JEEP CORP.

Jeep

DESCRIPTION

"CJ" Models – Instrument cluster is composed of speedometer housing, panel lights, high beam indicator, turn signal indicators, brake failure/parking brake warning indicator, Emergency Drive indicator, temperature gauge, and combination fuel gauge and constant voltage regulator (CVR).

Cherokee, Wagoneer & "J" Models – Instrument cluster is composed of speedometer housing, panel lights, high beam indicator, turn signal indicators, ammeter, oil pressure gauge, temperature and fuel gauges, constant voltage regulator (CVR), brake failure warning bulb, lockout warning bulbs (Quadra-Trac), heater control lights, wiper/washer and heater control lights, and blower motor fan switch.

OPERATION

Temperature Gauge & Sending Unit – Indicator circuit consists of a sending unit and gauge. Sending unit is threaded into cylinder head on 6 cylinder engines, and manifold coolant crossover on V8 engines. The gauge is grounded through the variable resistance of the sending unit. Changes in coolant temperature vary resistance in sending unit, increasing or decreasing indication on the gauge.

Fuel Level Gauge – Fuel level circuit consists of a sending unit, fuel gauge and on "CJ" models, a constant voltage regulator (CVR). Sending unit is located in fuel tank, gauge and CVR are located on instrument panel. Gauge is grounded through variable resistance of sending unit. A float attached to a slide rheostat follows fuel level and the varying resistance increases or decreases indicator reading.

Constant Voltage Regulator – 1) On "CJ" models, CVR is built into the fuel gauge and on all other models it is built into the temperature gauge. CVR provides equal regulated voltage to each gauge.

2) The CVR's function is to regulate the variable input voltage available from car battery, or charging system to provide a constant 5 volt output to gauges. The CVR does not produce a steady DC voltage output, but rather a pulsating voltage averaging 5 volts. Output voltage averaging lower or higher than 5 volts will result in proportionately higher or lower gauge readings.

TESTING

OIL PRESSURE GAUGE

1) To test accuracy of oil pressure gauge, use a variable resistance tester (J-24538 or equivalent).

2) Disconnect wire from sending unit on engine. Turn ignition switch "ON". Connect one lead of tester to ground and other leading to sending unit wire. Compare results with specifications shown in table.

Oil Press. Gauge Test Readings

Application	psi	Ohms
CJ Models	0	234-246
	20	149-157
	40	100.5-105.5
	80	32.5-34.5
Cherokee, Wagoneer & J Models	0	69-77
	10	35-38
	60	13-15
	80	9.5-10.5

FUEL & TEMPERATURE GAUGE

1) Using a variable resistance tester (J-24538 or equivalent), attach one lead to fuel tank sending unit and other lead to sending unit ground wire. Move float arm and mark arm location at each of the appropriate resistance values.

2) Disconnect sending wire from sending unit. Connect one lead of tester to sending wire and other lead to ground. Turn ignition to "ON" position. Adjust tester to known ohm values and observe gauge indication at each ohm setting.

NOTE – *Fuel and temperature gauge indications may vary width of needles at any specific resistance value. Preceding test applies to both gauges.*

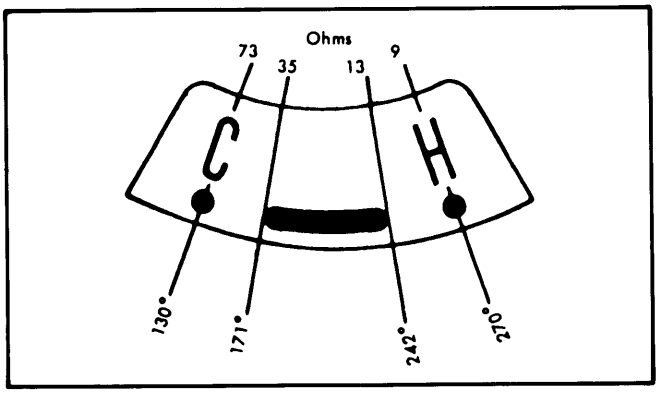

Fig. 1 Fuel and Temperature Gauge Test Band by Ohms and Needle Position

REMOVAL & INSTALLATION

SPEEDOMETER & GAUGES

All Models – Instrument panel must be removed to gain access to speedometer and gauges for repair or replacement.

INSTRUMENT CLUSTER

"CJ" Models – 1) Disconnect battery ground cable. Disconnect speedometer cable from instrument cluster and remove radio. Disconnect voltmeter wiring, retaining bracket and voltmeter. Remove four attaching nuts and pull cluster from mounting studs. Disconnect gauge wires and cluster lamps, then remove instrument cluster assembly.

2) To reinstall, reverse removal procedure while noting if the connector link between CVR and temperature gauge has to be replaced. If replacement is required, use 16 gauge or larger insulated wire.

JEEP CORP. (Cont)

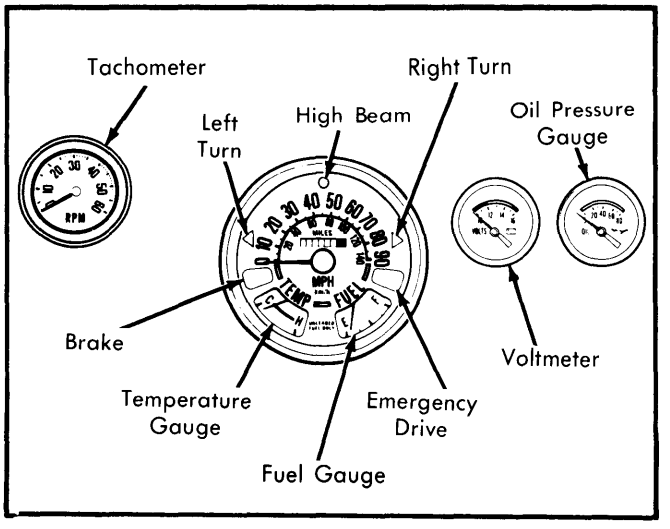

Fig. 2 Jeep Instrument Cluster ("CJ" Models)

Cherokee, Wagoneer & "J" Models – 1) Disconnect battery and remove six cluster retaining screws. Disconnect speedometer cable. Pull cluster pin terminal plug straight away from cluster. Disconnect four-terminal plug, fan switch connector plug, and vacuum hoses from heater control.

NOTE – *Tag hoses to ensure proper connections when installing the cluster.*

2) Remove two heater control panel lights, and disconnect temperature control wire from lever. Remove instrument cluster assembly. To install, reverse removal procedure.

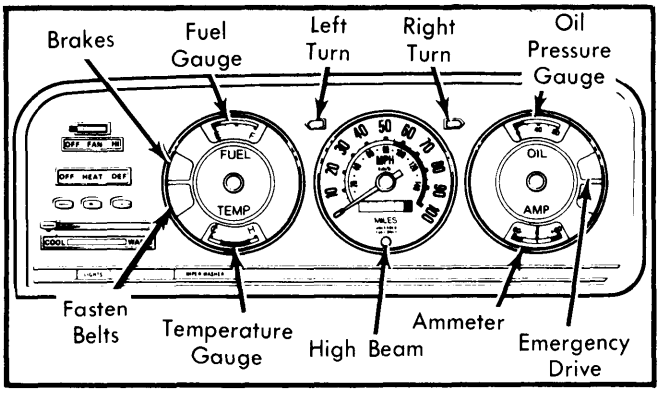

Fig. 3 Jeep Instrument Cluster (Cherokee, Wagoneer & "J" Models)

PRINTED CIRCUITS

Cherokee, Wagoneer & "J" Models – With instrument cluster out of dash panel, remove constant voltage regulator (CVR) and terminal nuts from temperature and fuel gauge studs. Remove attaching screws and lift circuit board off back of cluster.

HEADLIGHT SWITCH

All Models – Disconnect connector plug from switch, pull control knob out to second position. From behind instrument panel, depress knob release button and pull knob out of switch. Remove retaining nut and bezel. Remove switch through rear of instrument panel. To install, reverse removal procedures.

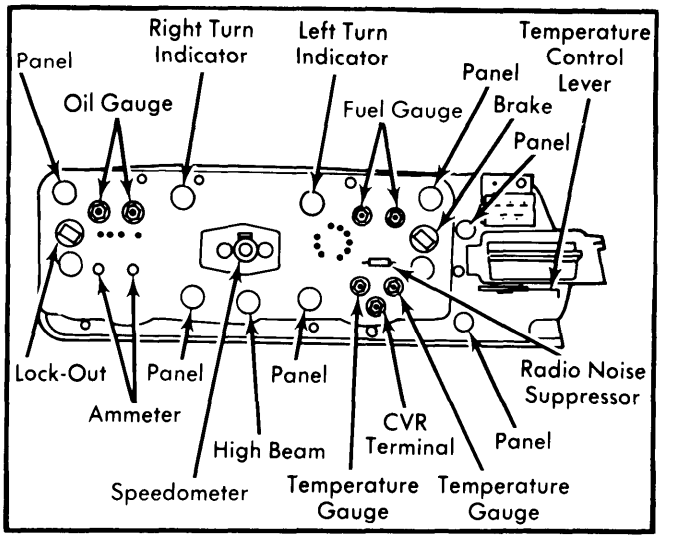

Fig. 4 Rear View of Jeep Instrument Cluster (Cherokee, Wagoneer & "J" Models)

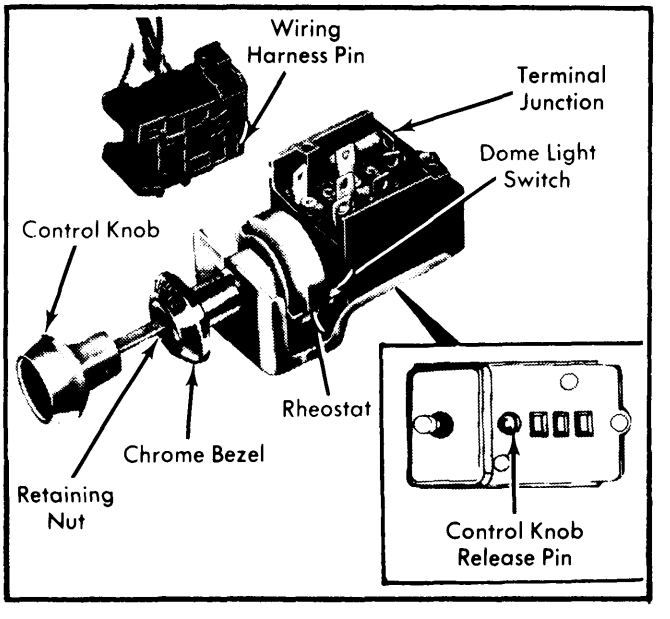

Fig. 5 Jeep Headlight Switch & Harness Connector