

# **EVOLUTION POWER P47-400 Turbo Upgrade System Installation Guide**

Home » EVOLUTION POWER » EVOLUTION POWER P47-400 Turbo Upgrade System Installation Guide 🏗



#### **Contents**

- 1 EVOLUTION POWER P47-400 Turbo Upgrade
- **System**
- **2 Product Information**
- **3 Product Usage Instructions**
- **5 Parts Included**
- **6 INSTALLATION INSTRUCTION**
- 7 Documents / Resources
  - 7.1 References
- **8 Related Posts**



**EVOLUTION POWER P47-400 Turbo Upgrade System** 



#### **Product Information**

### **Specifications**

• Product: Maverick R P47-400 Turbocharger Upgrade System

• **SKU(s):** 604FC0128, 604FC0129, 604FC0132

• ECU Unlock Required by EVP for proper tunes

• Tunes: 91, MS-109, E85

• Max Boost (psi): 21, 30, 32

• Engine HP: 354WHP 402CHP(E85)

#### **Parts Included**

- Maverick R Blow Off Valve (BOV) Kit
- Maverick R Charge Tube Kit, Black
- Maverick R Stock Turbo High Flow Intake Kit (HFI)
- X3 1000cc Injectors, Set of 3
- Maverick R P47 Turbocharger
- X3 4 Bar MAP Sensor Kit
- Maverick R Fuel Pump Assembly with 340LPH Pump, 4.5 Bar Regulator
- Maverick R Big Turbo Power Flash with Launch Control and Transmission
- Maverick R Big Turbo Spark Plug, Set of 3
- Maverick R ECU Unlock
- Maverick R OEM Turbocharger Gasket
- Maverick R Catch Can Kit
- Maverick R Plenum Clamp Kit

### **Product Usage Instructions**

#### Steps to Sending in Your Turbocharger

- 1. Wash turbocharger with heat shields removed but exhaust on.
- 2. Remove wastegate and hardware before sending.
- 3. Tape/plug the coolant & oil passages on the turbocharger.

### **Installation Steps**

1. Remove the heat shields around the turbocharger.

### **FAQ**

Q: Do I need to unlock my MG1 ECU for this turbocharger upgrade?

A: Yes, your MG1 ECU must be unlocked by EVP to enable proper tunes for this upgrade.

Q: What are the required parts sold separately for this upgrade?

A: The required parts sold separately include...

- Maverick R P47-400 Turbocharger Upgrade System
- SKU(s): 604FC0128, 604FC0129, 604FC0132
- NOTE: Your MG1 ECU must be Unlocked by EVP to enable proper tunes for this turbocharger upgrade.
- **NOTE:** Your turbocharger must be in working order or you will be charged for a core. Remove your wastegate before sending your turbocharger.

#### **Parts Included**

| Parts Included in Paragon 47-400 Turbo Upgrade System |   |  |  |  |  |
|---|---|--|--|--|--|
| 100FC0210   | Maverick R Blow Off Valve (BOV) Kit                                   |  |  |  |  |
| 100FC0206   | Maverick R Charge Tube Kit, Black                                     |  |  |  |  |
| 203FC0129   | Maverick R Stock Turbo High Flow Intake Kit (HFI)                     |  |  |  |  |
| 501FC0001   | X3 1000cc Injectors, Set of 3   |  |  |  |  |
| 604FC0123   | Maverick R P47 Turbocharger   |  |  |  |  |
| 702RC0013   | X3 4 Bar MAP Sensor Kit   |  |  |  |  |
| 500FC0065   | Maverick R Fuel Pump Assembly with 340LPH Pump, 4.5 Bar Regulator     |  |  |  |  |
| 002FC0317   | Maverick R Big Turbo Power Flash with Launch Control and Transmission |  |  |  |  |
| 804FC0319   | Maverick R Big Turbo Spark Plug, Set of 3                             |  |  |  |  |
| 953RU0586   | 2024 Maverick R ECU Unlock  |  |  |  |  |
| 804FC0320   | Maverick R OEM Turbocharger Gasket                                    |  |  |  |  |
| 803FC0020   | Maverick R Catch Can Kit  |  |  |  |  |
| 203FC0127   | Maverick R Plenum Clamp Kit   |  |  |  |  |

| Level   | Tunes               | Max Boost (<br>psi) | Spark Plug G<br>ap | Spring | Waste Gate<br>(psi) | Engine HP              |
|---------|---------------------|---------------------|--------------------|--------|---------------------|------------------------|
| P46-335 | 91, MS-109, E8<br>5 | 21, 30, 32          | .020"              | N/A    | Electronic          | 354WHP 402CH<br>P(E85) |

### **Required Parts (Sold Separately)**

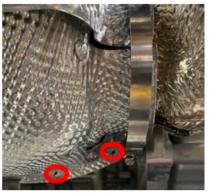
EVP or other Full Turbo Back Exhaust System

### STEPS TO SENDING IN YOUR TURBOCHARGER

- WASH TURBOCHARGER WITH HEAT SHIELDS REMOVED BUT EXHAUST ON
- REMOVE WASTEGATE AND HADWARE BEFORE SENDING
- TAPE/PLUG THE COOLANT & OIL PASSEGAES ON THE TURBOCHARGER.

### **INSTALLATION INSTRUCTION**

1. **Step 1:** Remove the heat shields (2 parts) around the turbocharger. 1 hose clamp, (2) 10mm screws underneath, and (4) on top by the valve cover.



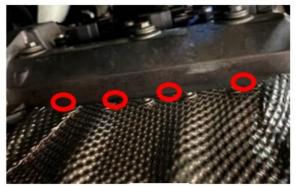


Figure 1 Figure

2. **Step 2:** Unplug the 02 sensor from the engine harness. If you are running a shocker, unplug the actuator plug as well.



Figure 3

3. Step 3: Remove the heat shield located on the downpipe. (3) 10mm screws.



Figure 4

4. **Step 4:** Remove the (4) exhaust springs holding the downpipe to the muffler. Loosen the V-band clamp holding the downpipe onto the turbocharger. Use a 13mm socket, lightly tap the V-band if stuck. Do not bend this clamp. Remove downpipe.



Figure 5

5. **Step 5:** Remove the turbocharger to the intercooler charge tube, (2) 11mm nuts. If you are running a rising rate setup, remove the vacuum line. Remove the intake tube, valve cover breather if not running a catch can, either OEM airbox or high flow intake.





Figure 6

Figure 7

6. **Step 6:** Unplug the electronic wastegate connector. There are (2) tabs, one on top and one on bottom. Press together and remove.



Figure 8

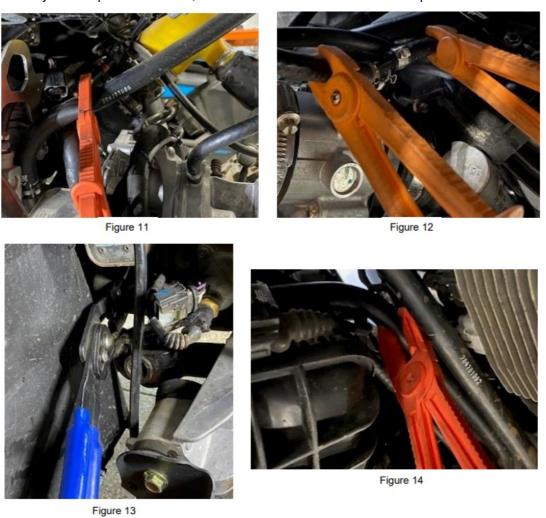
- 7. **Step 7:** Remove both V-band clamps holding the flex jointer from the header to the turbocharger.
  - Take note of where these clamps are orientated. Use a 10mm socket.





igure 9 Figure 10

- 8. Step 8: Remove the cap from the coolant reservoir. Pinch off all coolant lines going to and from the engine.
  - A total of 5 clamps, go to the head, lines running up to the radiator and intercooler located by the plenum, a large hose by the temperature sensor, and a hose between the firewall and plenum.



9. **Step 9:** CAREFULLY remove the 10mm nut holding the wastegate rod to the flapper. Remove the nut, washer, and inner sleeve. USE PB Blaster and let it sit!



Figure 15

10. Step 10: Remove (2) 8mm screws holding the wastegate bracket onto the turbocharger.



Figure 16

11. **Step 11:** Remove (2) 10mm turbocharger mounting screws on the bottom. Remove the wastegate bracket and rod.



Figure 17

12. **Step 12:** Place a catch pan underneath the vehicle. With the wastegate bracket removed, you can now access the coolant drain plug on the turbocharger. Use a 17mm socket, and slowly remove the plug and copper washer.



Figure 18



Figure 19

13. Step 13: Remove (4) 10mm screws on the top of the header.



Figure 20

14. **Step 14:** Loosen the bottom pinch plate screws holding the header to the block. You may need to indent the heat shield to get a socket on the screw.



Figure 21

15. Step 15: Remove the (2) top 10mm turbocharger screws.



Figure 22

16. **Step 16:** Wiggle the turbocharger off the (2) locating pins while lifting the header slightly. You do NOT need to remove the header. There is a pipe between the header and the turbocharger.



Figure 23

17. Step 17: Keep the compensator and (2) gaskets. If torn or bent, you must get new.



Figure 24

- 18. **Step 18:** Clean up the turbocharger mounting location and gasket. Remove the old gasket and replace it with the supplied gasket.
  - Make sure the compensator tube is bottomed out in the exhaust manifold or turbocharger. If not, remove and clean, and reinstall with a turbocharger. Sometimes they will get pinched sideways.



Figure 25

19. **Step 19:** Install the coolant plug and sealing washer into the turbocharger, torque to 22 ft-lb. This is what you will be sending to Evolution Powersports.



Figure 26

• Step 19b: You will keep all mounting hardware and wastegate hardware. DO NOT SEND THIS WITH YOUR TURBOCHARGER!



Figure 27
• NOTE: PLEASE TAPE OVER BOTH COOLANT AND OIL INLET/OUTLET

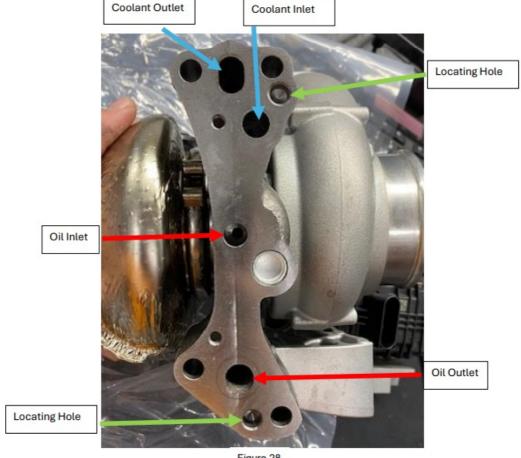


Figure 28

20. **Step** 20: Install the wastegate bracket and (2) 8mm screws onto the turbocharger. Install the wastegate rod with sleeve, washer, and nut onto the wastegate flap. You will notice the wastegate flap won't be closed, this is normal.



Figure 29

21. **Step 21:** Remove the header and inspect the gasket. If torn, replace. Reinstall the header into the pinch plate. Install a new turbocharger gasket if you haven't already.



Figure 30

22. **Step 22:** Install the new turbocharger fully assembled, with the compensator and gaskets. Install (2) turbo mounting screws loosely.



Figure 31

23. **Step 23:** Spin the compensator gaskets so the tabs are facing the wastegate actuator. If not clocked correctly, the V-band clamps will be clocked incorrectly.



Figure 32

24. Step 24: Torque the bottom (3) screws on the clamping plate to 18 ft-lb in sequence.

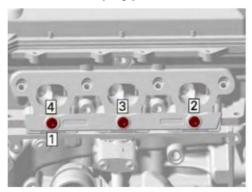


Figure 33

25. **Step 25:** Install the compensator V-band clamps and hand tighten to now. Make sure the gasket tab is in the opening of the V-band.



Figure 34

26. **Step 26:** Torque the upper exhaust manifold screws to 18 ft-lb, in sequence. Notice the difference between "NEW" and "USED".

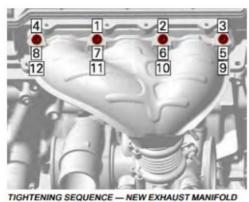
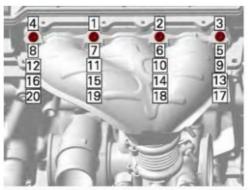


Figure 35



TIGHTENING SEQUENCE — REUSED EXHAUST MANIFOLD

Figure 36

27. Step 27: Torque the (4) turbocharger screws to 18 ft-lb in sequence.

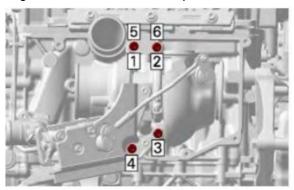


Figure 37

- 28. Step 28: Torque the compensator V-band clamps to 80 in-lb.
- 29. Step 27: Remove all the coolant clamps on all hoses.
- 30. Step 28: Reinstall the HFI intake tube.
- 31. **Step 29:** Reinstall the charge tube from the intercooler to the turbocharger.
- 32. Step 30: Reinstall exhaust and all heat shields.
- 33. Step 31: Check oil levels, may have to add a little.
- 34. Step 32: Add coolant, and heat cycle the engine so the thermostat opens to top off the coolant.

#### **Map Sensor Installation**

- 1. **Step 1:** located on the top of the plenum you will find a MAP sensor, remove the electrical connector. With a T-30 socket remove the screw.
  - Remove the OEM MAP sensor. Install dielectric grease on the supplied 4-bar MAP sensor O-ring. Install
    into the plenum and plug in the electrical connector.



Figure 38

- 2. **Step 2:** Located on the inside of the throttle body is the second MAP sensor. Remove the charge tube. Unplug the electrical connector, with a T-30 socket and remove the screw.
  - Remove the OEM MAP sensor. Install dielectric grease on the supplied 4-bar MAP sensor O-ring. Install the supplied MAP sensor harness to the OEM harness and MAP sensor.



Figure 39

### **Fuel Injector Installation**

1. **Step 1:** Spray all injector ports and plenum with brake cleaner and compressed air. You do NOT want anything falling into the injector ports. Remove (2) 8mm screws.



Figure 40

- 2. Step 2: Carefully push down and remove the blue safety clip on the fuel quick connector.
  - DON'T BREAK IT. Press down on the top black connector and remove the fuel hose from the fuel rail.



Figure 41

3. **Step 3:** Remove the fuel rail with injectors attached. Flip the fuel rail 180 degrees. Unclip all injector electrical connectors.



Figure 42

4. **Step 4:** ONLY remove the (3) secondary injector clips. Remove injectors and clean O-rings. Install the (3) supplied 1000cc injectors. Use dielectric grease on the O-rings.



Figure 43

5. **Step 5:** Reinstall all other parts in reverse order. No injector adaptors are needed.

## **Spark Plug Installation**

1. Step 1: Remove the bed and intercooler/radiator wind dam.



Figure 44

2. Step 2: Remove both charge tubes from the intercooler using an 11mm socket.

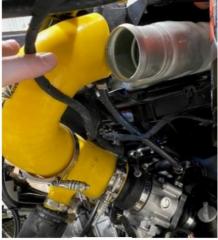






Figure 46

3. Step 3: Remove the (1) coolant reservoir mounting screw using a 10mm socket.



Figure 47

4. **Step 4:** Remove the coolant reservoir and bungee it up to the cage.



Figure 48

5. Step 5: Remove (6) intercooler tray screws using a 10mm socket.

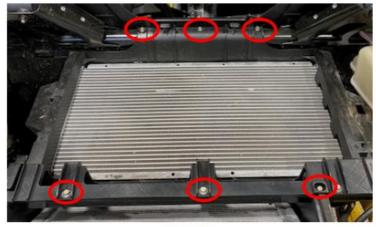


Figure 49

6. **Step 6:** Tilt the back of the intercooler upwards, and unplug (2) intercooler fan connectors. Remove the intercooler from the vehicle.



Figure 50

7. **Step 7:** With the intercooler removed you can now access the valve cover. Unplug (3) coil pack connectors, (3) T-30 screws, and remove (3) coils. With a 14mm socket loosen the spark plugs. Use a magnet to remove the plugs.





Figure 51

Figure 52





Figure 53

Figure 54

- 8. **Step 8:** Apply a small amount of anti-seize to the threads of the new plugs. Install the plugs into the head using a magnet. Torque the plugs to 124 in-lb (14 Nm).
- 9. **Step 9:** Once complete, reinstall the vehicle in reverse order.

Thank you for choosing Evolution Powersports products. If you require further assistance, please call our Tech Support @ 7152473862

**Note:** This product is exempt from the emission standards and related requirements of 40 C.F.R. § 1051 as provided by 40 C.F.R. § 1051.620, and California law [e.g., vehicle code§§ 27156 and 38391]. This product is sold only for use in connection with EPA certified, purpose-built, nonroad vehicles used solely for closed course, nonroad competition/racing and not used for any recreational purpose or on public highways or right of ways maintained by and open to the public. This product is sold only in connection with machines that do not fall under state and/or federal noise or emission standards/regulations. Purchasers who/that purchase this product represent and warrant that the product is purchased only in connection with EPA -certified, emission-regulations-exempt and noise-regulations-exempt competition/racing vehicles as interpreted under applicable state and/or federal law. Questions: Call Evolution Powersports at 7152473862.

#### **Documents / Resources**



**EVOLUTION POWER P47-400 Turbo Upgrade System** [pdf] Installation Guide P47-400 Turbo Upgrade System, P47-400, Turbo Upgrade System, Upgrade System, System

#### References

### • User Manual

#### Manuals+, Privacy Policy

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.