

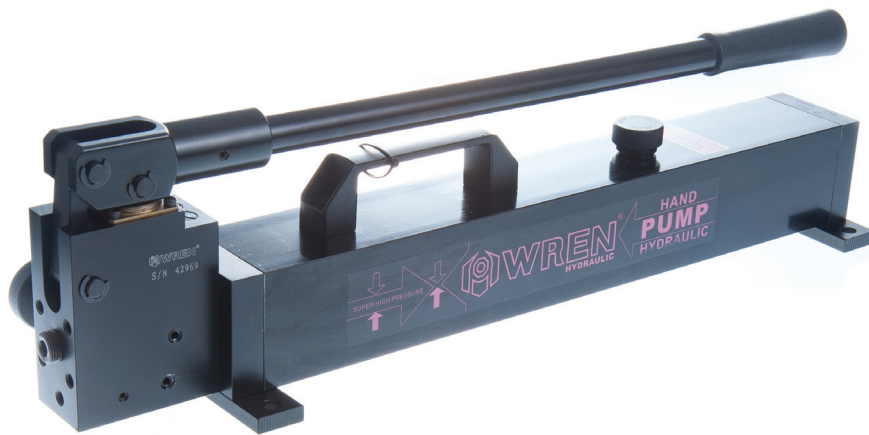


Hydraulic Equipment

COMPLETE HYDRAULIC SOLUTION

Operation and Maintenance Manual

→ Hydraulic Hand Pump



Operating manual for the P Series hydraulic hand pump. Please read carefully and follow instructions, warnings and cautions before use.

Safety Guide

Your Hydraulic Hand Pump requires correct operation and regular inspection as a precaution against direct loss to personnel and property. Should anything abnormal occur during operation, please release the pump pressure, disconnect the hose and consult with your Pacific / WREN agent.

- 1.** This hydraulic hand pump has been designed to operate with temperatures no less than 5°C and no more than 60°C.
- 2.** Do not make alternations to the pump – if changes are necessary, please inform Pacific / WREN or their agent for assistance. Unauthorised modifications may void warranty.
- 3.** Make sure the hose(s) and quick coupler(s) is (are) correctly connected and tightened before building up pressure to avoid hydraulic oil loss, personal injury and/or equipment malfunction.
- 4.** In the event of an oil leakage, release the pump pressure immediately and correct the problem before attempting to operate again.
- 5.** Hydraulic oil leakages can be extremely dangerous and can cause serious injuries which can sometimes be fatal. Always check the complete system before operating and do not use if there is any doubt about the system's integrity.
- 6.** In the event of rapid pressure release, the lifting device or the load being operated may drop or spring open etc., depending on the operation and may cause injuries.
- 7.** Do not operate this equipment in the vicinity of extreme heat or fire.
- 8.** If hydraulic oil comes in contact with your eyes, immediately flush for about 15 minutes with clean water and seek urgent medical attention.

Caution!

- ➔ Please ensure only ISO Grade 32 hydraulic oil is used.
- ➔ Used hydraulic oil should be carefully stored and / or disposed of in an environmentally acceptable manner.



Characteristics

TECHNICAL DATA

For the technical specifications of the hand pump, see the label on the pump. These specifications include:

1. Model
2. Max. pressure (Bar)

For further technical information; please refer to page 6 of this manual.

Double or 2 speed pump pistons feature two thrust sections of different diameters. When the load is not present, it is the piston's wider section which pushes the oil into the system thus allowing a fast approach to the load (stage 1 at low pressure and high capacity). Under load; the same section is to be automatically excluded by a specific valve. Continuous pumping with the smaller section achieves the maximum pressure by reducing the effort on the lever (stage 2 at high pressure and low capacity). The filler cap is a push-button air discharge type and depressurises the reservoir.

The pump can be used in both horizontal and vertical position with the pumping head downwards. A gauge adapter and gauge can be mounted on the oil delivery outlet; both of these gauge mountings are optional extras. Pumps with reservoirs which differ from standard, for higher working pressures or working with other fluids can be supplied upon request. For any specific enquiries, please contact your Pacific / WREN agent.

Warning!

- ➔ Ensure the pump tank contains sufficient oil in order to fill up the hydraulic system to which the pump is connected (generally filling hoses and cylinder).
- ➔ The oil within the pump's tank is not pressurised while the tank is disconnected from a system. The oil becomes pressurised when connected to a hydraulic system.
- ➔ Under any circumstances do not refill the oil in the pump's tank while operating the pump within the hydraulic system. For example; when attempting to complete the stroke of a cylinder which requires a volume greater than that of the pump's tank and additional oil was to be added; the volume of the oil then present in the system will exceed the capacity of the tanks when the piston retracts and the oil is returned to the pump's tank.

OIL DELIVERY / RETURN

The circulation direction of the oil from the pump to the hydraulic system (delivery) and successively from the system to the pump is regulated by the by-pass valve which is mounted on the hand pump head.

The pump is fitted with a 2-way by-pass valve. This valve operates the single acting cylinder's gravity and spring return; the pump head has only one delivery-return port. When the valve hand wheel is completely screwed clockwise, repeated action of the lever will push the oil into the system which will result in an increase of pressure. If the hand wheel is then unscrewed counter-clockwise; oil is allowed to return to the pump tank. In this case it is of no benefit to operate the lever as the pumped oil will immediately return to the system.

HOW TO CHOOSE THE PUMP

The selected pump must have a 2-way valve for the single-acting cylinders either gravity or spring return and a 4-way valve for single-acting oil return or double acting cylinders.

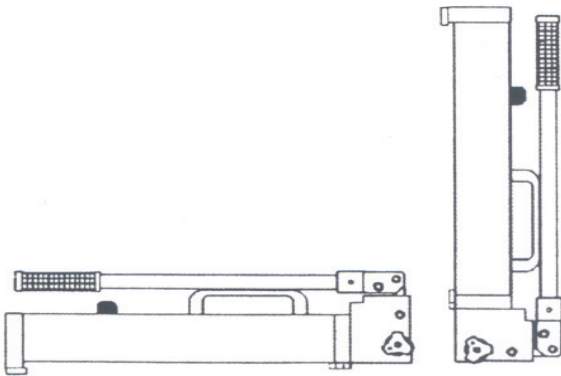
The reservoir must have a capacity of usable oil sufficient to fill the flexible hose and the cylinder. If a large amount of oil is required to fill the system and for the piston to approach the load, a pump with high delivery at low pressure is recommended. Hand pumps are best suited to low speed applications. For applications that require a higher working speed; it is recommended to select a hydraulic unit from our wide range of models that are driven by electric or pneumatic motors.

WARNING: It is recommended to mount a gauge on the pump in order to prevent any possible damage to the equipment when the weight of the lifting load is unknown. This allows visual monitoring of pressures at any phase of the lifting operation.



CORRECT USE OF THE PUMP

The pump must be placed on a stable and still surface to prevent it from turning over during operation. The by-pass valve must only be operated by hand.



Warning!

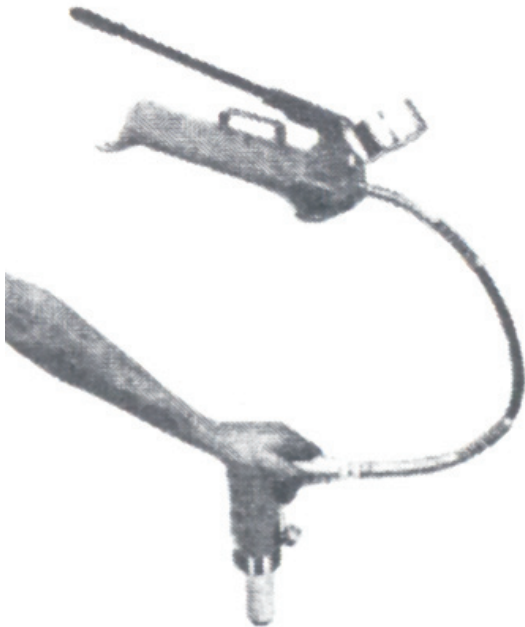
- ➔ The pump can be operated at either a horizontal or vertical position provided the head is downwards.

AIR IN THE SYSTEM

Due to air being compressed; it can be dangerous if air is present in a hydraulic system. Before applying a load to a cylinder; air must be removed from within the system.

Simply follow the following directions:

1. Pump until the piston is completely extended;
2. Invert the cylinder so that the piston head is placed on a bench or floor surface;
3. Ensure that pump is higher than the cylinder;
4. Open the valve of the pump;
5. Press the cylinder bottom to help the piston retract. The air will flow from the cylinder and the hose to the pump reservoir where it can stay without causing any inconvenience.



Operation Instructions

Before operating equipment, inspect the oil level inside the hand pump reservoir. This level should be approximately 10mm below the inlet. Add oil if necessary. The reservoir should not be completely filled in order to prevent any overflow from the inlet hole, due to an increase in oil volume while in operation.

It is recommended to only use ISO Grade 32 hydraulic oil: its viscosity and lubrication characteristics grant the maximum efficiency and longer life of the equipment. If large quantities of oil are required for the pump; it is recommended that the reservoir is drained, cleaned thoroughly and refilled with new oil.

Warning!

- High pressure equipment can develop high forces in comparison with its dimensions. Great attention must be taken when operating.

Caution!

- Make sure that the system components are suitable for the required working pressure.

DIRECTIONS ON THE USE OF FLEXIBLE HOSES

Caution!

- Do not use flexible hoses for carrying or dragging purposes.

Hoses must be placed in a straight line with no obstructions. Ensure that the bend radius is greater than 60mm, that no heavy load is placed over them and avoid any direct contact with sharp objects. Keep hoses clear of naked flames or heat sources.

DIRECTIONS ON CONNECTORS THROUGH NIPPLES

The threaded end connections are either 1/4" or 3/8" NPT male.

When tightening; do not use spanner extensions as damage to the threads can occur. Wrap the thread with Teflon tape (do not overtighten as damaged threads can contaminate the oil in the hydraulic system).

DIRECTIONS ON THE CONNECTIONS THROUGH COUPLERS

Ingress of foreign materials into the hydraulic system can cause scoring inside the cylinders or damage to the valve seats. This damage compromises the seal and the subsequent success of the operation. Therefore the following cautions and warnings should be adhered to:

Caution!

- Ensure that the couplings are clean before connecting them together.
- Dirt can prevent correct sealing and restrict the flow of oil due to the two seal balls not properly repelling each other.
- **Pressure regulation** – the hand pump safety relief valves are factory set to the maximum working pressure. Upon request; this can be set to suit customer requirements.

Warning!

- Manually screw the connecting sleeve of the female coupling to the threaded spigot of the male coupling.
- Always screw the protection caps on the two couplings when disconnected. Pacific / WREN rejects all liability for damaged or unsuccessful operations, deriving from improper use of pump or use of accessories and/or spares other than the original. For any information or explanation in regards to this, please refer to your Pacific / WREN agent.
- Any maintenance and / or repair operations must be carried out by qualified personnel. Any unauthorised operations may cause the warranty to be voided.
- It is absolutely forbidden to set a valve at a value higher than the one set in the WREN factory.



Technical Features of the Hydraulic Hand Pump

MODEL	WORKING PRESSURE (Mpa)		OIL OUTPUT VOLUME per stroke (cc)		OIL RESERVOIR	USABLE OIL	LEVER EFFORT				OUTLET PORT	GAUGE PORT	WEIGHT kg
	1st stage	2nd stage	1st stage	2nd stage	Volume (cm ³)	Volume (cm ³)	N	A	B	C			
P392	2.5	70	32	1.6	1670	1440	300	577	120	170	3/8"NPT	1/4"NPT	6.3
P80	2.5	70	32	1.6	2259	1980	300	577	120	170	3/8"NPT	1/4"NPT	8
P160	2.5	70	32	1.6	3580	3240	300	577	140	190	3/8"NPT	1/4"NPT	10
P462	2.5	70	32	1.6	6480	5860	300	577	220	190	3/8"NPT	1/4"NPT	14.5
10P392	1.5	100	32	1.6	1670	1440	350	577	120	170	1/4"BSP	1/2"BSP-1/4"NPT	6.3
10P80	1.5	100	32	1.6	2259	1980	350	577	120	170	1/4"BSP	1/2"BSP-1/4"NPT	8
10P160	1.5	100	32	1.6	3580	3240	350	577	140	190	1/4"BSP	1/2"BSP-1/4"NPT	10
20P392	1.5	200	32	0.9	1670	1440	400	577	120	170	1/4"BSP	1/2"BSP	6.3
20P80	1.5	200	32	0.9	2259	1980	400	577	120	170	1/4"BSP	1/2"BSP	8
20P160	1.5	200	32	0.9	3580	3240	400	577	140	190	1/4"BSP	1/2"BSP	10
28P392	2	280	32	0.9	1670	1440	450	577	120	170	3/4"-16UNF	1/2"BSP	6.3

Information about Security and Hydraulic Fluid

IDENTIFYING DANGERS

Frequent protracted contact with skin may cause irritations.

FIRST AID

1. If fluid is inhaled; remove the occupant from the exposure area. Do not induce vomiting and try not to swallow. Seek medical attention.
2. If the skin comes in contact with the fluid at any time; immediately wash the area with soap and water until the fluid is removed.
3. If hydraulic oil comes in contact with your eyes, immediately flush for about 15 minutes with clean water and seek urgent medical attention.

LEAKAGE

In the event of any leakage; do not allow the fluid to enter drains, waste canals or running water. If the fluid enters any of these areas; alert the relevant environment authorities immediately.

HANDLING AND STORAGE

1. Neoprene or nitrile rubber gloves should be worn when handling components within the system.
2. Safety glasses must be worn during the handling of components within system and also during operation.
3. Protective clothing should be worn to avoid fluid to contact the skin.
4. The pump must be stored away from heat sources and any oxidising agents. Keep in a well ventilated area with temperatures no less than 5°C and no more than 50°C.



Trouble shooting for the Hydraulic Hand Pump

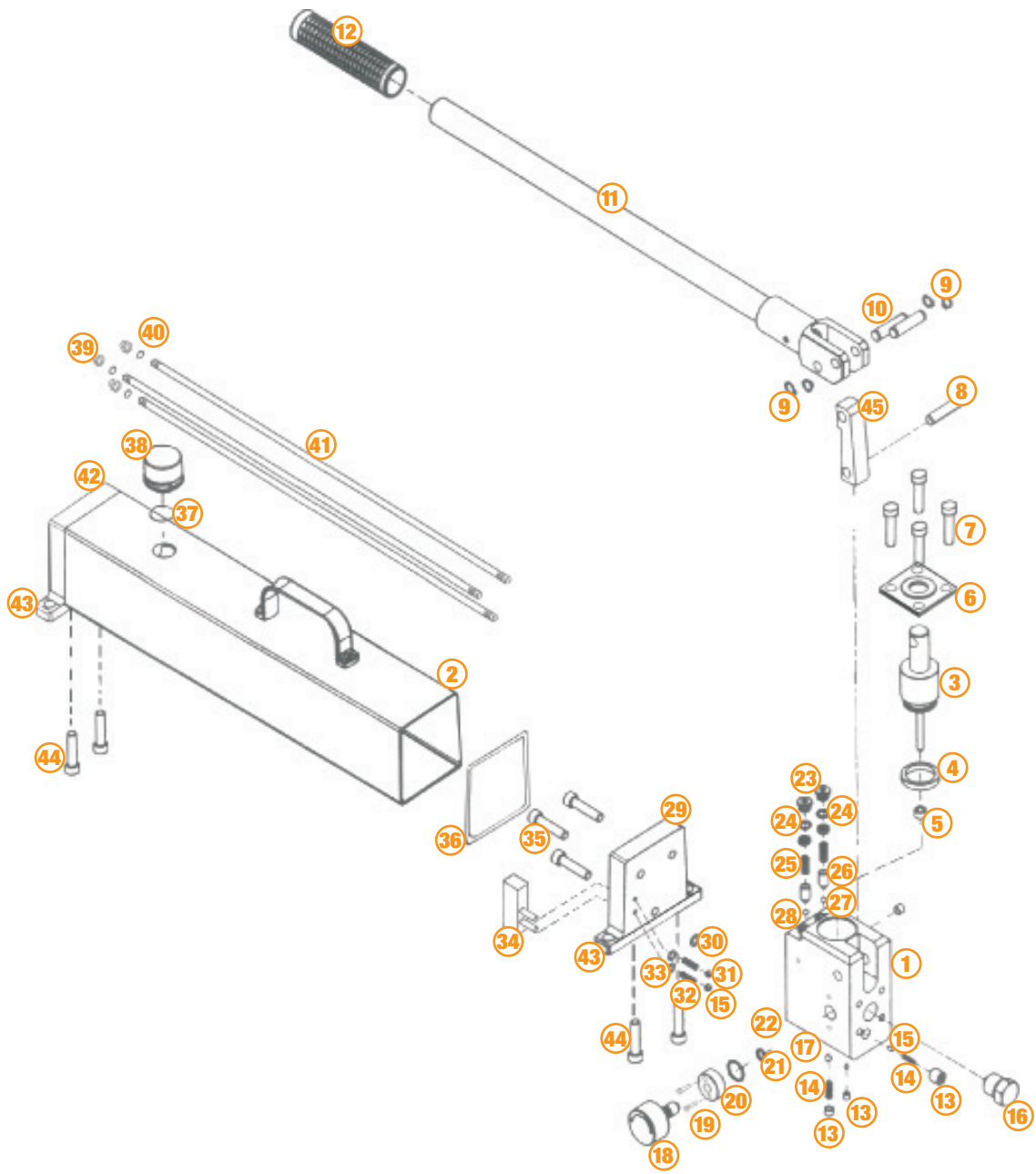
MALFUNCTION	REASON FOR CAUSED MALFUNCTION	SOLUTION
THE CYLINDER DOES NOT ADVANCE	The pump head is higher than the tank	Ensure pump head faces down
	The pump valve is not closed properly	Close the pump valve securely
	There is air present in the system or lack of oil in the pump	Remove all air from within the system and refill the oil to the specified level
	The hydraulic cylinder's capacity is lower than the load to lift	Replace the cylinder with one of a higher capacity
THE CYLINDER DOES NOT REACH FULL STROKE	There is air in the system	Remove all the air from the system
	The cylinder could be point or side loaded	Contact your supplier
	There is not enough oil in the pump	Refill the oil to specified level
	The hydraulic cylinder's oil capacity is larger than the reservoir	Replace the pump with one of a larger capacity and check oil
THE CYLINDER DOES NOT HOLD THE LOAD	The valve may be damaged	Contact your supplier
	Seals are leaking	Replace the seals
	Oil leakage through the flexible hose connection	Check and replace when required
THE CYLINDER RETRACTION IS SLOW OR NOT COMPLETED	The pump valve is closed	Open valve completely
	Coupling(s) are not screwed completely	Screw the couplings tightly until the balls repel each other and the oil flows correctly
OIL LEAKAGES	The return springs of the cylinder (if fitted) could be broken or loose and the internal walls of the cylinder could be worn	Contact your supplier
	The seals may be worn or damaged	Replace the seals

Warning!

- ➔ For the load return cylinders; it may be necessary to make an external force on the top of the cylinder in order for it to retract.
- ➔ Always assist the cylinder to retract by pressing on the reservoir relief valve on the feeding cap thus depressurising both equally.



Explosion Drawing of the Hydraulic Hand Pump



Parts of the Hydraulic Hand Pump

NAME	QTY	NAME	QTY
1 Pump head	1	24 Adjusting screw	2
2 Reservoir	1	25 High - low voltage adjusting spring	2
3 Piston rod	1	26 Spring seat	2
4 U circle	1	27 Boll Ø4.763	1
5 Green circle	1	28 Boll Ø3.175	1
6 Location dust block	1	29 Front seat	1
7 Inner six angle screw M4 x 10	4	30 O Ring Ø8.5 x 1.8	1
8 Long pin	1	31 Boll Ø6.3	1
9 Retaining ring	6	32 Spring	2
10 Short pin	2	33 O Ring 6.8 x 1.8	3
11 Handle	1	34 Oil filter	1
12 Switch	1	35 Inner six angle screw M8 x 40	3
13 Plug NPT 1/16	5	36 Seal pad	2
14 Spring	2	37 O Ring 17.5 x 1.8	1
15 Ball Ø5.5	1	38 Oil cover	1
16 Plug NPT3/8	1	39 Cover nut M8	3
17 Ball Ø5.5	1	40 Spring pad	3
18 Handle	1	41 Pulling rod	1
19 Inner six angle screw M5 x 16	2	42 Back cover	1
20 Release Valve	1	43 Hood contest	2
21 O Ring 10.5 x 1.8	2	44 Inner six angle screw M6 x 12	4
22 Boll Ø5	1	45 Connecting rod	1
23 Screw nut	2		



Warranty

Pacific Hoists Pty Ltd warrants that all products distributed by the company are guaranteed against any apparent fault arising from manufacturing defects caused by faulty materials and / or workmanship.

Should any part fail due to the above within 24 months after purchasing this product Pacific Hoists Pty Ltd will repair or replace the defective part free of charge. To make a claim pursuant to this warranty, the equipment must be delivered to Pacific Hoists Pty Ltd. Freight charges both ways are payable by the claimant and no liability is accepted for loss or damage during transit. The claimant is required to produce the original invoice or other purchase documents as proof of purchase when making a claim pursuant to this warranty.

The warranty does not cover the purchaser or any other person for damage, loss, normal wear or faults caused from misuse or incorrect installation of the equipment.

To be eligible under this warranty, the equipment is required to have been installed and operated correctly by qualified personnel and has not been subject to abuse, neglect or adjustment carried out by an unauthorized person.

This warranty may only be varied with the written approval of the Directors of Pacific Hoists Pty Ltd. In the following statement 'Our' means 'Pacific Hoists Pty Ltd' and 'You' means the 'claimant.'

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

The benefits given to the claimant in this warranty are in addition to other rights and remedies under a law in relation to the goods or services to which this warranty applies.



HEAD OFFICE

24 Foundry Rd,
Seven Hills NSW 2147 Australia
| P +61 2 8825 6900
| F +61 2 8825 6999
| E sales@pacifichoists.com.au

WESTERN AUSTRALIA

Unit 1, 31 Colin Jamieson Drive,
Welshpool WA 6106
| P +61 8 6253 1000
| F +61 8 9458 9840
| E sales@pacifichoists.com.au

QUEENSLAND

5/54 Nealdon Drive,
Meadowbrook QLD 4131
| P +61 7 3170 3800
| F +61 7 3170 3811
| E sales@pacifichoists.com.au

NEW ZEALAND

11 Druces Rd,
Manukau City 2104 Auckland
| P +64 9 263 5566
| F +64 9 263 5567
| E info@pacifichoists.co.nz