

Instrument cluster (through M.Y. 1999)

Instrument cluster, removing and installing

CAUTION!

Disconnect the battery Ground (GND) strap before working on the electrical system.

Notes:

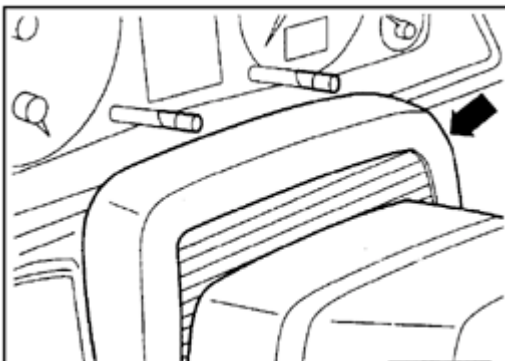
- ◆ *Before disconnecting the battery, determine the correct coding for the anti-theft radio.*
- ◆ *Once the battery is reconnected, check and activate the vehicle's electrical equipment (radio, clock, comfort and convenience features, etc.) as outlined in this Repair Manual or the Owner's Manual.*

Notes:

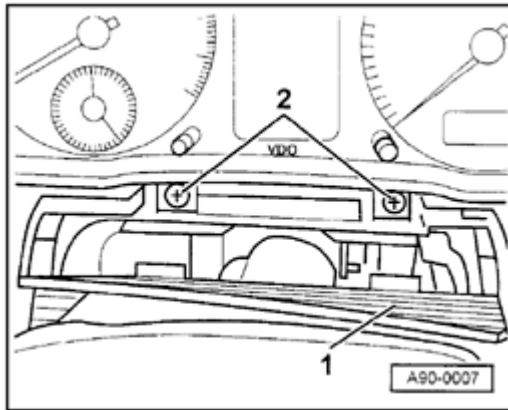
- ◆ Check DTC memory (⇒ [Page 01-10](#)) before removing the instrument cluster.
- ◆ Use the VAG1551 scan tool to check the Service Reminder Indicator (SRI) and odometer readings and record the displayed values ⇒ [Page 01-32](#) .

Two versions of the instrument cluster are manufactured by various companies:

- ◆ Raised version (Highline) with trip computer.
 - ◆ Standard version (Lowline) with mini-check system.
- Using steering column adjustment, fully extend steering wheel and move it to its lowest position.
 - Pivot top cover toward front and lift off.

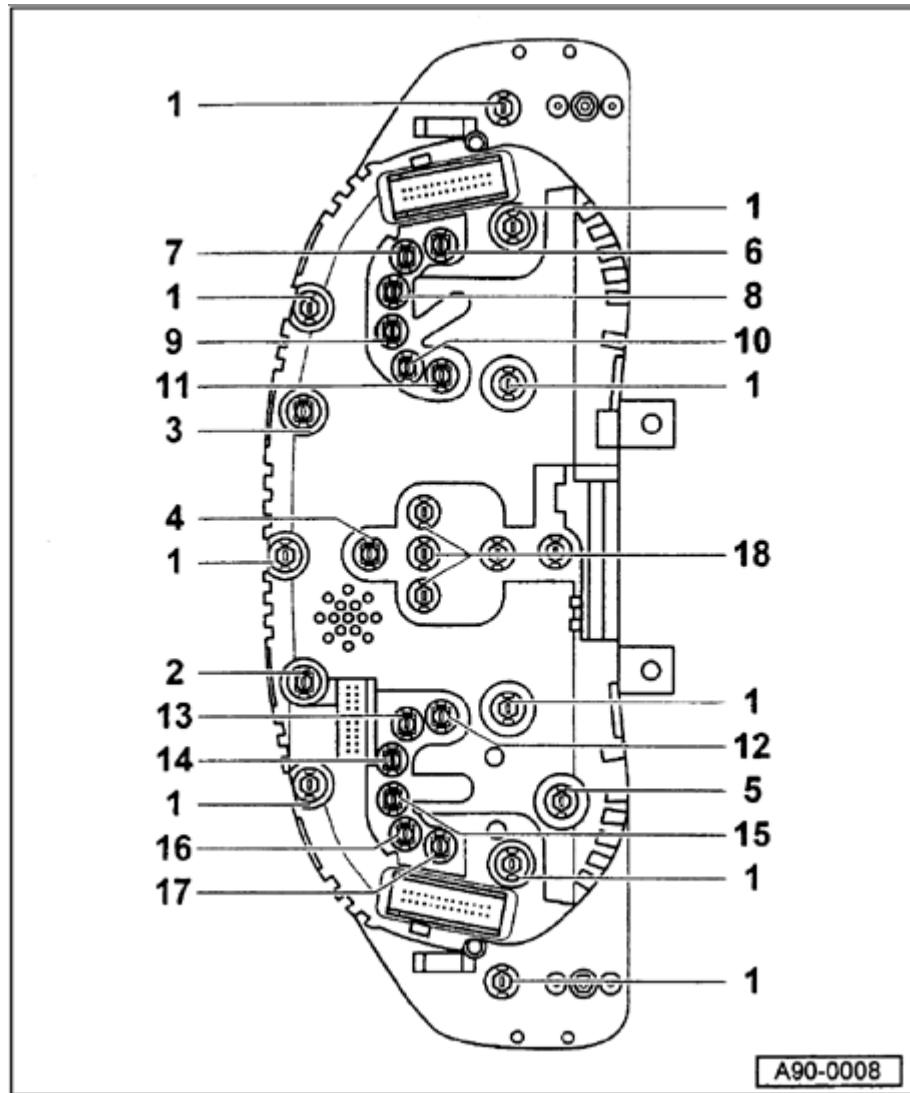


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- Pivot cover trim -1- away toward front.
- Remove screws -2-.
- Pull instrument cluster out, toward front.
- Cut open tie wraps on back of instrument cluster.
- Release retaining tabs on harness connectors and disconnect.
- Install in reverse order of removal.
- Check instrument cluster function after installation.
- If instrument cluster is working properly, initiate adaptation of Service Reminder Indicator (SRI) and service interval ⇒ [Page 01-32](#) .



Instrument cluster bulbs, locations (through 1997)

Highline version of instrument cluster with trip computer

1 - Instrument cluster illumination

Note:

When replacing instrument cluster bulbs in instrument clusters manufactured by Nippon Seiki, make sure to use replacement bulbs with red caps.

2 - Right turn signal indicator light

◆ 1.2 W

3 - Left turn signal indicator light -K65-

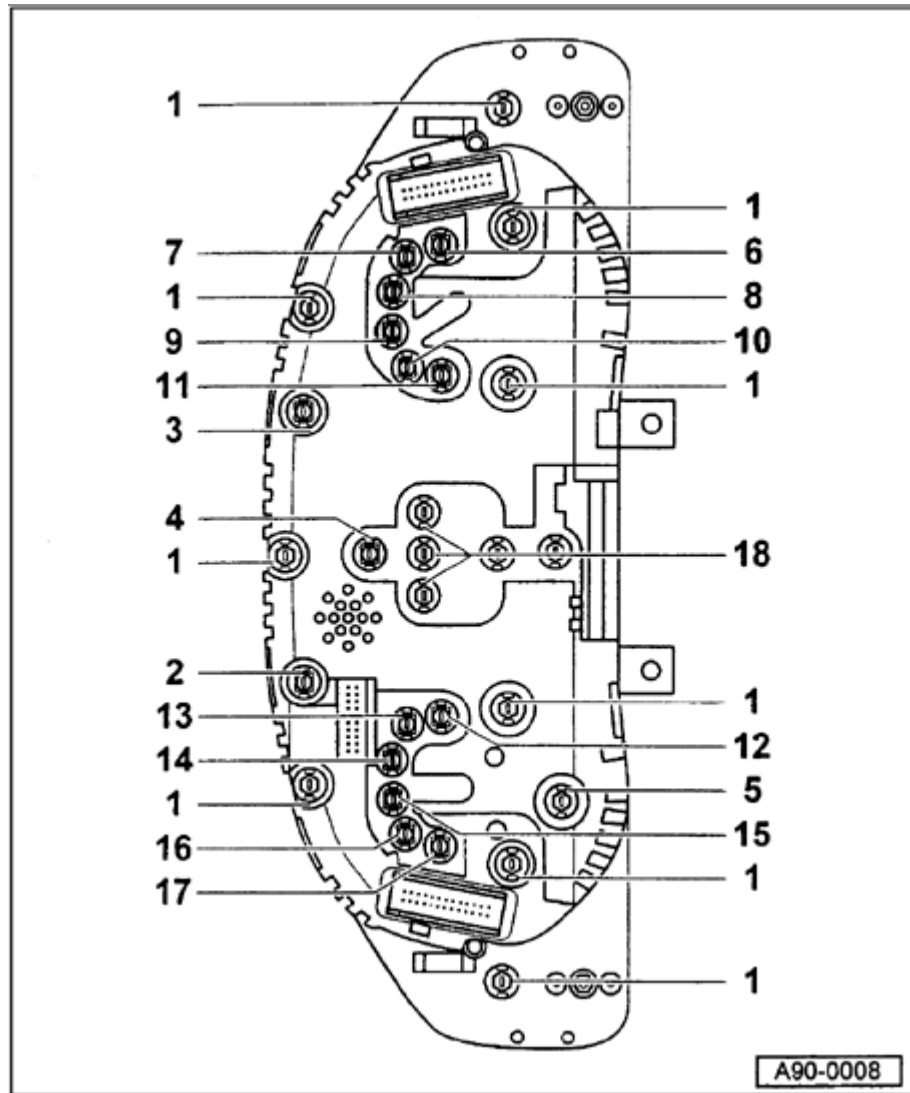
◆ 1.2 W

4 - Headlight high beam indicator light

◆ 1.2 W

5 - Odometer display illumination

◆ 1.1 W

**6 - Engine Malfunction Indicator Lamp (MIL)**

◆ 1.2 W

7 - Open**8 - Open****9 - Open****10 - Open****11 - Open****12 - Open****13 - Airbag Malfunction Indicator Lamp (MIL)**

◆ 1.2 W

14 - ABS warning light

◆ 1.2 W

15 - Parking brake indicator light

◆ 1.2 W

16 - Generator (GEN) warning light

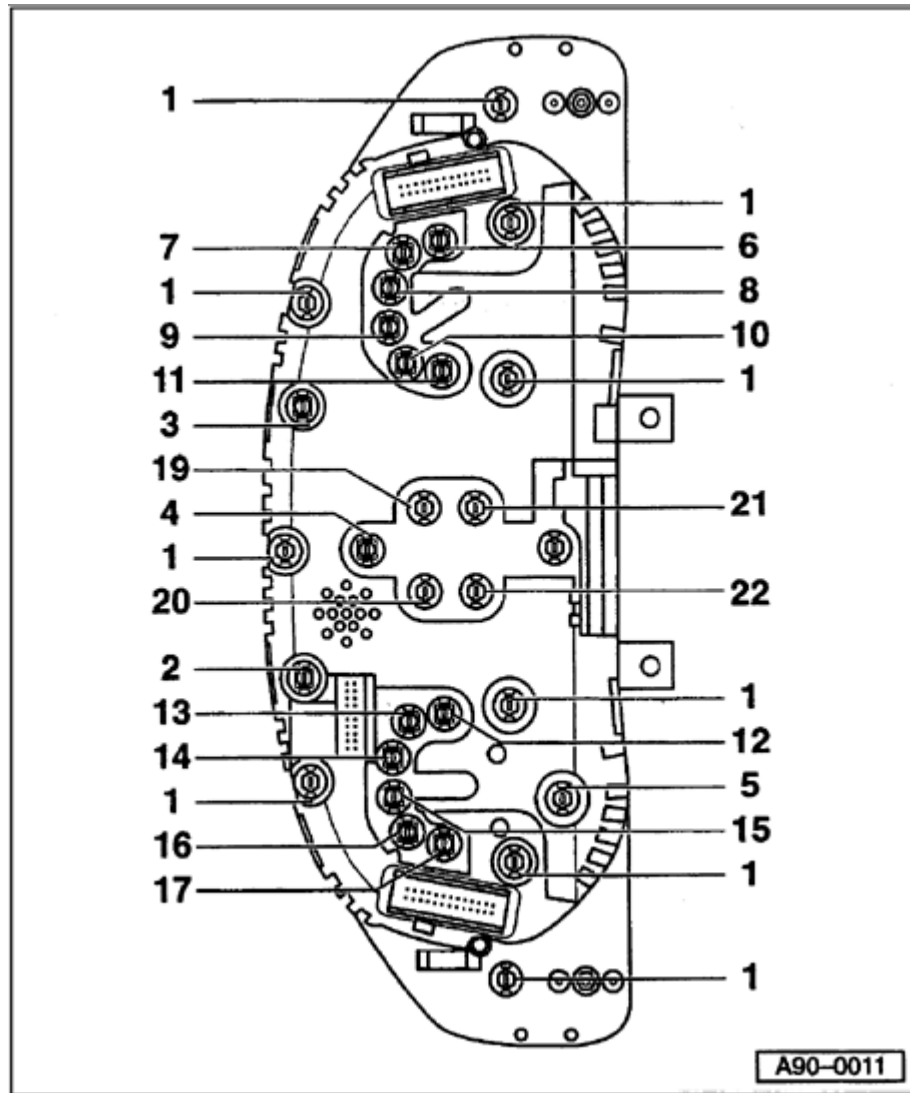
◆ 1.2 W

17 - Seat belt warning light

◆ 1.2 W

18 - Trip computer illumination

◆ 5 each 1.1 W



Lowline version instrument cluster with mini-check system

1 - Instrument cluster illumination

Note:

When replacing instrument cluster bulbs in instrument clusters manufactured by Nippon Seiki, make sure to use replacement bulbs with red caps.

2 - Right turn signal indicator light

◆ 1.2 W

3 - Left turn signal indicator light -K65-

◆ 1.2 W

4 - Headlight high beam indicator light

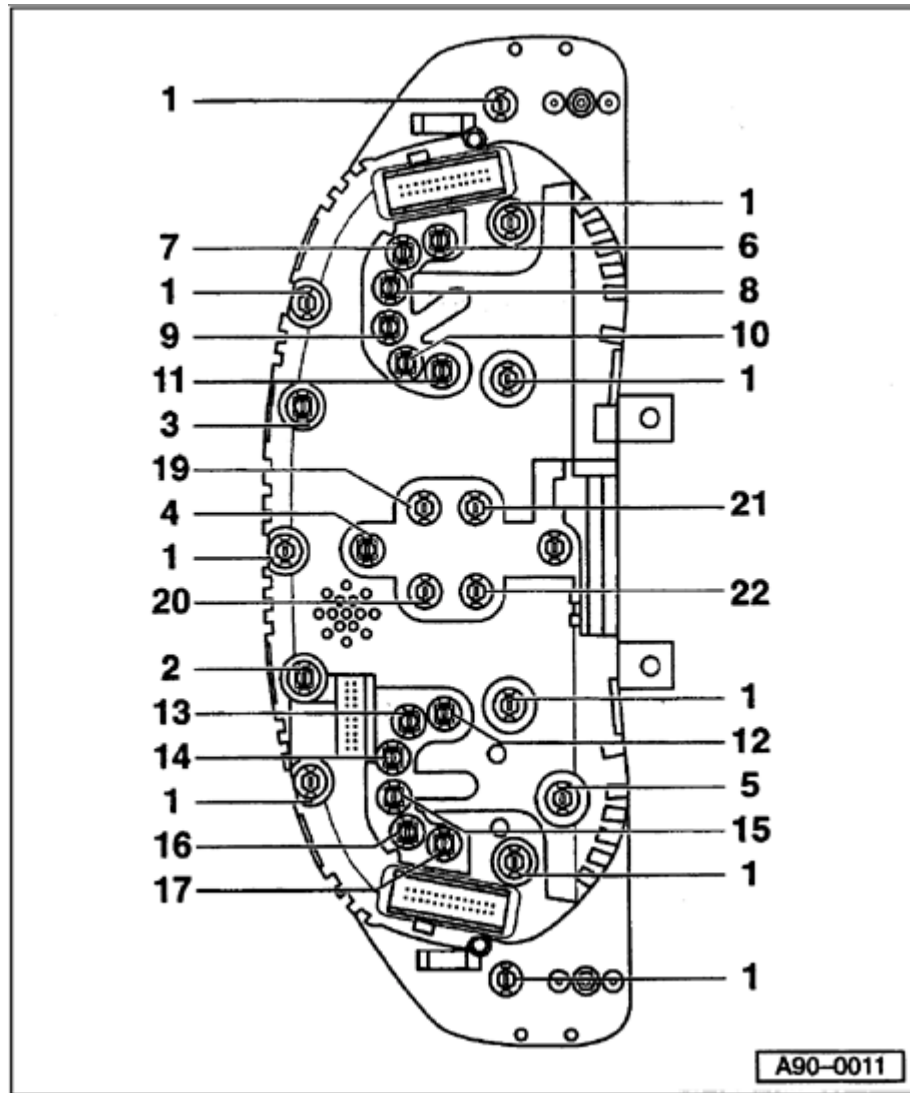
◆ 1.2 W

5 - Odometer display illumination

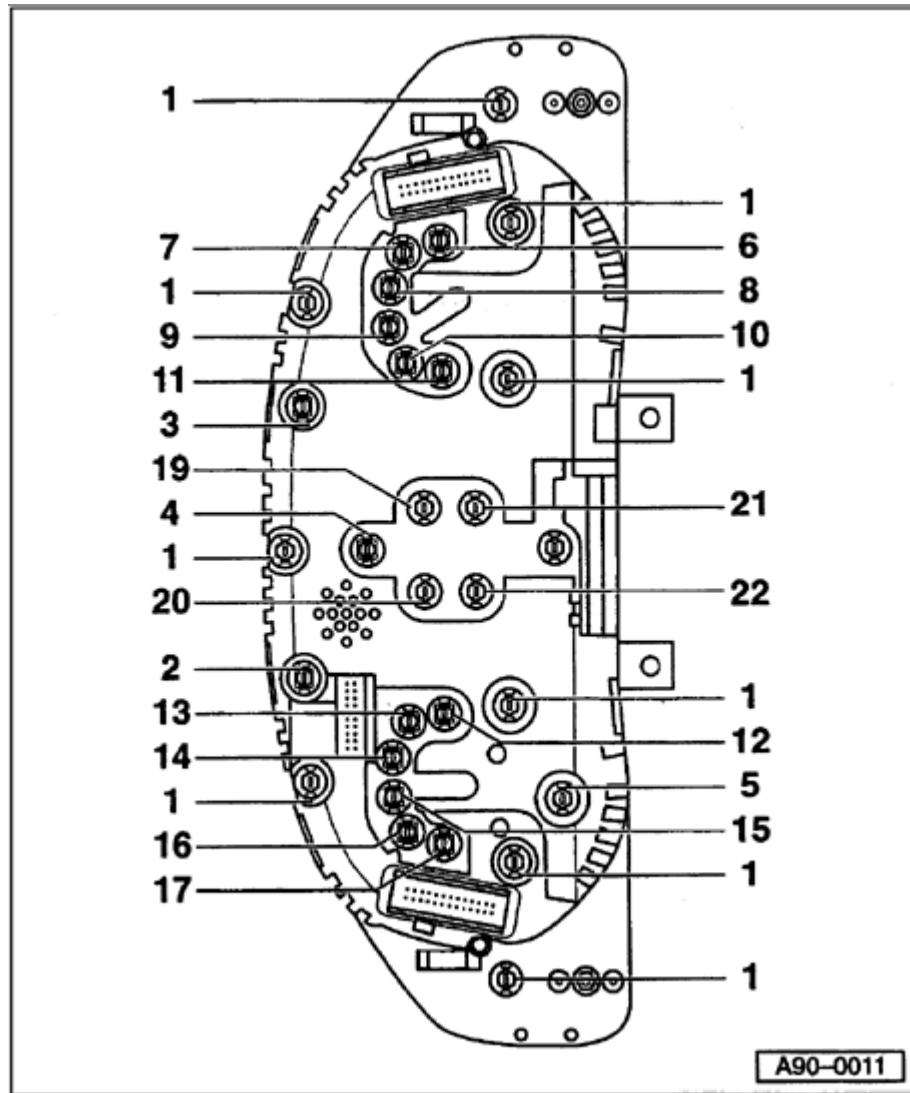
◆ 1.1 W

6 - Engine Malfunction Indicator Lamp (MIL)

◆ 1.2 W



- 7 - Open
- 8 - Open
- 9 - Open
- 10 - Open
- 11 - Open
- 12 - Open
- 13 - Airbag Malfunction Indicator Lamp (MIL)
 - ◆ 1.2 W
- 14 - ABS warning light
 - ◆ 1.2 W
- 15 - Parking brake indicator light
 - ◆ 1.2 W
- 16 - Generator (GEN) warning light
 - ◆ 1.2 W
- 17 - Seat belt warning light
 - ◆ 1.2 W



19 - Engine Coolant Temperature (ECT) warning light

◆ 1.2 W

20 - Oil pressure warning light

◆ 1.2 W

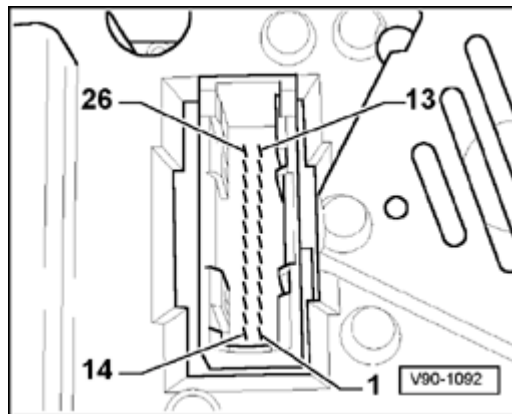
21 - Brake malfunction indicator light

◆ 1.2 W

22 - Low fuel level warning light

◆ 1.2 W

Instrument cluster multi-pin connector, terminal assignments (through 1997)

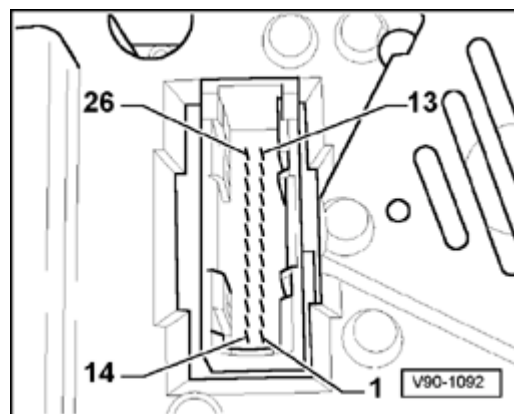


A 26-pin connector (blue)

Note:

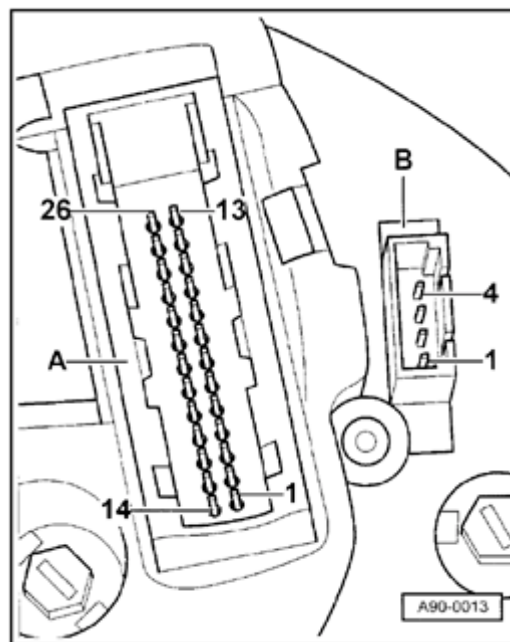
Use VAG1598/4 adapter with VAG1598 test box and appropriate wiring diagram for test measurements at 26-pin harness connectors.

- 1 - Open
- 2 - Signal for buzzer
- 3 - Terminal 15
- 4 - Terminal 15
- 5 - Open
- 6 - Terminal 61
- 7 - Parking brake/brake system malfunction
- 8 - ABS (input signal)
- 9 - Airbag (input signal)
- 10 - CAT
- 11 - Open
- 12 - Open



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- 13 - Parking light, right
- 14 - Ignition switch, S-contact
- 15 - Chime signal
- 16 - Open
- 17 - Open
- 18 - Oil pressure 1.8 bar
- 19 - Terminal 58d
- 20 - Coolant level
- 21 - Turn signal, right
- 22 - Headlight high beams
- 23 - Speedometer Vehicle Speed Sensor (VSS) (checking ⇒ [Page 90-22](#))
- 24 - Brake fluid
- 25 - Brake pads
- 26 - Parking light, left

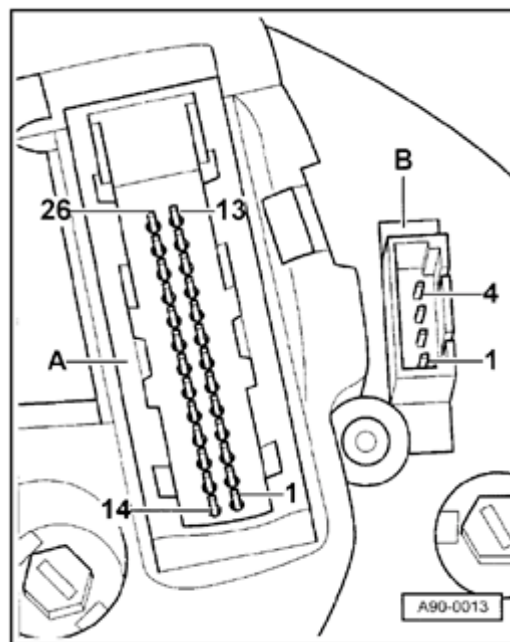


A 26-pin connector (yellow)

Note:

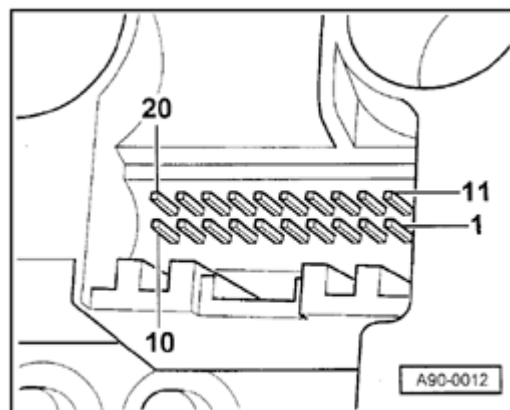
Use VAG1598/4 adapter with VAG1598 test box and appropriate wiring diagram for test measurements at 26-pin harness connectors.

- 1 - Terminal 58
- 2 - Terminal 58
- 3 - Engine RPM signal
- 4 - Air conditioner compressor
- 5 - Clock (output)
- 6 - Speed signal 1
- 7 - Speed signal 2
- 8 - Door contact (driver's door)
- 9 - Terminal 30
- 10 - Terminal 30
- 11 - Open
- 12 - Fuel tank warning



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- 13 - Turn signal, left
- 14 - Open
- 15 - Open
- 16 - Seat belt buckle switch
- 17 - Open
- 18 - Terminal 31
- 19 - Terminal 31
- 20 - Diagnostic wire
- 21 - Open
- 22 - Open
- 23 - Open
- 24 - Open
- 25 - Sender for fuel gauge
 - Checking ⇒ [Page 90-23](#)
- 26 - Engine coolant temperature sensor
 - Checking ⇒ [Page 90-24](#)

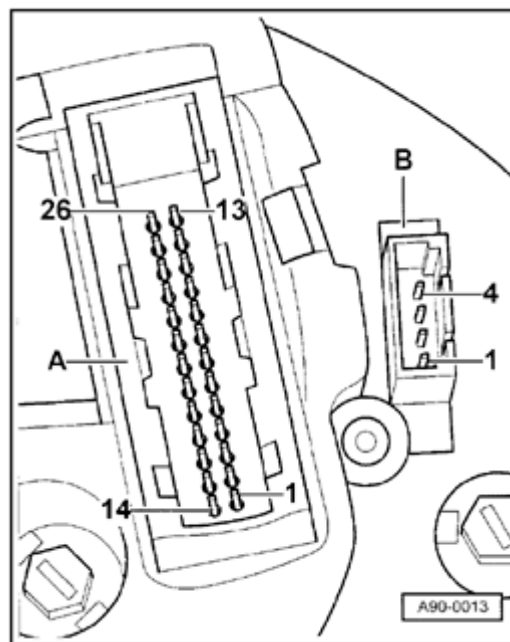


▲ 20-pin connector (black)

- 1 - Fuel consumption signal
- 2 - Open
- 3 - Open
- 4 - Open
- 5 - Outside air temperature
- 6 - Selector lever display
- 7 - Open
- 8 - Open
- 9 - Coolant level
- 10 - Hydraulic pressure
- 11 - Trip computer - Reset
- 12 - Radio/Telephone - Clock
- 13 - Radio/Telephone - Data
- 14 - Trip computer (forward sequence)
- 15 - Radio/Telephone - Enable
- 16 - Rear lights/headlight low beams
- 17 - Open
- 18 - Trip computer (reverse sequence)
- 19 - Brake lights

20 - Open

90-14

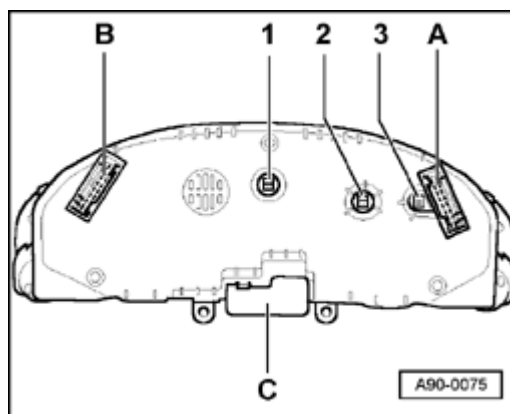
**A 4-pin connector (black)**

- 1 - Oil temperature sensor
- 2 - Open
- 3 - Open
- 4 - Open

Indicator lights in instrument cluster, locations (1998 through 1999)

Note:

With the exception of two indicator lights, all the remaining indicator lights are equipped with Light Emitting Diodes (LEDs). This means that if one LED fails, the instrument cluster must be replaced.



Lowline instrument cluster

1 - High beam indicator lamp - 1.2 W/1.1 W (Nippon Seiki)/ (VDO)

2 - Indicator light for Electronic Stability Program (ESP) - 1.2 W (only if equipped with ESP)

3 - Indicator light for trailer flasher - 1.2 W (only if equipped with trailer hitch)

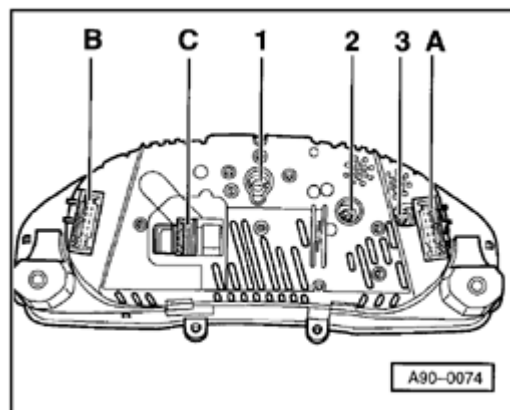
A - 32-pin connector for basic functions, blue

B - 32-pin connector for additional functions, green

C - Cover for vehicles without outside temperature display

Note:

If the instrument cluster is replaced in vehicles with outside temperature display or if outside temperature display is added later, cover -C- must be removed from the Lowline model.



A Highline instrument cluster

1 - High beam indicator lamp - 1.2 W/1.1 W (Nippon Seiki)/ (VDO)

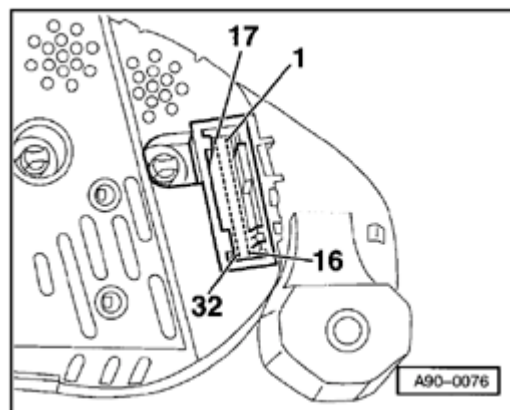
2 - Indicator light for Electronic Stability Program (ESP) - 1.2 W (only if equipped with ESP)

3 - Indicator light for trailer flasher - 1.2 W (only if equipped with trailer hitch)

A - 32-pin connector for basic functions, blue

B - 32-pin connector for additional functions, green

C - 20-pin connector for multi-function display

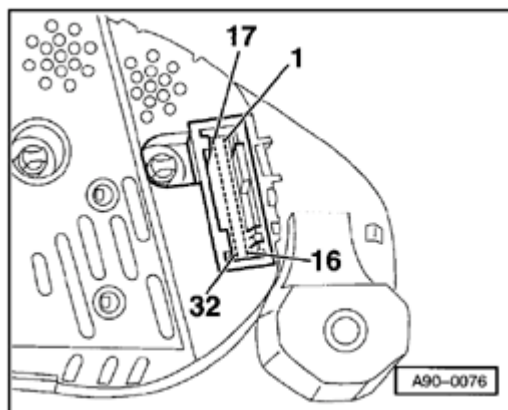


Instrument cluster, terminal assignments (1998 through 1999)



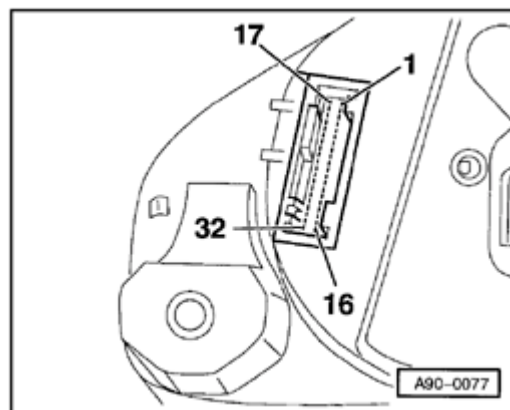
32-pin connector for basic functions, blue

- 1 - Terminal 15
- 2 - Turn signal, right
- 3 - Speedometer output 1
- 4 - Open
- 5 - Sender for fuel gauge
- 6 - Airbag
- 7 - Terminal 31 sensor Ground (GND)
- 8 - Coolant temperature
- 9 - Terminal 31 load Ground (GND)
- 10 - Oil pressure switch
- 11 - Engine speed (RPM) signal
- 12 - Terminal 61
- 13 - CAT
- 14 - Self leveling suspension
- 15 - Terminal 58d
- 16 - Malfunction Indicator Lamp (MIL)



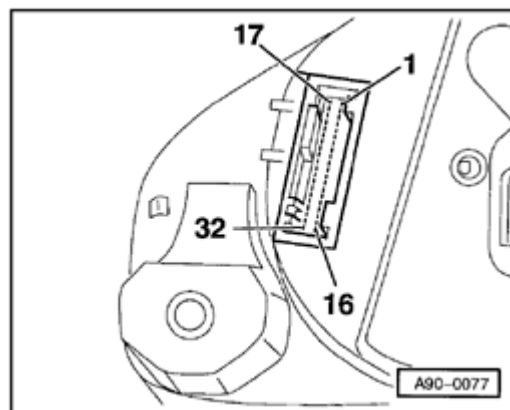
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- 17 - High beam
- 18 - Turn signal, left
- 19 - ABS
- 20 - Terminal 58s
- 21 - Door contact (driver's door)
- 22 - Engine coolant low
- 23 - Terminal 30
- 24 - Terminal 31 load Ground (GND)
- 25 - K-wire
- 26 - Parking light, right
- 27 - Parking light, left
- 28 - Speedometer (input)
- 29 - Brake fluid level/pressure
- 30 - S-contact
- 31 - Seat belt buckle
- 32 - Electronic Stability Program (ESP)



A 32-pin connector for additional functions, green

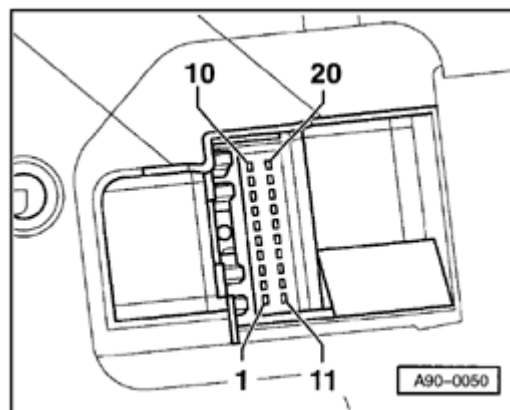
- 1 - Open
- 2 - Open
- 3 - Open
- 4 - Open
- 5 - W-wire
- 6 - Tailgate (Lowline model only)
- 7 - Brake pad (Highline model only)
- 8 - Input for outside buzzer control (currently not assigned)
- 9 - Input for outside chime control (currently not assigned)
- 10 - Low fuel level warning-output signal for Engine Control Module (ECM)
- 11 - Standing time output
- 12 - Air conditioning cutout
- 13 - Parking brake
- 14 - Electronic throttle
- 15 - Side marker light
- 16 - Open



A

- 17 - Open
- 18 - Open
- 19 - Open
- 20 - Open
- 21 - Oil temperature
- 22 - Open
- 23 - Open
- 24 - Open
- 25 - Open
- 26 - Open
- 27 - Open
- 28 - Open
- 29 - Open
- 30 - Speedometer output 2
- 31 - Open
- 32 - Open

90-21



A 20-pin connector for multi-function display, red

- 1 - Fuel consumption signal
- 2 - Open
- 3 - Open
- 4 - Open
- 5 - Outside air temperature
- 6 - Selector lever display
- 7 - Open
- 8 - Open
- 9 - Washer fluid
- 10 - Hydraulic pressure
- 11 - Trip computer reset
- 12 - Clock signal for radio frequency display
- 13 - Data signal for radio frequency display
- 14 - Trip computer (forward sequence)
- 15 - Enable signal for radio frequency display
- 16 - Tail lights/headlight low beam (indicator lights)
- 17 - Open
- 18 - Trip computer (reverse sequence)
- 19 - Brake lights

20 - Open

Instrument cluster multi-pin connectors, checking

Note:

Use VAG1598 test box and VAG1598/4 (26-pin), VAG1598/25 (32-pin) adapters.

Checking Vehicle Speed Sensor (VSS)

➤ 1997

- ◆ 26-pin connector (blue), terminal 23

- Roll vehicle back and forth (approx. 1 meter)

Must read:

Voltage must rise from 0 volts to approx. 5 volts and then drop again to 0 volts.

1998 ➤

- ◆ 32-pin connector (blue), terminal 28

- Roll vehicle back and forth (approx. 1 meter)

Must read:

Ohmic resistance must be between

approximately 0 ohms (Ω) and ∞ ohms (Ω).

Checking sender for fuel gauge

➤ 1997

- ◆ 26-pin connector (yellow), terminal 25

Fuel tank half full: approx. 162 ohms (Ω)

Fuel tank full: approx. 40 ohms

Fuel tank reserve: approx. 250 ohms(Ω)

1998 ➤

- ◆ 32-pin connector (blue), terminal 5

Fuel tank half full: approx. 162 ohms (Ω)

Fuel tank full: approx. 40 ohms

Fuel tank reserve: approx. 250 ohms(Ω)

Checking Engine Coolant Temperature (ECT) sensor

➤ 1997

- ◆ 26-pin connector (yellow), terminal 26

Coolant temperature 90 °C: approx. 110 ohms (Ω)

Coolant temperature 120 °C: approx. 50 ohms (Ω)

1998 ➤

- ◆ 32-pin connector (blue), terminal 8

Coolant temperature 90 °C: approx. 110 ohms (Ω)

Coolant temperature 120 °C: approx. 50 ohms (Ω)