

MERCEDES-BENZ

240D
280 Series
300 Series
380 Series

DESCRIPTION

All models have an instrument cluster with speedometer, clock, fuel gauge, oil pressure gauge and temperature gauge. Some models have a tachometer and 380 models have a vacuum gauge. The headlight switch is located on the instrument panel. A combination switch on the steering column lever controls the high beams, turn signals and wipers. Additional switches on the console operate other electrical options.

OPERATION

The speedometer on 300SD and 380SEL models is electronic, with a sending unit in the rear of the transmission. All other models use a cable-driven speedometer. The 300SD and 380SEL models also use an electric oil pressure sending unit, while all other models have an oil pressure line to the instrument cluster. Fuel and temperature gauges on all models use variable resistance sending units. Vacuum gauges are connected directly to the intake manifold by a vacuum line.

TESTING

ELECTRONIC SPEEDOMETER

1) Remove screw and pull sender out of transmission tail housing. Turn ignition on. Place a large screwdriver blade across sender tip. Move blade quickly off and on sender. Speedometer needle should move slightly. If not, remove instrument cluster and unplug connector at back of cluster.

2) Connect negative lead of voltmeter on pin 3 and positive lead on pin 5. Repeat test of sender. If voltage is indicated, speedometer is defective. If no voltage, replace sender and harness.

VACUUM GAUGE

Locate vacuum source hose at 4-way connector near engine. Check for vacuum. If not present, clean vacuum port or repair hose. If vacuum is present, connect directly to vacuum gauge hose (bypass connector). If gauge works, air conditioning system has a vacuum leak. If gauge does not work, repair vacuum line or replace gauge.

OIL PRESSURE GAUGE (ELECTRIC ONLY)

Turn ignition on and pull sending unit wire off sending unit. Gauge should indicate about 43 psi (3 kg/cm²). If not, check sending unit wire for short to ground. If wire is okay, replace gauge. Connect wire to ground. Gauge should indicate no

pressure. If reading remains high, sending unit wire is broken. Check resistance of sending unit as indicated in "Oil Pressure Sending Unit Resistance" chart.

FUEL GAUGE

Connect ohmmeter between terminal "G" and 31 on fuel gauge sender. Resistance should be between 2 and 70 ohms, depending upon level of fuel in tank. The higher the fuel level, the lower resistance will be. Connect ohmmeter across terminal "W" and 31. Continuity should exist only if tank is empty (low fuel warning contacts). If sender is okay and wire is good, replace fuel gauge.

REMOVAL & INSTALLATION

INSTRUMENT CLUSTER

Removal (380SL & 380SLC) – Pry out steering wheel center cap. Remove and discard screw. Remove steering wheel. Push top of cluster hood up and insert tool to pull cluster out. Unplug wiring, disconnect speedometer cable and remove oil pressure line. Remove cluster.

Installation – To install, reverse removal procedure. Install new steering wheel screw and tighten to 60 ft. lbs. (80 N·m).

Removal (240D, 280E, 280CE, 300D, 300CD & 300TD) – Push top of hood up and slide in pulling hook. Move hook over to right side of cluster (3 o'clock position) and pull cluster out slightly. Loosen speedometer cable clamp (in engine compartment). Pull cluster back, unplug wiring and remove oil pressure line. Disconnect speedometer cable and remove cluster.

Installation – To install, reverse removal procedure.

Removal (300SD & 380SEL) – Pry out steering wheel center cap. Remove and discard screw. Remove steering wheel. Insert pulling hook at left side of cluster and pull cluster out of spring clips. Unplug wiring and remove cluster.

Installation – To install, reverse removal procedure. Use new steering wheel screw and tighten to 60 ft. lbs. (80 N·m).

HEADLIGHT SWITCH

Removal (All Models) – Pull switch knob off. Remove nut and push switch shaft into panel. Remove cover below instrument panel. Disconnect wiring and remove switch.

Installation – To install, reverse removal procedure.

COMBINATION SWITCH

Removal (300SD & 380SEL) – Pry out steering wheel center cap. Remove and discard screw. Remove steering wheel. Remove cover below instrument panel. Unplug combination switch wiring. Remove screws from switch and pull switch out.

Installation – To install, reverse removal procedure. Install new steering wheel screw and tighten to 60 ft. lbs. (80 N·m).

Removal (All Other Models) – Remove rubber sleeve on switch lever. Remove 2 screws and pull switch out slightly. Remove 2 horn wires. Take off lower instrument panel cover and unplug wiring. Remove switch.

Installation – To install, reverse removal procedure.

Oil Pressure Sending Unit Resistance

| Pressure psi (kg/cm ²) | Resistance (Ohms) |
|---------------------------------------|----------------------|
| 0 (0) | 10 |
| 14 (1) | 70 |
| 28 (2) | 130 |
| 43 (3) | 185 |