Non-Leak Valve Unit

Model **BH**

Manual control type non-leak hydraulic valve unit. Most suitable for manual control of RA die lifter.

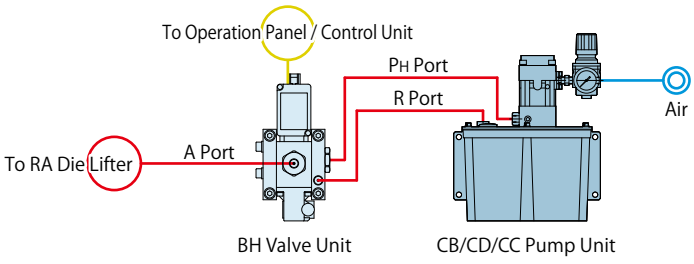
Directional control valve that actuates non-leak valve by the lever operation. Even if pressure supply is cut from hydraulic pressure source, it maintains pressure until switching the lever.

• Ensures safety with the pressure switch

The pressure switch detects pressure reduction in case of accident such as hydraulic hose damage, and immediately stops the press machine.

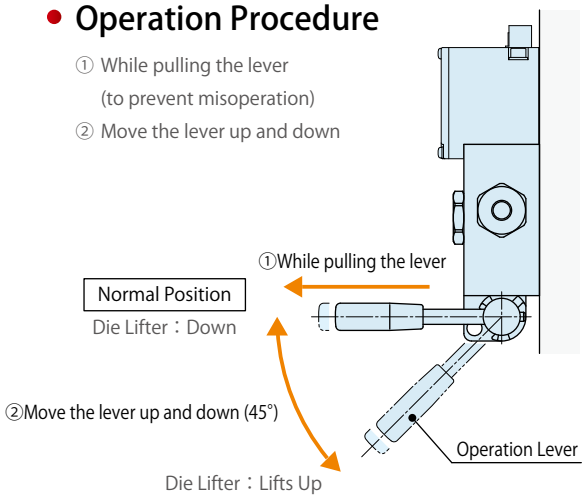
• Application Example

The drawing shows when controlling RA Die Lifter by BH Valve Unit and CB/CD/CC Pump Unit.



• Operation Procedure

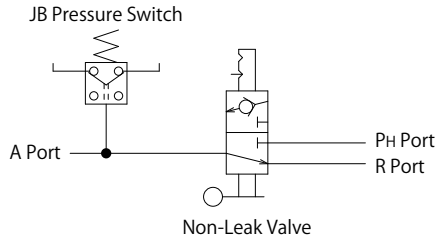
① While pulling the lever
(to prevent misoperation)
② Move the lever up and down



• Circuit Symbol

D ： For Die Lifter (Normal Close)

The lever at the normal position：Die lifter is down.



Notes

1. PH Port ： Hydraulic Pressure Source
   R Port ： Drain Port
   A Port ： To RA Die Lifter
2. Filters are built in PH and A port.

Model No. Indication

BH00 M 1 - D - 0 - GR P

1 2 3 4 5 6

1 Working Pressure Code

M : 24.5 MPa

2 Design No.

1 : Revision Number

3 Circuit Symbol

D : For Die Lifter (Normal Close)

4 Fluid Code

0 : General Hydraulic Oil (Equivalent to ISO-VG-32)
S : Silicon Oil
G : Water - Glycol

5 Option

Blank : Standard (Piping Block on the Right)
GR : Primary Pressure Gauge on the Right (Piping Block on both side)
GL : Primary Pressure Gauge on the Left (Piping Block on both side)
H : Piping Block on both side (PH Port)

6 Unit of Pressure Gauge

Blank : MPa (Standard)
N : PSI (used only in USA)/ NPT-Thread Fitting
P : PSI (used only in USA)/ Rc-Thread Fitting

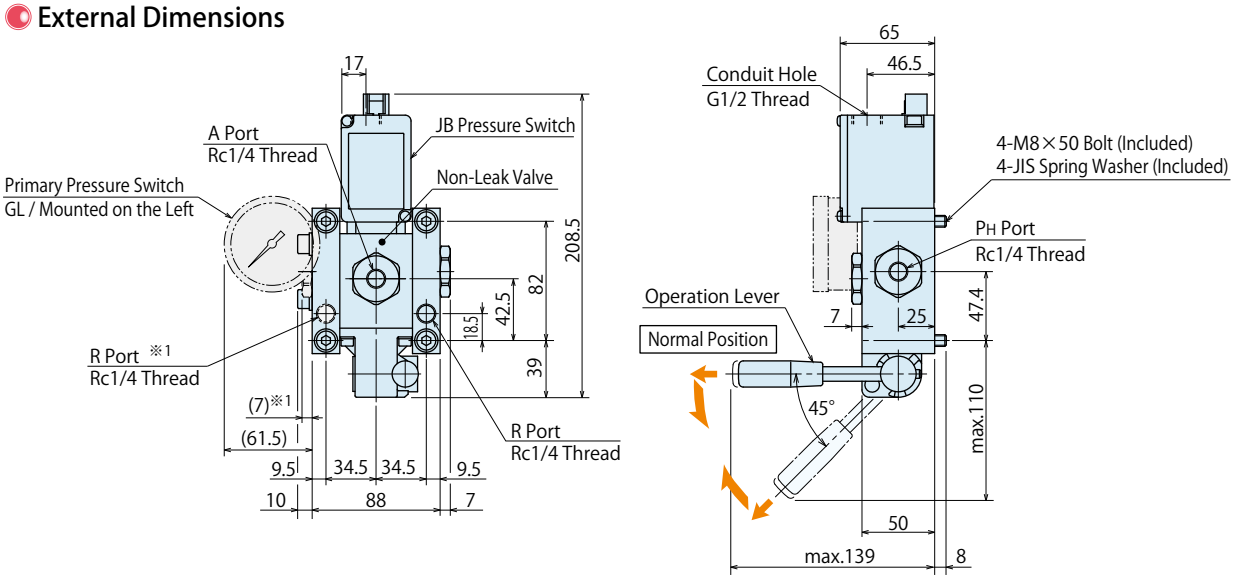
Specifications

Model No.			BH00M1-D-□-□
Working Hydraulic Pressure			24.5 MPa
Withstanding Pressure			36.8 MPa
Operating Temperature			0 ～ 70 ℃
Main Components	Non-Leak Valve	Model No.	BH5101-0
		Orifice	12.6 mm² (PH Port → A Port) 52.8 mm² (A Port → R Port)
	Pressure Switch (For RA Die Lifter)	Model No.	JB1000-M0
		Operation Mode / Set Pressure	Pressure Decrease Detection / DEC. 2.94 MPa

Notes

1. Please contact us for other special fluids.
2. If fluid viscosity is higher than specified, action time will be longer.
3. If using it at low temperature action time will be longer because of high viscosity of hydraulic oil.
4. Be sure to set an automatic drain air filter when air contains a large amount of moisture, or air supplying pipe is located at the end.
5. Operating pressure should be no more than working hydraulic pressure in the specification.
   If using it at higher temperature than working hydraulic pressure, it leads to damage.

External Dimensions



Note

※1. Dimension when choosing Option **H**: piping block on both side (PH port)

Cautions

Notes on Installation (Cautions for Hydraulic Series)

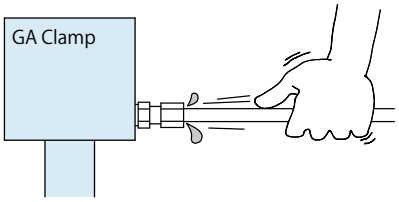
1) Check the fluid to use
- Please use the appropriate fluid by referring to the Hydraulic Fluid List.
- If hydraulic oil with viscosity grade higher than ISO-VG-32 is used, action time would be longer.
- If using it at low temperature, action time will be longer because the viscosity of hydraulic oil becomes higher.

2) Procedure before piping
- The pipeline, piping connector and fixture circuits should be cleaned by thorough flushing.
- The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
- Our products except some valves are not equipped with protective function to prevent dust and cutting chips going into the hydraulic system and pipeline.

3) Applying sealing tape
- Wrap with tape 1 to 2 times following the screwing direction.
- Pieces of the sealing tape can lead to air leaks and malfunction.
- In order to prevent a foreign substance from going into the product during piping, it should be carefully cleaned.

4) Air bleeding in the hydraulic circuit
- If the hydraulic circuit has excessive air, the action time may become very long.
  After installing the hydraulic circuit, or if the pump run out of oil, be sure to bleed air by the following step.

① Reduce hydraulic supply pressure to less than 2MPa.
② Please loosen the cap nut of pipe fitting that is closest to clamps・RA die lifters by one full turn.
③ Wiggle the pipeline to loosen the outlet of pipeline fitting. The hydraulic fluid mixed with air comes out.



④ Tighten the cap nut after bleeding.
⑤ It is more effective to bleed air at the highest point inside the circuit or at the end of the circuit.

5) Checking looseness and retightening
- At the beginning of the machine installation, the bolt/nut may be tightened lightly.
  Check torque and re-tighten as required.

Hydraulic Fluid List

ISO Viscosity Grade ISO-VG-32

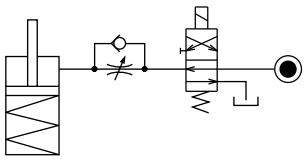
Maker	Anti-Wear Hydraulic Oil	Multi-Purpose Hydraulic Oil
Showa Shell Sekiyu	Tellus S2 M 32	Morlina S2 B 32
Idemitsu Kosan	Daphne Hydraulic Fluid 32	Daphne Super Multi Oil 32
JX Nippon Oil & Energy	Super Hyrando 32	Super Mulpus DX 32
Cosmo Oil	Cosmo Hydro AW32	Cosmo New Mighty Super 32
ExxonMobil	Mobil DTE 24	Mobil DTE 24 Light
Matsumura Oil	Hydol AW-32	
Castrol	Hyspin AWS 32	

Note As it may be difficult to purchase the products as shown in the table from overseas, please contact the respective manufacturer.

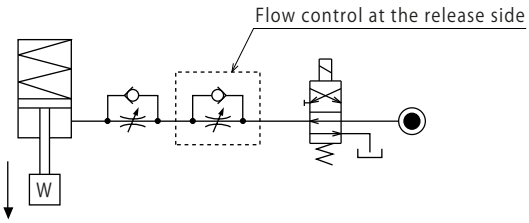
Speed Control Circuit of Hydraulic Cylinder and Notes

If the hydraulic cylinder speed is controlled, the circuit should be designed with the following points taken into consideration. Review these notes prior to installation as the wrong circuit design may lead to machine malfunction and damage.

● Flow control circuit for single acting cylinder.
For spring return type single acting cylinders, restricting flow during release can extremely slow down or prevent release action. The preferred method is to control the flow during the lock action and use a valve that has free-flow in the release direction. Also, it is preferred to provide a flow control valve at each actuator.

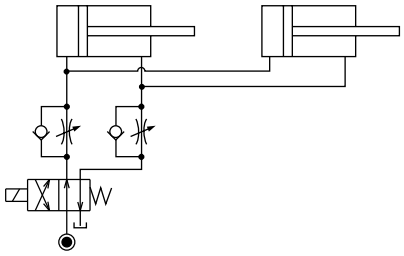


If the release action is accelerated by excessive hydraulic flow the cylinder may sustain damage. In this case add flow control to regulate flow.

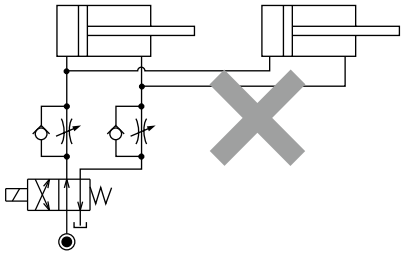


● Flow control circuit for double acting cylinder.
Flow control circuit for double acting cylinder should have meter-out circuits for both the lock and release sides. Meter-in control can have adverse effect by presence of air in the system.

【Meter-out circuit】

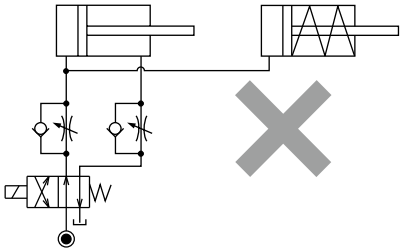


【Meter-in circuit】



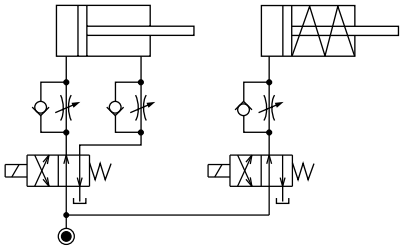
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

① Single acting components should not be used in the same flow control circuit as the double acting components. The release action of the single acting cylinders may become erratic or very slow.

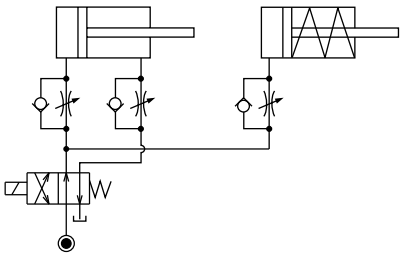


Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

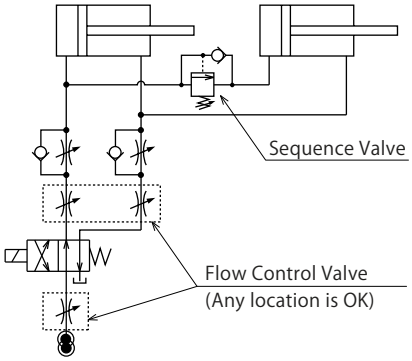
○Separate the control circuit.



○Reduce the influence of double acting cylinder control unit. However, due to the back pressure in tank line, single action cylinder is activated after double action cylinder work.



② In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve or pressure switches for clamping detection, if the back pressure is more than the set pressure then the system will not work as it is.



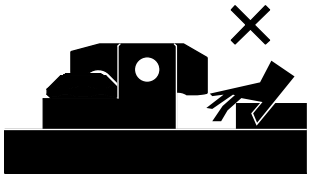
Cautions

Notes on Handling

1) It should be handled by qualified personnel.
- The hydraulic machine / air compressor should be handled and maintained by qualified personnel.

2) Do not handle or remove the machine unless the safety is ensured.
① The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.
② Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
③ After stopping the machine, do not remove until the temperature cools down.
④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.

3) Do not touch clamps (cylinders) while they are working. Otherwise, your hands may be injured.

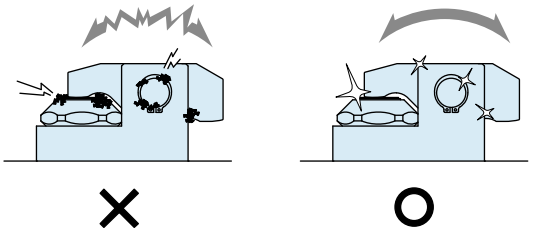


4) Do not disassemble or modify it.
- If the equipment is taken apart or modified, the warranty will be void even within the warranty period.

Maintenance・Inspection

1) Removal of the machine and shut-off of pressure source
- Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
- Make sure there is no abnormality in the bolts and respective parts before restarting.

2) Regularly clean the area around the equipment.
- If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage and air leaks.



3) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.

4) Regularly tighten bolts and pipe line, mounting bolts, nuts, circlips and cylinders to ensure proper use.

5) Make sure the hydraulic fluid has not deteriorated.

6) Make sure there is smooth action and no abnormal noise.
- Especially when it is restarted after left unused for a long period, make sure it can be operated properly.

7) The products should be stored in the cool and dark place without direct sunshine or moisture.

8) Please contact us for overhaul and repair.

Warranty

1) Warranty period

- The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

2) Warranty scope

- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
  Defects or failures caused by the following are not covered.

① If the stipulated maintenance and inspection are not carried out.
② If the product is used while it is not suitable for use based on operator judgment, resulting in defect.
③ If it is used or handled in inappropriate way by the operator.
(Including damage caused by the misconduct of a third party.)
④ If the defect is caused by reasons other than our responsibility.
⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
⑥ Defects caused by natural disasters or calamities not attributable to our company.
⑦ Parts expenses or replacement expenses due to parts consumption and deterioration.
(Such as rubber, plastic, seal material and some electric components.)

Damages from direct result of a product defect shall be excluded from the warranty.

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