



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

# INSTRUCTIONS

## Digital 4-Stroke Leak Down Tester P/N 08-0740

The Motion Pro Digital 4-Stroke Leak Down Tester is designed to check the percentage of cylinder leakage in a 4-stroke engine. A moisture free air supply of 90-200psi is required. This kit is supplied with a digital cylinder leakage tester, one hose, and two thread adapters. The kit will accommodate the common M10-1.0, M12-1.25, and M14-1.25 spark plug threads.

**WARNING! This tool should only be used by experienced users trained in servicing motorcycle engines and components. Wear eye protection to prevent eye injury from escaping gas and/or metal chips. Refer to your factory service manual for additional instructions for accessing these parts for service. Failure to follow service manual instructions and/or improper use of this tool could result in great bodily injury or death.**

### Instructions:

#### Leak Down Testing

1. Remove all spark plugs. **Note:** Some engine designs may feature dual spark plug heads per cylinder. In this case it is recommended you do not remove "all" the spark plugs. Just one per cylinder.

2. Rotate the crankshaft until the piston of the cylinder to be tested is at top dead center on the compression stroke.

**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.**

3. Thread the correct hose and/or adapter into the spark plug hole. The fitting on the hose will work with most M10 and M14 threads. The adapters screw on to the hose for use with M12 threads and long-reach M10 threads. Do not connect the hose to the leak down tester at this time.

4. Rotate the air pressure regulator adjustment knob counterclockwise until no resistance is perceived (approximately 6mm / ¼" gap between knob and body). This will set the regulator to 0psi to prevent over-pressurization when attached to the air supply.

5. Connect the tester to an air supply of 90-200psi.

6. Power on the gauge by pressing the ON/OFF button. Set the gauge reading to 0.0% (80.0psi) by adjusting the regulator knob. Clockwise rotation of the knob increases pressure/decreases displayed leak percentage. Check the setting by pushing the bleed valve in for a few seconds, then releasing. This will cause the displayed pressure to drop and then return to near 0.0%. Re-perform this step until the gauge reading returns to 0.0% without re-adjusting the regulator. **NOTE:** You may find that adjusting the regulator to exactly 0.0% is time consuming. If this is the case, it is okay to start at a non-zero value within ±1.0%, and adjust the final displayed value to compensate. For example, an initial reading of -0.7% would require the addition of 0.7% to the displayed resulting value. An initial reading of 0.7% would require the subtraction of 0.7% to the displayed resulting value. This compensation method maintains accurate final results.

7. Connect the tester to the adapter hose. Allow the gauge reading to settle to a steady value. Adjust the compensated value as described toward the end of step #6 if necessary, and record the percentage of leakage for that cylinder.

8. Repeat steps 1 through 7 to test the remaining cylinders.

**Note:** The gauge will power off automatically after 3 minutes of inactivity. To manually power off, hold the ON/OFF button for 3 seconds. The reference pressure units displayed on the gauge can be toggled between psi and bar by pressing the FUNCTION button.

#### HELPFUL TIPS:

Perform a leak down test to determine an engine's condition before a tune-up.

#### WHEN AIR IS 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



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.

#### Digital Gauge Battery

The Motion Pro 08-0740 Digital Leak Down Tester uses two AAA batteries to power the unit. When the batteries are running low on power, the display screen will show an empty battery indicator at its top to suggest prompt battery replacement. When the batteries have insufficient power for use and require immediate replacement, the display screen will read Lo then power off. To replace the batteries in the gauge after they no longer have sufficient power, carefully push the rubber boot back over the top of the gauge, exposing the rectangular battery compartment lid. Open the battery compartment lid by first removing the single cross-drive screw. Disengage the two prongs on the lower edge of the battery compartment lid to gain access to the batteries. Remove the old batteries and install new batteries, paying close attention to proper battery terminal orientation as indicated in the battery compartment. Engage the two prongs on the lower edge of the battery compartment lid, close top portion of lid, and fasten cross-drive screw to secure lid in place. Return the rubber boot to its original position and the gauge is now ready for use.