

MOMENTUM^{XP}

advanced FLOW engineering

Cold Air Intake System

Instruction Manual P/N: 50-30072D/50-30072R

Make: FORD	Model: F-150 Raptor	Year: 2021-2022	Engine: V6-3.5L(tt)
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Make: FORD	Model: F-150	Year: 2021-2022	Engine: V6-3.5L(tt) PowerBoost™



- Please read the entire instruction manual before proceeding.
- Ensure all components listed are present.
- If you are missing any of the components, call customer support at 951-493-7185.
- Ensure you have all necessary tools before proceeding.
- Do not attempt to work on your vehicle when the engine is hot.
- Retain factory parts for future use.

Label	Qty.	Description	Part Number
A1	1	Air Filter (Pro 5R) For 50-30072R	24-91115
A2	1	Air Filter (Pro DRY S) For 50-30072D	21-91115
B	1	Front Tube (Black)	05-73120B1
C	1	Back Tube (Black)	05-5030072B2
D	1	Housing, Plastic	05-5030072B3
E	1	Coupling, Silicone Elbow: (4" x 3")ID x 30 Deg	05-01445
F	1	Coupling, Silicone Elbow: (3" x 3")ID x 30 Deg	05-01446
G	1	Inlet, Silicone: Ford F-150	05-01543
H	1	Hose, Silicone Breather: 5/8" ID, U-Bend	05-01444
J	3	Clamp, 044 (2-5/16" - 3-1/4")	03-50019
K	1	Clamp, 064 (2-1/2" - 4-1/2 ")	03-50006
M	2	Clamp, Mini 008 (1/2" - 29/32")	03-50077
N	2	Push Clip: 6.5mm Hole x 18mm Head x 22mm Long	03-50773
P	1	Cable Holder, Push In**	05-01717
Q	1	Small Push Clip	05-01350
R	1	Plug, Silicone: 2.25" Dia	05-01482
S	1	Insert, Vent; Injection Molded	05-01405

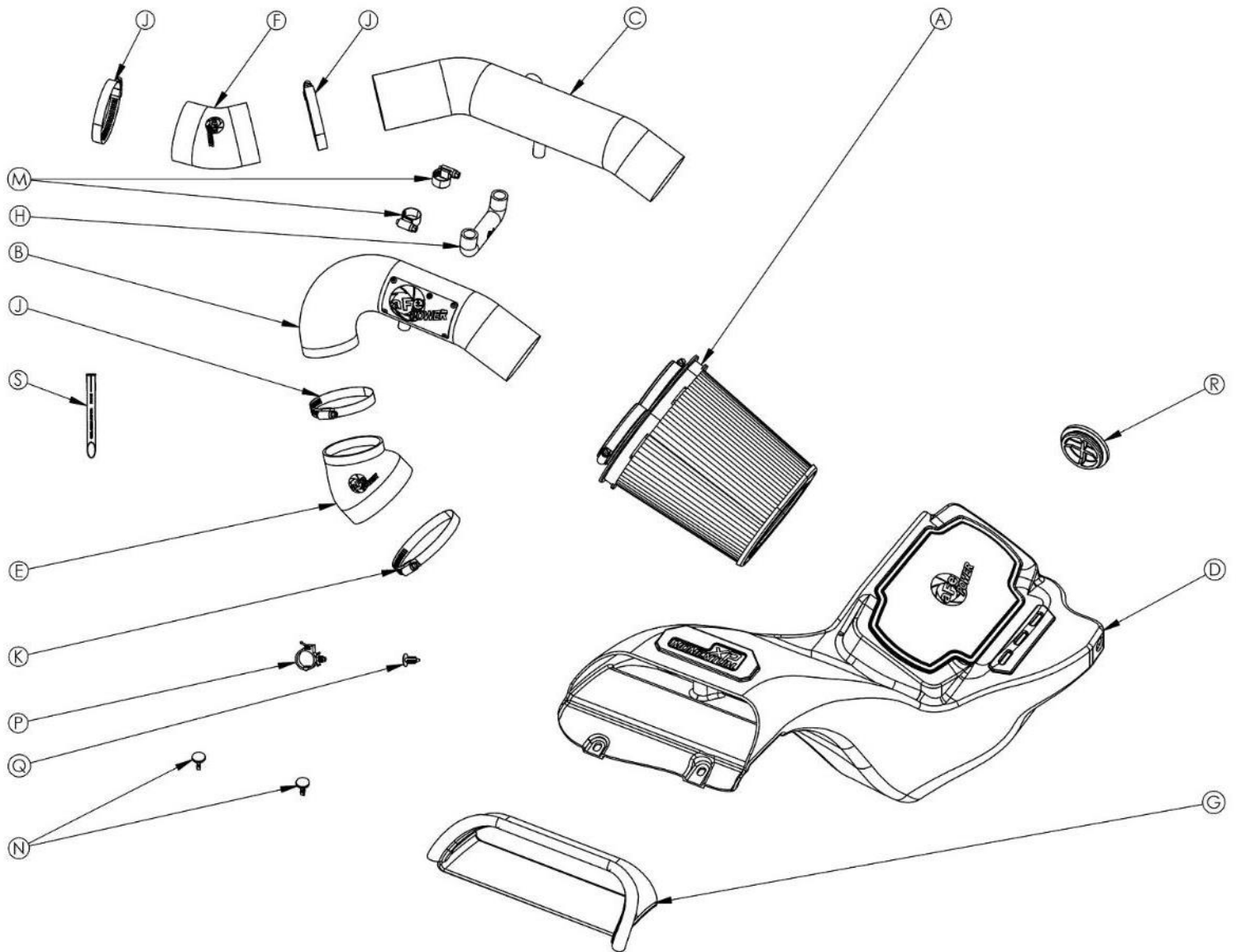
Installation will require the following tools: 7mm, 8mm, 11mm and 13mm Nut Drivers or Ratchet and Sockets, Flat Head Screwdriver, 5/8" Quick disconnect tool*

*Only required if vehicle equipped with orange tab on quick disconnect fitting, see page 8-9.

** Only required for PowerBoost™ models.

Warranty Information available at: <https://afepower.com/contact#warranty>

Emissions Disclaimer: This product is not currently CARB exempt and is not available for purchase in California or for use on any vehicle registered with the California Department of Motor Vehicles.



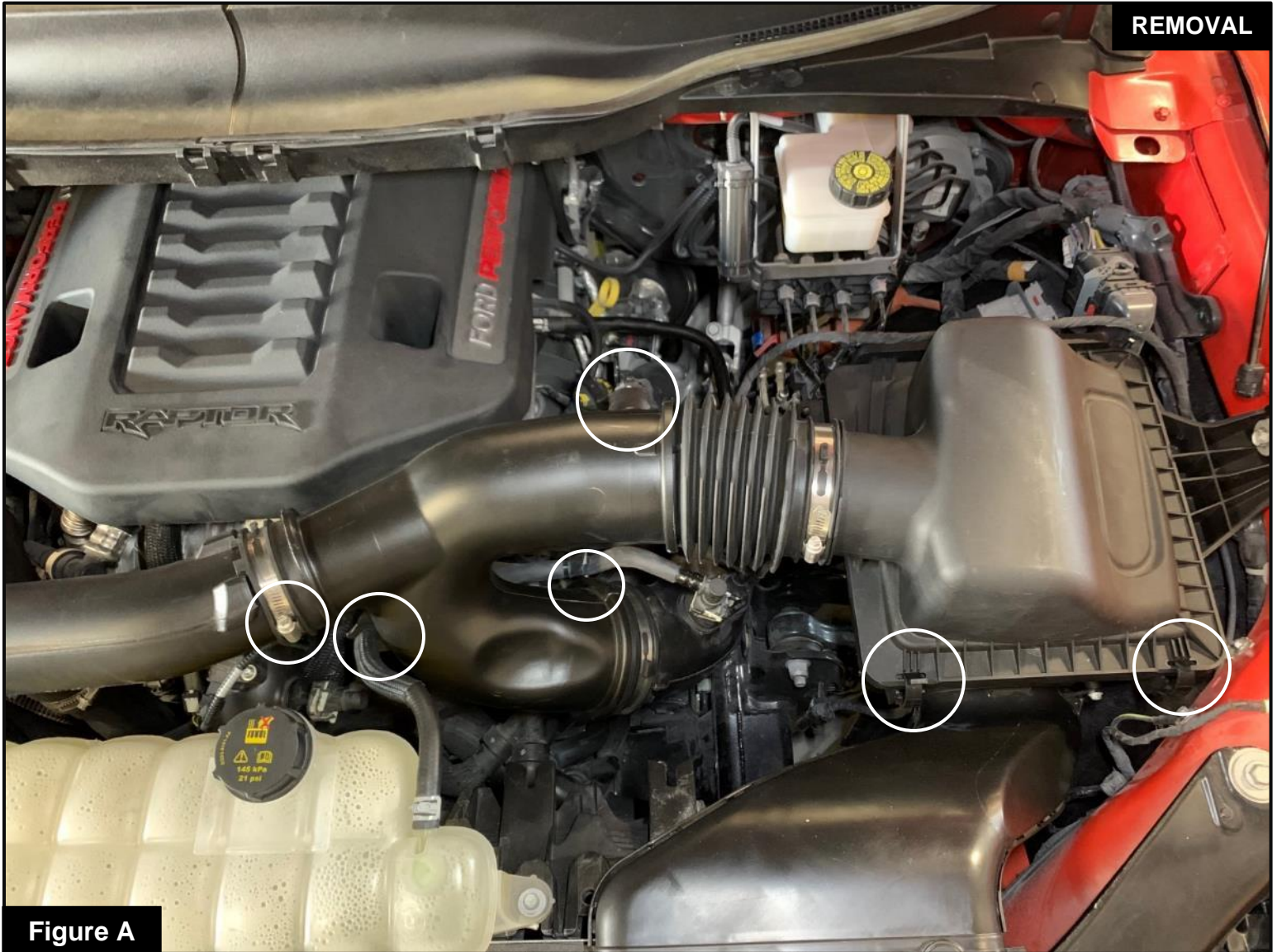


Figure A

Refer to Figure A for Steps 1-4

Step 1: Disconnect the Intake Air Temperature (IAT) Sensor.

Step 2: Loosen the two clamps securing the intake tube to the turbo inlets.

Step 3: Disconnect the coolant hose from the intake tube.

Step 4: Unlatch the two clips securing the top of the air box, and then remove the intake tube and the top of the air box from the vehicle.

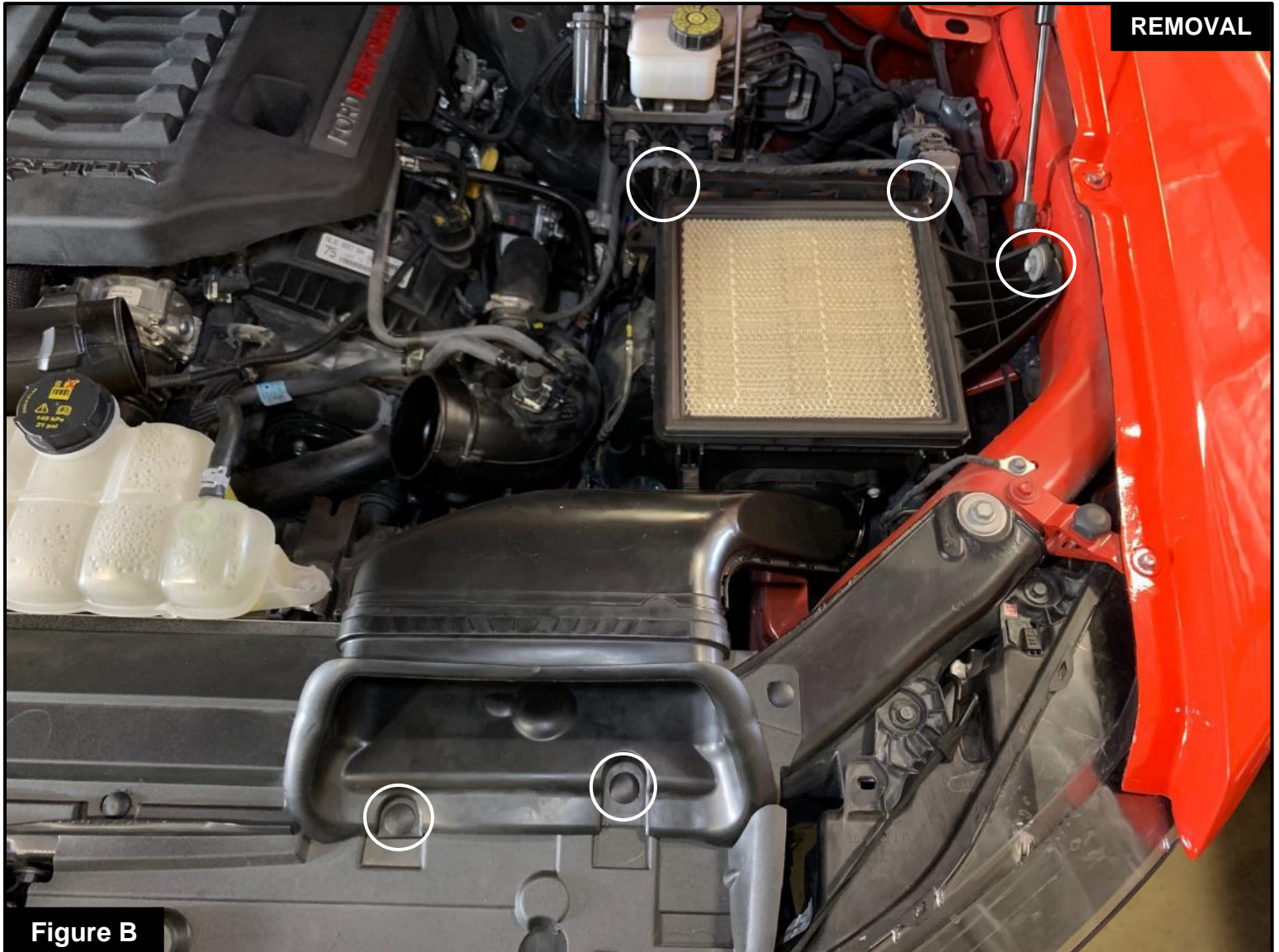


Figure B

Refer to Figure B for Steps 5-7

Step 5: Disconnect the IAT harness from the airbox.

Step 6: Remove the two clips securing the front of the air box to the truck.

Step 7: Remove the 13mm bolt securing the airbox to the truck, this bolt will be reused. Remove the airbox from the vehicle.

**Figure C****Refer to Figure C for Step 8**

The installation of the plastic vent tube insert is important to prevent check engine light. These procedures should be done with the turbo inlet tubes installed on the engine. It is shown off the vehicle for better illustration.

Step 8: Locate the factory plastic tube feeding the driver's side turbo inlet. This is the connection closer to the turbo.

For additional help, check out the video on YouTube titled: aFe POWER F 150 EcoBoost Vent Insert Tube Tech Tip

Or follow the link: <https://www.youtube.com/watch?v=vhaYJGbtEW4> or QR code:



**Figure D****Refer to Figure D for Steps 9-11**

Step 9: Locate the valve cover vent tube that feeds into the driver's side turbo inlet (the connection closer to the turbo). It is not necessary to remove the engine cover.

Step 10: Check the color of the locking tab on the quick disconnect fitting. If the locking tab is orange, go to steps 12 and 13. If the locking tab is blue or grey, go to step 14.



Figure E

Refer to Figure E for Step 12

Step 12: If the locking tab of the quick disconnect fitting is orange, like in this picture, you will need a quick-disconnect tool to remove it. Those disconnect tools are commonly used on AC and fuel lines.



Figure F

Refer to Figure F for Step 13

Step 13: For the fitting with the orange locking tab, slide the 5/8" quick-disconnect tool over the fitting and push it inside of the fitting. Rotate it and pull on the fitting at the same time.

**Figure G****Refer to Figure G for Step 14**

Step14: If the locking tab is grey or blue, apply pressure against the exposed tail and pull vent fitting off the turbo inlet tube. It is not necessary to disconnect at the valve cover end. There is a sensor and wire harness on this vent tube. Do not damage or remove these components.

INSTALL



Figure H

Refer to Figure H for Step 15

Step15: Insert vent fitting with slash cut facing turbo. It should not be a loose fit. It is direction dependent and must not rotate once installed.

**Figure I****Refer to Figure I for Steps 16-17**

Step 16: Reconnect the vent fitting. It will snap over without having to release the plastic clip. Pull up slightly to confirm installation.

Step 17: Installation of the vent tube is complete. Any codes can be cleared with a code reader or by disconnecting the battery. You will lose any radio presets with battery disconnection.

If removal of the vent insert is required, it can be pulled out with internal snap ring pliers.



Figure J

Refer to Figure J for Steps 18-20

Step 18: Install the inlet seal onto the aFe POWER housing.

Step 19: Transfer the grommet and metal sleeve from the factory air box to the aFe POWER housing.

Step 20: For PowerBoost™ models, install the white cable holder that is provided into the hole below the filter opening. For Non-PowerBoost models, plug the hole with the small black push clip provided.



Refer to Figure K for Steps 21-23

Step 21: Install the aFe POWER housing. Secure it using the two provided push clips, and the 13mm bolt removed in Step 7.

Step 22: Secure the IAT harness to the aFe POWER housing into the pre-drilled holes.

Step 23: For PowerBoost™ models only, secure the coolant hose with the white clip.

**Figure L****Refer to Figure L for Step 24**

Step 24: Firmly press the air filter into the large opening, making sure the air filter's tabs lock into place. Place the clamps over the flanges of the air filter. Do not tighten the clamps at this time.



Refer to Figure M for Steps 25

Step 25: Install the couplings and clamps onto the turbo inlets, but leave all clamps loose at this time.



Figure N

Refer to Figure N for Steps 26-27

Step 26: Transfer the IAT sensor from the factory intake tube to the rear aFe POWER tube.

Step 27: Install the U-shaped silicone hose and small clamps on to the intake tube, orient as shown and leave clamps loose at this time.

**Figure O****Refer to Figure O for Step 28**

Step 28: Install the aFe POWER rear tube as shown in the photo, but leave the clamps loose at this time.



Figure P

Refer to Figure P for Steps 29

Step 29: Install the front aFe POWER tube and adjust it so that it is parallel to the rear tube, then tighten all clamps. Do not forget the small clamps on the U-Bend silicone hose, on the underside of the two tubes.

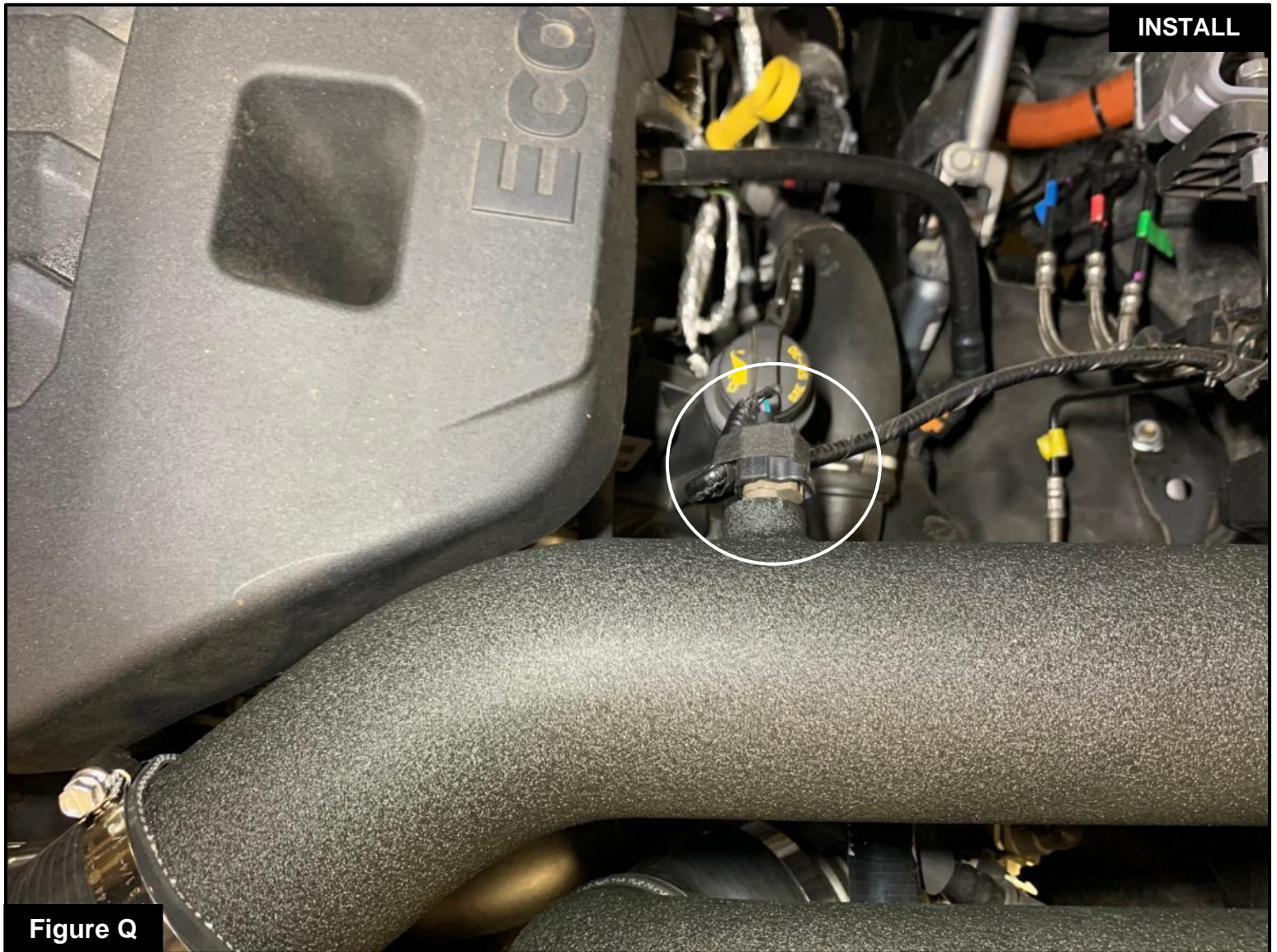


Figure Q

Refer to Figure Q for Step 30

Step 30: Connect the IAT harness to the IAT sensor.

**Figure R****Refer to Figure R for Step 31**

Step 31: The kit includes an optional plug to close off the auxiliary air inlet. Install the plug if you wish to close off the auxiliary air inlet to only capture cold air from the front air inlet.

- Without the plug installed, the aFe POWER intake will capture the maximum air available. More airflow offers more power, yet some of this air is picked up from inside the engine compartment could be warmer air. The warmer air will affect the performance of the vehicle.
- The plug installed on the housing will block off any hot engine air entering the housing to make sure that the coolest air available is directed into the engine. Intake noise will also be reduced if using the plug.

**Figure S****Refer to Figure S for Step 32**

Step 32: Verify that all clamps and connections are secured. Your installation is now complete. Thank you for choosing aFe POWER!



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