

**ALPHA**  
Performance Packages

**ALPHA A45 AMG SERIES**

**INTERCOOLER UPGRADE**

# Introduction

The goal of AMS Performance is to provide the highest quality, best performing products available. By utilizing research and development, and rigorous testing programs AMS Performance will never compromise the quality or performance of our products. In addition, AMS Performance will only provide the finest customer service offering only parts and advice that are in the best interests of the customer. AMS Performance was built on a foundation of integrity. This is who we are; this is what you can count on.

A vehicle modified by the use of performance parts may not meet the legal requirements for use on public roads. Federal and state laws prohibit the removal, modification, or rendering inoperative of any part or element of design affecting emissions or safety on motor vehicles used for transporting persons or property on public streets or highways. Use or installation of performance parts may adversely affect the drivability and reliability of your vehicle, and may also affect or eliminate your insurance coverage, factory warranty, and/or new OEM part warranty. Performance parts are sold as-is without any warranty of any type. There is no warranty stated or implied due to the stresses placed on your vehicle by performance parts and our inability to monitor their use, tuning, or modification.

These instructions are provided as a guide only as there are many variables that cannot be accounted for concerning your particular vehicle, including but not limited to model year differences, model differences, the presence of non-OEM parts, and modifications that may already be or were previously installed. A basic knowledge of automotive parts and systems is helpful but a better understanding of the parts and systems on your particular vehicle may be required.

If you have any questions or issues at any time during the installation of your AMS Performance product(s) please call us for technical assistance. The AMS Performance tech line can be reached during business hours at 847-709-0530 for AMS Performance products only.

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**04** Disassembly

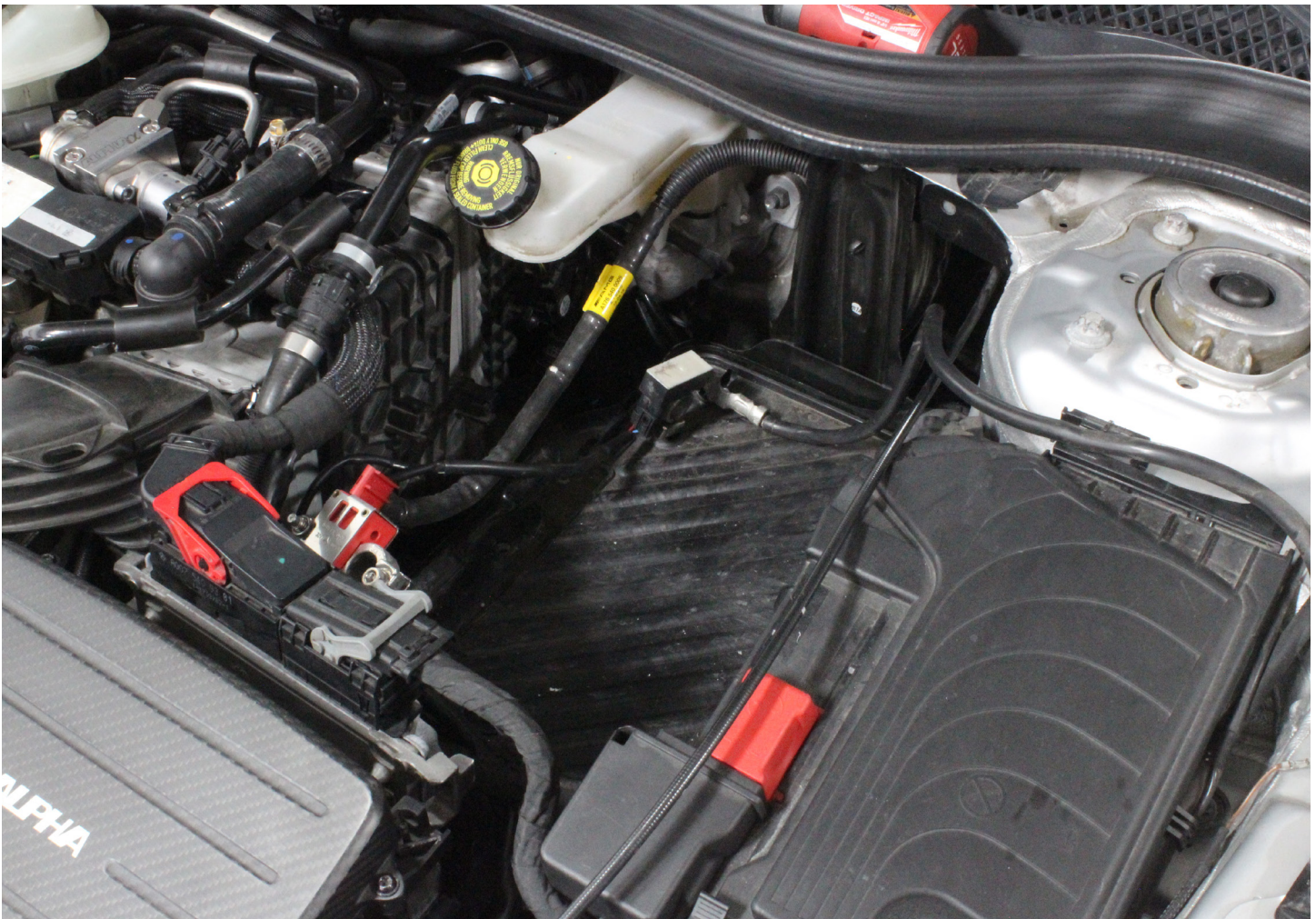
**15** System Bleeding w/ Air Lift

**16** Standard System Bleeding

1) Remove the engine cover and the plastic battery covers. Once the battery is exposed, remove both positive and negative battery cables.



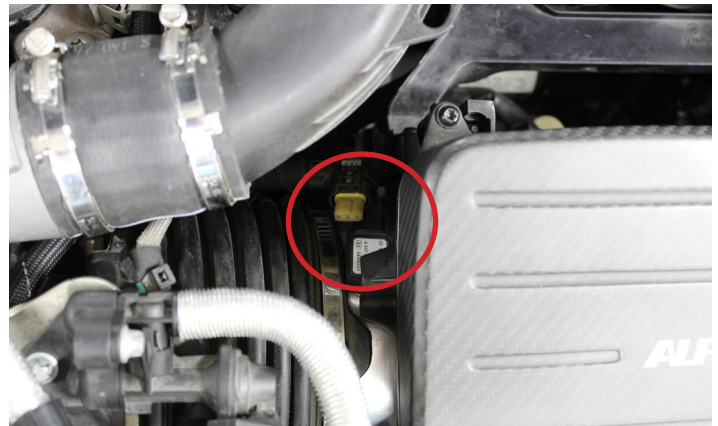
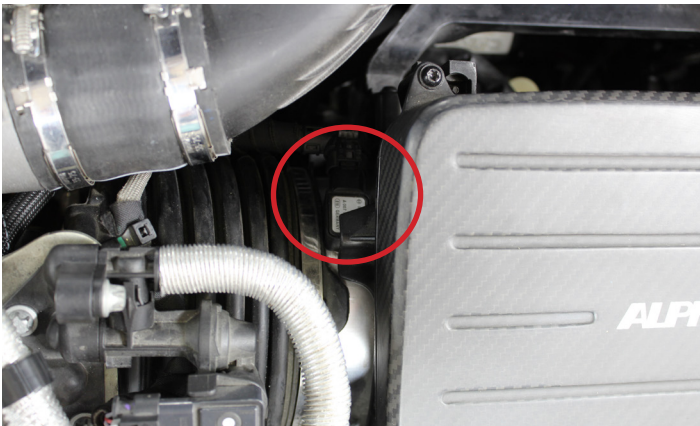
2) Once the battery covers and cables are removed, go ahead and remove the battery hold down brackets and plastic enclosure. Once that is done, remove the battery from the vehicle.



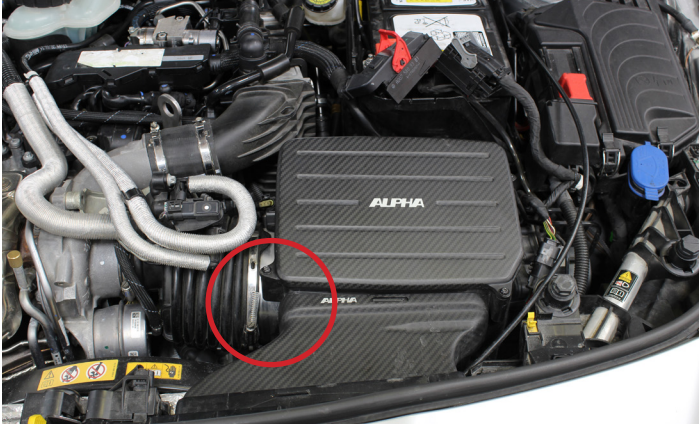
**3)** Remove the ECU from the vehicle. Take care releasing the ECU connectors. Carefully release the tab that holds the Grey and Red levers in place. Pull the levers one at a time to unseat the connectors from the ECU. If they are difficult to release, wiggle the connector while pulling the lever. Pull the connectors off to the side and remove the ECU.



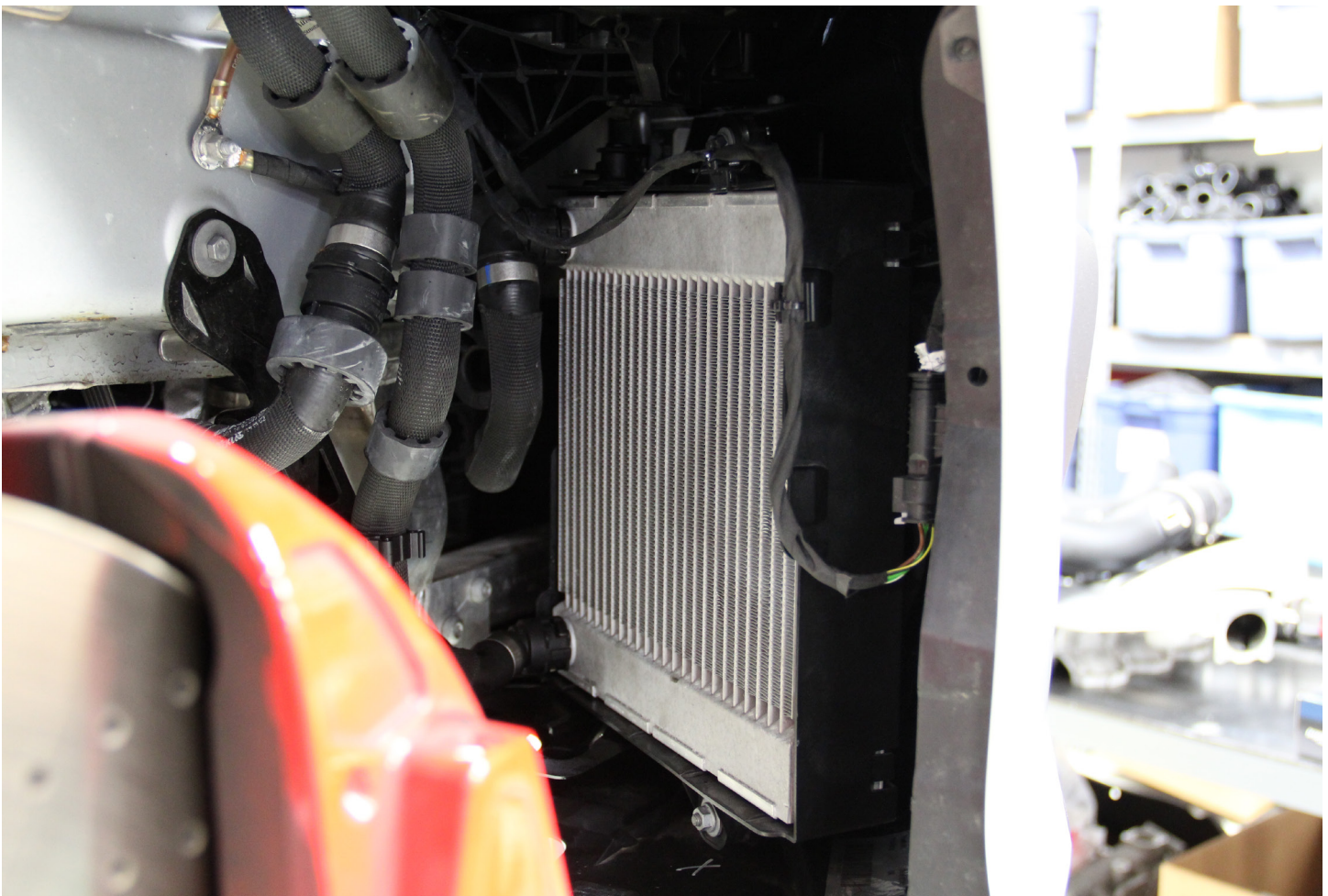
**4)** Disconnect the MAP sensor on the air box. To do so, use a small screwdriver to pull out the grey tab from the connector. Once released, depress the grey tab down to disconnect.



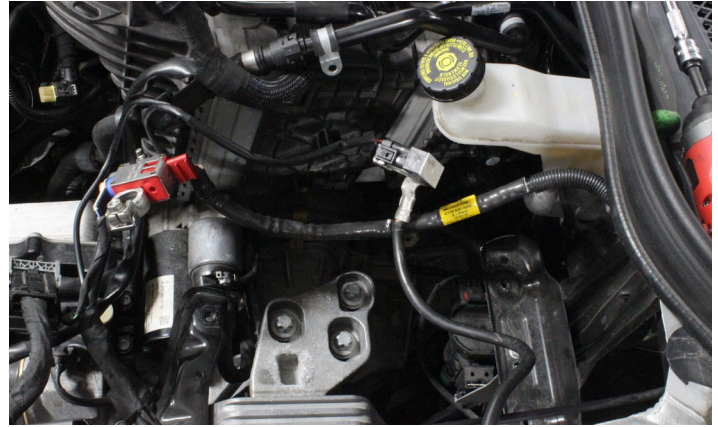
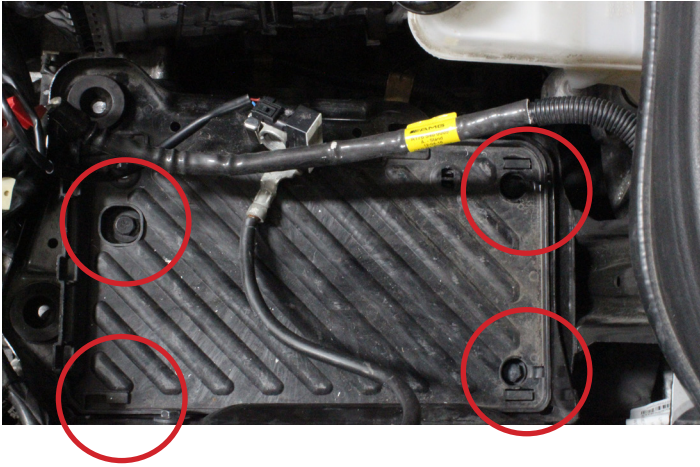
**5)** Loosen the hose clamp on the coupler to air box connection. Remove the airbox and inlet duct from the car.



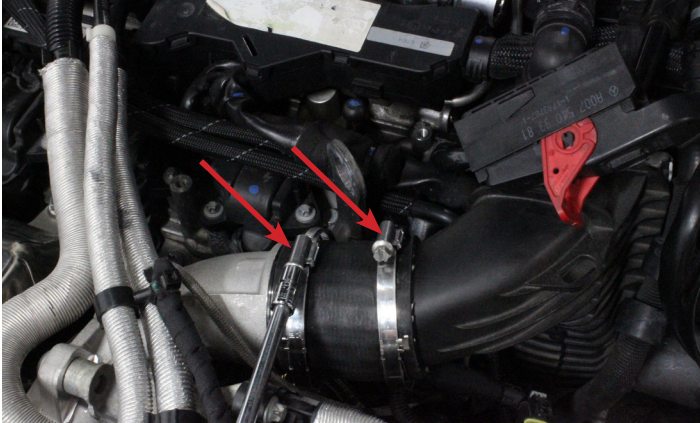
**6)** Drain the intercooler system. The lowest point in the system is the lower water hose connector on the side heat exchanger on the right side of the vehicle. Remove the fender liner and drain the system from there. The system can also be drained from the bottom connection on the intercooler or the intercooler pump however it will be a little messier.



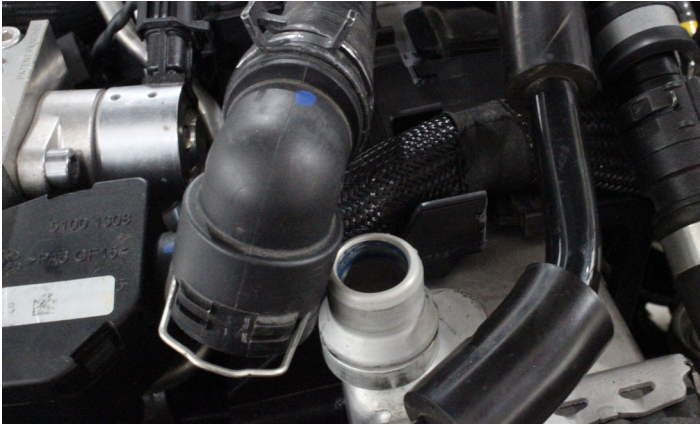
7) Then, you need to remove the battery tray. Remove the 4 circled 13mm bolts. Remove battery tray.



8) Loosen the hose clamps on the factory intercooler inlet coupler and outlet coupler. New hose clamps have also been provided for these connections with the new intercooler.



**9)** Using a pick, undo the clips holding the water lines on the top side and bottom side of the factory intercooler. Once those clips are undone, you can remove the line fittings.



**10)** Disconnect the small quick connect line going into the top of the intercooler outlet end tank as well as the MAP sensor harness on the side.

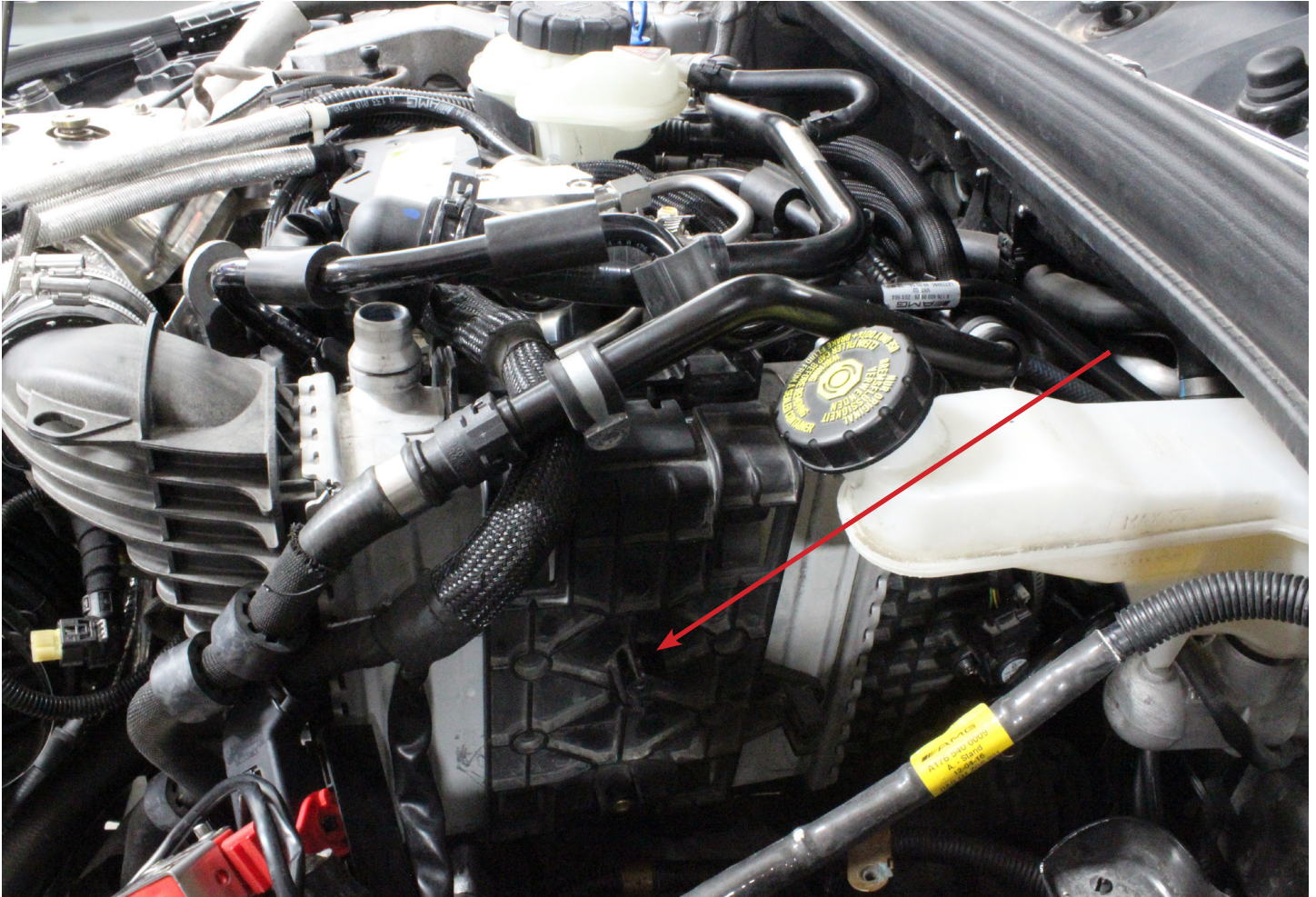




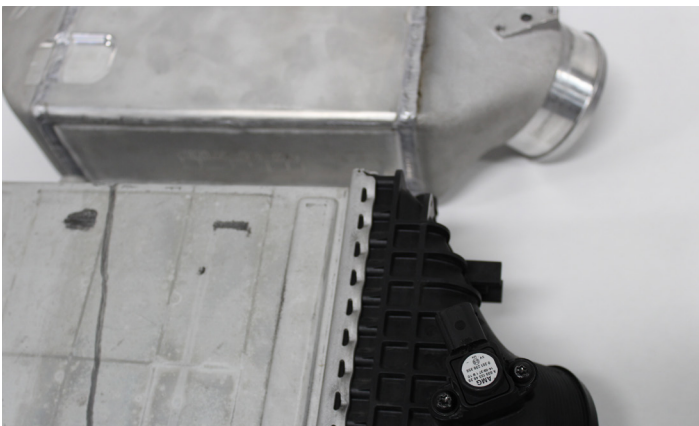
**11)** Disconnect the line that runs diagonally down the side of the intercooler to provide clearance for removing the factory intercooler from the car.



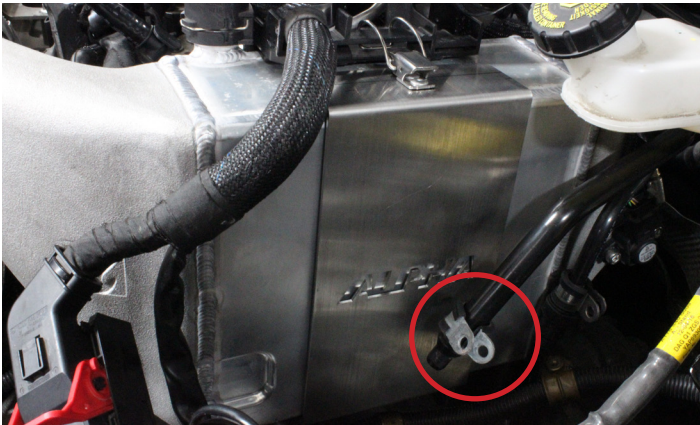
**12)** Remove the intercooler mounting bracket that wraps up the side of the intercooler. It clips in on the top side, and hinges into place on the bottom side. Once removed, remove the intercooler.



**13)** Remove the factory MAP sensor that is fastened to the OEM intercooler and install it onto the flange on the Alpha Intercooler using the supplied hardware. Make sure NOT to reuse the OEM bolts as damage will occur to the new intercooler.

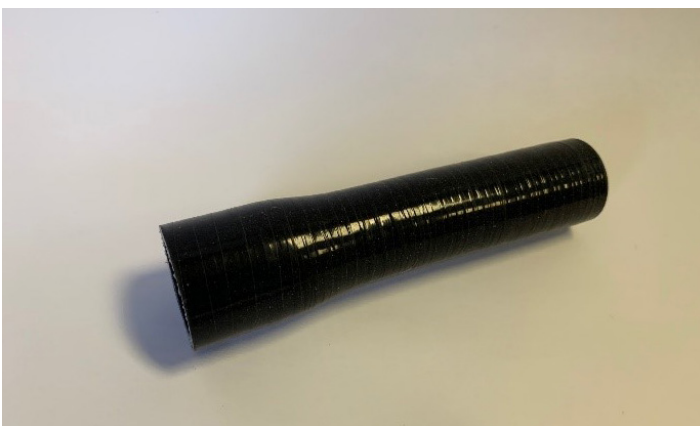


**14)** Install the Alpha intercooler. Make sure as you press the intercooler into place that the inlet and outlets of the intercooler are sliding into the factory couplers simultaneously. It makes things much easier. Once the Alpha intercooler is in place, install the Alpha bracket around the intercooler. The bottom part of the bracket hinges into place underneath the intercooler. The top part latches onto the factory black plastic piece that the OEM bracket clipped onto. Remove the OEM clamp circled in the picture.



**Note:** Replace the OEM clamps on the compressor discharge and intercooler outlet coupler with the two #40 and one #56 clamp provided. Make sure to tighten the clamp as close to the bead on the inlet and outlet to deter movement.

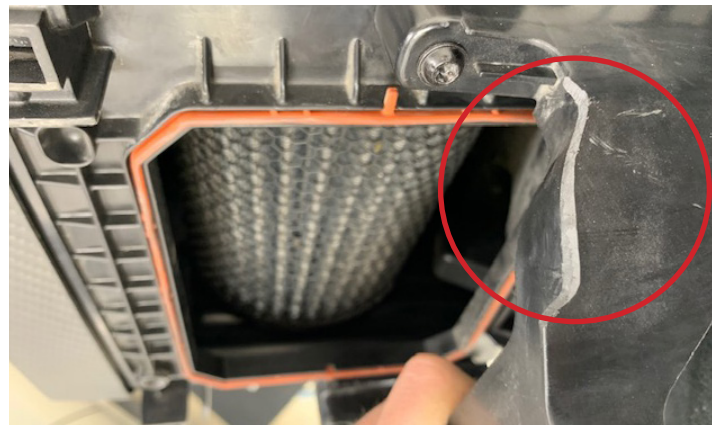
**15)** Reconnect all the hose connection on the intercooler. Locate and install the short silicone hose provided in the kit. This hose replaces the water outlet connection on the intercooler and is longer than the OEM part. You may reuse the OEM spring clamp however a #10 and #12 worm gear clamp have been provided in case the spring clamps were damaged or worn.



**16)** The battery tray will be close to the intercooler end tank on some vehicles. It is recommended to trim the area shown before reinstalling the battery tray to avoid any contact and potential noise.



**17)** The air box mounting bracket may also need trimming. Test fit the air box and trim the mounting bracket as necessary to clear the intercooler end tank.



**18)** Reinstall the remaining components in the reverse order of disassembly. Double check all hardware and hose connection.



1) The proper way to bleed the system is to use an air lift coolant fill system. These are available from any major tool manufacturer.



3) Use the air lift system to fill the system with coolant according to the tool's instructions. Once filled, remove the air lift tool.

4) Run or drive the car until the IC pump turns on. This could take 10 minutes or more of idle time.

5) Once the pump cycles on and off, check the fluid level.

6) If when the IC pump turns off and the reservoir pushes a bunch of coolant out, this means there is still a large amount of air in the system that needs to be bled.

7) You may have to repeat this process multiple times along with test drives. Continue until the coolant level is stable with the pump on or off.

8) Reinstall the engine cover.

- 1) Fill the system through the factory reservoir with the remote bleeder screw open.



- 2) It may only take a little bit of coolant. Close the bleeder and run the car until the IC pump turns on. This can take 10 minutes or more of idle time.
- 3) Once the pump turns on, it will start to cycle coolant into the system. Continue to fill with coolant to maintain a proper level. Make sure the fluid level is maintained when the IC pump turns off.
- 4) If the IC pump turns off and the reservoir pushes a bunch off coolant out, this means there is still a large amount of air in the system that needs to be bled.
- 5) Shut off the car and make sure the intercooler pump is off. Crack open the remote bleeder to allow any trapped air to bleed out.
- 6) You may have to repeat this process multiple times along with test drives. Continue until the coolant level is stable with the pump on or off.
- 7) Reinstall the engine cover.