Audi > B5 Platform > 1996 - 2002
2.8 Liter V6 5V Fuel Injection & Ignition, Engine Code(s): AHA
28 - Ignition/Glow plug system

Ignition coils and power output stage, checking

Notes:

- The ignition coils and power output stage are one component.
- Measuring the primary resistance of the ignition coils is not possible.
- Measure secondary resistance first with ignition wires connected to the ignition coil via the spark plug connector of the respective cylinder (with this method the interference resistances of the ignition cables are also measured).
- Component locations => page 24-1

Required special tools and test equipment

- Multimeter US1119 (Fluke 83 or equivalent)
- VW1594 connector test kit

Test conditions

- No fuel injector malfunction stored in DTC memory

Checking

- Check DTC memory => page 01-16.
- There must be no malfunctions stored
- If DTC memory is not clear (malfunctions recognized):
- Make necessary repairs and erase DTC memory.
- Stop engine and start engine again.
- Road test.
- Check and erase DTC memory again.
- By briefly disconnecting fuel injector connectors with engine running, check which cylinder is misfiring, or not firing at all.

A misfiring cylinder can also be isolated by examining the spark plugs (for a carbon-fouled plug).

- Interchange spark plug with one from cylinder that is OK.

If a different cylinder now misfires:

- Replace faulty spark plug.

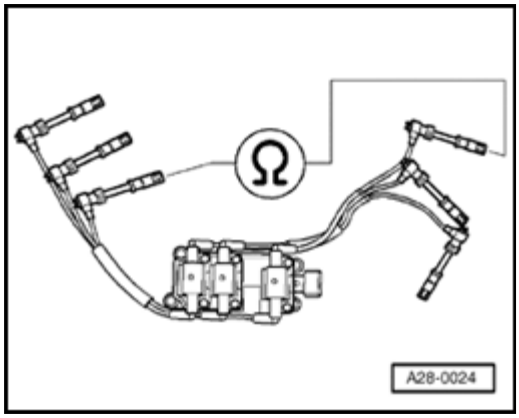
If the original cylinder misfires:

- Check ignition coil => page 28-23.

Checking ignition coils -N-, -N128- and -N158-

- Disconnect 5-pin connector from ignition coil assembly.

- Remove ignition wires from spark plugs.



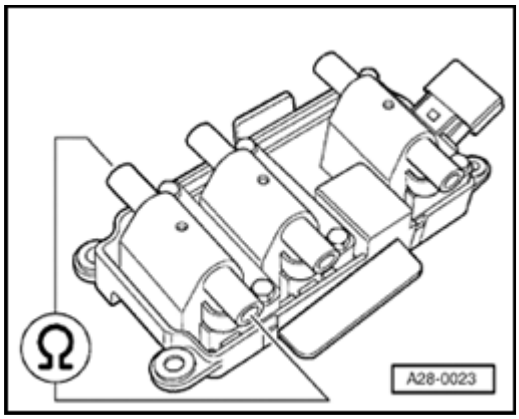
- Using multimeter and adapters from VAG1594 connector test kit, measure resistance between both spark plug connectors of respective ignition circuit (across coil).

Specification: approx. 18-25 k Ω .

If resistance is NOT OK:

- Remove ignition wires from ignition coils and measure resistance between ends of respective ignition wires.

Specification: approx. 4.0-6.0 k Ω



- Using multimeter and adapters from VAG1594 connector test kit, measure resistance across both ignition wire connectors of respective ignition coil.

Specification: 8.0-14.0 k Ω

If resistance values are not as specified:

- Replace coils.

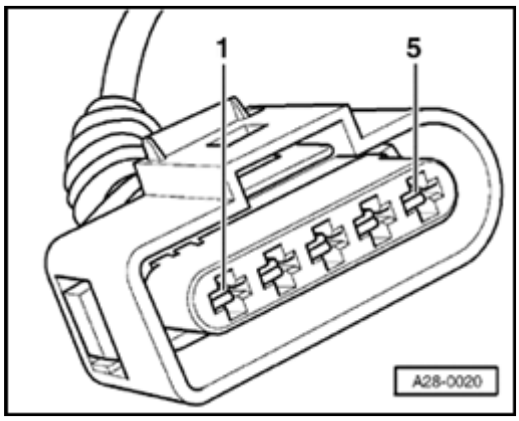
If resistance values are OK:

- Check signal for power output stage => page 28-25.

Checking signal for power output stage

- Remove connectors from all 6 injectors (DTC memory will have to be checked and erased later).

- Switch ignition on.



- Connect LED tester VAG1527 between engine ground and connector terminal 3.

- Crank starter for several seconds.

LED in voltage tester must flash.

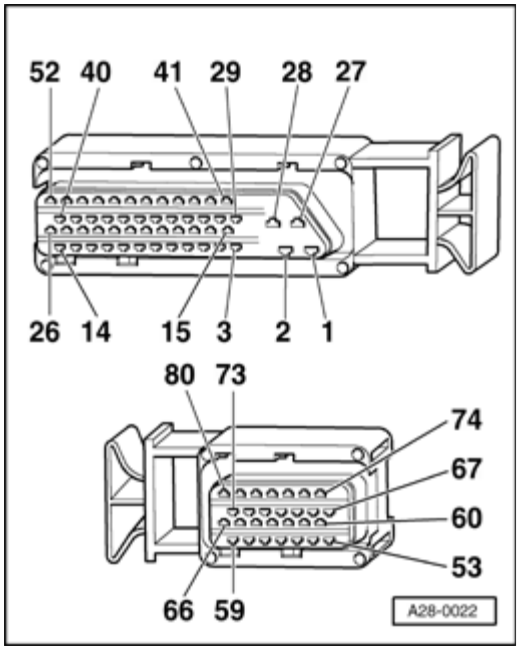
- Repeat test on 5-pin connector terminals 4 and 5.

If LED flashes:

- Replace ignition coils -N-, -N128- and -N158- with power output stage -N122-.

If LED does not flash:

- Connect VAG1598/22 test box to ECM harness connector => page 01-67.



- Check wiring between ECM/test box and 5-pin connector for continuity and/or short circuit per wiring diagram.
  - Connector terminal 3 to ECM/test box socket 71
  - Connector terminal 4 to ECM/test box socket 78
  - Connector terminal 5 to ECM/test box socket 70

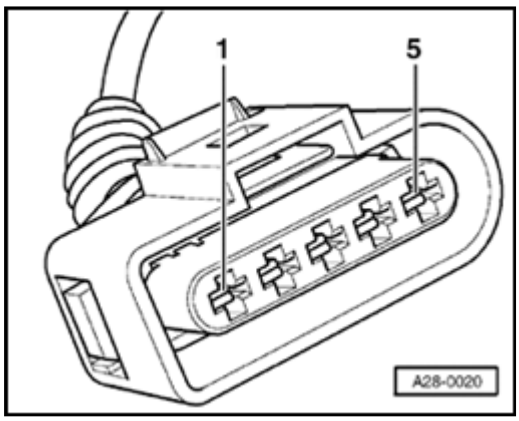
If wiring is OK:

- Replace Motronic ECM -J220- => page 01-68.
- Carry out adaptation of throttle valve control module to ECM => page 24-150.
- Check readiness code => page 01-70.

If Diagnostic Trouble Code (DTC) memory has been erased, or ECM has been disconnected, generate new readiness code => page 01-73.

Checking ground for power output stage

- Disconnect 5-pin connector from ignition coils.



- Connect VAG1527 LED voltage tester between B+ and terminal 2 (ground) of connector.

LED in tester must light up.

If LED does not light up:

- Check wires for open circuit per wiring diagram.

=> Electrical Wiring Diagrams, Troubleshooting & Component Locations binder

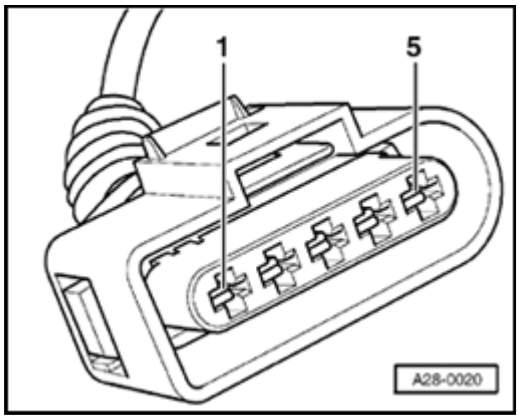
Checking voltage supply of ignition coils

Test requirement

- Fuse for ignition coils OK

- Disconnect 5-pin connector from ignition coils.

- Switch ignition on.



- Connect VAG1527 LED voltage tester between engine ground and terminal 1 (B+) of connector.

LED in tester must light up.

If LED does not light up:

- Check wires for open circuit per wiring diagram.
- Check fuse for ignition coils.

=> Electrical Wiring Diagrams, Troubleshooting & Component Locations binder