

CODE 33

MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR CIRCUIT (SIGNAL VOLTAGE HIGH - LOW VACUUM) 2.5L "P" SERIES (TBI)

Circuit Description:

The manifold absolute pressure sensor (MAP) responds to changes in manifold pressure (vacuum). The ECM receives this information as a signal voltage that will vary from about 1 to 1.5 volts, at closed throttle idle, to 4-4.5 volts at wide open throttle (low vacuum).

If the MAP sensor fails, the ECM will substitute a fixed MAP value and use the throttle position sensor (TPS) to control fuel delivery.

Test Description: Numbers below refer to circled numbers on the diagnostic chart.

- This step will determine if Code 33 is the result of a hard failure or an intermittent condition. A Code 33 will set if:
 - MAP signal voltage is too high (low vacuum).
 - TPS less than 4%.
 - These conditions for a time longer than 48 seconds.
- This step simulates conditions for a Code 34. If the ECM recognizes the change, the ECM, and CKTs 416 and 432 are OK. If CKT 469 is open, there may also be a stored Code 23.

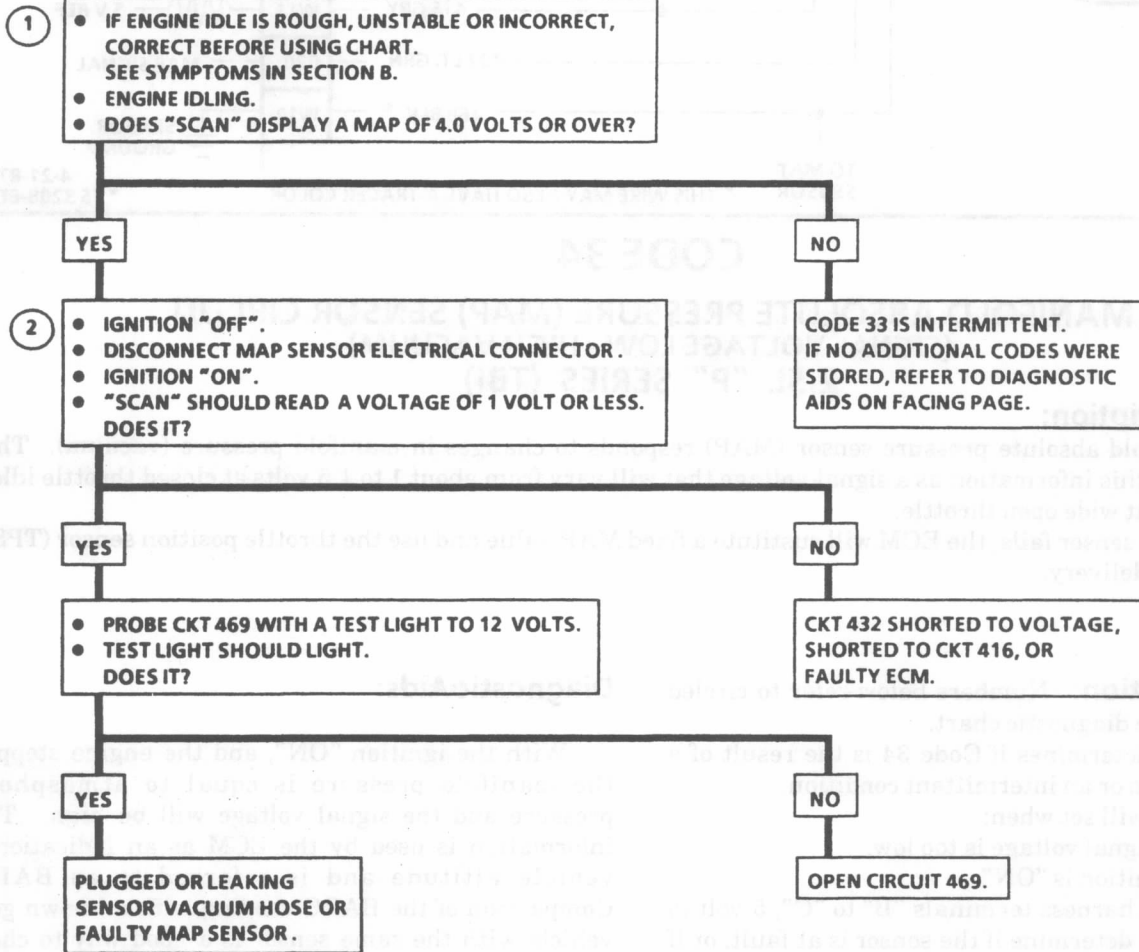
Diagnostic Aids:

With the ignition "ON", and the engine stopped, the manifold pressure is equal to atmospheric pressure and the signal voltage will be high. This information is used by the ECM as an indication of vehicle altitude and is referred to as BARO. Comparison of the BARO reading with a known good vehicle with the same sensor is a good way to check accuracy of a "suspect" sensor. Readings should be the same $\pm .4$ volt.

A Code 33 will result if CKT 469 is open, or if CKT 432 is shorted to voltage or to CKT 416.

If Code 33 is intermittent, refer to Section "B".

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SENSOR CIRCUIT
 (SIGNAL VOLTAGE HIGH - LOW VACUUM)
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IGNITION "ON" ENGINE STOPPED VOLTAGES

ALTITUDE		VOLTAGE RANGE
Meters	Feet	
Below 305	Below 1,000	3.8---5.5V
305--- 610	1,000--2,000	3.6---5.3V
610--- 914	2,000--3,000	3.5---5.1V
914--1219	3,000--4,000	3.3---5.0V
1219--1524	4,000--5,000	3.2---4.8V
1524--1829	5,000--6,000	3.0---4.6V
1829--2133	6,000--7,000	2.9---4.5V
2133--2438	7,000--8,000	2.8---4.3V
2438--2743	8,000--9,000	2.6---4.2V
2743--3048	9,000--10,000	2.5---4.0V

LOW ALTITUDE = HIGH PRESSURE = HIGH VOLTAGE