

# Hydraulic Unit

2 ℓ Tank

Model CP

Model CR



## Air-Powered Hydraulic Unit 2 ℓ Tank for Space-Saving

CP/CR Unit is the united type of CB/CD Pump Unit and BC Non-Leak Valve Unit.  
Suitable for hydraulic source of automatic clamps and die lifters.

### Specifications

Model No.		CP20M1	CP20N1	CR2M31	CR2N31	
Working Hydraulic Pressure		25 MPa				
Withstanding Pressure		37 MPa				
Tank Capacity		2 : 2 ℓ ( Actual Amount for Use 1.1 ℓ )				
Operating Temperature		0 ~ 70 °C				
Use Frequency		20 Cycles / Day or less Pressure Rising Time : 2.5 min. / Cycle or less				
Main Components	Pump	Model No.	AB7000-□		AD7300-□	
		Set Discharge Pressure	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
		Set Air Pressure	0.45 MPa	0.41 MPa	0.45 MPa	0.41 MPa
		Air Consumption	max. 0.4 m <sup>3</sup> (Normal)/min			
	Suction Filter	Model No.	JF1030			
		Filtration Degree	174 μm (100 Mesh)			
	Non-Leak Valve	Model No.	BA5011-0	BA5011-0 BA5R11-0	BA5011-0	BA5011-0 BA5R11-0
		Pressure Switch (for Clamp)	Model No.	JBA2700-0G		
	Operation Mode / Set Pressure		Pressure Increase Detection / INC. 17.6 MPa			
Pressure Switch (for Die Lifter)	Model No.	JBA0700-0G				
	Operation Mode / Set Pressure	Pressure Decrease Detection / DEC. 2.94 MPa				
Pressure Relief Valve	Model No.	-	BR5N11-0	-	BR5N11-0	
	Set Pressure	-	25 <sup>+2</sup> / <sub>0</sub> MPa	-	25 <sup>+2</sup> / <sub>0</sub> MPa	

- Notes :
1. If hydraulic oil with viscosity grade higher than listed on Hydraulic Fluid List (ISO-VG-32 or equivalent), action time will be longer.
  2. If using it 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 in consideration of hydraulic oil change.  
(Tank cleaning and suction strainer tightening become easier.)

## Model No. Indication

**C P 2 0 M 1 - CCD - 5 0 -** ※1

1 2 3 4 5 6 7 8 9

Note :

※1. For special-order products, “-Z□□□□□” will be added to the end of the model number. Please contact us for details.

### 1 Pump (Amount of Discharge Oil)

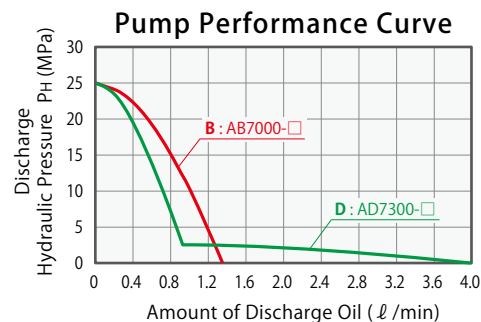
**P** : AB Pump

**R** : AD Pump

### 2 Tank Capacity

**2** : 2 ℓ (Actual Amount for Use 1.1 ℓ) ※2

Note: ※2. Please refer to Model CP□/CQ□ (P.105) for 5 ℓ /10 ℓ Tank.



### 3 Working Pressure Code

When selecting **1** Pump **P**

**0M** : 25MPa Supply Air Pressure=0.45MPa No Pressure Relief Valve

**0N** : 25MPa Supply Air Pressure=0.41MPa With Pressure Relief Valve ※3 ※4

When selecting **1** Pump **R**

**M3** : 25MPa Supply Air Pressure=0.45MPa No Pressure Relief Valve

**N3** : 25MPa Supply Air Pressure=0.41MPa With Pressure Relief Valve ※3 ※4

### 4 Design No.

**1** : Revision Number

### 5 Circuit Symbol ※ Please contact us for other types of circuits.

**C** : For Clamp Single Solenoid Valve (Normal Open)

**D** : For Die Lifter Single Solenoid Valve (Normal Close)

**U** : For Clamp Double Solenoid Valve

**V** : For Die Lifter Double Solenoid Valve

**G** : For Clamp Single Solenoid Valve (Normal Open) ※5

**H** : For Die Lifter Single Solenoid Valve (Normal Close) ※5

**PP** : For Double Acting Clamp Double Solenoid Valve (2 Stations)

**R** : Pressure Relief Valve ※3 ※4

Notes : ※3. 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. When choosing **3** Working Pressure Code **0N** or **N3** : With Pressure Relief Valve, please select **R** : Pressure Relief Valve at **5** Circuit Symbol after circuit symbol which requires pressure relief valve.

(Ex.) When choosing three circuits **C**, **C** and **D**

With three pressure relief valves on every circuit : CP20N1-CRCRDR-□-□

With pressure relief valves only on **C** circuits : CP20N1-CRCRD-□-□

No pressure relief valve on circuits : CP20M1-CCD-□-□

※5. **5** Circuit Symbol **G** and **H** should be selected only when used with Circuit Symbol **U**.

### 6 Control Voltage

**1** : AC100V (50/60Hz) **4** : AC220V (50/60Hz)

**2** : AC200V (50/60Hz) **5** : DC24V

**3** : AC110V (50/60Hz)

### 7 Common (For **6** Control Voltage **5** : DC24V only)

**Blank** : For **5** Circuit Symbol with Single Solenoid Valve only

For **5** Circuit Symbol which includes Double Solenoid Valve

**A** : + Common (Standard)

**B** : - Common

### 8 Fluid Code

**0** : General Hydraulic Oil (Equivalent to ISO-VG-32)

**G** : Water-Glycol (Iron Tank)

**S** : Silicon Oil

※ For fluids other than described above, please contact us.

### 9 Option

**Blank** : Standard (Air Regulator)

**D** : With Filter Regulator (Auto-Drain Type)

**G** : With Pressure Gauge (For Primary Pressure)

**H** : With Piping Block (PH Port)

**N** : Piping Port NPT Thread, Pressure Gauge in both PSI/MPa

**P** : Pressure Gauge in both PSI/MPa

**Q** : With Oil Level Switch

※ Please contact us for details of these options.

※ When selecting Option **N**, dimensions in the specification sheet and other documents are in inches.

Clamp · Unit  
Operation Panel  
Control Unit

Die Lifter  
Pre-Roller

Accessories

Cautions  
Company Profile

Clamp

GA

GD

GBB

GBC

GBE

GBF

GBP

GBQ

GN

GHA

Hydraulic Unit

CP

CR

CPB

CPD

CPC

CPE

CQC

CQE

Pump Unit

CB

CD

CC

Valve Unit

BC

BH

MV

Operation Panel  
Control Unit

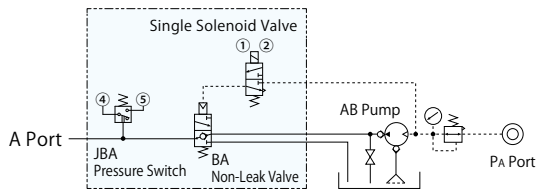
YP

YAA

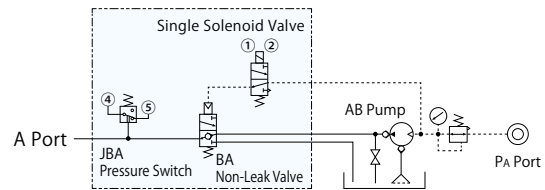
**Circuit Symbol / Main Circuit Examples** ※Please contact us for other circuits.

Circuit Symbol	Circuit Type (For Reference)	Number of Circuits	BA Valve Number of Connections	Air Solenoid Valve	Pressure Relief Valve	Pressure Switch
<b>C</b>	Clamp Circuit	1	1	Single Solenoid	—	○
<b>CR</b>		1	1	Single Solenoid	○	○
<b>CC</b>		2	2	Single Solenoid	—	○
<b>CRCR</b>		2	2	Single Solenoid	○	○
<b>U</b>		1	1	Double Solenoid	—	○
<b>PP</b>	Die Lifter Circuit	1	2	Double Solenoid	—	○
<b>D</b>		1	1	Single Solenoid	—	○
<b>V</b>		1	1	Double Solenoid	—	○

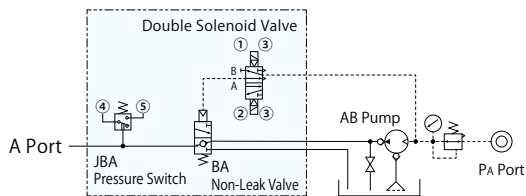
**C** Single Solenoid Valve for Clamp (Normal Open)



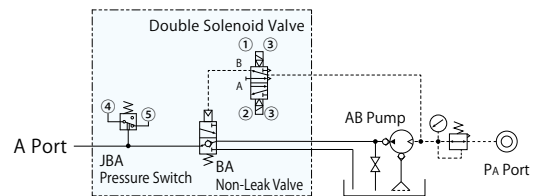
**D** Single Solenoid Valve for Die Lifter (Normal Close)



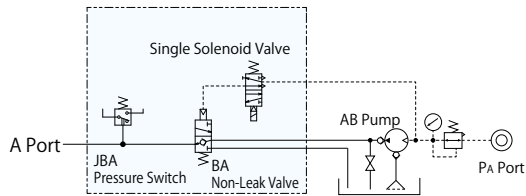
**U** Double Solenoid Valve for Clamp



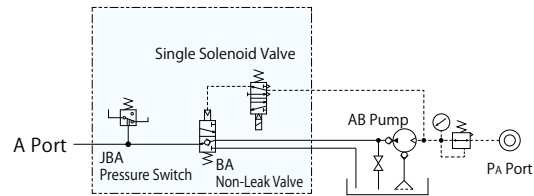
**V** Double Solenoid Valve for Die Lifter



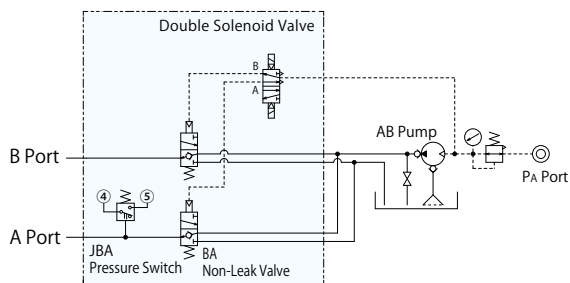
**G** Single Solenoid Valve for Clamp



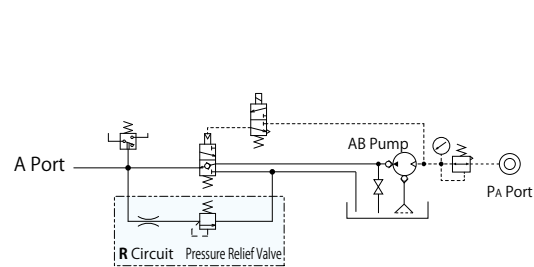
**H** Single Solenoid Valve for Die Lifter



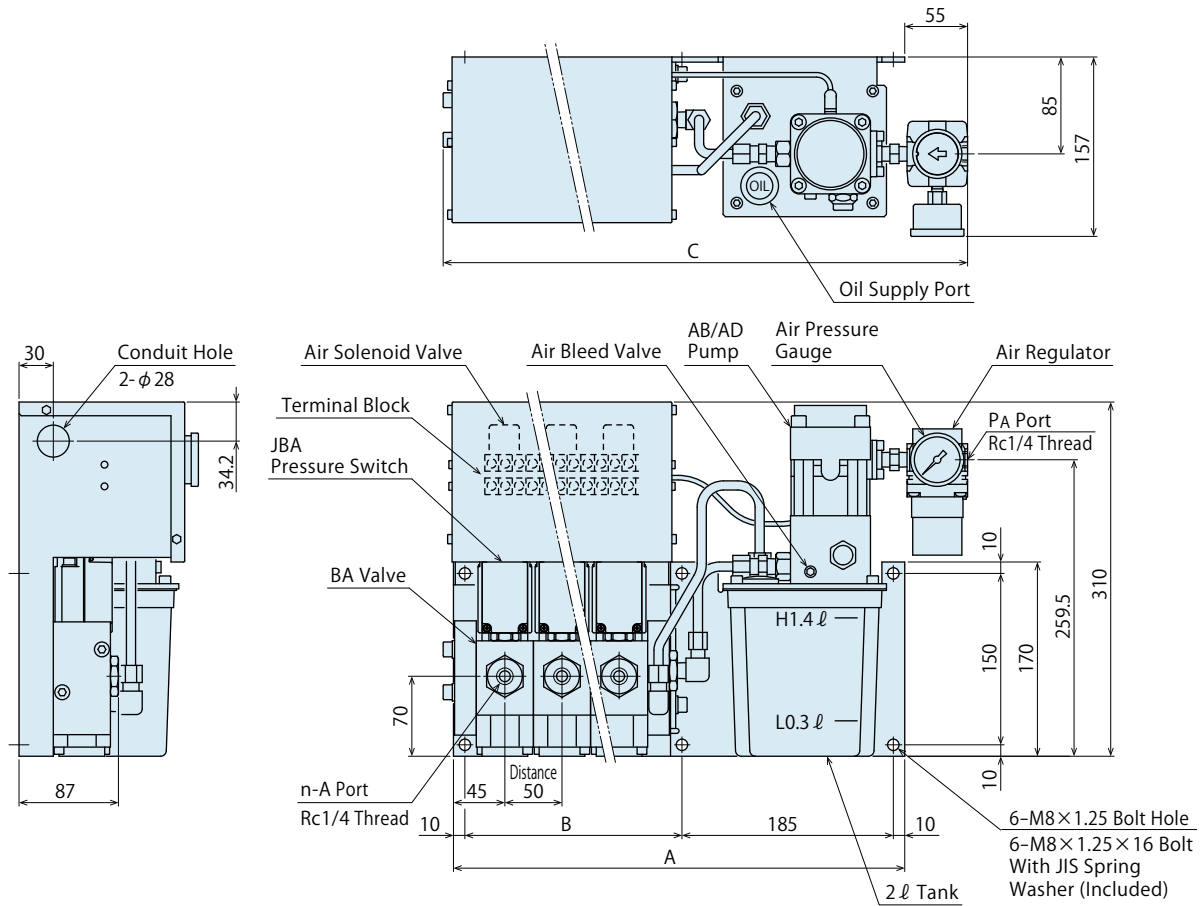
**PP** Double Solenoid Valve for Double-Acting Clamp



**R** Pressure Relief Valve



External Dimensions : CP / CR



		(mm)			
Valve Number of Connection (n)		1 Connection	2 Connections	3 Connections	4 Connections
A		295	345	395	445
B		90	140	190	240
C		359	409	459	510
Weight	CP	12.5	15	17.5	20
	CR	13.5	16	18.5	21

Note :

1. Please contact us for the specifications other than the drawing above :  
water-glycol type, with filter regulator, with hydraulic pressure switch, with piping block, with oil level switch.

Clamp • Unit  
Operation Panel  
Control Unit

Die Lifter  
Pre-Roller

Accessories

Cautions  
Company Profile

Clamp

- GA
- GD
- GBB
- GBC
- GBE
- GBF
- GBP
- GBQ
- GN
- GHA

Hydraulic Unit

- CP
- CR
- CPB
- CPD
- CPC
- CPE
- CQC
- CQE

Pump Unit

- CB
- CD
- CC

Valve Unit

- BC
- BH
- MV

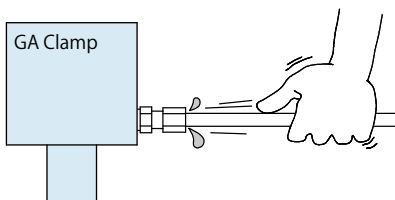
Operation Panel  
Control Unit

- YP
- YAA

## ● Cautions

### ● Installation Notes (Cautions for Hydraulic Series)

- 1) Check the Usable Fluid
  - Please use the appropriate fluid by referring to the Hydraulic Fluid List.
  - If viscosity grade of hydraulic oil is higher than ISO-VG-32, action time becomes longer.
  - If using it at low temperature, action time will be longer because the viscosity of hydraulic oil becomes higher.
- 2) Procedure before Piping
  - Pipelines, piping connectors and others should be cleaned by thorough flushing.
  - 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 that prevents contamination.
- 3) Applying Sealing Tape
  - Wrap with tape 1 to 2 times following the screw direction.
  - Pieces of the sealing tape can lead to fluid leakage and malfunction.
  - Please implement piping construction in a clear environment to prevent anything getting in products.
- 4) Air Bleeding of the Hydraulic Circuit
  - If the hydraulic circuit has excessive air, the action time may become very long. If air enters the circuit after connecting the hydraulic port or under the condition of no air in the oil tank, please perform the following steps.
    - ① Reduce hydraulic pressure to less than 2MPa.
    - ② Loosen the cap nut of pipe fitting closest to the clamp, RQA/RA Die Lifter by one full turn.
    - ③ Shake the pipeline to loosen the outlet of pipe fitting. Hydraulic fluid mixed with air comes out.



- ④ Tighten the cap nut after air bleeding.
  - ⑤ It is more effective to release 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 and nut may be tightened lightly. Check the looseness and re-tighten as required.

### ● Hydraulic Fluid List

Maker	ISO Viscosity Grade ISO-VG-32	
	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 : Please contact manufacturers when customers require products in the list above.

- Clamp · Unit  
Operation Panel  
Control Unit
- Die Lifter  
Pre-Roller
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Company Profile

**Cautions**

- Installation Notes  
(For Hyd. Series)
- Hydraulic  
Fluid List
- Notes on Hyd. Cylinder  
Speed Control Unit
- Notes on  
Handling
- Maintenance /  
Inspection
- Warranty

**Company Profile**

- Our Products
- Company Profile
- History
- Sales Offices

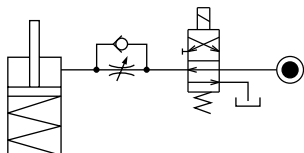
● Notes on Hydraulic Cylinder Speed Control Unit



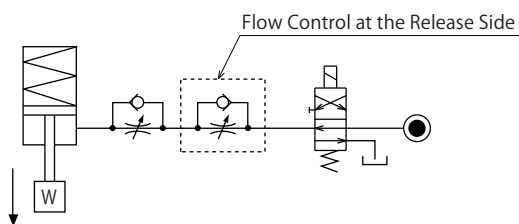
Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

● 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.



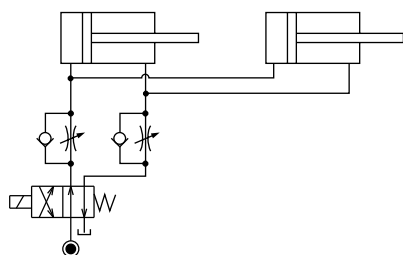
Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow.



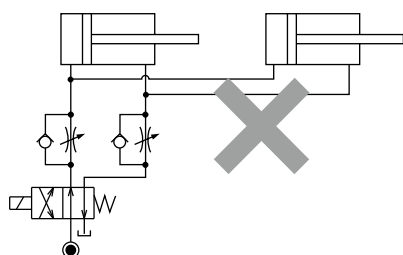
● Flow Control Circuit for Double-Acting Cylinder

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】

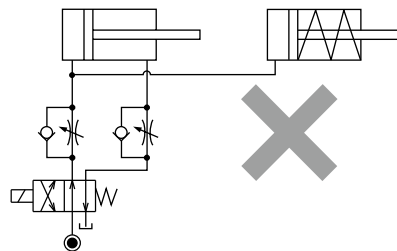


【Meter-in Circuit】



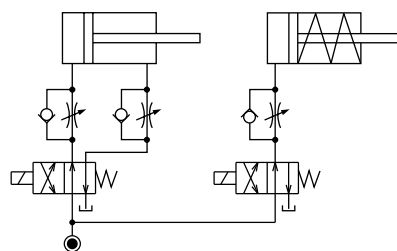
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

- 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.

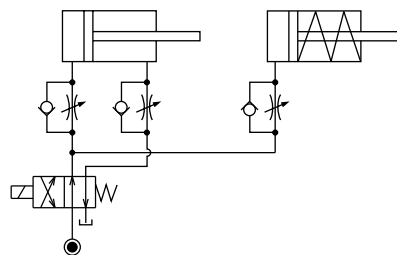


Refer to the following circuit when both the single-acting cylinder and double-acting cylinder are used together.

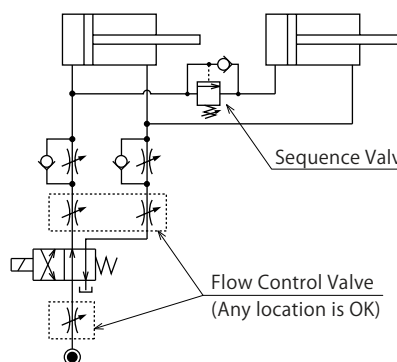
- Separate the control circuit.



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



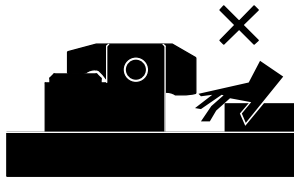
- ② In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve 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

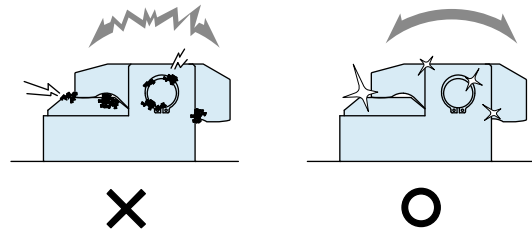
- 1) It should be operated by qualified personnel.
  - Hydraulic products, machines and devices should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
  - ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
  - ② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the hydraulic and air circuits.
  - ③ After stopping the product, do not remove until the temperature drops.
  - ④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not touch a clamp (cylinder) while it is working. Otherwise, your hands may be injured.



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

### ● Maintenance • Inspection

- 1) Removal of the Product and Shut-off of Pressure Source
  - Before removing the product, make sure that safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
  - Make sure there is no abnormality in the bolts and respective parts before restarting.
- 2) Regularly clean the area around the product.
  - If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning and fluid leakage.



- 3) If disconnecting by couplers, air bleeding should be carried out on a regular basis to avoid air mixed in the circuit.
- 4) Regularly tighten bolts, pipe line, mounting bolt, nut, snap ring, cylinder and others to ensure proper use.
- 5) Make sure the hydraulic fluid has not deteriorated.
- 6) Make sure there is a smooth action without an irregular 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 operated in an 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.

Clamp • Unit  
Operation Panel  
Control Unit

Die Lifter  
Pre-Roller

Accessories

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Company Profile

#### Cautions

Installation Notes  
(For Hyd. Series)

Hydraulic  
Fluid List

Notes on Hyd. Cylinder  
Speed Control Unit

Notes on  
Handling

Maintenance /  
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Company Profile

Our Products

Company Profile

History

Sales Offices

# Sales Offices

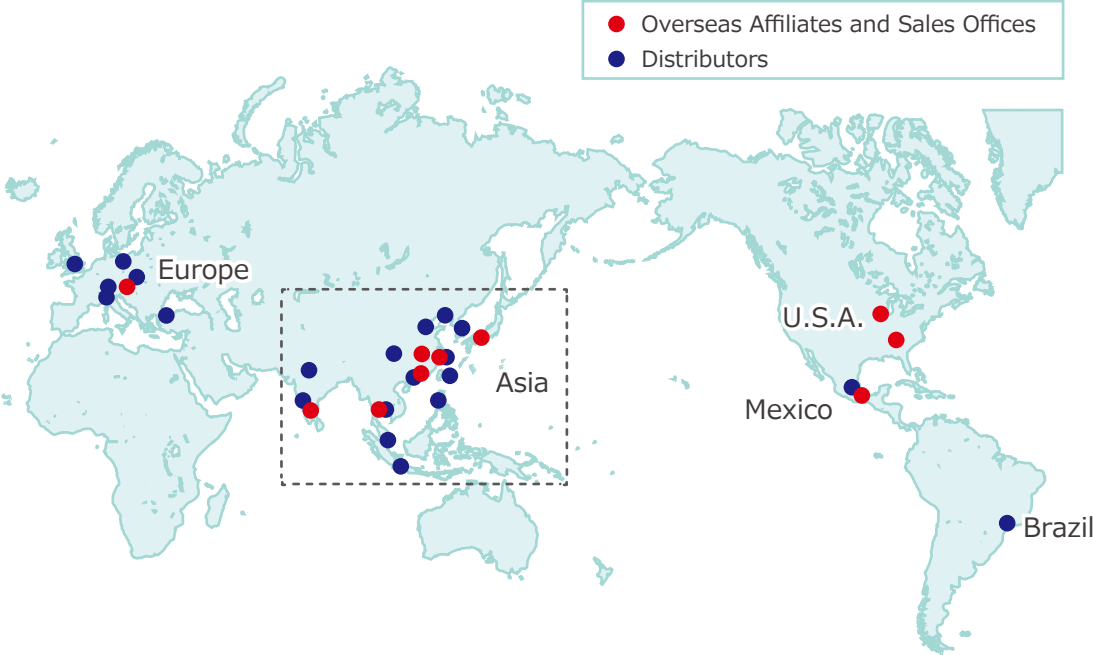
## Sales Offices across the World

Japan	KOSMEK LTD. HEAD OFFICE	<b>TEL. +81-78-991-5162</b> FAX. +81-78-991-8787 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241
USA	KOSMEK (USA) LTD. Overseas Subsidiary	<b>TEL. +1-630-620-7650</b> FAX. +1-630-620-9015 650 Springer Drive, Lombard, IL 60148 USA
	KOSMEK USA ATLANTA BRANCH OFFICE	<b>TEL. +1-630-620-7650</b> 303 Perimeter Center North, Suite 300, Atlanta, GA 30346 USA
Mexico	KOSMEK USA MEXICO BRANCH OFFICE	<b>TEL. +52-442-851-1377</b> Av. Loma Pinal de Amoles 320-piso PH oficina 504 interior 13, Vista Dorada, 76060 Santiago de Querétaro, Qro. Mexico
Europe	KOSMEK EUROPE GmbH Overseas Subsidiary	<b>TEL. +43-463-287587</b> FAX. +43-463-287587-20 Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria
China	KOSMEK (CHINA) LTD. Overseas Subsidiary	<b>TEL.+86-21-54253000</b> FAX. +86-21-54253709 Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai China
	KOSMEK (CHINA) LTD. Dongguan Office Overseas Subsidiary (Sales Office)	<b>TEL.+86-769-85300880</b> Room 603, Xinchuang Power Building (No. 122-1 West Houjie Avenue), Houjie Town, Dongguan City, Guangdong Province, China
	KOSMEK (CHINA) LTD. Wuhan Office Overseas Subsidiary (Sales Office)	<b>TEL.+86-15802172393</b> Room 309, Chuanggu Technology Building, 266 Taizihu Rd, Zhuankou Subdistrict, Caidian District, Wuhan 430056, Hubei Province, China
India	KOSMEK LTD. - INDIA Branch	<b>TEL. +91-9880561695</b> 4A/Old No:649, Ground Floor, 4th D cross, MM Layout, Kavalbyrasandra, RT Nagar, Bangalore -560032 India
Thailand	KOSMEK Thailand Representative Office Representative Office	<b>TEL. +66(0)2-059-2010</b> No.139, Blue Chips Building, 4th Floor, Room No.422, Soi Sukhumvit 63 (Thong Lor 10), Sukhumvit Road, Khlong Tan Nuea, Wattana, Bangkok 10110, Thailand
Taiwan	FULL LIFE TRADING CO., LTD. Distributor	<b>TEL. +886-2-82261860</b> FAX. +886-2-82261890 16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511
Philippines	G.E.T. Inc, Phil. Distributor	<b>TEL.+63-2-310-7286</b> FAX. +63-2-310-7286 Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427
Indonesia	PT. Yamata Machinery Sales Distributor	<b>TEL. +62-21-29628607</b> FAX. +62-21-29628608 Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia

## Sales Offices in Japan

Head Office Osaka Sales Office Overseas Sales	<b>TEL. 078-991-5162</b> FAX. 078-991-8787 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, 651-2241, Japan
Tokyo Sales Office	<b>TEL. 048-652-8839</b> FAX. 048-652-8828 81, 4-chome, Onari-cho, Kita-ku, Saitama City, Saitama, 331-0815, Japan
Nagoya Sales Office	<b>TEL. 0566-74-8778</b> FAX. 0566-74-8808 10-1, 2-chome, Misono-cho, Anjo City, Aichi, 446-0076, Japan
Fukuoka Sales Office	<b>TEL. 092-433-0424</b> FAX. 092-433-0426 8-10-101, 1-chome, Kamimuta, Hakata-ku, Fukuoka City, Fukuoka, 812-0006, Japan

# Global Network



Asia Detailed Map



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