



ISO Standard Stainless Steel
Sanitary tubing, fittings,
valves and filters

ISO

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ISO 2037 STAINLESS STEEL TUBES

Dimensional Tolerances

all dimensions in (mm)

Size OD	Tolerances, OD	Wall thickness	Tolerances on wall thickness ^{a)}	Tolerances on Length	Weight Kg/M
17,20	+/- 0.13	1,00	+/- 10.0%	+3.18-0	0.404
21,30	+/- 0.13	1,00	+/- 10.0%	+3.18-0	0.506
25,00	+/- 0.13	1,20	+/- 10.0%	+3.18-0	0.712
25,00	+/- 0.13	1,60	+/- 10.0%	+3.18-0	0.933
33,70	+/- 0.13	1,20	+/- 10.0%	+3.18-0	0.972
33,70	+/- 0.20	1,60	+/- 10.0%	+3.18-0	1.280
38,00	+/- 0.20	1,20	+/- 10.0%	+3.18-0	1.100
38,00	+/- 0.20	1,60	+/- 10.0%	+3.18-0	1.451
40,00	+/- 0.20	1,20	+/- 10.0%	+3.18-0	1.160
40,00	+/- 0.20	1,60	+/- 10.0%	+3.18-0	1.531
51,00	+/- 0.20	1,20	+/- 10.0%	+3.18-0	1.490
51,00	+/- 0.20	1,60	+/- 10.0%	+3.18-0	1.970
63,50	+/- 0.25	1,60	+/- 10.0%	+3.18-0	2.467
70,00	+/- 0.25	1,60	+/- 10.0%	+3.18-0	2.730
76,10	+/- 0.25	1,60	+/- 10.0%	+3.18-0	2.970
88,90	+/- 0.25	2,00	+/- 10.0%	+3.18-0	4.330
101,60	+/- 0.38	2,00	+/- 10.0%	+3.18-0	4.983
114,30	+/- 0.38	2,00	+/- 10.0%	+3.18-0	5.600
139,70	+/- 0.38	2,00	+/- 10.0%	+3.18-0	6.860
168,30	+/- 0.76	2,60	+/- 10.0%	+3.18-0	10.732
219,10	+/- 1.55	2,60	+/- 10.0%	+25.4-0	14.022
273	+/- 1.60	2,60	+/- 10.0%	+25.4-0	17.513
323,9	+/- 1.60	2,60	+/- 10.0%	+25.4-0	20.810
335,6	+/- 1.60	2,60	+/- 10.0%	+25.4-0	22.863
406,6	+/- 1.60	3,20	+/- 10.0%	+25.4-0	32.140

B

Chemical Composition

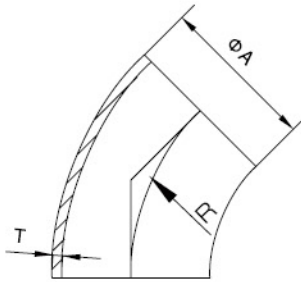
Chemical Composition%		
	304	316L
C	0.080	0.030
MN	2.00	2.000
P	0.045	0.045
S	0.030	0.030*
Si	1.000	1.000
Cr	18.0-20.0	16.0-18.0
Ni	8.0-13.0	10.0-14.0
Mo	-	2.0-3.0

***The sulfur content 316L ASME BPE is 0.005-0.017% for all weld ends.



WELDED FITTINGS

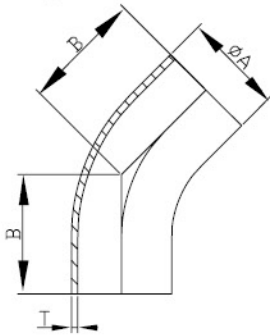
S2WK 45° Short elbow



Size	A	R	T
1°	25	15.53	1.2/1.5
1.5°	38	23.61	1.2/1.5
2°	51	31.69	1.2/1.5
2.5°	63.5	39.45	1.6
3°	76.1	47.28	1.6
4°	101.6	63.0	2.0

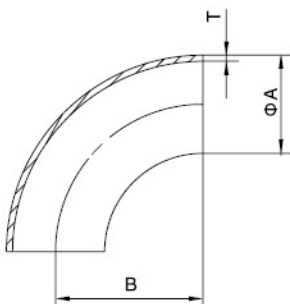
B

SL2WS 45° Long elbow



Size	A	B	T
1°	25	42.53	1.2/1.5
1.5°	38	56.61	1.2/1.5
2°	51	68.69	1.2/1.5
2.5°	63.5	78.45	1.6
3°	76.1	85.28	1.6
4°	101.6	103.0	2.0

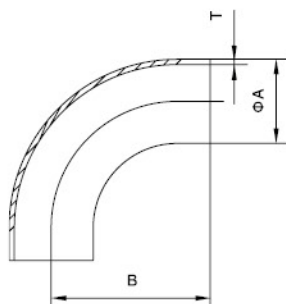
S2WCL 90° Short elbow



Size	A	B	T
1°	25	37.5	1.2/1.5
1.5°	38	57.0	1.2/1.5
2°	51	76.5	1.2/1.5
2.5°	63.5	95.25	1.6
3°	76.1	114.15	1.6
4°	101.6	152.1	2.0

WELDED FITTINGS

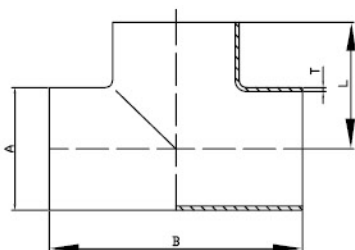
SL2WS 90° Long bend



Size	A	B	T
1°	25	55	1.2/1.5
1.5°	38	70	1.2/1.5
2°	51	82	1.2/1.5
2.5°	63.5	105	1.6
3°	76.1	110	1.6
4°	101.6	150	2.0

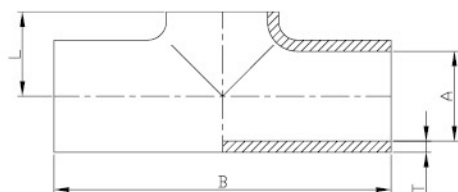
B

S7W Tee with straight-end



Size	A	B	L	T
1°	25	110	55	1.2/1.5
1.5°	38	140	70	1.2/1.5
2°	51	164	81	1.2/1.5
2.5°	63.5	210	105	1.6
3°	76.1	220	110	1.6
4°	101.6	300	150	2.0

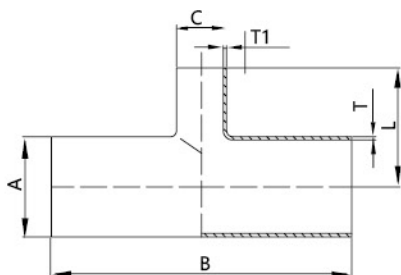
SL7WWW Tee without straight-end



Size	A	B	L	T
1°	25	110	15	1.2/1.5
1.5°	38	140	21	1.2/1.5
2°	51	164	29	1.2/1.5
2.5°	63.5	210	36	1.6
3°	76.1	220	44	1.6
4°	101.6	300	58	2.0

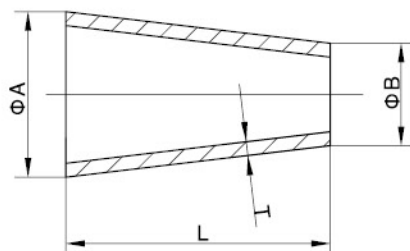
WELDED FITTINGS

S7RW Reducing Tee With Straight-end



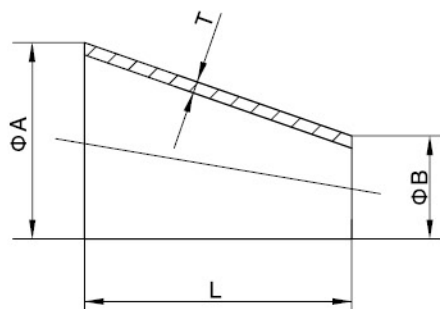
Size	A	B	C	L	T	T1
1.5°×1°	38	140	25	21	1.2/1.5	1.2/1.5
2°×1°	51	164	25	29	1.2/1.5	1.2/1.5
2°×1.5°	51	164	38	29	1.2/1.5	1.2/1.5
2.5°×1°	63.5	210	25	36	1.6	1.2/1.5
2.5°×1.5°	63.5	210	38	36	1.6	1.2/1.5
2.5°×2°	63.5	210	51	36	1.6	1.2/1.5
3°×1°	76.1	220	25	44	1.6	1.2/1.5
3°×1.5°	76.1	220	38	44	1.6	1.2/1.5
3°×2°	76.1	220	51	44	1.6	1.2/1.5
3°×2.5°	76.1	220	63.5	44	1.6	1.6
4°×1°	101.6	300	25	58	2	1.2/1.5
4°×1.5°	101.6	300	38	58	2	1.2/1.5
4°×2°	101.6	300	51	58	2	1.2/1.5
4°×2.5°	101.6	300	63.5	58	2	1.6
4°×3°	101.6	300	76.1	58	2	2

SL31 Concentric Reducer



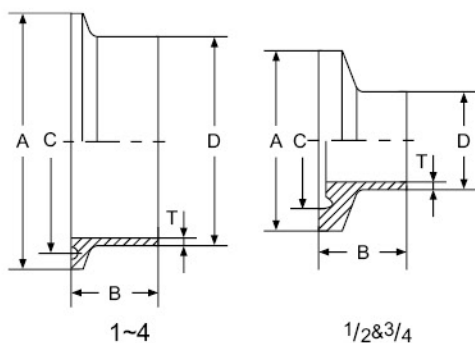
Size	A	B	L	T
1.5°×1°	38	25	39	1.2/1.5
2°×1°	51	25	57	1.2/1.5
2°×1.5°	51	38	39	1.2/1.5
2.5°×1°	63.5	25	74	1.6
2.5°×1.5°	63.5	38	57	1.6
2.5°×2°	63.5	51	39	1.6
3°×1s	76.1	25	92	1.6
3°×1.5s	76.1	38	74	1.6
3°×2°	76.1	51	57	1.6
3°×2.5°	76.1	63.5	39	1.6
4°×2°	101.6	51	95	2.0
4°×2.5°	101.6	63.5	78	2.0
4°×3°	101.6	76	60	2.0

SL32 Eccentric reducer



CLAMP UNION PARTS

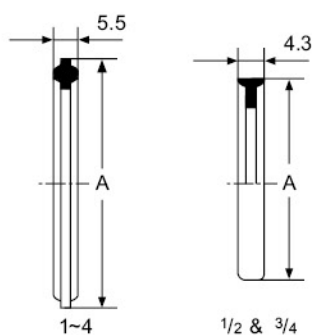
S14MMP Long Weld Ferrule



Size	D	T	A	B	C
1/2°	12.7	1.5	25.4	12.7	22
3/4°	19.05	1.5	25.4	12.7	22
1°	25	1.5	50.5	21.5	43.5
1.25°	31.8	1.5	50.5	21.5	43.5
1.5°	38	1.5	50.5	21.5	43.5
2°	51	1.5	64	21.5	56.5
2.5°	63.5	2.0	77.5	21.5	70.5
3°	76.1	2.0	91	21.5	83.5
3.5°	88.9	2.0	106	21.5	97
4°	101.6	2.0	119	21.5	110

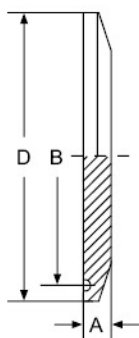
B

40MP Gasket



Size	A
1/2°	25.4
3/4°	25.4
1°	50.5
1.25°	50.5
1.5°	50.5
2°	64
2.5°	77.5
3°	91
3.5°	106
4°	119

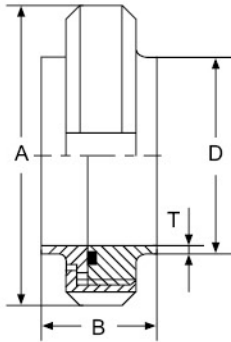
16AMP Solid End Cap



Size	D	A	B
1°	50.5	6.4	43.5
1.25°	50.5	6.4	43.5
1.5°	50.5	6.4	43.5
2°	64	6.4	56.5
2.5°	77.5	6.4	70.5
3°	91	6.4	83.5
3.5°	106	6.4	97
4°	119	6.4	110

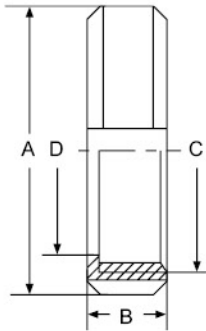
SMS UNION PARTS

Union



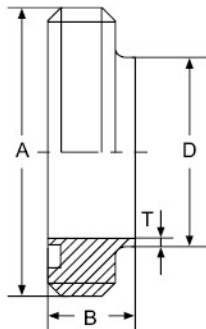
Size	D	T	A	B
1°	25.4	1.5	51	28
1.25°	31.8	1.5	60	30
1.5°	38.1	1.5	72	33
2°	50.8	1.5	82	33
2.5°	63.5	2.0	98	39
3°	76.1	2.0	113	40
3.5°	88.9	2.0	125	43
4°max	101.6	2.0	150	47
4°min	104	2.0	138	47

ISO-13RS Nut



Size	D	A	B	C
1°	32	51	19	Rd40×1/6"
1.25°	40	60	22	Rd48×1/6"
1.5°	48	72	23	Rd60×1/6"
2°	60.5	82	23.5	Rd70×1/6"
2.5°	74	98	25.5	Rd85×1/6"
3°	87	113	27	Rd98×1/6"
3.5°	99	125	28	Rd110×1/6"
4°max	117	150	31	Rd132×1/6"
4°min	113	138	31	Rd125×1/4"

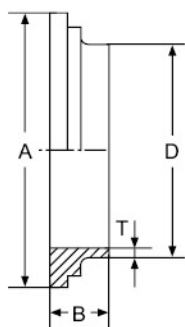
ISO-15 Welding male



Size	D	T	A	B
1°	25.4	1.5	Rd40×1/6"	15
1.25°	31.8	1.5	Rd48×1/6"	17
1.5°	38.1	1.5	Rd60×1/6"	20
2°	50.8	1.5	Rd70×1/6"	20
2.5°	63.5	2.0	Rd85×1/6"	24
3°	76.1	2.0	Rd98×1/6"	24
3.5°	88.9	2.0	Rd110×1/6"	27
4°max	101.6	2.0	Rd132×1/6"	30
4°min	104	2.0	Rd125×1/4"	30

SMS UNION PARTS

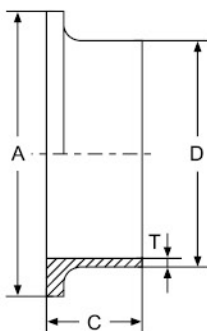
ISO-14 Welding liner(Short)



Size	D	T	A	B
1°	25.4	1.5	35.5	12
1.25°	31.8	1.5	43.5	12
1.5°	38.1	1.5	55	12
2°	50.8	1.5	65	12
2.5°	63.5	2.0	80	14
3°	76.1	2.0	93	15
3.5°	88.9	2.0	105	15
4°max	101.6	2.0	127	16
4°min	104	2.0	118	16

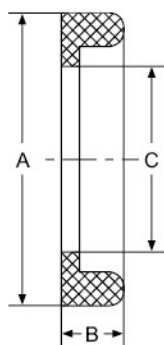
B

ISO-14 Welding liner(Long)



Size	D	T	A	B
1°	25.4	1.5	35.5	17
1.25°	31.8	1.5	43.5	17
1.5°	38.1	1.5	55	20
2°	50.8	1.5	65	20
2.5°	63.5	2.0	80	25
3°	76.1	2.0	93	30
3.5°	88.9	2.0	105	35
4°max	101.6	2.0	127	35
4°min	104	2.0	118	35

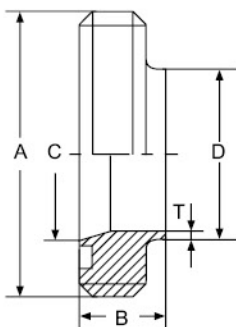
Seal ring



Size	A	B	C
1°	32	5	22.8
1.25°	40	5	29.2
1.5°	48	5	35.5
2°	61	5	48.2
2.5°	73.5	5	60.5
3°	86	5	72.5
3.5°	100	5	85.5
4°	113.5	6	98

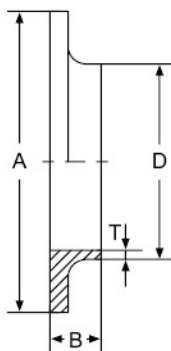
CLAMP UNION PARTS

ISO-15S Reducer Male



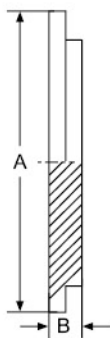
Size	D	T	A	B	C
1.5°/1°	25	1.5	Rd60×1/6"	20.0	35.1
2°/1°	25	1.5	Rd70×1/6"	20.0	47.8
2°/1.5°	38	1.5	Rd70×1/6"	20.0	47.8
2.5°/1.5°	38	1.5	Rd85×1/6"	24.0	59.5
2.5°/2°	51	1.5	Rd85×1/6"	24.0	59.5
3°/2°	51	1.5	Rd98×1/6"	24.0	72.1
3°/2.5°	63.5	2.0	Rd98×1/6"	24.0	72.1
4°/2.5°	63.5	2.0	Rd132×1/6"	30	97.6
4°/3°	76.1	2.0	Rd132×1/6"	30	97.6

ISO-14S Reducer Liner



Size	D	T	A	B
1.5°/1°	25	1.5	55	9
2°/1°	25	1.5	65	9
2°/1.5°	38	1.5	65	9
2.5°/1.5°	38	1.5	80	9
2.5°/2°	51	1.5	80	9
3°/2°	51	1.5	93	10
3°/2.5°	63.5	2.0	93	10
4°/2.5°	63.5	2.0	127	15
4°/3°	76.1	2.0	127	15

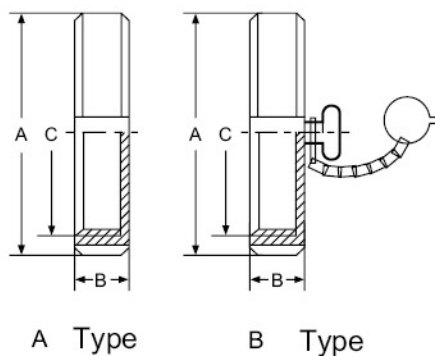
ISO-14B Blank liner



Size	A	B
1°	35.5	6.5
1.25°	43.5	7
1.5°	55	7.5
2°	65	7.5
2.5°	80	8
3°	93	9.5
3.5°	105	10
4°	127	10

CLAMP UNION PARTS

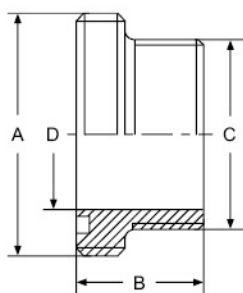
ISO-13RBN Blank nut with boss



Size	A	B	C
1°	51	15	Rd40×1/6"
1.25°	60	19	Rd48×1/6"
1.5°	72	19	Rd60×1/6"
2°	82	20	Rd70×1/6"
2.5°	98	21	Rd85×1/6"
3°	113	22	Rd98×1/6"
3.5°	125	23	Rd110×1/6"
4°	150	26	Rd132×1/6"

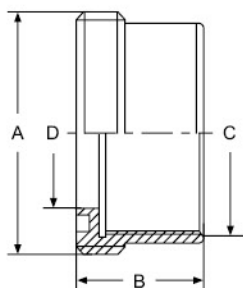
B

ISO-15RS Adapter Male



Size	D	A	B	C
1°	22.4	Rd40×1/6"	38	R1"
1.5°	35.1	Rd60×1/6"	42	R1 1/2"
2°	57.8	Rd70×1/6"	47	R2"
2.5°	59.5	Rd85×1/6"	55	R2 1/2"
3°	72.1	Rd98×1/6"	58	R3"

ISO-15RB Adapter Male



Size	D	A	B	C
1°	22.4	Rd40×1/6"	27	R1"
1.5°	35.1	Rd60×1/6"	32	R1 1/2"
2°	57.8	Rd70×1/6"	38	R2"
2.5°	59.5	Rd85×1/6"	42	R2 1/2"
3°	72.1	Rd98×1/6"	45	R3"

BUTTERFLY VALVES



Tech Specs

Working pressure:	0-10 bar
Control air pressure:	5-8 bar
Working temperature:	-20°C~135°C (EPDM)
Sterilization temperature:	150°C (Max 20min)
Materials:	non-contact product parts 304 (1.4301), Contact product parts 316L (1.4404)
Seal material:	Standard (EPDM) Option (FPM, Silicone, NBR)
Surfaces:	Internal Ra≤ 0.8μm External Ra≤ 1.6μm
Connection:	welding, clamp, thread, flange, etc

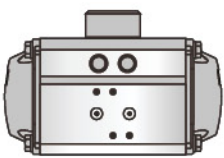
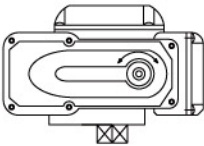


Minimum torque range of the actuator

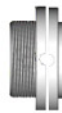
Standard size	Torque(Kgf.m)
1.0"	0.3
1.5"	0.4
2.0"	0.5
2.5"	1.2
3.0"	2
4.0"	2.5
5.0"	3
6.0"	3.5
8.0"	4.5

BUTTERFLY VALVES

S = Welded end
G = Male
K/M = Liner / nut
FI = Flange
CI = Clamp

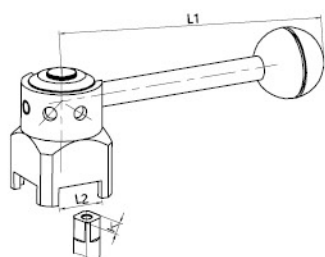
Pneumatical			
Stainless Steel Pneumatic Actuator	Aluminium Pneumatic Actuator	Electric Actuator	
			

Manually Operated			
hand lever Blue type A.	hand lever Black type A.	hand lever Blue type B.	hand lever Black type B.
			
hand lever Blue type C.	hand lever stainless steel A	hand lever stainless steel B	hand lever stainless steel
			

Connection Type					
S - S	G - S	G - G	K/M - G	K/M - S	FI (PN10) - G FI - FI (PN10)
					
CI - CI	Intermediate - butterfly Valve				
		S - S			

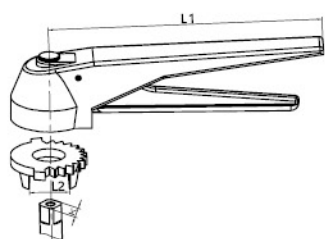
seals			
Silicone	EPDM	FKM	HNBR
			

BUTTERFLY VALVES



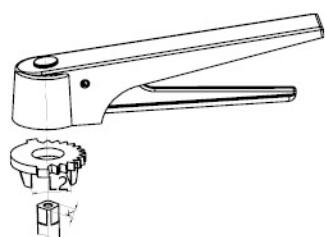
Pulling Handle

Size	L1	L2	K x K
0.5"-1.5"	126	20.2	8x8
2"	133	20.2	10x10
2.5"-3"	144	22.2	10x10
3.5"-4"	160	22.2	11x11
5"-6"	220	22.2	11x11
8"	284	30.2	14x14



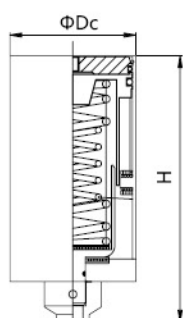
Plastic Multi-Position Handle

Size	L1	L2	K x K
0.5"-1.5"	150	20.2	8x8
2"-3"	150	20.2	10x10
3.5"-4"	150	22.2	11x11



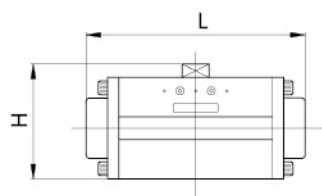
Stainless Steel Multi-Position Handle

Size	L1	L2	K x K
0.5"-1.5"	155	20.2	8x8
2"-3"	155	20.2	10x10
3.5"-6"	155	22.2	11x11
8"	230	30.2	14x14



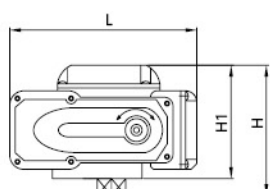
Stainless Steel Pneumatic Actuator

Size	Dc	H	match with butterfly valve	match with ball valve
Ø85	85.0	180.5	1"-4"	1"-2"
Ø108	108	223	5"-6"	2.5"-3"
Ø133	133	400	8"	2.5"-3"



Aluminium Pneumatic Actuator

Size	H	L	match with butterfly valve	match with ball valve
AT1	891.0	131.0	1/2"-1 1/4"	1/2"-1"
AT2	112.0	185.0	2"-4"	1 1/4"-2"
AT3	128.0	230.0	5"	2 1/2"-3"
AT4	154.0	290.0	6"-8"	3 1/2"-4"

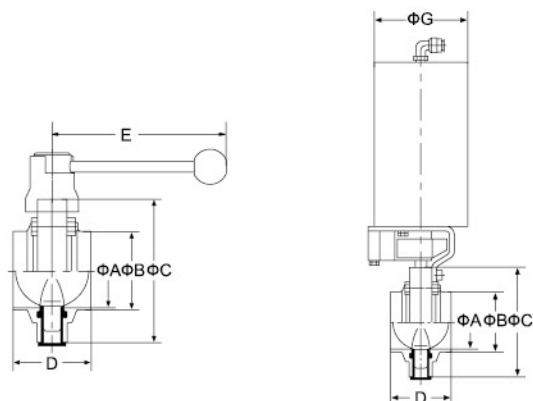


Electric Actuator

Size	L	H	H1	match with butterfly valve	match with ball valve
HL-05	157.5	115.0	103.0	1"-4"	1"-2"
HL-10	208.0	124.0	115.0	5"-8"	2.5"-3"
HL-20	280.0	135.0	109.0		4"

BUTTERFLY VALVES

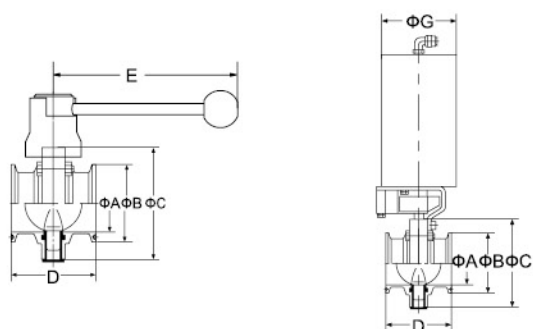
Welded Butterfly Valve



size	A	B	C	D	E	G
3/4°	16	19	78	50	140	63.5
1°	22.4	25.4	78	50	140	85
1.25°	29	32	78	50	140	85
1.5°	35	38	86	50	140	85
2°	48	51	102	52	150	85
2.5°	59.5	63.5	115	56	160	85
3°	72.1	76.1	128	56	160	85
3.5°	85	89	143	56	160	85
4°	97.6	101.6	154	64	180	108

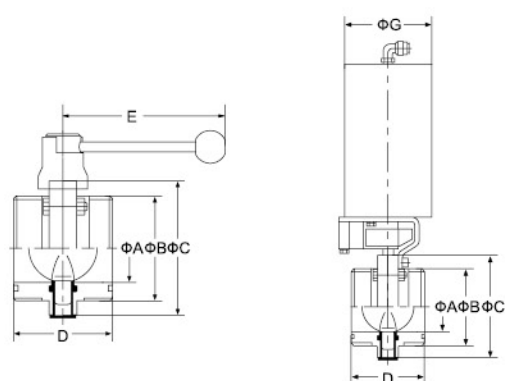
B

Clamped Butterfly Valve



size	A	B	C	D	E	G
3/4°	16	25.4	78	66	140	63.5
1°	22.4	50.5	78	66	140	85
1.25°	29	50.5	78	66	140	85
1.5°	35	50.5	86	70	140	85
2°	48	64	102	76	150	85
2.5°	59.5	77.5	115	80	160	85
3°	72.1	91	128	84	160	85
3.5°	85	106	143	84	160	85
4°	97.6	119	154	104	180	108

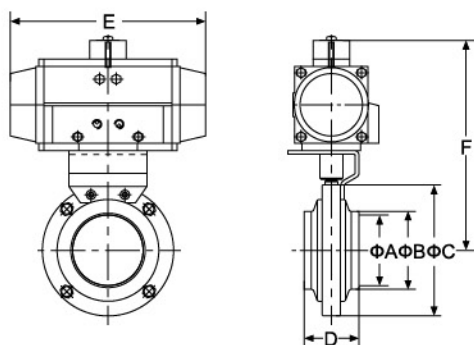
Threaded Butterfly Valve



size	A	B	C	D	E	G
3/4°	16	Rd34×1/8"	78	68	140	63.5
1°	22.4	Rd40×1/6"	78	68	140	85
1.25°	29	Rd48×1/6"	78	68	140	85
1.5°	35	Rd60×1/6"	86	68	140	85
2°	48	Rd70×1/6"	102	70	150	85
2.5°	59.5	Rd85×1/6"	115	75	160	85
3°	72.1	Rd98×1/6"	128	80	160	85
3.5°	85	Rd110×1/6"	143	85	160	85
4°	97.6	Rd132×1/6"	154	85	180	108

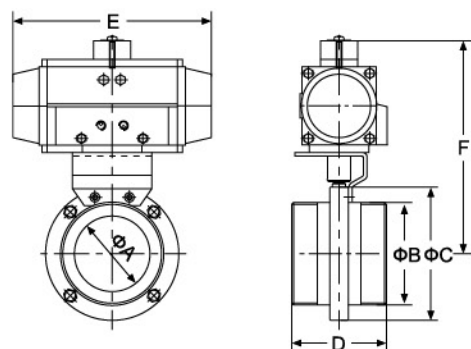
BUTTERFLY VALVES

Welded Butterfly Valve



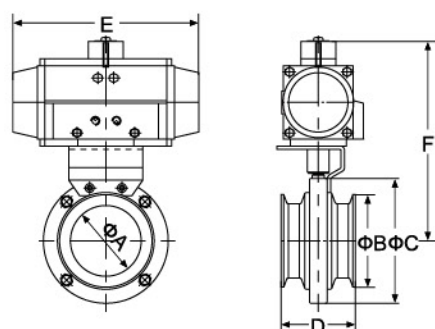
size	A	B	C	D	E	F
3/4°	16	19	78	50	155	168
1°	22.4	25.4	78	50	155	168
1.25°	29	32	78	50	155	174
1.5°	35	38	86	50	155	179
2°	48	51	102	52	168	200
2.5°	59.5	63.5	115	56	168	211
3°	72.1	76.1	128	56	168	218
3.5°	85	89	143	56	249	241
4°	97.6	101.6	154	64	249	263

Clamped Butterfly Valve



size	A	B	C	D	E	F
3/4°	16	Rd34×1/8"	78	68	155	168
1°	22.4	Rd40×1/6"	78	68	155	168
1.25°	29	Rd48×1/6"	78	68	155	174
1.5°	35	Rd60×1/6"	86	68	155	179
2°	48	Rd70×1/6"	102	70	168	200
2.5°	59.5	Rd85×1/6"	115	75	168	211
3°	72.1	Rd98×1/6"	128	80	168	218
3.5°	85	Rd110×1/6"	143	85	249	241
4°	97.6	Rd132×1/6"	154	85	249	263

Threaded Butterfly Valve



size	A	B	C	D	E	F
3/4°	16	25.4	78	68	140	63.5
1°	22.4	50.5	78	68	140	85
1.25°	29	50.5	78	68	140	85
1.5°	35	50.5	86	68	140	85
2°	48	64	102	70	150	85
2.5°	59.5	77.5	115	75	160	85
3°	72.1	91	128	80	160	85
3.5°	85	106	143	85	160	85
4°	97.6	119	154	85	180	108

CHECK VALVES

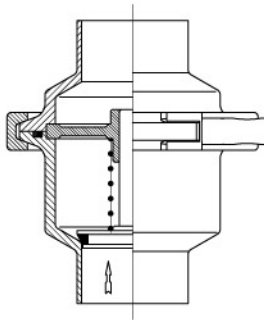


Tech Specs

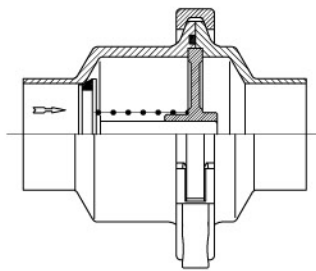
Working pressure:	10 bar(Max)
Opening pressure:	0.08 bar
Working temperature:	-20 °C ~135 °C (EPDM)
Sterilization temperature:	150 °C (Max 20min)
Materials:	non-contact product parts 304 (1.4301), Contact product parts 316L (1.4404)
Seal material:	Standard (EPDM) Option (FPM, Silicone, NBR)
Surfaces:	Internal Ra≤ 0.8µm External Ra≤ 1.6µm
Connection:	welding, clamp, thread, flange

B

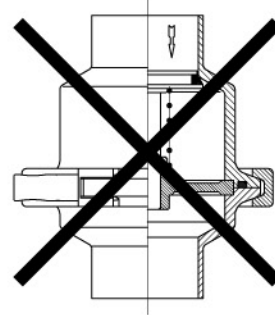
The Correct Installation Method



Optimal Installation Location



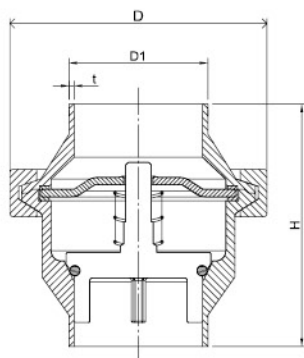
Correct Installation Location



Wrong Installation Location

BUTTERFLY VALVES

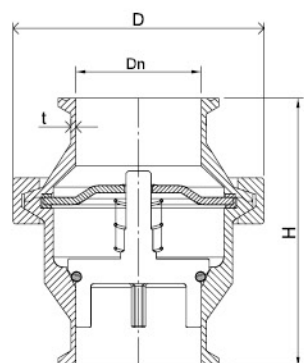
Welded Check Valve



Size	t	H	D	D1
1°	1.2	81	87	25
1.25°	1.2	81	87	32
1.5°	1.2	81	87	38
2°	1.2	91	100	51
2.5°	1.6	95	115	63.5
3°	1.6	101	128	76.1
4°	2	110	164	101.6

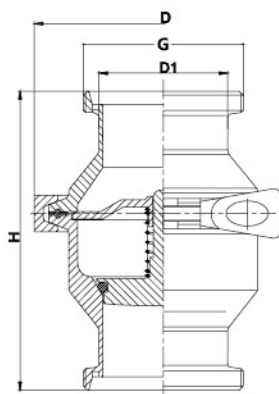
B

Clamped Check Valve



Size	t	H	D	Dn
1°	1.2	95	87	50.5
1.5°	1.2	95	87	64
2°	1.2	104	100	77.5
2.5°	1.6	110	115	91
3°	1.6	115	128	106
4°	2	130	164	119

Threaded Check Valve



Size	H	D	D1	G(RD)
3/4°	115	87	19	35.5×1/8
1°	119	87	25.4	39.5×1/6
1.25°	127	87	31.8	59.5×1/6
1.5°	127	87	38.1	69.5×1/6
2°	137	100	50.8	84.5×1/6
2.5°	149	115	63.5	97.3×1/6
3°	155	128	76.2	104.3×1/6
3.5°	149	128	89	124.3×1/4
4°	170	164	101.6	131.3×1/6

CHECK VALVES

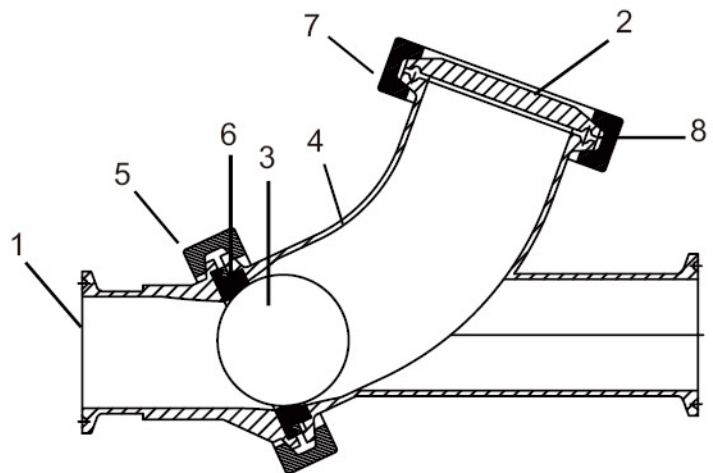
Information

- Precision machined seat to ensure positive shut-off
- Two-piece construction for easier alignment during installation
- Other connections available upon request
- Buna-N and Viton® elastomers
- Polished ID and OD
- All metal contact surfaces of T316L stainless steel
- Sizes range from 1 1/2" through 3"
- Buna Ball & Gaskets Standard

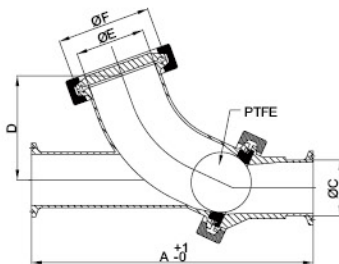


Parts Breakdown

- 1. Seat body - (Clamp)
- 1W. Seat body - (Weld)
- 2. Cap
- 3B. Ball-(Buna-N)
- 3V. Ball-(Viton®)
- 3P. Ball-(PTFE)
- 4. Angle body
- 4W. Angle body-(Weld)
- 5. Body clamp
- 6B. Body gasket-(Buna-N)
- 6V. Body gasket-(Viton®)
- 7. Cap clamp
- 8B. Cap gasket-(Buna-N)
- 8V. Cap gasket-(Viton®)

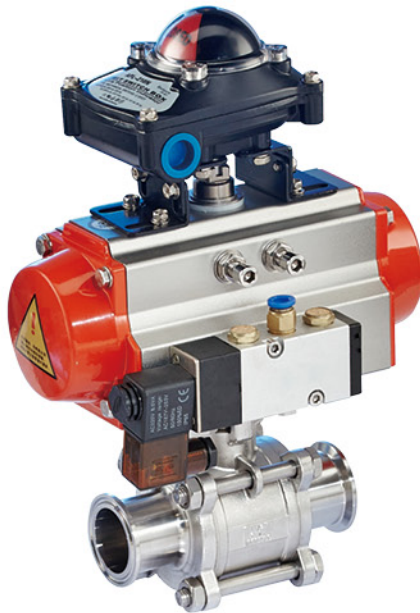


Y Ball Check Valve



Valve Size	A	C	D	E	F	Ball Diameter
1.5 ^S	190.5	38	83.8	47.5	64	40.6
2 ^S	215.9	51	99	59.3	77.5	53.3
2.5 ^S	254	63.5	114.3	72.9	91	68.5
3 ^S	292.1	76.1	134.6	97.4	119	91.4

BALL VALVES



Tech Specs

Working pressure:	10 bar
Working temperature:	-20°C~135°C (EPDM)
Sterilization temperature:	150°C (Max 20min)
Materials:	non-contact product parts 304 (1.4301), Contact product parts 316L (1.4404)
Seal material:	Standard (PTFE/EPDM) Option (PTFE/FPM, PTFE/Silicone, PTFE/NBR)
Surfaces:	Internal Ra≤ 0.8μm External Ra≤ 1.6μm
Connection:	welding, clamp, thread, flange

Ball valve Specific air consumption

Size	Air pressure(bar)	Open	Close
0.5 ^s	4-6bar	0.06	0.08
0.75 ^s	4-6bar	0.09	0.12
1 ^s	4-6bar	0.09	0.12
1.25 ^s	4-6bar	0.14	0.2
1.5 ^s	4-6bar	0.21	0.3
2 ^s	4-6bar	0.21	0.3
2.5 ^s	6-7bar	0.7	0.99
3 ^s	6-7bar	1.2	1.6
4 ^s	6-7bar	1.2	1.6

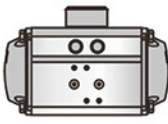
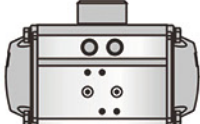
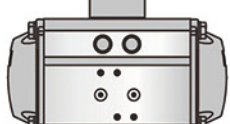
Ball valve Minimum torque range for driving device

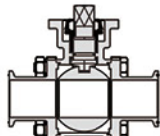
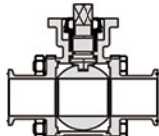
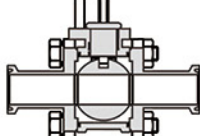
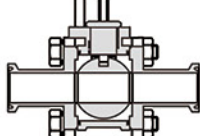
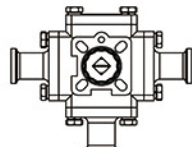
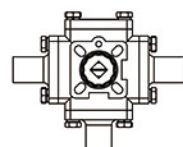
Size	Torque (Kgf.m)
DN10/0.5 ^s	0.9
DN15/0.75 ^s	1.1
DN25/1 ^s	1.4
DN40/1.5 ^s	2.7
DN50/2 ^s	3.1
DN65/2.5 ^s	5.0
DN80/3 ^s	7.3
DN100/4 ^s	10.7

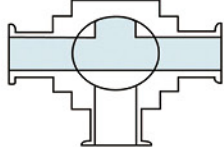
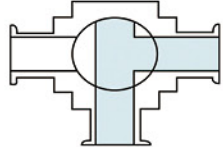
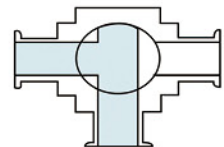
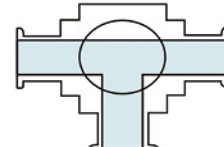
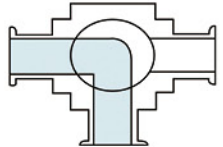
BALL VALVES

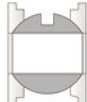
Modular system

S = Welded end
G = Male
K/M = Liner / nut
Fl = Flange
Cl = Clamp

Pneumatical		
140.5x60.5	158.5x83	210.5x94.5
		

Body Configuration			
Cl-Cl	S-S	Cl-Cl	S-S
			
Cl-Cl	S-S		
			

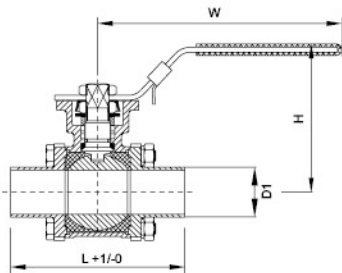
Ball Type			
"T" Port			
			
"L" Port			
			

Sealing Material	
Encapsulated	Standard
	



BALL VALVES

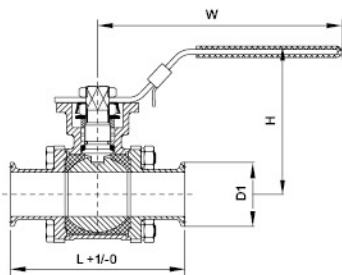
Weld Ball Valve With High Platform



Size	D1	L	W	H
1/2°	12.7	90	130	70
3/4°	19.05	102.2	125	80
1°	25	115.3	166	90
1.5°	38	137.6	193	105
2°	51	156	212	112
2.5°	63.5	171	370	174
3°	76.1	196.7	370	185
4°	101.6	242	400	205

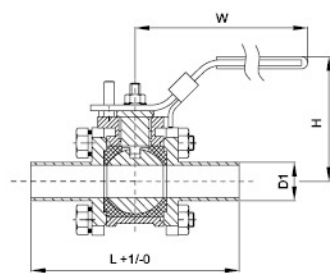
B

Clamp Ball Valve With High Platform



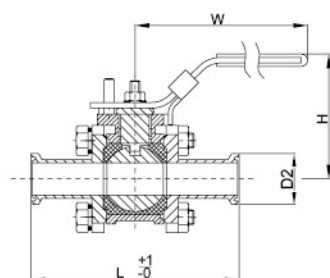
Size	D2	L	W	H
1/2°	25	90	130	70
3/4°	25	102.2	125	80
1°	50.5	115.3	166	90
1.5°	50.5	137.6	193	105
2°	64	156	212	112
2.5°	91	171	370	174
3°	106	196.7	370	185
4°	119	242	400	205

Weld Ball Valve With Low Platform



Size	D1	L	W	H
1/2°	12.7	91	130	62
3/4°	19.05	102.5	130	68.5
1°	25	114.8	176	74.5
1.5°	38	137.3	226	98
2°	51	156.4	226	100
2.5°	63.5	171	326	123.5
3°	76.1	196.7	325	150
4°	101.6	242	332	159

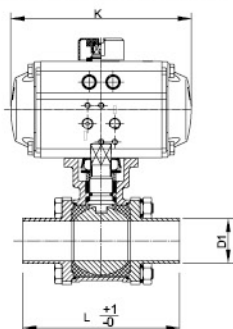
Clamp Ball Valve With Low Platform



Size	D2	L	W	H
1/2°	25	91	130	62
3/4°	25	102.5	130	68.5
1°	50.5	114.8	176	74.5
1.5°	50.5	137.3	226	98
2°	64	156.4	226	100
2.5°	91	171	326	123.5
3°	106	196.7	325	150
4°	119	242	332	159

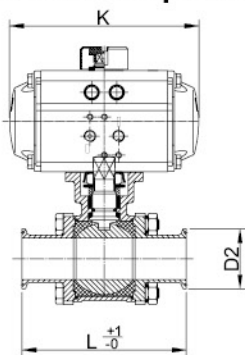
BALL VALVES

Pneumatic Weld Ball Valve



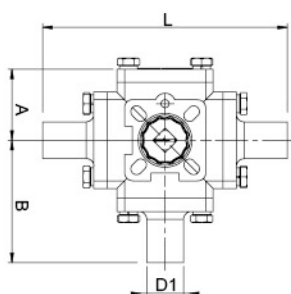
Size	D1	L	K
1/2°	12.7	90	130
3/4°	19.05	102.2	125
1°	25	115.3	166
1.5°	38	137.6	193
2°	51	156	212
2.5°	63.5	171	370
3°	76.1	196.7	370
4°	101.6	242	400

Pneumatic Clamp Ball Valve



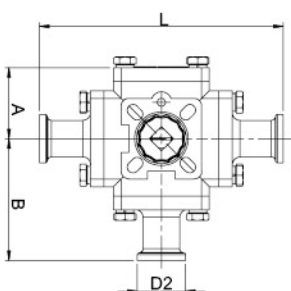
Size	D2	L	K
1/2°	25	90	130
3/4°	25	102.2	125
1°	50.5	115.3	166
1.5°	50.5	137.6	193
2°	64	156	212
2.5°	91	171	370
3°	106	196.7	370
4°	119	242	400

Sanitary Three-Way Weld Ball Valve



Size	D1	A	B	L
1/2°	12.7	34	59	118
3/4°	19.05	37	63.5	127
1°	25	41	76.3	152.6
1.5°	38	52.5	87.5	175
2°	51	65	100.7	201.4
2.5°	63.5	75	113.85	227.7
3°	76.1	95	130.3	260.6
4°	101.6	120	160	320

Sanitary Three-Way Clamp Ball Valve



Size	D2	A	B	L
1/2°	25	34	59	118
3/4°	25	37	63.5	127
1°	50.5	41	76.3	152.6
1.5°	50.5	52.5	87.5	175
2°	64	65	100.7	201.4
2.5°	91	75	113.85	227.7
3°	106	95	130.3	260.6
4°	119	120	160	320

DIAPHRAGM VALVES



Tech Specs

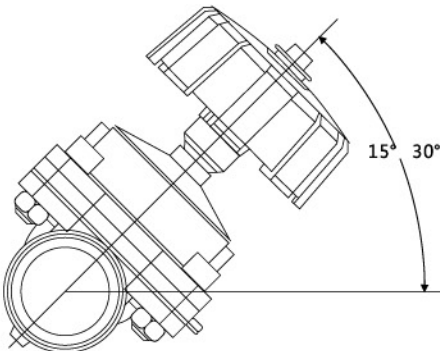
Working pressure:	0-10 bar
Control air pressure:	5-8 bar
Working temperature:	-20°C~135°C (EPDM)
Sterilization temperature:	150°C (Max 20min)
Materials:	non-contact product parts 304 (1.4301), Contact product parts 316L (1.4404)
Seal material:	Standard (PTFE+EPDM) Option (VMQ)
Surfaces:	Internal Ra≤ 0.8μm External Matt
Connection:	welding, clamp, flange, etc



No.	Description
01	Cap
02	Handwheel
03	Screw
04	Valve Rod
05	Valve Cap
06	Valve Core
07	Diaphragm
08	Valve Body
09	Nut

Optimal Installation Angle Diagram

According to the structure feature, fifteen to thirty degree is optimal, which makes for complete drain after cleaning and keep no residue.



DIAPHRAGM VALVES

Actuator			
01	02	03	04
Composite material	Composite material	Stainless steel	Stainless steel
			

B

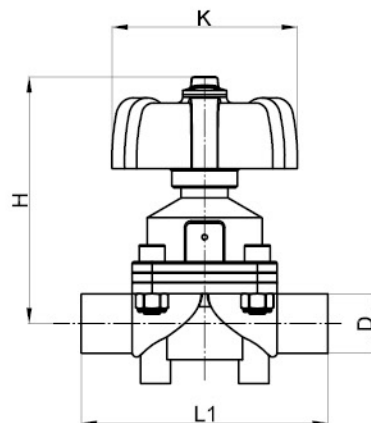
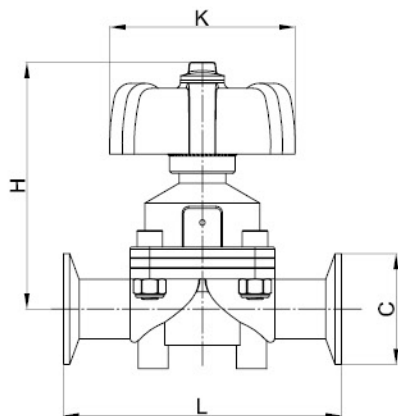
Diaphragms	
Elastomer diaphragms EPDM	PTFE diaphragms PTFE/EPDM, PTFE/FPM
	

Valve Body Versions			
Straight-through Type	T-type	Multi-way	SAP / GMP
			

Connections		
Clamp	Unions	Flange
		

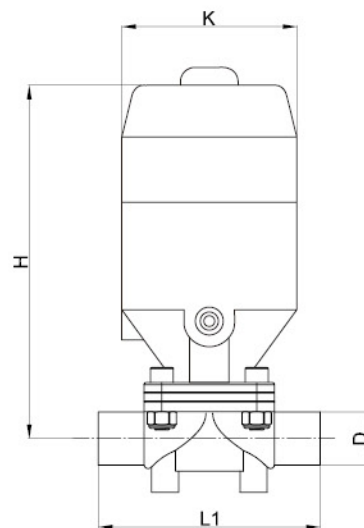
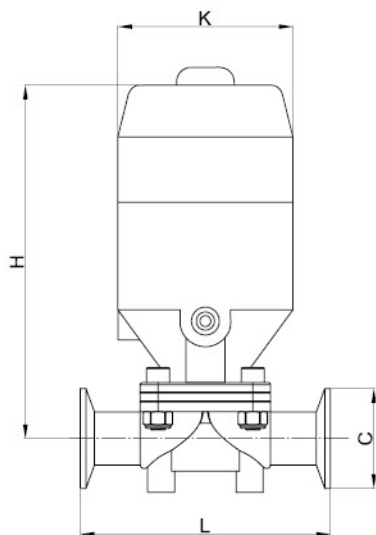
DIAPHRAGM VALVES

Manual Diaphragm Valve



Size	L	L1	K	D	C	H
1/2°	108	102	65	12.7	25	103
3/4°	126	120	87	19.05	25	103
1°	126	120	87	25	50.5	122
1.5°	160	140	104	38	50.5	160
2°	193	150	114	51	64	190

Pneumatic Diaphragm Valve



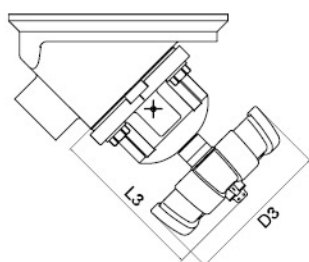
Size	L	L1	K	D	C	H
1/2°	108	125	62	12.7	25	135
3/4°	126	152	72	19.05	25	203
1°	126	154	72	25	50.5	207.5
1.5°	160	193	92	38	50.5	225
2°	193	225	114	51	64	240

TANK BOTTOM VALVES

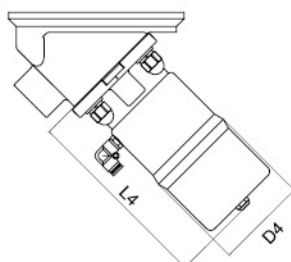
Aseptic Diaphragm Tank Bottom Valve

Tank bottom valve is applied to proportioning vessel for emptying in biological pharmacy, food and fine chemical engineering etc. When stirrer is started, bottom material can be stirred evenly together with water. Connection mode includes welded type and flange type.

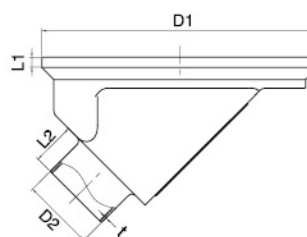
Installation and use of 45° material discharge can ensure that material inside vessel can be discharged completely, conforming to GMP requirements. It is sanitary valve for pipelines.



Manual diaphragm bottom valve



Pneumatic diaphragm bottom valve



Size	D1	D2	D3	D4	L1	L2	L3	L4	t
1 ^s	120	25.4	90	85	6	25	103	172	1.5
1.25 ^s	160	31.8	114	85	6.4	25	111	165	1.5
1.5 ^s	160	38.1	114	85	6.4	25	111	165	1.5
2 ^s	200	50.5	140	126	6	30	141	216	1.5



TANK BOTTOM VALVES



Tech Specs

Working pressure:	0-10 bar
Working temperature:	-20°C~135°C (EPDM)
Sterilization temperature:	150°C (Max 20min)
Materials:	non-contact product parts 304 (1.4301), Contact product parts 316L (1.4404)
Seal material:	PTFE/EPDM
Surfaces:	Internal Ra≤ 0.8μm External Matt
Connection:	welding, clamp
Option:	Staem inlet, disinfection valve

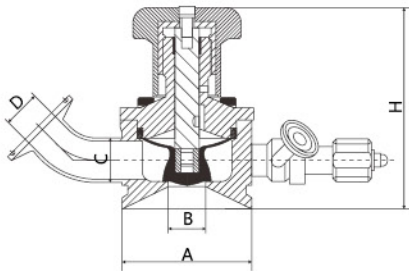
B

Characteristic

P&E series valves provide high performance liquid flow control for pharmaceutical and biopharmaceutical fluid treatment. Using hydraulic optimization design, P&E combines the inherent cleanability of flat diaphragm valve and the best characteristics of plug valve. The characteristics of both ensures that the P&E provides lowflow resistance and has a unique combination of health design verification. The P&E structure is made of durable material and ensures long service life under the requirement of working condition.

Hygienic Design Of Biological
Pharmaceutical Application

P&E has a unique patented design, that is, the use of clamp fixed valve diaphragm in the valve body and the driving head of the structure. All moving parts of the drive head are isolated from the liquid treatment, and most of the specifications of the valve do not require the use of tools for disassembly or maintenance. Valve cavity and pipe connection is no blind segment from the exhaust. Compared with the traditional flat diaphragm valve, with the use of P&E products in the system, the amount of valve can be reduced by up to 30%. This leads to a reduction in the amount of liquid remaining in the pipeline system.



Size	A	B	C	D	H
3/4 ^s	75	22	19	16	120
1 ^s	75	22	25.4	22.1	120
1.25 ^s	85	35	32	29	135
1.5 ^s	85	35	38	35	135
2	110	49	51	49	135

ASEPTIC SAMPLING VALVES



Tech Specs

Working pressure:	0-10 bar
Working temperature:	-20°C~135°C (EPDM)
Sterilization temperature:	150°C (Max 20min)
Materials:	non-contact product parts 304 (1.4301), Contact product parts 316L (1.4404)
Seal material:	Standard (PTFE/EPDM) Option (PTFE/Silicone, PTFE/FPM)
Surfaces:	Internal Ra≤ 0.8μm External Matt
Connection:	welding, clamp, KF



Valve Design Points

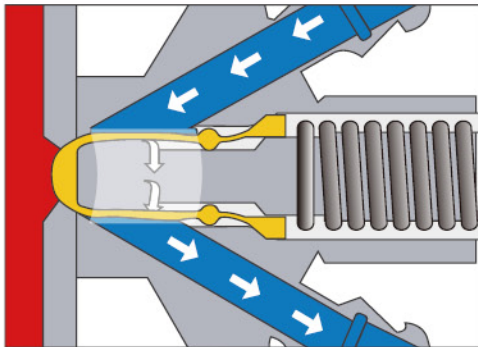
- All valves without dead corner design
- All valves with PTFE diaphragm, ensure clean liquid
- There is taper inside the valve, after sampling the liquid can be completely discharged, no residue.

B

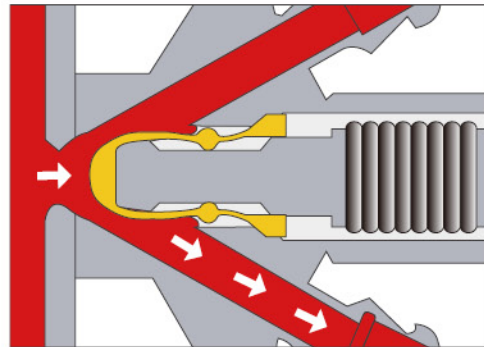
ASEPTIC SAMPLING VALVES

B

Body Configuration		
Weld Connection	Clamp Connection	KF- connection
		



closing valve, sterilization operating structure



opening valve, sampling operating structure

Sampling

- Open valve, sampling;
- After the sampling is completed, close the valve;
- Clean the valve with steam. Please refer to "sterilization"

Sterilization

- Connect the steam hose to the upper part of the valve;
- Open the steam source, so that it flows through the valve to carry out sterilization. Last for 1 minutes at 121°C ;
- Close the steam source;
- Remove the steam hose, then install a sterile rubber plug or sterile mask onto the upper connecting pipe.

ASEPTIC SAMPLING VALVES

Valve dimensions

Fig. 1. Dimensions - valve.

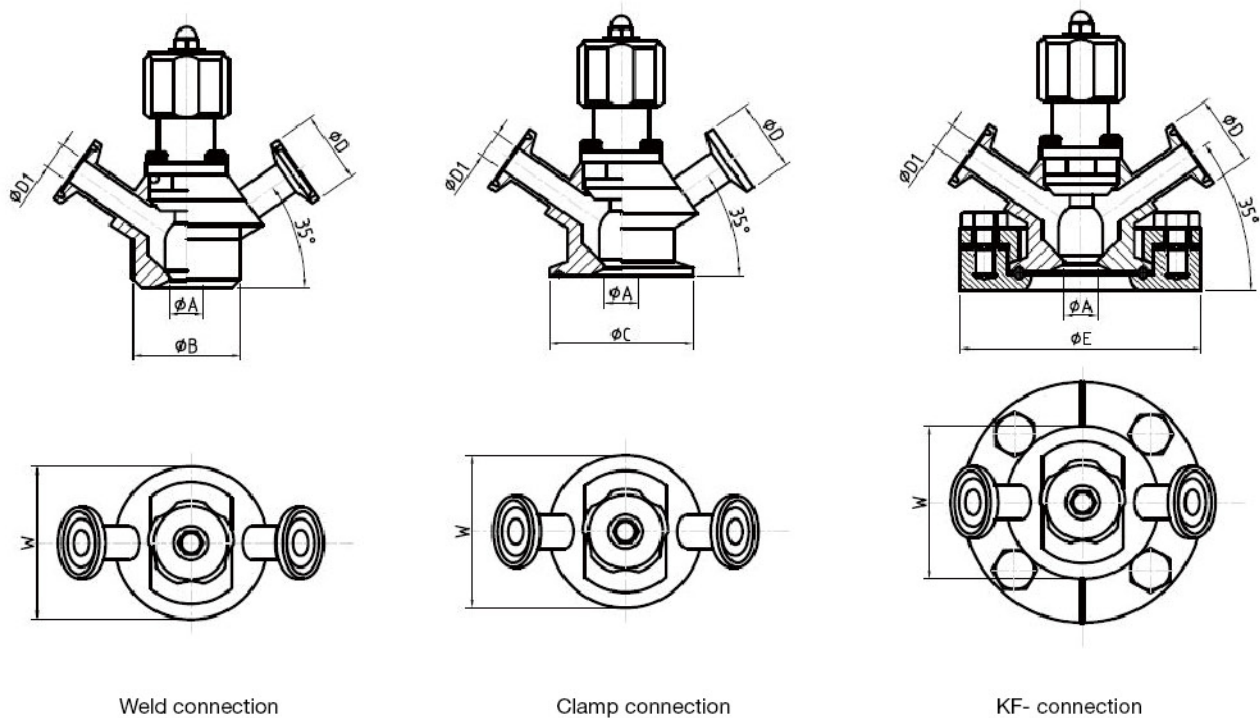
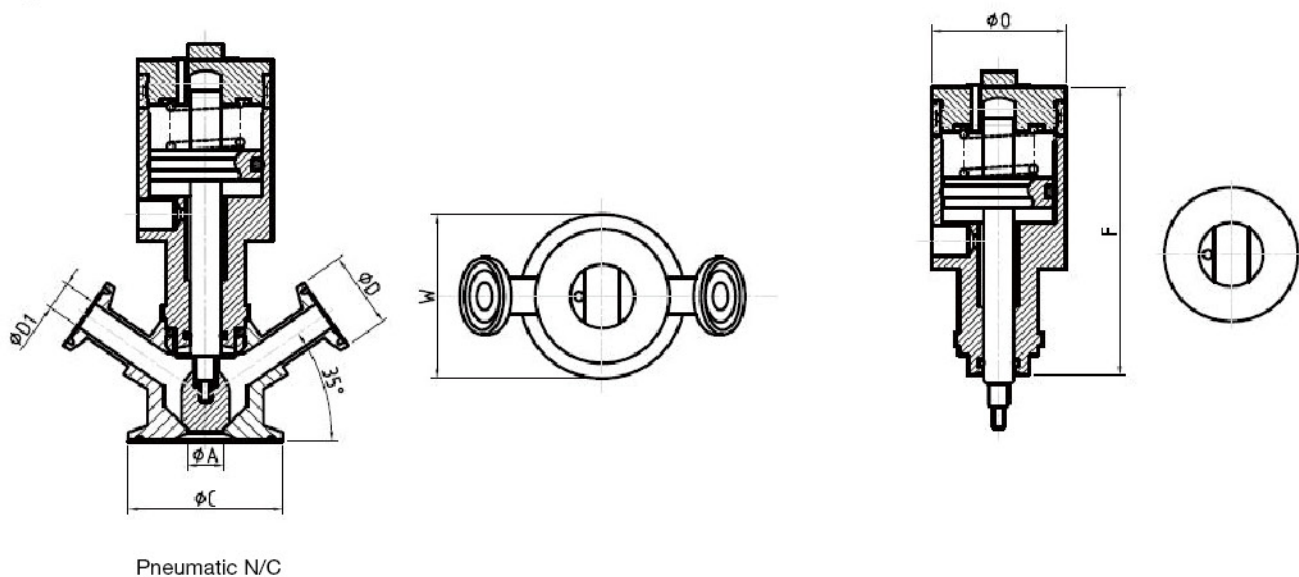


Fig. 2. Dimensions - actuator



Size	A	B	C	D	D1	E	F	O	W
3/4 ^s	6	17.2	25	25	15.2				38.5
1 ^s	12	25	50.5	25	22.6	85	95	44	53.7

ANGLE SEAT VALVES

Tech Specs

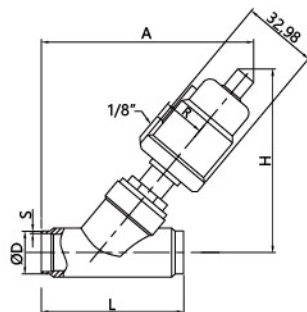
Working pressure:	0-16 bar
Medium temperature:	-10°C~180°C
Ambient temperature:	-100°C~600°C
Valve Materials:	SUS316L
Seal material:	Poly tetra fluoroethylene PTFE
Control gas:	neutral gas, air
Connection:	welding, thread, clamp, flange

- With open or closed position display
- External pneumatic pilot for increased service life and maintenance free
- Self-adjusting sealing gland between the overflow port and the slider for improved sealing performance.
- The valve body angle seat structure can realize large flow rate(especially compared with ordinary stop valve), and the structure is compact and fast.
- Large flow,small flow resistance,no water hammer
- Y-type design,increasing flow by 30%
- Long life
- Seat automatic calibration,self lubricating,maintenance free
- The cylinder is made of stainless steel or PA(polyacrylic acid)to meet the needs of harsh environments
- It can be installed at any position and can be rotated 360 degrees



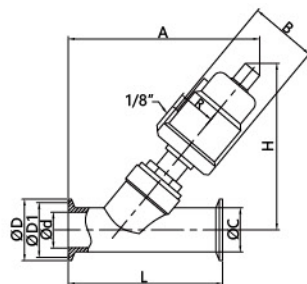
ANGLE SEAT VALVES

Stainless Steel Angle Seat Valve



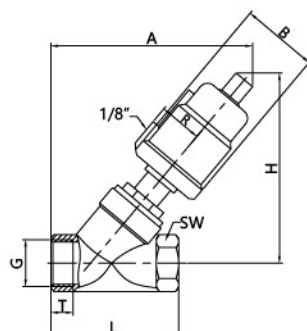
Size	Actuator	B	R	H	D	S	A	L
1/2 ^s	40	50.5	27	112	12	1.2	118	70
	50	60	33	125			128	
1 ^s	50	60	33	136	25	1.2	150	100
	63	75	41	162			175	
	90AL	112	57	210			216	
	90	106	55	211			218	
	90	106	55	223			235	
1.5 ^s	63	75	41	175	38	1.2	190	130
	90AL	112	57	220			232	
	90	106	55	223			235	
2 ^s	63	75	41	183	51	1.2	206	155
	90AL	112	57	232			247	
	90	106	55	232			250	
	125AL	148	74	287			250	
	125AL	148	74	287			250	

Tri-Clamp Angle Seat Valve



Size	Actuator	D	D1	d	L	A	H
1/2 ^s	50	25	22/23	9.6	80	140	126
1 ^s	50	50.5	28/29	22.6	130	165	140
	63					188	166
1.5 ^s	63	50.5	40/41	37	160	210	175
	90					255	223
2 ^s	63	64	52/53	49	175	221	185
	90					265	235

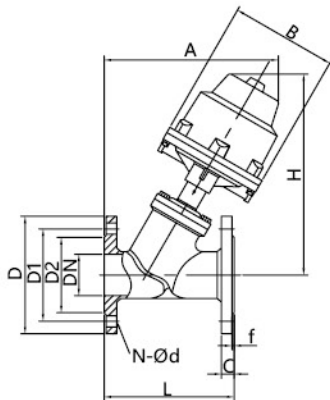
Stainless Steel Angle Seat Valve



Size	Actuator	B	R	H	G	T	A	L	SW
3/8 ^s	140	50.5	27	112	3/8"	12	124	68	27
	50	60	33	125			135		
1/2 ^s	40	50.5	27	112	1/2"	15	124	68	27
	50	60	33	125			135		
1 ^s	50	60	33	136	1"	17	150	90	40
	63	75	41	162			172		
	90AL	112	57	210			215		
	90	106	55	211			216		
	90	106	55	223			235		
1.5 ^s	63	75	41	175	1 1/2"	21	190	116	56
	90AL	112	57	220			230		
	90	106	55	223			235		
2 ^s	63	75	41	183	2"	22	205	138	69
	90AL	112	57	232			245		
	90	106	55	232			250		
	125AL	148	74	287			294		
	125AL	148	74	287			294		
2.5 ^s	90AL	112	57	262	2 1/2"	26	282	178	85
	90	106	55	265			285		
	125AL	148	74	302			320		
23 ^s	125AL	148	74	313	3"	27	372	210	100

ANGLE SEAT VALVES

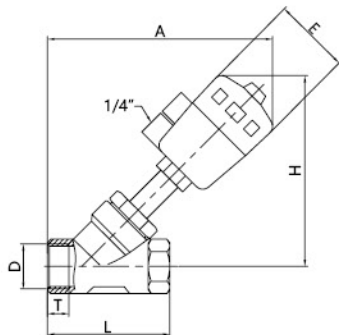
Angle Seat Valve(Bolted Bonnet)



Size	Actuator	L	C	F	D
2.5 ^s	Ø125	203	18	3	180
3 ^s	Ø125	241	20	3	195
3 ^s	Ø160	241	20	3	195
4 ^s	Ø160	254	20	3	215

D1	D2	A	H	B	N-Ød
145	120	275	318	168	4-Ø18
160	135	302	345	168	8-Ø18
160	135	330	380	220	8-Ø18
180	155	338	395	220	8-Ø18

Pneumatic Threaded Angle Seat Valve



Size	Actuator	L	A	H	D	E
3/8 ^s	Ø50	65	165	120	3/8"	64
1/2 ^s	Ø50	86	172	137	1/2"	64
3/4 ^s	Ø50	95	178	145	3/4"	64
1 ^s	Ø50	105	210	165	1"	64

PRESSURE/VACUUM RELIEF VALVES



Tech Specs

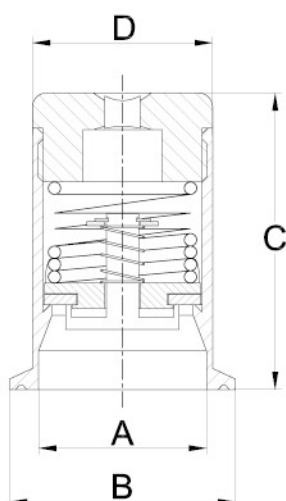
Positive pressure:	0.5-2 bar, 1 bar as default.
Negative pressure(vacuum):	0.3-0.9 bar, 0.9 bar as default
Temperature range:	-10°C~135°C
Materials:	stainless steel 304 (1.4301), 316L (1.4404)
Seal material:	Standard (EPDM) Option (Silicone, FPM, NBR)
Surfaces:	Internal Ra≤ 0.8μm External Ra≤ 1.6μm
Connection:	clamp

B

Working Principle

When the internal pressure of the container is higher than the set pressure, the valve will automatically open to exhaust air to the outside of the container, and otherwise it will be closed;

When vacuum pressure is generated in the container, the valve will automatically open (standard vacuum <0.9ber), the container will absorb air; the valve remains normally closed.



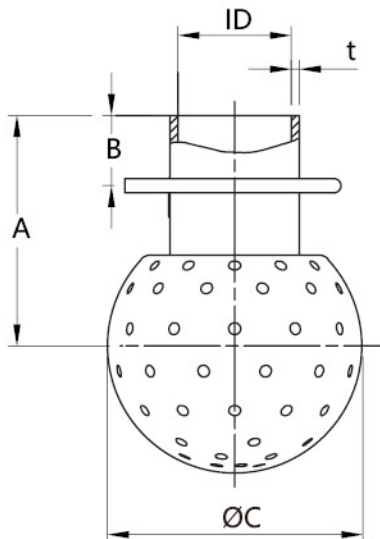
Size	A	B	C	D
	mm	mm	mm	mm
1.5 ^s	39	50.5	84	44
2 ^s	47.5	64.0	84	51
2.5 ^s	57.8	91	97	63

FIXED SPRAY BALL



Tech Specs

Working pressure:	1- 2.5 bar (14.5 -36.3 psi)
Cleaning diameter:	up to 8 m (26.2 ft)
Flow rate:	0.9 - 66.7 m ³ /h (15 -1,112 Vmin / 4 -294 USgpm)
Spray angle:	180° - 360°
Operating Temperature:	max.95C(203°F)
Pipe connection:	Clip on or weld
Surfaces:	ground, electro polished
Material:	stainless steel 316L (1.4404)



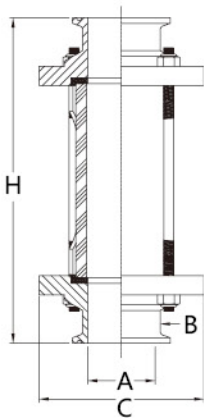
Size	25	51
A	58	77.5
B	17.5	22.5
OD	28.5	54.4
ID	25.5	51.4
t	1.5	1.5
C	64	94

SIGHT GLASS

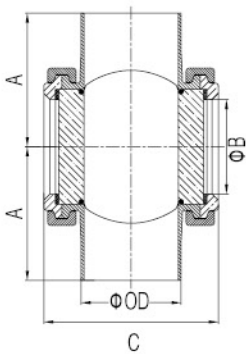


Tech Specs

Working pressure:	10 bar (max)
Temperature range:	-20°C~135°C (EPDM)
Materials:	stainless steel 304 (1.4301), 316L (1.4404)
Sight glass:	Tempered glass, Borosilicate glass or polycarbonate
Seal material:	Standard (EPDM) Option (Silicone, PTFE, FPM, NBR)
Surfaces:	Internal Ra≤ 0.8μm External Ra≤ 1.6μm
Connection:	welding, thread, clamp, flange



Size	A	B	C	H
	mm	mm	mm	mm
1 ^s	22.0	25.0	78	156
1.5 ^s	35.0	38.0	86	160
2 ^s	48.0	51.0	102	164
2.5 ^s	60.3	63.5	115	168
3 ^s	72.9	76.1	124	172
4 ^s	97.6	101.6	154	188



Size	A	B	C	OD
1.5"	65	38	80	38.1
2.0"	75	50	97	50.8
2.5"	85	63.5	111	63.5
3.0"	95	73	124	76.2
4.0"	120	100	149	101.6

FILTERS

Tech Specs

Working pressure:	10 bar (max)	
Working temperature:	-10°C to +120°C (EPDM) +140°C (SIP max. 30 min)	14°F to 248°F 248°F
Max. working pressure:	10 bar	145 PSI
Materials:	stainless steel 304 (1.4301), 316L (1.4404)	
Seal material:	Standard (EPDM) Option (Silicone, FPM, NBR)	
Surfaces:	Internal Ra ≤ 0.8 μm External Matt	
Connection:	welding, clamp	

Application

Filters have a wide range of applications in the food-processing, cosmetics and some chemical industries as well as in auxiliary services of the pharmaceutical industry.

They have a hygienic design and are used to filter particles which may damage pumps and other equipments.

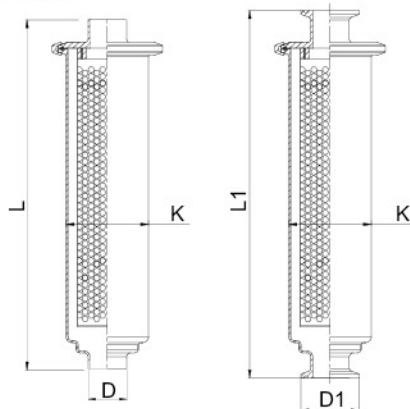
Operating Principle

The filter basically consists of a filter body with an inlet and an outlet for the product. The screen is fixed inside the body. The screen retains all particles that are equal to or larger than the size of the screen openings.



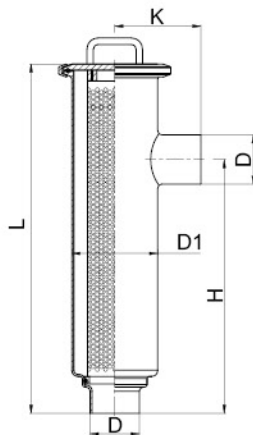
FILTERS

Straight Filter

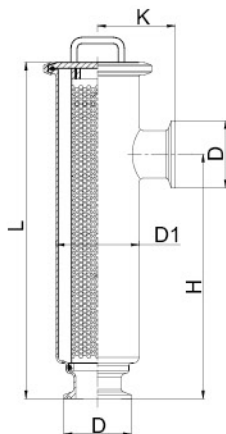


Weld / Clamp					
Size	ØD	ØD1	ØK	L(Weld)	L1(Clamp)
1 ^s	25	50.5	76.2	299.6	325
1.5 ^s	38	50.5	76.2	299.6	325
2 ^s	51	64.0	101.6	334.6	360
2.5 ^s	63.5	77.5	101.6	369.6	395
3 ^s	76.1	91.0	114.3	426.6	452
4 ^s	101.6	119	139.7	614.6	640

Angular Filter



Weld					
Size	ØD	ØD1	K	H	L
1 ^s	25	76	76	249	344
1.5 ^s	38	76	76	249	344
2 ^s	51	89	89	264	369
2.5 ^s	63.5	101.6	101.6	330	460
3 ^s	76.1	114.3	114.3	365	510
4 ^s	101.6	140	140	470	640

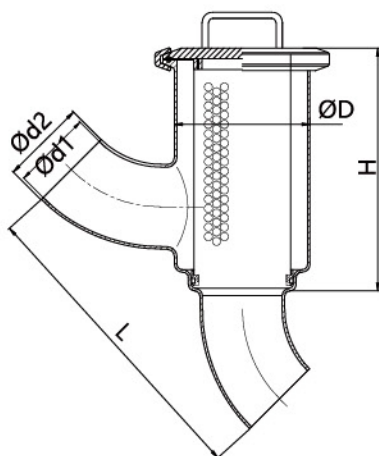


Clamp					
Size	ØD	ØD1	ØK	H	L
1 ^s	50.5	76	88.7	261.7	356.7
1.5 ^s	50.5	76	88.7	261.7	356.7
2 ^s	64.0	89	101.7	276.7	381.7
2.5 ^s	77.5	101.6	114.3	342.7	472.7
3 ^s	91.0	114.3	127	377.5	522.7
4 ^s	119.0	140	156	486	656

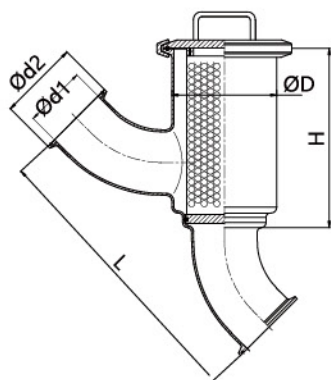
B

FILTERS

Y Filter

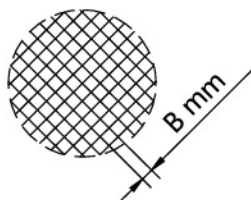


Weld					
Size	Ød1	Ød2	ØD	H	L
1 ^s	22	25	76	115	92
1.5 ^s	35	38	76	160	147
2 ^s	47	51	89	195	150
2.5 ^s	60.5	63.5	102	240	184
3 ^s	72.9	76.1	114.3	270	209
4 ^s	97.6	101.6	140	262	272



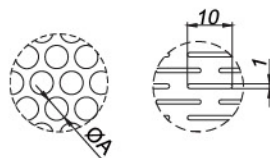
Clamp					
Size	Ød1	Ød2	ØD	H	L
1 ^s	22	50.5	76	200	138
1.5 ^s	35	50.5	76	185	138
2 ^s	47	64.0	89	225	153
2.5 ^s	60.5	77.5	102	275	173
3 ^s	72.9	91.0	114.3	305	193
4 ^s	97.6	119.0	140	391	258

Metal Mesh



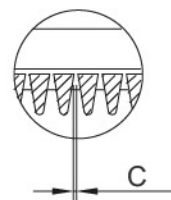
Mesh equiv.	B (mm)	Useful surface (%)
30	0.55	48
40	0.40	46
60	0.30	52.6
80	0.20	42
100	0.15	36.2
165	0.10	45.4

Perforated Plate



A (mm)	Useful surface (%)
0.5	15
1	28
1.5	33
2	30
3	33
5	46

Wedge Wire



Mesh equiv.	B (mm)	Useful surface (%)
30	0.55	48
40	0.40	46
60	0.30	52.6
80	0.20	42
100	0.15	36.2
165	0.10	45.4