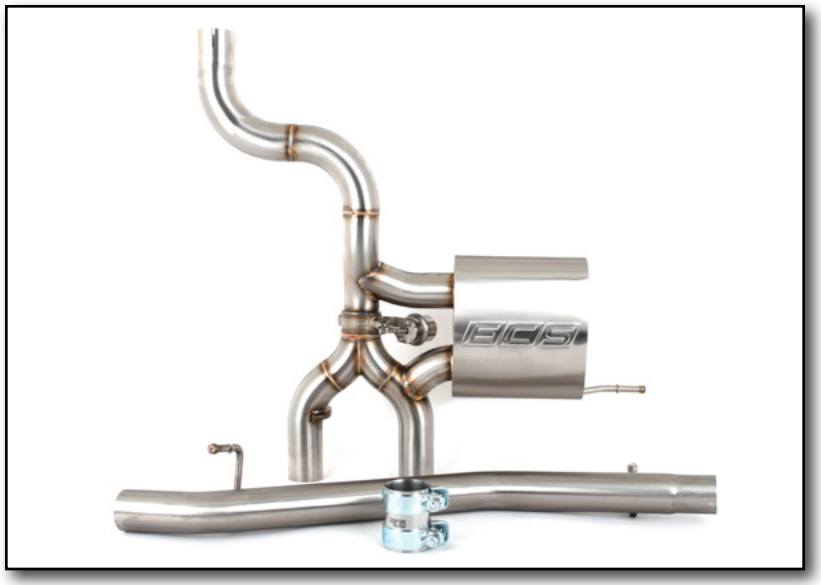
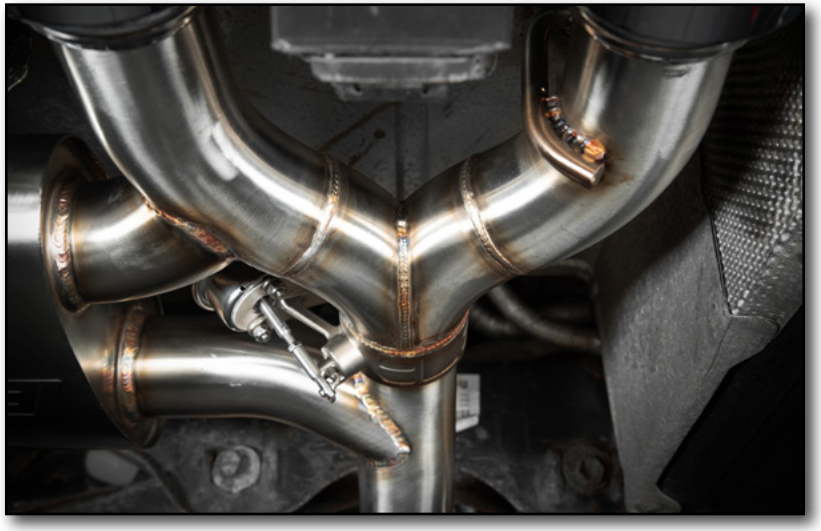
Volkswagen MK5 R32 ECS Valved Exhaust System Installation Instructions - ES4414027

Skill Level
1 - Easy

Basic Skills Required





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.

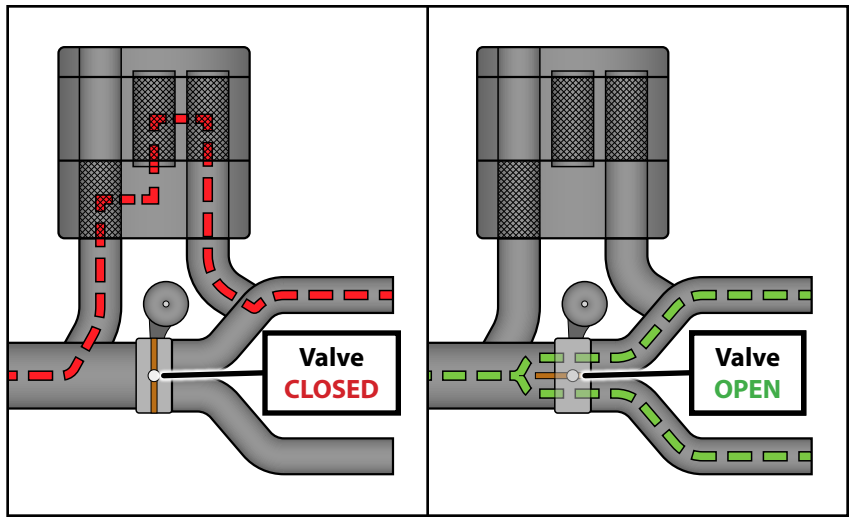
INTRODUCTION

Upgrading the exhaust system on your VW MK5 R32 is a very rewarding project that an experienced technician will be able to complete in a single day, plan accordingly based on your experience level.

To operate this valved exhaust system you'll need to install our remote control system, this also means that you'll need to find a suitable vacuum source. We'll go into more detail on this subject later on.

Why a valved system? When open, the valve allows a less restrictive path for exhaust gasses to travel, which of course translates to ***more noise***! When closed, the valve forces the exhaust gasses through the muffler for a more subdued, "***neighbor friendly***" volume level.

Before you begin, read and familiarize yourself with these instructions and make sure you have all the required tools on hand. Thank you for looking to ECS Tuning for all your performance and repair needs, we appreciate your business!



*It's important to understand that the muffler valve opens and closes throughout the RPM range with the factory stock control system. The valve is normally **CLOSED**, and it opens whenever vacuum is applied to the actuator on the muffler.

This will of course affect how our remote control system (sold separately) will function on the vehicle if you go that route. The **LOCK** button will **CLOSE** the valve, and the **UNLOCK** button will **OPEN** it.

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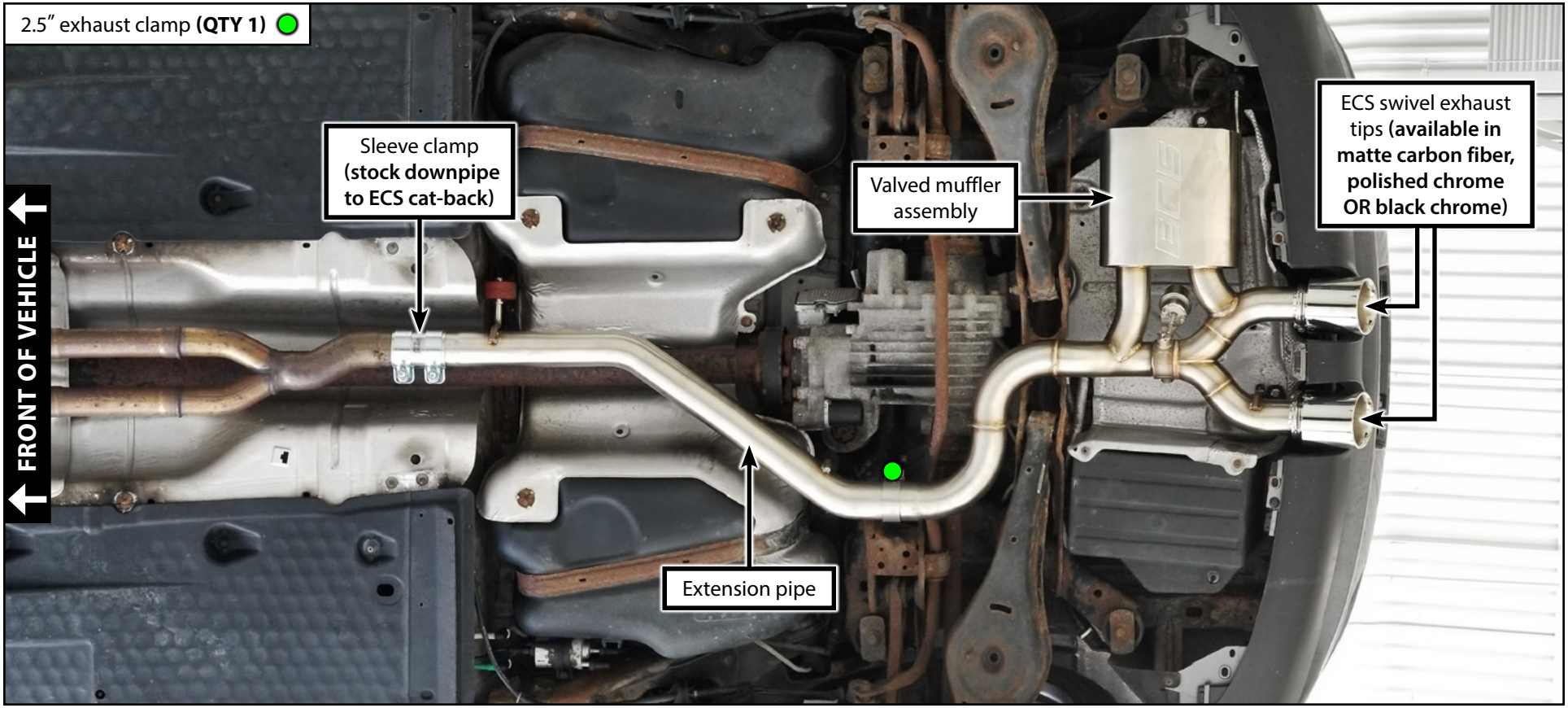
KIT CONTENTS



Our valved exhaust system is available with one of three color options for tips: Matte carbon fiber, polished chrome or black chrome. See Page 8 for the remote exhaust valve controller kit contents.

REQUIRED TOOLS

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

Standard Automotive Tools

- Protecta-Sockets (for lug nuts) ..... ES#2221243
- **⅜" Drive Ratchet** ..... ES#2765902
- **⅜" Drive Torque Wrench** ..... ES#2221245
- **⅜" Drive Deep and Shallow Sockets** ..... ES#2763772
- **⅜" Drive Extensions** ..... ES#2804822
- **Hydraulic Floor Jack** ..... ES#2834951
- **Torx Drivers and Sockets** ..... ES#11417/8
- **½" Drive Deep and Shallow Sockets** ..... ES#2839106
- ½" Drive Ratchet
- ½" Drive Extensions
- ½" Drive Torque Wrench ..... ES#2221244
- **½" Drive Breaker Bar** ..... ES#2776653
- Bench Mounted Vise
- Crows Foot Wrenches
- Hook and Pick Tool Set ..... ES#2778980

Required For This Install

- ¼" Drive Ratchet ..... ES#2823235
- ¼" Drive Deep and Shallow Sockets ..... ES#2823235
- ¼" Drive Extensions ..... ES#2823235
- Plier and Cutter Set ..... ES#2804496
- Flat and Phillips Screwdrivers ..... ES#2225921
- **Jack Stands** ..... ES#2763355
- **Ball Pein Hammers**
- Pry Bar Set ..... ES#1899378
- Electric/Cordless Drill
- **Wire Strippers/Crimpers**
- Drill Bits
- Punch and Chisel Set
- Hex Bit (Allen) Wrenches and Sockets ..... ES#11420
- Thread Repair Tools ..... ES#1306824
- **Open/Boxed End Wrench Set** ..... ES#2765907

Available On Our Website

Specialty Tools

- **Exhaust Hanger Removal Pliers** ..... ES#2784927

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.
- Whether lifting a vehicle using an automotive lift or a hydraulic jack, be sure and 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.

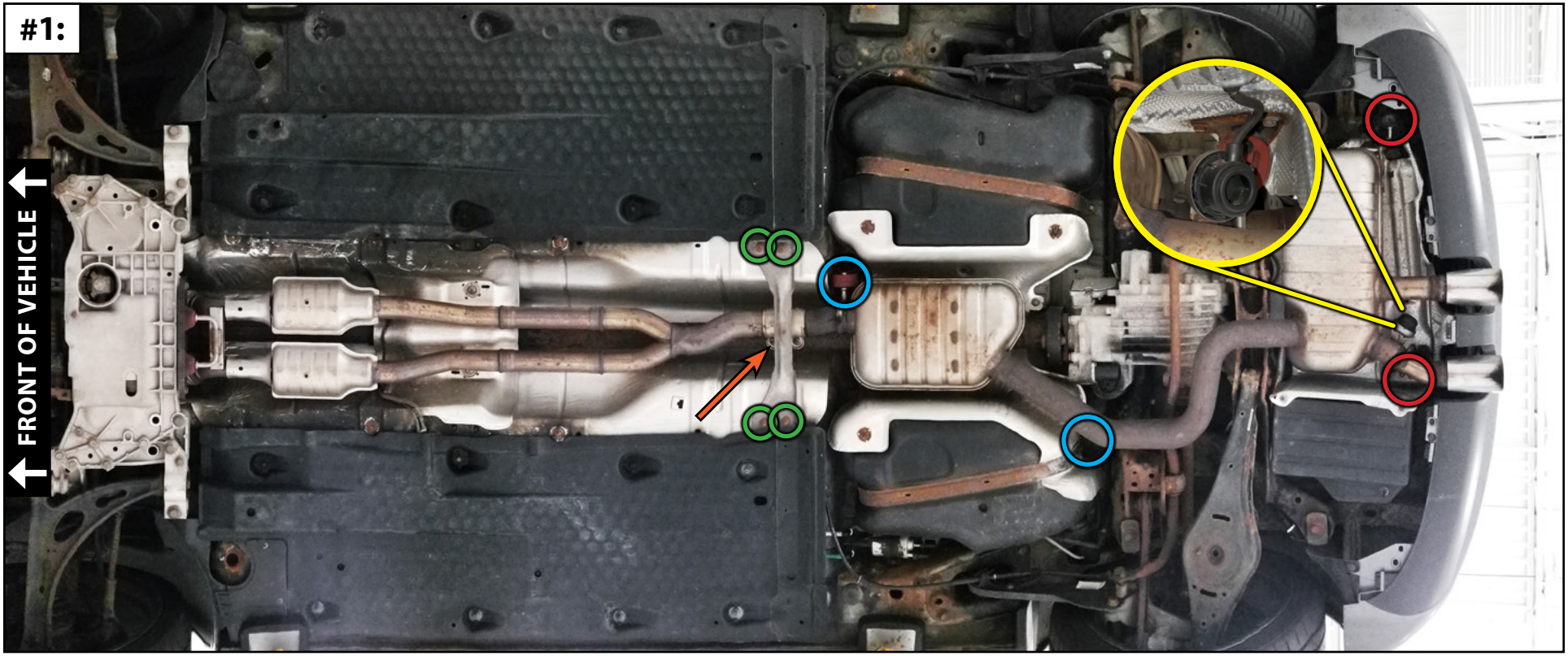
NEVER get underneath a vehicle that is supported only by a jack, and ALWAYS make sure that the vehicle is securely supported on jack stands.

REMOVING THE STOCK EXHAUST SYSTEM

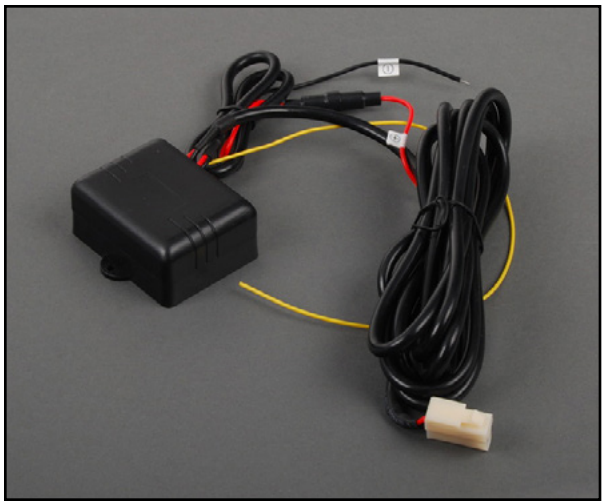
Step 1: 13mm Socket & Ratchet, Exhaust Hanger Removal Pliers

Safely lift and support the vehicle. Support the exhaust system from below. Remove the four nuts (circled in **GREEN**) which secure the cross brace to the chassis. Loosen the clamp which secures the cat-back to the downpipe (arrow), then slide the clamp forward on to the downpipe assembly (not shown).

Disconnect the vacuum line from the muffler valve (**YELLOW** inset photo). Release the front two hangers from the exhaust system (circled in **BLUE**) with exhaust hanger removal pliers. Unbolt the muffler hangers (circled in **RED**) from the vehicle, then carefully lower the entire system to the ground and set it aside.



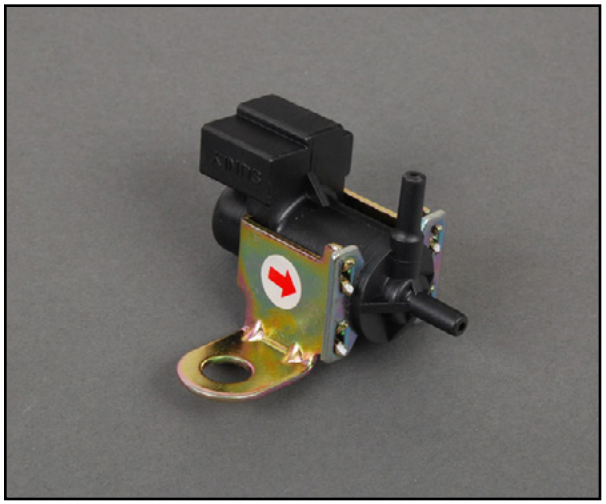
REMOTE EXHAUST VALVE CONTROLLER KIT CONTENTS



Control Module with Wiring Harness **(QTY 1)**

Vacuum Hose **(QTY 1)**

Remote Controllers **(QTY 2)**



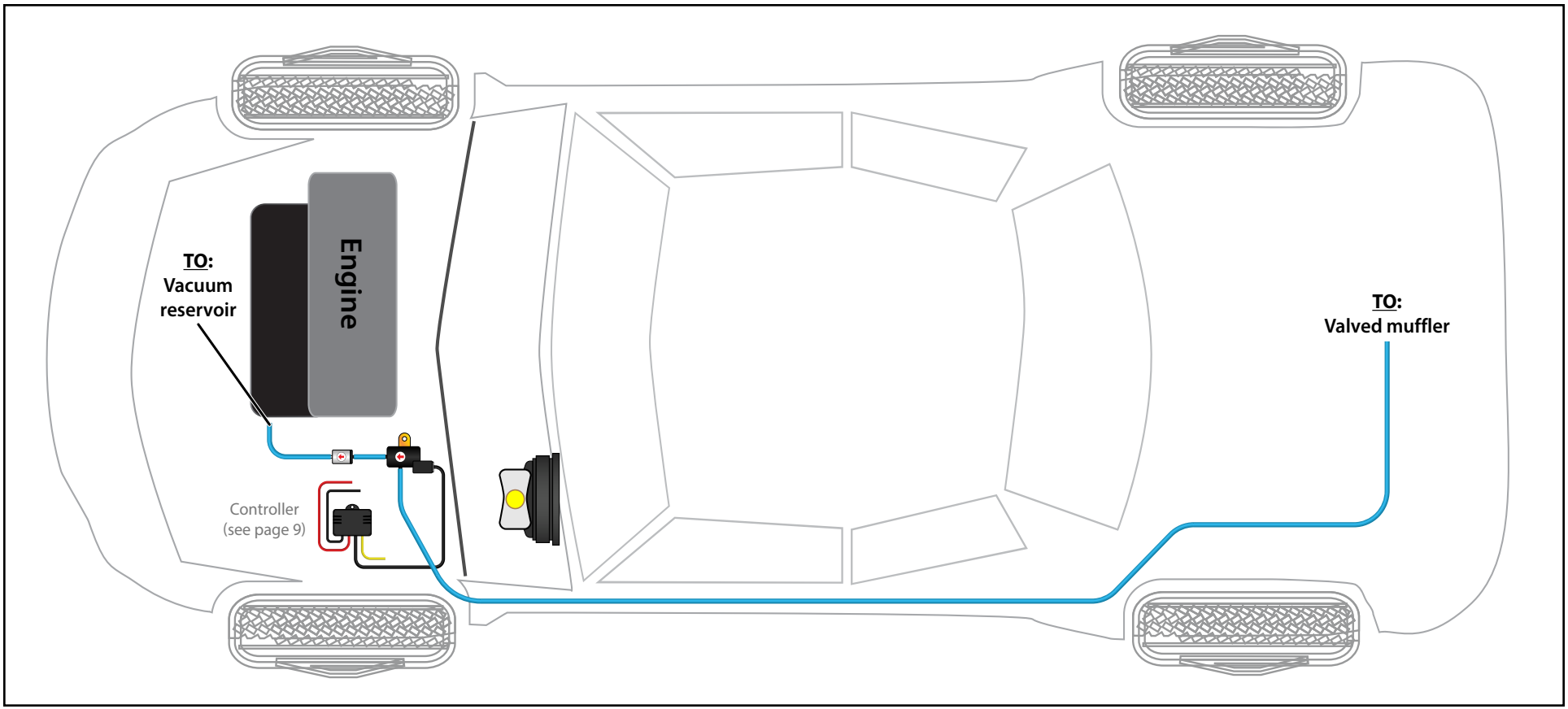
Solenoid Vacuum Valve **(QTY 1)**

Check Valve **(QTY 1)**

Vacuum Hose T-Fitting* **(QTY 1)**

*This is included but may not be required for this installation

REMOTE EXHAUST VALVE CONTROLLER SYSTEM DIAGRAMS

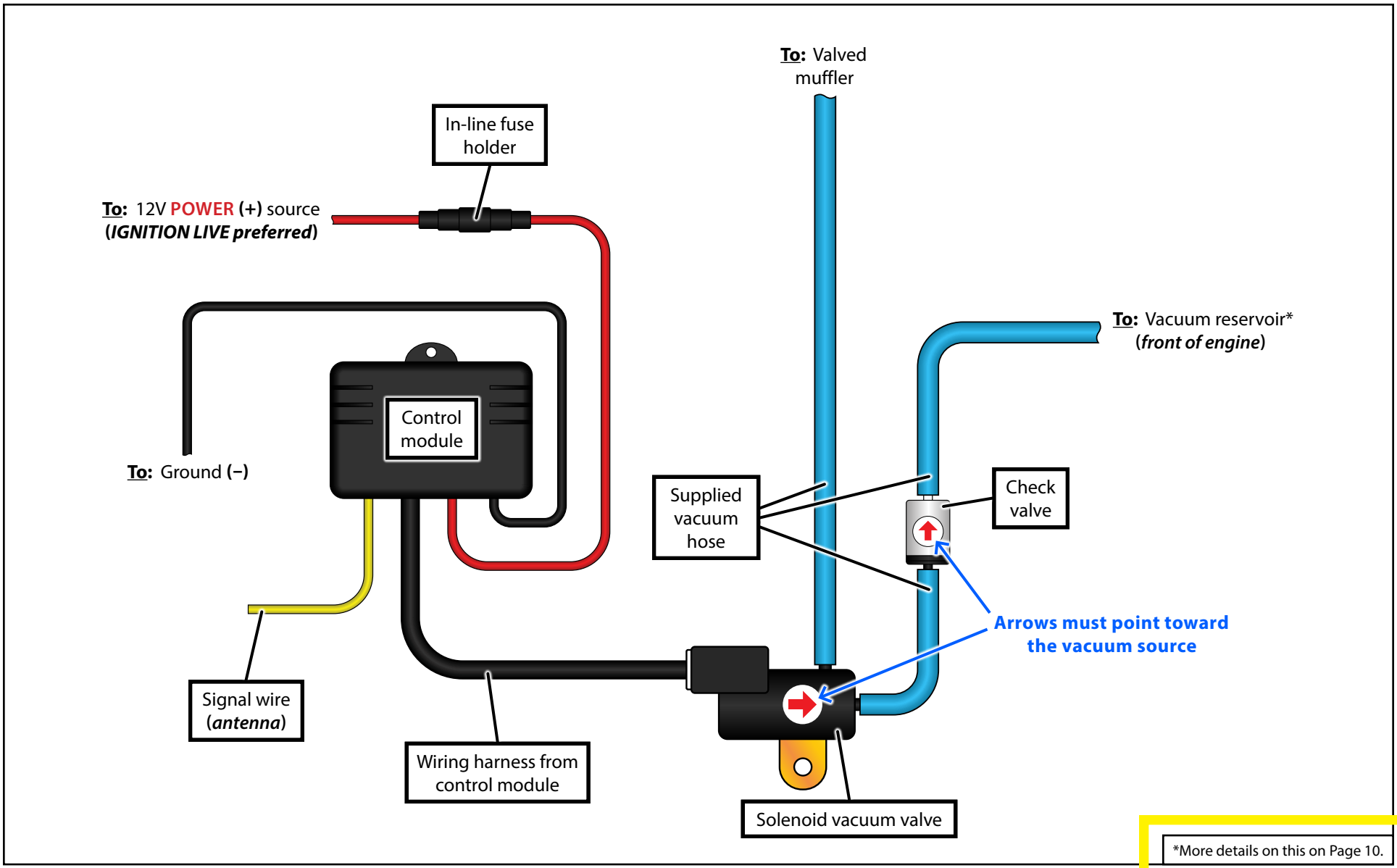


We decided to install our control module and solenoid under the hood. The remote exhaust valve controller system can be installed almost anywhere on the vehicle, if you want to install the components somewhere else that is absolutely OK as long as it is protected from direct contact w/water or high heat.

We powered the control module with an Add-A-Circuit Fuse Holder, tapping into an **IGNITION LIVE** fuse under the hood. This means that the control module will not be powered unless the key is turned **ON**. For more information on this please review the PDF which is located under the "Installation" tab on ES#1906431 or ES#3209653.

We then routed the vacuum hose from the vacuum reservoir, down along the underbelly and over to where the valved muffler will be located. Please proceed to the next page for a detailed diagram of the entire valve controller system.

REMOTE EXHAUST VALVE CONTROLLER SYSTEM DIAGRAMS



*More details on this on Page 10.

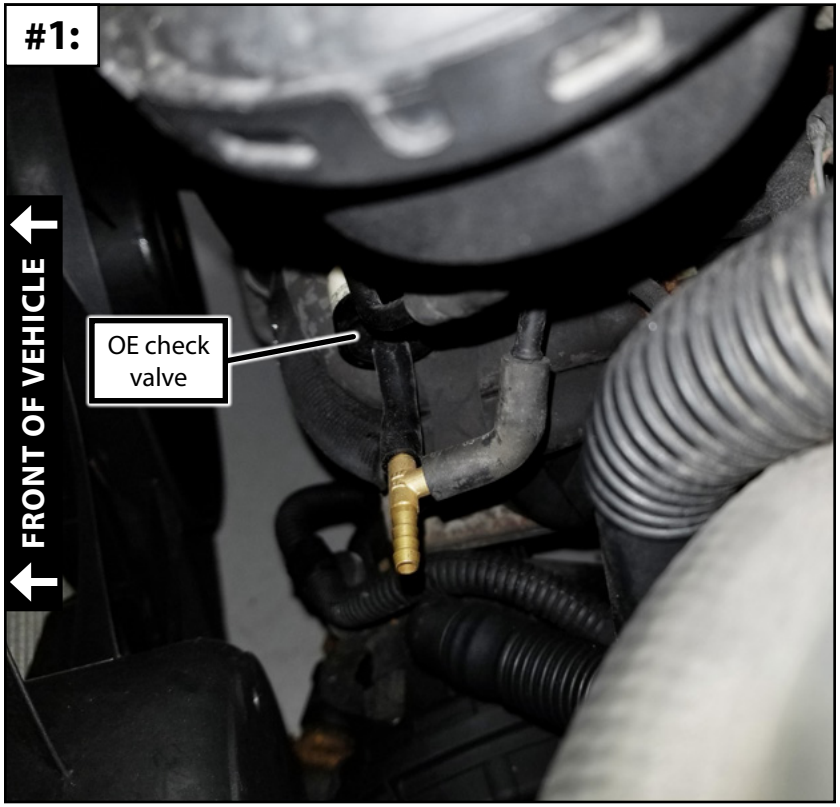
INSTALLING THE REMOTE EXHAUST VALVE CONTROLLER

Step 1:

Finding a suitable vacuum source can be tricky on an NA (naturally aspirated) engine. The VR6 engine in the MK5 R32 has a vacuum reservior mounted underneath the intake manifold, between the radiator and the engine. There isn't a lot of room to work in this tight corner of the engine bay. We've found that if you remove the air box you can reach the vacuum line where it connects to the OE check valve just before the vacuum reservoir (**Photo #1**). This is what we used as our vacuum source, you may choose another source at your own discretion.

Reference **Photo #2** below to see how we used our vacuum "T" to tap into the vacuum system.

#1:



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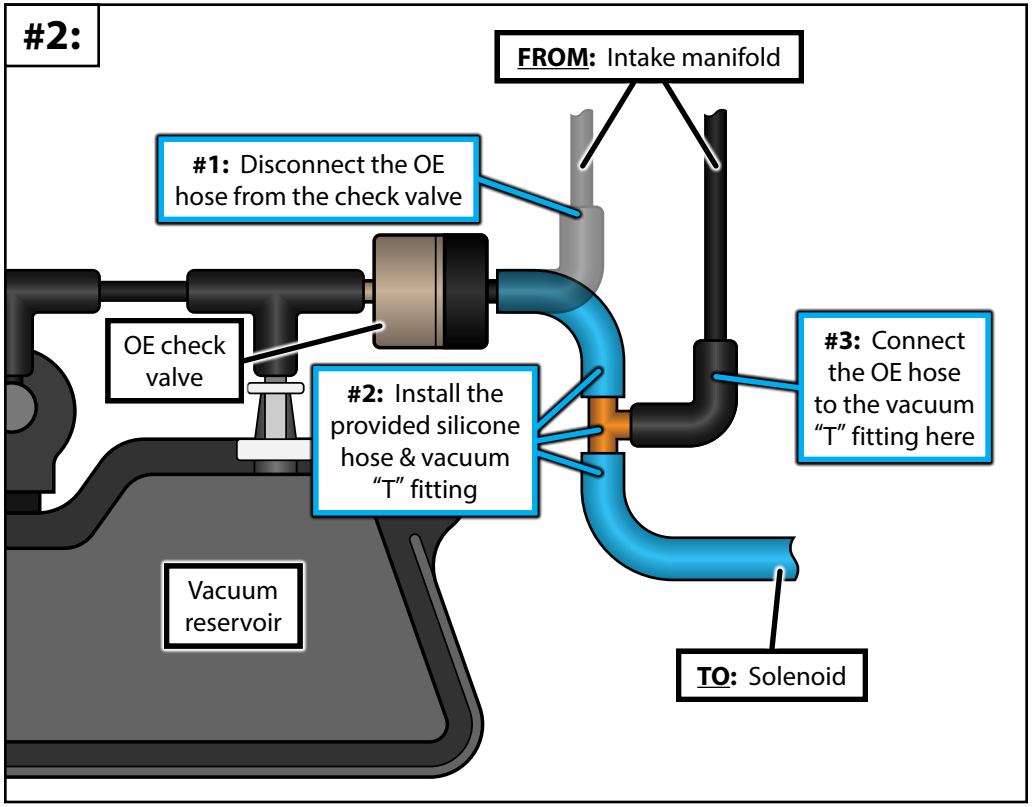


INSTALLING THE REMOTE EXHAUST VALVE CONTROLLER

Step 2:

Now it's time to mount the solenoid vacuum valve and the electronic control module. For our install we bolted the solenoid to the LH strut tower on an unused stud behind the fuse box, and zip tied the control module underneath that same fuse box (**Photo #1**). Connect the control module wiring to suitable power (+) and ground (–) sources.

Route the vacuum hose between the solenoid vacuum valve and the boost tap using the diagrams on Page 8-10 for reference.

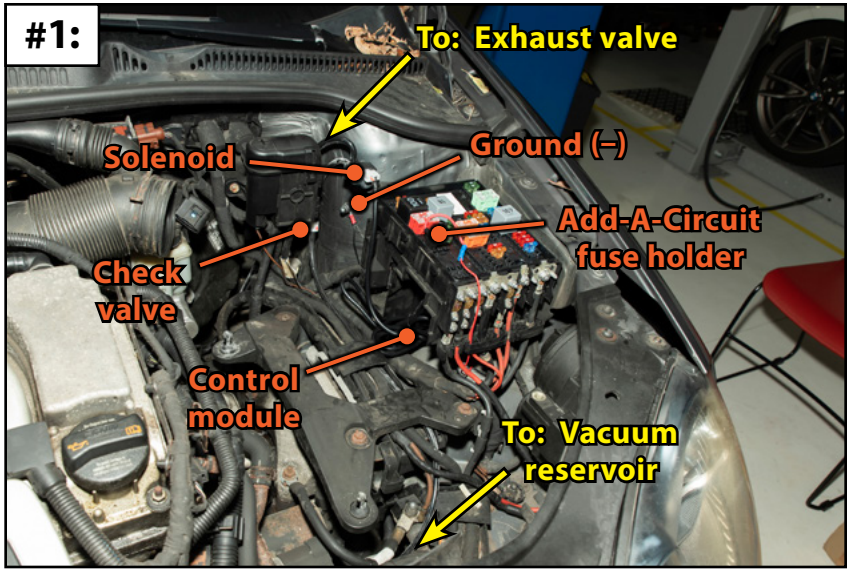
NOTE

The check valve can be installed anywhere between the solenoid vacuum valve and the vacuum source. Take into consideration the amount of hose needed between these components before cutting the hose to prevent excess waste.

Route the hose down away from any moving or hot components and out through the bottom of the vehicle. Pull the vacuum hose down past the front subframe and toward the rear of the vehicle (**Photo #2**). Route the hose to where the muffler will be located, securing it in place with zip ties if necessary.

You're now ready to install the new exhaust system, please proceed to the next page.

#1:



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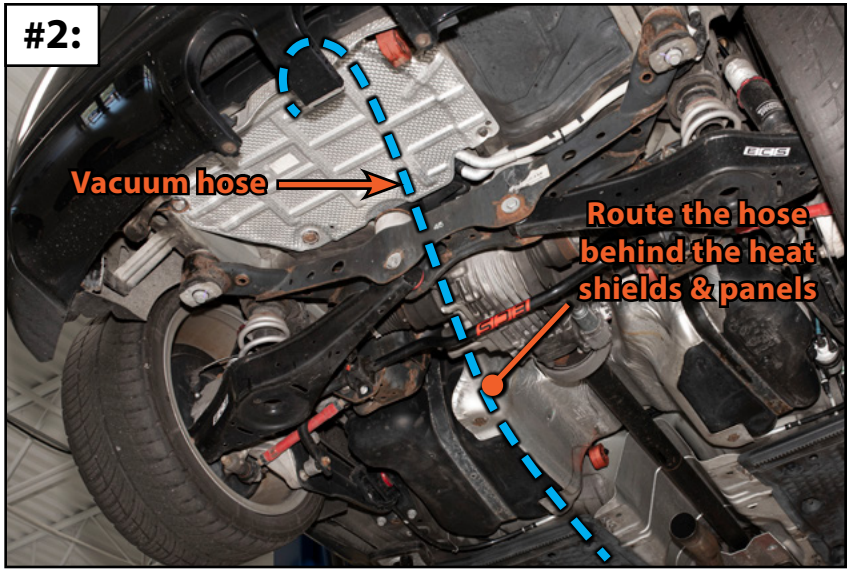


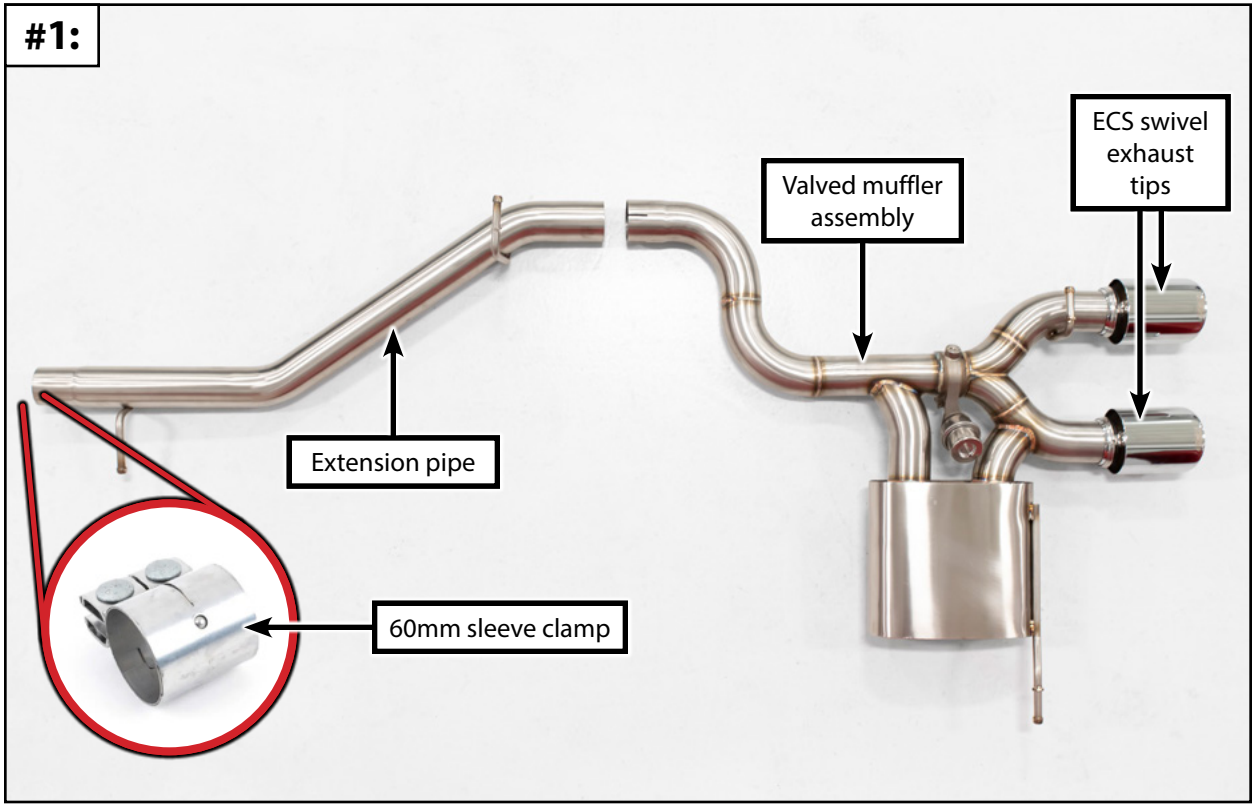
INSTALLING THE NEW EXHAUST SYSTEM

Step 1: Ball Pein Hammer

Before we begin it's a good idea to unpack your new exhaust system and carefully lay it out on the floor (**Photo #1**). Inspect all of the slip joints for any signs of damage during shipping. Test fit the pipes together at every slip joint to make sure they slide together easily (**Photo #2**). If they do not slide together easily, gently tap on the ends of the pipes with a ball pein hammer to straighten them, then recheck fitment. Confirm that the jam nut is tight on the muffler valve (**Photo #3**). Transfer the exhaust hangers from the stock system over to the new muffler and extension pipe. Be sure to orient them exactly as they were before.

Please note that during this installation, you will be installing the exhaust from front-to-back ***WITHOUT*** fully tightening the clamps until after we've adjusted for proper fitment. Proceed to the next page once all of the slip joints slide together easily.

#1:



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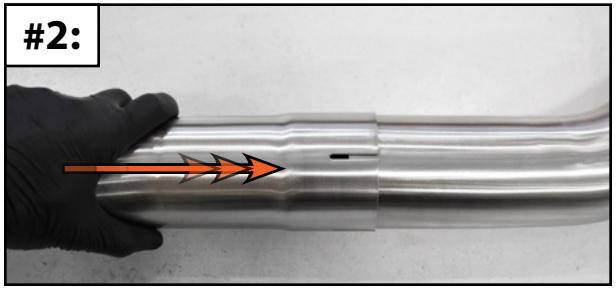

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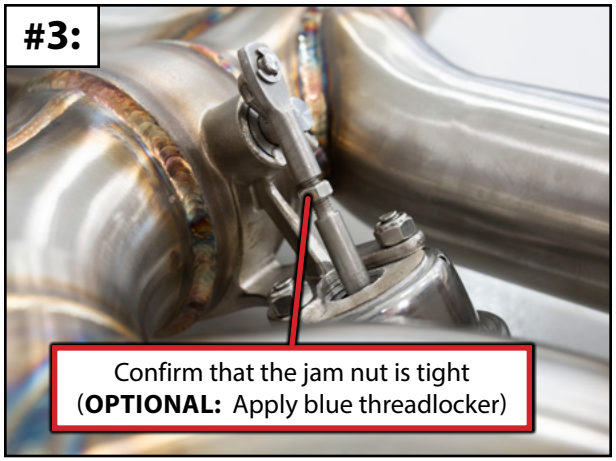
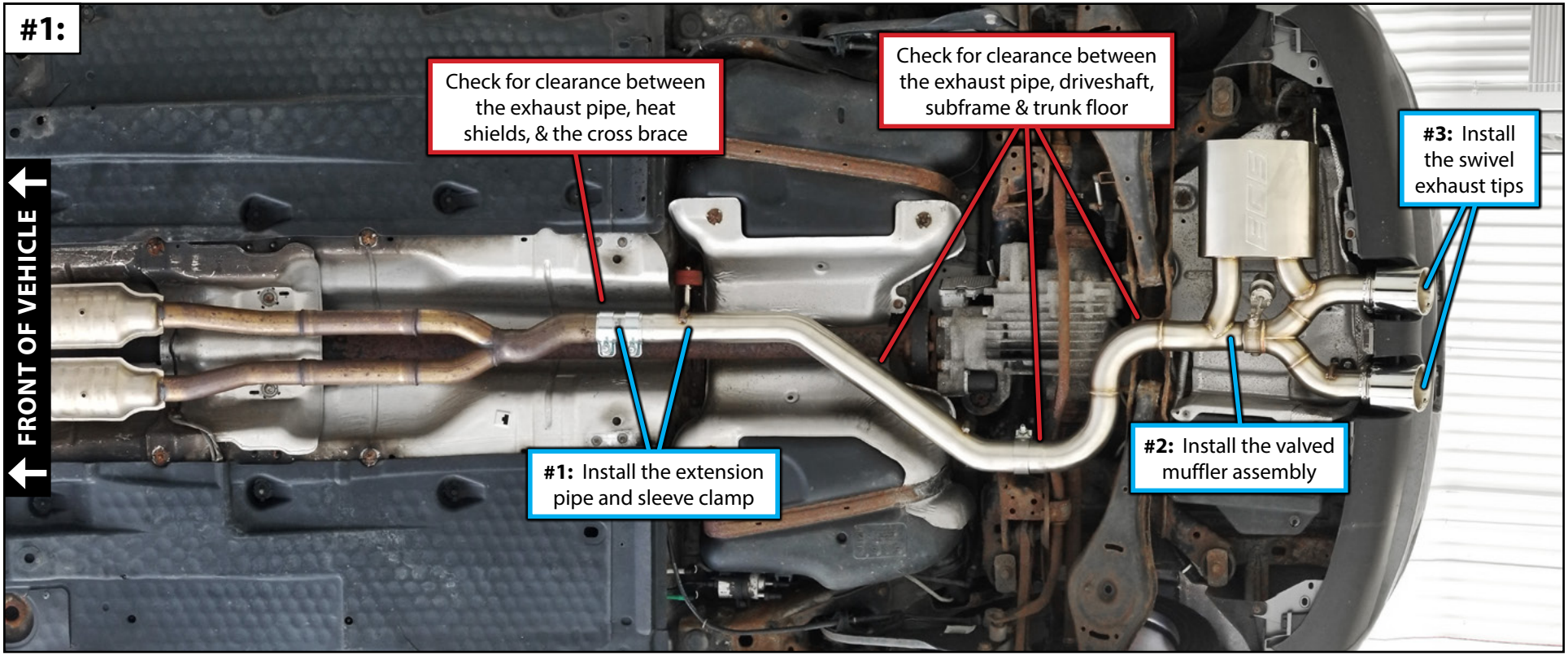


INSTALLING THE NEW EXHAUST SYSTEM

Step 2: 13mm & 15mm Sockets, Ratchet

Loosely install the extension pipe, sleeve clamp, valved muffler assembly and exhaust tips. Now it's time to adjust the exhaust system for proper fitment. The key to proper adjustment is patience, take your time and **DO NOT** fully tighten any of the clamps until **AFTER** you've performed all of the steps up through Page 16. Closely inspect the exhaust system from front to back, we need to check for clearance between the pipes and nearby chassis components.

CAUTION: You can tighten the exhaust clamps until they are "snug", but **DO NOT USE AN IMPACT WRENCH** and do not fully tighten them yet!



INSTALLING THE NEW EXHAUST SYSTEM

Step 3:

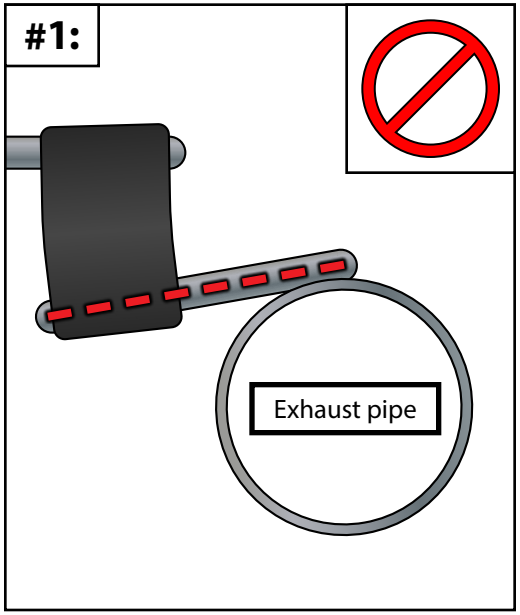
Check the hangers on the muffler and the extension pipe to ensure that they are sitting level side-to-side (**Photos #1 & #2 below**).

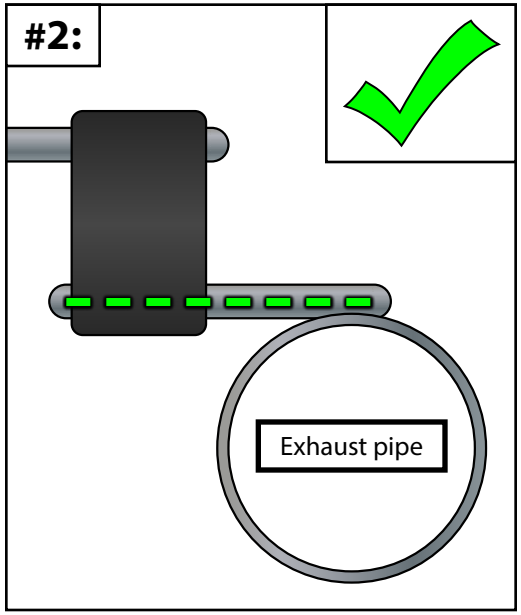
Finally, we want to ensure that the exhaust hangers are rotated at least slightly toward the front of the vehicle (**Photo #3 below**). The exhaust hangers should be inclined toward the front of the vehicle so that lower hole is approximately 10-15mm forward of the upper hole, this will allow the hangers to pivot backwards as the system heats up and expands.

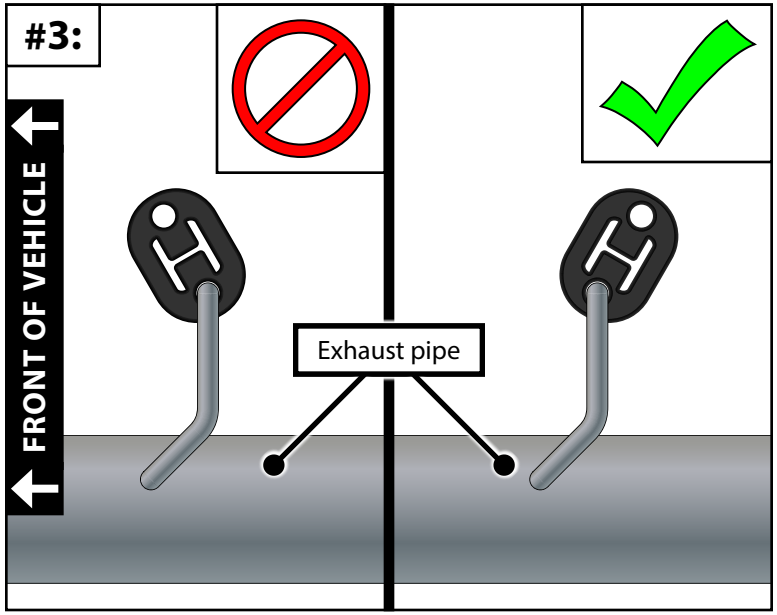
NOTE

Due to differences in manufacturing, as well as variations from one car to another, you might not be able to get all of your hangers to pitch forward. This is acceptable as long as they are at least close to vertical.

CAUTION: You can tighten the exhaust clamps until they are "snug", but **DO NOT USE AN IMPACT WRENCH** and do not fully tighten them yet!







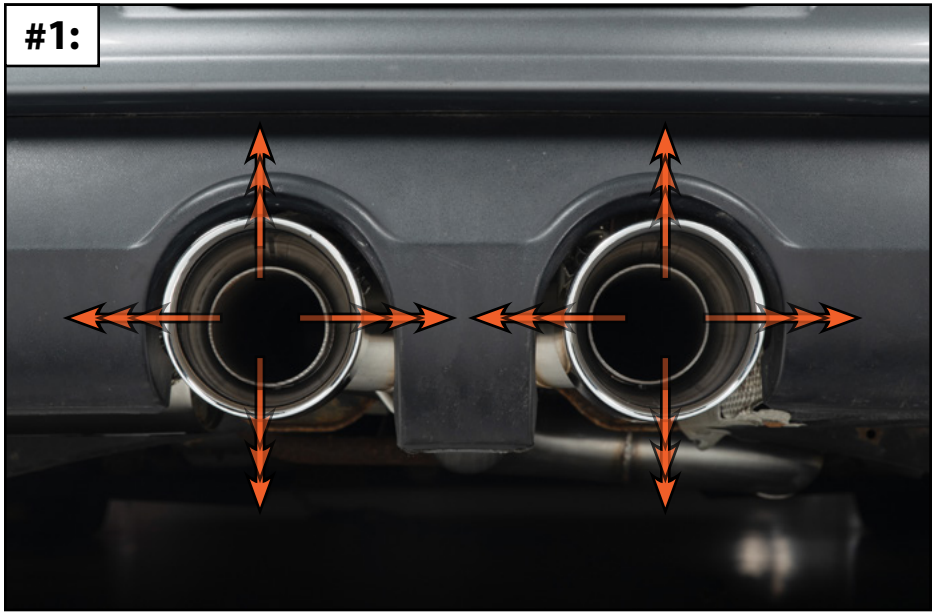
INSTALLING THE NEW EXHAUST SYSTEM

Step 4:

Center and level the each of the exhaust tips inside the bumper cut outs, then set their depth inside the valance (**Photo #1 & Photo #2**).

CAUTION: You can tighten the exhaust clamps until they are "snug", but **DO NOT USE AN IMPACT WRENCH** and do not fully tighten them yet!

#1:



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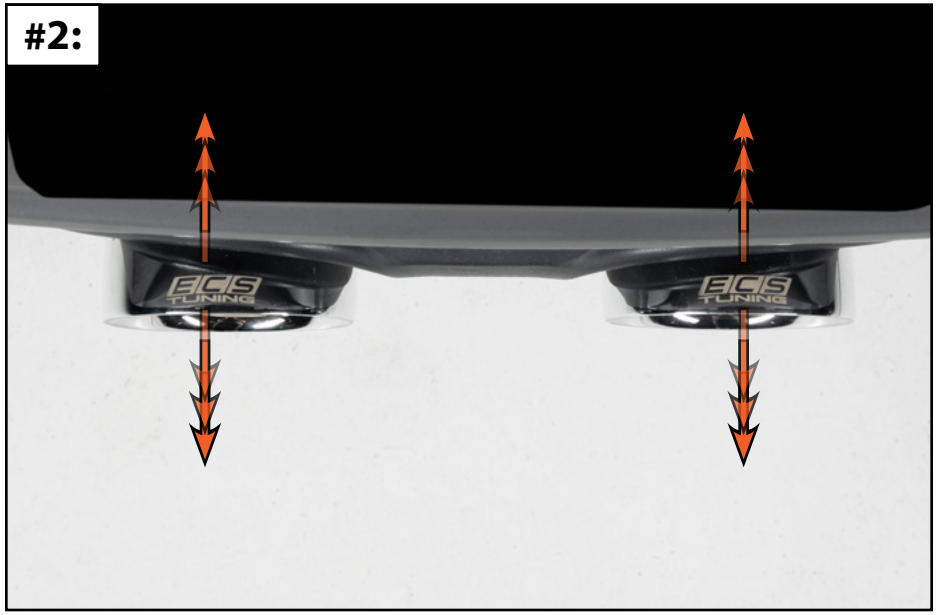


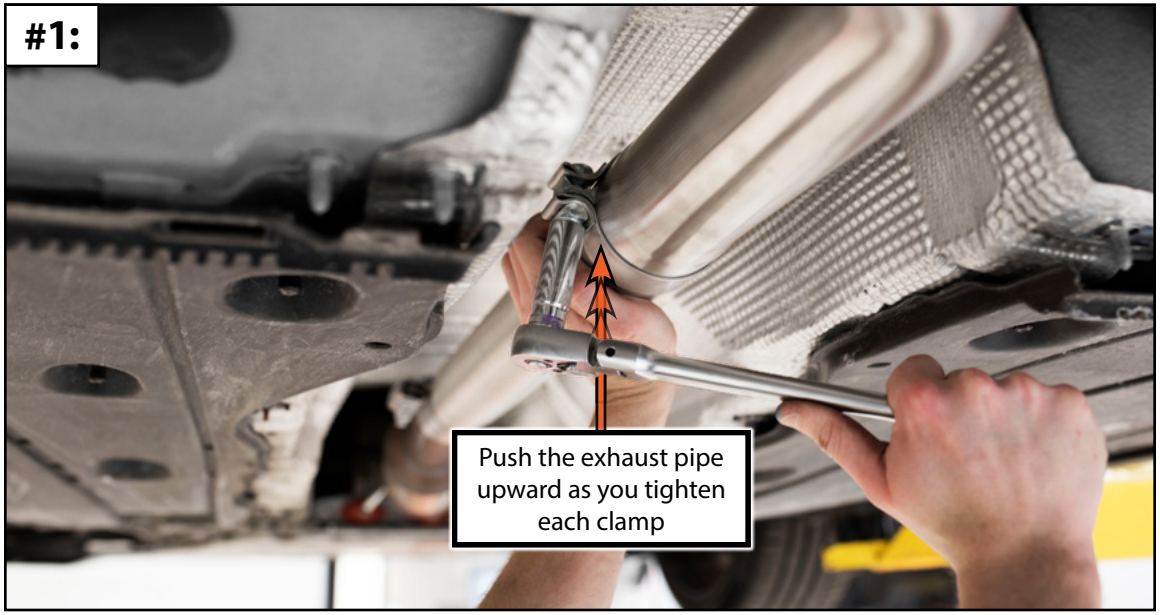
13mm & 15mm Sockets, Ratchet

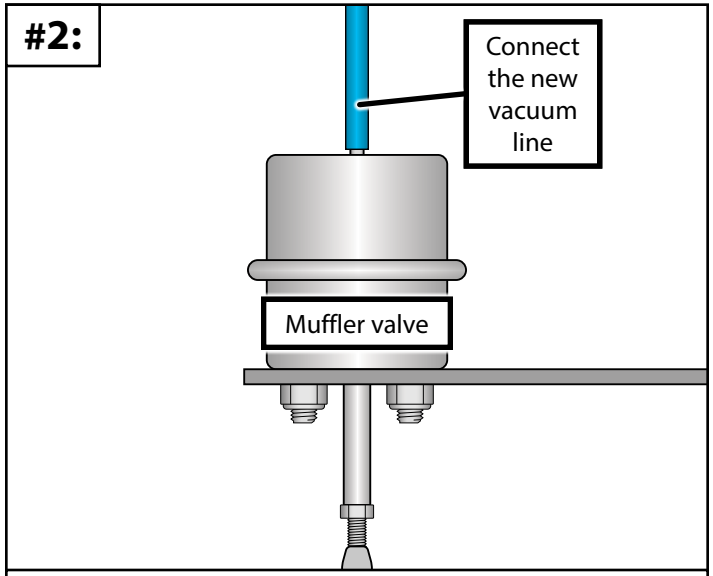
Push upward on the exhaust system as you fully tighten each clamp from the front of the system to the back (**Photo #1**). Let go and allow the exhaust to settle, then check again for clearance around all pipes. Connect the vacuum hose to the muffler valve (**Photo #2 or Photo #3**).

☐ Wipe any oil, grease, or fingerprints from the exhaust system. Reinstall the belly pans and chassis cross brace.

☐ Perform a system check by performing the following steps:
- Start the engine.
- Press the "unlock" button on the remote to open the valve.
- Press the "lock" button to close the valve.
  - You should be able to hear a difference in both exhaust tone and volume when the valves are opened or closed.
  - Looking under the vehicle you should be able to see the valve cycle back and forth (not shown).

☐ Recheck all fasteners after the vehicle has been driven 500 miles.





Installing NEW remote controller

PROGRAMMING THE HOMELINK® BUTTONS

Step 1:

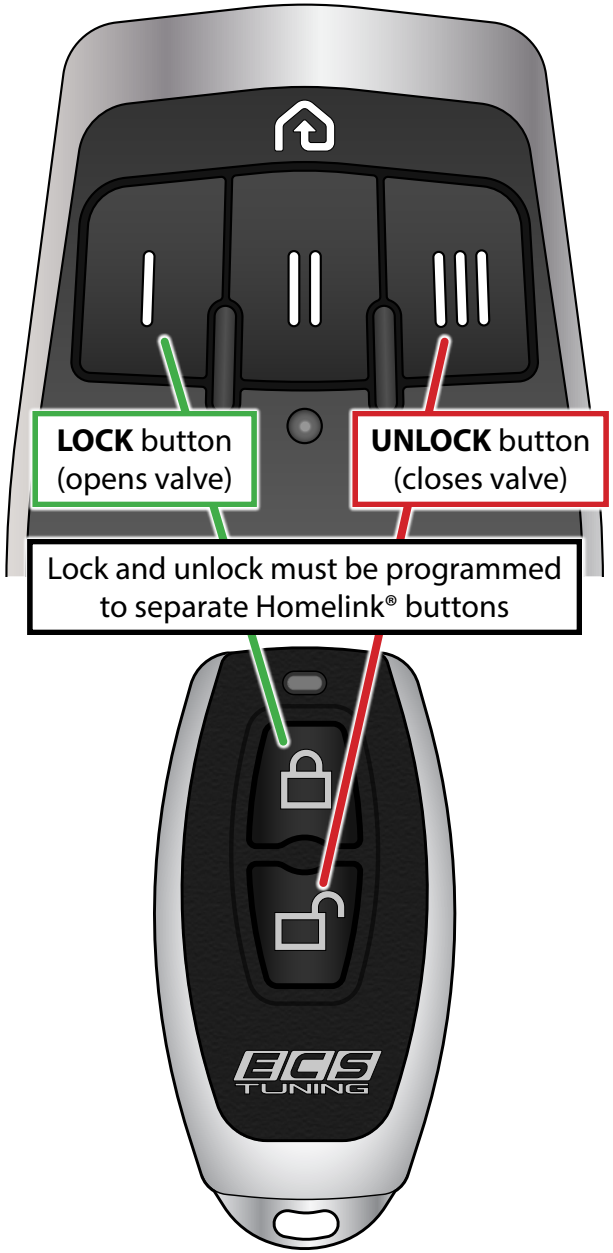
It is possible to program the Homelink® buttons inside your vehicle and use them to open and close the exhaust system valves. Since the valve in the muffler is ***normally open***, the **LOCK** button will **OPEN** the valve, the **UNLOCK** button will **CLOSE** the valve.

We recommend you check your owner's manual programming information, or you can visit the Homelink® website for their vehicle specific instructions:

- https://homelink.com/program/watchvideo

Here are a few notes to help you along the way:

1. You will need to program **ANY TWO** of your Homelink® buttons to control the exhaust system valves: one button will be used to open the valve, the second button will close it.
2. Pay close attention to where the manufacturer suggests pointing the remote during pairing. Some systems are very sensitive to location.
3. Depending on the method used to program the Homelink® system, it is possible that any previously programmed remotes will be deleted and will need to be reprogrammed.
4. If you have difficulty programming your Homelink® buttons, it might help to try the following:
    - Start the programming procedure over again.
    - Check your remote batteries.
    - Review the troubleshooting tips in your owner's manual.



Your ECS Exhaust System installation is complete!

Your ECS Valved Exhaust System installation is complete!

These instructions are provided as a courtesy by ECS Tuning

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