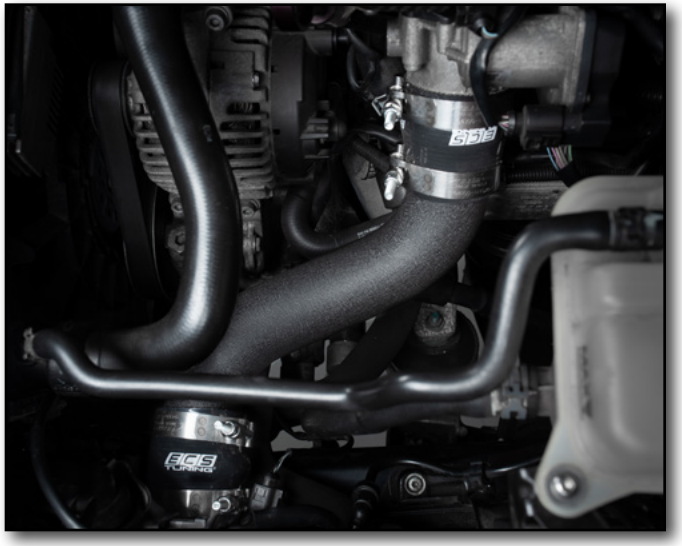
Audi B7 A4 2.0T Front Mount Intercooler Kit Installation Instructions



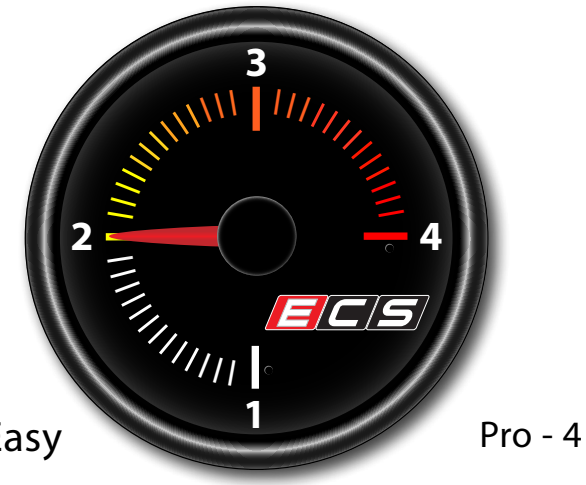
Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times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

INTRODUCTION

The Project:

Today we are going to install our ECS Tuning Front Mount Intercooler Kit for the Audi B7 A4 2.0T. Our intercooler kit replaces the small, overly complicated factory heat exchangers with one huge front mount intercooler. You can expect to see dramatically lower intake temperatures and better air flow from the reduction in restriction. Our intercooler is system is highly efficient and creates a direct path for air to flow smoothly straight from the turbo to the throttle body without experiencing excessive turbulence or restriction. The result is a whopping 12WHP increase at peak which can be felt throughout the RPM range. Our intercooler kit features a 2" thick powder coated aluminum intercooler core as well as sleek and durable powder coated charge pipes to complete the kit. Each kit includes a new performance power steering cooler to replace the stock one and includes all the hardware you need to make installation a breeze.

ECS Difficulty Gauge



1 - Easy

Pro - 4

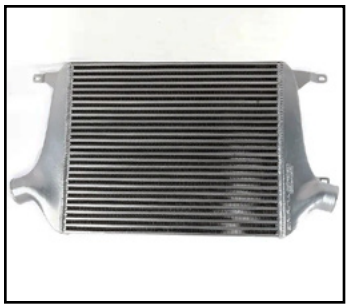
2 - Moderate

Advanced - 3

This project can easily be completed in an afternoon, making it a great weekend project. Take a moment to read through these instructions completely first, and reference the diagrams on Page 8. Once you've got a good understanding of what this installation entails and you've gathered all the tools you need, we're ready to begin! Thank you for looking to ECS Tuning for all your performance and repair needs, we appreciate your business!

TABLE OF CONTENTS

KIT CONTENTS



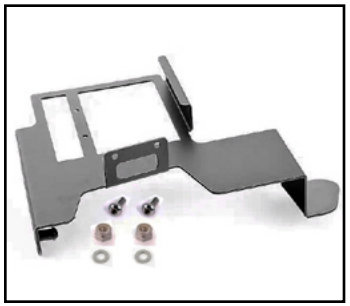
Intercooler
(**QTY 1**)

Power Steering Cooler
(**QTY 1**)

Turbo Outlet Pipe
(**QTY 1**)

Lower Charge Pipe
(**QTY 1**)

Upper Charge Pipe
(**QTY 1**)



PS Cooler Bracket
(**QTY 1**)

AAT Sensor Bracket
(**QTY 1**)

Turbo Outlet Coupler
(**QTY 1**)

Intercooler Coupler
(**QTY 2**)

Hump Coupler
(**QTY 1**)

Throttle Body Coupler
(**QTY 1**)

52-60mm Clamp
(**QTY 1**)

65-72mm Clamp
(**QTY 8**)

70-78mm Clamp
(**QTY 1**)

M6 Screw
(**QTY 2**)

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
- **⅜" Drive Ratchet** ES#2765902
- ⅜" Drive Torque Wrench ES#2221245
- **⅜" Drive Deep and Shallow Sockets** ES#2763772
- **⅜" Drive Extensions** ES#2804822
- **Hydraulic Floor Jack** ES#240941
- **Torx Drivers and Sockets** ES#11417/8
- ½" Drive Deep and Shallow Sockets ES#2839106
- ½" Drive Ratchet
- ½" Drive Extensions
- ½" Drive Torque Wrench ES#2221244
- ½" Drive Breaker Bar ES#2776653
- Bench Mounted Vise
- Crows Foot Wrenches
- Hook and Pick Tool Set ES#2778980

Required For This Install

- ¼" Drive Ratchet ES#2823235
- ¼" Drive Deep and Shallow Sockets ES#2823235
- ¼" 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

- **Hose Pinch-Off Pliers** ES#2804761

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.

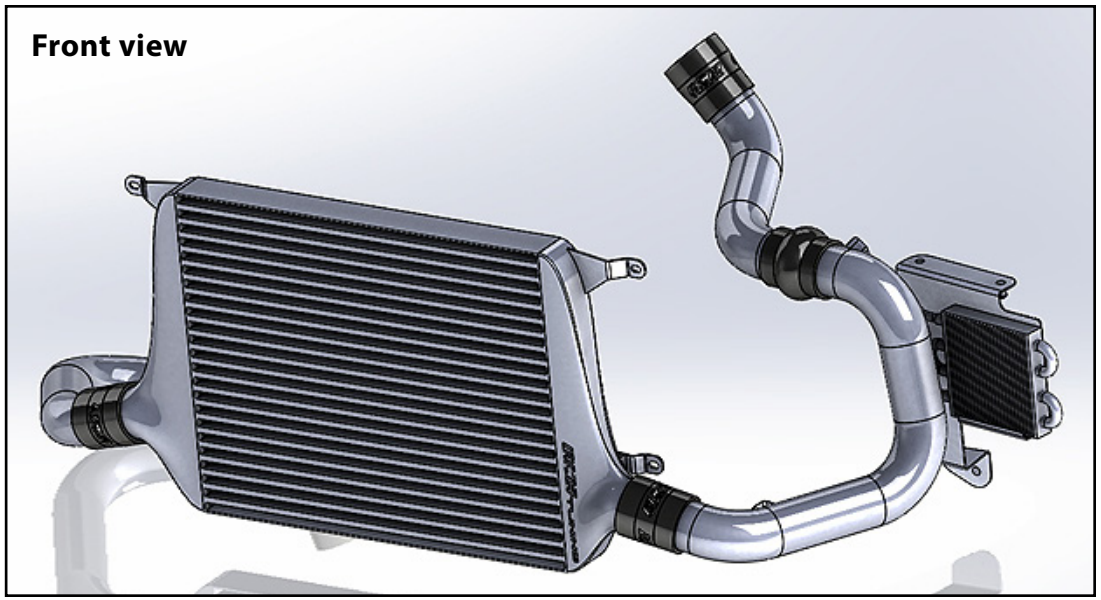
- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- 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.

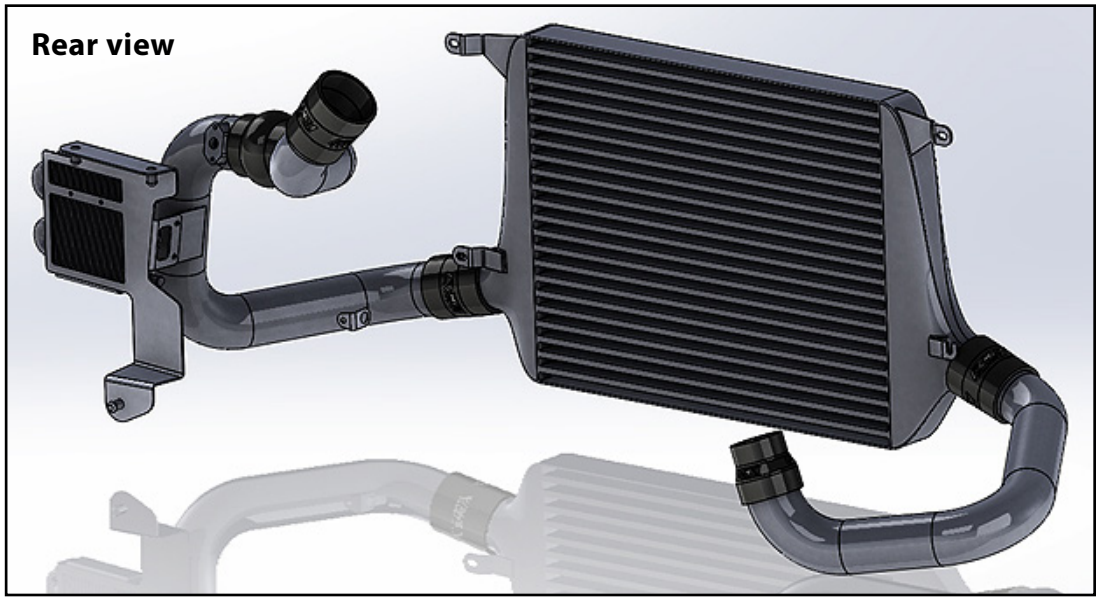
PROJECT OVERVIEW

Take a moment to familiarize yourself with the overall layout of this kit. The air exiting the turbo flows straight through our outlet pipe and into the intercooler inlet, from there it flows through the intercooler and into the lower and upper charge pipes before it is pulled into the throttle body. This kit eliminates the factory power steering cooler and replaces it with a performance unit. The new performance power steering cooler mounts onto a custom bracket on the lower charge pipe, and utilizes the empty space left by removing the factory LH intercooler.

Front view



Rear view



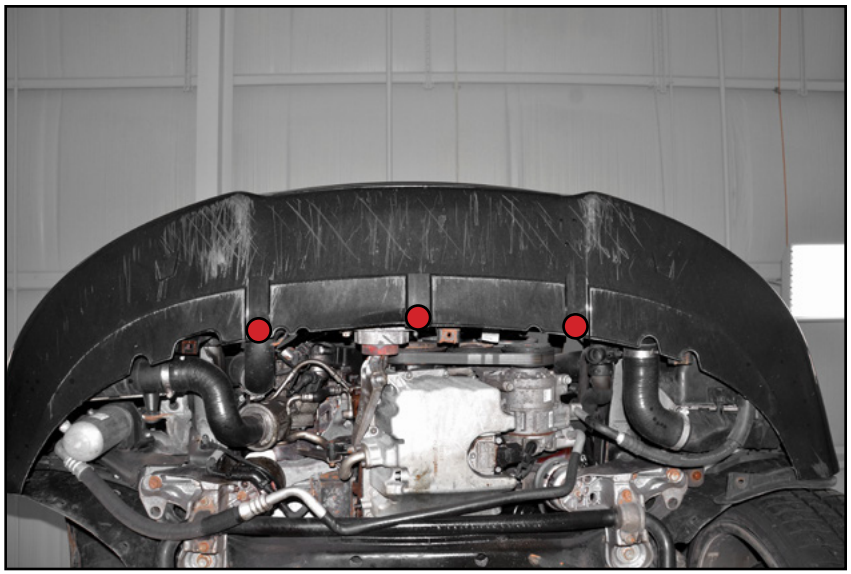
REMOVING THE ORIGINAL INTERCOOLERS

Step 1: T30 Torx

Remove the three bolts (circled in **RED**) which secure the bumper to the top of the core support.

Step 2: Flat Head Screwdriver

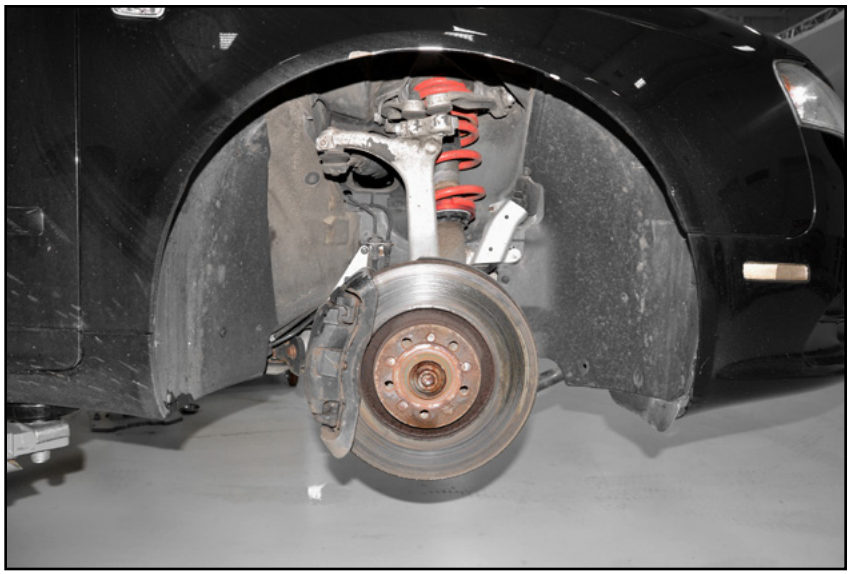
Remove the three fasteners (circled in **RED**) which secure the bumper to the belly pan.



REMOVING THE ORIGINAL INTERCOOLERS

Step 3: 17mm Protecta Socket & Ratchet

Safely lift and support the vehicle and remove the front wheels.



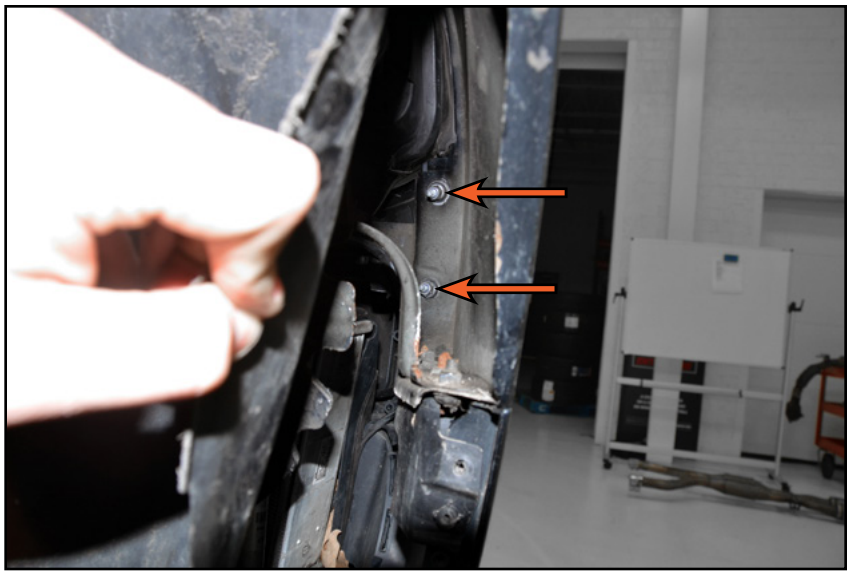
Step 4: T25 Torx

Remove the fasteners (circled in **RED**) to gain access to the inside of the fender.

REMOVING THE ORIGINAL INTERCOOLERS

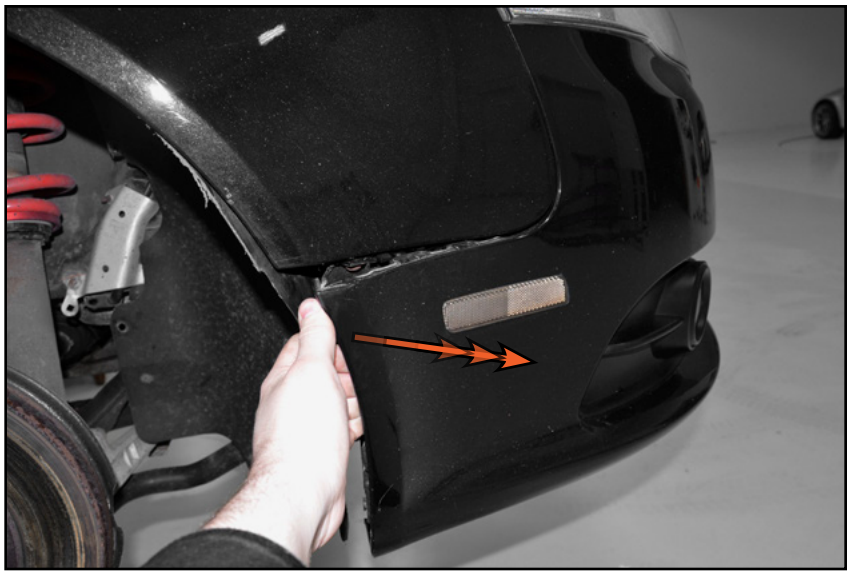
Step 5: 10mm Socket & Ratchet

Pull back the fender liner and remove the two nuts (arrows) which secure the bumper to the body of the vehicle.



Step 6:

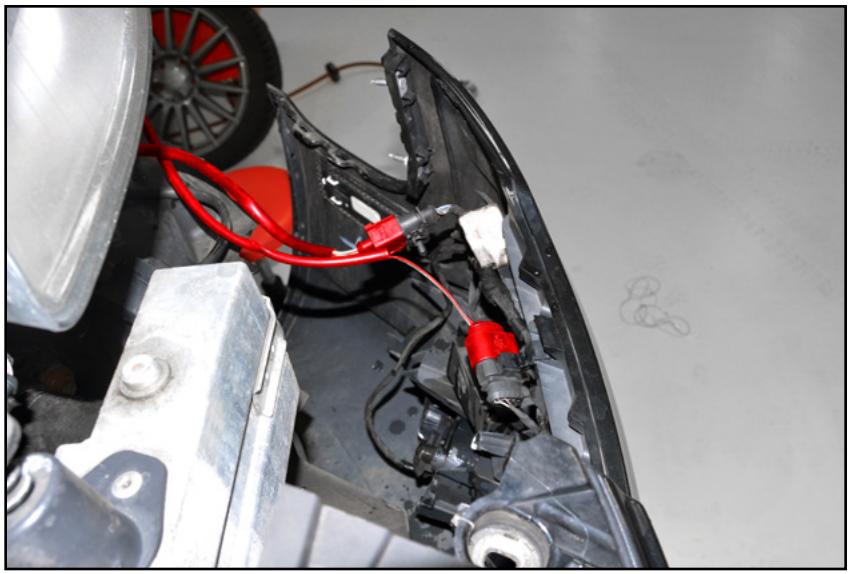
Firmly pull outward to pop the bumper free from the clips on either side. Repeat steps 4-6 for the other side of the vehicle.



REMOVING THE ORIGINAL INTERCOOLERS

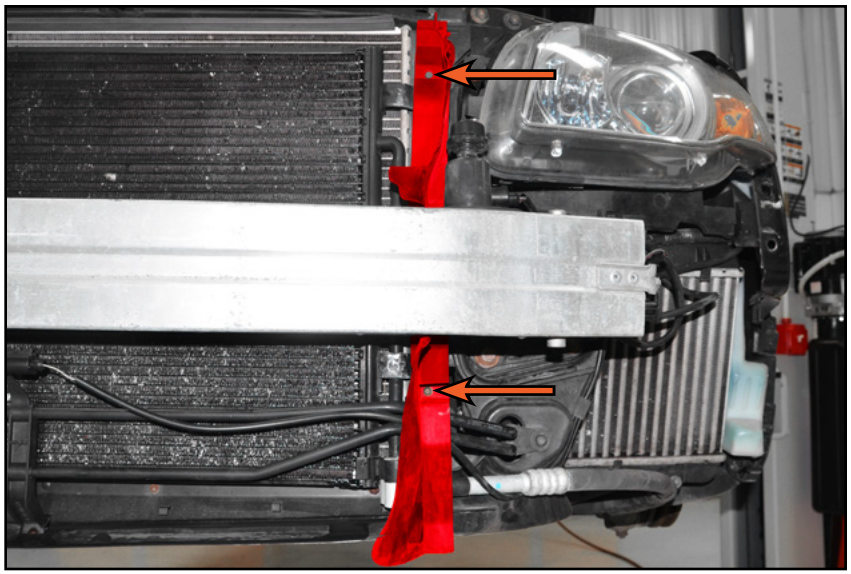
Step 7: VAG Connector Removal Tool

Gently pull the bumper back from the vehicle and, if equipped, disconnect the fog light connectors (highlighted in **RED**) before carefully setting the bumper aside.



Step 8: T20 Torx

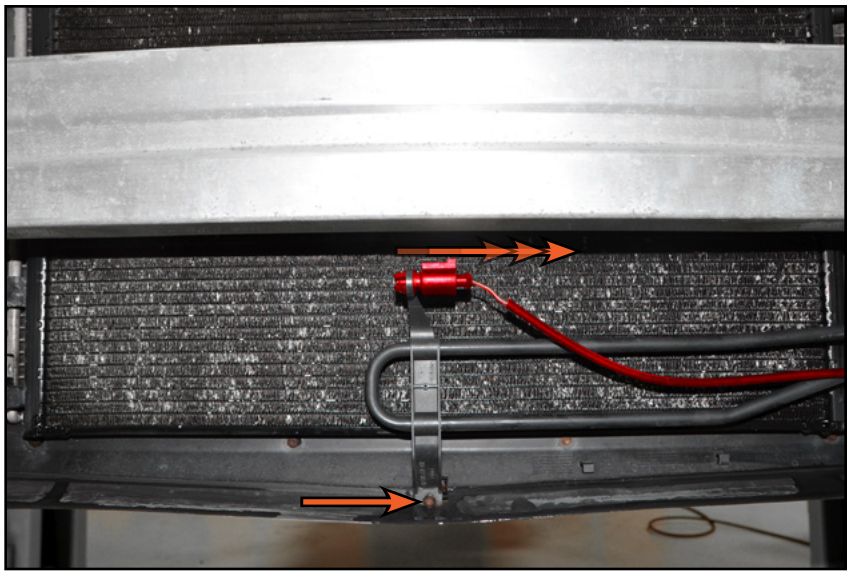
Remove the air shrouds (highlighted in **RED**) from the vehicle by removing the two screws (arrows) which secure them to the core support on either side.



REMOVING THE ORIGINAL INTERCOOLERS

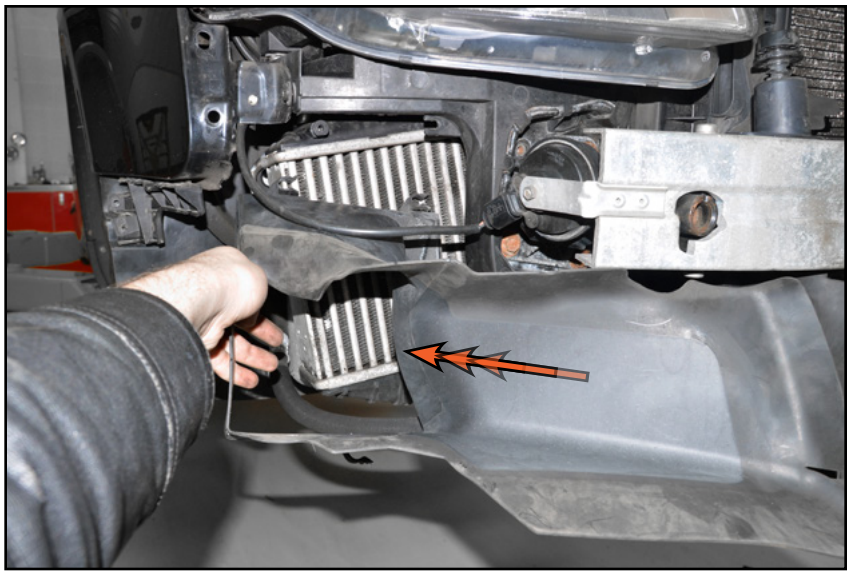
Step 9: T20 Torx

Pinch the mounting tabs inward to remove the ambient air temperature sensor (highlighted in **RED**) from the power steering cooler as shown, then remove the fastener (arrow).



Step 10:

Remove the air duct from the RH intercooler by pulling it outward as shown.



NOTE

Our kit eliminates the factory intercooler and thus does not re-use this air duct.

REMOVING THE ORIGINAL INTERCOOLERS

Step 11:

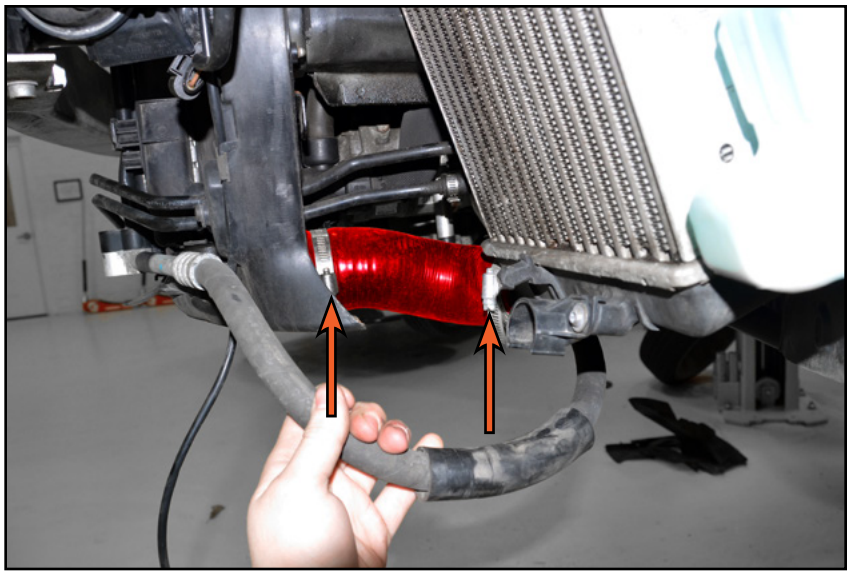
Remove the air duct from the LH intercooler by pulling it downward as shown.

NOTE

Our kit eliminates the factory intercooler and thus does not re-use this air duct.

Step 12: Flat Head Screwdriver

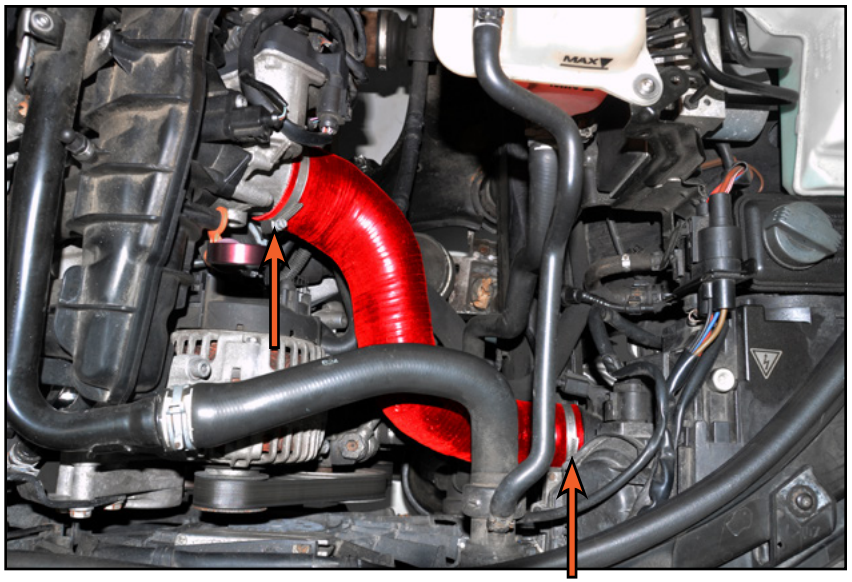
Loosen the two clamps (arrows) which secure the lower intercooler hose (highlighted in **RED**) on the LH intercooler. Remove the hose.



REMOVING THE ORIGINAL INTERCOOLERS

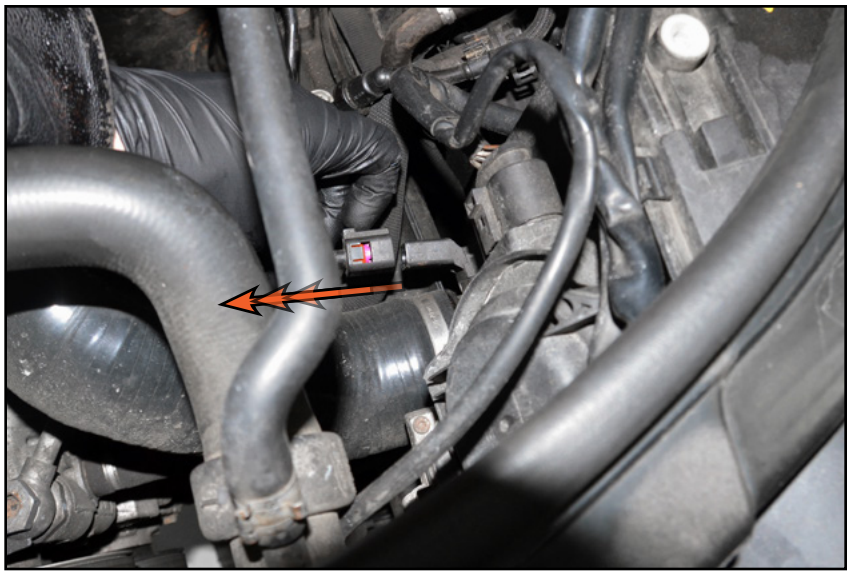
Step 13: Flat Head Screwdriver

Loosen the two clamps (arrows) which secure the upper intercooler hose (highlighted in **RED**) to the throttle body and the LH intercooler. Remove the hose.



Step 14: VAG Connector Removal Tool

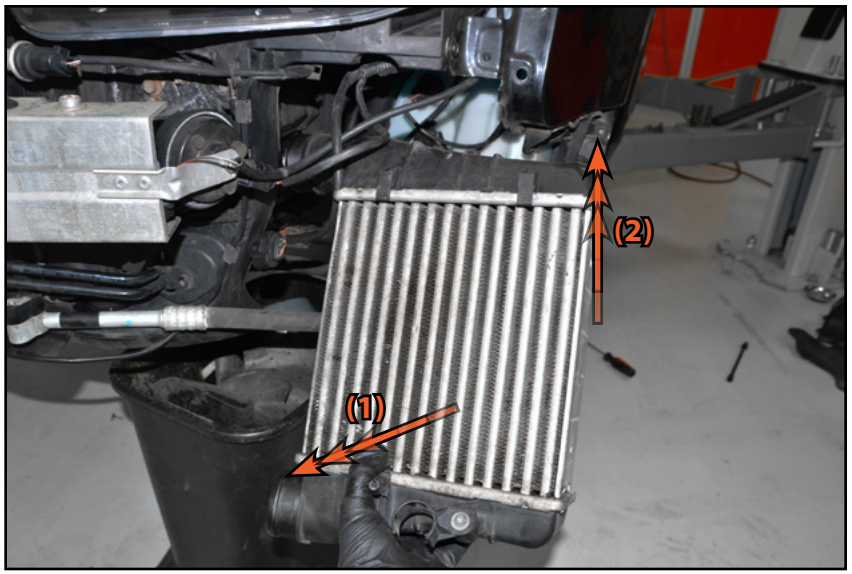
Disconnect the MAP sensor connector from the LH intercooler as shown.



REMOVING THE ORIGINAL INTERCOOLERS

Step 15:

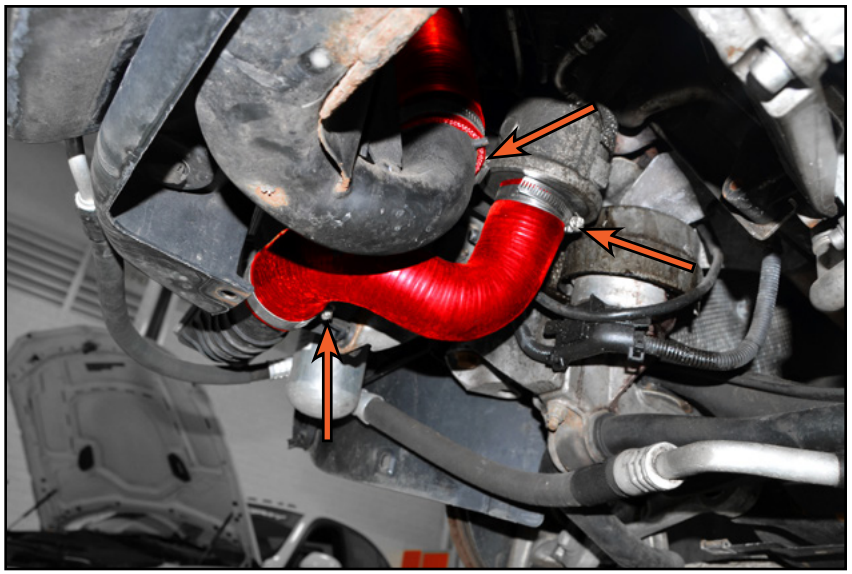
Remove the LH intercooler from the vehicle by pulling the bottom of the intercooler free from the lower grommet (1), then lifting up to pop it free from the upper grommets (2).



Step 16: Flat Head Screwdriver

Loosen the two clamps (arrows) which secure the lower RH intercooler hose (highlighted in **RED**). Remove the hose.

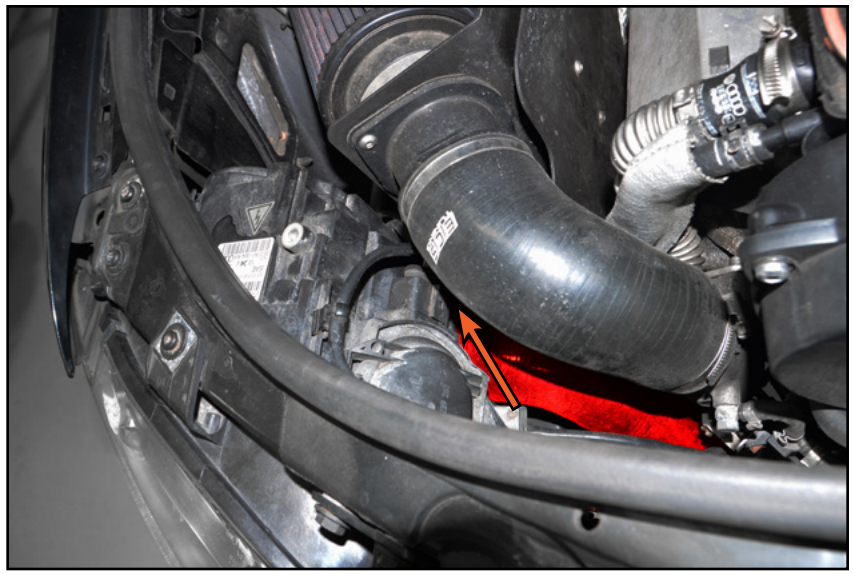
Loosen the lower clamp (arrow) on the upper RH intercooler hose (highlighted in **RED**).



REMOVING THE ORIGINAL INTERCOOLERS

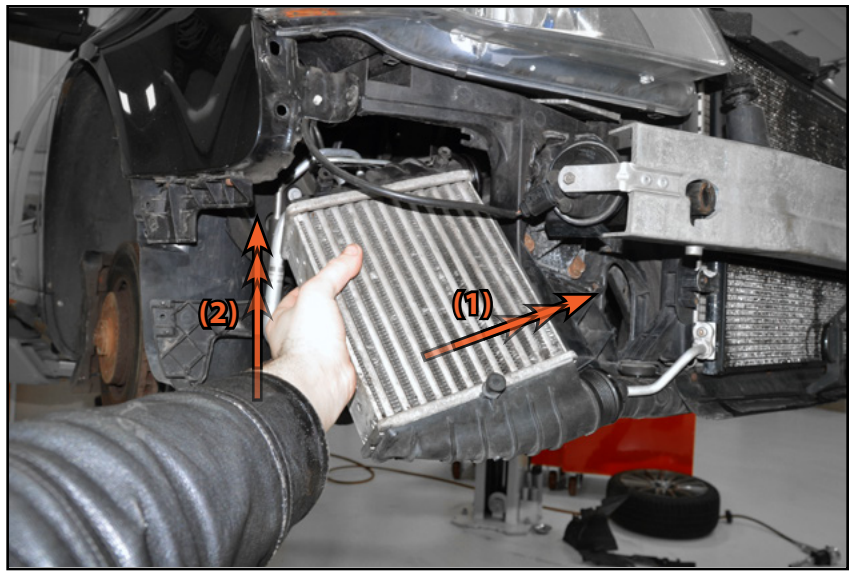
Step 17: Flat Head Screwdriver

Loosen the upper clamp which secures the upper intercooler hose (highlighted in **RED**) to the RH intercooler.



Step 18:

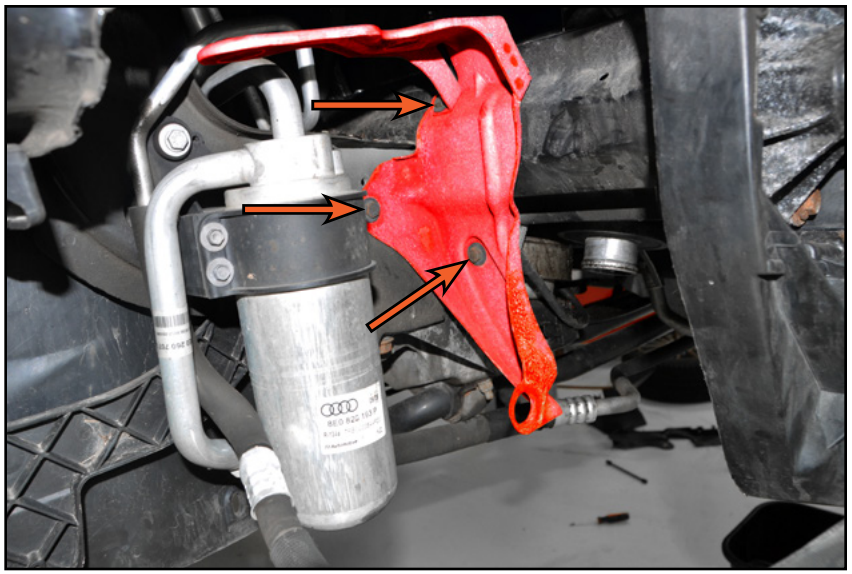
Remove the RH intercooler from the vehicle by pulling the bottom of the intercooler free from the lower grommet (1), then lifting up to pop it free from the upper grommets (2).



REMOVING THE ORIGINAL INTERCOOLERS

Step 19: 10mm Socket & Ratchet

Loosen and remove the three bolts (arrows) which secure the RH intercooler mounting bracket (highlighted in **RED**) to the vehicle.



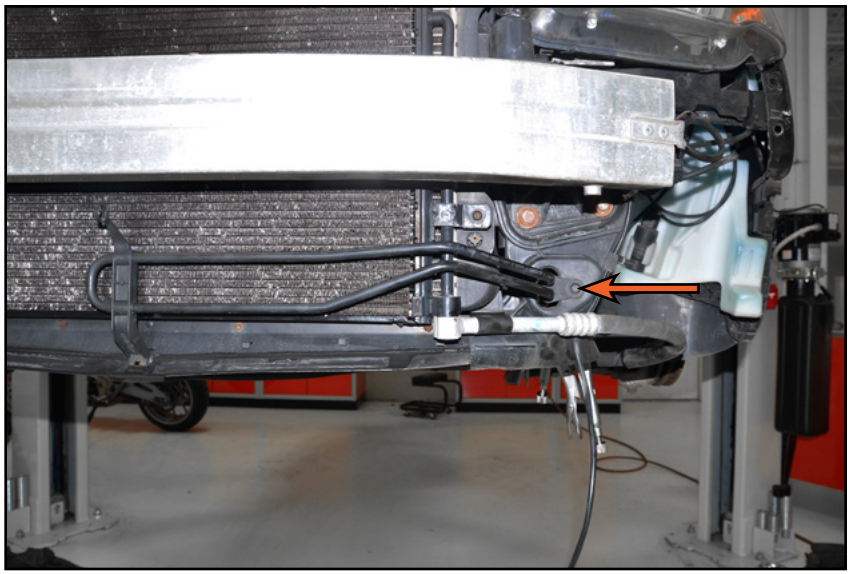
Step 20: Hose Pinch-Off Pliers

Clamp the two power steering hoses as shown, then loosen the two clamps (arrows).

REMOVING THE ORIGINAL INTERCOOLERS

Step 21: T30 Torx

Remove the power steering cooler mounting screw and set it aside.

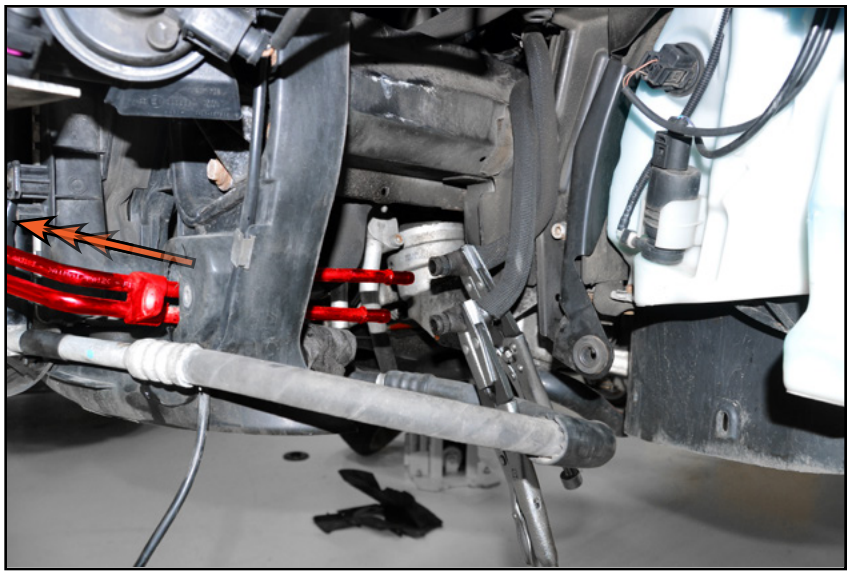


NOTE

We will be reusing this screw in Step 23.

Step 22:

Pull the power steering cooler (highlighted in **RED**) free from the power steering hoses and remove it from the vehicle.



REMOVING THE ORIGINAL INTERCOOLERS

Step 23: T30 Torx

Install the ambient air temperature sensor into the provided bracket and secure it using the screw we removed in step 21.

Step 24: T30 Torx, M10 Triple Square Socket & Ratchet

Remove the four A/C condenser mounting screws (circled in **RED**) and set them aside.

Disconnect the two horn connectors, then remove the two bolts (arrows) which secure the crash beam to the vehicle and set the crash beam aside.

INSTALLING THE NEW INTERCOOLER

Step 1: T30 Torx

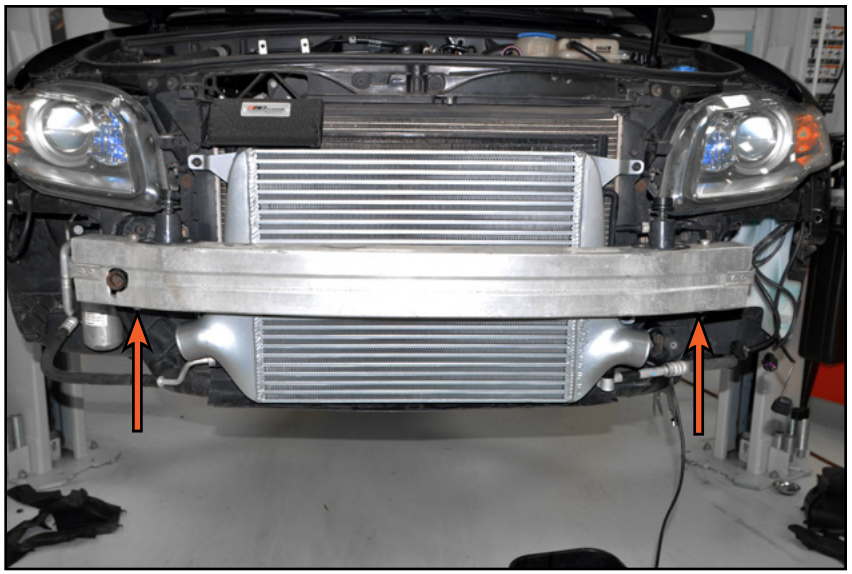
Lift the intercooler into place and reinstall the four mounting screws through the intercooler and A/C condenser and into the core support.

TECH TIP

Getting everything lined up can be a little tricky, It helps to have a friend hold the intercooler up into place while you line everything up and install the four screws.

Step 2: M10 Triple Square Socket & Ratchet

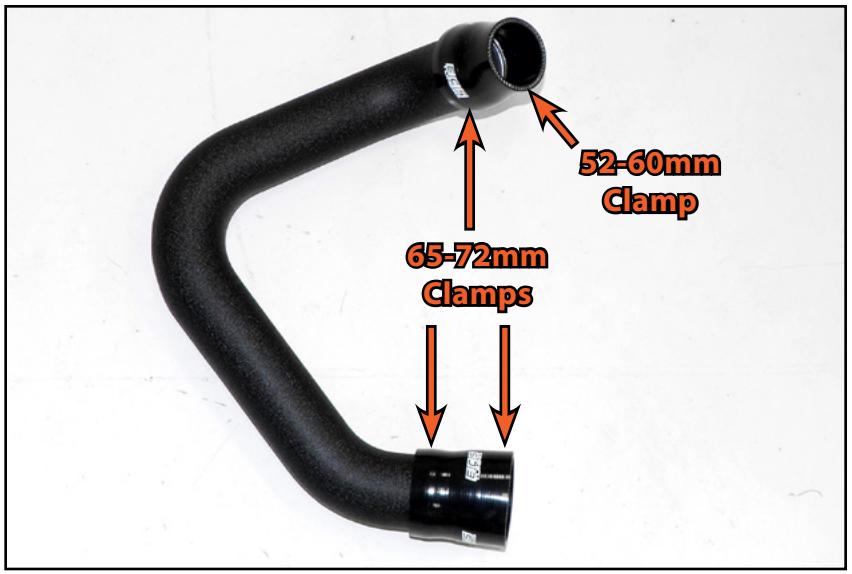
Re-install the crash beam and tighten the bolts (arrows) to 23 Nm (17 Ft-lbs). Reconnect the horn connectors.



INSTALLING THE NEW INTERCOOLER

Step 3:

Install the turbo outlet and intercooler couplers onto the turbo outlet pipe as shown, then slide the appropriate clamps into place.



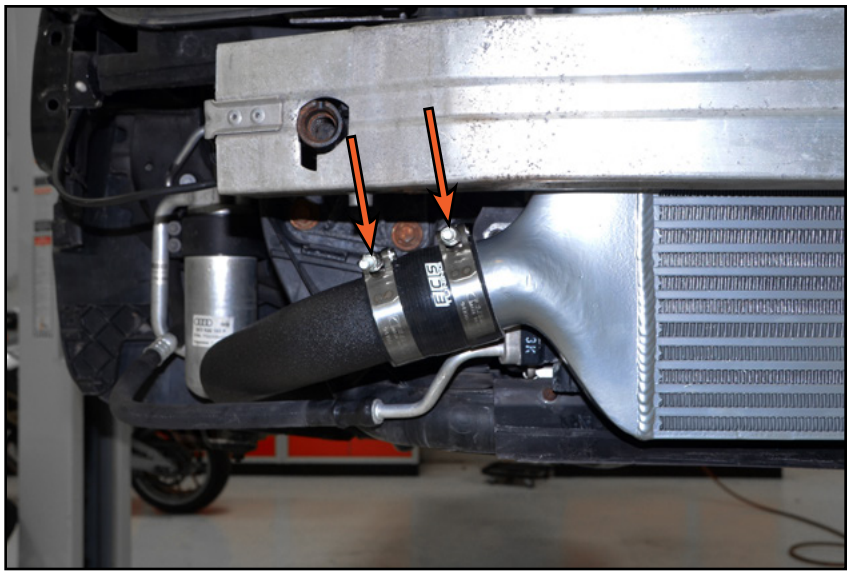
Step 4: 11mm Socket & Ratchet

Slide the turbo outlet pipe into place between the turbo outlet and the intercooler, then tighten the two turbo outlet coupler clamps.

INSTALLING THE NEW INTERCOOLER

Step 5: 11mm Socket & Ratchet

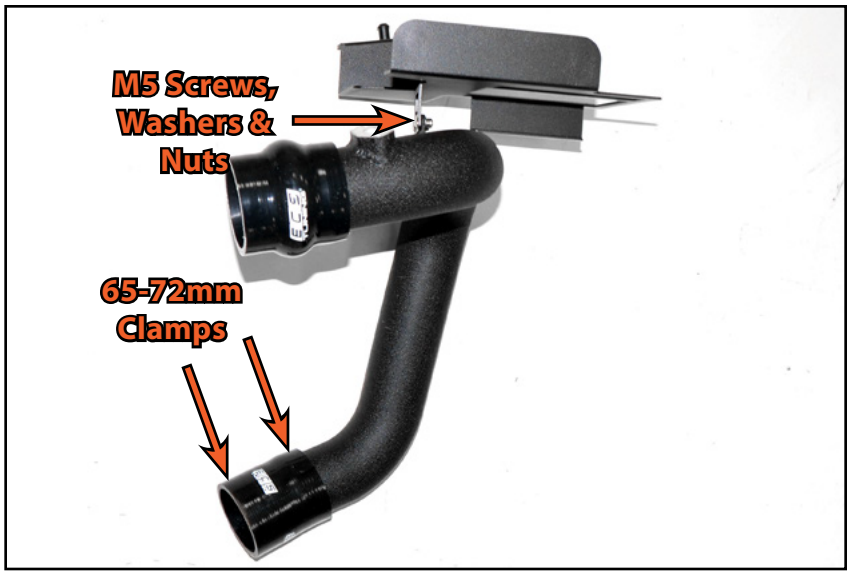
Tighten the two intercooler coupler clamps.



Step 6: 8mm Wrench, 3mm Hex (Allen)

Install the intercooler and hump couplers onto the lower charge pipe as shown, then slide the appropriate clamps into place.

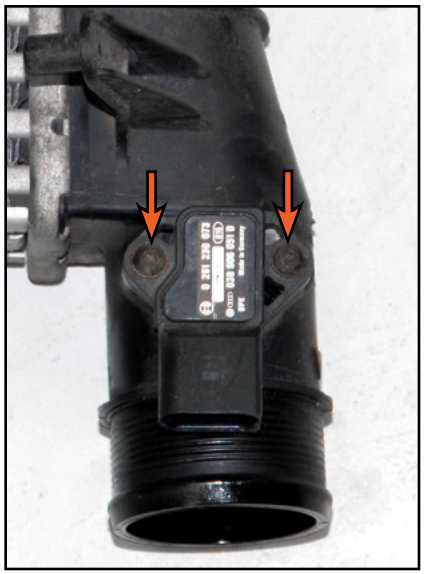
Install the new power steering cooler bracket onto the charge pipe using the provided M5 screws, washers, and nuts.



INSTALLING THE NEW INTERCOOLER

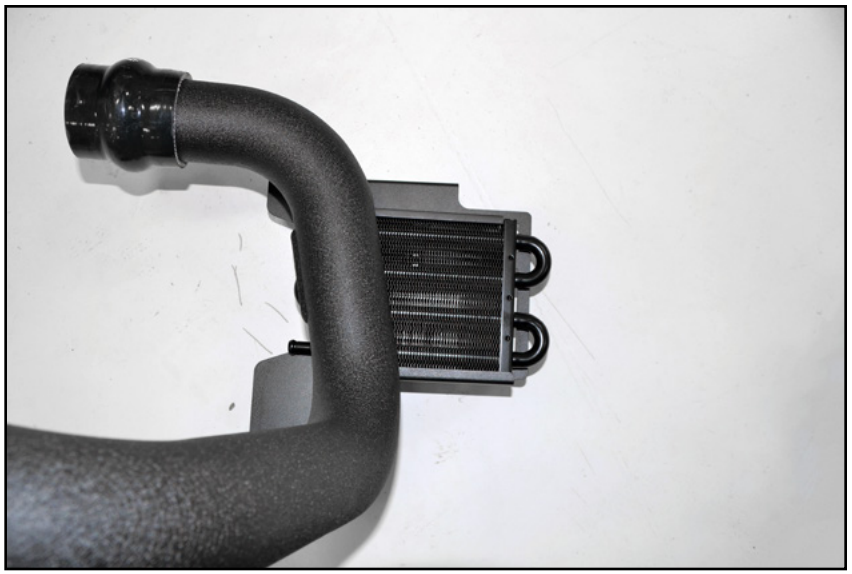
Step 7: T20 Torx, 4mm Hex (Allen)

Transfer the MAP sensor from the LH intercooler to the new charge pipe as shown using the provided M6 screws.



Step 8:

Slide the new power steering cooler into the bracket as shown.



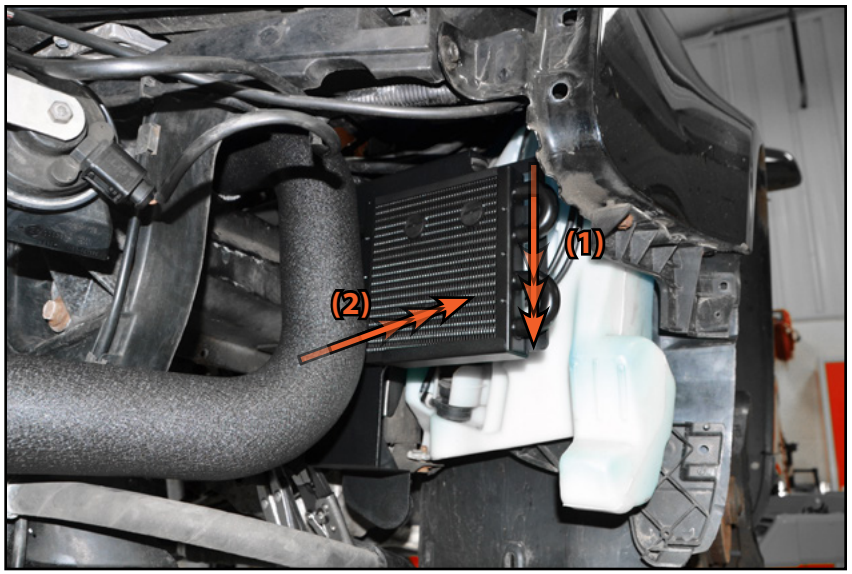
INSTALLING THE NEW INTERCOOLER

Step 9:

Slide the provided mounting ties through the cooler and out through the mounting holes in the back of the bracket, then install the locking rings (arrow) and trim off the excess length from the ties.

Step 10:

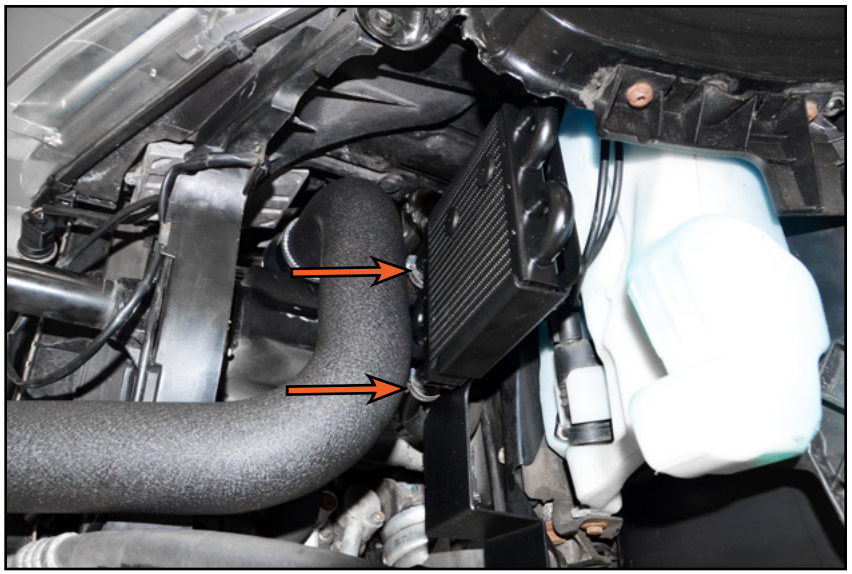
Lift the charge pipe/power steering cooler assembly up into the vehicle and pull down to pop it into the upper mounting grommets in the LH intercooler mounting bracket (1), then push the bottom rearward to pop it into the lower mounting grommet (2).



INSTALLING THE NEW INTERCOOLER

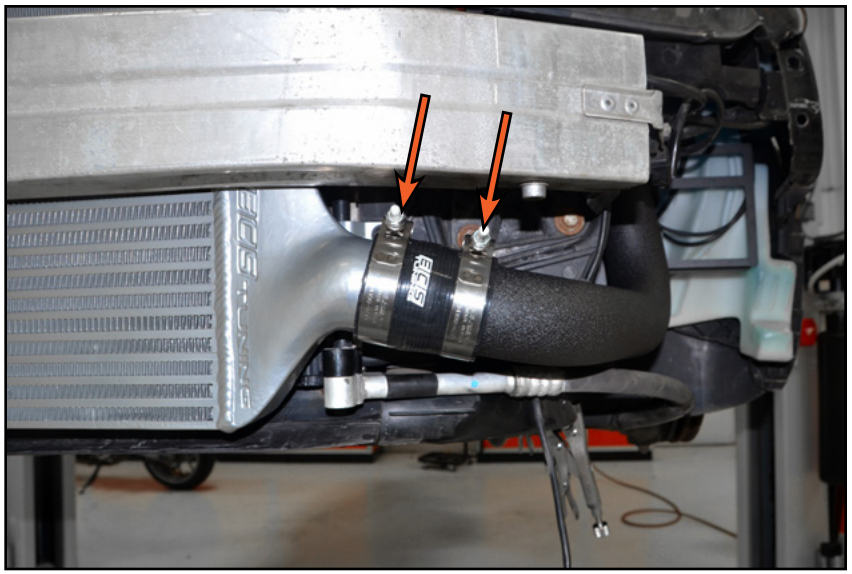
Step 11: Flat Head Screwdriver

Install the power steering hoses onto the fittings in the new power steering cooler and install and tighten the provided clamps to secure it in place.



Step 12: 11mm Socket & Ratchet

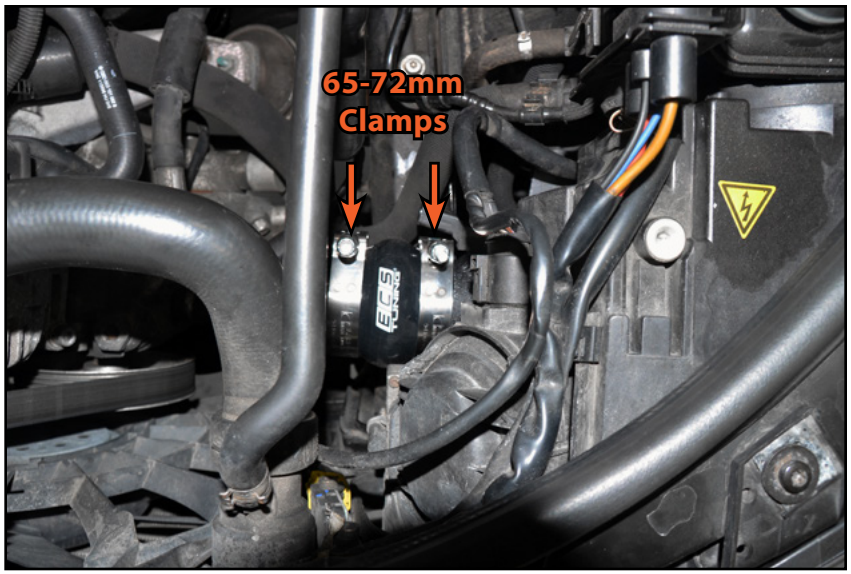
Slide the intercooler coupler over the LH intercooler flange and tighten the clamps (arrows).



INSTALLING THE NEW INTERCOOLER

Step 13:

Install two 65-72mm clamps over the hump coupler as shown.



Step 14:

Slide the throttle body coupler over the upper charge pipe as shown, then slide the appropriate clamps into place.

INSTALLING THE NEW INTERCOOLER

Step 15: 11mm Socket & Ratchet

Slide the upper charge pipe into place between the hump coupler and the throttle body, then tighten the two throttle body coupler clamps (arrows).

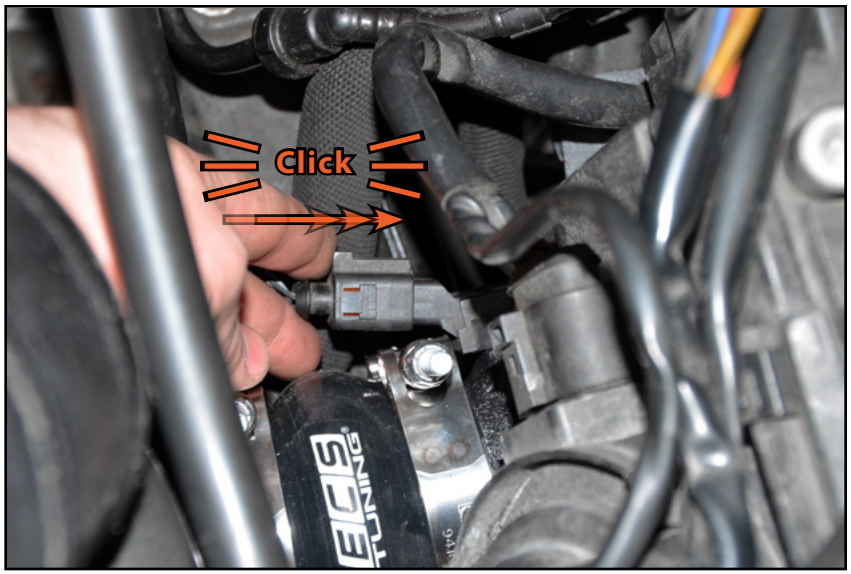
Step 16: 11mm Socket & Ratchet

Tighten the two hump coupler clamps (arrows).

INSTALLING THE NEW INTERCOOLER

Step 17:

Reconnect the MAP sensor.



Step 18:

Reinstall the bumper, fender liners and wheels, then proceed to the next page for more information on bleeding the power steering system.

POWER STEERING SYSTEM BLEEDING PROCEDURE

The steering wheel must not be turned at any point during the bleeding procedure.

1. Check power steering fluid level and top off as necessary.
2. Briefly start the engine and let it run for a maximum of 2 seconds.
3. Wait 30 seconds, then repeat step 1 and 2 until the fluid level remains constant.
4. Start engine and allow it to run for 2-3 minutes.

Any remaining air in the power steering system will naturally dissipate while driving over the next 10-15 miles

Congratulations, your installation is complete!

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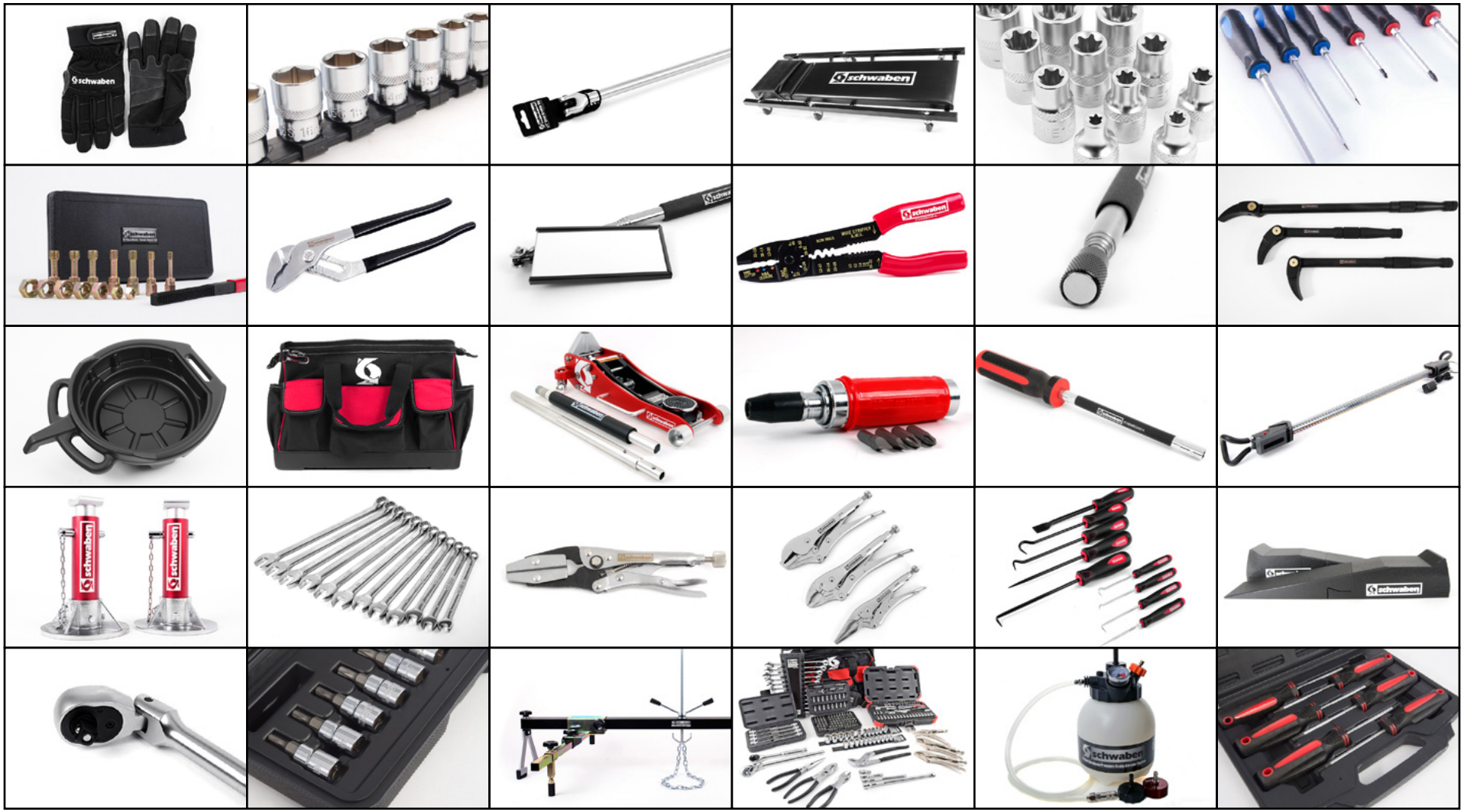

Your Front Mount Intercooler Kit installation is complete!

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.