

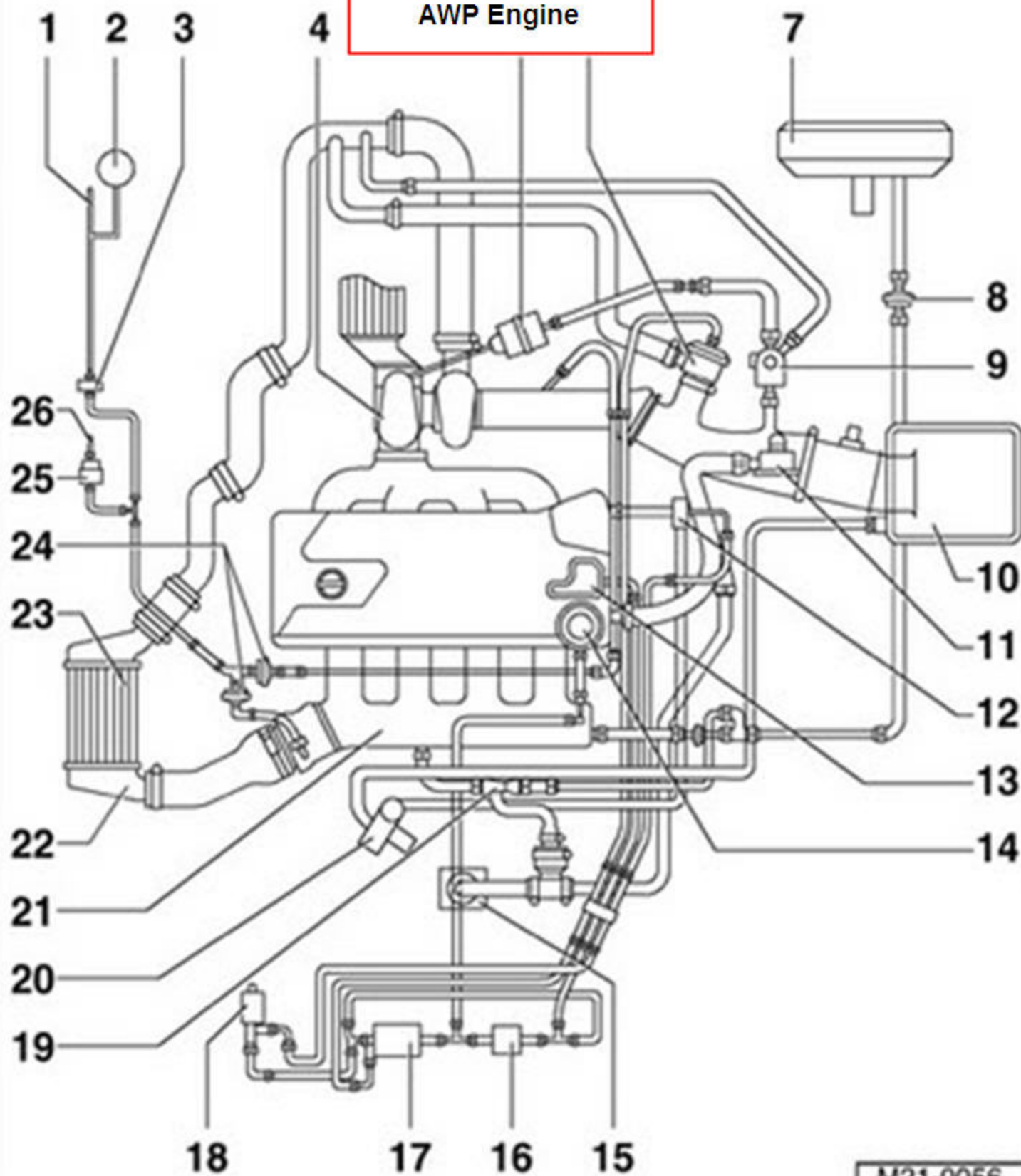
SAI, N249, PCV, EVAP Removal Kit

Instructions by Nathan Stevic

This guide will help you install the components in the kit. I have included elements of the AWD and AWP motors for the removal. In those cases you will see the page labeled specifically for the AWD or AWP.

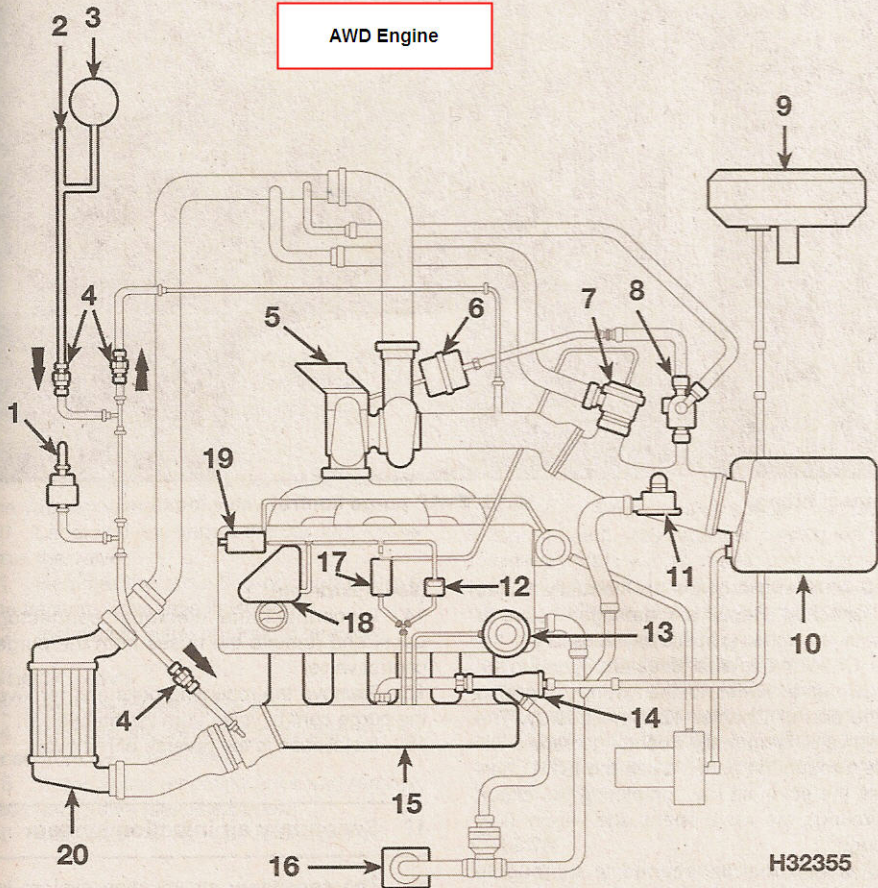
INFO@UROTUNING.COM

AWP Engine



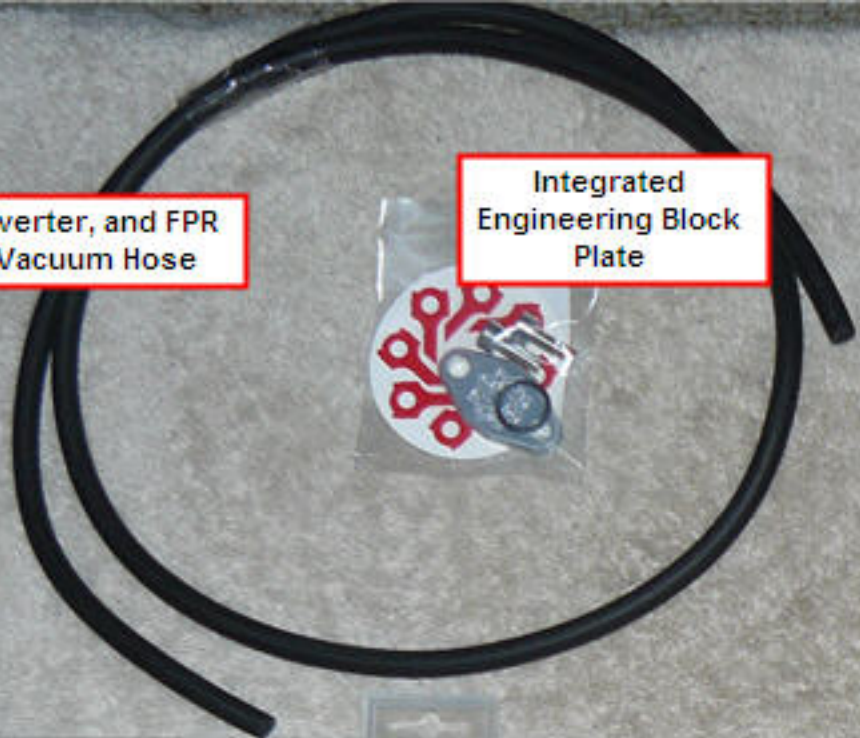
M21-0056

AWD Engine



H32355

Diverter, and FPR Vacuum Hose



Integrated Engineering Block Plate



Catch Can Hose



Brake Booster Hose

3/4"	1/2"	1/4"	1/8"
QTY: 11	QTY: 4	QTY: 3	QTY: 4



Vacuum Caps

Clamps



Resistors

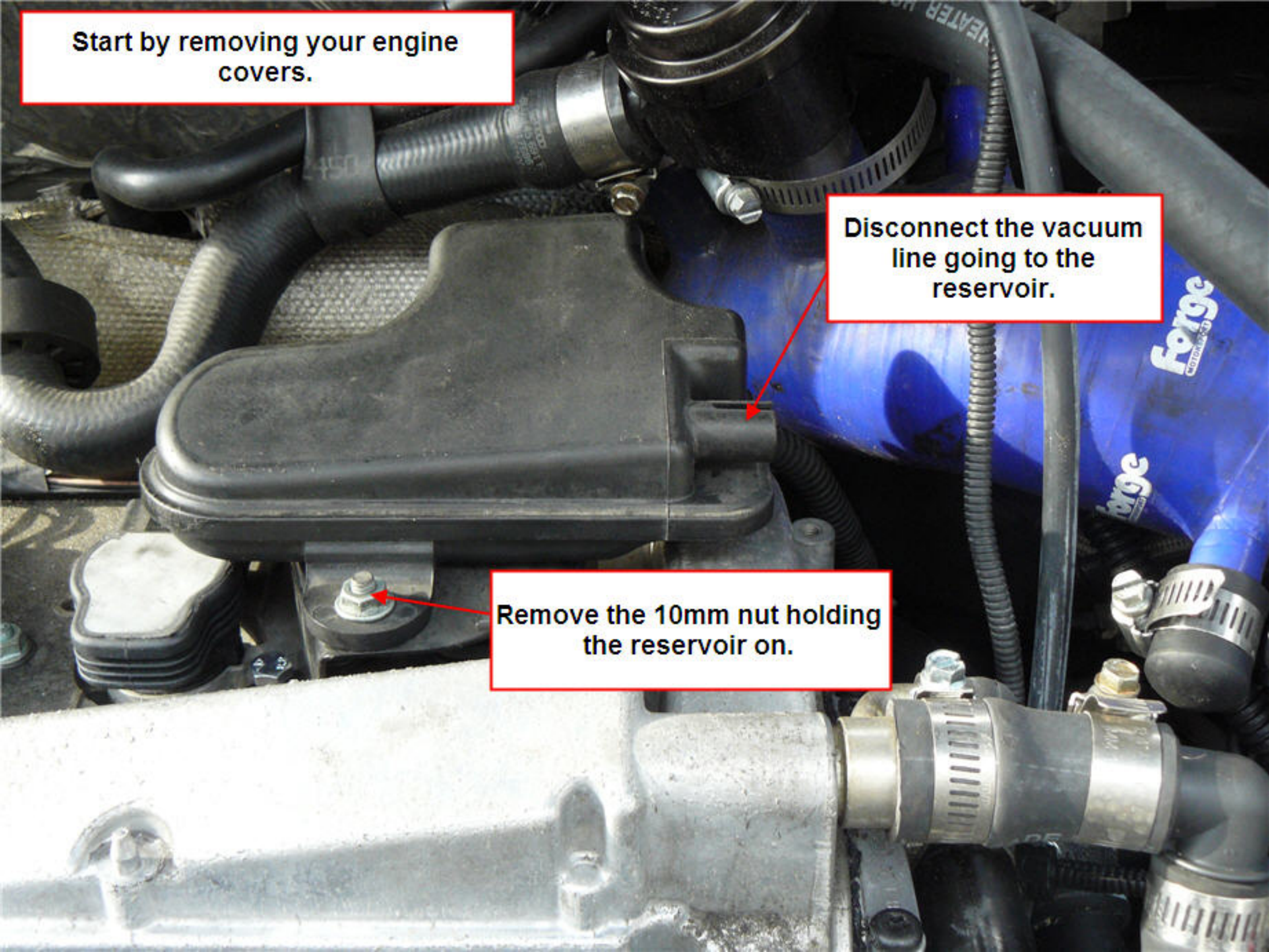
Custom PCV Hose




Start by removing your engine covers.

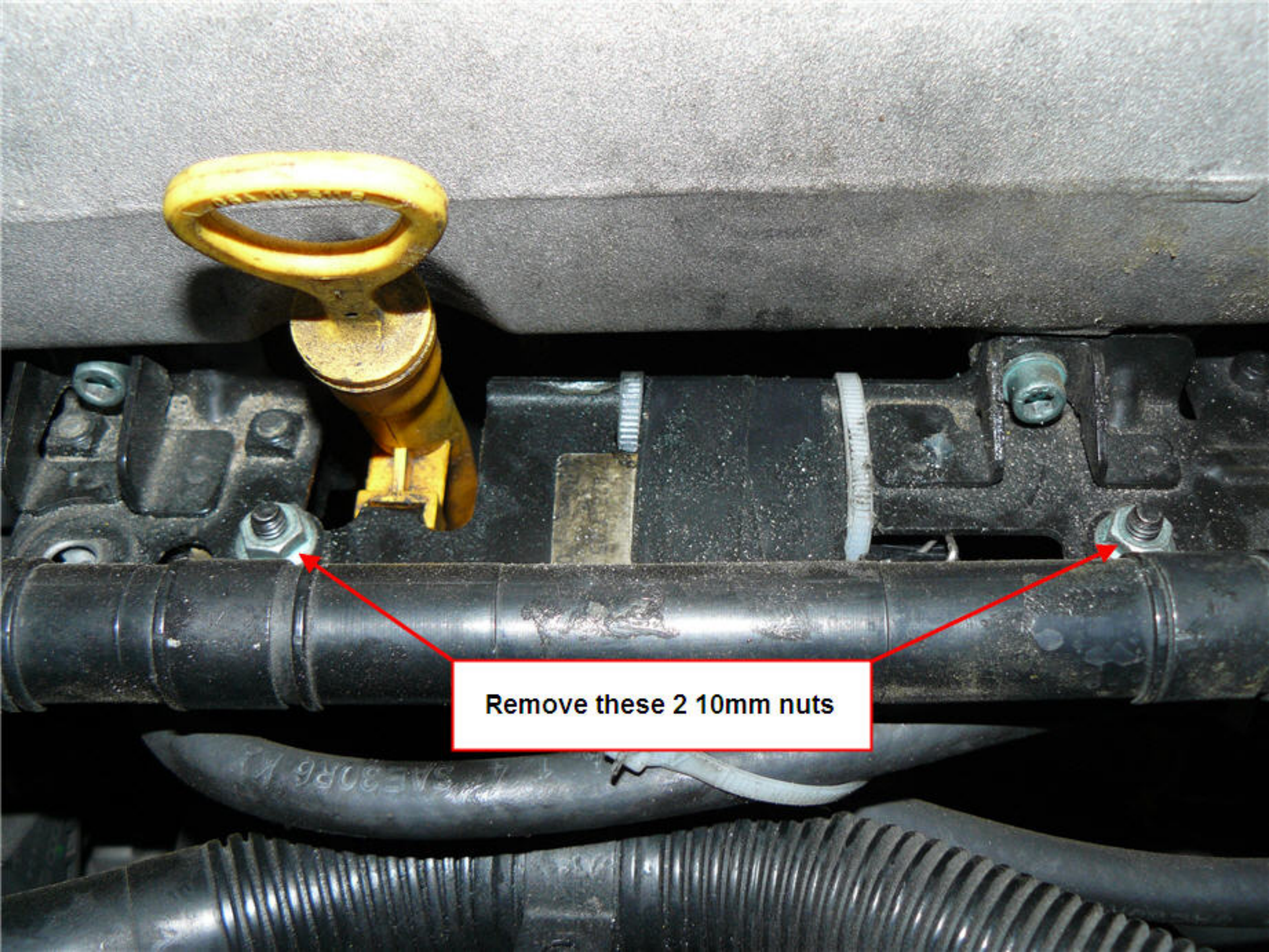
Disconnect the vacuum line going to the reservoir.

Remove the 10mm nut holding the reservoir on.





Remove the 3 10mm bolts holding the reservoir bracket on and remove.



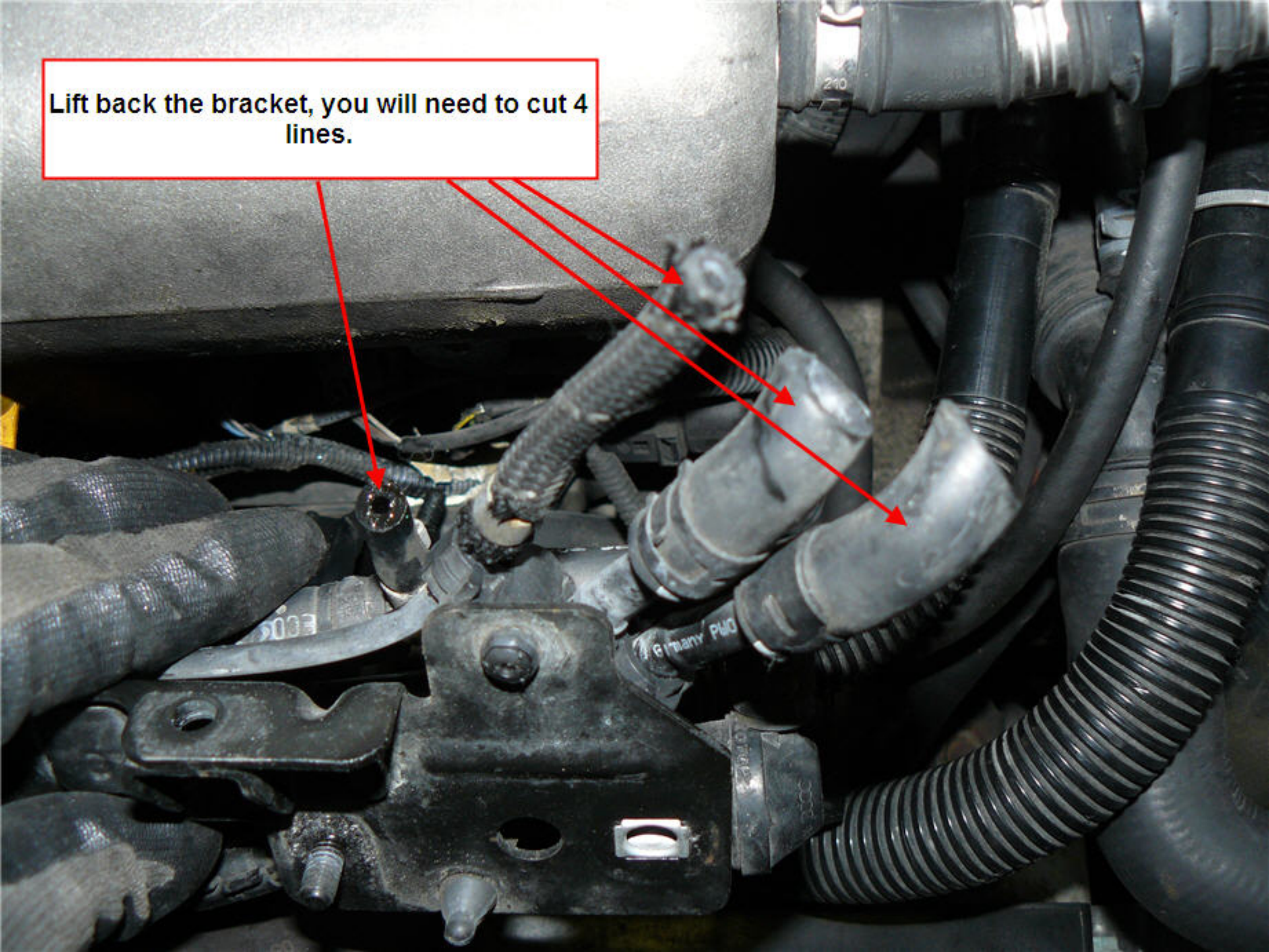
Remove these 2 10mm nuts



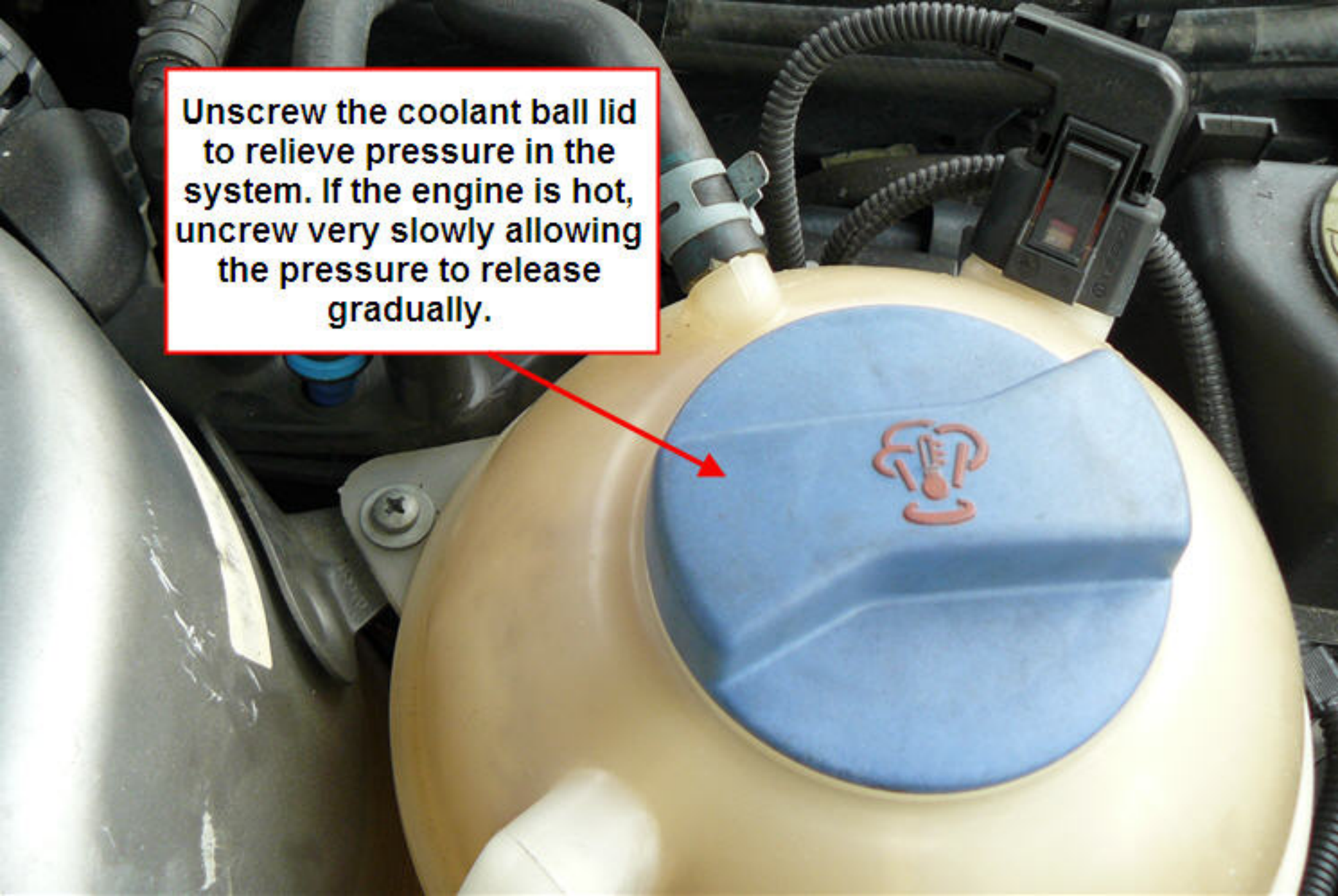
Remove these 2 5mm allen bolts (some cars may have 5.5mm)

Lift off the SAI tube and move out of the way

Lift back the bracket, you will need to cut 4 lines.



Unscrew the coolant ball lid to relieve pressure in the system. If the engine is hot, uncrew very slowly allowing the pressure to release gradually.



A close-up photograph of an engine's coolant system. A green plastic sensor is inserted into a black metal fitting. A black corrugated hose is connected to the fitting. A red arrow points from a text box to the hose. Another red arrow points from a text box to the green sensor. The engine block and various hoses are visible in the background.

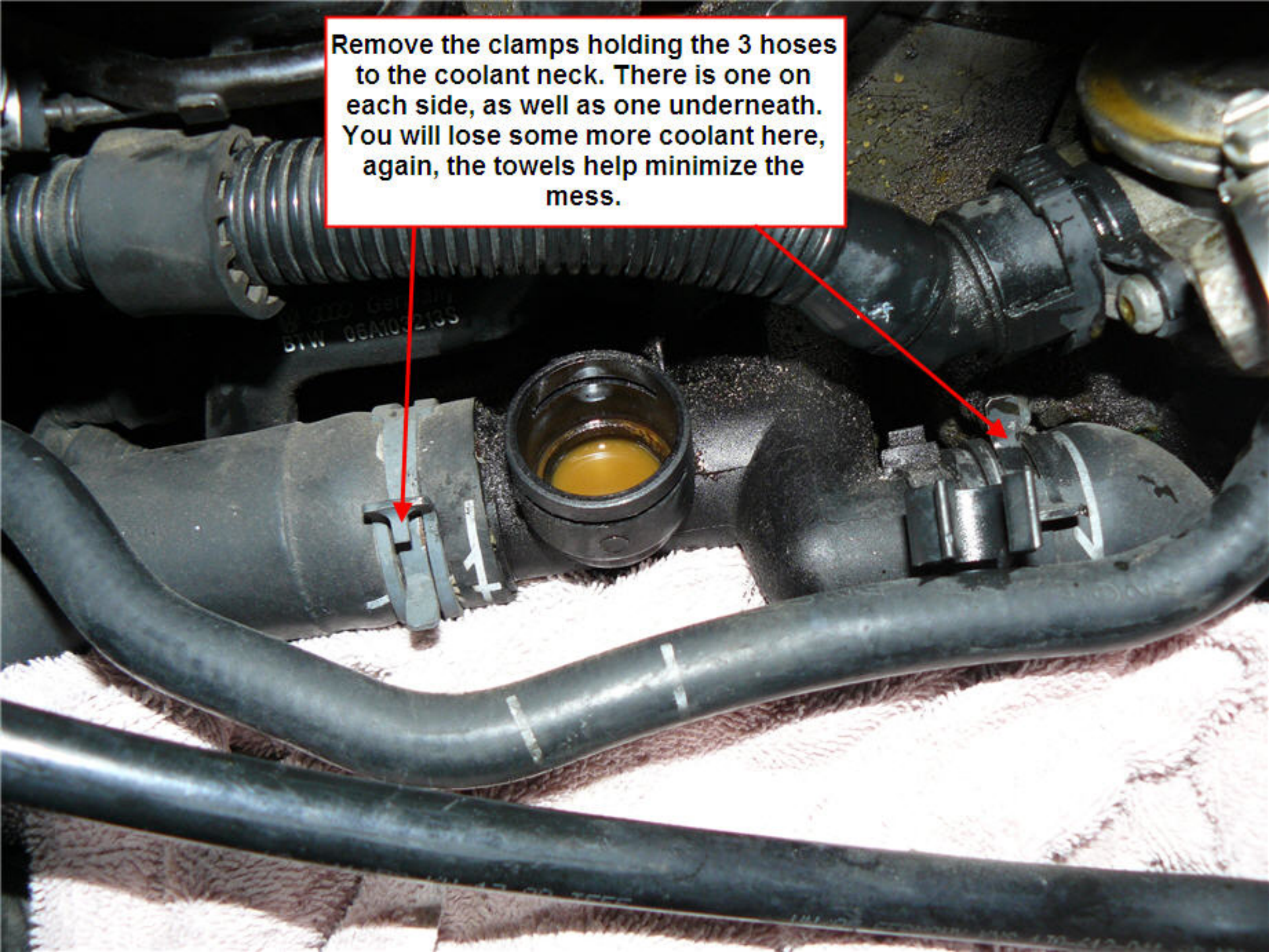
Remove the connector going to the coolant temperature sensor

Using a small flathead screwdriver, pry the clip holding the sensor in place

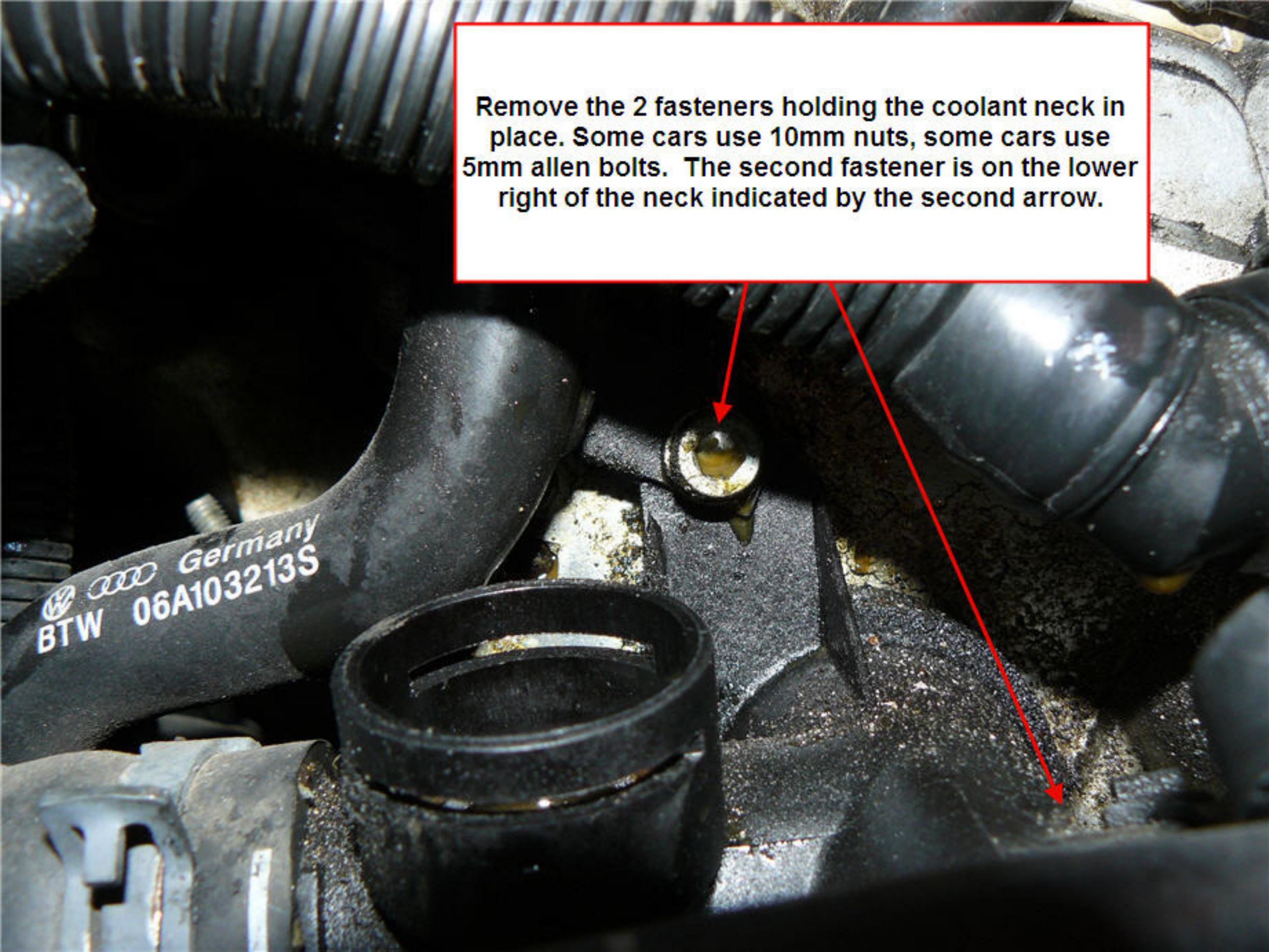
Wiggle the sensor and pull up to remove it. You will lose some coolant, I found it best to place a couple of towels under the sensor area to catch most of it.




Remove the clamps holding the 3 hoses to the coolant neck. There is one on each side, as well as one underneath. You will lose some more coolant here, again, the towels help minimize the mess.



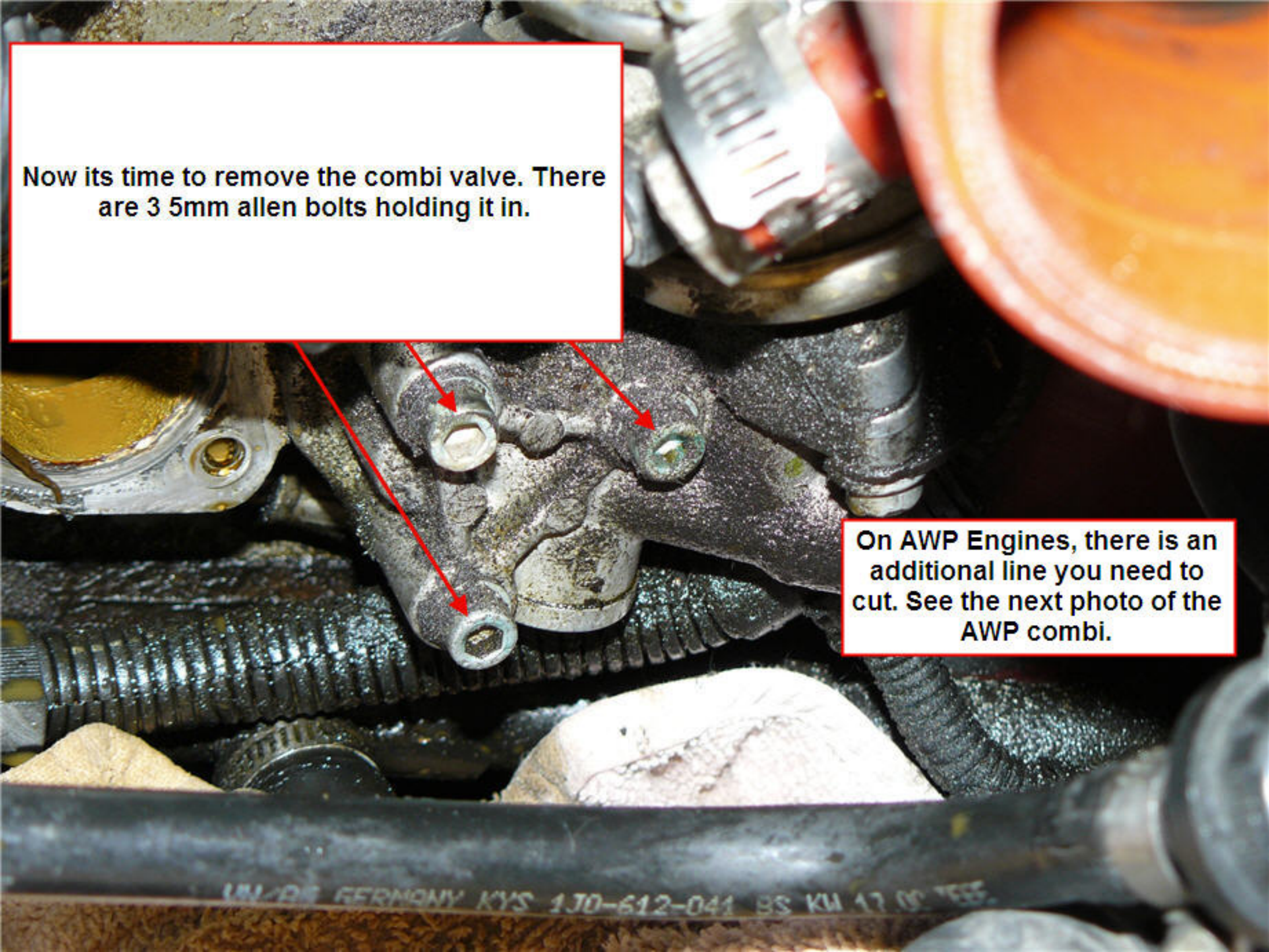
Remove the 2 fasteners holding the coolant neck in place. Some cars use 10mm nuts, some cars use 5mm allen bolts. The second fastener is on the lower right of the neck indicated by the second arrow.





Remove the SAI hose

Remove the hoses from the coolant neck, and pull it out

A close-up photograph of a mechanical assembly, likely a combi valve, mounted on a metal surface. Three 5mm allen bolts are visible, securing the valve. A red box highlights the text instructions. A red bowl is visible in the upper right corner. A black corrugated hose is visible in the lower left. A metal bar with technical markings is at the bottom.

Now its time to remove the combi valve. There are 3 5mm allen bolts holding it in.

On AWP Engines, there is an additional line you need to cut. See the next photo of the AWP combi.

UN/DE GERMANY KYS 1J0-612-041 BS KM 17 00 TEE

This is a AWP combi and hardlines

To Diverter

To Vac Res.

To Turbo Inlet Pipe, cut this line when removing the combi.

Plug the line going to the TIP or cap it off.

The 4 lines you cut earlier

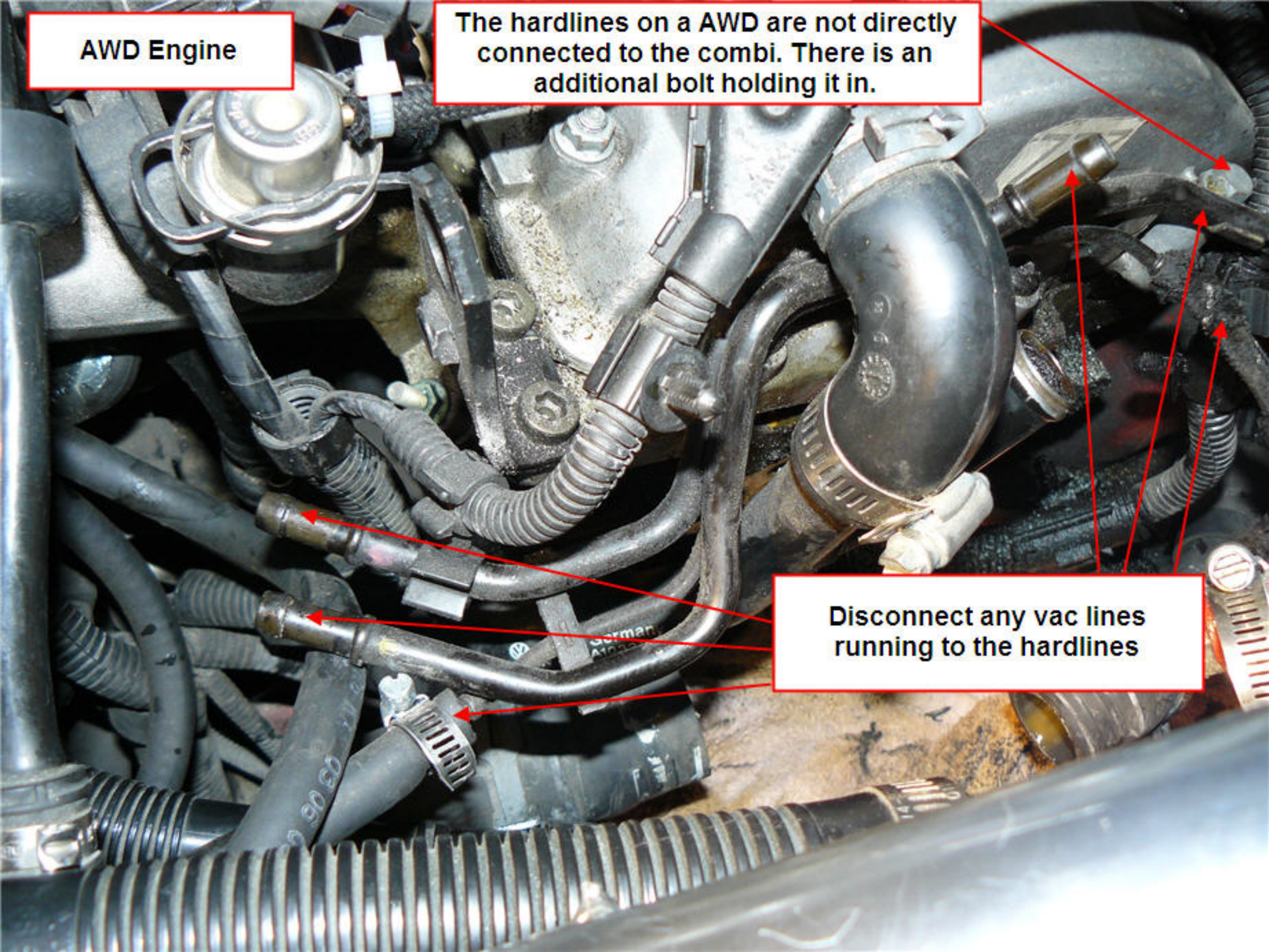
There are also 2 annoying wire clips for the coil pack harness, they can be pryed out with a flathead.

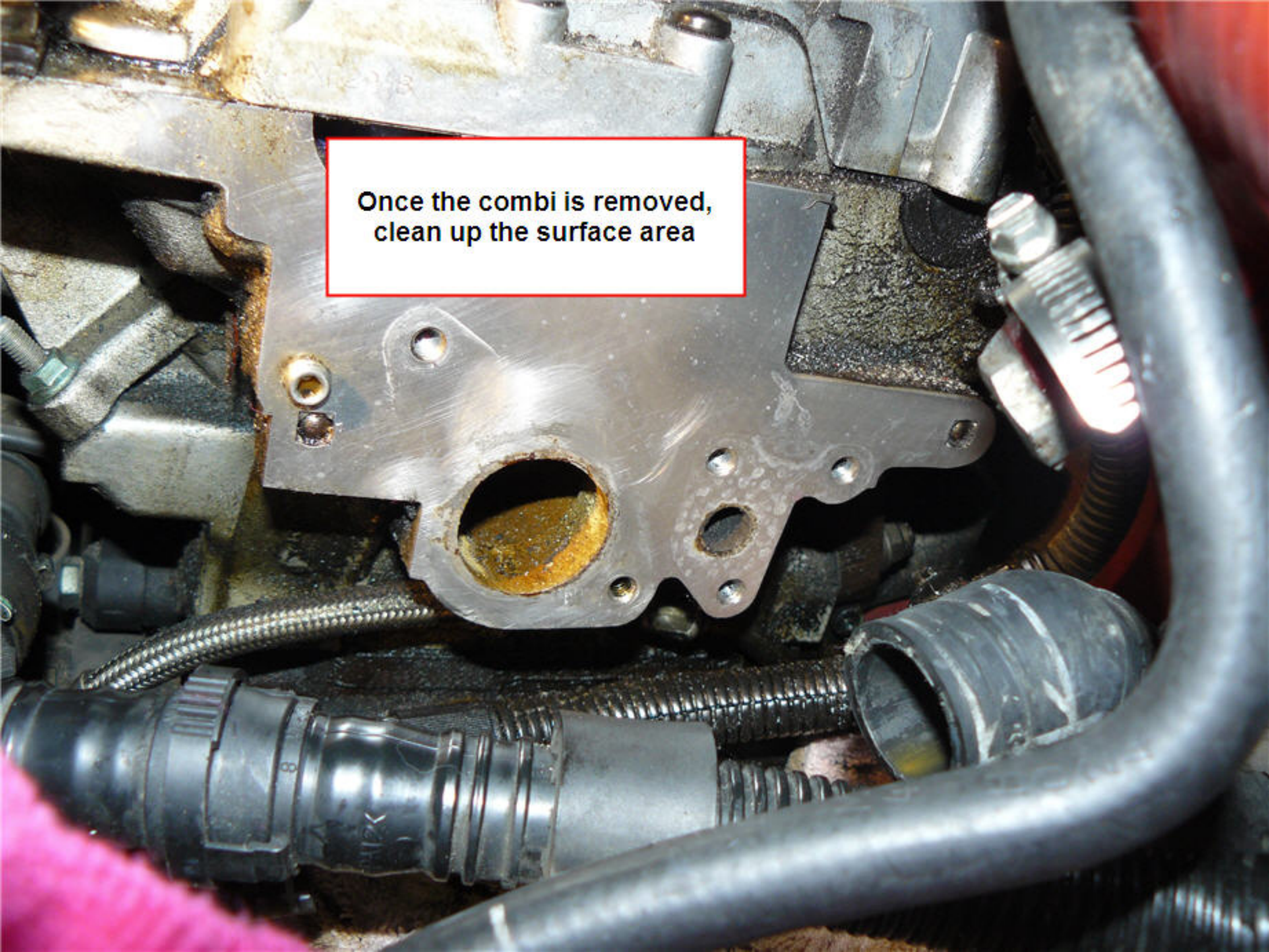


AWD Engine

The hardlines on a AWD are not directly connected to the combi. There is an additional bolt holding it in.

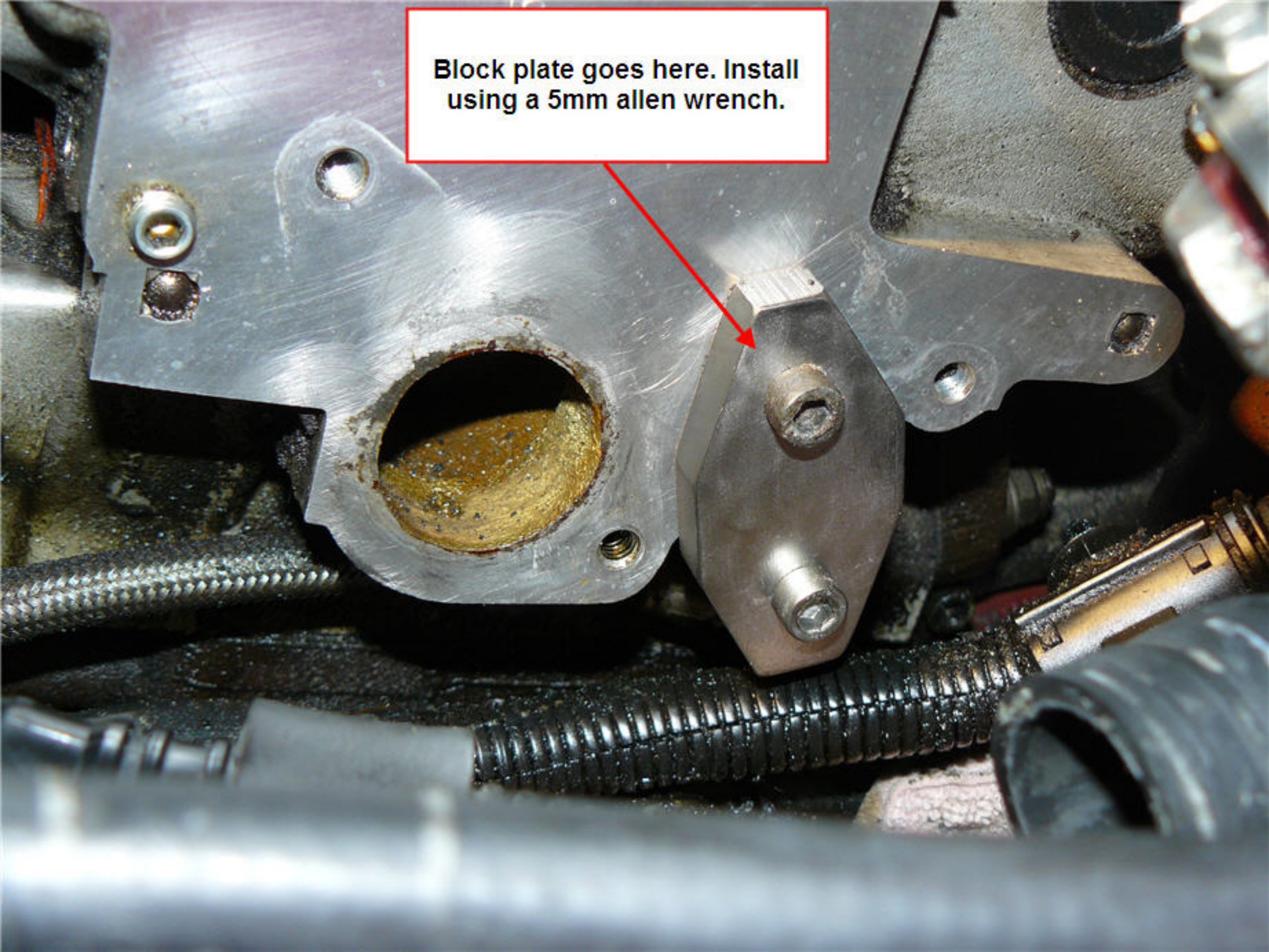
Disconnect any vac lines running to the hardlines



A close-up photograph of a metal engine component, likely a manifold or valve cover, showing a large circular opening. The surface is metallic and shows signs of wear and discoloration. A red-bordered text box is overlaid on the image, containing the instruction: "Once the combi is removed, clean up the surface area". The component is surrounded by various hoses and mechanical parts, including a braided metal hose and a black plastic hose in the foreground.


**Once the combi is removed,
clean up the surface area**

Block plate goes here. Install using a 5mm allen wrench.



Now is a good time to replace the coolant neck, especially if it has never been done before. Install using the 5mm allen wrench. Reconnect hoses, and place the clamps back on.



A close-up photograph of an engine's coolant sensor area. A black plastic sensor housing is being inserted into a metal port. A grey electrical connector with three wires (red, yellow, and black) is attached to the top of the sensor. A metal clip is being used to secure the sensor to the engine block. The surrounding area includes various engine components, hoses, and a blue plastic cover.

**Replace the coolant sensor and
insert the clip to hold it in place.
Reconnect the harness.**

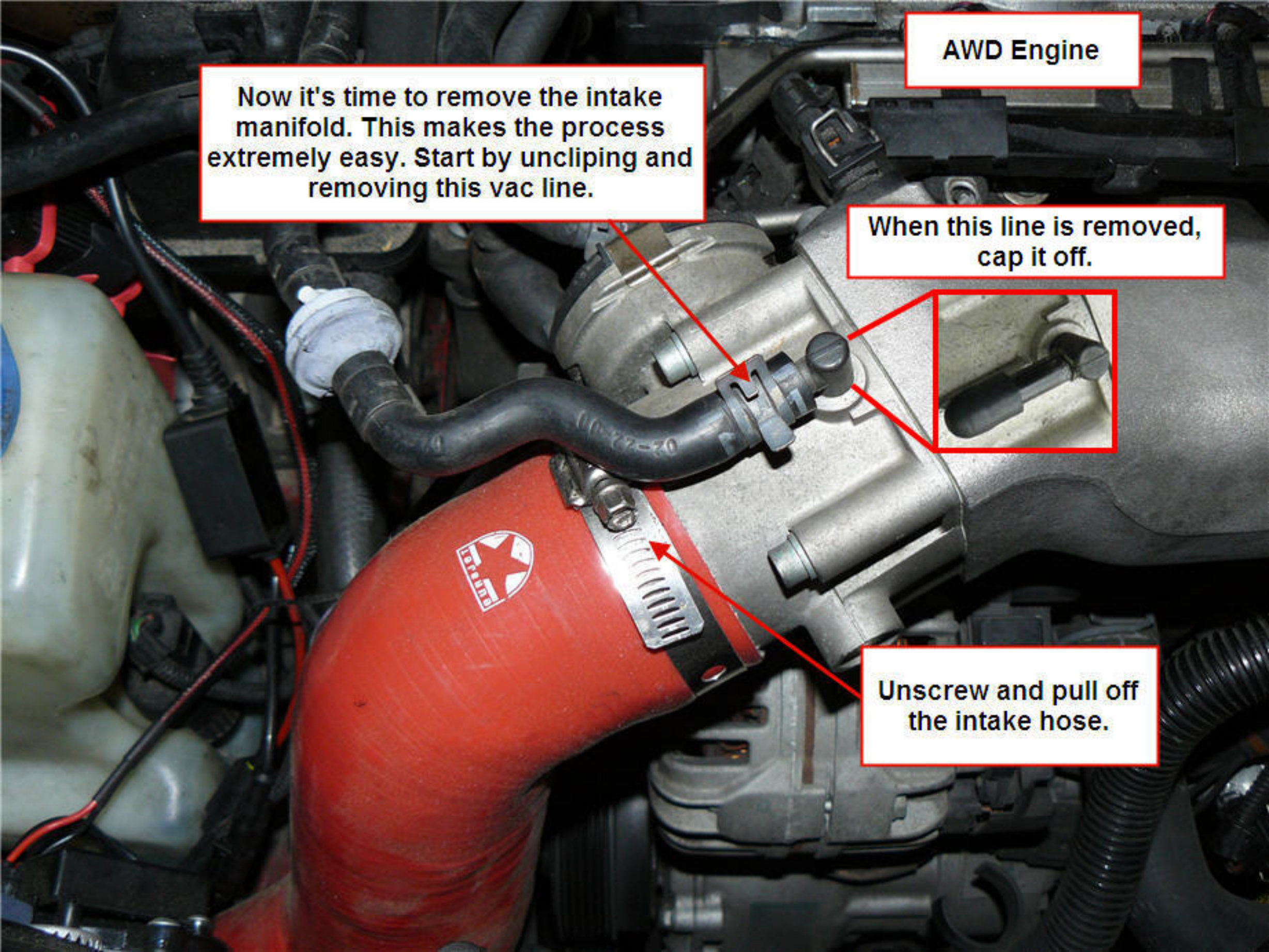
AWD Engine

Now it's time to remove the intake manifold. This makes the process extremely easy. Start by unclipping and removing this vac line.

When this line is removed, cap it off.



Unscrew and pull off the intake hose.

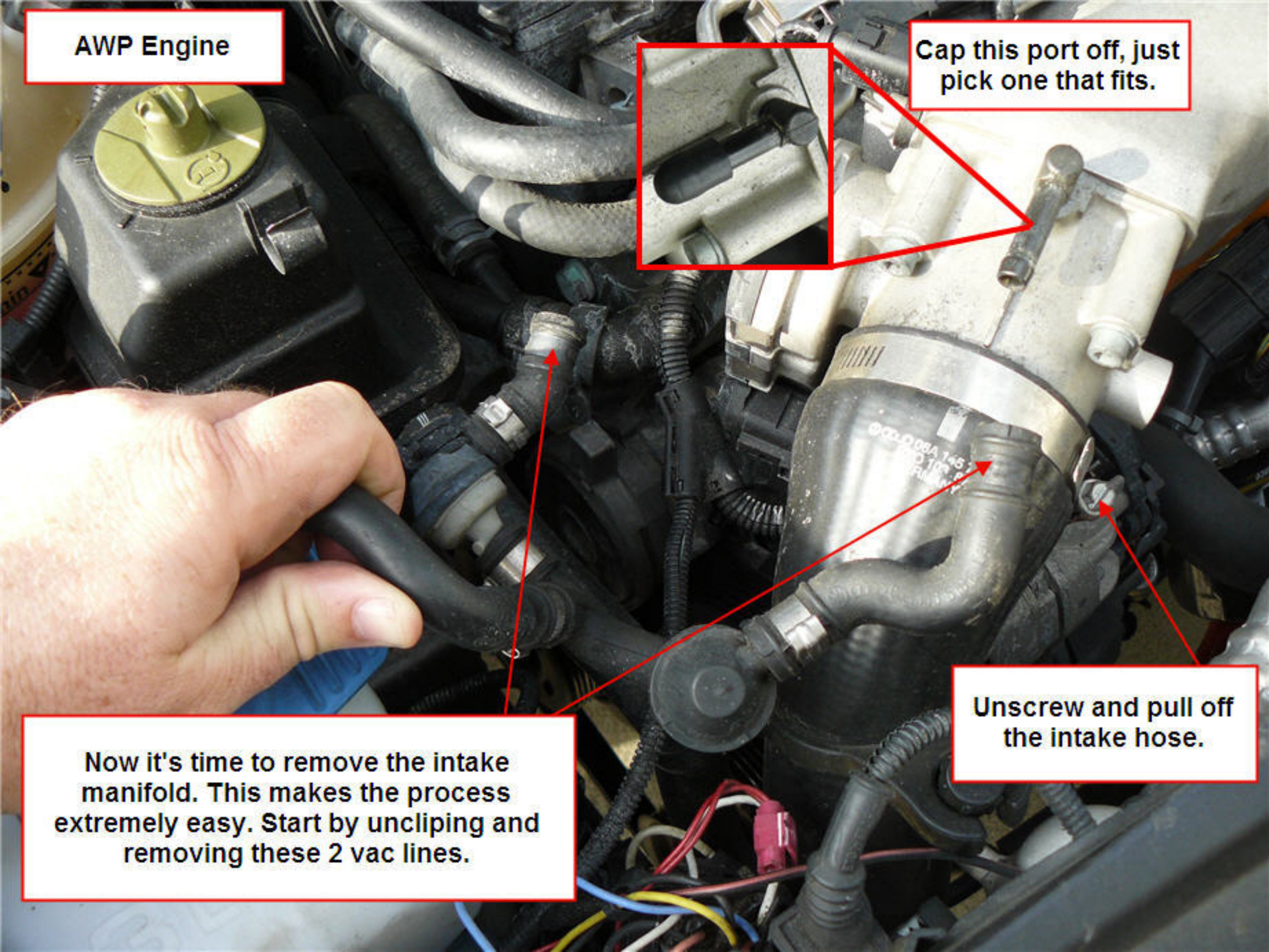


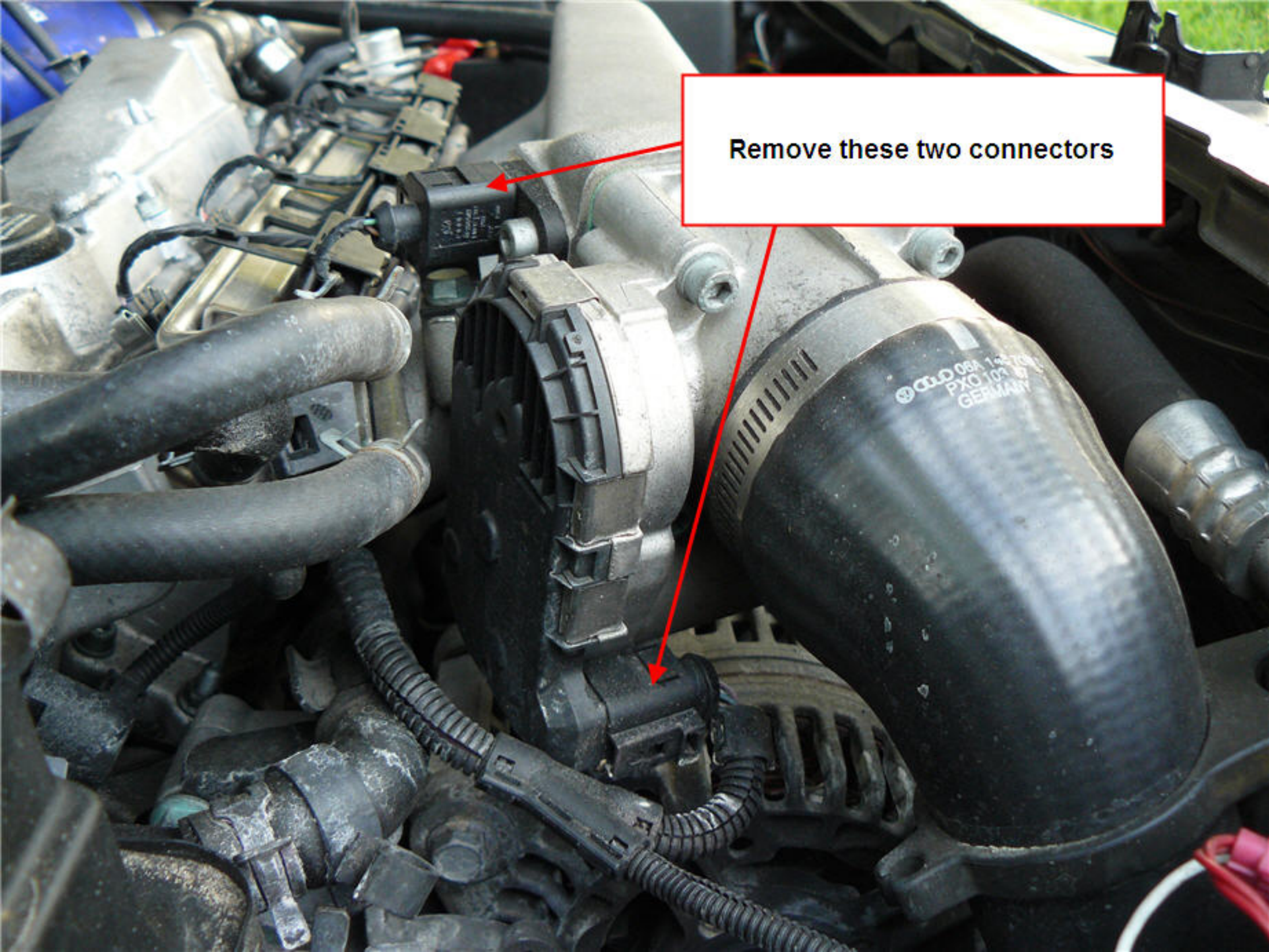
AWP Engine

Cap this port off, just pick one that fits.

Now it's time to remove the intake manifold. This makes the process extremely easy. Start by unclipping and removing these 2 vac lines.

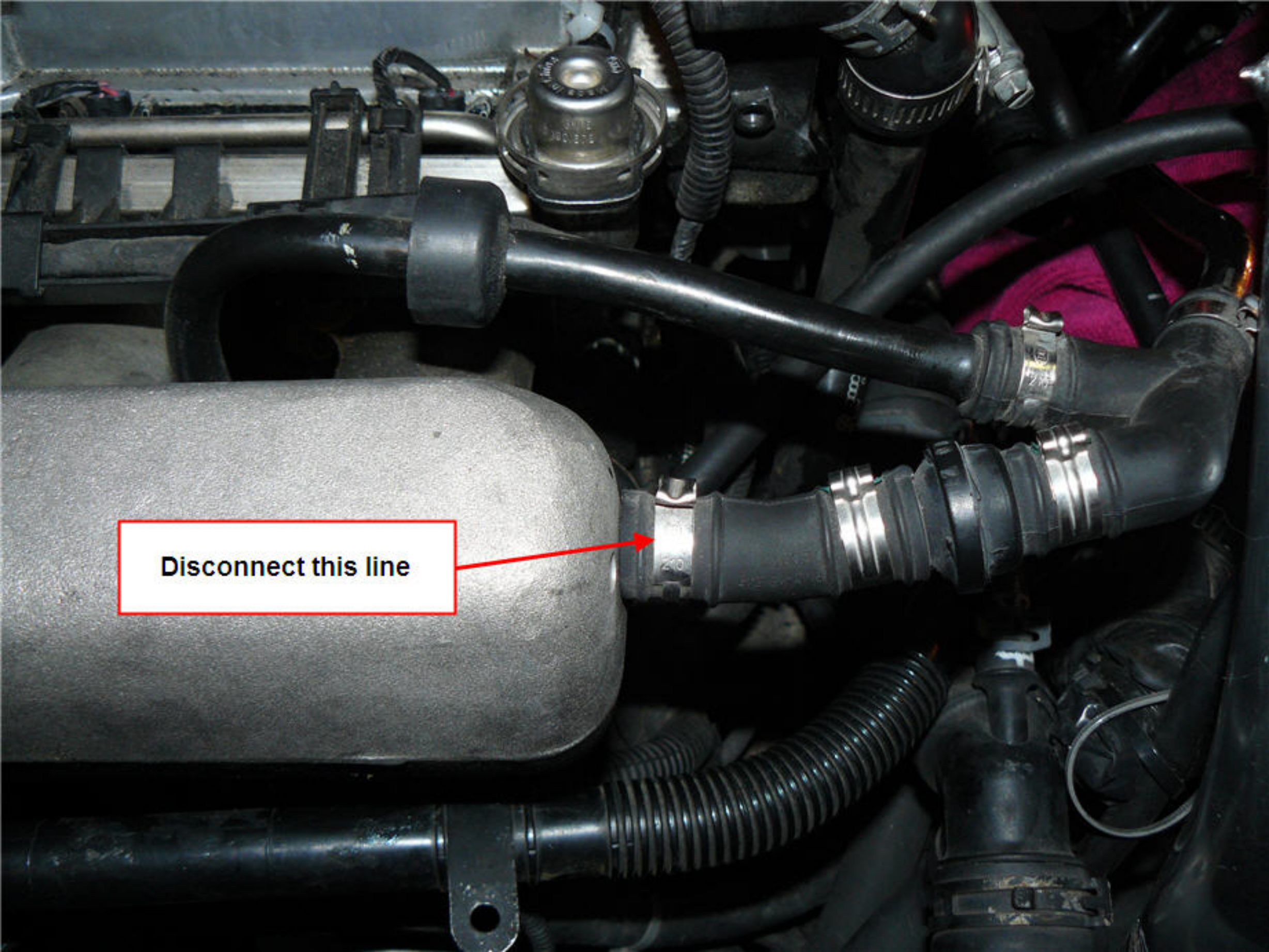
Unscrew and pull off the intake hose.





Remove these two connectors

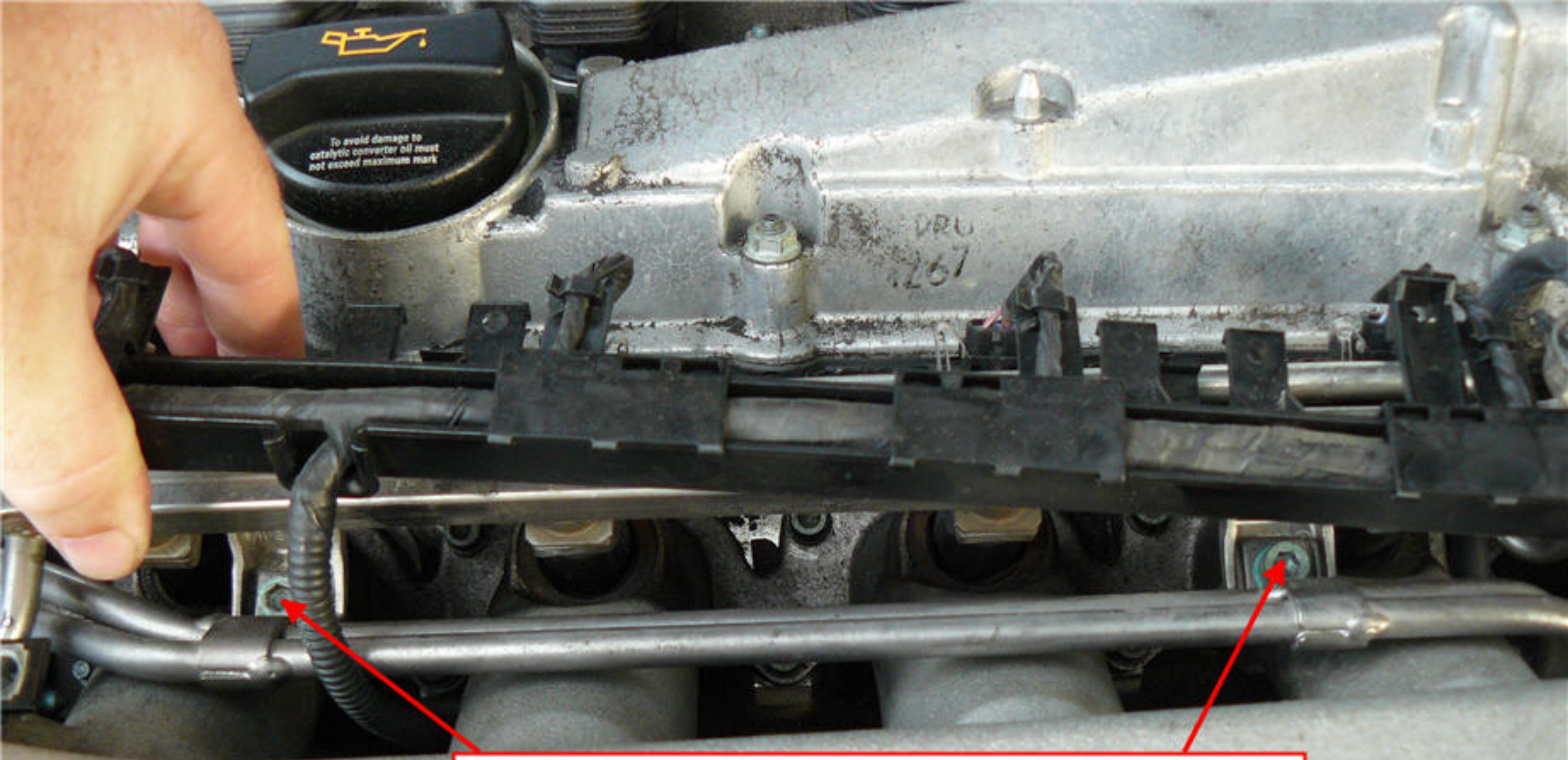
000 08A 142 704
PYO 103 87
GERMANY



Disconnect this line

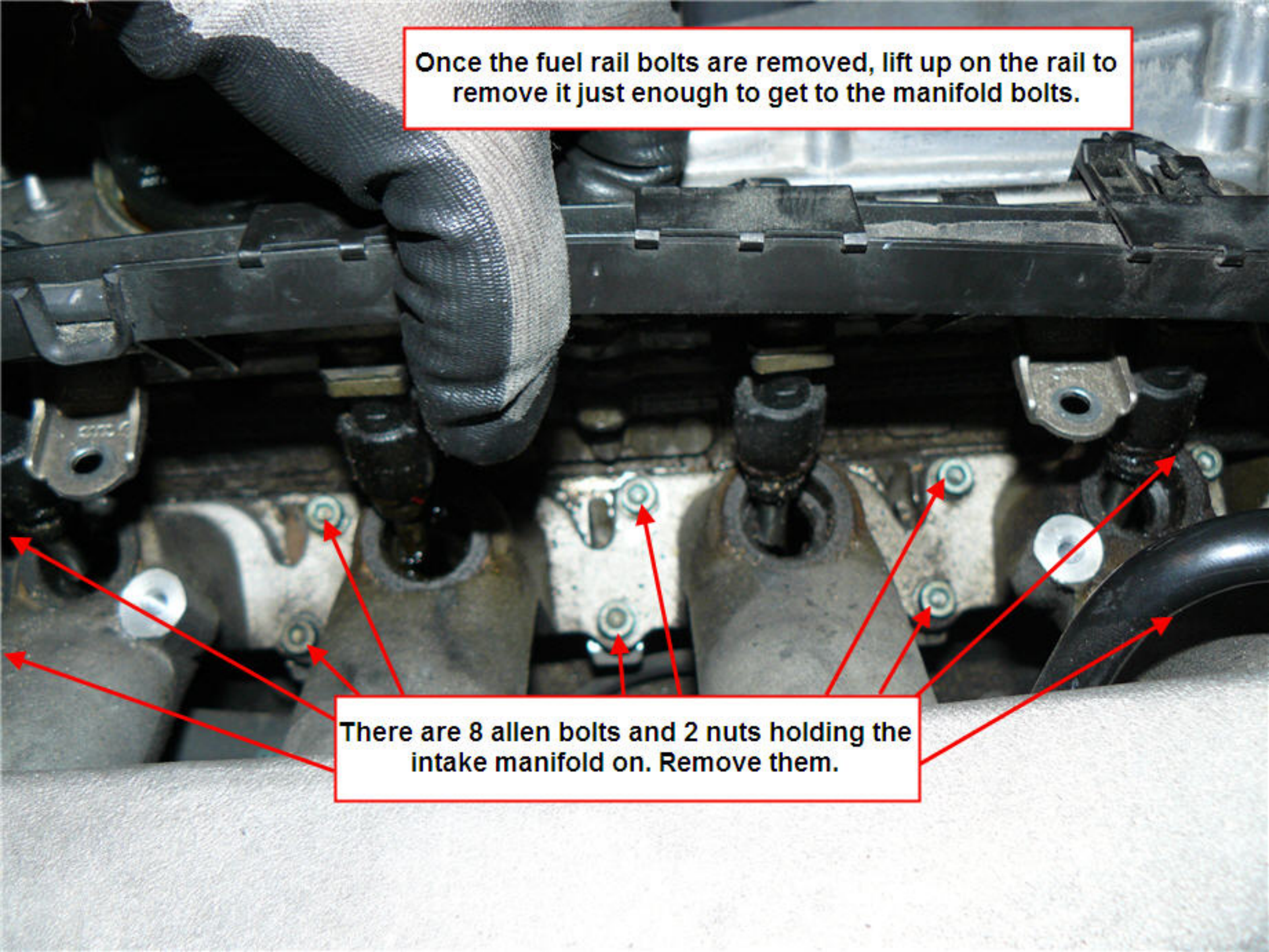
A close-up photograph of a person's hand unclipping a black plastic wire cover from a silver metal fuel rail. The fuel rail is mounted on a blue intake manifold. A red arrow points from a text box to the clip being removed. The text box contains the instruction "Unclip the fuel rail wire cover".

Unclip the fuel rail wire cover




Slide the wire cover down and up to remove it. You now have access to the 2 bolts holding the fuel rail to the intake manifold. Remove these 2 bolts so that the fuel rail can be moved out of the way for the intake manifold removal.

Once the fuel rail bolts are removed, lift up on the rail to remove it just enough to get to the manifold bolts.



There are 8 allen bolts and 2 nuts holding the intake manifold on. Remove them.



There is one more allen bolt underneath the manifold, remove it.

A close-up photograph of an engine manifold. The manifold is a dark, cast metal component with several ports. Two vacuum lines, made of black plastic with metal clamps, are connected to the manifold. A yellow dipstick tube is also visible, extending from the manifold. A person's hands are visible, one holding a bolt and nut assembly near the manifold. Red arrows point from text boxes to the vacuum lines and the dipstick tube.

Remove the vacuum lines connected under the manifold, some cars have 3, some have 4.

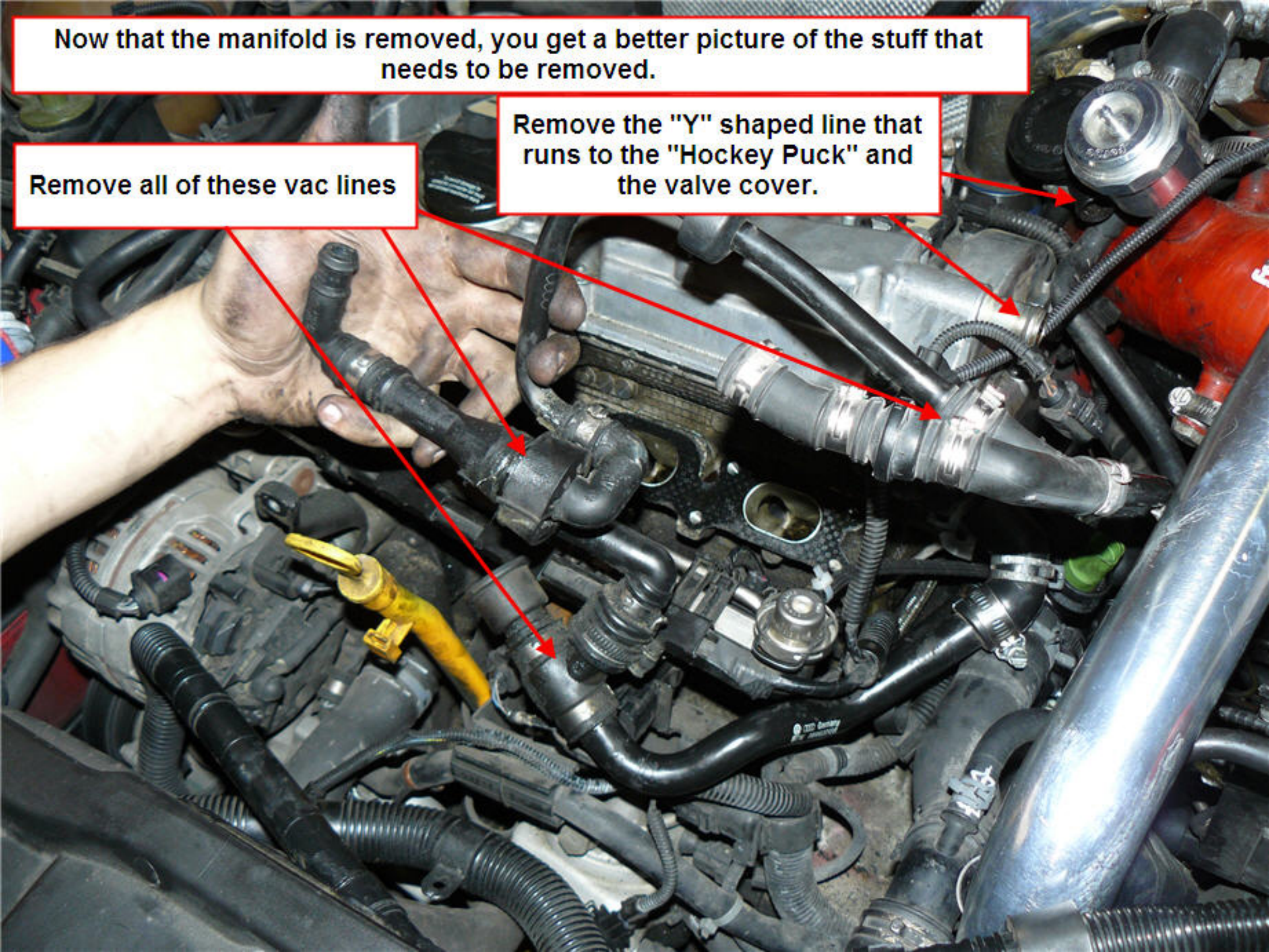
If you'd like, remove the dipstick tube as well to keep it from getting broken while working in that area. Just remember to reinstall it.

You can now lift out the manifold.

Now that the manifold is removed, you get a better picture of the stuff that needs to be removed.


Remove all of these vac lines

Remove the "Y" shaped line that runs to the "Hockey Puck" and the valve cover.





When removing the lines, keep the check valve connected to the brake booster line.

A close-up photograph of an engine's internal components, specifically focusing on an oil cooler housing. A red arrow points to a grey plastic elbow fitting that is connected to a vacuum line. The surrounding area is filled with various engine parts, including hoses, metal brackets, and a spark plug. The text box is positioned in the upper right quadrant of the image.

Once all of the vac lines are removed, you should be left with the elbow coming off the top of the oil cooler housing. Be sure that the reducer is still connected as shown.

**This end connects to
the valve cover**

**Take this line out of the kit as
well as two hose clamps to fit
over these ends**

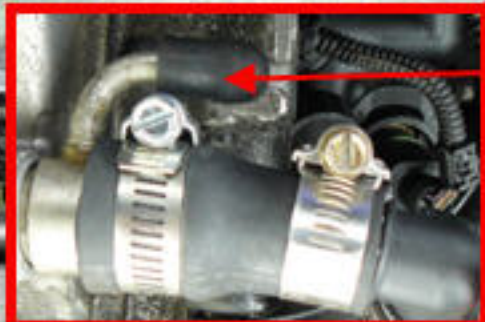
**This end connects to
the elbow on top of the
oil cooler housing**

**This connector will lead to
the Inlet of your catch can**



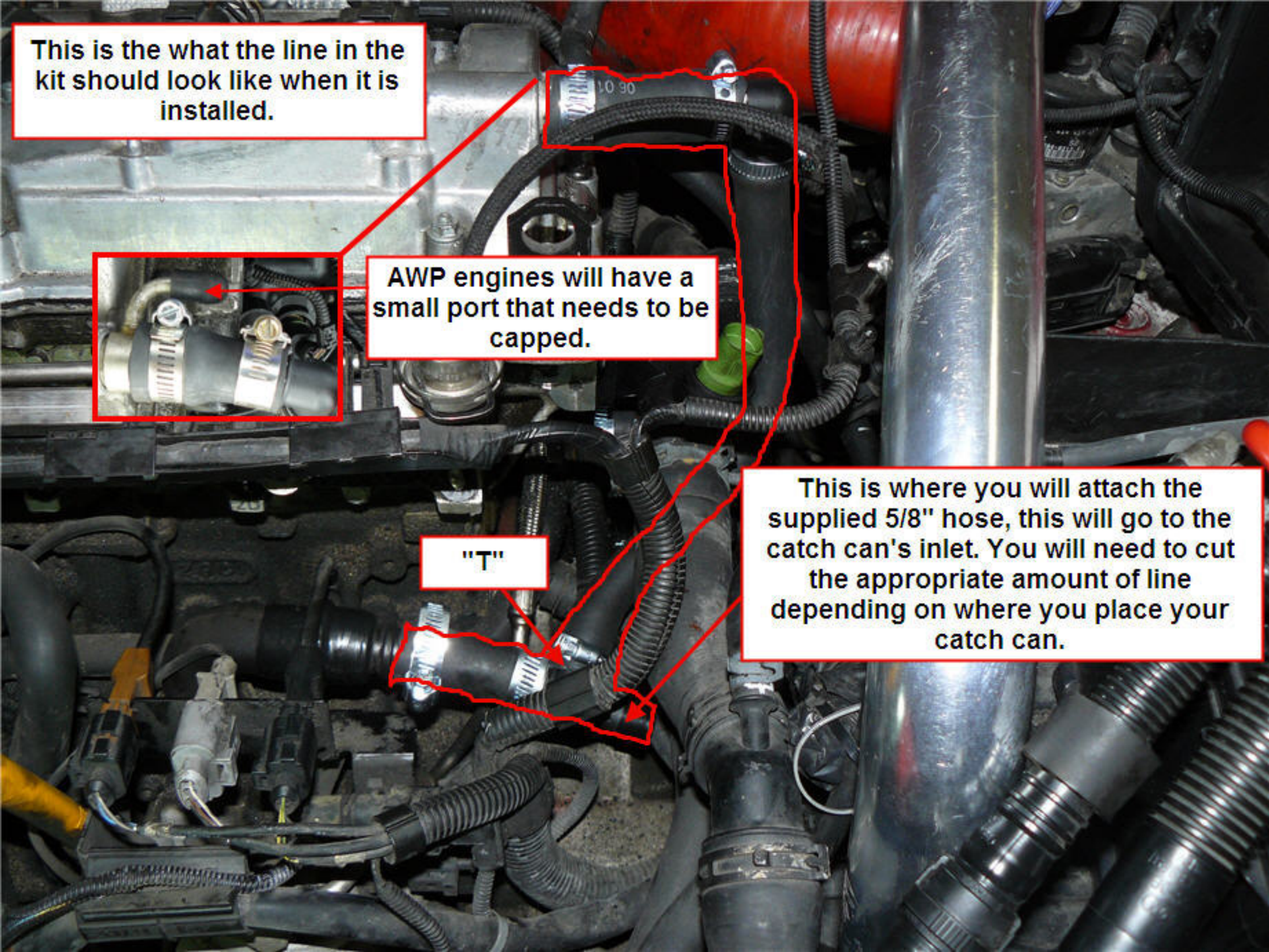
This is the what the line in the kit should look like when it is installed.


AWP engines will have a small port that needs to be capped.



"T"

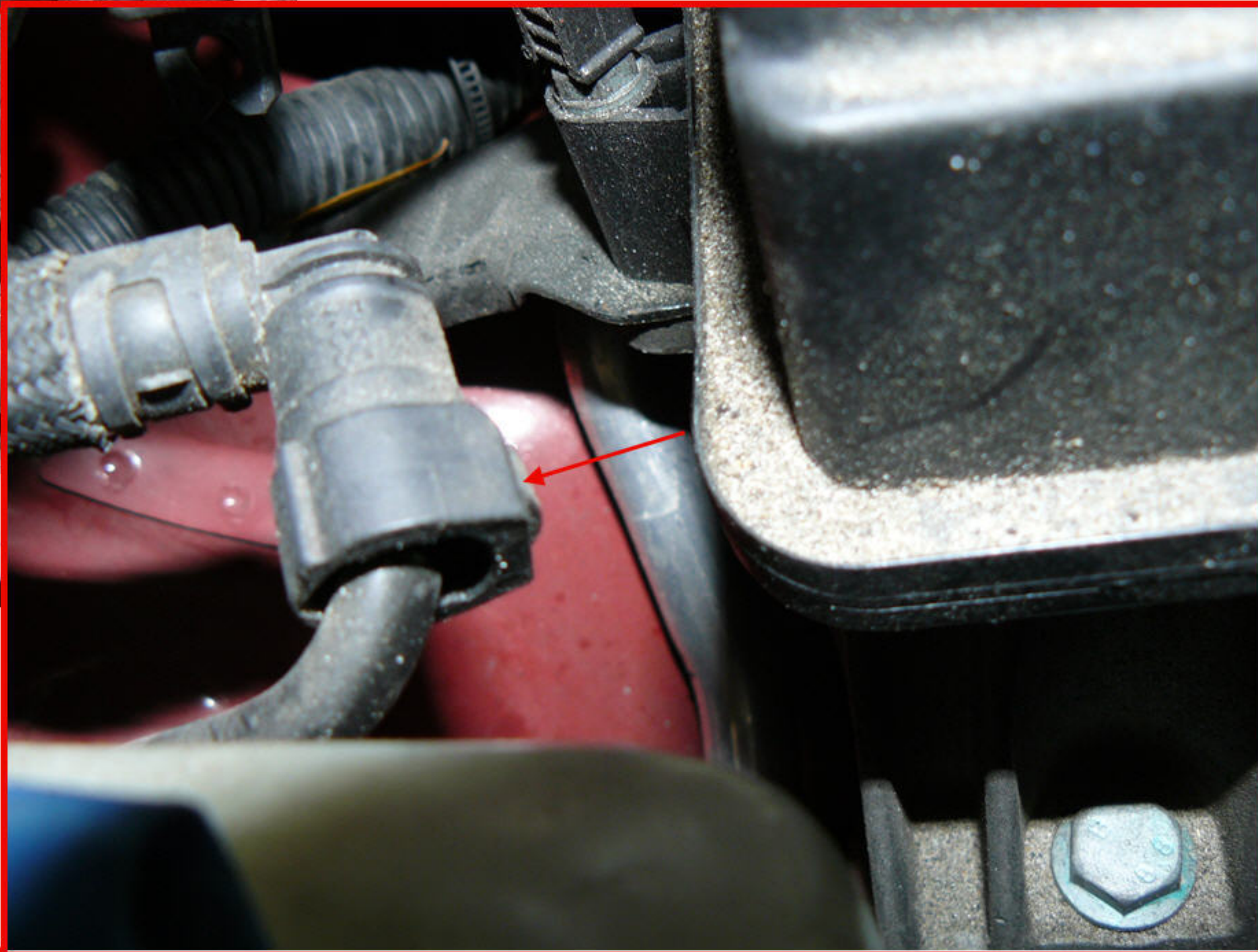
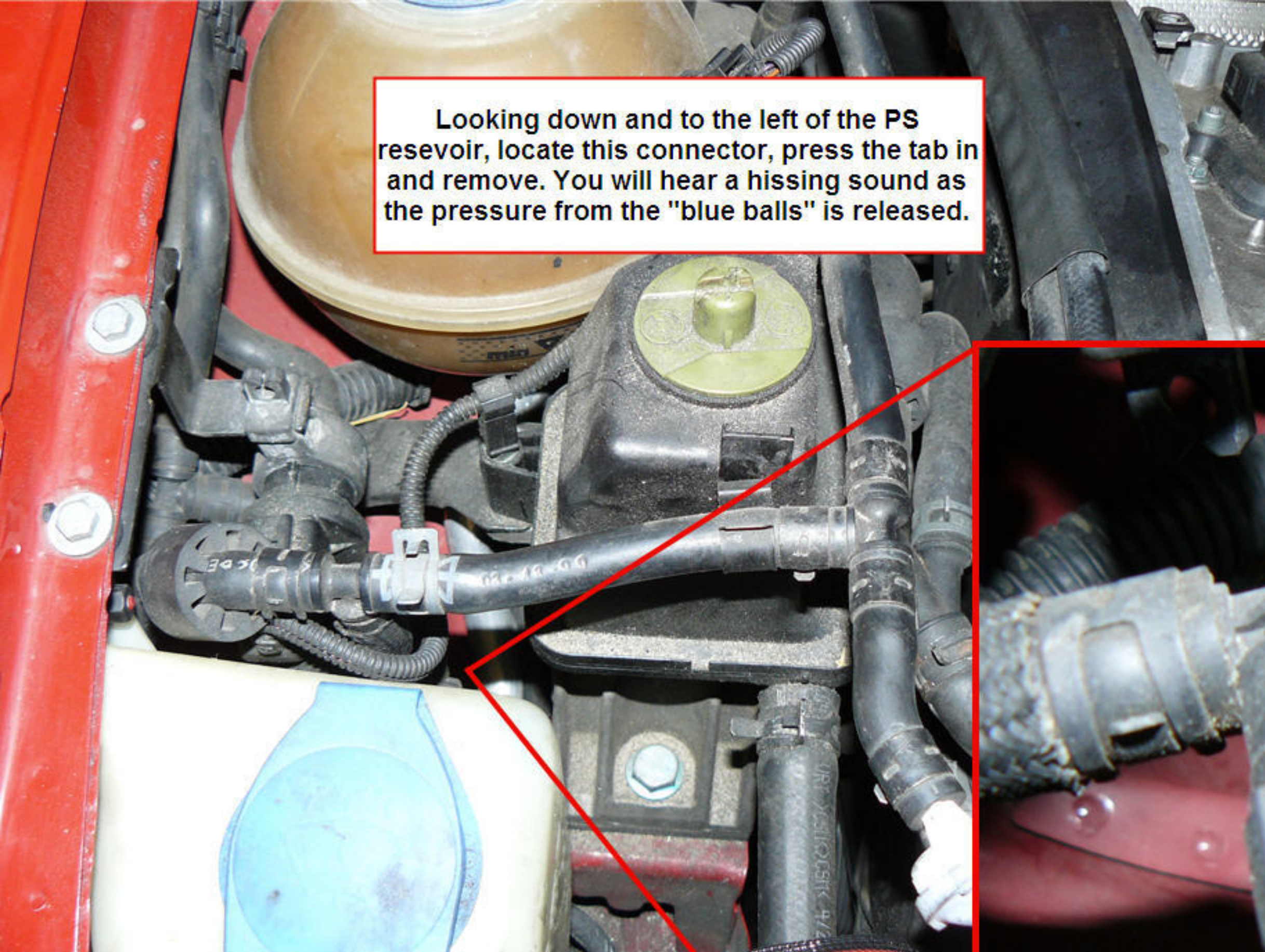
This is where you will attach the supplied 5/8" hose, this will go to the catch can's inlet. You will need to cut the appropriate amount of line depending on where you place your catch can.

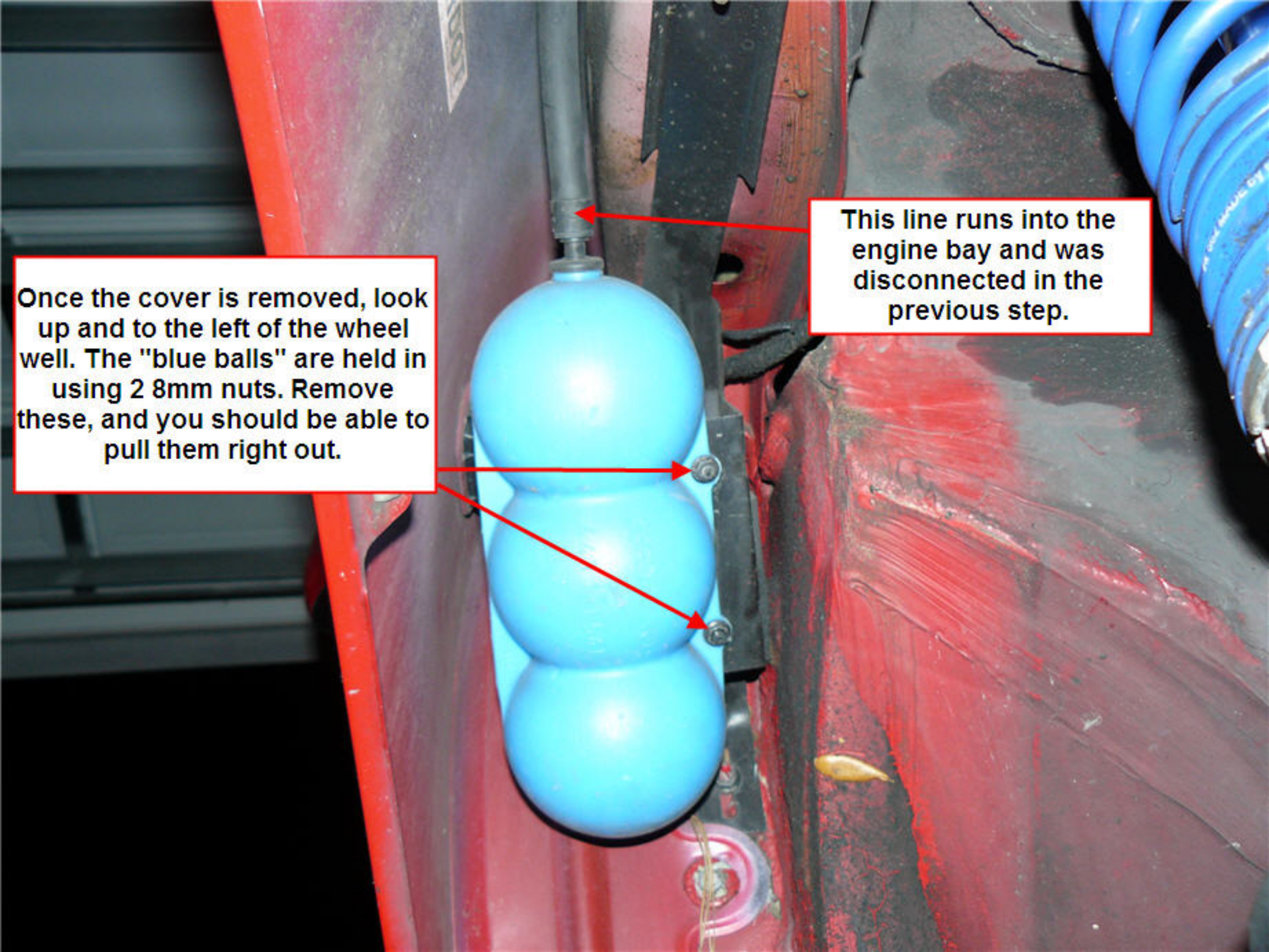




Jack up the passenger side of the vehicle, remove the wheel. Now remove the wheel well insert. There will be several screws holding it in.

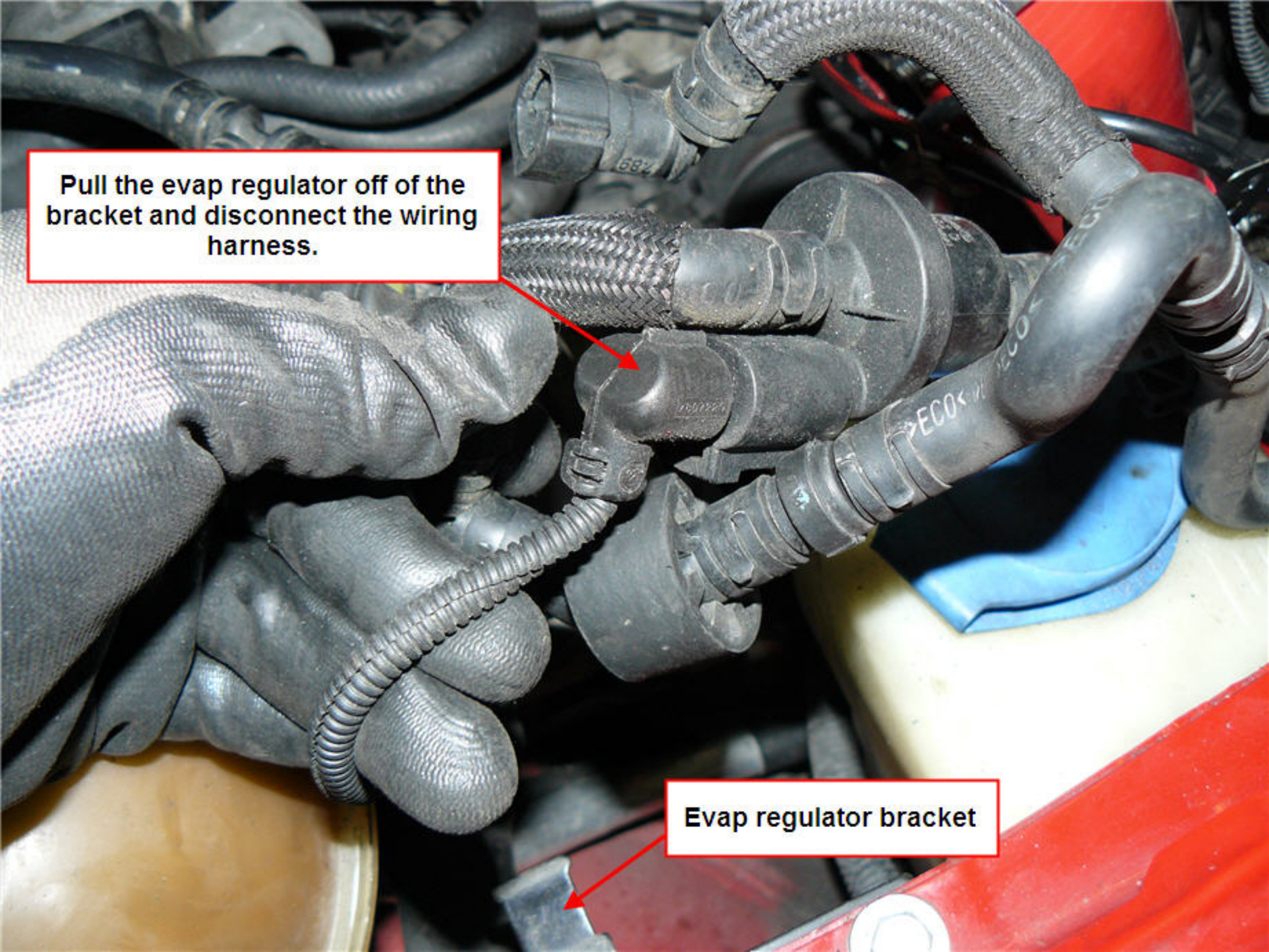
Looking down and to the left of the PS reservoir, locate this connector, press the tab in and remove. You will hear a hissing sound as the pressure from the "blue balls" is released.





Once the cover is removed, look up and to the left of the wheel well. The "blue balls" are held in using 2 8mm nuts. Remove these, and you should be able to pull them right out.

This line runs into the engine bay and was disconnected in the previous step.



Pull the evap regulator off of the bracket and disconnect the wiring harness.

Evap regulator bracket

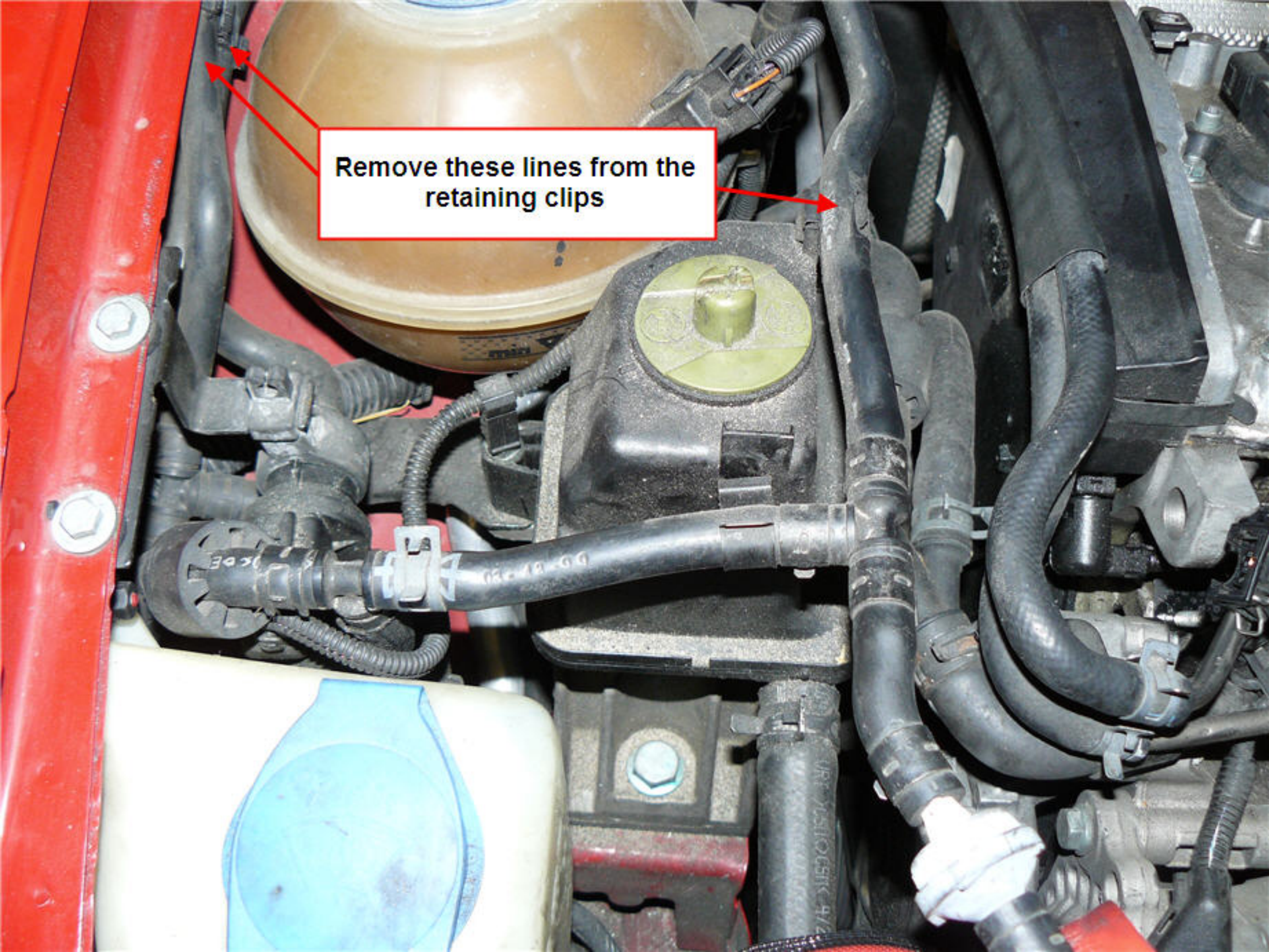
AWD Engines

On the passenger side behind the coolant ball, you will see these 2 lines connected by a black rubber band. Use a razor to cut this band, this will allow you to separate the lines.


You can now move this line out of the way. On AWD engines, this is the line that goes to the small port on the turbo inlet pipe

You have 2 options with this line, cut the line several inches above the turbo inlet pipe, and plug it with a screw. Or you can reach down and remove it from the TIP and cap it off.



A close-up photograph of an engine compartment. A white text box with a red border is centered in the upper half of the image. It contains the text "Remove these lines from the retaining clips" in black. Three red arrows point from the text box to specific locations: one points to a retaining clip on a black hose on the left side of the engine, another points to a retaining clip on a black hose in the center, and a third points to a retaining clip on a black hose on the right side. The engine compartment contains various components, including a yellow reservoir at the top, a blue reservoir at the bottom left, and a black plastic component with a yellow cap in the center. The engine block is visible on the right side. The overall scene is a detailed view of the engine's internal components and hoses.

Remove these lines from the retaining clips

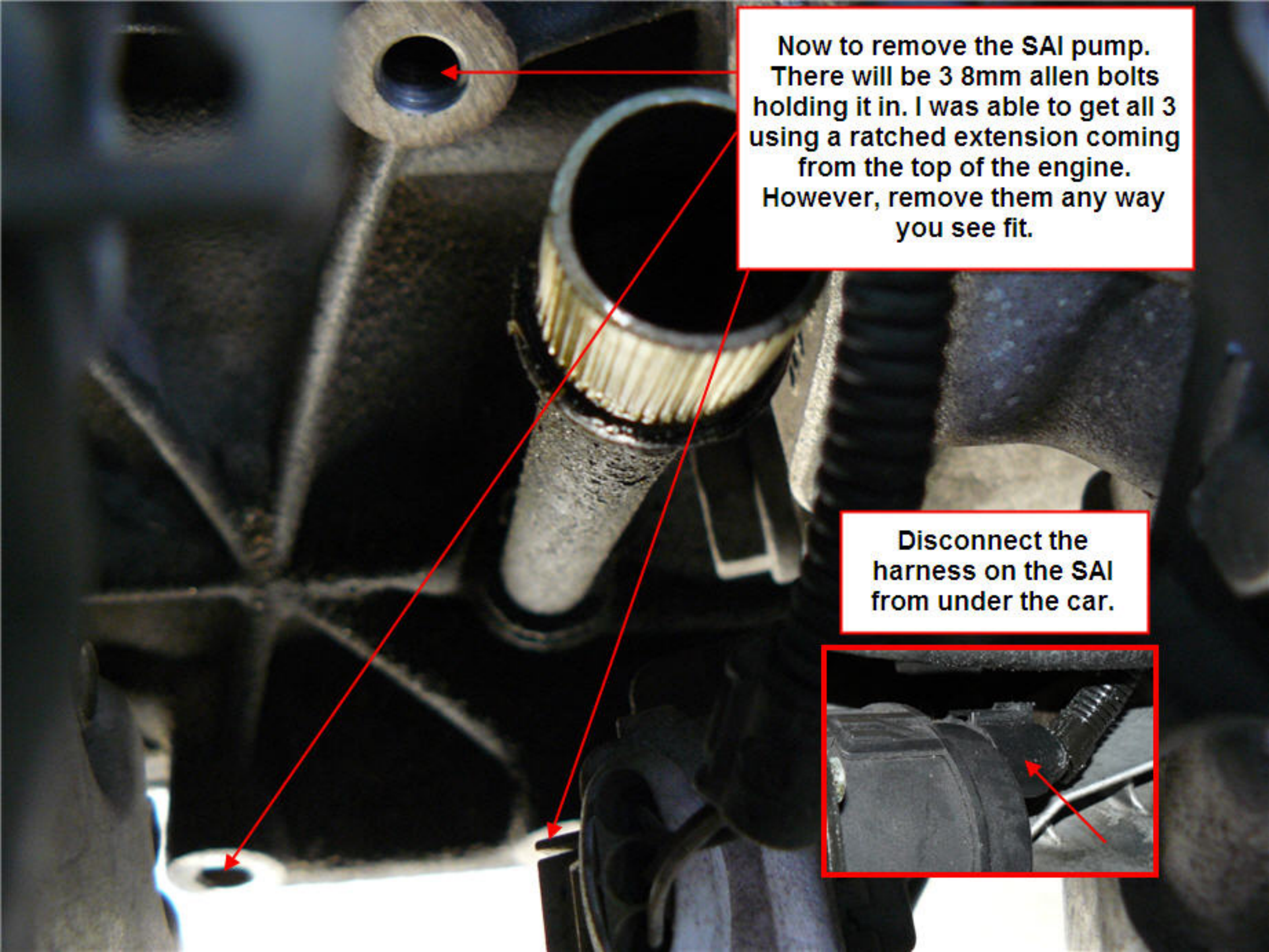
A close-up photograph of automotive air conditioning components. In the center, a black rubber band is wrapped around a metal line. To the left, a metal ball joint is visible. To the right, a silver metal fitting is attached to a line. A red text box with a white background is positioned at the top, containing instructions. Two red arrows point from the text box to the metal lines on either side of the rubber band. The text in the box reads: "Behind the coolant ball, where you cut the black rubber band, you will see 4 lines going down into a black box. Remove the two closest to the coolant ball. DO NOT REMOVE THE TWO CLOSEST TO THE WINDSHIELD." The text in the bottom right box reads: "You should now be able to lift out all of the Evap related lines."

Behind the coolant ball, where you cut the black rubber band, you will see 4 lines going down into a black box. Remove the two closest to the coolant ball. **DO NOT REMOVE THE TWO CLOSEST TO THE WINDSHIELD.**

You should now be able to lift out all of the **Evap** related lines.

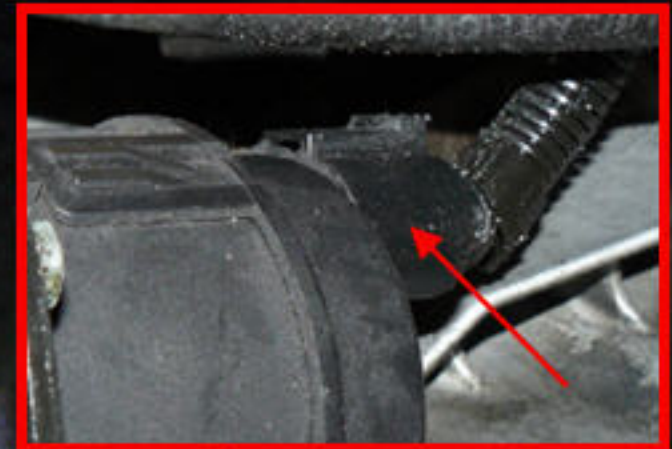
You will be left with 2 plastic lines sticking up. Use the included vacuum caps to cap them off. Secure with a mini clamp included in the kit.




A close-up photograph of an SAI pump assembly. The pump is a cylindrical component with a ribbed top section, mounted on a metal bracket. Three 8mm Allen bolts are visible, securing the pump to the bracket. Red arrows point from the text box to each of these bolts. The background shows various engine components and a metal frame.

Now to remove the SAI pump.
There will be 3 8mm allen bolts
holding it in. I was able to get all 3
using a ratched extension coming
from the top of the engine.
However, remove them any way
you see fit.

Disconnect the
harness on the SAI
from under the car.



A close-up photograph of a mechanical assembly, likely a fuel system component. A red arrow points from a white text box to a bolt on a metal fitting. The fitting is part of a larger assembly with a black plastic cap and various hoses and connectors. The background is a red-painted metal surface.

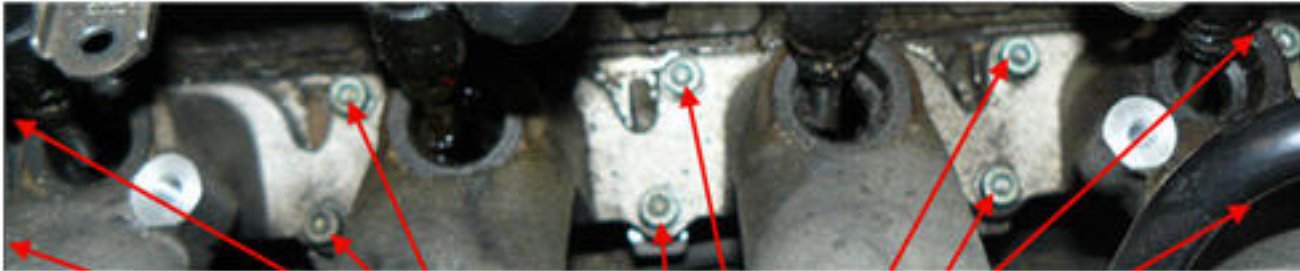
Remove the "Hockey Puck"

Re-install the intake manifold, the book calls for approximately 5 ft lbs of torque on the nuts and bolts. Now is also a good time to replace the manifold gasket with either a stock one or a NewSouth Power Gasket. Installation is reverse of removal.

AWP Engines, you can cap off the two sides of the hardline that runs under the fuel line. This line is not used



Install bolts



Cap this off



Fuel Rail bolts



Plug the harnesses back in

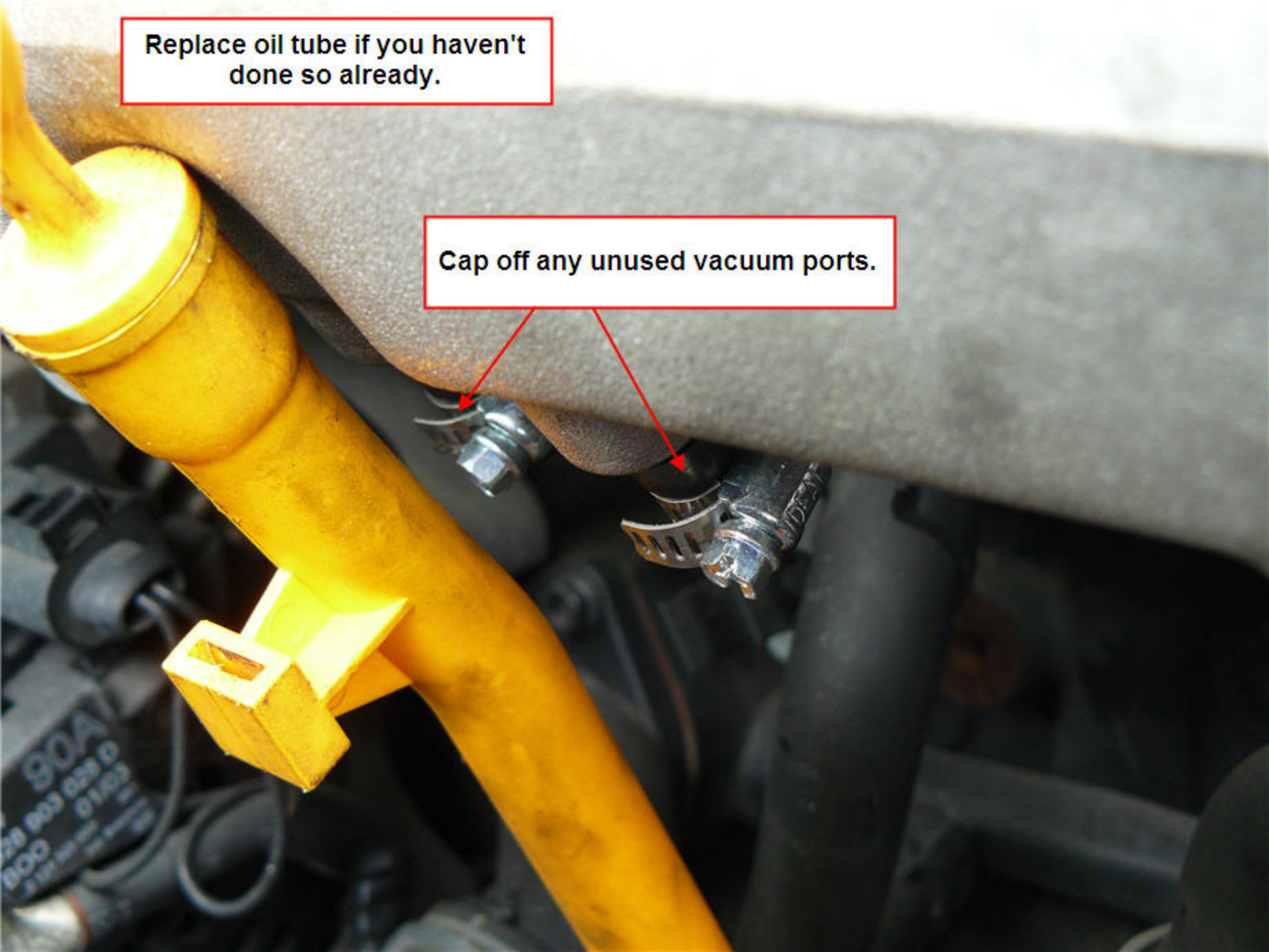


Bolt under the manifold

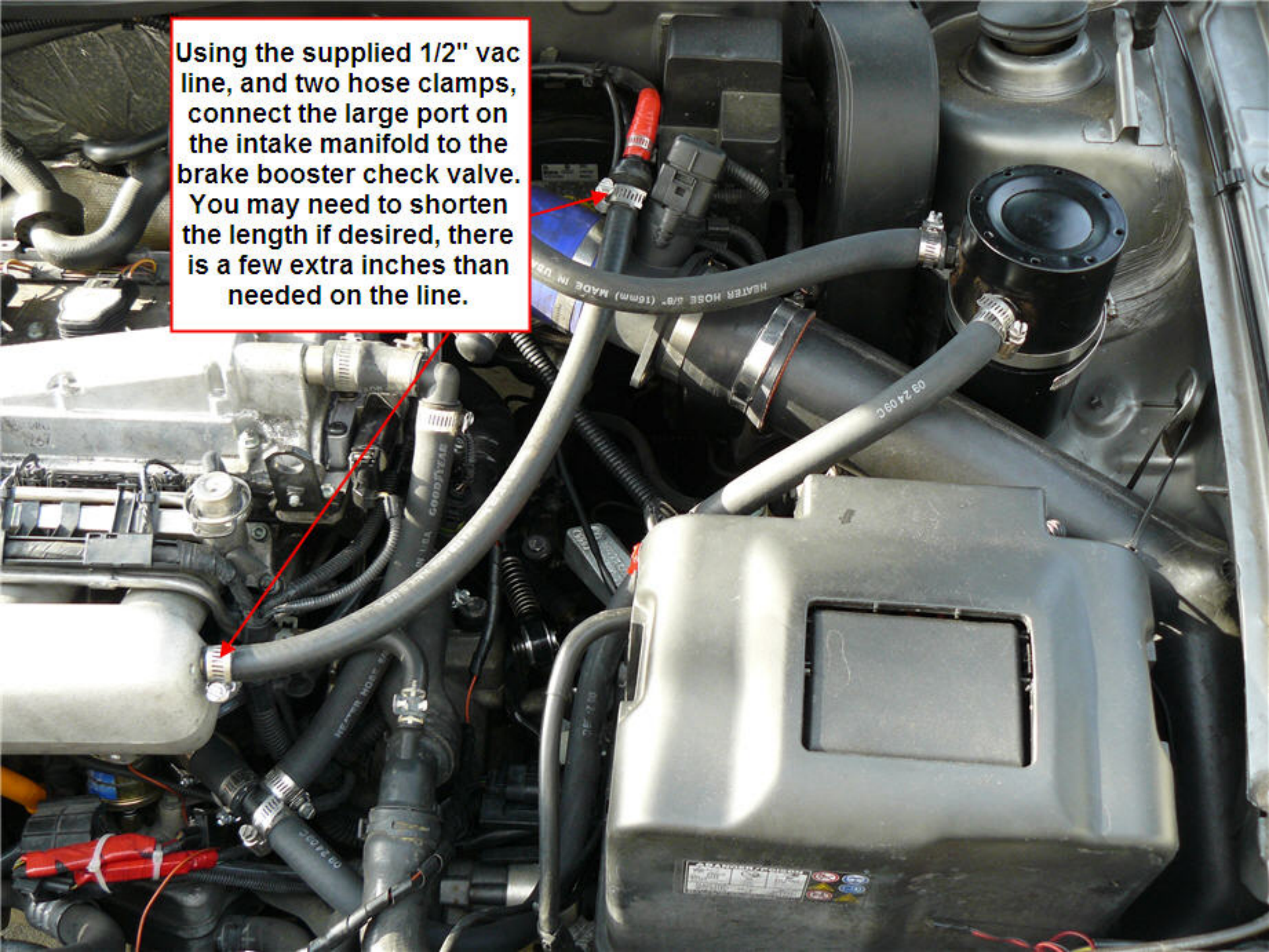


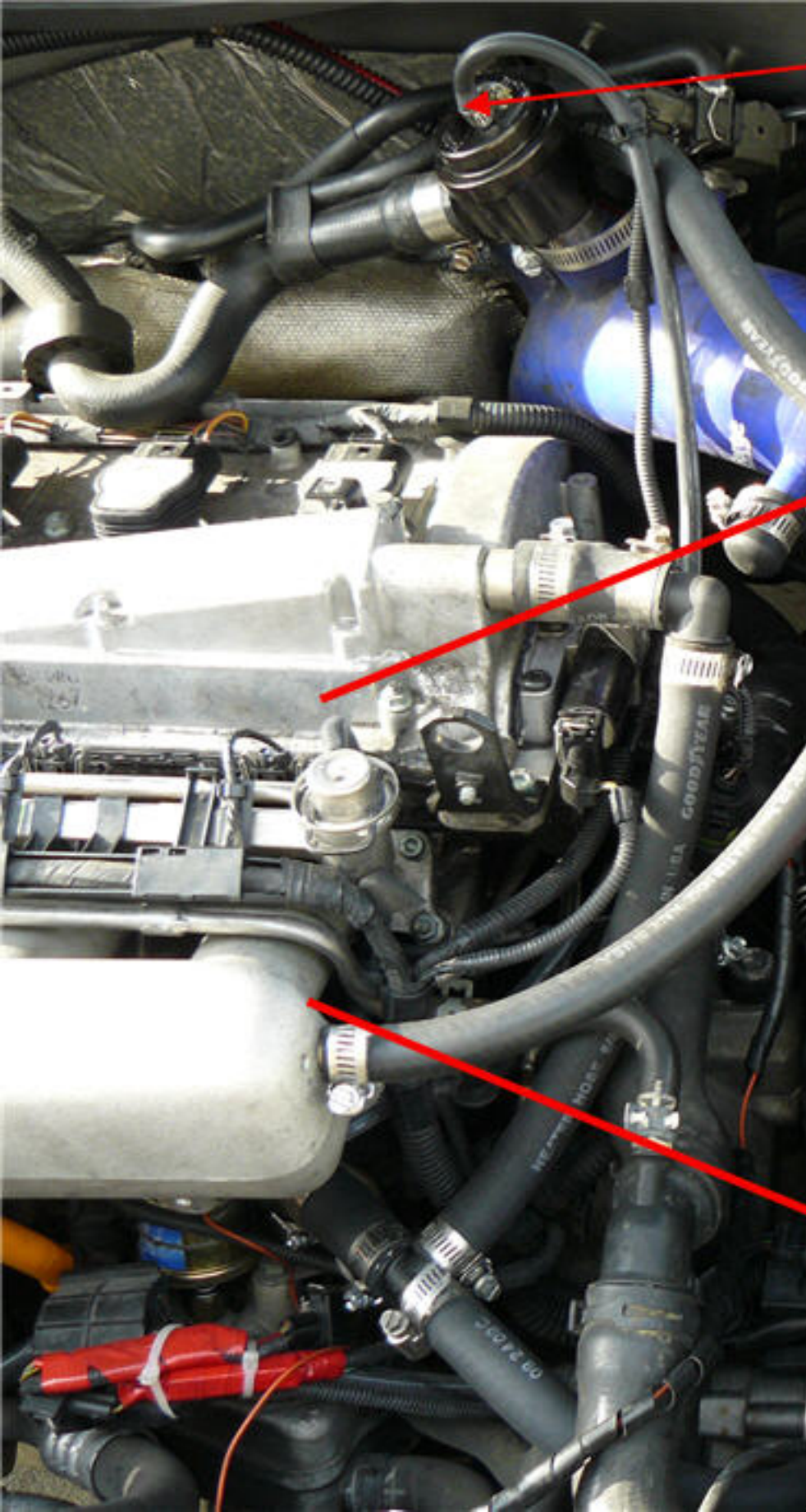
Replace oil tube if you haven't done so already.

Cap off any unused vacuum ports.



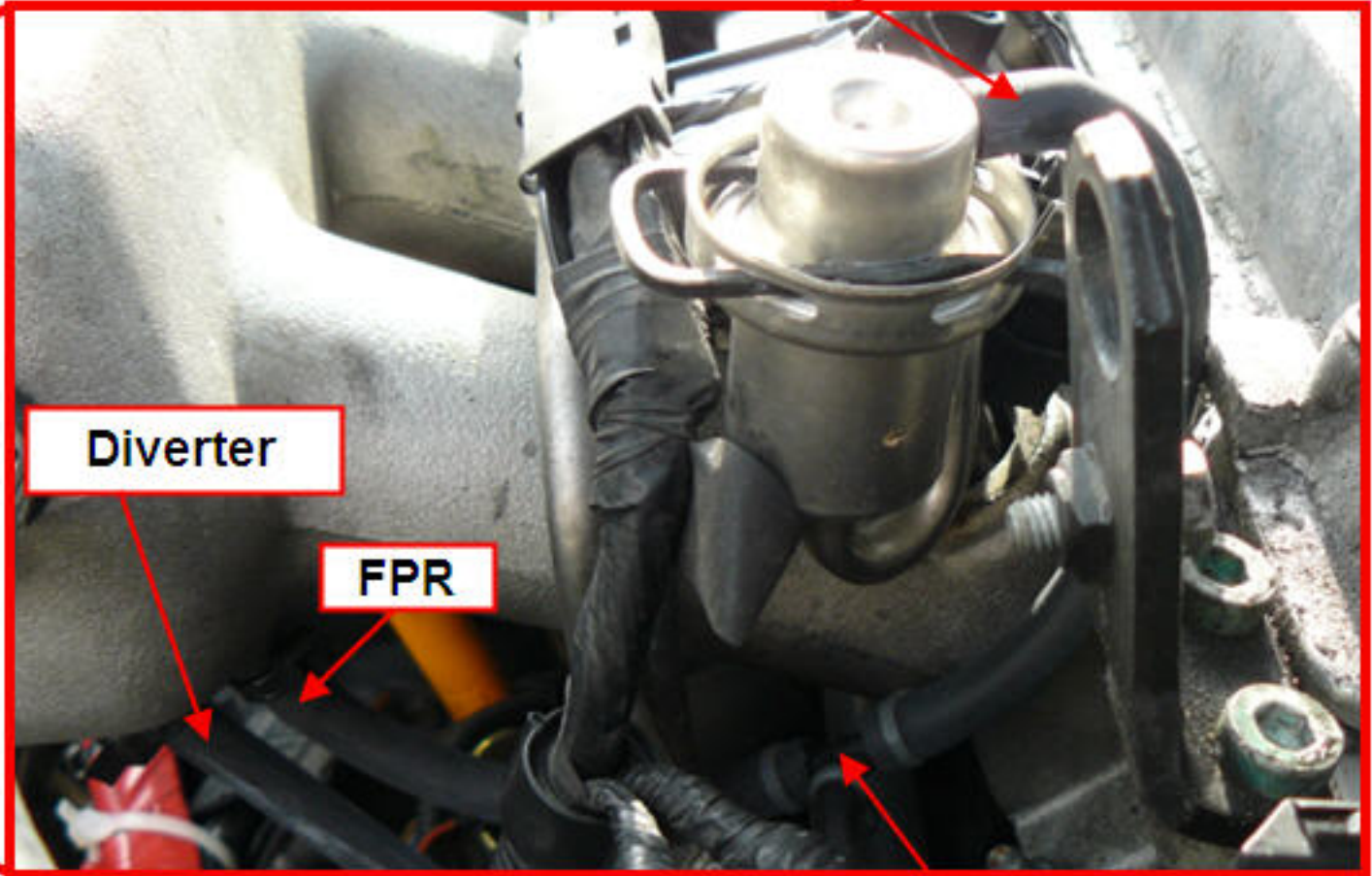
Using the supplied 1/2" vac line, and two hose clamps, connect the large port on the intake manifold to the brake booster check valve. You may need to shorten the length if desired, there is a few extra inches than needed on the line.





Using the included 5/32" vac line, run from you diverter to one of the open posts under the intake manifold (cut the excess). Secure with a mini clamp.

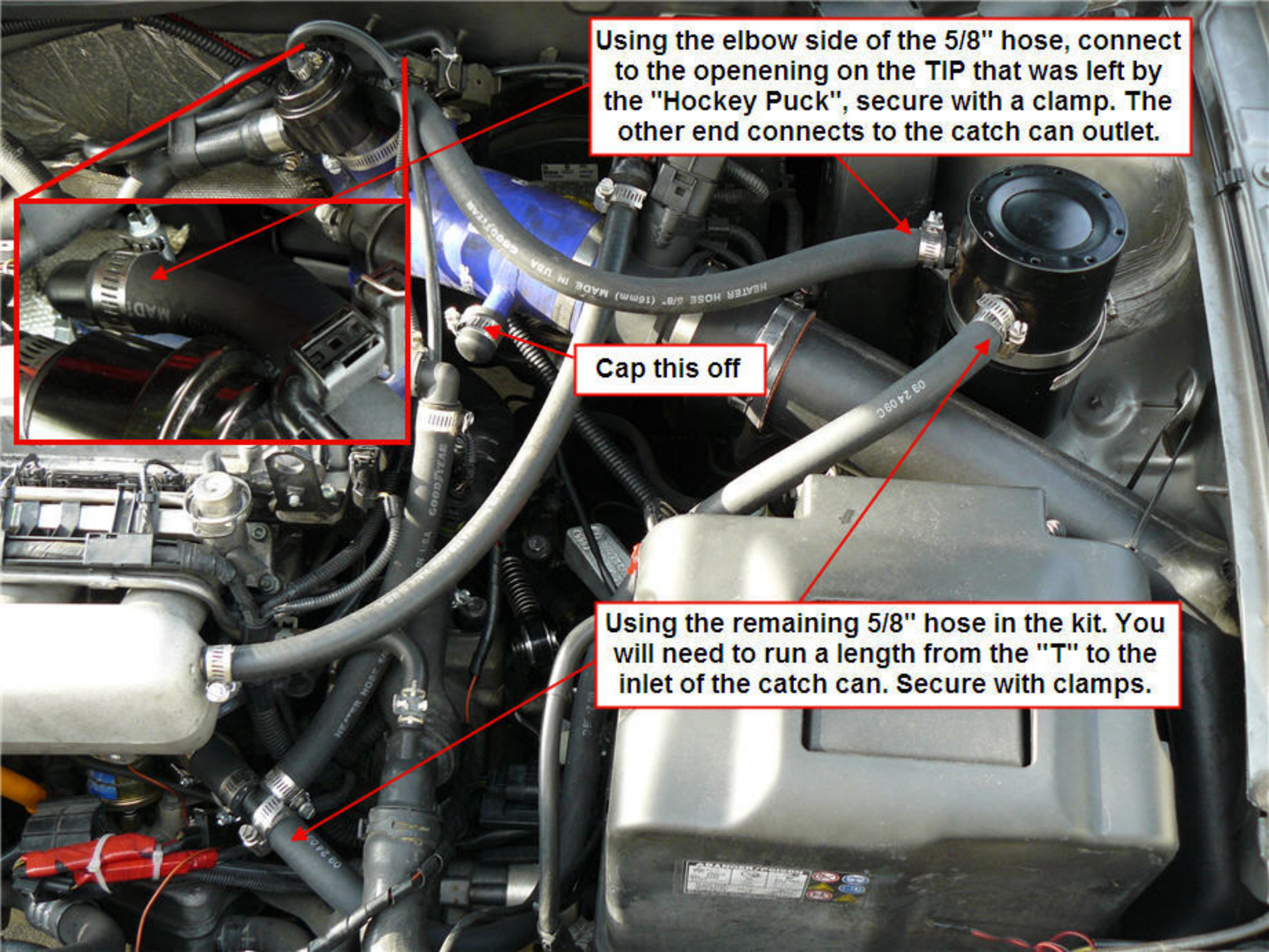
Use the remaining 5/32" vac line, run a new line from your fuel pressure regulator to the second open post



Diverter

FPR

For cars with boost gauges, use/reuse a "T" to run a line to the gauge.

A detailed view of an engine compartment showing various hoses and components. A blue T-shaped hose is connected to a black catch can. A grey hose is connected to the catch can's inlet. A red box highlights a specific connection point. Red arrows point from text boxes to specific parts of the engine bay.

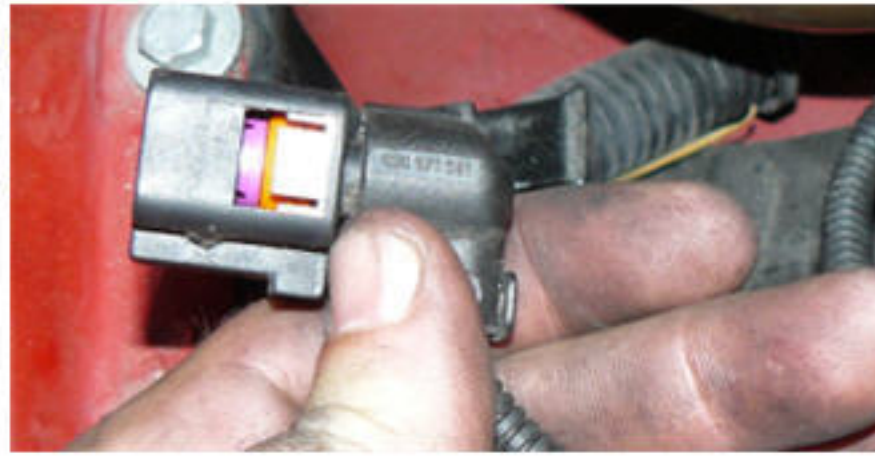
Using the elbow side of the 5/8" hose, connect to the opening on the TIP that was left by the "Hockey Puck", secure with a clamp. The other end connects to the catch can outlet.

Cap this off

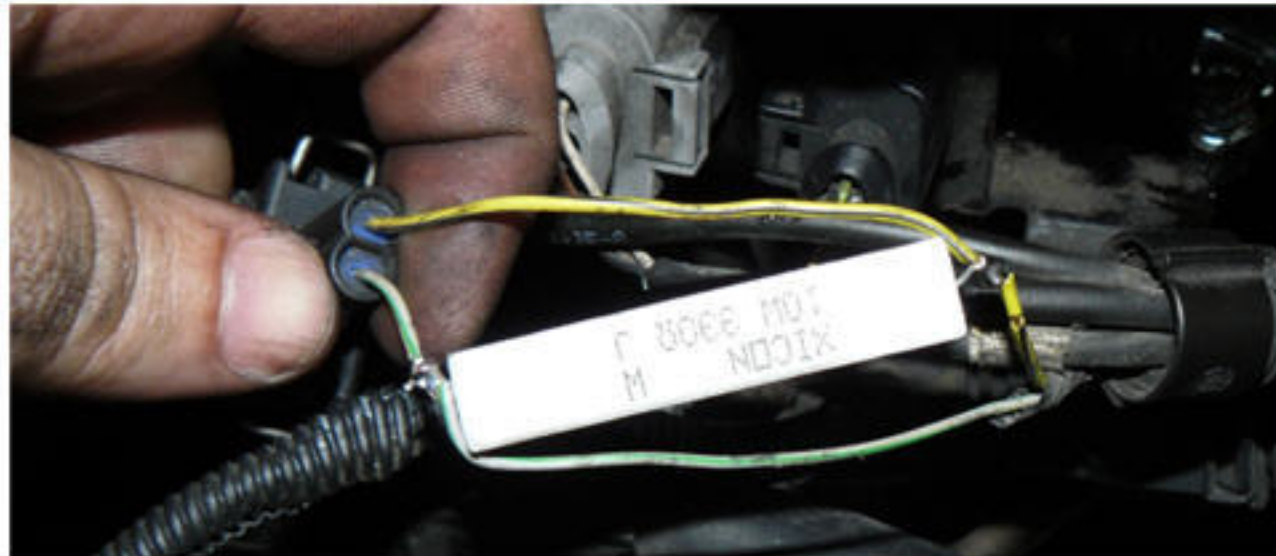
Using the remaining 5/8" hose in the kit. You will need to run a length from the "T" to the inlet of the catch can. Secure with clamps.

It's resistor time! This next part will be much more reliable if you solder the wires to the resistor, however there are other ways of doing it. Important thing is that the resistor "bridges" the wires and is protected from the elements. You should have 4 empty harnesses, two under the intake manifold, one near the coolant ball, and one under the car near the oil filter.

NOTE: The large plug for the SAI pump does NOT need a resistor!



You will need to pull back the plastic wire covering on the harnesses to expose the wires. I used a wire stripper to expose a section of each wire, staggered as to accommodate the size of the resistor. Solder in place. Wrap the harness in electrical tape and zip tie out of the way. Do this for all 4.



Final Steps:

- **Fill coolant reservoir with G12**

- **Start car and let it run, it may run a little different for a few moments, but will clear up soon**

- **Shut car down, check coolant reservoir, most likely you will need to add more**

- **Re-start the car and check for leaks**

- **If you have Vag-Com, clear any codes you have**