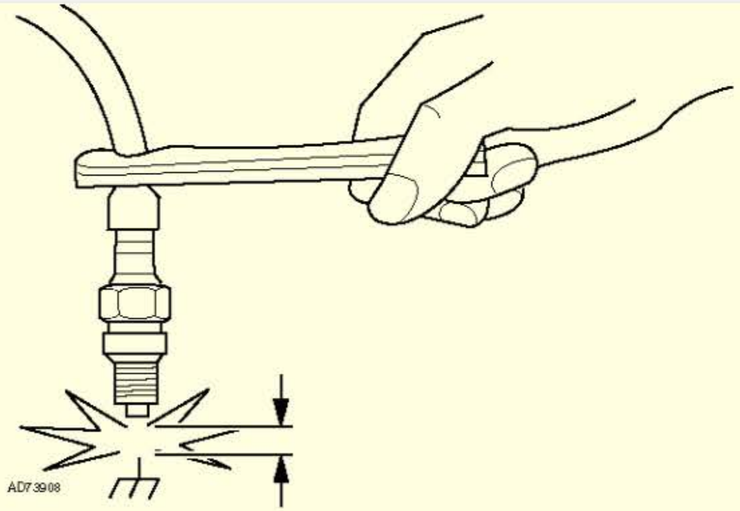
Volkswagen Passat (88-96) 2,0 1990-93
Engine code: 2E

System type: VAG Digifant

- Service adjustments
- Fuel system
- Intake system
- Ignition system
  - High-tension spark
  - Ignition timing & firing order
  - Ignition coil
  - Ignition amplifier
- Engine sensors
- Emission control system
- Control system

22



High-tension spark

NOTE: Disconnect injector harness multi-plug before cranking tests, to avoid damage to catalytic converter(s).

Checking - Fig. 22

- Ensure ignition switched OFF.
- Disconnect one high-tension lead from spark plug.
- Connect test spark plug to high-tension lead.
- Using insulated pliers, hold test spark plug 6 mm from suitable earth.
- Briefly crank engine.
- Check for strong blue spark.
- Repeat test for each high-tension lead.
- If no spark is visible: Carry out high-tension circuit component checks. Refer to General Test Procedures.

F1 F2 F3 F4 F5 F6 F7 F9 F11 Ctrl+F4 Ctrl+F8

AFTR:HRS - Mixe... intake vw_b3 - NetBeans... Output - Editor Autodata CD3 - [... 4.idle_air.jpg - Paint

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Ignition timing & firing order

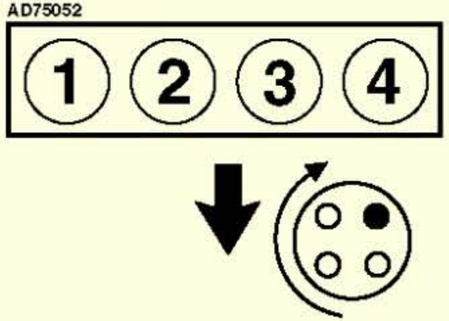
Checking and adjustment - Fig. 23 & Fig. 24

Technical Data	
Basic ignition timing - BTDC	6±1°/2250 rpm
Firing order	1-3-4-2

- Ensure high-tension leads are connected correctly Fig. 23.
- Ensure engine is at normal operating temperature.
- Passat 90-93: Disconnect engine coolant temperature (ECT) sensor multi-plug.
- Start engine. Allow to idle.
- Except Passat 90-93: Initiate basic setting using suitable diagnostic equipment.
- Increase rpm to specified value.
- Check basic ignition timing Fig. 24.
- Adjust by turning distributor.

23

AD75052



F1 F2 F3 F4 F5 F6 F7 F9 F11 Ctrl+F4 Ctrl+F8

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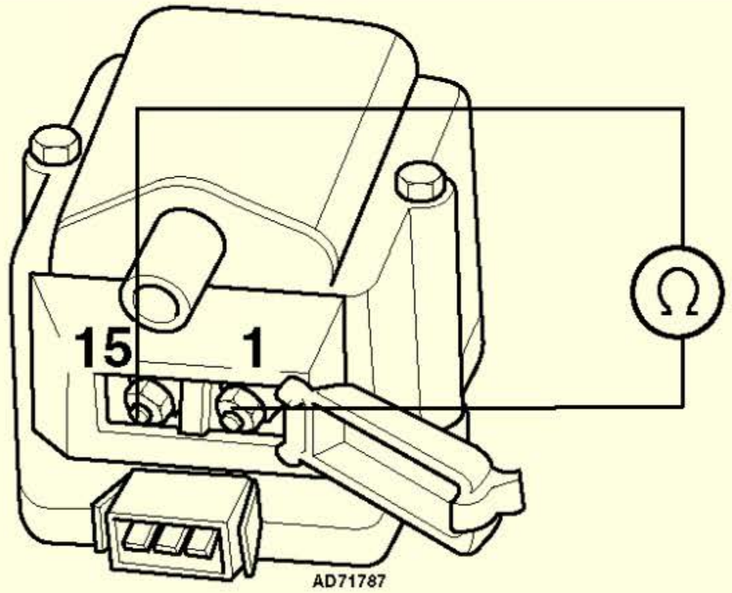

Ignition coil

NOTE: Incorporates ignition amplifier.

Checking primary resistance - Fig. 25

Technical Data	
Terminals	Resistance
1 & 15	0,5-0,7 Ω

- Ensure ignition switched OFF.
- Disconnect ignition coil multi-plug.
- Disconnect ignition coil high-tension lead.
- Open cover of low-tension terminals.
- Check resistance between ignition coil low-tension terminals.

Checking secondary resistance - Fig. 26

Technical Data	
Terminals	Resistance
15 & HT	3000-4000 Ω

- Ensure ignition switched OFF.
- Disconnect ignition coil multi-plug.
- Disconnect ignition coil high-tension lead.
- Open cover of low-tension terminals.
- Check resistance between one ignition coil low-tension terminal and the high-tension connection.

F1 F2 F3 F4 F5 F6 F7 F9 F11 Ctrl+F4 Ctrl+F8

Volkswagen Passat (88-96) 2,0 1990-93
Engine code: 2E

System type: VAG Digifant

- Service adjustments
- Fuel system
- Intake system
- Ignition system
  - High-tension spark
  - Ignition timing & firing order
  - Ignition coil
  - Ignition amplifier
- Engine sensors
- Emission control system
- Control system

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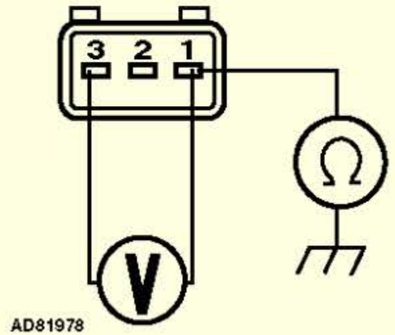

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Ignition amplifier

NOTE: Incorporated in ignition coil.

Checking earth connection - **Fig. 27**

Technical Data	
Terminals	**Resistance**
1 & earth	Zero

- Ensure ignition switched OFF.
- Disconnect ignition coil multi-plug.
- Check resistance between harness multi-plug terminal and earth.
- If resistance not as specified: Check wiring.

Checking supply voltage - **Fig. 27**

Technical Data	
Terminals	**Voltage**
1 & 3	Battery voltage

- Ensure ignition switched OFF.
- Disconnect ignition coil multi-plug.
- Switch ignition ON.
- Check voltage between harness multi-plug terminals.
- If voltage not as specified: Check wiring.

Checking signal - **Fig. 28**

Technical Data	
Terminals	**LED**
2 & 3	Flashing

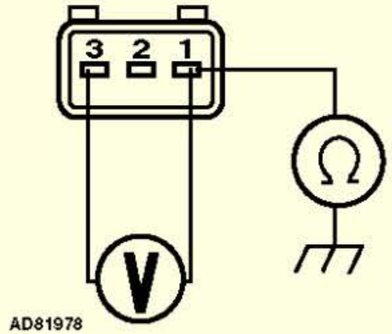
NOTE: Disconnect injector harness multi-plug before cranking tests, to avoid damage to catalytic converter(s).

- Ensure ignition switched OFF.
- Disconnect ignition coil multi-plug.
- Connect LED test lamp between harness multi-plug terminals.
- Briefly crank engine.
- Check that LED flashes.

Service adjustments
Fuel system
Intake system
Ignition system
- High-tension spark
- Ignition timing & firing order
- Ignition coil
- Ignition amplifier

Engine sensors
Emission control system
Control system

27



Technical Data	
Terminals	**Voltage**
1 & 3	Battery voltage

- Ensure ignition switched OFF.
- Disconnect ignition coil multi-plug.
- Switch ignition ON.
- Check voltage between harness multi-plug terminals.
- If voltage not as specified: Check wiring.

Checking signal - **Fig. 28**

Technical Data	
Terminals	**LED**
2 & 3	Flashing

NOTE: Disconnect injector harness multi-plug before cranking tests, to avoid damage to catalytic converter(s).

- Ensure ignition switched OFF.
- Disconnect ignition coil multi-plug.
- Connect LED test lamp between harness multi-plug terminals.
- Briefly crank engine.
- Check that LED flashes.

Checking operation - **Fig. 29**

Technical Data		
Terminals	**Condition**	**LED**
1 & 15	Ignition ON	ON for 1-2 secs.
1 & 15	Engine cranking	Flashing

NOTE: Disconnect injector harness multi-plug before cranking tests, to prevent engine from starting.

- Ensure ignition switched OFF.
- Access ignition coil low-tension terminals.
- Connect LED test lamp between ignition coil low-tension terminals.
- Switch ignition ON.
- Check that LED illuminates for 1-2 seconds.
- Briefly crank engine.
- Check that LED flashes.
- If LED does not flash: Suspect faulty ignition amplifier.