



MOTION PRO, INC.  
3171 Swetzer Road  
Loomis, CA 95650  
Tel 650.594.9600 Fax 650.594.9610  
www.motionpro.com

# INSTRUCTIONS

## MOTION PRO P/N 08-0678 STANDARD 4-STROKE LEAK DOWN TESTER

The Motion Pro Standard Leak Down Tester is designed to check the percentage of cylinder leakage in a 4-stroke engine. A moisture free air supply of 90 PSI to 200 PSI is required. This kit is supplied with a cylinder leakage tester, one hose, and one thread adapter. The kit will accommodate 10mm, 12mm, and 14mm spark plug threads.



**WARNING! On some engines, the crankshaft will spin when air pressure from the tester is applied to the piston. To avoid injury, never leave tools attached to the crankshaft while using the leak down tester. To prevent the engine from spinning, shift the engine into high gear and apply the rear brake. Improper use of this tool could cause great bodily injury or death.**

**Warning: Wear eye protection to prevent eye injury from escaping gas and/or metal chips. We recommend that a qualified mechanic in a properly equipped shop perform this procedure.**

1. Perform all leak down testing with the engine cold. **CAUTION: Introducing cold air into a hot engine can warp or fracture valves and/or other engine parts.**
2. Remove all spark plugs.
3. Rotate the crankshaft until the piston of the cylinder to be tested is at top dead center on the compression stroke.
4. Thread the correct hose and/or adapter into the spark plug hole. The fitting on the hose will work with 10mm and 14mm threads. The adapter screws on to the hose for use with 12mm threads. Do not connect the hose to the leak down tester at this time.
5. Pull up on the regulator knob to unlock it and turn it counter-clockwise as far as possible. This will ensure that the regulator is adjusted below 80 PSI to prevent damaging the leak down tester gauge when attached to the air supply.
6. Connect the tester to an air supply of 90 PSI to 200 PSI.
7. Set the gauge needle to 0% by adjusting the regulator knob. Check the setting by momentarily connecting the tester to the hose. This will cause the needle to swing counterclockwise and then return to 0%. Repeat this step until the needle returns to 0% without re-adjusting the regulator.
8. Connect the tester to the adapter hose. The needle will swing counterclockwise and then clockwise as the cylinder is pressurized. When the needle stops, record the percentage of leakage for that cylinder.
9. Repeat steps 3 through 8 to test the remaining cylinders.

PERCENTAGE OF CYLINDER LEAKAGE	ENGINE CONDITION
0% - 5%	Engine in excellent condition. Most engines built for racing have 5% or less
6% - 14%	Engine in good condition. Proceed with tune-up or adjustments as planned.
15% - 22%	Engine in poor condition. Will run, but performance will be down.
23% - UP	Engine in very poor condition. Consider rebuilding engine before proceeding.

### HELPFUL TIPS:

- Perform a leak down test to determine an engine's condition before a tune-up
- Air escaping from:
  - Carburetor.....Intake valve leaking
  - Exhaust system.....Exhaust valve leaking
  - Crank case breather.....Piston/rings leaking
  - Radiator.....Head gasket leaking
  - Adjacent cylinders.....Head gasket leaking

