1966-74 CHRYSLER CORP.

DESCRIPTION & OPERATION

Fuel, temperature, and oil pressure gauges operate on the constant voltage principle through a voltage limiter. On models equipped with the low fuel warning system, the voltage limiter is part of the low fuel relay and supplies power for the fuel gauge only. Imperial models are equipped with a Sentry Signal Light. This warns the driver of the following: Low oil pressure, low fuel level, and high coolant temperature. Separate sending units for the oil pressure and temperature indicating operation of Sentry Signal are mounted on the engine (see wiring diagram) and are connected to a low fuel warning relay located on the right lower instrument panel near glove box.

Fuel Level Gauge – A hinged float arm in fuel tank raises or lowers depending on fuel level, and contacts a variable resistor in the gauge sending unit. This provides a change of resistance in the fuel gauge circuit. This resistance registers on instrument panel gauge in the form of a level reading.

Temperature & Oil Pressure – The operation of temperature and oil pressure indicating systems are identical in operation with the fuel system, with the exception of the method of varying resistance of sending unit.

In temperature, the resistance of the disc in sending unit varies with a direct relation to coolant temperature. When coolant temperatures are high, resistance is low, when coolant temperatures are low, resistance is high.

In oil pressure, the sending unit resistance is controlled by a diaphragm. The diaphragm is actuated as oil pressure increases or decreases.

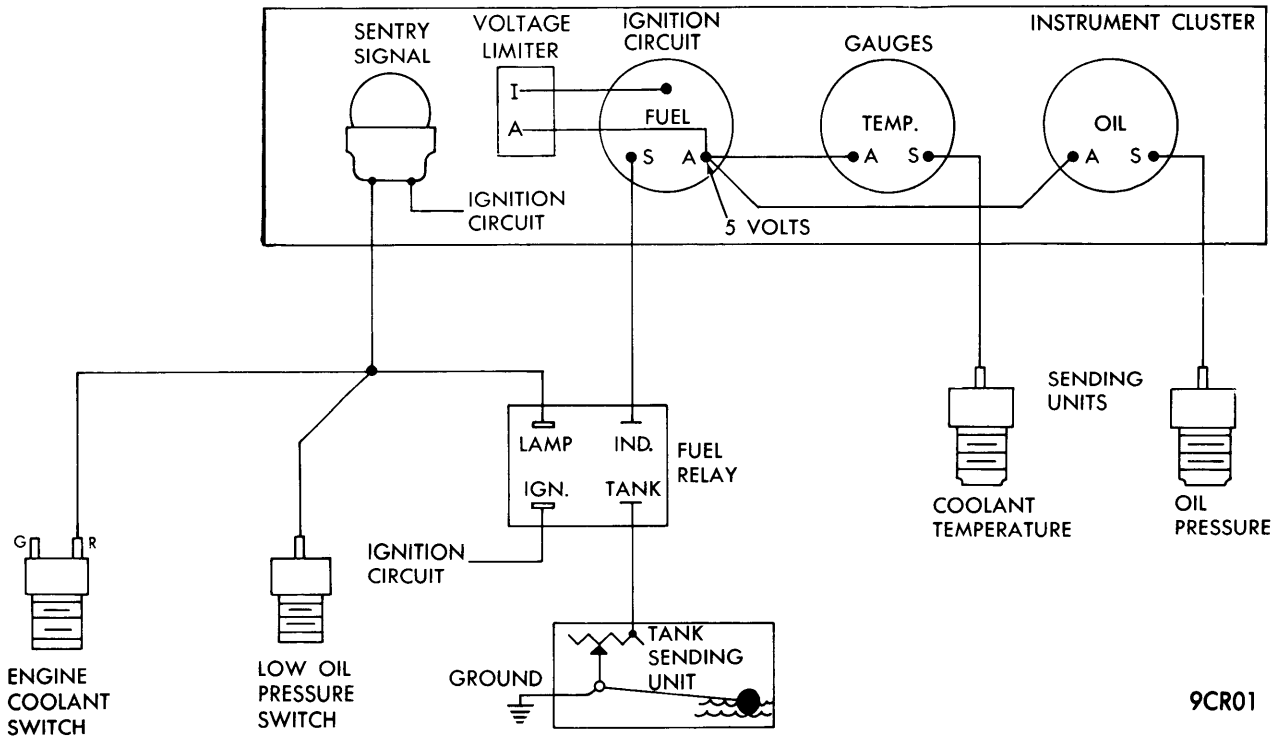
Alternator Indicating System – Alternator gauge is an ammeter which senses the direction and rate of flow of electrical current to or from battery, thereby indicating whether battery is being charged or discharged.

TESTING

TESTS ON VEHICLE

Voltage Limiter – To quickly test voltage limiter in vehicle, connect one lead of a voltmeter or test light to temperature sending unit and other lead to a good ground. Leave sending unit wire attached to sending unit. Turn ignition switch on. A fluctuating voltmeter or a flashing light indicates voltage limiter is operating.

Fuel Gauge & Low Fuel Warning Relay – Disconnect wire at fuel tank unit except on 1966-69 Imperials. On 1966-69 Imperials disconnect wire from terminal marked "Ind" on low fuel warning relay (located on lower right instrument panel near glove box). Connect one lead of suitable tester (C-3826) to wire terminal and other lead to a good ground. Turn ignition on. Turn tester knob to "H" position and observe instrument panel gauge. Gauge should read FULL, plus 3/32" or minus 1/32". Turn tester knob to "M", gauge should read ½. Turn knob to "L" and gauge should read EMPTY, plus 1/32" or minus 3/32". On all models except 1966-69 Imperials the low fuel warning relay will trigger the low fuel or Sentry Signal Lamp when the gauge pointer is moving from the ½ position to EMPTY. *NOTE – Temperature and oil switches must be disconnected for this test or engine running on Imperial models only.*



1966-69 SENTRY SIGNAL WIRING DIAGRAM

1966-74 CHRYSLER CORP. (Cont.)

On 1966-69 Imperials if gauge does not perform as prescribed, inspect for an open circuit paying special attention to printed circuit board. If circuit continuity has been established, replace gauge. If gauge functions properly test low fuel warning relay as follows: Disconnect wires to terminals marked "Ind" and Tank" on relay and connect one lead of ohmmeter to terminal "Ind" and other lead to terminal "Tank". The ohmmeter should read 7.4 ohms plus or minus .3. Remove lead to "Tank" terminal and connect to a good ground. Ohmmeter should now read 750 ohms plus or minus 35 ohms. If relay does not meet specifications, inspect for a poor ground at attaching screw or corroded or loose connections at terminals and repeat test. If relay still does not meet specifications it should be replaced. If both panel gauge and relay tests show them to be operating properly, proceed to test for fuel tank sending unit.

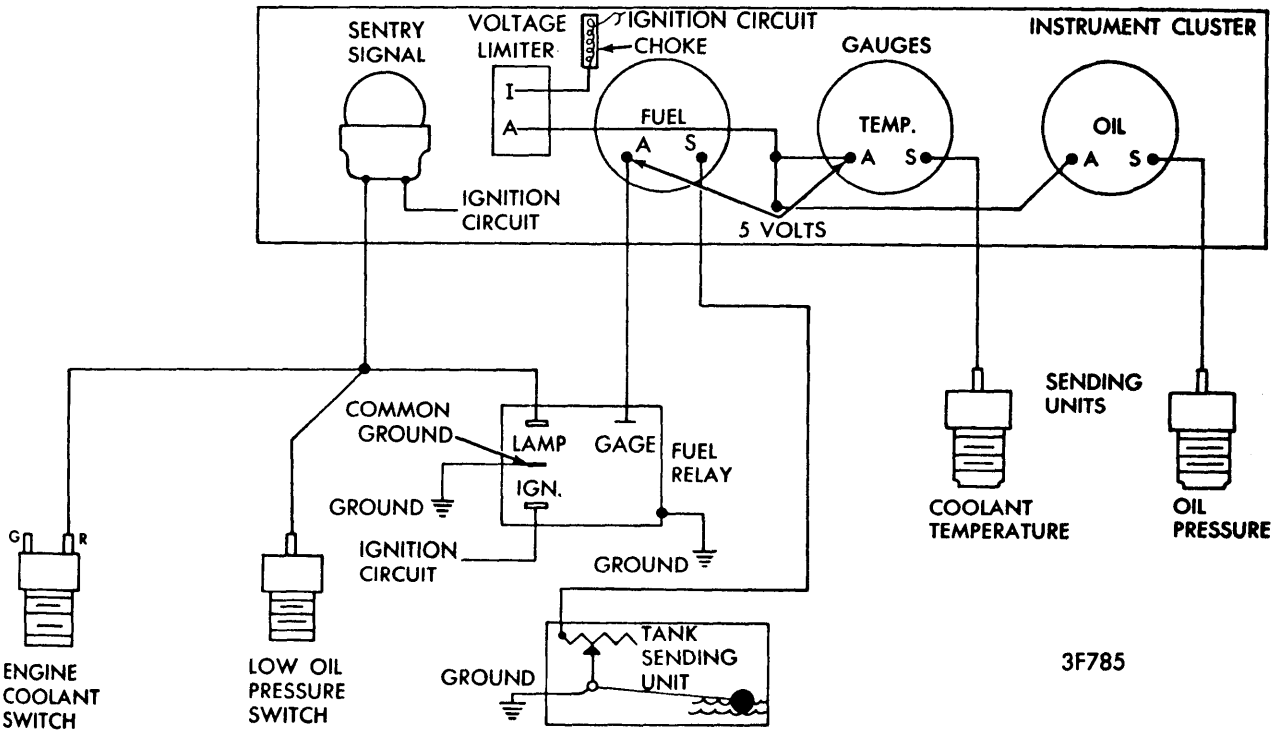
On all other models if panel gauge does not perform as prescribed, continuity of circuit from tank sending unit to panel unit should be tested with special attention to printed circuit board before replacing gauge. If panel performs properly when tested but fails to operate properly when connected to vehicle system, fuel tank sending unit ground strap should be inspected for proper installation on fuel line. If ground continuity is good, remove tank unit for testing.

Fuel Tank Sending Unit – With unit removed from tank proceed as follows: Using an ohmmeter with a 0 to 100 ohm scale, connect one lead to body of sending unit, and other lead to terminal in center of unit. Hold unit so float arm contacts EMPTY stop. The ohmmeter should read 73 ohms ±12 ohms (except 1966-69 Imperials which should read 66 ohms ±11.5 ohms). Raise arm to FULL stop. The reading should now be 9.6 ohms ±1 ohm (except 1966-69 Imperials which should read 2.2 ohms ±.5 ohms). If unit does not perform to these specifications inspect the stops or arm for possible distortion. If not physical defect can be found, unit must be replaced.

Temperature Gauge – Disconnect terminal from temperature sending unit on engine. Connect one test lead of suitable tester (C-3826) to terminal and other lead to a good ground. Turn ignition on. Turn tester knob to "L". Temperature gauge should show "C" plus or minus ⅛". Turn tester knob to "M" position, pointer should advance to the driving range left of the ½ position of dial. Turn tester knob to "H", gauge pointer should move to "H" position on dial. Should gauge respond to the above tests, but does not operate properly when connected to sending unit, indications are of defective sending unit.

Ammeter Gauge – Turn headlights on (do not start engine). Ammeter needle should move toward the "D" or discharge scale. If not movement of the needle is observed, check terminals for loose wires. If terminals are secure, ammeter is defective. If needle moves toward the "C" or charge side, the connections are reversed.

Oil Pressure Gauge – Disconnect wire from oil pressure sending unit on engine. Connect one lead of a suitable tester (C-3826) to removed wire and other lead to ground. Place tester knob in "L" position, and turn ignition on. Do not start engine. Oil pressure gauge should read "L" plus or minus ⅛". Turn tester knob to "M" position, oil pressure gauge should advance to ½ position on dial. With tester knob in "H" position, gauge should also advance to the "H" position on dial. Should gauge respond to the above tests, but fail to operate when connected to vehicle system, indications are of a defective sending unit.



1970-74 SENTRY SIGNAL WIRING DIAGRAM