



**Instructions for  
Cubic Inch Tester**

1. Remove spark plug from cylinder being checked. (Note: It is imperative to turn the engine over very slowly, (200 RPM if possible), so leave all other plugs in.)
2. Remove both pushrods from cylinder being tested.
3. Allow the car owner or mechanic to screw the hose adapter into the spark plug hole.
  - A. Blow through hose to assure air does not escape past threads
  - B. Attach hose to tester
4. Push the nylon puck and O-ring about 3/4 of the way down the tester with the supplied ram rod.
5. With the ignition off, crank the engine over about 5 times (until the O-ring stops climbing )
  - A. The tester is working properly only if the nylon puck forces the valve on the bottom of the tester to open on each stroke, yielding a slight popping sound. If the valve is not opening, push the O-ring back to the bottom and repeat the test. It is advisable to hold the valve open with your fingers on the initial test.
  - B. On 24 or 36 volt cranking systems it may be necessary to disconnect one or two of the batteries to reduce cranking speed. You may also bump the starter rather than cranking it over repeatedly.
  - C. If the vehicle does not have a starter, remove all spark plugs and push the car in high gear fast enough to assimilate cranking speed.
  - D. Turning the engine over by hand will not yield accurate results because some air will be allowed to escape past the rings
6. Read the inches from the bottom of the O-ring and multiply by the number of cylinders. This figure equals the total cubic inches of the motor being tested.

**Note:** Your reading will be correct if the engine is cold. (Same as room or outdoor temperature where the test is conducted) If the engine is hot, consult the chart on back.

**Correction Chart for Warm Engines**

This chart is to be used only if the engine is hotter than ambient (surrounding) temperature.

This chart is accurate within 3 cubic inches and will always measure on the low side, never larger than the actual displacement. If the engine pumps big, check it again. If it still pumps big, pull the head and measure bore and stroke.

Place the supplied thermometer in spark plug hole to measure cylinder temperature. Be very careful not to rest the thermometer on the piston or any other metal surface.

100 Degrees	Add	2.5%
120 Degrees	Add	3.0%
140 Degrees	Add	4.5%
160 Degrees	Add	6.0%
180 Degrees	Add	8.0%

(The warmer the engine is the less cubic inches the tester will read)

**Care and Maintenance**

It is very important that the nylon puck and precision bore glass be kept clean and lubricated with WD-40 or light oil.

If any fuel or other contaminants enter the tester and collect at the bottom it is permissible to unscrew the bottom and clean the unit. Always mark the threads before disassembly to assure proper reassembly. If the bottom were not screwed on enough or screwed on too far, the change in volume would result in inaccurate readings.

Replace parts, repairs and re-calibration services are available.