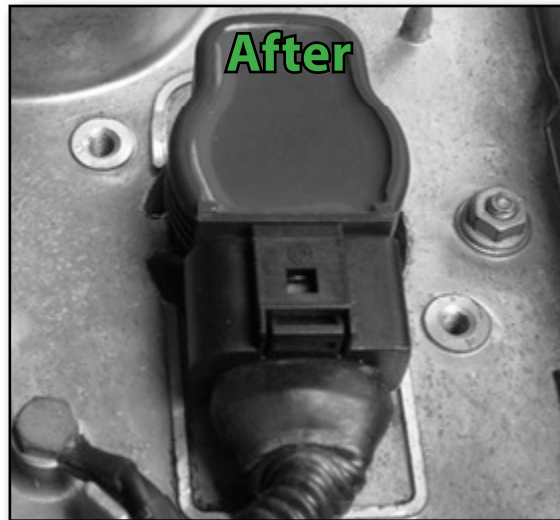
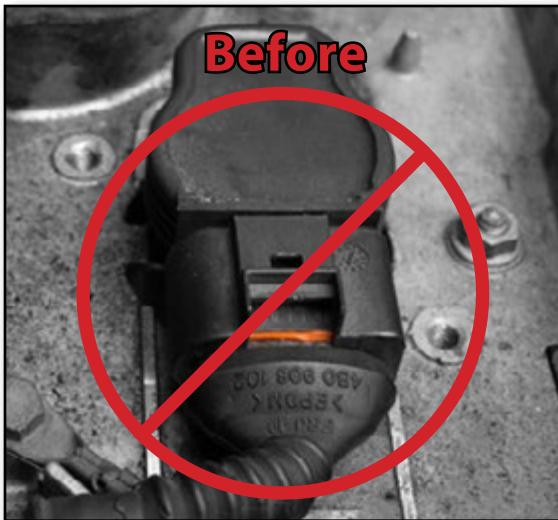




## Audi B5/B6 1.8T Ignition Wiring Replacement Kit Installation Instructions



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:

Today we'll be installing an Ignition Wiring Replacement Kit into a 1.8T equipped Audi B6 A4, but these instructions will also work for a B5 A4 with the same engine. The ignition wiring harnesses on these engines are prone to failure in as little as 50,000 miles, this is 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, and our comprehensive instructions will walk you through each step of the installation.

Looking at the ECS Difficulty Gauge to the right, we can see that this install falls between a **2: Moderate** (some experience recommended) and a **3: Advanced** (advanced skills and experience required). This means that this install is 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, but if you have less experience you should 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 12](#) and [13](#), as well as the Connector Pin Diagrams on [Page 14](#) and [15](#). 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, but don't forget to check out the tool list on [Page 5](#), and make sure you have everything you need on hand before you begin. Thanks for looking to ECS Tuning for all of your performance and repair needs, we appreciate your business!

### ECS Difficulty Gauge:



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### Symbols:

The following symbols may be used throughout these instructions indicating special attention:



**FORK IN THE ROAD:** When there are different options within any given kit, we will direct you to the proper page and step to continue.



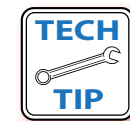
**YIELD:** Pause for a moment to double check component installation before you continue. Ignoring this can cost you time later during the installation.



**CAUTION:** Pay close attention to these warnings and instructions. Difficult installation, personal injury or component damage may occur if ignored.



**STOP:** The upcoming steps require specific preparation and/or assistance in the interest of safety. Please read ahead in the instructions and prepare before continuing.



**TECH TIP:** Tips and tricks to make the job go much easier.



**NOTE:** Additional information that may be useful to the installation depending on your application.

## KIT CONTENTS



Audi B5/B6 1.8T Ignition Wiring Replacement Kit



Schwaben Wire Crimper/Stripper Pliers

## 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](#)
- **3/8" Drive Ratchet** ..... [ES#2765902](#)
- 3/8" Drive Torque Wrench..... [ES#2221245](#)
- **3/8" Drive Deep and Shallow Sockets**..... [ES#2763772](#)
- 3/8" Drive Extensions ..... [ES#2804822](#)
- Hydraulic Floor Jack ..... [ES#240941](#)
- Torx Drivers and Sockets ..... [ES#11417/8](#)
- 1/2" Drive Deep and Shallow Sockets ..... [ES#2839106](#)
- 1/2" Drive Ratchet
- 1/2" Drive Extensions
- 1/2" Drive Torque Wrench ..... [ES#2221244](#)
- 1/2" Drive Breaker Bar ..... [ES#2776653](#)
- Crows Foot Wrenches
- Bench Mounted Vise
- **Trim Removal Tool**..... [ES517779](#)

### Required For This Install

- **1/4" Drive Ratchet**..... [ES#2823235](#)
- **1/4" Drive Deep and Shallow Sockets** ..... [ES#2823235](#)
- 1/4" Drive Extensions ..... [ES#2823235](#)
- **Plier and Cutter Set** ..... [ES#2804496](#)
- **Flat and Phillips Screwdrivers** ..... [ES#2225921](#)
- Jack Stands ..... [ES#2763355](#)
- Small Hammer
- Pry Bar Set..... [ES#1899378](#)
- Electric/Cordless Drill
- **Wire Strippers**..... [ES#2825692](#)
- **Wiring Terminal Crimpers**
- 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



## 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.

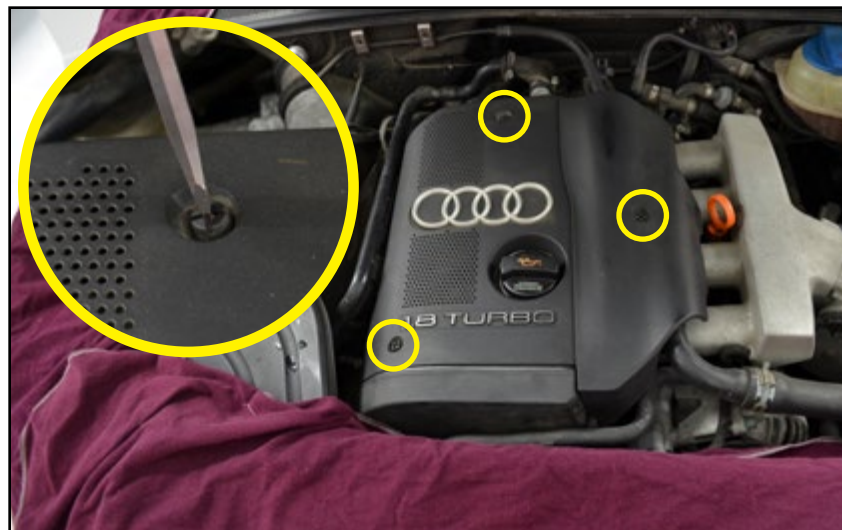


**NEVER** get underneath a vehicle that is supported only by a jack, and **ALWAYS** make sure that the vehicle is securely supported on jack stands.

## REMOVING THE FACTORY IGNITION WIRING HARNESS

### Step 1: Flat Blade Screwdriver

Turn each of the screws in the engine cover 1/4 turn (in either direction) to release them.



### Step 2:

Lift the engine cover up and out of the engine compartment and set it aside.





## REMOVING THE FACTORY IGNITION WIRING HARNESS

### Step 3:

Remove the battery cover by sliding it towards the RH (passenger) side of the car, then lifting it up off the rain tray. Note the markings on the battery cover in this picture. Normally just molded into the cover, we have highlighted them for reference. The green arrows indicate the direction in which to slide the cover for removal, the red and black indicate the positions of the positive and negative battery terminals underneath the cover.



### Step 4: 10mm Wrench - OR - 10mm Socket and Ratchet

Disconnect the negative battery terminal and isolate it so it does not accidentally swing over and contact the negative battery post.



This is the perfect opportunity to clean off any corrosion which may have accumulated on your battery terminals or cables.



## REMOVING THE FACTORY IGNITION WIRING HARNESS

### Step 5: Trim Removal Tool

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



### Step 6:

Gently pull the wiring harness out approximately 1-2 inches. The key here is to be GENTLE, you do not want to strain or damage the harness, we just need an inch or two of slack to work with.



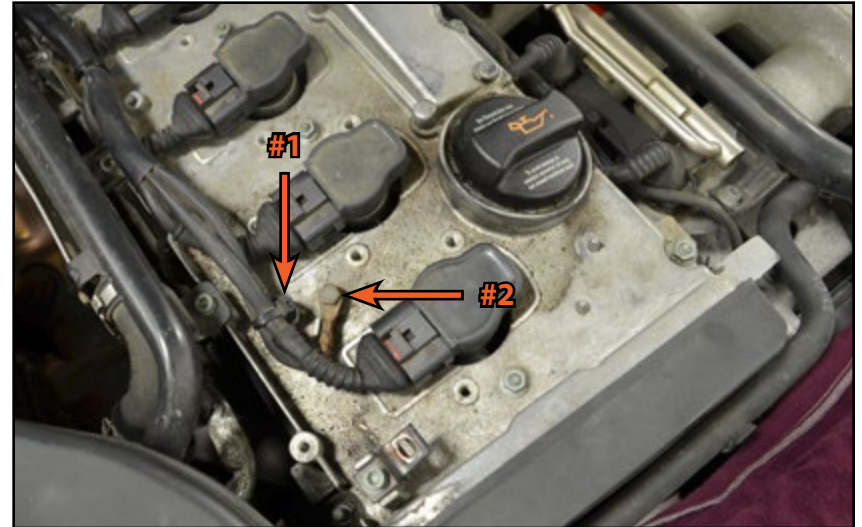
## REMOVING THE FACTORY IGNITION WIRING HARNESS

### Step 7: Trim Removal Tool, 10mm Socket and Ratchet

Release the push clip which secures the ignition wiring harness to the top of the valve cover (#1), then remove the bolt which secures the harness ground to the valve cover (#2).



The cylinder closest to the front of the engine is #1, and the cylinder closest to the rear of the engine is #4. We will reference cylinder numbers later in these instructions.

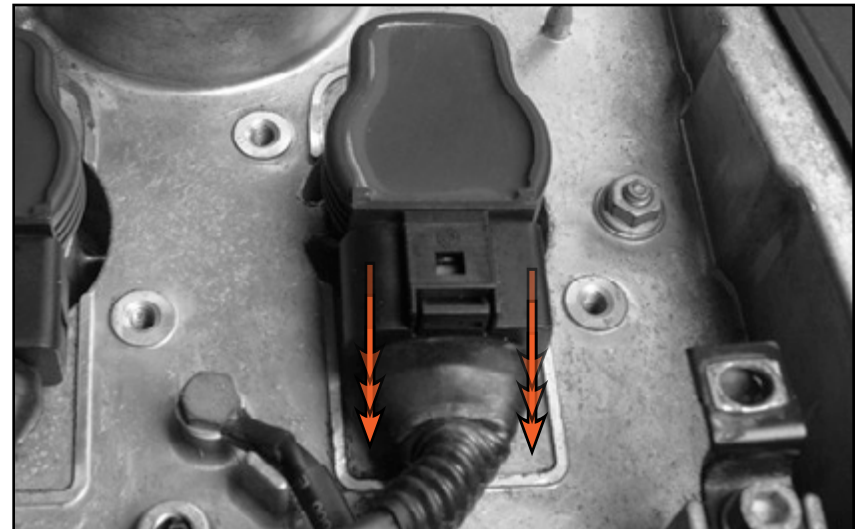


### Step 8: VAG Connector Tool

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



For tips on using the VAG Connector Tool, please refer to [Page 19](#) for detailed photos and procedures.





## REMOVING THE FACTORY IGNITION WIRING HARNESS

### Step 9: Wire Cutters

Carefully cut back the protective wrap on the ignition wiring harness as shown in the photo, you need to open up a section approximately 3" long in order to install the new harness kit.



### Step 10:

Here we have cut away 3" of the harness wrap to expose the harness wires. There are 12 wires inside this harness, eight of them are 14awg and four of them are 18awg. We will need to cut all 12 of the wires in order to install the new ignition wiring replacement kit.



**STOP!** You are ready to remove the original harness, all you have to do is cut the wires, but 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:

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.

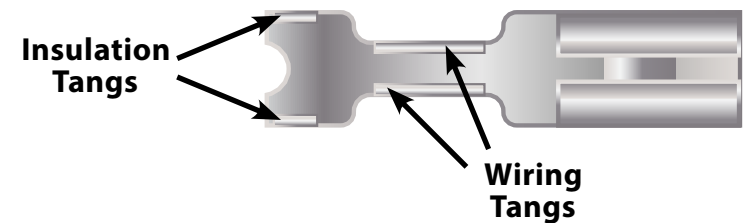
The diagram on the right shows the tangs and how they "roll" inwards and down onto the wire/insulation, the "wiring tangs" are meant to crimp onto the exposed wire, and the "insulation tangs" are meant to crimp onto the insulation.

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:





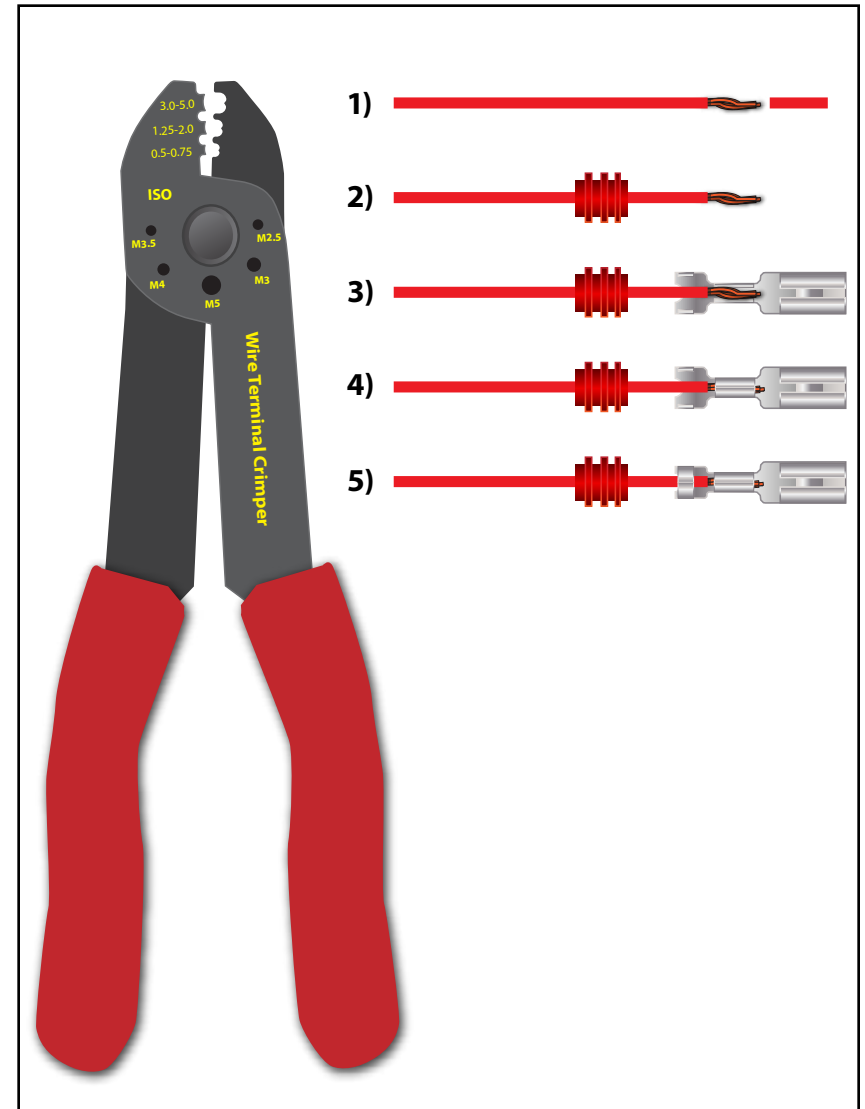
## PROPER TERMINAL CRIMPING TECHNIQUE

### Step 2:

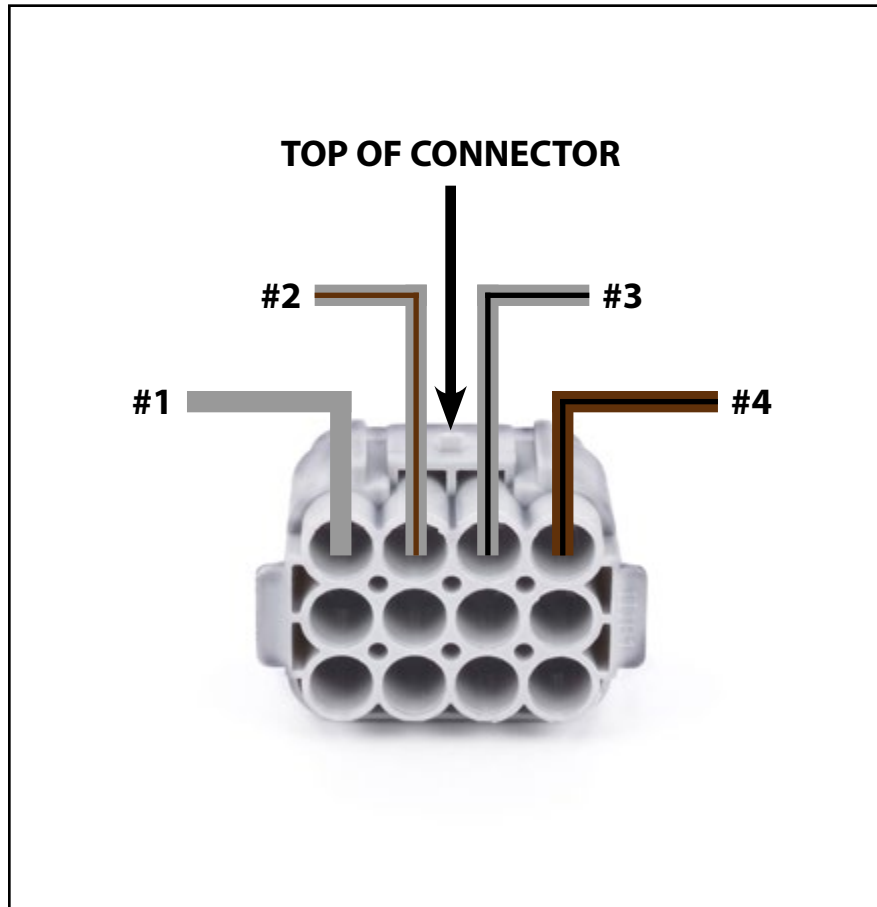
Please take a moment to familiarize yourself with the correct procedure for crimping a wiring terminal.

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) Strip the wire back approximately 1/4”.
- 2) Slide the rubber seal onto the wire (**DO NOT** forget to do this **BEFORE** you crimp the terminal onto the wire!
- 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) Insert the terminal into the appropriately sized crimping die, then squeeze the crimper until the insulation tangs are seated down onto the insulation. #5 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



### TOP ROW:

The top row of wires are the 18awg ECU Trigger wires, these wires **ARE** cylinder specific, and they must be installed into the correct connector cavity or the engine will not run. The colors of these wires may vary based on the year of your vehicle, but please note that we have used the wiring colors we found on our vehicle in all of our illustrations and photos. Please use the list below to determine the correct connector cavity for all possible wire colors:

#### #1: Cylinder 1

- Grey
- Blue w/Red Tracer

#### #2: Cylinder 2

- Grey w/Brown Tracer
- Blue w/Yellow Tracer

#### #3: Cylinder 3

- Grey w/Black Tracer
- Yellow w/Green Tracer

#### #4: Cylinder 4

- Brown w/Black Tracer
- Brown w/White Tracer
- Brown w/Green Tracer



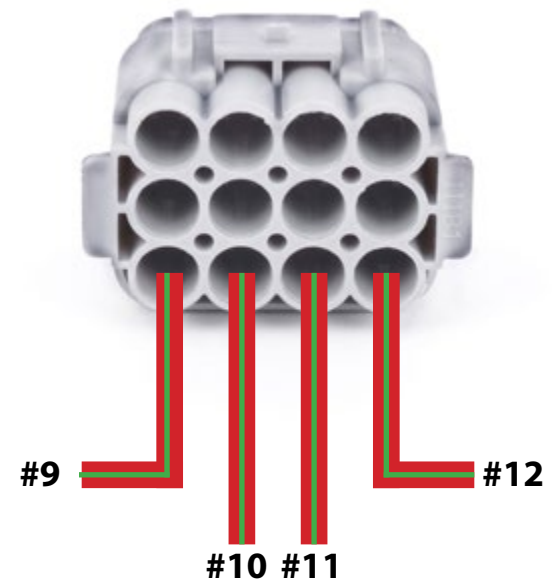
Please note that the photo above shows the top of the connector to assist with proper orientation.

## CONNECTOR PIN DIAGRAM



### MIDDLE ROW:

The middle row of wires are the 14awg Ground wires, these wires **ARE NOT** cylinder specific, therefore they can be installed into any connector cavity in the middle row. These wires will all be Brown w/no tracer color.



### BOTTOM ROW:

The bottom row of wires are the 14awg 12V+ Power wires, these wires **ARE NOT** cylinder specific, therefore they can be installed into any connector cavity in the bottom row. These wires will all be Red w/Green tracer.

# INSTALLING THE NEW IGNITION WIRING REPLACEMENT KIT

## Step 1: Wiring Terminal Crimpers

Using the process we reviewed on the last two pages, cut the four 18awg wires, slide the included seal over the wires, then attach the 18awg terminals onto the wires. Be sure to give each wire a small "tug" to check that the terminal is firmly crimped onto the wire.

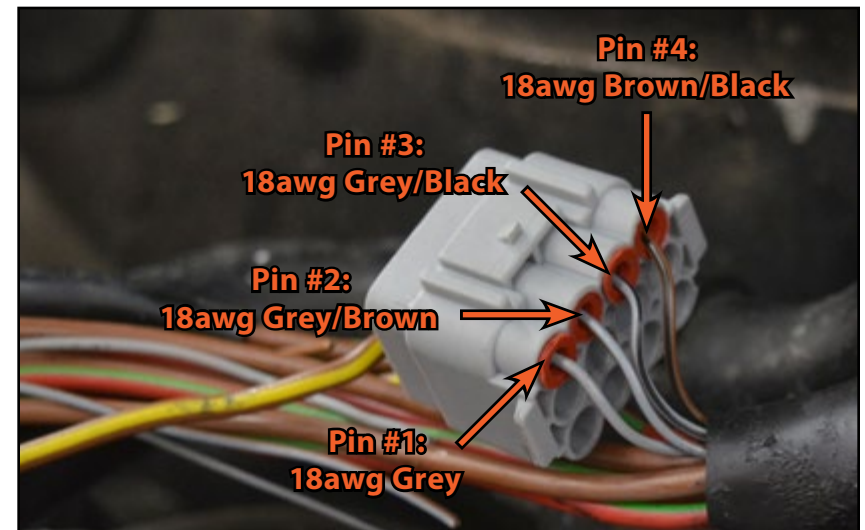
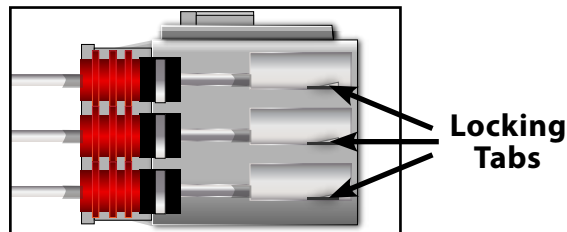


The color of the seals may vary depending on your kit. The terminal pins will come attached to a rail, simply cut them off of the rail with a pair of side cuts.



## Step 2:

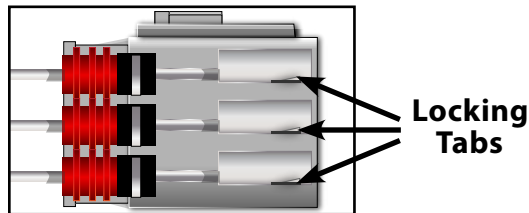
Insert the four 18awg wires into the included male connector as shown in the photo (if your wire colors do not match the photo, please reference the table on [Page 14](#)), ensuring that each of the locking tabs in the connector snap into the matching slot in the terminals (see illustration below). Be sure that each terminal firmly locks into place before pushing the seal into the connector.



# INSTALLING THE NEW IGNITION WIRING REPLACEMENT KIT

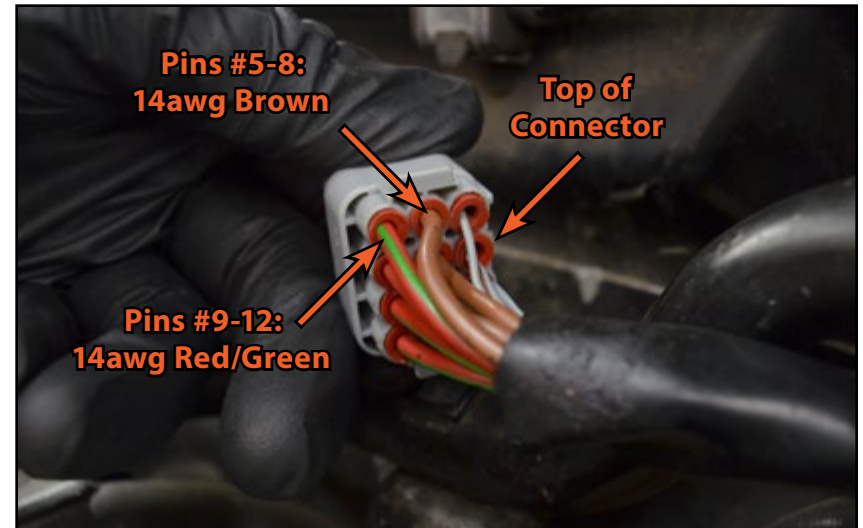
## Step 3: Wiring Terminal Crimpers

Now cut the eight 14awg wires, slide the included seals over the wires, then attach the 14awg terminals onto the wires. Insert the four brown 14awg wires into the middle row, then insert the four 14awg red/green wires into the bottom 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). Be sure that each terminal firmly locks into place before pushing the seal into place.



## 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.





## INSTALLING THE NEW IGNITION WIRING REPLACEMENT KIT

### Step 5:

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



### Step 6: 10mm Socket and Ratchet

Reinstall the ground bolt to the valve cover.

Reconnect the negative battery terminal.

Start the engine and make sure that it runs smoothly, this will indicate that all of the wires have been properly connected.

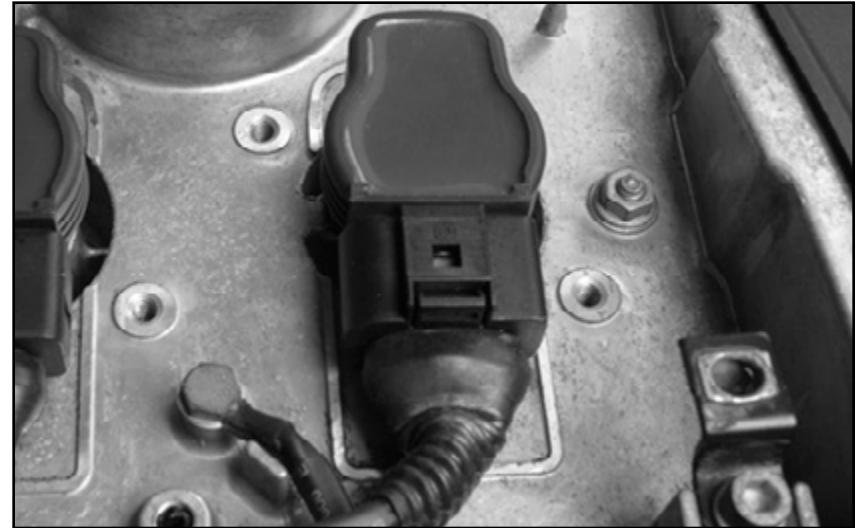
Reinstall the engine cover onto the engine.



## 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.



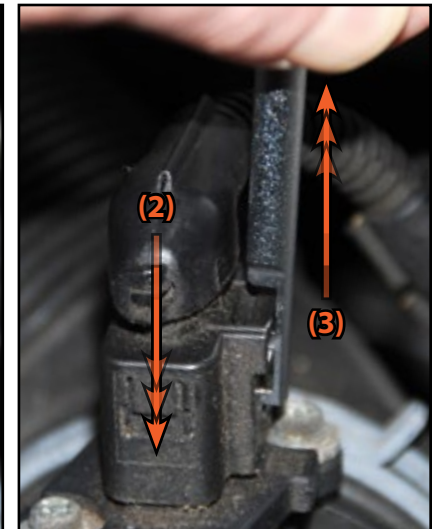
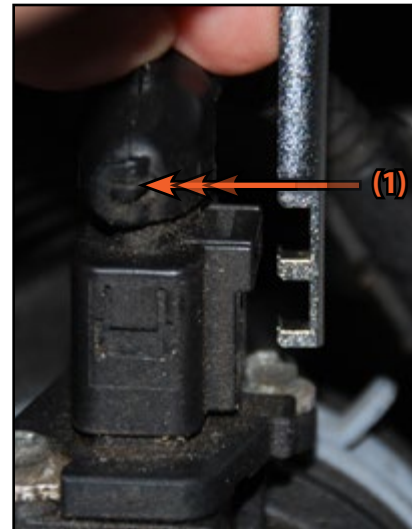
### Step 2: VAG Connector Tool

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 back on the handle of the release tool.
4. Pull the connector off of the component.



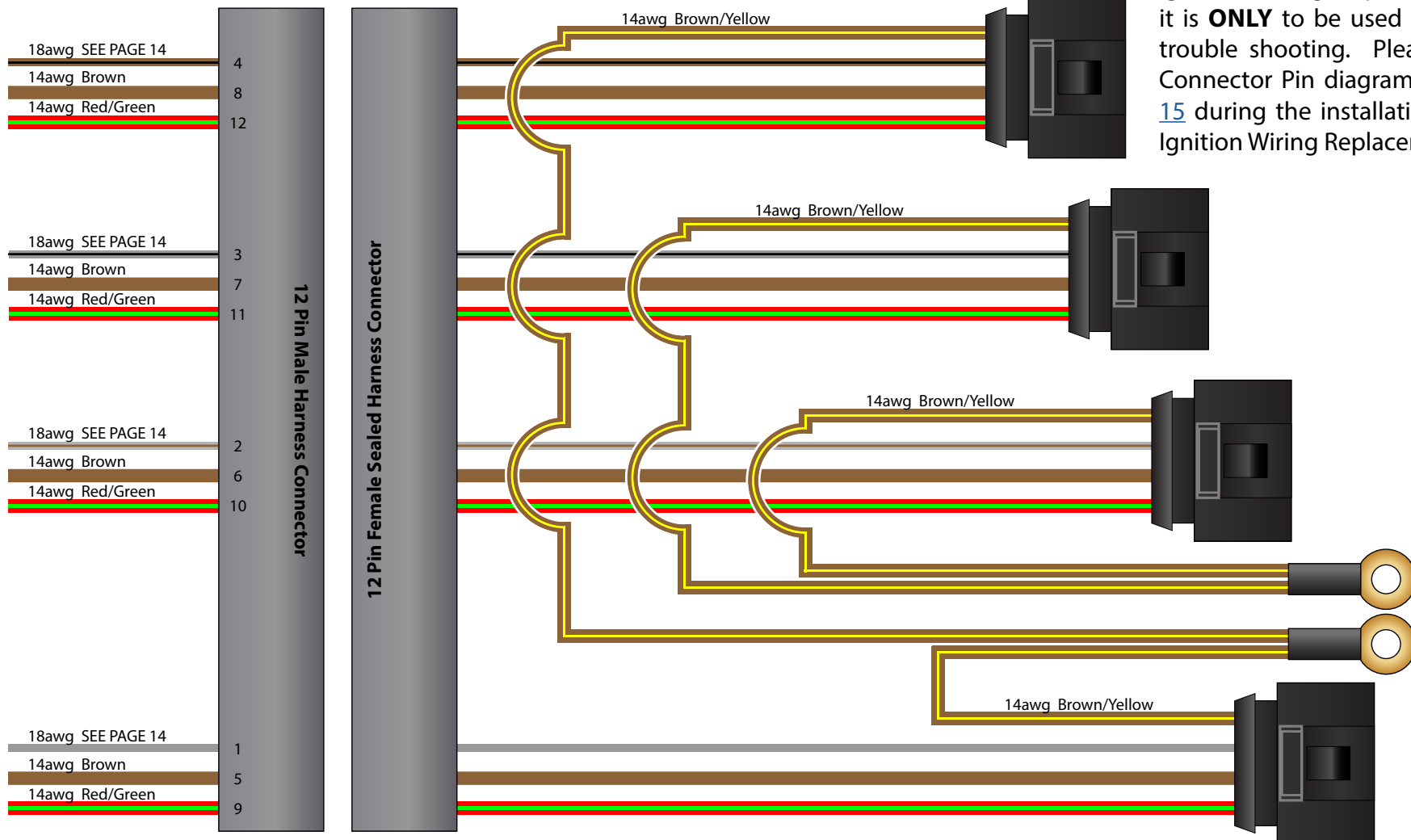
To return to the Ignition Wiring Replacement Kit instructions, simply click [HERE](#).



# IGNITION WIRING HARNESS REFERENCE DIAGRAM

## PLEASE NOTE:

This wiring diagram is a depiction of the Ignition Wiring Replacement Harness, it is **ONLY** to be used for reference or trouble shooting. Please refer to the Connector Pin diagrams on [Page 14](#) & [15](#) during the installation of your new Ignition Wiring Replacement Harness.



## 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.





**Your Audi B5/B6 1.8T 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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