

Metallic Ring Type Joint Gaskets (RTJ)





RTJ (Ring Type Joints)

- Metallic ring type joint gaskets are heavy duty, high-pressure gaskets largely used in offshore and onshore petrochemical applications. They are precision-engineered components designed to be used in conjunction with precision-machined flanges. All our Ring Joints are manufactured according to ASME B16.20 and API 6A.
- The gasket material is selected on a number of grounds primarily; chemical compatibility with the media and the hardness of the flange. The gasket material ideally needs to be roughly 30 Brinell less than the flange material to ensure sufficient deformation of the gasket without damaging the flange facing.
- Worn, pitted or corroded flange sealing surfaces can impede the sealing ability of RTJ gaskets. In such instances, a serrated octagonal RTJ gasket, covered with flexible graphite or a Maxiflex CR-RJ, can provide a temporary or emergency solution until the flange can be repaired or replaced.
- The sealing surfaces on the ring joint grooves must be smoothly finished to 63 Microinches and be free of objectionable ridges, tool or chatter marks.

A number of ring joint styles are available designed for specific flange types, these are:

Style R Oval

Size/Pressure Class:

½" to 24" : 150 to 2500 ASME B16.20
26" to 36" : 300 to 900 ASME B16.47 Series A
1 ½" to 20" : API 6A

Applications:

- Used for high pressure applications.

Typical Properties:

- High integrity seal at high pressures
 - Suitable for flat and round bottom groove flanges.
- Interchangeable on modern octagonal type grooved flanges.

- Available in Ring numbers R11 to R105

Style RX

Size/Pressure Class:

1 ½" to 20" : 720 to 5000 API 6A

Applications:

- Used for high pressure applications.
 - The Style RX is designed to fit the same groove design as a standard style R making joints interchangeable
 - The Style RX has an increased height and utilizes the internal system pressure to energize and improve the seal as internal pressure increase
 - Suitable for flat bottom groove flanges
- Also available in style SRX.

Style R Octagonal

Size/Pressure Class:

½" to 24" : 150 to 2500 ASME B16.20
26" to 36" : 300 to 900 ASME B16.47 Series A
1 ½" to 20" : API 6A

Applications:

- Used for high pressure applications.

Typical Properties:

- High integrity seal at high pressures
- The octagonal cross section has a higher sealing efficiency than the oval and would be the preferred gasket
- Suitable for flat bottom groove flanges
- Available in Ring numbers R11 to R105

Style BX

Size/Pressure Class:

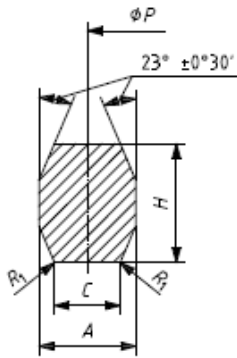
1 11/16" to 30" : 2000 to 20000 API 6A

Applications:

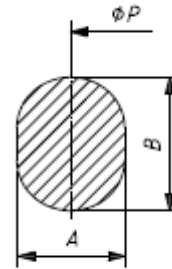
- The Style BX energised ring type joint is manufactured in accordance with API 6A for use in high pressures.
- Style BX ring type joints incorporate a pressure passage hole to allow for pressure equalization each side of the sealing faces.
- Style BX is not interchangeable with any other style, and is only suited for API 6BX flanges .

Also available in style SBX.

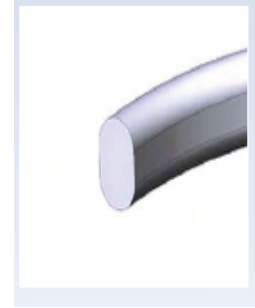
RTJ type R



a) Octagonal



b) Oval



Type R Oval and Octagonal RTJ Dimensions to ASME B16.20 ,API 6A

Nominal Pipe Size (DN in mm) and Pressure Class						Ring No.	Gasket Dimensions					
Class	Class	Class	Class	Class	Class		Pitch Diam. P (± 0.18)	Width A (± 0.20)	Height		C, Width of Flat Oct. (± 0.20)	R1, Radius in Oct. Ring (± 0.5)
									B, Oval (± 0.50)	H, Octagonal (± 0.50)		
	15	15				R11	34.13	6.35	11.18	9.65	4.32	1.5
			15	15		R12	39.70	7.95	14.22	12.70	5.23	1.5
	20	20			15	R13	42.87	7.95	14.22	12.70	5.23	1.5
			20	20		R14	44.45	7.95	14.22	12.70	5.23	1.5
25						R15	47.63	7.95	14.22	12.70	5.23	1.5
	25	25	25	25	20	R16	50.80	7.95	14.22	12.70	5.23	1.5
32						R17	57.15	7.95	14.22	12.70	5.23	1.5
	32	32	32	32	25	R18	60.32	7.95	14.22	12.70	5.23	1.5
40						R19	65.10	7.95	14.22	12.70	5.23	1.5
	40	40	40	40		R20	68.28	7.95	14.22	12.70	5.23	1.5
					32	R21	72.24	11.13	17.53	16.00	7.75	1.5
50						R22	82.55	7.95	14.22	12.70	5.23	1.5
	50	50			40	R23	82.55	11.13	17.53	16.00	7.75	1.5
			50	50		R24	95.25	11.13	17.53	16.00	7.75	1.5
65						R25	101.60	7.95	14.22	12.70	5.23	1.5
	65	65			50	R26	101.60	11.13	17.53	16.00	7.75	1.5
			65	65		R27	107.95	11.13	17.53	16.00	7.75	1.5
					65	R28	111.13	12.70	19.05	17.53	8.66	1.5
80						R29	114.30	7.95	14.22	12.70	5.23	1.5
	80	80				R30	117.48	11.13	17.53	16.00	7.75	1.5
	80	80	80			R31	123.83	11.13	17.53	16.00	7.75	1.5
					80	R32	127.00	12.70	19.05	17.53	8.66	1.5
90						R33	131.78	7.95	14.22	12.70	5.23	1.5
	90	90				R34	131.78	11.13	17.53	16.00	7.75	1.5
				80		R35	136.53	11.13	17.53	16.00	7.75	1.5
100						R36	149.23	7.95	14.22	12.70	5.23	1.5

RTJ type R

Nominal Pipe Size (DN in mm) and Pressure Class						Ring No.	Gasket Dimensions					
							Pitch Diam. P (±0.18)	Width A (±0.20)	Height		C, Width of Flat Oct. (±0.20)	R1, Radius in Oct. Ring (±0.5)
B, Oval (±0.50)	H, Octagonal (±0.50)											
Class	Class	Class	Class	Class	Class							
	100	100	100			R37	149.23	11.13	17.53	16.00	7.75	1.5
					100	R38	157.18	15.88	22.35	20.57	10.49	1.5
				100		R39	161.93	11.13	17.52	16.00	7.75	1.5
125						R40	171.45	7.95	14.22	12.70	5.23	1.5
	125	125	125			R41	180.98	11.13	17.53	16.00	7.75	1.5
					125	R42	190.50	19.05	25.40	23.88	12.32	1.5
150						R43	193.68	7.95	14.22	12.70	5.23	1.5
				125		R44	193.68	11.13	17.53	16.00	7.75	1.5
	150	150	150			R45	211.15	11.13	17.53	16.00	7.75	1.5
				150		R46	211.15	12.70	19.05	17.53	8.66	1.5
					150	R47	228.60	19.05	25.40	23.88	12.32	1.5
200						R48	247.65	7.95	14.22	12.70	5.23	1.5
	200	200	200			R49	269.88	11.13	17.53	16.00	7.75	1.5
				200		R50	269.88	15.88	22.35	20.57	10.49	1.5
					200	R51	279.40	22.23	28.70	26.92	14.81	1.5
250						R52	304.80	7.95	14.22	12.70	5.23	1.5
	250	250	250			R53	323.85	11.13	17.53	16.00	7.75	1.5
				250		R54	323.85	15.88	22.35	20.57	10.49	1.5
					250	R55	342.90	28.58	36.58	35.05	19.81	2.3
300						R56	381.00	7.95	14.22	12.70	5.23	1.5
	300	300	300			R57	381.00	11.13	17.53	16.00	7.75	1.5
				300		R58	381.00	22.23	28.70	26.92	14.81	1.5
350						R59	396.88	7.95	14.22	12.70	5.23	1.5
					300	R60	406.40	31.75	39.62	38.10	22.33	2.3
	350	350				R61	419.10	11.13	17.53	16.00	7.75	1.5
			350			R62	419.10	15.88	22.35	20.57	10.49	1.5
				350		R63	419.10	25.40	33.27	31.75	17.30	2.3
400						R64	454.03	7.95	14.22	12.70	5.23	1.5
	400	400				R65	469.90	11.13	17.53	16.00	7.75	1.5
			400			R66	469.90	15.88	22.35	20.57	10.49	1.5
				400		R67	469.90	28.58	36.58	35.05	19.81	2.3
450						R68	517.53	7.95	14.22	12.70	5.23	1.5
	450	450				R69	533.40	11.13	17.53	16.00	7.75	1.5
			450			R70	533.40	19.05	25.40	23.88	12.32	1.5
				450		R71	533.40	28.58	36.58	35.05	19.81	2.3
500						R72	558.80	7.95	14.22	12.70	5.23	1.5
	500	500				R73	584.20	12.70	19.05	17.53	8.66	1.5
			500			R74	584.20	19.05	25.40	23.88	12.32	1.5
				500		R75	584.20	31.75	39.62	38.10	22.33	2.3
600						R76	673.10	7.95	14.22	12.70	5.23	1.5
	600	600				R77	692.15	15.88	22.35	20.57	10.49	1.5
			600			R78	692.15	25.40	33.27	31.75	17.30	2.3
				600		R79	692.15	34.93	44.45	41.40	24.82	2.3

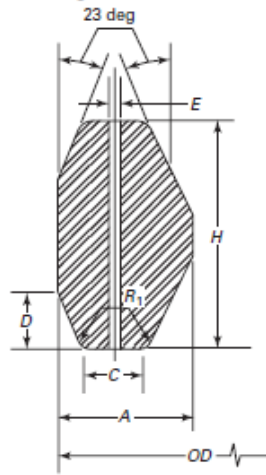
RTJ type R

Nominal Pipe Size (DN in mm) and Pressure Class							Ring No.	Gasket Dimensions					
Class	Class	Class	Class	Class	Class	Class		Pitch Diam. P (±0.18)	Width A (±0.20)	Height		C, Width of Flat Oct. (±0.20)	R1, Radius in Oct. Ring (±0.5)
										B,Oval (±0.50)	H,Octagonal (±0.50)		
150	300	600	900	1500	2500	10000* (API)							
550							R80	615.95	7.95	...	12.70	5.23	1.5
	550	550					R81	635.00	14.30	...	19.05	9.58	1.5
						25	R82*	57.15	11.13	...	16.00	7.75	1.5
						40	R84*	63.50	11.13	...	16.00	7.75	1.5
						50	R85*	79.38	12.70	...	17.53	8.66	1.5
						65	R86*	90.50	15.88	...	20.57	10.49	1.5
						80	R87*	100.03	15.88	...	20.57	10.49	1.5
						100	R88*	123.83	19.05	...	23.88	12.32	1.5
						90	R89*	114.30	19.05	...	23.88	12.32	1.5
						125	R90*	155.58	22.23	...	26.92	14.81	1.5
						250	R91*	260.35	31.75	...	38.10	22.33	2.3
							R92	228.60	11.13	17.53	16.00	7.75	1.5
	650	650					R93	749.30	19.05	...	23.88	12.32	1.5
	700	700					R94	800.10	19.05	...	23.88	12.32	1.5
	750	750					R95	857.25	19.05	...	23.88	12.32	1.5
	800	800					R96	914.40	22.23	...	26.92	14.81	1.5
	850	850					R97	965.20	22.23	...	26.92	14.81	1.5
	900	900					R98	1022.35	22.23	...	26.92	14.81	1.5
							R99	234.95	11.13	...	16.00	7.75	1.5
			650				R100	749.30	28.58	...	35.05	19.81	2.3
			700				R101	800.10	31.75	...	38.10	22.33	2.3
			750				R102	857.25	31.75	...	38.10	22.33	2.3
			800				R103	914.40	31.75	...	38.10	22.33	2.3
			850				R104	965.20	34.93	...	41.40	24.82	2.3
			900				R105	1022.35	34.93	...	41.40	24.82	2.3

Dimensions in mm

*These rings conform to API standard 6A

RTJ type RX



Type RX RTJ Dimensions to ASME B16.20 , API 6A

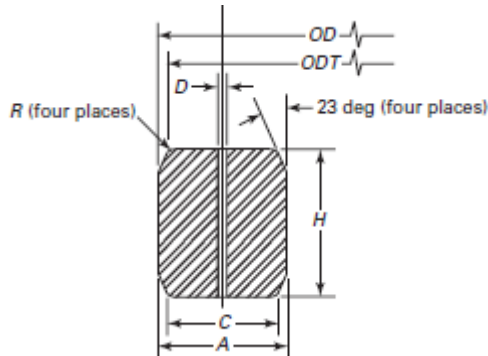
Nominal Size	Class	Ring No.	OD of Ring	Width of Ring, A	Width of Flat, C	Height of Outside Bevel, D	Height of Ring, H	Radius in Ring, R1	Hole Size, E
1 ½"	2000,3000,5000	RX 20	76.20	8.73	4.62	3.18	19.05	1.5	...
2"	2000	RX 23	93.27	11.91	6.45	4.24	25.40	1.5	...
2"	3000,5000	RX 24	105.97	11.91	6.45	4.24	25.40	1.5	...
3 ½"	5000	RX 25	109.55	8.74	4.62	3.18	19.05	1.5	...
2 ½"	2000	RX 26	111.91	11.91	6.45	4.24	25.40	1.5	...
2 ½"	3000,5000	RX 27	118.26	11.91	6.45	4.24	25.40	1.5	...
3"	2000,3000	RX 31	134.54	11.91	6.45	4.24	25.40	1.5	...
3"	5000	RX 35	147.24	11.91	6.45	4.24	25.40	1.5	...
4"	2000,3000	RX 37	159.94	11.91	6.45	4.24	25.40	1.5	...
4"	5000	RX 39	172.64	11.91	6.45	4.24	25.40	1.5	...
5"	2000,3000	RX 41	191.69	11.91	6.45	4.24	25.40	1.5	...
5"	5000	RX 44	204.39	11.91	6.45	4.24	25.40	1.5	...
6"	2000,3000	RX 45	221.84	11.91	6.45	4.24	25.40	1.5	...
6"	5000	RX 46	222.25	13.49	6.68	4.78	28.58	1.5	...
8"	Crossover flange	RX 47	245.26	19.84	10.34	6.88	41.28	2.3	...
8"	2000,3000	RX 49	280.59	11.91	6.45	4.24	25.40	1.5	...
8"	5000	RX 50	283.36	16.66	8.51	5.28	31.75	1.5	...
10"	2000,3000	RX 53	334.57	11.91	6.45	4.24	25.40	1.5	...
10"	5000	RX 54	337.34	16.66	8.51	5.28	31.75	1.5	...
12"	2000,3000	RX 57	391.72	11.91	6.45	4.24	25.40	1.5	...
14"	5000	RX 63	441.73	27.00	14.78	8.46	50.80	2.3	...
16"	2000	RX 65	480.62	11.91	6.45	4.24	25.40	1.5	...
16"	3000	RX 66	483.39	16.66	8.51	5.28	31.75	1.5	...
18"	2000	RX 69	544.12	11.91	6.45	4.24	25.40	1.5	...
18"	3000	RX 70	550.06	19.84	10.34	6.88	41.28	2.3	...
20"	2000	RX 73	596.11	13.49	6.68	5.28	31.75	1.5	...

RTJ type RX

Nominal Size	Class	Ring No.	OD of Ring	Width of Ring, A	Width of Flat, C	Height of Outside Bevel, D	Height of Ring, H	Radius in Ring, R1	Hole Size, E
20"	3000	RX 74	600.86	19.84	10.34	6.88	41.28	2.3	...
1"	10000	RX 82	67.87	11.91	6.45	4.24	25.40	1.5	1.5
1 ½"	10000	RX 84	74.22	11.91	6.45	4.24	25.40	1.5	1.5
2"	10000	RX 85	90.09	13.49	6.68	4.24	25.40	1.5	1.5
2 ½"	10000	RX 86	103.58	15.09	8.51	4.78	28.58	1.5	2.4
3"	10000	RX 87	113.11	15.09	8.51	4.78	28.58	1.5	2.4
4"	10000	RX 88	139.29	17.48	10.34	5.28	31.75	1.5	3.0
3 ½"	10000	RX 89	129.77	18.26	10.34	5.28	31.75	1.5	3.0
5"	10000	RX 90	174.63	19.84	12.17	7.42	44.45	2.3	3.0
10"	10000	RX 91	286.94	30.18	19.81	7.54	45.24	2.3	3.0
8"	2000,3000	RX 99	245.67	11.91	6.45	4.24	25.40	1.5	...
1 ¼"	5000	RX 201	51.46	5.74	3.20	1.45	11.30	0.5	...
1 ¾"	5000	RX 205	62.31	5.56	3.05	1.83	11.10	0.5	...
2 ½"	5000	RX 210	97.64	9.53	5.41	3.18	19.05	0.8	...
4"	5000	RX215	140.89	11.91	5.33	4.24	25.40	1.5	...

Dimensions in mm

RTJ type BX



Type BX RTJ Dimensions to ASME B16.20, API 6A

Nominal Size	Class	Ring No.	OD of Ring	Height of Ring, H	Width of Ring, A	OD of Flat, ODT	Width of Flat, C	Hole Size D
1 11/16"	10000,15000	BX 150	72.19	9.30	9.30	70.87	7.98	1.6
1 13/16"	10000,15000,20000	BX 151	76.40	9.63	9.63	75.03	8.26	1.6
2 1/16"	10000,15000,20000	BX 152	84.68	10.24	10.24	83.24	8.79	1.6
2 9/16"	10000,15000,20000	BX 153	100.94	11.38	11.38	99.31	9.78	1.6
3 1/16"	10000,15000,20000	BX 154	116.84	12.40	12.40	115.09	10.64	1.6
4 1/16"	10000,15000,20000	BX 155	147.96	14.22	14.22	145.95	12.22	1.6
7 1/16"	10000,15000,20000	BX 156	237.92	18.62	18.62	235.28	15.98	3.2
9"	10000,15000	BX 157	294.46	20.98	20.98	291.49	18.01	3.2
11"	10000,15000	BX 158	352.04	23.14	23.14	348.77	19.86	3.2
13 5/8"	10000	BX 159	426.72	25.70	25.70	423.09	22.07	3.2
13 5/8"	5000	BX 160	402.59	23.83	13.74	399.21	10.36	3.2
16 5/8"	5000	BX 161	491.41	28.07	16.21	487.45	12.24	3.2
16 5/8"	5000,10000	BX 162	475.49	14.22	14.22	473.48	12.22	1.6
18 3/4"	5000	BX 163	556.16	30.10	17.37	551.89	13.11	3.2
18 3/4"	100000	BX 164	570.56	30.10	24.59	566.29	20.32	3.2
21 1/4"	5000	BX 165	624.71	32.03	18.49	620.19	13.97	3.2
21 1/4"	10000	BX 166	640.03	32.03	26.14	635.51	21.62	3.2
26 3/4"	2000	BX 167	759.36	35.87	13.11	754.28	8.03	1.6
26 3/4"	3000	BX 168	765.25	35.87	16.05	760.17	10.97	1.6
5 1/8"	10000	BX 169	173.51	15.85	12.93	171.27	10.69	1.6
6 5/8"	10000,15000	BX 170	218.03	14.22	14.22	216.03	12.22	1.6
8 9/16"	10000,15000	BX 171	267.44	14.22	14.22	265.43	12.22	1.6
11 5/32"	10000,15000	BX 172	333.07	14.22	14.22	331.06	12.22	1.6
30"	2000,3000	BX 303	852.75	37.95	16.97	847.37	11.61	1.6

Dimensions in mm



Common Materials of RTJ

Material	Brinell Hardness Maximum*	Temperature Limitation*	Identification
Soft Iron	90	-60 to +400°C	D
Low Carbon Steel	120	-40 to +500°C	S
4%-6% Cr ½% Mo	130	-30 to +500°C	F5
Stainless Steel 304	160	-250 to +650°C	S304
Stainless Steel 316	160	-196 to +800°C	S316
Stainless Steel 321	160	-250 to +870°C	S321
Stainless Steel 347	160	-250 to +870°C	S347
Stainless Steel 410	170	-20 to +500°C	S410
Inconel 625	-	+1000°C	625
Incoloy 825	-	+1000°C	825
Hastelloy C276	-	+1000°C	C-276
Duplex	-	+800°C	S31803
Titanium	-	+540°C	Ti

*Please note that the properties shown here are typical for the metals used and suitability for actual application should always be determined by a suitably qualified Engineer . Specifications are subject to change without notice.

Klinger Limited guarantees the quality, materials and workmanship of all its products either manufactured or distributed, but cannot be held responsible for the manner in which they are used, fitted or stored