

OPERATION AND MAINTENANCE MANUAL

HLP3-20N series

Air Driven Tensioner Pump



WREN Hydraulic

It is operating manual of HLP3-20N series Air Driven Tensioner Pump, please read carefully follow instructions warnings and cautions before using the tools.

Safety Guide

Air Driven Tensioner Pump's safe usage requires correct operation and regular inspect, the user is always requested to follow always and carefully regular inspect.

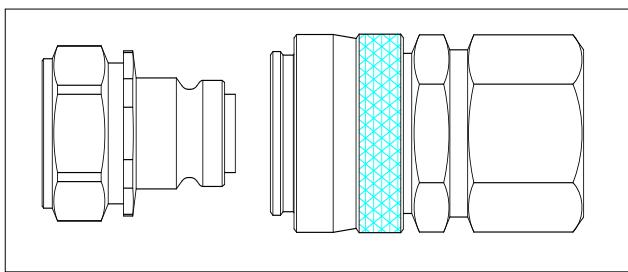
▲precaution to avoid direct loss in economic or property.

▲warning to avoid personal injury.

Please follow herein before!

When using, if something abnormal happens, please shut off the power immediately, and then consult WREN or WREN's agent.

1. When using, do not permit any person stand at the oil output in order to avoid personal injury and equipment damage. Please put the pump far away from the fire.
2. Make sure that the hose and quick coupler be connected before building up the pressure in order to avoid hydraulic fluid spouting out to cause personal injury.
3. The maximum operating pressure of this pump is 2000bar (29000psi), WREN has set up the pressure to 2000bar before selling this pump. Please do not adjust to a pressure higher than the maximum pressure which WREN has not set.
4. If this pump is used for operating other equipments, make sure the maximum operating pressure of the equipments will be less than 2000bar. Please adjust the pressure to which the equipment need, or else the equipment would be damaged.
5. Make sure the air power of the pump is shut off before repairing it.
6. If the rapid release of pressure, lifting jack in the load will fall or spring open, may cause injuries; please refer to WREN or WREN authorized agents, they will recommend you the right valve.
7. Make sure the equipment be connected with ground to avoid electric shock.
8. Please do not change any part of the pump; if it must be changed, please inform WREN or Wren's agent for help. Without allowance of WREN or its agent, any refit of it will be out of our warranty range.
9. Please do not fill the pump reservoir with too much oil, otherwise, the pressure of the reservoir will increase and the oil will spill over, so the reservoir will be broken and the environment will be polluted.
11. Make sure the quick coupler is tightened; if the quick coupler is not tightened enough, the equipment will not work normally; if it is a synchronic system, the problem may cause one or several pieces of equipment out of order and the quick coupler may be broken and it may cause personal injury or equipment damage.
12. Please stand away from the position where the hydraulic oil may be spurt out; hydraulic oil may penetrate your hand and hurt you.
13. If the hydraulic oil splashed in your eyes, please immediately wash your eyes about 15 minutes with clean water, then you must go to hospital for help right now.



14. Please do not touch the pressurized hose; if the hydraulic oil splashed out, it will cause serious injury.
15. Hydraulic hose is easily spoiled fitting; you inspect the hose with eyes regularly and find no problems, but the inner side may have crack and small hole; WREN suggests you should change the hose regularly for.

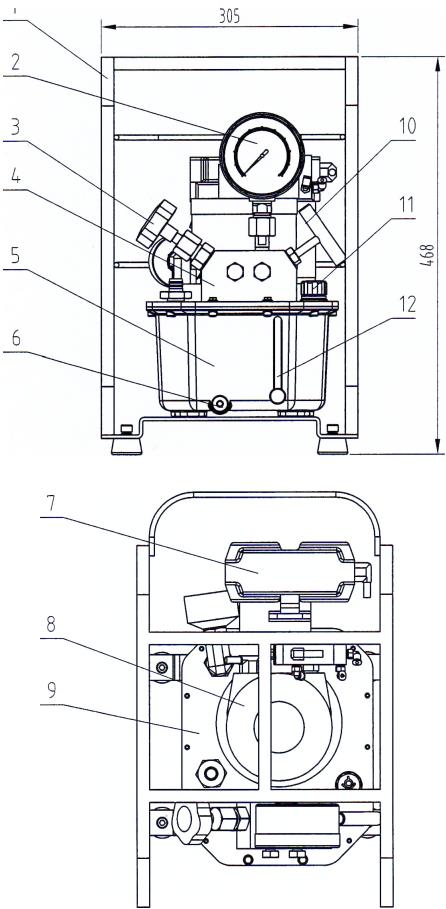
PRECAUTION

1. Only WREN hydraulic special oil available.
2. Do not use pressure regulate valve as relief valve.
3. The used hydraulic oil should be put away according to the antipollution ordinance.

DESCRIPTION

1. Tensioner pump is an integrated assembly; The oil pump, control valve, oil tank, air motor, FRL consisting of an independent and complete hydraulic device, has the advantages of small volume, light weight, simple structure, convenient operation, high working pressure. It can obtain the larger oil output. Its output pressure is 0~2000bar arbitrary regulating.
2. Hydraulic oil:46# wear-resistant hydraulic oil.
3. working environment temperature: - 10~60 C
4. Use WREN high-pressure hose, quick coupler. The maximum using pressure of hose is 1800bar, please use the selection and matching pressure system.
5. This pump for use, please consult the WREN engineer.
6. Please don't use the air driven Tensioner pump near flame.
7. Please do not arbitrarily adjustable pressure regulating valve, in order to avoid the high pressure caused by equipment damage and personal injury.

DESCRIPTIONS OF PARTS



Item	Description
1	Protective Frame
2	Pressure Gauge
3	Regulating Valve
4	Valve Block
5	Oil Tank
6	Oil Releasing Port
7	FRL
8	Air Motor
9	Tank Plate
10	Check Valve
11	Oil Filling Port
12	Oil Gauge

10.Six angle screws: Sealing connecting tank.

CHARACTERISTIC

- 1.HLP3-20N Air Driven Tensioner Pump is a double stage pump with 2000bar maximum operating pressure
- 3.Air input: 4 - 8Bar
- 4.Temperature: - 10~60 °C
- 5.Oil tank:5.5L
- 6.ISO VG 46# anti-wearing hydraulic oil

WARNING!!!

- 1.When operating, do not permit anyone stand at the oil output,The oil output must connect other components when adjusting the pressure.
- 2.When using, do not overpass the max operating pressure.
- 3.When Pump working, the oil back to oil reservoir may add the pressure. If open the cover plate, unnecessary injury and damage will happen.
- 4.Please do not use pump without Hydraulic oil

NOISE/VIBRATION AND TRANSPORT INFORMATION

NOISE/VIBRATION AND TRANSPORT INFORMATION

1. Air Driven Tensioner Pump noise declaration

1.1. Noise: ≤ 65 db

2. Air Driven Tensioner Pump transport information.

2.1 Handle with care.

2.2 The shipment should be vertical upward as shown in the figure 9-1.

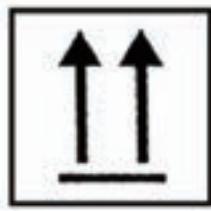


FIG 9-1

2.3 Product handling, generally using portable, car handling and lifting and moving, as shown in the figure 9-2

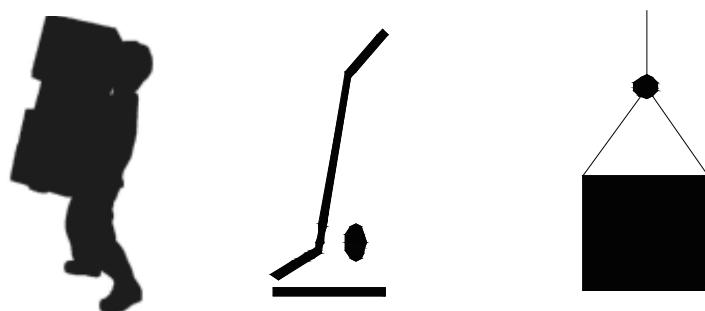


FIG 9-2

OPERATION INSTRUCTIONS

1. PREPARE

- 1.1 Make sure the air power is shut off before all connectings.
- 1.2 Please connect Bolt Tensioner and High Pressure Pump by quick Couplers, make sure they are connected correctly.
- 1.3 Open air power and make sure the input air pressure is kept more than 4 bar.
- 1.4 Please fill a few lube in FRL device(Filter, Regulator, lube).

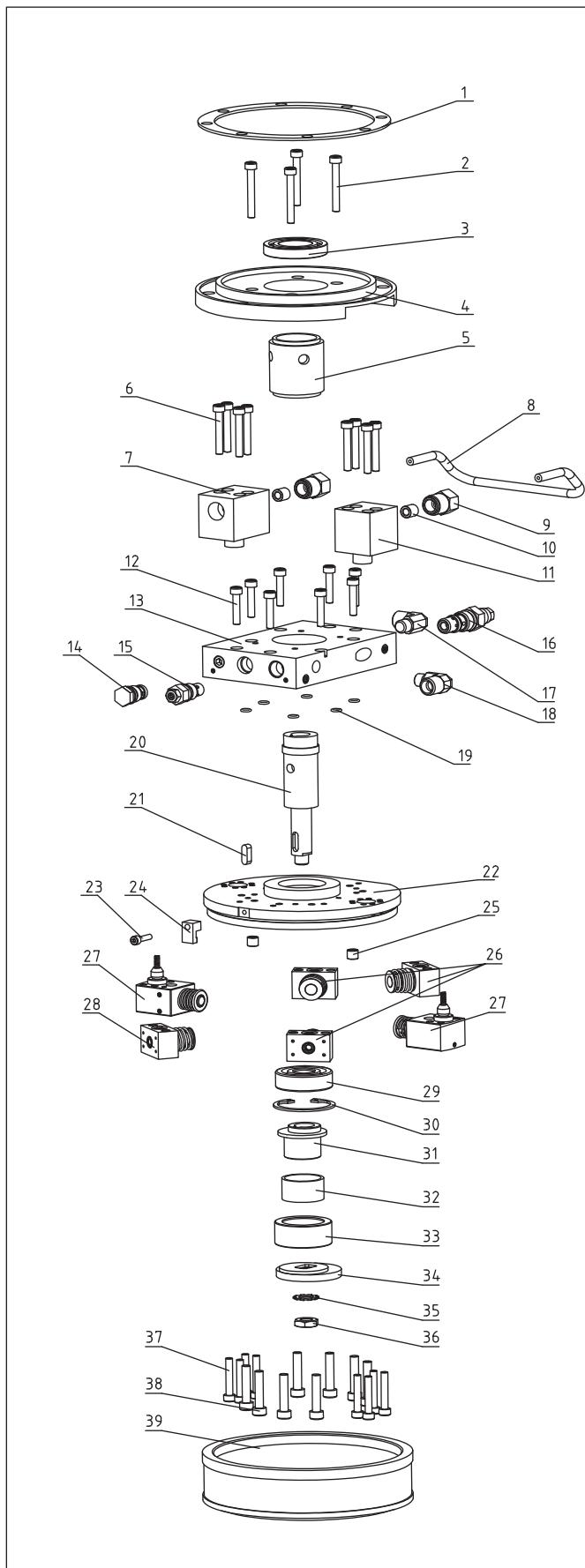
2. Start to operate

2. 1 Please turn to lock the check valve(right side of valve block) and loosen the regulating valve(left side of valve block) to end (the position for min pressure).
- 2.2 Press and hold on "Turn on" button on air remote control, and adjust regulating valve to desired pressure(Check pressure - Tension capacity chart), The process of setting pressure is finished.
- 2.3 Place Tensioner on Bolt correctly.
- 2.4 Operate pump and tensioner till job finished.
- 2.5 Press button"Turn off" to release pressure till Tensioner stroke is retracted to end.
- 2.6 Disconnect with Pump, hose, Tensioner.

TROUBLE SHOOTING GUIDE OF HYDRAULIC PUMP

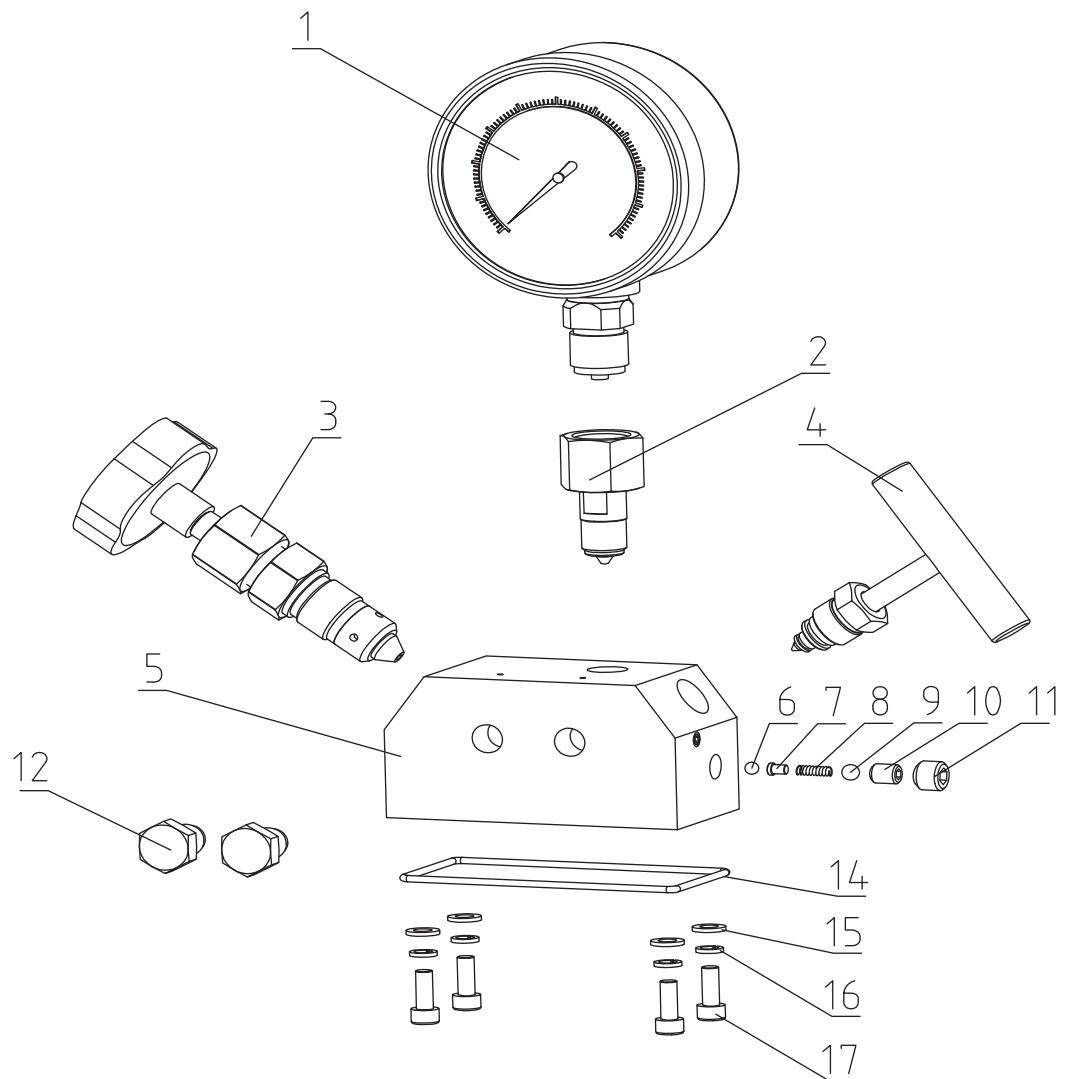
The pump can't be started	The input air pressure isn't suitable	Confirming input air pressure
	The air power hasn't be connected	Checked air power and remote control
The system has no pressure	The quick coupler hasn't be connected to the correct position	Take down and reinstall it
	No oil in the oil reservoir	Fill in oil
	Not enough oil in the oil reservoir	Fill in oil
	Check may not turn to lock	Inspect the check valve
After reinstalling the quick coupler, the system has no pressure	The quick coupler can't be connected to the correct position, which causes no pressure in the system	Take down the quick coupler, check if the boll is elastic with a rod, if it can't move,please knock it with a hammer to eliminate the mist hydraulic oil
Leakage in the quick coupler	The o ring and escape have worn out	Replace the quick coupler
The pressure can't reach to the set pressure	Oil is mixed with water	Change oil
	Not enough oil in the reservoir	Fill in oil
	Air in the system	Repeat operating the system with no load for several times to eliminate the air
	Check valve is wearing	Replace the check valve
When using under static pressure, the pressure reduces slowly	The seal is out of control, please check all the seal	Replace the seal
Pump during operation with strong noise	Radial plunger pump bearing damage	Replace the radial plunger

Part List with drawing for Pump body



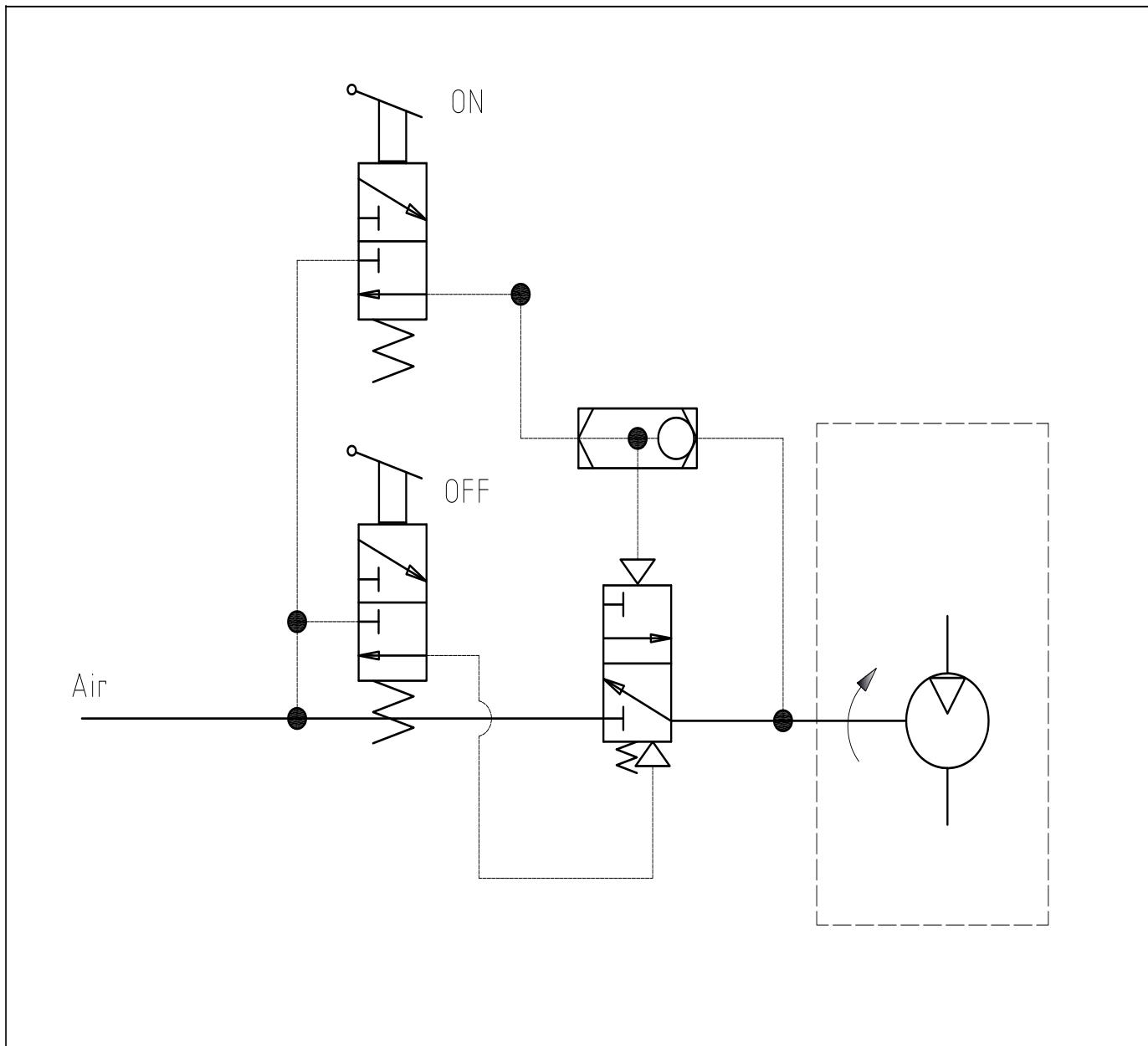
Item	Name	QTY
1	Seal Gasket	1
2	Screw	4
3	Bearing	1
4	Connect Flange	1
5	Body Sleeve	1
6	Screw	8
7	Block for High Pressure	1
8	Pipe	1
9	Pipe Fitting	1
10	Connect Fitting	1
11	Connector 2 (high pressure)	1
12	Screw 2	8
13	Pump head (low pressure)	1
14	Checking valve	1
15	Regulating valve	1
16	Relief valve (low pressure)	1
17	Fitting	1
18	Fitting	1
19	O ring	1
20	Bearing	1
21	Sleeve	1
22	Pump head (high pressure)	1
23	Screw 3	1
24	Filter press	1
25	Retaining ring	1
26	piston 1	3
27	High pressure piston	2
28	Piston 2	1
29	Deep groove ball bearing 2	1
30	Retaining ring	1
31	Eccentric sleeve	1
32	Copper sleeve	1
33	Bearing outer ring	1
34	Eccentric block	1
35	Multi-tooth gasket	1
36	Nut	1
37	Screw 4	8
38	Screw 5	8
39	Filter cover	1

Part List with drawing for Valve Block

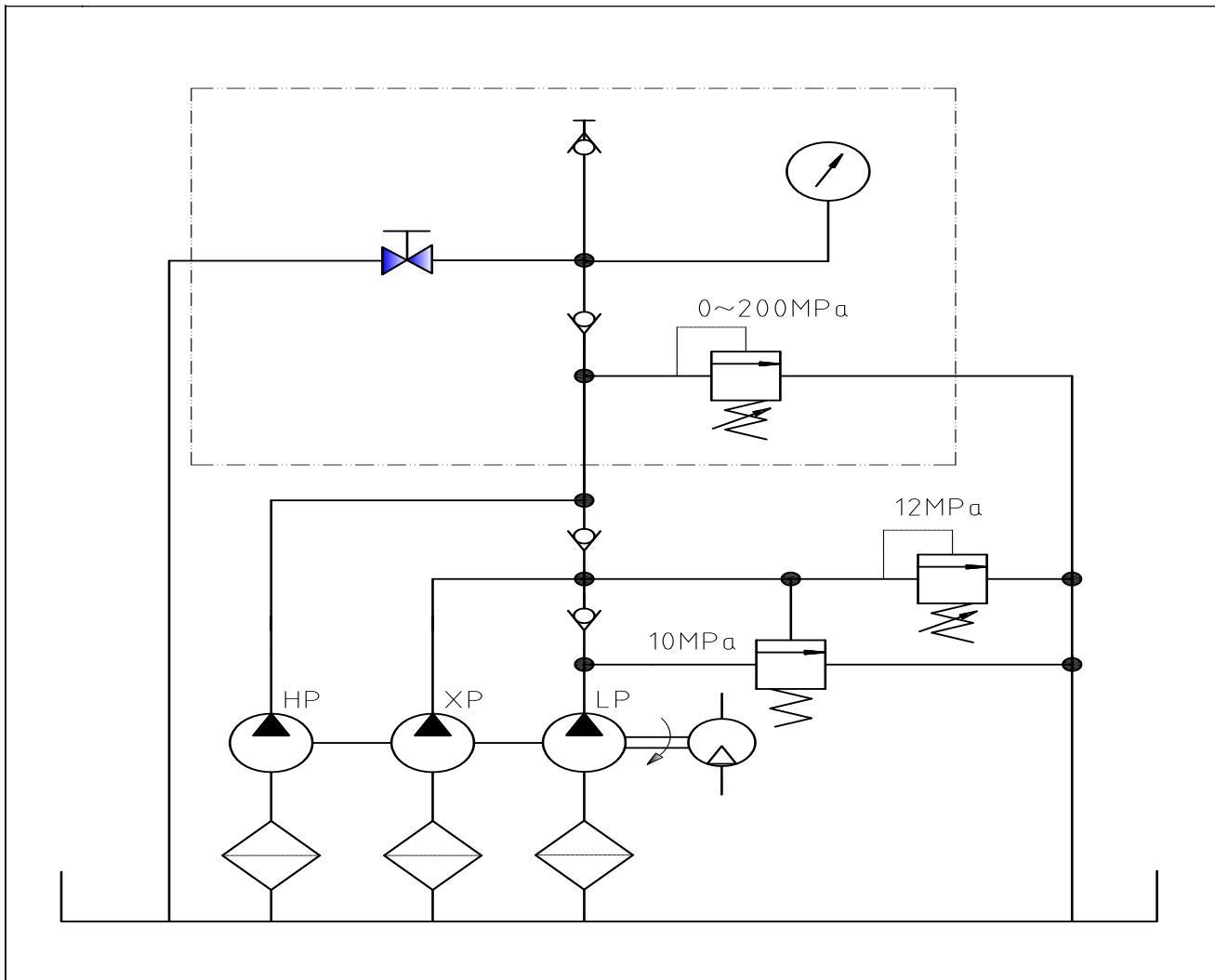


Item	Description	Quantity	Item	Description	Quantity
1	Gauge	1	10	Screw 1	1
2	Gauge adaptor	1	11	Screw 2	1
3	Regulating valve	1	12	Plug	2
4	Needle valve	1	13	O ring	1
5	Connector	1	14	Flat gasket	4
6	Steel ball 5	1	15	Spring gasket	4
7	Ejector pin	1	16	Screw	4
8	Spring	1			
9	Steel ball 6.35	1			

Air Control Principle



Hydraulic Principle



Warning for using high pressure hose

1. Please use Wren's JH series high pressure hoses.
2. The minimum bending radius: $R > 120\text{mm}$. Too small bending radius will destroy the high pressure hoses.
3. The maximum operating pressure is 1800bar, it is forbidden to overpass the pressure.
4. Do not tighten hoses excessively. Over tightening can cause to premature thread failure or high pressure fittings to split at a pressure lower than their rated capacities.
5. Do not use the hose to remove attached equipment. Stress can damage the hose, causing personal injury.
6. Do not subject the hose to potential hazard such as fire, sharp surfaces, extreme heat or cold or heavy impact. Do not kink, twist, or bend the hose so tightly that oil flowing in the hose is blocked or reduced. Periodically inspect the hose for wearing, because any of these conditions can damage the hose.
7. Should any hydraulic hose rupture, burst, or need to be disconnected, immediately shut off the pump. Never attempt to grasp a leaking pressurized hose with your hands. The force of escaping hydraulic fluid could cause serious injury.

Parameter Chart

Model	Oil Tank (L)	Control	Air Motor (rpm/Air Pressure)	Power (HP)	Flow Rate (L/min)			Oil port	Max Pressure (Bar)
					Low	Middle	High		
HLP3-20N	5.5	Air Valve	<p>rpm: 3000r/min</p> <p>Input air: 4~8bar</p> <p>Air consumption: $\geq 3.4\text{m}^3/\text{min}$</p>	4.0	6.0	2.8	0.25	BSP1/4	2000

All Wren products are guaranteed against defects in workmanship and materials for as long as you own them. Under this guarantee, free repair or replacement will be made to your satisfaction.

RECYCLED 

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