



INSTRUCTION SHEET FOR HYDRAULIC HAND PUMPS

Repair Parts Sheets for hydraulic hand pumps are available from your nearest authorized BELIUM Service Center or BELIUM Sales office.

NOTE

PLEASE READ AND FOLLOW THIS INSTRUCTION BEFORE YOU USE BELIUM HAND PUMPS.



Carefully inspect all components for shipping damage, if shipping damage is found. Please notify carrier at once. The carrier, not the BELIUM, is responsible for any damage resulting from shipment.

1. SAFETY



To avoid personal injury or property damage, please follow all safety precautions. BELIUM cannot be responsible for injury or damage resulting from unsafe and incorrect products use or system operation, or lack of maintenance.

DANGER is only use when your action or lack of action may cause serious injury or even death.

WARNING indicates a potential danger that requires correct action to avoid personal injury.

IMPORTANT indicates correct action to prevent damage or equipment failure.



DANGER

- The hydraulic equipment user must be a qualified operator familiar with correct training and use of hydraulic equipment. Lack of knowledge in any of these areas can lead to equipment damage or personal injury.
- Please carefully inspect cylinders, couplers, hose and hand pump before use hydraulic equipment, if you find any damage please contact with you nearest Authorized BELIUM Service Center or Sales office. These damages can cause personal injury when you use the hand pumps.
- To avoid personal injury, please do not modify or weld hydraulic equipment without approved by BELIUM.
- Please never lift a load more than the capacity of the cylinders, overloading causes equipment failure and serious personal injury.
- Cylinder is a load lifting device, not a load holding device. After the load has been raised or lowered, it must always be held mechanically, please never work under a load supported by hydraulic.
- Please keep hands and feet away from cylinder and workplace during operation to avoid

personal injury.

- Please do not put poor-balanced or off-center loads on cylinders. The incorrect load can result in equipment failure and serious personal injury.



WARNING

- Please wear safety glasses, safety cap and other necessary personal protective equipment when operating hydraulic equipment.
- Use cylinders to lift loads should have solid lifting surface for correct support. Please select steel or wood blocks that are capable of supporting the load.
- Please install Pressure gauges in the system to monitor the operating pressure. The gauge must have the same pressure rating as the pump and cylinder(s). The wrong gauges may result in Personal injury.
- The system operating pressure must lower than the lowest rated pressure in the system.
- Please carefully inspect the cylinders and couplers before use cylinders or shift couplers. Never connect the cylinders with damaged couplers or damaged port threads. The damaged coupler or damaged port threads may cause equipment failure and possible personal injury.
- Please shift couplers in a clean environment, prevent dust or other garbage into cylinder body or tube. Dust or other garbage will damage the cylinder and result in equipment failure and possible personal injury.
- Cylinder must be placed on a stable base, please use BELIUM cylinder base to improve stability.
- Before removing or tightening hose or couplers, please release hydraulic pressure in system.
- For hydraulic technical helps or repair service. Please contact the authorized BELIUM Service Center in your area. BELIUM is not responsible for any injury and property damage. If you repair your equipment in other hydraulic service centers which does not authorized by BELIUM.
- Hand pump must use special hydraulic oil, please use BELIUM or other approved hydraulic oil

IMPORTANT

- Please keep the hand pump clean all the time.
- When the hand pump is not in use, please release the valve, remove hose and use rubber cap to recover the port.
- Please do not drop heavy duty on hose.
- Please do not lift and carry hydraulic equipment by the hoses or couplers, use the handle or other safe way.
- Please use hydraulic equipment in normal temperature, do not use equipment in temperatures of 65 °C (150°F) or higher. Overheating will soften seals and weakens hose materials, resulting in oil leaking or other equipment failure.

2. SPECIFICATIONS

Model	Speed	Oil Volume (In3 / cm3)	Type *	Pressure Rating (MPa)		Oil output per stroke (in3/cm3)		Handle Force (lbf / kgf)	Output Oil Thread	Weight (lbs/kg)
				1 st stage	2 ^{ed} stage	1 st stage	2 ^{ed} stage			
BP-280	Two	20/330	S	1.4	70	0.48/7.8	0.05/0.8	77/35	NPT3/8	4.8/2.2
BP-950A	Two	55/900	S	2.5	70	2.03/33.4	0.2/3.3	108/49	NPT3/8	16/7.2
BP-2300A	Two	140/2300	S	2.5	70	2.03/33.4	0.2/3.3	108/49	NPT3/8	22/8.8
BPD-950A	Two	55/900	D	2.5	70	2.03/33.4	0.2/3.3	108/49	NPT3/8	19/10.1
BPD-2300A	Two	140/2300	D	2.5	70	2.03/33.4	0.2/3.3	108/49	NPT3/8	25/11.6
BP-4500	Two	275/4500	S	2.5	70	1.59/26	0.18/2.9	112/51	NPT3/8	49.5/22.5
BPD-4500	Two	275/4500	D	2.5	70	1.59/26	0.18/2.9	112/51	NPT3/8	49.5/22.5
BP-7500	Two	458/7500	S	1.5	70	7.6/125	0.35/5.75	112/51	NPT3/8	66/30
BPD-7500	Two	458/7500	D	1.5	70	7.6/125	0.35/5.75	112/51	NPT3/8	66/30
BHPA-2000	Two	98/1600	S	2.0	150	1.95/32	0.1/1.6	93/42	1/4 BSP	20.9/9.5

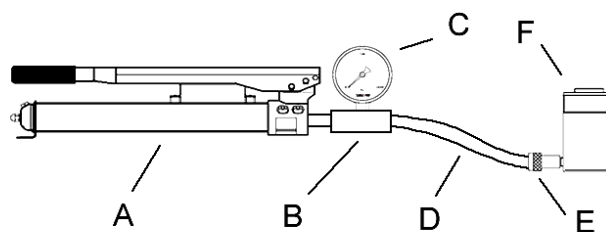
Note:

Type*: S = Single Acting D = Double Acting

3. CONNECTION

Before use hand pumps, please visually check all units, to make sure there are no damage on hand pump and other hydraulic equipment. No oil leaking and shortage of parts. If you find any problem please contact with your nearest authorized BELIUM Service Center or Sales office.

Figure 1



A. Hand Pump B. Gauge Base C. Pressure Gauge
D. Hose E. Coupler F. Cylinder

To successfully connect with the hand pump, please refer to Figure 1 and follow the steps below.

Step1: Clean all hose ends, couplers and other areas around oil ports of pump and cylinder.

Remove thread protectors from the hydraulic oil outlets.

Step2: Install a pressure gauge into hand pump.

Step3: Thread hose into gauge base.

Step4: Connect the hose(s) to cylinder(s) Coupler

IMPORTANT:

- To fully seal the connections, using Teflon tape is necessary. Please use 2 or 3 wraps of

Teflon tape on thread, leaving one or two complete thread free to prevent taps shed into hydraulic system. Any tape lose in hydraulic system, may jam the oil flow.

- For step 2 and step3, we strong suggest you to use pressure gauge when you use hydraulic system. Pressure gauge is a good way to monitor the pressure in system. It will help you keep safety in the work. If you do not want pressure gauge, Please thread hose in to hand pump directly.

4. BLEEDING AIR FROM THE CYLINDER

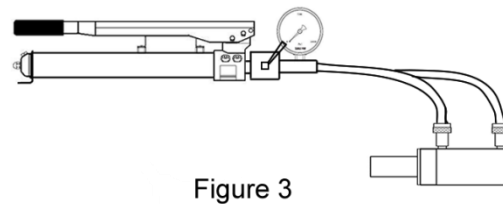
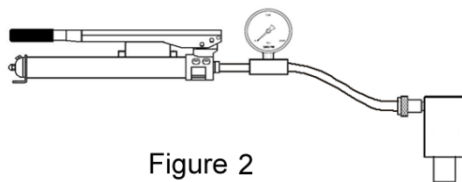
Air may accumulate within a hand pump during shipment or after refilling the hydraulic oil. This trapped air can cause the hand pump feel weak. Please use the steps below to bleed the air from cylinder.

- Single-acting cylinders:

Position the cylinder as figure 2 shows, so that the piston rod is extended down and the cylinder lower than the pump. Fully extend and retract the cylinder 1 or 2 times. It may be necessary to repeat the above steps several times.

- Double-acting cylinders:

Lay the cylinder as figure 3 shows, to make sure the couplers facing up. Fully extend and retract the cylinder 1 or 2 times. It may be necessary to repeat the above steps several times.



5. OPERATION



Some hand pumps have air vent screw, Please loosen it before use hand pump. To avoid the oil leak from oil reserve, please tighten the air vent screw in shipment,

5.1 Single acting hand pump

Single acting hand pump use two-way valve.

- To extend a cylinder, close the valve (Please see Figure 4). Then operate the handle up and down to produce pressure.
- Slowly open the valve to release the cylinder.

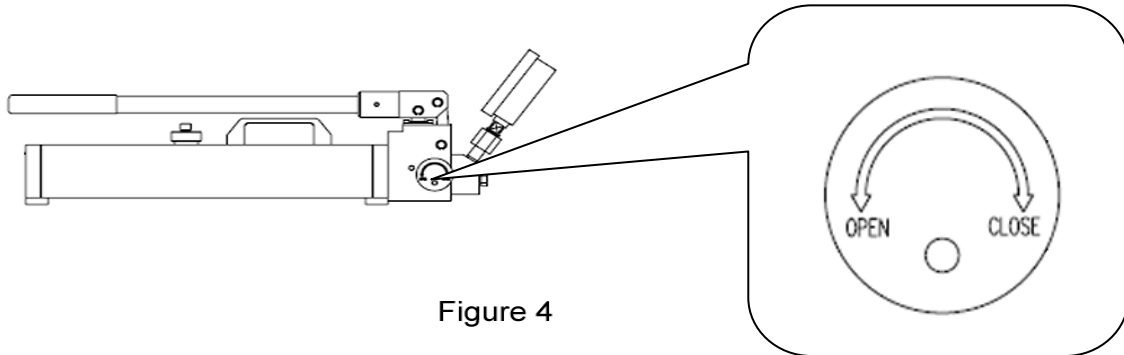


Figure 4

5.2 Double acting hand pump

Double acting hand pump use four-way valve.

Extending a cylinder depends on the connection between the double acting hand pump and double acting cylinder (please see Figure 5).

- Positioning handle to (A): Flow to Port "A"; oil output "B" returns flow to the hand pump.
- Positioning handle to (N) Neutral; ports "A" and "B" are both blocked
- Positioning handle to (B) Flow to port "B"; port "A" returns flow to the Hand pump.

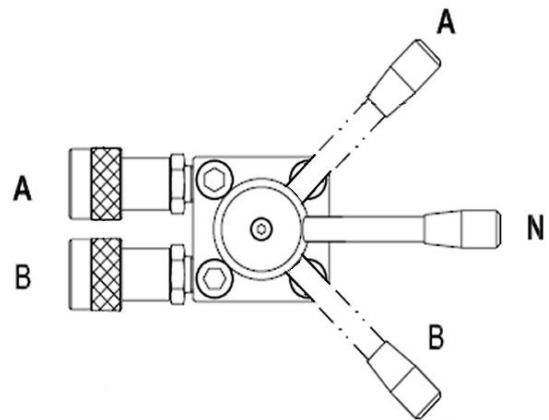


Figure 5



WARNING:

- The operator should close the valve by hand,
- Please always release the pressure slowly
- Please do not use extension handle, extension handle will damage the pump.

6. MAINTENANCE

6.1 Please always use clean BELIUM oil or other approved hydraulic oil with these cylinders. Use other unapproved oil or dirty oil will damage the hand pump.

6.2 Always keep hand pump clean.

6.3 After finish work, hand pump must be cleaned and stored in ventilation, moist-proof, corrosion-proof place.

7. TROUBLE SHOOTING



IMPORTANT: BELIUM hand pumps should be repaired only by a qualified operator or Authorized BELIUM Service Centers. Repair hand pumps without special tools and knowledge may result in personal injury. Please release pressure and disconnect hose(s)

before making repair.

Problem	Cause	Solution
Hand pump cannot produce pressure	1.Pump release valve not fully closed 2.Couplers not fully tightened 3.Oil level in pump reservoir is low 4.Pump or valve malfunctioning	1.Fully tighten pump release valve 2.Fully tighten couplers 3.Fill oil in pump 4.Contact with your nearest Authorized BELIUM Service Center
Hand pump can not maintain pressure	1.Leaky connection 2.Cylinder seals leaking 3.Release valve not fully closed 4.Pump or valve malfunctioning	1.Clean and reseal thread, tighten connection 2.Replace worn seals. Clean inside cylinder and use clean hydraulic oil 3.Fully tightening the release valve. 4.Contact with your nearest Authorized BELIUM Service Center
Cylinder extends slower than normal	1. Leaky connection. 2. Coupler not fully tightened. 3. Pump malfunctioning.	1.Clean and reseal thread, tighten connection 2.Fully tighten couplers 3.Repair, or use another pump and valve
Cylinder will not retract or Retracts slower than normal	1. Pump release valve closed. 2. Couplers are not fully tightened. 3. Pump reservoir is full 4. Hose is blocked 5. Return spring is damaged 6. Cylinder damaged.	1.Open release valve 2.Tighten the couplers 3.Drain hydraulic oil to correct level 4.Clean or change hose 5.Change return spring 6.Contact your nearest Authorized BELIUM Hydraulic Service Center