

### Diagnosis - Diagnostic Trouble Code (DTC) Memory

#### Preparation for DTC Readout

Diagnostic module (OBD II, N59/1) uses two different plug connectors for DTC readout:

- a) 16-pole diagnostic module (OBD II) generic scan tool connector (X11/22) using a generic scan tool (see connection diagram),
- b) 38-pole data link connector (X11/4) using the HHT (see section 0).

DTC readout using the impulse counter scan tool or via the LED pushbutton switch has been eliminated.

During DTC readout, the CHECK ENGINE MIL stays on continuously.

#### Layout of Diagnostic Module Generic Scan Tool Connector (OBD II, X11/22)

1	—
2	—
3	—
4	Ground (W1)
5	Ground (W15/1)
6	—
7	Diagnostic wire
8	—
9	—
10–15	—
16	Voltage supply, circuit 30

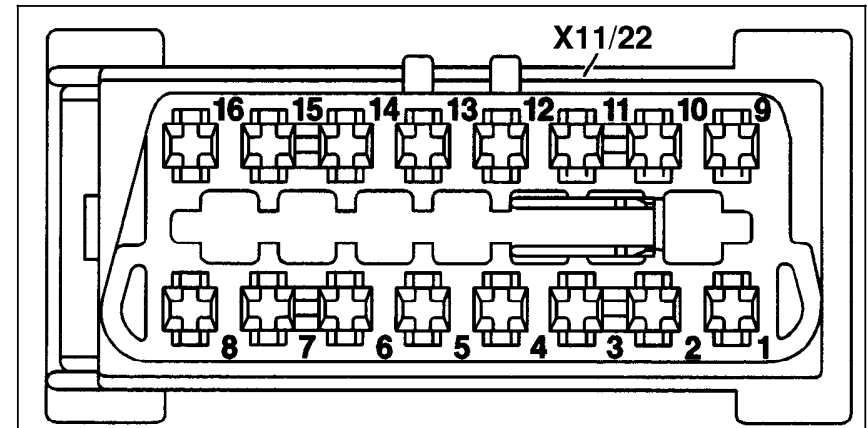
#### Notes Regarding Diagnostic Trouble Codes (DTC's)

The retained diagnostic trouble code (DTC) memory feature of the diagnostic module has been replaced with DTC memory which is cleared after disconnecting the vehicle's battery.

#### Notes Regarding DTC Readout Using Generic Scan Tool

In case of DTC P0131 and P0133, the exact cause of the fault in oxygen sensor 1 (O2S 1) can be read via "MODE 5" with the generic scan tool. To do so, the following codes must be entered in the generic scan tool:

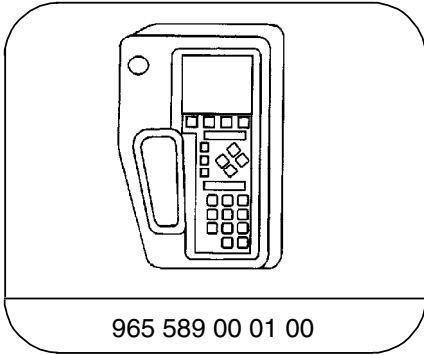
- DTC P0131: Code JD 4A HEX
- DTC P0133: Code JD 7E HEX



P07-6303-33

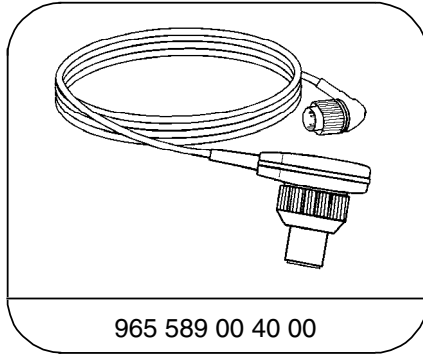
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Special Tools



965 589 00 01 00


Hand-Held-Tester



965 589 00 40 00


Test cable

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DTC 	Possible cause	Test step/Remedy <sup>1)</sup>
P0132	O2S 1 (before TWC) (G3/2) circuit high voltage	23⇒ 4.0
P0134	O2S 1 (before TWC) (G3/2) circuit no activity detected	23⇒ 4.0
P0131	O2S 1 (before TWC) (G3/2) circuit low voltage	23⇒ 4.0
P1131	O2S 1 (before TWC) (G3/2) circuit short circuit	23⇒ 4.0
P0133	O2S 1 (before TWC) (G3/2) circuit slow response	Damage to TWC 23⇒ 4.0
P0135	O2S 1 (before TWC) (G3/2) heater circuit malfunction	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P1132	O2S 1 (before TWC) (G3/2) circuit “rich” stop	Unmetered air, Damage to TWC or O2S
P0138	O2S 2 (after TWC) (G3/1) circuit high voltage	23⇒ 5.0
P0141	O2S 2 (after TWC) (G3/1) heater circuit malfunction	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P1137	O2S 2 (after TWC) (G3/1) circuit short circuit	23⇒ 5.0
P1138	O2S 2 (after TWC) (G3/1) operating condition	23⇒ 5.0
P0412	Secondary air injection (AIR) system switching valve/circuit malfunction <b>Model 129, 140:</b> AIR pump switchover valve (Y32) and electromagnetic AIR pump clutch (Y33) <b>Model 210:</b> AIR pump switchover valve (Y32) and AIR relay module (K17)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1


1) Observe Preparation for Test, see 22.

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DTC 	Possible cause	Test step/Remedy <sup>1)</sup>
P1411	Secondary air injection system incorrect flow detected	Hose lines, AIR pump, AIR shut-off valve
P1400	Electrical activation of the EGR switchover valve (Y27)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0400	Exhaust gas recirculation flow malfunction	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1 23 ⇒ 38.0 – 40.0,
P0507	Idle control system RPM higher than expected	Test EA/CC, see DM, Engines, Vol. 3, section 6 and/or 7
P0505	Idle control system malfunction	Test EA/CC, see DM, Engines, Vol. 3, section 6 and/or 7
P030x	TWC protection single cylinder misfire (Single cylinder ignition misfire within 200 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0300	TWC protection random cylinder misfire (Random cylinder ignition misfire within 200 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P030x	FTP standards single cylinder misfire (Single cylinder ignition misfire within 1000 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0300	FTP standards random cylinder misfire (Random cylinder ignition misfire within 1000 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P030x	I/M test single cylinder misfire (Single cylinder ignition misfire within 1000 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1


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P0300	I/M test random cylinder misfire (Random cylinder ignition misfire within 1000 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0420	Catalyst system efficiency below threshold	Catalytic converter (physical damage)
P1342	Electrical activation of adjustable camshaft timing solenoid (Y49)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1,
P1341	Adjustable camshaft timing solenoid (Y49) without function (Logic chain)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1 23⇒ 32.0,
P0200	Injector circuit malfunction	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P1170	Short term fuel trim (self-adaptation of fuel mixture)	Unmetered air, Injectors (Y62), Diaphragm pressure regulator, Hot film mass air flow sensor (B2/5), Engine wear (reset self-adaptation after repairs, see DM, Engines, Vol. 2, section 1.1)
P0170	Fuel trim malfunction (self-adaptation of fuel mixture)	Unmetered air, Injectors (Y62), Diaphragm pressure regulator, Hot film mass air flow sensor (B2/5), Engine wear (reset self-adaptation after repairs, see DM, Engines, Vol. 2, section 1.1)


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P0443	Evaporative emission control system (EVAP) purge control valve circuit malfunction (Purge control valve [Y58/1])	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P1443	Electrical activation of purge flow switchover valve (Y27/6)	23⇒ 8.0
P0441	EVAP without function (logic chain)	23⇒ 9.0
P1444	Pressure switchover without function (logic chain)	23⇒ 10.0
P1701	Electrical activation of upshift delay switchover valve (Y3/3)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P1700	Transmission upshift delay switchover valve (Y3/3) without function (Logic chain)	Upshift delay switchover valve (Y3/3), A/T control pressure cable adjustment (see SMS)
P030x	TWC protection single cylinder misfire (Single cylinder combustion misfire within 200 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0300	TWC protection random cylinder misfire (Random cylinder combustion misfire within 200 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P030x	FTP standards single cylinder misfire (Single cylinder combustion misfire within 1000 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0300	FTP standards random cylinder misfire (Random cylinder combustion misfire within 1000 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P030x	I/M test single cylinder misfire (Single cylinder combustion misfire within 1000 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1


<sup>1)</sup> Observe Preparation for Test, see 22.

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DTC 	Possible cause	Test step/Remedy <sup>1)</sup>
P0300	I/M test random cylinder misfire (Random cylinder combustion misfire within 1000 engine revolutions)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P1340	CMP sensor (L5/1) or camshaft Hall-effect sensor (B6/1) monitoring signal from engine control module (N3/4)	23 ⇒ 7.0
P1335	Engine speed signal TNA from diagnostic module (OBD II) not received	23 ⇒ 6.0
P1711	Electrical activation of resonance intake manifold switchover valve (Y22/6)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0116	Engine coolant temperature circuit range/performance problem (ECT sensor [B11/3])	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0125	Insufficient coolant temperature for closed loop fuel control	Engine coolant temperature sensor (B11/3)
P0111	Intake air temperature circuit range/performance problem (IAT sensor [B17])	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1, 1.2
P0101	Mass or volume air flow circuit range/performance problem (Hot film MAF sensor [B2/5])	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0335	CKP sensor circuit malfunction	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P1336	CKP sensor signal: Magnet coding on segment	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P1337	Engine speed signal TNA not transmitted from engine control module	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1

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P1740	Full load information: Load implausible	Test EA/CC, see DM, Engines, Vol. 3, section 6 and/or 7
P1741	Full load information: Throttle valve position implausible	Test EA/CC, see DM, Engines, Vol. 3, section 6 and/or 7
P0510	CTP information: Air mass implausible	Test EA/CC, see DM, Engines, Vol. 3, section 6 and/or 7
P0600	Serial communication link malfunction (CAN)	23 ⇒ 13.0
P0500	Vehicle speed signal implausible	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0501	Vehicle speed implausible	Engine control module (N3/4)
P0341	CMP sensor (L5/1) or camshaft Hall-effect sensor (B6/1)	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0105	Manifold absolute pressure implausible	23 ⇒ 11.0
P0327	Knock sensor 1; sensor signal	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0326	Knock sensor 1; circuit range/performance	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P0325	Knock sensor 1; control range end stop	Test HFM-SFI, see DM, Engines, Vol. 2, section 1.1
P1750	Diagnostic module (N59/1) voltage supply from circuit 30 too low	23 ⇒ 1.0

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