

Ignition system

General notes on ignition system ⇒ [28-1, General notes on ignition system](#)

Observe safety precautions ⇒ [28-1, Safety precautions](#) .

Ignition, assembly overview ⇒ [28-1, Ignition, assembly overview](#)

Ignition coils with power output stages, removing and installing ⇒ [28-1, Ignition coils with power output stage, removing and installing](#)

Technical Data, Spark Plugs ⇒ [28-1, Technical data, spark plugs](#)

General notes on ignition system

- For trouble-free operation of electrical components a voltage of at least 11.5 V is necessary.
- It is possible that the control module will recognize a malfunction and store a DTC during some tests. After completing all tests and repairs, DTC memory should be checked and erased if necessary ⇒ [24-3, Engine control module DTC memory, checking and erasing](#) .
- If the engine only starts briefly and then turns off again after troubleshooting, repair or checking of the components, it may be that the immobilizer is blocking the Engine Control Module (ECM). Then, Engine Control Module (ECM) must be adapted if necessary ⇒ *Vehicle Diagnosis, Testing and Information System VAS 5051 "Guided Functions"* .

Safety precautions

To reduce the risk of personal injury and/or damage to the fuel injection and ignition system, always observe the following:

- Do not touch or disconnect ignition coils with power output stages when engine is running or turning at starting RPM.

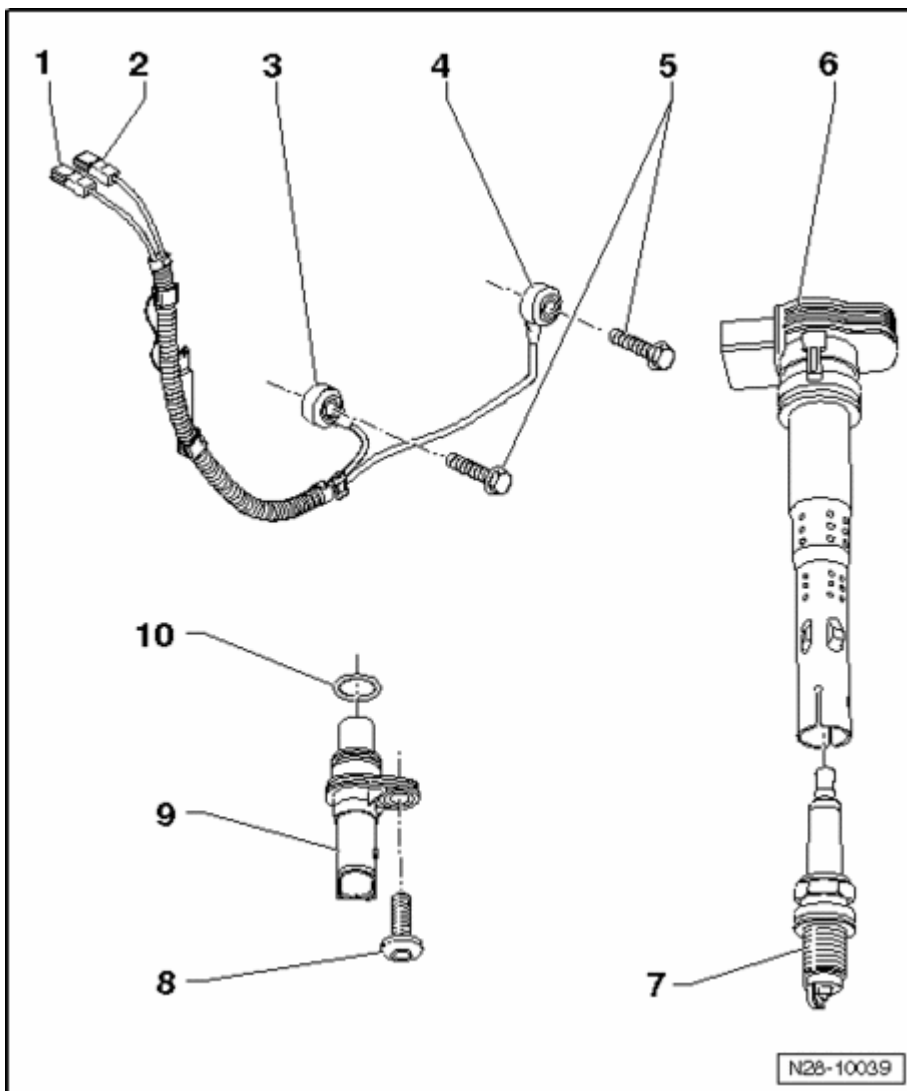
- Only disconnect and reconnect wires for injection and ignition system, including test leads, if ignition is turned off.

If special testing equipment is required during road test, note the following:

- Test equipment must always be secured to the rear seat and operated from there by a second person.

If test and measuring instruments are operated from the front passengers seat and vehicle is involved in an accident, there is a possibility that the person sitting in this seat may receive serious injuries when the airbag is triggered.

Ignition, assembly overview



- **Harness connector for Knock Sensor (KS) 2 G66**

- Gray
- Contacts gold plated
- Installed location ⇒ [28-1, Installation position of harness connectors for knock sensors](#)

- **Harness connector for Knock Sensor (KS) 1 G61**
 - Green
 - Contacts gold plated
 - Installed location ⇒ [28-1, Installation position of harness connectors for knock sensors](#)

- **Knock sensor 2 G66**
 - Note installation position:
Cable connection points 45°
 - toward right on outside

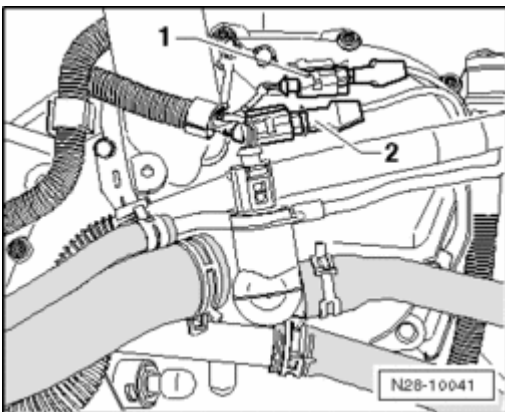
- **Knock sensor 1 G61**
 - Note installation position:
Cable connection points downward vertically.

- **20 Nm**
 - Tightening torque affects function of Knock Sensor (KS).

- **Ignition coil with power output stage N70, N127, N291, N292, N323**
 - Removing and installing ⇒ [28-1, Ignition coils with power output stage, removing and installing](#)

- **Spark plug**

- 25 Nm
 - Type and electrode gap ⇒
[28-1, Technical data, spark plugs](#)
 - Removing and installing with spark plug removal tool 3122 B
-
- 10 Nm
 - **Camshaft Position (CMP) sensor G40**
 - Contacts gold plated
 - **O-ring**
 - Replace if damaged

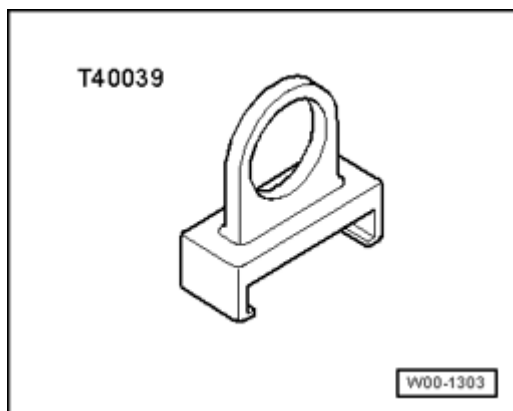


Installation position of harness connectors for knock sensors

- Green for Knock Sensor (KS) 1 G61
- Gray for Knock Sensor (KS) 2 G66

Ignition coils with power output stage, removing and installing

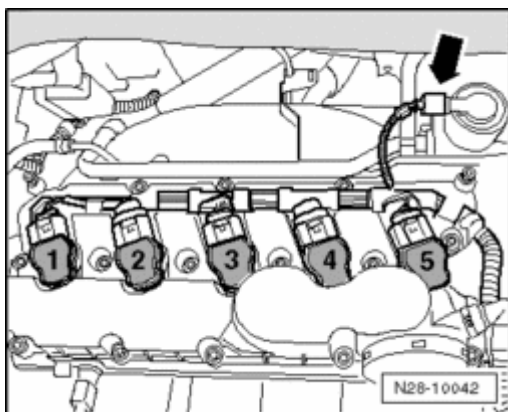
Special tools, testers and auxiliary items required



- Puller T40039

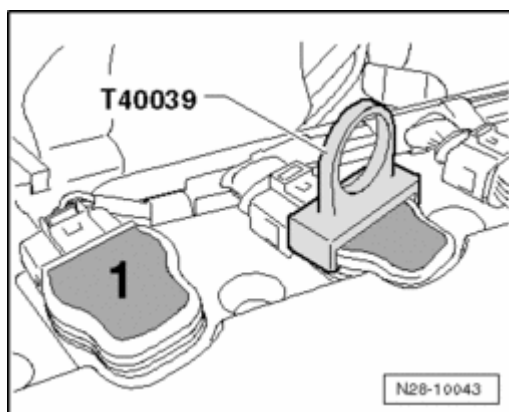
Removing

- Remove engine cover with air filter ⇒ [24-1, Engine cover with air filter, removing and installing](#) .



- If present, disconnect harness connector from Secondary Air Injection (AIR) Solenoid Valve N112 - **arrow** - .

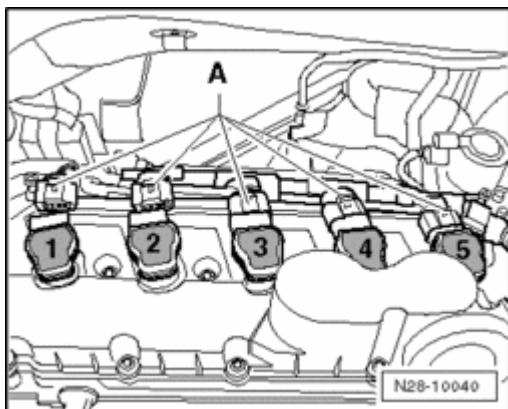
In order to prevent damage to cable guide, remove ignition coils with power output stage as follows:



- Using puller T40039 , pull all ignition coils only approx. 10 mm out of spark plug shaft, starting with ignition coil - 1

- .

- Then, pull out all ignition coils further (10 mm) in same sequence.
- Release all of connectors and pull them off only slightly.



- After that, pull off all connectors - **A** - , starting at ignition coil - **1** - , and remove ignition coils from spark plug shaft.

Installing

- Insert all ignition coils loosely into spark plug shaft.
- Align ignition coils to recesses in cylinder head cover and connect all connectors in reverse order of removal on to ignition coils.
- Press ignition coils evenly onto spark plugs by hand.

Technical data, spark plugs

Engine code	BGP, BGQ
Ignition sequence	1-2-4-5-3
Spark plugs	
VW/Audi	101 905 600
Manufacturers designation	PZFR5J-11
Electrode gap	1.0 to 1.1 mm
Tightening torque	25 Nm