

Type R[®] Rotary Unions

For water, air, steam, and thermal oil service



JOHNSON FLUITEN

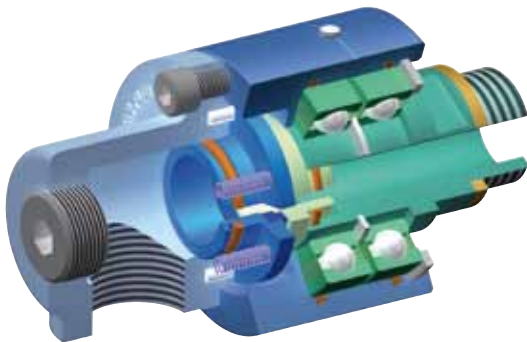
Advanced rotary unions for fluid service.



Engineered reliability for demanding applications

R/RH Rotary Unions

Overview of the R/RH Rotary Unions 3/8" to 2"	Pag.3
3/8" to 2" R Unions	Pag.4-5
3/8" to 2" RH Unions	Pag.6-7
RHB Rotary Unions	Pag.8
Overview of the R/RH Rotary Unions 2 1/2" to 6"	Pag.9
2-1/2" to 6" R Unions	Pag.10-11
2-1/2" to 6" RH Unions	Pag.12-13
Repair kit item	Pag.14
Seal replacement	Pag.15
Quick Release Flange	Pag.16-17
Fixed Flange Connections	Pag.18
Technical Data	Pag.19
Installation Recommendations	Pag.20
Rotary Joint Selection	Pag.21
Other Rotary Unions	Pag.22-23



Single flow rotary union



Dual flow rotary union

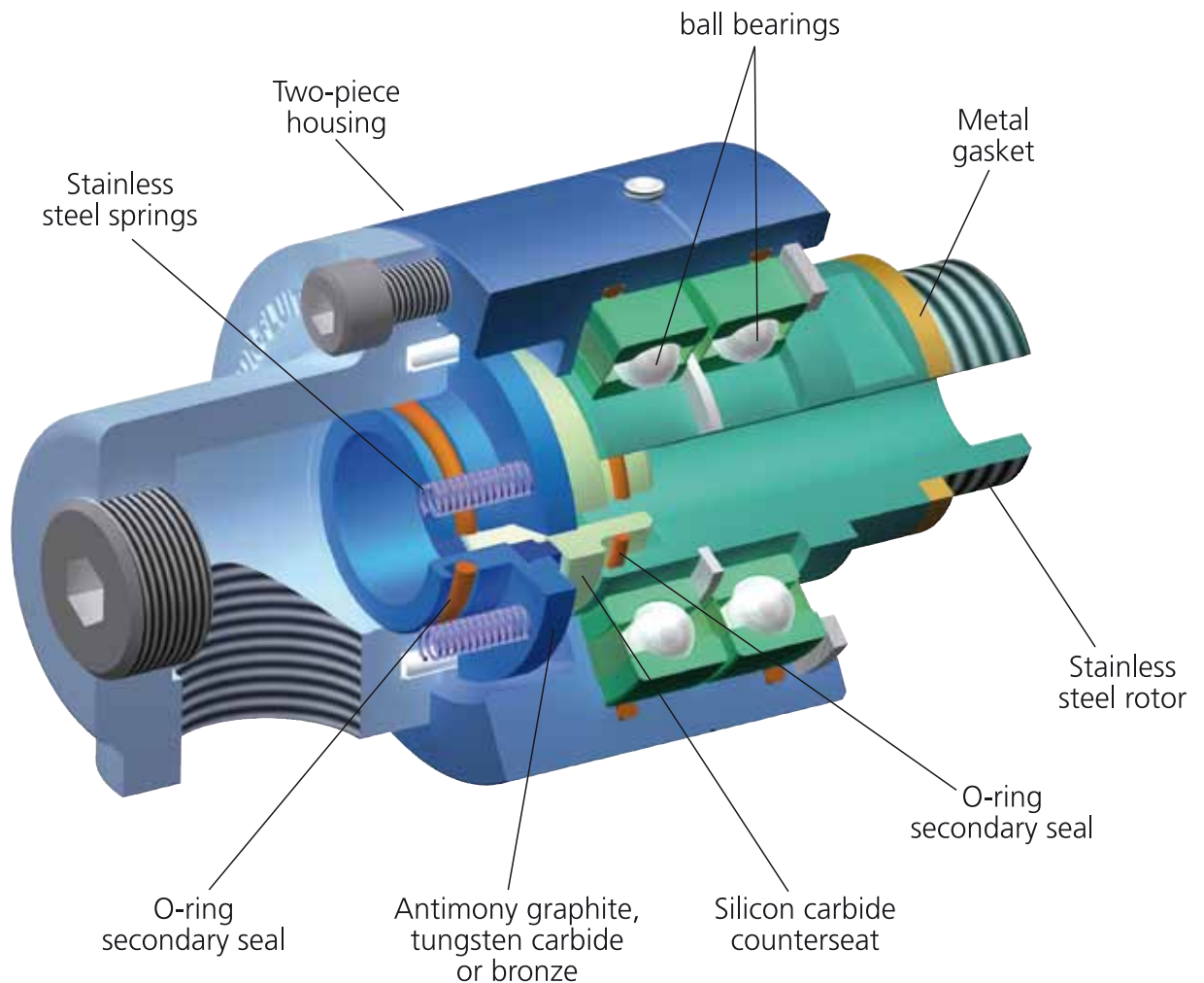
Quick Select Chart

Type		Media				Pressure (Max.)	Temperature (Max.)	Speed (RPM)
		Water	Thermal Oil	Steam	Air	BAR	°C	
3/8" to 2"	R	●	●	●	●	50	105	3.000
	RH	●	●	●	●	50	180	3.000
	RHB	●	●	●	●	25	400	1.100
2 1/2" to 6"	R	●	●	●	●	13	105	1.000
	RH	●	●	●	●	13	180	1.000
	RHB	●	●	●	●	12	400	750

● Recommended ● Acceptable ● Not Recommended

Do not operate unions at maximum values of pressure, temperature, and speed.

3/8" to 2" R Union



Features

- Springs located outside the flow area
- Stainless steel rotor
- Two-piece housing, on-machine seal replacement
- O-rings fully captured in glands
- Balanced seal assembly
- Full flow area
- Matched seal faces
- Bearing isolation system
- Silicon carbide counterseat

Benefit

- Improved reliability, increased flow area
- Corrosion resistant
- Reduced down-time and cost of maintenance
- Robust design, no risk of o-ring slipping
- Extended operating life
- Low pressure drop
- Materials selected for specific service
- Increased bearing protection
- Added toughness and shock resistance

The R rotary union connects stationary piping to a rotating device. The fluid is sealed by precision, micro-lapped seals that provide a uniform, full-flow design. The union is supported by two widely-spaced anti-friction bearings and is available with a bearing isolation system for added bearing protection. The R union is capable of intermittent dry running and features a carbon graphite seal inserted in stainless steel and silicon carbide counterseat.

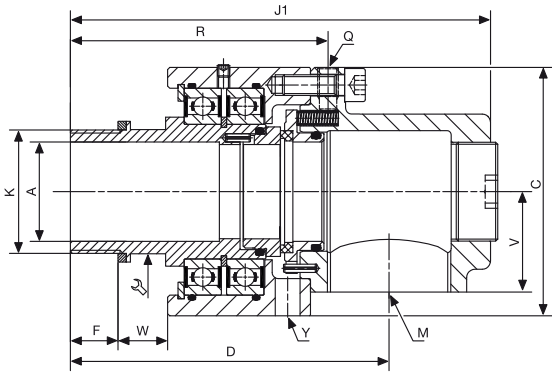
R Rotary Unions



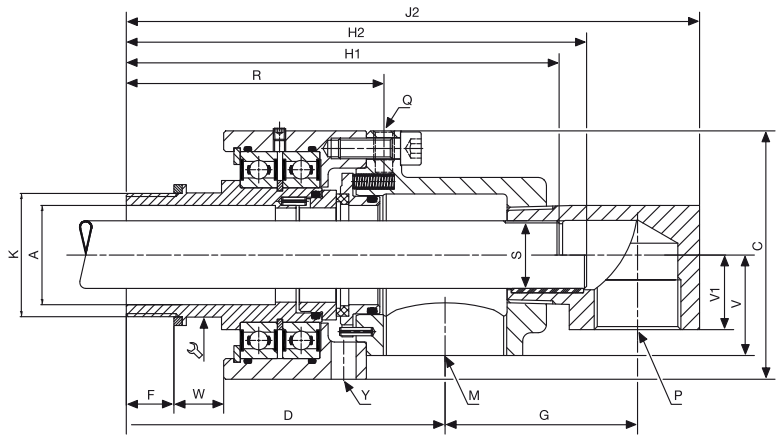
Standard R Ratings

	Water / Oil		Air	
	Pressure	Speed	Pressure	Speed
R009	50	3000	10	1500
R012	50	2800	10	1400
R019	50	2600	10	1300
R025	50	2300	10	1150
R031	40	2000	8	1000
R038	35	1700	7	850
R050	35	1400	7	700

- **Temperature:** 120°
- **Media:** Water, Air, Oil
- **Seal material:** B3



Single flow straight thread rotor



Dual flow rotary straight thread rotor

Size	K ISO 228-1 Rotor	M ISO-7 RH	Part ID			P ISO-7 RH	A	C	D	F	G	H1 Fixed pipe	H2 Rotary pipe	J1	J2	Q	R	S		V	V1	W	Y	⚙	Approx. Weight
			Single Flow	Dual Flow Fixed pipe	Dual Flow Rotary pipe													Fixed pipe	Rotary pipe h 13						
R009	G 3/8"-RH	Rp 3/8"	R009002641	R009020550	R009020621	Rp 1/4"	10	50	80	12	34	97	109	98	125	M5	68	M6x1	6	22	16	13	M6x6	19	0.65-0.7
	G 3/8"-LH		R009006594	R009020610	R009020622																				
R012	G 1/2"-RH	Rp 1/2"	R012001963	R012002296	R012019858	Rp 3/8"	13	56	90	15	40	110	120	110	142	M6	77	Rp 1/8	10	23	17	14	M10x5	24	0.85-0.95
	G 1/2"-LH		R012004960	R012002295	R012020623																				
R019	G 3/4"-RH	Rp 3/4"	R019003061	R019004475	R019020624	Rp 1/2"	16	67	106	17	49	131	144	132	170	M8	89	Rp 1/4	13	27,5	19	16	∅ 8,7x5	30	1.4-1.6
	G 3/4"-LH		R019003062	R019020611	R019020625																				
R025	G 1"-RH	Rp 1"	R025010909	R0250009768	R025005179	Rp 1/2"	25	82	120	19	55	149	163	150	192	M8	99	Rp 3/8	16	35	22	19	∅ 8,7x5	36	2.1-2.4
	G 1"-LH		R025020546	R0250008933	R025020626																				
R031	G 1-1/4"-RH	Rp 1-1/4"	R031003361	R031020614	R031020628	Rp 3/4"	32	93	135	22	67	172	188	173	221	M10	112	Rp 1/2	22	39	24	23	∅ 8,7x5	46	3.0-3.5
	G 1-1/4"-LH		R031003362	R031020613	R031020629																				
R038	G 1-1/2"-RH	Rp 1-1/2"	R038003436	R038008225	R038020631	Rp 3/4"	38	108	146	23	75	189	209	190	241	M10	120	Rp 3/4	26	44,5	29	24	∅ 10x5	55	4.3-4.9
	G 1-1/2"-LH		R038003437	R038020616	R038020632																				
R050	G 2"-RH	Rp 2"	R0500020608	R050021182	R050002497	Rp 1-1/4"	48	120	154	26	93	205	222	203	277	M10	125	Rp 1	32	50	36	24	∅ 12x5	60	5.4-6.6
	G 2"-LH		R050002800	R050020916	R050020634																				

3/8" to 2"

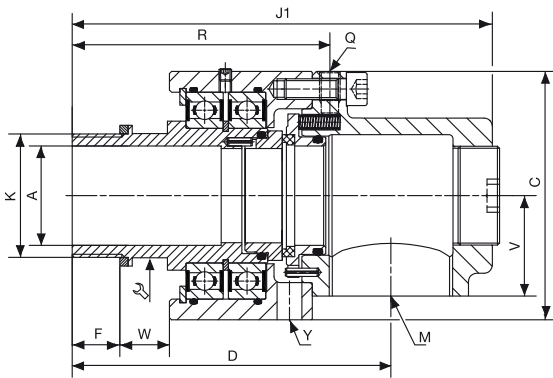


Standard R Ratings

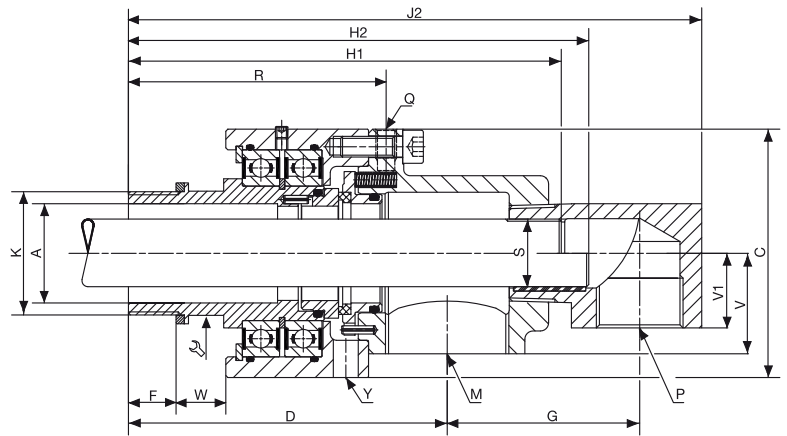
Water

	Pressure	Speed
R009	50	3000
R012	50	2800
R019	50	2600
R025	50	2300
R031	40	2000
R038	35	1700
R050	35	1400

- **Temperature:** 120°
- **Media:** Water with particles
- **Seal material:** C3



Single flow straight thread rotor



Dual flow rotary straight thread rotor

Size	K ISO 228-1 Rotor	M ISO-7 RH	Part ID			P ISO-7 RH	A	C	D	F	G	H1 Fixed pipe	H2 Rotary pipe	J1	J2	Q	R	S		V	V1	W	Y	⚙️	Approx. Weight
			Single Flow	Dual Flow Fixed pipe	Dual Flow Rotary pipe													Fixed pipe	Rotary pipe h 13						
R009	G 3/8"-RH	Rp 3/8"	R009002376	R009020644	R009020659	Rp 1/4"	10	50	80	12	34	97	109	98	125	M5	68	M6x1	6	22	16	13	M6x6	19	0.65-0.7
	G 3/8"-LH		R009014221	R009020645	R009020660																				
R012	G 1/2"-RH	Rp 1/2"	R012011330	R012010773	R012020661	Rp 3/8"	13	56	90	15	40	110	120	110	142	M6	77	Rp 1/8	10	23	17	14	M10x5	24	0.85-0.95
	G 1/2"-LH		R012020636	R012020646	R012020662																				
R019	G 3/4"-RH	Rp 3/4"	R019002344	R019005077	R019020663	Rp 1/2"	16	67	106	17	49	131	144	132	170	M8	89	Rp 1/4	13	27,5	19	16	∅ 8,7x5	30	1.4-1.6
	G 3/4"-LH		R019003245	R019020647	R019003336																				
R025	G 1"-RH	Rp 1"	R025003360	R025020648	R025020664	Rp 1/2"	25	82	120	19	55	149	163	150	192	M8	99	Rp 3/8	16	35	22	19	∅ 8,7x5	36	2.1-2.4
	G 1"-LH		R025003505	R025020649	R025020665																				
R031	G 1-1/4"-RH	Rp 1-1/4"	R031020638	R031020651	R031020667	Rp 3/4"	32	93	135	22	67	172	188	173	221	M10	112	Rp 1/2	22	39	24	23	∅ 8,7x5	46	3.0-3.5
	G 1-1/4"-LH		R031020639	R031020652	R031020668																				
R038	G 1-1/2"-RH	Rp 1-1/2"	R038006621	R038020654	R038020670	Rp 3/4"	38	108	146	23	75	189	209	190	241	M10	120	Rp 3/4	26	44,5	29	24	∅ 10x5	55	4.3-4.9
	G 1-1/2"-LH		R038012107	R038008716	R038020671																				
R050	G 2"-RH	Rp 2"	R050019572	R050020656	R050011274	Rp 1-1/4"	48	120	154	26	93	205	222	203	277	M10	125	Rp 1	32	50	36	24	∅ 12x5	60	5.4-6.6
	G 2"-LH		R050006143	R050020657	R050015641																				

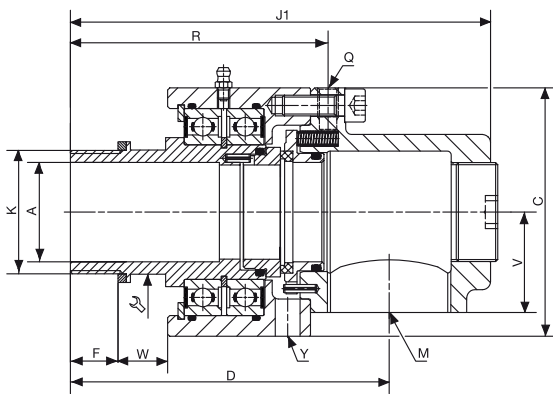
RH Rotary Unions



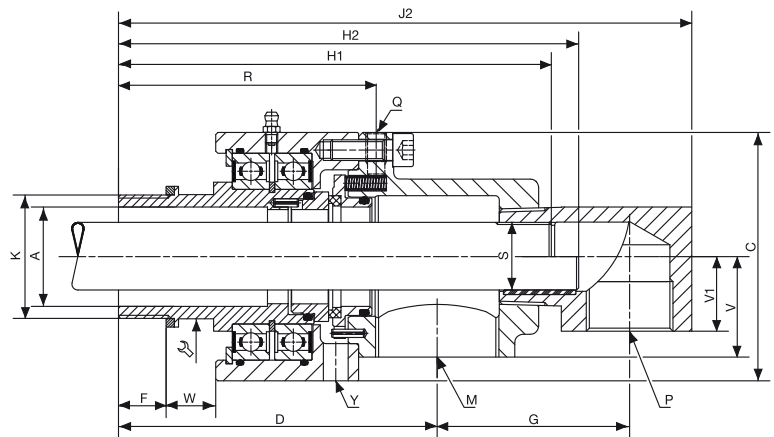
Standard RH Ratings

	Water		Steam	
	Pressure	Speed	Pressure	Speed
RH009	25	3000	25	1500
RH012	25	2800	25	1400
RH019	25	2600	25	1300
RH025	25	2300	25	1150
RH031	25	2000	20	1000
RH038	17,5	1700	17,5	850
RH050	17,5	1400	17,5	700

- **Temperature:** 180°
- **Media:** Water, Steam
- **Seal material:** B4



Single flow straight thread rotor



Dual flow rotary straight thread rotor

Size	K ISO 228-1 Rotor	M ISO-7 RH	Part ID			P ISO-7 RH	A	C	D	F	G	H1 Fixed pipe	H2 Rotary pipe	J1	J2	Q	R	S		V	V1	W	Y	⚙️	Approx. Weight
			Single Flow	Dual Flow Fixed pipe	Dual Flow Rotary pipe													Fixed pipe	Rotary pipe h 13						
RH009	G 3/8"-RH	Rp 3/8"	RH009020674	RH009015360	RH009020687	Rp 1/4"	10	50	80	12	34	97	109	98	125	M5	68	M6x1	6	22	16	13	M6x6	19	0.65-0.7
	G 3/8"-LH		RH009020675	RH009020681	RH009020688																				
RH012	G 1/2"-RH	Rp 1/2"	RH012014450	RH012016168	RH012020689	Rp 3/8"	13	56	90	15	40	110	120	110	142	M6	77	Rp 1/8	10	23	17	14	M10x5	24	0.85-0.95
	G 1/2"-LH		RH009014451	RH012020682	RH012020690																				
RH019	G 3/4"-RH	Rp 3/4"	RH019005373	RH019016700	RH019013300	Rp 1/2"	16	67	106	17	49	131	144	132	170	M8	89	Rp 1/4	13	27,5	19	16	∅ 8,7x5	30	1.4-1.6
	G 3/4"-LH		RH019005372	RH019016701	RH019015652																				
RH025	G 1"-RH	Rp 1"	RH025012056	RH025004244	RH025004970	Rp 1/2"	25	82	120	19	55	149	163	150	192	M8	99	Rp 3/8	16	35	22	19	∅ 8,7x5	36	2.1-2.4
	G 1"-LH		RH025014183	RH025004245	RH025020691																				
RH031	G 1-1/4"-RH	Rp 1-1/4"	RH031015341	RH031015651	RH031005355	Rp 3/4"	32	93	135	22	67	172	188	173	221	M10	112	Rp 1/2	22	39	24	23	∅ 8,7x5	46	3.0-3.5
	G 1-1/4"-LH		RH031014184	RH031014743	RH031020693																				
RH038	G 1-1/2"-RH	Rp 1-1/2"	RH038012205	RH038016335	RH038007158	Rp 3/4"	38	108	146	23	75	189	209	190	241	M10	120	Rp 3/4	26	44,5	29	24	∅ 10x5	55	4.3-4.9
	G 1-1/2"-LH		RH038012206	RH038020092	RH038009571																				
RH050	G 2"-RH	Rp 2"	RH050005419	RH050009923	RH050007542	Rp 1-1/4"	48	120	154	26	93	205	222	203	277	M10	125	Rp 1	32	50	36	24	∅ 12x5	60	5.4-6.6
	G 2"-LH		RH050020679	RH050016844	RH050015389																				

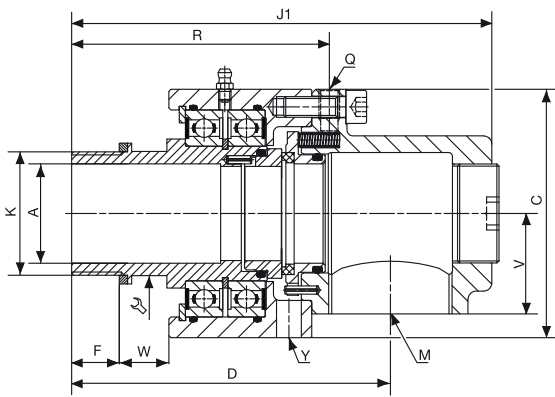
3/8" to 2"



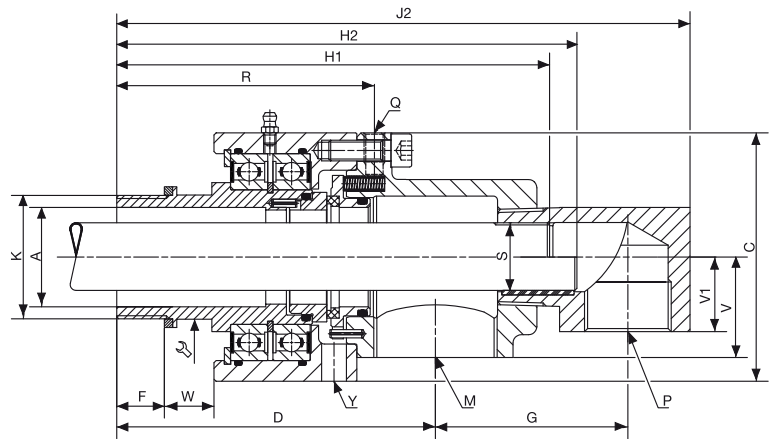
Standard RH Ratings

	Oil	
	Pressure	Speed
RH009	25	3000
RH012	25	2800
RH019	25	2600
RH025	25	2300
RH031	25	2000
RH038	17,5	1700
RH050	17,5	1400

- Temperature: 180°
- Media: Oil
- Seal material: T4



Single flow straight thread rotor



Dual flow rotary straight thread rotor

Size	K ISO 228-1 Rotor	M ISO-7 RH	Part ID			P ISO-7 RH	A	C	D	F	G	H1 Fixed pipe	H2 Rotary pipe	J1	J2	Q	R	S		V	V1	W	Y	Approx. Weight	
			Single Flow	Dual Flow Fixed pipe	Dual Flow Rotary pipe													Fixed pipe	Rotary pipe h 13						
RH009	G 3/8"-RH	Rp 3/8"	RH009020696	RH009020907	RH009020919	Rp 1/4"	10	50	80	12	34	97	109	98	125	M5	68	M6x1	6	22	16	13	M6x6	19	0,65-0,7
	G 3/8"-LH		RH009020697	RH009020908	RH009020920																				
RH012	G 1/2"-RH	Rp 1/2"	RH012015347	RH012017148	RH012020921	Rp 3/8"	13	56	90	15	40	110	120	110	142	M6	77	Rp 1/8	10	23	17	14	M10x5	24	0,85-0,95
	G 1/2"-LH		RH012020698	RH012020909	RH012020922																				
RH019	G 3/4"-RH	Rp 3/4"	RH019020699	RH019015438	RH019020923	Rp 1/2"	16	67	106	17	49	131	144	132	170	M8	89	Rp 1/4	13	27,5	19	16	Ø 8,7x5	30	1,4-1,6
	G 3/4"-LH		RH019020700	RH019020910	RH019020924																				
RH025	G 1"-RH	Rp 1"	RH025006969	RH025016987	RH025015689	Rp 1/2"	25	82	120	19	55	149	163	150	192	M8	99	Rp 3/8	16	35	22	19	Ø 8,7x5	36	2,1-2,4
	G 1"-LH		RH025006970	RH025020911	RH025020926																				
RH031	G 1-1/4"-RH	Rp 1-1/4"	RH031016774	RH031015374	RH031020928	Rp 3/4"	32	93	135	22	67	172	188	173	221	M10	112	Rp 1/2	22	39	24	23	Ø 8,7x5	46	3,0-3,5
	G 1-1/4"-LH		RH031R020902	RH031018271	RH031020929																				
RH038	G 1-1/2"-RH	Rp 1-1/2"	RH038017083	RH038020914	RH038007794	Rp 3/4"	38	108	146	23	75	189	209	190	241	M10	120	Rp 3/4	26	44,5	29	24	Ø 10x5	55	4,3-4,9
	G 1-1/2"-LH		RH038020904	RH038020915	RH038020931																				
RH050	G 2"-RH	Rp 2"	RH050017082	RH050020917	RH050020933	Rp 1-1/4"	48	120	154	26	93	205	222	203	277	M10	125	Rp 1	32	50	36	24	Ø 12x5	60	5,4-6,6
	G 2"-LH		RH050018024	RH050019406	RH050020934																				

RHB Rotary Unions

Type RHB

Union type RHB is designed to work at 400°C and high rotation speed. Such performance can be reached using two special seals with double balancing and with the interposition of a pressurized fluid for cooling of primary seal. This fluid is circulated by a pumping and cooling group which continuously verifies the system's effectiveness and signals through visual and sound alarm possible variations from the set values. These results are reached using ball bearings with closed loop oil cooling. Oil sealing is obtained by two double balanced seals which guarantee the effectiveness of system even in case of electrical failure.



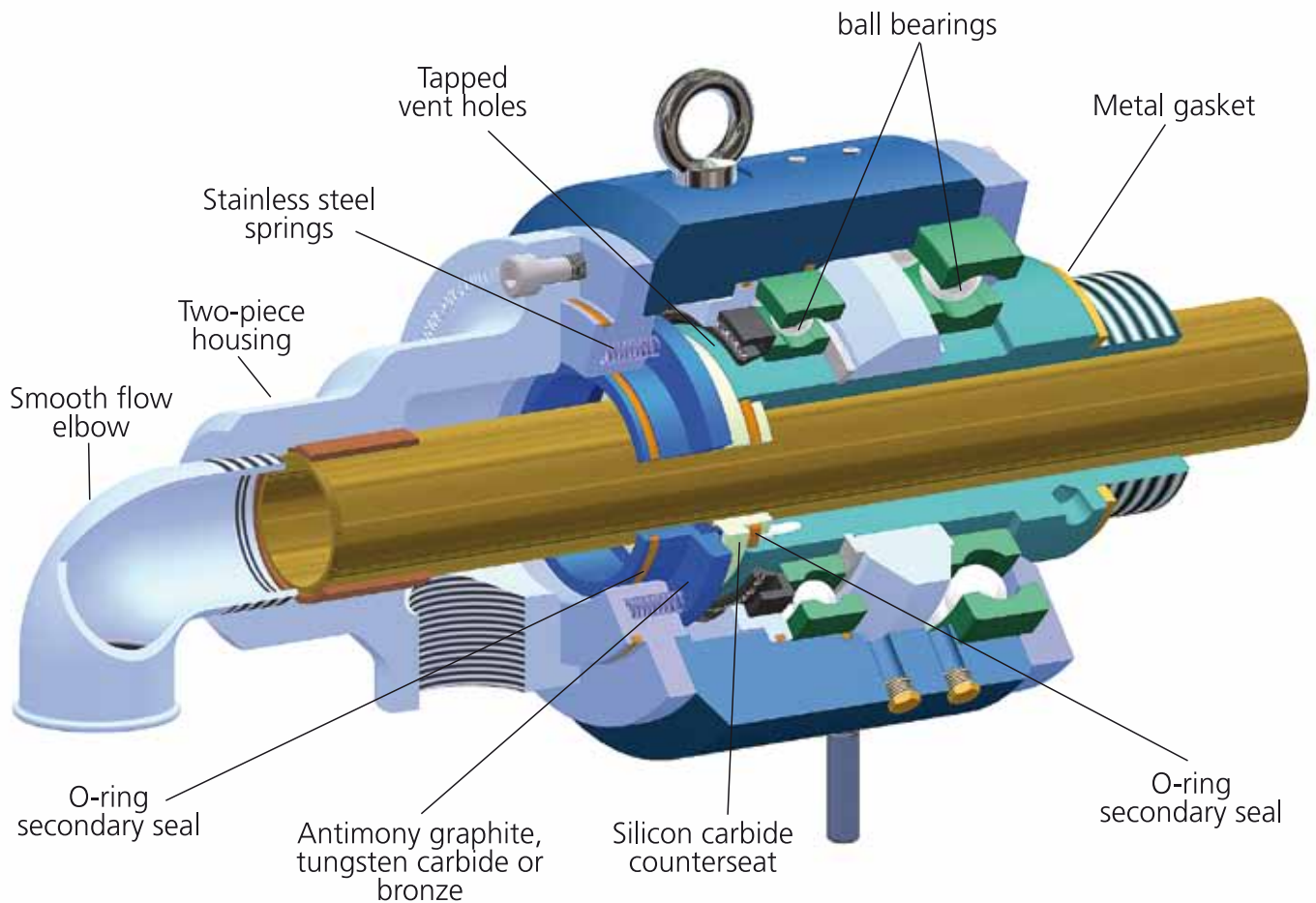
Double mechanical seals with pressurized barrier fluid avoid any leakage of the process fluid to atmosphere: in worst case the barrier fluid will leak into the process.

Customized Rotary Union Solutions

Have an application that requires a specialized solution? Johnson-Fluiten's product innovation team focuses on making the best solution in the shortest time possible. Johnson-Fluiten's engineering team is committed to providing technology that meets customers' application demands. Our goal is to work closely with our customers to develop reliable, efficient, and technically advanced products that add value by improving the process and the quality of the end product.



2½" to 6" R Unions



Features

- Springs located outside the flow area
- Carbon steel-nickel coated rotor
- Two-piece housing, on-machine seal replacement
- O-rings fully captured in glands
- Balanced seal assembly
- Full flow area
- Matched seal faces
- Bearing isolation system available
- Silicon carbide counterseat

Benefit

- Improved reliability, increased flow area
- Corrosion resistant
- Reduced down-time and cost of maintenance
- Robust design, no risk of o-ring slipping
- Extended operating life
- Low pressure drop
- Materials selected for specific service
- Increased bearing protection
- Added toughness and shock resistance

The R rotary union connects stationary piping to a rotating device. The fluid is sealed by precision, micro-lapped seals that provide a uniform, full-flow design. The union is supported by two widely-spaced anti-friction bearings and is available with a bearing isolation system for added bearing protection. The R union is capable of intermittent dry running and features a carbon graphite seal inserted in stainless steel and silicon carbide counterseat.

R Rotary Unions

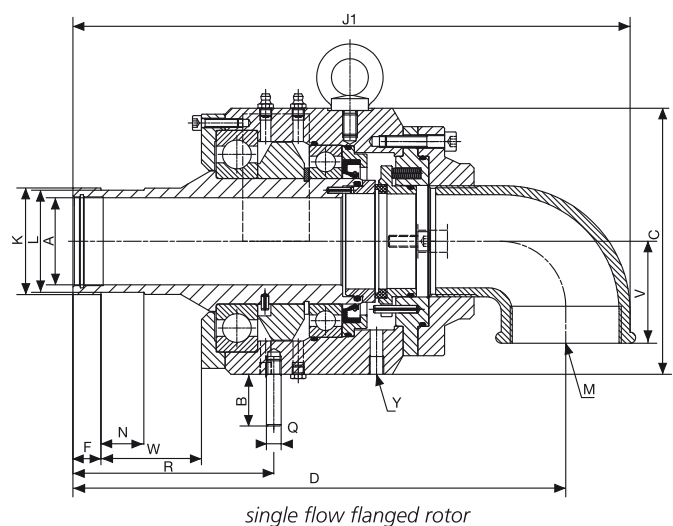
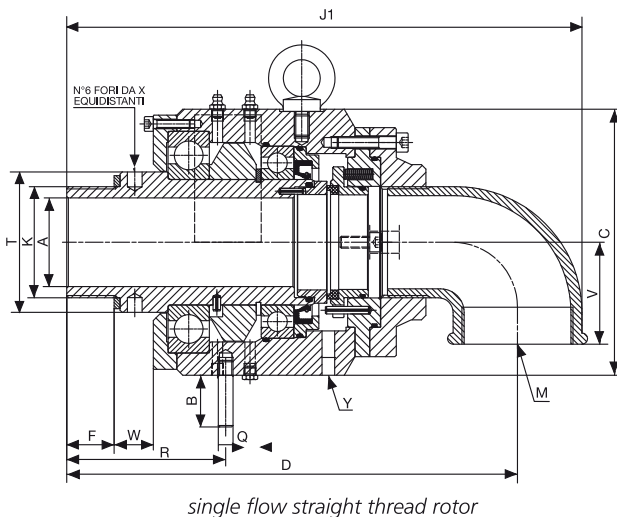
Single flow



Standard R Ratings

	Water		Air	
	Pressure	Speed	Pressure	Speed
R064-076	25	750	10	375
R089	20	700	5	375
R102	20	600	5	350
R125	20	500	4	300
R150	10	400	3	200

- Temperature: 120°
- Media: Water, Air
- Seal material: B3



Size	K Rotor ISO 228_1 (threaded) h8 (flanged)	M single flow ISO-228/1 RH	Part ID			M+P double passage ISO-228/1 RH	A	B	C	D single / double	F	G	H1 Fixed Pipe
			Single flow	Dual flow Fixed Pipe	Dual flow Rotary Pipe								
R064	G 2-1/2"-RH G 2-1/2"-LH 72,08 flanged	G 2-1/2"	R064024421	R064022872	R064019629	G 1-1/2"	60	35	180	305 / 245	32	133	292
			R064024422	R064022873	R064025542								
			R064022894	R064030140	R064030140								
R076	G 3"-RH G 3"-LH 87,12 flanged	G 3"	R076026401	R076019651	R076022913	G 2"	72	35	205	355 / 289	42	159	346
			R076026402	R076022911	R076022912								
			R076019637	R076021327									
R089	G 3-1/2"-RH G 3-1/2"-LH 99,82 flanged	G 4"	R089030168	CF	R089025531	G 2"	81	60	230	400 / 309	45	159	366
			R089026424	R089030145	R089025541								
			R089028654	R089024904	R089021521								
R102	G 4"-RH G 4"-LH 112,5 flanged	G 4"	R102026403	R102028693	R102022561	G 2-1/2"	95	60	262	432,5 / 352	50	186	420
			R102026404	R102028694	CF								
			R102026442	R102023525	R102026447								
R125	138,99 flanged		CF	CF	CF	G 3"	118	60	305	x / 433,5	31,75	211	515,5
			CF	CF	CF								
			CF	CF	R125030149								
R150	167,5 flanged		CF	CF	CF	G 4"	145	60	362	x / 484	31,75	247	587
			CF	CF	CF								
			CF	CF	R150033361								

2-1/2" to 6"

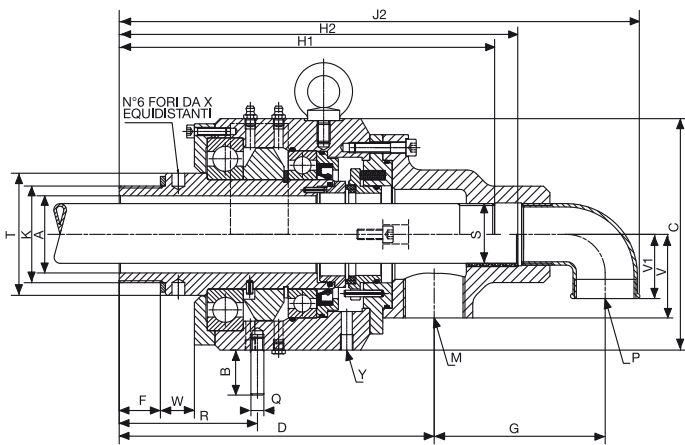
Dual flow



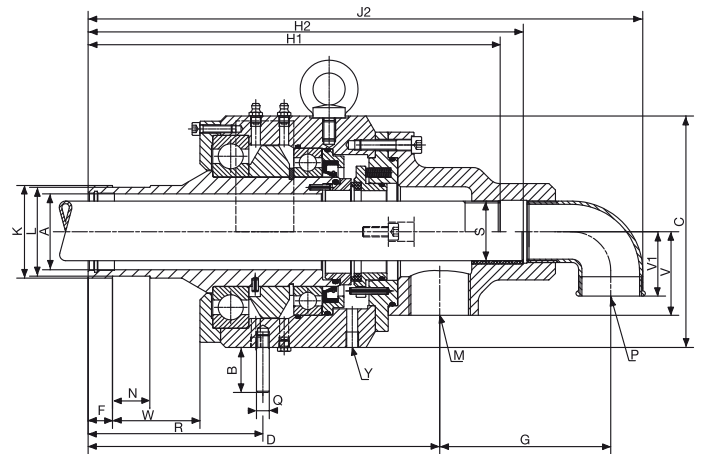
Standard R Ratings

	Water		Air	
	Pressure	Speed	Pressure	Speed
R064-076	25	750	10	375
R089	20	700	5	375
R102	20	600	5	350
R125	20	500	4	300
R150	10	400	3	200

- Temperature: 120°
- Media: Water, Air
- Seal material: B3



dual flow straight thread rotor



dual flow flanged rotor

H2 Rotary Pipe	J1	J2	L h8	N	Q	R	S		T f(8)	V single/double	V1	W	Y ISO 228/1	Approx. Weight Single-Double passage
							Fixed Pipe	Rotary Pipe h 13						
310	349,0	404,5			10	107,5	G 1-1/2"	45	95	69 / 65	50	26,5	G 1/8"	22-28
338,5	377	433	69,09	29	10	136	G 1-1/2"	45		69 / 65	50	68	G 1/8"	22-28
370	404,4	480			10	132	G 2"	60	112	80 / 75	58	33	G 1/8"	30-32,5
390	424,4	500	84,12	33,3	10	152	G 2"	60		80 / 75	58	72,65	G 1/8"	30-32,5
390	462,0	500			16	139,5	G 2"	60	124	98 / 85	58	33,5	G 1/8"	42-50
429,5	502	540	96,85	36,6	16	179	G 2"	60		98 / 85	58	92,6	G 1/8"	42-50
445	494,7	581			16	165	G 2-1/2"	75	144	98 / 95	69	43	G 1/8"	52-70
474	523,7	610	109,55	38,1	16	194	G 2-1/2"	75		98 / 95	69	96,6	G 1/8"	52-70
540,5		694	135,74	44,5	16	225	G 3"	88		x / 105	80	110,25	G 1/4"	92-98
607		793,5	165,1	44,5	16	240	G 4"	110		x / 130	98	115,25	G 1/4"	92-98
					16		G 3"	88		x / 105	80		G 1/4"	125-145
					16		G 4"	110		x / 130	98		G 1/4"	125-145

RH Rotary Unions

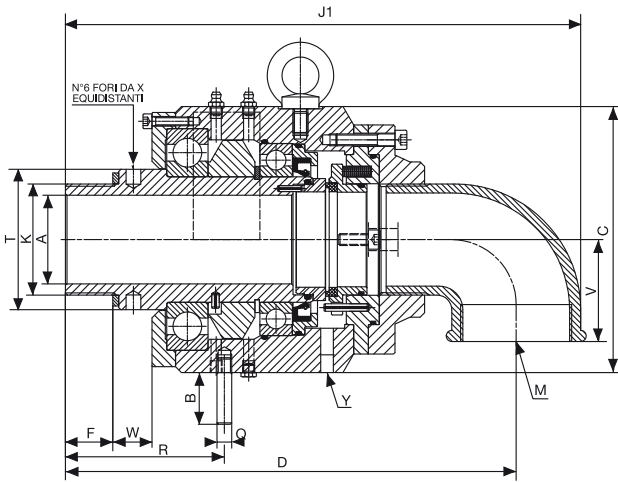
Single flow



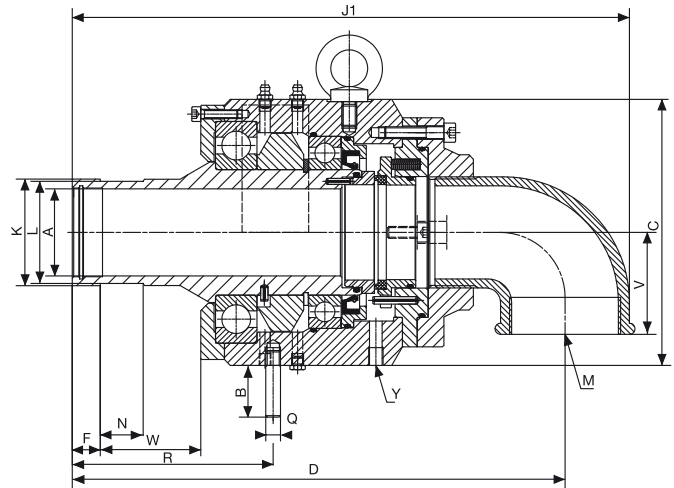
Standard RH Ratings

	Pressure	Speed
RH064-R076	12,5	750
RH089	12,5	700
RH102	10	600
RH125	10	500
RH150	7,5	400

- **Temperature:** 180°
- **Media:** Water, Steam
- **Seal material:** B4



single flow straight thread rotor



single flow flanged rotor

Size	K Rotor ISO 228.1 (threaded) h8 (flanged)	M single flow ISO-228/1 RH	Part ID			M+P double passage ISO-228/1 RH	A	B	C	D single / double	F	G	H1 Fixed Pipe
			Single flow	Dual flow Fixed Pipe	Dual flow Rotary Pipe								
RH064	G 2-1/2"-RH	G 2-1/2"	RH064028661	RH064025520	RH064025550	G 1-1/2"	60	35	180	305 / 245	32	133	292
	G 2-1/2"-LH		RH064028662	CF	RH064026400								
	72,08 flanged		RH064022961	RH064036885	RH064036885								
RH076	G 3"-RH	G 3"	CF	RH076019649	CF	G 2"	72	35	205	355 / 289	42	159	346
	G 3"-LH		CF	RH076019650	CF								
	87,12 flanged		CF	CF	RH076024903								
RH089	G 3-1/2"-RH	G 4"	RH089024451	CF	RH089016689	G 2"	81	60	230	400 / 309	45	159	366
	G 3-1/2"-LH		RH089024452	CF	CF								
	99,82 flanged		CF	CF	RH089033383								
RH102	G 4"-RH	G 4"	CF	CF	CF	G 2-1/2"	95	60	262	432,5 / 352	50	186	420
	G 4"-LH		CF	CF	CF								
	112,5 flanged		CF	CF	RH102028691								
RH125			CF	CF	CF	G 3"		60	305			211	
			CF	CF	CF								
	138,99 flanged		CF	CF	RH125030192								
RH150			CF	CF	CF	G 4"		60	352			247	
			CF	CF	CF								
	167,5 flanged		CF	CF	CF								

2-1/2" to 6"

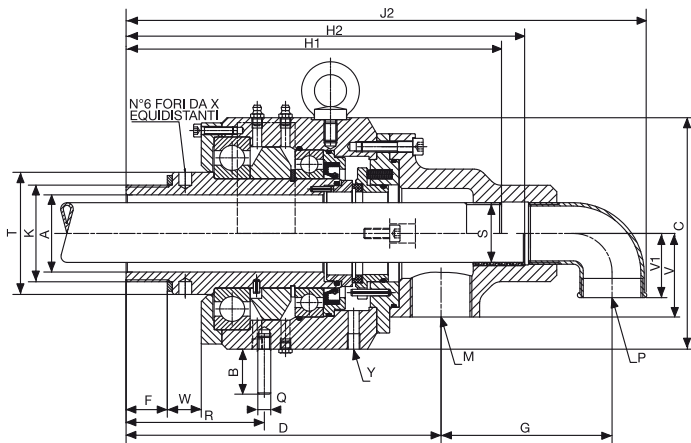
Dual flow



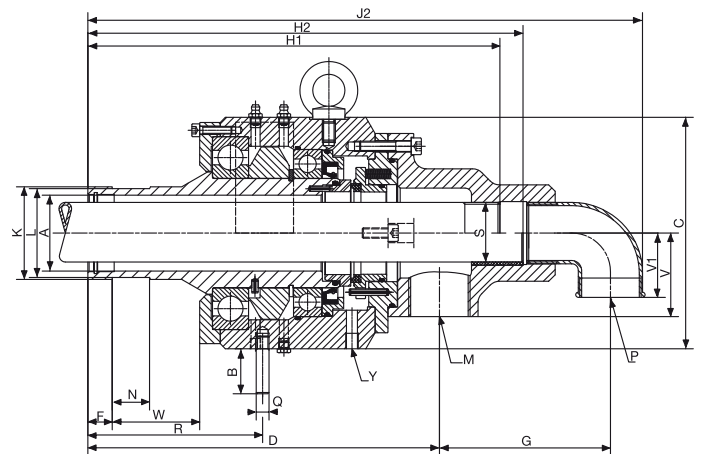
Standard RH Ratings

	Pressure	Speed
RH064-R076	12,5	750
RH089	12,5	700
RH102	10	600
RH125	10	500
RH150	7,5	400

- **Temperature:** 180°
- **Media:** Water, Steam
- **Seal material:** B4



dual flow straight thread rotor



dual flow flanged rotor

H2 Rotary Pipe	J1	J2	L h8	N	Q	R	S		T f(8)	V single/double	V1	W	Y ISO 228/1	Approx. Weight Single-Double passage
							Fixed Pipe	Rotary Pipe h 13						
310	349,0	404,5			10	107,5	G 1-1/2"	45	95	69 / 65	50	26,5	G 1/8"	22-28
338,5	377	433	69,09	29	10	136	G 1-1/2"	45		69 / 65	50	68	G 1/8"	22-28
370	404,4	480			10	132	G 2"	60	112	80 / 75	58	33	G 1/8"	30-32,5
390	424,4	500	84,12	33,3	10	152	G 2"	60		80 / 75	58	33	G 1/8"	30-32,5
390	462,0	500			16	139,5	G 2"	60	124	98 / 85	58	33,5	G 1/8"	42-50
429,5	502	540	96,85	36,6	16	179	G 2"	60		98 / 85	58	92,6	G 1/8"	42-50
445	494,7	581			16	165	G 2-1/2"	75	144	98 / 95	69	43	G 1/8"	52-70
474	523,7	610	109,55	38,1	16	194	G 2-1/2"	75		98 / 95	69	96,6	G 1/8"	52-70
540,5		694	135,74	44,5	16	225	G 3"	88		x / 105	80	110,25	G 1/4"	92-98
607		793,5	165,1	44,5	16	240	G 4"	110		x / 130	98	115,25	G 1/4"	125-145
					16		G 3"	88		x / 105	80		G 1/4"	92-98
					16		G 4"	110		x / 130	98		G 1/4"	125-145

Repair kit items

Easy seal replacement

The R line has a unique feature. The complete line from 3/8" to 6" is featured with a Quick Replacement Design (QRD). This feature will allow you to repair the R union while the union is still installed on the machine. The Johnson-Fluitten R union is the only one offering this feature in a ball bearing line. The R union is designed for long operating life and short maintenance time to guarantee the best operating times for your product line.

Repair Kits

Size	B3	C3	B4	T4
R-RH 009-RH	KR009020940	KR009013103	KRH009018289	KRH009020948
R-RH 009-LH	KR009020941	KR009020945	KRH009015714	KRH009020949
R-RH 012-RH	KR012020942	KR012018341	KRH012017021	KRH012020950
R-RH 012-LH	KR012007525	KR012020946	KRH012015715	KRH012020951
R-RH 019	KR019005348	KR019003383	KRH019015716	KRH019016114
R-RH 025	KR025020943	KR025012728	KRH025005664	KRH025017738
R-RH 031	KR031003585	KR031020947	KRH031015717	KRH031020074
R-RH 038	KR038004210	KR038015855	KRH038007591	KRH038016115
R-RH 050	KR050020944	KR050004494	KRH050011299	KRH050017858
R-RH 064	KR064021658	KR064028671	KRH064025529	KRH064021657
R-RH 076	KR076022904	x	KRH076027998	KRH076027994
R-RH 089	KR089023511	KR089030191	x	x
R-RH 102	KR102023526	x	KRH102027999	KRH102016116
R-RH 125	x	x	x	x
R-RH 150	x	x	x	x



Seal Replacement

How does it work?

Step 1.

Loosen and remove socket head cap screws (2A) and set aside. Remove head (2).

Step 2.

Remove seal ring (5), o-ring (12), and springs (7) from head (2) and discard.

Step 3.

Remove counterseat insert (6), and o-ring (12) from nipple (4) and discard.

Step 4.

Carefully clean the o-ring end of the nipple (4) and the bore of the head (2) where the seal ring (5) sits. Do not scratch surfaces. This may be done using a Scotch Brite pad.

Step 5.

Apply a small amount of o-ring lube to both sides of a new o-ring (12) and fit it over the end of the new seal ring (5) into the o-ring groove. Insert new springs (7) into the spring holes in the head (2).

Step 6.

Place a clean soft cloth over the sealing face of the seal ring (5). Align the notches in the seal ring with the pins (13) in the head (2) and gently press the seal ring in to the bore of the head.

Step 7.

Apply a small amount of o-ring lube to both side of a new o-ring (12) for the counterseat (6) and fit it into the o-ring groove in the end of the nipple (4). Align the flats on the OD of the new counterseat (6) with raised ends of the nipple. Gently press the counterseat into the nipple.

Step 8.

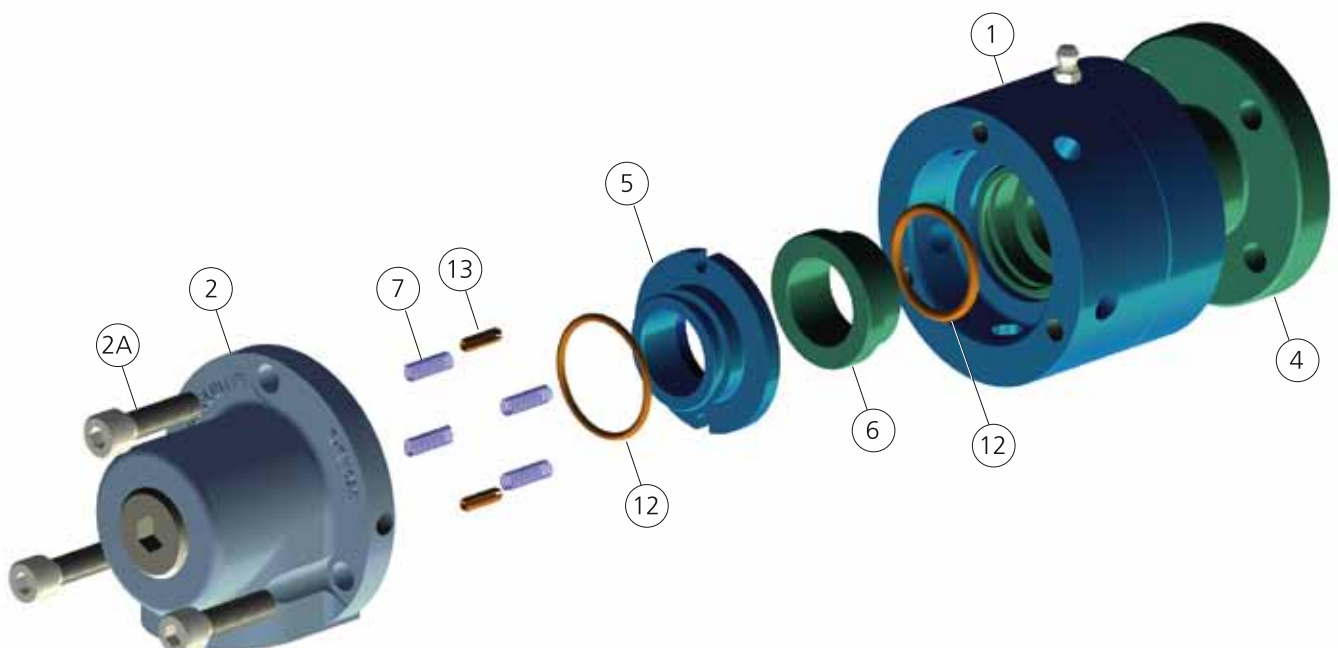
Ensure that the seal face are clean. Clean the faces of the counterseat (6) and seal ring (5) using a lint free cloth and acetone.

Step 9.

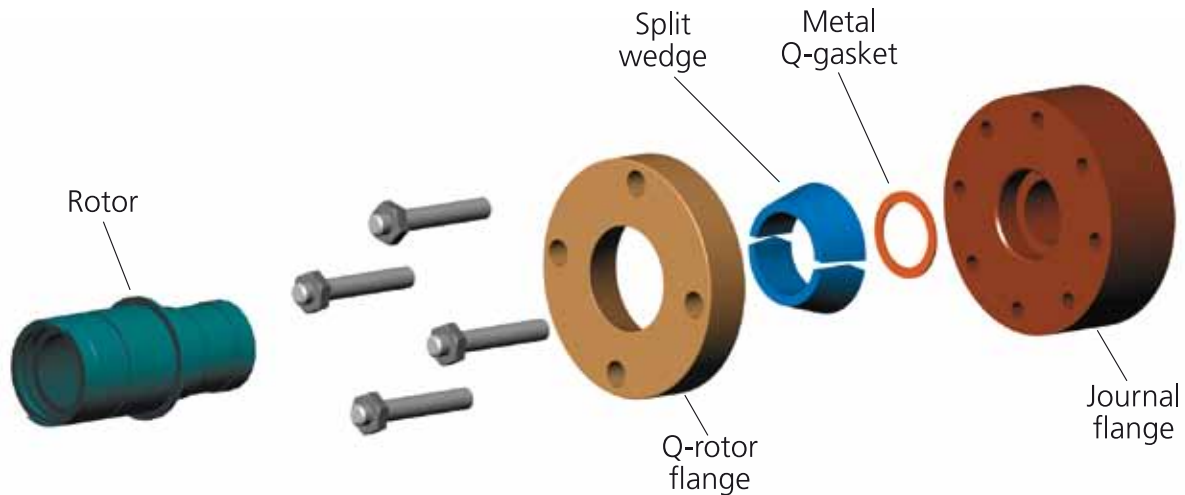
Carefully place the head (2) containing the seal ring (5) back onto the body (1).

Secure head to body using socket head cap screws (2A).

Seal package replacement is complete.



Quick Release Flange



Joint Size	Flange (n)	Flange set Water/Air/Steam	Flange set Oil	Flange	Split Wedge	Gasket Copper Water/Air/Steam	Gasket Aluminium (Oil)
1"	4 holes	050.303	050.403	050.003	550.003	080.053	080.102
1¼"	4 holes	050.304	050.404	050.004	550.004	080.054	080.103
1½"	4 holes	050.305	050.405	050.005	550.005	080.055	080.104
2"	4 holes	050.306	050.406	050.006	550.006	080.056	080.105
2½"	4 holes	050.307	050.407	050.007	550.007	080.057	080.106
3"	4 holes	050.317	050.417	050.017	550.008	080.058	080.107
	5 holes	050.308	050.408	050.008			
	6 holes	050.318	050.418	050.018			
3½"	6 holes	050.309	050.409	050.009	550.009	080.059	080.108
	8 holes	050.310	050.410	050.010			
4"	6 holes	050.311	050.411	050.011	550.010	080.060	080.109
	8 holes	050.312	050.412	050.012			
5"	8 holes	050.313	050.413	050.013	550.015	080.061	080.110
6"	8 holes	050.314	050.414	050.014	550.012	080.062	080.111

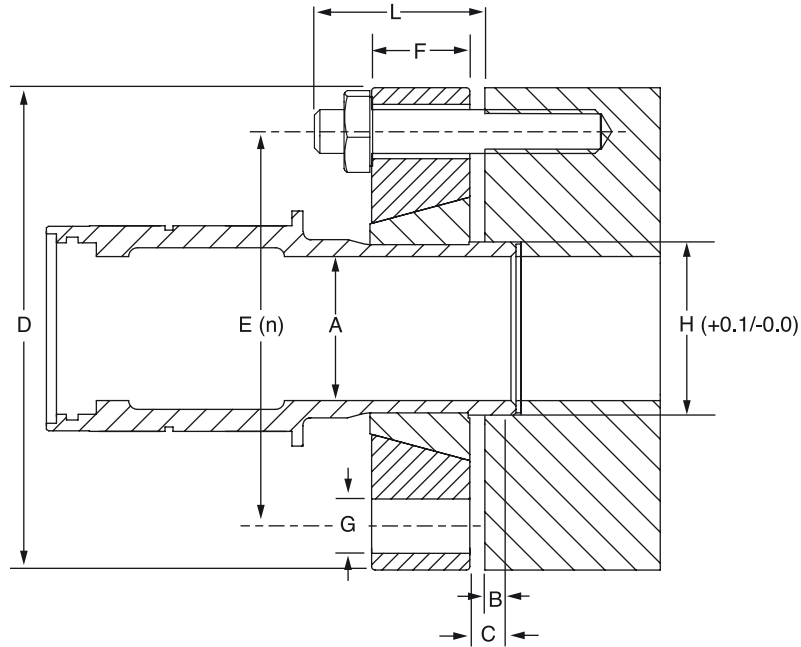
Features

- Split wedge construction for ease of installation
- Q-flange can be used for LH and RH rotation
- Gasket for different media
- Mounting with multiple bolts
- Size available from ½" to 12"

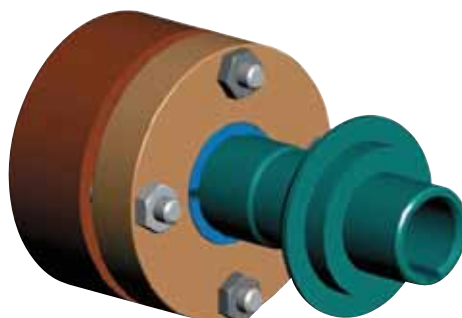
Benefit

- Reduced installation and maintenance times
- Reduced inventory levels
- Application for all media
- Easy installation with hand tools

Quick Release Flanges are used for increased ease of installation and reduced maintenance cost. The quick Release Flange can be used for steam, water, oil, and all other media which passes through the rotary joint.



Size	Type	A	B	C	D	E	F	G	H	L	n	Torque (Nm) Copper Gasket	Torque (Nm) Aluminium Gasket	Kg
1"	R/RH025	32,5	8	11,1	127	88,9	15	14,25	24,5	M12x35	4	21	19	1,3
1¼"	R/RH031	32,5	10	12,7	127	88,9	16	14,25	41,3	M12x35	4	23	21	1,3
1½"	R/RH038	38	10	12,7	140	100	20	14,25	47,6	M12x40	4	25	22	1,9
2"	R/RH050	48	13	15,9	165	120,6	20	14,25	59,1	M12x40	4	29	25	2,6
2½"	R/RH064	59	16	19	165	120,6	20	14,25	72,2	M12x40	4	34	28	2,5
3"	R/RH076	73	19	22,2	203	171,5	31	17,5	87,3	M16x55	4	72	62	5,9
											5	66	57	
											6	61	54	
3½"	R/RH089	85	20	25,4	216	177,8	32	17,5	100	M16x55	6	66	57	6,4
								14,25		M12x55	8	31	26	
4"	R/RH102	97	20	25,4	229	190,5	35	17,5	112,7	M16x60	6	71	61	7,6
											8	63	56	
5"	R/RH125	122	25	32	292	235	39	22	139,2	M20x70	8	117	104	13,8
6"	R/RH150	146	25	32	330	279,5	41	22	168	M20x70	8	138	119	19



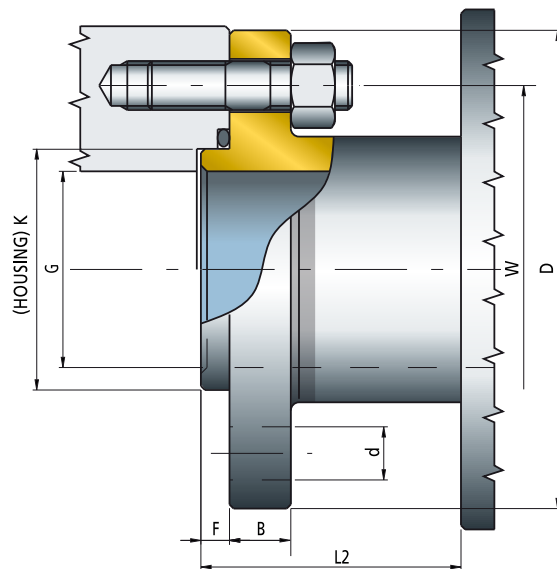
Fixed Flange Connections

DIMENSIONS

Fixed flanges type F for rotor

MODEL	G	HOUSING K G 7	F	D	W	B	nr holes	d	L2	Screws
R-RH 019	16	30	8	75	55	12	4	9	50	M8
R-RH 025	25	35	8	80	60	12	4	9	50	M8
R-RH 031	32	45	8	100	75	12	4	11	55	M10
R-RH 038	38	50	10	105	80	15	4	11	60	M10
R-RH 050	48	65	10	130	100	15	4	14	70	M12
R-RH 064	60	85	12	180	145	25	4	18	70	M16
R-RH 076	72	105	15	210	175	30	6	18	90	M16
R-RH 089	81	105	15	210	175	30	6	18	90	M16
R-RH 102	95	114	20	230	195	30	8	18	115	M16
R-RH 125	118	150	20	250	210	35	8	18	142	M16
R-RH 150	145	180	20	305	260	40	8	22	150	M20

Dimensions subject to change without notice.



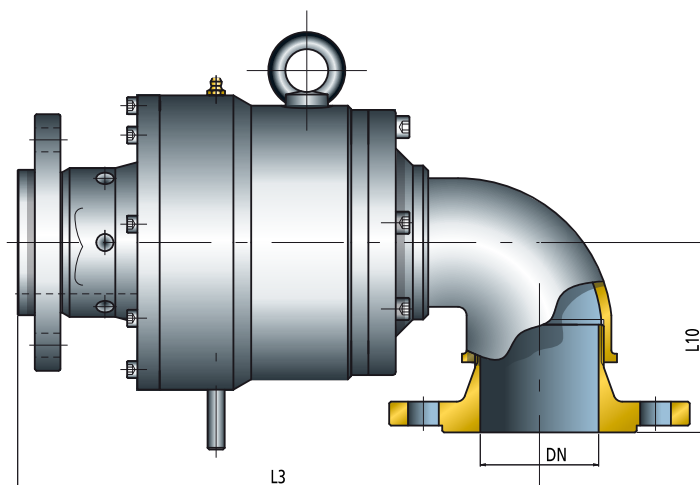
DIMENSIONS

R / RH 064 - 150

Flanged version - Single passage

MODEL	DN	L3	L10	MASS Kg
R-RH 064	DN 65-PN40	305	140	25
R-RH 076	DN 80-PN40	355	155	34
R-RH 089	DN100-PN40	395	180	45
R-RH 102	DN100-PN40	425	180	58
R-RH 125	DN125-PN16	570	245	92
R-RH 150	DN150-PN16	650	285	125

Dimensions subject to change without notice.



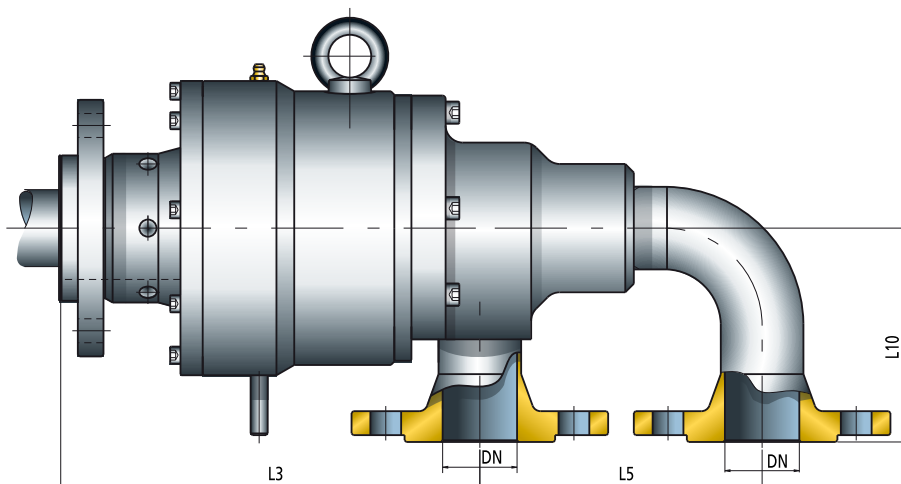
DIMENSIONS

R / RH 064 - 150

Flanged version - Double passage

MODEL	DN	L3	L10	MASS Kg
R-RH 064	245	165	125	36
R-RH 076	290	205	140	34
R-RH 089	310	205	150	60
R-RH 102	352	250	170	82
R-RH 125	408	282	180	110
R-RH 150	447	338	215	150

Dimensions subject to change without notice.

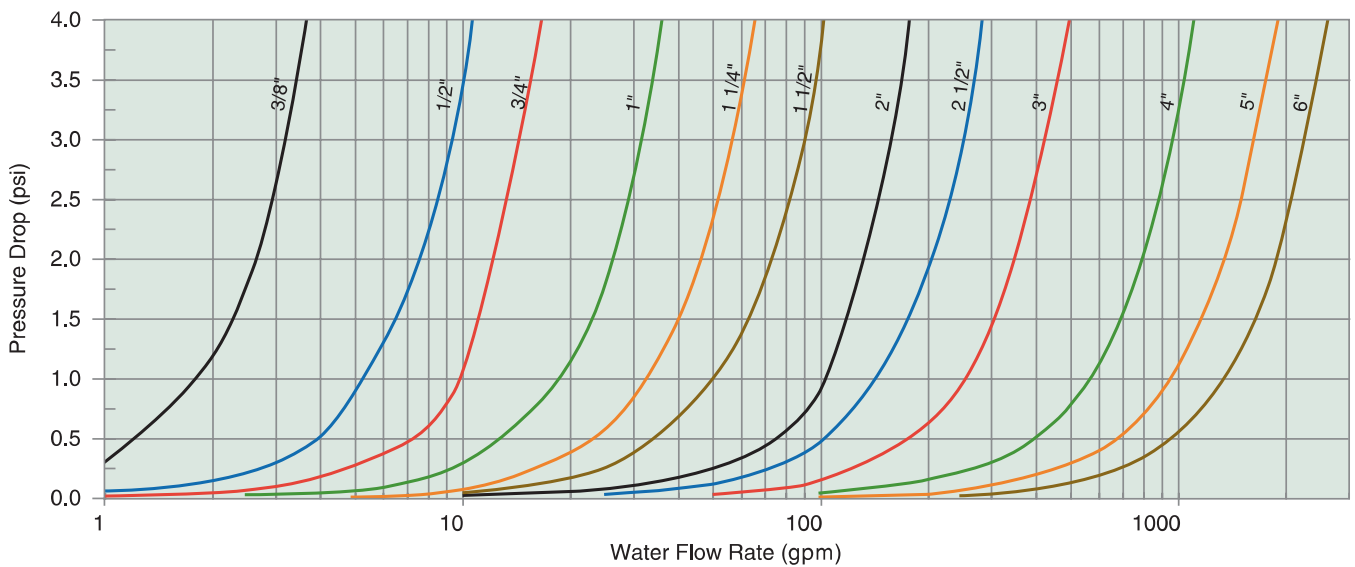


Technical Data

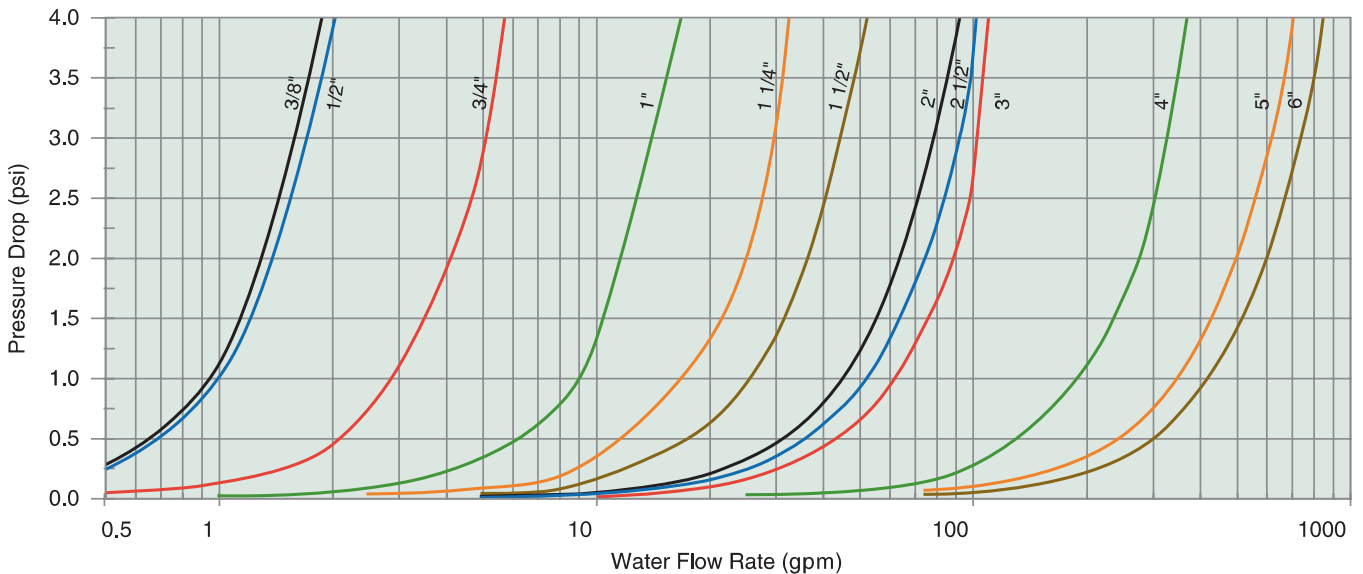
Rotary union sizing

Rotary unions that are used for liquid flow are typically sized so that the pressure drop is less than 0,20 bar for open-loop system and less than 0,40 bar for closed-loop system. The pressure drop through a dual flow rotary union is higher than the pressure drop through a single flow union of the same size, because the internal flow area is lower. Use the appropriate chart below for your configuration. Note that the pressure drop shown for dual flow unions is for the supply passage. The total pressure drop (flow in and flow out) would be approximately 2x this value.

R/RH Rotary Union (Single Flow)



R/RH Rotary Union (Dual Flow)



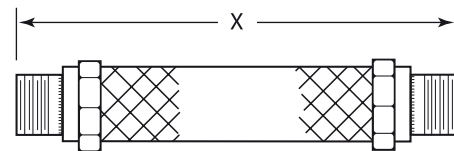
Recommendations

Flexible hose Ratings

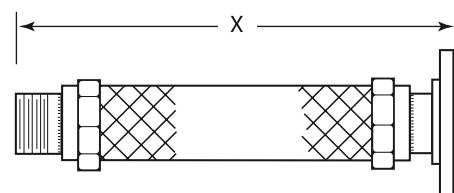
To ensure free movement of the rotary union and elimination of side loading, the proper installation, type, and length of flexible hose should be used.

Recommended hose length, bend, and offset (mm)

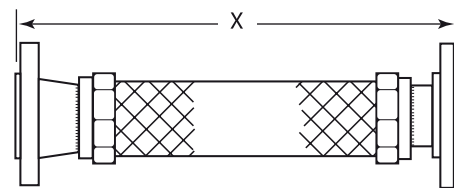
Pipe Size	Minimum Length (x)	Minimum Bend radius	Maximum Offset
1/4"	200	140	50
3/8"	250	140	50
1/2"	250	150	38
3/4"	300	200	25
1"	375	225	38
1 1/4"	450	250	50
1 1/2"	450	300	50
2"	525	375	50
2 1/2"	550	355	60
3"	600	425	60
4"	700	550	75
5"	750	700	60
6"	850	850	60



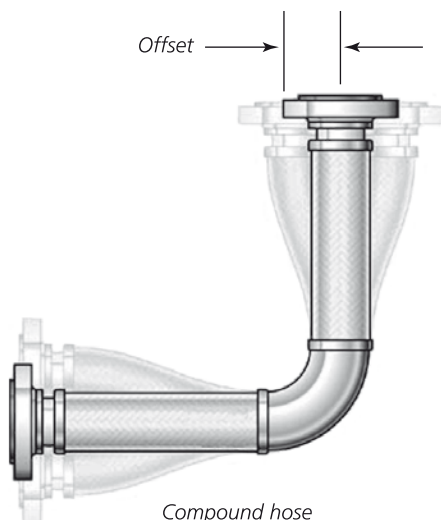
Threaded both ends



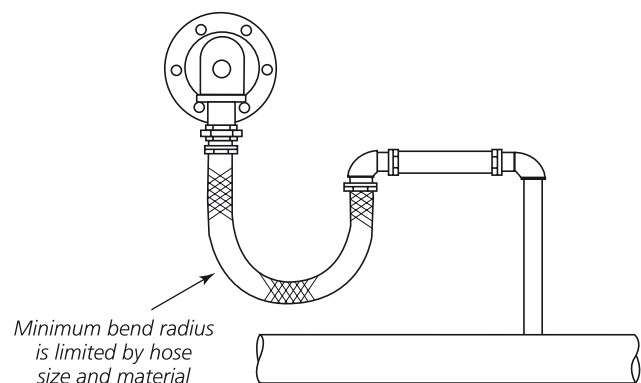
Threaded one end, lap flange other end



Fixed flange one end, lap flange other end



Compound hose
(recommended)



Filtration

It is important to follow the filtration requirements recommended by the machinery manufacturer. Type R rotary unions do not require additional filtration other than what is recommended for the fluid circulation system (typically 40-60 micron).

Guarantee

Type R rotary unions are tested prior to shipment and are warranted against manufacturing defects for 12 months. Johnson-Fluiten global sales and service network stands behind its products and provides support to more than 150 countries worldwide.

Rotary Joint Selection

Ordering information Johnson-Fluitem

If you have an existing rotary union with a product label affixed to the housing, the part ID written on the label is all that is required to order a replacement union. For new applications or if no part ID is available, the following data are requested:

1. Number passages (single flow or dual flow)
2. Rotor type (threaded, Q-flange, or integral flange)
3. Rotor thread (right-or left hand and type)
4. Supply pipe (fixed or rotating)
5. Service (water, thermal oil, air, or steam)
6. Fluid pressure
7. Fluid temperature
8. Rotational speed (RPM)
9. Connection sizes shown on drawing (M, P, S, K)



HIGH TEMPERATURE CONFIGURATIONS:

- R T max 120° C →
- RH T max 180° C →
- RHB T max 400° C →
- 009 ÷ 150 ROTARY JOINT NOMINAL DIAMETER →
- DRAWING NUMBER FOR SPECIAL DESIGN →

MATERIAL SEAL FACES and O-RINGS:

- B3 1 SILICON CARBIDE VS ANTIMONY GRAPHITE / FLUORELASTOMER →
- B4 1 SILICON CARBIDE VS ANTIMONY GRAPHITE/AFLAS →
- C3 1 SILICON CARBIDE VS TUNGSTEN CARBIDE/FLUOROELASTOMER →
- T4 2 SILICON CARBIDE VS BRONZE / AFLAS →

PASSAGES:

- M SINGLE PASSAGE →
- F TWO PASSAGE - FIXED SYPHON →
- L TWO PASSAGE - ROTATING SYPHON →

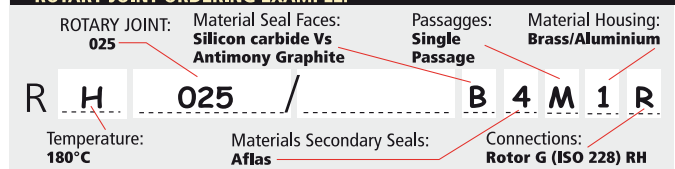
MATERIALS - HOUSING / SUPPORT:

- 1 BRASS / ALUMINIUM →
- 2 3 STAINLESS STEEL AISI 316 / ALUMINIUM →
- 3 3 STAINLESS STEEL AISI 316/ STAINLESS STEEL AISI 304 →

CONNECTIONS:

	ROTOR	HOUSING
R	G (ISO 228) RH(°)	G (ISO 7) RH(°)
L	G (ISO 228) LH(°)	G (ISO 7) RH(°)
N	NPT RH(°)	NPT RH(°)
P	NPT LH(°)	NPT RH(°)
J	4 J	G (ISO 7) RH(°)
T	4 J	6 F
U	5 F	G (ISO 7) RH(°)
V	G (ISO 228) RH(°)	6 F
W	G (ISO 228) LH(°)	6 F
Z	5 F	6 F

ROTARY JOINT ORDERING EXAMPLE:



- 1 For R009 e R012 Silicon Carbide in place of Tungsten Carbide
- 2 For R009 e R012 Hardened Stainless Steel in place of Silicon Carbide
- 3 Stainless Steel Elbow included for Two Passages
- 4 Flanges type with conical rings in two halves (see page 16)
- 5 Fixed flanges type F (see page 18)
- 6 Flanges for housing connections (see page 18)

(°) RH = Right handed threading LH = Left handed threading
 (*) **Warning!** Use only siliconic grease to lubricate these gaskets.

Other Rotary Unions

Johnson-Fluiten is a leading supplier and service provider of rotary unions and joints. Based in Italy and with sales offices around the globe, the company serves customers in nearly 150 countries on six continents.

Johnson-Fluiten specializes in precision rotary unions and joints for rotating components to convey water, steam, air, hydraulic oil, and coolant.

Johnson-Fluiten integrates 40 years of Fluiten's mechanical seal expertise and application knowledge with Johnson-Fluiten advanced research and development capabilities and global sales and service network to provide our customers with a broad product and service offering worldwide.



Type Z rotary for thermal oil



Type Z rotary unions are designed for thermal oil applications. The union is supported by two internal carbon guides (bearings) and can run up to 500 RPM and 300°C.

The proprietary antimony impregnated carbon seal ring is in compression sealing against the rotor and sealplate. This seal package combination provides for a long lasting and low maintenance rotary union. The type Z rotary union is available in sizes from 19mm to 102mm with both flanged and threaded connections.

Stainless steel rotary union R/RH



Johnson-Fluiten's type R/RH can be made also of stainless steel 316 for specific applications. Johnson-Fluiten can offer many different seal materials to seal fluids with abrasive materials, glycol, fluids with crystallizing sugars or materials that require FDA or ATEX approved designs. The stainless steel unions are supplied in a AISI 316 made of casting or, when required, in machined surfaces for special cleaning requirements.

Type G rotary union for coolant, water, air, and hydraulic oil



The G rotary union is a high performance, high precision union for coolant, water, air, and hydraulic oil applications. Type G unions are generally applied to spindles, gun drills, milling, and other machinery. The G union is designed for smooth-running at speed up to 50,000 RPM and pressures up to 400 bar in sizes ranging from 1/4" to 5/8".

Type MP for pneumatic, hydraulic, and water applications



The MP rotary union is a custom-designed multi-passage union for pneumatic, hydraulic, and water applications. The precision ball bearings are lubricated for life and housing materials include stainless steel, aluminium, steel, or brass. Standard passage sizes are 1/8", 1/4", 3/8", 1/2", 3/4", and 1" with other sizes available. MP unions are available with up to 12 passages and rated up to 107°C, 207 bar, and 500 RPM.

Type BCI



The Bearing Cover Inserted (BCI) rotary union is applied to continuous casting steel segment rolls on water service. It is self-centering and mounted inside the bearing cover to protect the rotary union from breakouts and eliminates side loading caused by external flexible hoses. The ability to handle misalignment, the large flow area, and simple design make this rotary union a preferred design for all new and rebuilt continuous casting roll segments. Field tests have proven the BCI rotary union capable of operating for multiple campaigns without requiring repair. All materials of the BCI are corrosion-resistant stainless steel or bronze and the internal bearing surface is permanently lubricated. Because of its ability to tolerate dirty water with varying pH levels, the BCI outperforms all other rotary unions on the market today. The BCI union is rated up to 121° C, 10 bar and 25 RPM.

Global Sales and Service Network

Many suppliers have made a commitment to the international marketplace. But few have taken that commitment far as Johnson-Fluiten.

To assure product availability wherever it's needed, R/RH Rotary Unions are sold and serviced in Asia, Europa, North America and South America.

Because knowledgeable advice and prompt service are as important as the products, Johnson-Fluiten has factory-authorised representatives in nearly one hundred and fifty countries. So no matter where you are, Johnson-Fluiten products, service and assistance are nearby.



JOHNSON-FLUITEN, srl

Via Newton, 21
20016 Pero, Milano (Italy)
tel: +39 02 3394091
fax: +39 02 33940950
www.johnson-fluiten.com



KADANT

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



KADANT

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



KADANT

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



KADANT

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