



# Tech

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## ENGINE LEAK DOWN

Performing a static leak down test can be very helpful in determining if piston rings have begun to leak, seated valves are sealing and if the head gasket is allowing compression to leak into the cooling system.

The Longacre Leak Down Tester includes two gauges, a port for connecting to the compressor, a port for connecting to the spark plug hole and a regulator. Leak Down testers can use digital or analog gauges.

Testing should be done with the engine warmed up to normal operating temperature. This is done so that the rings have expanded and will seal better which should provide more meaningful numbers.

With a spark plug removed and the piston at top dead center, pressure (normally 100 psi) will be fed into the cylinder via the spark plug hole and the air flow, which represents leakage, can be measured. For example, if the left gauge is at 100 psi and the right gauge reads 95 psi, you have 5% leak down.

If you have high leakage, you should listen for air hiss in the following areas:

- Exhaust pipe – May indicate a burnt or stuck exhaust valve
- Carburetor – Could indicate a bent or stuck intake valve
- Oil filler or dip stick – Possible broken ring or piston
- Radiator cap - Bubbles in the radiator indicates a leaking head gasket or cracked head

Generally, racing engines would be in the 1-10% range for optimum performance, although this number can vary. Ideally, you would want to complete a leak down test when the engine is fresh and use those numbers as your baseline.

Remember, like tire pressure gauges, you should use the same leak down tester on the same engine for a true comparison!