

## 28 - IGNITION/GLOW PLUG SYSTEM

### GENERAL INFORMATION AND SAFETY MEASURES

#### Ignition system, general information

- The engine control module is equipped with On Board Diagnostics (OBD).
- For electric components to work properly, a voltage of at least 11.5 Volts is required.
- It is possible that the control module will recognize a malfunction and store a DTC during some tests. Therefore after completing all checks and repairs the DTC memory must be checked and if necessary erased.
- 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). DTC memory must then be checked and if necessary, control module must be adapted.

#### Safety precautions

Observe the following if test and measuring instruments are required during a test drive:

- CAUTION:**
- **Test and measuring equipment must always be secured to the rear seat and be operated from there by a second person.**
  - **If test and measuring instruments are operated from the front passengers seat and the 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.**

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 remove ignition wires when engine is running or turning at starter speed.
- Always switch ignition off before disconnecting or reconnecting wires for ignition system, including high voltage wiring and test leads.
- If engine is to be cranked at starting RPM without starting (e.g. for compression testing), disconnect connectors from ignition coils and from fuel injectors. After performing work, check and erase DTC memory.
- Cleaning engine should only be performed with ignition switched off.
- The battery must only be disconnected and connected with ignition switched off, since the Engine Control Module (ECM) can otherwise be damaged.

### IGNITION, SERVICING

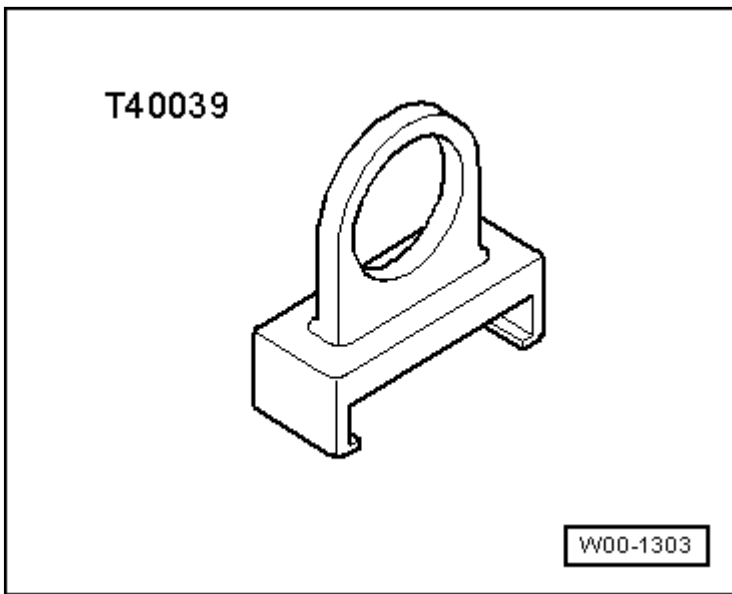
#### Test data

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<b>Engine data</b>		<b>4.2L/4V/257 kW-Motor</b>
Idle speed (not adjustable)		approx. 650 RPM <sup>1)</sup>
Ignition timing		Not adjustable, regulated by control module
Ignition system		Single coil ignition system with 8 ignition coils (output stages integrated) that are connected directly to spark plugs via ignition cables.
Spark plugs	Names	
	Removing and installing	405
Ignition sequence		1-5-4-8-6-3-7-2
<ul style="list-style-type: none"> <li><sup>1)</sup> Depending on engine control module (ECM) requirements.</li> </ul>		

**Ignition coils, removing and installing**

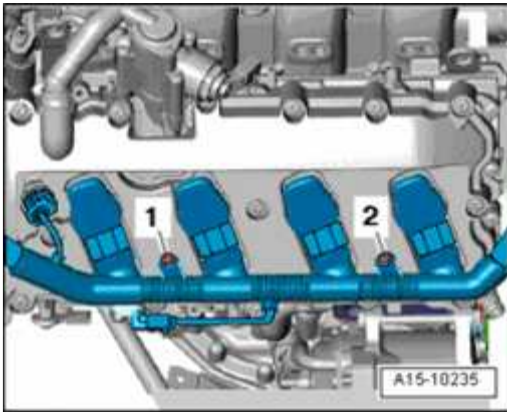
**Special tools, testers and auxiliary items required**



**Fig. 121: Identifying Ignition Coil Puller T40039**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

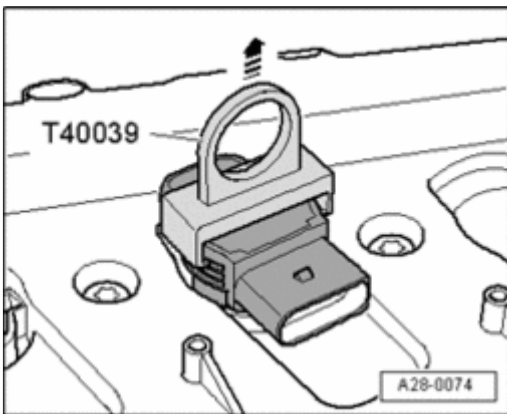
- Ignition Coil Puller T40039

**Removing from cylinders 1, 2 and 3 (cylinder bank 1):**



**Fig. 122: Identifying Bolts & Ignition Coils Electrical Harness Connectors**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

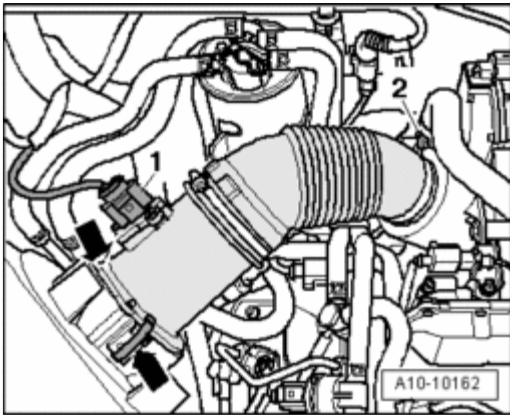
- Remove bolts - 1 - and - 2 -.
- Release electrical connectors and remove connectors simultaneously from ignition coils.



**Fig. 123: Removing Ignition Coils Using Ignition Coil Puller T40039**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove ignition coils with Ignition Coil Puller T40039 from spark plug shaft

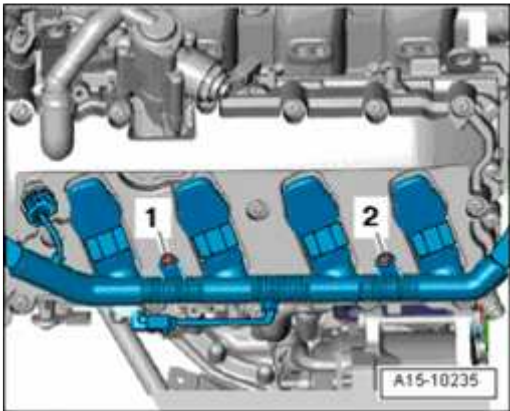
**Removing cylinder 4 (cylinder bank 1):**



**Fig. 124: Disconnecting Electrical Harness Connector At Mass Air Flow (Maf) Sensor G70 & Removing Air Duct Hose**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

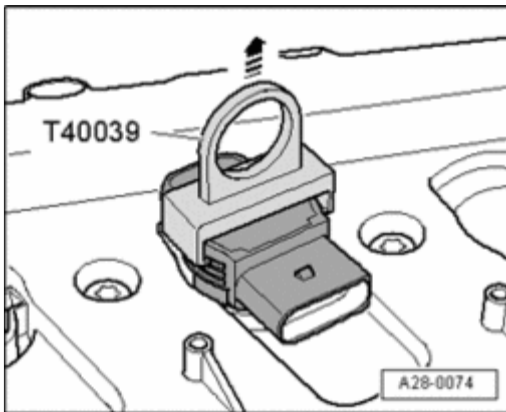
- Disconnect electrical connector - **1** - from Mass Air Flow (MAF) Sensor G70.
- Open both clips - **arrows** -.
- Open hose clamp and carefully pull Mass Air Flow (MAF) Sensor G70 out of guide from air filter housing.



**Fig. 125: Identifying Bolts & Ignition Coils Electrical Harness Connectors**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

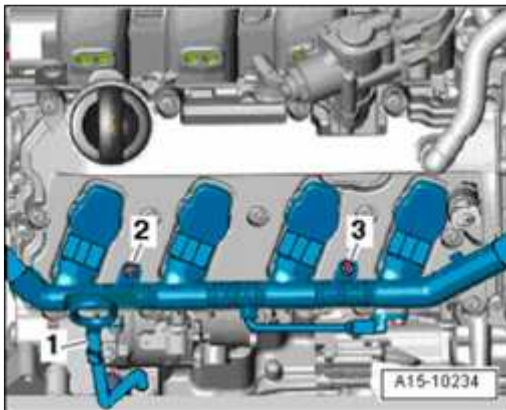
- Remove bolts - **1** - and - **2** -.
- Release electrical connectors and remove connectors simultaneously from ignition coils.



**Fig. 126: Removing Ignition Coils Using Ignition Coil Puller T40039**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

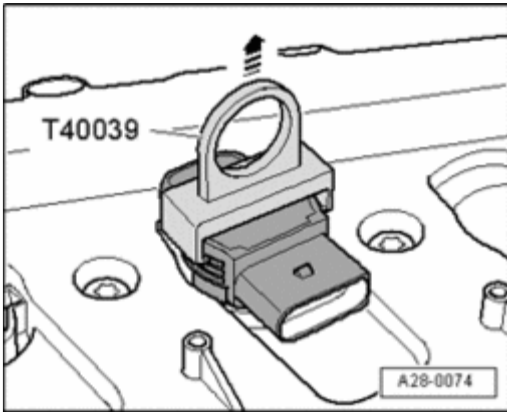
- Remove ignition coil (cylinder 4) using ignition coil puller T40039.

**Remove cylinders 5, 6, 7 (cylinder bank 2):**



**Fig. 127: Identifying Oil Dipstick, Bolts & Ignition Coils Electrical Harness Connectors**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

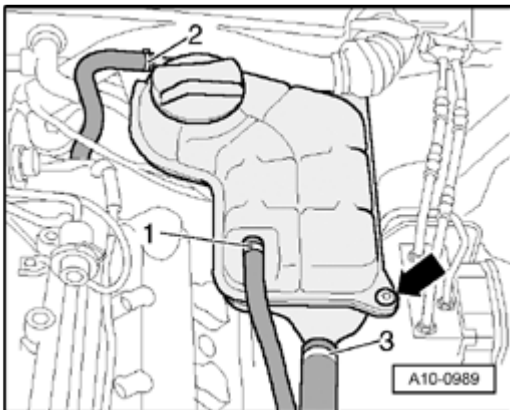
- Remove bolts - 2 - and - 3 -.
- Release electrical connectors and remove connectors simultaneously from ignition coils.



**Fig. 128: Removing Ignition Coils Using Ignition Coil Puller T40039**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

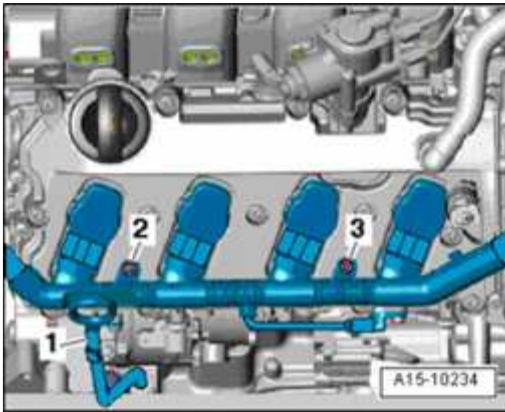
- Remove ignition coils with Ignition Coil Puller T40039 from spark plug shaft

**Removing cylinder 8 (cylinder bank 2):**



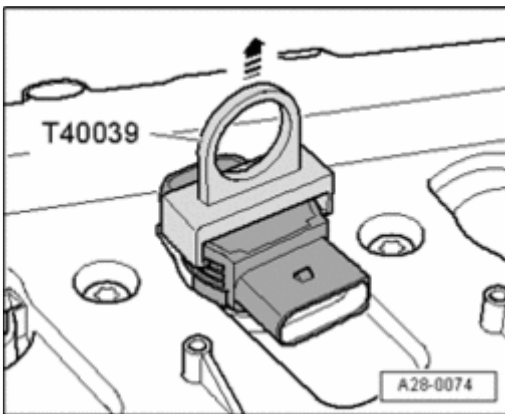
**Fig. 129: Removing Coolant Hoses**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove coolant reservoir - **arrow** - and disconnect electrical connector on Engine Coolant Level (ECL) Warning Switch F66 at bottom of coolant reservoir.
- Lay aside coolant reservoir with connected coolant hoses - **1 through 3** -.



**Fig. 130: Identifying Oil Dipstick, Bolts & Ignition Coils Electrical Harness Connectors**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - 2 - and - 3 -.
- Release electrical connectors and remove connectors simultaneously from ignition coils.



**Fig. 131: Removing Ignition Coils Using Ignition Coil Puller T40039**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove ignition coil with Ignition Coil Puller T40039 from spark plug shaft

**Installing**

- Insert all ignition coils loosely into spark plug shaft.
- Align ignition coils to connectors and then connect all of connectors simultaneously onto ignition coils.
- Press ignition coils uniformly onto spark plugs by hand (do not use an impact tool under any circumstances).

Further installation is in reverse order of removal.

**Torque specifications**

Component	Nm
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**2008 Audi A6 Quattro**

ENGINE PERFORMANCE 4.2 Liter V8 4V Fuel Injection and Ignition, Engine Code(s): BVJ

Wiring for ignition coils at cylinder head cover

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