Service Action Code: 80C1

Subject	**High-Voltage Heater Element**
Release Date	August 23, 2016
Revision Summary	**Parts information section updated.**
Affected Vehicles	***U.S.A.:*** **2016 MY e-Golf** *Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the only valid campaign inquiry & verification source.* ✓ *Campaign status must show "open."* ✓ *If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.*
Problem Description	The heater element for high-voltage heating may have been damaged in production. When high heating performance is required, this damage can lead to failure of the heater element. If the element fails, the driver will be alerted to the condition by illumination of the red central warning light in the instrument panel and messages in the instrument panel display.
Corrective Action	Replace high-voltage heater.
Dealer Requirements – e-Golf	This repair must only be performed by an authorized Volkswagen dealer certified to conduct repairs on e-Golf vehicles.
Parts Information	**For all parts requests, please contact VW Techline at 800-678-2389.**
Code Visibility	On or about August 17, 2016, affected vehicles were listed on the Inventory Vehicle Open Campaign Action report under My Dealership Reports (found on www.vwhub.com & OMD Web). A list was not posted for dealers who did not have any affected vehicles. On or about August 17, 2016, this campaign code showed open on affected vehicles in Elsa. On or about August 17, 2016, affected vehicles were identified with this campaign code in the VIN Lookup tool at www.vw.com.
Owner Notification	Owner notification took place on August 22, 2016. An owner letter example is included in this bulletin for your reference.
Campaign Expiration Date	This campaign expires on December 31, 2018. Repairs must be performed on or before this date to be eligible for payment. Keep this expiration date in mind when scheduling customers for this action. If a customer wishes to have this service performed after the expiration date, your dealerships normal parts and labor cost associated with this repair will apply.
Additional Information	**Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.** Dealers must ensure that every affected inventory vehicle has this campaign completed before delivery to consumers. Fill out and affix Campaign Completion Label (CAMP 010 000) after work is complete. *Labels can be ordered at no cost via the Compliance Label Ordering portal at www.vwhub.com.*

Claim Entry Instructions

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action *open on the day of repair* to the repair order.

If customer refused campaign work:

- ✓ U.S. dealers: Submit request via WISE under the *Campaigns/Update/Recall Closure* option.

Service Number	80C1
Damage Code	0099
Parts Vendor Code	WWO
Claim Type	Sold vehicle: 7 10 Unsold vehicle: 7 90
Causal Indicator	Mark high-voltage heater as causal part*
Vehicle Wash/Loaner	Do not claim wash/loaner under this action
Criteria I.D.	01

De-energizing of the high-voltage electrical

Labor operation: 9310 00 99 Time stated on diagnostic protocol (max 100 TU)

-AND-

Bleed HV coolant circuit

Labor operation: 01 50 00 50 Time stated on diagnostic protocol (max 20 TU)

-AND-

Replace High-Voltage Heater

Labor operation: 8039 55 99 60 T.U.

Quantity	Part Number	Description
1.00	5QE819013AB	High-Voltage Heater*
1.00	12E998152A	Repair Kit
Up to 2.00	G 013A8JS0	Coolant

Customer Letter Example (USA)

<MONTH YEAR>

<CUSTOMER NAME>
<CUSTOMER ADDRESS>
<CUSTOMER CITY STATE ZIPCODE>

This notice applies to your vehicle: <VIN>

Subject: Service Action 80C1 – High-Voltage Heater Element
2016 Model Year Volkswagen e-Golf

Dear Volkswagen Owner,

As part of Volkswagen's ongoing commitment to customer satisfaction, we are informing you of our decision to conduct a service action on certain 2016 model year Volkswagen e-Golf vehicles. Our records show that you are the owner of a vehicle affected by this action.

What is the issue?	The heater element for high-voltage heating may have been damaged in production. When high heating performance is required, this damage can lead to failure of the heater element. If the element fails, the driver will be alerted to the condition by illumination of the red central warning light in the instrument panel and messages in the instrument panel display. See your vehicle owner's manual for more information about warning lights and messages.
What will we do?	Your authorized Volkswagen e-Golf dealer will replace the high-voltage heater. This work will take about three hours to complete and will be performed for you free of charge.
What should you do?	In order to limit any possible inconvenience, please contact your authorized Volkswagen e-Golf dealer as soon as possible to schedule this service. Please keep in mind that your e-Golf dealer may need additional time for the preparation of the repair, as well as to accommodate their daily workshop schedule. For your convenience, you can also visit www.vw.com and click on the "Find a Dealer" link, enter your zip code or city, and select "e-Golf Dealer" under the "All Services" dropdown to locate an e-Golf dealer near you and schedule this service online. This service action will be available for you free of charge **only until December 31, 2018.** If you wish to have this service performed after that date, your dealer's normal parts and labor cost associated with this repair will apply.
Lease vehicles and address changes	If you are the lessor and registered owner of the vehicle identified in this action, please 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, please refer to the enclosed form that explains how to request reimbursement.
Can we assist you further?	If your authorized Volkswagen e-Golf dealer fails or is unable to complete this work free of charge within a reasonable time, or if you should have any questions about this communication, please don't hesitate to contact Customer CARE, Monday through Friday from 8AM to 10PM EST and Saturday from 9AM to 5PM EST by phone at 800-893-5298. You are also welcome to chat through the "Contact Us" page http://www.vw.com/contact/.
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 click on the ***Look Up Recalls*** link at www.vw.com and enter your Vehicle Identification Number (VIN) into the ***Recall/Service Campaign Lookup*** tool.

We apologize for any inconvenience this matter may cause; however we are taking this action to help ensure your Volkswagen e-Golf continues to meet and exceed your expectations.

Sincerely,

Volkswagen Customer Protection

NOTE

Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.

NOTE

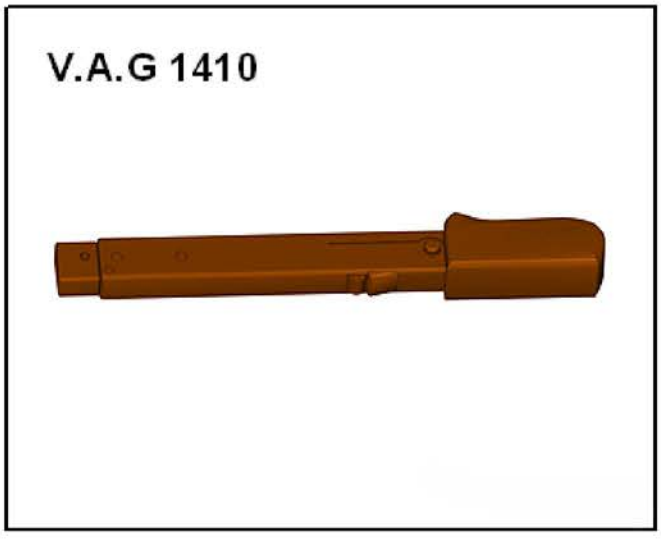
ATTENTION! DEALER REQUIREMENTS - E-GOLF

This repair must only be performed by an authorized Volkswagen dealer certified to conduct repairs on e-Golf vehicles.

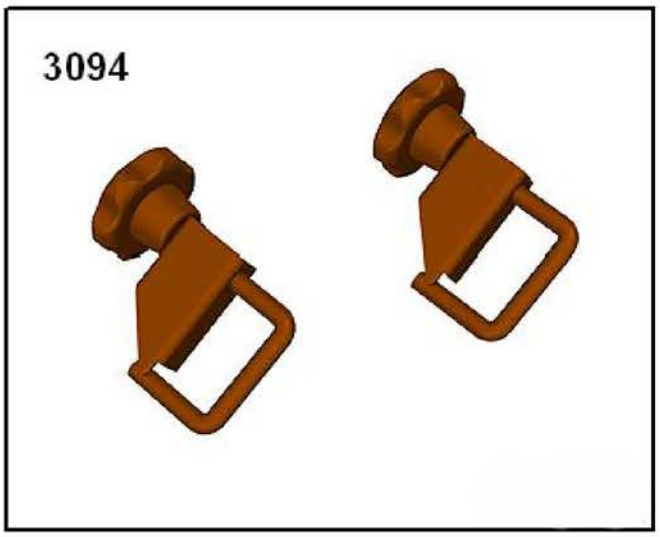
Required Parts

Quantity	Part Number	Part Description
1	5QE819013AB	High-voltage Heater
1	12E998152A	Repair Kit
Up to 0.2 quarts	G 013A8J1G	G13 Coolant (Concentrate)

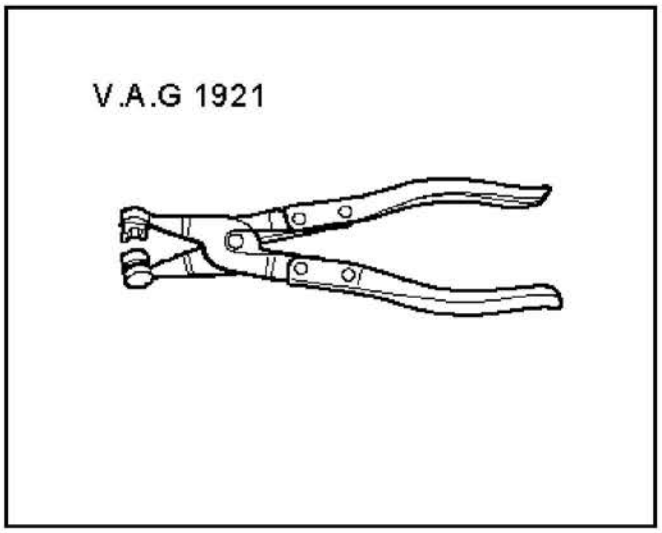
Required Tools



- Torque Wrench 1410 - 4-20 Nm - VAG1410 (or equivalent)

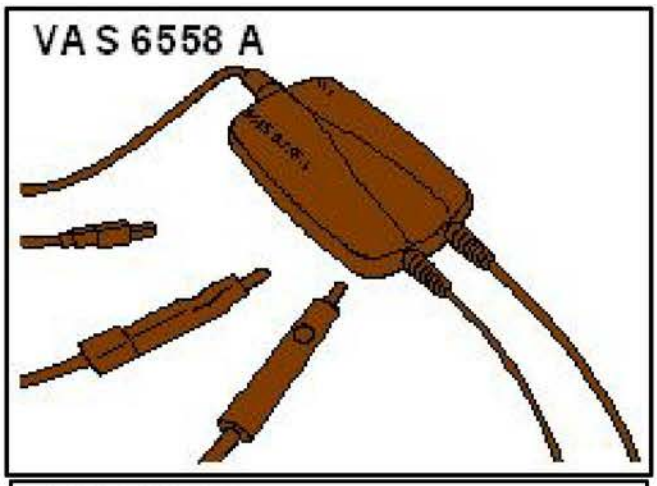


- Hose Clamps - Up To 25 mm - 3094



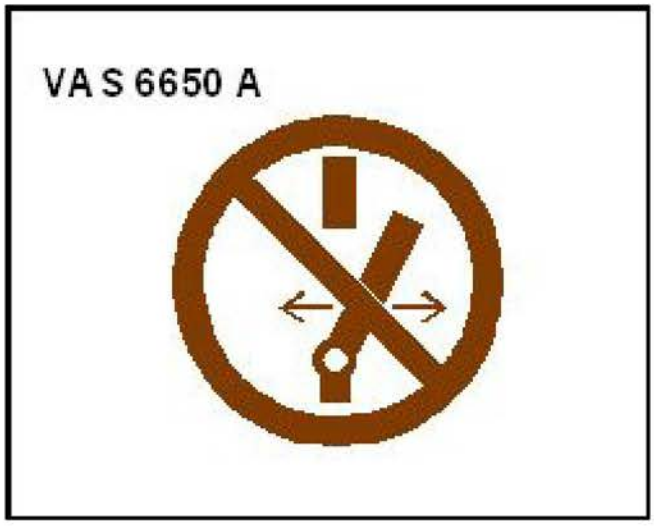
- Hose Clip Pliers - VAG1921 (or equivalent)

- VAS6150C - Diagnostic Tester (or equivalent)

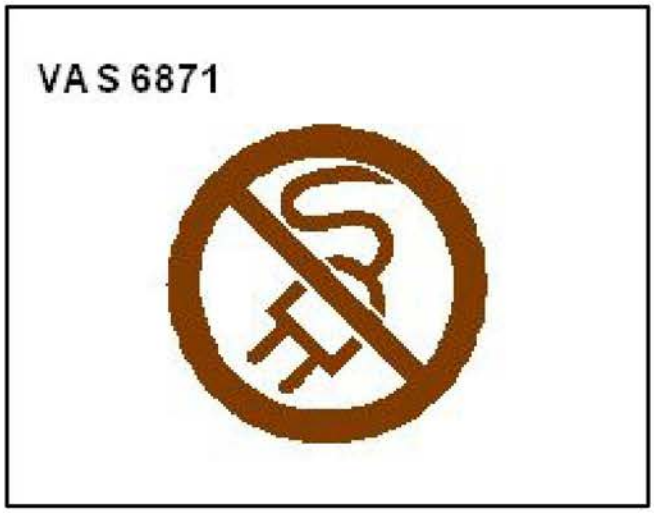


- Test Adapter - Hybrid Module - VAS6558A

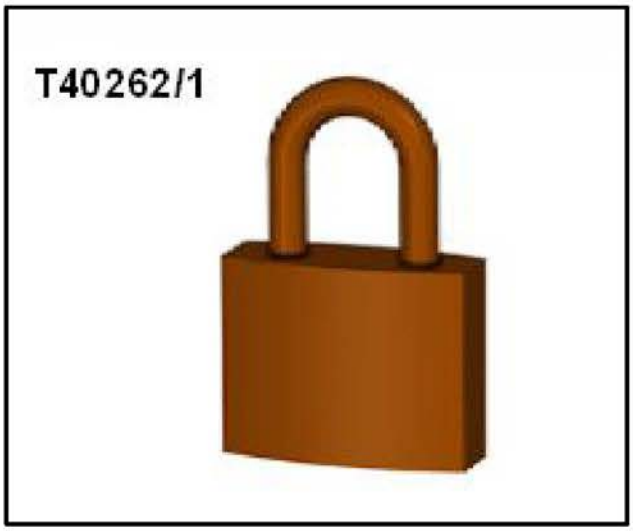
- Warning Sign - High-voltage - VAS6649



- Warning Sign - Switch - VAS6650A



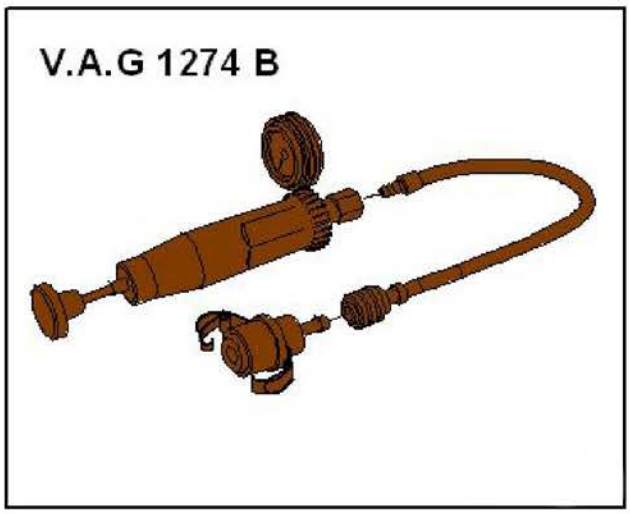
- Warning Sign "Do not insert" - VAS6871



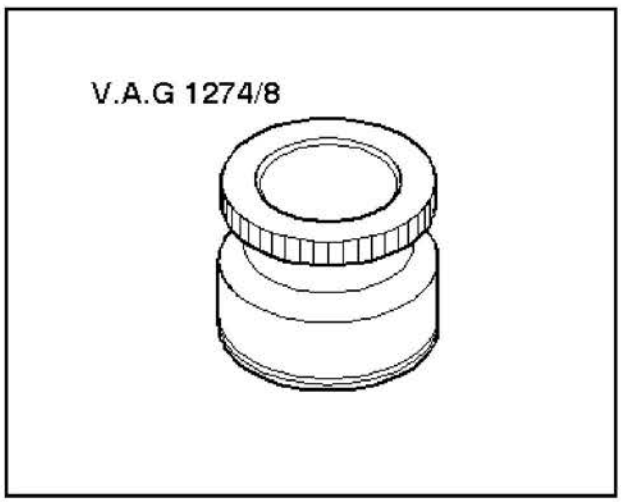
- Service Disconnect Lock -T40262/1

- Connector Test Set - Test Clips -VAG1594/14

- High-Voltage Cordon - VAS6884

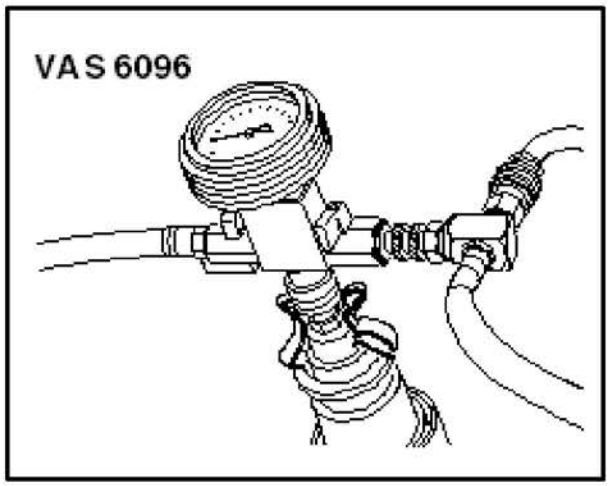


- Cooling System Tester - VAG1274B



- Cooling System Tester - Adapter -VAG1274/8

- Refractometer – T10007A



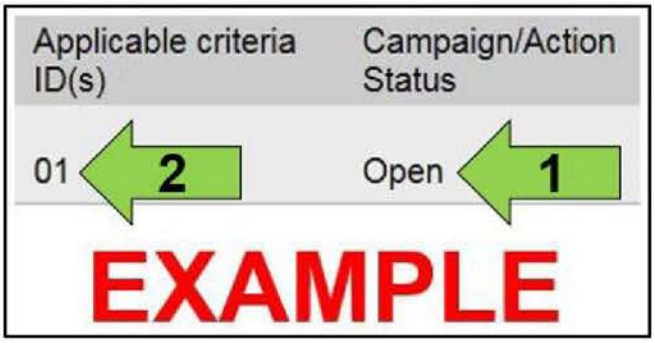
- VAS 6096

Repair Instruction

Section A - Check for Previous Repair

TIP

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



- 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.

- Confirm the Campaign/Action is open <arrow 1>. If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.

Proceed to Section B

Section B – Repair Procedure

WARNING

- This repair procedure must be performed by a High-voltage Technician.
- Risk of injury or death. Refer to "Warnings and Safety Precautions", found in **Appendix A** at the end of this document.

DANGER

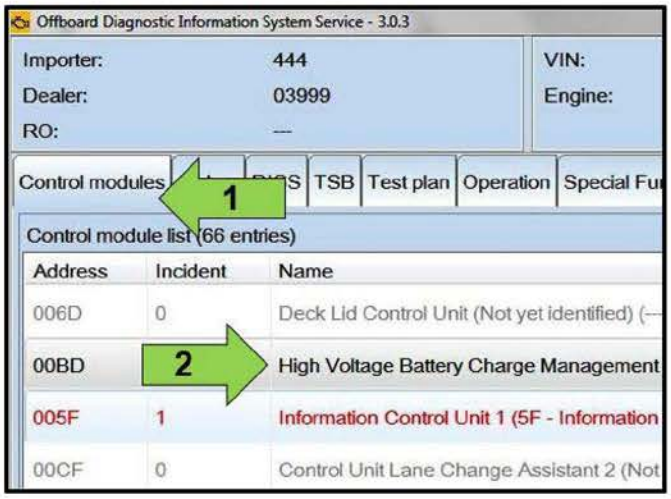
- Danger to life due to high-voltage.
- Death or serious bodily injury possible by electric shock.
- Have the high-voltage system de-energized by a qualified person

- Secure the vehicle using the High-Voltage Cordon – VAS6884.
- Prepare the inspection record.
- Have the calibrated voltage tester with suitable test probes ready.
- Prepare the high-voltage signs.
- Switch the ignition ON.

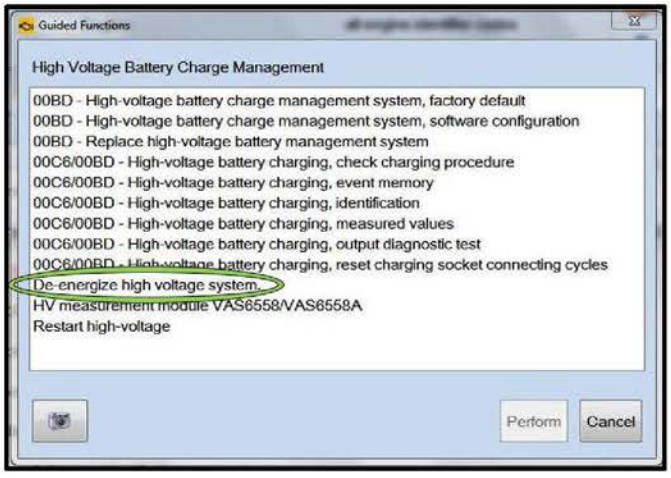
- Connect the Diagnostic Tester VAS6150C (or equivalent) to the vehicle.
- Using ODIS, perform a complete GFF scan of the vehicle.

TIP

Diagnosis and repair of pre-existing conditions that exist in the vehicle are not covered under this action.



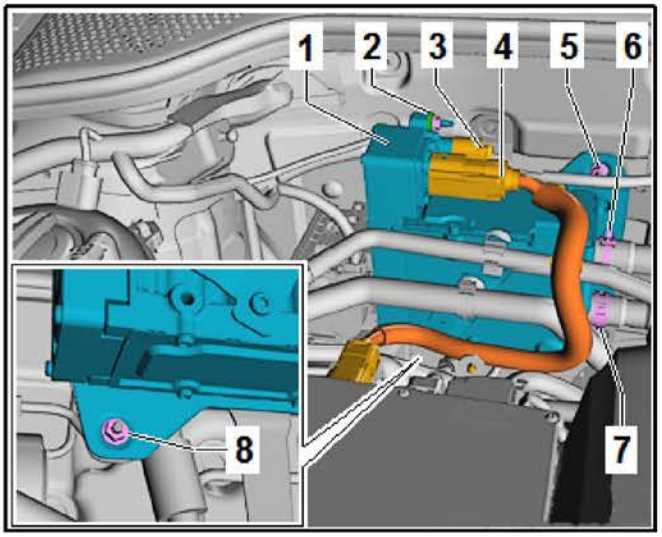
- From the “Control Module List” screen <arrow 1>, right click on the “High-voltage Battery Charge Management” <arrow 2>.
- When the drop down list is displayed, select “Guided Functions”.



- From the “Guided Functions” list, select “De-energize high-voltage system”, <circle>.
- Follow the on-screen directions to complete the de-energization of the high-voltage electrical system.
- Once the high-voltage system is safe to work on according to the test plan;

  Proceed to Section C

Section C – Replace High-voltage Heater

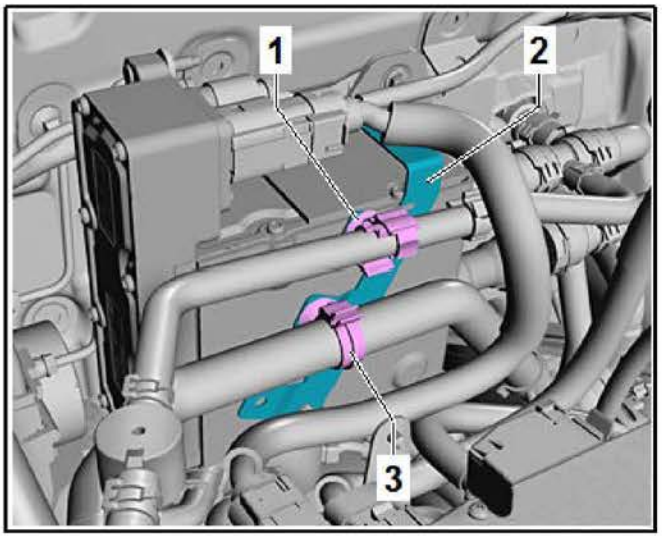


- Unclip the connector wiring brackets <3> and <4> from the bracket.

NOTE

After disconnecting the electrical connectors, ensure that they are secured in an area where they cannot be subjected to coolant intrusion during coolant line removal.

- Disconnect the connectors <3> and <4>.
- Remove the nut <2> and the potential equalization cable.



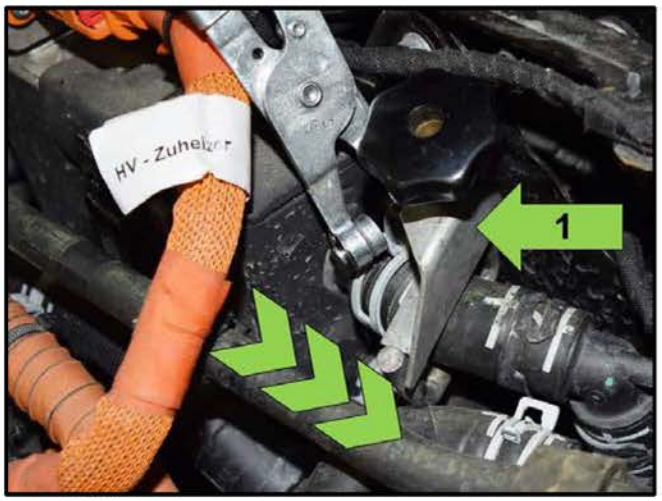
- Unclip the hose brackets <1> and <3> from the bracket <2>.

NOTE

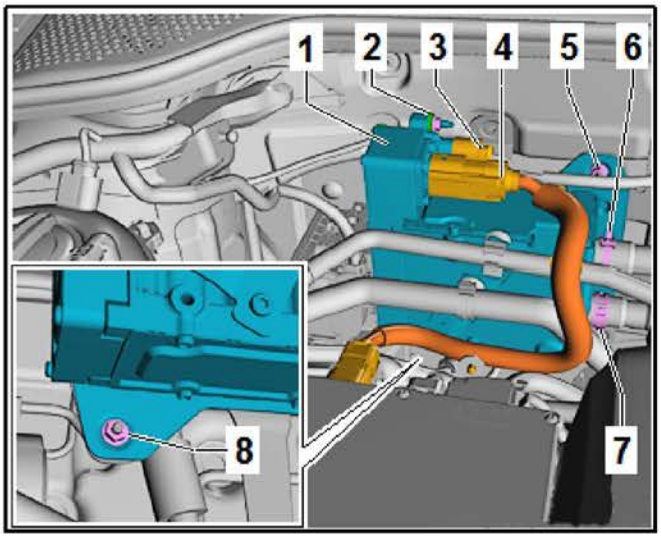
Ensure that the coolant pumps are not activated and that coolant is not circulating prior to installation of the Hose Clamps – 3094.

NOTE

The upper coolant hose must be positioned as described below prior to the installation of the Hose Clamp – 3094. Failure to do so may cause damage to the upper coolant hose, resulting in a coolant leak.



- Loosen the upper coolant hose with Hose Clip Pliers - VAG1921 (or equivalent) and slide the hose approximately 12 mm in the direction shown <directional arrows> to allow installation of the Hose Clamp – 3094 <arrow 1>.
- Once the Hose Clamp – 3094 <arrow 1> is installed, remove the upper coolant hose from the high-voltage heater.

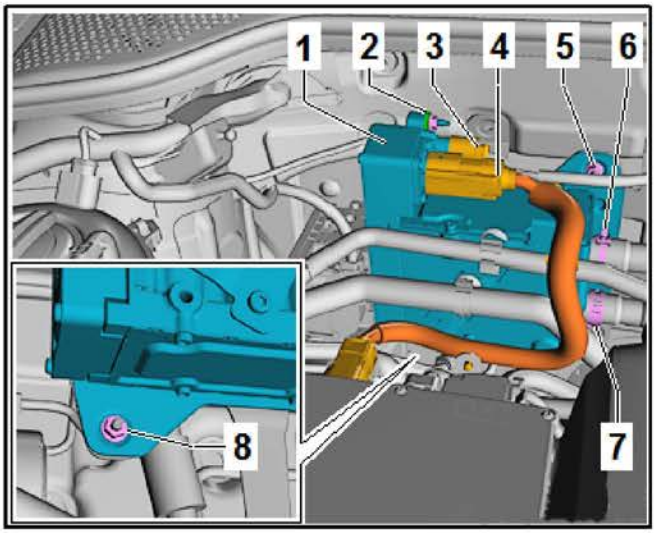


- Install the Hose Clamp – 3094 to the lower coolant hose <7> and remove the hose from the high-voltage heater <1> using Hose Clip Pliers - VAG1921 (or equivalent).

TIP

The nut <8> is accessible from below.

- Remove the nut <8>.
- Remove the nut <5>.
- Remove the high-voltage heater <1>.



- Install the new high-voltage heater <1>.
- Reinstall the nut <5> and torque to 9 Nm.

TIP

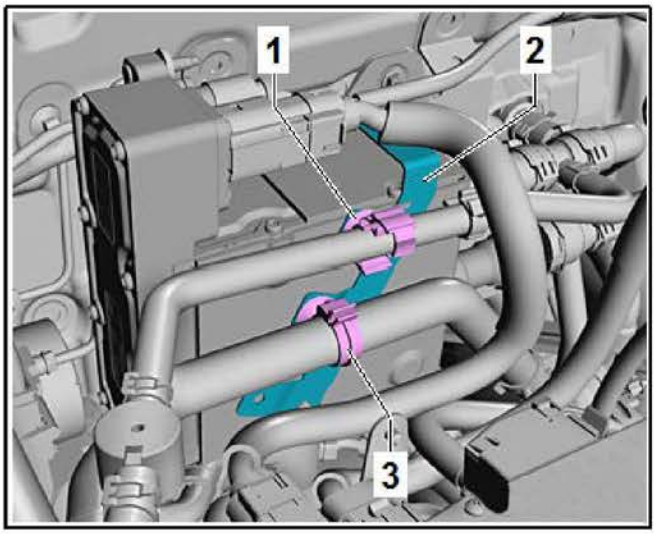
The nut <8> is accessible from below.

- Reinstall the nut <8> and torque to 9 Nm.
- Reconnect the upper and lower coolant hoses <6> and <7> to the high-voltage heater <1> using Hose Clip Pliers - VAG1921 (or equivalent).
- Remove the Hose Clamps - 3094 from the coolant hoses.
- Reconnect the connectors <3> and <4>.
- Clip the connector wiring brackets <3> and <4> to the bracket.

NOTE

- Check the contact surfaces on the potential equalization cables before installation.
- The contact surfaces must be clean. There must be no rust or grease on them.

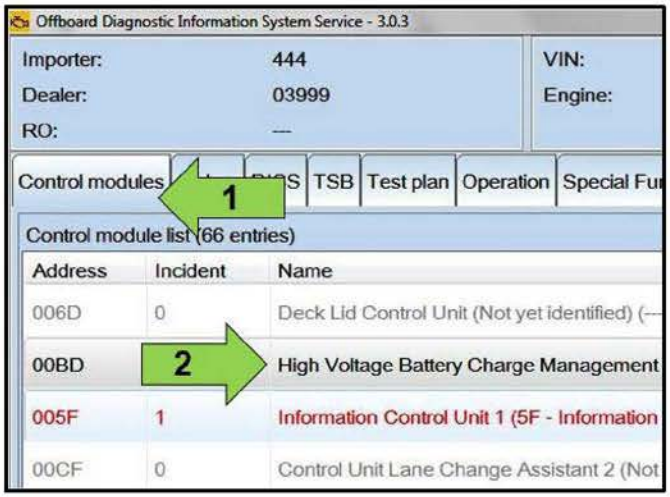
- Reinstall the nut <2> and the potential equalization cable and torque to 9 Nm.



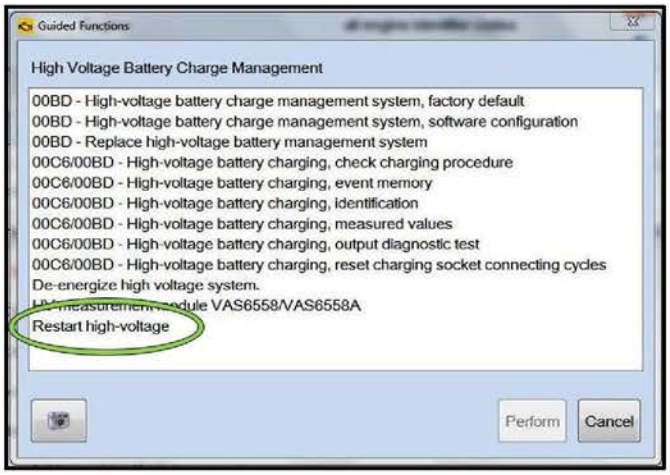
- Clip the hose brackets <1> and <3> to the bracket <2>.

Proceed to section D.

Section D – Re-energize the High-voltage System



- Switch the ignition ON.
- If necessary, perform a complete GFF scan of the vehicle.
- From the "Control Module List" screen <arrow 1>, right click on the "High-voltage Battery Charge Management" <arrow 2>.
- When the drop down list is displayed, select "Guided Functions".



- From the "Guided Functions" list, select "Restart high-voltage", <circle>.
- Follow the on-screen directions to complete the re-energization of the high-voltage electrical system.

  Once the high-voltage system is reactivated successfully, **proceed to Section E.**

Section E – Refill the Cooling System

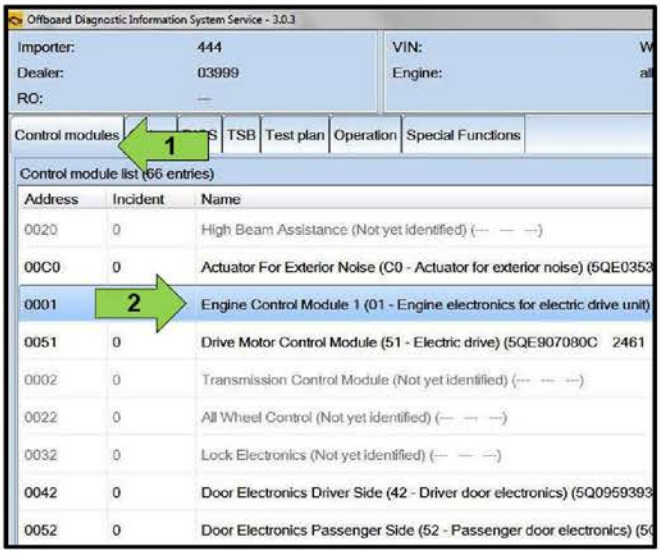
NOTE

To properly fill the cooling system the coolant pumps must be activated using the Vehicle Diagnostic Tester.

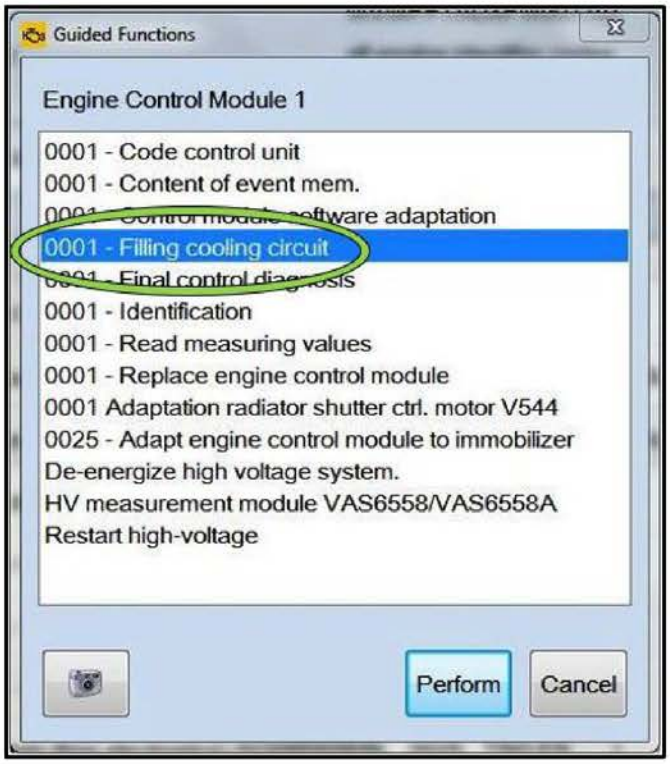
NOTE

- Only mix distilled water with coolant additives. Using distilled water provides optimum corrosion protection.
- Please reference the note in Appendix A for further instruction.

- Fill the coolant to the MAX marking on the coolant expansion tank <1>.



- Activate the coolant pumps using the Diagnostic Tester - VAS6150C (or equivalent).
- From the “Control Module List” screen <arrow 1>, right click on the “Engine Control Module 1” <arrow 2>.
- When the drop down list is displayed, select “Guided Functions”.

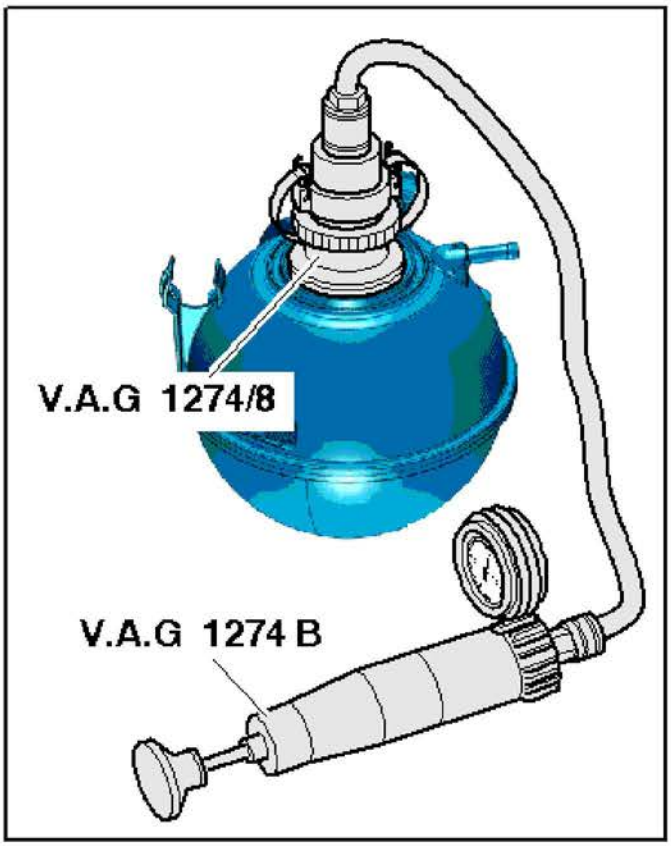


- From the “Guided Functions” list, select “Filling cooling circuit”, <circle>.

NOTE

Fill the coolant circuit using the -VAS6096-. Refer to -VAS6096- - Owner's Manual.

- Follow the on-screen directions to complete the filling of the coolant circuit.



- Once the coolant circuit is filled to the proper levels, check the system for leaks by positioning the Cooling System Tester - VAG1274B with the Cooling System Tester Adapter - VAG1274/8 on the coolant reservoir.
- Generate a positive pressure of approximately 1.0 bar (14.5 psi) using the hand pump on the tester.

If pressure decreases, search for leaking areas and repair the malfunction.

- Once it's confirmed that no leaks are present, reinstall the cap <2> on the coolant expansion tank <1>.
- Perform a road test to bring the coolant to the operating temperature.
- Check coolant level and fill if necessary.

NOTE

- Coolant level may be on or above "max marking" with cooling system at the operating temperature
- The coolant level must be between the "min mark" and the "max marking" when the cooling system is cold.

Proceed to section F

Section F – Campaign Completion Label and Parts Return

Install Campaign Completion Label

- 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.

Parts Return/Disposal

Properly store (retain), destroy or dispose of removed parts in accordance with all state and local requirements, unless otherwise indicated and/or requested through the Warranty Parts Portal (WPP).

ALL WORK IS COMPLETE

Appendix A – Warning and Safety Precautions

⚠ DANGER

The vehicle high-voltage system and the high-voltage battery are dangerous and can cause burns, other injuries and fatal electrocution.

- Procedures on the high-voltage system and systems that can be indirectly influenced by it may only be performed by qualified and trained personnel.
- Individuals with electronic/medical life- and health sustaining machines in or on their person cannot perform any work on high-voltage systems. Life- and health sustaining machines are for example pain killer pumps, implanted defibrillators, pacemakers, insulin pumps, and hearing aids.
- If there are any questions or ambiguity regarding the terms "high-voltage technician" and "high-voltage expert" or regarding the high-voltage system, check with the technical helpline before beginning any work on the high-voltage system.
- The following must be considered during repair operations: the applicable legal regulations, other legal provisions, the recognized engineering guidelines, any applicable accident prevention regulations and this repair manual.

⚠ WARNING

Observe the Following Precautions When Working on the High-Voltage System:

- All work on vehicles with a high-voltage electrical system (for example, maintenance, changing a tire, working in the convenience systems electronics) may only be performed by technicians who are specially trained in electrical systems. If there is any uncertainty, discuss with the responsible high-voltage technician.
- A high-voltage technician must disable the system before any work can be performed on the high-voltage electrical system or any other service work to the body.
- Only a High-voltage Expert (HVE) may perform repairs to the vehicle if it is not possible to disable the high-voltage electrical system.
- Only a high-voltage technician authorized with high-voltage system certification is allowed to de-energize and re-energize the high-voltage system, and should be the only person performing the task.
- The high-voltage system must not be de-energized when performing regularly scheduled maintenance work.
- Only technicians trained in electrical systems are allowed to work on the e-Golf.
- Perform a visual inspection of the high-voltage relevant components in the procedure/work area during every procedure.
- The high-voltage cables must not be sharply bent or kinked.
- Misuse can damage the insulation of high-voltage cables or high-voltage connectors.
- Never support yourself or other objects on the high-voltage cables and the high-voltage connectors.
- Contact a high-voltage technician or a high-voltage expert if something is not clear or if there are any abnormalities.
- Working near high-voltage components and high-voltage cables with cutting, deforming, sharp-edged tools or with heat-generating sources, such as welding, soldering, hot air, thermal adhesive and infrared dryer, is forbidden. If this is the case, the high-voltage system must be de-energized and the applicable components must be removed or sufficiently protected.
- When de-energizing and re-energizing the high-voltage system, the high-voltage technician must:
  - Ensure the system is disabled and cannot turn on again.
  - Ensure the system cannot turn on again by safekeeping the key, the service plug, and the pilot line cable.
  - Put the proper signage on the vehicle displaying the voltage is disabled.
  - Pay attention to the coding of the high-voltage connectors when reconnecting.
- For safety reasons, no other procedures may be performed in or on the vehicle during the charging process.

WARNING

Cooling System Safety Precautions

There is a risk of burning from hot coolant.

The cooling system is under pressure when the motor is warm. There is a risk of scalding from hot steam and coolant.

- Wear protective gloves.
- Wear protective eyewear.
- Reduce the pressure: cover the coolant reservoir cap with a cloth and carefully open.

WARNING

Air Conditioning Systems Safety Precautions

There is a risk of frostbite through refrigerant

When working on the A/C system refrigerant can come out under pressure. Frostbite on the skin and other parts of the body is possible

- Wear protective gloves
- Wear protective eyewear
- Extract refrigerant and open the refrigerant circuit immediately
- If the refrigerant was extracted more than 10 minutes in the past and the refrigerant circuit was not opened, extract the refrigerant again. The refrigerant circuit pressure comes from evaporation.

Risk of destroying the refrigerant lines

Destroying the refrigerant lines by ripping in the inner foil is possible

- Never bend the refrigerant lines to a radius smaller than r = 100 mm

CAUTION

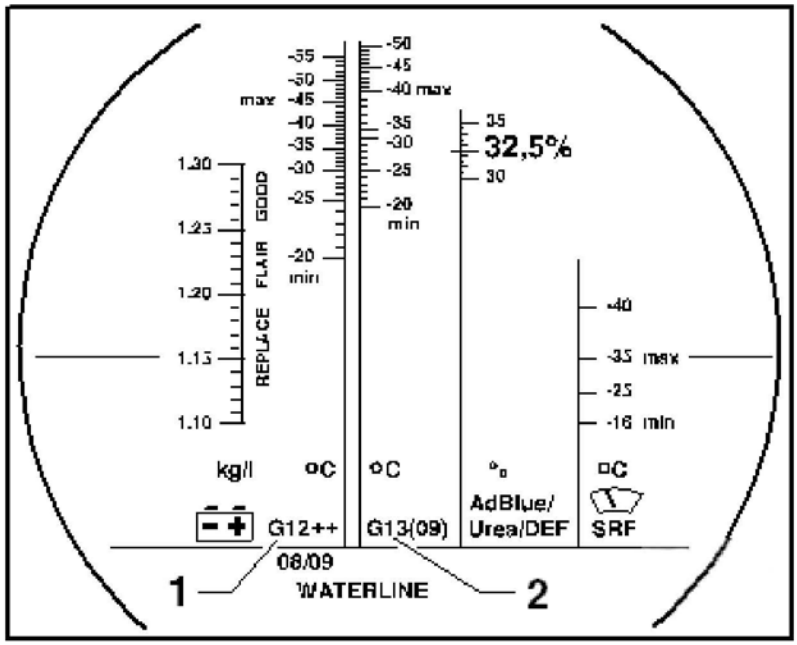
There is a risk of injury if the radiator fan turns on by itself.

- Disconnect the connectors.

NOTE

- The water portion of the coolant influences the effectiveness of the coolant. Based on the contents, the country or even the region specific quality can be different. Use distilled water. For this reason, we recommend using distilled water when adding coolant or filling coolant for the first time.
- Use only coolant additives listed in this procedure. Other coolant additives may above all reduce the corrosion protection effect significantly. The damage resulting from this may lead to loss of coolant and consequently to severe motor damage.
- Coolant with the correct mixture ratio prevents freezing and corrosion damage and calcium deposits. The boiling point will be raised. The cooling system must be filled with coolant additive year-round.
- Because of its high boiling point, the coolant contributes to motor reliability under heavy loads, particularly in countries with tropical climates.

- The -T10007A- MUST be used to determine the freeze protection value.
- Protection against frost must be assured down to minimum -25 °C (-13 °F) (in arctic climatic countries down to approximately -36 °C (-32.8 °F)). When stronger freeze protection is needed due to the climate, the freeze protection may be increased. But only up to -48 °C (-54 °F), otherwise the effectiveness of the coolant decreases.
- The coolant concentration must not be reduced by adding water even in warmer seasons and in warmer countries. The frost protection must be at least -25 °C (-13 °F).
- Read the freeze protection value on the scale for the coolant additive that has been added.



- The temperature on the -T10007A- corresponds to the **»freezing point«**. At this temperature, ice crystals may begin to form in the coolant.
- Do not reuse used coolant.
- Only use water/coolant additive to lubricate the coolant hoses.

Recommended Mixture Ratios (Use Only Distilled Water for Mixing):

Frost Protection to	Coolant Additive
-25 °C (-13 °F)	40%
-36 °C (-32.8 °F)	50%