



OTHER
SEALING SOLUTIONS



RTJ
RING TYPE JOINTS

“Extremely safe and reliable even with aggressive or explosive media”

Characteristics

- Oval, octagonal, BX Symmetrical, RX Asymmetrical
- Available with hardness lower than standard, for special applications.

The ring type joint was initially developed for high pressure (up to 1500 bars) and temperatures (up to 1000°C) found in **Oil & Gas Industries**.

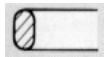
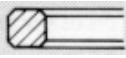
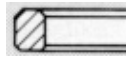

Nowadays it can be found on valves and pipework assemblies.

Gasket Profiles and limiting values

Ring joint gaskets are made from metallic materials. The requirements in terms of dimensional accuracy and surface quality, both the gasket and the sealing section of the flange, are therefore high.

The necessary surface quality depends substantially on the hardness of the gasket material.

The relationship $RZ [\mu m] < 300/HB$ provides a useful indication.

Profile	Cross-section	Ring Type	K_0	K_1	R_z^*
			[N/mm]	[mm]	(μm)
R-OV		R OVAL	2	6	From 1,6 to 6,3
BX-SYM		BX SYMMETRICAL			
R-OCT		R OCTAGONAL			
RX-ASYM		RX ASYMMETRICAL			

* Recommended surface roughness of flange sealing surfaces

Characteristics and Details

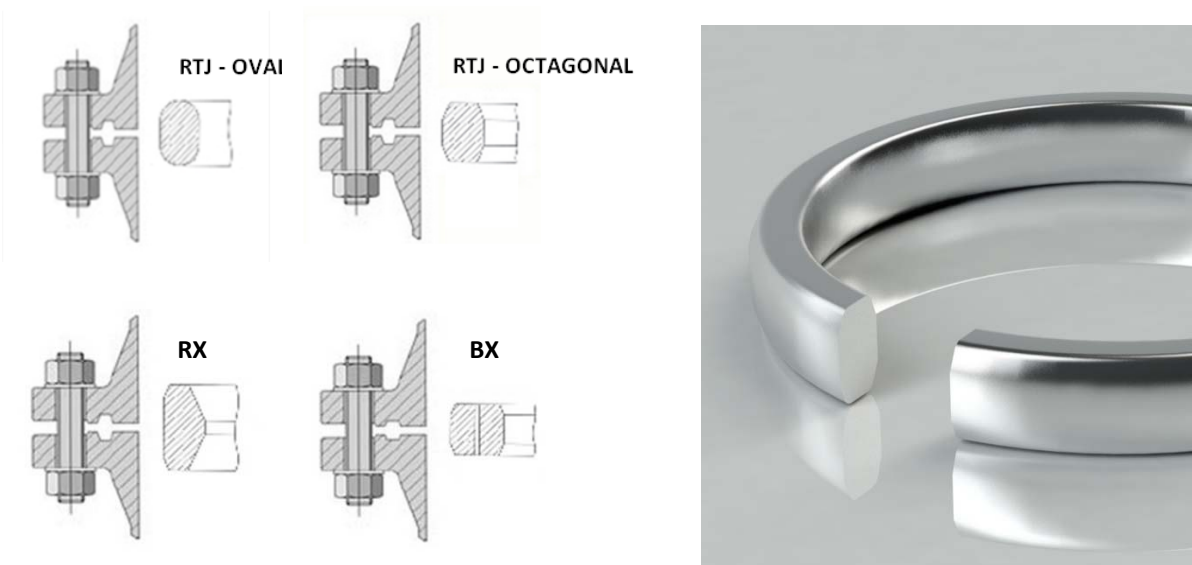
Complete material certification and traceability ensure the highest standards of quality. The Ring Type Joint material is selected in order to suit the application conditions. It is always recommended that the gasket material be softer than the mating flanges.

The more commonly used Ring Type Joint materials are soft iron, low carbon steel and different types of stainless steel. But for more specialized applications, Ring Type Joints can be machined from other exotic materials such as Monel®, Inconel® or Hastelloy®.

Do not hesitate to contact our Engineering Department for advice.



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



Surface Pressure

In order to avoid collapse, the sealing surface pressure must be between σ_{\min} and σ_{\max} :

Profile	Materials	Surface Pressure (N/mm ²)			
		T = 20°C		T = 300°C	
		σ_{\min}	σ_{\max}	σ_{\min}	σ_{\max}
R-OV R-OCT	Mild Carbon Steel 11.003	235	525	235	515
	Stainless Steel 14.541	335	750	335	630
	Stainless Steel 14.828	400	900	400	750
	Alloy-Steel 15.415	300	675	300	585
	Alloy-Steel 17.362	400	900	400	730
	Monel® 24.360	260	660	260	650

Available solid metal gaskets for high pressures, high temperatures and corrosive agents applications that comply with API6A, ASME B16-20, EN 12560, and ISO 10423 standards.


RTJ
 RING TYPE JOINTS

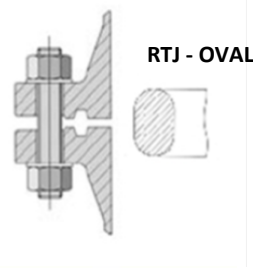
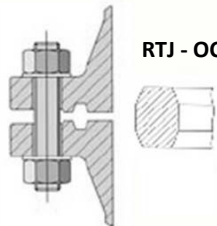
TECHNICAL DATA
ASME B 16.20

 For Flanges ANSI/ASME B 16.5
 and ASME B 16.47 Series A

 d_m: Average Diameter (mm)

b: Width (mm)

h: Height Profile – OVAL

 h₁: Height Profile – OCTAGONAL

RTJ - OVAL

RTJ - OCTAGONAL

NPS	Lbs	Number	d _m	b	h	h ₁
½"	300 to 600	R 11	34,13	6,35	11,11	9,52
½"	900, 1500	R 12	39,68	7,93	14,28	12,7
¾"	2500	R 13	42,86	7,93	14,28	12,7
¾"	300 to 600	R 13	42,86	7,93	14,28	12,7
¾"	900, 1500	R 14	44,45	7,93	14,28	12,7
1"	150	R 15	47,62	7,93	14,28	12,7
¾"	2500	R 16	50,8	7,93	14,28	12,7
1"	300 to 1500	R 16	50,8	7,93	14,28	12,7
1 ¼"	150	R 17	57,15	7,93	14,28	12,7
1"	2500	R 18	60,32	7,93	14,28	12,7
1 ¼"	300 to 1500	R 18	60,32	7,93	14,28	12,7
1 ½"	150	R 19	65,08	7,93	14,28	12,7
1 ½"	300 to 1500	R 20	68,26	7,93	14,28	12,7
1 ¾"	2500	R 21	72,23	11,11	17,46	15,87
2"	150	R 22	82,55	7,93	14,28	12,7
1 ½"	2500	R 23	82,55	11,11	17,46	15,87
2"	300 to 600	R 23	82,55	11,11	17,46	15,87
2"	900, 1500	R 24	95,25	11,11	17,46	15,87
2 ½"	150	R 25	101,6	7,93	14,28	12,7
2"	2500	R 26	101,6	11,11	17,46	15,87
2 ½"	300 to 600	R 26	101,6	11,11	17,46	15,87
2 ½"	900, 1500	R 27	107,95	11,11	17,46	15,87
2 ½"	2500	R 28	111,12	12,7	19,05	17,46
3"	150	R 29	114,3	7,93	14,28	12,7
3"	300 to 600	R 30	117,47	11,11	17,46	15,87
3"	300 to 900	R 31	123,82	11,11	17,46	15,87
3"	2500	R 32	127	12,7	19,05	17,46
3 ½"	150	R 33	131,76	7,93	14,28	12,7
3 ½"	300 to 600	R 34	131,76	11,11	17,46	15,87
3"	1500	R 35	136,52	11,11	17,46	15,87
4"	150	R 36	149,22	7,93	14,28	12,7
4"	300 to 600	R 37	149,22	11,11	17,46	15,87
4"	2500	R 38	157,16	15,87	22,22	20,64
4"	1500	R 39	161,92	11,11	17,46	15,87
5"	150	R 40	171,45	7,93	14,28	12,7
5"	300 to 900	R 41	180,97	11,11	17,46	15,87
6"	150	R 43	193,67	7,93	14,28	12,7
5"	1500	R 44	193,67	11,11	17,46	15,87
6"	300 to 900	R 45	211,12	11,11	17,46	15,87
6"	1500	R 46	211,13	12,7	19,05	17,46
6"	2500	R 47	228,6	19,05	25,4	23,81
8"	150	R 48	247,65	7,93	14,28	12,7
8"	300 to 900	R 49	269,87	11,11	17,46	15,87
8"	1500	R 50	269,87	15,87	22,22	20,64
8"	2500	R 51	279,4	22,22	28,57	26,99
10"	150	R 52	304,8	7,93	14,28	12,7
10"	300 to 900	R 53	323,85	11,11	17,46	15,87
10"	1500	R 54	323,85	15,87	22,22	20,64
10"	2500	R 55	342,9	28,57	36,51	34,92
12"	150	R 56	381	7,93	14,28	12,7
12"	300 to 900	R 57	381	11,11	17,46	15,87
12"	1500	R 58	381	22,22	28,57	26,99
14"	150	R 59	396,87	7,93	14,28	12,7

TECHNICAL DATA

ASME B 16.20

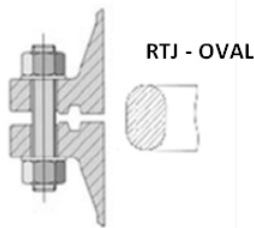
For Flanges ANSI/ASME B 16.5
and ASME B 16.47 Series A

d_m : Average Diameter (mm)

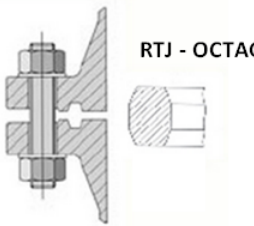
b: Width (mm)

h: Height Profile – OVAL

h1: Height Profile – OCTAGONAL



RTJ - OVAL



RTJ - OCTAGONAL

NPS	Lbs	Number	d_m	b	h	h ₁
12"	2500	R 60	406,4	31,75	39,68	38,1
14"	300 to 600	R 61	419,1	11,11	17,46	15,87
14"	900	R 62	419,1	15,87	22,22	20,64
14"	1500	R 63	419,1	25,4	33,33	31,75
16"	150	R 64	454	7,93	14,28	12,7
16"	300 to 600	R 65	469,9	11,11	17,46	15,87
16"	900	R 66	469,9	15,87	22,22	20,64
16"	1500	R 67	469,9	28,57	36,51	34,92
18"	150	R 68	517,52	7,93	14,28	12,7
18"	300 to 600	R 69	533,4	11,11	17,46	15,87
18"	900	R 70	533,4	19,05	25,4	23,81
18"	1500	R 71	533,4	28,57	36,51	34,92
20"	150	R 72	558,8	7,93	14,28	12,7
20"	300 to 600	R 73	584,2	12,7	19,05	17,46
20"	900	R 74	584,2	19,05	25,4	23,81
20"	1500	R 75	584,2	31,75	39,68	38,1
24"	150	R 76	673,1	7,93	14,28	12,7
24"	300 to 600	R 77	692,15	15,87	22,22	20,64
24"	900	R 78	692,15	25,4	33,33	31,75
24"	1500	R 79	692,15	34,92	44,45	41,27
22"	150	R 80	615,95	7,93		12,7
22"	300 to 600	R 81	635	14,28		19,05
1"	10000	R 82	57,15	11,11		15,87
1 ½"	10000	R 84	63,5	11,11		15,87
2"	10000	R 85	79,37	12,7		17,46
2 ½"	10000	R 86	90,49	15,87		20,63
3"	10000	R 87	100,01	15,87		20,63
4"	10000	R 88	123,83	19,05		23,81
3 ½"	10000	R 89	114,3	19,05		23,81
5"	10000	R 90	155,58	22,22		26,98
10"	10000	R 91	260,35	31,75		38,1
		R 92	228,6	11,11	17,46	15,87
28"	300, 400, 600	R 94	800,1	19,05		23,81
30"	300, 400, 600	R 95	857,25	19,05		23,81
32"	300, 400, 600	R 96	914,4	22,22		26,98
34"	300, 400, 600	R 97	965,2	22,22		26,98
36"	300, 400, 600	R 98	1022,35	22,22		26,98
8"	2000, 3000	R 99	234,95	11,11		15,87
26"	900	R 100	749,3	28,57		34,92
28"	900	R 101	800,1	31,75		38,1
30"	900	R 102	857,25	31,75		38,1
32"	900	R 103	914,4	31,75		38,1
34"	900	R 104	965,2	34,92		41,27
36"	900	R 105	1022,35	34,92		41,27

Flanges compliant with the standard not available

* These rings conform to API standard 6A. The measurements given in mm are converted measurements and will differ marginally from the metric API table.

1) Specify material when placing order

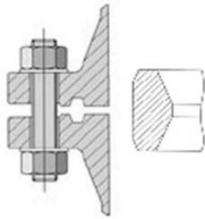
2) Ring for flanges in accordance with ASME B16.47 Series A

TECHNICAL DATA

ASME B 16.20

For Flanges ANSI/ASME B 16.20

Profile RX



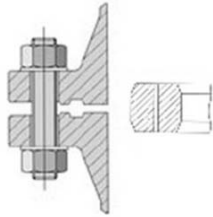
NPS	Lbs	Number	d _m	b	c	h1	h
1 1/2"	2000, 3000, 5000	RX 20	76,2	8,73	4,62	19,05	3,18
2"	2000	RX 23	93,27	11,91	6,45	25,4	4,24
2"	3000, 5000	RX 24	105,97	11,91	6,45	25,4	4,24
3 1/8"	5000	RX 25	109,54	8,73	4,62	19,05	3,18
2 1/2"	2000	RX 26	111,92	11,91	6,45	25,4	3,78
2 1/2"	3000, 5000	RX 27	118,27	11,91	6,45	25,4	4,24
3"	2000, 3000	RX 31	134,54	11,91	6,45	25,4	4,24
3"	5000	RX 35	147,24	11,91	6,45	25,4	4,24
4"	2000, 3000	RX 37	159,94	11,91	6,45	25,4	4,24
4"	5000	RX 39	172,64	11,91	6,45	25,4	4,24
5"	2000, 3000	RX 41	191,69	11,91	6,45	25,4	4,24
5"	5000	RX 44	204,39	11,91	6,45	25,4	4,24
6"	2000, 3000	RX 45	211,85	11,91	6,45	25,4	4,24
6"	5000	RX 46	222,25	13,49	6,68	28,58	4,78
8"		RX 47	245,3	19,84	10,34	41,28	6,88
8"	2000, 3000	RX 49	280,59	11,91	6,45	25,4	4,24
8"	5000	RX 50	283,37	16,67	8,51	31,75	5,28
10"	2000, 3000	RX 53	334,57	11,91	6,45	25,4	4,24
10"	5000	RX 54	337,34	16,67	8,51	31,75	5,28
12"	2000, 3000	RX 57	391,72	11,91	6,45	25,4	4,24
14"	5000	RX 63	441,72	26,99	14,78	50,8	8,46
16"	2000	RX 65	480,62	11,91	6,45	25,4	4,24
16"	3000	RX 66	483,39	16,67	8,51	31,75	5,28
18"	2000	RX 69	544,1	11,91	6,45	25,4	4,24
18"	3000	RX 70	550,1	19,84	10,34	41,28	6,88
20"	2000	RX 73	596,1	13,49	6,68	31,75	5,28
20"	3000	RX 74	600,87	19,84	10,34	41,28	6,88
		RX 82	67,87	11,91	6,45	25,4	4,24
		RX 84	74,22	11,91	6,45	25,4	4,24
		RX 85	90,09	13,49	6,68	25,4	4,24
		RX 86	103,58	15,08	8,51	28,58	4,78
		RX 87	113,1	15,08	8,51	28,58	4,78
		RX 88	139,3	17,46	10,34	31,75	5,28
		RX 89	129,78	18,26	10,34	31,75	5,28
		RX 90	174,62	19,84	12,17	44,45	7,42
		RX 91	286,94	30,16	19,81	45,24	7,54
		RX 99	245,67	11,91	6,45	25,4	4,24
1 1/4"	5000	RX 201	51,46	5,74	3,2	11,3	1,45
1 3/4"	5000	RX 205	62,31	5,56	3,05	11,1	1,83
2 1/2"	5000	RX 210	97,63	9,53	5,41	19,05	3,18
4"	5000	RX 215	140,89	11,91	5,33	25,4	4,24
4 x 4 1/4"	5000	RX 215	140,89	11,91	5,33	25,4	4,24

TECHNICAL DATA

ASME B 16.20

For Flanges ANSI/ASME B 16.20

Profile BX



NPS	Lbs	Number	d1	b	h	e
1 11/16"	10000, 15000	BX 150	72,19	9,3	9,3	1,6
1 13/16"	10000, 15000, 20000	BX 151	76,4	9,63	9,63	1,6
2 1/16"	10000, 15000, 20000	BX 152	84,68	10,24	10,25	1,6
2 9/16"	10000, 15000, 20000	BX 153	100,94	11,38	11,38	1,6
3 1/16"	10000, 15000, 20000	BX 154	116,84	12,4	12,4	1,6
4 1/16"	10000, 15000, 20000	BX 155	147,96	14,22	14,22	1,6
7 1/16"	10000, 15000, 20000	BX 156	237,92	18,62	18,62	1,6
9"	10000, 15000	BX 157	294,46	20,98	20,98	1,6
11"	10000, 15000	BX 158	352,04	23,14	23,14	1,6
13 5/8"	10000	BX 159	426,72	25,7	25,7	3,2
13 5/8"	5000	BX 160	402,59	13,7	23,83	3,2
16 3/4"		BX 161	491,41	16,2	28,07	3,2
16 3/4"	5000, 10000	BX 162	475,49	14,2	14,22	1,6
18 3/4"	5000	BX 163	556,16	17,37	30,1	3,2
18 3/4"	10000	BX 164	570,56	24,59	30,1	3,2
21 1/4"	5000	BX 165	624,71	18,49	32,03	3,2
21 1/4"	10000	BX 166	640,03	26,14	32,03	3,2
16 3/4"	2000	BX 167	759,36	13,11	35,86	1,6
16 3/4"	3000	BX 168	765,25	16,05	35,86	1,6
5 1/8"	10000	BX 169	173,52	12,93	15,84	1,6
9"		BX 170	218,03	14,22	14,22	1,6
11"		BX 171	267,44	14,22	14,22	1,6
13 5/8"		BX 172	333,07	14,22	14,22	1,6
30"	2000, 3000	BX 173	852,75	16,97	37,95	1,6