



Mercedes E63 AMG S-Model Turbo Cooler System



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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 battery 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 LF wheel well
 - d. Front wheel well liner of RF wheel well
 - e. Front bumper



- 3) Remove the center engine cover and remove the IC heat exchanger reservoir cap. Disconnect the lower RF side heat exchanger hose to drain the coolant from the IC system.



- 4) The next few steps will be for replacing the factory mid-heat exchanger with the Alpha mid-heat exchanger.

- 5) 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
 - f. Secondary hood latch bracket
 - g. Upper radiator/core support mounting plate



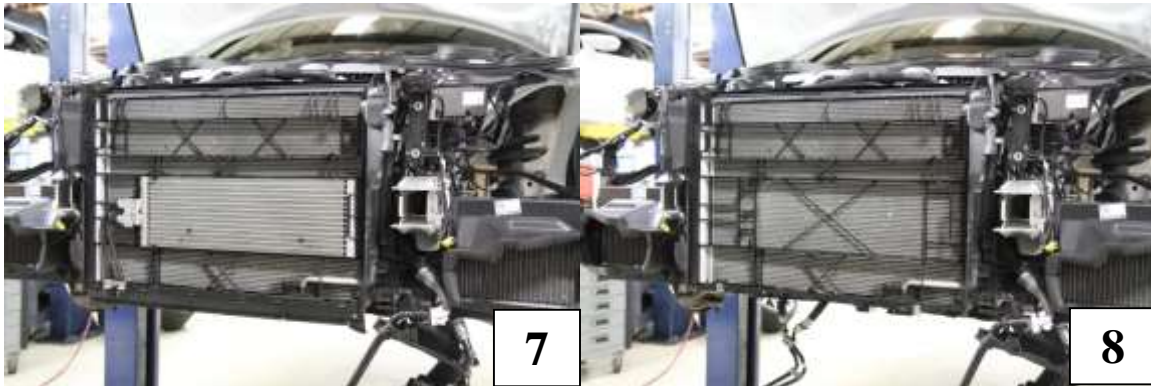
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- 6) Remove the front crash bar. **Caution**, there are two SRS sensors on the back of the bar. Take care in disconnecting the connectors and removing the bar.

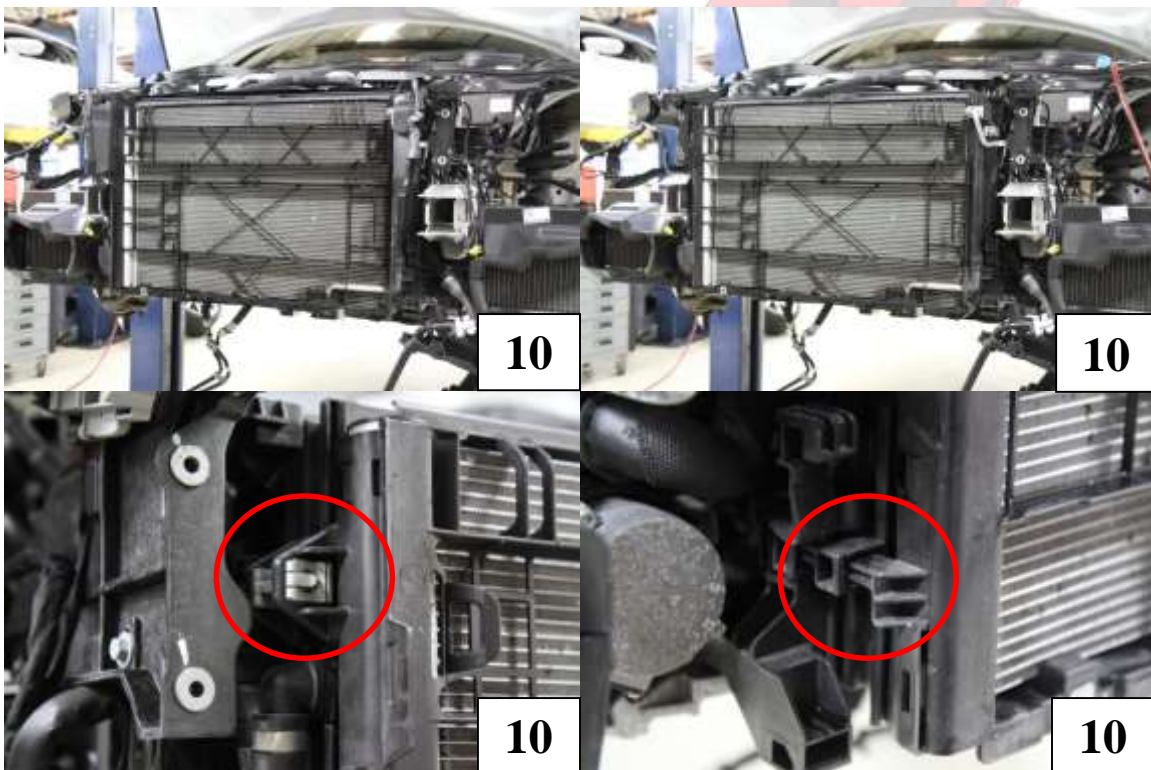


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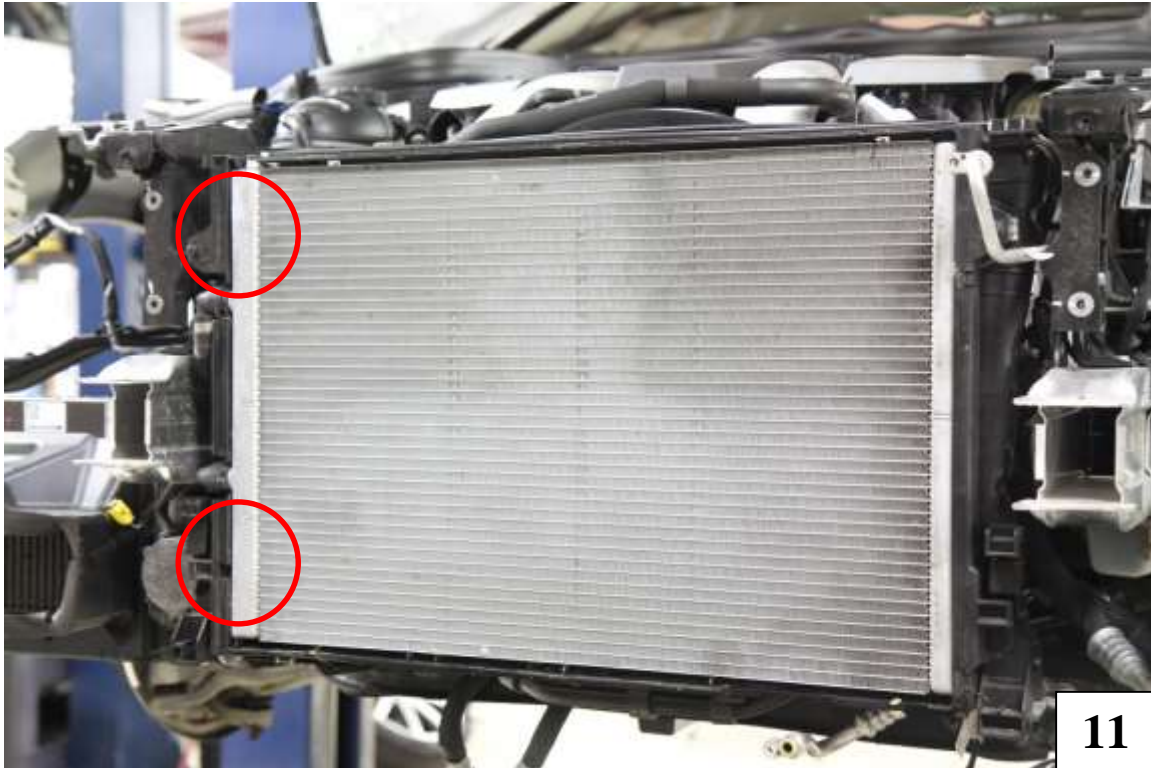
- 7) Unclip the engine oil cooler from the front of the car and move it out of the way. You do not have to disconnect the lines. Let the cooler hang down out of the way.
- 8) Remove the lower trim covering the transmission cooler lines. Remove the one E10 reverse Torx screw securing the transmission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



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



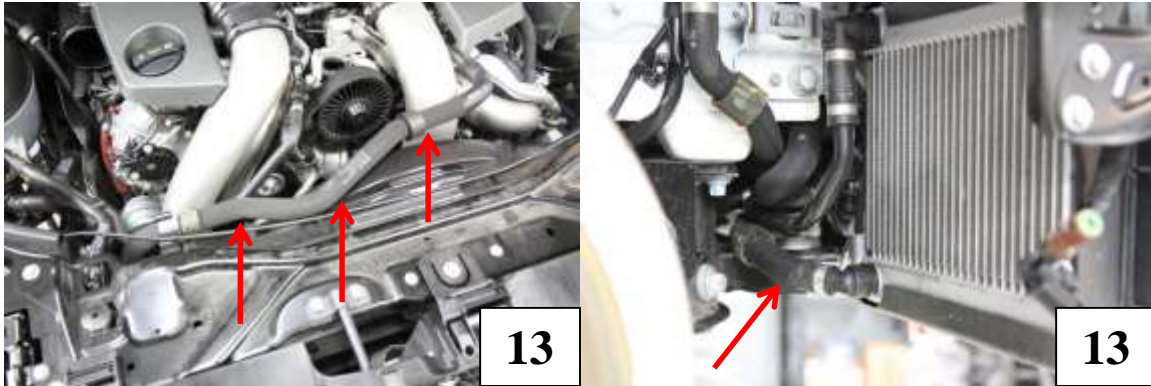
11) Disconnect the hose connection by releasing the metal clip retainers. Release the two plastic tabs on the side with the hose connections to remove the mid-heat exchanger.



12) Install the Alpha Mid-heat Exchanger.



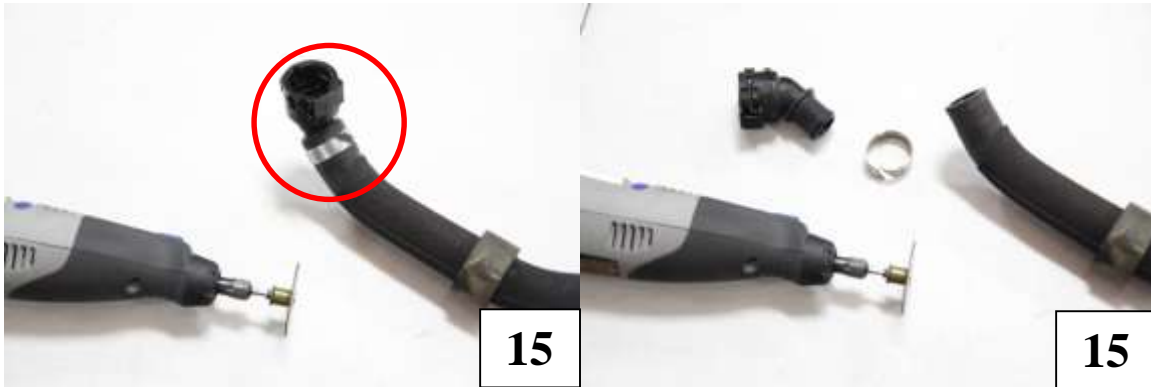
13) Before reassembling the front end and all the coolers, there is a water pipe and hose that needs to be removed. The next series of photos show the water pipe.



14) The hose routes from the outlet of the intercooler to the lower port of the RF side heat exchanger. It consists of a soft section on the ends and a metal part in the center. To remove this pipe, disconnect the water pipe from both ends. Lift the radiator up and forward to clear up room between the radiator fan and the engine. Remove the one screw that holds the pipe in place at the bottom of the fan shroud. Work the water pipe assembly out through the top. Once the pipe is removed, reinstall the screw. It also holds another water pipe bracket that will remain. Reset the radiator back in place.



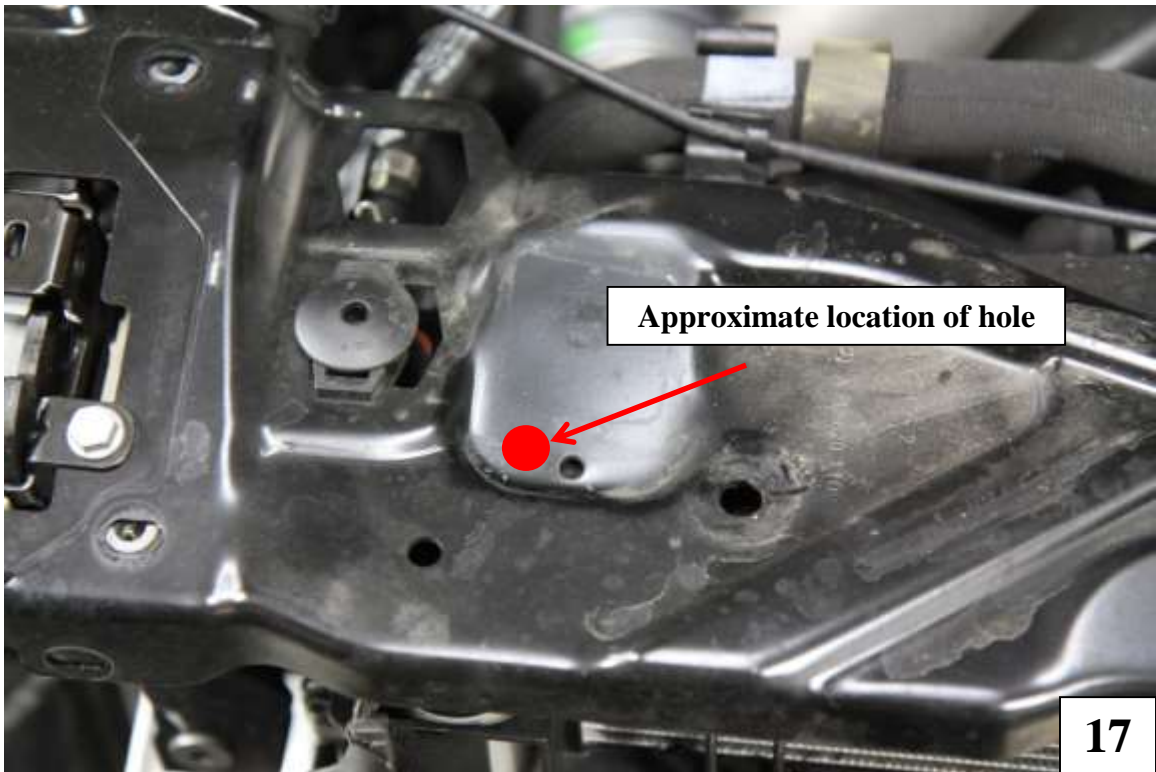
15) The quick connect fitting at the one end will need to be removed. Use a Dremel to carefully cut through the permanent clamp on the fitting. Remove the fitting.



16) Reinstall the fitting back onto the lower port of the passenger side heat exchanger.



17) Locate the upper radiator support plate. This plate covers the mid-heat exchanger bleeder screw. 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.



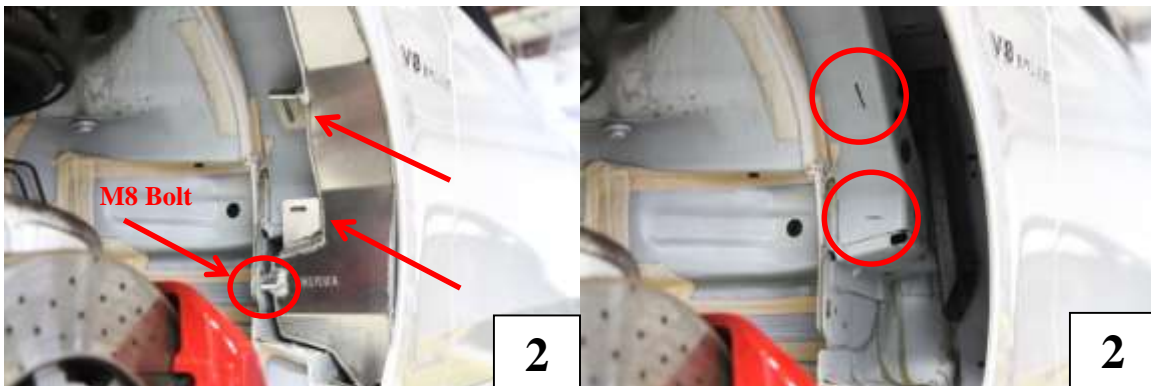
18) Reassemble the front end in the reverse order of removal. Reinstall everything but leave the front bumper and wheel well liners off for now.

Alpha Reservoir Tank Install

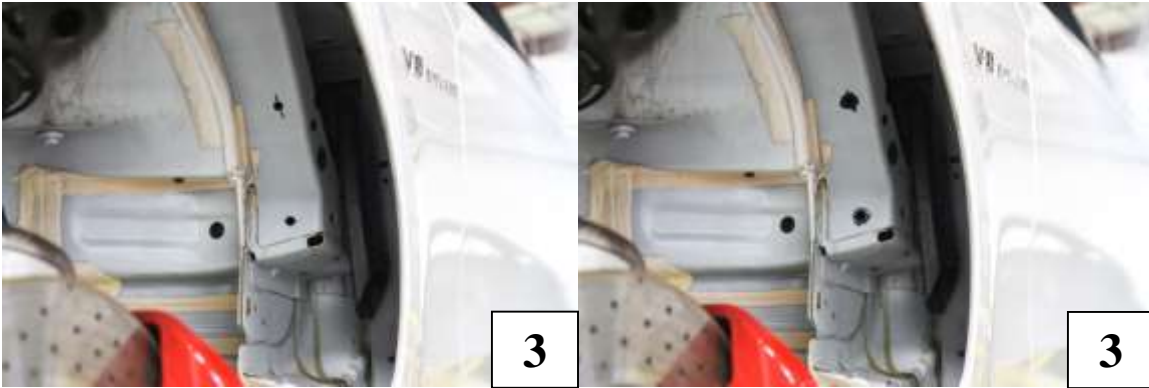
- 1) Locate the reservoir. It will be installed into the LF fender well area. Two holes will need to be drilled for the rivet nuts installed.



- 2) Place the tank into the fender well. Use the M8 bolt and the factory hole to secure it in place for mock up purposes. Push the tank into the fender well up against the body panels. Using a sharpie, mark the slots in the two brackets.



- 3) Mark the center of the both lines you made in step # 2). Center punch and drill using a 3/8" drill bit on both locations. Once drilled, use the supplied paint tube to seal up the newly drilled holes. The paint is Black POR 15.



- 4) Locate and install the two M6 rivet nuts into the holes. You can install them with the paint still wet. It will help to seal the hole.

Note: You will need a rivet nut installer. One can be purchased through any hardware supply company like McMaster-Carr or even amazon. We stock these installers as well; contact your sales advisor for more information.

<http://www.mcmaster.com/#rivet-nut-installation-tools/=xyrby2>

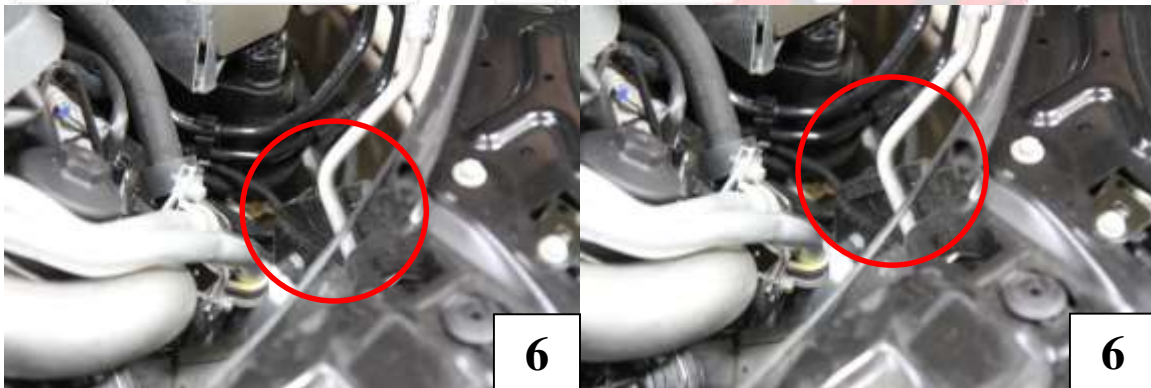


5) Install the tank using the two M6 bolts and one M8 bolt.



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6) Locate the panel trim. Install the trim in the location shown in the next two pictures.



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7) Locate the 60" long hose with 90 degree bend. This hose will be routed from the outlet of the intercooler to the lower inlet of the water reservoir. Trim the hose as needed.



- 8) Once properly routed and adjusted, remove the hose. Locate the braided sleeve and install in over the hose starting at the end opposite of the 90 degree bend. Cut the braided sleeve about a 1/2" away from the end of the hose. Locate and install the two hose clamps at the ends of the hose. Use a lighter or small torch to melt down the end of the sleeve. This will keep it from fraying.





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- 9) Permanently install the hose on the car using two #10 hose clamps from the outlet of the intercooler to the lower inlet of the tank.

Note: We have included a Gates PowerGrip® Hose clamp for a more streamline look after installation. The hose clamp would be installed on the outlet of the intercooler. See the addendum at the end of the instructions for information on using these types of clamps.

- 10) Locate the other 84" long hose. Install this hose from the upper outlet of the Alpha reservoir to the lower inlet of the heat exchanger in the RF corner of the front bumper. Route the hose along the other hose installed in step 9) in the wheel well. Trim the hose as necessary. Once properly routed, remove the hose and install the braided sleeve as you did in step 8). Permanently install the hose using two #10 hose clamps and zip tie in place as shown in the next series of photos.



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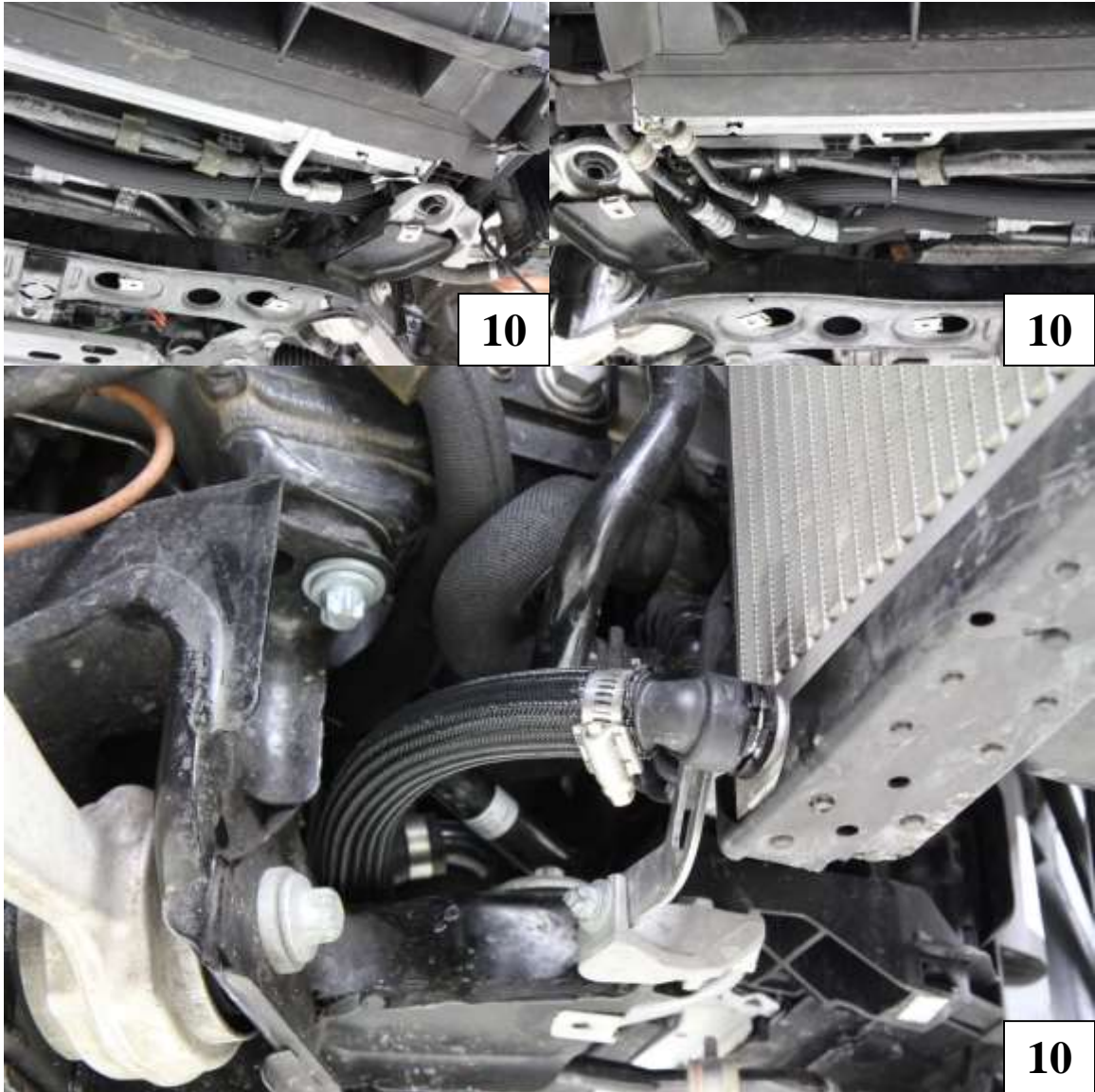
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11) Once everything is installed, reinstall the front bumper, wheel wells, under trays, front wheels. Leave the engine cover, upper plastic trim plate, and air box inlet ducts off for now to bleed the system.

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.



- 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!

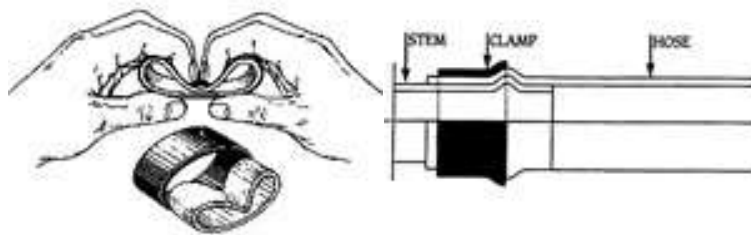
Intercooler System Bleeding with Standard Filling

- 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 off 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!

Gates PowerGrip® Hose Clamp Addendum



- 1) Remove clamp from brace by squeezing, then folding the brace in half and removing it.
- 2) Place clamps over each end of new hose.
- 3) Position hose over fitting.
- 4) Slide clamp over top of fitting bead. Be sure to position so the print on clamp is facing up and in full view.
- 5) Apply heat as follows:
 - Use standard heat gun with settings on high.
 - Do not use open flame to apply heat.
 - Do not apply heat to one spot too long. Move gun continuously.
 - Continue until shrinking is complete.
- 6) Check connections to be sure a good seal was made by trying to turn the hose.
- 7) Replace coolant.
- 8) Start engine and check for leaks. If leaks appear, apply more heat to clamp.

If the clamp ever needs to be removed, it will have to be cut off and replaced. Make sure you have another clamp ready for reinstallation or another standard clamp.

Enjoy!