

Hydraulic Unit

2 ℓ Tank

Model CP

Model CR



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

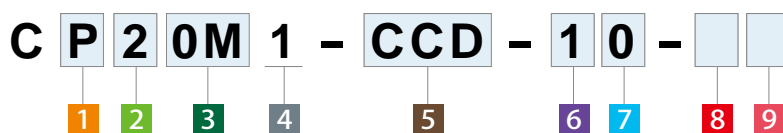
CP/CR Hydraulic Unit is the united type of CB/CD Pump Unit and BC Non-Leak Valve Unit. Most suitable for hydraulic source of automatic clamp / RA Die Lifter.

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 ³ (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 BA5R11-0
		Model No.	JBA2700-0G		
	Pressure Switch (For Clamp)	Operation Mode / Set Pressure	Pressure Increase Detection / INC. 17.6 MPa		
	Pressure Switch (For RA Die Lifter)	Model No.	JBA0700-0G		
	Pressure Relief Valve	Operation Mode / Set Pressure	Pressure Decrease Detection / DEC. 2.94 MPa		
		Model No.	-	BR5N11-0	- BR5N11-0
		Set Pressure	-	25 ⁺² / ₀ MPa	- 25 ⁺² / ₀ 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 to compensate for hydraulic oil change.
(Tank cleaning and suction strainer tightening becomes easier.)

Model No. Indication



1 Pump (Amount of Discharge Oil)

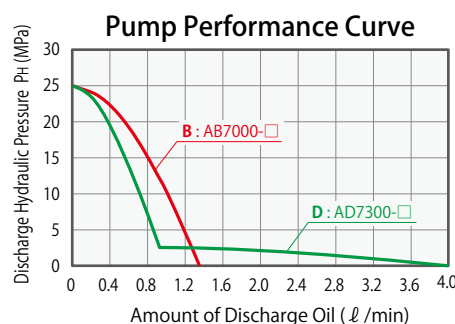
P : AB Pump

R : AD Pump

2 Tank Capacity

2 : 2 ℓ (Actual Amount for Use 1.1 ℓ)

※ Please refer to Model CP□/CQ□ (P.075)
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※2 ※3

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※2 ※3

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)※4

H : For Die Lifter Single Solenoid Valve (Normal Close)※4

R : Pressure Relief Valve ※2 ※3

Notes:

※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.

※3. When choosing **3** Pressure Code **0N**, **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**, **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-□-□

※4. Please select **5** Circuit Symbol **G**, **H** only when using it with circuit symbol **U**.

6 Control Voltage

1 : AC 100 V

4 : AC 220 V

2 : AC 200 V

5 : DC 24 V

3 : AC 110 V

7 Fluid Code

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

G : Water-Glycol (Tank is made of steel.)

S : Silicon Oil

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

8 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)

Q : With Oil Level Switch

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

9 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

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

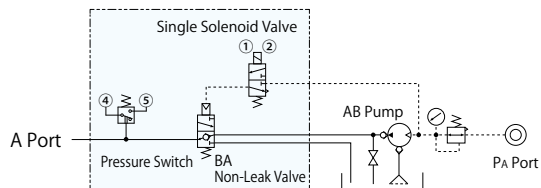
YP

YA

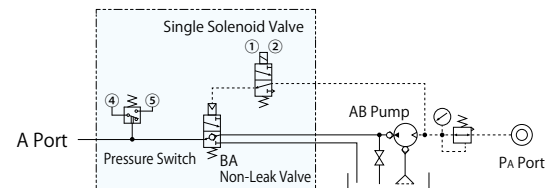
Circuit Symbol / Main Circuit Examples ※Please contact us for other circuits.

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

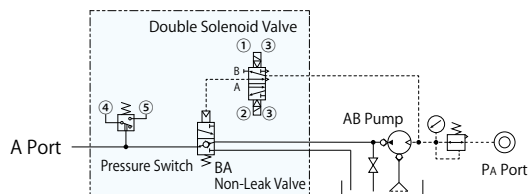
C Single Solenoid Valve for Clamp (Normal Open)



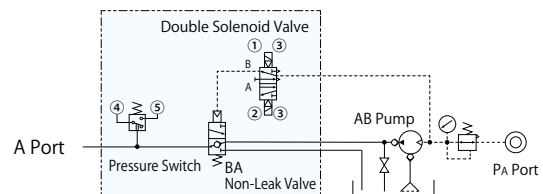
D Single Solenoid Valve for Die Lifter (Normal Close)



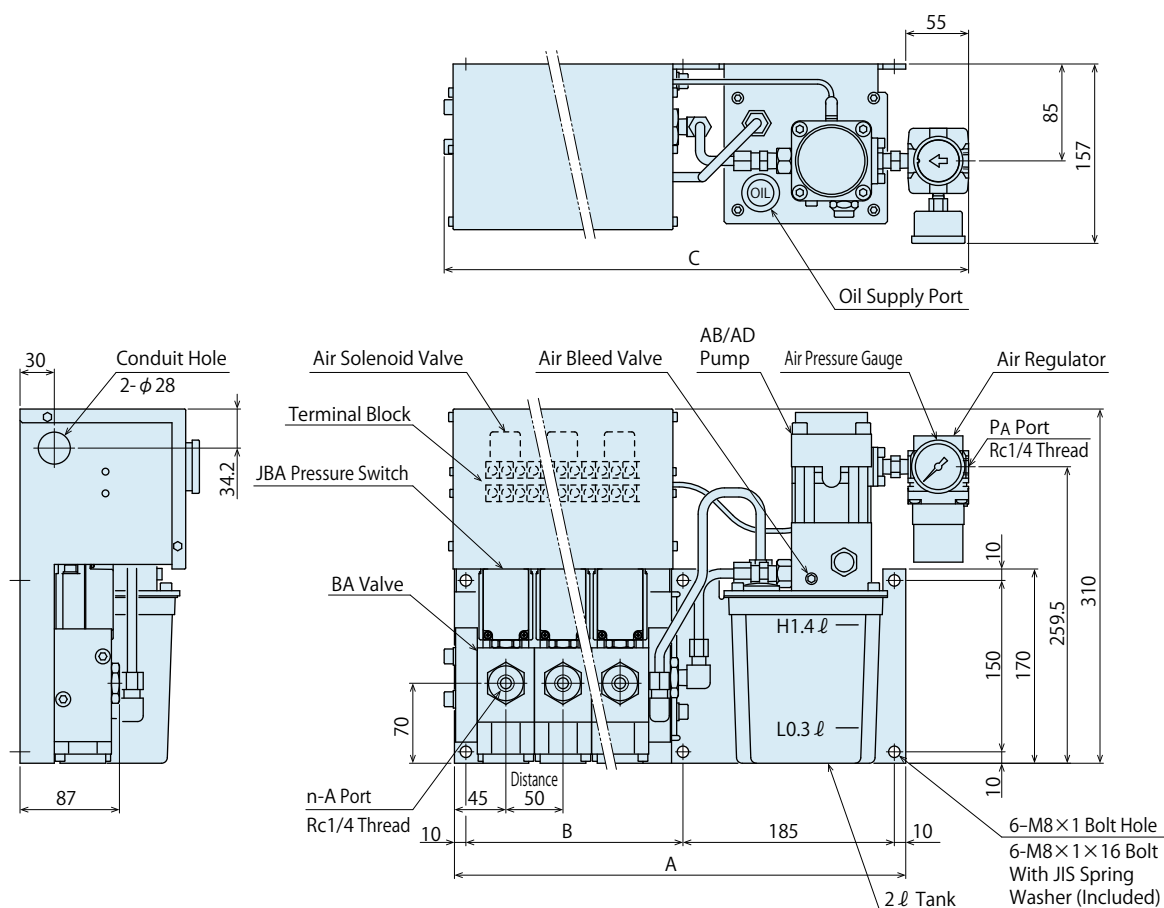
U Double Solenoid Valve for Clamp



V Double Solenoid Valve for Die Lifter



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

Note:

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

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Pump Unit

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Valve Unit

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MV

Operational Control Panel

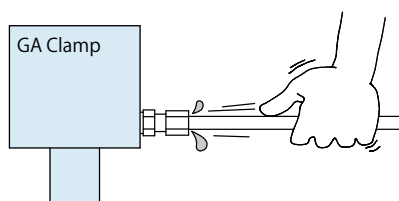
YP

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.

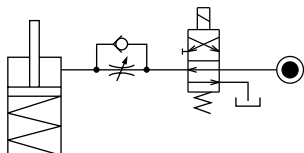
Notes on Hydraulic Cylinder Speed Control Unit



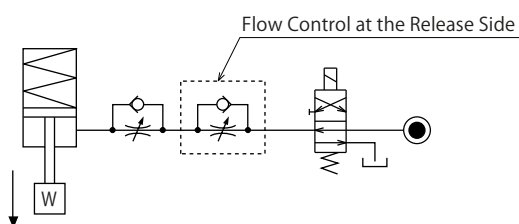
Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

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.



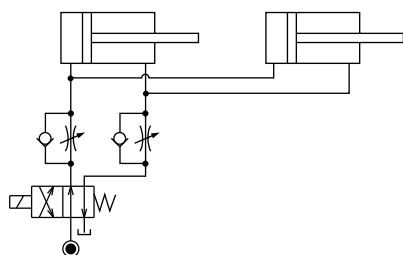
Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow.



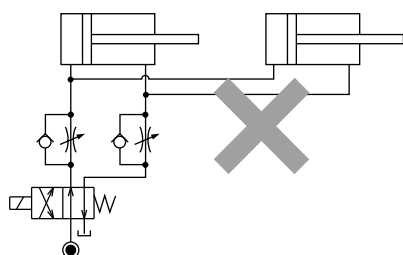
Flow Control Circuit for Double Acting Cylinder

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】

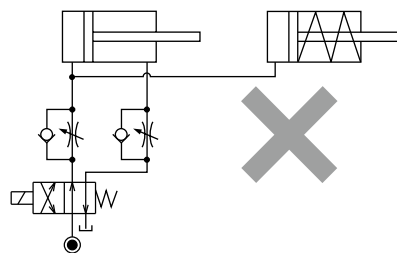


【Meter-in Circuit】



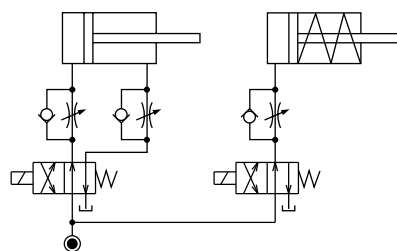
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

- 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.

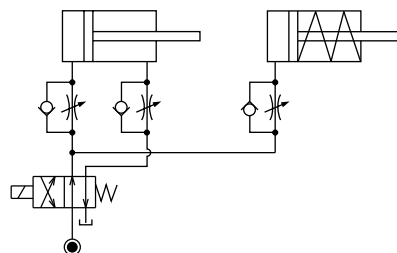


Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

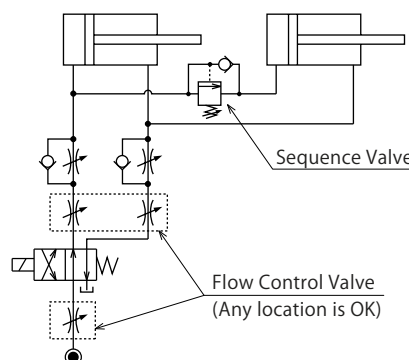
- Separate the control circuit.



- 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.



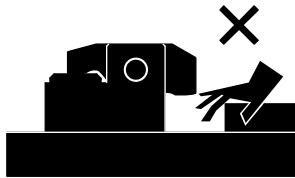
- ② In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve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

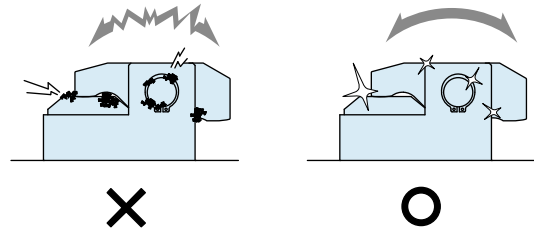
- 1) It should be handled by qualified personnel.
- The hydraulic machine / air compressor should be handled and maintained by qualified personnel.
- 2) Do not handle or remove the machine unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when it 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.

Cautions

Installation Notes
(For Hydraulic Series)

Hydraulic Fluid List

Notes on Hydraulic Cylinder
Speed Control Unit

Notes on Handling

Maintenance / Inspection

Warranty

Company Profile

Company Profile

Our Products

History

Sales Office

● 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.

Sales Offices

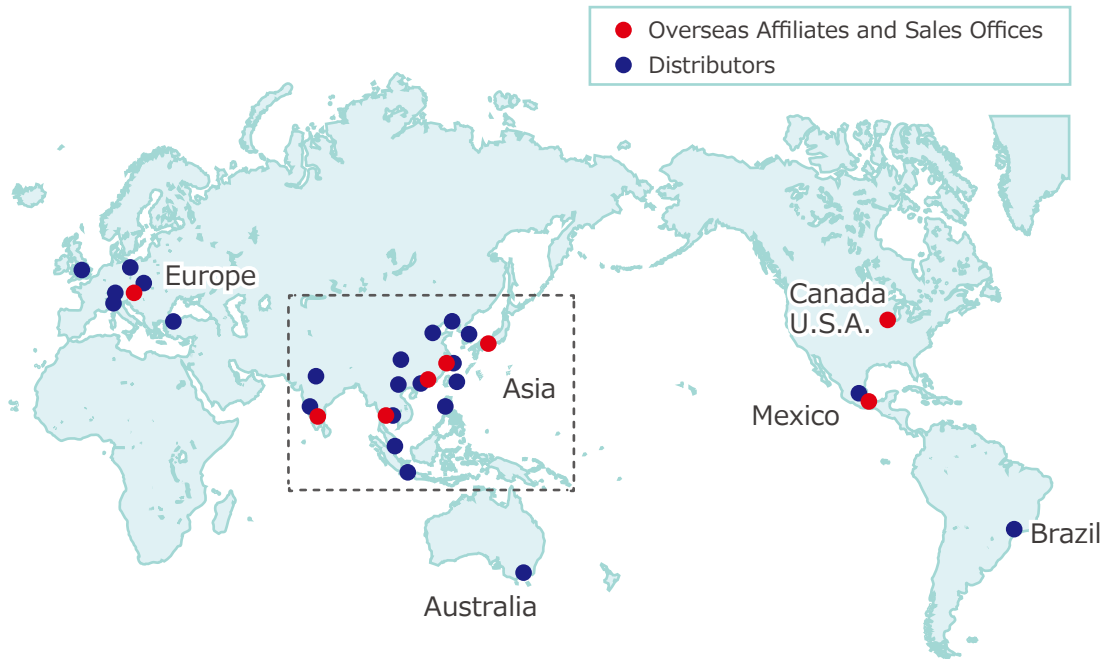
Sales Offices across the World

Japan	TEL. +81-78-991-5162	FAX. +81-78-991-8787
Overseas Sales	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	
USA	TEL. +1-630-620-7650	FAX. +1-630-620-9015
KOSMEK (USA) LTD.	650 Springer Drive, Lombard, IL 60148 USA	
Mexico	TEL. +52-442-161-2347	
KOSMEK USA Mexico Office	Blvd Jurica la Campana 1040, B Colonia Punta Juriquilla Queretaro, QRO 76230 Mexico	
EUROPE	TEL. +43-463-287587	FAX. +43-463-287587-20
KOSMEK EUROPE GmbH	Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria	
China	TEL. +86-21-54253000	FAX. +86-21-54253709
KOSMEK (CHINA) LTD. 考世美(上海)贸易有限公司	Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China 中国上海市浦东新区浦三路21弄55号银亿滨江中心601室 200125	
India	TEL. +91-9880561695	
KOSMEK LTD - INDIA	F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India	
Thailand	TEL. +66-2-300-5132	FAX. +66-2-300-5133
Thailand Representative Office	67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand	
Taiwan (Taiwan Exclusive Distributor)	TEL. +886-2-82261860	FAX. +886-2-82261890
Full Life Trading Co., Ltd. 盈生貿易有限公司	16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511 台湾新北市中和區建八路2號 16F-4 (遠東世紀廣場)	
Philippines (Philippines Exclusive Distributor)	TEL. +63-2-310-7286	FAX. +63-2-310-7286
G.E.T. Inc, Phil.	Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427	
Indonesia (Indonesia Exclusive Distributor)	TEL. +62-21-29628607	FAX. +62-21-29628608
PT. Yamata Machinery	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	TEL. 078-991-5162	FAX. 078-991-8787
	〒651-2241 兵庫県神戸市西区室谷2丁目1番5号	
Tokyo Sales Office	TEL. 048-652-8839	FAX. 048-652-8828
	〒331-0815 埼玉県さいたま市北区大成町4丁目81番地	
Nagoya Sales Office	TEL. 0566-74-8778	FAX. 0566-74-8808
	〒446-0076 愛知県安城市美園町2丁目10番地1	
Fukuoka Sales Office	TEL. 092-433-0424	FAX. 092-433-0426
	〒812-0006 福岡県福岡市博多区上牟田1丁目8-10-101	

Global Network



Asia Detailed Map



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Harmony in Innovation

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