

Technical product information

Topic	Engine overheating - Warning on the DIP - V8 Kovomo
Market area	Australia E04 Bentley rest Asia and Australia (6E04),China 723 Volkswagen (Anhui) Automotive CO (6723),China 796 VW Import Comp. Ltd (Vico), Beijing (6796),Germany E02 Bentley rest Europe (6E02),Japan E03 Bentley Japan (6E03),Korea, (South) E08 Bentley South Korea (6E08),United Arab Emirates E06 Bentley Middle East and Africa (6E06),United Kingdom E01 Bentley UK (6E01),United States E05 Bentley USA and rest America (6E05)
Brand	Bentley
Transaction No.	2061369/6
Level	EH
Status	Approval
Release date	

New customer code

Object of complaint	Complaint type	Position
engine -> cooling, lubrication -> engine coolant temperature control	functionality -> faulty	
engine -> cooling system	functionality	
engine -> cooling system -> engine cooling fan	noise, vibration -> too loud	

Vehicle data

Bentayga-New Continental GT/C-New Flying Spur (V8 Kovomo)

Sales types

Type	MY	Brand	Designation	Engine code	Gearbox code	Final drive code
3S32CB	2020	E		*	*	*
3S32CB	2021	E		*	*	*
3S32CB	2022	E		*	*	*
3S32CB	2023	E		*	*	*
3S34CB	2023	E		*	*	*
3S42CB	2020	E		*	*	*
3S42CB	2021	E		*	*	*
3S42CB	2022	E		*	*	*
3S42CB	2023	E		*	*	*
3S44CB	2023	E		*	*	*
4V14D9	2018	E		*	*	*
4V14D9	2019	E		*	*	*
4V14D9	2020	E		*	*	*
4V14D9	2021	E		*	*	*
4V14D9	2022	E		*	*	*
4V14D9	2023	E		*	*	*
ZG22CB	2021	E		*	*	*
ZG22CB	2022	E		*	*	*
ZG22CB	2023	E		*	*	*
ZG24CB	2023	E		*	*	*
ZV14D9	2023	E		*	*	*

Documents

Document name
master.xml

Customer statement / workshop findings

Customer statement

- Customer reports an engine overheat warning within the DIP
- Engine overheating
- Unusual cooling fan operation at high temperatures
- There are no obvious signs of coolant leaks both internally or externally

Workshop findings

- P19F700: Low engine coolant temperature indicator lamp Coolant too warm
- Signs of coolant in the vacuum hoses (Refer to the *video on the Bentley Hub* referencing TPI 2061369/-

Technical background

- To heat the engine as quickly as possible during cold starting, delivery of coolant from the coolant pump is interrupted in the warm-up phase by the switch valve for mechanical coolant pump N649 for the mechanical coolant pump



For illustration purposes only:

Figure 1 Shows Bentayga (Arrow)

Figure 2 Shows New Continental GT/ GTC and Flying Spur (Arrow)

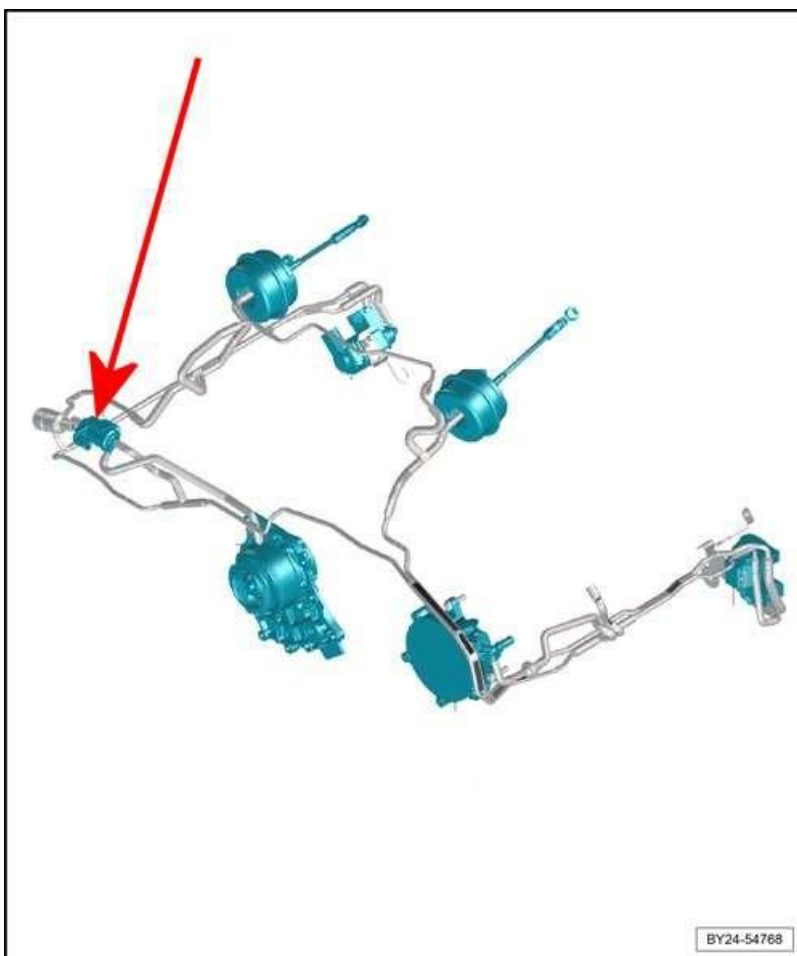


Figure 1

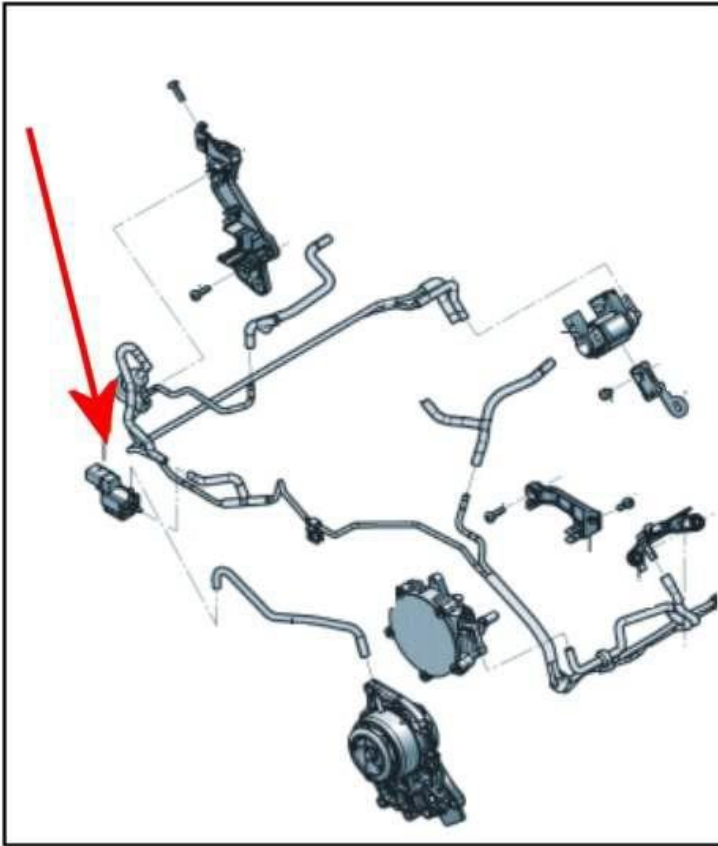


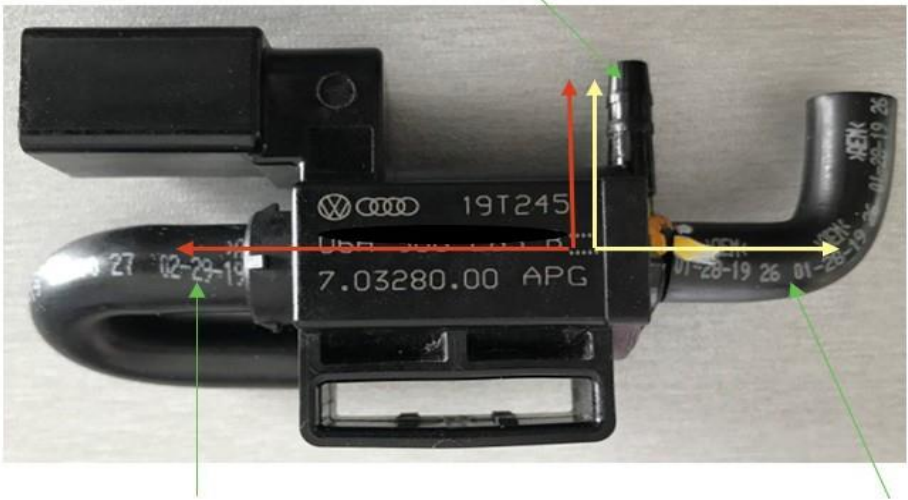
Figure 2

- The switch valve for mechanical coolant pump N649 is designed to cut off the vacuum supply to the coolant pump when the engine reaches maximum temperature, the vacuum cut off allows the engine to start circulating coolant by retracting a sleeve which is situated around the coolant pump impeller

TIP: When the switch valve for mechanical coolant pump N649 is at fault (sticking open) the vacuum supply is constant, this allows the sleeve to stay in position around the impeller which leads to the symptoms described within the Customer statement/Workshop findings section of this TPI

- Referring to Figure 3 the standard operation of N649 (with no operational issues) is as follows:
- Un-energised state (Ignition off) = coolant pump connected to vent connection (red arrows)
- Energised state (Ignition on) = engine vacuum connection to coolant pump (yellow arrows)

Coolant pump



Vent connection

Engine vac

Figure 3

HINT: Figure 3 shows an example of N649 for photographic and reference purposes only



IMPORTANT: The switch valve for mechanical coolant pump N649 fails due to an internal leak from coolant pump causing corrosion within the unit from coolant migration

In the event the symptoms are as described refer to the instructions within the Measure section of this TPI

Revision history - TPI 2061369/6

- Warranty accounting instructions amended for Bentayga

Production change

All vehicles post the following VIN's should have the latest specification coolant pump fitted

However

In the event the issue is evident post the suggested VIN please raise a technical DISS query and await feedback before conducting any further work

New Continental GT/C and New Flying Spur

SCBBZ53S6MC087175

Bentayga

SJAAL14V0MC036042

Measure



The following **MUST** be conducted when the engine coolant is at ambient temperature (cold engine)

1) Referring to Figures 1,2 and 3 - With care (visually monitor for any traces of coolant) disconnect each vacuum hose from the switch valve for mechanical coolant pump N649

VERY IMPORTANT: If traces of coolant are evident during disconnection, take clear photos or record a clear video of any coolant in the vacuum hoses or N649 and attach to a new or existing DISS query

- Refer to the video on the Bentley Hub referencing TPI 2061369/- to check for any signs of coolant within the vacuum hoses
- Where possible check and confirm N649 is sticking open and supplying a constant vacuum

TIP: Use a Mityvac or similar vacuum tool to check and confirm there are no vacuum related issues/leaks present within the system

2) Referring to Rep.Gr 19 - Replace all of the following parts

- Coolant pump
- Coolant regulator (Thermostat)
- Switch valve for mechanical coolant pump N649



NOTE: All of the afore listed parts **MUST** be replaced at the same time, the requirement to replace all parts is only applicable when conducting the instructions within this TPI this is due to the required symptoms/criteria being met

IMPORTANT: Ensure the vacuum lines are free from moisture DO NOT use compressed air to attempt to remove moisture from the vacuum lines (allow the moisture to naturally evaporate from the vacuum lines) as damage to other components and unintentional disconnection of vacuum hoses can occur



Within the quoted Rep.Gr procedures there are single use items which must be replaced and not reused. Ensure that new replacements are available prior to starting this procedure



Ensure all procedures within the Repair manual are followed including full wheel and alignments/calibrations which are required for all applicable Driver assist systems (Depending on vehicle specification)

3) On completion conduct a road test to confirm the issue is resolved

Warranty accounting instructions

Warranty type 110 or 910
Damage service number 21 69
Damage code 00 17

All Models

Time to replace the switch valve for mechanical coolant pump N649

Labour operation code 21 69 19 22
Time 30 TU

Time to replace the Coolant regulator (Thermostat)

Labour operation code 19 58 19 70
Time 10 TU

Road test

Labour operation code 01 21 00 00
Time 50 TU

Time to replace the coolant pump (Depending on model)

Bentayga

87 34 19 20 - 860 TU - HVAC compressor remove/install (Includes front end module remove/install)
13 75 19 70 - 40 TU - Crank pulley remove/install
19 50 19 70 - 120 TU - Coolant pump remove/install (Includes regulator housing remove/install)
21 41 19 71 - 10 TU - Pressure pipe remove / install
24 34 19 71 - 20 TU - Throttle valve remove / install

New Continental GT/C

50 38 19 20 - 720 TU - Front end module remove/install
13 75 19 00 - 140 TU - Crank pulley remove/install
19 55 19 00 - 310 TU - Regulator housing remove/install
19 50 19 00 - 210 TU - Coolant pump remove/install

New Flying Spur

50 38 19 20 - 770 TU - Front end module remove/install
13 75 19 00 - 140 TU - Crank pulley remove/install
19 55 19 00 - 260 TU - Regulator housing remove/install
19 50 19 00 - 170 TU - Coolant pump remove/install



Due to various vehicle types and specifications the operative must refer to the Labour operations section within Elsa pro for Labour operation codes for the Wheel alignment and the alignment/calibration of all applicable Driver assist systems

Parts information

New Continental GT/GTC and New Flying Spur

Description	Part number	Quantity
Switch valve for mechanical coolant pump N649	06H 906 283B	1

Bentayga

Description	Part number	Quantity
Switch valve for mechanical coolant pump N649	7PP 906 283F	1

All models

Description	Part number	Quantity
Coolant pump	0P2 121 014H	1
Coolant regulator (Thermostat)	Refer to ETKA	1



All part numbers listed are correct at the time of publishing, please always refer to the ETKA parts catalogue for latest part number information