller crankcase tube from the air filter to the turbocharger.

Step 16: Using a 10mm socket, remove the heatshield bolts that sit under the cooler on the passenger side of your engine bay.

Step 17: Use your 10mm to remove the nuts from the front of the EGR Cooler Assembly that hold the heatshield.



Step 18: Now you can pry the heatshield off the one stud and bend it out of way to pull the front piece off.



Step 19: Remove the remaining heatshield bolts using an 8mm socket.



Step 20: Spray Penetrating Oil on the two (x2) 15mm nuts holding the Front of the EGR to the exhaust manifold and let them rest (maybe grab yourself a beer while they soak.). These are both **VERY TIGHT** and they like to bind up, take your time and make sure you do not break a stud.



Step 21: Break the accessible 15mm nut free, then, you'll then need a stubby 15mm wrench to get the remaining nut. We like to use a pry bar on the wrench to break it free, just set the wrench on the nut and get the pry bar in from the top and crack it. Just make sure you're not prying on anything that can break!

Note: *Keep these two nuts, we will be reusing them in later steps.*

Step 22: Remove the two (x2) 10mm bolts between the EGR and the Valve Cover that hold the bracket for the Bypass Valve down.



Step 23: Remove the three (x3) bolts on the other side of the EGR Cooler



Step 24: Pull off the Bypass Valve Assembly including the front section of the cooler plumbing.



Step 25: Now you can get the 15mm nuts that you had saved to put on the supplied small steel plate and **Torque to 37ft-lb.**

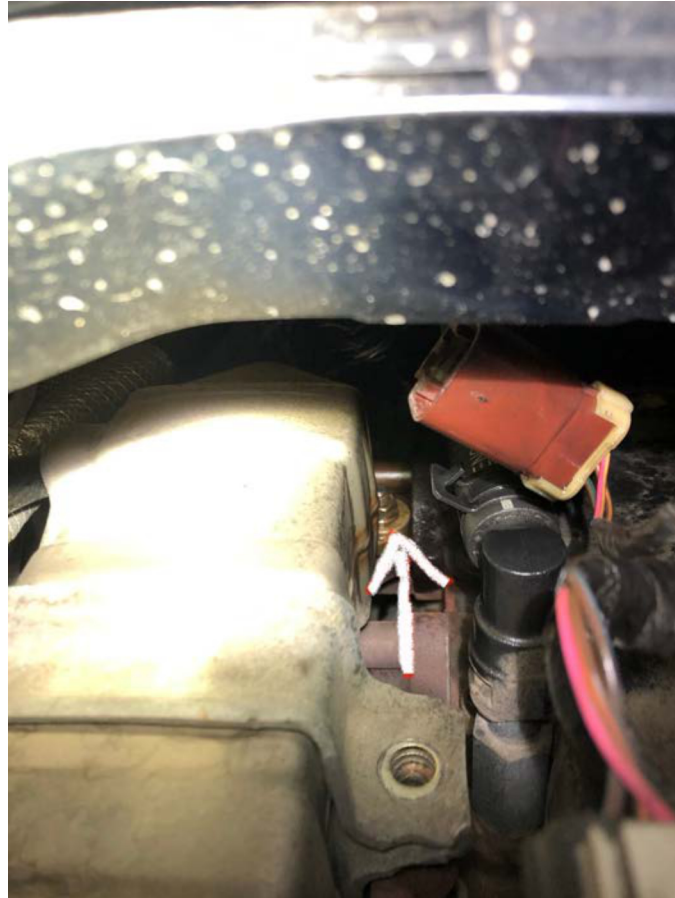


Step 26: Unbolt the four (x4) 10mm bolts that hold down the EGR Cooler.



Step 27: On the back left side, use a pry bar to get the transmission dipstick tube hold-down off **(68RFE Automatics Only)**

Step 28: There are two more 15mm nuts, and they also like to bind up. They are in the very back holding the EGR Cooler to the manifold, same as the front side. You can see them in the next photo.



Step 29: Throw a rag or something over the EGR Cooler as it may be hot, and use a 3" extension with a 15mm socket on a ½" ratchet to get at both. Set the two bolts aside as we will be reusing them again.

At this time, make sure you have a drain pan under the turbo on the passenger side! It's about to get messy. 2009-2012 Trucks you can drain the coolant. 13+ trucks are tougher so it's easier to just top up after (about ½ Liter)

Step 30: Pull the Coolantg Line/Tube out of the cooler and use a pry bar to get the Coolant Hose off. **You will lose a tiny amount of coolant if you haven't drained it.** Once removed, you're ready to pull the cooler out!



Step 31: Use a pry bar to release the cooler from the bracket and pull the cooler up and forward to remove it.

Step 32: Remove the two (x2) 13mm bolts to pull the bracket off and remove the bracket



Step 33: Now you're ready to install the second larger Steel Plate. If you have a pyrometer, you can install the bung on the plate and install your pyro. If not, just make sure you install the $\frac{1}{8}$ " NPT plug snug in place and **Torque the plate to 37ft-lbs.**

Step 34: Remove the Exhaust Manifold bolt out from Cylinder 4 using a 13mm socket.



Step 35: Thread in the stud with the Factory Collar and tighten the 15mm supplied nut,

Torque it to 37ft-lbs

Step 36: Grab the supplied Aluminum Threaded Collar and thread it onto the end of the new stud, snug it up with a 16mm wrench.



Step 37: Get your supplied 1/2" NPT Plug ready by wrapping it in Teflon Tape to plug the hole you're about to make.

Step 38: Use a 1" Wrench to take out the Coolant Nipple that threads into the head. **Go Slowly, it's very tight.** Once out, quickly install the NPT Plug in its place.



Step 39: Grab the Coolant Nipple you removed in the last step and remove the O-Ring and put Teflon Tape on the threads and have it ready to place into the plug you are removing in the next step.

Step 40: Pull out the rear plug (directly behind the nipple you just removed) with a $\frac{3}{8}$ " ratchet and thread in the Coolant Nipple and tighten it up.

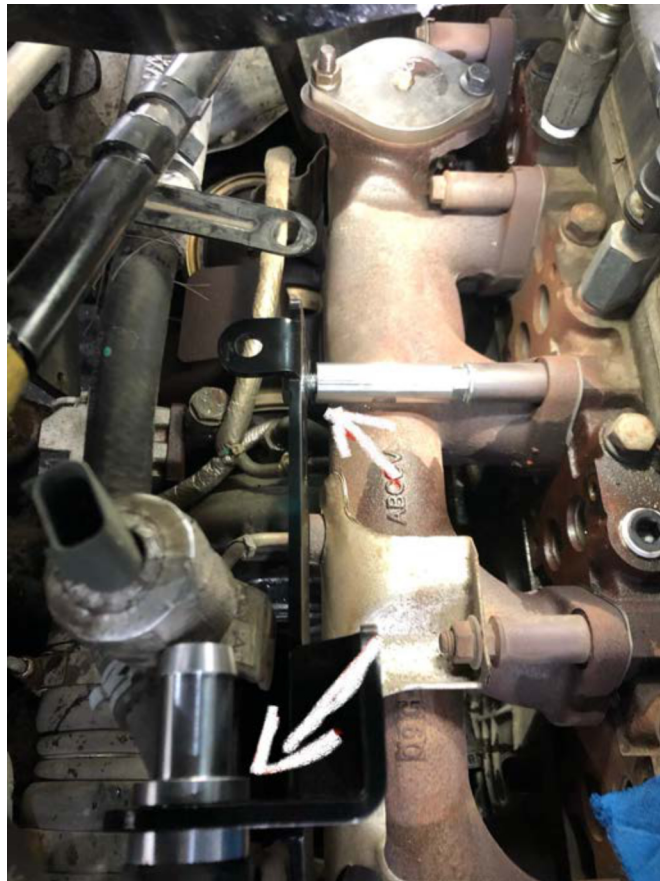
Coolant will come spilling out very quickly so be prepared.



Step 41: Grab the supplied aluminum hose adapter, lube it up and press it into the coolant line as seen in the image on the following page.



Step 42: Get our your Black Steel Bracket and attach it to the threaded collar and hose adapter.



Step 43: Use the supplied 10mm bolt and washer to hold the bottom of the bracket to the threaded collar you installed earlier on **Exhaust Bolt #4**.

Step 44: Now, you can bolt up the transmission dipstick to the top of the bracket using a 1/4" bolt and nut.

Step 45: All the years of trucks have different things bolted to this bracket, but use the 5/16" bolts to connect the backpressure tube (2008-2012) and anything else that lines up.

Step 46: Grab the supplied Silicone Hose and lube up the shorter end and slide it onto the coolant nipple (it's tight) with a hose clamp (you may want to hold it in there first in-case you want to cut a bit off the shorter end). Then, line up the hose to the aluminum hose adapter to see how much you'll need for the other side.

Step 47: Cut the Silicone Hose to size, lube it up, slide it onto the hose adapter, and tighten up your hose clamps. **Make sure you keep the end you cut off!**

Step 48: Plug in the Brown Back Pressure Sensor (13+ Trucks Only) and tie up the EGR pigtails cleanly to the brown one.

Step 49: Use the trimmed end of the hose you cut earlier and cut a piece about 7" long to replace the Crankcase Vent Hose between the Tube and the Valve Cover.



Step 50: Use the supplied Aluminum Spacer and longer 5/16" bolt to attach the tube to the bracket when installing the Air Intake Tubing.



Step 51: Make sure you unplug the throttle valve on the rear of the Intake Horn by the DIRTY plate.



Step 52: Make sure you tie up any loose wires you have left unplugged and top up your coolant and you're all done!

Let us know if you have any other questions or concerns when installing your kit. You can reach out to us via email at support@thedieseltechs.com