

IMPORTANT INFORMATION

Please inform and provide a copy of this document to every person in your dealership with campaign-related responsibilities, including Service, Parts and Accounting personnel. By law, dealers must correct, prior to delivery for sale or lease, any vehicle that fails to comply with an applicable Federal Motor Vehicle Safety Standard or that contains a defect relating to motor vehicle safety. **If you have questions regarding this or any other campaign, please contact Warranty.**



Safety Recall

REVISION

Code: 24AP

**Subject: Certain 2011-2013 Audi S4, S5, A6, A7 and Q7 with 3.0L TFSI Engine
Fuel Injection System Leak**

March 17, 2015

Revision Summary

Criteria 03 repair instructions & SAGA claiming information revised.

Problem Description

Due to a combination of production tolerance issues and vehicle vibration during dynamic driving, it is possible that, in rare cases, a fuel leak may occur in the vehicle's fuel injection system. Leaking fuel, in the presence of an ignition source, may result in a fire.

Additionally, some vehicles may benefit from having the thermostat and/or the crankcase pressure valve updated. Repairs to these other components are not related to the safety recall, but can be easily performed at the same time as recall repair.

Corrective Action

To correct the safety defect, dealers will replace both fuel rails and the fuel injector seals.

Additionally, some vehicles may also have the thermostat and/or the crankcase pressure valve updated. This work is not related to the safety recall, but can easily be performed at the same time as the recall repair.

Affected Vehicles

U.S.A.:

2011-2012 Audi S4, S5, Q7 with 3.0L TFSI Engine

2012 Audi A6 with 3.0L TFSI Engine

2012-2013 Audi A7 with 3.0L TFSI Engine

Canada.:

U.S.A.:

2011-2012 Audi S4, S5, Q7 with 3.0L TFSI Engine

2012 Audi A6, A7 with 3.0L TFSI Engine

Verify the open Campaigns/Actions screen in Elsa to determine if the VIN# applies to this Campaign/Action

NOTE:

- *Elsa is the only valid campaign inquiry/verification source. Check Elsa on the day the campaign work will be performed to verify vehicle eligibility for the repair in order to receive claim payment consideration. Campaign status must show "open".*
- *If this repair appears to have already been performed on the vehicle but the code still shows open in Elsa, contact Warranty before proceeding further, e.g. a dealer may have recently performed this repair but not yet entered a claim for it in the system.*
- *Elsa may also show additional open action(s); if so, inform your customer - this work can be done while the vehicle is in for this campaign.*
- *Contact Warranty if you have any questions.*

Inventory Vehicle Open Campaign/Action Report (AIM)

In March 2015 (anticipated), affected vehicles will be listed on the Inventory Vehicle Open Campaign Action report under My Dealership Reports (found on www.accessaudi.com & AIM). A list will not be posted for dealers who do not have any affected vehicles.

Parts Information and Allocation

Parts will be allocated prior to customer notification. If you have exhausted your allocated parts but have exceeded your weekly Upper Order Limit, please submit your requests for additional parts via email to upperorderlimits@vw.com.

If you have questions regarding parts, please contact the Parts Helpline at 800-767-6552.

Owner Notification Mailing

We anticipate the customer notification will take place on or about March 17, 2015. A sample copy of the proposed owner letter is enclosed.

Requirements for Emissions Campaigns Having Customer Notification (CALIFORNIA ONLY)

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. **When campaign work is done you must provide the owner with a signed "Vehicle Emission Recall – Proof of Correction" certificate (RC EMISCAVWAU).** Certificates can be ordered at no cost online via the Compliance Label Ordering portal at www.accessaudi.com.

Campaign Completion Labeling Guidelines

Vehicles repaired under this action must be identified with a campaign completion label (part number CAMP 010 000). Labels can be ordered at no cost online via the Compliance Label Ordering portal at www.accessaudi.com.

Important Reminder on Vehicles Affected by Safety and Compliance Recalls

By law, dealers must correct, prior to delivery for sale or lease, any vehicle that fails to comply with an applicable Federal/Canadian Motor Vehicle Safety Standard or that contains a defect relating to motor vehicle safety.

Immediately upon completion of the repair work, enter the Applicable Criteria ID and Repair Operation from the following chart. **The Applicable Criteria ID is shown in Elsa.** Claims will only be paid for vehicles that show this campaign open in Elsa on the day of the repair. To help ensure prompt and proper payment, attach the screen print to the repair order.

Check Elsa to determine if this campaign is open.

Damage Code: 0099

Unsold vehicle = 7 90

Criteria I.D. 01

2441 55 99 290 T.U. A6, A7 and Q7

<u>Quantity</u>	<u>Part Number</u>	<u>Part Description</u>
6.00	06E998907E	Repair kit
6.00	06D133036K	Injector support
1.00	06E198201*	Fuel rail kit
1.00	06E103213	Vent Tube
6.00	079129717D	Gasket
6.00	079129717B	Gasket
2.00	06E127065G	Adapter
1.00	06E121119C	Seal
2.00	06E121119E	Seal
1.00	06E145417A	Seal
4.00	06E121119D	Seal (if required)
15.00	G 013A8JS0	Coolant concentrate

-AND/OR-

Continue to next page

Criteria I.D. 02

Replace thermostat

Repair operation: 1955 19 91 270 T.U. S4, S5
1955 19 91 250 T.U. A6 and A7
1955 19 89 170 T.U. Q7

<u>Quantity</u>	<u>Part Number</u>	<u>Part Description</u>
1.00	06E121111AL	Thermostat

-AND/OR-**Criteria I.D. 03**

Repair pressure control valve and perform software update

Repair operation: 1050 41 99 30 T.U.**AND**

2470 23 99 Time stated on diagnostic protocol (max 40 T.U.)

<u>Quantity</u>	<u>Part Number</u>	<u>Part Description</u>
1.00	06E103772G	Repair set for pressure control valve
1.00	06E103271B	Restrictor
1.00	N 10203601	Retaining clip (12.3mm) (or equivalent)

There is NO reimbursement for Vehicle Wash or Loaner**If customer refused repairs****U.S. dealers:** Submit the request through Audi Warranty Online under the Campaigns/Update option.**Canadian dealers:** Fax the Repair Order to Warranty at (905) 428-4811 and provide VIN, applicable Service Number, Customer Information, Dealer Number and Date.

Customer Letter Example (USA – EXCEPT CALIFORNIA)

This notice applies to your vehicle: <VIN>

NHTSA: 15V019

Subject: Safety Recall 24AP – Fuel Injection System Leak
Certain 2011-2013 Model Year Audi S4, S5, A6, A7 & Q7 with 3.0L TFSI Engine

Dear Audi Owner,

This notice is sent to you in accordance with the National Traffic and Motor Vehicle Safety Act. Audi has decided that a defect, which relates to motor vehicle safety, exists in certain 2011-2013 model year Audi vehicles equipped with a 3.0L TFSI engine. Our records show that you are the owner of a vehicle affected by this action.

What is the issue? Due to a combination of production tolerance issues and vehicle vibration during dynamic driving, it is possible that a fuel leak may occur in the vehicle's fuel injection system. Leaking fuel, in the presence of an ignition source, may result in a fire.

Additionally, some vehicles may benefit from having the thermostat and/or the crankcase pressure valve updated. Repairs to these other components are not related to the safety recall, but can be easily performed at the same time as recall repair.

What will we do? To help correct the safety defect, your authorized Audi dealer will replace both fuel rails and the fuel injector seals.

The thermostat and/or the crankcase pressure valve will also be updated on certain vehicles. These repairs are not related to the safety recall, but can easily be performed at the same time as the recall repair.

This work will take about eight hours to complete and will be performed for you free of charge.

What should you do? Please contact your authorized Audi dealer without delay to schedule this recall repair. Please keep in mind that your dealer may need additional time for the preparation of the repair, as well as to accommodate their daily workshop schedule.

Precautions you should take Affected vehicles can continue to be driven as usual, but if you can smell fuel in the vehicle proceed immediately to the nearest authorized dealer or qualified workshop if you believe that it is safe to do so in order to have the fuel system on the vehicle inspected.

Lease vehicles and address changes If you are the lessor and registered owner of the vehicle identified in this action, the law requires you to forward this letter immediately via first-class mail to the lessee within ten (10) days of receipt. If you have changed your address or sold the vehicle, please fill out the enclosed prepaid Owner Reply card and mail it to us so we can update our records.

Reimbursement of Expenses If you have previously paid for repairs relating to the condition described in this letter, the enclosed form explains how to request reimbursement. We would be pleased to review your reimbursement request.

Can we assist you further? If your authorized Audi dealer fails or is unable to complete this work free of charge within a reasonable time, please call or write to:

Audi of America, Inc.,
Attn: Customer Experience (24AP)
3800 Hamlin Road, Auburn Hills, MI 48326
1-800-253-2834
www.audiusa.com

Checking your vehicle for open Recalls and Service Campaigns To check your vehicle's eligibility for repair under this or any other recall/service campaign, please visit the **Recall/Service Campaign Lookup** tool at www.audiusa.com and enter your Vehicle Identification Number (VIN). As always, if you have any questions or if you need additional assistance, please contact Customer Experience or your authorized Audi dealer.

If you still cannot obtain satisfaction, you may file a complaint with: The Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590; or call the toll-free Vehicle Safety Hotline at 1-888-327-4236 (TTY: 1-800-424-9153); or go to <http://www.safercar.gov>.

We apologize for any inconvenience this matter may cause; however we are taking this action to help ensure your safety and continued satisfaction with your vehicle. Thank you for your continued loyalty!

Sincerely,

Audi Customer Protection

Customer Letter Example (USA –CALIFORNIA)

This notice applies to your vehicle: <VIN>

NHTSA: 15V019

**Subject: Safety Recall 24AP – Fuel Injection System Leak
Certain 2011-2013 Model Year Audi S4, S5, A6, A7 & Q7 with 3.0L TFSI Engine**

Dear Audi Owner,

This notice is sent to you in accordance with the National Traffic and Motor Vehicle Safety Act. Audi has decided that a defect, which relates to motor vehicle safety, exists in certain 2011-2013 model year Audi vehicles equipped with a 3.0L TFSI engine. Our records show that you are the owner of a vehicle affected by this action.

What is the issue? Due to a combination of production tolerance issues and vehicle vibration during dynamic driving, it is possible that a fuel leak may occur in the vehicle's fuel injection system. Leaking fuel, in the presence of an ignition source, may result in a fire.

Additionally, some vehicles may benefit from having the thermostat and/or the crankcase pressure valve updated. Repairs to these other components are not related to the safety recall, but can be easily performed at the same time as recall repair.

What will we do? To help correct the safety defect, your authorized Audi dealer will replace both fuel rails and the fuel injector seals.

The thermostat and/or the crankcase pressure valve will also be updated on certain vehicles. These repairs are not related to the safety recall, but can easily be performed at the same time as the recall repair.

This work will take about eight hours to complete and will be performed for you free of charge.

What should you do? Please contact your authorized Audi dealer without delay to schedule this recall repair. Please keep in mind that your dealer may need additional time for the preparation of the repair, as well as to accommodate their daily workshop schedule.

Precautions you should take Affected vehicles can continue to be driven as usual, but if you can smell fuel in the vehicle proceed immediately to the nearest authorized dealer or qualified workshop if you believe that it is safe to do so in order to have the fuel system on the vehicle inspected.

Important information for California Vehicle Owners – California Regulations California regulations require that this campaign be completed prior to the time you renew your vehicle registration. Therefore, **please make sure that this campaign is completed prior to the renewal of your vehicle registration**, and that you furnish proof of completion to the Department of Motor Vehicles (DMV) in the form of a copy of the dealer's repair order, including a signed "Proof of Correction" certificate. You obtain this from your dealer after the campaign has been completed. Please retain the signed "Proof of Correction Certificate" with your vehicle records. **DO NOT MAIL THIS FORM** to the DMV, unless requested.

Lease vehicles and address changes If you are the lessor and registered owner of the vehicle identified in this action, the law requires you to forward this letter immediately via first-class mail to the lessee within ten (10) days of receipt. If you have changed your address or sold the vehicle, please fill out the enclosed prepaid Owner Reply card and mail it to us so we can update our records.

Reimbursement of Expenses If you have previously paid for repairs relating to the condition described in this letter, the enclosed form explains how to request reimbursement. We would be pleased to review your reimbursement request.

Can we assist you further? If your authorized Audi dealer fails or is unable to complete this work free of charge within a reasonable time, please call or write to:

Audi of America, Inc.,
Attn: Customer Experience (24AP)
3800 Hamlin Road, Auburn Hills, MI 48326
1-800-253-2834
www.audiusa.com

Checking your vehicle for open Recalls and Service Campaigns To check your vehicle's eligibility for repair under this or any other recall/service campaign, please visit the **Recall/Service Campaign Lookup** tool at www.audiusa.com and enter your Vehicle Identification Number (VIN). As always, if you have any questions or if you need additional assistance, please contact Customer Experience or your authorized Audi dealer.

If you still cannot obtain satisfaction, you may file a complaint with: The Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590; or call the toll-free Vehicle Safety Hotline at 1-888-327-4236 (TTY: 1-800-424-9153); or go to <http://www.safercar.gov>.

We apologize for any inconvenience this matter may cause; however we are taking this action to help ensure your safety and continued satisfaction with your vehicle. Thank you for your continued loyalty!

Sincerely,

Audi Customer Protection

Customer Letter Example (CANADA)

This notice applies to your vehicle: <VIN>

Subject: Safety Recall 24AP – Fuel Injection System Leak
Certain 2011-2012 Model Year Audi S4, S5, A6, A7 and Q7 with 3.0L TFSI Engine

Dear Audi Owner,

This notice is sent to you in accordance with the requirements of the Motor Vehicle Safety Act. Audi has decided that a defect, which relates to motor vehicle safety, exists in certain 2011-2012 model year Audi vehicles equipped with a 3.0L TFSI engine. Our records show that you are the owner of a vehicle affected by this action.

What is the issue? Due to a combination of production tolerance issues and vehicle vibration during dynamic driving, it is possible that a fuel leak may occur in the vehicle's fuel injection system. Leaking fuel, in the presence of an ignition source, may result in a fire.

Additionally, some vehicles may benefit from having the thermostat and/or the crankcase pressure valve updated. Repairs to these other components are not related to the safety recall, but can be easily performed at the same time as recall repair.

What will we do? To help correct the safety defect, your authorized Audi dealer will replace both fuel rails and the fuel injector seals.

The thermostat and/or the crankcase pressure valve will also be updated on certain vehicles. These repairs are not related to the safety recall, but can easily be performed at the same time as the recall repair.

This work will take about eight hours to complete and will be performed for you free of charge.

What should you do? Please contact your authorized Audi dealer without delay to schedule this recall repair. Please keep in mind that your dealer may need additional time for the preparation of the repair, as well as to accommodate their daily workshop schedule.

Precautions you should take Affected vehicles can continue to be driven as usual, but if you can smell fuel in the vehicle proceed immediately to the nearest authorized dealer or qualified workshop if you believe that it is safe to do so in order to have the fuel system on the vehicle inspected.

Lease vehicles and address changes If you are the lessor and registered owner of the vehicle identified in this action, the law requires you to forward this letter immediately via first-class mail to the lessee within ten (10) days of receipt. If you have changed your address or sold the vehicle, please fill out the enclosed prepaid Owner Reply card and mail it to us so we can update our records.

Reimbursement of Expenses If you have previously paid for repairs relating to the condition described in this letter, the enclosed form explains how to request reimbursement. We would be pleased to review your reimbursement request.

Can we assist you further? If your authorized Audi dealer fails or is unable to complete this work free of charge within a reasonable time, please call or write to:

Audi Canada
Attn: Customer Relations (24AP)
PO Box 842, Stn. A
Windsor, ON N9A 6P2
1-800-822-2834
www.audi.ca

We apologize for any inconvenience this matter may cause; however we are taking this action to help ensure your safety and continued satisfaction with your vehicle. Thank you for your continued loyalty!

Sincerely,

Audi Customer Protection

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Audi dealer. ©2015 Audi of America, Inc. and Audi Canada. All Rights Reserved.

Required Parts:

Criteria 01

<u>Quantity</u>	<u>Part Number</u>	<u>Part Description</u>
6.00	06E998907E	Repair kit
6.00	06D133036K	Injector support
1.00	06E198201	Fuel rail kit
1.00	06E103213	Vent Tube
6.00	079129717D	Gasket
6.00	079129717B	Gasket
2.00	06E127065G	Adapter
1.00	06E121119C	Seal
2.00	06E121119E	Seal
1.00	06E145417A	Seal
4.00	06E121119D	Seal (if required)
1.5L	G 013A8J1G	Coolant concentrate

Criteria 02

<u>Quantity</u>	<u>Part Number</u>	<u>Part Description</u>
1.00	06E121111AL	Thermostat

Criteria 03

<u>Quantity</u>	<u>Part Number</u>	<u>Part Description</u>
1.00	06E103772G	Repair set for pressure control valve
1.00	06E103271B	Restrictor
1.00	N 10203601	Retaining clip (12.3mm) (or equivalent)

Required Tools:



⇐ 3094 Hose Clamps Up to 25mm Diameter (or equivalent)



⇐ Spanner Wrench 3212



⇐ VAS 6362 Hose Clip Pliers (or equivalent)



⇐ T10133 – Fuel injector seal tool (or equivalent)



⇐ VAG 1331/2 – Torque Wrench Insert



⇐ VAS 6213 – Hand Vacuum Pump (or equivalent)



⇐ T10060A Locking Pin (or equivalent)



⇐ VAS 6096 Cooling System Charge Unit



⇐ VAG1274/8 Adapter



⇐ VAG 1274/10 Adapter



⇐ VAS 6208 Drip Tray for VAS 6100 (or equivalent)



⇐ T10007A Refractometer



⇐ VAS 6150 Laptop Diagnostic Unit, VAS 5051B, or VAS 5052/A



⇐ VAS 6122 Engine Bung Set (or equivalent)



⇐ 80-200 – Pry Lever (or equivalent)



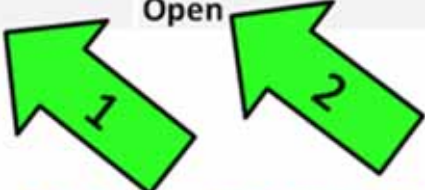
⇐ SMN372500 – Used Oil Collection and Extraction Unit

Repair Overview:

All affected VINs will have Criteria 01 open. Some of these vehicles may have Criteria 02 and/or 03 open also. To ensure all applicable repairs are performed, check Elsa for open criteria and follow the steps in this work instruction carefully.

Work Procedure

Applicable Criteria ID (s)	Campaign/Action Status
01	Open



EXAMPLE

TIP

If Campaign Completion label is present, no further work is required

Section A – Check for Previous Repair

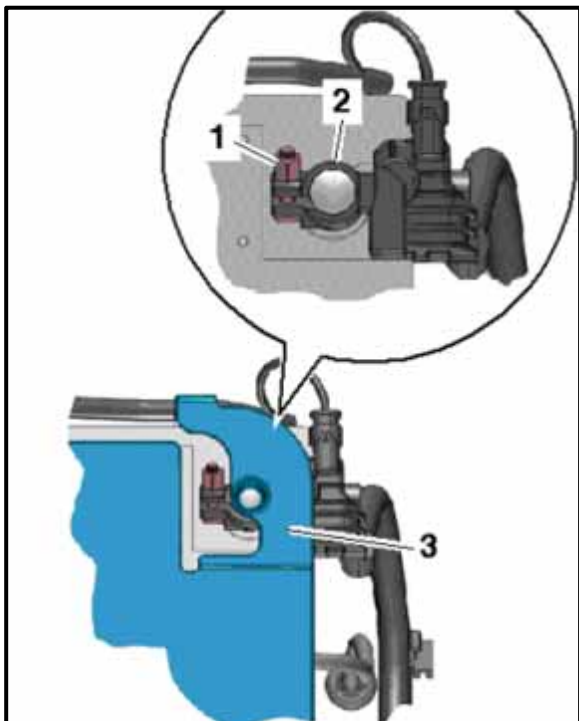
- Enter the VIN in Elsa and proceed to the “Campaign/Action” screen



Tip: On the date of repair, print this screen and keep a copy with the repair order

- ⇐ Ensure that the Status is “Open”
<arrow 2>
- ⇐ Note the Applicable Criteria ID
<arrow 1> for use in determining the correct work to be done and corresponding parts associated

Proceed to Section B



Section B – Disconnect the Vehicle Battery



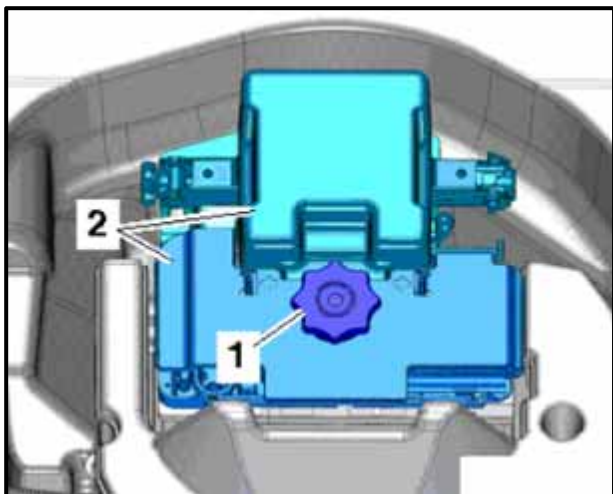
Note: On vehicles with air suspension, activate the lift mode prior to disconnecting the battery (see **Appendix A**)

A6 and A7 models:

- Switch the ignition OFF.
- Lift the luggage compartment floor covering by the handle and fold it forward.
- ⇐ Open the cover <3> over the negative battery terminal.
- ⇐ Loosen the nut <1>.
- ⇐ Disconnect and isolate the negative battery terminal <2>.

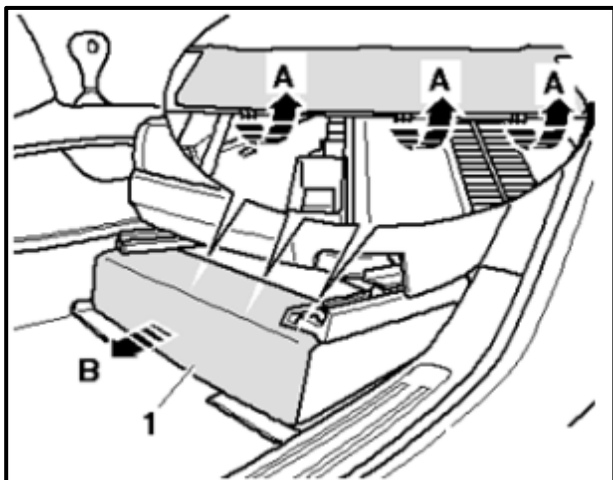
S4 and S5 models:

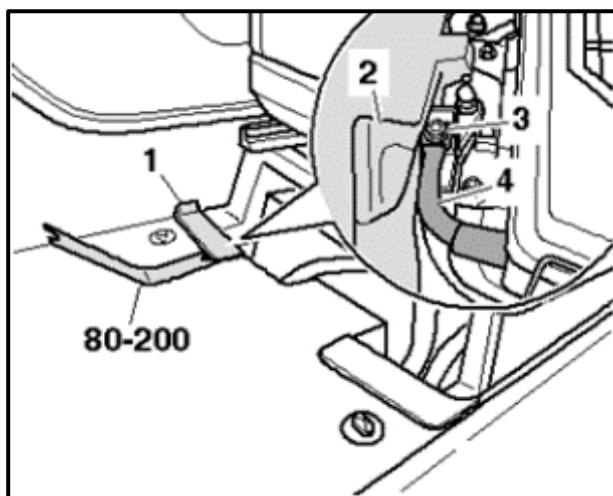
- Switch the ignition OFF.
- Lift the luggage compartment floor covering.
- If necessary, remove the spare tire.
- ⇐ Remove the nut <1> and the cover <2> to access the vehicle battery.
- Lift the cover to access the negative battery terminal.
- Disconnect and isolate the negative battery terminal.



Q7 models:

- Position the driver seat in the full rearward position.
- ⇐ Release the mounting clips on the battery cover <1>, lift the front of the cover <direction of arrow A>, then remove the cover <direction of arrow B>.





- ⇐ Pry cover <1> with Pry Lever 80-200 from the floor covering.
- ⇐ Lift the floor covering <2> to access battery ground connection.
- ⇐ Loosen mounting nut <3>.
- Remove and isolate the battery cable.

Proceed to Section C



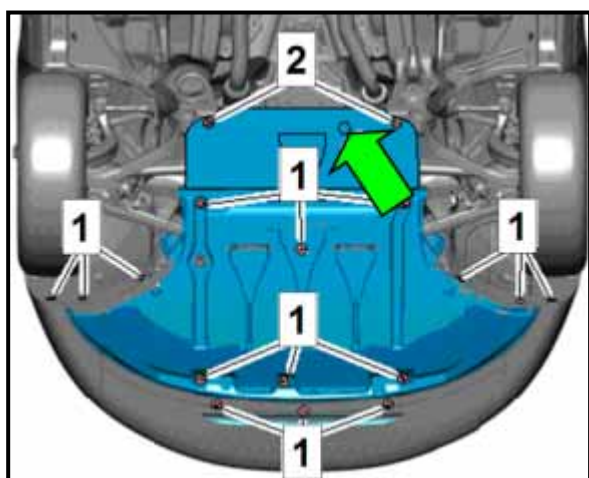
Section C – Drain the Cooling System



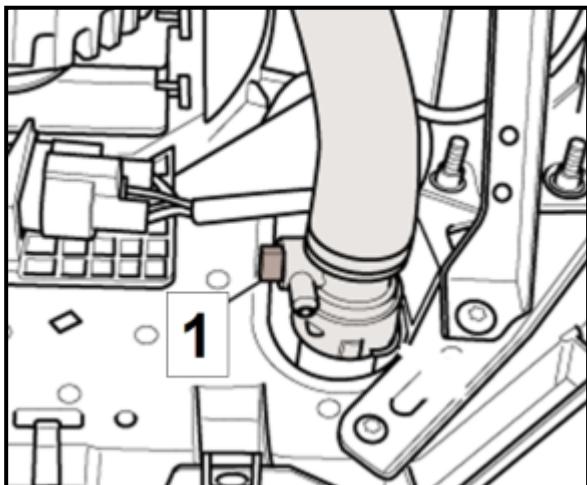
WARNING: Risk of scalding due to hot steam and hot coolant

- The coolant system is under pressure when the engine is warm
- Cover the coolant reservoir cap with a clean cloth and then open it slowly to release the pressure in the system

- Open the hood.
- ⇐ Carefully open the coolant reservoir cap <arrow>.



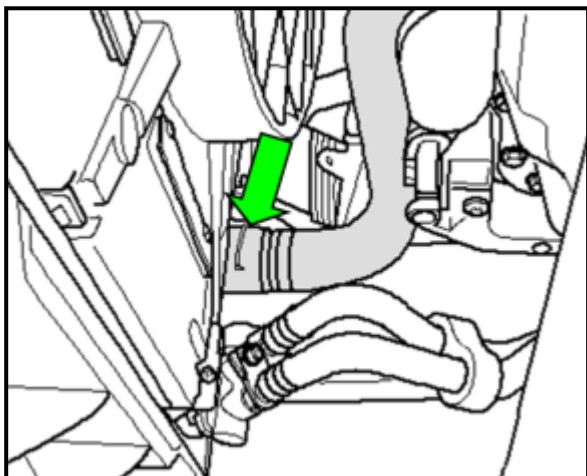
- Raise the vehicle on an appropriate hoist.
- ⇐ Remove the underbody shield fasteners <1, 2, arrow>.
- Remove the underbody shield.
- Place the VAS 6208 drip tray, or equivalent, under the vehicle.



⇐ If equipped, open the drain plug <1> and drain the coolant.



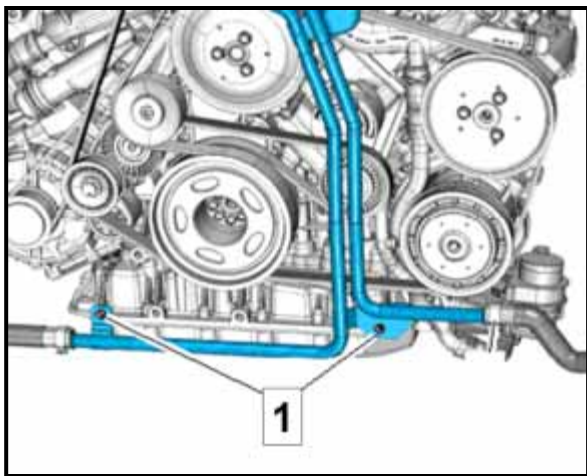
Tip: The drain plug may be closed once the coolant is drained.



⇐ If the drain plug is not present, disconnect the right lower radiator hose and allow the coolant to drain.



Tip: The hose may be reattached once the coolant is drained.

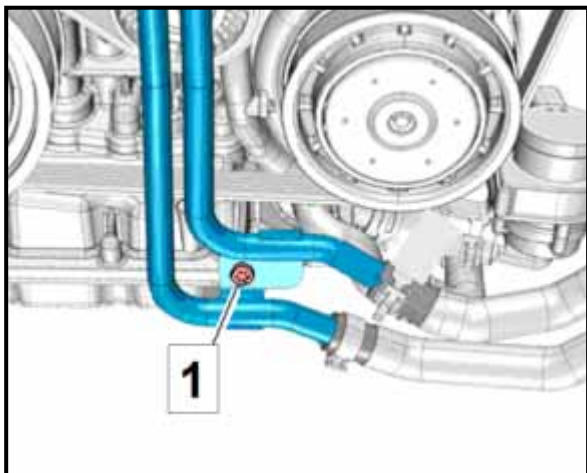


S4 and S5 models:

⇐ Remove the two screws <1> for the hard coolant lines.



Tip: Removing screws for the hard coolant line bracket will provide more working room at the front of the engine.



All other models:

- ⇐ Remove the coolant hose mounting screw <1>.



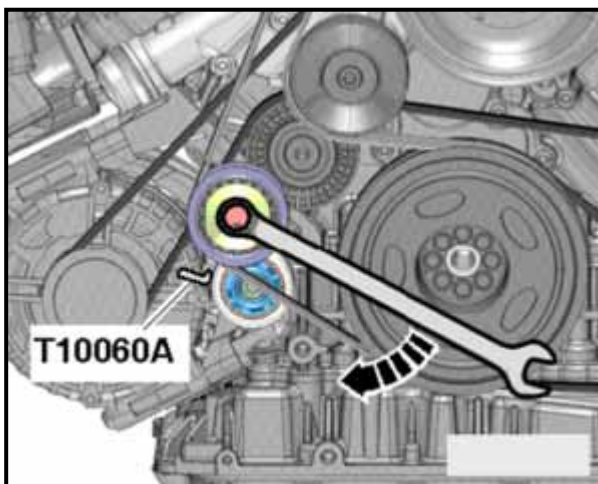
Tip: Removing the screw for the hard coolant line bracket will provide more working room in front of the engine.

Proceed to Section D.



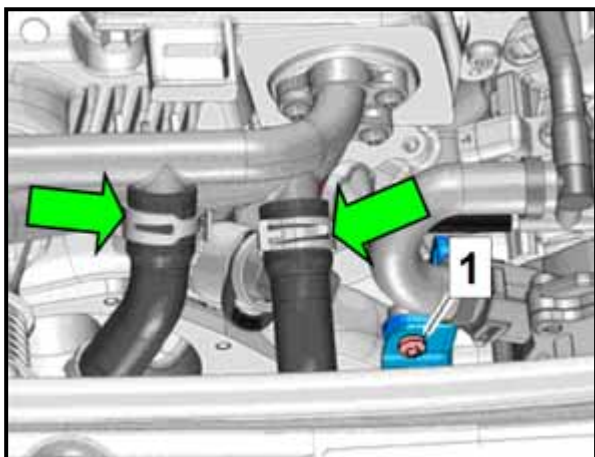
Section D – Remove the Supercharger

- Lower vehicle to a comfortable working level.
- ⇐ If necessary, open the hood.
- ⇐ Remove the engine covers <arrows>.



Note: Before removing the ribbed belt, mark the turning direction on it with chalk or felt tip pen. A reversed turning direction can cause damage to the belt under operating conditions.

- ⇐ Pivot the belt tensioner clockwise <direction of arrow> to release the tension on the ribbed belt for the supercharger.
- ⇐ Remove the ribbed belt and secure the belt tensioner with locking pin T10060A <as shown>.



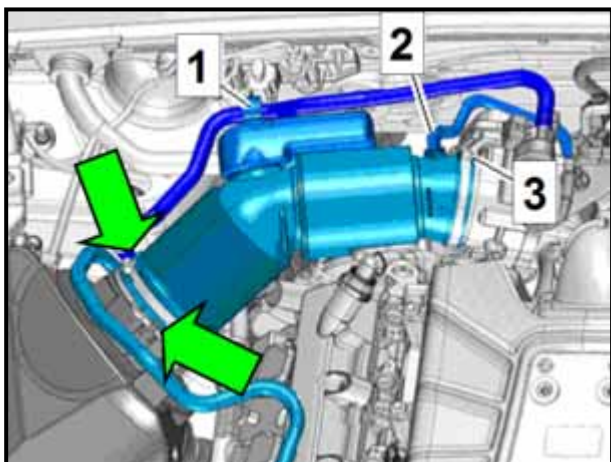
Tip: Place a shop towel beneath the coolant hoses to catch any residual coolant.

⇐ Release the clamps <arrows> using hose clip pliers VAS 6362 (or equivalent) and disconnect the coolant hoses from the coolant pipes on the supercharger.

⇐ Remove upper screw <1> for the bracket to the hard coolant lines.



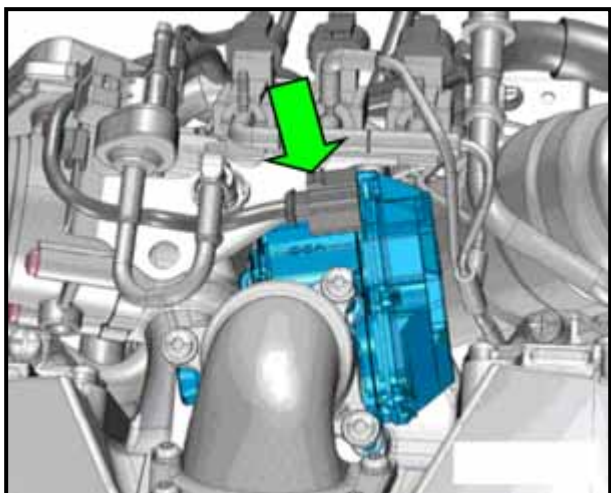
Tip: Removing screw for the hard coolant line bracket will provide more working room in front of the engine.



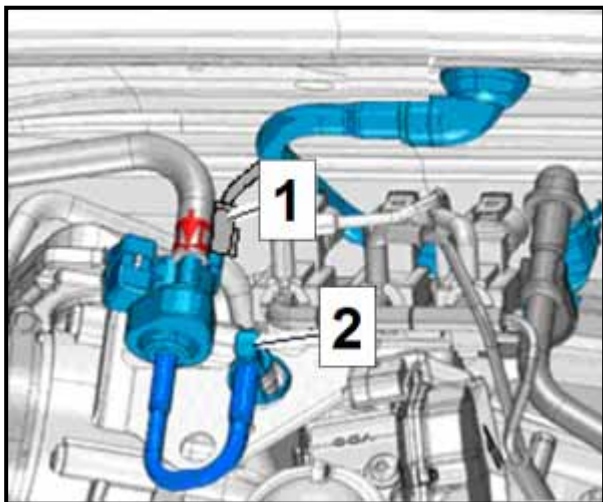
⇐ Free up hose connection <1> from the EVAP canister on the air filter housing guide tube.

⇐ Remove the vacuum hose <2> from the air guide hose connection.

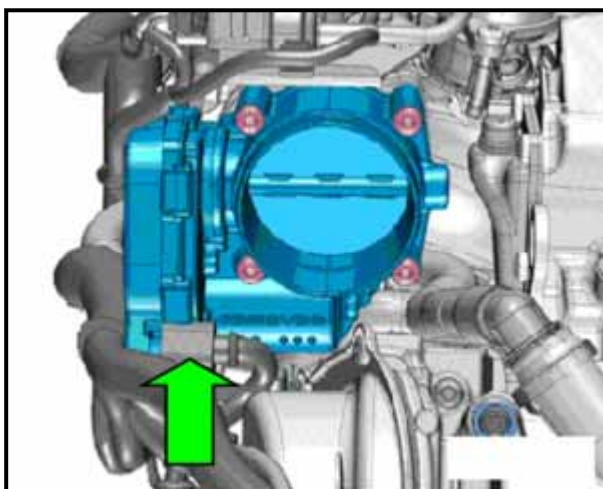
⇐ Remove the air guide pipe by loosening the hose clamp <3> and opening the clips <arrows>.



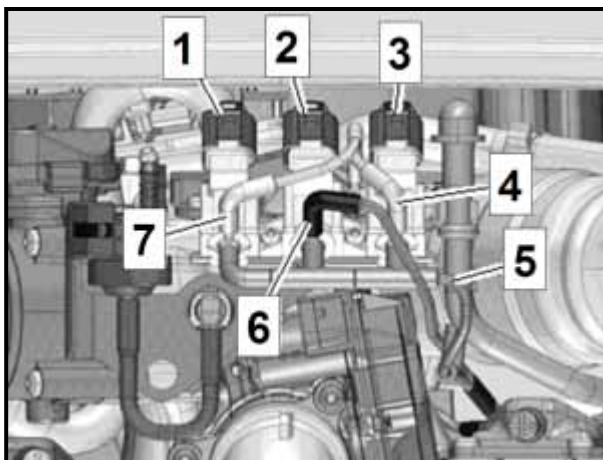
⇐ Disconnect the control module (J808) <arrow>.



- ⇐ Unplug the electrical connector <1> on EVAP canister purge valve N80.
- ⇐ Disconnect the vacuum hose <2>.
- Remove the N80 valve from the bracket and lay it aside with the hose connected.



- ⇐ Disconnect the throttle valve control module J338 <arrow>.

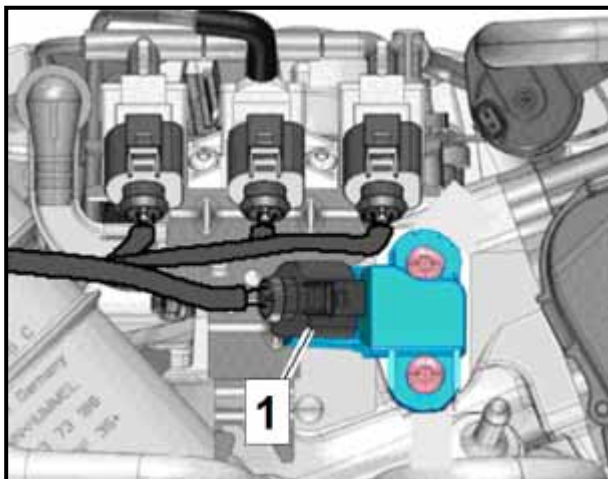


- ⇐ Disconnect the vacuum solenoids <1, 2 and 3>.
- Free up the connector harness from bracket by disconnecting retainer clip (not shown).

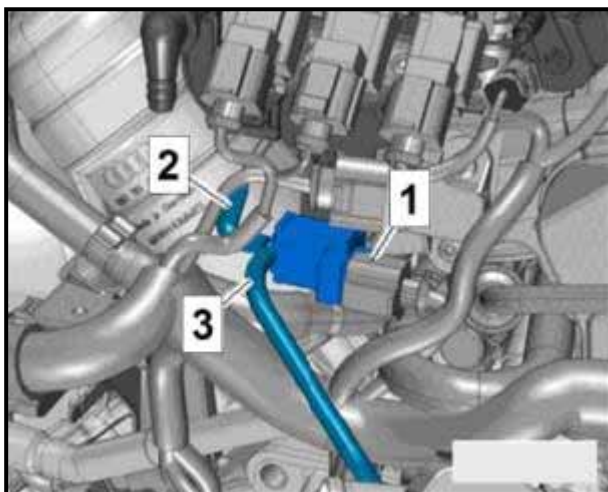


Tip: Mark the vacuum hoses for re-installation later.

- ⇐ Disconnect the vacuum hoses <4 through 7>.



- ⇐ Disconnect the intake air temperature sensor G42/manifold absolute pressure sensor G71 <1>.



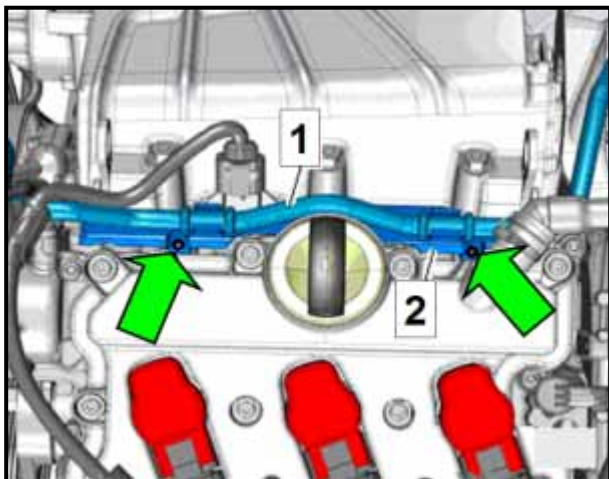
S4 and S5 models:

- ⇐ Unplug the connector <1> and the vacuum hoses <2> and <3>.

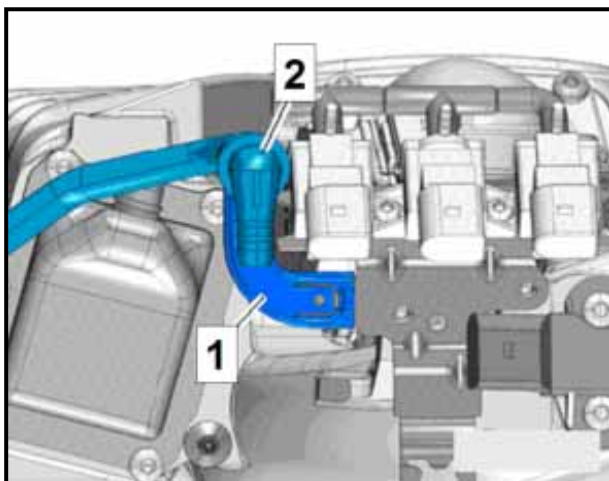


All models:

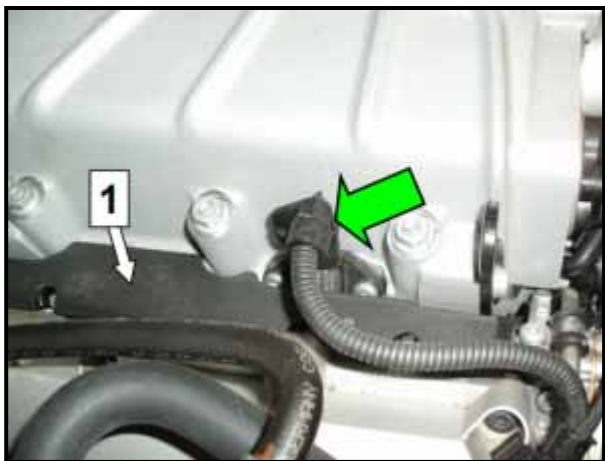
- ⇐ On the left side of the engine, disconnect the Charge Air Pressure Sensor G447 <arrow>.



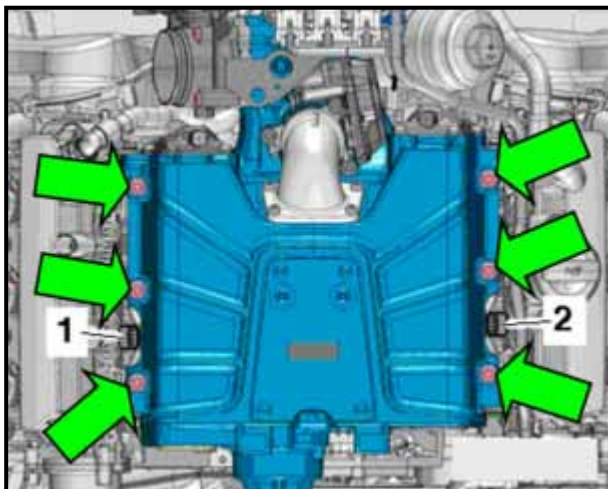
- ⇐ Free up the vacuum hose <1>.
- ⇐ Remove the left and right retaining screws <arrows> and the cover <2>.



- ⇐ Free up the brake booster vacuum hose <2> on the bracket <1>.



- ⇐ On right side of engine, disconnect the Charge Air Pressure Sensor G31<arrow>.
- ⇐ Remove cover <1> by first removing the two screws.

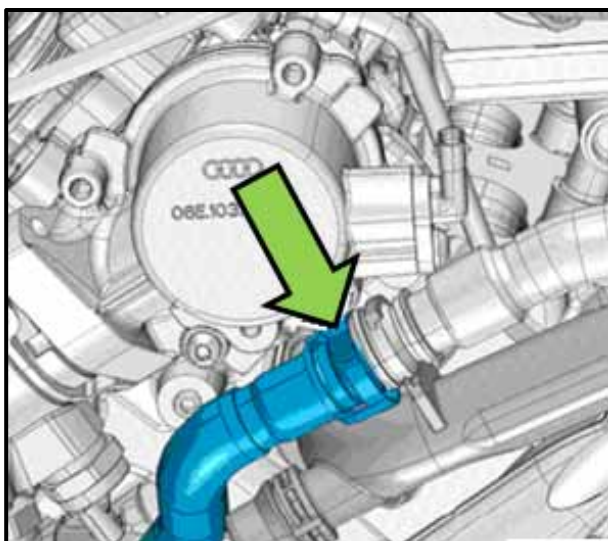


⇐ Remove the nuts <arrows> and lift upward to remove the compressor with the charge air coolers.

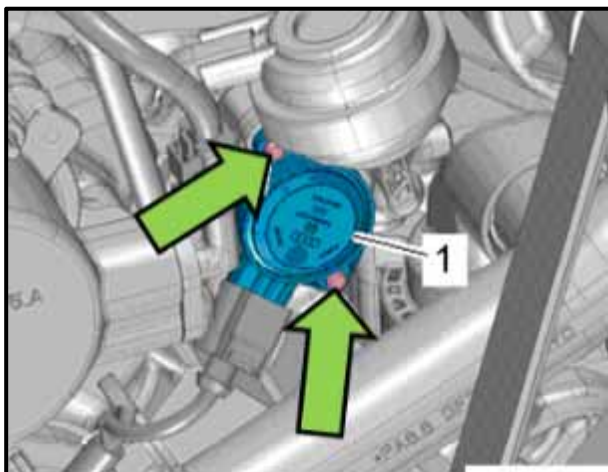
- Seal off the openings on the compressor and on the charge air pipe using engine bung set VAS 6122 (or equivalent).

Proceed to Section E.

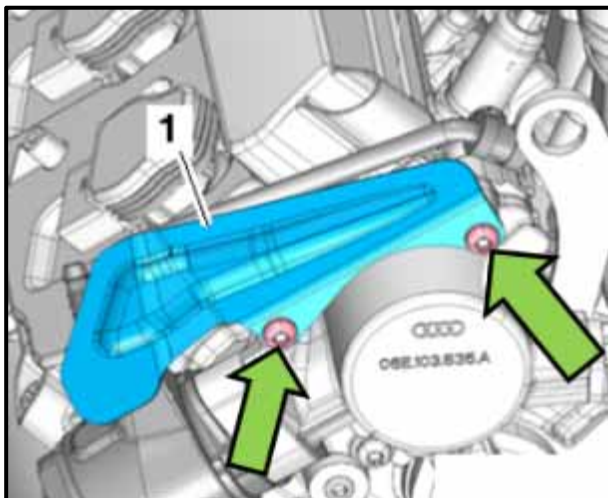
Section E – Remove the Fuel Rails



- ⇐ Remove the front secondary air hose <arrow> from the mounting bracket.
- ⇐ Disconnect the front secondary air hose <arrow> by pressing the release buttons.



- ⇐ Remove the mounting screws <arrows> from the right Intake Manifold Runner Position Sensor –G336- <1> and position it to the side.



⇐ Remove the mounting screws <arrows> and the protective plate <1>.



⇐ Wrap a clean cloth around the fuel line threaded connection <arrow> and open it slowly, allowing residual fuel pressure to escape. Once the fuel pressure is relieved, fully remove the threaded connection.



Note: While removing the threaded connection, hold the brass union nut stationary using an open end wrench.



Note: the removal of the driver side intake manifold/fuel rail assembly is depicted here. The procedure for the passenger side is nearly identical.

- ⇐ Loosen and remove the threaded fuel line connection <arrow 1>.
- ⇐ Disconnect the fuel pressure sensor <arrow 2> (driver side only).
- ⇐ Loosen the brass union nut, and the fuel rail pressure sensor <circles> from the fuel rail.



⇐ Remove the mounting fasteners <circles> from the intake manifold/fuel rail assembly.



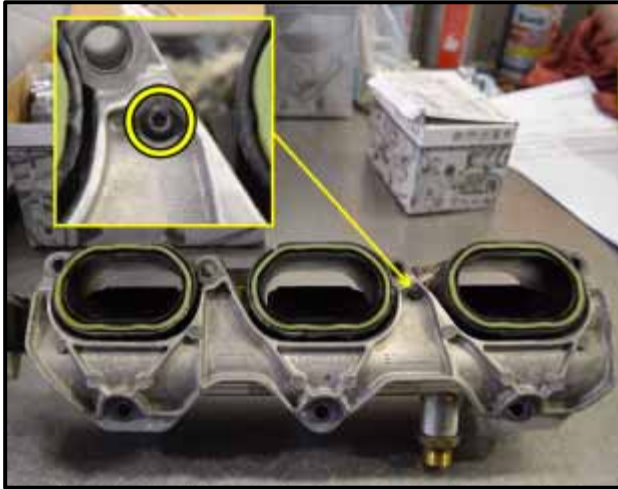
- Lift gently upward on the lower intake manifold/fuel rail assembly to unseat the fuel rail from the fuel injectors.
- ⇐ During removal of the intake manifold/fuel rail assembly, disconnect the intake manifold runner position sensor and vacuum line <arrows>.
- Repeat the previous steps to remove the intake manifold/fuel rail assembly from the opposite side of the engine.



Note: Some of the fuel injectors may come out with the fuel rail. Any injectors that are removed from the cylinder head **MUST** have replacement seals installed on them prior to reassembly (**see Appendix B**).

Proceed to Section F

Section F – Replace Fuel Rails



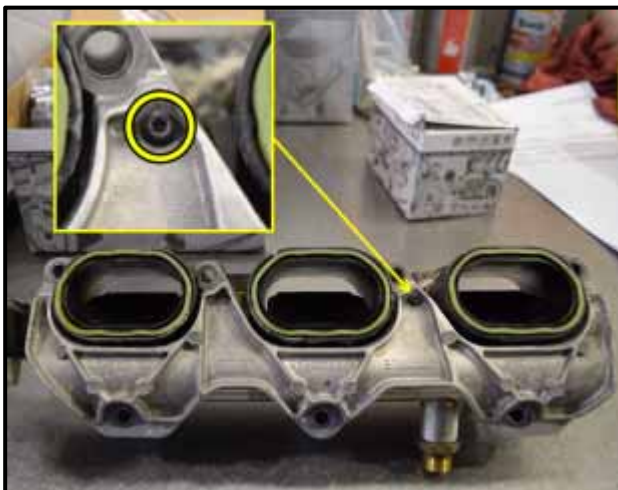
Note: The replacement procedure depicted here shows the passenger side fuel rail. Replacement of the driver side fuel rail is nearly identical.

- Remove the set screw <circle>.



⇐ Disassemble the mounting bracket, fuel rail, and intake manifold <as shown>.

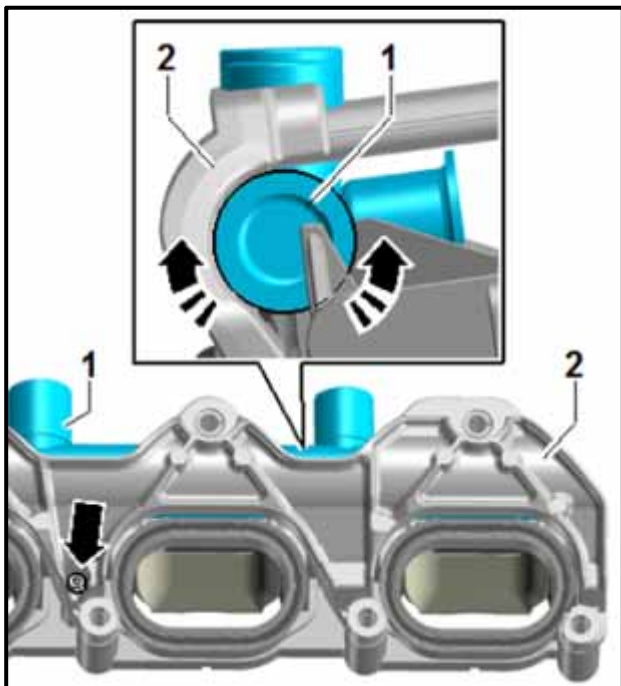
- Remove the brass union nut and the fuel rail pressure sensor (driver side only) from the fuel rail.
- Install the fuel rail pressure sensor (driver side only) into the new fuel rail and finger-tighten.
- Install the replacement brass union nut, P/N 06E127065G.



⇐ Reassemble the mounting bracket, fuel rail, and intake manifold <as shown>.

⇐ Install and gently tighten the set screw <circle>.

- Repeat these steps on the opposite intake manifold/fuel rail assembly.



- ⇐ After reassembly, test the fuel rail <1> free play inside the retaining bracket <2> as shown <direction of arrows>.
- ⇐ The fuel rail **MUST** pivot slightly. If the rail does not move, slightly loosen the set screw <lower arrow> and retest.



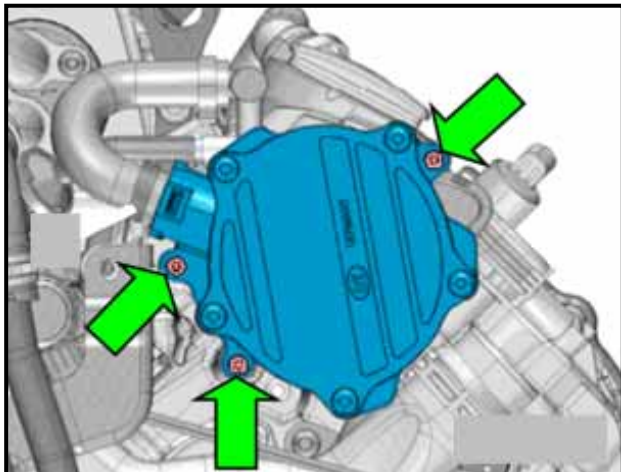
Note: If Criteria 02 and/or 03 are also open, **DO NOT** re-install the intake manifold/fuel rail assemblies at this time.

If **ONLY** Criteria 01 is open, **Proceed to Section I.**

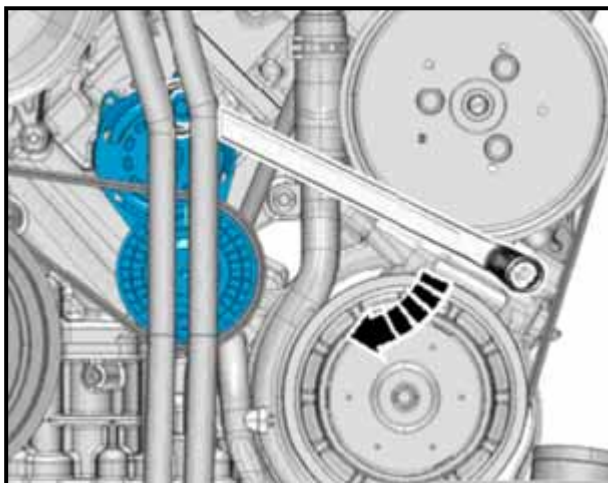
If Criteria 02 is open, **Proceed to Section G.**

If Criteria 02 is **NOT** open, but Criteria 03 is open, **Proceed to Section H.**

Section G – Thermostat Replacement

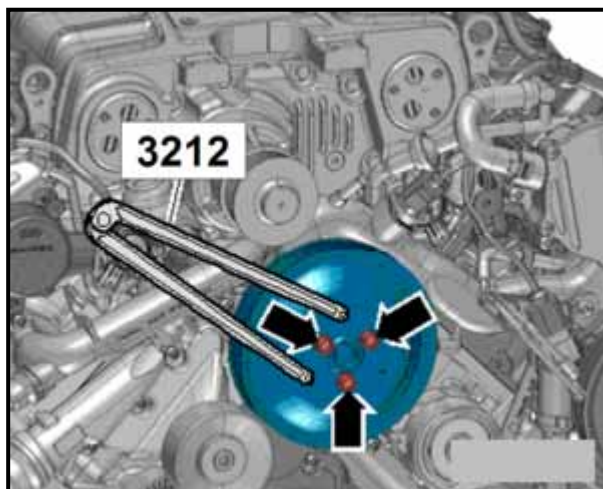


- ⇐ Remove the screws <arrows> for brake vacuum pump, then lay pump to side.



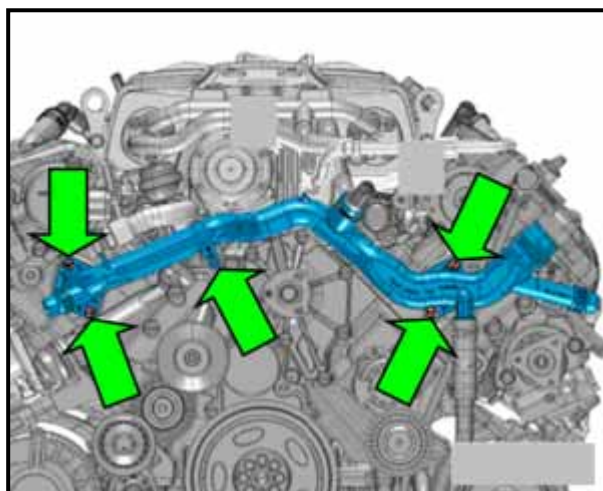
Note: Before removing the ribbed belt, mark the turning direction on it with chalk or felt tip pen. A reversed turning direction can cause damage to the belt under operating conditions.

- ⇐ Pivot the belt tensioner clockwise <arrow> to release the tension on the ribbed belt.
- ⇐ Remove the ribbed belt and release the tension on the tensioning element.



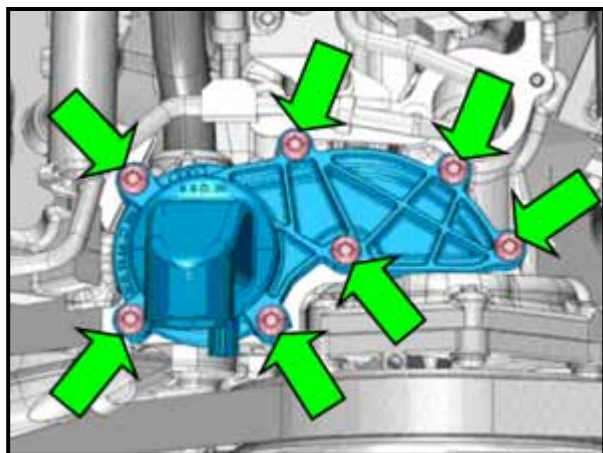
⇐ Remove the screws <arrows> for the coolant pump pulley, using spanner wrench 3212 to counter-hold.

- Remove the ribbed belt pulley.



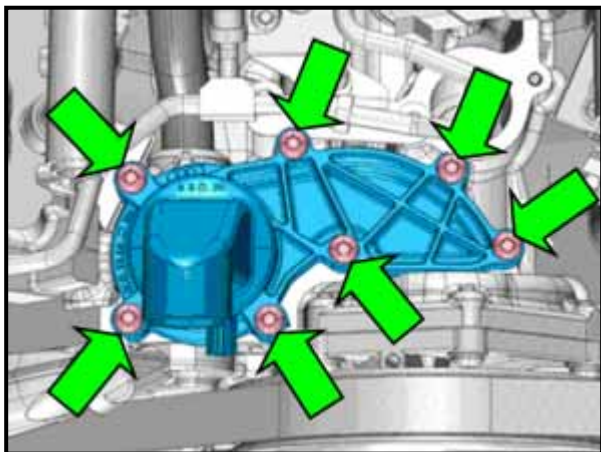
⇐ Remove the five screws <arrows> for the upper coolant pipe.

- Loosen the coolant pipe from its mounting location to allow access to the thermostat.



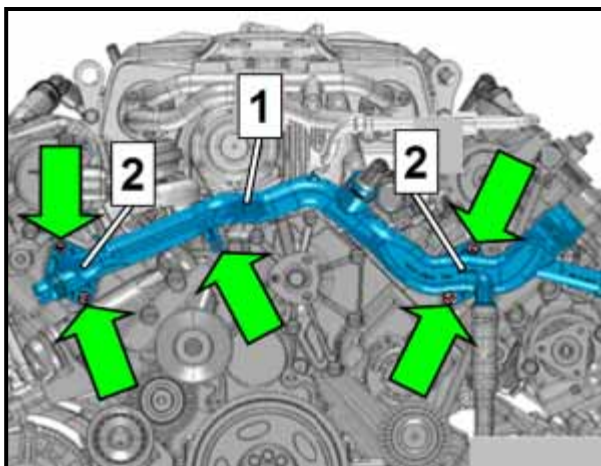
⇐ Remove the seven screws <arrows> then remove the thermostat from vehicle.

- Remove the old gasket and clean the surface to prepare for new thermostat installation.

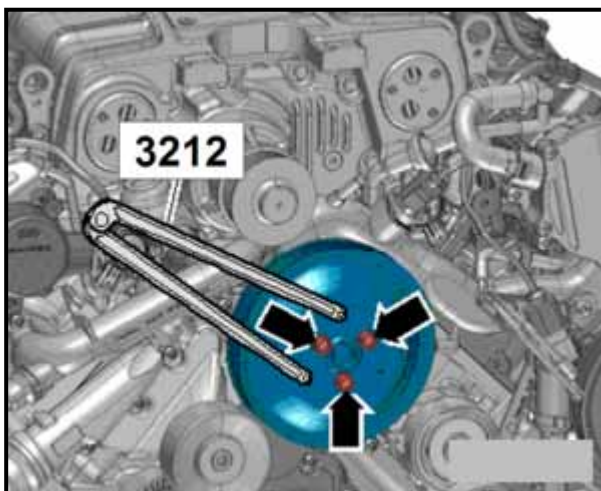


Tip: Coat the new O-rings and gaskets for the coolant system with clean coolant prior to installation.

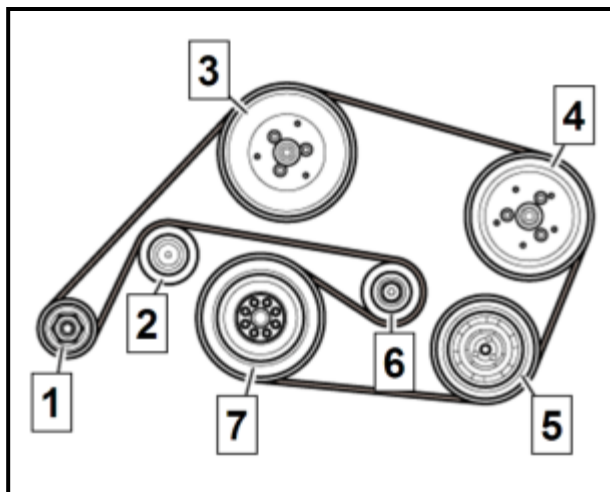
- ⇐ Install the new thermostat, P/N 06E121111AL, and gasket that comes with it, and evenly tighten the seven screws <arrows> to 9 Nm.



- ⇐ Remove the center seal ring <1> and install the new O-ring, P/N 06E121119C.
- ⇐ Remove the two seal rings <2> and install new O-rings, part number, P/N 06E121119E.
- Reinstall the coolant pipe into its mounting location.
- ⇐ Reinstall the five screws <arrows> for the upper coolant pipe and torque to 9Nm.



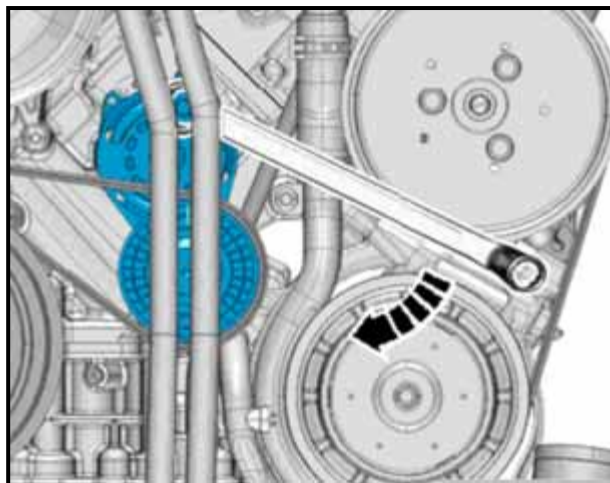
- Reinstall the pulley onto the coolant pump.
- ⇐ Reinstall the three screws <arrows> and torque to 20Nm using spanner wrench 3212 to counter-hold.



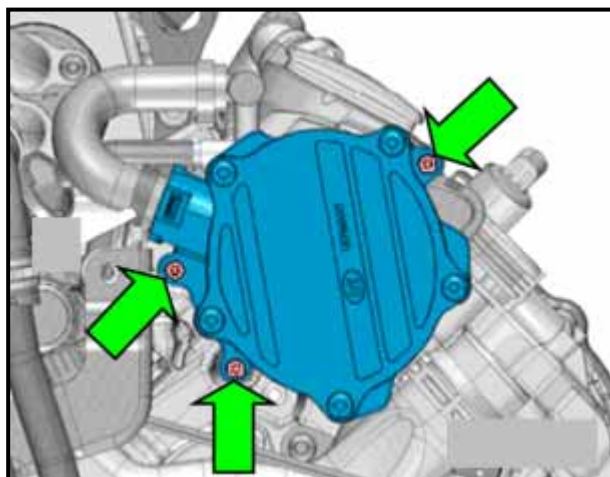
Note: Before removing the ribbed belt, mark the turning direction on it with chalk or felt tip pen. A reversed turning direction can cause damage to the belt under operating conditions.

⇐ Reposition the ribbed belt properly and in the correct running position as illustrated:

- 1 = Generator
- 2 = Idler roller
- 3 = Coolant pump
- 4 = Power steering pump
- 5 = A/C Compressor
- 6 = Belt tensioner for ribbed belt
- 7 = Vibration damper



- ⇐ Release the tension on the belt tensioner by pivoting the tensioner clockwise <arrow>
- Reinstall the ribbed belt correctly onto all pulleys then release the tensioner against the belt.



- ⇐ Reinstall brake vacuum pump using new gasket part number (06E 145 417 A).
- Reinstall three screws <arrows> for brake vacuum pump and torque to 9Nm.

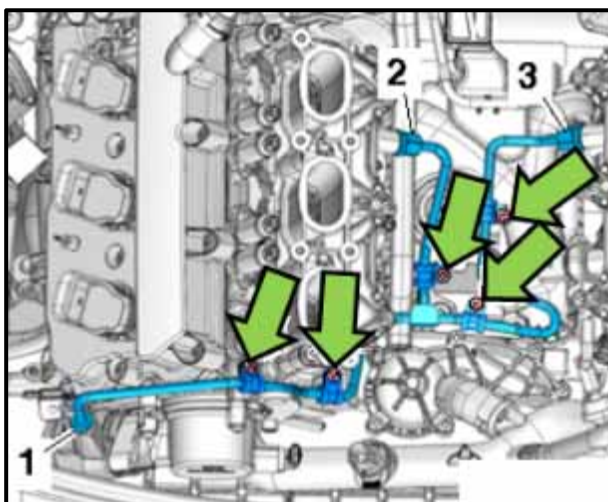
If Criteria 03 is also open, **Proceed to Section H.**

If Criteria 03 is NOT open, **Proceed to Section I.**



Section H – Repair Crankcase Breather

⇐ Disconnect and reposition the plastic lines <arrows> as necessary to access the crankcase breather.



⇐ The fuel line connections <1, 2, and 3> have been previously disconnected.

⇐ Remove the fuel line mounting screws <arrows> and remove the steel fuel line.



⇐ Remove the retaining screws <circles> and mounting bracket from the top of the crankcase breather.



- ⇐ If necessary, loosen the lower clamp on the breather hose elbow <arrow>.
- ⇐ Remove the breather hose <arrows> from the crankcase breather.



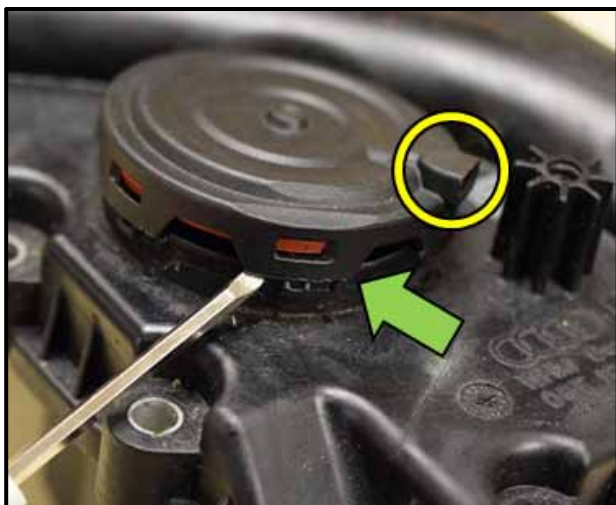
Tip: In the following steps, the breather was removed for clarity purposes. It is not necessary to remove the crankcase breather from the engine to perform these repairs.



- ⇐ Press the restrictor, P/N: 060103271B, into the neck of the crankcase breather fitting <circle> until it reaches the stop.
- Reinstall the breather hose onto the crankcase breather fitting.
- If necessary, reinstall/refasten the retaining clamp.



CAUTION: The VAS 6122 Engine Bung Set (or equivalent) **MUST** be used to seal off all engine openings prior to installing the restrictor. Dropping the restrictor or any other debris into the engine during this procedure will result in engine damage. Damage to the engine is not covered under this action.



- ⇐ Note the orientation of the vent <circle> on the breather cap and mark the crankcase breather as necessary. The replacement cap must be installed in the same position.
- ⇐ Using a small flat blade screwdriver or pick tool, carefully pry the tabs on the crankcase breather cap <arrow> and release the cap from the crankcase breather.
- Remove the cap.



⇐ Remove the diaphragm and spring from the crankcase breather as shown <arrows>.



⇐ Assemble the replacement cap, diaphragm, and spring as shown.



Note: The plastic fingers on the diaphragm must be positioned toward the spring, as they are used to hold the spring in a centered position against the diaphragm.

- Install the spring, diaphragm, and breather cap onto the crankcase breather.



Tip: It will be necessary to hold the spring against the diaphragm during installation. The individual pieces do not snap together.



Note: Be sure the replacement cap is installed in the same orientation as the old cap.

- Press down on the cap until an audible “click” is heard.
- ⇐ Inspect each locking tab on the cap <arrow> to ensure the cap is properly locked onto the crankcase breather.

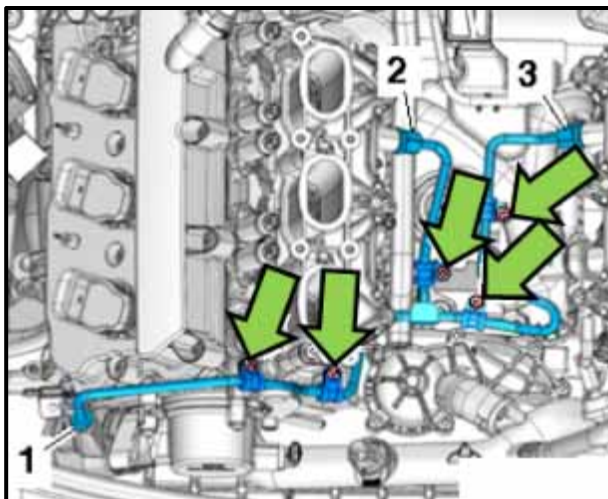




⇐ Reinstall the bracket and retaining screws <circles> onto the crankcase breather.



⇐ Position the plastic lines back to their original routing <arrows> and reconnect them as necessary.



⇐ Reinstall the steel fuel line and fasten the mounting screws <arrows>.

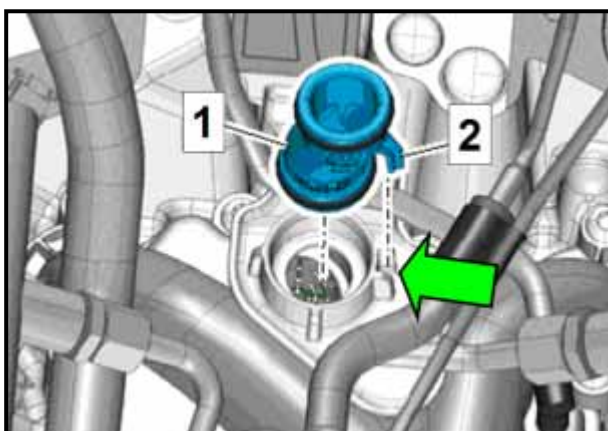
⇐ Install the threaded nut <1> onto the high pressure pump and finger-tighten.



⇐ Torque the threaded connection to 27Nm.

Note: While torquing the threaded connection, use an open end wrench to counter-hold the brass union nut. The brass union nut **MUST NOT** turn inside the high pressure fuel pump during this step.

Proceed to Section I



Section I – Vehicle Reassembly

⇐ Install new crankcase vent tube <1> P/N (06E 103 213) into the oil separator cover.

Tip: The tab <2> must engage into the guide <arrow>.

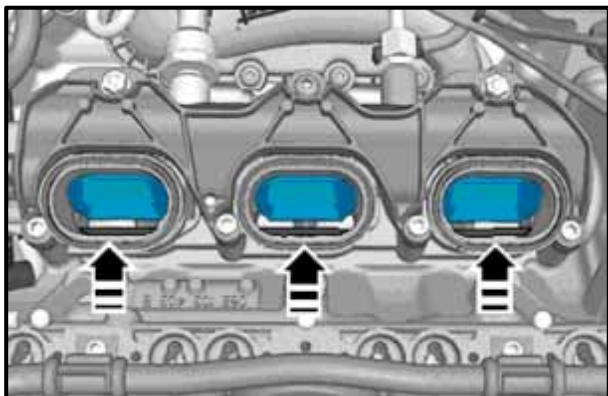


⇐ Coat the upper fuel injector O-rings <as shown> with clean engine oil.

Note: It is **NOT** necessary to remove the fuel injector from the cylinder head during this step.

Note: During installation of the intake manifold/fuel rail assemblies the fuel rails **MUST NOT** be forced onto the fuel injectors. Press the fuel rails onto the injectors slowly to allow the O-rings to compress without tearing.

- Reinstall the intake manifold/fuel rail assemblies.

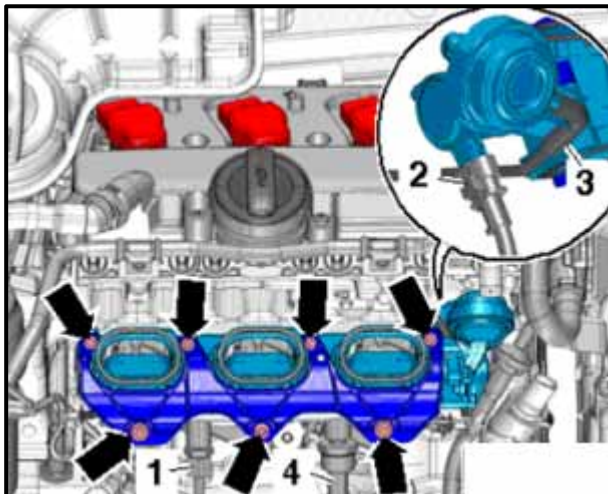


- Attach the hand vacuum pump VAS6213 (or equivalent) to the intake manifold runner vacuum actuator.

⇐ Apply a vacuum using the pump and allow the flaps to fully open <direction of arrows>.



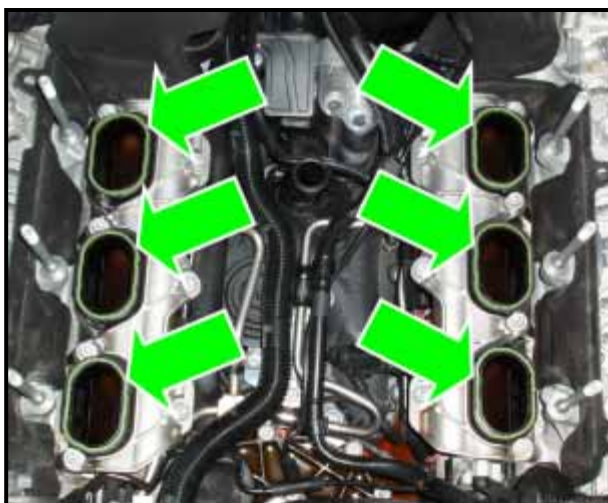
Note: Installing the intake manifold without opening the flaps could result in intake manifold damage.



⇐ Install the retaining fasteners <arrows> and gently tighten by hand.

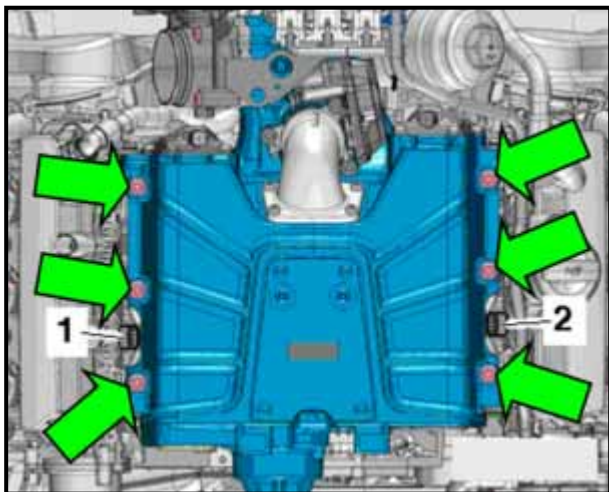
- Remove the hand vacuum pump from the IMRC vacuum actuator.
- Reconnect the vacuum line and electrical connector to the IMRC.

⇐ Torque the mounting fasteners <arrows> in a diagonal sequence to 9Nm.

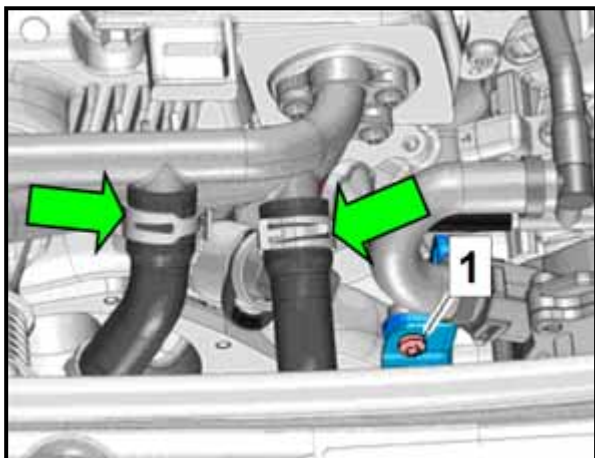


- Remove the engine bung set VAS 6122 (or equivalent) from the openings on the compressor and on the charge air pipe.

⇐ Remove old gaskets <arrows> and install new gaskets P/N 079 129 717 D.

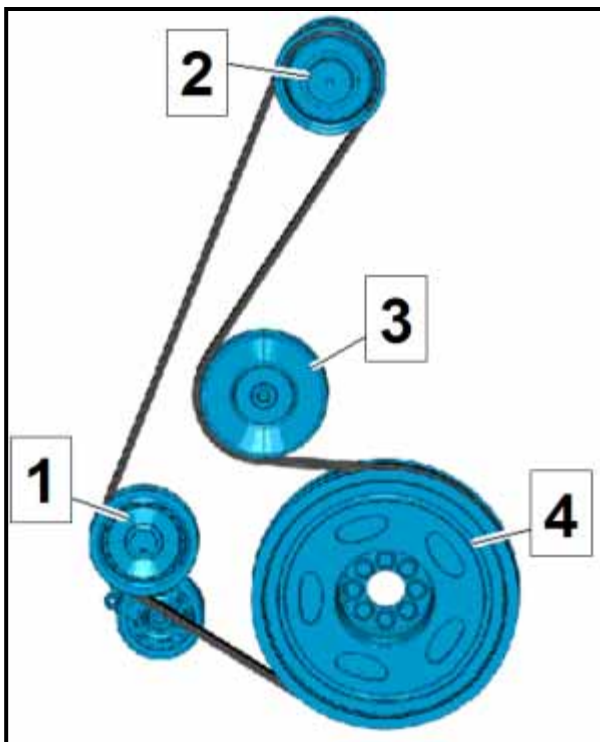


⇐ Reinstall the supercharger and torque the nuts <arrows> to 20Nm.



⇐ Reinstall upper screw <1> for bracket to hard coolant lines and torque to 9Nm.

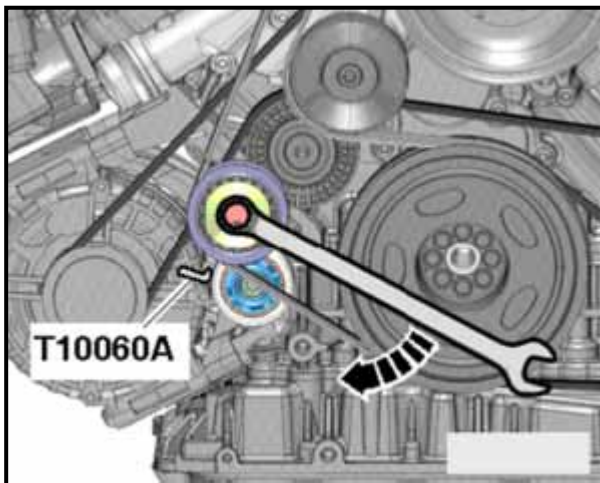
⇐ Reconnect the coolant hoses onto the coolant pipes on the supercharger, then secure the clamps <arrows> properly using tool 3094.



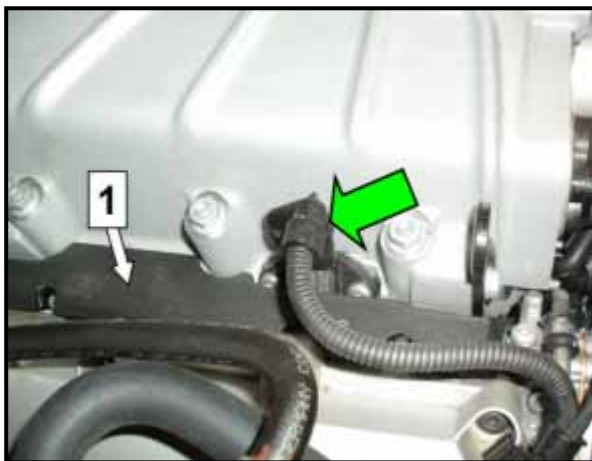
Note: Before removing the ribbed belt, mark the turning direction on it with chalk or felt tip pen. A reversed turning direction can cause damage to the belt under operating conditions.

⇐ Reposition the ribbed belt properly and in the correct running position as illustrated:

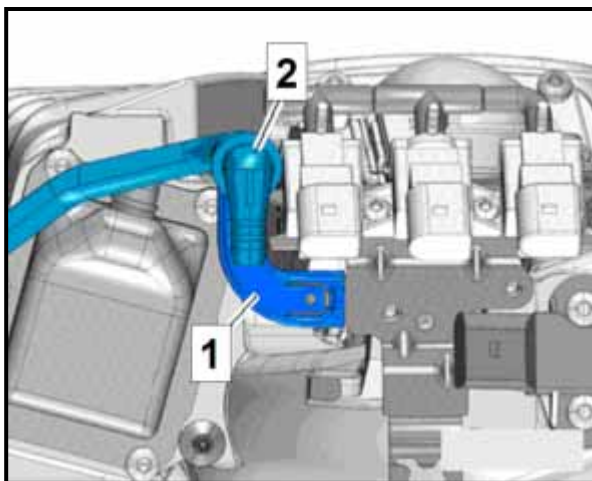
- 1 = Belt tensioner
- 2 = Compressor (Supercharger)
- 3 = Idler roller
- 4 = Vibration damper



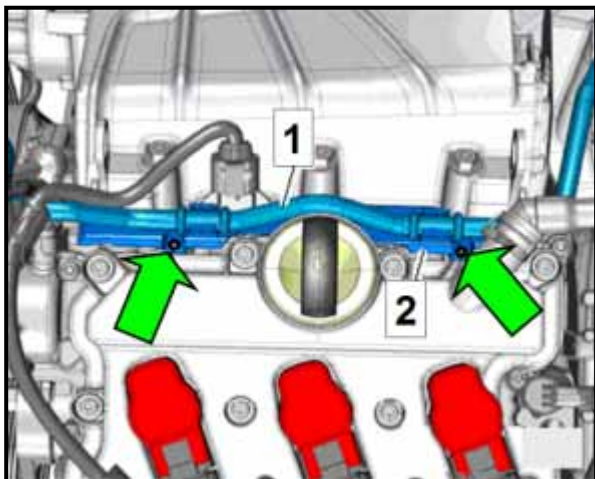
- ⇐ Release the tension on the belt tensioner and remove tool T10060A by pivoting the tensioner clockwise <arrow>.
- ⇐ Reinstall the ribbed belt correctly onto all pulleys then release the tensioner against the belt.



- ⇐ Reinstall cover <1> and secure with the two screws.
- ⇐ On right side of engine, reconnect electrical connector <arrow> for Charge Air Pressure Sensor G31.



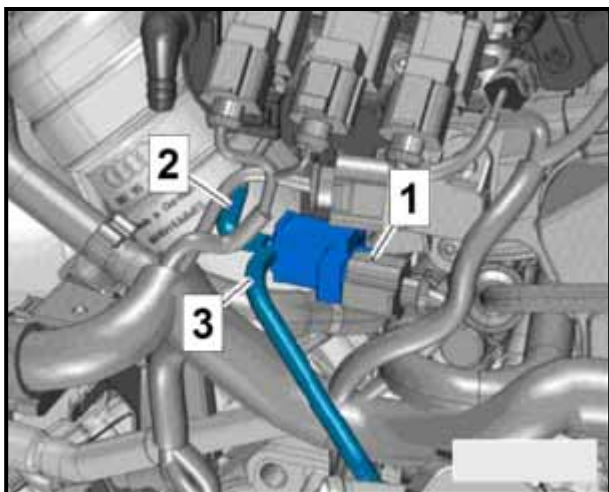
- ⇐ Reinstall brake booster vacuum hose <2> onto the bracket <1>.



- ⇐ Reinstall the vacuum hose <1>.
- ⇐ Reinstall the cover <2> and the left and right screws <arrows>.

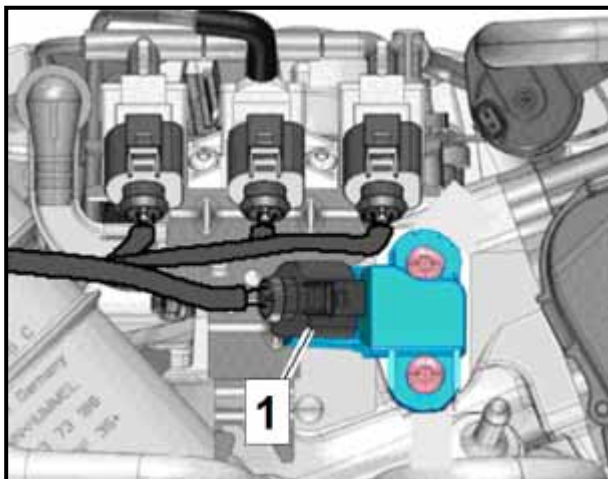


- ⇐ On left side of engine, reconnect electrical connector <arrow> for Charge Air Pressure Sensor 2 G447.



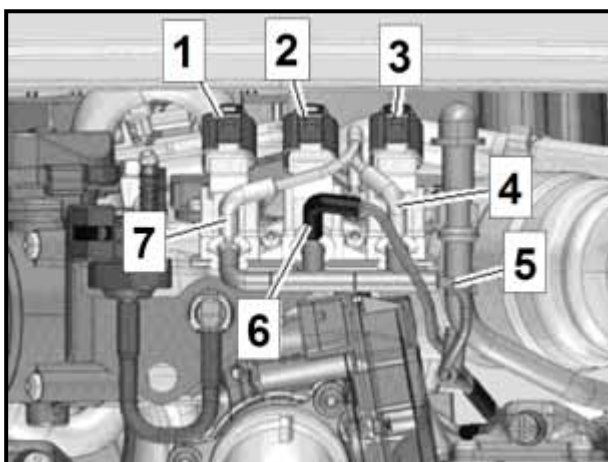
S4 & S5 models:

- ⇐ Reconnect connector <1> and vacuum hoses <2> and <3>.

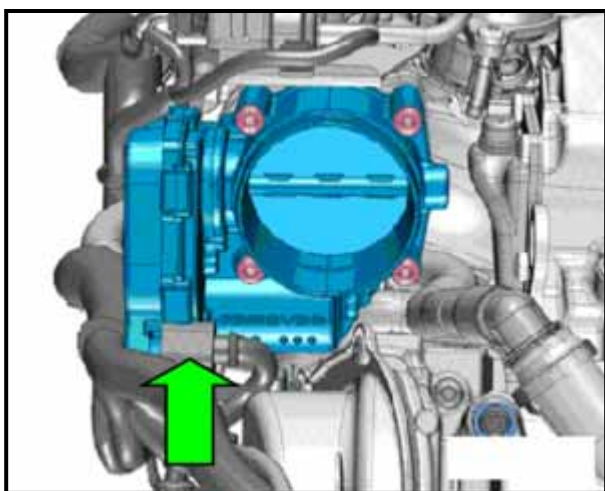


All models:

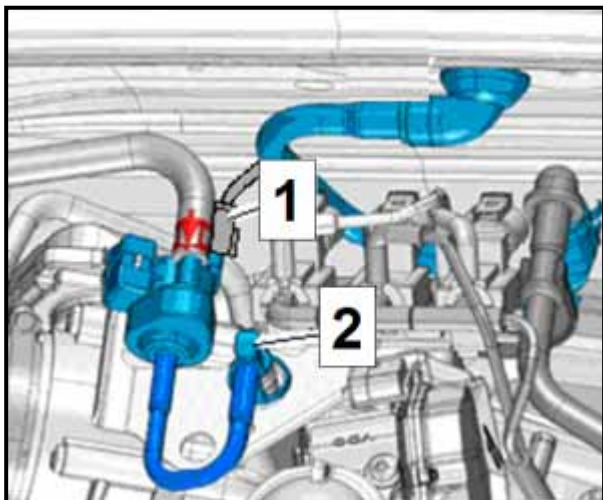
- ⇐ Reconnect the connector on the intake air temperature sensor G42/manifold absolute pressure sensor G71 <1>.



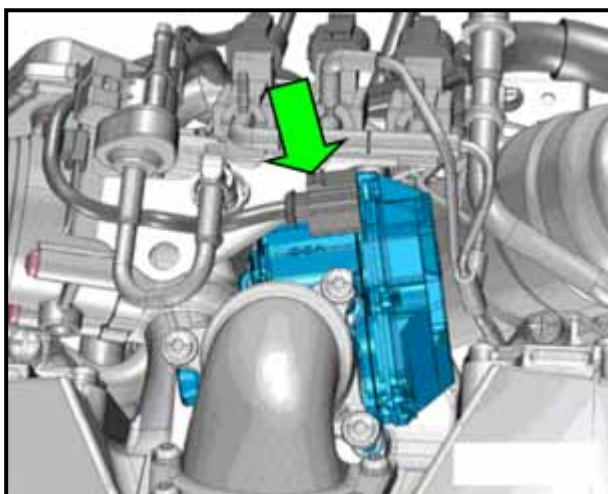
- Reconnect connector harness to bracket by reconnecting retainer clip (not shown).
- ⇐ Reconnect connectors <1, 2 and 3>.
- ⇐ Reconnect the vacuum hoses <4 through 7>.



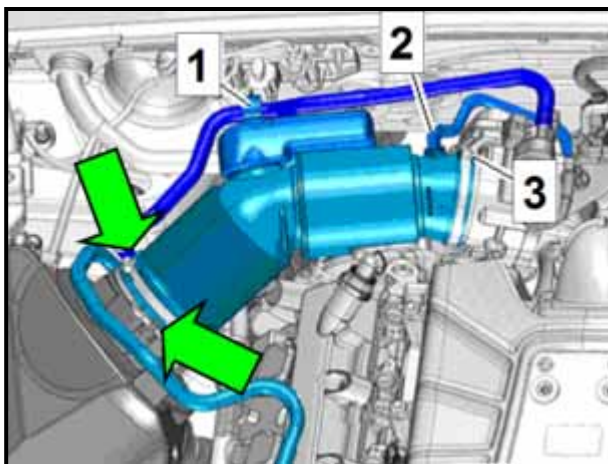
- ⇐ Reconnect the connector <arrow> on the throttle valve control module J338.



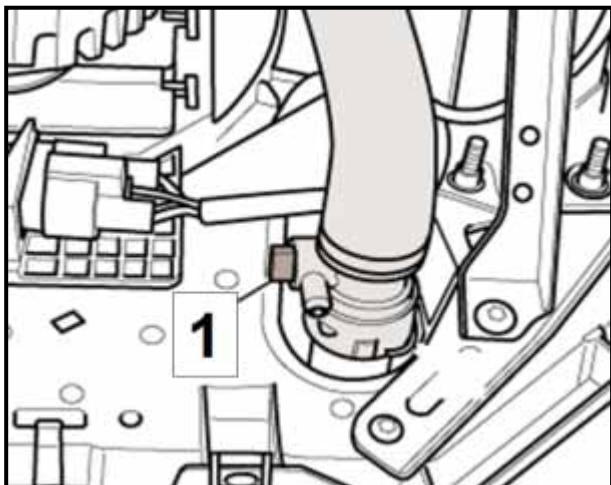
- ⇐ Reinstall the EVAP canister purge regulator valve onto the bracket.
- ⇐ Reconnect the electrical connector <1> onto EVAP canister purge regulator valve N80 and reconnect the vacuum hose <2>.



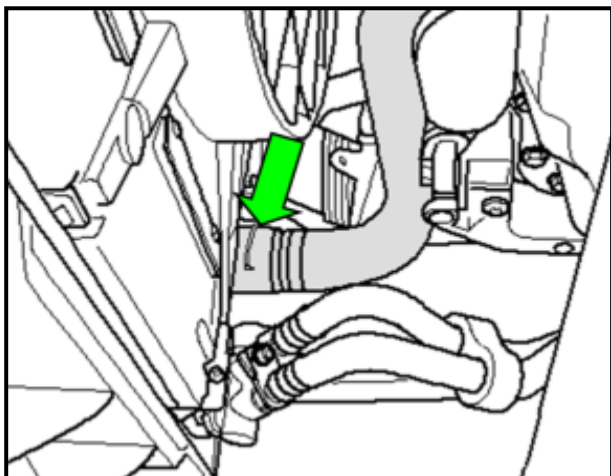
- ⇐ Reconnect the connector <arrow> on the control module J808.



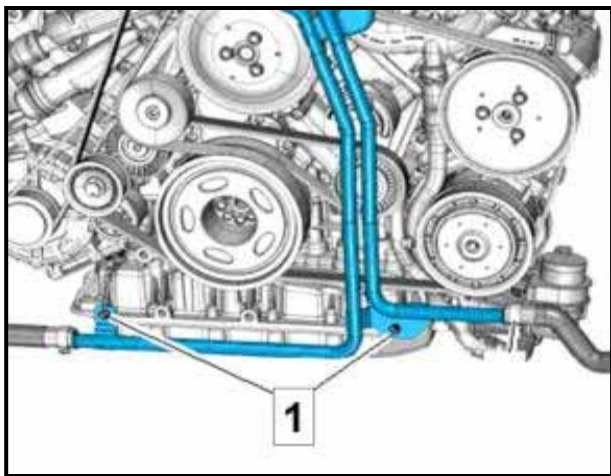
- ⇐ Reinstall the air guide pipe and secure the hose clamp <3> and the clips <arrows>.
- ⇐ Reinstall hose connection <1> into bracket on the air filter housing guide tube.
- ⇐ Reinstall the vacuum hose <2> into the air guide hose connection.



- Raise vehicle on hoist.
- ⇐ If not already done and drain plug is present, close the drain plug <1>.

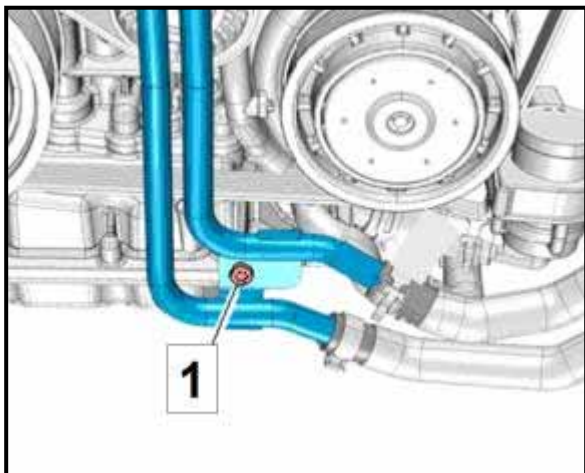


- ⇐ If drain plug is not present and if not already done, reinstall the right lower coolant hose <arrow> onto the radiator, then close the clamp.



S4 & S5 models:

- ⇐ Reinstall two screws <1> for hard coolant lines and torque to 9Nm.



All other models:

⇐ Reinstall screw <1> for lower bracket to harden coolant lines and torque to 9Nm.



- If the crankcase breather was replaced, Change the engine oil.



Note: It is not necessary to change the oil filter <arrow> during the procedure. Replacement of the oil filter will not be covered under this action.

- Lower the hoist.

Proceed to Section J

Section J – Coolant Filling

⇐ Fill coolant reservoir per the provided tool instructions on the VAS 6096 with coolant removed during the drain process and if necessary, top off with premixed coolant part number (G 012 A8G 1G) with the proper mixture ratio:

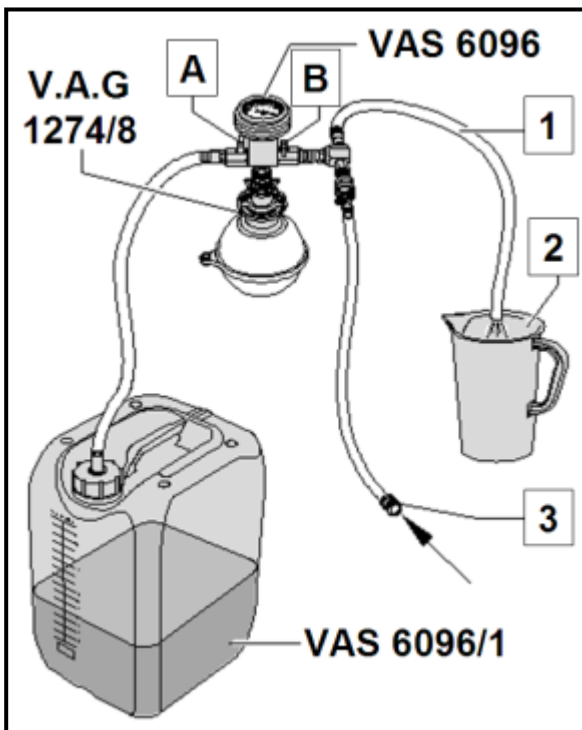
- Coolant additive (40%) and water (60%) for freeze protection down to -25°C (-13°F)
- Coolant additive (50%) and water (50%) for freeze protection down to -35°C (-31°F)
- Coolant additive (60%) and water (40%) for freeze protection down to -40°C (-40°F)

- Attach the VAG 1274/8 to coolant reservoir
- Install the VAS 6096 on adapter

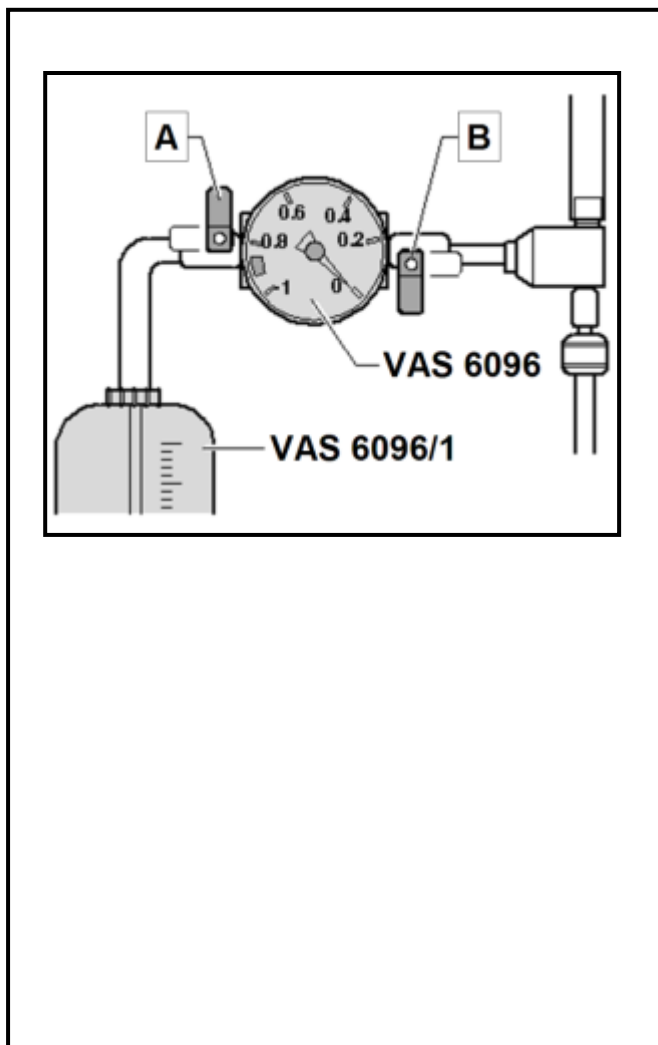
⇐ Place air outlet <1> in a small container <2>



Note: A small amount of coolant which should be collected is drawn off with the discharged air



- Follow provided VAS 6096 tool instructions



- ⇐ Close valves <A> and by turning lever at a right angle to direction of flow.
- ⇐ Connect hose <3> to compressed air regulated between 6 to 10 bar pressure.
- ⇐ Open valve by turning lever in direction of flow.



Tip: The suction jet pump generates pressure in the coolant system; indicator on display instrument must move into green area.

- ⇐ Briefly open valve <A> by turning lever in direction of flow so that hose on VAS 6096 coolant reservoir fills with coolant.
- ⇐ Close valve <A> again.
- ⇐ Leave valve open another 2 minutes.



Tip: More pressure is generated in the coolant system by the suction jet pump; indicator on display instrument must stay in green area.

- ⇐ Close valve .



Tip: Needle in the display instrument must remain in the green region, then the sufficient vacuum in the cooling system is obtained for the upcoming filling.

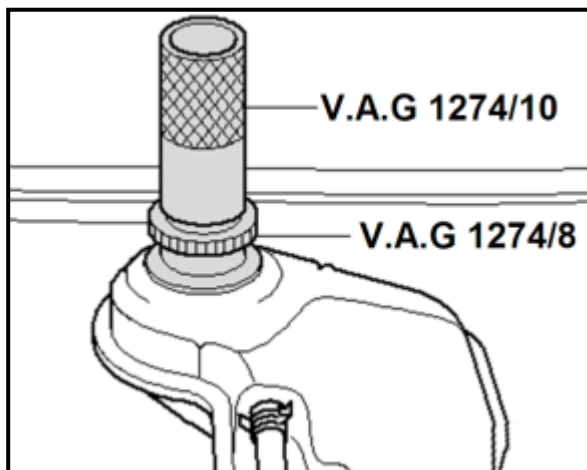


Note: If needle stands below the green area, repeat procedure. If pressure falls, check coolant system for leaks.

- Remove pressurized air hose.
- Open valve <A>.



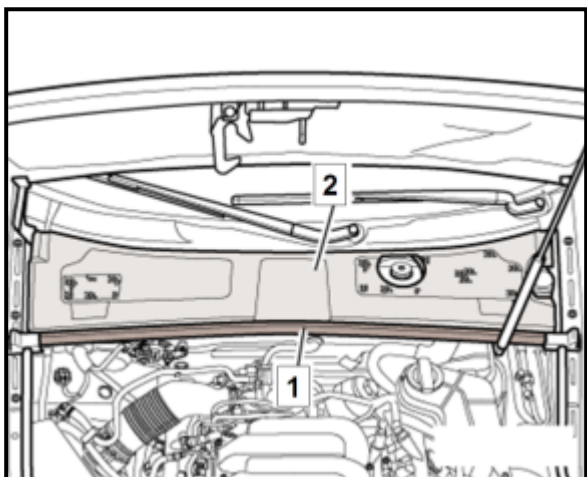
Tip: Coolant is extracted from the VAS 6096 coolant reservoir by pressure in the coolant system and the system is filled.



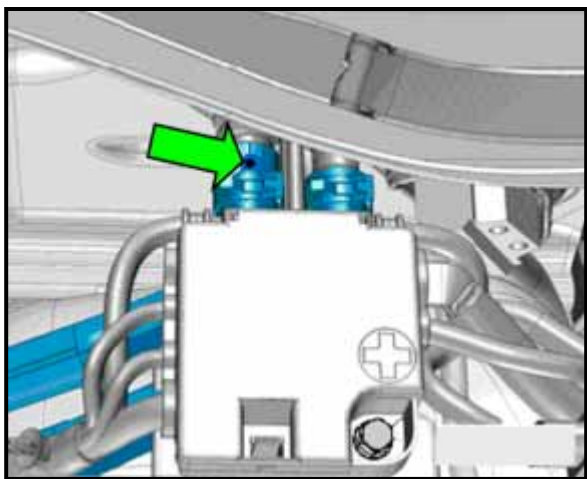
- Remove the VAS 6096 from the VAG 1274/8 on coolant reservoir.
- Mount the VAG 1274/10 on the adapter.
- Fill with coolant until the coolant system tester tube is full.



Tip: Fill again during the bleeding procedure if necessary.

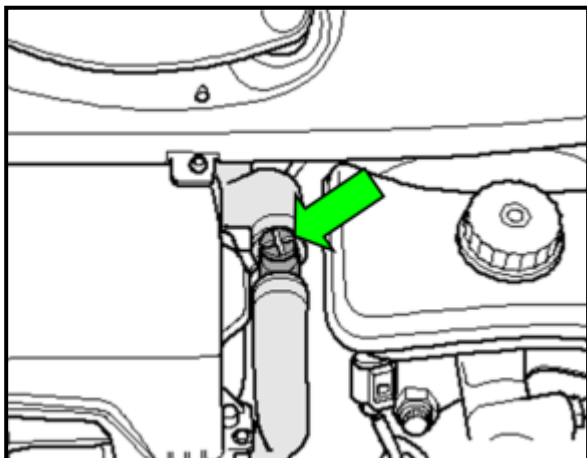


- ⇐ Remove the seal <1> and remove the plenum chamber cover <2>



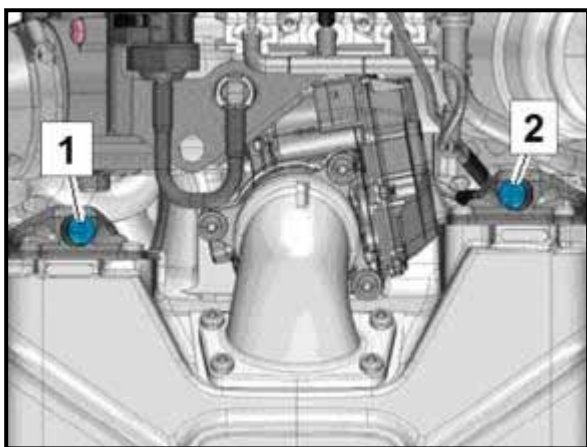
S4 & S5 models:

- ⇐ Disconnect the heat exchanger coolant hose and pull it back until coolant starts to drain out of the bleed hole <arrow> in the coolant hose.
- Slide coolant hose back into position and secure the spring clamp properly.

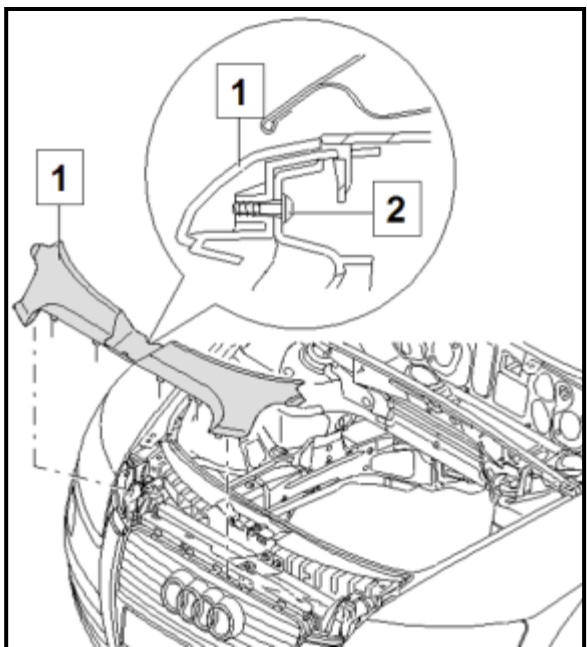


All other models:

- ⇐ Open the bleeder screw <arrow> until coolant starts to come out.
- Close the bleeder screw.

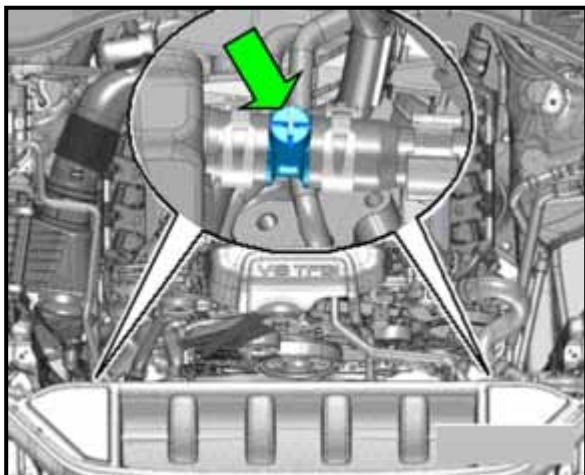


- ⇐ Open the bleeder screws <1> and <2> one after the other until coolant starts to come out.
- Close the bleeder screw.



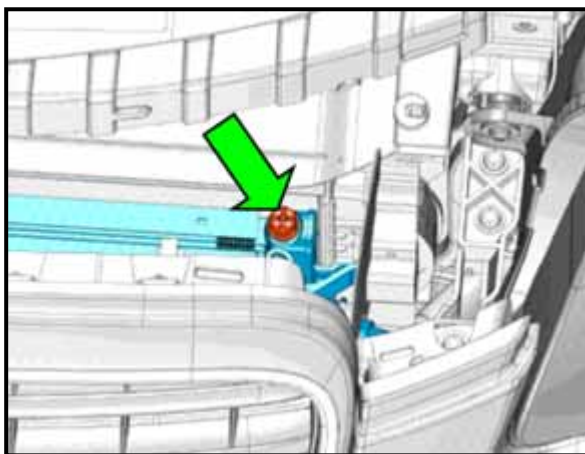
Tip: S4 & S5 models do not require the removal of the lock carrier cover.

- ⇐ Remove screw <2> for lock carrier cover.
- ⇐ Remove the lock carrier cover <1> by unclipping the cover on the front and then pull forward.



Q7 models:

- ⇐ Open the bleeder screws <arrow> on the left and right cooler for the charge air cooling circuit until coolant starts to come out.
- Close the bleeder screws.



Other models except S4 & S5:

- ⇐ Open the bleeder screw <arrow> until coolant starts to come out.
- Close the bleeder screw.



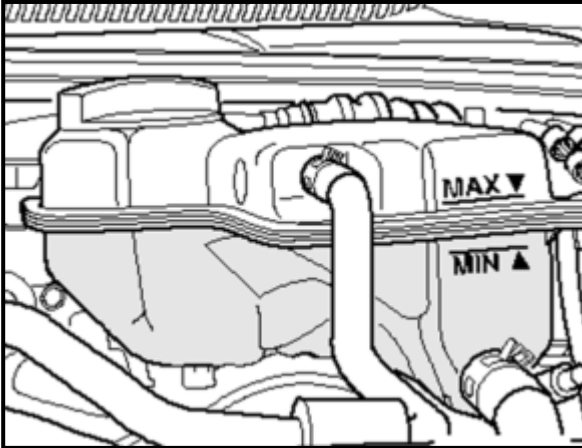
- ⇐ Remove the tools from the coolant reservoir and close coolant reservoir cap <arrow>.
- ⇐ Reconnect the vehicle battery and reassemble trim/battery coverings as necessary.
- Start the engine.
- Adjust the temperature for all zones to "HI".
- Switch the A/C compressor off by pressing the "ECON" or "AC" button, depending on the version.



Tip:

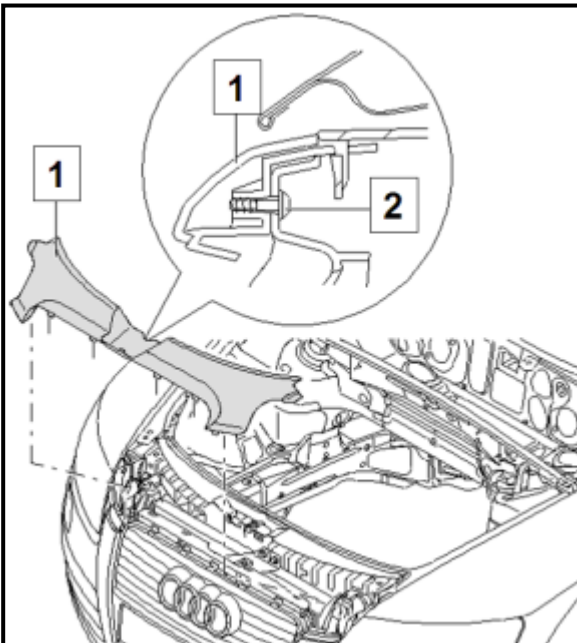
- If the "ECON" button is present, the LED must illuminate.
 - If "AC" button is present, the LED must not come on.
- Run the engine at 2000 RPM for 3 minutes.
 - Run the engine at idle until both large coolant hoses on the radiator are warm.

- Run the engine at 2000 RPM for 2 minutes.
- Turn off engine and allow it to cool off.
- Check coolant level.



Tip:

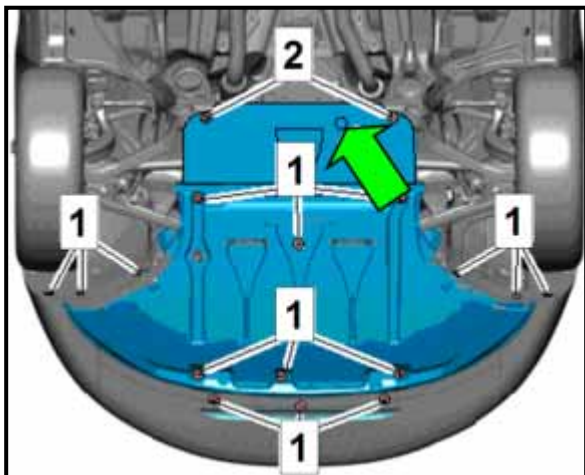
- Coolant level must be at "MAX" marking with engine cold.
- Coolant level may be above "MAX" marking with engine at operating temperature.



- ⇐ Reinstall the lock carrier cover <1>.
- ⇐ Reinstall screw <2> for lock carrier cover.



- ⇐ Reinstall engine covers <arrows>.
- Close hood.



⇐ Raise vehicle on hoist and reinstall the noise insulation and the mounting parts <1, 2, arrow>.

If Criteria 03 is open, **Proceed to Section K.**

If Criteria 03 is NOT open, **Proceed to section L.**

Section K – ECM Software Update and Oil Change

SVM Update Instructions

1. Follow all instructions in TSB 2011732: *00 Software Version Management (SVM), operating instructions.*
2. Using Audi Flashing, update the ECM, using the SVM action code **01A092**.

Proceed to Section L

Section L – Campaign Stamp

I certify that this campaign has been performed in strict accordance with the applicable Audi repair procedure.

SAGA Code: _____

Technician: _____

Date: _____

Item#: AUD4927ENG

⇐ Once the campaign has been completed, the technician should stamp the repair order.

- Stamps are available for ordering through the Compliance Label Ordering Portal (item# AUD4927ENG).

OR

Je certifie que cette campagne de rappel a été exécutée suivant les strictes directives de réparation d'Audi

Code de SAGA: _____

Technicien: _____

Date: _____

Item # AUD4927FRE

Proceed to Section M

Section M - Install Campaign Completion Label

- Open the hood.

Fill out and affix Campaign Completion label, part number CAMP 010 000, next to the vehicle emission control information label



TIP

Ensure Campaign Completion label does not cover any existing label(s)

- Close the hood.

Proceed to section N

Section N - Parts Return/Disposal

Properly destroy or dispose of removed parts in accordance with all state and local requirements, unless otherwise indicated and/or requested through the Warranty Parts Shipping Portal (WPSP) for U.S. and SAGA for Canada.

CALIFORNIA ONLY – Proceed to section O

Section O - Requirements for Emissions Campaigns Having Customer Notification

CALIFORNIA ONLY Requirements for Emissions Campaigns Having Customer Notification

The California Air Resources Board and the Department of Motor Vehicles (DMV) require emissions-related campaigns to be completed prior to vehicle registration renewal. **When campaign work is done you must provide the owner with a signed “Vehicle Emission Recall – Proof of Correction” certificate (RC EMIS_CAL VW).** Certificates can be ordered at no cost can be ordered at no cost online via the Compliance Label Ordering portal at www.accessaudi.com.



Tip: Ensure owners are aware of the importance of retaining the completed certificate for their records. It should be mailed to the California DMV only upon request.

ALL WORK IS COMPLETE

Appendix A – Activating/Deactivating Vehicle Lift Mode



Tip: Before raising vehicle with vehicle jack or hoist, vehicle lift mode must be activated so that the air suspension automatic control procedures do not create difficulties when raising with vehicle jack or hoist.



Note: Vehicle lift mode is automatically switched off at a speed above 10 km/h.

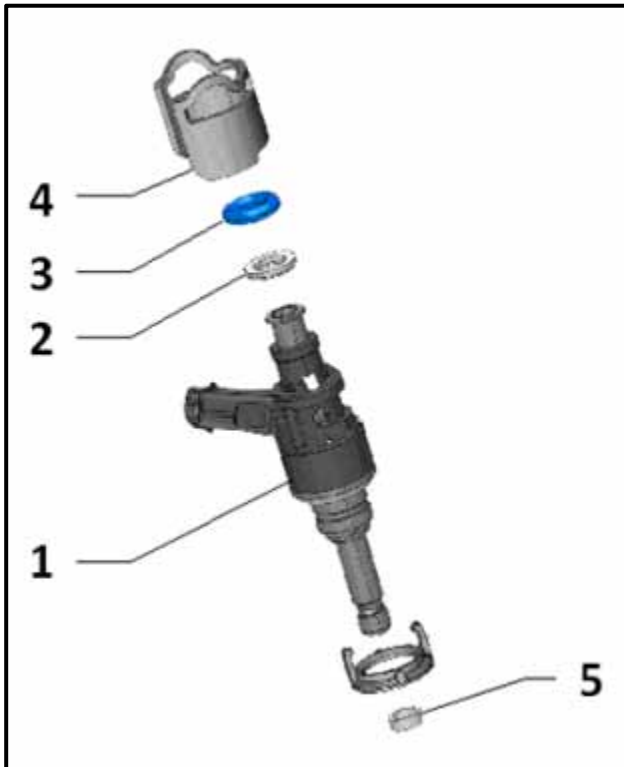
Switching On:


- Switch on ignition.
- Press “CAR” function button to view “adaptive air suspension” main menu.
- Press “SETUP” function button to view “adaptive air suspension” menu.
- Rotate control knob to desired mode and select “ON”.
- Switch the ignition off.

Switching OFF:

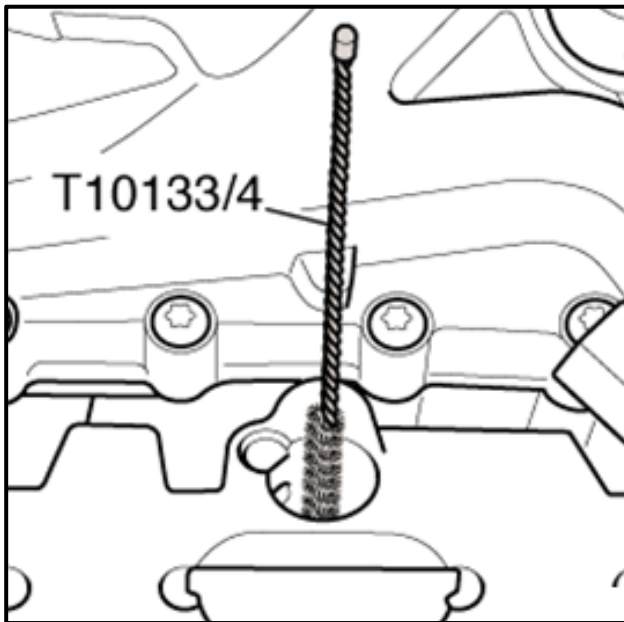
- Switch on ignition.
- Press “CAR” function button to view “adaptive air suspension” main menu.
- Press “SETUP” function button to view “adaptive air suspension” menu.
- Rotate control knob to “Vehicle lift mode” and select “OFF”.
- Switch the ignition off.

Appendix B – Replacing the Fuel Injector Seals

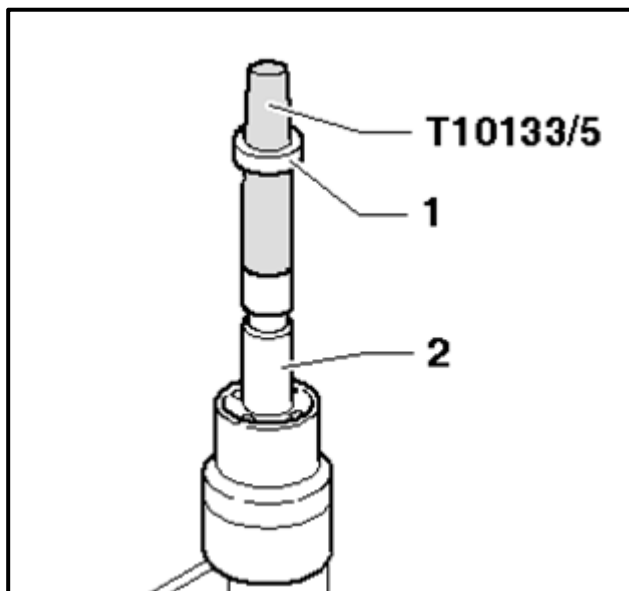


 Note: Follow this procedure **ONLY** on injectors that came out of the cylinder head during removal of the fuel rail.

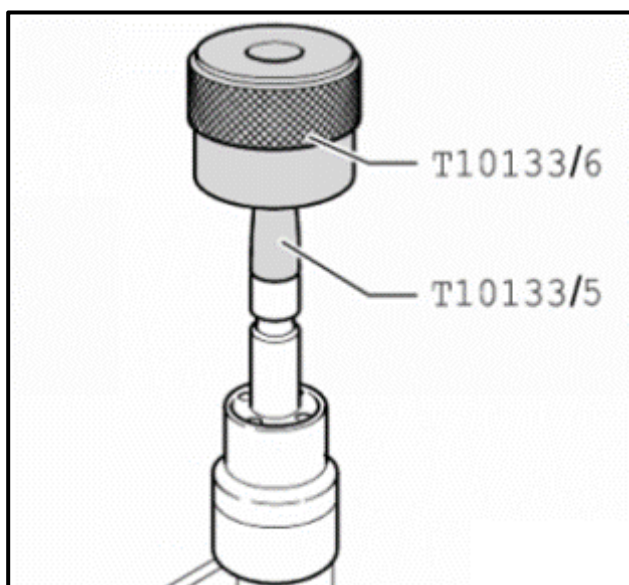
- ⇐ Remove the support ring <4>, the o-ring <3>, and the spacer ring <2> from the fuel injector.
- ⇐ Carefully cut and remove the combustion chamber sealing ring <5>.
- Use a clean cloth to remove any excess combustion residue from the sealing ring groove on the fuel injector.



- ⇐ Clean the fuel injector hole inside the cylinder head with the nylon cylinder brush T10133/4 <as shown>.

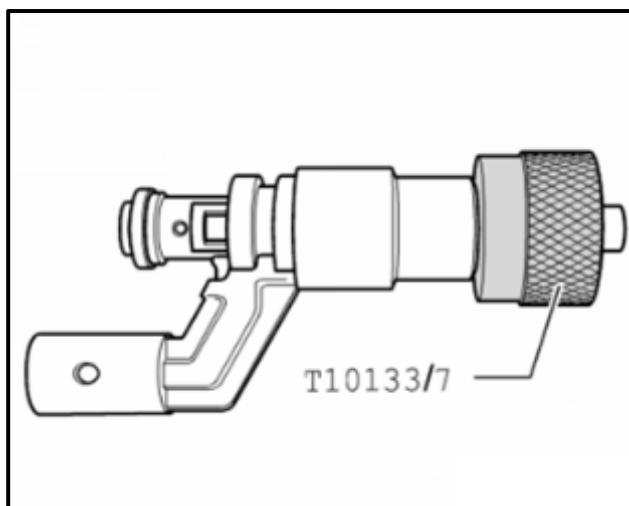


- ⇐ Place the assembly cone T10133/5 with the new combustion chamber seal <1> onto the fuel injector <2>.

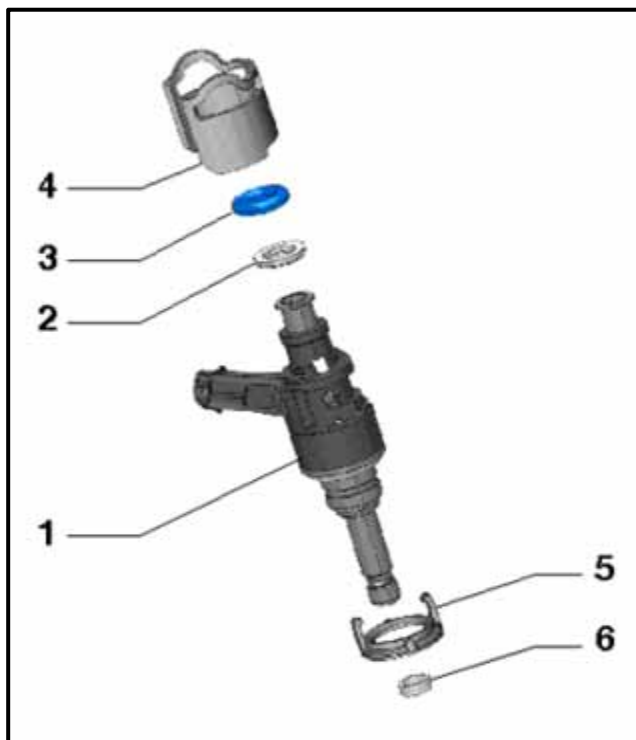


- ⇐ Slide the combustion chamber seal with the assembly sleeve T10133/6 onto the assembly cone T10133/5 as far as possible.
- ⇐ Turn the assembly sleeve T10133/6 and the combustion chamber seal until they slide into the seal groove.

Note: When pushing the combustion chamber seal onto the fuel injector the seal spreads open. After pushing it on, it must be tightened again in two steps, as illustrated in the following steps.



- ⇐ Press the calibration sleeve T10133/7 with a gentle turning movement (approximately 180°) all the way onto the fuel injector.
- ⇐ Remove the calibration sleeve T10133/7 by gently turning it in the opposite direction.
- Repeat these steps using calibration sleeve T10133/8.



- ⇐ Install the components from the repair kit onto the fuel injector <1>.
- ⇐ 2 – Spacer Ring
- ⇐ 3 – O-Ring
- ⇐ 4 – Support Ring (not supplied in kit)
- ⇐ 5 – Sealing washer (this seal is reused for this procedure).
- ⇐ Coat the new O-ring <3> with clean engine oil before installing it.

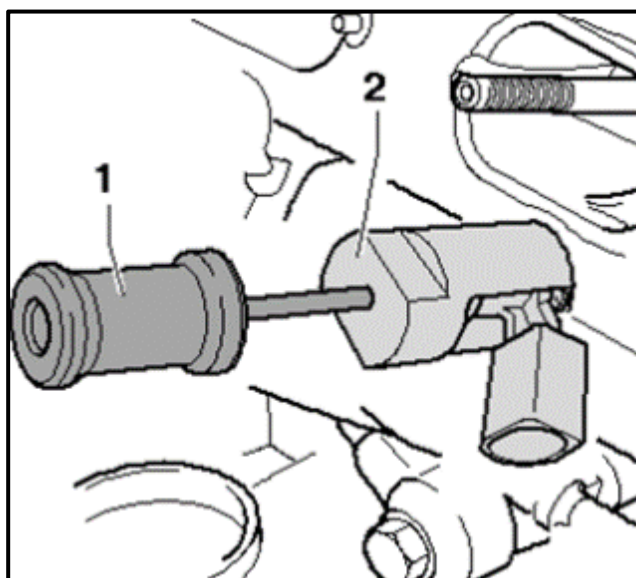


Note: The combustion chamber seal <6> must NOT be oiled.

- Install the fuel injector into the cylinder head by hand until it stops. Make sure the electrical connection is positioned correctly.



Note: The injector must NOT be difficult to install. If necessary, wait and allow the combustion chamber seal to further contract, then retry installation.



- ⇐ If the fuel injector does not fit into the head by pressing gently, use the puller – T10133B/2A <2> with the Sliding Hammer T10133A/3 <1> to guide the fuel injector into place.