



The Merlin S400A is an air operated testing and setting apparatus for precise assessment of functional performance of individual fuel injectors, before and after reconditioning.

All controls and instruments are grouped together for operator convenience and include the Merlin S500-1 display monitor, flow control valve, light and fume extraction control.

Injectors are mounted onto the worktable and securely located to facilitate pressure adjustment. Injector clamping is achieved via an optional quick action vee clamp assembly which will accept most standard automotive injector types\*.

Quick Action Test Pipe T022-001 (14 and 12 x1.5mm) is fitted with a nylon nipple enabling a complete seal to be made at the injector by hand pressure of the plastic hand wheel. No spanners are required.

\*Marine options are available

#### FEATURES INCLUDE:

- **Operating handle not required, all tests are carried out by precise adjustment of air/and fuel valves.**
- **Analogue gauge not required, supplied complete with the proven S500-1 digital injector opening pressure/backleakage timing monitor for optimum accuracy and consistency of test results.**
- **Print out of test results from the thermal image printer, which is included in the scope of delivery.**
- **Designed to carry out all tests detailed in ISO 8984-2, i.e. Nozzle opening pressure, chatter test (atomization), spray pattern, seat leakage and back leakage**
- **Removable front spill tray, provides ease of access to fuel tank and fuel filter.**
- **Robust mechanical design with all steel frame construction.**
- **Fluid level sight gauge with integral temperature indication.**

Illustrations and Technical Data are non-binding. Subject to change as a result of technological progress.

Manufacturers part numbers are given for reference purposes only and do not imply that in all cases the parts are of their manufacture

## SPRAY CHAMBER

Finished in black and illuminated to give a good view of injector spray form.

## FUME EXTRACTION

Variable rate air operated fume extraction system. An optional perspex spray arrestor further assists the extraction operation.

## FUEL TANK

Working capacity of approximately 3 imperial gallons (13.6 litres) Standard tank features include sight level gauge, quick release filler cap and magnetic drain plug.

## AIR PUMP UNIT

Fully sealed unit, robust construction, pneumatically operated via normal workshop air supply.

## FUEL FILTER

A replaceable paper element filter (2 micron filtration) protects both the air pump unit and the injector on test. Access to the filter is via the removable spillage tray and filler cap.

## FLOW CONTROL VALVE

Provides full to minimum flow for critical testing.

## OUTLET CONNECTION

Standard connection thread size is M14 x 1.5.

An optional adaptor is available with a thread M22 x 1.5 for industrial and marine injector applications.

## S500-1 DISPLAY MONITOR

The S500-1 Monitor has been designed for accurate performance testing, production line testing and quality over checking of Diesel Fuel Injectors and Nozzles.

The repeatable and reliable digital display of pressure eliminates errors normally found in conventional analogue pressure gauges due to hysteresis in gauge readings, possible undetected mechanical damage, gauge inaccuracies and gauge needle bounce when setting 'Nozzle Opening Pressure'

Back leakage timing errors are eliminated due to the absence of having to start and stop a remotely sited mechanical timer.

Pressure Range: - 0 - 700bar, psi, MPa or kgf/cm<sup>2</sup>

Time Range: - 0 - 99.9 seconds

Pressure: - ±1 bar

Time: - ±1 second

Transducer: - ±0.1% of full value

Linearity: - ±1 bar over full range

Memory: - Data store/recall for injector type test plans.

Display: - Tick/cross symbols advise user of NOP and back-leak pass/fail.

Compensation: - Automatic compensation for variations in test oil temperature.

Test oil: - Variable test oil compensation, Standard, (No compensation), Shell calibration fluid 'C' or ISO 4113 calibration fluid.

## PRINTER

Thermal printer for data recording

## ACCESSORIES

### QUICK ACTION PIPE

T022-001 Quick Action Pipe assembly, complete with M14 x 1.5 threaded hand-wheel and M12 x 1.5 split adaptor.

### VEE CLAMP ASSY

D8727 Vee Clamp assembly.

### SPRAY ARRESTOR

SDS400 Perspex spray deflector.

### CABINET

CAB400 Mounting cabinet for S400A.

### ADDITIONAL SPLIT ADAPTORS FOR T022-001 Q/A Pipe

T022-003 M12 x 1.5 split adaptor

T022-004 M18 x 1.5

T022-006 ¼" B.S.P. (Gardner Injectors)

T022-007 9/16" U.N.F. x 18 T.P.I.

T022-008 5/8" U.N.F. x 18 T.P.I.

T022-009 M14 x 1.5 (long reach)

### ACCESSORIES FOR INDUSTRIAL AND MARINE INJECTORS

13306 Heavy Duty Vee Clamp assembly.

B8745 M22x1.5 Male threaded outlet connector suitable for use with the following test pipes:-

T022-010 M22 x 1.5 - 10mm x 3mm

T022-011 M27 x 1.5 - 10mm x 3mm

T022-012 M24 x 1.5 - 10mm x 3mm

T022-013 M30 x 1.5 - 10mm x 3mm

Other sizes available.

Please contact our office for further details.

### STANDARD ELECTRICAL SPECIFICATION

240v 1ph 50Hz

110v 1ph 60Hz

### DIMENSIONS

60cm x 60cm x 77cm

Nett Weight: 66kg

### SHIPPING SPECIFICATION

70cm x 70cm x 91cm

Gross Weight : 92 kg