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Iron Horn

2011-2014 Ford 6.7L Turbo Kit Installation Instructions

NOT FOR SALE IN USA

1045852 2011-2014 Ford 6.7L, 364 SX-E

*****Tuning is Required for This Installation*****

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION

Install Time: 9 Hours

Kit Contents

Please check to make sure that you have all the parts listed in this kit **before** you start the disassembly of your truck.

					
Ford 6.7L IH Turbo	Boot; 4x3.35x2.5L	Boot; Ford 6.7 Retro Cap	Clamp; Spring 11/16" CTL-11	Hose, 3/8" D x 3" L	
Qty: 1	Qty: 1	Qty: 1	Qty: 2	Qty: 1	
					
Oil Line; -4 JIC x 11" long	Fitting; -4 JIC-M x -4 NPT-M	Fitting; -4 JIC-M x -4 ORB	Plug, 3/8" Barb, LLY	Gasket; Crossover Tube	Bolt; M6x1.0
Qty: 1	Qty: 1	Qty: 1	Qty: 1	Qty: 2	Qty: 3
					
Gasket; Ford 6.7L Turbo Pedestal	Clamp; #64 3.5"-4.5"	Clamp; #52 2.75"-3.75"	Cap; Rubber 3/16" OD by 9/16"	Tie Wrap, 5.6"L	
Qty: 1	Qty: 1	Qty: 2	Qty: 1	Qty: 1	

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Introduction

The BD Iron Horn turbo kit for the 2011-2014 Ford 6.7L replaces the problematic OEM VGT turbo. The stock turbo is prone to failure beyond stock power numbers, but BD’s Iron Horn kit adds reliability and power at the same time, allowing you to make greater horsepower while trusting that your turbo will not fail on you.

Tools Required for Installation

- Ft-lb Torque Wrench
- In-lb Torque Wrench
- Various Sockets
- Thread Sealant

Pre-Installation Inspection

When replacing a turbocharger BD recommends the following precautions are taken:

- Replace or clean the air filter.
- Change the engine oil and filter.
- Inspect Intake and CAC passages for debris, and clean if necessary.

In the case of a previous failure also include the following steps:

- Inspect CAC for debris and cleanout if necessary.
- Inspect engine oil for debris. Flush system if debris was present.

Ensuring that these steps are followed will prolong the life of your new turbocharger.

Replacement OEM Ford Parts (Table 1)

If gaskets need replacement, the part numbers from Ford are listed below:

Upper intake
gaskets

BC3Z-9439-A, BC3Z-9439-B, BC3Z-9439-C

Installation

Removing Stock Turbo



Disconnect both battery ground cables.

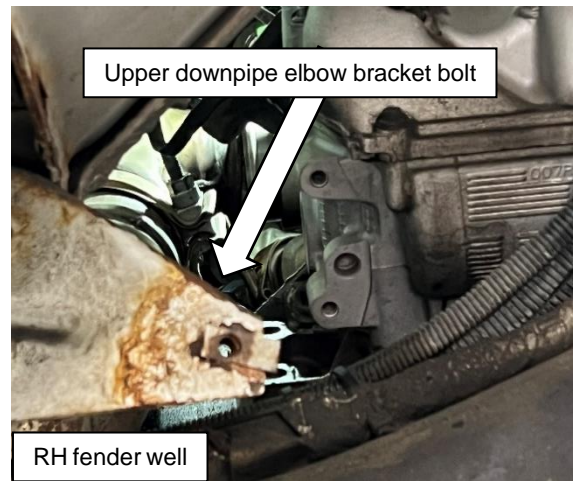
Drain coolant.



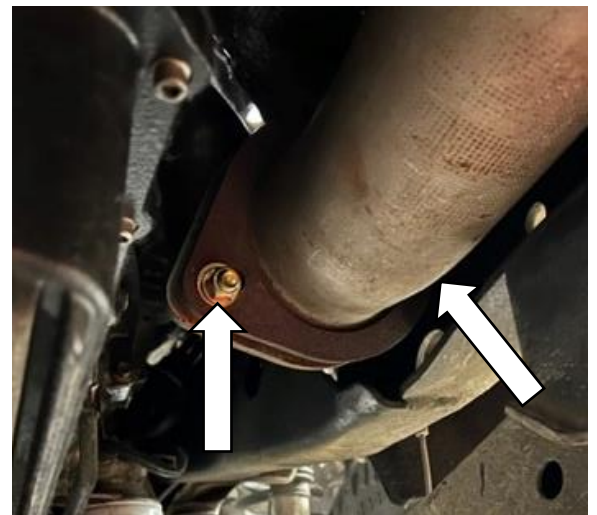
Remove RH fender liner.



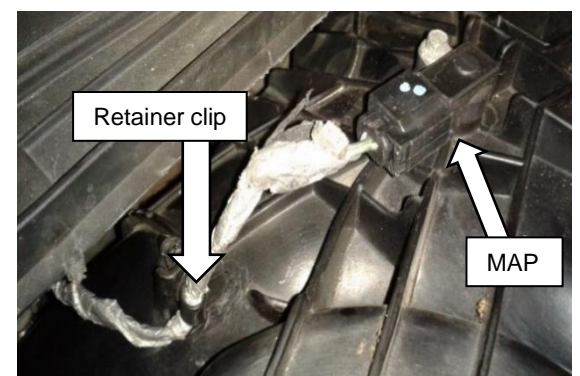
Remove upper downpipe elbow bracket bolt through RH fender well.



Remove 2 bolts connecting downpipe to exhaust pipe.



Disconnect Manifold Absolute Pressure (MAP) sensor connector and wire harness retainer from top of upper intake manifold.



Disconnect coolant hose retainer from upper intake manifold.

Note: Some models may also have a vacuum line fastened to intake manifold. If equipped, disconnect this retainer also.



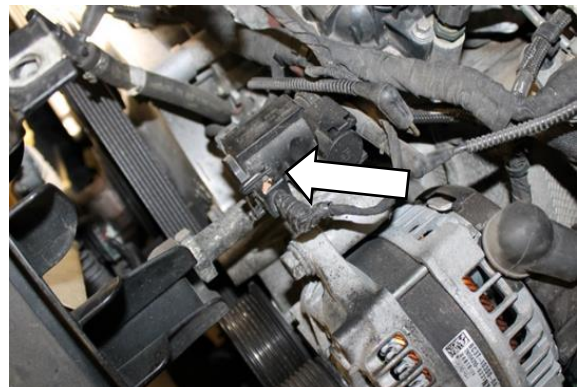
Disconnect turbo wastegate actuator tube on intake side as shown.



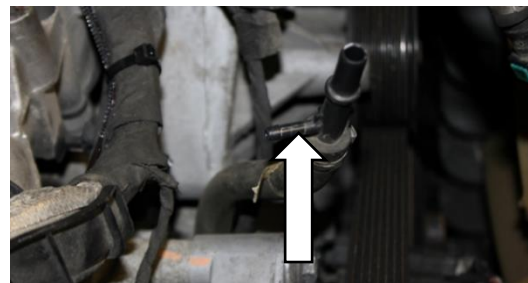
Remove wastegate actuator solenoid feed tube near the air filter intake inlet.



Remove wastegate actuator solenoid (will not be reused).



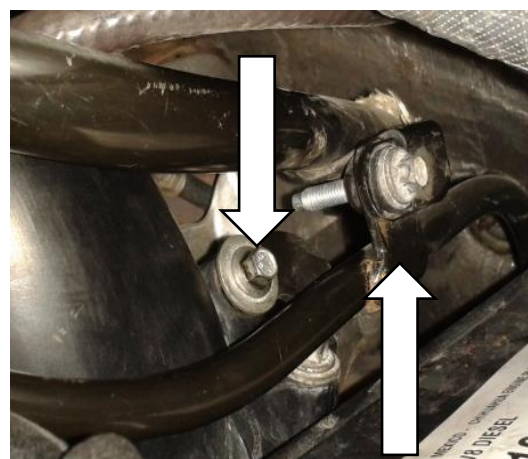
Use rubber cap (**1900068**) to cover where the wastegate actuator solenoid was fed.



Use provided zip tie (**1300133**) to secure cap to the connector. Cut off the excess zip tie.

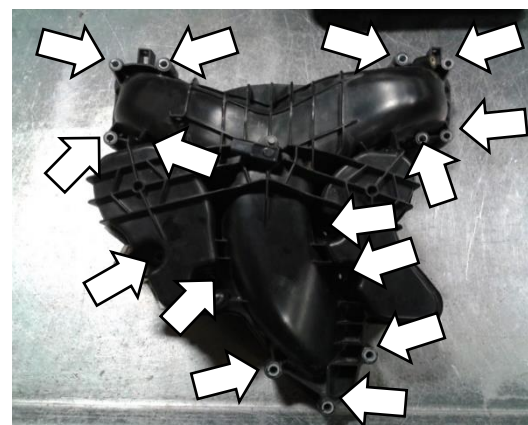


Remove transmission fluid level indicator tube bolt and engine oil level indicator tube bolt.

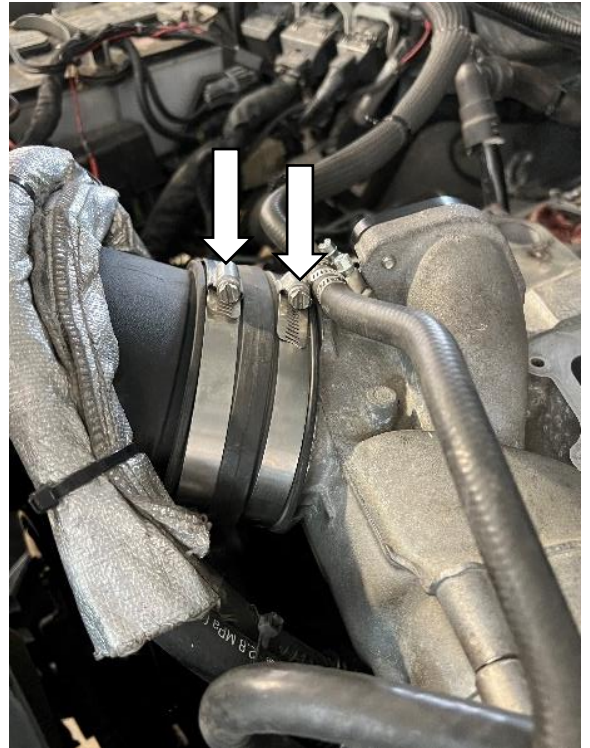


Remove 15 bolts and upper intake manifold.

Important! Cover or tape openings on valve covers and lower intake manifold once removed to prevent debris from entering.

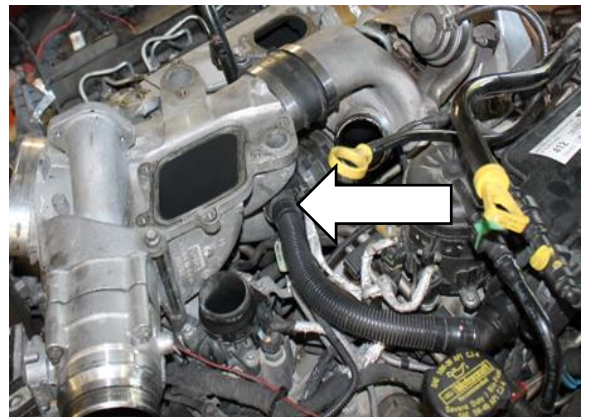


Remove Air Cleaner (ACL) outlet tube by removing the two clamps.

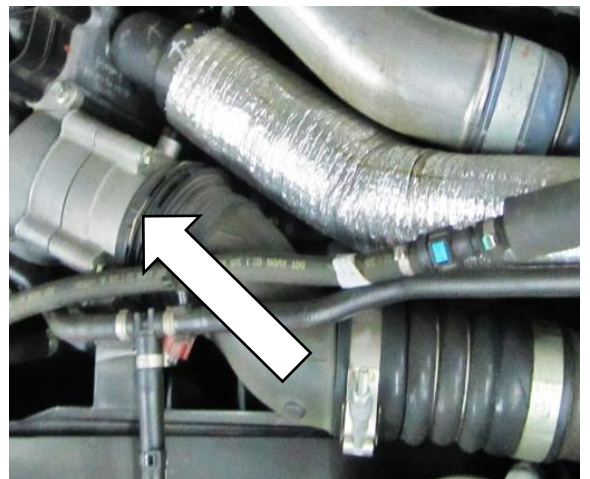


Detach crank case vent tube from lower intake/aluminum intake casting to turbo. This joint is twist-to-release.

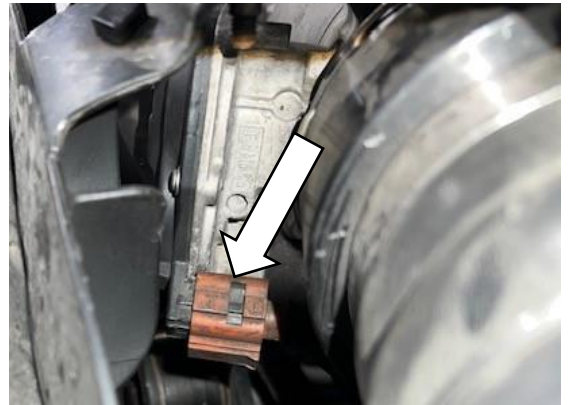
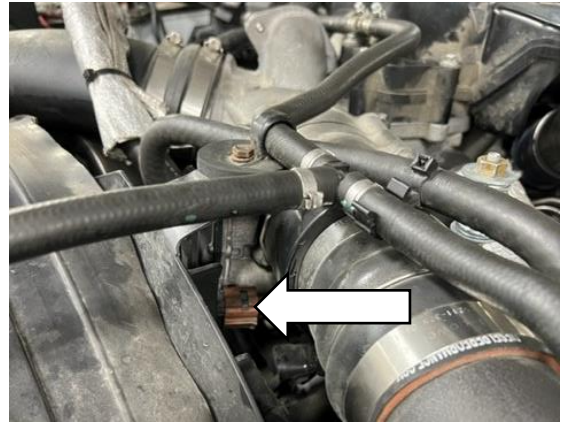
Unplug the sensor cable if you wish to remove this tube until reinstall.



Release clip and disconnect Charge Air Cooler (CAC) outlet tube from Throttle Body (TB).



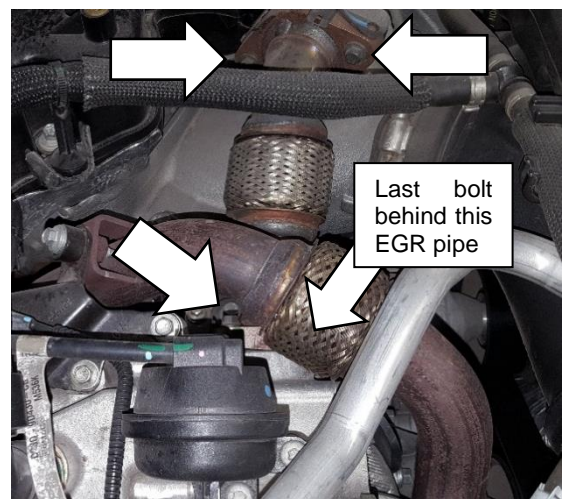
Disconnect throttle body electrical connector.



Disconnect Exhaust Gas Recirculation Temperature (EGRT) sensor connector and wire harness retainer under the air filter inlet. This will be reused.



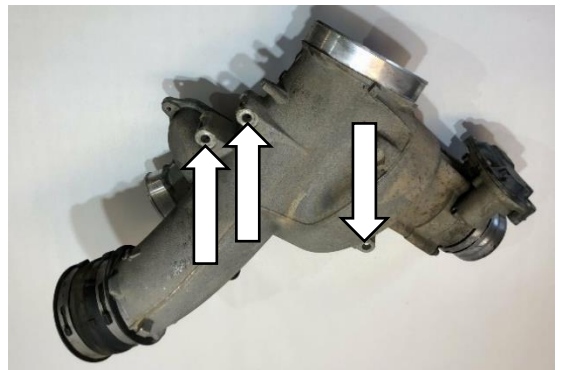
Remove 4 bolts and EGR bypass outlet pipe.



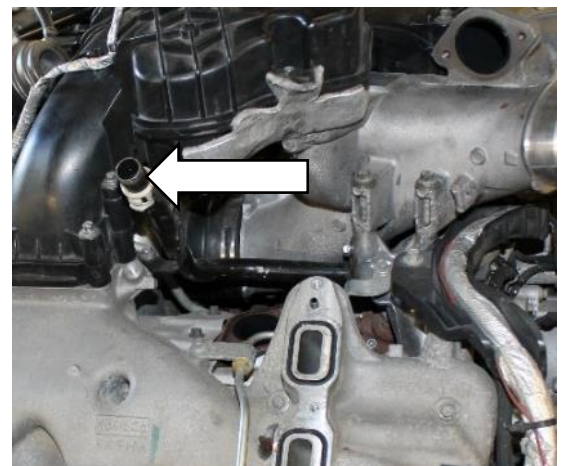
Release cold side intercooler inlet clamp, disconnect CAC inlet tube from turbo.



Remove 3 bolts and remove lower intake manifold.



Disconnect heater core inlet hose from the heater inlet tube.

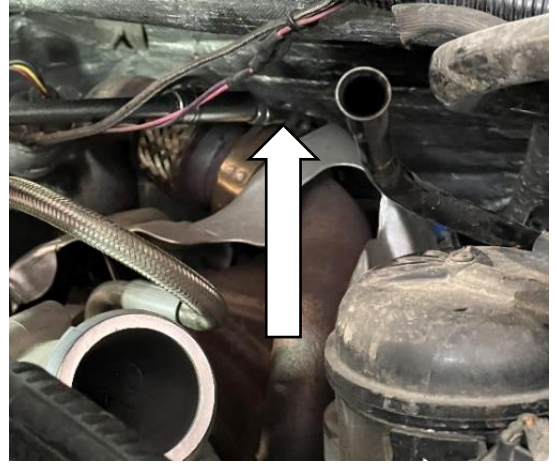


Mark position of turbo feed pipe clamps as shown (optional but recommended).



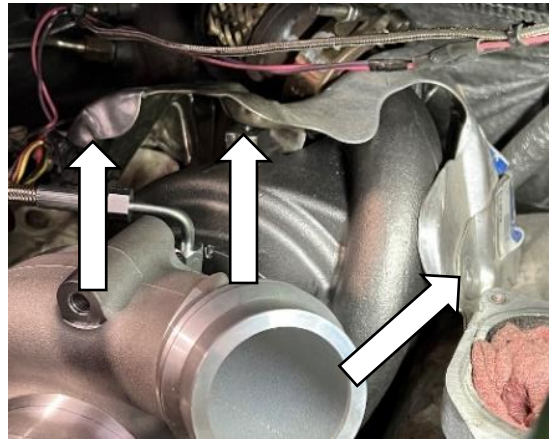
Loosen turbo feed pipe hose clamps.

Remove LH and RH turbo feed pipes.



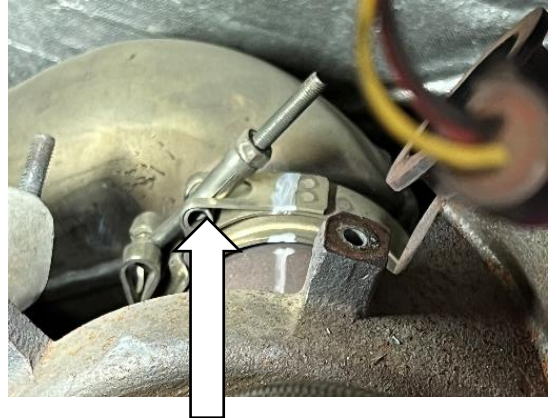
Remove heatshield. Three bolts hold heatshield to turbo as shown.

Discard these bolts, keep OEM heatshield.



Mark position of the turbo outlet pipe (optional but highly recommended).

Undo clamp and remove upper downpipe.

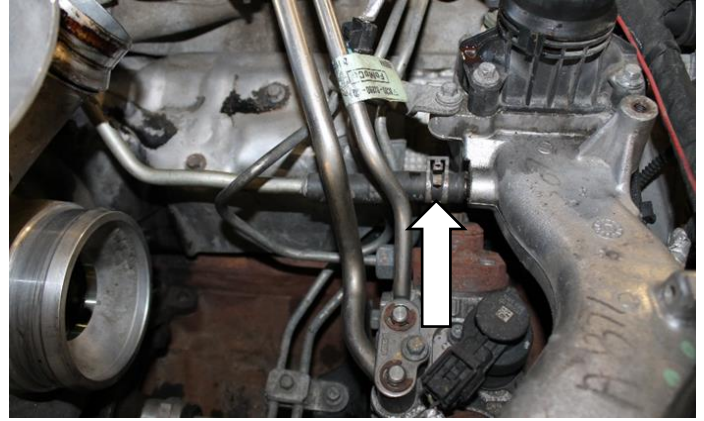


Undo four bolts (2 front, 2 rear) securing turbo pedestal to vehicle.



Remove turbo coolant return line found on the driver's side.

Lift turbo off the locating pins and out of the vehicle.

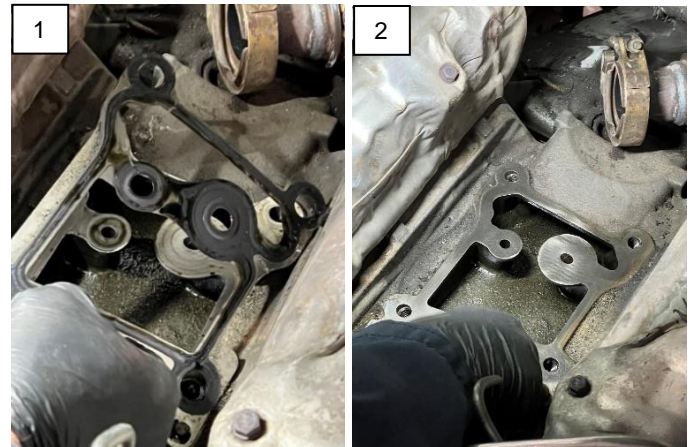


Installing the Iron Horn Turbo

Remove and replace valley gasket.

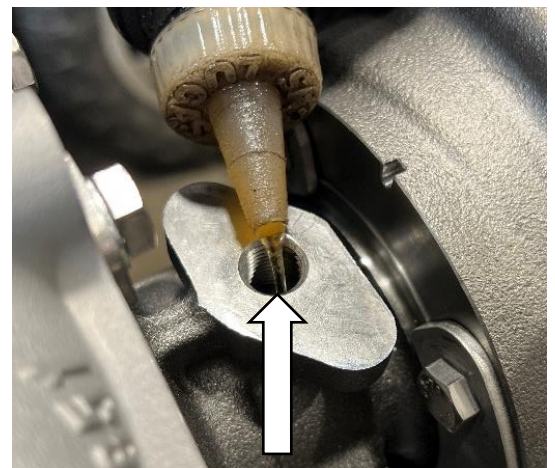
Wipe down valley, ensuring it is clean, and all old gasket is removed.

Install new gasket provided.



Ensure to pre-lube turbo oil inlet ports with ½ oz. of engine oil.

Important!! Failure to pre-lube may cause damage to turbo internals.

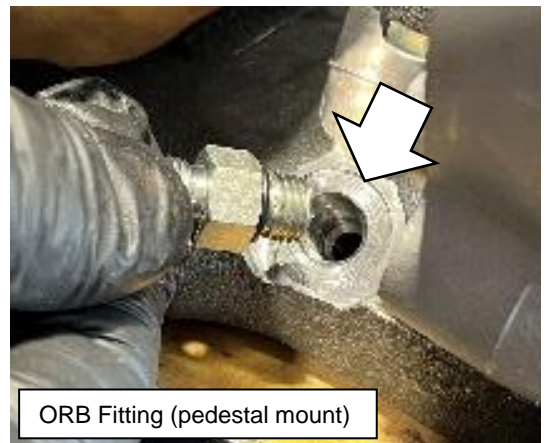


Add thin layer of thread sealant to NPT threads of **FT-420653**.

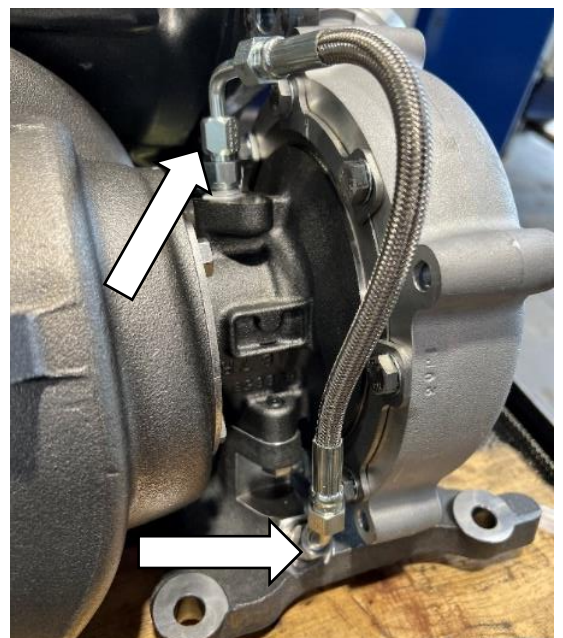


Install provided oil fittings.

IMPORTANT!! FT-421313 which contains an O-ring is to be installed on pedestal mount.



Connect the oil line to the two oil fittings, making sure that end of hose with a right angle connection is at top fitting.





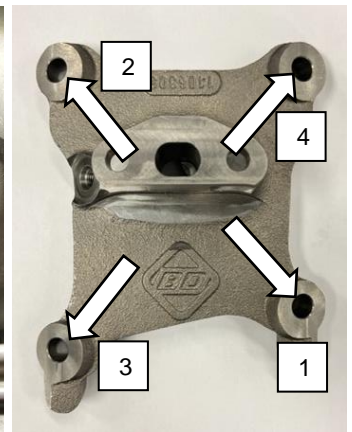
Replace feed pipe to manifold gaskets with the 2 provided **BC3Z-6N640-A**.



Seat turbo on valley, aligning the locating pins into the pedestal.

Insert 4 pedestal bolts, and torque to **55 Nm (41 lb-ft)**, following the tightening sequence shown.

Important!! Ensure turbo pedestal is seated on locating dowels to prevent misalignment of turbo.



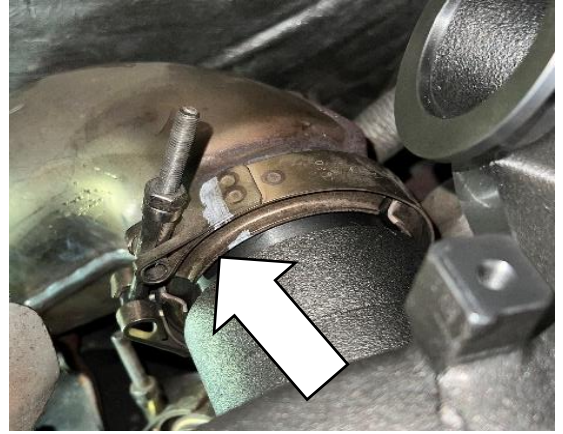
Torque LH exhaust feed pipe to **15 Nm (133 lb-in)**. Clamp bolt should be vertical as shown.

Tighten 3 nuts on exhaust manifold to **15 Nm (133 lb-in)**.



Seat upper downpipe to turbo, slide clamp into position, and torque to **15 Nm (133 lb-in)**.

Note: Ensure mark made previously on the clamp and downpipe line up.



Torque RH exhaust feed pipe to **15 Nm (133 lb-in)**. Clamp bolt should be vertical as shown.

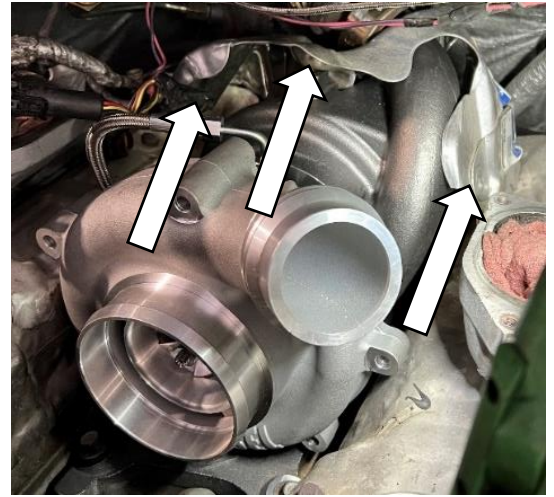
Tighten 3 nuts on exhaust manifold to **15 Nm (133 lb-in)**.



Use the supplied spring clamps (**1500403**), 3/8" diameter hose (**1604053**), and turbo coolant port block off plug (**1462122**) to block off the coolant port.

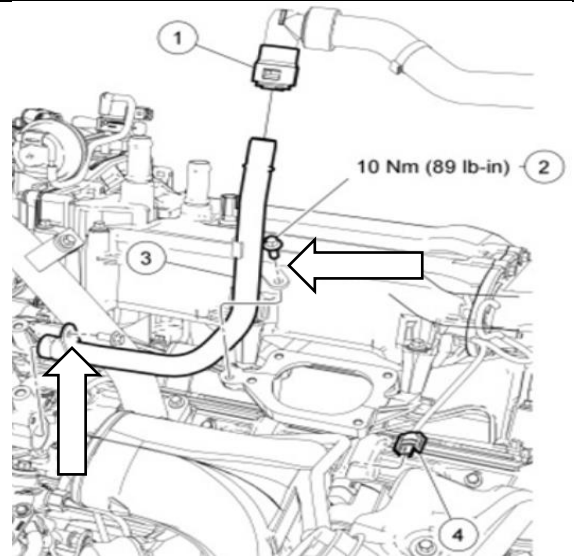


Install heat shield using the 3x supplied **FT-11117514** bolts and tighten to **10 Nm (89 lb-in)**.



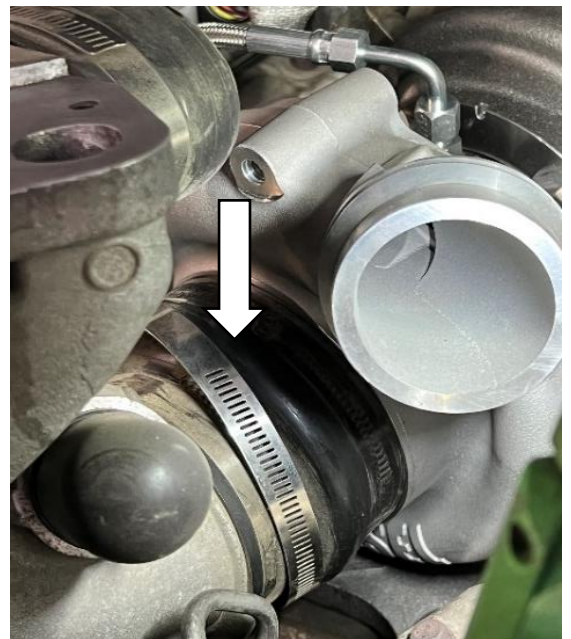
Install heater core inlet tube with 2 bolts torqued to **10 Nm (89 lb-in)**.

Connect heater core inlet hose to heater inlet tube.

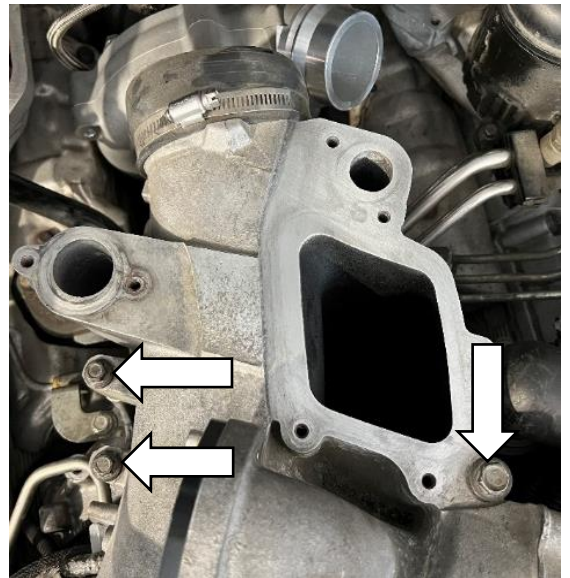


Install **1405858** boot on lower intake manifold with 1 **FT-0427642** and 1 **FT-0427640** clamp. Slide this assembly into position on the front turbo housing. Tighten the two clamps.

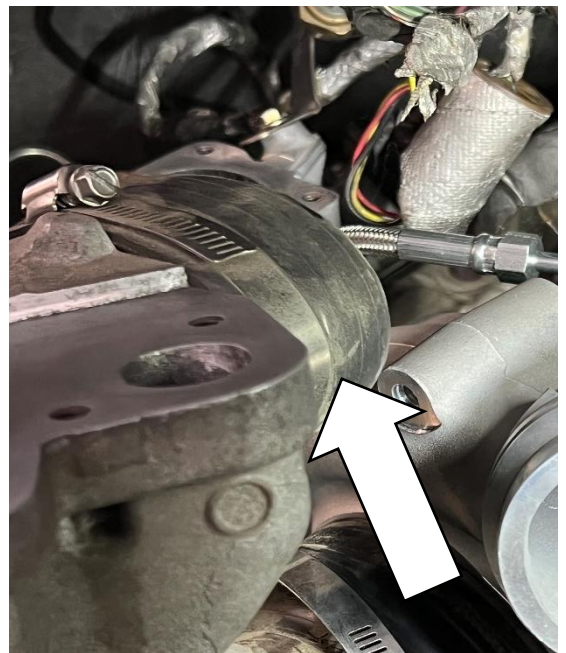
Note: The truck shown has a crankcase vent tube delete.



Install and tighten lower intake manifold with 3 mounting bolts to **24 Nm (18 lb-ft)**.



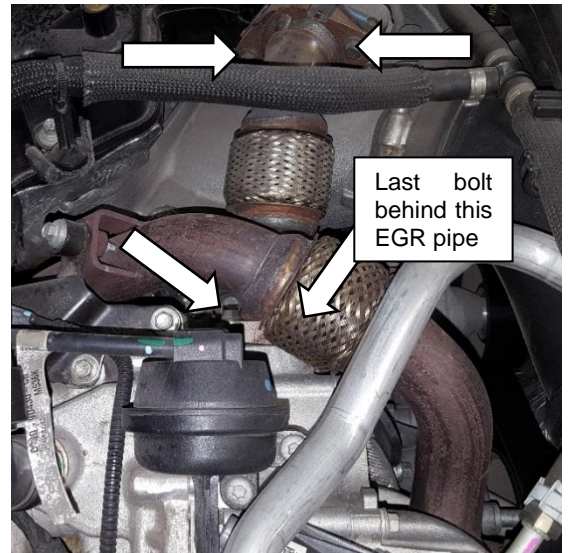
The Iron Horn does not utilize the top inlet boot. Use the provided **1405829** boot cap and remaining **FT-0427640** clamp to cover opening on the lower manifold.



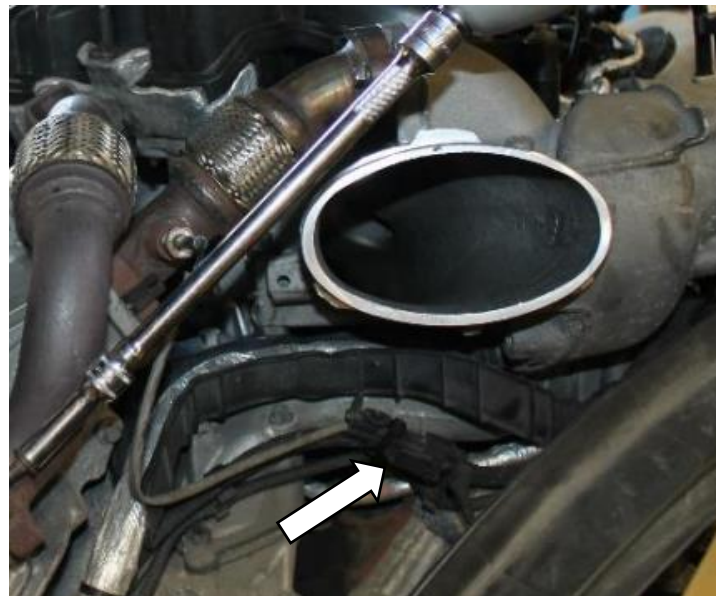
Reattach the crankcase vent tube by twisting it clockwise.



Reattach EGR bypass pipe and torque the 4 bolts to **10 Nm (89 in-lb)**.



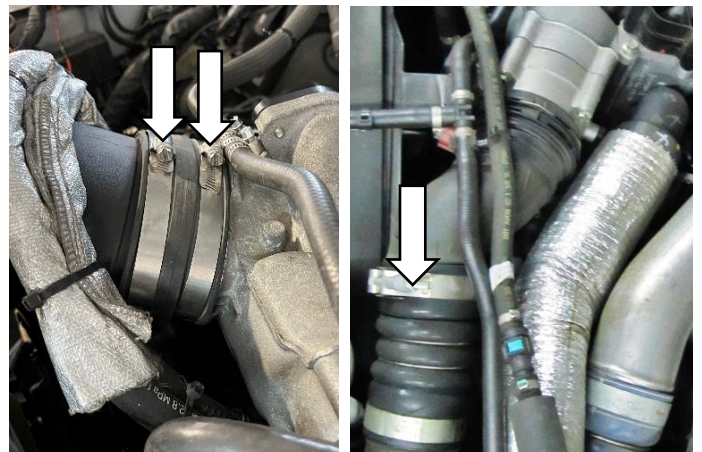
Reattach EGRT sensor connector and wire harness retainer.



Connect CAC inlet hose and air filter inlet hose to lower manifold.

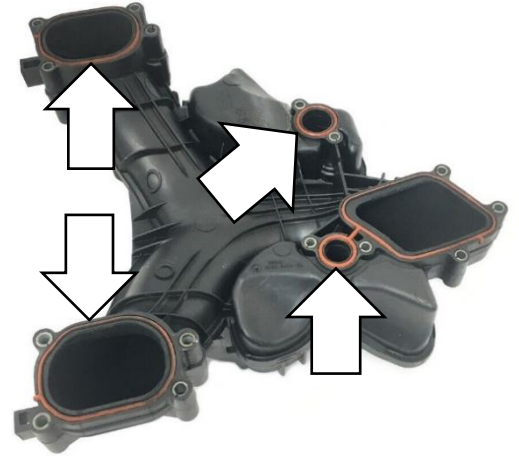
Install retaining clip for CAC inlet hose and two clamps for air filter inlet hose.

Tighten air filter clamps to **4 Nm (35 lb-in)**.



Inspect 4 upper intake manifold gaskets. If worn, ripped, or leaking, replace.

See **Table 1** for gasket part number.



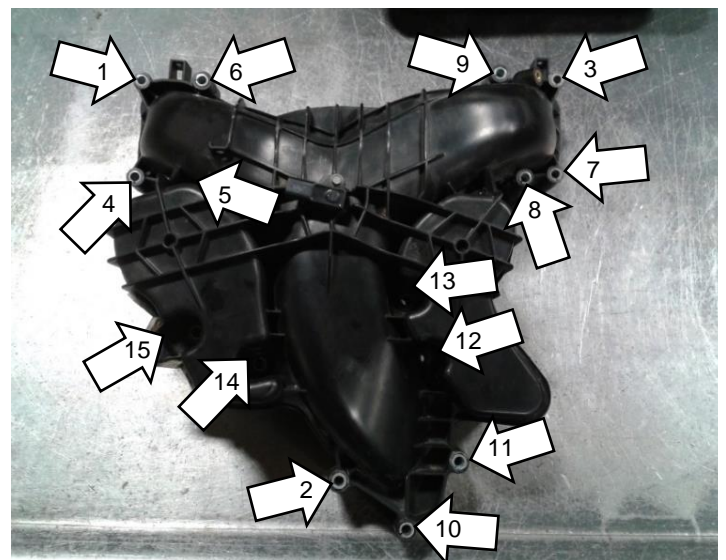
Before installing upper intake manifold, remember to remove rags or tape covering valve covers.

Clean surfaces to ensure proper sealing.



Install upper intake manifold.

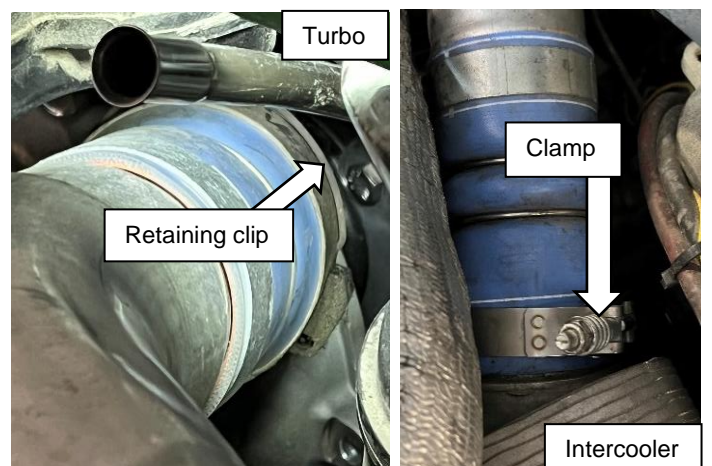
Install and tighten 15 bolts to **10 Nm (89 lb-in)** using tightening sequence shown.



Install CAC pipe to turbo inlet.

Use retaining clip on turbo side of the pipe and clamp on heat exchanger side of pipe.

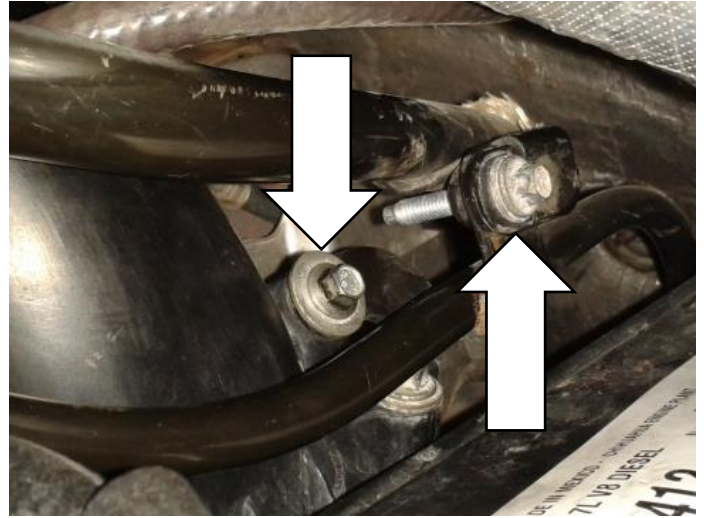
Torque the clamp to **9 Nm (80 lb-in)**.



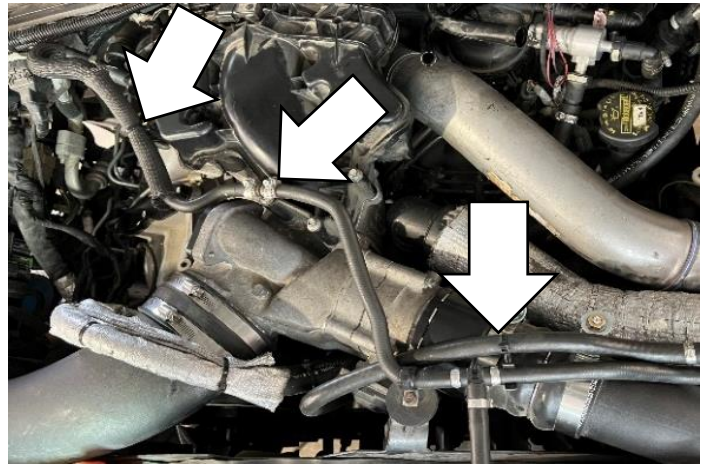
Install engine oil level indicator tube bolt and transmission fluid level indicator tube bolt.

Torque engine oil level indicator tube bolt to **10 Nm (89 lb-in)**.

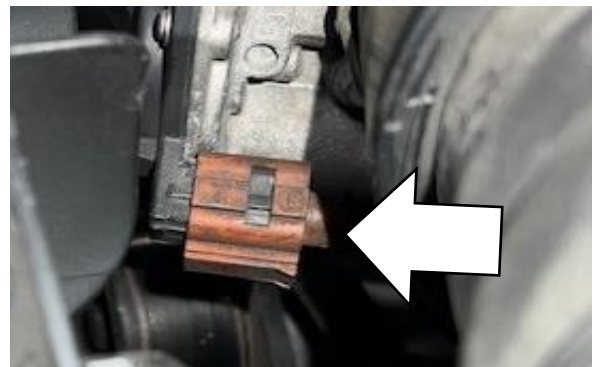
Torque transmission fluid level indicator tube bolt to **11 Nm (97 lb-in)**.



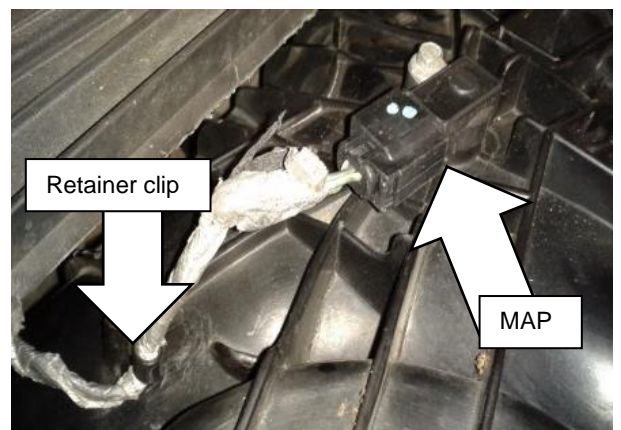
Connect coolant hose retainers and vacuum hose retainer (if equipped).



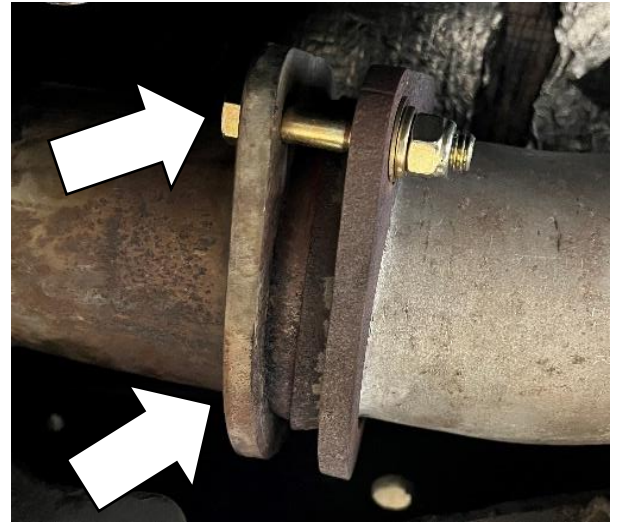
Connect throttle body electrical connector.



Connect MAP sensor and wire harness retainer.



Attach downpipe to the exhaust pipe and torque 2 bolts to **40 Nm (30 lb-ft)**.



Install RH fender liner.



Drain oil and reinstall oil drain plug.

Remove and replace oil filter.

Fill truck with Ford-approved oil.

Fill truck with Ford-approved coolant.



Connect both battery ground cables.

