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Auto-Check system, operation

Malfunctions of vehicle systems are displayed on the Auto-Check system in two priority categories.

Displays in the first priority category are:

engine coolant level too low
engine coolant temperature too high

oil pressure too low

If malfunctions occur in these systems, the symbol will light and the warning chime will sound three times.

Displays in the second priority category are:

windshield washer fluid level too low

low beam headlight/tail light burned out

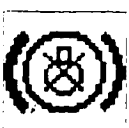
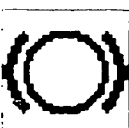
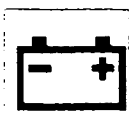
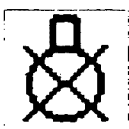
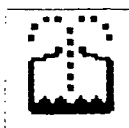
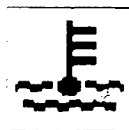
battery undercharging/overcharging

brake pads worn

brake light bulb burned out

brake light bulb burned out (Canada)

more





low fuel tank level

If malfunctions occur in these systems, the symbol will light and the warning chime will sound once.

In addition, the Auto-Check system also monitors:

brake pressure
brake fluid level
hydraulic fluid level

If malfunctions occur in these systems, the **BRAKE** symbol in the instrument cluster will light up but no chimes will sound.



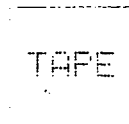
Note

The Auto-Check system on Canadian vehicles will display these symbols:

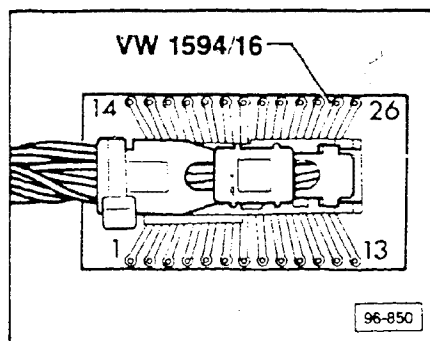
brake pressure
brake fluid level
hydraulic fluid level



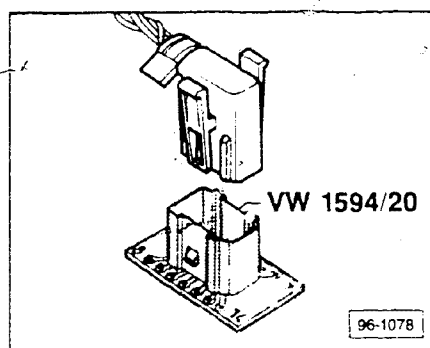
When the Auto-Check system is not being used, the radio station being played or the cassette player in use symbols will be displayed in the Auto-Check display.



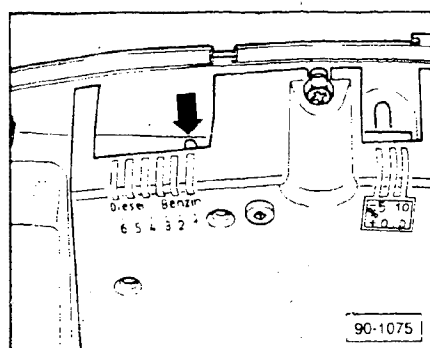
Auto-Check system, testing



► Fig. 1 Test measurement adapter for 26-point connectors



► Fig. 2 Test measurement adapter for 14-point connector



Auto-Check coding

The Auto-Check system is coded by a sliding switch on the instrument cluster.

- Position 1** German speaking countries/
gasoline engines
- Position 2** USA/gasoline engines
- Position 3** all countries other than the USA
and German speaking countries/
gasoline engines
- Position 4** German speaking countries/
diesel engines
- Position 5** USA/diesel engines
- Position 6** all countries other than the USA
and German speaking countries/
diesel engines

more

Auto-Check code, checking

- switch ignition **OFF**
- push and hold Auto-Check button on instrument cluster
- switch ignition **ON**
 - two number code is displayed

Note

The first number of the code is the number of cylinders of the engine. The second number is the appropriate code of the country.

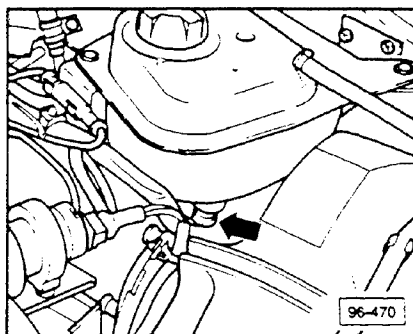
For example:

If 51 is displayed,

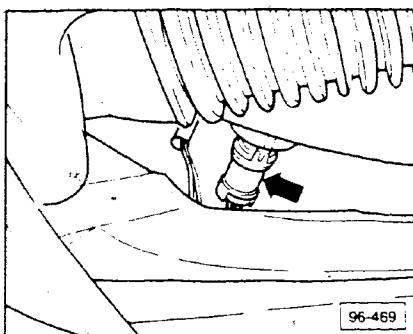
5 = number of cylinders

1 = German speaking countries gasoline engine

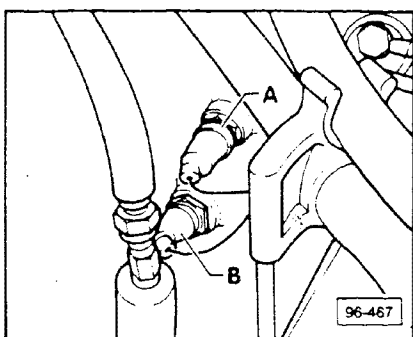
Interior Lights



Engine coolant level switch



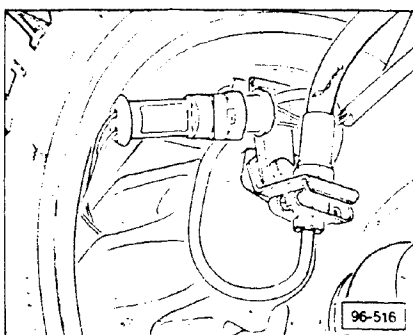
Windshield washer fluid level switch



Engine oil pressure switches

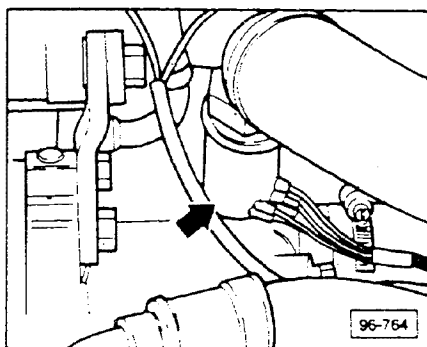
A — 1.8 bar

B — 0.3 bar

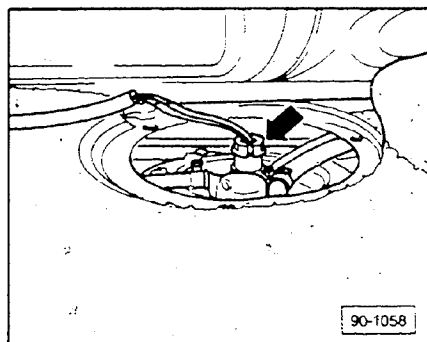


Brake pad wear indicator connector

Interior Lights



Electronic thermoswitch



Fuel gauge sender

Interior Lights

Measuring at the two 26-point connectors and the 14-point connector on the instrument cluster	Additional steps	Specification	Fault elimination
Voltage supply ■ connect voltmeter between terminals 10 and 26 of black 26-point connector	■ switch ignition ON	• 12 Volts	If NOT OK ■ repair break in wiring using wiring diagram
Display unit lighting ■ connect voltmeter to point 15 and 10 on black 26-point connector	■ switch parking lights ON	• 12 Volts	If NOT OK ■ repair break in wiring using wiring diagram
■ check warning contacts for windshield washer bottle ■ connect ohmmeter to contact 11 on 14-point connector and to contact 11 on brown 26-point connector	■ refill windshield washer bottle	∞ Ohm	If NOT OK ■ remove connector from windshield washer fluid bottle ■ repeat measurement If OK ■ replace windshield washer fluid bottle contacts If NOT OK ■ repair break in wiring using wiring diagram

Interior Lights

Measuring at the two 26-point connectors and the 14-point connector	Additional steps	Specification	Fault elimination
Electronic thermal switch and switch for coolant level indicator ■ connect ohmmeter to contact 4 and contact 11 on brown 26-point terminal		∞ Ohm	If NOT OK ■ remove connector from engine coolant level indicator switch ■ repeat measurement If OK ■ replace defective engine coolant level indicator switch If NOT OK ■ remove connector from electronic thermoswitch ■ repeat measurement If OK ■ replace defective electronic thermoswitch If NOT OK ■ repair short circuit using wiring diagram

Interior Lights

Measuring at the two 26-point connectors and the 14-point connector	Additional steps	Specification	Fault elimination
Fuel level display ■ connect ohmmeter between terminals 3 and 10 of black 26-point connector		tank full = approximately 40 Ohm tank empty = approximately 283 Ohm. measurement value depends on fuel level in tank	If NOT OK ■ repair wiring short circuit using wiring diagram
Brake pad wear indicator ■ connect ohmmeter on point 10 and point 11 of brown 26-point terminal		0 Ohm	If NOT OK ■ repair break in wiring using wiring diagram OR ■ replace worn brake pads

Interior Lights

Measuring at the two 26-point connectors and the 14-point connector	Additional steps	Specification	Fault elimination
Oil pressure switch 0.3 bar ■ connect ohmmeter to contact 6 and 11 on brown 26-point connector	■ switch ignition ON ■ let engine idle	0 ohm ∞ ohm	If NOT OK ■ remove wire from oil pressure switch and connect to ground ■ repeat measurement ● 0 ohm If OK ■ replace oil pressure switch If NOT OK ■ repair break in wiring using wiring diagram If NOT OK ■ remove wire from oil pressure switch ■ repeat measurement ● ∞ ohm If OK ■ replace oil pressure switch If NOT OK ■ repair short circuit using wiring diagram

Measuring at the two 26-point connectors and the 14-point connector	Additional steps	Specification	Fault elimination
Oil pressure switch 1.8 bar ■ connect ohmmeter to contact 12 on 14-point terminal and to contact 11 on brown 26-point terminal	■ switch ignition ON ■ let engine idle	∞ ohm 0 ohm	If NOT OK ■ pull wire off of oil pressure sender ■ repeat measurement ● ∞ ohm If OK ■ replace oil pressure switch If NOT OK ■ repair short circuit using wiring diagram If NOT OK ■ remove wire from oil pressure sender and connect to ground ■ repeat measurement ● approximately 0 ohm If OK ■ replace oil pressure sender If NOT OK ■ repair break in wiring using wiring diagram

Measuring at the two 26-point connectors and the 14-point connector	Additional steps	Specification	Fault elimination
Front bulb control unit ■ connect voltmeter to contact 1 on 14-point connector and contact 11 on brown 26-point connector	■ switch ignition ON ■ switch low beam headlights ON	• less than 1.5 volt	If NOT OK ■ repair break in wiring using wiring diagram If voltage is greater than 3.5 V ■ replace defective bulb OR ■ remove black connector from rear bulb control unit ■ repeat measurement If NOT OK ■ replace front bulb control unit
Rear bulb control unit ■ connect voltmeter to contact 1 on 14-point connector and cavity 11 on brown 26-point connector	■ reconnect black connector to rear bulb control unit ■ switch ignition ON ■ switch parking lights ON	• less than 1.5 volt	If NOT OK ■ repair break in wiring using wiring diagram If voltage is greater than 3.5 V ■ replace defective bulb ■ remove black connector from rear bulb control unit ■ check voltage between terminals 15 and 31 • approximately 12 V ■ repeat initial measurement • less than 1.5 V If NOT OK ■ replace rear bulb control unit

Measuring at the two 26-point connectors and the 14-point connector	Additional steps	Specification	Fault elimination
Rear bulb control unit, rear brakes ■ connect voltmeter to contact 2 on 14-point connector and cavity 11 on brown 26-point connector	■ switch low beam lights ON ■ press brake pedal	• 12 Volt less than 1.5 V	If NOT OK ■ repair break in wiring using wiring diagram If measured voltage is greater than 3.5 V when brake pedal is depressed ■ replace defective bulb ■ remove black plug from rear bulb control unit ■ measure voltage between terminals 15 and 31 • approximately 12 V ■ repeat initial measurement • 1.5 V If NOT OK ■ replace rear bulb control unit

Interior Lights

Measuring at the two 26-point connectors and the 14-point connector	Additional steps	Specification	Fault elimination
RPM signal ■ connect voltmeter to contact 12 and contact 11 on brown 26-point connector	■ switch ignition ON ■ let engine idle	• 2 to 10 V (varies with engine RPM)	If NOT OK ■ repair break in wiring using wiring diagram
Radio station frequency or cassette operation indication ■ connect voltmeter between contact 3 of 14-point connector and ground ■ connect voltmeter between contact 4 of 14-point connector and ground ■ connect voltmeter between contact 8 of 14-point connector and ground	■ switch ignition ON ■ switch radio ON	• approximately 5 V • approximately 5 V • 0 V	If OK ■ replace Auto-Check display unit If NOT OK ■ check wiring to radio ■ check radio

Selector lever display, removing/installing, terminal identification/checking

General notes

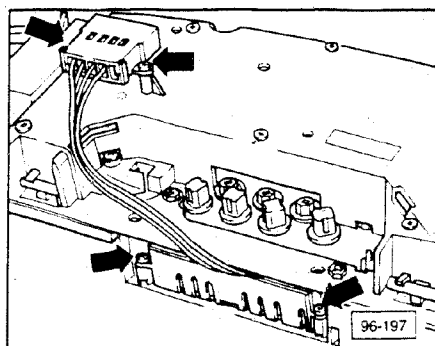
Beginning with 1991 m.y., a selector lever display is installed in the instrument cluster on vehicles equipped with the four-speed automatic transmission.

The selector lever display uses the following inputs:

- selector lever signal from automatic transmission control unit
- ground (—), terminal **31**
- instrument illumination (terminal **58b**)
- plus (+), terminal **15a**

Note

Always use appropriate wiring diagram when troubleshooting.



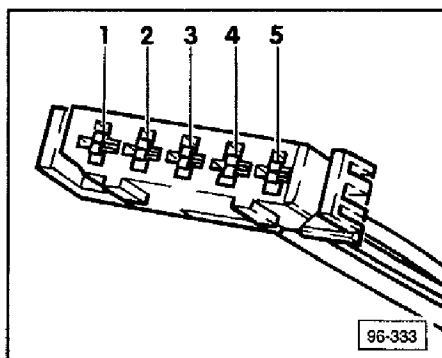
Selector lever display, removing/installing

- remove instrument cluster, see Repair Group 90
- disconnect five-point selector lever display connector
- remove connector securing screws (**upper arrows**)
- remove selector lever display screws (**lower arrows**)
- remove selector lever display
- install in reverse order of removal

Note

If the instrument cluster is replaced, remove the cover over the selector lever display window on the new instrument cluster before installing.

Interior Lights

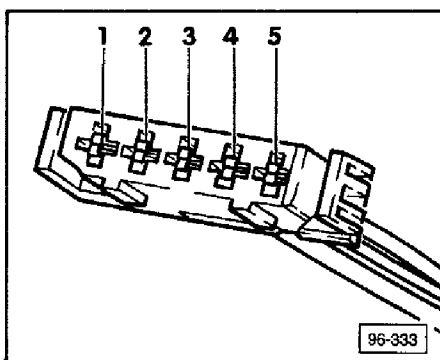


Five-point selector lever display connector, terminal identification

- 1 Selector lever signal (from automatic transmission control unit, J217)
- 2 Ground (—)
- 3 Instrument illumination, terminal 58b
- 4 Plus (+), terminal 15a
- 5 Open

Five-point selector lever display connector terminals, checking

- remove instrument cluster (leave instrument cluster connectors attached), see Repair Group 90
- disconnect five-point selector lever display connector



Terminal 1 — selector lever signal

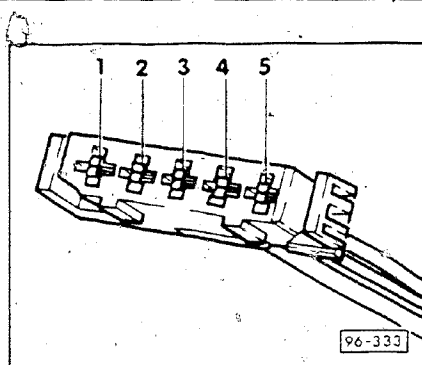
- connect digital multimeter **Fluke 83 (US 1119)** set to volt range between terminal 1 of selector lever display connector and ground
- switch ignition **ON**

Gear selector position	Specified value
P	approximately 6.0 V
R	approximately 4.2 V
N	approximately 3.4 V
D	approximately 2.8 V
3	approximately 2.5 V
2	approximately 2.2 V
1	approximately 2.0 V

Terminal 2 — ground (—)

- switch ignition **OFF**
- connect digital multimeter **Fluke 83 (US 1119)** set to Ohm range between terminal 2 of selector lever display connector and ground
 - must be 0 Ohm (continuity)

Interior Lights



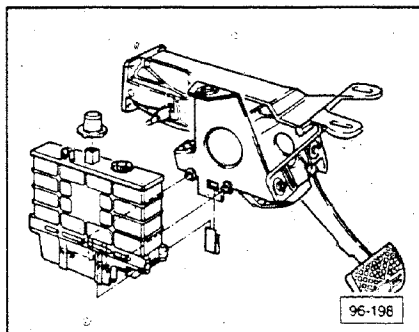
Terminal 3 — instrument illumination, terminal 58b

- connect digital multimeter **Fluke 83 (US 1119)** set to volt range between terminal 3 of selector lever display connector and ground
- switch parking lights **ON**
 - must be approximately 2.75-12.0 V depending on position of instrument panel light dimmer

Terminal 4 — plus (+), terminal 15a

- connect digital multimeter **Fluke 83 (US 1119)** set to volt range between terminal 4 of selector lever display connector and ground
- switch ignition **ON**
 - must be approximately 12 V (battery voltage)

Terminal 5 — open



Automatic transmission control unit (J217), removing/installing

- remove lower left instrument panel cover
- unlatch control unit connector securing clip
- remove connector from control unit
- remove control unit from bracket on brake pedal assembly
- install in reverse order of removal