



***advanced FLOW engineering***

**Instruction Manual P/N: 46-20384-B**

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BladeRunner - Intercooler Hot and Cold Side Tubes

Make: Ford Model: Ranger Year:2019+ Engine: L4 – 2.3L (t)



- 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 951-493-7100.
- 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
A	1	Hot Side Tube
B	1	Cold Side Tube
C	1	Coupling, Silicone Elbow Reducer: 2-1/4" x 2" x 45°
D	1	Coupling, Silicone Hump: 2-3/4"ID x 4"L
E	2	Clamp, Spring Loaded T-Bolt: 2-7/8"
F	1	Clamp, Spring Loaded T-Bolt: 2-3/8"
G	1	Clamp, Spring Loaded T-Bolt: 2-1/4"
H	3	Screw, Btn Hd Socket: M6 x 1.0 x 12mm
I	1	O-Ring, 60mm ID
J	1	O-Ring, 66mm ID
K	2	Plug, Hex Hd Socket: 1/8" NPT

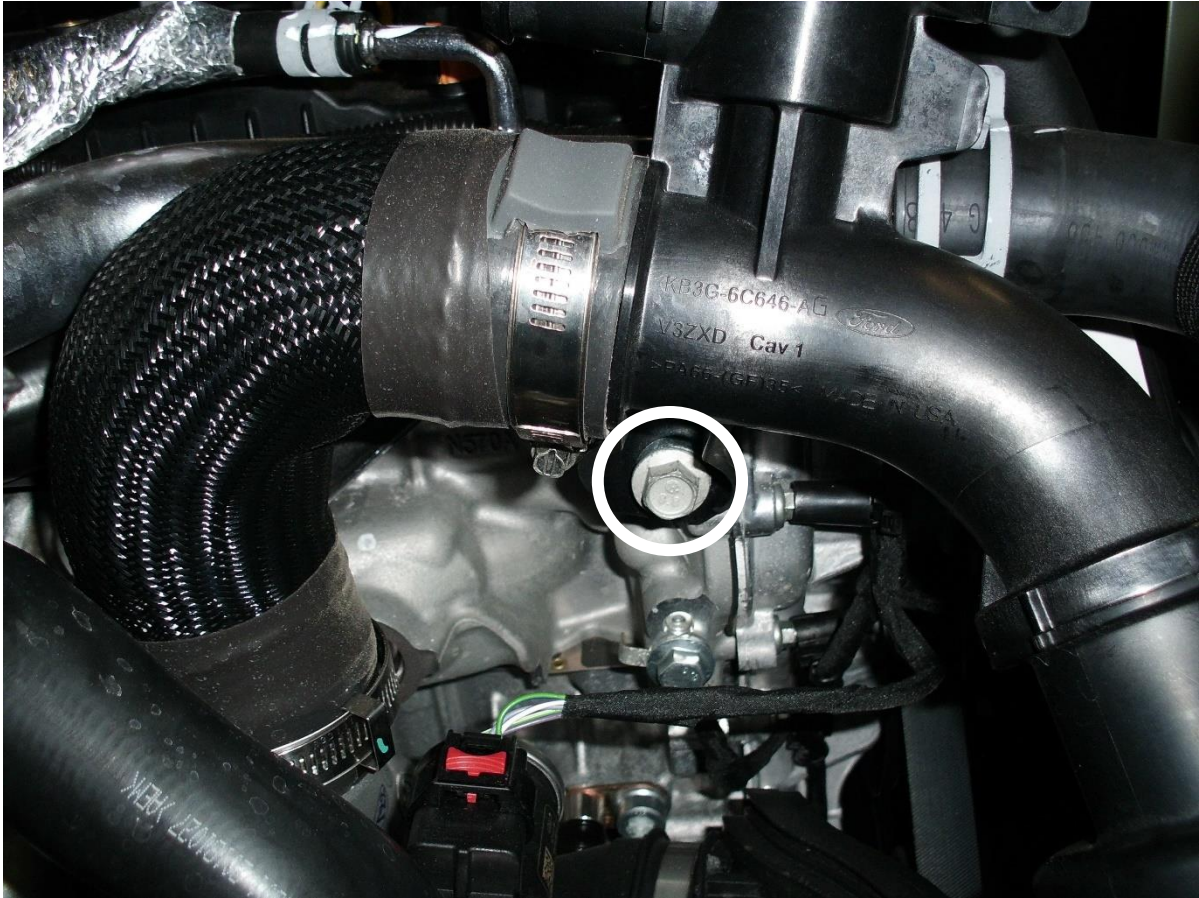
**Tools Needed:** 7mm, 8mm, 13mm, 7/16" sockets, 3/16" allen wrench, 4mm allen wrench, T30 Torx socket, 3/8" drive ratchet, 6" extension, flat blade screwdriver, pliers, pick, thread sealant.

**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.





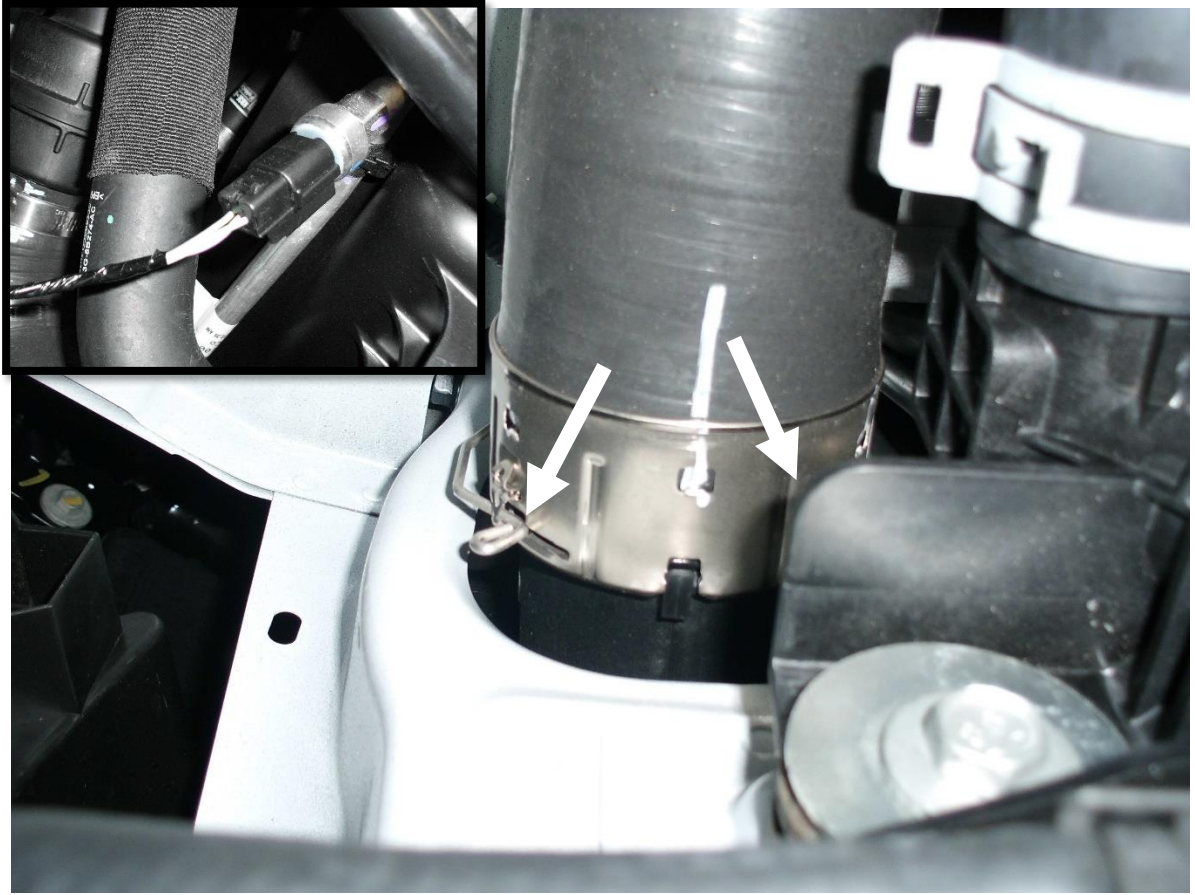
1. Park the vehicle on level ground and engage the parking brake.
2. Disconnect the negative battery cable.
3. Remove the two (2) screws securing the factory intake scoop.
4. Unclip the factory intake scoop from the air box and remove it from the vehicle.
5. Locate the hot side intercooler tube on the passenger side of the vehicle, right next to the air intake tube, then disconnect the recirculation valve actuator connector on the top of the tube.
6. Remove the recirculation hose from the hot side intercooler tube by squeezing the clamp and pulling the hose off.



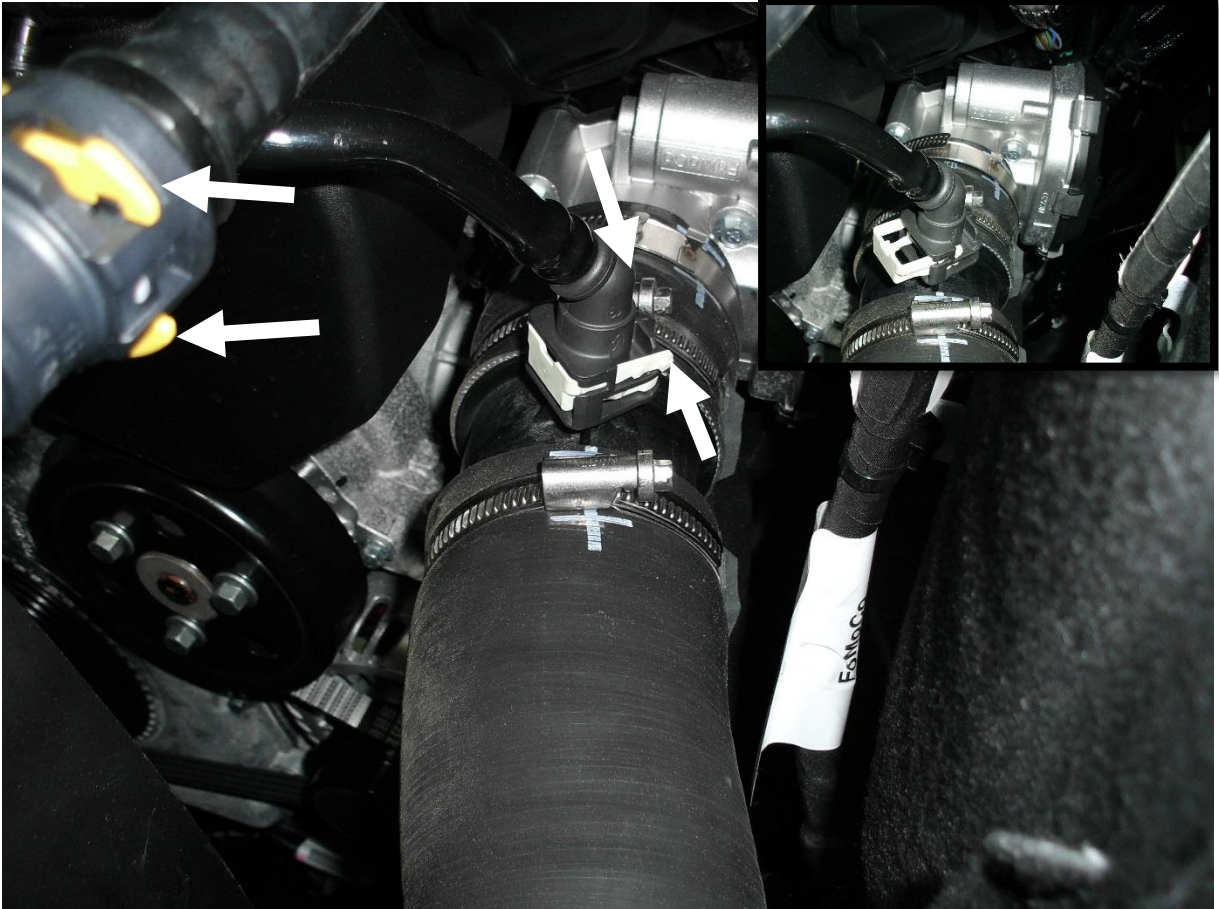
7. Remove the bolt securing the hot side intercooler tube to the engine located directly below the recirculation valve actuator (bolt will not be reused).
8. Loosen the clamp securing the hot side intercooler tube to the turbo outlet.

**Note: It may be necessary to use a pick to break the connection between the intercooler tube coupling and the turbo outlet in order to slide the coupling off.**

9. Disconnect the hot side intercooler tube from the turbo outlet.



10. Disconnect the A/C pressure switch connector.
11. Release the factory retaining clip from the intercooler connection by pressing down on the clip to lock it in the open position on both sides.
12. Disconnect the hot side intercooler tube from the intercooler.



13. On the driver's side of the vehicle, release the connection located above the factory cold side intercooler tube, by pushing the locking tabs back and disconnect the connection.
14. Release the locking tab on the connection on the factory cold side intercooler tube by squeezing the ends together and pushing it back then disconnect the connection.
15. Loosen the clamp securing the intercooler tube to the throttle body.

**Note: It may be necessary to use a pick to break the connection between the intercooler tube coupling and the throttle body in order to slide the coupling off.**

16. Release the factory retaining clip from the intercooler connection and remove the cold side intercooler tube from the vehicle.



**Note: The retaining clips will need to be removed from both factory intercooler tubes for reuse with the aFe intercooler tubes.**

17. Lift the metal retainer up enough to slide the retaining clips out of the factory intercooler tubes and remove the clips.
18. Remove the factory recirculation valve actuator from the factory hot side intercooler tube.





**Note: Be sure to use thread sealant on the plug or sensor to prevent any leaking.**

19. If you are not using any aftermarket sensors, install a supplied 1/8" NPT plug into the threaded fitting on the supplied aFe hot side intercooler tube.

**Note: Be sure to lubricate the O-ring with grease to prevent it from tearing during installation.**

20. Install the supplied 60mm ID O-ring into the groove on the inside of the adapter on the aFe hot side intercooler tube.

21. Install the factory retaining clip into the slotted adapter on the aFe hot side intercooler tube with the opening facing upwards.



22. Install the supplied 2-1/4" x 2" x 45° coupling along with the supplied 2-1/2" clamp onto the reduced end of the aFe hot side intercooler tube approximately in the same orientation as the factory intercooler tube coupling (do not tighten the clamp yet).
23. Install the factory recirculation valve actuator onto the aFe hot side intercooler tube using the supplied M6 x 1.0 x 12mm screws.



**Note: When connecting the aFe intercooler tube to the intercooler be sure to line up the notch in the intercooler connection with the tab on the intercooler.**

24. Install the aFe hot side intercooler tube into the vehicle connecting the quick connection to the intercooler first, then the coupling onto the turbo outlet along with the supplied 2-1/4" clamp (do not tighten the clamp yet).
25. Once connected, give it a little pull to be sure the clip is connected all the way around the fitting.
26. Ensure the tube is not touching anything then tighten the clamps from Steps 22 and 24.
27. Reconnect the A/C connection from Step 10.
28. Install the recirculation hose onto the aFe intercooler tube and secure it with the factory clamp from Step 6.
29. Reconnect the recirculation valve actuator connection from Step 5.
30. Reinstall the factory air scoop from Step 4.

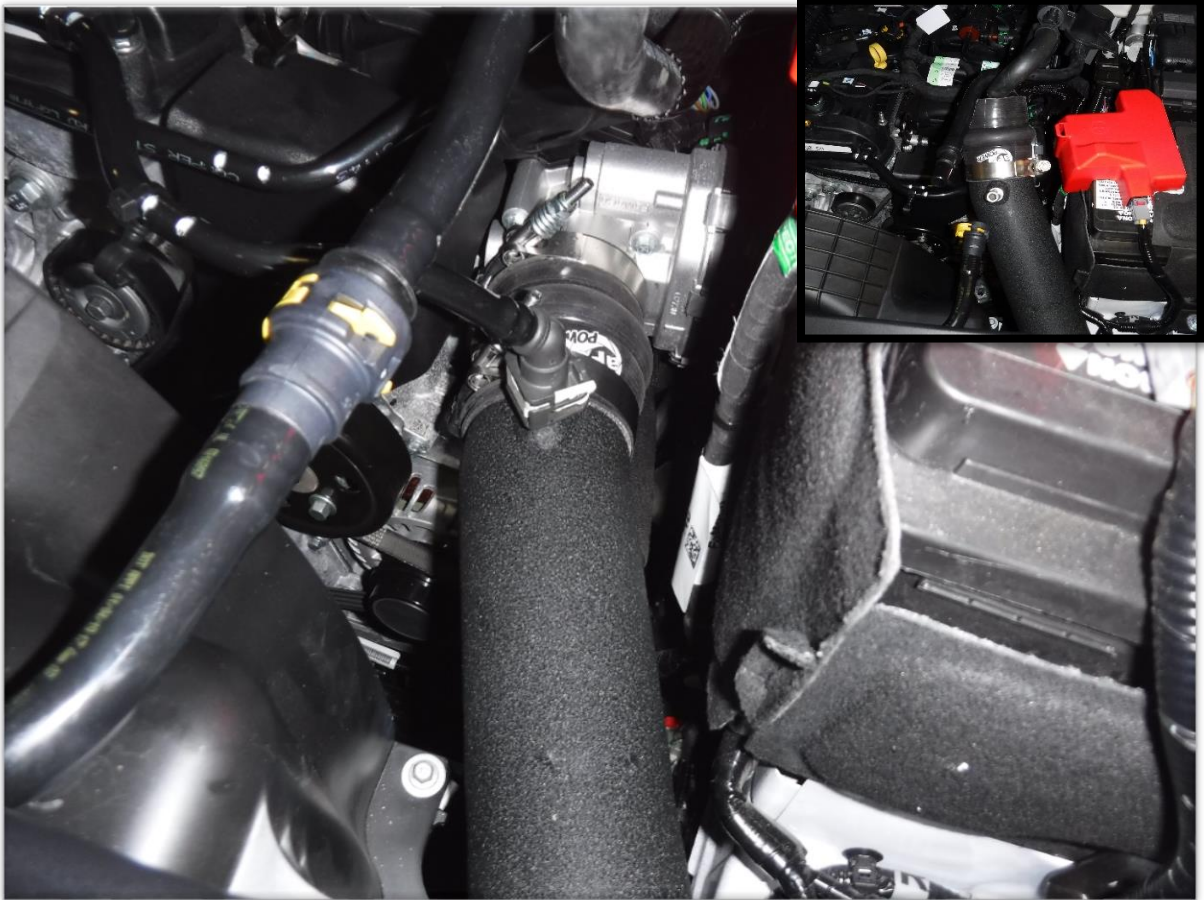


**Note: Be sure to lubricate the O-ring with grease to prevent it from tearing during installation.**

31. Install the supplied 66mm ID O-ring into the groove on the inside of the adapter on the supplied aFe cold side intercooler tube.

**Note: Be sure to use thread sealant on the plug or sensor to prevent any leaking.**

32. If you are not using any aftermarket sensors, install a 1/8" NPT plug into the threaded fitting on the aFe cold side intercooler tube.
33. Install the factory retaining clip into the slotted adapter on the aFe cold side intercooler tube with the opening facing upwards.
34. Install the supplied 2-3/4" x 4" hump coupling along with one of the supplied 2-7/8" clamps onto the aFe cold side intercooler tube (do not tighten the clamp yet).



**Note: When connecting the aFe intercooler tube to the intercooler be sure to line up the notch in the intercooler connection with the tab on the intercooler.**

**Note: When connecting the aFe coupling to the throttle body, you will need to use a pick to slide the coupling onto the throttle body.**

35. Install the aFe cold side intercooler tube into the vehicle connecting the tube to the intercooler first then to the throttle body.
36. Remove the nut and spring from the remaining 2-7/8" clamp, open it and slide the clamp onto the throttle body side of the coupling from the previous step, then reinstall the spring and nut (do not tighten the clamp yet).
37. Once connected, give it a little pull to be sure the clip is connected all the way around the fitting.
38. Ensure the tube is not touching anything then tighten the clamps from Steps 34 and 36.
39. Reconnect the connections from Steps 13 and 14, then press the locking tabs down.



40. Reconnect the negative battery cable.

Install is now complete!

**Note: Be sure to check all connection after 50-100 miles**

# 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](mailto: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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