

Weld ring gaskets

We recommend weld ring gaskets for use in any place where a welded seal is necessary, due either to the danger of the medium or the danger presented by a loss of functionality, but where the connection also needs to be detachable to a certain degree.

These gaskets are therefore described as being semi-detachable, as the welded sealing joint needs to be undone as well as the flange bolts.

Weld ring gaskets are generally made of the same or a related material as the pipe or flange and are only used in pairs.

The choice between the various profiles depends on the operating conditions of the weld ring gasket. The table shows the typical features of Profiles A21 to A25. The "attachment seam" is the connection of a welded half with the flange. The "attachment seam" can be located internally or externally. The "seal seam" is always the welding of both weld rings with one another.

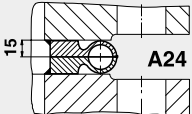
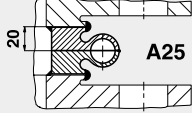
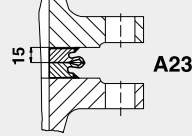
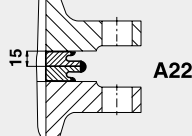
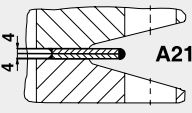
Note:

The suitability of the materials for welding (gasket to flange), the ability to weld (proper fitting) and the security of the welding (expert layout and specifications) should be assessed and tested with regard to the local operating conditions by an expert welding engineer. The "attachment seams" and "seal seam" should be arranged so that they can withstand all load conditions.

Weld rings with hollow lips in Profiles A24, A25 and A23 optimise the stress ratio in the seal seam. Weld rings with hollow lips are recommended for use when connecting components with different heat exchange properties.

The advantage of weld ring gaskets in Profile A24 and A25 lies in their greater motion absorption. They are predominantly used with heat exchangers with differing radial strain properties, e.g. as gaskets between channel flanges and tube plates. With the A24 gasket the weld seams are not accessible from the outside. However in many cases this is an advantage, particularly where creep corrosion is feared.

Typical features:

Profile	Internal "attachment seam" Crevice corrosion between weld ring and flange is avoided	External "attachment seam" Re-welding or disassembly possible	Capacity of radial differential expansion	Undo and re-weld
 A24	Usual	Not possible	Depending on the thickness of the wall of the torus, to a max. $\Delta r \sim 5 \text{ mm}$	Easy to separate with a 2 mm cutting wheel. Can be re-welded 2 to 4 times
 A25	Possible to have additional attachment. Intermittently welded	Usual	Depending on the thickness of the wall of the torus, to a max. $\Delta r \sim 5 \text{ mm}$	Easy to separate with a 2 mm cutting wheel. Can be re-welded 2 to 4 times
 A23	a) Only as an additional attachment. Intermittently welded b) if there is a danger of corrosion	a) Usual setup b) Only as an additional attachment aid. Intermittently welded	Only low capacity due to the small lip. max. $\Delta r \sim 0,5 \text{ mm}$	Difficult to separate Can be re-welded 1 to 3 times
 A22	a) Only as an additional attachment. Intermittently welded. b) if there is a danger of corrosion	a) Usual setup b) Only as an additional attachment aid. Intermittently welded	Not really possible. max. $\Delta r \sim 0,1 \text{ mm}$	With cutting wheel Separation loss 2 to 3 mm respectively. Can be re-welded 3 to 5 times
 A21	Usual	Not possible Flange form M in accordance with DIN 2526 also necessary	Modest capacity Depending on projection max. $\Delta r \sim 0,3 \text{ mm}$	With cutting wheel Separation loss 2 to 3 mm respectively. Can be re-welded 2 to 4 times

Weld ring gaskets

In this case we recommend the following profiles: A24H, A24K, A24KVR and A24N.

All weld ring gaskets can be combined with additional auxiliary gaskets. These can be useful for various different reasons.

- a) The pressure test should be carried out with an auxiliary gasket without welding.
- b) The start or run-up phase should be undertaken with the auxiliary gasket, as it is likely to need to be opened several times.
- c) This application is generally in conjunction with the additional auxiliary gasket. The weld ring gasket is only welded if the auxiliary gasket fails.

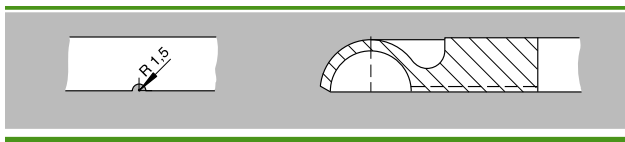
Weld ring gaskets should be fitted so that the weld ring halves lie on top of each other, and parallel to each other and to the flanges.

If weld ring gaskets are used with auxiliary gaskets, the flange and bolt calculations must be carried out once for the weld ring gasket with the seal diameter to the outermost seal seam and once for the auxiliary gasket.

With the use of auxiliary gaskets, a gap of 0.3 mm remains between the weld ring gasket halves, depending on the design.

Note:

If there is a build-up of condensation during temperature cycles, this can lead to an uncontrolled increase in pressure in the torus. This can be avoided by inserting one or more grooves (1.5 mm deep, 3 mm wide) into one of the ring halves. Please specify the number of grooves when ordering.

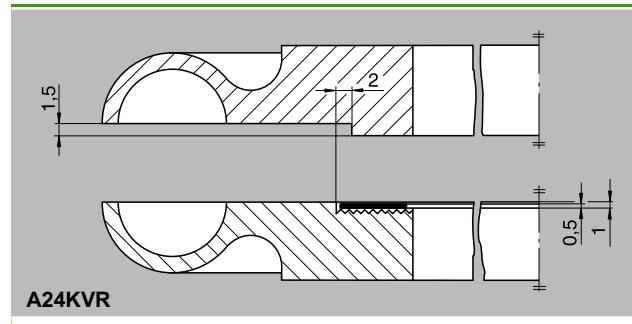


Profile A24H has a weld ring half with a convex sealing surface. The radius conforms to the pressure, temperature and the material involved. A galvanised coat can be useful.

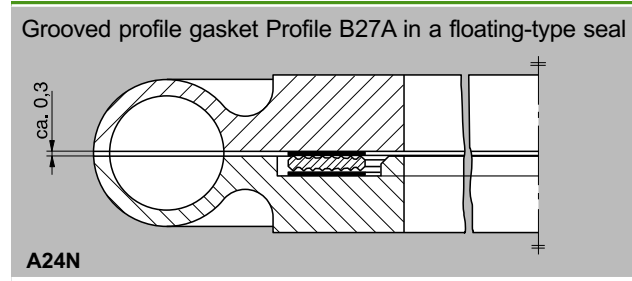
Profile A24K has a weld ring half with a grooved profile, onto which has been attached a layer approximately 0.5 mm thick of either PTFE, graphite, silver or FA (fibre in accordance with DIN 28091), depending on the operating conditions.

Gasket profiles

Profile	Cross-section
A23	
A24	
A24H	
A24K	
A25	



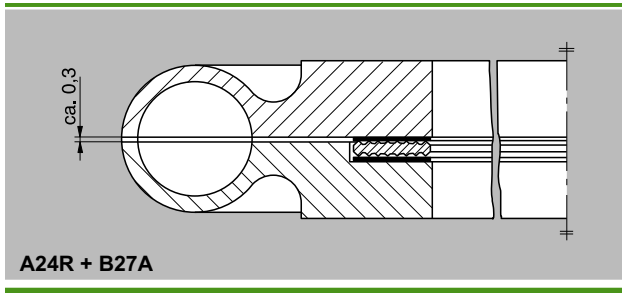
Profile A24KVR with male and female face joints and grooved profile as shown in diagram. Depending on the operating conditions, the layer for this gasket is either PTFE, graphite, silver or fibre* at a thickness of approximately 0.5 mm.



Profile A24N has a groove in one weld ring half for the addition of a grooved profile gasket Profile B27A. For the materials used in the gasket see the section "Grooved gaskets". The depth of the groove is less than the thickness of the grooved profile gasket, so that a floating-type seal can be guaranteed. The groove depth for the use of a grooved profile gasket = $3,5^{+0,1}$ mm, the thickness of the grooved profile gasket = $3,6^{+0,1}$ mm.

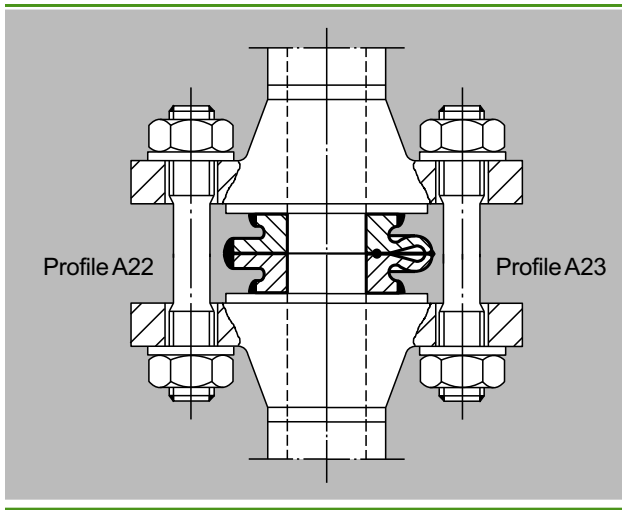
Weld ring gaskets

The weld ring gaskets can also be supplied with a female face in Profile A24R to receive a grooved profile gasket, so that if there is any damage to the gasket it can be replaced.



The various types of auxiliary gaskets, explained in more detail for A24, are also available for Profile A25 and A23. Profile A23 is shown with a protective gasket which is in no way leak-tight.

Weld ring gaskets in Profile A22 are, like A23 and A24, 2x15=30 mm thick therefore providing enough room to weld without special flanges, as shown in the illustration.



This results in large bolt lengths with good spring suspension. As all weld seams are external, any irregularities can easily be re-welded.

Profiles A22 to A22N are predominantly used in pipeline construction, where the twin flange design means that no large differences in strain properties arise when the same material for the gasket and flange is selected.

A further advantage is that due to the greater thickness an auxiliary gasket can be provided, as is explained for A24 - see weld rings with hollow lips.

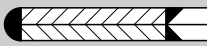
Gasket profiles

Profile	Cross-section
A22	
A22H	
A22K	
A22KVR	
A22N	

Weld ring gaskets

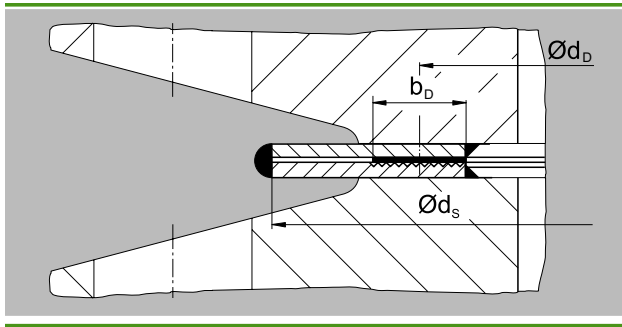
Membrane rings in accordance with DIN 2695 are each 4 mm thick and should be made of the same material as the flange due to the low absorption of radial strain differences. These gaskets are firstly welded internally to the flange using an “attachment seam”, and once the flange has been assembled a “seal seam” is made externally. Any errors made when creating the internal welds can only be fixed with great difficulty.

Gasket profile

Profile	Cross-section
A21	

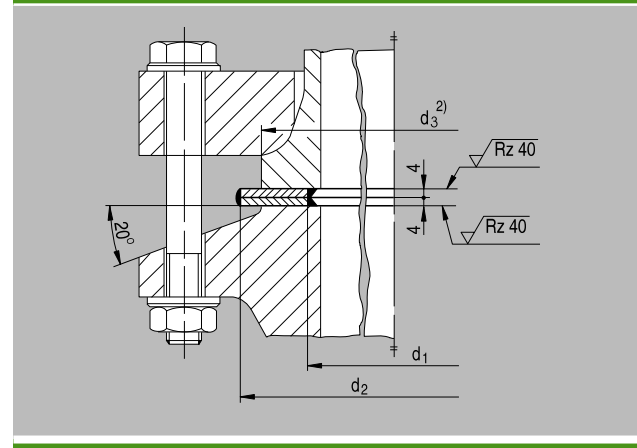
First check if there is sufficient room to make the seal weld or if bevelled flanges of the type Form M in accordance with DIN 2526 will be required.

Membrane weld ring gaskets in Profile A21K are provided with an additional grooved profile. The layers of PTFE, graphite or silver are approximately 0.5 mm thick and should be selected according to the operating conditions.



The figure shows Profile A21K as assembled between flanges of type Form M.

Profil A21



Membrane weld ring gasket Profile A21

Ordering example for a membrane weld ring gasket Profile A21 with $d_1=115$ mm internal diameter and $d_2 = 169$ mm external diameter, made of...¹⁾:

Gasket 115 x 169, DIN 2695, 1.5415

Each membrane weld ring gasket has two weld halves.

Conforms to DIN 2695 (PN 63 to PN 400) Model M

DN	d_1	$d_2^{(3)}$ at PN				
		63	100	160	250 a. 320	400
80	90	143	149	149	153	153
100	115	169	176	176	179	179
125	142	206	213	213	216	216
150	165	243	248	248	248	248
200	214	305	315	315	315	315
250	264	360	370	370	370	-
300	310	420	430	430	-	-
350	340	482	490	-	-	-
400	386	539	-	-	-	-
to 3200 possible						

Dimensions in mm

Weld ring gaskets

Conforms to DIN 2695 (Class 150 to Class 2500) Model M

DN	NPS	d ₁	d ₂ In class				900 to 1500	2500
			150	300	600	1500		
80	3	92	130	142	142	157	157	
100	4	118	167	172	180	187	187	
125	5	114	190	208	216	216	216	
150	6	170	215	243	246	246	246	
200	8	220	272	300	300	300	300	
250	10	273	332	354	354	354	354	
300	12	322	400	411	411	411	411	
350	14	360	440	443	443	443	-	
400	16	412	500	500	500	500	-	
to 3200 possible								

Dimensions in mm

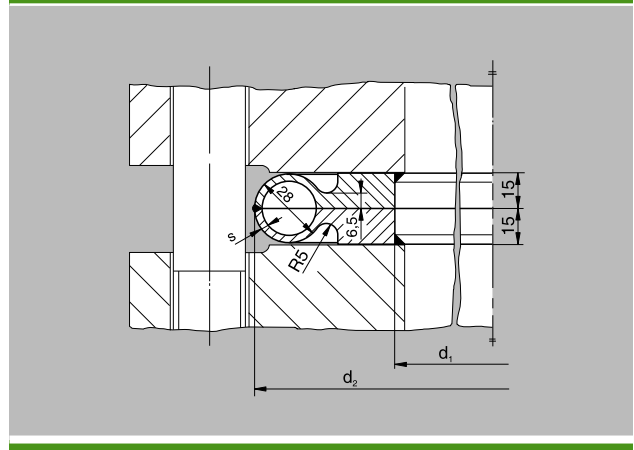
Size d₃²⁾ for PN (DIN 2695) and Class

DN	NPS	d ₃ ²⁾			
		PN 63 - 400	150	Class 300	600
80	3	123	116	122	122
100	4	149	146	150	-
125	5	186	172	180	-
150	6	218	196	-	-
200	8	285	252	-	-
250	10	340	308	-	-
300	12	400	370	-	-
350	14	460	-	-	-
400	16	519	-	-	-

Dimensions in mm

- ¹⁾ Specify materials when placing order.
- ²⁾ When bevelling the flanges the raised face should be machined to this size (not required for DN150, 200, 350, 400).
- ³⁾ Aim for 15 mm membrane protrusion, but at least 10 mm (maximum size: centring diameter less than 4 mm).

Profile A24



Weld ring gaskets Profile A24 for DIN flanges

Ordering example for a weld ring gasket, Profile A24, DN 500, PN 40, works standard 126, made of...¹⁾:

Weld ring gasket DN 500, PN 40, A24, 490 x 626, WN 126, 1.5415, s = ...*

Works standard 126

DN	PN									
	16		25		40		63		100	
	d ₁	d ₂	d ₁	d ₂	d ₁	d ₂	d ₁	d ₂	d ₁	d ₂
250	-	-	-	-	-	-	-	-	258	389
300	-	-	-	-	-	-	-	-	306	456
350	-	-	-	-	348	472	341	484	334	510
400	-	-	-	-	395	544	388	541	-	570
500	-	-	498	622	490	626	-	655	-	702
600	-	-	598	729	-	745	-	762	-	811
700	-	-	696	831	-	850	-	877	-	948
800	-	-	795	940	-	972	-	986	-	-
900	-	-	892	1040	-	1082	-	1106	-	-
1000	1006	1126	991	1152	-	1192	-	1218	-	-
1200	1205	1340	-	1362	-	1396	-	1450	-	-
1400	1402	1540	-	1576	-	1616	-	-	-	-
1600	1598	1762	-	1796	-	1828	-	-	-	-
1800	1795	1962	-	1998	-	-	-	-	-	-
2000	1990	2166	-	2228	-	-	-	-	-	-

Dimensions in mm

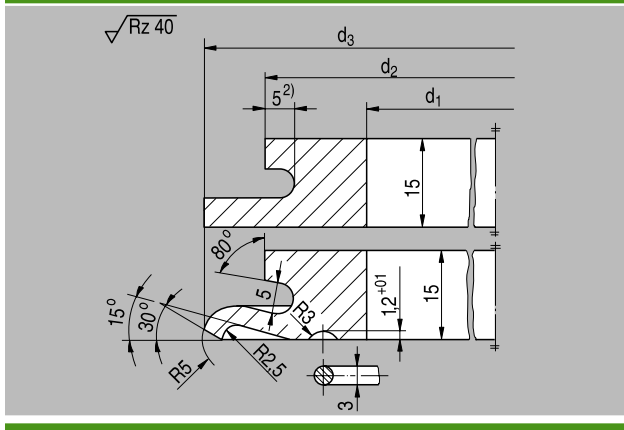
* size specified by client The wall thickness s is determined according to pressure, temperature, material and motion to be absorbed.

** In Profiles A24 to A24N the total width of the weld ring gasket must be no less than $(d_2 - d_1) / 2 = 60$ mm.

¹⁾ Specify material when placing order

Weld ring gaskets

Profile A22 and A23



Weld ring gasket Profile A22* and Profile A23 in accordance with DIN 2695 2002 for DIN flanges

Ordering example for a weld ring gasket, Profile A22, DN 100, PN 60, conforming to DIN 2695-2002, made of...¹⁾:

Weld ring gasket, DN 100, PN 160, A22, DIN 2695-2002, 1.5415

Each membrane weld ring gasket has two weld ring halves.

In order to successfully carry out the welding, the customer should check

- a) whether the raised face is being machined
- b) whether a smooth flange is being used
- c) or whether the external diameter d_3 is to be reduced other than in accordance with our works standard.

¹⁾ Specify material when placing order

²⁾ At DN 10 and 15 only 4 mm

* Model "S" conforms to DIN 2695-2002

Dimensions in accordance with DIN 2695-2002 for DIN flanges

DN	PN 10 – 40			PN 63			PN 100			PN 160			PN 250			PN 320			PN 400		
	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3
10	14	27	41	14	30	50	14	30	50	14	30	50	12	30	50	12	30	50	10	30	50
15	17	32	46	17	35	55	17	35	55	17	35	55	16	35	55	15	35	55	17	40	60
20	22	38	58	21	48	68	21	48	68	-	-	-	-	-	-	-	-	-	-	-	-
25	29	46	66	29	50	70	29	50	70	28	50	70	27	50	70	24	50	70	28	50	70
32	37	55	75	37	55	75	37	55	75	-	-	-	-	-	-	-	-	-	-	-	-
40	43	60	80	43	60	80	43	60	80	41	60	80	38	60	80	36	60	80	40	80	100
50	55	75	95	55	75	95	54	75	95	52	75	95	48	80	100	48	90	110	51	90	110
65	70	90	110	70	90	110	69	90	110	66	90	110	60	100	120	67	110	130	70	120	140
80	83	105	125	82	105	125	81	105	125	76	105	125	80	115	135	77	125	145	79	130	150
100	107	125	145	106	125	145	104	125	145	98	125	145	99	135	155	101	145	165	95	150	170
125	132	150	170	131	150	170	127	150	170	120	160	180	120	160	180	128	172	192	134	188	208
150	159	178	198	157	178	198	154	178	198	143	185	205	143	185	205	144	205	225	149	218	238
200	207	235	255	205	235	255	199	235	255	187	230	250	195	255	275	185	255	275	193	285	305
250	259	285	305	255	285	305	248	285	305	233	280	300	235	310	330	244	335	355	-	-	-
300	310	335	355	302	335	355	296	335	355	280	335	355	244	335	355	-	-	-	-	-	-

Dimensions in mm

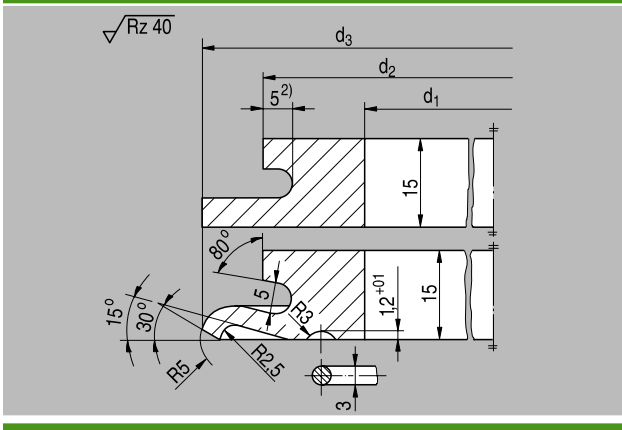
DN	PN 10			PN 16			PN 25			PN 40			PN 63			PN 100		
	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3
350	341	385	405	340	385	405	340	385	405	338	385	405	331	385	405	324	385	405
400	392	435	455	390	435	455	389	435	455	384	435	455	378	435	455	371	435	455
450	443	490	510	441	490	510	440	490	510	435	490	510	-	-	-	-	-	-
500	494	540	560	492	540	560	488	540	560	480	540	560	476	560	580	464	560	580
600	595	645	665	592	645	665	588	645	665	585	645	665	575	655	675	560	670	690
700	695	750	770	694	750	770	686	750	770	683	750	770	671	760	780	651	780	800
800	797	840	860	793	850	870	785	855	875	781	855	875	769	870	890	-	-	-
900	894	945	965	894	945	965	882	960	980	880	960	980	864	975	995	-	-	-
1000	996	1045	1065	996	1045	1065	988	1055	1075	981	1060	1080	964	1085	1105	-	-	-
1200	1198	1260	1280	1195	1260	1280	1188	1265	1285	1176	1275	1295	1156	1295	1315	-	-	-
1400	1396	1455	1475	1392	1460	1480	1385	1465	1485	1375	1475	1495	-	-	-	-	-	-
1600	1592	1665	1685	1588	1665	1685	1585	1665	1685	1570	1680	1700	-	-	-	-	-	-
1800	1790	1860	1880	1785	1865	1885	1780	1870	1890	-	-	-	-	-	-	-	-	-
2000	1984	2070	2090	1980	2070	2090	1975	2075	2095	-	-	-	-	-	-	-	-	-
2200	2184	2270	2290	2175	2275	2295	-	-	-	-	-	-	-	-	-	-	-	-
2400	2380	2470	2490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2600	2576	2675	2695	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2800	2776	2875	2895	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3000	2972	3080	3100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- Flanges compliant with the standard not available

Dimensions in mm

Weld ring gaskets

Profile A22 and A23



Weld ring gasket Profile A22 and Profile A23 for DIN flanges

Ordering example for a weld ring gasket, Profile A22, DN 100, PN 160, conforming to works standard 110, made of...¹⁾:

Weld ring gasket, DN 100, PN 160, A22, works standard 110, 1.5415

Each membrane weld ring gasket has two weld ring halves.

In order to successfully carry out the welding, the customer should check:

- whether the raised face is being machined
- whether a smooth flange is being used
- or whether the external diameter d_1 is to be reduced other than in accordance with our works standard.

¹⁾ Specify material when placing order

²⁾ At DN 10 and 15 only 4 mm

Dimensions in accordance with works standard 110 for DIN flanges

DN	PN 10 – 40			PN 63			PN 100			PN 160			PN 250			PN 320			PN 400		
	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3
10	13,6	27	41	13,6	30	50	13,6	30	50	13,6	30	50	12	30	50	12	30	50	10	30	50
15	17,3	32	46	17,3	35	55	17,3	35	55	17,3	35	55	16,1	35	55	14,9	35	55	16,9	40	60
20	22,3	38	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	28,5	46	66	28,5	50	70	28,5	50	70	27,9	50	70	26,5	50	70	23,7	50	70	28,2	50	70
32	37,2	55	75	37,2	55	75	37,2	55	75	-	-	-	-	-	-	-	-	-	-	-	-
40	43,1	60	80	42,5	60	80	42,5	60	80	41,1	60	80	38,3	60	80	35,7	60	80	40,3	80	100
50	54,5	75	95	54,5	75	95	53,9	75	95	52,3	75	95	47,7	80	100	47,5	90	110	51,1	90	110
65	70,3	90	110	69,7	90	110	68,9	90	110	66,1	90	110	60,1	100	120	66,9	110	130	69,6	120	140
80	82,5	105	125	81,7	105	125	80,9	105	125	76,3	105	125	79,6	115	135	76,6	125	145	79,3	130	150
100	107,1	125	145	106,3	125	145	104,3	125	145	98,3	125	145	98,6	135	155	101	145	165	95,3	150	170
125	131,7	150	170	130,7	150	170	127,1	150	170	119,7	160	180	120,4	160	180	128,3	172	192	133,7	188	208
150	159,3	178	198	157,1	178	198	154,1	178	198	143,3	185	205	142,8	185	205	143,7	205	225	149,1	218	238
200	206,5	235	255	204,9	235	255	199,1	235	255	187,1	230	250	194,5	255	275	184,5	255	275	193	285	305
250	258,8	285	305	255,4	285	305	248	285	305	233	280	300	234,5	310	330	243,9	335	355	-	-	-
300	309,7	335	355	301,9	335	355	295,5	335	355	279,5	335	355	244	335	355	-	-	-	-	-	-

Dimensions in mm

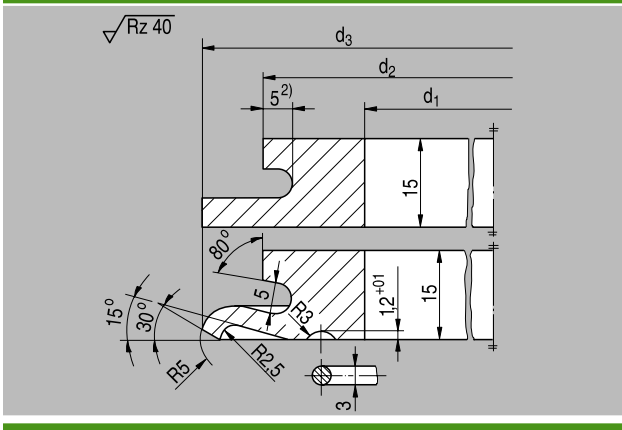
DN	PN 10			PN 16			PN 25			PN 40			PN 63			PN 100		
	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3	d_1	d_2	d_3
350	341,4	385	405	339,6	385	405	339,6	385	405	338,0	385	405	330,6	385	405	323,6	385	405
400	392,2	435	455	390,4	435	455	388,6	435	455	384,4	435	455	378	435	455	371,4	435	455
450	443	490	510	441,2	490	510	439,6	490	510	435,2	490	510	-	-	-	-	-	-
500	493,8	540	560	492	540	560	488	540	560	479,6	540	560	476	560	580	464	560	580
600	595,4	645	665	592	645	665	587,6	645	665	585	645	665	575	655	675	560	670	690
700	695,2	750	770	693,6	750	770	686,2	750	770	683	750	770	671	760	780	651	780	800
800	797	840	860	793	850	870	784,6	855	875	781	855	875	769	870	890	-	-	-
900	894	945	965	894	945	965	882	960	980	880	960	980	864	975	995	-	-	-
1000	996	1045	1065	996	1045	1065	988	1055	1075	981	1060	1080	964	1085	1105	-	-	-
1200	1198	1260	1280	1195	1260	1280	1188	1265	1285	1176	1275	1295	1156	1295	1315	-	-	-
1400	1396	1455	1475	1392	1460	1480	1385	1465	1485	1375	1475	1495	-	-	-	-	-	-
1600	1592	1665	1685	1588	1665	1685	1585	1665	1685	1570	1680	1700	-	-	-	-	-	-
1800	1790	1860	1880	1785	1865	1885	1780	1870	1890	-	-	-	-	-	-	-	-	-
2000	1984	2070	2090	1980	2070	2090	1975	2075	2095	-	-	-	-	-	-	-	-	-
2200	2184	2270	2290	2175	2275	2295	-	-	-	-	-	-	-	-	-	-	-	-
2400	2380	2470	2490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2600	2576	2675	2695	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2800	2776	2875	2895	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3000	2972	3080	3100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- Flanges compliant with the standard not available

Dimensions in mm

Weld ring gaskets

Profile A22 and A23



Weld ring gasket Profile A22* and A23 for ANSI flanges

Ordering example for a weld ring gasket, Profile A22, NPS 3, Class 900, made of ...¹⁾:

Schweißdichtung A22, NPS 3, Class 900, WN 111, 1.5415

* Model "S" conforms to DIN 2695-2002

In accordance with 2695-2002 for ANSI flanges

DN	NPS	Class						
		150-300	400-900	1500-2500	d ₁	d ₂	d ₃	
15	1/2	16	14	6	29	45	29	45
20	3/4	21	19	11	33	53	33	53
25	1	27	24	15	42	62	42	62
32	1 1/4	35	33	23	52	72	55	75
40	1 1/2	41	38	28	60	80	64	84
50	2	53	49	38	75	95	83	103
65	2 1/2	63	59	45	96	116	96	116
80	3	78	74	58	105	125	118	138
100	4	102	97	80	148	168	148	168
125	5	128	122	103	160	180	177	197
150	6	154	146	124	185	205	207	227
200	8	203	194	174	240	260	261	281
250	10	255	248	222	295	315	315	335
300	12	305	298	273	372	392	372	392
350	14	337	330	305	404	424	404	424
400	16	387	381	356	461	481	461	481
450	18	438	432	406	525	545	525	545
500	20	499	483	457	575	595	575	595
600	24	591	584	559	683	703	683	703

Dimensions in mm

Works standard 111 for ANSI flanges

DN	NPS	Class						
		150-300	400-900	1500-2500	d ₁	d ₂	d ₃	
15	1/2	15,7	14,0	6,4	29	45	29	45
20	3/4	20,8	18,8	11,0	33	53	33	53
25	1	26,7	24,4	15,2	42	62	42	62
32	1 1/4	35,1	32,5	22,8	52	72	55	75
40	1 1/2	40,9	38,1	27,9	60	80	64	84
50	2	52,6	49,3	38,2	75	95	83	103
65	2 1/2	62,7	58,9	45,0	96	116	96	116
80	3	78,0	73,7	58,4	105	125	118	138
100	4	102,4	97,3	80,1	148	168	148	168
125	5	128,3	122,2	103,2	160	180	177	197
150	6	154,2	146,3	124,4	185	205	207	227
200	8	202,7	193,8	174,6	240	260	261	281
250	10	254,5	247,6	222,3	295	315	315	335
300	12	304,8	298,4	273,1	372	392	372	392
350	14	336,6	330,2	304,8	404	424	404	424
400	16	387,3	381,0	355,6	461	481	461	481
450	18	438,1	431,8	406,4	525	545	525	545
500	20	488,9	482,6	457,2	575	595	575	595
600	24	590,5	584,2	558,8	683	703	683	703

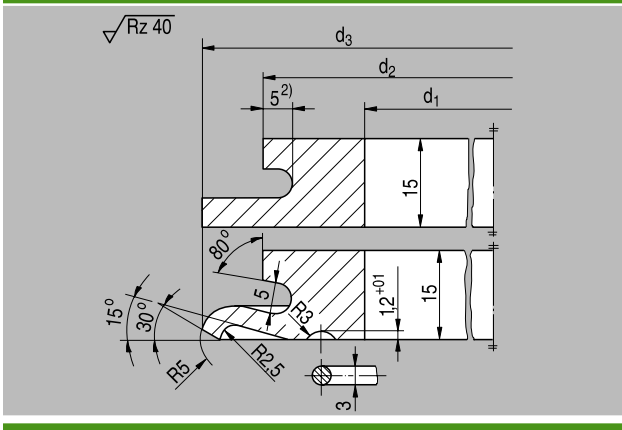
Dimensions in mm

¹⁾ Specify material when placing order

²⁾ At NPS 1/2 and NPS 3/4 only 4 mm

Weld ring gaskets

Profile A22 and A23



Weld ring gasket Profile A22 and Profile A23 for flanges in accordance with ASME B16.47 Series A

Ordering example for a weld ring gasket, Profile A22, NPS 30, Class 150, made of...¹⁾:

Weld ring gasket A22, NPS 30, Class 150, WN 143, 1.5415

06

Works standard 143 for ASME B16.47 Series A flanges

NPS	Class 150 - 300			Class 400 - 600			Class 900		
	d ₁	d ₂	d ₃	d ₁	d ₂	d ₃	d ₁	d ₂	d ₃
26	641,4	695,8	715,8	635,0	695,8	715,8	622,4	708,4	728,4
28	692,2	746,6	766,6	685,8	746,6	766,6	673,2	759,2	779,2
30	743,0	797,4	817,4	736,6	797,4	817,4	724,0	810,0	830,0
32	793,8	848,2	868,2	787,4	848,2	868,2	774,8	860,8	880,8
34	844,6	899,0	919,0	838,2	899,0	919,0	825,6	911,6	931,6
36	895,4	949,8	969,8	889,0	949,8	969,8	876,4	962,4	982,4
38	946,2	1000,6	1020,6	939,8	1000,6	1020,6	927,2	1013,0	1033,0
40	997,0	1051,4	1071,4	990,6	1051,4	1071,4	978,0	1064,0	1084,0
42	1047,8	1102,4	1122,2	1041,4	1102,4	1122,2	1028,8	1114,8	1134,8
44	1098,6	1153,0	1173,0	1092,2	1153,0	1173,0	1079,6	1165,6	1185,6
46	1149,4	1203,8	1223,8	1143,0	1203,8	1223,8	1130,4	1216,4	1236,4
48	1200,2	1254,6	1274,6	1193,8	1254,6	1274,6	1181,2	1267,2	1287,2
50	1251,0	1305,4	1325,4	1244,6	1305,4	1325,4	-	-	-
52	1301,8	1356,2	1376,2	1295,4	1356,2	1376,2	-	-	-
54	1352,6	1407,0	1427,0	1346,2	1407,0	1427,0	-	-	-
56	1403,4	1457,8	1477,8	1397,0	1457,8	1477,8	-	-	-
58	1454,2	1508,6	1528,6	1447,8	1508,6	1528,6	-	-	-
60	1505,0	1559,4	1579,4	1498,6	1559,4	1579,4	-	-	-

- Flanges compliant with the standard not available

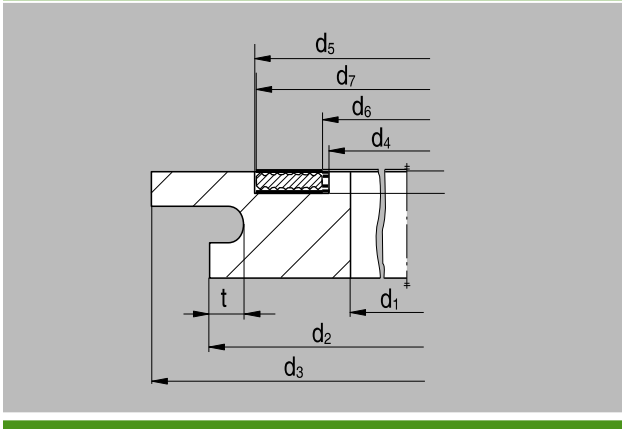
Dimensions in mm

Each membrane weld ring gasket has two weld ring halves.

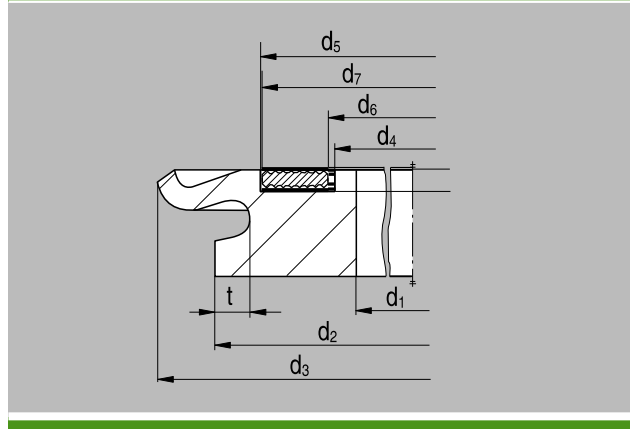
All measurements are recommendations and should be checked by the client.

Weld ring gaskets

Profile A22N



Profile A23N



Weld ring gasket Profile A22N and Profile A23N for DIN flanges

Ordering example for a weld ring gasket, Profile A22N, DN 100, PN 6, with a grooved profile gasket Profile B27A, conform to works standard 134, made of...¹⁾:

Weld ring gasket, DN 100, PN 16, A22N, B27A, 1.4541 / graphite, WN 134

* Turning in depth t 4 mm only
In order to successfully carry out the welding, the customer should check:
a) whether the raised face is being machined
b) whether a smooth flange is being used
c) or whether the external diameter d₃ is to be reduced other than in accordance with our works standard.

¹⁾ Specify material when placing order

Works standard 134, PN 10

DN	Groove measurement		Groove width	Gasket width	Grooved gasket				
	d ₁	d ₂			d ₄	d ₅	d ₆	d ₇	
32 *	37,2	65	79	40,0	54	7,0	6,0	41	53
40 *	43,1	71	85	46,0	60	7,0	6,0	47	59
50 *	54,5	84	98	59,0	73	7,0	6,0	60	72
65 *	70,3	101	115	74,6	90	7,7	6,5	76	89
80	82,5	115	135	86,6	102	7,7	6,5	88	101
100 *	107,1	141	155	111,4	128	8,3	7,0	113	127
125 *	131,7	166	180	136,4	153	8,3	7,0	138	152
150 *	159,3	196	210	165,2	183	8,9	7,5	167	182
(175) *	182,9	223	237	189,0	209	10,0	8,5	191	208
200 *	207,3	246	260	212,0	232	10,0	8,5	214	231
250	260,4	299	315	264,0	285	10,5	9,0	266	284
300	309,7	354	370	314,6	338	11,7	10,0	317	337
350	341,4	390	410	348,6	372	11,7	10,0	351	371
400	392,2	445	465	401,2	427	12,9	11,0	404	426
(450)	443,0	500	520	453,0	481	14,0	12,0	456	480
500	493,8	555	575	506,0	534	14,0	12,0	509	533
600	595,4	660	680	608,0	638	15,0	13,0	611	637
700	695,2	770	790	710,2	745	17,4	15,0	714	744
800	797,0	875	895	813,0	850	18,5	16,0	817	849
900	894,0	970	990	908,0	945	18,5	16,0	912	944
1000	996,0	1075	1095	1012,0	1049	18,5	16,0	1016	1048

- Flanges compliant with the standard not available

Dimensions in mm

Works standard 134, PN 16

DN	Groove measurement		Groove width	Gasket width	Grooved gasket				
	d ₁	d ₂			d ₄	d ₅	d ₆	d ₇	
32 *	37,2	65	79	40,0	54	7,0	6,0	41	53
40 *	43,1	71	85	46,0	60	7,0	6,0	47	59
50 *	54,5	84	98	59,0	73	7,0	6,0	60	72
65 *	70,3	101	115	74,6	90	7,7	6,5	76	89
80	82,5	115	135	86,6	102	7,7	6,5	88	101
100 *	107,1	141	155	111,4	128	8,3	7,0	113	127
125 *	131,7	166	180	136,4	153	8,3	7,0	138	152
150 *	159,3	196	210	165,2	183	8,9	7,5	167	182
(175) *	182,9	223	237	189,0	209	10,0	8,5	191	208
200 *	207,3	246	260	212,0	232	10,0	8,5	214	231
250	260,4	299	315	264,0	285	10,5	9,0	266	284
300	309,7	354	370	314,6	338	11,7	10,0	317	337
350	339,6	390	410	348,6	372	11,7	10,0	351	371
400	390,4	445	465	401,2	427	12,9	11,0	404	426
(450)	-	-	-	-	-	-	-	-	-
500	492,0	555	575	506,0	534	14,0	12,0	509	533
600	592,4	660	680	608,0	638	15,0	13,0	611	637
700	693,4	770	790	710,2	745	17,4	15,0	714	744
800	793,0	875	895	813,0	850	18,5	16,0	817	849
900	894,0	970	990	908,0	945	18,5	16,0	912	944
1000	996,0	1075	1095	1012,0	1049	18,5	16,0	1016	1048

Dimensions in mm

Weld ring gaskets

Works standard 134, PN 25

DN	Groove measurement			Groove width	Sealing width	Grooved gasket			
	d ₁	d ₂	d ₃			d ₄	d ₅	d ₆	d ₇
32 *	37,2	65	79	40,0	54	7,0	6,0	41	53
40 *	43,1	71	85	46,0	60	7,0	6,0	47	59
50 *	54,5	84	98	59,0	73	7,0	6,0	60	72
65 *	70,3	101	115	74,6	90	7,7	6,5	76	89
80	82,5	115	135	86,6	102	7,7	6,5	88	101
100 *	107,1	141	155	111,4	128	8,3	7,0	113	127
125 *	131,7	166	180	136,4	153	8,3	7,0	138	152
150 *	159,3	196	210	165,2	183	8,3	7,5	167	182
(175) *	182,5	225	245	189,0	209	10,0	8,5	191	208
200 *	206,5	250	270	214,0	234	10,0	8,5	216	233
250	258,8	310	330	269,0	290	10,5	9,0	271	289
300	307,9	360	380	317,6	341	11,7	10,0	320	340
350	339,6	390	410	348,6	372	11,7	10,0	351	371
400	388,8	445	465	399,2	425	12,9	11,0	402	424
500	488,0	555	575	506,0	534	14,0	12,0	509	533
600	588,0	660	680	608,0	638	15,0	13,0	611	637
700	686,0	770	790	710,2	745	17,4	15,0	714	744
800	784,6	875	895	813,0	850	18,5	16,0	817	849
900	882,0	970	990	908,0	945	18,5	16,0	912	944
1000	981,0	1075	1095	1012,0	1049	18,5	16,0	1016	1048

Dimensions in mm

Works standard 134, PN 40

DN	Groove measurement			Groove width	Sealing width	Grooved gasket			
	d ₁	d ₂	d ₃			d ₄	d ₅	d ₆	d ₇
32 *	37,2	65	79	40,0	54	7,0	6,0	41	53
40 *	43,1	71	85	46,0	60	7,0	6,0	47	59
50 *	54,5	84	98	59,0	73	7,0	6,0	60	72
65 *	70,3	101	115	74,6	90	7,7	6,5	76	89
80	82,5	115	135	86,6	102	7,7	6,5	88	101
100 *	107,1	141	155	111,4	128	8,3	7,0	113	127
125 *	131,7	166	180	136,4	153	8,3	7,0	138	152
150 *	159,3	196	210	165,2	183	8,9	7,5	167	182
(175) *	182,5	225	245	189,0	209	10,0	8,5	191	208
200 *	206,5	250	270	214,0	234	10,0	8,5	216	233
250	258,8	310	330	269,0	290	10,5	9,0	271	289
300	307,9	360	380	317,6	341	11,7	10,0	320	340
350	338,0	390	410	347,6	371	11,7	10,0	350	370
400	388,4	440	460	394,2	420	12,9	11,0	397	419
500	479,6	540	560	491,0	519	14,0	12,0	494	518

Dimensions in mm

Works standard 134, PN 63

DN	Groove measurement			Groove width	Gasket width	Grooved gasket			
	d ₁	d ₂	d ₃			d ₄	d ₅	d ₆	d ₇
25 *	28,5	61	75	33,0	47	7,0	6,0	34	46
32 *	37,2	65	79	40,0	54	7,0	6,0	41	53
40 *	42,5	76	90	48,0	62	7,0	6,0	49	61
50	54,5	85	105	58,0	72	7,0	6,0	59	71
65	69,7	105	125	74,6	90	7,7	6,5	76	89
80	81,7	120	140	88,6	104	7,7	6,5	90	103
100	106,3	145	165	111,4	128	8,3	7,0	113	127
125	130,7	175	195	139,2	157	8,9	7,5	141	156
150	157,1	200	220	164,0	183	9,5	8,0	166	182
(175)	181,1	225	245	188,0	208	10,0	8,5	190	207
200	204,9	250	270	212,0	232	10,0	8,5	214	231
250	255,4	305	325	265,0	286	10,5	9,0	267	285
300	301,9	355	375	311,6	335	11,7	10,0	314	334
350	330,6	385	405	341,6	365	11,7	10,0	344	364
400	378,0	435	455	389,2	415	12,9	11,0	392	414

Dimensions in mm

Works standard 134, PN 100

DN	Groove measurement			Groove width	Gasket width	Grooved gasket			
	d ₁	d ₂	d ₃			d ₄	d ₅	d ₆	d ₇
25 *	28,5	61	75	33,0	47	7,0	6,0	34	46
32 *	37,2	65	79	40,0	54	7,0	6,0	41	53
40 *	42,5	76	90	48,0	62	7,0	6,0	49	61
50	53,9	85	105	58,0	72	7,0	6,0	59	71
65	68,9	105	125	74,6	90	7,7	6,5	76	89
80	80,9	120	140	87,6	103	7,7	6,5	89	102
100	104,3	145	165	111,4	128	8,3	7,0	113	127
125	127,1	170	190	135,2	153	8,9	7,5	137	152
150	154,1	200	220	164,0	183	9,5	8,0	166	182
(175)	176,1	225	245	186,0	206	10,0	8,5	188	205
200	199,1	245	265	207,0	227	10,0	8,5	209	226
250	248,0	295	315	256,0	277	10,5	9,0	258	276
300	295,5	350	370	306,6	330	11,7	10,0	309	329
350	323,6	385	405	337,6	361	11,7	10,0	340	360

Dimensions in mm

* Turning in depth t 4 mm only

Weld ring gaskets

Works standard 134, PN 160

DN	Groove measurement						Groove width		Grooved gasket	
	d ₁	d ₂	d ₃	d ₄	d ₅	Groove width	Gasket width	d ₆	d ₇	
10	-	-	-	-	-	-	-	-	-	
15	-	-	-	-	-	-	-	-	-	
25	27,9	61	75	33,0	47	7,0	6,0	34	46	
40*	41,1	76	90	48,0	62	7,0	6,0	49	61	
50	52,3	90	110	59,0	73	7,0	6,0	60	72	
65	66,1	105	125	72,6	88	7,7	6,5	74	87	
80	76,3	115	135	83,6	99	7,7	6,5	85	98	
100	98,3	140	160	106,4	123	8,3	7,0	108	122	
125	119,7	160	180	126,2	144	8,9	7,5	128	143	
150	143,3	190	210	152,0	171	9,5	8,0	154	170	
(175)	165,3	215	235	175,0	195	10,0	8,5	177	194	
200	187,1	230	250	194,0	214	10,0	8,5	196	213	
250	233,0	280	300	241,0	262	10,5	9,0	243	261	
300	279,5	335	355	290,6	314	11,7	10,0	293	313	

Dimensions in mm

Works standard 134, PN 320

DN	Groove measurement						Groove width		Grooved gasket	
	d ₁	d ₂	d ₃	d ₄	d ₅	Groove width	Gasket width	d ₆	d ₇	
10*	12,0	46	60	18,0	32	7,0	6,0	19	31	
15*	14,9	51	65	23,0	37	7,0	6,0	24	36	
25	23,7	60	80	30,0	44	7,0	6,0	31	43	
40	35,7	75	95	43,0	57	7,0	6,0	44	56	
50	47,5	90	110	56,0	70	7,0	6,0	57	69	
65	66,9	110	130	75,6	91	7,7	6,5	77	90	
80	76,6	125	145	88,6	104	7,7	6,5	90	103	
100	101,0	145	165	109,4	126	8,3	7,0	111	125	
125	128,3	172	192	136,2	154	8,9	7,5	138	153	
150	143,7	205	225	160,0	179	9,5	8,0	162	178	
(175)	163,1	230	250	182,0	202	10,0	8,5	184	201	
200	184,5	255	275	205,0	225	10,0	8,5	207	224	
250	243,9	335	355	274,0	295	10,5	9,0	276	294	

Dimensions in mm

Works standard 134, PN 250

DN	Groove measurement						Groove width		Grooved gasket	
	d ₁	d ₂	d ₃	d ₄	d ₅	Groove width	Gasket width	d ₆	d ₇	
10*	12,0	46	60	18,0	32	7,0	6,0	19	31	
15*	16,1	51	65	23,0	37	7,0	6,0	24	36	
25*	26,5	61	75	33,0	47	7,0	6,0	34	46	
40	38,3	75	95	45,0	59	7,0	6,0	46	58	
50	47,7	85	105	54,0	68	7,0	6,0	55	67	
65	60,1	100	120	67,6	83	7,7	6,5	69	82	
80	79,6	120	140	87,6	103	7,7	6,5	89	102	
100	98,6	140	160	106,4	123	8,3	7,0	108	122	
125	120,4	165	185	129,2	147	8,9	7,5	131	146	
150	142,8	190	210	152,0	171	9,5	8,0	154	170	
(175)	174,7	230	250	198,0	218	10,0	8,5	200	217	
200	194,5	255	275	220,0	240	10,0	8,5	222	239	
250	234,5	310	330	257,0	278	10,5	9,0	259	277	

Dimensions in mm

Works standard 134, PN 400

DN	Groove measurement						Groove width		Grooved gasket	
	d ₁	d ₂	d ₃	d ₄	d ₅	Groove width	Gasket width	d ₆	d ₇	
10*	10,0	46	60	18,0	32	7,0	6,0	19	31	
15*	16,9	51	65	23,0	37	7,0	6,0	24	36	
25	28,2	65	85	35,0	49	7,0	6,0	36	48	
40	40,3	80	100	49,0	63	7,0	6,0	50	62	
50	51,1	90	110	59,0	73	7,0	6,0	60	72	
65	69,6	120	140	82,6	98	7,7	6,5	84	97	
80	79,3	130	150	92,6	108	7,7	6,5	94	107	
100	95,3	150	170	109,4	126	8,3	7,0	111	125	
125	133,7	188	208	147,2	165	8,9	7,5	149	164	
150	149,1	218	238	169,0	188	9,5	8,0	171	187	
(175)	-	-	-	-	-	-	-	-	-	
200	193,0	285	305	224,0	244	10,0	8,5	226	243	

Dimensions in mm

* Turning in depth 4 mm only

Weld ring gaskets

Weld ring gasket Profile A22N and Profile A23 for ANSI flanges

Ordering example for a weld ring gasket, Profile A22N, NPS 10, Class 150, with a grooved profile gasket Profile B27A, conform to works standard 135, made of ...¹⁾:

Weld ring gasket NPS 10, Class 150, A22N, B27A, 1.4541 / graphite, works standard 135

Works standard 135, Class 150

DN	Groove measurement					Groove width	Gasket width	Grooved gasket	
	d ₁	d ₂	d ₃	d ₄	d ₅			d ₆	d ₇
1/2	-	-	-	-	-	-	-	-	-
3/4	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-
1 1/4	-	-	-	-	-	-	-	-	-
1 1/2	-	-	-	-	-	-	-	-	-
2 *	52,6	81	95	56,0	70	7,0	6,0	57	69
2 1/2	62,7	96	116	68,0	82	7,0	6,0	69	81
3 *	78,0	111	125	82,6	98	7,7	6,5	84	97
3 1/2	90,2	131	151	97,4	114	8,3	7,0	99	113
4	102,4	148	168	112,4	129	8,3	7,0	114	128
5	128,3	160	180	132,2	150	8,9	7,5	134	149
6	154,2	194	210	160,2	178	8,9	7,5	162	177
8	202,7	245	265	209,0	229	10,0	8,5	211	228
10	254,5	300	320	262,0	283	10,5	9,0	264	282
12	304,8	372	392	321,6	345	11,7	10,0	324	344
14	336,6	404	424	353,6	377	11,7	10,0	356	376
16	387,3	461	481	406,2	432	12,9	11,0	409	431
18	438,1	515	535	458,0	486	14,0	12,0	461	485
20	488,9	575	595	513,0	541	14,0	12,0	516	540
22	539,7	625	645	563,0	593	15,0	13,0	566	592
24	590,5	683	703	617,0	647	15,0	13,0	620	646

Dimensions in mm

Works standard 135, Class 900 1500

DN	Groove measurement					Groove width	Gasket width	Grooved gasket	
	d ₁	d ₂	d ₃	d ₄	d ₅			d ₆	d ₇
1/2 *	15,7	46	56	20,0	34	7,0	5,5	22	33
3/4 *	20,8	52	62	25,0	39	7,0	5,5	27	38
1 *	26,7	56	70	31,0	45	7,0	6,0	32	44
1 1/4	35,1	66	80	40,0	54	7,0	6,0	41	53
1 1/2 *	40,9	76	90	48,0	62	7,0	6,0	49	61
2	52,6	90	110	60,0	74	7,0	6,0	61	73
2 1/2	62,7	100	120	70,0	84	7,0	6,0	71	83
3	78,0	120	140	85,6	102	7,7	6,5	88	101
4	102,4	150	170	113,4	130	8,3	7,0	115	129
5	128,3	180	200	140,2	158	8,9	7,5	142	157
6	154,2	210	230	168,2	186	8,9	7,5	170	185
8	202,7	260	280	217,0	237	10,0	8,5	219	236
10	254,5	315	335	270,0	291	10,5	9,0	272	290
12	304,8	372	392	321,6	345	11,7	10,0	324	344
14	336,6	404	424	353,6	377	11,7	10,0	356	376
16	387,3	461	481	406,2	432	12,9	11	409	431
18	438,1	515	535	458	486	14	12	461	485
20	488,9	575	595	513	541	14	12	516	540
24	590,5	683	703	617	647	15	13	620	646

Dimensions in mm

The measurement d₁ corresponds to the internal diameter for standard pipes in accordance with ANSI B 36.10

* Turning in depth t 4 mm only

In order to successfully carry out the welding, the customer should check:

- whether the raised face is being machined
- whether a smooth flange is being used
- or whether the external diameter d₃ is to be reduced other than in accordance with our works standard.

¹⁾ Specify material when placing order

Works standard 135, Class 300 - 600

DN	Groove measurement					Groove width	Gasket width	Grooved gasket	
	d ₁	d ₂	d ₃	d ₄	d ₅			d ₆	d ₇
1/2	-	-	-	-	-	-	-	-	-
3/4 *	20,8	52	62	25,0	39	7,0	5,5	27	38
1 *	26,7	58	68	32,0	46	7,0	5,5	34	45
1 1/4 *	35,1	68	78	42	56	7,0	5,5	44	55
1 1/2 *	40,9	71	85	45	59	7,0	6,0	46	58
2 *	52,6	81	95	56,0	70	7,0	6,0	57	69
2 1/2	62,7	96	116	68,0	82	7,0	6,0	69	81
3	78,0	111	125	83,6	99	7,7	6,5	85	98
3 1/2	90,2	131	151	97,4	114	8,3	7,0	99	113
4	102,4	148	168	112,4	129	8,3	7,0	114	128
5	128,3	170	190	135,2	153	8,9	7,5	137	152
6	154,2	195	215	161,2	179	8,9	7,5	163	178
8	202,7	260	280	217,0	237	10,0	8,5	219	236
10	254,5	315	335	270,0	291	10,5	9,0	272	290
12	304,8	372	392	321,6	345	11,7	10,0	324	344
14	336,6	404	424	353,6	377	11,7	10,0	356	376
16	387,3	461	481	406,2	432	12,9	11,0	409	431
18	438,1	515	535	458,0	486	14,0	12,0	461	485
20	488,9	575	595	513,0	541	14,0	12,0	516	540
22	539,7	632	652	566,6	596	15,0	13,0	569	595
24	590,5	683	703	617,0	647	15,0	13,0	620	646

Dimensions in mm

Works standard 135, Class 2500

DN	Groove measurement					Groove width	Gasket width	Grooved gasket	
	d ₁	d ₂	d ₃	d ₄	d ₅			d ₆	d ₇
1/2 *	15,7	46	60	20,0	34	7,0	6,0	21	33
3/4 *	20,8	51	65	25,0	39	7,0	6,0	26	38
1 *	26,7	61	75	33,0	47	7,0	6,0	34	46
1 1/4	35,1	70	90	41,0	55	7,0	6,0	42	54
1 1/2 *	40,9	80	100	49,0	63	7,0	6,0	50	62
2	52,6	95	115	62,0	76	7,0	6,0	63	75
2 1/2	62,7	105	125	72,0	86	7,0	6,0	73	85
3	78,0	125	145	89,6	105	7,7	6,5	91	104
4	102,4	155	175	115,4	132	8,3	7,0	117	131
5	128,3	185	205	143,2	161	8,9	7,5	145	160
6	154,2	210	230	168,2	186	8,9	7,5	170	185
8	202,7	260	280	217,0	237	10,0	8,5	219	236
10	254,5	315	335	270,0	291	10,5	9,0	272	290
12	304,8	372	392	321,6	345	11,7	10,0	324	344
14	336,6	404	424	353,6	377	11,7	10,0	356	376
16	387,3	461	481	406,2	432	12,9	11	409	431
18	438,1	515	535	458	486	14	12	461	485
20	488,9	575	595	513	541	14	12	516	540
24	590,5	683	703	617	647	15	13	620	646

Dimensions in mm