

NOTE: Be sure to read these instructions completely before operating this pump. Failure to follow these Instructions may result in personal injury or damage to the pump. Safety and Operating instructions are on the back of this page.

1. INTRODUCTION

Dirt - This will quickly ruin any hydraulic system. Before hooking up a system, insure that couplings are clean and free of foreign matter. Dirt, sand, etc. can cause difficult assembly and premature wear to seals and steel components of your hydraulic equipment. After each use of the system, clean all couplings and assemble all dust caps.

Air Bleeding - Air in a hydraulic system can be hazardous because it is compressible. Before loading any cylinder, air must be bled from the system.

With single-acting and spring return cylinders, fully extend the unloaded piston. Invert cylinder and allow it to retract. Do this several times to purge all the air from the system. Note that the pump must be higher than the cylinder.

Air can enter your system in many ways, but the most common is by inadequate usable reservoir capacity (Oil level drops below inlet and pump sucks air.).

2. ASSEMBLY

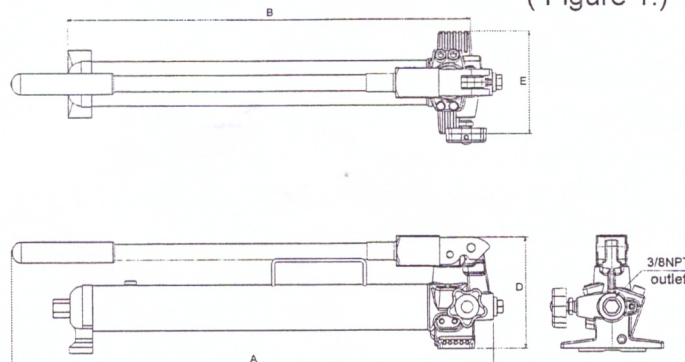
- Remove plug from outlet ports located at the front of the pump (See Figure 1).
- Assemble hose or quick-disconnect couplings at this port.

3. Trouble Shooting

CAUTION: To prevent personal injury, release pump pressure and disconnect the hose from the pump before making repairs.

PROBLEM	CAUSE	SOLUTION
Pump loses pressure Pump not delivering fluid	1. System components leaking. 1. Lower fluid level in Reservoir. 2. Seats are worn.	Repair or replace as necessary. 1. Check the fluid level. 2. Repair seats or replace pump body.
Pump does not reach rated capacity	1. Lower fluid level in Reservoir. 2. System components leaking. 3. Fluid leaking past inlet or outlet checks.	1. Check the fluid level. 2. Repair or replace as necessary. 3. Repair Inlet or Outlet checks or replace high pressure piston seal.
Pump handle has a "spongy" feel	1. Air tapped into system. 2. Too much fluid in Reservoir.	1. Refer to <u>Air Bleeding</u> . 2. Check fluid level.

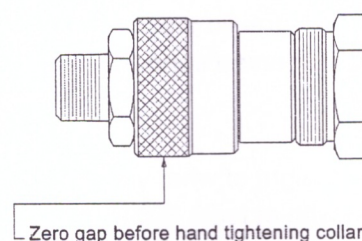
(Figure 1.)



c). Connect hose to cylinder or ram.

d). All POWERRAM cylinders are equipped with quick-disconnect couplings. These couplings make assembly of your system simple and quick. These couplings must be assembled by hand. If wrenches or pliers seem to be necessary for assembly, you are doing something wrong. If couplings will not fully engage (See Figure 2 for proper engagement), open the release screw to release any pressure that have built up.

(Figure 2.)



e). The reservoir is not vented so there is no need to open any air vents prior to using the pump.

SAFETY

WORKING PRESSURE

The pump's maximum working pressure is 10,000 PSI (700 kg/cm²). Make sure that all hydraulic equipment such as rams, hoses, etc. used with this pump are rated 10,000 PSI operating pressure.

HYDRAULIC CONNECTIONS

Never disconnect or connect any hydraulic hoses fittinga without first unloading the ram, then shift, or open all hydraulic controls several times to assure that the system has been depressurized. If the system includes a gauge, double check the gauge to assure pressure has been released. When making connections with quick-disconnect couplings, make sure the couplings are fully engaged. Threaded connections such as fittings, gauges, etc. must be securely tightened and leak free.

DO NOT overtighten connections. Connections need only be secure and leak free. Overtightening can cause premature thread failure.

CAUTION: Loose or cross threaded fittings can be potentially dangerous if pressurized. Never hold or stand directly on line with any hydraulic connections while pressurizing. Never grab, touch or in any way come in contact with a hydraulic pressure leak. Escaping oil can penetrate the skin and a serious injury can result.

JACKING SAFELY

You should know the weight of what you intend to lift and choose a ram with at least 10% more capacity. The ram must be placed on a solid foundation so that the base of the ram is fully supported. The load must be centered on the ram, or equally distributed on on multiple rams. Off-center loading can result in the ram slipping out and loss of the load. Never crawl or place any part of your body under the load as you lift. Hydraulic rams are meant for lifting only and should not be used to support the load for any period of time. You should obtain and be familiar with using hydraulic tools.

HOSES

DO NOT DROP HEAVY OBJECTS ON HOSE. A sharp impact kink wire strands on which the strength of the hose depends.

AVOID SHARP KINKS IN HOSE. Never apply pressure when hose is swung in sharp curves or when the hose is visibly kinked.

KEEP AWAY FROM FIRE AND HEAT. Keep your equipment away from excessive heat which tends to soften packings and cause leakage. Heat also weakens the structure of hose and packings. For best performance, DO NOT expose equipment to temperatures above 160° F.

OPERATING INSTRUCTIONS

- A. Be sure the pump reservoir is full of hydraulic oil.
- B. Operate pump handle several times with the release screw assembly open to remove air from the system and to prime the pump. Hand-tighten the release screw to advance the ram. Opening the release screw releases pressure for retracting the ram.

NOTE: Use caution when releasing a loaded ram. Be sure all personnel are clear of the load. Open the release screw slowly to prevent dropping the load.

NEVER FILL THE RESERVOIR UNLESS THE CONNECTED RAMS ARE FULLY RETRACTED.

MAINTENANCE

Completely change oil at least twice a year. The following conditions require more frequent oil changes.

- a. Rigorous duty, where oil may leak out or become contaminated.
- b. High humidity environment and extreme changes in temperature that can result in condensation inside the reservoir.
- c. Dirty or dusty environments that may contaminate the oil.

Flushing the pump. If you suspect your pump has been contaminated or discover sludge or other deposits on internal components, you should thoroughly flush the pump.

- a. Remove the old oil from the reservoir, then thoroughly clean the reservoir and refill with a clean, nonflammable flushing oil.
- b. Reassemble the pump head to the reservoir and pump the pump handle approximately 50 times with the release screw open.
- c. Empty the reservoir and refill with clean Jack oil.

REF NO.	PARTS NO.	DESCRIPTION	QTY	REF NO.	PARTS NO.	DESCRIPTION	QTY
01	F0068PT	Pump Housing	1	46	K0036	Steel Ball	1
02	L0051	45° Elbow	1	47	G0050	O-Ring	1
03	M0001	Oil Filter	1	48	E2677	Release Valve Screw	1
04	G0102	O-Ring	1	49	G0155B	O-Ring	1
05	E0155	Tie Rod	1	50	E2676	Release Nut	1
06	D0090	Head Base	1	51	E2934	Release Knob	1
07	G0090	O-Ring	2	52	I0072	Spring Pin	1
08	B0108	Reservoir	1				
09	G0009	O-Ring	1				
10	H0005	Air Release Screw	1				
11	F0065	Tail Base	1				
12	G0002	O-Ring	1				
13	E0002	Nut	1				
14	K0001	Steel Ball	3				
15	H0003	Screw	3				
16	G0116	O-Ring	1				
17	G0575	Nipple	1				
18	H0131	Set Screw	1				
19	G0003	O-Ring	1				
20	G0004	Back-Up Ring	1				
21	E0153	H.P. Piston	1				
22	I0019	Snap Ring	1				
23	G0103	O-Ring	1				
24	G0106	Back-Up Ring	1				
25	E0154	L.P. Piston	1				
26	F0003	Yoke	1				
27	E0389	Piston Pin	1				
28	E0005	Yoke Pin	1				
29	I0001	E-Ring	1				
30	G0107	Yoke Cover	1				
31	D0089	Handle	1				
32	G0573	Handle Grip	1				
33	K0002	Steel Ball	2				
34	J0045	Inlet Ball Spring	2				
35	K0003	Steel Ball	2				
36	J0001	Outlet Ball Spring	2				
37	J0002	Copper Washer	2				
38	H0006	Valve Cover Screw	2				
39	K0104	Steel Ball	1				
40	J0140A	L.P. Spring	1				
41	E2098	Screw	2				
42	H0054	Set Screw	2				
43	K0004	Steel Ball	1				
44	E0006	Spring End Cap	1				
45	J0406	Spring	1				

HAND PUMP HC2500

