



advanced FLOW engineering
Instruction Manual P/N: 46-20299-B

Make: **Ford** Model: **F-150 Raptor** Year: **2017** Engine: **V6-3.5L (tt) EcoBoost**



- Please read the entire instruction manual before proceeding.
- Ensure all components listed are present.
- Ensure you have all necessary tools before proceeding.
- Do not attempt to work on your vehicle when the engine is hot.
- Disconnect the negative battery terminal before proceeding.
- Retain factory parts for future use.

Label	Qty.	Description	Part Number
A	1	Tube, Cold Side	05-60771B
B	1	Coupling, Silicone Hump: 3"ID x 2-1/4"	05-01245
C	1	Coupling, Silicone Elbow: 3-1/2"ID x 45	05-60556
D	1	Adaptor	05-60373
E	1	Plug, Hex Head Socket: 1/8" NPT	03-50029
F	1	O-Ring	05-60626
G	2	Clamp, #052	03-50008
H	2	Clamp, #048	03-50007
I	1	Screws, Socket Head Cap: M6	03-50241
J	1	Washer, M6	03-50177

Tools Needed: 6mm & 8mm Allen wrenches, 7mm & 8 mm sockets or nut drivers, T30 Torx socket or driver, 13mm & 15mm sockets, ratchet, grease and thread sealant.

Note: Legal in California for use on race vehicles only. The use of this device on vehicles used on public streets or highways is strictly prohibited in California and others states that have adopted California emission regulations.





Refer to Figure A for Steps 1-6

- Step 1: Park vehicle on level ground and engage parking brake.
- Step 2: Remove intake Y-pipe by loosening the three clamps using a 7mm socket or nut driver and disconnecting the sensor. (Figure A).
- Step 3: Disconnect the vent tube by squeezing the retaining clip and pushing it through to release it, then gently pull it off the intercooler tube. (Figure B).
- Step 4: Disconnect the wire harness from the sensor and the factory intercooler tube. (Figure B).
- Step 5: Remove the sensor for reuse in your new aFe intercooler tube, using a Torx socket. (Figure B).
- Step 6: Loosen the clamp at the throttle body connection, using a 7mm socket or nut driver and separate the coupling from the throttle body. (Figure B).



Figure B

Refer to Figure B for Steps 7-12

- Step 7: Under the vehicle you will need to remove the six bolts securing the skid plate to the truck.
- Step 8: Once the skid plate is removed disconnect the pressure relief valve tube on the driver side of the vehicle right above the intercooler tube connection by twisting it a $\frac{1}{4}$ turn counter-clock wise, then gently pulling it back to separate it from the canister and twisting the entire tube out of the way.
- Step 9: On the driver side of the vehicle loosen the clamp using a 7mm socket or nut driver that is securing the cold side intercooler tube to the 3-1/2" rubber hose and disconnect the hard plastic tube from the rubber coupling.
- Step 10: Once the rubber hose is disconnected remove the tube from the top of the vehicle.
- Step 11: Use a small screwdriver to remove the wire retaining clip at the lower intercooler tube connection on the driver side of the vehicle.
- Step 12: Pull the lower tube connection apart and remove the lower half of the intercooler tube from the vehicle.

**Figure C****Refer to Figure C for Steps 13-14**

Step 13: Place the small silicone coupling over the small end of the aFe intercooler tube with one of the smaller supplied clamps and install the 1/8" NPT plug into the fitting.

NOTE: Be sure to use thread sealant on the threads prior to installation.

Step 14: Install the sensor from Step 5 into the aFe intercooler tube with the small screw provided, using an allen wrench.



Figure D

Refer to Figure D for Steps 15-17

Step 15: Install the factory retaining clip into the groove on the outside of the supplied aluminum adaptor (Figure A).

Step 16: Install the supplied O-ring into the groove on the inside the aluminum adaptor (Figure A).

NOTE: Lube the O-rings for the adaptor and the sensor from Step 5 with a small amount of grease, prior to installation, to prevent the O-ring from tearing.

Step 17: Place the large 45° silicone coupling the intercooler adaptor along with the large clamps (Figure B).



Figure E

Refer to Figure E for Steps 18-20

Step 18: Install the intercooler tube from the top of the vehicle.

Step 19: Install the aluminum adaptor onto the intercooler and then onto the intercooler tube, be sure that the clip snaps all the way into the groove on the intercooler.

Step 20: Up top, install the throttle body coupling onto the throttle body with the last clamp.



Figure F

Refer to Figure F for Steps 21-23

Step 21: Reinstall the relief valve tube from Step 8.

Step 22: Ensure intercooler tube is not resting on any plastic or metal surfaces then tighten all clamps.

Step 23: Reinstall factory skid plate.



Figure G

Refer to Figure G for Steps 24-27

Step 24: Up top, reconnect the vent tube onto the aFe intercooler tube and lock it with the retaining clip.

Step 25: Reconnect the sensor from Step 4.

Step 26: Reinstall intake y-pipe and the tighten clamps.

Step 27: Reconnect the sensor in the intake tube. Install is now complete.

Thank you for choosing aFe Power. Enjoy!

Intercooler w/ Tube



P/N: 46-20292-B

Rear Diff. Cover



P/N: 46-70152-WL (w/ Oil)
46-70152 (Blk, Mch)
46-70150 (RAW)

Cat-Back Exhaust System



P/N: 49-43045-B (Blk. Tips)
49-43045-P (Pol. Tips)

Side-Exit Exhaust System



P/N: 49-43091-B (Blk. Tips)
49-43091-P (Pol. Tips)

SCORCHER GT Module



P/N: 77-43023

Cold Air Intake System



P/N: 51-73115 (PDS)
54-73115 (P5R)