Hydraulic Oil/Air/Coolant

Rotary Joint

Model JR

Long Life • Compact • Low Torque

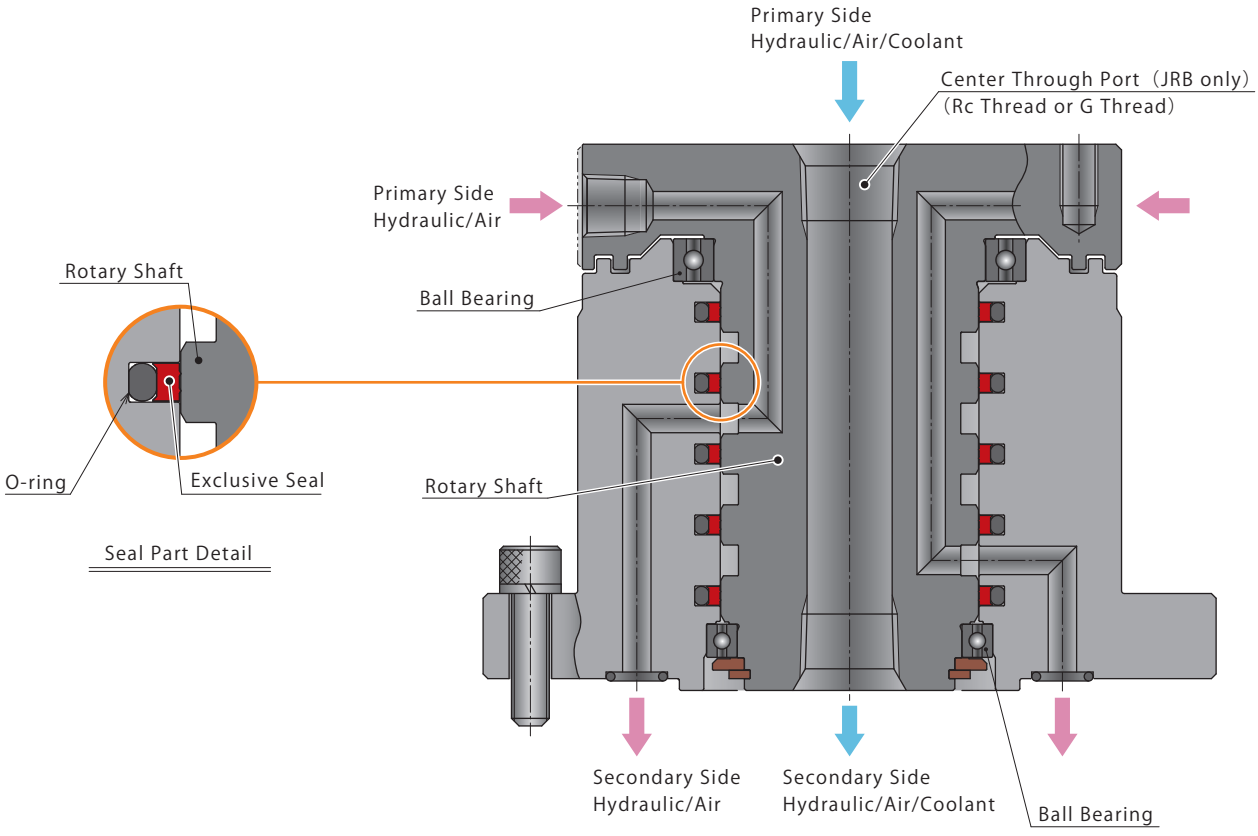
A center through port is available for high volume coolant

● Applicable for Hydraulic • Pneumatic • High Volume Coolant※1

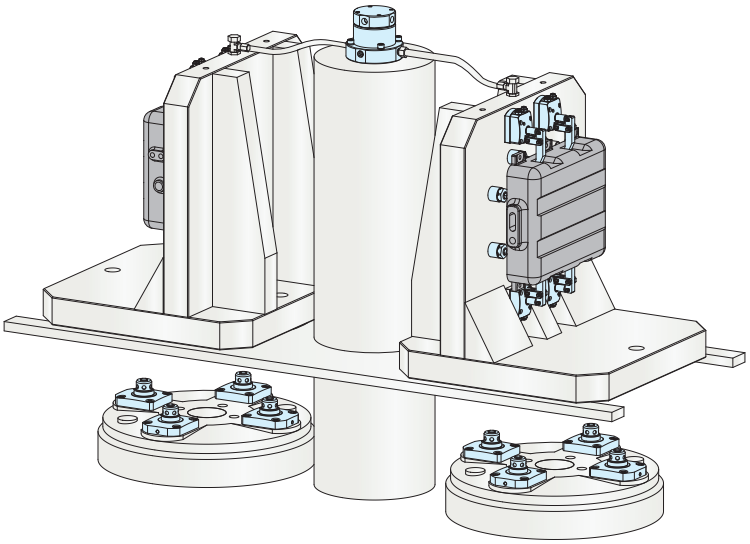
It adopts the original developed low friction seal and low torque enables smooth rotation.
Each part of this rotary joint is highly durable and each seal provided by KOSMEK has low torque, highly durable and high capacity design that allows for a longer life of the component.

You can choose the number of ports from 2, 4, 6, 8 along with the center through port.

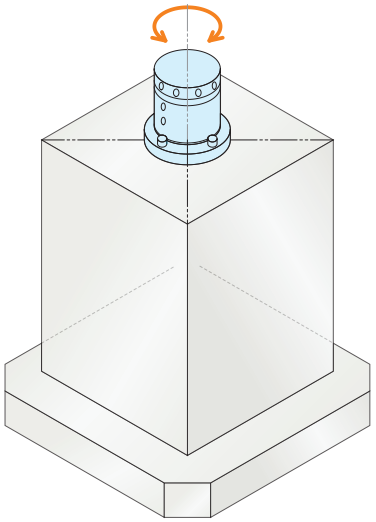
※1. JRB is the only model with center through port.



Application Examples



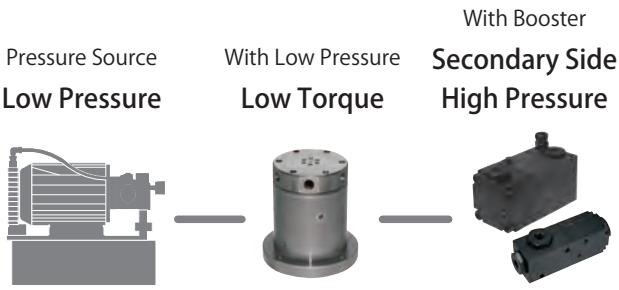
On Rotary Table

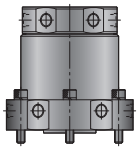


On Angle Plate Fixture

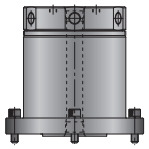
- **Make the secondary side pressure higher with low torque.**

Using a booster (model AU/BU) after rotary joint allows low rotating torque and will allow the use of high pressure for actuators.





Model JRC → P.889



Model JRB → P.890

	Model JRC	Model JRB
Classification	No Center Through Port	One Center Through Port
The Number of the Ports	2/4/6/8 Port	2/4/6/8 Port＋Center Through Port
Usable Fluid	General Hydraulic Oil：7MPa or less air：1MPa or less	General Hydraulic Oil：7MPa or less air：1MPa or less Coolant: less than 1MPa (Available only for center through port)
Feature	Low Rotary Torque (Compact Design)	Large Flow Rate

Model No. Indication：No Center Through Port Model

JRC 02 0 0 - S - A
1 2 3 4 5

1 The Number of the Ports

02 ： 2 ports
04 ： 4 ports
06 ： 6 ports
08 ： 8 ports

2 Center Through Port

0 ： No Center Through Port

3 Design No.

0 ： Revision Number

4 Primary Side Piping Method

B ： Piping Option (BSPP Thread (G-Thread))
S ： Piping Option (BSPT (Rc-Thread))

5 Secondary Side Piping Method

A ： Both Gasket and Piping Options (With BSPT Plug (R-Thread Plug))
D ： Both Gasket and Piping Options (With BSPP (G-Thread Plug))

Note
1. Contact us, if you need a piping option different than what is shown in model code of catalogue.

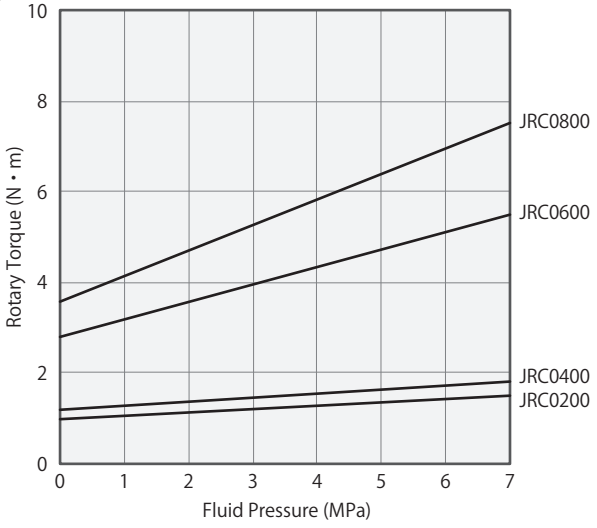
Specifications

Model No.		JRC0200-□-□	JRC0400-□-□	JRC0600-□-□	JRC0800-□-□
Operating Pressure MPa	Oil	0 ～ 7.0			
	Air	0 ～ 1.0			
Ports	Number	2	4	6	8
	Min. Passage Area mm2	19.6			
Center Through Port		Nothing			
Allowable Rotary Speed (at 7MPa)※1 min^{-1}		280	280	200	200
Usable Fluid		General Hydraulic Oil Equivalent to ISO-VG-32 or Air			
Operating Temperature ℃		–10 ～ 70			
Mass kg		4.5	5.5	8.0	9.5

Notes ※1. The allowable rotary speed is based on operating pressure of maximum 7MPa.
1. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
2. Please avoid continuous operation as it will cause overheating and damage to the internal packing.

Performance Curve (Rotary Torque：Reference Value)

	Rotary Torque (N·m)			
Model No. Indication	JRC0200	JRC0400	JRC0600	JRC0800
Fluid Pressure(MPa)	-□-□	-□-□	-□-□	-□-□
7	1.5	1.8	5.5	7.5
6	1.4	1.7	5.1	6.9
5	1.4	1.6	4.7	6.4
4	1.3	1.5	4.3	5.8
3	1.2	1.5	4.0	5.3
2	1.1	1.4	3.6	4.7
1	1.1	1.3	3.2	4.2
0	1.0	1.2	2.8	3.6



Notes
1. This graph show the relationship between the rotary torque and the fluid pressure.
2. The starting torque might be more than double of rotating torque shown in graph and may change according to the conditions of the stationary down time. It varies depending on the condition such as stationary down time.
3. The rotary torque is a reference level.

Model No. Indication：One Center Through Port Model

JRB 02 1 0 - S - G - S

1 2 3 4 5 6

1 The Number of the Ports

02 ： 2 ports　　**06** ： 6 ports
04 ： 4 ports　　**08** ： 8 ports

2 Center Through Port

1 ： One Center Through Port

3 Design No.

0 ： Revision Number

4 Primary Side Piping Method

B ： Piping Option (BSPP Thread (G-Thread))
S ： Piping Option (BSPT (Rc-Thread))

5 Secondary Side Piping Method

G ： Gasket Option

6 Piping Method of Center Through Port

B ： Piping Option (BSPP Thread (G-Thread)) ※Contact us.
S ： Piping Option (BSPT (Rc-Thread))

Note
1. Contact us, if you need a piping option different than what is shown in model code of catalogue.

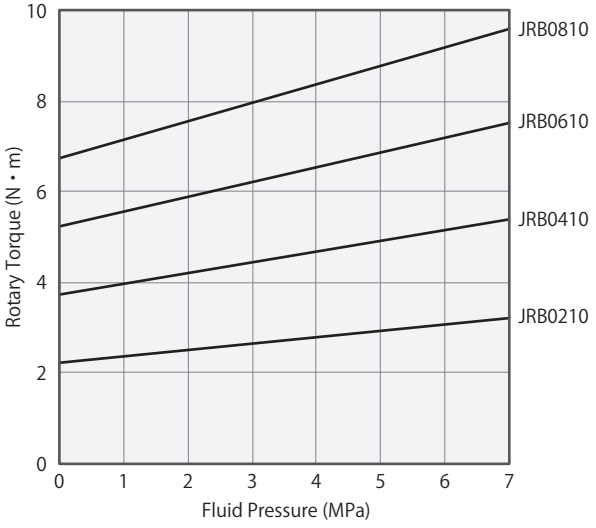
Specifications

Model No.		JRB0210-□-G-□	JRB0410-□-G-□	JRB0610-□-G-□	JRB0810-□-G-□
Operating Pressure MPa	Oil	0 ～ 7.0			
	Air/Coolant	0 ～ 1.0			
Ports	Number	2	4	6	8
	Min. Passage Area mm2	28.3			
	Usable Fluid	General Hydraulic Oil Equivalent to ISO-VG-32 or Air			
Center Through Port	Number	1			
	Min. Passage Area mm2	254			
	Usable Fluid	General Hydraulic Oil Equivalent to ISO-VG-32 or Air or Coolant			
Allowable Rotary Speed (at 7MPa)※1 min-1		140			
Operating Temperature ℃		−10 ～ 70			
Mass kg		7.5	10.0	12.5	15.0

Notes ※1. The allowable rotary speed is based on operating pressure of maximum 7MPa.
1. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
2. Please avoid continuous operation as it will cause overheating and damage to the internal packing.

Performance Curve (Rotary Torque：Reference Value)

	Rotary Torque (N·m)			
Model No. Indication	JRB0210	JRB0410	JRB0610	JRB0810
Fluid Pressure(MPa)	-□-G-□	-□-G-□	-□-G-□	-□-G-□
7	3.2	5.4	7.5	9.6
6	3.1	5.2	7.2	9.2
5	2.9	4.9	6.9	8.8
4	2.8	4.7	6.5	8.4
3	2.7	4.5	6.2	8.0
2	2.5	4.2	5.9	7.6
1	2.4	4.0	5.6	7.2
0	2.3	3.8	5.3	6.8



Notes
1. This graph show the relationship between the rotary torque and the fluid pressure.
2. The starting torque might be more than double of rotating torque shown in graph and may change according to the conditions of the stationary down time. It varies depending on the condition such as stationary down time.
3. The rotary torque is a reference level.

External Dimensions：JRC0200

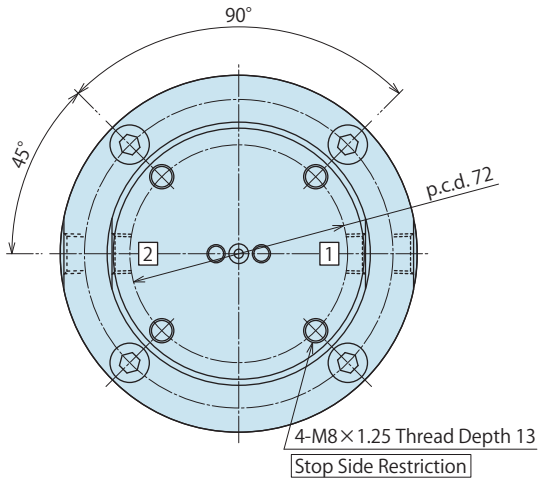
※This drawing indicates JRC0200-S-A.
(2 Port Circuit)

When G thread is necessary for a primary side or secondary side port, please contact us separately.

Model No. Indication

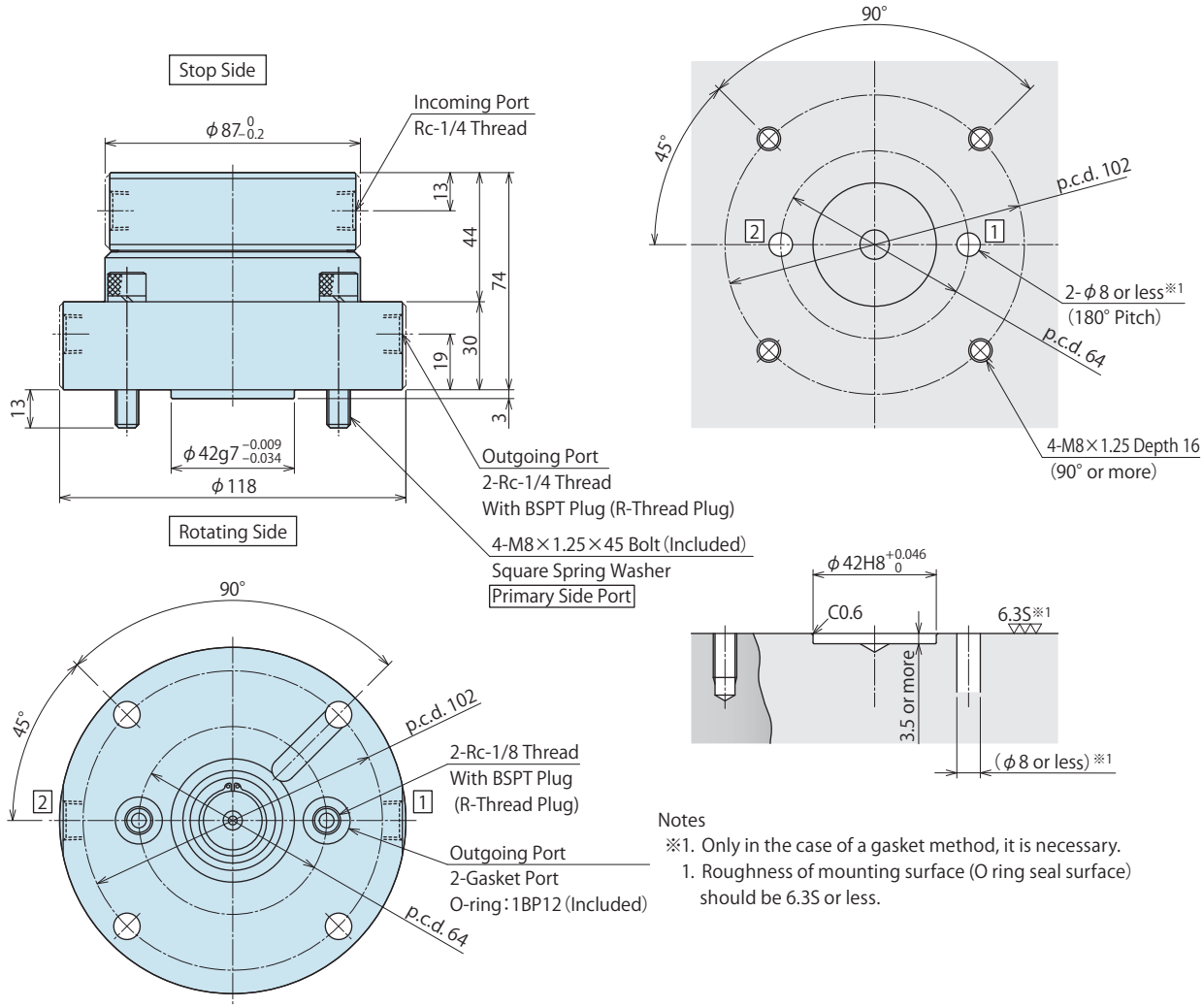
JRC0200- B S - A D

4 Primary Side Piping Method
5 Secondary Side Piping Method



Notes
1. The rotation side must be fixed the flange part with the bolt, and restrain only the rotation direction of the stop side.
2. Please use hose for piping of stop side.
3. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
4. Please avoid continuous operation as it will cause overheating and damage to the internal packing.
5. Each port exhibits a port number.
6. When using Rc1/4 thread for a secondary side port, please attach the attached R1/8 screw plug to the gasket port part.
When using gasket option, please attach O-ring and R1/4 plug.

Machining Dimensions of Mounting Area



Notes
※1. Only in the case of a gasket method, it is necessary.
1. Roughness of mounting surface (O ring seal surface) should be 6.3S or less.

External Dimensions：JRC0400

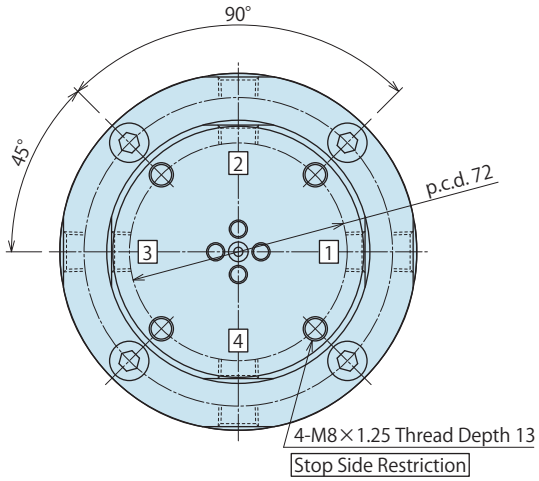
※ This drawing indicates JRC0400-S-A.
(4 Port Circuit)

When G thread is necessary for a primary side or secondary side port, please contact us separately.

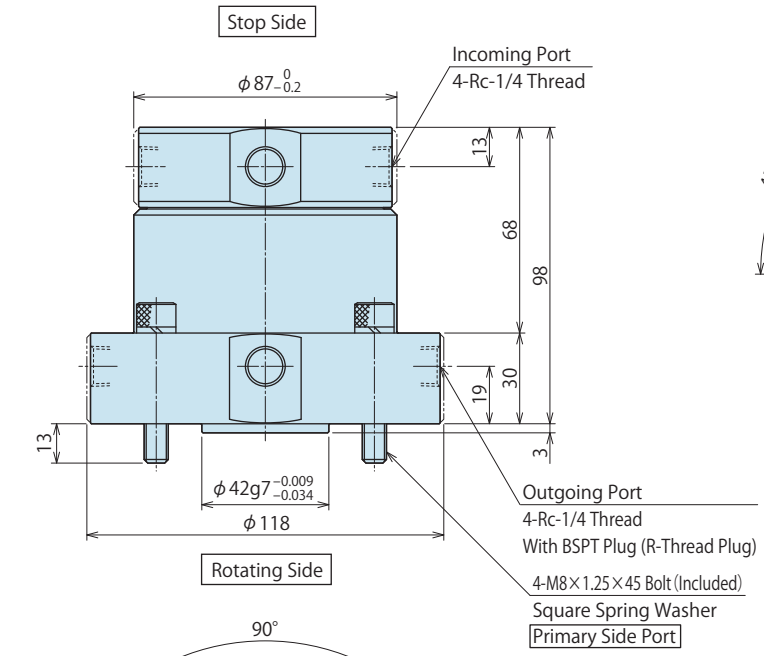
Model No. Indication

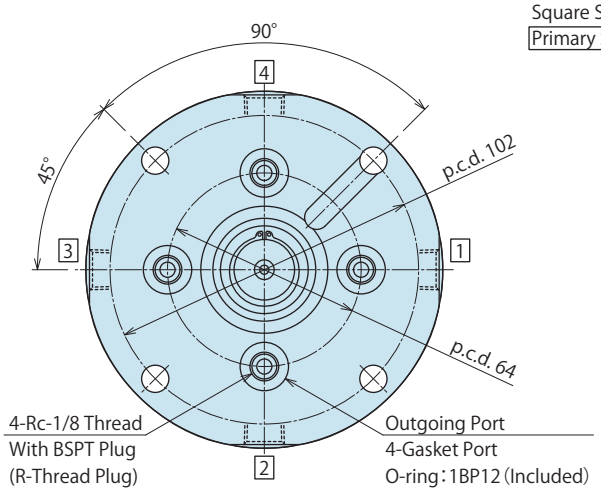
JRC0400-[4][5]

[4] BS Primary Side Piping Method
[5] AD Secondary Side Piping Method

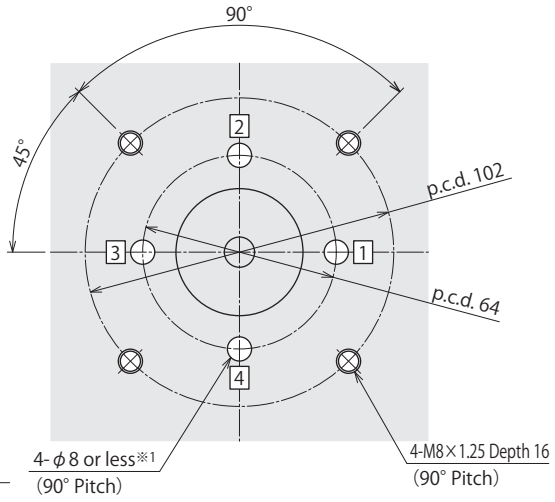


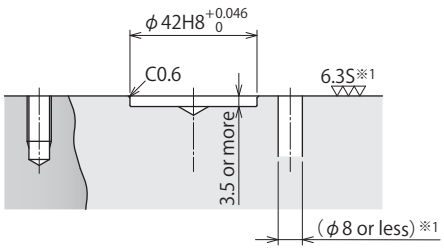
Notes
1. The rotation side must be fixed the flange part with the bolt, and restrain only the rotation direction of the stop side.
2. Please use hose for piping of stop side.
3. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
4. Please avoid continuous operation as it will cause overheating and damage to the internal packing.
5. Each port exhibits a port number.
6. When using Rc1/4 thread for a secondary side port, please attach the attached R1/8 screw plug to the gasket port part. When using gasket option, please attach O-ring and R1/4 plug.





Machining Dimensions of Mounting Area





Notes
※1. Only in the case of a gasket method, it is necessary.
1. Roughness of mounting surface (O ring seal surface) should be 6.3S or less.

External Dimensions：JRC0600

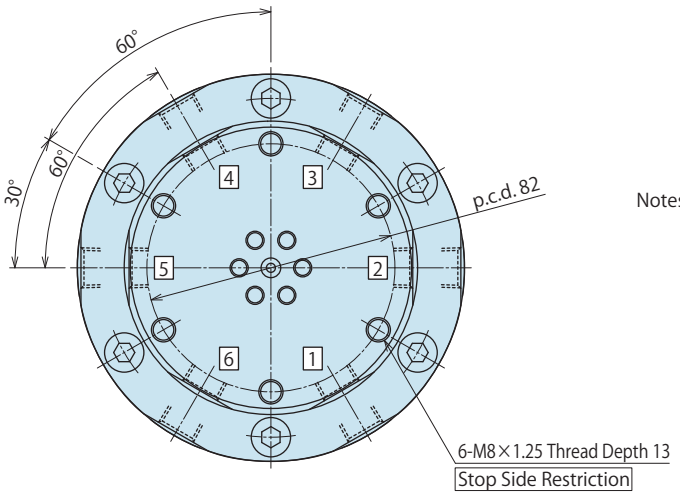
※This drawing indicates JRC0600-S-A.
(6 Port Circuit)

When G thread is necessary for a primary side or secondary side port, please contact us separately.

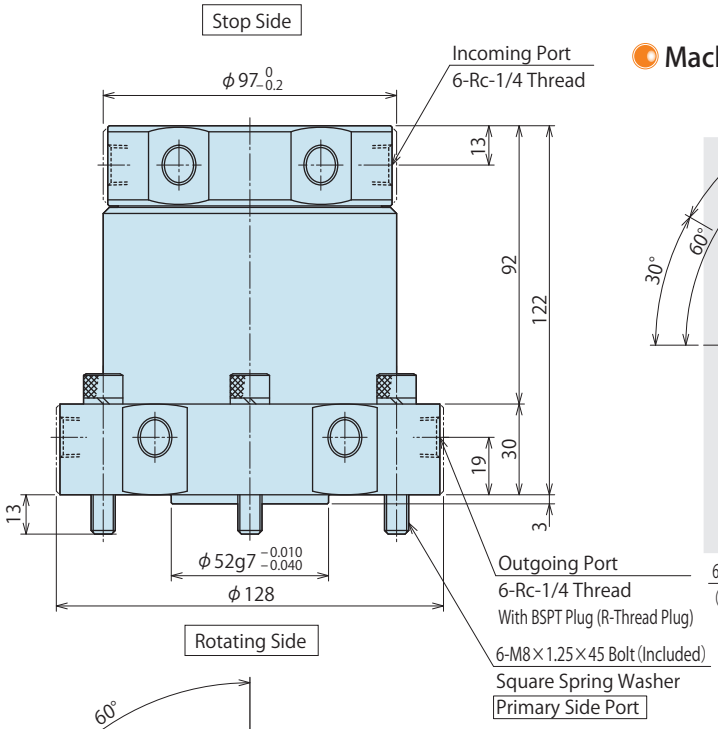
Model No. Indication

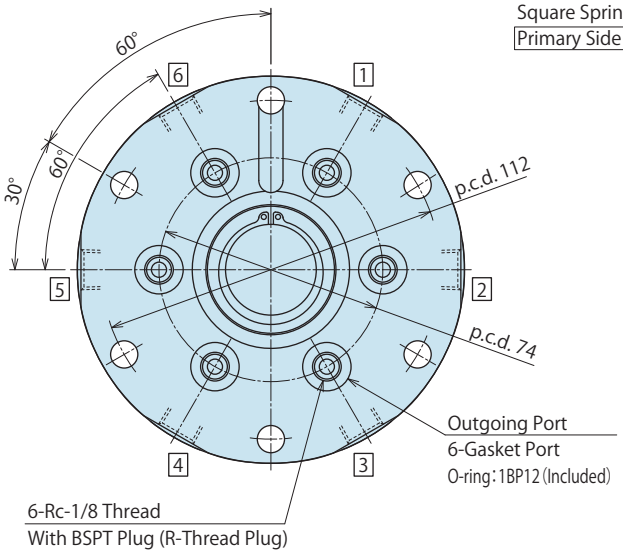
JRC0600- B S - A D

4 Primary Side Piping Method
5 Secondary Side Piping Method

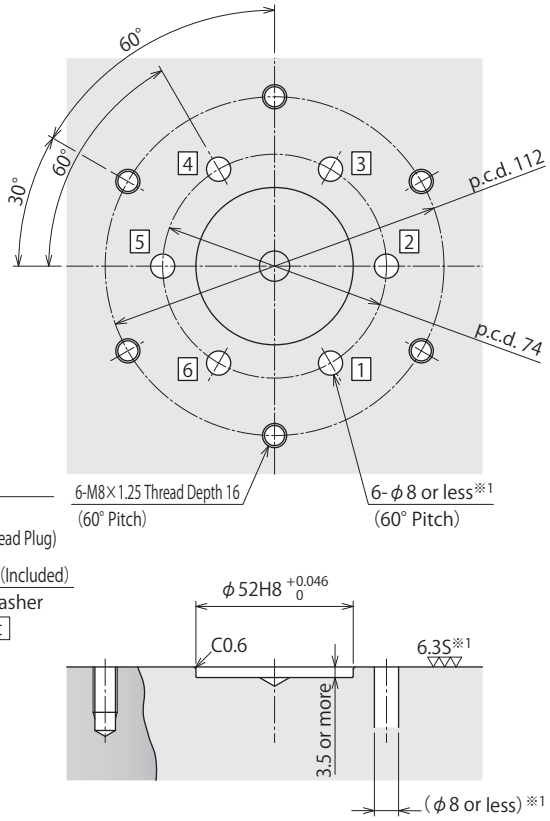


Notes
1. The rotation side must be fixed the flange part with the bolt, and restrain only the rotation direction of the stop side.
2. Please use hose for piping of stop side.
3. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
4. Please avoid continuous operation as it will cause overheating and damage to the internal packing.
5. Each port exhibits a port number.
6. When using Rc1/4 thread for a secondary side port, please attach the attached R1/8 screw plug to the gasket port part.
When using gasket option, please attach O-ring and R1/4 plug.





Machining Dimensions of Mounting Area



Notes
※1. Only in the case of a gasket method, it is necessary.
1. Roughness of mounting surface (O ring seal surface) should be 6.3S or less.

External Dimensions：JRC0800

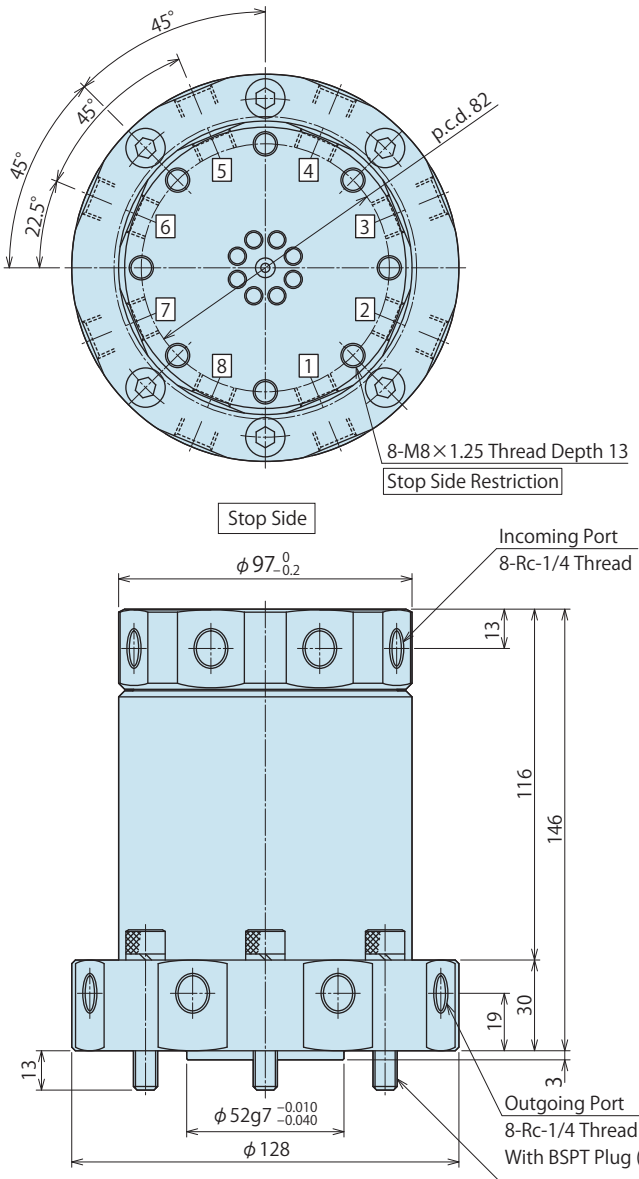
※ This drawing indicates JRC0800-S-A.
(8 Port Circuit)

When G thread is necessary for a primary side or secondary side port, please contact us separately.

Model No. Indication

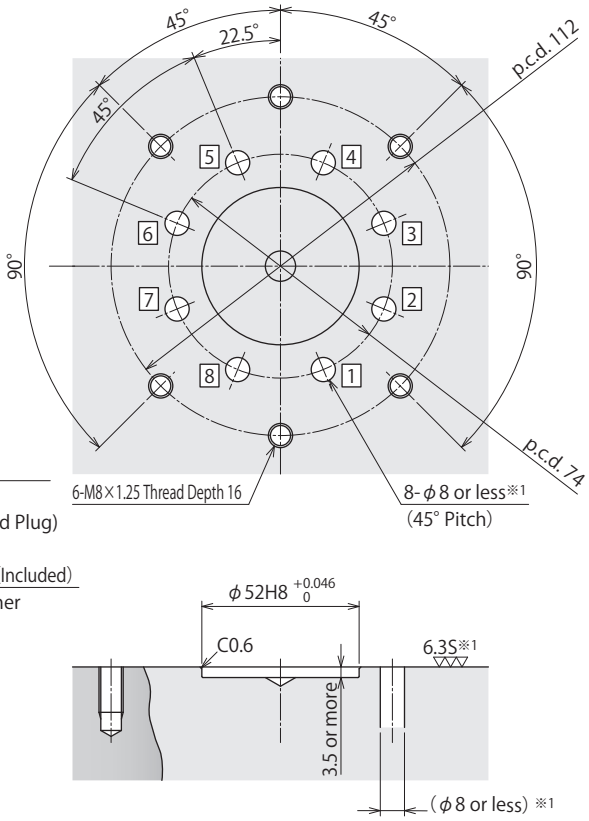
JRC0800-[B S]-[A D]

4 Primary Side Piping Method
5 Secondary Side Piping Method



Notes
1. The rotation side must be fixed the flange part with the bolt, and restrain only the rotation direction of the stop side.
2. Please use hose for piping of stop side.
3. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
4. Please avoid continuous operation as it will cause overheating and damage to the internal packing.
5. Each port exhibits a port number.
6. When using Rc1/4 thread for a secondary side port, please attach the attached R1/8 screw plug to the gasket port part. When using gasket option, please attach O-ring and R1/4 plug.

Machining Dimensions of Mounting Area



Notes
※1. Only in the case of a gasket method, it is necessary.
1. Roughness of mounting surface (O ring seal surface) should be 6.3S or less.

External Dimensions：JRB0210

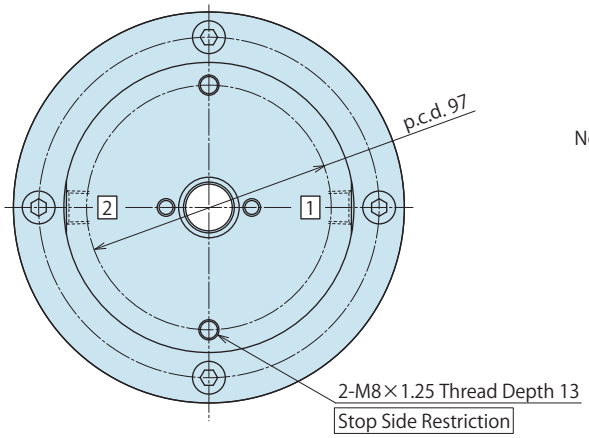
※ This drawing indicates JRB0210-S-G-S.
(2 Port Circuit + 1 Center Through Port)

When G thread is necessary for a primary side port or a center through port, please refer separately.

Model No.Indication

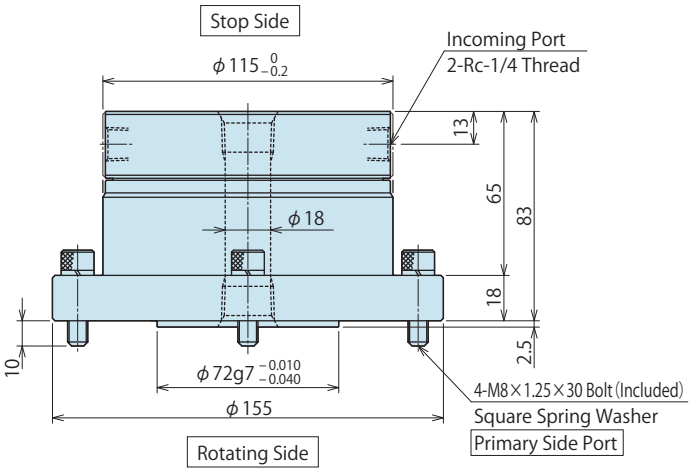
JRB0210- B S -G- B S

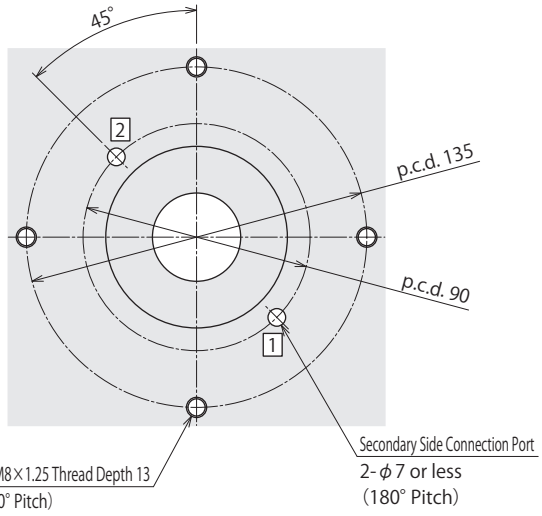
4 Primary Side Piping Method
6 Center Through Port Piping Method

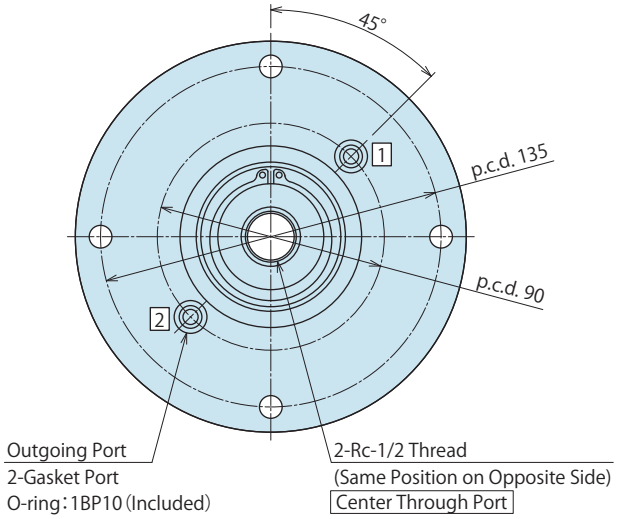


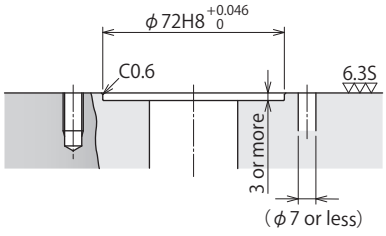
Notes
1. The rotation side must be fixed the flange part with the bolt, and restrain only the rotation direction of the stop side.
2. Please use hose for piping of stop side.
3. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
4. Please avoid continuous operation as it will cause overheating and damage to the internal packing.
5. Each port exhibits a port number.

Machining Dimensions of Mounting Area







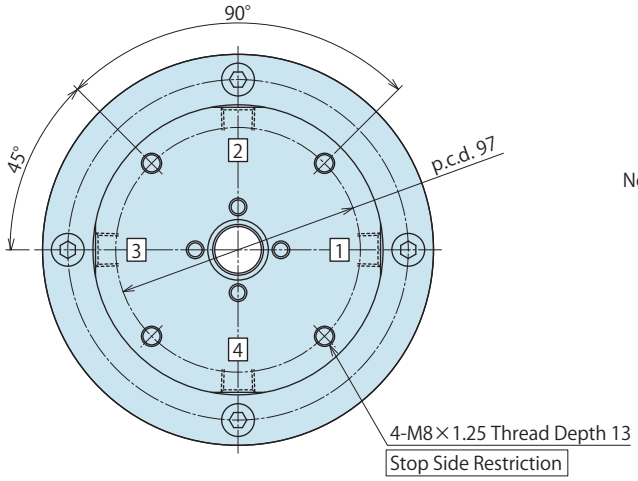


Note
1. Roughness of mounting surface (O-ring seal surface) should be 6.3S or less.

External Dimensions：JRB0410

※ This drawing indicates JRB0410-S-G-S.
(4 Port Circuit + 1 Center Through Port)

When G thread is necessary for a primary side port or a center through port, please refer separately.



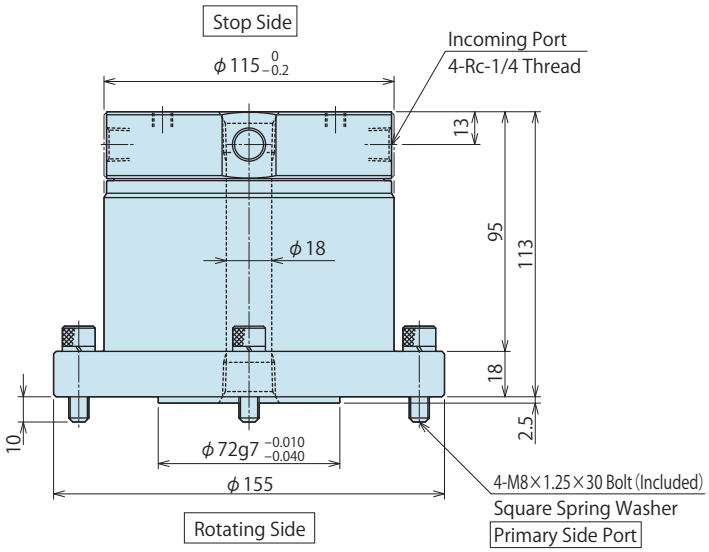
Model No. Indication

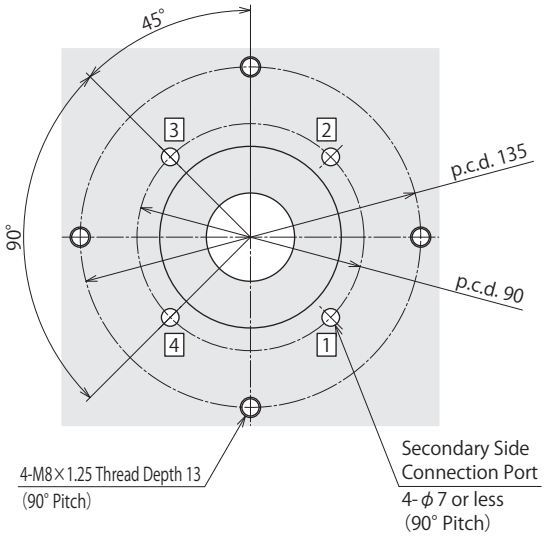
JRB0410-[B/S]-G-[B/S]

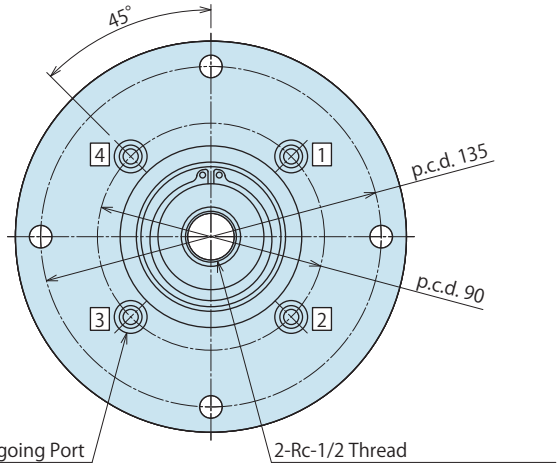
4 Primary Side Piping Method
6 Center Through Port Piping Method

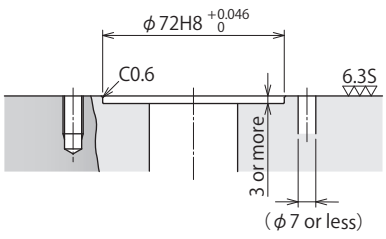
Notes
1. The rotation side must be fixed the flange part with the bolt, and restrain only the rotation direction of the stop side.
2. Please use hose for piping of stop side.
3. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
4. Please avoid continuous operation as it will cause overheating and damage to the internal packing.
5. Each port exhibits a port number.

Machining Dimensions of Mounting Area









Note
1. Roughness of mounting surface (O ring seal surface) should be 6.3S or less.

External Dimensions：JRB0610

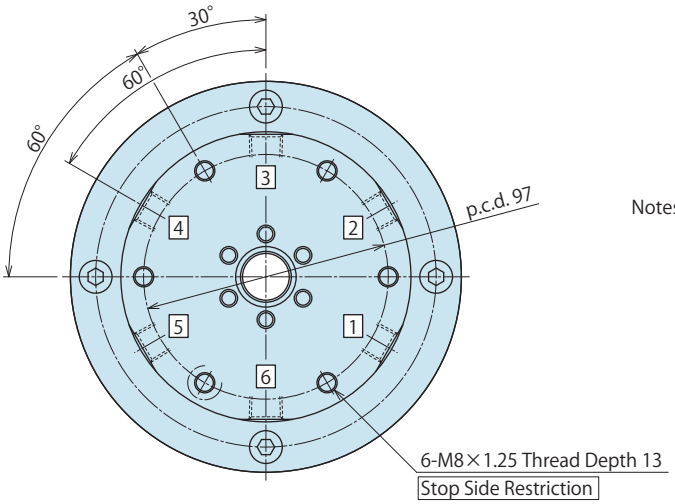
※This drawing indicates JRB0610-S-G-S.
(6 Port Circuit + 1 Center Through Port)

When G thread is necessary for a primary side port or a center through port, please refer separately.

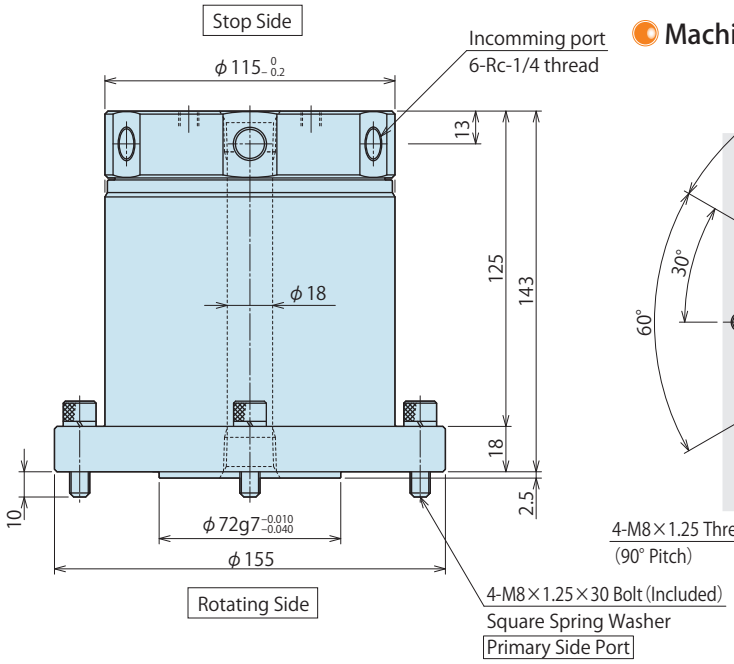
Model No.Indication

JRB0610- B S -G- B S

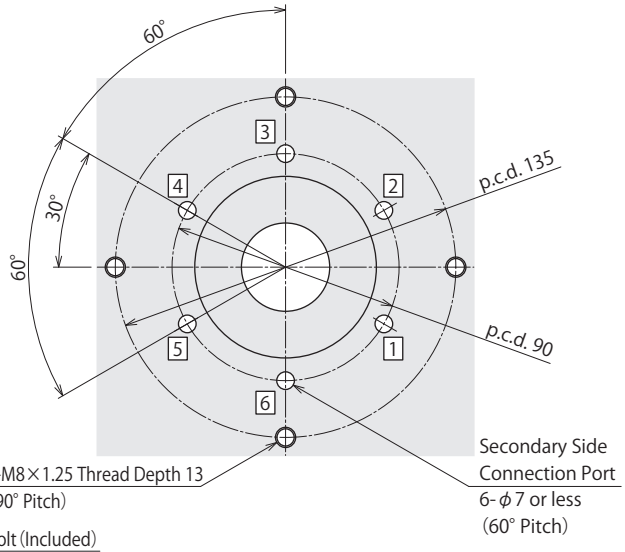
4 Primary Side Piping Method
6 Center Through Port Piping Method

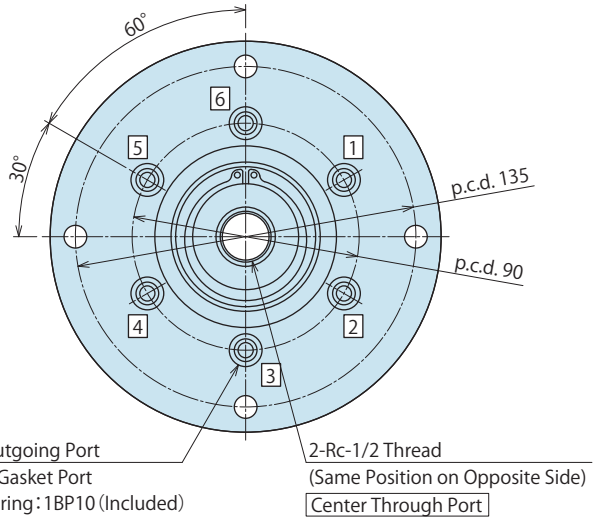


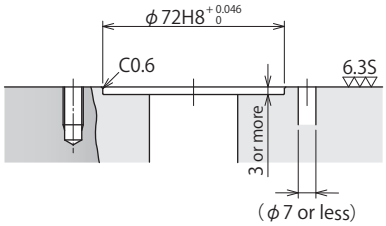
Notes
1. The rotation side must be fixed the flange part with the bolt, and restrain only the rotation direction of the stop side.
2. Please use hose for piping of stop side.
3. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
4. Please avoid continuous operation as it will cause overheating and damage to the internal packing.
5. Each port exhibits a port number.



Machining Dimensions of Mounting Area





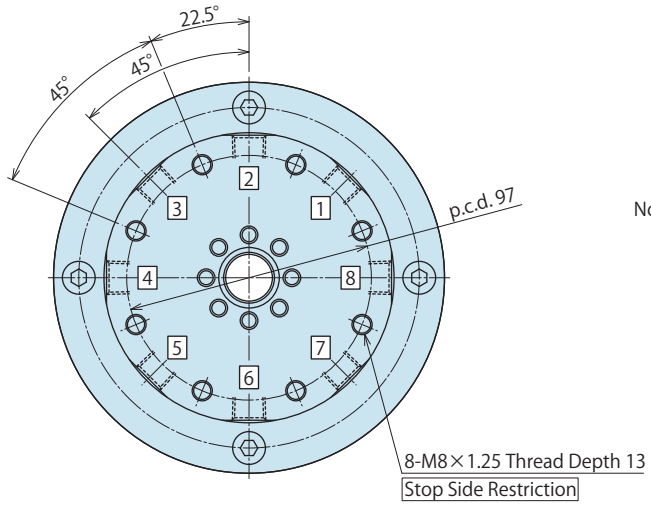


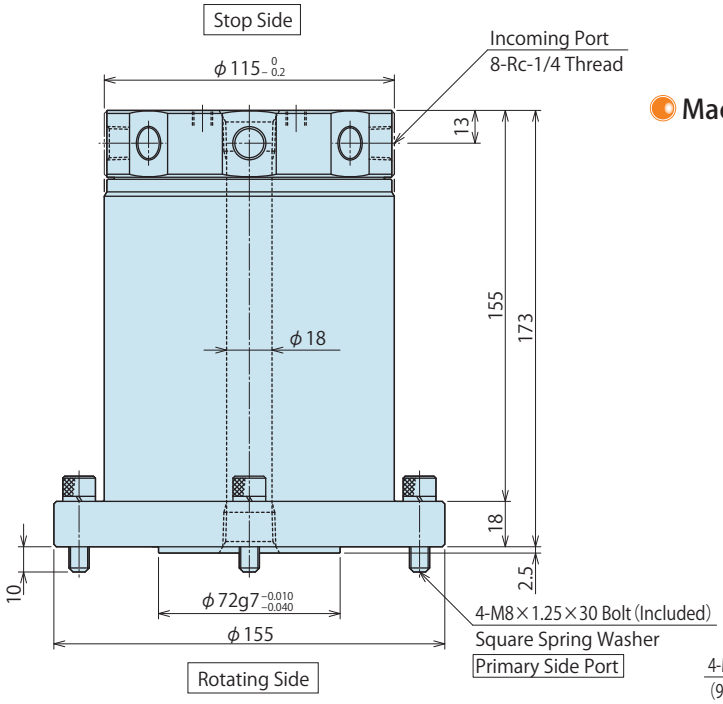
Note
1. Roughness of mounting surface (O-ring seal surface) should be 6.3S or less.

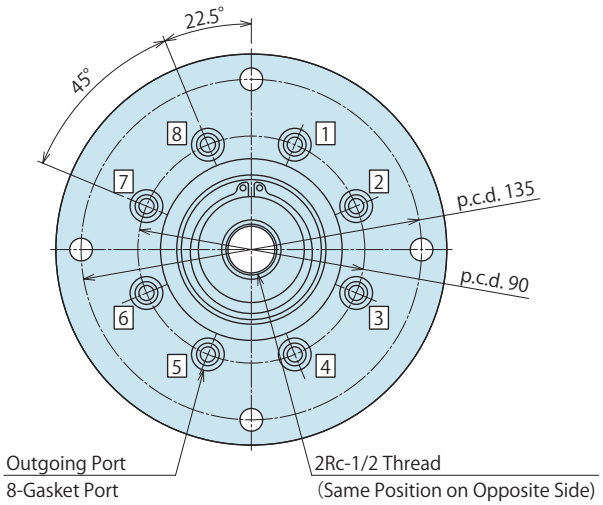
External Dimensions：JRB0810

※ This drawing indicates JRB0810-S-G-S.
(8 Port Circuit + 1 Center Through Port)

When G thread is necessary for a primary side port or a center through port, please refer separately.







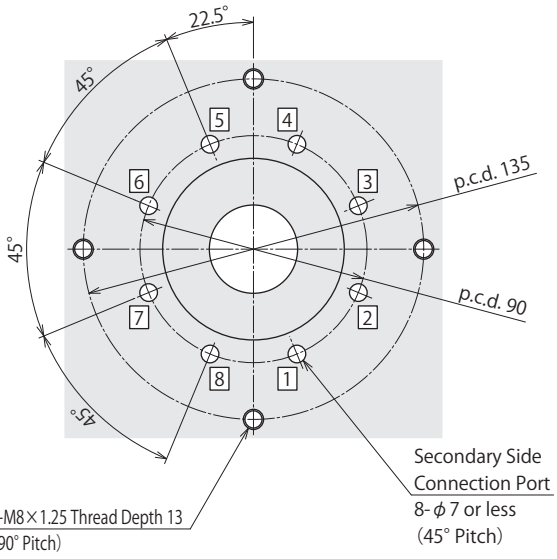
Model No. Indication

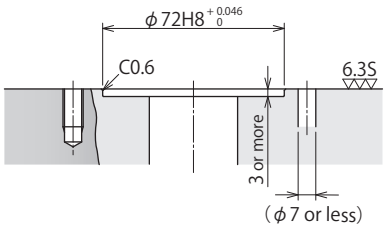
JRB0810-BS-G-BS

4 Primary Side Piping Method
6 Center Through Port Piping Method

Notes
1. The rotation side must be fixed the flange part with the bolt, and restrain only the rotation direction of the stop side.
2. Please use hose for piping of stop side.
3. Please prepare one circuit for drain between them when the oil slick leak from hydraulic circuit to adjacent air circuit becomes a problem.
4. Please avoid continuous operation as it will cause overheating and damage to the internal packing.
5. Each port exhibits a port number.

Machining Dimensions of Mounting Area





Note
1. Roughness of mounting surface (O-ring seal surface) should be 6.3S or less.

Cautions

Notes for Design

1) Check Specifications
- Please use each product according to the specifications.

2) Please hold the rotating direction only on the stop side.
- Please hold the rotating direction on the stop side with mounting bolt to avoid offsetting of the rotary joint. The mounting bolt is included with product.

3) Please use hose for piping of stop side.
- In case of using steel pipe, it will became a load when rotating.

4) Please avoid continuous operation.
- It will cause heat of internal packing.

5) Please be careful of oil slick leak when the air circuit and hydraulic circuit are adjacent.
- Please prepare one circuit for drain between them when the oil leaks from hydraulic circuit to adjacent air circuit becomes a problem. (Depending on the model the oil leak from hydraulic circuit to adjacent air circuit will not occur.)

6) The rotating torque changes according to the pressurized condition of the fluid.
- The rotating torque shown in the performance graph is based (reference) at 0 pressure of fluid.

7) The starting torque might become 2 times or more the rotating torque.
- The starting torque will vary due to the influence of exposure time.

8) Center through port is not rotary constitution.
- When center through port is used, such as swivel joint is needed.

Installation Notes

1) Check the Usable Fluid
- Please use the appropriate fluid by referring to the Hydraulic Fluid List (P.1043).
- Air should be clean and free of contaminants.

2) Treatment before Assembly
- Perform flushing of piping and pipe fittings sufficiently to ensure a clean environment to avoid malfunctioning. Existence of chips or dusts may cause oil leakage or malfunction.
- Dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
- This product is not equipped with protective function to prevent dust and cutting chips going into the hydraulic system and pipeline.
- In order to prevent foreign substance going into the product during the piping work, it should be carefully cleaned before the work is started.

3) Applying Sealing Tape
- Wrap with tape 1 to 2 times following the screw direction.
- Pieces of the sealing tape can lead to oil leakage and malfunction.
- In order to prevent a foreign substance from going into the product during the piping work, it should be carefully cleaned before working.

4) Mounting the Unit
- Install carefully not to damage the O-ring installed in each body.
- Use all attached bolts with hex holes (strength division 12.9) and tighten the body with torque as shown in the table below.

Model No.	Mounting Bolt	Tightening Torque(N·m)
JRC/JRB	M8×1.25	25

※ Please refer to P.1043 for common cautions. • Installation Notes • Hydraulic Fluid List • Notes on Hydraulic Cylinder Speed Control Circuit • Notes on Handling • Maintenance/Inspection • Warranty

MEMO

Cautions

Installation Notes (For Hydraulic Series)

1) Check the Usable Fluid

- Please use the appropriate fluid by referring to the Hydraulic Fluid List.

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.
- There is no filter provided with Kosmek' s product except for a part of valves which prevents foreign materials and contaminants from getting into the circuit.

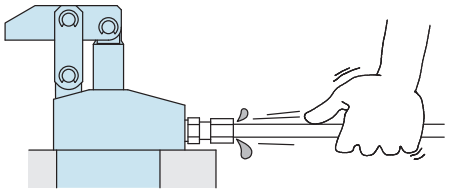
3) Applying Sealing Tape

- Wrap with tape 1 to 2 times following the screw direction.
- Pieces of the sealing tape can lead to oil leakage and malfunction.
- In order to prevent a foreign substance from going into the product during the piping work, it should be carefully cleaned before working.

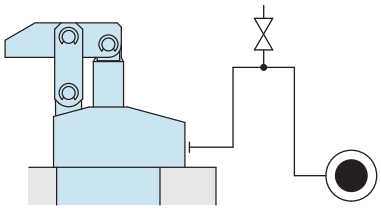
4) Air Bleeding of the Hydraulic Circuit

- 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 by one full turn.
③ Wiggle the pipeline to loosen the outlet of pipe fitting.
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.
(Set an air bleeding valve at the highest point inside 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

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	

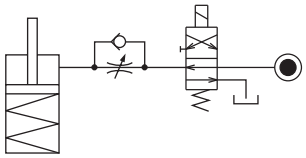
Note As it may be difficult to purchase the products as shown in the table from overseas, please contact the respective manufacturer.

Notes on Hydraulic Cylinder Speed Control Unit

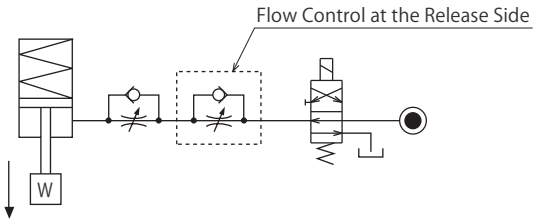
Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

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.



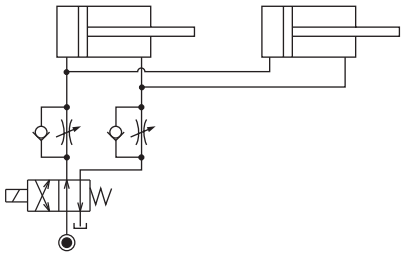
Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow. (Please add flow control to release flow if the lever weight is put on at the time of release action when using swing clamps.)



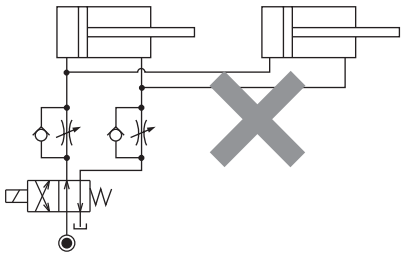
Flow Control Circuit for Double Acting Cylinder

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.
However, in the case of controlling LKE, TMA, TLA, both lock side and release side should be meter-in circuit.
Refer to P.47 for speed adjustment of LKE.
For TMA and TLA, if meter-out circuit is used, abnormal high pressure is created, which causes oil leakage and damage.

【Meter-out Circuit】(Except LKE/TMA/TLA)

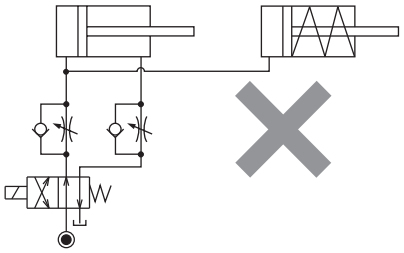


【Meter-in Circuit】(LKE/TMA/TLA must be controlled with meter-in.)



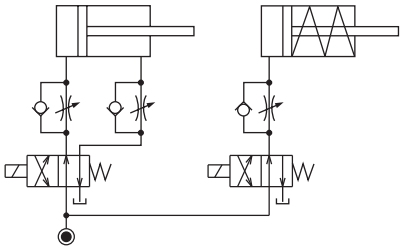
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

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.

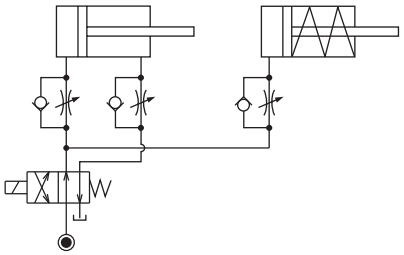


Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

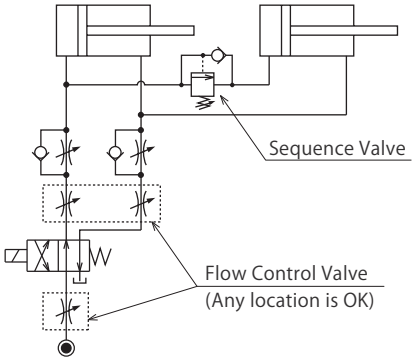
○ Separate the control circuit.



○ 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.



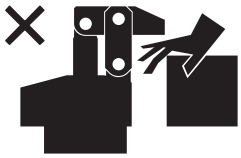
Cautions

Notes on Handling

1) It should be handled by qualified personnel.
- The hydraulic machine and 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 (cylinder) while clamps (cylinder) is working. Otherwise, your hands may be injured due to clinching.

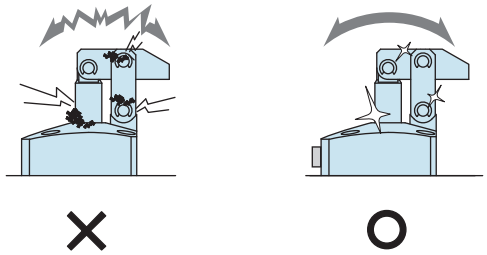


4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

Maintenance and Inspection

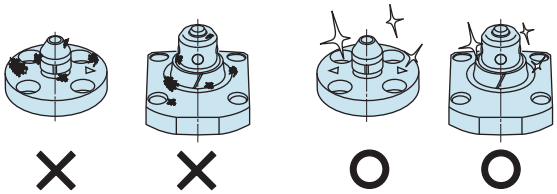
1) Removal of the Machine and Shut-off of Pressure Source
- Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
- Make sure there is no abnormality in the bolts and respective parts before restarting.

2) Regularly clean the area around the piston rod and plunger.
- 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) Please clean out the reference surface regularly (taper reference surface and seating surface) of locating machine .(VS/VT/VL/VM/VJ/VK/WVS/WM/WK/VX/VXF)

- Location products, except VX/VXF model, can remove contaminants with cleaning functions.
  When installing pallets makes sure there is no thick sludge like substances on pallets.
- Continuous use with dirt on components will lead to locating functions not work properly, leaking and malfunction.



4) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.

5) Regularly tighten nuts, bolts, pins, cylinders and pipe line to ensure proper use.

6) Make sure the hydraulic fluid has not deteriorated.

7) 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.

8) The products should be stored in the cool and dark place without direct sunshine or moisture.

9) 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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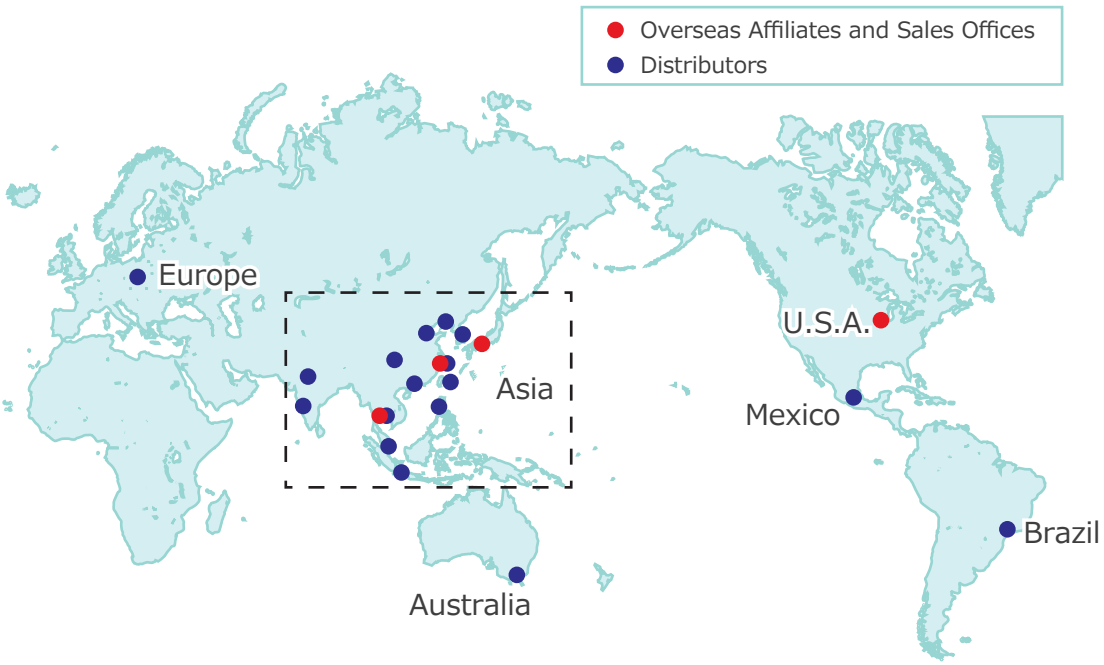
Global Network



Asia Detailed Map

KOSMEK
Harmony in Innovation

- FOR FURTHER INFORMATION ON UNLISTED SPECIFICATIONS AND SIZES, PLEASE CALL US.
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