

00 - GENERAL, TECHNICAL DATA

ENGINE NUMBER

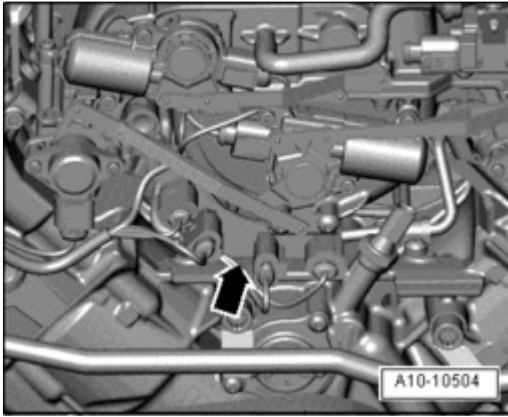


Fig. 1: Identifying Engine Number Stamped On Engine Block
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Engine number ("engine code" and "serial number") is located at front on cylinder block at top - **arrow** -.
- The engine code is also located on vehicle data plate.

NOTE: • **The engine number is only visible if the front engine cover is removed.**

ENGINE DATA

Engine data

| | | |
|--------------------------------------|-------------|------------------|
| Code letters | | BVJ |
| Displacement | ltr. | 4.163 |
| Output | kW at 1/rpm | 257/6800 |
| Torque | Nm at rpm | 440/3500 |
| Bore | dia. mm | 84.5 |
| Stroke | mm | 92.8 |
| Compression ratio | | 12.5 |
| RON | | 98 ¹⁾ |
| Fuel injection and ignition system | | Bosch Motronic |
| Ignition sequence | | 1-5-4-8-6-3-7-2 |
| Charging | | no |
| Oxygen sensor regulation | | 4 sensors |
| Variable valve timing | | yes |
| Variable intake manifold | | yes |
| Secondary air injection (AIR) system | | yes |

2008 Audi A6 Quattro

ENGINE 4.2 Liter V8 4V Engine Mechanical, Engine Code(s): BVJ

Valves per cylinder

4

- ¹⁾ Super unleaded RON 95 is permissible, although with reduced power.

SAFETY PRECAUTIONS

Safety precautions

Note the following when working on the fuel system:

CAUTION: There is a risk of injury because the fuel is under very high pressure.

- Before opening high pressure area of the fuel injection system, fuel pressure must be relieved to residual pressure.
- To reduce remaining residual pressure, lay a clean cloth around the connector and carefully loosen connector.

To prevent personal injury and damage to the injection and ignition system, observe the following:

- The ignition must be switched off before connecting or disconnecting injection and ignition system wiring or tester cables.
- Only clean engine with ignition switched off.
- If electrical connectors were disconnected, faults are saved in ECM:
 - Connect Vehicle Diagnosis, testing info. system VAS 5051.
 - Start "Guided Functions" operating mode.
 - Generate readiness code in ECM.

CAUTION: Risk of destroying electrical components when battery is disconnected.

- Observe measures when disconnecting battery.
- Only disconnect battery with ignition switched off.

Note the following when working on the cooling system:

CAUTION: Risk of scalding due to hot steam and hot coolant.

- When the engine is warm the cooling system is under pressure.
- To reduce pressure, cover coolant reservoir cap with cloth and carefully open.

If it is necessary to use testing and measuring devices on road tests, observe the following:

CAUTION: Risk of injury due to deployment of passenger airbag in a collision.

- **Always secure testing and measuring equipment on the rear seat and have a second person operate it from there.**

Procedure before opening fuel injection system high pressure area

- The fuel injection system is separated into a high-pressure section (max. approx. 120 bar) and a low-pressure section (approx. 6 bar).
- Before a component in the fuel injection system high pressure area is remove, the fuel pressure must be definitely reduced to a residual pressure of approx. 6 bar, as described in the following.

Special tools, testers and auxiliary items required

- Vehicle diagnostic, testing, and information system VAS 5051

Work procedure

- Start engine and run at idle speed.

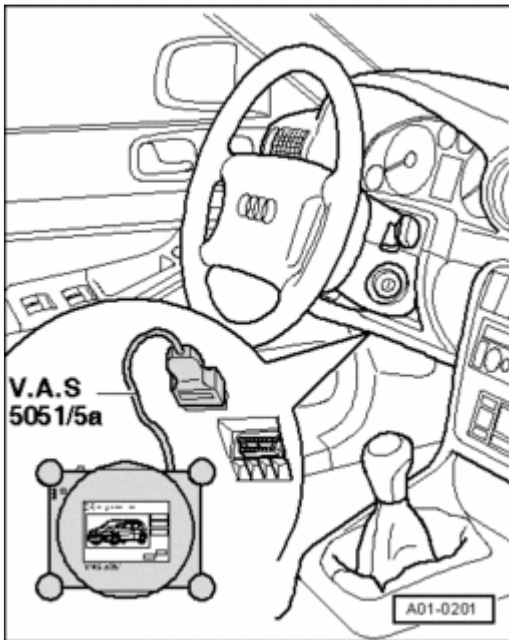


Fig. 2: Connecting Data Link Connector (DLC)
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Connect Vehicle Diagnosis, testing info. system VAS 5051.

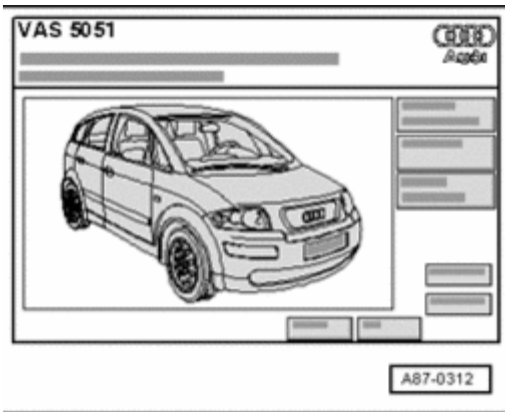


Fig. 3: Diagnostic System VAS 5051: Display
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS 5051 :

- Click on Vehicle Self-Diagnosis button.

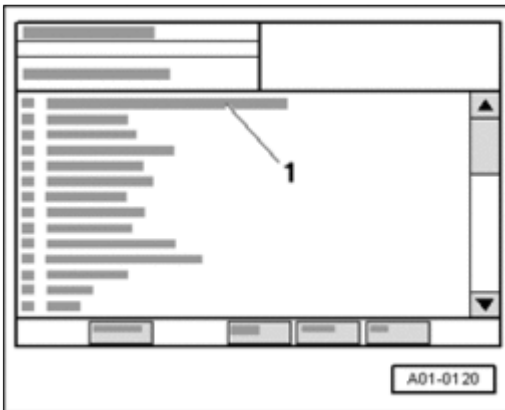


Fig. 4: Diagnostic System VAS 5051: Display - "01 - Engine Electronics"
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS 5051 :

- In selection - 1 - , press vehicle system "01 - Engine electronics".
- Wait until next display appears.

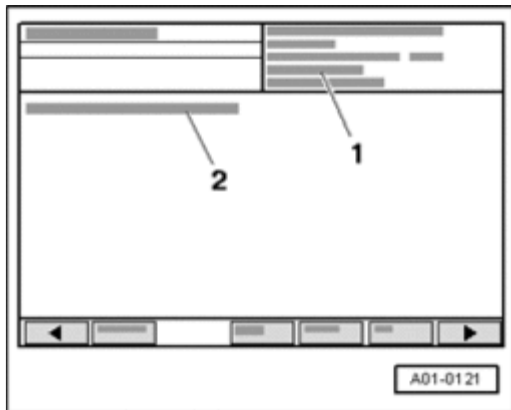


Fig. 5: VAS 5051 Tester Displaying Control Module Identification And Coding
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS 5051 :

1 - Control module identification of engine control module (ECM)

- o Click on --> button.

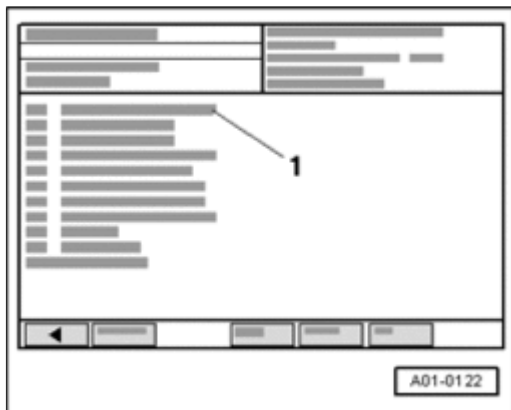


Fig. 6: Diagnostic System VAS 5051: Display - Basic Setting
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS 5051 :

1 - Selection of diagnostic functions

- o In selection - 1 - , click on diagnostic function "08 - Read measuring value block".

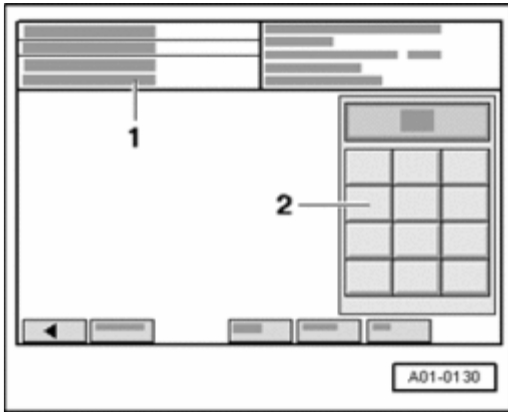


Fig. 7: Diagnostic System VAS 5051: Display - Display Group And Key Pad
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS 5051 :

- In button field - 2 - , press buttons 1 4 0 for "display group 140" and confirm entry by pressing Q button.

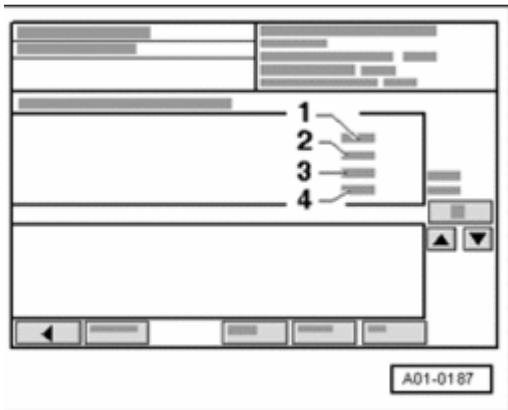


Fig. 8: Diagnostic System VAS 5051: Display
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS 5051 :

- Check display for fuel pressure in fuel rail in display field - 3 -.

Example:

3 - 40.63 bar

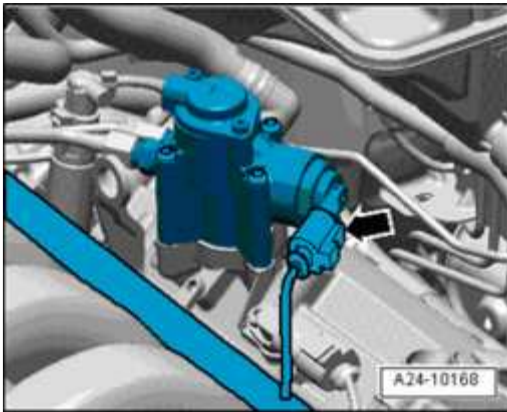


Fig. 9: Disconnecting Electrical Connector At Fuel Metering Valve 2 N402 On Left High Pressure Pump
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Disconnect electrical connector - **arrow** - at Fuel Metering Valve 2 N402 on left high pressure pump.

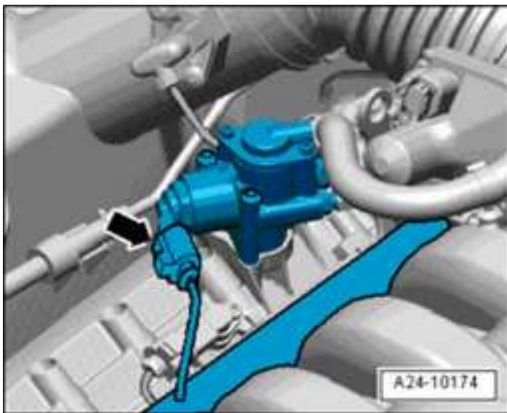


Fig. 10: Disconnecting Electrical Connector At Fuel Metering Valve 2 N290 On Right High Pressure Pump
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Disconnect electrical connector - **arrow** - at Fuel Metering Valve N290 on right high pressure pump.

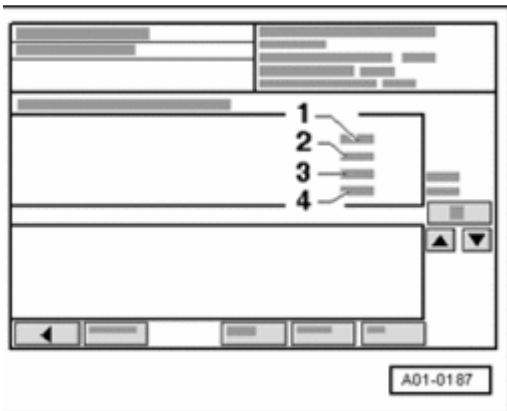


Fig. 11: Diagnostic System VAS 5051: Display

Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS 5051 :

- Check indication in display field - **3** - :
- Fuel pressure in fuel rail must sink to approx. 6 bar.
- Switch off ignition.

The fuel rail will continue to be filled with fuel, but it will no longer be under high pressure.

Now components or lines can be opened. Lay a clean cloth around connection points and collect escaping fuel.

Final procedures

- Reconnect electrical harness connectors.

Faults are saved in ECM when electrical connectors are disconnected:

- Connect Vehicle Diagnosis, testing info. system VAS 5051.
- Start "Guided Functions" operating mode.
- Generate readiness code in ECM.

RULES FOR CLEANLINESS**Rules for cleanliness**

Even minor contaminations can lead to malfunctions in the fuel injection system. When working on coolant supply and fuel injection system, observe the following rules of cleanliness:

- Before loosening, connections and surrounding areas must be cleaned thoroughly with engine or brake cleaner, and then cleaned area must be dried completely.
- Immediately seal off lines and connections with clean plugs or protective caps.
- Place removed parts on a clean surface and cover them with lint-free cloths.
- Only install clean components: Only unpack replacement parts immediately prior to installation. Do not use parts that have been stored unpackaged (e.g. in tool boxes etc.).
- If system is open, do not work with compressed air and do not move the vehicle.
- Protect disconnected electrical connectors from dirt and moisture and only connect if dry.