



Application

- ✓ For contaminating or poisonous fluids
- ✓ For hot or viscous media
- ✓ Process industry and petrochemical industries
- ✓ Chemical or water treatment

Special Features

- ✓ Flush type flange diaphragm deal according to standards
- ✓ Variety of dimensions and sizes

Description

Seal-Mate group of diaphragm seals come between the pressure measuring instrument and some medias which can damage the instrument or be harmful if they get directly in touch with the instrument. In many industrial processes, it happens a lot that the media cannot or should not get into direct contact with the instrument. Sometimes that is for the sake of keeping the instrument work properly as the media is too viscous and might easily clog the process connections, and sometimes it is for hygienic purposes.

The flexible metal diaphragm of InstruMate seals is made of SS316L by default (otherwise specified by customer). The space between this flexible diaphragm and the instrument process connection should be filled with a filling fluid, chosen in best interest of where the instrument is going to be installed. So the intended pressure is transmitted via the flexible diaphragm to the filling fluid and then via the filling fluid to the pressure instrument.

InstruMate diaphragm seals are vacuum protected and also not sensitive to sudden sharp increase in pressure.

InstruMate raised face flange diaphragm seal model 8207 can be used for corrosive and hot media and also poisonous fluid which is dangerous for environments. InstruMate 8207 with its flush diaphragm and raised face flange is an excellent choice for viscous or crystalizing media. Seal-Mate 8207 is very much suitable for high pressure measurement at high temperatures. InstruMate flange type diaphragm seal model 8207 offers all universal flange standards and sizes for a competitive price thanks to InstruMate special production plant for diaphragm seals.

Material Combinations

Versions	Body of diaphragm seal	Wetted parts	Maximum permissible process temperature in °C
Standard version	SS316	SS316L	400 ¹
Option		Monel 400 Hastelloy C276	
Option	SS316L	SS316L Monel 400 Hastelloy	
Option	Monel 400	Monel 400	
Option	Hastelloy C276	Hastelloy C276	

1. This value is the maximum temperature that the diaphragm seal can safely endure. Indeed the maximum permissible process temperature in operation is limited by system filling fluid and also the joining method.

Pressure-Temperature ratings for SS316 flanges per ASME B16.5

Working Pressures by Classes (bar)

Temp., °C	Class					
	150	300	600	900	1500	2500
50	18.4	48.1	96.2	144.3	240.6	400.9
100	16.2	42.2	84.4	126.6	211.0	351.6
150	14.8	38.5	77.0	115.5	192.5	320.8
200	13.7	35.7	71.3	107.0	178.3	297.2
300	10.2	31.6	63.2	94.9	158.1	263.5
400	6.5	29.4	58.9	88.3	147.2	245.3

Pressure-Temperature ratings for SS316L flanges per ASME B16.5

Working Pressures by Classes (bar)

Temp., °C	Class					
	150	300	600	900	1500	2500
50	15.3	40.0	80.0	120.1	200.1	333.5
100	13.3	34.8	69.6	104.4	173.9	289.9
150	12.0	31.4	62.8	94.2	157.0	261.6
200	11.2	29.2	58.3	87.5	145.8	243.0
300	10.0	26.1	52.1	78.2	130.3	217.2
400	6.5	24.3	48.6	72.9	121.5	202.5

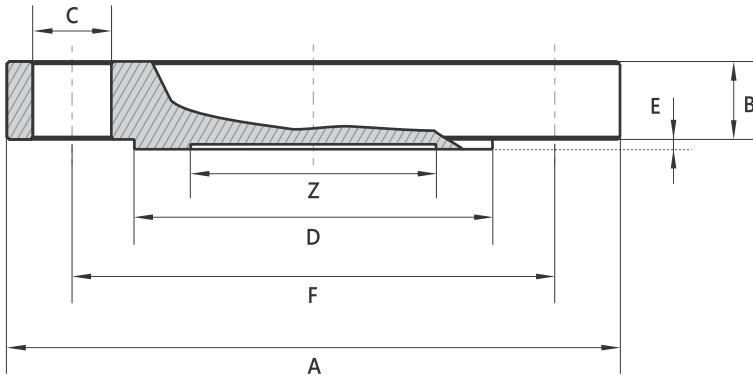
Pressure-Temperature ratings for Monel 400 flanges per ASME B16.5

Working Pressures by Classes (bar)						
Temp., °C	Class					
	150	300	600	900	1500	2500
50	15.4	40.2	80.5	120.7	201.2	335.3
100	13.8	35.9	71.9	107.8	179.7	299.5
150	12.9	33.7	67.5	101.2	168.7	281.1
200	12.5	32.7	65.4	98.1	163.5	272.4
300	10.2	32.6	65.2	97.8	163.0	271.7
400	6.5	32.1	64.2	96.2	160.4	267.4

Pressure-Temperature ratings for Hastelloy C276 flanges per ASME B16.5

Working Pressures by Classes (bar)						
Temp., °C	Class					
	150	300	600	900	1500	2500
50	19.5	51.7	103.4	155.1	258.6	430.9
100	17.7	51.5	103.0	154.6	257.6	429.4
150	15.8	50.3	100.3	150.6	250.8	418.2
200	13.8	48.3	96.7	145.0	241.7	402.8
300	10.2	42.9	85.7	128.6	214.4	357.1
400	6.5	36.5	73.3	109.8	183.1	304.9

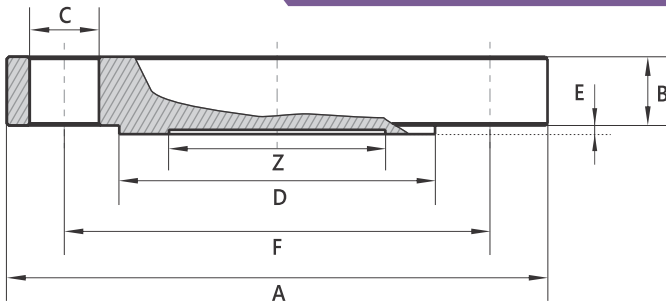
Flange Connection Sizes per ASME B16.5, Raised Face



- A: Outer diameter of diaphragm seal
- B: Flange thickness
- C: Bore diameter
- D: Sealing face diameter
- E: Height of raised face
- F: Pitch circle diameter
- G: Number of bores
- Z: Effective diameter of diaphragm

Class	DN	Dimensions in mm							G	KG	
		A	B	C	D	E	F	Z			
150	1"	110	12.7	16	51	2	79.4	32	4	1.4	
	1 1/2"	125	15.9		73		98.4	42		1.6	
	2"	150	17.5		92		120.7	58		2.7	
	3"	190	22.3	19	127		152.4	92		8	5.3
	4"	230			157.2		190.5		7.7		
300	1"	125	15.9	22	51		7	88.9	32	4	1.7
	1 1/2"	155	19.1		73			114.3	42		2.5
	2"	165	20.7	19	92			127	58	8	3.7
	3"	210	27	127	168.3			92	7.8		
	4"	255	30.2	22	157.2				200		12.7
600	1 1/2"	155	22.3	26	73	7		114.3	42	4	3.3
	2"	165	25.4		19			92	127		58
	3"	210	31.8	22	127			168.3	92	11	
	4"	275	38.1	26	157.2			215.9		8	21.5
900	3"	240			127			190.5	235		8
	4"	290	44.5	32	157.2		27.7				
1,500	1 1/2"	180	31.8	29	73		7	123.8	42	4	5.9
	2"	215	38.1	26	92			165.1	58		13.2
	3"	265	47.7	32	127			203.2	92	8	24.5
	4"	310	54	35	157.2			241.3			37
2,500	1 1/2"	205	44.5	32	73	7		146	42	4	10.4
	2"	235	50.9	29	92			171.4	58		19.8
	3"	305	66.7	35	127			228.6	92	8	42.7
	4"	355	76.2	42	157.2			273			65.7

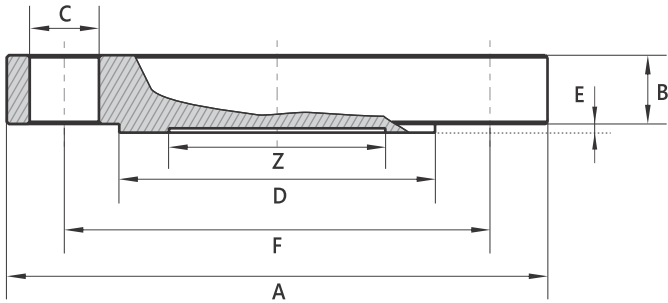
Flange Connection Sizes per EN 1092-1, form B



- A: Outer diameter of diaphragm seal
- B: Flange thickness
- C: Bore diameter
- D: Sealing face diameter
- E: Height of raised face
- F: Pitch circle diameter
- G: Number of bores
- Z: Effective diameter of diaphragm

PN in bar	DN	Dimensions in mm							G	KG	
		A	B	C	D	E	F	Z			
10/40	25	115	16	14	68	2	85	32	4	1.5	
	40	150			88		110	42		2.6	
	50	165		102	125		58	3.3			
10/16	80	200	18	18	138		160	92	8	4.9	
	100	220			158		180	112		5.9	
	125	250	20	188	210		112	8.4			
25/40	80	200	22		138		160	92		8	5.8
	100	235		22	162		190	112			8.1
	125	270	24	26	188		220	112			11.6
63/100	25	140	22	18	68		100	24	4	2.5	
	40	170	24		88		125	42		4.0	
63	50	180			22		102	135		58	8
	80	215	26		138	170	92	7.9			
	100	250	28	26	162	200	112	11.5			
	125	295	32	30	188	240	112	16.5			
100	50	195	26	26	102	145	58	4	6.5		
	80	230	30		138	180	92		8	10.4	
	100	265	34	30	162	210	112	15.5			
	125	315	38	33	188	250	112	24.4			
160	40	170	26	22	88	125	42	4	4.3		
	50	195	28	26	102	145	58		7.0		
	80	230	34			138	180	92	8	11.7	
	100	265	38	30	162	210	112	17.3			
	125	315	42	33	188	250	112	26.9			
250	40	185	32	26	88	135	42	4	6.3		
	50	200	36		102	150	58		8	9.3	
	80	255	44	30	138	200	92	18.4			
	100	300	52	33	162	235	112	12		29.9	
	125	340	58		188	275	112		42.7		

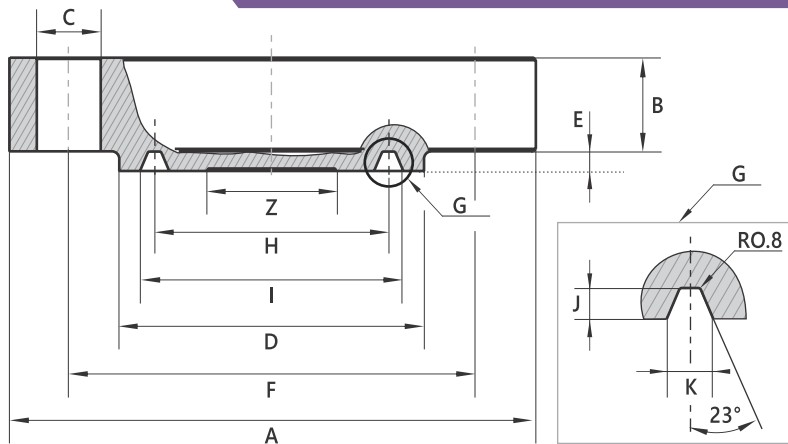
Flange connection per GOST 33259, type B



- A: Outer diameter of diaphragm seal
- B: Flange thickness
- C: Bore diameter
- D: Sealing face diameter
- E: Height of raised face
- F: Pitch circle diameter
- G: Number of bores
- Z: Effective diameter of diaphragm seal

PN in bar	DN	Dimensions in mm							G	KG
		A	B	C	D	E	F	Z		
10/16	50	160	13	18	102	3	125	58	4	2.4
	100	215	17		158		180	92	8	5.3
	125	245	19		184		210	92	8	7.7
25/40	50	160	17	102	125		58	4	3	
10	80	195	15	133	160		92		4	4
16			17					4.5		
25	80	230	19	22	158		190	92	8	4.8
	100		21							7.1
	125	23	26							184
40	80	195	21	18	133		160	92	8	5.2
	100	230	23	22	158		190			7.8
	125	270	25	26	184		220			11.4
63	50	175	23	22	102		135	58	4	4.5
	80	210	27		133		170	92	8	7.4
	100	250	29		158		200			11.1
	125	295	33		30	184	240	17.4		
100	50	195	25	26	102	145	58	4	5.6	
	80	230	31		133	180	92	8	9.8	
	100	265	35		158	210			14.5	
	125	310	39		33	184	250	22.3		
160	50	195	27	26	102	145	58	4	6.4	
	80	230	33		133	180	92	8	10.4	
	100	265	37		158	210			15.3	
	125	310	41		33	184	250	23.4		
200	50	210	37	39	102	160	58	8	9.4	
	80	290	51		133	230	92		24.7	
	100	360	63		158	292			47.2	
	125	385	73		184	318	63.2			

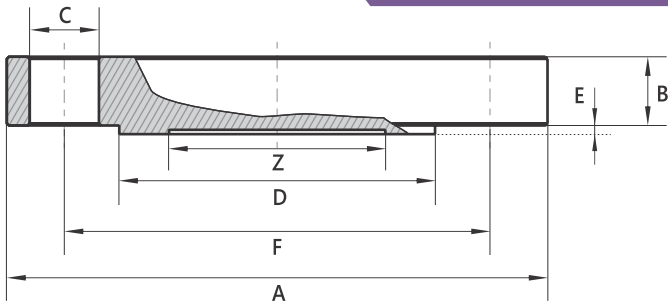
Flange connection per API 6A, ring-joint groove



- A: Outer diameter of diaphragm seal
- B: Flange thickness
- D: Sealing face diameter
- E: Height of raised face
- F: Pitch circle diameter
- G: Number of bores
- Z: Effective diameter of diaphragm
- C: Bore diameter
- H: Mid diameter, ring groove
- I: Outer diameter, ring groove
- J: Groove depth
- K: Groove width

PN in bar	DN	Dimensions in mm						G	Groove dimensions in mm					KG										
		A	B	D	E	F	Z		C	H	I	J	K											
2,000	2 1/16"	165	25.4	108	8	127	58	8	20	82.55					4.6									
	2 9/16"	190	28.6	127		149.2			23	101.6					6.7									
		210	31.8	146	7.9	168.3	26		123.83	9.2														
3,000	3 1/8"	240	38.1	156	8	190.5	92		26		-	7.9	11.91	13.9										
5,000		265	47.7	168	7.9	203.2	32		136.53	20.2														
3,000/ 5,000	2 1/16"	215	38.1	124	8	165.1	58		26	95.25					10.7									
	2 9/16"	245	41.3	137		190.5		29	107.95	15														
10,000	1 13/16"	185	38.1	105	4	146.1	42	23	-		77.77	5.56	11.84	7.7										
	2 1/16"	200	40.1	111		158.8								58	86.23	5.95	12.65	9.5						
	2 9/16"	230	47.2	132		184.2								26	102.77	6.75	14.07	14.7						
15,000	1 13/16"	210	41.3	106		4	160.3	58						29			77.77	5.56	11.84	10.5				
	2 1/16"	220	46.8	114			174.6													29	86.23	5.95	12.65	13.2
	2 9/16"	255	53.2	133			200													32	102.77	6.75	14.07	20.1
20,000	1 13/16"	255	59.5	117	4	203.2	42	32			77.77	5.56	11.84	22.3										
	2 1/16"	285	67.5	132		230.2								35	86.23	5.95	12.65	31.6						
	2 9/16"	325	79.4	151		261.9								35	102.77	6.75	14.07	46.3						

Flange connection per JIS B 2220, RF



- A: Outer diameter of diaphragm seal
- B: Flange thickness
- C: Bore diameter
- D: Sealing face diameter
- E: Height of raised face
- F: Pitch circle diameter
- G: Number of bores
- Z: Effective diameter of diaphragm

PN	DN	Dimensions in mm							G	KG
		A	B	C	D	E	F	Z		
5k	25A	95	9	12	59	1	75	32	4	0.7
	50A	130	12	15	85	2	105	58		1.5
	80A	180		19	121		145	92	2.7	
	100A	200	141		165	8	3.7			
10k	25A	125	13	19	67	1	90	32	4	1.4
	50A	155	14		96	2	120	58		2.3
	80A	185	16		126		150	92	8	3.5
	100A	210			151	175	8	4.6		
16k	25A	125	13	23	67	1	90	32	4	1.4
	50A	155	14		96	2	120	58		2.2
	80A	200	18		132		160	92	8	4.5
	100A	225	20		160	185	8	6.4		
20k	25A	125	15	19	67	1	90	32	4	1.6
	50A	155	16	96	2	120	58	2.4		
	80A	200	20	132		160	92	8	4.9	
	100A	225	22	160	185	8	6.9			
30k	25A	130	19	19	70	1	95	32	4	2.1
	50A	165	20	105	2	130	58	3.4		
	80A	210	26	23		140	170	92	8	7
	100A	240	30	25	160	195	8	10.4		
40k	25A	130	21	19	70	1	95	24	4	2.3
	50A	165	24	105	2	130	58	4.0		
	80A	210	30	23		140	170	92	8	8
	100A	250	34	25	165	205	8	12.8		
63k	25A	140	26	23	70	1	100	24	4	3.1
	50A	185	32		105	2	145	58		6.4
	80A	230	38		25		140	185	92	8
	100A	270	42		27	165	220	8	18.2	

How To Order

Product Group Name	Model	Standard	DN	PN - Class	Flange body material	Diaphragm material	Instrument connection size	Pressure range intended to use the diaphragm	Options
<i>E.g.</i> Seal-Mate	8207	ASME B16.5	2"	Class 300	SS316	SS316L	1/2 NPT female	0...25 bar	oil and grease free

Or simply order by item number on the basis of your previous purchases.

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