

# Cat. No. 33500 Cylinder Leak-Down Test Kit

## Operating Instructions

1. Allow engine to run until sufficiently warm. Turn off engine.
2. Remove all spark plugs. Remove air cleaner, radiator cap, and crankcase filler cap.
3. Install proper adapter on end of test hose. Screw adapter with test hose attached into spark plug hole.  
**Warning: Do not overtighten.**
4. Connect included TDC whistle to test hose.
5. Rotate crankshaft until you hear the whistle indicating the piston in cylinder under test is at top dead center on compression stroke (valves closed).
6. Disconnect TDC whistle and connect test hose to cylinder leak tester.
7. Turn pressure regulator knob on cylinder leak tester fully counterclockwise.
8. Connect a source of compressed air to the tester. The test pressure used should be 10 PSI less than the maximum pressure produced by the air source, but not to exceed 100 PSI.
9. Slowly turn pressure regulator knob clockwise until left-hand gauge indicates desired test pressure. Test pressure must not exceed 100 PSI. Right-hand gauge will indicate the pressure maintained in the cylinder under test. The difference between the gauge readings indicates the amount of leakage in the cylinder. See chart for gauge readings compared to the percent leakage.  
**Warning: Air pressure may push cylinder down during testing.**
10. When cylinder test is complete, turn pressure regulator knob fully counterclockwise before disconnecting and proceeding to next cylinder.

Due to standard engine clearances and normal wear, no cylinder should be expected to maintain a perfect no-leak reading. It is important that all cylinders have a relatively constant reading. A difference of 5 PSI between cylinders is satisfactory. A difference of 10-15 PSI indicates the need for further investigation.

The operator may also locate the source of the compression loss by listening at these places:

- a. Oil dipstick tube for leaking cylinder rings
- b. Radiator fill cap for cylinder wall cracks
- c. Adjacent port for head gasket leaking
- d. Tailpipe for exhaust valve leaks
- e. Carburetor air horn for intake valve leakage
- f. Fuel injector body for intake valve leakage

Cat. No.	Description
33501	Test Hose for 33500
33502	Gauge for 33500
33503	Top Dead Center Whistle
33504	10mm O-ring for 33508
33505	12mm O-ring for 33509
33506	18mm O-ring for 33510
33507	14mm O-ring for 33501
33508	10mm Adapter for 33500
33509	12mm Adapter for 33500
33510	18mm Adapter for 33500
-	Replacement O-Rings (two each size)

Left-Hand Gauge Reading	Right-Hand Gauge Reading, PSI														
	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85
100 PSI	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85
90 PSI	89	88	87	86	85	84	-	83	82	81	80	79	78	77	76
75 PSI	74	-	73	72	71	-	70	69	68	67	-	66	65	-	64
% of Leak	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%

Percentages in the table are approximate.

For exact leakage:

1. Divide the right gauge reading by the left gauge reading.
2. Subtract that result from 1.
3. Multiply by 100 for the leakage percentage.

**Example:** Gauge Left: 100 Gauge Right: 93

1.  $93 \div 100 = 0.93$
2.  $1 - 0.93 = 0.07$
3.  $0.07 \times 100 = 7\%$  leakage