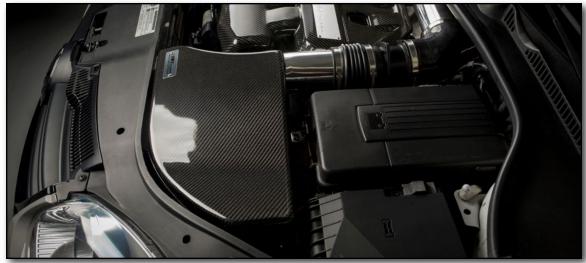


Volkswagen MK5 TSI ECS Intake Systems Installation Instructions

















INTRODUCTION

VW MK5 TSI Luft-Technik and Kohlefaser Luft-Technik Intake Systems

Our ECS Intake Systems offer the following features for your MK5 TSI:

- CNC bent aluminum pipes available in either polished or wrinkle black powder coat finishes
- Available in an open-element design (Luft-Technik systems) or with a hand-laid carbon fiber air box (Kohlefaser Luft-Technik systems)
- Designed in-house by ECS Tuning Engineers
- 4 Ply silicone couplers
- High flow cotton gauze air filter
- All mounting hardware included
- Easy installation

ECS Difficulty Gauge



Installing an ECS Tuning Luft-Technik Intake System on your VW MK5 TSI is an enjoyable project that you can complete in just a short couple of hours. There is no easier way to give your engine a boost and to make you eager to pop your hood and show off the looks of your new intake system. Before you begin, read and familiarize yourself with these instructions and make sure you have all the required tools on hand. Thank you for making ECS Tuning your choice for performance parts and accessories, we appreciate your business!

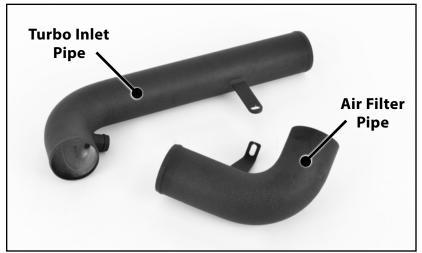


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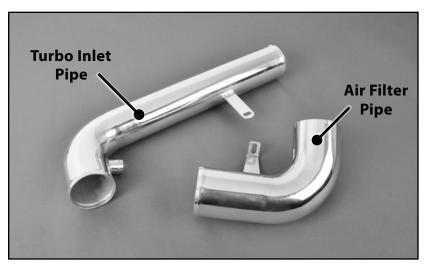
Kit Contents: Luft-Technik Intake Systems	<u>pg.4</u>
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Installing the New Intake System	<u>pg.19</u>
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Secondary Air Injection Intake Filter Installation	<u>pg.36</u>
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KIT CONTENTS: LUFT-TECHNIK INTAKE SYSTEMS



Black Aluminum Pipes - Included With ES#3419500



Polished Aluminum Pipes - Included With ES#3419499



Aluminum Heat Shield Assembly (1)



High Flow Air Filter w/Clamp (1)



90° Coupler (1)



Reducing Coupler (1)



Flex Coupler (1)



KIT CONTENTS: LUFT-TECHNIK INTAKE SYSTEMS



50-70mm Hose Clamp (1)



70-90mm Hose Clamps (5)



Vibration Damper (1) and Nut (1)



Heat Shield Mounting Grommet (1)



M6x20mm Bolt (1)



M6 Stainless Washer (1)



M6 Rubber Isolator (1)



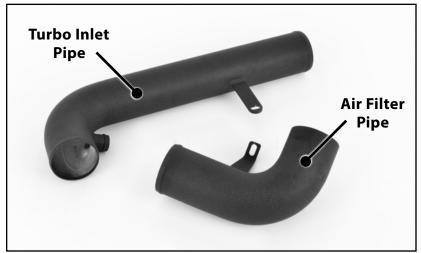
Air Box Snorkel Screws (2)



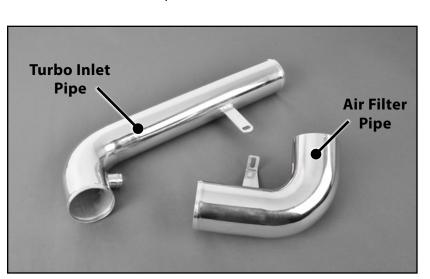
Turbo Inlet Pipe To Heat Shield Bolt (1)



KIT CONTENTS: KOHLEFASER LUFT-TECHNIK INTAKE SYSTEMS



Black Aluminum Pipes - Included With ES#3419497



Polished Aluminum Pipes - Included With ES#3419494



Carbon Fiber Air Box and Lid Assembly (1)



High Flow Air Filter w/Clamp (1)



90° Coupler (1)



Reducing Coupler (1)



Flex Coupler (1)



KIT CONTENTS: KOHLEFASER LUFT-TECHNIK INTAKE SYSTEMS



50-70mm Hose Clamp (1)



70-90mm Hose Clamps (5)



M6x16mm Bolts (5)



M6 Nylon Washers (5)



M6x20mm Bolt (1)



M6 Stainless Washer (1)



M6 Rubber Isolator (1)



Vibration Damper and Nut (1)



Air Box Mounting Grommets (2)



Air Box Snorkel Screws (2)



Turbo Inlet Pipe To Heat Shield Bolt (1)



REQUIRED TOOLS

Note: The tools required for each step will be listed by the step number throughout these instructions.

Standard Automotive Tools

Required For This Install

Available On Our Website

Protecta-Sockets (for lug nuts) <u>ES#2221243</u>	• 1/4" Drive Ratchet <u>ES#2823235</u>
• 3/8" Drive Ratchet <u>ES#2765902</u>	• ¹ / ₄ " Drive Deep and Shallow Sockets <u>ES#2823235</u>
• 3/8" Drive Torque Wrench <u>ES#2221245</u>	• 1/4" Drive Extensions <u>ES#2823235</u>
• 3/8" Drive Deep and Shallow Sockets ES#2763772	• Plier and Cutter Set <u>ES#2804496</u>
• 3/8" Drive Extensions <u>ES#2804822</u>	Flat and Phillips Screwdrivers ES#2225921
Hydraulic Floor Jack <u>ES#240941</u>	• Jack Stands <u>ES#2763355</u>
• Torx Drivers and Sockets ES#11417/8	Ball Pein Hammers
• ½" Drive Deep and Shallow Sockets <u>ES#2839106</u>	• Pry Bar Set <u>ES#1899378</u>
• ½" Drive Ratchet	Electric/Cordless Drill
• ½" Drive Extensions	• Wire Strippers/Crimpers
• ½" Drive Torque Wrench <u>ES#2221244</u>	• Drill Bits
• ½" Drive Breaker Bar <u>ES#2776653</u>	 Punch and Chisel Set
Bench Mounted Vise	Hex Bit (Allen) Wrenches and Sockets ES#11420
Crows Foot Wrenches	• Thread Repair Tools <u>ES#1306824</u>
Hook and Pick Tool Set ES#2778980	Open/Boxed End Wrench Set <u>ES#2765907</u>

Specialty Tools

VAG Connector Tool	. <u>ES#2628676</u>
Spring Clamp Pliers	.ES#2702616



SHOP SUPPLIES AND MATERIALS

Standard Shop Supply Recommendations: We recommend that you have a standard inventory of automotive shop supplies before beginning this or any automotive repair procedure. The following list outlines the basic shop supplies that we like to keep on hand. Shop supplies with a hyperlink are available on our website.

- Hand Cleaner/Degreaser Click Here
- Pig Mats for protecting your garage floor and work area from spills and stains Click Here
- Spray detailer for rapid cleaning of anything that comes into contact with your paint such as brake fluid Click Here
- Micro Fiber Towels for cleaning the paint on your car Click Here
- Latex Gloves for the extra oily and dirty jobs Click Here
- Medium and High Strength Loctite Thread lock compound to prevent bolts from backing out Click Here
- Anti-Seize Compound to prevent seizing, galling, and corrosion of fasteners Click Here
- Aerosol Brake/Parts Cleaner for cleaning and degreasing parts
- Shop Rags used for wiping hands, tools, and parts
- Penetrating oil for helping to free rusted or stuck bolts and nuts
- Mechanics wire for securing components out of the way
- Silicone spray lube for rubber components such as exhaust hangers
- Paint Marker for marking installation positions or bolts during a torquing sequence
- Plastic Wire Ties/Zip Ties for routing and securing wiring harnesses or vacuum hoses
- Electrical tape for wrapping wiring harnesses or temporary securing of small components



INSTALLATION NOTES

- **RH** refers to the *passenger side* of the vehicle.
- **LH** refers to the *driver side* of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process **BEFORE** you begin.

GENERAL PREPARATION AND SAFETY INFORMATION

ECS Tuning cares about your health and safety. Please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- If using an automotive lift, be sure and utilize the factory specified lift points. Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- When lifting a vehicle using a jack, always utilize the factory specified lift points. Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear. **ALWAYS** support the vehicle with jack stands.
- Always read and follow all safety information and warnings for the equipment you are using.

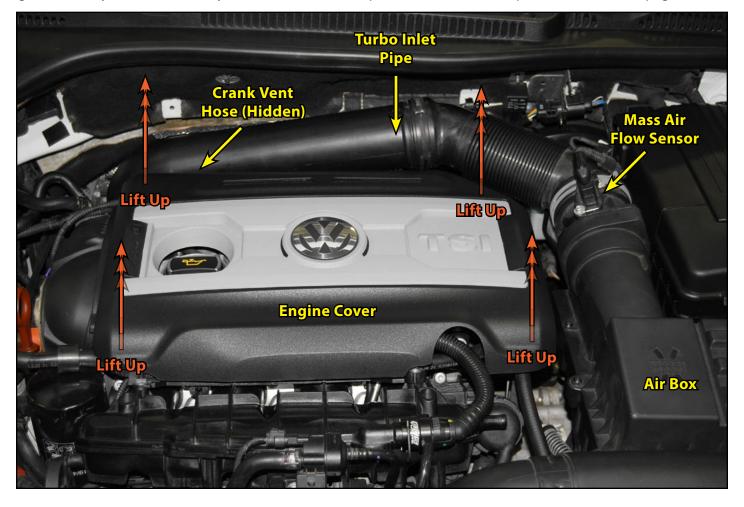


NEVER get underneath a vehicle that is supported only by a jack, and ALWAYS make sure that the vehicle is securely supported on jack stands.

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Begin by pulling up on the four corners of the engine cover to release it from the grommets and remove it from the car. In the following pages, we will be removing the original intake system. Familiarize yourself with these component locations, then proceed to the next page.



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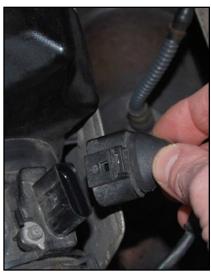
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Step 1: Schwaben Connector Release Tool

Disconnect the Mass Air Flow sensor electrical connector using our Schwaben Connector Release or other suitable tool. The trick to removing these "push and pull" style of connectors is to first push and hold the connector down, which will release the tension between the locking tab and the catch on the sensor, then insert the tool and pull up. This will raise the locking tab in the connector just far enough to clear the catch on the sensor and it will slide off with ease.





Step 2: Spring Clamp Pliers

Release the tension on the spring clamp that secures the flexible intake tube to the Mass Air Flow sensor.



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Spring Clamp Pliers Step 3:

Pull the flexible intake tube off of the Mass Air Flow sensor, then remove the spring clamp.



Step 4:

Pull the air box inlet tube off of the front air scoop.



Note the location of the coolant air bleed hose (indicated by //////). This will be relevant on Page 16, step 9.







Step 5:

5mm Hex

Loosen the hold down screw for the original air box. This is a "trapped" screw and will remain in place in the air box after it is loosened.



Step 6:

Look down between the air box and the fender and you will see where there is a drain tube attached to the bottom. It is very difficult to release the retaining clip, but by patiently following the next two steps, the air box can be removed without disconnecting this drain tube.



Some vehicles may also have a secondary air tube connected to the front of the air box lid. If you are not sure, carefully inspect your air box and remove this tube if equipped.





Step 7:

There are two rubber hold down grommets on the air box. First, pull up on the LH (driver's) side of the air box to release the grommet on the end, then using one hand on the front and one on the back, pull up on the center of the air box to release the grommet on the bottom side.



Pull up on the air box just enough to release the grommets but do not attempt to completely remove it at this time.



Lift the air box up slowly on the LH side and carefully guide the drain tube out.







Step 9:

Rotate the air box upside down so the curved inlet tube can be pivoted around the small coolant air bleed tube (see Page 13, step 4). You will now be able to lift the entire air box assembly out of the vehicle.



T25 Torx Step 10:

Remove the front air scoop by removing the two securing screws (arrows) and pulling it rearwards off of the core support.





T30 Torx Step 11:

Remove the bolt securing the turbo inlet pipe to the heat shield, behind the rear of the cylinder head (shown here with the flexible intake tube removed for clarity).



Step 12:

Remove the crank vent hose from the turbo inlet pipe by releasing the retaining tabs, then pulling it back off the pipe. Examples are shown below of the 2-sided and 4-sided connectors your vehicle may be equipped with.

2-Sided Connector:



Gently squeeze both sides of the connector inward AT THE SAME TIME

4-Sided Connector:



Gently pry outward on all four retainers ONE AT A TIME





Step 13:

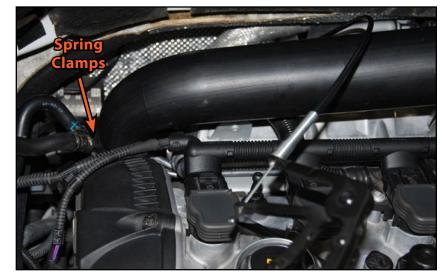
Inspect the picture on the right which shows the turbo inlet pipe removed from the vehicle, with the rubber coupler located on the end. There are two spring clamps on the coupler which are difficult to see while the pipe is still in the vehicle. You will need to release the tension on the LOWER clamp in order to remove the turbo inlet pipe.



Spring Clamp Pliers Step 14:

Release the tension from the **LOWER** clamp on the coupler, then pull the turbo inlet pipe and coupler off together and set them aside.

Now it's time to install your new intake system!





Flat Blade Screwdriver - OR - 7mm Socket & Ratchet Step 1:

Push the reducing coupler onto the 90° end of the new turbo inlet pipe as shown, then install one of the 70-90mm hose clamps onto the coupler and tighten it until it is snug. Make sure the head of the clamp screw is positioned as shown in the picture so it so that it does not interfere with any nearby engine components, and that it is accessible if we need to tighten or loosen the clamp later on.



Step 2:

Place the 50-70mm hose clamp over the turbo inlet as shown (must be loosened for this step). Make sure the head of the clamp screw is positioned as shown in the picture so it so that it does not interfere with any nearby engine components, and that it is accessible when we come back and tighten it in a later step.





Step 3:

Push the reducing coupler down onto the turbocharger inlet and position the turbo inlet pipe along the back of the engine.



T30 Torx Step 4:

Position the bracket on the turbo inlet pipe so that it is *in front* of the mounting tab on the exhaust heat shield. Insert the mounting bolt through the turbo inlet pipe bracket, thread it into the mounting tab by hand, then tighten it until snug.





Step 5:

Connect the crank vent hose to the new turbo inlet pipe.



Step 6:

Place a loosened 70-90mm hose clamp onto the turbo inlet pipe.





Step 7:

Some customers may observe a lack of clearance between the turbo inlet pipe and the bracket shown in the photo on the right. If there is insufficient clearance between these two parts to install the 90° coupler in Step 8, gently pull the pipe forward (approximately 1") as shown.



Step 8:

Install the 90° coupler onto the end of the turbo inlet pipe, then place a loosened 70-90mm clamp the end of the coupler as shown in the photo on the right.

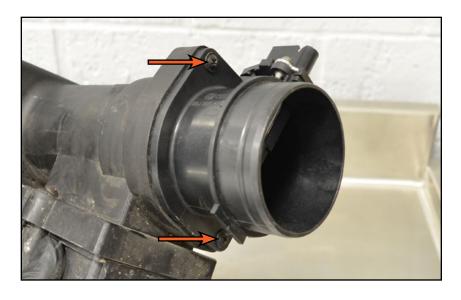


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Step 9: Phillips Head Screwdriver

Remove the two screws and separate the MAF sensor from the original air box.



Step 10:

Insert the MAF sensor into the 90° coupler, but do not tighten the clamp at this time. Plug the electrical connector into the MAF sensor.



The MAF sensor has an arrow on the side (circled, as shown in the inset) to indicate direction of air flow. The MAF Sensor has also been installed with the connector facing down for a cleaner look.





Step 11:

Place a loosened 70-90mm clamp onto each end of the flex coupler.



Step 12:

Push the flex coupler onto the end of the turbo inlet pipe. The clamp screws may be located on the top or bottom of the flex coupler, depending on the desired appearance of the final installation.



If you are installing a Luft-Technik system with an open-air element, continue on the next page.

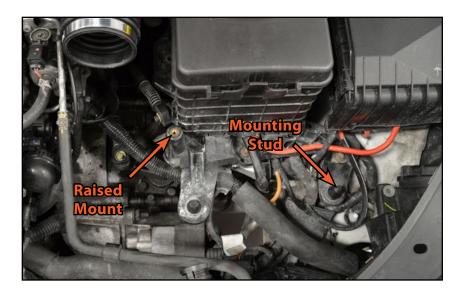
If you are installing a Kohlefaser Luft-Technik system with a carbon fiber air box, continue on Page 30.





Step 13:

Note the locations of the mounting stud for the heat shield bracket, and the raised mount for the air filter pipe bracket, located on the battery tray.



Step 14:

Locate the mounting tab on the heat shield and install the heat shield mounting grommet into place with the larger end on the bottom as shown.



If your car is equipped with Secondary Air Injection, you MUST follow the instructions beginning on Page 35 to install the Secondary Air Intake Filter before you proceed.

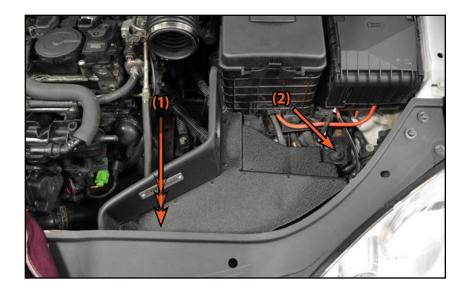






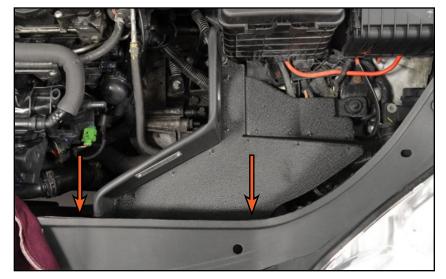
Step 15:

With the mounting eyelets facing forward, place the edge of the heat shield under the lip of the radiator support (1), then push the grommet onto the mounting stud (2).



T25 Torx Step 16:

Install the mounting screws through the eyelets and into the air duct mounting holes located on the radiator core support. Be careful to not overtighten these screws or you may strip the threads in the core support





Step 17:

Install the air filter pipe through the opening in the heat shield as shown so that the mounting bracket lines up with the raised mount on the battery tray.



Step 18:

Rotate the air filter pipe downward and insert it into the flex coupler, lifting up slightly on the end of the turbo inlet pipe as the pipe is rotated downward.



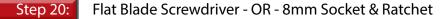


4mm Hex Bit - OR - 10mm Socket & Ratchet Step 19:

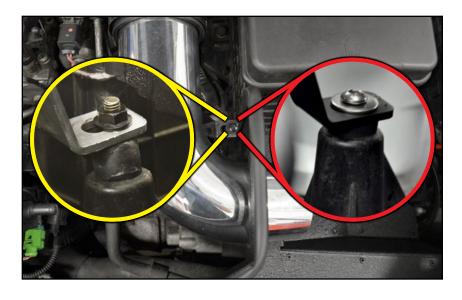
Due to variations in fitment on the vehicles we've tested this system with, we have included two different options for mounting hardware. Select whichever option provides you with the best fitment.

If you select the vibration damper (highlighted in YELLOW in the photo), thread the damper into the raised mount, then install the air filter pipe and install the nut to hold it in place.

If you select the rubber isolator (highlighted in **RED** in the photo), place the isolator between the air filter pipe bracket and the raised mount, then place the M6 steel washer onto the M6x20 bolt, and install the bolt through the bracket and into the mount.



Push the air filter onto the end of the air filter pipe, then tighten the clamp.





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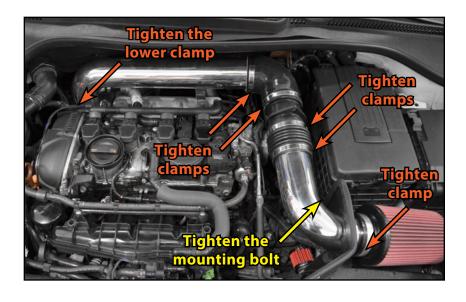
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7mm Socket, 4mm Hex Bit - OR - 10mm Socket Step 21:

Make sure all hoses are properly positioned and aligned, then tighten all of the hose clamps and the air filter pipe mounting hardware.



Step 22:

Reinstall the engine cover.

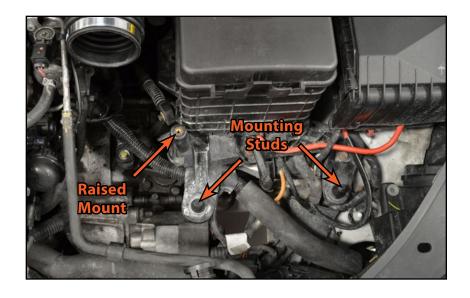
Your Luft-Technik Intake System **Installation is complete!**





Step 13:

Note the locations of the mounting studs for the carbon fiber air box, and the raised mount for the air filter pipe bracket, located on the battery tray.



Step 14:

Install a grommet into each opening on the bottom of the carbon fiber air box.



If your car is equipped with Secondary Air Injection, you **MUST** follow the instructions beginning on Page 35 to install the Secondary Air Intake Filter before you proceed.



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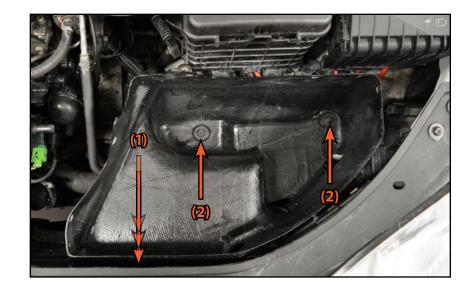
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Step 15:

Place the intake duct of the air box under the lip of the radiator core support (1), then line up the grommets with the mounting studs and press them into place (2).

Some customers may find it difficult to line up the grommets with the mounting studs. If this happens to you, try removing the battery covers and the battery, then loosening (but not removing) the three 10mm bolts which hold the battery tray down. Doing this will allow you to slide the battery tray around slightly, and since the mounting studs are incorporated into this tray, being able to move it side to side may make installing the air box significantly easier.



T25 Torx Step 16:

Install and hand tighten the mounting screws through the eyelets in the air box, and into the air intake duct mounting holes located on the radiator core support. Be careful not to over tighten these screws or you may strip the threads in the core support.



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Step 17:

Push the air filter onto the air filter pipe as shown.



Step 18:

Insert the air filter pipe into the flex coupler with the air filter element facing upwards, so that the bracket clears the edge of the air box base.





Step 19:

Turn the air filter pipe assembly downward so that the air filter element fits into the air box and the mounting bracket is aligned with the raised mount on the battery tray.

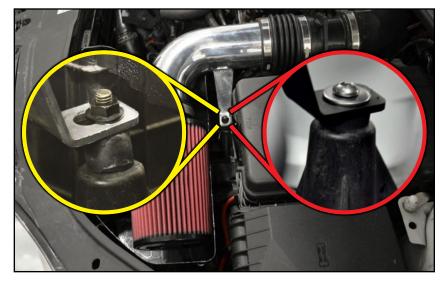


4mm Hex Bit - OR - 10mm Socket & Ratchet Step 20:

Due to variations in fitment on the vehicles we've tested this system with, we have included two different options for mounting hardware. Select whichever option provides you with the best fitment.

If you select the vibration damper (highlighted in YELLOW in the photo), thread the damper into the raised mount, then install the air filter pipe and install the nut to hold it in place.

If you select the rubber isolator (highlighted in **RED** in the photo), place the isolator between the air filter pipe bracket and the raised mount, then place the M6 steel washer onto an M6x20 bolt, and install the bolt through the bracket and into the mount.



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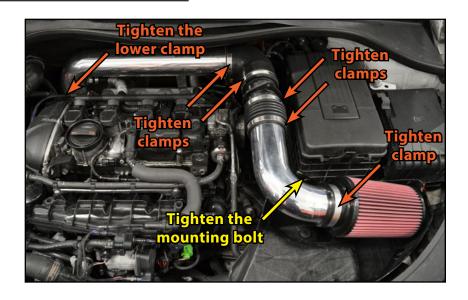
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Step 21: 7mm, 8mm Sockets; 4mm Hex Bit - OR - 10mm Socket

Make sure all hoses are properly positioned and aligned, make sure the air filter is properly aligned, then tighten all of the hose clamps and the air filter pipe mounting hardware.



Step 22: 4mm Hex

Slide the air box lid into place, then install the supplied M6x16 air box lid bolts and M6 nylon washers. Thread in all five bolts by hand at first, then once they are all in place tighten them only until they are snug.

Reinstall the engine cover.



CARBON FIBER CAUTION: Be careful not to over tighten the bolts, over tightening can crack the carbon fiber.

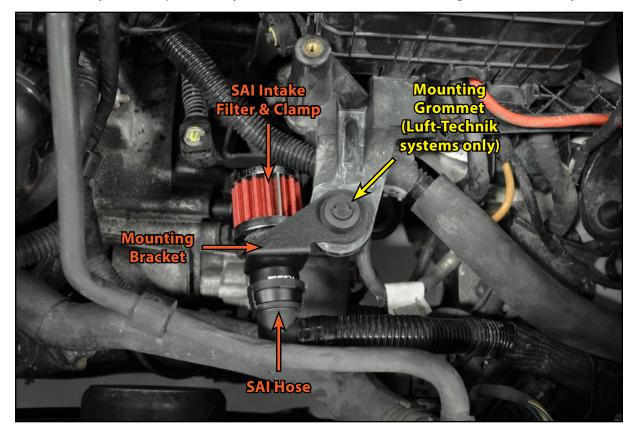
Your Kohlefaser Luft-Technik Intake System **Installation is complete!**





SECONDARY AIR INJECTION KIT OVERVIEW

If your vehicle is equipped with SAI (Secondary Air Injection), you will need to install a filter onto the end of the SAI hose which we disconnected in an earlier step. Our SAI Filter Kit installs easily, and will prevent any contaminants or debris from being drawn into the system.





These components are available for purchase separately if your vehicle is equipped with Secondary Air Injection. They can be found on our website as <u>ES#2864860</u>.



Step 1:

Remove from the secondary air injection kit from its packaging, and confirm that all parts shown on the right are present.



Step 2:

Install the adapter through the bracket and into the filter, then tighten the hose clamp until it is snug.



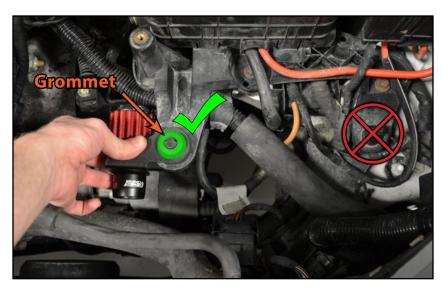


Step 3:

Luft-Technik Systems ONLY:

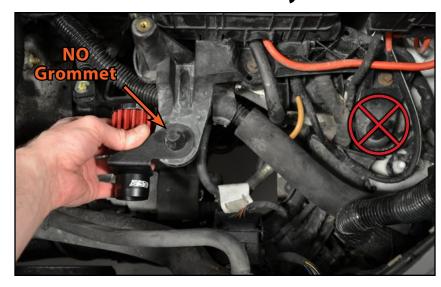
Install the supplied mounting grommet into the mounting bracket so that the larger end is on the bottom.





Place the secondary air intake assembly onto the innermost air box mounting stud (the stud which is nearest to the engine) so the filter and adapter hang down below the mounting stud.

Kohlefaser Luft-Technik Systems ONLY:



We will **NOT** be installing a mounting grommet into the mounting bracket for this application, the carbon fiber air box will hold the bracket in place once installed.

Place the secondary air intake assembly onto the innermost air box mounting stud (the stud which is nearest to the engine) so the filter and adapter hang down below the mounting stud.



Step 4:

Luft-Technik Systems ONLY:



Route the original secondary air intake tube over to the adapter and connect the two together. Rotate the filter assembly as necessary so the secondary air intake tube does not kink or bind.

Kohlefaser Luft-Technik Systems ONLY:



Route the original secondary air intake tube over to the adapter and connect the two together. Rotate the filter assembly as necessary so the secondary air intake tube does not kink or bind.



Step 5:

Luft-Technik Systems ONLY:



As shown here, when the intake system installation is complete, the secondary air filter will sit below the intake heat shield.



Return to Page 26, step 15 and continue with the installation of your Luft-Technik Intake System.

Kohlefaser Luft-Technik Systems ONLY:



Allow the assembly to hang in place for now, when you install the carbon fiber air box the innermost air box mounting grommet will hold the secondary air intake securely in place. As you can see in the photo, the secondary air intake is almost completely hidden underneath the carbon fiber air box.



Return to Page 31, step 15 and continue with the installation of your Kohlefaser Luft-Technik Intake System.



CARBON FIBER CLEANING AND CARE

ECS Tuning Carbon Fiber Intakes are clear coated for excellent finish durability and UV resistance right out of the box.

Carbon fiber can be washed with any gentle cleanser or soap. If it is safe for the paint on your car, it will be safe for the carbon fiber.

Be extra careful not to nick or deeply scratch the clear coat on the carbon fiber. This can lead to water intrusion into the carbon fiber which will damage the finish and the integrity of the intake.

If the clear coat does get nicked or deeply scratched to expose the carbon fiber, seal the damaged area thoroughly with a clear coat touch up or clear nail polish.

To retain UV resistance and protect the finish, we recommend regular waxing with a high quality caranuba wax.

Small surface scratches and light oxidation can be buffed out using the same methods and cautions you would use on the vehicle paint.

Carbon Fiber Cleaning and Care Kit, available at ecstuning.com.

ES#2914954





SCHWABEN - BUILD THE ULTIMATE TOOL COLLECTION

At ECS Tuning, we carry a line of high quality Schwaben Tools and Equipment to help you build your ultimate tool collection. Never before has affordability and quality been so closely related. Our entire Schwaben line is subjected to strict in house testing for strength and durability. See what we have to offer and equip your garage without breaking the bank.



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Your VW MK5 TSI ECS Intake installation is complete!



These instructions are provided as a courtesy by ECS Tuning

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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