

## INSTRUMENT PANEL

Volkswagen Technical Site - <http://volkswagen.msk.ru>

### ARTICLE BEGINNING

1993 ACCESSORIES & EQUIPMENT  
Volkswagen Instrument Panels

Volkswagen; EuroVan, Passat

### DESCRIPTION & OPERATION

Instrument cluster for most models includes speedometer, fuel gauge and temperature gauge. Optional instruments include clock, tachometer, voltmeter and oil temperature gauge. See Figs. 3 and 4.

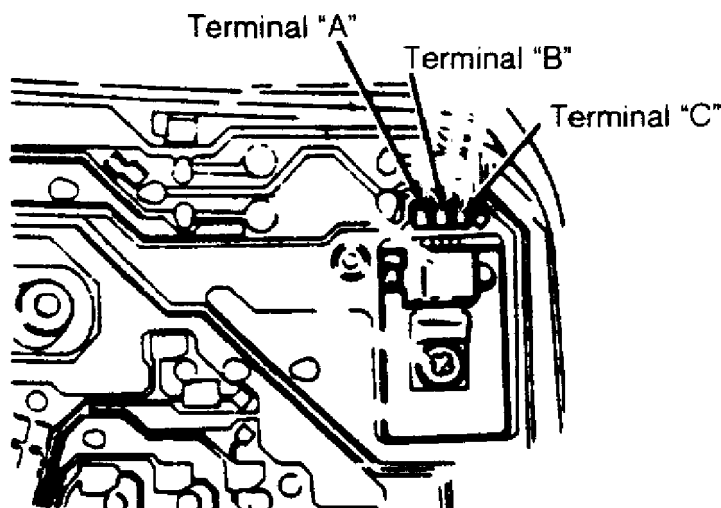
Printed circuit provides voltage to gauges. A voltage regulator attached to printed circuit controls voltage to fuel and temperature gauges. Most warning lights are a Light Emitting Diode (LED). To replace diode, pull from printed circuit socket.

### TESTING

#### VOLTAGE REGULATOR TEST

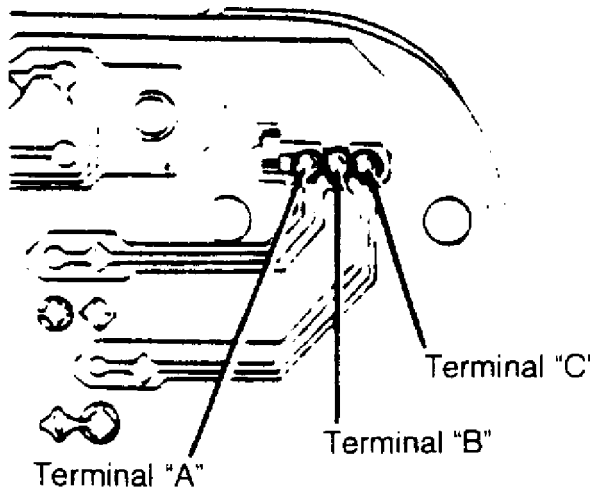
1) If only one gauge is inoperative, regulator is not defective. Remove instrument cluster trim, leaving multi-point connector attached. Remove tachometer/clock. Connect positive (+) lead to terminal "A". See Fig. 1 or 2. Connect voltmeter negative (-) lead to terminal "B". Turn ignition on. If battery voltage is present, go to next step. If battery voltage is not present, repair wiring harness.

2) Turn ignition off. Connect positive (+) lead to terminal "C". See Fig. 1 or 2. Connect voltmeter negative (-) lead to terminal "B". Meter reading should be 9.5-10.5 volts. If voltage is incorrect, replace voltage regulator.



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Fig. 1: Testing Voltage Regulator (Analog Gauges)  
Courtesy of Volkswagen United States, Inc.



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Fig. 2: Testing Voltage Regulator (Passat With Electronic Gauges)  
 Courtesy of Volkswagen United States, Inc.

FUEL & TEMPERATURE GAUGE TEST

NOTE: Volkswagen Tester (VW 1301) is required for resistance tests. Tester settings are numerical. Settings do not indicate resistance in ohms. Manufacturer does not supply resistance values in ohms.

1) Disconnect wire from fuel tank or temperature sending unit. Connect VW Tester (VW 1301) between wire and ground. Turn ignition on and allow 2 minutes for gauge reading to stabilize. Use FUEL GAUGE TESTING or TEMPERATURE GAUGE TESTING table to compare gauge reading. Gauge should be within one pointer width of specification.

2) If gauge needle does not move, check continuity between sender wire and gauge. If needle moves but does not match specifications, replace gauge. If gauge works correctly with tester but not sending unit, replace sending unit.

FUEL GAUGE TESTING (1) TABLE

Application	Dial Setting	Indicator
Passat	50	Full

(1) - Information for EuroVan not available from manufacturer.

TEMPERATURE GAUGE TESTING (1) TABLE

Application	Dial Setting	Indicator
Passat	80	Normal
	50	(2) Hot

(1) - Information for EuroVan not available from manufacturer.

(2) - With Red LED flashing.

REMOVAL & INSTALLATION

CAUTION: DO NOT damage printed circuit when installing instruments.

**Removal & Installation (EuroVan)**

1) Obtain radio code. Remove negative battery cable. Remove instrument cluster trim. Remove instrument cluster trim cover. For tachometer and combination gauge, carefully pull gauge from housing and connector. Remove speedometer mounting screws and carefully pull speedometer from housing.

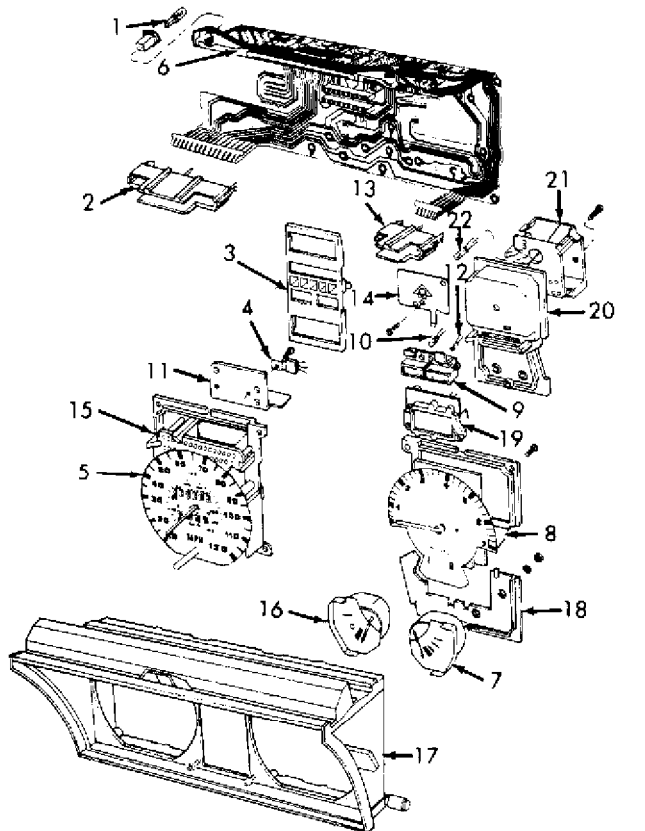
2) To install, reverse removal procedure. Carefully guide plugs on rear of instruments into connector on printed circuit board.

**Removal & Installation (Passat)**

1) Obtain radio code. Remove negative battery cable. Remove instrument cluster trim. Remove instrument cluster trim cover.

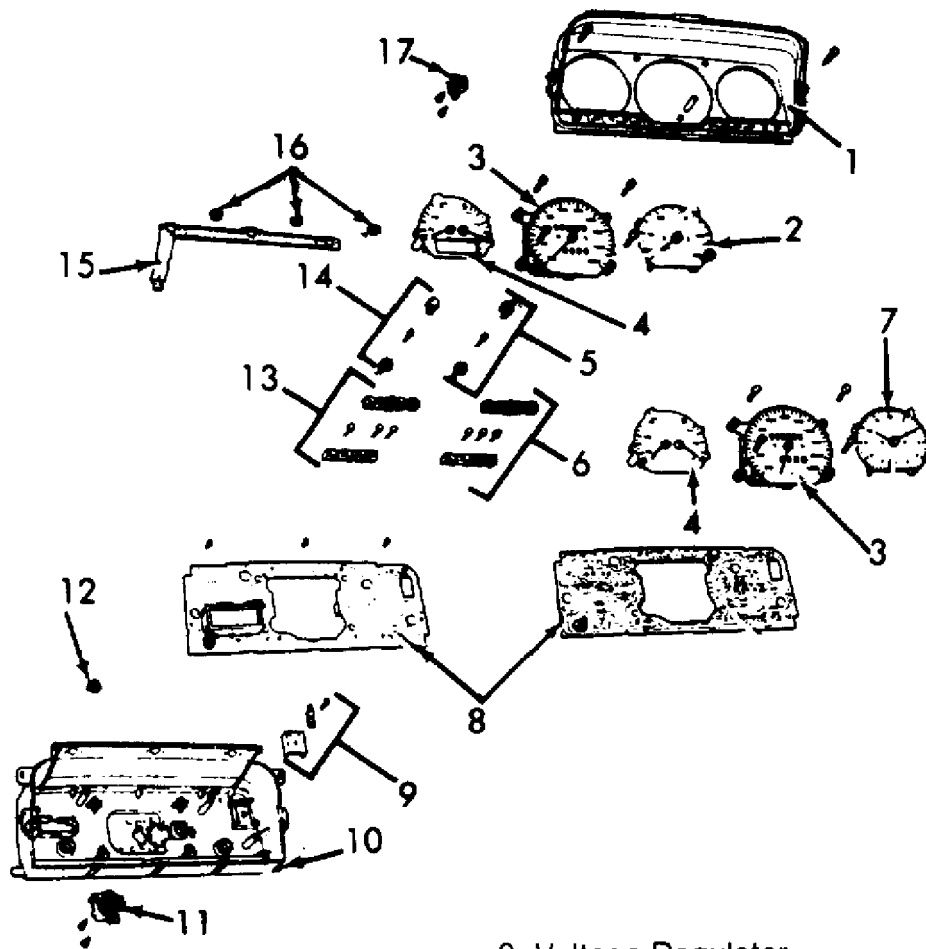
2) For tachometer and combination gauge, carefully pull gauge from housing and connector. For mechanical speedometer, remove mounting screws and carefully pull speedometer from housing.

3) To install, reverse removal procedure. Carefully guide plugs on rear of instruments into connector on printed circuit board.



- |                                   |   |
|-----------------------------------|---|
| 1. Instrument Cluster Light Bulb  | 12. Warning LED   |
| 2. Wire Terminal Housing          | 13. Wire Terminal Housing   |
| 3. Trim                           | 14. Upshift Indicator (If Equipped)                               |
| 4. Voltage Regulator              | 15. Oil Pressure Warning System Control Unit                      |
| 5. Speedometer                    | 16. Coolant Temperature Gauge                                     |
| 6. Flexible Printed Circuit       | 17. Instrument Cluster Insert                                     |
| 7. Fuel Gauge                     | 18. Support Plate For Gauges                                      |
| 8. Tachometer                     | 19. Digital Clock   |
| 9. LED Holder                     | 20. Instrument Cluster Housing Cover                              |
| 10. LED Indicator Light           | 21. Parking Brake/Brake Fluid Level Warning Light Printed Circuit |
| 11. Voltage Regulator Heat Shield | 22. Upshift Indicator LED (If Equipped)                           |

**Fig. 3: Exploded View Of Instrument Cluster (Jetta Is Similar) Courtesy of Volkswagen United States, Inc.**

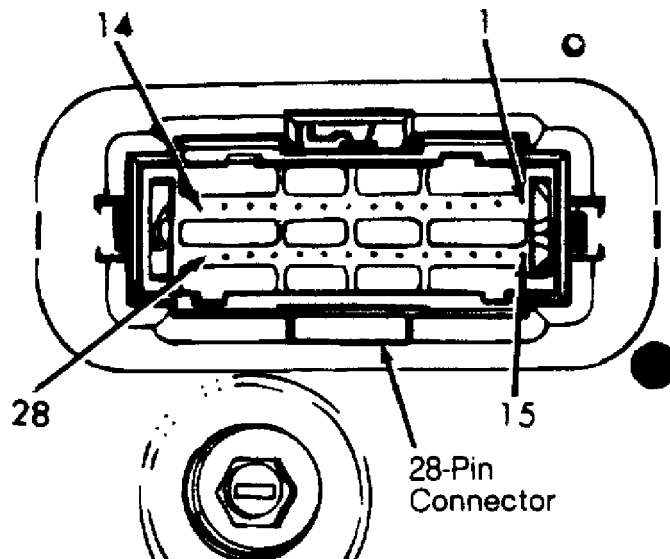


- |                             |                                |
|-----------------------------|--------------------------------|
| 1. Frame                    | 9. Voltage Regulator           |
| 2. Tachometer               | 10. I/C Housing                |
| 3. Speedometer              | 11. Vehicle Speed Sensor Plate |
| 4. Fuel/Coolant Temp. Gauge | 12. Digital Clock Light        |
| 5. Right Indicator Light    | 13. Warning/Indicator Light    |
| 6. Warning/Indicator Light  | 14. Warning/Indicator Light    |
| 7. Clock                    | 15. Printed Circuit Board      |
| 8. Printed Circuit Board    | 16. Instrument Cluster Light   |
|                             | 17. Vehicle Speed Sensor       |

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Fig. 4: Exploded View Of Instrument Cluster (EuroVan Is Similar)  
 Courtesy of Volkswagen United States, Inc.

PRINTED CIRCUIT CONNECTORS



1. Outside Temperature Sensor Ground (If Equipped)
2. To Coolant Low Level Sensor
3. Ground (Terminal No. 31)
4. Multifunction Indicator Memory Reset Switch (If Equipped)
5. Ground (Terminal No. 31)
6. Multifunction Indicator Memory Reset Switch (If Equipped)
7. Vehicle Speed Sensor Signal
8. From Oil Pressure Switch (High Side)
9. From Oil Pressure Switch (Low Side)
10. Tachometer Input Signal (Terminal 1/W)
11. Battery Voltage (Terminal No. 30)
12. Battery Voltage For Instrument Lighting (Terminal 58b)
13. Battery Voltage (Terminal No. 15)
14. (Not Used)
15. To MFI Mode Switch (If Equipped)
16. Alternator Warning Light (Terminal No. 61)
17. From Oil Temperature Sensor (If Equipped)
18. To Seat Belt Warning Light/Brake Warning Light (If Equipped)
19. Outside Temperature Sensor Signal (If Equipped)
20. MIL Or Glow Plug (Diesel Only)
21. Fuel Gauge
22. Left Turn Signal
23. Coolant Temperature Gauge
24. Right Turn Signal
25. High Beam Indicator
26. Fuel Consumption Indicator (If Equipped)
27. Signal From Speedometer Sensor (If Equipped)
28. A/T Selector Display (If Equipped)

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Fig. 5: Identifying Printed Circuit 28-Pin Connector (Passat)  
 Courtesy of Volkswagen United States, Inc.

#### WIRING DIAGRAMS

See appropriate chassis wiring diagram in WIRING DIAGRAMS.

END OF ARTICLE