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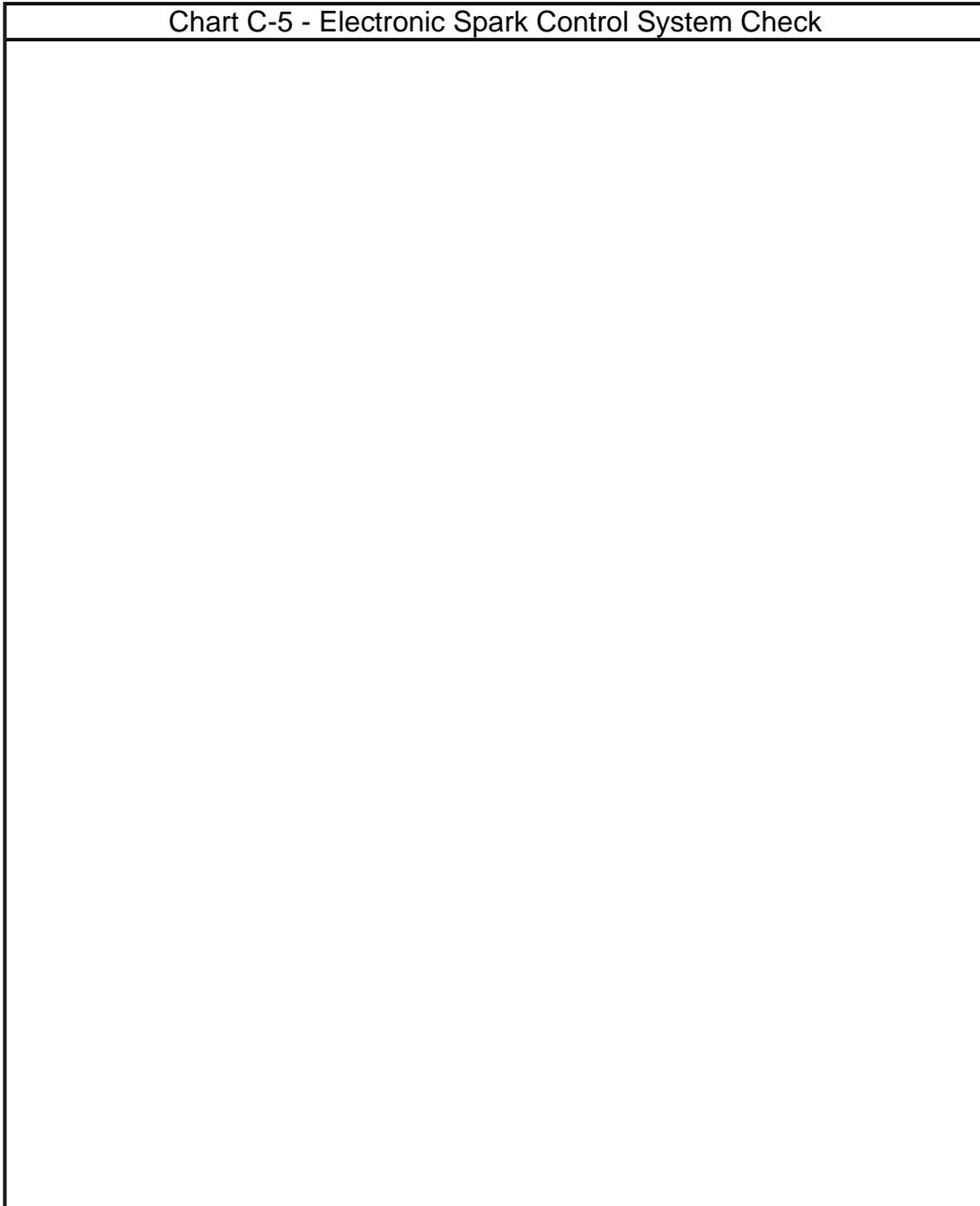
 Conversion Calculator

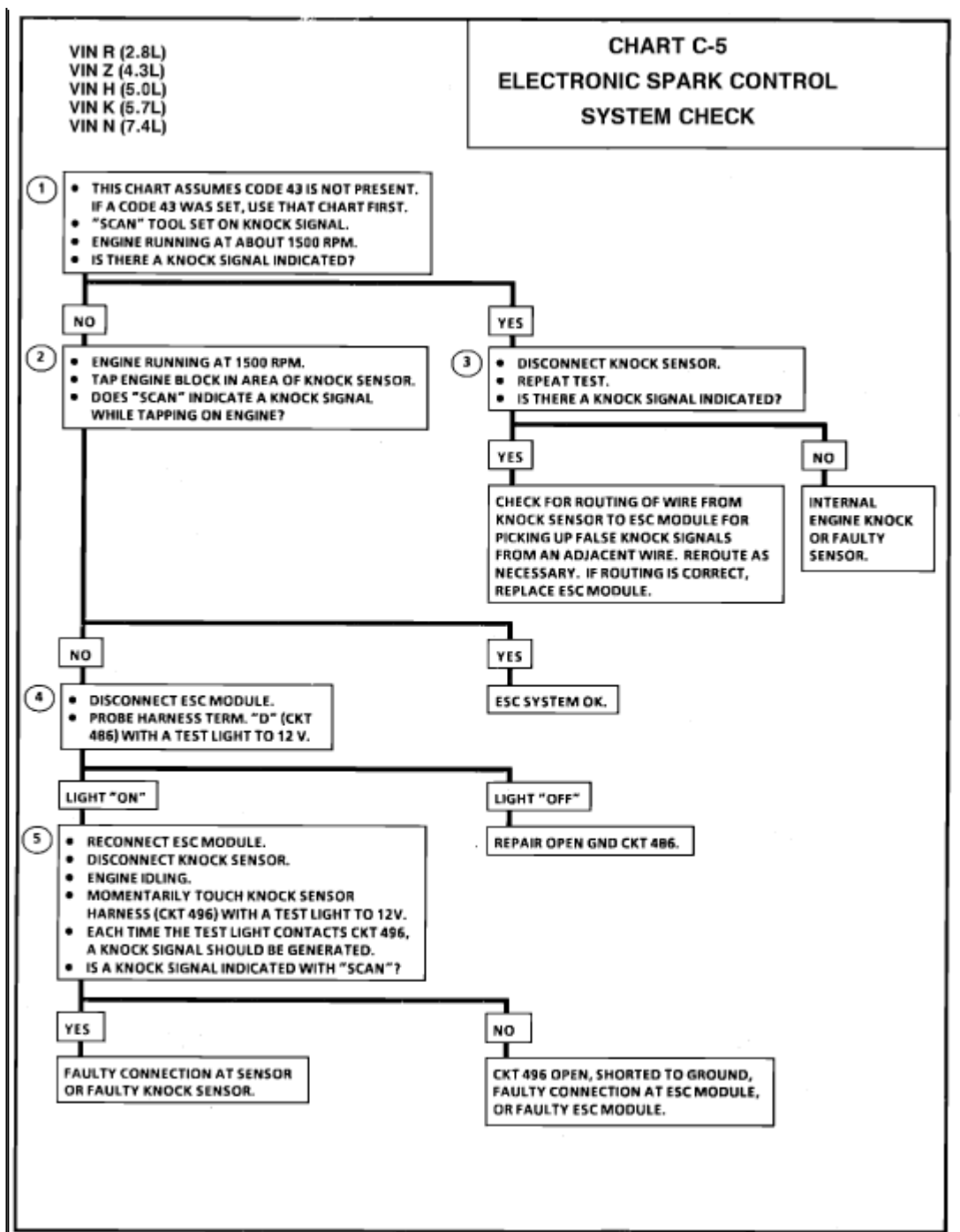
1989 GMC Truck C 1500 Truck 2WD V8-350 5.7L

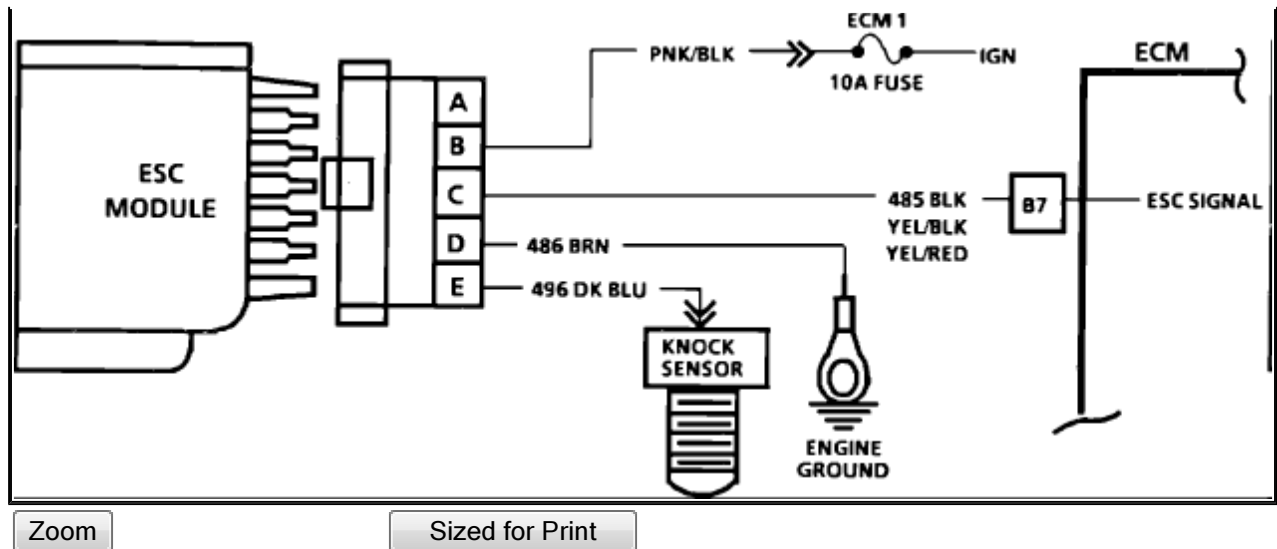
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Testing and Inspection

Chart C-5 - Electronic Spark Control System Check







CIRCUIT DESCRIPTION :

Electronic spark control is accomplished with a module that sends a voltage signal to the ECM. As the knock sensor detects engine knock, the voltage from the ESC module to the ECM is shut "OFF" and this signals the ECM to retard timing, if engine rpm is over about 900.

TEST DESCRIPTION : Numbers below refer to circled numbers on the diagnostic chart.

1. If A Code 43 is not set, but a knock signal is indicated while running at 1500 rpm, listen for an internal engine noise. Under a no load condition there should not be any detonation, and if knock is indicated, an internal engine problem may exist.
2. Usually a knock signal can be generated by tapping on the right exhaust manifold. This test can also be performed at idle. Test number 1 was run at 1500 rpm to determine if a constant knock signal was present, which would affect engine performance.
3. This tests whether the knock signal is due to the sensor, a basic engine problem, or the ESC module.
4. If the module ground circuit is faulty, the ESC module will not function correctly. The test light should light indicating the ground circuit is OK.
5. Contacting CKT 496, with a test light to 12 volts, should generate a knock signal to determine whether the knock sensor is faulty, or the ESC module can't recognize a knock signal.

DIAGNOSTIC AIDS :

"Scan" tools have two positions to diagnose the ESC system. The knock signal can be monitored to see if the knock sensor is detecting a knock condition and if the ESC module is functioning, knock signal should display "yes", whenever detonation is present. The knock retard position on the "Scan" displays the amount of spark retard the ECM is commanding. The ECM can retard the timing up to 20 degrees.

This check should be used after other causes of spark knock have been checked such as engine timing, EGR systems, engine temperature or excessive engine noise.

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