

Technical product information

Topic	Engine warning light illuminated within the DIP during acceleration - DTC P029900 evident - W12 TSI only
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.	2063954/5
Level	EH
Status	Released for publishing
Release date	03-Oct-2023

Event memory entries

Diagnostic address	Event memory entry	Fault type	Fault status
0001 - Engine electronics	P029900: Turbo/Super Charger Underboost		Intermittent
0011 - Engine Electronics 2	P029900: Turbo/Super Charger Underboost		static
0011 - Engine Electronics 2	P029900: Turbo/Super Charger Underboost		Intermittent
0001 - Engine electronics	P029900: Turbo/Super Charger Underboost		static

New customer code

Object of complaint	Complaint type	Position
engine -> operation, engine control	functionality	
engine -> engine operation	functionality	
engine -> operation, engine control -> engine control unit	control units, services -> error message	
engine -> engine operation -> power development -> engine power	dimensional accuracy -> too low	
information, navigation, communication, entertainment -> symbolic fault indicators -> emission control system fault indicator	functionality -> activates	
engine -> engine operation -> engine refinement -> engine limp-home mode	functionality -> does not end	

Vehicle data

New Continental GT/GTC - New Flying Spur, Bentayga - W12 TSI

Sales types

Type	MY	Brand	Designation	Engine code	Gearbox code	Final drive code
3S31BB	2018	E		*	*	*
3S31BB	2019	E		*	*	*
3S31BB	2020	E		*	*	*
3S31BB	2021	E		*	*	*
3S31BB	2022	E		*	*	*
3S31BB	2023	E		*	*	*
3S31BB	2024	E		*	*	*
3S31EB	2023	E		*	*	*
3S31EB	2024	E		*	*	*
3S41BB	2019	E		*	*	*
3S41BB	2020	E		*	*	*
3S41BB	2021	E		*	*	*
3S41BB	2022	E		*	*	*
3S41BB	2023	E		*	*	*
3S41BB	2024	E		*	*	*
3S41EB	2023	E		*	*	*
3S41EB	2024	E		*	*	*
4V14A9	2017	E		*	*	*
4V14A9	2018	E		*	*	*

4V14A9	2019	E		*	*	*
4V14A9	2020	E		*	*	*
4V14A9	2021	E		*	*	*
4V14A9	2022	E		*	*	*
4V14A9	2023	E		*	*	*
4V14A9	2024	E		*	*	*
4V14G9	2020	E		*	*	*
4V14G9	2021	E		*	*	*
4V14G9	2022	E		*	*	*
4V14G9	2023	E		*	*	*
4V14G9	2024	E		*	*	*
ZG21BB	2020	E		*	*	*
ZG21BB	2021	E		*	*	*
ZG21BB	2022	E		*	*	*
ZG21BB	2023	E		*	*	*
ZG21BB	2024	E		*	*	*
ZG26BB	2023	E		*	*	*
ZG26BB	2024	E		*	*	*

Documents

Document name
master.xml

Customer statement / workshop findings

Customer statement:

Engine warning light and 'max engine speed 4000 rpm' warning evident within the DIP during acceleration - Warning on DIP first appears when accelerating (During boost)

Workshop findings:

- DTC P029900 evident within the engine control unit/s

In the event the afore mentioned symptoms are evident the operative should refer to the onward instructions

Technical background

One of the turbochargers may not be achieving full boost, the issue can be related to a poor connection between the applicable boost pressure valve vacuum solenoid and the signal wire to the applicable Engine Control Module (ECM) leading to a lack of vacuum supplied to the wastegate when under load

Or

A kinked/damaged hose within the engine vacuum system

TIP: The operative should also refer to Rep.Gr 21 - Boost pressure valve vacuum solenoid (To assist identifying the component location)

Production change

Not applicable

Measure



When required two operatives are required:

x1 operative to drive the vehicle

x1 operative to monitor test equipment

1) Referring to Figure 1 - Monitor the following MWB's on Bank 1 and 2

- Normed load value IDE00085
- Engine RPM IDE00021
- Air Mass specified/Actual IDE00347/00350
- Charge air pressure specified actual IDE00190/00191
- Turbocharger speed sensor 1 IDE03770
- Intake manifold pressure specified/actual IDE04409/04410

2) Compare the values of each MWB between Bank 1 and 2

Measured value name	ID	Value
Normed load value	IDE00085	
—	MAS00194	59.21568737 %
Engine rpm	IDE00021	
—	MAS00194	4854 1/min
Air mass, actual value:	IDE00347	
—	MAS00194	119.08 g/s
Air mass, specified value	IDE00350	
—	MAS00194	796.8 kg/h
Charge air pressure, actual value	IDE00191	
—	MAS00194	1011.7969 hPa
Charge air pressure, specified value	IDE00190	
—	MAS00194	1708.125 hPa
Turbocharger speed sensor 1	IDE03770	
—	MAS00194	81400.0 1/min
Intake manifold pressure, specified value	IDE04410	
—	MAS00194	1658.4375 hPa
Intake manifold pressure, corrected	IDE04409	
—	MAS00194	1025.0 hPa

Figure 1

3) Carry out a visual inspection of the engine vacuum system TIP: Referring to the example shown in Figure 2, Check there are no kinks or damaged vacuum hoses

NOTE: The issue shown in Figure 2 is an example of a kinked vacuum hose which is fitted to the Boost pressure valve vacuum solenoid



Figure 2

4) Referring to Figure 3 - Attach a manual vacuum gauge (B) between the following components: (Depending on the bank which is suspected to be at fault)

- Turbocharger wastegate (A) and (C) Boost pressure valve vacuum solenoid

N249 (Bank1)

Or

N547 (Bank 2)

NOTE: Point (D) refers to the engine vacuum system



The manual vacuum gauge must be connected as shown, the hose must be long enough to allow the gauge/readings to be viewed from inside the cabin

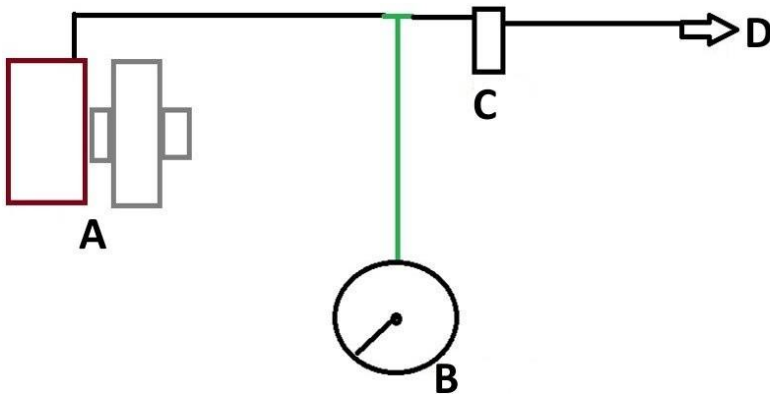


Figure 3

4) The vehicle should be driven whilst the second operative monitors the gauge to confirm if the Boost pressure valve vacuum solenoid is being actuated in a plausible manner **For example: Vacuum supplied to build boost pressure/vacuum supply closed when the target boost pressure is achieved**



If vacuum supply to the wastegate is not plausible the operative must check the vacuum supply to the Boost pressure valve vacuum solenoid

5) Carry out a wiring integrity check between the applicable ECM and the applicable solenoid circuit - Refer to the applicable Rep.Gr wiring diagram

- Figure 4 shows a location which should also be checked for damage/kinks *NOTE: The disconnected pin is shown for photographic purposes only*



Figure 4

7) In the event an issue is suspected, for test purposes the operative should overlay the suspected wiring as follows:

- Make and temporarily fit an overlay wire between the applicable boost pressure valve vacuum solenoid and the signal wire to the applicable Engine Control Module (ECM)
- Attempt to erase the DTC and carry out a road test to confirm the issue has been successfully diagnosed
- The overlay **MUST** not be left in place under any circumstances, the operative should repair the wiring as per Rep.Gr 97

Warranty accounting instructions

Diagnosis time

Warranty type 110 or 910
Labour operation code 97 09 01 00
Damage service number 97 09
Damage code 00 26
Time Must not exceed 120 TU

Road test

Labour operation code 01 21 00 00
Time 50 TU