

with Installation Instructions

Owner's Manual

Banks Intercooler System

2013-2016 Chevy/GMC Turbo-Diesel Pickup Trucks

THIS MANUAL IS FOR USE WITH BANKS INTERCOOLER
SYSTEM 25988

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General Installation Practices

Dear Customer,

If you have any questions concerning the installation of your Banks Intercooler, please call our Technical Service Hotline at (888) 839-2700 between 7:00 am - 4:00 pm (PT). If you have any questions relating to shipping or billing, please contact our Customer Service Department at (888) 839-5600.

Thank you.

- 1.** Before starting work, familiarize yourself with the installation procedure by reading all of the instructions.
- 2.** Throughout this manual, the left side of the vehicle refers to the driver's side, and the right side to the passenger's side.
- 3.** Disconnect the negative (ground) cable from the battery (or batteries, if there are two) before beginning work.
- 4.** Route and tie wires and hoses a minimum of 6" away from exhaust heat, moving parts and sharp edges. Clearance of 8" or more is recommended where possible.
- 5.** When raising the vehicle, support it on properly weight-rated safety stands, ramps or a commercial hoist. Follow the manufacturer's safety precautions. Take care to balance the vehicle to prevent it from slipping or falling. When using ramps, be sure the front wheels are centered squarely on the topsides. When raising the front of the vehicle, put the transmission in park (automatic) or reverse (manual), set the parking brake, and block the rear wheels. When raising the back of

the vehicle, be sure the vehicle is on level ground and the front wheels are blocked securely.

Caution! Do not use floor jacks to support the vehicle while working under it. Do not raise the vehicle onto concrete blocks, masonry or any other item not intended specifically for this use.

6. During installation, keep the work area clean. Do not allow anything to be dropped into intake, exhaust, or lubrication system components while performing the installation, as foreign objects will cause immediate engine damage upon start-up.

TOOLS REQUIRED:

- Drive ratchet
- Ratchet extension
- Inch and metric deep sockets
- Pliers
- Phillips and flat blade screwdrivers
- Torx bits

HIGHLY RECOMMENDED TOOLS:

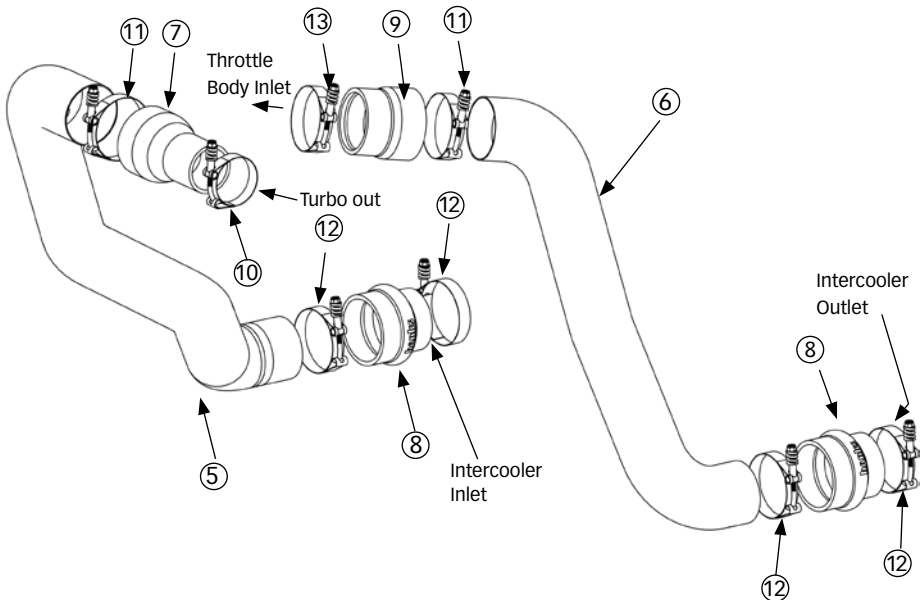
- Foot-pound torque wrench
- Inch-pound torque wrench

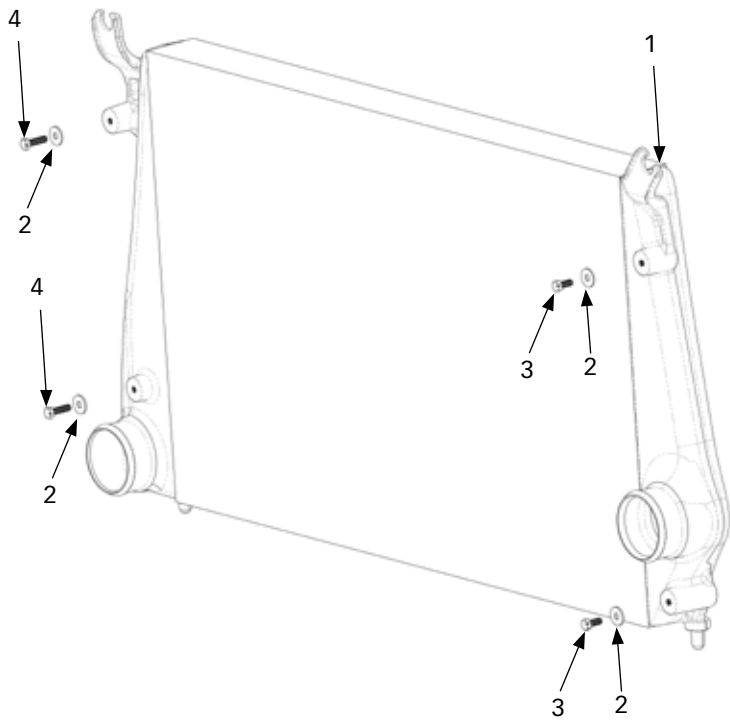
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General Assembly

Item	Description	Part#	Qty
1	Intercooler - 2013-16 Chevy 6.6L Duramax	25561	1
2	Washer - M8 X 24MM	91702	4
3	Hex Bolt - 8MM-1.25 X 20MM	91786	2
4	Hex Bolt - 8MM-1.25 X 30MM	91790	2
5	Banks Boost Tube, Left (Driver)	42332	1
6	Banks Boost Tube, Right (Passenger)	42331	1
7	Hose, Turbo Outlet, 2.36" to 3.5", 6.0" long	94299	1
8	Hump Hose, 3.5" to 3.5", 3.5" long w/o internal bead	94293	2
9	Hose, 3.5" to 3.15", 2.9" long w/ internal bead	94312	1
10	T-Bolt Clamp, 2.8" No Spring	92852	1
11	T-Bolt Clamp, 4.0" Spring Loaded	92901	2
12	T-Bolt Clamp, 3.75" Spring Loaded	92897	4
13	T-Bolt Clamp, 3.5" Spring Loaded	92895	1
14	Urocal, Banks Power, Small	96009	2
15	Owners Manual, 2013-2016 Chevy 6.6L Duramax	97656	1





Section 1:

Removing stock Intercooler

1. Disconnect the ground cables from both the driver and passenger side batteries. Position the loose cables so that they do not come into contact with their respective battery posts during the installation.

2. Remove air box filter assembly.

Loosen the hose clamp from the stock intake tube and separate the stock intake tube. Remove the Air Flow (MAF) sensor connector from stock air box filter cover. Remove stock air box by lifting the air box up and out. The bottom of the stock air box is held in place by rubber grommets. There may be some slight resistance when removing the stock air box.

NOTE: Be careful not to damage the connector or the MAF sensor.

NOTE: Number of sensors may vary with model year.

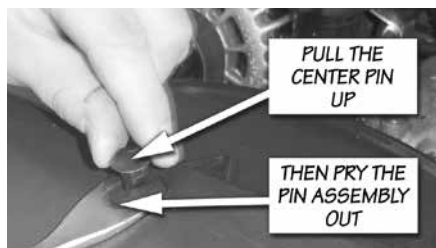
3. Remove the upper grill baffle.

Remove the upper grill baffle that mounts between the grill and radiator cross brace. The baffle is held in place by push-in retainers. The retainers are removed by pulling up on the center pin, then prying the retainer out of it's hole as shown in **Figure 1**.

4. Remove front grill.

Pull the grill gently outward until all clips are disengaged.

Figure 1



NOTE: Some model years may vary. Be sure to remove any bolts holding grill first.

5. Remove the inner fenderwell.

Remove the pushpin fasteners and bolts from both driver's and passenger's side fenderwell.

NOTE: The fasteners are accessed through the wheel arch opening. Pull the fenderwell down approximately six inches once the fasteners are removed. Disconnect the wire harness retaining clips on top of the fenderwell, and then remove the fenderwell from the vehicle.

6. Remove both diagonal fender support braces. **See figure 2.**

Figure 2



7. Remove trim panel below headlight. See **figure 3**.

Figure 3



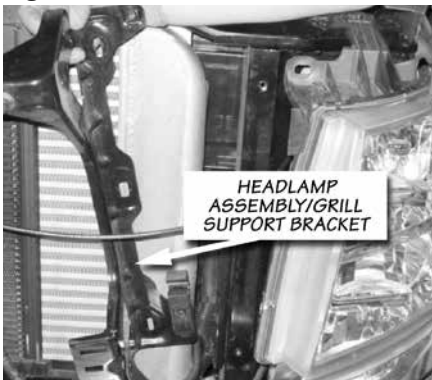
8. Remove three 10mm bolts from headlamps. Pull top of the lamp down and carefully forward. Disconnect headlamp harness from the backside of the headlamp assembly, and remove both driver's and passenger headlamp assemblies from the vehicle.

NOTE: The headlamp is easily disengaged and does not require force.

ATTENTION: Number and location of bolts on the headlamp assembly may vary by model and year.

9. Remove the headlamp mounting structure on the driver and passenger side of the vehicle shown in **Figure 4**. There are six 10mm bolts, three per side. The retaining clip that attaches the hood latch cable to the support structure must also be removed on the driver's side.

Figure 4



10. Remove the two bolts that secure the intercooler to the upper radiator cross brace. Remove four 13mm bolts, two per side, that connect the intercooler to the radiator.

11. Remove the low pressure A/C condenser line from the line retainer attached to the upper fan shroud.

12. Remove the two upper condenser mounting bolts that attach to the radiator cross brace.

13. Remove the ambient temp sensor. See **figure 5**.

Figure 5



14. Mark the location of the hood latch, disconnect the hood latch electrical connector, then remove the hood latch from the latch support. The latch is held in place by three bolts. It is not necessary to remove the cable from the latch, just place the latch and cable assembly out of the way.

15. Remove the two bolts that attach the latch support to the radiator cross brace and the four lower attachment bolts (two per side). The two bolts that attach the upper support to the radiator cross brace are accessed from the engine compartment side of the vehicle.

16. Remove oil cooler mounting bolts.

17. Remove the power steering cooler mounting bolts.

18. Pull the air conditioning condenser out of its lower mounts.

19. Remove the six bolts (three per side) that secure the radiator cross brace. The bolts are on the bottom side at each end of the support. Remove the cross brace from the vehicle.

Figure 6



20. Remove mounting tray under airbox and corner brace. **See figures 6/7.**

21. Loosen the driver side boost tube hose clamps. Remove the boost tube from the charge air cooler (CAC).

22. Remove the passenger side boost tube and intake air temperature sensor. Use a small screw driver to rotate the retaining ring to release the boost tube. **See figure 8**

Figure 7



Figure 8



23. At this point the charge air cooler is ready for removal. Shown in **figure 9**.

24. Remove the charge air cooler from the vehicle. Check that the lower mounting peg grommets are removed from the stock intercooler and place to the side. The lower rubber grommet will be transferred to the Banks intercooler.

25. Loosen the driver side boost tube hose clamps from the turbo outlet. Remove the stock driver's side boost tube from the vehicle.

26. Locate the supplied Banks charge air cooler and transfer both top and bottom rubber grommets and corresponding metal sleeve into position on the Banks charge air cooler.

27. Install the Banks CAC into the vehicle. Align the lower CAC mounting pegs with the rubber mounts in the vehicle's frame. There is a significant amount of play in the rubber mounts that can allow them to be aligned with the CAC as required.

28. Reinstall the radiator cross brace. Leave the attachment bolts loose to aid in aligning the CAC with the support.

29. Reinstall the radiator onto CAC. Secure the radiator to the Banks CAC with supplied bolts washers supplied in the Banks system. Tighten to 15-18 ft-lbs.

NOTE: Use the 20 mm long bolts on the passenger side, and the 30 mm bolts on the driver's side.

NOTE: Install the passenger side bolts 1st then install driver side bolts. It may be helpful to use a pry bar or similar to assist in aligning the screw holes between the radiator and the Banks charge air cooler.

30. Install the upper CAC attachment bolts that were previously removed. There is enough play in the lower mounting pads, that the CAC can be positioned to align with the upper cross brace. Tighten the bolts.

31. Check that the engine-cooling fan can freely spin without contacting the lower fan shroud. If the fan contacts the shroud, the shroud must be realigned with the radiator.

32. Tighten the six radiator-cross brace bolts to 80 in-lbs. Install the diagonal fender support brace and tighten the bolts.

Figure 9



Section 2:

Installation of Banks Intercooler

NOTE: Before slipping any boost tubes and the corresponding hoses, into position, ensure that all connection ends are clean and free of any oil residue and contaminants. Clean compressor outlet and all connection points with a non-oil based solvent such as Acetone, Mineral Spirits, Denatured Alcohol or Lacquer Thinner. Read and follow the manufactures operation instruction for non-oil based solvent cleaner.

NOTE: The a/c line that runs near the intake manifold will need to be bent downward to provide clearance for the boost tube. The a/c line can be bent by placing a wooden block on the a/c line, then lightly tapping the block with a hammer.

33. Install hump hose (Item #9) onto the Banks intercooler inlet with clamps (Item #7) oriented as shown in **figure 10**.

Figure 10



Figure 11



34. Insert the driver's side boost tube up through the fender well opening and insert into the intercooler hump hose.

35. Connect the turbo outlet to the boost tube using transition hose (Item #8), and clamps (Items #5 and 6).

36. Install hump hose (Item #9) onto the Banks intercooler outlet with clamps (Item #7) oriented as shown in **figure 11**.

37. Install transition hose (Item #8) onto the throttle body inlet with clamps (Items #6 and 7) as shown in **figure 12**.

38. Insert the passenger side boost tube and tighten all clamps.

39. Re-install the intake air temperature sensor as shown in **figure 13**.

40. Secure IAT sensor harness as shown in **figure 14**.

Figure 12



Figure 13



Figure 14



41. Install the a/c condenser, ambient temp sensor, oil cooler, power steering cooler, their tighten it's upper mounting bolts to 80 in-lbs.

42. Install the latch support. Tighten it's attachment bolts to 80 in-lbs.

43. Install the hood latch. Position it so that it aligns with the marks that were previously made on the latch support prior to it's removal. Tighten it's bolts to 80 in-lbs.

44. Install the driver and passenger side headlamp support structures. Tighten the screws to 80 in-lbs.

45. Install the electrical connectors to the headlamp assembly. Install the headlamp assemblies and trim panels.

46. Install the grill by snapping in the tabs into the retainer clips.

47. Install the upper grill baffle and secure with the push-in retainers that were previously removed. The push-in retainers that secure the grill baffle are secured by inserting the retainer with the center pin pulled out. Once the retainer is inserted, press the center pin down to secure the retainer.

48. Install the mounting tray, corner brace, and air box assembly. Install the air duct on the turbocharger inlet and tighten it's hose clamp.

49. Install the driver side and passenger side fenderwell. The charge air temperature before the CAC approaches 400°F at full load. So, take care to route wiring away from the driver side boost tube and re-install the factory wire retainers on the fenderwell cover.

50. Re-install the connector on the MAF sensor at the air box assembly

51. Re-connect the ground cables on both batteries.

52. Road test the truck ensuring there are no leaks. Be sure to re-check all the connections and re-tighten everything at least twice in the first three days or 100 miles.

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