

Output Diagnostic Test Mode (DTM) (function 03)

Notes:

- ◆ *Output Diagnostic Test Mode (DTM) is only possible with engine idle and ignition switched on.*
- ◆ *The electric Fuel Pump (FP) runs during all of output Diagnostic Test Mode (DTM).*
- ◆ *In output Diagnostic Test Mode (DTM), individual actuators (with the exception of the fuel injectors) are activated for approximately 1 minute unless the next actuator is selected earlier by pressing the ► button.*
- ◆ *Actuators are checked either acoustically or by touch.*
- ◆ *Output Diagnostic Test Mode (DTM) is aborted if engine is started or an RPM signal is recognized.*
- ◆ *Before re-initiating output Diagnostic Test Mode (DTM), engine must be started and the ignition must be switched off and on again.*

Output Diagnostic Test Mode (DTM) activates the following components in the specified sequence:

Activation sequence	
1	Evaporative Emission (EVAP) canister purge regulator valve -N80-
2	Secondary Air Injection (AIR) solenoid valve -N112-
3	Secondary Air Injection (AIR) pump relay - J299-
4	Wastegate bypass regulator valve -N75-
5	Camshaft adjustment
6	Leak Detection Pump (LDP) tank ventilation system
7	Recirculating valve for turbocharger -N249-
8	Cylinder 1 fuel injector -N30-
9	Cylinder 3 fuel injector -N32-
10	Cylinder 4 fuel injector -N33-
11	Cylinder 2 fuel injector -N31-
12	Brake system vacuum pump ¹⁾

1) Only vehicles with automatic transmission

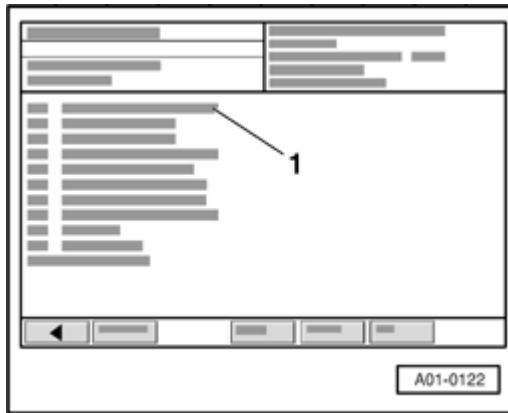
Test requirement:

- Fuses for engine electronics OK

⇒ *Electrical Wiring Diagrams, Troubleshooting & Component Locations*

Test sequence

- Connect VAS5051 tester ⇒ [Page 01-7](#) and select vehicle system "01 - Engine electronics". Ignition must remain switched on for this.



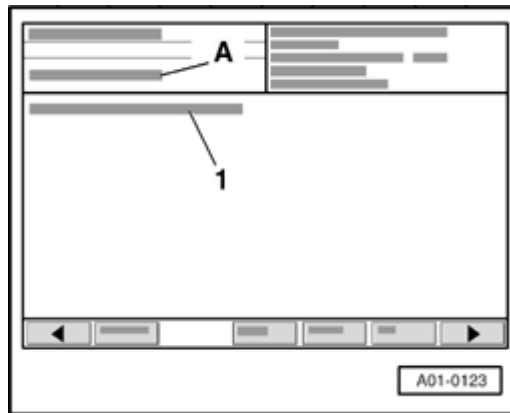
Display on VAS5051:

- In selection -1-, click on the diagnostic function "03 - On Board Diagnostic (OBD)".

Activating the EVAP canister purge regulator valve (tank ventilation valve)

Note:

The Fuel Pump (FP) relay must trigger, the Fuel Pump (FP) must run, flowing noise at fuel pressure regulator is clearly audible. If Fuel Pump (FP) does not run, check activation ⇒ [Page 24-55](#).



Display on VAS5051:

A - 1. Actuator in test

1 - EVAP canister purge regulator valve -N80-

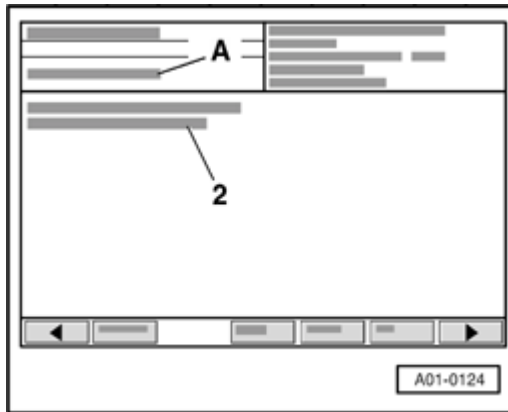
- ◆ This valve is activated for approx. 1 minute (clicks), unless ► button is pressed first to switch to the next actuator.

If valve is not activated (does not click):

- Check Evaporative Emission (EVAP) canister purge regulator valve - N80- ⇒ [Page 24-114](#).

Activating the Secondary Air Injection (AIR) solenoid valve

- Press ► button



◀ Display on VAS5051:

A - 2. Actuator in test

- ◆ This valve is activated for approx. 1 minute (clicks), unless ► button is pressed first to switch to the next actuator.

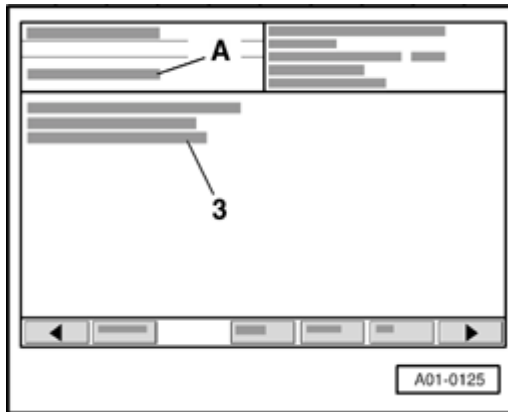
If valve is not activated (does not click):

- Check Secondary Air Injection (AIR) solenoid valve -N112-:

⇒ [Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Engine Mechanical, Engine Code\(s\): AWM, Repair Group 26; Checking Secondary Air Injection \(AIR\) system](#)

Activating the Secondary Air Injection (AIR) pump relay

- Press ► button



◀ Display on VAS5051:

A - 3. Actuator in test

3 - Secondary Air Injection (AIR) pump relay -J299-

- ◆ The Secondary Air Injection (AIR) pump relay -J299- (in 3-socket relay carrier in the E-box, at left in the plenum chamber , position 2) switches the Secondary Air Injection (AIR) pump motor -V101- on and off in intervals for approx. 1 minute unless the next actuator is selected first by pressing the ► button.

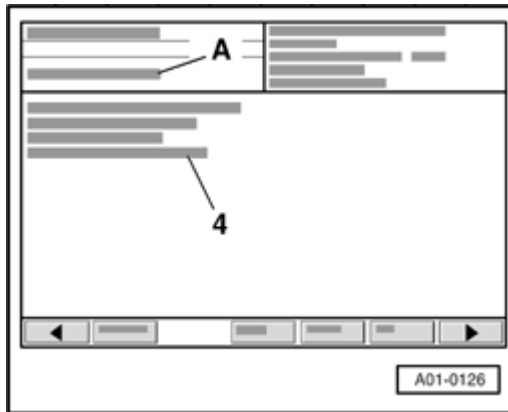
If the Secondary Air Injection (AIR) pump motor does not start up in intervals:

- Check Secondary Air Injection (AIR) pump relay -J299-:

⇒ [Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Engine Mechanical, Engine Code\(s\): AWM, Repair Group 26; Checking Secondary Air Injection \(AIR\) system](#)

Activating wastegate bypass regulator valve - N75-

- Press ► button



◀ Display on VAS5051:

A - 4. Actuator in test

4 - Wastegate bypass regulator valve -N75-

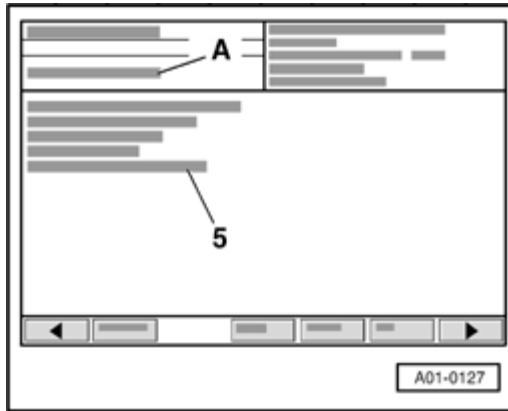
- ◆ This valve is activated for approx. 1 minute (clicks), unless ► button is pressed first to switch to the next actuator.

If valve is not activated (does not click):

⇒ [Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Engine Mechanical, Engine Code\(s\): AWM, Repair Group 21, Charge air system with turbocharger](#)

Activating camshaft adjustment valve

- Press ► button



◀ Display on VAS5051:

A - 5. Actuator in test

5 - Camshaft adjustment

- ◆ This valve is activated for approx. 1 minute (clicks), unless ► button is pressed first to switch to the next actuator.

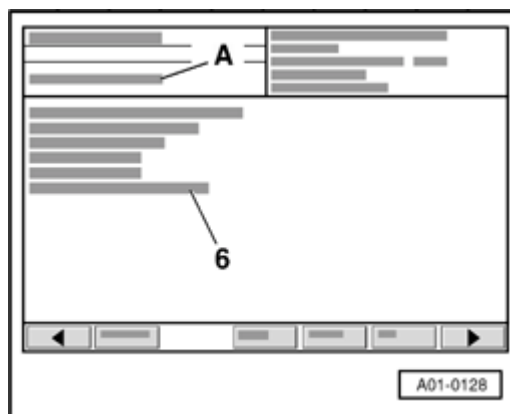
If valve is not activated (does not click):

- Check camshaft adjustment valve:

⇒ [Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Engine Mechanical, Engine Code\(s\): AWM, Repair Group 15; Checking camshaft adjustment](#)

Activating Leak Detection Pump (diagnostic pump for tank ventilation system)

- Press ► button



◀ Display on VAS5051:

A - 6. Actuator in test

6 - Leak Detection Pump (LDP) tank ventilation system

- ◆ Th change-over valve in the LDP is activated for approximately 1 minute (clicks), unless ► button is pressed first to switch to the next actuator.

Note:

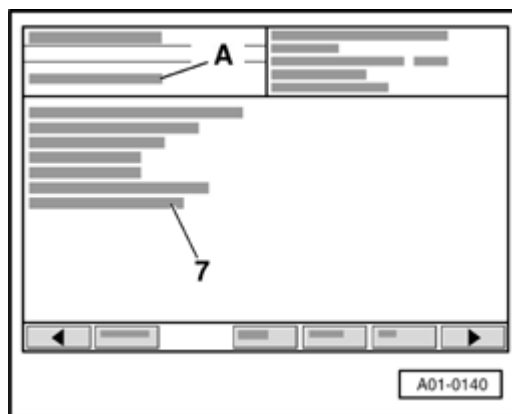
The click can be heard by listening near the rear left wheelhousing.

If valve is not activated (does not click):

⇒ [Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Engine Mechanical, Engine Code\(s\): AWM, Repair Group 20; components of the EVAP canister system, servicing; Leak Detection Pump \(LDP\) -V144-, checking.](#)

Turbocharger boost pressure recirculation valve, activating

- Press ► button



◀ Display on VAS5051:

A - 7. Actuator in test

7 - Recirculating valve for turbocharger -N249-

- ◆ This valve is activated for approx. 1 minute (clicks), unless ► button is pressed first to switch to the next actuator.

If valve is not activated (does not click):

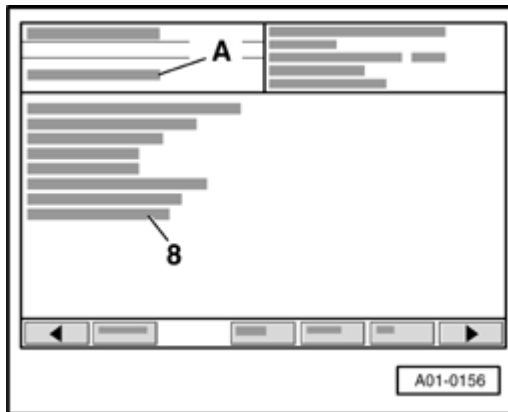
⇒ [Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Engine Mechanical, Engine Code\(s\): AWM, Repair Group 21, Charge air system with turbocharger](#)

Activating fuel injectors

Note:

Fuel injectors are activated according to ignition sequence: Cyl. 1, Cyl. 3, Cyl 4, Cyl. 2.

- Press ► button



◀ Display on VAS5051:

A - 8. Actuator in test

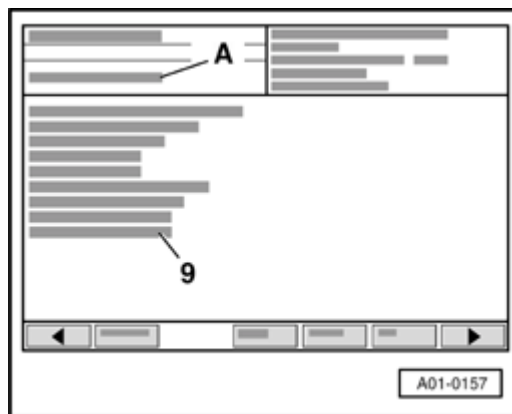
8 - Cylinder 1 fuel injector -N30-

- Press ► button

◆ Fuel injector must click 5 times after ► button is pressed.

If injector does not click:

- Check fuel injectors ⇒ [Page 24-37](#) .



- Press ► button

⏪ Display on VAS5051:

A - 9. Actuator in test

9 - Cylinder 3 Fuel Injector -N32-

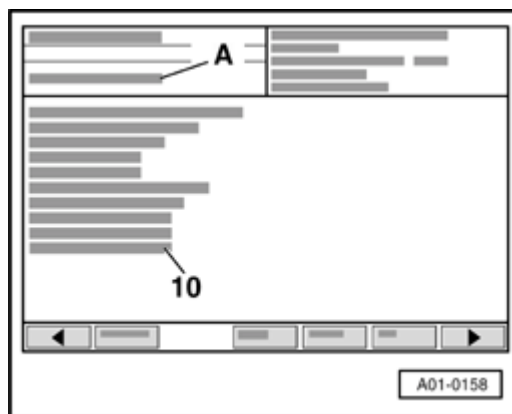
- Press ► button

◆ Fuel injector must click 5 times after ► button is pressed.

If injector does not click:

- Check fuel injectors ⇒ [Page 24-37](#) .

- Press ► button



⏪ Display on VAS5051:

A - 10. Actuator in test

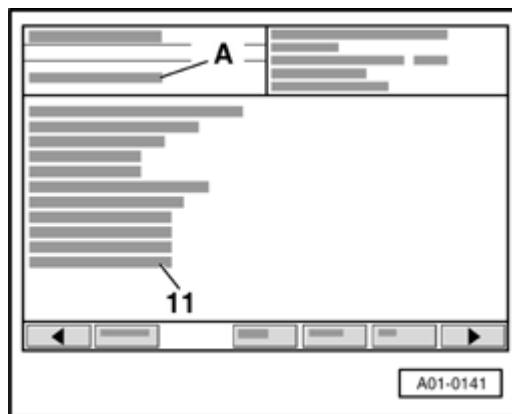
10 - Cylinder 4 Fuel Injector -N33-

- Press ► button

◆ Fuel injector must click 5 times after ► button is pressed.

If injector does not click:

- Check fuel injectors ⇒ [Page 24-37](#) .



- Press ► button

◀ Display on VAS5051:

A - 11. Actuator in test

11 - Cylinder 2 Fuel Injector -N31-

- Press ► button

◆ Fuel injector must click 5 times after ► button is pressed.

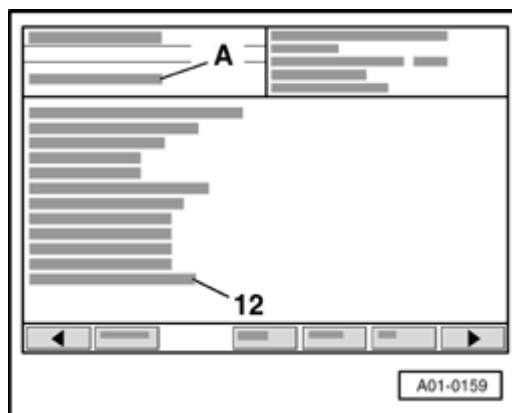
If injector does not click:

- Check fuel injectors ⇒ [Page 24-37](#) .

Activate brake system vacuum pump¹⁾

1) Only vehicles with automatic transmission

- Press ► button



◀ Display on VAS5051:

A - 12. Actuator in test

12 - Brake system vacuum pump

- ◆ The vacuum pump for brake booster on right at firewall must start up in intervals for approx. 1 minute, unless the ► button is pressed first to end On Board Diagnostic (OBD).

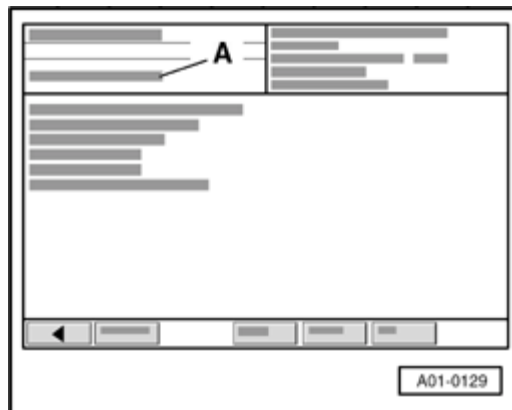
If the vacuum pump for brake booster does not start up in intervals:

- Check vacuum pump for brake booster:

⇒ [Repair Manual, Brake System, Repair Group 47](#)

End Output Diagnostic Test Mode (DTM)

- Press ► button



◀ Display on VAS5051:

A - Actuator test has ended

- End function "03 - output Diagnostic Test Mode (DTM)" by pressing ◀ button.

Note:

Before re-initiating output Diagnostic Test Mode (DTM), engine must be started and the ignition must be switched off and on again.