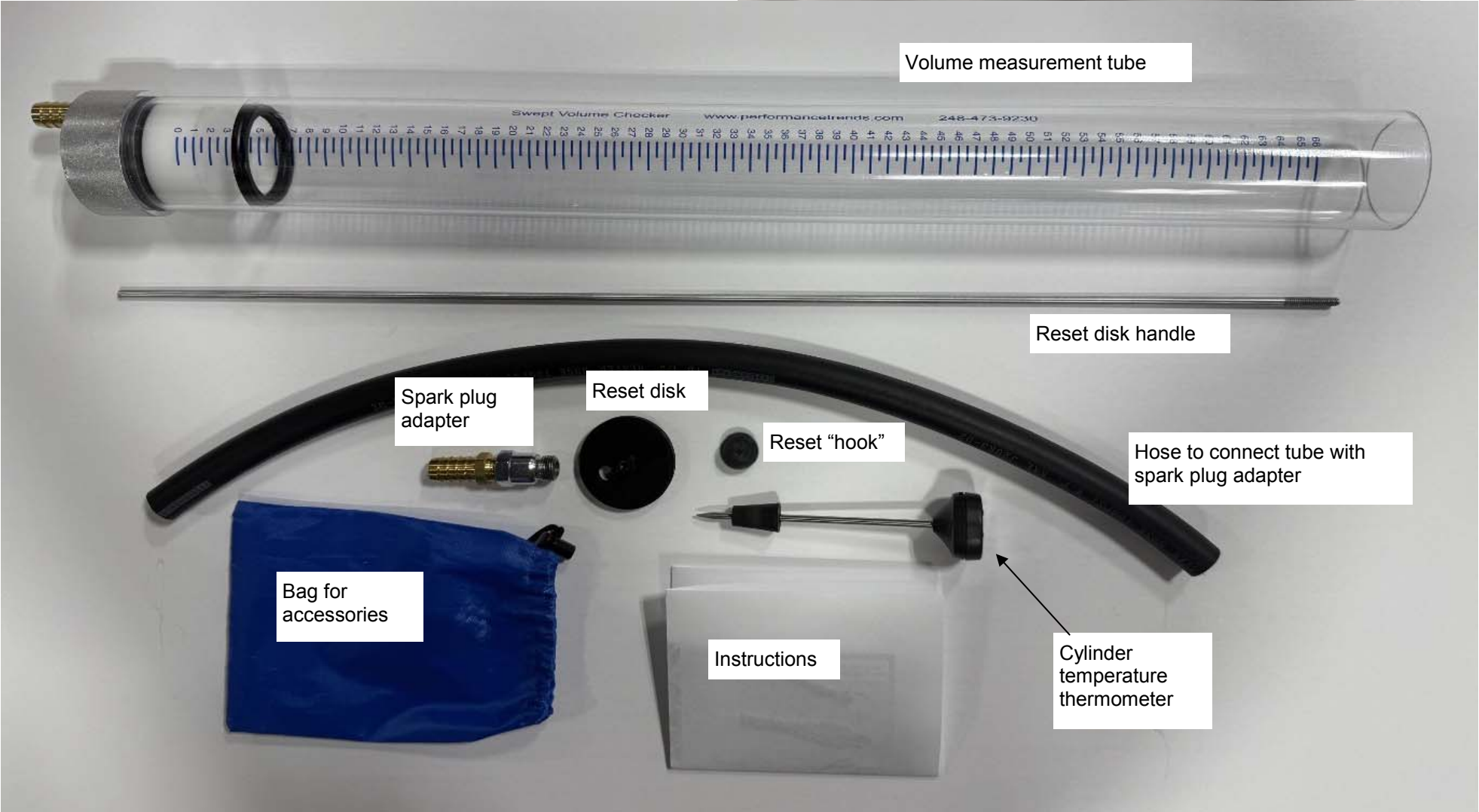


Volume Checker

The Volume Checker is designed to measure the swept volume of a piston motor. Disable the valves on the cylinder to be checked, install the sensor to a spark plug hole, reset the indicator O ring, turn the motor over several times and you will get a reading of that cylinder's swept volume. Detailed instructions are on the next pages.



1) Record the cylinder temperature. If the motor is room temperature, this step can be omitted. No temperature correction is needed.

This correction is from the original P&G Volume Checker.



For example, if the Cylinder Temp you measure is 142 degrees, use the 140 deg correction of multiplying by 1.0506. If you measure 44 cubic inches, multiply the 44 by 1.0506.

Corrected Volume = 44 x 1.0506

Corrected Volume = 46.2 cubic inches

This is the volume for 1 cylinder. Multiply this number by the number of cylinders to obtain the total engine's cubic inches.

46.2 x 8 cylinders = 369.6 cubic inches total engine volume

Cylinder Temp	Add this %	or	Multiply by
70	0.00		1.0000
75	0.36		1.0036
80	0.72		1.0072
85	1.08		1.0108
90	1.45		1.0145
95	1.81		1.0181
100	2.17		1.0217
105	2.53		1.0253
110	2.89		1.0289
115	3.25		1.0325
120	3.62		1.0362
125	3.98		1.0398
130	4.34		1.0434
135	4.70		1.0470
140	5.06		1.0506
145	5.42		1.0542
150	5.78		1.0578
155	6.15		1.0615
160	6.51		1.0651
165	6.87		1.0687
170	7.23		1.0723
175	7.59		1.0759
180	7.95		1.0795
185	8.31		1.0831
190	8.68		1.0868
195	9.04		1.0904
200	9.40		1.0940
205	9.76		1.0976
210	10.12		1.1012
215	10.48		1.1048
220	10.85		1.1085
225	11.21		1.1121
230	11.57		1.1157
235	11.93		1.1193
240	12.29		1.1229

2) Install the reset disk on it's handle.
There is no force on this, so light finger tightening is sufficient.



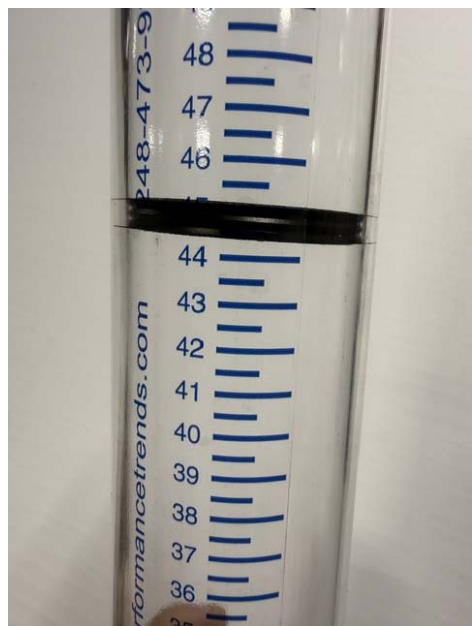
3) Slide the O Ring down the tube to a number well below what you expect to measure.



- 4) Install spark plug adapter into hole for cylinder to be tested.
- 5) Disable the rocker arms for this cylinder.
- 6) Connect the hose between the spark plug adapter and the bottom of the Volume Checker. The exact length of this hose is not critical.
- 7) Hold the Volume Checker vertical.
- 8) Crank the motor over several revolutions. The O Ring will record the highest travel of the plastic puck. The highest travel is the most accurate reading. You will likely have to crank the motor over 10 to 20 revolutions to get an accurate, repeatable reading.
- 9) If you want to check repeatability, slide the O Ring down to below the expected volume and crank the motor over again.



10) Read the bottom of the O Ring. In this case, it would be 44.5 cubic inches. Then do the temperature correction if any is required as shown on page 2. Then multiply by the number of cylinders.



Tips:

Sometimes you may want to remove the O Ring. Install the smaller "hook" disc on the handle. Light finger tightening is all that is required. Then you can hook the O Ring and pull it up.



If you think the O Ring or puck are sticking, you can spray some silicone into the tube. Push the O Ring down, then spray the silicone. Roll up a section of paper towel to make a roll about 2 ft long and slide it up and down inside the tube to remove the excess silicone.

Only use silicone as other lubricants may discolor or fog the acrylic tube.



Approximately 1/8" of movement.

Approximately 1/8" gap.

Check to ensure the spring loaded check valve at the bottom is working. With the puck at the bottom of its travel, it will be resting on the top of the check valve screw head. Pull the nut down at the bottom of the Volume Checker. You should see about 1/8" of movement on the puck.

