pearl rotary joints

SHOWA GIKEN INDUSTRIAL CO., LTD.

Tokyo Office (Export Dept.) 2-64-11, Akabane, Kita-ku, Tokyo, 115-0045 Japan
Phone:+81-3-3598-1400 Fax.:+81-3-3598-2700
E-mail sgk-tk@sgk-p.co.jp

Osaka Office 2-9-7, Toyosaki, Kita-ku, Osaka, 531-0072 Japan
Phone:+81-6-6371-8341 Fax.:+81-6-6371-6283
E-mail sgk-os@sgk-p.co.jp

Nagoya Office 1-107, Takaharidai, Meito-ku,Nagoya, 465-0054 Japan
Phone:+81-52-701-4068 Fax.:+81-52-704-4051
E-mail sgk-ng@sgk-p.co.jp

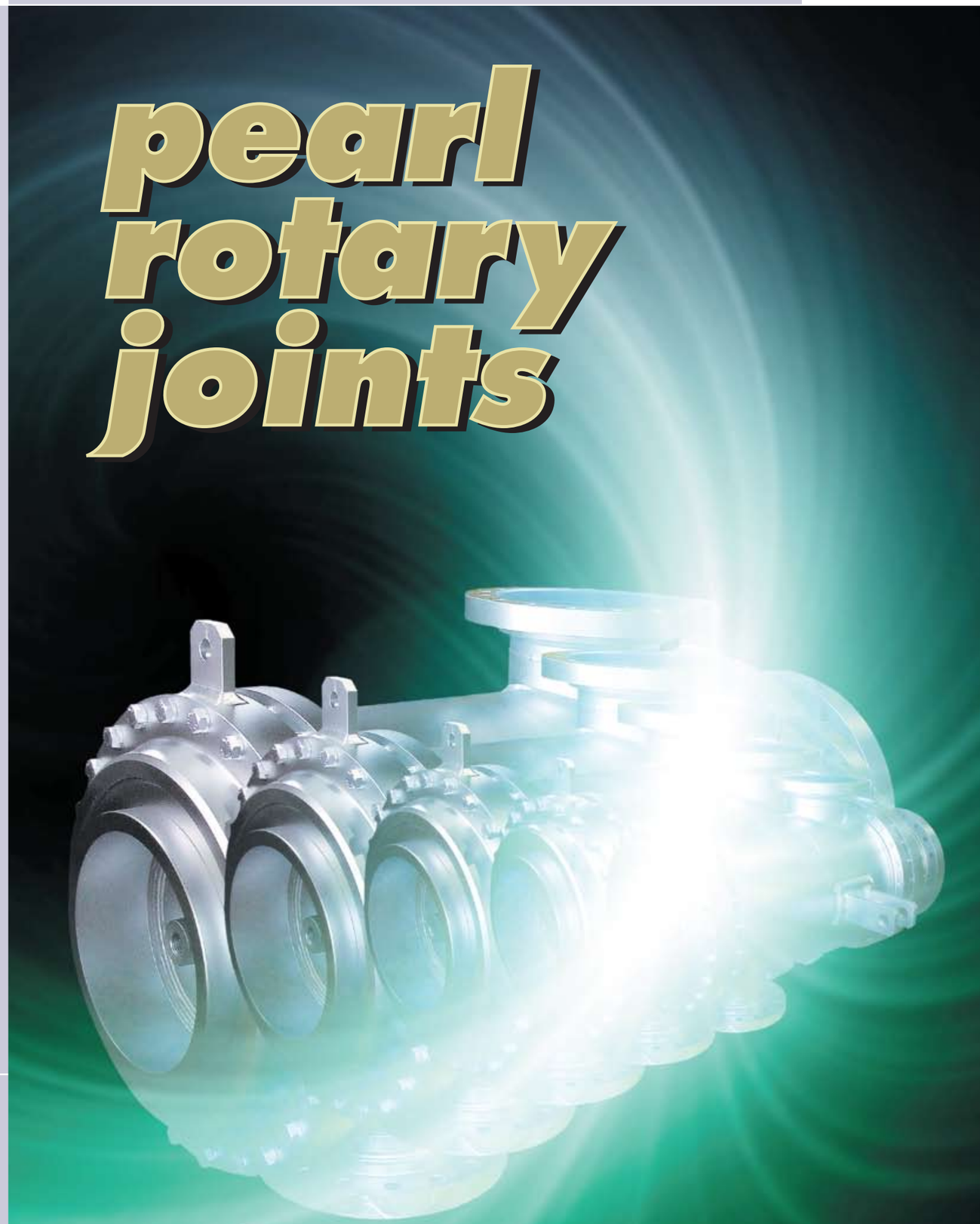
Head Office 1247, Kobari-Shinsyuku,Ina-Machi,Saitama, 362-0808 Japan
Phone:+81-48-728-8321 Fax.:+81-48-728-8360
E-mail sgk-spa@sgk-p.co.jp (Engineering Dept.)

URL http://www.sgk-p.co.jp

AGENCY

SGK
Catalog
RJ-01

pearl rotary joints



SHOWA GIKEN INDUSTRIAL CO., LTD.

In various fields of industry, “pearl” (SGK’s brand name) rotary joints have been successfully used under variety of service conditions covering a wide range of materials, pressures, temperatures and speed.

pearl rotary joints

“ROTARY JOINT” WHAT?

Pearl Rotary Joints are used for supplying/discharging compressed (below atmospheric pressure) fluid/gas from a fixed piping to the rotary section of various machines with no leak. For example, they can be used when a heat transfer medium such as <steam>, <hot water> or <heated oil>, or a coolant such as <water>, <brine>, <ammonia> or <Freon> for cooling is supplied to rotating [roll], [drum] or [cylinder], and when <compressed air> or <operating oil> is supplied to rotary machines such as [clutch] and [chuck] that are operated by fluid/gas.

“PEARL ROTARY JOINT” WHAT?

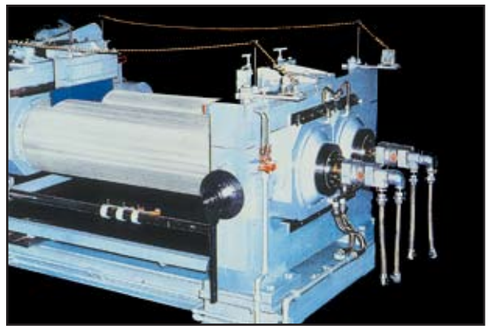
Pearl Rotary Joints have been developed based on the most recent and advanced mechanical seal theory, and are extremely effective and economical. They are manufactured under strict quality control, and are compatible to one another with no deviation in the product. Furthermore, with rich line-up of models, they can satisfy various purposes.

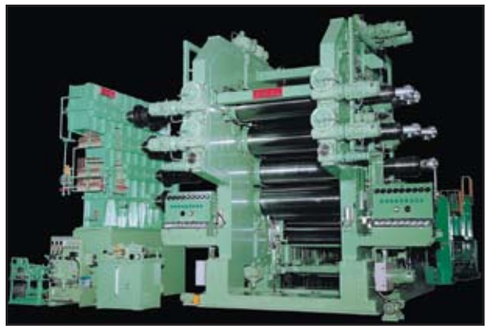
STANDARD ROTARY JOINTS

Series	Fluid	Max. Temperature (Degree C)	Max. Pressure (MPa)	Max. Rotation Speed (min^{-1})	Page
AC 	Steam Thermal Oil Hot water Water Air	180	1.47MPa {15kgf/cm^2}	10A～40A 300 50A～80A 150	7～10
NC 	Steam Thermal Oil	180	1.47MPa {15kgf/cm^2}	15A～40A 300 50A～80A 150	11～13
KC 	Air, Gas Water Oil	100	0.98MPa {10kgf/cm^2}	6A～25A 1500 32A～65A 1000	14～15
RXE (RXC) 	Water Oil Air Gas	100	8A～25A 2.25MPa {23kgf/cm^2} 32A～40A 1.67MPa {17kgf/cm^2} 50A～80A 1.18MPa {12kgf/cm^2} * Air or Gas (For each size: 1 MPa) * Vacuum: (For each size: Up to 13Kpa abs.)	8A～25A 3500 32A～40A 2000 50A～80A 750	16～25
RXK			90A・100A 0.98MPa {10kgf/cm^2}	90A・100A 500	23
RXH (RXM) 	Hot water Thermal Oil Water	150	10A～25A 2.25MPa {23kgf/cm^2} 32A～40A 1.67MPa {17kgf/cm^2} 50A～80A 1.18MPa {12kgf/cm^2}	10A～25A 3500 32A～40A 2000 50A～80A 750	16～25
SXO 	Machining Oil Water Oil	120	STRAIGHT THRU TYPE RIGHT ANGLE TYPE 6.9MPa {70kgf/cm^2} COMPACT TYPE 10.3MPa {105kgf/cm^2}	STRAIGHT THRU TYPE RIGHT ANGLE TYPE 10000 COMPACT TYPE 15000	26～27

* Pressure indication is gauge pressure unless other specification.
* Unit is written with SI unit (International System of Units)
* Contact us when the service conditions exceed than max. service conditions mentioned in this catalogue.

APPLICATION OF "PEARL" ROTARY JOINT





Industries in which pearl rotary joints have been successfully used

Industries	Machine Name to be mounted
Rubber & Plastics	Calendar Roll, Plastic Extruder, Lamination Press, Mixing Roll, Film Machine, Film cooling and take-off roll, Casting Roll, Laminator, Banbury Mixer, Kneader, Tire Press Machine, etc.
Chemicals & Pharmaceuticals	Conical Dryer, Tube Dryer, Vacuum Dryer, Ball Mill, etc.
Food & Sugar Refining	Double Drum Dryer, Blender, Rotary Kiln, Cleaning System, For wrapping, etc.
Steelmaking & Metal	Steel Converter-Trunnion Main Unit Cooling, Continuous Casting Roll, Roll Coolant, For Furnace Coolant, CGL, Mud Gun, Winder, Ladle Turret, etc.
Printing	Offset Press, Sheet Offset Press, Photogravure Press, Dry Laminator, Form Printing Press, etc
Paper & Pulp	Paper Dryer, Super Calendar, Yankee Dryer, Coater, Cellophane Machine, Laminating Machine, Colgate Machine, etc.
Fiber & Dyeing	Dyeing/Drying Cylinder, Roll Printing Machine, Sizing Machine, etc
Electronic & Semiconductor	Grinder, Lapping machine, Polishing machine, etc
Other industrial fields	Machine Tool, Drilling Machine, Cleaning equipment, Vacuum System, Air Clutch for Press, Shield Machine, Sludge Dryer Facility, Screw Press, Hydraulic and pneumatic equipment, etc.

"pearl" Rotary Joint are classified into two broad types, Simplex and Duplex, for use as exemplified below.

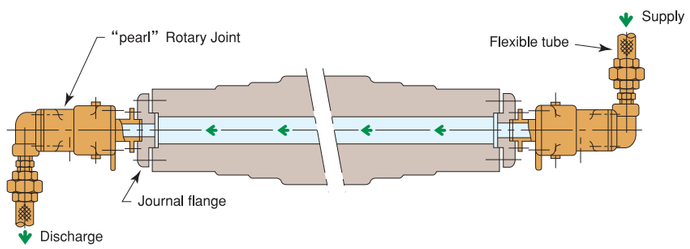
●SIMPLEX

Used to supply a fluid (water, oil or steam) into a roll from one end and discharge it from the other end where both ends of the journal are available.

Example:

Film Cooling and Take-Off Roll,
Rolls for iron manufacturing
Super Calendar, Machine Tool,
Washing Machine, etc.

Illustration1



●DUPLEX, Stationary Internal Pipe

Where only one end of the journal is available, the fluid is supplied from one end of the roll and discharge it from same end.

Example: for Water or Thermal oil

Mixing Roll, Plastic Extruder, Kneader, Offset Press, etc. (Illustration2)

Example: for Steam

Paper Dryer, Plastic Calendar,
Double Drum Dryer, etc. (Illustration3)

Illustration2

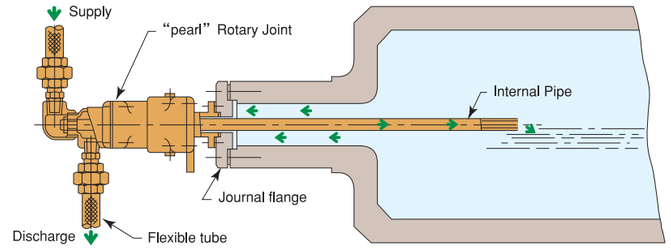
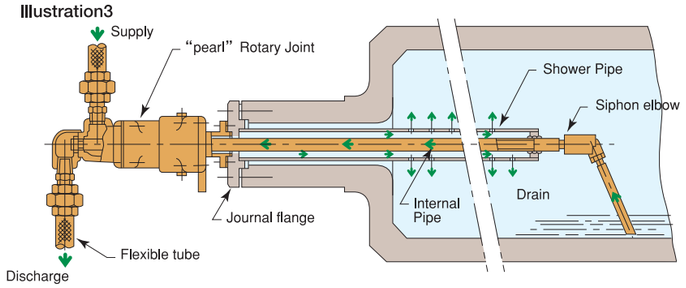


Illustration3



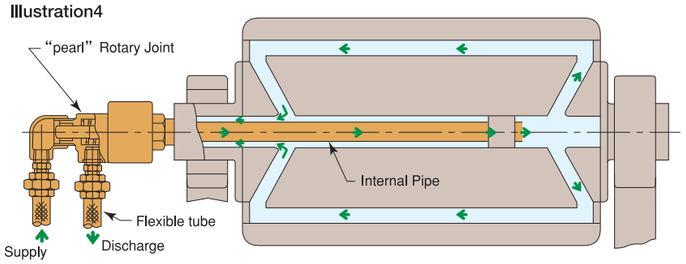
●DUPLEX, Rotational Internal Pipe

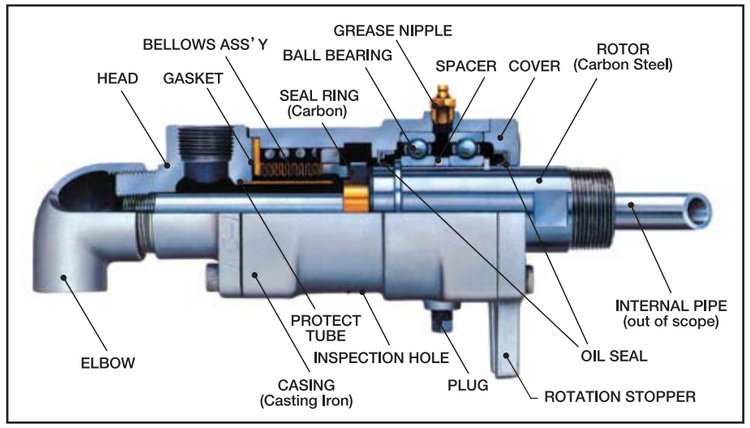
Where the internal pipe rotates simultaneously with a roll, the rotary joint must have another seal for the internal pipe.

Example:

Drilled Roll, Film Machine, etc.

Illustration4





●FEATURES

- Can be alternated between heating and cooling
- Capable of high temperature and pressure under high rotation speed
- Long life due to low seal-face friction and wear

●SERVICE CONDITIONS

Fluid	Steam, Thermal Oil, Water, Hot water, Air
Max. Temperature	180℃
Max. Pressure	1.47MPa{15kgf/cm^2}
Max. Rotation Speed	10A~40A 300min^{-1}{r.p.m} 50A~80A 150 min^{-1}{r.p.m}

* Bellows assembly: 304 Stainless Steel is available upon request.
ACY type uses a stainless steel bellows assembly.
ACX type uses a stainless steel bellows assembly utilizing a seal ring for hot oil.
* In the ACZ type, the head connecting port is directed opposite (180°) to the position shown in this catalogue.

●CONSTRUCTION

①Rotor: Rotor is made to rotate by attaching it by either a screw or a flange to a rotating roll or drum. With the screw-in method, the Japanese Industrial Standards (JIS) "taper pipe thread" is used. The screws must be allowed to tighten freely against the direction of rotation of the roll or drum to which the shaft is connected. **The left-hand screw is used when the roll or drum rotates clockwise when viewed from the rotary joint installation position. Likewise, the right-hand screw is used when the roll or drum rotates counterclockwise when viewed from the rotary joint installation position.**

②Casing: Casing has built-in Ball Bearings and a seal mechanism that consisting of the Seal Ring and Bellows assembly. Bellows assembly gives appropriate initial sealing face pressure to Seal Ring and the seal surface of Rotor. By automatically increasing or decreasing seal surface pressure with a force generated in proportion to changes taking place in the inner fluid pressure, Bellows assembly not only performs the functions of keeping the rotary joint airtight, but of compensating for seal surface wear and absorbing fine vibrations.

③Head Block: Head Block is where the fluid feed inlet and discharge outlet join. With the duplex type (Stationary Internal Pipe type), Internal Pipe is fitted to this block using the JIS right-hand taper pipe thread when Rotor is fitted with a right-hand screw, and the left-hand JIS taper pipe thread with a left-hand screw, allowing the screws to tighten freely. When Rotor is fitted with a flange, the JIS parallel pipe thread (usually the right-hand screw) is used. To prevent the screw from loosing, lock nut is installed on the internal pipe at the inside of Elbow.

④Cover: Cover is used to steady the movement of the ball bearings built into Casing. It is fitted with Oil Seal to prevent bearing lubricant grease leaks.

●MAINTENANCE AND LUBRICATION

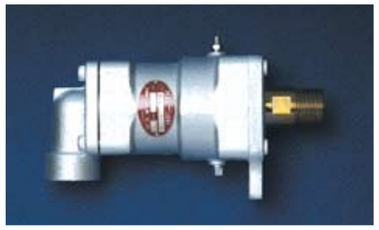
The Pearl Rotary Joint AC series requires lubrication with high-performance grease on the bearing areas. When operating at high temperatures, use heat-resistant grease and be sure to check/refill grease as needed. When adding grease, remove the plug, lubricate the grease and refit the plug. The table below provides an approximate guide for greasing. Determine appropriate greasing intervals depending on the operating temperature, RPMs and operating time.

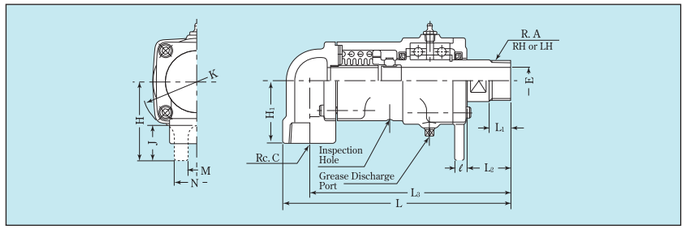
Greasing frequency	
0℃~130℃	Once every 3 months
130℃~150℃	Once a month
150℃~180℃	Once a week

●NOTE

1. Operation at Max. pressure combined with Max. speed should be avoided.
2. For operation at a steam pressure of 0.98MPa (10kgf/cm2) or more, use a stainless steel bellows.
3. The joints should not run dry (without liquid). When air service, mix oil mist into the air to avoid dry operation.

ACL Type (Simplex, Thread Connection)





NOMINAL SIZE		A	C	E	H1	H	J	K	M	N	L1	L2	ℓ	L3	L
10A	3/8B	3/8	3/8	8	43	55	24	78	15	35	18	38	9	164	179
15A	1/2B	1/2	1/2	12	43	55	24	78	15	35	18	38	9	164	179
20A	3/4B	3/4	3/4	18	45	65	28	90	20	45	20	38	12	180	198
25A	1B	1	1	24	60	75	32	110	20	50	25	48	12	204	227
32A	1 1/4B	1 1/4	1 1/4	30	75	95	40	130	20	50	25	52	14	239	270
40A	1 1/2B	1 1/2	1 1/2	34	75	95	40	130	20	50	25	52	14	239	270
50A	2B	2	2	46	85	100	40	138	20	55	30	63	16	268	307
65A	2 1/2B	2 1/2	2 1/2	60	97	120	46	180	25	60	30	78	19	319	367
80A	3B	3	3	72	100	130	52	193	30	70	34	85	20	346	401

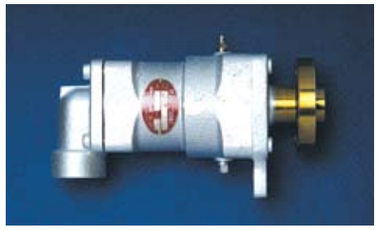
TYPE & SIZE: Example for placing order
Type ⟶ Size ⟶ Thread direction of Rotor: RH or LH

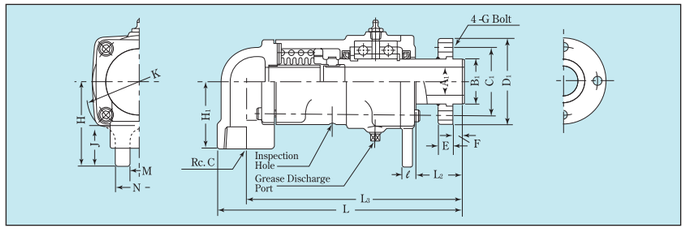
Example: ACL 25A

ACL — 10A/15A/20A/25A 32A/40A/50A/65A/80A — RH／LH

* Rc1/2x3/8 bushing has been set to Rc.C connecting port of nominal size 10A joint and dimension H1 of it is different from the table.

ACLF Type (Simplex, Flange Connection)





NOMINAL SIZE		C	A1	FLANGE DIMENSIONS						H1	H	J	K	M	N	L2	ℓ	L3	L
				B1	C1	D1	E	F	G										
10A	3/8B	3/8	12	25	45	62	11	8	M8	43	55	24	78	15	35	38	9	164	179
15A	1/2B	1/2	12	25	45	62	11	8	M8	43	55	24	78	15	35	38	9	164	179
20A	3/4B	3/4	18	30	54	74	13	8	M10	45	65	28	90	20	45	42	12	184	202
25A	1B	1	24	35	60	80	14	9	M10	60	75	32	110	20	50	46	12	202	225
32A	1 1/4B	1 1/4	34	50	75	96	16	9	M10	75	95	40	130	20	50	49	14	236	267
40A	1 1/2B	1 1/2	34	50	75	96	16	9	M10	75	95	40	130	20	50	49	14	236	267
50A	2B	2	46	65	95	120	19	10	M12	85	100	40	138	20	55	60	16	265	304
65A	2 1/2B	2 1/2	60	80	110	136	20	12	M12	97	120	46	180	25	60	62	19	303	351
80A	3B	3	72	90	125	154	20	15	6-M12	100	130	52	193	30	70	85	20	346	401

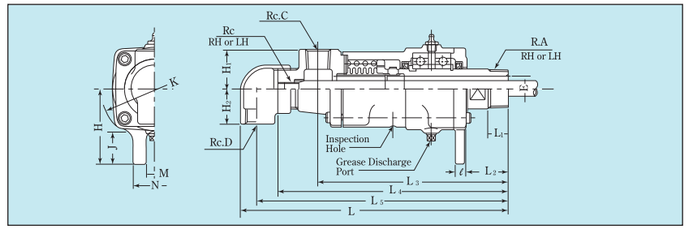
TYPE & SIZE: Example for placing order
Type ⟶ Size

Example: ACLF 25A

ACLF — 10A/15A/20A/25A 32A/40A/50A/65A/80A

* The flange connection type is supplied with a copper gasket (to be attached on the shaft end), along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* Since Type 80A has a split ring on the flange, be sure to use a gasket at the end of the shaft.
* Rc1/2x3/8 bushing has been set to Rc.C connecting port of nominal size 10A joint and dimension H1 of it is different from the table.

AC Type (Duplex, Stationary Internal Pipe: Thread Connection)



NOMINAL SIZE		A	B	C	D	E	H1	H2	H	J	K	M	N	L1	L2	ℓ	L3	L4	L5	L
15A	1/2B	1/2	1/8	1/2	1/2	12	30	30	55	24	78	15	35	18	38	9	165	198	218	233
20A	3/4B	3/4	(1/8)・1/4	3/4	3/4	18	45	35	65	28	90	20	45	20	38	12	181	221	245	263
25A	1B	1	(1/4)・3/8	1	3/4	24	59	40	75	32	110	20	50	25	48	12	205	255	280	298
32A	1 1/4B	1 1/4	1/2	1	1	30	50	45	95	40	130	20	50	25	52	14	231	283	311	333
40A	1 1/2B	1 1/2	(1/2)・3/4			34														
50A	2B	2	(3/4)・1	1 1/2	1	46	55	51	100	40	138	20	55	30	63	16	267	333	361	383
65A	2 1/2B	2 1/2	(1)・1 1/4	2	1 1/2	60	65	62	120	46	180	25	60	30	78	19	314	382	419	449
80A	3B	3	1 1/2・2	2	2	72	90	74	130	52	193	30	70	34	85	20	327	411	459	497

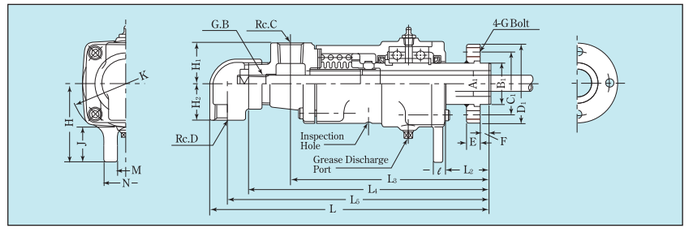
TYPE & SIZE: Example for placing order
Type ⟶ Size-(Thread size for Internal Pipe) ⟶ Thread direction of Rotor: RH or LH

Example: AC 25A-10A RH

AC — 15A(6A)/20A(6A・8A)/25A(8A・10A)/32A(15A) 40A(15A・20A)/50A(20A・25A)/65A(25A・32A)/80A(40A・50A) — RH／LH

* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure specify the dimensions.
* On types that are 50A or larger in size, the pipe connection part Rc.C is directed downward.

ACF Type (Duplex, Stationary Internal Pipe: Flange Connection)



NOMINAL SIZE		B	C	D	A1	FLANGE DIMENSIONS						H1	H2	H	J	K	M	N	L2	ℓ	L3	L4	L5	L
						B1	C1	D1	E	F	G													
15A	1/2B	1/8	1/2	1/2	12	25	45	62	11	8	M8	30	30	55	24	78	15	35	38	9	165	198	218	233
20A	3/4B	(1/8)・1/4	3/4	3/4	18	30	54	74	13	8	M10	45	35	65	28	90	20	45	42	12	185	225	249	267
25A	1B	(1/4)・3/8	1	3/4	24	35	60	80	14	9	M10	59	40	75	32	110	20	50	46	12	203	253	278	296
40A	1 1/2B	1/2・3/4	1	1	34	50	75	96	16	9	M10	50	45	95	40	130	20	50	49	14	228	280	308	330
50A	2B	3/4・1	1 1/2	1	46	65	95	120	19	10	M12	55	51	100	40	138	20	55	60	16	264	330	358	380
65A	2 1/2B	1・1 1/4	2	1 1/2	60	80	110	136	20	12	M12	65	62	120	46	180	25	60	62	19	298	366	403	433
80A	3B	1 1/2・2	2	2	72	90	125	154	20	15	6-M12	90	74	130	52	193	30	70	85	20	327	412	459	497

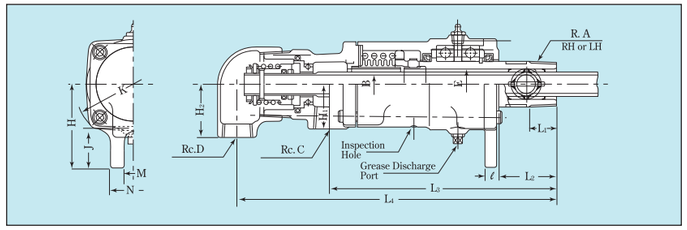
TYPE & SIZE: Example for placing order
Type ⟶ Size-(Thread size for Internal Pipe)

Example: ACF 25A-10A

ACF — 15A(6A)/20A(6A・8A)/25A(8A・10A)/40A(15A・20A) 50A(20A・25A)/65A(25A・32A)/80A(40A・50A)

* The internal pipe retaining nut is supplied with the joint.
* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure specify the dimensions.
* On types that are 50A or larger in size, the pipe connection part Rc.C is directed downward.
* The flange connection type is supplied with a copper gasket (to be attached on the shaft end), along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* Since Type 80A has a split ring on the flange, be sure to use a gasket at the end of the shaft.

ACW Type (Duplex, Rotational Internal Pipe: Thread Connection)



NOMINAL SIZE		A	B	C	D	E	H1	H2	H	J	K	M	N	L1	L2	ℓ	L3	L4
25A	1B	1	1/4・3/8	1	3/4	24	60	49	75	32	110	20	50	25	48	12	205	295
32A	1 1/4B	1 1/4	1/2	1	1	30	47	60	95	40	130	20	50	25	52	14	243	341
40A	1 1/2B	1 1/2	1/2・3/4	1	1	34	47	60	95	40	130	20	50	25	52	14	243	341
50A	2B	2	3/4・1	1 1/2	1	46	55	55	100	40	138	20	55	30	63	15	269	389
65A	2 1/2B	2 1/2	1・1 1/4・1 1/2	2	1 1/2	60	65	70	120	46	180	25	60	30	78	19	310	460
80A	3B	3	1 1/2	2	1 1/2	72	85	70	130	52	193	30	70	34	85	20	334	486
			2		2			85										502

TYPE & SIZE: Example for placing order

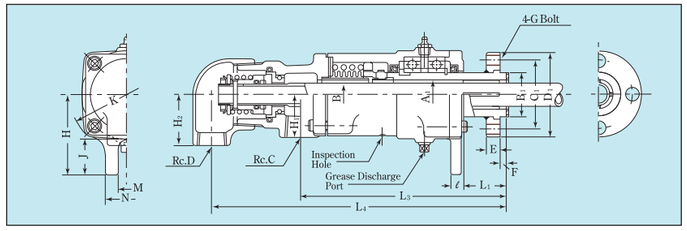
Type → No Key way (ACW-1) → Size-(Nominal size of Internal Pipe) → Thread direction of Rotor: RH or LH
With Key way (ACW-2)

ACW — 1 or 2 — 25A (8A・10A) /32A (15A) /40A (15A・20A)
50A (20A・25A) /65A (25A・32A・40A) /80A (40A・50A) — RH／LH

Example: ACW-2 25A-10A RH

* If you should place an order for the internal pipe with us, please be sure to specify the dimensions.
* Nut and lock washer to fix rotating ring and internal pipe are supplied with the joint.

ACFW Type (Duplex, Rotational Internal Pipe: Flange Connection)



NOMINAL SIZE		B	C	D	A1	FLANGE DIMENSIONS						H1	H2	H	J	K	M	N	L2	ℓ	L3	L4
						B1	C1	D1	E	F	G											
25A	1B	1/4・3/8	1	3/4	24	35	60	80	14	9	M10	60	49	75	32	110	20	50	46	12	203	293
40A	1 1/2B	1/2・3/4	1	1	34	50	75	96	16	9	M10	47	60	95	40	130	20	50	49	14	240	338
50A	2B	3/4・1	1 1/2	1	46	65	95	120	19	10	M12	55	55	100	40	138	20	55	60	15	266	386
65A	2 1/2B	1・1 1/4・1 1/2	2	1 1/2	60	80	110	136	20	12	M12	65	70	120	46	180	25	60	62	20	294	444
80A	3B	1 1/2	2	1 1/2	72	90	125	154	20	15	6-M12	85	70	130	52	193	30	70	85	20	334	486
		2		2									85									502

TYPE & SIZE: Example for placing order

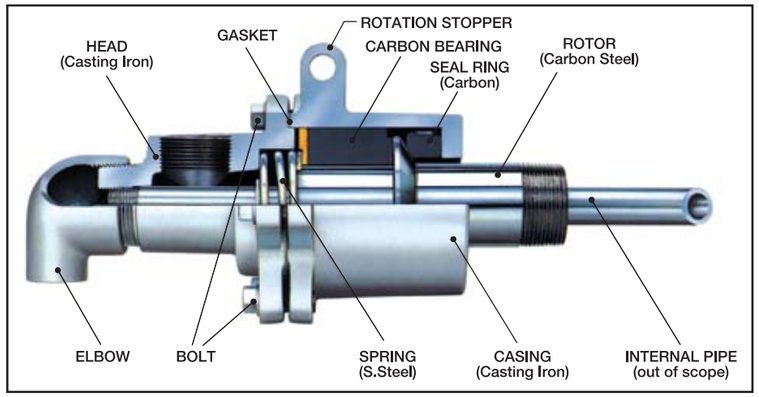
Type → No Key way (ACFW-1) → Size-(Nominal size of Internal Pipe)
With Key way (ACFW-2)

Example: ACFW-2 25A-10A

ACFW — 1 or 2 — 25A (8A・10A) /40A (15A・20A) /50A (20A・25A)
65A (25A・32A・40A) /80A (40A・50A)

* If you should place an order for the internal pipe with us, please be sure to specify the dimensions.
* Nut and lock washer to fix rotating ring and internal pipe are supplied with the joint.
* The flange connection type is supplied with a copper gasket (to be attached on the shaft end), along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* Since Type 80A has a split ring on the flange, be sure to use a gasket at the end of the shaft.

NC series



●FEATURES

- Need no lubrication, low maintenance
- Capable of high temperature and pressure
- Long life due to low friction and less wear
- Simple design, easy maintenance

●SERVICE CONDITIONS

Fluid	Steam, Thermal Oil
Max. Temperature	180℃
Max. Pressure	1.47MPa{15kgf/cm^2}
Max. Rotation Speed	15A～40A 300min^{-1}{r.p.m}　50A～100A 100 min^{-1}{r.p.m}

* Non-electrolysis Nickel Plating is available for corrosive fluid upon request.
* In the NCZ type, the head connecting port is directed opposite (180°) to the position shown in this catalogue.

●CONSTRUCTION

①Rotor: Rotor with a spherical shaped flange is made to rotate by attaching it by either a screw or a flange to a rotating roll or drum. With the screw-in method, the Japanese Industrial Standards (JIS) “taper pipe thread” is used. The screws must be allowed to tighten freely against the direction of rotation of the roll or drum to which the shaft is connected. The left-hand screw is used when the roll or drum rotates clockwise when viewed from the rotary joint installation position. Likewise, the right-hand screw is used when the roll or drum rotates counterclockwise when viewed from the rotary joint installation position.

②Casing: Casing has built-in Seal Ring which has a spherical sealing surface and a flat sealing surface and Carbon Bearing that bears the weight of the joint, and the spherical shaped flange of Rotor has been put between Seal Ring and Carbon Bearing. Perfect air-tightness is maintained by a initial seal surface pressure with a Spring and the seal surface pressure which increases and decreases in proportion to the internal fluid pressure.

③Head Block: Head Block is where the fluid feed inlet and discharge outlet join. With the duplex type (Stationary Internal Pipe type), Internal Pipe is fitted to this block using the JIS right-hand taper pipe thread when Rotor is fitted with a right-hand screw, and the left-hand JIS taper pipe thread with a left-hand screw, allowing the screws to tighten freely. When Rotor is fitted with a flange, the JIS parallel pipe thread (usually the right-hand screw) is used. To prevent the screw from loosing, lock nut is installed on the internal pipe at the inside of Elbow.

* Duplex, Rotational Internal Pipe: Thread Connection type (NCW) and Duplex, Rotational Internal Pipe: Flange Connection type (NCFW) is available upon request.

●NOTE

1. Operation at Max. pressure combined with Max. Speed should be avoided.
2. The joints should not run dry (without liquid).

NXE/NXH series

For higher pressure/temperature application than service conditions of NC series, NXE/NXH series in nominal size 50A & 65A are prepared.

○Please contact us for NXE/NXH series.

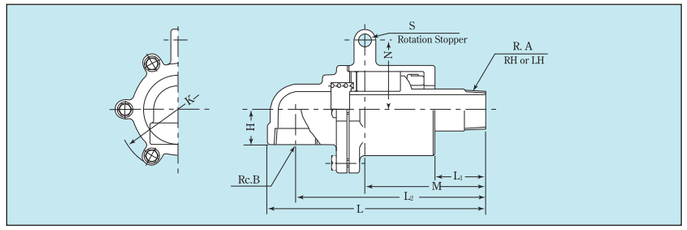
●SERVICE CONDITIONS

Fluid	Steam, Thermal Oil
Max. Temperature	NXE: 200℃ for Steam NXE: 220℃ for Thermal Oil
	NXH: 280℃ for Thermal Oil
Max. Pressure	1.5MPa
Max. Rotation Speed	150min^{-1}

●TYPE LIST OF NXE/NXH series

	Thread Connection		Flange Connection	
	Nominal Size		Nominal Size	
	50A	65A	50A	65A
Simplex	NXE1050 NXH1050	NXE1065 NXH1065	NXE2050 NXH2050	NXE2065 NXH2065
Duplex, Stationary Internal Pipe	NXE3050 NXH3050	NXE3065 NXH3065	NXE4050 NXH4050	NXE4065 NXH4065
Duplex, Rotational Internal Pipe	NXE5050 NXH5050	NXE5065 NXH5065	NXE6050 NXH6050	NXE6065 NXH6065

NCL Type (Simplex, Thread Connection)



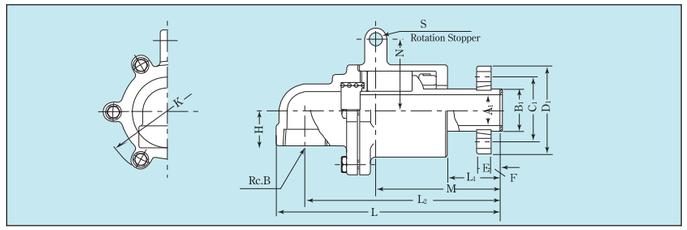
NOMINAL SIZE		A	B	H	K	L1	L2	L	M	N	S
15A	1/2B	1/2	1/2	25	92	40	140	160	95	50	12
20A	3/4B	3/4	3/4	25	92	45	145	165	100	50	12
25A	1B	1	1	30	104	50	165	190	110	60	12
32A	1 1/4B	1 1/4	1 1/4	35	119	53	180	208	113	65	12
40A	1 1/2B	1 1/2	1 1/2	40	144	60	215	245	140	80	15
50A	2B	2	2	50	166	60	229	270	145	90	15
65A	2 1/2B	2 1/2	2 1/2	55	188	70	255	305	165	100	18
80A	3B	3	3	62	219	80	310	365	205	110	18

TYPE & SIZE: Example for placing order
Type → Size → Thread direction of Rotor: RH or LH

Example: NCL 25A RH

NCL — 15A/20A/25A/32A 40A/50A/65A/80A — RH/LH

NCLF Type (Simplex, Flange Connection)



NOMINAL SIZE		B	H	K	L1	L2	L	M	N	S	FLANGE DIMENSIONS						
											A1	B1	C1	D1	E	F	BOLT
15A	1/2B	1/2	25	92	52	152	172	106	50	12	14	25	54	74	12	9	4-M10
20A	3/4B	3/4	25	92	45	145	165	100	50	12	17	26	54	74	12	8	4-M10
25A	1B	1	30	104	50	165	190	110	60	12	22	34	60	80	12	8	4-M10
32A	1 1/4B	1 1/4	35	119	53	180	208	113	65	12	30	42	75	96	14	10	4-M10
40A	1 1/2B	1 1/2	40	144	60	215	245	140	80	15	35	48	75	96	14	10	4-M10
50A	2B	2	50	166	60	229	270	145	90	15	48	60	95	120	14	12	4-M12
65A	2 1/2B	2 1/2	55	188	70	255	305	165	100	18	60	75	110	136	16	16	4-M12
80A	3B	3	62	219	80	310	365	205	110	18	72	90	125	154	20	22	6-M12

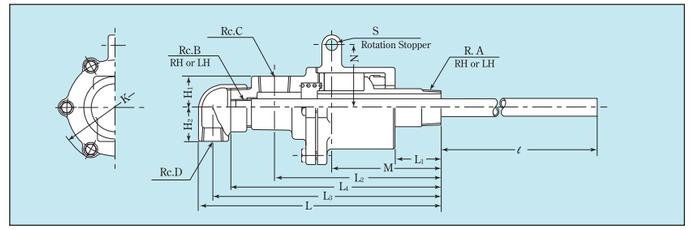
TYPE & SIZE: Example for placing order
Type → Size

Example: NCLF 25A

NCLF — 15A/20A/25A/32A 40A/50A/65A/80A

* The flange connection type is supplied with a copper gasket (to be attached on the shaft end), along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* Since NC series has a split ring on the flange, be sure to use a gasket at the end of Rotor.

NC Type (Duplex, Stationary Internal Pipe: Thread Connection)



NOMINAL SIZE		A	B	C	D	L1	L2	L3	L4	L	H1	H2	M	N	S	K
15A	1/2B	1/2	1/8	1/2	1/2	40	140	200	178	213	25	33	95	50	12	92
20A	3/4B	3/4	1/4	3/4	1/2	45	145	205	183	218	25	33	100	50	12	92
25A	1B	1	3/8	1	1/2	50	165	235	213	248	30	38	110	60	12	104
32A	1 1/4B	1 1/4	1/2	1	1/2	53	172	242	223	256	35	38	113	65	12	119
40A	1 1/2B	1 1/2	1/2・(3/4)	1 1/4	1	60	210	290	265	308	42	43	140	80	15	144
50A	2B	2	3/4・(1)	1 1/2	1	60	220	305	280	327	50	51	145	90	15	166
65A	2 1/2B	2 1/2	1・(1 1/4)	2	1 1/2	70	252	353	319	381	55	62	165	100	18	188
80A	3B	3	1 1/4・(1 1/2)	2 1/2	2	80	300	426	385	463	62	72	205	110	18	219

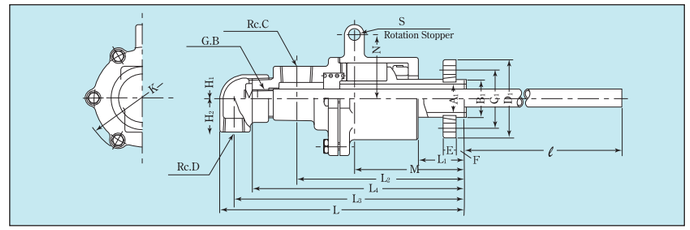
TYPE & SIZE: Example for placing order
Type → Size-(Thread size for Internal Pipe) → Thread direction of Rotor: RH or LH

Example: NC 25A-10A RH

NC — 15A(6A)/20A(8A)/25A(10A)/32A(15A)/40A(15A・20A) 50A(20A・25A)/65A(25A・32A)/80A(32A・40A) — RH/LH

* On types that are 50A or larger in size, the pipe connection part Rc.C is directed opposite to the rotation stopper.
* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure specify the dimensions.

NCF Type (Duplex, Stationary Internal Pipe: Flange Connection)



NOMINAL SIZE		B	C	D	L1	L2	L3	L4	L	H1	H2	M	N	S	K	FLANGE DIMENSIONS						
																A1	B1	C1	D1	E	F	BOLT
15A	1/2B	1/8	1/2	1/2	52	152	212	190	225	25	33	106	50	12	92	14	25	54	74	12	9	4-M10
20A	3/4B	1/4	3/4	1/2	45	145	205	183	218	25	33	100	50	12	92	17	26	54	74	12	8	4-M10
25A	1B	3/8	1	1/2	50	165	235	213	248	30	38	110	60	12	104	22	34	60	80	12	8	4-M10
32A	1 1/4B	1/2	1	1/2	53	172	242	223	256	35	38	113	65	12	119	30	42	75	96	14	10	4-M10
40A	1 1/2B	1/2・(3/4)	1 1/4	3/4	60	210	290	265	308	42	43	140	80	15	144	35	48	75	96	14	10	4-M10
50A	2B	3/4・(1)	1 1/2	1	60	220	305	280	327	50	51	145	90	15	166	48	60	95	120	14	12	4-M12
65A	2 1/2B	1・(1 1/4)	2	1 1/2	70	252	353	319	381	55	62	165	100	18	188	60	75	110	136	16	16	4-M12
80A	3B	(1)・1 1/4・(1 1/2)	2 1/2	2	80	300	426	385	462	62	72	205	110	18	219	72	90	125	154	20	22	6-M12

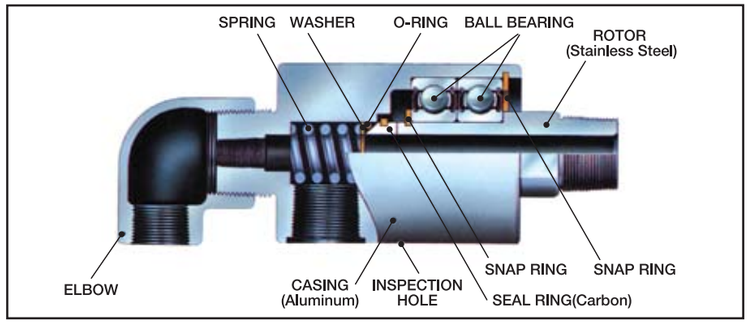
TYPE & SIZE: Example for placing order
Type → Size-(Thread size for Internal Pipe)

Example: NCF 25A-10A

NCF — 15A(6A)/20A(8A)/25A(10A)/32A(15A)/40A(15A・20A) 50A(20A・25A)/65A(25A・32A)/80A(25A・32A・40A)

* The internal pipe retaining nut is supplied with the joint.
* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure specify the dimensions.
* On types that are 50A or larger in size, the pipe connection part Rc.C is directed opposite to the rotation stopper.
* The flange connection type is supplied with a copper gasket (to be attached on the shaft end), along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* Since NC series has a split ring on the flange, be sure to use a gasket at the end of Rotor.

KC series



●FEATURES

- Light weight due to aluminum casing
- Compact design and simple construction
- Lubrication-free due sealed ball bearings
- Capable of high rotation speed

●LIST OF KC series

	Thread Connection	Flange Connection
Simplex	KCL	KCLF
Duplex, Stationary Internal Pipe	KC	KCF
Duplex, Rotational Internal Pipe	KCW	KCFW

* The flange connection type is supplied with a copper gasket (to be attached on the shaft end), along with a stud bolt, nut and washer set.
* KCW type, KCFW type: Rotational Internal Pipe Type is available upon request.
* Simplex, Straight Thru type (KCS type: size 8A～25A) is also available.

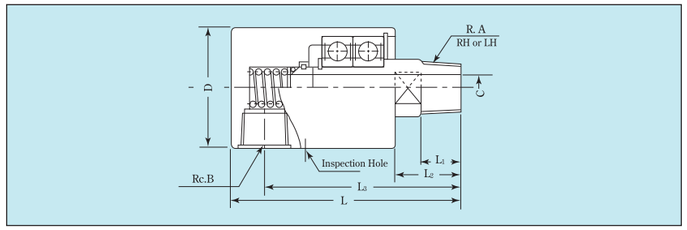
●SERVICE CONDITIONS

Fluid	Air, Gas, Water, Oil
Max. Temperature	100℃
Max. Pressure	0.98MPa{10kg/cm^2}
Max. Rotation Speed	6A～25A 1500min^{-1}{r.p.m} 32A～65A 1000min^{-1}{r.p.m}

●NOTE

1. Operation at Max. pressure combined with Max. speed should be avoided.
2. The joints should not run dry (without liquid). When air service, mix oil mist into the air to avoid dry operation.

KCL Type (Simplex, Thread Connection)



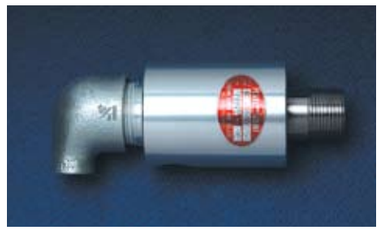
NOMINAL SIZE		A	B	C	D	L1	L2	L3	L
6A	1/8B	1/8	1/8	4	34	10	20	60	70
8A	1/4B	1/4	1/4	6	40	14	24	75	85
10A	3/8B	3/8	3/8	9	46	19	29	82	94
15A	1/2B	1/2	1/2	12	54	21	33	94	109
20A	3/4B	3/4	3/4	16	60	22	34	102	120
25A	1B	1	1	20	70	23	36	108	130
32A	1 1/4B	1 1/4	1 1/4	30	90	28	43	131	158
40A	1 1/2B	1 1/2	1 1/2	35	95	28	43	135	165
50A	2B	2	2	48	124	30	55	164	203
65A	2 1/2B	2 1/2	2 1/2	56	148	40	78	206	256

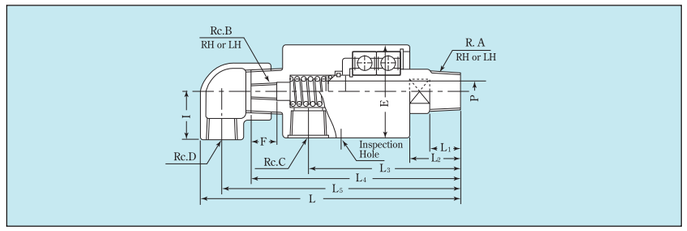
TYPE & SIZE: Example for placing order
Type → Size → Thread direction of Rotor: RH or LH

KCL — 6A/8A/10A/15A/20A/25A 32A/40A/50A/65A — RH／LH

Example: KCL 25A RH

KC Type (Duplex, Stationary Internal Pipe: Thread Connection)





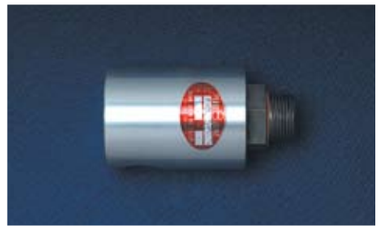
NOMINAL SIZE		A	B	C	D	E	F	P	I	L1	L2	L3	L4	L5	L
15A	1/2B	1/2	1/8	1/2	3/8	54	13	12	28	21	33	94	127	145	156
20A	3/4B	3/4	(1/8)・1/4	1/2	3/8	60	13	16	31	22	34	100	135	154	165
25A	1B	1	(1/4)・3/8	3/4	1/2	70	15	20	38	23	36	108	149	170	184
32A	1 1/4B	1 1/4	1/2	1	3/4	90	20	30	43	28	43	127	173	198	215
40A	1 1/2B	1 1/2	(1/2)・3/4	1	3/4	95	21	35	43	28	43	127	173	198	215
50A	2B	2	(3/4)・1	1 1/2	1 1/2	124	25	48	62	30	55	160	230	267	297
65A	2 1/2B	2 1/2	1 1/4	2	1 1/2	148	30	56	62	40	78	198	270	307	337

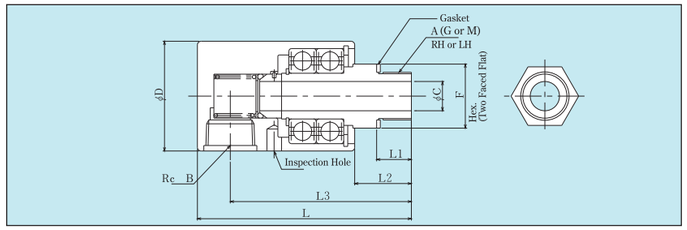
TYPE & SIZE: Example for placing order
Type → Size-(Thread size for Internal Pipe) → Thread direction of Rotor: RH or LH

KC — 15A(6A)/20A(8A)/25A(10A)/32A(15A) 40A(15A・20A)/50A(20A・25A)/65A(32A) — RH／LH

Example: KC 25A-10A RH

SKCL Type (Simplex, Thread Connection) Rotor thread: JIS Parallel/ISO Metric





NOMINAL SIZE		JIS Parallel	ISO Metric	B	C	D	F	L1	L2	L3	L
8A	1/4B	G1/4	M16×1.5	Rc1/4	6	40	17	14	26	77	87
10A	3/8B	G3/8	M18×1.5	Rc3/8	9	48	26	16	26	79	91
15A	1/2B	G1/2	M22×1.5	Rc1/2	12	54	29	18	30	90	105
20A	3/4B	G3/4	M26×1.5	Rc3/4	16	60	35	19	31	98	116
25A	1B	G1	M30×1.5	Rc1	20	70	41	20	33	105	127

TYPE & SIZE: Example for placing order
Type → Size → Thread direction of Rotor: RH or LH

SKCL — 8A/10A/15A/20A/25A — RH／LH
SKCL — M16×1.5/M18×1.5/M22×1.5/ M26×1.5/M30×1.5 — RH／LH

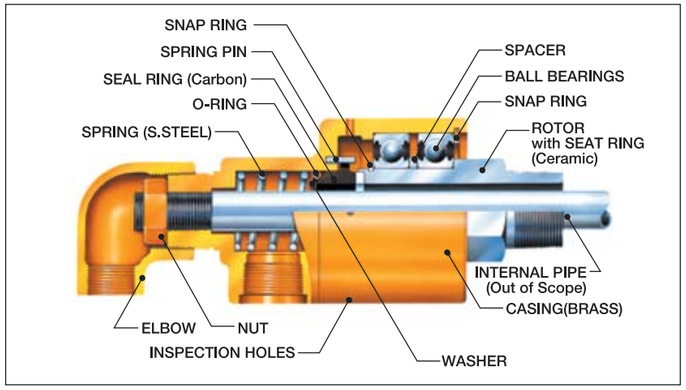
Exam. of JIS Parallel : SKCL 25A RH

Exam. of ISO Metric : SKCL M30X1.5 RH

* Rotor is supplied with a copper plate gasket.

RXE Type (RXC Type)

Suited for cooling service, Lubrication free due to pre-greased ball bearings



●SERVICE CONDITIONS

Fluid	Water, Warm Water, Oil, Air, Gas	Max. Pressure	[Vacuum: Up to 13kPa abs{10Torr} for each size]
Max. Temperature	100℃		8A～25A 2.25MPa{23kgf/cm²}
Max. Rotation Speed	(Nominal Size)		32A～40A 1.67MPa{17kgf/cm²}
	8A～25A 3500min⁻¹{r.p.m}		50A～80A 1.18MPa{12kgf/cm²}
	32A～40A 2000min⁻¹{r.p.m}		* Air or Gas: for each size 1MPa{10kgf/cm²}
	50A～80A 750min⁻¹{r.p.m}		

RXH Type (RXM Type)

Available for high temperature due to employing high grade seal materials and providing grease nipple for lubrication

●SERVICE CONDITIONS

Fluid	Hot Water, Thermal Oil, Water	Max. Pressure	[Vacuum: Up to 13kPa abs{10Torr} for each size]
Max. Temperature	150℃		10A～25A 2.25MPa{23kgf/cm²}
Max. Rotation Speed	(Nominal Size)		32A～40A 1.67MPa{17kgf/cm²}
	10A～25A 3500min⁻¹{r.p.m}		50A～80A 1.18MPa{12kgf/cm²}
	32A～40A 2000min⁻¹{r.p.m}		
	50A～80A 750min⁻¹{r.p.m}		

●FEATURES

- RX series joints offer long trouble-free and leakproof operation with ease of maintenance due to employing ceramic seal and brass casing.
- To secure the reliable sealing, the carbon and ceramic seal faces are lapped to an optical flatness.
- The widely spaced ball bearings provide stable operation under high speed rotation.
- Hexagonal wrench flats offer easy mounting and demounting.
- Ultra precision lapped seal faces materialize low torque operation for economizing power cost and having no need of an extra rotation stopper.
- 4 vented holes (Inspection Holes) in casing enable to detect leakage before fluid corrodes the ball bearings.

●NOTE

RXC & RXM are the same as RXE & RXH respectively but Casing and Elbow (connection for hose) threads are NPT.

●ORDERING INFORMATION (CODE NUMBERING SYSTEM)

① TYPE	② SIMPLEX or DUPLEX MOUNTING CODE	③ MOUNTING SPECIFICATION	④ SIZE CODE	⑤ THREAD DIRECTION
RXE (RXC) or RXH (RXM)	1 : Simplex, Thread 2 : Simplex, Flange 3 : Duplex, SIP, Thread 4 : Duplex, SIP, Flange 5 : Duplex, RIP, Thread 6 : Duplex, RIP, Flange	(for thread) 0 : JIS Taper 1 : JIS Parallel 2 : ISO Metric 3 : Metric w/Pilot 6 : NPT 7 : UNF (for flange) 0: With Split Ring 1: Welded Flange (Standard)	(A) : (B) 8 : (1/4) 10 : (3/8) 15 : (1/2) 20 : (3/4) 25 : (1) 32 : (1 1/4) 40 : (1 1/2) 50 : (2) 65 : (2 1/2) 80 : (3)	RH or LH

SIP: Stationary Internal Pipe
RIP: Rotational Internal Pipe

TYPE & SIZE: Example for placing order

In case of Thread Connection Type, Size 25A:

① TYPE + ② SIMPLEX or DUPLEX MOUNTING CODE + ③ MOUNTING SPEC. + ④ SIZE + ⑤ THREAD DIRECTION

Example: RXE1025 RH, RXC1125 LH, RXE1325 RH, RXH3025 RH, RXH5025 LH

In case of Flange Connection Type, Size 25A:

① TYPE + ② SIMPLEX or DUPLEX MOUNTING CODE + ③ MOUNTING SPEC. + ④ SIZE

Example: RXE2125, RXC2125, RXH2125, RXH4125, RXM4125, RXH6125

* A rotor with a parallel screw is supplied with the copper plate gasket.
* The flange connection type is supplied with a copper gasket (to be attached on the shaft end), along with a stud bolt, nut and washer set.

●Sizes of internal pipes for the RX Series duplex type

Joint	Nominal size	15A: (1/2B)	20A: (3/4B)	25A: (1B)	32A: (1 1/4B)	40A: (1 1/2B)	50A: (2B)	65A: (2 1/2B)	80A: (3B)
Internal Pipe	Nominal size	6A: (1/8B)	8A: (1/4B)	10A: (3/8B)	15A: (1/2B)	20A: (3/4B)	25A: (1B)	32A: (1 1/4B)	40A: (1 1/2B)

* The internal pipe uses the right-hand G-type screw only. Secure it with the supplied lock nut.

●MAINTENANCE AND LUBRICATION

RXE type uses sealed ball bearings and lubrication is not required. No maintenance work is required except for periodic checking for leakage caused due to wear of the rotary joint.

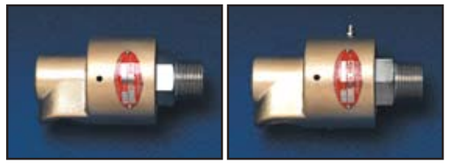
Pearl Rotary Joint RXH Type requires lubrication with high-performance grease on the bearing areas. When operating at high temperatures, use heat-resistant grease and be sure to check/refill grease as needed. When adding grease, remove the plug, top off the grease and refit the plug. The table to the right provides an approximate guide for greasing. Determine appropriate greasing intervals depending on the operating temperature, RPMs and operating time.

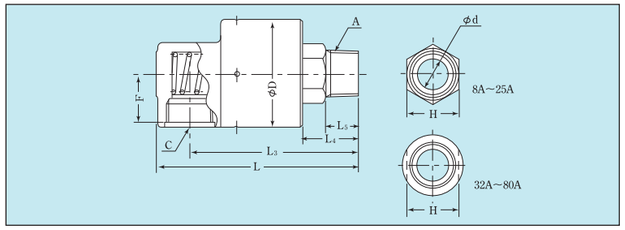
Greasing frequency	
0℃～60℃	Once every 6 months
60℃～120℃	Once every 3 months
120℃～150℃	Once a month

●NOTE

1. Operation at Max. pressure combined with Max. speed should be avoided.
2. When high speed operation, parallel threads or flange connection should be recommended for mounting.
3. The joint should not run dry (without liquid). When air service, mix oil mist into the air to avoid dry operation.
4. Ceramic Seat Ring has been bonded to Rotor in a special way. Seat Ring without Rotor is not sold.

RXE1000 RXH1000 (Simplex, Thread Connection)



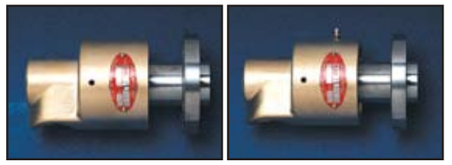


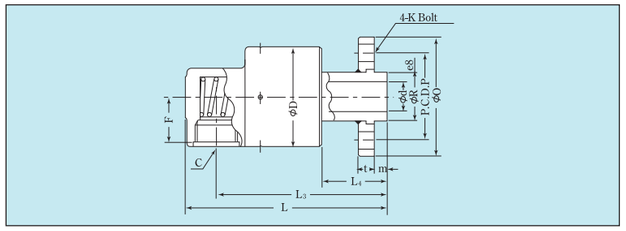
NOMINAL SIZE	CODE	A: SIZE OF ROTOR THREAD	C	F	D	L	L3	L4	L5	d	H
8A	1008	R1/4	Rc1/4	18	39	81	70	22	14	6	17
10A	1010	R3/8	Rc3/8	21	46	90	77	23	14	9	19
	1110	G3/8	Rc3/8	21	46	93	80	26	15	9	22
	1210	M16×1.5	Rc3/8	21	46	93	80	26	15	9	22
	1610	NPT3/8	NPT3/8	21	46	90	77	23	14	9	19
	1710	5/8-18UNF	NPT3/8	21	46	93	80	26	15	9	22
15A	1015	R1/2	Rc1/2	24	53	108	91	28	18	12.5	22
	1115	G1/2	Rc1/2	24	53	110	93	30	18	12.5	27
	1215	M22×1.5	Rc1/2	24	53	110	93	30	18	12.5	27
	1615	NPT1/2	NPT1/2	24	53	108	91	28	18	12.5	22
	1715	3/4-16UNF	NPT1/2	24	53	110	93	30	18	12.5	27
20A	1020	R3/4	Rc3/4	29	65	120	101	32	19	18	32
	1120	G3/4	Rc3/4	29	65	120	101	32	17	18	32
	1220	M26×1.5	Rc3/4	29	65	120	101	32	17	18	32
	1620	NPT3/4	NPT3/4	29	65	120	101	32	19	18	32
	1720	1-14UNS	NPT3/4	29	65	120	101	32	17	18	32
25A	1025	R1	Rc1	31	72	135	112	37	22	22	36
	1125	G1	Rc1	31	72	131	108	33	18	22	36
	1225	M35×1.5	Rc1	31	72	132	109	34	16	22	41
	1625	NPT1	NPT1	31	72	135	112	37	22	22	36
	1725	1 1/2-12UNF	NPT1	31	72	139	116	41	23	22	41
32A	1032	R1 1/4	Rc1 1/4	41	83	161	134	45	25	30	41
	1132	G1 1/4	Rc1 1/4	41	83	162	135	46	25	30	41
	1232	M42×1.5	Rc1 1/4	41	83	162	135	46	25	30	41
	1632	NPT1 1/4	NPT1 1/4	41	83	161	134	45	25	30	41
	1732	1 3/4-12UN	NPT1 1/4	41	83	162	135	46	25	30	41
40A	1040	R1 1/2	Rc1 1/2	44	89	171	141	47	25	35	46
	1140	G1 1/2	Rc1 1/2	44	89	172	142	48	25	35	46
	1240	M50×1.5	Rc1 1/2	44	89	172	142	48	25	35	46
	1640	NPT1 1/2	NPT1 1/2	44	89	171	141	47	25	35	46
	1740	2-12UN	NPT1 1/2	44	89	172	142	48	25	35	46
50A	1050	R2	Rc2	57	115	206	168	56	30	48	60
	1650	NPT2	NPT2	57	115	206	168	56	30	48	60
65A	1065	R2 1/2	Rc2 1/2	73	123	257	210	75	40	58	65
	1665	NPT2 1/2	NPT2 1/2	73	123	257	210	75	40	58	65
80A	1080	R3	Rc3	80	138	279	224	75	40	68	75
	1680	NPT3	NPT3	80	138	279	224	75	40	68	75

* Model code "1008" is only available with type "RXE", not type "RXH".
* A rotor with a parallel screw is supplied with the copper plate gasket.
* Contact us or representatives when a port for temperature or pressure sensor is required.

RXC & RXM are the same as RXE & RXH respectively but Casing and Elbow (connection for hose) threads are NPT.
RXC: Suitable for cooling service. Lubrication free due to pre-greased ball bearings
RXM: Available for high temperature operation with high grade seal materials and providing grease nipple for lubrication
Code No.16**&17** are not available for RXC & RXM.
Code No.1008 is not available for RXC & RXM.

RXE2100 RXH2100 (Simplex, Flange Connection)

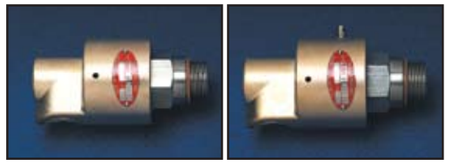


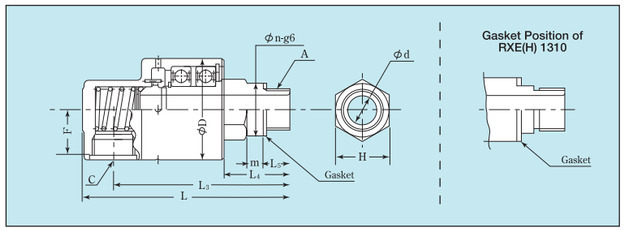


SIZE	CODE	C	d	FLANGE DIMENSIONS						F	D	L	L3	L4
				R	O	P	m	t	K					
15A	2115	Rc1/2	12.5	25	62	45	8	10	M8	24	53	118	101	38
20A	2120	Rc3/4	18	30	74	54	8	12	M10	29	65	133	114	45
25A	2125	Rc1	22	35	80	60	9	12	M10	31	72	146	123	48
32A	2132	Rc1 1/4	30	50	96	75	9	14	M10	41	83	166	139	50
40A	2140	Rc1 1/2	35	50	96	75	9	14	M10	44	89	174	144	50
50A	2150	Rc2	48	65	120	95	10	14	M12	57	115	210	172	60
65A	2165	Rc2 1/2	58	80	136	110	12	16	M12	73	123	242	195	60
80A	2180	Rc3	68	90	154	125	15	20	M12	80	138	269	214	65

* The flange connection type is supplied with a copper gasket (to be attached on the shaft end), along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* Contact us or representatives when a port for temperature or pressure sensor is required.

RXE1300 RXH1300 (Simplex, ISO Metric Thread With Pilot)



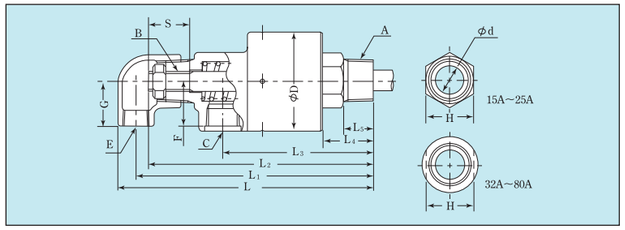


NOMINAL SIZE	CODE	A: SIZE OF ROTOR THREAD	C	F	D	L	L3	L4	L5	m	n	d	H
10A	1310	M16×1.5	Rc3/8	21	46	98	85	31	13	7	18	9	22
15A	1315	M22×1.5	Rc1/2	24	53	117	100	37	14	10	28	12.5	30
20A	1320	M25×1.5	Rc3/4	29	65	129	110	41	16	10	30	16	32
25A	1325	M33×1.5	Rc1	31	72	144	121	46	18	10	40	22	41

* A rotor with a parallel screw is supplied with the copper plate gasket.
* Contact us or representatives when a port for temperature or pressure sensor is required.

RXC & RXM are the same as RXE & RXH respectively but Casing and Elbow (connection for hose) threads are NPT.
RXC: Suitable for cooling service. Lubrication free due to pre-greased ball bearings
RXM: Available for high temperature operation with high grade seal materials and providing grease nipple for lubrication

RXE3000 RXH3000 (Duplex, Stationary Internal Pipe: Thread Connection)

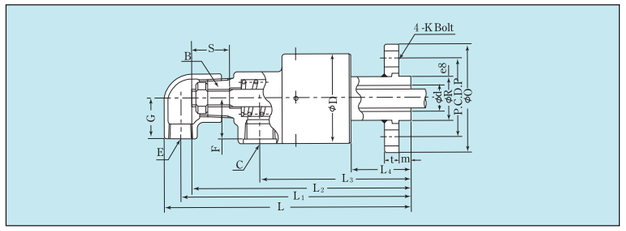


NOMINAL SIZE	CODE	A: SIZE OF ROTOR THREAD	B	C	E	F	G	D	L	L1	L2	L3	L4	L5	d	H	INTERNAL PIPE S
15A	3015	R1/2	G1/8	Rc1/2	Rc3/8	24	25	53	153	141	133	91	28	18	12.5	22	22
	3115	G1/2	G1/8	Rc1/2	Rc3/8	24	25	53	155	143	135	93	30	18	12.5	27	22
	3215	M22×1.5	G1/8	Rc1/2	Rc3/8	24	25	53	155	143	135	93	30	18	12.5	27	22
	3615	NPT1/2	G1/8	NPT1/2	NPT3/8	24	25	53	153	141	133	91	28	18	12.5	22	22
	3715	3/4-16UNF	G1/8	NPT1/2	NPT3/8	24	25	53	155	143	135	93	30	18	12.5	27	22
20A	3020	R3/4	G1/4	Rc1/2	Rc3/8	29	28	65	165	153	144	98	32	19	18	32	23
	3120	G3/4	G1/4	Rc1/2	Rc3/8	29	28	65	165	153	144	98	32	17	18	32	23
	3220	M26×1.5	G1/4	Rc1/2	Rc3/8	29	28	65	165	153	144	98	32	17	18	32	23
	3620	NPT3/4	G1/4	NPT1/2	NPT3/8	29	28	65	165	153	144	98	32	19	18	32	23
	3720	1-14UNS	G1/4	NPT1/2	NPT3/8	29	28	65	165	153	144	98	32	17	18	32	23
25A	3025	R1	G3/8	Rc3/4	Rc1/2	33	33	72	187	174	163	110	37	22	22	36	26
	3125	G1	G3/8	Rc3/4	Rc1/2	33	33	72	183	170	159	106	33	18	22	36	26
	3225	M35×1.5	G3/8	Rc3/4	Rc1/2	33	33	72	184	171	160	107	34	16	22	41	26
	3625	NPT1	G3/8	NPT3/4	NPT1/2	33	33	72	187	174	163	110	37	22	22	36	26
	3725	1 1/2-12UNF	G3/8	NPT3/4	NPT1/2	33	33	72	191	178	167	114	41	23	22	41	26
32A	3032	R1 1/4	G1/2	Rc1	Rc3/4	36	40	83	219	202	189	132	45	25	30	41	30
	3132	G1 1/4	G1/2	Rc1	Rc3/4	36	40	83	220	203	190	133	46	25	30	41	30
	3232	M42×1.5	G1/2	Rc1	Rc3/4	36	40	83	220	203	190	133	46	25	30	41	30
	3632	NPT1 1/4	G1/2	NPT1	NPT3/4	36	40	83	219	202	189	132	45	25	30	41	30
	3732	1 3/4-12UN	G1/2	NPT1	NPT3/4	36	40	83	220	203	190	133	46	25	30	41	30
40A	3040	R1 1/2	G3/4	Rc1	Rc3/4	39	43	89	226	209	196	137	47	25	35	46	32
	3140	G1 1/2	G3/4	Rc1	Rc3/4	39	43	89	227	210	197	138	48	25	35	46	32
	3240	M50×1.5	G3/4	Rc1	Rc3/4	39	43	89	227	210	197	138	48	25	35	46	32
	3640	NPT1 1/2	G3/4	NPT1	NPT3/4	39	43	89	226	209	196	137	47	25	35	46	32
	3740	2-12UN	G3/4	NPT1	NPT3/4	39	43	89	227	210	197	138	48	25	35	46	32
50A	3050	R2	G1	Rc1 1/2	Rc1	50	51	115	268	247	233	164	56	30	48	60	34
	3650	NPT2	G1	NPT1 1/2	NPT1	50	51	115	268	247	233	164	56	30	48	60	34
65A	3065	R2 1/2	G1 1/4	Rc2	Rc1 1/2	68	62	123	345	315	293	206	75	40	58	65	45
	3665	NPT2 1/2	G1 1/4	NPT2	NPT1 1/2	68	62	123	345	315	293	206	75	40	58	65	45
80A	3080	R3	G1 1/2	Rc2	Rc1 1/2	72	62	138	353	323	300	212	75	40	68	75	45
	3680	NPT3	G1 1/2	NPT2	NPT1 1/2	72	62	138	353	323	300	212	75	40	68	75	45

* A rotor with a parallel screw is supplied with the copper plate gasket.
* The internal pipe retaining nut (lock nut) is supplied with the joint.
* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure to specify the dimensions.

RXC & RXM are the same as RXE & RXH respectively but Casing and Elbow (connection for hose) threads are NPT.
RXC: Suitable for cooling service. Lubrication free due to pre-greased ball bearings
RXM: Available for high temperature operation with high grade seal materials and providing grease nipple for lubrication
Code No.36**&37** are not available for RXC & RXM.

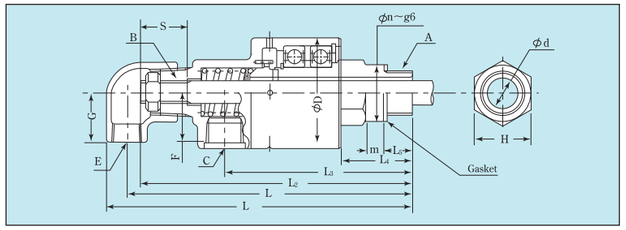
RXE4100 RXH4100 (Duplex, Stationary Internal Pipe: Flange Connection)



NOMINAL SIZE	CODE	B	C	E	d	FLANGE DIMENSIONS R	O	P	m	t	K	F	G	D	L	L1	L2	L3	L4	INTERNAL PIPE S
15A	4115	G1/8	Rc1/2	Rc3/8	12.5	25	62	45	8	10	M8	24	25	53	163	151	143	101	38	22
20A	4120	G1/4	Rc1/2	Rc3/8	18	30	74	54	8	12	M10	29	28	65	177	166	157	111	45	23
25A	4125	G3/8	Rc3/4	Rc1/2	22	35	80	60	9	12	M10	33	33	72	198	185	174	121	48	26
32A	4132	G1/2	Rc1	Rc3/4	30	50	96	75	9	14	M10	36	40	83	224	207	194	137	50	30
40A	4140	G3/4	Rc1	Rc3/4	35	50	96	75	9	14	M10	39	43	89	229	212	199	140	50	32
50A	4150	G1	Rc1 1/2	Rc1	48	65	120	95	10	14	M12	50	51	115	272	251	237	168	60	34
65A	4165	G1 1/4	Rc2	Rc1 1/2	58	80	136	110	12	16	M12	68	62	123	330	300	278	191	60	45
80A	4180	G1 1/2	Rc2	Rc1 1/2	68	90	154	125	15	20	M12	72	62	138	343	313	290	202	65	45

* The flange connection type is supplied with a copper gasket (to be attached on the shaft end) , along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* The internal pipe retaining nut (lock nut) is supplied with the joint.
* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure to specify the dimensions.

RXE3300 RXH3300 (Duplex, Stationary Internal Pipe: ISO Metric Thread With Pilot)

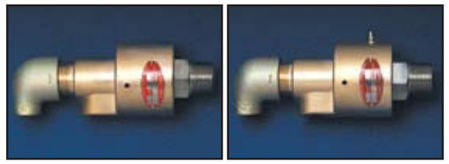


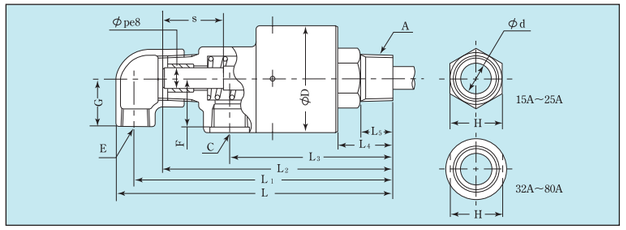
NOMINAL SIZE	CODE	A: SIZE OF ROTOR THREAD	B	C	E	F	G	D	L	L1	L3	L3	L4	L5	m	n	d	H	INTERNAL PIPE S
15A	3315	M22×1.5	G1/8	Rc1/2	Rc3/8	24	25	53	162	150	142	100	37	14	10	28	12.5	30	22
20A	3320	M25×1.5	G1/4	Rc1/2	Rc3/8	29	28	65	173	162	153	107	41	16	10	30	16	32	23
25A	3325	M33×1.5	G3/8	Rc3/4	Rc1/2	33	33	72	196	183	172	119	46	18	10	40	22	41	26

* A rotor with a parallel screw is supplied with the copper plate gasket.
* The internal pipe retaining nut (lock nut) is supplied with the joint.
* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure to specify the dimensions.

RXC & RXM are the same as RXE & RXH respectively but Casing and Elbow (connection for hose) threads are NPT.
RXC: Suitable for cooling service. Lubrication free due to pre-greased ball bearings
RXM: Available for high temperature operation with high grade seal materials and providing grease nipple for lubrication

RXE5000 RXH5000 (Duplex, Rotational Internal Pipe: Thread Connection)



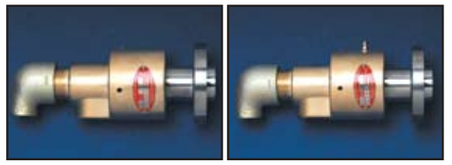


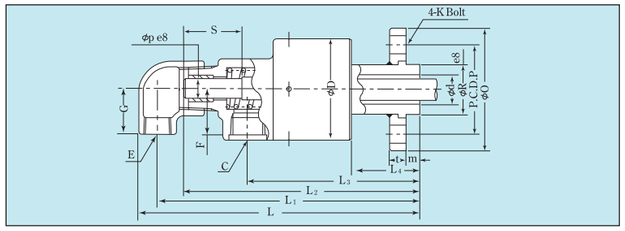
NOMINAL SIZE	CODE	A	C	E	F	G	D	L	L1	L2	L3	L4	L5	d	H	INTERNAL PIPE P	INTERNAL PIPE S
15A	5015	R1/2	Rc1/2	Rc3/8	24	25	53	153	141	128	91	28	18	12.5	22	10	30
	5115	G1/2	Rc1/2	Rc3/8	24	25	53	155	143	130	93	30	18	12.5	27	10	30
	5215	M22×1.5	Rc1/2	Rc3/8	24	25	53	155	143	130	93	30	18	12.5	27	10	30
	5615	NPT1/2	NPT1/2	NPT3/8	24	25	53	153	141	128	91	28	18	12.5	22	10	30
	5715	3/4-16UNF	NPT1/2	NPT3/8	24	25	53	155	143	130	93	30	18	12.5	27	10	30
20A	5020	R3/4	Rc1/2	Rc3/8	29	28	65	165	153	138	98	32	19	18	32	13	30
	5120	G3/4	Rc1/2	Rc3/8	29	28	65	165	153	138	98	32	17	18	32	13	30
	5220	M26×1.5	Rc1/2	Rc3/8	29	28	65	165	153	138	98	32	17	18	32	13	30
	5620	NPT3/4	NPT1/2	NPT3/8	29	28	65	165	153	138	98	32	19	18	32	13	30
	5720	1-14UNS	NPT1/2	NPT3/8	29	28	65	165	153	138	98	32	17	18	32	13	30
25A	5025	R1	Rc3/4	Rc1/2	33	33	72	187	174	157	110	37	22	22	36	16	35
	5125	G1	Rc3/4	Rc1/2	33	33	72	183	170	154	106	33	18	22	36	16	35
	5225	M35×1.5	Rc3/4	Rc1/2	33	33	72	184	171	154	107	34	16	22	41	16	35
	5625	NPT1	NPT3/4	NPT1/2	33	33	72	187	174	157	110	37	22	22	36	16	35
	5725	1 1/2-12UNF	NPT3/4	NPT1/2	33	33	72	191	178	160	114	41	23	22	41	16	35
32A	5032	R1 1/4	Rc1	Rc3/4	36	40	83	219	202	182	132	45	25	30	41	20	40
	5132	G1 1/4	Rc1	Rc3/4	36	40	83	220	203	182	133	46	25	30	41	20	40
	5232	M42×1.5	Rc1	Rc3/4	36	40	83	220	203	182	133	46	25	30	41	20	40
	5632	NPT1 1/4	NPT1	NPT3/4	36	40	83	219	202	182	132	45	25	30	41	20	40
	5732	1 3/4-12UN	NPT1	NPT3/4	36	40	83	220	203	182	133	46	25	30	41	20	40
40A	5040	R1 1/2	Rc1	Rc3/4	39	43	89	226	209	189	137	47	25	35	46	26	40
	5140	G1 1/2	Rc1	Rc3/4	39	43	89	227	210	189	138	48	25	35	46	26	40
	5240	M50×1.5	Rc1	Rc3/4	39	43	89	227	210	189	138	48	25	35	46	26	40
	5640	NPT1 1/2	NPT1	NPT3/4	39	43	89	226	209	189	137	47	25	35	46	26	40
	5740	2-12UN	NPT1	NPT3/4	39	43	89	227	210	189	138	48	25	35	46	26	40
50A	5050	R2	Rc1 1/2	Rc1	50	51	115	268	247	224	164	56	30	48	60	32	45
	5650	NPT2	NPT1 1/2	NPT1	50	51	115	268	247	224	164	56	30	48	60	32	45
65A	5065	R2 1/2	Rc2	Rc1 1/2	68	62	123	345	315	283	206	75	40	58	65	40	55
	5665	NPT2 1/2	NPT2	NPT1 1/2	68	62	123	345	315	283	206	75	40	58	65	40	55
80A	5080	R3	Rc2	Rc1 1/2	72	62	138	353	323	290	212	75	40	68	75	48	60
	5680	NPT3	NPT2	NPT1 1/2	72	62	138	353	323	290	212	75	40	68	75	48	60

* A rotor with a parallel screw is supplied with the copper plate gasket.
* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure to specify the dimensions.

RXC & RXM are the same as RXE & RXH respectively but Casing and Elbow (connection for hose) threads are NPT.
RXC: Suitable for cooling service. Lubrication free due to pre-greased ball bearings
RXM: Available for high temperature operation with high grade seal materials and providing grease nipple for lubrication
Code No.56**& 57** are not available for RXC & RXM.

RXE6100 RXH6100 (Duplex, Rotational Internal Pipe: Flange Connection)



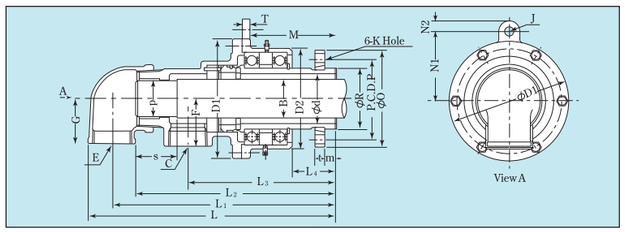


SIZE	CODE	C	E	d	FLANGE DIMENSIONS R	O	P	m	t	K	F	G	D	L	L1	L2	L3	L4	INTERNAL PIPE P	INTERNAL PIPE S
15A	6115	Rc1/2	Rc3/8	12.5	25	62	45	8	10	M8	24	25	53	163	151	138	101	38	10	30
20A	6120	Rc1/2	Rc3/8	18	30	74	54	8	12	M10	29	28	65	177	166	151	111	45	13	30
25A	6125	Rc3/4	Rc1/2	22	35	80	60	9	12	M10	33	33	72	198	185	168	121	48	16	35
32A	6132	Rc1	Rc3/4	30	50	96	75	9	14	M10	36	40	83	224	207	187	137	50	20	40
40A	6140	Rc1	Rc3/4	35	50	96	75	9	14	M10	39	43	89	229	212	192	140	50	26	40
50A	6150	Rc1 1/2	Rc1	48	65	120	95	10	14	M12	50	51	115	272	251	228	168	60	32	45
65A	6165	Rc2	Rc1 1/2	58	80	136	110	12	16	M12	68	62	123	330	300	268	191	60	40	55
80A	6180	Rc2	Rc1 1/2	68	90	154	125	15	20	M12	72	62	138	343	313	280	202	65	48	60

* The flange connection type is supplied with a copper gasket (to be attached on the shaft end) , along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure to specify the dimensions.

RXC & RXM are the same as RXE & RXH respectively but Casing and Elbow (connection for hose) threads are NPT.
RXC: Suitable for cooling service. Lubrication free due to pre-greased ball bearings
RXM: Available for high temperature operation with high grade seal materials and providing grease nipple for lubrication

RXK6000 (Duplex, Rotational Internal Pipe: Flange Connection)



SIZE	CODE	C	E	d	R	O	P	m	t	K	F	G	D1	D2	N1	N2	L	L1	L2	L3	L4	p	s	M	J	B	T
90A	6081	Rc2	Rc2	82	100	175	150	15	20	14	80	72	206	172	125	20	419	382	347	260	80	59	70	156	18	60.5	15
100A	6082	Rc2 1/2	Rc2 1/2	98	120	190	160	20	20	19	95	90	236	202	140	20	483	437	392	290	85	75	80	169	18	76.3	16

・Non-electrolysis Nickel plated on Rotor (steel)
・Non-electrolysis Nickel plated on Head (cast iron)
・Sealed with carbon and ceramic
・Contact us for further information

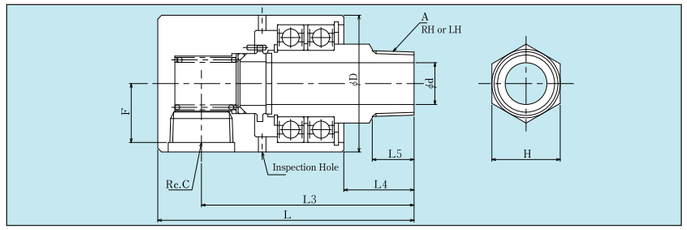
TYPE & SIZE: Example for placing order

Type ⟶ Size

RXK	90A	RXK 6081
	100A	RXK 6082

* The flange connection type is supplied with a copper gasket (to be attached on the shaft end) , along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* Since RXK Type has a split ring on the flange, be sure to use a gasket at the end of the shaft.
* Please prepare the internal pipe by yourself. If you should place an order for the internal pipe with us, please be sure to specify the dimensions.

RXE1000SUS series (Simplex, Thread Connection)



NOMINAL SIZE	CODE	A	C	F	D	L	L3	L4	L5	d	H
8A	1008S	R1/4	Rc1/4	18	39	81	70	22	14	6	17
10A	1010S	R3/8	Rc3/8	21	46	90	77	23	14	9	19
15A	1015S	R1/2	Rc1/2	24	53	108	91	28	18	12,5	22
20A	1020S	R3/4	Rc3/4	29	65	120	101	32	19	18	32
25A	1025S	R1	Rc1	31	72	135	112	37	22	22	36
32A	1032S	R1 1/4	Rc1 1/4	41	92	161	134	45	25	30	41
40A	1040S	R1 1/2	Rc1 1/2	40	94	171	141	47	25	35	46

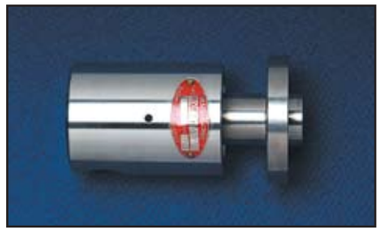
TYPE & SIZE: Example for placing order
Type → Code → Thread direction of Rotor: RH or LH

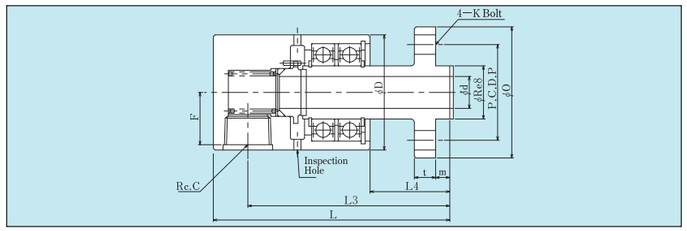
RXE — 1008S/1010S/1015S 1020S/1025S/1032S/1040S — RH／LH

Example: Example: RXE1015S RH
RXH1025S LH

* High temperature types (RXH type) are also available upon request except for Size 8A.
* Contact us or representatives when a port for temperature or pressure sensor is required.

RXE2100SUS series (Simplex, Flange Connection)





NOMINAL SIZE	CODE	C	d	FLANGE DIMENSIONS						F	D	L	L3	L4
				R	O	P	m	t	K					
15A	2115S	Rc1/2	12.5	25	62	45	8	10	M8	24	53	118	101	38
20A	2120S	Rc3/4	18	30	74	54	8	12	M10	29	65	133	114	45
25A	2125S	Rc1	22	35	80	60	9	12	M10	31	72	146	123	48

TYPE & SIZE: Example for placing order
Type → Code

RXE — 2115S/2120S/2125S

Example: RXE2115S
EXH2125S

* The flange connection type is supplied with a copper gasket (to be attached on the shaft end) , along with a stud bolt, nut and washer set.
* When you place an order for the flange connection type, it is not necessary to specify the direction of the thread.
* High temperature types (RXH type) are also available upon request.
* Contact us or representatives when a port for temperature or pressure sensor is required.

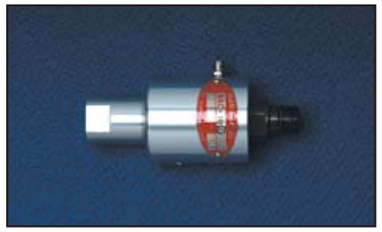
In addition to Rotor, Casing and Washer are also made of stainless steel.
If you need SUS accessories such as the stud bolt, please contact us for more information.
Duplex, Stationary Internal Pipe, Thread Connection Type: **RXE3000S/RXH3000S** and Duplex, Stationary Internal Pipe, Flange Connection Type: **RXE4100S/RXH4100S** are also available.
Rotational Internal Pipe types are available upon request.

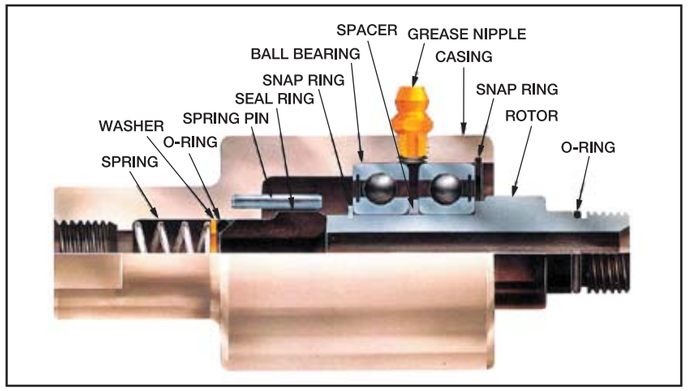
SPECIAL PARTS AND SYMBOL CODES

A wide variety of special parts are available to meet your diversified demands.
Please refer to the following table for the description of symbol codes and contact us for our proposal to best fit your needs.

No.	Difference from standard product of the same family	Symbol Code	Example of Product
1	RXE/RXH type product using a seal ring with an outer ring	C	RXE 2125C
2	RXE/RXH type product using a special elbow (different dimensions from “E” shown in this catalog	E	RXE 3025E
3	RXE type product requiring lubrication (i.e. using Casing with Grease Nipple and LB bearing)	G	RXE 2125G
4	RXE/RXH type product using a carbide seat ring (silver-alloy brazing) for the rotor	H	RXH 2125H
5	RXE/RXH type product having a number beginning “5****” or “61**” using a rotor with keyway	K	RXH 5025K RH
6	RXE/RXH type product having a number beginning “1****” or “21**” using a casing with a screw hole “Rc” for fitting a temperature gauge	T	RXH 2125T
7	RXE/RXH type product using a reinforced spring	P	RX 2125P
8	RXE type product using an FPM O-ring	V	RXE 4125V
9	RXE/RXH type product using an FPM O-ring with PTFE coating	Q	RXE 4125Q
10	RXH type product using an NBR O-ring	N	RXH 4125N
11	RXE/RXH type product using an O-ring made of materials other than those listed in 8, 9, and 10 above	Z	RXE 4125Z
12	RXE/RXH type product having a number beginning “1****” or “21**” using Casing and Washer made of SUS304 (In the case of RXH, the oil drain plug is also made of SUS304.)	S	RXE 1025S

Specifications with up to two special parts will be indicated by adding the symbol codes noted above to the model number.
Symbol codes are represented in alphabetical order. (e.g., RXE 2125CG)
Specifications with three or more special parts will be regarded as a special product and listed under a model number beginning with “RXS” .





●SERVICE CONDITIONS

STRAIGHT THRU TYPE, RIGHT ANGLE TYPE

Fluid	Machining Oil, Water, Oil
Max. Temperature	120℃
Max. Pressure	6.9MPa{70kgf/cm^2}
Max. Rotation Speed	10000min^{-1}{r.p.m}

SXO-200 COMPACT TYPE

Fluid	Machining Oil, Water, Oil
Max. Temperature	120℃
Max. Pressure	10.3MPa{105kgf/cm^2}
Max. Rotation Speed	15000min^{-1}{r.p.m}

●FEATURES

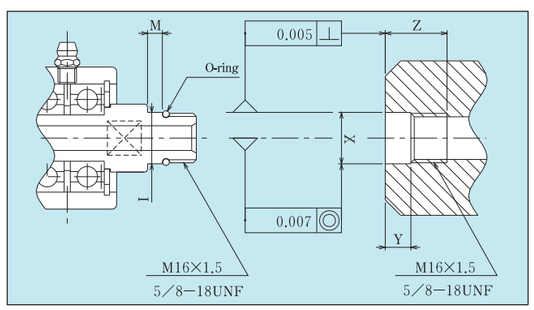
- This joint is mainly served for drilling and boring operations of various machine tools.
- Under high pressure or high rotation speed, SXO operates efficiently due to its accurate machined rotor and advanced seal technology.
- Compact design and simple construction

In addition to standard "Carbon Graphite to Hardened Tool Steel" seal, SXO offers "Tungsten Carbide to Ceramic"(TCC seal for higher working pressure/rotation speed and for longer service life).

●NOTE

1. Operation at Max. pressure combined with Max. rotation speed should be avoided.
2. The joint should not run dry (without liquid).
3. Install the proper strainer when fluid handled contains solid foreign materials.

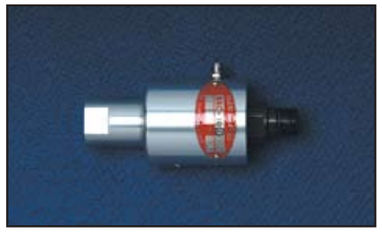
●Dimensions of the apparatus to which a SGK thread is attached (For reference)

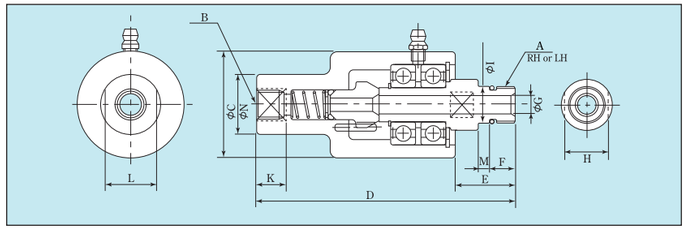


DIMENSIONS

	Rotary spigot		Connecting shaft processing dimensions		
	I	M	X	Y	Z
ISO Metric	16.025 16.007	5	16.037 16.027	8.5	17
UNF	15.872 15.860	2.4	15.885 15.875	8.5	17
	16.650 16.637	4.8	16.663 16.653	8.3	20

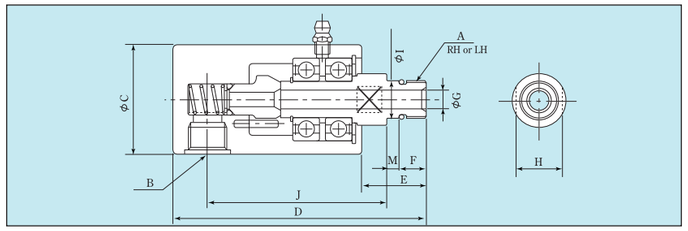
SXO-180 Straight Thru Type Simplex, Thread Connection





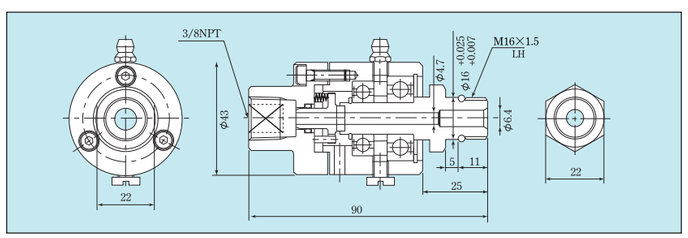
Standard Seal	TCC Seal	A	B	C	D	E	F	G	H	I	K	L	M	N
SXO−180	SXO−180−1	M16×1.5	NPT1/4	46	112	26	11	8	19	16.025 16.007	13	22	5	26
SXO−180−2	SXO−180−3	M16×1.5	NPT3/8	46	112	26	11	8	19	16.025 16.007	13	27	5	31
SXO−181	SXO−181−1	M16×1.5	Rc1/4	46	112	26	11	8	19	16.025 16.007	13	22	5	26
SXO−181−2	SXO−181−3	M16×1.5	Rc3/8	46	112	26	11	8	19	16.025 16.007	13	27	5	31
SXO−182	SXO−182−1	5/8-18UNF	NPT1/4	46	109	23	10.3	8	19	15.872 15.860	13	22	2.4	26
SXO−188	SXO−188−1	5/8-18UNF	NPT1/4	46	115.4	29.4	14.3	6.5	19	16.650 16.637	13	22	4.8	26

SXO-090 Right Angle Type Simplex, Thread Connection



Standard Seal	TCC Seal	A	B	C	D	E	F	G	H	I	J	M
SXO−090	SXO−090−1	M16×1.5	NPT3/8	46	103	26	11	8	19	16.025 16.007	73	5
SXO−091	SXO−091−1	M16×1.5	Rc1/4	46	103	26	11	8	19	16.025 16.007	73	5
SXO−091−2	SXO−091−3	M16×1.5	Rc3/8	46	103	26	11	8	19	16.025 16.007	73	5
SXO−092	SXO−092−1	5/8-18UNF	NPT3/8	46	100	23	10.3	8	19	15.872 15.860	73.3	2.4
SXO−098	SXO−098−1	5/8-18UNF	NPT3/8	46	106.4	29.4	14.3	6.5	19	16.650 16.637	73.3	4.8

SXO-200 Compact Type Simplex, Thread Connection



Standard Seal	TCC Seal
SXO−200	SXO−200−1

FLOW RATES 1

●AC series

Type	Nominal Size (A)	Cross Section Area		Water Flow Rate (m^3/h)	Saturated Steam Flow Rate (When the pressure of steam is ….) (kg/h)				
		Outside (cm^2)	Inner (cm^2)		0.1(MPa)	0.2 (MPa)	0.4 (MPa)	0.6 (MPa)	0.8 (MPa)
AC	15A-6A	0.26	0.33	0.28	3.25	4.75	7.66	10.5	13.3
	20A-6A	1.14	0.33	0.35	14.0	20.5	33.1	45.4	57.6
	20A-8A	0.51	0.69	0.55	6.31	9.22	14.9	20.4	25.9
	25A-8A	2.31	0.69	0.74	28.2	41.3	66.7	91.5	116
	25A-10A	1.45	1.19	1.28	17.8	26.0	41.9	57.6	73.0
	32A-15A	3.37	1.94	2.09	41.3	60.3	97.4	134	170
	40A-15A	4.34	1.94	2.09	53.2	77.8	126	172	219
	40A-20A	2.23	3.53	2.41	27.3	40.0	64.5	88.6	112
	50A-20A	10.8	3.53	3.81	132	194	312	429	544
	50A-25A	7.54	5.73	6.18	92.3	135	218	299	380
	65A-25A	15.6	5.73	6.18	190	278	450	617	783
	65A-32A	10.3	9.46	10.2	126	185	298	409	519
	80A-40A	22.2	12.9	14.0	271	397	641	879	1120
	(80A-50A)	12.0	21.6	12.9	147	214	346	475	603
ACL	10A	0.50	–	0.54	6.16	9.00	14.5	19.9	25.3
	15A	1.13	–	1.22	13.9	20.3	32.7	44.9	56.9
	20A	2.01	–	2.17	24.6	36.0	58.1	79.8	101
	25A	3.80	–	4.11	46.6	68.1	110	151	191
	32A	7.07	–	7.63	86.6	127	204	280	356
	40A	8.04	–	8.69	98.5	144	233	319	405
	50A	16.6	–	17.9	204	298	480	659	837
	65A	24.6	–	26.6	302	441	712	977	1240
	80A	40.7	–	44.0	499	729	1180	1620	2050

Calculation of water flow is based on the smaller area of passage, and steam flow on the cross section of out side pipe. **Velocity of Water: 3m/sec Velocity of Steam: 30m/sec Air: normal state**
For the dimension specifications of the internal pipes, refer to "SUS304 Pipe dimensions for internal pipes" on page-29.

●Table of Saturated Steam (Reference Value) unit: MPa abs (kg/cm² abs)

℃	0	+1	+2	+3	+4	+5	+6	+7	+8	+9
100	0.10(1.03)	0.10(1.07)	0.11(1.11)	0.11(1.15)	0.12(1.19)	0.12(1.23)	0.13(1.28)	0.13(1.32)	0.13(1.37)	0.14(1.41)
110	0.14(1.46)	0.15(1.51)	0.15(1.56)	0.16(1.61)	0.16(1.67)	0.17(1.72)	0.17(1.78)	0.18(1.84)	0.19(1.90)	0.19(1.96)
120	0.20(2.02)	0.20(2.09)	0.21(2.16)	0.22(2.22)	0.23(2.29)	0.23(2.37)	0.24(2.44)	0.25(2.52)	0.25(2.59)	0.26(2.67)
130	0.27(2.75)	0.28(2.84)	0.29(2.92)	0.30(3.01)	0.30(3.10)	0.31(3.19)	0.32(3.29)	0.33(3.38)	0.34(3.48)	0.35(3.58)
140	0.36(3.69)	0.37(3.79)	0.38(3.90)	0.39(4.01)	0.40(4.12)	0.42(4.24)	0.43(4.36)	0.44(4.48)	0.45(4.56)	0.46(4.73)
150	0.48(4.85)	0.49(4.99)	0.50(5.12)	0.52(5.26)	0.53(5.40)	0.54(5.54)	0.56(5.69)	0.57(5.84)	0.59(5.99)	0.60(6.14)
160	0.62(6.30)	0.63(6.46)	0.65(6.63)	0.67(6.80)	0.68(6.97)	0.70(7.15)	0.72(7.32)	0.74(7.51)	0.75(7.69)	0.77(7.88)
170	0.79(8.08)	0.81(8.27)	0.83(8.47)	0.85(8.68)	0.87(8.89)	0.89(9.10)	0.91(9.32)	0.94(9.54)	0.96(9.76)	0.98(9.99)
180	1.00(10.22)	1.03(10.46)	1.05(10.70)	1.07(10.95)	1.10(11.20)	1.12(11.46)	1.15(11.71)	1.17(11.98)	1.20(12.25)	1.23(12.52)
190	1.26(12.80)	1.28(13.08)	1.31(13.37)	1.34(13.66)	1.37(13.96)	1.40(14.26)	1.43(14.57)	1.46(14.88)	1.49(15.20)	1.52(15.53)
200	1.55(15.86)	1.59(16.19)	1.62(16.53)	1.65(16.88)	1.69(17.23)	1.72(17.58)	1.76(17.95)	1.80(18.31)	1.83(18.69)	1.87(19.07)
210	1.91(19.45)	1.95(19.85)	1.99(20.24)	2.02(20.65)	2.07(21.06)	2.11(21.48)	2.15(21.90)	2.19(22.33)	2.23(22.76)	2.28(23.21)
220	2.32(23.66)	2.36(24.11)	2.41(24.57)	2.46(25.04)	2.50(25.52)	2.55(26.00)	2.60(26.49)	2.65(26.99)	2.70(27.50)	2.75(28.01)
230	2.80(28.53)	2.85(29.05)	2.90(29.59)	2.95(30.13)	3.01(30.68)	3.06(31.24)	3.12(31.80)	3.17(32.37)	3.23(32.95)	3.29(33.54)

Subtract 0.10MPa (1.03kg/cm²) from the figures of the table to obtain the gauge pressure.
Unless specified, the pressure is written in terms of absolute pressure for steam, or in terms of gauge pressure for air.

FLOW RATES 2

●NC series

Type	Nominal Size (A)	Cross Section Area		Water Flow Rate (m^3/h)	Saturated Steam Flow Rate (When the pressure of steam is ….) (kg/h)				
		Outside (cm^2)	Inner (cm^2)		0.1(MPa)	0.2 (MPa)	0.4 (MPa)	0.6 (MPa)	0.8 (MPa)
NC	15A-6A-R	0.26	0.33	0.28	3.25	4.75	7.66	10.5	13.3
	15A-6A-F	0.67	0.33	0.35	8.25	12.1	19.5	26.7	33.9
	20A-8A	0.77	0.69	0.74	9.48	13.9	22.4	30.7	39.0
	25A-10A	1.45	1.19	1.28	17.8	26.0	41.9	57.6	73.0
	32A-15A	3.37	1.94	2.09	41.3	60.3	97.4	134	170
	40A-15A	5.92	1.94	2.09	72.5	106	171	235	298
	40A-20A	3.81	3.53	3.81	46.7	68.2	110	151	192
	50A-20A	12.3	3.53	3.81	150	220	355	487	619
	50A-25A	9.02	5.73	6.18	110	161	261	358	454
	65A-25A	19.2	5.73	6.18	235	344	555	762	966
	65A-32A	14.0	9.46	10.2	171	250	403	554	703
	80A-32A	26.4	9.46	10.2	323	473	763	1050	1330
	80A-40A	22.2	12.9	14.0	271	397	641	879	1120
NCL	15A-R	1.13	–	1.22	13.9	20.3	32.7	44.9	56.9
	15A-F	1.54	–	1.66	18.9	27.6	44.5	61.1	77.5
	20A	2.27	–	2.45	27.8	40.6	65.6	90.1	114
	25A	3.80	–	4.11	46.6	68.1	110	151	191
	32A	7.07	–	7.63	86.6	127	204	280	356
	40A	9.62	–	10.4	118	172	278	382	484
	50A	18.1	–	19.5	222	324	523	718	911
	65A	28.3	–	30.5	346	506	817	1120	1420
	80A	40.7	–	44.0	499	729	1180	1620	2050

●KC series

Type	Nominal Size (A)	Cross Section Area		Water Flow Rate (m^3/h)
		Outside (cm^2)	Inner (cm^2)	
KC	15A-6A	0.26	0.33	0.28
	20A-6A	1.14	0.33	0.35
	20A-8A	0.51	0.69	0.55
	25A-8A	1.65	0.69	0.74
	25A-10A	0.79	1.19	0.85
	32A-10A	4.72	1.19	1.28
	32A-15A	3.37	1.94	2.09
	40A-15A	5.92	1.94	2.09
	40A-20A	3.81	3.53	3.81
	50A-20A	12.3	3.53	3.81
	50A-25A	9.02	5.73	6.18
	65A-32A	10.3	9.46	10.2
KCL	6A	0.12	–	0.13
	8A	0.28	–	0.30
	10A	0.63	–	0.68
	15A	1.13	–	1.22
	20A	2.01	–	2.17
	25A	3.14	–	3.39
	32A	7.07	–	7.63
	40A	9.62	–	10.4
	50A	18.1	–	19.5
	65A	24.6	–	26.6

●SUS304 Pipe dimensions for Internal Pipes

SIZE	Outer diameter x Thickness
6A	φ10.5×t2.0
8A	φ13.8×t2.2
10A	φ17.3×t2.5
15A	φ21.7×t3.0
20A	φ27.2×t3.0
25A	φ34.0×t3.5
32A	φ42.7×t4.0
40A	φ48.6×t4.0
50A	φ60.5×t4.0

Calculation of water flow is based on the smaller area of passage.
Velocity of Water: 3m/sec
For the dimension specifications of the internal pipes, refer to "SUS304 Pipe dimensions for internal pipes".

●RX series (Simplex)

Type	Nominal Size (A)	Cross Section Area		Water Flow Rate (m^3/h)
		Outside (cm^2)	Inner (cm^2)	
1000 2100	8A	0.28	–	0.30
	10A	0.63	–	0.68
	15A	1.23	–	1.33
	20A	2.54	–	2.75
	25A	3.80	–	4.11
	32A	7.07	–	7.63
	40A	9.62	–	10.4
	50A	18.1	–	19.5
	65A	26.4	–	28.5
	80A	36.3	–	39.2

●RX series (Duplex)

Type	Nominal Size (A)	Cross Section Area		Water Flow Rate (m^3/h)
		Outside (cm^2)	Inner (cm^2)	
3000 4100 5000 6100	15A-6A	0.36	0.33	0.35
	20A-8A	1.05	0.69	0.74
	25A-10A	1.45	1.19	1.28
	32A-15A	3.37	1.94	2.09
	40A-20A	3.81	3.53	3.81
	50A-25A	9.02	5.73	6.18
	65A-32A	12.1	9.46	10.2
	80A-40A	17.8	12.9	14.0
RXK6081	90A	24.1	21.6	23.4
RXK6082	100A	29.7	34.1	32.1

Calculation of water flow is based on the smaller area of passage. **Velocity of Water: 3m/sec**
For the dimension specifications of the internal pipes, refer to "SUS304 Pipe dimensions for internal pipes".

WEIGHT CHART (Unit = kg/1pce)

●AC series

	10A	15A	20A	25A	32A	40A	50A	65A	80A
ACL	2.2	2.2	3.2	5.2	9.0	8.9	12.0	19.0	25.0
ACLF	2.4	2.4	3.4	5.6	9.6	9.5	13.5	20.5	27.0
AC	–	2.3	3.8	6.0	9.3	9.2	12.5	22.0	28.0
ACF	–	2.5	4.0	6.4	9.9	9.8	14.0	23.5	30.0
ACW	–	–	–	6.5	11.3	11.3	14.0	25.0	32.0
ACFW	–	–	–	6.9	11.9	11.9	15.5	26.5	34.0

●NC series

	10A	15A	20A	25A	32A	40A	50A	65A	80A
NCL	–	2.1	2.1	3.1	3.7	6.5	10.3	13.0	20.5
NCLF	–	2.6	2.6	3.7	4.3	7.3	11.1	14.2	22.5
NC	–	2.2	2.2	3.4	4.0	6.8	10.8	14.2	22.0
NCF	–	2.7	2.7	4.0	4.6	7.6	11.6	15.2	24.0

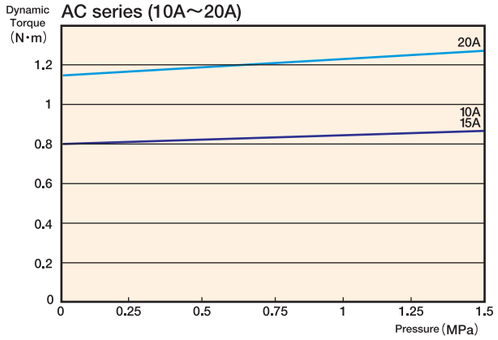
●KC series

	6A	8A	10A	15A	20A	25A	32A	40A	50A	65A
KCL	0.16	0.25	0.37	0.60	0.85	1.2	2.3	2.6	5.3	9.6
KCLF	–	–	0.90	0.90	1.25	1.7	3.0	3.3	6.6	10.9
KC	–	–	–	0.75	1.05	1.5	2.6	2.9	6.5	10.6
KCF	–	–	–	1.05	1.45	2.0	3.3	3.6	7.8	11.9

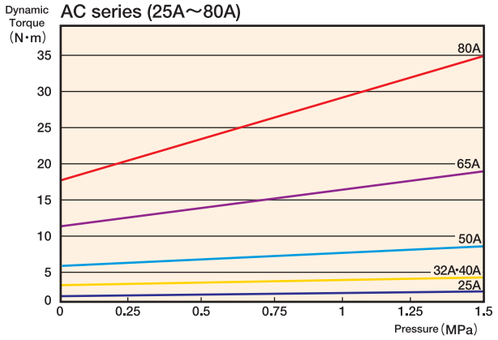
●RX series

	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A
1000	0.35	0.55	0.9	1.3	1.8	2.7	3.4	6.5	8.7	12.0
2100	–	–	1.1	1.7	2.1	3.5	4.0	7.4	9.9	13.6
3000/5000	–	–	1.0	1.4	2.0	3.1	3.7	6.7	9.6	11.6
4100/6100	–	–	1.2	1.8	2.3	3.9	4.3	7.6	10.8	13.2

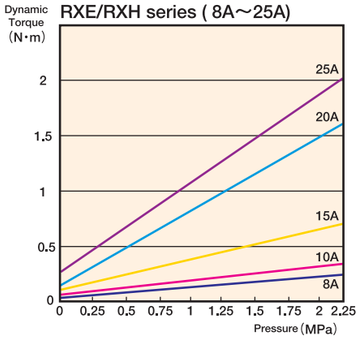
DYNAMIC TORQUE GRAPH:
AC series (10A～20A)



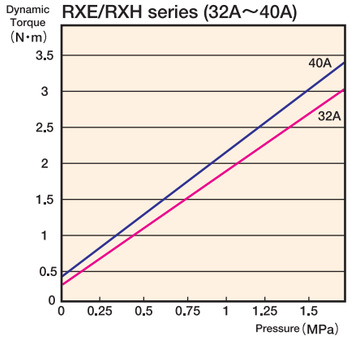
DYNAMIC TORQUE GRAPH:
AC series (25A～80A)



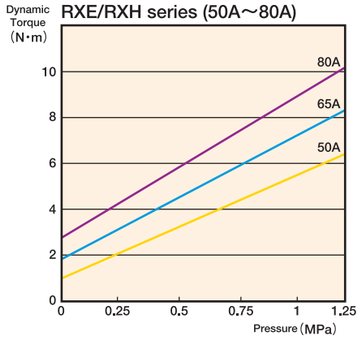
DYNAMIC TORQUE GRAPH:
RXE/RXH series (8A～25A)



DYNAMIC TORQUE GRAPH:
RXE/RXH series (32A～40A)



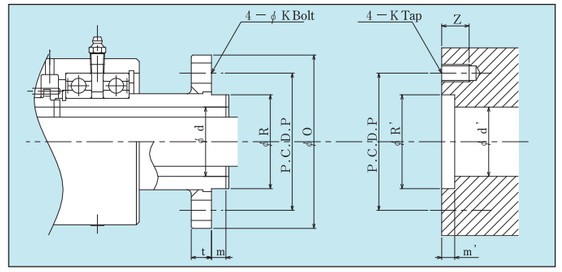
DYNAMIC TORQUE GRAPH:
RXE/RXH series (50A～80A)



The rotation torque of the rotary joint varies according to the storage condition, storage period and fluid type.
The above graphs show representative values measured according to our in-house testing standard and do not represent guaranteed values.
The initial (starting) torque is larger than the dynamic torque.
When ringing (adhesion phenomenon) occurs, torque is particularly large but this is not an abnormal phenomenon.

DIMENSIONS OF APPARATUS TO WHICH A SGK FLANGE IS ATTACHED (FOR REFERENCE)

●AC/RX/KC series

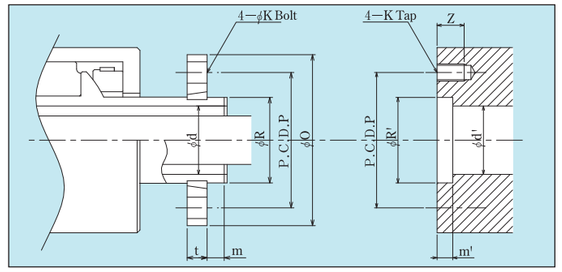


Flange	d		R	O	P	m	t		K	
	RX	AC					RX	AC	RX	AC
10A	–	12	25	62	45	8	–	11	–	M8
15A	12.5	12	25	62	45	8	10	11	M8	M8
20A	18	18	30	74	54	8	12	13	M10	M10
25A	22	24	35	80	60	9	12	14	M10	M10
32A	30	34	50	96	75	9	14	16	M10	M10
40A	35	34	50	96	75	9	14	16	M10	M10
50A	48	46	65	120	95	10	14	19	M12	M12
65A	58	60	80	136	110	12	16	20	M12	M12
80A	68	72	90	154	125	15	20	20	M12	6-M12

Dimensions of the apparatus	d'		R'	P	m'	Z
	RX	AC				
10A	–	12	25	45	7	12
15A	12.5	12	25	45	7	12
20A	18	18	30	54	7	16
25A	22	24	35	60	8	16
32A	30	34	50	75	8	16
40A	35	34	50	75	8	16
50A	48	46	65	95	9	19
65A	58	60	80	110	11	19
80A	68	72	90	125	14	19

Dimension of ϕR': $^{+0.05}_{0}$

●NC series



Flange	d	R	O	P	m	t	K
15A	14	25	74	54	9	12	M10
20A	17	26	74	54	8	12	M10
25A	22	34	80	60	8	12	M10
32A	30	42	96	75	10	14	M10
40A	35	48	96	75	10	14	M10
50A	48	60	120	95	12	14	M12
65A	60	75	136	110	16	16	M12
80A	72	90	154	125	22	20	6-M12

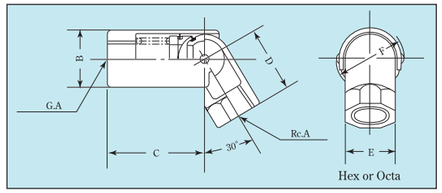
Dimensions of the apparatus	d'	R'	P	m'	Z
15A	14	25	54	8	16
20A	17	26	54	7	16
25A	22	34	60	7	16
32A	30	42	75	9	16
40A	35	48	75	9	16
50A	48	60	95	11	19
65A	60	75	110	13	19
80A	72	90	125	15	19

Dimension of ϕR': $^{+0.05}_{0}$

SIPHON ELBOW

Siphon Elbow Joints are used for siphoning condensate in rotating rolls or drums with 500 mm diameter or larger.

Nominal Size	A	B	C	D	E	F	Net wt.kg
10A	3/8	27	47	35	26	28	0.5
15A	1/2	32	55	40	29	33	0.5
20A	3/4	38	60	45	35	39	0.8
25A	1	50	87	60	42	55	1.0
32A	1 1/4	62	95	70	52	74	1.8
40A	1 1/2	70	105	80	60	78	1.9



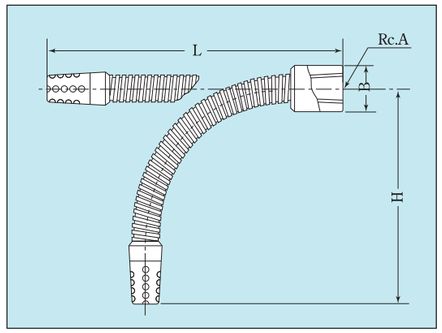
A locknut for G-type screw is attached to the screw part G.A

SIPHON PIPE

Siphon pipes(semi-interlocked) are used siphoning condensate in rotating rolls or drums with 500 mm or smaller diameters.
Please specity the hight(H) or inner diameter of the roll or drum.

Nominal Size	A	B	H or L
6A	1/8	16	
8A	1/4	20	
10A	3/8	25	
15A	1/2	32	
20A	3/4	40	
25A	1	45	

The length(L) and sagging will be determined by SGK in accordance with inner diameter of the roll.



FLEXIBLE TUBE

Use flexible tubes at the inlet and outlet of the fluid.
Rigid installation with rigid pipe is not permissible.
Recommendable length for connecting with a rotary joint

・Nominal Size 25A or less: 400mm~500mm
・Nominal Size 25A or more: 500mm~700mm

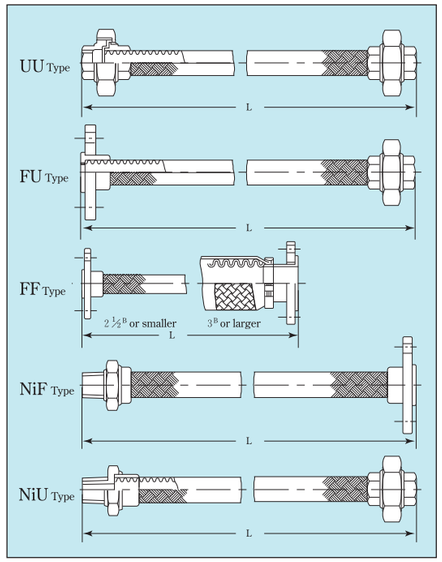
Be sure to use 2 pipe wrenches to attach a [UU type] flexible tube with unions on both ends.
If the flexible tube is "twisted" due to forceful attachment, it may lead to drastic deterioration in the durability of the flexible hose.

○Material: Flexible tube blade: SUS304
Metal Union: FCMB
Nipple and flange: Steel

* If you need SUS fittings, please specify it.

Nominal Size		Inner Diameter (approx.)	Outer Diameter (approx.)	Minimum Reference Curvature Radius (mm)
8A	1/4B	6.3mm	10.5mm	130mm
10A	3/8B	9.5	18	180
15A	1/2B	12.7	21	210
20A	3/4B	19.1	25	230
25A	1B	25.4	30	260
32A	1 1/4B	31.7	40	310
40A	1 1/2B	38.1	48	360
50A	2B	50.8	71	410
65A	2 1/2B	63.5	86	560
80A	3B	80.7	117	—

If you need a PTFE pipe, please provide us with the specifications for the dimensions and structure at the joint area.



U: Union
F: Flange
Ni: Nipple

PRECAUTIONS FOR USE

1. Take care not to allow foreign matter to enter the sealed area.
2. When installing a joint that has a inspection hole (for fluid leakage), be sure to direct the inspection hole downward.
3. For joints having a fluid leakage inspection hole: When fluid leaks from the inspection hole, it is time to replace the joint.
4. For screw-in connection types: The screw must be allowed to tighten freely against the direction of rotation.
   The left-hand screw is used when the roll or drum rotates clockwise (when viewed from the rotary joint installation position);
   the right-hand screw is used when the roll or drum rotates counterclockwise.
5. Avoid installing piping that would cause the rotary joint to bear the weight of the valve, etc.
6. Use a flexible tube for connecting the rotary joint and piping.
   Do not bind the joint by connecting it directly to the steel pipe.
7. Do not give the rotation stopper on the rotary joint any excessive restraint for stopping the rotation of the joint.
8. Lubrication is required where ball bearings are used for high-temperature operation.
   Supply grease at regular intervals (the interval differs depending on the operation frequency).
9. Do not operate the rotary joint at the maximum rotation speed under the maximum allowable working pressure.
10. When supplying grease, remove the plug, and then lubricate the grease.
11. Do not leave the rotary joint at rest for long periods of time. This may cause fluid leaks due to the formation of rust.
12. In the event of any failure, repair or replace the rotary joint promptly.

⚠ Continued operation with fluid leakage may cause major accident.

CAUSES OF FAILURE

**A sign of failure often appears as a premature fluid leakage from the sealing part. This can be found by checking whether any fluid is leaking from the inspection hole in the main body or through the gap between the rotor and casing.
In many cases, the failed joint can be re-used by repairing or replacing certain parts.
Please take appropriate measures before the internal parts are damaged.
Main causes of failure are as follows:**

1) Natural wear and abnormal wear on sealing surface or bearing area
2) Undue restraint of joint body
   ・The rotation stopper is restrained.
3) The center of the machine is improperly aligned with the center of the rotary joint.
   ・The end face of the axis of rotation of the machine is not at a right angle to the shaft.
   ・The mating part (spigot) is improperly assembled.
   ・The center of the mounting screw of the machine to be connected to is incorrectly aligned.
   ・The screw direction is incorrect.
   ・In the case of flange connection, bolts are not evenly tightened.
   (After installation, be sure to operate it at low speed and make sure that centering is achieved).
4) The piping ahead of the joint is improperly installed.
   ・The joint is connected to a steel pipe.
   ・The flexible tube does not have adequate flexibility.
   ・The length of the flexible tube is inappropriate
   ・The bending direction of the flexible tube is inappropriate.
   ・The joint is directly subjected to the weight of a valve, trap or other part.
5) The internal pipe is not appropriate.
   ・The internal pipe and siphon pipe are too heavy and held just by the screw at the joint head.
   ・The internal pipe is off-center.
6) Use of improper product type.
   ・The diameter is too small.
   ・The working temperature is too high.
   ・The working pressure is too high.
   ・The number of RPMs is too high.
   ・Operated with an improper type of fluid.
   ・Operated with no fluid running.
7) Problem with flowing fluid
   ・Foreign matter remains in the flow path such as piping, roll, etc.
   ・Improper solvent medium is deposited in fluid.
   ・The design of the piping installation is not appropriate.

If a failure is detected, DO NOT disassemble the joint yourself. Contact us for repairs.

WHEN PLACING ORDER TO US

Please specify the following information in your order.

○If you are currently using our joint

A: In the case of a joint listed in this catalog
Model, size (and, in the case of duplex type, internal pipe size), and screw direction (when using a screw-in type)

B: In the case of a special product
Model, size, screw direction (when using a screw-in type)
Serial number, date (year/month) of manufacture
Model names contain “OC”, “ONC”, “OKC”, “RXS”, “SR”, etc.
* For flange connection types, it is not necessary to specify the screw direction.
* For screw-in types, please specify the screw direction.

Please select a left-hand screw when the roll or drum rotates clockwise (when viewed from the rotary joint installation position) and a right-hand screw when the roll or drum rotates counterclockwise.

○When this is a new order to us

1. Fluid for use, pressure, temperature, number of revolutions and description of the machine to be connected
2. Direction of rotation of the machine to be connected (Direction of rotation when viewed from the joint installation position)
3. Connection type: Screw-in connection (screw direction) or flange connection
4. Connection piping port: Screw-in connection or flange connection
5. Size
6. Structure: Simplex type or duplex type (with stationary internal pipe or rotational internal pipe)
7. Frequency of operation and working shifts
8. Working environment (e.g., use in clean room)
9. Other special requests

FREQUENTLY ASKED QUESTIONS

Q: What is the difference between “RH/LH” (representing the screw direction of the rotor of the screw-in type rotary joint) and “R/L” (stamped on the rotary joint)?
A: There is no particular difference between “RH/LH” and “R/L”. “RH” and “LH” are the abbreviation of “Right Hand” and “Left Hand”, respectively. “R/L” is simply used instead of “RH/LH” on the nameplate of the product.

Q: What is the difference between AC Series and NC Series?
A: They are both high-temperature types but with different structure. The AC Series is a lubricating type using a ball bearing, while the NC Series is a non-lubricating type using a carbon bearing in a spherical sealing structure.

Q: What should I do to let a screw tighten freely against the direction of rotation?
A: When installing the joint, use a screw whose direction is opposite to the direction of rotation of a rotating body to which the joint is connected.

Q: Fluid is leaking from the inspection hole.
A: It is time to repair or replace the joint.

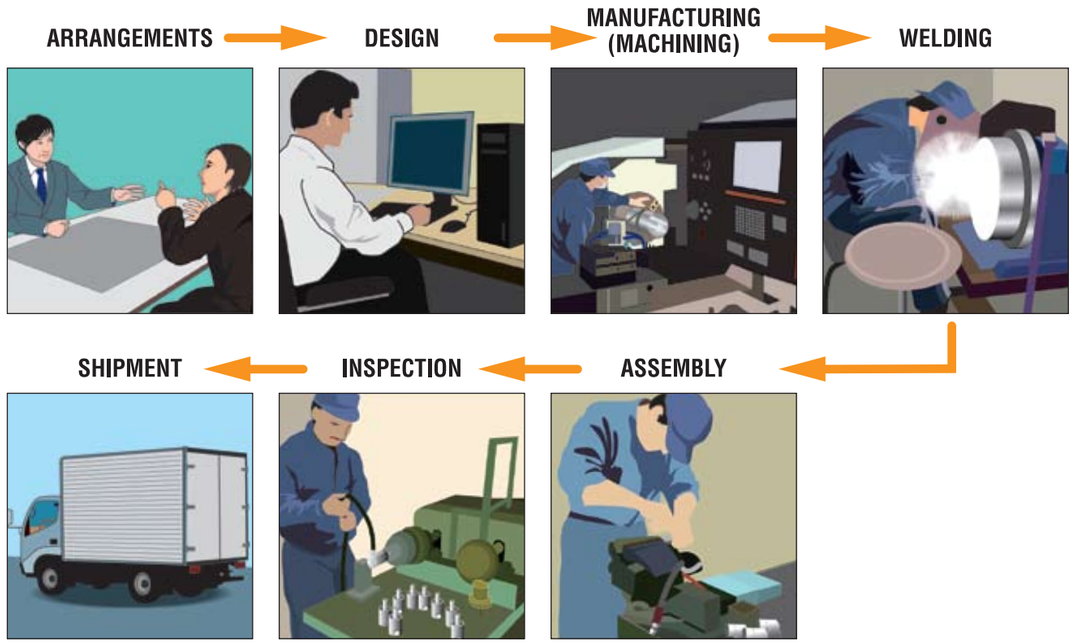
Q: Is it possible to use RXH type to run steam as fluid?
A: The standard products of RXH type cannot be used to run steam as a fluid. For this purpose, use AC Series or NC Series.

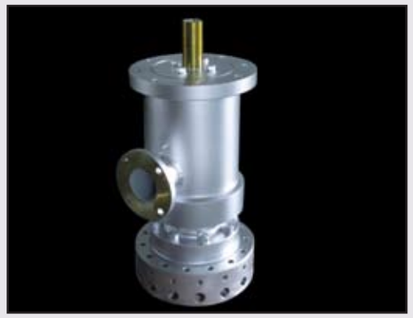
Q: A leakage occurred shortly after installation.
A: Check installation and use conditions. Impurities in the fluid and improper installation are two common causes of many leakage failures. Use of an improper product type may also cause leakage.

SPECIAL PRODUCTS

We, SHOWA GIKEN INDUSTRIAL CO., LTD., have manufactured many kinds of special products answering various demands of the customers. Contact us for special requests.

●PROCEDURE TO THE COMPLETION OF THE SPECIAL PRODUCTS





Center Joint for Turn Table

Type: SR
Fluid: Oil, Air
Number of Ports: 65Ax1P, 25Ax1P
Max. Rotation Speed: Low-speed rotation

This rotary joint can divided pressurized fluid fed through a fixed piping having a single flow path into multiple ports and supply fluid to the rotating body.

Multi-ports Rotary joint for Mud Gun

Type: SR
Fluid: Hydraulic Oil, Air
Number of Ports: 16 ports
Max Pressure: 20.6 MPa
Max. Rotation Speed: Low-speed rotation

This rotary joint transfers and supplies several types of pressurized fluid having different properties and pressures to rotating body in independent flow paths.

The contents of this catalog subject to change without notice.
Numerical value of this catalog is reference value. It does not always guarantee the function under all conditions.