

SX Rotary Joints

For steam or thermal oil service

KADANT
AN ACCENT ON INNOVATION

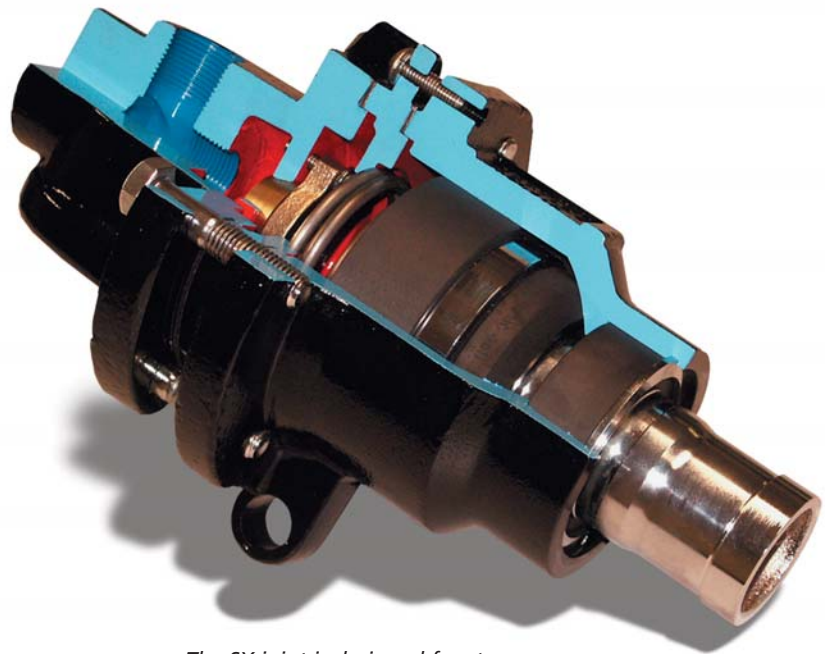
Self-aligning
seal with dual carbon
bearing support.



Engineered reliability and performance.

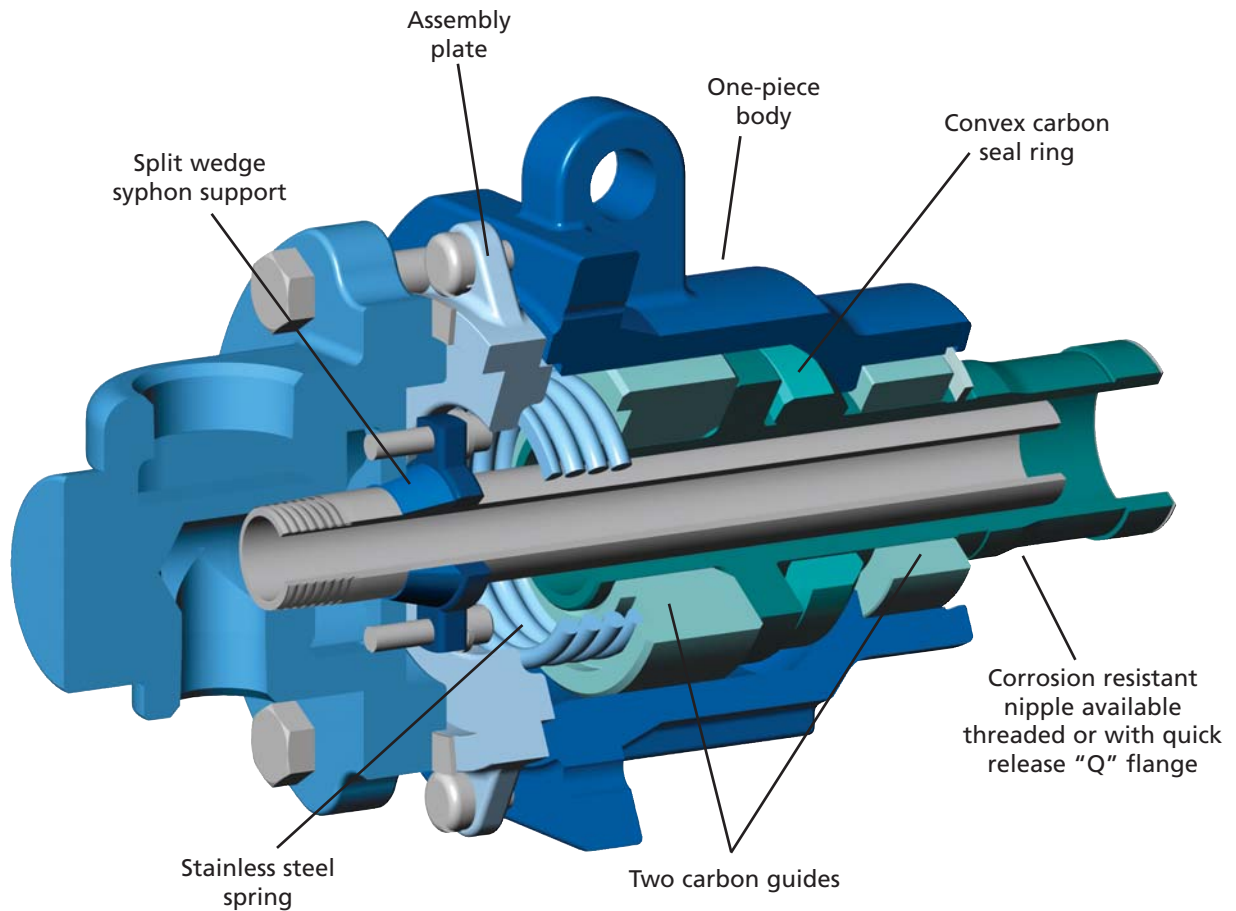
Table of Contents

SX Rotary Joint Overview	3
Type SXA	4
Type SXC	5
Type SXB	6
Type SXBN	8
Type SXB2	8
Type SXD	9
SX Cartridge	10
Engineering Data	11



The SX joint is designed for steam and thermal oil service.

SX Rotary Joint Overview



The SX rotary joint provides a positive seal between stationary piping and a rotating cylinder. Using new sealing technologies, the SX joint has extended seal life and increased reliability. The SX is a robust rotary joint that performs well in steam and thermal oil applications.

Features

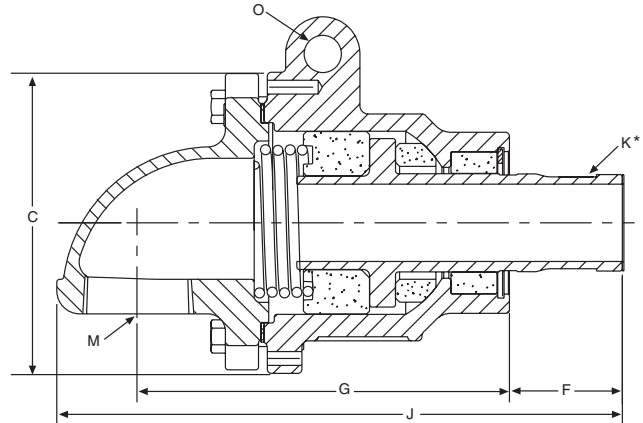
- ▶ Designed for steam and thermal oil
- ▶ Optimized seal diameter
- ▶ Convex seal ring in compression
- ▶ Maximum carbon guide separation
- ▶ Single-flow or dual-flow
- ▶ Adjustable syphon clearance option

Benefits

- ▶ Positive sealing
- ▶ Extended seal life, reduced maintenance
- ▶ Self-aligning seal, longer life
- ▶ Improved joint and syphon support
- ▶ Application flexibility
- ▶ Repeatable syphon clearance adjustment

Through Flow

Type SXA – Angled port



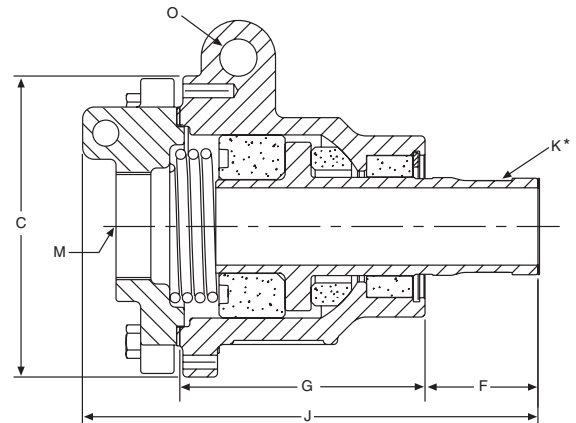
Size (K)*	M	C	F	G	J	O	Units
3/4"	3/4"	3.69	2.06	4.38	7.25	0.42	inches
		94	52	111	184	11	mm
1"	1"	4.12	1.88	4.81	7.69	0.44	inches
		105	48	122	195	11	mm
1 1/4"	1 1/4"	5.25	1.97	5.94	9.17	0.56	inches
		133	50	151	232	14	mm
1 1/2"	1 1/2"	6.56	2.19	7.00	10.50	0.72	inches
		167	56	178	267	18	mm
2"	2"	6.94	2.25	8.02	11.88	0.88	inches
		176	57	204	302	22	mm
2 1/2"	2 1/2"	7.81	2.62	8.45	12.58	0.88	inches
		198	67	215	320	22	mm
3"	3"	8.62	3.00	9.76	15.32	1.09	inches
		219	76	248	389	28	mm

* Available threaded (NPT, BSPT, BSP) or "Q" Quick Release Nipple.
Dimensions are for reference only and subject to change.

	Steam	Thermal Oil
Pressure:	300 psig (20 bar)	150 psig (10 bar)
Temperature:	550°F (288°C)	650°F (343°C)
Speed:	Up to 550 RPM	Up to 550 RPM

See page 11 for PV curves and maximum speed ratings.

Type SXC – Concentric port



Size (K)*	M	C	F	G	J	O	Units
3/4"	3/4"	3.69	2.06	3.19	6.91	0.42	inches
		94	52	81	176	11	mm
1"	1"	4.12	1.88	3.29	6.31	0.44	inches
		105	48	84	160	11	mm
1 1/4"	1 1/4"	5.25	1.97	3.88	7.63	0.56	inches
		133	50	99	194	14	mm
1 1/2"	1 1/2"	6.56	2.19	4.75	8.63	0.72	inches
		167	56	121	219	18	mm
2"	2"	6.94	2.25	5.12	8.81	0.88	inches
		176	57	130	224	22	mm
2 1/2"	2 1/2"	7.81	2.62	5.43	9.90	0.88	inches
		198	67	138	251	22	mm
3"	3"	8.62	3.00	6.30	10.99	1.09	inches
		219	76	160	279	28	mm

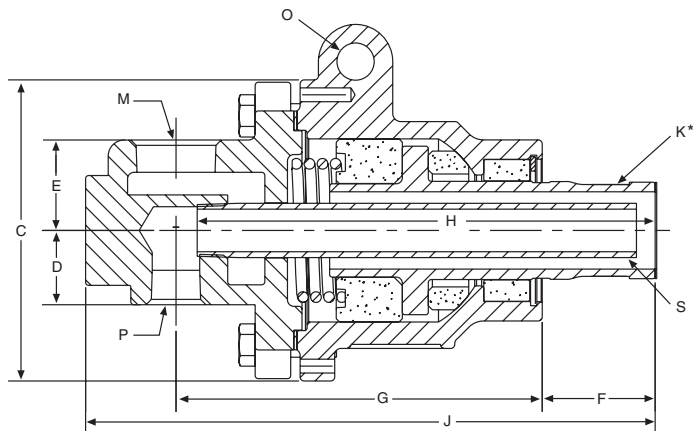
* Available threaded (NPT, BSPT, BSP) or "Q" Quick Release Nipple.
 Dimensions are for reference only and subject to change.

	Steam	Thermal Oil
Pressure:	300 psig (20 bar)	150 psig (10 bar)
Temperature:	550°F (288°C)	650°F (343°C)
Speed:	Up to 550 RPM	Up to 550 RPM

See page 11 for PV curves and maximum speed ratings.

Dual Flow

Type SXB – Two ports, 180°



Size (K)*	M	P	S	C	D	E	F	G	H	J	O	Units
¾"	½"	½"	⅛" – ¼"	3.69	0.75	1.31	2.06	4.56	6.00	7.88	0.42	inches
				94	19	33	52	116	152	200	11	mm
1"	¾"	½"	¼" – ⅜"	4.81	1.12	1.38	1.88	5.12	6.38	8.31	0.44	inches
				122	28	35	48	130	162	211	11	mm
1¼"	1"	½"	⅜" – ½"	5.25	1.38	1.81	1.97	6.50	7.75	10.44	0.56	inches
				133	35	46	50	165	197	265	14	mm
1½"	1¼"	¾"	½" – ¾"	6.56	1.44	1.75	2.19	7.12	8.88	11.00	0.72	inches
				167	37	44	56	181	226	279	18	mm
2"	1½"	¾"	½" – ¾"	6.94	1.50	1.88	2.25	7.75	9.50	12.28	0.88	inches
				176	38	48	57	197	241	312	22	mm
2½"	2"	1"	¾" – 1"	7.81	1.50	2.06	2.62	8.25	10.30	13.60	0.88	inches
				198	38	52	67	210	262	345	22	mm
3"	2" – 2½"	1¼" – 1½"	¾" – 1½"	8.62	2.88	3.56	3.00	10.44	12.00	16.64	1.09	inches
				219	73	90	76	265	305	423	28	mm

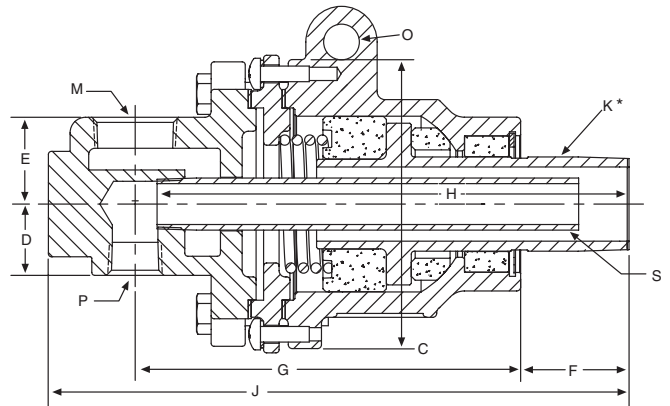
* Available threaded (NPT, BSPT, BSP) or "Q" Quick Release Nipple.

Dimensions are for reference only and subject to change.

	Steam	Thermal Oil
Pressure:	300 psig (20 bar)	150 psig (10 bar)
Temperature:	550°F (288°C)	650°F (343°C)
Speed:	Up to 550 RPM	Up to 550 RPM

See page 11 for PV curves and maximum speed ratings.

Type SXBP – Two ports, 180°, with assembly plate



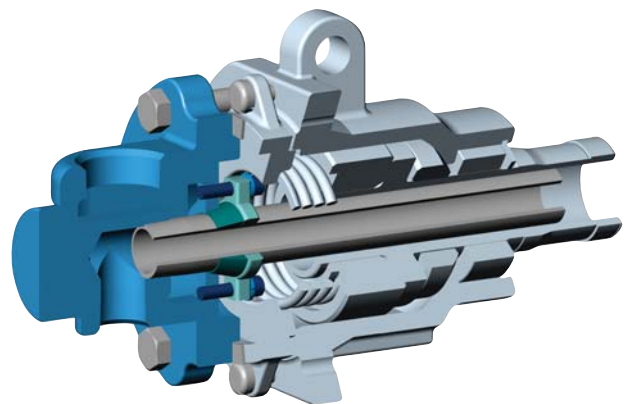
Size (K)*	M	P	S	C	D	E	F	G	H	J	O	Units
1"	3/4"	1/2"	1/4" - 3/8"	4.12	1.12	1.38	1.88	5.79	7.02	9.17	0.44	inches
				105	28	35	48	147	178	232	11	mm
1 1/4"	1"	1/2"	3/8" - 1/2"	5.25	1.38	1.81	1.97	7.12	8.12	11.12	0.56	inches
				133	35	46	50	181	206	282	14	mm
1 1/2"	1 1/4"	3/4"	1/2" - 3/4"	6.56	1.44	1.75	2.19	7.81	9.50	11.75	0.72	inches
				167	37	44	56	198	241	298	18	mm
2"	1 1/2"	3/4"	1/2" - 3/4"	6.94	1.50	1.88	2.25	8.44	10.12	12.94	0.88	inches
				176	38	48	57	214	257	329	22	mm
2 1/2"	2"	1"	3/4" - 1"	7.81	1.50	2.06	2.62	8.88	11.0	14.31	0.88	inches
				198	38	52	67	226	279	363	22	mm
3"	2" - 2 1/2"	1 1/4" - 1 1/2"	3/4" - 1 1/2"	8.62	2.88	3.56	3.00	11.04	12.66	17.28	1.09	inches
				219	73	90	76	280	322	439	28	mm

* Available threaded (NPT, BSPT, BSP) or "Q" Quick Release Nipple.

Dimensions are for reference only and subject to change.

Split Wedge Syphon Support

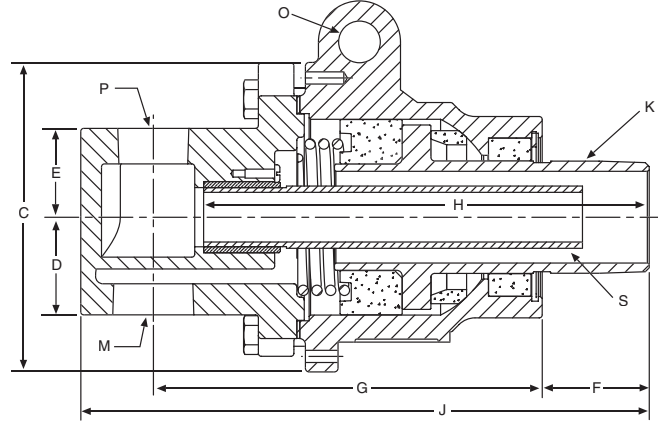
To improve the syphon performance and reduce maintenance, the split wedge syphon support is recommended. The split wedge and pressure plate device relieves the stress found in the threads of the cantilevered horizontal syphon pipe. When the split wedge syphon support is used, the potential for syphon pipe breakage is greatly reduced.



SX rotary joint shown with the split wedge syphon support.

Dual Flow

Type SXBN – Two ports, 180°, for rotating supply pipe

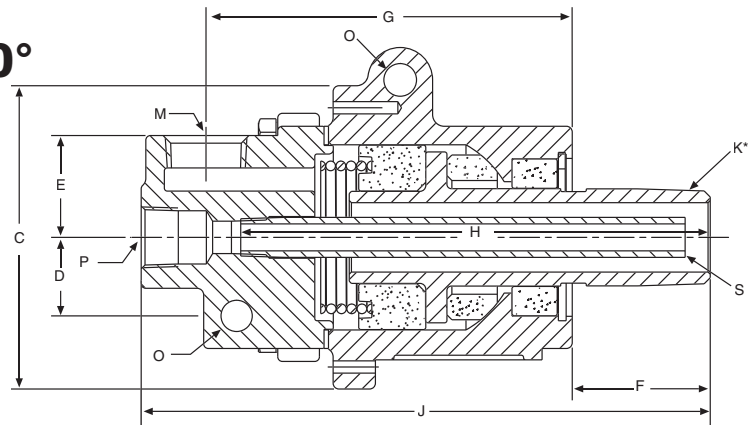


For thermal oil service

Size (K)	M	P	S	C	D	E	F	G	H	J	O	Units
¾"	½"	½"	¼" - ⅜"	3.69	0.75	1.31	2.06	4.56	6.10	7.88	0.42	inches
				94	19	33	52	116	155	200	11	mm
1"	¾"	¾"	½"	4.81	1.13	1.38	1.88	4.65	5.65	8.06	0.44	inches
				122	29	35	48	118	144	205	11	mm
1¼"	1"	½" - ¾"	¾"	5.25	1.38	1.81	1.97	6.50	7.75	10.44	0.56	inches
				133	35	46	50	165	197	265	14	mm
1½"	1¼"	¾"	¾"	6.56	1.44	1.75	2.19	7.77	8.96	11.70	0.72	inches
				167	37	44	56	197	228	297	18	mm
2"	1¼" - 1½"	¾" - 1¼"	1¼"	6.94	1.88	2.06	2.25	8.21	9.41	12.00	0.88	inches
				176	48	52	57	209	239	305	22	mm
2½"	1½"	1½"	1¼"	7.81	2.32	2.36	2.62	8.46	9.78	12.54	0.88	inches
				198	59	60	67	215	248	318	22	mm
3"	2" - 2½"	1¼" - 1½"	1¼" - 2"	8.62	2.88	3.56	3.00	11.04	12.89	17.29	1.09	inches
				219	73	90	76	280	327	439	28	mm

Dimensions are for reference only and subject to change.

Type SXB2 – Two ports, 90°



Size (K)*	M	P	S	C	D	E	F	G	H	J	O	Units
¾"	½"	⅜"	⅛"	3.69	0.94	1.31	2.06	4.56	6.18	7.43	0.42	inches
				94	24	33	52	116	157	189	11	mm
1"	¾"	½"	¼" - ⅜"	4.12	1.06	1.38	1.88	4.94	6.38	7.69	0.44	inches
				105	27	35	48	125	162	195	11	mm
1¼"	1"	½"	⅜"	5.25	-	1.56	1.97	6.50	8.43	9.20	0.56	inches
				133	-	40	50	165	214	234	14	mm

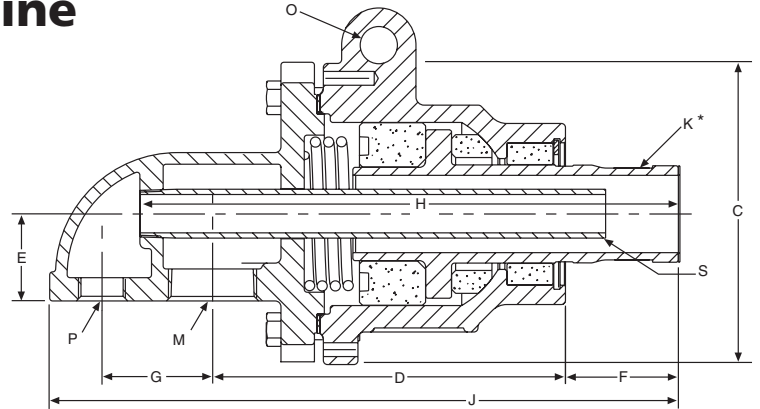
* Available threaded (NPT, BSPT, BSP) or "Q" Quick Release Nipple.

Dimensions are for reference only and subject to change.

Type SXD – Two ports, in-line

	Steam	Thermal Oil
Pressure:	300 psig (20 bar)	150 psig (10 bar)
Temperature:	550°F (288°C)	650°F (343°C)
Speed:	Up to 550 RPM	Up to 550 RPM

See page 11 for PV curves and maximum speed ratings.

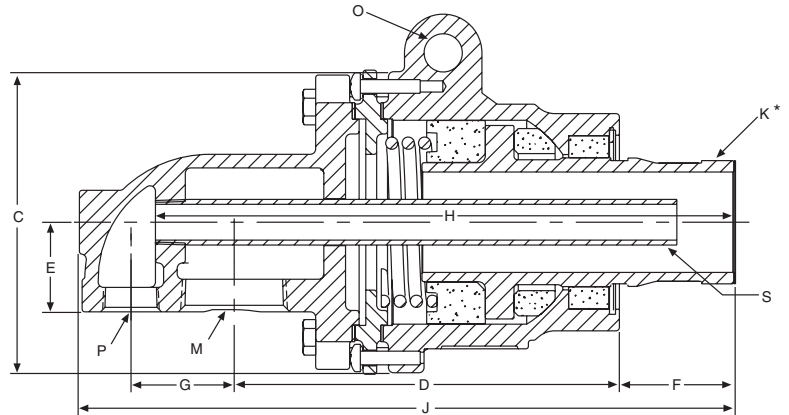


Size (K)*	M	P	S	C	D	E	F	G	H	J	O	Units
1½"	1¼"	¾"	½" – ¾"	6.56	6.84	1.75	2.19	2.25	11.07	12.69	0.72	inches
				167	174	44	56	57	281	322	18	mm
2"	1½"	¾"	½" – ¾"	6.94	7.42	1.88	2.25	2.38	11.22	13.24	0.88	inches
				176	188	48	57	60	285	336	22	mm
2½"	2"	1"	½" – 1"	7.81	8.21	2.06	2.62	2.40	12.69	14.44	0.88	inches
				198	209	52	67	61	322	367	22	mm
3"	2½"	1¼" – 1½"	1" – 1½"	8.62	9.48	2.38	3.00	3.50	14.80	17.42	1.09	inches
				219	241	60	76	89	376	442	28	mm

* Available threaded (NPT, BSPT, BSP) or "Q" Quick Release Nipple.

Dimensions are for reference only and subject to change.

Type SXDP – Two ports, in-line, with assembly plate

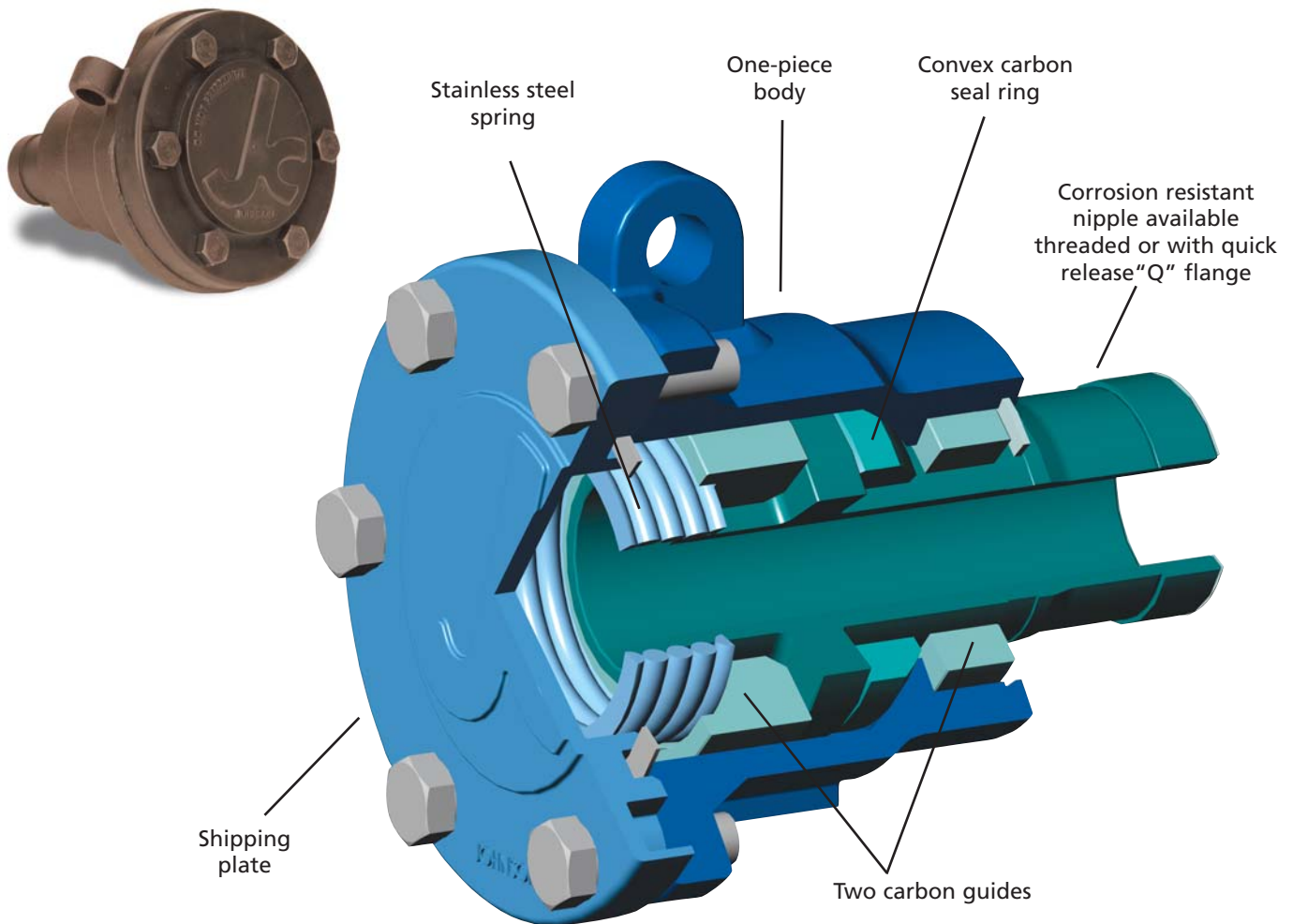


Size (K)*	M	P	S	C	D	E	F	G	H	J	O	Units
1½"	1¼"	¾"	½" – ¾"	6.56	7.78	1.75	2.19	2.25	11.76	13.34	0.72	inches
				167	198	44	56	57	300	339	18	mm
2"	1½"	¾"	½" – ¾"	6.94	8.05	1.88	2.25	2.38	11.90	13.91	0.88	inches
				176	205	48	57	60	302	353	22	mm
2½"	2"	1"	½" – 1"	7.81	8.83	2.06	2.69	2.40	13.31	15.06	0.88	inches
				198	224	52	68	61	338	383	22	mm
3"	2½"	1¼" – 1½"	1" – 1½"	8.62	10.14	2.38	3.00	3.50	15.45	18.08	1.09	inches
				219	258	60	76	89	392	459	28	mm

* Available threaded (NPT, BSPT, BSP) or "Q" Quick Release Nipple.

Dimensions are for reference only and subject to change.

SX Cartridge



The SX cartridge is an innovative and easy upgrade for users of Kadant Johnson Type S rotary joints. With the ability to re-use the existing S joint head, flexible hoses, and syphon equipment, the SX cartridge is a low-cost upgrade to today's latest seal technology and improved performance.

Features

- ▶ Same connection locations as Type S joint
- ▶ Fits existing Type S joint heads
- ▶ Two internal support guides
- ▶ Optimized seal diameter
- ▶ Convex seal ring in compression
- ▶ Maximum carbon guide separation

Benefits

- ▶ No piping modifications, easy upgrade
- ▶ Low cost upgrade
- ▶ Increased life and reliability
- ▶ Extended seal life, reduced maintenance
- ▶ Self-aligning seal, longer life
- ▶ Improved joint and syphon support

Engineering Data

Kadant Johnson seal rings are made of proprietary materials that meet or exceed six critical qualification criteria. Based on results from the Seal Laboratory at the Kadant Johnson Research Center, only a select group of seal rings are qualified for use in Kadant Johnson rotary joints.

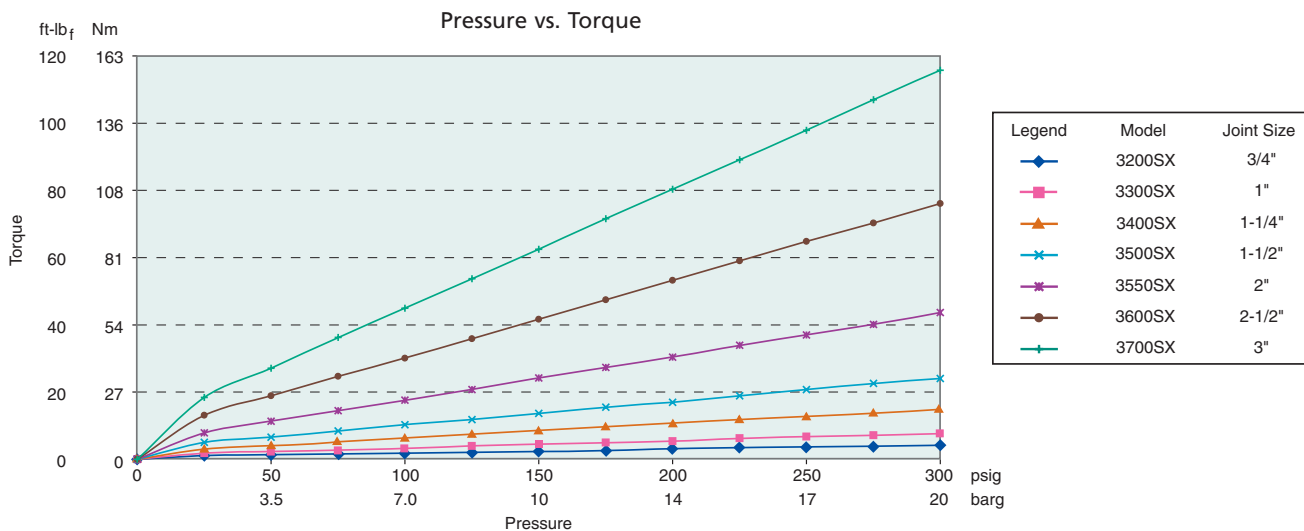
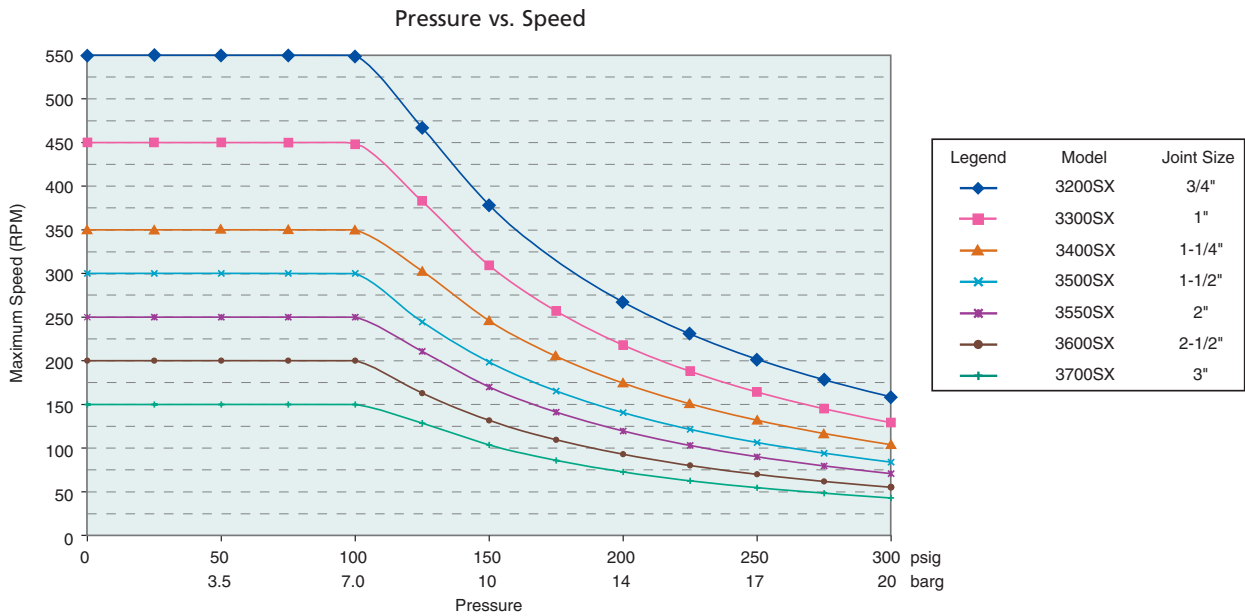


For steam service, both Resin and Antimony Impregnated (AI) seals are available. Antimony Impregnated seals can last up to three times longer than resin seals and are usually applied to high-pressure or high-speed applications.

Thermal Oil

The SX rotary joint is available in a special configuration for thermal oil applications. Using an AI seal ring with distinctive seal geometry and seal loading, the SX joint can operate leak-free on oil service up to 650°F (343°C). Every SX rotary joint used with thermal oil is tested at operating temperature before leaving the factory, and is certified for thermal oil service.

PV Curves



Local Assistance On A Worldwide Basis

Many suppliers have made a commitment to the international marketplace. But few have taken that commitment as far as Kadant Johnson. To assure product availability wherever it's needed, Kadant Johnson joints, syphons, and related equipment are manufactured in Asia, Europe, North America, and South America.

Because knowledgeable advice and prompt service are as important as the products, Kadant Johnson has factory-authorized representatives in nearly 150 countries. So no matter where you are, Kadant Johnson products, service, and assistance are nearby.

MANUFACTURING LOCATIONS



805 Wood Street
Three Rivers, MI 49093 USA
tel: +1 269 278 1715
fax: +1 269 279 5980



Nijverheidslaan 23-25
1380 AB Weesp, The Netherlands
tel: +31 294 494200
fax: +31 294 431359



Rua Miguel Nelson Bechara, 297
02712-130, São Paulo, SP, Brazil
tel: +55 11 3932 7877
fax: +55 11 3931 4043



Wuxi National Hi-Tech Industrial Development Zone
Wuxi City, Jiangsu Province, China
tel: +86 510 85212218
fax: +86 510 85212038

KADANT
AN ACCENT ON INNOVATION

Kadant is a leading global supplier of products and services that improve productivity and quality in paper production and other process industries. For the nearest location and contact, visit our Website.

www.kadant.com

Contact us:

KADANT JOHNSON INC.
805 Wood Street
Three Rivers, MI 49093 USA
Tel: +1-269-278-1715
Fax: +1-269-279-5980
Email: info@kadant.com