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INSTALLATION INSTRUCTIONS

TURBOCHARGER SYSTEM:
2015 - 2019 2.3L Mustang Ecoboost
P/N 11910

This turbocharger is emissions legal per CARB E.O.: D-99-9

Read This First

Study these instructions completely before proceeding. Engine and/or turbocharger damage may occur if any component within these instructions is improperly installed. Turbonetics, Inc or any of its distributors cannot be held responsible for damages as a result of negligent or improper installation. This complete turbocharger system can be installed using common tools and automotive procedures, but installer must have a thorough knowledge of automotive engine operation and feel comfortable working on the vehicle. If in doubt, contact Turbonetics' technical support staff at 805-581-0333, between the hours of 8:00AM and 5:00PM PST, Monday through Friday.
Remove the turbocharger system from its carton and inspect for any obvious physical damage. All kit components are thoroughly inspected and carefully packaged prior to shipment from the factory. If any shipping damage is evident, contact your supplier and request that they process a claim with the shipper involved. Be sure to review the parts list on page 3 & 4 to verify that you have all necessary system components to proceed. If any components in the parts list are missing, contact Turbonetics' customer service staff.
The information contained in this publication was accurate and in effect at the time the publication was approved for printing and is subject to change without notice or liability. Turbonetics reserves the right to revise the information presented herein or to discontinue the production of parts described at any time.
SAFETY REQUIREMENTS: It is recommended to follow these precautions.

- • Always wear safety glasses & gloves.
- • Turn the ignition switch to the OFF position & disconnect the battery.
- • Always use properly rated jack stands when working under the vehicle.
- • Prevent unexpected vehicle movement by using wheel chocks and/or parking brake.
- • Operate the vehicle only in well ventilated areas.
- • Do not smoke or use flammable items near or around the vehicle's fuel system.
- • Keep hands, clothing and other objects away from moving parts when engine is running.

SUPPLIES: It is recommended to have the following items before beginning installation.

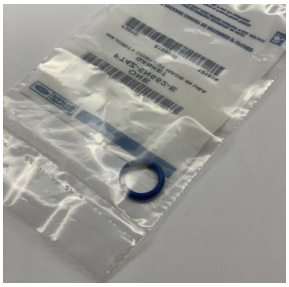
- • Factory service manual.
- • A large table or bench and plenty of adjacent available workspace.
- • Standard selection of automotive tools, primarily metric sizes.
- • The ability to securely lift the vehicle at least a few feet off the ground.
- • Pinch Hose Clamp Pliers

TORQUE RECOMMENDATION: When removing and re-installing factory fasteners, refer to the service manual for torque values. When installing fasteners included in this kit, refer to the following chart:

#11910 TURBOCHARGER SYSTEM PARTS LIST:

QTY	P/N	DESCRIPTION
TURBO kit # 11910 (COMPONENTS)		
1	11909	Upgrade Turbocharger
HARDWARE (CLAMPS) PARTS LIST:		
1	30615	Hose Clamp, Liner Style: #036
1	30616	Hose Clamp, Liner Style: #044
1	31350	Hose Clamp, Liner Style: #064
HARDWARE (HOSES) PARTS LIST:		
1	22778	Silicone Trans Hose 2.25”-3.50”
1	22779	Silicone Trans Hose 3.00”-3.50”
HARDWARE (GASKETS) PARTS LIST:		
1	31498	Gasket, Turb HSG Inlet Ford
1	31500	Gasket, Turb HSG Outlet Ford
1	31502	O-Ring Oil Drain, Ford
3	31499	O-Ring Oil/Water, Ford

HARDWARE KIT (NUTS/BOLTS/FITTINGS)		
2	31504	Stud, M10 Turb. Outlet Ford
2	31559	Nut, M10-1.5 Flanged

P/N11909	P/N 22778	P/N 22779
		
P/N 30615	P/N 30616	P/N 31350
		
P/N 31498	P/N 31500	P/N 31499
		
P/N 31504	P/N 31559	P/N 31502
		

PREPARING THE VEHICLE FOR TURBO KIT INSTALLTION

1. Jack the vehicle up to a workable height. Secure the vehicle with jack stands.
2. Remove the negative cable from the battery terminal. (10mm socket).

   See Fig.1

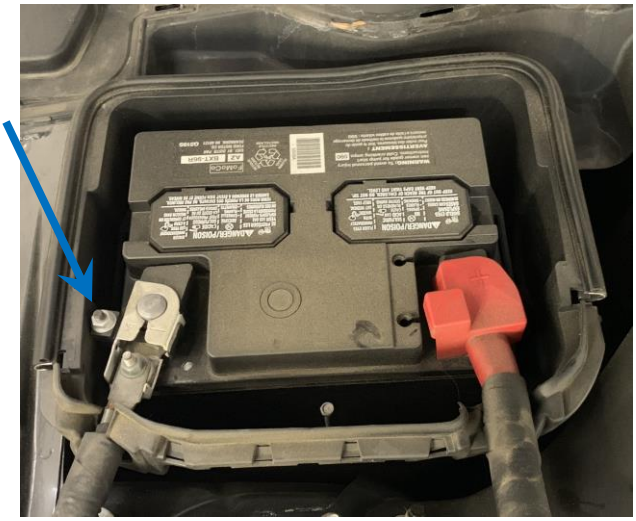


Fig. 1

AIR FILTER BOX/TUBE ASSY. REMOVAL

1. Release 2 plastic tabs by pushing outward. See Fig. 2
2. Carefully pull cable clip. ----------
3. Squeeze IAT Connector and pull to release. See Fig. 2
4. Slide Airbox Forward to release from base. See Fig. 2

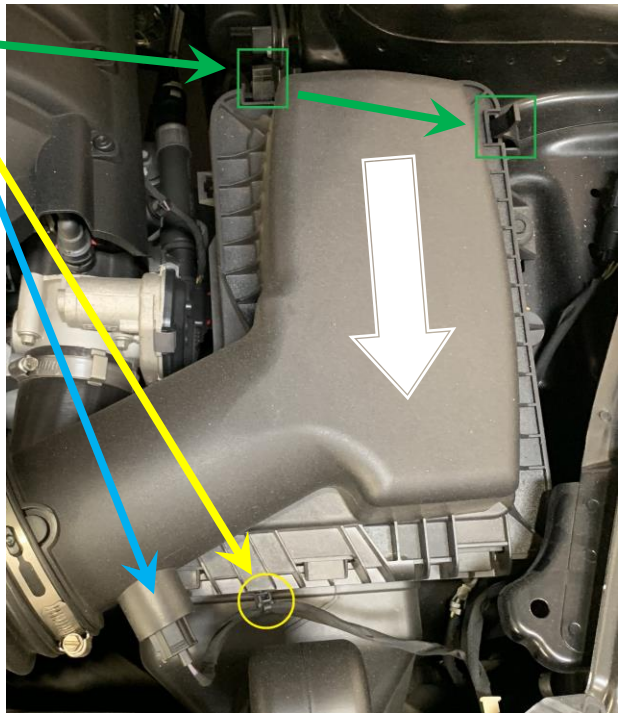


Fig. 2

AIR FILTER BOX/TUBE ASSY. REMOVAL

5. Locate BOV recirculating hose next to the coolant reservoir. See Fig. 3 Using pliers squeeze the metal clamp and slide back from the end of the hose. Proceed to disconnect hose from intake tube.

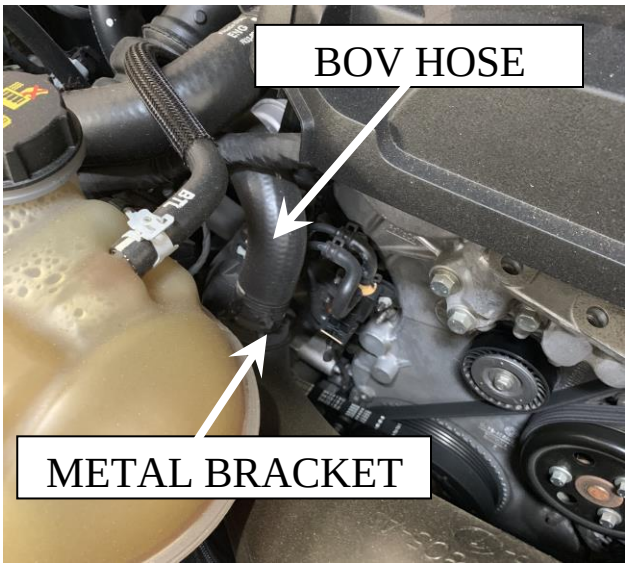


Fig. 3

6. Locate PCV hose exposed once the BOV hose is disconnected. See Fig 4. Using a flat screw driver gently release safety clip and pull hose from intake tube.

Fig. 4

AIR FILTER BOX/TUBE ASSY. REMOVAL

7. Locate the inlet tube worm clamp attached to the factory turbo. See Fig. 5

   (Loosen clamp using a 7mm socket.)

8. Proceed to remove the Intake tube assy from the engine compartment.

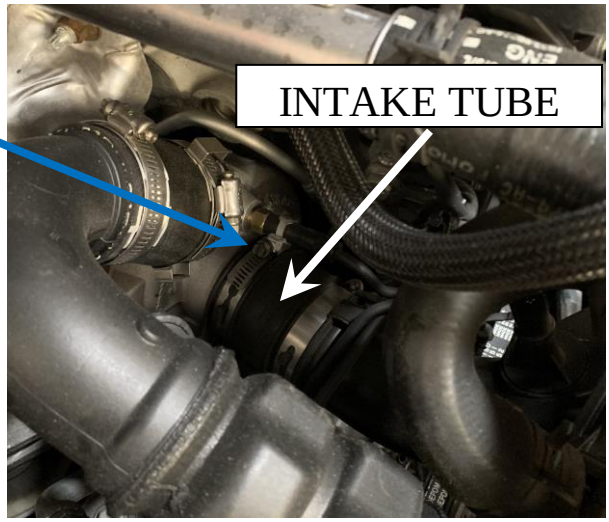


Fig 5.

TURBO DISCHARGE TUBE REMOVAL.

1. Locate BOV solenoid wiring hardness. See Fig. 6. Squeeze the connector end and pull.

2. Pry wiring hardness retention clip from discharge tube. See Fig. 6

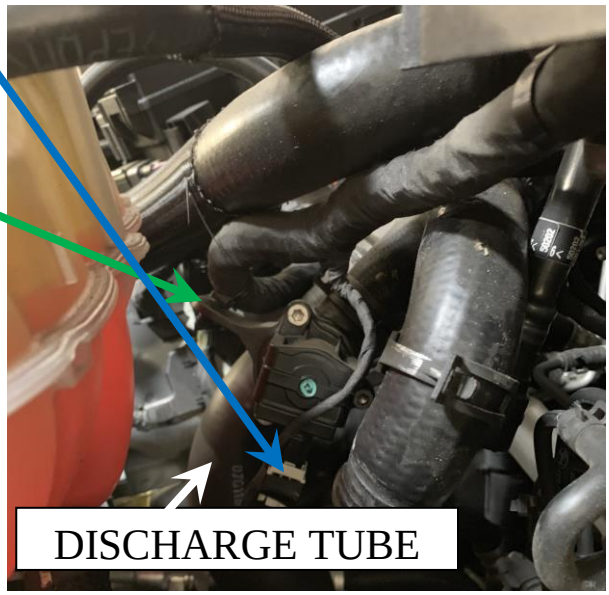


Fig. 6

TURBO DISCHARGE TUBE REMOVAL.

3. By following the Turbo discharge tube down towards the intercooler, located and loosen worm clamp. See Fig. 7 (use 7mm socket)
4. Loosen last discharge tube worm clamp and wiggle the tube out from the engine bay. See Fig. 7 (use 7mm socket)

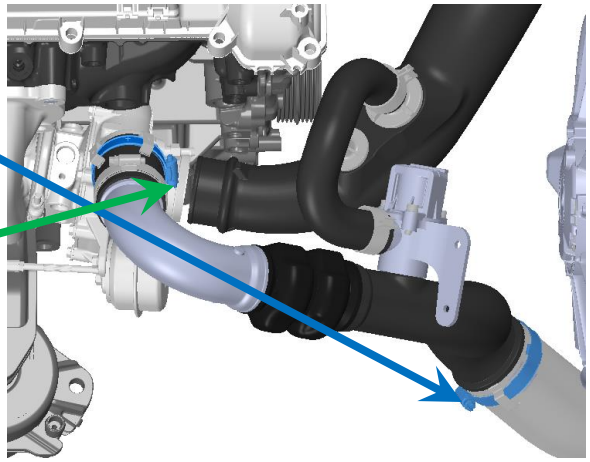


Fig. 7

ACTUATOR/SOLENOID LINE REMOVAL.

1. Using nose pliers, squeeze metal clip and pull the rubber lines away from the fittings.

   See Fig. 8

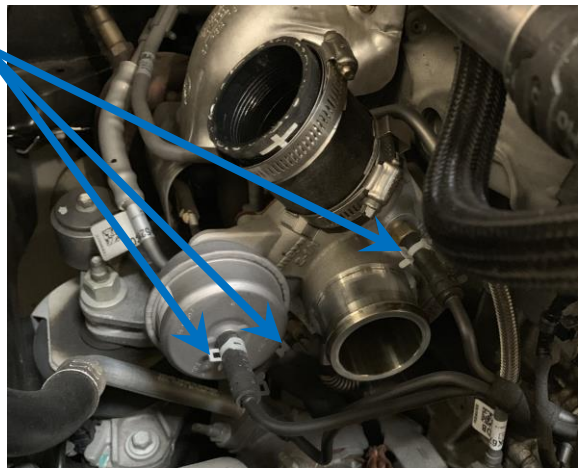


Fig. 8

OIL & COOLANT LINES REMOVAL.

1. Locate Oil feed line. Loosen and remove bolt. See Fig. 9 (use 8mm socket)
2. Remove water line support bracket. See Fig. 9 (use T35 Torx bit)
3. Locate coolant feed and return lines. Loosen and remove bolt. See Fig. 9 (use 8mm socket)

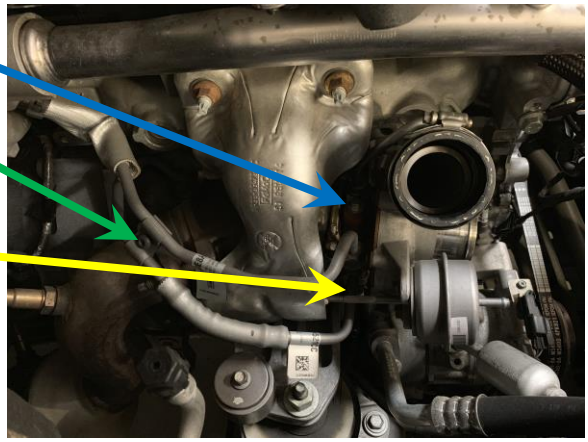


Fig. 9

OIL DRAIN LINE REMOVAL.

1. Locate oil drain line. Loosen & remove bolt. See Fig. 10 (use 8mm or 10mm socket)
2. Using a flat screw driver pry Oil drain flange away from the center housing.
3. Carefully bend the oil tube down as shown.

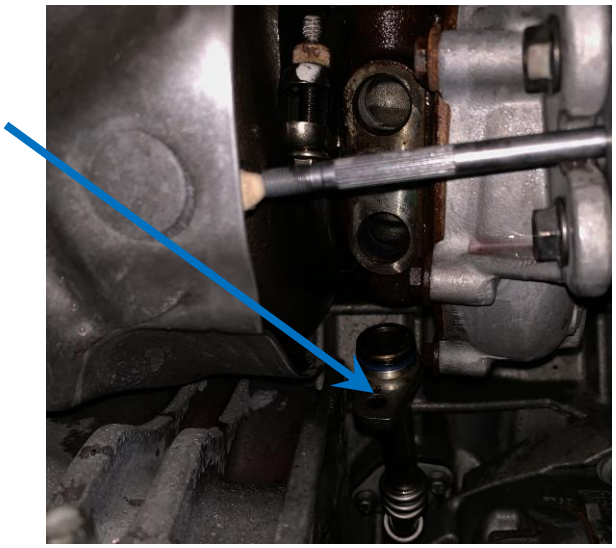


Fig. 10

VIBRATION DAMPENER REMOVAL.

1. Removing the dampener gives greater access to the heat shield bolt. Remove bolt and dampener from bracket. See Fig. 11 (use 10mm socket)

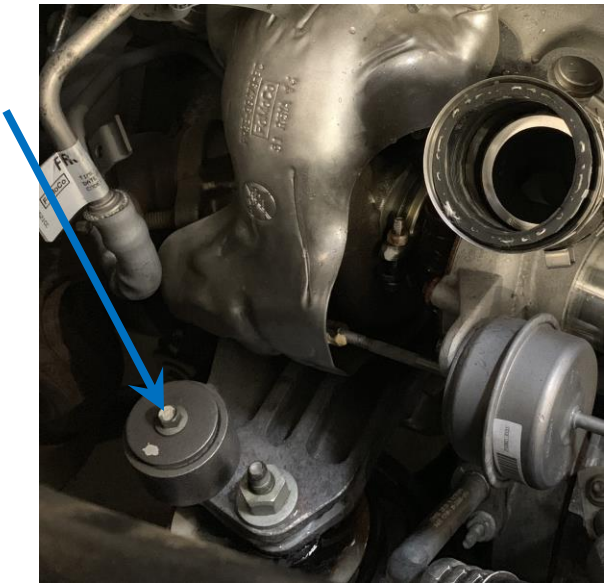


Fig. 11

EXHAUST DOWN PIPE REMOVAL.

1. Locate and remove both nuts from studs. See Fig. 12 (use 15mm socket)

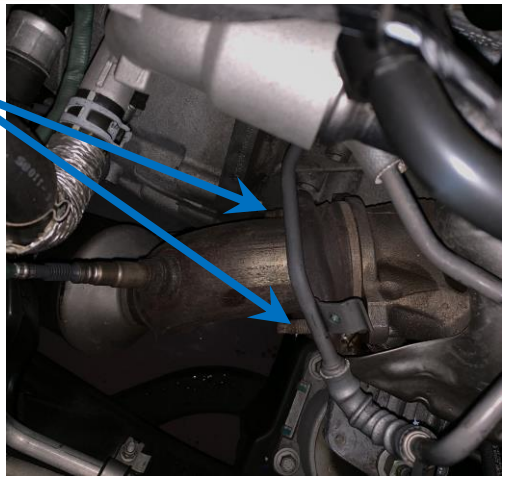


Fig. 12

2. From underneath the vehicle, locate the catalytic converter's support bracket. Remove both bolts. See Fig. 13 (use 13mm socket)

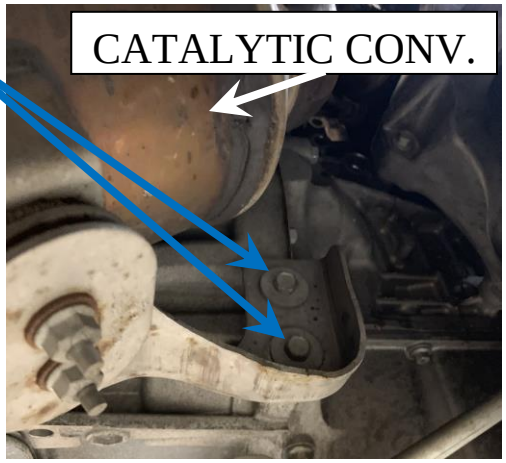


Fig. 13

HEAT SHIELD & TURBO REMOVAL.

1. Remove the top nuts holding the heatshield to the engine head. See Fig. 14 (use 13mm socket)
2. Locate and remove single bolt holding the heatshield to the Turbine Housing. Bolt is difficult to see as its tucked under the shield. See fig. 14 (use 8mm socket or T35 Torx)
3. Remove the last two bottom nuts holding the Turbo to the engine head. See Fig. 14 (use 13mm socket)
4. Slide turbo away from the engine head and out from the engine bay.

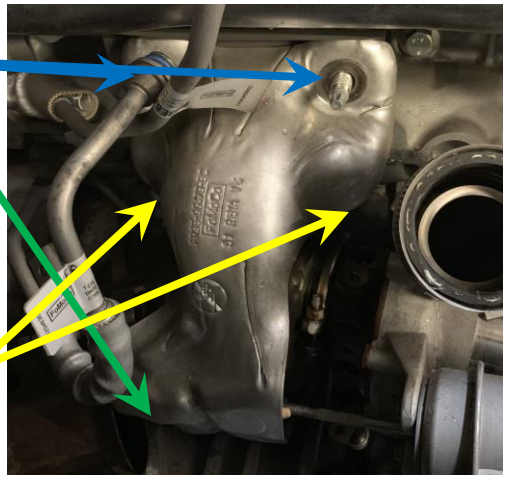


Fig. 14

UPGRADE TURBO PREPARATION.

1. Install the provided new studs (31504) to the new turbo using a stud installation tool. See Fig. 15

Fig. 15

NEW O-RING REPLACEMENT INSTALLATION.

1. Using a point screw driver or similar, pry old O-rings off from the flange groove. See Fig. 16
2. Apply a few drops of oil to new O-rings

3. Repeat process on all remaining connections. See Fig. 17 for proper O-ring part number identification.

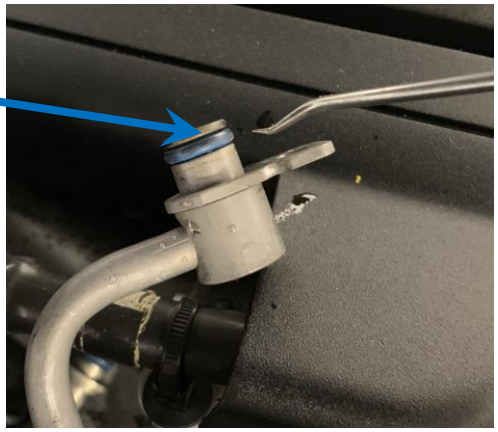


Fig. 16

Part Number: 31499 (Oil feed & coolant lines)

Part Number: 31502 (Oil Drain line)

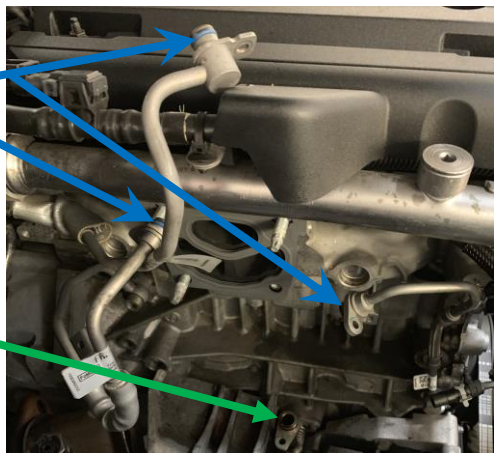


Fig. 17

NEW TURBO INLET GASKET INSTALLATION.

1. Find and install the new gasket provided. Be sure the bent flange on the gasket points away from the engine head. See Fig. 18

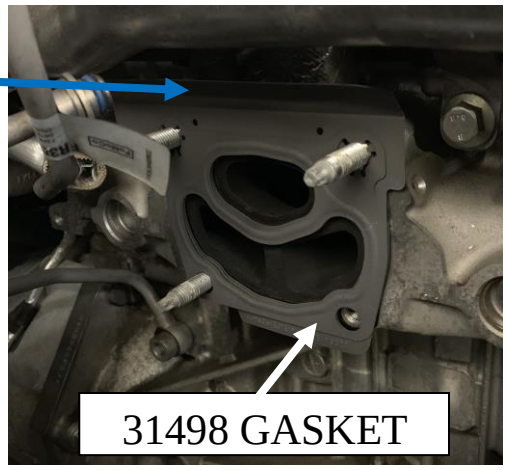


Fig. 18

NEW TURBO INSTALLATION.

1. Carefully lower the new Turbo, align Turbine flange holes with cylinder head stud and slide into position.
2. Re-install and torque the two bottom nuts. See Fig. 19

(use 13mm socket) *Torque to 37 lb.ft (50 Nm)*

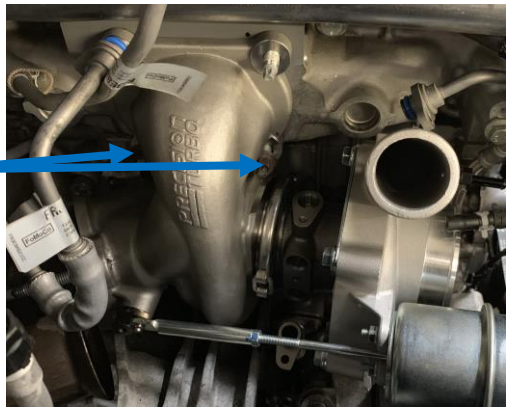


Fig. 19

TURBO DOWN PIPE INSTALLATION.

1. Use the new gasket provided in the box (PN 31500) with the tapered end pointing away from the Turbo flange and towards the downpipe.
2. Re-align the downpipe to the Turbine flange and slip the bracket thru the studs. (Use anti-seize)
3. Manually thread both new nuts into studs. Make sure that both sides are evenly torque. (use 15mm socket) **DO NOT FINAL TORQUE ONE NUT AT A TIME!** See Fig. 20 *Torque to 30 lb.ft (40 Nm)*

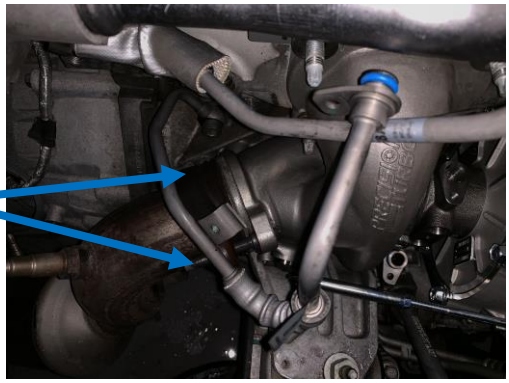


Fig. 20

4. From underneath the vehicle again, locate the catalytic converter's support bracket and tighten bolts. See Fig. 21 (use 13mm socket) *Torque to 18 lb.ft (25 Nm)*

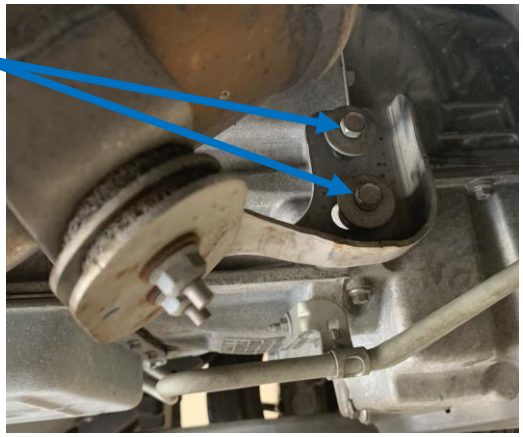


Fig. 21

HEATSHIELD INSTALATION.

1. Slip heat shield back into position. See Fig. 22
2. Tighten the two top nuts attacking the Turbo to the cylinder head. (use 13mm socket) *Torque to 37 lb.ft (50 Nm)*
3. Tighten lower heatshield bolt. See Fig. 22 (use 8mm socket or T35 Torx bit) *Torque to 89 lb.in (10 Nm)*
4. If necessary, use a flat screw driver to pry heatshield away from actuator rod.

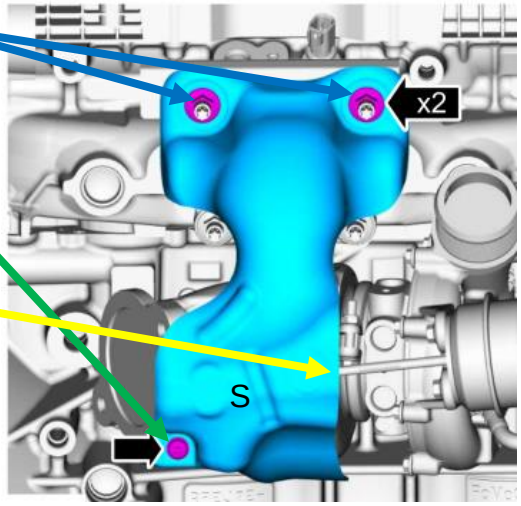


Fig. 22

OIL FEED LINE INSTALATION.

1. Maneuver oil feed line around the compressor housing discharge flange.
2. Push flange gently into the center housing until the flange is flush and fully seated. See Fig. 23 (use 8mm socket) *Torque to 89 lb.in (10 Nm)*

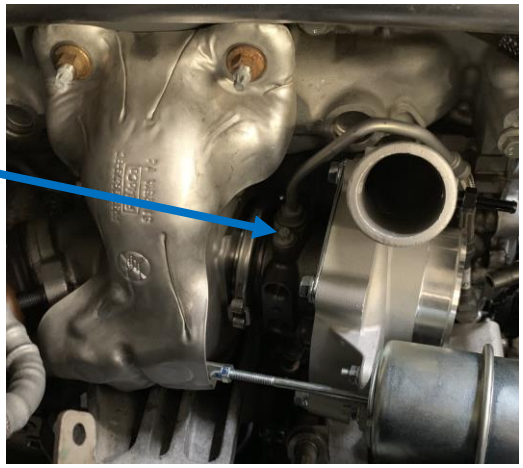


Fig. 23

COOLANT LINES INSTALATION.

1. Maneuver lower coolant line into position. Evenly push flange into turbo center housing until it is fully seated. See Fig. 24
2. Maneuver upper coolant line into position and evenly push flange into turbo center housing until it is fully seated. See Fig. 24
3. Tighten center bolt. (use 8mm socket) *Torque to 89 lb.in (10 Nm)*

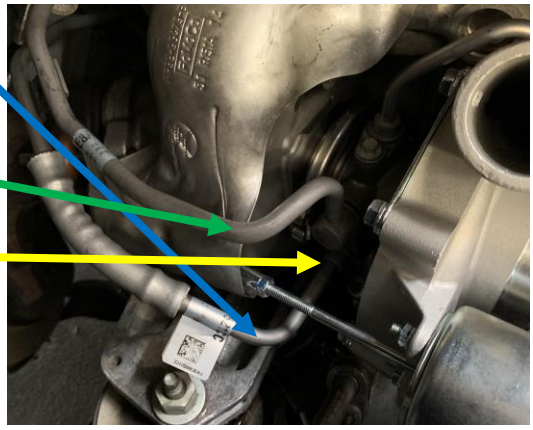


Fig. 24

OIL DRAIN LINE INSTALATION.

1. Carefully maneuver oil drain line into position. Gently push flange up towards turbo center housing. See Fig. 25
2. Tighten bolt. (use 8mm socket or 10mm socket) *Torque to 89 lb.in (10 Nm)*

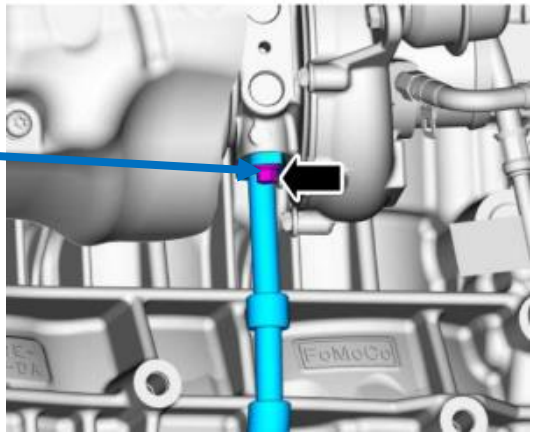


Fig. 25

ACTUATOR/SOLENOID LINE INSTALATION.

1. Locate and push boost pressure reference line into compressor fitting. Use nose pliers to secure metal clip into final position. See Fig. 26
2. Locate and push actuator pressure line into actuator canister fitting. Use nose pliers to secure metal clip into final position. See Fig. 26
3. Locate and push solenoid return line into compressor fitting. Use nose pliers to secure metal clip into final position. See Fig. 26

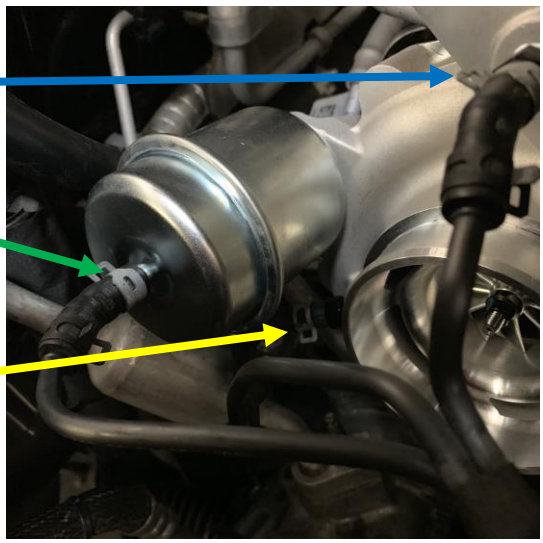


Fig. 26

VIBRATION DAMPENER INSTALLATION.

1. Tighten bolt. See Fig. 27 (use 10mm socket) *Torque to 21 lb.ft (28 Nm)*

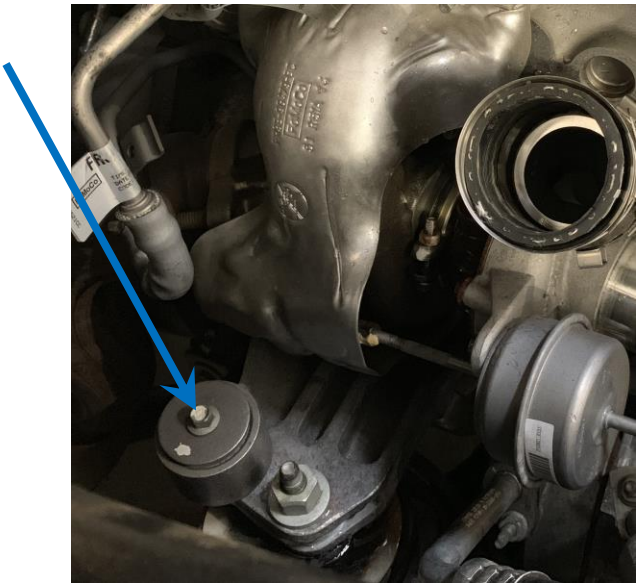


Fig. 27

TURBO DISCHARGE TUBE INSTALLATION.

1. Maneuver discharge tube back into position. Tighten worm clamp bolt. See Fig. 28 (use 7mm socket) *Torque to 44 lb.in (5 Nm)*
2. tighten worm clamp bolt. See Fig. 28 (use 7mm socket) *Torque to 44 lb.in (5 Nm)*
3. *Re-attach wiring harness plastic clips back into position.* See Fig. 28

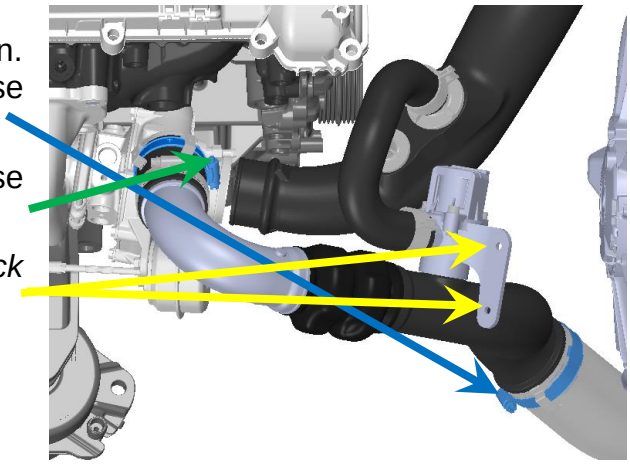


Fig. 28

INTAKE TUBE PREPARATION.

1. While on the bench, remove factory coupler from intake tube. See Fig. 29 (use 7mm socket)
2. Use new coupler part number 22778 included in the kit if you are using the factory intake tube as shown. Secure coupler to intake tube using 30615 worm clamp included in the kit.
3. Use new coupler part number 22779 if you are using popular aftermarket 3” intake tubes. Secure coupler to intake tube using 30616 worm clamp included in the kit.
4. Attach coupler of choice to intake tube.

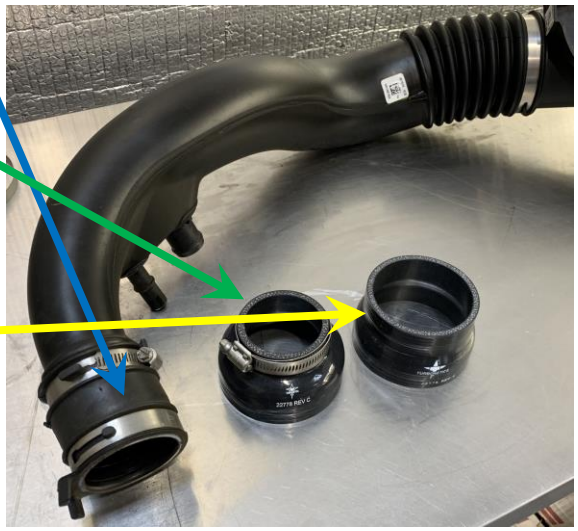


Fig. 29

INTAKE TUBE INSTALLATION.

1. Maneuver intake tube back into position.
2. Use worm clamp part number 31350 included in the kit and secure tube into final position. See Fig. 30

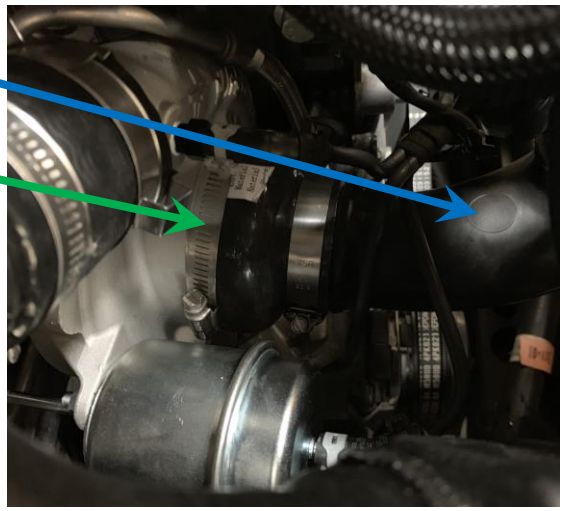


Fig. 30

3. Maneuver PCV line back into position and push down into intake tube until the safety clip snaps back into the locked position. See Fig. 31
4. Maneuver the BOV recirculating hose back into position and push down into intake tube fitting. Using nose pliers slip metal clamp back into position. See Fig. 31
5. Re-attach BOV solenoid connector by pushing until safety clip snaps back into locked position. See Fig. 31

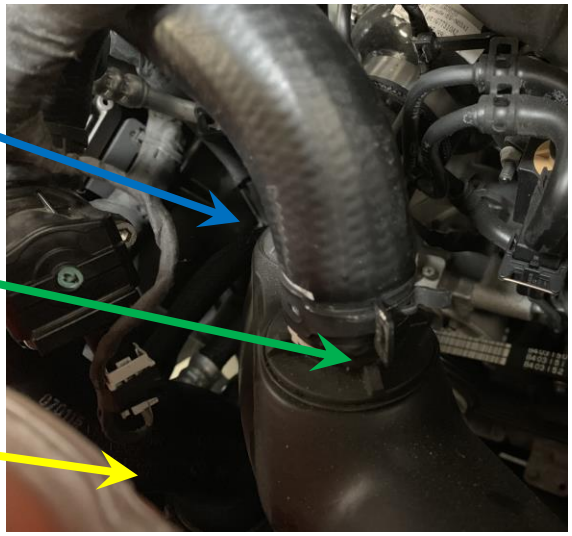


Fig. 31

AIR FILTER BOX/TUBE ASSY. INSTALLATION.

1. Slide Airbox back into position such that forward locking slots interlock between cover and base. See Fig. 32

2. Push clips inward until locked in place.
3. push wiring plastic clip back into position. See Fig. 32
4. Push AIT connector back into sensor. See Fig. 32

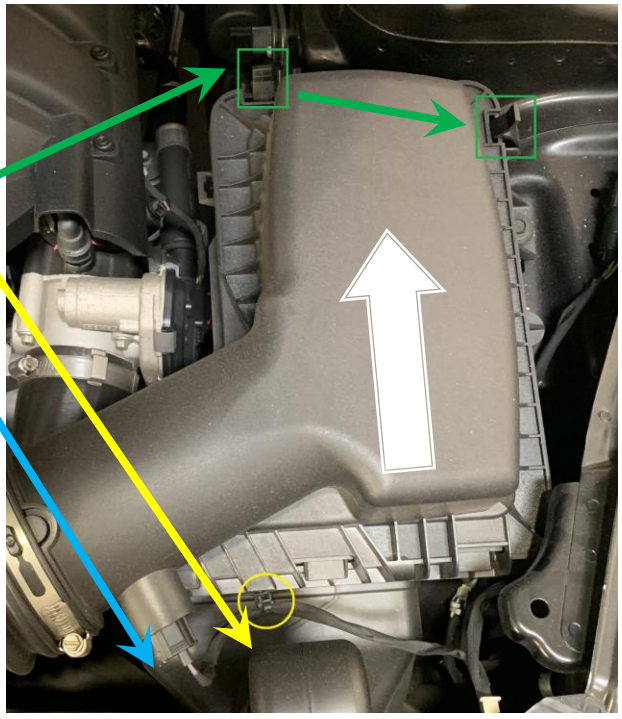


Fig. 32

BATTERY GROUND CABLE INSTALLTION.

1. Tigthen Terminal nut. (10mm socket).
   Torque to 89 lb.in (10 Nm) See Fig.33

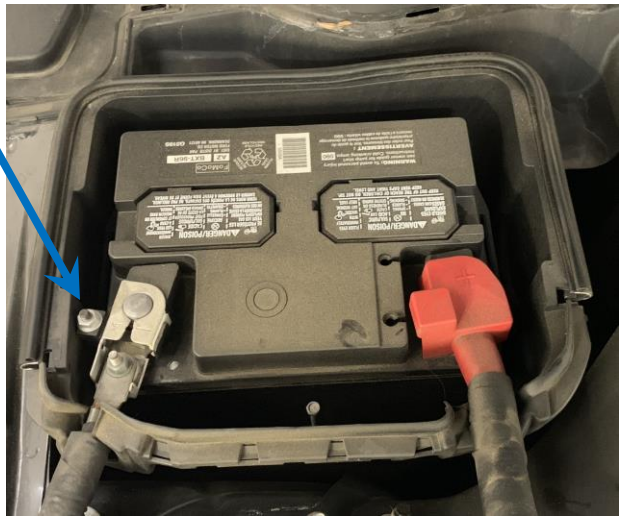


Fig. 33

COOLANT SYSTEM BURPING.

1. Remove coolant plug. (use 3/8 ratchet) See Fig. 34
2. Fill system coolant through this boss until water level slightly overfills.
3. Re-install plug. *Torque to 18 lb.ft (25 Nm)*

Fig. 34

1. Start the vehicle and check for any oil or coolant leaks prior to a test drive.
2. Test drive the vehicle, check for oil/coolant leaks again, check all fluid levels and top off as necessary. If you are experiencing any issues of idling, bucking, running extremely rich, or poor performance, ensure that all hose clamps are tight and all hoses are installed properly and that there are no air leaks of any kind in the plumbing from turbo to intercooler to throttle body. If you need any support, our tech lines are open Monday through Friday from 8am to 5pm at (805) 581-0333, or go to our website at www.Turboneticsinc.com to our forums under “Tech Support”.

EMISSIONS NOTE: This vehicle is emissions legal only when the parts are installed as described in this instruction manual. Making changes to the kit or ECU programming voids the CARB exemption order making the vehicle illegal for use on California roads.

“NO FAULT / NO HASSLE” WARRANTY PROGRAM:

TURBONETICS will repair or replace, at our expense, any new TURBONETICS / Spearco products that fail, including products used in racing or competition applications, for a period of one year from the original date of purchase. All turbocharger and cartridge assemblies have a factory installed inline oil filtration device. This filter device must remain in place if any warranty is to be considered under the No-Fault / No-Hassle program. Electrical components that fail due to misuse are not covered under the No-Fault / No-Hassle Warranty Program.

Warranty is limited to TURBONETICS products and does not include progressive or subsequential damage and does not cover removal or installation labor or associated parts. No warranty is made for any other claims for special, indirect or consequential damages including but not limited to component removal or installation equipment downtime, prospective profits or other economic loss.

Warranty will not be granted for recurring damage, malfunction, or failure due to improper installation, misuse, unauthorized repair or alterations, or externally induced physical damage.

Warranty is non-transferable and must be processed via the original purchaser from TURBONETICS.

Remanufactured units, performance upgraded units, and O.E.M. replacement units are covered by a 90-day warranty or the O.E. warranty period.

TURBONETICS highly recommends that the installation of mechanical or electrical parts be performed by trained professionals. Improperly installed products may lead to unsafe and unreliable conditions.

RETURN POLICY:

Only unused and complete merchandise may be accepted for return subject to inspection and acceptance by TURBONETICS. No goods will be accepted without prior return authorization from TURBONETICS. Call for approval and RGA (Returned Goods Authorization) tracking number. No returns will be accepted without an RGA tracking number. No returns will be accepted after ninety (90) days from the original shipping date from TURBONETICS unless approved. All approved returns are subject to a 15% restocking charge – NO EXCEPTIONS. The original invoice must accompany the return. Accepted warehouse / distributor and open account returns will be issued credit only.

RETURNED GOODS AUTHORIZATION TRACKING NUMBER:

TURBONETICS will only accept product returns, repair orders / upgrades, and warranty requests that have been approved and are returned with a corresponding RGA (Returned Goods Authorization) tracking number.

Contact TURBONETICS for approval and the RGA number. Write the RGA number clearly on the outside of the package and include it inside the package. This is very important in allowing us to properly identify and process your request. Failure to comply with this requirement will result in the delay of processing or the product being returned to you.