



Mercedes E63 CLS AMG
non S-model
Turbo Cooler System



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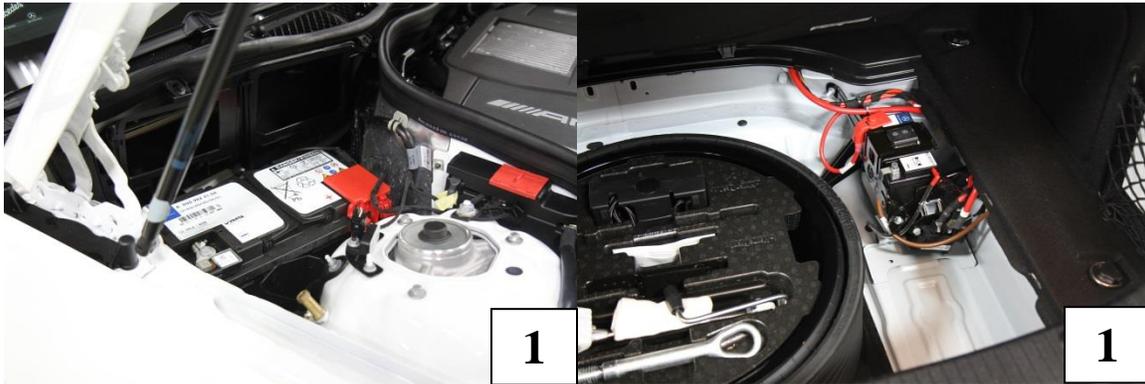
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These instructions are provided as a guide only as there are many variables that cannot be accounted for concerning your particular vehicle, including but not limited to model year differences, model differences, the presence of non-OEM parts, and 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 Alpha Performance product(s) please call us for technical assistance. The Alpha Performance tech line can be reached during business hours at 847-709-0530 for Alpha Performance products only.

Alpha Mid-heat Exchanger Install

- 1) Disconnect both batteries. There is the main batter in the engine bay and a secondary small battery in the truck. **CAUTION**, this step is important because SRS impact sensors will be disconnected during the install process!



- 2) Remove these items,
 - a. Front wheels
 - b. Under trays
 - c. Both wheel well liners of RF wheel well
 - d. Front wheel well liner of LF wheel well
 - e. Front bumper

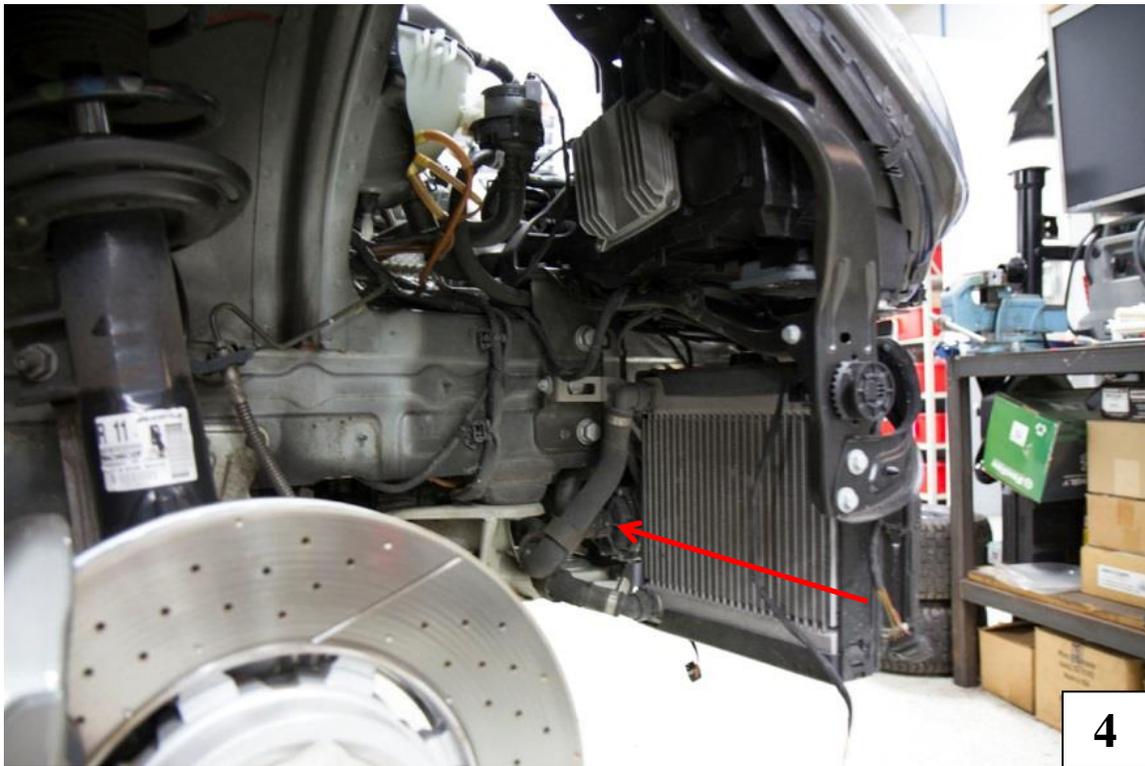


Note: Depending on the model and year some of the parts may not have to be removed.

- 3) Remove the center engine cover and remove the IC heat exchanger reservoir cap. If there is no small reservoir under the center engine cover, you have a combined system; loosen the main coolant reservoir cap.

Note: If you wish to convert your vehicle to a factory divorced system, please contact your sales representative. We offer conversion kits using all factory components.

- 4) Drain the IC heat exchanger system. To do this, disconnect the IC pump inlet hose. The IC pump is located in the RF corner of the front bumper. You could remove the side cooler to gain more access.



- 5) The next few steps will be for replacing the factory mid-heat exchanger with the Alpha mid-heat exchanger.
- 6) Remove these items,
 - a. Both air box ducts
 - b. Core support trim panel
 - c. Both headlights
 - d. Headlight and front bumper/headlight adjuster assembly
 - e. Distronix bracket with horns (if equipped)
 - f. Secondary hood latch bracket
 - g. Upper radiator/core support mounting plate



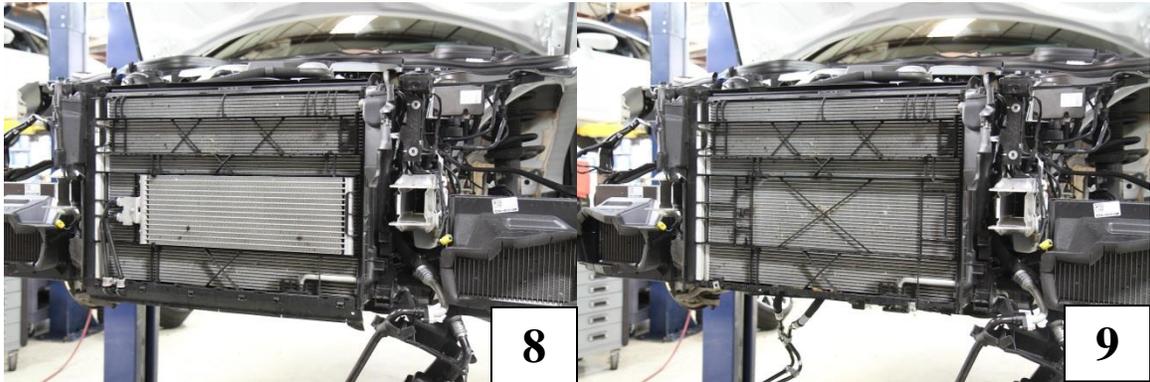
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- 7) Remove the front crash bar. **Caution**, there are two SRS sensors on the back of the bar. Take care in disconnecting the connectors and removing the bar.



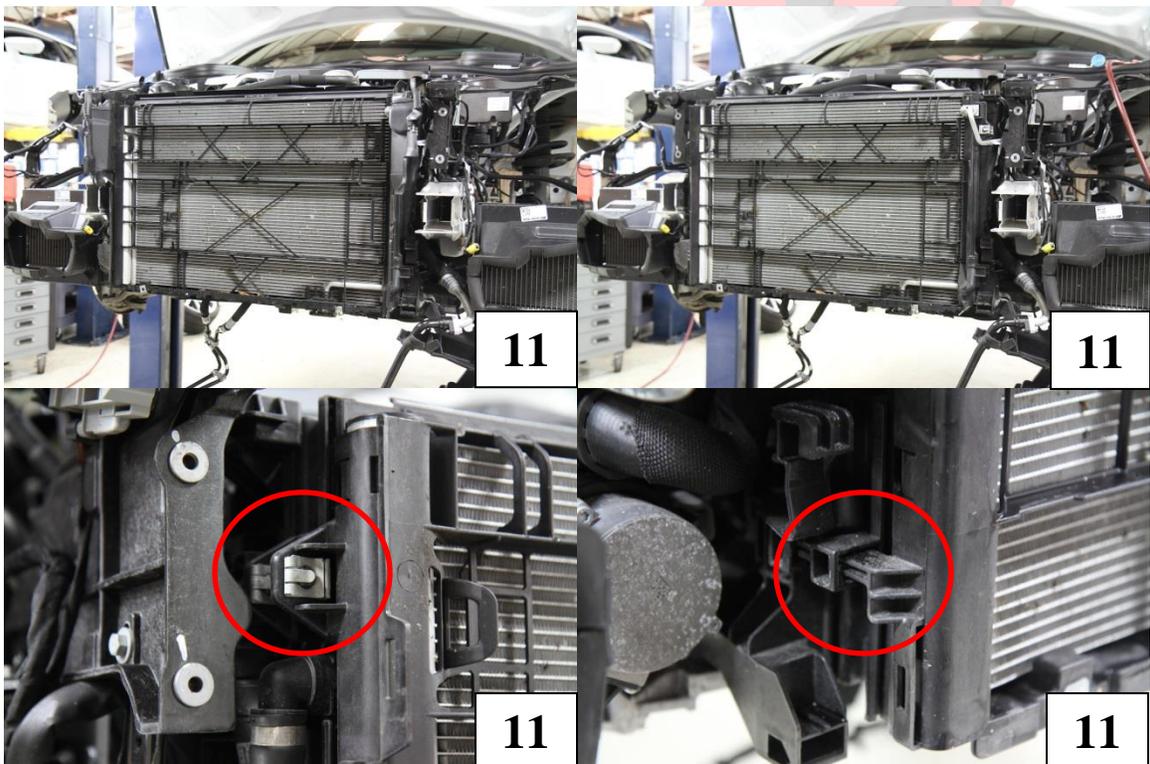
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- 8) Unclip the engine oil cooler from the front of the car and move it out of the way. You do not have to disconnect the lines. Let the cooler hang down out of the way.
- 9) Remove the lower trim covering the transmission cooler lines. Remove the one E10 reverse Torx screw securing the transmission hard lines. Unclip the transmission cooler and allow it to hang out of the way. You do not need to disconnect the cooler lines.

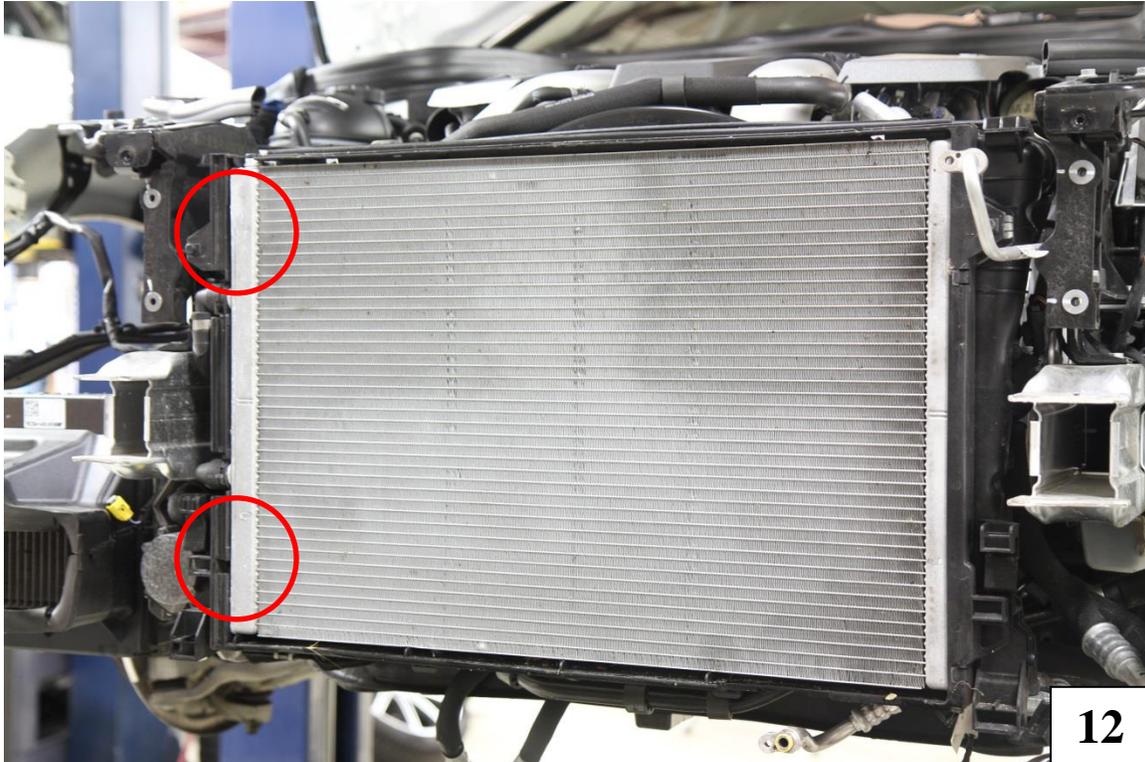


10) Drain the A/C system. The A/C condenser will need to be removed.

11) Remove the air duct trim around the A/C condenser by unclipping it. Once the A/C system is drained, disconnect both A/C lines and pressure sensor connector on the condenser. Remove the A/C condenser from the car by removing the metal clips at the top and releasing the clips at the bottom on both sides.

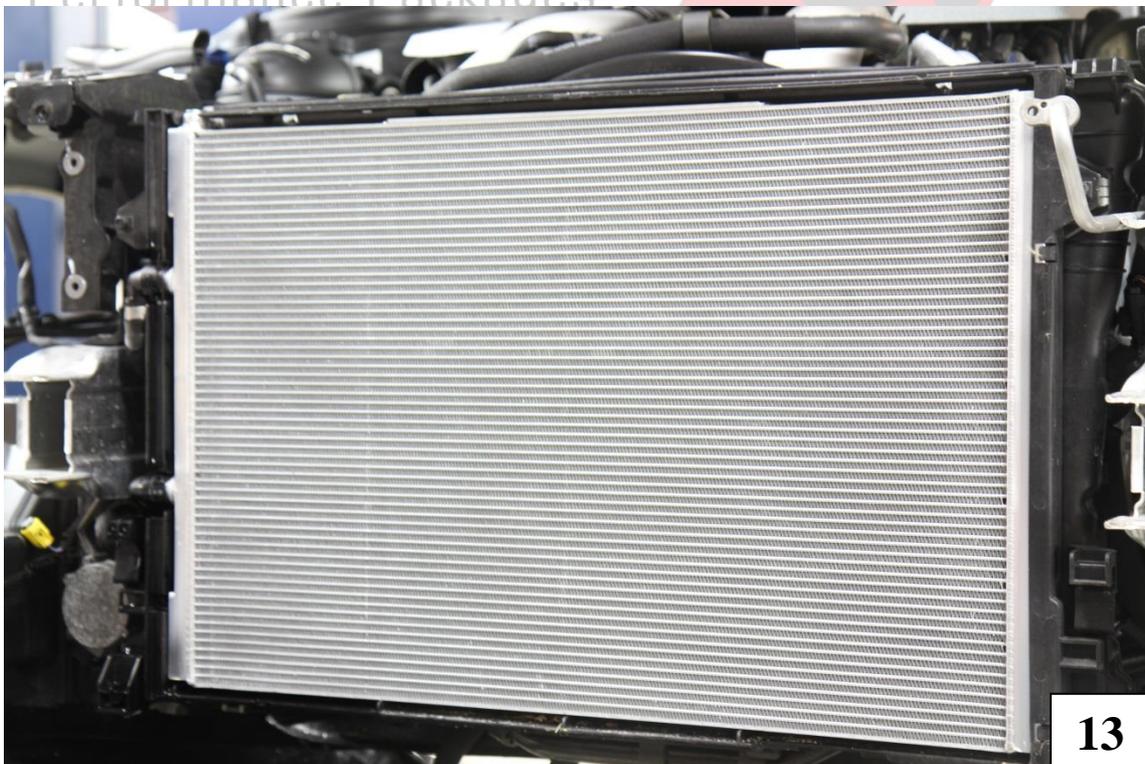


12) Disconnect the hose connection by releasing the metal clip retainers. Release the two plastic tabs on the side with the hose connections to remove the mid-heat exchanger.



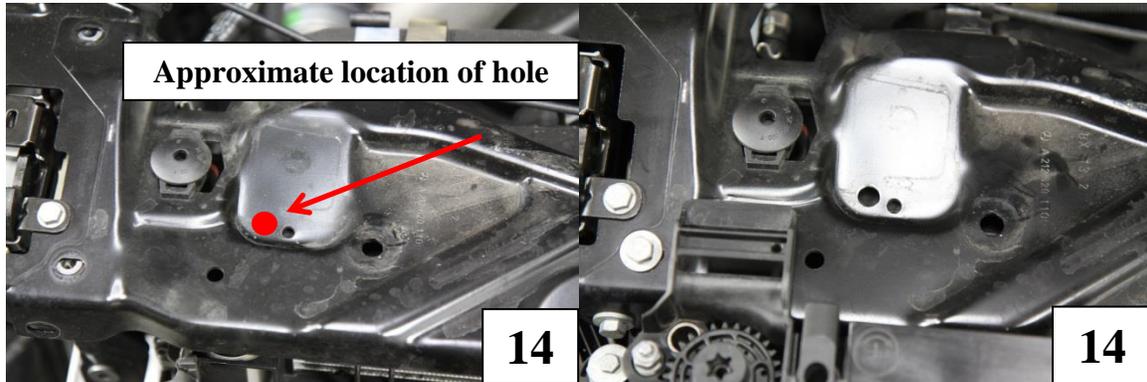
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13) Install the Alpha Mid-heat Exchanger.

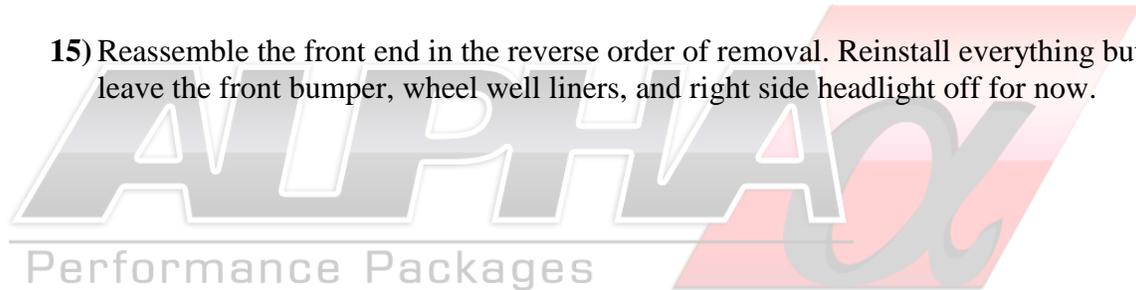


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14) Locate the upper radiator support plate. This plate covers the mid-heat exchanger bleeder screw. On some models, once the front end is reassembled, this plate cannot be removed to bleed the heat exchanger. We recommend drilling a hole to gain access to the bleeder screw while the car is assembled. You will need to line up the upper plate and the location of the bleeder to drill the hole. The next 2 pictures show an approximate location for the hole. Use a 3/8" drill bit to make the hole. Make sure you can loosen the bleeder screw before final reassembly. This hole is covered up by the plastic trim plate that is easily removed while the car is assembled.

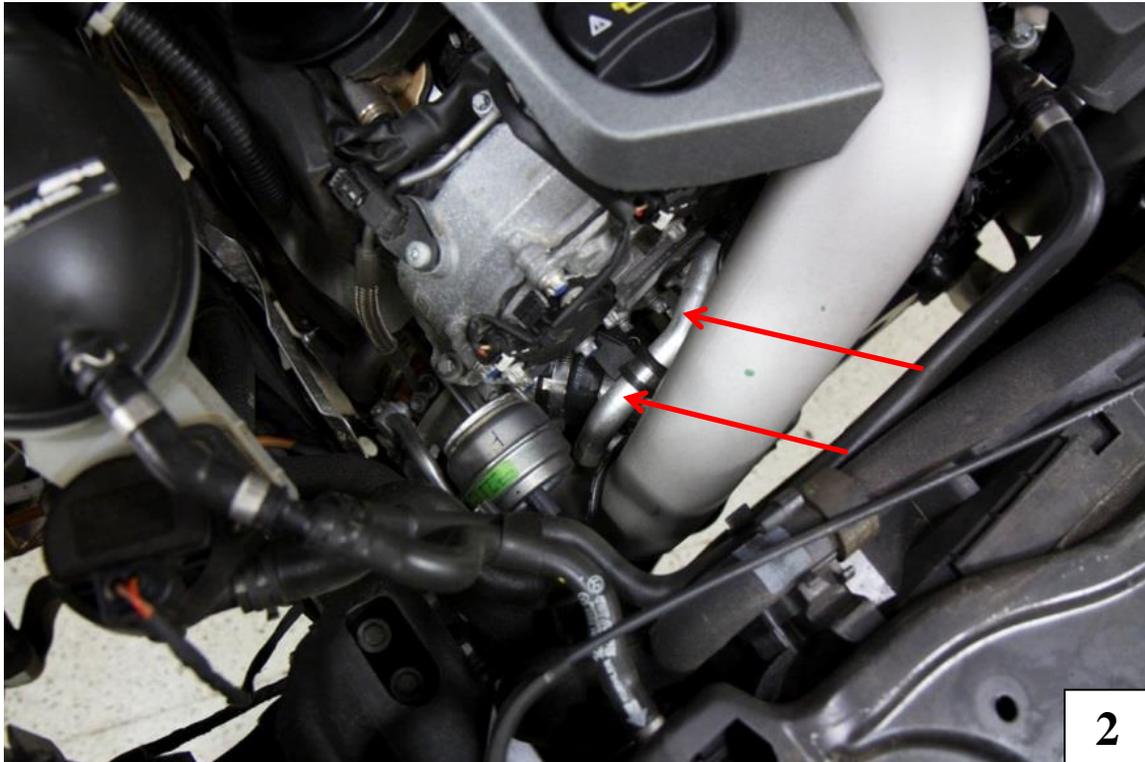


15) Reassemble the front end in the reverse order of removal. Reinstall everything but leave the front bumper, wheel well liners, and right side headlight off for now.

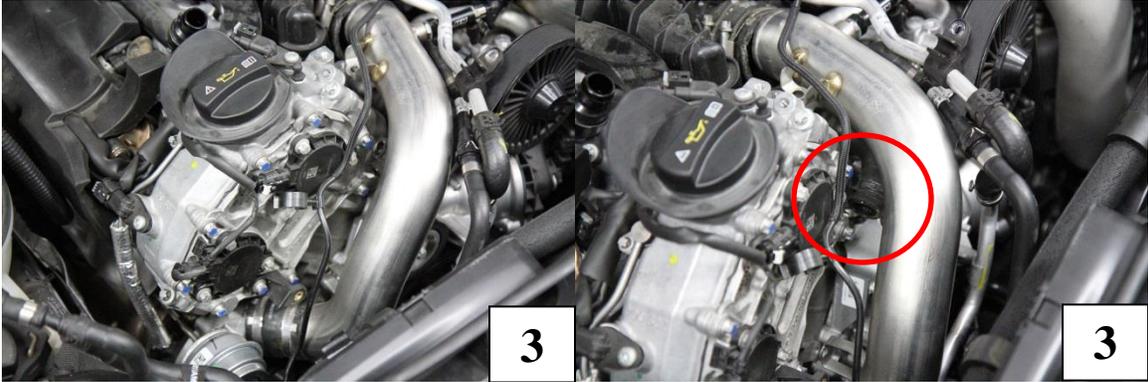


Alpha Reservoir Tank and Additional Water Pump Install

- 1) The next few steps will be to remove the IC water pump outlet hose that routes up to the engine. This is the IC inlet.
- 2) Disconnect the IC pump outlet hose at the IC pump. Follow the hose up to the top of the engine. This hose will need to be removed.



- 3) To remove this hose and hard pipe, remove these items,
 - a. Right side air box
 - b. Right side turbo compressor inlet pipe
 - i. There is one E10 bolt on the upper part of the inlet pipe and a 7mm hex hose clamp on the turbo inlet.
 - c. Pull the right side charge pipe away from the intercooler inlet
 - i. There is a 7mm hex hose clamp connecting the pipe to the intercooler inlet.
 - ii. There are two E10 bolts, one on the upper part of the compressor outlet pipe and the other lower near the compressor outlet.
 - iii. You do not have to completely remove the charge pipe or disconnect it from the turbo compressor outlet; just pull it away from the engine to gain access to the hose clamp.
 - d. Remove the center engine cover bracket from the idler belt pulley.
 - i. There are two small E8 bolts holding the bracket in place.
 - ii. Removing this will allow you to pull the charge pipe away from the intercooler.



- 4) Locate and install the Alpha water pipe. It is a short 6-1/2" pipe with a triangular mounting bracket. Install is as shown using the bolt that held the factory water pipe removed in step # 3.



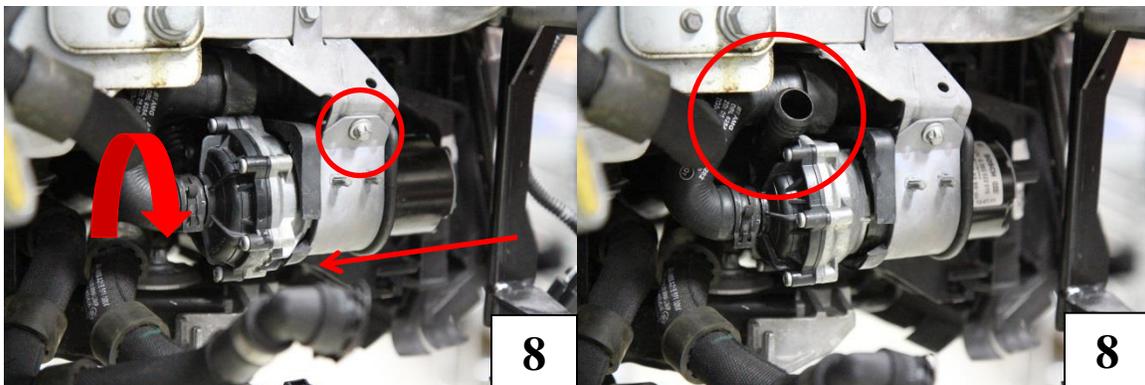
- 5) Reinstall the items removed in step #3.



- 6) Remove the right side head lamp assembly if this has not been done.
- 7) In the next few images shown, the side cooler will be removed. This is for instructional purposes. You however can remove the cooler if you like or move it to the side. This will aid in accessibility for the next few step.

Note: If the side cooler is removed, the engine coolant system will need to be bled.

- 8) Locate the factory IC pump. The pump will need to be clocked and moved slightly towards the rear of the car. To do this, loosen or remove the E10 reverse Torx bolt. Rotate the pump so the pump outlet is pointing as shown in the picture. Silicone spray will aid in moving the pump within its rubber mount.



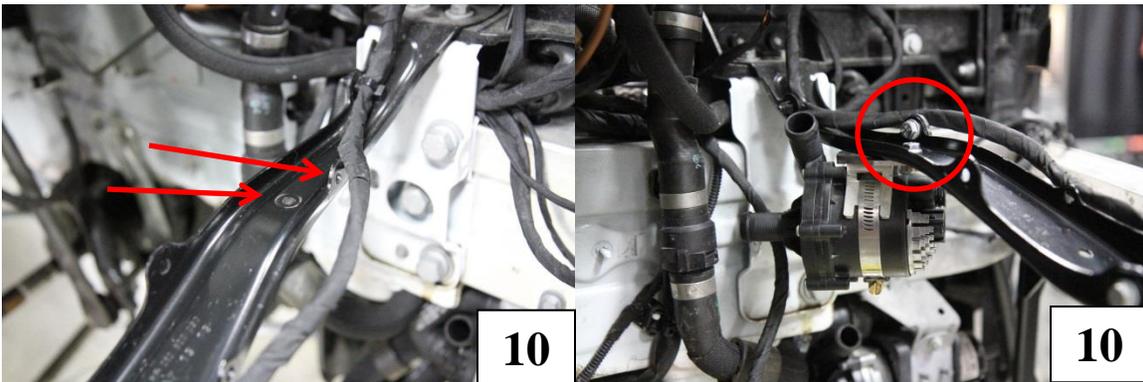
- 9) Locate the Alpha IC pump, bracket, #36 hose clamp, and two M6 x 12mm bolts. The Alpha IC pump will be mounted just under the headlight. This pump will be run in addition to the factory IC pump, it is not a replacement. Mount the pump to the bracket as shown using the #36 hose clamp. Leave the clamp loose to allow for adjustment once installed.



9

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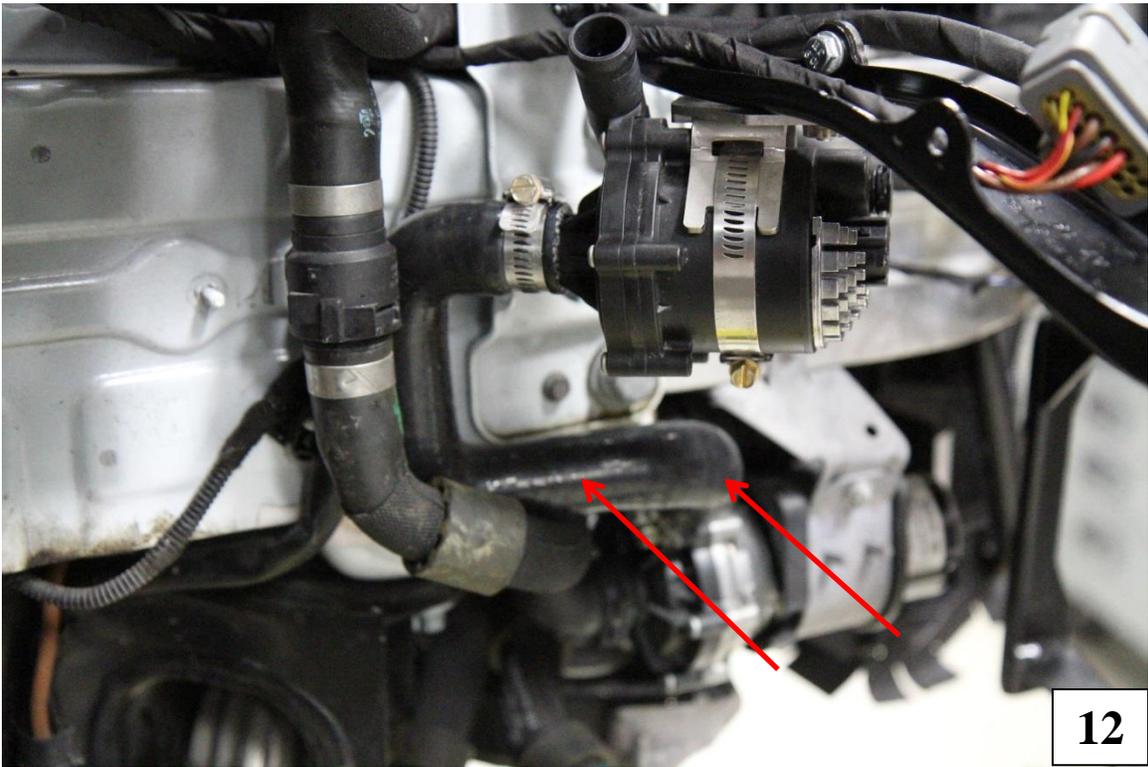
- 10) Install the bracket and pump assembly in the location shown using the two M6 x 12mm bolts and existing factory holes. You will have to unclip a factory wire harness in one of the factory holes.



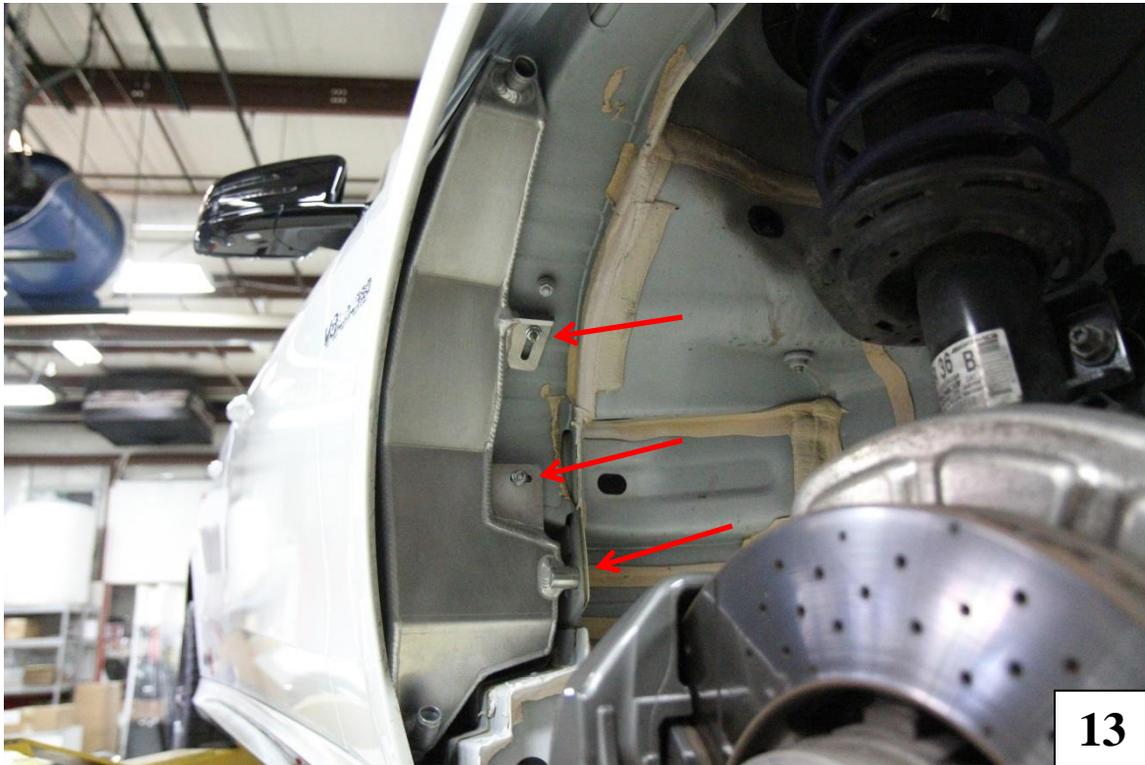
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- 11)** Rotate the Alpha IC pump so the outlet points upwards in the bracket as far as you can, leave enough clearance to install a hose and a clamp. Tighten the #36 hose clamp only snug enough to hold the pump in place. Do not over tight the clamp.
- 12)** Locate the short silicone hose and two #12 hose clamps. This hose connects the outlet of the factory IC pump to the inlet of the Alpha IC pump. Install the hose as shown. The hose can only be installed in one direction.



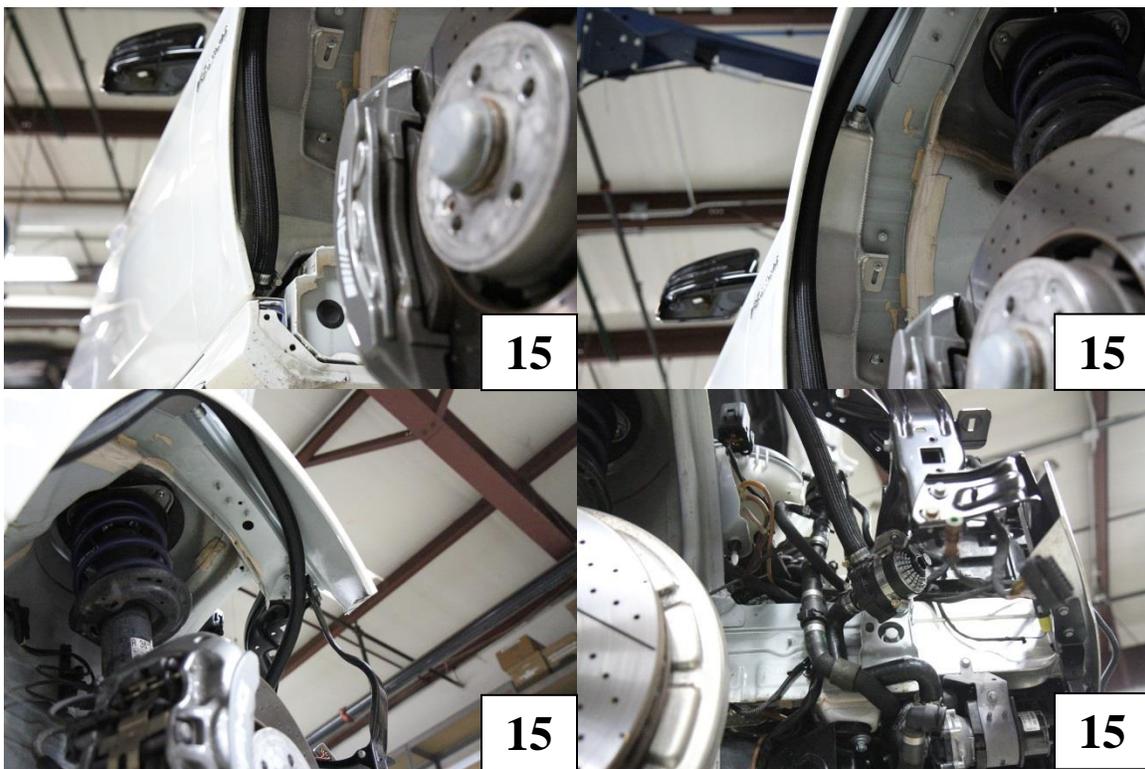
13) Locate the Alpha reservoir tank, two M6 nuts, and one M8 x 12mm bolt. The Alpha reservoir tank will bolt into the rear section of the right side fender. Use the supplied hardware to bolt the tank in place. There are two factory studs and an open hole to mount the Alpha reservoir as shown in the next picture.



14) Locate the supplied heater hose. There is 100” total. You will need to fit two hoses. The first hose will be approximately 52” long and will route from the outlet of the Alpha IC pump to the lower inlet of the Alpha reservoir tank.

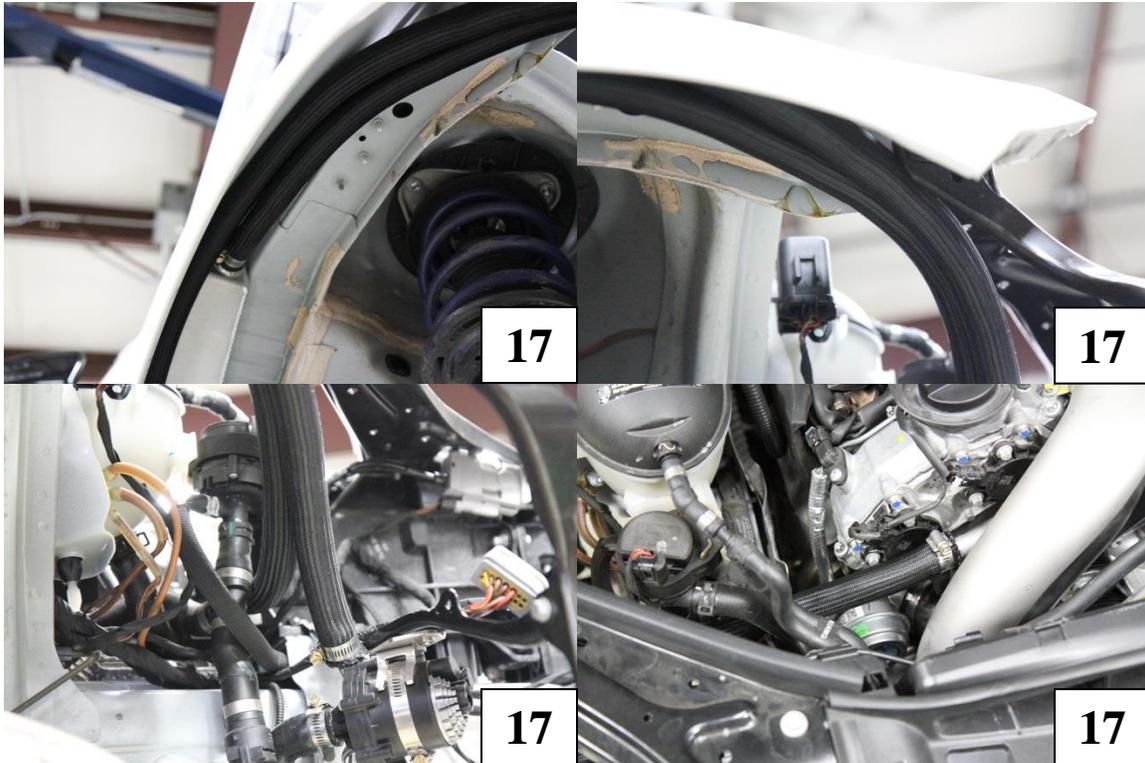
15) Fit the hose and follow the routing shown in the picture before cutting the hose. Your application may be slightly longer or shorter depending on exact routing. You may also have to test fit the head lamp to check for clearance and routing of the hose. Once the hose is cut to length, cover it with the supplied nylon braiding. Install the hose with two #10 hose clamps as shown.

Note: See the addendum in the rear of the instructions for tip on how to install the nylon braid.



16) The second hose will be approximately 41” long. This hose will route from the upper outlet of the Alpha reservoir to the Alpha water pipe installed in step # 4.

17) Fit the hose and follow the routing shown in the picture before cutting the hose. Your application may be slightly longer or shorter depending on exact routing. You may also have to test fit the head lamp to check for clearance and routing of the hose. Once the hose is cut to length, cover it with the supplied nylon braiding. Install the hose with two #10 hose clamps as shown.



- 18)** Locate the supplied 12” long split wire loom. Cut the loom in half making two 6” long pieces. Install the loom on the hoses installed in steps # 15 and 17. The hose passes through a small area in between the fender liner and a body seam. This will help to protect the hose.

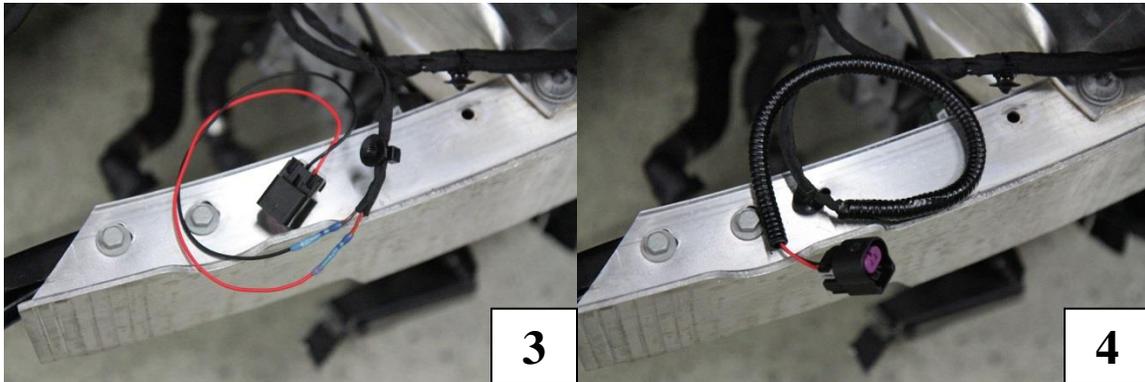


- 19)** Reinstall the side cooler if this was moved off to the side or removed. Leave the head lamp out for now.

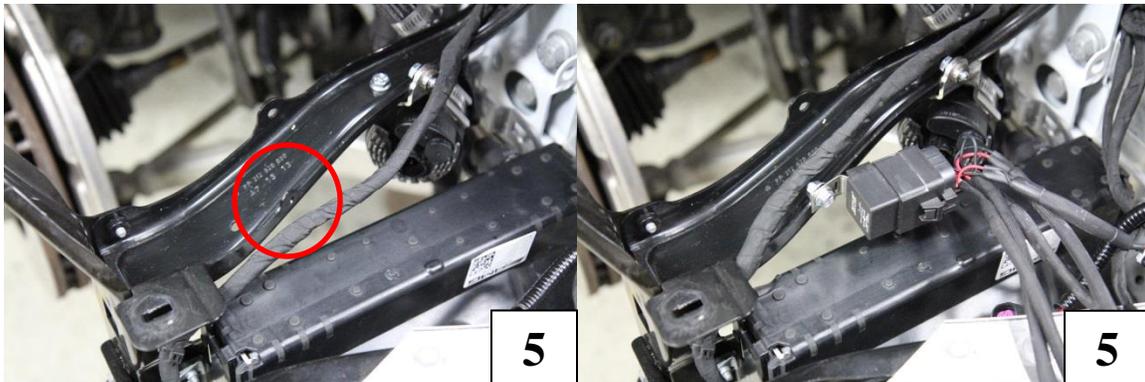


Wiring Harness Install

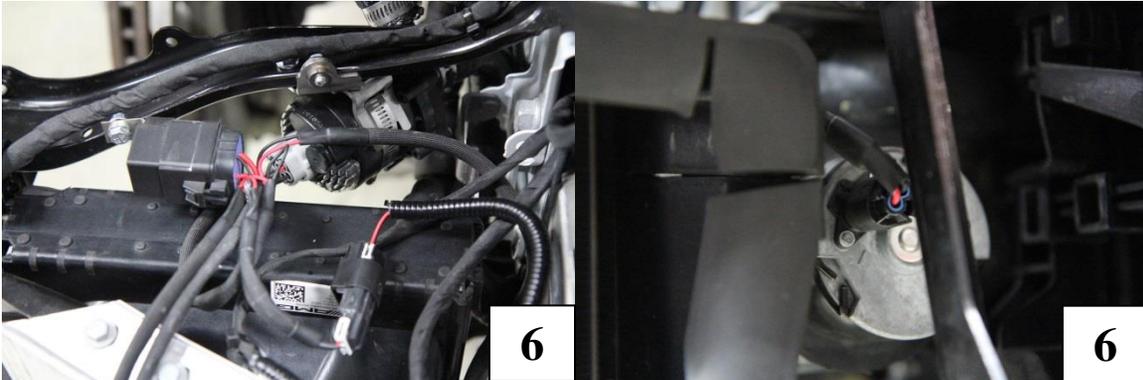
- 1) Locate the Alpha wiring harness. Near the relay on the harness, there is a two pin GT-150 series connector. This connector will have a pigtail with a red and black wire. This pigtail will need to be wired into the factory IC pump harness.
- 2) Unplug the factory connector from the factory IC pump. Cut the connector off approximately three inches from the connector. Discard the factory two pin IC pump connector.
- 3) Wire in the two pin pigtail to the cut wires on the factory harness. Wire the **Black** wire to the **Brown** wire. Wire the **Red** wire to the **Red/Blue** wire. Use the supplied blue butt connectors. Use a heat gun to shrink the connectors. They are filled with sealing glue to keep moisture and the element out of the connection.
- 4) Locate the 12" long piece of ¼" split loom. Cover the harness connection you just made and wrap it up.



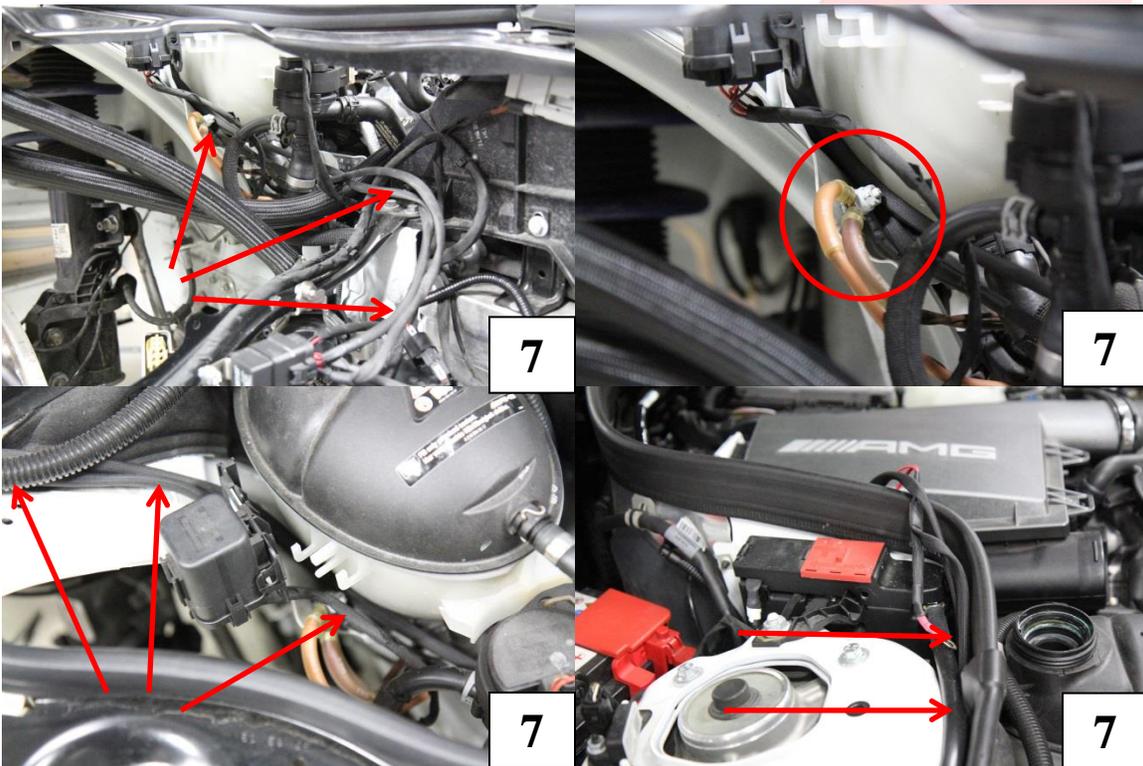
- 5) Locate a M6 x 12mm bolt and M6 nut. Mount the relay on the harness to the open factory hole as shown.



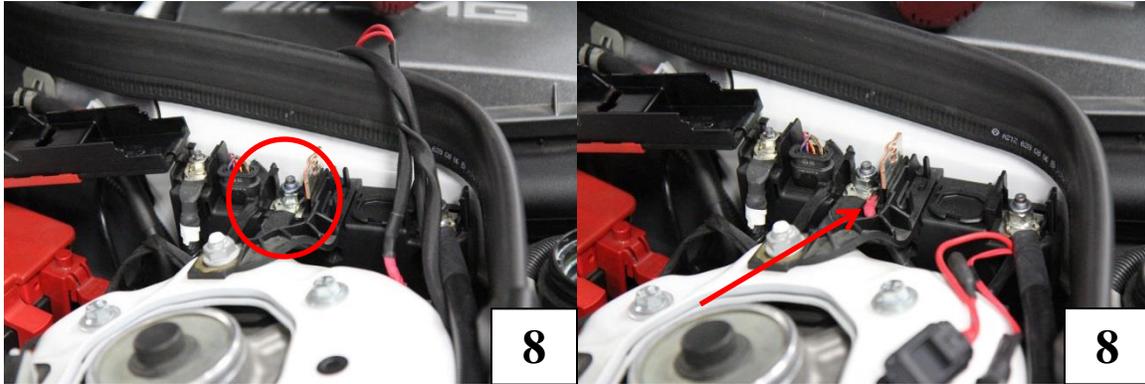
- 6) You may now make the connections at the IC pumps. Plug in the four pin connector to the Alpha IC pump. Plug in the small two pin connector to the factory IC pump. Plug in the GT-150 two pin connector to the pigtail wired in step # 3.



- 7) Now route the harness up to the battery as shown in the next few pictures. About half way on the harness in between the relay and the fuse holder, there is a ground connection. Connect this ground to the factory ground location just under the engine coolant reservoir.



- 8) Lift up the battery jumper cover. It is the one with the red slide cover. The battery connection will be made here. Unbolt the battery cable shown and install the red ring terminal under the factory battery cable as shown.



- 9) There is a fuse holder and a momentary switch. Make sure the 25 amp fuse is installed. The momentary switch when pressed will turn on both pumps. This switch will aid in bleeding the system. You may mount the fuse holder and switch anywhere you like. We have supplied a M6 bolt and nut. We chose to mount the fuse holder as shown in the picture to the battery cable cover.



- 10) Reinstall the head lamp.
- 11) Reconnect the battery. With the key off, press the momentary switch to make sure both IC pumps operate. The Alpha IC pump has a few second delay during start up.

- 12)** Once the wiring is confirmed and both pumps operate, reassemble the front end of the car.
- a. Front bumper
 - b. Fender liners
 - c. Under trays
 - d. Wheels
 - e. Reconnect both batteries



Intercooler System Bleeding with Air Lift

- 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.



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- 2) Use the air lift system to fill the system with coolant according to the tool's instructions. Once filled, crack the bleeder screw open on the top of the mid-heat exchanger until there is a solid stream of coolant with no air. **CAUTION**, do not completely unscrew the fitting. It may fall out into the bumper. If this happens, you will need to completely disassemble the front end again to reinstall it.
- 3) Run or drive the car until the IC pump turns on. This could take 10 minutes or more of idle time.
- 4) Once the pump cycles on and off, open the bleeder screw to release any more air and check the fluid level.
- 5) 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.
- 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) Enjoy!

Intercooler System Bleeding with Standard Filling

- 1) Fill the system through the factory reservoir with the bleeder screw on the mid-heat exchanger open. **CAUTION**, do not completely unscrew the fitting. It may fall out into the bumper. If this happens, you will need to completely disassemble the front end again to reinstall it.



- 2) It will only take a little bit of coolant. 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 until coolant comes out of the bleeder screw then close the screw.
- 4) When the pump turns off, open the bleeder screw to release any more air and check the fluid level.
- 5) 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.
- 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) Enjoy!

Radiator System Bleeding with Air Lift

- 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.



Performance Packages

- 2) Use the air lift system to fill the system with coolant according to the tool's instructions. Once the system is filled, remove the tool.
- 3) Run the vehicle until the fans cycle, topping off coolant as needed.
- 4) If the reservoir pushes coolant out at any time, there is air in the system still that will need to be bled out. Continue running the vehicle and topping off the coolant until the level is stable.
- 5) Test drive the vehicle and adjust the coolant level until it remains at a stable level.
- 6) Repeat steps #3-5 as needed.
- 7) Enjoy

Radiator System Bleeding with Standard Filling

- 1) Fill the system through the engine reservoir until full.



- 2) Run the vehicle until the fans turn on adjusting the fluid level as needed.
- 3) If the reservoir pushes coolant out at any time, there is air in the system still that will need to be bled out. Continue running the vehicle and topping off the coolant until the level is stable.
- 4) Test drive the vehicle and adjust the coolant level until it remains at a stable level.
- 5) Repeat steps # 1-4 as needed.
- 6) Enjoy