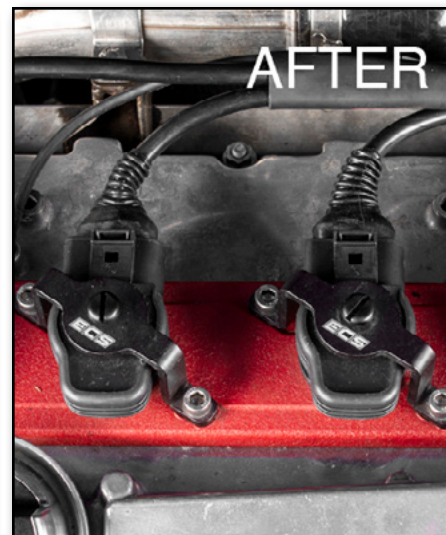




VW/Audi 1.8T Transverse (FWD) Ignition Wiring Replacement Kit Installation Guide



Skill Level
2 - Moderate
Some Experience
Recommended



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

The Project:

The ignition wiring harnesses on 1.8T front wheel drive (FWD) VW/Audi vehicles are prone to failure in as little as 50,000 miles, mostly due to their close proximity to the exhaust and other hot components. VW/Audi recommends replacing the entire engine harness to repair this issue, which will likely cost you over \$1,000! Our Ignition Wiring Replacement Kit is an affordable repair solution, the installation is pretty straight forward, and our comprehensive instructions will walk you through the procedure step by step.

Keep in mind that this harness is designed to fit front wheel drive VW/Audi's which are equipped with AWD, AWP, or AWW engine code 1.8T engines. This harness **WILL NOT** fit the 225hp Audi TT (code AMU) without significant modification, but it **will** fit 180hp Audi TT. How do you know which engine code your 1.8T is? The engine code is stamped into the cylinder head along the front RH side, directly above one of the engine lift points. This stamping is shown in the inset photo below, and as you can see our shop MK4 is equipped with an "AWP" 1.8T.

This install can be a bit challenging, but not beyond the ability of a relative novice. If you have experience cutting and splicing wires, and you have the ability to look at and understand a wiring diagram you could probably knock this out in an afternoon. If you have less experience you might want to plan an entire day for the project just in case.

Make sure that you completely read these instructions **BEFORE** you start with this repair, including the Terminal Crimping Illustrations on Page 9 and 10, as well as the Connector Pin Diagrams on Page 11, 12, and 13. These diagrams will be a big help when it comes time to start cutting and splicing wires on your vehicle. A basic set of tools is required for this job. Thank you for looking to ECS Tuning for all of your performance and repair needs, we appreciate your business!

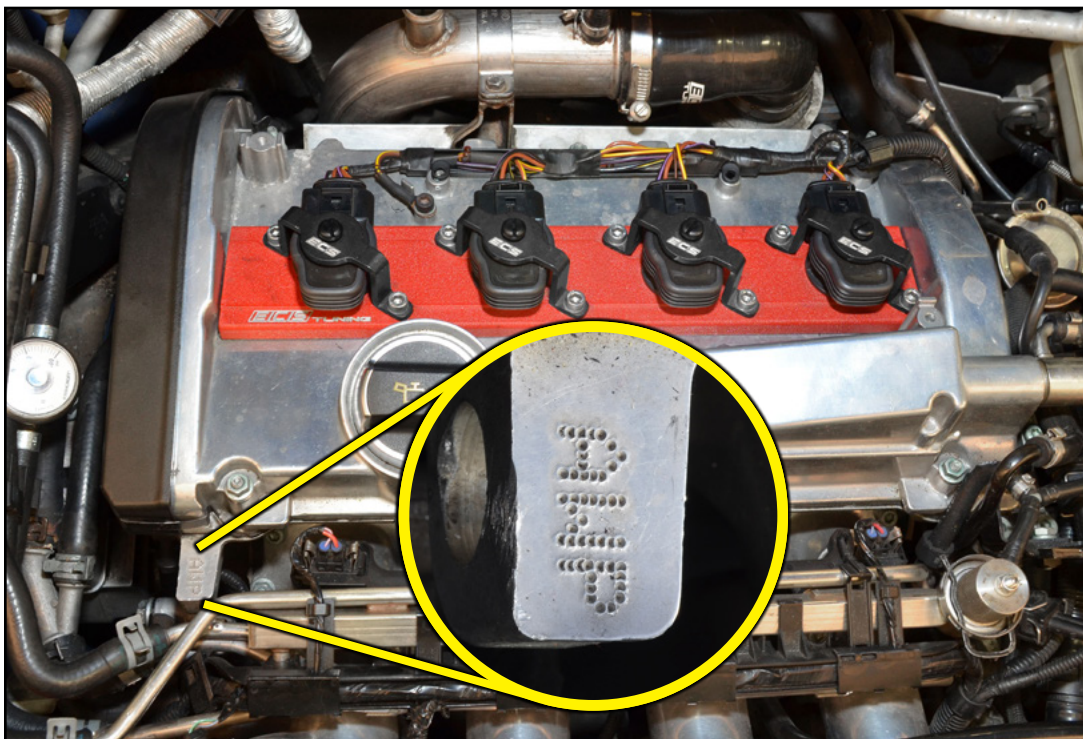


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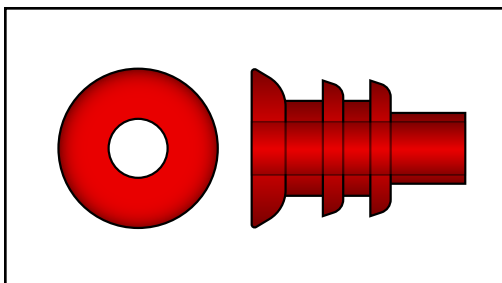
KIT CONTENTS

Note: We have included more wire terminals & seals than you will need, you will have extras leftover.

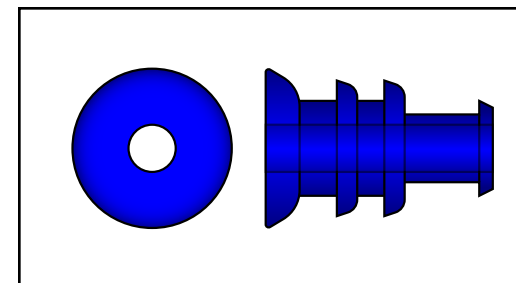


ECS Ignition Wiring Harness
(QTY 1)

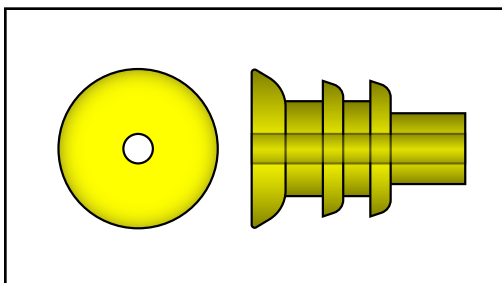
12-Pin Connector Assembly
(QTY 1)



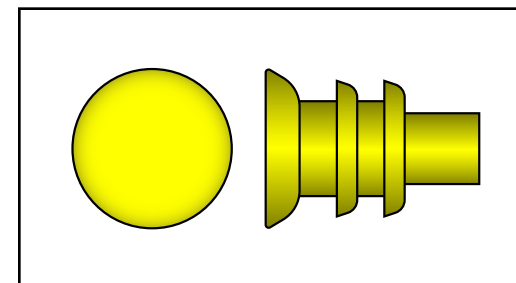
14awg Wire Seal
(QTY 7)



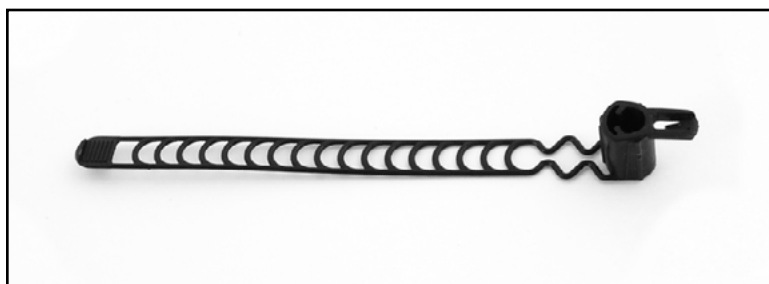
18awg Wire Seal
(QTY 1)



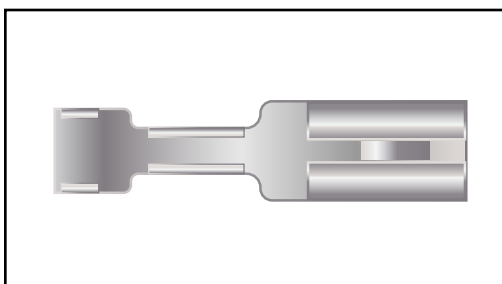
22awg Wire Seal
(QTY 5)



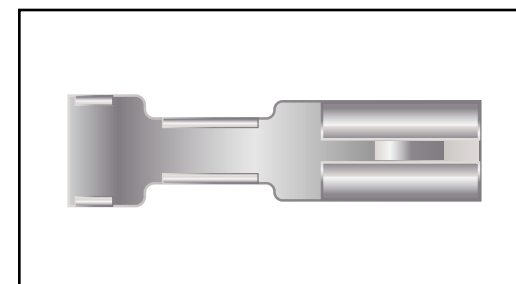
Solid Connector Plug
(QTY 3)



Reusable Cable Tie
(QTY 1)



22awg Wire Terminal
(QTY 6)



14awg Wire Terminal
(QTY 8)

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.



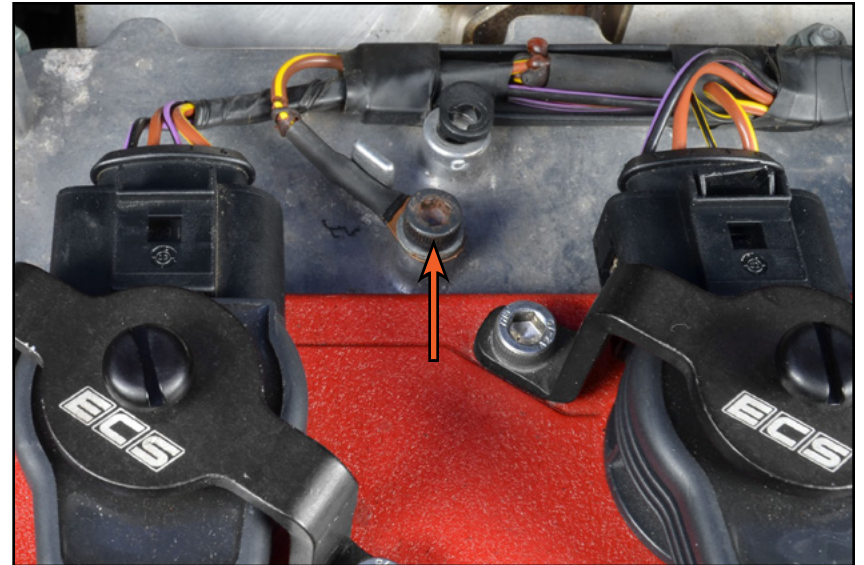
NEVER get underneath a vehicle that is supported only by a jack, and **ALWAYS** make sure that the vehicle is securely supported on jack stands.

REMOVING THE FACTORY IGNITION WIRING HARNESS

Step 1:

Disconnect the negative battery terminal, remove the intake pipe and any other components which are in the way of the ignition harness. We removed the intake tube, battery box, battery, and several other components for better visibility, but this job can be done with many of these parts left installed.

Release the push clips which secure the ignition wiring harness to the top of the valve cover (not shown), then remove the bolt which secures the harness ground to the valve cover (arrow).

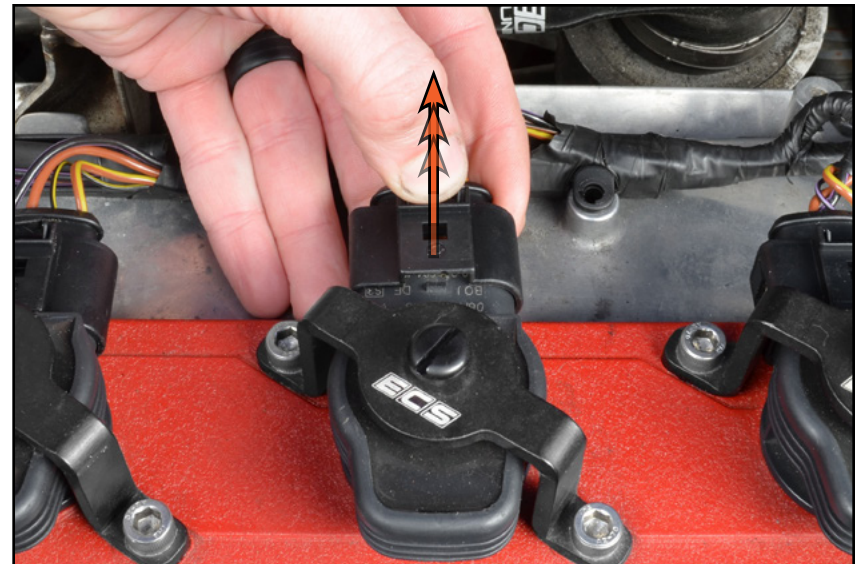


Step 2: VAG Connector Tool

Release the locking tab on the top of each ignition coil connector, then slide the connectors off of the coils.



Please refer to [Page 19](#) for detailed photos and procedures on using the VAG Connector Tool ([ES#2628676](#)).



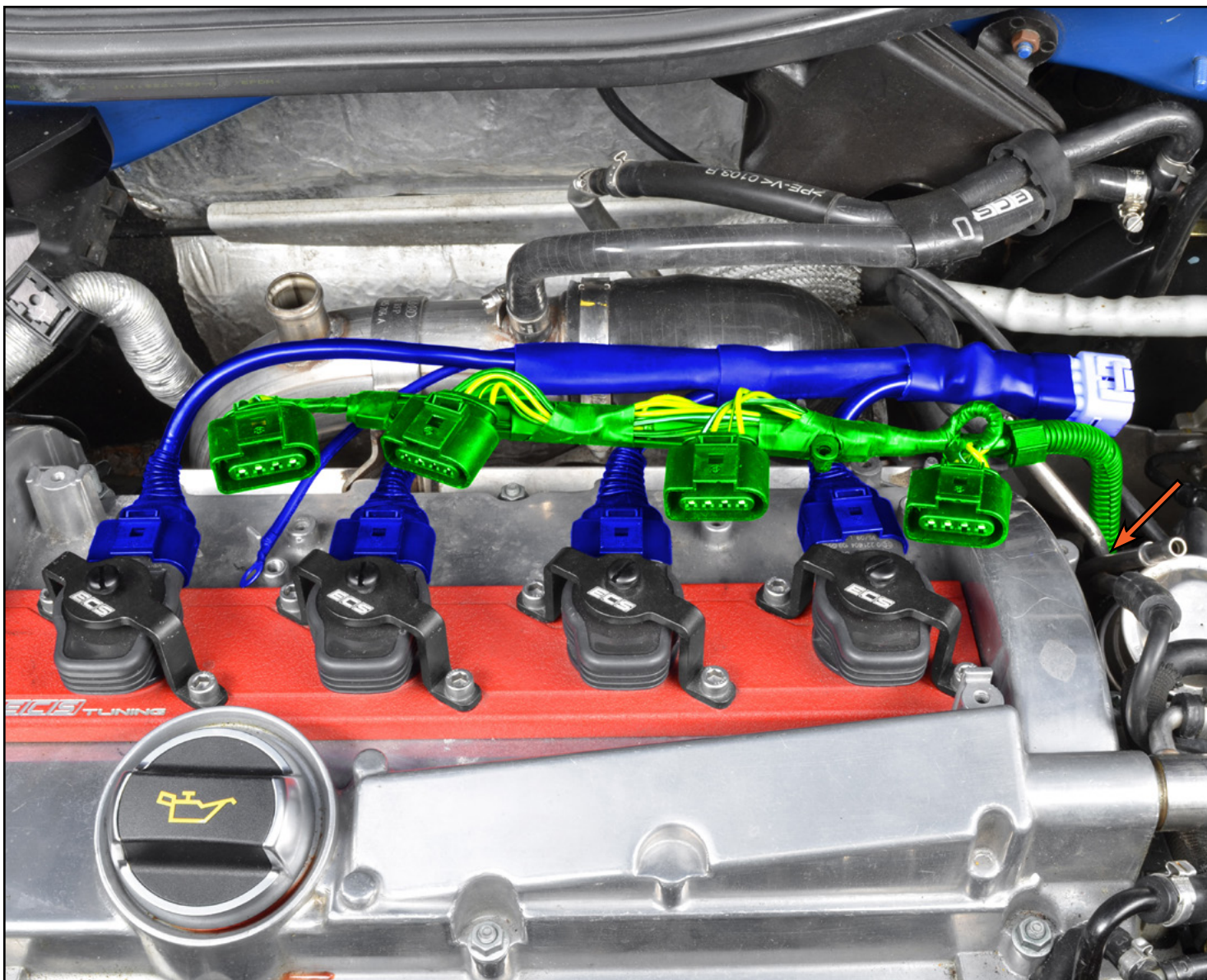
REMOVING THE FACTORY IGNITION WIRING HARNESS

Step 3:

Locate and release the push clip which secures the engine wiring harness to the back of the cylinder head (arrow).

It's a good idea at this point to lay out the new ignition harness (**BLUE**) along side the stock harness (**GREEN**) to get a sense of how the new harness will fit, and approximately where we will need to cut the stock harness in order to add the new 12-pin connector. We even clipped the new connectors onto the coils temporarily to ensure that the harness was properly routed.

You may also notice that we have routed the stock harness on top of the steel line on the back side of the valve cover, this is optional but it does give you more space to work without compromising fitment.



REMOVING THE FACTORY IGNITION WIRING HARNESS

Step 4:

Carefully cut back the protective wrap/tape on the factory ignition wiring harness as shown in the photo, you need to gain access to the area where you will be splicing in the new 12-pin connector.

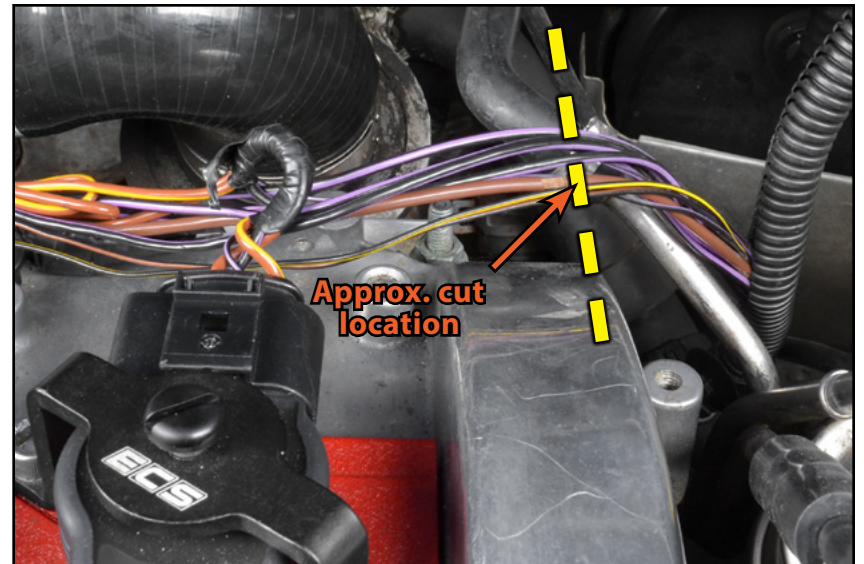


Step 5:

Here we have cut away the harness wrap to expose the wires. Depending on your vehicle, and what transmission it is equipped with, there will be 9 or 10 wires inside this harness. We will explain these differences in greater detail later on in this install, but for now please proceed to the next page for instructions on proper terminal crimping.



STOP! You are ready to remove the original harness, all you have to do is cut the wires, however once you do your vehicle will be out of commission until you complete the installation. Please read the **ENTIRE** installation procedure and make sure you have all of the required tools before cutting any wires.



PROPER TERMINAL CRIMPING TECHNIQUE

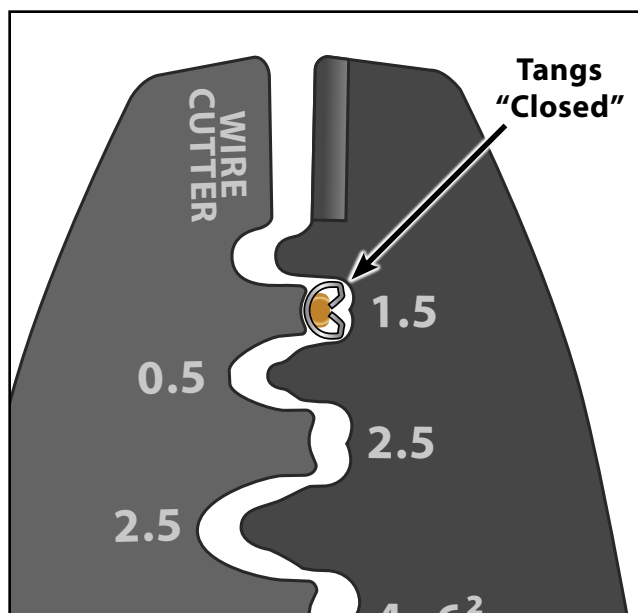
Step 1: Wire Stripper/Terminal Crimper Pliers

Now let's take a moment and look at how the terminals need to be crimped. A proper pair of wiring terminal crimpers will take the "tangs" on the terminal and roll them down and in, this makes for a solid and strong connection. Make sure that the "tangs" are completely pressed down into the wire, and give the wire a quick tug to make sure it is secure.

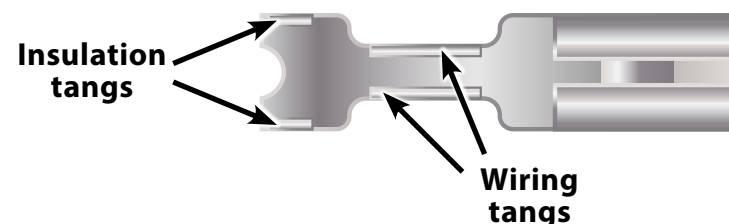
The diagram on the right shows the tangs and how they "roll" inwards and down onto the wire/insulation, the "wiring tangs" are meant to crimp onto the exposed wire, and the "insulation tangs" are meant to crimp onto the wire seal.

This diagram shows a terminal being crimped inside the wiring terminal crimpers, notice how the tangs roll back towards the wire and secure it in place.

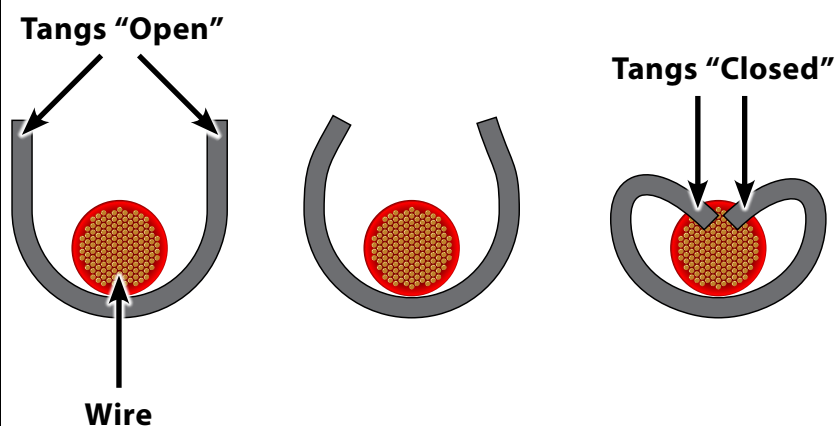
Please note: This style of crimp is for newer terminals, many old style crimpers WILL NOT have the correct crimp dies and WILL NOT work for this install.



Terminal Top View:



Terminal Back View:



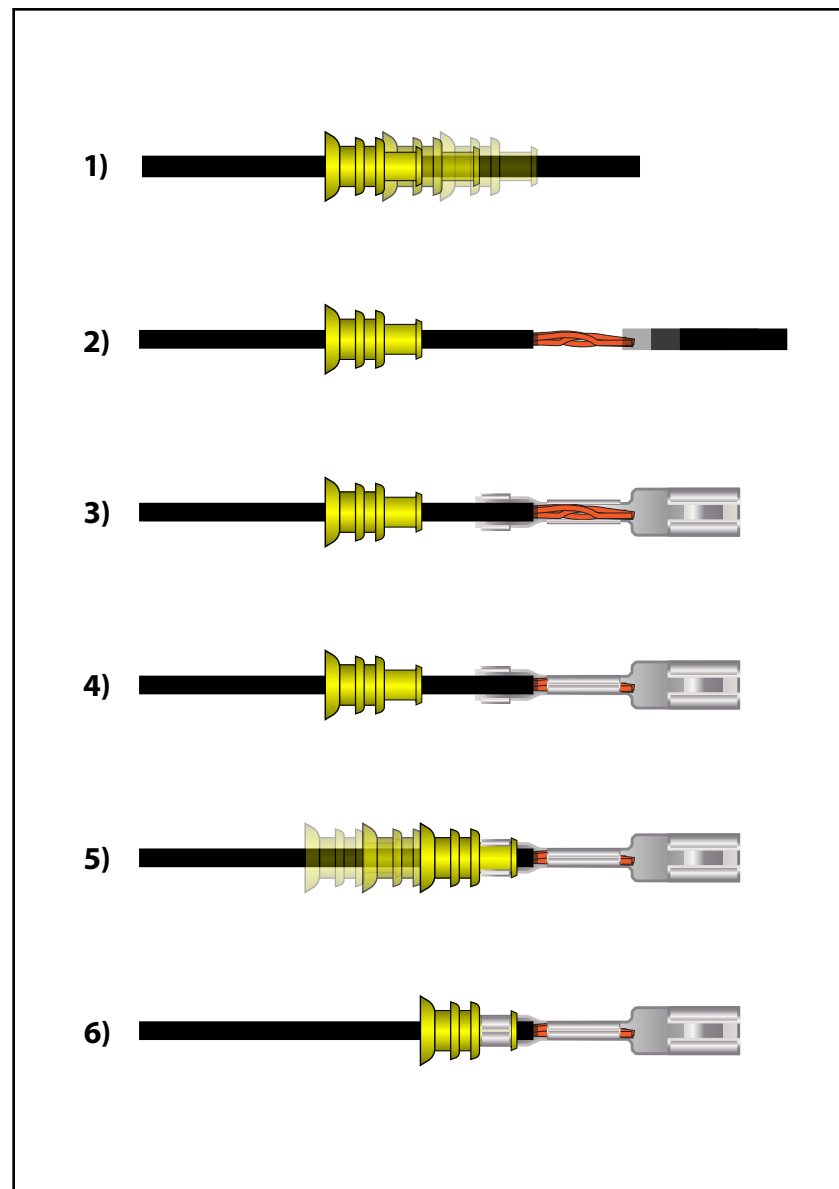
PROPER TERMINAL CRIMPING TECHNIQUE

Step 2: Wire Stripper/Terminal Crimper Pliers

Please take a moment to familiarize yourself with the correct procedure for crimping a wiring terminal.

Looking at the illustration on the right we can see a pair of wiring terminal crimpers, these crimpers are used to close the “tangs” on the terminal onto the wire and insulation, creating a firm and solid electrical connection.

1. Slide the rubber seal onto the wire (**DO NOT** forget to do this **BEFORE** you crimp the terminal onto the wire).
2. Strip the wire back approximately $\frac{1}{4}$ ”.
3. Line up the wire in the terminal so that the exposed wire is lined up with the wiring tangs, and the insulation tangs are lined up with the wire insulation.
4. Insert the terminal into the appropriately sized crimping die, then squeeze the crimper until the wiring tangs are seated down onto the wire. #4 in the illustration shows us what the first crimp should look like, notice how the tangs are wrapped around the exposed wire. Gently tug on the wire to make sure the crimp is secure, if the wire pops out it may be possible to spread the tangs slightly with a small pick and then crimp the connection again.
5. Slide the rubber seal up the wire until the front of the seal is aligned with the insulation tangs on the terminal (see #5 in the illustration on the right).
6. Insert the terminal into the appropriately sized crimping die, then squeeze the crimper until the insulation tangs are seated down onto the seal. #6 in the illustration shows us what the finished crimp should look like, notice how the insulation tangs are wrapped around the wire insulation. This terminal is now ready to be inserted into the connector.



CONNECTOR PIN DIAGRAM

BOTTOM ROW:

The 22awg ECU Trigger wires can be found in the bottom row of the 12-pin connector. These wires **ARE** cylinder specific and they must be installed into the correct connector cavity, failure to properly install these wires will cause the engine to not start or run.

The colors of these wires may vary based on the engine code, but please note that we will be using the wiring colors we found on our vehicle in all of the illustrations and photos in the steps ahead. Please use the list below to determine the correct connector cavity for all possible wire colors:

#9: Signal - Cylinder 4

- **BLACK** w/**PURPLE** tracer (AWD/AWP/AWW engines)

#10: Signal - Cylinder 3

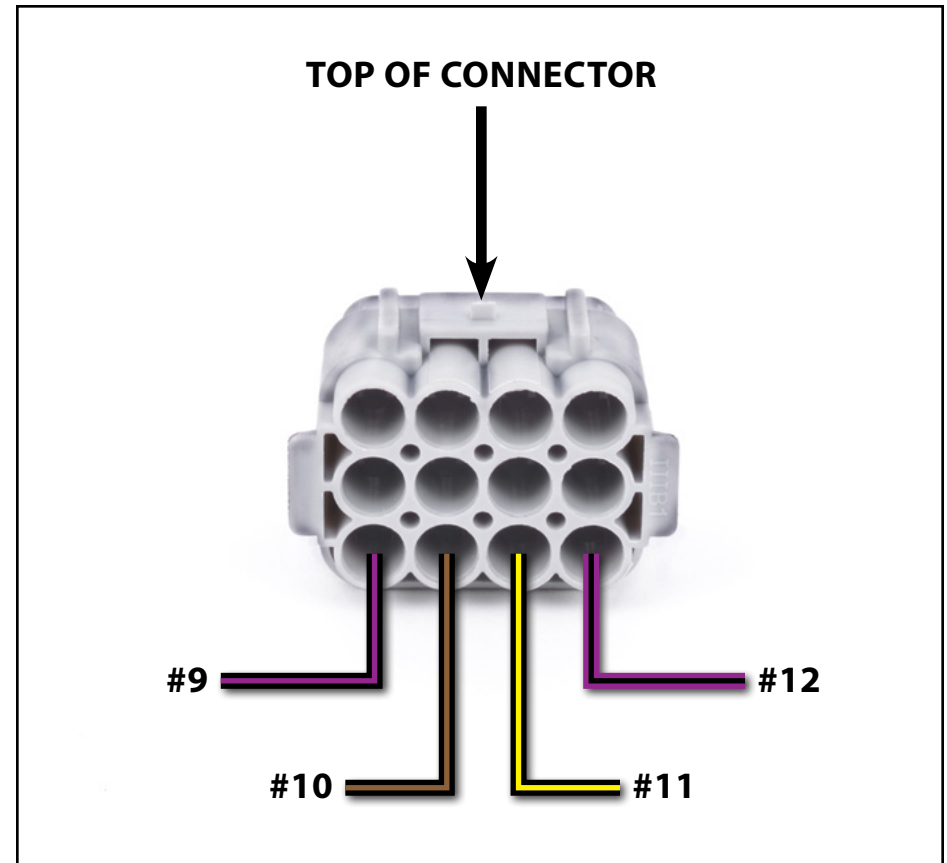
- **BLACK** w/**BROWN** tracer (AWD/AWP/AWW engines)

#11: Signal - Cylinder 2

- **BLACK** w/**YELLOW** tracer (AWD/AWP/AWW engines)

#12: Signal - Cylinder 1

- **PURPLE** w/**BLACK** tracer (AWP/AWW engines)
- **BLACK** w/**BLUE** tracer (AWD engines)



Please note that the photo above shows the top of the connector to assist with proper orientation.

CONNECTOR PIN DIAGRAM

MIDDLE ROW:

The 14awg Ground (-) wires can be found in the middle row of the 12-pin connector. These wires **MUST** be installed into the correct connector cavity, failure to properly install these wires will cause the engine to not start or run. Please use the list below to determine the correct connector cavity for all possible wire colors:

#5: Ignition Ground (ALL engine codes)

- **BROWN** w/no tracer

#6: VSS Ground (SEE LIST BELOW)

- **BROWN** or **PEACH** w/no tracer

- USED IN:

- All AWD engines
- All AWP engines w/manual or 4-speed auto trans
- All AWW engines w/manual trans
- Install the **BLUE** wire seal and one of the 14awg wire terminals onto this wire for these applications

- NOT USED IN:

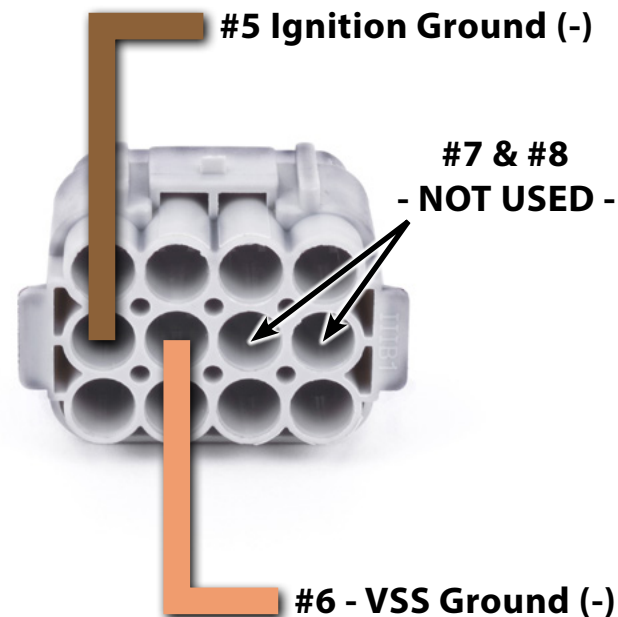
- All AWP engines 5-speed auto trans
- All AWW engines auto trans
- Install a solid connector plug into this cavity for these applications

#7: NOT USED (ALL engine codes)

- Install one of the solid connector plugs into this cavity

#8: NOT USED (ALL engine codes)

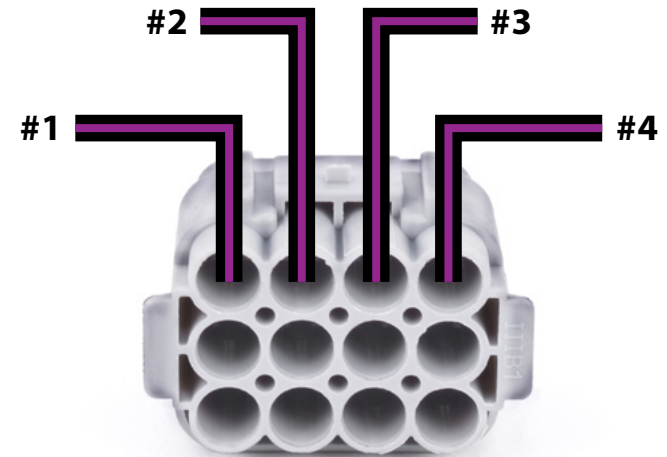
- Install one of the solid connector plugs into this cavity



CONNECTOR PIN DIAGRAM

TOP ROW:

The 14awg 12V Power (+) wires can be found in the top row of the 12-pin connector. These wires **ARE NOT** cylinder specific, therefore they can be installed into any connector cavity in the top row. These wires will all be **BLACK** w/**PURPLE** tracer.



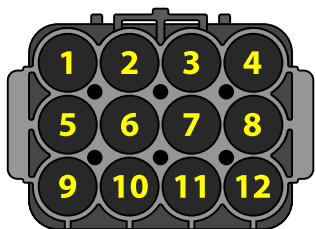
INSTALLING THE NEW IGNITION WIRING REPLACEMENT KIT

Step 1: Wire Stripper/Terminal Crimper Pliers

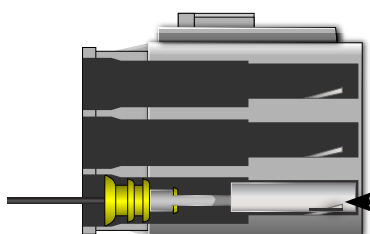
Using the process we reviewed on the last two pages, cut the four signal wires, slide on the included **YELLOW** 22awg seals, then attach the 22awg terminals. Be sure to give each wire a small “tug” to check that the terminal is firmly crimped into place.

Insert the four signal wires into the included 12-pin connector as shown in the photo (if your wire colors do not match the photo, please reference the table on Page 11), ensuring that each of the locking tabs in the connector snap into the matching slot in the terminals (see illustration below).

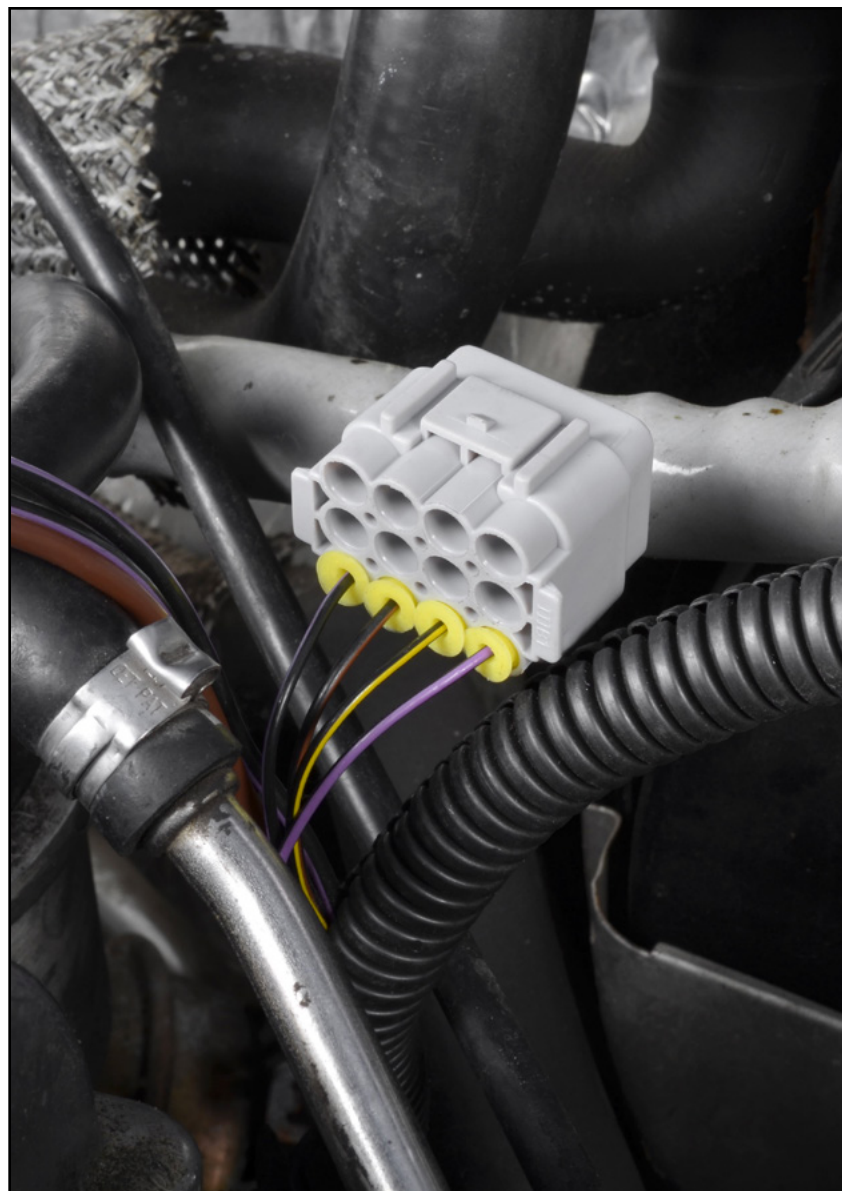
12-pin connector (as viewed from behind)



12-pin connector (as viewed from side)



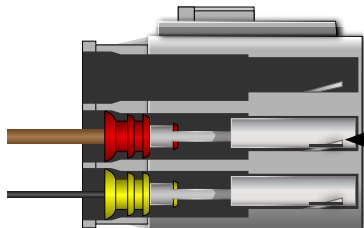
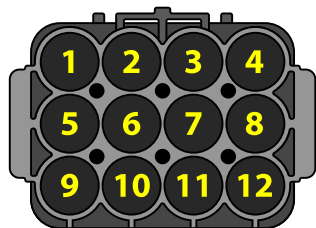
Locking tabs



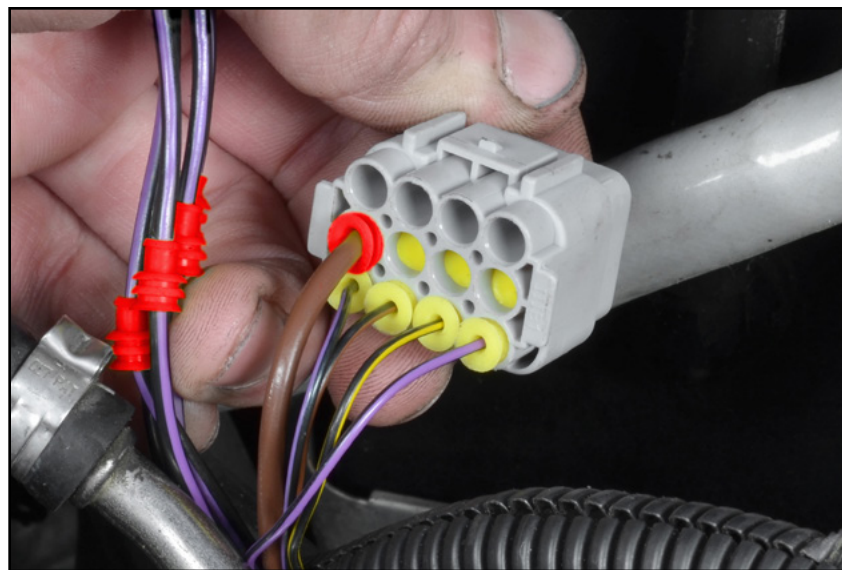
INSTALLING THE NEW IGNITION WIRING REPLACEMENT KIT

Step 2: Wire Stripper/Terminal Crimper Pliers

Next, cut the 14awg brown Ground (-) wire, slide on the included **RED** 14awg seal, then attach the 14awg terminal. Insert the Ground (-) wire into the appropriate cavity in the middle row, ensuring that the locking tab in the connector snaps into the matching slot in the terminal (see illustration below). Insert the solid connector plugs into all of the empty cavities in the middle row. *If you have a second ground wire please see Page 12 for more information.*

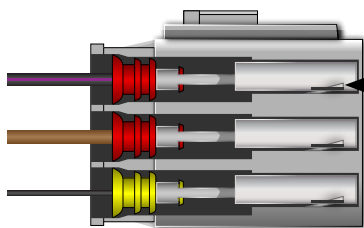


Locking tabs



Step 3: Wire Stripper/Terminal Crimper Pliers

Finally, cut the four Power (+) wires, slide on the included seals, then attach the 14awg terminals. Insert the four Power (+) wires into the top row as shown in the photo, ensuring that each of the locking tabs in the connector snap into the matching slot in the terminals (see illustration below).



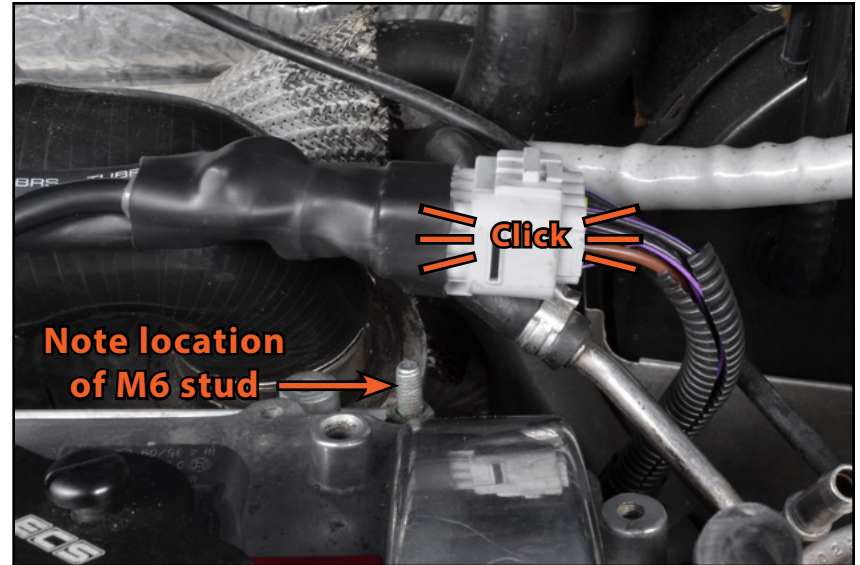
Locking tabs



INSTALLING THE NEW IGNITION WIRING REPLACEMENT KIT

Step 4:

Connect the ignition wiring replacement harness to the male connector we just wired in, making sure you hear the locking tab “click” when the harness connector is fully seated. Don’t forget to secure the harness along the back side of the cylinder head with the original retaining clips, and take note of the M6 stud location shown in the photo.



Step 5:

Connect all of the ignition coil connectors onto the ignition coils.

Use the reusable cable tie to secure the harness to the M6 stud.

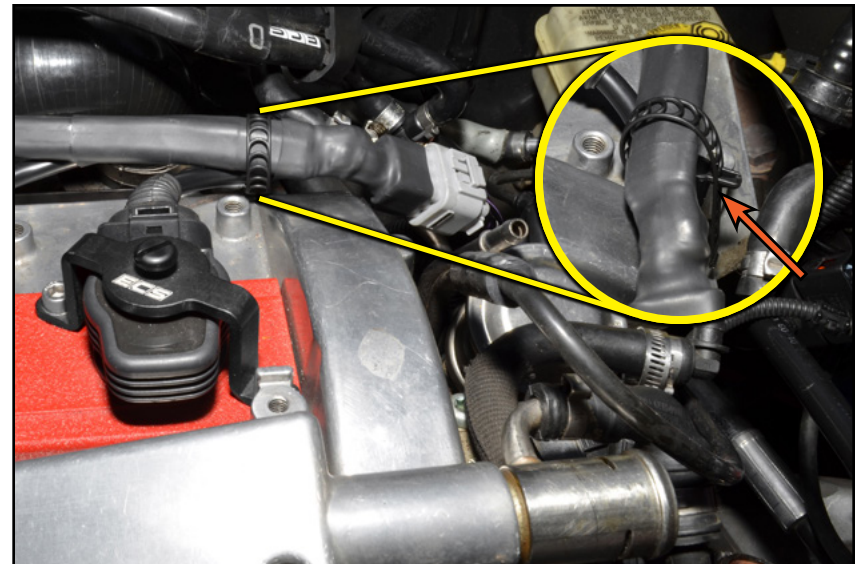
Reinstall the ground bolt to the valve cover.

Reinstall any additional components in the reverse order of removal.

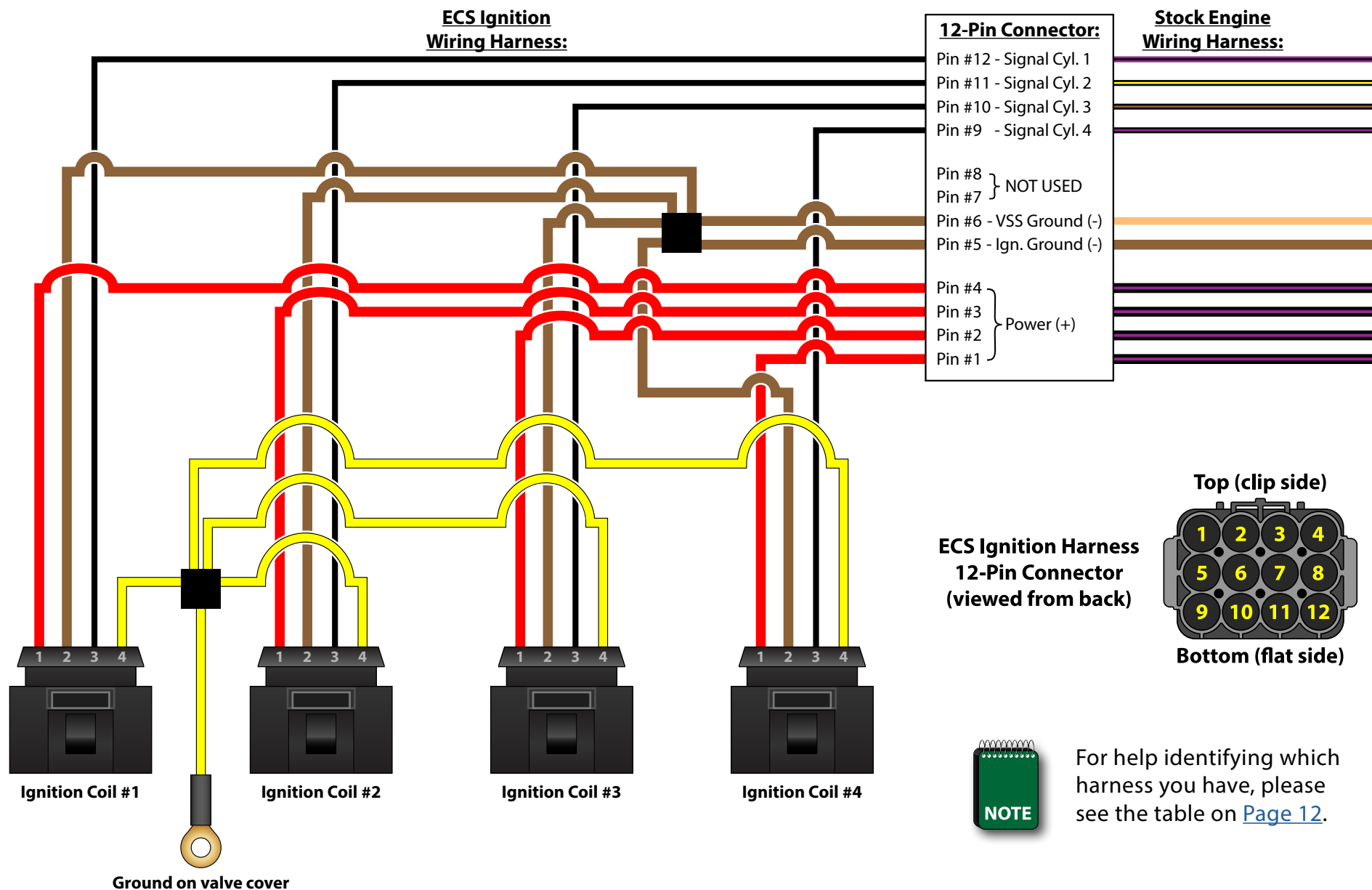
Start the engine and make sure that it runs smoothly.

- This indicates that all of the wires have been properly connected.

Your installation is complete!

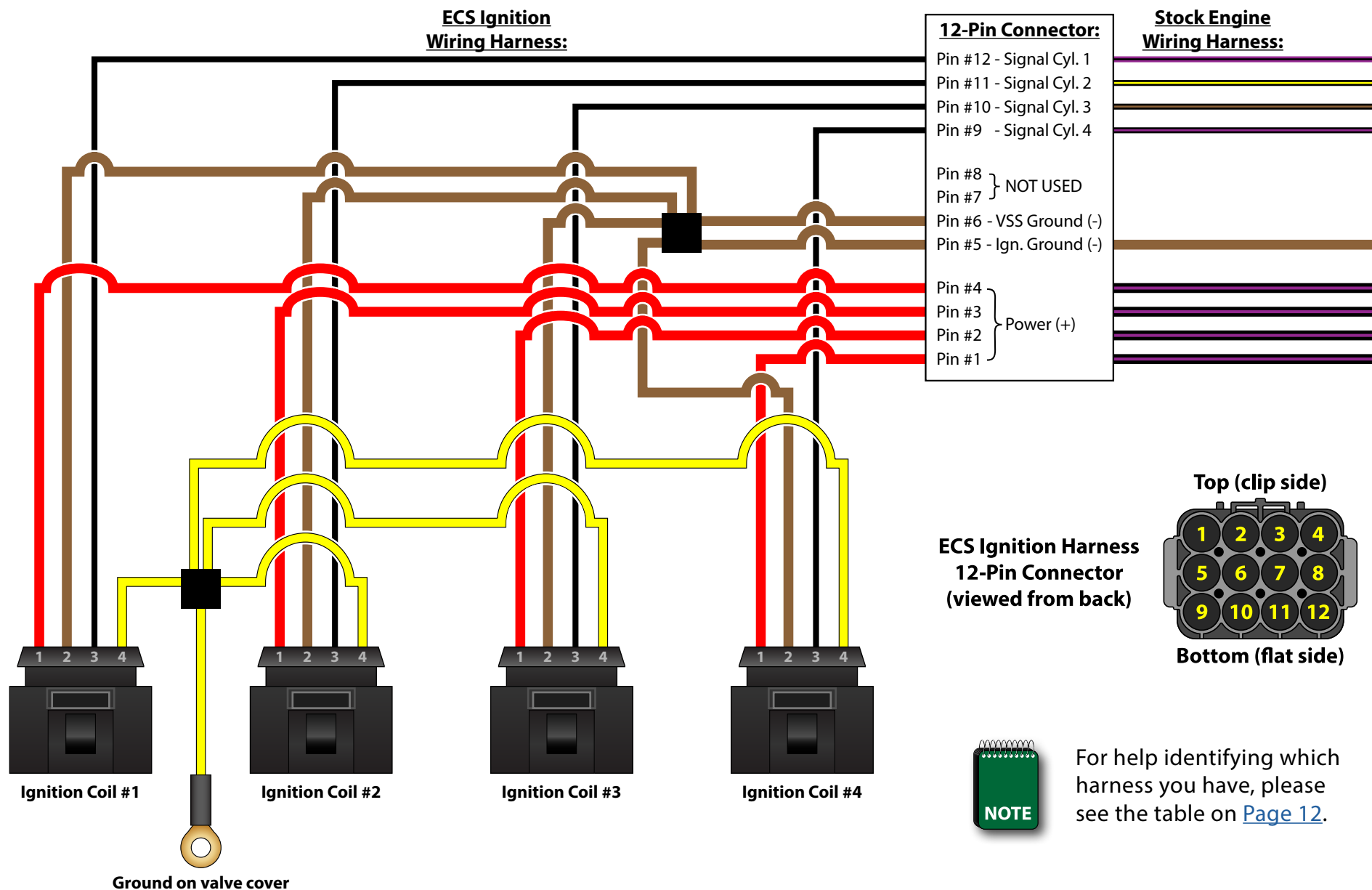


IGNITION WIRING HARNESS REFERENCE DIAGRAM - 10 WIRES



For help identifying which harness you have, please see the table on [Page 12](#).

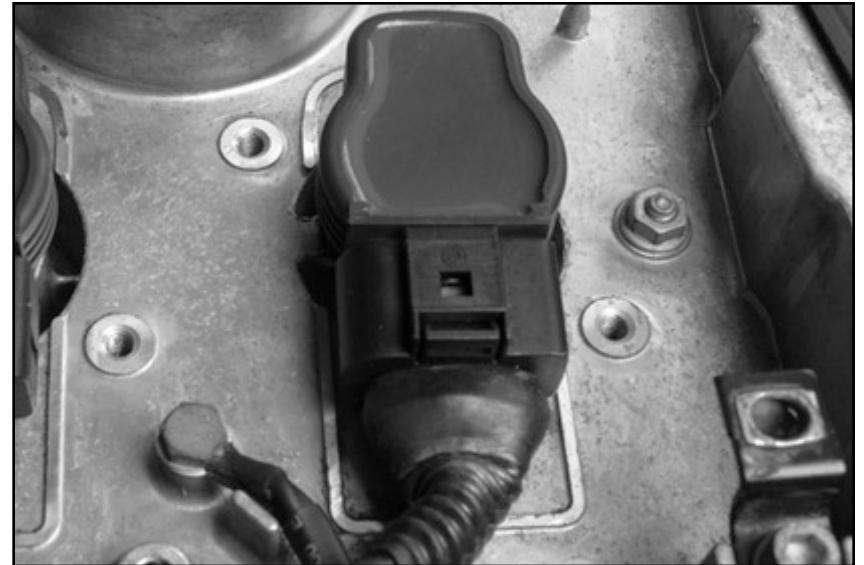
IGNITION WIRING HARNESS REFERENCE DIAGRAM - 9 WIRES



USING THE VAG CONNECTOR TOOL

Step 1:

These connectors are commonly referred to as “Push and Pull” connectors, in reference to the method used to disconnect them.



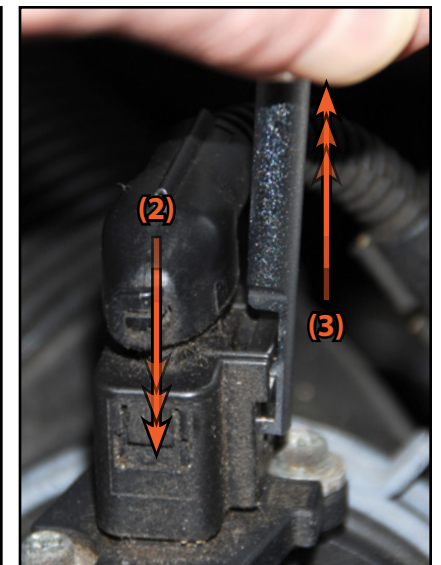
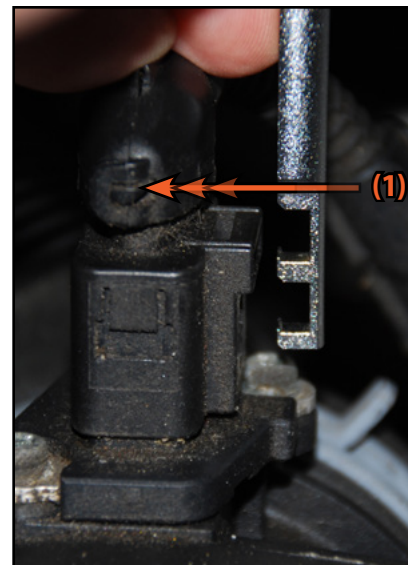
Step 2:

To disconnect one of these connectors, follow this procedure:

1. Engage the connector release tool into the connector housing.
2. Push inward gently on the connector.
3. While holding pressure inward on the connector, pull up on the handle of the release tool.
4. Pull the connector off of the component and move the harness out of the way.



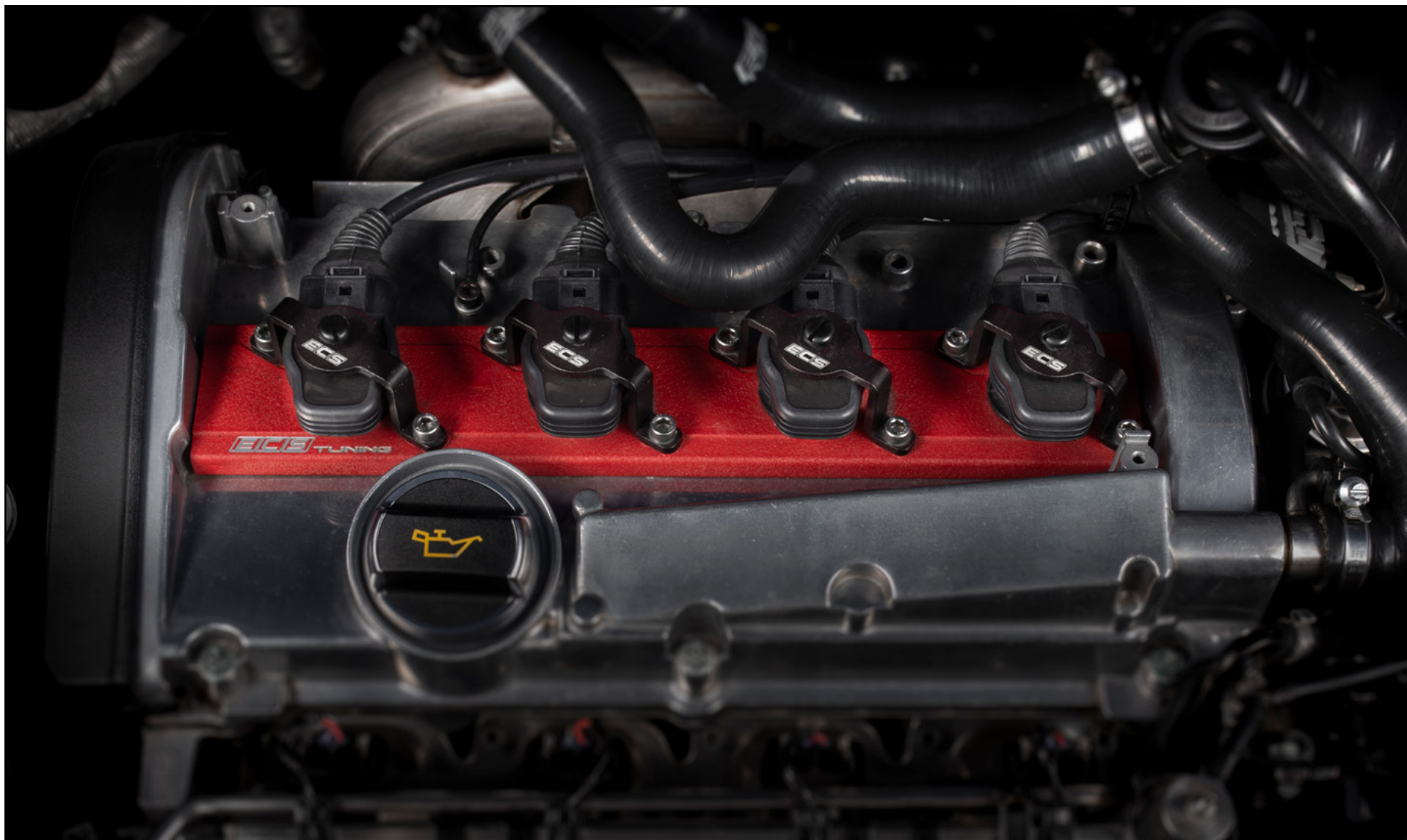
To return to the Ignition Wiring Replacement Kit instructions, simply click [HERE](#).



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Your VW/Audi 1.8T Transverse Ignition Wiring Replacement Kit 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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