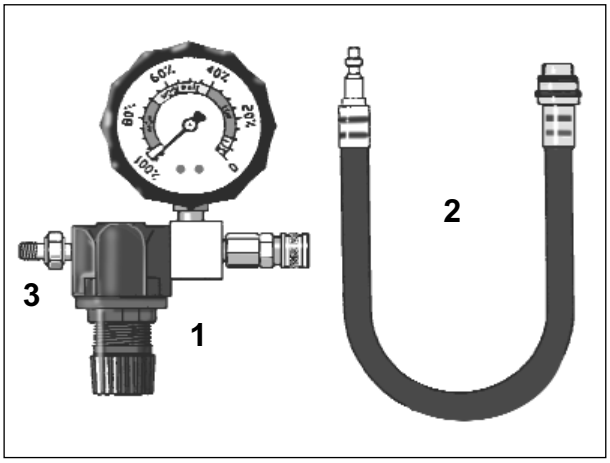
SEALEY Professional TOOLS
AUTO SERVICE LINE

INSTRUCTIONS FOR:
CYLINDER LEAKAGE TESTER
Model: VS202



PART NUMBERS

1	VS202/1	Regulator and Gauge Assembly
2	VS202/2	Flexible Adaptor, M14/M18
3	VS202/3	Adaptor, 1/8"NPT - 1/4"BSP

1. INTRODUCTION & APPLICATION

INTRODUCTION: VS202 is used to test for cylinder leakage where poor engine performance is suspected to be due to cylinder pressure loss. The tester allows workshop compressed air to be directed into the cylinder and measures the percentage of air loss. The constant supply of compressed air also allows faults to be pin-pointed by listening for the source of leakage.

APPLICATION: For use on petrol engines with M14 or M18 spark plugs.

2. SAFETY INSTRUCTIONS

✓ *Ensure that Health & Safety, local authority and general workshop practice regulations are strictly adhered to when using tools.*
✓ Maintain the equipment in good and clean condition for best and safest performance. DO NOT use if damaged.
✓ If required, ensure that the vehicle to be worked on is adequately supported with axle stands, ramps and chocks.
❒ **WARNING!** Select neutral (or 'park' if automatic transmission) and keep hands clear of the engine as engine rotation may occur when using this tool. **The ignition MUST BE turned off.**
❒ **WARNING!** Turn regulator knob fully anti-clockwise before connecting to compressed air. Excess pressure will damage the gauge and will invalidate the warranty.
✓ Wear approved eye protection. A full range of personal safety equipment is available from your Sealey dealer.
✓ Wear suitable clothing to avoid snagging. Do not wear jewellery and tie back long hair.
✓ Account for all tools and parts being used and do not leave them in or near the engine.
▲ **IMPORTANT:** Refer to the vehicle manufacturer's service instructions, or proprietory manual, to establish the current procedure and data. These instructions are provided as a guide only.

3. INSTRUCTIONS FOR USE

3.1. LOCATION OF LISTENING POINTS

1. Oil Dipstick Tube . . . . . .for leakage from damaged or worn rings and/or cylinder wall.
2. Radiator Filler . . . . . .for cylinder wall cracks or head gasket leakage.
3. Adjacent Cylinder . . . . . .for head gasket leakage.
4. Tail Pipe . . . . . .for exhaust valve leakage.
5. Carburettor Air Inlet . . . . . .for intake valve leakage.
6. Fuel Injection Throttle Body . . . .for intake valve leakage.

3.2. CONNECTING THE SYSTEM

1. Run the engine until it reaches operating temperature.
2. Remove spark plugs, oil dipstick, radiator cap, air filter from carburettor or, if fuel injected, remove air filter or hose from the throttle body.
3. Position No. 1 piston at TDC on the compression stroke so that both inlet and exhaust valves are closed. Note: Always rotate the engine in the normal operating direction. To position the piston correctly use a piston position gauge and remove the cam/rocker cover so that closed valves can be confirmed.
4. Turn the regulator knob fully anti-clockwise. Connect the compressed air, which must be between 45 and 150psi, to the regulator. Turn the regulator knob clockwise until the gauge reads zero (at the end of the yellow 'Set' band).
5. Screw the cylinder hose into the spark plug hole and then connect to the tester. The amount of leakage will show on the gauge as a percentage loss.
6. Test all other cylinders, each at TDC, and compare the leakage figures to determine which cylinders are faulty.
7. If necessary, retest the cylinder(s) showing high leakage. Check the listening points (see 3.1.) to determine the cause of the leakage.

3.3. HELPFUL SUGGESTIONS

1. If 100% or excessive leakage shows on gauge the cylinder may not be at TDC on the compression stroke. Check to ensure that the valves are closed. Always try to position piston at TDC for uniform results.
2. If rings are broken or cylinder walls are scored excessive leakage will be identified.
3. It is important that all cylinders have reasonably uniform readings (as in compression testing). Differences in excess of 15% indicate excessive leakage.
4. Large engines tend to leak more than small engines.
5. If leak is excessive on a vehicle with low mileage, piston rings may be stuck. Treat engine with quality tune-up oil for a period of time and then re-test before disassembling.

6. The lower the pitch of the leakage sound, the greater the leak.
7. To assist with listening use a length of clean hose, or a mechanic's stethoscope with the probe removed.
8. When making repeat tests on the same cylinder, variations in the piston position and engine temperature can cause gauge readings to differ by up to 10%.
9. If an engine has multiple faults (such as worn rings and burned valves), the tester may indicate only the most serious fault.

Note: *There is always some leakage past the piston rings. As a result you will always hear some leakage when listening to the dipstick tube.*

3.4. COMPRESSION FAULTS

Low compression reading on some cylinders.	High relative compression readings. Relatively even cylinder power balance readings.	Lower relative compression readings. One or more cylinders weak on cylinder power balance test.
Use oil in cylinder to see if rings are worn.	But, if excessive exhaust emissions, lack of power, poor performance, or poor fuel consumption.	Do a cylinder leakage test to determine source of problem.
If compression increases, rings and/or cylinder wall are worn.	Do a cylinder leakage test to determine source of problem.	
If compression does not rise, do a cylinder leakage test to determine source of problem.		

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