

Ring Type Joint (RTJ) Gaskets



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MS ISO/IEC 17021:2011
QS26122016 CB 16



Certificate Number : FM 646287
ISO 9001 : 2015

- Our Ring Type Joint Gaskets was initially developed for heavy duty and high pressure/temperature application found in the petroleum industry, the main use in the oil field on drilling and completion equipment.
- However, this product range can also be found on valves and pipework assemblies, along with some high integrity pressure vessel joints nowadays.
- Ring Type Joint Gaskets are manufactured in accordance to ASME B16.20 and API 6A specifications.
- Standard Ring Type Joint Gaskets can be categorized into 3 series:
 - i) Type R - Oval & Octagonal
 - ii) Type RX
 - iii) Type BX

R-Series - Oval



- The original ring joint design.
- Used on standard ring joint flat bottom groove flanges.
- Can used on 'older' round bottom groove flanges.
- Available in Ring No R11 to R105.

R-Series - Octagonal



- Modified oval ring joint to provide better sealing performance.
- Used on standard ring joint flat bottom groove flanges.
- Available in Ring No R11 to R105.

RX Series



- Provides a pressure energised seal.
- Used on standard ring joint flat bottom groove flanges.
- Prevents turbulences and protects the flanges from erosion.
- Available in Ring No RX20 to RX215.

BX Series



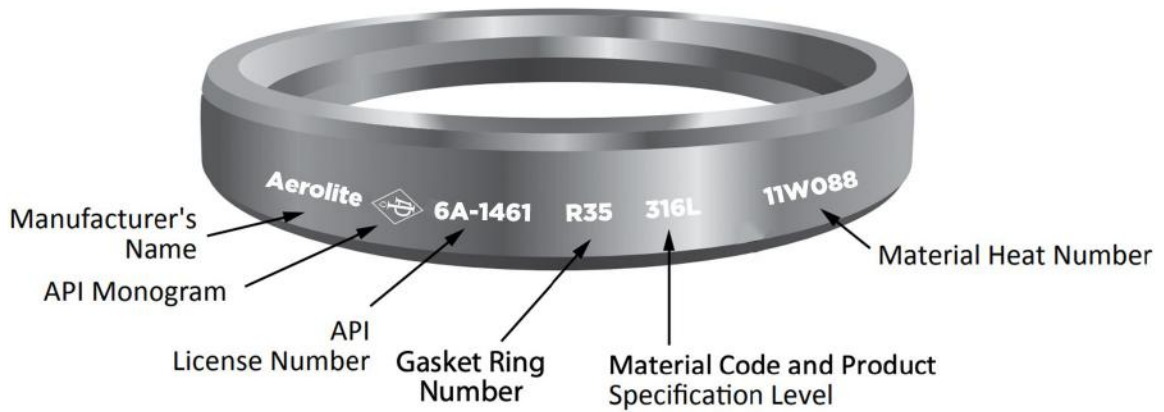
- Used in special applications involving high pressures from 350 bar to 1400 bar.
- Provides a pressure energised seal.
- Not recommended to re-use. Available in Ring No BX150 to BX172.

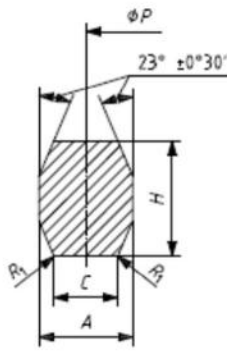
- Ring Type Joint Gaskets are available in a range of materials according to different hardness & temperature limits:

Material Availability and Technical Information for API and Solid Metal Ring Joints				
Material	Brinell Hardness	Rockwell B	Temperature Limits °C	Indentification
Soft Iron	90	56	- 60°C to 500°C	D
Low Carbon Steel	120	68	- 40°C to 500°C	S
4%-6% Chrome ½% Mo	130	72	- 125°C to 500°C	F5
304 Stainless Steel	160	83	- 250°C to 500°C	SS304
316L Stainless Steel	160	83	- 110°C to 550°C	SS316
321 Stainless Steel	160	83	- 250°C to 550°C	SS321
347 Stainless Steel	160	83	- 250°C to 550°C	SS347
410 Stainless Steel	170	87	- 20°C to 500°C	SS410

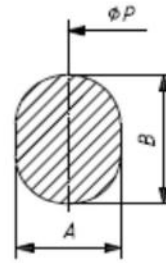
Other materials, Monel, Copper, Brass, Aluminium, Inconel, Incoloy, Titanium etc. are available on request

- **Markings for Standard Ring Type Joint Gaskets**





a) Octagonal



b) Oval



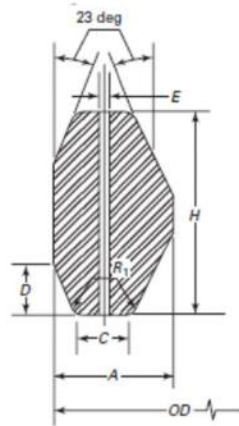
● Type R Oval and Octagonal RTJ Dimensions to ASME B16.20 ,API 6A

Nominal Pipe Size (DN in mm) and Pressure Class						Ring No.	Gasket Dimensions						
							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	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	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	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	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
50	50				32	R21	72.24	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
150	300					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
200	200			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	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
90	90	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	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
100	100			80		R35	136.53	11.13	17.53	16.00	7.75	1.5	
							R36	149.23	7.95	14.22	12.70	5.23	1.5

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							
150	300	600	900	1500	2500							
	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

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		
150	300	600	900	1500	2500	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*	5715	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

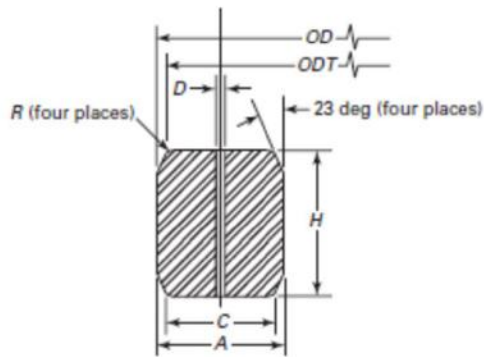
*These rings conform to API standard 6A



● 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
1½"	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	...
3¼"	5000	RX 25	109.55	8.74	4.62	3.18	19.05	1.5	...
2½"	2000	RX 26	111.91	11.91	6.45	4.24	25.40	1.5	...
2½"	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	1.5	...
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	...

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
1½"	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
2½"	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
3½"	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	...
1¼"	5000	RX 201	51.46	5.74	3.20	1.45	11.30	0.5	...
1¾"	5000	RX 205	62.31	5.56	3.05	1.83	11.10	0.5	...
2½"	5000	RX 210	97.64	9.53	5.41	3.18	19.05	0.8	...
4"	5000	RX 215	140.89	11.91	5.33	4.24	25.40	1.5	...



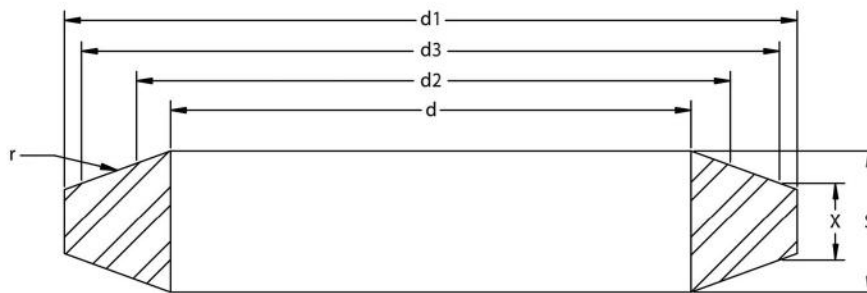
● Type BX RTJ Dimensions to ASME B16.20, API 6A

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 1/16"	10000,15000	BX 150	72.19	9.30	9.30	70.87	7.98	1.6
1 1/8"	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 1/8"	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 3/4"	10000	BX 159	426.72	25.70	25.70	423.09	22.07	3.2
13 3/4"	5000	BX 160	402.59	23.83	13.74	399.21	10.36	3.2
16 3/4"	5000	BX 161	491.41	28.07	16.21	487.45	12.24	3.2
16 3/4"	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 1/2"	10000	BX 169	173.51	15.85	12.93	171.27	10.69	1.5
6 1/2"	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 1/32"	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	12.97	847.37	11.61	1.6

- A lens type gasket is a line contact seal for use in high pressure piping systems and in pressure vessel heads. The lens cross section is a spherical gasket surface and requires special machining on the flanges. These gaskets will seat with a small bolt load since the contact area is very small and gasket seating pressures are very high. Normally the gasket materials should be softer than the flange. In ordering lens gaskets, complete drawings and material specifications must be supplied.



- **Dimensions for Lens Rings per DIN 2696 (Millimeters)**



Nominal Pipe Size (DN)	d		d1	S for d Max	d2 Middle Contact Diameter	r	d3	X
	min.	max.						
Nominal Pressure PN64-400								
10	10	14	21	7	171	25	18	5.7
15	14	18	28	805	22	32	27	6
25	20	29	43	11	34	50	39	6
40	34	43	62	14	48	70	55	8
50	46	55	78	16	60	88	68	9
65	62	70	102	20	76.6	112	85	13
80	72	82	116	22	88.2	129	97	13
100	94	108	143	26	116	170	127	15
125	116	135	180	29	149	218	157	22
150	139	158	210	33	171	250	183	26
Nominal Pressure PN64-100								
*175	176	183	243	31	202.5	296	218	28
200	198	206	276	35	225	329	243	27
250	246	257	332	37	277.7	406	298	25
300	295	305	385	40	323.5	473	345	26
350	330	348	425	41	368	538	394	23
400	385	395	475	42	417.2	610	445	24
Nominal Pressure PN160-400								
*175	162	177	243	37	202.5	296	218	21
200	183	200	276	40	225	329	243	25
250	230	246	332	46	277.7	406	298	25
300	278	285	385	50	323.5	473	345	30

*Avoid using these Nominal Pipe Sizes

All information/applications contained in this publication are to the best of our product knowledge. Since condition of uses is beyond our control, users must satisfy themselves that products are suitable for the intended processes and uses. Failure of select the proper sealing products could result in property damage and/or serious personal injury. We reserve the right to change product information without notice.