



Evaporative emissions system

Function description of EVAP canister system

Depending upon the air pressure and ambient temperature, fuel vapor will form above the level of fuel in the tank.

The Evaporative Emissions system prevents these HC emissions escaping to the atmosphere.

In limited quantities, fuel vapors pass through a gravity valve (which closes at an angle of 45°) located at the highest point in the tank and through a pressure retention valve into the evaporative emissions (EVAP) canister.

The EVAP canister stores these vapors like a sponge.

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When the oxygen sensor control is active when driving (engine warm), the EVAP canister purge regulator valve -N80-, is activated (pulsed) from the engine control module depending upon load and engine speed. The opening period is dependent on the input signals.

Intake manifold vacuum draws fresh air through the vent opening on the underside of the EVAP canister during the purging procedure (regenerating the activated charcoal in the canister). The fuel vapors stored in the activated charcoal and fresh air are pulse-fed for combustion.

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The pressure retention valve prevents fuel vapors from being drawn from the tank when the solenoid valve is open and intake manifold vacuum is present. It therefore ensures that the evacuation of the EVAP canister has priority.

No voltage (e.g. wiring open circuit) the solenoid valve is closed and the EVAP canister will not be purged.

The vacuum line from the throttle valve control part to the EVAP canister has an additional by-pass which is connected with the cylinder block breather valve. The non-return valve integrated in the cylinder block breather valve prevents the intake air gassing into the cylinder block during some partial load ranges. This improves the overall cylinder block breathing. The by-pass guarantees the cylinder block breathing.

Functional description of leak diagnosis

The evaporative emissions system (including fuel tank) is equipped with a leak diagnosis, the leak diagnosis will detect whether the system is leaking.

The diagnosis operates by pressurizing the system and should detect leaks where the damage exceeds 1 mm in diameter.

During the diagnosis the Leak Detection Pump (LDP) - V144- builds up a pressure of approx. 30 mbar in the evaporative emissions system. The pump will switch off when the pressure is attained. When the pressure falls to below a certain figure, the pump will switch on again. The On Board Diagnostic (OBD) monitors the time between the switched on periods and if it is too short it will register a code in the DTC memory.



Note:

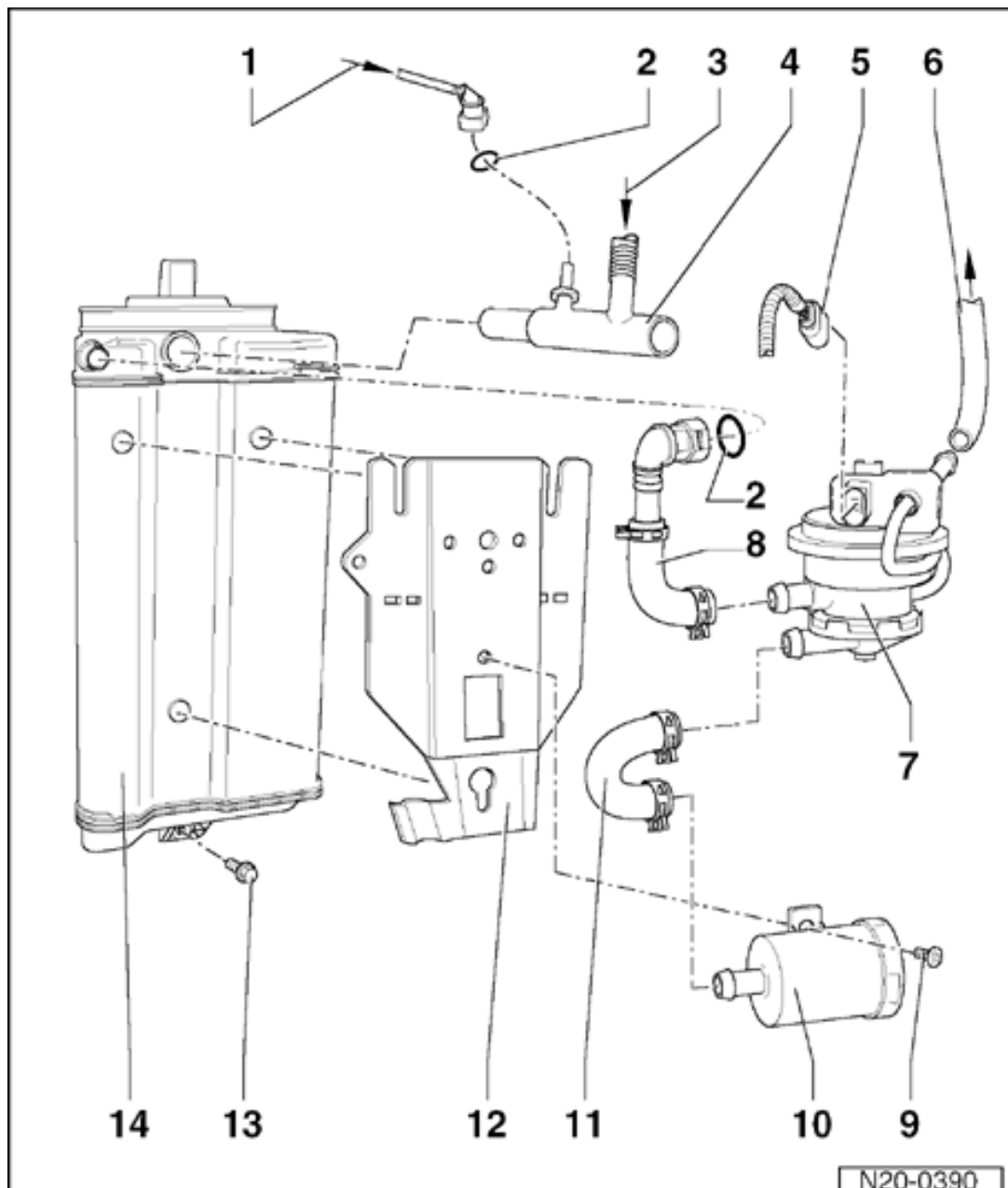
- ◆ *Hose connections are secured with either spring-type or clamp-type clips.*

- ◆ *Always replace clamp-type clips with spring-type clips.*

- ◆ *Assembly tool VAS 5024 or hose clip pliers V.A.G 1921 are recommended for installing spring-type clips.*

Observe safety precautions ⇒ [Page 20-11](#) .

Observe rules for cleanliness ⇒ [Page 20-13](#) .



Evaporative emissions system components, servicing

Note:

◆ Components marked with an * are checked by the On Board Diagnostic (OBD):

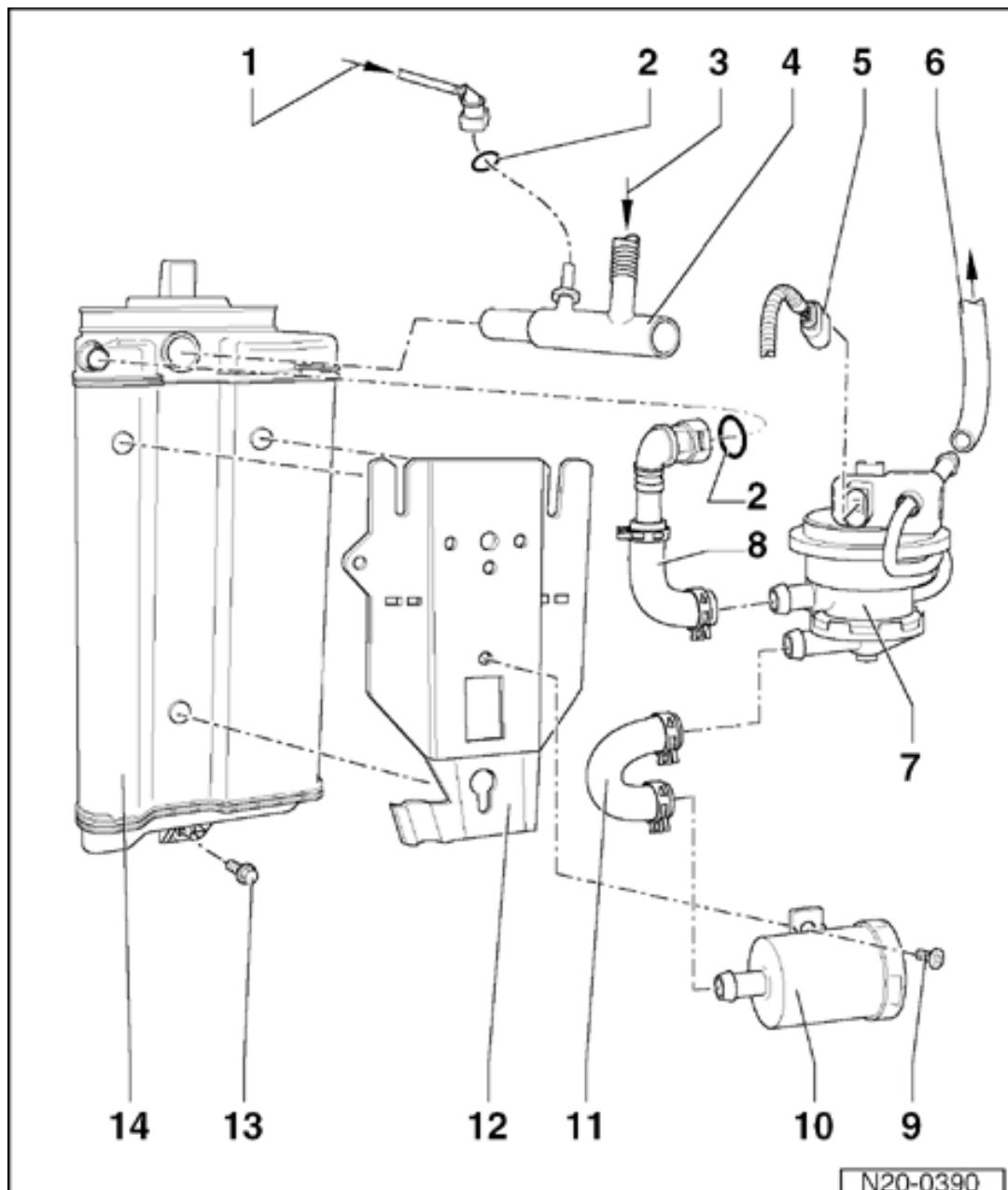
⇒ Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; DTC memory; DTC memory of Engine Control Module (ECM), checking and erasing

◆ Components marked with ** are checked by the Output Diagnostic Test Mode:

⇒ Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Output Diagnostic Test Mode (DTM), Performing Output Diagnostic Test Mode (DTM)

N20-0390

**1 - From Evaporative
Emission (EVAP)
Canister Purge
Regulator Valve -
N80-*/****



2 - Seal

- ◆ Replace if damaged

3 - Vent pipe

4 - Connection piece

5 - Connector

- ◆ 3 pin

6 - Vacuum pipe

- ◆ for throttle valve control module ⇒ [Page 20-54](#) , item. 5

7 - Leak Detection Pump (LDP) -V144-*/**

- ◆ In right rear wheel well
- ◆ Checking ⇒ [Page 20-66](#)

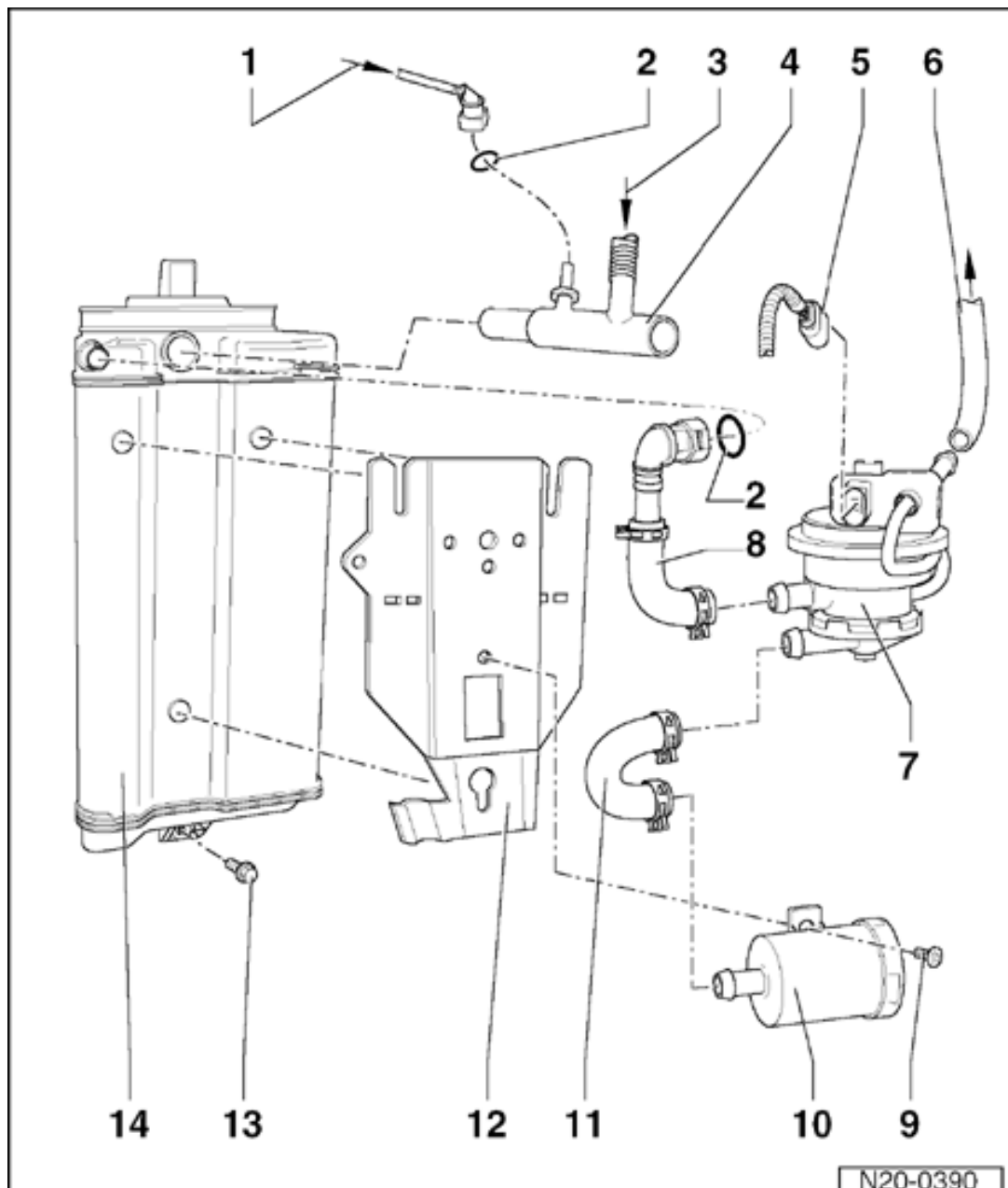
8 - Connecting hose

N20-0390

◆ Pressure
side

9 - 3 Nm

10 - Air cleaner for LDP



11 - Connecting hose

◆ Suction side

12 - Retainer

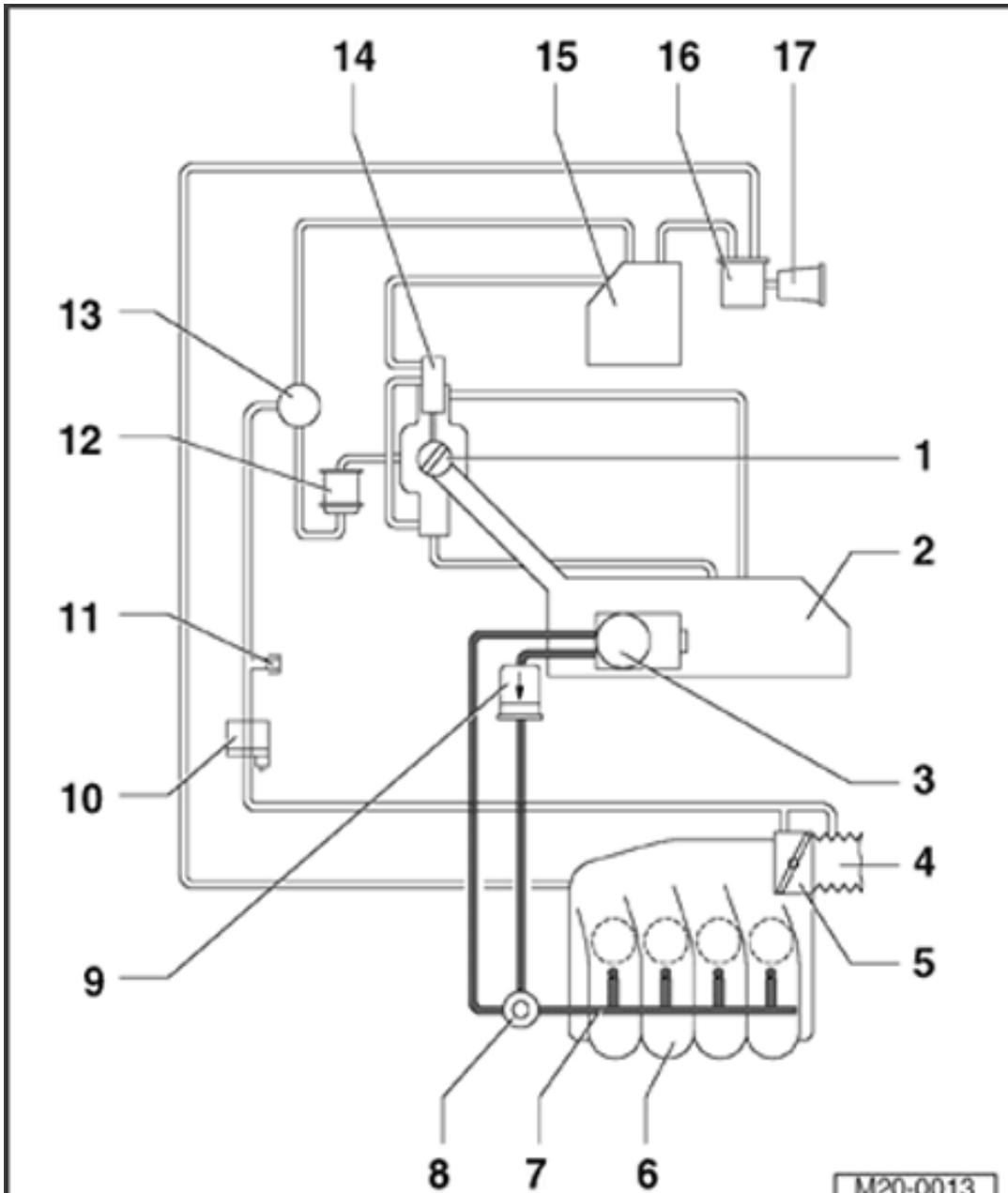
13 - 10 Nm

14 - EVAP canister

◆ In right rear wheel well

Volkswagen Golf, GTI, Jetta 1999-2004, Jetta Wagon 2001-2004 - 1.8 Liter 4-Cyl. 5V Turbo Engine Mechanical, Engine Code(s): AWD, AWW, AWP

N20-0390



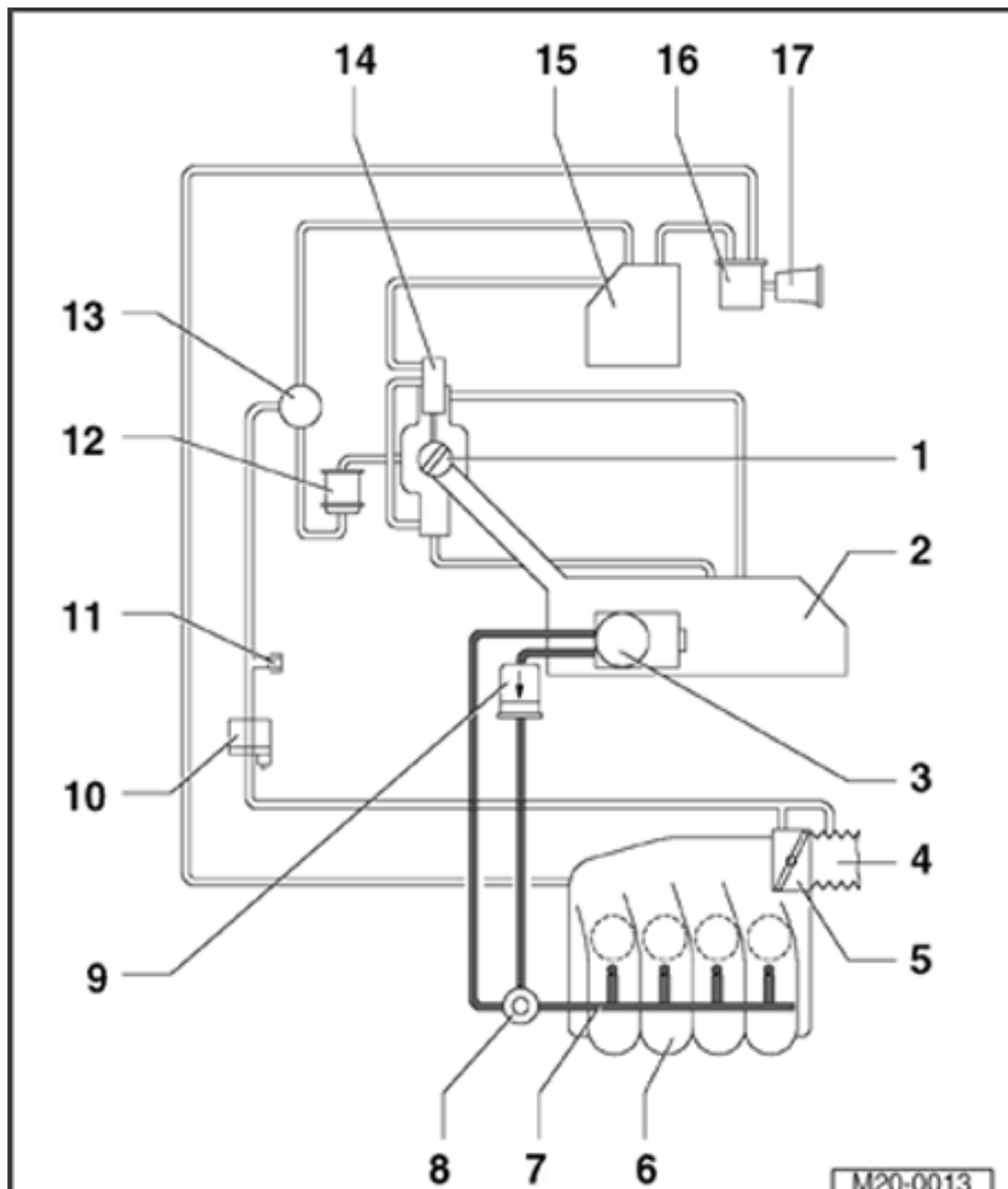
Evaporative emissions system, overview

- 1 - Tank cap unit
- 2 - Fuel tank
- 3 - Fuel delivery unit
- 4 - Intake hose
- 5 - Throttle valve control module - J338-
- 6 - Intake manifold upper part
- 7 - Fuel rail with injectors
- 8 - Fuel pressure regulator
- 9 - Fuel filter

◆ Installed position:
Arrow points in
through-flow
direction

8 7 6

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10 - Evaporative Emission (EVAP) canister purge regulator valve -N80-

◆ Checking activation:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Output Diagnostic Test Mode; Performing Output Diagnostic Test Mode*

◆ Checking function
⇒ [Page 20-56](#)

11 - Test connection

12 - Gravity/overflow valve

13 - Pressure retaining valve

14 - Change-over valve

15 - EVAP canister

◆ In right rear wheel housing under wheel housing liner

8

7

6

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16 - Leak Detection Pump (LDP) -V144-

- ◆ Checking
activation:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Output Diagnostic Test Mode; Performing Output Diagnostic Test Mode*

17 - Air cleaner for LDP

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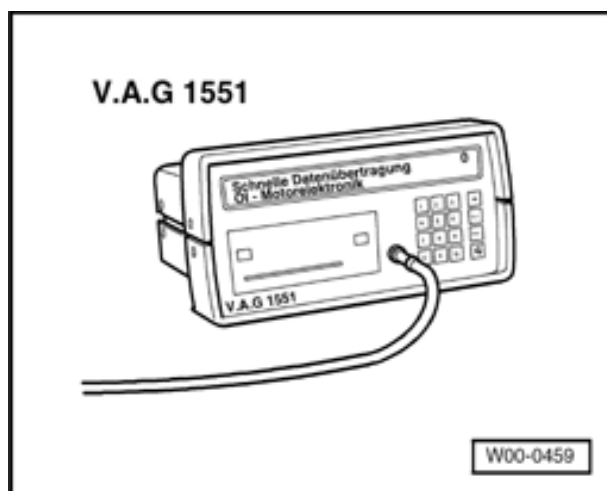
Evaporative Emission (EVAP) canister purge regulator valve -N80-, checking

In a no-current situation the valve is closed.

Checking activation:

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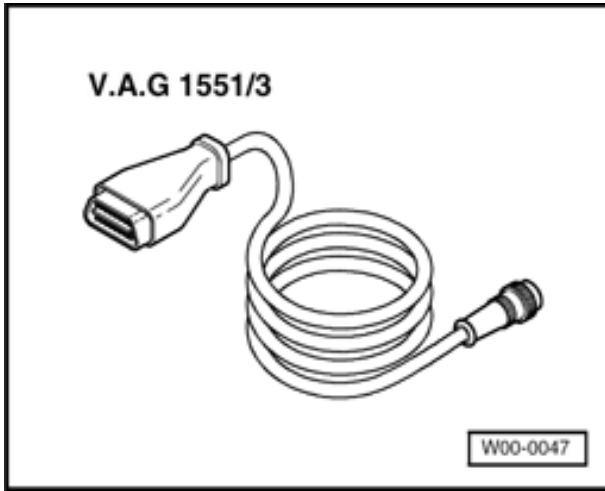
Special tools and equipment



◆ V.A.G 1551 Scan Tool

Note:

The vehicle system tester V.A.G 1552 can be used instead of the VAG 1551 Scan Tool, however a print-out is not possible.

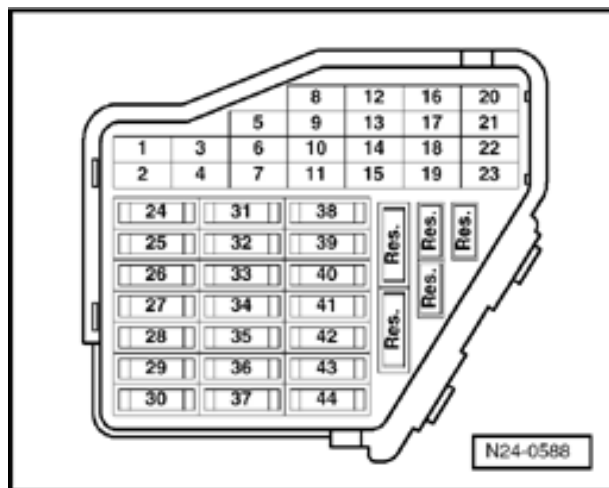


◆ V.A.G 1551/3
Cable



Test conditions

- Coolant temperature must be at least 80 °C,
⇒display group 04, display zone 3.
- Fuse No. 43 must be OK.



Functional check

- Connect VAG 1551 scan tool ((V.A.G 1552). Start engine and select engine control module with "Address word" 01.
⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; On Board Diagnostic (OBD); Connecting VAG 1551 scan tool and selecting engine electronics control module*

Rapid data transfer

HELP

Select function XX

Indicated on display

- Press keys 0 and 8 for "Read measured value block" function and confirm entry with Q key.

Read measured value block

Input display group number XXX



Indicated on display

- Press keys 0, 7 and 0 for "Display group number 70" and confirm entry with Q key.

Read measured value block 70 →

1 2 3 4



Indicated on display: (1 to 4 = Display zones)

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- Press key 4 for the "Basic setting" function ("Tank venting valve diagnosis" will be initiated)

Note:

The engine must not be loaded during this diagnosis because the diagnosis will be interrupted and will not be started again until the engine is revved-up.

System in basic setting 70 →

1 2 3 4



Indicated on display: (1 to 4 = Display zones)

When the diagnosis is initiated by the engine control module, the display in display zone 4 jumps from "Test OFF" to "Test ON"

- Run engine at idling speed until specification "TBV OK" is displayed in display zone 4.

Note:

TBV stands for tank breather valve (Evaporative Emission (EVAP) canister purge regulator valve).

If "TBV not OK" appears in display zone 4:

- Initiate Output Diagnostic Test Mode and activate Evaporative Emission (EVAP) canister purge regulator valve -N80-:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Output Diagnostic Test Mode; Performing Output Diagnostic Test Mode*

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- Check DTC memory:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01*

- Read readiness code:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Readiness code; Reading out readiness code*

- Generate readiness code again if DTC memory has been erased or engine control module separated from permanent positive.

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Readiness code*

If the specification "TBV OK" is obtained:

- Press
→ key.

Rapid data transfer

HELP

Select function XX



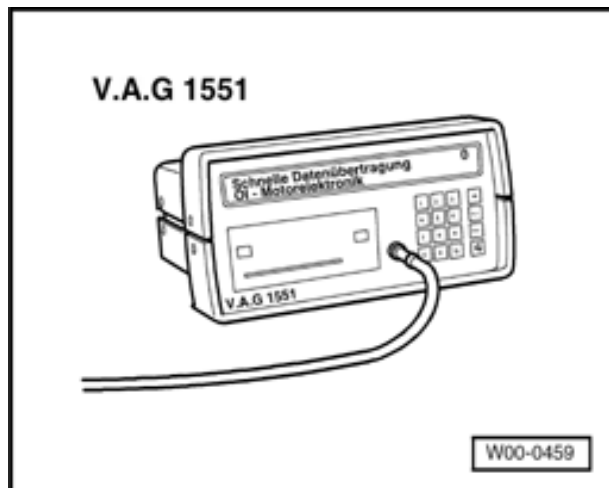
Indicated on display

- Press keys 0 and 6 for function "End output" and confirm entry with Q key.
- Switch ignition off.



Evaporative emissions system, checking for leaks

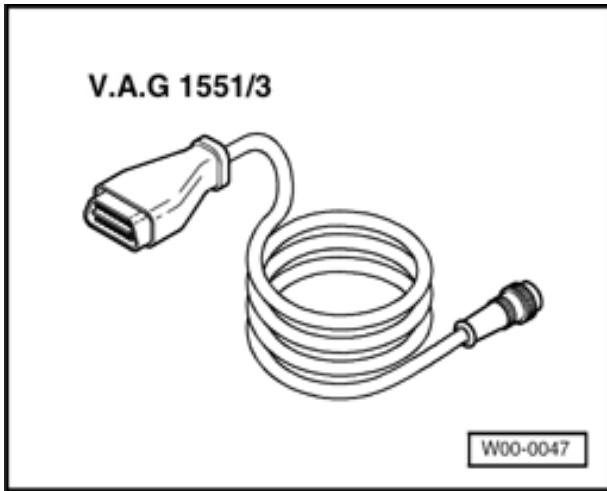
Special tools and equipment



- ◆ V.A.G 1551 Scan Tool

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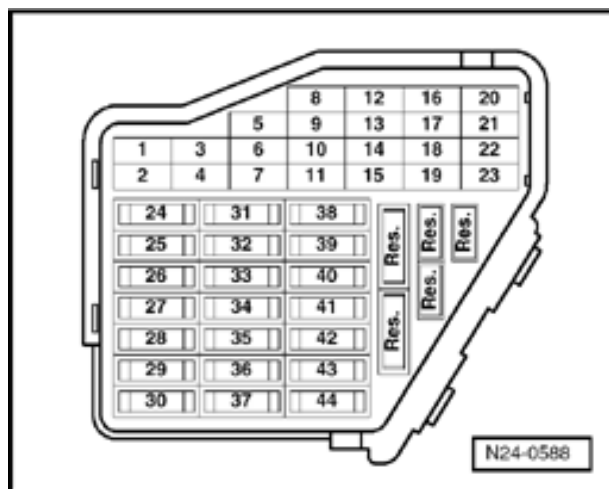
The vehicle system tester V.A.G 1552 can be used instead of the VAG 1551 scan tool, however a print-out is not possible.



◆ V.A.G 1551/3
Cable



Test conditions



- Fuse No. 43 must be OK.
- No DTC stored in DTC memory

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01*

- All electrical consumers, e.g. lights and rear window defroster must be switched off
- If the vehicle is equipped with an air conditioner, this must be switched off.
- Throttle valve angle less than 10° % display group 03, display zone 3
- Coolant temperature less than 80° C ⇒ display group 04, display zone 3
- Intake air temperature less than 60° C ⇒ display group 04, display zone 4



Functional check

- Connect VAG 1551 Scan Tool (or V.A.G 1552). Start engine and select engine control module with the "Address word" 01.

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; On Board Diagnostic (OBD); Connecting VAG 1551 scan tool and selecting engine electronics control module*

Rapid data transfer **HELP**

Select function **XX**



Indicated on display

- Press keys 0 and 8 for function "Read measured value block" and confirm entry with Q key.

Read measured value block

Input display group number **XXX**



Indicated on display

- Press keys 0, 7 and 1 for "Display group number 71" and confirm entry with Q key.

Read measured value block 71 →

Reed open

Test OFF



Indicated on display

- Press key 4 for "Introduction of basic setting" function.

System in basic setting 71 →
Reed open **Test ON**

↩ Indicated on display

System in basic setting 71 →
Reed closed **Test ON**

↩ Indicated on display

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The test of the evaporative emissions system will be initiated. First of all the function of the Reed contact (in the LDP -V144-) will be checked by the control module.

System in basic setting 71 →

Reed closed Syst. Test Test ON

← Indicated on display

After approx. 10 seconds the LDP -V144- will be activated and build-up pressure in the fuel system.

System in basic setting 71 →

Reed open Syst. Test Test ON

← Indicated on display

The test will be initiated after approx. 50 seconds (when there is not sufficient pressure available in the fuel system can last up to 120 seconds).

System in basic setting 71 →

Reed open Check Test ON

← Indicated on display

The LDP -V144- switches off and the control module measures the time until the Reed contact closes.

System in basic setting 71



Reed closed Check.END Syst. OK



Indicated on display

- Check display in display zones 3 and 4:

Specified value display field 3: Meas.
END

Specified value display field 4: Syst.
OK

If the specifications are not attained:

- Checking for proper seal ⇒ [Page 20-64](#)

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If the specifications are obtained:

- Press
→ key.

- Press keys 0 and 6 for function "End output" and
confirm entry with Q key.

- Switch off
ignition.

Checking for leaks

If a small or large leak is detected during the check of the evaporative emissions system, proceed as follows.

- Switch ignition
off.

- Check whether sealing cap of fuel tank is completely
closed or seal is leaking, replace if necessary.

- Repeat functional check.

Is the malfunction still present:

- Fold rear seat bench forward.
- Remove cover below seat bench.
- Check locking ring for fuel pump for tightness or if seal is faulty and replace if necessary. Tighten locking ring using 3217 special tool. Check supply and return lines of at fuel pump for proper seal.

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- Repeat functional check.

Is the malfunction still present:

- Remove rear right wheel housing liner:

⇒ [Repair Manual, Body Exterior, Repair Group 66; Removing and installing wheel housing liner](#)

- Check pressure hose between LDP and EVAP canister for proper seal ⇒ [Page 20-52](#) , item. 8 ; replace if necessary.
- Check wires and wire connections between EVAP canister and tank flap unit or tank ventilation valve for proper seal ⇒ [Page 20-54](#) , EVAP canister system setup overview
- Repeat functional check.

Is the malfunction still present:

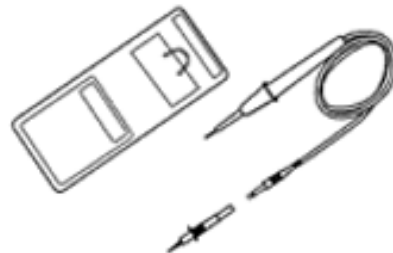
- Remove EVAP canister and check for tears and leaks, replace if necessary.
- Repeat functional check.



V.A.G 1526 A



V.A.G 1527 B



V.A.G 1594 A



V.A.G 1598/31



Leak Detection Pump (LDP). checking

Special tools and equipment

- ◆ V.A.G 1526 A Hand multimeter
- ◆ VAG 1527B voltage tester
- ◆ V.A.G 1594 A Adapter set
- ◆ V.A.G 1598/31 Test box
- ◆ Wiring diagram

Volkswagen Golf, GTI, Jetta 1999-2004, Jetta Wagon 2001-2004 - 1.8 Liter 4-Cyl. 5V Turbo Engine Mechanical, Engine Code(s): AWD, AWW, AWP

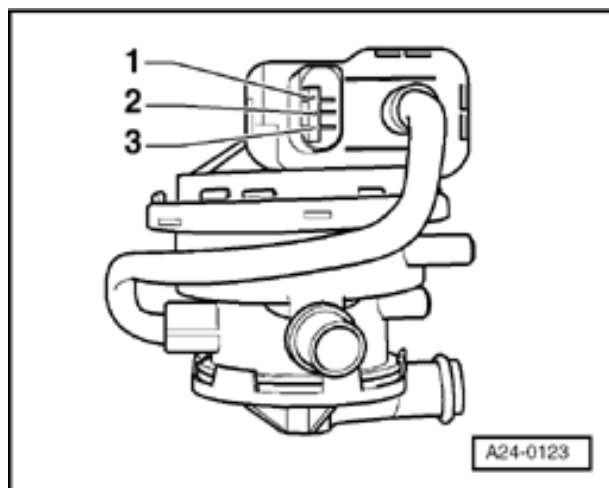
W20-0039



Electrically checking LDP

- Remove rear right wheel housing liner:

⇒ [Repair Manual, Body Exterior, Repair Group 66; Removing and installing wheel housing liner](#)



- Pull 3 pin connector off LDP - V144-.
- Connect hand multimeter V.A.G 1526 A to measure resistance between contacts 1 and 3 of LDP -V144-.
Specification: 640 . . .720
 Ω
- Connect hand multimeter V.A.G 1526 to measure resistance between contacts 2 and 3 of LDP -V144-.
Specification: 12.5...19.5
 Ω

If the specifications are not attained:

- Replace Leak Detection Pump (LDP) - V144-.

- Check DTC
memory:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel
Injection & Ignition, Repair Group 01*

- Read readiness
code:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel
Injection & Ignition, Repair Group 01; Readiness code*

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- Generate readiness code again if DTC memory has been erased or engine control module separated from permanent positive.

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Readiness code*

Checking voltage supply

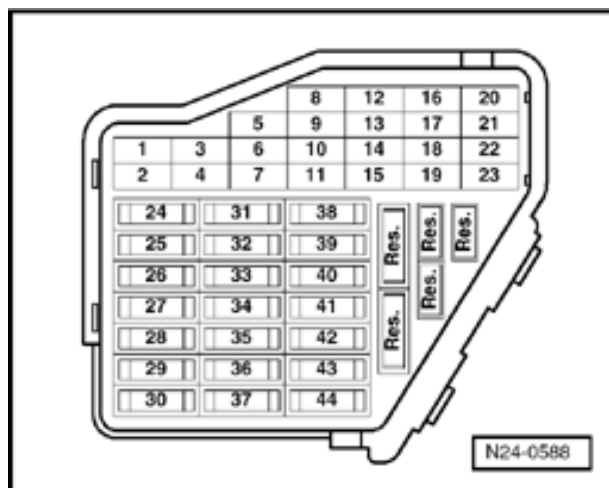
Test conditions

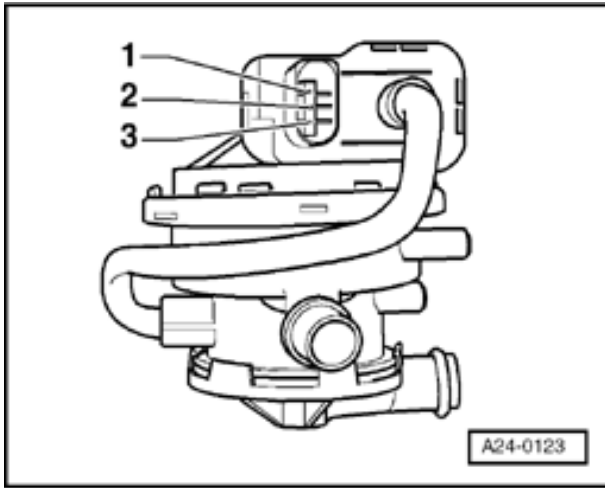
- Fuse No. 43 must be OK.
- The battery voltage must be at least 11.5 V.

Test sequence

- Remove right rear wheel housing liner:

⇒ [*Repair Manual, Body Exterior, Repair Group 66; Removing and installing wheel housing liner*](#)





A

- Disconnect 3 pin connector of LDP - V144-.
- Connect VAG 1527B voltage tester between connector contact 3 (positive) and engine Ground.
- Start engine and run at idling speed:
LED must light up.

20-69



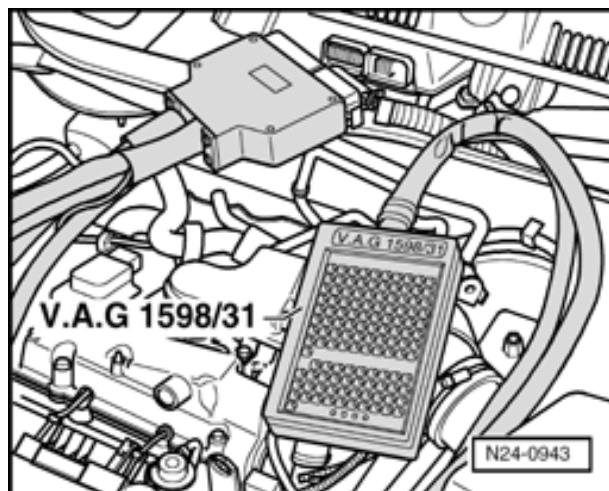
If the LED does not light up:

- Switch ignition off.
- Check wire between connector contact 3 and central electrics for open circuit using wiring diagram:

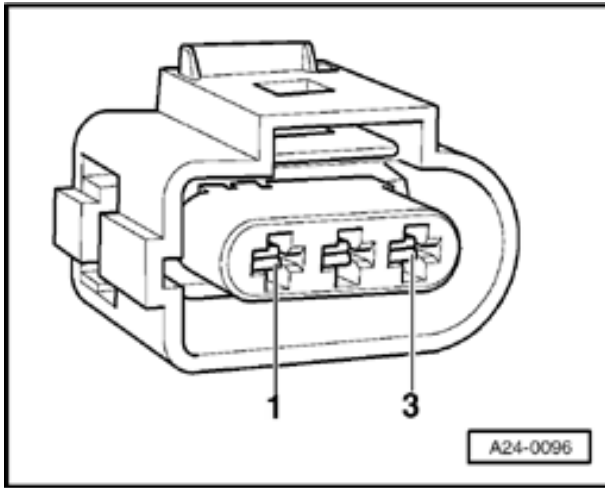
Wire resistance: max. 1.5

Ω

LED lights up (voltage supply OK.):



- Connect test box V.A.G 1598/31 to control module wiring harness. Engine control module remains disconnected.



- Check wiring between test box and 3 pin connector for open circuit using wiring diagram.

Contact 1+socket
80

Contact 2+socket
25

Wire resistance: max. 1.5

Ω

- Additionally check wires for short to one another.

Specification:

$\infty \Omega$

If no wiring malfunction is detected and voltage was present between contacts 3 and Ground:

- Replace Leak Detection Pump (LDP) - V144-.

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- Check DTC memory:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01*

- Read readiness code:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Readiness code*

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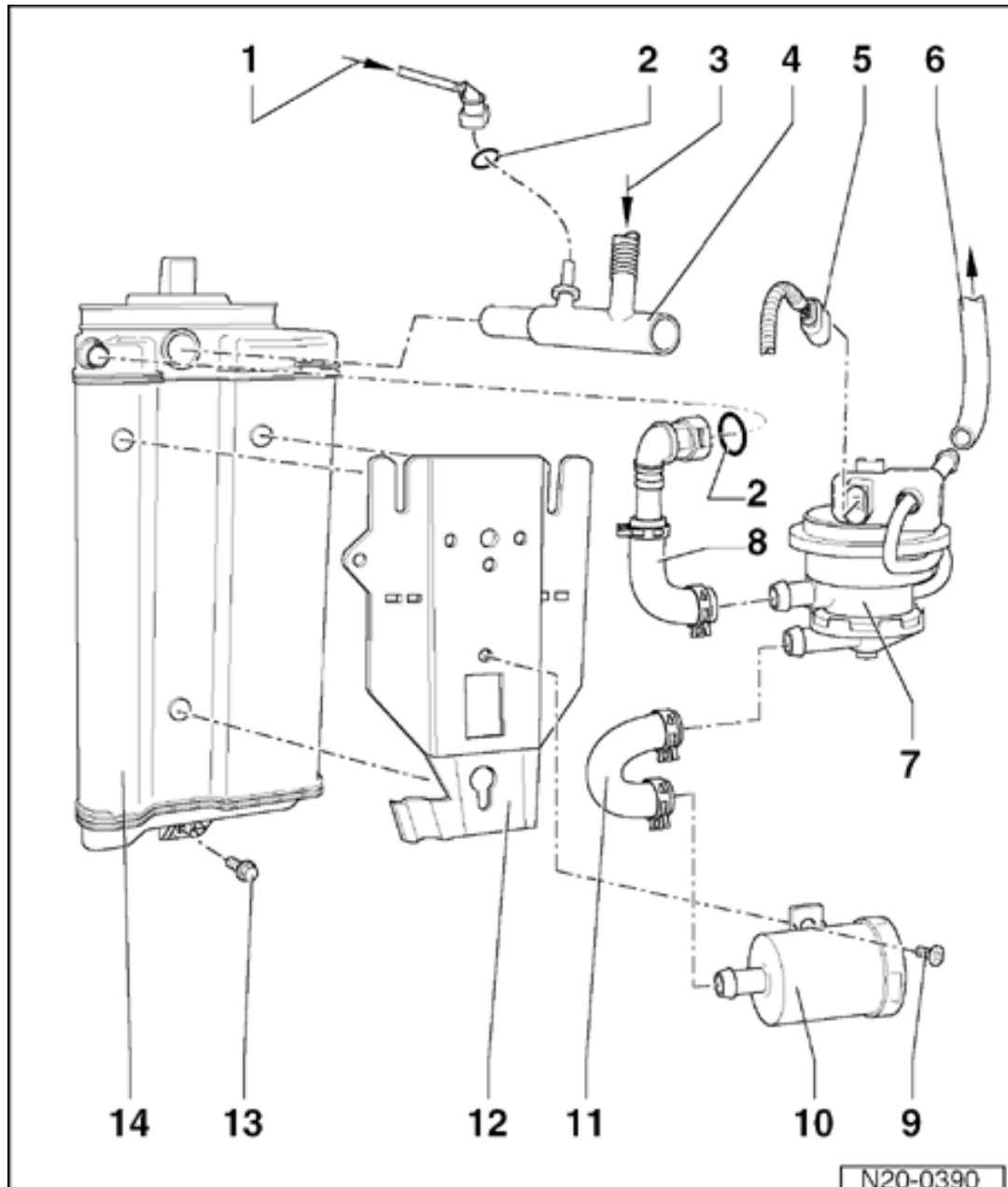
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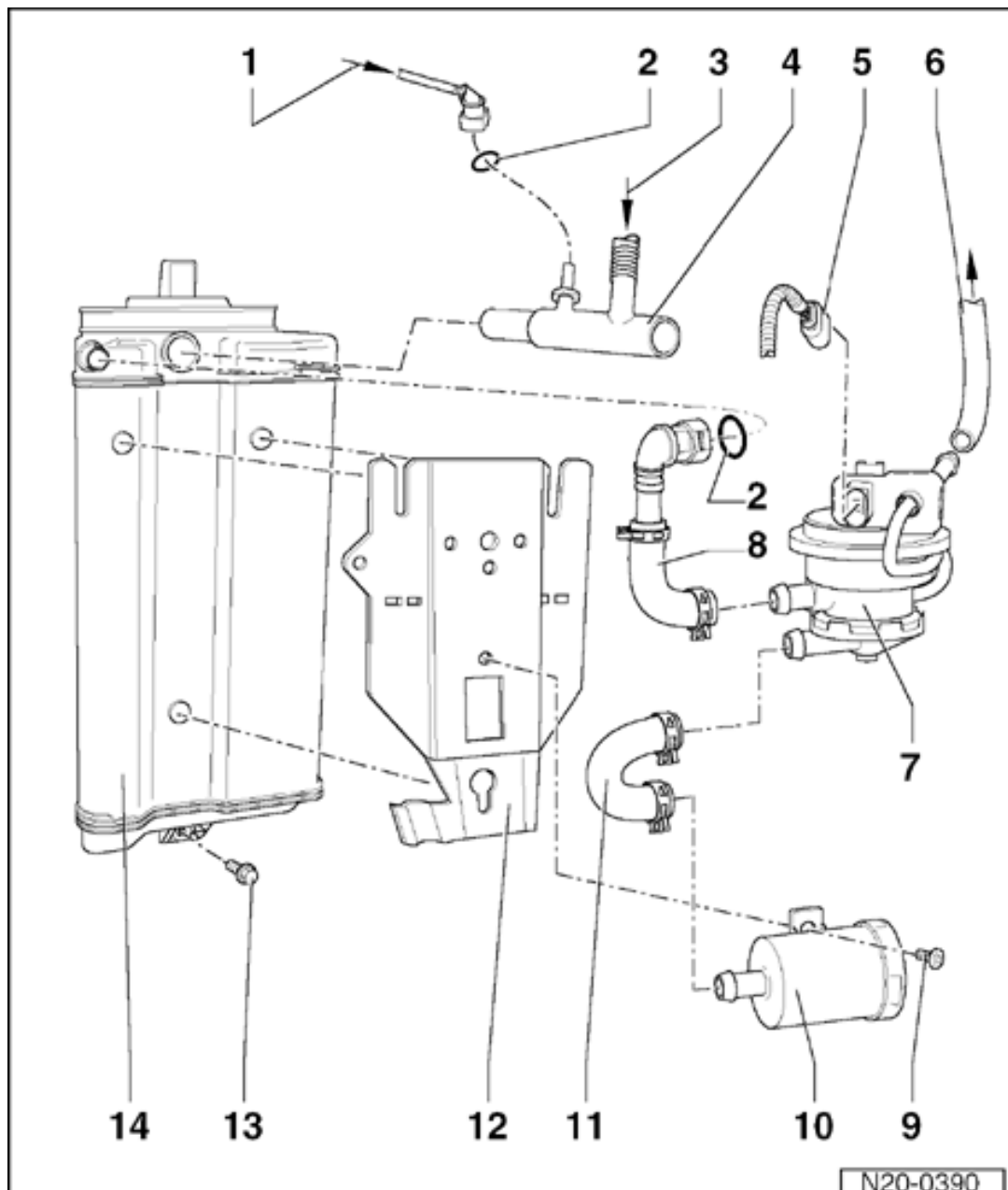
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N20-0390

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Regulator Valve -
N80-*/****



2 - Seal

- ◆ Replace if damaged

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5 - Connector

- ◆ 3 pin

6 - Vacuum pipe

- ◆ for throttle valve control module ⇒ [Page 20-54](#) , item. 5

7 - Leak Detection Pump (LDP) -V144-*/**

- ◆ In right rear wheel well
- ◆ Checking ⇒ [Page 20-66](#)

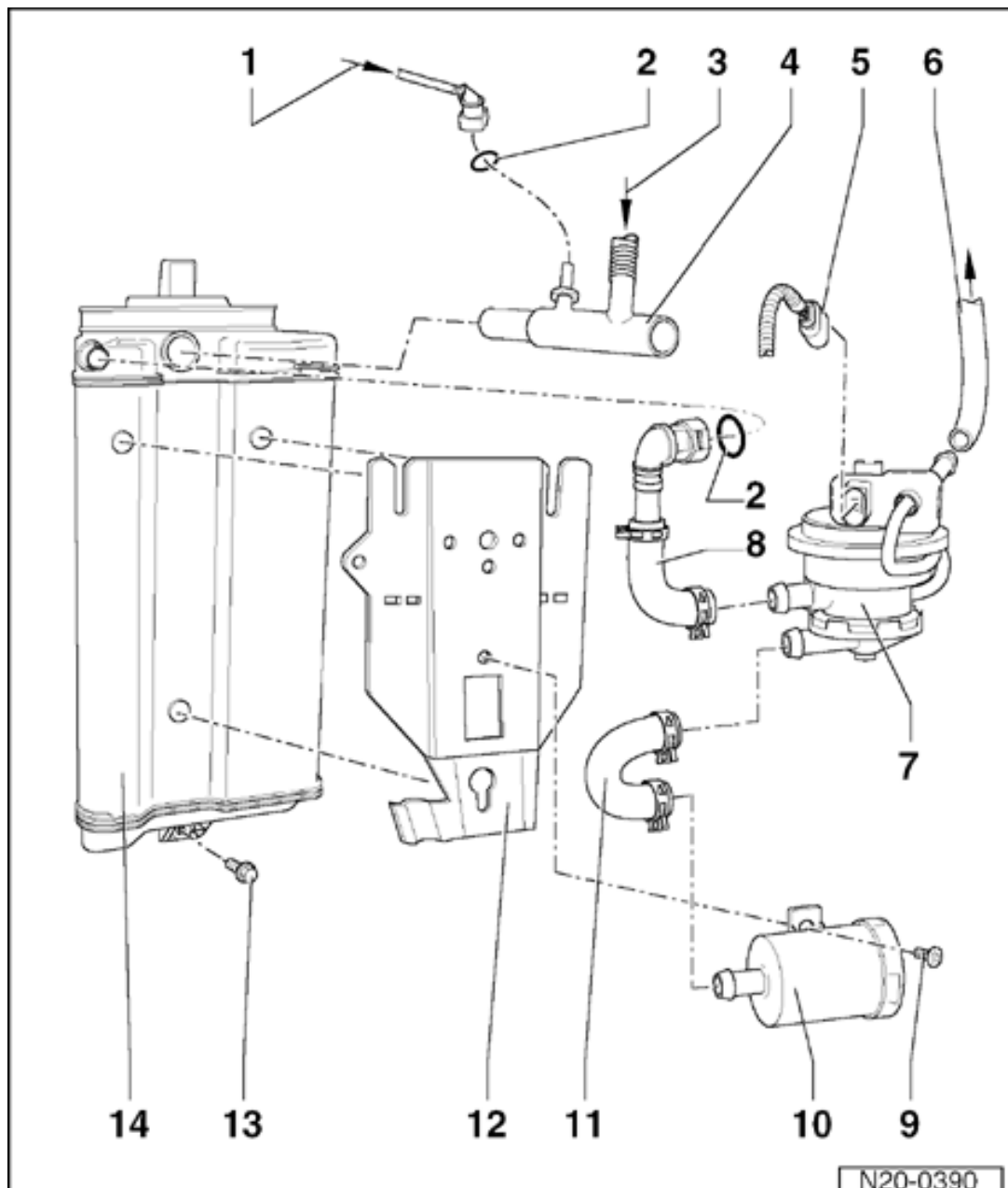
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N20-0390

◆ Pressure
side

9 - 3 Nm

10 - Air cleaner for LDP



11 - Connecting hose

◆ Suction side

12 - Retainer

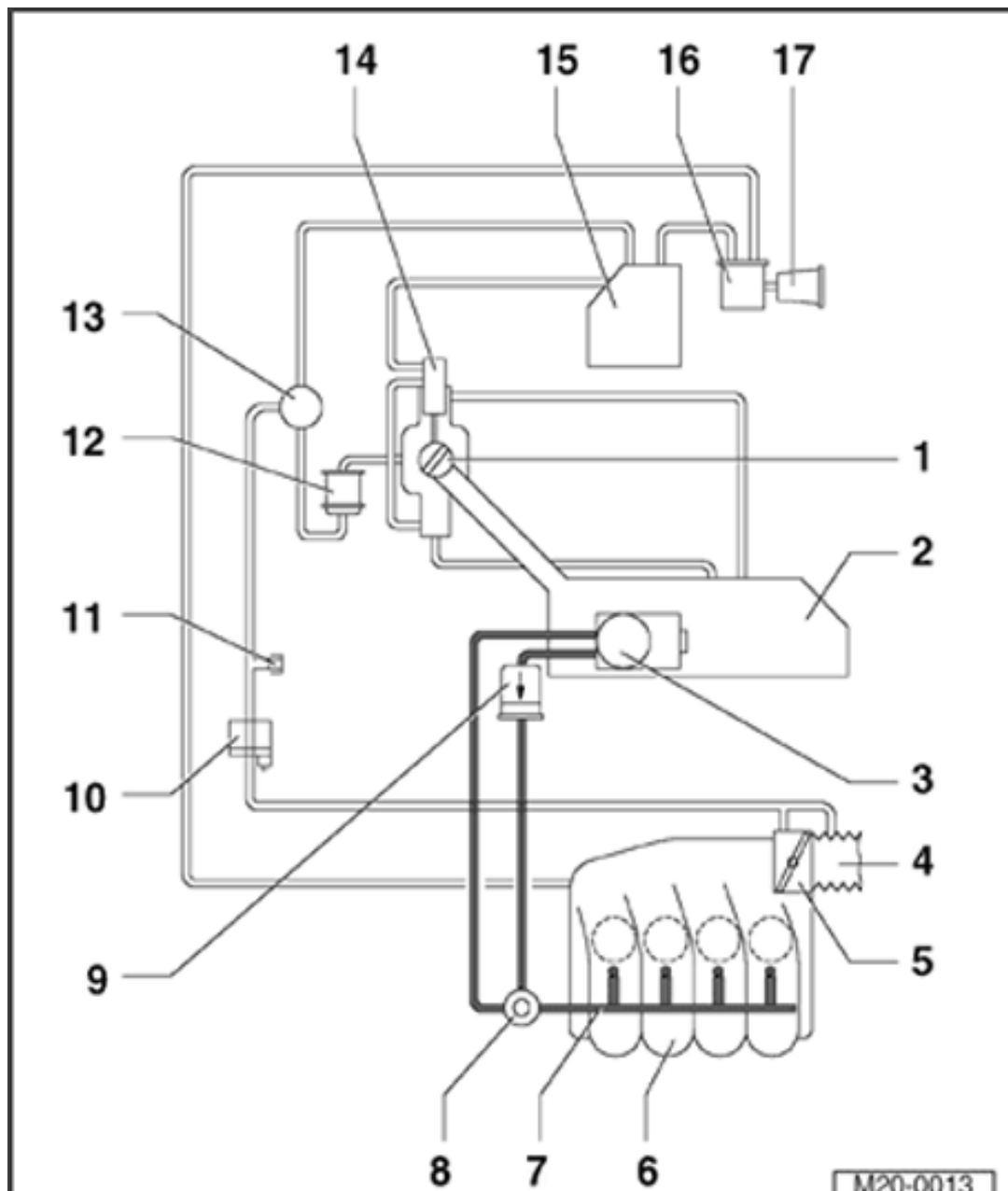
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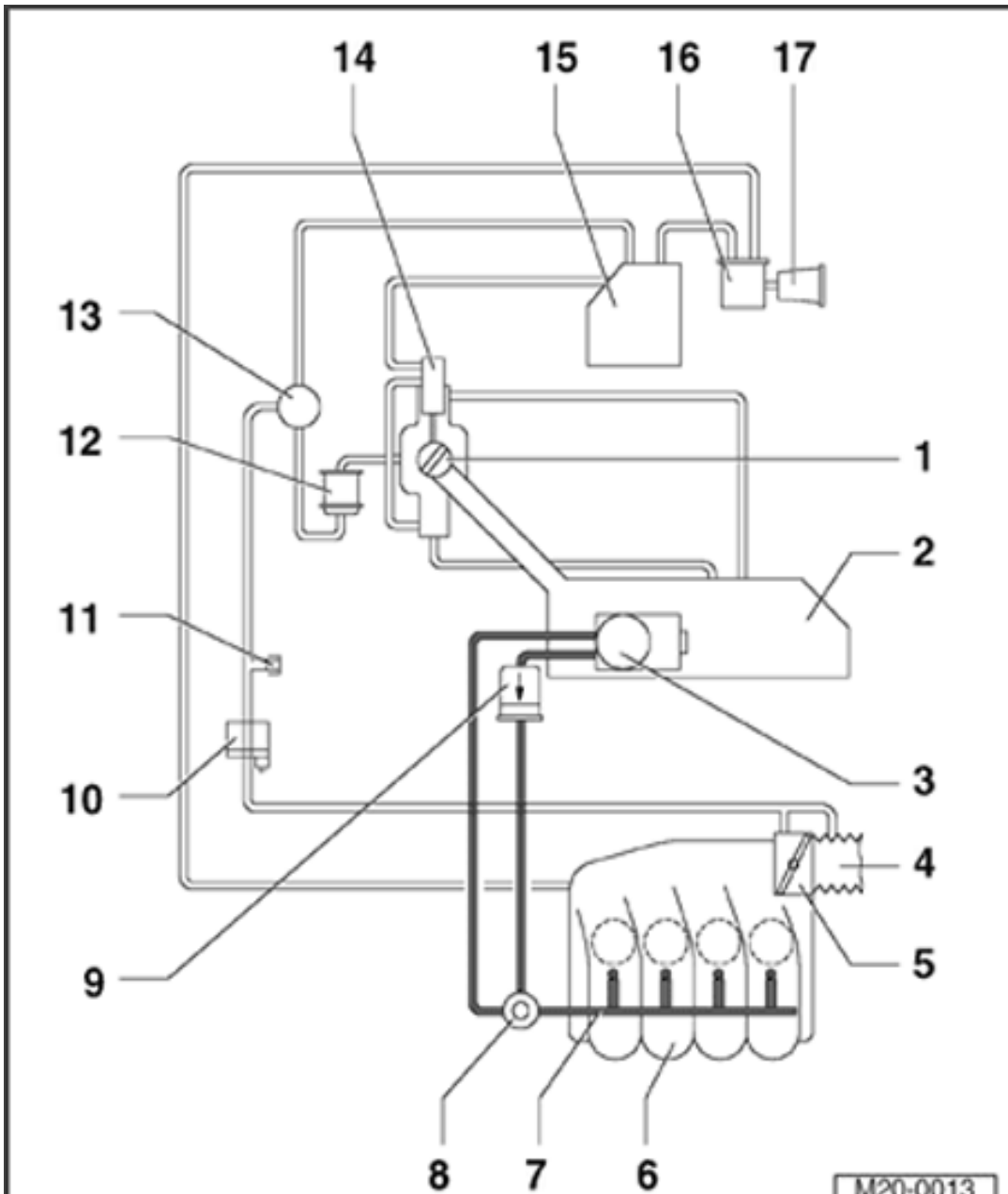
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8 7 6

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◆ Checking function
⇒ [Page 20-56](#)

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◆ In right rear wheel housing under wheel housing liner

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6

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- ◆ Checking
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17 - Air cleaner for LDP

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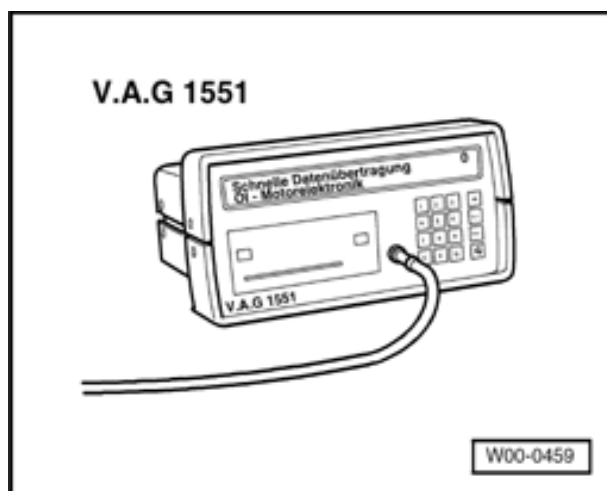
Evaporative Emission (EVAP) canister purge regulator valve -N80-, checking

In a no-current situation the valve is closed.

Checking activation:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Output Diagnostic Test Mode; Performing Output Diagnostic Test Mode*

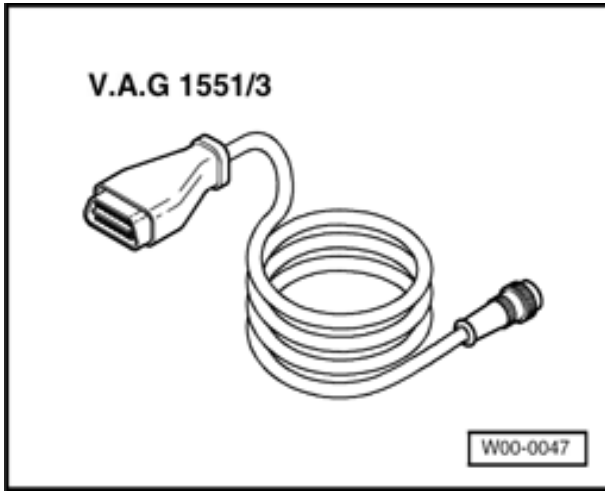
Special tools and equipment



- ◆ V.A.G 1551 Scan Tool

Note:

The vehicle system tester V.A.G 1552 can be used instead of the VAG 1551 Scan Tool, however a print-out is not possible.

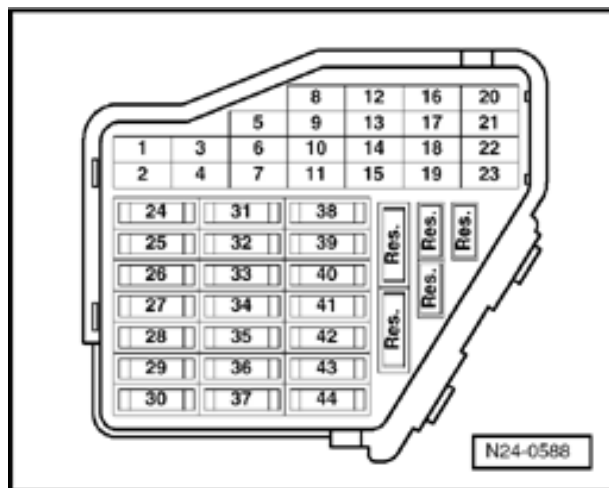


◆ V.A.G 1551/3
Cable



Test conditions

- Coolant temperature must be at least 80 °C,
⇒display group 04, display zone 3.
- Fuse No. 43 must be OK.



Functional check

- Connect VAG 1551 scan tool ((V.A.G 1552). Start engine and select engine control module with "Address word" 01.
⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; On Board Diagnostic (OBD); Connecting VAG 1551 scan tool and selecting engine electronics control module*

Rapid data transfer

HELP

Select function XX

Indicated on display

- Press keys 0 and 8 for "Read measured value block" function and confirm entry with Q key.

Read measured value block

Input display group number XXX



Indicated on display

- Press keys 0, 7 and 0 for "Display group number 70" and confirm entry with Q key.

Read measured value block 70 →

1 2 3 4



Indicated on display: (1 to 4 = Display zones)

20-58



- Press key 4 for the "Basic setting" function ("Tank venting valve diagnosis" will be initiated)

Note:

The engine must not be loaded during this diagnosis because the diagnosis will be interrupted and will not be started again until the engine is revved-up.

System in basic setting 70 →

1 2 3 4



Indicated on display: (1 to 4 = Display zones)

When the diagnosis is initiated by the engine control module, the display in display zone 4 jumps from "Test OFF" to "Test ON"

- Run engine at idling speed until specification "TBV OK" is displayed in display zone 4.

Note:

TBV stands for tank breather valve (Evaporative Emission (EVAP) canister purge regulator valve).

If "TBV not OK" appears in display zone 4:

- Initiate Output Diagnostic Test Mode and activate Evaporative Emission (EVAP) canister purge regulator valve -N80-:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Output Diagnostic Test Mode; Performing Output Diagnostic Test Mode*

20-59



- Check DTC memory:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01*

- Read readiness code:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Readiness code; Reading out readiness code*

- Generate readiness code again if DTC memory has been erased or engine control module separated from permanent positive.

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Readiness code*

If the specification "TBV OK" is obtained:

- Press
→ key.

Rapid data transfer

HELP

Select function XX



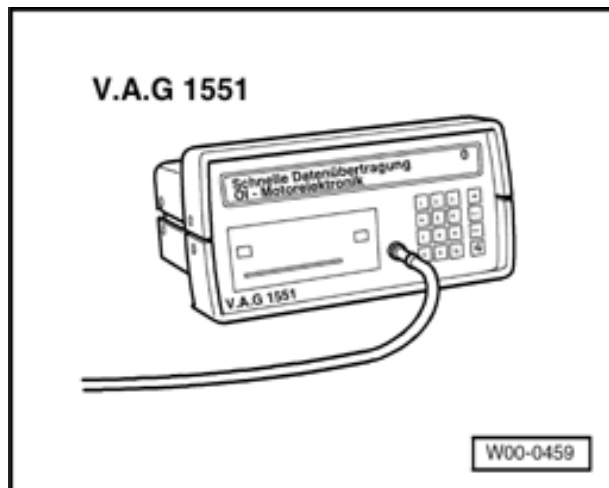
Indicated on display

- Press keys 0 and 6 for function "End output" and confirm entry with Q key.
- Switch ignition off.



Evaporative emissions system, checking for leaks

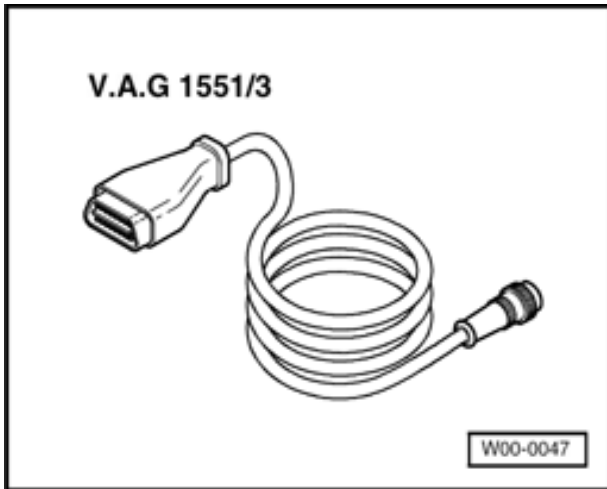
Special tools and equipment



- ◆ V.A.G 1551 Scan Tool

Note:

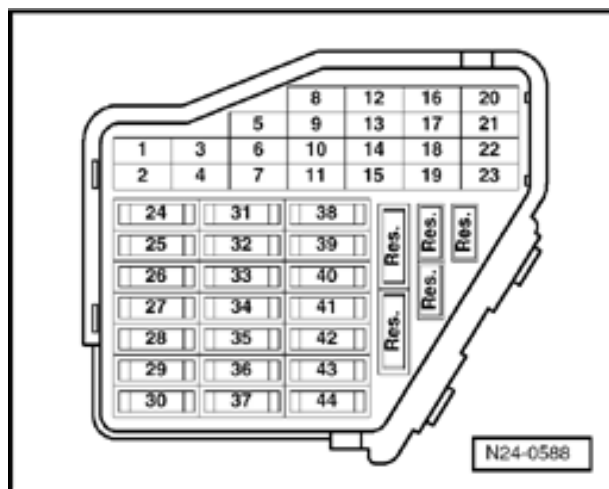
The vehicle system tester V.A.G 1552 can be used instead of the VAG 1551 scan tool, however a print-out is not possible.



◆ V.A.G 1551/3
Cable



Test conditions



- Fuse No. 43 must be OK.
- No DTC stored in DTC memory

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01*

- All electrical consumers, e.g. lights and rear window defroster must be switched off
- If the vehicle is equipped with an air conditioner, this must be switched off.
- Throttle valve angle less than 10 ° % display group 03, display zone 3
- Coolant temperature less than 80 ° C ⇒ display group 04, display zone 3
- Intake air temperature less than 60 ° C ⇒ display group 04, display zone 4



Functional check

- Connect VAG 1551 Scan Tool (or V.A.G 1552). Start engine and select engine control module with the "Address word" 01.

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; On Board Diagnostic (OBD); Connecting VAG 1551 scan tool and selecting engine electronics control module*

Rapid data transfer **HELP**

Select function **XX**



Indicated on display

- Press keys 0 and 8 for function "Read measured value block" and confirm entry with Q key.

Read measured value block

Input display group number **XXX**



Indicated on display

- Press keys 0, 7 and 1 for "Display group number 71" and confirm entry with Q key.

Read measured value block 71 →

Reed open

Test OFF



Indicated on display

- Press key 4 for "Introduction of basic setting" function.

System in basic setting 71 →
Reed open **Test ON**

← Indicated on display

System in basic setting 71 →
Reed closed **Test ON**

← Indicated on display

20-63



The test of the evaporative emissions system will be initiated. First of all the function of the Reed contact (in the LDP -V144-) will be checked by the control module.

System in basic setting 71 →

Reed closed Syst. Test Test ON

← Indicated on display

After approx. 10 seconds the LDP -V144- will be activated and build-up pressure in the fuel system.

System in basic setting 71 →

Reed open Syst. Test Test ON

← Indicated on display

The test will be initiated after approx. 50 seconds (when there is not sufficient pressure available in the fuel system can last up to 120 seconds).

System in basic setting 71 →

Reed open Check Test ON

← Indicated on display

The LDP -V144- switches off and the control module measures the time until the Reed contact closes.

System in basic setting 71



Reed closed Check.END Syst. OK



Indicated on display

- Check display in display zones 3 and 4:

Specified value display field 3: Meas.
END

Specified value display field 4: Syst.
OK

If the specifications are not attained:

- Checking for proper seal ⇒ [Page 20-64](#)

20-64



If the specifications are obtained:

- Press
→ key.
- Press keys 0 and 6 for function "End output" and confirm entry with Q key.
- Switch off ignition.

Checking for leaks

If a small or large leak is detected during the check of the evaporative emissions system, proceed as follows.

- Switch ignition off.
- Check whether sealing cap of fuel tank is completely closed or seal is leaking, replace if necessary.

- Repeat functional check.

Is the malfunction still present:

- Fold rear seat bench forward.
- Remove cover below seat bench.
- Check locking ring for fuel pump for tightness or if seal is faulty and replace if necessary. Tighten locking ring using 3217 special tool. Check supply and return lines of at fuel pump for proper seal.

20-65



- Repeat functional check.

Is the malfunction still present:

- Remove rear right wheel housing liner:

⇒ [Repair Manual, Body Exterior, Repair Group 66; Removing and installing wheel housing liner](#)

- Check pressure hose between LDP and EVAP canister for proper seal ⇒ [Page 20-52](#) , item. 8 ; replace if necessary.
- Check wires and wire connections between EVAP canister and tank flap unit or tank ventilation valve for proper seal ⇒ [Page 20-54](#) , EVAP canister system setup overview
- Repeat functional check.

Is the malfunction still present:

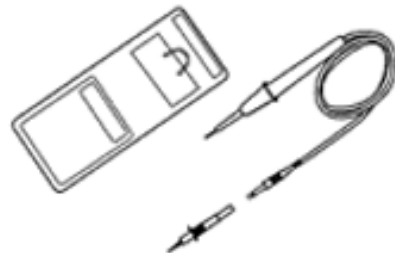
- Remove EVAP canister and check for tears and leaks, replace if necessary.
- Repeat functional check.



V.A.G 1526 A



V.A.G 1527 B



V.A.G 1594 A



V.A.G 1598/31



Leak Detection Pump (LDP). checking

Special tools and equipment

- ◆ V.A.G 1526 A Hand multimeter
- ◆ VAG 1527B voltage tester
- ◆ V.A.G 1594 A Adapter set
- ◆ V.A.G 1598/31 Test box
- ◆ Wiring diagram

Volkswagen Golf, GTI, Jetta 1999-2004, Jetta Wagon 2001-2004 - 1.8 Liter 4-Cyl. 5V Turbo Engine Mechanical, Engine Code(s): AWD, AWW, AWP

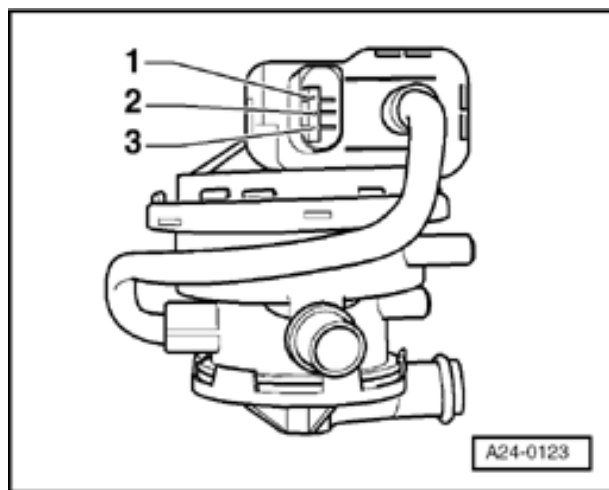
W20-0039



Electrically checking LDP

- Remove rear right wheel housing liner:

⇒ [Repair Manual, Body Exterior, Repair Group 66; Removing and installing wheel housing liner](#)



- Pull 3 pin connector off LDP - V144-.
- Connect hand multimeter V.A.G 1526 A to measure resistance between contacts 1 and 3 of LDP -V144-.
Specification: 640 . . .720
 Ω
- Connect hand multimeter V.A.G 1526 to measure resistance between contacts 2 and 3 of LDP -V144-.
Specification: 12.5...19.5
 Ω

If the specifications are not attained:

- Replace Leak Detection Pump (LDP) - V144-.

- Check DTC
memory:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel
Injection & Ignition, Repair Group 01*

- Read readiness
code:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel
Injection & Ignition, Repair Group 01; Readiness code*

20-68



- Generate readiness code again if DTC memory has been erased or engine control module separated from permanent positive.

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Readiness code*

Checking voltage supply

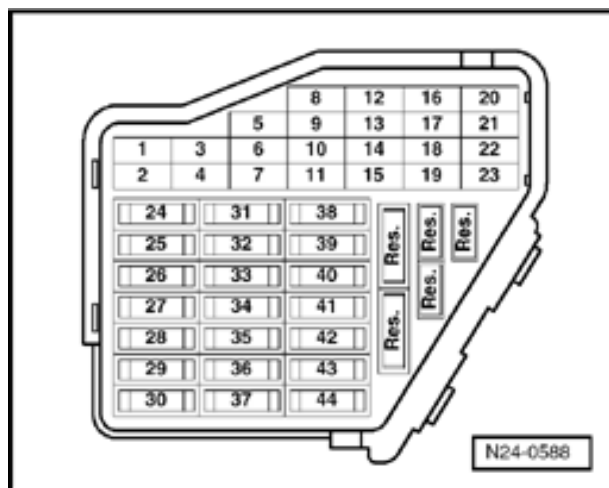
Test conditions

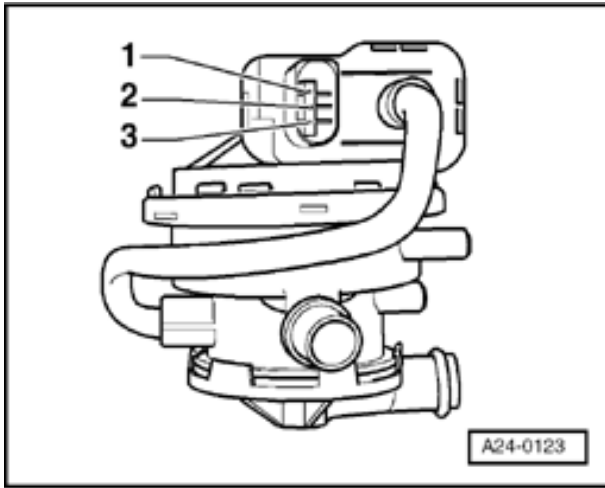
- Fuse No. 43 must be OK.
- The battery voltage must be at least 11.5 V.

Test sequence

- Remove right rear wheel housing liner:

⇒ [*Repair Manual, Body Exterior, Repair Group 66; Removing and installing wheel housing liner*](#)





A

- Disconnect 3 pin connector of LDP - V144-.
- Connect VAG 1527B voltage tester between connector contact 3 (positive) and engine Ground.
- Start engine and run at idling speed:
LED must light up.

20-69



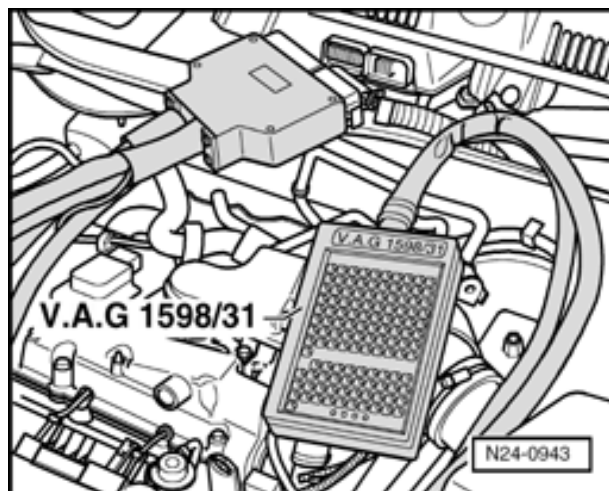
If the LED does not light up:

- Switch ignition off.
- Check wire between connector contact 3 and central electrics for open circuit using wiring diagram:

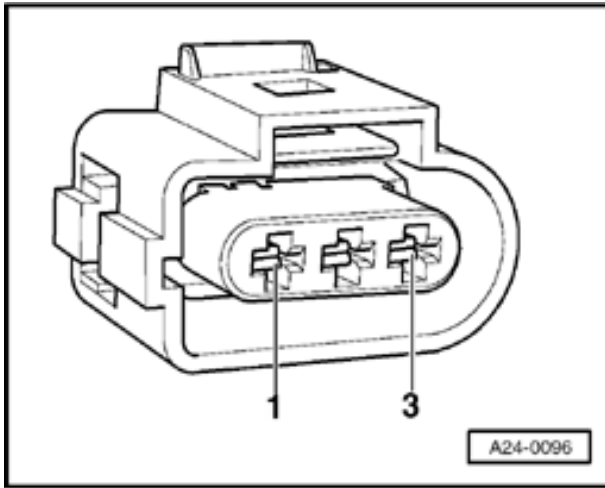
Wire resistance: max. 1.5

Ω

LED lights up (voltage supply OK.):



- Connect test box V.A.G 1598/31 to control module wiring harness. Engine control module remains disconnected.



- Check wiring between test box and 3 pin connector for open circuit using wiring diagram.

Contact 1+socket
80

Contact 2+socket
25

Wire resistance: max. 1.5

Ω

- Additionally check wires for short to one another.

Specification:

$\infty \Omega$

If no wiring malfunction is detected and voltage was present between contacts 3 and Ground:

- Replace Leak Detection Pump (LDP) - V144-.

20-70



- Check DTC memory:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01*

- Read readiness code:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Readiness code*

- Generate readiness code again if DTC memory has been erased or engine control module separated from permanent positive.

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Repair Group 01; Readiness code*



Evaporative emissions system

Function description of EVAP canister system

Depending upon the air pressure and ambient temperature, fuel vapor will form above the level of fuel in the tank.

The Evaporative Emissions system prevents these HC emissions escaping to the atmosphere.

In limited quantities, fuel vapors pass through a gravity valve (which closes at an angle of 45°) located at the highest point in the tank and through a pressure retention valve into the evaporative emissions (EVAP) canister.

The EVAP canister stores these vapors like a sponge.

Vehicle

System

Repair Group

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When the oxygen sensor control is active when driving (engine warm), the EVAP canister purge regulator valve -N80-, is activated (pulsed) from the engine control module depending upon load and engine speed. The opening period is dependent on the input signals.

Intake manifold vacuum draws fresh air through the vent opening on the underside of the EVAP canister during the purging procedure (regenerating the activated charcoal in the canister). The fuel vapors stored in the activated charcoal and fresh air are pulse-fed for combustion.