

## No. s1257 - CYLINDER LEAKAGE TESTER

The Cylinder Leakage Tester is an instrument designed to pin-point the problem that your compression tester indicated. This tester **supplements** your compression tester by utilizing shop air and measuring the exact amount of leakage, and localizing the source.

You can do a certain amount of pin-pointing with your compression gage by squirting oil into the cylinder—but the results are not always conclusive nor precise.

But now, in just a few minutes, you can run a Cylinder Leakage Test and be almost certain of what the trouble is. Doing a valve job is one thing—doing an engine overhaul is something else. The key is **accurate diagnosis**.

### HOW DOES IT WORK?...

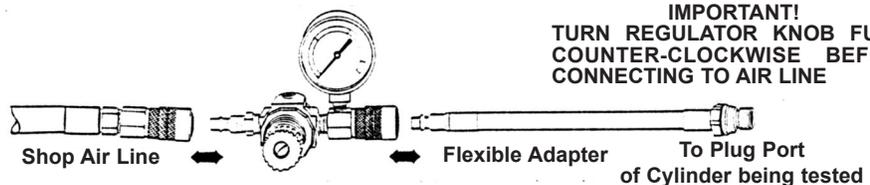
Controlled air pressure is applied to the suspected cylinder (at TDC—Top Dead Center) and the rate at which it leaks out of the cylinder is measured. The gage, which functions as a flow-meter, shows the amount (%) of leakage so that you can evaluate the seriousness of the problem.

Next, by listening at these places, you can locate the source of the leakage:

1. Tail pipe ..... for exhaust valve leakage.
2. Carburetor air horn ..... for intake valve leakage.
3. Adjacent plug port ..... for head gasket leakage.
4. Radiator filler ..... for cylinder wall cracks.
5. Oil dip stick tube ..... for ring/cylinder wall leakage.

Even in a perfect engine, there will always be a certain amount of ring leakage due to the ring gap. This is the only place where leakage is allowed. Thus, you should always hear leakage at the dip stick tube—but never any place else. The gage, of course, shows you whether it is normal or not.

### USING THE CYLINDER LEAKAGE TESTER...



1. Connect the instrument to shop air pressure (50-150 PSI) and adjust the regulator until the gage reads in the middle of the SET band, before connecting flexible adapter.
2. With all plugs removed (the normal case, since this test usually follows a compression test), set the cylinder in question to approximately TDC on the compression stroke. This is easily done by observing the distributor's rotor and reluctor position. The rotor points to the cylinder coming up on compression. When the reluctor "teeth" align with the stationary core, the piston is essentially at TDC. On breaker point ignition, this occurs at the instant the points OPEN, assuming that the timing is set to approximately TDC. Use a dwellmeter to indicate point opening.
3. Thread the flexible adapter into the plug port and then connect it to the instrument. The gage now shows the amount of leakage. If it appears excessive, **localize the source** by listening at the above mentioned locations.
4. Test the remaining cylinders, if desired, by bumping the engine over with a remote crank switch or by using a wrench at the vibration damper. Use the rotor/reluctor position as above to indicate TDC.

### NOTES ON LEAKAGE TESTING. . .

- A. A mechanic's stethoscope, with the probe removed, makes a good listening device. So does a length of heater hose. To avoid false indications, do the listening in as quiet a location as possible.
- B. The greater the leakage, the lower will be the pitch of the leakage sound.
- C. There will always be leakage past the rings (and leakage sound at the dip stick tube). Use the leakage readings to evaluate it.
- D. However, a burned exhaust valve, for example, which can be heard at the tail pipe, may divert the normal ring leakage and you may hear very little sound at the dip stick tube.
- E. Do not expect to get exactly the same gage readings when making repeat tests on the same engine. A reading variation of 10% is normal. These variations are caused primarily by changes in engine temperature and piston position from the previous test.
- F. For consistent results, try to position the piston a few degrees before TDC. Once the piston passes TDC, the rings press against the top of the ring grooves and may alter the test results.

**ALL MILTON PRODUCTS HAVE LIMITED WARRANTY  
AGAINST ALL DEFECTIVE MATERIALS AND WORKMANSHIP**