




EVOLUTION POWER P43R-325 Turbo Upgrade System Installation Guide

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INSTALLATION INSTRUCTION

NOTE: Your MG1 ECU must be Unlocked by EVP to enable proper tunes for this turbocharger upgrade.

NOTE: Expect 24–48-hour delay from the time you request a tune to when the file is enabled. Please create your Map tuner account before starting the project. Email us at maptunerx@evopowersports.com

NOTE: Due to the MG1 torque strategy, the boost figures listed represent max boost on a hot engine. When intake temps are cooler, boost will be lower, however it will make the same power. The MG1 ECU tries to make the same power given environmental conditions by allowing a boost increase when intake temperatures increase.

This is a high-performance upgrade! Although we have gone through great lengths to build safety into the upgrade turbo system, the fact is installing any upgrade / turbo system requires care in both operation and installation. Poor fuel, improper setup or any number of things that are done incorrectly can damage your engine!

- You have likely voided the sound and exhaust emission standards of your country if applicable.
- This upgrade is intended for OFFLOAD and RACING use only.
- This is a performance upgrade which will VOID your engine warranty especially if installed incorrectly or operated without regard to your instruments.
- The fuel requirements must be adhered to. Poor fuel can destroy an engine in seconds.
- Evolution Powers ports bears no responsibility for damage caused to your vehicle by the installation of EVP products. The warranty on big turbo kits is 30 days from the date of purchase. Evolution Powers ports, at its discretion will determine whether a part meets the warranty requirements. In no case is there any warranty from EVP for your vehicle or vehicles drive train. Although we have been careful to supply you with the highest quality parts possible, we assume no liability for damage to the vehicle or personal injury from installing or using any of our products.
- The installation of this kit is technical and mechanical in nature with many opportunities to make mistakes – mistakes that can be very costly. If you are not qualified to install this kit, bring your vehicle to one of our qualified installation centres to do the installation.
- This kit will make your vehicle faster, climb higher and accelerate more quickly and take a longer distance to

brake than a stock tuned vehicle. If you are not capable of controlling the vehicle with the added performance, do not install the kit.

- High boost is hard on spark plugs – they must be changed frequently. If you experience misfire issues – Gap and replace the spark plugs.
- A full exhaust and clutching are required for this kit and can be purchased separately.
- Do not ever allow a child or an unqualified driver to operate this vehicle

Parts Included in Paragon 43R-325 Turbo Upgrade System

100FC0115	X3 Blow Off Valve 2.0 (BOV) Kit
100RC0083	2020+ X3 Desert Storm Charge Tube Kit
203FC0060	2020+ X3 Desert Storm V-Flow Intake Kit
102FC0001	2020+ X3 Race Inter cooler
203FC0051	X3 “The Clamp” Plenum Brace
501FC0001	X3 1000cc Injectors, Set Of 3
604FC0090	X3 MG1 P43R Red Turbocharger Assembly
604FC0026	X3 Paragon Install Kit
702FC0001	X3 Turbo RR 1000cc Fuel Injector Adaptors, Set of 3
500RC0017	X3 (2021+ Turbo RR) 265LPH Fuel Pump Kit
800FC0000	X3 Head Stud Kit, 9mm
804FC0001	X3 Spark Plug Set of 3
953RU0725	(optional) MG1 ECU Unlock

Parts Included X3 Paragon Install Kit

953RU0073	Paragon and Desert Storm Turbo Oil Feed Line	1
953RC0067	5/8" Black Silicone Fire Sleeve	15
953RU0013	27mm Pinch Clamp	1
953RU0060	18mm Pinch Clamp	5
953RU0077	M8-1.25 Copper Flange Nut	2
953RU0078	HPS 3/8" Silicone Water Hose	13
953RU0078	HPS 3/8" Silicone Water Hose	13
953RU0079	3/4" Black Silicone Fire Sleeve	6
953RU0079	3/4" Black Silicone Fire Sleeve	11
953RU0038	3/16" 90-Degree Hose Barb	2
953RU0037	3mm ID Hose	7
953RU0037	3mm ID Hose	7
953RU0037	3mm ID Hose	30
953RU0080	3/8" Brass Hose Barb	1
953RU0034	11.3mm Pinch Clamp	8
603RU0000	X3 Turbo Heat Shield	1
002FP0222	Paragon Code Shooter Power Flash	1
953RU0076	M8-1.25 x 40mm Stud	2
953RU0041	3/16" T Barb	1

Level	Tunes	Max Boost (psi)	Spark Plug Gap	Spring	Waste Gate (psi)	Engine HP
P46-335	91, MS-109,E85	20, 27, 28	.016 – .018	Blue	12	325 (E85)

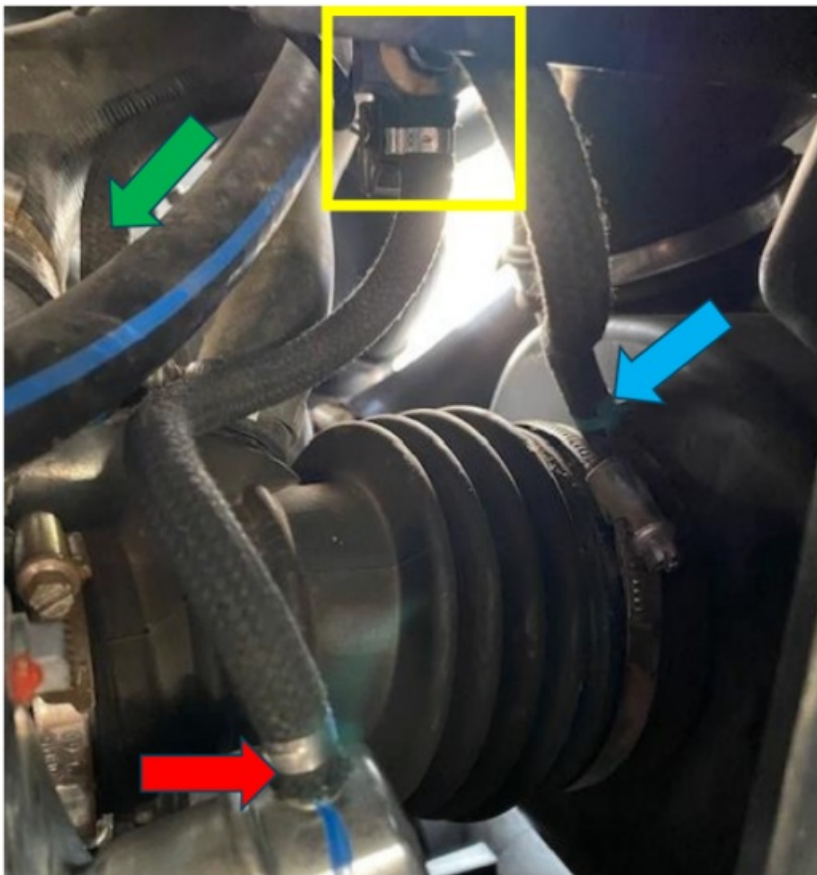
Required Parts (Sold Separately)

- EVP or other Full Turbo Back Exhaust System
- AFR Module
- Boost Module

TURBO REMOVAL

Step 1: Remove panel between the seats that allows access to the turbocharger.

Step 2: Remove and label vacuum lines from the boost control solenoid going to the waste gate actuator, boost reference, and air box (corresponding colors). Boost solenoid located in the yellow box.



Step 3: Remove the worm drive clamp holding the intake tube onto the turbo. (Shown in photo above).

Step 4: Remove the worm drive clamp on the top of the air box.

Step 5: Using a 13mm socket remove the 2 bolts behind the driver seat holding the air box to the firewall.



Step 6: Remove the worm drive clamps or t-bolt clamps holding the charge tubes on. Inter cooler to turbocharger and inter cooler to throttle body. Remove from vehicle.

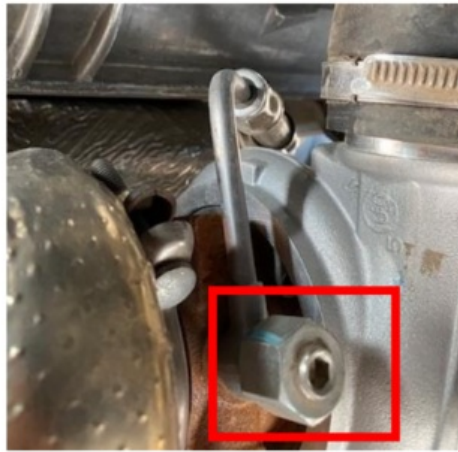
Step 7: Using a 10mm socket, remove the (4) fasteners holding the inter cooler in place. Be sure to unplug the inter cooler fan. Remove inter cooler assembly from vehicle.

Step 8: Remove the nut on the V-band clamp holding the exhaust onto the turbo. You may need to use penetrating oil.

Step 9: Remove the worm drive clamps holding the heat shielding on to the mid-pipe. Remove heat shields from mid-pipe.

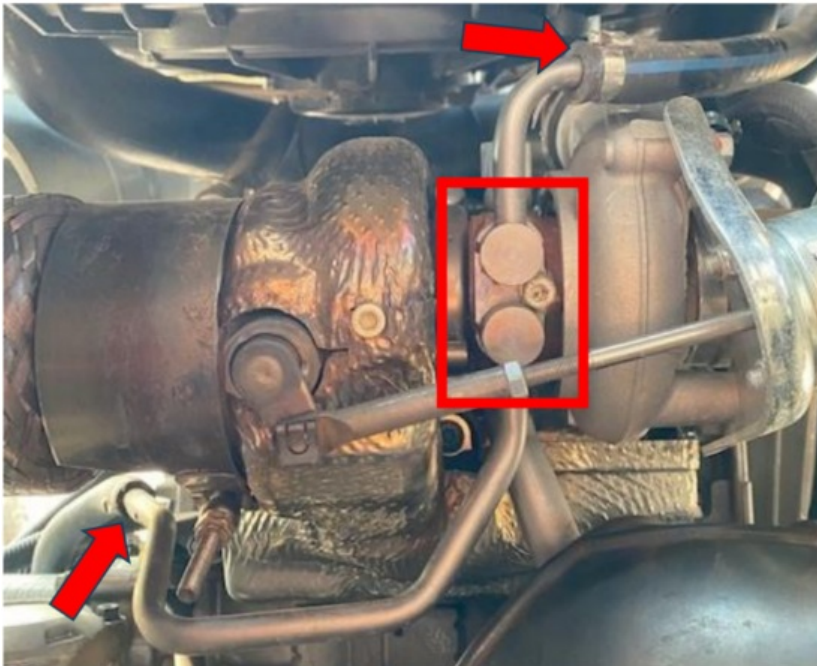
Step 10: Remove oil drain line from turbocharger by cutting the OEM clamp.

Step 12: Remove oil supply line from top of the turbocharger.



Step 14: Using a soft grip vise grip, pinch off the soft coolant lines that supply/return water to the turbo. About 2 inches from the hardliners.

Step 15: Cut the OEM clamps holding the soft coolant line to the hard line. Remove the soft coolant lines from the hard lines. The hardliners will come out with the turbocharger.



Step 17: Remove bolts securing exhaust manifold heat shields – lower heat shield can be removed. Upper heat shield must stay on until the turbo is loose.

Step 18: Using a 10mm socket or T40 Torx remove the fasteners holding the exhaust manifold to the engine and remove the turbo from the vehicle.

Step 19: Remove oil pressure sensor and OEM oil line (be sure to save the copper washers).



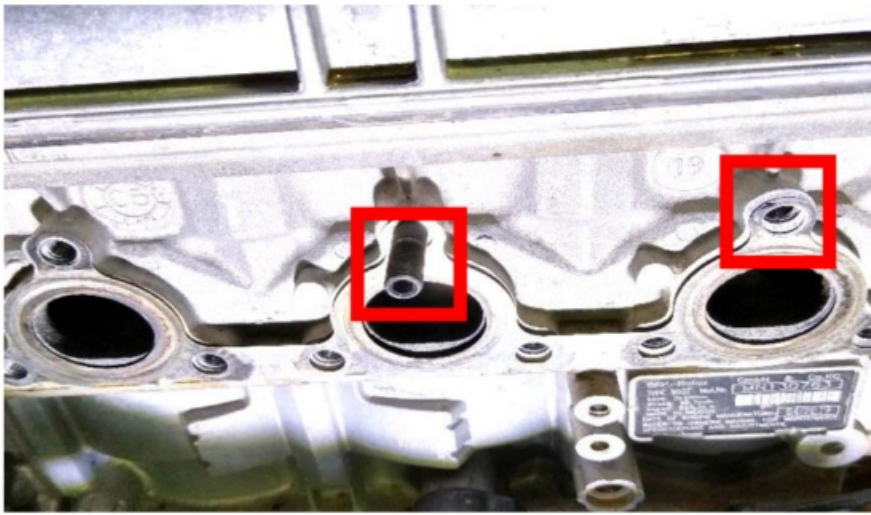
Installation of the Paragon Turbocharger

NOTE: Your Paragon turbocharger will come pre-oiled and fitted with the correct coolant and oil fittings.

Step 1: Slide the supplied oil feed line through the 5/8" supplied fire sleeve. Reinstall the OEM oil pressure sensor through the banjo side of the EVP oil feed line. Install the OEM copper washers on each side of the banjo fitting. **See figure 1.**

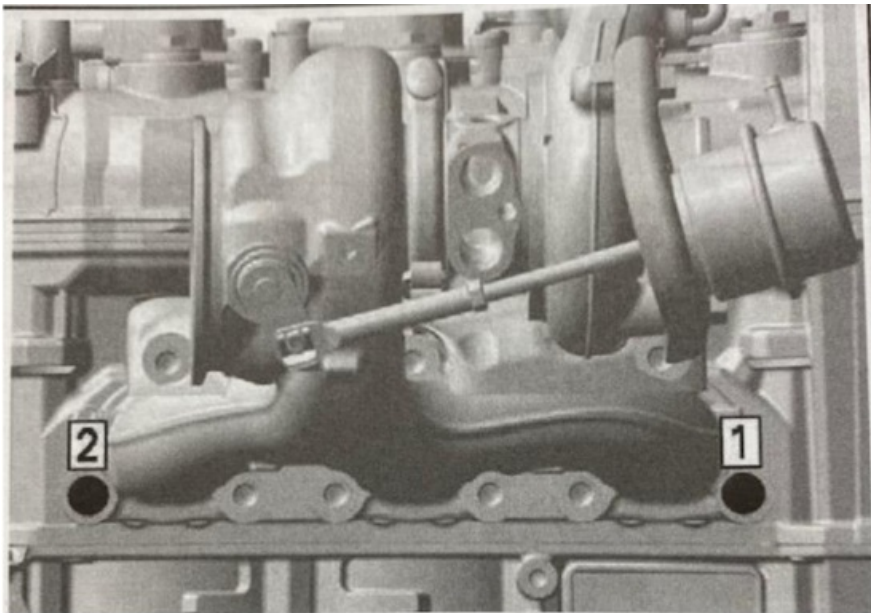


Step 2: Install the M8 x 1.25 stud into the top hole of the center exhaust port. Thread the stud all the way in then back it out one full turn. Hang the OEM manifold exhaust gasket on the stud. **See figure 2.**

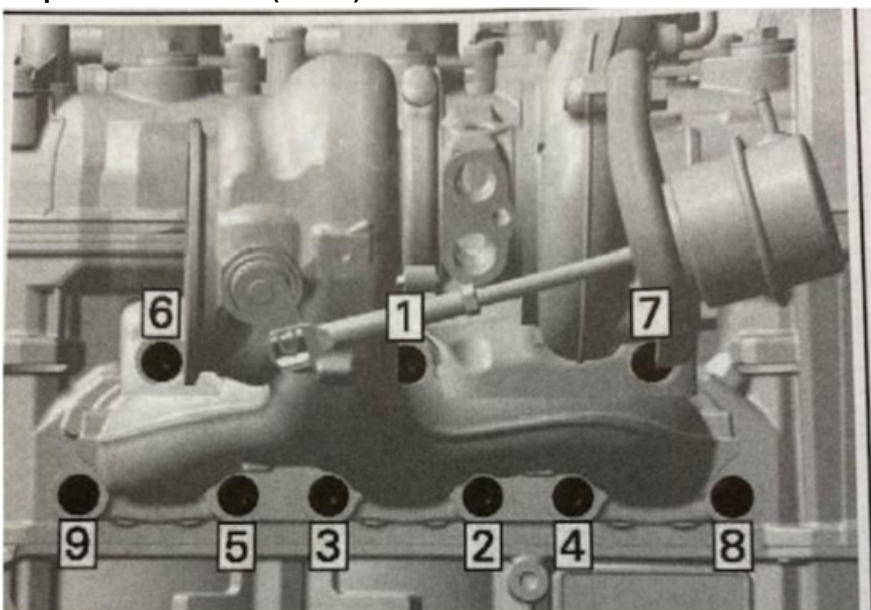


NOTE: If you have a P46/50 install the second stud on the top right hole.

Step 3: Install the new turbocharger reusing the OEM fasteners. Sequence 1: Torque the (2) retaining screws to 44 in-lb (4 ft-lb). Sequence 2: Torque the all (9) retaining screws to 17 ft-lbs. (23 Nm). Install the M8 x 1.25 copper flange nut onto the stud. Use a 4mm Allen wrench to hold the stud while torquing to 17 ft-lb. **See figures 3-4.**



Sequence 1: 44 in-lb (4 ft-lb)



Sequence 2: 17 ft-lb

Step 4: Connect the EVP oil supply line to the top of the turbocharger. Remove the safety red cap before installing.

Step 5: Connect the OEM rubber drain hose to the Paragon oil drain. Use the supplied 27mm pinch clamp to

secure it.

Step 6: Install both 3/4" fire sleeves onto each 3/8" silicone water hoses. The shorter fire sleeve will connect to the rear of the turbocharger coolant fitting and run to the "T" underneath the coolant resistor. Use (2) 18mm pinch clamps. The longer fire sleeve with silicone hose will connect the the front barb coolant fitting and connect back to the OEM soft coolant line using the supplied 3/8" hose barb. Use (3) 18mm pinch clamps.

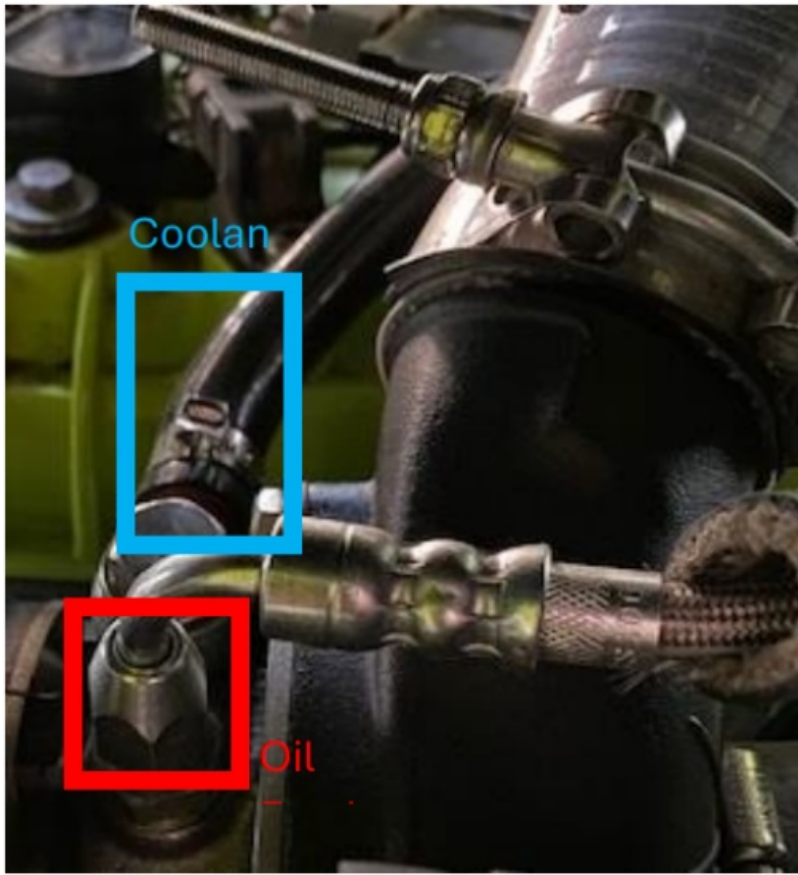


Fig 5

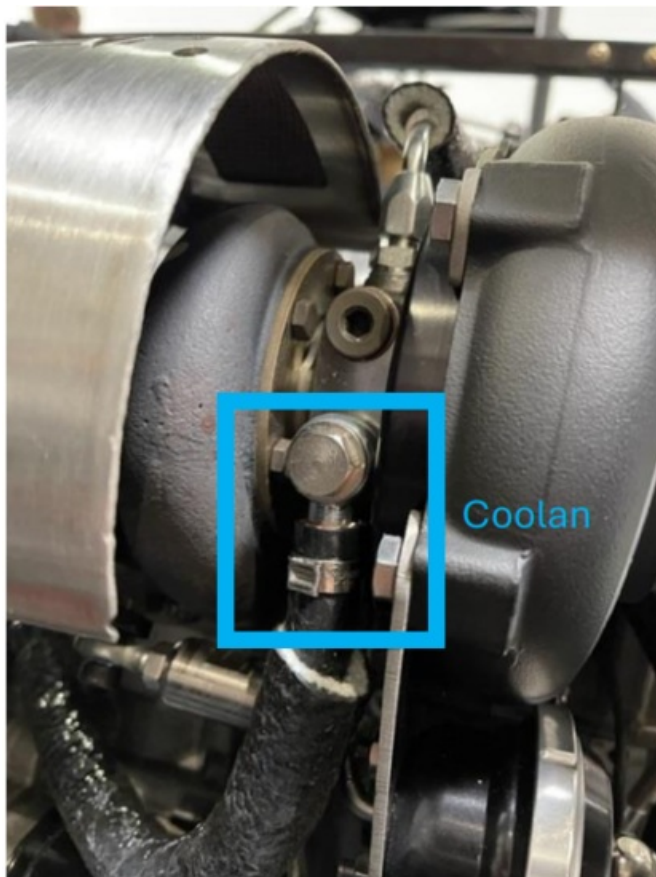


Fig 6

Step 7: Install the 3/4-3/4 barb into the V-Flow and secure with a pinch clamp. **NOTE:** If using a catch can, cap the hose barb with supplied cap. Install the V-Flow to the turbocharger and air box. Reinstall the (2) 13mm bolts securing the airbox to the firewall. Tighten the V-Flow down.

Step 8: Reinstall the (3) vacuum lines coming off the boost control solenoid. Use the (2) 3/16" 90-degree hose barbs and (2) 7inch vacuum hoses to connect the waste gate and boost reference port. Reuse the OEM airbox vacuum line and clamp and connect to the V Flow.

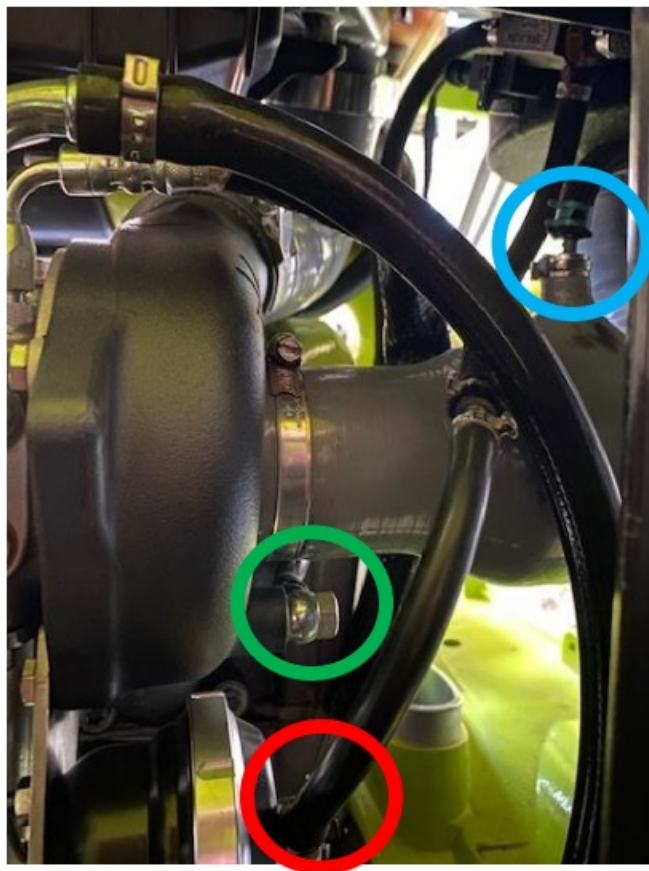


Fig 7

Blow Off Valve Installation:

Step 9: Install the lower charge tube onto the throttle body, don't tighten down yet.

Step 10: Install the Blow Off Valve into the charge tube. Run the vacuum line from the BOV to the plenum. Install the supplied plenum barb, reuse the OEM torx screw. **(Fig 8)**



Step 11: Install the EVP plenum brace onto the OEM plenum. The brace will only fit on one way. This is a girdle for the plenum. If you have any questions, please reference "the clamp" instructions on our website.

NOTE: you can upgrade to a EVP plenum if you don't want the brace.

Injector Installation:

Step 12: With brake cleaner, spray around all (3) injector ports and fuel rail. Wipe debris away with a rag. Turbo and Turbo R models press the metal clip down and remove the connector from the injector. Remove the fuel hose from the fuel rail. Push the connector in and spread left/right side away from the fuel rail. Remove the fuel rail, keep the Orings with the fuel hose. Remove the (2) fuel rail screws.

Step 13: Remove the injector clip, once the clip is removed you can pull the injector out of the fuel rail. Install the EVP injectors, use dielectric grease on the o-rings allowing for easier installation. Place the injector clip back onto the fuel rail, make sure the clip is in both grooves. Reinstall the fuel rail in reverse order.



Fig 9



Fig 10

Plenum Clamp Installation:

Step 14: You don't need to remove the OEM plenum from the vehicle. Unplug the MAP sensor and remove from the plenum. Cover the MAP sensor hole.

Step 15: Using a Dreamer tool or air grinder, remove tabs shown in the picture below. Be careful not to compromise the integrity of the runners by only removing as much material as necessary for the clamp.

Step 16: Once tabs are removed put the left half of the inside in place first and then the right.

Fig 11

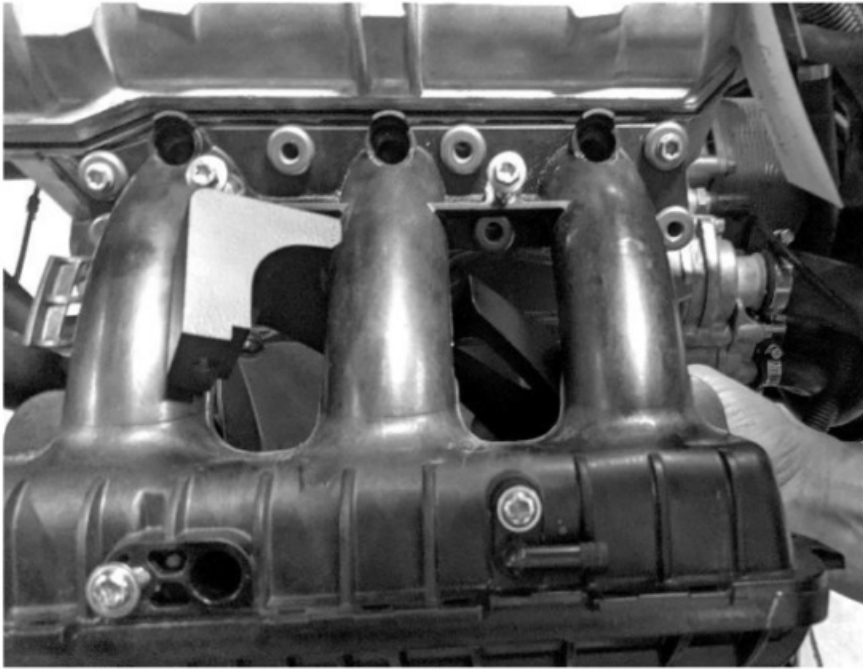


Fig 12

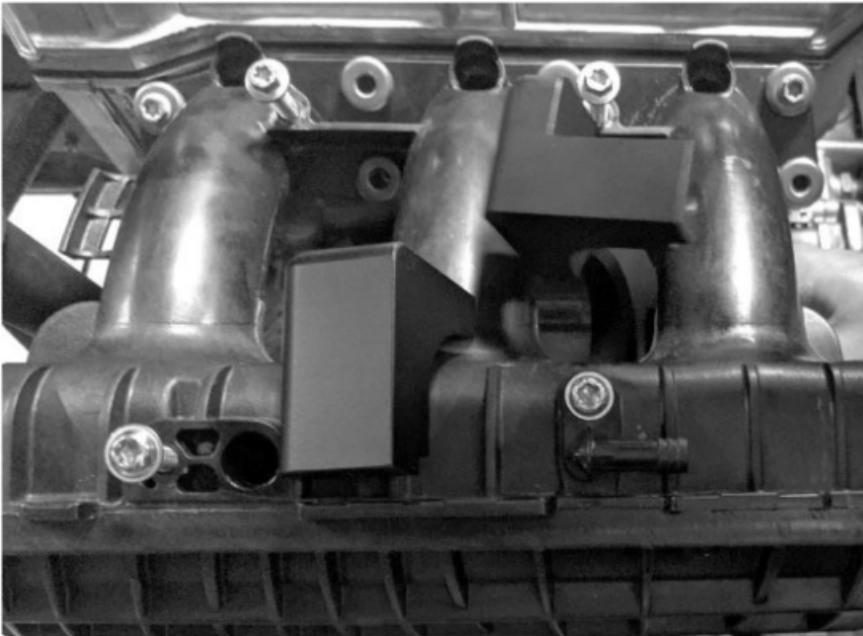


Fig 13

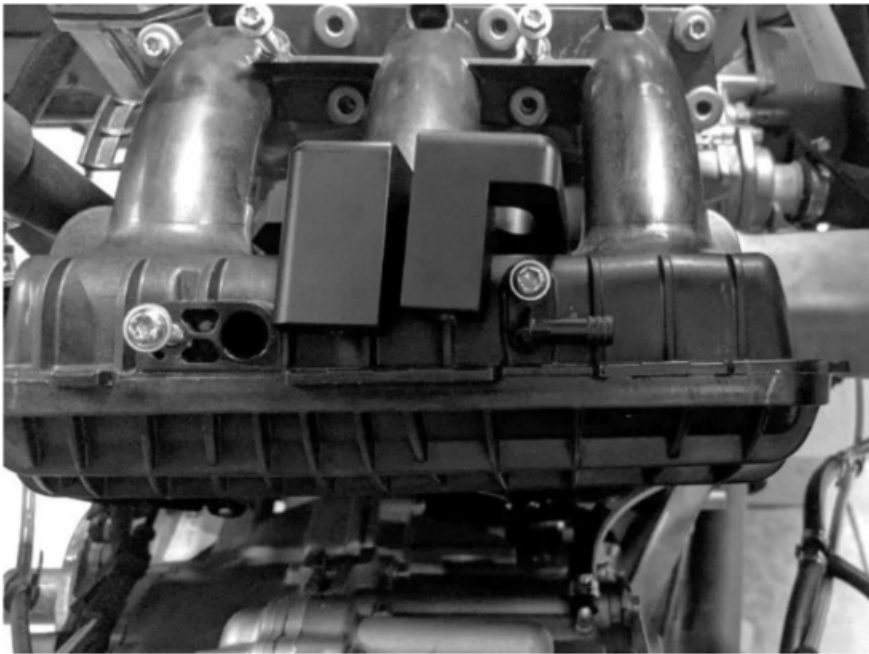


Fig 14



Step 17: Now that all (3) pieces are installed, start all (4) bolts before tightening them down. Put Loctite on the threads of the bolts.

Step 18: When tightening the (2) bottom bolts it is easiest to use a 6mm Allen socket.

Step 19: Tighten all (4) bolts.

Torque Specs for the Intake Manifold Screws are 80 in-lb

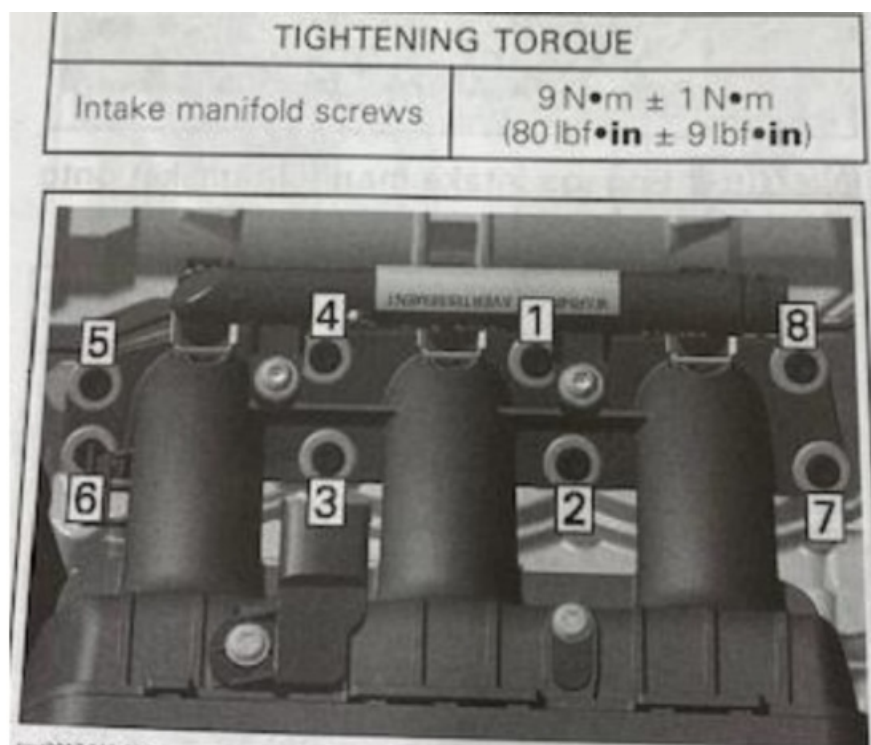


Fig 15

Spark Plug Installation:

Step 20: Remove all (3) spark plug coil connectors. Remove all (3) retaining screws and ground connectors. Pull the ignition coils out of the block. Now the spark plugs can be accessed and changed out with supplied EVP plugs. Torque the new spark plugs to 97 in-lb (11 Nm). Reinstall the coils, ground connectors and retaining screws.

Head Stud Installation:

Step 21: If you're installing 9mm ARP 2000 head studs please follow the instructions. If you're NOT installing head studs please skip to **step 22**.

Remove (1) factory head bolt and replace with **(1) ARP 2000 Head Stud 9mm** . Apply supplied assembly lube to the top of the stud threads and both sides of the washer and nut. Install washer first, then thread nut onto the top of the stud – torque nut to 45 ft lbs. Be very careful not to drop anything into the engine! **NOTE:** Do this process one at a time for all remaining head bolts. **Never loosen more than (1) head bolt without replacing and torquing with a stud.**

This will ensure the cylinder head gasket does not lose its seal. Once all factory bolts have been replaced with studs, torque the head according to the "REPLACEMENT" pattern and torque steps below. When all studs have been torqued to the final value, re-torque to the final value (3) more times.

XR Series Custom Age 625 9mm-10mm Torque Specs

REPLACEMENT Torque Procedure

1. Initial 45 ft lb
2. Final 65 ft lb confirm
3. TIMES

NEW GASKET Torque procedure

1. Initial 28 ft lb

2. Intermediate 45 ft lb
3. Final 65 ft lb confirm 3-TIMES

Exhaust Side

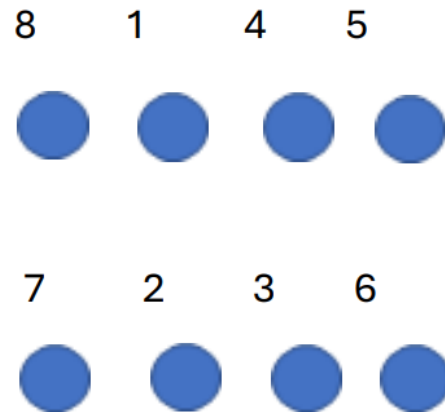


Fig 16

Inter cooler Installation:

Step 22: Installing the EVP race inter cooler and stock inter cooler will be the same process.

Place the inter cooler into the tray and install the (4) inter cooler bolts loosely. Connect the inter cooler fan to the vehicles wiring harness. Connect both upper and lower charge tubes to the inter cooler. Tighten all (4) inter cooler bolts and all (4) charge tube clamps.

Exhaust Installation:

Step 23: Reinstall your free-flowing exhaust or if you have purchased one of our EVP handcrafted exhaust kits please find those installation instructions on our website. Install the EVP turbo heat shield: one v-band clamp and bracket.

X3 (2021+ Turbo RR) X3 265LPH Fuel Pump Installation

NOTE: It is best to syphon all fuel out of the tank prior to starting this job.

Step 24: Remove plastics covering fuel tank. See fig below for location.

Step 25: Unplug electrical connector going into the top of the pump.

Step 26: Unhook fuel hose by removing the red/blue clip from the connection. Then push down on the black clip while pushing in on the back side of the fitting – then lift the fitting off the pump assembly.

Step 27: Rotate pump assembly cap counterclockwise and remove from the tank

NOTE: Your fuel pump assembly MUST be the 172 HP Turbo R or 195 HP RR versions! If you have a 2017 X3 or a 120 Base Model that has not been updated to the Turbo R or RR pump assembly, this must be purchased separately!



Fig 17

Step 28: With the fuel pump on a workbench and all the fuel drained out of the pump assembly, press in on the (3) tabs to release the housing covering the tank.

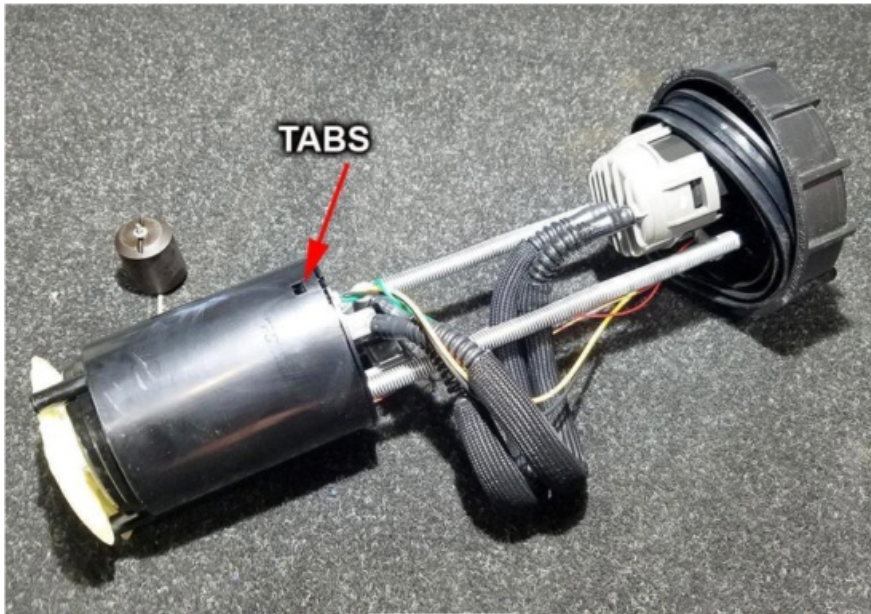


Figure 18

Step 29: Slide the top hat away from the surge tank. The fuel pump may come with the hat or stay in the surge tank. Remove the fuel pump and rubber grommet from the lid.



Figure 19



Figure 20

Step 30: Install the new pump into the bottom surge tank. Make sure both tabs are locked into place. The pump shouldn't move when properly locked into place.



Figure 21

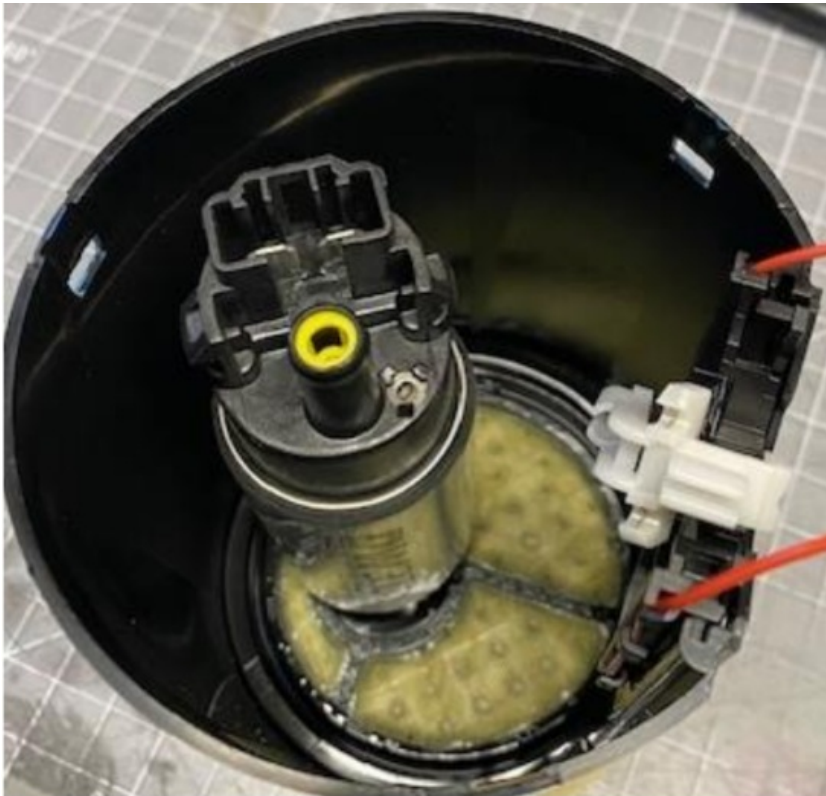


Figure 22

Step 31: Apply dielectric grease to the rubber grommet. Reinstall it into the upper lid inlet port. Apply dielectric grease to the fuel pump outlet port. Slowly reinstall the upper lid to the surge tank, making sure all (3) clips meet and fuel pump and inlet meet. Watch the float wires.



Figure 23

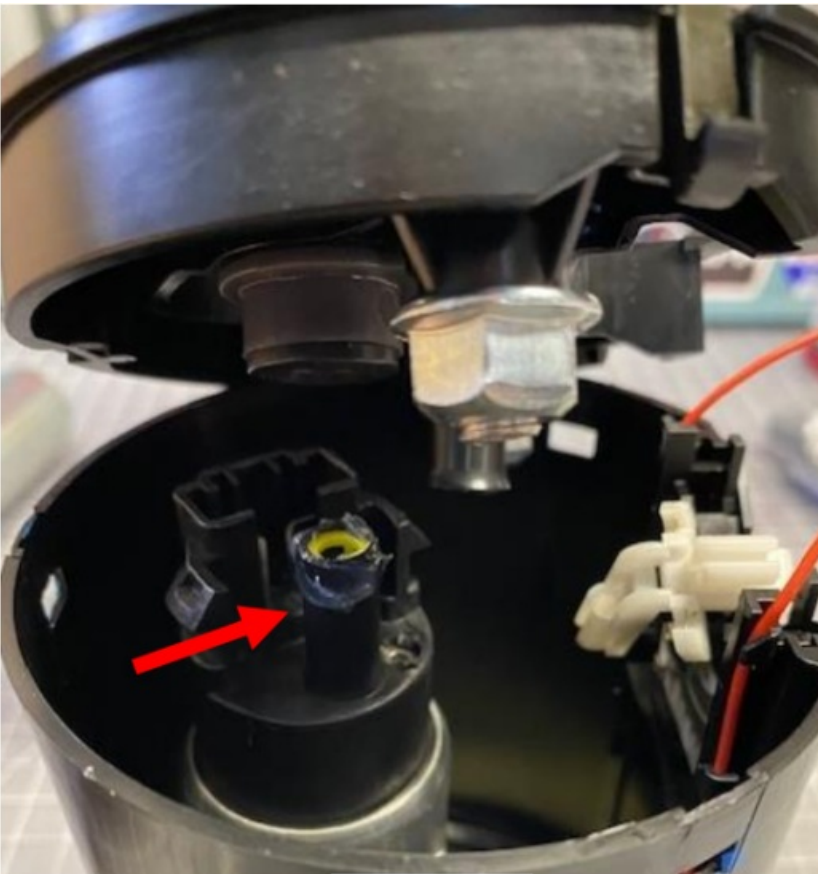


Figure 24

Step 32: Reinstall pump assembly.

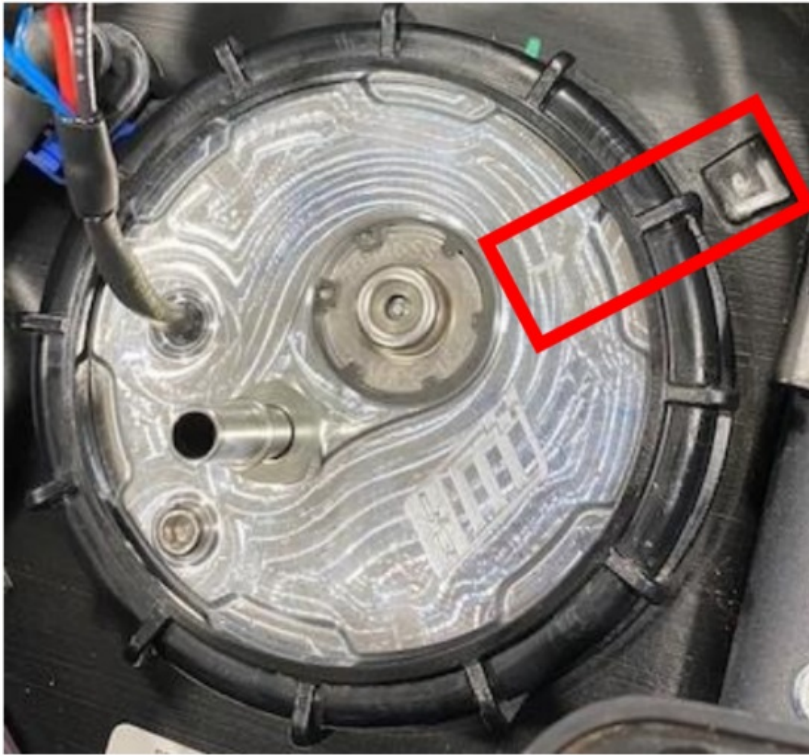


Figure 46

Step 33: Replace OEM fuel pump fuse with the supplied 20-amp fuse in location F5.

Clutching (P43R-325 Kits)

- Clutching for 325 kits must be adjusted for an 8600-8800 RPM shift out.
- Running a 91-octane tune clutching must be adjusted for 8100 RPM shift out.

MaptunerX / CodeShooter


Now that your Paragon turbocharger kit is install, you need to flash your ECU before starting the vehicle. Make sure the proper fuel is in your vehicle before starting it. If you have already contacted your sales representative and have a big turbo file, please follow the step-by-step MaptunerX or CodeShooter instructions found on our website. If you have NOT contacted your sales representative, please call [715-247-3862](tel:715-247-3862) or email: sales@evopowersports.com

Launch Control (optional)

If Launch Control has been purchased as part of this kit, your clutching engagement **RPMs MUST** be raised to at least your chosen engagement. This kit has launch files for 2600, 2800, 3000, 3300, 3600, 4000, 4500, 4800 RPMs. If you have any questions about clutching please contact our Tech Department tech@evopowersports.com.



Documents / Resources

	<p>EVOLUTION POWER P43R-325 Turbo Upgrade System [pdf] Installation Guide 2024 P43-325, 604FC0127, 604FC0126, P43R-325 Turbo Upgrade System, P43R-325, Turbo Upgrade System, Upgrade System, System</p>
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References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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