

Technical Service Bulletin

Topic	19 Engine: cooling system - red coolant temperature/coolant level warning lamp on - 4.0 ltr. V8 TFSI
Market area	United States 444 Volkswagen of America, Inc. (6444)
Brand	Audi
Transaction No.	2074303/8
Level	EH
Status	Released for publishing
Release date	Jun 26, 2025

New customer code

Object of complaint	Complaint type	Position
engine -> cooling, lubrication -> engine coolant temperature regulation	functionality -> faulty	
information, navigation, communication, entertainment -> instrument displays -> display of coolant temperature	functionality -> increasing	
information, navigation, communication, entertainment -> warning display symbols -> low coolant\coolant temperature warning display	functionality -> activates	

New workshop code

Object of complaint	Complaint type	Position
engine -> cooling system -> coolant pump -> coolant pump bearing housing	leaks -> not watertight	

Vehicle data

EA825 4.0 ltr. V8 TFSI

Sales types

Type	MY	Brand	Designation	Engine code	Gearbox code	Final drive code
*	2021	A		DCUE	*	*
*	2022	A		DCUE	*	*
*	2023	A		DWRB	*	*
*	2020	A		CWWB	*	*
*	2023	A		DWNB	*	*
*	2023	A		DWKA	*	*
*	2023	A		DWLA	*	*
*	2021	A		DJPB	*	*
*	2021	A		CXYA	*	*
*	2019	A		CXYA	*	*
*	2021	A		CWWB	*	*

Type	MY	Brand	Designation	Engine code	Gearbox code	Final drive code
*	2020	A		CXYA	*	*
*	2022	A		CWWB	*	*
*	2021	A		DHUB	*	*
*	2020	A		DCUE	*	*
*	2022	A		DHUB	*	*
*	2020	A		DHUB	*	*
*	2022	A		DJPB	*	*

Documents

Document name
master.xml
217548.jpg
overviewofcoolantdistributors.pdf



Connection offline

Technical Service Bulletin

Transaction No.: **2074303/8**

19 Engine: cooling system - red coolant temperature/coolant level warning lamp on -
4.0 ltr. V8 TFSI

Release date: Jun 26, 2025

Condition

REVISION HISTORY		
Revision	Date	Purpose
8	-	Revised <i>Service</i> (Updated inspection instructions) Revised <i>Warranty</i> (Updated accounting instructions)
7	03/18/2025	Revised <i>Service</i> (Updated documenting instructions)
6	12/04/2024	Revised <i>Warranty</i> (Updated accounting instructions)

Customer statement:

- The red coolant warning lamp lights up:
 - Switch off the engine and check tge coolant level.

or

- Coolant temperature: too high. Please let the engine run with vehicle stationary.

Workshop findings:

- Coolant loss at the front end of the engine

and/or

- The engine is overheating

Technical Background

EA825 V8 TFSI engines across all power classes are currently equipped with a switchable mechanical coolant pump.

It is activated via the electric changeover valve N649.

When N649 is activated, it switches a vacuum to the mechanical coolant pump. This pushes a locking sleeve over the pump impeller, which can cause coolant to stagnate.

When N649 is not activated, no vacuum is switched to the mechanical coolant pump, and the coolant pump is not covered. In this case, the coolant is pumped through the coolant pump impeller.

The charge pressure control for the EA825 V8 TFSI turbochargers is electropneumatic.

This means that charge pressure positioners V465 and V546 are electropneumatic pressure converters. Depending on activation (PWM) by the engine control unit, they can induce a calculated negative pressure (characteristic curve). This determines the opening path of the wastegate. They are open when they are not activated.

SSP 676 contains more information on the EA825 V8 TFSI engine cooling system.

Production Solution

Not applicable.

Service

Step 1

Check whether there is a visible external leak in the area surrounding the mechanical coolant pump.



NOTICE

Note: The mechanical coolant pump on the EA825 V8 TFSI engine is behind the coolant distributor. Please refer to the attachment “Overview of coolant distributors” and the following two images.

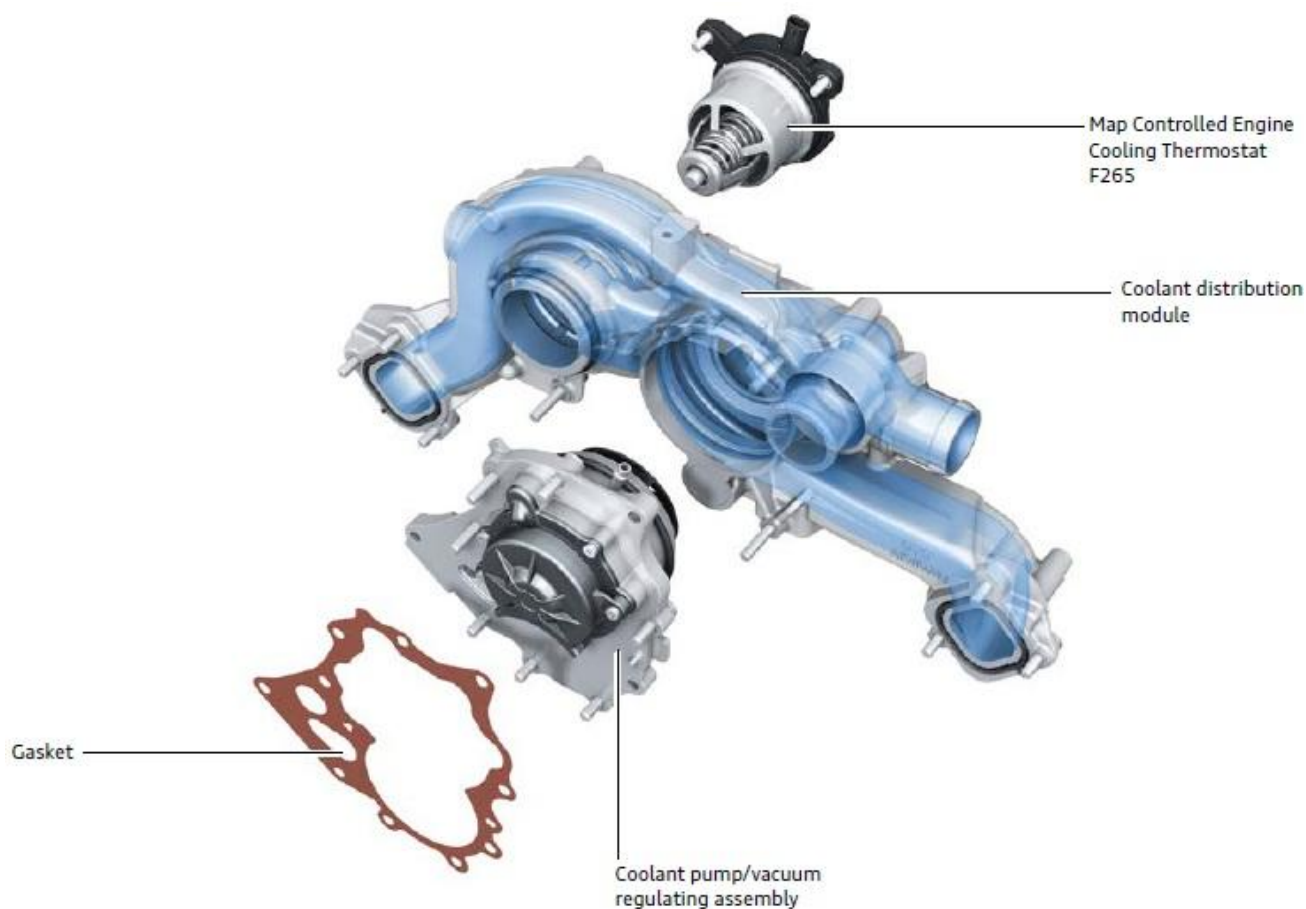


Figure 1. Coolant distribution

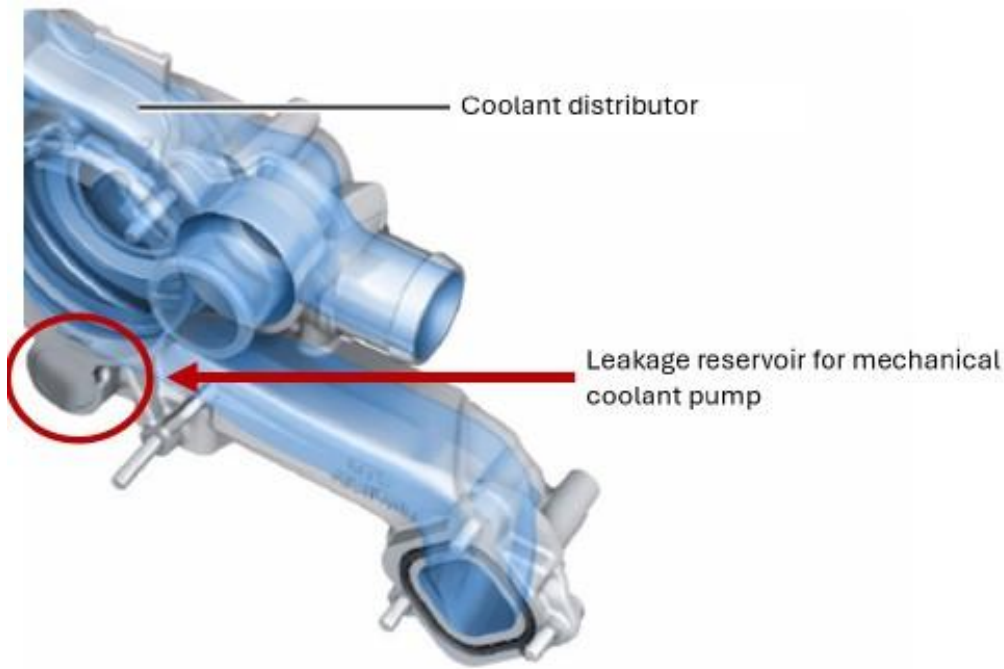


Figure 2. Coolant distributor and leakage reservoir

A fresh coolant leak in the area of the mechanical coolant pump can take the form of fresh drops on the underside of the coolant distributor or the leakage reservoir (See figures 1 and 2 or attachment “Overview of coolant distributors”). If necessary, perform a pressure test of the cooling system according to ELSA.

If a fresh leak is detected, please note that it is not necessary to replace the coolant distributor. In this case, replacing the mechanical coolant pump, per the workshop manual, is sufficient.

If no fresh coolant is visible from the mechanical coolant pump or the coolant distributor, it may be what is known as a “cosmetic leak” from the mechanical coolant pump. Replacing the mechanical coolant pump is therefore not intended for this reason.

In either case, proceed with step 2.

Step 2

Perform a functional check on the switch valve for the mechanical coolant pump N649 using ODIS.

Also, always check whether a coolant leak has occurred at the vacuum connection of the mechanical coolant pump towards N649. If there is any coolant in the vacuum connection of N649 or in the vacuum hose between the mechanical coolant pump and N649, replace N649, the mechanical coolant pump, and the vacuum hose between N649 and the mechanical coolant pump (Figure 5, item 13).

Step 3

This step is only necessary if no issues are identified in step 1 and step 2, and the customer complained about a **red coolant TEMPERATURE warning**.

First ensure no other TSB applies. If another TSB applies, please work through it first then reassess the customer complaint.

If no other TSB applies, or the customer complaint (red coolant temperature warning appears) is still present, remove the coolant distributor and check the switching function of the mechanical coolant pump.

To do so, connect a vacuum pump to the vacuum connection of the mechanical coolant pump.

Please note:

- If there is no vacuum applied to the vacuum connection of the mechanical coolant pump, the modulating piston (orifice panel) must be fully retracted into the pump housing.



Figure 3. *Modulating piston moved back correctly (starting position, not actuated)*

- The modulating piston (orifice panel) must completely cover the pump impeller when a vacuum (maximum: ~600mbar) is applied at the vacuum connection of the mechanical coolant pump. The vacuum must be maintained throughout the functional test.



Figure 4. *Modulating piston correctly deployed (end position, actuated)*



NOTICE

Note: The modulating piston tilting while it is moving out is not a reason for complaint if the end positions (as pictured above) are reached correctly.

If the end positions are not reached correctly, replace the mechanical coolant pump.

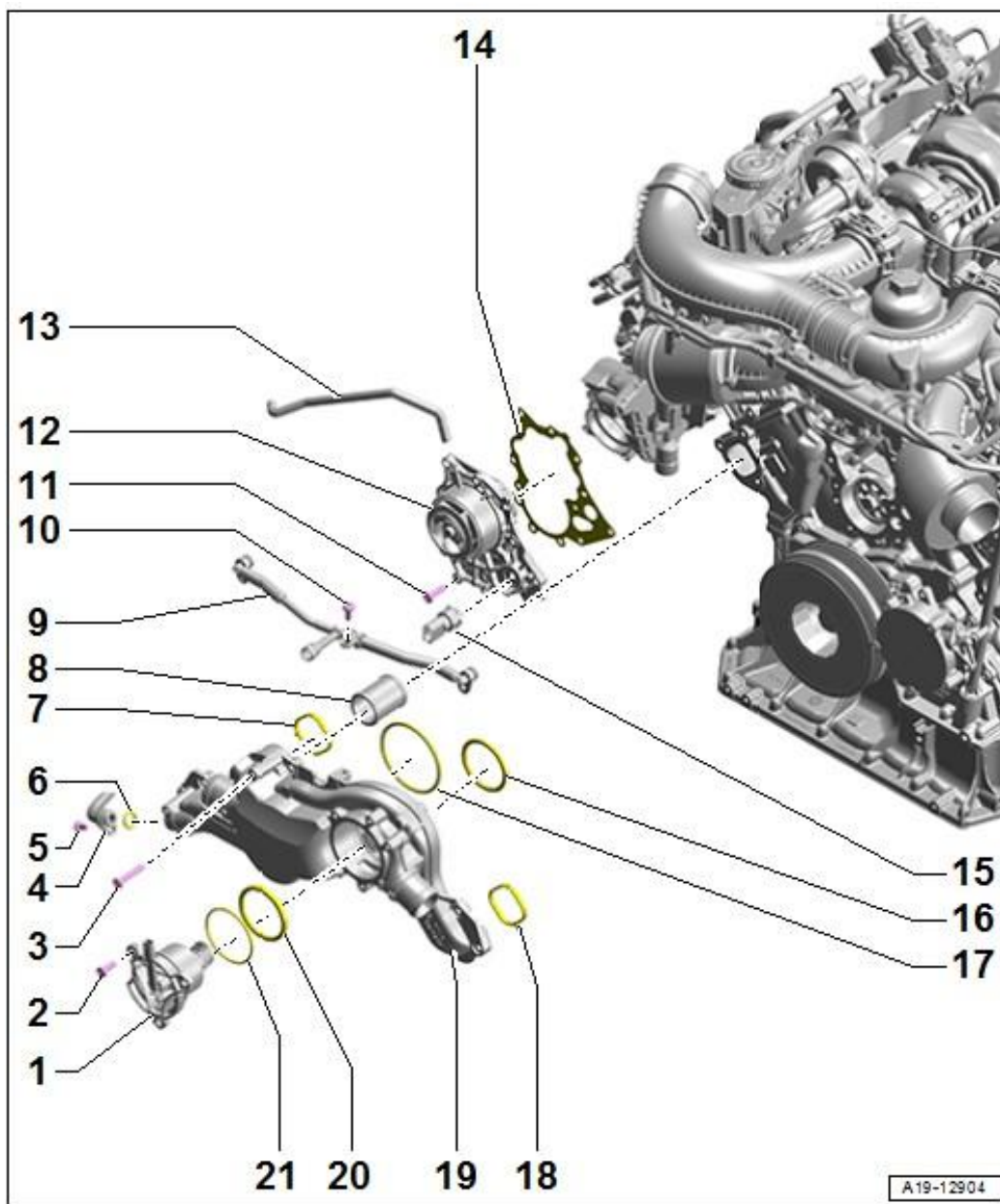


Figure 5. Assembly overview – coolant pump/thermostat incl. switchable mechanical coolant pump, number 12.

Warranty

When billing, please always attach a video that clearly shows the complaint to DOC-IT. To ensure a reference to the vehicle, the video must:

- Include the VIN and date.
- Must not be edited.
- Should be in focus and taken with sufficient light.

If appropriate, please mark the location of the problem so that parts analysis has a clear reference to the complaint. Please ensure that the photo documentation does not show any people and/or face, license plates, or customer data.

Claim Type:	• If the vehicle is outside of any warranty, this Technical Service Bulletin is informational only.
--------------------	---

Service Number:	Case 1: If a coolant leak was detected at the mechanical coolant pump (to outside or into vacuum chamber). Use service number: 1950 Case 2: If a deviation was detected in the switching function of the mechanical coolant pump. Use service number 1950.		
Damage Code:	Case 1: 050 Case 2: 017		
Labor Operations:	Remove and install noise insulation	1082 1900	See SRT with associated operations
	Check and top off coolant	1938 3599	10 TU
	Check cooling system – pressure test	1901 0150	See SRT with associated operations
	Checking coolant pump	1950 0299	20 TU
	Remove and install valve N649	1984 19xx	See SRT with associated operations
	Remove and install coolant pump (if necessary)	1950 19xx	See SRT with associated operations
	Charge battery	2706 8950	See SRT with associated operations
	GFF	0150 0060	Labor according to the diagnostic log
Claim Comment:	As per TSB 2074303/8		

All warranty claims submitted for payment must be in accordance with the *Audi Warranty Policies and Procedures Manual*. Claims are subject to review or audit by Audi Warranty.

Additional Information

All part and service references provided in this TSB (**2074303**) are subject to change and/or removal. Always check with your Parts Department and/or ETKA for the latest information and parts bulletins. Please check the Repair Manual for fasteners, bolts, nuts, and screws that require replacement during the repair.

©2025 Audi of America, Inc. All rights reserved. The information contained in this document is based on the latest information available at the time of printing and is subject to the copyright and other intellectual property rights of Audi of America, Inc., its affiliated companies, and its licensors. All rights are reserved to make changes at any time without notice. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, nor may these materials be modified or reposted to other sites, without the prior expressed written permission of the publisher.