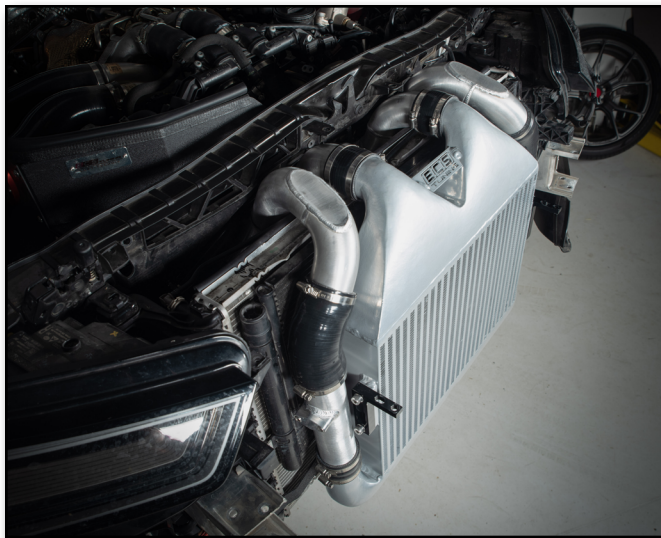
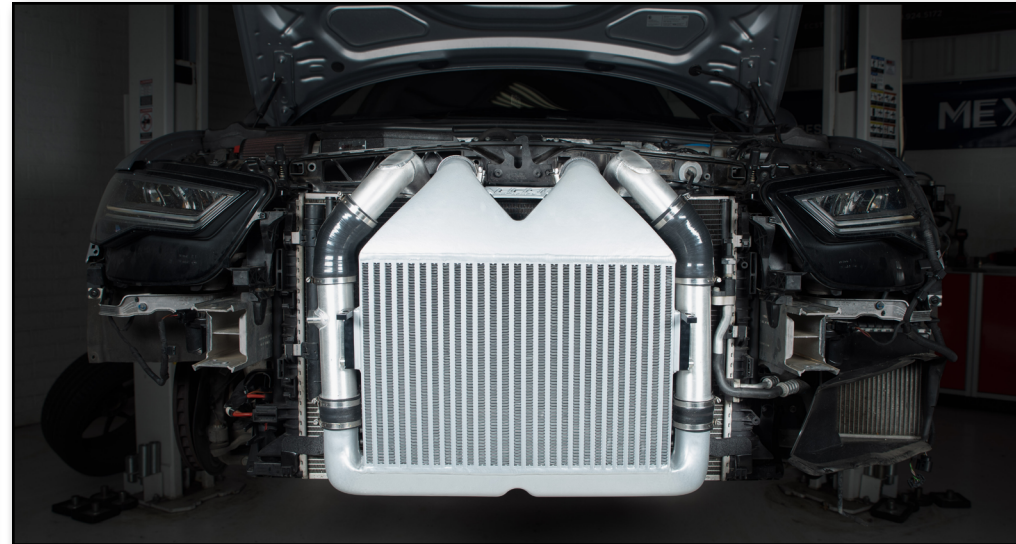




Audi C7 S6 4.0T Air to Air Intercooler Kit Installation Instructions - [Click HERE to Shop](#)



Skill Level
3 - Advanced
Advanced Skills &
Experience Required



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



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#2834951](#)
- **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

- **Die Grinder**

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.

REMOVING THE STOCK INTERCOOLER

Step 1: Trim Removal Tool

Disconnect the battery, then remove the two push-rivets (arrows) and remove the radiator shroud.



Step 2: T20 Torx Socket & Ratchet

Remove the two screws (arrows) that secure the bumper to the top of the core support.



REMOVING THE STOCK INTERCOOLER

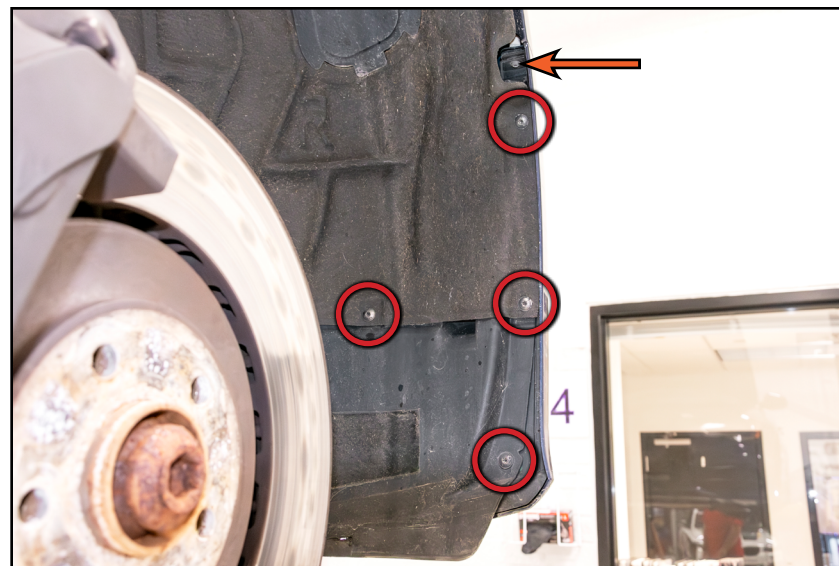
Step 3: 17mm Protecta-Socket & Breaker Bar

Safely lift and support the vehicle, then remove the front wheels as shown.



Step 4: T25 Torx Socket & Ratchet

Remove the four screws (circled in **RED**) that secure the front of each fender liner to the bumper. Remove the vertical screw (arrow) that secures the bumper to the fender on either side.



REMOVING THE STOCK INTERCOOLER

Step 5: 10mm Socket, Extension & Ratchet

Pull back the fender liner and remove the screw (arrow) that secures the bumper to the vehicle on either side.



Step 6:

Remove the skid plate or insulation panel from the vehicle.



REMOVING THE STOCK INTERCOOLER

Step 7: T25, T30 Torx Socket & Ratchet

Remove the six screws (circled in **RED**) that secure the bumper to the underside of the vehicle.



Step 8:

Carefully pull each corner of the bumper away from the vehicle slightly as shown.



REMOVING THE STOCK INTERCOOLER

Step 9:

Disconnect the connector (highlighted in **RED**) from the passenger side of the vehicle, disconnect the homelink® receiver (located behind the emblem), then carefully guide the bumper off of the vehicle and set it aside.

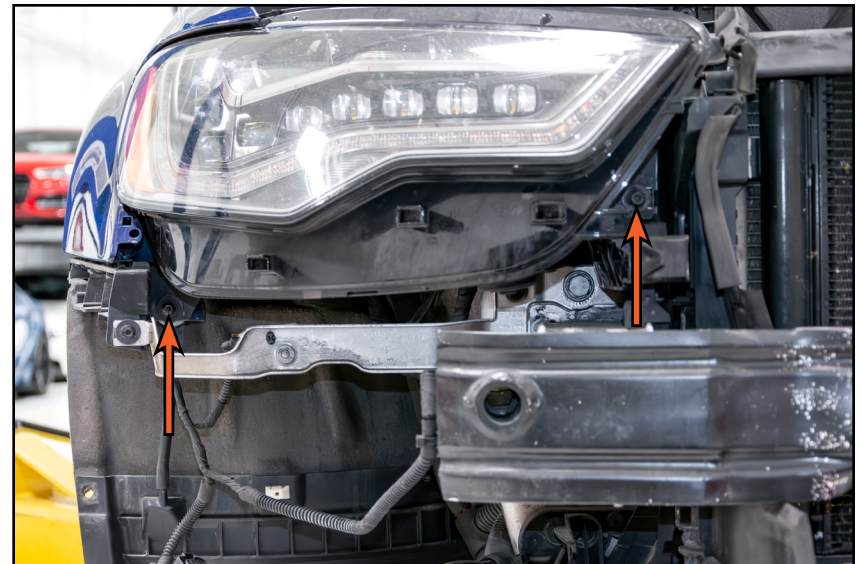


If your vehicle is equipped with fog lights, a front camera, or a night vision camera, disconnect it now.



Step 10: T30 Torx Socket & Ratchet

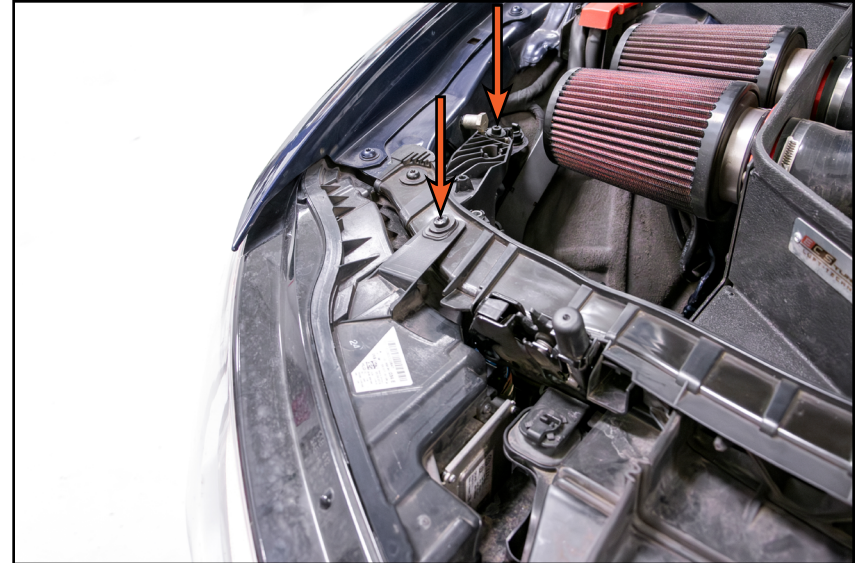
Remove the two bolts (arrows) that secure the front of each headlight to the vehicle.



REMOVING THE STOCK INTERCOOLER

Step 11: T30 Torx Socket & Ratchet

Remove the two bolts (arrows) that secure the top of each headlight to the vehicle.



Step 12: Angled Pick Tool

Pull up on the blue release latch (arrow) and disconnect the headlight connector. Remove the headlights and set them aside.



REMOVING THE STOCK INTERCOOLER

Step 13:

Remove the engine cover.



Step 14: T30 Torx Socket & Ratchet

Remove the three screws (circled in **RED**) and remove the plastic air cowl from the vehicle.



REMOVING THE STOCK INTERCOOLER

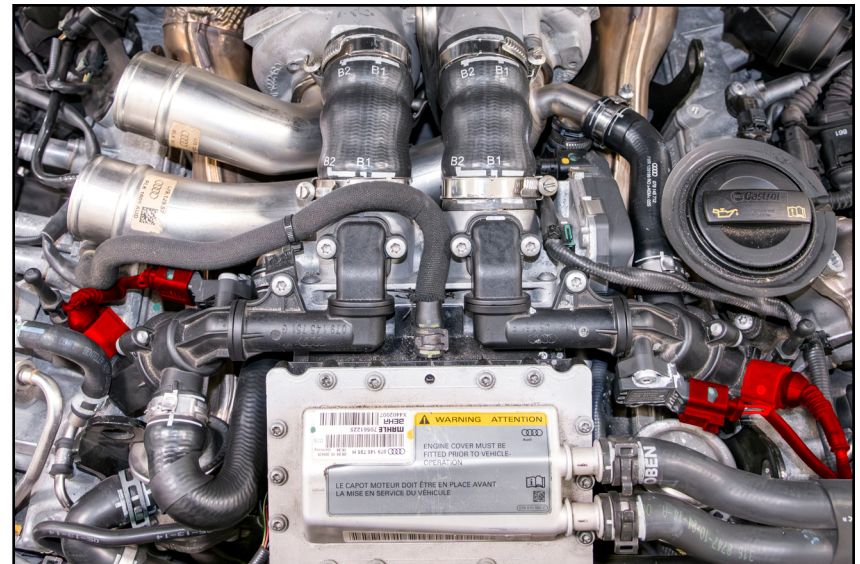
Step 15:

Remove the air scoop and intake system from the vehicle and set them aside.



Step 16:

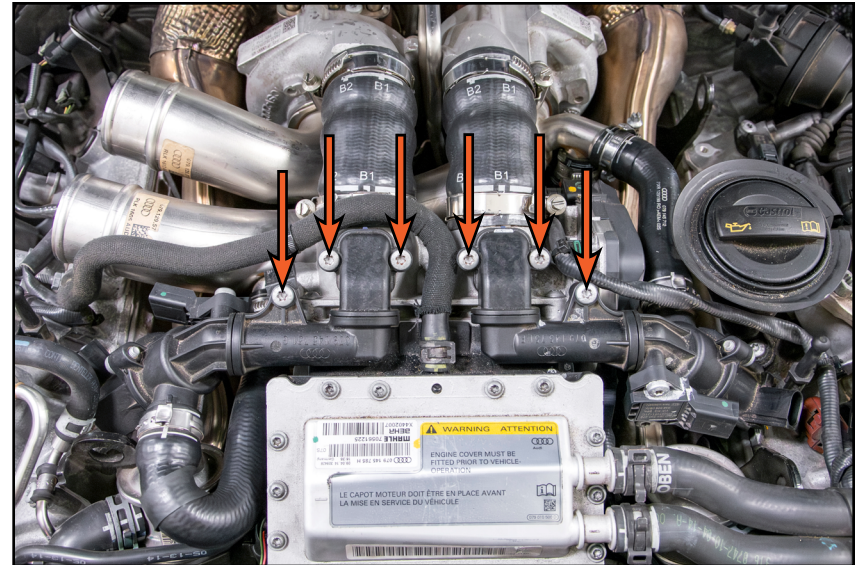
Disconnect the four connectors (highlighted in **RED**) for the diverter valves.



REMOVING THE STOCK INTERCOOLER

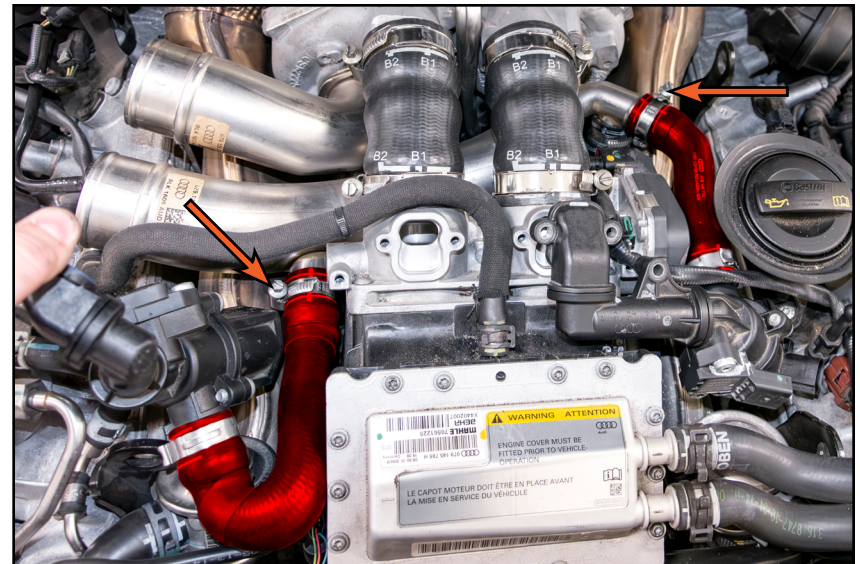
Step 17: T30 Torx Socket & Ratchet

Remove the six screws (arrows) that secure the diverter valve assemblies to the throttle body.



Step 18: 7mm Socket & Ratchet -OR- Flat Head Screwdriver

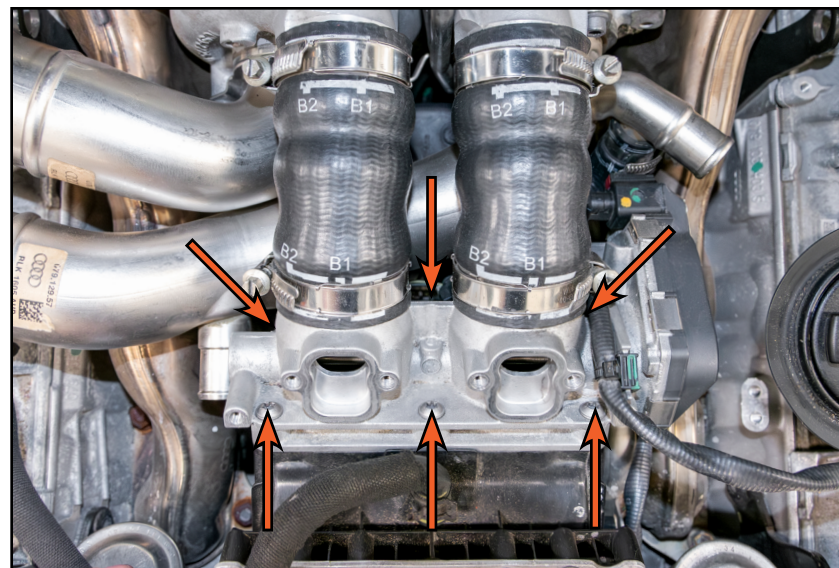
Loosen the clamps (arrows) and pull the two diverter valve hoses (highlighted in **RED**) free from the turbo inlets. Remove the diverter valve assemblies from the vehicle and set them aside.



REMOVING THE STOCK INTERCOOLER

Step 19: T30 Torx Socket & Ratchet

Remove the six screws (arrows) that secure the throttle body to the intercooler.



Step 20: 7mm Socket & Ratchet -OR- Flat Head Screwdriver

Loosen the two clamps (arrows) which secure the turbo outlet couplers to the turbos, then carefully rotate the throttle body up off the intercooler as shown.



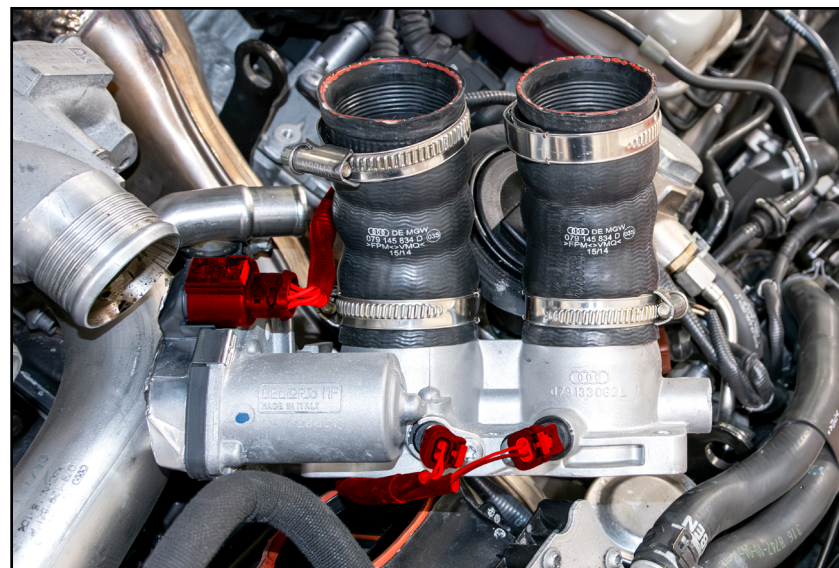
Do not attempt to fully remove the throttle bodies yet.



REMOVING THE STOCK INTERCOOLER

Step 21:

Release the locking tabs then disconnect the three connectors (highlighted in **RED**) from the underside of the throttle bodies.



Step 22: 7mm Socket & Ratchet -OR- Flat Head Screwdriver

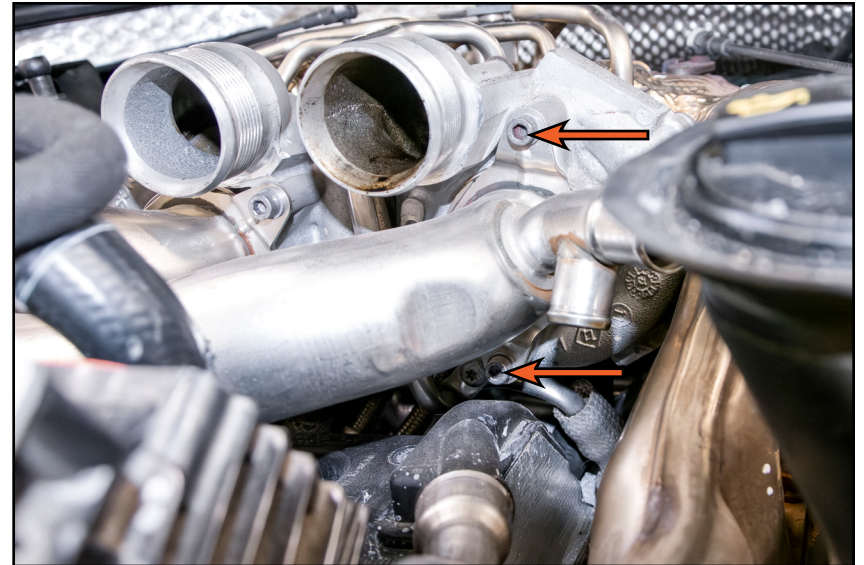
Loosen the clamp (arrow) and pull the PCV vent hose (highlighted in **RED**) off of the LH turbo inlet pipe.



REMOVING THE STOCK INTERCOOLER

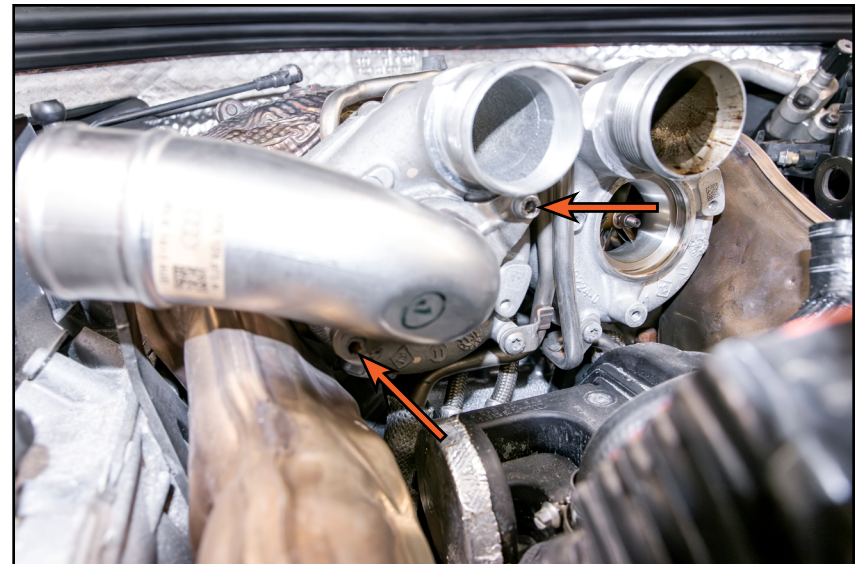
Step 23: 5mm Hex (Allen) Socket & Ratchet

Remove the two bolts (arrows) and pull the LH turbo inlet pipe out of the turbo.



Step 24: 5mm Hex (Allen) Socket & Ratchet

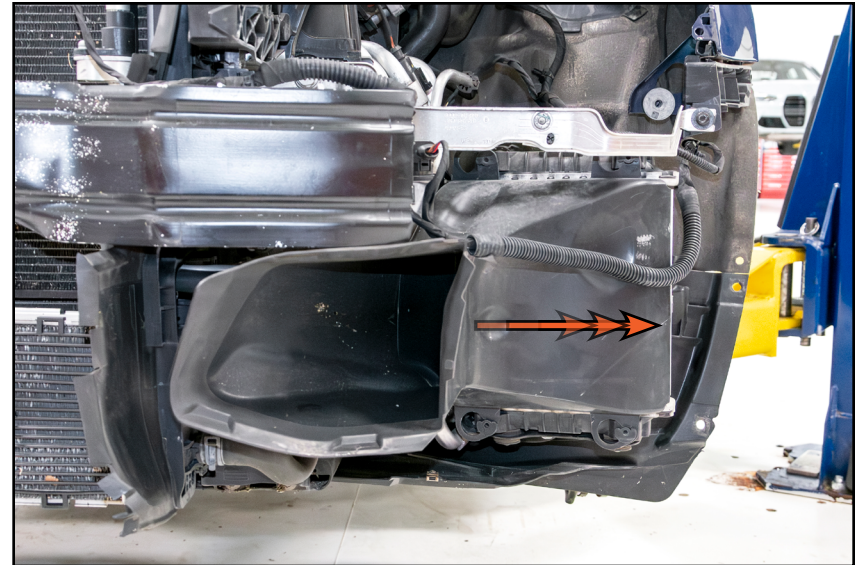
Remove the two bolts (arrows) and pull the RH turbo inlet pipe out of the turbo.



REMOVING THE STOCK INTERCOOLER

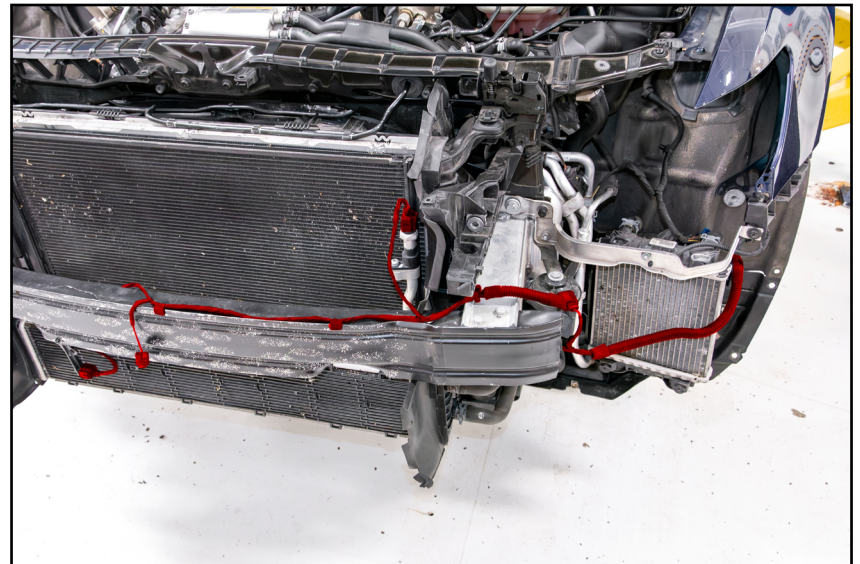
Step 25:

Remove the auxiliary radiator cowl by pulling it towards the outside of the vehicle as shown.



Step 26:

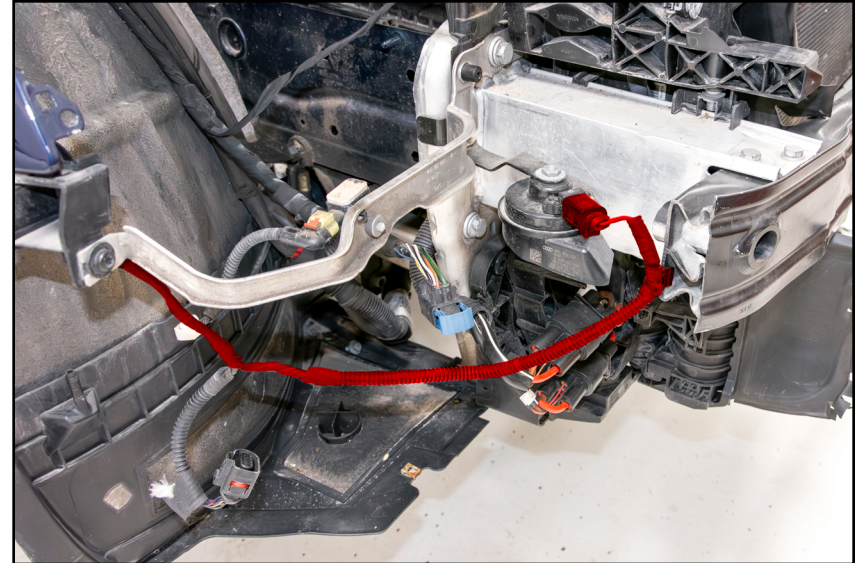
Disconnect and free up the wiring harness (highlighted in **RED**) that connects the LH horn and runs across the crash beam.



REMOVING THE STOCK INTERCOOLER

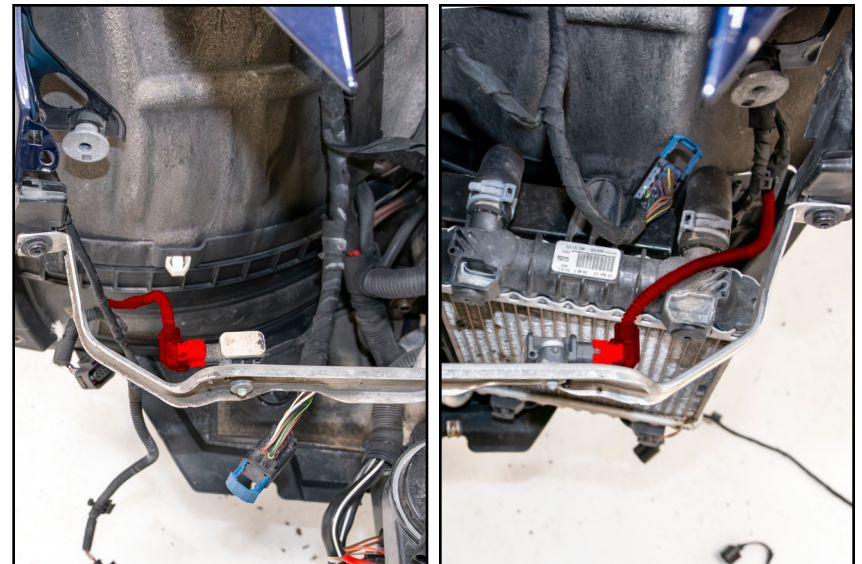
Step 27:

Disconnect the RH horn connector and free up the wiring harness (highlighted in **RED**).



Step 28:

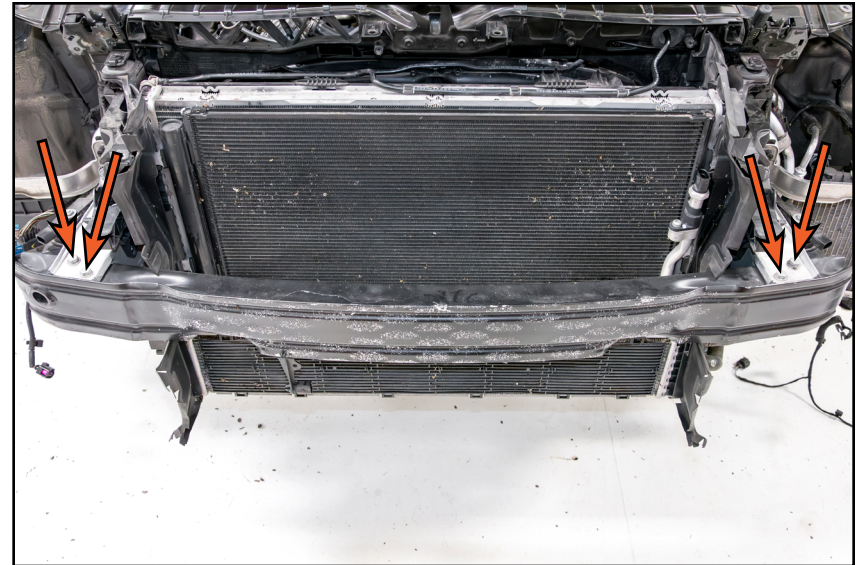
Release the locking tabs then disconnect the two impact sensor connectors (highlighted in **RED**) on either side of the crash beam.



REMOVING THE STOCK INTERCOOLER

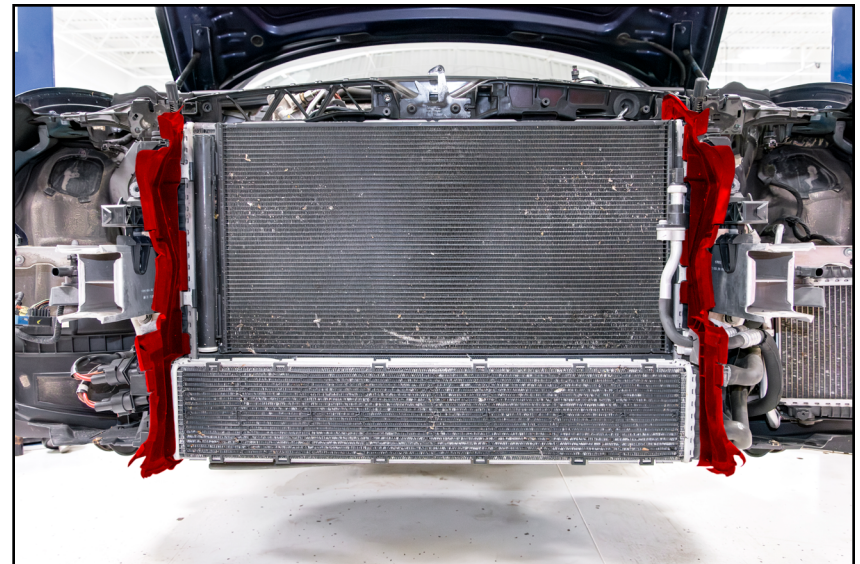
Step 29: 13mm Wrench, 13mm Socket & Ratchet

Remove the four bolts and nuts (arrows) that secure the crash beam to the vehicle, then remove the crash beam.



Step 30: Angled Pick Tool

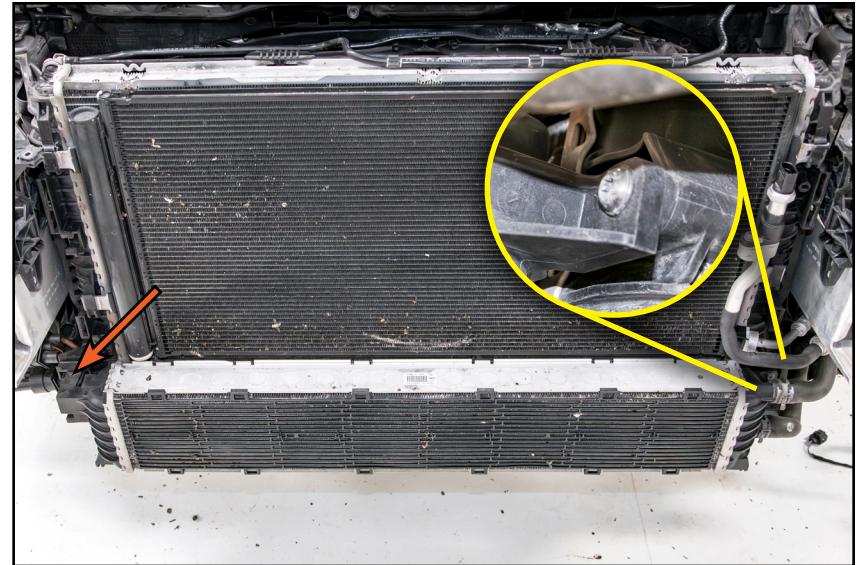
Remove the two plastic air shrouds (highlighted in **RED**) which are clipped into the front of the core support.



REMOVING THE STOCK INTERCOOLER

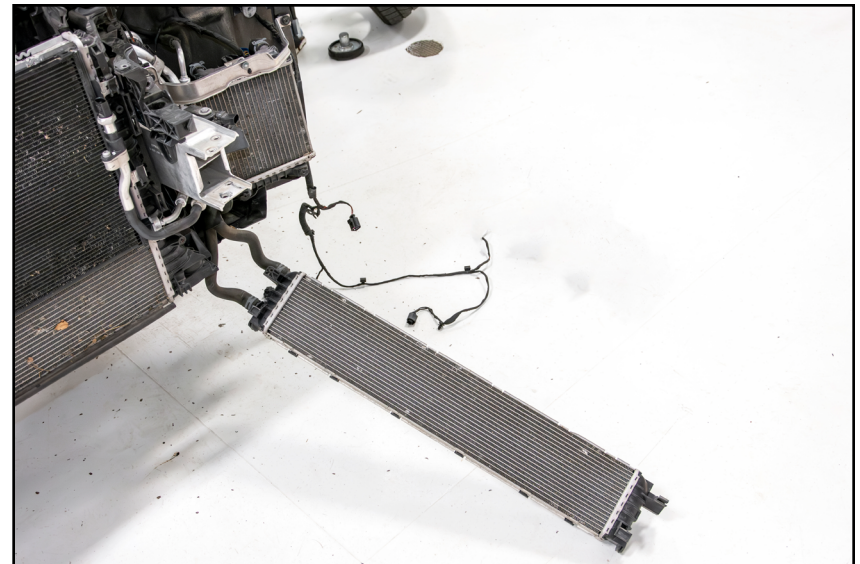
Step 31: Flat Head Screwdriver, T30 Torx Socket & Ratchet

Remove the screw (inset photo) and depress the locking tab (arrow) to release the intercooler heat exchanger from the core support.



Step 32:

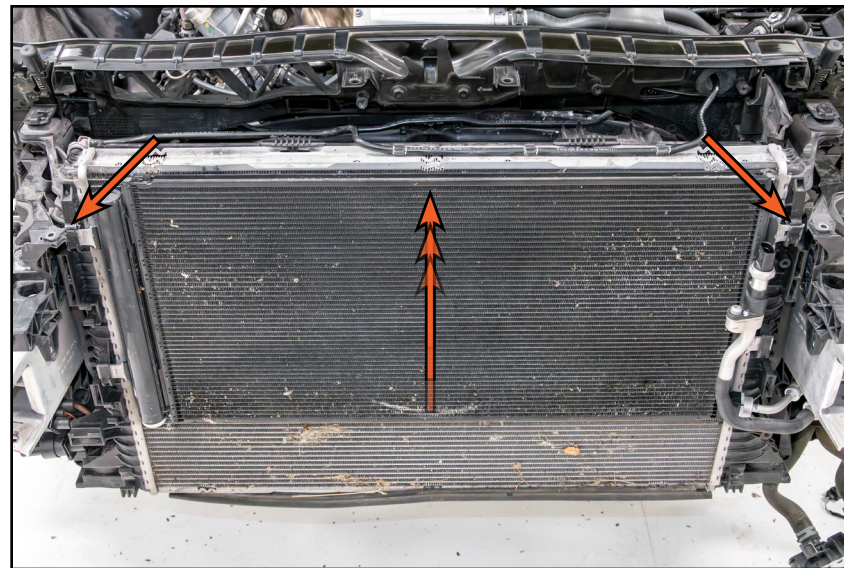
Carefully pivot the heat exchanger out of the way as shown.



REMOVING THE STOCK INTERCOOLER

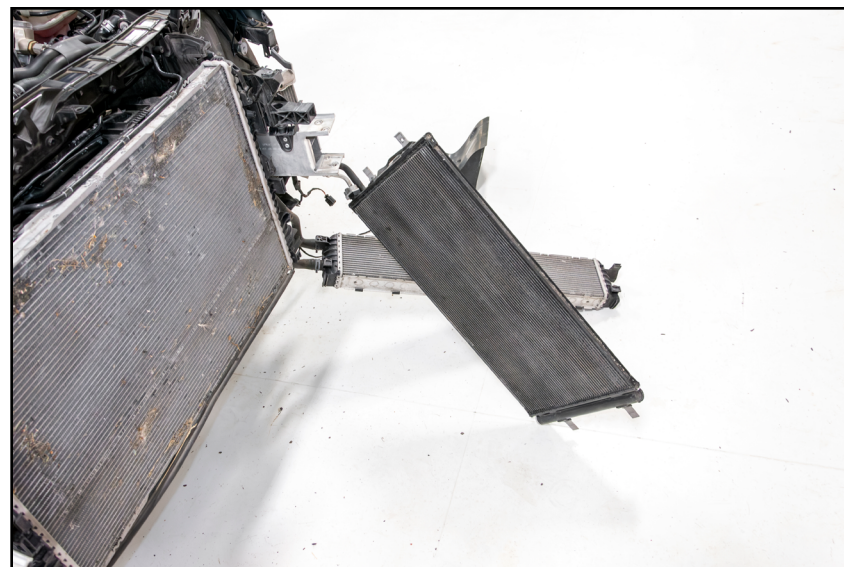
Step 33: Flat Head Screwdriver

Depress the two locking tabs (arrows) and lift up to release the A/C condenser from the core support.



Step 34:

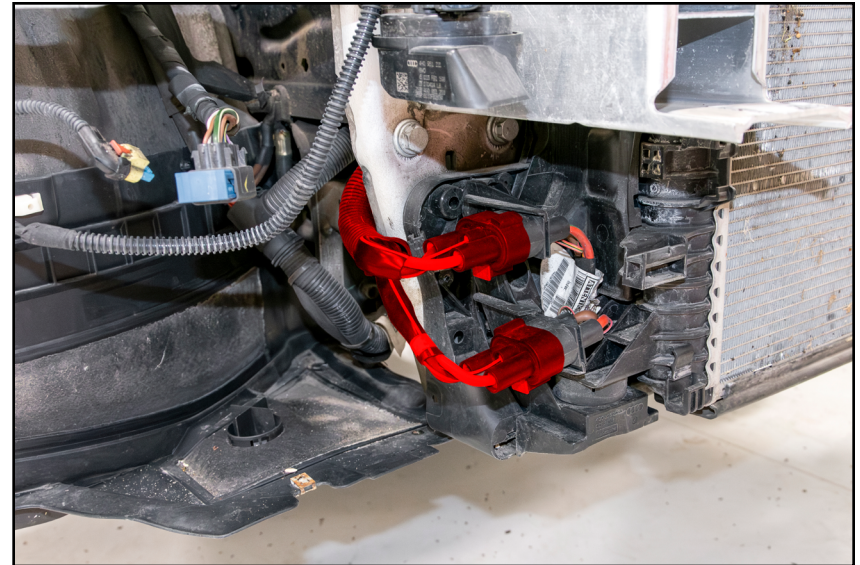
Carefully pivot the condenser out of the way as shown being extremely careful not to bend or stress any of the hard A/C lines.



REMOVING THE STOCK INTERCOOLER

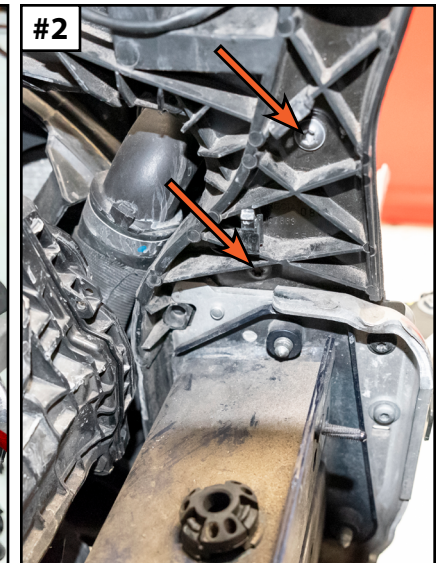
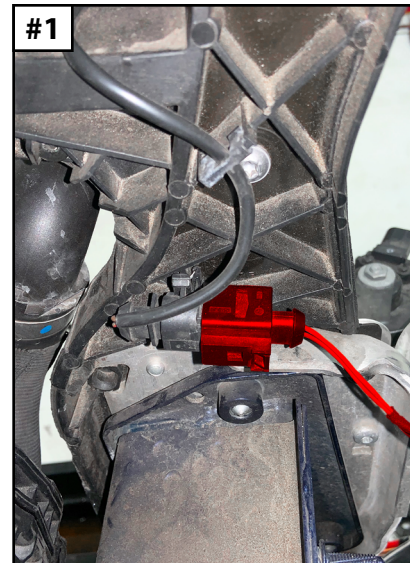
Step 35:

Release the locking tabs then disconnect the two fan connectors (highlighted in **RED**).



Step 36: T30 Torx Socket & Ratchet

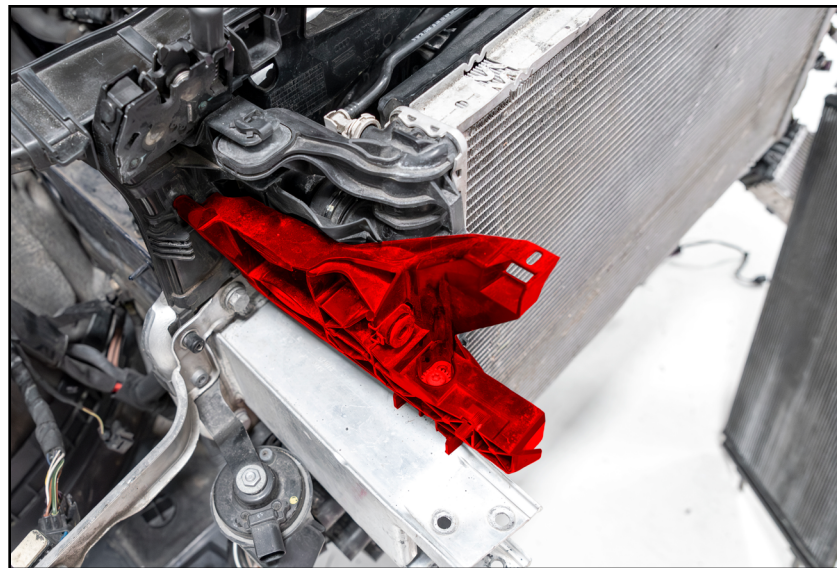
Disconnect the hood latch sensor connector (highlighted in **RED** in **photo #2**) located behind the core support on the RH side, then remove the two screws (arrows in **photo #2**) that secure the RH headlight bracket in place.



REMOVING THE STOCK INTERCOOLER

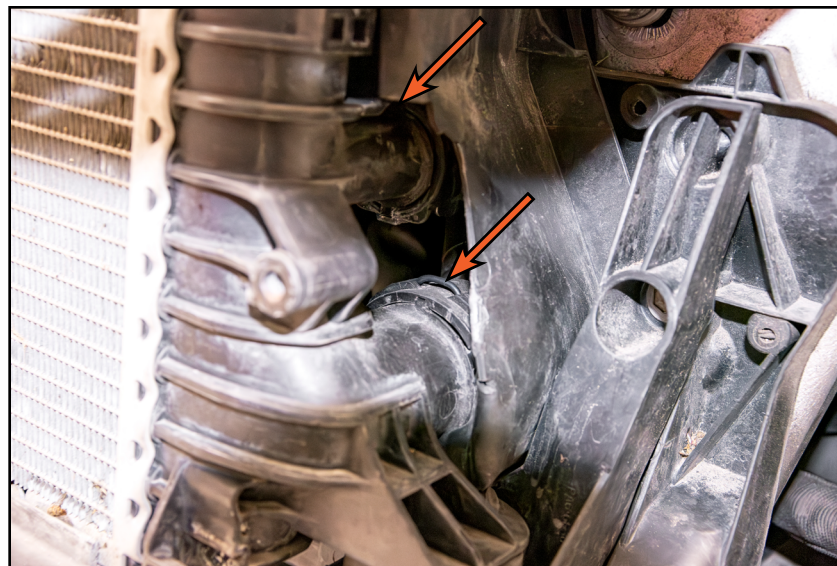
Step 37:

Remove the RH headlight bracket (highlighted in **RED**) and set it aside.



Step 38: Angled Pick Tool

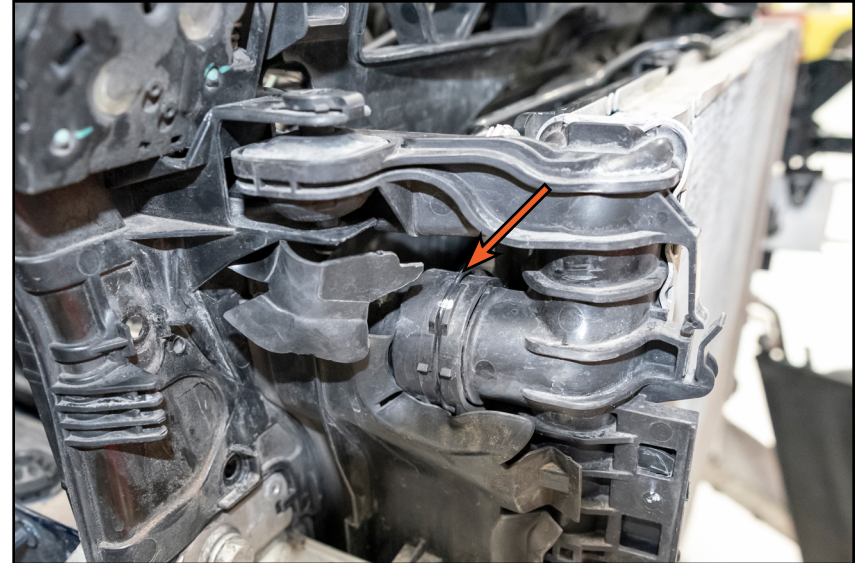
Place a large drip tray below the car, pull up to release the clips (arrows), and pull the two lower radiator hoses off of the radiator, draining the coolant.



REMOVING THE STOCK INTERCOOLER

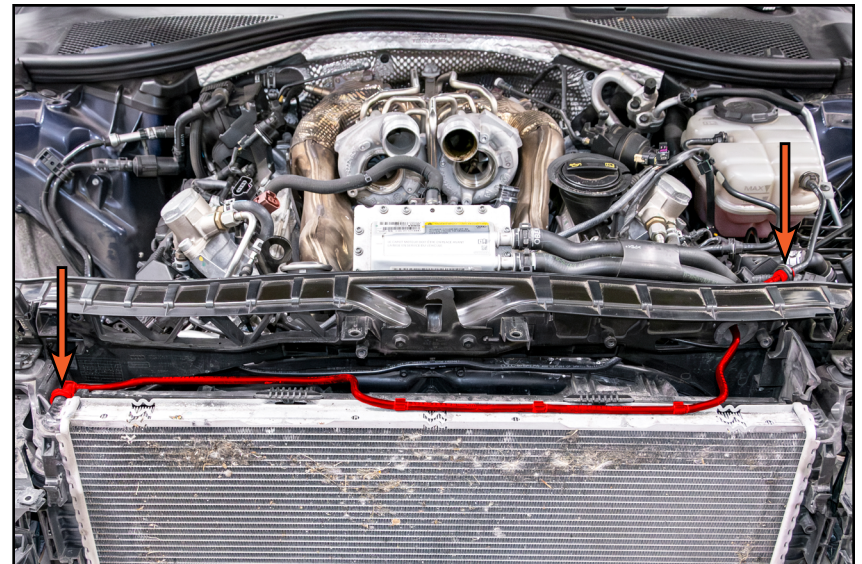
Step 39: Angled Pick Tool

Pull up to release the clip (arrow), then pull the upper radiator hose off of the radiator.



Step 40: Angled Pick Tool

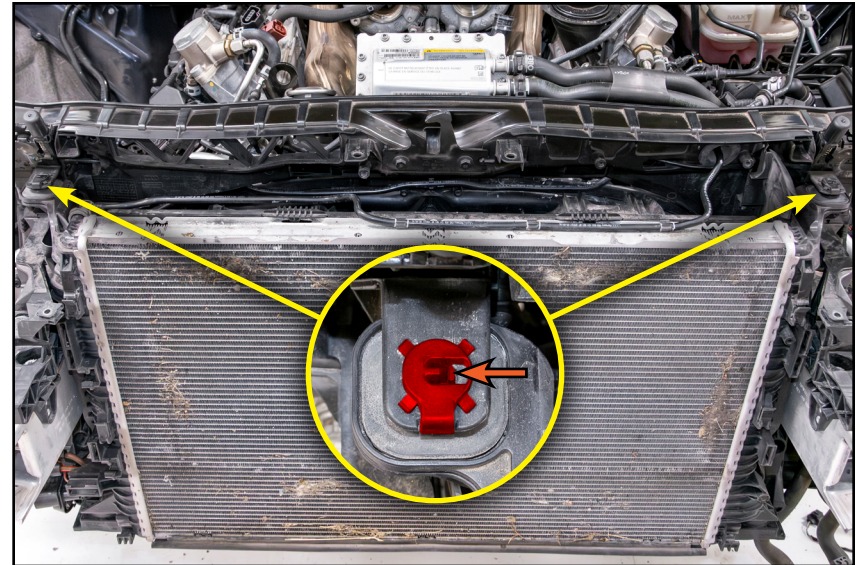
Pull up on the clips (arrows) and pull the coolant vent tube (highlighted in **RED**) free from the radiator and front expansion tank tube.



REMOVING THE STOCK INTERCOOLER

Step 41: Angled Pick Tool

Release the retaining tab (arrow in inset photo) and pull the two upper radiator mounting posts (highlighted in **RED** in inset photo) out of the upper radiator bushings.



Step 42: T20 Torx Socket & Ratchet

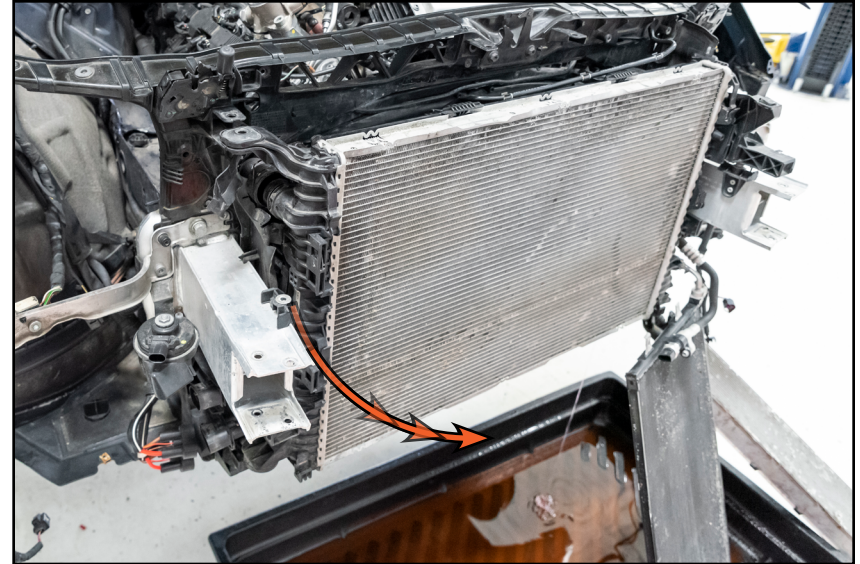
Remove the two vertical screws that secure the lower radiator mounting posts to the core support.



REMOVING THE STOCK INTERCOOLER

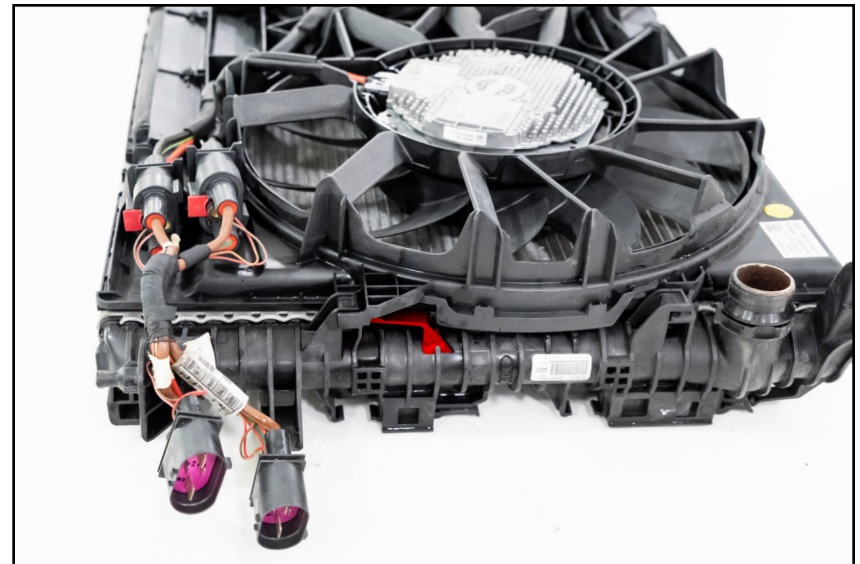
Step 43:

Carefully swing the RH side of the radiator out from the core support as shown, then remove the radiator assembly and set it aside.



Step 44: Flat Head Screwdriver

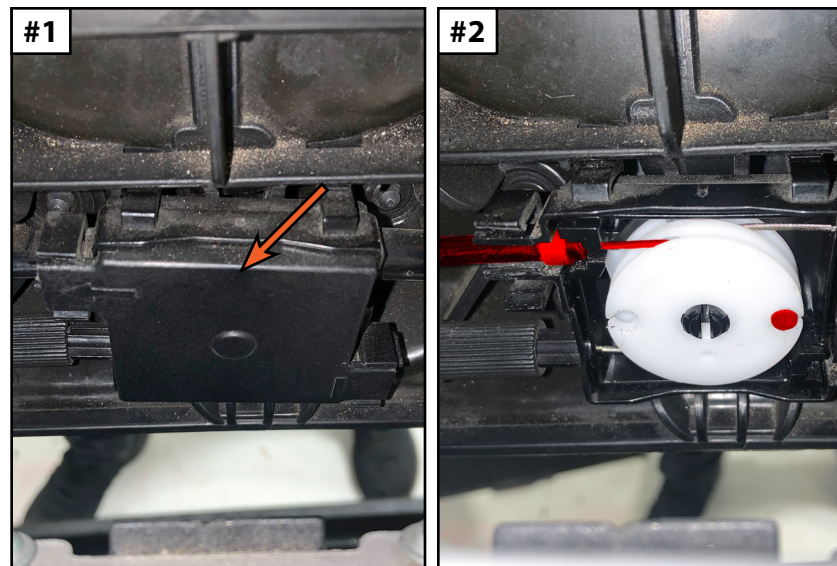
Depress the retaining tab (highlighted in **RED**) on either side of the radiator while you slide the fan shroud upward to free it from the radiator.



REMOVING THE STOCK INTERCOOLER

Step 45: Angled Pick Tool

Carefully pry off the plastic cover (arrow in **photo #1**) and pull the hood release cable (highlighted in **RED** in **photo #2**) free from the latch assembly as shown.



Step 46: T30 Torx, 16mm Socket & Ratchet

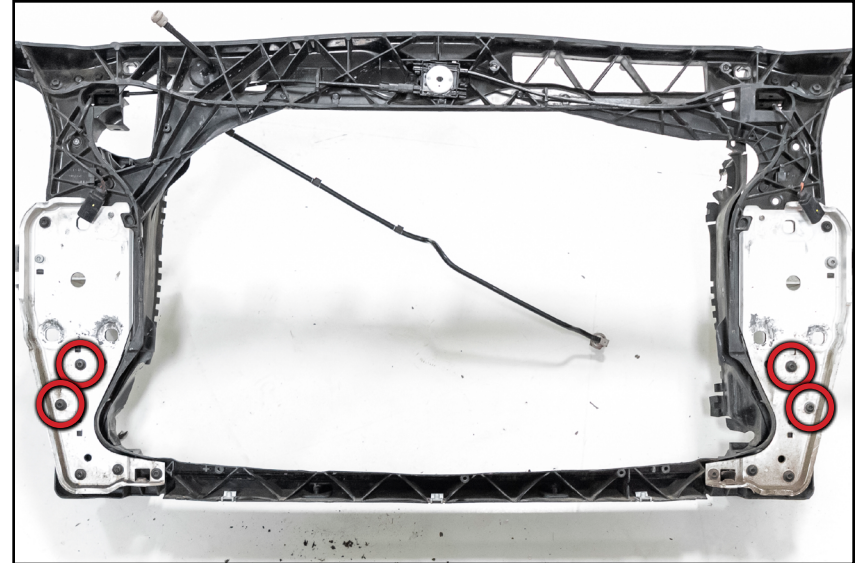
Remove the screw (arrow) that secures the core support brace to the fender on either side. Support the core support and remove the three bolts (circled in **RED**) that secure it to the frame rail on either side, then carefully remove the core support from the vehicle.



REMOVING THE STOCK INTERCOOLER

Step 47: T30 Torx Socket & Ratchet

Remove the four screws (circled in **RED**) that secure the lower radiator mounts to the core support from the back.



Step 48: 8mm Socket & Ratchet

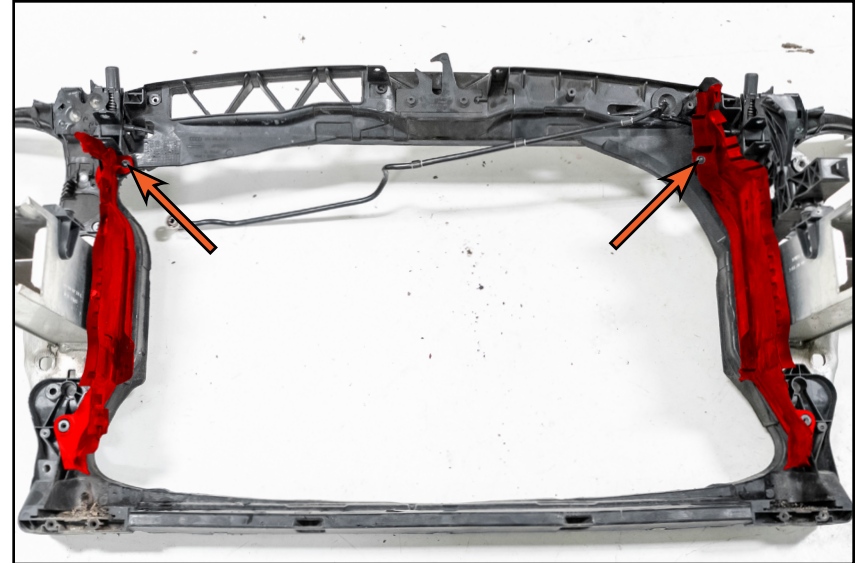
Remove the six screws (arrows) and pull the lower radiator mounts (highlighted in **RED**) free from the front of the core support.



REMOVING THE STOCK INTERCOOLER

Step 49: T30 Torx Socket & Ratchet

Remove the screws (arrows) and remove the core support air shrouds (highlighted in **RED**).



Step 50: T30 Torx, 8mm Socket & Ratchet

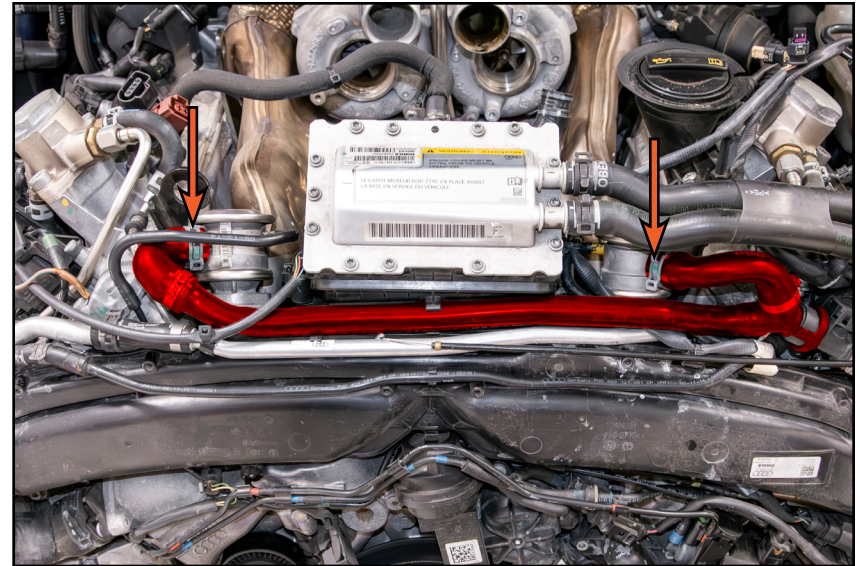
Reinstall the lower radiator mounts (highlighted in **GREEN**), tightening the screws until snug.



REMOVING THE STOCK INTERCOOLER

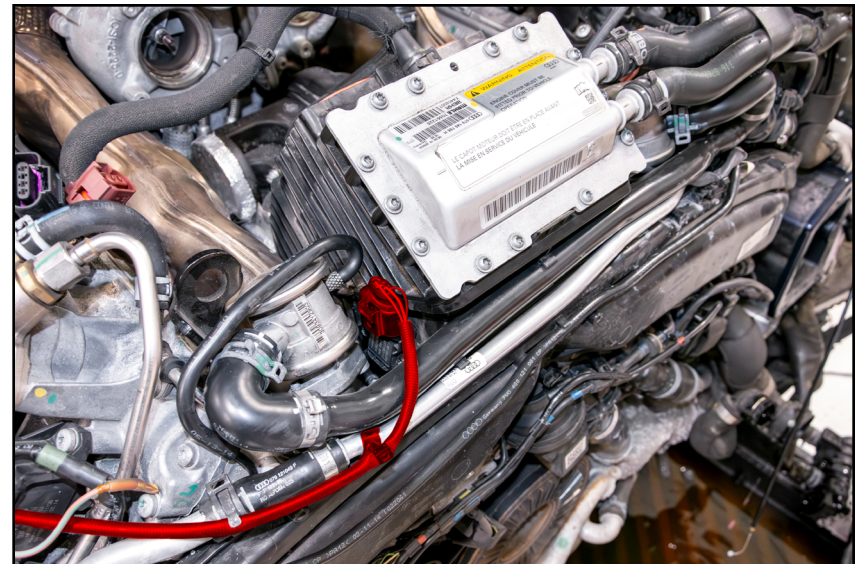
Step 51: Hose Clamp Pliers

Compress the hose clamps (arrows) and pull the secondary air injection pipe (highlighted in **RED**) off of the EGR valves.



Step 52:

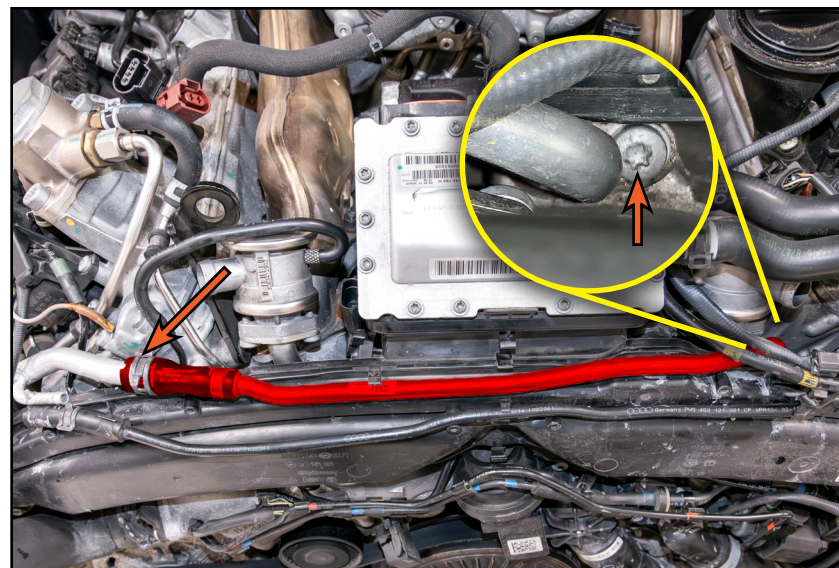
Disconnect the MAP sensor connector (highlighted in **RED**) on the RH side of the intercooler.



REMOVING THE STOCK INTERCOOLER

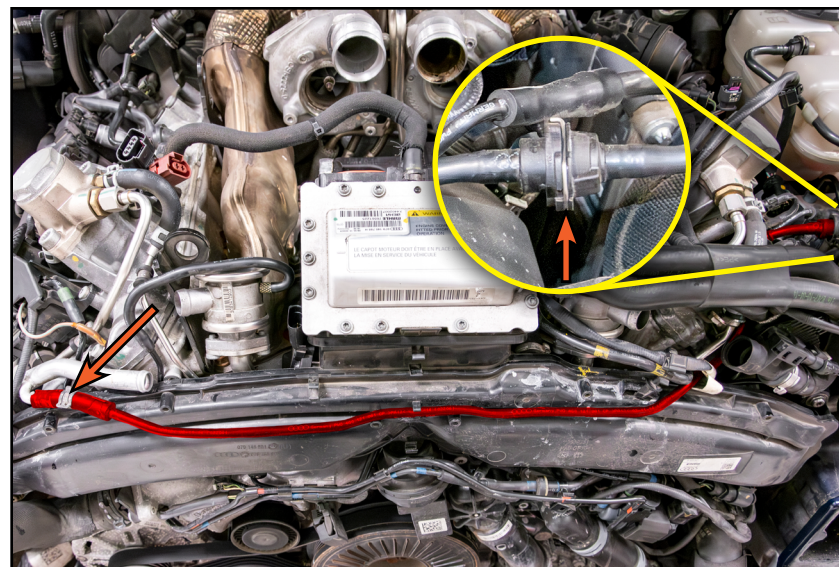
Step 53: Hose Clamp Pliers, T30 Torx Socket & Ratchet

Remove the screw (arrow in inset photo), compress the hose clamp (arrow), then pull the hard coolant pipe (highlighted in **RED**) out of the top of the engine.



Step 54: Angled Pick, Hose Clamp Pliers

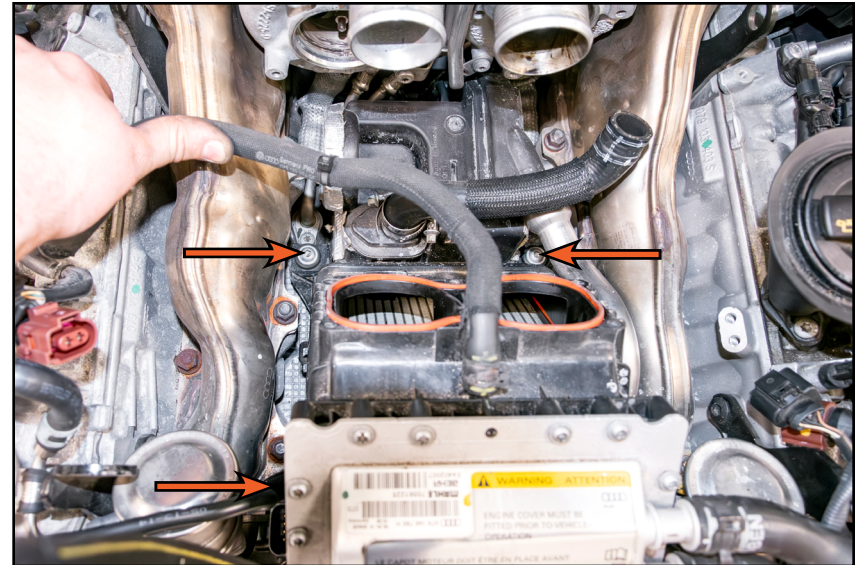
Compress the hose clamp (arrow), then pull up on the clip (arrow in inset photo) and pull the coolant vent tube (highlighted in **RED**) free from the rear expansion tank tube. Rotate the tube as needed to guide it free from the engine.



REMOVING THE STOCK INTERCOOLER

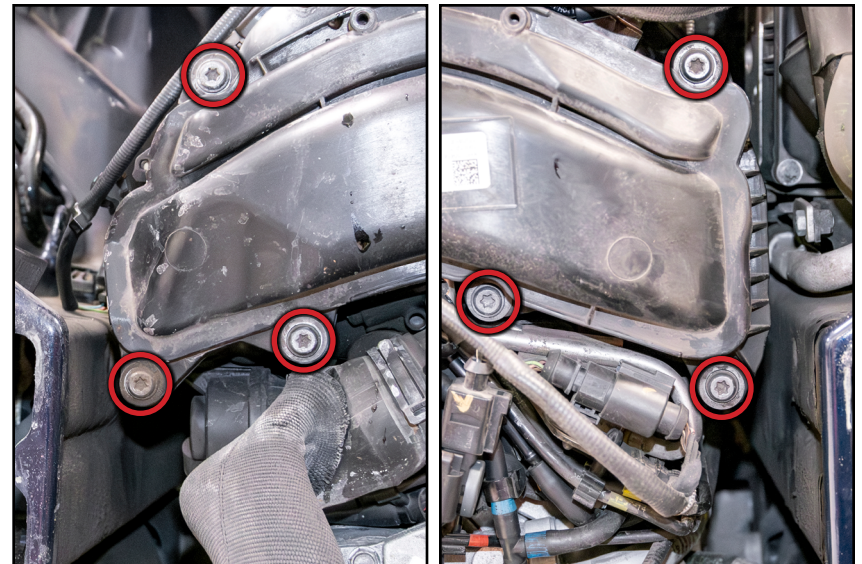
Step 55: 5mm Hex (Allen) Socket & Ratchet

Loosen and remove the three bolts (arrows) that secure the intercooler and PCV module to the top of the engine.



Step 56: T30 Torx Socket & Ratchet

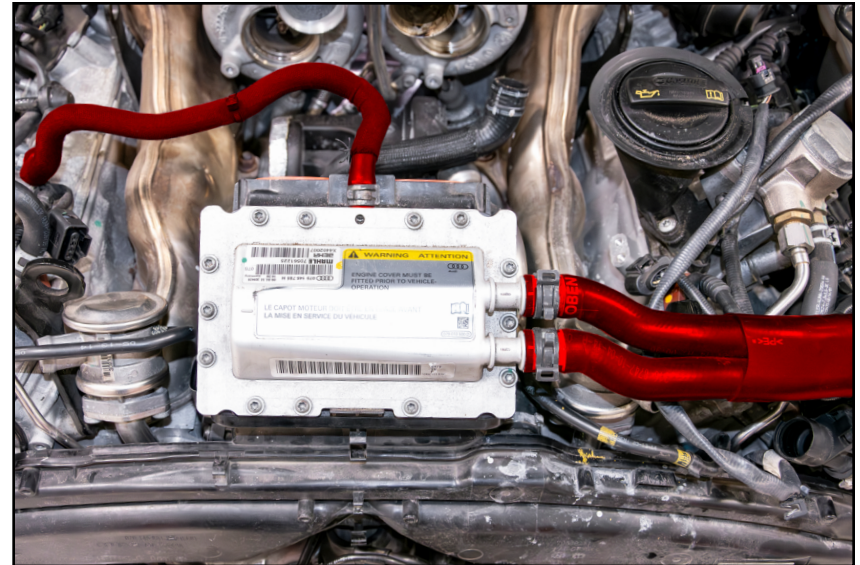
Fully loosen the six bolts (circled in **RED**) that secure the intercooler to the intake manifolds at the front of the engine.



REMOVING THE STOCK INTERCOOLER

Step 57: Hose Clamp Pliers

Remove the vent and two coolant hoses (highlighted in **RED**) from the intercooler.

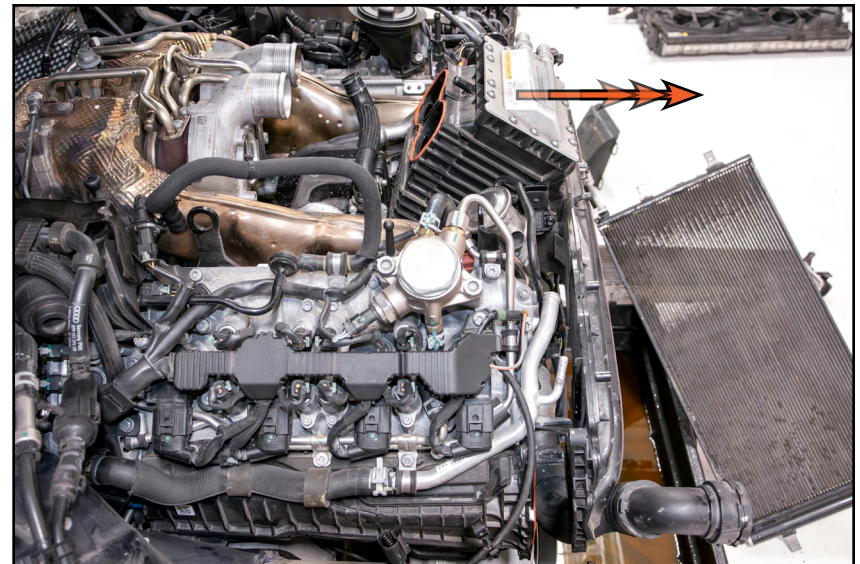


Step 58:

Pull the intercooler assembly towards the front of the vehicle to pop the PCV free from the engine, then lift the intercooler up and out of the vehicle.



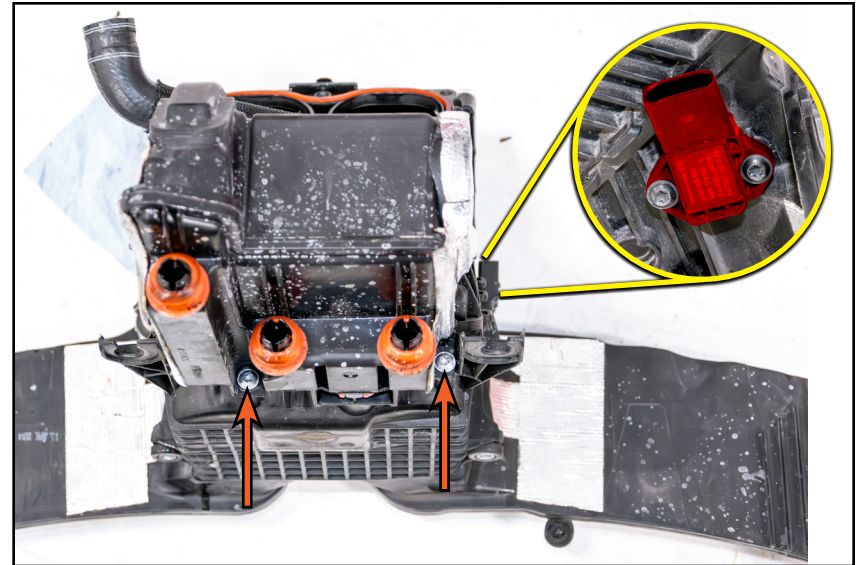
Closely inspect the intercooler to ensure there are no hoses, lines, or wires in the way of the intercooler before attempting to remove it.



REMOVING THE STOCK INTERCOOLER

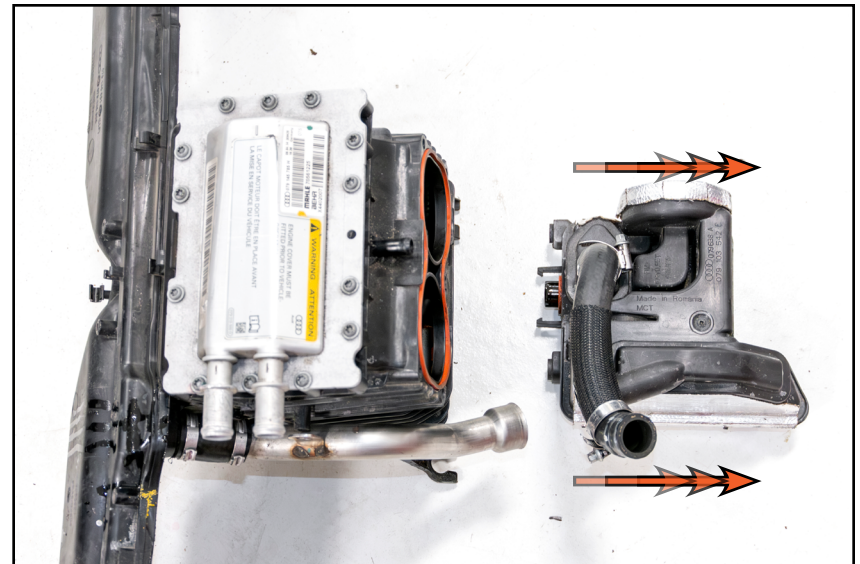
Step 59: T25, T30 Torx Socket & Ratchet

Remove the two screws and pull the MAP sensor (highlighted in **RED** in inset photo) out of the intercooler and set it aside. Remove the two screws (arrows) that secure the PCV module to the intercooler.



Step 60:

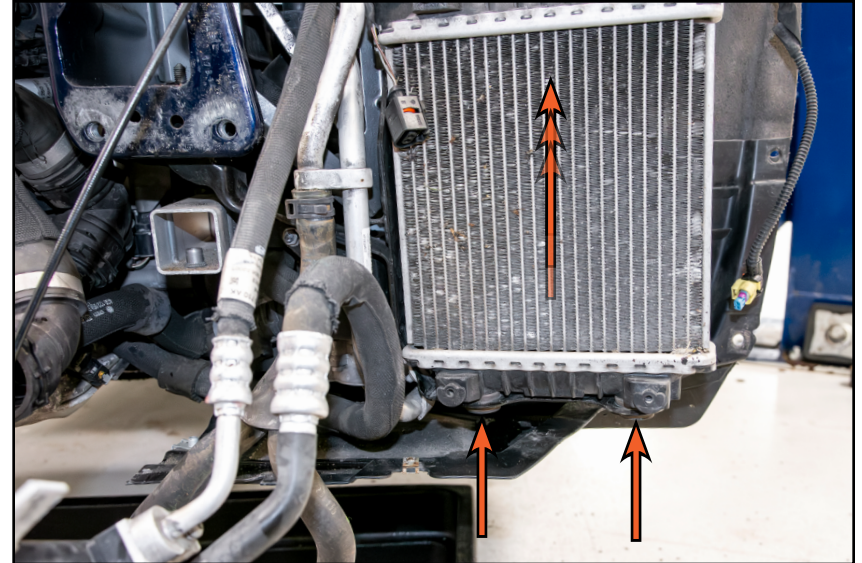
Pull the PCV module off of the intercooler as shown.



REROUTING THE COOLING SYSTEM

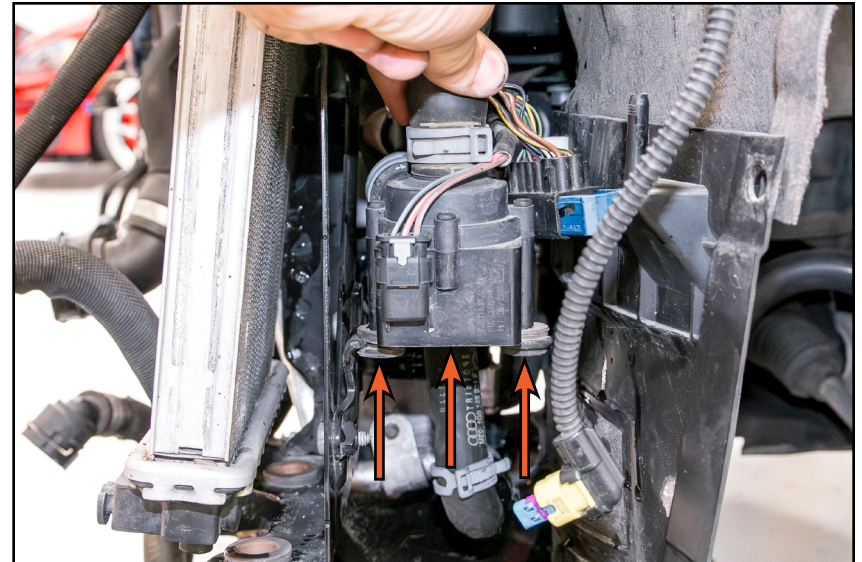
Step 1: T20 Torx Socket & Ratchet

Remove the two screws (arrows) that secure the lower auxiliary radiator mounts to the bracket, then lift up to pop the radiator free.



Step 2: T10 Torx Socket & Ratchet

Remove the three screws (arrows) that secure the auxiliary coolant pump to the bracket and move it out of the way.



REROUTING THE COOLING SYSTEM

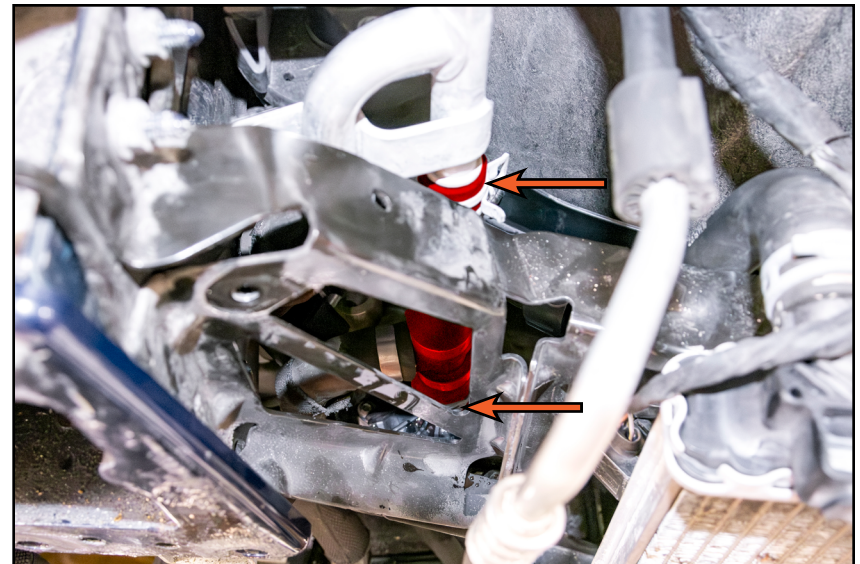
Step 3: Hose Clamp Pliers

Compress the hose clamp (arrow) and pull the coolant hose (highlighted in **RED**) off of the side of the main coolant pump.



Step 4: Hose Clamp Pliers

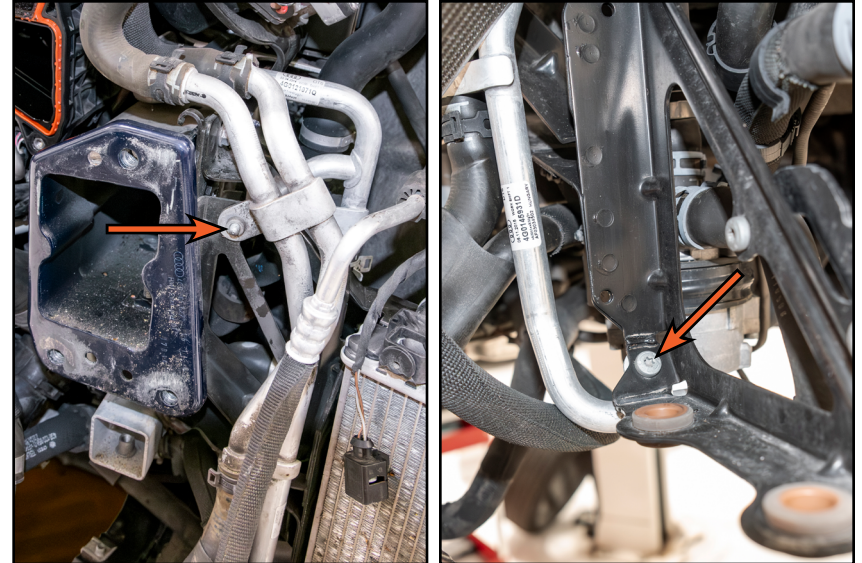
Compress the two hose clamps (arrows) and pull the coolant hose (highlighted in **RED**) off of the top of the main coolant pump.



REROUTING THE COOLING SYSTEM

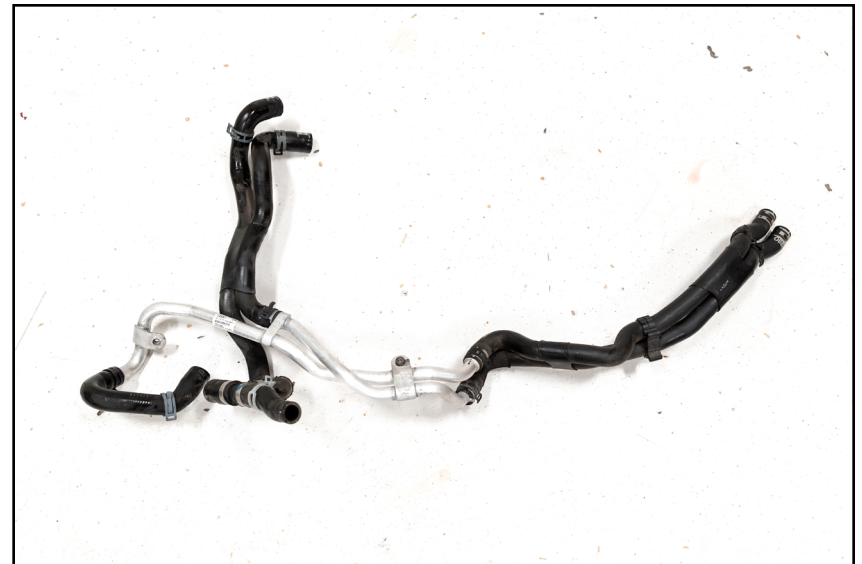
Step 5: T30 Torx Socket & Ratchet

Remove the two bolts (arrows) that secure the heat exchanger hard coolant lines to the auxiliary radiator bracket.



Step 6:

Pull the heat exchanger, hard lines, and hoses free from the vehicle (shown here without the heat exchanger).



REROUTING THE COOLING SYSTEM

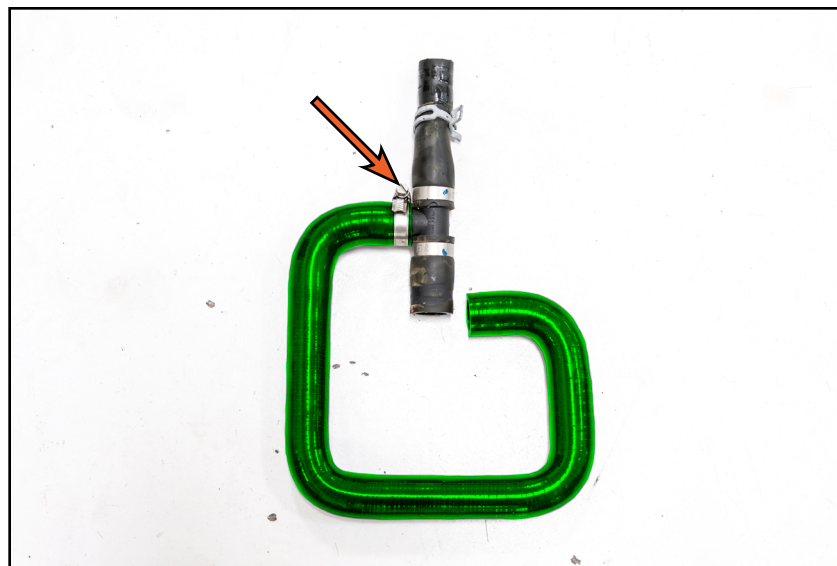
Step 7: Die Grinder w/ Cut-off Wheel

Cut the band clamp (arrow) and pull the hose (highlighted in **RED**) off of the upper coolant pump hose tee fitting.



Step 8: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Install the new provided intercooler delete hose (highlighted in **GREEN**) onto the tee fitting as shown, then fully tighten the clamp (arrow) until snug.



REROUTING THE COOLING SYSTEM

Step 9: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Reinstall the upper coolant pump hose onto the top of the main coolant pump, then install the other end of the intercooler delete hose (highlighted in **GREEN**) onto the side of the coolant pump and tighten the clamp (arrow) until snug.



Step 10: T10, T20 Torx Socket & Ratchet

Reinstall the auxiliary radiator and pump as shown.



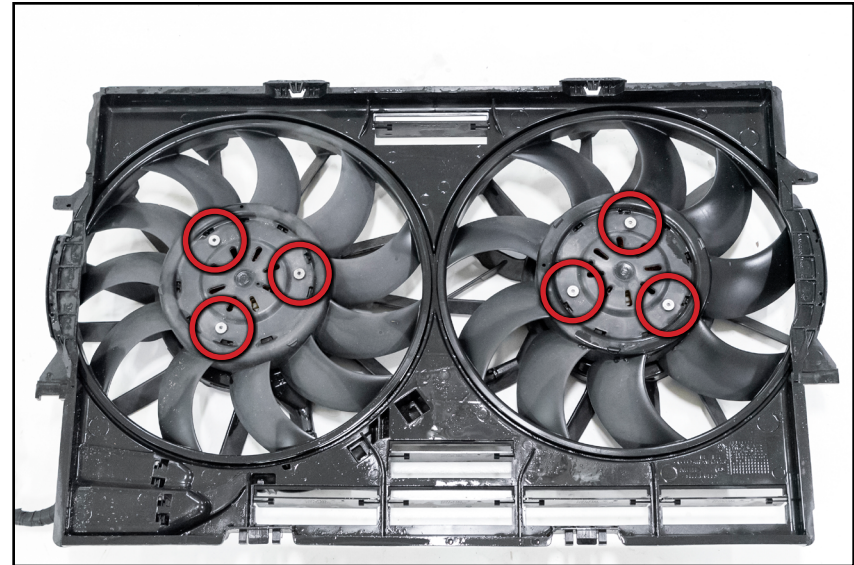
INSTALLING THE NEW FAN SHROUD

Step 1: T20 Torx Socket & Ratchet

Remove the six screws (circled in **RED**) and pull the fan blades off of the fan motors.



The fan blades and motors are side-specific and must be installed onto the new ECS fan shroud in the same orientation as they were removed.



Step 2: T20 Torx Socket & Ratchet

Remove the eight screws (circled in **RED**) and pull the fan motors and harnesses free from the OE fan shroud.



INSTALLING THE NEW FAN SHROUD

Step 3: T20 Torx Socket & Torque Wrench

Transfer the fan motors to the new fan shroud and reinstall the screws (circled in **YELLOW**) to secure them into place. Torque the screws to 3.5 Nm (31 In-lbs).



Step 4: T20 Torx Socket & Torque Wrench

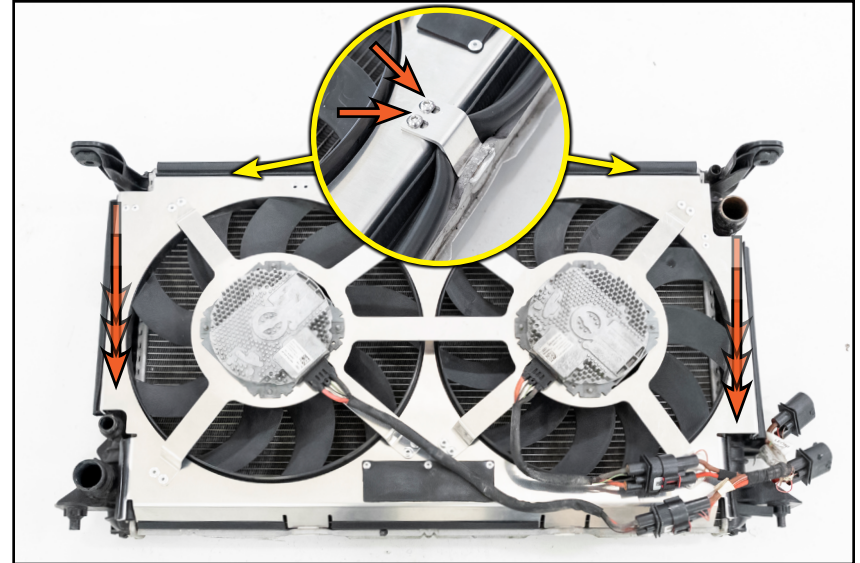
Transfer the fan blades to the new fan shroud and reinstall the screws (circled in **YELLOW**) to secure them into place. Torque the screws to 5 Nm (44 In-lbs).



INSTALLING THE NEW FAN SHROUD

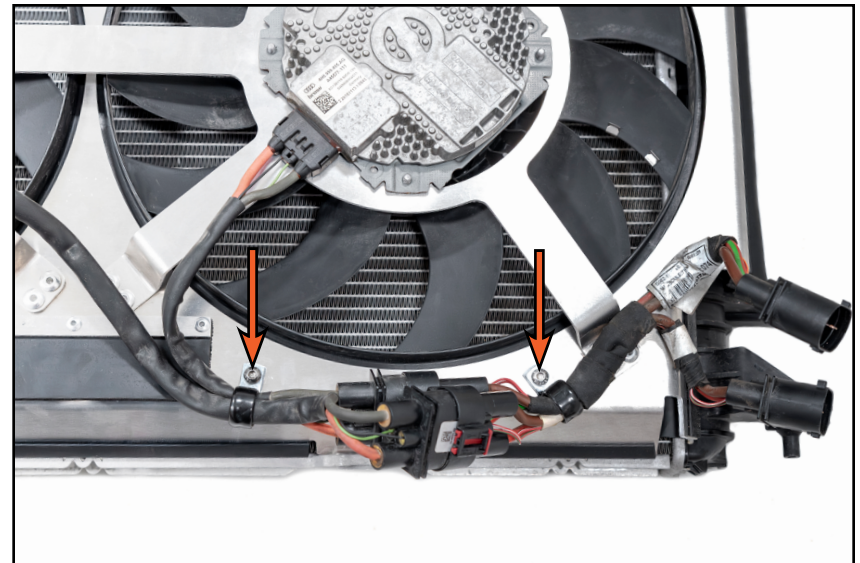
Step 5: 4mm Hex (Allen) Socket & Ratchet

Lay the new fan shroud onto the back of the radiator and slide it downward to engage the side and lower mounting tabs into the slots in the radiator. Install the upper mounting brackets into the slots in the top of the radiator then install the screws (arrows in inset photo) to secure the fan shroud assembly to the radiator.



Step 6: 4mm Hex (Allen) Socket & Ratchet

Secure the fan harnesses to the back of the shroud using the provided cable clips and screws (arrows).



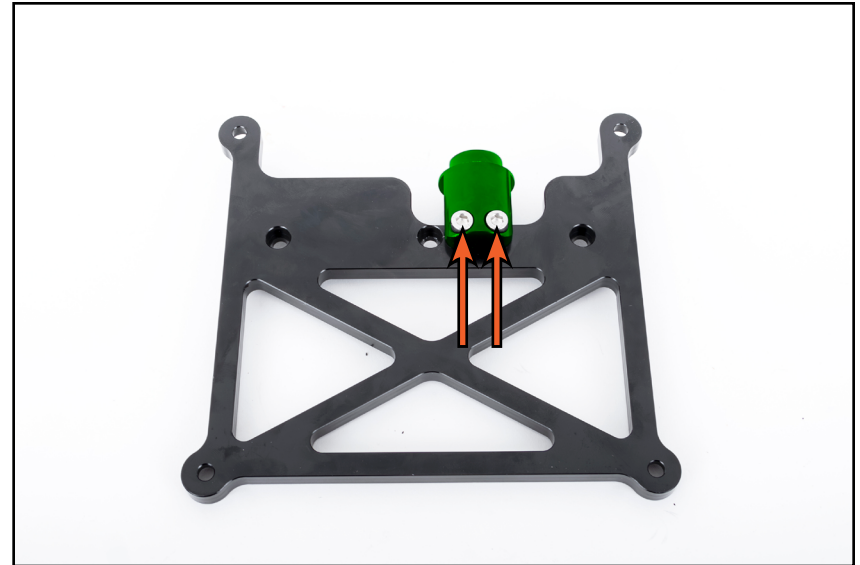
INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 1: 5mm Hex (Allen) Socket & Ratchet

Install the provided PCV module adapter (highlighted in **GREEN**) onto the underside of the lower throttle body bracket using the provided M6 x 16mm screws (arrows), tightening until snug.

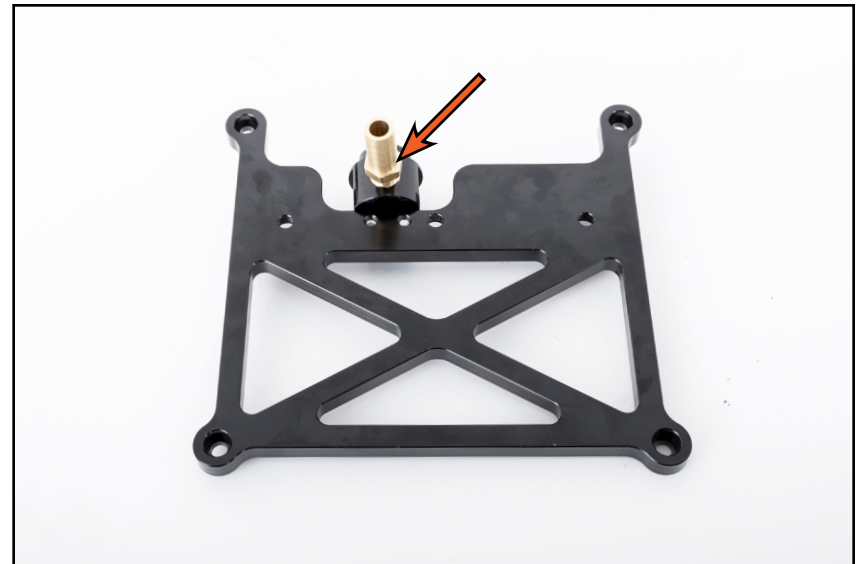


Hardware located in pocket labeled "1" in the provided hardware kit.



Step 2: 16mm Socket & Ratchet

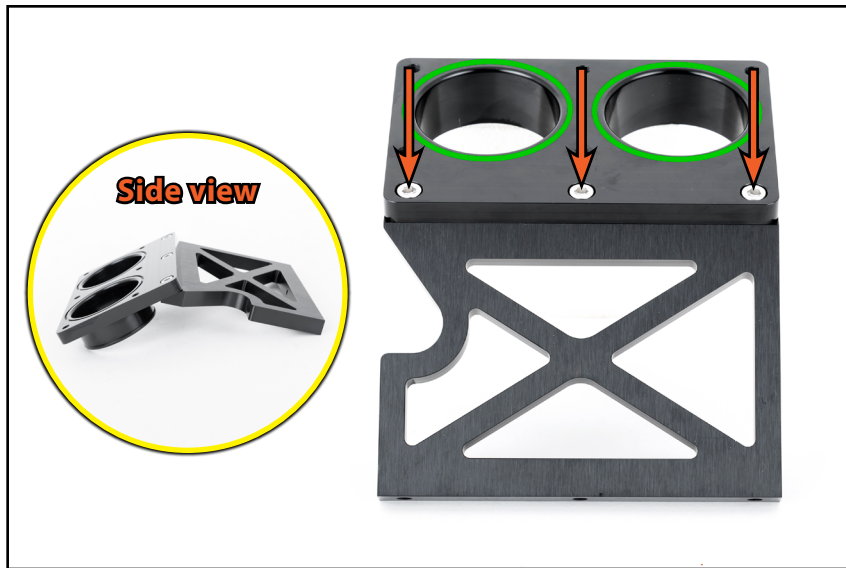
Install the provided barbed fitting (arrow) into the PCV adapter and tighten it until snug.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

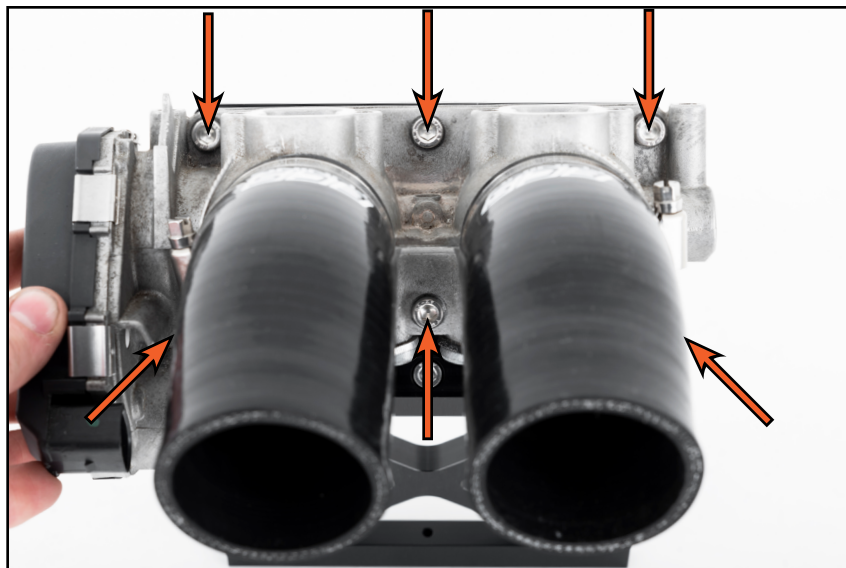
Step 3: 5mm Hex (Allen) Socket & Ratchet

Secure the throttle body bracket to the upright bracket as shown using the three provided M6 x 12mm screws (arrows), tightening until snug. Install the two provided o-rings into the grooves (highlighted in **GREEN**) in the throttle body bracket as shown.



Step 4: 5mm Hex (Allen) Socket & Ratchet

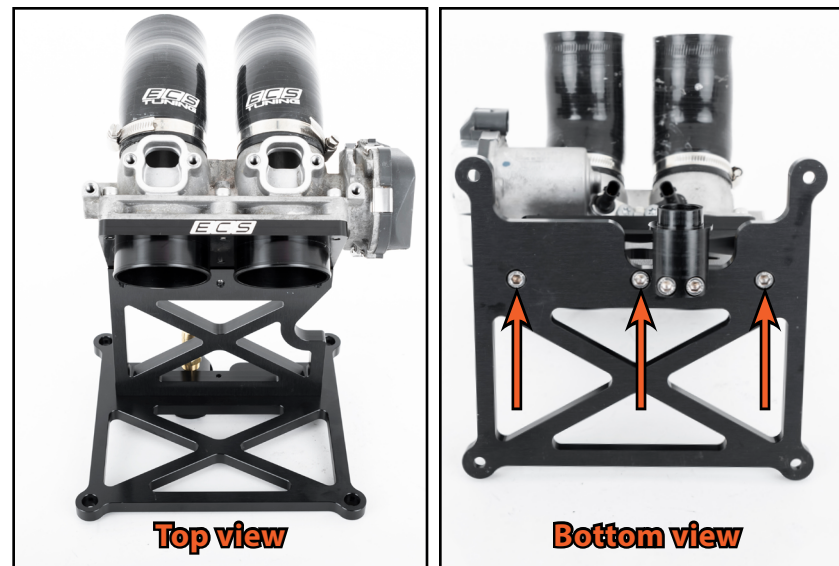
Install the throttle body onto the throttle body bracket using the six provided M6 x 25mm screws (arrows), tightening until snug.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 5: 5mm Hex (Allen) Socket & Ratchet

Secure the upright bracket to the base bracket using the three provided M6 x 16mm screws (arrows), tightening until snug.



Step 6: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Install the small provided PCV hose (highlighted in **GREEN**) through the opening in the vertical bracket and onto the barbed fitting, then tighten the clamp until snug. Slide the check valve (arrow) into the other end of the hose and tighten the clamp until snug.



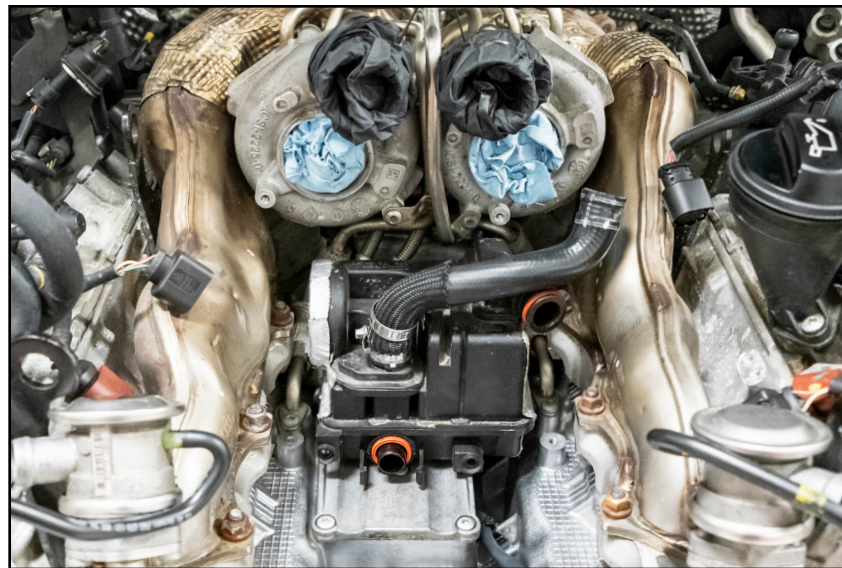
Confirm the orientation of the check valve; The white side should be inserted into the hose, leaving the black side facing towards the front of vehicle once installed.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 7:

Line up the PCV module fittings with the ports in the valley of the engine and push it rearward to pop it back into place.



Step 8: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Attach the provided main PCV hose (highlighted in **GREEN**) to the fitting near the top of the PCV. Rotate the hose until it matches the orientation shown in the photo on the right, then tighten the clamp (arrow) until snug.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 9: 5mm Hex (Allen) Socket & Torque Wrench

Reinstall the two turbo inlet pipes, torquing the screws to 9 Nm (7 Ft-lbs).



Step 10: 7mm Socket & Ratchet -OR- Flat Head Screwdriver

Slide the PCV vent hose (highlighted in **GREEN**) back onto the LH turbo inlet pipe as shown and tighten the clamp (arrow) until snug.

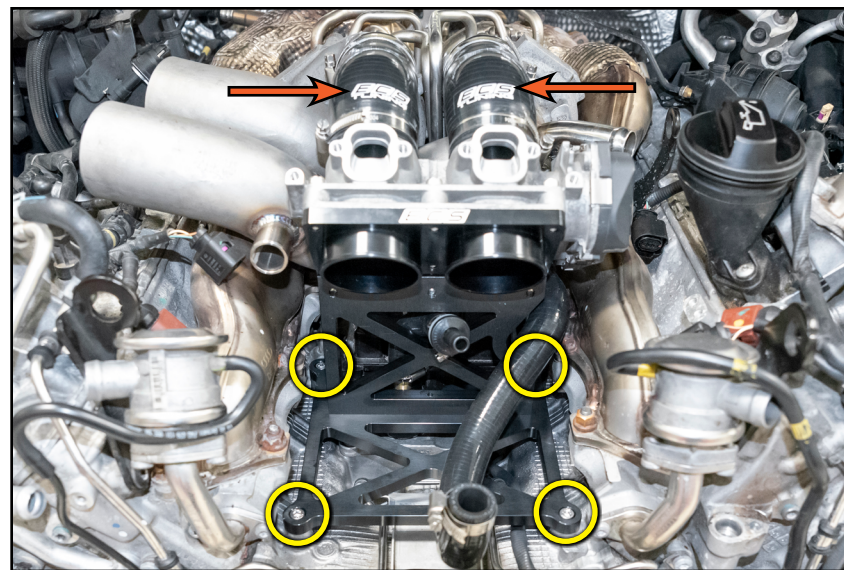


INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 11: 5mm Hex (Allen) Socket & Torque Wrench

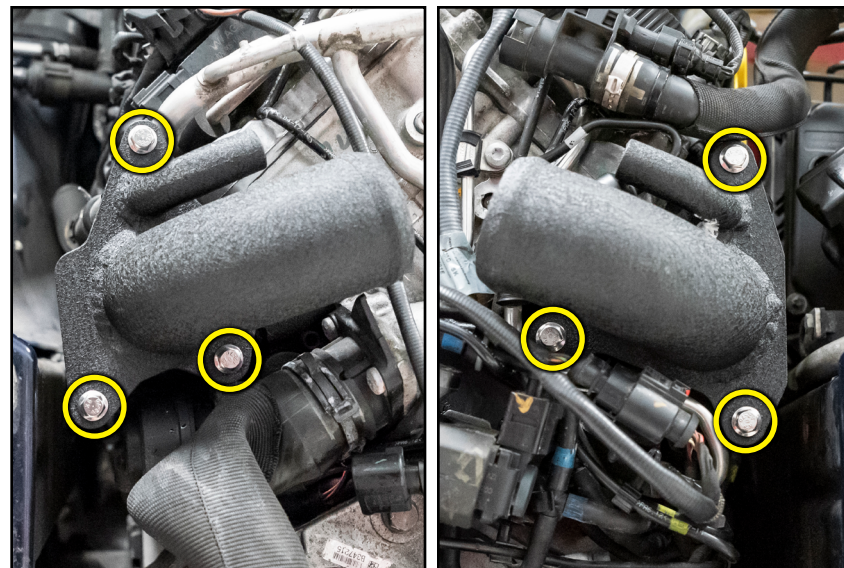
Install the new throttle body bracket assembly by doing the following:

1. Carefully lay the assembly into the valley of the engine and slide it rearward, ensuring the PCV fitting slides into the port in the new PCV adapter.
2. Reconnect the three throttle body connectors (not shown).
3. Slide the turbo outlet couplers (arrows) onto the turbos and tighten the clamps until snug.
4. While pushing the whole system rearward, install the four M6 x 12mm screws (circled in **YELLOW**) and torque them to 9 Nm (7 Ft-lbs).



Step 12: 6mm Hex (Allen) Socket & Torque Wrench

Install the new intake manifold flanges using the six provided M8 x 22mm screws and washers (circled in **YELLOW**). Torque the screws to 9 Nm (7 Ft-lbs).

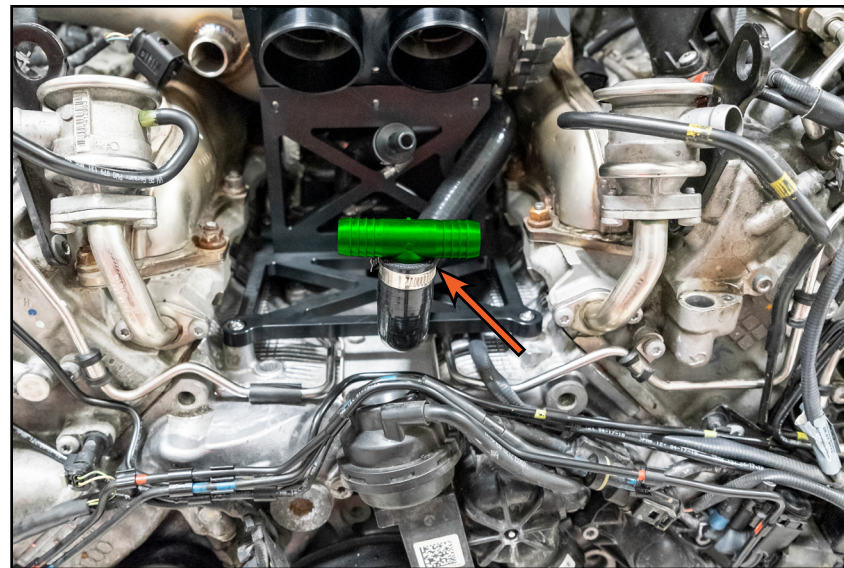


Hardware located in pocket labeled "2" in the provided hardware kit.

INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 13: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

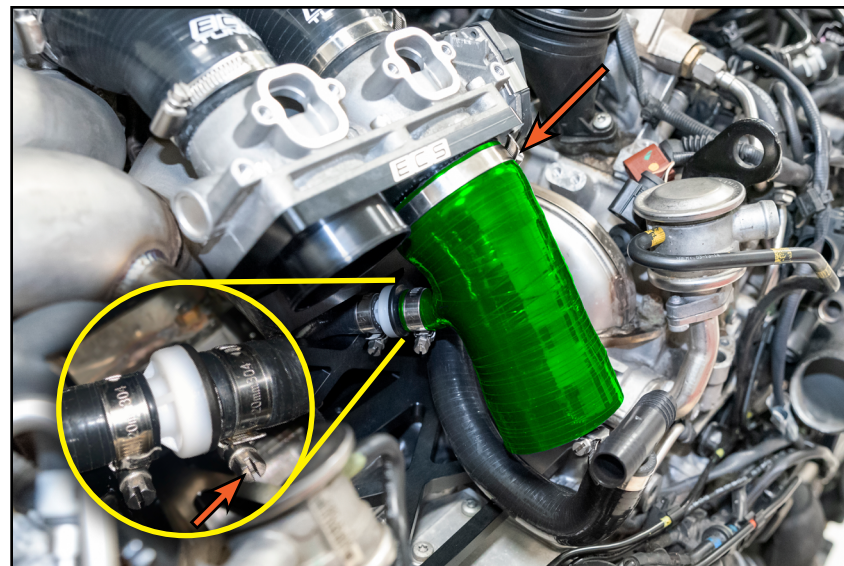
Install the provided plastic tee connector (highlighted in **GREEN**) into the end of the main PCV hose then tighten the clamp (arrow) until snug.



Step 14: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Install the LH throttle body hose (highlighted in **GREEN**) by doing the following:

1. Slide the coupler onto the LH flange on the underside of the throttle body bracket as shown.
2. Slide the black end of the check valve into the small hole in the bottom of the hose and tighten the clamp (arrow in inset photo) until snug.
3. Tighten the clamp (arrow) until snug.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

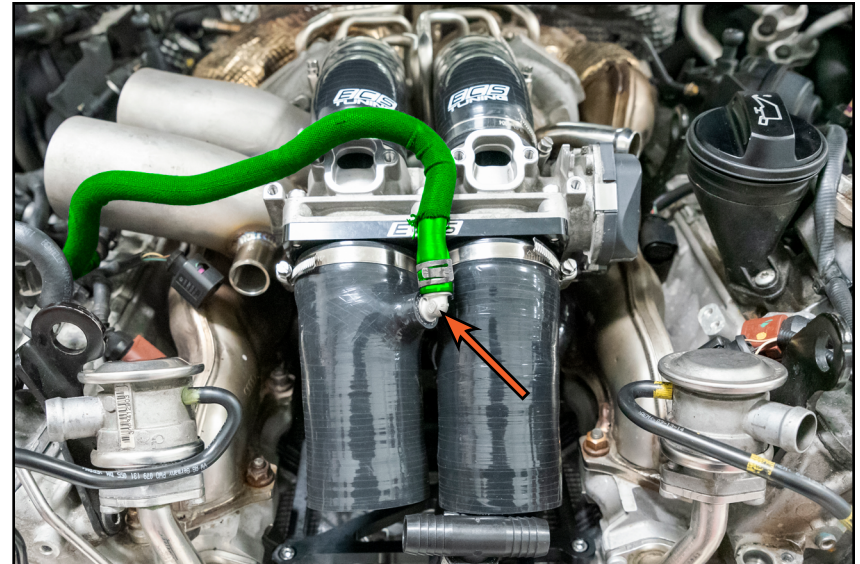
Step 15: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Install the RH throttle body hose (highlighted in **GREEN**) and tighten the clamp (arrow) until snug.



Step 16: Hose Clamps Pliers

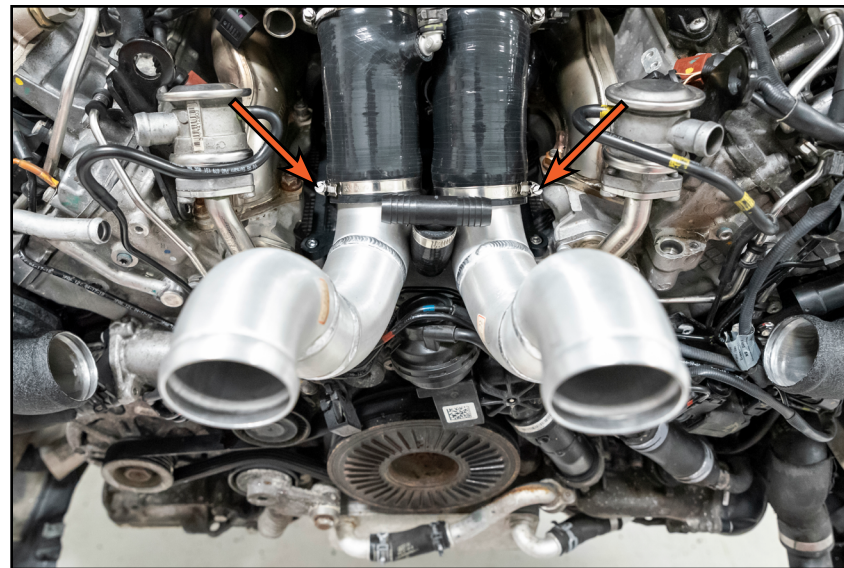
Install the provided 90 degree fitting (arrow) into the vent hose (highlighted in **GREEN**), then install the other end into the small hole on the RH throttle body hose.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 17: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Slide the new intercooler inlet pipes onto the throttle body hoses but leave the clamps (arrows) loose enough to allow for adjustment.



Step 18: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Install the LH and RH PCV hoses (highlighted in **GREEN**) between the upper ports on the intake manifold flanges and the tee fitting, then tighten the clamps (arrows) until snug.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 19: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Install the intake manifold couplers (highlighted in **GREEN**) onto the intake manifold flanges, then tighten the clamps (arrows) until snug. Slide the upper intercooler outlet pipes into the intake manifold couplers but leave the clamps loose enough to allow for adjustment.



Step 20: Hose Clamp Pliers

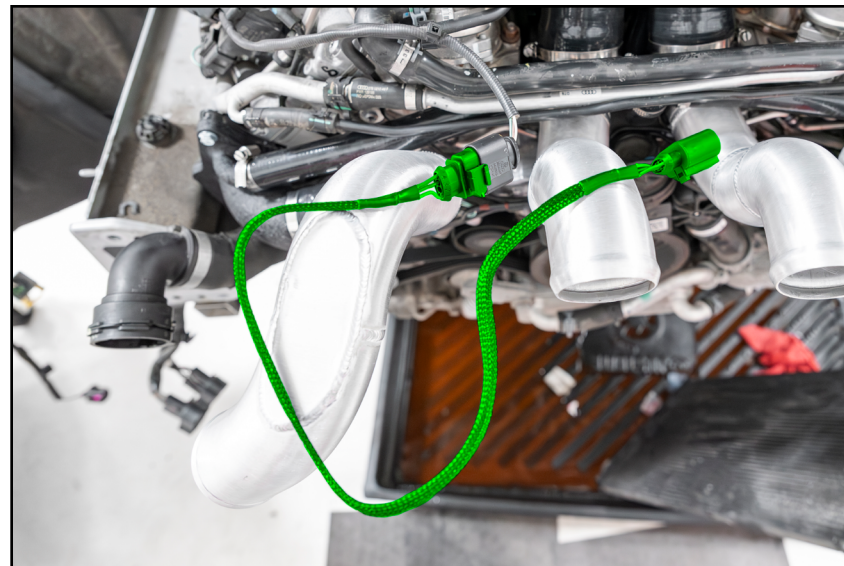
Reinstall the secondary air injection pipe, coolant pipe, and coolant vent tube (highlighted in **GREEN**).



INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 21:

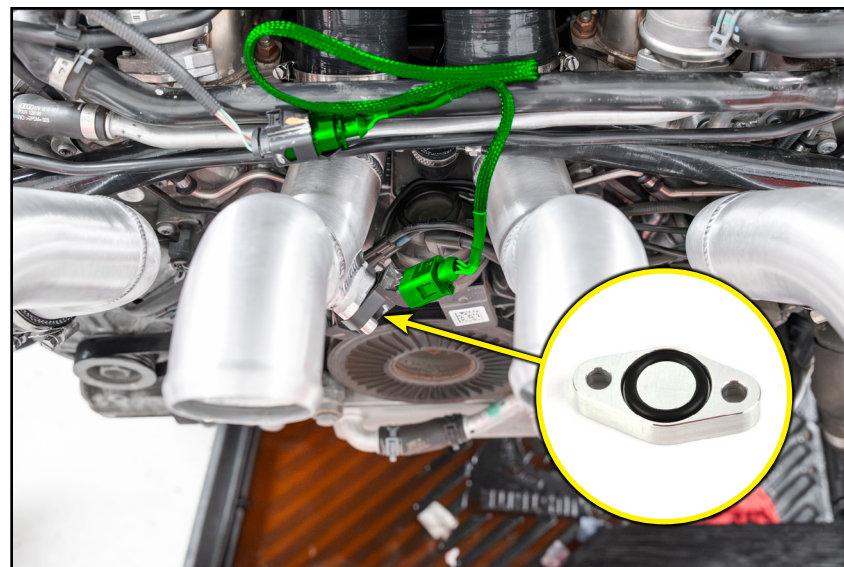
Connect the MAP sensor extension harness (highlighted in **GREEN**) to the OE map sensor harness.



Step 22:

For factory/off the shelf tunes: Install the OE MAP sensor into the pre-intercooler MAP location in the RH intercooler inlet pipe and secure it with the provided M6 x 14mm screws, then connect the extension harness (highlighted in **GREEN**).

For custom tuning applications: Install the provided MAP sensor block off plate (Inset photo) into the RH intercooler inlet pipe and secure it with the provided M6 x 10mm screws.

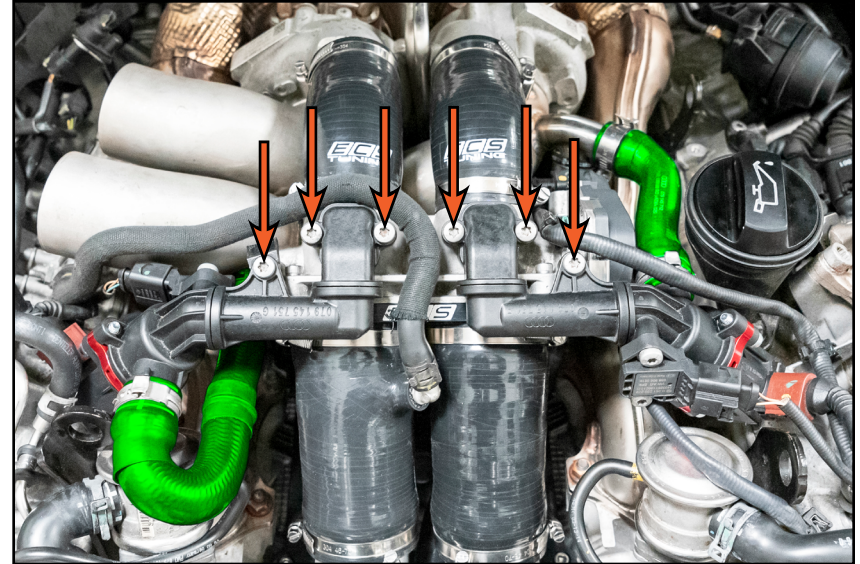


Hardware located in pocket labeled "4" in the provided hardware kit.

INSTALLING THE AIR TO AIR INTERCOOLER KIT

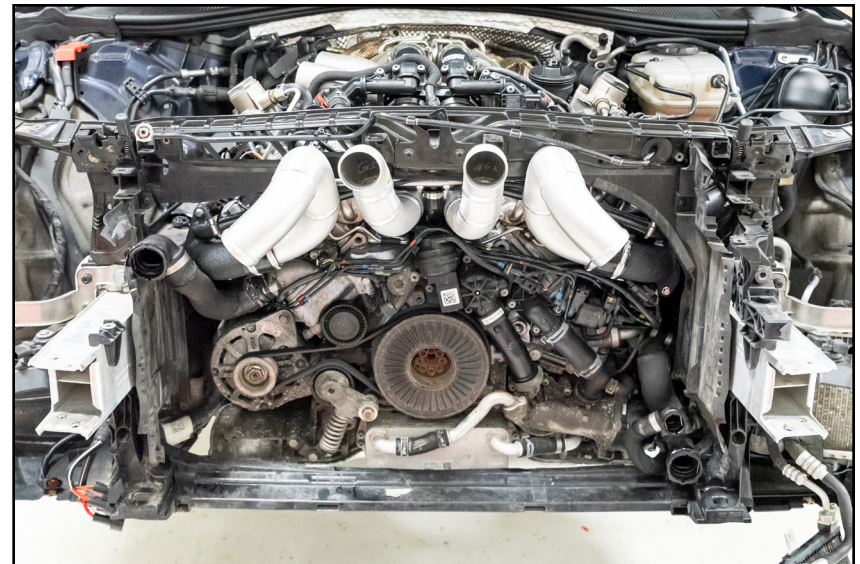
Step 23: T30 Torx Socket & Torque Wrench

Slide the diverter valve hoses (highlighted in **GREEN**) onto the turbo inlets and tighten the clamps until snug. Reinstall the diverter valve assemblies onto the throttle body and reconnect the four connectors. Torque the screws (arrows) to 9 Nm (7 Ft-lbs).



Step 24: T30 Torx, 16mm Socket & Torque Wrench

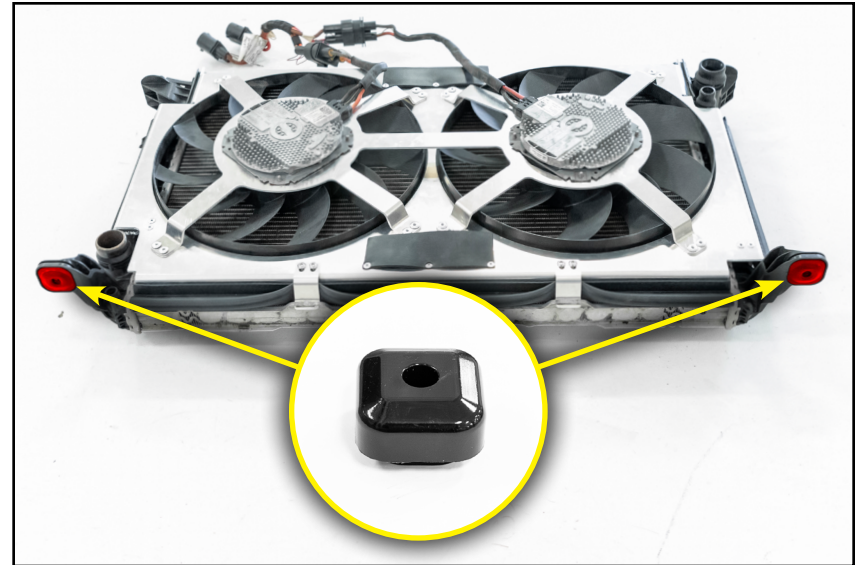
Reinstall the core support and secure it to the frame rails with the six bolts, torquing them to 55 Nm (41 Ft-lbs). Reinstall the screws that secure the core support braces to the fenders. Reconnect the hood latch and impact sensors. Reinstall the hood release cable.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

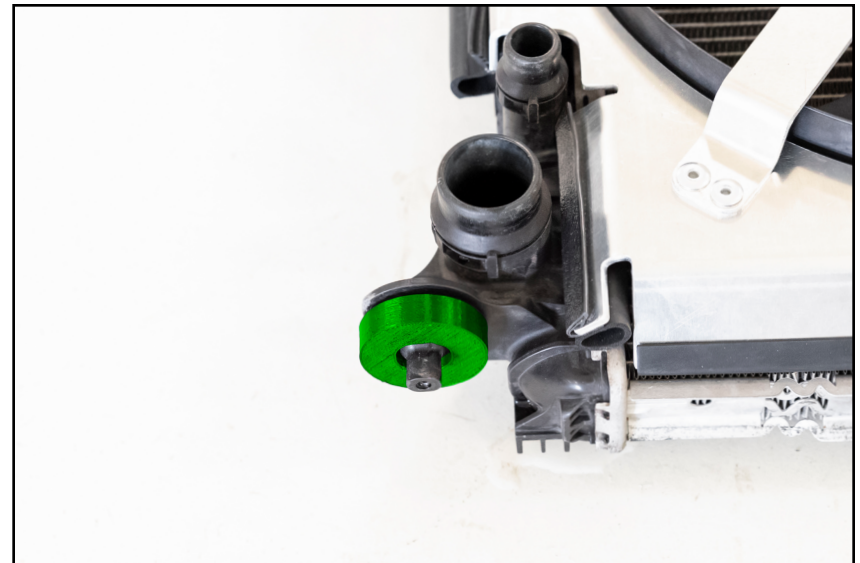
Step 25: Angled Pick Tool

Pry the OE upper radiator bushings (highlighted in **RED**) free from the upper radiator mounts and replace them with the new provided upper radiator bushings (inset photo).



Step 26:

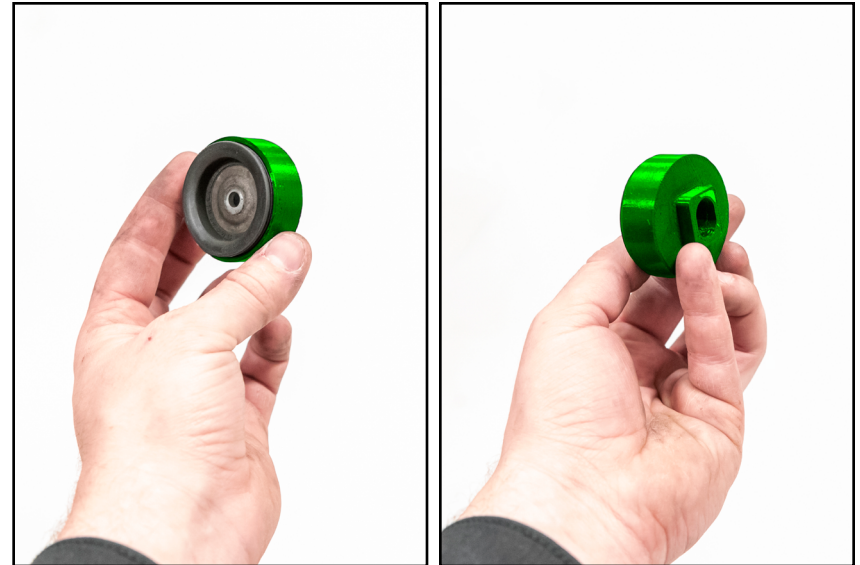
Slide the upper half of the new lower radiator bushings (highlighted in **GREEN**) onto the lower radiator mounting posts.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

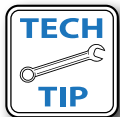
Step 27:

Slide the lower half of the new lower radiator bushings (highlighted in **GREEN**) over the OE lower radiator clamping washer as shown.

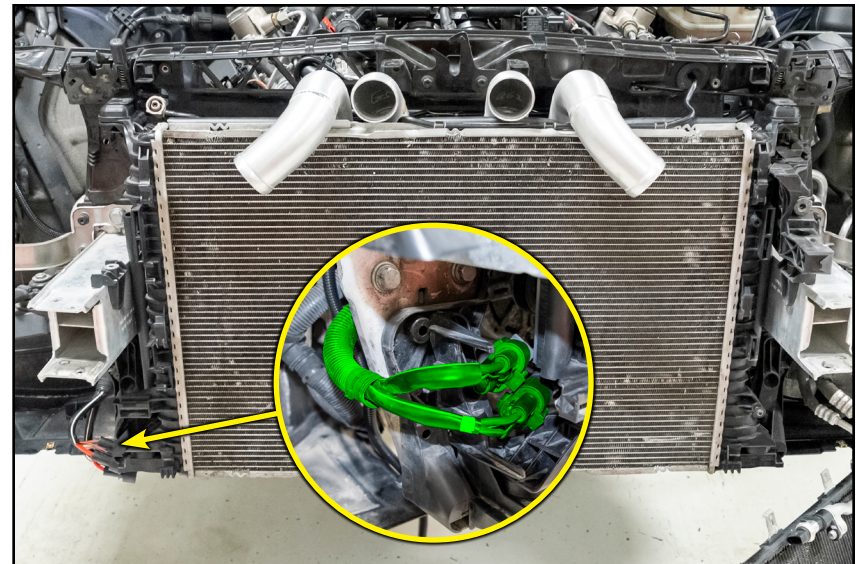


Step 28: T20 Torx Socket & Ratchet

Reinstall the radiator in reverse order of removal, being extra careful not to damage the radiator or intercooler pipes. Reconnect the fan connectors (highlighted in **GREEN** in inset photo).



Angle the top of the radiator up into place first, then pivot the bottom into position.



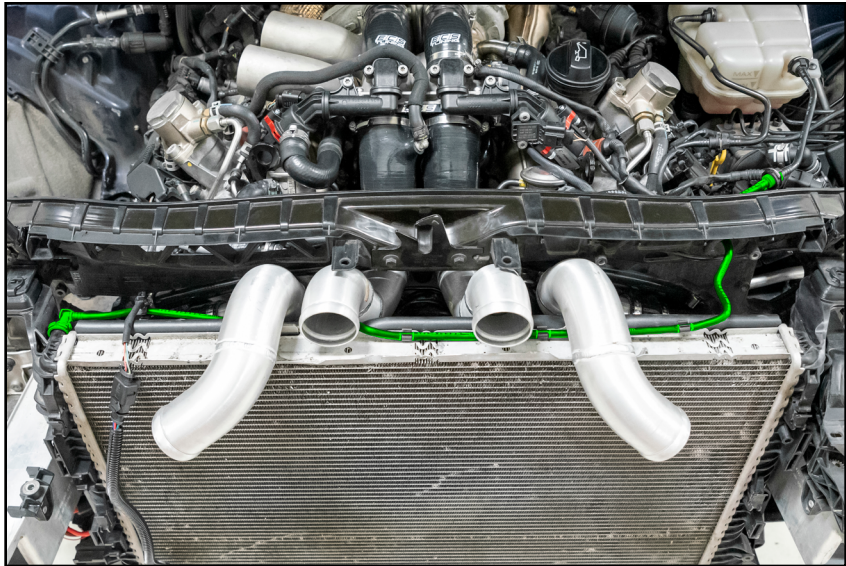
INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 29:

Reconnect both ends of the coolant vent tube (highlighted in **GREEN**) and ensure the clips snap back into place.

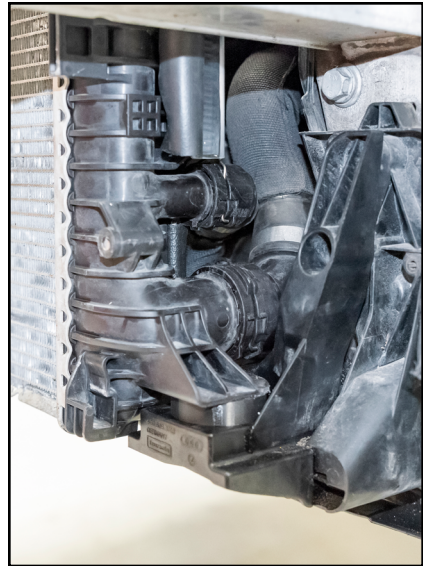
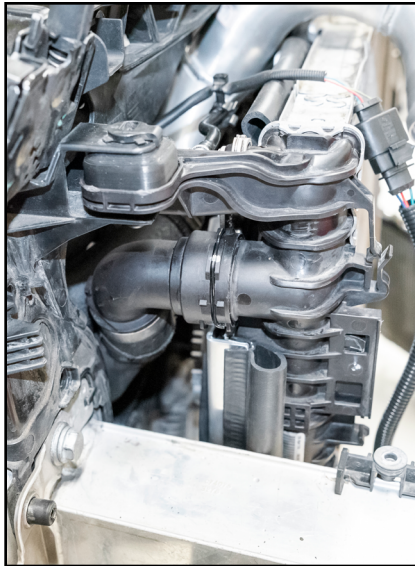


The coolant vent tube may not be able to be clipped to the top of the radiator due to the new intercooler pipes.



Step 30:

Reconnect the upper and lower radiator hoses and ensure the clips snap back into place.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 31:

Reinstall the A/C condenser onto the front of the radiator as shown.



Step 32: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Slide the intercooler inlet couplers (highlighted in **GREEN**) onto the ends of the intercooler inlet pipes, then tighten the rear clamps (arrows) until snug.

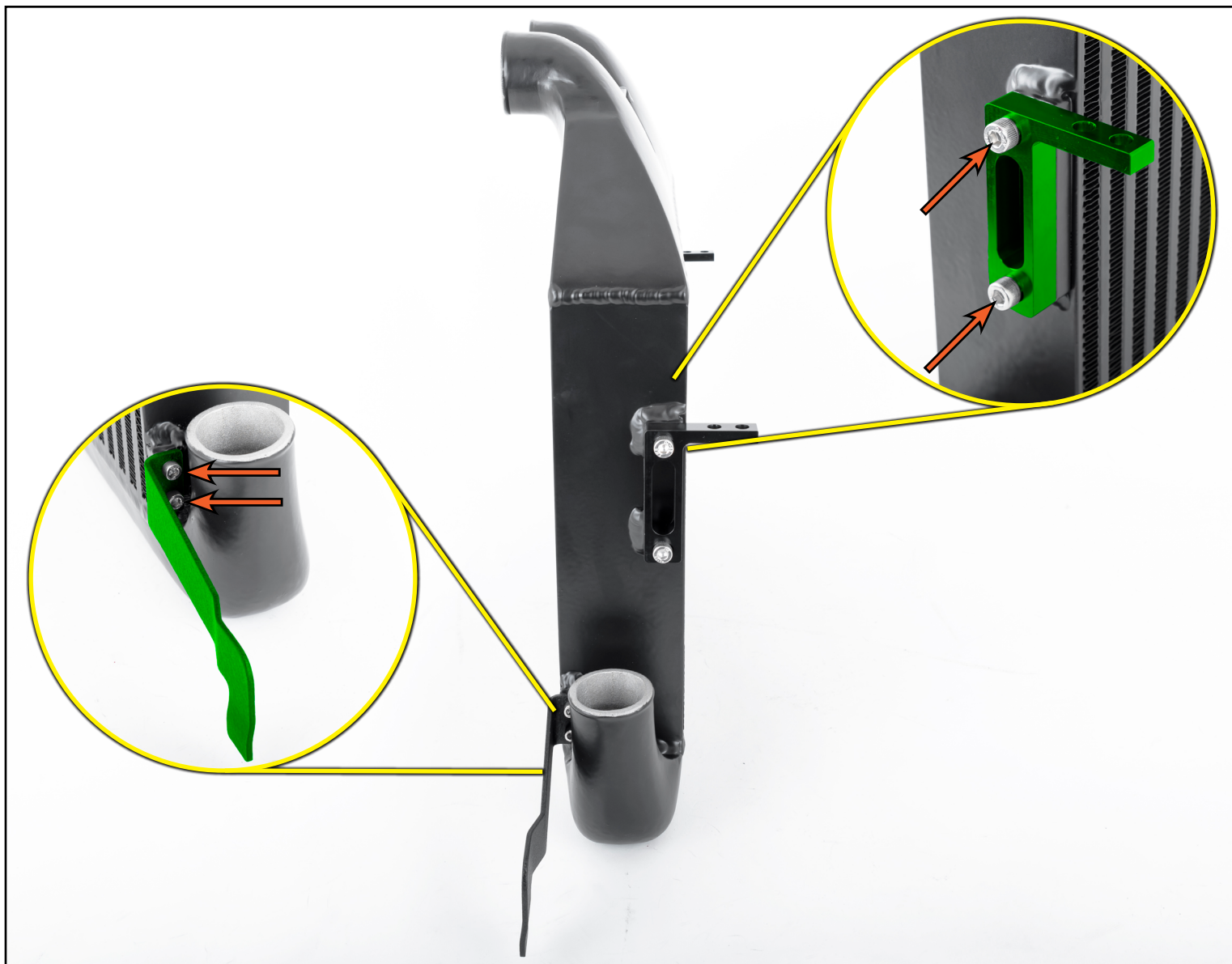


INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 33:

Install the upper mounting brackets (highlighted in **GREEN** in upper inset photo) onto the sides of new intercooler using the two provided M8 x 22mm bolts and washers (arrows).

Install the lower mounting brackets (highlighted in **GREEN** in lower inset photo) onto the sides of new intercooler using the two provided M6 x 12mm bolts and washers (arrows).



Hardware located in pocket labeled "3" in the provided hardware kit.

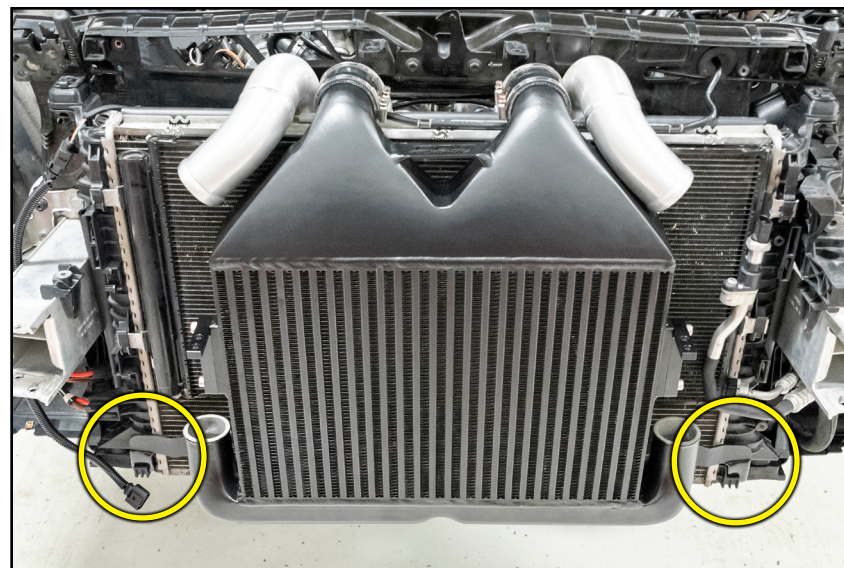
INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 34:

Slide the intercooler assembly into place so that the lower mounting feet engage the mounting tabs on the front of the radiator, then tilt the top of the intercooler back until the inlets slide into the couplers.



Install the provided rubber caps (circled in **YELLOW**) onto the lower mounting feet as shown.



Step 35: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Adjust the intercooler until it is perfectly centered, then tighten the clamps (arrows) until snug.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

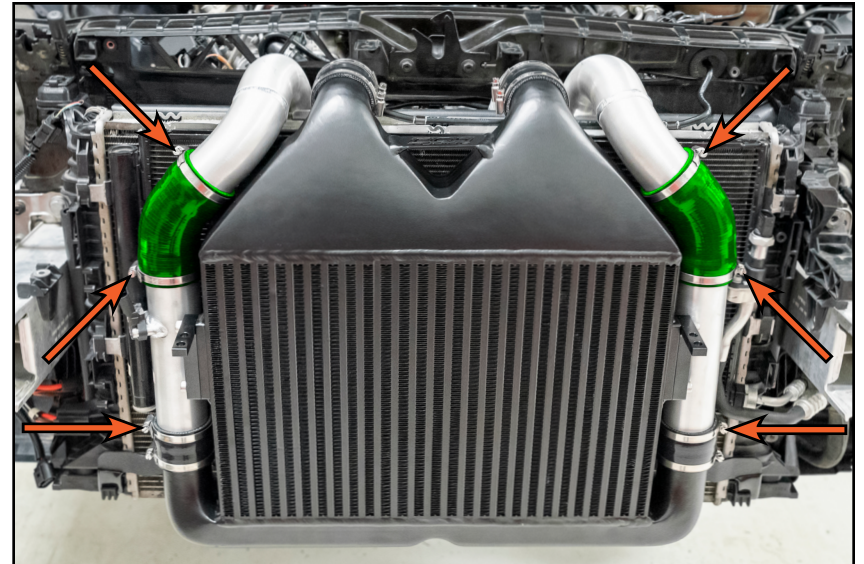
Step 36: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Slide the lower intercooler outlet couplers (highlighted in **GREEN**) onto the intercooler, then tighten the lower clamps (arrows) until snug.



Step 37: 8mm Socket & Ratchet -OR- Flat Head Screwdriver

Slide the lower intercooler outlet pipes into the lower couplers, then install the upper couplers (highlighted in **GREEN**) before tightening all the clamps (arrows) until snug.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

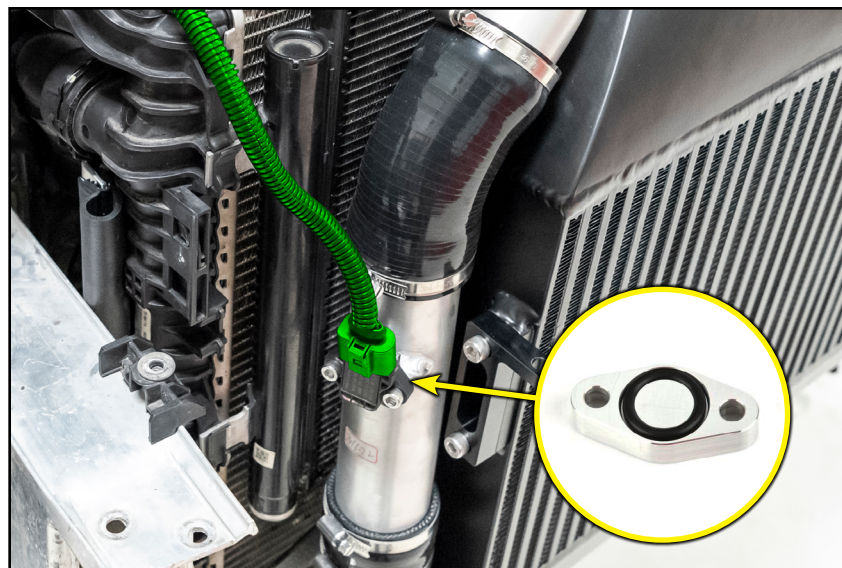
Step 38: 5mm Hex (Allen) Socket & Ratchet

For custom tuning applications: Install the OE MAP sensor into the post-intercooler MAP location in the RH lower intercooler outlet pipe and secure it with the provided M6 x 14mm screws, then connect the extension harness (highlighted in **GREEN**).

For factory/off the shelf tunes: Install the provided MAP sensor block off plate (Inset photo) into the RH lower intercooler outlet pipe and secure it with the provided M6 x 10mm screws.



Hardware located in pocket labeled "4" in the provided hardware kit.



Step 39: 13mm Wrench, 13mm Socket & Ratchet

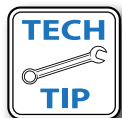
Reinstall the crash beam and reinstall the bolts and nuts to secure it in place.



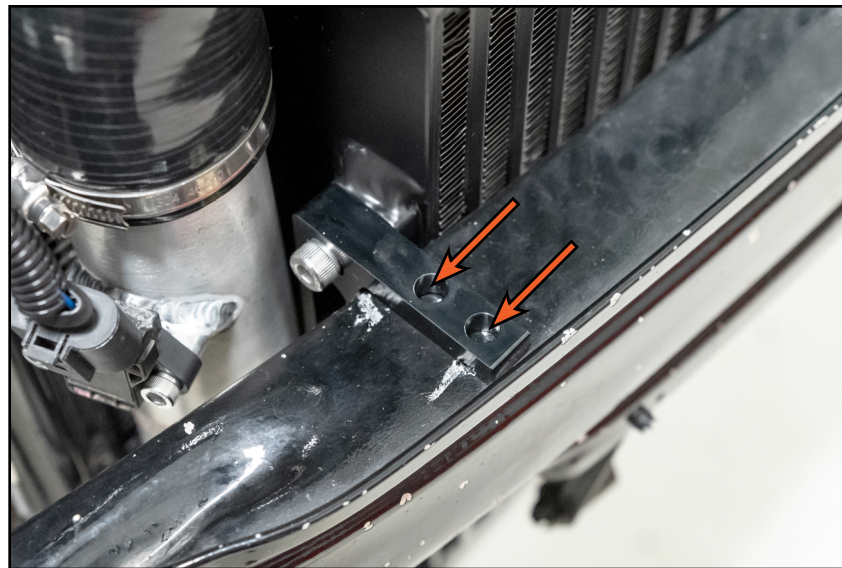
INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 40: Center Punch - OR- Paint Pen

Loosen and adjust the four intercooler mounting brackets until there is adequate clearance between the intercooler, crash beam, and A/C condenser, then tighten all the brackets back down and mark the locations where the four mounting holes (arrows) align with the crash beam.

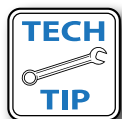


Our Schwaben automatic center punch (available [HERE](#)) makes marking these holes a lot easier and helps to prevent the drill bit from walking during drilling.



Step 41: Drill, 13.5mm Bit, Riv-Nut Installation Tool

Remove the crash beam, drill 13.5 mm holes at the marks made in the previous step and install the provided riv-nuts into the crash beam as shown.



Our Schwaben riv-nut installation tool kit (available [HERE](#)) helps make installation of these riv-nuts a breeze.



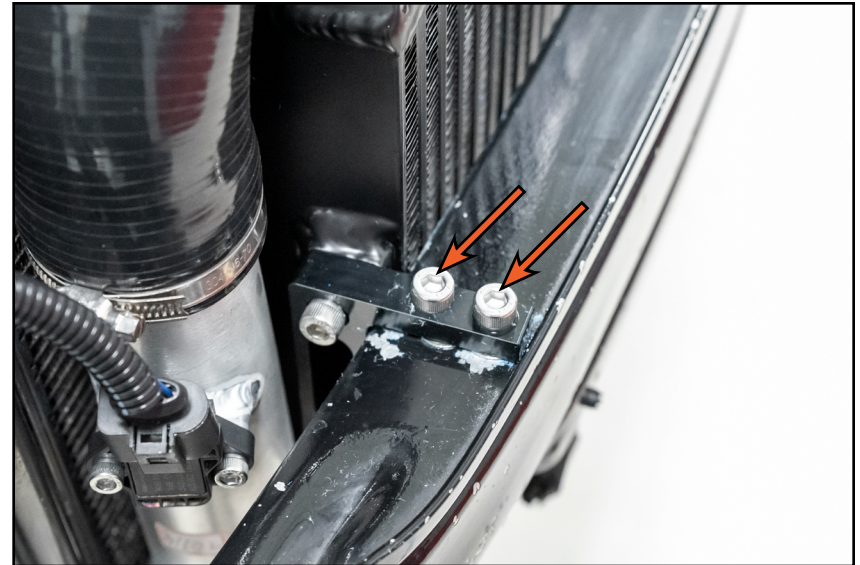
INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 42: 13mm, 6mm Hex (Allen) Socket & Torque Wrench

Reinstall the crash beam and torque the nuts to 20 Nm (15 Ft-lbs). Install the M8 x 22mm screws and washers (arrows) through the upper intercooler mounting brackets and into the riv-nuts, tightening until snug.

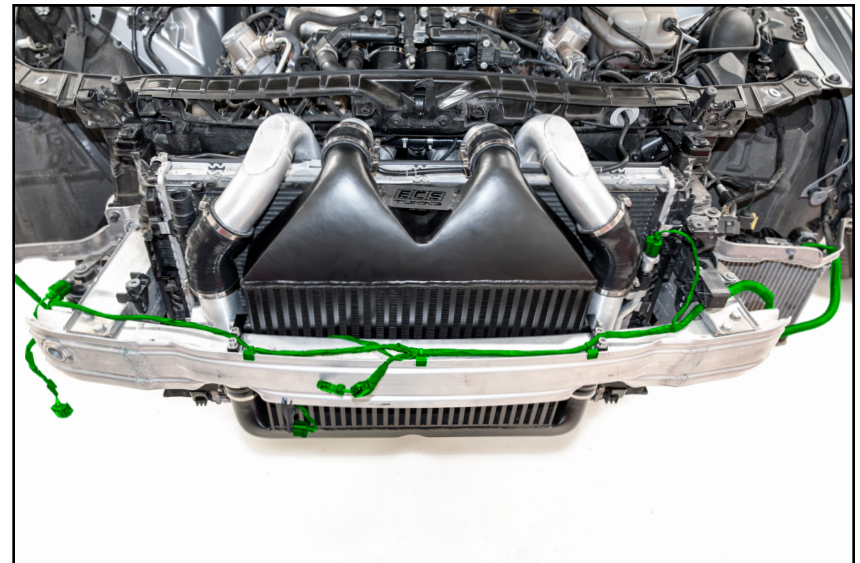


Hardware located in pocket labeled "5" in the provided hardware kit.



Step 43:

Reroute the wiring harness (highlighted in **GREEN**) across the crash beam and reconnect all the connectors.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 44:

Reinstall the headlight bracket and headlights in reverse order of removal.



Step 45:

Reinstall the front bumper cover and skid plate/insulation panel in reverse order of removal.



INSTALLING THE AIR TO AIR INTERCOOLER KIT

Step 46:

Reinstall the intake system and engine cover.



Step 47: 17mm Protecta-Socket & Torque Wrench

Fill and bleed the cooling system. Reinstall the wheels and torque the bolts to 120 Nm (89 Ft-lbs).

Congratulations, your installation is complete!



Your Air to Air Intercooler Kit installation is complete!



These instructions are provided as a courtesy by ECS Tuning

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

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