TRITORC

BOLTON TRUST

Operating And Maintenance Manual

Air Operated Hydraulic Power Pack For Tensioner
MODEL: BPL 100

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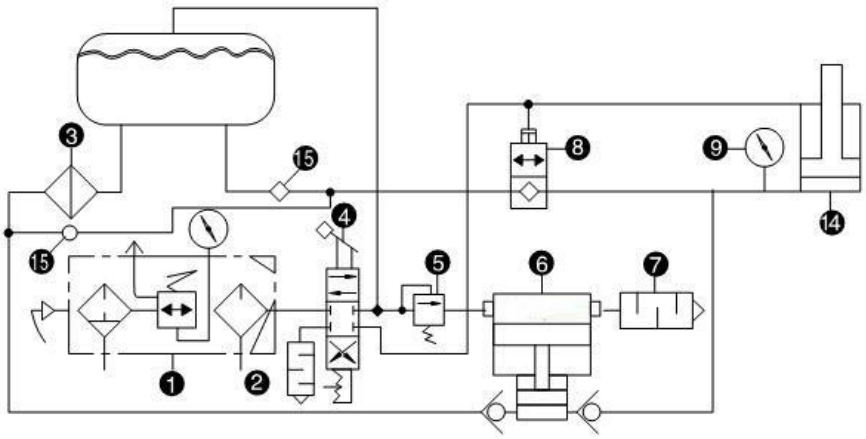
Figure 1. Typical installation loop diagram

All kinds of power units and testing equipment can be made according to customer requirements.



1. Pneumatic triplet 2. Driving gas source switch 3. Liquid filter 4. Manual four way valve 5. Air pressure regulating valve
6.Air driven liquid booster pump 7. Silencer 8. Pneumatic unloading valve
9. Pressure gauge 14. Hydraulic cylinder 15. Unidirectional valve

2 Installation

The driving pressure connection range of liquid booster pump is (1Bar-8.3Bar max).

DANGER!
Unauthorized modification or modification of the system (mechanical, hydraulic, pneumatic, etc.) may cause damage to personnel and systems.

4.0 Operation

4.1 The working environment requires no dust and no corrosion.

4.2 Each booster pump is equipped with two L tripod, indicating that part of the notes are installed and the space needs size.

4.3 Air Pressure Request

Solid particles		Pressure dew point		Maximum oil content	
classification	μm	classification	℃	classification	mg/m3
6	≤ 5	4	≤ +3	2	≤ 0.1

Classification standard:ISO 8573-1

4.4 Gas access

4.5 Driving interface (screw size of port) is marked, drive and pre-compressed media are connected. It is suggested that the precision of filter device should meet our requirements. Driving intake and oil mist device should lubricate the pump body itself. (The oil mist device should add VG32 turbine oil, and other oil will accelerate the aging of seal parts.)

4.6 Pipeline requirements

According to the output pressure of the pump, we must select a pipeline that can withstand the maximum output pressure of the pump.

4.6 Start-up

a. ensures that all interfaces are fastened and the original is installed in place.

b. adjust the pressure reducing valve and transfer the pressure to O psi.

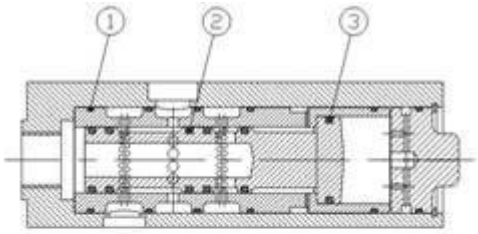
c. Open the intake switch, slowly adjust the pressure relief valve until the pump starts (under normal conditions, the starting pressure of the pump is 15-20 psi), continue to adjust and observe the pressure gauge, to achieve the pressure you need.

5.0 Troubleshooting

Serial number	Failure phenomenon	Failure analysis	Resolvent
1	The pump does not reciprocate, and the muffler does not exhaust or trace exhaust.	1. reversing valve stuck. 2. muffler jam	1. remove the reversing valve spring, remove the spool of the reversing valve, remove the contaminants, and apply proper amount of lubricating oil. 2. remove the muffler and clean it up.
2	Pump does not reciprocate, silencers exhaust a lot of exhaust.	Commutation valve spool O ring wear seriously	Remove the reversing valve circlip, replace the worn seal with the new seal, and apply the appropriate grease.
3	Pump action, but the stroke is not in place, pump frequently abnormal or fast.	1. firing pin stuck. 2. firing pin O ring off.	1. screw down the firing pin and use the sharp nose pliers to remove the firing pin and wipe it clean. 2. screw down the firing pin and reset the O ring.
4	The pump operates normally, does not pressurized, or can pressurized and pressurized to less than rated pressure.	1. there is a foreign body in one-way valve or one-way valve. 2. the pressure piston seal is seriously worn.	1. check the check valve and clean up the dirt. 2. after removing the check valve, replace the pressurized piston seal.

6.0 reversing valve assembly

The directional valve changes the direction of gas movement by changing the airflow passage, so as to achieve the purpose of changing the direction of pneumatic actuator movement.



NO	Name	Specifications unit(mm)	quantity
1	O ring	ID36.5*1.8	6
2	O ring	ID19.8*2.65	5
3	O ring	ID28*2.65	1

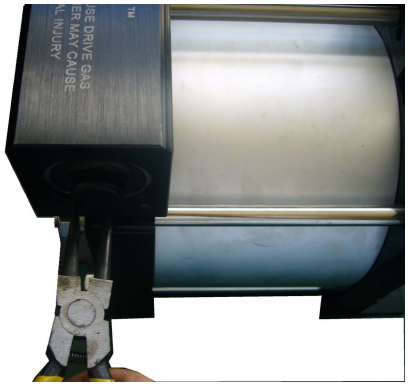
Sketch of assembly drawing

Schematic diagram

6.1 Disassemble

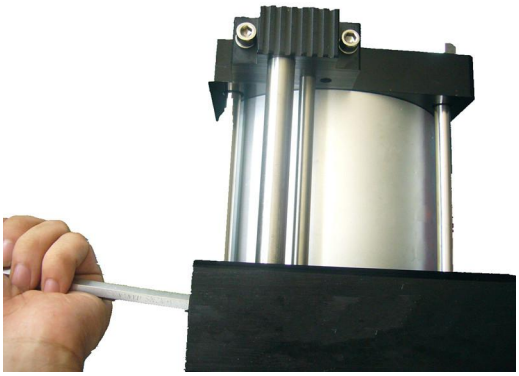
Maintenance, disassembly and decomposition of pneumatic directional valves are as follows:

Figure 6-1. Remove 40 retaining rrifice



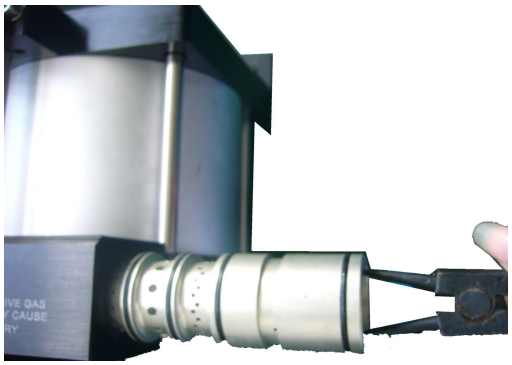
6.1.1 As shown in the figure, after cleaning the calipers with solvent, Remove the 40 retaining rings.

Figure 6-2. Remove cover and spool with



6.1.2 As shown in the figure, use a screwdriver to pass through the gas inlet, gently push out the valve cover,take out the valve core and place it in a clean position.

Figure 6-3. Remove the spool bush with a shaft clamp



6.1.3 As shown in the figure, clamp the valve with a spring clamp on the shaft Inside the sleeve, gently take it out andplace it in a clean place.In general, it is not necessary to remove the valve sleeve, but only to replace the valve core density.Sealing rings.。

Figure 6-4. Manual removal of the spool valve sleeve seal ring

6.1.4 As shown in Figure 1, remove the spool sleeve manually Sealing ring, ensure that the seal ring is not damaged, placed in dry The location of silence.

Table 6-5. Attribute description of parts and components of reversing valve

NO	Name	figure number
1	Valve Sleeve	VB04000-003
2	Spool	VB04000-004
3	Bonnet	VB04000-005
4	Bead flange	VB04000-006
5	O ring	ORING-19.8*2.65
6	O ring	ORING-28*2.65
7	O ring	ORING-36.5*1.8

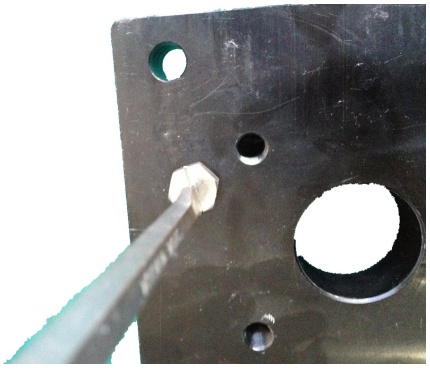
● Be careful

1. In the whole process of disassembly and assembly, the driving gas source must be cut off before the above operation can be carried out, otherwise it may cause harm to personnel.
2. The whole disassembly and assembly process of the booster pump must be careful. Seal rings and fittings in all positions must be clean and undamaged, and appropriate amount of silicone resin should be coated at the contact between metal and seal rings.

7.0 firing pin assembly

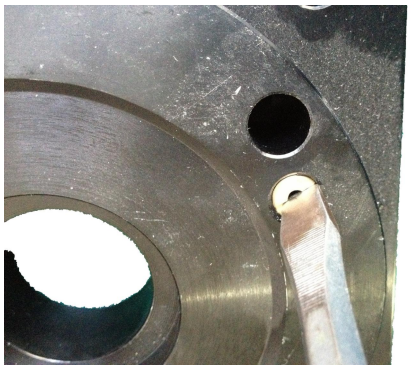
The maintenance, disassembly and decomposition of the impact pin are as follows:

Figure 7-1. Remove pin nut



7.1.1 As shown in the figure, use 17 open wrenches orA screwdriver removes the nut and inspects it.Whether the O-ring is damaged or not.

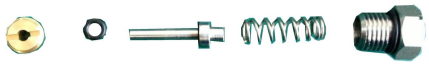
7.1.2 As shown in the figure, first take out the compression spring.
Then push the pin out from the back or use the pointed tongs to go out.
Pull out the firing pin.
NOTE: Clean or replace the above dismantled parts, clean up
After loading back to the original location, if not troubleshooting and then proceed
The following operations.
Fig. 7-3. dismantling guide bushing



7.1.3 Remove the guide sleeve with a screwdriver as shown in the figure.
Remove the guide sleeve.
Figure 7-4 Removal guide sleeve seal

7.1.4 As shown in the figure, use the tool to remove the bottom of the guide sleeve.Seal, clean the sealing groove, check whether the sealing ring is damaged.

Fig. 7-5 firing pin assembly



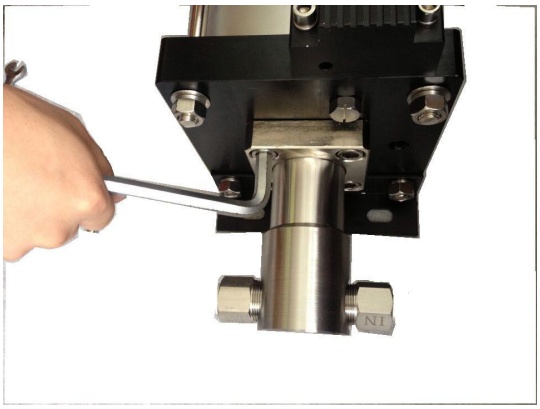
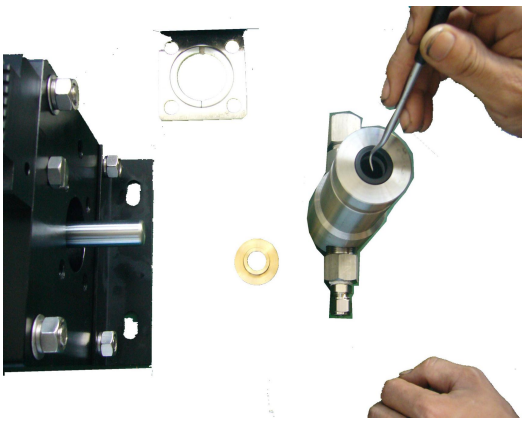
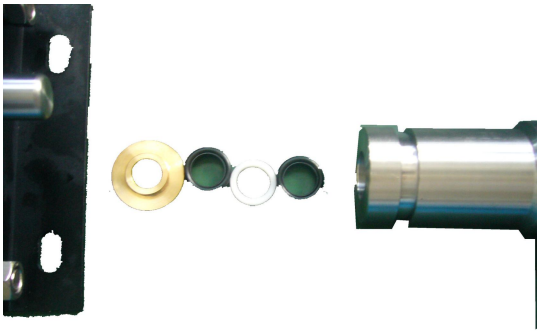
7.1.5 As shown in the figure, dismantle all parts and components, and use non-corrosive.Corrosive Solvent Cleans Sealing Groove and Cleans Parts Check whether the seals are damaged.

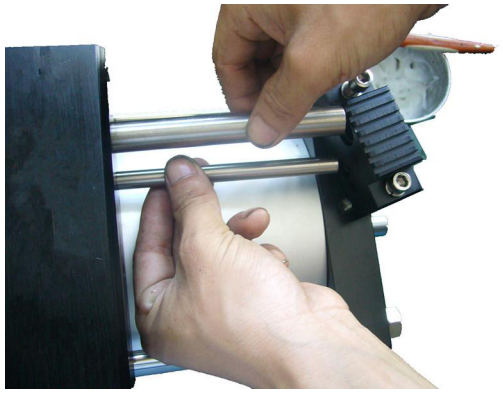
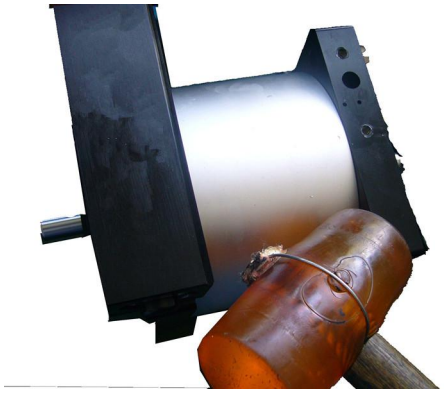
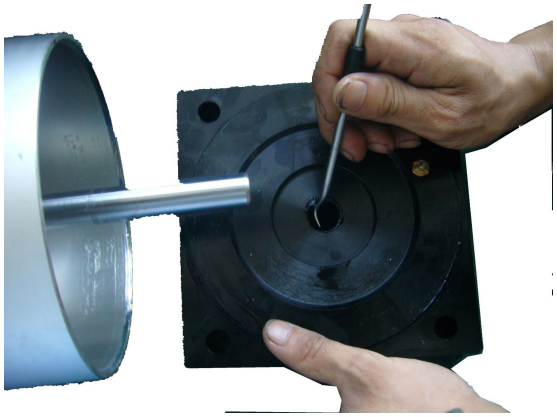
Table 7-6 Attribute description of parts and components of impact pin

NO	Name	Map number / specification	quantity
1	Guide sleeve	FP10000-003	1
2	O ring	d4*1.8	1
3	Firing pin	FP10000-002	1
4	O ring	d5.6*1.8-90°	1
5	Compression spring	D7*CS1*25-8.5	1
6	O ring	d11.8*1.8	1
7	Firing pin nut	FP10000-004	1

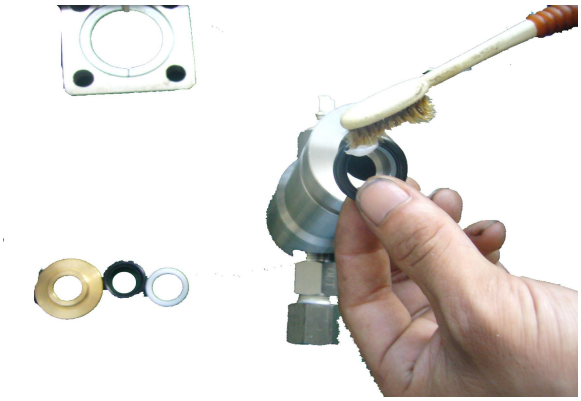
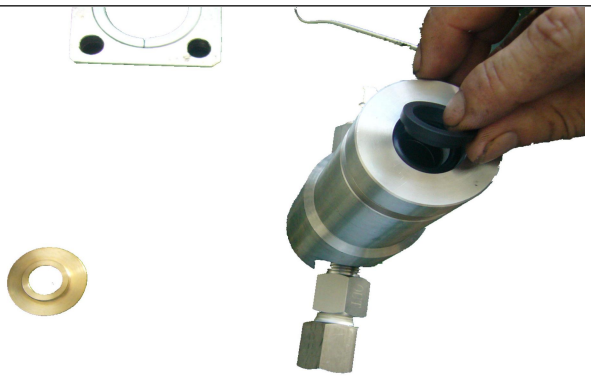
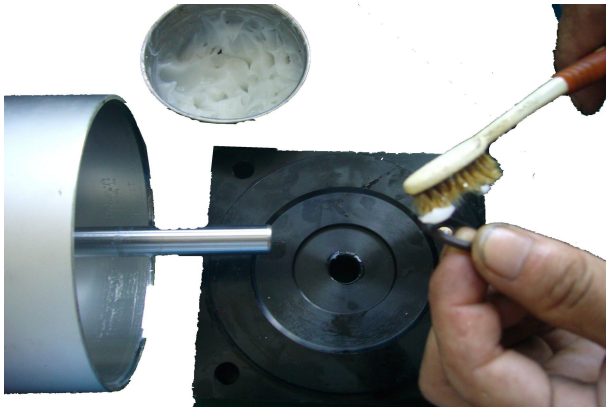
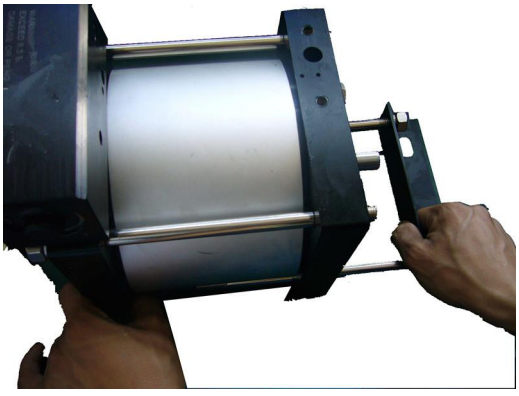
8.0 Driving body and high-pressure part

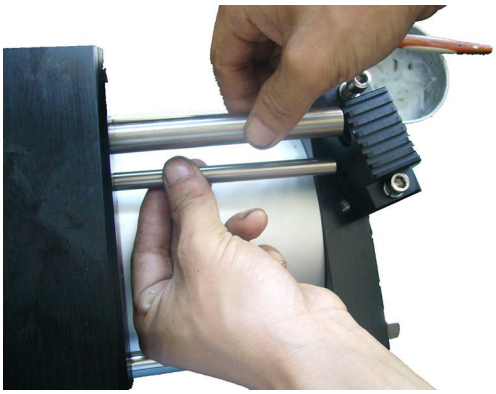
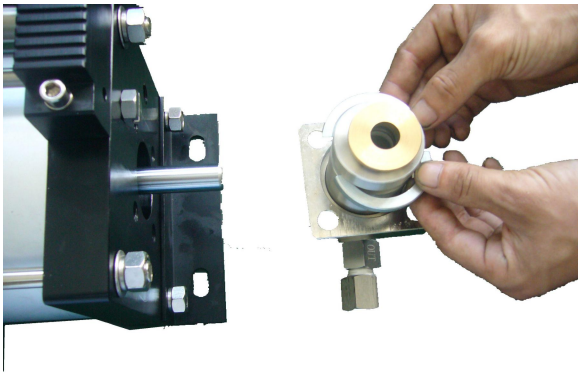
8.1 Disassembly steps

	**Removal of four screws for fixing left and right high pressure cylinders with M12 hexagonal wrench（M12*25）.**
	**Slowly pull out the high pressure cylinder to avoid accidental injury to the piston rod.**
	**The high-pressure seal in the high-pressure cylinder can be removed by tools. The sealing seat can be taken out first, and then the O-ring can be taken out. The H605 high-pressure seal can be taken out directly by tools to clean the high-pressure cylinder.**
	**The high pressure cylinder has: high pressure seal and high pressure guide sleeve.**

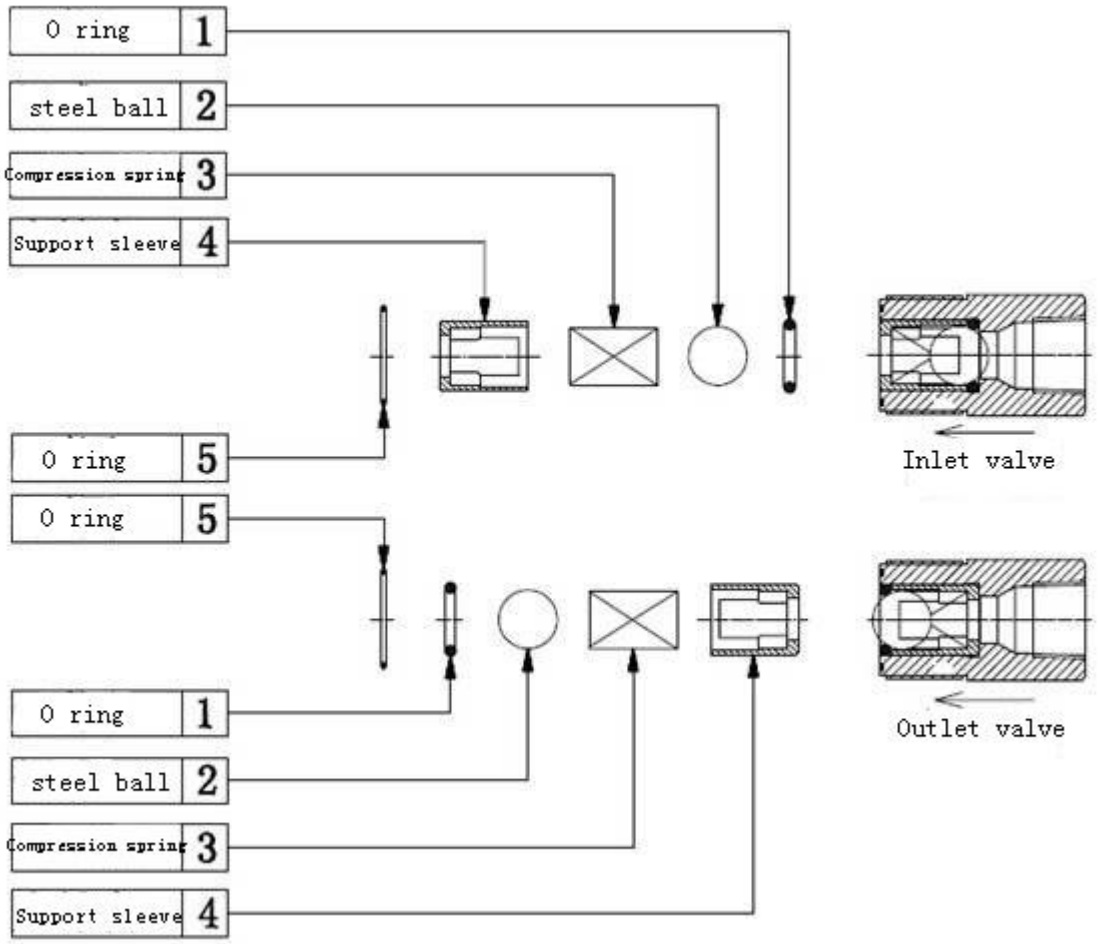
	**High-pressure cylinder: high-pressure seals and high-pressure guide sleeve.。**
	**Remove the pipes of 16 and 10. Note that there are sealing rings at both ends of the pipes. (d6.9*1.8) 2 pieces (d11.2*2.65) 2 pieces**
	**A rubber hammer is used to strike the edge of the end cap and remove the end cap to separate it from the driving cylinder.**
	**When the seal in the end cap is removed by the tool, the smooth ring of the seal can be removed first, and then the O-ring can be removed. The UN seal can be removed directly by the tool, and the sealing groove can be cleaned by non-corrosive solvent.**

8.2 Installation steps

	First, clean the parts and grease the sealing parts.
	High-pressure seals are assembled in sequence. High-pressure seals can be installed with O-rings first, and then into seats. H605 high-pressure seals can be directly loaded.
	Clean the shaft seal, apply grease, assemble into the left and right end caps. The O-ring and the smooth ring can be separated by the shaft package matching. Firstly, the O-ring is loaded into the sealing groove, and then the smooth ring is loaded into the groove. The 072 shaft seal can be assembled in different directions, and the UN shaft seal can be directly loaded into the groove.
	Assemble the pull rod of the scaffold and place it on the marble platform and lock the nut tightly.

	**When assembling the valve block, the O-ring on the valve block needs to be assembled first.** **(d11.2*2.65) 1 pieces** **(d6.9*1.8) 1 pieces** **(d4.5*1.8) 2 pieces**
	**Assemble the gas distribution pipe and install the gas seal ring before assembling.** **(d11.2*2.65) 1 pieces** **(d6.9*1.8) 1 pieces**
	**Assemble the clasp jacket, first put it into the clasp jacket, then clamp the fixed groove of the high pressure cylinder with the clasp.**
	**When assembling the high-pressure cylinder, when tightening the screw of the high-pressure cylinder, attention should be paid to ensure that the one-way valve at the inlet and outlet of the high-pressure cylinder is parallel to the scaffold, and then tighten four pieces of screw.**

8.3 Check valve assembly

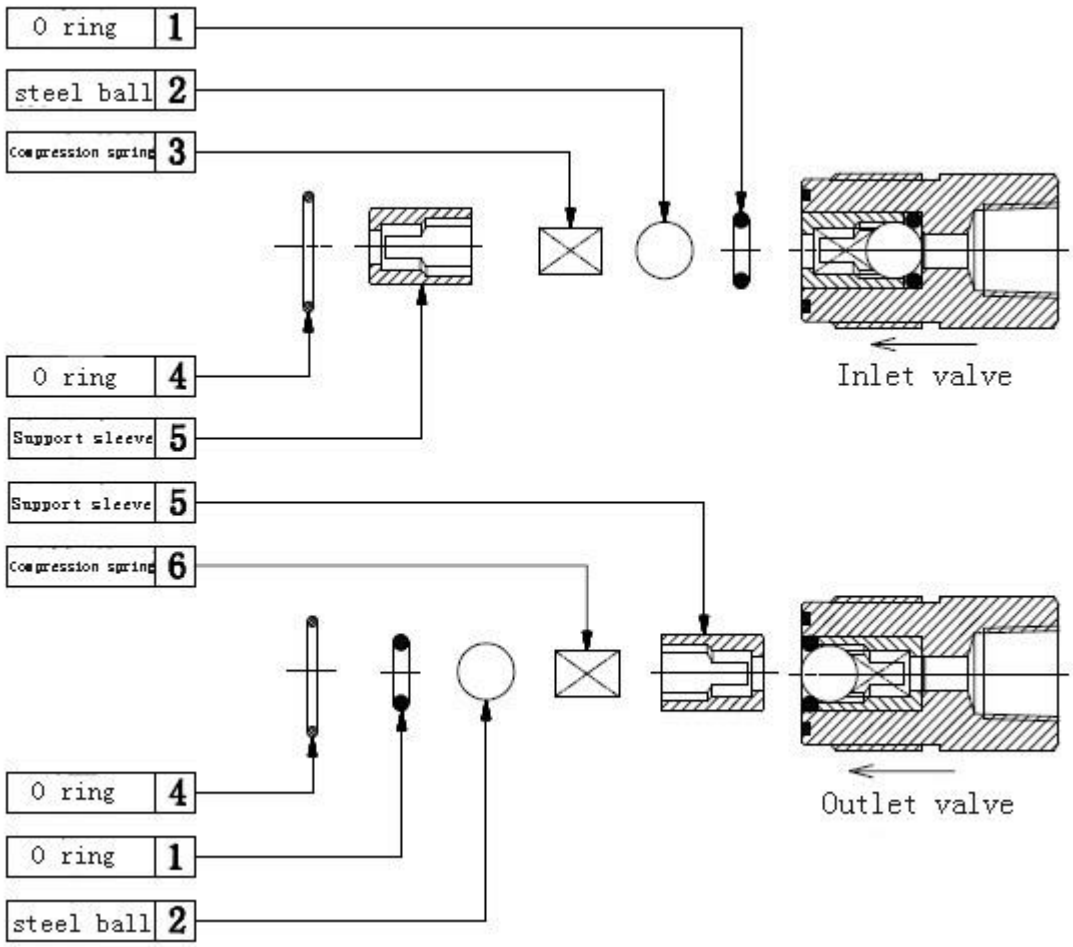


BPL 100 Assembly Drawing

8.4 Attribute description of parts and components of one-way valve

NO	Name	figure number	quantity
1	o-ring	ORING-18*3.55	2
2	stainless steel ball	S₵20-001	2
3	Compression spring	D18.3*CS0.85*30-7	2
4	Support sleeve	DF 01017-001	2
5	o-ring	d30*1.8-90°	2

8.5 Check valve assembly

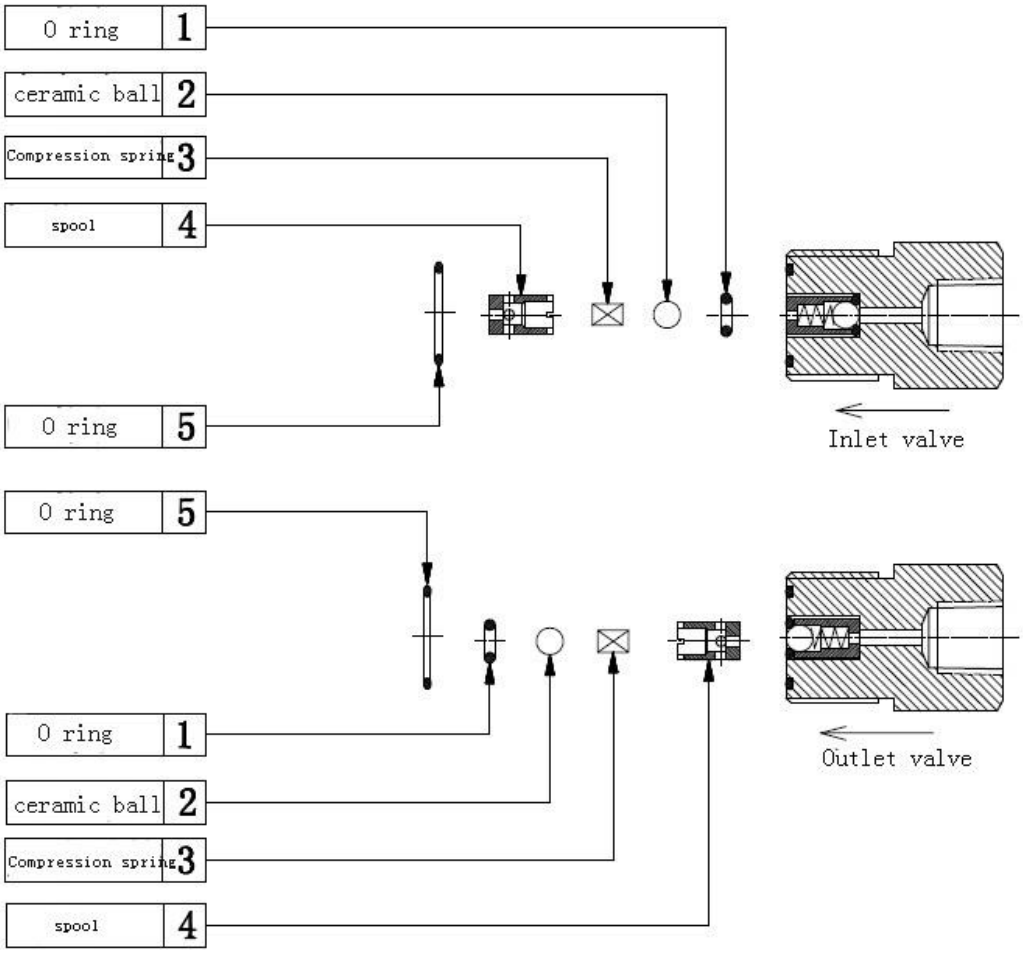


BPL 100 Series one-way Valve Import & Export Drawing Assembly

8.6 Attribute description of parts & components of one-way valve

NO	Name	figure number	quantity
1	o-ring	ORING-8*2.65-90°	2
2	stainless steel ball	S₵10-001	2
3	Compression spring	D7.6*CS0.4*17-9	1
4	o-ring	ORING-18*1.8-90°	2
5	Support sleeve	DF03006-001	2
6	Compression spring	D8*CS0.5*17-9	1

8.7 Check valve assembly



BPL 100 Series one-way Valve import & export assembly drawings

8.8 Attribute description of parts & components of one-way valve

NO	Name	figure number	quantity
1	o-ring	ORING-5*2-90°	2
2	ceramic ball	S¢6-001	2
3	Compression spring	D3.95*CS0.45*10.5-9	2
4	spool	DC06027-002	2
5	o-ring	ORING-15*1.8-90°	2

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