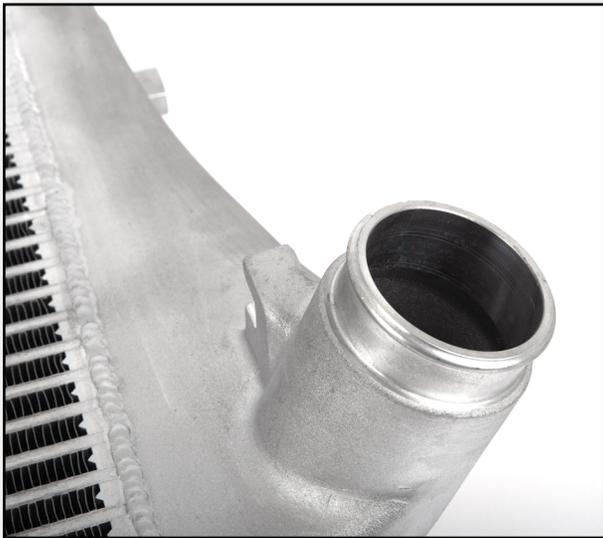




# VW/Audi 1.8T/2.0T Gen3 ECS Cast Aluminum Intercooler Installation Instructions - [Click HERE to Shop](#)



**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.

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## 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](#)
- Bench Mounted Vise
- Crows Foot Wrenches
- **Hook and Pick Tool Set** ..... [ES#2778980](#)

### 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](#)
- 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

- **Trim Removal Tool Set** ..... [ES#517779](#)
- **Triple Square Socket Set** ..... [ES#1910125](#)
- **VAG Connector Removal Tool** ..... [ES#2628676](#)
- **Paint Marker**

## 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.

## PROJECT OVERVIEW

Let's take a moment and look at what we will be doing today.

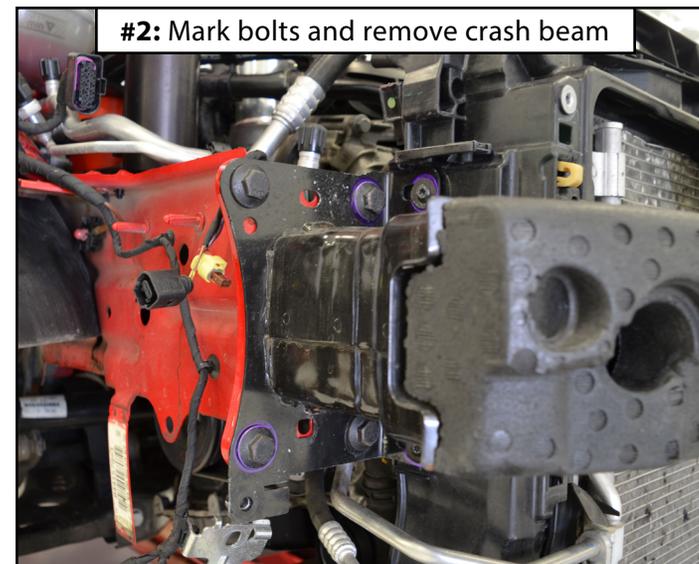
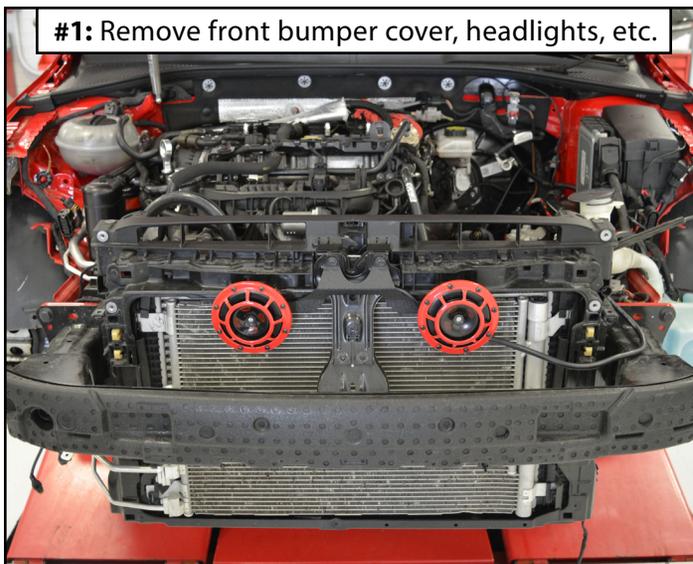
First we'll remove the bumper cover, headlights, and a few other components under the hood (**Photo #1**).

Next, we'll mark the crash beam bolts for easy realignment, then we'll remove the crash beam (**Photo #2**).

Then we'll disassemble the core support and remove the stock intercooler (**Photo #3**).

Finally, we'll install the new ECS cast aluminum intercooler, and we'll reassemble everything in the reverse order of removal (**Photo #4**).

***Now let's get to it!***



## REMOVING THE STOCK INTERCOOLER

**Step 1:** 10mm Socket & Ratchet, T25 Torx

Disconnect the negative battery terminal and remove the intake system.



We opted to remove the battery and the engine cover for better visibility in our photos.



**Step 2:** T25 Torx

Remove the two screws which secure the front grille to the core support.



## REMOVING THE STOCK INTERCOOLER

### Step 3:

#### **MK7 only:**

First lift the grille upward to release the clips along the bottom from the bumper cover, then gently pull it forward and out of the core support (**Photo #1**).



#1: (MK7 only)

#### **MK7.5 only:**

First pull the top of the grille forward to release the clips along the top, then pull the bottom of the grille forward to release the clips along the bumper cover (**Photo #2**). Don't forget to disconnect the wiring harness behind the VW emblem (not shown).



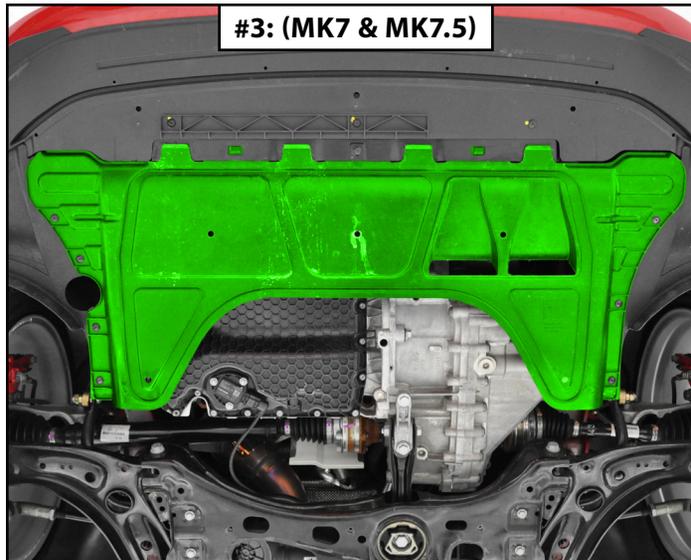
#2: (MK7.5 only)

Don't forget to disconnect the sensor harness behind the VW emblem



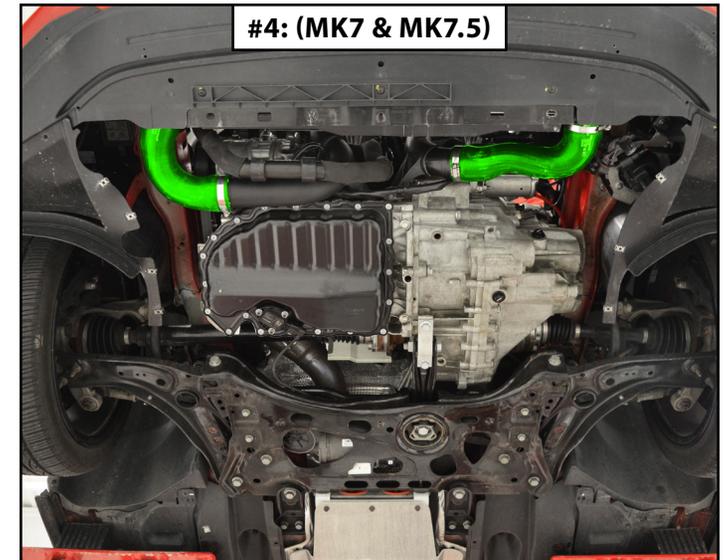
#### **MK7 & MK7.5:**

Safely lift and support the vehicle, then remove the belly pan (highlighted in **GREEN** in **Photo #3**).



#3: (MK7 & MK7.5)

Disconnect the intercooler hoses (highlighted in **GREEN** in **Photo #4**) from the intercooler.

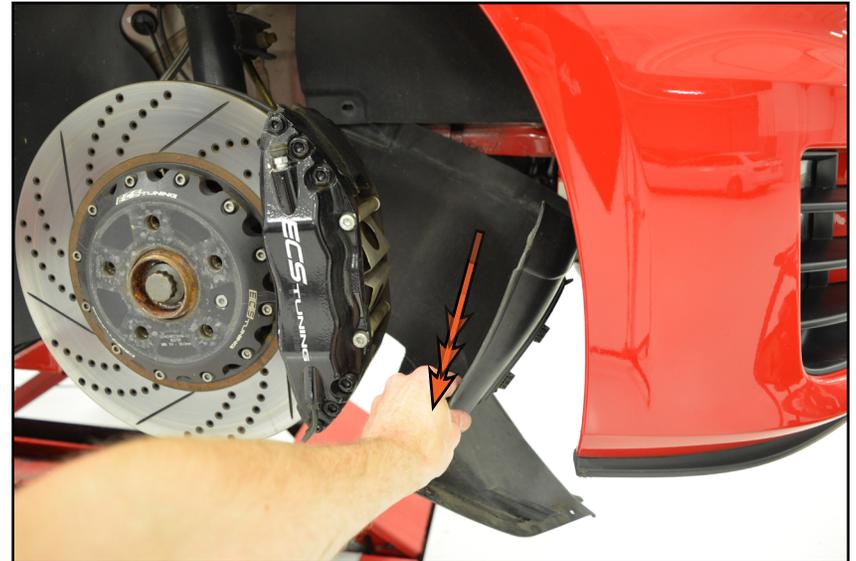


#4: (MK7 & MK7.5)

## REMOVING THE STOCK INTERCOOLER

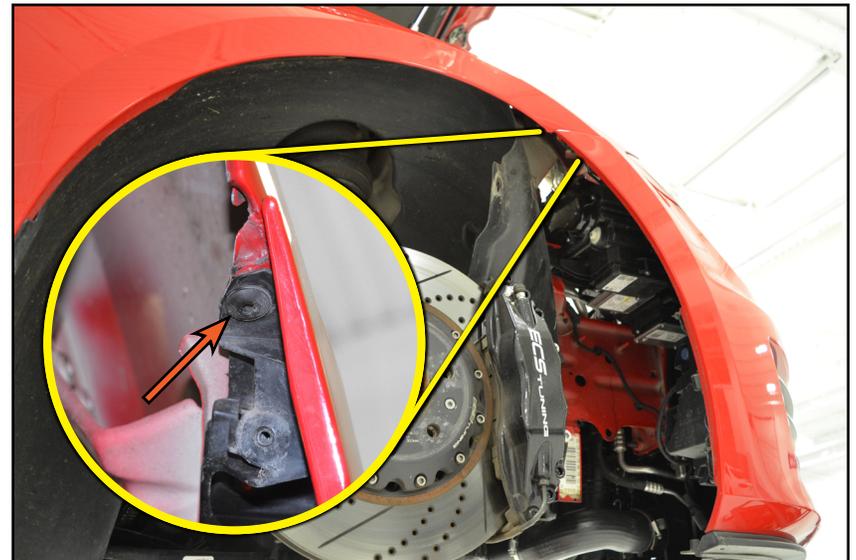
**Step 4:** 17mm Protecta-Socket & Breaker Bar, T25 Torx

Remove both front wheels. Remove screws and pull the lower fender liners free from the vehicle.



**Step 5:** T25 Torx

Pull the upper fender liner back slightly, then locate and remove the screws which secure the bumper cover to each fender (arrow in the inset photo).



## REMOVING THE STOCK INTERCOOLER

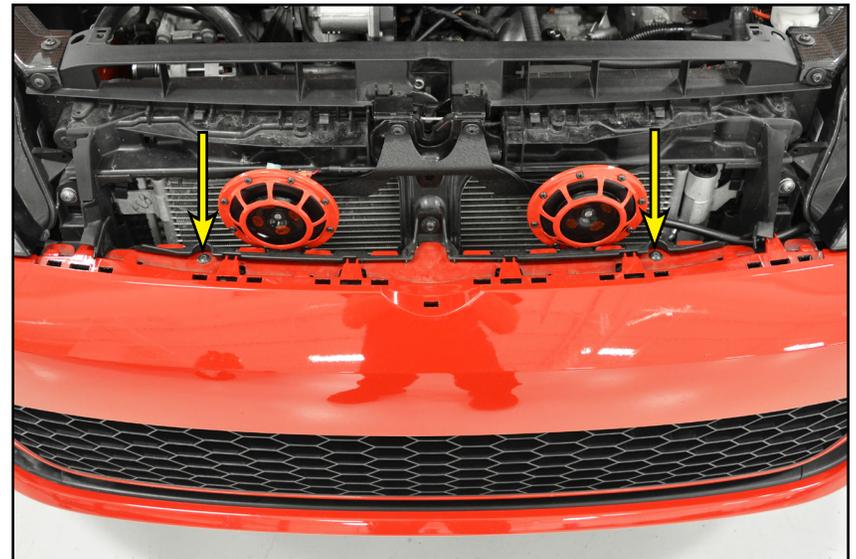
### Step 6:

If equipped, disconnect both fog light connectors (arrow).



### Step 7: T25 Torx

Remove the two screws which secure the top of the bumper cover to the core support.



## REMOVING THE STOCK INTERCOOLER

### Step 8:

Pull outward on each side of the bumper cover as shown in the photo to release it from each fender.



### Step 9:

Gently lift up on the clips (arrows) that secure the bumper cover to the top of the core support and remove the bumper cover.



## REMOVING THE STOCK INTERCOOLER

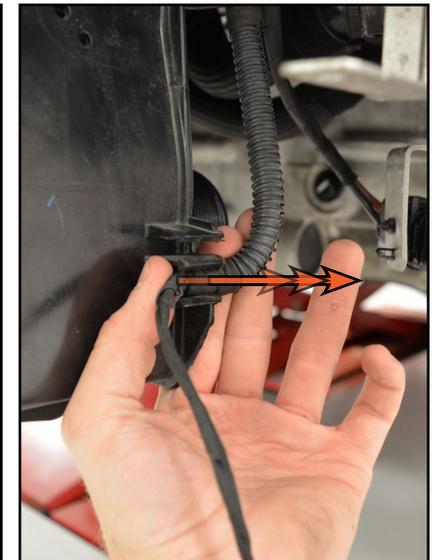
### Step 10:

Pull the bumper cover off of the vehicle a few inches to ensure that there are no electrical connections or hoses still attached, then remove the bumper cover and set it aside.



### Step 11:

Disconnect the ambient air temperature sensor (arrow), then release the wiring harness from the clips on the LH side of the core support.

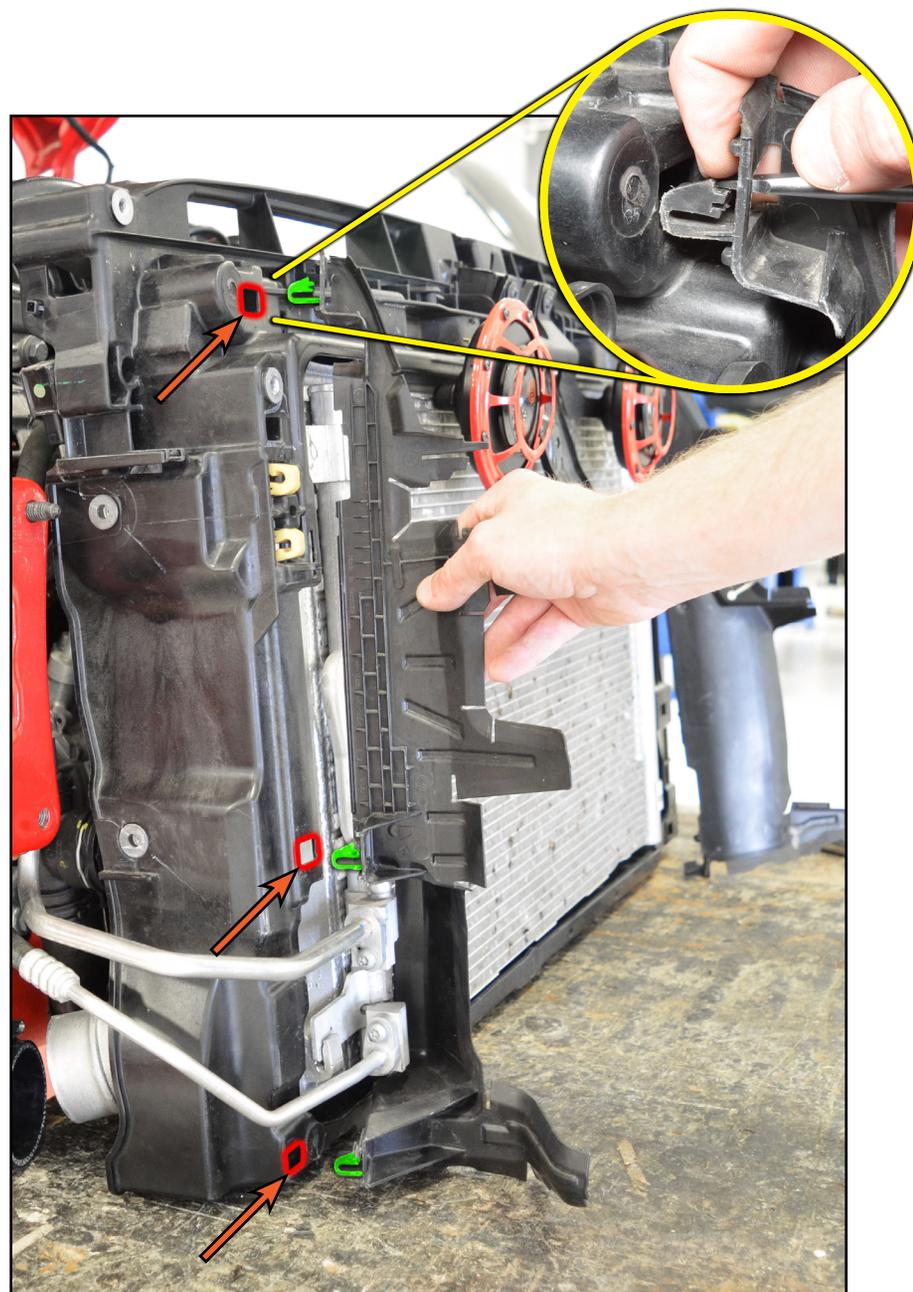


## REMOVING THE STOCK INTERCOOLER

### Step 12: Flat Head Screwdriver

Locate the two plastic air guides which clip into the front of the core support. The clips and on the air guides have been highlighted in **GREEN** in the photo on the right, and the holes in the core support have been highlighted in **RED**.

Working on the RH side of the vehicle, press inward on each tab, pull the air guide out of the radiator support slightly, then pull it straight down to guide it out from behind the crash beam. Repeat this process on the LH side of the vehicle to remove the other air guide.

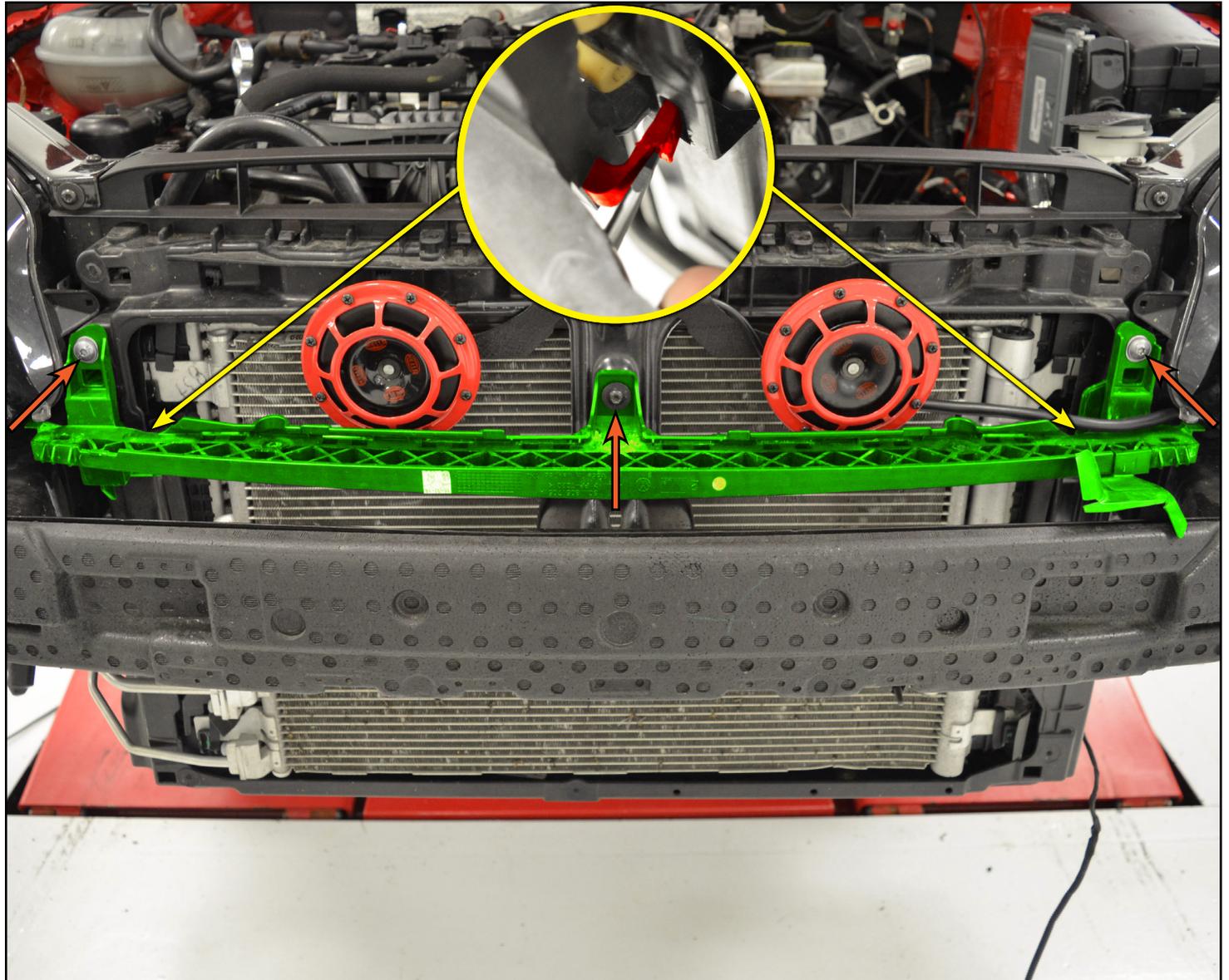


## REMOVING THE STOCK INTERCOOLER

### Step 13:

Remove the three T30 bolts (**ORANGE** arrows) which secure the bumper support to the core support (highlighted in **GREEN**) into place.

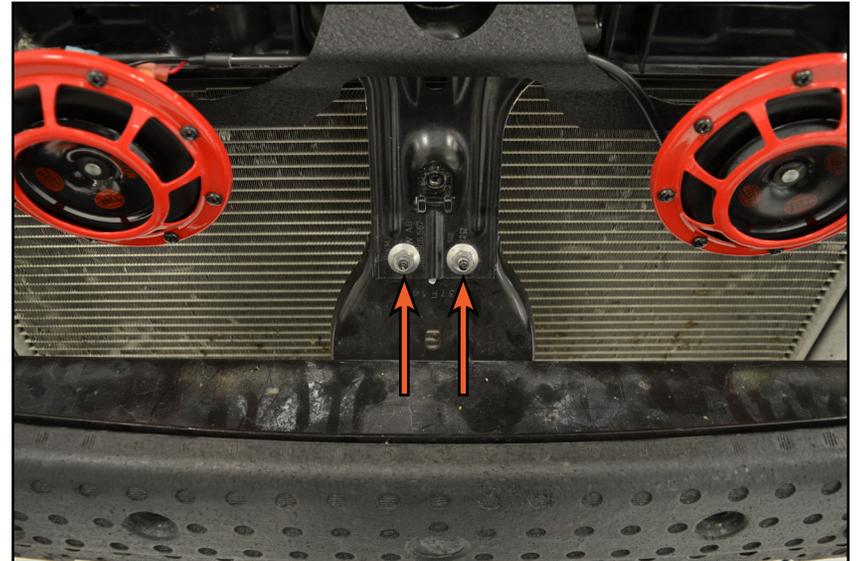
Next, locate and release the two clips which secure the bumper support to the core support (highlighted in **RED** in the inset photo). With the bolts removed and the clips released you will be able to remove the bumper support from the vehicle.



## REMOVING THE STOCK INTERCOOLER

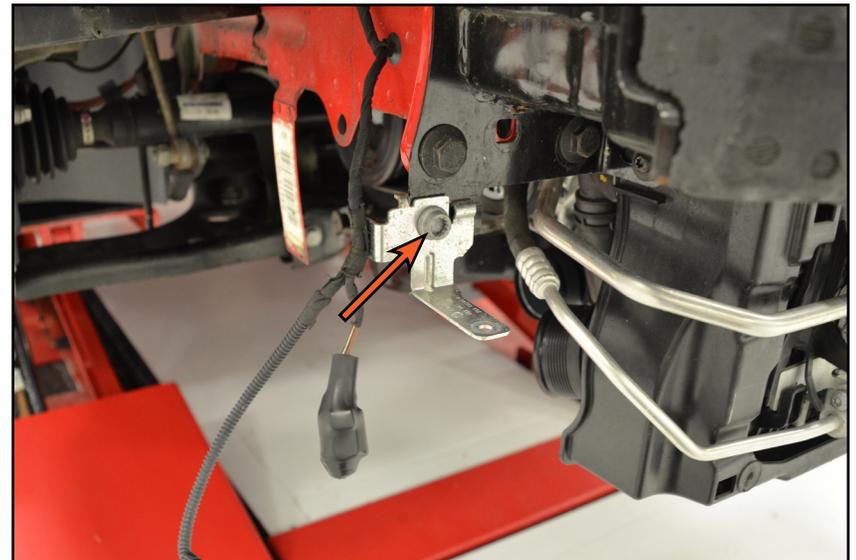
### Step 14: 10mm Socket & Ratchet

Remove the two nuts which secure the hood latch brace to the crash beam.



### Step 15: M10 Triple Square Socket & Ratchet

Disconnect both horns and remove the brackets from the crash beam.



## REMOVING THE STOCK INTERCOOLER

### Step 16: T30 Torx

Remove the three bolts which secure the RH core support brace and remove it from the vehicle.



### Step 17:

Push the windshield washer fluid spout clip inward, then lift upward to release it from the LH core support brace.



This does not apply to the MK7 Golf R & Audi S3. The washer reservoir and cap are independent of the core support brace on these vehicles.



## REMOVING THE STOCK INTERCOOLER

### Step 18:

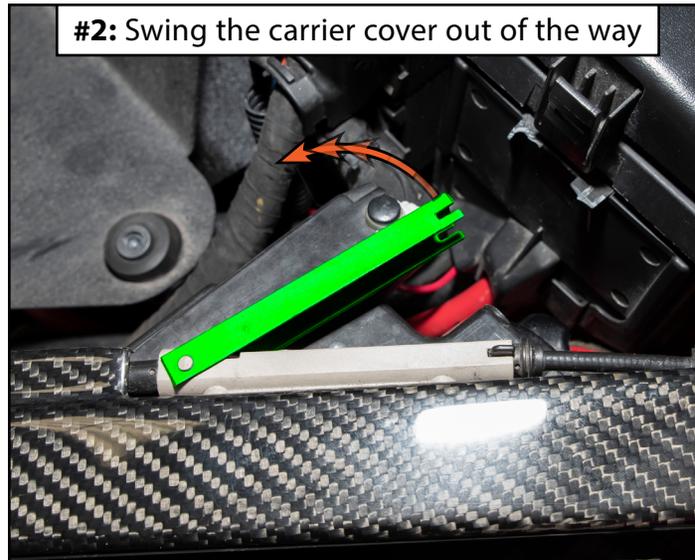
The hood release cable carrier is mounted on the back side of the LH core support brace.

We need to release the cable from the carrier. First, pull the cable out of the carrier (**Photo #1**), then swing the carrier cover (highlighted in **GREEN** in **Photo #2**) out of the way and pull the ball-end of the cable out of the carrier (**Photo #3**).

**#1:** Pull on the cable to release it from the carrier



**#2:** Swing the carrier cover out of the way



**#3:** Release the ball-end of the cable



## REMOVING THE STOCK INTERCOOLER

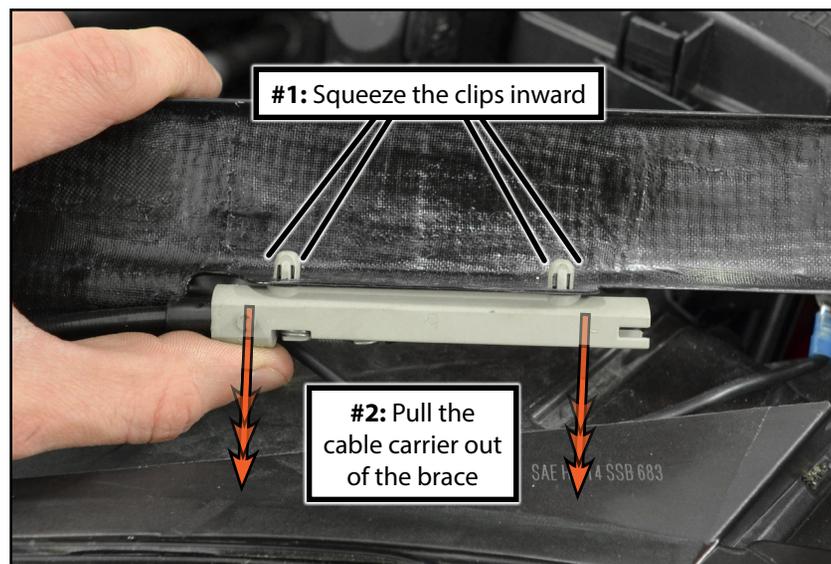
### Step 19: T30 Torx

Remove the three bolts which secure the LH core support brace and remove it from the vehicle.



### Step 20: Needle Nose Pliers

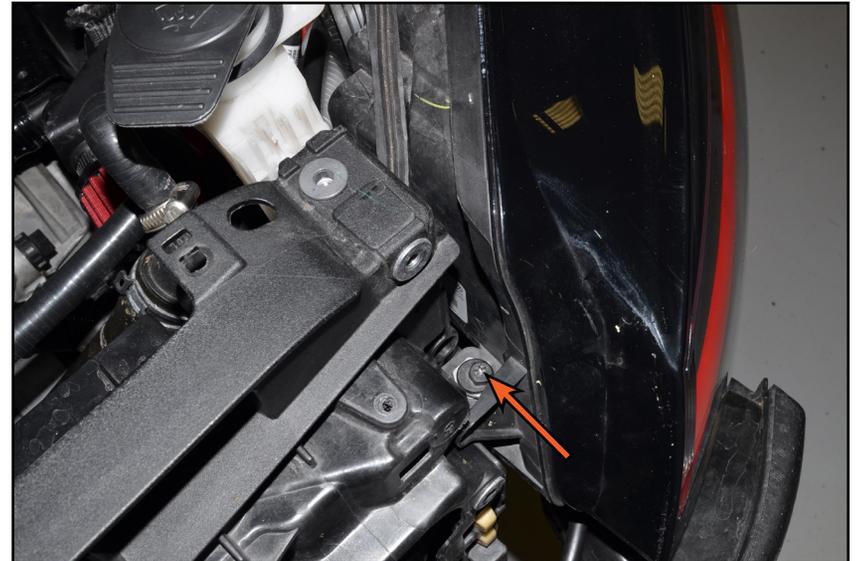
Gently squeeze inward on the cable carrier clips as shown in the photo on the right, then pull the carrier out of the core support brace. Set the core support brace aside and swing the cable carrier out of the way.



## REMOVING THE STOCK INTERCOOLER

**Step 21:** 10mm Socket & Ratchet -or- T30 Torx

Remove the bolt from the front inside corner of the LH headlight.



**Step 22:** T30 Torx

Remove the bolt which secures the LH headlight to the fender.



## REMOVING THE STOCK INTERCOOLER

### Step 23:

Carefully slide the LH headlight outward 2-3 inches. The goal here is to gain better access to the back side of the headlight, we aren't removing it just yet.



Some vehicles may have an additional bolt securing the rear of the LH headlight to the vehicle. Please reference the photo in step 26 on the next page.



### Step 24:

Locate and disconnect the LH headlight electrical connector (highlighted in **GREEN** in the photo), then remove the headlight and set it aside.



## REMOVING THE STOCK INTERCOOLER

### Step 25: T30 Torx

Repeat steps 22-25 to remove the RH headlight. Please note that the RH headlight will have an additional bolt which secures the rear of the headlight to the vehicle.



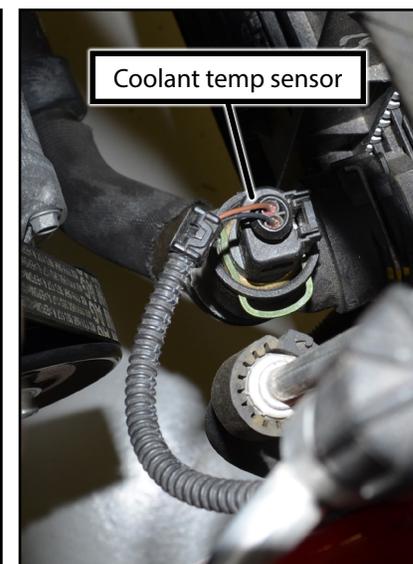
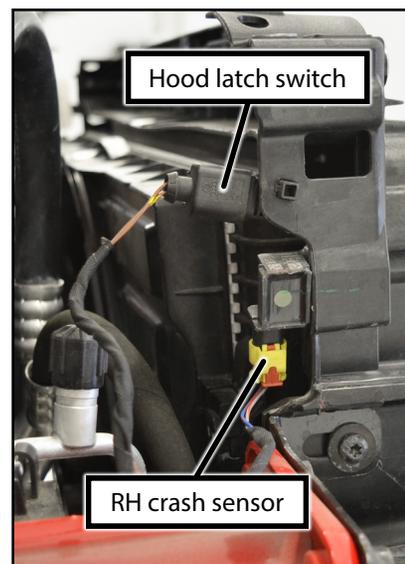
### Step 26: VAG Connector Removal Tool



It is very important that the negative battery terminal has been removed **BEFORE** proceeding with this step.

Working on the RH side of the vehicle, disconnect the electrical connectors from the following:

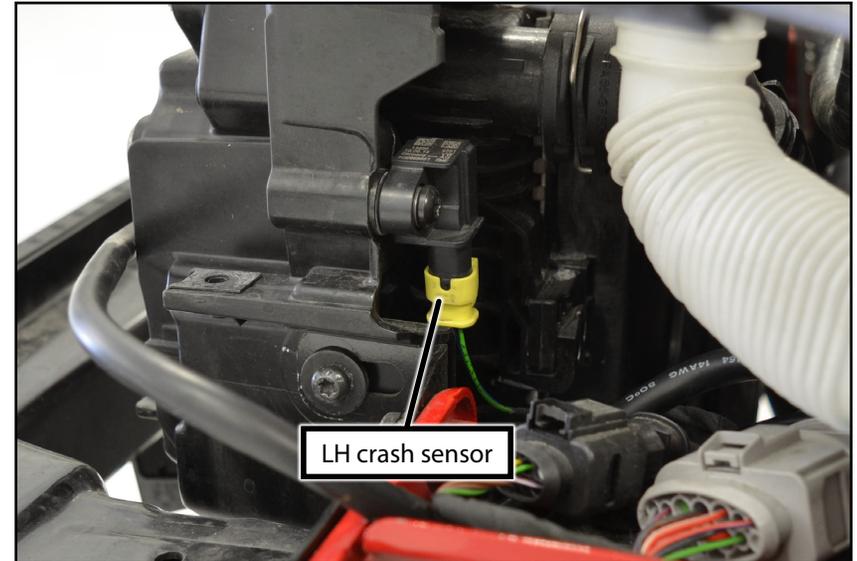
- RH crash sensor (located on the RH side of the core support)
- Hood latch switch (located on the RH side of the core support)
- Coolant temp sensor (located on the lower radiator hose)



## REMOVING THE STOCK INTERCOOLER

### Step 27:

Working on the LH side of the vehicle, disconnect the electrical connector from the LH crash sensor (located on the LH of the core support).



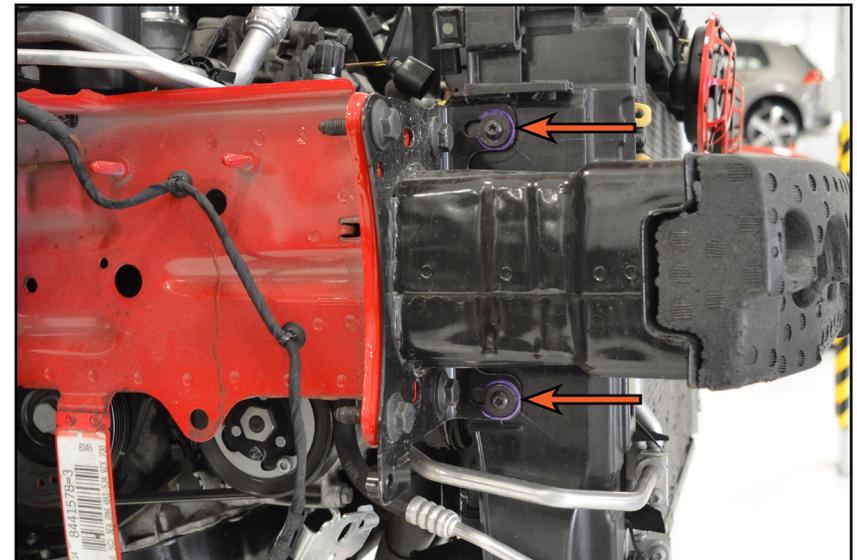
LH crash sensor

### Step 28: Paint Marker, T30 Torx

**Safely support the core support from below**, then remove the bolts (arrows) which secure the core support to the crash beam.



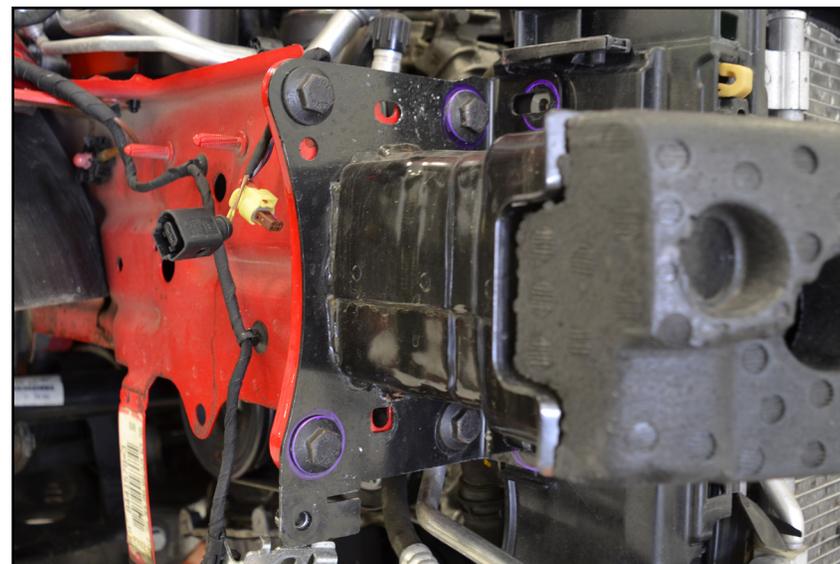
**CAUTION:** Failure to properly support the core support from below could damage to radiator hoses or A/C lines.



## REMOVING THE STOCK INTERCOOLER

### Step 29:

Trace around the eight bolts which secure the crash beam to the frame rails, this will make reinstallation a *breeze*.

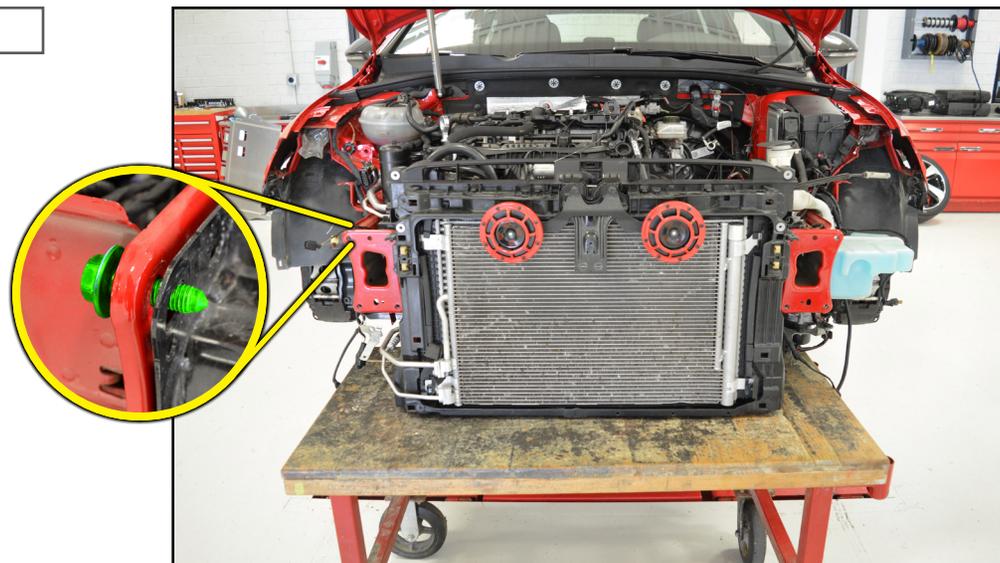


### Step 30: 16mm Socket & Ratchet

Remove the bolts and the crash beam.



If you are working alone, thread one of the crash beam bolts back through the chassis as shown in the inset photo. This will allow you to "hang" the crash beam on one side while you remove the bolts from the other side.



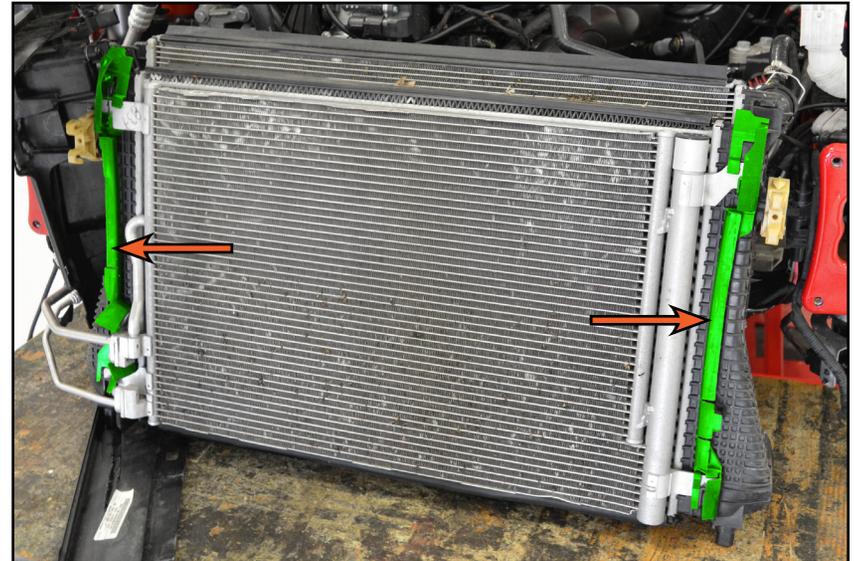
## REMOVING THE STOCK INTERCOOLER

### Step 31:

Our next task is to release the condenser from the front of the intercooler. Locate the two air channels which are clipped onto either side of the condenser (highlighted in **GREEN** in the photo).



The next few photos were taken with the core support already released and swung off to the side. This was done for better visibility, you can actually release the condenser now as your vehicle currently sits.



### Step 32:

Pull upwards to release the air channels from the condenser and remove them from the vehicle.



## REMOVING THE STOCK INTERCOOLER

Step 33:

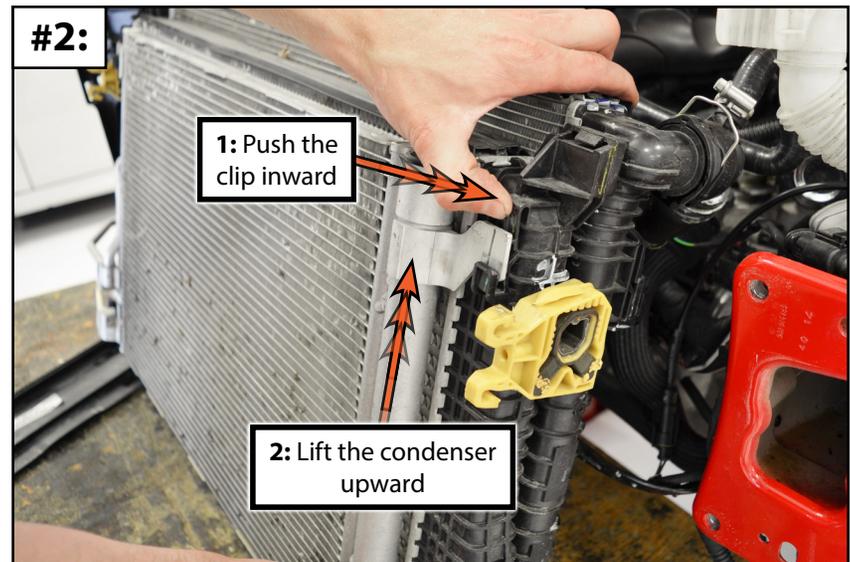


**DO NOT** disconnect any of the A/C lines, there is enough flexibility to swing the condenser out of the way while remaining attached to the system.



The condenser is secured by two clips which are located near the top of each intercooler side tank (highlighted in **GREEN** in **Photo #1**). Push inward on these clips one at a time while lifting the condenser upward (**Photo #2**).

Once the condenser has been lifted out of the clips you can set it aside, but it is a good idea to support it from below to prevent putting any unwanted stress on the A/C lines.



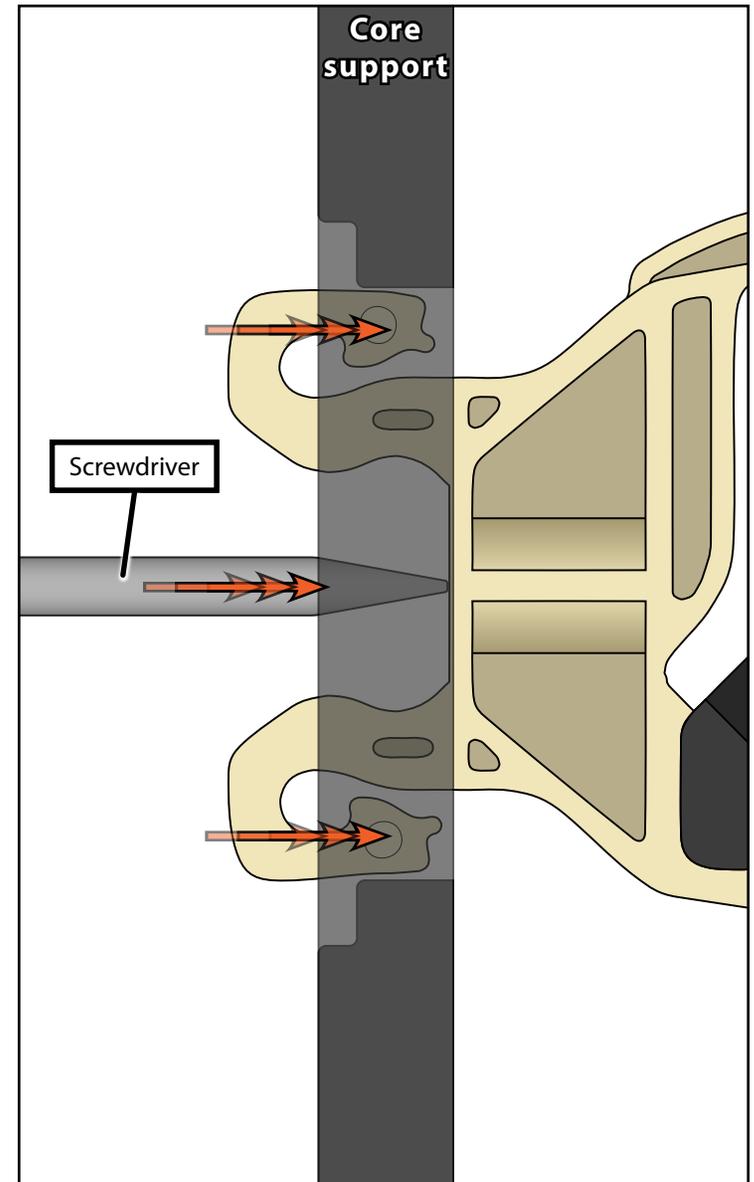
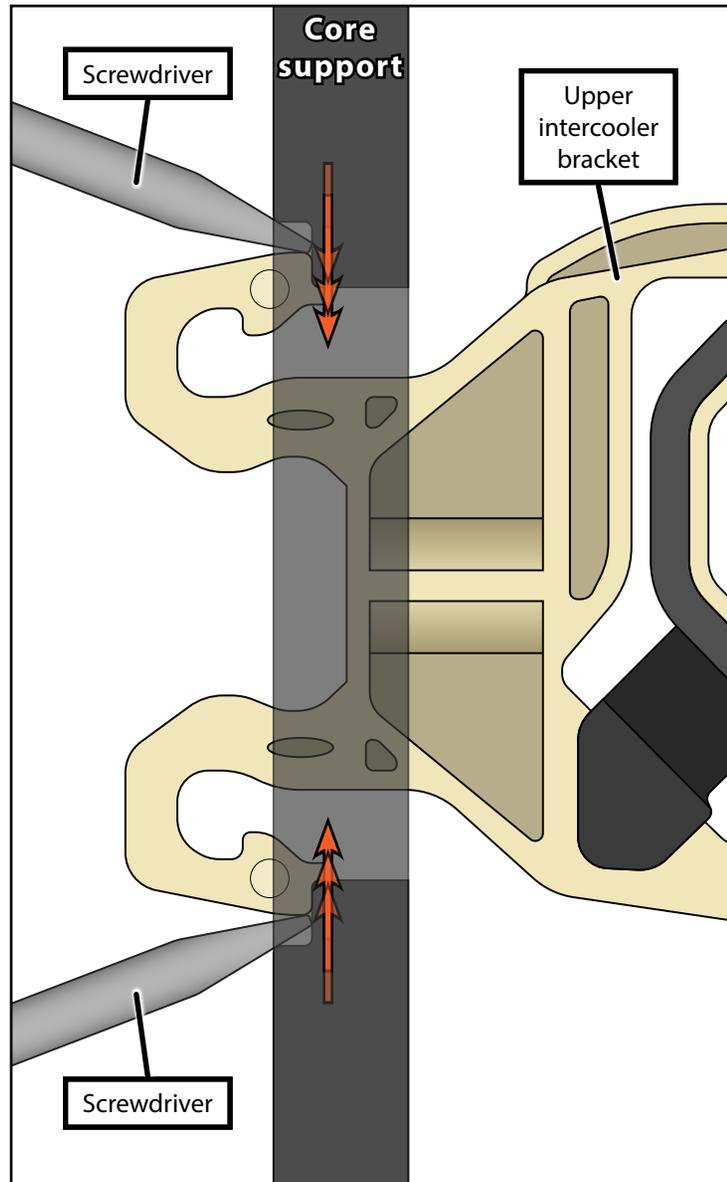
## REMOVING THE STOCK INTERCOOLER

### Step 34:

Now we need to release the upper intercooler brackets from the core support.

The illustrations on the right show how the two "ears" lock into place against the core support. The goal here is to **GENTLY** pry these ears inward while pushing the brackets back through the slot. Over time these plastic brackets can become very brittle, so take your time and work slowly.

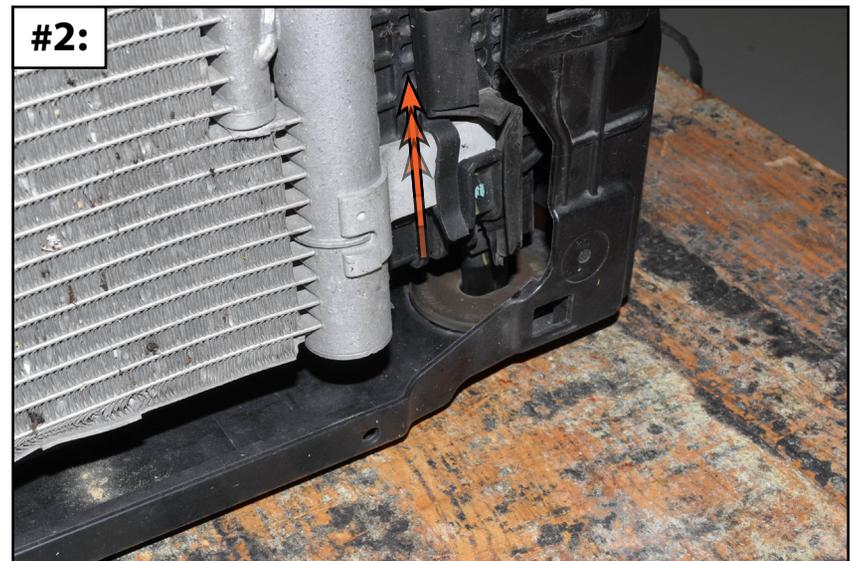
Use this procedure to release both upper intercooler brackets, then continue to the next page.



## REMOVING THE STOCK INTERCOOLER

### Step 35:

Pull the top of the radiator and intercooler assembly rearward until it clears the core support (**Photo #1**), then lift the entire assembly out of the rubber grommets in the bottom of the core support (**Photo #2**).



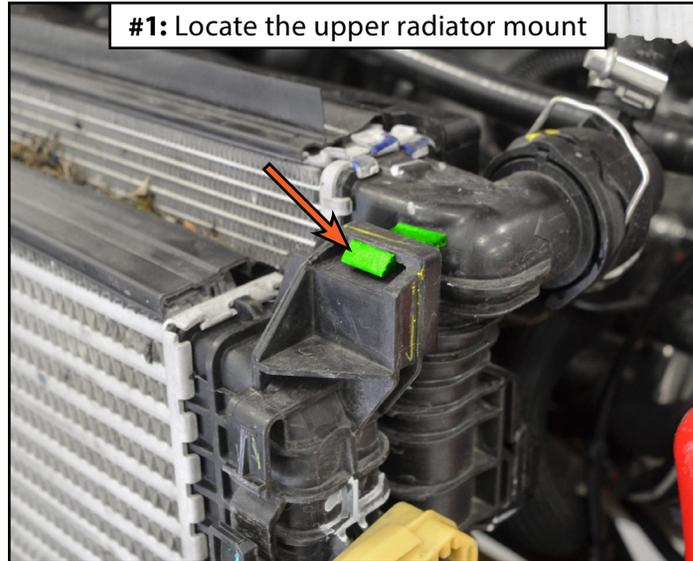
## REMOVING THE STOCK INTERCOOLER

### Step 36:

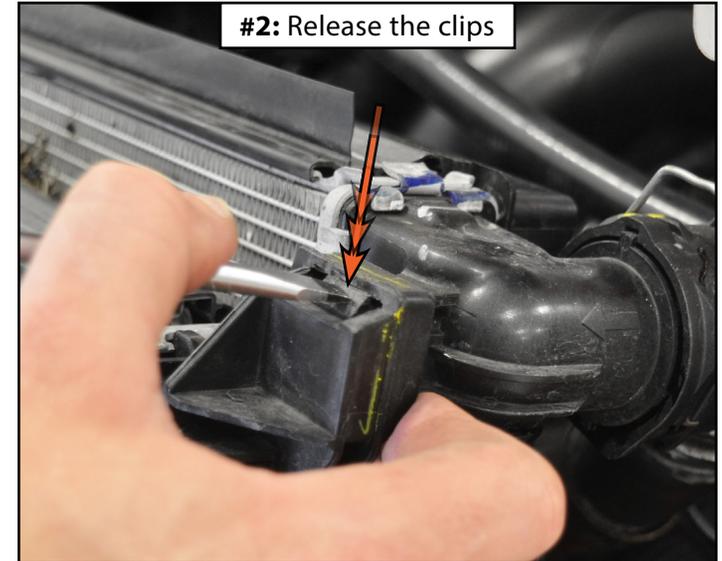
The radiator is secured to the intercooler by two clips which are located near the top of each side tank (highlighted in **GREEN** in **Photo #1**).

Push downward on these clips one at a time (**Photo #2**) while pushing the radiator away from the intercooler (**Photo #3**).

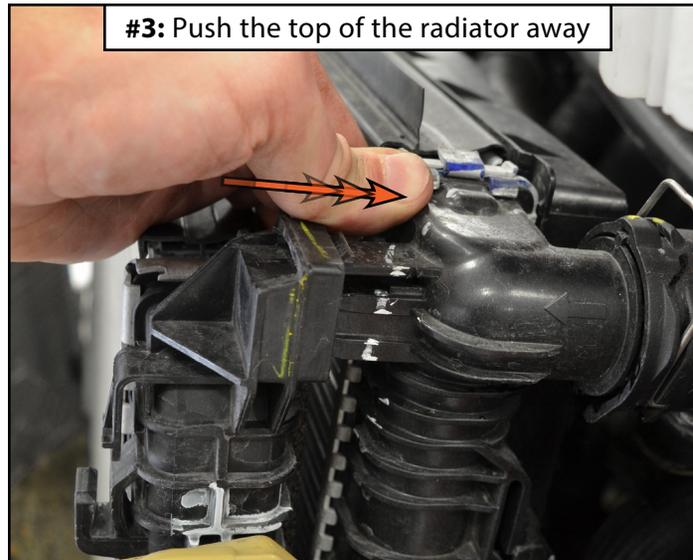
Once the top of the radiator has been released from the intercooler it can be lifted out of the lower mounts (**Photo #4**).



#1: Locate the upper radiator mount



#2: Release the clips



#3: Push the top of the radiator away

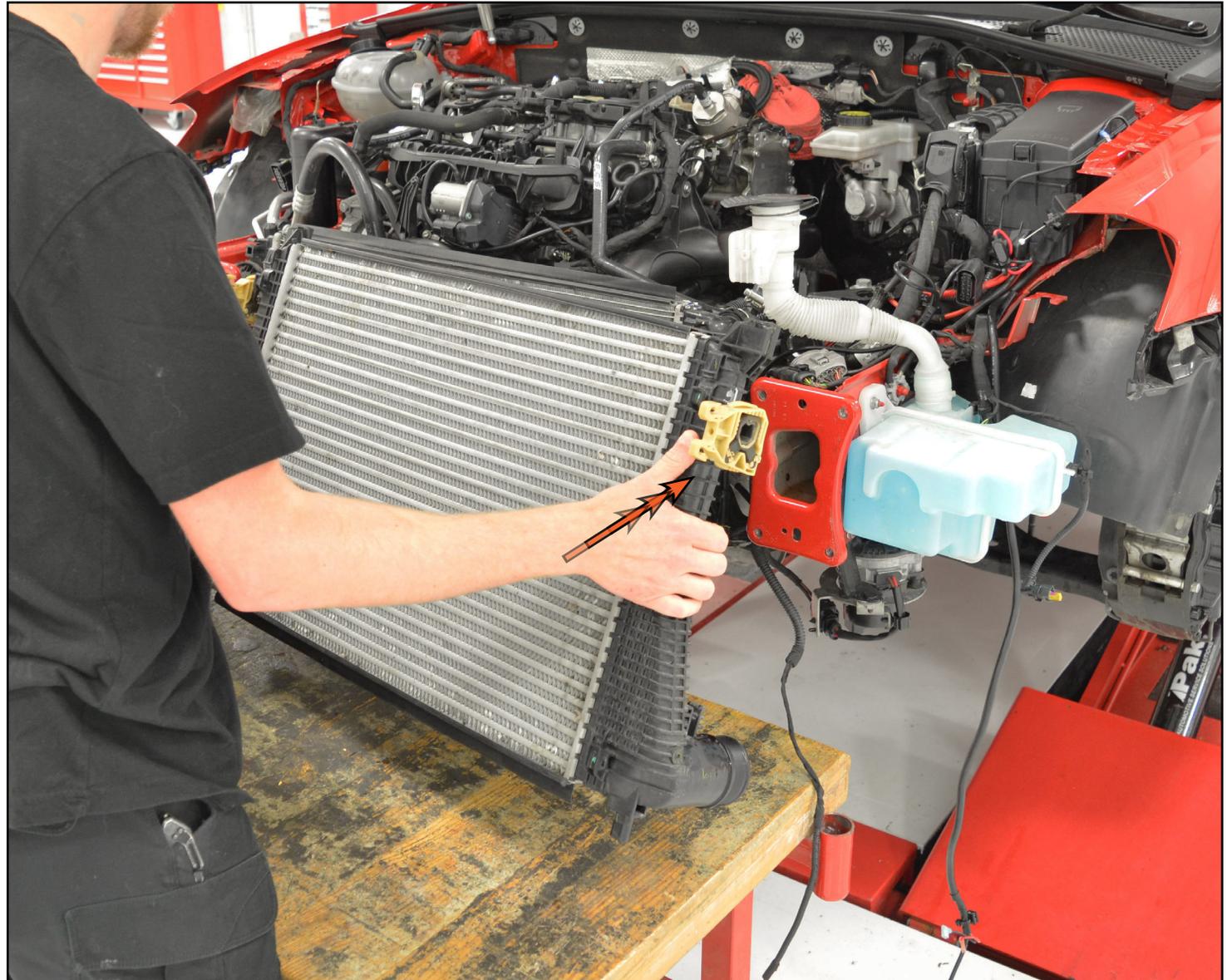


#4: Lift the radiator out of the lower mount

## REMOVING THE STOCK INTERCOOLER

### Step 37:

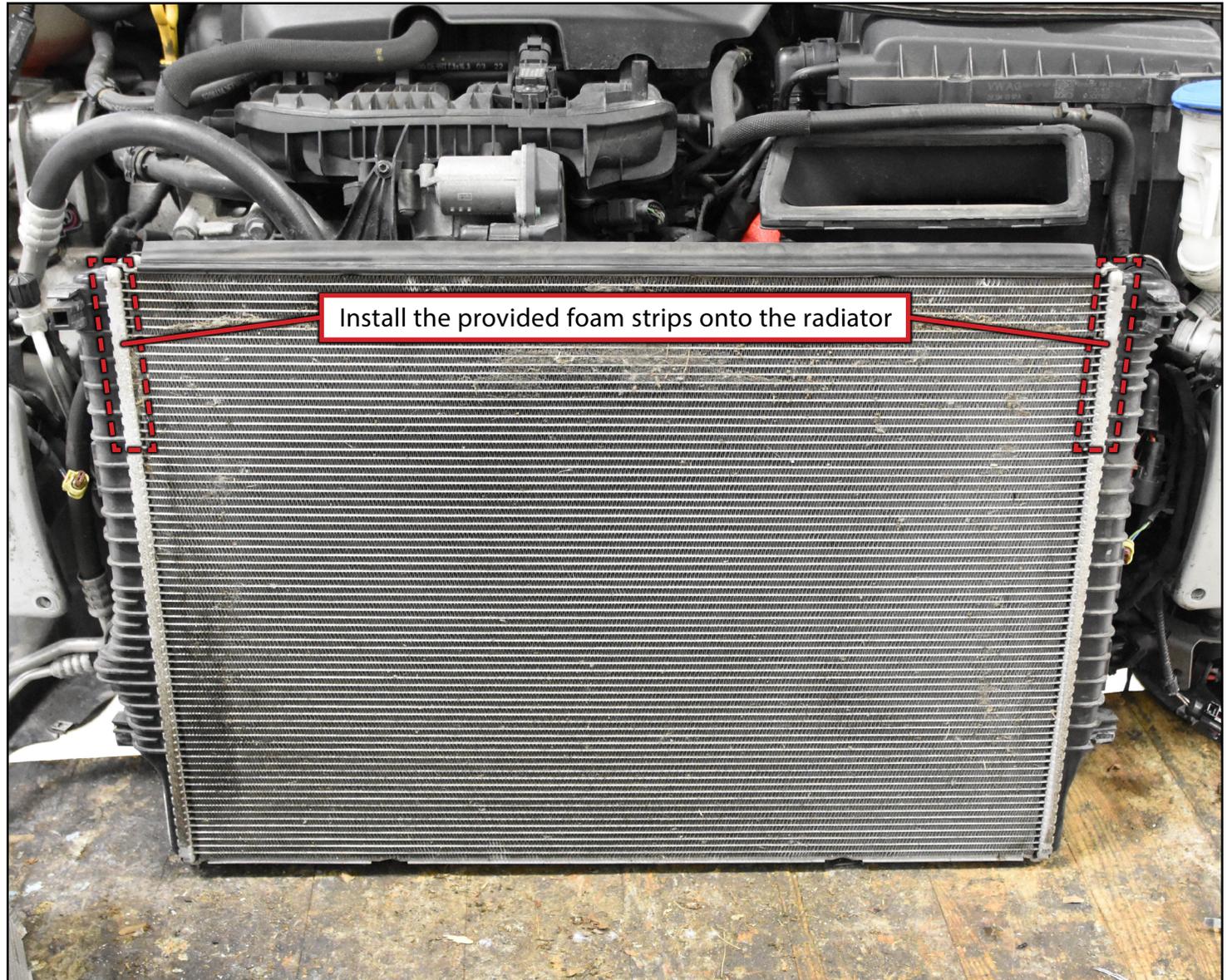
Lift the stock intercooler out of the engine compartment. Be sure to confirm that there are no hoses or wiring harnesses in your way as you are removing the intercooler.



## REMOVING THE STOCK INTERCOOLER

### Step 38:

Due to differences in manufacturing, there may be slight contact between the radiator and the new intercooler. To prevent this contact we have provided foam strips which can be installed over top of the radiator end tank seams (represented in the photo on the right with **RED** dotted lines).



# INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

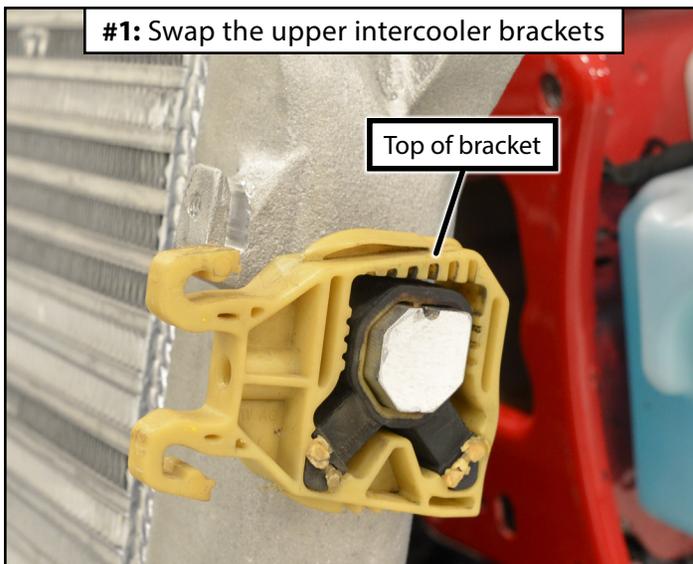
## Step 1:

Swap the upper intercooler brackets from the stock intercooler to the new ECS cast aluminum intercooler, or replace them if they are broken (replacements available [HERE](#)). These brackets are not side specific, but they can only fit onto the mounting post one way (**Photo #1**).

Slide the new intercooler into position (**Photo #2**), then slide the radiator into the lower slots in the intercooler (**Photo #3**), and secure the upper radiator clips into position (**Photo #4**).



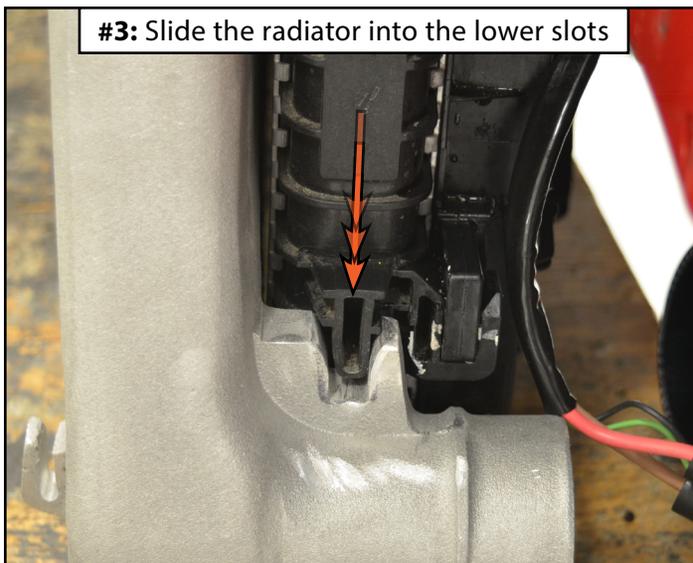
This installation was completed using an early version of our intercooler, your intercooler appearance may vary.



#1: Swap the upper intercooler brackets



#2: Slide the new intercooler into position



#3: Slide the radiator into the lower slots



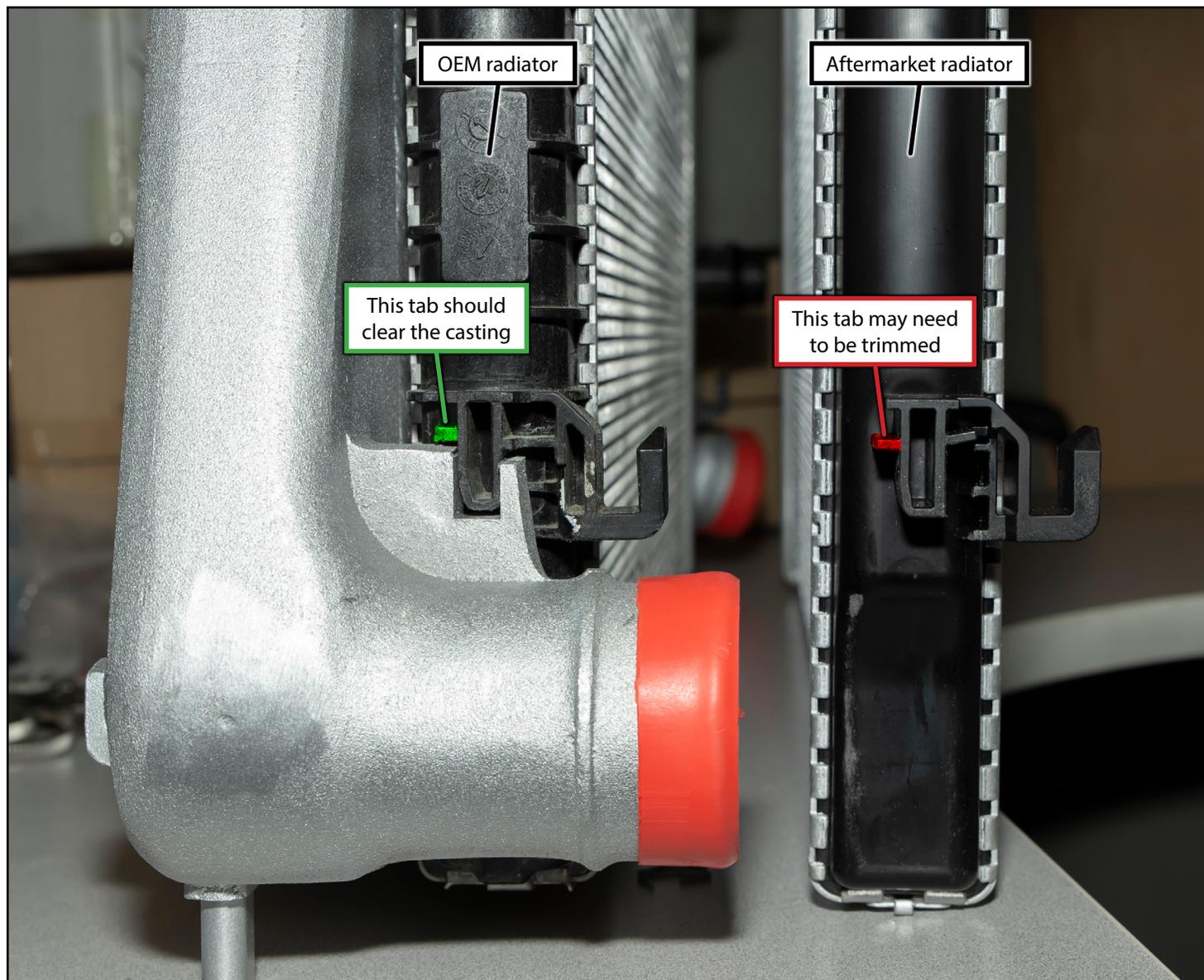
#4: Secure the upper radiator clips into place

## INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

### Step 1 (continued):

If you have an aftermarket radiator you may find some interference when you go to slide the radiator into the intercooler. Some aftermarket radiators have different mounting tabs (highlighted in **RED** in **Photo #1**) compared to the OE radiator (highlighted in **GREEN** in **Photo #1**).

You may need to trim away one of the plastic tabs (highlighted in **RED** in **Photo #1**) on your aftermarket radiator in order to get it to fit. This will not affect the performance of the radiator.



## INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

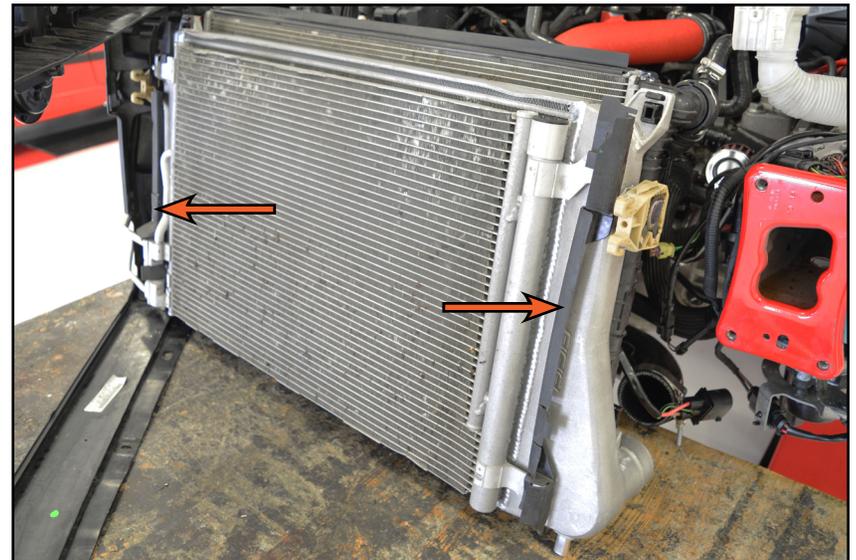
### Step 2: 4mm Hex (Allen)

Slide the condenser into the slots on the front of the intercooler, then use the supplied set screws (arrow) to secure it into place.



### Step 3:

Reinstall the two air channels onto the front of the condenser.

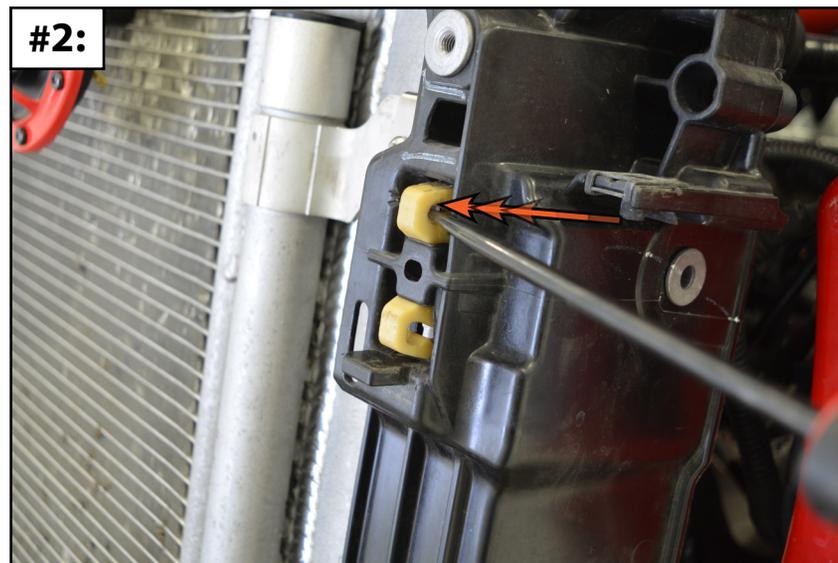
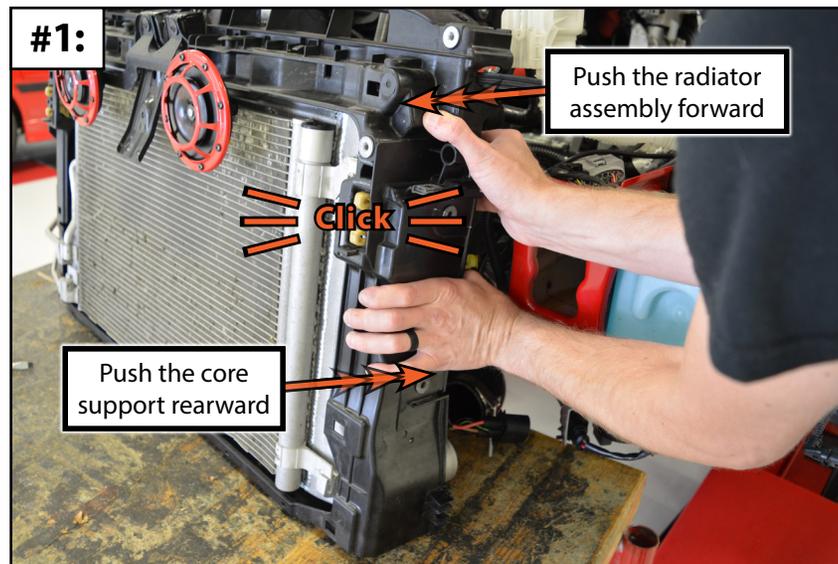


# INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

**Step 4:** Pick -or- Small Screwdriver

Now it's time to reassemble the core support. Start by sliding the posts on the bottom of the intercooler into the rubber grommets in the bottom of the core support (not shown), then align the two upper intercooler brackets and push the two assemblies together until the brackets "click" into place (**Photo #1**).

If you have trouble getting the brackets to fully seat, try **GENTLY** prying on them with a pick or other suitable tool (**Photo #2**).



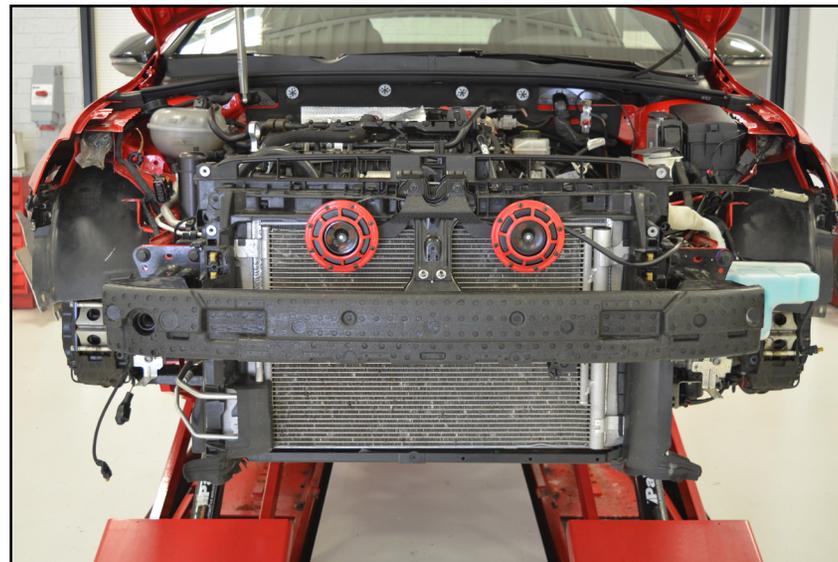
# INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

## Step 5: 13mm, 16mm Socket & Torque Wrench

Reinstall the two plastic air dams onto the front of the core support.

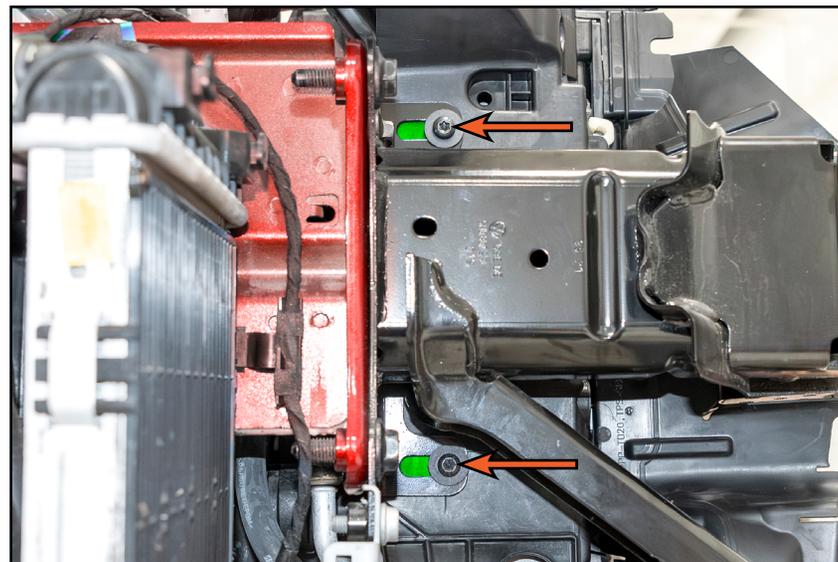
Reinstall the crash beam, align the bolts on the crash beam with the paint marks, and torque them to 55 Nm (41 Ft-lbs).

Reinstall the two nuts which secure the hood latch brace to the crash beam.



## Step 6: T30 Torx Socket & Torque Wrench

The mounting holes (highlighted in **GREEN**) for the core support are slotted to allow for adjustment. For maximum clearance, loosely install the screws (arrows), then slide the core support forward as far as it will go before tightening the screws to 8 Nm (6 Ft-lbs).

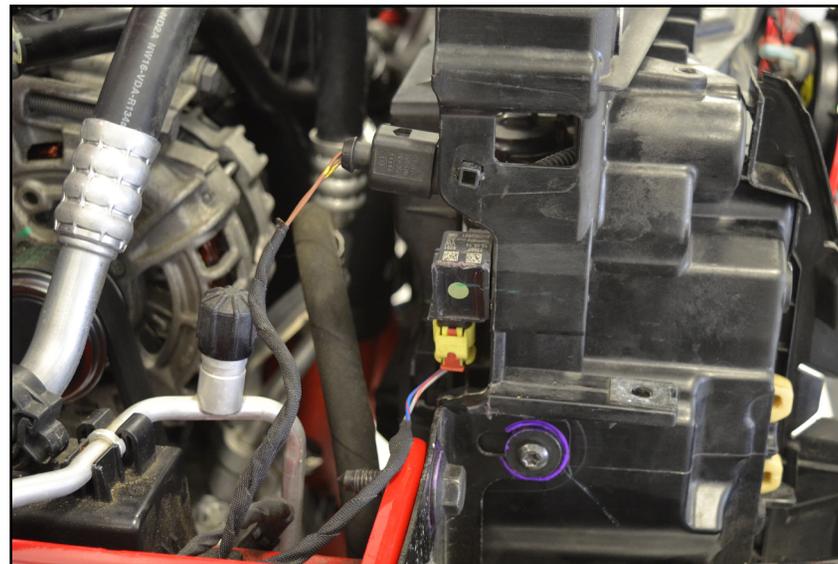


## INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

### Step 7:

Reconnect the following:

- RH crash sensor (located on the RH of side the core support)
- Hood latch switch (located on the RH side of the core support)
- Coolant temp sensor (located on the lower radiator hose)
- LH crash sensor (located on the LH side of the core support)



### Step 8:

Reinstall both headlights.

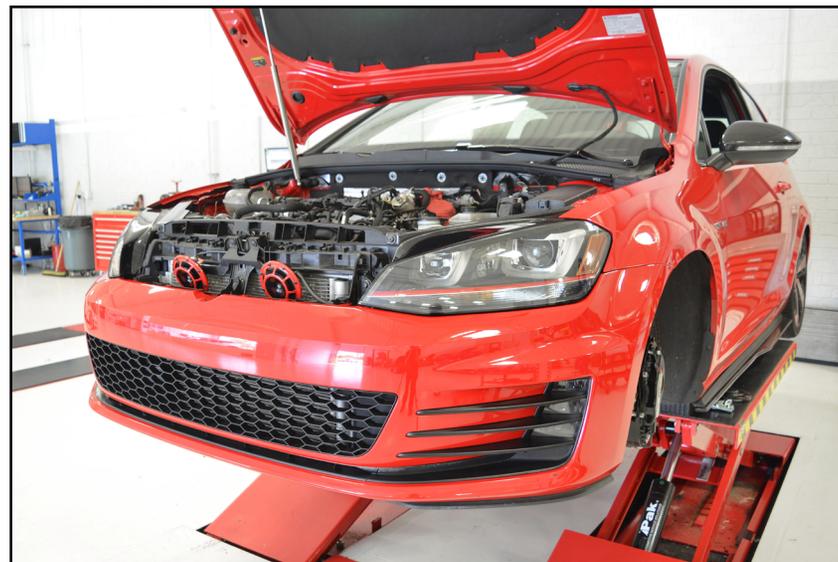
Reinstall the core support braces.

Reconnect the hood release cable.

Reconnect both horns and reinstall their mounting brackets.

Reinstall the grille support panel.

Reinstall the front bumper cover (reconnect the fog lights).



## INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

### Step 9:

Connect the charge pipe hoses to the intercooler.

Reinstall the lower fender liners.

Reinstall the belly pan.



### Step 10:

Reinstall the grille.

Reinstall the core support braces.

Reinstall the air inlet duct.

Reconnect the negative battery terminal.

***Congratulations, your install is complete!***



## Your ECS Cast Aluminum Intercooler 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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