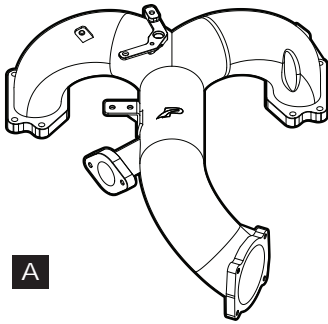


# Intake Manifold and Turbo Inlet Kit

*2020-2025 Ford Super Duty 6.7L Power Stroke*

*(315054000), (315054010), (315054030)*

## *Installation Guide*



A



E



I



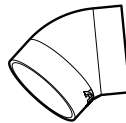
M



Q



B



F



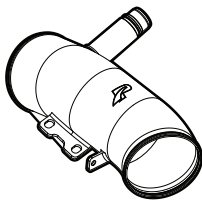
J



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O



S



D



H



L



P



T

## CONTENTS:

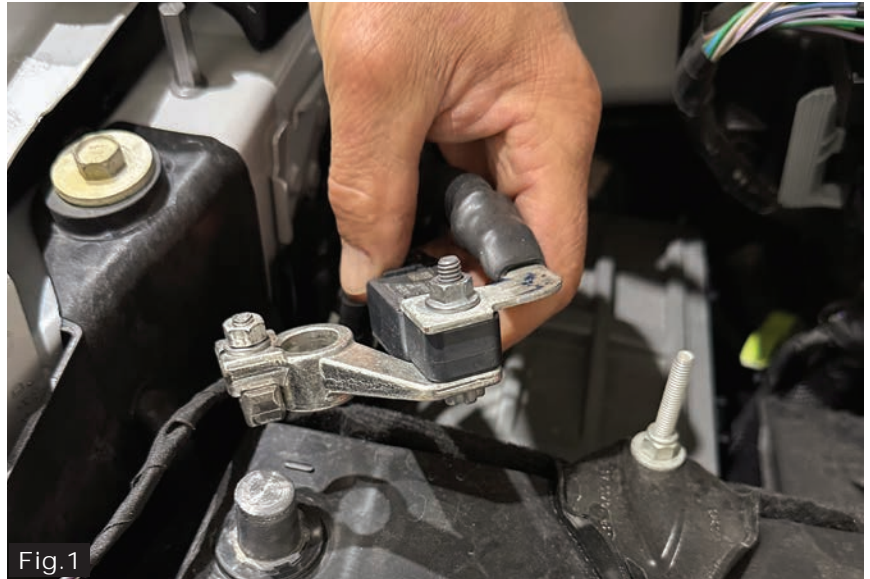
- A (1) Intake Manifold
- B (1) EGR Pipe
- C (1) Turbo Inlet
- D (1) Carbon Fiber Airbox Duct
- E (1) Straight Silicone Coupler
- F (1) Elbow Silicone Coupler
- G (2) Manifold Gasket
- H (2) EGR Pipe Gasket
- I (4) T-bolt Clamps
- J (1) Manifold Support Spacer
- K (1) Dipstick Support Spacer
- L (6) M6 x 30mm Hex Head Flange Bolt
- M (1) M8 x 80mm Hex Head Flange Bolt
- N (2) M8 x 25mm Hex Head Flange Bolt
- O (3) M6 x 12mm Hex Head Flange Bolt
- P (1) M6 x 60mm Threaded Stud
- Q (1) M5 x 12mm Flange Bolt
- R (2) M6 Flange Nut
- S (2) M6 Hex Nut
- T (4) Tree Mount Zip Ties

## INSTALLATION NOTES:

1. *\*Some steps are only applicable to the 500 HP High-Output Version. Such steps are notated with a \*.*
2. *For HO applications, drain coolant from both radiators.*
3. *For non-HO applications, drain coolant only from the primary radiator.*
4. *Turbo Coolant Lines Relocation Kit (SKU 319010000) is required for HO applications. This kit is not included within the Intake Manifold Kit and is available for purchase separately.*

## DISASSEMBLY:

1. Vehicle off and cool. Disconnect both battery negative terminals. (**FIG 1**)



2. Drain coolant from the primary radiator via the drain valve on the driver side of the radiator, (**FIG 2**) the blue drain hose shown was used in our installation to avoid spillage.



3. \*Drain coolant from the secondary radiator via the drain valve on the passenger side of the radiator.
4. Remove airbox outlet duct by loosening two clamps. (**FIG 3**)



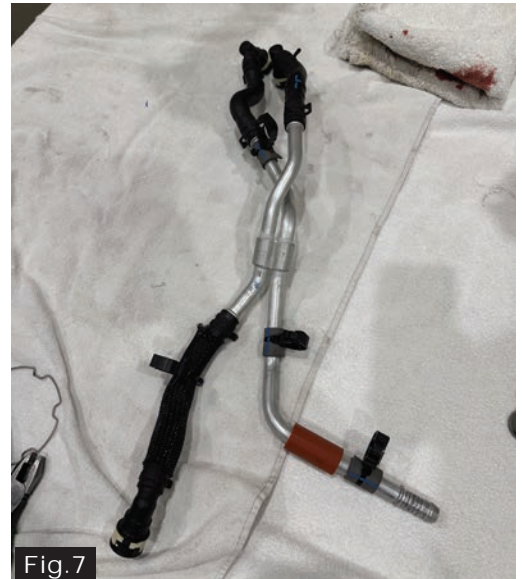


5. Remove the EGR coolant 4-way hose. (FIG 4)



6. \*Remove the turbo coolant inlet and outlet lines. See FIG7 for the removed piece. (FIG 5, FIG 6, FIG 7).





7. Remove the EGR temp sensor on the EGR tube located in between the EGR valve and the intake manifold. Remove EGR tube. (**FIG 8, FIG 9**).

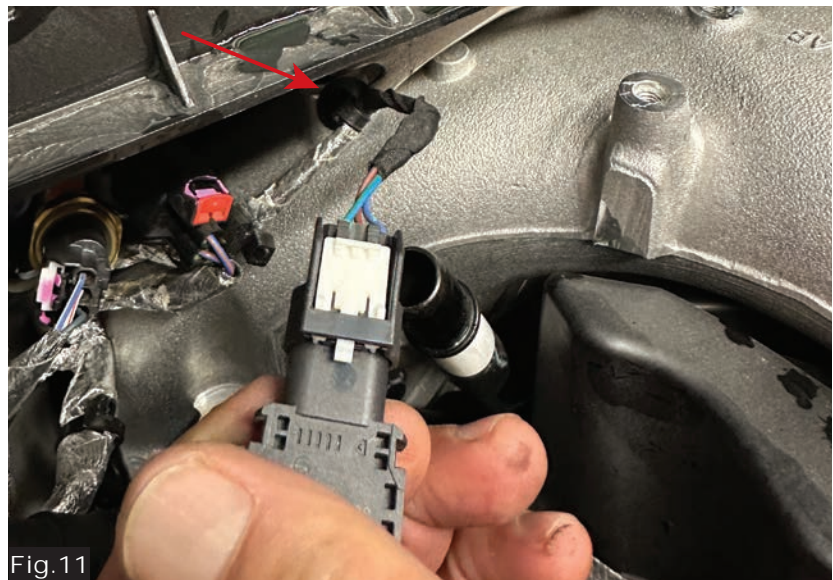




8. Remove MAP sensor shield on top of stock manifold. (**FIG 10**)



9. Pull out MAP sensor and set it aside. Disengage the push mount clip securing the MAP sensor harness to the stock manifold (**FIG 11**)



10. Disconnect the IAT sensor on top of the cold charge pipe connector. Disengage the connection between the cold charge pipe connector and the throttle housing (**FIG 12**) (No need to remove the cold pipe). Remove the hot charge pipe. (**FIG 13**) The PPE Hot Charge Pipe is shown here instead of the OEM Pipe.





Fig.13

11. Remove the throttle plate housing.  
(FIG 14)



Fig.14

12. Unmount the dipstick brackets from the factory manifold. There are two brackets.  
(FIG 15)

13. Remove upper radiator hose, then remove the plastic thermostat cover.



Fig.15



(FIG 16, FIG 17)



Fig.16



Fig.17

14. Remove the one long bolt securing the manifold to the thermostat bridge, then the eight bolts securing the manifold to both valve covers. (FIG 18)

15. Disconnect the CCV hose from the factory turbo inlet. If equipped with the twist lock type connector, twist and pull

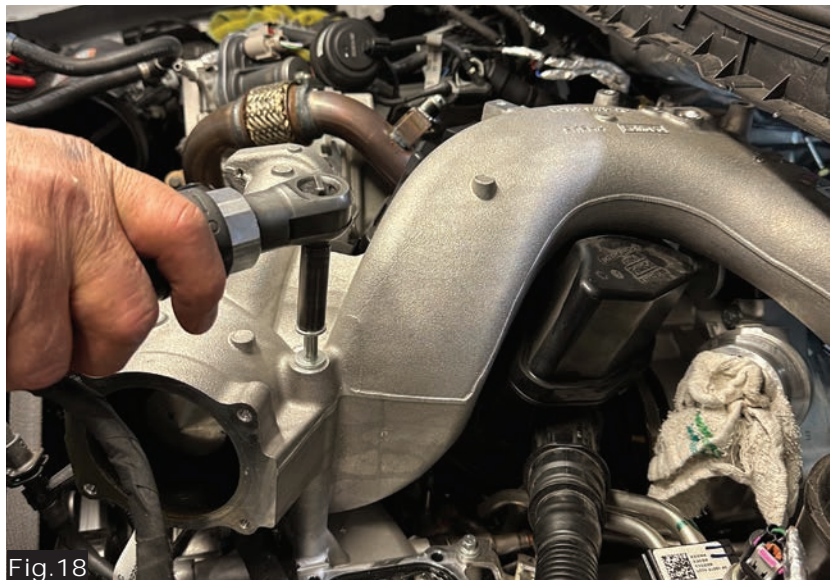


Fig.18



to disengage the CCV hose. If equipped with a connector with internal clips, pry on the outer lip of the connector and pull out to disengage (**FIG 19**).

16. Remove the two bolts securing the turbo inlet, then loosen the clamp that connects the turbo inlet to the compressor housing.
17. Lift the stock aluminum manifold up and remove the stock turbo inlet, then remove the manifold.

## INSTALLATION:

1. Install the Elbow Silicone Coupler (**F**) onto compressor housing with two clamps (**G**), install the Turbo Inlet Tube (**C**) to thermostat bridge using two M8 bolts (**N**). Tighten M8 bolts to 16 lb-ft first, adjust elbow coupler to proper orientation, then tighten both clamps to 80 lb-in. (**FIG20, FIG21**)



Fig.19



Fig.20

2. Clip the EGT sensor module to the welded bracket at the bottom of the Turbo



Fig.21

Inlet as shown in **(FIG22)**.



Fig.22

3. Connect the Carbon Fiber Airbox Duct **(D)** to the accordion coupler, install the Straight Coupler **(E)** after the Airbox Duct with two clamps. **(FIG23, FIG24)**



Fig.23

4. Prepare the Intake Manifold **(A)** by putting the two Manifold Gaskets **(G)** in

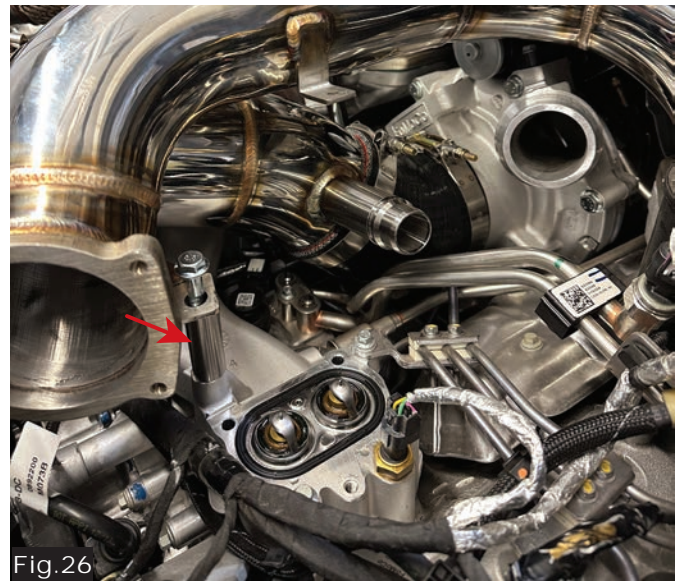


Fig.24



place. (FIG25)

5. Install the Intake Manifold. Place Spacer (J) below the Manifold Support Bracket and start threading the long M8 bolt (M). Do not tighten yet. (FIG26).



6. Install Spacer (K) and factory double-end stud-bolt to the Manifold (FIG27). Install M6 Stud (P) and Flange Nut (R) to the manifold (FIG28). Install six bolts (L) to the remaining bolt holes. See (FIG29) for hardware placement. Tighten all M6 fasteners to 10 lb-ft and the M8 Bolt from step 5 to 18 lb-ft.



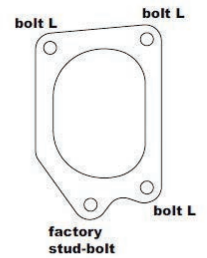
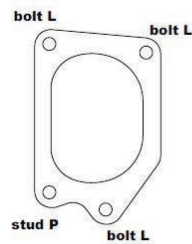


Fig.29

7. Position the dipstick back in place. Secure the rear dipstick bracket to the welded tab on the Manifold using one Bolt **(O)** and one Nut **(S)** (**FIG30**). Install the front dipstick bracket on top of the factory stud-bolt with spacer **(K)**, secure with Nut **(R)** (**FIG31**).





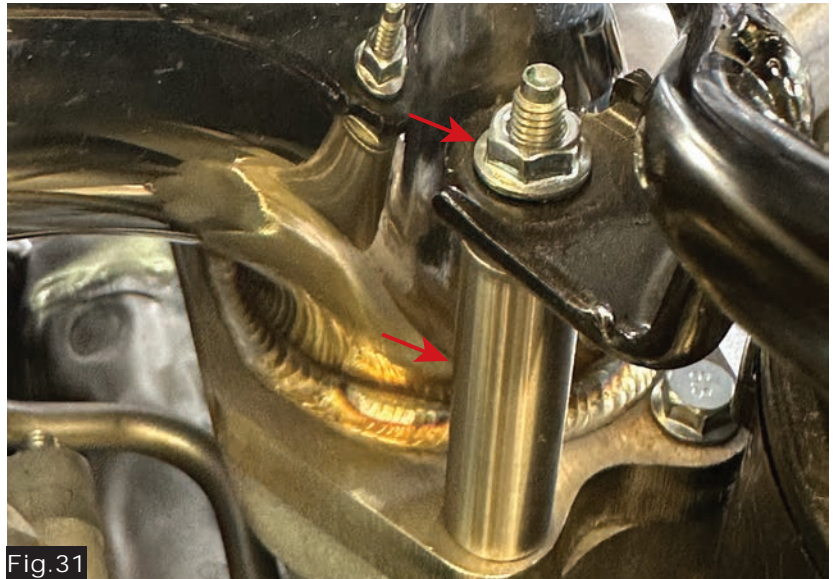


Fig.31

8. Push the harness socket clip back onto the M6 stud (**P**). Attach a Tree Mount Zip Tie (**T**) to the MAP harness and clip to the welded bracket on the Manifold. Trim off excessive strap of the tie. (**FIG32**), (**FIG33**).



Fig.32

9. Reinstall MAP sensor back to the Manifold with Bolt (**Q**). Reinstall sensor shield



Fig.33



onto the Manifold using two bolts **(O)** and one nut **(S)**. **(FIG 34)**



Fig.34

10. Attach one EGR Gasket **(H)** to each end of EGR Pipe **(B)**. Reinstall the four factory EGR pipe bolts. **(FIG35)**

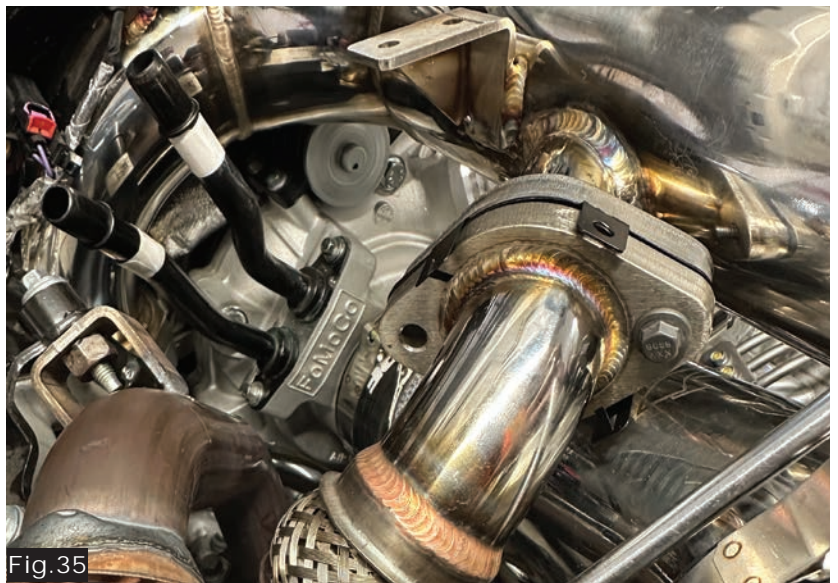


Fig.35

11. Install the EGR temp sensor back to the EGR Pipe, clip sensor harness to the welded tab of the Turbo Inlet **(FIG36)**.

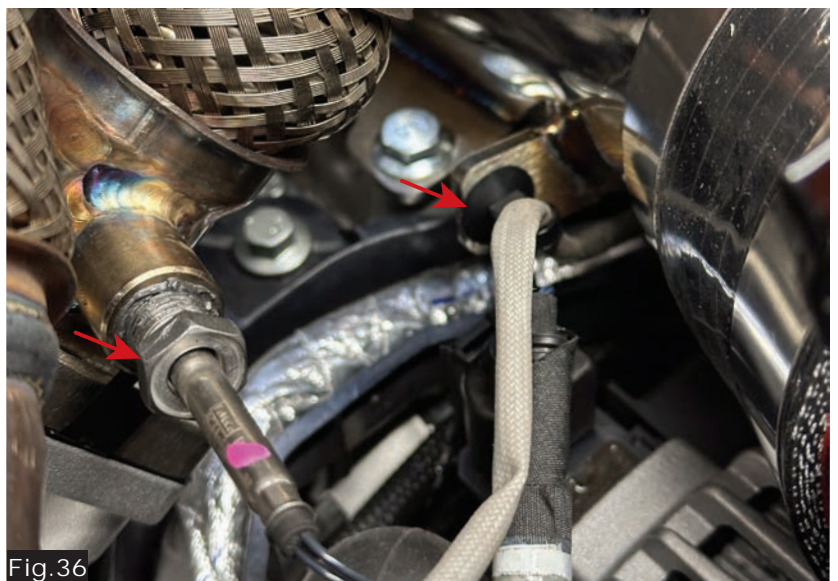


Fig.36



12. Reconnect factory CCV hose to PPE Turbo Inlet. **(FIG37)**.
13. Reinstall throttle plate housing and thermostat cover. Reinstall upper radiator hose, hot and cold charge air pipes. Reinstall IAT sensor to cold charge pipe connector.

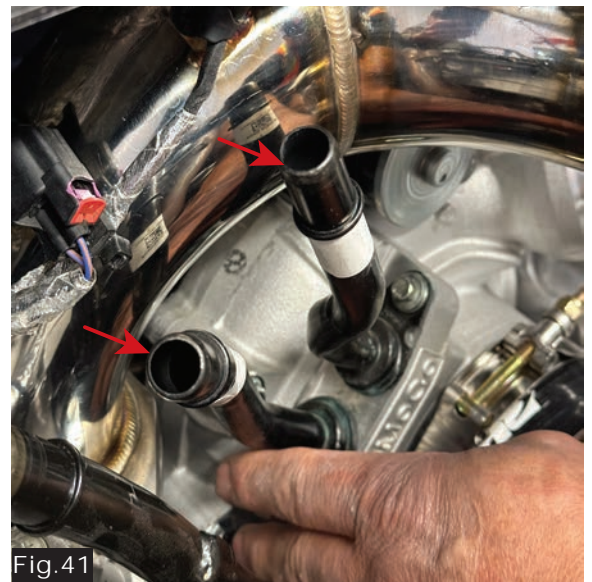


14. Reconnect the EGR coolant 4-way hose. Clip to the L-shape bracket of the PPE Manifold and support the hose with the built-in Rest on the Carbon Fiber Duct. **(FIG 38, FIG39)**.





15. \*Disconnect the quick connect fittings from the turbo coolant lines removed in Disassembly Step 7. Install the fittings to the turbo coolant tubes. (**FIG40, FIG41**).



16. \*Connect the Double-End Barbed Fitting to the factory coolant hose, then install the Turbo Coolant Return Hose. (**FIG42**). Use a Tree Mount Zip Tie to secure the return hose to the welded tab on the Manifold. (**FIG43**).





**Fig.43**

17. \*Connect the Turbo Coolant Feed Hose to the coolant tube and to the radiator hose connector. The routing of the turbo coolant feed and return hoses is shown in **(FIG44)**. Blue for feed, red for return.
18. Reinstall battery negative cables. Refill coolant.

**Installation complete**

**Fig.44**

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