



advanced FLOW engineering

Instruction Manual P/N: 46-20292-B

Make: **Ford** Model: **F-150 Raptor** Year: **2017-2020** Engine: **V6-3.5L (tt) EcoBoost**



- 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.
- Disconnect the negative battery terminal before proceeding.
- Retain factory parts for future use.

Label	Qty.	Description	Part Number
A	1	Intercooler	A5-60765
B	1	Adaptor	05-60373
C	1	Coupling, Silicone Elbow	05-60556
D	1	O-Ring	05-60626
E	2	Clamp, #048	03-50007
F	1	Coupling, Silicone Hump	05-01245
G	2	Spacer, Bracket	05-60780
H	2	Spacer, Fan	05-60781
I	2	Clamp, #052	03-50008
J	2	Screw, SHCS: M10	03-50478
K	3	Plug, Hex Hd Socket: 1/8" NPT	03-50029
L	2	Screw, Cap: M6	03-30241
M	2	Washer, M6	03-50177
N	1	Vent, Breather 1/8" NPT	03-50393
O	1	Tube, Cold Side	05-60771B

Tools Needed: Panel popper, flat head screwdriver, 6mm/8mm & 10mm Allen wrenches, 7mm & 8 mm sockets or nut drivers, 13mm & 15mm sockets, T30 Torx socket or driver, ratchet, grease, 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.





Figure A

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 Step 13

Step 13: Loosen the 2 clamps on the passenger side of the intercooler for the hot side intercooler tubes securing the couplings to the tubes and disconnect them.



Figure D

Refer to Figure D for Step 14

Step 14: Unclip the blow off valve wire loom from the intercooler in the front (Figure A) and in the rear.



Figure E

Refer to Figure E for Steps 15-17

- Step 15: Unclip the wire loom for the intercooler fans and unplug the connector on the driver side (Figure A).
- Step 16: While supporting the intercooler cross brace, remove the 2 bolts securing the cross brace to the frame using a 13mm socket and remove the intercooler, fans, and brace all together (Figure B).
- Step 17: Now that the intercooler is out of the vehicle transfer all the rubber grommets from the factory intercooler to the aFe intercooler and install the two supplied plugs into the bottom pins of the aFe intercooler using an allen wrench.

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

REMOVAL



Figure F

Refer to Figure F for Step 18

Step 18: Remove the factory grommets from the bottom of the intercooler fans and install the supplied aluminum fan spacers into the rubber grommet, you will need to lube it prior to installation.

REMOVE



Figure G

Refer to Figure G for Steps 19-20

Step 19: Transfer the blow off valve and canister to the aFe intercooler by removing the 8mm screw and twisting the entire canister $\frac{1}{4}$ turn counter clockwise and the canister will lift straight out.

Step 20: Install the blow off valve and canister onto the aFe intercooler in the same way and secure it to the intercooler with the bolt and washer provided, tighten using an Allen wrench.



Figure H

Refer to Figure H for Step 21

Step 21: Install the grommets with the fan spacers, and the two hot side intercooler couplings onto the cross brace along with the fans and intercooler.



Figure I

Refer to Figure I for Steps 22-23

Step 22: With some help install the cross brace, fans, and intercooler all together with the second set of spacers with bolts that are provided to space the brace down from the frame.

Step 23: Before completely tightening the mounting bolts, be sure that the top grommets are in the proper locations for the intercooler and fans.



Figure J

Refer to Figure J for Steps 24-26

Step 24: Install the factory retaining clip into the groove on the outside of the supplied aluminum adaptor (Figure A).

Step 25: 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 26: Place the large 45° silicone coupling the intercooler adaptor along with the large clamps (Figure B).



Figure K

Refer to Figure K for Steps 27-28

Step 27: 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 instillation.

Step 28: Install the sensor from Step 5 into the aFe intercooler tube with the small screw provided, using an allen wrench.



Figure L

Refer to Figure L for Steps 29-30

Step 29: Install the intercooler tube from the top of the vehicle.

Step 30: 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.



Figure M

Refer to Figure M for Steps 33-39

Step 33: Reinstall the relief valve tube from Step 8.

Step 34: Ensure tube is not resting on any plastic or metal surfaces then tighten all clamps.

Step 35: Reinstall factory skid plate.

Step 36: Up top, reconnect the vent tube onto the aFe intercooler tube and lock it with the retaining clip.

Step 37: Reconnect the sensor from Step 4.

Step 38: Reinstall intake y-pipe and the tighten clamps.

Step 39: Reconnect the sensor in the intake tube and your installation is now complete.

Thank you for choosing aFe Power. Enjoy!

Cold Air Intake System



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

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

To purchase any of the items above, view airflow charts, dyno graphs, photos, and video; please go to aFepower.com.



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Warranty

General Terms:

- aFe warrants their products to be free from manufacturer's defects due to workmanship and material.
- This warranty applies only to the original purchaser of the product and is nontransferable.
- Proof of purchase of the aFe product is required for all warranty claims.
- Warranty is valid provided aFe instructions for installation and/or cleaning were properly followed.
- Proper maintenance with regular inspections of product is required to insure warranty coverage.
- Damage due to improper installation, abuse, unauthorized repair or alteration is not warranted.
- Incidental or consequential damages or cost, including installation and removal of part, incurred due to failure of aFe product is not covered under this warranty.
- All warranty is limited to the repair and/or replacement of the aFe part. To request Return Goods Authorization ("RGA"), email RGA@afepower.com or call (951)493-7100. Upon receipt of the RGA, you must return the product to the address provided in the RGA, freight prepaid and accompanied with a dated proof of purchase and the RGA. Upon receipt of the defective product and upon verification of proof of purchase, aFe will either repair or replace the defective product within a reasonable time, not to exceed thirty days.

Product Category	P/N Prefix	Warranty duration
Direct OE Replacement Filters	10, 11, 30, 31, 71, 73	Life of the vehicle
Racing Filters	18	1 year
Universal	21, 24, 72	2 years
Air Intake Systems	50, 51, 54, 55, 75	2 years
Exhaust Systems	49	2 years
Intercoolers & Intercooler Tubes	46-2	2 years
Intake Manifolds	46-1	2 years
Differential Cover	46-7	Life of the vehicle
Exhaust Manifolds	46	2 years
Throttle Body Spacers	46-3	2 years
Fluid Filters	44	90 days
Pre-Filters	28	2 years
Heavy Duty OE Replacement	70	2 years
PowerSports OE Replacement	81, 87	2 years
PowerSports Intake Systems	85	2 years

No other warranty expressed or implied applies nor is any person or advanced FLOW engineering authorized to assume any other warranty. Some States do not allow the exclusion or limitation of incidental or consequential damages or do not allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.



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