

# Installation Guide for 6 cylinder Coil Repair Harness

1999-2006 Volvo 6 cylinder models.

## NOTES:

Wire colors for this harness will match all 1999-2006 models directly without any changes or special instructions.

### **Disconnecting your battery during this installation is strongly recommended.**

Be aware that some of these Volvo models have an "Immobilizer" ECU. It becomes relevant when performing maintenance that involves unplugging electrical connectors. If the ECU has power, the immobilizer function may be activated, rendering a "no start" condition. Disconnecting the battery until this installation is complete should prevent this from happening, however, if this occurs, the following procedure should fix things.

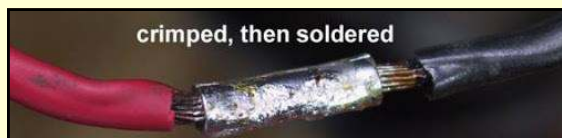
Disconnect the negative battery terminal for 30 minutes. This function performs a "reset" of the ECU without harming any electrical components.

### **Crimping versus soldering your wire splices.**

The most common installation involves splicing wires using the supplied insulated butt-crimps and then covering with heat-shrink tubing. Some people prefer to solder their wire splices.

This is an acceptable option. If you prefer to solder, be sure to insulate each individual solder splice.

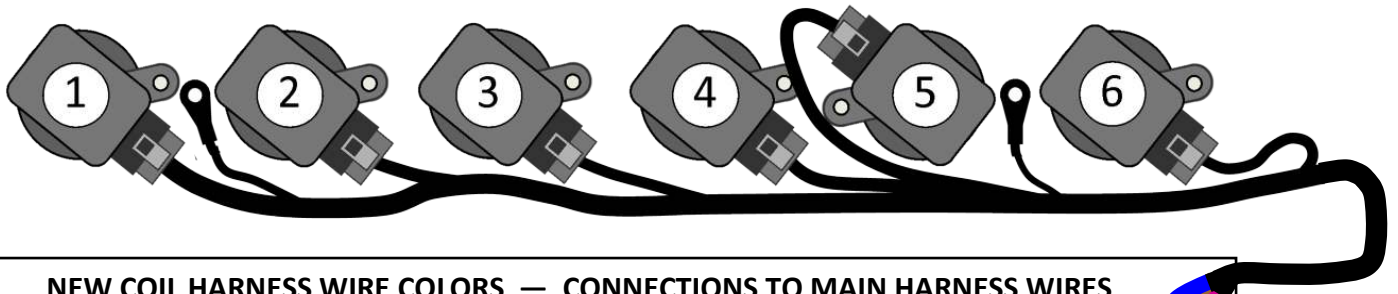
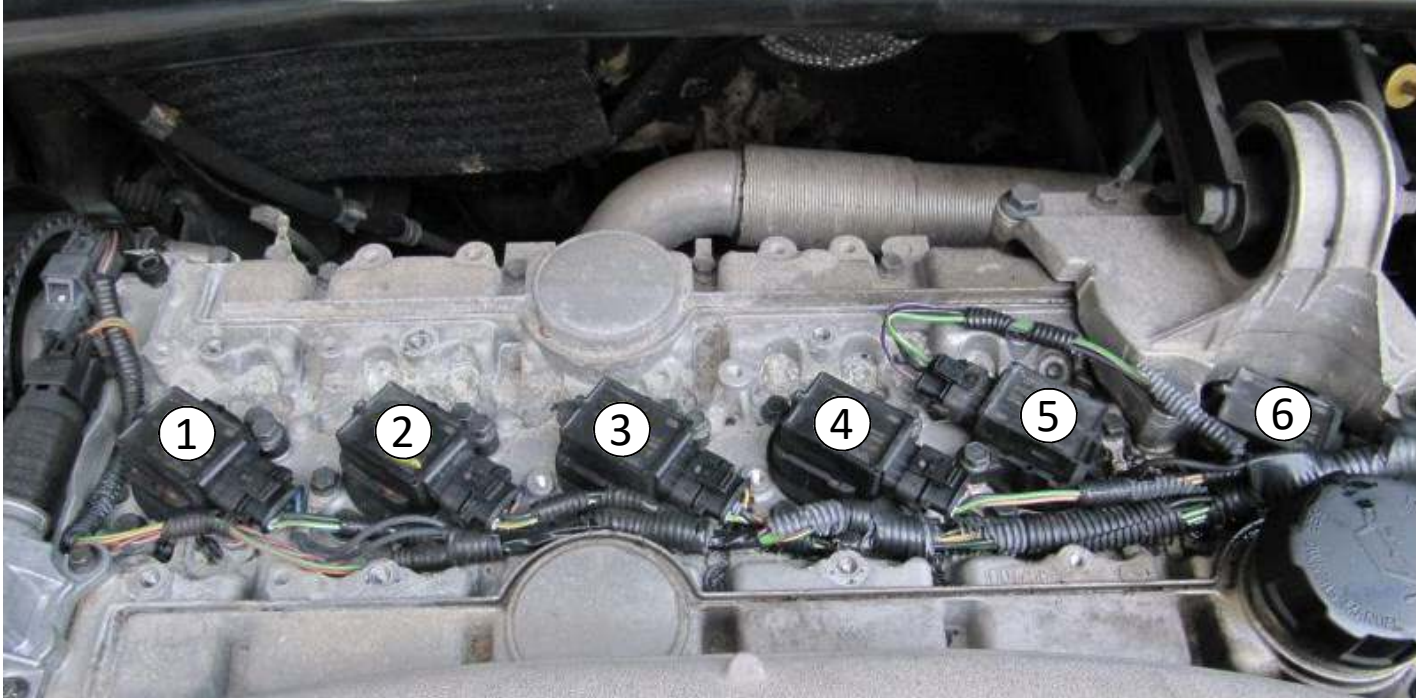
Keep in mind that **engine vibration can crack a solder joint over time**. A stronger solder joint is possible by using a **non-insulated butt-crimp and then soldering**. This **crimping plus soldering** method will help prevent the possibility of a cracked solder joint later.



If you find any errors, or omissions in this guide or if you find your car has any wiring that's different from what is shown here, please email.

## IMPORTANT: PLEASE READ ALL DIRECTIONS BEFORE BEGINNING.

The below photo will offer a typical view of an original '99 to '06 Volvo 6 cylinder Volvo coil harness section. The cylinders are shown in numerical order with Cylinder 1 being nearest the timing belt. The routing of this harness to each coil is important to create a good fit. The new coil repair harness uses the same routing and is illustrated in detail by the bottom image.



### NEW COIL HARNESS WIRE COLORS — CONNECTIONS TO MAIN HARNESS WIRES

BLUE Coil 1, Pin 1

BROWN Coil 2, Pin 1

YELLOW Coil 3, Pin 1

PINK Coil 4, Pin 1

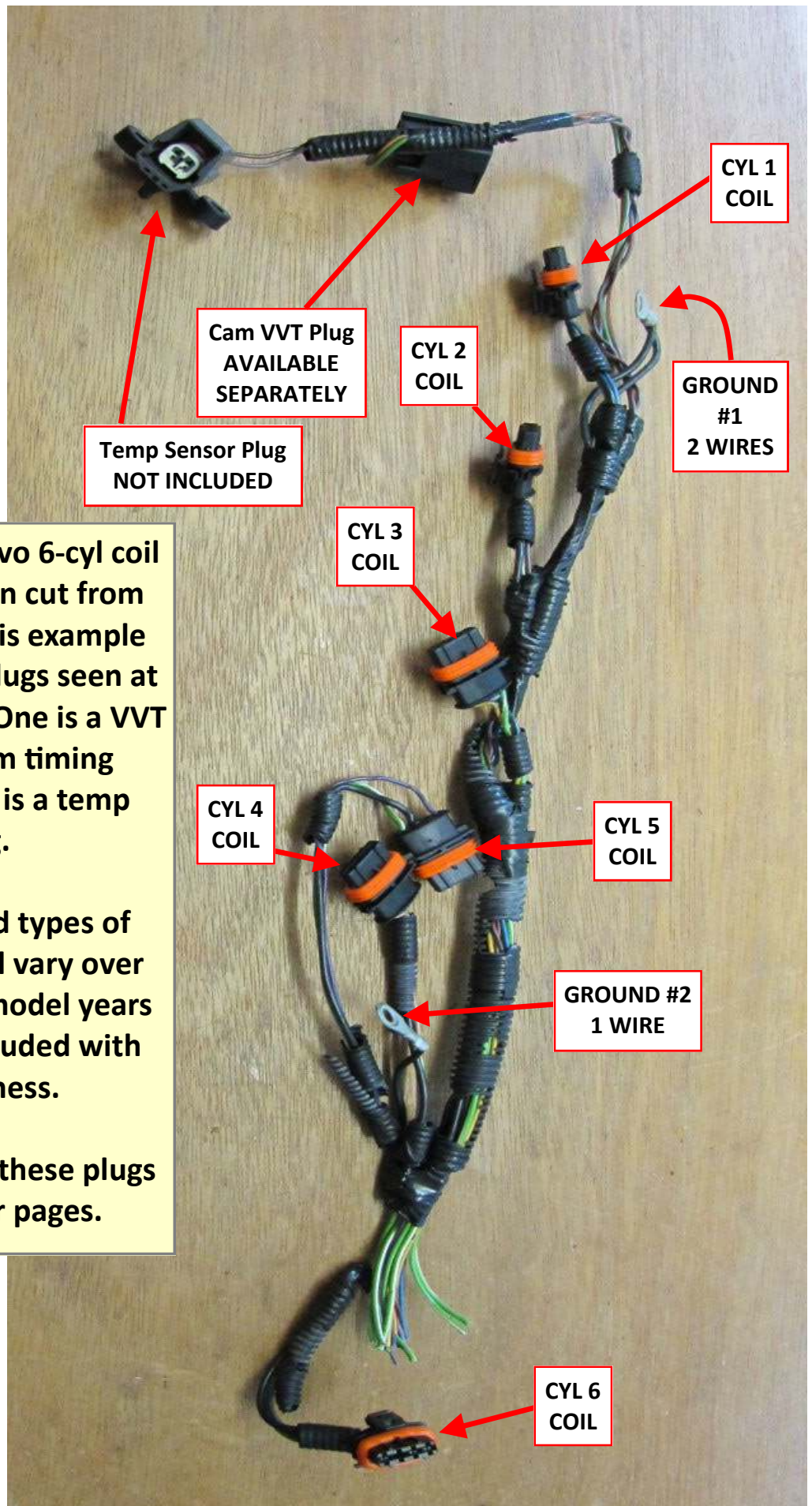
VIOLET Coil 5, Pin1

GRAY Coil 6, Pin 1

All Coils, Pin 2 (VACANT, no wire present)

GREEN/WHITE All Coils, Pin 4

**VVT WIRES ARE NOT SHOWN IN THIS DIAGRAM**

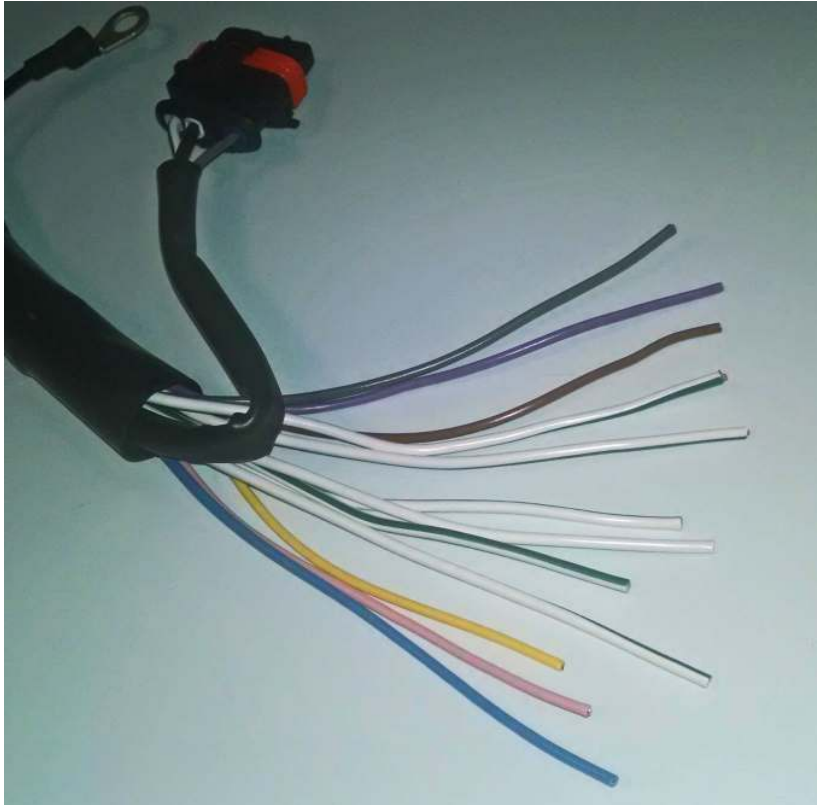


Here is an original Volvo 6-cyl coil harness that has been cut from the main harness. This example uses two additional plugs seen at the top of this photo. One is a VVT connector for a cam timing solenoid. The other is a temp sensor plug.

The existence of and types of these extra plugs will vary over the 1999-2000 6-cyl model years and they are not included with this repair harness.

More information on these plugs is included in later pages.

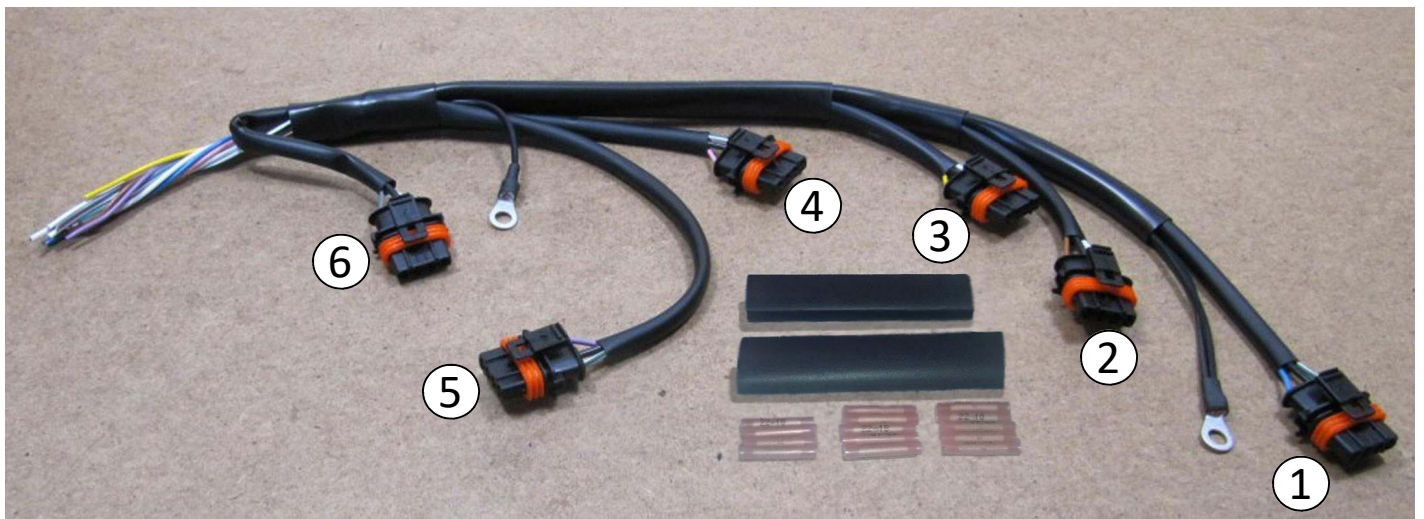


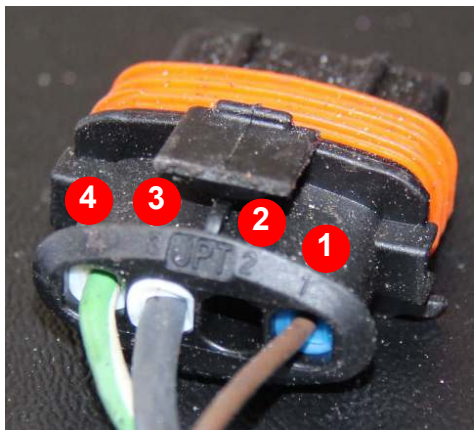


When preparing to cut your original harness, you should first consider staggering the cuts about 2 inches. This repair harness has 12 wires. Putting 12 splices all in one location can be a bit much and probably will not all fit in the heat shrink tubing supplied. Cutting half of them 2 inches away from the other half will make this job much neater. As a suggestion, cut all 6 Green/White wires at one place and the other 6 about 2 inches away.

**NOTE:** It is not critical to organize the 6 Green/White wires according to cylinder number. These 6 wires all converge into ONE wire in another place inside the main engine harness.

Before beginning the re-splice operation, first place the supplied heat-shrink tubing over the harness wires, so that it can later be slid over your splices and heated to shrink. Then you may begin to match up wires by color and splice them using the supplied crimp terminals. The next page will show the wire colors for each connector.

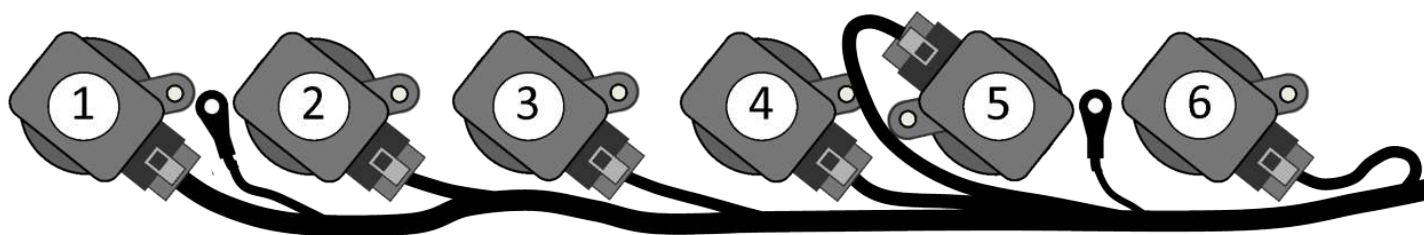




Each of the coil connector plugs has FOUR poles.

The wire color order is shown below for each coil plug.

Pole #2 is VACANT.



1999-2006 6CYL

#### CYL 1

1. **BLUE**
2. empty
3. **BLACK**
4. **GRN/WHT**

#### CYL 2

1. **BROWN**
2. empty
3. **BLACK**
4. **GRN/WHT**

#### CYL 3

1. **YELLOW**
2. empty
3. **BLACK**
4. **GRN/WHT**

#### CYL 4

1. **PINK**
2. empty
3. **BLACK**
4. **GRN/WHT**

#### CYL 5

1. **VIOLET**
2. empty
3. **BLACK**
4. **GRN/WHT**

#### CYL 6

1. **GRAY**
2. empty
3. **BLACK**
4. **GRN/WHT**

**NOTE:** There are some BLACK ground wires in the harness that go from Pin 3 of each coil plug to the ground rings terminals, which are bolted to the engine. These wires do not exit through the harness bundle, so you will NOT need to deal with them when splicing.

## VVT

If your car is equipped with a plug(s) for a **Variable Valve Timing Solenoid**, there will be TWO additional wires for each VVT plug. Most 6 cylinder cars found with VVT will have ONE plug. Some will have TWO. These plugs and wires are NOT included in this coil harness repair kit. You may reuse your old VVT plug and wiring. Or a new VVT plug with wires is available separately if needed.

You may also find a **Temperature Sensor Plug** near the VVT Plug. That may be reused also. There is more info about these plugs beginning on page 7.

## Special Information for unusual coils.

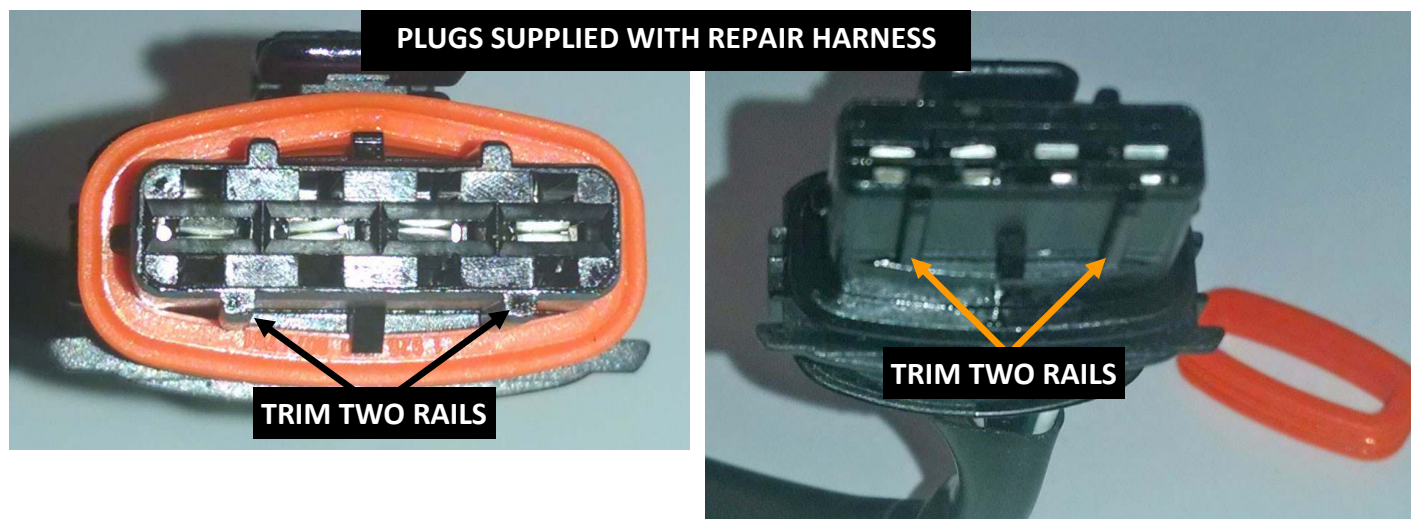
This repair harness will fit all listed models, however there is a small possibility of finding a slightly different coil on your car. If you find that these new plugs will not slide into your coil ports, the below info will help to solve this.



A small difference in the two coils is illustrated to the left. There are two slots on the bottom that are in a different position on some coils.

## SIMPLE FIX:

First remove the orange seal so it does not get damaged. Using a sharp hobby knife or sharp box cutter, trim the two raised rails (bottom of plug) as shown below until they are flat. Be careful to avoid cutting yourself. Then replace the seal. This is all that is needed to make these fit.



If you find a 6 cylinder Volvo using unusual coils such as shown above, please email me with your car YEAR/MODEL so I can make a note in this guide for future customers.

Thank you.



This section will show the camshaft VVT connectors related to the Variable Valve Timing system. VVT was not installed on all cars and these connectors are not included in the basic Coil Repair Harness Kit. New VVT plug pigtails are available separately if needed.



These plugs are located near the timing belt end on the engine. Some (early) cars do not have these at all.

<<< Some cars will have **ONE connector**, however there are two different types of single connectors that may appear. More info on the next page.



<<< Some will have **TWO connectors** (one for the Intake Cam and one for Exhaust Cam). This is known as **DUAL VVT**. More info below.



Front View

Here are the styles of plugs for all cars with **DUAL VVT connectors**. The intake and exhaust plugs are slightly different so they cannot be mixed up.

#### INTAKE PLUG

1. Green/Gray
2. Red/Yellow



REAR VIEW  
(Cable End)



Front View

#### EXHAUST PLUG

1. Green/Gray
2. Green/White



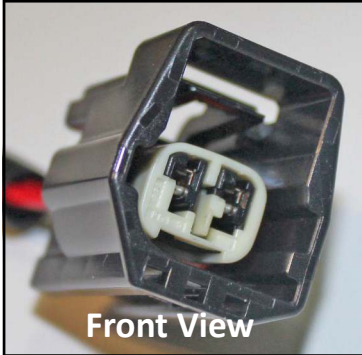
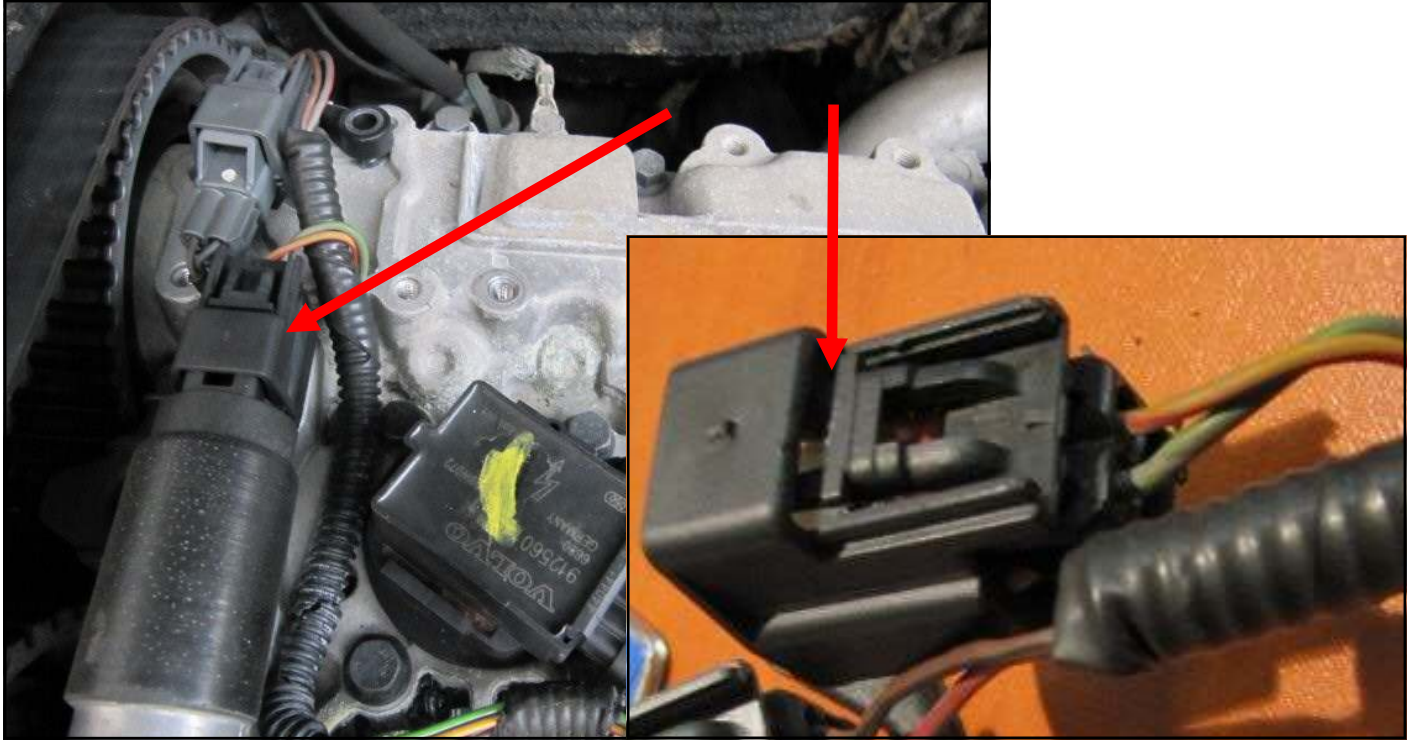
REAR VIEW  
(Cable End)

**Pin 1 Green/Gray wire** is power input and both wires may be combined (joined) if needed or spliced separately to Green/Gray wires when splicing.

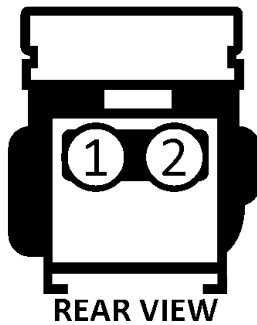
**The Pin 2 wire** for each connector is the control signal from the ECU and must be spliced to the correct matching wire color.

This is a **SINGLE VVT plug**. This is the most common VVT plug found on a 6 cyl.

This is located near the timing belt end of the engine (FRONT).



Here is the VVT plug in detail (**Single VVT Type 1 Large**)

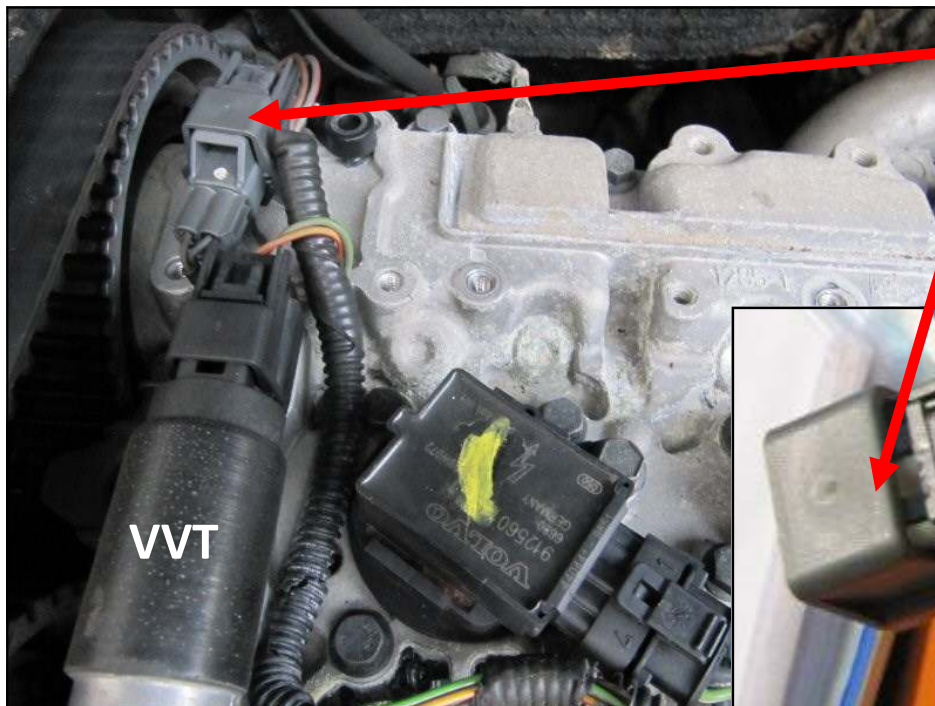


VVT PLUG

1. Green/Gray
2. Red/Yellow



This section shows **TEMPERATURE SENSOR PLUG** that may be found on some 6 cylinder engines near the VVT plug. This connector is **NOT** included in the Coil Repair Harness kit and is **NOT** currently available through my sources. You may reuse your original plug and wiring.



This sensor plug is located near the timing belt end of the engine.



<<< In this photo, the connector on the left is the VVT Type 1 (large) connector. **The one on the right is the temperature sensor connector shown above.** They look very similar, but the **outer shell is a mirror image**, so they are **not interchangeable**.