



Mercedes E63/CLS AMG Carbon Turbo Intake System Instructions



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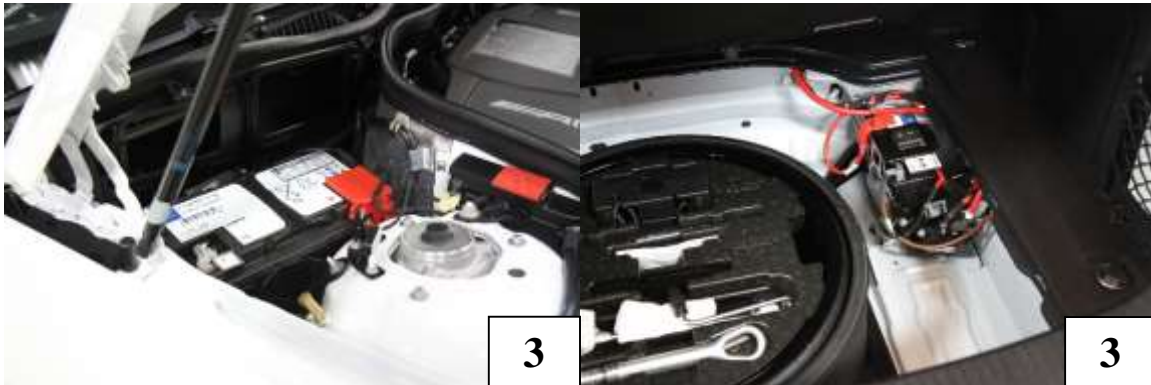
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These instructions are provided as a guide only as there are many variables that cannot be accounted for concerning your particular vehicle, including but not limited to model year differences, model differences, the presence of non-OEM parts, and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

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Carbon Turbo Induction Kit Installation

- 1) The installation process will vary between model year and specific model. In these instructions, we will be showing a vehicle that would require the most amount of disassembly that would be required to install the Carbon Turbo Induction Kit.
- 2) In order to install the carbon inlet tubes, the radiator will have to be moved forward. To do this, you will have to remove the front bumper and some supporting components depending on the model and year.
- 3) Start by disconnecting both batteries. The main battery will be in the engine bay and the secondary battery will be located in the trunk. **CAUTION**, this step is important because SRS impact sensors will be disconnected during the install process!



- 4) Raise the vehicle and remove these items,
 - a. Front wheels
 - b. Center and front under trays
 - c. Both front wheel well liners
 - d. Front bumper



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- 5) You will need to lift and move the radiator front clip forward to install the Carbon Turbo Inlet Tubes. To do this, you will need to remove the upper core support plate. On most of these models, the headlights and mounts will have to be removed due to over lapping parts. Start by removing these parts in this order.
- a. Air box inlet ducts
 - b. Upper plastic core support trim panel
 - c. Both headlights
 - d. Front bumper and headlight adjustment bracket
 - e. Upper radiator core support plate
 - f. Distronix bracket



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- 6) Next remove the front crash bar. Take caution when disconnecting both impact sensors behind the crash bar.



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- 7) Remove all 3 engine covers. Once removed, disconnect the MAP sensor connectors on each air box. Remove the air boxes from the car.

- 8) The couplers on the air box to the inlet tubes will also need to be removed. The passenger side coupler has a permanent clamp on the small side tube. Use a small Dremel cut off wheel to carefully cut the clamp off. Remove the coupler. On the driver's side coupler, use a pick and a little silicone spray to remove the small tube from the valve cover.



- 9) To remove the turbo inlet tubes, lift the entire core support up off the lower mounts and pull it forward as far as the hoses will allow. You will not need to disconnect anything unless it is an S-model which will be covered in a latter section. This will give you the room needed to remove and install the Carbon Turbo Induction Tubes.

- 10) Remove the E10 reverse Torx bolts from the upper brackets of the factory turbo inlet tubes. Loosen the 7mm turbo inlet clamps on the tubes. It will take a bit of wiggling and force to get the turbo inlet tubes off the inlet of the turbo first time around. Once loose, remove the tubes.



Note: If you have an S-model, continue to step # a of the S-model only section. If not, continue to step # 11.

E63 / CLS S-model Only

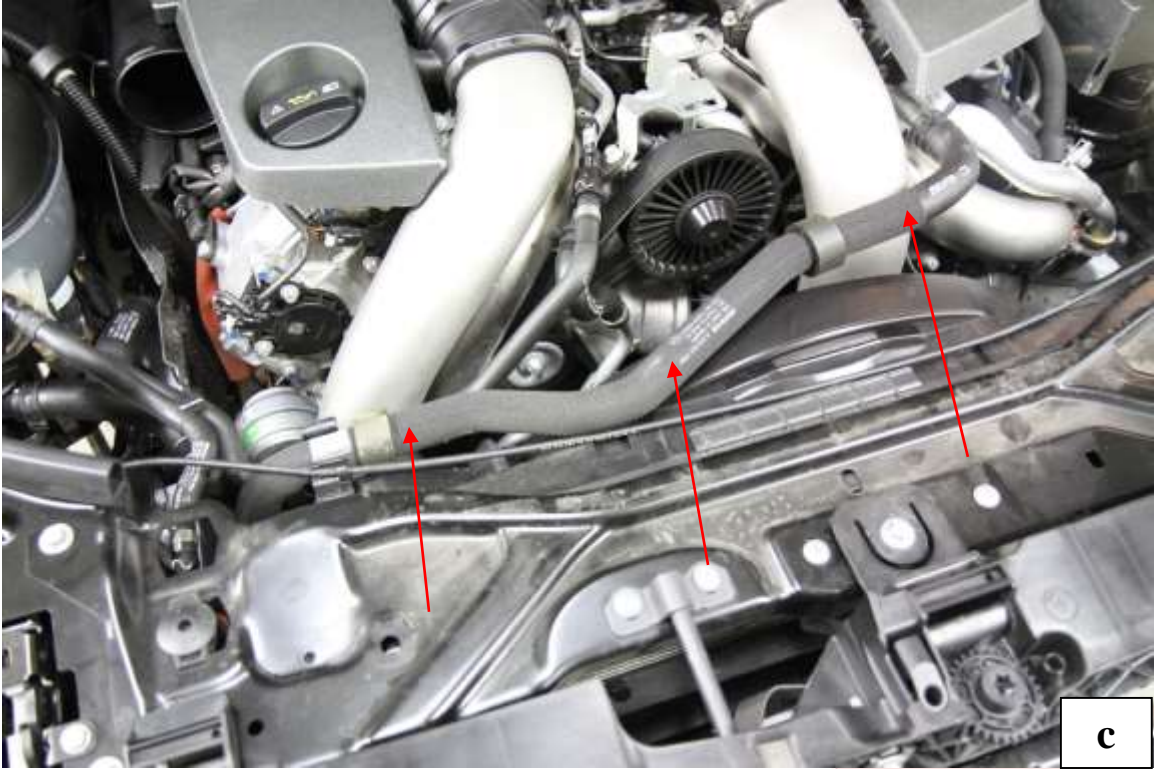
- a) At this time, on S-models only, there is an Intercooler water pipe that need to be removed. The hard pipe interferes with the passenger side Carbon Turbo Inlet Tube. A hose to reroute this pipe has been included for S-models only.

Note: If you have our Turbo Cooler Kit with Fender Reservoir or are installing it, you can bypass this section since this pipe has already been removed and rerouted.

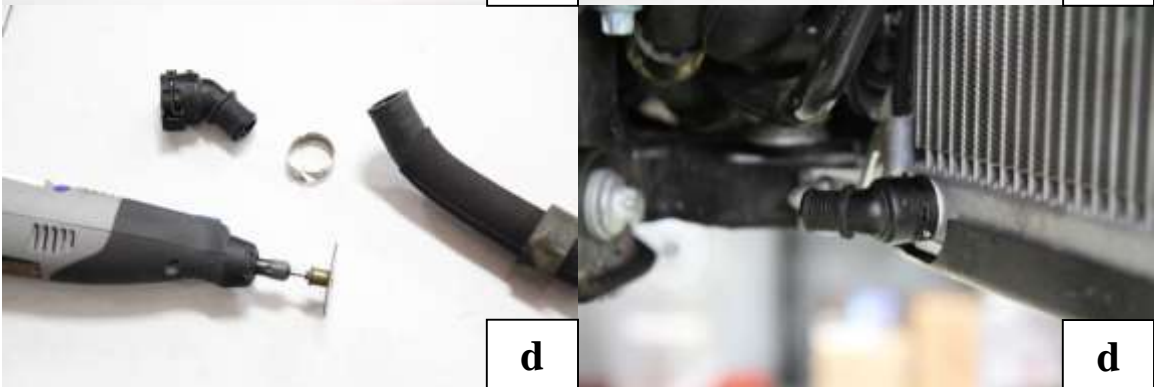
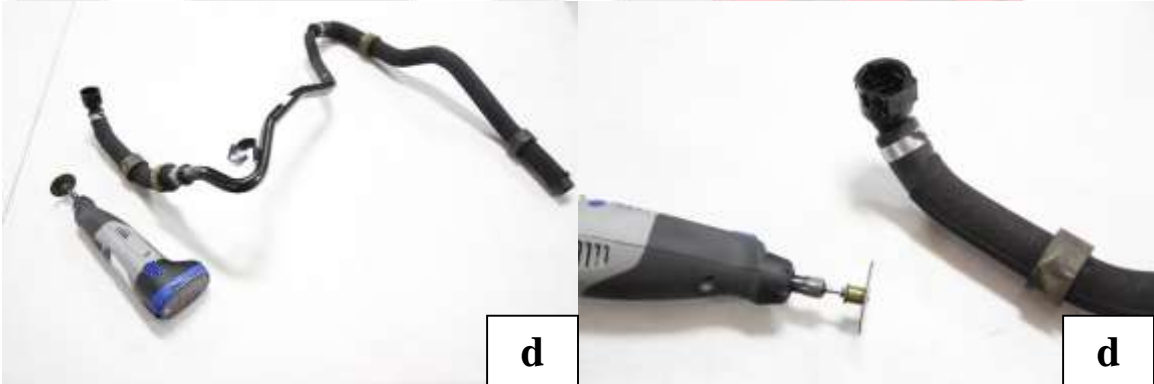
- b) Start by draining the Intercooler system. Best location to do this is at the passenger side heat exchanger. This will the hose that needs to be removed as well. Disconnect the quick connector and drain the system.



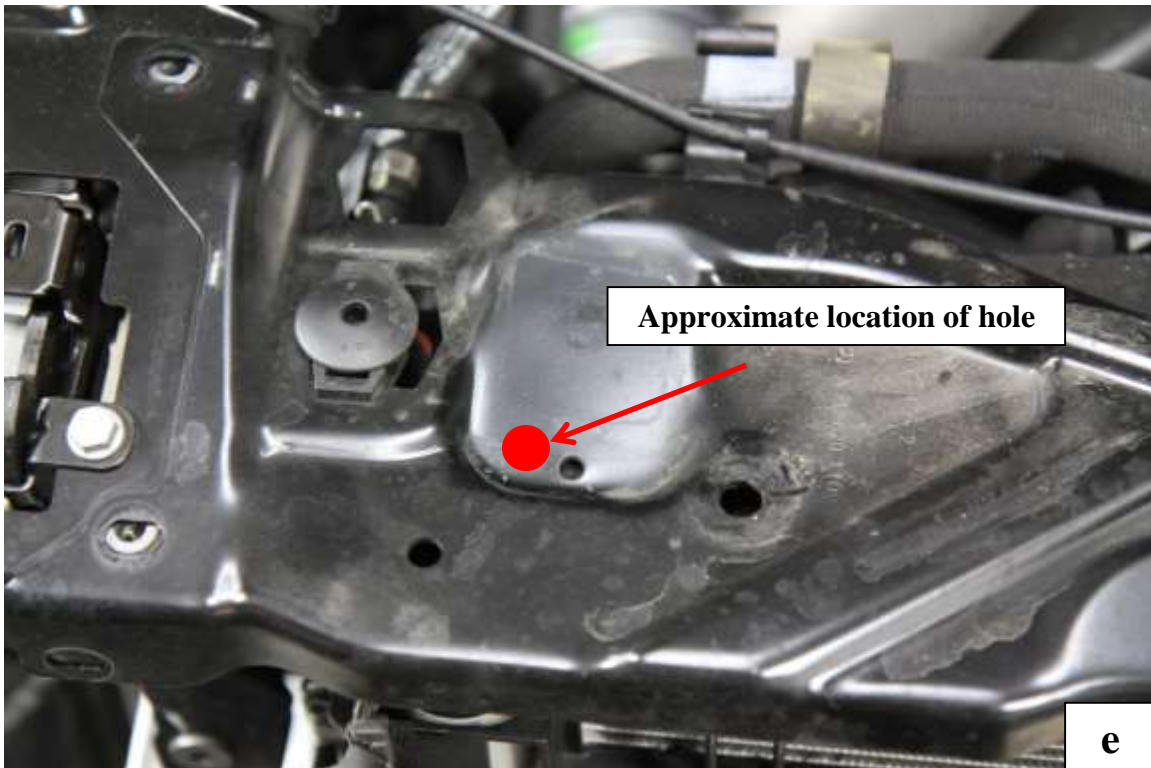
- c) The pipe that needs to be removed routes from the upper intercooler outlet to the fitting that was just removed to drain the system. While the turbo inlet tubes are removed and the radiator core support is pulled forward, remove this pipe. There are a couple mounting screws that need to be removed on the fan shroud.



d) Once the pipe is removed, the quick connect fitting that was disconnected to drain the system will need to be removed. To do this, use a Dremel with a small cut of wheel to carefully cut off the permanent clamp on the fitting. Once the fitting is removed, reinstall it on the side heat exchanger.



- e) 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.





- f) At this point, continue with the Carbon Turbo Induction Kit Install. There will be a few more steps later on during install that will include installing and routing the new hose with bleeding instructions.

Performance Packages

Carbon Turbo Induction Kit Installation (Continued)

- 11)** Remove the rubber inserts and clamps from the factory turbo inlet tubes. They will be reused on the new Alpha Carbon Inlet Tubes.



- 12)** Locate the screw on turbo inlet adaptors. There are two different types, you should have the correct ones based on how you had originally ordered. The next picture will show the difference between the two parts. The only difference is the height. The stock turbo adaptors are longer than the upgraded turbo adaptors. This is due to the ball bearing CHRA with billet wheels used in our Alpha 9 upgraded turbos being slightly longer than the factory units.



13) Screw the turbo inlet adaptors onto the Carbon Turbo Inlet Tubes. No Loctite or sealer is required. We do however recommend a little bit of assembly grease to keep the part from seizing.



14) Install the factory hose clamps onto the turbo inlet adaptors. Breeze #40 hose clamps are also supplied to replace the factory clamps if desired. The trick here is to install the clamps and put a little bit of tension to hold them in place while installing. This will aid in installation of the tubes and help with getting the clamps into a position to tighten. Put the clamps in a position easiest for you to tighten once installed.



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- 15)** Install the factory rubber turbo inlet adaptors onto the inlets of the turbos. Use a little silicone spray to on the rubber turbo inlets to aid in installation. Install the Carbon Turbo Inlet Tubes. Before tightening the turbo inlet clamps, install the E10 Torx screws removed in step # 10. You will have a little bit of adjustment available in the tubes. The driver's side tube will be the tightest clearance wise. Make sure the Carbon Inlet Tubes are clear of the accessory belt and radiator fan. Tighten the E10 first then the turbo inlet clamps. Set the radiator core support back into place and recheck clearance.



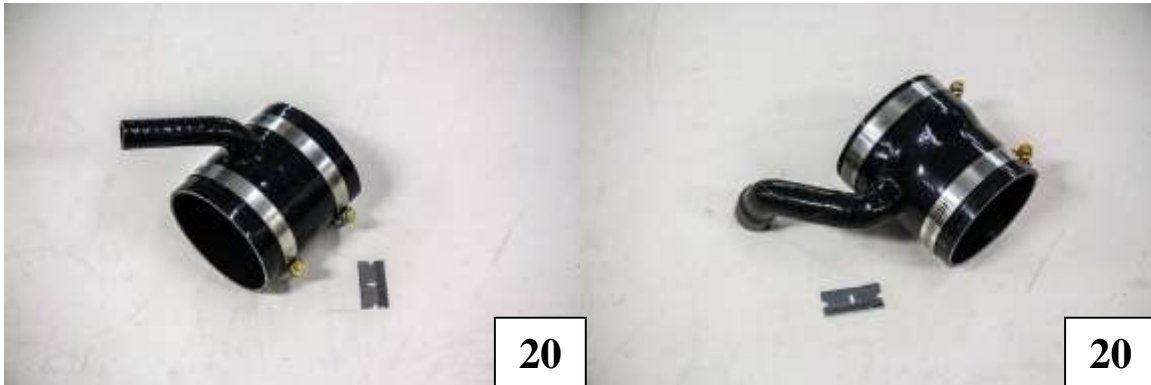
- 16)** At this point, after checking to make sure the Carbon Turbo Inlet Tubes have proper clearance, reinstall the factory parts removed in steps # 5 and 6. Leave the front bumper off for now.
- 17)** Remove the factory MAP sensors from the factory air boxes by rotating the sensors 90 degrees, then pulling outwards. Install the MAP sensors in the Alpha Carbon Air Boxes in the reverse order.
- 18)** The Carbon Air Boxes have been pre-assembled with the air filter and retaining clips installed. Install the air boxes on the vehicle making sure the air box is completely seated onto the mounting clips.



19) The Carbon Turbo Inlet Tube to Air Box Silicone is long and will need to be trimmed to length. Place the silicone couplers on top of the tubes and line up the small side tube of the silicone coupler with the gap in between Carbon tube and Air Box. Mark the silicone where it needs to be trimmed.



20) The best way to trim the silicone couplers is to use the supplied hose clamps and a new razor blade. Install the hose clamps onto the silicone coupler with light tension to hold it in place in line with your marks. Use the razor blade to cut silicone using the hose clamp as a guide. Allow the razor blade to do the work cutting the silicone. A new sharp razor blade is needed for a clean cut.



21) When the silicone is trimmed, install it on the vehicle. Silicone spray will help when installing and adjusting the silicone. Use a # 44 and # 48 hose clamp on the passenger side and two # 48 hose clamps on the driver's side. To aid in installing the hose clamps, hand form the hose clamps in the shape of the tube. It does not need to be perfect, an oval will help. Install the clamps and tighten. **Caution, Do Not Over Tighten the hose clamps! Overtightening will cause the carbon to crack!** Tighten the hose clamps until they form around the tubes and fit snugly.



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22) Install the Carbon Air Box Inlet Ducts. Make sure the ducts fully clip into place.



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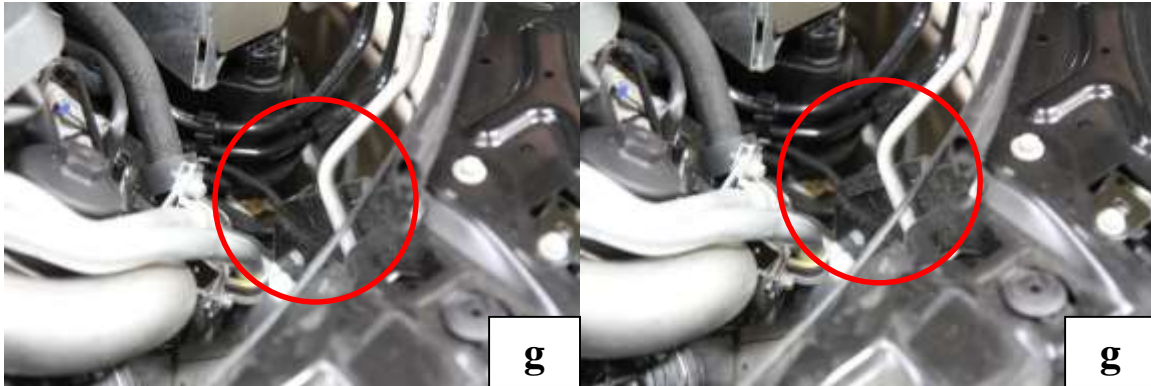
23) Locate the Inlet Duct to Air Box Silicone. One of the silicone couplers is slightly longer. Install the longer silicone on the passenger side and the shorter on the driver's side. Use a # 52 hose clamp on the Air Box side and a # 56 hose clamp on the Inlet Duct side. A bit of silicone spray will aid in installing and adjusting the silicone couplers. **Caution, Do Not Over Tighten the hose clamps! Overtightening will cause the carbon to crack!** Tighten the hose clamps until they form around the tubes and fit snugly.



24) Enjoy!

E63 / CLS S-model Only (Continued)

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



- h) Locate the supplied coolant hose and nylon braided sleeve. The hose will be routed from the intercooler outlet, out and around the front driver's side wheel well, under the radiator core support to the lower fitting of the side cooler and the passenger side.



h

- i) The hose is long and will need to be routed and trimmed. Start by connecting the short 90 degree end to the outlet of the intercooler. Route the hose through the wheel well behind the headlight and down under the core support. Trim the hose as needed.

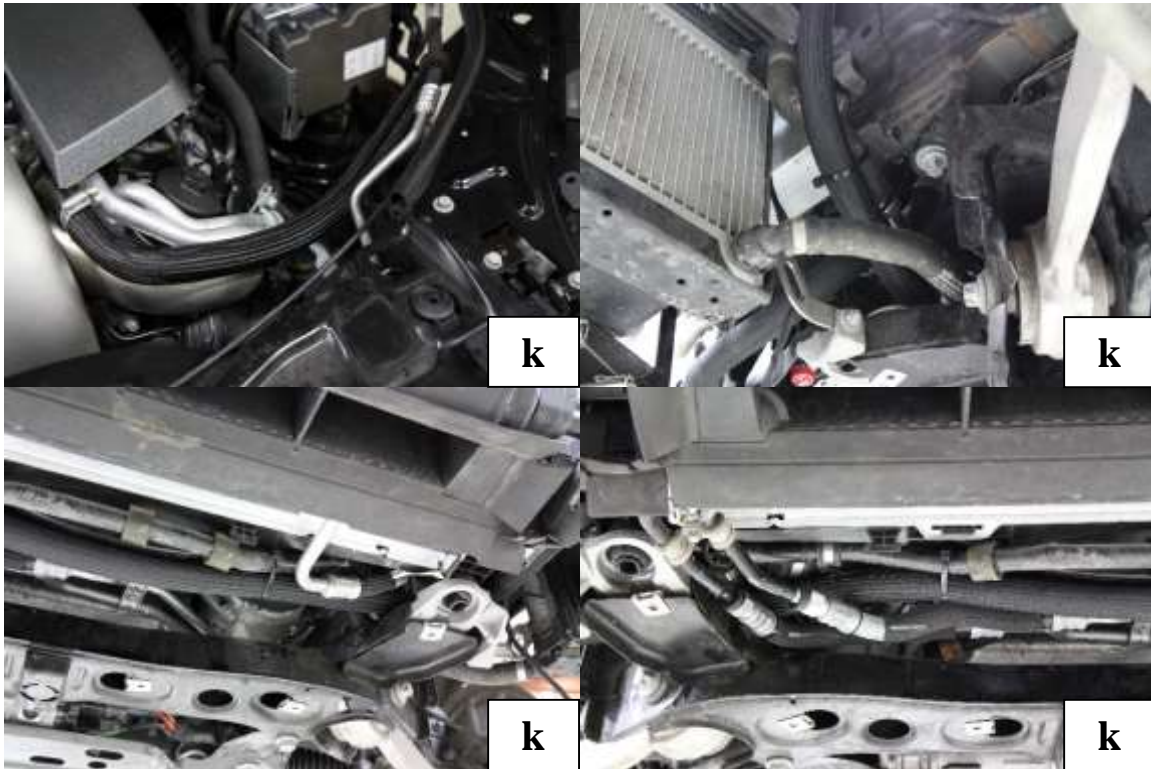


- j)** Once properly routed and adjusted, remove the hose. Locate the braided sleeve and install in over the hose starting at the end opposite of the 90 degree bend. Cut the braided sleeve about a 1/2" away from the end of the hose. Locate and install the two hose clamps at the ends of the hose. Use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



- k) Permanently install the hose on the car using two #10 hose clamps. Use the supplied zip ties to secure the hose.

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.





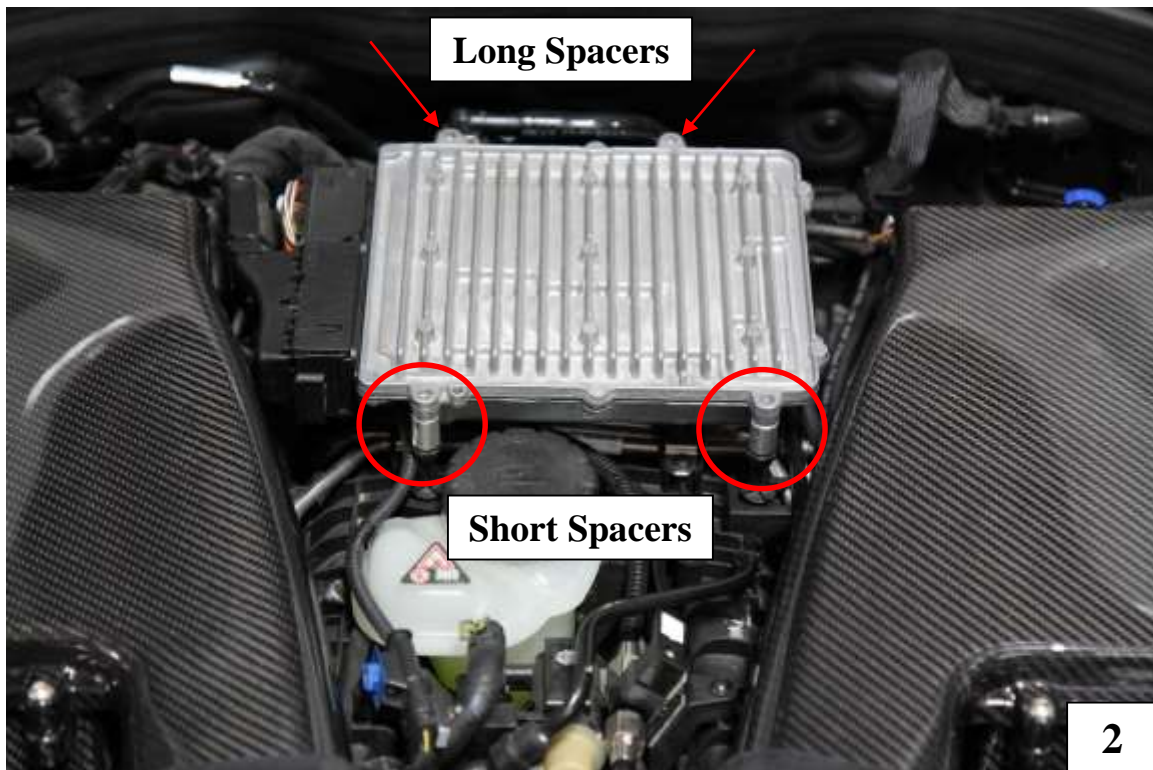
- l)** Once the coolant hose is routed and secure, reinstall the front bumper, wheel well liners, under trays, and wheels.
- m)** Follow the bleeding procedure for the intercooler system.
- n)** Enjoy!

Performance Packages

Alpha Carbon Engine Cover

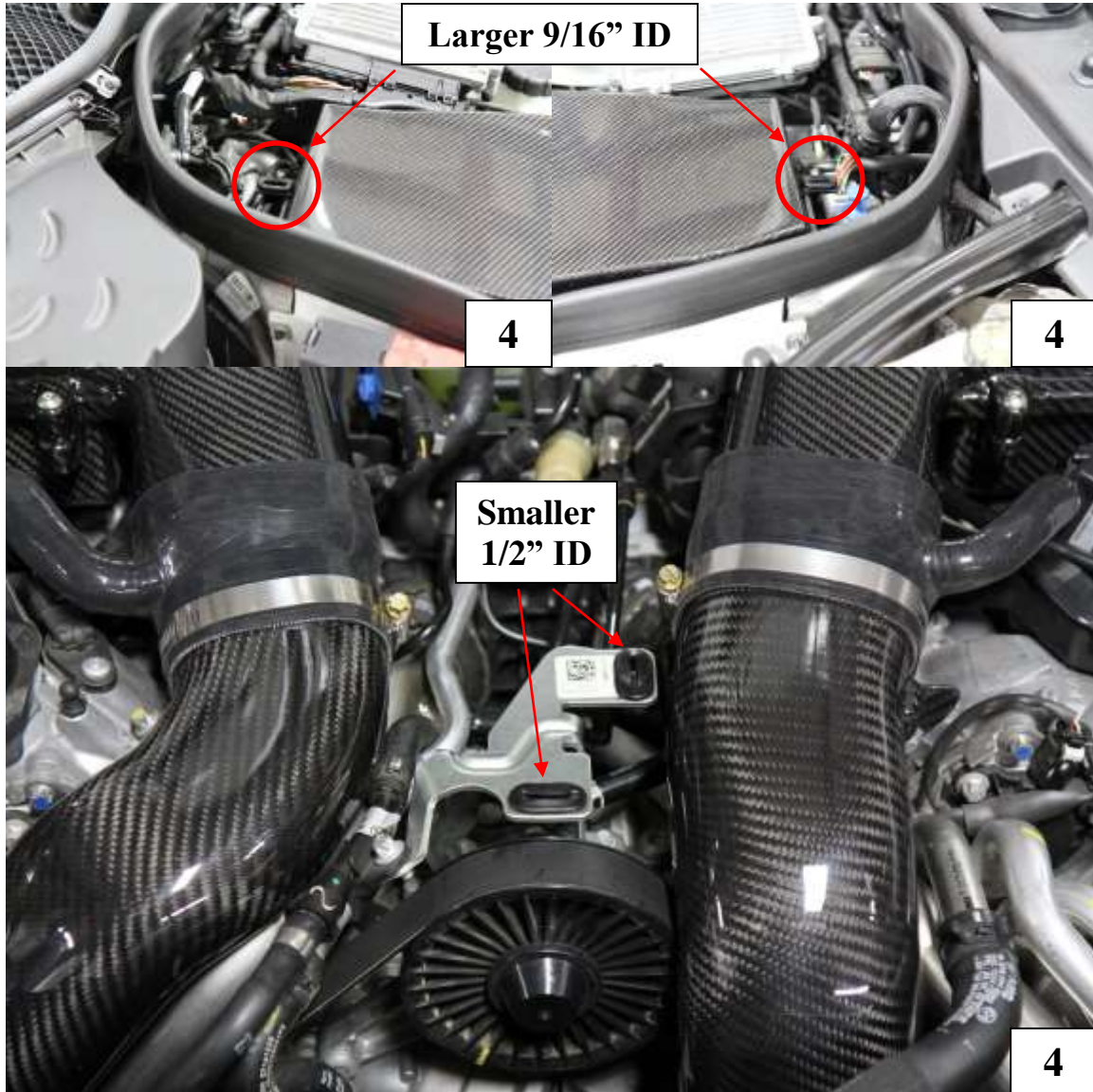
Note: If the factory cover will be utilized, trimming and adjustment of the cover will be necessary.

- 1) If the Alpha Carbon Engine Cover was purchased as an option, locate it now.
- 2) The engine cover will include four spacers and four M6x16mm studs for the ECU mounts to adjust the height matching the engine cover. Remove the ECU by lift it upwards. Remove the ECU mounts and install the spacers in between the mount and the ECU.
 - a) Install the longer spacers on the rear shorter factory mounts. First install the spacer onto the factory mount, then screw in the M6 stud on the other end until it stops. Reinstall the mounts with spacers onto the ECU.
 - b) Install the shorter spacers on the front longer factory mounts. First install the spacer onto the factory mount, then screw in the M6 stud on the other end until it stops. Reinstall the mounts with spacers onto the ECU.



- 3) Locate the four supplied grommets. Two of the grommets will have a larger 9/16" inside diameter and the other two will have a smaller 1/2" inside diameter. The outside diameter of the grommets are all the same at 3/4". These grommets will be installed in to the front factory bracket and the rear two brackets mounted to the carbon air boxes.
- 4) The grommets will be tight to install. Use a liberal amount of silicone spray on the grommets to install the grommets as shown. Install the grommets with the larger

9/16" inside diameter on the rear brackets of the air boxes. Install the grommets with the smaller 1/2" inside diameter on the front factory bracket right behind the serpentine belt pulley.



- 5) The factory Mercedes emblem and "Engine Builder" name plate will need to be transferred.
 - a) To remove the Mercedes Emblem, use a small sanding wheel and lightly grind the location shown in the picture. The plastic is lightly melted over studs behind the rear emblem to hold it in place. Once you just start to see the difference in material between the engine cover and the emblem, stop. Do this to all the points. Once completed, use a small screw driver and push on the studs of the emblem to pop it off the factory cover. Install it onto the Carbon Engine Cover. Use super glue or another type of adhesive on the studs to secure the emblem on the rear of the cover.

- b) To remove the engine builder name plate, use a heat gun and heat up the back side of the factory engine cover while gently prying on the name plate with a plastic trim tool. The factory double sided tape will eventually release slowly when heated. Once removed, clean the rea of the name plate. Install it using the supplied double sided tape.

- 6) Once everything has been transferred over, install the engine cover. The carbon air boxes have a small amount of adjustability. Shift the air boxes so the cover can be installed. Use silicone spray on the installed grommets from step # 4). When installing the cover, make sure the rubber grommets remain seated and do not push out of the brackets.

Note: The ECU height is the main determining factor for the Engine cover fitment. The ECU will align the top of the cover with the top of the air boxes. On some vehicles, the air boxes may sit slightly higher or lower. The ECU spacers can be adjusted to accommodate the overall fitment of the engine cover and air boxes by either adding washers or removing some material on the spacers to make them shorter.



- 7) Enjoy!

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!

