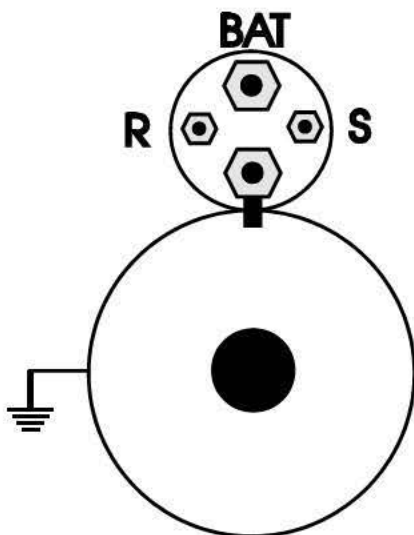


## TO CHECK FOR PROPER STARTER VOLTAGE

1. Install starter and fasten all electrical connections securely.
2. **Connect** a voltmeter to the starter in this manner. Black lead to starter case; red lead to "S" terminal. Attempt to crank engine.



### NO CRANK - VOLTAGE LESS THAN 12 VOLTS:

If the engine does not crank and voltage is less than 12.0 volts check for defective neutral safety switch, bad ignition switch, weak battery, or poor ground.

### NO CRANK – VOLTAGE MORE THAN 12 VOLTS:

If the engine does not crank and voltage is MORE than 12.0 volts. Proceed to step 3.

3. Move red wire of voltmeter to starter BAT post.
4. Turn the ignition key to the crank position.
5. Observe the voltmeter:

### NO CRANK - VOLTAGE LESS THAN 12 VOLTS:

Check for weak battery, loose or corroded cables

### CRANKS - VOLTAGE LESS THAN 9 VOLTS:

Cranking at less than 9 volts will damage the starter. This condition must be corrected to prevent a repeat failure. Check for weak battery, loose or corroded cables

*In many cases the "R" terminal will not be used. This is normal*

**1999-2000 Cadillac Escalade  
1995-2000 Chevrolet and GMC S/T models  
1996-2000 Chevrolet and GMC C/K, M/L, G, P models  
1996-2000 Oldsmobile Bravada**

- ❖ **No start**
- ❖ **Slow start**
- ❖ **Grinding noise while cranking**
- ❖ **Kickback during crank/starting**
- ❖ **Broken starter drive housing**
- ❖ **Broken ring gear**
- ❖ **Cracked or broken engine block at the starter boss**
- ❖ **Any combination of the above**

If your vehicle has shown one or more of the symptoms above General Motors says; these conditions may be due to an improper crankshaft position sensor that commands up to 50 extra degrees of spark advance during cranking only. This results in much higher than normal cylinder pressures that can affect the starter, ring gear and engine block.

### **CORRECTION:**

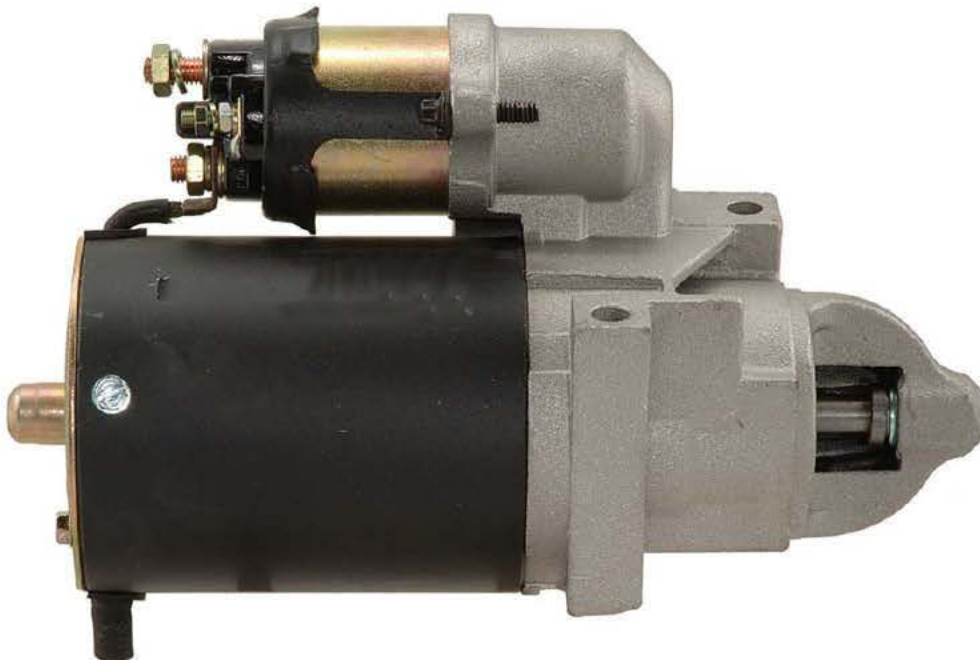
Have your vehicle inspected for a stored Powertrain DTC code P0338. This DTC code will NOT illuminate the "Service Engine Soon" light. If this code is stored, the Crankshaft Position Sensor must be replaced with part number #10456607, and the following checked for damage.

- ❖ **Engine block at starter bolt holes**
- ❖ **Starter drive housing**
- ❖ **Flywheel ring gear**

### **These units are interchangeable**

*Although the unit you purchased (Fig. 1) may not look exactly like the one removed from the vehicle (Fig 2), it will install and operate with no modifications necessary.*

**Fig. 1**



**Fig. 2**

