

Field campaign

Topic	Bentayga W12 - Engine control modules - Software update - Emission service action (SC 20/07)
Market area	United States E05 Bentley USA and rest America (6E05)
Brand	Bentley
Transaction No.	2058667/4
Campaign number	EB49
Note	
Type	
US code	

Vehicle data

Bentayga W12

Sales types

Type	MY	Brand	Designation	Engine code	Gearbox code	Final drive code
4V14A9	2017	E		*	*	*
4V14A9	2018	E		*	*	*

Chassis numbers

Manufacturer	Filler	Type	Filler	MY	Factory	From	To	Prod from	Prod to
SJA	*	*	*	*	*	011769	023151		

Documents

Document name
master.xml

Notes

▪ Repair instructions

Technical background

Due to sub-optimal configuration of the OBD (On Board Diagnostics) system, which monitors emissions controlling components within the engine and exhaust system, some of the components may not be monitored as frequently as stipulated by the federal regulators

The software additionally addresses concerns where the engine control modules display the following DTC's

Diagnostic address	Event memory entry
0001 - Engine Control Module 1 P008700:	Fuel Rail/System Pressure - Too Low
0001 - Engine Control Module 1 P008800:	Fuel Rail/System Pressure - Too High
0001 - Engine Control Module 1 P013300:	O2 Sensor Circ.,Bank1-Sensor1 Slow Response
0011 - Engine Control Module 2 P008700:	Fuel Rail/System Pressure - Too Low
0011 - Engine Control Module 2 P008800:	Fuel Rail/System Pressure - Too High
0011 - Engine Control Module 2 P013300:	O2 Sensor Circ.,Bank1-Sensor1 Slow Response

The software also reduces the excess build up of engine oil within the charge air cooler system

IMPORTANT: A specific level of oil residue is expected in a charge air cooler, however if any amount of oil is found within the charge air coolers OR any of the previously mentioned symptoms within the Customer statement/workshop findings section are evident the operative must determine which section is applicable

▪
The operative **MUST** only conduct

Section 1

Or

Section 2

Do Not under any circumstances conduct both sections as this is not required

▪
VERY IMPORTANT:

Conduct Section 1 ONLY - For vehicles with a customer complaint or an observation by the retailer that the engine has operation issues for example - Not running smooth - Rough running - Misfires - Related DTC's and/or the emission warning light is evident within the drivers information panel

Or

Conduct Section 2 ONLY - For all other vehicles which DO NOT exhibit any of the previously mentioned symptoms/engine operation issues

*NOTE: Although no issues are evident in this scenario the instructions within section 2 **MUST** be followed to completion including the application of the emission software update*

Remedy

Software update for the engine control modules

Customer notification

Customers of affected vehicles will be notified in writing by Bentley Motors.

Please ensure that all affected vehicles are checked and repaired during the next workshop visit, make a note of the required emission service action on the workshop order before it is signed by the customer.

If it is omitted to perform the work required for the emission service action during a workshop visit, the customer should be notified immediately.

You should also pass on this information to your new and used car sales departments so that vehicles affected are checked and if necessary repaired immediately.

Warranty accounting instructions

Warranty Type 710 or 790

Damage Service Number EB 49

Damage Code 00 66

Criterion ID 01

Time to conduct Software update - Includes readiness code and idle torque adaptations

Labour Operation Code 01 29 00 06

Time 60 Time units

Time to clean the Charge air coolers and pipes and checks/replacement of G429 or G71 (if required)

Labour Operation Code 21 41 30 03

Time 150 Time units

Time to add G17 additive and monitor over 8 hours idle period (Section 1 only)

Labour Operation Code 24 40 29 00

Time 20 Time units

Time to add G17 additive only (Section 2 only)

Labour Operation Code 20 03 29 00

Time 10 Time units

Road test

Labour Operation Code 01 21 00 00

Time 50 Time units

Genuine parts

Part number	Description	Quantity
G001 780 M3	Additive	2

Parts supply

The required replacement parts should be ordered from Bentley Motors Limited Crewe or through your regional Bentley parts distribution centre

Parts despatch control

Not applicable

Repair instructions

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The software also reduces the excess build up of engine oil within the charge air cooler system

IMPORTANT: A specific level of oil residue is expected in a charge air cooler, however if any amount of oil is found within the charge air coolers OR any of the previously mentioned symptoms within the Customer statement/workshop findings section are evident the operative must determine which section is applicable

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Conduct Section 2 ONLY - For all other vehicles which DO NOT exhibit any of the previously mentioned symptoms/engine operation issues

NOTE: Although no issues are evident in this scenario the instructions within section 2 MUST be followed to completion including the application of the emission software update

Check

If the vehicle is not already listed as repaired in the 'Repair history' section of Elsa Pro, check for the presence of the red completion mark (Refer to the Identification section). In the event the emission service action has not been applied, please carry out the required work in accordance with these instructions.

Control

All VIN applicable vehicles as per Elsa Pro must have the required work conducted

Genuine parts

Part number	Description	Quantity
G001 780 M3	Additive	2

Work

Section 1

Please read carefully to confirm/clarify you are conducting the correct section NOTE: Do Not conduct both sections

Section 1 – Must be conducted on vehicles with a customer complaint or an observation by the retailer that the engine has operation issues for example - Not running smooth - Rough running – Misfires – Related DTC's and/or the emission warning light is evident within the drivers information panel

▪
IMPORTANT: Prior to starting this procedure the fuel tank MUST be full

1) Remove the front undersheet – Refer to Rep.Gr 66

- Referring to Figure 1 - Remove the right and left hand lower charge air cooler pipes, any oil found in the charge cooler/pipes should be drained off, any remaining oil residue should be cleaned from the charge coolers and pipes
- Refit the lower charge air cooler pipes

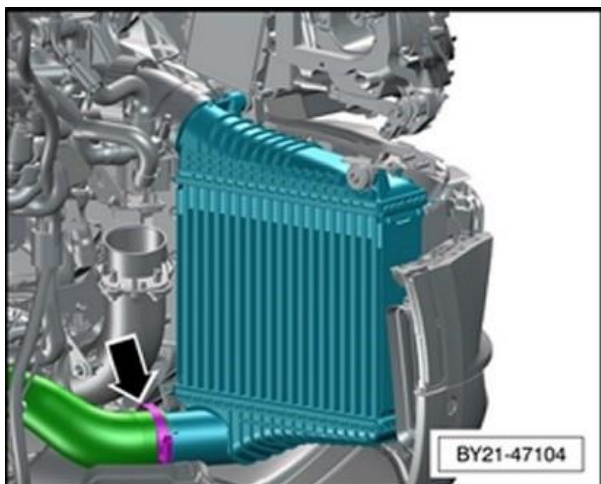


Figure 1

2) Check and if necessary correct all engine fluid levels (Coolant/engine oil)

- Check the fault memory of both engine control modules for either of the following DTC's

- Address 01 - Engine Control Module 1

"P010600: Manifold Absolute Pressure or Bar. Pressure Sensor Circuit Range/Performance"

Or

- Address 11 - Engine control Module 2

"P2A0B00: Manifold Absolute Pressure Sensor "B" Circuit Range/Performance"

If either of the DTC's are stored, remove the relevant sensor (G429 or G71) and check for oil contamination in the sensor (Figure 2). If found to be contaminated replace the affected sensor - Refer to the ETKA parts catalogue



Figure 2

3) Refit the front undersheet

4) Software update

- The closed-circuit voltage of the vehicle must be at least 12.5 V during the update. Connect a suitable battery charger to the vehicle. For further information refer to the Repair manual.
- During the update switch off all unnecessary consumers (ventilation, seat heater, interior illumination etc)
- Because of the highest transmission stability you **MUST** use the diagnosis interface VAS 6154 (WiFi diagnostic tool) **ONLY** in USB operation or the cable-connected VAS 5055 for the reprogramming (updating) of control units. If these units are not available, the diagnosis interface VAS 5054 (A) can also be used in USB mode
- Do Not under any circumstances use a Bluetooth connection to conduct the reprogramming (updating) of control units

5) Place the ignition key in the remote control key reader and switch on the ignition - Figure 3



Figure 3

6) Select and run Guided fault finding

- Within the Special functions tab select SVM – Problem related Hardware/Software update then select Perform test (Figure 4)

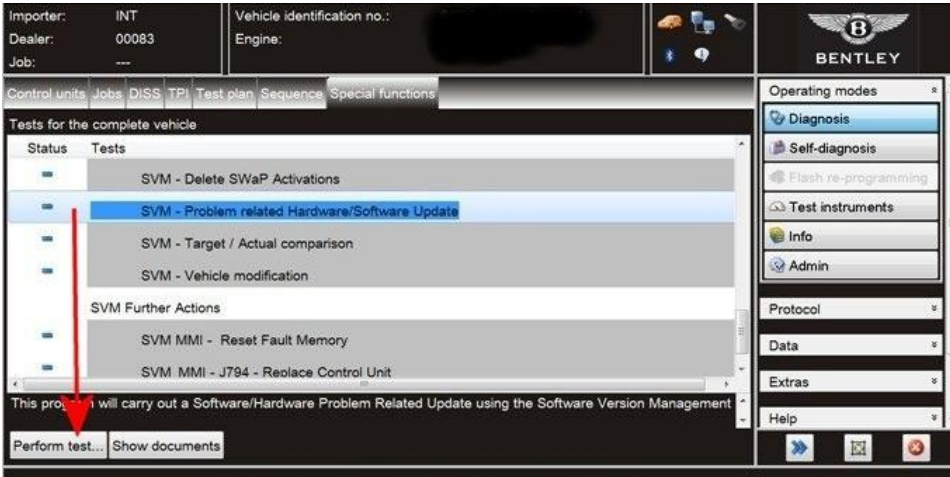


Figure 4

- 7) On the next screen enter the SVM code 4V0ECMTF01 and select Adopt (Figure 5)

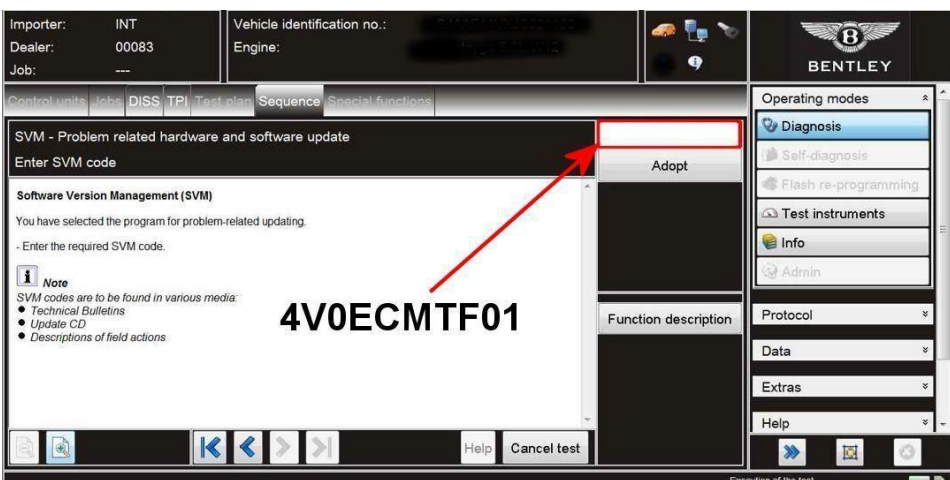


Figure 5

- On the following screen, confirm the SVM code is correct and select Yes.
- All control modules will now be interrogated.
- The software update will then be suggested, select Yes.
- The software of the 01 – Engine Control Module 1 and 02 – Engine Control Module 2 will then be updated individually, a progress bar will be displayed
- Once the software update is completed for both engine control modules, a confirmation screen will be evident to clarify the update has been successful (Figure 6)

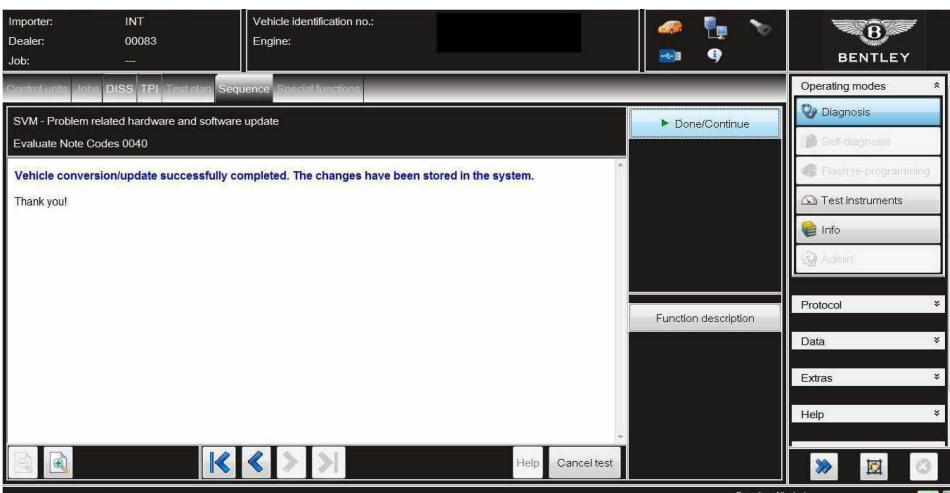


Figure 6

- 8) Add the relevant dose of G17 Fuel additive as specified on the bottle

- Run the engine at idle for 8 hours – Periodically check to ensure engine coolant temperature is within safe limits – do not allow the engine to overheat



9) Check and confirm that no DTC's are stored or there are no engine operation issues evident prior to starting the procedure from step 10 – Save an online log to confirm that no DTC's were evident at this stage of the procedure

VERY IMPORTANT: The operative conducting this procedure must be aware of the following whilst the vehicle is undergoing this procedure during the current workshop visit

- Do not attempt to erase any DTC's from the engine control module/s and transmission control module



- VERY IMPORTANT: Do not conduct a readiness test other than when instructed within this procedure
- Do not disconnect the battery whilst the CAN BUS is awake
- Failure to comply with any of the above will erase the previously set engine adaption, therefore the complete process will require repeating

CAUTION: Ensure that any outstanding issues are resolved before commencing

IMPORTANT: Ensure that before the next part of the procedure is conducted (engine DTC adaption clear) the engine must be at operating temperature (>90C)

10) Carry out the engine adaption clear routine as follows:

- Referring to Figure 7 – Navigate to Test plan – Select own test

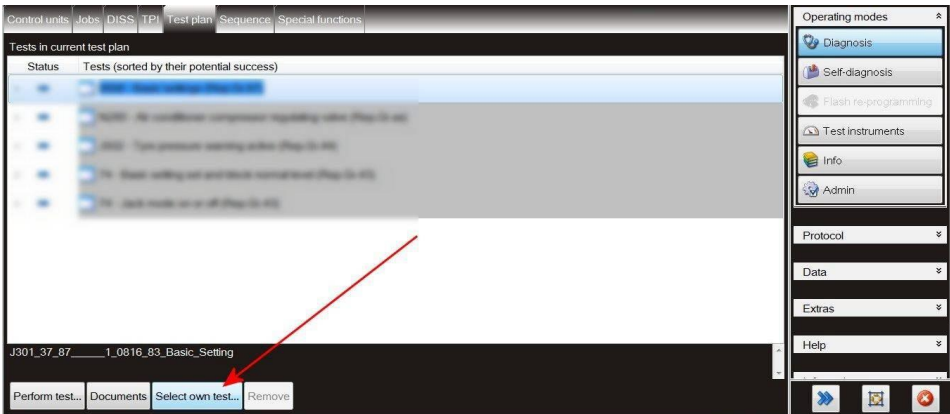


Figure 7

- Referring to Figure 8
- Select - Powertrain (Point A)
- Select - W12 Engine (Point B)
- Select - 01 - Self-Diagnostic capable system (Point C)

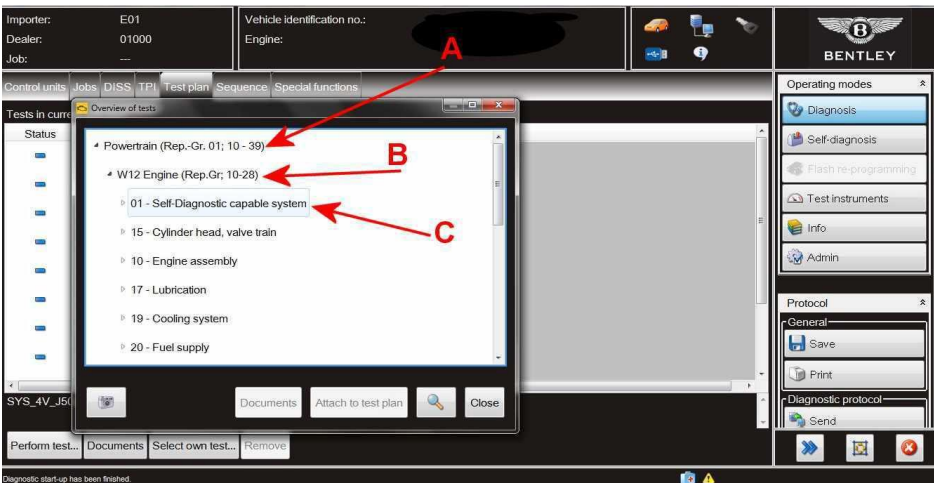


Figure 8

- Referring to Figure 9

- Select -01 –Engine control unit –J623 (Point A)
- Select - 01 – Subsystems, marginal conditions (Point B)
- Select - Clear engine adaption (Point C)
- Select -Attach to test plan (Point D)

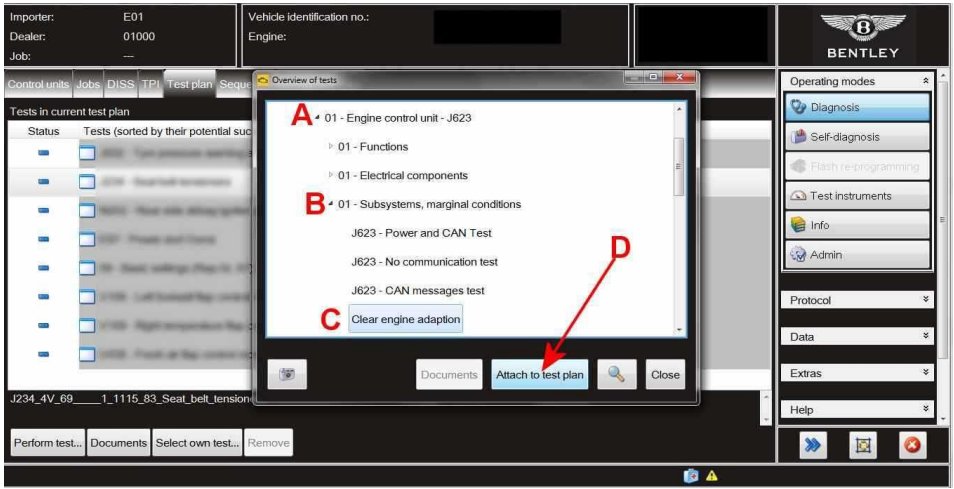


Figure 9

- Follow the Clear engine adaption test plan procedure until completion

11) Referring to Figure 10, Once the Clear engine adaption procedure is completed the operative will automatically be guided to conduct the Readiness code procedure

- Select Perform test and follow all on screen prompts



- ENSURE NEUTRAL IS SELECTED DURING THE TEST WHEN INSTRUCTED AS DIRECTED BY ODIS

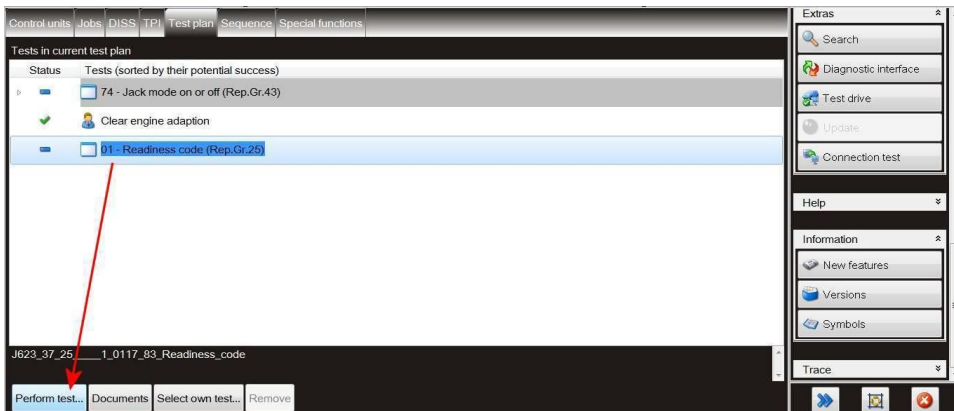


Figure 10

- Carry out the Readiness code test until complete as shown in Figure 11

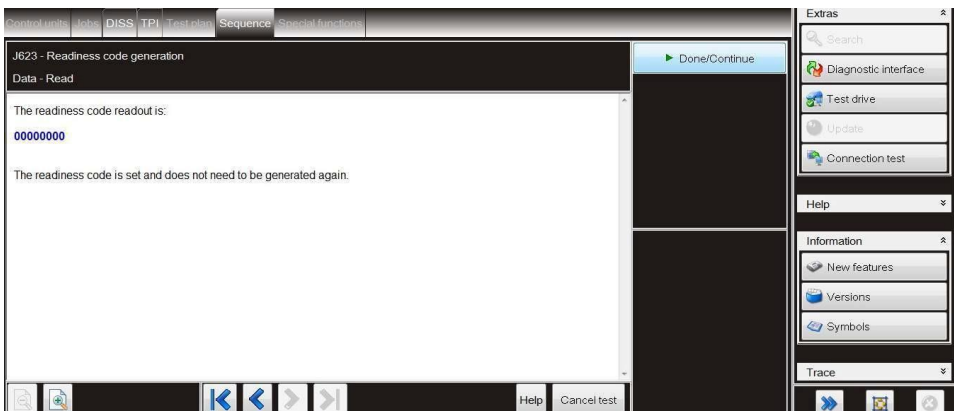


Figure 11



Should the readiness code bytes be 00000000 NO FURTHER ACTION IS REQUIRED

Should ANY of the bytes be 1, YOU MUST repeat the Readiness code test again. Once complete you must then recheck and confirm the readiness code is 00000000

12) Idle torque adaption- These must be done while the vehicle is stationary

VERY IMPORTANT: Ensure the Park brake is applied, the operative should also apply the foot brake for the duration of the torque adaption procedure process

- Select Neutral and ensure the A/C is ON and is set to MAX (Figure 12) Allow the engine to idle for 30 seconds
- Select Drive and ensure that the A/C is ON and is set to MAX Allow the engine to idle for 30 seconds



Figure 12

- Select Drive and ensure that the AC is OFF (Figure 13) Allow the engine to idle for 30 seconds
 - Select Neutral and ensure that the AC is OFF Allow the engine to idle for 30 seconds
- Repeat procedure 12 a further 3 times, (4 times total)



Figure 13

13) Conduct a Road test to check and confirm that no issues regarding engine operation are evident and/or the customer complaint has now been rectified

NOTE: Should any engine operating issues be evident during the road test, the operative should submit a DISS query

NOTE: Before returning vehicle to the customer top up to fill the fuel tank

14) Place a red completion mark on the left hand bonnet latch striker - Refer to the Identification section

Section 2

Please read carefully to confirm/clarify you are conducting the correct section NOTE: Do Not conduct both sections

Section 2 MUST only be conducted on vehicles which have no engine operation issues as detailed within the Technical background section

1) Remove the front undersheet - Refer to Rep.Gr66

- Referring to Figure 1 – Remove the right and left hand lower charge air cooler pipes, any oil found in the charge cooler/pipe should be drained off, any remaining oil residue should be cleaned from the charge coolers and pipes
- Refit the lower charge air cooler pipes

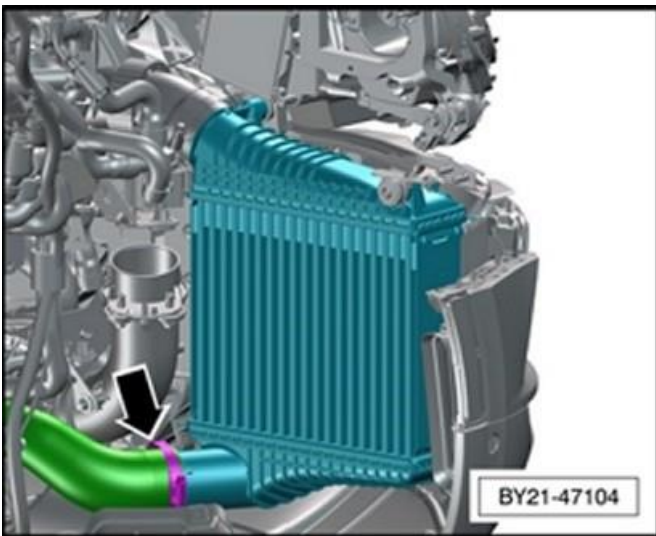


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"P2A0B00: Manifold Absolute Pressure Sensor "B" Circuit Range/Performance"

- If either of the DTC's are stored, remove the relevant sensor (G429 or G71) and check for oil contamination in the sensor (Figure 2). If found to be contaminated replace the affected sensor - Refer to the ETKA parts catalogue



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5) Place the ignition key in the remote control key reader and switch on the ignition - Figure 3



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6) Select and run Guided fault finding

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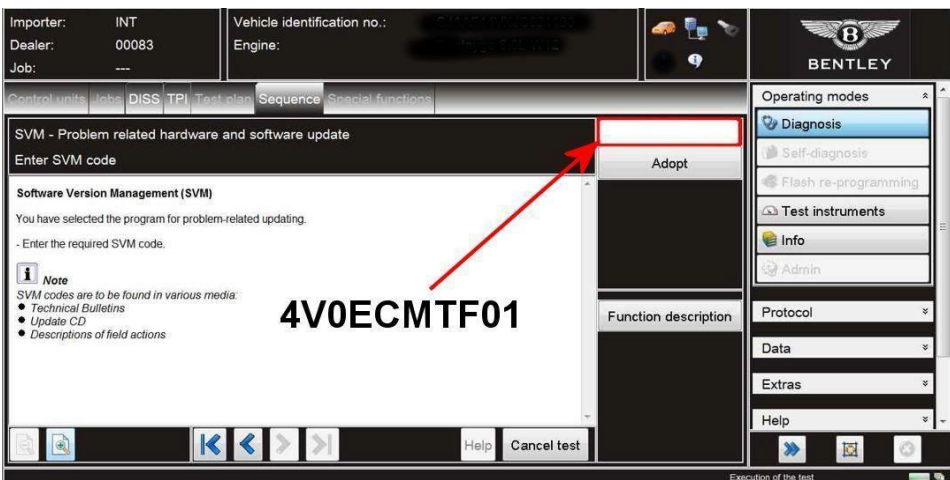


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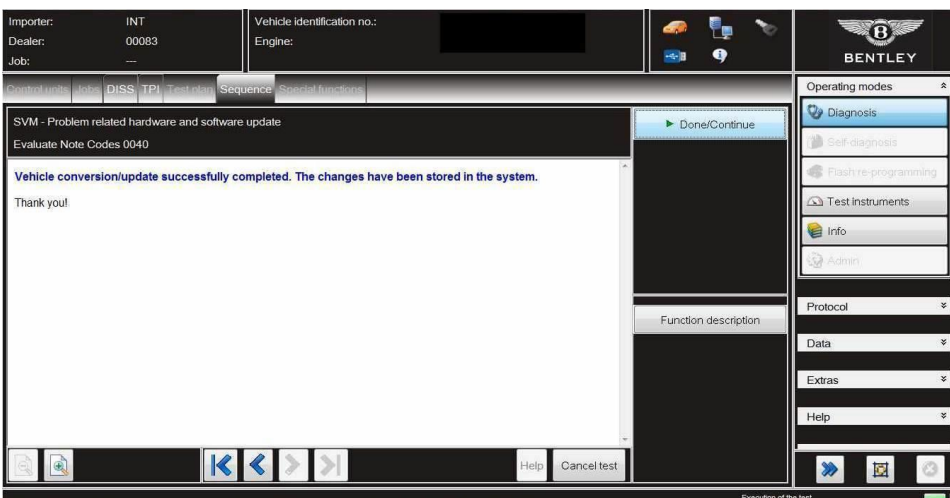


Figure 6



8) Check and confirm that no DTC's are stored or there are no engine operation issues evident prior to starting the procedure from step 9 – Save an online log to confirm that no DTC's were evident at this stage of the procedure

VERY IMPORTANT: The operative conducting this procedure must be aware of the following whilst the vehicle is undergoing this procedure during the current workshop visit

- Do not attempt to erase any DTC's from the engine control module/s and transmission control module



- VERY IMPORTANT: Do not conduct a readiness test other than when instructed within this procedure
- Do not disconnect the battery whilst the CAN BUS is awake
- Failure to comply with any of the above will erase the previously set engine adaption, therefore the complete process will require repeating

CAUTION: Ensure that any outstanding issues are resolved before commencing

IMPORTANT: Ensure that before the next part of the procedure is conducted (engine DTC adaption clear) the engine must be at operating temperature (>90C)

9) Carry out the engine adaption clear routine as follows:

- Referring to Figure 7 – Navigate to Test plan – Select own test

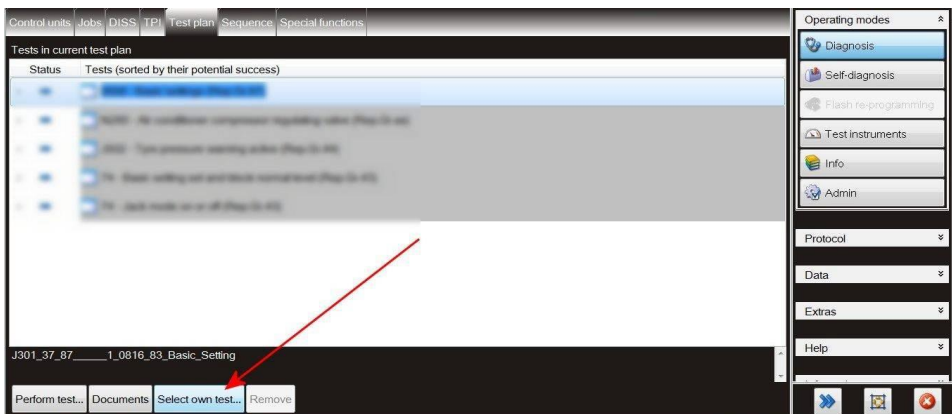


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- Referring to Figure 8
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- Select - W12 Engine (Point B)
- Select - 01 - Self-Diagnostic capable system (Point C)

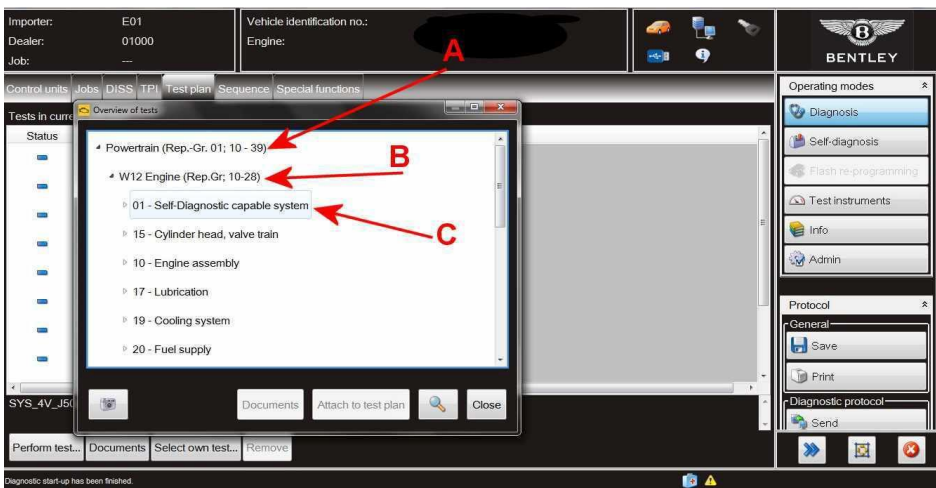


Figure 8

- Referring to Figure 9
- Select - 01 – Engine control unit – J623 (Point A)
- Select - 01 – Subsystems, marginal conditions (Point B)
- Select - Clear engine adaption (Point C)
- Select - Attach to test plan (Point D)

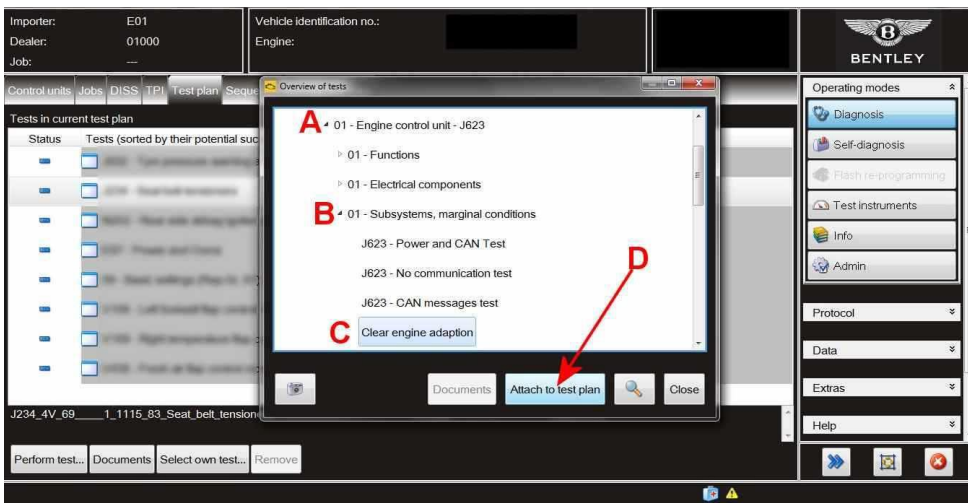


Figure 9

- Follow the Clear engine adaption test plan procedure until completion

10) Referring to Figure 10, Once the Clear engine adaption procedure is completed the operative will automatically be guided to conduct the Readiness code procedure

- Select Perform test and follow all on screen prompts



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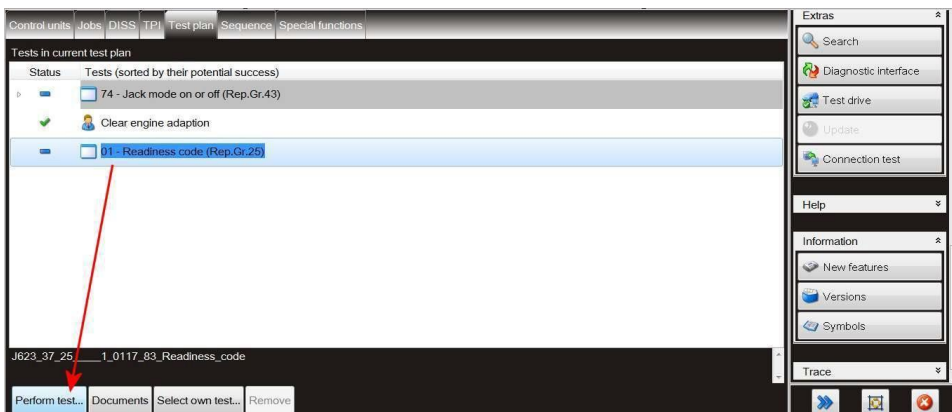


Figure 10

- Carry out the Readiness code test until complete as shown in Figure 11

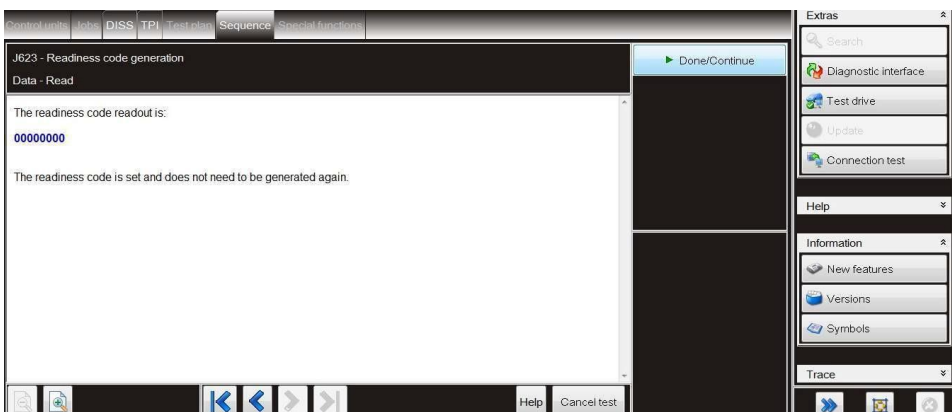


Figure 11



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Should ANY of the bytes be 1, YOU MUST repeat the Readiness code test again. Once complete you must then recheck and confirm the readiness code is 00000000

11) Idle torque adaptations - These must be done while the vehicle is stationary

VERY IMPORTANT: Ensure the Park brake is applied, the operative should also apply the footbrake for the duration of the torque adaptations

procedure process

- Select Neutral and ensure the A/C is ON and is set to MAX (Figure 12) Allow the engine to idle for 30 seconds
- Select Drive and ensure that the A/C is ON and is set to MAX Allow the engine to idle for 30 seconds



Figure 12

- Select Drive and ensure that the AC is OFF (Figure 13) Allow the engine to idle for 30 seconds
- Select Neutral and ensure that the AC is OFF Allow the engine to idle for 30 seconds

Repeat procedure 12 a further 3 times, (4 times total)



Figure 13

12) Conduct a Road test to check and confirm that no issues regarding engine operation are evident

NOTE: Should any engine operating issues be evident during the road test, the operative should submit a DISS query



IMPORTANT: Fill up the fuel tank and add the relevant dose of G17 Fuel additive as specified on the bottle (refer to ETKA) no further action is required the procedure is now complete

13) Place a red completion mark on the left hand bonnet latch striker - Refer to the Identification section

Identification

Red paint completion mark on the left hand bonnet latch striker



▪ [Repair instructions](#) ▪ [Notes](#)