



2011-2014
6.7 Powerstroke
Installation Instructions

KCTURBOS.COM
480-688-7160

Warlock Retrofit Kit Installation Preparation:

NOTICE: Before you start your build, please take a few moments to review the installation steps set out within this instruction manual. If you have any questions regarding your purchase, installation, or other KC Turbos products, please contact us at 480-688-7160.

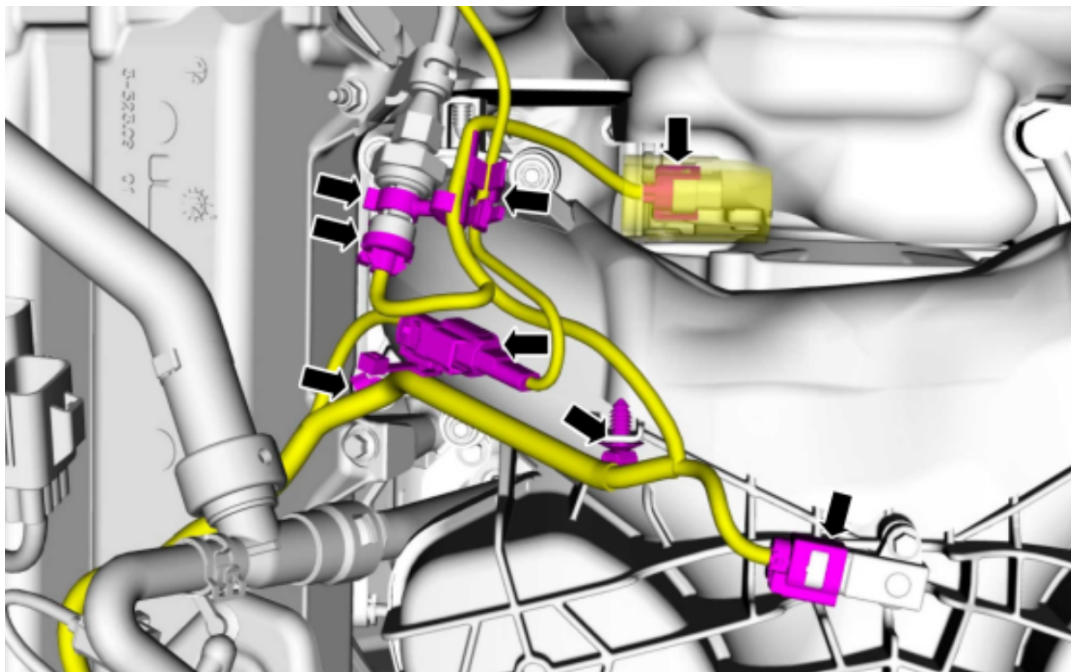
NOTICE: We recommend the use of an experienced professional for proper installation of this product. The steps herein are designed for an experienced professional to follow in detail for proper installation and function. Specialty tools are required to complete proper installation of this product.

NOTICE: The engine oil must be changed any time the turbocharger is removed from the engine. Running dirty oil can void the warranty. The passages in the block underneath the turbocharger are direct passages to the lubrication system. Debris and/or coolant may enter lubrication system and engine damage may occur.

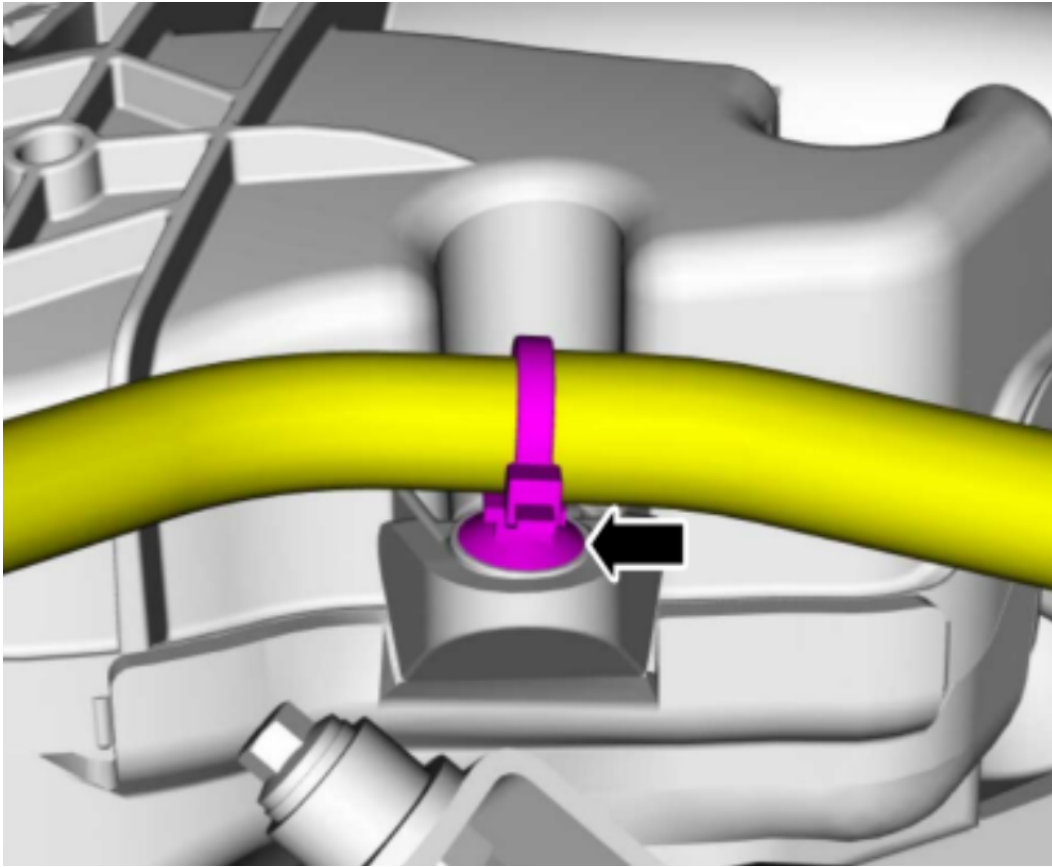
1. Disconnect the battery ground cable(s).
2. Drain the primary engine cooling system.

Upper Intake Manifold Removal:

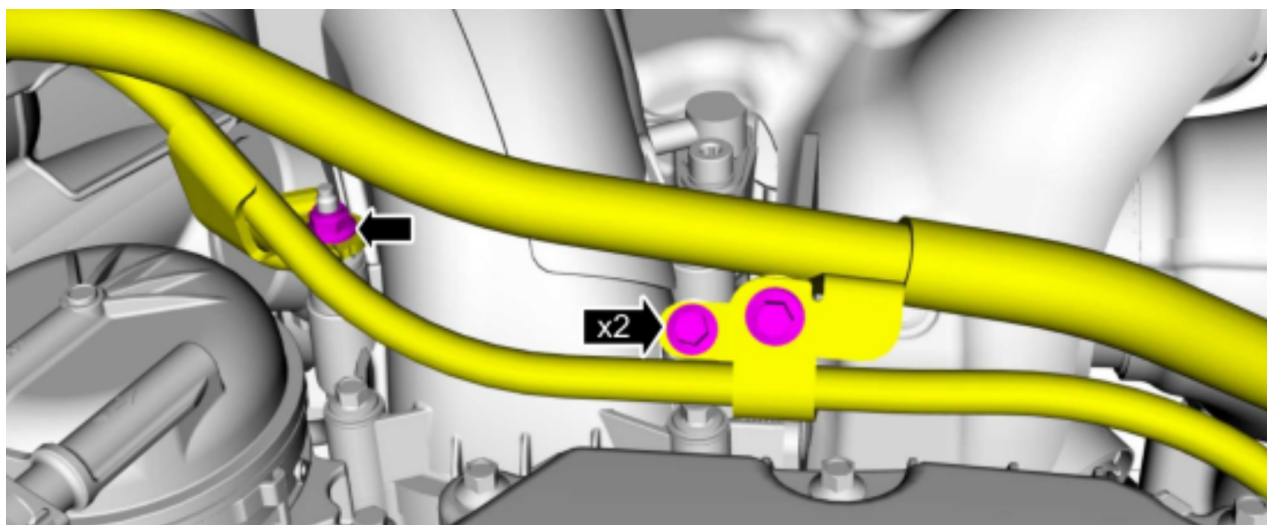
1. Disconnect the Manifold Absolute Pressure (MAP) sensor electrical connector and wire harness retainers.



2. Disconnect the coolant hose retainer from the upper intake manifold.



3. Remove the transmission fluid level indicator tube bolt and the engine oil level indicator tube bolt.

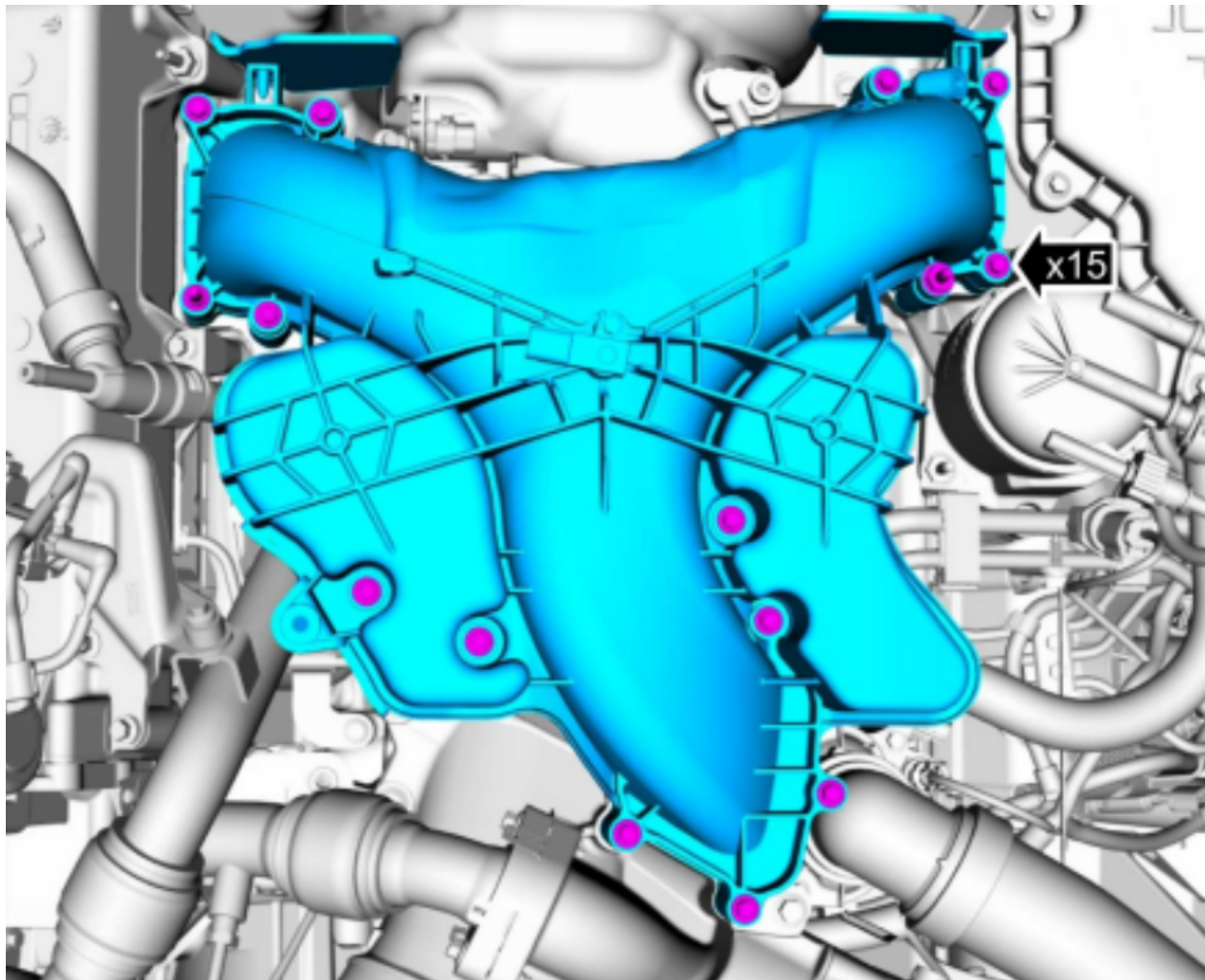


4. If equipped, disconnect the vacuum hose retainer from the upper intake manifold.

5. Remove heater inlet tube top retainer.

6. Remove the 15 bolts and apply outward pressure on metal pipe to remove the upper intake manifold.

NOTE: Cover or tape the opening on the valve covers and lower intake manifold.



Lower Intake Manifold Removal:

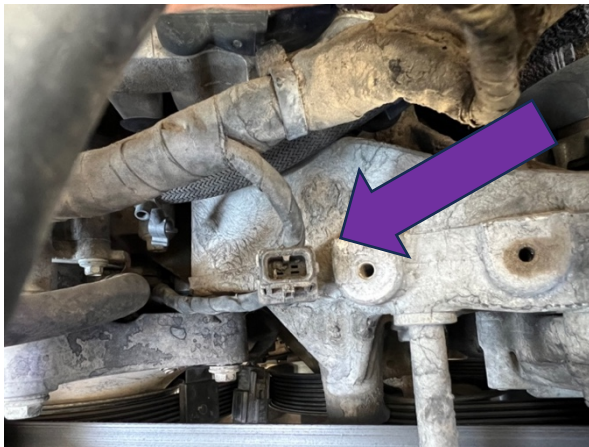
NOTICE: Vehicles over 14,000 lbs Gross Vehicle Weight Rating (GVWR), will only have the lower turbocharger inlet boot.

1. Remove the Air Cleaner outlet tube.
2. Release the clip and disconnect the Charge Air Cooler (CAC) outlet tube from the Throttle Body (TB).
3. Disconnect the TB (Throttle Body) electrical connector.
4. Disconnect the Exhaust Gas Recirculation Temperature (EGRT) sensor electrical connector and the wire harness retainer.
5. Remove the 4 bolts and the EGR bypass outlet pipe.
6. Release the clip and disconnect the CAC (Charge Air Cooler) inlet tube from the turbocharger.
7. Loosen the 2 lower turbocharger inlet hose clamps.
8. If equipped, loosen the 2 upper turbocharger inlet hose clamps.
9. Disconnect the crankcase ventilation hose from the lower intake manifold.
10. Remove the 3 bolts and the lower intake manifold.
11. Remove the turbocharger inlet hose(s) as needed.

Turbocharger and Downpipe Removal:

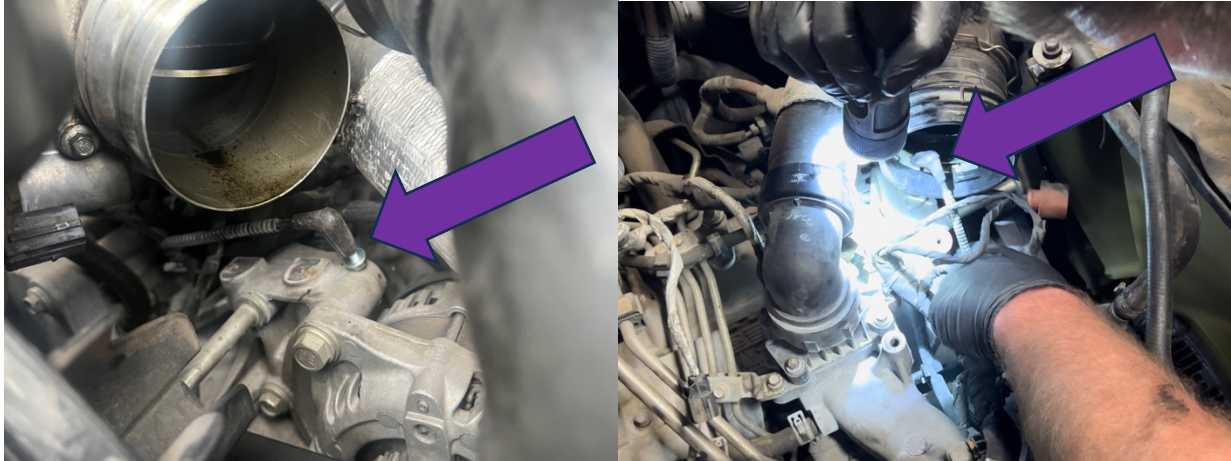
1. Disconnect the heater core inlet hose from the heater inlet tube.
2. Remove 2 bolts and the heater core inlet tube.
3. Replace O-ring seal on heater core inlet tube with supplied part.
4. Disconnect the turbocharger actuator electrical connector.
5. Remove the vacuum hose connecting the Wastegate solenoid to the turbocharger and remove Wastegate solenoid.

NOTE: Plug Wastegate Solenoid connector harness into open spot next to plug as shown below.



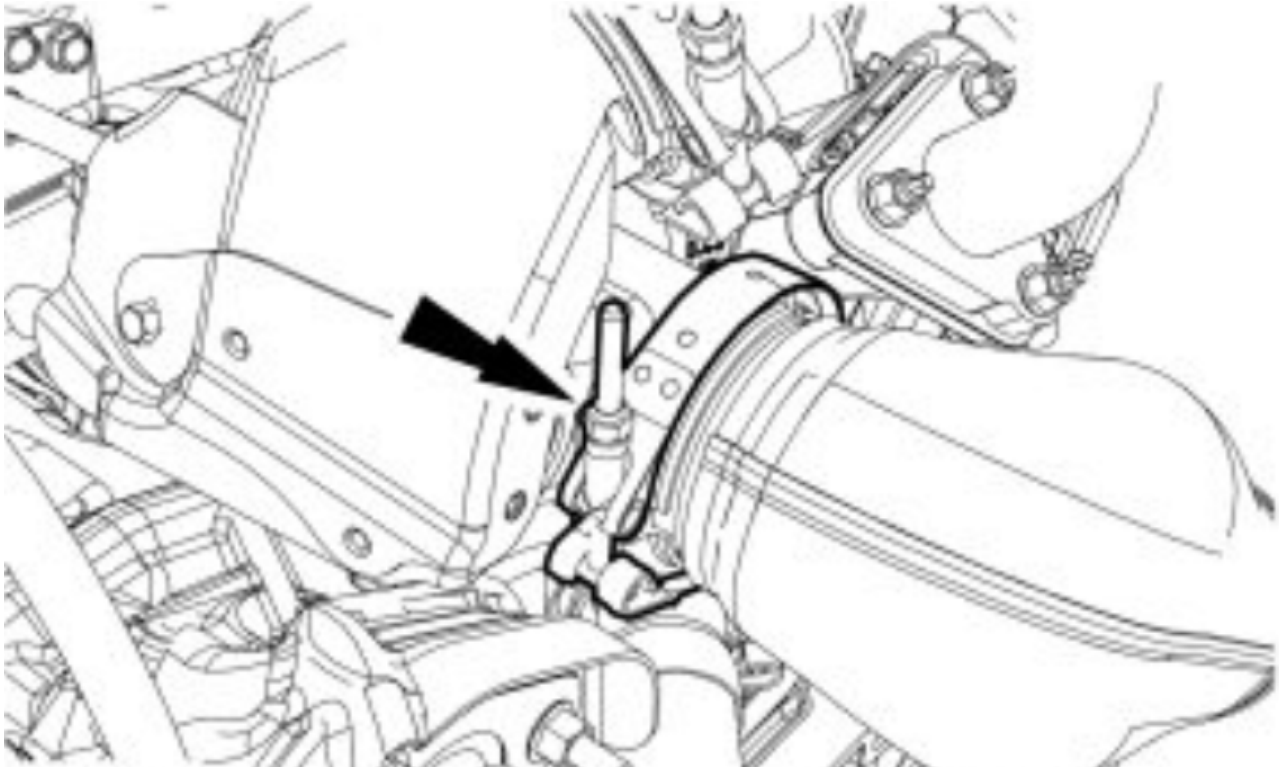
6. Use vacuum cap or screw in the vacuum line that feeds the wastegate solenoid so there are no vacuum leaks.

NOTE: The KC Turbos Warlock 2011-2014 Retrofit Kit utilizes a 2015+ style non-wastegated electronically controlled turbocharger that does not require the use of this vacuum actuator wastegate solenoid. All boost management will be completed electronically.



7. Loosen the upper exhaust downpipe clamp.

NOTE: Mark the position of the exhaust upper downpipe clamp for installation.

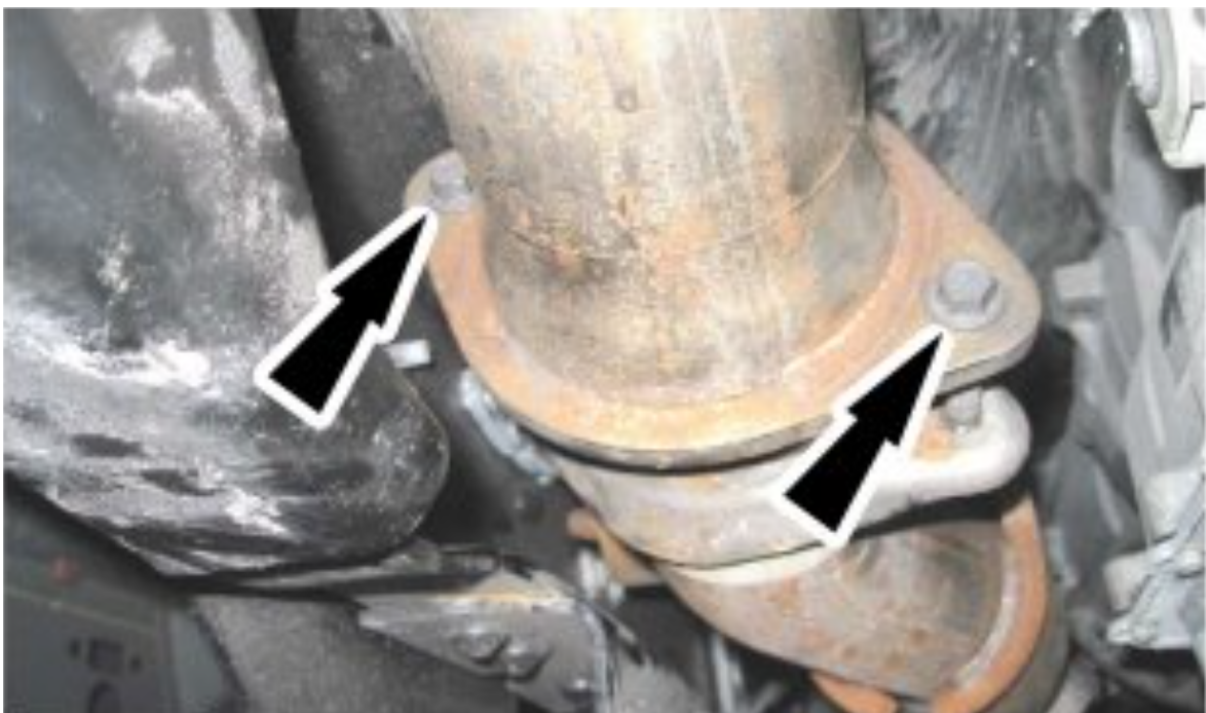


8. Remove the RH fender splash shield.

9. Remove the exhaust upper downpipe bracket bolt.

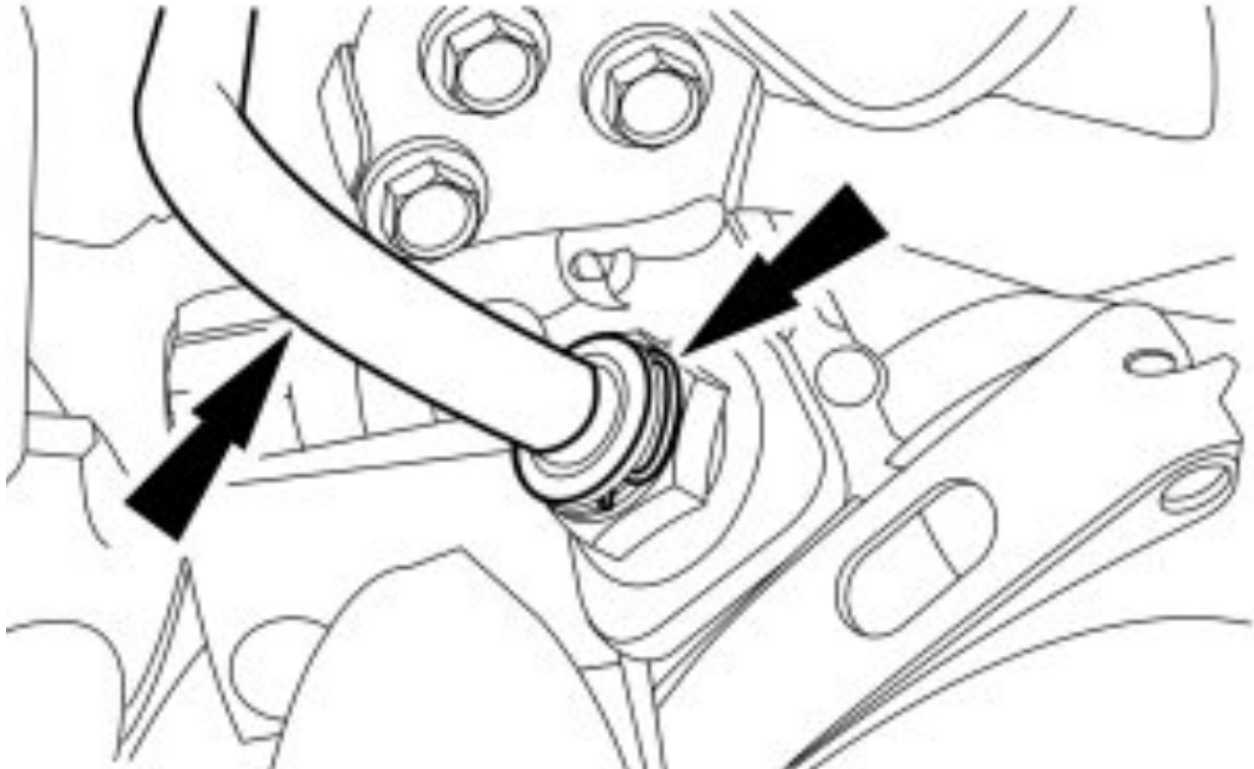


10. Remove the 2 exhaust lower downpipe-to-catalyst and particulate filter assembly bolts and remove the downpipe assembly.



11. Loosen the RH turbocharger inlet pipe clamp and slide the clamp off the turbocharger.
12. Loosen the LH turbocharger inlet pipe clamp and slide the clamp off the turbocharger.
13. Disconnect the turbocharger coolant outlet tube. (Use a 3/8 inch Jiffy-tite quick line disconnect tool, such as Snap-on(R) LDTSP4 or equivalent).

NOTE: If necessary, remove the turbocharger heat shield.



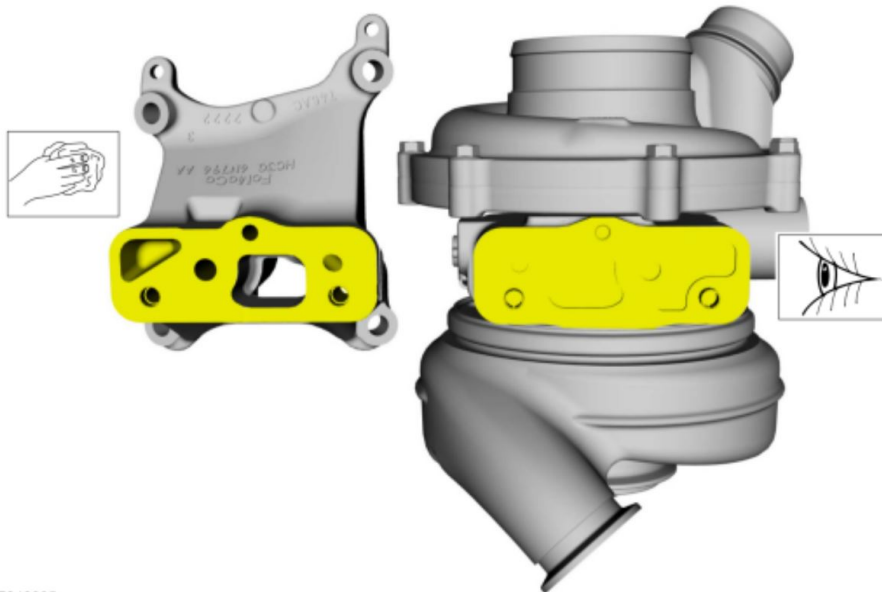
14. Remove the 4 bolts from the turbocharger.
15. Lift the turbocharger off locating dowels before positioning forward for removal.

NOTE: The turbocharger is a tight fit between cowl and injection pump fuel lines but comes out without removing fuel lines.

16. Remove original turbocharger from vehicle.

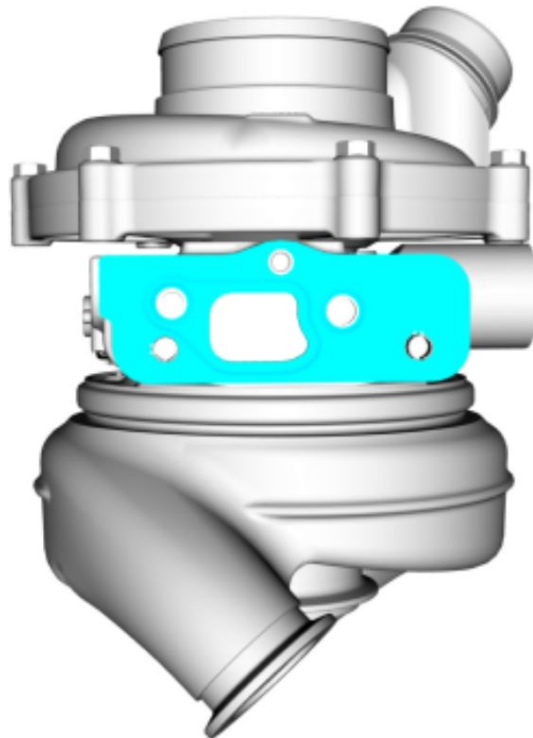
Turbo and Pedestal Assembly:

1. Check the supplied turbocharger and turbocharger pedestal sealing surfaces for damage.
2. Clean the turbocharger and the turbocharger pedestal sealing surfaces.



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3. Install the new turbocharger pedestal gasket.



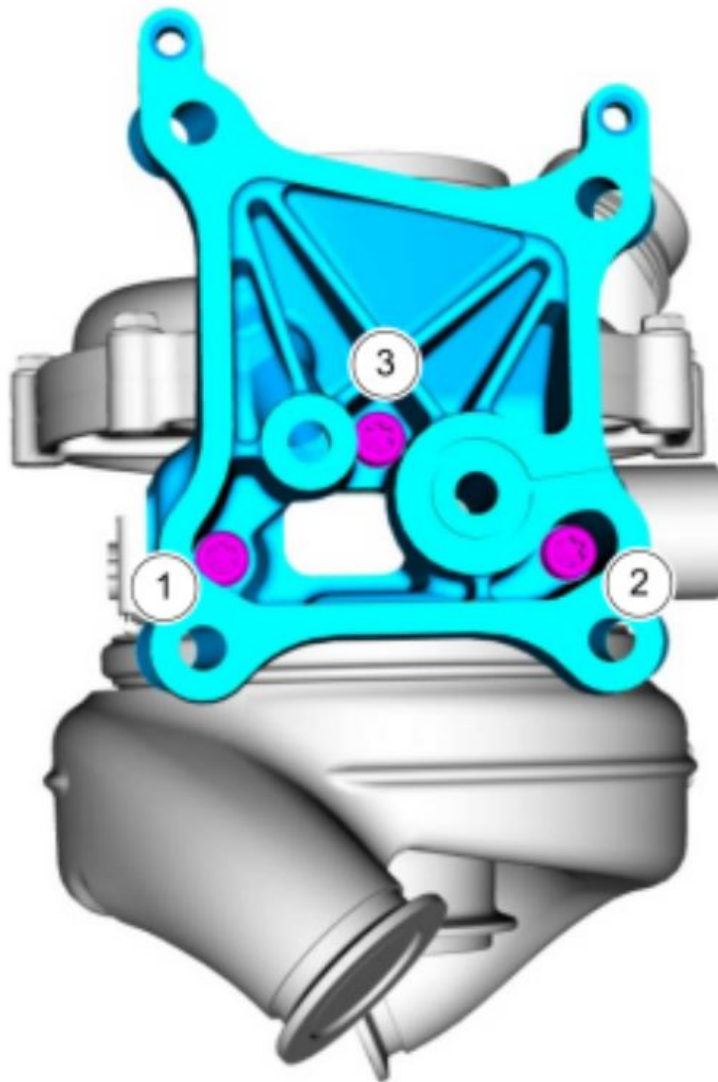
4. Install the turbocharger pedestal on to the turbocharger.
5. Install the new turbocharger pedestal bolts and washers.
6. Tighten the turbocharger pedestal bolts in the following 3 stages and in the sequence shown.

Torque:

Stage 1: 133 lb.in (15 Nm)

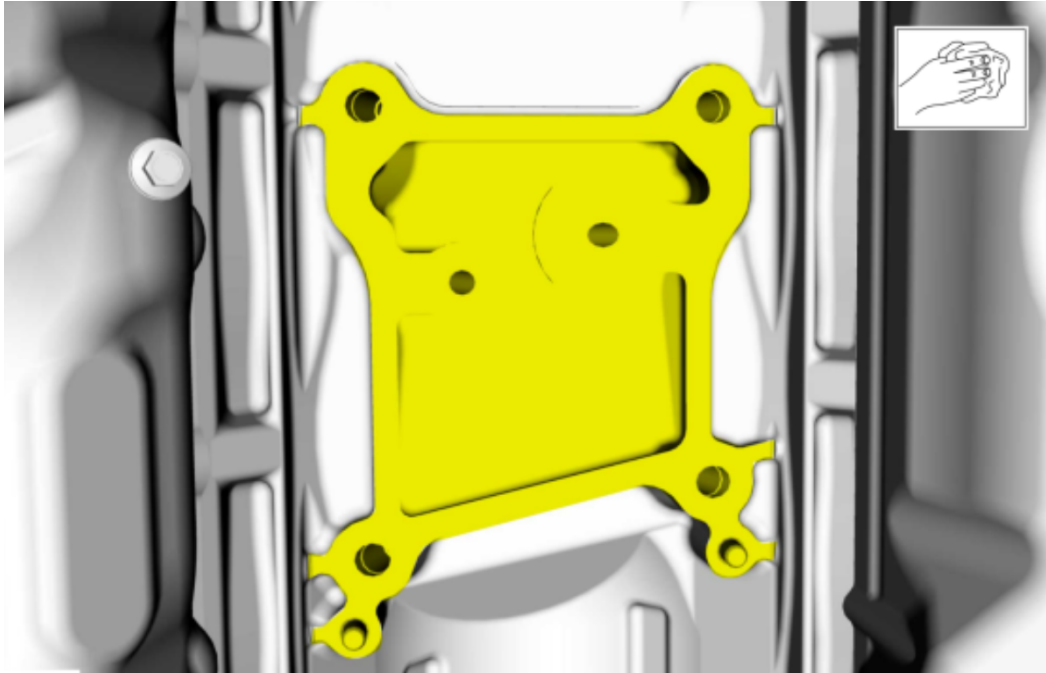
Stage 2: 177 lb.in (20 Nm)

Stage 3: 120° (degree) turn

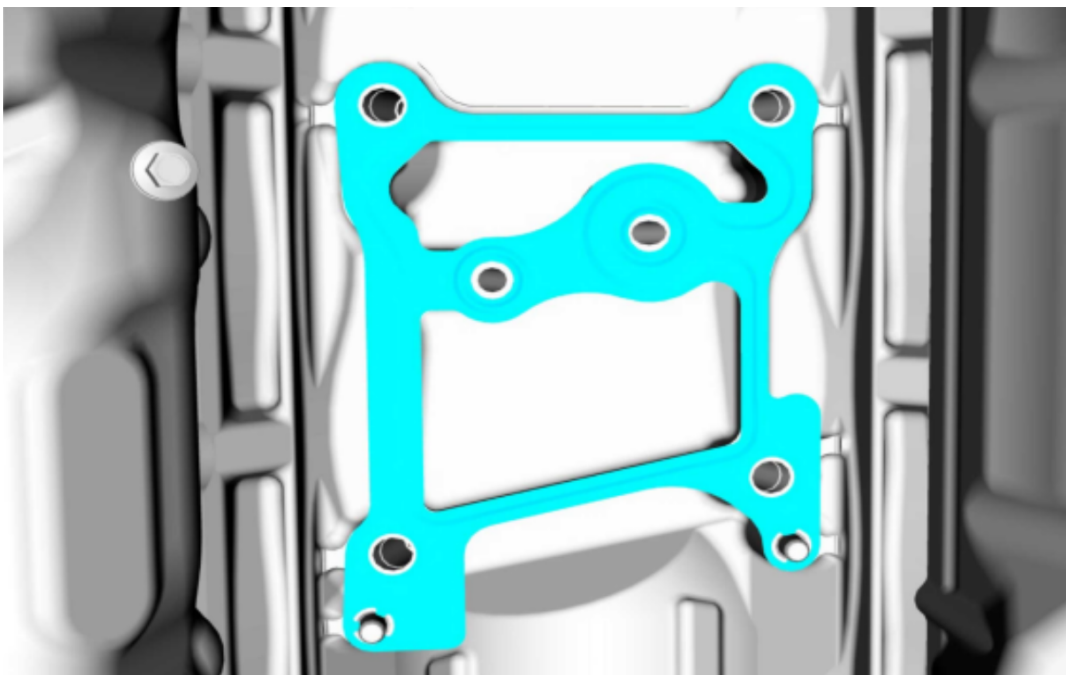


Turbocharger Installation:

1. Clean the turbocharger sealing surfaces and wipe the turbocharger valley clean of all oil and debris.

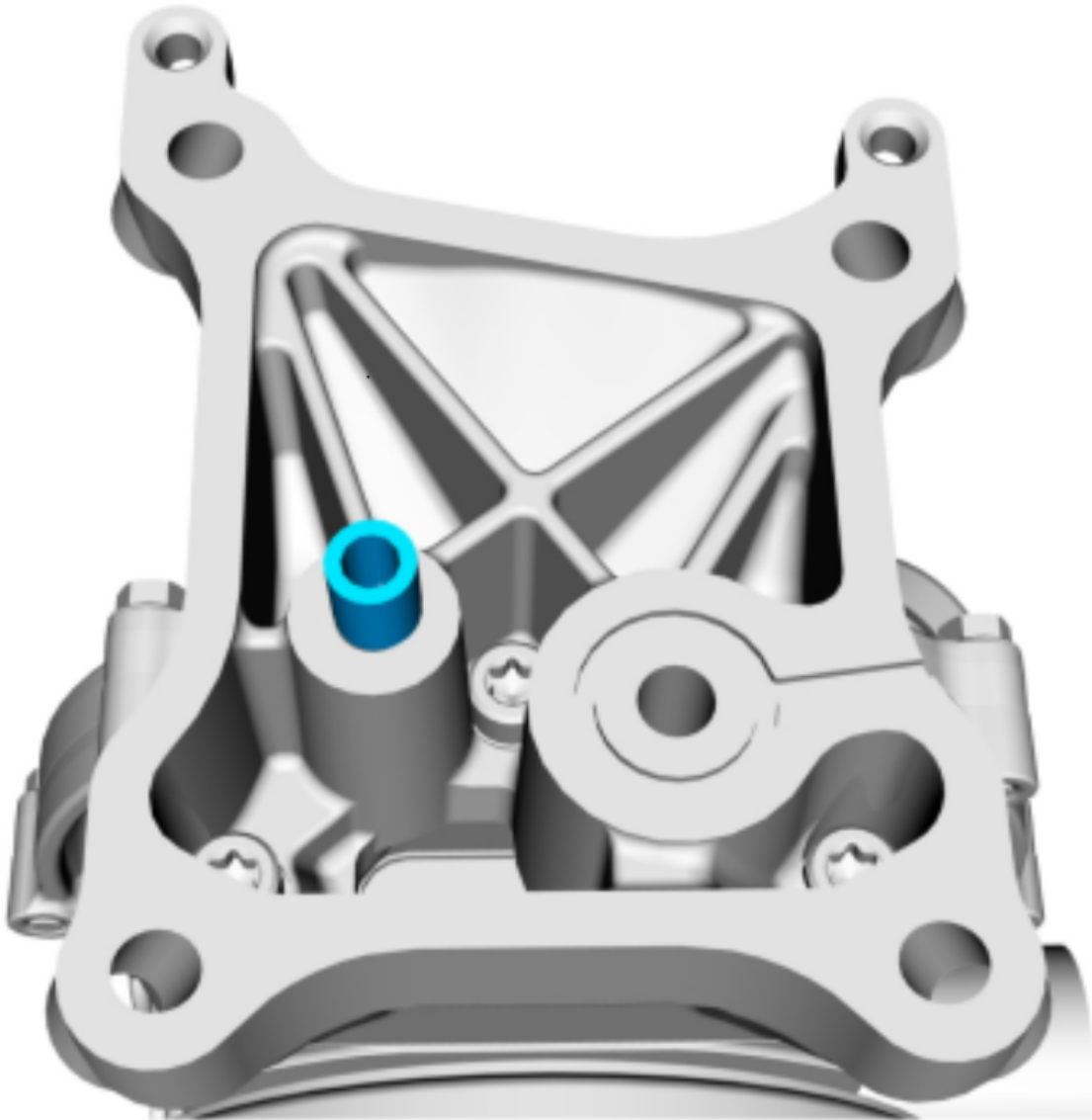


2. Install a new turbocharger mounting gasket.



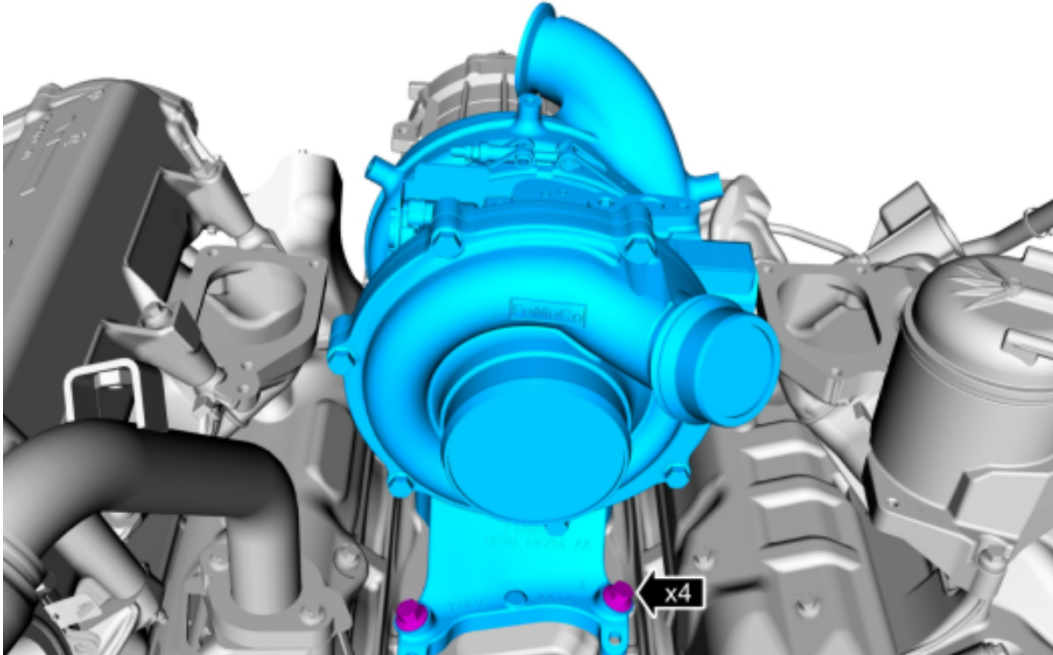
3. Install the new turbocharger oil supply filter.

NOTE: Use Trans-Gel, or similar, to keep filter from slipping out if necessary.



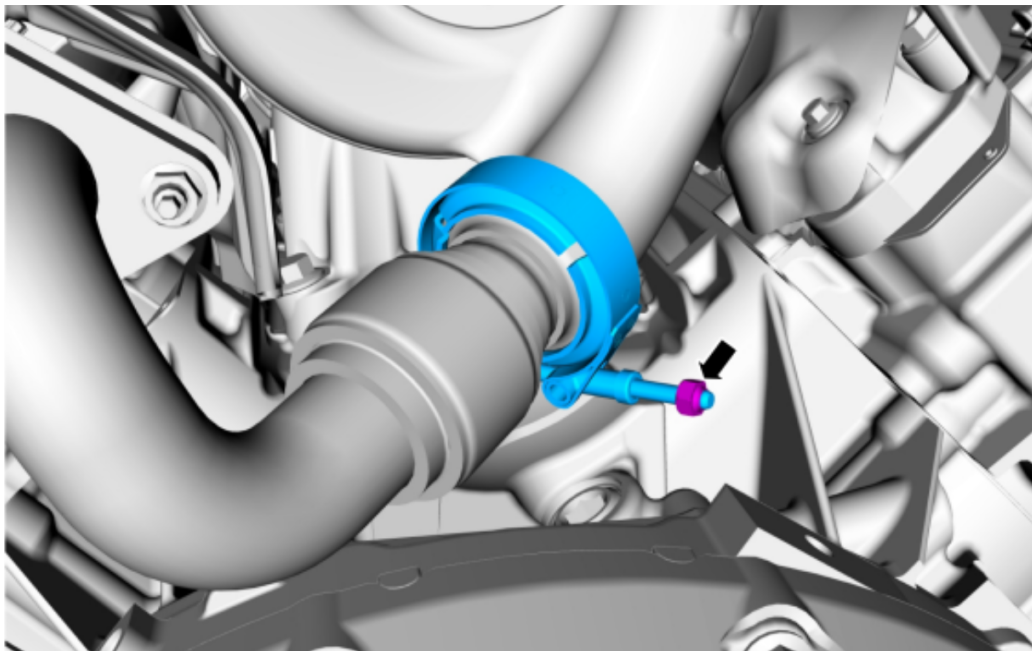
4. Install the turbocharger and new turbocharger mounting bolts finger tight at this stage.

NOTE: Position the turbocharger on the locating dowels while being careful not to allow the dowels to damage the sealing surfaces when installing the turbocharger.



5. Loosely position the LH turbocharger inlet pipe clamp over both sealing flanges.

NOTE: Do not tighten the LH turbocharger inlet pipe clamp at this time, make sure the LH inlet pipe is fully seated.

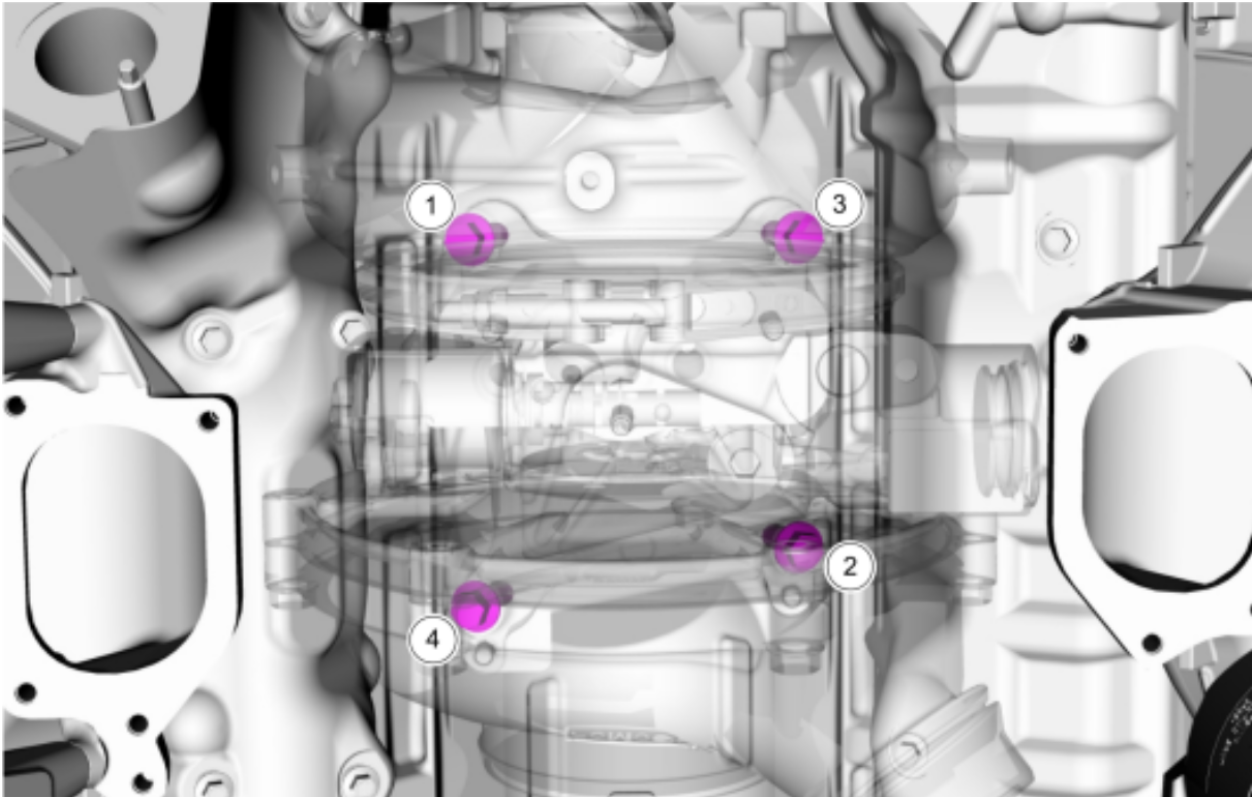


6. Tighten the new turbocharger mounting bolts in the following 2 stages and in the sequence shown.

Torque:

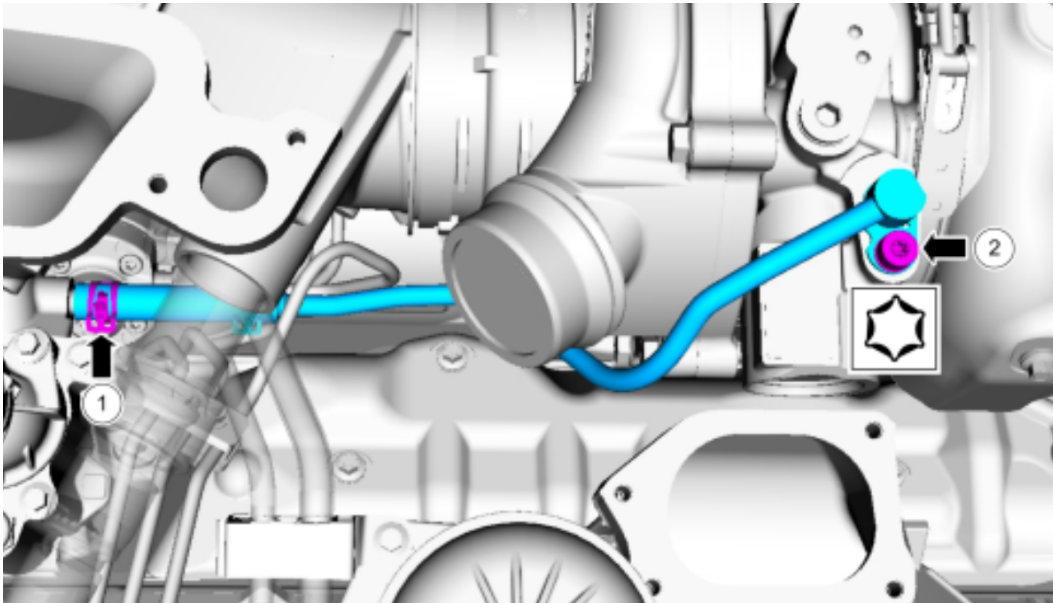
Stage 1: 133 lb.in (15 Nm)

Stage 2: 41 lb.ft (55 Nm)



7. Install the new turbocharger coolant return tube and reinstall clamp.

NOTE: When installing the turbocharger coolant return tube, the turbocharger coolant return tube must be fully engaged and seated into the turbocharger before the fastener is tightened.

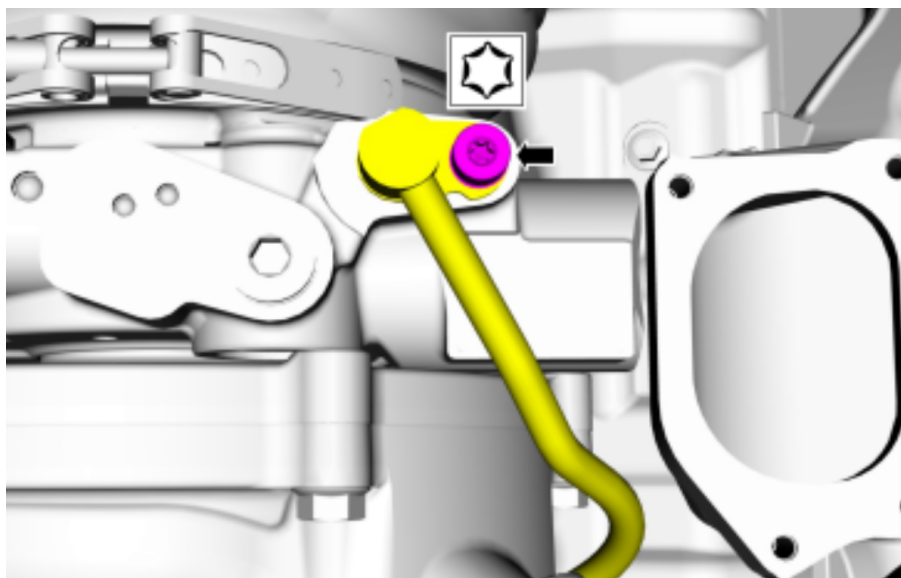


8. Install and tighten the turbocharger coolant return tube bolt in the following 2 stages and in the sequence shown.

Torque:

Stage 1: 106 lb.in (12 Nm)

Stage 2: 30° (degree) turn



9. Loosely position the RH turbocharger inlet pipe clamp over both sealing flanges.

NOTE: Do not tighten the RH turbocharger inlet pipe clamp at this time, make sure the LH & RH inlet pipes are fully seated.

10. Tighten the LH turbocharger inlet pipe clamp in the following 3 stages.

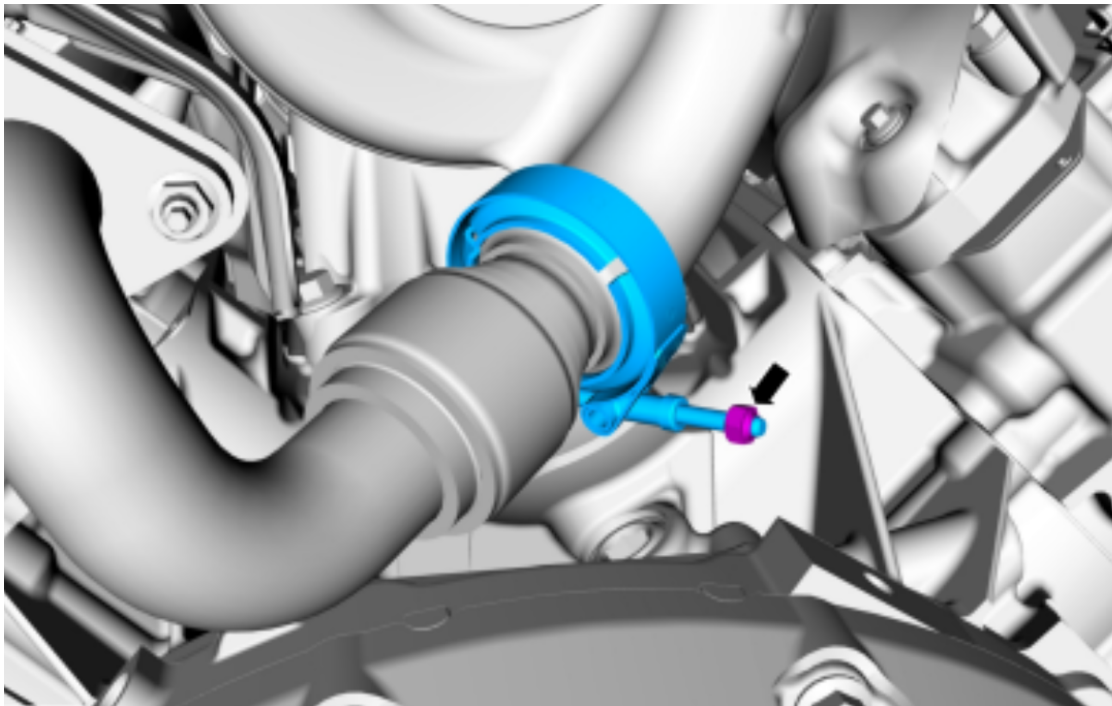
Torque:

Stage 1: 150 lb.in (17 Nm)

Stage 2: Loosen 3 turn(s)

Stage 3: 159 lb.in (18 Nm)

NOTE: Do not bend or twist the turbocharger inlet pipes or damage to the bellows on the turbocharger inlet pipes may occur.



11. Tighten the RH turbocharger inlet pipe clamp in the following 3 stages.

Torque:

Stage 1: 150 lb.in (17 Nm)

Stage 2: Loosen 3 turn(s)

Stage 3: 159 lb.in (18 Nm)

NOTE: Do not bend or twist the turbocharger inlet pipes or damage to the bellows on the turbocharger inlet pipes may occur.

12. Plug in the VGT Actuator.

Downpipe Installation:

1. Position the exhaust upper downpipe clamp on the turbocharger.
2. Disengage the clamp T-bolt and loosely install it on the turbocharger.

NOTE: Do not tighten the exhaust lower downpipe clamp at this time.

3. Position the exhaust downpipe assembly in the vehicle and install the exhaust upper downpipe bracket bolt.

NOTE: Do not tighten the exhaust upper downpipe bracket bolt at this time.



4. Install the new exhaust lower downpipe-to-catalyst and particulate filter assembly bolts and hand tighten.

NOTE: Do not tighten the exhaust lower downpipe-to-catalyst and particulate filter assembly bolts at this time.



5. Tighten the exhaust upper downpipe bracket bolt to 18 lb.ft (25 Nm).
6. Tighten exhaust upper downpipe clamp to 133 lb.in (15 Nm).
7. Tighten the exhaust lower downpipe-to-catalyst and particulate filter assembly bolts to 30 lb.ft (40 Nm).



8. Reinstall the RH fender splash shield.

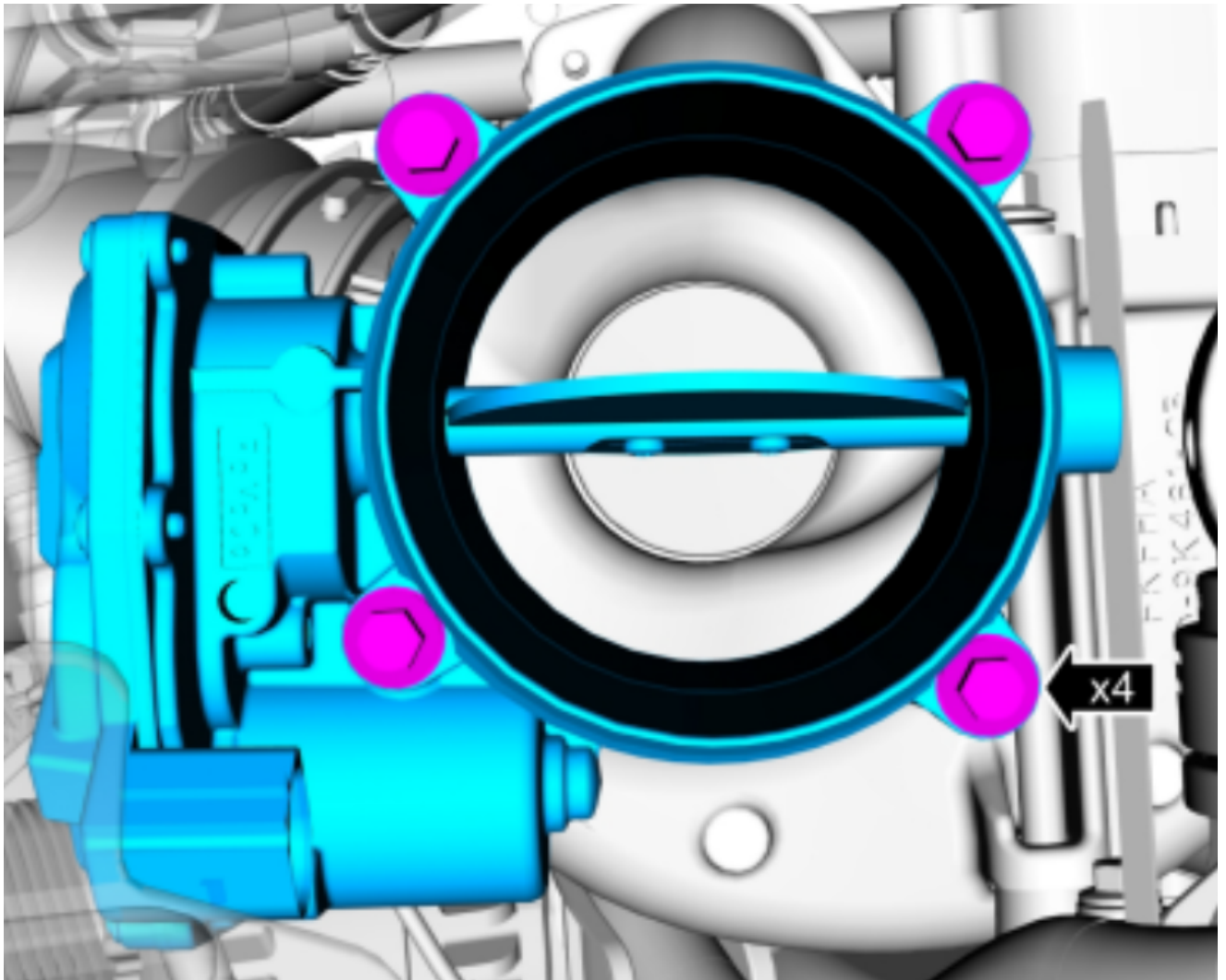
Lower Intake Manifold Installation:

1. Transfer throttle body to new manifold.

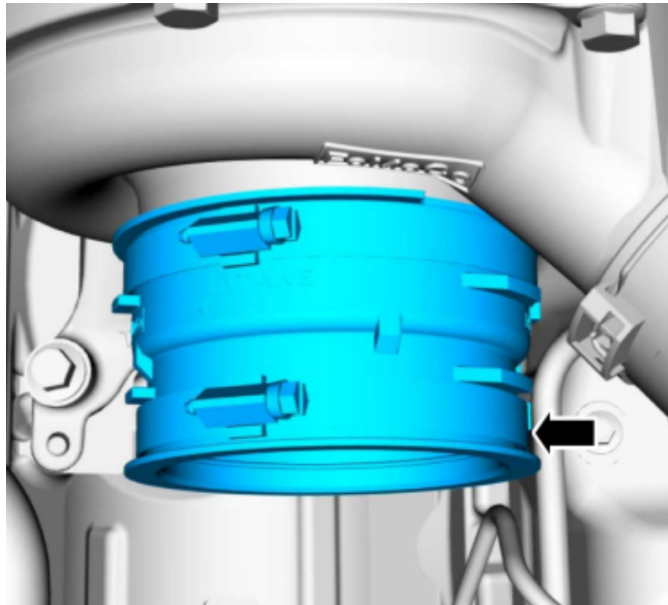
Torque:

Stage 1: 89 lb.in (10 Nm)

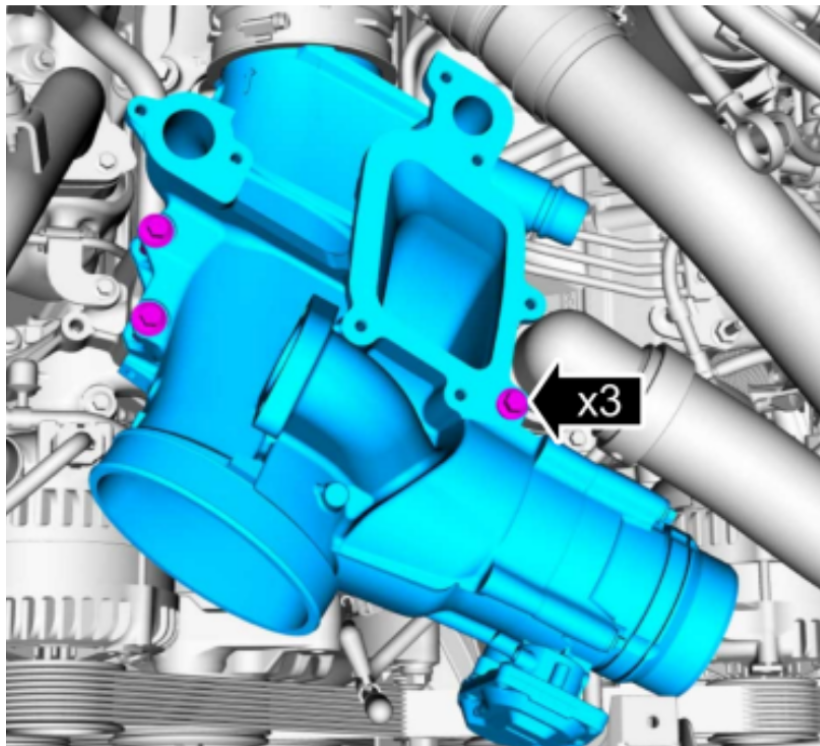
Stage 2: 45° (degree) turn



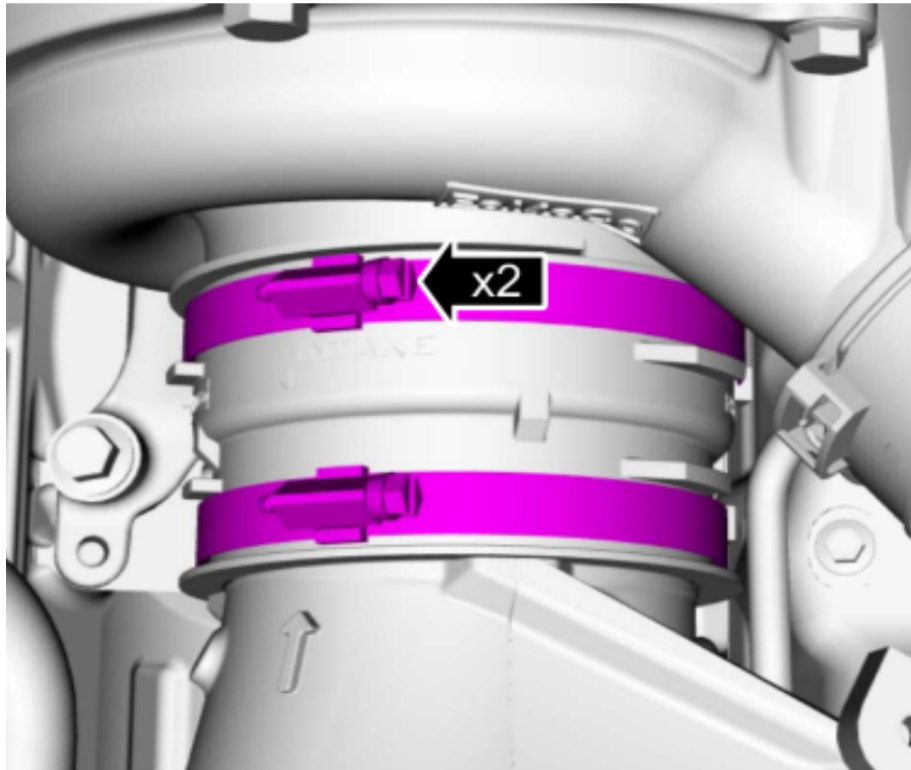
2. Install the turbocharger inlet hose.



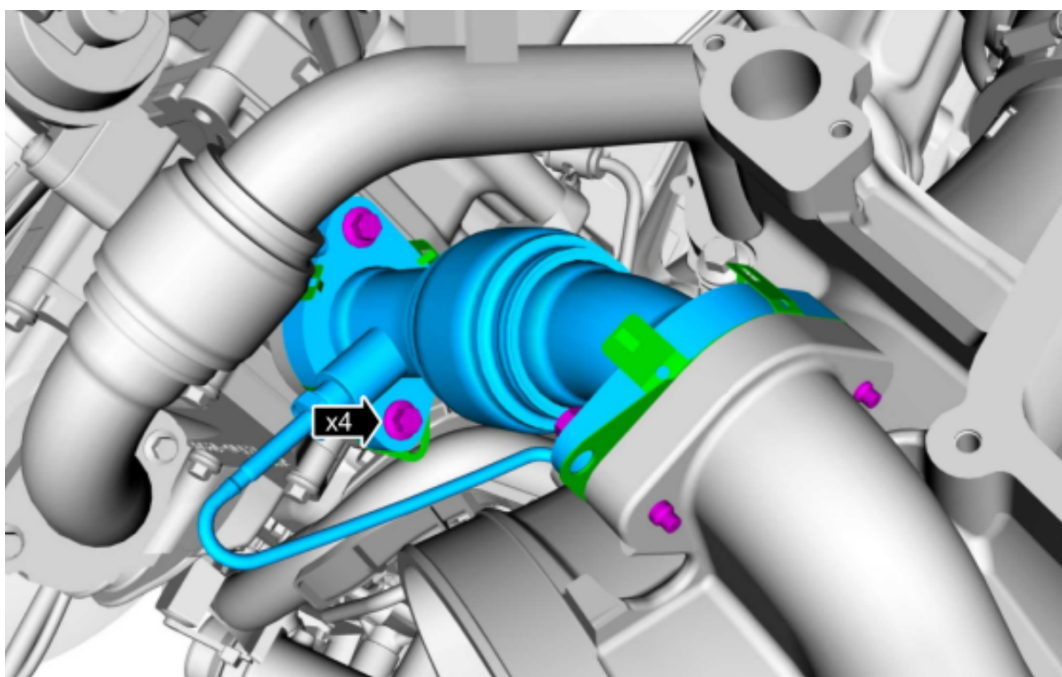
3. Install the lower intake manifold and the bolts and torque to 18 lb.ft (24 Nm).



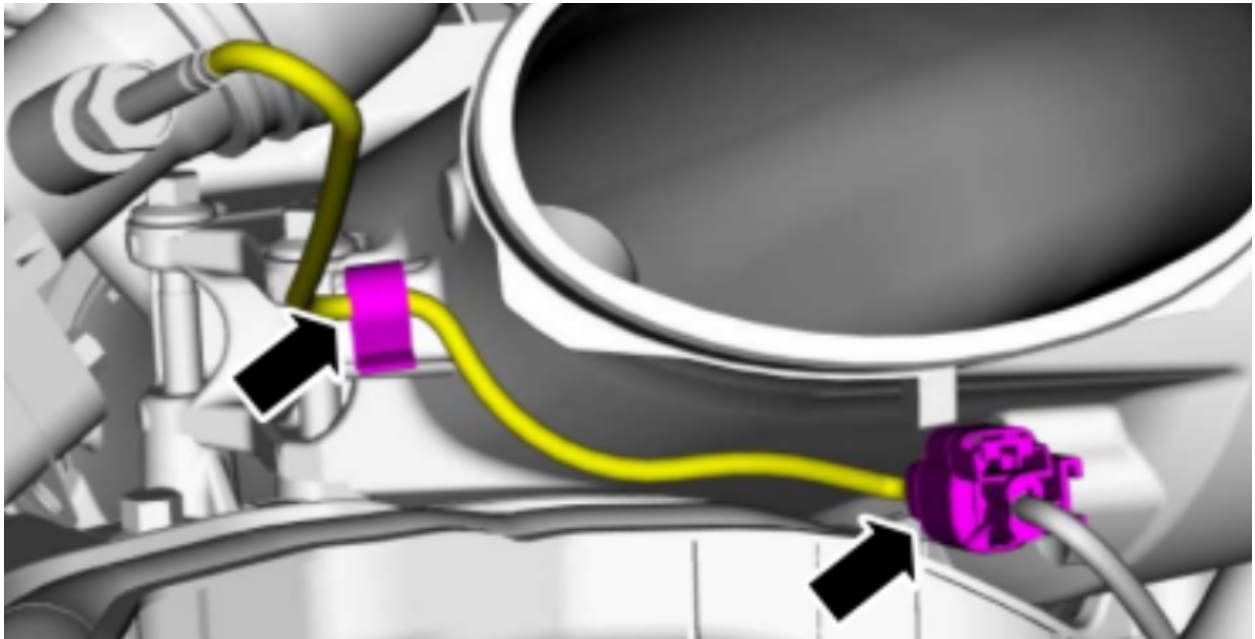
4. Tighten the turbocharger inlet hose clamps and torque to 35 lb.in (4 Nm).



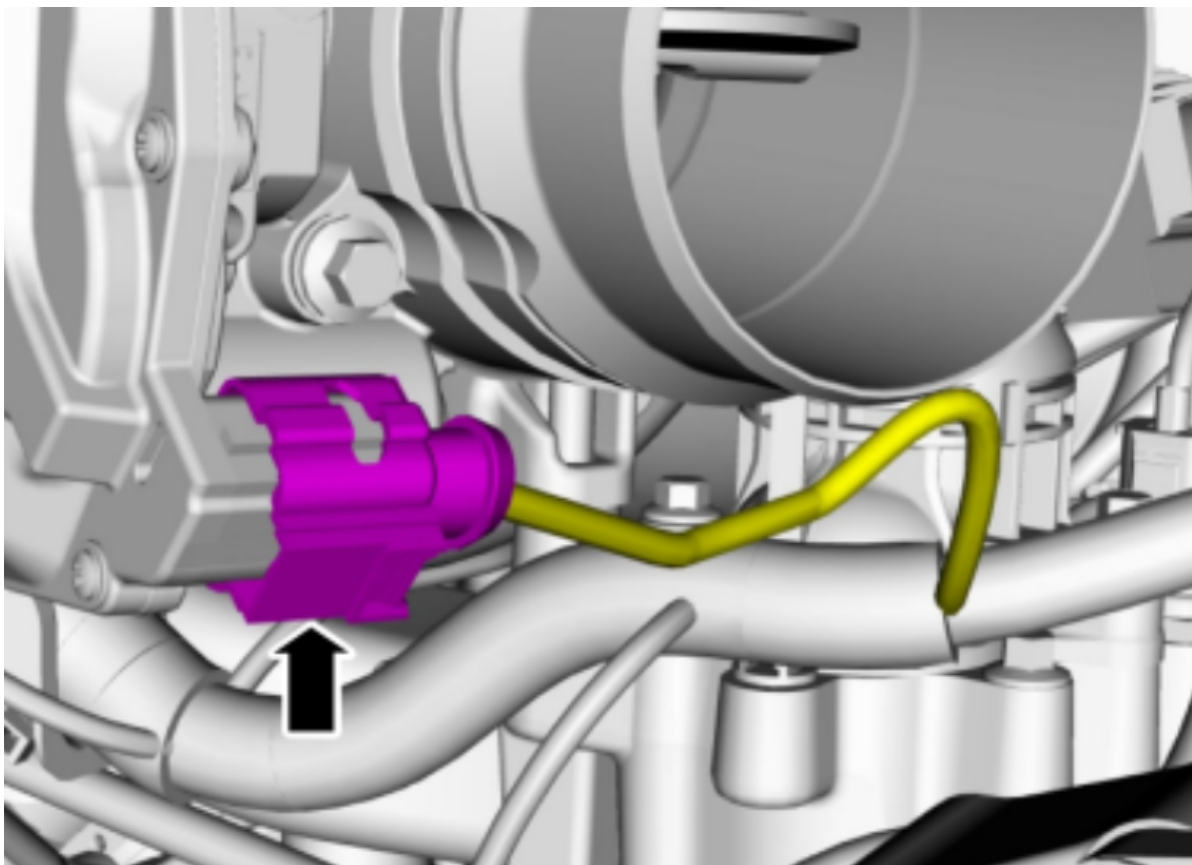
5. Install the EGR cooler outlet pipe and the bolts and torque to 89 lb.in (10 Nm).



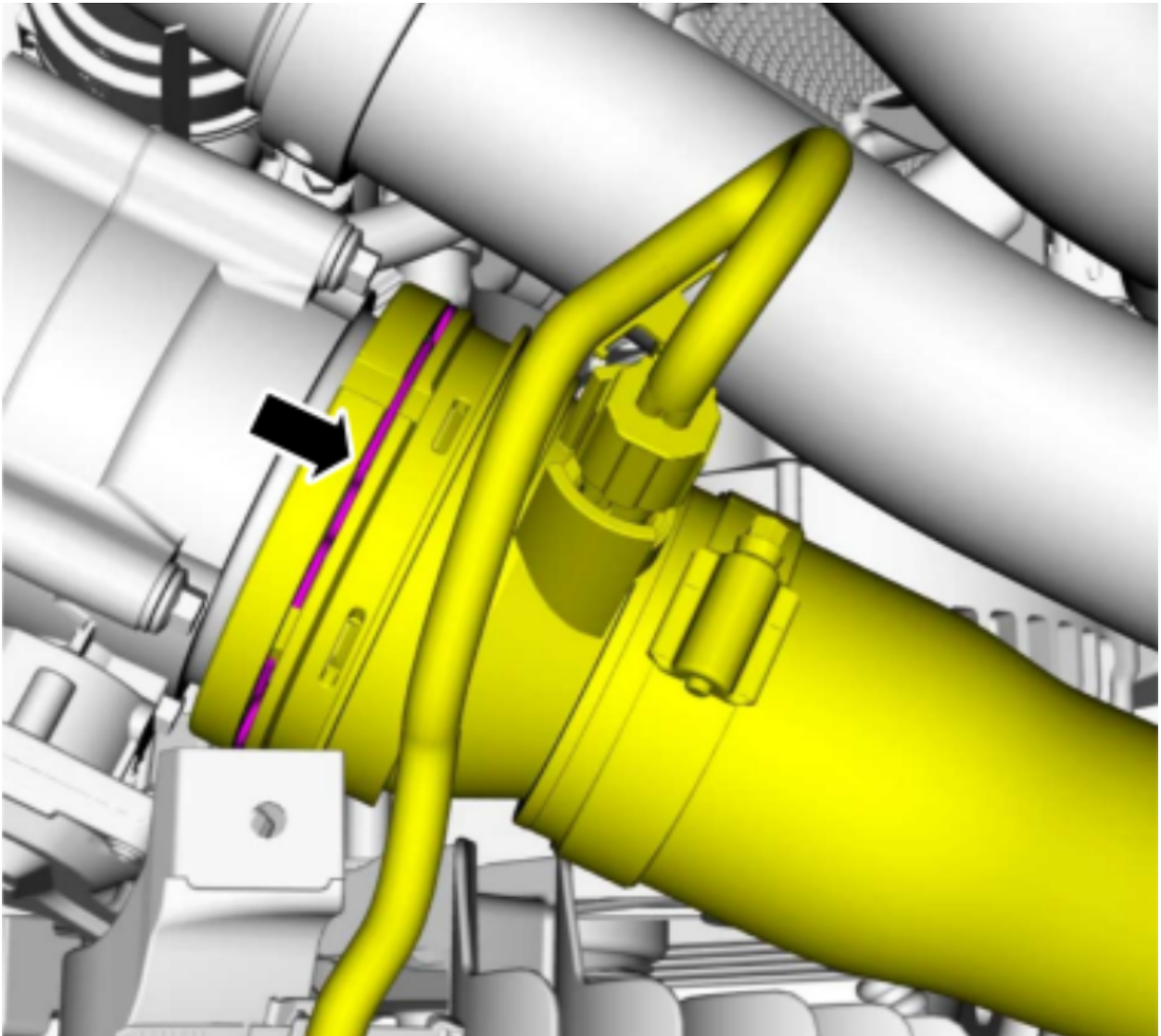
6. Connect the EGRT electrical connector and wiring retainers.



7. Connect the TB electrical connector.



8. Connect the CAC outlet tube to the TB and install the clip.



9. Install Air Cleaner Outlet Pipe

Upper Intake Manifold Installation:

1. Remove the cover or tape from the valve covers and lower intake manifold prior to installing the upper intake manifold.

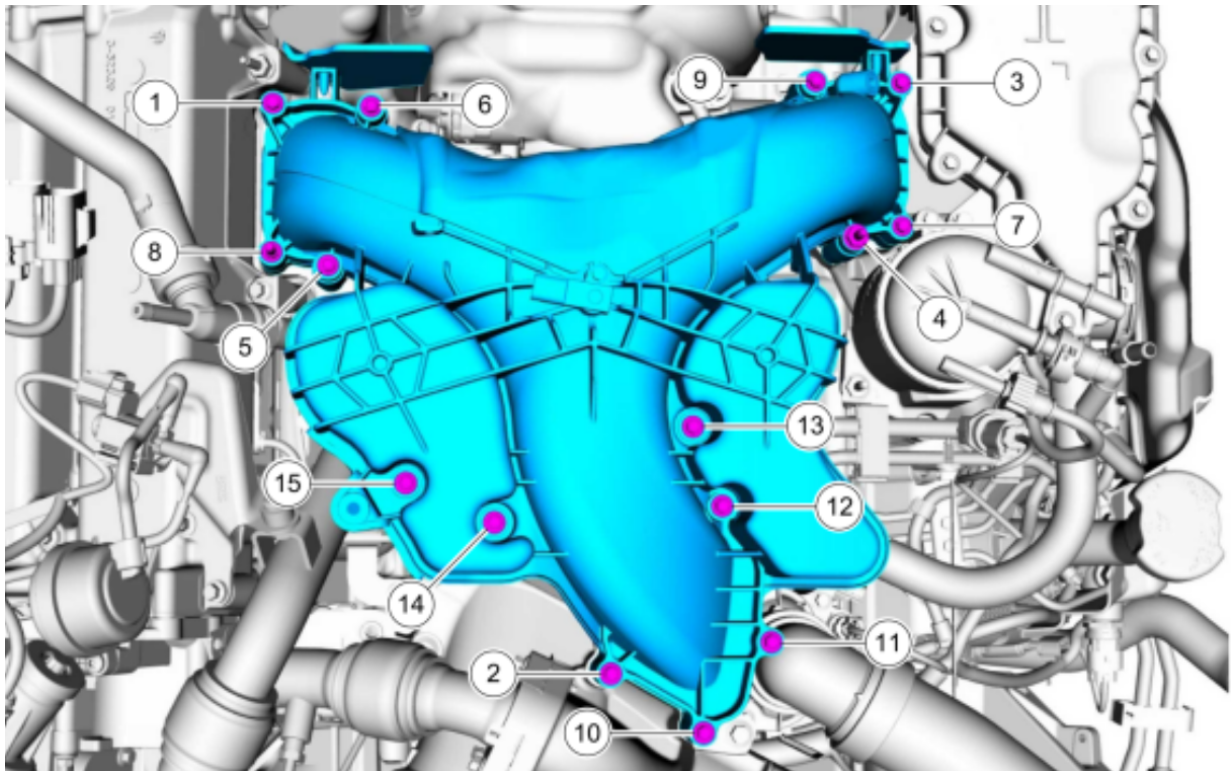
Note: Do not slide the upper intake manifold across the lower intake manifold during installation. Failure to follow this may result in damage to the upper intake manifold gaskets.

2. Install the upper intake manifold and tighten the retainers in the following 2 stages and in the sequence shown.

Torque:

Stage 1: 89 lb.in (10 Nm)

Stage 2: 98° (degree) turn



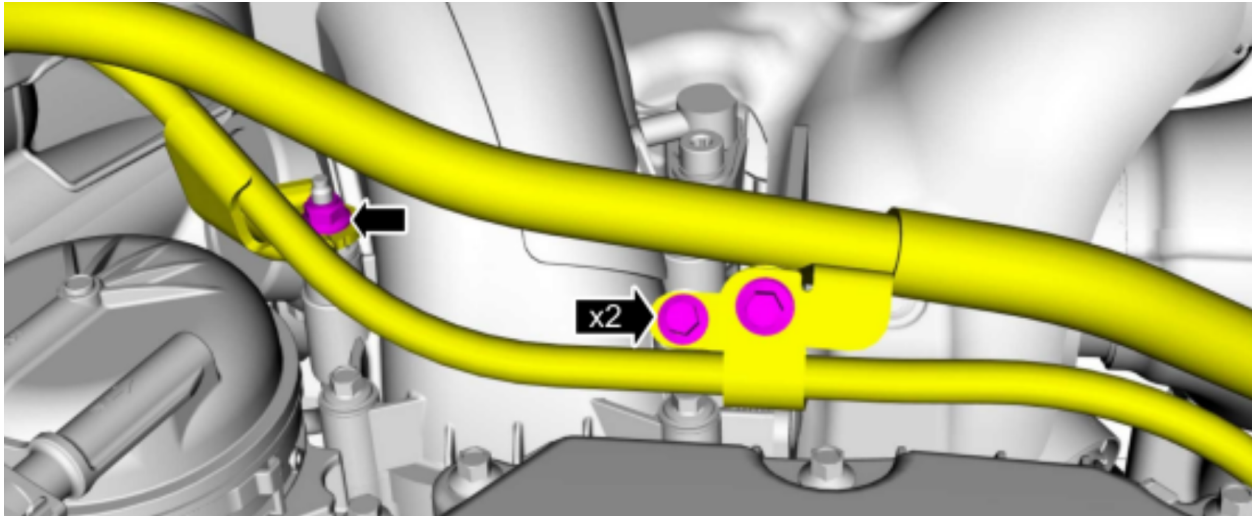
3. Install the engine oil level indicator tube bolt, nut, and the transmission fluid level indicator tube bolt and tighten the retainers in the following stages and in the sequence shown.

Torque:

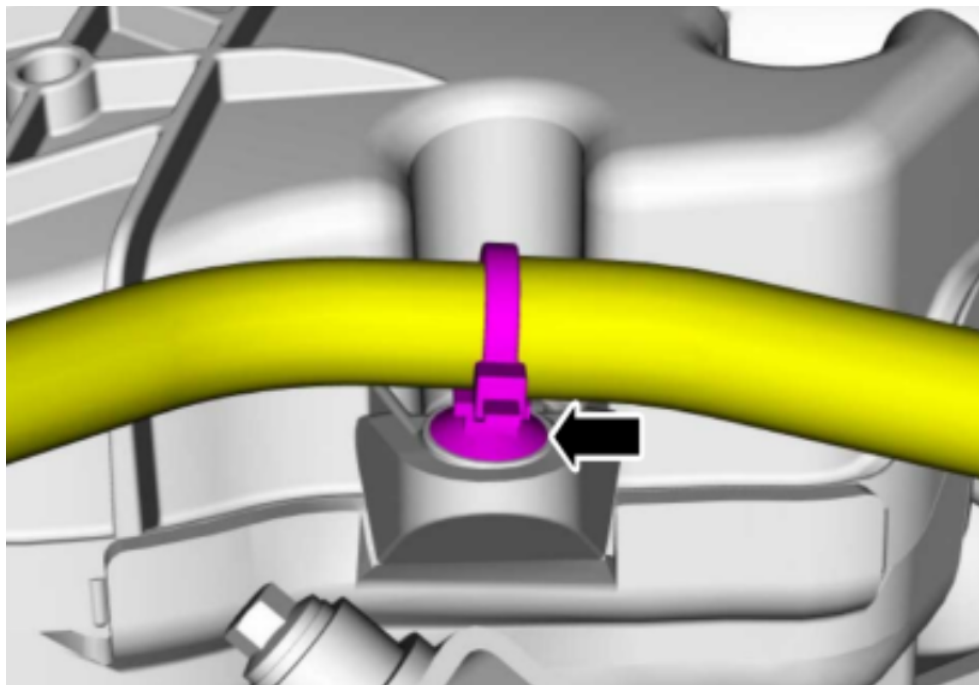
Engine oil level indicator tube nut: 89 lb.in (10 Nm)

Engine oil level indicator tube bolt: 89 lb.in (10 Nm)

Transmission fluid indicator tube bolt: 97 lb.in (11 Nm)

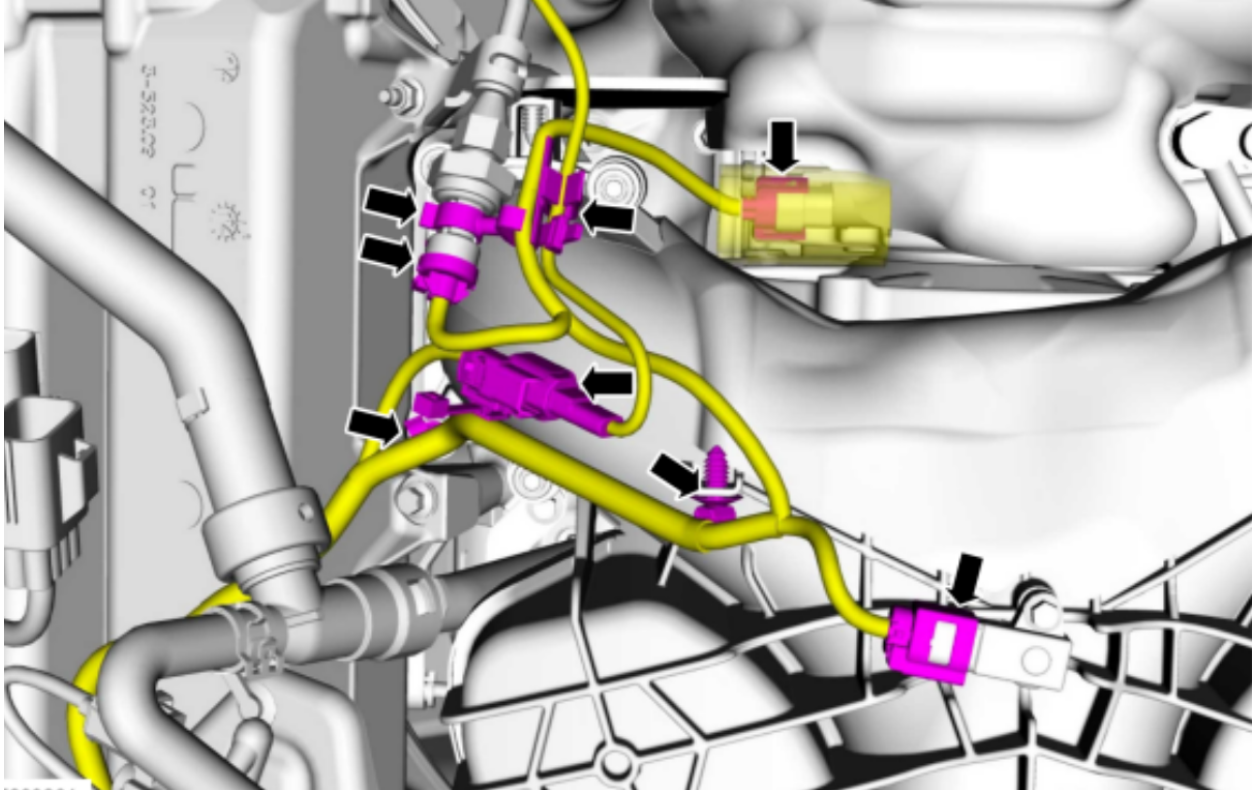


4. Connect the coolant hose retainer to the upper intake manifold.



5. Connect the MAP sensor.

6. Connect the wiring harness retainers.



Before Starting Your Vehicle:

1. Perform an Oil and Oil Filter Change.
2. Please re-read these instructions going step by step to confirm that everything is in the correct place, fastened down, seated, secured, plugged in, and torqued to spec.
3. Before starting up the engine, ensure that you retrieved all tools, hardware, rags, etc. from engine bay.
4. Ensure air filter and piping is clean and free of debris so nothing other than clean air can get sucked into the turbocharger. We recommend the use of a new air filter.
5. Fill vehicle with manufacturer recommended coolant.

Note: Using a vacuum filler is recommended.

START THE TRUCK and check the following:

1. Ensure that there is no leakage between turbocharger and pedestal.
2. Ensure there is no abnormal noises.
3. Ensure there is no leaks between exhaust inlet and turbocharger (Up-Pipes to Turbo).
4. If there are any issues present, shut the vehicle down immediately and correct the issue.
5. Once the vehicle has reached operating temperature and no issues are present, your vehicle is ready for service.

Questions?

If you have any questions regarding your purchase, installation, or other KC Turbos products, please contact us at 480-688-7160 or email us at sales@kcturbos.com for more information!

Warranty:

If you suspect any warranty issues, please email us at warranty@kcturbos.com. We will help begin the warranty process by troubleshooting the issue and then if needed, will have you send in your turbo for repair/replacement with the appropriate warranty documents. Failure to follow these instructions is considered misuse which, at KC Turbos option, may void your coverage under your Warranty. See online for full coverage details and claim steps at (<https://kcturbos.com/pages/warranty>).