
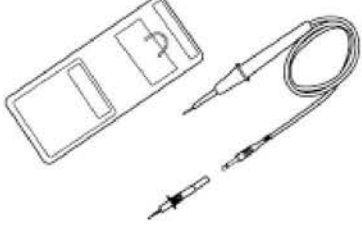
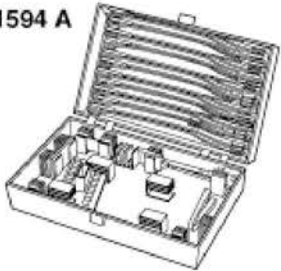



Ignition Coils with Power Output Stage, Checking

| | |
|---|--|
| <p>V.A.G 1526 A</p>  | <p>V.A.G 1527 B</p>  |
| <p>V.A.G 1594 A</p>  | <p>V.A.G 1598/31</p>  |
| <p style="text-align: right;">G24-0022</p> | |

Special tools and workshop equipment required

- ◆ multimeter -VAG1526A-
- ◆ Voltage Tester -VAG1527B-
- ◆ connector test kit -VAG1594A-
- ◆ test box -VAG1598/31-



Note

The ignition coil and power output stage are combined in one complete component.

Test requirement:

- Fuses for engine electronics OK → [Wiring diagrams](#), [Troubleshooting & Component locations](#)

Procedure

- Start engine and let run at idle.

Recognize a non-functional or misfiring cylinder as follows:

- Disconnect connectors from fuel injectors in sequence with engine running and observe engine operation.

or

- Compare spark plugs of all cylinders to each other. Check electrodes for carbon fouling.

If faulty cylinder is recognized:

- Switch spark plug from faulty cylinder with one from another cylinder.

If malfunction follows the spark plug:

- Replace spark plug.

If malfunction remains at original cylinder:

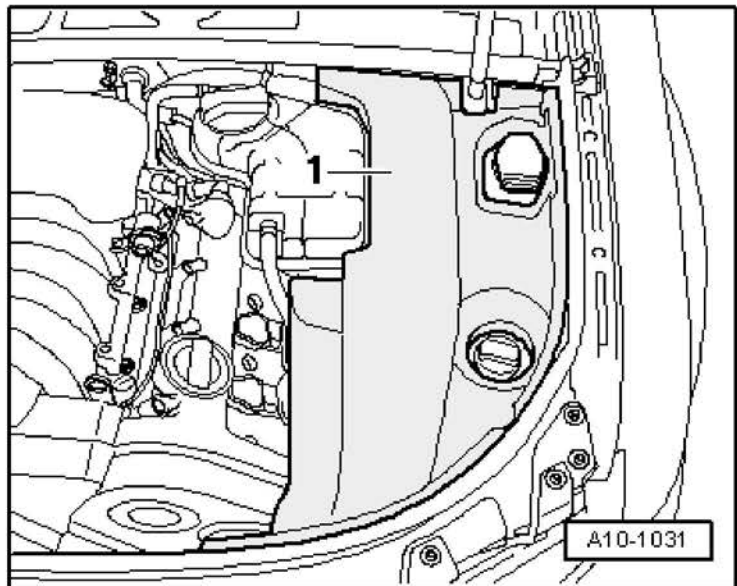
- Switch ignition coil from faulty cylinder with one from another cylinder.

If malfunction follows the ignition coil:

- Replace ignition coil.

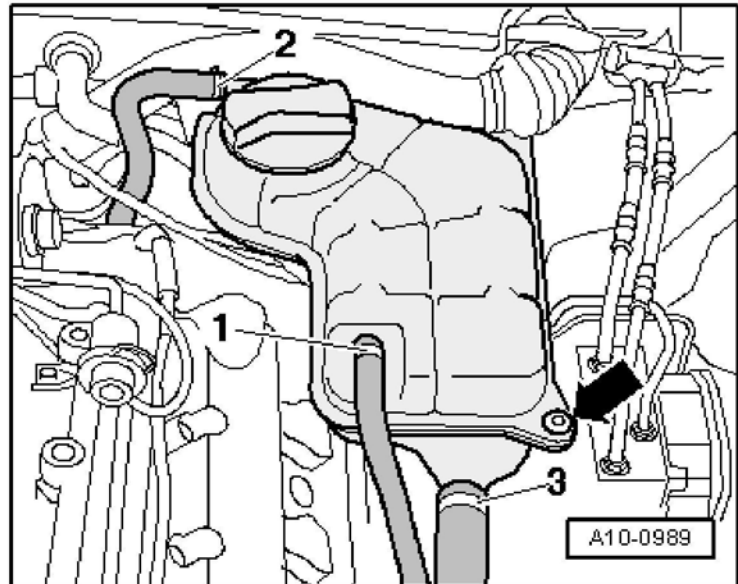
Checking Ground (GND) connections

- Remove cover -1- in engine compartment (left side).

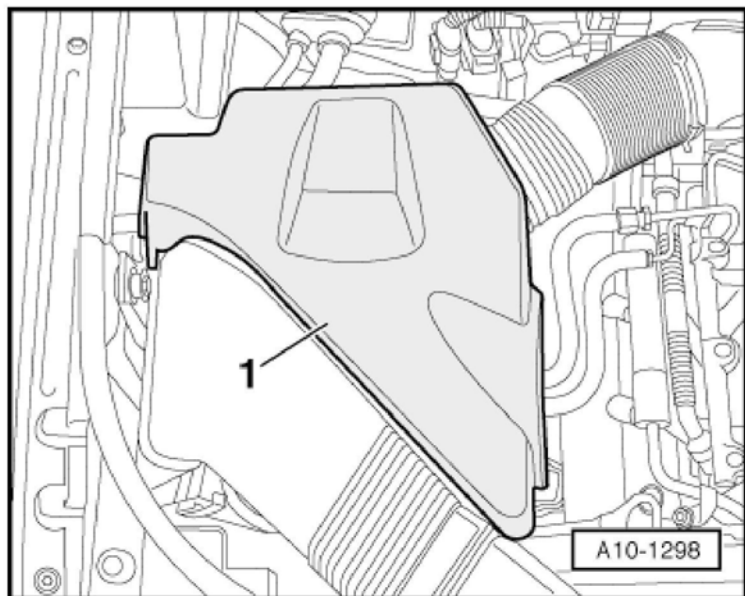


- Remove coolant reservoir (arrow)
- Disconnect electrical wire from Engine Coolant Level (ECL) Warning Switch -F66- at bottom of reservoir.

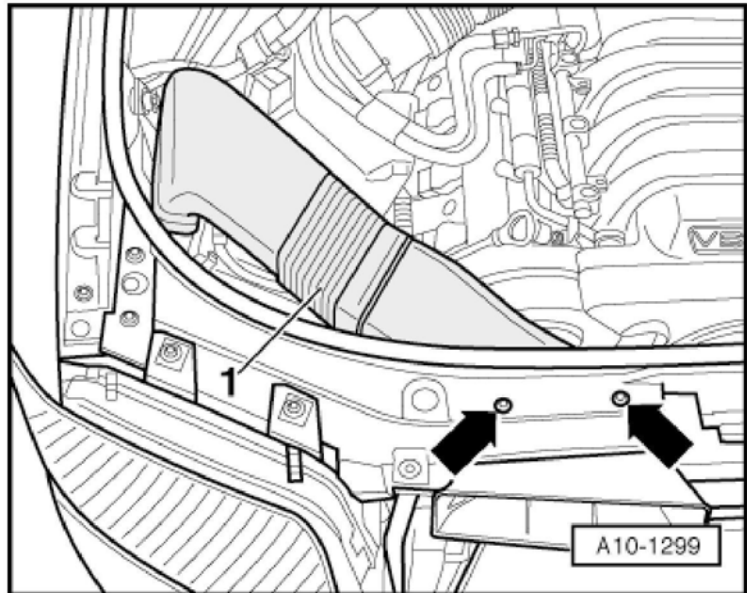
- Lay aside coolant reservoir with connected coolant hoses -1- to -3-.



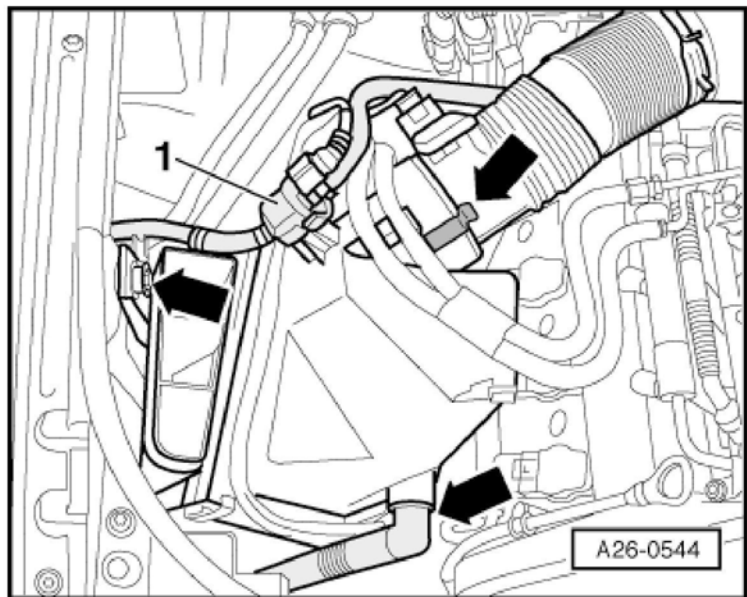
- Remove cover -1- in engine compartment (right side).



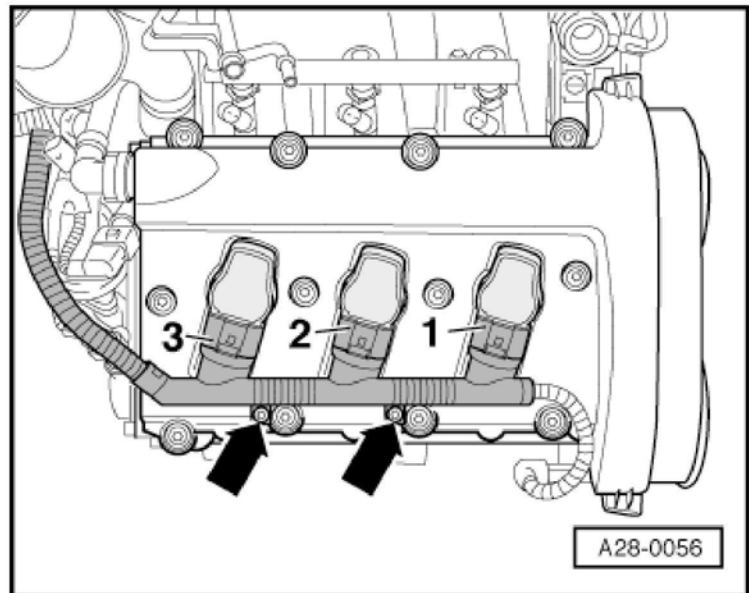
- Remove bolts (arrows).
- Remove air guide -1-.



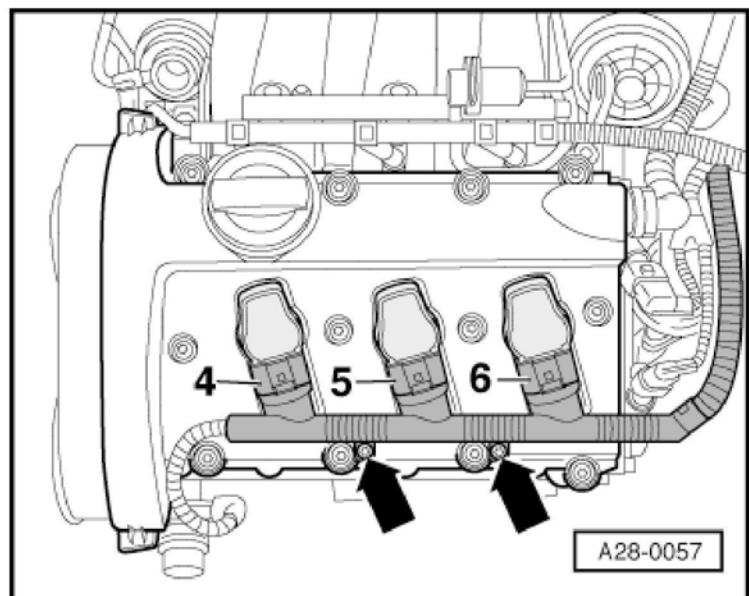
- Detach Evaporative Emission (EVAP) Canister Purge Regulator Valve -N80- (-1-) at air filter housing.
- Remove air filter housing (arrows).



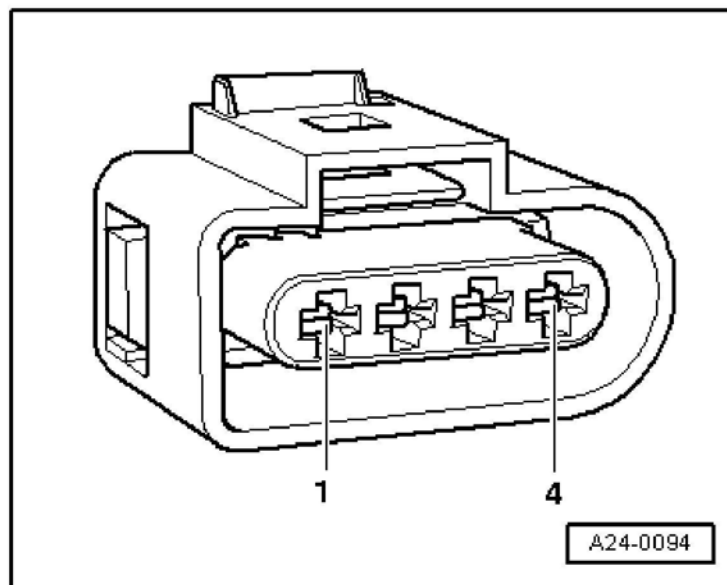
- Remove bolts (arrows) on cylinder head at right.
- Disconnect 4-pin harness connectors -1- to -3- at ignition coils.



- Remove bolts (arrows) on cylinder head at left.
- Disconnect 4-pin harness connectors -4- to -6- at ignition coils.



- Connect e.g. voltage tester -VAG1527B- as follows:



| Harness connector Terminal | Measure to |
|----------------------------|------------|
| 2 | B+ |
| 4 | B+ |

LED must light up.

If LED does not light up:

- Check the wire connections for open circuit.

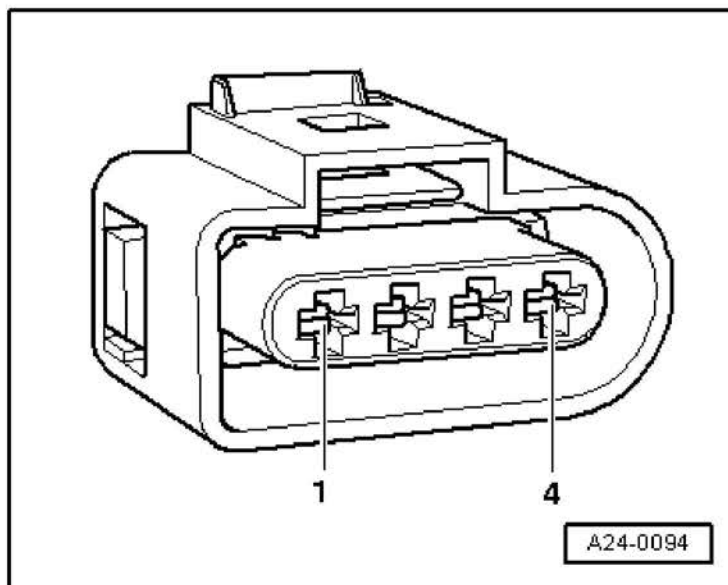
Specified value: Wire resistance max 1.5 Ω

- If necessary, repair wire connection.

If LED lights up:

Checking voltage supply

- Connect multimeter for voltage measurement as follows:



| Harness connector Terminal | Measure to |
|----------------------------|---------------------|
| 1 | Engine Ground (GND) |

- Switch ignition on.

Specified value: approx. battery voltage

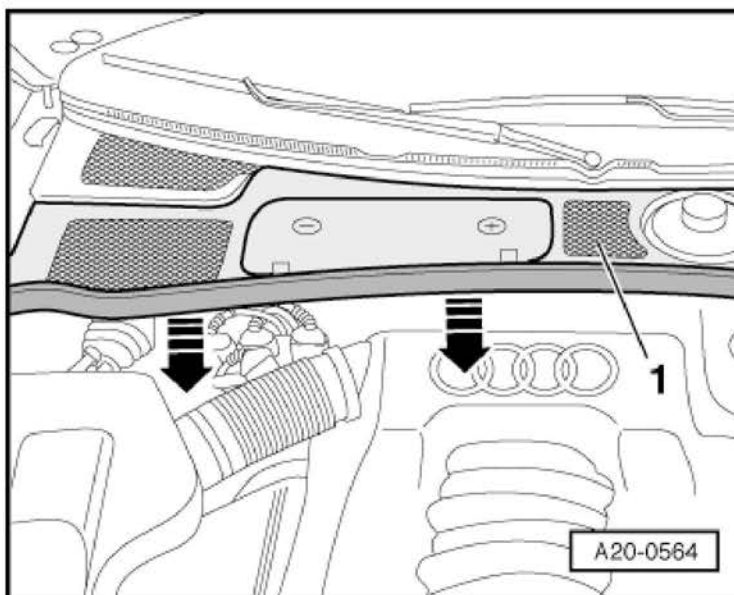
- Switch ignition off.

If specified value is obtained:

- Check activation of power output stages → **Anchor**.

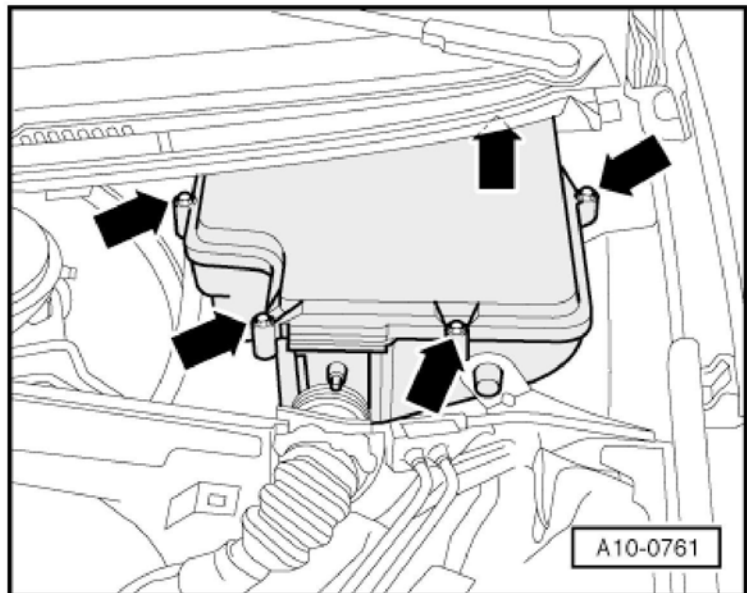
If specified value is not obtained:

- Pull off rubber seal of plenum chamber cover in direction of arrow.
- Remove cover -1- toward front.

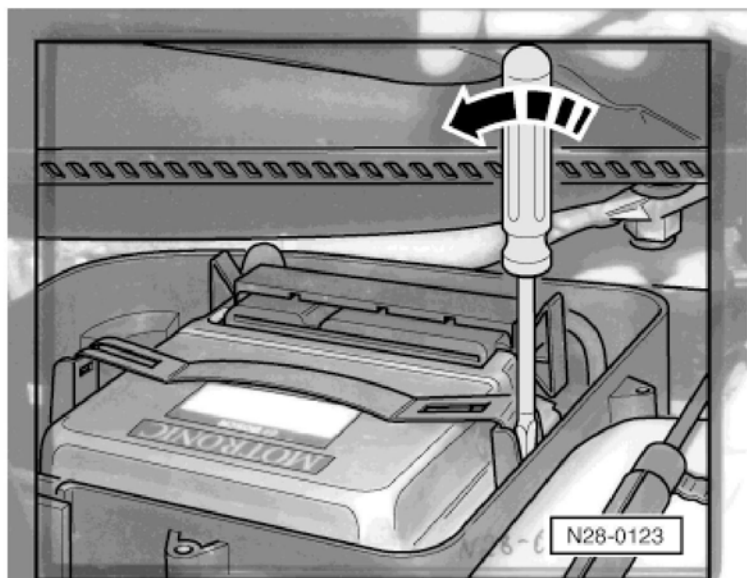


- Remove cover for E-box, plenum chamber

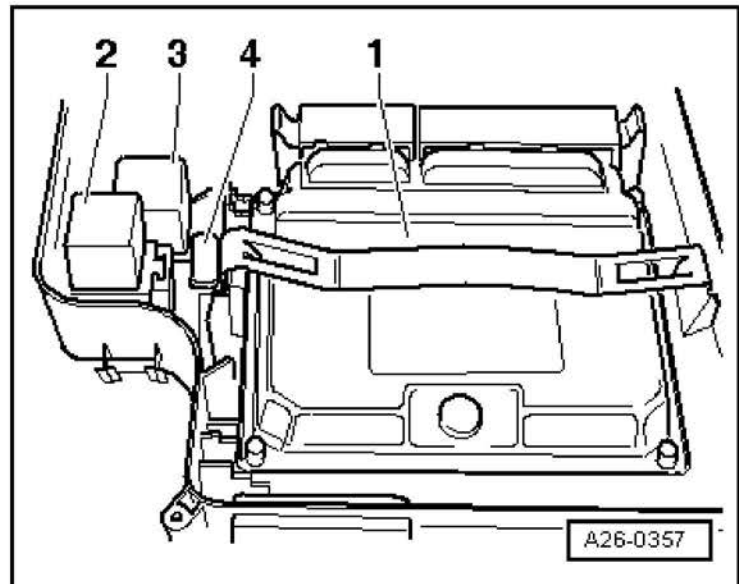
(arrows).



- Pry off Engine Control Module (ECM) retaining bracket (arrow) using a screwdriver and set control module aside.



- Disconnect voltage supply relay -3-.
- Perform the following tests marked with dots:



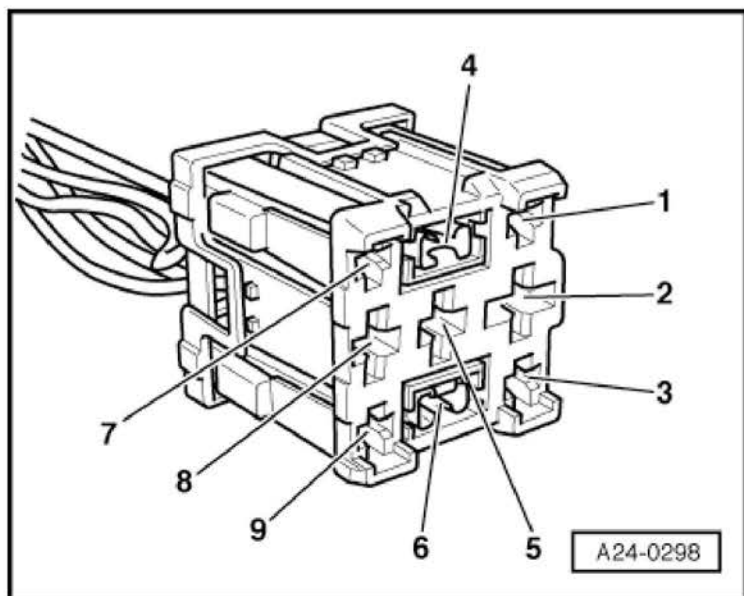
- Check wire connection from 3-pin relay carrier in E-box, plenum chamber, position 3, terminal 8 to harness connector at ignition coil terminal 1.
- Check Motronic Engine Control Module (ECM) Power Supply Relay -J271- → **Chapter**.

Checking activation of power output stages

- Harness connector at ignition coils disconnected
- Remove all harness connectors to injectors.

Note

Fuel must not be injected during the test to avoid damaging catalytic converter. Connectors must therefore be disconnected from fuel injectors.



- Connect e.g. voltage tester -VAG1527B- to connector terminals 2 and 3.

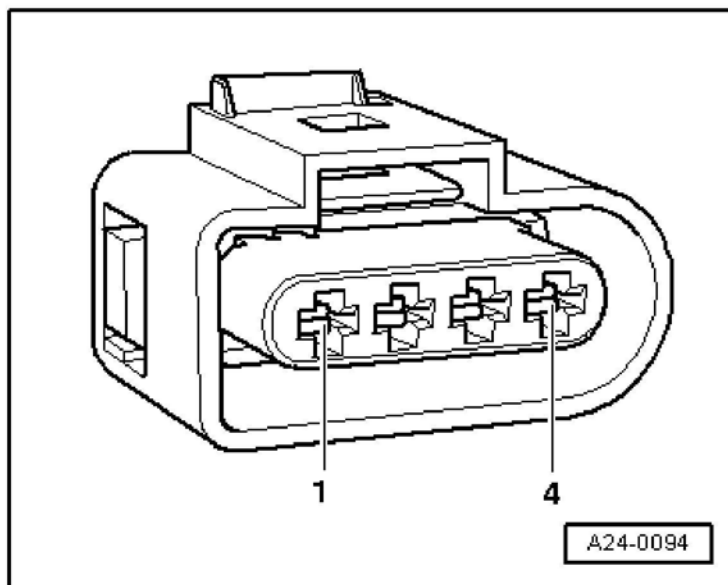
- Operate starter briefly.

LED must blink (brief blink signal).

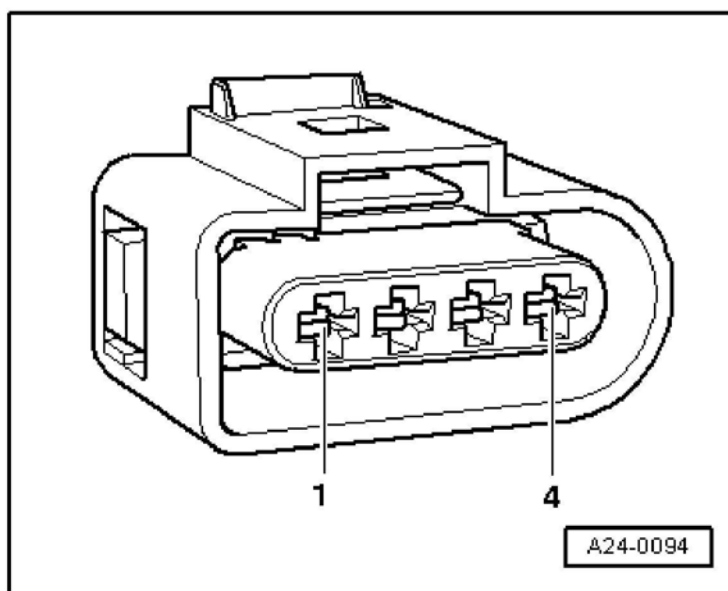
- Switch ignition off.

If LED does not blink:

- Connect test box to wiring harness of Engine Control Module (ECM) → **Chapter**; ECM is not connected.



- Check the following wire connections for open circuit according to wiring diagram:



| Harness connector Terminal | Test box Socket |
|----------------------------|-----------------|
| 3 (Cyl. 1) | 102 |
| 3 (Cyl. 2) | 110 |
| 3 (Cyl. 3) | 94 |
| 3 (Cyl. 4) | 103 |
| 3 (Cyl. 5) | 111 |
| 3 (Cyl. 6) | 95 |

Specified value: Wire resistance max 1.5 Ω

- Also check wires for short circuit to each other as well as to B+ and Ground (GND).

Specified value: $\infty \Omega$ (no continuity)

- If necessary, repair wire connection.

If no malfunctions are found in wires:

- Replace the combined component, ignition coil with power output stage.

Final procedures

After repair work, the following work steps must be performed in the mentioned sequence:

- 1 - Check DTC memory "Mode 3: Check DTC memory"
→ Chapter.
 - 2 - If necessary, erase DTC memory "Mode 4: Reset/erase diagnostic data" → Chapter.
 - 3 - If DTC memory was erased, generate readiness code
→ Chapter.
- End diagnosis and switch ignition off.