

RING JOINT GASKET Style No:TMR

Ring joint gaskets are heavy duty, high-pressure gaskets largely used in offshore 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.

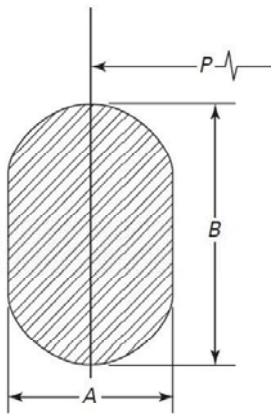
Type	Nominal Pipe Size	Class Ratings
Type R Oval and Octagonal	1/2" to 24" 26" to 36" 1 1/2" to 20"	150 to 2500 ASME B16.20 300 to 900 ASME B16.20 Series A API 6A
Type RX	1 1/2" to 24" 26" to 36" 1 1/2" to 20"	720 to 5000 ASME B16.20 300 to 900 ASME B16.20 Series A API 6A
Type BX	1 11/16" to 21 1/4"	5000 to 20000 ASME B16.20


Common Materials

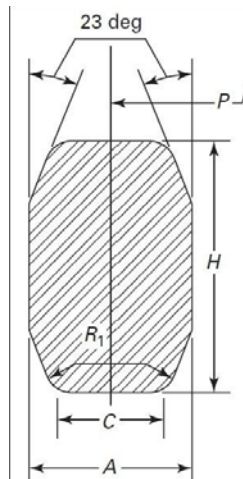
Material	Brinell Hardness	Temperature Limitation	Identification
Soft Iron	90	-60 to 500 °C	D
Low Carbon Steel	120	-40 to 500 °C	S
4-6% Cr 1/2 %Mo	130	-250 to 500 °C	F5
304	160	-250 to 550 °C	S304
316	160	-110 to 550 °C	S316
321	160	-250 to 550 °C	S321
347	160	-250 to 550 °C	S347
410	170	-20 to 500 °C	S410
Monel (N04400)	135	450 °C	N04400
UNS N08904	180	400 °C	904L
Inconel 625	-	450 °C	625
Incoloy 825	-	450 °C	825
Hastelloy C-276	-	450 °C	C-276
Titanium	-	450 °C	TI

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.

Size Designations for Oval or Octagonal Rings



OVAL



OCTAGONAL



Dimensions for Type R Octagonal and Oval Ring Gaskets to Suit ASME B16.20 and API 6A

Nominal Pipe Size (NPS)	Flange Pressure Class							
	150	300-600	900	1500	2500	API 6A (psi)		
						2000	3000	5000
1/2	--	R-11	R-12	R-12	R-13	--	--	--
3/4	--	R-13	R-14	R-14	R-16	--	--	--
1	R-15	R-16	R-16	R-16	R-18	--	--	--
1 1/4	R-17	R-18	R-18	R-18	R-21	--	--	--
1 1/2	R-19	R-20	R-20	R-20	R-23	--	--	--
2	R-22	R-23	R-24	R-24	R-26	--	--	--
2 1/16	--	--	--	--	--	R-23	R-24	--
2 1/2	R-25	R-26	R-27	R-27	R-28	--	--	--
2 9/16	--	--	--	--	--	R-26	R-27	--
3	R-29	R-31	R-31	R-35	R-32	--	--	--
3 1/8	--	--	--	--	--	R-31	--	R-35
3 1/2	R-33	R-34	R-34	--	--	--	--	--
4	R-36	R-37	R-37	R-39	R-38	--	--	--
4 1/16	--	--	--	--	--	R-37	--	R-39
5	R-40	R-41	R-41	R-44	R-42	--	--	--
5 1/8	--	--	--	--	--	R-41	--	R-44
6	R-43	R-45	R-45	R-46	R-47	--	--	--
7 1/16	--	--	--	--	--	R-45	--	R-46
8	R-48	R-49	R-49	R-50	R-51	--	--	--
9	--	--	--	--	--	R-49	--	R-50
10	R-52	R-53	R-53	R-54	R-55	--	--	--
11	--	--	--	--	--	R-53	--	R-54
12	R-56	R-57	R-57	R-58	R-60	--	--	--
13 5/8	--	--	--	--	--	R-57	--	--

Nominal Pipe Size (NPS)	Flange Pressure Class							
	150	300-600	900	1500	2500	API 6A (psi)		
14	R-59	R-61	R-62	R-63	--	--	--	--
16	R-64	R-65	R-66	R-67	--	--	--	--
16 3/4	--	--	--	--	--	R-65		
18	R-68	R-69	R-70	R-71	--	--	--	--
20	R-72	R-73	R-74	R-75	--	--	--	--
20 3/4	--	--	--	--	--		R74	
21 1/4	--	--	--	--	--	R-73	--	--
22	R-80	R-81	--	--	--	--	--	--
24	R-76	R-77	R-78	R-79	--	--	--	--
26	--	R-93	R-100	--	--	--	--	--
28	--	R-94	R-101	--	--	--	--	--
30	--	R-95	R-102	--	--	--	--	--
32	--	R-96	R-103	--	--	--	--	--
34	--	R-97	R-104	--	--	--	--	--
36	--	R-98	R-105	--	--	--	--	--



Dimensions for Type R Octagonal and Oval Ring Gaskets to Suit ASME B16.20 and API 6A

Ring Number	Pitch Diameter of Ring (P)	Width of Ring (A)	Oval (B)	Octagonal (H)	Width of Flat on Octagonal Ring (C)	Radius in Octagonal Ring (R1)
	mm	mm	mm	mm	mm	mm
R-11	34.14	6.35	11.2	9.7	4.32	1.5
R-12	39.7	7.95	14.2	12.7	5.23	1.5
R-13	42.88	7.95	14.2	12.7	5.23	1.5
R-14	44.45	7.95	14.2	12.7	5.23	1.5
R-15	47.63	7.95	14.2	12.7	5.23	1.5
R-16	50.8	7.95	14.2	12.7	5.23	1.5
R-17	57.15	7.95	14.2	12.7	5.23	1.5
R-18	60.33	7.95	14.2	12.7	5.23	1.5
R-19	65.1	7.95	14.2	12.7	5.23	1.5
R-20	68.28	7.95	14.2	12.7	5.23	1.5
R-21	72.24	11.13	17.5	16	7.75	1.5
R-22	82.55	7.95	14.2	12.7	5.23	1.5
R-23	82.55	11.13	17.5	16	7.75	1.5
R-24	95.25	11.13	17.5	16	7.75	1.5
R-25	101.6	7.95	14.2	12.7	5.23	1.5
R-26	101.6	11.13	17.5	16	7.75	1.5
R-27	107.95	11.13	17.5	16	7.75	1.5
R-28	111.13	12.7	19.1	17.5	8.66	1.5
R-29	114.3	7.95	14.2	12.7	5.23	1.5
R-30	117.48	11.13	17.5	16	7.75	1.5
R-31	123.83	11.13	17.5	16	7.75	1.5
R-32	127	12.7	19.1	17.5	8.66	1.5
R-33	131.78	7.95	14.2	12.7	5.23	1.5
R-34	131.78	11.13	17.5	16	7.75	1.5
R-35	136.53	11.13	17.5	16	7.75	1.5
R-36	149.23	7.95	14.2	12.7	5.23	1.5
R-37	149.23	11.13	17.5	16	7.75	1.5
R-38	157.18	15.88	22.4	20.6	10.49	1.5
R-39	161.93	11.13	17.5	16	7.75	1.5
R-40	171.45	7.95	14.2	12.7	5.23	1.5
R-41	180.98	11.13	17.5	16	7.75	1.5
R-42	190.5	19.05	25.4	23.9	12.32	1.5
R-43	193.68	7.95	14.2	12.7	5.23	1.5
R-44	193.68	11.13	17.5	16	7.75	1.5
R-45	211.15	11.13	17.5	16	7.75	1.5
R-46	211.15	12.7	19.1	17.5	8.66	1.5
R-47	228.6	19.05	25.4	23.9	12.32	1.5
R-48	247.65	7.95	14.2	12.7	5.23	1.5
R-49	269.88	11.13	17.5	16	7.75	1.5

Ring Number	Pitch Diameter of Ring (P)	Width of Ring (A)	Oval (B)	Octagonal (H)	Width of Flat on Octagonal Ring (C)	Radius in Octagonal Ring (R1)
	mm	mm	mm	mm	mm	mm
R-50	269.88	15.88	22.4	20.6	10.49	1.5
R-51	279.4	22.23	28.7	26.9	14.81	1.5
R-52	304.8	7.95	14.2	12.7	5.23	1.5
R-53	323.85	11.13	17.5	16	7.75	1.5
R-54	323.85	15.88	22.4	20.6	10.49	1.5
R-55	342.9	28.58	36.6	35.1	19.05	2.3
R-56	381	7.95	14.2	12.7	5.23	1.5
R-57	381	11.13	17.5	16	7.75	1.5
R-58	381	22.23	28.7	26.9	14.81	1.5
R-59	396.88	7.95	14.2	12.7	5.23	1.5
R-60	406.4	31.75	39.6	38.1	22.33	2.3
R-61	419.1	11.13	17.5	16	7.75	1.5
R-62	419.1	15.88	22.4	20.6	10.49	1.5
R-63	419.1	25.4	33.3	31.8	17.3	2.3
R-64	454.03	7.95	14.2	12.7	5.23	1.5
R-65	469.9	11.13	17.5	16	7.75	1.5
R-66	469.9	15.88	22.4	20.6	10.49	1.5
R-67	469.9	28.58	36.6	35.1	19.81	2.3
R-68	517.53	7.95	14.2	12.7	5.23	1.5
R-69	533.4	11.13	17.5	16	7.75	1.5
R-70	533.4	19.05	25.4	23.9	12.32	1.5
R-71	533.4	28.58	36.6	35.1	19.81	2.3
R-72	558.8	7.95	14.2	12.7	5.23	1.5
R-73	584.2	12.7	19.1	17.5	8.66	1.5
R-74	584.2	19.05	25.4	23.9	12.32	1.5
R-75	584.2	31.75	39.6	38.1	22.33	2.3
R-76	673.1	7.95	14.2	12.7	5.23	1.5
R-77	692.15	15.88	22.4	20.6	10.49	1.5
R-78	692.15	25.4	33.3	31.8	17.3	2.3
R-79	692.15	34.93	44.5	41.4	24.82	2.3
R-80	615.95	7.95	--	12.7	5.23	1.5
R-81	635.00	14.30	--	19.1	9.58	1.5
R-82	57.15	11.13	--	16.0	7.75	1.5
R-84	63.50	11.13	--	16.0	7.75	1.5
R-85	79.38	12.70	--	17.5	8.66	1.5
R-86	90.50	15.88	--	20.6	10.49	1.5
R-87	100.03	15.88	--	20.6	10.49	1.5
R-88	123.83	19.05	--	23.9	12.32	1.5
R-89	114.30	19.05	--	23.9	12.32	1.5

Ring Number	Pitch Diameter of Ring (P)	Width of Ring (A)	Oval (B)	Octagonal (H)	Width of Flat on Octagonal Ring (C)	Radius in Octagonal Ring (R1)
	mm	mm	mm	mm	mm	mm
R-90	155.58	22.23	--	26.9	14.81	1.5
R-91	260.35	31.75	--	38.1	22.33	2.3
R-92	228.60	11.13	--	16.0	7.75	1.5
R-93	749.30	19.05	--	23.9	12.32	1.5
R-94	800.10	19.05	--	23.9	12.32	1.5
R-95	857.25	19.05	--	23.9	12.32	1.5
R-96	914.40	22.23	--	26.9	14.81	1.5
R-97	965.20	22.23	--	26.9	14.81	1.5
R-98	1022.35	22.23	--	26.9	14.81	1.5
R-99	234.95	11.13	--	16.0	7.75	1.5
R-100	749.30	28.58	--	35.1	19.81	2.3
R-101	800.10	31.75	--	38.1	22.33	2.3
R-102	857.25	31.75	--	38.1	22.33	2.3
R-103	914.40	31.75	--	38.1	22.33	2.3
R-104	965.20	34.93	--	41.4	24.82	2.3
R-105	1022.35	34.93	--	41.4	24.82	2.3

Tolerances:

P = average pitch diameter of ring, $\pm 0.007''$ (± 0.18 mm)

A = width of ring, $\pm 0.008''$ (± 0.20 mm)

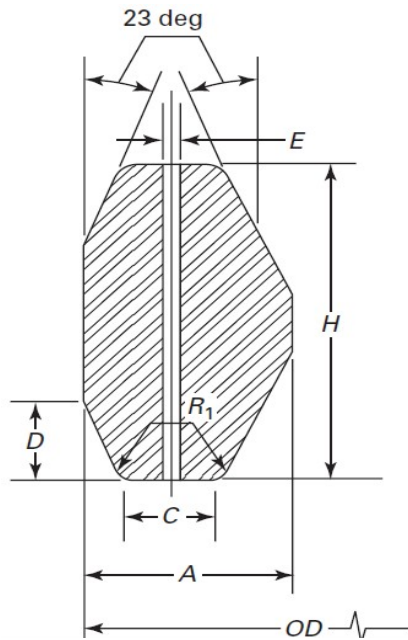
B, H = height of ring, (+ 0.05", -0.02") (+1.3 mm, -0.5 mm) Variation in height throughout the entire circumference of any given ring shall not exceed 0.02" within these tolerances

C = width of flat on octagonal ring $\pm 0.008''$ (± 0.20 mm)

B1 = radius in ring, $\pm 0.02''$ (± 0.5 mm)

23 deg = angle, $\pm 1/2$ deg (± 0 deg 30min)

RX Ring Designations for API 6B Flanges



RX Ring Designations for API 6B Flanges

API Ring Number	Sizes of Flange (Inches)			API Ring Number	Sizes of Flange (Inches)		
	2000 psi	2900 psi	3000 psi		2000 psi	2900 psi	3000 psi
RX 20	1 1/2	--	1 1/2	RX 65	16 3/4	--	--
RX 23	2 1/16	--	--	RX 66	--	--	16 3/4
RX 24	--	--	2 1/16	RX 69	18	--	--
RX 26	2 9/16	--	--	RX 70	--	--	18
RX 27	--	--	2 9/16	RX 73	21 1/4	--	--
RX 31	3 1/8	--	3 1/8	RX 74	--	--	20 3/4
RX 35	--	--	--	RX 82	--	1	--
RX 37	4 1/16	--	4 1/16	RX 84	--	1 1/2	--
RX 39	--	--	--	RX 85	--	2	--
RX 41	5 1/8	--	5 1/8	RX 86	--	2 1/2	--
RX 44	--	--	--	RX 87	--	3	--
RX 45	7 1/16	--	7 1/16	RX 88	--	4	--
RX 46	--	--	--	RX 89	--	3 1/2	--
RX 47	--	--	--	RX 90	--	5	--
RX 49	9	--	9	RX 91	--	10	--
RX 50	--	--	--	RX 99	8*	--	8*
RX 53	11	--	11	RX 201	--	--	--
RX 54	--	--	--	RX 205	--	--	--
RX 57	13 5/8	--	13 5/8	RX 210	--	--	--
RX 63	--	--	--	RX 215	--	--	--

Dimensions For Type RX Ring Gaskets Per ASME B16.20 and API 6A

RingNumber	Pitch Diameter of Ring (P)	Width of Ring (A)	Width of Flat (C)	Height of Outside Bevel (D)	Height of Ring (H)	Radius of Ring (R1)	Hole Size (E)(1)
	mm	mm	mm	mm	mm	mm	mm
RX-20	76.2	8.74	4.62	3.18	19.05	1.5	--
RX-23	93.27	11.91	6.45	4.24	25.40	1.5	--
RX-24	105.97	11.91	6.45	4.24	25.40	1.5	--
RX-25	109.55	8.74	4.62	3.18	19.05	1.5	--
RX-26	111.91	11.91	6.45	4.24	25.40	1.5	--
RX-27	118.26	11.91	6.45	4.24	25.40	1.5	--
RX-31	134.54	11.91	6.45	4.24	25.40	1.5	--
RX-35	147.24	11.91	6.45	4.24	25.40	1.5	--
RX-37	159.94	11.91	6.45	4.24	25.40	1.5	--
RX-39	172.64	11.91	6.45	4.24	25.40	1.5	--
RX-41	191.69	11.91	6.45	4.24	25.40	1.5	--
RX-44	204.39	11.91	6.45	4.24	25.40	1.5	--
RX-45	221.84	11.91	6.45	4.24	25.40	1.5	--
RX-46	222.25	13.49	6.68	4.78	28.58	1.5	--
RX-47	245.26	19.84	10.34	6.88	41.28	2.3	--
RX-49	280.59	11.91	6.45	4.24	25.40	1.5	--
RX-50	283.36	16.66	8.51	5.28	31.75	1.5	--
RX-53	334.57	11.91	6.45	4.24	25.40	1.5	--
RX-54	337.34	16.66	8.51	5.28	31.75	1.5	--
RX-57	391.72	11.91	6.45	4.24	25.40	1.5	--
RX-63	441.73	27.00	14.78	8.46	50.80	2.3	--
RX-65	480.62	11.91	6.45	4.24	25.40	1.5	--
RX-66	457.99	16.66	8.51	5.28	31.75	1.5	--
RX-69	544.12	11.91	6.45	4.24	25.40	1.5	--
RX-70	550.06	19.84	10.34	6.88	41.28	2.3	--
RX-73	596.11	13.49	6.68	5.28	31.75	1.5	--
RX-74	600.86	19.84	10.34	6.88	41.28	2.3	--
RX-82	67.87	11.91	6.45	4.24	25.40	1.5	1.5
RX-84	74.22	11.91	6.45	4.24	25.40	1.5	1.5
RX-85	90.09	13.49	6.68	4.24	25.40	1.5	1.5
RX-86	103.58	15.09	8.51	4.78	28.58	1.5	2.3
RX-87	113.11	15.09	8.51	4.78	28.58	1.5	2.3
RX-88	139.29	17.48	10.34	5.28	31.75	1.5	3.0
RX-89	129.77	18.26	10.34	5.28	31.75	1.5	3.0
RX-90	174.63	19.84	12.17	7.42	44.45	2.3	3.0
RX-91	286.94	30.18	19.81	7.54	45.24	2.3	3.0
RX-99	245.67	11.91	6.45	4.24	25.40	1.5	--
RX-201	51.46	5.74	3.20	1.45	11.30	0.5 (3)	--
RX-205	62.31	5.56	3.05	1.83 (2)	11.10	0.5 (3)	--
RX-210	97.64	9.53	5.87	3.18 (2)	19.05	0.8 (3)	--
RX-215	140.89	11.91	5.33	4.24 (2)	25.40	1.5 (3)	--

Note:

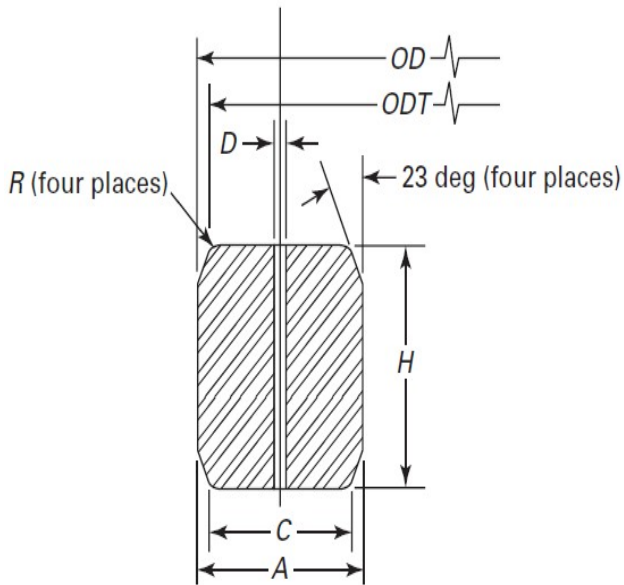
- (1) Rings RX-82 through RX-91 only require one pressure passage hole as illustrated. The Center line of the hole shall be located at the midpoint of dimension C.
- (2) Tolerance on these dimensions is (+0, -0.015") (+0 mm,-0.38 mm).
- (3) Tolerance on these dimensions is (+0.02", -0) (+0.5 mm, -0 mm)

Tolerances:

- OD = outside diameter of ring, +0.020", -0 (+0.51 mm, -0 mm)
- A = width of ring, +0.008", -0 (+0.20 mm, -0 mm) variation in width throughout the entire circumference of any ring shall not exceed 0.004" (0.10 mm) within these tolerances.
- C = width of flat, +0.006", -0 (+0.15 mm, -0 mm)
- D = height of outside bevel, +0, -0.03" (+0 mm, -0.76 mm)
- H = height of ring, +0.008", -0 (+0.20 mm, -0 mm) variation in height throughout the entire circumference of any ring shall not exceed 0.004" (0.10 mm) within these tolerances.
- R1 = radius of ring, ±0.02" (±0.5 mm)
- E = hole size, ±0.02" (±0.5 mm)
- 23 deg = angle, ±1/2 deg (±0 deg 30 min)



BX Ring Designations for API 6BX Flanges



BX Ring Designations for API 6BX Flanges

API Ring Number	Nominal Flange Bore (Inches)						Weight Kg
	2000 psi	3000 psi	5000 psi	10000 psi	15000 psi	20000 psi	
BX 150	--	--	--	1 11/16	1 11/16		0.134
BX 151	--	--	--	1 13/16	1 13/16	1 13/16	0.153
BX 152	--	--	--	2 1/16	2 1/16	2 1/16	0.193
BX 153	--	--	--	2 9/16	2 9/16	2 9/16	0.287
BX 154	--	--	--	3 1/16	3 1/16	3 1/16	0.398
BX 155	--	--	--	4 1/16	4 1/16	4 1/16	0.555
BX 156	--	--	--	7 1/16	7 1/16	7 1/16	1.882
BX 157	--	--	--	9	9	9	2.977
BX 158	--	--	--	11	11	11	4.364
BX 159	--	--	--	13 5/8	13 5/8	13 5/8	6.550
BX 160	--	--	13 5/8	--	--	--	3.068
BX 161	--	--	--	--	--	--	4.744
BX 162	--	--	16 3/4	16 3/4	--	--	1.989
BX 163	--	--	18 3/4	--	--	--	6.534
BX 164	--	--	--	18 3/4	18 3/4	--	9.545
BX 165	--	--	21 1/4	--	--	--	8.352
BX 166	--	--	--	21 1/4	--	--	12.500
BX 167	26 3/4	--	--	--	--	--	8.182
BX 168	--	26 3/4	--	--	--	--	11.136
BX 169	--	--	--	5 1/8	5 1/8	--	--
BX 170				6 5/8	6 5/8		
BX 171				8 9/16	8 9/16		
BX 172				11 5/32	11 5/32		
BX 303	30	30	--	--	--	--	--

Ring Number	Nominal Size	Outside Diameter of Ring (OD)	Height of Ring, H	Width of Ring, A	Outside Diameter of Flat ODT	Width of Flat, C	Hole Size, D (1)
	mm	mm	mm	mm	mm	mm	mm
BX-150	43	72.19	9.30	9.30	70.87	7.98	1.5
BX-151	46	76.40	9.63	9.63	75.03	8.26	1.5
BX-152	52	84.68	10.24	10.24	83.24	8.79	1.5
BX-153	65	100.94	11.38	11.38	99.31	9.78	1.5
BX-154	78	116.84	12.4	12.4	115.09	10.64	1.5
BX-155	103	147.96	14.22	14.22	145.95	12.22	1.5
BX-156	179	237.92	18.62	18.62	235.28	15.98	3
BX-157	229	294.46	20.98	20.98	291.49	18.01	3
BX-158	279	352.04	23.14	23.14	348.77	19.86	3
BX-159	346	426.72	25.7	25.7	423.09	22.07	3
BX-160	346	402.59	23.83	13.74	399.21	10.36	3
BX-161	422	491.41	28.07	16.21	487.45	12.24	3
BX-162	422	475.49	14.22	14.22	473.48	12.22	1.5
BX-163	476	556.16	30.1	17.37	551.89	13.11	3
BX-164	476	570.56	30.1	24.59	566.29	20.32	3
BX-165	540	624.71	32.03	18.49	620.19	13.97	3
BX-166	540	640.03	32.03	26.14	635.51	21.62	3
BX-167	679	759.36	35.86	13.11	754.28	8.03	1.5
BX-168	679	765.25	35.86	16.05	760.17	10.97	1.5
BX-169	130	173.51	15.85	12.93	171.27	10.69	1.5
BX-170	168	218.03	14.22	14.22	216.03	12.22	1.5
BX-171	217	267.44	14.22	14.22	265.43	12.22	1.5
BX-172	283	333.07	14.22	14.22	331.06	12.22	1.5
BX-303	762	852.75	37.95	16.97	847.37	11.61	1.5

Note:

(1) Rings RX-82 through RX-91 only require one pressure passage hole as illustrated.

The Center line of the hole shall be located at the midpoint of dimension C.

(2) Tolerance on these dimensions is (+0, -0.015") (+0 mm,-0.38 mm)

(3) Tolerance on these dimensions is (+0.02", -0) (+0.5 mm, -0 mm)

Tolerances:

OD = outside diameter of ring, (+0.020", -0) (+0.51 mm, -0 mm)

A = width of ring, (+0.008", -0) (+0.20 mm, -0 mm) variation in width throughout

the entire circumference of any ring shall not exceed 0.004" (0.10 mm) within these tolerances.

C = width of flat, (+0.006", -0) (+0.15 mm, -0 mm)

D = height of outside bevel, (+0, -0.03") (+0 mm, -0.76 mm)

H = height of ring, (+0.008", -0) (+0.20 mm, -0 mm) variation in height throughout

the entire circumference of any ring shall not exceed 0.004" (0.10 mm) within these tolerances.

R1 = radius of ring, ±0.02" (±0.5 mm)

E = hole size, ±0.02" (±0.5 mm)

23 deg = angle, ±1/2 deg (±0 deg 30 min)