



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



Skill Level
2 - Moderate
Some Experience
Recommended

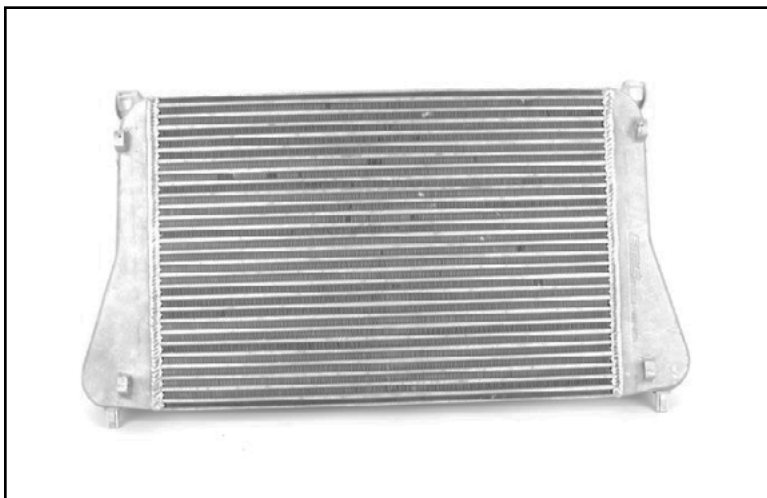


Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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KIT CONTENTS



ECS Cast Aluminum Intercooler Upgrade



Condenser Mounting Hardware

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

Available On Our Website

- **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](#)

Specialty Tools

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

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.
- 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**).

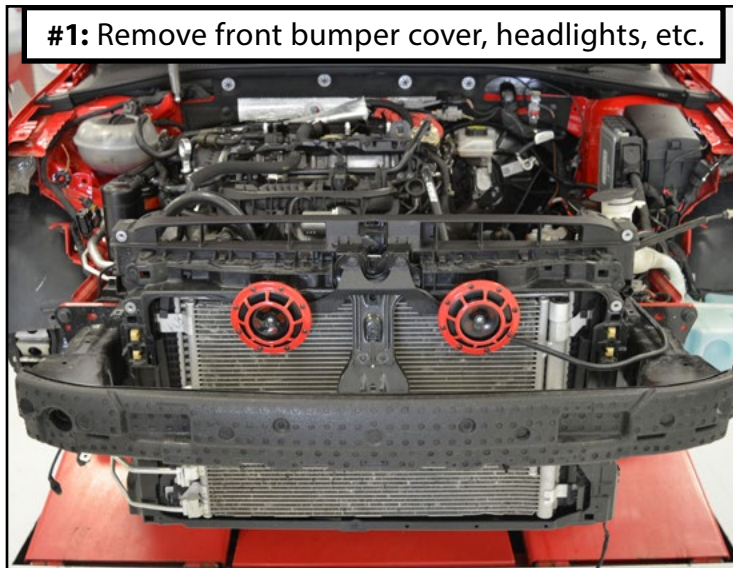
Next, we'll mark the crash beam and lock carrier bolts for easy realignment, then we'll remove the crash beam (**Photo #2**).

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

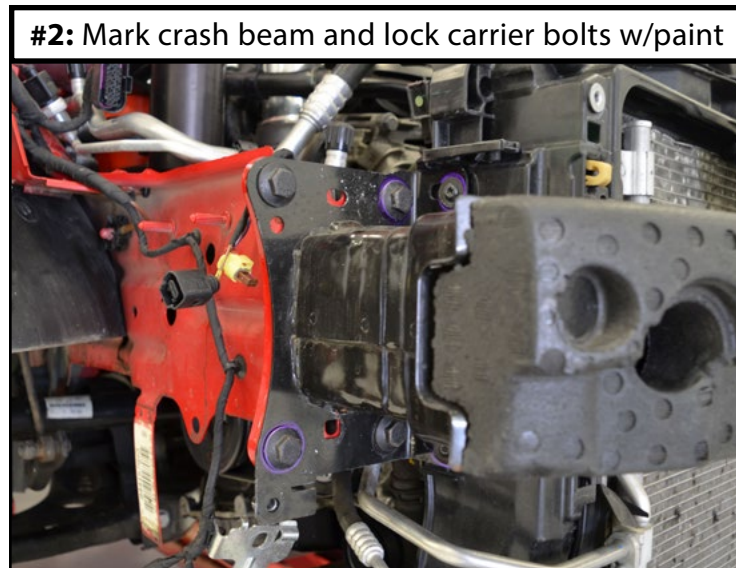
Finally, we'll install the new ECS cast aluminum intercooler, and we'll reassemble everything in the reverse order of removal (**Photo #4**).

Now let's get to it!

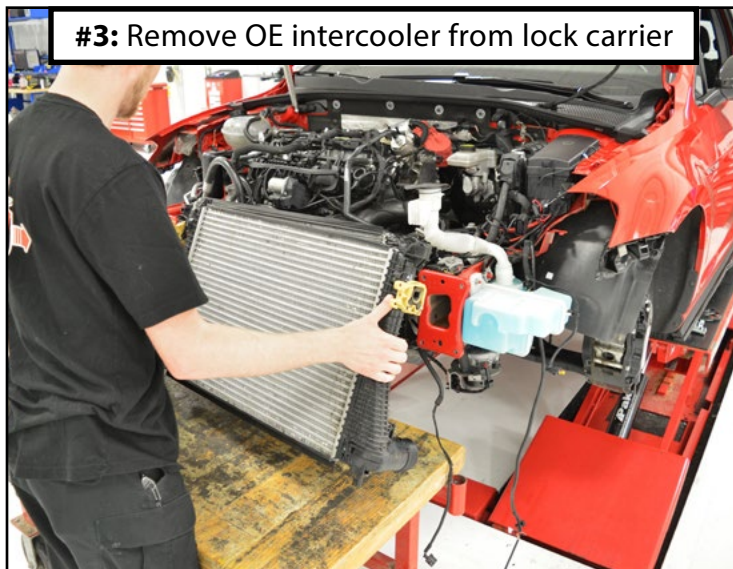
#1: Remove front bumper cover, headlights, etc.



#2: Mark crash beam and lock carrier bolts w/paint



#3: Remove OE intercooler from lock carrier



#4: Install new ECS intercooler into lock carrier



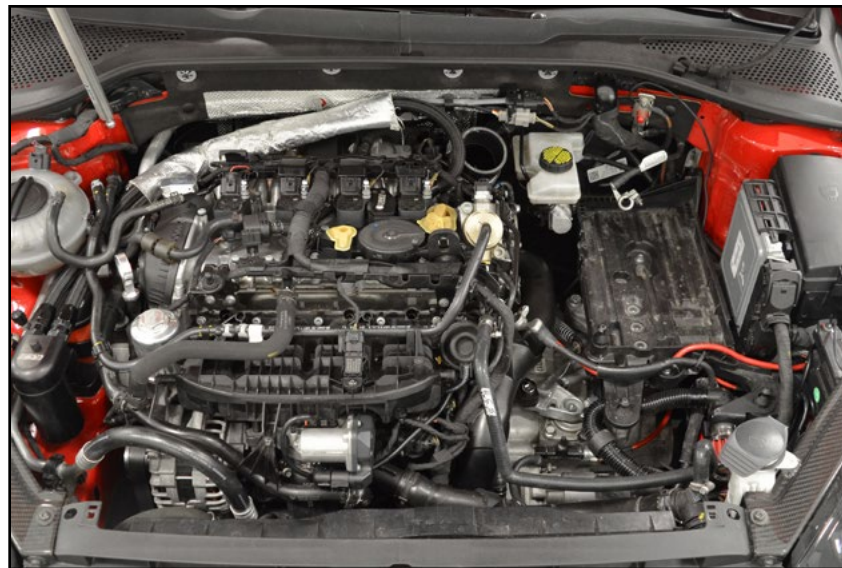
REMOVING THE STOCK INTERCOOLER

Step 1: 10mm Socket & Ratchet, T25 Torx

To begin this install we need to disconnect the negative battery terminal and remove the air inlet duct. We opted to remove the battery entirely, as well as the intake system and the engine cover for better visibility in our photos. These additional parts don't need to be removed for this job, but it only takes a few minutes and it is **WELL** worth it to gain a little extra space to work with.

Step 2: T25 Torx

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



REMOVING THE STOCK INTERCOOLER

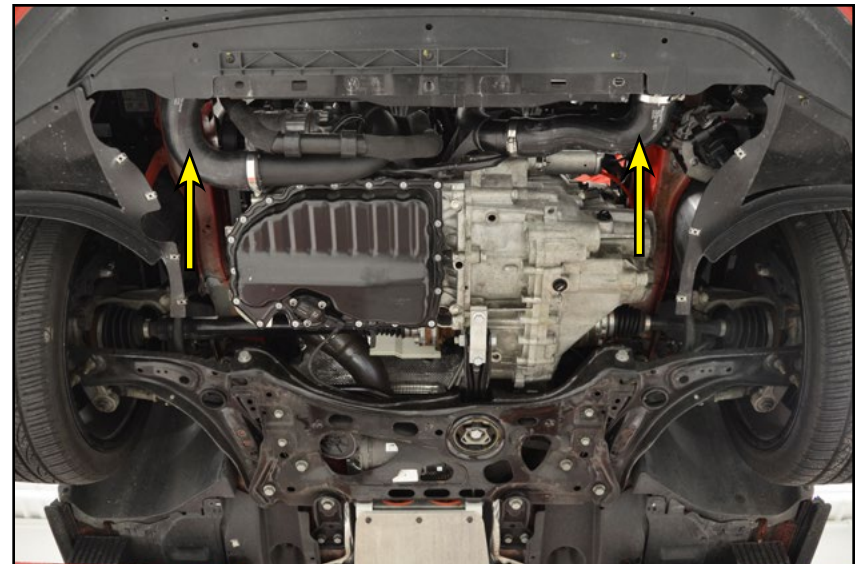
Step 3:

To remove the grille from the bumper, first lift straight up to pop it free from the bottom, then pull forward to slide the grille out from the core support and free from the vehicle.



Step 4: T25 Torx, Flat Head Screwdriver

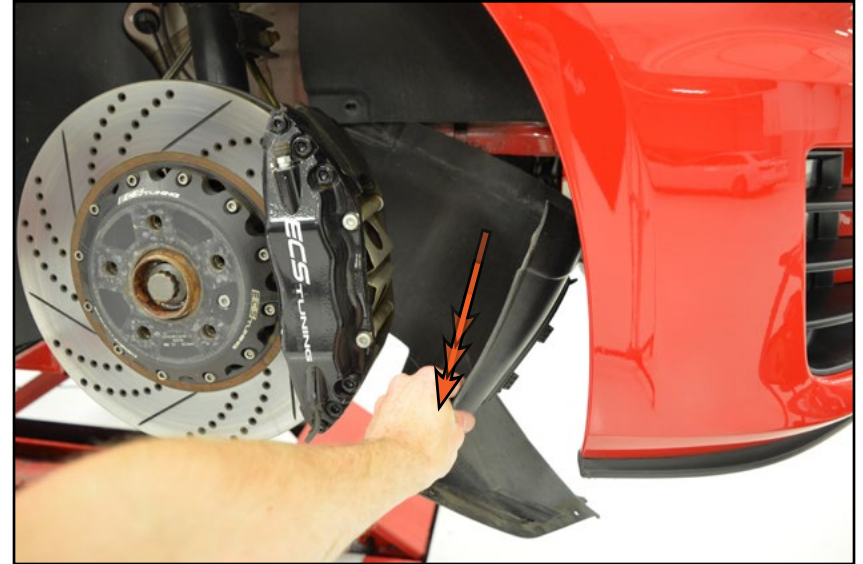
Safely lift and support the vehicle, then remove the belly pan and disconnect the charge pipe hoses (arrows) from the intercooler.



REMOVING THE STOCK INTERCOOLER

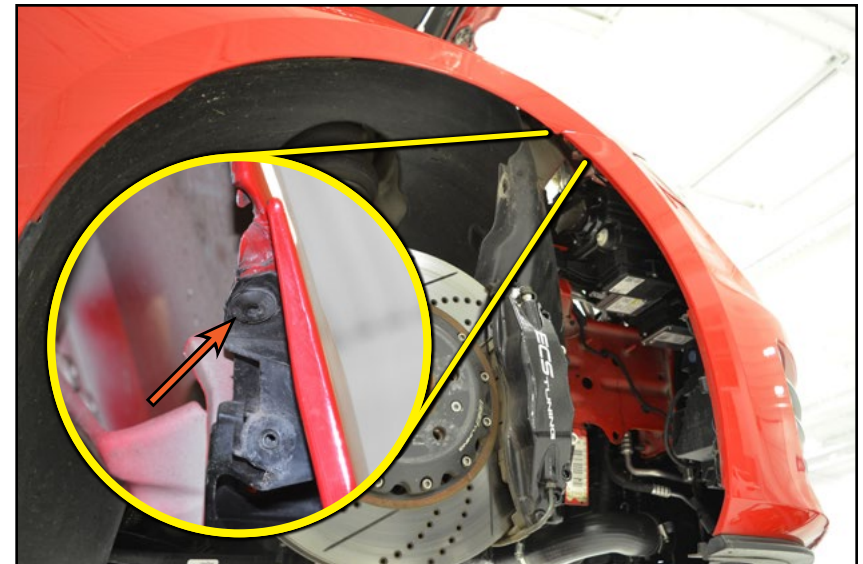
Step 5: 17mm Protecta-Socket & Breaker Bar, T25 Torx

Remove both front wheels and the lower fender liners.



Step 6: T25 Torx

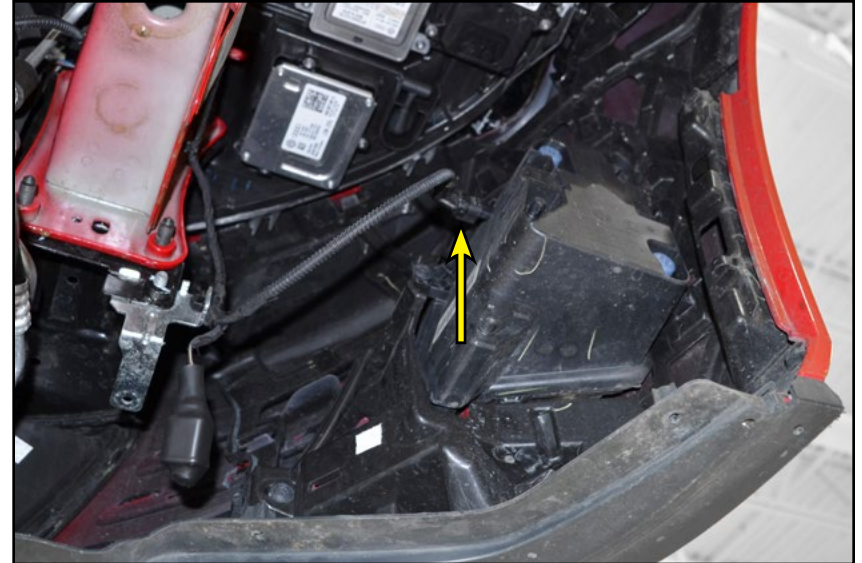
Pull the upper fender liner back slightly, then locate and remove the screws which secure the bumper cover to each fender (arrow in the inset photo).



REMOVING THE STOCK INTERCOOLER

Step 7:

Disconnect both fog light electrical connectors (if equipped).

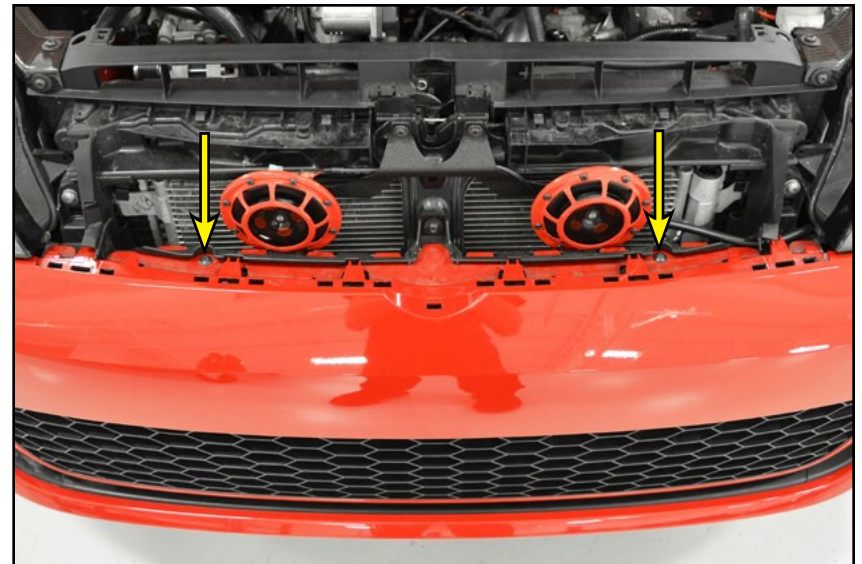


Step 8: T25 Torx

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



This would be a good time to lay out a sheet or a blanket on the floor so you have a safe place to put the bumper cover once it has been removed.



REMOVING THE STOCK INTERCOOLER

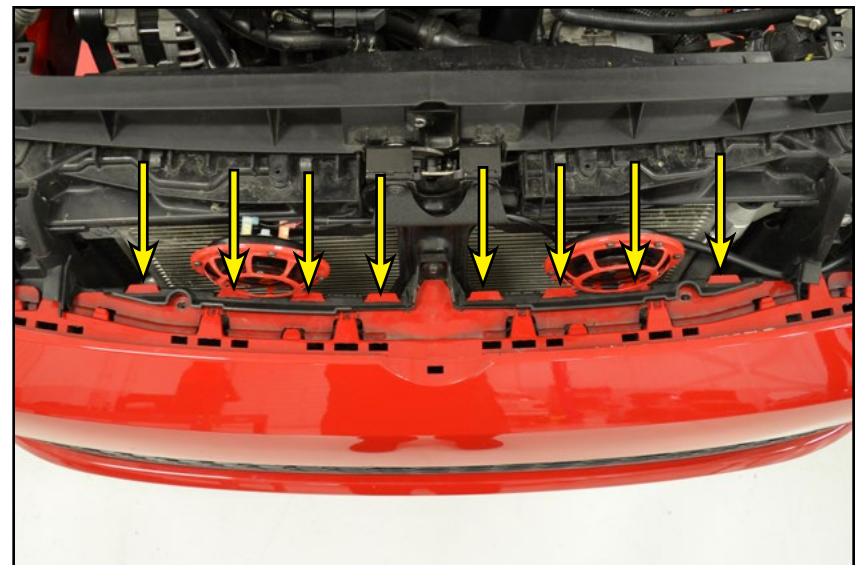
Step 9:

Now is a good time to enlist the help of a friend. Pull outward on each side of the bumper cover as shown in the photo to release it from each fender.



Step 10:

At this point the only thing which is still holding the bumper cover on the front end is the line of clips which are located just below where the grille was mounted. Gently lift up on these clips to release them while also pulling the bumper cover toward the front of the vehicle.



REMOVING THE STOCK INTERCOOLER

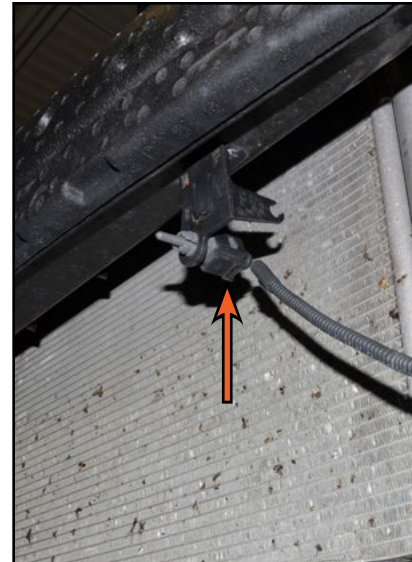
Step 11:

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 12:

Disconnect the ambient air temperature sensor, then release the wiring harness from the clips on the LH side of the lock carrier.

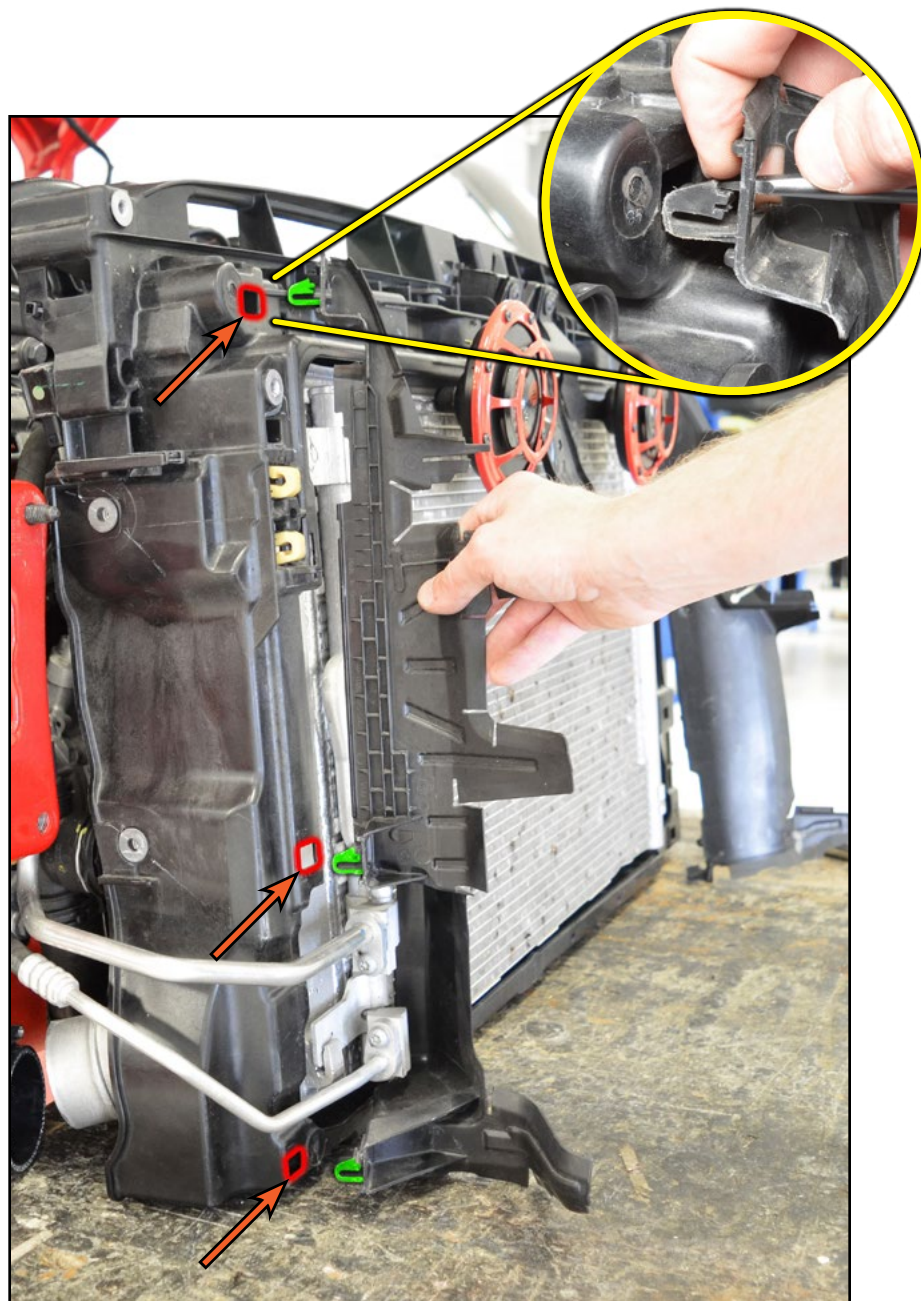


REMOVING THE STOCK INTERCOOLER

Step 13: Flat Head Screwdriver

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

Working on the RH side of the vehicle, press inward on each tab, pull the air dam 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 dam.

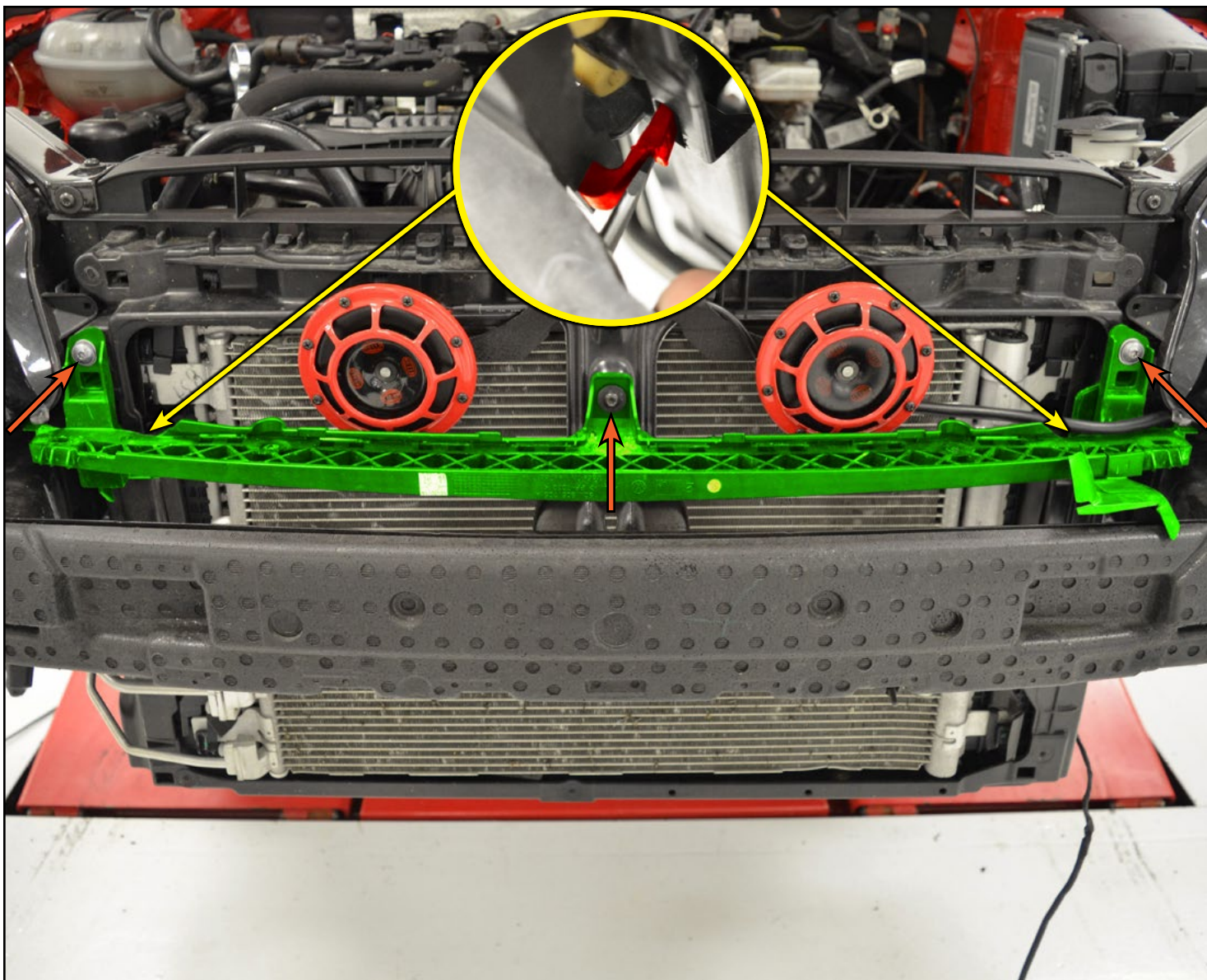


REMOVING THE STOCK INTERCOOLER

Step 14:

Remove the three T30 bolts (**ORANGE** arrows) which secure the grille support panel (highlighted in **GREEN**) into place.

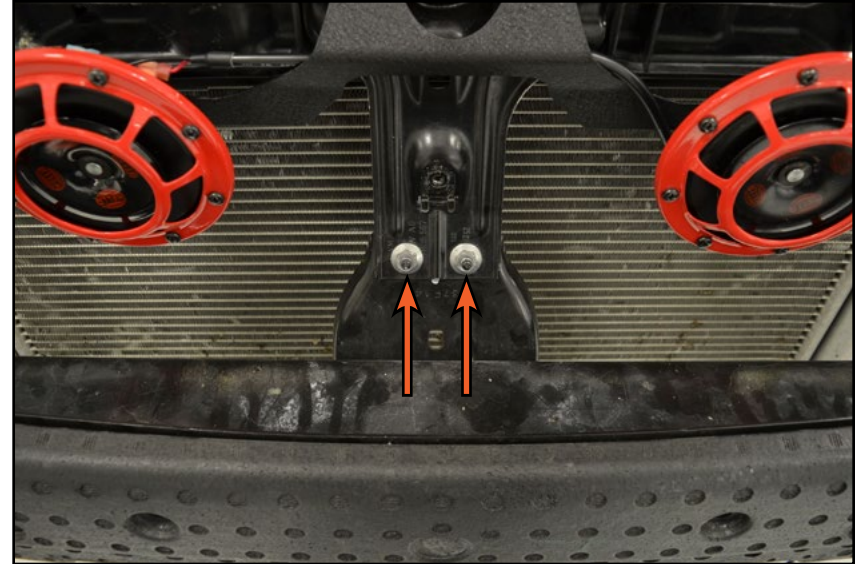
Next, locate and release the two clips which secure the grille support panel to the lock carrier (highlighted in **RED** in the inset photo). With the bolts removed and the clips released you will be able to remove the panel from the vehicle.



REMOVING THE STOCK INTERCOOLER

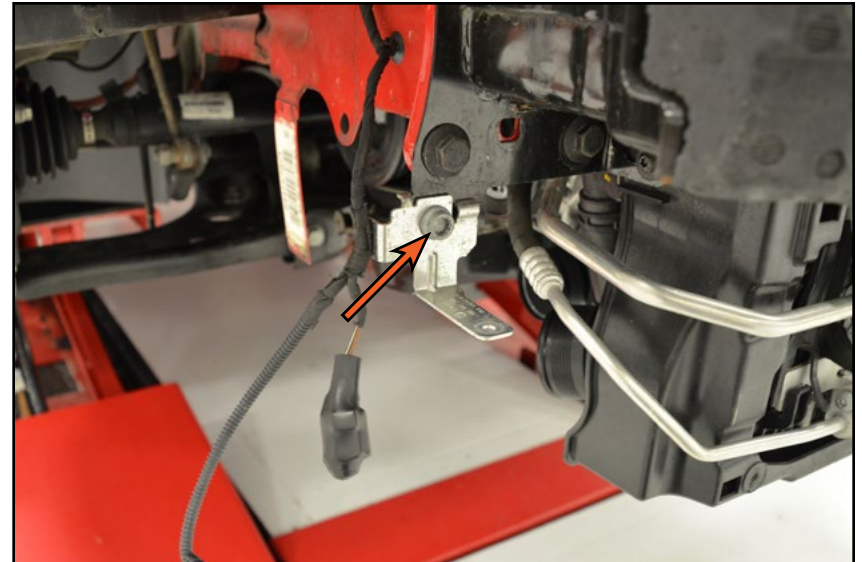
Step 15: 10mm Socket & Ratchet

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



Step 16: M10 Triple Square Socket & Ratchet

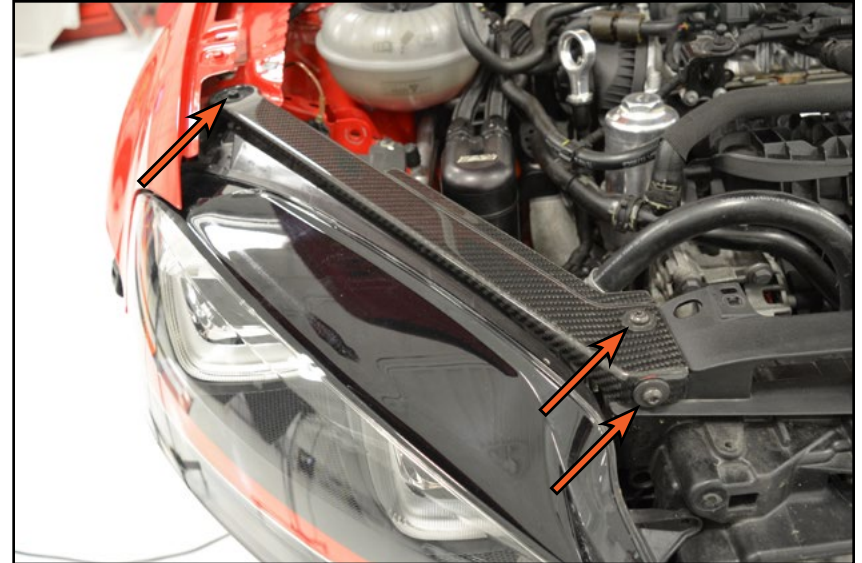
Disconnect both horns and remove the brackets from the crash beam.



REMOVING THE STOCK INTERCOOLER

Step 17: T30 Torx

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



Step 18:

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

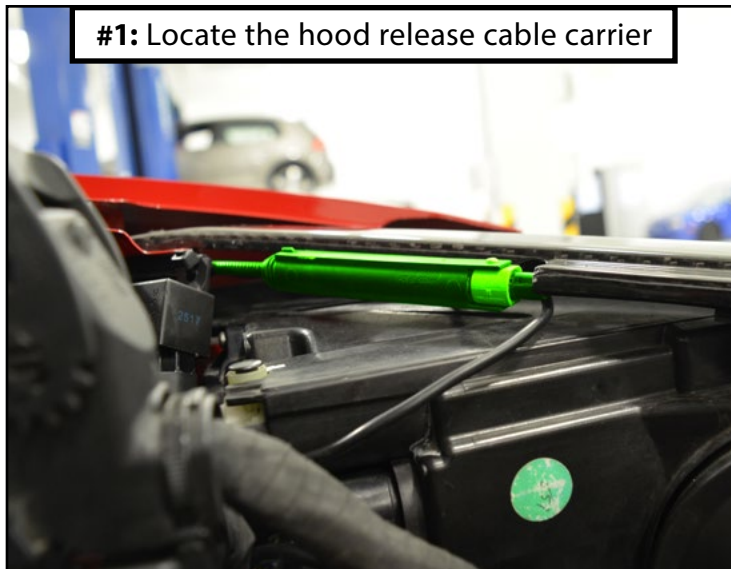
Step 19:

The hood release cable carrier (highlighted in **GREEN** in **Photo #1**) is mounted on the back side of the LH core support brace.

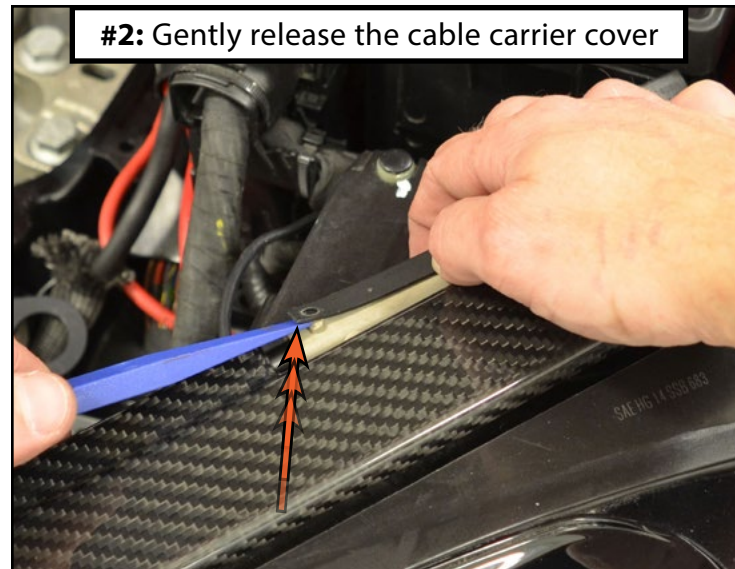
GENTLY lift upwards on the clips which secure the cable carrier cover in place (**Photo #2**), then remove the cover.

Pull the ball-end of the cable out of the carrier (**Photo #3**), then separate the cable from the carrier (**Photo #4**).

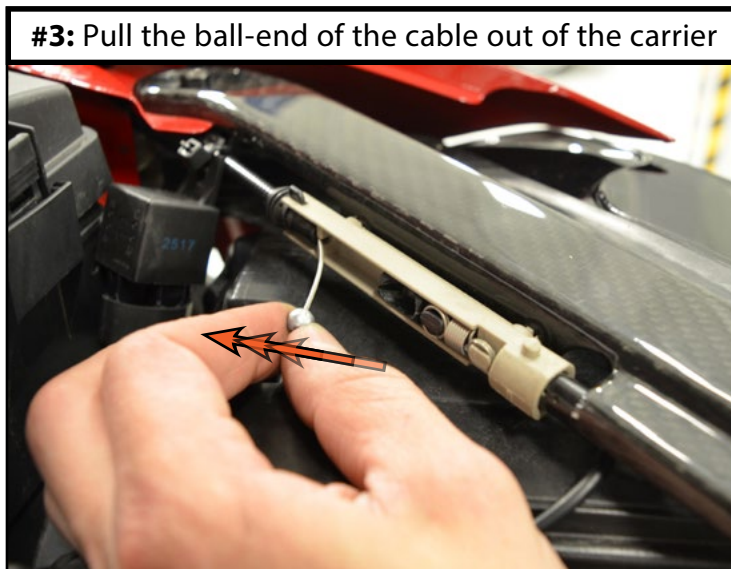
#1: Locate the hood release cable carrier



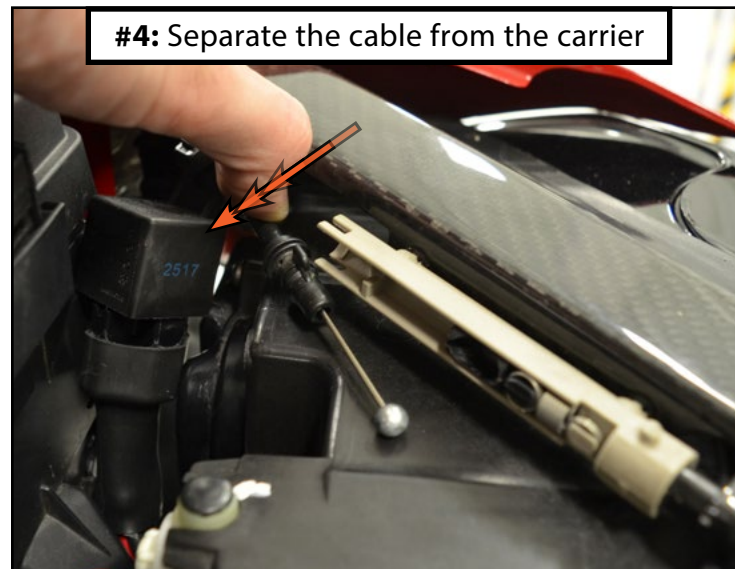
#2: Gently release the cable carrier cover



#3: Pull the ball-end of the cable out of the carrier



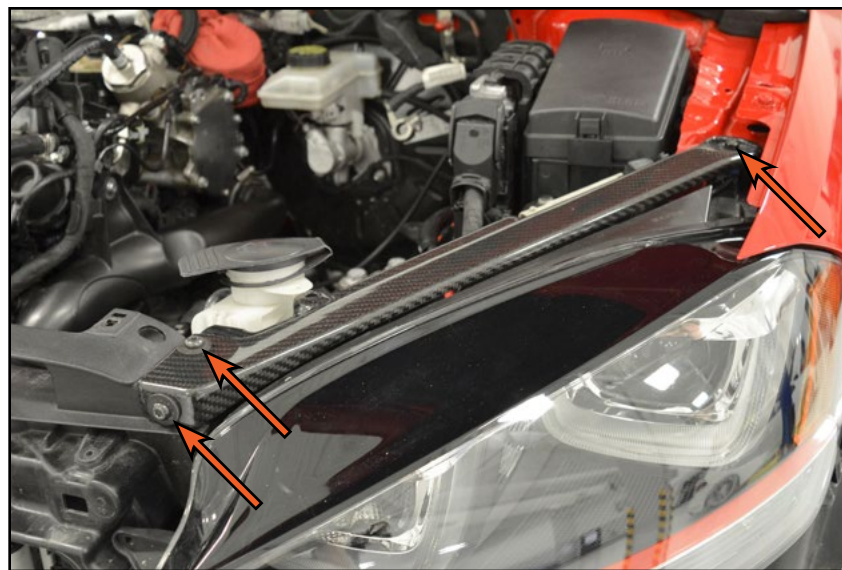
#4: Separate the cable from the carrier



REMOVING THE STOCK INTERCOOLER

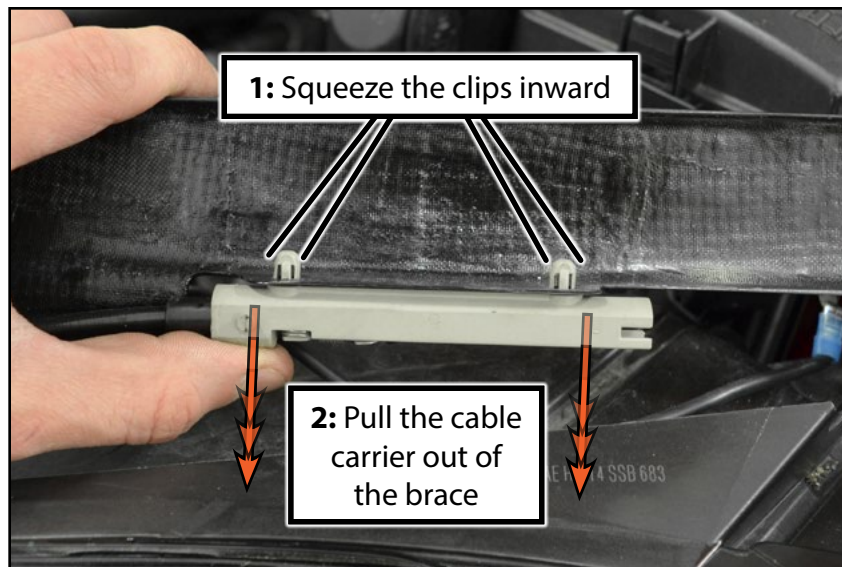
Step 20: T30 Torx

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



Step 21: Needle Nose Pliers

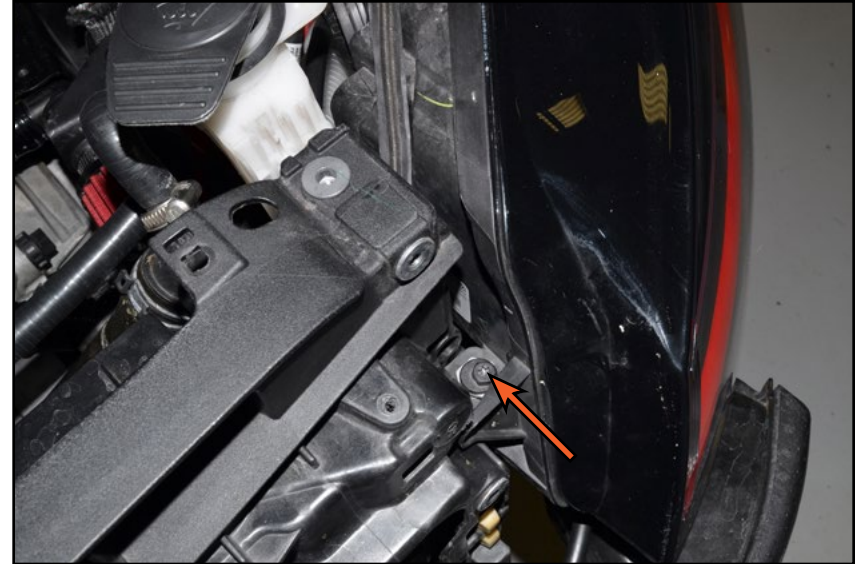
Gently squeeze inward on the cable carrier clips as shown in the photo on the right, then pull the carrier out of the core support brace. Set the core support brace aside and swing the cable carrier out of the way.



REMOVING THE STOCK INTERCOOLER

Step 22: 10mm Socket & Ratchet -or- T30 Torx

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



Step 23: T30 Torx

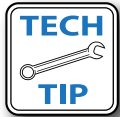
Remove the bolt which secures the LH headlight to the fender.



REMOVING THE STOCK INTERCOOLER

Step 24:

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 25:

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 26: 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.



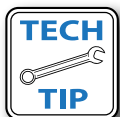
Step 27: VAG Connector Removal Tool



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 lock carrier)
- Hood latch switch (located on the RH side of the lock carrier)
- Coolant temp sensor (located on the lower radiator hose)



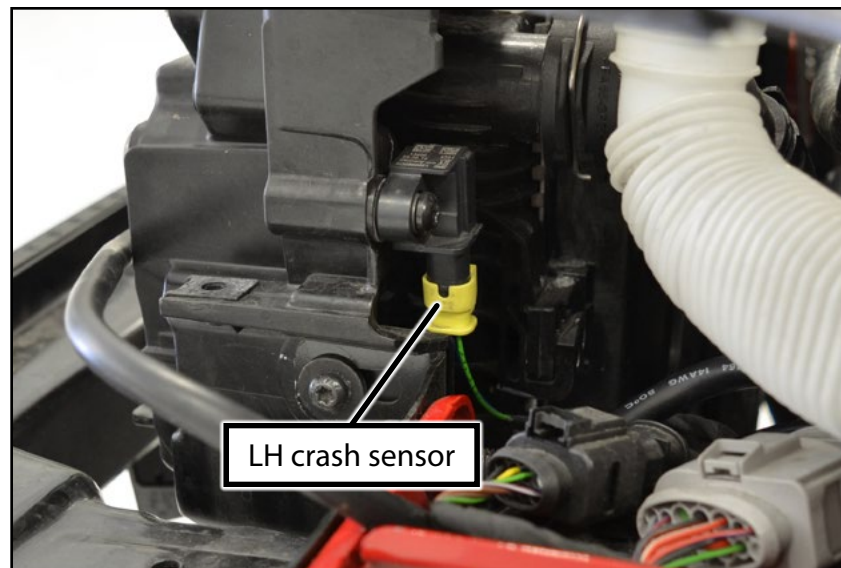
For detailed photos and tips on using the VAG Connector Removal Tool, please refer to [Page 37](#).



REMOVING THE STOCK INTERCOOLER

Step 28:

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



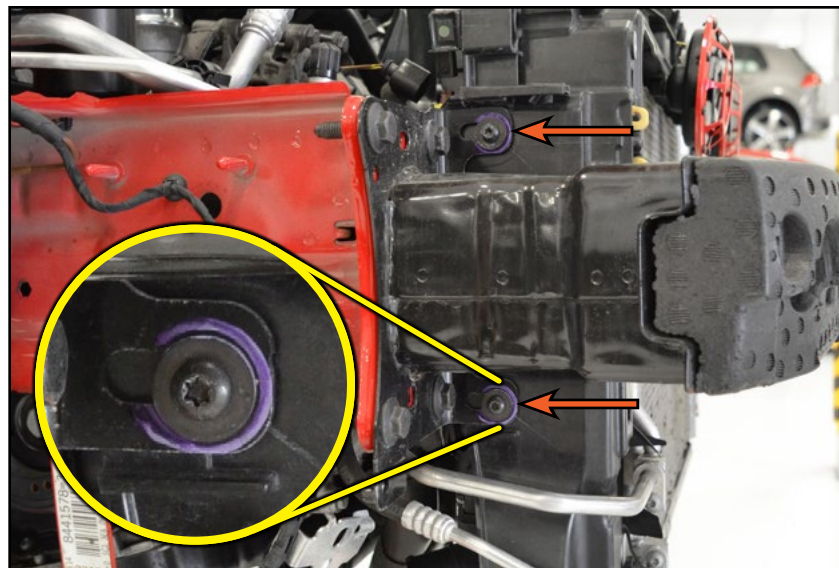
Step 29: Paint Marker, T30 Torx

Trace around the four bolts which secure the lock carrier to the crash beam, this will make aligning the front end body panels a **BREEZE!**

Once all four bolts have been traced out, **safely support the lock carrier from below**, then remove the bolts.



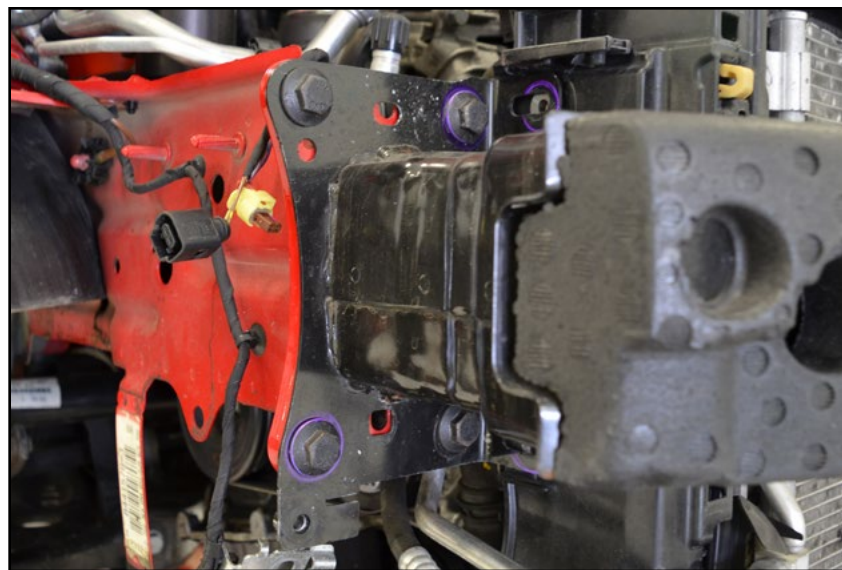
CAUTION: Failure to properly support the lock carrier from below could damage to radiator hoses or AC lines.



REMOVING THE STOCK INTERCOOLER

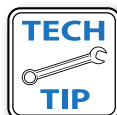
Step 30:

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

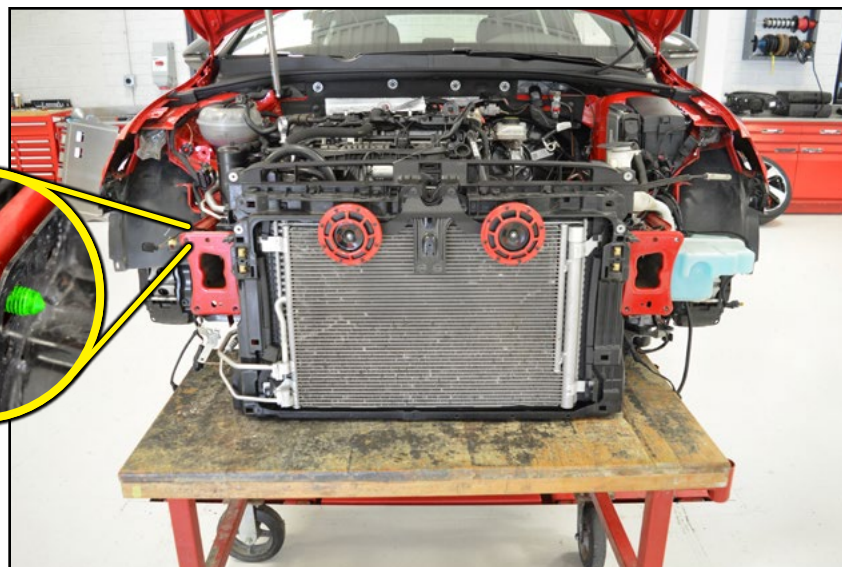


Step 31: 16mm Socket & Ratchet

Once all eight bolts have been traced out, 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.



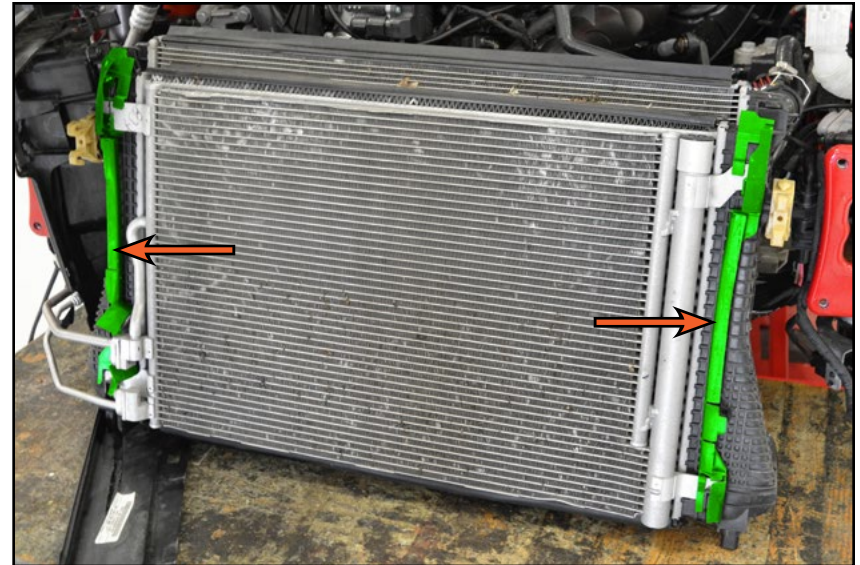
REMOVING THE STOCK INTERCOOLER

Step 32:

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 lock carrier 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 33:

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



REMOVING THE STOCK INTERCOOLER

Step 34:



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



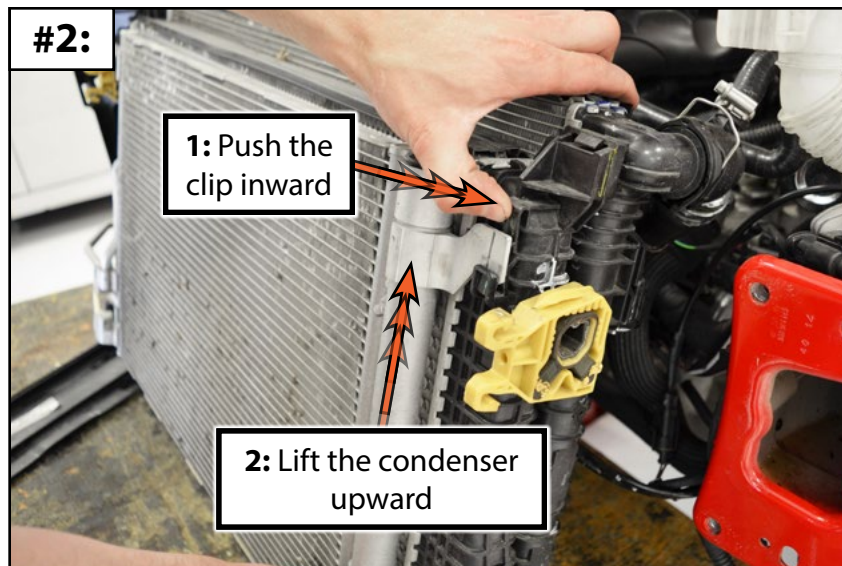
The condenser is secured by two clips which are located near the top of each intercooler side tank (highlighted in **GREEN** in **Photo #1**). Push inward on these clips one at a time while lifting the condenser upward (**Photo #2**).

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 AC lines.

#1:



#2:



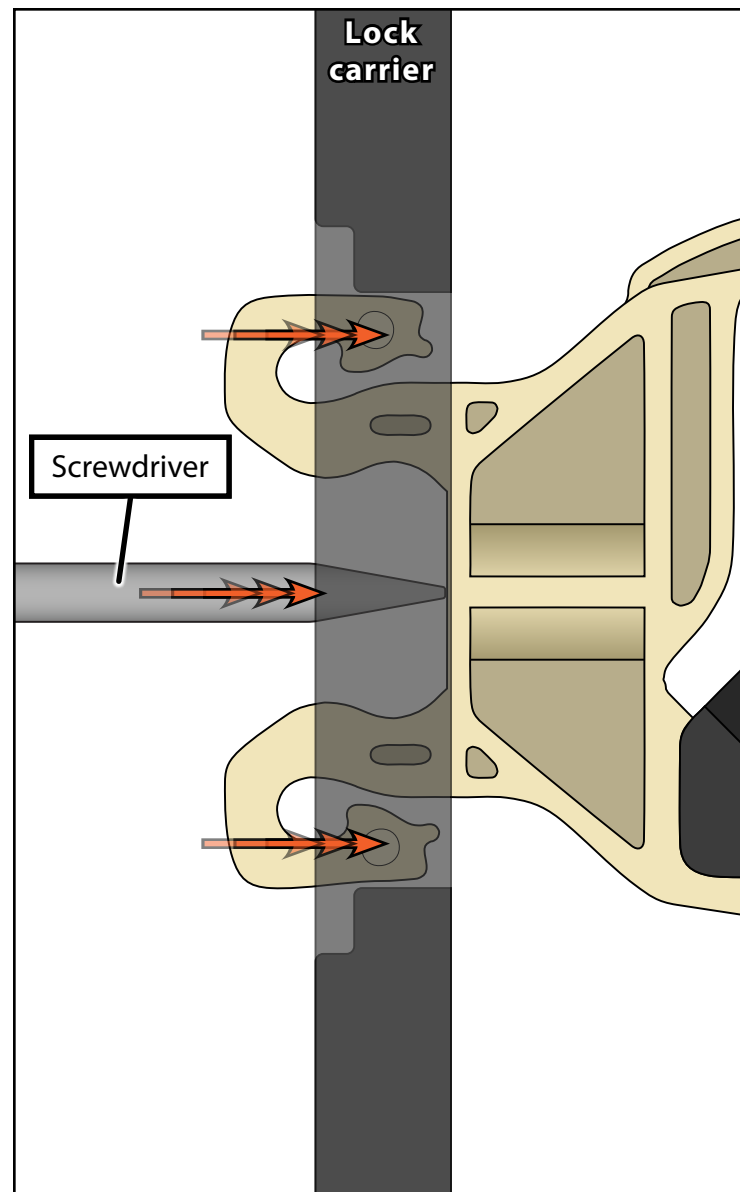
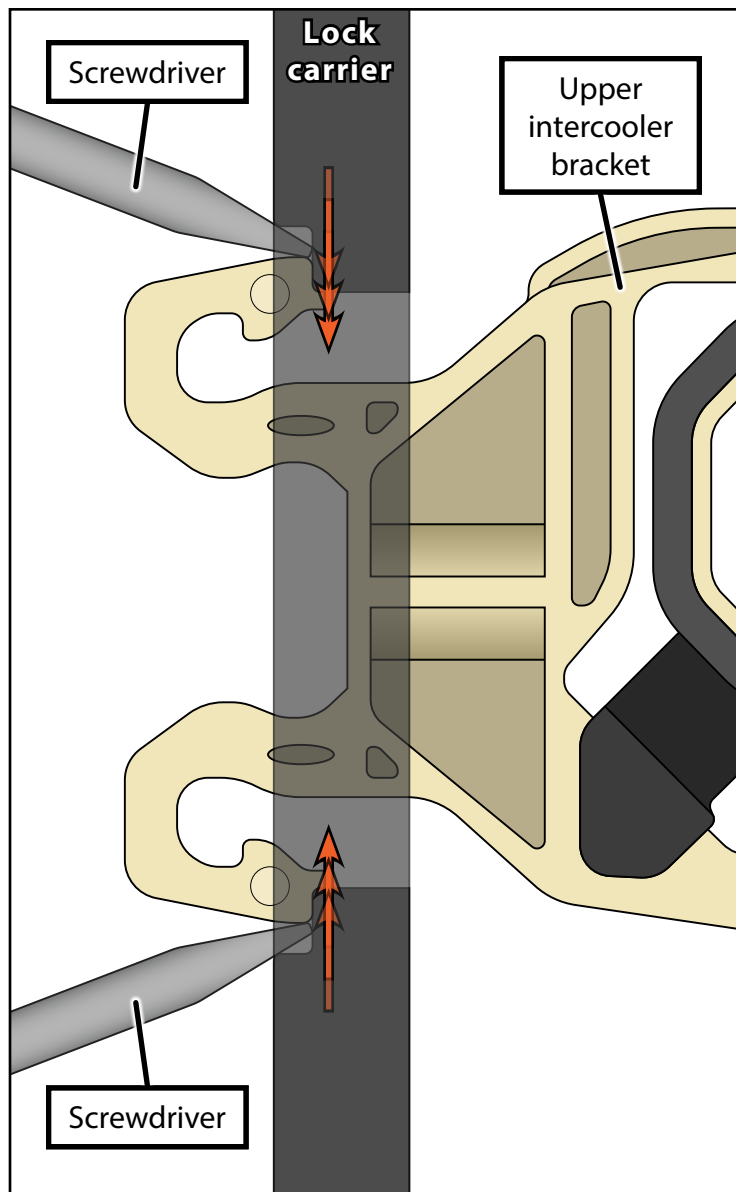
REMOVING THE STOCK INTERCOOLER

Step 35:

Now we need to release the upper intercooler brackets from the lock carrier.

The illustrations on the right show how the two “ears” lock into place against the lock carrier. 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.

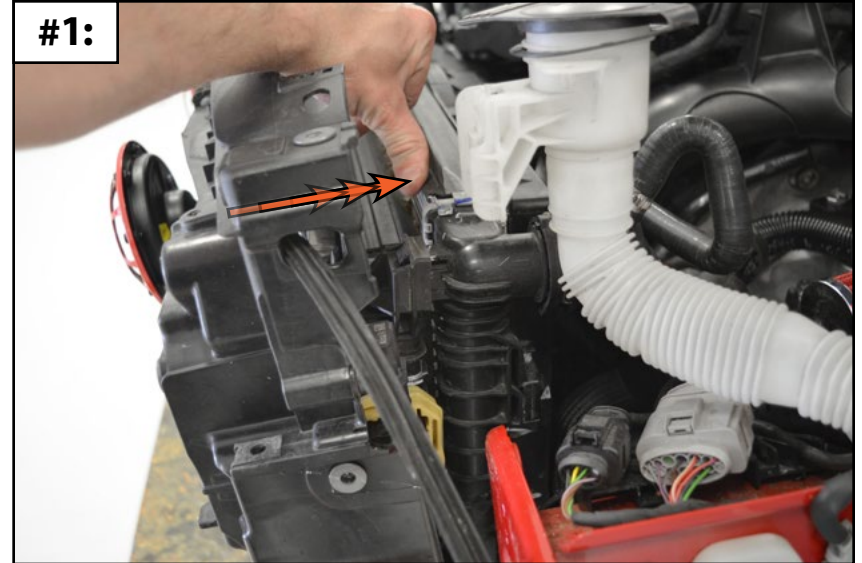


REMOVING THE STOCK INTERCOOLER

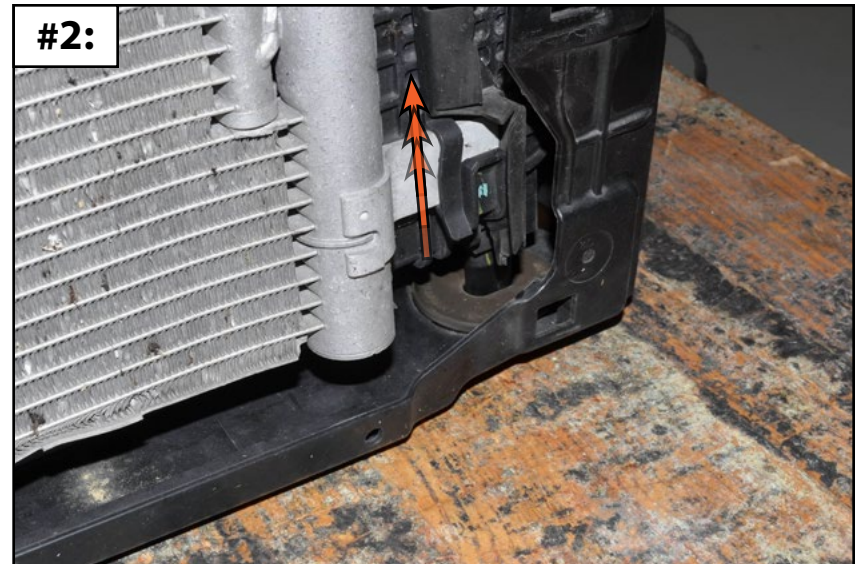
Step 36:

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

#1:



#2:



REMOVING THE STOCK INTERCOOLER

Step 37:

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**).

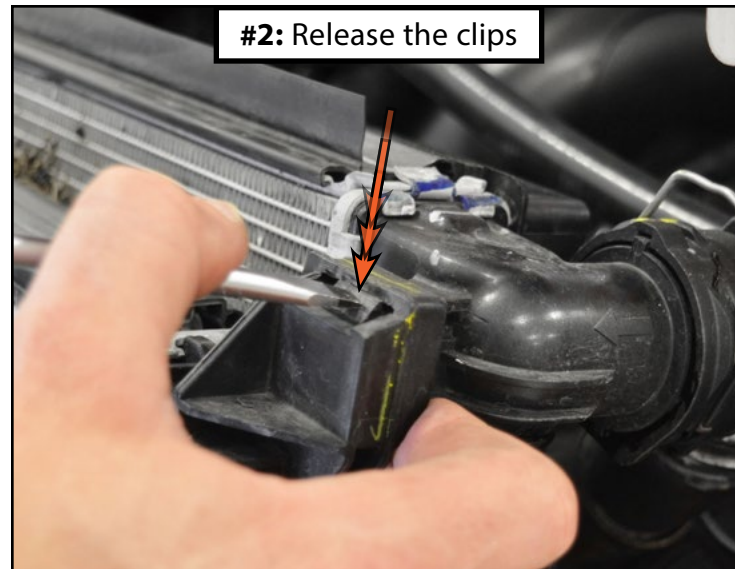
Push downward on these clips one at a time (**Photo #2**) while pushing the radiator away from the intercooler (**Photo #3**).

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

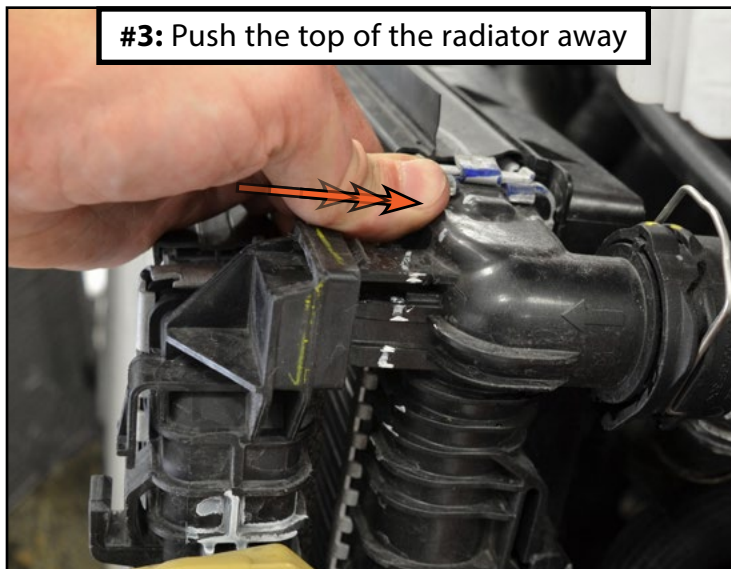
#1: Locate the upper radiator mount



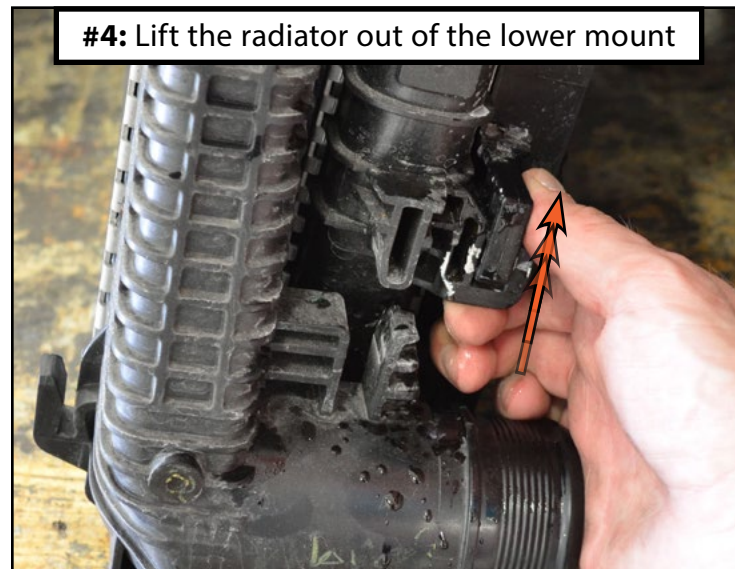
#2: Release the clips



#3: Push the top of the radiator away



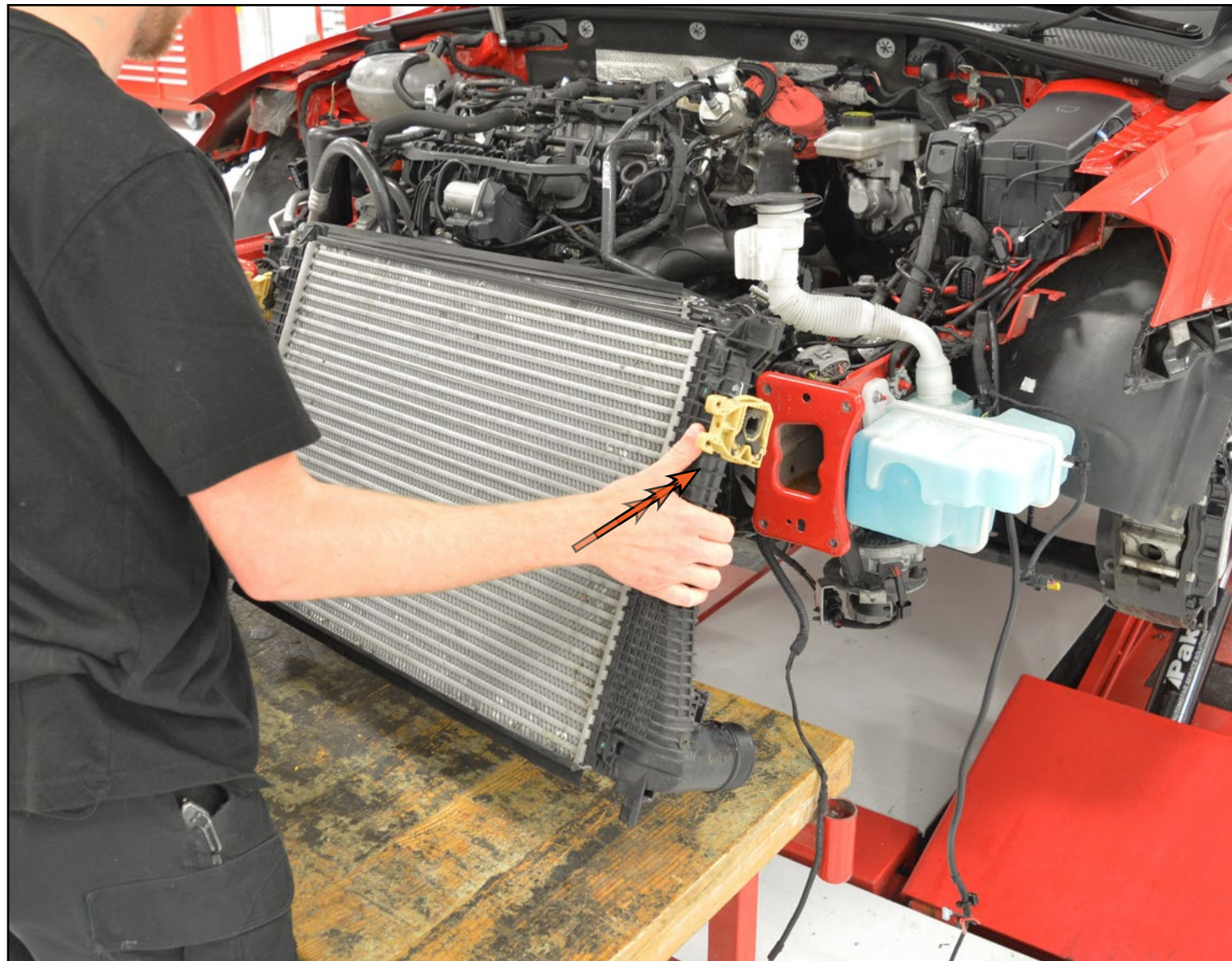
#4: Lift the radiator out of the lower mount



REMOVING THE STOCK INTERCOOLER

Step 38:

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 39:

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).



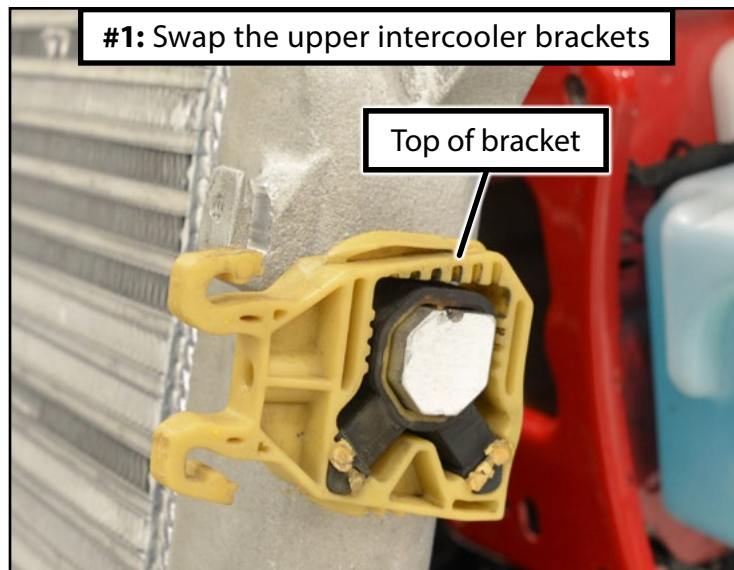
INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

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 (available on ecstuning.com by clicking [HERE](#)). These brackets are not side specific, but they can only fit onto the mounting post one way due to the irregular shape of the bushing (**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**).

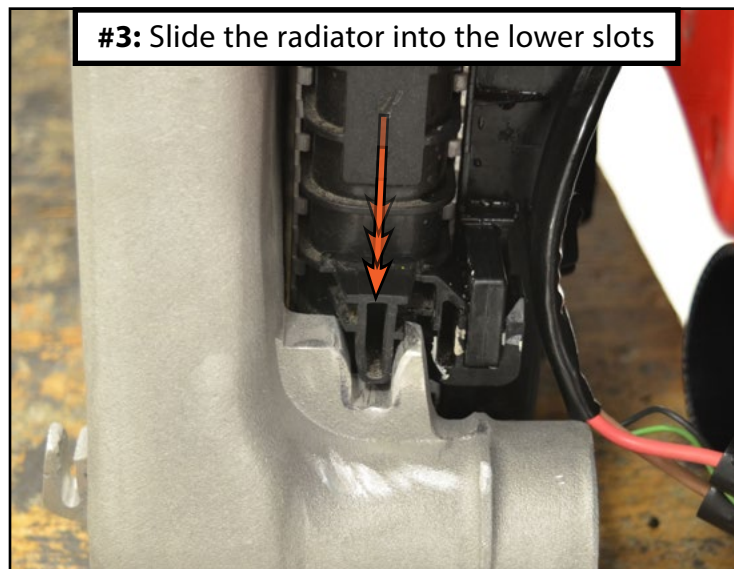
#1: Swap the upper intercooler brackets



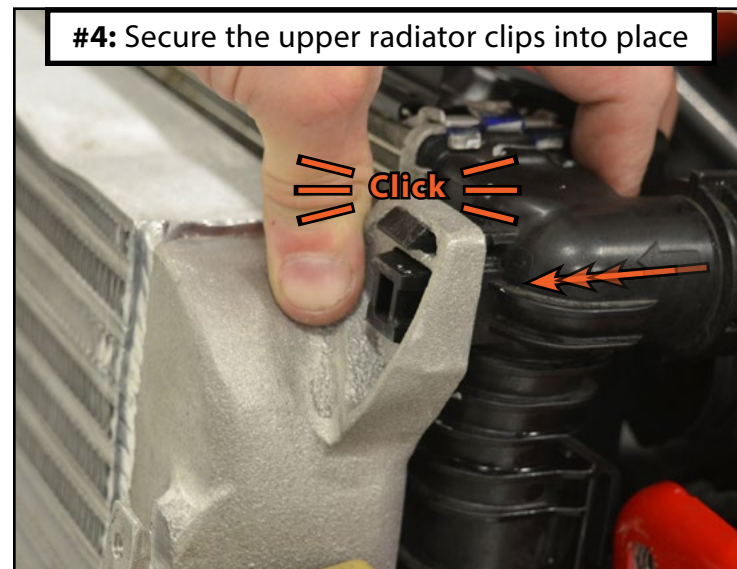
#2: Slide the new intercooler into position



#3: Slide the radiator into the lower slots



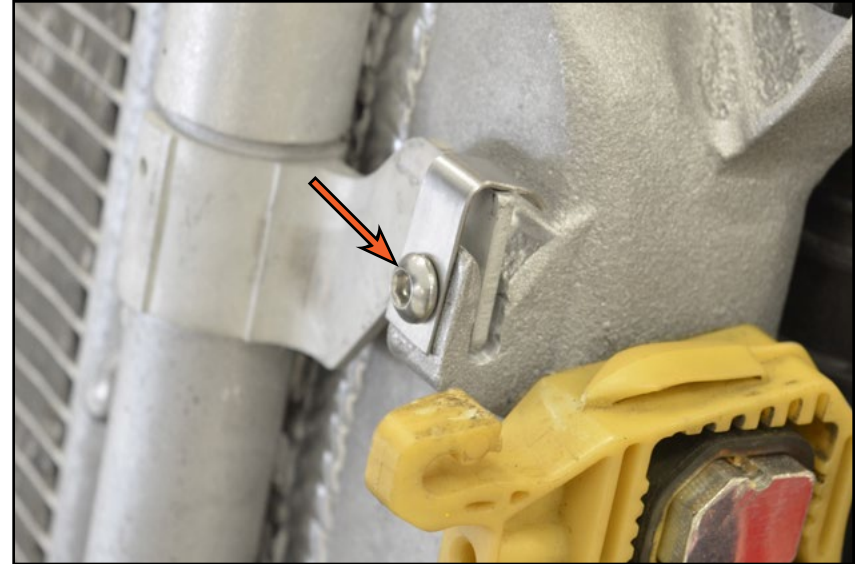
#4: Secure the upper radiator clips into place



INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

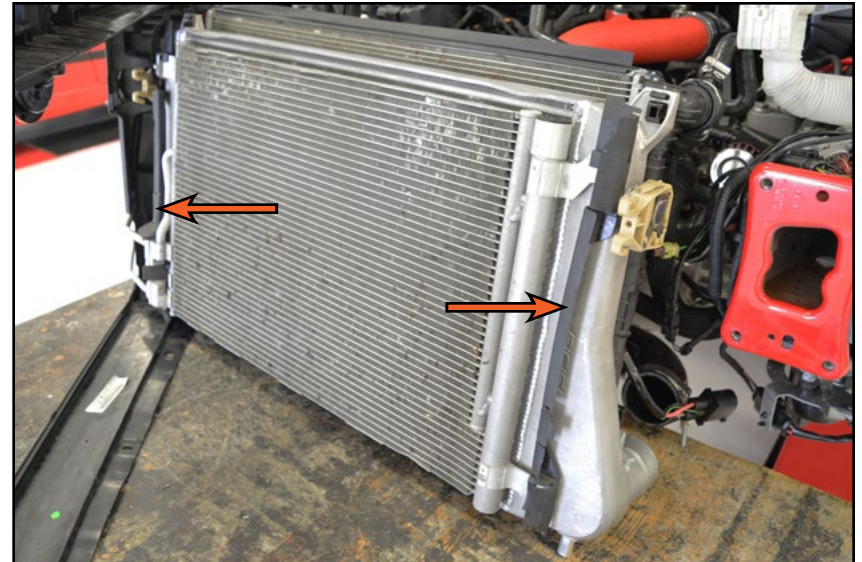
Step 2: 4mm Hex (Allen)

Slide the condenser into the slots on the front of the intercooler, then use the supplied brackets and screws to secure it into place.



Step 3:

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

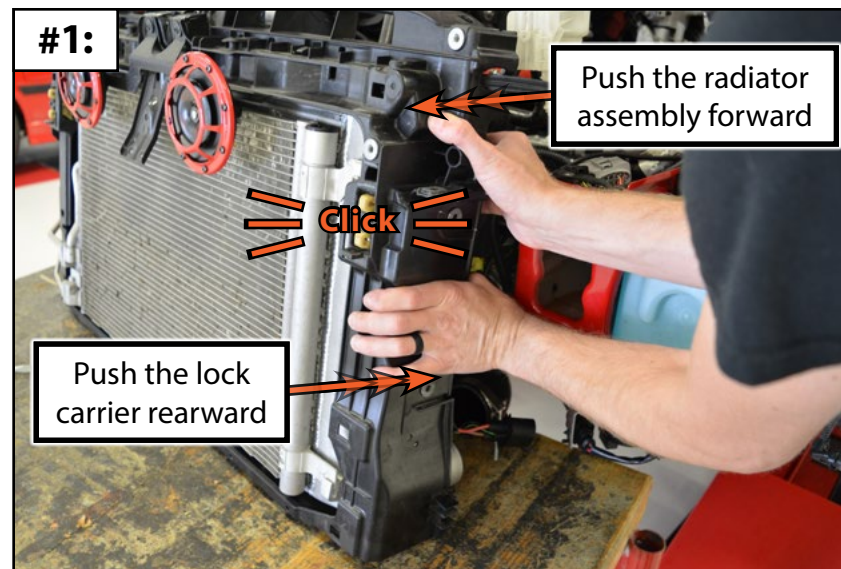


INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

Step 4: Pick -or- Small Screwdriver

Now it's time to reassemble the lock carrier. Start by sliding the posts on the bottom of the intercooler into the rubber grommets in the bottom of the lock carrier (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:

Reinstall the two plastic air dams onto the front of the lock carrier.

LOOSELY reinstall the crash beam, we will torque these bolts later.

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

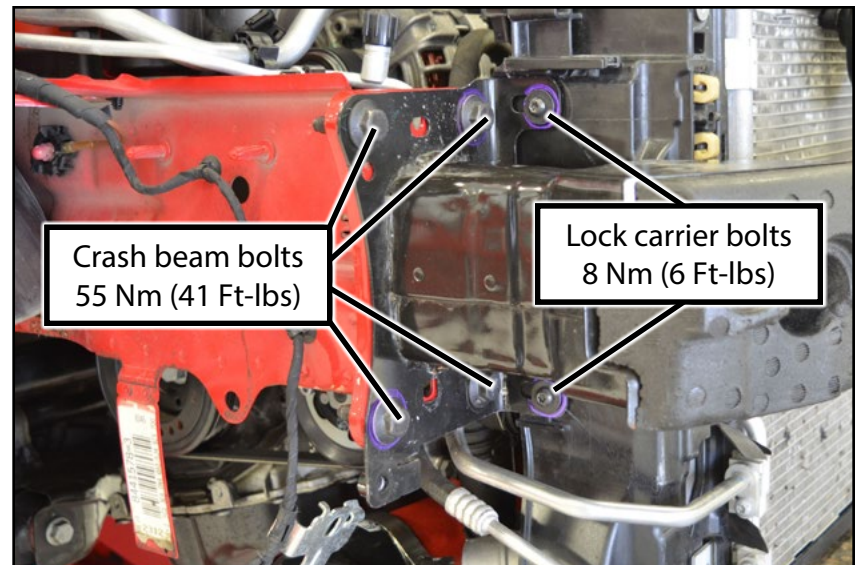


Step 6: T30 Torx, 16mm Socket, Torque Wrench

Align the bolts on the crash beam and the lock carrier with the paint marks we applied earlier.

Torque the crash beam bolts to 55 Nm (41 Ft-lbs).

Torque the lock carrier bolts to 8 Nm (6 Ft-lbs).

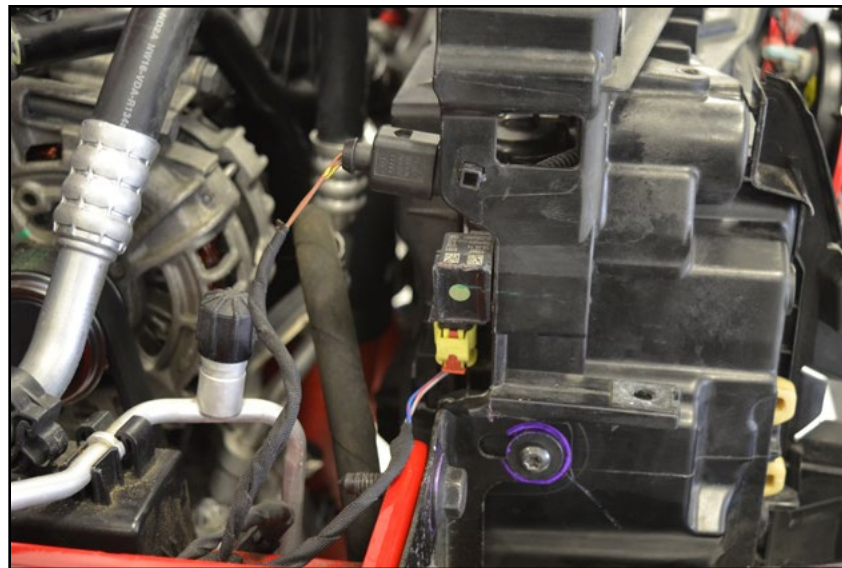


INSTALLING THE NEW ECS CAST ALUMINUM INTERCOOLER

Step 7:

Reconnect the following:

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



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!



USING THE VAG CONNECTOR REMOVAL TOOL

Step 1:

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



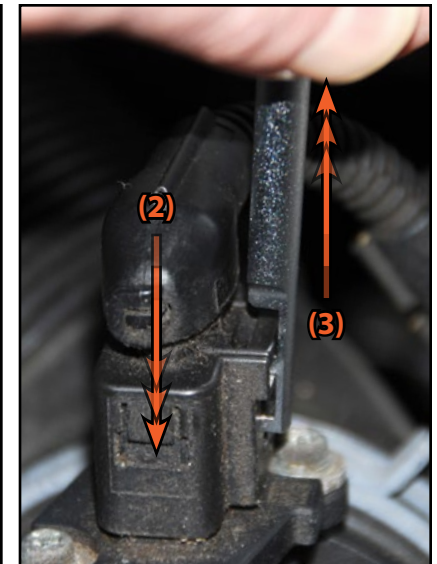
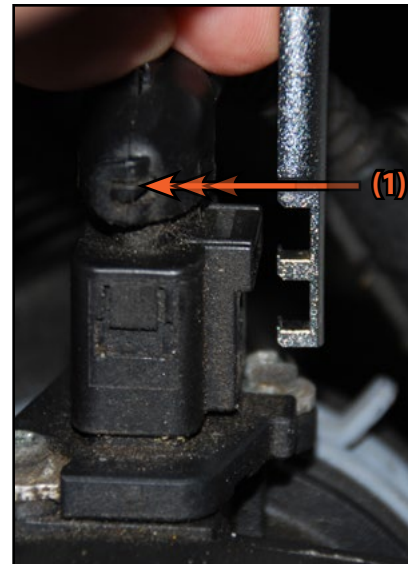
Step 2:

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 intercooler removal instructions, simply click [HERE](#).



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Your ECS Cast Aluminum Intercooler installation is complete!



These instructions are provided as a courtesy by ECS Tuning

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