

Oil Solutions

For Webtec Products

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DHM 3 Series Digital Hydraulic Multimeter

Measure Flow, Pressure, Peak
Pressure and Temperature

Power and Volumetric Efficiency

- Up to 800 lpm
- Up to 480 bar
- Bi-Directional



*DHM 3 Series Digital
Hydraulic Multimeter*

The Webster DHM 3 Series Digital Hydraulic Multimeter is an all-in-one unit designed to test the performance of hydraulic pumps, motors, valves and hydrostatic transmissions.

The easy-to-use design allows the operator to just switch on and test, without complex setup or special training. The DHM measures flow, pressure and temperature. In addition, the DHM holds the peak pressure value as well as calculating hydraulic power and volumetric efficiency using the unique P-Q test button.

The DHM is the ideal tool for pinpointing hydraulic system faults, reducing downtime, and helping in preventative maintenance. The design builds on the very successful Webster DHT range of portable testers with the addition of a large digital display and a built-in pressure transducer.

The turbine flow meter with built-in loading valve is bi-directional and specifically designed to enable the operator to simulate the maximum working pressure safely during normal machine operation.

The loading valve has safety discs built-in to protect the operator and the multimeter in the event of excessive pressure, allowing oil to bypass the loading valve INTERNALLY with no spillage of oil from the hydraulic circuit, eliminating any danger to the operator or environmental hazards.

Features

- **ACCURATE** measurement of flow, pressure, peak pressure and temperature.
- **BUILT-IN** loading valve.
- **BI-DIRECTIONAL** for unrestricted connection and simplified testing.
- **SAFE** to use in both directions of flow. Internal oil by-pass protects the tester and system against overpressure.
- **AUTOMATIC** calculation of hydraulic power and volumetric efficiency
- **EASY** to operate controls. Connect into the hydraulic system and simply "Switch on".
- **PORTABLE AND LIGHTWEIGHT** with angled case for easier viewing and cleaning.

Another quality product from the Webster Range

Specifications

Consult Sales office for US gpm models.

Connections

Flow block connection by flexible hoses 1 - 2 metres (3 - 6ft) long.

Measurement and Indication

Flow

Measured by the electronic count of an axial turbine designed to minimise pressure drop and the effects of viscosity. The EU version of the DHM displays flow in lpm. Accuracy: $\pm 1\%$ of indicated reading (over 15 - 100% of range)

Pressure and peak pressure

Measured using a built-in pressure transducer rated to 600 bar. The transducer has a typical response time of <1 ms to enable the accurate capture of peak pressures. The engineering units for pressure can be changed using the 'pressure units' button on the front panel. Standard units are 'BAR, PSI, MPA, KSC'.

Accuracy: Pressure 0.5% FSD, Peak 1% FSD

Temperature

Sensed by a thermistor built into the flow transducer to maximise contact with the oil flow and ensure fast

Adaptors

Adaptor Fitting kits and flanges are available to suit the range of flow blocks. Consult the sales office.

response. The EU version of the DHM displays temperature in $^{\circ}\text{C}$.

Accuracy: $\pm 1^{\circ}\text{C}$

Power

Calculated from the flow and pressure, the hydraulic power is displayed in either HP or KW. The engineering units for power are linked to the pressure units and can be changed using the 'pressure units' button on the front panel.

Accuracy: ± 3 kW (δ 100 kW), ± 5 kW ($>$ 100 kW)

Volumetric efficiency

Calculated as a ratio of the flow at high pressure to the flow under reference conditions. Volumetric Efficiency is expressed as a percentage.

Accuracy: $\pm 1\%$ point

Construction

Readout

The DHM is microprocessor based and has three screens that can be toggled by the operator. Flow, pressure, peak pressure and temperature are displayed simultaneously on screens one and two. Power can be displayed in place of temperature at the touch of a button. The three screens show: all digital values, digital values with a bar graph, and P-Q test.

The readout refreshes three times per second and uses low power circuitry to maximise battery life. The DHM has an auto power off feature that turns the unit off if unused for more than 20 minutes. The

standard 9-volt battery enables more than 6 months normal testing time. The 9V (PP3, 64F22, 6AM6, A1604) battery is available worldwide.

Turbine Block

High tensile aluminium block houses a six blade turbine rotating on a stainless steel bearing and shaft. Built-in flow straighteners reduce flow turbulence and allows accurate flow measurement in both directions.

General

Loading Valve

The integral loading valve gives progressive pressure loading in either flow direction. Replaceable safety discs relieve to **internally by-pass** the oil if the maximum pressure is exceeded by $\sim 5\%$. Safety discs with different pressure ranges up to 480 bar are available. Consult sales office for further information.

Seals

Viton seals compatible with oil, water/oil emulsion are fitted as standard. EP seals for phosphate-ester are available to special order.

Dimensions (Millimetres)

DHM403: 240 Wide, 200 Deep, 200 High
Weight: Unpacked 6.5 kg, Shipped 7 kg (Approx)

DHM803: 245 Wide, 225 Deep, 225 High
Weight: Unpacked 10 kg, Shipped 11 kg (Approx)

Operators Manual

Full instructions are supplied with each tester.

How to Order

Specify the model number, eg. DHM403-B-6, which is a 10 - 400 lpm unit with BSP ports and Metric engineering units, suitable for pressures up to 420 bar.

