

Spring Die Lifter

Model RB

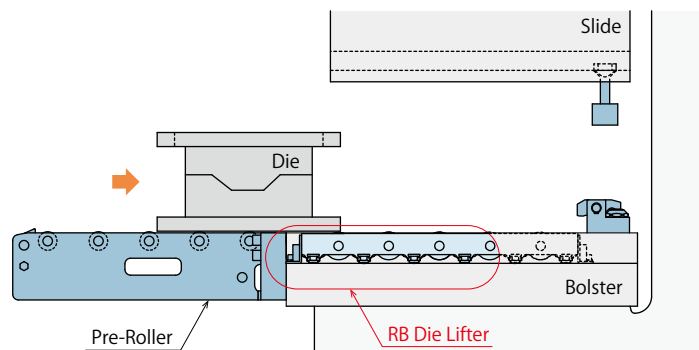
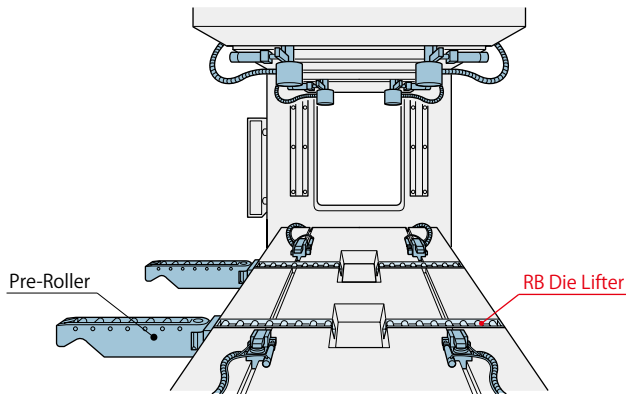


Set in the T-slot or U-slot

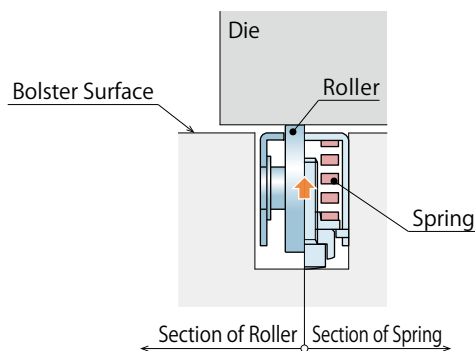
Easy to load / unload the die with spring lifting rollers.

The die is easily moved to the bolster by the roller of die lifter.

No hydraulic supply is required.

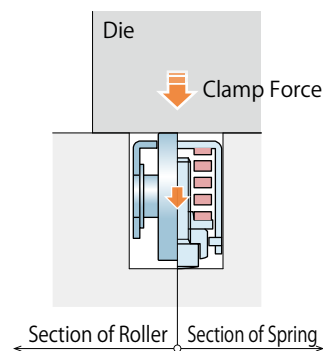


● Action Description



Up

Die lifter lifts up by spring force.
Roller is above bolster surface,
and the die can be easily moved by the roller.



Down

Die lifter moves down by
clamping force which locks the die.
Roller descends under bolster surface,
and the die contacts the bolster.

Model No. Indication

RB 22 2 0 - V145

1 2 3 4

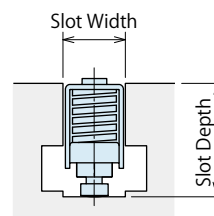
1 Applicable Slot Width

22 : Slot Width 22 mm

24 : Slot Width 24 mm

28 : Slot Width 28 mm

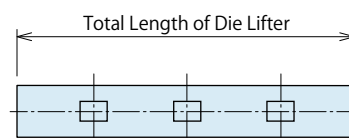
32 : Slot Width 32 mm



2 Total Length of Die Lifter

2 : Total Length of Die Lifter 200 mm

3 : Total Length of Die Lifter 300 mm



3 Design No.

0 : Revision Number

4 Option

Blank : Standard

V : High Temperature (0 ~ 200°C)

145 : Total Length of Die Lifter 145 mm^{※1 ※2} (Only when choosing **2** Total Length of Die Lifter **2**:200 mm)

245 : Total Length of Die Lifter 245 mm^{※1 ※2} (Only when choosing **2** Total Length of Die Lifter **3**:300 mm)

Notes:

※1. For **4** Option **145** and **245**, total length of model number will be written in millimeter even if specifications and other documents are written in inch for USA etc.

※2. Please contact us for the external dimensions of **4** Option **145** and **245**.

1. End plate is not provided. Please refer to "Accessories" on P.120.

Specifications

Model No.		RB2220	RB2230	RB2420	RB2430	RB2820	RB2830	RB3220	RB3230
Applicable Slot Width	mm	22		24		28		32	
Applicable Slot Depth	mm	32 ~ 43				44 ~ 58			
Total Length of Die Lifter	mm	200	300	200	300	200	300	200	300
Number of Rollers (per Die Lifter)		3	5	3	5	3	5	3	5
Number of Lift Spring (per Die Lifter)		4	6	4	6	4	6	4	6
Lifting Force (per Die Lifter)	kN	1.5	2.2	1.5	2.2	2.9	4.4	2.9	4.4
Operating Temperature	℃	0 ~ 110 (V : High Temperature 0 ~ 200 ℃)							

RB2220



RB2230



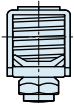
RB2420



RB2430



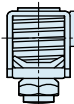
RB2820



RB2830



RB3220



RB3230

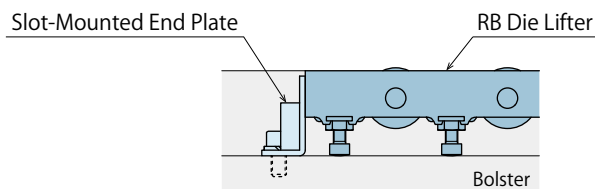


Accessories : Slot-Mounted End Plate

Model No. Indication

RBE **21** **0** - **43**

1 2 3



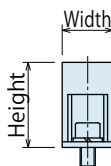
1 Width

21 : Width 21 mm (Applicable Die Lifter RB22□0)

23 : Width 23 mm (Applicable Die Lifter RB24□0)

27 : Width 27 mm (Applicable Die Lifter RB28□0)

31 : Width 31 mm (Applicable Die Lifter RB32□0)



2 Design No.

0 : Revision Number

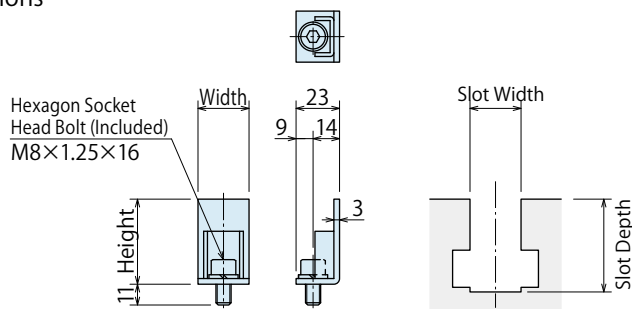
3 Height

43 : Height 43 mm (For **1** Width **21, 23**)

45 : Height 45 mm (For **1** Width **27**)

58 : Height 58 mm (For **1** Width **27, 31**)

External Dimensions



Model No.	Slot-Mounted End Plate	RBE210-43	RBE230-43	RBE270-45	RBE270-58	RBE310-58
Model No.	Applicable Die Lifter	RB22□0	RB24□0	RB28□0	RB32□0	RB32□0
Width	mm	21	23	27	27	31
Height ※1	mm	43	43	45	58	58
Applicable Slot Width	mm	22	24	28		32
Applicable Slot Depth	mm	32 ~ 43		44 ~ 58		

Note:

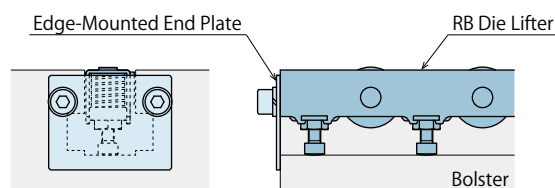
※1. Please cut the end plate height according to applicable slot depth.

Accessories : Edge-Mounted End Plate

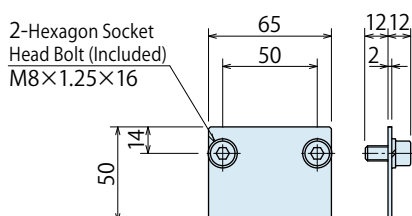
Model No. Indication

RBF00 0

Design No.
(Revision Number)



External Dimensions



Note:

1. Edge-Mounted End Plate can be used in all sizes of RB die lifter.

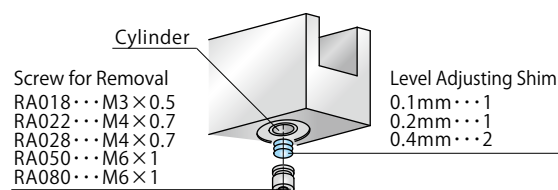
● Cautions

● Notes for Design

- 1) Check Specifications
 - Working pressure of RA die lifter is 25MPa, and maximum operating pressure is 27MPa.
 - Please use the product according to each specification of RA/RB die lifter and RAF roller.
- 2) Check Die Weight
 - Please use the product within the allowable die weight range. If weight of the die exceeds the allowable range, the bottom of the die may be damaged and it may cause lifting failure.
- 3) Check the positions of scrap hole and cylinders (only for RA die lifter).
 - If the bolster has a scrap hole, make sure that cylinders on the bottom of RA die lifter are not on the space of scrap hole. If cylinders are on the scrap hole, RA die lifter will be damaged resulting in malfunction and/or dangerous working conditions.
- 4) Check the positions of scrap hole and mounting bolts (only for RAF roller).
 - If the bolster has a scrap hole, make sure that mounting bolts of RAF roller are not on the space of scrap hole.

● Installation Notes

- 1) Check the fluid to use (for RA Die Lifter Only)
 - Please refer to Hydraulic Fluid List and use the appropriate fluid.
- 2) Procedure before Piping (for RA Die Lifter Only)
 - The pipeline and piping connector should be cleaned by thorough flushing.
- 3) Use Hydraulic Hose for Piping (for RA Die Lifter Only)
 - Please use a hydraulic hose since hydraulic connection port moves up and down.
- 4) Level Adjustment
 - Set the die lifter into U-slot (T-slot) and adjust the level according to dimensions when moving upward and downward. Please refer to the external dimensions for U-slot (T-slot) dimensions and setting of level adjustment. If the level is not adjusted, the load may not be uniformly distributed, which could damage the die and die lifter. Use the level adjusting shims to adjust the RA roller level, and use the level adjusting bolt to adjust the RB roller level and fasten the level adjusting bolt with a lock nut tightened with 5.9-9.8 N · m of torque.



- 5) Air Bleeding within Hydraulic Circuit (for RA Die Lifter Only)
 - Excessive air in the hydraulic circuit will slow the reaction time and may result in pump continuous idling. After installing the hydraulic circuit, or if the pump run out of oil, be sure to bleed air from the nipple in the case of RA0180/0220/0280 or from the air bleed valve in the case of RA050/080.

● 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	

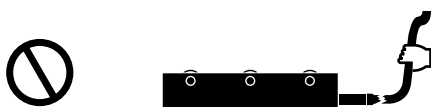
Note : As it may be difficult to purchase the products as shown in the table from overseas, please contact the respective manufacturer.

● Notes on Handling

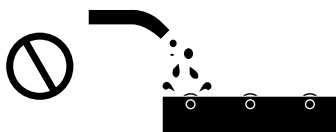
- 1) The product should be handled by qualified personnel.
- 2) Do not handle or remove the machine unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.
 - ② Before the machine is removed, 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 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 disassemble or modify it.
 - If the equipment is taken apart or modified, the warranty will be void even within the warranty period.
- 4) Do not touch die lifters while they are working.
 - Otherwise, your hands may be injured.



- 5) Hold the RA Die Lifter Itself when Moving or Removing
 - If pulling on the hose, RA die lifter may fall off leading to accident. Also, rivet part of the hose will be loosened leading to fluid leakage.



- 6) Do not pour water or oil over the product.
 - It may lead to malfunction or deterioration of the product causing an accident.



● Maintenance / Inspection

- 1) Removal of Equipment
 - Before the equipment is removed, make sure that the preventive devices are in place.
 - Make sure there is no abnormality in the bolts and respective parts before restarting.
- 2) Check to make sure that the rollers move smoothly and do not make noises.
- 3) Please contact us for overhaul and repairs.
- 4) Regularly tighten pipe lines to ensure proper use.
- 5) Regularly check to make sure that the supply hydraulic pressure is at the operating pressure.
- 6) Make sure hydraulic fluid is not deteriorated.
- 7) Make sure the operation is smooth without abnormal sounds.
 - Especially when the equipment has not used for a long period of time or when using for the first time, make sure it operates properly.
- 8) Regularly tighten the end plate mounting bolts to ensure proper use.
- 9) When storing the product, keep it out of direct sunlight in a cool location where it is protected from water.

※ Refer to P.177 for common cautions.

• Notes on Installation
• Notes on Handling

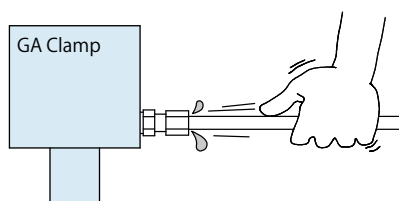
• Hydraulic Fluid List
• Maintenance / Inspection

• Speed Control Circuit of Hydraulic Cylinder & Notes
• Warranty

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.

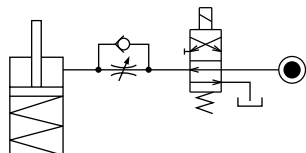
Notes on Hydraulic Cylinder Speed Control Unit



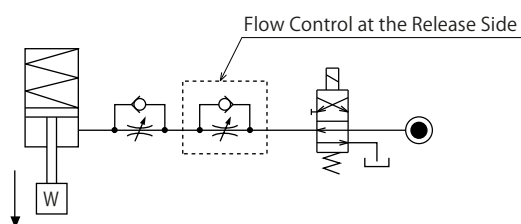
Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

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.



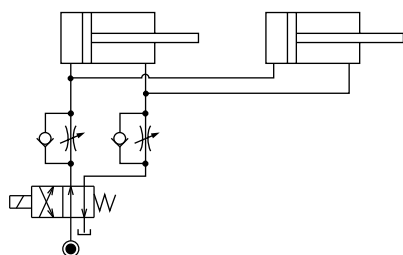
Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow.



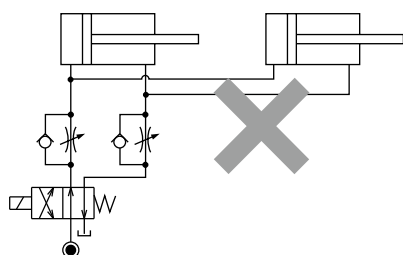
Flow Control Circuit for Double Acting Cylinder

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】

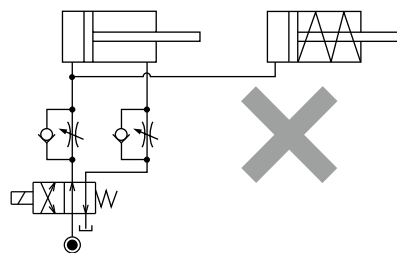


【Meter-in Circuit】



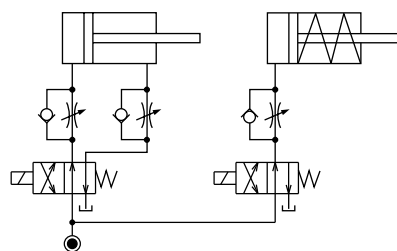
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

- 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.

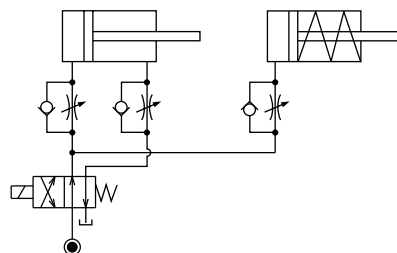


Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

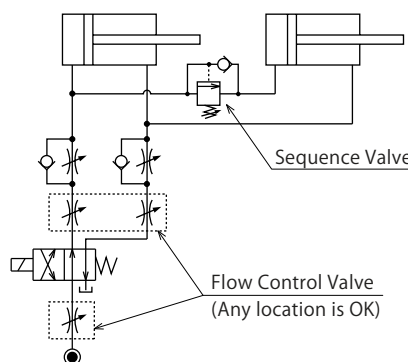
- Separate the control circuit.



- 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.



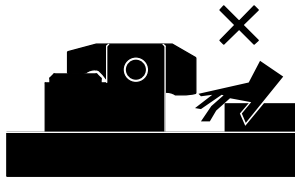
- ② In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve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

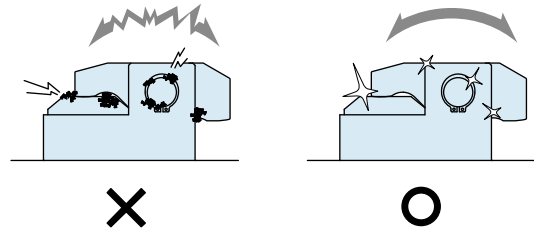
- 1) It should be handled by qualified personnel.
- The hydraulic machine / air compressor should be handled and maintained by qualified personnel.
- 2) Do not handle or remove the machine unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when it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

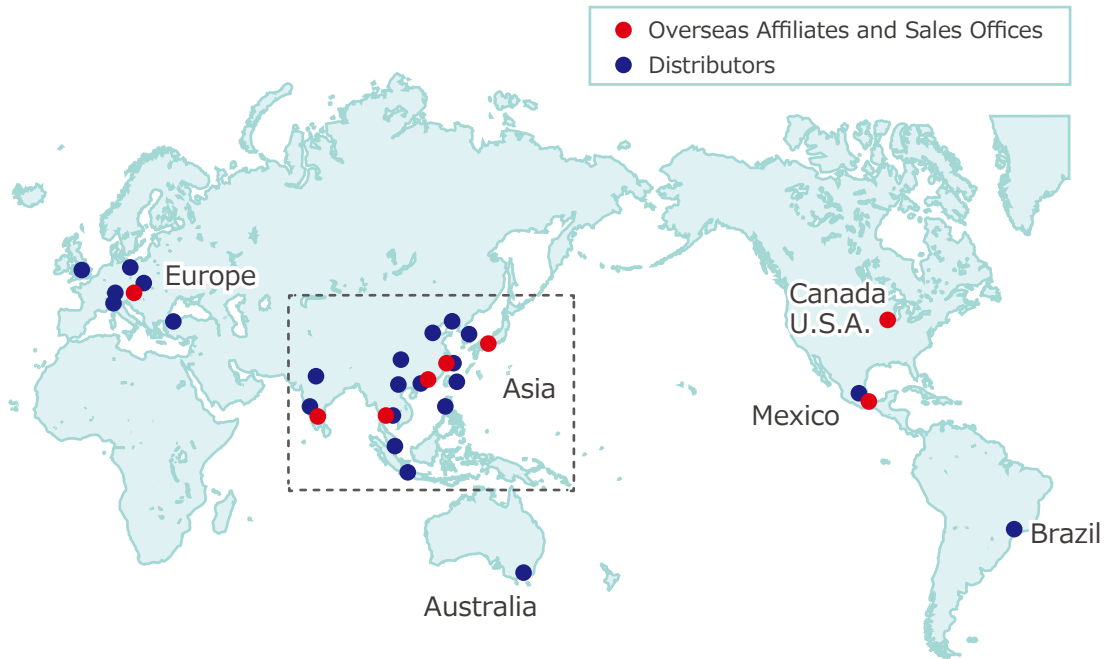
Sales Offices across the World

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	
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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	
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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	
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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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