KOSMEK ORIGINAL BASIC EQUIPMENT

KOBE

Air-driven pump *model* **AA/AB/AC**
Continuous Discharge Booster *model* **AU**
Non Leak Pilot Check Valve *model* **BSP**
Non Leak Valve *model* **BAS**
Non Leak Valve Unit *model* **BC/BH**
Auto Air Bleed Valve *model* **BX**
Pump Unit *model* **CB/CC/CV**
Hydraulic Unit *model* **CP/CS**
Pressure Switch *model* **JB**

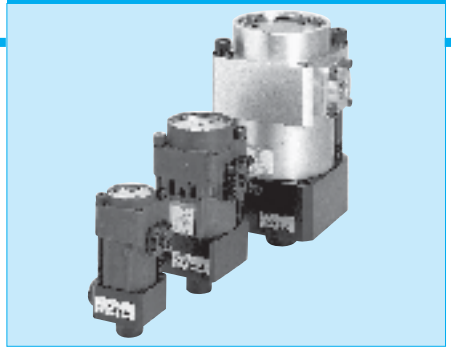
VALVE/UNIT

KOSMEK
Harmony in Innovation

AA/AB/AC

Air-driven pump

Variation of 16 sizes ranging from palm size to large flow rate. High hydrauric pressure is available using only compressed air. Applicable to explosionproof specification because no electric motor is used.



MODEL CODE

A | B | 700 | 0 | — | V | 0

① ② Design No. ③ ④

① Pump size
② Pressure coad
③ Blank:Standard
V:Valve buiit-in type

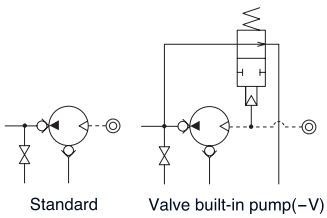
④ Fluid to be used
0 : General hydraulic oil
G: Water-glycol
S: Silicon oil

SPECIFICATIONS

	Model	Discharge pressure MPa	Air consumption Nm^3/min	Lift m	Weight kg	Suction filter	Noise dB	Fluid to be used*
AA pump	AA4001	4.0～7.2	0.15	Within 0.3	1.0	JF4010	82～85	General hydraulic oil Water-glycol Silicon oil
	AA5001	6.1～11.0						
	AA6001	10.0～17.7						
AB pump	AB3000	2.4～4.5	0.4	Within 0.6	2.4	JF1030	82～85	General hydraulic oil Water-glycol Silicon oil
	AB4000	4.0～7.0						
	AB5000	6.0～11.0						
	AB6000	10.0～17.5						
	AB7000	15.5～27.0						
	AB8000	25.0～43.5						
AC pump	AC3000	2.3～4.2	1.0	Within 1.0	8.8	JF1040	82～85	General hydraulic oil Water-glycol Silicon oil
	AC4000	3.6～6.6						
	AC5000	5.8～9.6						
	AC6000	8.9～16.3				JF1030		
	AC7000	14.4～26.4						
	AC8000	22.6～43.2						
	AC9000	35.3～64.7						

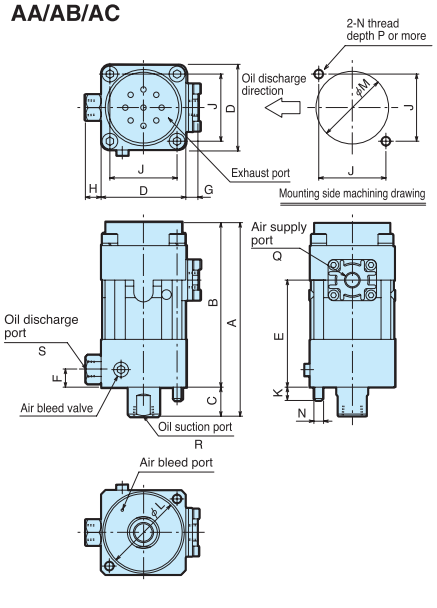
*Contact us for fluid not listed in the table.

CIRCUIT SYMBOLS

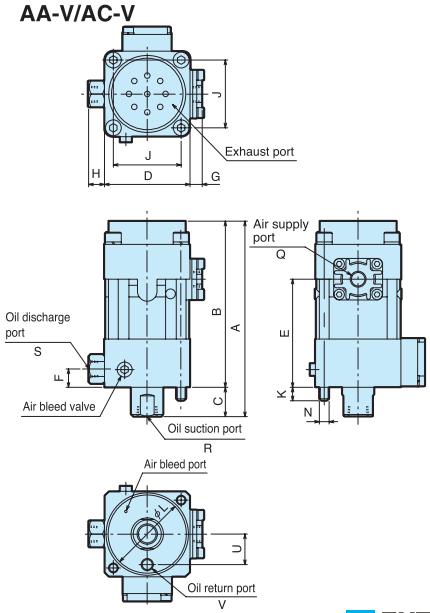


OUTLINE DIMENSIONS

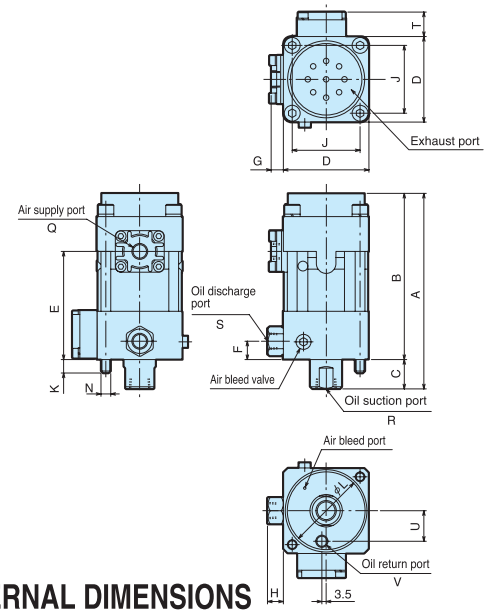
AA/AB/AC



AA-V/AC-V

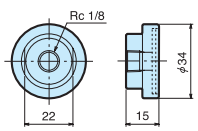


AB-V

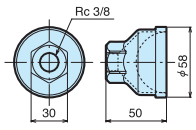


SUCTION FILTER

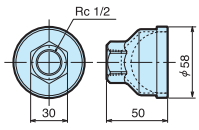
JF4010



JF1030



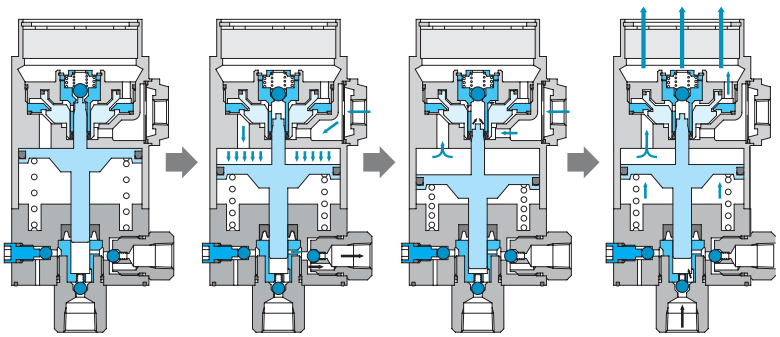
JF1040



PUMP ACTION DESCRIPTION

Actions ❶ through ❹ are repeated to discharge oil.
When "Air pressure x Piston area" balances with "Hydraulic pressure x Plunger area," the piston stops automatically.

❶ Initial condition ❷ Discharge process ❸ Air supply switching ❹ Suction process (Air exhaust)



EXTERNAL DIMENSIONS

Model		AA4001～6001	AB3000～8000	AC3000/4000	AC5000～9000
	A	126	160	232	225
	B	109	136	200	
	C	17	24	32	25
	D	50	70	110	
	E	72.5	88.5	140	
	F	13	15	22	
AA	G	8	10	13	
	H	12	13	17	
AB	J	37.8	55.5	87	
	K	8	11	15	
AC	L	38	64	99.5	
	M	36	60	95	
	N	M6	M8	M12	
	P	11	13	18	
	Q	Rc1/4	Rc1/4	Rc1/2	
	R	Rc1/8	Rc3/8	Rc1/2	Rc3/8
	S	Rc1/8	Rc1/4	Rc3/8	Rc1/4
	T	18	20	30	
−V	U	16	25	40	
	V	φ2.6	Rc1/8	Rc1/4	

Notes for use

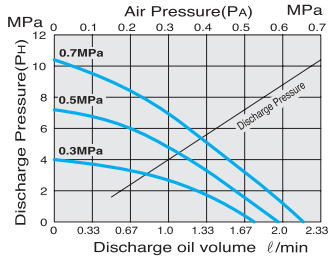
① Always install a set of air filter and regulator in the pneumatic circuit of the pump primary side.
Otherwise malfunction may be caused due to contaminants in the air supply.
② Always use a suction filter at the pump suction side. The filter of 100-mesh or more manufactured by us or another company is recommended.
③ Use a pipe having no rust or scale internally as a suction pipe. Remove burrs from thread part sufficiently. When installing apply a seal material such as seal tape to prevent air from entering.
④ The pump is not suitable for continuous operation (circulation or open circuit). Always use in a closed circuit. Continuous operation results in packing wear, adversely affecting the pump life.
⑤ When installing a purchased hydraulic valve in the hydraulic circuit, the pump may not balance to stop due to internal leakage of the valve. Continuous operation reduces the pump life. Use a non-leak valve manufactured by our company as a control valve.
⑥ The pump discharges oil in pulses. An accumulator can be installed to reduce pulsations.

KOSMEK

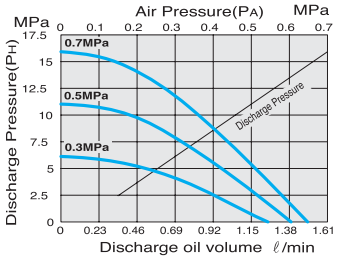
PERFORMANCE CURVE

AA

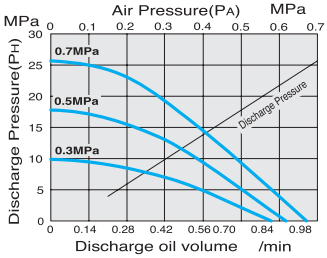
AA4001 PH=16(PA-0.05)



AA5001 PH=24.5(PA-0.05)

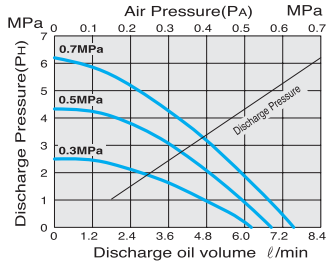


AA6001 PH=39.5(PA-0.05)

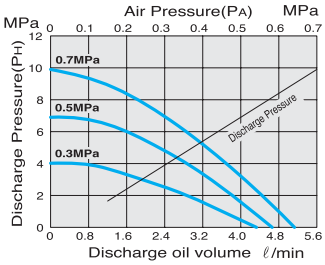


AB

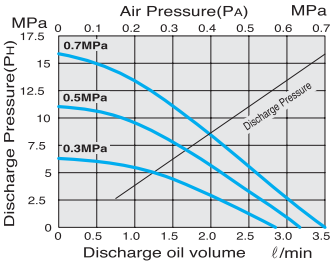
AB3000 PH=9.4(PA-0.04)



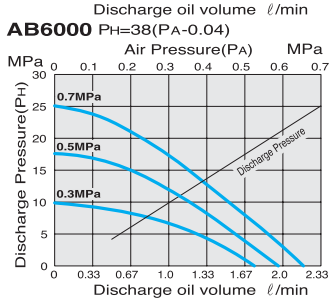
AB4000 PH=15(PA-0.04)



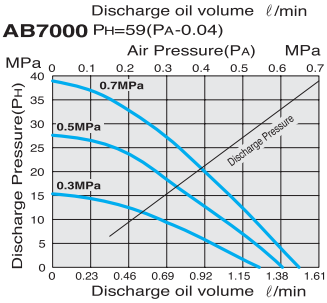
AB5000 PH=24(PA-0.04)



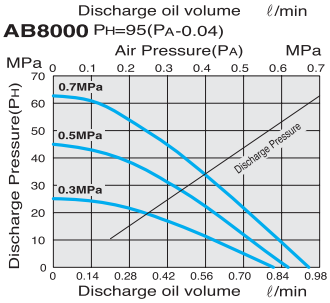
AB6000 PH=38(PA-0.04)



AB7000 PH=59(PA-0.04)

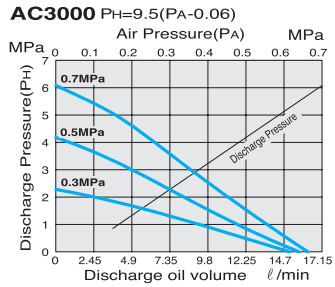


AB8000 PH=95(PA-0.04)

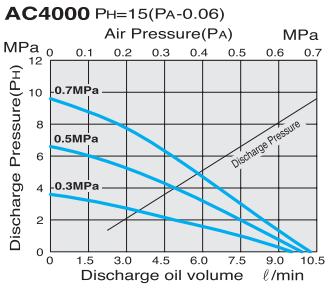


AC

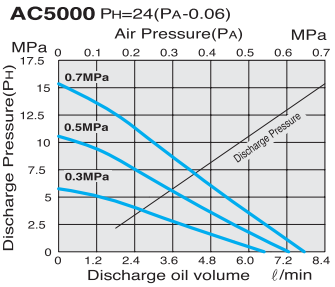
AC3000 PH=9.5(PA-0.06)



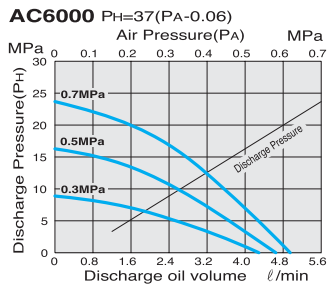
AC4000 PH=15(PA-0.06)



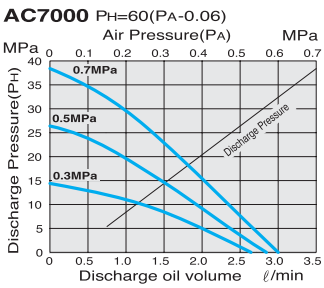
AC5000 PH=24(PA-0.06)



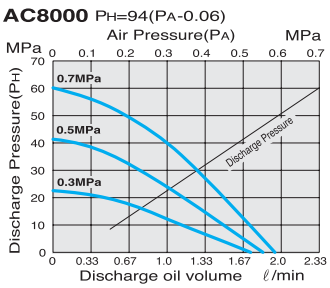
AC6000 PH=37(PA-0.06)



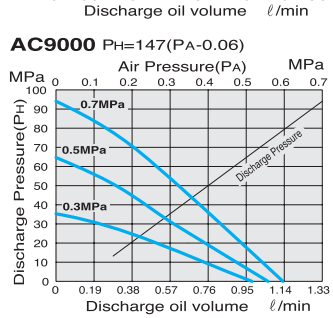
AC7000 PH=60(PA-0.06)



AC8000 PH=94(PA-0.06)



AC9000 PH=147(PA-0.06)



How to use pump performance curve

This performance curve provides necessary air supply pressure based on the discharge pressure and also provides the discharge pressure and approximate oil discharge rate based on the air supply pressure.

▶ Air pressure (MPa) necessary for the set discharge pressure (MPa)

- Read discharge pressure A on the left vertical axis of the chart, and extend a horizontal line rightward.
- Extend a vertical line upward starting from the intersecting point of the above extended line and the discharge pressure curve B (rising rightward).
- Read the scale of the intersecting point of the vertical line and the air pressure axis C to obtain the necessary air pressure.
- On the other hand, the air pressure can be obtained using the calculation formula D shown at the top left.

Example: Air pressure necessary for oil discharge pressure of 7 MPa in AB 4000 is obtained as 0.5 MPa on the chart and 0.51 MPa by calculation.

▶ Oil discharge pressure at the set air pressure

- To be obtained in the procedures reverse to the above.

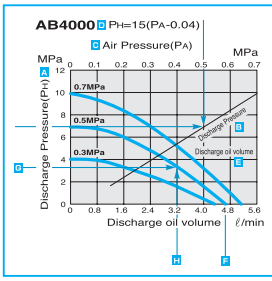
▶ Oil discharge rate

- Assuming the pressure to be 0 MPa in no load run (no load applies during actuator stroke and circuit pressure is nearly zero), read the point F at which the oil discharge rate curve E reaches the horizontal line for the pressure of 0 MPa to obtain the oil discharge rate.

Example: When using AB 4000 at a discharge pressure of 7 MPa, necessary air pressure is 0.5 MPa. The oil discharge rate is found to be approximately 4.6 ℓ/min by reading the point at which the oil discharge rate curve reaches the horizontal line for the discharge pressure of 0 MPa.

- In the load run (when the load acting during actuator stroke generates circuit pressure), read the discharge pressure G on the left vertical axis of the chart, and extend a horizontal line rightward.
- Extend a vertical line downward starting from the intersecting point of the above extended line and the oil discharge rate curve.
- Read the scale of the intersecting point of the vertical line and the horizontal axis H to obtain the oil discharge rate.

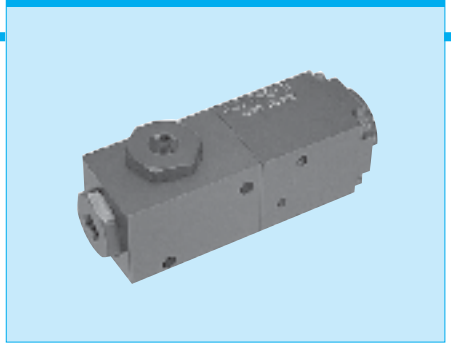
Example: When using AB 4000 at an air set pressure of 0.5 MPa in load run at a discharge pressure of 3.3 MPa, read 3.3 MPa on the vertical axis and extend a line downward starting from the interesting point of the horizontal line through 3.3 MPa and the oil discharge rate curve to obtain the oil discharge rate of approximately 3.2 ℓ/min.



AU

AU Continuous Discharge Booster

Supply pressure of the primary side is boosted by reciprocating movement of a piston using a bypass to discharge to the secondary side. Capacity of the secondary side has no limitation because of the continuous discharge.



MODEL CODE

A U 2 [5] [2] 0 — 0

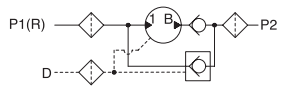
① ②

PAT. PEND

① Secondary side discharge perssure coad
5 : 6.0 ~ 25.0MPa
8 : 10.0 ~ 35.0MPa

② Boosting ratio
2 : Two times
3 : Three times
5 : Five times

CIRCUIT SYMBOL



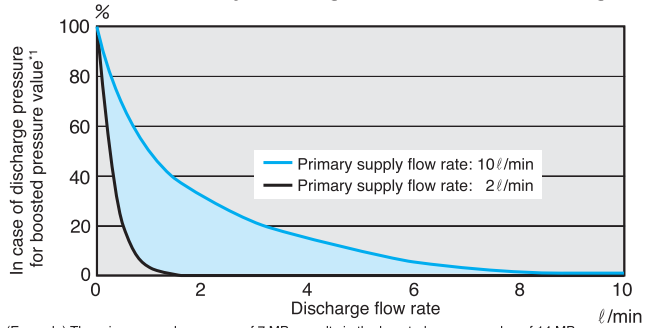
B:Boosting ratio

SPECIFICATIONS

Model	AU2520-0	AU2530-0	AU2850-0
Boosting ratio	Two times	Three times	Five times
Primary side supply pressure MPa	3.0 ~ 12.5	2.0 ~ 8.4	2.0 ~ 7.0
Secondary side discharge pressure MPa	6.0 ~ 25.0		10.0 ~ 35.0
Minimum passage area mm²	9.1		
Primary side supply rate ℓ/min.	2 ~ 10		
Pilot valve opening pressure	Approx. 1/10 or better of the secondary pressure		
Operating temperature	0 ~ 70℃		
Fluid to be used	General hydraulic oil equivalent to ISO-VG-32		

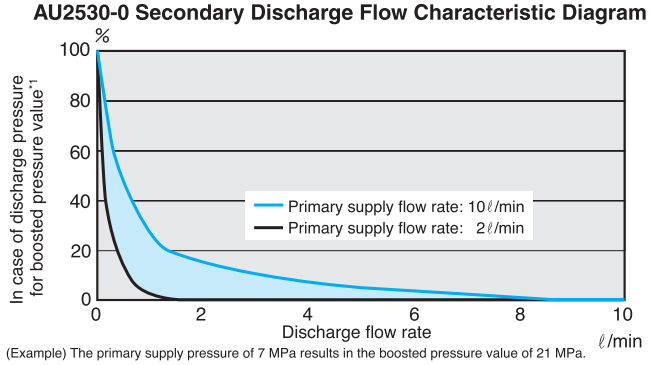
AU CONTINUOUS DISCHARGE BOOSTER FLOW CHARACTERISTIC DIAGRAM

AU2520-0 Secondary Discharge Flow Characteristic Diagram



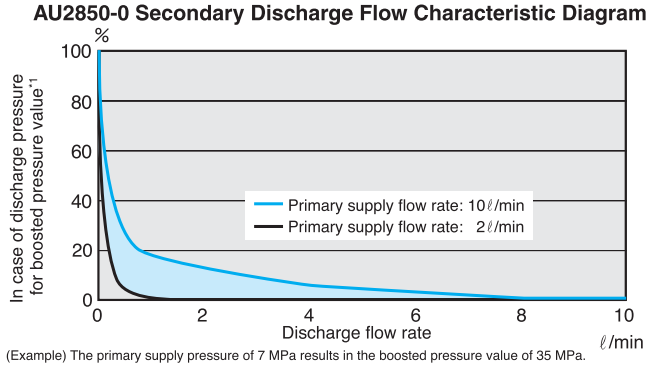
*1 (Example) The primary supply pressure of 7 MPa results in the boosted pressure value of 14 MPa.

AU2530-0 Secondary Discharge Flow Characteristic Diagram



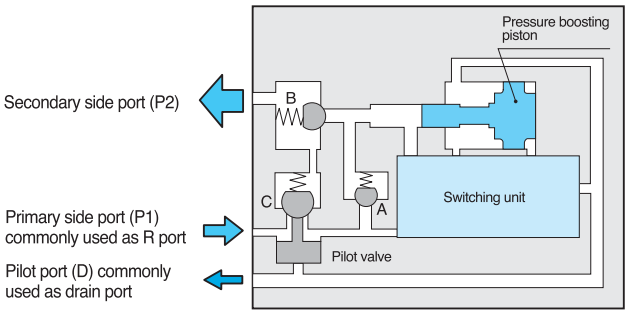
*1 (Example) The primary supply pressure of 7 MPa results in the boosted pressure value of 21 MPa.

AU2850-0 Secondary Discharge Flow Characteristic Diagram



*1 (Example) The primary supply pressure of 7 MPa results in the boosted pressure value of 35 MPa.

PERFORMANCE DESCRIPTION



Construction diagram

Pressure boosting (Discharge)

1. Having hydraulic pressure supplied from the primary side port oil passes through the built-in check valve C (A and B) to flow to the secondary side port.
2. As the secondary pressure comes close to the primary pressure, the check valve C (A and B) is shut to operate the built-in switching unit, and the boosting piston boosts the primary pressure remaining between the check valves A and B.
3. The boosted pressure forces the check valve B to open so that oil having the boosted pressure flows to the secondary side.
4. When the boosting piston reaches the stroke end, the check valve B is shut to operate the switching unit so that oil having the primary pressure flows through the check valve A to push the pressure boosting piston backward.
5. When the pressure boosting piston reaches the backward end, the check valve A is shut to operate the switching unit again to return to the step 2. These steps are repeated to allow the AU to discharge continuously.

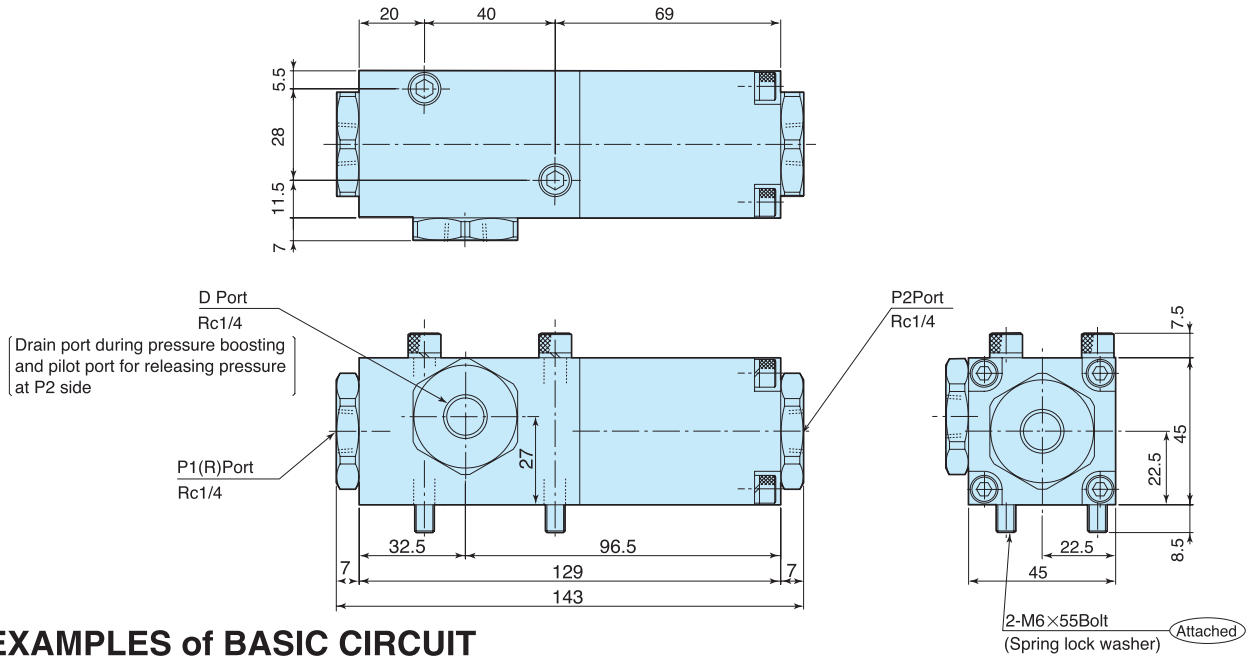
Pressure reduction (Release)

1. The primary pressure is supplied through the pilot port.
2. The pilot valve opens the check valve C to release the secondary pressure.
   *The pilot valve is actuated at approx. 1/10 (10%) of the secondary pressure.

Precautions for operation

1. The increase of the secondary load (pressure rising) results in the decrease of the discharge rate (see left diagram).
2. Due to the mechanical structure, internal leakage normally occurs between the primary port (P1) and the pilot port (D).
   Note the following:
   ① When a balance-stop type pump (AA, AB or AC pump manufactured by KOSMEK) is used for hydraulic power supply, the pump may be subjected to continuous operation, leading to reduction of pump life, because the internal leakage in AU does not allow the pump to balance-stop.
   ② When supply pressure lowers or stops temporarily, pressure in the circuit downstream of P2 port of AU is held by non-leakage function. However, pressure in the circuit upstream of P1 port is not held due to internal leakage between P1 port and D port.
3. When installing a device having leakage in the secondary circuit, normal pressure vising is impossible. (Do not connect a general modular type solenoid valve to the P2 port because it has internal leakage.)
4. Due to the condition of primary supply flow volume,circuit volume in secondary side and the other control terms, surging will occur at primaryside and it makes secondary pressure increase more than boosting ratio. In case of it, please prevent surging from installing accumulator, or reducing primary supply etc.

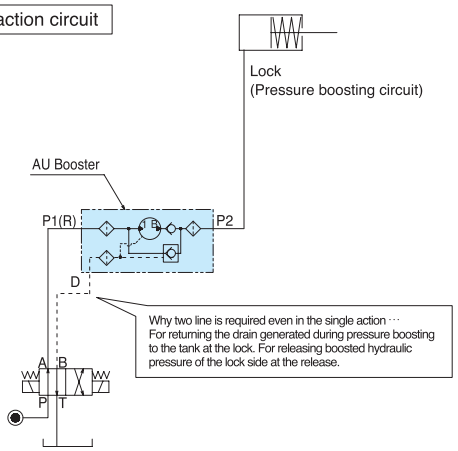
OUTLINE DIMENSIONS



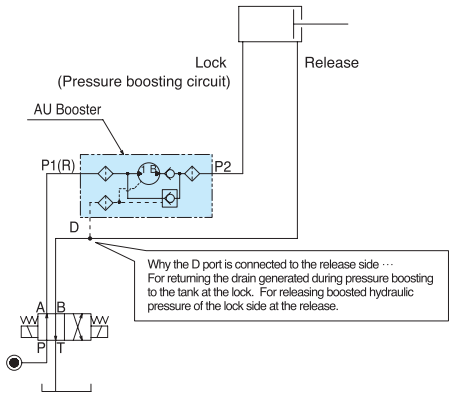
EXAMPLES of BASIC CIRCUIT

Normally connected circuit

Single action circuit



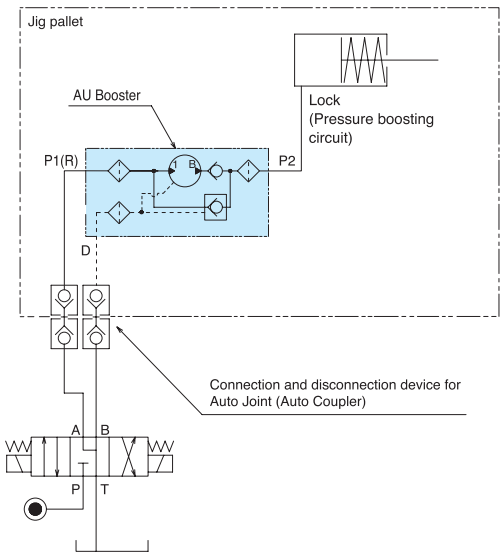
Double action circuit



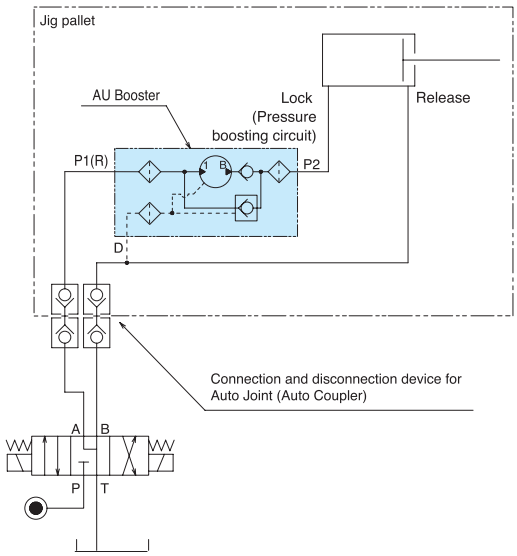
Pressure source disconnecting circuit

*Prior to connection or disconnection, always stop hydraulic pressure supply to allow the circuit to be in an atmospheric condition.

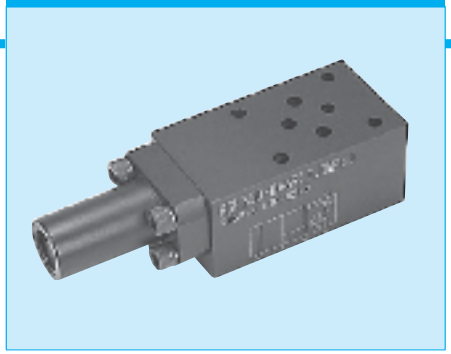
Single action circuit



Double action circuit



BSP



Modular Type Non-leak Pilot Check Valve

Pressure is held even if pressure supply from the hydraulic source is stopped.
Capable of holding the hydraulic cylinder action.
Mounting surface conforming to ISO 4401-03

PAT. PEND

MODEL CODE

B S P 3 [5] [0] – 0 [W] [6 R] ([8MPa])
① ② ③ ④
Design No.

① Pressure code

② Circuit symbol
A : A Port check
W: AB Port check

③ Blank: Without pressure compensating valve
With pressure compensating valve (Relief pressure setting code)
4R: 3.5～ 8 $^{+1.5}_{0}$ MPa
6R: 8.5～17 $^{+2}_{0}$ MPa
7R:17.5～27 $^{+2.5}_{0}$ MPa

④ Operating pressure (only with pressure compensating valve)
(Specify the supply pressure to the P port and a unit of pressure.)

SPECIFICATIONS

Without pressure compensating valve

Model	BSP320-0A	BSP350-0A	BSP320-0W	BSP350-0W
Operating pressure range MPa	2.5～7.0	7.0～25.0	2.5～7.0	7.0～25.0
Cracking pressure MPa	0.05			
Pilot pressure MPa	One third of A2 port holding pressure or more		One third of A2 (B2) port holding pressure or more	
Minimum passage area mm^2	24			
Operating temperature	0～70℃			
Fluid to be used	General hydraulic fluid ISO-VG-32			

With pressure compensating valve

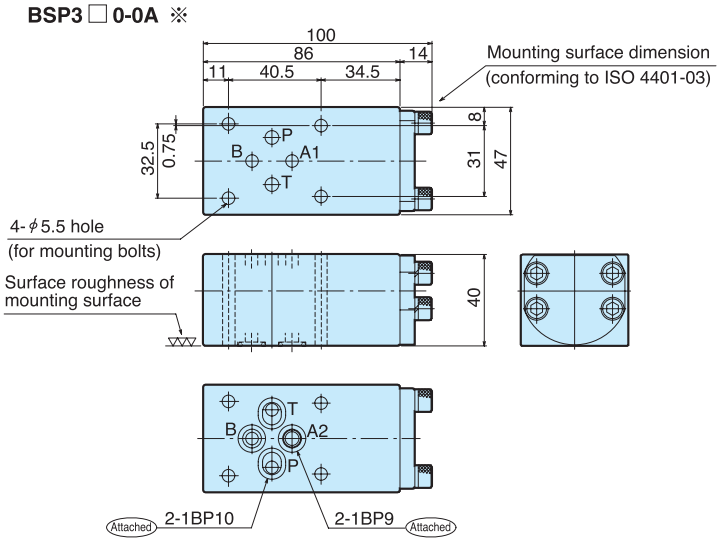
Model	BSP320-0A4R	BSP350-0A6R	BSP350-0A7R	BSP320-0W4R	BSP350-0W6R	BSP350-0W7R
Operating pressure range MPa	2.5～7.0	7.0～15.5	15.5～25.0	2.5～7.0	7.0～15.5	15.5～25.0
Relief pressure setting range MPa	3.5～8 $^{+1.5}_{0}$	8.5～17 $^{+2}_{0}$	17.5～27 $^{+2.5}_{0}$	3.5～8 $^{+1.5}_{0}$	8.5～17 $^{+2}_{0}$	17.5～27 $^{+2.5}_{0}$
Relief pressure setting value MPa	㊟ +1 $^{+1.5}_{0}$	㊟ +1.5 $^{+2}_{0}$	㊟ +2 $^{+2.5}_{0}$	㊟ +1 $^{+1.5}_{0}$	㊟ +1.5 $^{+2}_{0}$	㊟ +2 $^{+2.5}_{0}$
Cracking pressure MPa	0.05					
Pilot pressure MPa	One third of A2 port holding pressure or more			One third of A2 (B2) port holding pressure or more		
Minimum passage area mm^2	24					
Operating temperature	0～70℃					
Fluid to be used	General hydraulic fluid ISO-VG-32					

Note: The relief pressure setting value is the operating pressure ㊟ plus with the value shown in the table.

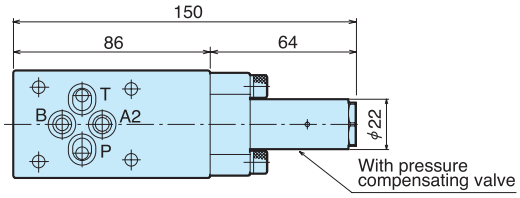
Note:
1. When stopping hydraulic pressure supply to the A1 (B1) port to hold pressure at the A2 (B2) side, take the pressure loss due to an oil temperature drop into consideration
2. This pressure compensating valve is used for relieving pressure resulting from the oil volume increase due to an oil temperature rise. It cannot be used for reducing the supply pressure higher than the relief setting pressure.
3. In case of BSP with pressure compensating valve, generation of back pressure at the T port may result in failure of normal relief action. Contact us for this problem with pressure compensating valve.

OUTLINE DIMENSIONS

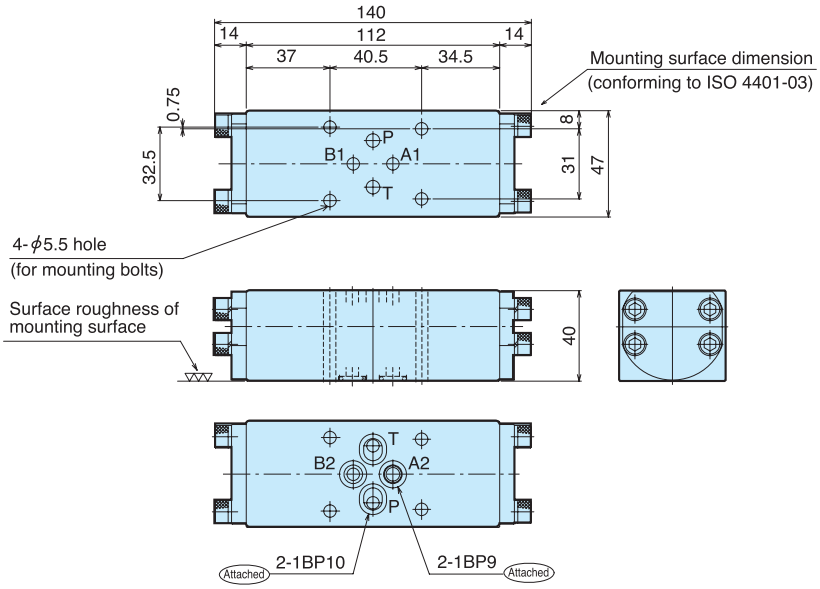
BSP3 □ 0-0A ※



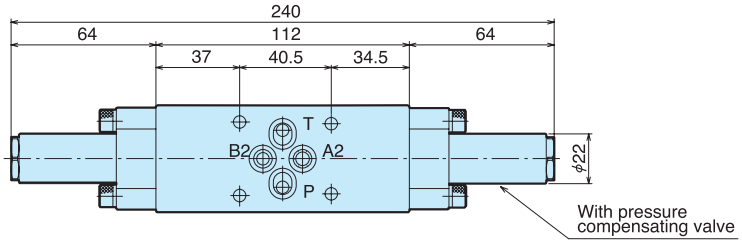
BSP3 □ 0-0A □R ※



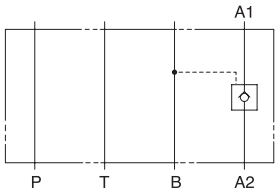
BSP3 □ 0-0W ※

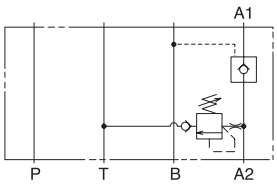


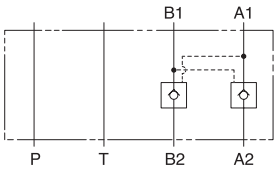
BSP3□0-0W□R ※

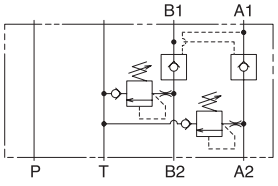


CIRCUIT SYMBOLS





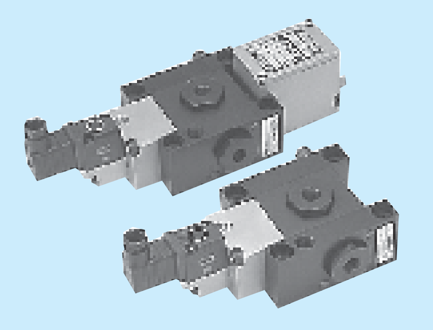




BAS

Non-leak 3-port valve

Pressure is held even if pressure supply from the hydraulic source is stopped.
Capable of holding the hydraulic cylinder action.
Capable of checking pressure if a valve equipped with a pressure switch is used.



MODEL CODE

B A S 0 7 1 A 1 0 (20MPa)

① Design No. ② ③ ④

① Pressure code

② Circuit symbol
- A: Normal open (without pressure switch)
- B: Normal close (without pressure switch)
- C: Normal open (with pressure switch)
- Z: Normal close (with pressure switch)

(You can select the A or B circuit by turning over the gasket plate shown below.)
(You can select thee C or Z circuit by turning over the gasket plate shown below.)

③ Control voltage
- 1:AC100V
- 2:AC200V
- 3:AC110V
- 4:AC220V
- 5:DC24V

④ Operating pressure (only with pressure switch)
Specify the supply pressure to the PH port and a unit of pressure.)

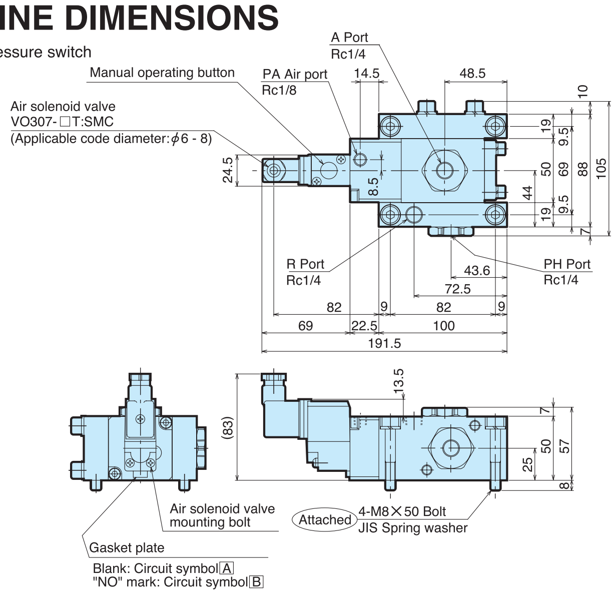
SPECIFICATIONS

Model	BAS031	BAS041	BAS041 (Without pressure switch)	BAS051	BAS061	BAS071	BAS071 (Without pressure switch)
Operating pressure MPa	2.5～4.5	4.0～7.0	2.5～7.0	6.0～11.0	10.0～17.5	15.5～30.0	6.0～30.0
Design pressure MPa	10.5			37.5			
Supply air pressure MPa	min 0.3			min 0.4			
Minimum passage area mm²	P→A : 8 A→R : 44						
Operating temperature	0～70℃						
Fluid to be used	General hydraulic fluid ISO-VG-32						
JB pressure switch model code	JB0400-M0	JB1000-M0	—	JB1000-M0	JB2800-M0		—

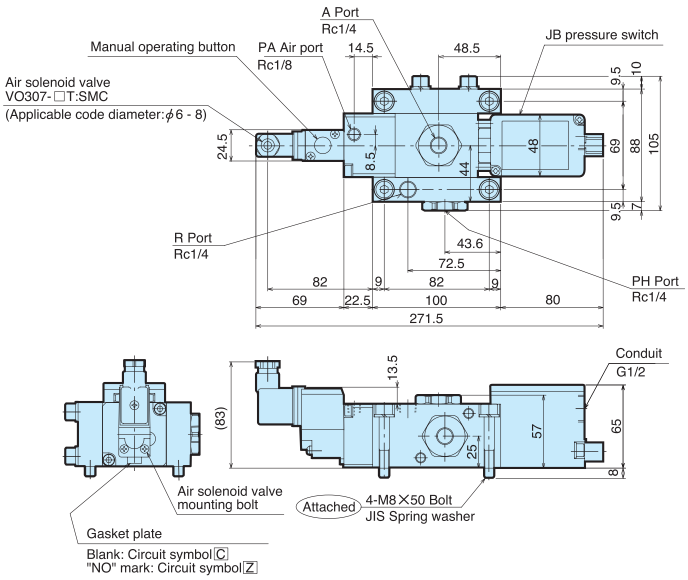
Note: The JB pressure switch is set at 70% of the operating pressure by the method of pressure increase detection. Specify pressure setting values other than this.

OUTLINE DIMENSIONS

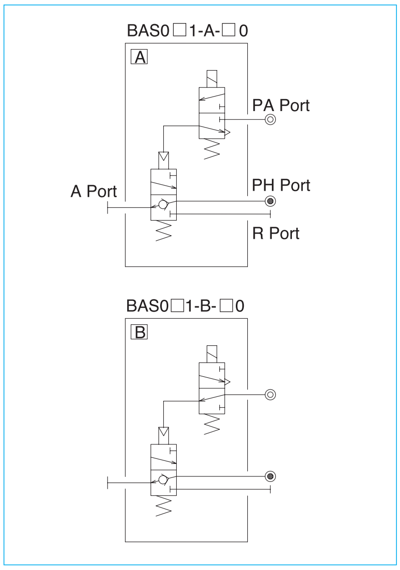
●Without pressure switch

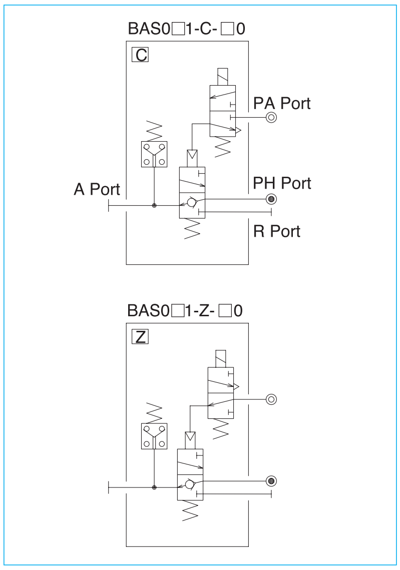


●With pressure switch



CIRCUIT SYMBOLS



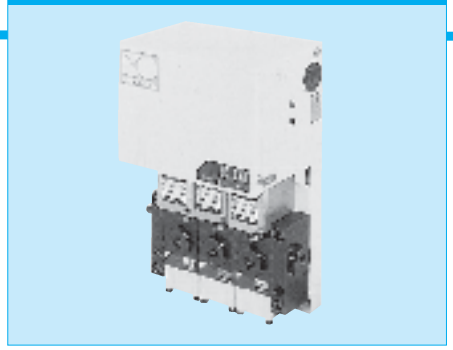


KOSMEK

BC

Non Leak Valve Unit

Non leak valve unit with pressure switch remotely operated by electrical control.



MODEL CODE

B C 0 0 [7] [1] – [C C] – [1 0] – [G R P] [(20MPa)]

① Design No. ② ③④ ⑤⑥ ⑦

① Pressure code
3: 2.5～ 4.5 MPa
4: 4.0～ 7.0 MPa
5: 6.0～11.0 MPa
6:10.0～17.5 MPa
7:15.5～30.0 MPa

② Circuit type (See circuit symbol)

③ Control voltage
1: AC100V
2: AC200V
3: AC110V
4: AC220V
5: DC 24V

④ Fluid to be used
0 : General hydraulic oil
(See the separate Hydraulic Oil List.)
S : Silicon oil
G : Water−glyco

⑤ Option
Blank :None
GR :With pressure gauge for hydraulic source on right side
GL :With pressure gauge for hydraulic source on left side
H :With piping seat (PH port) on left side

⑥ Unit for pressure gauge
Blank:Standard MPa
P :PSI only USA / Rc thread fitting

⑦ Normal pressure
Note:Write the normal pressure accurately including unit.
(20MPa) (2850PSI) (200kgf/cm²)

NOTE The type surrounded by is to be manufactured after an order placed. And, some products may be manufactured after an order placed depending on code ②"Circuit type." Please ask delivery date before placing an order.

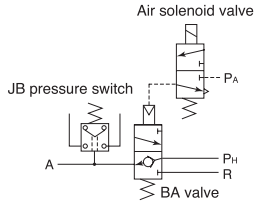
SPECIFICATIONS

Model	BC0031	BC0041	BC0051	BC0061	BC0071
Operating pressure MPa	2.5～4.5	4.0～7.0	6.0～11.0	10.0～17.5	15.5～30.0
*1Design pressure MPa	10.5		37.5		
BA valve model	BA2011-0		BA5011-0		
JB pressure switch model	JB0400-M0	JB1000-M0		JB2800-M0	
Operating temperature	0～70℃				
Fluid to be used	General hydraulic oil equivalent to ISO-VG-32 (According to fluid code)				

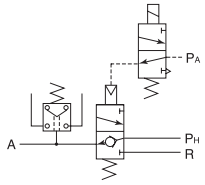
*1. Design pressure is for the unit without a pressure gauge.
Remarks: 1. INC. setting (pressure rise detection) of the JB pressure switch is performed at 70% of operating pressure.
In case of the other pressure setting, contact us.
2. In case of the unit with a pressure gauge (for pressure source), piping ports are provided on both sides.

CIRCUIT SYMBOLS

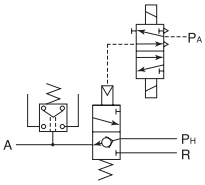
C Normal open



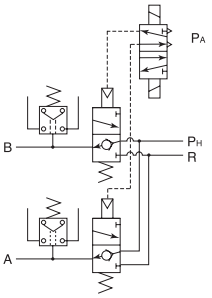
Z Normal close



U Double solenoid valve

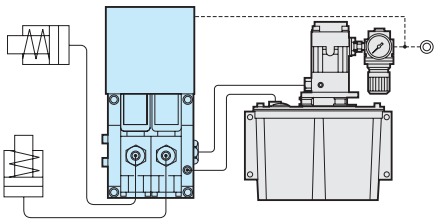


YY Exclusively used for double action circuit



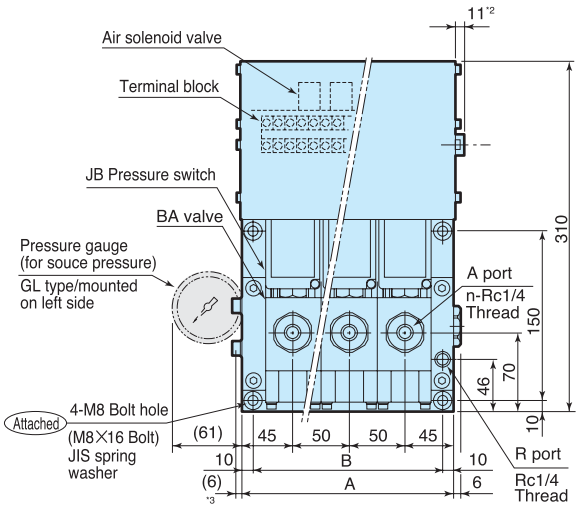
* A filter is built in each port other than PA and R ports.

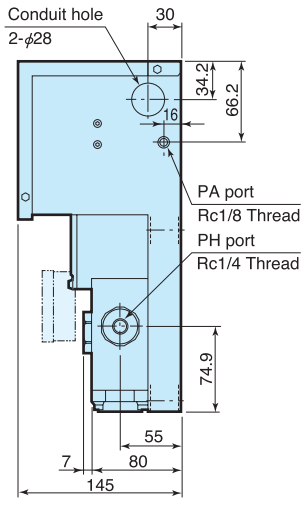
APPLICATIONS



Lock and release of actuator controlled electrically

OUTLINE DIMENSIONS





Number of connected valves(n)	1	2	3	4
A	90	140	190	240
B	70	120	170	220

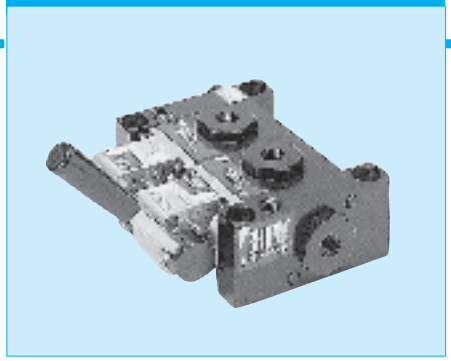
*2.For circuit symbols U and YY

*3.Dimensions of Non-leak Valve Unit with piping seat on the left are shown.

BH

Non Leak Valve Unit

Non leak valve unit for manual operation.
Normal open and normal close types available.



MODEL CODE

B H 0 0 [7|1] – [N N] – [0] – [G R P] [(20MPa)]

① Design No. ② ③ ④ ⑤ ⑥

①Pressure code*2
4:2.5～ 7.0 MPa
7:6.0～30.0 MPa

②Circuit type(See circuit symbol)

③Fluid to be used
0 : General hydraulic oil
(See the separate Hydraulic Oil List.)
S : Silicon oil
G : Water−glycol

④Option
Blank:None
GR :With source pressure gauge on right side
GL :With source pressure gauge on left side
H :With source piping seat(P_H port)on left side

⑤Unit for pressure gauge
Blank:Standard MPa
P :PSI only for USA / Rc thread fitting

⑥Normal pressure
Note:Write the normal pressure accurately including unit.
(20MPa) (2850PSI) (200kgf/cm²)

NOTE The type surrounded by is to be manufactured after an order placed.
And, some products may be manufactured after an order placed depending on code "②Circuit type." Please ask delivery date before placing an order.

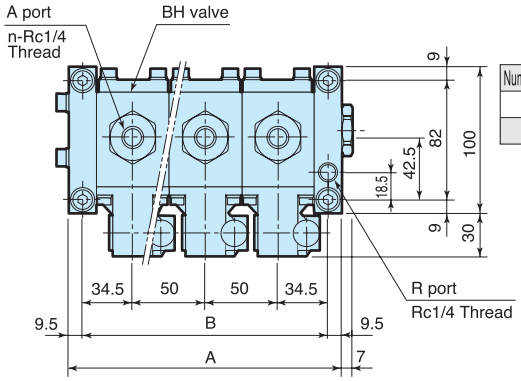
*2. When a pressure switch or a hydraulic pressure gauge is attached, the pressure code is common to the BH and BC units.

SPECIFICATIONS

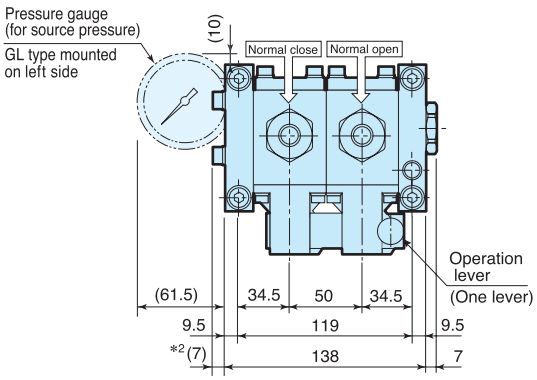
Model	BH0041	BH0071
Operating pressure MPa	2.5～7.0	6.0～30.0
*1Design pressure MPa	10.5	37.5
Operating temperature	0～70℃	
Fluid to be used	General hydraulic oil equivalent to ISO-VG-32	

*1. Design pressure is for the unit without a pressure gauge.
Remarks: 1. In case of the unit with a pressure gauge (for pressure source), piping ports are provided on both sides.

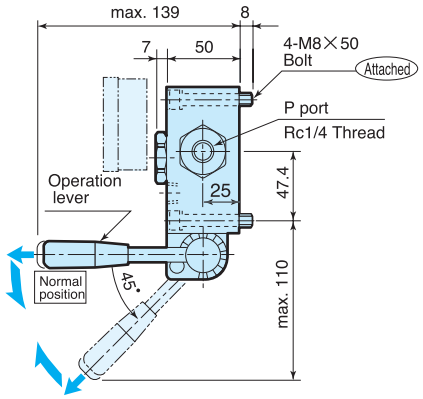
OUTLINE DIMENSIONS



Number of connected valves(n)	1	2	3	4
A	88	138	188	238
B	69	119	169	219



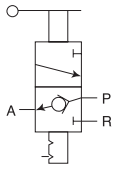
Exclusively used for NN circuit / double action circuit



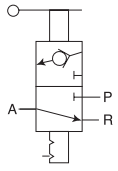
*2.Dimensions of Non-leak Valve Unit with piping seat on the left are shown.

CIRCUIT SYMBOLS

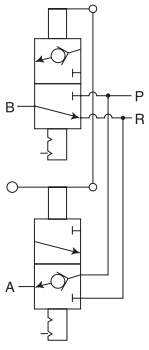
A Normal open



B Normal close

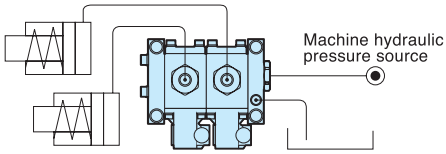


NN Exclusively used for double action circuit

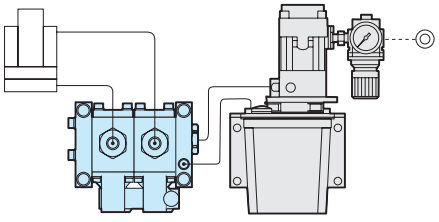


* A filter is built in each port other-than R port.

APPLICATIONS



Individual actuator (single action) manually operated by AA circuit



Actuator (double action) manually operated by NN circuit

BX

Auto Air Bleed Valve

Valve to automatically exhaust air mixed in hydraulic oil by repetitively turning ON/OFF hydraulic pressure, installed on the top of piping.

MODEL CODE

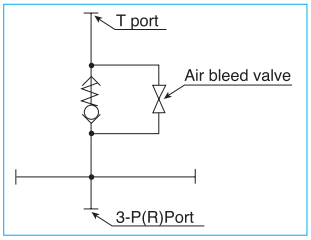
PAT. PEND

B X 0 0 1 0 – 0 2

Design No.

① Port size
2: Rc1/4 Thread
3: Rc3/8 Thread

CIRCUIT SYMBOLS



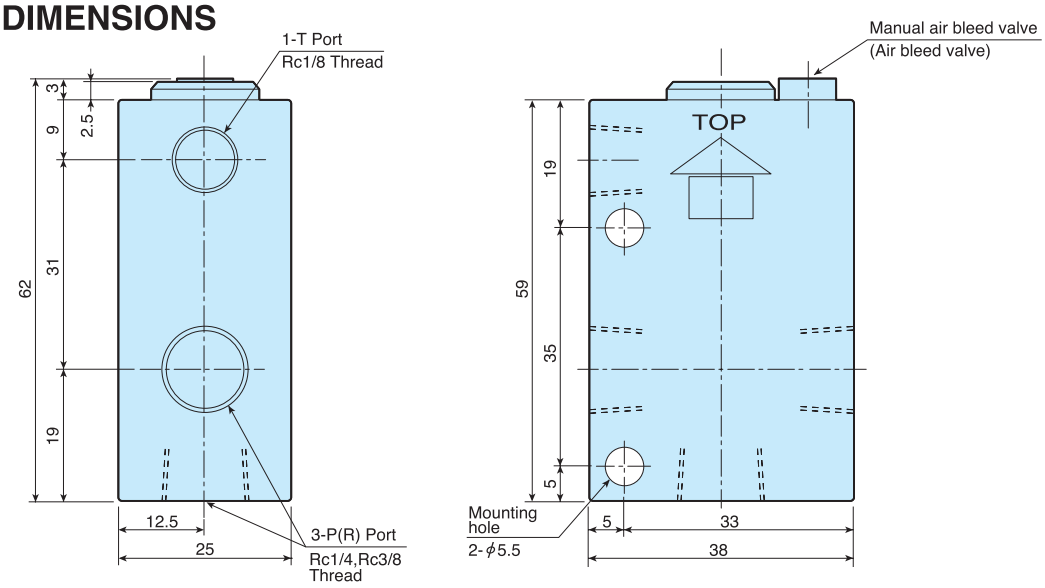
SPECIFICATIONS

Model		BX0010-02	BX0010-03
Maximum operating pressure MPa		25.0	
Cracking pressure MPa		0.04	
Design pressure MPa		37.5	
Operating temperature		0～70℃	
Fluid to be used		General hydrailic oil equivalent to ISO-VG-32	
Drain volume *1	Only air	10cm³/Action	
	Only oil	0.6cm³/Action	
Minimum operating flow rate		50cm³/min.	
Mounting posture		Vertically upward(See outline drawing)	
3-P(R) Port		Rc1/4 therad	Rc3/8 thread

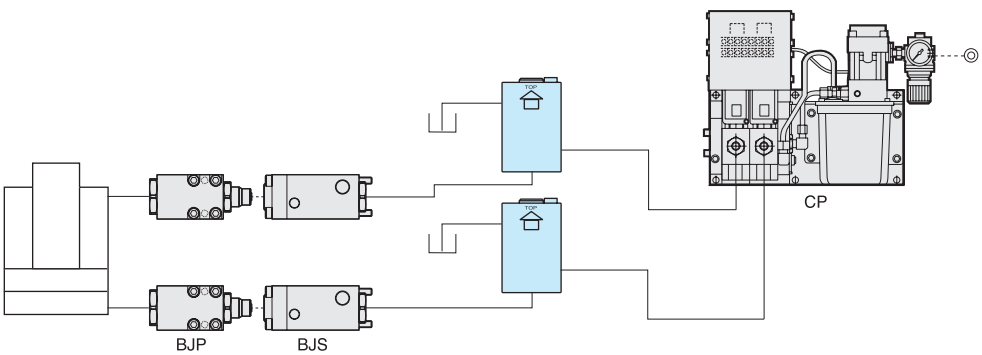
*1 Drain volume returning from the valve to the tank when the circuit pressure changes from zero condition to operating pressure.

Remarks:
1. Install on the top of hydraulic circuit where air bleeding is desirable.
2. Mixed air and hydraulic oil are exhausted from T port. Always perform drain piping to the tank.
3. Always keep mounting posture as shown in the drawing. In case of an incorrect direction, air cannot be bled.

OUTLINE DIMENSIONS



APPLICATIONS



CB

Pump Unit

Air driven pump unit to be used in combination with a three-port non leak valve unit (BC and BH).

MODEL CODE

C B 2 0 4 0 – 0 – D P

① ② Design No. ③ ④ ⑤

①Tank capacity
2:2ℓ(H.L.-L.L.=1.1ℓ)
5:5ℓ(H.L.-L.L.=3.1ℓ)

②Pump model code
3: AB3000-□
4: AB4000-□
5: AB5000-□
6: AB6000-□
7: AB7000-□
8: AB8000-□

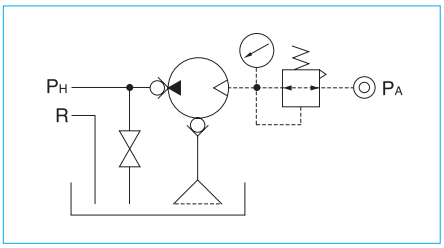
③Fluid to be used
0 : General hydraulic oil
(See the separate Hydraulic Oil List.)
S : Silicon oil
G : Water–glycol (Excllluding of AB8000)
(The tank to be made of steel)

④Option
Blank:Only with a standard air regulator
D :With a filter regulator (Automatic drain type)
Q :With a level switch

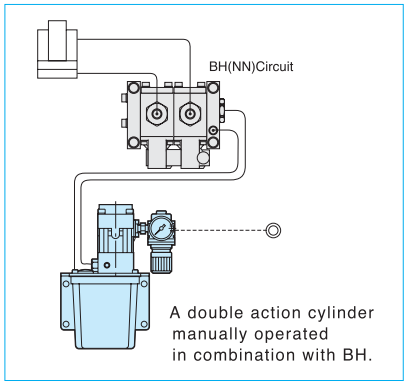
⑤Unit for pressure gauge
Blank: Standard MPa
P : PSI only USA

NOTE Types inside shall be produced after an order received. If you place an order, ask delivery time in advance.

CIRCUIT SYMBOLS



APPLICATIONS

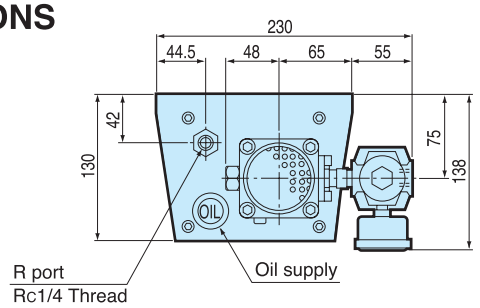


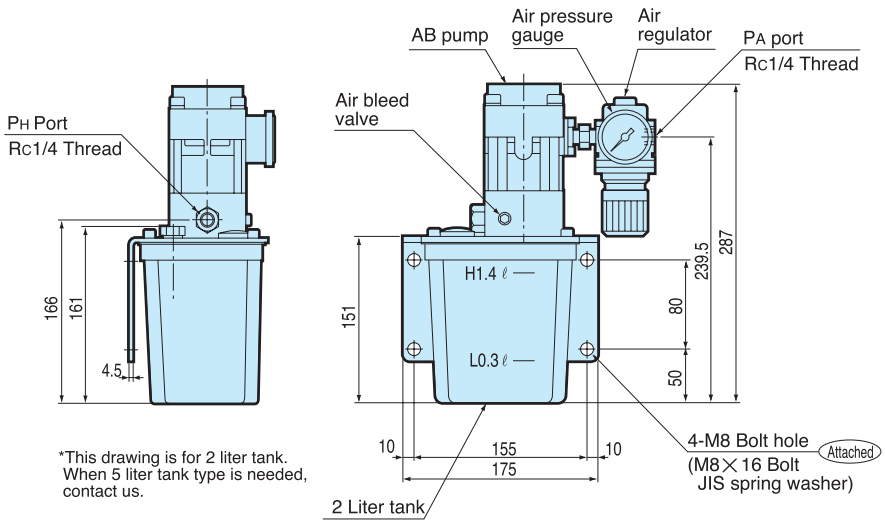
SPECIFICATIONS

Model	CB□030	CB□040	CB□050	CB□060	CB□070	CB□080
*1Discharge pressure MPa	2.4～4.5	4.0～7.0	6.0～11.0	10.0～17.5	15.5～27.0	25.0～43.5
Tank capacity ℓ	2:2ℓ(H. L.-L. L=1.1ℓ) 5:5ℓ(H.L.-L. L=3.1ℓ)					
Operating temperature	0～70℃					
Fluid to be used	General hydraulic oil equivalent ISO-VG-32 (According to fluid code)					
Operation frequency	Pump operating time: less than 500 hr/year (2 hr/day)(Actual discharge time)					

*1. Discharge pressure is for a set air pressure range between 0.3～0.5 MPa.
Remarks: 1. See the pump performance curve of the AB Pump for hydraulic discharge rate.
2. Air consumption:0.4 Nm³/min

OUTLINE DIMENSIONS





*This drawing is for 2 liter tank.
When 5 liter tank type is needed, contact us.

CC

Pump Unit

This is a high flow rate air-driven pump unit to be used in combination with a 3-port Non-leak Valve Unit (BC or BH).

MODEL CODE

NON STOCKING ITEM

C C 5 0 [3] [0] – [0] – [D] [P]

① Design No. ② ③ ④

① Pump model code
- 03: AC3000-□
- 04: AC4000-□
- 05: AC5000-□
- 06: AC6000-□
- 07: AC7000-□
- 08: AC8000-□
- 09: AC9000-□

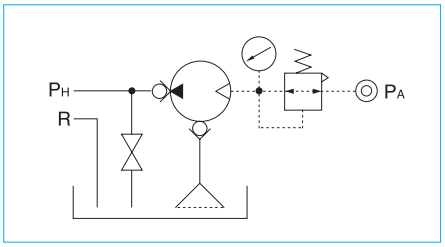
② Fluid to be used
- 0 : General hydraulic oil (See hydraulic oil list)
- S : Silicon oil
- G : Water-glycol (Excluding AC8000 and AC9000) (The tank to be made of steel)

③ Option
- Blank: Only with a standard air regulator
- D : With a filter regulator (Automatic drain type)
- Q : With a level switch

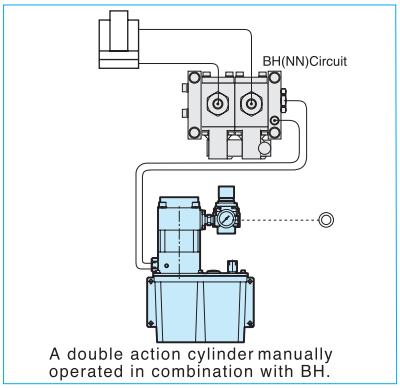
④ Unit for pressure gauge
- Blank: Standard MPa
- P : PSI only USA

NOTE All types shall be produced after an order received.If you place an order, ask delivery time in advance.

CIRCUIT SYMBOLS



APPLICATION



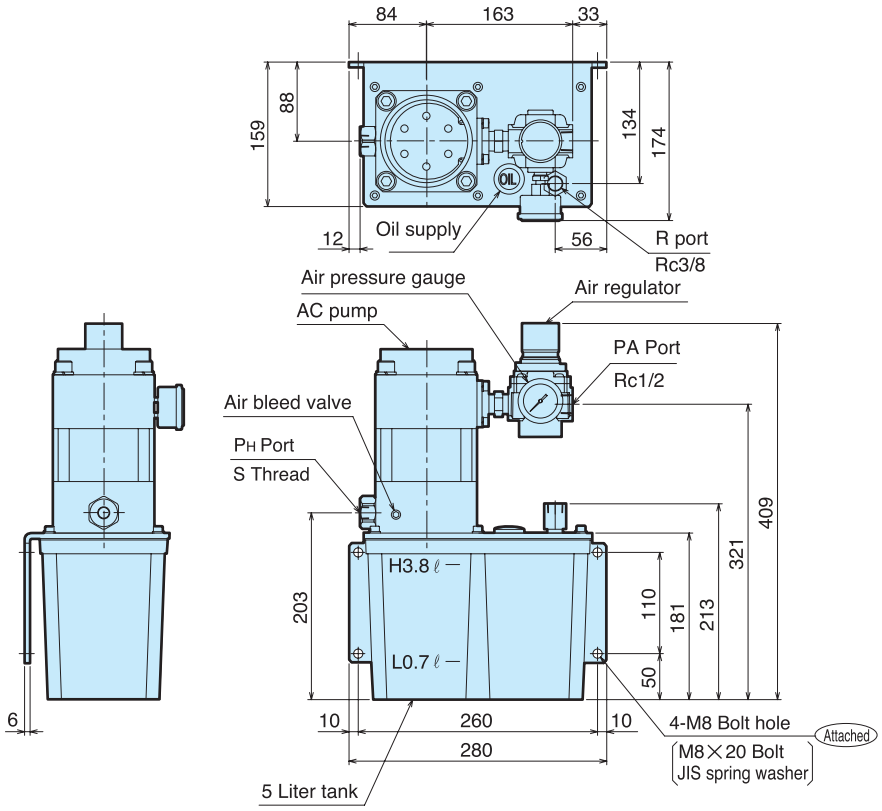
A double action cylinder manually operated in combination with BH.

SPECIFICATIONS

Model	CC5030	CC5040	CC5050	CC5060	CC5070	CC5080	CC5090
Discharge pressure MPa	2.3～4.2	3.6～7.0	5.8～9.6	8.9～16.3	14.4～26.4	22.6～43.2	35.3～64.7
Tank capacity ℓ	5:5 ℓ (H. L.-L. L. =3.1 ℓ)						
Operating temperature	0～70℃						
Fluid to be used	General hydraulic oil equivalent ISO-VG-32 (According to fluid code)						
Opetating frequency	Pump operating time: less than 500 hr/year (2 hr/day)(Actual discharge time)						

＊1. Discharge pressure is for a set air pressure range between 0.3～0.5 MPa.
Remarks: 1. See the pump performance curve of the AC Pump for hydraulic discharge rate.
2. Air consumption:1.0Nm³/min

OUTLINE DIMENSIONS



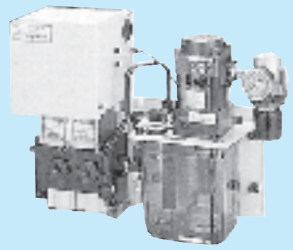
PH (R) port size

Pump code	S
AC3000/4000	Rc3/8
AC5000～9000	Rc1/4

CP

Hydraulic Unit

CP unit is a compact hydraulic unit consisting of the AB pump, valves and pressure switches.



MODEL CODE

C P 2 0 7 1 – Y Y Y Y – 5 0 – H P (21MPa)

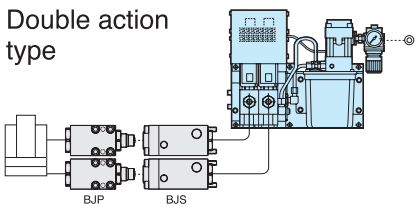
① ② Design No. ③ ④ ⑤ ⑥ ⑦ ⑧

TYPICAL CIRCUIT EXAMPLES

Circuit symbol	Circuit type	Number of circuits	Number of connecttions	Air solenoid valve	Pressure switch
A	Single action actuator circuit	1	1	Single	—
C		1	1	Single	○
CC		2	2	Single	○
U		1	1	Double	○
UU		2	2	Double	○
NN	Double action clamp circuit	1	2	Double	—
YY		1	2	Double	○

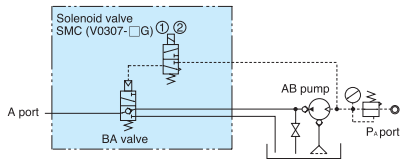
APPLICATIONS

Double action type

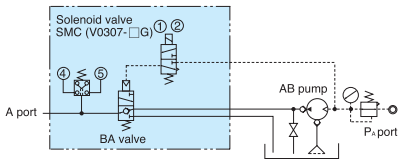


CIRCUIT SYMBOLS

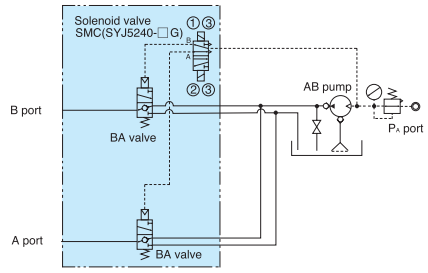
A



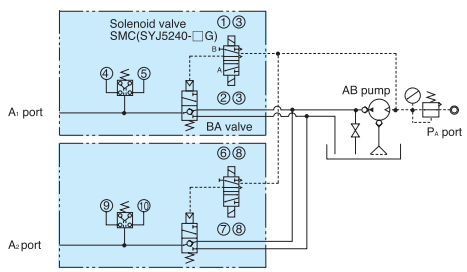
C



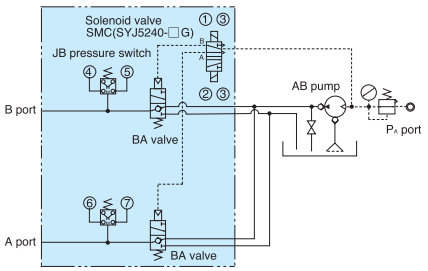
NN



UU



YY



①Tank capacity
2 : 2ℓ (H.L.-L.L.=1.1ℓ)
5 : 5ℓ (H.L.-L.L.=3.1ℓ)

②Pump model code
03 : AB3000-□
04 : AB4000-□
05 : AB5000-□
06 : AB6000-□
07 : AB7000-□
08 : AB8000-□

③Circuit type(See circuit example)

④Control voltage
1 : AC100V
2 : AC200V
3 : AC110V
4 : AC220V
5 : DC 24V

⑤Fluid to be used
0 : General hydraulic oil
(See hydraulic oil list)
S : Silicon oil
G : Water–glycol (The tank to be made of steel)

⑥Option
Blank : Standard
H : With piping seat
G : With a main pressure gauge

⑦Unit for pressure gauge
Blank: Standard MPa
P : PSI only USA

⑧Normal pressure
Note:Write the normal pressure accurately including unit.
(20MPa) (2850PSI) (200kgf/cm²)

NOTE 1)The type surrounded by is to be manufactured after an order placed. And, some products may be manufactured after an order placed depending on code ③"Circuit type." Please ask delivery date beforeplacing an order.
2)The symbol(□) at the end of pump type shown in *1 Item②"Pump model code" is identical to Item ⑤"Fluid to be used."

SPECIFICATIONS

Model			CP□□□1-□□□-□0					
			CP□031	CP□041	CP□051	CP□061	CP□071	CP□081
Discharge pressure		MPa	2.5～4.5	4.0～7.0	6.0～11.0	10.0～17.5	15.5～27.0	25.0～30.0
Nominal tank capacity			2 : 2ℓ/5 : 5ℓ					
Actual usage range : at H.L-L.L			2 : 1.1ℓ/5 : 3.1ℓ					
Control voltage			1 : AC100V/2 : AC200V/3 : AC110V/4 : AC220V/5 : DC24V					
Operating temperature			0～70℃					
Fluid to be used			General hydraulic oil equivalent to ISO-VG-32 (According to fluid code)					
Operation frequency			Pump operating time: less than 500 hr/year (2 hr/day)(Actual discharge time)					
Main components	Pump		AB3000-0	AB4000-0	AB5000-0	AB6000-0	AB7000-0	AB8000-0
	Valve		BA2011-0		BA5011-0			
	Pressure switch	Pressure rise check	JB0400-M0	JB1000-M0		JB2800-M0		
	Air solenoid valve		Single solenoid valve:VO307-□G/Double solenoid valve:SYJ5240-□G					
	Suction filter		JF1030:174 μm(100 mesh)					

*1. When using special fluid, contact us.
*2. If hydraulic oil having viscosity higher than the shown value, action time increases.
*3. In case of a low ambient temperature, action time increases because of high viscosity of hydraulic oil.
*4. When air contains a large amount of moisture, or air supply piping is located at the end of entire piping, always equip with an automatic drain type air filter.
*5. When the hydraulic circuit is equipped with a pressure gauge, install a damper or use an oil filled (glycerin) type pressure gauge to prevent pressure gauge damage due to pressure surging.
*6. Provide space having the same height as the tank at the bottom of the unit considering hydraulic oil change (Tank cleaning and suction strainer tightening become easier).
*7. Standard setting value of pressure switch shall be 70% of the normal pressure.
*8. Air consumption:0.4 Nm³/min

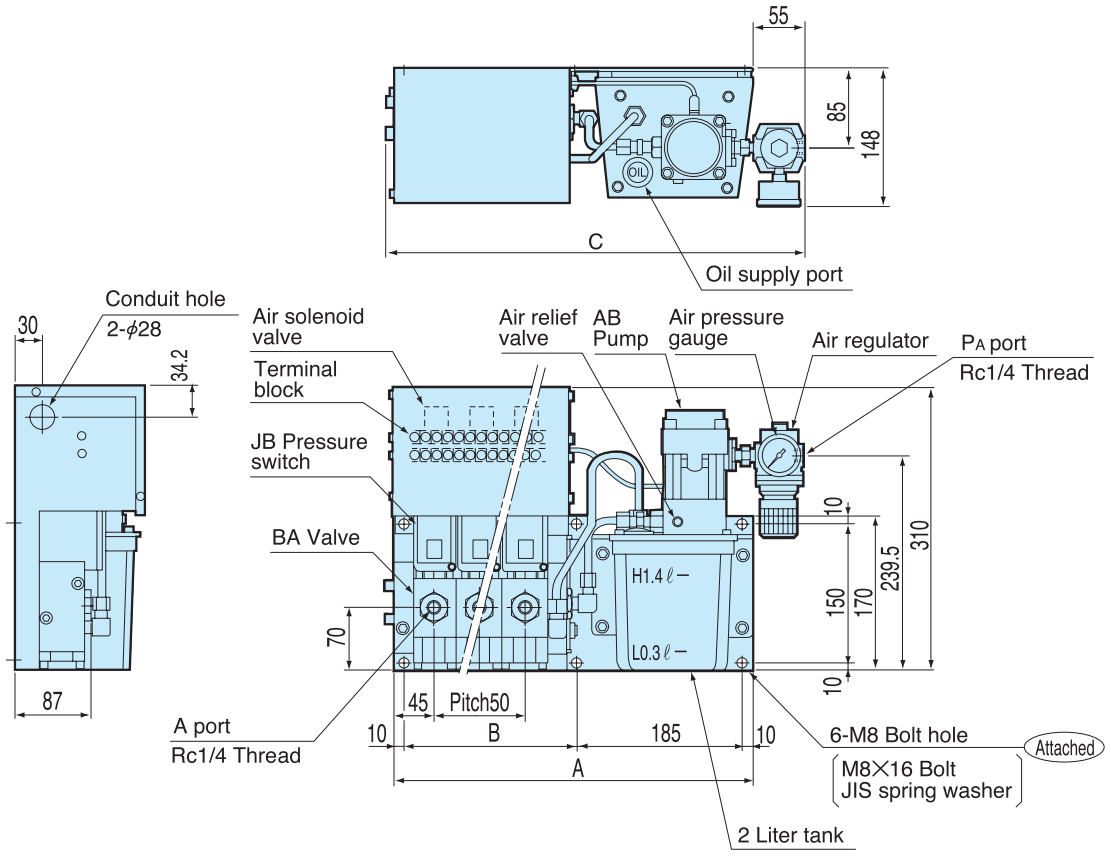
OUTLINE DIMENSIONS

CP

※This drawing is for 2 liter tank

●**OUTLINE DIMENSIONS** (Please ask type to 2 litter tank)

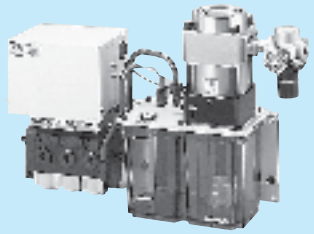
Number of connections	1	2	3	4
A	295	345	395	445
B	90	140	190	240
C	359	409	459	510



CS

Hydraulic Unit

The CS unit is a hydraulic unit equipped with the AC pump used for the system requiring a flow rate higher than that of the CP unit.



MODEL CODE

NON STOCKING ITEM

C S 5 [0 7] 0 – [Y Y Y Y] – [5 0] – [H P] [(21MPa)]

① Design No. ② ③④ ⑤⑥ ⑦

①Pump model code*1
- 03 : AC3000-□
- 04 : AC4000-□
- 05 : AC5000-□
- 06 : AC6000-□
- 07 : AC7000-□
- 08 : AC8000-□

②Circuit type(See circuit example)

③Control voltage
- 1 : AC100V
- 2 : AC200V
- 3 : AC110V
- 4 : AC220V
- 5 : DC 24V

④Fluid to be used
- 0 : General hydraulic oil (See hydraulic oil list)
- S : Silicon oil
- G : Water−glycol (The tank to be made of steel)

⑤Option
- Blank : Standard
- H : With piping seat
- G : With a main pressure gauge

⑥Unit for pressure gauge
Blank: Standard MPa
P : PSI only USA

⑦Normal pressure
Note:Write the normal pressure accurately including unit.
(20MPa) (2850PSI) (200kgf/cm²)

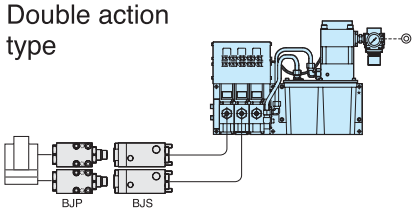
NOTE 1) All types shall be produced after an*1 order received.If you place an order, ask delivery time in advance.
2)The symbol(□) at the end of pump type shown in *1 item ①"Pump model code" is identical to item ④"Fluid cobe."

TYPICAL CIRCUIT EXAMPLES

Circuit symbol	Circuit type	Number of circuits	Number of connecttions	Air solenoid valve	Pressure switch
A	Single action actuator circuit	1	1	Single	—
C		1	1	Single	○
CC		2	2	Single	○
U		1	1	Double	○
UU		2	2	Double	○
NN	Double action clamp circuit	1	2	Double	—
YY		1	2	Double	○

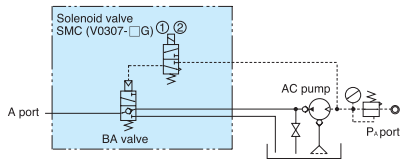
APPLICATIONS

Double action type

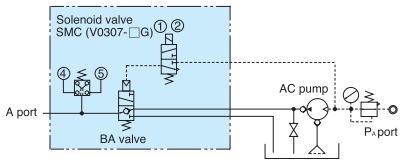


CIRCUIT SYMBOLS

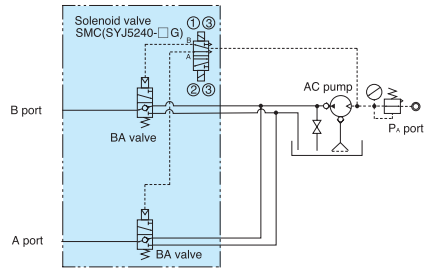
A



C



NN



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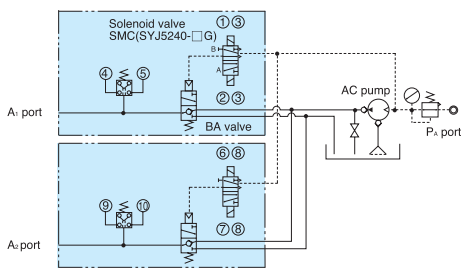
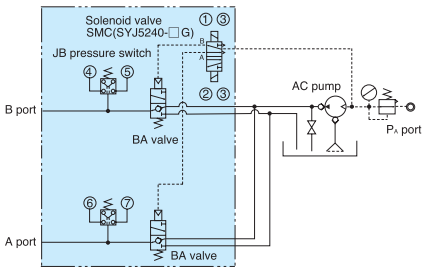


YY



KOSMEK

SPECIFICATIONS

Model			CS50□0-□□□-□0					
			CS5030	CS5040	CS5050	CS5060	CS5070	CS5080
Discharge pressure		MPa	2.3～4.2	3.6～7.0	6.0～9.6	8.9～16.3	14.4～26.4	22.5～30.0
Nominal tank capacity			5 ℓ					
Actual usage range : at H.L-L.L			3.1 ℓ					
Control voltage			1 : AC100V/2 : AC200V/3 : AC110V/4 : AC220V/5 : DC24V					
Operating temperature			0～70℃					
Fluid to be used			General hydraulic oil equivalent ISO-VG-32 (According to fluid code)					
Operation frequency			Pump operating time: less than 500 hr/year (2 hr/day)(Actual discharge time)					
Main component	Pump		AC3000-0	AC4000-0	AC5000-0	AC6000-0	AC7000-0	AC8000-0
	Valve		BA2011-0		BA5011-0			
	Pressure switch	Pressure rise check	JB0400-M0	JB1000-M0		JB2800-M0		
	Air solenoid valve		Single solenoid valve:VO307-□G/Double solenoid valve:SYJ5240-□G					
	Suction filter		JF1040:174 μm(100 mesh)		JF1030:174 μm(100 mesh)			

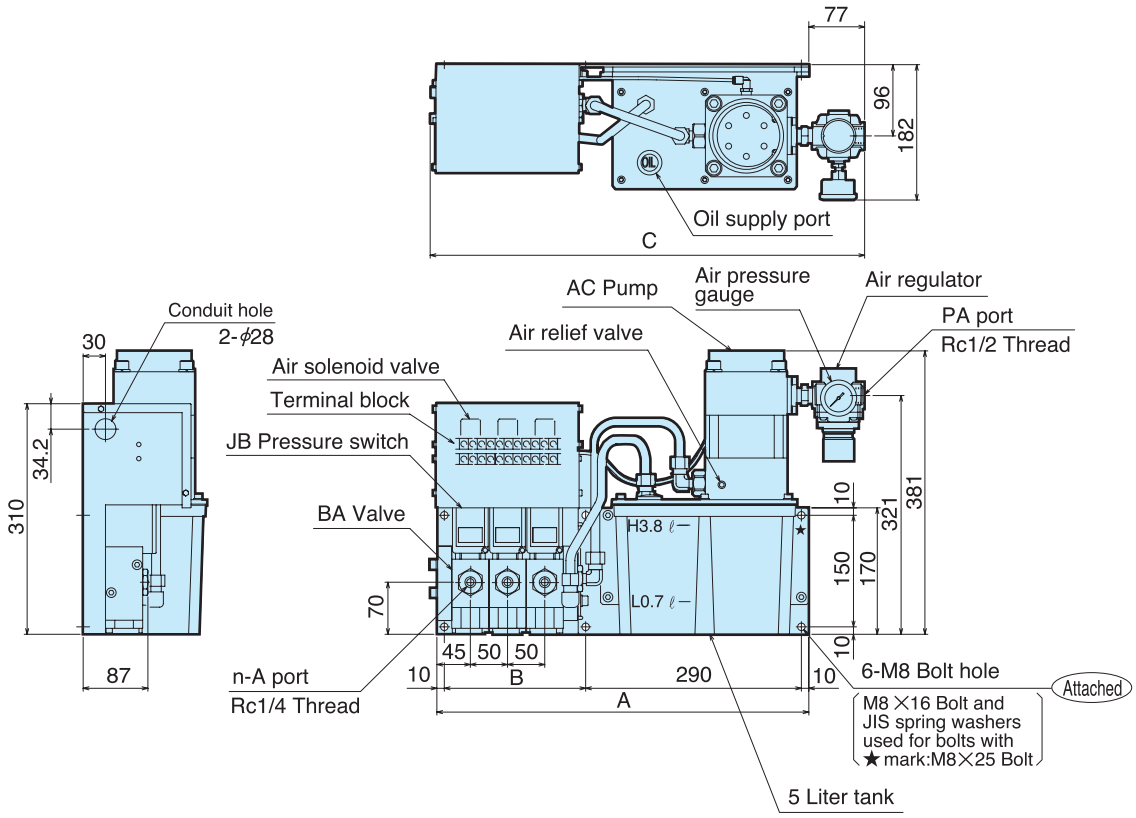
*1. When using special fluid, contact us.
*2. If hydraulic oil having viscosity higher than the shown value, action time increases.
*3. In case of a low ambient temperature, action time increases because of high viscosity of hydraulic oil.
*4. When air contains a large amount of moisture, or air supply piping is located at the end of entire piping, always equip with an automatic drain type air filter.
*5. When the hydraulic circuit is equipped with a pressure gauge, install a damper or use an oil filled (glycerin) type pressure gauge to prevent pressure gauge damage due to pressure surging.
*6. Provide space having the same height as the tank at the bottom of the unit considering hydraulic oil change (Tank cleaning and suction strainer tightening become easier).
*7. Standard setting value of pressure switch shall be 70% of the normal pressure.

OUTLINE DIMENSIONS

CS

●OUTLINE DIMENSIONS

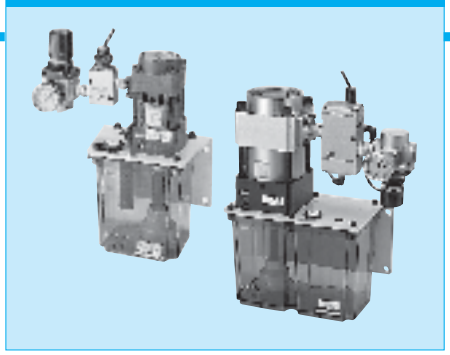
Number of connections	1	2	3	4
A	400	450	500	550
B	90	140	190	240
C	486	536	586	637



CV

Pump Unit

Hydraulic unit for one circuit to manually operate a pump in which a hydraulic valve is built.



MODEL CODE

C V 2 B 7 0 — 0 — H H R — P

① ② ③ Design No. ④ ⑤ ⑥ ⑦

①Tank capacity
2: 2ℓ (Only AB pump)
5: 5ℓ

②Pump code
B: AB pump
C: AC pump

③Pump model code

AB pump	AC pump
3: AB3000-V□	3: AC3000-V□
4: AB4000-V□	4: AC4000-V□
5: AB5000-V□	5: AC5000-V□
6: AB6000-V□	6: AC6000-V□
7: AB7000-V□	7: AC7000-V□
8: AB8000-V□	8: AC8000-V□
	9: AC9000-0□

④Fluid to be used
0 : General hydraulic oil
(See hydraulic oil list)
S : Silicon oil
G : Water−glycol
(Excluding AB8000, AC8000 and AC9000)
(The tank to be made of steel)

⑤Control type
HH: Mechanical selector valve type
5A: Solenoid valve type(DC24V)
1A: Solenoid valve type(AC100V)
F : Foot switch

⑥Component directly mounted on air supply side
R:Standard (Air regulator)
D:With a filter regulator (Automatic drain type)

⑦Unit for pressure gauge
Blank: Standard MPa
P : PSI only USA

NOTE Types inside shall be produced after an order received. If you place an order, ask delivery time in advance.

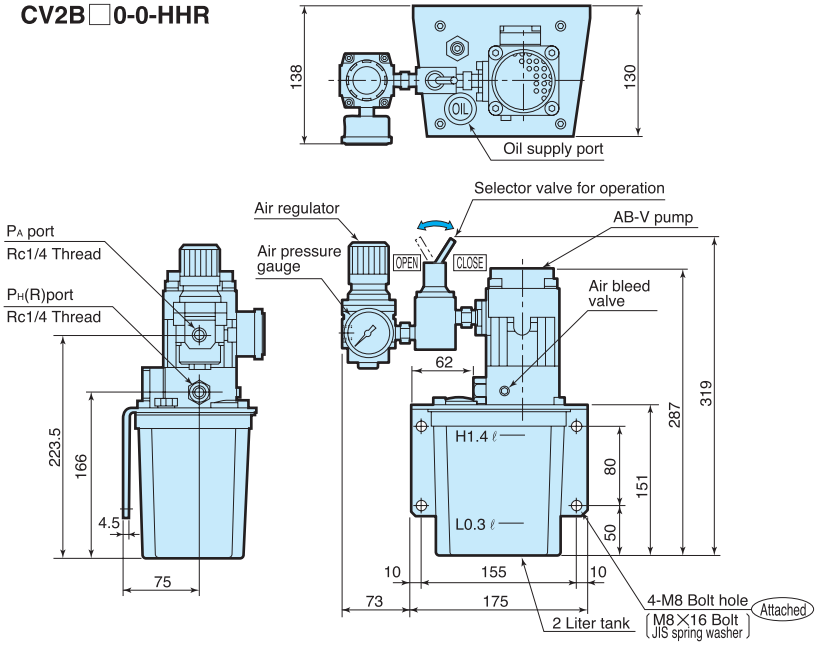
SPECIFICATIONS

Model		CV□□30	CV□□40	CV□□50	CV□□60	CV□□70	CV□□80	CV□□90
*1Discharge pressure MPa	AB pump	2.4～4.5	4.0～7.0	6.0～11.0	10.0～17.5	15.5～27.0	25.0～43.5	—
	AC pump	2.3～4.2	3.6～7.0	5.8～9.6	8.9～16.3	14.4～26.4	22.6～43.2	35.3～64.7
Tank capacity ℓ		2:2ℓ(H. L.-L. L. =1.1ℓ) / 5:5ℓ(H. L.-L. L. =3.1ℓ)						
Operating temperature		0～70℃						
Fluid to be used		General hydraulic oil equivalent ISO-VG-32 (According to fluid code)						

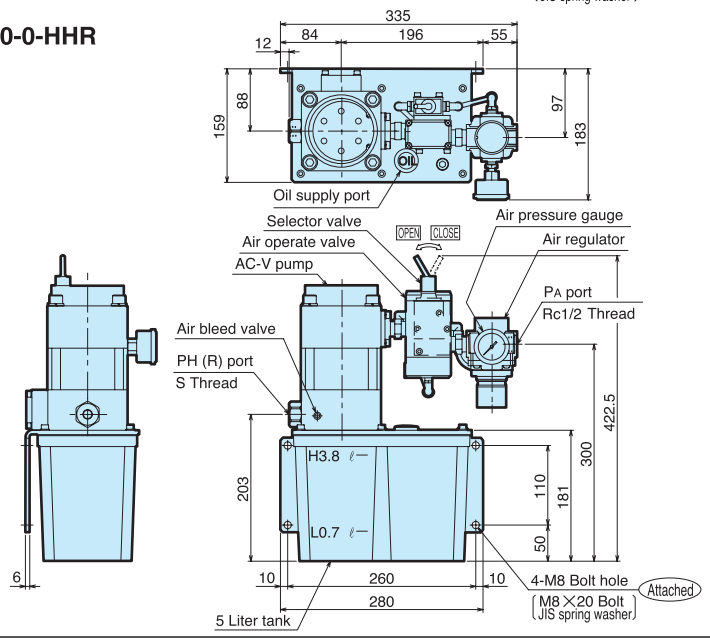
*1. Discharge pressure is for a set air pressure range between 0.3～0.5 MPa.
Remarks: 1. See the following pump performance curve for discharged oil volume.
2. Air consumption:AB 0.4Nm³/min AC 1.0Nm³/min

OUTLINE DIMENSIONS

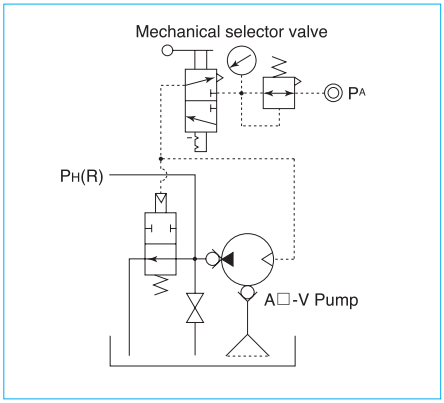
CV2B□0-0-HHR



CV5C□0-0-HHR



CIRCUIT SYMBOLS



PH (R) port size

Pump code	S
AC3000/4000	Rc3/8
AC5000～9000	Rc1/4

*If you need this drawing other contact us.

KOSMEK

JB

Pressure switch

Most suitable for checking circuit internal pressure
Resistant to vibration of 30 G and long life of more than one million times
The switch equipped with a lamp enables to check the action easily.

MODEL CODE

J B 2 8 0 0 – M 0 L 1 (INC.18.6MPa)
① ② ③ ④
Design No.

① Pressure code
② Blank: Thread piping type (Rc1/4)
M: Manifold type (O-ring seal)
③ Blank: Without lamp (standard)
L1: LED lamp (AC/DC12~125V)
L2: Neon lamp (AC200V)
④ Set pressure
NOTE Write the set pressure accurately including unit.
Moreover, please let us know whether your requirement is INC.(pressure rise detection) or DEC.(pressure down detection).
(INC.18.6MPa),(DEC.30kgf/cm²)

SPECIFICATIONS

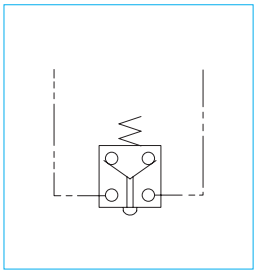
Operating fluid	General hydraulic fluid
Operating fluid temperature	—10～80℃
Ambient temperature	—10～70℃(No freezing)
Vibration resistance	max 30G
Repeat accuracy	±1%(of maximum set pressure)
Mechanical life	More than one million times
Mounting orientation	Free

PERFORMANCE

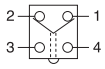
(MPa)

Model	Set pressure range		Open/close pressure difference		Maximum operating pressure
	INC. (pressure increase detection)	DEC. (pressure decrease detection)	Low pressure range	High pressure range	
JB0250	0.7～ 2.4	0.4～ 1.7	0.3	0.7	19.6
JB0400	1.2～ 3.9	0.7～ 3.4	0.5	0.9	19.6
JB1000	2.3～ 9.8	1.5～ 8.3	1.0	2.0	39.2
JB1600	3.5～15.6	2.5～13.7	1.2	2.7	39.2
JB2800	6.4～27.4	5.0～24.8	1.7	3.5	39.2
JB4000	9.8～39.2	8.1～36.2	2.2	4.0	68.6

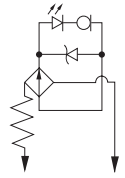
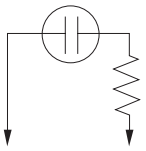
CIRCUIT SYMBOLS



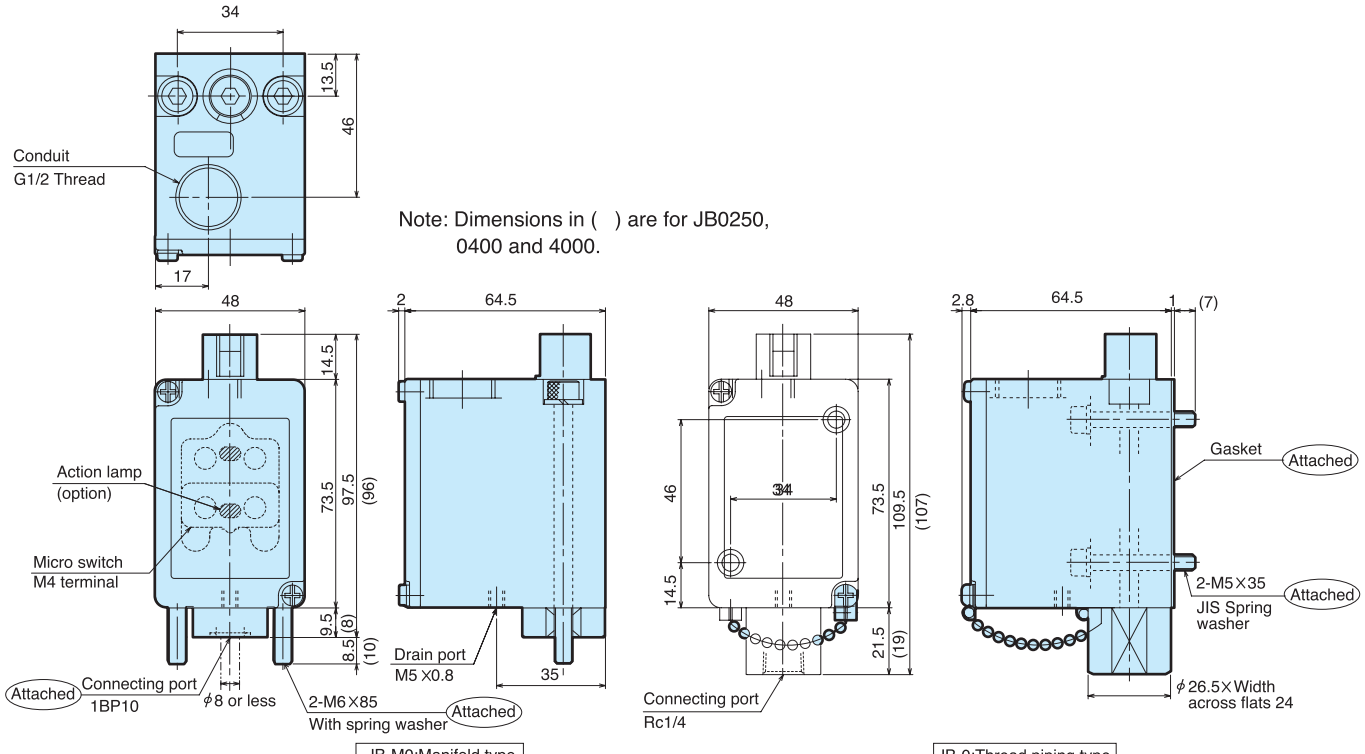
MICRO SWITCH

Symbol	
Rating	10A-125, 250, 480VAC 0.8A-125VDC 0.4A-250VDC
Switch type	2MN8-J(Yamatake)
Contact type	Two-circuit double off type(1a1b)

ACTION LAMP (OPTION)

Type	L1: LED lamp	L2: Neon lamp
Symbol		
Rating	AC/DC12～125V	AC200V
Internal resistance	33kΩ	100kΩ

OUTLINE DIMENSIONS



Note:
1. As to the switch with the action lamp, you can turn the internal lamp unit by 180 degrees to select an illumination condition from "Illuminated at more than set pressure "and" Illuminated at less than set pressure."
2. The user should provide the lamp circuit with a load. The circuit without a load may result in lamp unit failure.

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- FOR FURTHUR INFORNATION ON UNLISTED SPECIFICATIONS AND SIZES, PLEASE CALL US.
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