

Engine Leakdown Tester Operating Instructions

- Put the cylinder to be tested at TDC. (Top Dead Center) Clamp Flywheel in place. (Four-cycle engines must be on the compression stroke)
- Screw the hose into the spark plug hole of the cylinder to be tested. Be sure that it is tight enough to completely seal. Leakage here will give you a false reading other than the true leakdown.
- Connect the hose to the tester and to your air supply. Ideally air supply should be between 110 and 125 psi (150 psi MAX) and be clean and moisture free.
- Adjust the regulator until the regulated pressure (left) gauge reads 100 psi. (See Note A below if you air supply cannot maintain 100 psi on the regulated pressure (left) gauge.)
- Alternate method - Hold the crankshaft from rotating with the proper tool. (Using a ratchet allows the motor to spin free if turned past TDC) **If you do not, the motor will suddenly turn over when you connect the air, possibly causing serious injury to you or someone else working on the motor.** Adjust regulator to approximately 10 to 20 PSI. Turn engine over as follows. When testing a V-4, V-6, V-8 Outboard motor Turn Clockwise for Port side, Counter Clockwise for Starboard side. When you feel the tension become less as the piston nears TDC. At this point, increase the air pressure to 100 PSI. Be careful not to go past TDC or the engine will turn over.
- At this point, the percentage of leakdown (right) gauge will display the leakdown as a percentage. For example 92 psi on the percentage of leakdown (right) gauge = 92% of regulated pressure or 8% leakage (100 - 92 = 8). See the chart below for leakage percentage. If you get an extremely low leakdown percentage and the motor seems to be running well check for a blockage in the precision restriction between the gauges.
- For more detailed testing, slowly allow the crankshaft to rotate in the direction listed above. Watch percentage of leakdown (right) gauge for Leakdown readings as the piston travels down in the cylinder. This will test the entire length of the stroke. On two-cycle engines, you will see 100% leakdown when the top ring meets the exhaust port. On four-cycle engines, you will see 100 % leakdown when an intake or exhaust valve begins to open.

➤ WARNING: It is important to lower the regulator setting before disconnecting either air line to avoid rapid pressure changes to the gauges.

➤ Do not drop this unit or your readings could be affected.

NOTE A: If your air supply cannot maintain 100 psi on the regulated pressure (left) gauge, you may use a lower pressure. Use the chart below or divide the percentage of leakdown (right) gauge by the regulated pressure (left) gauge pressure for the %.															
% leakage	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
100 psi on regulated pressure (left) gauge	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85
85 psi on regulated pressure (left) gauge	84	83	82	81	81	80	79	78	77	76	76	75	74	73	72
70 psi on regulated pressure (left) gauge	69	69	68	67	66	66	65	64	64	63	62	61	61	60	59
Talk to your engine builder about what leakdown % should be expected on new and used motors. Most leakage is past the rings which, when worn, cannot seal the compression properly and costs you power. Once you have established a maximum leakage before rebuild, test your motor often to keep it running its best. Store it in a clean dry place.															

The manufacture is not responsible for personal injury caused by improper use or maintenance of this tool.