



Mercedes E63 / CLS AMG Turbo Cooler Kit

(RWD E63/CLS63/ Non S Model Only)



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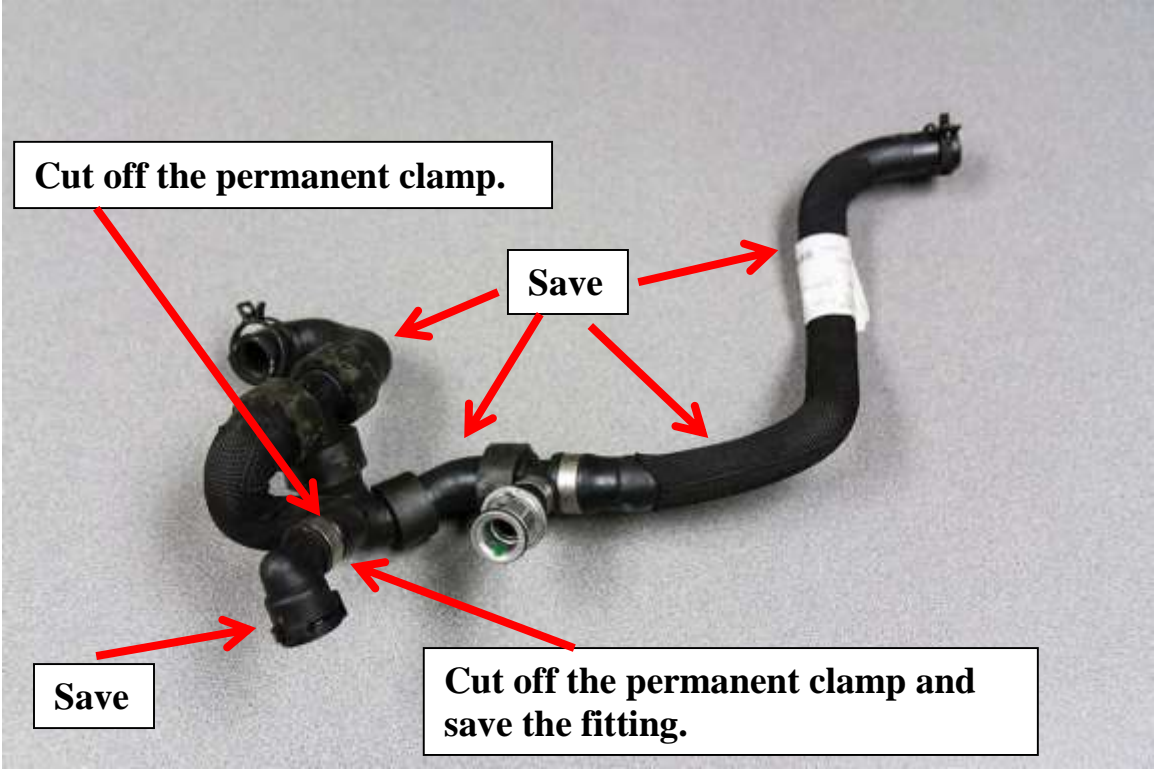
These instructions are provided as a guide only as there are many variables that cannot be accounted for concerning your particular vehicle, including but not limited to model year differences, model differences, the presence of non-OEM parts, and modifications that may already be or were previously 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.

Disassembly

- 1) Start by removing and disconnecting these items
 - a. Disconnect both front and rear batteries
 - b. Under trays
 - c. Front wheel well liner on left side
 - d. Front and rear wheel well liner on right side
 - e. Front bumper
 - f. Remove both head lights
 - g. Distronic Bracket (if applies)
- 2) Drain the coolant
 - a. Drain just the heat exchanger system for divorced models
 - b. Drain the entire coolant system for non-divorced models
- 3) Remove the factory hose assembly that connects to the lower port of the factory heat exchanger and routes to the inlet side of the factory IC water pump. This can be done without removing the front radiator clip assembly. Releasing the retainer clip for the lower factory heat exchanger fitting will be tight but does clear when you roll it out.
 - a. On Non-divorced systems, there will be a tee that will route up to another tee connecting to the radiator and the main coolant reservoir. Disconnect at these two points to remove.
 - b. On divorced systems, disconnect the hose leading up to the IC system reservoir.
- 4) This factory hose assembly will need to be modified. Divorced or non-divorced, the modification is the same.
 - a. You will need to remove the hose that connected the lower outlet of the factory heat exchanger to the tee on this assembly. To do so, you will need to cut off the permanent hose clamps. You will need to cut through these bands without damaging the plastic fittings. The hose removed will not be reused but the plastic fittings will be. See illustrations. A Dremel tool with a cut off wheel is the best method.
 - b. Set both sections aside, the hose assembly and the 90 degree plastic quick connect fitting, to install on a latter step.
- 5) Remove the factory IC pump outlet hose and pipe. This assembly routes from the outlet of the factory IC pump up to the inlet of the factory intercooler. Remove the section up until the short factory 90 rubber hose just under the charge pipe. Leave the short 90 degree rubber hose and clamps.
 - a. To gain access to the hose clamp just under the charge pipe, remove the two mounting bolts that hold the charge pipe in place. One on the front cover and one up top. Disconnect the upper rubber coupler on the intercooler. You should not have to disconnect the lower or completely remove the charge pipe, just pull out and away to gain access.
 - b. Leave everything pulled away for now as this tube is getting replaced with a new Alpha water pipe.
- 6) Locate and loosen the factory IC pump mounting clamp. Turn the pump in the mounting clamp so the outlet is pointing into the passenger side wheel well.

You will also need to slide the pump towards the rear of the car slightly. Use a small screwdriver to lift away the rubber mount and spray a little silicone spray between the pump and rubber mount to loosen it up. This will help with rotating the pump.





picture above.

This pipe will replace the one removed in the

Note: For all hose and silicone hose installation, there is nylon braided sleeve provided. This is highly expandable and flexible sleeve. Use this on all hose and silicone hoses for added protection and a cleaner look. The next several steps are for installing the sleeve.

Hose Sleeve Installation Instructions

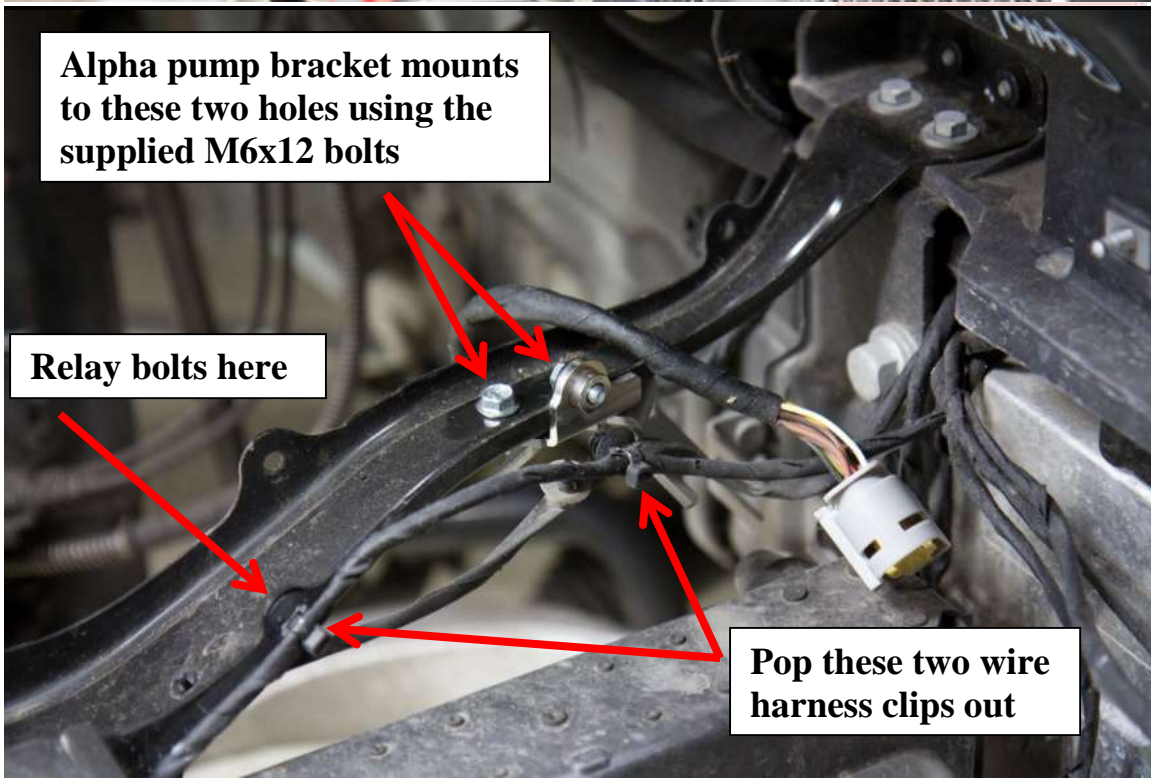
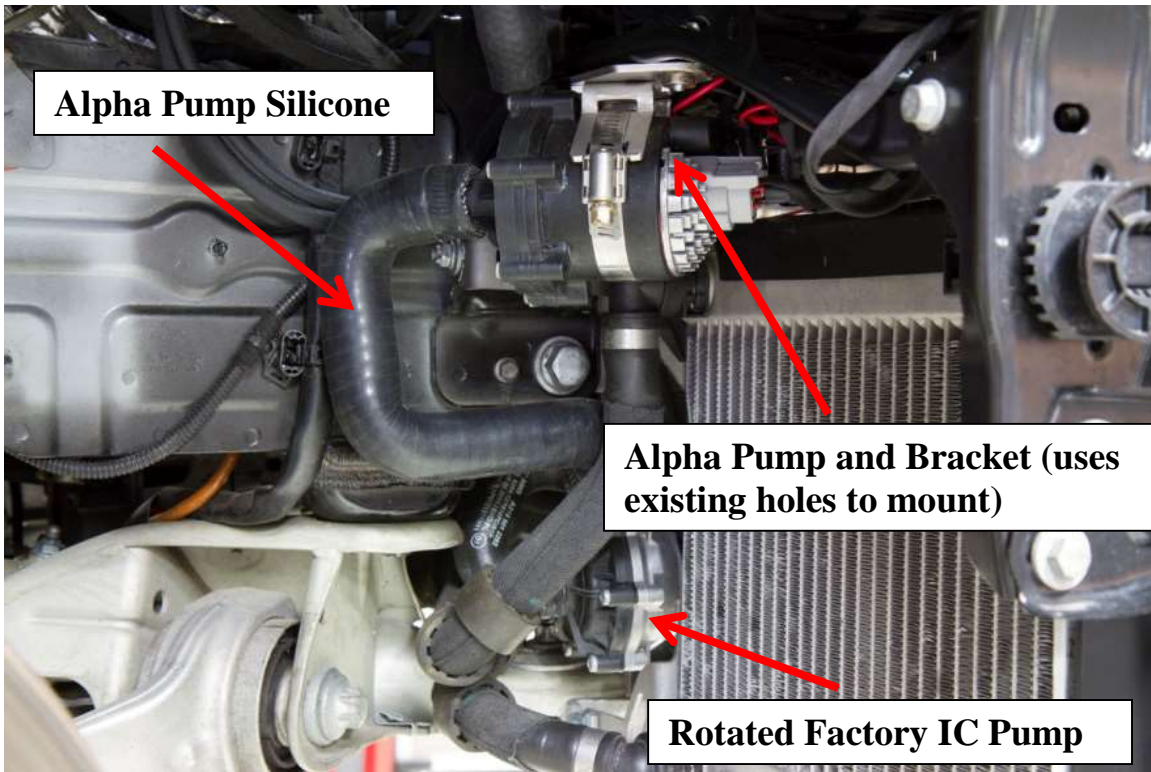
Note: These next few steps apply after the hoses have been cut with length and fitment has been confirmed.

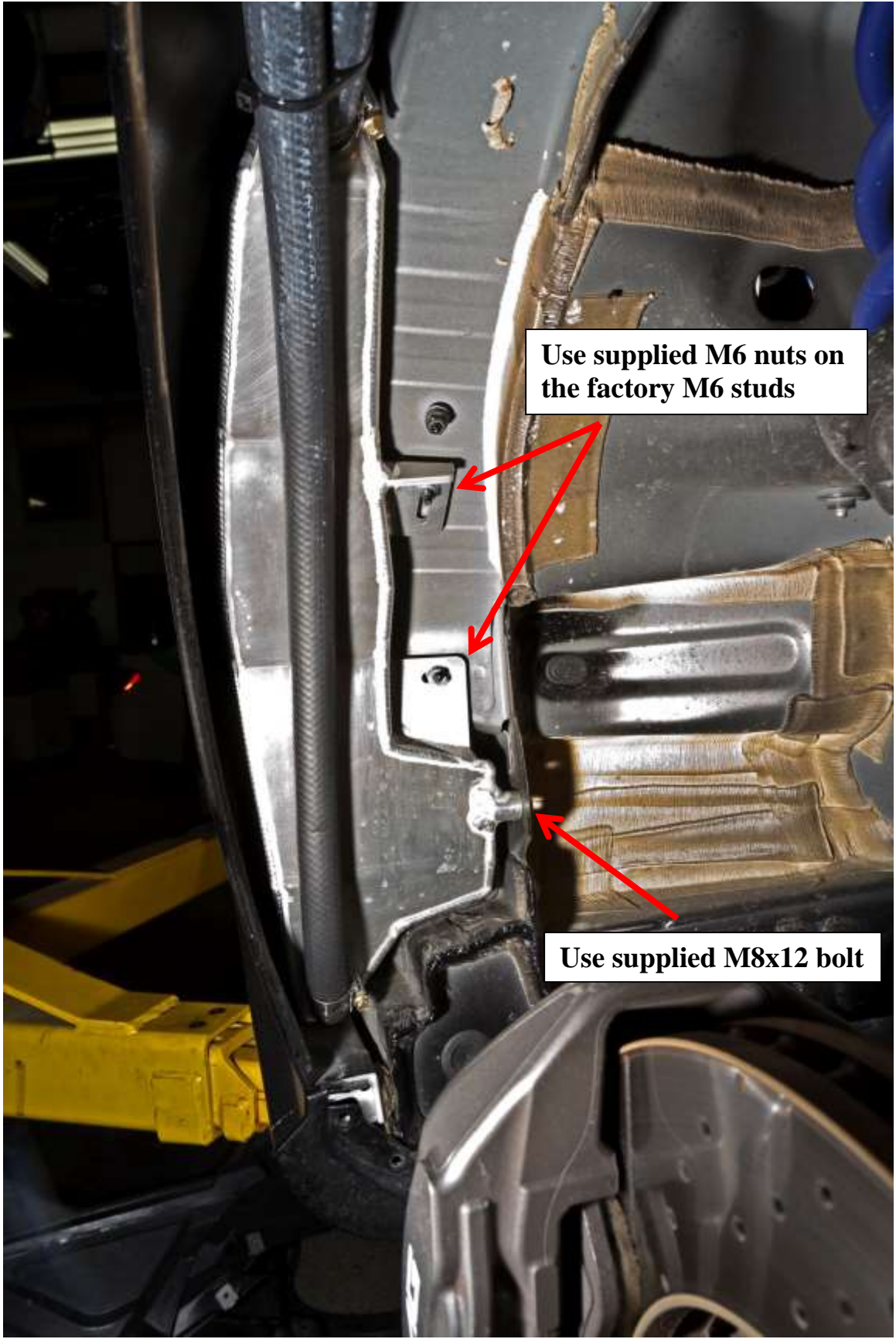
- 7) The sleeve is highly expandable. Expand the sleeve over the hose, run about an inch or two passed both ends of the hose.
- 8) Pull the sleeve tight and use the hose clamps on the ends of the hoses to hold the sleeve in place.
- 9) Trim the excess, this does not need to be flush to the hose, leave approximately 1/2".
- 10) Use a lighter or small torch to melt the sleeve down to the edge of the hose and the clamp. This will help hold the sleeve in place and keep it from unwinding.

Alpha Tank and Pump Installation

- 11) Locate the Alpha pump and bracket. The bracket installs on the factory fender support bracket using existing holes. There is a wire harness retainer clip in one of these holes that needs to be removed. Use two M6x12 bolts to secure the Alpha pump bracket to the fender support.
- 12) Install the Alpha IC pump into the bracket and secure using the supplied #36 hose clamp. Rotate the pump in the bracket so the outlet is point upwards as much as possible without interfering with the fender bracket and the headlight.

- 13)** Locate the Alpha pump silicone hose. This hose will route from the outlet of the factory IC pump to the inlet of the Alpha pump. Use two supplied #12 hose clamps to secure. Adjust the pumps as necessary for clearance.
 - a.** Some models will have a vertical coolant hose that runs along the frame. You can adjust these hoses so the Alpha silicone hose is behind the factory one. Check wheel well clearance, it will be tight.
- 14)** Locate the Alpha reservoir tank. This tank mounts inside the right side fender. There are two factory M6 studs and an open hole in the sheet metal to bolt the reservoir to. Carefully install the tank and use the two supplied M6 nuts and M8x12 bolt to secure.
- 15)** Locate the heater hose. You will need to cut each piece to length. This was uncut to provide flexibility during install if there has been other modification done to the car.
- 16)** The first hose routes from the Alpha pump outlet to the lower inlet of the Alpha reservoir tank. Route the hose as shown. Once the hose is cut to length, install it using two #10 hose clamps.
- 17)** Locate the Alpha water pipe. This pipe will install using the factory hardware where the factory water pipe was removed in step **5**). After installed, reinstall the factory charge pipe.
- 18)** The second hose routes from the upper outlet of the Alpha reservoir tank to the inlet of the Alpha water pipe just install in step **17**). This is the inlet of the factory intercooler. Cut and install the hose following the routing of the first hose installed in step **16**). Route the hose so it is not stretched or interferes with other factory components. Use two #10 hose clamps to secure. Use zip ties to tie both hoses together through the wheel well. Check wheel well liner clearance for proper placement of the hoses.
- 19)** Locate high temp convoluted tubing. There is 12" of 1-1/4" tubing. Cut the tubing in half. Cover the hoses where they turn out from the wheel well to the engine bay. This is done to provide a little extra protection from the surrounding sheet metal.





Use supplied M6 nuts on the factory M6 studs

Use supplied M8x12 bolt

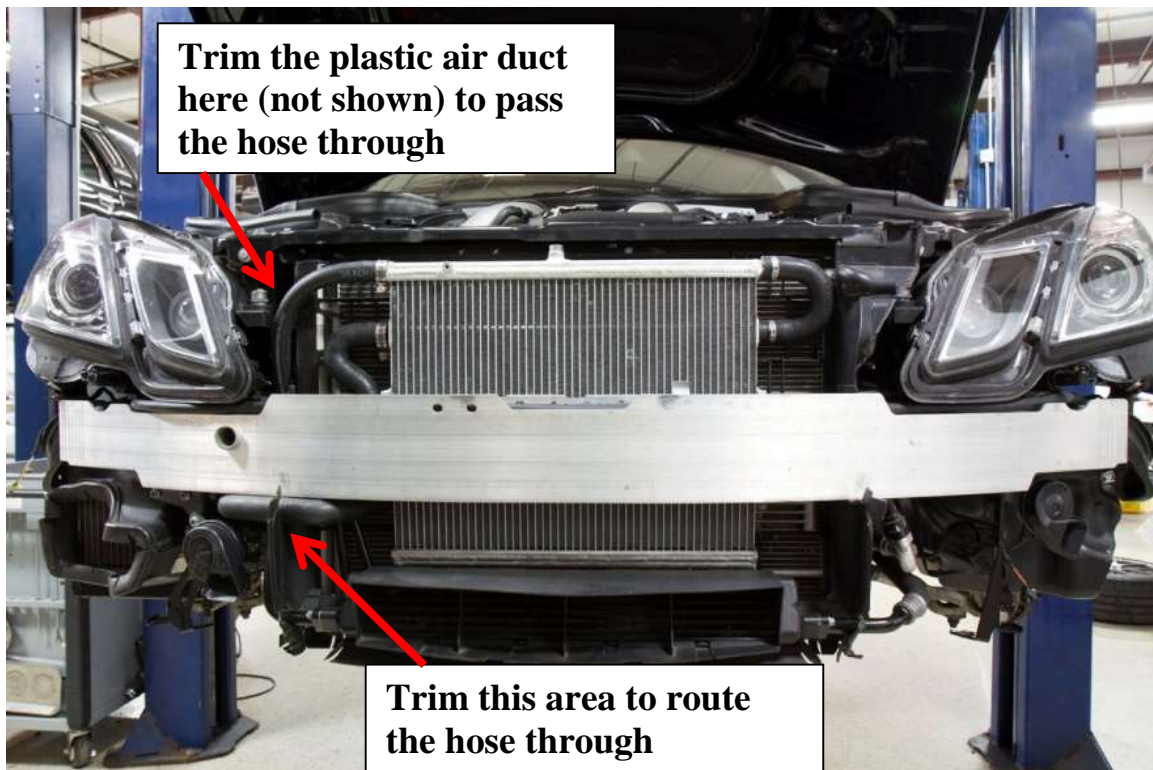
Alpha Heat Exchanger Installation

- 20) Unbolt the front crash bar. There are four main bolts to the frame and four M6 bolts on the sides. Just pull the crash beam outwards slightly but do not remove.

Caution! Do not disconnect the impact sensors with the batteries connected! This may cause the main SRS battery disconnect to discharge. This is a safety feature with Mercedes that in case of an accident, the SRS system will sever battery power to the vehicle. This part is expensive to replace.

- 21) Set the Alpha heat exchanger in place, it locks into place on the crash beam. Slide the crash beam back into place and drop the four main bolts in. Locate the heat exchanger mounting bracket and use it to line up the heat exchanger. Once the heat exchanger is properly located, mark where the brackets sit on the crash beam. Removed the four main bolts, slide the beam back out and remove the Alpha heat exchanger.
- a. The E63 Alpha heat exchanger mounting bracket replaces the secondary hood latch assembly and bolts into the same location.
 - b. The CLS Alpha heat exchanger mounting bracket bolts to the crash beam and is an independent piece with supplied hardware.
- 22) Locate the rubber edge protector. Cut the section in half and install it on the crash beam where the Alpha heat exchanger sits.
- 23) Reinstall the Alpha heat exchanger and crash beam.
- 24) Locate the Alpha heat exchanger silicone hose. This hose routes from the passenger side outlet of the Alpha heat exchanger, (the pipe running alongside the rear of the heat exchanger) down to the factory hose assembly cut in step 4). The silicone hose will connect to the plastic tee leading into the factory IC pump inlet. You will need to trim the plastic air shroud just under the crash beam on right side of the car. Trim only what is needed to install the silicone hose.
- 25) Once the plastic air shroud is trimmed, install the Alpha heat exchanger silicon using a #12 hose clamp on the heat exchanger and a #16 hose clamp on the factory plastic tee.
- 26) The last hose will be difficult to install. This hose will route from the lower outlet of the factory heat exchanger to the right side upper inlet of the Alpha heat exchanger. Grab the factory 90 degree quick connect fitting that was cut out of the hose assembly in step 4). Cut 18" of hose and connect it to the fitting. This hose is cut long and will be trimmed after install.
- a. Two clamps are provided, a 27.1 Gapless Pinch Clamp and a #10 Breeze Hose Clamp. There is not much room to work with on the lower outlet of the factory heat exchanger and the frame rail so the Gapless Pinch Clamp is recommended. There is enough room to use a standard hose clamp as well.

- 27) Install the hose on to the lower outlet of the factory heat exchanger. There is a plastic air duct on the right side that will need to be trimmed to allow the hose to pass through to the Alpha heat exchanger. Trim what is needed and pass the hose through. Connect the hose to the Alpha heat exchanger using a #10 hose clamp.
- 28) Install the Alpha heat exchanger bracket (E63 and CLS). Final reinstall the front crash beam and double check all hose connections and mounting hardware.
- 29) For the E63 with DISTRONIC, a bracket is provided which will completely replace the factory one. Before reinstalling the bumper, install the new Alpha DISTRONIC bracket.

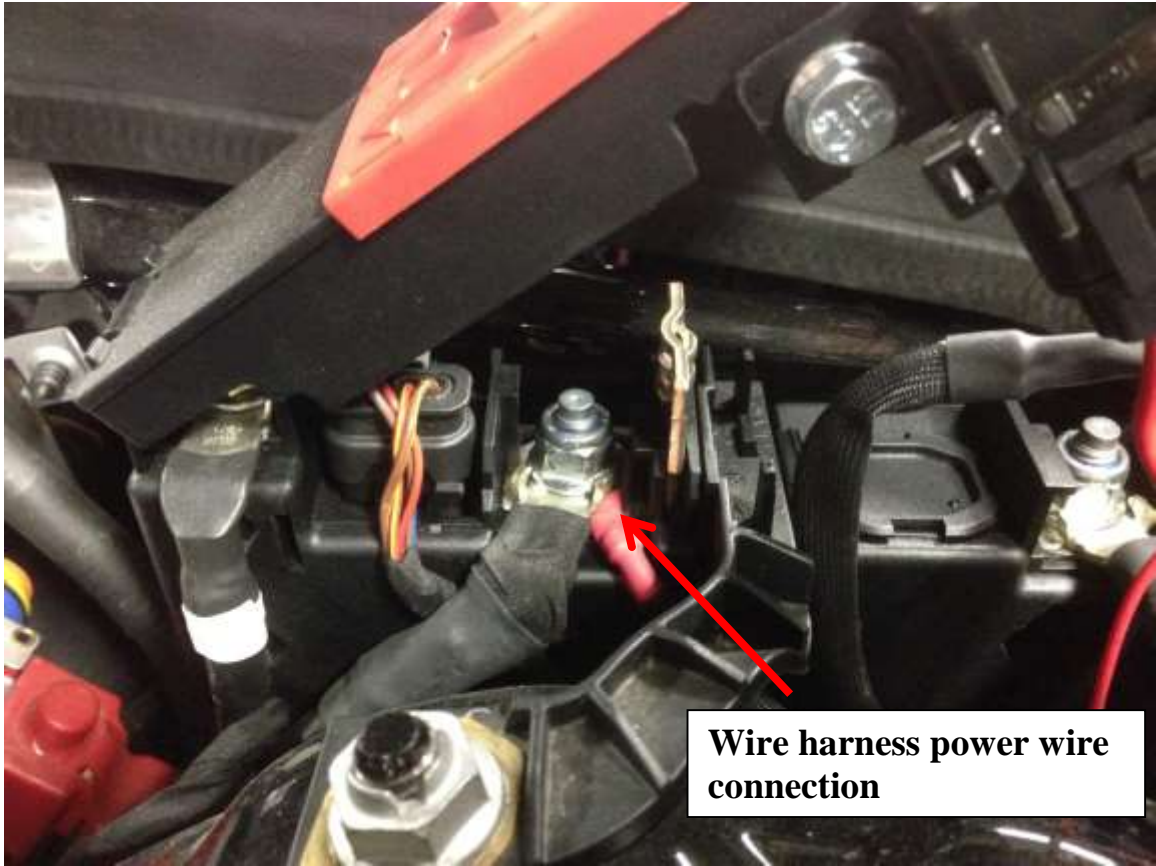


Alpha Wiring Harness Installation

- 30) Locate the wiring harness. The relay of the harness mounts to an existing factory hose in the fender support bracket just under the right side headlight.

You may have to unclip a wire harness push retainer to free up the hole. Bolt the relay in place with the supplied M6 bolt and nut. Route the end with the fuse and switch up under the factory coolant reservoir following the large battery cable.

- 31)** There is an eye ring terminal that will sit out of the harness just under the factory coolant reservoir. This is the ground for the harness. Connect it to the factory ground under the factory coolant reservoir.
- 32)** Route the fuse holder and switch up to the battery jumper location. Connection will be made here.
- 33)** Connect the main battery eye ring terminal to the middle connection in the box.
- 34)** You can choose to leave the fuse holder push down and out of the way or bolt it to the battery terminal lid. Same goes for the momentary switch. After bleeding, it can be push down and out of the way or zip tied to the fuse holder.
 - a.** The momentary switch located next to the fuse holder is used for bleeding only. Since the pumps will operate like factory, (PCM controlled) the momentary switch was provided to help bleed the system and can be done without the car running.
- 35)** Leading out of the relay are 2 connectors, one for the new Alpha IC pump and the other for the factory Mercedes IC pump. Plug these connectors in.
- 36)** The last connection to make is the trigger. Locate the factory IC pump connector and cut the connector off a few inches from the connector. The last lead you will see on the Alpha harness will be a two pin connector with two open wires. Connect these two open wires to the two wires you just cut on the factory IC pump harness. Polarity does not matter in this case. Use the supplied butt connectors.
 - a.** The supplied butt connectors are heat shrink connectors. Use a heat gun to shrink the connectors until the glue inside pushes out of any opening until completely sealed.
- 37)** Once all connections have been made, press the momentary switch and check the operation of both pumps.



Wire harness power wire connection



Optional fuse holder and switch mounting



Filling and Bleeding the coolant system

- 38) Filling and bleeding the system will take a little bit of time since the overall capacity of the system has been increased by over 3 gallons.
- 39) The best way to bleed the system is to fill from the reservoir and open the bleeds on the Alpha heat exchanger and the factory heat exchanger.
 - a. The factory heat exchanger bleed is a plastic phillips head screw on the top right side of the heat exchanger. To gain access to it, you will need to remove the upper core support plate.

Tip: Mark the location of the factory heat exchanger bleeder screw on top of the core support plate and drill a hole. This will allow you to loosen this bleeder screw while everything is assembled.

- b. The bleed on the Alpha heat exchanger is a standard hex
 - c. Divorced systems fill from the small reservoir on the top of the engine and non-divorced systems fill from the main coolant reservoir.
- 40) Continue to fill the system until all the air has been released from the heat exchangers.
- 41) Tighten the bleeder screws and press the momentary switch to run the pumps. Add coolant as necessary while the pumps are running. After a couple minutes release the switch to turn off the pumps. If coolant pushes out of the reservoir after the pumps shut off, it is an indication there is air in the system.

The level in the reservoir will recede slightly with the pumps on and rise slightly with them off but should not be a drastic over flow unless air is present.

- 42)** Repeat steps **34) – 36)** until the system stops taking in coolant.
- 43)** Once bled, confirm there are no leaks.
- 44)** Reassemble the vehicle and test drive. As the engine warms up and the system turns on, you may need to top of the coolant system some more. Check the level for the next couple days or so to make sure the coolant level is correct.

Enjoy!

