Pump Unit

Model CB
Model CD
Model CC

Pump unit used in combination with BC / BH non-leak hydraulic valve unit.

Pump unit easily generates hydraulic pressure using factory compressed air.

- **Energy Saving**

  Pump drives only during pressurization. After the pressurization pneumatic and hydraulic pressure balance and the pump stops. Air consumption is zero after pressurization completed.

- **Prevention of Hydraulic Pressure Reduction**

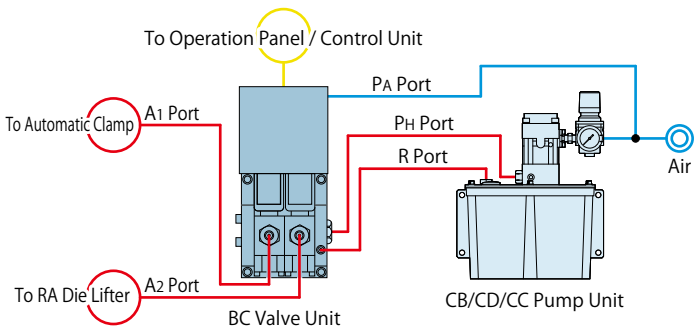
  When hydraulic pressure decreaces, a balanced-type hydraulic and pneumatic pump immediately supplies additional hydraulic pressure.

- **Free Layout**

  Hydraulic pressure is easily supplied and controlled with BC/BH non-leak valve unit. Since the pump unit and non-leak valve unit are separated, it is more free to layout than the united type CP/CR/CP□/CQ□ unit.

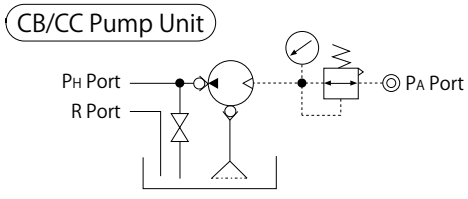
- **Application Example**

  The drawing shows when controlling automatic clamp and RA die lifter separately used in the combination with two-circuit BC valve unit.

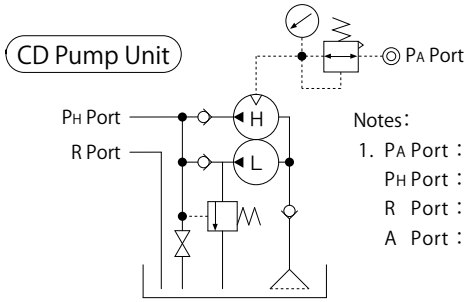


- **Circuit Symbol**

CB/CC Pump Unit



CD Pump Unit



Notes:

1. PA Port : Air Source
   PH Port : Hydraulic Source
   R Port : Drain Port
   A Port : To Automatic Clamp or To RA Die Lifter

Model No. Indication

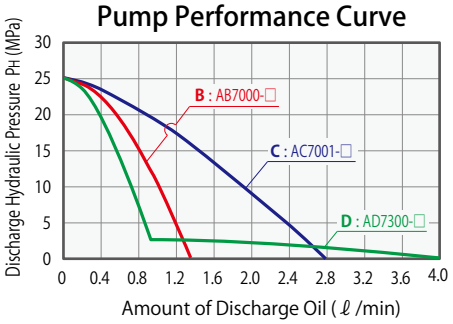
C D 2 M3 0 – 0 – □ □

1 2 3 4 5 6 7

1 Pump

B : AB Pump
D : AD Pump
C : AC Pump

Pump Performance Curve



2 Tank Capacity

2 : 2 ℓ (Actual Amount for Use 1.1 ℓ) ※1
5 : 5 ℓ (Actual Amount for Use 3.1 ℓ)

Note:
※1. 2 Tank Capacity **2** : 2 ℓ is only for 1 Pump **P**: AB Pump, **D**: AD Pump.

3 Working Pressure Code

When selecting 1 Pump **B**	**0M** : 25MPa	Supply Air Pressure=0.45MPa	
	0N : 25MPa	Supply Air Pressure=0.41MPa	Compatible with BC Valve Unit with Pressure Relief Valve ※2
When selecting 1 Pump **D**	**M3** : 25MPa	Supply Air Pressure=0.45MPa	
	N3 : 25MPa	Supply Air Pressure=0.41MPa	Compatible with BC Valve Unit with Pressure Relief Valve ※2
When selecting 1 Pump **C**	**0M** : 25MPa	Supply Air Pressure=0.47MPa	
	0N : 25MPa	Supply Air Pressure=0.43MPa	Compatible with BC Valve Unit with Pressure Relief Valve ※2

Note:
※2. Select the hydraulic unit with pressure relief valve when using hydraulic clamps under high temperature or large temperature change since there may be pressure fluctuation caused by temperature change.

4 Design No.

0 : Revision Number

5 Fluid Code

0 : General Hydraulic Oil (Equivalent to ISO-VG-32)
G : Water-Glycol (Tank is made of steel.)
S : Silicon Oil

※ Please contact us for fluids other than described above.

6 Option

Blank : Standard (Air Regulator)
D : With Filter Regulator (Auto-Drain Type)
Q : With Oil Level Switch

※ Please contact us for the details of option **D** and **Q**.

7 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

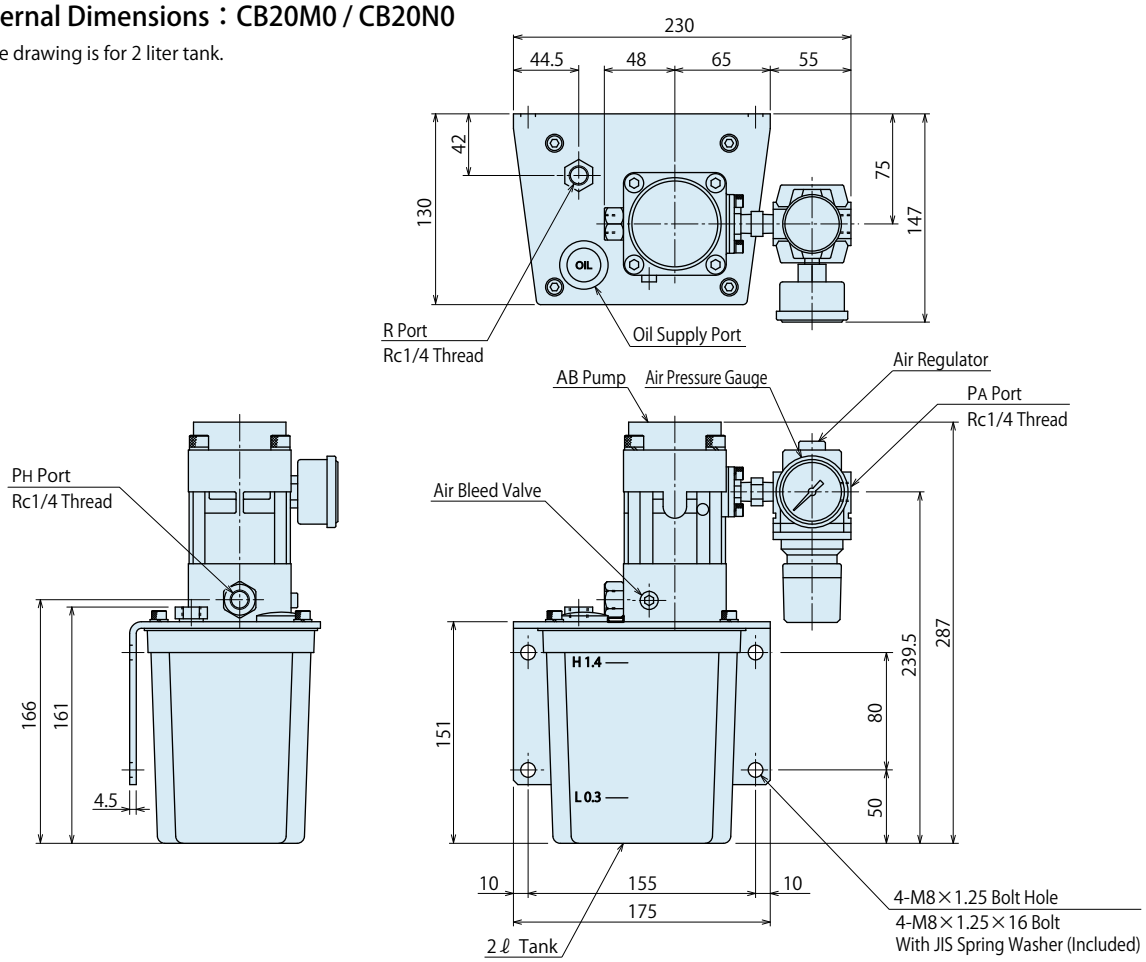
Specifications

Model No.			CB□0M0	CB□0N0	CD□M30	CD□N30	CC50M0	CC50N0
Working Hydraulic Pressure			25 MPa					
Withstanding Pressure			37 MPa					
Tank Capacity			**2** : 2 ℓ (Actual amount for use 1.1 ℓ) **5** : 5 ℓ (Actual amount for use 3.1 ℓ)				**5** : 5 ℓ (Actual amount for use 3.1 ℓ)	
Operating Temperature			0 ~ 70 ℃					
Use Frequency			20 Cycles / Day or less		Pressure Rising Time : 2.5 min. / Cycle or less			
Main Components	Pump	Model No.	AB7000-□		AD7300-□		AC7001-□	
		Set Discharge Pressure	25 MPa	22.5 MPa	25 MPa	22.5 MPa	25 MPa	22.5 MPa
		Discharge Volume Under No Load	1.36 ℓ /min	1.32 ℓ /min	4.00 ℓ /min	3.74 ℓ /min	2.79 ℓ /min	2.70 ℓ /min
		Set Air Pressure	0.45 MPa	0.41 MPa	0.45 MPa	0.41 MPa	0.47 MPa	0.43 MPa
		Air Consumption	max. 0.4 m^3 (Normal)/min				max. 1.0 m^3	(Normal)/min
	Suction Filter	Model No.	JF1030					
		Filtration Degree	174 μm (100 Mesh)					

Notes:
1. If viscosity of hydraulic oil is higher than listed on Hydraulic Fluid List (ISO-VG-32 or equivalnt), action time will be longer.
2. If using at low temperature action time will be longer because of high viscosity of hydraulic oil.
3. 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.
4. When setting a pressure gauge to hydraulic circuit, install a damper or use an oil filled (glycerin) pressure gauge in order to prevent damage caused by pressure surging.
5. Provide enough space at the bottom of the unit to compensate for hydraulic oil change. (Tank cleaning and suction strainer tightening becomes easier.)
6. This product is not suitable for continuous operation (circulation / open circuit). Please use it for a closed circuit.
7. If using it with hydraulic valve on the market, pump does not stop due to internal leak, and pump life will be shortened. Please use Kosmek valve.

External Dimensions：CB20M0 / CB20N0

※ The drawing is for 2 liter tank.

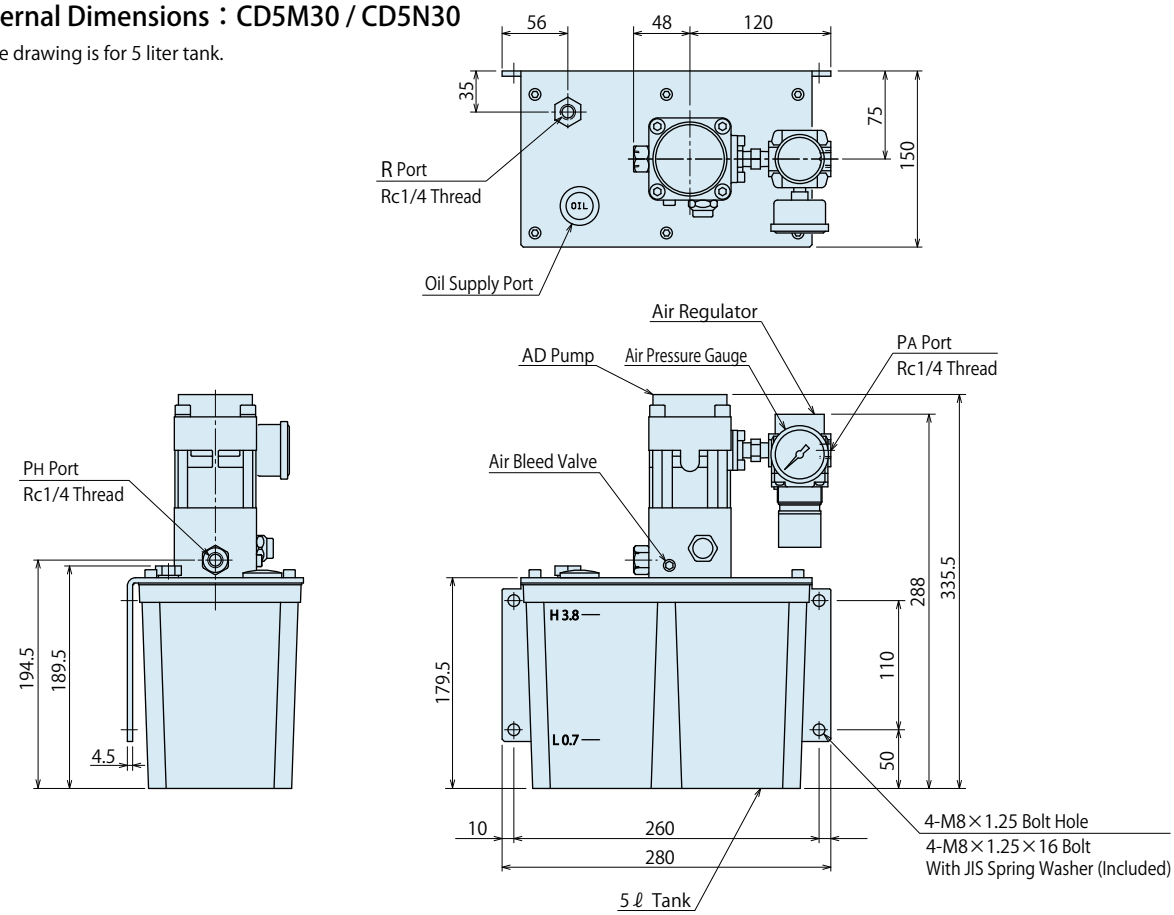


Note:

1. Please contact us for the specification other than the drawing above (5ℓ tank, water-glycol type, with filter regulator, with oil level switch).

External Dimensions：CD5M30 / CD5N30

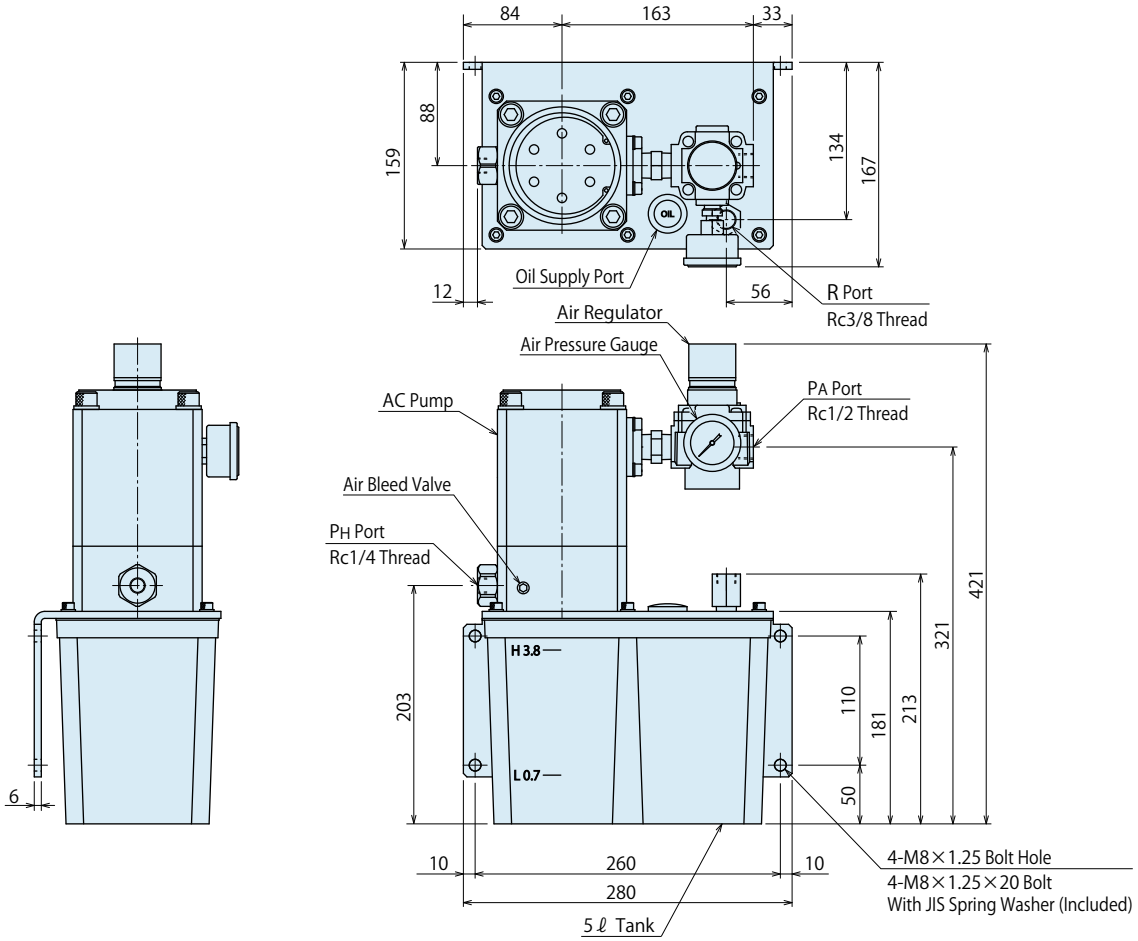
※ The drawing is for 5 liter tank.



Note:

1. Please contact us for the specification other than the drawing above (2ℓ tank, water-glycol type, with filter regulator, with oil level switch).

External Dimensions：CC50M0 / CC50N0



Note:

1. Please contact us for the specification other than the drawing above (water-glycol type, with filter regulator, with oil level switch).

Clamp Hydraulic Unit Operation Control Panel
Die Lifter Pre-Roller
Accessories
Cautions Company Profile

Clamp
GA
GD
GBB
GBE
GBC
GBF
GBP
GBQ
GN

Hydraulic Unit
CP
CR
CPB
CPD
CPC
CPE
CQC
CQE

Pump Unit
CB
CD
CC

Valve Unit
BC
BH
MV

Operational Control Panel
YP
YA

Cautions

Installation Notes (Cautions for Hydraulic Series)

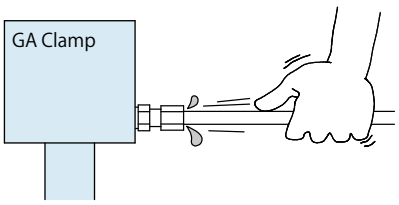
1) Check the fluid to use
- Please use the appropriate fluid by referring to the Hydraulic Fluid List.
- If hydraulic oil with viscosity grade higher than ISO-VG-32 is used, action time would be longer.
- If using it at low temperature, action time will be longer because the viscosity of hydraulic oil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

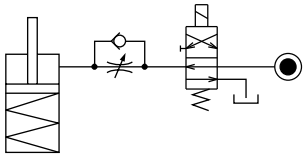
Note： As it may be difficult to purchase the products as shown in the table from overseas, please contact the respective manufacturer.

Notes on Hydraulic Cylinder Speed Control Unit

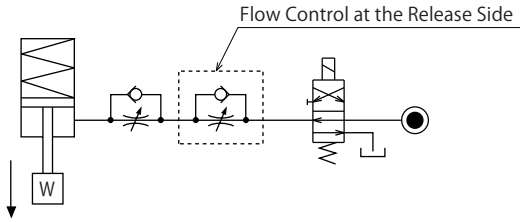
Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

Flow Control Circuit for Single Acting Cylinder

For spring return single acting cylinders, restricting flow during release can extremely slow down or disrupt release action. The preferred method is to control the flow during the lock action using a valve that has free-flow in the release direction. It is also preferred to provide a flow control valve at each actuator.



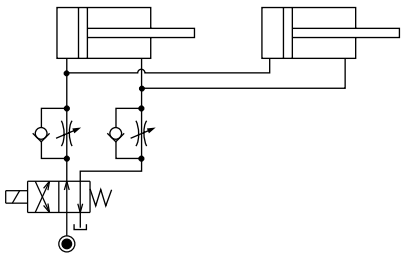
Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow.



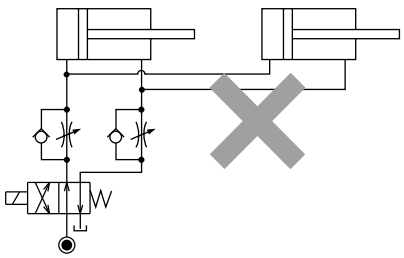
Flow Control Circuit for Double Acting Cylinder

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】

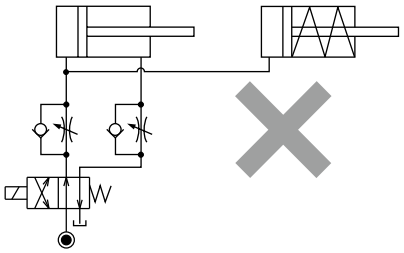


【Meter-in Circuit】



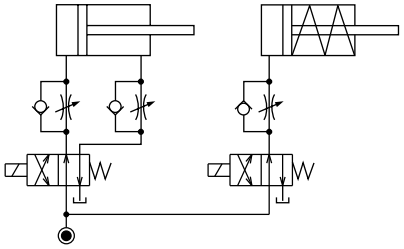
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

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.

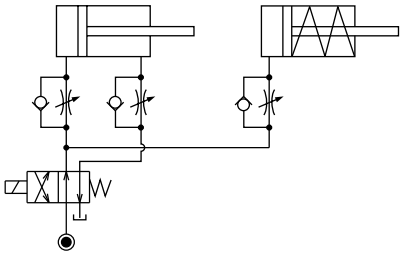


Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

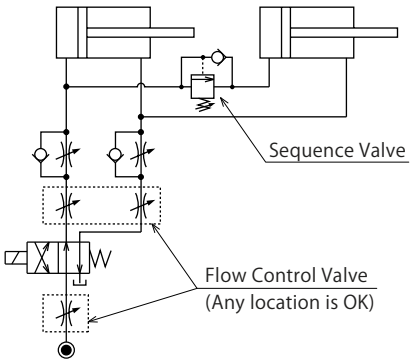
○ Separate the control circuit.



○ 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 works.



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 designed to.



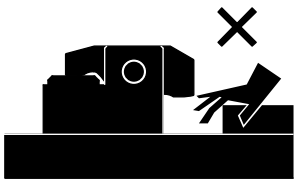
Cautions

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 protocols are 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.

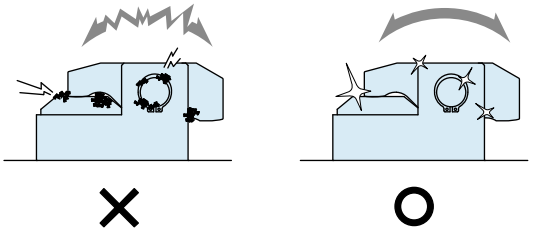


4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

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 correctly.

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 the operator's judgment, resulting in defect.
③ If it is used or handled in inappropriate way by the operator.
(Including damage caused by the misconduct of the 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 Other caused by natural disasters or calamities not attributable to our company.
⑦ Parts or replacement expenses due to parts consumption and deterioration.
(Such as rubber, plastic, seal material and some electric components.)

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

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Japan Overseas Sales	**TEL. +81-78-991-5162**	FAX. +81-78-991-8787 KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241 〒651-2241　兵庫県神戸市西区室谷2丁目1番5号
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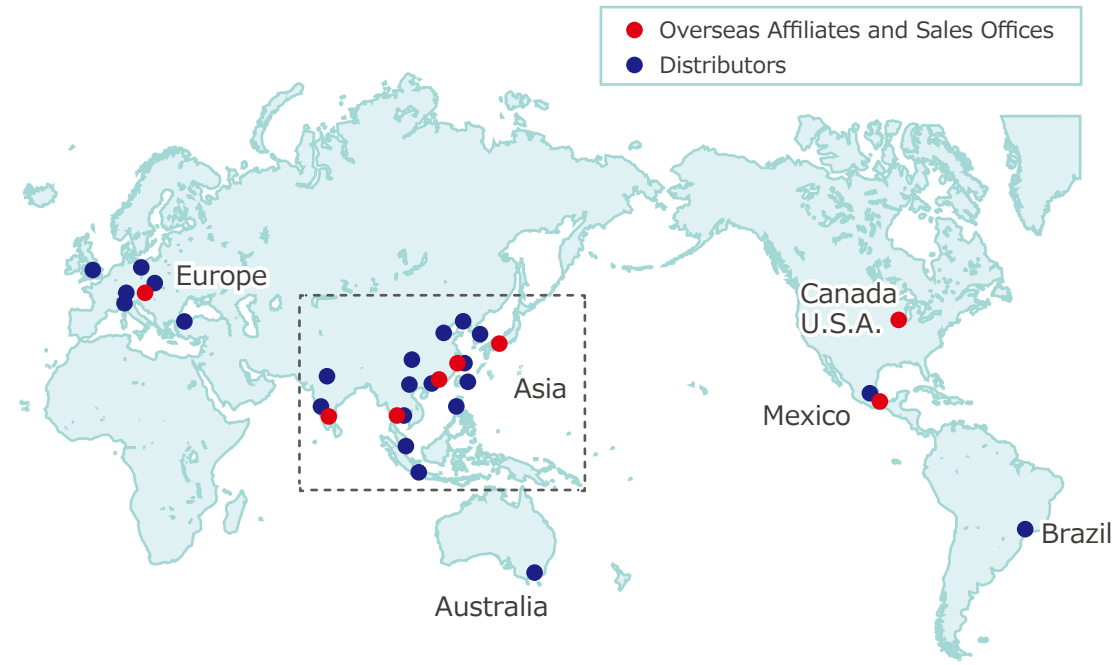
Global Network



Asia Detailed Map

KOSMEK
Harmony in Innovation

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