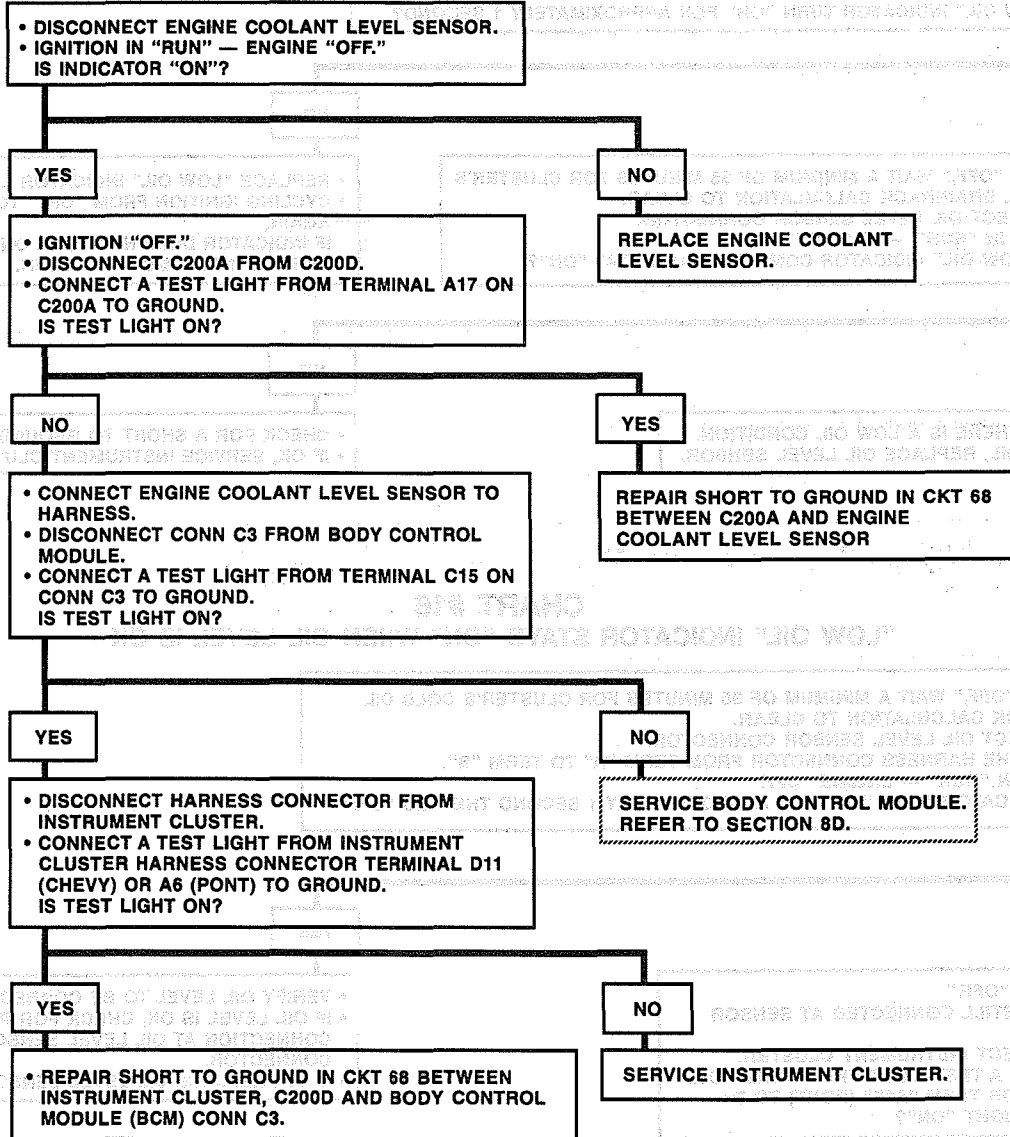


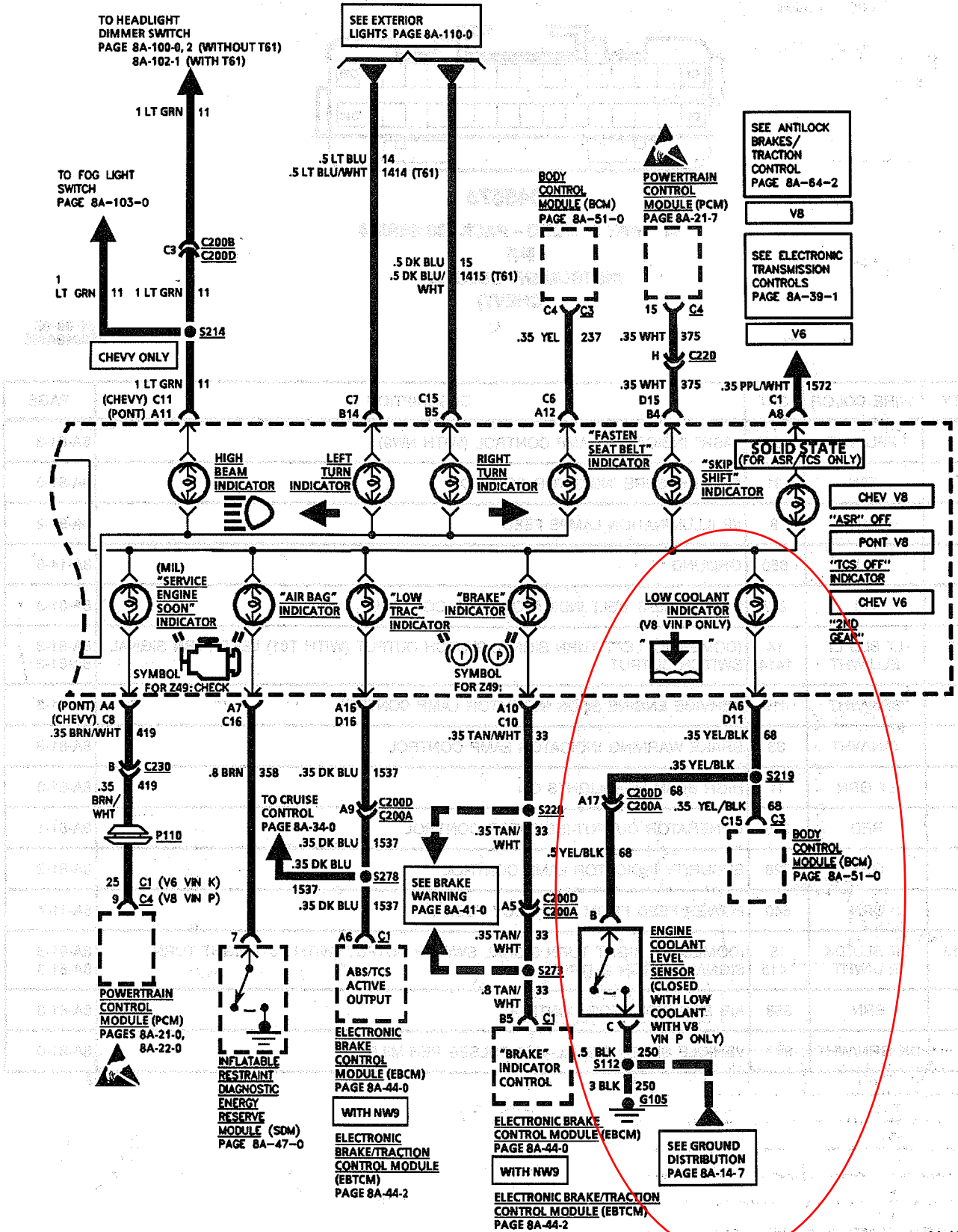
**CHART #14**  
**"LOW COOLANT" INDICATOR ALWAYS "ON," COOLANT LEVEL OK**  
**(V8 VIN P)**



**IMPORTANT:**

- ALL V8's ARE EQUIPPED WITH A COOLANT LEVEL "LATCHING" CIRCUIT. READ "CIRCUIT DESCRIPTION" "LOW COOLANT INDICATOR (V8 VIN P)" AT THE END OF THIS SECTION AND CYCLE IGNITION FROM "OFF" TO "RUN" BEFORE PERFORMING THIS DIAGNOSTIC CHART.





## CIRCUIT OPERATION

The Instrument Cluster contains Analog Gages and Indicators. Some Gages and Indicators are controlled by solid-state controls within the Cluster; some are controlled by direct circuits into the Cluster from other components. These operations are described here briefly.

### "ABS INOP" INDICATOR (Z49)

Refer to Section 5E1.

### "AIR BAG" INDICATOR

Refer to Section 9J.

### "ASR" INDICATOR (CHEVROLET)

Refer to Section 5E2.

### "BRAKE" INDICATOR (Z49)

Refer to "Brake Warning," page 8A-41-5.

### "CHECK GAUGES" INDICATOR

The Instrument Cluster's internal circuitry monitors three inputs for determining when to illuminate the "CHECK GAUGES" Indicator.

The "CHECK GAUGES" Indicator is provided a ground for illumination when:

1. The Coolant Temperature Sensor indicates above-normal temperature (252°F for V6 VIN K or 244°F for V8 VIN P).
2. The Instrument Cluster senses the Generator turn-on input is at ground potential. The Generator pulls CKT 225 low with system voltage at or below 11.2v or with 16.5v or higher, also pulled low if Generator is stopped.
3. The Oil Pressure Sensor indicates below-normal pressure. The minimum rating for the pump is 8.3 psi, though the sensor will be approximately 3 to 5 psi at 10 ohms which will cause the "CHECK GAUGES" Indicator to illuminate (maximum pressure should be about 90 ohms at the sensor).
4. The Instrument Cluster performs a bulb check function for approximately one second after Ignition "ON."

### COOLANT TEMPERATURE GAGE

The Coolant Temperature Gage contains internal coils that create magnetic fields when current flows through them. The current through the coils varies depending on the Coolant Temperature Sensor resistance (approximately 55 ohms at 260°F (hot) and approximately 1365 ohms at 100°F). The varying sensor resistance causes the current through the coils to fluctuate. The magnetic fields of the coils move the pointer.

### "FASTEN SEAT BELT" INDICATOR

Refer to "Audible Warnings," page 8A-76-0.

### FUEL GAGE

The Fuel Gage contains internal coils that create magnetic fields when current flows through them. The current through the coils varies depending on the Fuel Gage Sender resistance (see Fuel Level/Resistance Chart). The varying sender resistance causes the current through the coils to fluctuate. The magnetic fields of the coils move the pointer.

### HIGH BEAM INDICATOR

The High Beam Indicator has system voltage applied to it whenever the Headlights are "ON" and the Headlight Dimmer Switch is on "HIGH." The Indicator has a constant ground and will illuminate whenever system voltage is applied.

### "LOW COOLANT" INDICATOR (V8 VIN P)

The "LOW COOLANT" Indicator has system voltage applied in "RUN," "BULB TEST," or "START." The Indicator requires a ground for illumination. There are two ways the Indicator receives a ground:

1. During bulb check through the Instrument Cluster.
2. Whenever the Engine Coolant Level Sensor detects a low coolant condition.

The Instrument Cluster performs a bulb check by grounding the circuit to the indicator for approximately one second after Ignition "ON". When a low coolant condition occurs, a ground path is supplied through the Engine Coolant Level Sensor to the Indicator. At the same time, ground is supplied through the Engine Coolant Level Sensor to the Body Control Module (BCM). The module is designed to provide a continuous ground path to the Indicator for the remainder of the Ignition cycle in which a momentary low coolant condition occurred. (The module provides its own ground to the Indicator until the Ignition is turned off).

### "LOW OIL" INDICATOR

The Instrument Cluster's internal circuitry will only check the Oil Level Sensor at Ignition "ON" if Drainback Times are met (35 minutes after Ignition "OFF" if the Engine was still cold, or 4 minutes after Ignition "OFF" if the Engine was hot. Hot is defined as running for at least 17 minutes). Drainback Timer sets at Ignition "OFF". The sensor has normally closed contacts that are open under a low oil condition. After determining a low oil condition exists, the "LOW OIL" Indicator is provided a ground for illumination. The Indicator also receives a ground for approximately one second during the Cluster's bulb check function right after Ignition "ON".