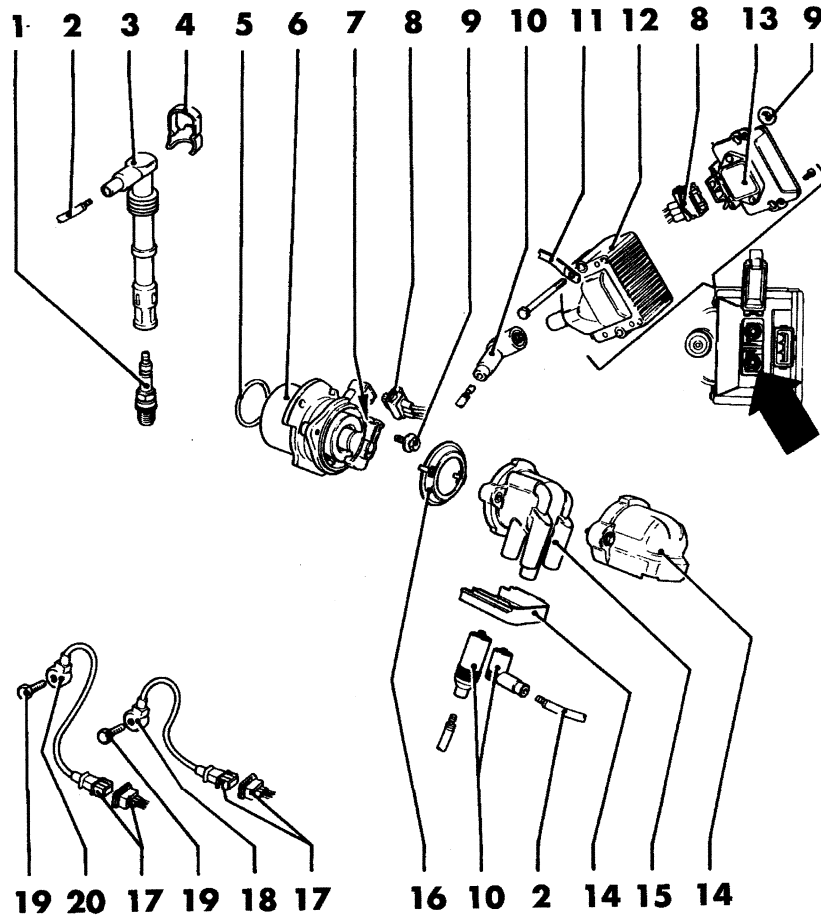


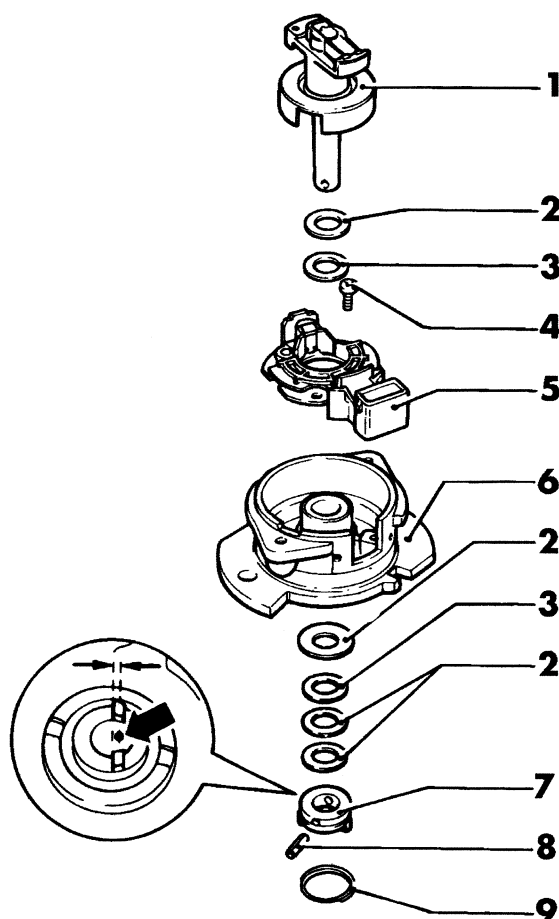
DIGIFANT 2.0 l 16 V IGNITION SYSTEM: EXPLODED VIEW



28AD23

- | | |
|---|--|
| <p>1. Spark plugs. 30 Nm.
Remove and install with the U-30037 tool.</p> <p>2. Ignition cables.
Check the resistance.</p> <p>3. Spark plug connectors.
Resistance between 4 and 6 KΩ. Remove only with extractor ring.</p> <p>4. Extractor ring.</p> <p>5. O-ring.
Replace if damaged.</p> <p>6. Ignition distributor with Hall generator.
Resistance between 0.6 and 1.4 KΩ.</p> <p>7. No. 1 cylinder mark.</p> <p>8. Connector.</p> <p>9. 10 Nm.</p> <p>10. Interference suppression connector.
Resistance between 0.6 and 1.4 KΩ.</p> <p>11. Ground stip.</p> <p>12. Ignition transformer.</p> <p>13. Ignition transformer final stage.</p> | <p>14. Cap.</p> <p>15. Distributor cover.
Must not be cracked nor show current leak marks, nor contact wear.
Check the wear and that the brush is free to operate.</p> <p>16. Dust boot.</p> <p>17. Triple connector for pinking sensor.
For pinking sensor 1: brown
For pinking sensor 2: black.</p> <p>18. Pinking sensor 1.
Seen on the right in the direction of travel.</p> <p>19. Pinking sensor fixing bolt. 20 Nm.
The tightening torque affects the operation of the pinking sensor.</p> <p>20. Pinking sensor 2.
Seen on the left in the direction of travel.</p> |
|---|--|

IGNITION DISTRIBUTOR: EXPLODED VIEW



28BD09

1. Ignition distributor shaft.

With diaphragm of ignition distributor rotor
Disassemble the pin (7) and remove it.

2. Washer(s).

3. Plastic washer.

4. Bolt. 3 Nm.

5. Hall transmitter.

6. Ignition distributor casing.

7. Coupling.

Mark the position of the driven pivot with respect to
the shaft (1) before removing.

8. Cotter pin.

9. Safety spring.

Note

When assembling, check that the coupling (7) slides smoothly on the pin (8) and that the clearance between the ignition distributor shaft (1) is not reduced.

SAFETY MEASURES REGARDING THE DIGIFANT INJECTION AND IGNITION SYSTEM

To prevent personal injuries and damages to the injection and ignition system, take into account the following rules:

- The injection and ignition system cables, including the high voltage cables, can only be plugged and unplugged with the ignition turned off.
- If the engine must rotate without starting up, unplug the Hall generator connector (ignition distributor).
- The starting help with a quick charger is only allowed for 1 minute as a maximum and without exceeding 16.5 V.
- Washing of the engine must be carried out with the ignition disconnected only.
- When performing electric welding or spot welding, fully disconnect both battery terminal leads.
- Do not connect any capacitor to terminal 1 (-).
- Do not replace the 1 K Ω ignition distributor rotor (code R1) for other, not even to protect the radio from statics.
- To protect the radio from statics, use only 1 K Ω resistances for the high voltage cables and 5 K Ω spark plug connectors.

ADJUSTMENT DATA AND SPARK PLUGS

ENGINE	ABF
Ignition timing	$6 \pm 3^\circ$
Speed RPM	$770 \div 870$
Ignition order	1-3-4-2
Spark plugs (manufacturer's designation)	C6 VPYC
Electrode gap in mm	0.6
Tightening torque	30 Nm

IGNITION DISTRIBUTOR ROTOR: REPLACEMENT

The rotor of the ignition distributor is fixed to the shaft. If it is to be replaced, it must be destroyed, by crushing it with pliers, for example. Do not break it with a hammer as this could destroy the distributor shaft or the bearing.

Remove any traces which may remain on the shaft and stick the new rotor in place with AMV 185 101 A1.

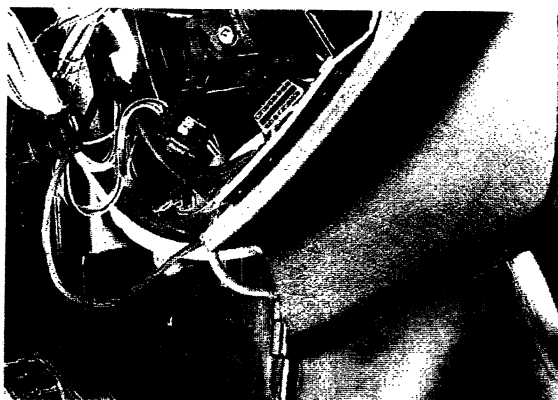
IGNITION TIMING

Checking

- All equipment must be connected with the ignition switched off.
- Engine oil minimum temperature 80 °C.
- All electrical loads disconnected.

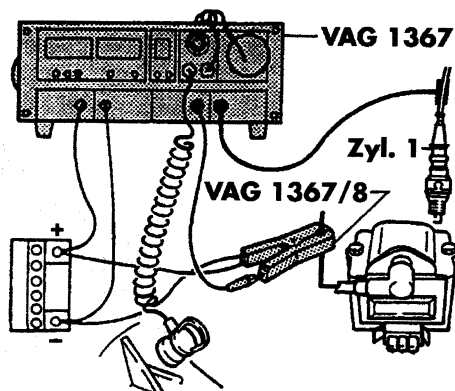
Engine 28

Ignition system: 2.0 I 16 V engine



24B004

- Correct functioning of the lambda probe.
- Connect the fault detector equipment **VAG 1551** to the 16 pin connector located at the right of the steering column on the dashboard lower part, using the cable **VAG 1551/3**.
- Consult and erase the faults memory, as described in this group, but do not end transmission with the 0 and 6 keys.



28BD10

- Connect the equipment **VAG 1367** using the pick up clamp **VAG 1367/8**, or connect directly the equipment **VAG 1767**, to check the ignition timing and the engine speed.
- Start up the engine and let it run at the idle speed.

Use the fault detector equipment **VAG 1551** in the following way:

- Press the key 1 to enter the mode "Quick data transmission".

- Press the keys 01 to select the "Engine electronics" function and confirm by pressing the Q key.
 - Press the key →.
 - Press the 04 keys to enter the function "Start basic adjustment" and confirm by pressing Q.
- The display will show:

System in basic adjustment	HELP
Input the value group number XX	

- Press the keys 00 to enter the measurement values group number. Confirm the selection by pressing the Q key.

The display will show:

System in basic adjustment	HELP
1 2 3 4 5 6 7 8 9 10	

(The numbers which appear on the display do not have any meaning for this test.)

- With TDC transmitter.
The ignition timing is indicated directly.
Test value: $6 \pm 3^\circ$ before TDC.
At the fault detector equipment **VAG 1551**: press the key →.
- Type 06 to select the function "End data transmission" and confirm the selection by pressing the key Q.

IGNITION TIMING ADJUSTMENT CHECKING

- Engine oil minimum temperature: 80°C .
- Connect the equipment **VAG 1367** using the pick up clamp **VAG 1367/8** or directly connect the equipment **VAG 1767**.
- Start up the engine and let it run at the idle speed.
- Adjust the ignition checking equipment for 3500 rpm.
- Increase the engine speed slowly to over 3500 rpm, until the ignition timing value is shown.
Theoretical value: $32 \div 36^\circ$ before TDC.

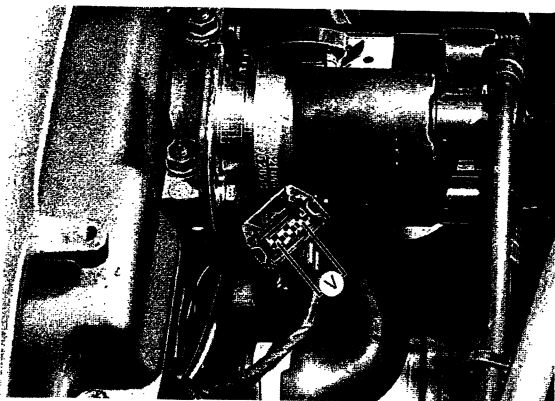
CHECKING THE HALL PULSE GENERATOR

The electrical checking of the functioning and cabling of the Hall pulse generator is given in the self-diagnosis tables for the **VAG 1551** fault-finder and the **VAG 1598/18** tester, described in Group 24.

As well as testing with this equipment the following is carried out.

Checking the power supply

- Unplug the Hall pulse generator connector.



28B025

- Connect the digital tester **VAG 1526**, set for measuring DC voltage, to the connector outer pins using the auxiliary cables **VAG 1594 A**.

- Turn on ignition.

Rated value: 10 volts minimum.

If there is voltage:

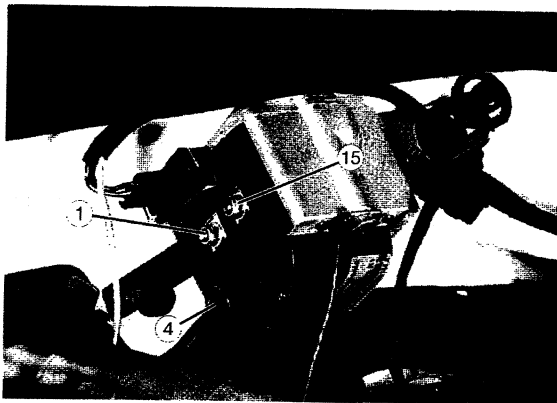
- Change the Hall transmitter.

If there is no voltage:

- Change the Digifant control unit.

CHECKING THE IGNITION TRANSFORMER

- Remove the triple connector and the high tension cable from the ignition transformer.



28B005

- Check the primary winding resistance using the digital tester **VAG 1526**, between the pins 1 and 15.

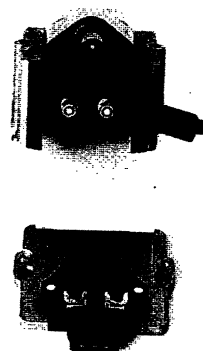
Rated value: $0.5 \div 0.7 \Omega$.

- Check the secondary winding resistance between the pins 4 and 15.

Rated value: $3 \div 4 K\Omega$.

If the above rated values are not met:

- Remove the ignition transformer.



28B006

- Remove the bolts fixing the power stage to the ignition transformer housing and loosen the nuts of the terminals 1 and 15.
- Remove the power stage.
- Repeat the checking.

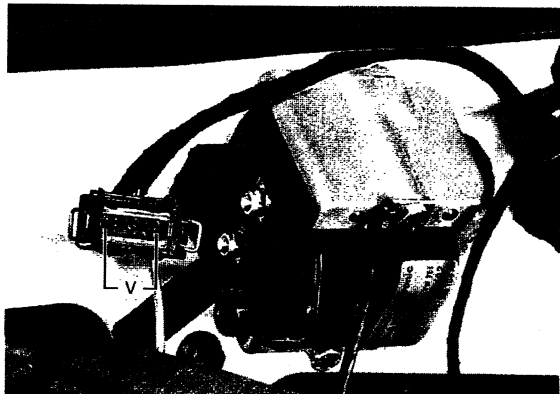
CHECKING THE IGNITION TRANSFORMER FINAL STAGE

- Ignition transformer OK.
- Hall generator, correct.
- Engine speed transmitter correct.

Engine 28

Ignition system: 2.0 l 16 V engine

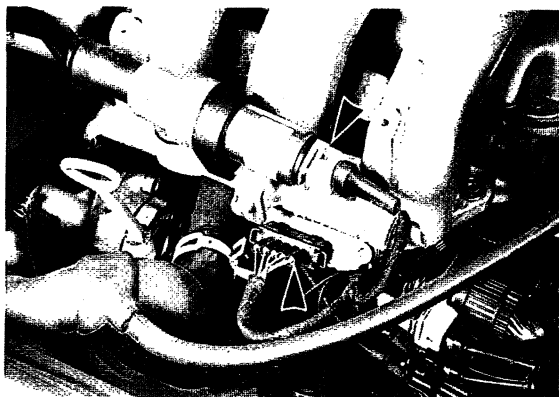
Checking the power supply



28B007

- Unplug the final power stage connector from the ignition transformer.
- Connect the digital tester **VAG 1526**, using the auxiliary cables **VAG 1594 A**, to the connector pins 1 and 3.
- Turn on ignition.
Nominal value: approximately battery voltage.
- Turn the ignition off.

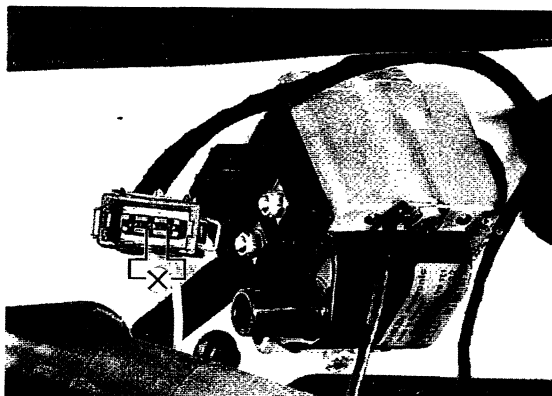
Operation checking



24A131

- Remove the 5-pin connector from the common injectors connection.

(No fuel must enter the cylinders as the catalyst could be damaged.)

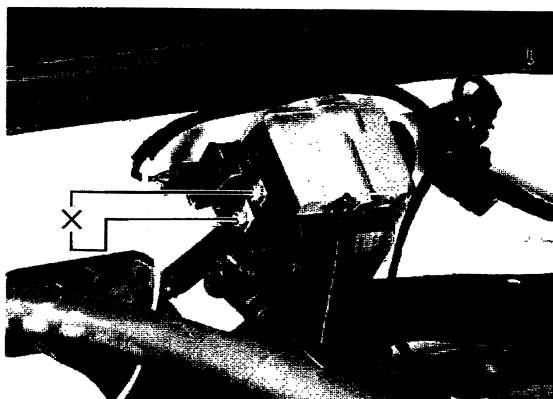


28B008

- Connect the voltage checking lamp **VAG 1527** using the auxiliary cables **VAG 1594 A** and the intermediate connectors **VAG 1594/15**, to the ignition transformer final stage connector pins 2 and 3.
- Operate the starter motor and check that the LEDs flash.

If the LED does not flash:

- Change the Digifant control unit.
- Connect the triple connector and the ignition cable to the transformer.



28B009

- Connect the **VAG 1527** voltage test lamp using the clips from the **VAG 1594 A** between contacts 1 and 15 of the ignition transformer.

- Turn the ignition on:
The LED should light up for between 1 and 2 seconds.
- Activate starter motor:
The LEDs should flash; if necessary, replace the final stage.

CAUTION

During the above test, do not touch the terminals of the ignition transformer not the test equipment cables.