



advanced FLOW engineering

Instruction Manual P/N: 46-20644-B

BladeRunner – Charge Pipe Combo Kit

Make: Hyundai

Model: Veloster N

Year: 19 - 22

Engine: L4–2.0L(t)

Note: This item will only fit vehicles equipped with Dual Clutch Transmission (DCT).



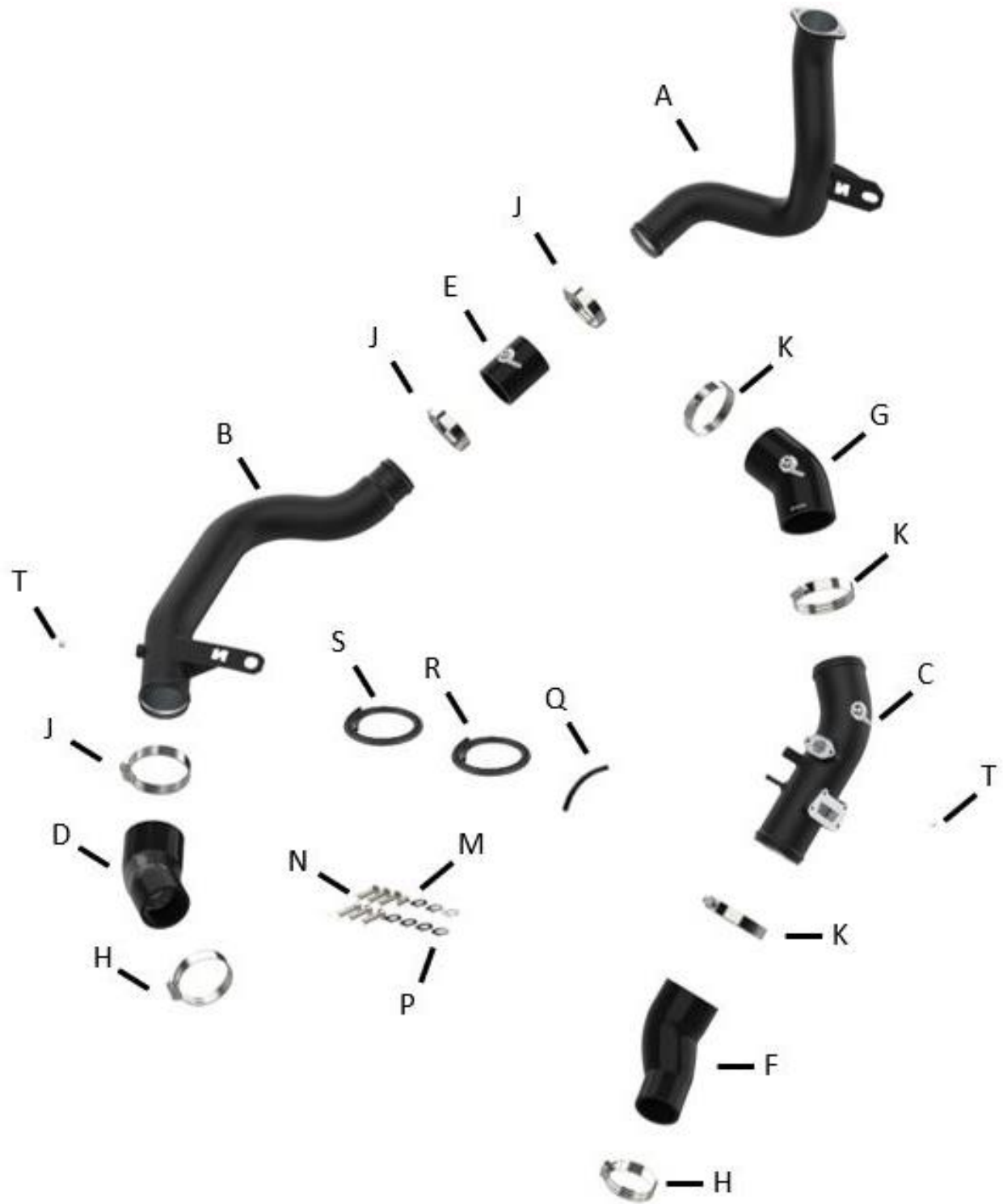
- Please read the entire instruction manual before proceeding.
- Ensure all components listed are present.
- If you are missing any of the components, call customer support at 951-493-7100.
- Ensure you have all necessary tools before proceeding.
- Do not attempt to work on your vehicle when the engine is hot.
- Disconnect the negative battery terminal before proceeding.
- Retain factory parts for future use.

Label	Qty.	Description	Part Number
A	1	Tube, Hot Side Upper: 46-20648	05-61298B
B	1	Tube, Hot Side Lower: 46-2064X	05-61299B
C	1	Tube, Cold Side: 46-2064X	05-61300B
D	1	Coupling, Silicone Dbl Elbow Rdr: 2.5" x 2"	05-61301
E	1	Coupling, Silicone Straight: 2.25"ID x 3"L	05-01242
F	1	Coupling, Silicone Dbl Elbow Rdr: 2.75" x 2"	05-61302
G	1	Coupling, Silicone Elbow 2.75" x 2"L x 36Deg	05-61303
H	2	Clamp, SmartSeal, 032 (1.94" – 2.31")	03-50655
J	3	Clamp, SmartSeal, 044 (2.50" – 3.06")	03-50656
K	3	Clamp, SmartSeal, 056 (2.88" – 3.56")	03-50786
M	1	Screw, Btn Hd Socket: M6x1x12	03-50102
N	6	Screw, Socket Head Cap: M6x1.0x20, S/S	03-50241
P	7	Washer, M6 (12mm OD x 6.4mm ID)	03-50177
Q	1	Hose, Silicone: 4mm ID x 50' Roll: 4"	05-46512
R	1	Hose, Silicone: 4mm ID x 50' Roll: 11"	05-46512
S	1	Hose, Silicone: 4mm ID x 50' Roll: 11"	05-46512
T	2	Plug, 1/8" NPT	03-50029

Installation will require the following tools:

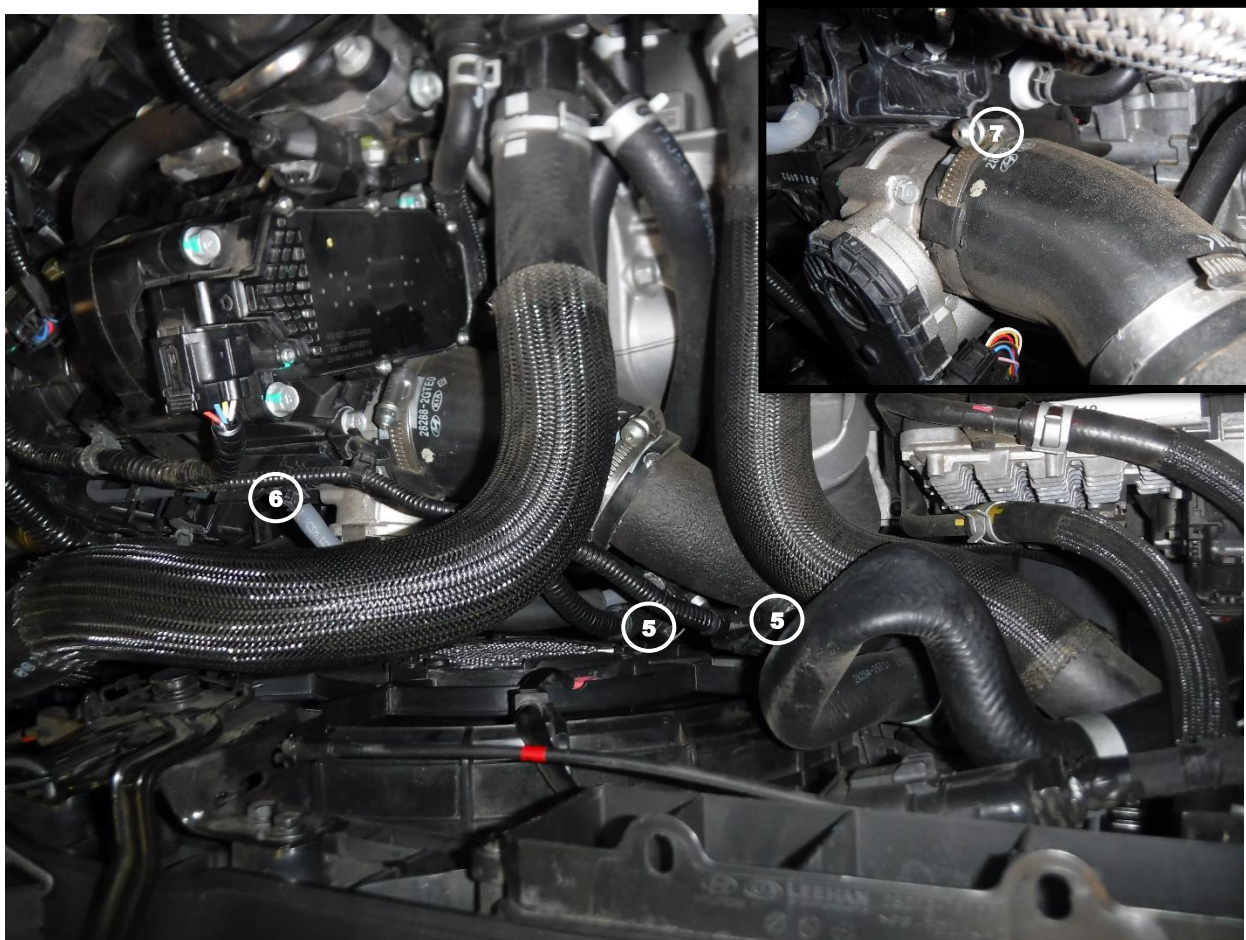
8mm socket, swivel, 18"L extension, 10mm socket, 14mm socket, 17mm socket, 3/16" allen wrench, 5mm allen wrench, ratchet, pick, flat head screwdriver, thread sealant

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

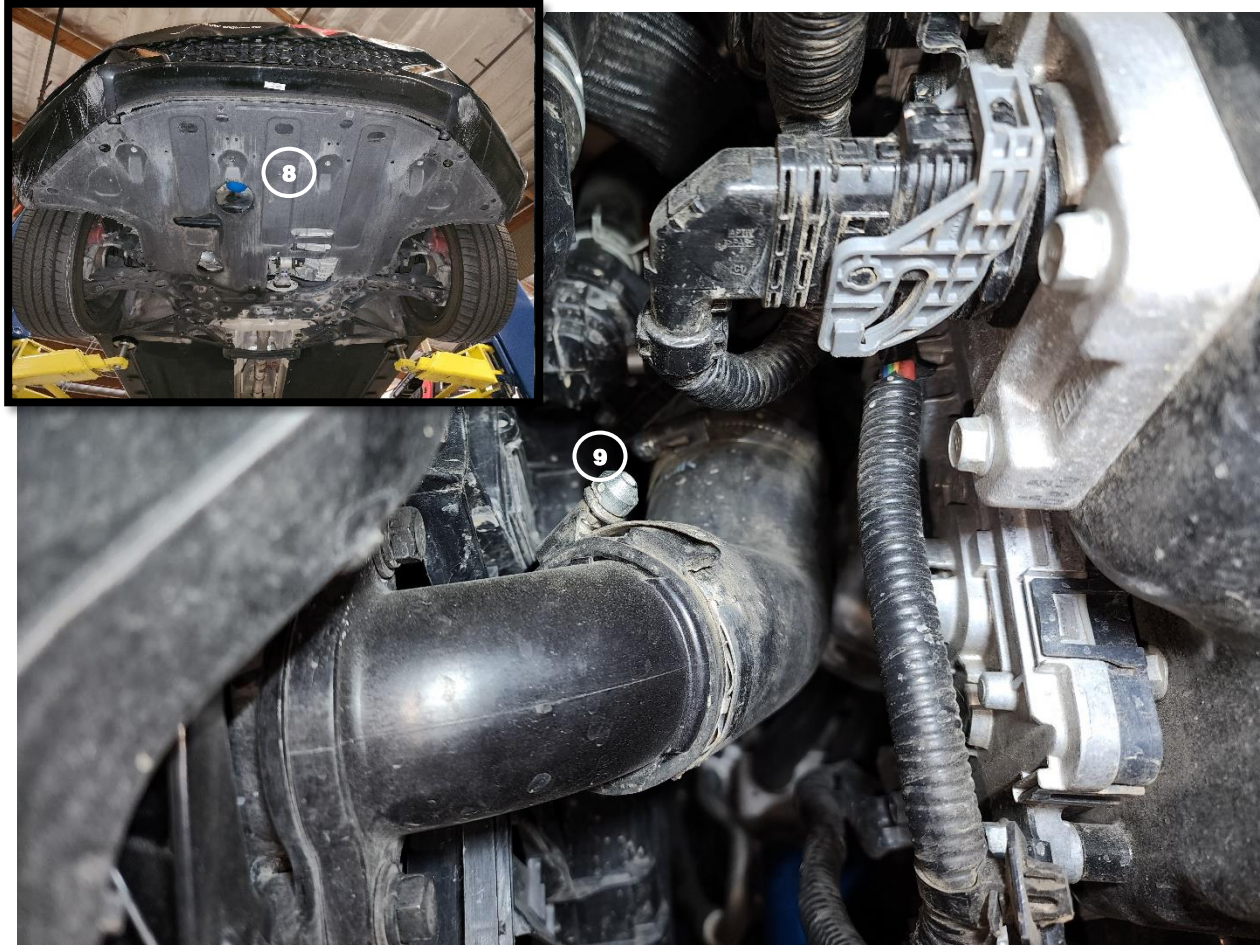




1. Park vehicle on level ground and engage the parking brake.
2. Disconnect the negative battery cable.
3. Disconnect the diverter valve recirculation hose from the front of the air intake tube ①.
4. Disconnect the two (2) hoses from the back of the air intake tube ②.
5. Loosen the two (2) clamps securing the air intake tube onto the turbo inlet and air intake box, then remove the tube from the vehicle ③.
6. Remove the two (2) clips and three (3) mounting screws securing the air intake box to the vehicle, then remove the air box from the vehicle ④.

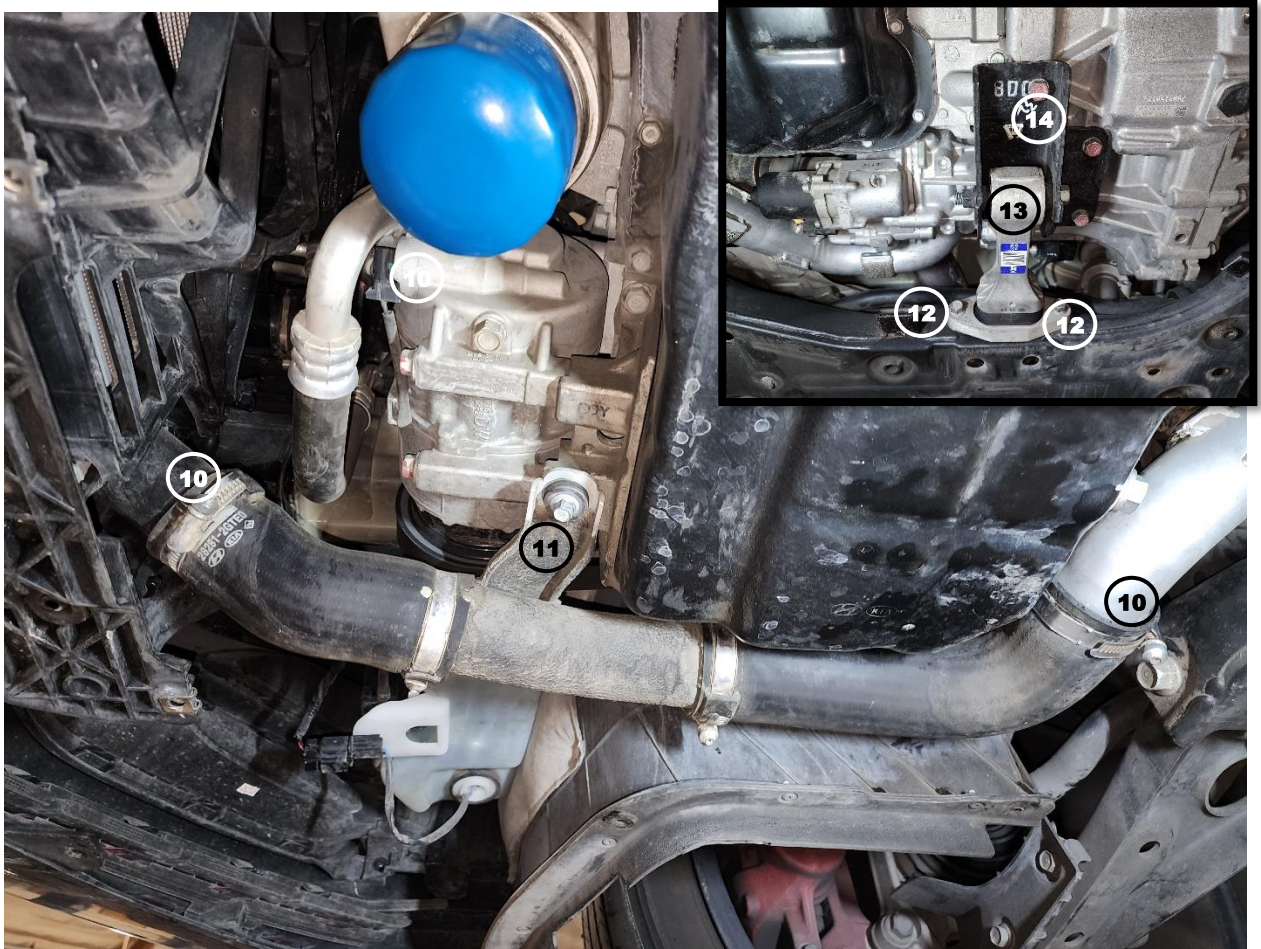


7. Disconnect the electrical connections for the Manifold Absolute Pressure (MAP) sensor and the turbo boost solenoid (5)
8. Disconnect the vacuum hose from the intake manifold for the turbo boost solenoid (6)
9. Remove the cap from the hose clamp screw and loosen the clamp securing the factory cold side charge pipe coupling to the throttle body (7) and disconnect it from throttle body.

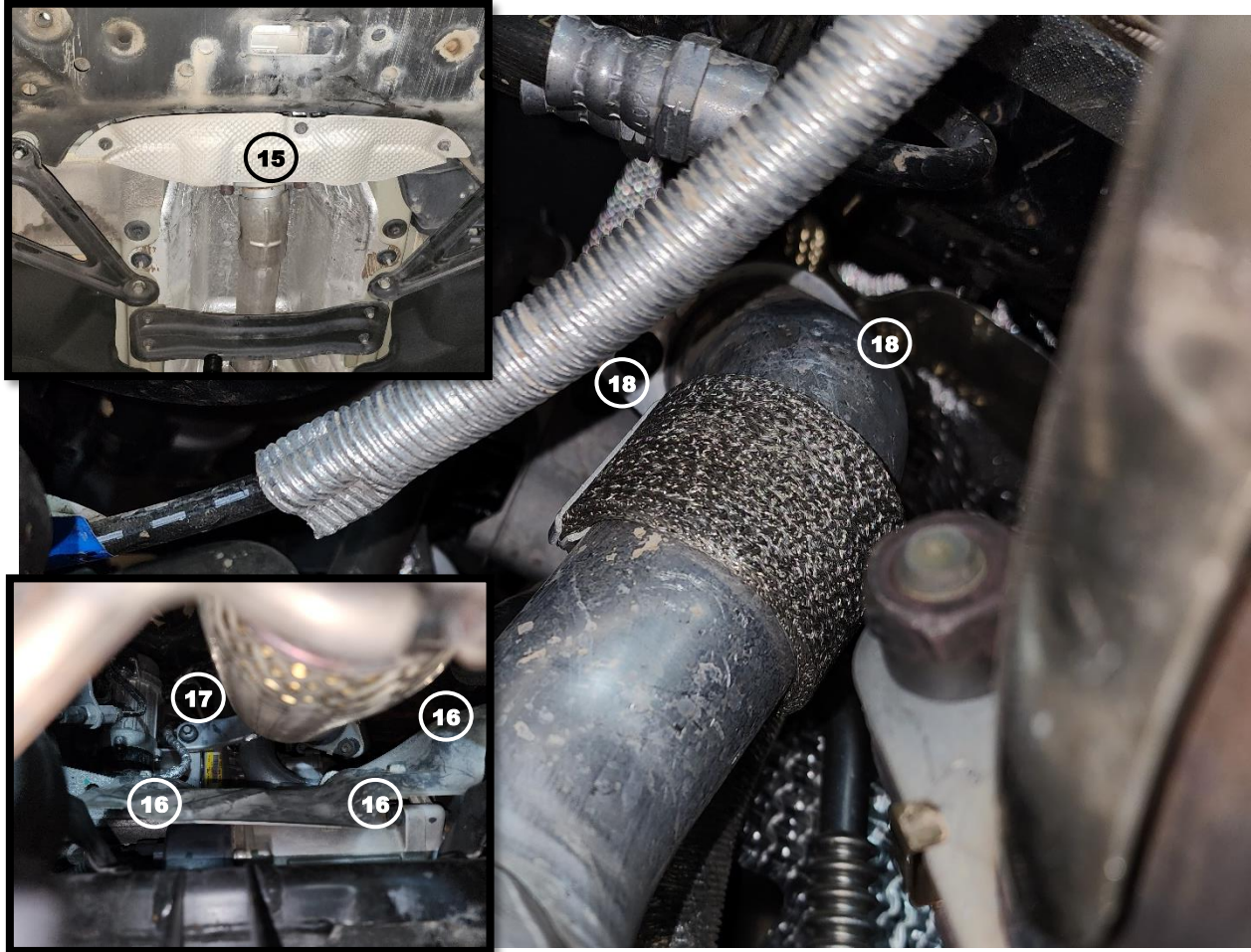


10. Remove all of the screws and clips from belly pan and remove it from the vehicle (8).

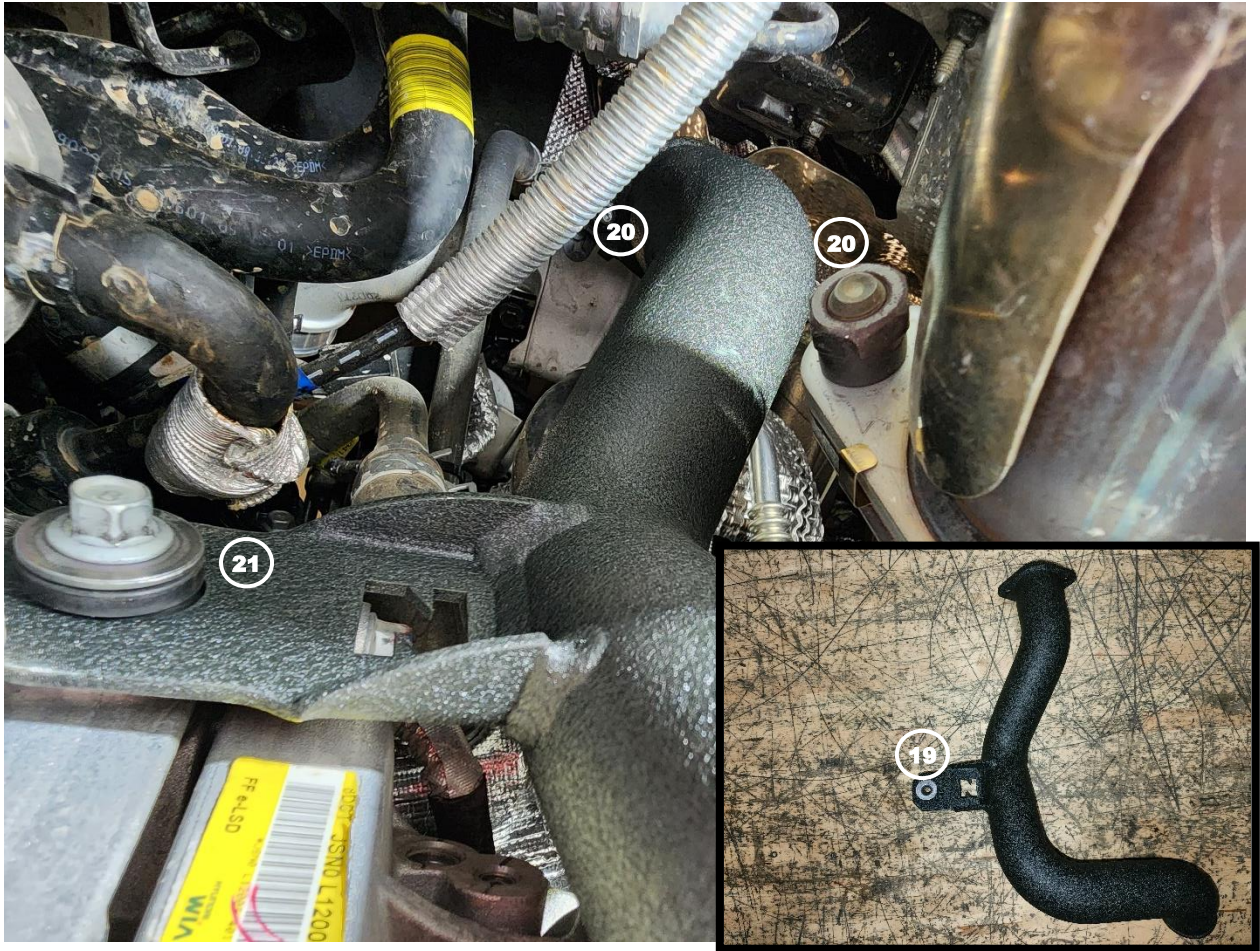
11. Remove the cap from the hose clamp screw and loosen the clamp securing the factory cold side charge pipe coupling to the intercooler (9) and remove the charge pipe from the vehicle.



12. Remove the caps from the hose clamp screws and loosen the clamps securing the factory lower hot side charge pipe to the intercooler and to the upper hot side charge pipe (10)
13. Remove the screw securing the lower hot side charge pipe to the engine (11) then remove it from the vehicle.
14. Remove the two (2) screws (12) securing the lower engine mount to the subframe of the vehicle.
15. Remove the bolt and nut (13) securing the lower engine mount to the engine bracket, then remove the mount from the vehicle.
16. Remove the four (4) screws (14) securing the engine mount bracket to the engine, then remove the bracket from the vehicle.



17. Remove the three (3) nuts securing the small heat shield to the bottom of the subframe and remove it from the vehicle (15)
18. Remove the three (3) screws securing the large heat shield to the top of the subframe, below the down pipe and move it to the side (16)
19. Remove the screw securing the factory upper hot side charge pipe to the engine (17).
20. Remove the two (2) nuts securing the factory upper hot side charge pipe to the turbo using a long extension and a swivel with a socket, then remove it from the vehicle (18)
21. Maneuver the charge pipe out from between the engine and the subframe while supporting the engine forward to gain access to remove the charge pipe from the vehicle.



22. Transfer the mounting grommet from the factory upper hot side charge pipe to the supplied aFe upper hot side charge pipe in the same orientation as removed (19).

Ensure the factory gasket did not fall off of the turbo.

23. Maneuver the aFe upper hot side charge pipe in between the engine and the subframe while supporting the engine forward to gain access to install the charge pipe into the vehicle.

24. Secure the aFe upper hot side charge pipe to the turbo using the factory nuts (20)

25. Secure the aFe upper hot side charge pipe to the engine using the factory screw (21)

26. Secure the large heat shield to the top of the subframe using the factory screws.

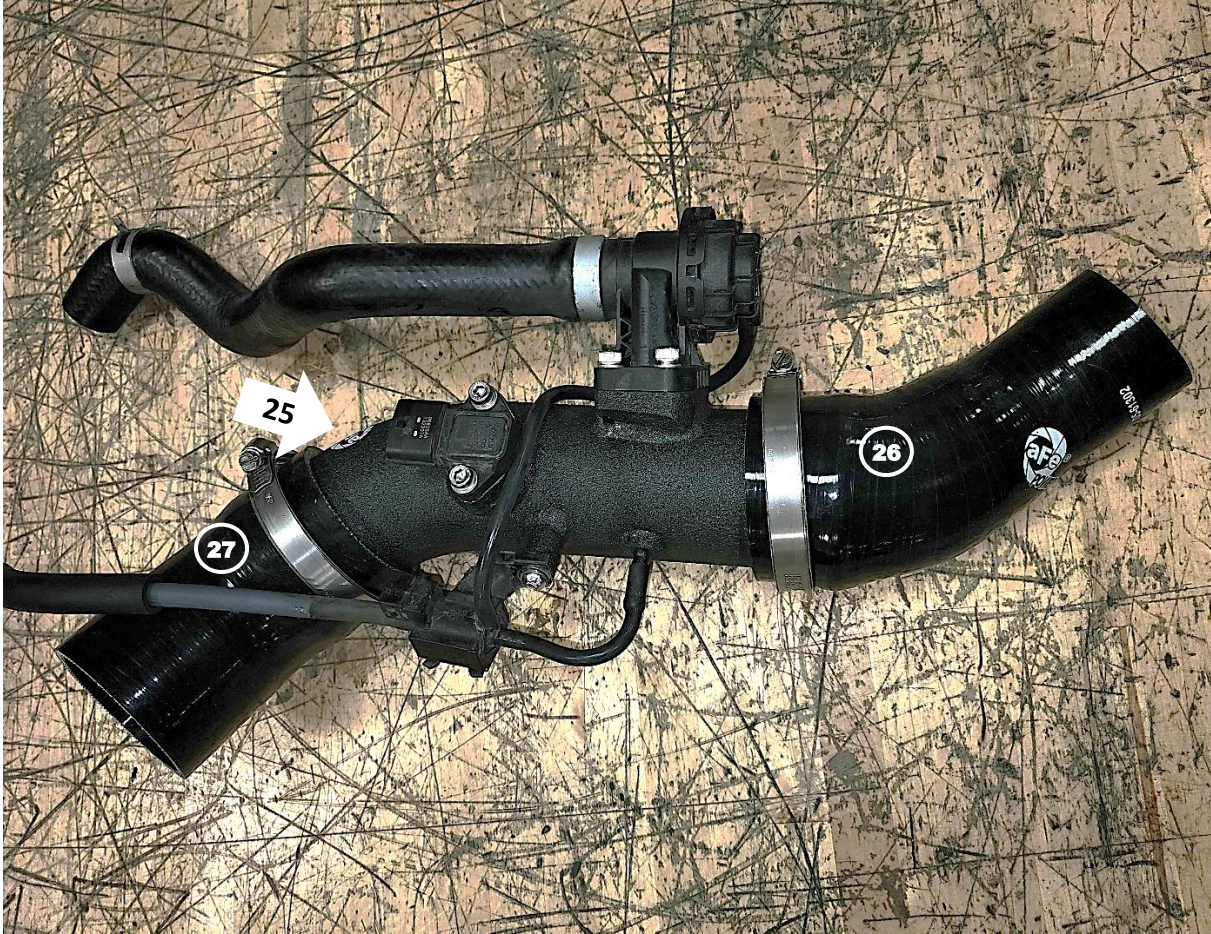
27. Secure the small shield to the bottom of the subframe using the factory nuts.

28. Reinstall the lower engine mount and bracket into the vehicle using the factory hardware.



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

29. If you are not using any aftermarket sensors, install the supplied 1/8" NPT plug (22) into the threaded fitting on the supplied aFe lower hot side charge pipe.
30. Transfer the mounting grommet from the factory lower hot side charge pipe to the aFe lower hot side charge pipe in the same orientation as removed (23)
31. Install the aFe silicone elbow reducer coupling, 2.50"x 2", (24) and one of the supplied 044 SmartSeal clamps onto the end of the aFe lower hot side charge pipe with the bracket, do not tighten the clamp yet.
32. Adjust the coupling in a similar direction as the factory hot side charge pipe.

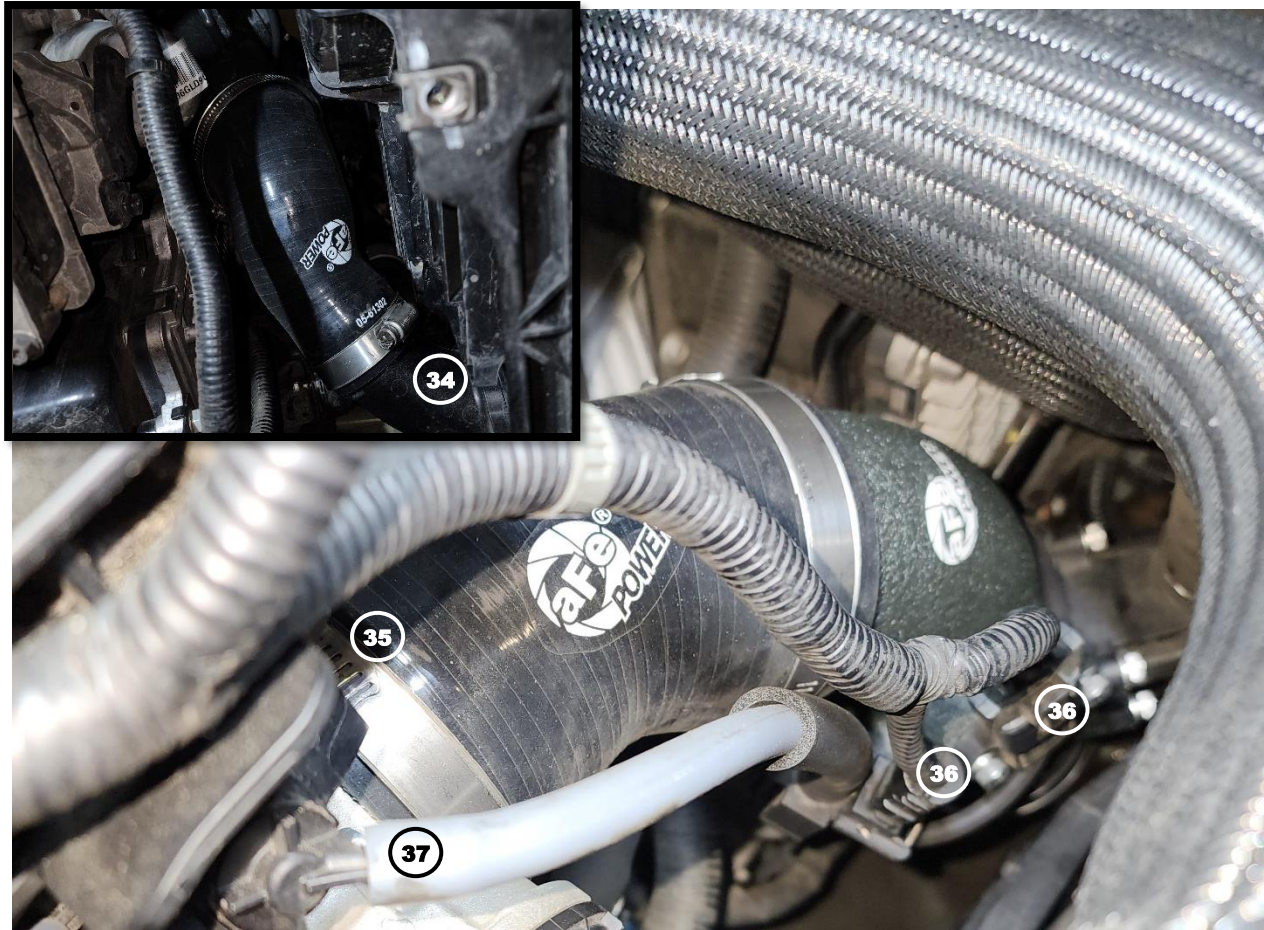


Note: Be sure to use thread sealant on the plug or sensor to prevent any leaking

33. If you are not using any aftermarket sensors, install the 1/8" NPT plug (25) into the threaded fitting on the aFe cold side charge pipe.
34. Install the larger side of the aFe elbow reducer coupling, 2.75"x 2" (26) and one of the supplied 056 SmartSeal clamps onto the longer end of the aFe cold side charge pipe, do not tighten the clamp yet.
35. Install the aFe elbow coupling, 2.75"x 36 degrees (27) and one of the 056 SmartSeal clamps onto the shorter end of the aFe cold side charge pipe, do not tighten the clamp yet.
36. Adjust the couplings in a similar direction as the factory cold side charge pipe.



37. Transfer the factory diverter valve onto the aFe cold side charge pipe (28). Secure it with four (4) of the supplied M6 x 1 x 20mm screws and M6 washers.
38. Transfer the factory turbo boost solenoid onto the aFe cold side charge pipe (29). Secure it with the supplied M6 x 1 x 12mm screw and M6 washer, be sure to install it in the same orientation as it was removed.
39. Transfer the factory MAP sensor onto the aFe cold side charge pipe (30). Secure it with the two (2) supplied M6 x 1 x 20mm screws and M6 washers.
40. Lubricate the nipple fitting on the aFe cold side charge pipe and install the supplied 4" long silicone hose. Connect the opposing end to the bottom port of the turbo boost solenoid (31).
41. Install one of the supplied 11" long silicone hoses onto the aFe cold side charge pipe connecting the diverter valve to the side port on the turbo boost solenoid (32).
42. Install the remaining supplied 11" long silicone hose onto the aFe cold side charge pipe connecting it to the top port on the turbo boost solenoid (33) the opposing end will later be connected to the intake manifold.



Note: Be sure to thoroughly clean all oil residue off of the connections before installing any of the aFe charge pipes into the vehicle

43. Install the aFe cold side charge pipe into the vehicle from the top. Connect the aFe elbow reducer coupling, 2.75"x 2", to the intercooler (34) with one of the supplied 032 SmartSeal clamps, do not tighten the clamp yet.
44. Connect the aFe elbow coupling, 2.75"x 36 degrees, to the throttle body along with one of the supplied 056 SmartSeal clamps, (35) do not tighten the clamp yet.
45. Adjust the couplings as necessary and be sure the aFe cold side charge pipe is not touching anything.
46. Tighten all of the clamps on the aFe cold side charge pipe.
47. Reconnect the electrical connections for the MAP sensor and the turbo boost solenoid (36).
48. Reconnect the vacuum hose to the intake manifold for the turbo boost solenoid (37).



Note: Be sure to thoroughly clean all oil residue off of the connections before installing any of the aFe charge pipes into the vehicle

49. Install the supplied aFe straight coupling, 2.25" x 3" L, onto the aFe upper hot side charge pipe along with the one of the supplied 044 SmartSeal clamps (38) do not tighten the clamp yet.
50. Install the aFe lower hot side charge pipe into the vehicle from the bottom. Connect the reduced end of the charge pipe to the aFe straight coupling, 2.25" x 3" L, along with one of the supplied 044 SmartSeal clamps, (39) do not tighten the clamp yet.
51. Connect the aFe elbow reducer coupling, 2.50" x 2", to the intercooler along with one of the supplied 032 SmartSeal clamps, (40) do not tighten the clamp yet.
52. Adjust the couplings as necessary and be sure the aFe hot side charge pipe is not touching anything.
53. Secure the aFe charge pipe to the engine using the factory screw (41)
54. Tighten all of the clamps on the aFe hot side charge pipe and reinstall the belly pan.



55. Reinstall the air intake box into the vehicle (42)
56. Reinstall the air intake tube into the vehicle (43)
57. Reconnect the two (2) hoses to the back of the air intake tube (44)
58. Reconnect the diverter valve recirculation hose to the front of the air intake tube (45)
59. Reconnect the negative battery cable.
60. Installation is now complete.

Note: Be sure to check all connections after 50-100 miles.



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