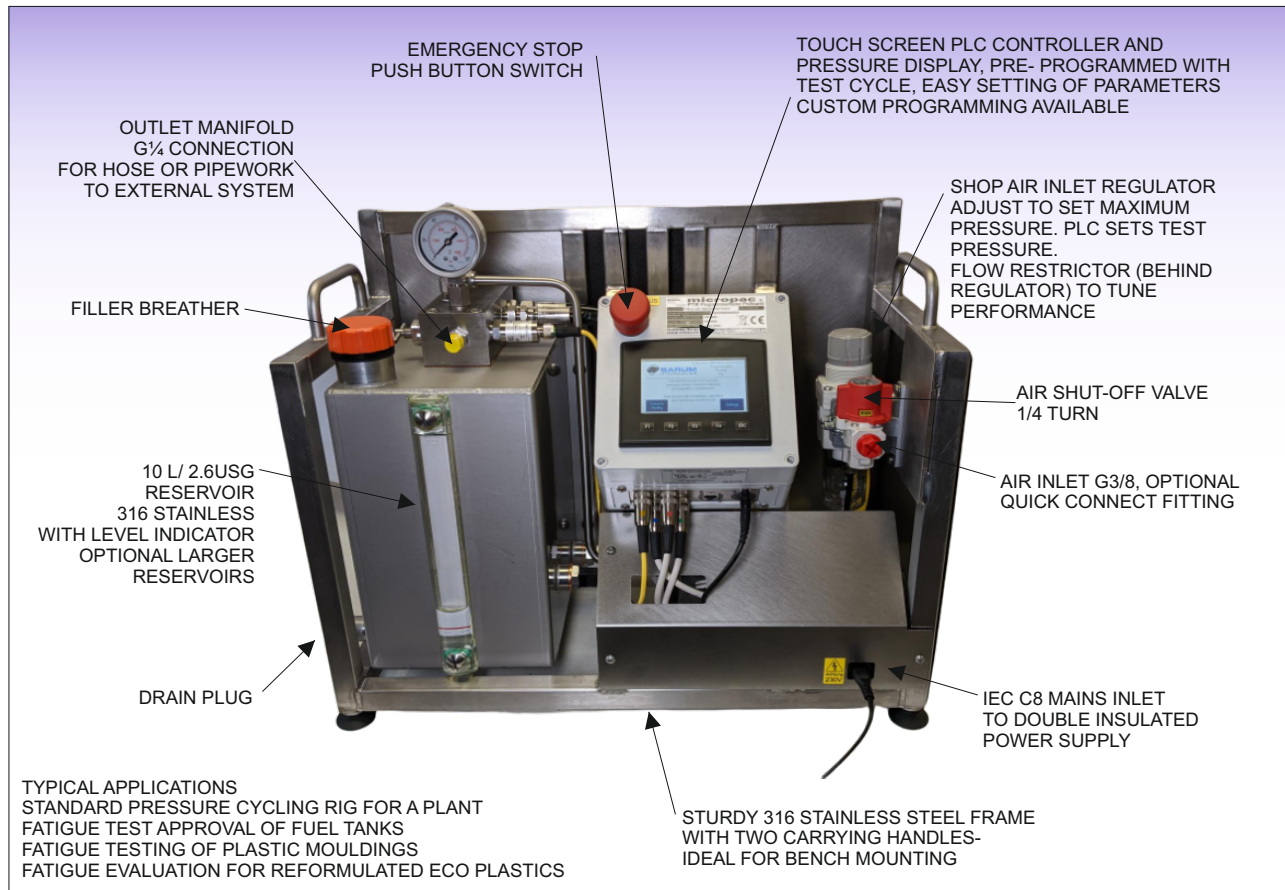




SARUM
HYDRAULICS
Designers & Manufacturers of Micropac® Hydraulics

MICROPAC® PTR-A Programmable hydraulic pressure cycling test rig 0.5 bar to 740 bar



FEATURES

- Versatile hydraulic pressure cycling test rig
- Pressure and cycle sequencing user adjustable
- Maximum pressure is set using PLC controller
- Touch screen control for setting test parameters
- Run the test sequence for up to 40,000 cycles
- Instantaneous & peak. test pressure displayed
- USB connection for data output & programming
- Air operated pressure pump for reliability & safety
- 100-240V mains only operating the PLC controller
- Shop air powers the unit for safety
- Easy user entry of test parameters on touch screen
- Suitable for water, oil and other operating media
- Pump options to suit max.pressures 125-740 bar
- Maximum free flow of test media 3.5 l/min
- Integrated 10 litre stainless steel fluid reservoir
- Fluid level gauge. Unit stops if reservoir is empty
- Skid mounted for optimum operating flexibility
- Quality British manufacture - 1 year warranty
- Factory support for product and application
- Customised programming options available
- Highly cost effective compared with custom rigs
- Enquires welcomed for bespoke test enclosures



APPLICATION, INSTALLATION & MAINTENANCE

BASIC OPERATION OF A PTR SERIES PROGRAMMABLE PRESSURE TEST RIG.

Our Micropac PTR-A series Programmable Test Rig offers a very cost effective fatigue or multi cycle pressure test rig compared with normal custom equipment.

The standard programme that is installed in the Industry standard PLC (Programmable Logic Controller) offers easy entry of user parameters such as the number of cycles and maximum pressure using intuitive scrolling screens. The unit has the ability to be programmed to do more via bespoke programming. The software is the proprietary PLC software.

Although it can be used for simple hydrostatic pressure testing or single cycle burst testing, this unit is designed primarily for repetitive pressure testing. As standard, the unit allows the user to pressurise a hydraulic system to a predefined pressure, hold that pressure for a defined amount of time and then release the pressure to zero. This cycle is then repeated a number of times as programmed. The unit is supplied with our standard programme based on scrolling screens, allowing test parameters to be entered. The unit uses an industry standard integrated PLC.

A USB connection is available which allows data output to a data logger. Consult the factory to discuss.

The unit as supplied will perform a standard testing cycle up to 9999 cycles. Multiple air driven pump ratios are offered to adjust flow rate and maximum pressure. Although the test pressure is set on the PLC using the input from the pressure transducer, adjustment of the air regulator will set the pump flow rate. The air driven pump selected has to be capable of achieving the test pressure.

The scrolling menu screens on the PLC include run on periods to set a maximum pump run period. All times and settings are set as defaults and can be updated by the user. This run-on period is necessary to limit how long the pump runs if the test piece has burst.

APPLICATION AND CONNECTIONS

Under the Pressure Equipment Directive 2014/68/EU, this unit is suitable for use with group 1 liquids (liquids classified as explosive, extremely flammable, highly flammable, flammable, very toxic, toxic, oxidising) up to 280 bar and group 2 liquids (all other liquids) with no limit in pressure, subject to compatibility with seals and materials used in the equipment construction. Check carefully both seal and material compatibility prior to ordering; if in doubt, contact our technical support.

The unit requires dry shop air (60psi/4.1 bar to 125psi/8.6 bar) to operate the air driven pump and 100-240V mains to supply the integral desktop power supply for the 24V supply to the PLC controller unit.

The maximum hydraulic pressure quoted for each model is based on an inlet air pressure of 6.9 bar (100 psi).

APPLICATION AND CONNECTIONS (continued)

Pressure may be released back to the reservoir manually using the needle hold/release valve on the connection block or the automated pressure release valve operated by the PLC controller. The manual hold/release valve must be tight before automated testing starts. The maximum test pressure is controlled using the setting entered into the controller by the technician which in turn is measured using the integral pressure transducer. There is no necessity to fit a relief valve although some users will fit one as a safety option, particularly on low pressure testing. This will mount on the connection block as pressure and tank ports are present. If your need is for a safety relief valve to protect the test component, we would advise using a PED certificated safety device. Consult the factory.

There is a G1/4 flat bottom pressure gauge port on the connection block should a pressure gauge need to be fitted. There is a pressure readout on the controller screen, derived from the output of the pressure transducer. The screen indicates the system pressure in bar, psi or Mpa. The units of measurement are selected by the user but the default is bar.

The PTR rig can be ordered with a universal 1000 bar pressure transducer which will cover the full operating range. If you know that your required test pressure is substantially lower, then gain greater accuracy by selecting a lower range transducer. The ordering code offers multiple options for alternate transducer ranges with inherently greater accuracy at lower pressures. You will not be able to exceed these pressures. You can, however buy a new transducer to upgrade the unit, resetting the updated range on the set-up menu on the controller.

The basic unit is fitted with a 10 litre fixed reservoir. Larger reservoirs such as 20 litres can be fitted. The reservoir is filled through the filler/breather cap. There is a clear polymer level indicator and a float switch which allows the controller unit to stop the pump should the reservoir be empty. The reservoir can be drained using the hexagon plug. The PTR unit is mounted on a sturdy skid with carrying handles and levelling feet for bench mounting. Both the air and electrical connections are on the front of the unit.

Connection to the hydraulic system is made via a G1/4 port in the connection block on top of the reservoir. A range of optional hydraulic hoses are also available, G1/4 swivel on free end.

Temperature range:

This unit uses a mix of Nitrile, Viton Fluorocarbon and Polyurethane seals which run up to a maximum temperature of 90°C. Minimum temperature is -10°C. Consult the factory if in doubt.



APPLICATION, INSTALLATION & MAINTENANCE

MATERIALS OF CONSTRUCTION

Seals: Viton, PTFE, Polyurethane, UHMWP and nitrile. Optional alternative compounds are available.

Reservoir, connection block and pipework: stainless wetted parts.

Air driven pump and release valve: stainless wetted parts, anodised aluminium alloy and stainless air section.

SAFETY

This unit is a component forming part of a hydraulic pressure system. The system should be designed, operated and maintained in accordance with statutory requirements and other relevant instructions.

A risk assessment covering safe transport, installation, operation and maintenance should be carried out prior to use.

INSTALLATION

Site unit on a flat surface and fill reservoir with fluid. Make pressure connection to external system via G1/4 port on the connection block mounted on the reservoir. Make air connection to the inlet air shut off valve for the air driven pump regulator. The mains connection for the integral desktop power supply is an IEC C8 chassis socket. The power supply is 100-240V/ 47-63Hz supply.

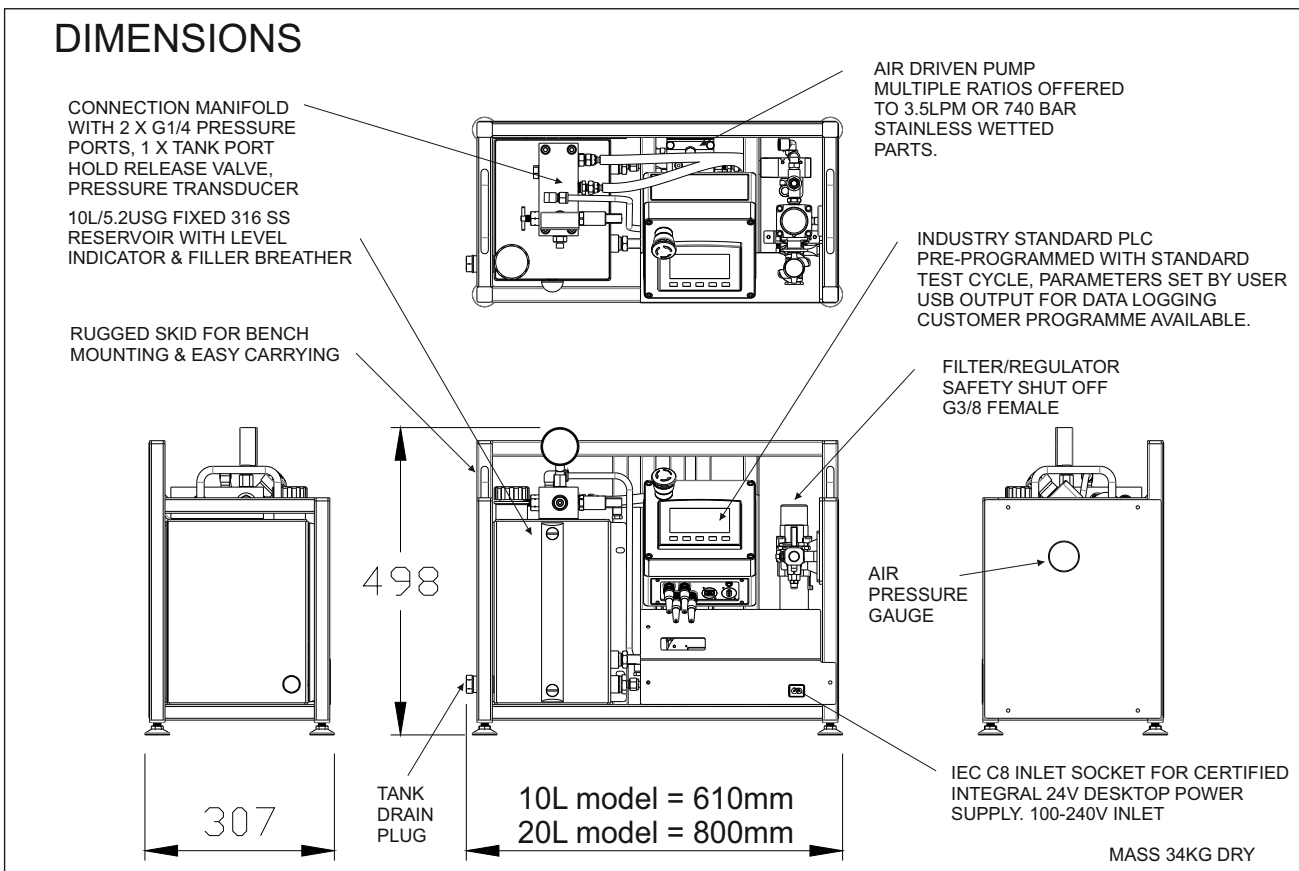
COMMISSIONING

Always set the air pressure back to zero on the regulator and switch the 2 way air shut off valve to its closed position before connecting shop air to the unit. We would always recommend fitting a hose with a blanked end then setting up the test parameters and operating the unit before connecting to your test piece. The main menu on the controller has a test mode which allows you to manually run the pump and dump the pressure using the touch screen. Set the test pressure on the controller then run the pump initially with the hold/release valve on the connection block open to bleed the air. Then shut the manual hold release valve and run the pump using the test mode. Check for leaks in the system.

Consult the manual for instructions on how to set up your test parameters using the scrolling touch screens on the controller.

MAINTENANCE

Service kits can be supplied for the unit. These comprise all seals, seats, and fitting instructions. Maintenance should only be undertaken by a competent authorised person.





ORDER CODE FOR MICROPAC® PTR PRESSURE TEST RIG

Model	
PTR-A	Automatic Air Driven Hydrotest pump skid
	For manual units see PTR-M Datasheet

Air Driven Pump Model (choose best fit for max.pressure and free flow requirement)	
15	125 bar max. 3.6 litre/min free flow
25	190 bar max. 2.7 litre/min free flow
35	235 bar max. 2.1 litre/min free flow
45	330 bar max. 1.6 litre/min free flow
65	480 bar max. 1.2 litre/min free flow
105	740 bar max. 0.6 litre/min free flow

Transducer Range			
010	0-10 Bar	250	0-250 Bar
025	0-25 Bar	400	0-400 Bar
060	0-60 Bar	600	0-600 Bar
100	0-100 Bar	1000	0-1000 Bar

Seal material (ask about fluid compatibility)	
N	Nitrile, Polyurethane
V	Viton Fluorocarbon, Polyurethane

Test fluid			
W	Water	S	Special
O	Mineral Oil		

Pressure gauge	
O	No Gauge
G	Normal
D	Digital, datalogging

Reservoir size	
10	10 Litre fixed
20	20 Litre fixed

Hydraulic Hose, stainless fittings G1/4	
O	No hose required
3	Hose 3 metres overall

Pneumatic Hose for Air supply	
O	No hose required
5	Hose 5 metres overall

PTR-A- - - - - - - - - - -

CE marking: this product is classified under 'Sound Engineering Practice' of the Pressure Equipment Directive (PED) 2014/68/EU. As such, it does not carry the CE marking.

Sarum Hydraulics are an ISO 9001:2015 registered company with over 35 years experience in design and manufacture of hydraulic equipment. Call us, email us or visit our website to find out more about our extensive product range. Enquiries are welcomed for bespoke solutions.

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We invest heavily and continuously in product development.
Specifications are therefore liable to change without prior notification.
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