

Pro**Meister**



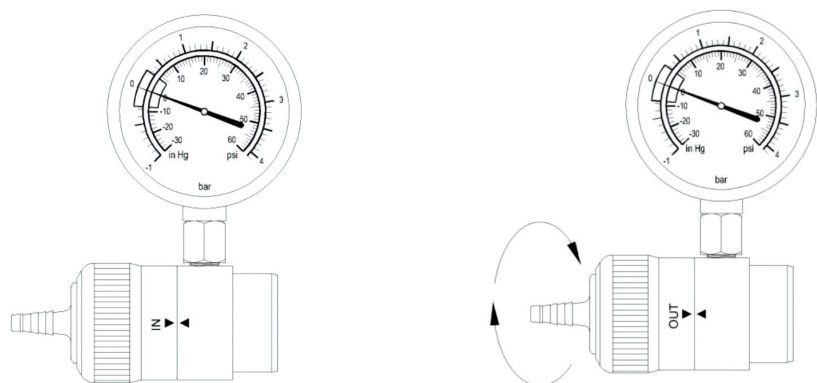
User Guide

Vacuum Pump Tester

The Vacuum / Pressure Pump

The Vacuum Pump is accurate, robust and easy to use. The unit consists of a pump-body, movable handle and a gauge which displays both vacuum (inhg / bar) and pressure (psi / bar). The gauge can be rotated for 360 degree.

Pressure and Vacuum modes can be selected via the mode selector as follows:



1. For vacuum testing: Turn the valve to "IN"

2. For pressure testing: Turn the valve to "OUT"

Caution

Although the pump is manufactured to exacting standards, please ensure that it is handled accordingly. Dropping, rough handling, exposure to high temperatures (hot engines, naked flames, etc.) or misuse may jeopardise the accuracy of the pump and may also invalidate the warranty.

Using The Automotive Vacuum & Pressure Test Kit To Diagnose Engine Faults

Before condemning the engine management system for causing any particular problem, remember that the engine's mechanical components must be in good condition for the engine to perform properly. A vacuum gauge can be used to check the mechanical condition of an engine, however it is not foolproof.

By connecting the pump to a manifold vacuum port(this must be the engine side of the throttle butterfly) with the T connectors provided, a wide array of diagnostic examinations can be conducted.

By examining the range of vacuum readings and the movement of the gauge needle in comparison to the pressure readings of a normal engine running at idle(typically steady and between 16 inhg~22 inhg), it is possible to diagnose a variety of faults*

* This is by no means an exhaustive list of tests. The hand pump and adaptors can be used to test practically any component or system that requires proper sealing, vacuum or pressure to operate.

To Test Fuel Systems

Professional vacuum / pressure diagnostic tool helps identify a variety of faults on vehicle systems including fuel, ignition, transmission, emission and air conditioning / heating. Set also includes reservoirs, hoses and adaptors for bleeding brake and clutch systems. By using the appropriate connector from the selection included in the kit, most vacuum pipes can be interrupted.

When bleeding diesel fuel systems, it is recommended that the reservoir pot is used. This creates a vacuum in the pot and the diesel fuel is drawn in. This may need to be completed a few times before the procedure is complete. Connect the pot and gauge between the fuel filter and distribution pump.

FAULT	INDICATOR (Comparative to normal engine at idle 16 inhg~22 inhg)
Normal Engine	Reads steady at between 16 inhg~22 inhg.
Worn Valve Guides	Reads lower than normal and fluctuates in a range of approximately 3 inhg. As the rpm increases, the reading will become increasingly steady.
Burned or Leaking Valves	Will fluctuate between low and normal at regular intervals.
Sticking Valves	Will demonstrate rapid and intermittent drop in vacuum pressure.
Piston Ring Leaks	Will be low, constant and demonstrate a rapid leap following a quick throttle opening and closing. The vacuum reading at idle will be low but steady at approximately 12 inhg~16 inhg. Increase the engine speed to 2,000 rpm and close the throttle suddenly and the vacuum should increase 2 inhg~5 inhg above its low steady reading. A smaller reading may indicate faulty rings.
Blown Cylinder Head Gasket	At idle, the reading will fluctuate between a normal and a low reading. The vacuum will drop approximately 10 inhg from the normal reading and return to normal each time the defective cylinder(s) reach firing point.
Incorrect Idle Air/Fuel Mixture	Rich mixture will read as a slow up and down movement over a range of around 4 inhg~5 inhg. Lean mixture appears as a drop over the same range.
Late Ignition/Valve Timing	Steady, low vacuum reading at idle indicates late ignition or valve timing or a uniformly close setting of the valve lash.

To Test Air Conditioning And Heating Systems

Using the connectors provided, it is possible to interrupt the vacuum system of the heating / air con system to enable safe and precise operation of the heater direction flaps in the heater box.

Remove the main vacuum supply to the unit and replace with the vacuum / pressure tester. Select vacuum mode and apply a small amount of vacuum while observing the gauge pressure.