



# Emissions Service Action

## Code: 24iO

**Subject** Camshaft Position Sensors

**Document History**

Date	Summary
08/03/2023	Updated work instructions with sensor part number detail in the event the colored dots are missing from the sensors.
03/09/2023	Updated labor operation for S5 Cabriolet models. Added claiming for bleeding coolant system.
02/14/2023	Original publication

**Affected Vehicles**

Country	Beginning Model Year	Ending Model Year	Vehicle	Vehicle Count
USA	2022	2022	A6 ALLROAD	45
USA	2022	2022	A6 SEDAN	129
USA	2022	2022	A7	86
USA	2022	2022	Q7	757
USA	2022	2022	Q8	394
USA	2022	2022	S4 SEDAN	69
USA	2022	2022	S5 CABRIOLET	103
USA	2022	2022	S5 COUPE	39
USA	2022	2022	S5 SPORTBACK	154
USA	2021	2022	SQ5	2,302
USA	2021	2022	SQ5 SPORTBACK	311
CAN	2022	2022	A6 ALLROAD	3
CAN	2022	2022	A6 SEDAN	12
CAN	2022	2022	A7	10
CAN	2022	2022	Q7	198
CAN	2022	2022	Q8	38
CAN	2022	2022	S4 SEDAN	16
CAN	2022	2022	S5 CABRIOLET	9
CAN	2022	2022	S5 COUPE	4
CAN	2022	2022	S5 SPORTBACK	40
CAN	2021	2022	SQ5	451
CAN	2021	2022	SQ5 SPORTBACK	132

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**

Under certain conditions, tolerance issues related to the engine camshaft position sensors may elevate tailpipe emissions.

<b>Corrective Action</b>	Install updated camshaft position sensors.
<b>Code Visibility</b>	On or about February 14, 2023, the campaign code was applied to affected vehicles.
<b>Owner Notification</b>	Owner notification took place in February 2023. Owner letter examples are included in this bulletin for your reference.
<b>Emissions Campaigns Requirements (CALIFORNIA ONLY)</b>	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). Order certificates online via the Compliance Label Ordering portal at <a href="http://www.accessaudi.com">www.accessaudi.com</a> .
<b>Additional Information</b>	<p><b>Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.</b></p> <p>Dealers must ensure that every affected inventory vehicle has this campaign completed <u>before delivery to consumers</u>.</p> <p>Fill out and affix Campaign Completion Label (CAMP 010 000) after work is complete. <i>Labels can be ordered at no cost via the Compliance Label Ordering portal at <a href="http://www.accessaudi.com">www.accessaudi.com</a>.</i></p>

## Parts Information

<b>Parts Control Type:</b> <b>Free Order</b>	Parts will be managed by Free Order
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<b>Initial Allocation:</b> <b>NO</b>	There will be no parts allocation. Please reference the Repair Projection Tool (below) to view your potential VIN population.
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<b>Repair Projection Tool:</b> <b>(right click to open)</b>	
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Criteria	Quantity	Part Number	P.O.C. Part Description	Ordering Method
01	1	06M-998-601	REPAIR KIT	Free Order
	Up to 1.0 L	G -12E-050-1G DSP	G12 EVO Coolant <b>(U.S. ONLY)</b>	POC
	Up to 1.0 L	G -12E-050-2G DSP	G12 EVO Coolant <b>(CANADA ONLY)</b>	POC

### NOTE

The specified part numbers reflect the status at the start of this action. Interim updates made in ETKA can cause a listed part number to become unavailable. In this case, the new part number specified in ETKA should be used.

## Claim Entry Instructions

The labor times listed here may differ from the labor operations and labor times listed in ELSA.

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 the request through Audi Warranty Online under the Campaigns/Update option.
- ✓ Canada dealers: Upload the repair order [signed by customer] to Audi WIN/Operations/Campaign Closure.

<b>Service Number</b>	24iO (Letter O, not number zero)		
<b>Damage Code</b>	0099		
<b>Parts Vendor Code</b>	002		
<b>Claim Type</b>	Sold vehicle: 7 10 Unsold vehicle: 7 90		
<b>Causal Indicator</b>	Mark REPAIR KIT* as causal part		
<b>Vehicle Wash/Loaner</b>	Do not claim wash/loaner under this action		
<b>Criteria I.D.</b>	01		
	Replace bank 1 and bank 2 intake camshaft position sensors (G40 & G163)		
	<b>LABOR</b>		
	<u>All Models EXCEPT S5 Cabriolet:</u>		
	<b>Labor Op</b>	<b>Time Units</b>	<b>Description</b>
	2866 19 43	SEE ELSA	Camshaft position sensor remove+reinstall (G163)
	2866 19 94	SEE ELSA	Camshaft position sensor remove+reinstall (G40)
	2425 19 43	SEE ELSA	Air cleaner remove+reinstall (if necessary)
	1901 01 99	30	Bleed cooling system (if necessary)
	<u>S5 Cabriolet ONLY:</u>		
	<b>Labor Op</b>	<b>Time Units</b>	<b>Description</b>
	2866 19 43	SEE ELSA	Camshaft position sensor remove+reinstall (G163)
	2866 19 99	10	Camshaft position sensor remove+reinstall (G40)
	2425 19 43	SEE ELSA	Air cleaner remove+reinstall
	1901 01 99	30	Bleed cooling system (if necessary)

**Continued on next page**

PARTS (all models)		
Quantity	Part Number	Description
1.00	06M998601	REPAIR KIT*
Up to 0.26	G 12E050S0	COOLANT <b>(U.S. ONLY)</b>
Up to 10.00	G 12E050S0	COOLANT <b>(CANADA ONLY)</b>

## Customer Letter Example (USA)

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

**This notice applies to your vehicle:** <MODEL YEAR> <BRAND> <CARLINE>, <VIN>

**Subject: Emissions Service Action 24iO – Camshaft Position Sensors**

Dear Audi Owner,

In cooperation with the United States Environmental Protection Agency and the California Air Resources Board, we are informing you of our decision to conduct an emissions service action on certain 2021-2022 model year Audi vehicles. Our records show that you are the owner of a vehicle affected by this action.

<b>What is the issue?</b>	Under certain conditions, tolerance issues related to the engine camshaft position sensors may elevate tailpipe emissions.
<b>What will we do?</b>	Your authorized Audi dealer will install updated camshaft position sensors. This work will take about two hours to complete and will be performed for you free of charge. 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.
<b>What should you do?</b>	In order to limit any possible inconvenience, please contact your authorized Audi dealer as soon as possible to schedule this service. For your convenience, you can also visit <a href="http://www.audiusa.com">www.audiusa.com</a> and click on the "Find a Dealer" link to locate a dealer near you and schedule this service.
<b>Lease vehicles and address changes</b>	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.
<b>Important information for California Vehicle Owners – California Regulations</b>	California regulations require that this campaign be completed prior to the time you renew your vehicle registration. Therefore, <b>please make sure that this campaign is completed prior to the renewal of your vehicle registration</b> , 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. <b>DO NOT MAIL THIS FORM</b> to the DMV, unless requested.
<b>Can we assist you further?</b>	If your authorized Audi dealer fails or is unable to complete this work free of charge within a reasonable time, please contact Audi Customer Experience at 1-800-253-2834 or via our "Contact Us" page at <a href="http://www.audiusa.com">www.audiusa.com</a> .
<b>Checking your vehicle for open Recalls and Service Campaigns</b>	To check your vehicle's eligibility for repair under this or any other recall/service campaign, please visit the <b>Recall/Service Campaign Lookup</b> tool at <a href="http://www.audiusa.com">www.audiusa.com</a> and enter your Vehicle Identification Number (VIN).

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

Sincerely,

Audi Customer Protection

## Customer Letter Example (Canada)

<MONTH YEAR>

<CUSTOMER NAME>

<CUSTOMER ADDRESS>

<CUSTOMER CITY STATE ZIPCODE>

**This notice applies to your vehicle:** <MODEL YEAR> <BRAND> <CARLINE>, <VIN>

**Subject: Emissions Service Action 24iO – Camshaft Position Sensors**

Dear Audi Owner,

This notice is sent to you in accordance with the requirements of the *Canadian Environmental Protection Act, 1999*. Audi has determined that a defect, which relates to a prescribed emission standard, exists in certain 2021-2022 model year Audi vehicles. Our records show that you are the owner of a vehicle affected by this action.

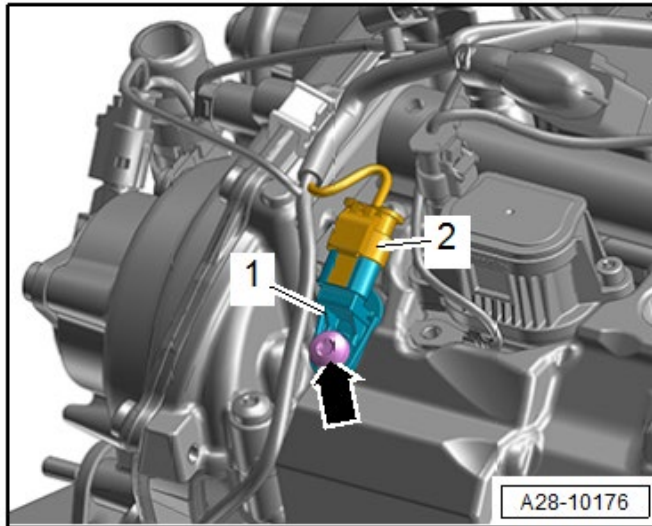
<b>What is the issue?</b>	Under certain conditions, tolerance issues related to the engine camshaft position sensors may elevate tailpipe emissions.
<b>What will we do?</b>	Your authorized Audi dealer will install updated camshaft position sensors. This work will take about two hours to complete and will be performed for you free of charge. 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.
<b>What should you do?</b>	In order to limit any possible inconvenience, please contact your authorized Audi dealer as soon as possible to schedule this service. On or about February 14, 2023 the necessary repair instructions and parts will be available to your authorized Audi dealer.
<b>Lease vehicles and address changes</b>	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.
<b>Can we assist you further?</b>	If your authorized Audi dealer fails or is unable to complete this work free of charge within a reasonable time, please contact Audi Customer Relations Monday through Friday from 8AM to 8PM EST at 1-800-822-2834 or via our "Contact Audi Canada" page at <a href="http://www.audi.ca">www.audi.ca</a> .

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

Sincerely,

Audi Customer Protection

## Repair Overview



- Replace intake camshaft position sensors (G40 & G163).

### NOTE

- These repair instructions may differ from the labor operations and labor times listed in ELSA.
- 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.
- This procedure must be read in its entirety prior to performing the repair.
- Due to variations in vehicle equipment and options, the steps/illustrations in this work procedure may not identically match all affected vehicles.
- Diagnosis and repair of pre-existing conditions in the vehicle are not covered under this action.
- When working during extreme temperatures, it is recommended that the vehicle be allowed to acclimate inside the shop to avoid temperature-related component damage/breakage.

## Required Tools



Bit Torx T30  
-T10573-  
(or equivalent)



Cooling System Charge Kit  
-VAS6096-



## Repair Instruction

### Section A - Check for Previous Repair

Applicable criteria ID(s)	Campaign/Action Status
01 ← <b>2</b>	Open ← <b>1</b>

**EXAMPLE**

Campaign/Action	Start	Designation
← <b>3</b>	2015-11-10	W-SERV_ACT -
	2018-12-13	RECALL -
	2017-05-16	A-RECALL -

**EXAMPLE**

- 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.

#### CRITICAL REPAIR STEP

 **STOP!** 

If multiple software update Campaign/Actions are open, they must be performed in order of the Start date <arrow 3>. The oldest should be performed first.

- **All Safety Recalls must be completed prior to completing this campaign.**
- **Proceed to Section B.**

## Section B – Repair Procedure

### Remove engine cover:

- See ELSA Repair Manual: *Repair manual > Engine > Servicing - 6-Cylinder 2.9L; 3.0L 4V TFSI EA839 Engine > 10 Engine Assembly > Engine Cover > Engine Cover, Removing and Installing*

### Remove air filter housing:

- See ELSA Repair Manual: *Repair manual > Engine > 6-Cylinder Direct Fuel Injection 2.9L; 3.0L 4V TFSI Engine EA 839 > 24 Multiport Fuel Injection > Air Filter > Air Filter Housing, Removing and Installing*

### Remove the right coolant pipes from longitudinal member (if necessary):

#### CAUTION

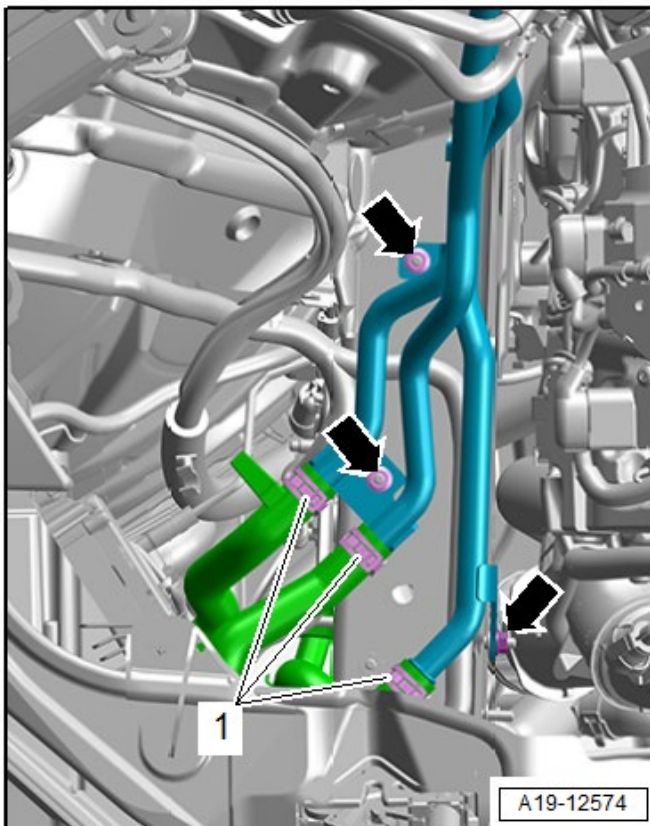
The cooling system can be under pressure. Risk of scalding by hot steam and hot coolant. Possibility of scalding the skin and other parts of the body.

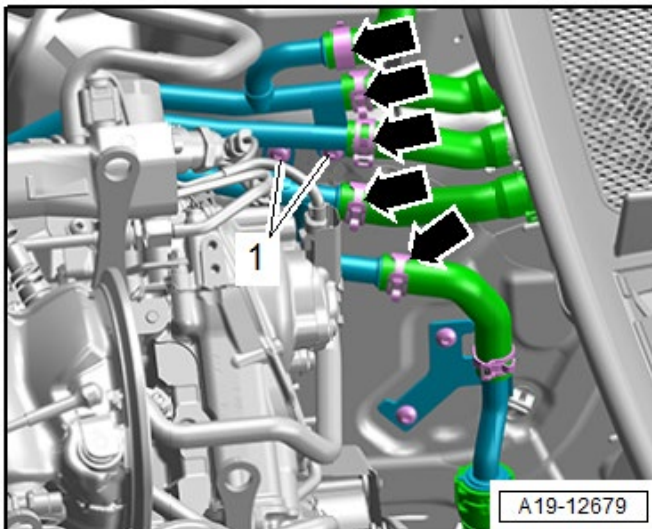
Wear safety gloves.

Wear protective eyewear.

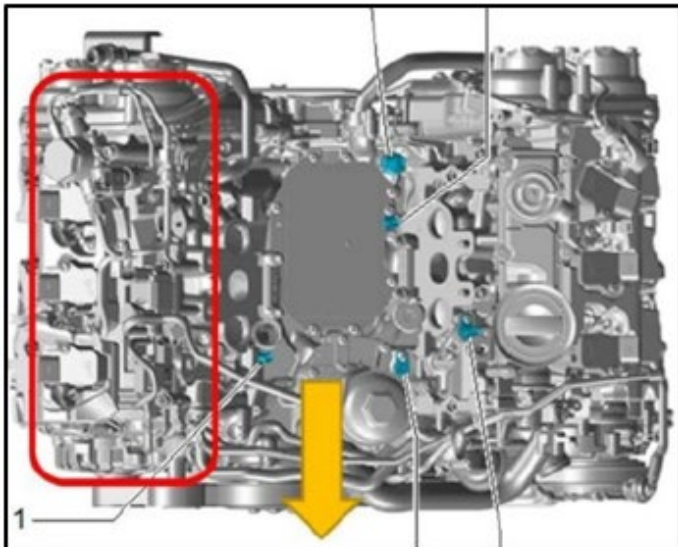
Reduce the pressure: cover the coolant expansion tank cap with a suitable towel and carefully open.

- Place rags underneath the hoses or a catch tray under the vehicle to catch escaping coolant. Ensure that any spilled coolant is cleaned with water.
- Loosen the hose clamps <1> and remove the coolant hoses.
- Remove the nuts <arrows>.





- Remove the bolts <1>.
- Loosen the hose clamps <arrows>, remove the coolant hoses and remove the coolant pipes.



### Replacing the camshaft position sensors:

It is essential to observe the following fitting locations when installing the new camshaft sensors:

- Install white (part number index "K") camshaft position sensor (G40) on bank 1 <top image>. Bank 1 is always on the right/passenger side of the engine as seen in the direction of vehicle travel <arrow>, opposite the gearbox.
- Install blue (part number index "J") camshaft position sensor (G163) on bank 2 (left/driver side).

Bank 1

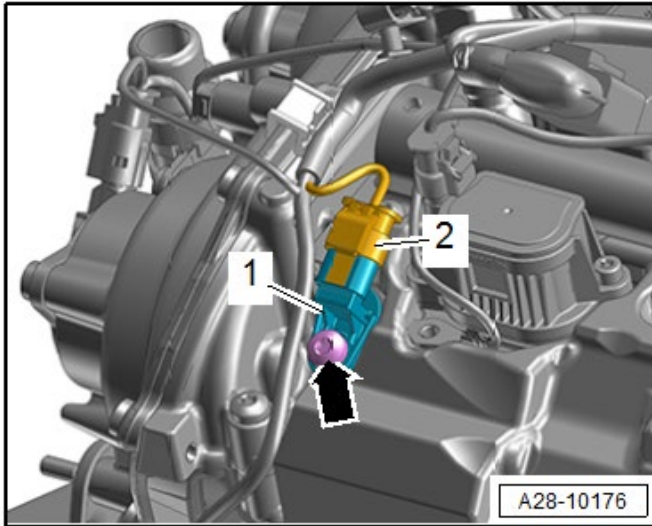
Bank 2



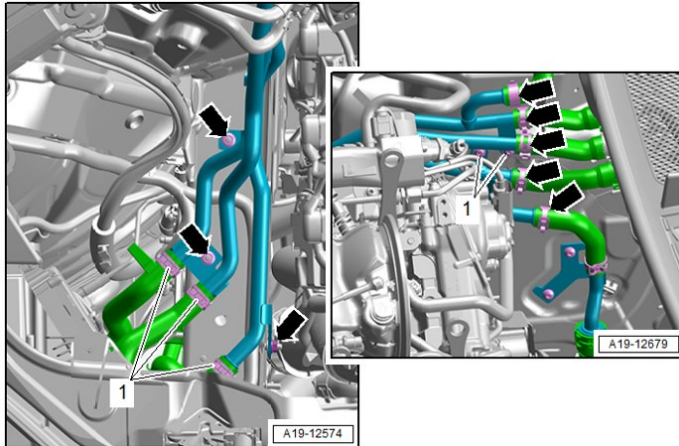
Index "K"



Index "J"

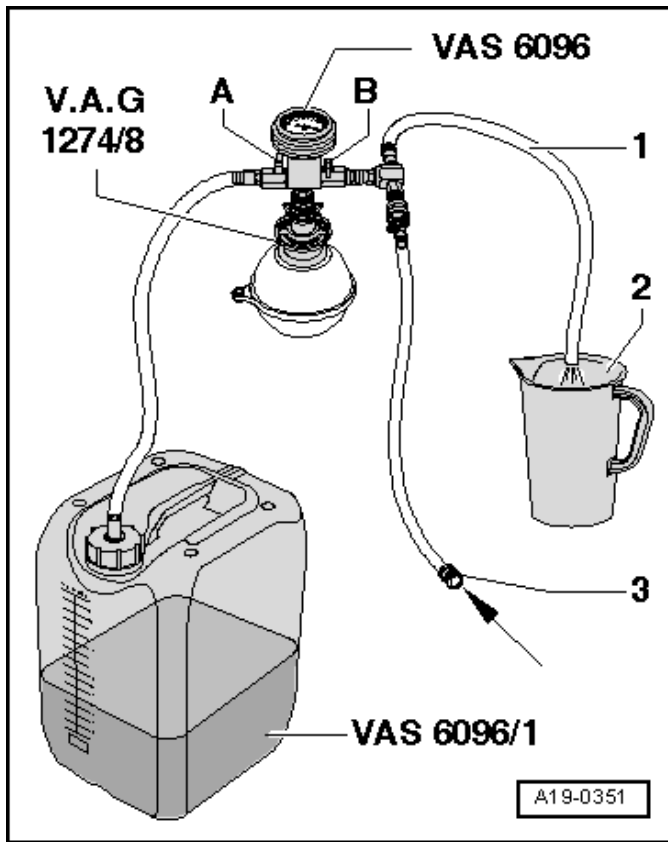


- Push the upper section of the noise insulation slightly upward.
- Disconnect the connector <2>.
- Remove the bolt <arrow> and remove the camshaft position sensor <1>. (Camshaft Position Sensor -G40- shown).
- Install the new sensor in the reverse order of removal.
- Torque bolt <arrow> to 9 Nm.



#### Reinstall coolant pipes:

- Installation is the reverse order of removal.
- Torque bolts to 9 Nm.



**Fill coolant:**

- See ELSA Repair Manual: *Repair manual > Engine > 6-Cylinder Direct Injection 3.0L 4V TFSI Engine EA839 > 19 Cooling System > Coolant System/Coolant > Coolant, Draining and Filling*

**Reinstall air filter housing and engine cover:**

- Installation is the reverse order of removal.

**Proceed to Section C**

## Section C – Campaign Completion Stamp

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

SAGA Code: \_\_\_\_\_

Technician: \_\_\_\_\_

Date: \_\_\_\_\_

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

- Once the campaign has been completed, the technician should stamp the repair order.
- Stamps are available for ordering through the Compliance Label Ordering Portal.

**Proceed to Section D**

## Section D – Campaign Completion Label

### 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).

**Proceed to Section E**

## Section E - Parts Return/Disposal

Properly store (retain), destroy or dispose of removed parts in accordance with all state/province and local requirements, unless otherwise indicated and/or requested through the Warranty Parts Portal (WPP) for U.S. and the Part Destruction and Core Disposition Report for Canada.

**Proceed to Section F (California only).**

## Section F – California Only Requirements

### **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 online via the Compliance Label Ordering portal at [www.accessaudi.com](http://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.