

Fault code Jan 26, 2020

ISTA purge valve gas diagnostic test

VIN C365307 Vehicle 5/E60/SEDAN/528i/N52/AUTO/US/LL/2009/09 KL 15: -- KL 30: --

Operations	Vehicle information	Vehicle management	Service plan	Favourites	Workshop/ Operating fluids	Measuring devices
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Vehicle details Repair history **Control unit tree** Control unit list Operations report Information by service cases

Legend:
K-CAN (blue line) MOST (red line) F-CAN (red line) PT-CAN (black line)

Fault memory 3 Ecu without fault memory Ecu with fault memory Ecu not responding Ecu with programming abort

Start vehicle test Call up ECU functions Activate Window Display fault memory

VIN C365307

Vehicle 5/E60/SEDAN/528i/N52/AUTO/US/LL/2009/09

KL 15: --

KL 30: --

Operations	Vehicle information	Vehicle management	Service plan	Favourites	Workshop/ Operating fluids	Measuring devices
Repair/ Maintenance	Troubleshooting	Service functions	Software update	Control Unit Replacement	Vehicle modification	
Fault memory	Fault patterns	Function Structure	Component Structure	Text Search	Input fault code	

Code	Description	Mileage	Class
002A16	Fuel tank ventilation system and purge air system, micro-leak	82968	
009315	KOMBI: Odometer difference	82504	
009CC5	LM: No message, LIN (RLS)	82976	

Number of fault memories: 3 / 3 No. fault patterns: 0 Filter: Default

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Show fault code	Delete fault memory	Filter fault memory	Delete filter	Show completely	Calculate test plan
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Procedure

Description

Details

Fault data

Following fault data are stored for the tested function or component group.

- 1 002A16 Fuel tank ventilation system and purge air system, micro-leak

Select fault code and continue procedure.

No fault code description for fault code 002A16 available.

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Details

Procedure

Description

Details

Fault data

Following fault data are stored for the tested function or component group.

1 002A16 Fuel tank ventilation system and purge air system, micro-leak

Select fault code and continue procedure.

Fault types

Fault currently not present
Leak greater than 0.5 mm
Fault can activate a warning light (emission warning light or engine warning symbol)

Environment conditions

Condition	First fault memory entry
Frequency	2
Logistics counter	40
Mileage/km reading	82928 km
SAE diagnostic trouble code	P0456
Fuel tank, fill level	43 l
DMTL current, reference leak	24.02 mA
DMTL current, end of diagnosis	24.02 mA
current time, DMTL leak measurement	179.2 s



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ABL-DIT-B1214_NG6DMTL1 - Diagnostic module for tank leaks

Procedure

A leak was detected.

The function test of the fuel tank leak diagnostic module (DMTL) is conducted in the next test step. Deleting the default memory of the DME is absolutely necessary in order to be able to perform the functional check.

Important information:

For technical reasons, all stored fault codes are deleted when clearing the DME fault code memory. If faults for other components are stored in addition to faults for the diagnostic module for tank leaks (DMTL), these faults must be eliminated first. After the faults that were stored for other components have been processed, repeat the procedure for the DMTL.

Clearing the fault code memory does not affect the calculated test schedule.

Selection>

Continue test module (delete fault memory of the DME)

End test module

Wiring Diagram

Functional Description

The diagnostic module for tank leaks (DMTL) serves to determine leaks in the fuel system. The monitoring of the tightness of the fuel system is a statutory requirement as part of the on-board diagnosis.

Brief component description

The diagnostic module for tank leaks consists of the following components:

- Electrical vane-type compressor: Generation of the required excess pressure in the fuel tank for tank leak diagnosis
- Electromagnetic changeover valve: Setting of different operating conditions
- Module housing with integrated reference leak of 0.5 mm
- Heating: Heating of the vane-type compressor to remove condensate

The function of the diagnostic module for tank leak detection is controlled with the DME.

Function of the tank leak diagnosis

The leak test of the fuel system is run regularly after stopping the engine. The following processes are thereby running during the running-after phase of the DME as long as the starting conditions have been met:

- Starting situation: During normal engine operation, the changeover valve in the diagnosis module is in the so called "Regeneration" position. Fuel vapours are stored in the carbon canister and fed into the engine depending on the actuation of the tank vent valve (please refer to "Fuel tank ventilation").
- Checking starting conditions: The necessary start conditions are checked after the engine is switched off:
 - Engine off
 - Battery voltage between 11.5 V and 14.5 V
 - No fault entries in the DME for the diagnostic module for tank leaks or the

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FUB-FUB-SCT0901FB1214_NGDMTL - Diagnostic module for tank leaks (DMTL)

Procedure

A leak was detected.
The function test of the fuel tank leak diagnostic module (DMTL) is conducted in the next test step. Deleting the default memory of the DME is absolutely necessary in order to be able to perform the functional check.

Important information:

For technical reasons, all stored fault codes are deleted when clearing the DME fault code memory. If faults for other components are stored in addition to faults for the diagnostic module for tank leaks (DMTL), these faults must be eliminated first. After the faults that were stored for other components have been processed, repeat the procedure for the DMTL.

Clearing the fault code memory does not affect the calculated test schedule.

Selection>

Continue test module (delete fault memory of the DME)

End test module

Wiring Diagram

Functional Description

- Checking starting conditions: The necessary start conditions are checked after the engine is switched off.
 - Engine off
 - Battery voltage between 11.5 V and 14.5 V
 - No fault entries in the DME for the diagnostic module for tank leaks or the tank ventilation system
 - Fuel tank level exceeds 15% and below 85%
 - Ambient temperature between 4.5 °C and 35.3 °CWith a positive result, the tank leak diagnosis is started with the reference leak measurement.
- Reference leak measurement: The tank vent valve is always closed after the engine is switched off. The changeover valve of the diagnosis module remains in the "Regeneration" position. The electric vane-type compressor pumps fresh air from the surrounding area through a defined leak of 0.5 mm diameter. The subsequently required pump flow is stored as reference value. This is followed by the actual tank leak check.
- Tank leak check: The tank vent valve remains closed. The changeover valve of the diagnosis module switches to the "Diagnosis" position. The vane-type compressor pumps fresh air from the environment into the fuel tank, slowly raising the internal tank pressure. At the start of the tank leak check, the internal tank pressure corresponds with the ambient pressure. Therefore, the pump flow is very low. The pump flow increases with increasing internal tank pressure. The DME evaluates the pump flow.
- Evaluation of the pump flow: The DME evaluates the rise of the pump flow in a defined interval. When the pump flow exceeds the reference flow during this interval, the fuel system will be deemed to be OK. Tank leak diagnosis is ended. In contrast, when the pump flow does not reach the reference flow value, the fuel system will be deemed to be not OK. The diagnosis allows a difference to be made between:
 - Minor leak

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FUB-FUB-SCT0901FB1214_NGDMTL - Diagnostic module for tank leaks (DMTL)

Procedure

Wiring Diagram

Functional Description

A leak was detected. The function test of the fuel tank leak diagnostic module (DMTL) is conducted in the next test step. Deleting the default memory of the DME is absolutely necessary in order to be able to perform the functional check.

Important information:

For technical reasons, all stored fault codes are deleted when clearing the DME fault code memory. If faults for other components are stored in addition to faults for the diagnostic module for tank leaks (DMTL), these faults must be eliminated first. After the faults that were stored for other components have been processed, repeat the procedure for the DMTL.

Clearing the fault code memory does not affect the calculated test schedule.

Selection>

Continue test module (delete fault memory of the DME)

End test module

pressure. The DME evaluates the pump flow.

- Evaluation of the pump flow: The DME evaluates the rise of the pump flow in a defined interval. When the pump flow exceeds the reference flow during this interval, the fuel system will be deemed to be OK. Tank leak diagnosis is ended. In contrast, when the pump flow does not reach the reference flow value, the fuel system will be deemed to be not OK. The diagnosis allows a difference to be made between:
 - Minor leak
 - Micro-leak

The relevant fault is entered in the DME fault memory. Tank leak diagnosis is then terminated.

- End of tank leak diagnosis: The changeover valve is switched back to the "Regeneration" position. The after-running period of the DME is available for other functions.

This function can also be actively triggered with the DIS tester. In this case, the processes take place as described above.

Diagnosis of module components

The components of the diagnostic module for tank leak tests are diagnosed through the DME. If a relevant fault occurs during engine operation, the corresponding fault will be entered in the fault memory for the DME. The following faults can thereby be diagnosed:

- Activation of electromagnetic changeover valve
- Activation of pump motor
- Module fault
- Activation of heating, diagnostic module for tank leak testing

The diagnostic program provides the option to initiate the system test through the DIS tester.

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Procedure

The following marginal conditions must be present in order to perform the functional check on the DMTL:

- No battery chargers should be connected during the functional check.
(connecting a charger can lead to a malfunction, or cause the functional check to be aborted)
- The vehicle condition should not be changed during the functional check.
(e.g., no opening/closing the vehicle doors, no operating electrical components, no terminal change, ...)
- Fuel tank level between 15% and 85%.
(the function test will not return reliable results if the fuel level is outside the specified range)
- Proper fit of the fuel filler cap.
(Check the correct fit of the fuel filler cap prior to starting the functional check. the fuel filler cap must lock in with an audible click)

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Wiring Diagram

Functional Description

pressure. The DME evaluates the pump flow.

- Evaluation of the pump flow: The DME evaluates the rise of the pump flow in a defined interval. When the pump flow exceeds the reference flow during this interval, the fuel system will be deemed to be OK. Tank leak diagnosis is ended. In contrast, when the pump flow does not reach the reference flow value, the fuel system will be deemed to be not OK. The diagnosis allows a difference to be made between:
 - Minor leak
 - Micro-leakThe relevant fault is entered in the DME fault memory. Tank leak diagnosis is then terminated.
- End of tank leak diagnosis: The changeover valve is switched back to the "Regeneration" position. The after-running period of the DME is available for other functions.

This function can also be actively triggered with the DIS tester. In this case, the processes take place as described above.

Diagnosis of module components

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- Activation of electromagnetic changeover valve
- Activation of pump motor
- Module fault
- Activation of heating, diagnostic module for tank leak testing

The diagnostic program provides the option to initiate the system test through the DIS tester.

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Wiring Diagram

Functional Description

Ignition was not turned on. It is essential to switch terminals so that the function test with the fuel tank leakage diagnosis module (DMTL) can be carried out. The test module will be terminated if terminals are not switched.

Selection>

- Perform terminal change
- End test module

pressure. The DME evaluates the pump flow.

- Evaluation of the pump flow: The DME evaluates the rise of the pump flow in a defined interval. When the pump flow exceeds the reference flow during this interval, the fuel system will be deemed to be OK. Tank leak diagnosis is ended. In contrast, when the pump flow does not reach the reference flow value, the fuel system will be deemed to be not OK. The diagnosis allows a difference to be made between:
 - Minor leak
 - Micro-leakThe relevant fault is entered in the DME fault memory. Tank leak diagnosis is then terminated.
- End of tank leak diagnosis: The changeover valve is switched back to the "Regeneration" position. The after-running period of the DME is available for other functions.

This function can also be actively triggered with the DIS tester. In this case, the processes take place as described above.

Diagnosis of module components

The components of the diagnostic module for tank leak tests are diagnosed through the DME. If a relevant fault occurs during engine operation, the corresponding fault will be entered in the fault memory for the DME. The following faults can thereby be diagnosed:

- Activation of electromagnetic changeover valve
- Activation of pump motor
- Module fault
- Activation of heating, diagnostic module for tank leak testing

The diagnostic program provides the option to initiate the system test through the DIS tester.

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ABL-DIT-B1214_NG6DRTL1 - Diagnostic module for tank leaks

Procedure

Function test of diagnostic module for tank leaks (DRTL) is running.

Note:

The functional check can take up to 12 minutes.

Current function status:

[Minor leak measurement running](#)

Current duration of function test: 34 s

Please wait!

Wiring Diagram

Functional Description

pressure. The DME evaluates the pump flow.

- Evaluation of the pump flow: The DME evaluates the rise of the pump flow in a defined interval. When the pump flow exceeds the reference flow during this interval, the fuel system will be deemed to be OK. Tank leak diagnosis is ended. In contrast, when the pump flow does not reach the reference flow value, the fuel system will be deemed to be not OK. The diagnosis allows a difference to be made between:
 - Minor leak
 - Micro-leakThe relevant fault is entered in the DME fault memory. Tank leak diagnosis is then terminated.
- End of tank leak diagnosis: The changeover valve is switched back to the "Regeneration" position. The after-running period of the DME is available for other functions.

This function can also be actively triggered with the DIS tester. In this case, the processes take place as described above.

Diagnosis of module components

The components of the diagnostic module for tank leak tests are diagnosed through the DME. If a relevant fault occurs during engine operation, the corresponding fault will be entered in the fault memory for the DME. The following faults can thereby be diagnosed:

- Activation of electromagnetic changeover valve
- Activation of pump motor
- Module fault
- Activation of heating, diagnostic module for tank leak testing

The diagnostic program provides the option to initiate the system test through the DIS tester.

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ABL-DIT-B1214_NG6DMTL1 - Diagnostic module for tank leaks

Procedure

The function test relating to the fuel tank leak diagnosis module (DMTL) was carried out.

Status of function test last determined:

Functional check finished: **Micro-leak detected**

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Wiring Diagram

Functional Description

pressure. The DME evaluates the pump flow.

- Evaluation of the pump flow: The DME evaluates the rise of the pump flow in a defined interval. When the pump flow exceeds the reference flow during this interval, the fuel system will be deemed to be OK. Tank leak diagnosis is ended. In contrast, when the pump flow does not reach the reference flow value, the fuel system will be deemed to be not OK. The diagnosis allows a difference to be made between:
 - Minor leak
 - Micro-leakThe relevant fault is entered in the DME fault memory. Tank leak diagnosis is then terminated.
- End of tank leak diagnosis: The changeover valve is switched back to the "Regeneration" position. The after-running period of the DME is available for other functions.

This function can also be actively triggered with the DIS tester. In this case, the processes take place as described above.

Diagnosis of module components

The components of the diagnostic module for tank leak tests are diagnosed through the DME. If a relevant fault occurs during engine operation, the corresponding fault will be entered in the fault memory for the DME. The following faults can thereby be diagnosed:

- Activation of electromagnetic changeover valve
- Activation of pump motor
- Module fault
- Activation of heating, diagnostic module for tank leak testing

The diagnostic program provides the option to initiate the system test through the DIS tester.

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ABL-DIT-B1214_NG6DML1 - Diagnostic module for tank leaks

Procedure

Wiring Diagram

Functional Description

Help

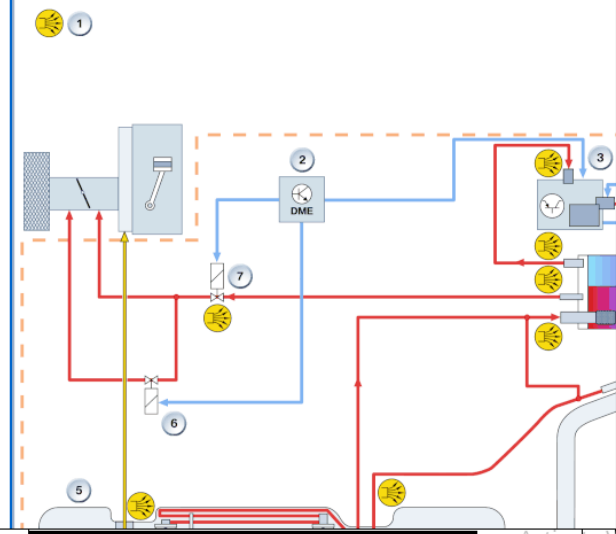
A micro-leak was detected.
Carry out a leak detection test on the tank ventilation and purge air system.
Use a Diagnostic Smoke Vapour Machine for this purpose.
The overview opposite shows the points where leaks may occur.

Note:
The connector of the diagnostic module for tank leaks must remain connected during the leak detection.

On which component was a leak detected?

- Carbon canister and/or carbon canister connections
- Tank vent valve
- Fuel filler pipe and/or fuel filler pipe connections
- Service cap or connections to the fuel tank
- Gasket at the flange of the delivery unit
- Lines of the tank ventilation and air purging system
- Fuel tank

The following graphics show the fuel evaporation system overview.



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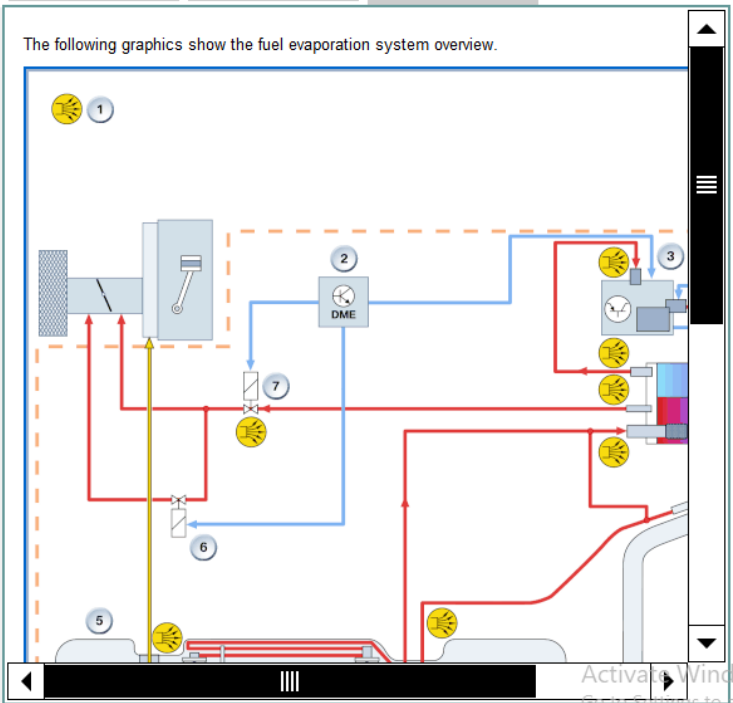
ABL-DIT-B1214_NG6DRTL1 - Diagnostic module for tank leaks

Procedure Wiring Diagram Functional Description Help

The connector of the diagnostic module for tank leaks must remain connected during the leak detection.

On which component was a leak detected?

- Carbon canister and/or carbon canister connections
- Tank vent valve
- Fuel filler pipe and/or fuel filler pipe connections
- Service cap or connections to the fuel tank
- Gasket at the flange of the delivery unit
- Lines of the tank ventilation and air purging system
- Fuel tank
- other component
- no leak found



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Procedure

The connector of the diagnostic module for tank leaks must remain connected during the leak detection.

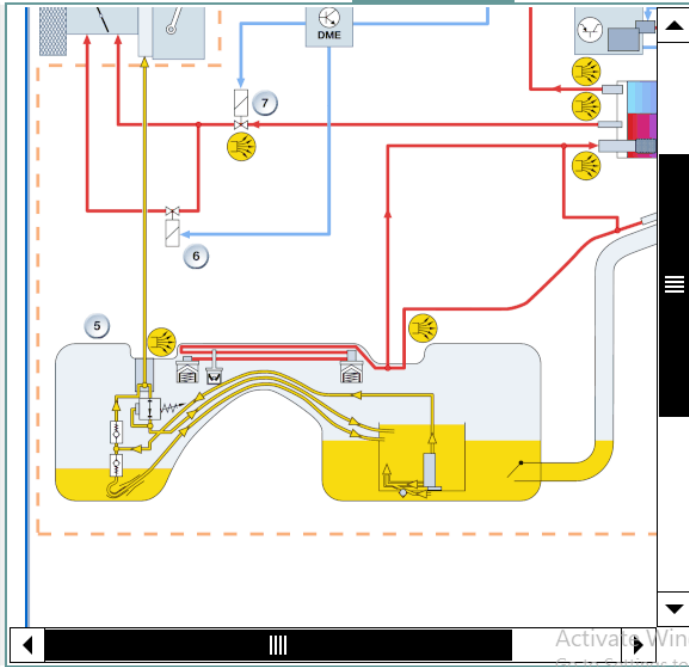
On which component was a leak detected?

- Carbon canister and/or carbon canister connections
- Tank vent valve
- Fuel filler pipe and/or fuel filler pipe connections
- Service cap or connections to the fuel tank
- Gasket at the flange of the delivery unit
- Lines of the tank ventilation and air purging system
- Fuel tank
- other component
- no leak found

Wiring Diagram

Functional Description

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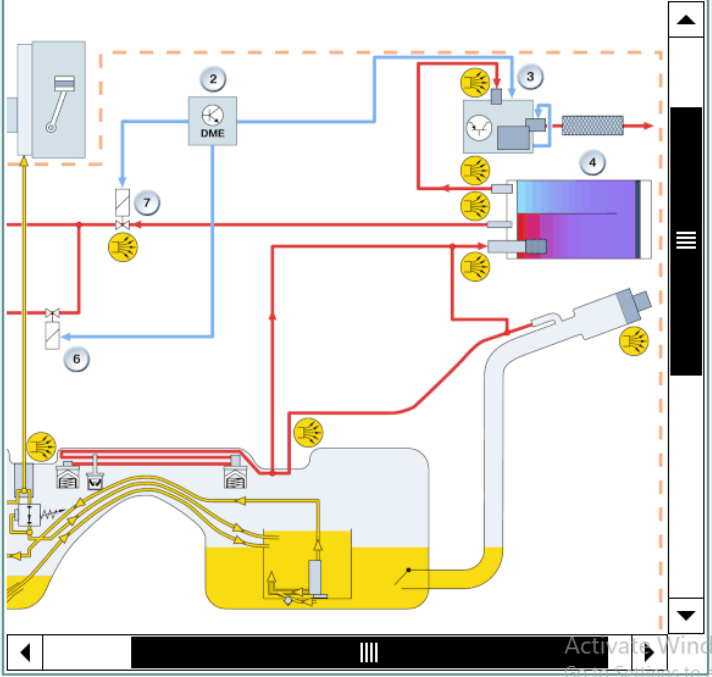
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Activate Windows
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The connector of the diagnostic module for tank leaks must remain connected during the leak detection.

On which component was a leak detected?

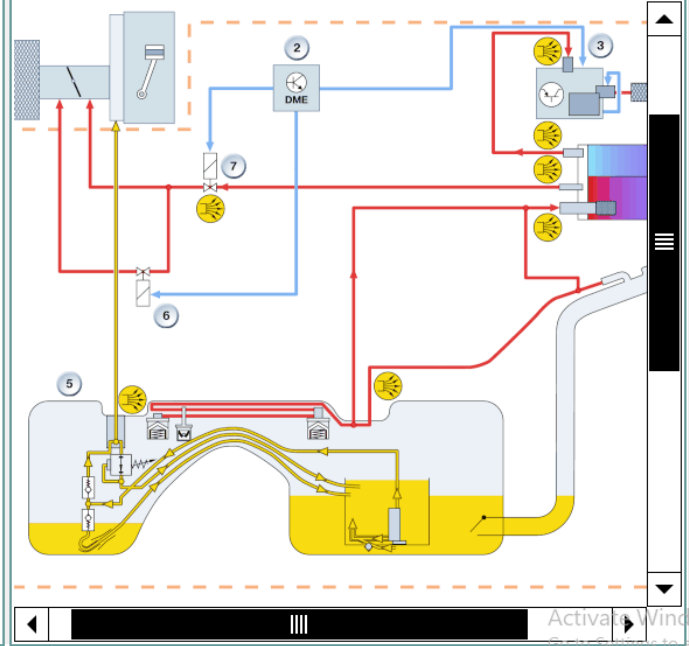
- Carbon canister and/or carbon canister connections
- Tank vent valve
- Fuel filler pipe and/or fuel filler pipe connections
- Service cap or connections to the fuel tank
- Gasket at the flange of the delivery unit
- Lines of the tank ventilation and air purging system
- Fuel tank
- other component
- no leak found



ABL-DIT-B1214_NG6DMTL1 - Diagnostic module for tank leaks

Procedure Wiring Diagram Functional Description Help

The function test relating to the fuel tank leak diagnosis module (DMTL) was carried out.
Status of function test last determined:
Functional check finished: **Micro-leak detected**
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SSP-SSP-SP0000021654 - Diagnostic module, fuel tank leakage

Procedure

A micro-leak was detected.
Carry out a leak detection test on the tank ventilation and purge air system.
Use a Diagnostic Smoke Vapour Machine for this purpose.
The overview opposite shows the points where leaks may occur.

Note:
The connector of the diagnostic module for tank leaks must remain connected during the leak detection.

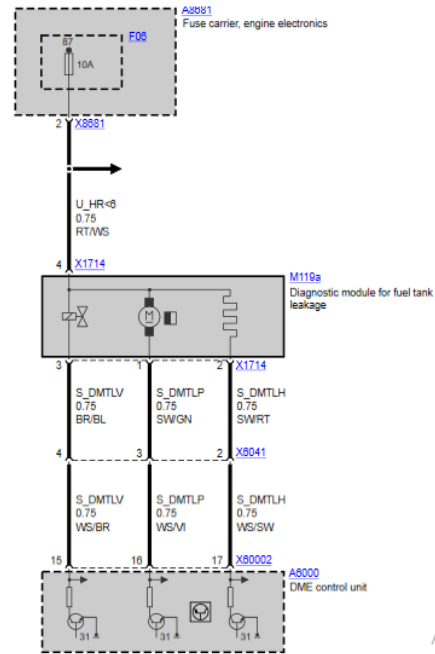
On which component was a leak detected?

- Carbon canister and/or carbon canister connections
- Tank vent valve
- Fuel filler pipe and/or fuel filler pipe connections
- Service cap or connections to the fuel tank
- Gasket at the flange of the delivery unit
- Lines of the tank ventilation and air purging system
- Fuel tank

Wiring Diagram

Functional Description

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Procedure

Wiring Diagram

Functional Description

Help

A micro-leak was detected. Carry out a leak detection test on the tank ventilation and purge air system. Use a Diagnostic Smoke Vapour Machine for this purpose. The overview opposite shows the points where leaks may occur.

Note: The connector of the diagnostic module for tank leaks must remain connected during the leak detection.

On which component was a leak detected?

- Carbon canister and/or carbon canister connections
- Tank vent valve
- Fuel filler pipe and/or fuel filler pipe connections
- Service cap or connections to the fuel tank
- Gasket at the flange of the delivery unit
- Lines of the tank ventilation and air purging system
- Fuel tank

The diagnostic module for tank leaks (DMTL) serves to determine leaks in the fuel system. The monitoring of the tightness of the fuel system is a statutory requirement as part of the on-board diagnosis.

Brief component description

The diagnostic module for tank leaks consists of the following components:

- Electrical vane-type compressor: Generation of the required excess pressure in the fuel tank for tank leak diagnosis
- Electromagnetic changeover valve: Setting of different operating conditions
- Module housing with integrated reference leak of 0.5 mm
- Heating: Heating of the vane-type compressor to remove condensate

The function of the diagnostic module for tank leak detection is controlled with the DME.

Function of the tank leak diagnosis

The leak test of the fuel system is run regularly after stopping the engine. The following processes are thereby running during the running-after phase of the DME as long as the starting conditions have been met:

- Starting situation: During normal engine operation, the changeover valve in the diagnosis module is in the so called "Regeneration" position. Fuel vapours are stored in the carbon canister and fed into the engine depending on the actuation of the tank vent valve (please refer to "Fuel tank ventilation").
- Checking starting conditions: The necessary start conditions are checked after the engine is switched off.
 - Engine off
 - Battery voltage between 11.5 V and 14.5 V
 - No fault entries in the DME for the diagnostic module for tank leaks or the

Procedure

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Functional
Description

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No further action is necessary.

End test module

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DIAGCODE: D1330_B000000_01_903

The diagnostic module for tank leaks (DML) serves to determine leaks in the fuel system. The monitoring of the tightness of the fuel system is a statutory requirement as part of the on-board diagnosis.

Brief component description

The diagnostic module for tank leaks consists of the following components:

- Electrical vane-type compressor: Generation of the required excess pressure in the fuel tank for tank leak diagnosis
- Electromagnetic changeover valve: Setting of different operating conditions
- Module housing with integrated reference leak of 0.5 mm
- Heating: Heating of the vane-type compressor to remove condensate

The function of the diagnostic module for tank leak detection is controlled with the DME.

Function of the tank leak diagnosis

The leak test of the fuel system is run regularly after stopping the engine. The following processes are thereby running during the running-after phase of the DME as long as the starting conditions have been met:

- Starting situation: During normal engine operation, the changeover valve in the diagnosis module is in the so called "Regeneration" position. Fuel vapours are stored in the carbon canister and fed into the engine depending on the actuation of the tank vent valve (please refer to "Fuel tank ventilation").
- Checking starting conditions: The necessary start conditions are checked after the engine is switched off.
 - Engine off
 - Battery voltage between 11.5 V and 14.5 V
 - No fault entries in the DME for the diagnostic module for tank leaks or the

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