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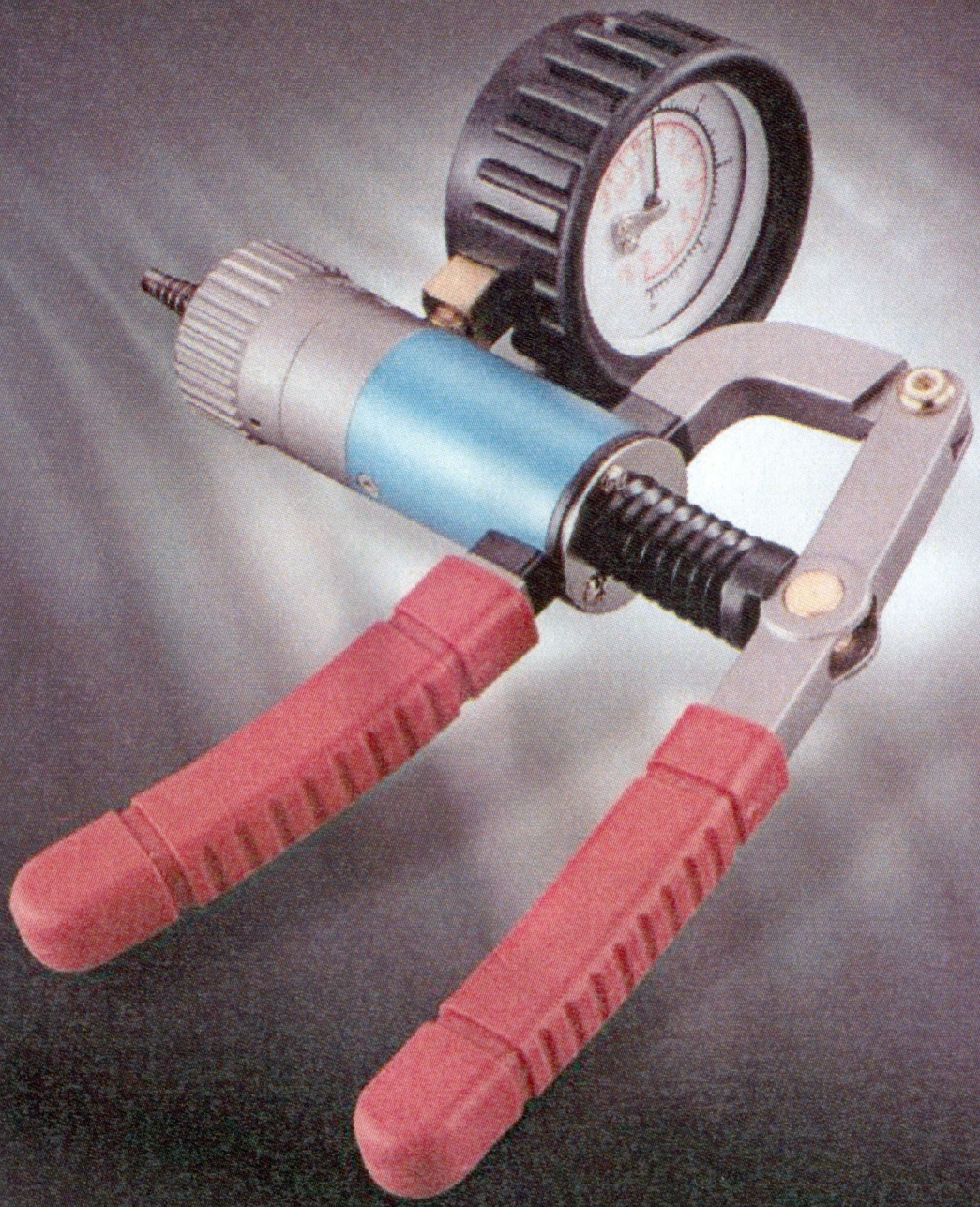
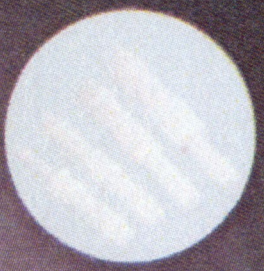
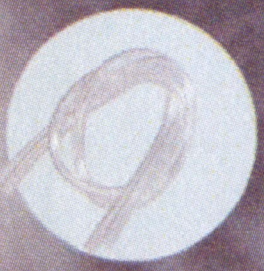
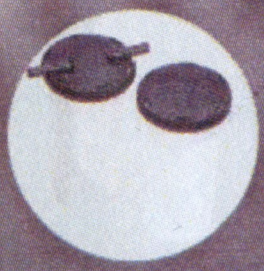
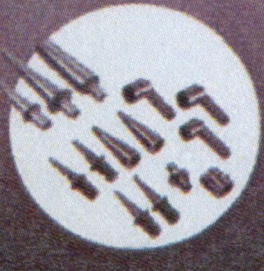
Automotive Vacuum & Pressure Test Kit











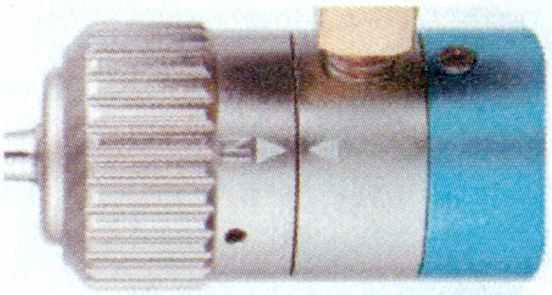


Fig.2.1 Vacuum

THE VACUUM / PRESSURE PUMP(FIG.1)

The Vacuum Pump is accurate, robust and easy to use. The unit consists of a pump-body(A), moveable handle (B) and a gauge (C) which displays both vacuum (inHG / BAR) and pressure (Psi /Bar). Pressure and vacuum modes can be selected via the Mode Selector (D) as follows:

1.For vacuum testing-turn the mode selector until the selection arrow is aligned with operation arrow labelled 'IN' (Fig. 2.1)

2.For pressure testing - turn the mode selector until the selection arrow is aligned with the operation arrow labelled 'OUT' (Fig.2.2)

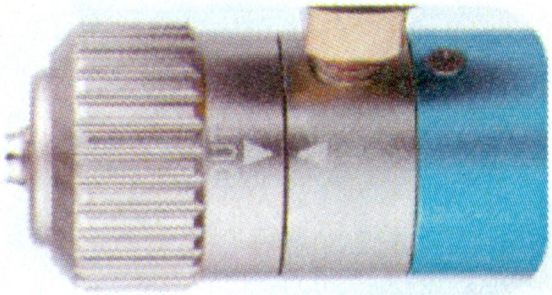


Fig.2.2 Pressure

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 16inHg and 22inHg), 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.

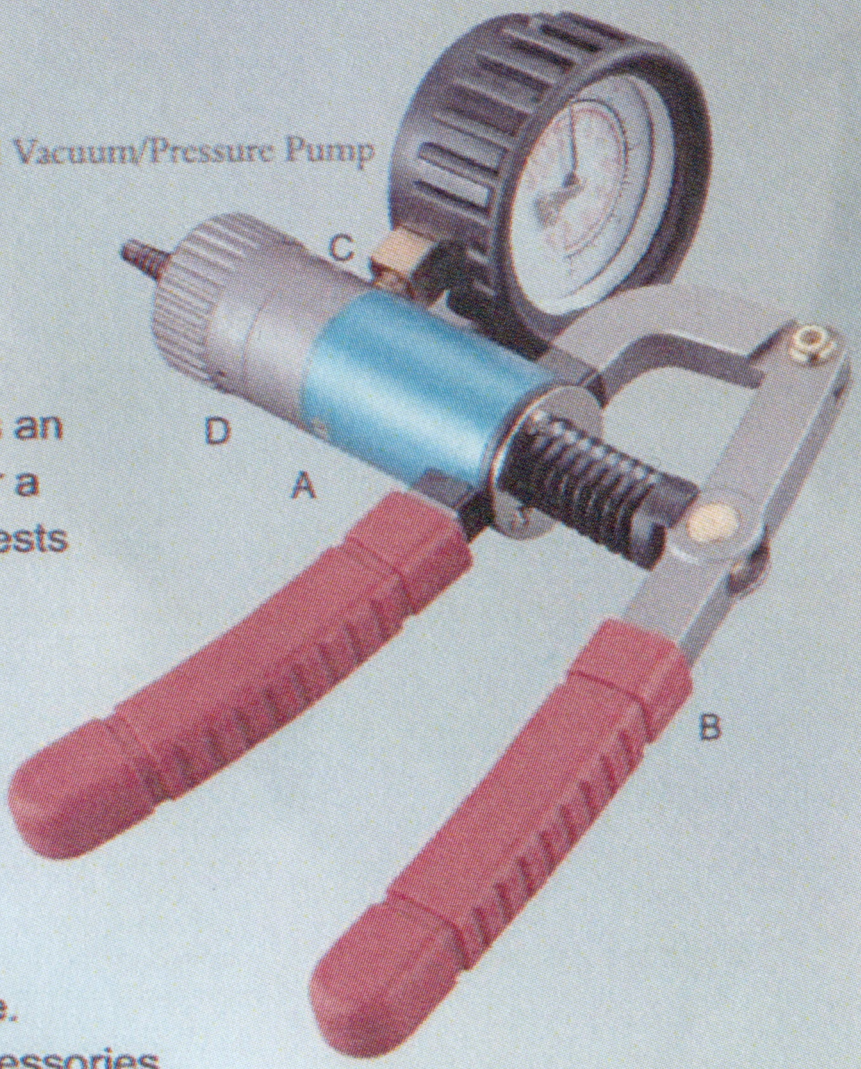
When bleeding diesel fuel systems, it is recommended that the reservoir pot is used. This creates a vacuum in the pot and the diesel fuel is drawn in. This may need to be completed a few times before the procedure is complete. Connect the pot and gauge between the fuel filter and distribution pump.

FAULT	Indicator Comparison to normal engine at idle (16-22inHg)
NORMAL ENGINE	Reads steady at between 16inHg and 22inHg
WORN VALVE GUIDES	Reads lower than normal and fluctuates rapidly in a range of approximately 3inHg. 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 12inHg to 16inHg. Increase the engine speed to 2000 rpm and close the throttle suddenly and the vacuum should increase 2inHg to 5inHg above its low steady reading. A smaller reading may indicate faulty rings
BLOWN CYLINDER HEAD GASKETS	At idle the reading will fluctuate between a normal and a low reading. The vacuum will drop approximately 10inHg from the normal reading and return to normal each time the defective cylinder or cylinders reach firing point
INCORRECT IDLE AIR/FUEL MIXTURE	Rich mixture will read as a slow up and down movement over a range of around 4inHg-5inHG. 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 operation and gauge pressure.

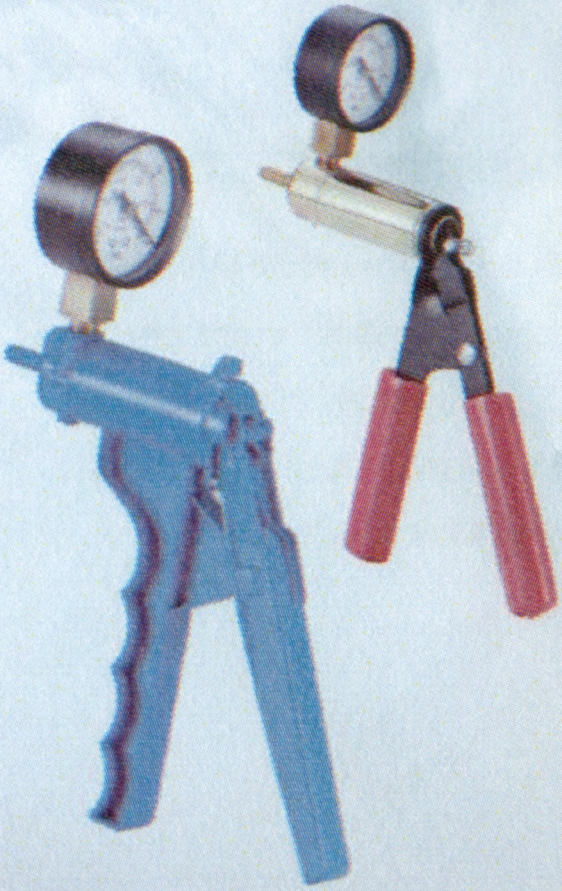
Fig.1 Vacuum/Pressure Pump



INTRODUCTION

Professional Automotive Vacuum & Pressure Test Kit is an apparatus that can be used for a variety of automotive system tests and functions.

The hand pump and adaptors can be used to test vacuum motors and control valves as well as component or system that requires proper sealing, vacuum or pressure to operate. The pump and associated accessories can also be used to transfer fluids and to bleed brakes.



Connectors

24" Pipe

Connection Pipes

Reservoir Pot

Bleed Adapters

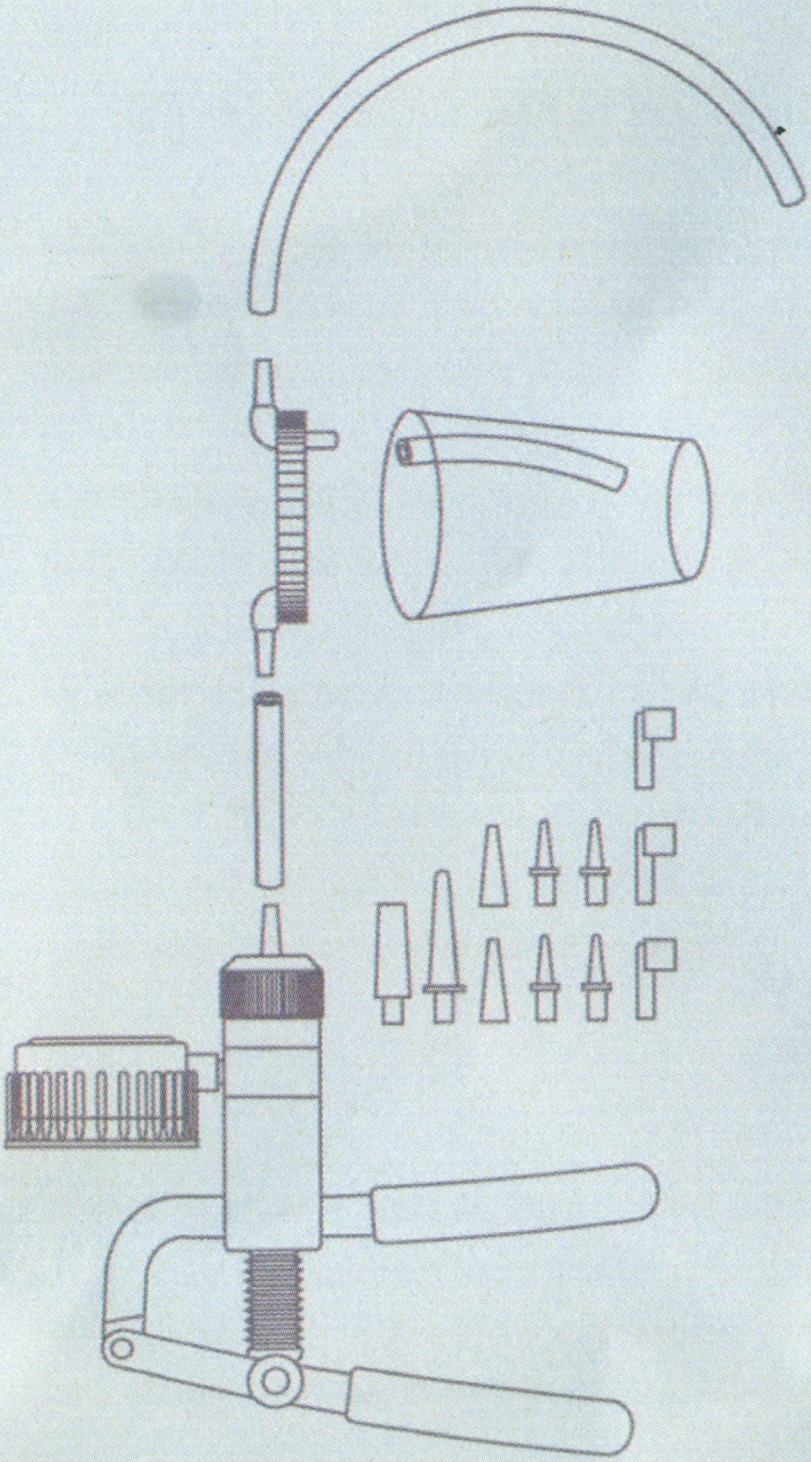


Fig.3 Brake Bleeding Assembly

To assemble the unit for brake bleeding

a. Attach one of the 3"pipe lengths to the hand pump and to the reservoir lid

b. Attach another 3"pipe to the bottom of the cap

c. Attach the 24"pipe length to the free reservoir lid port

d. Select an appropriate adapter and attach to the reservoir hose

e. Attach the adaptor to the bleed nipple

f. Place a wrench on the brake bleeding fitting, but do not turn

g. Ensuring that the mode selector is in the "IN" position, pump around 15-20 times to build up a vacuum in the pump system

h. Open the fitting until the fluid starts to enter the reservoir jar

i. Remove approx. 2oz of fluid and then tighten the fitting

j. Repeat on remaining wheels