INSTALLATION INSTRUCTIONS

P/N 62300 - SMOKEY YUNICK COMPRESSION RATIO TOOL - SBC & 90° V-6
P/N 62310 - SMOKEY YUNICK COMPRESSION RATIO TOOL - BBC

In addition to this tool, you will need a 150 cc burette (a 100 cc burette will also work but will have to be refilled to get a total volume reading on the tool) with fluid (water and alcohol 50-50) and a small amount of heavy grease such as Lubriplate. You will also need equipment to locate true TDC (either a TDC stop and degree wheel, or a dial indicator) and a well-used head gasket.

1. Take plexiglass tool and put a very thin film of grease, about an 1/8" from the edge of cut area. Turn tool over and place on a very smooth, flat, perfectly level surface and press down firmly to spread grease. Grease should not go into cut out area. Fill burette and pour slowly into tool. Determine cc's poured and jot down the figure. This figure will b referred to as "tool volume". **NOTE**: Due to the thermal expansion rate of plexiglas, more than a 10° change in temperature may alter the tool's cc volume by a few tenths of a cc. For utmost accuracy, keep this in mind and check tool's volume each time you suspect the temperature has changed more than 10° up or down.

2. With head off, bring piston in cylinder you wish to check, up to exact TDC. Take some of the heavy grease and run it around the edge of the piston to prevent leakage past the rings. Smooth it in with your finger and wipe excess off piston and cylinder wall with towel.

3. Grease both sides of head gasket around the bore of the cylinder you are checking with a thin film of grease and place on deck surface.

4. Place tool over cylinder and center by eye. Snug tool down and be sure to use washers to prevent cracking. Tighten bolts to no more than 20-25 ft/lbs. of torque.

5. Fill burette to 100 cc and pour in slowly to lessen the chance of bubbling. Determine the number of cc's poured and deduct from your tool's initial volume. Refer to this figure as M. M = (Tool Volume) - (Poured Volume). As you can see with some style pistons, M could be a negative number.
EXAMPLE: Your tool measures 107 cc's and you poured 111 cc's. "M" in this case is (107) = -4.

6. Compute your head cc in regular fashion using this tool flat side down or a regular flat plate. Refer to the head cc figure as Q.

7. Take these figures and plug into the following formula: Z = Q - M.
REMEMBER: If you are subtracting a negative number, it is the same as adding that number.
EXAMPLE: Head measured 56 cc and M was (-4). Z = (56) - (-4)
Z = 56 + 4
Z = 60

For Technical Assistance, Call Moroso's Tech Line at
(203) 458-0542, 8:30am – 5:00pm Eastern Time

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8. To determine compression ratio, use the following formula:

$$\text{Compression Ratio} = \frac{(\text{CID}) \times (16.39)}{Z} + 1$$

CID = exact cubic inch displacement of motor carried to two decimal places.
N = number of cylinders

To determine CID use formula: Displacement = Bore x Bore x Stroke x 6.2832 (for 8 cylinder engines only).

EXAMPLE: 302 Chevy .030 over
4.030 x 4.030 x 3.00 x 6.2832 = 306.13

In our example we know CID = 306.13 and N = 8.

Now plug into Compression Ratio formula and compute compression.

$$\text{Compression Ratio} = \frac{(306.13) \times (16.39)}{\frac{8}{60}} + 1$$

$$\text{CR} = \frac{(38.27) \times (16.39)}{60} + 1$$

$$\text{CR} = \frac{627.25}{60} + 1$$

CR = 10.45 + 1
CR = 11.45