

# **INDUSTRIAL** I N J E C T I O N



## Compound Add-A Turbo Installation Instructions

2003-2016 5.9L/6.7L  
Dodge Cummins



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***Note: Our kit will NOT work with an AFE exhaust manifold. It will work with BD, ATS or PDI exhaust manifold. If you have any questions call us at 1-800-955-0476.***

## STEP 1



Disconnect the negative battery cables from both the passenger side and the drivers side batteries.



## STEP 2



Unplug air intake sensor, then remove the clamps from the intake tube, one at the turbo, and one at the air box. Remove hold down nut at the front of the air box. Then remove the intake tube and air box from the truck.



### STEP 3



Use a pair of pliers to drain coolant by twisting the coolant drain plug found on the bottom drivers side of the radiator.



### STEP 4



Remove the passenger side wheel well by removing the screws that attach it to the fender.



## STEP 5



Loosen the two clamps on the stock exhaust downpipe and cast elbow then remove.



## STEP 6



Remove oil filter and clean the freeze plug located beneath the oil filter.

*Note: It helps to use brake cleaner and compressed air to make sure the freeze plug is cleaned thoroughly, so no debris will fall into the block when it is removed.*



## STEP 7



Use a screwdriver and a hammer to tap the top part of the freeze plug gently until it begins to roll. Then grab the freeze plug with pliers and remove it from the block.

*Note: Once the freeze plug has been removed, double check that it is clean around the hole in the block and make sure there are no sharp edges.*



## STEP 8



Install the o-ring onto the groove of the drain nipple and apply grease to the drain and the hole in the block.



## STEP 9



Install the drain nipple into the block by gently tapping with a hammer until the edge of the drain and the block meet.

*Note: You can use an air hammer to install, but you need to be careful to not use excessive force because you can damage the nipple.*



## STEP 10



Using pliers remove the clamps from the coolant hoses that lead to the heater core. There are two clamps at the engine, and two clamps at the firewall. After the clamps are removed you can remove the hoses.

*Note: Be careful not to damage the coolant nipples at the firewall when removing the coolant hoses. You may also need to cut the lower waterline bracket at this time if it hasn't been done on your truck previously*



## STEP 11



Use a marker to trace the heat shield onto the back of the protective heat wrap, then cut to fit and apply to heat shield.



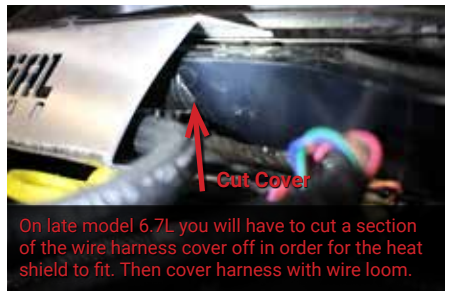
**Important:** If you are installing on a 6.7L please skip to page 28 for the next step! If you are installing on a 5.9L then continue to step 12.

## STEP 12



Remove two plastic clips from cowling, slide heat shield in between plastic and metal part of cowling and secure with provided push lock fasteners. Attach bottom part of the heat shield using the provided hardware.

*Note:* 6.7L trucks may need to drill out the plastic cowling. There is already a hole in the metal underneath.



On late model 6.7L you will have to cut a section of the wire harness cover off in order for the heat shield to fit. Then cover harness with wire loom.



## STEP 13



If you are installing a pyrometer or already have one installed, you will need to make sure it is installed in the #1,2 or 6 location of the exhaust manifold. If it is installed in the #3, 4 or 5 location it will interfere with the new large charger that is being installed.

*Note: If your new or current manifold is drilled and tapped in the #3, 4 or 5 location, you will have to plug the hole and re-locate the pyrometer.*

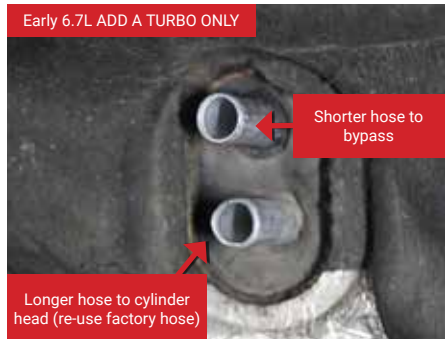


## STEP 14



Use the remainder of the heat wrap from step 11 to wrap around the new coolant hoses that have been provided. Then using the stock hose clamps, install the new hoses. On the 5.9L the longer hose goes from the top hole on the heater core to the cylinder head, the shorter hose goes from the bottom hole to the bypass next to the manifold.

*Note: 6.7L add a turbo only - switch orientation of coolant hoses; longer hose from lower heater core connection to cylinder head, shorter hose from upper heater core connection to bypass.*



## STEP 15



Remove the compressor cover and clamp on your new large charger. Then loosen the turbine housing slightly so that it will spin with slight force.



## STEP 16



Using the supplied oil drain gasket and hardware, *(two smaller bolts and washers included in bag of hardware)* install the oil drain onto the center section of the large charger. Make sure the drain faces towards the compressor side of the charger.



Continued on next page »



## STEP 17



Remove the front upper motor mount bolt and set aside to use for the large charger support bracket. Then remove the factory A/C line from the fire wall and from the A/C compressor and discard.



## STEP 18

2013 - 2016 Only



Using the factory hardware, install the new supplied soft A/C line from the fire wall to the A/C compressor. Using the supplied P-clamp, mark and drill the shock tower then secure the A/C line to the shock tower using the clamp and supplied hardware.



Continued on next page »



## STEP 19



Install the new large charger by lining up the support bracket to the hole on the motor mount and install the bolt that you previously removed. Do not fully tighten, leave it loose enough that you can rock the charger back and forth slightly.

*Note: It is helpful to have a second person start the bolt by reaching in through the wheel well.*



## STEP 20



Install the hot pipe by having a person pass it through the wheel well, and another person aligning it with the large charger from above. Install the supplied gasket and hardware. Leave the hardware loose so you can line up the hot pipe with the S300 charger. Position hot pipe clamp so that it will not interfere with the down pipe. **Do not tighten fully at this time.**



## STEP 21



Install the heim joint top support bracket onto the studded exhaust manifold bolt, then attach the heim joint to the support bracket and to the top of the charger using the supplied hardware and tighten.

*Note: You will have to push the bolt for the heim joint support through the hole before you mount it onto the exhaust manifold stud.*



## STEP 22



Make sure everything is lined up properly, tighten the bottom side of the hot pipe first, tighten the turbine housing clamp next. Use a torque wrench to make sure the turbine housing clamp is tightened to 110 in/lbs. Then tighten the four T6 flange bolts.

**Important:** it is good to check that the compressor wheel spins free and has not gotten bound up during the installation process.

*Note:* It may be easier to tighten the back T6 flange bolt closest to the engine, using a long extension and a “wobbly”, accessing through the wheel well.





## STEP 23



Get the supplied (large) steel braided drain hose and apply some assembly lube into the end. Also apply some assembly lube onto the drain line on the support bracket. Install the hose onto the drain line.

*Note: It will take a lot of force and twisting to get the hose installed fully onto the drain line. It helps to have a person pushing from the bottom and another person pulling from the top.*

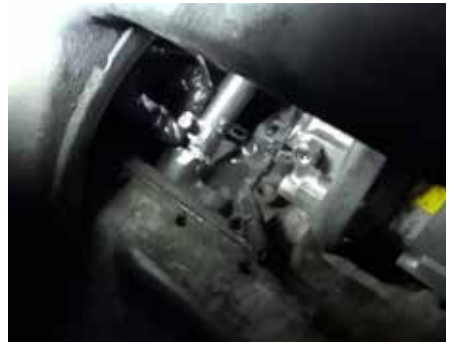


## STEP 24



On the bottom side of the drain, using a marker, align the hose to the drain nipple and mark where to cut. Be sure not to cut too short, but also leave enough hose to have room to remove the oil filter. Once you have it marked, use some electrical tape to cover the metal sheathing where you will cut. Using a die grinder, cut the hose to fit. Make sure the hose is clean of all debris then apply some assembly lube to the hose and nipple. Slide the clamps onto the hose, then install the hose onto the drain nipple. Slide top clamp up to the drain support and tighten. Then tighten bottom clamp on the nipple.

Continued on next page »



## STEP 25



Carefully slide the compressor cover on and mark a line on the exhaust manifold where the center of the compressor outlet and the manifold meet. This will be used as a reference while cutting the boot to fit.

The boot will need to be modified to ensure a perfect fit for your truck. Use the supplied clamps to help you cut a straight line when cutting the boot. Cut the 4 inch side to fit. Be careful not to cut too much. After the first cut, do a test fit and reference the marking on the manifold to see if you need to cut more.

*Note: It is always better to cut the boot slightly long to allow expansion when under boost pressure.*



## STEP 26



Now cut the 3 inch side of the boot and test fit it before installing the compressor cover.



## STEP 27



Install the boot onto the compressor housing outlet first. Make sure the compressor clamp is on the large charger before installation. Carefully slide the compressor and boot into place. Once the boot and compressor cover are in place, keep steady pressure on the compressor while you tighten the compressor clamp. Torque the compressor cover clamp to 110 in/lbs. Tighten the jam nuts on the heim joint. Make sure there is at least a paper width gap between the compressor cover and the manifold to ensure they aren't touching.



Continued on next page »



## STEP 28



Install the boot clamps. Install the bottom clamp first from the top side and slide it down. Tighten through the wheel well. Install the top clamp and tighten



## STEP 29



Remove plug from oil filter housing. Apply adequate amount of thread tape to new oil feed fittings. Install small fitting into the top of the oil filter housing and tighten. Install larger fitting into the top of the large charger and tighten. Once the fittings are tightened you can install the oil feed line from the top of the oil filter housing to the top of the large charger and tighten.

*Note: Be careful not to get the oil feed line twisted when tightening. All new turbo charger oil feed lines should be bled.*



## STEP 30



Remove grid heater relay from stock location and install drop bracket using supplied hardware. You may have to twist the charge air tube so the grid heater relay will fit with the drop bracket.



## STEP 31



Install the down pipe by passing it through the bottom of the engine bay and aligning it with the large charger and tighten the clamp.

*Note: You may need to loosen the clamp again when installing the exhaust.*



## STEP 32



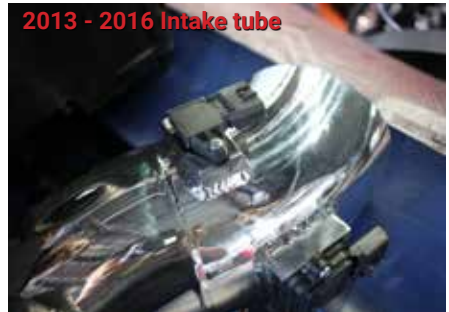
Install the supplied turbine blanket onto the large charger. Make sure there is enough room for the blanket to slide between the turbine housing on the large charger and the compressor cover on the S300. Use the supplied metal zip ties to secure the turbine blanket through the eyelets. Do not over-tighten. Cut off the excess zip tie when finished.



## STEP 33



Remove the sensor(s) out of the stock intake box and install into the S&B sensor location(s) with new hardware and seal.





## STEP 34

2003 - 2012 Only



Set the air intake box in the truck. Install the filter onto the intake tube and tighten. Then slide the boot all the way on the other end of the intake tube. Slide clamps onto the intake tube before installing intake on the truck. Install intake tube onto turbo, once in place, slide the boot onto the compressor cover and tighten clamps. Remove film from intake window and install on box and tighten hardware. Re-connect sensor(s).

*Note: On 5.9L and early 6.7L the front intake hold down will be a stud, on late 6.7L it will be a bolt.*



## STEP 35

2013 - 2016 Only



Install 4.5" to 5" boot onto intake tube, then push intake tube into intake box to install. Set intake into truck and push boot onto the compressor cover. Install clamps onto boot and tighten. Install air filter onto intake tube and tighten. Install intake box window with hardware and tighten. Tighten front intake box hold down with supplied bolt.



## STEP 36



To complete the install, re-connect your exhaust to the down pipe and re-attach your battery cables.

Before you re-install your wheel well, we recommend doing a test drive to make sure everything is fit correctly and there are no leaks in the system. Once you have determined that everything is working properly, re-install the wheel well.

Thank you for choosing Industrial Injection!

# The following are instructions for 6.7L ONLY!

» Continued from step 11

## STEP 1

2007.5 - 2012 Only



Remove factory coolant overflow bottle and detach hoses. Install coolant bottle bracket using supplied hardware. Attach bracket with 2 mounts on fire wall side, and 1 on the fender side.

*Note: You will use the same mount location when installing the heat shield.*



## STEP 2

2013 - 2016 Only



Remove factory coolant bottle by first detaching all coolant hoses, coolant level sensor, and removing mounting bolts.



## STEP 3

2007.5 - 2012 Only



Install new coolant overflow bottle and attach the overflow hose. Attach to the bracket with the 3 supplied zip screws.



## STEP 4

2013 -2016 Only



Once the factory coolant bottle is removed, you will need to detach the battery and remove it to install the new coolant bottle. You will need to drill the holes in the battery tray to a slightly larger size where the new coolant bottle will mount. Install new coolant bottle by sliding mounting hook into the factory slot on the back side of the battery tray. Tighten using supplied hardware

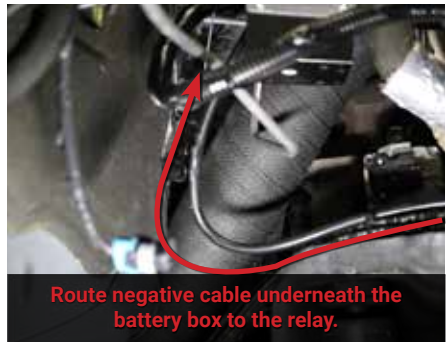


## STEP 5

2013 -2016 Only



Remove factory grid heater relay and re-locate to the new coolant bottle using supplied hardware. You will need to cut and splice the negative cable to lengthen for re-location.



## STEP 6



Install supplied performance exhaust plates onto the manifold.

*Note: We are simulating this step on a manifold that has been removed from the truck. Your manifold will remain on the truck.*

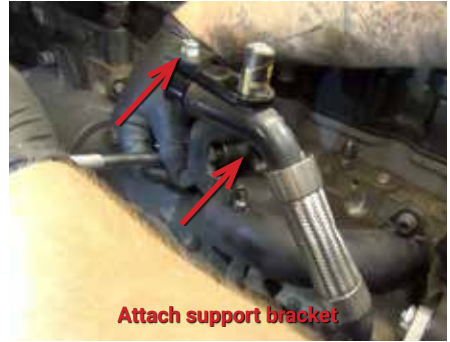
*Note: For clearance of the hotpipe, remove outer rear (passenger side rear) stud on the manifold and replace with supplied bolt for the performance plate.*



## STEP 7



**2007.5 -2012 Only** Add a little assembly lube onto coolant plug and install. Add tear drop style bracket onto the coolant line as shown, and attach support bracket from cylinder head to the coolant plug.



**2013 -2016 Only** Install supplied coolant distribution pipe and o-ring into the coolant inlet housing on the block, re-using factory hardware.



## STEP 8

**2013 -2016 Only**



Install supplied coolant line to coolant bottle and reattach factory lines to coolant bottle. Install coolant level footer and zip tie out of the way.

*Note: You may need to cut the line to fit.*





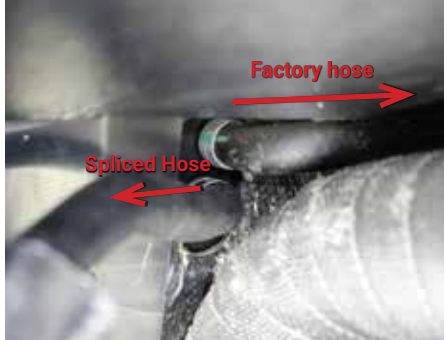
## STEP 9

2013 -2016 Only



Using factory and supplied coolant hoses, cut and lengthen the coolant hose from the firewall. Use supplied 90° hose from firewall, measure length, cut and splice with factory hose. Be sure to route the spliced together lines away from any heat sources. Use supplied bracket and self tapping screw to mount hose to the heat shield.

*Note: You may want to wrap the coolant hose with heat wrap.*



Remove factory coolant line bracket. Re-use bolt and install new bracket using the manifold stud.

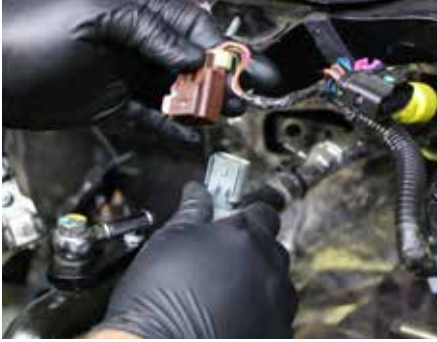


## STEP 10

2013 -2016 Only



Now you will need to remove the EBP sensor and install the supplied EBP plug.



## STEP 11



Install the intake horn performance plate. Re-use the factory mount bolts. Install crank case breather hose using the supplied clamp. Route it down the engine to vent to atmosphere.



## STEP 12



Install transmission dipstick support bracket using supplied hardware. Mount one side to the factory mount on the dipstick. Mount the other side to the factory studded bolt on the valve cover.

Install 3 coolant plugs. One in coolant line, one on the cylinder head, and one in the engine block behind the filter housing as shown.



*Please return to page 8 - step 12 to finish the remainder of the install.*

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