



APOLLON

CATALOGUE METAL GASKETS

Gaskets and seals are our passion



Apollon DN50/600lbs 1.4541 P

281876



High-precision metal and soft metal gaskets

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Your reliable partner for sealing technology

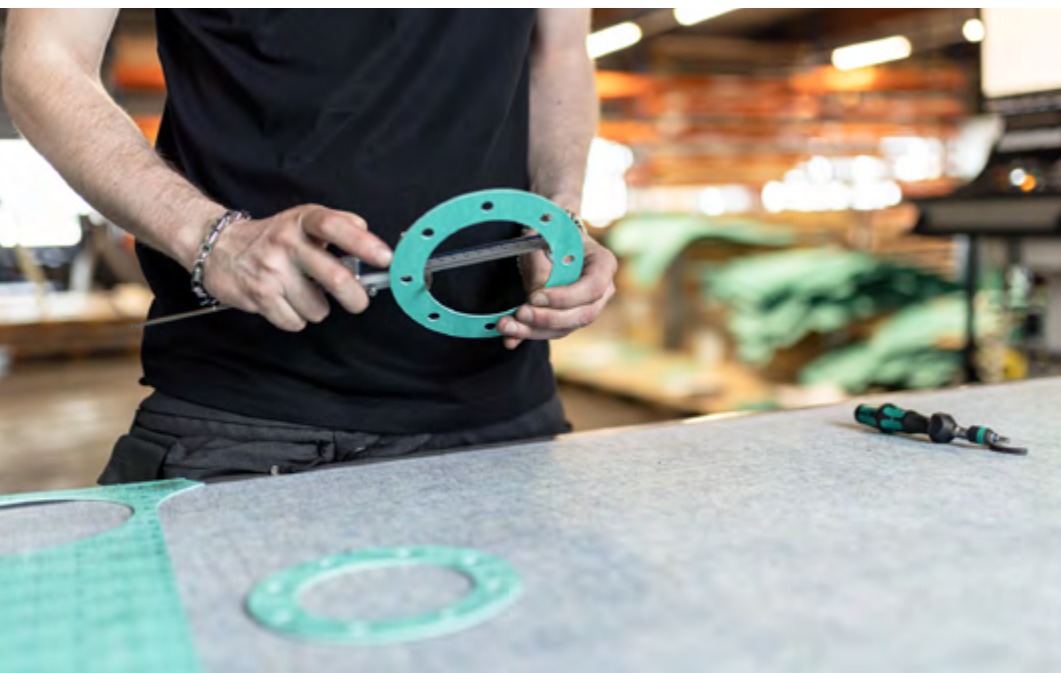
CUSTOMISED SEALING SYSTEMS AND SOLUTIONS

METAL GASKETS • SOFT MATERIAL GASKETS •
HYDRAULIC SEALS • PACKINGS AND PACKING RINGS



Sustainable management means minimising environmental impact as far as possible. Accordingly, industrial processes today are planned in such a way that resources and the environment are conserved. This also corresponds to the principle of optimised calculation, manufacturing and processing procedures. In terms of tightness, leaks mean material and energy losses. To avoid this, seals are indispensable.

Gaskets and seals are our passion. When producing our gaskets and seals, we focus on flawless function and a long service life. Our modern production facility in Hamburg for standard gaskets and customised products based on customer requirements or samples, as well as our extremely wide-ranging warehouse, make us a reliable partner for a wide range of industries.



We manufacture high-quality sealing systems on CNC machines, laser cutting systems and flatbed plotters. We produce ring joint gaskets, spiral wound gaskets, grooved gaskets, metallic flat gaskets and non-metallic flat gaskets based on graphite, fibre or PTFE.

We are also a reliable supplier partner for lens gaskets, corrugated gaskets, rubber-steel gaskets, rod seals, piston seals, wipers, rotor seals, bearing and seal rings, O-rings, graphite rings, packings and packing rings.

We keep all this and more in stock for your short-term requirements, if necessary as merchandise from well-known manufacturers. We respond quickly to your enquiries so that you receive the prices you need immediately. You set the standard: order production and delivery from us and, if necessary and possible, your seals will be at your premises the very next morning with UPS Express Plus. If you need it faster? Then we'll send a courier.



METAL GASKETS



Metal gaskets are indispensable for ensuring high-quality and reliable flange connections. Our range of metallic gaskets includes ring joint gaskets, spiral wound gaskets, grooved gaskets and other metallic gaskets such as lens gaskets, corrugated gaskets, metallic flat gaskets and rubber-steel gaskets.

Metal gaskets

RING JOINT GASKETS

Ring joint gaskets are among the safest and highest quality metal gaskets. They are used wherever pipelines and fittings are not only exposed to extremely high pressures, but also have to withstand extreme temperatures. They are used in particular in the petrochemical industry, in power stations, in the oil and gas industry and in the offshore sector.



Our range includes not only oval and octagonal ring joint gaskets, but also a large selection of special shapes. We supply according to our standard materials or according to your specifications.

Please provide us with the following parameters with your order or enquiry: Profile type, ring number and material.

SPECIFICATIONS

We supply the following standards:

- API 6A (oilfield use).
- ASME B 16.20 (general) suitable for ASME, BS and DIN/EN flanges.

PROFILES

Type R



oval octagonal

Perfect fit for standard ring joint flanges with trapezoidal grooves.

Type BX and RX



BX RX

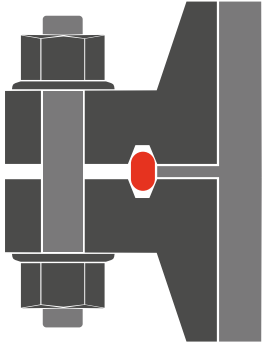
With complex bevelled edges for pressures above 700 bar.

DIMENSIONS

Standard sizes up to 1,200 mm Ø. We are happy to supply larger dimensions on request.

Flanges

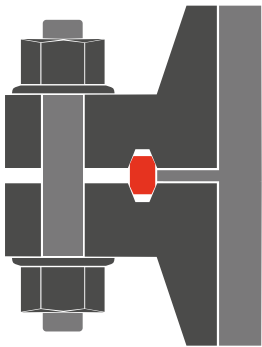
RING JOINT GASKETS



TYPE R OVAL



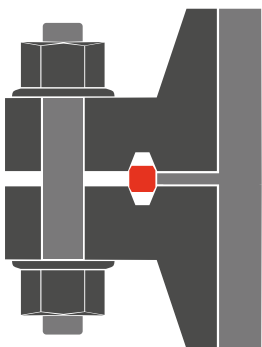
With the oval ring joint gasket, the ring-shaped circular surface of the gasket presses against the trapezoidal groove of the flanges. The sealing surface pressure increases disproportionately when the bolt force is increased.



TYPE R OCTAGONAL



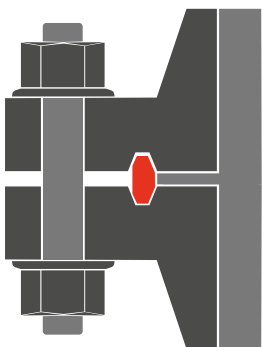
The octagonal ring joint gasket acts like a spherical gasket and therefore creates a larger contact or sealing surface. The effect is greater than with oval ring joint gaskets. The sealing surface pressure increases proportionally as the bolt force is increased.



TYPE BX



The seal has a square cross-section with bevelled corners. The diameter of the ring joint gasket type BX is slightly larger than that of the groove. In this way, it remains pre-compressed and thus creates a high sealing value. The equalising bores correspond to the API. The sealing surface pressure increases proportionally as the screw force is increased.



TYPE RX



The seal was developed to utilise the pressure of the fluid and increase the sealing values. The greater the internal pressure, the more the lateral surfaces of the Type RX ring joint gasket press into the groove surfaces. The sealing surface pressure increases proportionally as the screwdriving force increases.

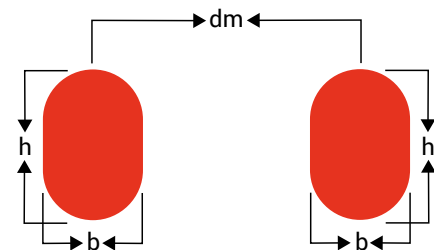
Type R oval R 11 to R 44

RING JOINT GASKETS

Standard: ASME B 16.20 / API 6A and EN 12560-5

Flange: ASME B 16.5 and 16.47 A

Pressure rating: Class 150 - 10,000

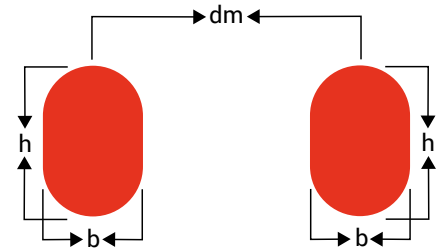


NPS (inches)	Class (lbs)	Ring-Nr.	dm (mm)	b (mm)	h (mm)
1/2	300 bis 600	R 11	34,13	6,35	11,11
1/2	900, 1.500	R 12	39,68	7,93	14,28
1/2	2500	R 13	42,86	7,93	14,28
3/4	300 bis 600	R 13	42,86	7,93	14,28
3/4	900, 1.500	R 14	44,45	7,93	14,28
1	150	R 15	47,62	7,93	14,28
3/4	2500	R 16	50,80	7,93	14,28
1	300 bis 1.500	R 16	50,80	7,93	14,28
1 1/4	150	R 17	57,15	7,93	14,28
1	2500	R 18	60,32	7,93	14,28
1 1/4	300 bis 1.500	R 18	60,32	7,93	14,28
1 1/2	150	R 19	65,06	7,93	14,28
1 1/2	300 bis 1.500	R 20	68,26	7,93	14,28
1 1/4	2500	R 21	72,23	11,11	17,46
2	150	R 22	82,55	7,93	14,28
1 1/2	2500	R 23	82,55	11,11	17,46
2	300 bis 600	R 23	82,55	11,11	17,46
2	900, 1.500	R 24	95,25	11,11	17,46
2 1/2	150	R 25	101,60	7,93	14,28
2	2500	R 26	101,60	11,11	17,46
2 1/2	300 bis 600	R 26	101,60	11,11	17,46
2 1/2	900, 1.500	R 27	107,95	11,11	17,46
2 1/2	2500	R 28	111,12	12,70	19,05
3	150	R 29	114,30	7,93	14,28
3	300 bis 600	R 30	117,47	11,11	17,46
3	300 bis 900	R 31	123,82	11,11	17,46
3	2500	R 32	127,00	12,70	19,05
3 1/2	150	R 33	131,76	7,93	14,28
3 1/2	300 bis 600	R 34	131,76	11,11	17,46
3	1500	R 35	136,52	11,11	17,46
4	150	R 36	149,22	7,93	14,28
4	300 bis 900	R 37	149,22	11,11	17,46
4	2500	R 38	157,16	15,87	22,22
4	1500	R 39	161,92	11,11	17,46
5	150	R 40	171,45	7,93	14,28
5	300 bis 900	R 41	180,97	11,11	17,46
5	2500	R 42	190,50	19,05	25,40
6	150	R 43	193,67	7,93	14,28
5	1500	R 44	193,67	11,11	17,46

Type R oval R 45 to R 84

RING JOINT GASKETS

Standard: ASME B 16.20 / API 6A and EN 12560-5
 Flange: ASME B 16.5 and 16.47 A
 Pressure rating: Class 150 - 10,000

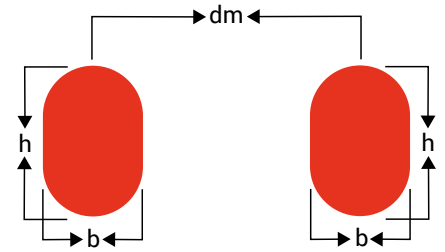


NPS (inches)	Class (lbs)	Ring-Nr.	dm (mm)	b (mm)	h (mm)
6	300 bis 900	R 45	211,13	11,11	17,46
6	1.500	R 46	211,13	12,70	19,05
6	2.500	R 47	228,60	19,05	25,40
8	150	R 48	247,65	7,93	14,28
8	300 bis 900	R 49	269,87	11,11	17,46
8	1.500	R 50	269,87	15,87	22,22
8	2.500	R 51	279,40	22,22	28,57
10	150	R 52	304,80	7,93	14,28
10	300 bis 900	R 53	323,85	11,11	17,46
10	1.500	R 54	323,85	15,87	22,22
10	2.500	R 55	342,90	28,57	36,51
12	150	R 56	381,00	7,93	14,28
12	300 bis 900	R 57	381,00	11,11	17,46
12	1.500	R 58	381,00	22,22	28,57
14	150	R 59	396,87	7,93	14,28
12	2.500	R 60	406,40	31,75	39,68
14	300 bis 600	R 61	419,10	11,11	17,46
14	900	R 62	419,10	15,87	22,22
14	1.500	R 63	419,10	25,40	33,33
16	150	R 64	454,02	7,93	14,28
16	300 bis 600	R 65	469,90	11,11	17,46
16	900	R 66	469,90	15,87	22,22
16	1.500	R 67	469,90	28,57	36,51
18	150	R 68	517,52	7,93	14,28
18	300 bis 600	R 69	533,40	11,11	17,46
18	900	R 70	533,40	19,05	25,40
18	1.500	R 71	533,40	28,57	36,51
20	150	R 72	558,80	7,93	14,28
20	300 bis 600	R 73	584,20	12,70	19,05
20	900	R 74	584,20	19,05	25,40
20	1.500	R 75	584,20	31,75	39,68
24	150	R 76	673,10	7,93	14,28
24	300 bis 600	R 77	692,15	15,87	22,22
24	900	R 78	692,15	25,40	33,33
24	1.500	R 79	692,15	34,92	44,45
22	150	R 80	615,95	7,93	--
22	300 bis 600	R 81	635,00	14,28	--
1	10.000	R 82	57,15	11,11	--
1 1/2	10.000	R 84	63,50	11,11	--

Type R oval R 85 to R 105

RING JOINT GASKETS

Standard: ASME B 16.20 / API 6A and EN 12560-5
 Flange: ASME B 16.5 and 16.47 A
 Pressure rating: Class 150 - 10,000

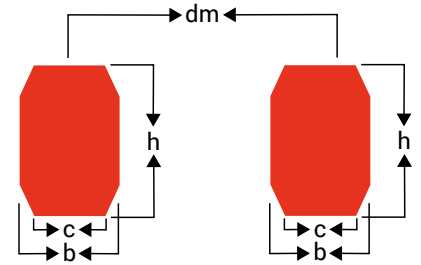


NPS (inches)	Class (lbs)	Ring-Nr.	dm (mm)	b (mm)	h (mm)
2	10.000	R 85	79,37	12,70	--
2 1/2	10.000	R 86	90,49	15,87	--
3	10.000	R 87	100,01	15,87	--
4	10.000	R 88	123,83	19,05	--
3 1/2	10.000	R 89	114,30	19,05	--
5	10.000	R 90	155,58	22,22	--
10	10.000	R 91	260,35	31,75	--
--	--	R 92	228,60	11,11	17,46
26	300, 400, 600	R 93	749,30	19,05	--
28	300, 400, 600	R 94	800,10	19,05	--
30	300, 400, 600	R 95	857,25	19,05	--
32	300, 400, 600	R 96	914,40	22,22	--
34	300, 400, 600	R 97	965,20	22,22	--
36	300, 400, 600	R 98	1.022,35	22,22	--
8	2.000, 3.000	R 99	234,95	11,11	--
26	900	R 100	749,30	28,58	--
28	900	R 101	800,10	31,75	--
30	900	R 102	857,25	31,75	--
32	900	R 103	914,40	31,75	--
34	900	R 104	965,20	34,93	--
36	900	R 105	1.022,35	34,93	--

Type R octagonal R 11 to R 44

RING JOINT GASKETS

Standard: ASME B 16.20 / API 6A and EN 12560-5
 Flange: ASME B 16.5 and 16.47 A
 Pressure rating: Class 150 - 10,000

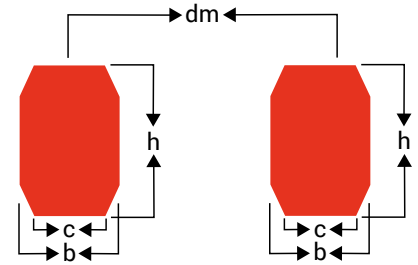


NPS (inches)	Class (lbs)	Ring-Nr.	dm (mm)	b (mm)	h (mm)	c (mm)
1/2	300 bis 600	R 11	34,13	6,35	9,52	4,32
1/2	900, 1.500	R 12	39,68	7,93	12,70	5,32
1/2	2.500	R 13	42,86	7,93	12,70	5,32
3/4	300 bis 600	R 13	42,86	7,93	12,70	5,32
3/4	900, 1.500	R 14	44,45	7,93	12,70	5,32
1	150	R 15	47,62	7,93	12,70	5,32
3/4	2.500	R 16	50,80	7,93	12,70	5,32
1	300 bis 1.500	R 16	50,80	7,93	12,70	5,32
1 1/4	150	R 17	57,15	7,93	12,70	5,32
1	2.500	R 18	60,32	7,93	12,70	5,32
1 1/4	300 bis 1.500	R 18	60,32	7,93	12,70	5,32
1 1/2	150	R 19	65,06	7,93	12,70	5,32
1 1/2	300 bis 1.500	R 20	68,26	7,93	12,70	5,32
1 1/4	2.500	R 21	72,23	11,11	15,87	7,75
2	150	R 22	82,55	7,93	12,70	5,23
1 1/2	2.500	R 23	82,55	11,11	15,87	7,75
2	300 bis 600	R 23	82,55	11,11	15,87	7,75
2	900, 1.500	R 24	95,25	11,11	15,87	7,75
2 1/2	150	R 25	101,60	7,93	12,70	5,23
2	2.500	R 26	101,60	11,11	15,87	7,75
2 1/2	300 bis 600	R 26	101,60	11,11	15,87	7,75
2 1/2	900, 1.500	R 27	107,95	11,11	15,87	7,75
2 1/2	2.500	R 28	111,12	12,70	17,46	8,66
3	150	R 29	114,30	7,93	12,70	5,23
3	300 bis 900	R 30	117,47	11,11	15,87	7,75
3	300 bis 900	R 31	123,82	11,11	15,87	7,75
3	2.500	R 32	127,00	12,70	17,46	8,66
3 1/2	150	R 33	131,76	7,93	12,70	5,23
3 1/2	300 bis 600	R 34	131,76	11,11	15,87	7,75
3	1.500	R 35	136,52	11,11	15,87	7,75
4	150	R 36	149,22	7,93	12,70	5,23
4	300 bis 900	R 37	149,22	11,11	15,87	7,75
4	2.500	R 38	157,16	15,87	20,64	10,49
4	1.500	R 39	161,92	11,11	15,87	7,75
5	150	R 40	171,45	7,93	12,70	5,23
5	300 bis 900	R 41	180,97	11,11	15,87	7,75
5	2.500	R 42	190,50	19,05	23,81	12,32
6	150	R 43	193,67	7,93	12,70	5,23
5	1.500	R 44	193,67	11,11	15,87	7,75

Type R octagonal R 45 to R 84

RING JOINT GASKETS

Standard: ASME B 16.20 / API 6A and EN 12560-5
 Flange: ASME B 16.5 and 16.47 A
 Pressure rating: Class 150 - 10,000



NPS (inches)	Class (lbs)	Ring-Nr.	dm (mm)	b (mm)	h (mm)	c (mm)
6	300 bis 900	R 45	211,13	11,11	15,87	7,75
6	1.500	R 46	211,13	12,70	17,46	8,66
6	2.500	R 47	228,60	19,05	23,81	12,32
8	150	R 48	247,65	7,93	12,70	5,23
8	300 bis 900	R 49	269,87	11,11	15,87	7,75
8	1.500	R 50	269,87	15,87	20,64	10,49
8	2.500	R 51	279,40	22,22	26,99	14,81
10	150	R 52	304,80	7,93	12,70	5,23
10	300 bis 900	R 53	323,85	11,11	15,87	7,75
10	1.500	R 54	323,85	15,87	20,64	10,49
10	2.500	R 55	342,90	28,57	34,92	19,81
12	150	R 56	381,00	7,93	12,70	5,23
12	300 bis 500	R 57	381,00	11,11	15,87	7,75
12	1.500	R 58	381,00	22,22	26,99	14,81
14	150	R 59	396,87	7,93	12,70	5,23
12	2.500	R 60	406,40	31,75	38,10	22,33
14	300 bis 600	R 61	419,10	11,11	15,87	7,75
14	900	R 62	419,10	15,87	20,64	10,49
14	1.500	R 63	419,10	25,40	31,75	17,30
16	150	R 64	454,02	7,93	12,70	5,23
16	300 bis 600	R 65	469,90	11,11	15,87	7,75
16	900	R 66	469,90	15,87	20,64	10,49
16	1.500	R 67	469,90	28,57	34,92	19,81
18	150	R 68	517,52	7,93	12,70	5,23
18	300 bis 600	R 69	533,40	11,11	15,87	7,75
18	900	R 70	533,40	19,05	23,81	12,32
18	1.500	R 71	533,40	28,57	34,92	19,81
20	150	R 72	558,80	7,93	12,70	5,23
20	300 bis 600	R 73	584,20	12,70	17,46	8,66
20	900	R 74	584,20	19,05	23,81	12,32
20	1.500	R 75	584,20	31,75	38,10	22,33
24	150	R 76	673,10	7,93	12,70	5,23
24	300 bis 600	R 77	692,15	15,87	20,64	10,49
24	900	R 78	692,15	25,40	31,75	17,30
24	1.500	R 79	692,15	34,92	41,27	24,82
22	150	R 80	615,95	7,93	12,70	5,23
22	300 bis 600	R 81	635,00	14,28	19,05	9,57
1	10.000	R 82	57,15	11,11	15,87	7,75
1 1/2	10.000	R 84	63,50	11,11	15,87	7,75

Type R octagonal

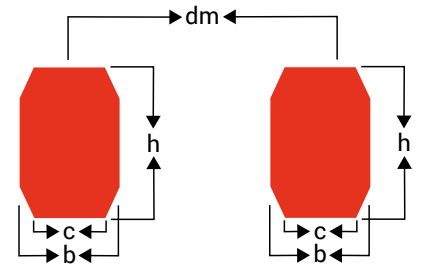
R 85 to R 105

RING JOINT GASKETS

Standard: ASME B 16.20 / API 6A and EN 12560-5

Flange: ASME B 16.5 and 16.47 A

Pressure rating: Class 150 - 10,000



NPS (inches)	Class (lbs)	Ring-Nr.	dm (mm)	b (mm)	h (mm)	c (mm)
2	10.000	R 85	79,37	12,70	17,46	8,66
2 1/2	10.000	R 86	90,49	15,87	20,63	10,49
3	10.000	R 87	100,01	15,87	20,63	10,49
4	10.000	R 88	123,83	19,05	23,81	12,32
3 1/2	10.000	R 89	114,30	19,05	23,81	12,32
5	10.000	R 90	155,58	22,22	26,98	14,81
10	10.000	R 91	260,35	31,75	38,10	22,33
--	--	R 92	228,60	11,11	15,87	7,75
26	300, 400, 600	R 93	749,30	19,05	23,81	12,32
28	300, 400, 600	R 94	800,10	19,05	23,81	12,32
30	300, 400, 600	R 95	857,25	19,05	23,81	12,32
32	300, 400, 600	R 96	914,40	22,22	26,98	14,81
34	300, 400, 600	R 97	965,20	22,22	26,98	14,81
36	300, 400, 600	R 98	1.022,45	22,22	26,98	14,81
8	2.000, 3.000	R 99	234,95	11,11	15,87	7,75
26	900	R 100	749,30	28,58	34,92	19,81
28	900	R 101	800,10	31,75	38,10	22,33
30	900	R 102	857,25	31,75	38,10	22,33
32	900	R 103	914,40	31,75	38,10	22,33
34	900	R 104	965,20	34,93	41,27	24,82
36	900	R 105	1.022,35	34,93	41,27	24,82

Type BX

BX 150 to BX 172

RING JOINT GASKETS

Standard:

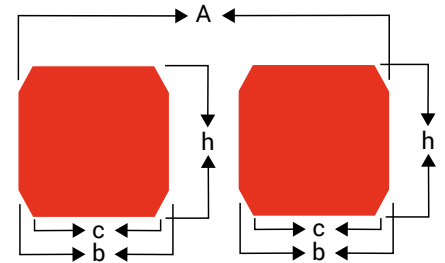
API 6 A

Flange:

API 6 BX

Pressure rating:

Class 2,000 - 20,000



NPS (inches)	Class (lbs)	Ring-Nr.	A (mm)	b (mm)	h (mm)	c (mm)	dφ
1 11/16	10.000, 15.000	BX 150	72,19	9,30	9,30	7,98	1,60
1 13/16	10.000, 15.000, 20.000	BX 151	76,40	9,63	9,63	8,26	1,60
2 1/16	10.000, 15.000, 20.000	BX 152	84,68	10,24	10,24	8,79	1,60
2 9/16	10.000, 15.000, 20.000	BX 153	100,94	11,38	11,38	9,78	1,60
3 1/16	10.000, 15.000, 20.000	BX 154	116,84	12,40	12,40	10,64	1,60
4 1/16	10.000, 15.000, 20.000	BX 155	147,96	14,22	14,22	12,22	1,60
5 1/8	10.000	BX 169	173,52	12,93	15,84	10,69	1,60
7 1/16	10.000, 15.000, 20.000	BX 156	237,92	18,62	18,62	15,98	3,20
9	10.000, 15.000	BX 157	294,46	20,98	20,98	18,01	3,20
11	10.000, 15.000	BX 158	352,04	23,14	23,14	19,86	3,20
13 5/8	10.000	BX 159	426,72	25,70	25,70	22,07	3,20
13 5/8	5.000	BX 160	402,59	13,74	23,83	10,36	3,20
16 3/4	5.000	BX 161	491,41	16,21	28,07	12,24	3,20
16 3/4	5000, 10.000	BX 162	475,49	14,22	14,22	12,22	1,60
18 3/4	5.000	BX 163	556,16	17,37	30,10	13,11	3,20
18 3/4	10.000	BX 164	570,56	24,59	30,10	20,32	3,20
21 1/4	5.000	BX 165	624,71	18,49	32,03	13,97	3,20
21 1/4	10.000	BX 166	640,03	26,14	32,03	21,62	3,20
26 3/4	2.000	BX 167	759,36	13,11	35,86	8,03	1,60
26 3/4	3.000	BX 168	765,25	16,05	35,86	10,97	1,60
5 1/8	10.000	BX 169	173,52	12,93	15,84	--	1,60
9	--	BX 170	218,03	14,22	14,22	--	1,60
11	--	BX 171	267,44	14,22	14,22	--	1,60
13 5/8	--	BX 172	333,07	14,22	14,22	--	1,60
30	2.000, 3.000	BX 303	852,75	16,97	37,95	--	1,60

Type RX

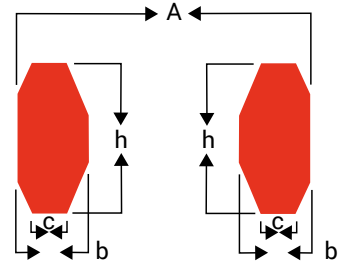
RX 20 to RX 201

RING JOINT GASKETS

Standard: ASME B 16.20 and API 6 A

Flange: API 6 B

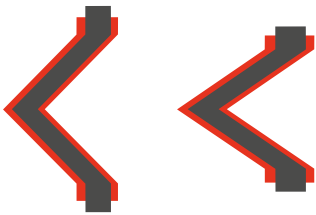
Pressure rating: Class 2,000 - 20,000



NPS (inches)	Class (lbs)	Ring-Nr.	A (mm)	b (mm)	h (mm)	c (mm)	hs (mm)	dø
1 1/26	2.000, 3.000, 5.000	RX 20	76,20	8,73	19,05	4,62	3,18	--
2	5.000	RX 20	76,20	8,73	19,05	4,62	3,18	--
2	2.000	RX 23	93,27	11,91	25,40	6,45	4,24	--
2	3.000, 5.000	RX 24	105,97	11,91	25,40	6,45	4,24	--
3	5.000	RX 25	109,54	8,73	19,05	4,62	3,18	--
2 1/2	2.000	RX 26	111,92	11,91	25,40	6,45	4,24	--
2 1/2	3.000, 5.000	RX 27	118,27	11,91	25,40	6,45	4,24	--
3	2.000, 3.000	RX 31	134,54	11,91	25,40	6,45	4,24	--
3	5.000	RX 35	147,24	11,91	25,40	6,45	4,24	--
4	2.000, 3.000	RX 37	159,94	11,91	25,40	6,45	4,24	--
4	5.000	RX 39	172,64	11,91	25,40	6,45	4,24	--
5	2.000, 3.000	RX 41	191,69	11,91	25,40	6,45	4,24	--
5	5.000	RX 44	204,39	11,91	25,40	6,45	4,24	--
6	2.000, 3.000	RX 45	221,85	11,91	25,40	6,45	4,24	--
6	5.000	RX 46	222,25	13,49	28,58	6,68	4,78	--
8	--	RX 47	245,27	19,84	41,28	10,34	6,88	--
8	2.000, 3.000	RX 49	280,59	11,91	25,40	6,45	4,24	--
8	5.000	RX 50	283,37	16,67	31,75	8,51	5,28	--
10	2.000, 3.000	RX 53	334,57	11,91	24,40	6,45	4,24	--
10	5.000	RX 54	337,34	16,67	31,75	8,51	5,28	--
12	2.000, 3.000	RX 57	391,72	11,91	25,40	6,45	4,24	--
14	5.000	RX 63	441,72	26,99	50,80	14,78	8,46	--
16	2.000	RX 65	480,62	11,91	25,40	6,45	4,24	--
16	3.000	RX 66	483,39	16,67	31,75	8,51	5,28	--
18	2.000	RX 69	544,12	11,91	25,40	6,45	4,24	--
18	3.000	RX 70	550,07	19,84	41,28	10,34	6,88	--
20	2.000	RX 73	596,11	13,49	31,75	6,68	5,28	--
20	3.000	RX 74	600,87	19,84	41,28	10,34	6,88	--
--	--	RX 82	67,87	11,91	25,40	6,45	4,24	1,60
--	--	RX 84	74,22	11,91	25,50	6,45	4,24	1,60
--	--	RX 85	90,09	13,49	25,40	6,68	4,24	1,60
--	--	RX 86	103,58	15,08	28,58	8,51	4,78	2,40
--	--	RX 87	113,11	15,08	28,58	8,51	4,78	2,40
--	--	RX 88	139,30	17,46	31,75	10,34	5,28	3,20
--	--	RX 89	129,78	18,26	31,75	10,34	5,28	3,20
--	--	RX 90	174,63	19,84	44,45	12,17	7,42	3,20
--	--	RX 91	286,94	30,16	45,24	19,81	7,54	3,20
--	--	RX 99	245,67	11,91	25,40	6,45	4,24	--
1 1/4	5.000	RX 201	51,46	5,74	11,30	3,20	1,45	--
1 3/4	5.000	RX 205	62,31	5,56	11,10	3,05	1,83	--
2 1/2	5.000	RX 210	97,63	9,53	19,05	5,41	3,18	--
4	5.000	RX 215	140,89	11,91	25,40	5,33	4,24	--
4 + 4 1/4	5.000	RX 215	140,89	11,91	25,40	5,33	4,24	--
2 3/4	5.000	RX 205	180,18	15,09	32,55	6,47	5,45	--

Metal gaskets

SPIRAL WOUND GASKETS



The secret of the spiral wound gasket is a coiled „V“-shaped steel strip. Under pressure, it presses against the flanges and compresses the filling material at the same time. The many advantages of spiral wound gaskets

are used in conventional and nuclear power stations, chemical and petrochemical plants, refineries, in boiler and apparatus construction, high-pressure pipelines with flange connections, in paper and pulp production and in the aerospace industry.

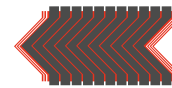
We offer all spiral wound gaskets with and without inner and outer rings. Our spiral wound gaskets can be used universally and can easily seal substances such as water, alkalis, vapour, acids and gases. If you require particularly chemically resistant versions of our spiral wound gaskets, we will be happy to present you with customised solutions.

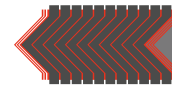
SPECIFICATIONS


We supply in accordance with the following standards: ASME B 16.20 suitable for ASME, BS, JIS, works standards and DIN/EN flanges.


We offer different versions of these exclusive gaskets. Depending on your requirements and area of application, we can provide you with the optimum equipment.

PROFILES

 Type SW – Spiral wound gasket without inner and outer ring for force shunt and tongue and groove applications.

 Type SW-I – Spiral wound gasket with inner support ring. For front and rear flanges.

 Type SW-O – Spiral wound gasket with centring ring. For flanges with and without sealing strip.

 Type SW-IO – Spiral wound gasket with centring ring and inner ring. Gasket for flange connections with and without sealing strip.

CHARACTERISTIC VALUES

* depending on: Flange type, temperature, pressure, medium

The maximum permissible temperature that can generally be controlled with graphite in continuous use is approx. 460 °C at the sealing surface. Specifications for temperatures from 480 °C – 550 °C are based on laboratory data.

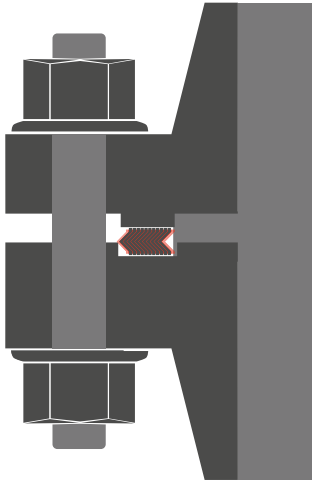
PRELOAD FORCES

- Preload forces (kN) and tightening torques (Nm) for with expansion shank and full shank at 70% of the minimum length.
- Coefficient of friction = 0.14.

Flanges

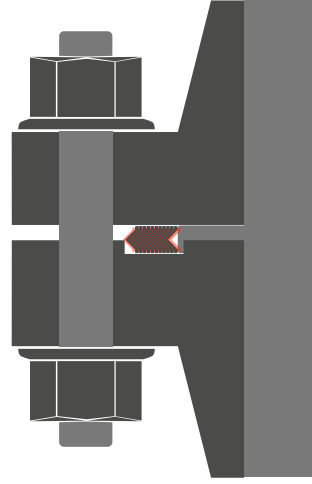
SPIRAL WOUND GASKETS

FLANGES WITH GROOVE & SPRING



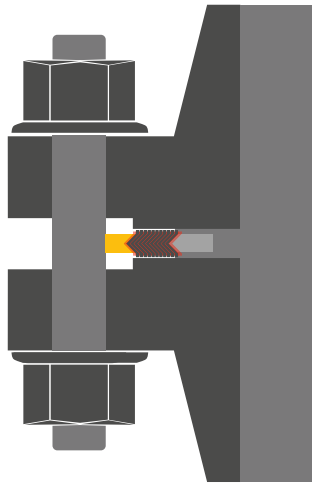
Spiral wound gaskets for flanges type TG.

FLANGES WITH GROOVE



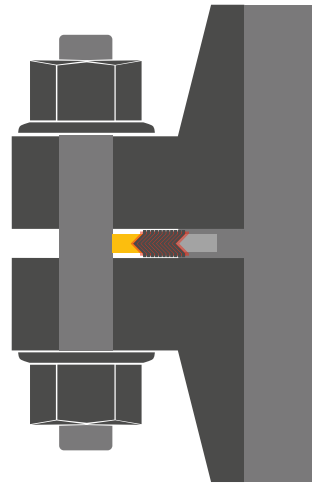
Spiral wound gaskets for gaskets in the force-fog seal.

DIN FLANGES



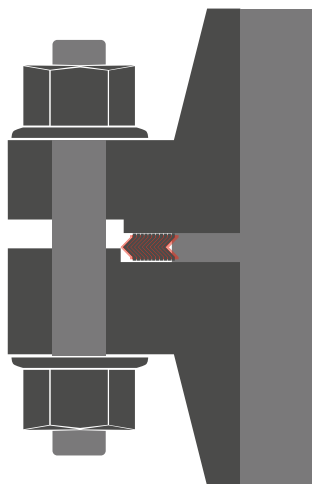
Spiral wound gaskets for DIN flanges.

SMOOTH FLANGES



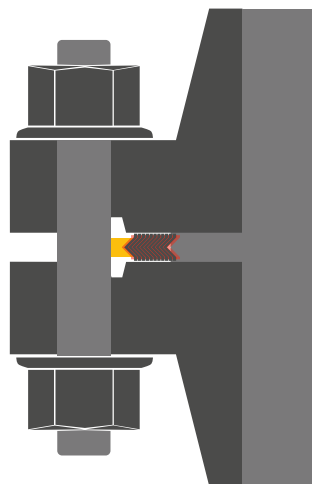
Spiral wound gaskets for flanges with a smooth seal.

FLANGES WITH MALE AND FEMALE RECESS



Spiral wound gaskets for flanges type SR.

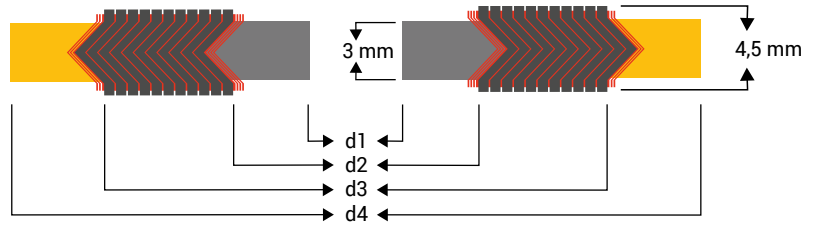
RTJ-FLANGES REGARDING TO ANSI



Spiral wound gaskets for RJT flanges for replacing oval or octagonal octagonal ring joint gaskets.

Type SW-10 SW-I and SW-O SPIRAL WOUND GASKETS

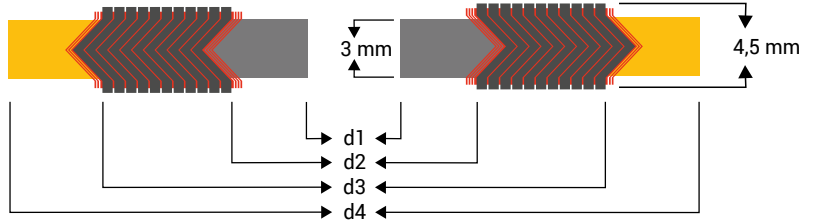
Standard: EN 1514-2
 Flange: DIN
 Pressure level: PN 10 – 160



DN	PN 10-250		10-40	64-250	10	16	25	40	64	100	160
	d1	d2	d3		d4						
10	18,0	24,0	34,0	34,0	--	--	--	46,0	56,0	56,0	56,0
15	23,0	29,0	39,0	39,0	--	--	--	51,0	61,0	61,0	61,0
20	28,0	34,0	46,0	--	--	--	--	61,0	--	--	--
25	35,0	41,0	53,0	53,0	--	--	--	71,0	82,0	82,0	82,0
32	43,0	49,0	61,0	--	--	--	--	82,0	--	--	--
40	50,0	56,0	68,0	68,0	--	--	--	92,0	103,0	103,0	103,0
50	61,0	70,0	86,0	86,0	--	--	--	107,0	113,0	119,0	119,0
65	77,0	86,0	102,0	106,0	--	--	--	127,0	137,0	143,0	143,0
80	90,0	99,0	115,0	119,0	--	--	--	142,0	148,0	154,0	154,0
100	115,0	127,0	143,0	147,0	--	162,0	168,0	168,0	174,0	180,0	180,0
125	140,0	152,0	172,0	176,0	--	192,0	194,0	194,0	210,0	217,0	217,0
150	167,0	179,0	199,0	203,0	--	217,0	224,0	224,0	247,0	257,0	257,0
200	216,0	228,0	248,0	252,0	--	272,0	284,0	290,0	309,0	324,0	324,0
250	267,0	279,0	303,0	307,0	327,0	328,0	340,0	352,0	364,0	391,0	388,0
300	318,0	330,0	354,0	358,0	377,0	383,0	400,0	417,0	424,0	458,0	458,0
350	360,0	376,0	400,0	404,0	437,0	443,0	457,0	474,0	486,0	512,0	--
400	410,0	422,0	450,0	456,0	488,0	495,0	514,0	546,0	543,0	572,0	--
500	510,0	522,0	550,0	556,0	593,0	617,0	624,0	628,0	657,0	704,0	--
600	610,0	622,0	650,0	656,0	695,0	734,0	731,0	747,0	764,0	813,0	--
700	710,0	722,0	756,0	762,0	810,0	804,0	833,0	852,0	879,0	950,0	--
800	810,0	830,0	864,0	870,0	917,0	911,0	942,0	974,0	988,0	--	--
900	910,0	930,0	964,0	970,0	1.017,0	1.011,0	1.042,0	1.084,0	1.108,0	--	--
1.000	1.010,0	1.030,0	1.074,0	1.080,0	1.124,0	1.178,0	1.154,0	1.194,0	--	--	--

Type SW-10 SW-I and SW-O SPIRAL WOUND GASKETS

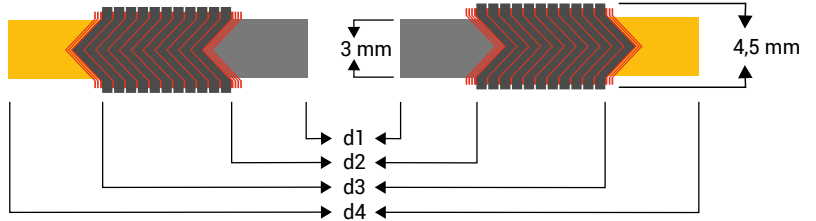
Standard: EN 12560-2
 Flange: ASME B 16.5 and prEN 1759-1
 Pressure level: Class 150 – 2,500



NPS Zoll	150/300	600	150/300	600	150/600	150	300	600
	d1		d2		d3	d4		
1/2	14,3	14,3	19,1	19,1	31,8	47,8	54,1	54,1
3/4	20,7	20,7	25,4	25,4	39,6	57,2	66,8	66,8
1	27,0	27,0	31,8	31,8	47,8	66,8	73,2	73,2
1 1/4	38,1	38,1	47,8	47,8	60,5	76,2	82,6	82,6
1 1/2	44,5	44,5	54,1	54,1	69,9	85,9	95,3	95,3
2	55,6	55,6	69,9	69,9	85,9	104,9	111,3	111,3
2 1/2	66,7	66,7	82,6	82,6	98,6	124,0	130,3	130,3
3	81,0	81,0	101,6	101,6	120,7	136,7	149,4	149,4
4	106,4	106,4	127,0	120,7	149,4	174,8	181,1	193,8
5	131,8	131,8	155,7	147,6	177,8	196,9	215,9	241,3
6	157,2	157,2	182,6	174,8	209,6	222,3	251,0	266,7
8	215,9	209,6	233,4	225,6	263,7	279,4	308,1	320,8
10	268,3	260,4	287,3	274,6	317,5	339,9	362,0	400,1
12	317,5	317,5	339,9	327,2	374,7	409,7	422,4	457,2
14	349,3	349,3	371,6	362,0	406,4	450,9	485,9	492,3
16	400,0	400,0	422,4	412,8	463,6	514,4	539,8	565,2
18	449,3	449,3	474,7	469,9	527,1	549,4	596,9	612,9
20	500,0	500,0	525,5	520,7	577,9	606,6	654,1	682,8
24	603,3	603,3	628,7	628,7	685,8	717,6	774,7	790,7

Type SW-10 SW-I and SW-O SPIRAL WOUND GASKETS

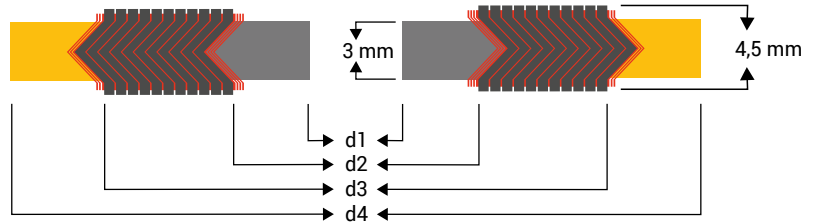
Standard: EN 12560-2
 Flange: ASME B 16.5 and prEN 1759-1
 Pressure level: Class 900 - 2,500



NPS Zoll	900	1.500	2.500	900	1.500	2.500	900/2.500	900	1.500	2.500
	d1			d2			d3	d4		
1/2	14,3	14,3	14,3	19,1	19,1	19,1	31,8	63,5	63,5	69,9
3/4	20,7	20,7	20,7	25,4	25,4	25,4	39,6	69,9	69,9	76,2
1	27,0	27,0	27,0	31,8	31,8	31,8	47,8	79,5	79,5	85,9
1 1/4	33,4	33,4	33,4	39,6	39,6	39,6	60,5	88,9	88,9	104,9
1 1/2	41,3	41,3	41,3	47,8	47,8	47,8	69,9	98,6	98,6	117,6
2	52,4	52,4	52,4	58,7	58,7	58,7	85,9	143,0	143,0	146,1
2 1/2	66,7	66,7	66,7	69,9	69,9	69,9	98,6	165,1	165,1	168,4
3	81,0	81,0	81,0	95,3	92,2	92,2	120,7	168,4	174,8	196,9
4	106,4	106,4	106,4	120,7	117,6	117,6	149,4	206,5	209,6	235,0
5	131,8	131,8	131,8	147,6	143,0	143,0	177,8	247,7	254,0	279,4
6	157,2	157,2	157,2	174,8	171,5	171,5	209,6	289,1	282,7	317,5
8	196,9	196,9	196,9	222,3	215,9	215,9	257,3	358,9	352,6	387,4
10	246,1	246,1	246,1	276,4	266,7	270,0	311,2	435,1	435,1	476,3
12	292,1	292,1	292,1	323,9	323,9	317,5	368,3	498,6	520,7	549,4
14	320,8	320,8	--	355,6	362,0	--	400,1	520,7	577,9	--
16	374,7	368,3	--	412,8	406,4	--	457,2	574,8	641,4	--
18	425,5	425,5	--	463,6	463,6	--	520,7	638,3	704,9	--
20	482,6	476,3	--	520,7	514,4	--	571,5	698,5	755,7	--
24	590,6	577,9	--	628,7	616,0	--	679,5	838,2	901,7	--

Type SW-10 SW-I and SW-O SPIRAL WOUND GASKETS

Standard: Work standard 104
 Flange: DIN
 Druckstufe: PN 10 – 400



PN	10-400		10-40	63-250	10	16	25	40	64	100	160	250	320	400
DN	d1	d2	d3		d4									
10	18,0	24,0	36,0	36,0	46,0	46,0	46,0	46,0	56,0	56,0	56,0	67,0	67,0	67,0
15	22,0	28,0	40,0	40,0	51,0	51,0	51,0	51,0	61,0	61,0	61,0	72,0	72,0	78,0
20	27,0	33,0	47,0	47,0	61,0	61,0	61,0	61,0	--	--	--	--	--	--
25	34,0	40,0	54,0	54,0	71,0	71,0	71,0	71,0	82,0	82,0	82,0	83,0	92,0	104,0
32	43,0	49,0	65,0	65,0	82,0	82,0	82,0	82,0	--	--	--	--	--	--
40	48,0	54,0	70,0	70,0	92,0	92,0	92,0	92,0	103,0	103,0	103,0	109,0	119,0	135,0
50	57,0	66,0	84,0	84,0	107,0	107,0	107,0	107,0	113,0	119,0	119,0	124,0	134,0	150,0
65	73,0	82,0	102,0	104,0	127,0	127,0	127,0	127,0	137,0	143,0	143,0	153,0	170,0	192,0
80	86,0	95,0	115,0	119,0	142,0	142,0	142,0	142,0	148,0	154,0	154,0	170,0	190,0	207,0
100	108,0	120,0	140,0	144,0	162,0	162,0	168,0	168,0	174,0	180,0	180,0	202,0	229,0	256,0
125	134,0	146,0	168,0	172,0	192,0	192,0	194,0	194,0	210,0	217,0	217,0	242,0	274,0	301,0
150	162,0	174,0	196,0	200,0	217,0	217,0	224,0	224,0	247,0	257,0	257,0	284,0	311,0	348,0
175	183,0	195,0	221,0	227,0	247,0	247,0	254,0	265,0	277,0	287,0	284,0	316,0	358,0	402,0
200	213,0	225,0	251,0	257,0	272,0	272,0	284,0	290,0	309,0	324,0	324,0	358,0	398,0	442,0
250	267,0	279,0	307,0	315,0	327,0	328,0	340,0	352,0	364,0	391,0	388,0	442,0	488,0	--
300	318,0	330,0	358,0	366,0	377,0	383,0	400,0	417,0	424,0	458,0	458,0	538,0	--	--
350	363,0	375,0	405,0	413,0	437,0	443,0	457,0	474,0	486,0	512,0	--	--	--	--
400	414,0	426,0	458,0	466,0	488,0	495,0	514,0	546,0	543,0	572,0	--	--	--	--
500	518,0	530,0	566,0	574,0	593,0	617,0	624,0	628,0	657,0	704,0	--	--	--	--
600	618,0	630,0	666,0	674,0	695,0	734,0	731,0	747,0	764,0	813,0	--	--	--	--
700	718,0	730,0	770,0	778,0	810,0	804,0	833,0	852,0	879,0	950,0	--	--	--	--
800	818,0	830,0	874,0	882,0	917,0	911,0	942,0	974,0	988,0	--	--	--	--	--
900	910,0	930,0	974,0	982,0	1.017,0	1.011,0	1.042,0	1.084,0	1.108,0	--	--	--	--	--
1.000	1.010,0	1.030,0	1.078,0	1.086,0	1.124,0	1.128,0	1.154,0	1.194,0	1.220,0	--	--	--	--	--
1.200	1.210,0	1.230,0	1.280,0	1.290,0	1.341,0	1.342,0	1.364,0	1.398,0	1.452,0	--	--	--	--	--
1.400	1.420,0	1.450,0	1.510,0	--	1.548,0	1.542,0	1.578,0	1.618,0	--	--	--	--	--	--
1.600	1.630,0	1.660,0	1.720,0	--	1.772,0	1.764,0	1.798,0	1.830,0	--	--	--	--	--	--
1.800	1.830,0	1.860,0	1.920,0	--	1.972,0	1.964,0	2.000,0	--	--	--	--	--	--	--
2.000	2.020,0	2.050,0	2.120,0	--	2.182,0	2.168,0	2.230,0	--	--	--	--	--	--	--

Type SW-10

SW-I and SW-O

SPIRAL WOUND GASKETS

Standard:

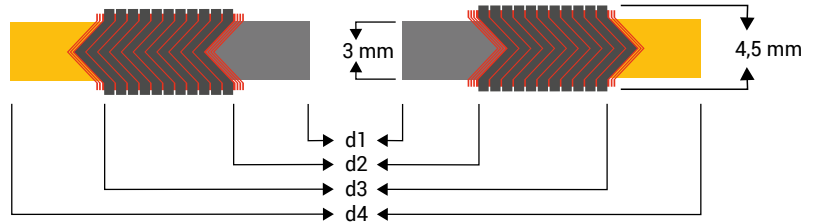
ASME B 16.20

Flange

ASME B 16.5

Pressure level::

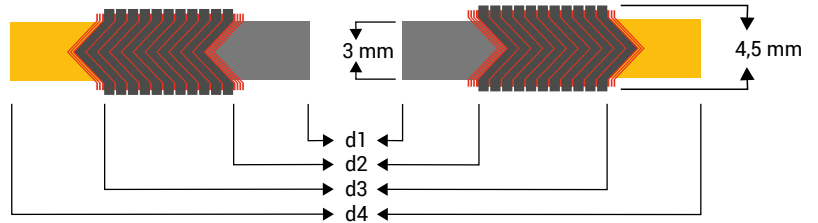
Class 150 - 600



Class NPS	150/300	400/600	150/300	400/600	150/600	150	300	400	600
	d1		d2		d3	d4			
1/2	14,2	14,2	19,1	19,1	31,8	47,8	54,1	--	54,1
3/4	20,6	20,6	25,4	25,4	39,6	57,2	66,8	--	66,8
1	26,9	26,9	31,8	31,8	47,8	66,8	73,2	--	73,2
1 1/4	38,1	38,1	47,8	47,8	60,5	76,2	82,6	--	82,6
1 1/2	44,5	44,5	54,1	54,1	69,9	85,9	95,3	--	95,3
2	55,6	55,6	69,9	69,9	85,9	104,9	111,3	--	111,3
2 1/2	66,5	66,5	82,6	82,6	98,6	124,0	130,3	--	130,3
3	81,0	81,0	101,6	101,6	120,7	136,7	149,4	--	149,4
4	106,4	106,4	127,0	120,7	149,4	174,8	181,1	177,8	193,8
5	131,8	131,8	155,7	147,6	177,8	196,9	215,9	212,9	241,3
6	157,2	157,2	182,6	174,8	209,6	222,3	251,0	247,7	266,7
8	215,9	209,6	233,4	225,6	263,7	279,4	308,1	304,8	320,8
10	268,2	260,4	287,3	274,6	317,5	339,9	362,0	358,9	400,1
12	317,5	317,5	339,9	327,2	374,7	409,7	422,4	419,1	457,2
14	349,3	349,3	371,6	362,0	406,4	450,9	485,9	482,6	492,3
16	400,1	400,1	422,4	412,8	463,6	514,4	539,8	536,7	565,2
18	449,3	449,3	474,7	469,9	527,1	549,4	596,9	593,9	612,9
20	500,1	500,1	525,5	520,7	577,9	606,6	654,1	647,7	682,8
24	603,3	603,3	628,7	628,7	685,8	717,6	774,7	768,4	790,7

Type SW-10 SW-I and SW-O SPIRAL WOUND GASKETS

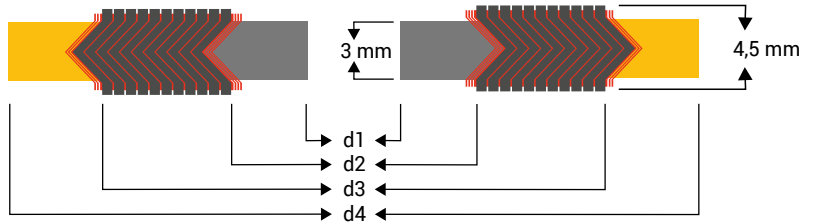
Standard: ASME B 16.20
 Flange: ASME B 16.5
 Pressure level: Class 900 - 2,500



Class NPS	900	1.500	2.500	900	1.500	2.500	900/2.500	900	1.500	2.500
	d1		d2		d3	d4				
1/2	--	14,2	14,2	--	19,1	19,1	31,8	--	63,5	69,9
3/4	--	20,6	20,6	--	25,4	25,4	39,6	--	69,9	76,2
1	--	26,9	26,9	--	31,8	31,8	47,8	--	79,5	85,9
1 1/4	--	33,3	33,3	--	39,6	39,6	60,5	--	88,9	104,9
1 1/2	--	41,4	41,4	--	47,8	47,8	69,9	--	98,6	117,6
2	--	52,3	52,3	--	58,7	58,7	85,9	--	143,0	146,1
2 1/2	--	63,5	63,5	--	69,9	69,9	98,6	--	165,1	168,4
3	81,0	81,0	81,0	95,3	92,2	92,2	120,7	168,4	174,8	196,9
4	106,4	106,4	106,4	120,7	117,6	117,6	149,4	206,5	209,6	235,0
5	131,8	131,8	131,8	147,6	143,0	143,0	177,8	247,7	254,0	279,4
6	157,2	157,2	157,2	174,8	171,5	171,5	209,6	289,1	282,7	317,5
8	196,9	196,9	196,9	222,3	215,9	215,9	257,3	358,9	352,6	387,4
10	246,1	246,1	246,1	276,4	266,7	270,0	311,2	435,1	435,1	476,3
12	292,1	292,1	292,1	323,9	323,9	317,5	368,3	498,6	520,7	549,4
14	320,8	320,8	--	355,6	362,0	--	400,1	520,7	577,9	--
16	374,7	368,3	--	412,8	406,4	--	457,2	574,8	641,4	--
18	425,5	425,5	--	463,6	463,6	--	520,7	638,3	704,9	--
20	482,6	476,3	--	520,7	514,4	--	571,5	698,5	755,7	--
24	590,6	577,9	--	628,7	616,0	--	679,5	838,2	901,7	--

Type SW-10 SW-I and SW-O SPIRAL WOUND GASKETS

Standard: ASME B 16.20
Flange: ASME B 16.47 Serie A
Pressure level: Class 150 - 900



NPS	150	300	400	150	300	400	150	300	400	150	300	400
NPS	d1			d2			d3			d4		
26	654,1	654,1	660,4	673,1	685,8	685,8	704,9	736,6	736,6	774,7	835,2	831,9
28	704,9	704,9	711,2	723,9	736,6	736,6	755,7	787,4	787,4	831,9	898,7	892,3
30	755,7	755,7	755,7	774,7	793,8	793,8	806,5	844,6	844,6	882,7	952,5	946,2
32	806,5	806,5	812,8	825,5	850,9	850,9	860,6	901,7	901,7	939,8	1.006,6	1.003,3
34	857,3	857,3	863,6	876,3	901,7	901,7	911,4	952,5	952,5	990,6	1.057,4	1.054,1
36	908,1	908,1	917,7	927,1	955,8	955,8	968,5	1.006,6	1.006,6	1.047,8	1.117,6	1.117,6
38	958,9	952,5	952,5	977,9	977,9	971,6	1.019,3	1.016,0	1.022,4	1.111,3	1.054,1	1.073,2
40	1.009,7	1.003,3	1.000,3	1.028,7	1.022,4	1.025,7	1.070,1	1.070,1	1.076,5	1.162,1	1.114,6	1.127,3
42	1.060,5	1.054,1	1.051,1	1.079,5	1.073,2	1.076,5	1.124,0	1.120,9	1.127,3	1.219,2	1.165,4	1.178,1
44	1.111,3	1.104,9	1.104,9	1.130,3	1.130,3	1.130,3	1.178,1	1.181,1	1.181,1	1.276,4	1.219,2	1.231,9
46	1.162,1	1.152,7	1.168,4	1.181,1	1.178,1	1.193,8	1.228,9	1.228,9	1.244,6	1.327,2	1.273,3	1.289,1
48	1.212,9	1.209,8	1.206,5	1.231,9	1.235,2	1.244,6	1.279,7	1.286,0	1.295,4	1.384,3	1.324,1	1.346,2
50	1.263,7	1.244,6	1.257,3	1.282,7	1.295,4	1.295,4	1.333,5	1.346,2	1.346,2	1.435,1	1.378,0	1.403,4
52	1.314,5	1.320,8	1.308,1	1.333,5	1.346,2	1.346,2	1.384,3	1.397,0	1.397,0	1.492,3	1.428,8	1.454,2
54	1.358,9	1.352,6	1.352,6	1.384,3	1.403,4	1.403,4	1.435,1	1.454,2	1.454,2	1.549,4	1.492,3	1.517,7
56	1.409,7	1.403,4	1.403,4	1.435,1	1.454,2	1.454,2	1.485,9	1.505,0	1.505,0	1.606,6	1.543,1	1.568,5
58	1.460,5	1.447,8	1.454,2	1.485,9	1.511,3	1.505,0	1.536,7	1.562,1	1.555,8	1.663,7	1.593,9	1.619,3
60	1.511,3	1.524,0	1.517,7	1.536,7	1.562,1	1.568,5	1.587,5	1.612,9	1.619,3	1.714,5	1.644,7	1.682,8

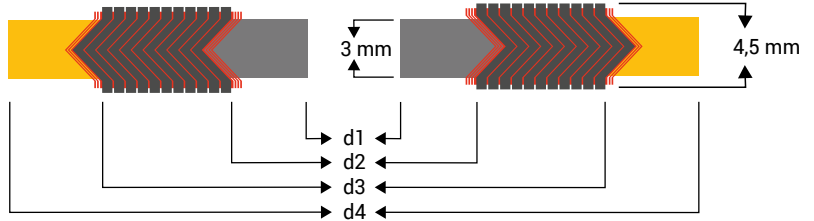
Class	600	900	600	900	600	900	600	900	
NPS	d1		d2		d3		d4		
26	647,7	660,4	685,8	685,8	736,6	736,6	866,9	882,7	
28	698,5	711,2	736,6	736,6	787,4	787,4	914,4	946,2	
30	755,7	774,7	793,8	793,8	844,6	844,6	971,6	1.009,7	
32	812,8	812,8	850,9	850,9	901,7	901,7	1.022,4	1.073,2	
34	863,6	863,6	901,7	901,7	952,5	952,5	1.073,2	1.136,7	
36	917,7	920,8	955,8	958,9	1.006,6	1.009,7	1.130,3	1.200,2	
38	952,5	1.009,7	990,6	1.035,1	1.041,4	1.085,9	1.104,9	1.200,2	
40	1.009,7	1.060,5	1.047,8	1.098,6	1.098,6	1.149,4	1.155,7	1.251,0	
42	1.066,8	1.111,3	1.104,9	1.149,4	1.155,7	1.200,2	1.219,2	1.301,8	
44	1.111,3	1.155,7	1.162,1	1.206,5	1.212,9	1.257,3	1.270,0	1.368,6	
46	1.162,1	1.219,2	1.212,9	1.270,0	1.263,7	1.320,8	1.327,3	1.435,1	
48	1.219,2	1.270,0	1.270,0	1.320,8	1.320,8	1.371,6	1.390,7	1.485,9	
50	1.270,0	--	1.320,8	--	1.371,6	--	1.447,8	--	
52	1.320,8	--	1.371,6	--	1.422,4	--	1.498,6	--	
54	1.378,0	--	1.428,8	--	1.479,6	--	1.555,8	--	
56	1.428,8	--	1.479,6	--	1.530,4	--	1.612,9	--	
58	1.473,2	--	1.536,7	--	1.587,5	--	1.663,7	--	

Type SW-10

SW-I and SW-O

SPIRAL WOUND GASKETS

Standard: ASME B 16.20
 Flange: ASME B 16.47 Serie B
 Pressure level: Class 150 - 900



Class	150	300	400	150	300	400	150	300	400	150	300	400
NPS	d1			d2			d3			d4		
26	654,1	654,1	654,1	673,1	673,1	666,8	698,5	711,2	698,5	725,4	771,7	746,3
28	704,9	704,9	701,8	723,9	723,9	714,5	749,3	762,0	749,3	776,2	825,5	800,1
30	755,7	755,7	752,6	774,7	774,7	765,3	800,1	812,8	806,5	827,0	886,0	857,3
32	806,5	806,5	800,1	825,5	825,5	812,8	850,9	863,6	860,6	881,1	939,8	911,4
34	857,3	857,3	850,9	876,3	876,3	866,9	908,1	914,4	911,4	935,0	993,9	962,2
36	908,1	908,1	898,7	927,1	927,1	917,7	958,9	965,2	965,2	987,6	1.047,8	1.022,4
38	958,9	971,6	952,0	974,6	1.009,7	971,6	1.009,7	1.047,8	1.022,4	1.044,7	1.098,6	1.073,0
40	1.009,7	1.022,4	1.000,3	1.022,4	1.060,5	1.025,7	1.063,8	1.098,6	1.076,5	1.095,5	1.149,4	1.127,3
42	1.060,5	1.085,9	1.051,1	1.079,5	1.111,3	1.076,5	1.114,6	1.149,4	1.127,3	1.146,3	1.200,2	1.178,1
44	1.111,3	1.124,0	1.104,9	1.124,0	1.162,1	1.130,3	1.165,4	1.200,2	1.181,1	1.197,1	1.251,0	1.231,9
46	1.162,1	1.178,1	1.168,4	1.181,1	1.216,2	1.193,8	1.224,0	1.254,3	1.244,6	1.255,8	1.317,8	1.289,1
48	1.212,9	1.231,9	1.206,5	1.231,9	1.263,7	1.244,6	1.270,0	1.311,4	1.295,4	1.306,6	1.368,6	1.346,2
50	1.263,7	1.267,0	1.257,3	1.282,7	1.317,8	1.295,4	1.325,6	1.355,9	1.346,2	1.357,4	1.419,4	1.403,4
52	1.314,5	1.317,8	1.308,1	1.333,5	1.368,6	1.346,2	1.376,4	1.406,7	1.397,0	1.408,2	1.470,2	1.454,2
54	1.365,3	1.365,3	1.352,6	1.384,3	1.403,4	1.403,4	1.422,4	1.454,2	1.454,2	1.463,8	1.539,4	1.517,7
56	1.422,4	1.428,8	1.403,4	1.444,8	1.479,6	1.454,2	1.477,8	1.524,0	1.505,0	1.514,6	1.593,9	1.568,5
58	1.478,0	1.484,4	1.454,2	1.500,4	1.535,2	1.505,0	1.528,8	1.573,3	1.555,8	1.579,6	1.655,8	1.619,3
60	1.535,2	1.557,3	1.517,7	1.557,3	1.589,0	1.568,5	1.586,0	1.630,4	1.619,3	1.630,4	1.706,6	1.682,8

Class	600	900	600	900	600	900	600	900
NPS	d1		d2		d3		d4	
26	644,7	666,8	663,7	692,2	714,5	749,3	765,3	838,2
28	692,2	717,6	704,9	743,0	755,7	800,1	819,2	901,7
30	752,6	781,1	778,0	806,5	828,8	857,3	879,6	958,9
32	793,8	838,2	831,9	863,6	882,7	914,4	933,5	1.016,0
34	850,9	895,4	889,0	920,8	939,8	971,6	997,0	1.073,2
36	901,7	920,0	939,8	946,2	990,6	997,0	1.047,8	1.124,0
38	952,5	1.009,7	990,6	1.035,1	1.041,4	1.085,9	1.104,9	1.200,2
40	1.009,7	1.060,5	1.047,8	1.098,6	1.098,6	1.149,4	1.155,7	1.251,0
42	1.066,8	1.111,3	1.104,9	1.149,4	1.155,7	1.200,2	1.219,2	1.301,8
44	1.111,3	1.155,7	1.162,1	1.206,5	1.212,9	1.257,3	1.270,0	1.368,6
46	1.162,1	1.219,2	1.212,9	1.270,0	1.263,7	1.320,8	1.327,2	1.435,1
48	1.219,2	1.270,0	1.270,0	1.320,8	1.320,8	1.371,6	1.390,7	1.485,9
50	1.270,0	--	1.320,8	--	1.371,6	--	1.447,8	--
52	1.320,8	--	1.371,6	--	1.422,4	--	1.498,6	--
54	1.378,0	--	1.428,8	--	1.479,6	--	1.555,8	--
56	1.428,8	--	1.479,6	--	1.530,4	--	1.612,9	--
58	1.473,2	--	1.536,7	--	1.587,5	--	1.663,7	--
60	1.530,4	--	1.593,9	--	1.644,7	--	1.733,6	--

SPIRAL WOUND GASKETS

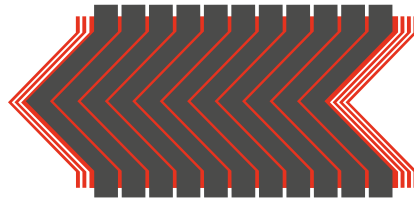
TYPE SW

Spiral wound gaskets without inner and outer ring.

Standard: EN 1514-1 Form TG
EN 12560-1 Form TG

Flange: Tongue & groove

Nominal size: DN 15 - 1500



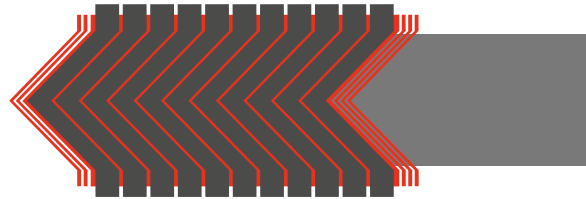
TYPE SW-I

Spiral wound gaskets with inner support ring.

Standard: EN 1514-1 Form SR
EN 12560-1 Form SR

Flange: Forward & backward

Nominal size: DN 15 - 1000



TYPE SW-O

Spiral wound gaskets with centring ring.

Standard: EN 1514-2
EN 12560-2

Flange: Sealing strip

Nominal size: DN 15 - 1000



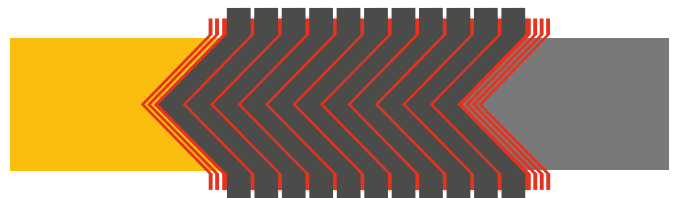
TYPE SW-IO

Spiral wound gaskets with centric ring and inner ring.

Standard: EN 1514-2
EN 12560-2

Flange: Sealing strip

Nominal size: DN 15 - 1000



Characteristic values

SPIRAL WOUND GASKETS

Dichtungsquerschnitte	Werkstoffe		Dicke		KH	KN	empfl. Rauht.	mind. Breite	Einsatzgrenzen		zul. Flächenpressungen			Vorverformung	Betr. Zust.	
	Dichtung	Verbund-Werkstoff	Dichtg.	Nut-tiefe					zul. Temp.	zul. Druck	Einbau Min.	Betrieb Max.	Faktor			
			hD	t					Rz	B _d mind	P _{zul.}	σ _{Vu}	σ _{bo}			m
		mm	mm	μm	mm	°C	bar	$\frac{N}{mm^2}$	$\frac{N}{mm^2}$		$\frac{N}{mm}$	mm				
	Grafitband 1.4541 0.2 mm Metallband Gesickt	4.5		X				20		500						
		4.5	3.3		X	12,5	5	200		170						
									300	400*	65	1,4	KH	KH		
									400		160					
									500		150					
	Grafitband 1.4541 0.2 mm Metallband Gesickt	4.5		X				20		300						
		4.5	3.3		X	12,5	6	200		170						
									300	400*	55	1,4	KH	KH		
									400		160					
									500		150					
	Grafitband 1.4541 0.2 mm Metallband Gesickt	4.5		X				20		160						
		4.5	3.3		X	12,5	4	200		130						
									300	400*	55	1,4	KH	KH		
									400		120					
									500		110					
	Grafitband 1.4541 0.2 mm Metallband Gesickt	4.5		X				20		300						
		4.5	3.3		X	12,5	5	200		170						
									300	400*	60	1,4	KH	KH		
									400		160					
									500		150					
								550		140						
									135							

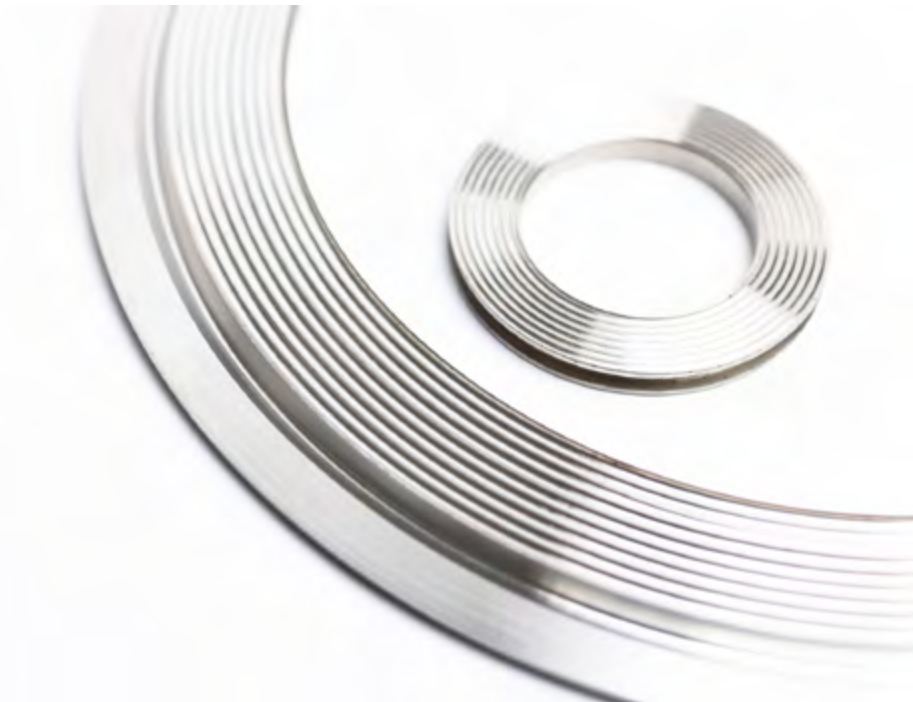
* Dependent on: Flange type, temperature, pressure, media

The maximum permissible, basically controllable temperature at the sealing surface in the case of continuous use with graphite is 460 °C.

Information for temperatures from 480 °C - 550 °C is based on laboratory data.

Metal gaskets

GROOVED GASKETS



The grooved gasket is one of the technical standards, particularly in power stations and nuclear power plants. It is used, for example, as a heat exchanger gasket, for manhole covers and for valve covers in the steam circuit. The sealing surface of the metal core consists of a sealing surface profiled with 45° grooves, on which a soft material layer is installed. The latter consists exclusively of particularly high-quality materials such as graphite or PTFE.


Due to its good spring-back properties, the grooved gasket is ideally suited for applications with alternating temperature and pressure loads. This is why it is often referred to as a combination gasket.


SPECIFICATIONS


The grooved gaskets in our range can be used for all standardised flanges from DN 10 to DN 3600.

If you require special shapes, we can of course also offer you customised solutions that are also characterised by a high level of quality.

PROFILES

 Type KPC – Grooved gasket with centring ring: centring ring with and without predetermined breaking point.

 Type KPC-T – Grooved gasket with loose centring ring.

 Type KP – Grooved gasket for tongue and groove flanges.

CHARACTERISTIC VALUES

* depending on: Flange type, temperature, pressure, medium

- The maximum permissible temperature that can generally be controlled with graphite in continuous use is approx. 460 °C at the sealing surface.
- Specifications for temperatures from 480 °C – 550 °C are based on laboratory data

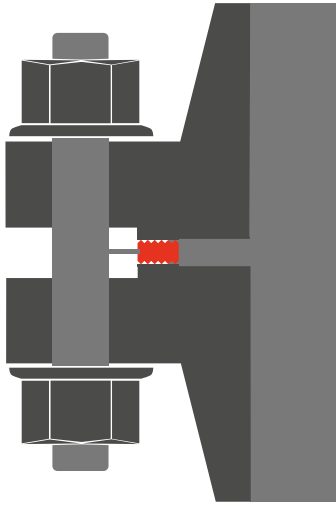
PRELOAD FORCES

- Preload forces (kN) and tightening torques (Nm) for with expansion shank and full shank at 70% of the minimum length.
- Coefficient of friction = 0.14.

Flanges

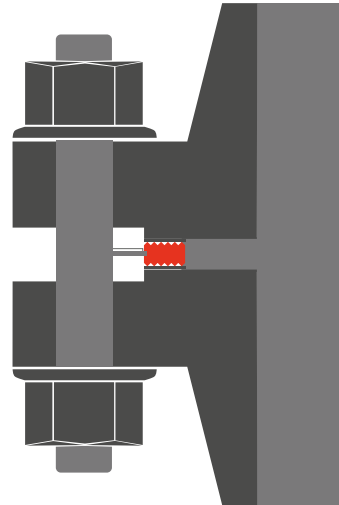
GROOVED GASKETS

DIN AND EN FLANGES



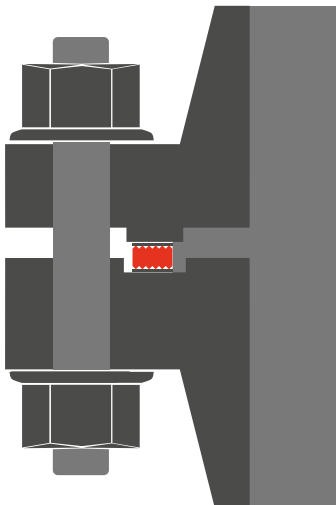
Grooved gaskets for flanges pursuant to DIN and EN 1091.

ASME FLANGES



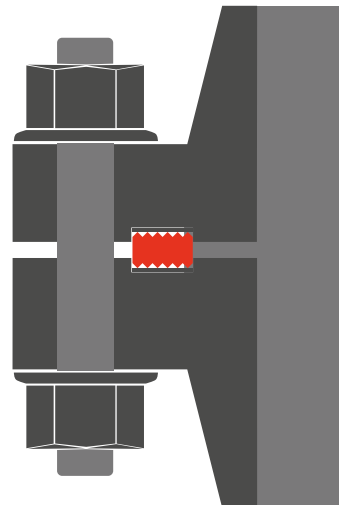
Grooved gaskets for flanges pursuant to: EN 12550-6, ASME B 16.5, ASME B 16.47 series A and prEN 1759-1.

FLANGES WITH GROOVE & SPRING



Grooved gaskets for flanges of Type TG.

FLANGES WITH GROOVE ON GROOVE

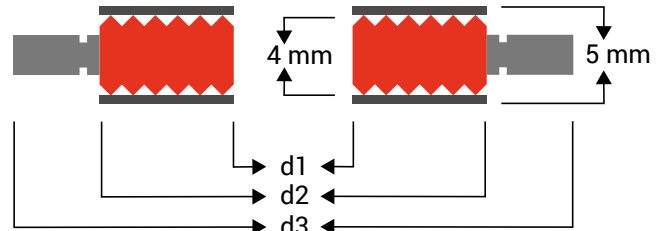


Grooved gaskets for flanges pursuant to DIN 2512.

Type KPC KP and KPC-T

GROOVED GASKETS

Standard: EN 1514-6
 Flange: DIN
 Pressure level: PN 10 - 400

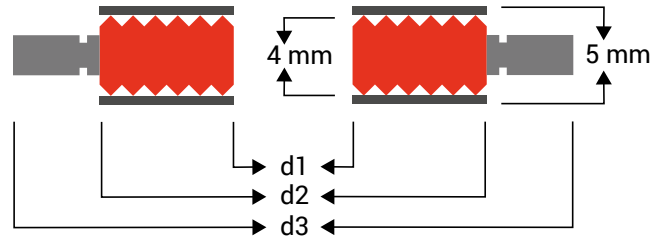


PN	10-40	63-160	250-400	10	16	25	40	64	100	160	250	320	400	
DN	d1	d2		d3										
10	22,0	36,0	36,0	36,0	46,0	46,0	46,0	46,0	56,0	56,0	56,0	67,0	67,0	67,0
15	26,0	42,0	42,0	42,0	51,0	51,0	51,0	51,0	61,0	61,0	61,0	72,0	72,0	--
20	31,0	47,0	47,0	47,0	61,0	61,0	61,0	61,0	--	--	--	--	--	--
25	36,0	52,0	52,0	52,0	71,0	71,0	71,0	71,0	82,0	82,0	82,0	83,0	92,0	104,0
32	46,0	62,0	62,0	66,0	82,0	82,0	82,0	82,0	--	--	--	--	--	--
40	53,0	69,0	69,0	73,0	92,0	92,0	92,0	92,0	103,0	103,0	103,0	109,0	119,0	135,0
50	65,0	81,0	81,0	87,0	107,0	107,0	107,0	107,0	113,0	119,0	119,0	124,0	134,0	150,0
65	81,0	100,0	100,0	103,0	127,0	127,0	127,0	127,0	137,0	143,0	143,0	153,0	170,0	192,0
80	95,0	115,0	115,0	121,0	142,0	142,0	142,0	142,0	148,0	154,0	154,0	170,0	190,0	207,0
100	118,0	138,0	138,0	146,0	162,0	162,0	168,0	168,0	174,0	180,0	180,0	202,0	229,0	256,0
125	142,0	162,0	162,0	178,0	192,0	192,0	194,0	194,0	210,0	217,0	217,0	242,0	274,0	301,0
150	170,0	190,0	190,0	212,0	217,0	217,0	224,0	224,0	247,0	257,0	257,0	284,0	311,0	348,0
175	195,0	215,0	215,0	245,0	247,0	247,0	254,0	265,0	277,0	287,0	284,0	316,0	358,0	402,0
200	220,0	240,0	248,0	280,0	272,0	272,0	284,0	290,0	309,0	324,0	324,0	358,0	398,0	442,0
250	270,0	290,0	300,0	340,0	327,0	328,0	340,0	352,0	364,0	391,0	388,0	442,0	488,0	--
300	320,0	340,0	356,0	400,0	377,0	383,0	400,0	417,0	424,0	458,0	458,0	536,0	--	--
350	375,0	395,0	415,0	--	437,0	443,0	457,0	474,0	486,0	512,0	--	--	--	--
400	426,0	450,0	474,0	--	489,0	495,0	514,0	546,0	543,0	572,0	--	--	--	--
450	480,0	506,0	--	--	539,0	555,0	--	571,0	--	--	--	--	--	--
500	530,0	560,0	588,0	--	594,0	617,0	624,0	628,0	657,0	704,0	--	--	--	--
600	630,0	664,0	700,0	--	695,0	734,0	731,0	747,0	764,0	813,0	--	--	--	--
700	730,0	770,0	812,0	--	810,0	804,0	833,0	852,0	879,0	950,0	--	--	--	--
800	830,0	876,0	886,0	--	917,0	911,0	942,0	974,0	988,0	--	--	--	--	--
900	930,0	982,0	994,0	--	1.017,0	1.011,0	1.042,0	1.084,0	1.108,0	--	--	--	--	--
1.000	1.040,0	1.098,0	1.110,0	--	1.124,0	1.128,0	1.154,0	1.194,0	1.220,0	--	--	--	--	--
1.200	1.250,0	1.320,0	1.334,0	--	1.341,0	1.342,0	1.364,0	1.398,0	1.452,0	--	--	--	--	--
1.400	1.440,0	1.522,0	--	--	1.548,0	1.542,0	1.578,0	1.618,0	--	--	--	--	--	--
1.600	1.650,0	1.742,0	--	--	1.772,0	1.764,0	1.798,0	1.830,0	--	--	--	--	--	--
1.800	1.850,0	1.914,0	--	--	1.972,0	1.964,0	2.000,0	--	--	--	--	--	--	--
2.000	2.050,0	2.120,0	--	--	2.182,0	2.168,0	2.230,0	--	--	--	--	--	--	--
2.200	2.250,0	2.328,0	--	--	2.384,0	2.378,0	--	--	--	--	--	--	--	--
2.400	2.460,0	2.512,0	--	--	2.594,0	--	--	--	--	--	--	--	--	--
2.600	2.670,0	2.728,0	--	--	2.794,0	--	--	--	--	--	--	--	--	--
2.800	2.890,0	2.952,0	--	--	3.014,0	--	--	--	--	--	--	--	--	--
3.000	3.100,0	3.166,0	--	--	3.228,0	--	--	--	--	--	--	--	--	--

Type KPC KP and KPC-T

GROOVED GASKETS

Standard: EN 12560-6
 Flange: prEN 1759-1
 Pressure level: Class 150 - 2,500

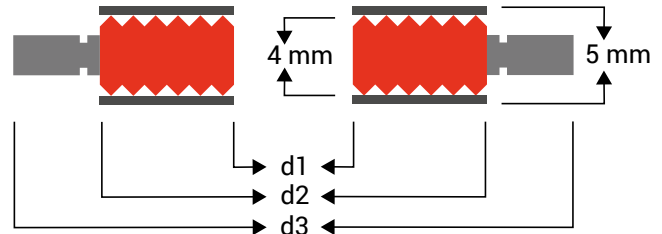


Class	150-2.500		150	300	400	600	900	1.500	2.500
NPS	d1	d2	d3						
1/2	23,0	33,3	44,4	50,8	50,8	50,8	60,3	60,3	66,7
3/4	28,6	39,7	53,9	63,5	63,5	63,5	66,7	66,7	73,0
1	36,5	47,6	63,5	69,8	69,8	69,8	76,2	76,2	82,5
1 1/4	44,4	60,3	73,0	79,4	79,4	79,4	85,7	85,7	101,6
1 1/2	52,4	69,8	82,5	92,1	92,1	92,1	95,2	95,2	114,3
2	69,8	88,9	101,8	108,0	108,0	108,0	139,7	139,7	142,8
2 1/2	82,5	101,6	120,6	127,0	127,0	127,0	161,9	161,9	165,1
3	98,4	123,8	133,4	146,1	146,1	146,1	165,1	171,5	193,7
3 1/2	111,1	136,5	158,8	161,9	158,7	158,7	--	--	--
4	123,8	154,0	171,5	177,8	174,6	190,5	203,2	206,4	231,7
5	150,8	182,6	193,7	212,7	209,5	238,1	244,5	250,8	276,2
6	177,8	212,7	219,1	247,7	244,5	263,5	285,8	279,4	314,3
8	228,6	266,7	276,2	304,8	301,6	317,5	355,6	349,3	384,1
10	282,6	320,7	336,5	358,8	355,6	396,9	431,8	431,8	473,0
12	339,7	377,8	406,4	419,1	415,9	454,0	495,3	517,5	432,0
14	371,5	409,6	447,7	482,6	479,4	488,9	517,5	574,7	--
16	422,3	466,7	511,2	536,6	533,4	561,9	571,5	638,1	--
18	479,4	530,2	546,1	593,7	590,5	609,6	635,0	701,7	--
20	530,2	581,0	603,2	650,9	644,5	679,5	695,3	752,4	--
22	581,0	631,8	657,2	701,7	698,5	730,3	--	--	--
24	631,8	682,6	714,4	771,5	765,2	787,4	835,0	898,5	--

Type KPC KP and KPC-T

GROOVED GASKETS

Standard: Working standard 101
 Flange: DIN
 Pressure level: PN 10 - 400

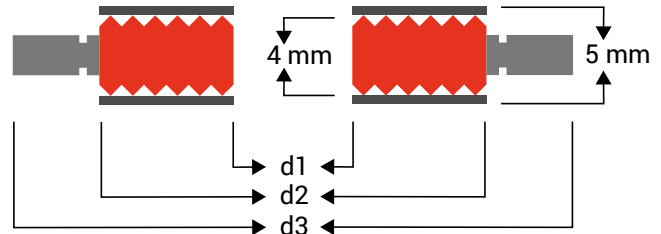


PN	10-40		10	16	25	40	64	100	160	250	320	400
DN	d1	d2	d3									
10	22,0	36,0	46,0	46,0	46,0	46,0	56,0	56,0	56,0	67,0	67,0	67,0
15	26,0	42,0	51,0	51,0	51,0	51,0	61,0	61,0	61,0	72,0	72,0	78,0
20	31,0	47,0	61,0	61,0	61,0	61,0	--	--	--	--	--	--
25	36,0	52,0	71,0	71,0	71,0	71,0	82,0	82,0	82,0	83,0	92,0	104,0
32	46,0	66,0	82,0	82,0	82,0	82,0	--	--	--	--	--	--
40	53,0	73,0	92,0	92,0	92,0	92,0	103,0	103,0	103,0	109,0	119,0	135,0
50	65,0	87,0	107,0	107,0	107,0	107,0	113,0	119,0	119,0	124,0	134,0	150,0
65	81,0	103,0	127,0	127,0	127,0	127,0	137,0	143,0	143,0	153,0	170,0	192,0
80	95,0	121,0	142,0	142,0	142,0	142,0	148,0	154,0	154,0	170,0	190,0	207,0
100	118,0	144,0	162,0	162,0	168,0	168,0	174,0	180,0	180,0	202,0	229,0	256,0
125	142,0	176,0	192,0	192,0	194,0	194,0	210,0	217,0	217,0	242,0	274,0	301,0
150	170,0	204,0	217,0	217,0	224,0	224,0	247,0	257,0	257,0	284,0	311,0	348,0
175	195,0	229,0	247,0	247,0	254,0	265,0	277,0	287,0	284,0	316,0	358,0	402,0
200	224,0	258,0	272,0	272,0	284,0	290,0	309,0	324,0	324,0	358,0	398,0	442,0
250	275,0	315,0	327,0	328,0	340,0	352,0	364,0	391,0	388,0	442,0	488,0	--
300	325,0	365,0	377,0	383,0	400,0	417,0	424,0	458,0	458,0	536,0	--	--
350	375,0	420,0	437,0	443,0	457,0	474,0	486,0	512,0	--	--	--	--
400	426,0	474,0	489,0	495,0	514,0	546,0	543,0	572,0	--	--	--	--
450	480,0	528,0	539,0	555,0	--	571,0	--	--	--	--	--	--
500	530,0	578,0	594,0	617,0	624,0	628,0	657,0	704,0	--	--	--	--
600	630,0	680,0	695,0	734,0	731,0	747,0	764,0	813,0	--	--	--	--
700	730,0	780,0	810,0	804,0	833,0	852,0	879,0	950,0	--	--	--	--
800	830,0	880,0	917,0	911,0	942,0	974,0	988,0	--	--	--	--	--
900	930,0	980,0	1.017,0	1.011,0	1.042,0	1.084,0	1.108,0	--	--	--	--	--
1.000	1.040,0	1.090,0	1.124,0	1.128,0	1.154,0	1.194,0	1.220,0	--	--	--	--	--
1.200	1.250,0	1.310,0	1.341,0	1.342,0	1.364,0	1.398,0	1.452,0	--	--	--	--	--
1.400	1.440,0	1.510,0	1.548,0	1.542,0	1.578,0	1.618,0	--	--	--	--	--	--
1.600	1.650,0	1.730,0	1.772,0	1.764,0	1.798,0	1.830,0	--	--	--	--	--	--
1.800	1.850,0	1.930,0	1.972,0	1.964,0	2.000,0	--	--	--	--	--	--	--
2.000	2.050,0	2.130,0	2.182,0	2.168,0	2.230,0	--	--	--	--	--	--	--
2.200	2.250,0	2.340,0	2.384,0	2.378,0	--	--	--	--	--	--	--	--
2.400	2.460,0	2.550,0	2.594,0	--	--	--	--	--	--	--	--	--
2.600	2.670,0	2.760,0	2.794,0	--	--	--	--	--	--	--	--	--
2.800	2.890,0	2.980,0	3.014,0	--	--	--	--	--	--	--	--	--
3.000	3.100,0	3.190,0	3.228,0	--	--	--	--	--	--	--	--	--

Type KPC KP and KPC-T

GROOVED GASKETS

Standard: Working standard 146
 Flange: ANSI B 16.5
 Pressure level: Class 150 - 2,500

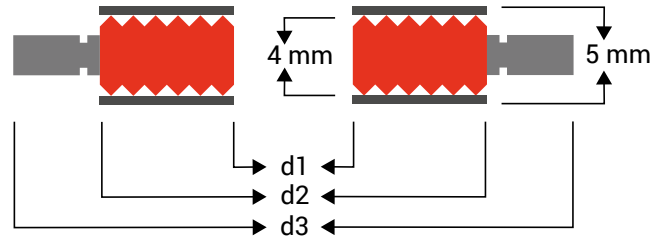


Class	150-2.500	400-600	900-2.500	150	300	400	600	900	1.500	2.500	
NPS	d1	d2		d3							
1/2	20,0	30,0	30,0	30,0	44,4	50,8	50,8	50,8	60,3	60,3	66,7
3/4	25,0	35,0	35,0	35,0	53,9	63,5	63,5	63,5	66,7	66,7	73,0
1	32,0	42,0	42,0	42,0	63,5	69,8	69,5	69,5	76,2	76,2	82,5
1 1/4	40,0	56,0	56,0	56,0	73,0	79,4	79,4	79,4	85,7	85,7	101,6
1 1/2	45,0	61,0	61,0	61,0	82,5	92,1	92,1	92,1	95,2	95,2	114,3
2	60,0	80,0	80,0	80,0	101,8	108,0	108,0	108,0	139,7	139,7	142,8
2 1/2	70,0	90,0	90,0	90,0	120,6	127,0	127,0	127,0	161,9	161,9	165,1
3	85,0	105,0	105,0	110,0	133,4	146,1	146,1	146,1	165,1	171,5	193,7
3 1/2	100,0	120,0	120,0	--	158,8	161,9	158,7	158,7	--	--	--
4	110,0	130,0	130,0	135,0	171,5	177,8	174,6	190,5	203,2	206,4	231,7
5	135,0	155,0	155,0	165,0	193,7	212,7	209,5	238,1	244,5	250,8	276,2
6	160,0	180,0	180,0	195,0	219,1	247,7	244,5	263,5	285,8	279,4	314,3
8	210,0	230,0	230,0	250,0	276,2	304,8	301,6	317,5	355,6	349,3	384,1
10	265,0	285,0	295,0	315,0	336,5	358,8	355,6	396,9	431,8	431,8	473,0
12	315,0	335,0	350,0	375,0	406,4	419,1	415,9	454,0	495,3	517,5	546,1
14	350,0	370,0	390,0	405,0	447,7	482,6	479,4	488,9	517,5	574,7	--
16	400,0	425,0	445,0	460,0	511,2	536,6	533,4	561,9	571,5	638,1	--
18	450,0	480,0	500,0	525,0	546,1	593,7	590,5	609,6	635,0	701,7	--
20	500,0	535,0	555,0	575,0	603,2	650,9	644,5	679,5	695,3	752,4	--
24	600,0	640,0	665,0	685,0	714,4	771,5	765,2	787,4	835,0	898,5	--

Type KPC KP and KPC-T

GROOVED GASKETS



Standard: Working standard 147
 Flange: ASME B 16.47 Serie A
 Pressure level: Class 150 - 2,500



Class	150-2.500		150	300	400	600	900	1.500	2.500
NPS	d1	d2	d3						
26	690,0	740,0	772,0	832,0	829,0	864,0	880,0	--	--
28	740,0	790,0	829,0	895,0	889,0	911,0	943,0	--	--
30	800,0	850,0	880,0	949,0	943,0	968,0	1.007,0	--	--
32	845,0	905,0	937,0	1.003,0	1.000,0	1.019,0	1.070,0	--	--
34	895,0	955,0	987,0	1.054,0	1.051,0	1.070,0	1.134,0	--	--
36	950,0	1.010,0	1.045,0	1.114,0	1.114,0	1.127,0	1.197,0	--	--
38	960,0	1.020,0	1.108,0	1.051,0	1.070,0	1.102,0	1.197,0	--	--
40	1.015,0	1.075,0	1.159,0	1.111,0	1.124,0	1.153,0	1.248,0	--	--
42	1.065,0	1.125,0	1.216,0	1.162,0	1.175,0	1.216,0	1.299,0	--	--
44	1.125,0	1.185,0	1.273,0	1.216,0	1.229,0	1.267,0	1.365,0	--	--
46	1.175,0	1.235,0	1.324,0	1.270,0	1.286,0	1.324,0	1.432,0	--	--
48	1.220,0	1.290,0	1.381,0	1.321,0	1.343,0	1.388,0	1.483,0	--	--
50	1.270,0	1.350,0	1.432,0	1.375,0	1.400,0	1.445,0	--	--	--
52	1.320,0	1.400,0	1.489,0	1.426,0	1.451,0	1.495,0	--	--	--
54	1.375,0	1.455,0	1.546,0	1.489,0	1.515,0	1.553,0	--	--	--
56	1.430,0	1.510,0	1.603,0	1.540,0	1.565,0	1.610,0	--	--	--
68	1.485,0	1.565,0	1.661,0	1.591,0	1.616,0	1.661,0	--	--	--
60	1.535,0	1.615,0	1.711,0	1.742,0	1.680,0	1.730,0	--	--	--

Characteristic values

GROOVED GASKETS

Dichtungsquerschnitte	Werkstoffe		Dicke	KH	KN	empfl. Rauht.	mind. Breite	Einsatzgrenzen		zul. Flächenpressungen			Vorverformung	Betr. Zust.
	Auflage	Träger						Dichtg.	zul. Temp.	zul. Druck	Einbau Min.	Betrieb Max.		
			hD			Rz	Bd _{mind}		Pzul.	σ _{Vu}	σ _{bo}	m	Ko • KD	K1
			mm			μm	mm	°C	bar	$\frac{N}{mm^2}$	$\frac{N}{mm^2}$		$\frac{N}{mm}$	mm
	Grafit Auflage 0,5 mm dick	1.454 1	4.0 (+2x0,5)	X		8-25	7	20			500			
								200			450			
								300			420	1,1	KH	KH
								400	400*	40	390		14 bD	0,8bD
								500			350			
								550			335			
	PTFE Auflage 0,5 mm dick	1.454 1	4.0 (+2x0,5)	X		8-25	7	20			450			
								200			390	1,1	KH	KH
								250	400*	40	330		14	0,8b
													bD	D

* Dependent on: Flange type, temperature, pressure, media

The maximum permissible, basically controllable temperature at the sealing surface in the case of continuous use with graphite is 460 °C.

Information for temperatures from 480 °C - 550 °C is based on laboratory data.

PRE-STRESSING FORCES AND TIGHTENING TORQUES FOR SCREWS

Werkstoffe																											
5.6		8.8		10.9		12.9		1.1181 Ck 35		1.7258 24 CrMo 5		1.7709 21 CrMoV 57		1.7711 40 CrMoV 47		1.4923 X 22 CrMoV 121		1.4913 X 19 CrMo Vbn 111		1.4986 X 8 CrNi MoNb 1616		2.4952 NiCr 20 TiAl					
min. Streckgrenze (N/mm ²)																											
300		660		940		1100		280		440		550		700		600		780		500		600					
Montage-Vorspannkraft (kN)												Montage-Anziehdrehmoment (Nm)															
kN		Nm		kN		Nm		kN		Nm		kN		Nm		kN		Nm		kN		Nm		kN		Nm	
M10	○	-	-	-	-	-	-	-	-	7,5	12,0	11,7	20,0	146	24,0	18,6	31,0	16,0	27,0	20,8	35,0	13,3	22,0	16,0	27,0		
	●	12,2	21,0	26,0	44,0	38,2	64,0	44,7	75,0	11,4	19,0	17,9	30,0	22,3	38,0	28,4	48,0	24,4	41,0	31,7	53,0	20,3	34,0	-	-		
M12	○	-	-	-	-	-	-	-	-	11,0	23,0	17,3	36,0	21,6	44,0	27,4	57,0	23,5	49,0	30,6	63,0	19,6	40,0	23,5	49,0		
	●	17,6	35,0	37,6	75,0	55,3	110,0	64,7	130,0	16,5	33,0	29,9	52,0	32,3	65,0	41,2	82,0	35,3	71,0	45,9	92,0	29,4	59,0	-	-		
M14	○	-	-	-	-	-	-	-	-	15,3	35,0	24,0	55,0	30,0	69,0	38,2	88,0	32,8	75,0	42,6	98,0	27,3	63,0	32,8	75,0		
	●	24,2	56,0	51,5	120,0	75,7	175,0	88,6	205,0	22,5	52,0	35,4	82,0	44,3	100,0	56,4	130,0	48,3	110,0	62,8	145,0	40,3	93,0	-	-		
M16	○	-	-	-	-	-	-	-	-	22,2	58,0	34,8	92,0	43,5	115,0	55,4	145,0	47,5	125,0	61,7	160,0	39,6	105,0	47,5	125,0		
	●	33,0	85,0	70,3	180,0	103,5	265,0	121,0	310,0	30,8	79,0	48,4	125,0	60,4	155,0	76,9	200,0	65,9	170,0	85,7	220,0	55,0	140,0	-	-		
M18	○	-	-	-	-	-	-	-	-	25,9	80,0	40,7	125,0	50,8	155,0	64,7	195,0	55,4	170,0	72,1	220,0	46,2	140,0	55,4	170,0		
	●	40,3	120,0	88,7	260,0	126,5	370,0	148,0	430,0	37,6	110,0	59,1	170,0	73,9	215,0	94,1	275,0	80,6	235,0	105,0	305,0	67,2	195,0	-	-		
M20	○	-	-	-	-	-	-	-	-	34,5	110,0	54,2	175,0	67,8	220,0	86,2	280,0	73,9	240,0	96,1	310,0	61,6	200,0	73,9	240,0		
	●	51,5	165,0	113,0	360,0	161,0	520,0	188,5	600,0	48,0	155,0	75,5	240,0	94,3	300,0	120,0	385,0	103,0	330,0	134,0	425,0	85,8	275,0	-	-		
M22	○	-	-	-	-	-	-	-	-	44,3	150,0	69,6	240,0	87,0	300,0	110,5	380,0	94,9	325,0	123,5	425,0	79,1	270,0	94,9	325,0		
	●	63,6	220,0	140,0	485,0	199,5	690,0	233,5	810,0	59,4	205,0	93,3	320,0	116,5	405,0	148,5	510,0	127,5	440,0	165,5	570,0	106,0	365,0	-	-		
M24	○	-	-	-	-	-	-	-	-	49,8	190,0	78,2	300,0	97,8	370,0	124,5	475,0	106,5	405,0	138,5	530,0	88,9	340,0	106,5	405,0		
	●	74,1	285,0	163,0	630,0	232,5	890,0	272,0	1050,0	69,2	265,0	108,5	415,0	136,0	520,0	173,0	660,0	148,5	570,0	192,5	740,0	123,5	475,0	-	-		
M27	○	-	-	-	-	-	-	-	-	64,5	275,0	101,5	435,0	126,5	545,0	161,0	690,0	138,0	590,0	179,5	770,0	115,0	495,0	138,0	590,0		
	●	96,4	415,0	212,0	910,0	302,0	1300,0	353,0	1500,0	90,0	390,0	141,5	610,0	176,5	760,0	225,0	970,0	193,0	830,0	250,5	1100,0	160,5	690,0	-	-		
M30	○	-	-	-	-	-	-	-	-	81,3	390,0	128,0	610,0	160,0	770,0	203,0	980,0	174,5	840,0	226,5	1100,0	145,5	700,0	174,5	840,0		
	●	118,0	570,0	259,0	1250,0	369,0	1800,0	432,0	2100,0	110,0	530,0	173,0	830,0	216,0	1050,0	275,0	1300,0	235,5	1100,0	306,0	1500,0	196,5	950,0	-	-		
M33	○	-	-	-	-	-	-	-	-	100,0	520,0	157,0	820,0	196,5	1000,0	250,0	1300,0	214,0	1100,0	278,5	1450,0	178,5	930,0	214,0	1100,0		
	●	146,0	760,0	321,0	1700,0	457,0	2400,0	534,0	2800,0	136,0	710,0	214,0	1100,0	267,0	1400,0	340,0	1800,0	291,5	1500,0	379,0	2000,0	243,0	1250,0	-	-		
M36	○	-	-	-	-	-	-	-	-	116,0	660,0	182,5	1050,0	228,5	1300,0	290,5	1650,0	249,0	1400,0	324,0	1850,0	207,5	1200,0	249,0	1400,0		
	●	172,0	980,0	377,0	2150,0	538,0	3100,0	629,0	3600,0	160,0	920,0	251,5	1450,0	315,0	1800,0	400,0	2300,0	343,0	1950,0	446,0	2550,0	286,0	1650,0	-	-		
M39	○	-	-	-	-	-	-	-	-	140,0	880,0	225,0	1400,0	281,0	1750,0	358,0	2200,0	307,0	1900,0	399,0	2450,0	255,5	1550,0	307,0	1900,0		
	●	205,0	1250,0	451,0	2800,0	642,0	3950,0	752,0	4650,0	191,5	1200,0	301,0	1850,0	376,0	2300,0	478,0	2950,0	410,0	2500,0	533,0	3300,0	342,0	2100,0	-	-		
M42	○	-	-	-	-	-	-	-	-	162,5	1100,0	255,5	1700,0	319,0	2100,0	406,0	2700,0	348,0	2300,0	453,0	3000,0	290,0	1950,0	348,0	2300,0		
	●	235,0	1550,0	517,0	3450,0	737,0	4900,0	862,0	5800,0	219,5	1450,0	345,0	2300,0	431,0	2900,0	549,0	3650,0	470,0	3150,0	612,0	4100,0	392,0	2600,0	-	-		
M45	○	-	-	-	-	-	-	-	-	194,0	1400,0	305,0	2150,0	381,0	2700,0	485,0	3450,0	415,0	2950,0	540,0	3850,0	346,0	2450,0	415,0	2950,0		
	●	273,0	19 50,0	601,0	43 00,0	855,0	6 100,0	1000,0	7 100,0	255,0	1800,0	400,0	2850,0	500,0	3600,0	637,0	4500,0	546,0	3900,0	710,0	5100,0	455,0	3200,0	-	-		
M48	○	-	-	-	-	-	-	-	-	216,5	1650,0	340,0	2600,0	425,0	3250,0	541,0	4150,0	464,0	3550,0	603,0	4600,0	386,0	2950,0	464,0	3550,0		
	●	309,0	24 00,0	679,0	52 00,0	967,0	7 400,0	1130,0	8 700,0	288,0	2200,0	453,0	3500,0	566,0	4300,0	720,0	5500,0	617,0	4700,0	803,0	6100,0	515,0	3950,0	-	-		
M52	○	-	-	-	-	-	-	-	-	258,5	2100,0	407,0	3350,0	508,0	4150,0	647,0	5300,0	554,0	4550,0	721,0	5900,0	462,0	3800,0	554,0	4550,0		
	●	370,0	30 00,0	813,0	67 00,0	1160,0	9 500,0	1355,0	11 100,0	345,0	2850,0	542,0	4450,0	678,0	5600,0	862,0	7100,0	739,0	6100,0	961,0	7900,0	616,0	5100,0	-	-		
M56	○	-	-	-	-	-	-	-	-	297,5	2650,0	468,0	4150,0	585,0	5200,0	744,0	6600,0	638,0	5600,0	829,0	7300,0	532,0	4700,0	638,0	5600,0		
	●	426,0	3800,0	938,0	8300,0	1335,0	11800,0	1565,0	13900,0	398,0	3500,0	625,0	5500,0	782,0	6900,0	995,0	8800,0	853,0	7600,0	1110,0	9800,0	711,0	6300,0	-	-		

Pre-stressing forces (kN) and tightening torque (Nm) with reduced shaft (○) and full shaft (●) in the case of 70% of the minimum distance. Coefficient of friction = 0,14.

MATERIALS *

	DIN 17006	DIN 17007	AISI	Kenn- zeichen	Artikelstamm Werknummer	Härte HB	Temperatur C° von bis		Spez. Gew. g/cm ³
Steel & Iron	RSt 37-2	1.0038	--		0038	100-130	-40°	500°	7,85
	St 35	1.0308	--		0308	100-130	-40°	500°	7,85
	Ust 13	1.0333	1.003		0333	80-115	-40°	500°	7,85
	StW 24 mod.	1.0335	Soft-Iron	D	0335	90-100			
	Reineisen (Armco)	1.1003	Soft-Iron	D	1003	90-100	-60°	500°	7,85
Stainless Steel	X6 Cr13	1.4000	410	S 410	4000	130-180	-20°	500°	7,85
	X6 Cr17	1.4016	430		4016	130-170	-20°	350°	7,70
	X20 Cr13	1.4021	420		4021	225-275	-20°	500°	7,70
	X5 CrNi 18 10	1.4301	304	S 304	4301	130-180	-250°	550°	7,90
	X5 CrNiMo 17 12 2	1.4401	316	S 316	4401	130-180	-110°	550°	7,90
	X2 CrNiMo 17 13 2	1.4404	316 L		4404	120-180	-110°	550°	7,90
	X6 CrNiTi 18 10	1.4541	321	S 321	4541	130-190	-250°	550°	7,90
	X6 CrNiNb 18 10	1.4550	347	S 347	4550	130-190	-250°	550°	7,90
	X6 CrNiMoTi 17 12 2	1.4571	316 Ti	316 Ti	4571	130-190	-110°	550°	7,80
	X15 CrNiSi 20 12	1.4828	309		4828	130-190	-110°	800°	7,90
	X10 NiCrAlTi 32 20	1.4876	B 407-409		4876	140-220	-110°	850°	8,00
Heat treatable	16 Mo 3	1.5415	F9		5415	130-170	-20°	530°	7,85
	13 CrMo 4-5	1.7335	F12	7.335,0	7335	130-175	-60°	560°	7,85
	12 CrMo 195	1.7362	F5	F5	7362	175-220	-40°	650°	7,85
	10 CrMo 910	1.7380	F22		7380	130-175	-40°	590°	7,85

	Material	Bezeichnung	Artikelstamm Werknummer	Härte HB	Temperatur C° von bis		Spez. Gew. g/cm ³
	Kupfer	SF-Cu	8001	55	-250°	400°	9,00
	Messing	CuZn37	8002	60-80	-100°	350°	8,00
	Blei	Pb 99,9	8003	4	-250°	220°	12,00
	Nickel	Ni 99,2	8004	100-150	-250°	600°	9,00
	Monel	NiCu30Fe	8005	95-125	-125°	600°	9,00
	Aluminium	Al 99,5	8006	20-23	-250°	300°	3,00
	Alu Compusit	AlMg1	8007	25-32	-250°	300°	3,00

* Metal gaskets from other materials and materials we like to produce on request

OTHER METAL GASKETS

Lens gaskets

Lens gaskets are characterised by a whole range of advantages. This type of seal is insensitive to overpressing and can be used several times. This makes them highly attractive for several industrial sectors.

Corrugated gaskets

Corrugated gaskets are available in very different versions. They are available as round, oval and elongated rings with webs or tabs as well as with and without supports.

The enormous variety of this type of gasket means that they are used in a wide range of applications. In particular, wherever flanges with low flexural strength are used.

We offer three basic variants in our range, all of which can be supplied by us in different variations if required.

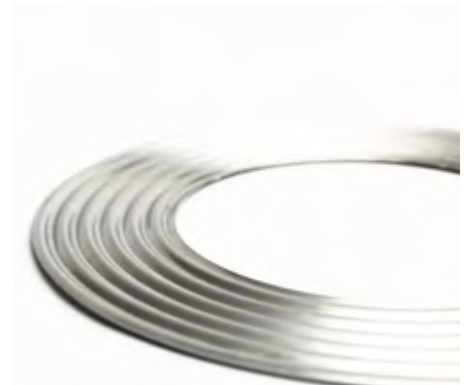
1. Gaskets with flat soft material overlays
2. With cord supports
3. All-metal without support

Metal flat gaskets

Metal flat gaskets are used where, for example, special temperature and pressure values make it impossible to use other gaskets. The thickness of the metallic flat gaskets varies depending on the nature of the flange surfaces and the operating conditions.

We offer you flat gaskets made of different metals in our range:

- Steel and iron: 1.0038, 1.0308, 1.0333, 1.0335, 1.1003
- Stainless steel: 1.4000, 1.4016, 1.4021, 1.4301, 1.4401, 1.4404, 1.4541, 1.4550, 1.4571, 1.4828, 1.4876
- Heat-treatable stainless steel: 1.5415, 1.7335, 1.7362, 1.7380
- Metals: copper, brass, lead, nickel, monel, aluminium, aluminium composite



... OTHER METAL GASKETS

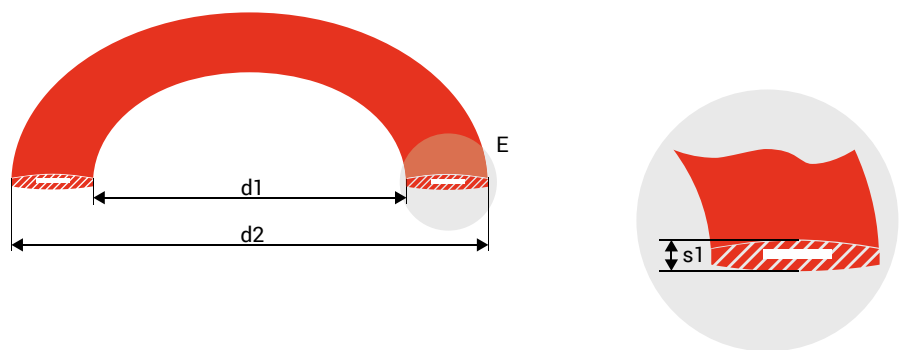


Rubber-steel gaskets

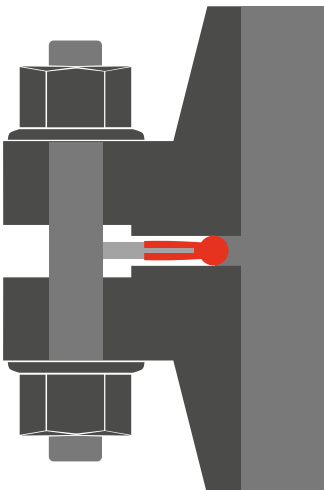
Rubber-steel gaskets consist of a steel ring encased in rubber (caoutchouc), which makes them not only corrosion-resistant but also media-protected.

The optimum area of application for rubber-steel gaskets is wherever effective sealing of cool substances with low leakage rates, coupled with low bolting forces, is required. The internal steel ring prevents the seal from being pressed out by the prevailing pressure.

We offer you different versions of these exclusive seals. Depending on your requirements and area of application, we can equip you optimally.

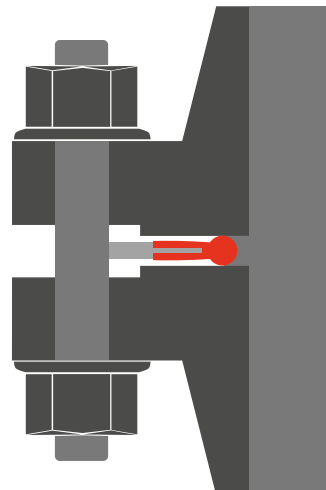


DIN FLANGES



Rubber-steel gaskets PKN for DIN flanges.

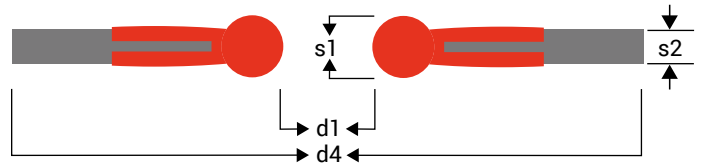
ASME FLANGES



Rubber-steel gaskets PKN for ASME B 16.5 and ASME B 16.47 series A flanges.

Profile PKN RUBBER-STEEL GASKETS

Standard: DIN 2690
Flange: DIN
Pressure lev.: PN 10 - 100

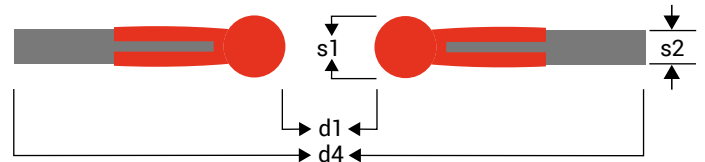


PN	10	16	25	40	64	100			
DN	d1	d4	d4	d4	d4	d4	d4	s1	s2
10	18,0	45,0	45,0	45,0	45,0	56,0	56,0	5,0	3,0
15	22,0	50,0	50,0	50,0	50,0	61,0	61,0	5,0	3,0
20	28,0	60,0	60,0	60,0	60,0			5,0	3,0
25	35,0	70,0	70,0	70,0	70,0	82,0	82,0	5,5	3,5
32	43,0	82,0	82,0	82,0	82,0			5,5	3,5
40	49,0	92,0	92,0	92,0	92,0	103,0	103,0	5,5	3,5
50	61,0	107,0	107,0	107,0	107,0	113,0	119,0	5,5	3,5
65	77,0	127,0	127,0	127,0	127,0	137,0	143,0	5,5	3,5
80	90,0	142,0	142,0	142,0	142,0	148,0	154,0	5,5	3,5
100	115,0	162,0	162,0	168,0	168,0	174,0	180,0	8,0	5,0
125	141,0	192,0	192,0	195,0	195,0	210,0	217,0	8,0	5,0
150	169,0	218,0	218,0	225,0	225,0	247,0	257,0	8,0	5,0
175	195,0	248,0	248,0	255,0	267,0	277,0	287,0	8,0	5,0
200	220,0	273,0	273,0	285,0	292,0	309,0	323,0	8,0	5,0
250	274,0	328,0	330,0	342,0	353,0	364,0	391,0	8,0	5,0
300	325,0	378,0	385,0	402,0	418,0	424,0	458,0	8,0	5,0
350	368,0	438,0	445,0	458,0	475,0	486,0	512,0	8,0	5,0
400	420,0	490,0	497,0	515,0	547,0	543,0	572,0	8,0	5,0
450	470,0	540,0	557,0	565,0	572,0			10,0	6,5
500	520,0	595,0	618,0	625,0	628,0	657,0	704,0	10,0	6,5
600	620,0	695,0	735,0	730,0	745,0	764,0	813,0	10,0	6,5
700	720,0	810,0	805,0	830,0	850,0	879,0	950,0	10,0	6,5
800	820,0	915,0	910,0	940,0	970,0	988,0		10,0	6,5
900	920,0	1.015,0	1.010,0	1.040,0	1.080,0	1.108,0		10,0	6,5
1.000	1.020,0	1.120,0	1.125,0	1.150,0	1.190,0	1.220,0		10,0	6,5
1.200	1.220,0	1.340,0	1.340,0	1.360,0	1.395,0	1.452,0		10,0	6,5
1.400	1.420,0	1.545,0	1.540,0	1.575,0	1.615,0			12,0	8,0
1.600	1.620,0	1.770,0	1.760,0	1.795,0	1.830,0			12,0	8,0
1.800	1.820,0	1.970,0	1.960,0	2.000,0				12,0	8,0
2.000	2.020,0	2.180,0	2.165,0	2.230,0				12,0	8,0
2.200	2.220,0	2.375,0	2.375,0					12,0	8,0
2.400	2.420,0	2.590,0	2.585,0					12,0	8,0
2.600	2.620,0	2.790,0	2.785,0					12,0	8,0
2.800	2.820,0	3.010,0						12,0	8,0
3.000	3.020,0	3.225,0						12,0	8,0

Profile PKN

RUBBER-STEEL GASKETS

Standard: ASME B 16.21
 Flange: ASME B 16.5
 Pressure lev.: Class 150 - 900

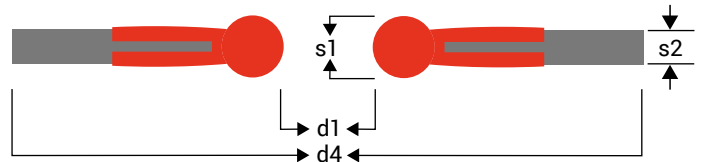


Class	150	300	400	600	900			
NPS	d1	d4	d4	d4	d4	d4	s1	s2
1/2	22,0	47,0	53,0	53,0	53,0	63,0	5,0	3,0
3/4	27,0	57,0	66,0	66,0	66,0	69,0	5,0	3,0
1	34,0	66,0	73,0	73,0	73,0	79,0	5,0	3,0
1 1/4	43,0	76,0	82,0	82,0	82,0	88,0	5,5	3,5
1 1/2	49,0	85,0	95,0	95,0	95,0	98,0	5,5	3,5
2	61,0	104,0	111,0	111,0	111,0	142,0	5,5	3,5
2 1/2	74,0	124,0	130,0	130,0	130,0	165,0	5,5	3,5
3	90,0	136,0	149,0	149,0	149,0	168,0	5,5	3,5
3 1/2	102,0	162,0	165,0	162,0	162,0		8,0	5,0
4	115,0	174,0	180,0	177,0	193,0	206,0	8,0	5,0
5	141,0	196,0	215,0	212,0	241,0	247,0	8,0	5,0
6	169,0	222,0	251,0	247,0	266,0	289,0	8,0	5,0
8	220,0	279,0	307,0	304,0	320,0	358,0	8,0	5,0
10	274,0	339,0	362,0	358,0	400,0	434,0	8,0	5,0
12	325,0	409,0	422,0	419,0	457,0	498,0	8,0	5,0
14	356,0	450,0	485,0	482,0	492,0	520,0	8,0	5,0
16	407,0	514,0	539,0	536,0	565,0	574,0	8,0	5,0
18	458,0	549,0	596,0	593,0	612,0	638,0	8,0	5,0
20	508,0	606,0	654,0	647,0	682,0	698,0	10,0	6,5
24	610,0	717,0	774,0	768,0	790,0	838,0	10,0	6,5

Profile PKN

RUBBER-STEEL GASKETS

Standard: ASME B 16.21
 Flange: ASME B 16.47 Series A and Series B
 Pressure lev.: Class 150 - 600



Class	NPS	150	300	400	600	s1	s2	
		d1	d4	d4	d4			d4
26		665,0	774,0	835,0	831,0	866,0	10,0	6,5
28		720,0	831,0	898,0	892,0	914,0	10,0	6,5
30		770,0	882,0	952,0	946,0	971,0	10,0	6,5
32		820,0	939,0	1.006,0	1.003,0	1.022,0	10,0	6,5
34		865,0	990,0	1.057,0	1.054,0	1.073,0	10,0	6,5
36		920,0	1.047,0	1.117,0	1.117,0	1.130,0	10,0	6,5
38		965,0	1.111,0	1.054,0	1.073,0	1.104,0	10,0	6,5
40		1.020,0	1.162,0	1.114,0	1.132,0	1.155,0	10,0	6,5
42		1.070,0	1.219,0	1.165,0	1.178,0	1.219,0	10,0	6,5
44		1.120,0	1.276,0	1.219,0	1.231,0	1.270,0	10,0	6,5
46		1.170,0	1.327,0	1.273,0	1.289,0	1.327,0	10,0	6,5
48		1.220,0	1.384,0	1.323,0	1.346,0	1.390,0	10,0	6,5
50		1.270,0	1.435,0	1.378,0	1.403,0	1.447,0	12,0	8,0
52		1.320,0	1.492,0	1.428,0	1.454,0	1.498,0	12,0	8,0
54		1.370,0	1.549,0	1.492,0	1.517,0	1.555,0	12,0	8,0
56		1.430,0	1.606,0	1.543,0	1.568,0	1.612,0	12,0	8,0
58		1.475,0	1.663,0	1.593,0	1.619,0	1.663,0	12,0	8,0
60		1.530,0	1.714,0	1.644,0	1.682,0	1.720,0	12,0	8,0

**We provide fast and reliable
assistance worldwide to protect you
from system downtimes.**

APOLLON

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