

Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.



IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS AND CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.

1. SAFETY INSTRUCTIONS

- ❑ **WARNING! DO NOT** use this kit or the components from this kit on diesel fuel systems or high pressure petrol injection systems (in excess of 145psi). Ensure you have read and understood the safety aspects of dealing with the fuel injection system and petrol in general before commencing.

IMPORTANT: Always refer to the vehicle manufacturer's service instructions, or proprietary manual to establish the current procedure and data. These instructions are provided as a guide only.

- ❑ **WARNING! Ensure all Health and Safety, local authority, and general workshop practice regulations are strictly adhered to when using product.**
- ✓ Maintain tools in good and clean condition for best and safest performance. **DO NOT** use test kit if damaged.
- ✓ Account for all tools and parts being used and do not leave them in, or on the engine after use.
- ✓ Ensure you have read and understood the safety aspects of dealing with the fuel injection system and petrol in general before commencing.



Fuel Hazards:

- ❑ **WARNING!** Petrol fumes and battery gases are explosive.
- x **DO NOT** smoke or allow an open flame or sparks in the work area.
- ✓ Keep a dry chemical (class B) fire extinguisher near to the working area.
- ✓ Avoid fire hazard by using caution when disconnecting fuel lines and installing adaptors - some spillage is inevitable.
- ✓ When connecting to or disconnecting from a fuel system, relieve pressure from system and wrap a cloth around the fuel line fitting to absorb any fuel leakage. Wipe up fuel spills immediately.

Fuel Leaks

- ✓ Constantly check gauge and adaptor connections for leakage. If you see leakage turn off the ignition or disable the fuel pump, relieve fuel pressure if necessary and correct leaks before continuing.

- x **DO NOT** let fuel drip or spill onto a hot engine.
- ✓ Wipe up fuel spills immediately.
- ✓ When using tee adaptors, secure hose with hose clamps to ensure leak-free connections.
- ✓ Check all adaptor sealing washers and 'O' rings are in good condition before use.
- x **DO NOT** allow fuel to remain in the adaptors or hoses after use.

Personal / Operation

- ✓ Wear approved eye protection. A full range of personal safety equipment is available from your Sealey dealer.
- ✓ Keep yourself, clothing and test equipment away from all moving or hot engine parts.
- ✓ Do not wear jewellery and tie back long hair.
- ✓ Before performing a test with the engine running (unless the manufacturer's manual states otherwise), set the parking brake and place the gear selector in neutral or park, and block the drive wheels.
- ✓ Exhaust gas contains deadly poisonous gases. The test area must be well ventilated - route the exhaust gas outdoors.
- ✓ Before repairing the fuel system, turn off the ignition switch and disconnect the battery per manufacturer's procedure.
- ✓ Never disconnect the battery whilst the engine is running.

2. INTRODUCTION

Set of three gauges with connectors and adaptors for testing compression and fuel pressure on motorcycles. Gauges range from 0-300psi for compression testing, 0-7bar (0-100psi) for fuel pressure and 0-1bar (0-100kPa) for low pressure fuel.

Model No: **MS100**
Spark Plug Sizes: **8, 10, 12, 14**
Hose Lengths: **220mm**
Fuel Connector Sizes: **Ø 6.4, 7.9mm**



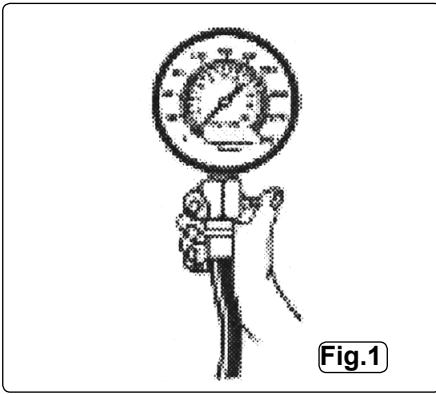


Fig.1

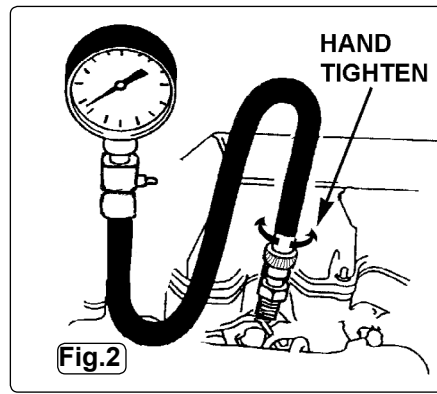


Fig.2

3. OPERATION

3.1 Procedure for Compression Test

- ❑ **WARNING!** Always release the pressure via the Release Valve **before** disconnecting the tester. Press the release valve slowly to release the pressure gradually. Refer to Fig.1.

NOTE! A variation in compression readings between cylinders is often a better indication of engine problems than the absolute values of compression.

- 3.2 Run the engine until it reaches the normal operating temperature.
- 3.3 Stop the engine and disconnect all spark plug wires, numbering them according to the cylinder to which they were connected.
- 3.4 Loosen all spark plugs by about half a turn, but do not remove them.
- 3.5 Using an air hose or wire brush, remove all the dirt and debris from the spark plug wells.
- 3.6 Remove the spark plugs and place them on a clean, flat surface in the cylinder order in which they were removed.
- 3.7 Remove the air filter.
- 3.8 Disconnect the ignition system, following the manufacturer's recommendations in the vehicle servicing manual.
- 3.9 Select the spark plug adaptor required for the vehicle. Screw the adaptor to the hose. Screw the spark plug adaptor and hose assembly into a spark plug well. Hand tighten only. **DO NOT** use a wrench. Refer to Fig.2.
- 3.10 Connect the coupling on the gauge to the hose. Ensure the coupling is fully engaged.
- 3.11 Crank the engine for at least five compression strokes, or until the pressure reading on the gauge stops rising, with the throttle in the wide open position.
- 3.12 Record the compression reading, then push the side release valve to relieve the pressure.
- 3.13 Repeat the test and record the reading. Relieve the pressure and remove the hose and adaptor from the spark plug well.
- 3.14 Repeat for the remainder of the cylinders.

4. TEST RESULTS

4.1 Compression Gauge Readings

- 4.2 On a normal cylinder, the gauge needle should travel up the scale on each compression stroke until it reaches peak value. All cylinders should indicate a pressure that is within the vehicle manufacturer's specifications, and the reading should not vary by more than 10% from cylinder to cylinder.
- 4.3 If the gauge needle does not travel up the scale or if it remains at the same value for several strokes and then starts to climb, the problem could be a valve sticking.
- 4.4 If the compression reading is considerably higher than the vehicle manufacturer's specification, the problem may be carbon build-up in the cylinder. It may also indicate that either the piston, or the cylinder head, has been modified.
- 4.5 If a reading on two adjacent cylinders is 20psi (or more) lower than the other cylinders, the problem may be a cracked cylinder head or defective main gasket. Under these conditions, both coolant and oil may be found in both cylinders.
- 4.6 If the readings are low, or vary widely between cylinders, pour a teaspoon of SAE 30 oil into each cylinder and retest them. If the readings increase considerably, the problem may be poorly seated, or worn, piston rings. If the readings remain about the same, the valves and/or associated components may be the problem. A burned or damaged piston may also cause the same results.

5. COMPLETION OF TEST

- 5.1 Clean, re-gap and reinstall the spark plugs in the same order in which they were removed, or install new spark plugs.
- 5.2 Reconnect each spark plug wire to the plug it was connected to prior to removal.
- 5.3 Return the throttle plates to the closed position.
- ▲ **IMPORTANT: After test, failure to return the throttle plates to the closed position before starting the engine can cause serious damage to the engine.**
- 5.4 Reconnect the ignition system wiring disconnected in paragraph 3.8.

6. FUEL PRESSURE TEST

6.1 Relieving Fuel System Pressure

NOTE! The following instructions are intended as a guide only. Always adhere to manufacturer's procedures for relieving system pressure.

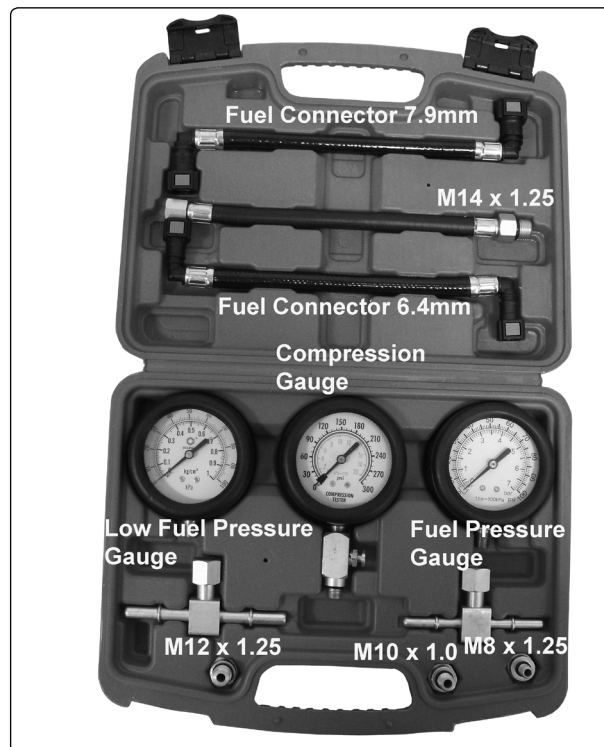
- 6.1.1 Before disconnecting the fuel lines to connect adaptors and pressure gauge to fuel system, the fuel system pressure must be relieved, this will prevent fuel spraying when a joint is disconnected.
 - 6.1.2 Switch off ignition, loosen the fuel tank cap to relieve tank pressure, then re-tighten.
 - 6.1.3 To relieve fuel pressure, it is necessary to prevent the fuel pump operating, whilst still allowing both injection and ignition systems to operate.
 - 6.1.4 The procedure may simply require the fuel pump relay, fuse or electrical supply to be disconnected; some models have two fuel pumps - make sure both are disabled.
 - 6.1.5 Once pump(s) is/are disabled, run the engine until it stalls, and then crank over 5 to 10 times after it has stalled. On some electronic fuel injection systems, removing the fuel pump fuse disables both the fuel pump and the injectors. In this case refer to manufacturer's procedure.
- **WARNING! DO NOT assume that pressure in the fuel system has been relieved. When disconnecting, wrap a cloth around the fuel line fitting to absorb any fuel leakage.**

6.2 Connection and Usage

- 6.2.1 With the engine off and the fuel system pressure relieved, install the correct adaptor into the fuel system at the point to be tested and connect to the quick coupler on the gauge hose ensuring the locking collar is in position.

NOTE! Use a cloth around the fittings to absorb any fuel.

- 6.2.2 Re-connect the fuel pump(s).
- 6.2.3 Start engine and allow to idle.
- 6.2.4 Read the fuel pressure on the gauge and compare to the manufacturer's specification.
- 6.2.5 Turn off the engine.
- 6.2.7 Remove the tester and adaptors from the fuel line.
- 6.2.8 Restore fuel line to original condition, restart the engine and check the system for leaks.



Parts support is available for this product. To obtain a parts listing and/or diagram, please log on to www.sealey.co.uk, email sales@sealey.co.uk or phone 01284 757500.

NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.
IMPORTANT: No liability is accepted for incorrect use of this product.

WARRANTY: Guarantee is 12 months from purchase date, proof of which will be required for any claim.

INFORMATION: For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.

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