

Simple to use portable hydraulic testers. . .

An easy to use range of portable testers for field and workshop testing of hydraulic systems.

The Webster range of testers have been designed to meet the needs of engineers and technicians in the diagnostic testing of hydraulic systems; they are the result of over 35 years experience in the fluid power industry and continuous product improvement.

Webster testers can simultaneously read flow, pressure and temperature.

Unique features include:

- Bi-Directional loading valve for safe and precise simulation of machine operating loads
- Built-in "INTERPASS" protection against pressure overload
- Simple single switch operation

All Webster testers are individually calibrated on test stands and all calibrations are traceable to National Standards.

Two models are available to meet individual testing requirements. Innovative design and attention to detail ensures a technically advanced and high quality product.

Benefits of Testing

The Webster hydraulic tester enables you to quickly pinpoint which component is malfunctioning and causing poor system performance. The problem could be internal leakage in the pump, motor or valve.

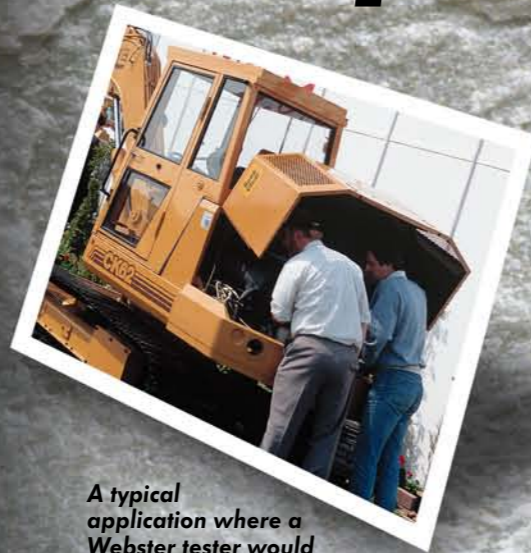
Measuring only the pressure means you can correctly set each valve and ensure that the machine is not being over-loaded. However you will need a flow meter to identify faulty components.

Using a Webster tester you can quickly test a machine to identify a problem, thus eliminating costly and time consuming guesswork. After completion of the repair you can re-test the machine and verify performance.

The loading valve allows you to simulate the working conditions in the field or shop, making it far easier to run a test as you don't need to operate all the machine's functions.

Webster testers reduce down-time and save on labor. . .

. . .engineered to make testing of hydraulic machinery fast and convenient.



A typical application where a Webster tester would save you down-time



"Every Webster digital tester has been designed and built to withstand today's rigorous working environment using tomorrow's technology."

Analog Pressure Gauge

Our pressure gauges are glycerine filled for fast reliable readings on fluctuating pressures. The gauge is connected to the flow block via a shuttle valve thereby indicating the high pressure side of the loading valve in either flow direction. When simulating machine loading, you see not only the pressure but **how** the pressure is changing.

When setting a relief valve, you can easily see the cracking pressure by watching for the sudden reduction in flow.

Battery Powered

All digital series testers are powered by a standard 9 Volt battery. An **AUTO-OFF** feature turns the tester off when not in use, saving battery life.

Bi-Directional Load Valve

A load valve allows you to simulate pressure on the hydraulic system without the need to operate all the machine functions in the workshop.

The pressure balanced design assures low handle effort and smooth operation over the entire flow and pressure range in either flow direction.

Unique "INTERPASS" Protection

Bi-Directional safety discs are built into the load valve. In the event of excess pressure in the hydraulic circuit, the discs rupture and oil is internally bypassed through the valve and on downstream at low pressure, a feature unique to Webster testers. "INTERPASS" protects the environment and most importantly YOU from external oil leakage.

Digital Readout

Accuracy 1% of FULL-SCALE reading

The digital series of testers use computer technology to automatically linearise the characteristics of the turbine flow meter.

This gives a flow accuracy of 1% of FSD reading, a level of accuracy that can only be displayed on a digital readout.



Safety disc storage

There is an integral storage compartment for spare safety discs at the back of the tester, to ensure they are always available should you ever need them.

. . .for mobile and industrial applications

High pressure, low cost, no mess. . .

An easy to use range of portable testers for field and workshop testing of hydraulic pumps.

The Webster range of testers have been designed to meet the needs of technicians and engineers in the diagnostic testing of hydraulic systems; they are the result of over 35 years experience in the fluid power industry.

Webster testers can simultaneously read flow, pressure and temperature.

Unique benefits include:

- Loading valve for quick simulation of machine operating loads.
- Built-in INTERPASS protection against pressure overload.

All Webster testers are individually calibrated on test stands and all calibrations are traceable to National Standards.

Models are available to meet individual testing requirements. Innovative design and attention to detail ensures a technically advanced and high quality product.

Benefits of Testing.

The Webster hydraulic tester enables you to quickly test the pump to check the cause of poor machine performance. The problem could be internal leakage in the pump or a partly blocked suction strainer.

Measuring only the pressure means you can correctly set each valve and ensure that the machine is not being over-loaded. However, you will need a flow meter to identify the suspect component.

Using a Webster tester you can quickly test a machine to identify a problem, thus eliminating guesswork. After completion of the repair you can easily re-test the machine.

The loading valve allows you to simulate the working conditions while in the workshop, making it far easier to run a test as you don't need to operate all the machine's functions.

Webster testers reduce down-time and save on labor. . .

. . .engineered to make testing of hydraulic machinery fast and convenient.

A typical application where a Webster tester would save you downtime



The FIK series of mechanical flow indicator test kits require no batteries or external power. Their simple compact design allows simultaneous measurement of all three basic parameters: flow, pressure and temperature.

Built-in thermometer

Heat stressed hydraulic fluids can be a major factor in component failure. The thermometer, calibrated for both °F and °C is a carefully designed and integrated part of a high quality unit, not a bolted-on afterthought.

Easy-to-read dial

The large 2.5" dial display has a robust, impact resistant plastic window and is fully sealed.

Dual scale

The dial has a dual US and Metric scale calibrated in GPM and LPM

Easy Connection

The FIK can be connected "In Line" between the pump and valve for convenient machine testing.

Accurate & Repeatable

All units are individually checked on test stands traceable to NIST or International standards and display flow accurate to better than 4% FSD.

Rugged case

Manufactured in high quality steel and coated in a durable paint finish, the FIK can withstand the most rigorous of use out in the field.

Analog Pressure Gauge

Our pressure gauges are Glycerine filled for stable and reliable readings with fluctuating pressures. When simulating machine loading, you see not only the pressure but how the pressure is changing.

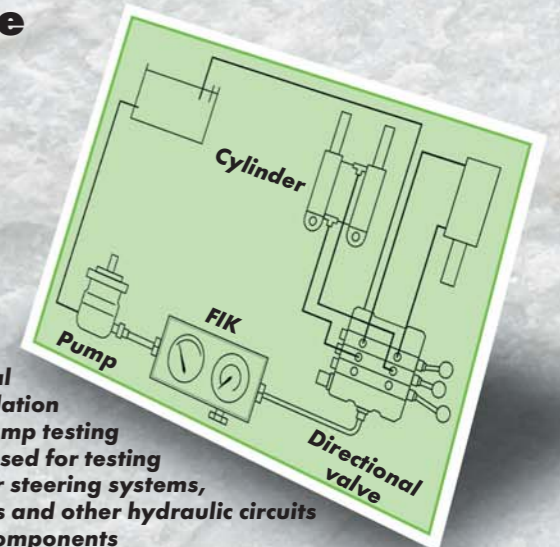
When setting a relief valve, you can easily see the cracking pressure by watching for the sudden reduction in flow.

Unique "INTERPASS" Protection

Safety discs are built into the load valve. In the event of excess pressure in the hydraulic circuit, the discs rupture and oil is internally bypassed back to the tank, a feature exclusive to Webster Testers. "INTERPASS" protects the environment and most importantly YOU from external oil spillage.

Loading Valve

A loading valve allows you safely pressurize the hydraulic system without the need to operate all the machine functions. The multi-stage valve design assures low handle effort and precise control over the entire flow and pressure range.



Typical installation for pump testing also used for testing power steering systems, valves and other hydraulic circuits and components

. . .for mobile and industrial pump testing

High pressure, low cost, no mess. . .

An easy to use range of portable testers for field and workshop testing of hydraulic components & circuits.

The Webster range of testers have been designed to meet the needs of engineers in the diagnostic testing of hydraulic systems; they are the result of over 35 years experience in the fluid power industry.

Webster testers can simultaneously read flow, pressure and temperature.

Unique benefits include:

- Allows flow in the reverse direction
- Loading valve for quick simulation of machine operating loads.
- Built-in INTERPASS protection against pressure overload.

All Webster testers are individually calibrated on test stands and all calibrations are traceable to National Standards.

Models are available to meet individual testing requirements. Innovative design and attention to detail ensures a technically advanced and high quality product.

Benefits of Testing.

The Webster hydraulic tester enables you to quickly test the pump or individual components to check the cause of poor machine performance. The problem could be internal leakage in a pump, motor, directional valve or a partly blocked suction strainer.

Measuring only the pressure means you can correctly set each valve and ensure that the machine is not being over-loaded. However, you will need a flow meter to identify faulty components.

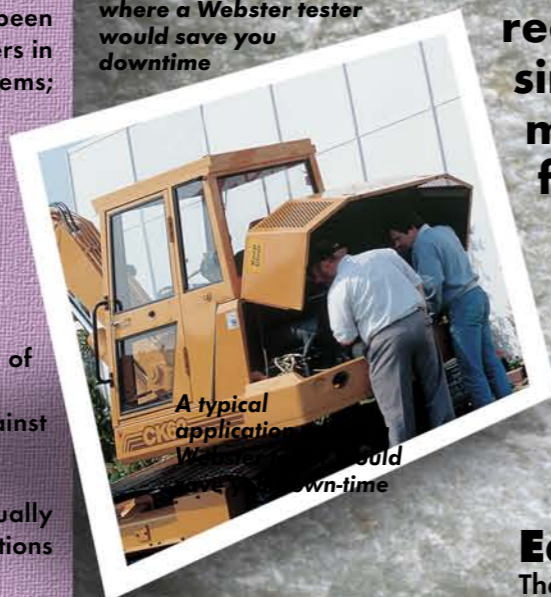
Using a Webster tester you can quickly test a machine to identify a problem, eliminating guesswork and reduce downtime & labor. After completion of the repair you can easily verify component & system performance.

The loading valve allows you to simulate the working conditions while in the workshop, making it far easier to run a test as you don't need to operate all the machine's functions.

Webster testers reduce down-time and save on labor. . .

. . .engineered to make testing of hydraulic machinery fast and convenient.

A typical application where a Webster tester would save you downtime



A typical application where a Webster tester would save you downtime

The RFIK series of reversible hydraulic test kits require no batteries or external power. Their simple compact design allows simultaneous measurement of all three basic parameters: flow, pressure and temperature.

Built-in thermometer

Heat stressed hydraulic fluids can be a major factor in component failure. The thermometer, calibrated for both °F and °C is a carefully designed and integrated part of a high quality unit, not a bolted-on afterthought.

Easy-to-read dial

The large 2-1/2" (63mm) dial display has a robust, impact resistant plastic window and is fully sealed.

Dual scale

The dial has a dual scale calibrated in both gpm & lpm.

Easy Connection

The RFIK can be connected "In Line" between the pump and valve for convenient machine testing.

Accurate & Repeatable

All units are individually checked on test stands traceable to British and International standards and display flow accurate to better than 4% FSD.

Reversible Flow

The RFIK will allow full flow to pass through in the reverse direction at low pressure. This can be useful in situations when the flow and direction are uncertain or a cycle requires reversing, via the raising and lowering of a cylinder.

Analog Pressure Gauge

Our pressure gauges are glycerine filled for fast reliable reading on fluctuating pressures. When simulating machine loading, you see not only the pressure but how the pressure is changing.

When setting a relief valve, you can easily see the cracking pressure by watching the sudden reduction in flow corresponding to relief pressure overshoot

Unique "INTERPASS" Protection

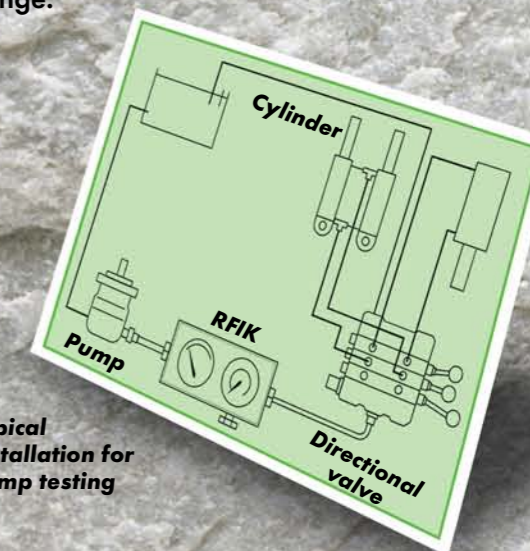
Safety discs are built into the load valve. In the event of excess pressure in the hydraulic circuit, the discs rupture and oil is internally bypassed back to the tank, a feature unique to Webster Testers. "INTERPASS" protects the environment and most importantly YOU from external oil spillage. The case is designed in a way that allows the safety discs to be replaced quickly and easily without dismantling.

Loading Valve

A loading valve allows you to simulate pressure on the hydraulic system without the need to operate all the machine functions in the workshop. The multi-stage valve design assures low handle effort and smooth operation over the entire flow and pressure range.

Rugged case

Manufactured in high quality steel case with removeable lid and coated in a tough paint finish, the RFIK can withstand the most rigorous of use out in the field.



Typical installation for pump testing

. . .for mobile and industrial hydraulic testing

High pressure, low cost, no maintenance. . .

High pressure in-line flow indicators for 3/4" and 1 1/2" pipe sizes

The FI series provides the ideal solution for continuous monitoring or intermittent use commissioning and servicing hydraulic systems for pressures up to 6000 psi (420 bar). They can be used on mobile and industrial hydraulic circuits and also on lubrication and coolant systems using oil or water-oil emulsions. The direct acting FI series can be installed in hazardous areas or on applications where no electrical power is available. The flow indicator design ensures good reliability and minimises the effects of viscosity changes.

The large clear 2 1/2" diameter dial ensures that quick checks can be made to determine pump performance and setting of flow control valves. The thermometer is angled deep into the block to sense the temperature changes in the fluid passage. A 1/4" NPT gauge port is provided for installation of pressure gauge.

For external protection the readout scales of both thermometer and flow indicator are recessed and shielded behind impact resistant polycarbonate windows. A glass window is available for Skydrol applications. The whole unit is fully sealed and extremely rugged.

Features

- Low cost rugged construction
- Measures Flow, Temperature and Pressure (via separate gauge)
- Max pressures of 6000 psi
- Accurate to within 4% FSD
- Large clear easy-to-read dial
- Horizontal or vertical mounting
- Wide operating range
- 1/4" Pressure gauge port standard
- Flow Test kits with Loading Valve and pressure gauge are available to test flow, pressure and temperature



An extreme test of an FI's ruggedness

The FI series of mechanical flow indicators require no batteries or external power. Their simple compact design allows simultaneous measurement of all three basic parameters: flow, pressure and temperature.

Pressure port

A 1/4" gauge port is standard on all models. Simply screw in the pressure gauge that best suits your system requirements.

Quality finish

All models have a quality brushed finish to enhance the appearance of your completed installation. Each component is manufactured to ISO 9001 using CNC machines.

Multiple fluid types

The FI Series is available in aluminium calibrated for use with Oil. Also available in bronze for use with Oil and Water.

Mounting holes

All models have holes for mounting on a control panel or in-line. Mount in any position, horizontally, vertically or anywhere in between. One more example of how careful design makes your job easier.



FI 1500 Bronze model suitable for use with Oil and Water



Remote Alarms

In lubrication systems and boost pump systems the loss of oil flow can be catastrophic. An optional flow switch signals loss of flow or excessive flow. The normally open or normally closed flow switch is easily field adjustable without removing the unit from its installed location.

Built-in thermometer

Heat stressed hydraulic fluids can be a major factor in component failure.

The option of a built-in thermometer gives advanced warning of poor system performance. The thermometer, calibrated for both °F and °C, is a carefully designed and integrated part of a high quality unit, not a bolted-on afterthought.

Accurate & repeatable

All units are individually checked on test stands traceable to NIST or International standards and display flow accurate to better than 4% FSD.



Model shown is a FI 750-180-ASOT

Dual scale

The dial has a dual scale calibrated in both gpm and lpm.

Easy-to-read dial

The large 2.5" dial display is easily readable at a distance; no more straining your eyes for accurate readings.



Ideal for permanent monitoring of hydraulic pumps and power packs

. . .for mobile and industrial applications

Collect...

Display...

Additional sensors

"It has never been easier to analyse a hydraulic circuit. The Sensor Recognition (SR) family includes flow, pressure, temperature and speed transducers. The SR sensors and universal connecting cables can be used with the HPM420, 540 and 460 readouts."

"The two-input HPM420 now has a two-line display making it a very flexible readout, ideal for measuring any two parameters simultaneously as well as differential and peak pressure. Users can easily switch between flow, pressure, temperature or speed sensors with no calibration required."



Screen shot showing two inputs. Pressure 1 and 2.



Screen shot showing differential pressure

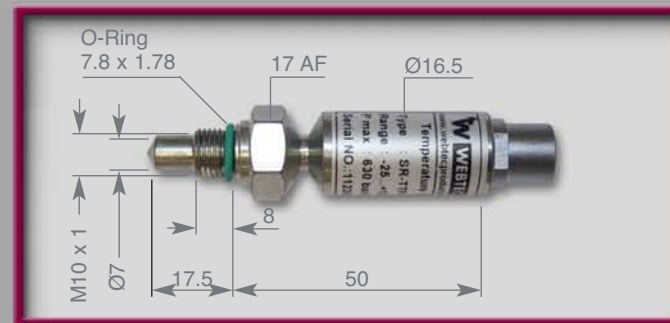


Screen shot showing peak pressure 1 and 2

* Temperature can be displayed when used with the HPM460, however this information can only be recorded with the HPM540.



Note: M16 x 2 adaptor also available in two piece 316 SS version



Note: For line mounting in a pipe, a Tee adaptor with an M10 x 1 port is available.



Note: The photo-tachometer comes with a built-in 3m cable with a 5-pin connector



Note: External sensors may be connected using external modules for up to 1.5 Amp and 48 VDC.

Pressure Transducer

Model number	Pressure range	Overload pressure	D.p. pressure
SR-PTT-015-05-0C**	-14.5 to 210 psi†	435 psi	2
SR-PTT-060-05-0C**	0 to 870 psi	1740 psi	2
SR-PTT-150-05-0C	0 to 2175 psi	4350 psi	1
SR-PTT-400-05-0C	0 to 5800 psi	11600 psi	1
SR-PTT-600-05-0C**	0 to 8700 psi	17400 psi	1
SR-PTT-1K0-05-0C	0 to 14500 psi	17400 psi	0

Accuracy: ± 0.25% FS (typical)
Response time: 1 ms
Fluid temperature: -25 to +105 °C
Material: Stainless Steel (1.4301)

Cable: Use standard 3m universal male-male sensor cable
 Model number: SR-CBL-003-55-MM
 † Range: 0 - 210 psi when used with HPM420

Temperature Probe

The temperature probe houses a silicone chip which produces a voltage proportional to temperature. The probe can be connected directly into a high pressure line. Media Temperature Range -25°C to 125°C. Ambient temperature range 0 to 70°C.

Model number: SR-TTP-400-05-0C
Display: -25 to 125°C
Accuracy: ± 1.5% FS
Maximum pressure: 9100 psi
Material: Steel zinc plated

Cable: Use standard 3m universal male-male sensor cable
 Model number: SR-CBL-003-55-MM

Photo-tachometer

Two measurement methods are available
 Rotational speed photo-tachometer and optional cone point, or a wheel for linear speed.

Model number: SR-RPM-300-05-3C
Measuring distance: 25...500 mm
Type of sensor: Optical, red LED
Measuring range: 20...10,000 rpm
Accuracy: < 0.5% of FS
Resolution: ± 5 RPM
Material: ABS
Weight: 300 g.

Analog Input Boxes

Choice of two analog input boxes to enable custom sensors to be connected into the HPM540 / 460 series.

Model number: SR-VAD-10V-05-1C
Range: 4 - 20 mA or 0 - 10 V DC input
Model number: SR-VAD-48V-05-1C
Range: 0 - 48 V DC up to 1.5 Amps

Both input boxes come complete with 1m 5 pin cable to plug into the HPM540 / 460.

Connector cable kit, model number: SR-CBL-VAD-BP-1C is available to connect to an analogue source.

** Sensors stocked as standard.
 Unless stated otherwise, all seals in contact with the fluid are Viton®

Flow meters

Datalog...

Analyse...



Turbine flow meter

Turbine flow meter

Webster flow meters are bi-directional for unrestricted connection and simplified testing and can operate at pressures up to 6000 / 7000 psi.

- Accuracy:** ±1% indicated reading (IR)*
- Calibration Viscosity:** 21cSt
- Material:** High Tensile Aluminium
- Pressure Test Point:** M16 x 2
- Top Ports:** One M10 x 1 and one or two #4 SAE

Cable:
Use standard 3m universal male-male sensor cable
Model number: SR-CBL-003-55-MM

These easy to use turbine flow meters can help pinpoint hydraulic system faults, reduce downtime and help with preventative maintenance. Flow tests can be used to quickly locate defective pumps, valves, cylinders, motors; any of these components can cause poor performance and machine malfunction.

Model number	Scaled range (gpm)	Calibrated range (gpm)	Accuracy	Max. cont. pressure (psi)	Inlet/outlet ports
CT15-SR-S-S	0 - 4	0.25 - 4	1% FS	6000	3/4" UNF #8 SAE O-Ring
CT60-SR-S-S	0 - 16	0.8 - 16	1% IR *	6000	1-1/16" UN #12 SAE O-Ring
CT150-SR-S-S	0 - 40	1.4 - 40	1% IR *	6000	1-1/16" UN #12 SAE O-Ring
CT300-SR-S-S	0 - 80	1.6 - 80	1% IR *	6000	1-5/16" UN #16 SAE O-Ring
CT600-SR-S-S	0 - 160	5.2 - 160	1% IR *	7000	1-7/8" UN #24 SAE O-Ring
CT750-SR-S-S	0 - 200	5.6 - 200	1% IR *	7000	1-7/8" UN #24 SAE O-Ring

* Accuracy 1% of the indicated reading over the top 85% of the flow range. FS = Full Scale



Turbine flow meter with built-in loading valve

Flow meters with built-in loading valve

Webster bi-directional loading valves provide pressure loading in either flow direction. The valve incorporates the unique 'INTERPASS' burst disc safety method which protects the flow meter in the event of overpressure. The oil is contained within the hydraulic system, not vented externally, thus preventing expensive oil spillage and environmental damage.

- Accuracy:** ±1% indicated reading (IR)*
- Calibration Viscosity:** 21cSt
- Material:** High Tensile Aluminium
- Pressure Test Point:** M16 x 2
- Top Ports:** One M10 x 1 and two #4 SAE

Cable:
Use standard 3m universal male-male sensor cable
Model number: SR-CBL-003-55-MM

Model number	Scaled range (gpm)	Calibrated range (gpm)	Accuracy	Max. cont. pressure (psi)	Inlet/outlet ports
CT300R-SR-S-S	0 - 80	2.6 - 80	1% IR (> 5.3 Gpm)	6000	1-5/16" UN
CT600R-SR-S-S	0 - 160	5.3 - 160	1% IR (> 6.6 gpm)	7000	1-7/8" UN
CT750R-SR-S-S	0 - 200	5.3 - 200	1% IR (> 6.6 gpm)	7000	1-7/8" UN

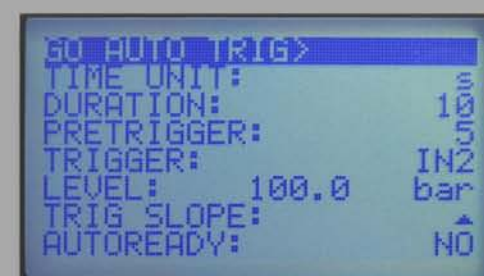
* Accuracy 1% of the indicated reading over the top 85% of the flow range.

Note: A 5m long, 5 pin to 5 pin extension cable SR-CBL-005-55-FM is available for use with all sensors.

"For in-depth hydraulic faultfinding the HPM540 and HPM460 enable you to datalog to onboard memory up to 1000 times a second on all channels and save the results for immediate viewing or analysis at a later date."



HPM540 Data logger with USB data transfer direct to laptop

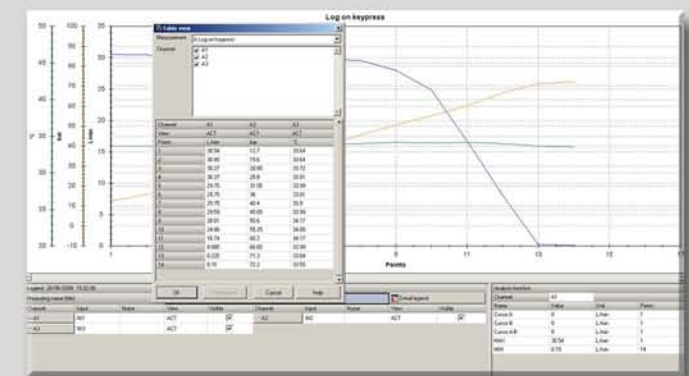
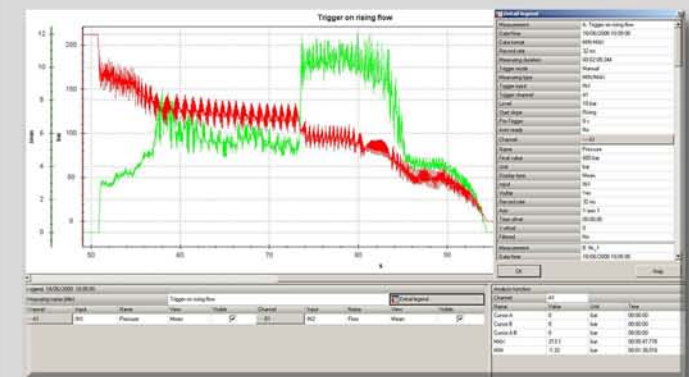
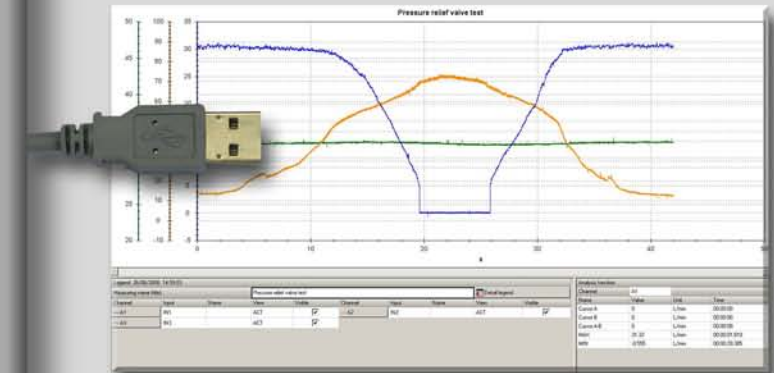


Screen shot showing the Auto Trigger menu



Screen shot showing 4 values on the screen while logging on by point

"Test results can easily be transferred to a laptop or PC for further analysis, sharing with colleagues or print out. Graphs can be overlaid upon each other for easy comparison. On-screen tools, such as zoom or dual cursors make measuring time-periods very easy."



HPM110 pressure gauge

Applications

The HPM110 digital pressure gauge is designed for continuous monitoring of oil, gas, water, hydraulic and other pressure media in mobile equipment, industrial hydraulics, compressors and process control equipment.



The HPM110 offers an economical solution to monitoring pressure and peak pressure with a simple visual display. The hand-held unit can be installed when required using a standard test point, or left permanently connected in a system. Since the HPM110 is battery powered it requires no external wiring.

The HPM110 simultaneously displays actual pressure, peak or minimum pressure, battery level, engineering units as well as a bar graph indicator. The back light can be switched on at the press of a button. Using the buttons on the front panel the user can clear the peak value, display min, max and actual pressure, reset the zero point and change the engineering units. The unit is available in four models.

Features

- Accuracy ($\pm 0.5\%$ Full Scale)
- Economically priced
- Rugged design
- Digital display with bar graph
- Stainless Steel wetted parts
- Peak pressure - 10 ms scan rate
- Back lit display

Technical Data

Input

Sensor element ceramics (relative)
Strain gauge pressure measurement cell (absolute)
Pressure ports stainless steel 7/16"-20 UNF-2B #4 SAE O-Ring Male.
10 msec. scanning rate
Accuracy $\pm 0.5\%$ FS (typ.)
A/D converter 12 bit 4096 steps resolution

	EU versions (bar)		US versions (psi)	
Range	0 - 100	0 - 600	0 - 1500	0 - 8700
Overload Pressure Pmax	200	1200	3000	17,400
Burst Pressure	800	2200	6000	31,900



- 1 Display with bar-graph due to peak & hold function
- 2 Actual value back-lit display (15 mm)
- 3 Battery level display
- 4 Display of MIN/MAX or Full Scale Range display (FS)

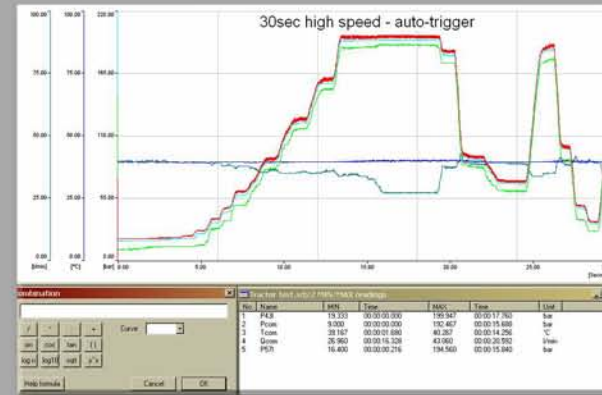
Menu functions

- ON/OFF** On/off switch
Back-lit display
- MIN/MAX/FS** Minimum/maximum value
Full Scale
- MENU/ZERO** Menu: auto shut-off
Choice of units
Zero: Zero point equalisation
- RESET/OK** Delete MIN/MAX value
Confirm menu function

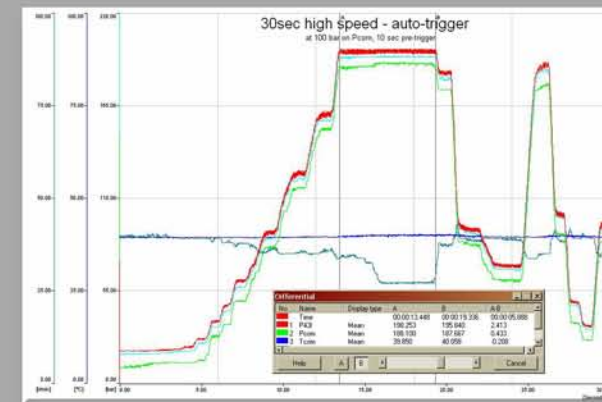
HPM460 data logger



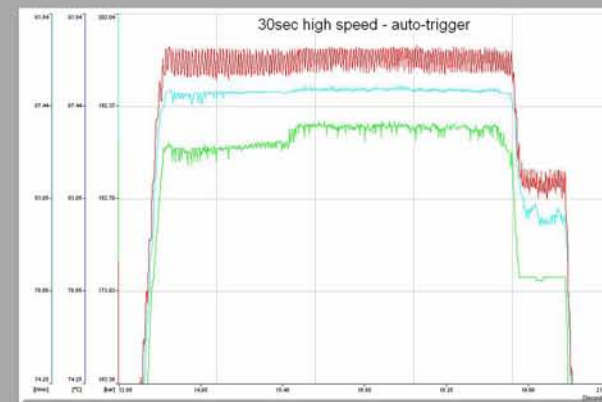
Screen shot of HPM460 showing 6 values on screen at once and calculated power.



Plot a graph and analyse the results



Using two cursors to measure exact values



Zooming in on the high pressure area of the graph

Detailed specification

Sensor inputs: 6 inputs
With sensor recognition (p/T/Q/n)
Adaptor for external sensors (volts, amps)
Plug-in connection: 5-pin, push-pull
Sample rate: ≥ 1 ms = 1,000 measurement values/sec.
Resolution: 12 bit + sign = 4,096 steps
Frequency input via input #3 for flow turbine or tachometer
Frequency range: 0.5 Hz ... 30 kHz
Signal input: depends on frequency 5 VPP (max)

Display: Graphic LCD
Resolution: 128 x 64 pixels
Visible area: 72 x 40 mm
Automatic adjustment of digit size
Digit size: 4.2 mm (for 8 line display)
Accuracy of display: $< 0.25\%$ of Full Scale Range
Graphic curve representation

Operation: Via 11-key membrane keyboard
With mechanical tactile touch and embossed edges

Interface: RS232C (4-pin, push-pull)
optional with a standard RS232/USB PC adaptor
Baud rate: 1,200 - 38,400 8 data bits, 1 stop bit
Online data transmission to the PC
Transferring recorded data to PC with HPMcomm software

Functions: I1-I2 indication of differential values
Indication of MIN/MAX/ACTUAL values
Indication of TEMP values PTT transducers
Auto power off/battery level control
Hydraulic power/outflow volume

Measured value memory: Memory capacity (250,000 MIN and MAX points)
Variable storage interval (e.g. = 10 ms)
Number of points per channel (e.g. 4,000 Min-Max)
Variable recording time (2 s ... 100 h)
Trigger: slope/manual/external/time
Pre trigger adjustable 1-100%
External trigger with optional modul SCMA-TR

Ambient conditions: Temperature range: 0 ... +50 °C
Storage temperature: -25 ... +60 °C
Temperature error: $< 0.02\%$ °C
Rel. humidity: $< 80\%$
Protection according to DIN 40050:
IP 54 (water spray/ oil)

Power supply: Internal: NiCd-battery 7.2 V/700 mAh
Battery charging circuit
Battery service capacity: 5 h approx.
External: with SCSN-450 (220/100 VDC)
Automotive power adaptor (12/24 VDC)

Housing: Material: glass ball-reinforced polyamide
Dimensions: 235 x 106 x 53 mm (L/W/H)
Weight: approx. 530 g

HPM460 data logger

HPM460 Datalogger,
6 inputs



Example of a
custom HPM460 kit



Faultfinding on a tractor with the HPM460

The HPM460 is ideal for use as an in-house or portable display and data logging instrument. Powered by a 9 Volt rechargeable battery, this easy to use diagnostic test system is a valuable tool for preventive maintenance, verifying component settings, pin-pointing poor system performance, measuring differential pressure and capturing harmful pressure spikes.

Accessories include a wide range of pressure transducers, flow meters, temperature sensors and diagnostic test points. Measurement of unique sensors and DC amperage or voltage can be made with the optional external signal modules.

Features

- **Measure** and record flow, pressure, temperature, speed plus peak and differential pressure
- **Option** to connect in other sensors and DC Amp or Volt signals
- **Six** multi-purpose inputs
- **Automatic** set-up with any Sensor Recognition (SR) sensor
- **Data log** continuously, auto-trigger or log by point
- **Connect** to a PC via RS232 – Serial cable
- **Analyse** data quickly and easily using free Windows® compatible HPMcomm software
- **Easy** operation with menu driven functions
- **Store** up 250,000 values
- **Rugged** ergonomic design
- **Measure** frequency directly from a speed sensor or flow meter (Channel 3)
- **Sample Rate** 1 ms

Data logging modes

- **Continuous** - Start / Stop / Esc log at a high speed against time
- **Trigger** - Auto trigger at high speed to start data logging when an event occurs, eg: when a pressure goes over a certain level or an external trigger is received
- **Trigger** - Manual trigger, press a key when you want the test to begin
- **Trigger** – Start at a pre-defined time e.g.: 13:25

HPM420 readout



HPM420 Readout,
2 inputs



Standard HPM420 Kit
(Custom Kits Available)



Testing pump flow and pressure with the HPM420

"It has never been easier to analyze a hydraulic circuit. The Sensor Recognition (SR) family includes flow, pressure, temperature and speed transducers. The SR sensors and universal connecting cables can be used with the HPM420, 540 and 460 readouts."

The HPM420 Series readouts and associated pressure, temperature and flow sensors provide an accurate, economical and user friendly solution for servicing and commissioning hydraulic systems and components. The HPM420 readouts have two inputs which recognize which pressure, temperature or flow sensors are connected and automatically sets the correct calibration to each input for the type of sensor being used.

Features

- **Readout** with 2 inputs displayed simultaneously to measure Flow, Pressure, Peak, Differential Pressure, Temperature, Speed
- **Carry Case** available
- **Automatic** set-up with any Sensor Recognition (SR) sensor
- **Battery** Powered rechargeable battery as standard
- **Switch** between minimum, peak and differential values
- **Large** Clear two-line LCD
- **Online** Logging model available, version 'C'
- **Differential** Pressure calculated at the touch of a button
- **Sample Rate** 2ms

HPM420 A / HPM420 C

The HPM420 has a large easy to read two-line LCD display with a character height of 0.35" (9 mm). The two inputs are scaled automatically when the required sensors are connected. Readings are displayed with default engineering units for pressure (psi), flow (gpm) and temperature (°F) these can be changed to bar, lpm, °C by the operator. Peak pressure and differential pressure can be user selected by push button. The ABS housing is protected to IP54 and has a rubber cover with built-in stand. To conserve battery life the readout has auto 'power off' after 15 minutes of being inactive. The HPM420-C has RS232 output for online logging via the serial or USB*port on a PC or Laptop. (*adaptor required)

Power Supply:

HPM420-A Rechargeable battery and charger*
HPM420-C Rechargeable battery and charger*

Accuracy: < 0.3% ± 2 Digit
Temperature range: 0...+ 50°C Ambient
Storage temperature: -20...+60°C
Rel. Humidity: < 85%
Dimensions: l/w/h 5.7" x 2.75" x 1.57"
(145 x 70 x 40 mm)
approx. 0.75 lbs (340 g).

Weight:
* Charger included

HPM420-A Kit Contents:

- Carrying case
- HPM420-A Readout (Rechargeable) battery
- Power supply unit with three AC plug adaptors
- Universal connecting cable 3m long
- Pressure Sensor 0 - 8700 psi
- Specify additional sensors as required

HPM540 data logger

USB
UNIVERSAL SERIAL BUS

HPM540
Datalogger,
4 inputs &
USB data
output



Example of a
custom HPM540
kit



Faultfinding on a hydraulic test bench with the HPM540 connected to a PC via USB

The HPM540 is ideal for use as a portable display and data logger as well as for permanent installation on small hydraulic test benches.

Powered by a rechargeable NiMH battery, this easy to use diagnostic test system is a valuable tool for comparative testing as well as preventive maintenance, verifying component settings, pinpointing poor system performance, measuring differential pressure and capturing harmful pressure spikes. Accessories include a wide range of pressure transducers and flow meters as well as temperature and speed sensors. In addition other unique sensors as well as DC Current or Voltage can be connected with the optional external signal modules.

Features

- Measure and record flow, pressure, temperature, speed plus peak and differential pressure
- Option to connect in other sensors and DC Amp or Volt signals
- Four multi-purpose inputs (8 channels if you measure temperature using PTT pressure / temperature transducer)
- Automatic set-up with any Sensor Recognition (SR) sensor
- Data log continuously, auto-trigger or log by point
- Connect, view & store readings on PC in real time via USB
- Via PC HPMcomm software define 'projects' to simplify repeat tests
- Directly control continuous logging from your PC and graph data in real time
- Analyse data quickly and easily using free Windows® compatible HPMcomm software
- Easy operation with menu driven functions
- Store up 1 million values
- Rugged ergonomic design
- Sample Rate 0.25 ms (Input 1) 1 ms (Inputs 2-4)

Data logging modes

Continuous* - Start / Stop / Esc log at a high speed against time
(* HPM540 also can be run in continuous log mode directly from the HPMcomm software on the PC)

Trigger - Auto trigger at high speed to start data logging when an event occurs, eg: when a pressure goes over a certain level or a trigger is received

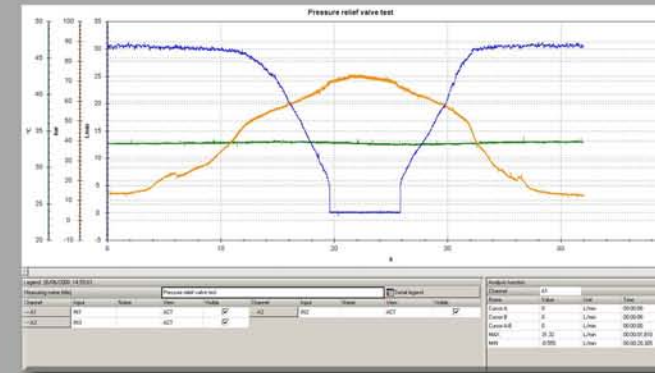
Trigger - Manual trigger, press a key when you want the test to begin

Log by point - Log data every time you press a key, ideal for recording data from a test procedure

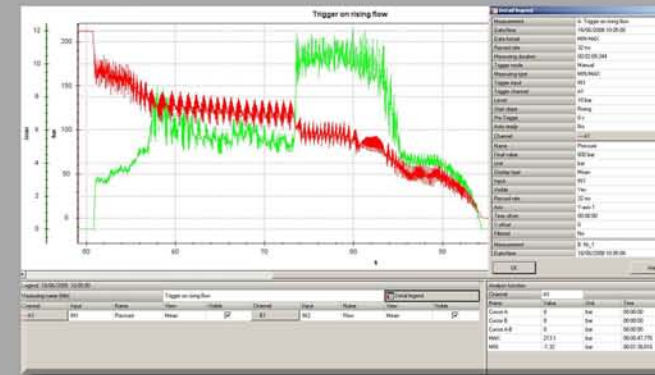
HPM540 data logger

Diagnostic fault-finding

Using continuous logging from the PC . . .

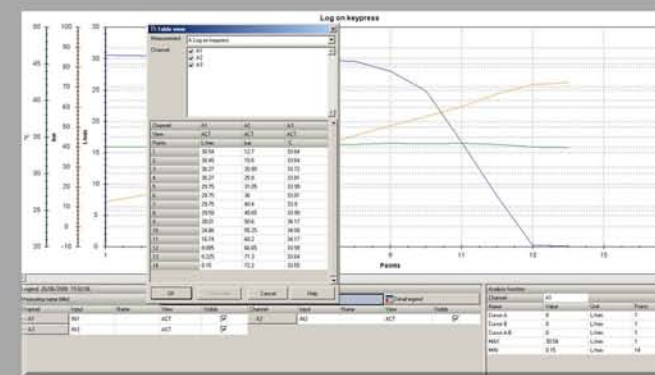


Using auto-trigger. . .



Calibration and testing at pre-defined points

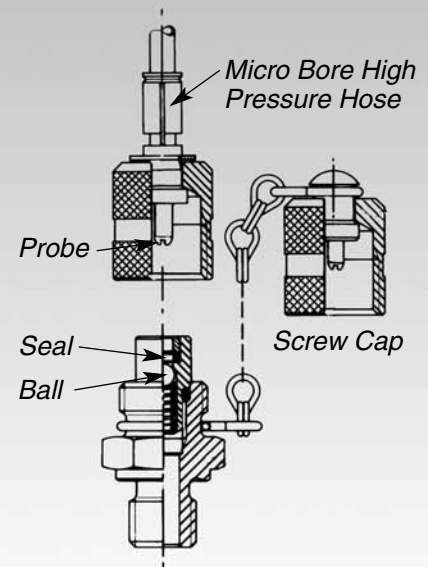
Using log by point...



Detailed specification

Technical data	Sensor recognition (p/T/Q/n)
Input:	Connecting auxiliary sensors Plug-in connection, 5-pin push-pull
Resolution:	12 bit + sign = 4,096 steps
Sampling Rate:	1 ms (Inputs 2-4 active) 0.25 ms FAST MODE (Input 1 active)
Display:	LCD 128 x 64 pixels, size 72 x 40 mm Illumination, Height of characters 6 mm
Input:	Membrane keypad
Interface:	USB 2.0 Online speed 20 ms ACT-MIN-MAX (min-max over sample period)
Display functions:	Difference; addition; power; volumes ACT; MIN; MAX; FS; TEMP
Measured value memory:	Measured value memory: 1,000,000 data points Curve memory: 250,000 points Data format: ACT: MIN-MAX FAST (0.25 ms) Memory configuration: interval (e.g. 5 ms) points per channel (2,000)
Environmental Conditions:	Ambient temperature: 0 . . 50 °C Storage temperature: -25 °C . . 60 °C Temperature error: 0.02 %/°C Relative humidity: <80 % Degree of protection: EN 60529 IP 54 (water splash/oil) Drop test IEC 60068-2-32
CE	DIN/EN 61000-6-2 DIN/EN 61000-6-3
Power supply (external)	11 ... 30 VDC Power supply unit 110/240 VAC - 15 VDC Car adapter 12/24 VDC
Battery	NiMH Charging time 180 minutes Operating time 8 hours
Housing	Polyamide 235 x 106 x 53 mm Weight 530 g
PC software SensoWin	Read out/depict measurement data and analyse on PC Device settings read out/process Load sensor settings into HPM540 from library on PC

Pressure - Test System



Typical Contents

Gauges:

Six 63mm (2 1/2 ") glycerine filled pressure gauges.
Two 400 bar 6000 psi
One 70 bar 1000 psi
Two 40 bar 600 psi
One 10 bar 160 psi

Pressure Hoses:

Six 2 metre long micro bore hoses, 400 bar

Test Points:

Two test points 1/8" BSPF Male thread 400 bar
Two test points 1/4" BSPT Male thread 400 bar
Two test points M 14 x 1.5 Male thread 400 bar

Adaptors:

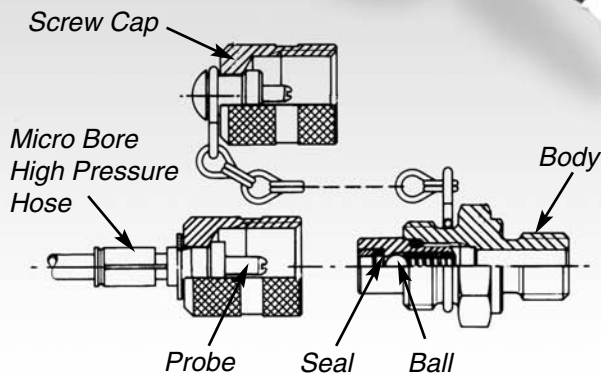
Two 9/16" 'O' ring Male thread to 1/8" BSPF Female
Two 1/2" BSPF male thread to 1/8" BSPF Female.

Features

- Pressure Test Kit provides complete test system for rapid pressure testing.
- Pressure test points can be fitted anywhere in the circuit for instant pressure checks, saving installation costs of piping and gauges.
- Test hoses can be connected by hand under full system pressure without loss of oil or ingress of dirt. Oil samples can also be taken and circuits bled of air.
- The kit includes up to 6 gauges, up to 6 hoses, test points and adaptors. The case provides ample storage and the gauge panel can be removed for convenient use while testing the machine.

Another quality product from the Webster Range

Hydraulic Pressure Test Kit



Model PT 200-8

Typical Contents

Pressure Gauges:

Eight 63mm (2 1/2 ") glycerine filled gauges fitted with rubber covers.

Two 400 bar 6000 psi
Two 40 bar 600 psi
Three 210 bar 3000 psi
One 10 bar 150 psi

Pressure Hoses:

Three 2 metre long micro bore hoses, 400 bar max.
PH 2503-3

Test Points:

Four PT 2502-10 7/16" UNF Male thread. 400 bar
Three PT 2502-1 1/8" BSPF Male thread. 400 bar

Adaptors:

One M18 x 1.5 Male thread to 1/8" BSPF female
One 7/8" JIC male to 1/8" BSPF female

Features

- The pressure kit includes eight gauges, three hoses, seven test points and three adaptors.
- The carrying case measures 400 x 32 x 100 mm (16 x 12 1/2 x 4 inches) and provides convenient storage for each item. The kit weighs approximately 5.5 kg (12 lbs).
- The Pressure Test Kit provides a complete test system for rapid pressure testing.
- Pressure test points can be fitted anywhere in the circuit for instant pressure checks saving installation costs of piping and gauges.
- Test hoses can be connected by hand under full system pressure without loss of oil or ingress of dirt. Oil samples can be taken and circuits bled of air.

Test Kits can be assembled to customer requirements. Specify gauges, hoses and adaptors.