

Hi-Force HYDRAULIC TOOLS		HPX1500 Hand Pump Operating Instructions.		TDS:- 1394
Prepared by:-	M.Davies	Approved by:-		Date: 12/03/14
REV NO:-	1			
ECO:-	4161			

Hand Pump 1500 Bar

INTRODUCTION

The operating and maintenance procedures listed within this manual should be adhered to and will enable the operator to obtain maximum efficiency and reliability from the equipment.

PRECAUTIONS

Prior to connecting the hydraulic pump to any equipment, the user is to ensure that:-

- The working pressure of the hydraulic pump and the equipment to be operated are compatible.
- The reservoir pump capacity is adequate to operate the equipment throughout its range.
- The hydraulic oil specifications used within the pump and the equipment are compatible.

TECHNICAL SPECIFICATION

Working Pressure Bar 1500
 Total Oil Capacity cm³ 1800
 Effective Oil Capacity cm³ 1200
 Displacement/Pump stroke, Low-press cm³ 20
 Displacement/Pump stroke, High-press cm³ 1.0
 Pumping Effort, N 370
 Weight, Kg 6.5

RECOMMENDED OIL

Hydraulic oil, viscosity class ISO 32

PRIOR TO USE

Operate the handle with the hand wheel item (32) open this will assist in bleeding the pump of air trapped in the system.


During test and operation of the pump it is recommended that a length of hose is either connected to a tool or terminated with a coupling and blanking plug is connected to the pump. This assists in moving a reasonable quantity of oil from the pump prior to pressurising and prevents air from gathering and being trapped in the system.

OPERATION OF THE PUMP

Rotate the hand wheel (32) clockwise until it seats, then raise the pump handle.

The low pressure piston is withdrawn. The stationary high pressure piston mounted in the valve body is simultaneously withdrawn from the hollow low pressure piston. The vacuum that is then created both in the low pressure piston & pump bore and inside the piston causes oil to be sucked from the oil container via a passage, past the two intake balls and into each other, the intake balls close and the oil from both the high and low pressure piston is forced past the discharge ball and out into the discharge connection.

When the load on the pump increases to around 20-30 bar, a valve opens a passage between the low pressure pump piston & pump bore and the oil container. The low pressure function is now disengaged. Only the high pressure piston is working.

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The safety valve opens a passage between the high pressure piston and the oil container when the load reaches maximum working pressure.

When the hand wheel (32) is turned anti-clockwise, a passage is opened between the discharge connection and the oil container allowing the pressure to be released.

OIL LEVEL

Place the pump on a horizontal surface, remove filler cap (45) from the oil tank. Fill-up with the recommended grade of oil until the level is approx. 20mm from the bottom of the filler hole.

BLEEDING

Place the pump on a bench or similar, with the pump head slightly inclined downwards and the ram on the floor standing on its pressure head. Pump up to approx. half its stroke and leave to stand for a few minutes. Allow the ram to retract very slowly. Repeat this operation a few times until all the oil has been bled from the system. In order to bleed the pump system separately, pump with the hand wheel (no. 32) fully open.

FAULT DIAGNOSIS

FULL PRESSURE CANNOT BE REACHED:

Discharge or intake balls do not seal tightly

Remove the gauge so that the balls (9, 11 and 13) are accessible. Minor damage to the ball seats can be remedied by tapping the ball home with a light hammer blow. **IMPORTANT!** Use a punch made of soft material that will not damage the ball.

Impurities in the oil

Disassemble and clean the pump.

Relief valve incorrectly adjusted

Remove reservoir (44) to adjust the relief valve (36). Clockwise to increase pressure. Anti-clockwise to decrease pressure. **Do not attempt to test the relief valve outside of the reservoir**

Release not tightened or ball damaged

Check Hand wheel (32) is tight. Check screw (31) if damaged replace.

Oil level low

Top up following above instructions.

Air in pump

Bleed the pump following the instructions above.

PUMP LEAKING OIL

Clean the pump. Locate any visible leakage

Check:-

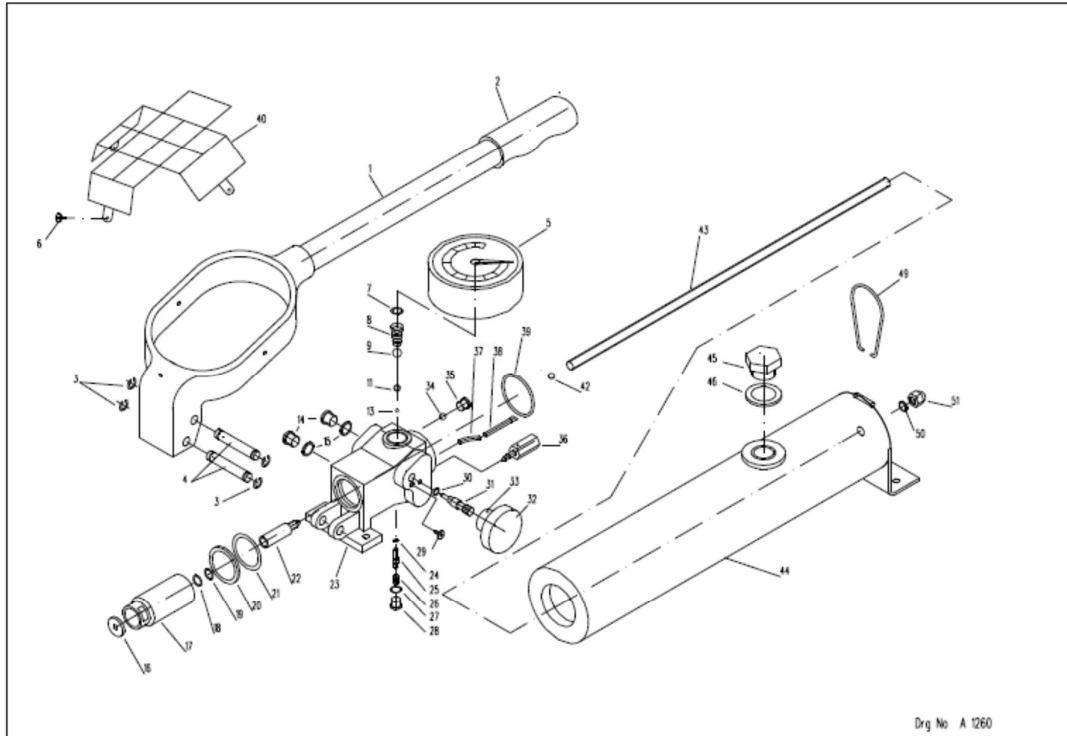
1. That all screws are securely tightened
2. That the seals are intact.
3. That the sealing surfaces on the seals are undamaged.
4. That any damage, such as cracks, deformations and dirt particles are removed.

CAUTION: Make certain that all those using the equipment have the necessary training.

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1	Handle	1
2	Grip	1
3	Track ring	4
4	Axle	2
5	Gauge	1
6	Screw	3
7	O-ring	1
8	Spring	1
9	Ball	1
11	Ball	1
13	Ball	1
14	Plug	2
15	Packing	2
16	Washer	1
17	Piston	1
18	O-ring	1
19	Support ring	1
20	Wiper	1
21	O-ring	1
22	Piston	1
23	Housing	1
24	O-ring	1
25	Piston	1
26	Spring	1
27	Packing	1
28	Plug	1
29	Screw	1
30	O-ring	1
31	Release screw	1
32	Hand wheel	1
33	Screw	1
34	Ball	1
35	Plug	1
36	Relief valve	1
37	Suction pipe	1
38	Filter	1
39	O-ring	1
40	Mesh	1
42	Ball	1
43	Rod	1
44	Oil tank	1
45	Plug	1
46	Packing	1
49	Yoke	1
50	Packing	1
51	Nut	1

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