

Diaphragm Seal

990.27 with flange and flush diaphragm
with pressure gauge

E 06.02.03

Ed.17.01

Design	Diaphragm Seal with flush diaphragm and flange acc.to EN 1092-1 or ASME B 16,5 Pressure gauge in stainless steel
Type	990.27
Lower body	Flush diaphragm with flange connection acc.to EN 1092-1 or ASME B 16,5
Flange EN 1092-1	DN 25, DN 40, DN 50, DN 80, DN 100 or DN 125 Sealing face form B1 (B2 in special materials) Pressure rate PN 10 to PN 250
Flange ASME B 16,5	DN 1", 1½", 2", 3", 4" or 5" Sealing face RF 125...250 AA Option RFSF, RJF-groove, small tongue, large tongue Pressure rate 150, 300, 600, 900, 1500 or 2500 lbs
Material standard	Body of stainless steel 1.4404 (316L) Wetted parts of stainless steel 1.4435 (316L) Special materials see page 2
Level of cleanliness	Oil and grease free per ASTM G93-03 level E (< 550 mg/m ²)
Working Pressure	90% of full scale range by fluctuating pressure full scale value by short time pressure
Process temperature	Process temperature standard max +200°C Option lowest temperature to max -90°C Option highest temperature to max +400°C Max temperature depending on material and filling media
Ambient temperature	Ambient temperature standard +10+40°C Option lowest temperature to max -40°C Option highest temperature to max +60°C
Cooling/capillary	The pressure instrument must be protected in process temperatures over +200°C with cooling tower or capillary
Filling media	KN 2 silicone oil (standard) temperature -45+300°C KN 17 silicone oil for low temperatures -90+200°C KN 32 silicone oil for high temperatures -25+400°C KN 21 halocarbene for oxygen and chlorine -60+175°C KN 70 silicone free filling -20+200°C KN 59 Neobee M-20 FDA (Food & Pharma) -35+260°C KN 92 white mineral oil FDA (Food & Pharma) -15+260°C
Certificate (option)	EN 10204-3.1 Certificate wetted parts incl. chemical analysis EN 10204-3.1 Certification of class and accuracy EN 10204-3.1 Accuracy calibration values listed EN 10204-3.1 Pressure and stability test EN 10204-3.1 Helium leak test
More options	Mounted TAG-schild with customer numbers Design according to NACE MR 0175 or MR 0103 Origen of wetted parts from EU, Schweiz or USA Flange acc.to Gost 33259, API 6A or JIS B 2220



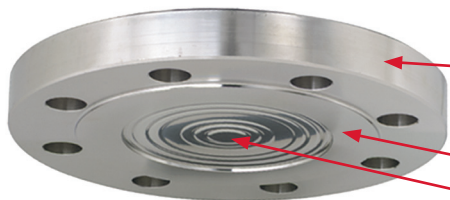
990.27 DN 25
flange EN 1092-1
with pressure gauge
2940.100

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Material for body and wetted parts



Flange body

Standard = stainless steel 1.4404 (316L)

Wetted parts

Wetted parts are diaphragm and sealing face
Standard = stainless steel 1.4435 (316L)

Body stainless steel 1.4404 (316L) Wetted parts	Temperature
Stainless steel 1.4435 (316 L) standard	max +400°C
Stainless steel 1.4541 (321)	max +400°C
Stainless steel 1.4571 (316Ti)	max +400°C
Stainless steel with ECFTE-coating	max +150°C
Stainless steel with PFA-coating	max +260°C
Stainless steel with Gold-plating	max +400°C
Hastelloy C22 (2.4602)	max +260°C
Hastelloy C276 (2.4819)	max +400°C

Body stainless steel 1.4404 (316L) Wetted parts	Temperature
Inconel 600 (2.4816)	max +400°C
Inconel 625 (2.4856)	max +400°C
Incoloy 825 (2.4858)	max +400°C
Monel 400 (2.4360)	max +400°C
Nickel	max +260°C
Titanium (3.7035)	max +150°C
Titanium (3.7235)	max +150°C
Tantalum	max +150°C

Flange + wetted parts	Temperature
Syrafast stål 1.4571 (316Ti)	max +400°C
Duplex 2205 (1.4462)	max +300°C
Superduplex 2507 (1.4410)	max +300°C
Hastelloy C22 (2.4602)	max +260°C
Hastelloy C276 (2.4819)	max +400°C

Flange + wetted parts	Temperature
Incoloy 825 (2.4858)	max +400°C
Monel 400 (2.4360)	max +400°C
Nickel	max +400°C
Titanium (3.7035)	max +400°C
Titanium (3.7235)	max +260°C

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Pressure gauges for mounting with diaphragm seal 990.27



Stainless steel version

Case of stainless steel dim 100 mm, wetted parts of stainless steel
Accuracy Cl.1,0%, pressure range max 250 bar
Ingress protection IP 65 EN 60529/IEC 529

Pressure limitation 90% of full scale value by fluctuating pressure

2840 = lower mount - standard without case filling

2841 = back mount - standard without case filling

2940 = lower mount - with liquid filled case (glycerine)

2941 = back mount - with liquid filled case (glycerine)

2880 = with vibration damped movement



Stainless steel safety version

Case of stainless steel dim 100 mm, wetted parts of stainless steel
Safety version EN 837-1 (S3) with safety wall behind the scale

Accuracy Cl.1,0%, pressure range max 250 bar

Ingress protection IP 65 EN 60529/IEC 529

Pressure limitation 90% of full scale value by fluctuating pressure

232.30 = standard without case filling

233.30 = with liquid filled case (glycerine)



With electrical switch

Case of stainless steel dim 100 mm, wetted parts of stainless steel
Safety version EN 837-1 (S3) with safety wall behind the scale

Accuracy Cl.1,0%, pressure range max 250 bar

Ingress protection IP 65 EN 60529/IEC 529

Pressure limitation 90% of full scale value by fluctuating pressure

Magnet spring switch 821 or inductive switch 831

Single switch with function max or min

Double switch with function max-min, min-max, 2x max or 2x min

PGS23.100 = case with or without liquid filled case

Options for pressure gauges





- Dial with unit bar/Pa, bar/psi, kPa, MPa, psi
- ATEX protection c with device cat 2G/2D
- Design acc.to NACE Sour Gas Service
- Design Oxygen Oil- and Grease free
- Silicone free version
- Dial with colored fields or customer logo
- Ingress protection IP 66 or IP 67
- Case in stainless steel 316 Ti
- Case polished
- Case epoxy-coated
- Case PTFE-coated
- Liquid filled case silicone M50 for low ambient temperatures

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Standard types 990.27 DN 25

<p>990.27 EN 1092-1 flange DN 25 Pressure rate PN 40 process temperature +200°C filling KN 2 silicone</p> <p>Pressure gauge 2840.100 standard 2880.100 vibration damped 2940.100 liquid filled</p>				
	Stainless steel	Stainless steel	Stainless steel	PFA-coating*
	2840.100	2880.100	2940.100	2940.100
Pressure range	Code	Code	Code	Code
0-4 bar	40262746	40262846	40262706	40268706
0-6 bar	40262747	40262847	40262707	40268707
0-10 bar	40262748	40262848	40262708	40268708
0-16 bar	40262751	40262851	40262711	40268711
0-25 bar	40262753	40262853	40262713	40268713
0-40 bar	40262755	40262855	40262715	40268715
-1/0 bar	40262770	40262870	40262740	40268740
-1/+3 bar	40262777	40262877	40262767	40268767
-1/+5 bar	40262778	40262878	40262768	40268768
-1/+9 bar	40262779	40262879	40262769	40268769

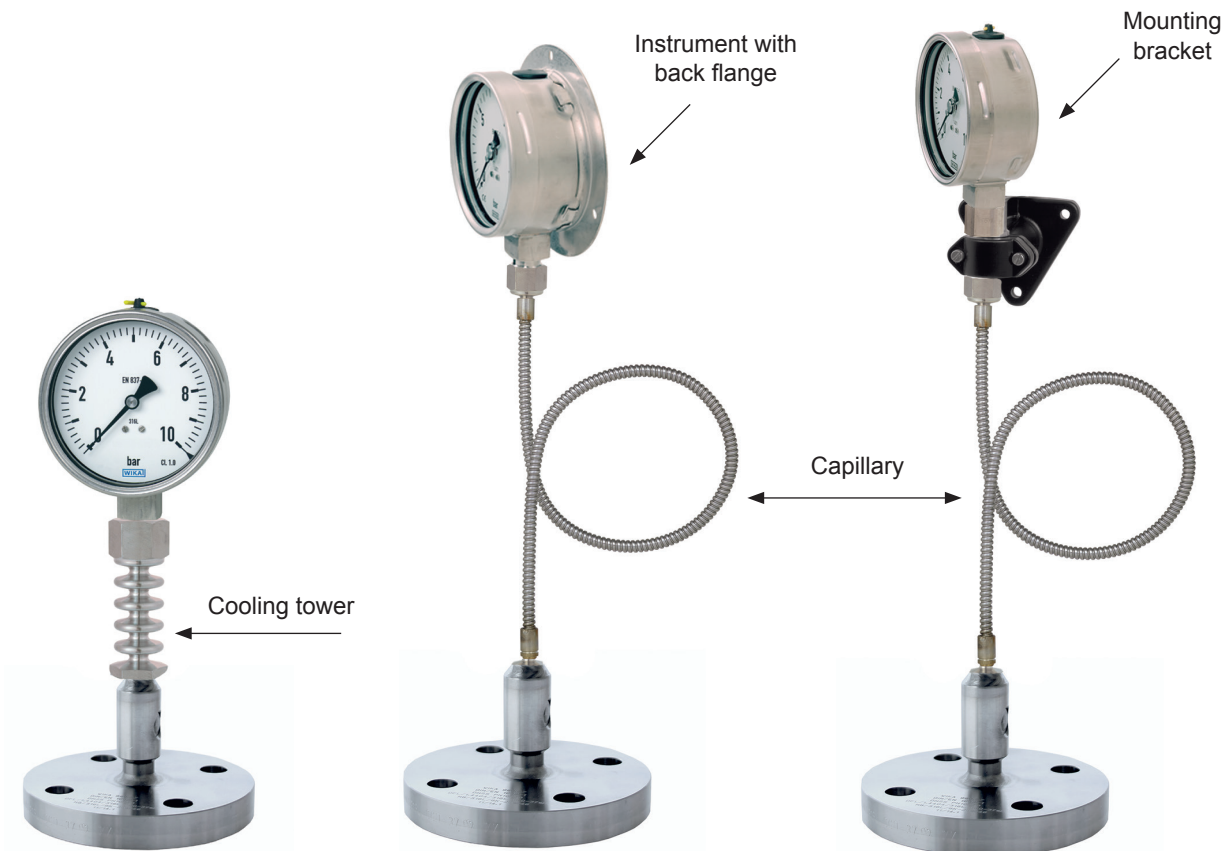
* Stainless steel diaphragm with PFA-coating

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Cooling tower and capillary



Cooling tower

Cooling tower is mounted to protect the pressure instrument from high process temperature. Air circulation through the perforated capillary protector reduces the temperature of the filling liquid. Material stainless steel. Length: 116,5 mm

Capillary

Stainless steel capillary with stainless steel spiral armour provides connection between chemical seal and pressure instrument to enable distant reading or remote control. Capillary lengths from 0,5 meter to max 10 meter.

Mounting of pressure gauge

Alternative 1 = Pressure gauge with back flange for wall mounting

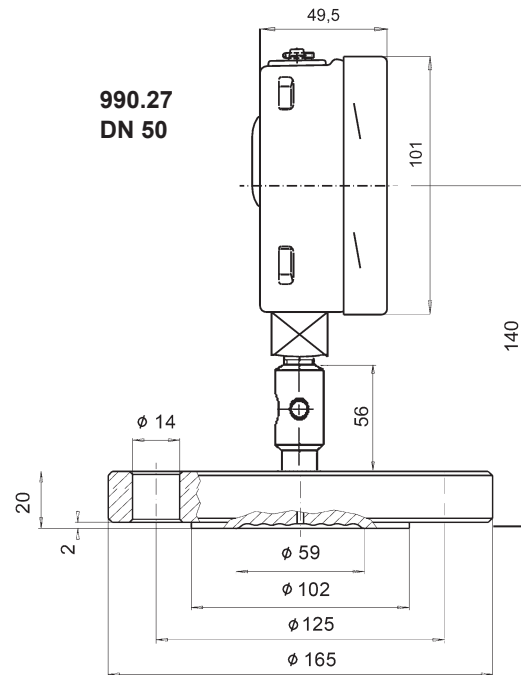
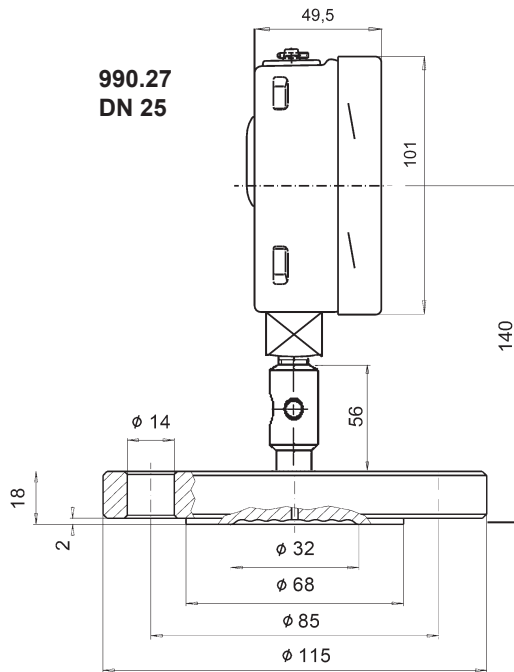
Alternative 2 = Mounting bracket in aluminium or stainless steel for wall mounting

Diaphragm Seal

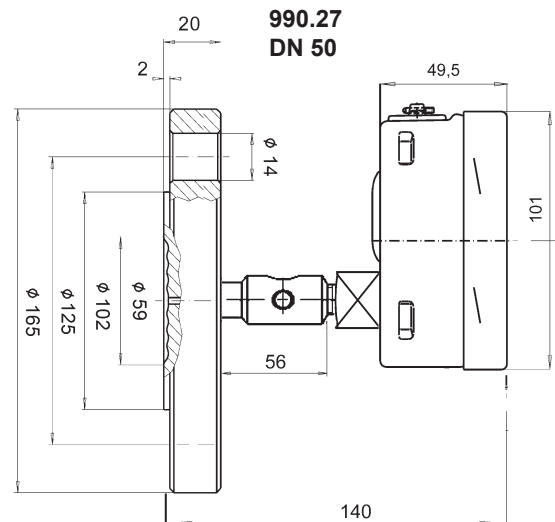
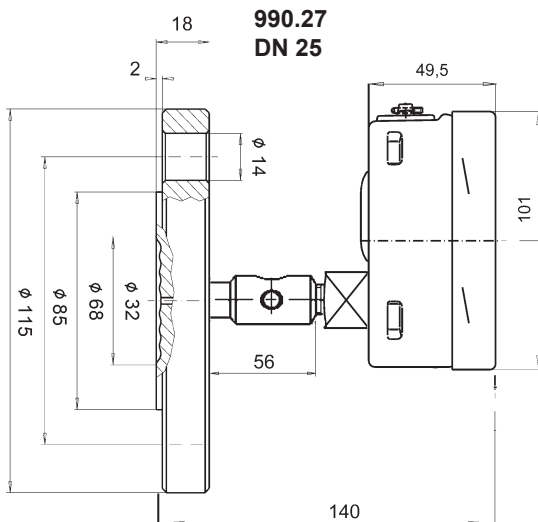
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990.27 EN 1092-1 PN 10/40 with pressure gauge 2840.100, 2880.100 or 2940.100 lower mount



990.27 EN 1092-1 PN 10/40 with pressure gauge 2841.100 or 2941.100 back mount



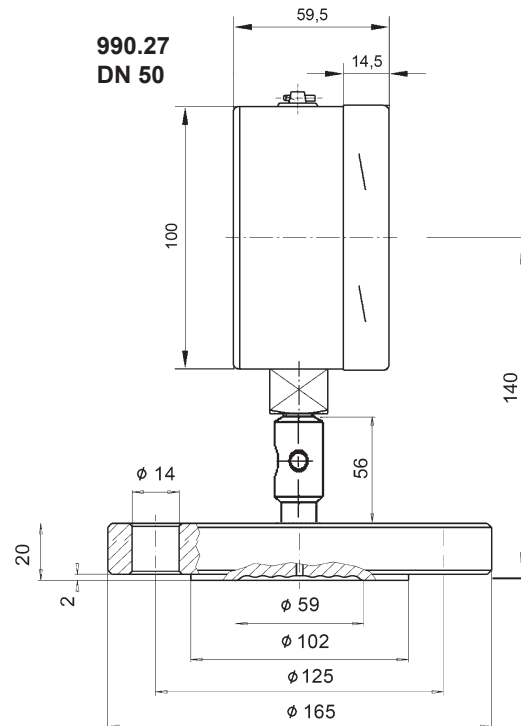
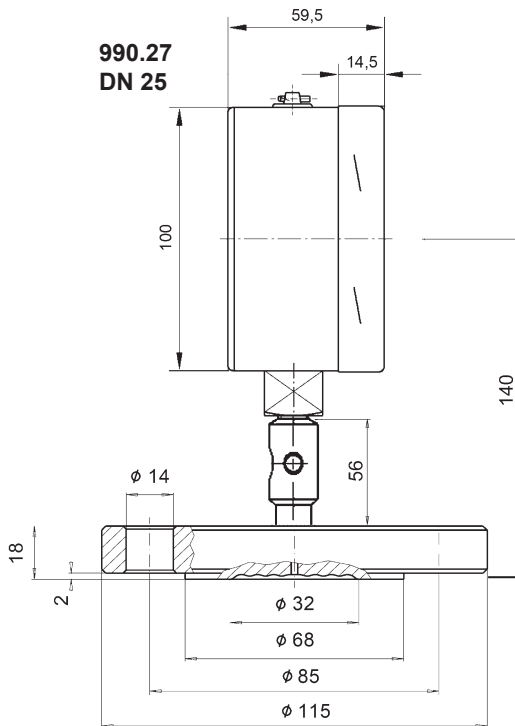
Dimensions refers to 990.27 with pressure rate PN 10/40 and in material stainless steel
Specified dimensions may be different in other materials or with other pressure rates

Diaphragm Seal

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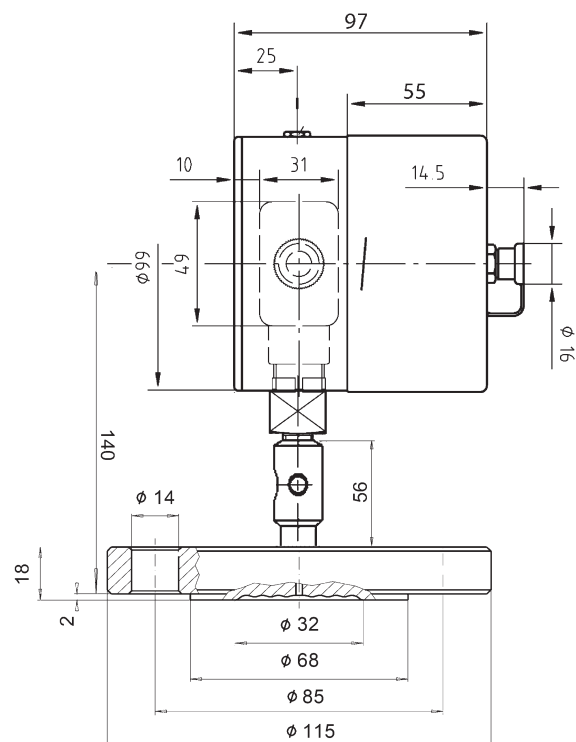
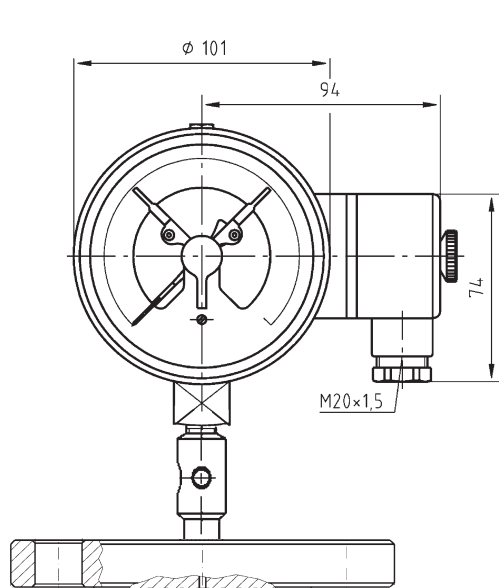
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990.27 EN 1092-1 PN 10/40 with pressure gauge in safety design 232.30.100 or 233.30.100



Dimensions refers to 990.27 with pressure rate PN 10/40 and in material stainless steel
Specified dimensions may be different in other materials or with other pressure rates

990.27 EN 1092-1 PN 10/40 with pressure gauge with switch PGS23.100 821.xx (safety design)



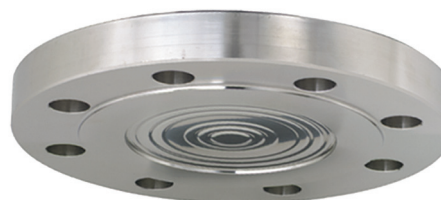
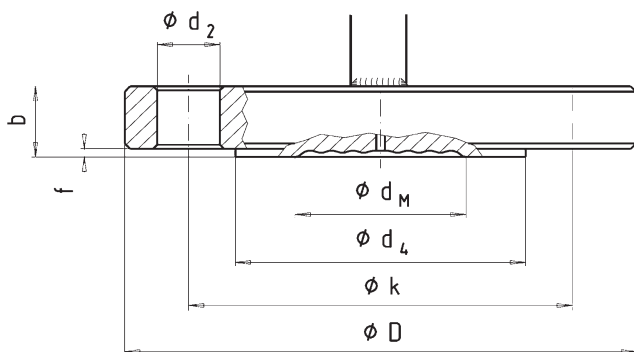
Dimensions refers to 990.27 with pressure rate PN 10/40
and in material stainless steel. Specified dimensions may be
different in other materials, with other pressure rates and with
other types of switch

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Flange EN 1092-1, form B1 - DIN 2501, form D
Size DN 25, 40, 50, 80, 100 or 125



x = mounting holes

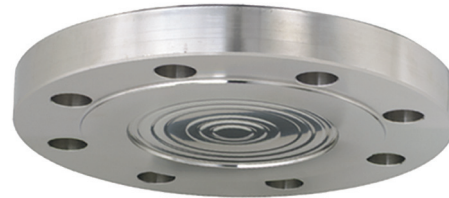
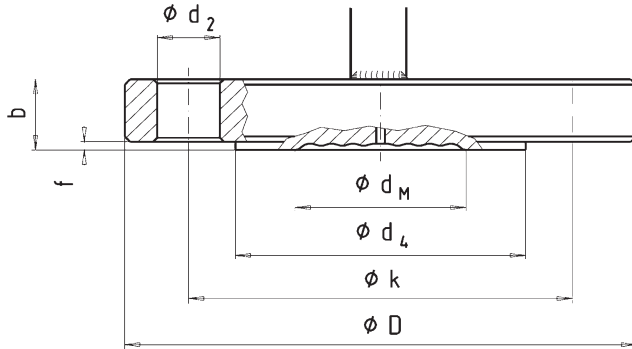
DN	PN	Dimension mm					Sealing face				Weight kg
		dm	D	b	d ₂	k	f	d ₄	x		
25	10/40	32	115	18	14	85	2	68	4	1.5	
	63/100	25	140	24	18	100	2	68	4	2.5	
40	10/40	45	150	18	18	110	2	88	4	2.1	
	63/100	45	170	26	22	125	2	88	4	4.0	
	160	45	170	28	22	125	2	88	4	4.3	
50	250	45	185	34	26	135	2	88	4	6.3	
	10/40	59	165	20	18	125	2	102	4	3.3	
	63	59	180	26	22	135	2	102	4	5.1	
	100	59	195	28	26	145	2	102	4	6.5	
80	160	59	195	30	26	145	2	102	4	7.0	
	250	59	200	38	26	150	2	102	8	9.3	
	10/16	89	200	20	18	160	2	138	8	4.9	
	25/40	89	200	24	18	160	2	138	8	5.8	
	63	89	215	28	22	170	2	138	8	7.9	
100	100	89	230	32	26	180	2	138	8	10.4	
	160	89	230	36	26	180	2	138	8	11.7	
	250	89	255	46	30	200	2	138	8	18.4	
	10/16	89	220	20	18	180	2	158	8	5.9	
125	25/40	89	235	24	22	190	2	162	8	8.1	
	63	89	250	30	26	200	2	162	8	11.5	
	100	89	265	36	30	210	2	162	8	15.5	
	160	89	265	40	30	210	2	162	8	17.3	
	250	89	300	54	33	235	2	162	8	29.9	
125	10/16	124	250	22	18	210	2	188	8	8.4	
	25/40	124	270	26	26	220	2	188	8	11.6	
	63	124	295	34	30	240	2	188	8	14.7	
	100	124	315	40	33	250	2	188	8	24.4	
	160	124	315	44	33	250	2	188	8	26.9	
250	124	340	60	33	275	2	188	12	42.7		

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Flange ASME 16,5, RF 125...250 AA
Size DN 1", 1 1/2", 2", 3" or 4"



x = mounting holes

DN	Class	Dimension mm			Sealing face					Weight kg
		dm	D	b	d ₂	k	f	d ₄	x	
1"	150	32	110	14.7	16	79.4	2	51	4	1.4
	300	32	125	17.9	19	88.9	2	51	4	1.7
1 1/2"	150	45	125	17.9	16	98.4	2	73	4	1.6
	300	45	155	21.1	22	114.3	2	73	4	2.5
	600	45	155	29.3	22	114.3	7	73	4	3.3
	1500	45	180	38.8	29	123.8	7	73	4	5.9
	2500	45	205	51.5	32	146	7	73	4	10.4
2"	150	59	150	19.5	19	120.7	2	92	4	2.7
	300	59	165	22.7	19	127	2	92	8	3.7
	600	59	165	32.4	19	127	7	92	8	5.7
	1500	59	215	45.1	26	165.1	7	92	8	13.2
	2500	59	235	57.9	29	171.4	7	92	8	19.8
3"	150	89	190	24.3	19	152.4	2	127	4	5.3
	300	89	210	29	22	168.3	2	127	8	7.8
	600	89	210	38.8	22	168.3	7	127	8	11
	900	89	240	45.1	26	190.5	7	127	8	16.7
	1500	89	265	54.7	32	203.2	7	127	8	24.5
4"	2500	89	305	73.7	35	228.6	7	127	8	42.7
	150	89	230	24.3	19	190.5	2	158	8	7.7
	300	89	255	32.2	22	200	2	158	8	12.7
	400	89	255	42	26	200	7	158	8	17.4
	600	89	275	45.1	26	215.9	7	158	8	21.5
900	89	290	51.5	32	235	7	158	8	27.7	
	1500	89	310	61	35	241.3	7	158	8	37
	2500	89	355	83.2	42	273	7	158	8	65.7