

# SANITARY FITTINGS



- ▶ Clamps
- ▶ Tube Hangers
- ▶ Ferrules
- ▶ Sanitary Unions
- ▶ Sanitary Fittings
- ▶ Sanitary Valves
- ▶ BPE Fittings & Valves
- ▶ Wine Unions & Valves
- ▶ Technical Data



Delta INC

🌐 : <https://deltafittings.com/>

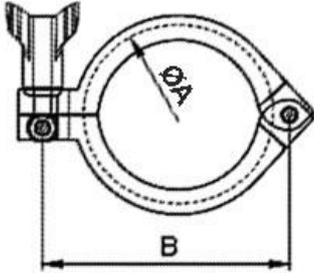
@ : [info@deltafittings.com](mailto:info@deltafittings.com)

☎ : +919331027521, +918961407768

## Clamps

Dimension (mm)

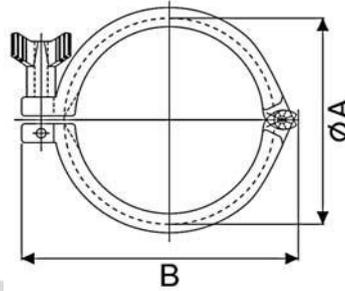
### 13LAH Single Pin Heavy Duty Clamp



SIZE	ØA	B
1/2"	28.4	48.0
3/4"	28.4	48.0
1"	53.9	72.7
1-1/2"	53.9	72.7
2"	67.4	86.5
2-1/2"	80.9	99.0
3"	94.4	113.5
3-1/2"	109.4	132.0
4"	122.4	145.0
4-1/2"	133.5	156.0
5"	150.3	173.0
5-9/16"	158.4	188.0
6"	170.1	210.0
6-5/8"	187.0	227.0
8"	221.0	262.0
8-5/8"	238.0	278.0
10"	271.3	322.0
10-3/4"	289.4	340.0
12"	322.5	402.0

SIZE	ØA	B
DN80	109.4	132.0
DN100	133.5	156.0
DN125	158.4	188.0
DN150	187.0	227.0
DN200	238.0	278.0

### 13LAF Flat Rivet Clamp

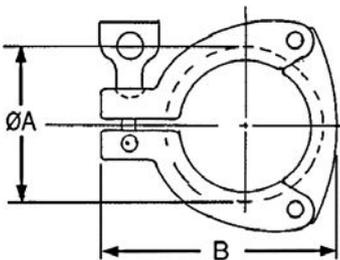


SIZE	ØA	B
3/4"	28.00	59.0
7/8"	37.20	62.19
1-1/2"	53.70	83.0
2"	67.20	95.9
2-1/2"	80.70	108.95
3"	94.20	122.46
3-1/2"	109.20	144.0
4"	122.20	158.0
4-1/2"	133.20	178.0
5"	147.70	188.1
5-1/2"	158.20	208.0
6"	170.20	217.0
6-1/2"	186.20	241.86
8"	221.20	291.0
8-1/2"	236.20	301.1

SIZE	ØA	B
DN10	37.2	62.19
DN15	37.2	62.19
DN20	37.2	62.19
DN25	53.7	83.0
DN40	53.7	83.0
DN50	67.2	95.9
DN65	94.2	122.46
DN80	109.2	144.0
DN100	122.2	158.0
DN125	147.7	188.1
	158.2	208.0
DN150	170.2	217.0
	186.2	241.86
DN200	221.2	291.0
	236.2	301.15

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### 13MHHS 3-Piece Segmental Clamp



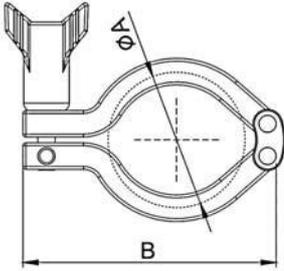
SIZE	ØA	B
1-1/2"	54.0	80.0
2"	67.5	94.0
2-1/2"	80.9	109.0
3"	94.4	126.0
4"	122.4	154.0
12"	323.4	369.0

SIZE	ØA	B
DN25	54.0	80.0
DN40	54.0	80.0
DN50	67.5	94.0
DN65	94.4	126.0
DN100	122.4	154.0

## Clamps

Dimension (mm)

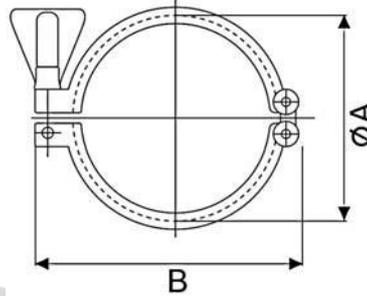
### 13MHM Double Pin Heavy Duty Clamp



SIZE	ØA	B
3/4"	28.2	45.60
7/8"	37.2	60.93
1"	53.7	84.54
1-1/2"	53.7	84.54
2"	67.2	96.49
2-1/2"	80.7	112.51
3"	94.2	129.5
3-1/2"	109.2	144.0
4"	122.2	157.5
4-1/2"	133.2	178.0
6"	170.2	204.0
8"	221.2	260.0

SIZE	ØA	B
DN10	37.2	60.93
DN15	37.2	60.93
DN20	37.2	60.93
DN25	53.7	84.54
DN40	53.7	84.54
DN50	67.2	96.49
DN65	94.2	129.5
DN80	109.2	144.0
DN100	122.2	157.5
DN150	170.2	204.0
DN200	221.2	260.0

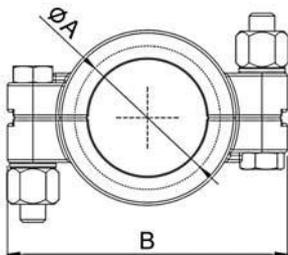
### 13MHA L.B. Double Pin Heavy Duty Clamp



SIZE	ØA	B
1/2"	33.0	60.0
3/4"	33.0	60.0
1"	58.6	85.0
1-1/2"	58.6	85.0
2"	72.0	99.0
2-1/2"	85.6	114.0
3"	99.0	129.0
3-1/2"	109.2	140.62
4"	127.0	157.0
4-1/2"	133.2	167.89
6"	170.0	217.0
8"	221.0	265.0
10"	271.3	319.0
12"	322.5	378.0

SIZE	ØA	B
DN125	158.4	205.0
DN150	187.0	237.0
DN200	238.0	280.0

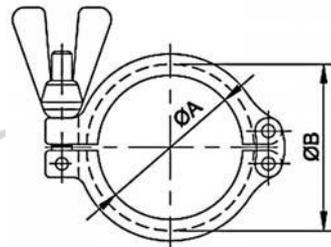
### 13MHP High Pressure Clamp



SIZE	ØA	B
3/4"	28.2	57.0
1-1/2"	55.0	101.6
2"	68.5	114.3
2-1/2"	81.9	127.0
3"	95.5	139.7
4"	122.2	165.1
4-1/2"	133.2	185.6
6"	170.2	215.8
6-1/2"	186.2	235.0

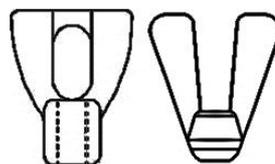
SIZE	ØA	B
DN25	55.0	101.6
DN40	55.0	101.6
DN50	68.5	114.3
DN65	95.5	139.7
DN100	122.2	165.1
DN150	170.2	215.8
	186.2	235.0

### 13CS Double Pin Clamp



SIZE	ØA	ØB
1/2"	20.58	28.34
3/4"	20.58	28.34
1-1/2"	41.02	53.52
2"	54.54	67.04
2-1/2"	68.02	80.52
3"	81.52	94.02
4"	109.54	122.04
6"	157.60	175.1
8"	207.04	225.9

SIZE	ØA	ØB
DN10	27.2	37.0
DN20	27.2	37.0
DN25	44.5	54.5
DN40	44.5	54.5
DN50	57.0	68.0
DN65	84.0	95.0
DN80	99.0	110.0
DN100	112.0	123.0
DN115	123.0	134.0
DN125	144.0	159.0
DN150	172.0	187.0
DN200	222.5	237.5
DN250	257.0	272.0
DN300	308.0	323.0



Nut for Size DN115 and below

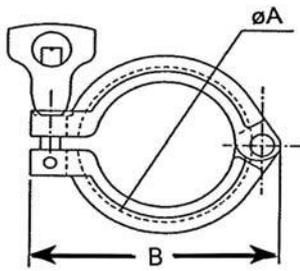


Nut for Size DN125 and above

## Clamps

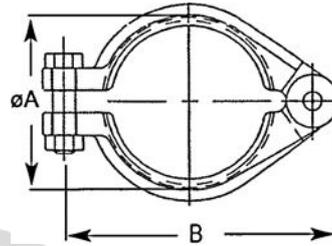
Dimension (mm)

**13IL I-Line Clamp**



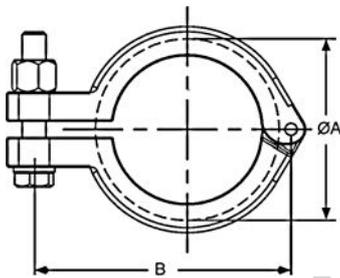
SIZE	ØA	B
1-1/2"	53.4	83.8
2"	72.2	111.0
2-1/2"	88.1	121.4
3"	102.4	136.1
4"	127.8	162.0
6"	195.3	242.1

**13ILB Bolted I-Line Clamp**



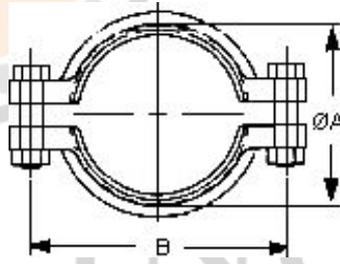
SIZE	ØA	B
1-1/2"	26.92	90.42
2"	35.81	117.35
2-1/2"	44.45	142.75
3"	51.56	168.15
4"	63.50	197.36

**13IU I-Line Clamp**



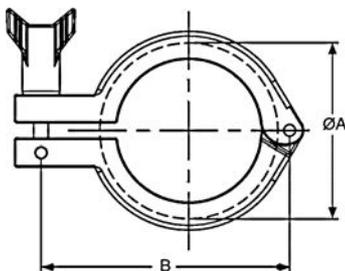
SIZE	ØA	B
1"	55.2	89.0
1-1/2"	55.2	89.0
2"	71.7	102.8
2-1/2"	88.6	124.7
3"	99.4	145.0
4"	128.3	172.2
6"	195.0	230.5

**13ILB Bolted I-Line Clamp**



SIZE	ØA	B
6"	195.15	285.75
8"	246.06	336.55

**13IS I-Line Clamp**

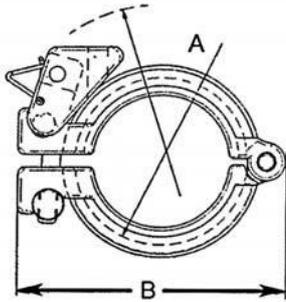


SIZE	ØA	B
1"	55.2	89.0
1-1/2"	55.2	89.0
2"	71.7	102.8
2-1/2"	88.6	124.7
3"	99.4	145.0
4"	128.3	172.2
6"	195.0	230.5

## Clamps

Dimension (mm)

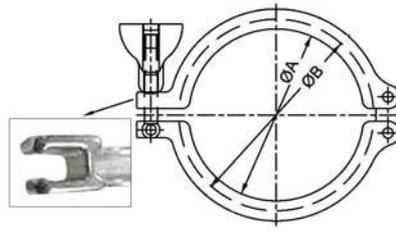
### 13LSC Single Pin Safety Clamp



SIZE	ØA	ØB
3/4"	28.2	56.0
1-1/2"	53.7	84.5
2"	67.2	100.0
2-1/2"	80.7	113.7
3"	94.2	127.0
4"	122.2	155.0

SIZE	ØA	ØB
DN25	53.7	84.5
DN40	53.7	84.5
DN50	67.2	100.0
DN65	94.2	127.0
DN100	122.2	155.0

### 13MSC Double Pin Safety Clamp



SIZE	ØA	ØB
1/2"	21.58	28.34
3/4"	21.58	28.34
1"	41.02	53.52
1-1/2"	41.02	53.52
2"	54.54	67.04
2-1/2"	68.02	80.52
3"	81.52	94.02
4"	109.54	122.04
6"	157.60	175.1
8"	207.40	225.9

SIZE	ØA	ØB
DN10	27.2	37.0
DN20	27.2	37.0
DN25	44.5	54.5
DN40	44.5	54.5
DN50	57.0	68.0
DN65	84.0	95.0
DN80	99.0	110.0
DN100	112.0	123.0
DN115	123.0	134.0
DN125	144.0	159.0
DN150	172.0	187.0
DN200	222.5	237.5
DN250	257.0	272.0
DN300	308.0	323.0

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### Wing Nuts for Clamp

13MHH-10



13MHH-11



13MHH-12



13MHH-13



13MHH-14



13MHH-15



13MHH-16



13MHH-17



13MHH-18



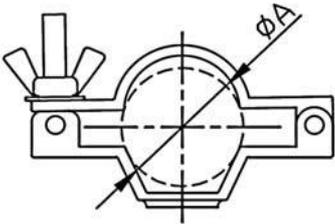
13SP-2



## Tube Hangers

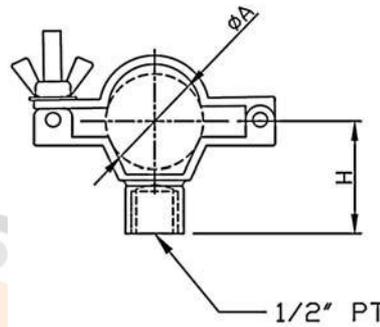
Dimension (mm)

**THR** Round Tube Hanger



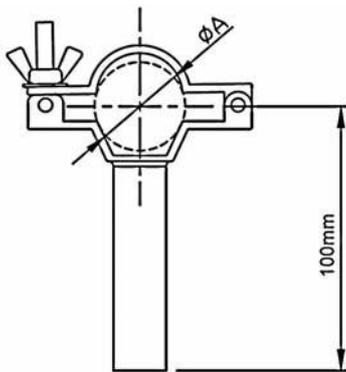
SIZE	ØA
3/4"	19.05
1"	25.4
1-1/2"	38.1
2"	50.8
2-1/2"	63.5
3"	76.2
4"	101.6

**THRT** Round Tube Hanger, 1/2"PT



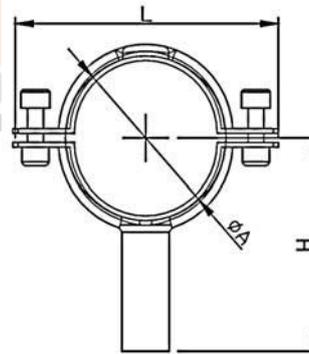
SIZE	ØA	H
1"	25.4	28.7
1-1/2"	38.1	35.1
2"	50.8	41.4
2-1/2"	63.5	47.8
3"	76.2	54.1
4"	101.6	66.8

**THR100** Round Tube Hanger



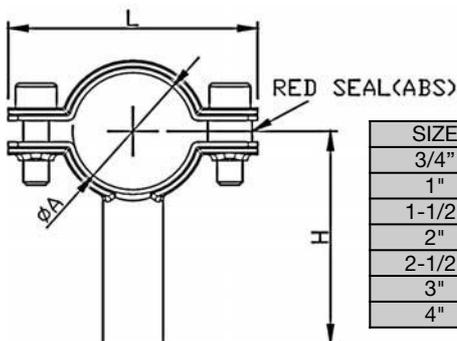
SIZE	ØA
3/4"	19.05
1"	25.4
1-1/2"	38.1
2"	50.8
2-1/2"	63.5
3"	76.2
4"	101.6

**THRL** Round Tube Hanger



SIZE	ØA	H	L
1/2"	12.7	58	64.0
3/4"	19.05	61	72.0
1"	25.4	90	77.5
1-1/4"	31.8	90	80.5
1-1/2"	38.1	90	88.5
2"	50.8	90	104.0
2-1/2"	63.5	90	117.0
3"	76.2	90	131.5
3-1/2"	88.9	90	145.0
4"	101.6	90	154.0

**THRS** Round Tube Hanger, Red Seal (ABS)

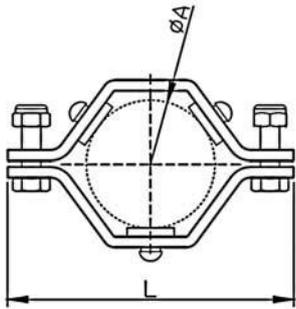


SIZE	ØA	H	L
3/4"	19.05	60	60
1"	25.4	63	66
1-1/2"	38.1	70	78
2"	50.8	76	92
2-1/2"	63.5	82	104
3"	76.2	89	119
4"	101.6	101	149

## Tube Hangers

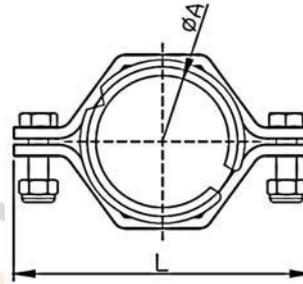
Dimension (mm)

**THHG** Hex. Tube Hanger with Black Rubber Grommets



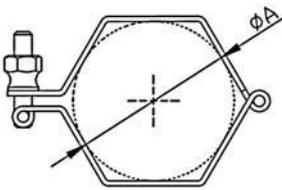
SIZE	ØA	L
1/2"	12.70	64
3/4"	19.05	75
1"	25.4	87
1-1/2"	38.1	95
2"	50.8	110
2-1/2"	63.5	123
3"	76.2	140
4"	101.6	167
6"	152.4	225

**THHP** Hex. Tube Hanger with White PP Sleeves



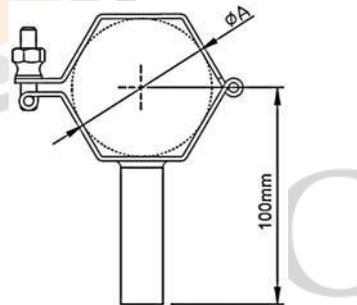
SIZE	ØA	L
1/2"	12.70	64
3/4"	19.05	75
1"	25.4	87
1-1/2"	38.1	95
2"	50.8	110
2-1/2"	63.5	123
3"	76.2	140
4"	101.6	167
6"	152.4	225

**THHS** SMS Hex. Tube Hanger, Hex. Nut



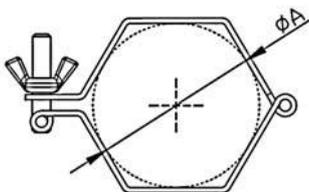
SIZE	ØA
1"	25.0
1-1/2"	38.0
2"	51.0
2-1/2"	63.5
3"	76.1
4"	104.0

**THHS100** SMS Hex. Tube Hanger, Hex. Nut



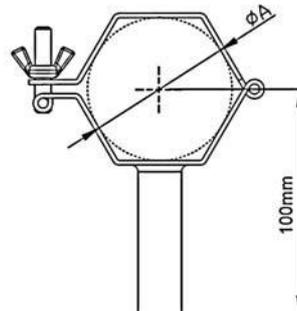
SIZE	ØA
1"	25.0
1-1/2"	38.0
2"	51.0
2-1/2"	63.5
3"	76.1
4"	104.0

**THHW** SMS Hex. Tube Hanger, Wing Nut



SIZE	A
1"	25.0
1-1/2"	38.0
2"	51.0
2-1/2"	63.5
3"	76.1
4"	104.0

**THHW100** SMS Hex. Tube Hanger, Wing Nut

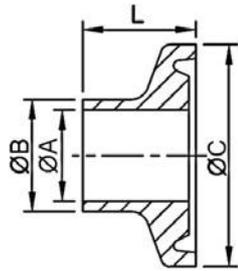


SIZE	ØA
1"	25.0
1-1/2"	38.0
2"	51.0
2-1/2"	63.5
3"	76.1
4"	104.0

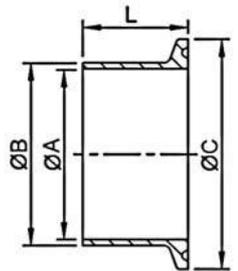
## Ferrules

Dimension (mm)

### 14WMP Short Welding Ferrule



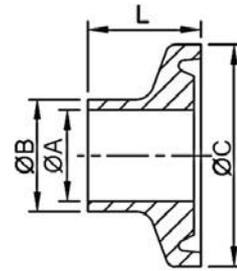
Size: 1/2" and 3/4"



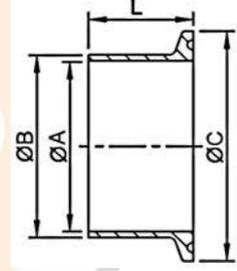
Size: 1" and above

SIZE	ØA	ØB	ØC	L
1/2"	9.4	12.7	25.2	12.7
3/4"	15.7	19.05	25.2	12.7
1"	22.2	25.4	50.5	12.7
1-1/2"	34.8	38.1	50.5	12.7
2"	47.5	50.8	64.0	12.7
2-1/2"	60.2	63.5	77.5	12.7
3"	72.9	76.2	91.0	12.7
4"	97.4	101.6	119.0	15.9
6"	146.8	152.4	166.8	22.2
8"	197.6	203.3	217.6	23.8
10"	247.2	254.0	268.0	23.8
12"	298.0	304.9	319.3	23.8

### 14MMP Butt Welding Ferrule



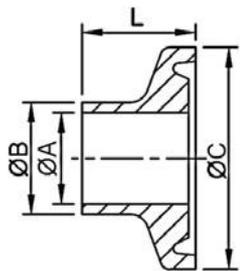
Size: 1/2" and 3/4"



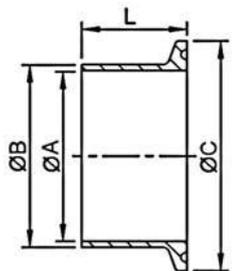
Size: 1" and above

SIZE	ØA	ØB	ØC	L
1/2"	9.4	12.7	25.2	21.5
3/4"	15.7	19.05	25.2	21.5
1"	22.2	25.4	50.5	21.5
1-1/2"	34.8	38.1	50.5	21.5
2"	47.5	50.8	64.0	21.5
2-1/2"	60.2	63.5	77.5	21.5
3"	72.9	76.2	91.0	21.5
4"	97.4	101.6	119.0	21.5
6"	146.8	152.4	166.8	28.6
8"	197.6	203.2	217.7	28.6
10"	247.2	254.0	268.0	28.6
12"	298.0	304.8	319.0	28.6

### 14AMP Long Welding Ferrule



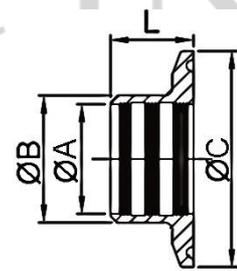
Size: 1/2" and 3/4"



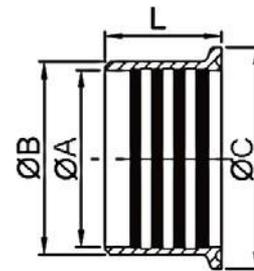
Size: 1" and above

SIZE	ØA	ØB	ØC	L
1/2"	9.4	12.7	25.2	28.6
3/4"	15.7	19.05	25.2	28.6
1"	22.2	25.4	50.5	28.6
1-1/2"	34.8	38.1	50.5	28.6
2"	47.5	50.8	64.0	28.6
2-1/2"	60.2	63.5	77.5	28.6
3"	72.9	76.2	91.0	28.6
4"	97.4	101.6	119.0	28.6
6"	146.8	152.4	166.8	38.1
8"	197.6	203.2	217.7	38.1
10"	247.2	254.0	268.0	38.1
12"	298.0	304.8	319.0	38.1

### 14RMP Roll-On Expanding Ferrule



Size: 1"



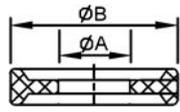
Size: 1-1/4" and above

SIZE	ØA	ØB	ØC	L
1"	25.5	29.5	50.5	19.1
1-1/4"	31.9	36.3	50.5	28.6
1-1/2"	38.2	42.6	50.5	28.6
2"	50.9	55.7	64.0	33.3
2-1/2"	63.6	68.8	77.5	34.9
3"	76.3	81.9	91.0	36.5
4"	101.7	108.1	119.0	38.1

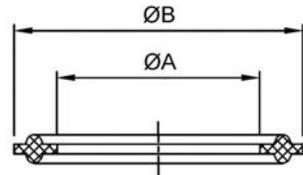
## Ferrules

Dimension (mm)

### Seal For Ferrule Plain Type



Size: 1/2" and 3/4"

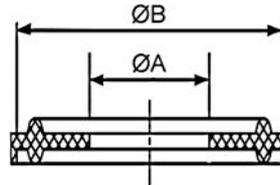


Size: 1" and above

SIZE	ØA	ØB
1/2"	9.4	21.85
3/4"	15.7	21.85
A37	18.1	34.0
1"	22.8	50.5
1-1/4"	28.5	50.5
1-1/2"	35.5	50.5
2"	48.2	64.0
2-1/2"	60.5	77.5
3"	73.2	91.0
4"	97.8	119.0
6"	147.6	166.8
8"	198.4	217.7
10"	248.5	268.0

SIZE	ØA	ØB
DN80	85.4	106.0
DN100	110.8	130.0
DN200	213.6	234.5

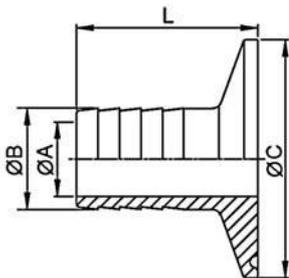
### Seal For Ferrule Lipped Type



SIZE	ØA	ØB
1"	22.8	50.5
1-1/2"	35.5	50.5
2"	48.2	64.0
2-1/2"	60.5	77.5
3"	73.2	91.0
4"	97.8	119.0
5"	125.0	146.7
6"	147.6	166.8
8"	198.4	217.7
10"	248.5	268.0
12"	299.5	319.0

SIZE	ØA	ØB
DN80	85.4	106.0
DN125	135.2	155.0
DN150	163.2	183.0
DN200	213.6	234.5

### 14MPHR Hose Adapter



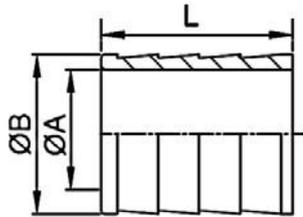
SIZE	ØA	ØB	ØC	L
1/2"x1/2"	9.5	13.7	25.2	38.0
3/4"x3/4"	15.8	21.4	25.2	38.0
1"x1"	20.6	25.4	50.5	43.0
1-1/2"x1-1/2"	33.2	38.1	50.5	43.0
2"x2"	46.0	50.8	64.0	58.7
2-1/2"x2-1/2"	58.7	63.5	77.5	59.5
3"x3"	72.0	76.2	91.0	78.6
4"x4"	97.6	101.6	119.0	85.5

SIZE	ØA	ØB	ØC	L
1/2"x1/4"	3.175	7.3	25.2	38.0
1/2"x3/8"	6.35	10.4	25.2	38.0
1/2"x5/8"	12.7	16.8	25.2	38.0
3/4"x1/4"	3.175	7.3	25.2	38.0
3/4"x3/8"	6.35	10.4	25.2	38.0
3/4"x1/2"	9.5	13.7	25.2	38.0
3/4"x5/8"	12.7	16.8	25.2	38.0
1"x1/4"	3.175	7.3	50.5	38.0
1"x3/8"	6.35	10.4	50.5	38.0
1"x1/2"	9.5	13.7	50.5	38.0
1"x5/8"	12.7	16.8	50.5	38.0
1"x3/4"	15.8	21.4	50.5	38.0
1-1/2"x3/8"	6.35	10.4	50.5	38.0
1-1/2"x1/2"	9.5	13.7	50.5	38.0
1-1/2"x5/8"	12.7	16.8	50.5	38.0
1-1/2"x3/4"	15.8	21.4	50.5	38.0
1-1/2"x1"	20.6	25.4	50.5	43.0
1-1/2"x1-1/4"	26.8	31.75	50.5	43.0
2"x1-1/4"	26.8	31.75	64.0	43.0
2"x1-1/2"	33.2	38.1	64.0	43.0

## Ferrules

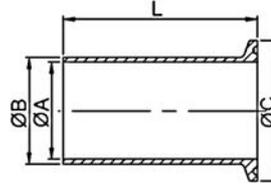
Dimension (mm)

### 14WHR Hose Adapter



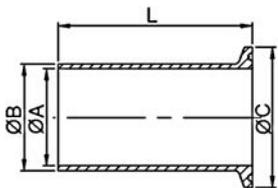
SIZE	ØA	ØB	L
1/2"	13.7	9.5	25.3
3/4"	21.4	15.8	25.3
1"	25.4	20.6	30.3
1-1/2"	38.1	33.2	30.3
2"	50.8	46.0	46.0
2-1/2"	63.5	58.7	46.8
3"	76.2	72.0	65.9
4"	101.6	97.6	72.8

### 14MPHT Tygon Hose Adapter



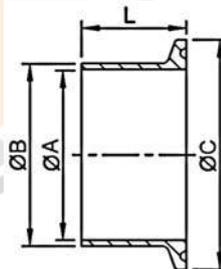
SIZE	ØA	ØB	ØC	L
1/2"	9.4	12.7	25.0	44.45
				101.6
3/4"	15.75	19.05	25.0	44.45
				101.6
1"	22.1	25.4	50.5	114.3
1-1/2"	34.8	38.1	50.5	114.3
2"	47.5	50.8	64.0	114.3
2-1/2"	60.2	63.5	77.5	114.3
3"	72.9	76.2	91.0	114.3
4"	97.4	101.6	119.0	117.5

### 14WLMP Tank Welding Ferrule



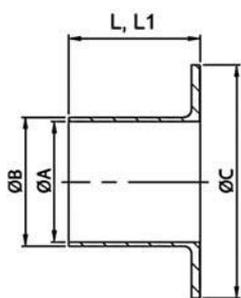
SIZE	ØA	ØB	ØC	L
1"	22.1	25.4	50.5	76.2
1-1/2"	34.8	38.1	50.5	76.2
2"	47.5	50.8	64.0	76.2
2-1/2"	60.2	63.5	77.5	76.2
3"	72.9	76.2	91.0	101.6
4"	97.4	101.6	119.0	101.6
6"	146.8	152.4	166.8	152.4
8"	197.6	203.2	217.7	152.4
10"	247.2	254.0	268.0	152.4

### 14MPW Heavy Tank Welding Ferrule



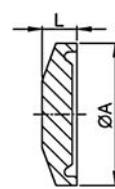
SIZE	ØA	ØB	ØC	L
1"	22.1	29.5	50.5	41.3
1-1/2"	34.8	42.6	50.5	41.3
2"	47.5	55.7	64.0	44.5
2-1/2"	60.2	68.8	77.5	44.5
3"	72.9	81.9	91.0	46.0
4"	97.4	108.1	119.0	54.0
6"	146.25	165.87	166.8	63.5
	146.80	165.10		108.0
8"	197.05	208.10	217.6	63.5

### 14VB Stub End

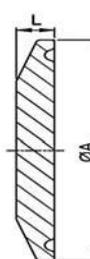


SIZE	ØA	ØB	ØC	L	L1
1/2"	9.40	12.70	38.10	6.5	28.6
3/4"	15.75	19.05	38.10	6.5	34.9
1"	22.10	25.40	50.80	6.5	41.3
1-1/2"	34.80	38.10	73.00	6.5	44.5
2"	47.50	50.80	92.10	6.5	38.1
2-1/2"	60.20	63.50	104.80	6.5	50.8
3"	72.90	76.20	127.00	7.4	57.2
4"	97.40	101.60	157.20	7.4	66.7
6"	146.86	152.40	215.90	8.8	76.2
8"	197.66	203.20	269.90	8.8	76.2
10"	247.60	254.00	323.85	25.4	88.9
12"	298.00	304.00	381.00	25.4	76.2

### 16AMP Solid End Cap



Size: 1/2" and 3/4"



Size: 1" and above

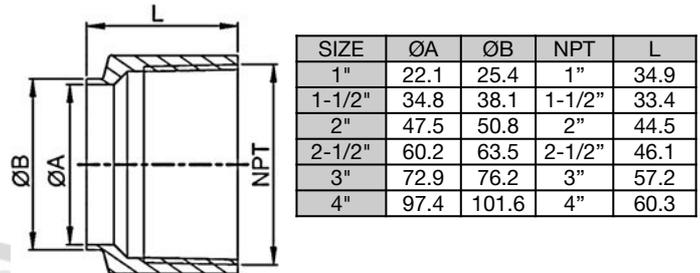
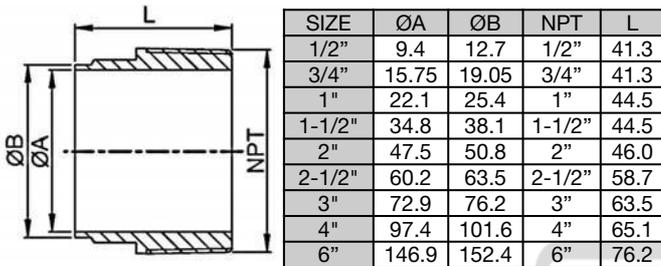
SIZE	ØA	L
1/2"	25.2	5.0
3/4"	25.2	5.0
1"	50.5	6.4
1-1/2"	50.5	6.4
2"	64.0	6.4
2-1/2"	77.5	6.4
3"	91.0	6.4
4"	119.0	7.9
5"	144.5	10.0
6"	166.8	11.1
8"	217.7	11.1
10"	268.0	11.1
12"	319.0	11.1

## Ferrules

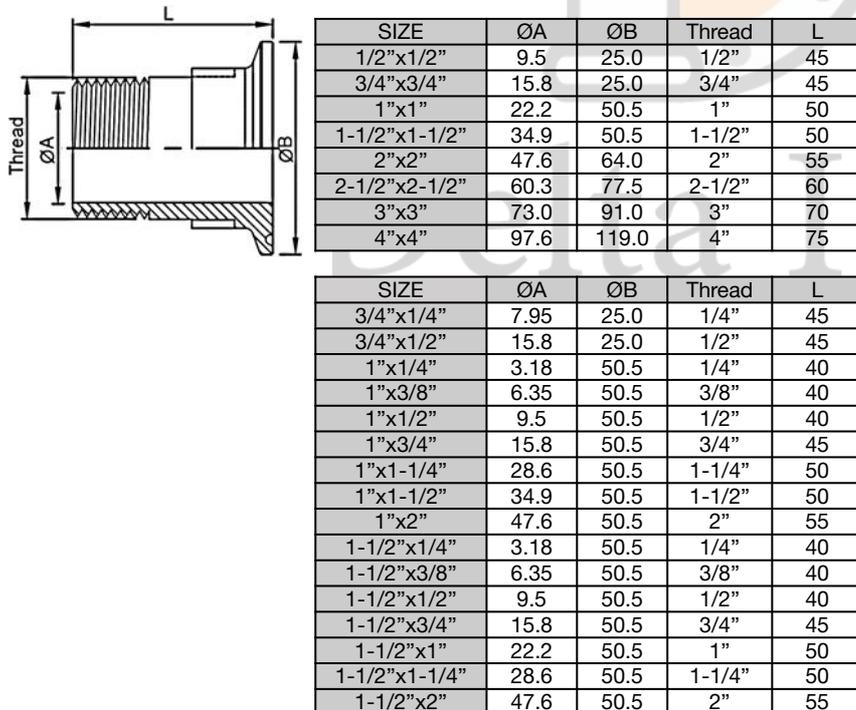
Dimension (mm)

**19WB Male Thread Weld Adapter**

**22WB Female Thread Weld Adapter**



**21MP Male Thread Clamp Adapter**

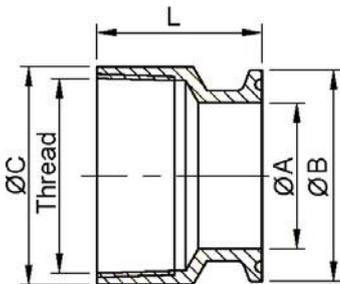


SIZE	ØA	ØB	Thread	L
2"x1/4"	3.18	64	1/4"	40
2"x3/8"	6.35	64	3/8"	40
2"x1/2"	9.5	64	1/2"	40
2"x3/4"	15.8	64	3/4"	50
2"x1"	22.2	64	1"	50
2"x1-1/2"	34.9	64	1-1/2"	50
2"x2-1/2"	60.3	64	2-1/2"	60
2"x3"	73.0	64	3"	70
2"x4"	97.6	64	4"	75
2-1/2"x1"	22.2	77.5	1"	50
2-1/2"x1-1/2"	34.9	77.5	1-1/2"	50
2-1/2"x2"	47.6	77.5	2"	55
2-1/2"x3"	73.0	77.5	3"	70
2-1/2"x4"	97.6	77.5	4"	75
3"x1"	22.2	91	1"	55
3"x1-1/2"	34.9	91	1-1/2"	55
3"x2"	47.6	91	2"	55
3"x2-1/2"	60.3	91	2-1/2"	60
3"x4"	97.6	91	4"	75
4"x1"	22.2	119	1"	55
4"x1-1/2"	34.9	119	1-1/2"	55
4"x2"	47.6	119	2"	55
4"x2-1/2"	60.3	119	2-1/2"	60
4"x3"	73.0	119	3"	70

## Ferrules

Dimension (mm)

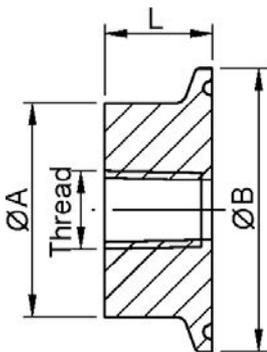
### 22MP Female Thread Clamp Adapter



SIZE	ØA		ØB	ØC	Thread	L
	1"	1-1/2"				
1/2"x1/2"	9.5	9.5	25.0	30	1/2"	33
3/4"x3/4"	15.8	15.8	25.0	31	3/4"	33
1-1/2"x1-1/2"	22.2	34.9	50.5	54	1-1/2"	39
2"x2"	47.6	47.6	64.0	65	2"	40
2-1/2"x2-1/2"	60.3	60.3	77.5	80	2-1/2"	50
3"x3"	73.0	73.0	91.0	95	3"	52
4"x4"	97.6	97.6	119.0	120	4"	54

SIZE	ØA		ØB	ØC	Thread	L
	1"	1-1/2"				
1/2"x1/4"	9.5	9.5	25.0	30	1/4"	33
3/4"x1/2"	15.75	15.75	25.0	30	1/2"	38.1
1"x1-1/4"	22.2	34.9	50.5	52	1-1/4"	39
1-1/2"x1-1/4"	22.2	34.9	50.5	52	1-1/4"	39
1"x1-1/2"	22.2	34.9	50.5	54	1-1/2"	39
1"x2"	22.2	34.9	50.5	65	2"	40
1-1/2"x2"	22.2	34.9	50.5	65	2"	40
3"x2-1/2"	73.0	73.0	91.0	95	2-1/2"	50

### 22MP Female Thread Clamp Adapter



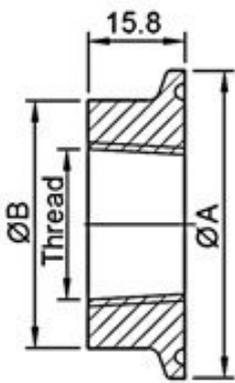
SIZE	ØA	ØB	Thread	L
1"x1/4"	38.1	50.5	1/4"	19
1-1/2"x1/4"	38.1	50.5	1/4"	19
1"x3/8"	38.1	50.5	3/8"	19
1-1/2"x3/8"	38.1	50.5	3/8"	19
1"x1/2"	38.1	50.5	1/2"	19
1-1/2"x1/2"	38.1	50.5	1/2"	19
1"x3/4"	38.1	50.5	3/4"	19
1-1/2"x3/4"	38.1	50.5	3/4"	19
1"x1"	40.0	50.5	1"	19
1-1/2"x1"	40.0	50.5	1"	19
2"x1/4"	50.8	64.0	1/4"	19
2"x3/8"	50.8	64.0	3/8"	19
2"x1/2"	50.8	64.0	1/2"	19
2"x3/4"	50.8	64.0	3/4"	19

SIZE	ØA	ØB	Thread	L
2"x1"	50.8	64.0	1"	19
2"x1-1/2"	53.0	64.0	1-1/2"	19
2-1/2"x1"	63.5	77.5	1"	35
2-1/2"x1-1/2"	63.5	77.5	1-1/2"	35
2-1/2"x2"	65.0	77.5	2"	35
3"x1"	76.2	91.0	1"	35
3"x1-1/2"	76.2	91.0	1-1/2"	35
3"x2"	76.2	91.0	2"	35
4"x1"	101.6	119.0	1"	35
4"x1-1/2"	101.6	119.0	1-1/2"	35
4"x2"	101.6	119.0	2"	35
4"x2-1/2"	101.6	119.0	2-1/2"	35
4"x3"	101.6	119.0	3"	35

## Ferrules

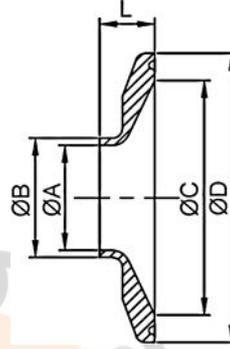
Dimension (mm)

### 23BMP Thermometer Cap



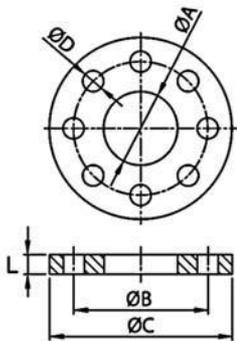
SIZE	ØA	ØB	Thread
1"x1/8"	50.5	25.4	1/8"
1"x1/4"	50.5	25.4	1/4"
1"x3/8"	50.5	25.4	3/8"
1"x1/2"	50.5	25.4	1/2"
1-1/2"x1/8"	50.5	38.1	1/8"
1-1/2"x1/4"	50.5	38.1	1/4"
1-1/2"x3/8"	50.5	38.1	3/8"
1-1/2"x1/2"	50.5	38.1	1/2"
1-1/2"x3/4"	50.5	38.1	3/4"
1-1/2"x1"	50.5	38.1	1"
2"x1/2"	64.0	50.8	1/2"
2"x3/4"	64.0	50.8	3/4"
2"x1"	64.0	50.8	1"
2"x1-1/2"	64.0	50.8	1-1/2"
2-1/2"x1/2"	77.5	63.5	1/2"
2-1/2"x3/4"	77.5	63.5	3/4"
2-1/2"x1"	77.5	63.5	1"
2-1/2"x1-1/2"	77.5	63.5	1-1/2"
2-1/2"x2"	77.5	63.5	2"
3"x1/2"	91.0	76.2	1/2"
3"x3/4"	91.0	76.2	3/4"
3"x1"	91.0	76.2	1"
3"x1-1/2"	91.0	76.2	1-1/2"
3"x2"	91.0	76.2	2"
4"x3/4"	119	101.6	3/4"
4"x1"	119	101.6	1"
4"x1-1/2"	119	101.6	1-1/2"
4"x2"	119	101.6	2"
4"x2-1/2"	119	101.6	2-1/2"
4"x3"	119	101.6	3"

### 31WMP Concentric Reducing Ferrule



SIZE	ØA	ØB	ØC	ØD	L
1"x1/2"	9.4	12.7	22.2	50.5	12.7
1"x3/4"	15.7	19.05	22.2	50.5	12.7
1-1/2"x1/2"	9.4	12.7	34.8	50.5	12.7
1-1/2"x3/4"	15.7	19.05	34.8	50.5	12.7
1-1/2"x1"	22.1	25.4	34.8	50.5	12.7
2"x1"	22.2	25.4	47.5	64.0	12.7
2"x1-1/2"	34.8	38.1	47.5	84.0	12.7
2-1/2"x1"	22.1	25.4	60.2	77.5	12.7
2-1/2"x1-1/2"	34.8	38.1	60.2	77.5	12.7
2-1/2"x2"	47.5	50.8	60.2	77.5	12.7
3"x1"	22.1	25.4	72.9	91.0	12.7
3"x1-1/2"	34.8	38.1	72.9	91.0	12.7
3"x2"	47.5	50.8	72.9	91.0	12.7
3"x2-1/2"	60.2	63.5	72.9	91.0	12.7
4"x1"	22.2	25.4	97.4	119	15.9
4"x1-1/2"	34.8	38.1	97.4	119	15.9
4"x2"	47.5	50.8	97.4	119	15.9
4"x2-1/2"	60.2	63.5	97.4	119	15.9
4"x3"	72.9	76.2	97.4	119	15.9

### 38SL Back-Up Flange

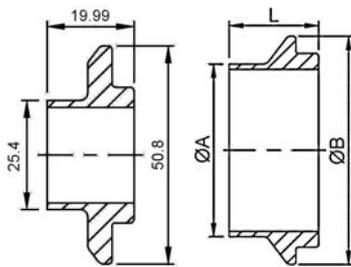


SIZE	ØA	ØB	ØC	ØD	L
1"	27.0	79.4	108.0	4-15.9	9.5
1-1/2"	39.7	98.4	127.0	4-15.9	9.5
2"	52.4	120.7	152.4	4-19.05	11.1
2-1/2"	65.1	139.7	177.8	4-19.05	11.1
3"	77.8	152.4	190.5	4-19.05	12.7
4"	103.2	190.5	228.6	8-19.05	12.7
6"	154.0	241.3	279.4	8-22.2	14.3

### I-Line Ferrules

Dimension (mm)

**14WI Male I-Line Short Weld Ferrule**

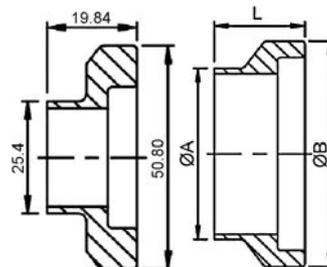


SIZE	ØA	ØB	L
1-1/2"	38.1	50.80	24.00
2"	50.8	67.18	26.00
2-1/2"	63.5	84.12	28.55
3"	76.2	98.43	31.00
4"	101.6	123.83	34.11

Size: 1"

Size: 1-1/2" and above

**15WI Female I-Line Short Weld Ferrule**

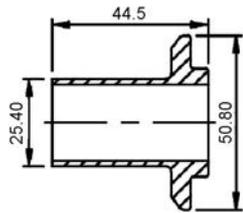


SIZE	ØA	ØB	L
1-1/2"	38.1	50.80	23.83
2"	50.8	67.18	26.20
2-1/2"	63.5	84.12	29.36
3"	76.2	98.43	30.96
4"	101.6	123.83	34.14

Size: 1"

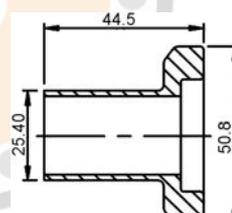
Size: 1-1/2" and above

**14WLI Male I-Line Long Weld Ferrule**

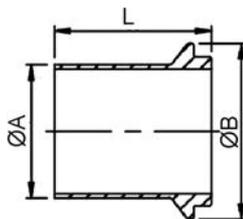


Size: 1"

**15WLI Female I-Line Long Weld Ferrule**

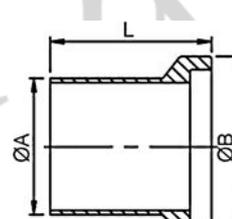


Size: 1"



SIZE	ØA	ØB	L
1-1/2"	38.1	50.80	51.6
2"	50.8	67.18	58.7
2-1/2"	63.5	84.12	63.5
3"	76.2	98.43	68.3
4"	101.6	123.83	76.2

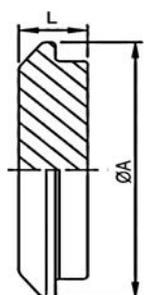
Size: 1-1/2" and above



SIZE	ØA	ØB	L
1-1/2"	38.1	50.8	51.6
2"	50.8	67.18	58.7
2-1/2"	63.5	84.12	63.5
3"	76.2	98.43	68.3
4"	101.6	123.83	76.2

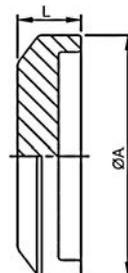
Size: 1-1/2" and above

**16AI-14I Male I-Line Solid End Cap**



SIZE	ØA	L
1"	50.8	12.7
1-1/2"	50.8	12.7
2"	66.7	14.3
2-1/2"	84.1	19.05
3"	98.4	19.05
4"	123.8	19.05

**16AI-15I Female I-Line Solid End Cap**

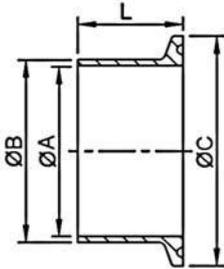


SIZE	ØA	L
1"	50.8	12.7
1-1/2"	50.8	12.7
2"	66.7	17.4
2-1/2"	84.1	19.05
3"	98.4	19.05
4"	123.8	19.05

## Ferrules

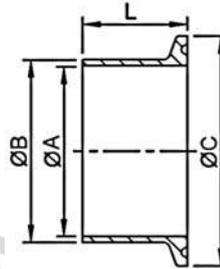
Dimension (mm)

### DIN-32676 Welding Ferrule



SIZE	ØA	ØB	ØC	L
DN10	10.0	13.0	34.0	18.0
DN15	16.0	19.0	34.0	18.0
DN20	20.0	23.0	34.0	18.0
DN25	26.0	29.0	50.5	21.5
DN32	32.0	35.0	50.5	21.5
DN40	38.0	41.0	50.5	21.5
DN50	50.0	53.0	64.0	21.5
DN65	66.0	70.0	91.0	28.0
DN80	81.0	85.0	106.0	28.0
DN100	100.0	104.0	119.0	28.0
DN125	125.0	129.0	155.0	28.0
DN150	150.0	154.0	183.0	28.0
DN200	200.0	204.0	233.5	28.0

### DIN Welding Ferrule



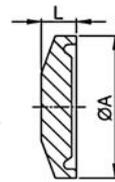
SIZE	ØA	ØB	ØC	L
DN10	9.0	12.0	34.0	18.0
DN15	15.0	18.0	34.0	18.0
DN20	19.0	22.0	34.0	18.0
DN25	25.0	28.0	50.5	21.5
DN32	31.0	34.0	50.5	21.5
DN40	37.0	40.0	50.5	21.5
DN50	49.0	52.0	64.0	21.5
DN65	66.0	70.0	91.0	28.0
DN80	81.0	85.0	106.0	28.0
DN101.6	97.6	101.6	119.0	28.0
DN100	100.0	104.0	119.0	28.0
DN125	125.0	129.0	155.0	28.0
DN150	150.0	154.0	183.0	28.0
DN200	200.0	204.0	233.5	28.0

### EPDM Seal For DIN Ferrule

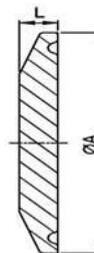


SIZE	ØA	ØB
DN10	9.8	33.2
DN15	15.8	33.2
DN20	19.8	33.2
DN28	25.8	49.7
DN34	31.8	49.7
DN40	37.8	49.7
DN52	49.8	63.2
DN70	66.8	90.2
DN85	81.8	105.2
DN101.6	98.4	118.2
DN104	100.8	118.2
DN125	125.8	154.2
DN150	150.8	182.2
DN200	200.8	232.7

### DIN16AMP DIN Solid End Cap



Size: DN6 and DN8



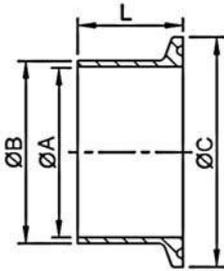
Size: DN10 and above

SIZE	ØA	L
DN6	25.0	4.75
DN8	25.0	4.75
DN10	34.0	6.35
DN15	34.0	6.35
DN20	34.0	6.35
DN25	50.5	6.35
DN32	50.5	6.35
DN40	50.5	6.35
DN50	64.0	6.35
DN65	91.0	6.35
DN80	106.0	6.35
DN100	119.0	8.0
DN125	155.0	8.0
DN150	183.0	11.1
DN200	233.5	11.1

## Ferrules

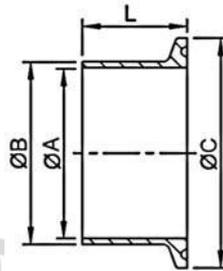
Dimension (mm)

### ISO-1127 Welding Ferrule



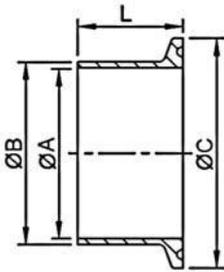
SIZE	ØA	ØB	ØC	L
DN15	18.1	21.3	34.0	21.5
DN20	23.6	26.9	50.5	21.5
DN25	29.7	33.7	50.5	21.5
DN32	38.4	42.4	64.0	21.5
DN40	44.3	48.3	64.0	21.5
DN50	56.3	60.3	77.5	21.5
DN65	72.1	76.1	91.0	21.5
DN80	84.9	88.9	106.0	21.5
DN100	110.3	114.3	130.0	28.6
DN125	134.7	139.7	155.0	28.6
DN150	162.7	168.3	183.0	28.6
DN200	213.1	219.1	233.5	28.6

### ISO-2852 Welding Ferrule



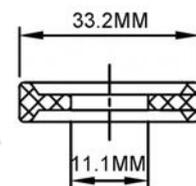
SIZE	ØA	ØB	ØC	L
25	22.6	25.0	50.5	21.5
33.7	31.3	33.7	50.5	21.5
38	35.6	38.0	50.5	21.5
40	37.6	40.0	64.0	21.5
51	48.6	51.0	64.0	21.5
63.5	60.3	63.5	77.5	21.5
70	66.8	70.0	91.0	21.5
76.1	72.9	76.1	91.0	21.5
88.9	84.9	88.9	106.0	21.5
101.6	97.6	101.6	119.0	21.5
114.3	110.3	114.3	130.0	28.0
139.7	135.7	139.7	155.0	28.0
168.3	163.1	168.3	183.0	28.0
219.1	213.9	219.1	233.5	28.0

### ISO-(REP) Welding Ferrule

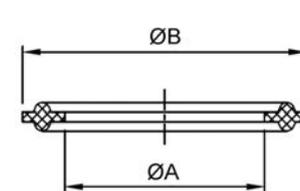


SIZE	ØA	ØB	ØC	L
DN8	10.3	13.5	34.0	28.6
DN10	14.0	17.2	34.0	28.6
DN15	18.1	21.3	34.0	28.6
DN20	23.7	26.9	50.5	28.6
DN25	30.5	33.7	50.5	28.6
DN32	39.2	42.4	50.5	28.6
DN40	45.1	48.3	64.0	28.6
DN50	56.3	60.3	77.5	28.6
DN65	72.1	76.1	91.0	28.6
DN80	84.3	88.9	106.0	28.6
DN100	109.7	114.3	130.0	28.6
DN125	133.7	139.7	155.0	28.6
DN150	162.3	168.3	183.0	28.6
DN200	211.1	219.1	233.5	28.6
DN250	266.3	273.1	233.5	28.6

### PTFE Seal For ISO Ferrule



Size: DN8



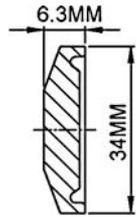
Size: DN12 and above

SIZE	ØA	ØB
DN12	14.8	33.2
DN15	18.9	33.2
DN20	24.5	49.7
DN25	31.3	49.7
DN32	40.0	49.7
DN40	45.9	63.2
DN50	57.1	76.7
DN65	72.9	90.2
DN80	85.7	105.2
DN100	109.9	129.2
DN125	134.5	154.2
DN150	163.1	182.2
DN200	211.9	232.7

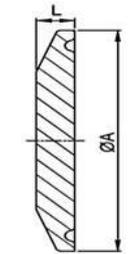
## Ferrules

Dimension (mm)

### ISO16AMP ISO (Rep) Solid End Cap



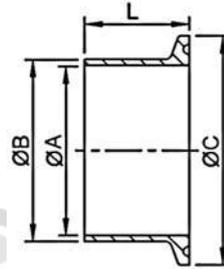
Size: DN8



Size: DN12 and above

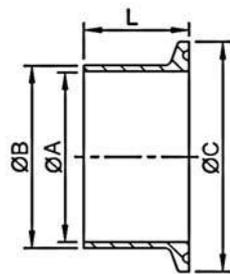
SIZE	ØA	L
DN12	34.0	6.3
DN15	34.0	6.3
DN20	50.5	6.3
DN25	50.5	6.3
DN32	50.5	6.3
DN40	64.0	6.3
DN50	77.5	6.3
DN65	91.0	6.3
DN80	106.0	6.3
DN100	130.0	7.9
DN125	155.0	7.9
DN150	183.0	11.1
DN200	233.5	11.1

### BS-4825 Welding Ferrule



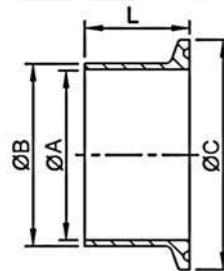
SIZE	ØA	ØB	ØC	L
1"	22.1	25.4	50.5	21.5
1-1/2"	34.8	38.1	50.5	21.5
2"	47.5	50.8	64.0	21.5
2-1/2"	60.2	63.5	91.0	21.5
3"	72.9	76.2	106.0	21.5
4"	97.4	101.6	119.0	21.5

### IDF Welding Ferrule



SIZE	ØA	ØB	ØC	L
1"	23.0	25.4	50.5	21.5
1-1/4"	29.4	31.8	50.5	17.0
1-1/2"	35.7	38.1	50.5	21.5
2"	47.8	50.8	64.0	21.5
2-1/2"	59.5	63.5	77.5	21.5
3"	72.3	76.3	91.0	21.5
3-1/2"	85.1	89.1	106.0	21.5
4"	97.6	101.6	119.0	28.0
4-1/2"	108.3	114.3	130.0	28.0
5-1/2"	133.8	139.8	165.0	28.0
6-1/2"	159.2	165.2	183.0	28.0

### JIS Welding Ferrule

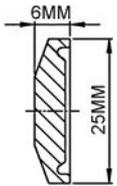


SIZE	ØA	ØB	ØC	L
1S	23.0	25.4	50.5	21.5
1.25S	29.4	31.8	50.5	17.0
1.5S	35.7	38.1	50.5	21.5
2S	47.8	50.8	64.0	21.5
2.5S	59.5	63.5	77.5	21.5
3S	72.3	76.3	91.0	21.5
3.5S	85.1	89.1	106.0	21.5
4S	97.6	101.6	119.0	28.0
4.5S	108.3	114.3	130.0	28.0
5.5S	133.8	139.8	165.0	28.0
6.5S	159.2	165.2	183.0	28.0

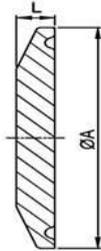
## Ferrules

Dimension (mm)

### 16AMP-I Imperial Solid End Cap



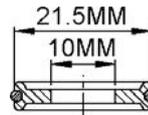
Size: 1/2" and 3/4"



Size: 1" and above

SIZE	ØA	L
A37	34.00	6.3
1"	50.50	6.3
1-1/2"	50.50	6.3
2"	64.00	6.3
2-1/2"	77.50	6.3
3"	91.00	6.3
4"	119.00	7.9
6"	166.87	11.1
8"	217.67	11.1
10"	268.47	11.1
12"	319.27	11.1

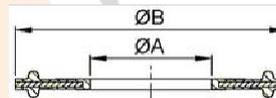
### Imperial Seal For Ferrule



Size: 1/2"



Size: 3/4"



Size: 1" and above

SIZE	ØA	ØB
1"	22.5	50.2
1-1/2"	34.9	50.2
2"	47.6	63.5
2-1/2"	60.5	77.7
3"	73.2	90.5
4"	97.7	118.4

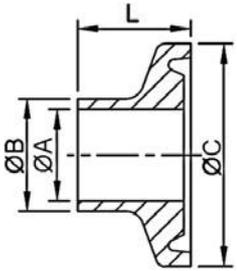
Delta INC

## Ferrules

Dimension (mm)

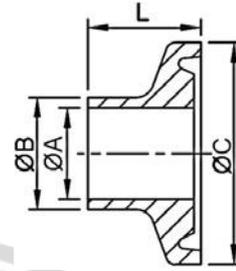
### SMS14WMP SMS Short Welding Ferrule

### SMS14MMP SMS Butt Welding Ferrule



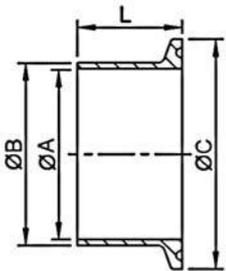
SIZE	ØA	ØB	ØC	L
DN15	9.7	12.7	25.4	12.7
DN20	15.95	19.05	25.4	12.7
DN25	22.5	25.0	50.5	12.7
DN38	35.5	38.0	50.5	12.7
DN50	48.5	51.0	64.0	12.7
DN63	60.3	63.5	77.5	12.7
DN76	72.9	76.1	91.0	12.7
DN104	100.0	104.0	119.0	15.8

Size: DN15 and DN20

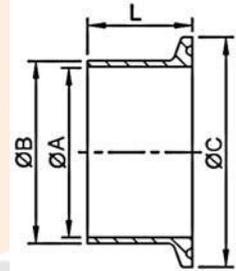


SIZE	ØA	ØB	ØC	L
DN15	9.7	12.7	25.4	21.5
DN20	15.95	19.05	25.4	21.5
DN25	22.5	25.0	50.5	21.5
DN38	35.5	38.0	50.5	21.5
DN50	48.5	51.0	64.0	21.5
DN63	60.3	63.5	77.5	21.5
DN76	72.9	76.1	91.0	21.5
DN104	100.0	104.0	119.0	21.5

Size: DN15 and DN20

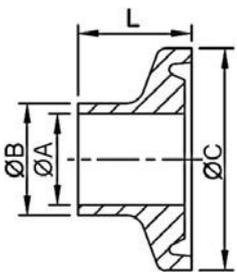


Size: DN25 and above



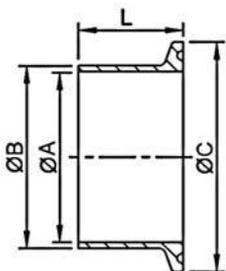
Size: DN25 and above

### SMS14AMP SMS Long Welding Ferrule



SIZE	ØA	ØB	ØC	L
DN15	9.7	12.7	25.4	28.6
DN20	15.95	19.05	25.4	28.6
DN25	22.5	25.0	50.5	28.6
DN38	35.5	38.0	50.5	28.6
DN50	48.5	51.0	64.0	28.6
DN63	60.3	63.5	77.5	28.6
DN76	72.9	76.1	91.0	28.6
DN104	100.0	104.0	119.0	28.6

Size: DN15 and DN20

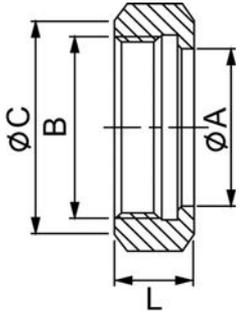


Size: DN25 and above

### 3A Unions

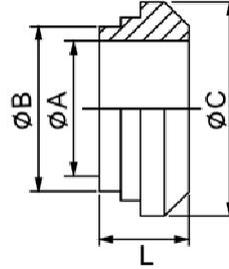
Dimension (mm)

**13H Hex. Nut**



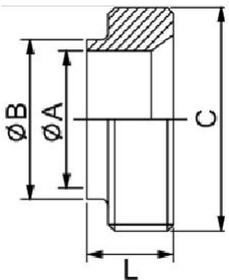
SIZE	ØA	B	ØC	L
1"	30.3	34.3x1/8	46.0	23.00
1-1/2"	43.4	47.9x1/8	61.1	24.60
2"	56.5	61.4x1/8	76.2	27.00
2-1/2"	69.6	74.9x1/8	91.3	30.15
3"	82.7	88.4x1/8	106.4	32.50
4"	108.9	115.4x1/8	137.6	38.10

**14PRF Short Bevel Seat Weld Liner**



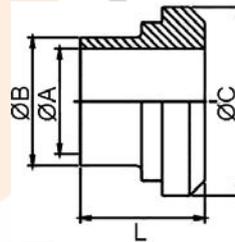
SIZE	ØA	ØB	ØC	L
1"	22.2	25.7	33.3	18.3
1-1/2"	34.9	38.4	46.8	18.3
2"	47.5	51.1	60.3	19.1
2-1/2"	60.2	63.8	73.8	22.3
3"	72.9	76.5	87.3	23.1
4"	97.4	101.9	114.3	26.2

**15TRF Short Bevel Seat Weld Male**



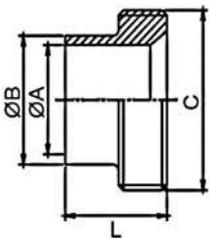
SIZE	ØA	ØB	C	L
1"	22.2	25.7	37.1 ACME 8TPI	18.3
1-1/2"	34.9	38.4	50.7 ACME 8TPI	18.3
2"	47.5	51.1	64.2 ACME 8TPI	19.1
2-1/2"	60.2	63.8	77.7 ACME 8TPI	22.2
3"	72.9	76.5	91.2 ACME 8TPI	23.1
4"	97.4	101.9	119.3 ACME 6TPI	26.2

**14A Long Weld Liner**



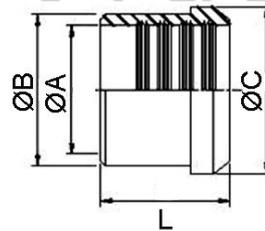
SIZE	ØA	ØB	ØC	L
1"	22.2	25.7	33.3	34.9
1-1/2"	34.9	38.4	46.8	38.1
2"	47.5	51.1	60.3	38.1
2-1/2"	60.2	63.8	73.8	44.5
3"	72.9	76.5	87.3	44.5
4"	97.4	101.9	114.3	44.5

**15A Long Weld Male**



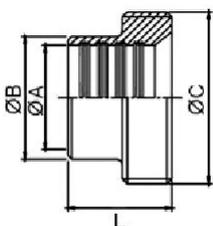
SIZE	ØA	ØB	C	L
1"	22.2	25.7	37.13 ACME 8TPI	34.9
1-1/2"	34.9	38.4	50.65 ACME 8TPI	38.1
2"	47.5	51.1	64.16 ACME 8TPI	38.1
2-1/2"	60.2	63.8	77.67 ACME 8TPI	44.5
3"	72.9	76.5	91.19 ACME 8TPI	44.5
4"	97.4	101.9	119.25 ACME 6TPI	44.5

**14R Expanding Liner**



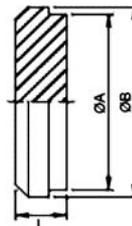
SIZE	ØA	ØB	ØC	L
1"	25.5	29.5	33.3	19.1
1-1/2"	38.2	42.6	46.8	28.6
2"	50.9	55.7	60.3	33.3
2-1/2"	63.6	68.8	73.8	34.9
3"	76.3	81.9	87.3	36.5
4"	101.7	108.1	114.3	38.1

**15R Expanding Male**



SIZE	ØA	ØB	ØC	L
1"	25.5	29.5	37.13	20.6
1-1/2"	38.2	42.6	50.65	28.6
2"	50.9	55.7	64.17	34.9
2-1/2"	63.6	68.8	77.67	38.1
3"	76.3	81.9	91.19	41.3
4"	101.7	108.1	119.25	41.3

**16A Solid End Cap**

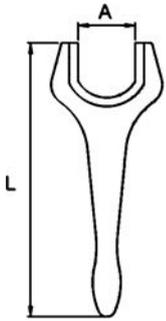


SIZE	ØA	ØB	L
1"	29.5	33.3	11.9
1-1/2"	42.6	46.8	14.3
2"	55.7	60.3	15.9
2-1/2"	68.8	73.8	16.7
3"	81.9	87.3	18.3
4"	108.1	114.3	20.6

### 3A Unions

Dimension (mm)

**HS 3A Hexagonal Spanner**



SIZE	A	L
1"	47.0	240
1-1/2"	62.1	288
2"	77.2	300
2-1/2"	92.5	326
3"	107.9	440
4"	131.5	448

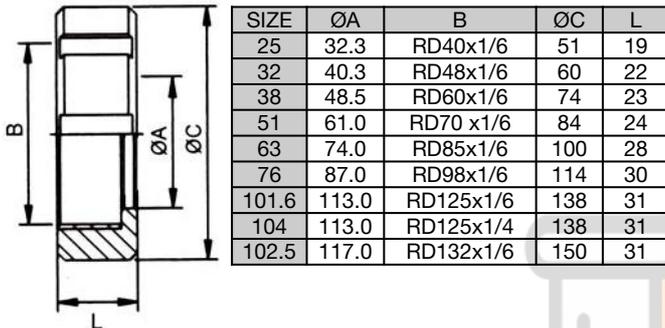


Delta INC

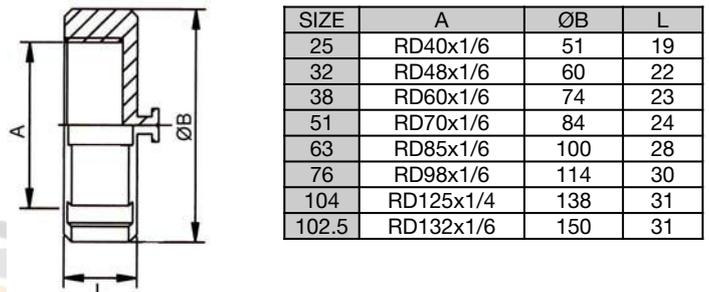
## SMS Unions

Dimension (mm)

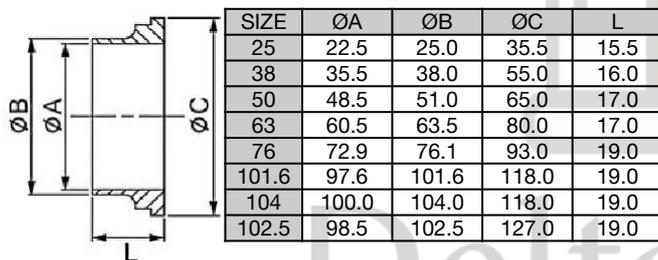
### SMS13R Round Nut 6 Slots



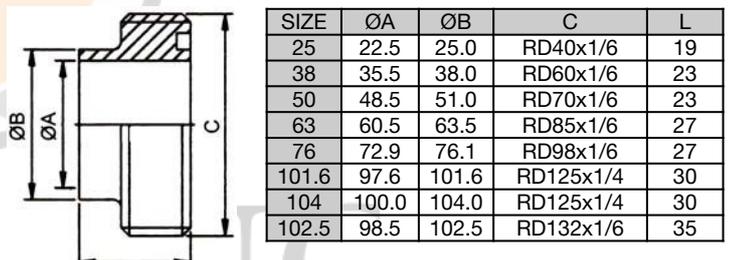
### SMS13RBN Round Blank Nut



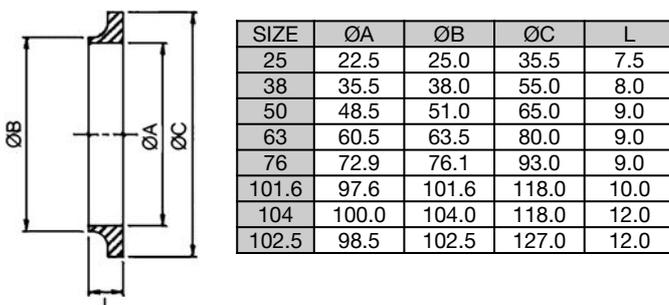
### SMS14 Welding Liner



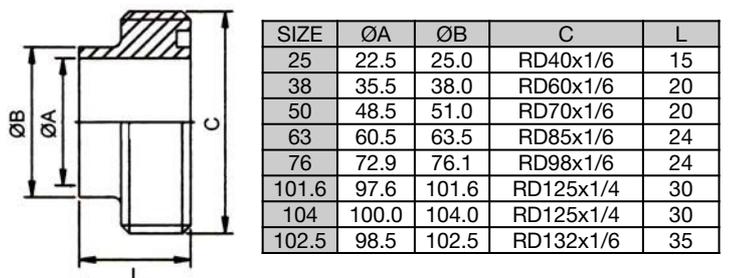
### SMS15 Welding Male



### SMS14S Short Welding Liner



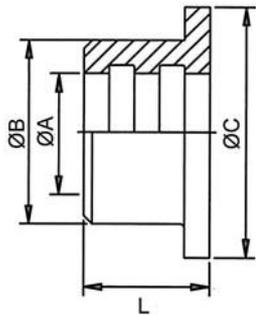
### SMS15S Short Welding Male



## SMS Unions

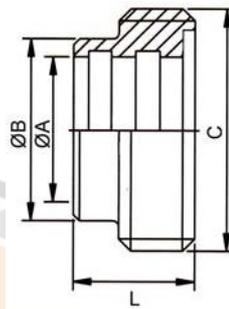
Dimension (mm)

**SMS14R Expanding Liner**



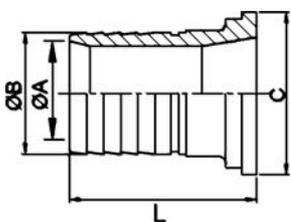
SIZE	ØA	ØB	ØC	L
25	25.0	32.0	35.5	17
32	32.0	40.0	43.5	17
38	38.0	47.9	55.0	20
40	40.0	48.0	55.0	20
50	51.0	60.4	65.0	20
63	63.5	73.5	80.0	25
76	76.1	86.5	93.0	30
101.6	101.6	112.5	118.0	27
104	105.0	112.5	118.0	27

**SMS15R Expanding Male**



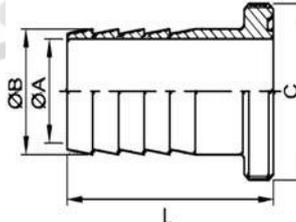
SIZE	ØA	ØB	C	L
25	25.0	32.0	RD40x1/6	20
32	32.0	40.0	RD48x1/6	20
38	38.0	47.9	RD60x1/6	23
40	40.0	48.0	RD60x1/6	23
51	51.0	60.4	RD70x1/6	25
63	63.5	73.5	RD85x1/6	30
76	76.1	86.5	RD98x1/6	35
101.6	101.6	112.5	RD125x1/4	30
104	104.2	112.5	RD125x1/4	30

**SMS14AHR Liner Hose Adapter**



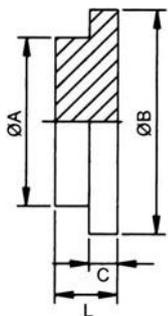
SIZE	ØA	ØB	ØC	L
25	22.2	25.0	35.5	60.5
38	34.0	38.0	55.0	72.0
50	47.0	50.5	65.0	82.0
63	59.0	63.2	80.0	95.0
76	71.5	75.5	93.0	97.0
104	95.0	100.8	118.0	109.0

**SMS15AHR Male Hose Adapter**



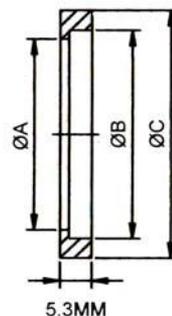
SIZE	ØA	ØB	C	L
25	22.2	32.0	RD40x1/6	64
38	34.0	48.0	RD60x1/6	79
50	47.0	60.5	RD70x1/6	89
63	59.0	73.5	RD85x1/6	102
76	71.5	86.5	RD98x1/6	105
104	95.0	112.5	RD125x1/4	120

**SMS16A Blank End Cap**



SIZE	ØA	ØB	C	L
25	32.0	35.5	3.5	7.5
38	48.0	55.0	5.0	9.0
50	60.0	65.0	5.0	10.0
63	73.5	80.0	5.0	10.0
76	86.0	93.0	5.0	11.0
101.6	116.0	118.0	6.0	11.0
104	116.0	118.0	6.0	11.0
102.5	112.0	128.0	6.0	11.0

**GSTUS Seal For SMS Union**

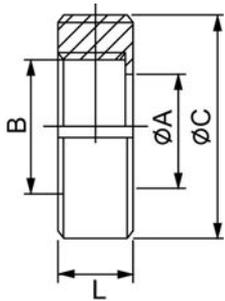


SIZE	ØA	ØB	ØC
25	22.8	25.1	31.8
38	35.8	38.1	47.8
50	48.8	51.1	60.8
63	61.0	63.6	73.3
76	73.4	76.1	85.8
104	100.5	104.0	115.7
102.5	100.5	104.0	115.7

## DIN-11851 Unions

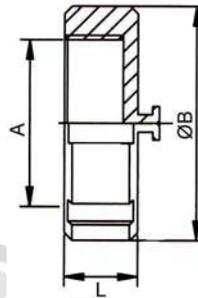
Dimension (mm)

### DIN13R Round Slotted Nut



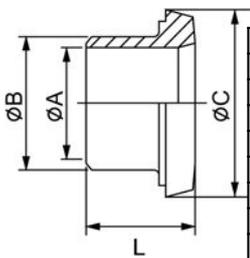
SIZE	ØA	B	ØC	L	SLOT
DN10	19	RD28x1/8	38	18	4
DN15	25	RD34x1/8	44	18	4
DN20	31	RD44x1/6	54	21	4
DN25	36	RD52x1/6	63	21	4
DN32	42	RD58x1/6	70	21	4
DN40	49	RD65x1/6	78	21	4
DN50	62	RD78x1/6	92	22	4
DN60	70	RD85x1/6	99	22	4
DN65	80	RD95x1/6	112	25	4   6
DN80	94	RD110x1/4	127	29	4   6
DN90	104	RD120x1/4	138	30	6
DN100	115	RD130x1/4	148	31	4   6
DN125	138	RD160x1/4	178	35	4   6
DN150	164	RD190x1/4	210	40	4   6

### DIN13RBN Round Blank Nut



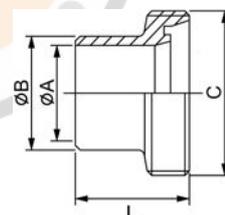
SIZE	A	ØB	L	SLOT
DN10	RD28x1/8	38	18	4
DN15	RD34x1/8	44	18	4
DN20	RD44x1/6	54	21	4
DN25	RD52x1/6	63	21	4
DN32	RD58x1/6	70	21	4
DN40	RD65x1/6	78	21	4
DN50	RD78x1/6	92	22	4
DN60	RD85x1/6	99	22	4
DN65	RD95x1/6	112	25	4   6
DN80	RD110x1/4	127	29	4   6
DN90	RD120x1/4	138	30	6
DN100	RD130x1/4	148	31	4   6
DN125	RD160x1/4	178	35	4   6
DN150	RD190x1/4	210	40	4   6

### DIN14 Welding Liner



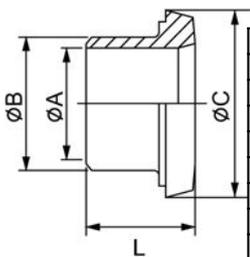
SIZE	ØA	ØB	ØC	L
DN10	10	15	22.5	17
DN15	16	21	28.5	17
DN20	20	25	36.5	18
DN25	26	31	44.0	22
DN32	32	37	50.0	25
DN40	38	43	56.0	26
DN50	50	55	68.5	28
DN60	57	63	76.0	30
DN65	66	72	86.0	32
DN80	81	87	100	37
DN100	99	104	121	44
DN125	125	132	150	34
DN150	150	157	176	37

### DIN15 Welding Male



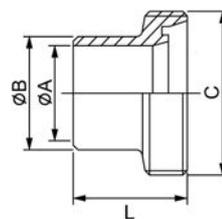
SIZE	ØA	ØB	C	L
DN10	10	15	RD28x1/8	21
DN15	16	21	RD34x1/8	21
DN20	20	25	RD44x1/6	24
DN25	26	31	RD52x1/6	29
DN32	32	37	RD58x1/6	32
DN40	38	43	RD65x1/6	33
DN50	50	55	RD78x1/6	35
DN60	57	63	RD85x1/6	36
DN65	66	72	RD95x1/6	40
DN80	81	87	RD110x1/4	45
DN100	99	104	RD130x1/4	54
DN125	125	132	RD160x1/4	46
DN150	150	157	RD190x1/4	50

### DIN14B Welding Liner



SIZE	ØA	ØB	ØC	L
DN10	9	12	22.5	17
DN15	15	18	28.5	17
DN20	19	22	36.5	18
DN25	25	28	44.0	22
DN32	31	34	50.0	25
DN40	37	40	56.0	26
DN50	49	52	68.5	28
DN60	57	61	76.0	30
DN65	66	70	86.0	32
DN80	81	85	100	37
DN100	100	104	121	44
DN125	125	129	150	34
DN150	150	154	176	37

### DIN15B Welding Male

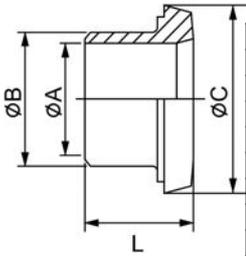


SIZE	ØA	ØB	C	L
DN10	9	12	RD28x1/8	21
DN15	15	18	RD34x1/8	21
DN20	19	22	RD44x1/6	24
DN25	25	28	RD52x1/6	29
DN32	31	34	RD58x1/6	32
DN40	37	40	RD65x1/6	33
DN50	49	52	RD78x1/6	35
DN60	57	61	RD85x1/6	36
DN65	66	70	RD95x1/6	40
DN80	81	85	RD110x1/4	45
DN90	89	93	RD120x1/4	54
DN100	100	104	RD130x1/4	54
DN125	125	129	RD160x1/4	46
DN150	150	154	RD190x1/4	50

## DIN-11851 Unions

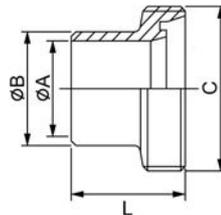
Dimension (mm)

### DIN14D Welding Liner



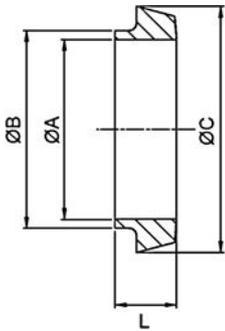
SIZE	ØA	ØB	ØC	L
DN10	10	13	22.5	17
DN15	16	19	28.5	17
DN20	20	23	36.5	18
DN25	26	29	44.0	22
DN32	32	35	50.0	25
DN40	38	41	56.0	26
DN50	50	53	68.5	28
DN60	57	61	76.0	30
DN65	66	70	86.0	32
DN80	81	85	100	37
DN100	100	104	121	44
DN125	125	129	150	34
DN150	150	154	176	37

### DIN15D Welding Male



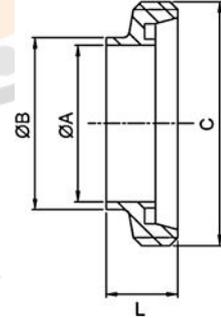
SIZE	ØA	ØB	C	L
DN10	10	13	RD28x1/8	21
DN15	16	19	RD34x1/8	21
DN20	20	23	RD44x1/6	24
DN25	26	29	RD52x1/6	29
DN32	32	35	RD58x1/6	32
DN40	38	41	RD65x1/6	33
DN50	50	53	RD78x1/6	35
DN60	57	61	RD85x1/6	36
DN65	66	70	RD95x1/6	40
DN80	81	85	RD110x1/4	45
DN90	89	93	RD120x1/4	54
DN100	100	104	RD130x1/4	54
DN125	125	129	RD160x1/4	46
DN150	150	154	RD190x1/4	50

### DIN14BS Short Welding Liner



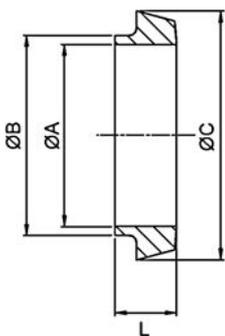
SIZE	ØA	ØB	ØC	L
DN10	9	12	22.5	13.0
DN15	15	18	28.5	13.0
DN20	19	22	36.5	13.0
DN25	25	28	44.0	15.0
DN32	31	34	50.0	15.0
DN40	37	40	56.0	15.0
DN50	49	52	68.5	16.0
DN60	57	61	76.0	16.0
DN65	66	70	86.0	17.0
DN80	81	85	100	17.0
DN100	100	104	121	20.0
DN125	125	129	150	23.5
DN150	150	154	176	27.0

### DIN15BS Short Welding Male



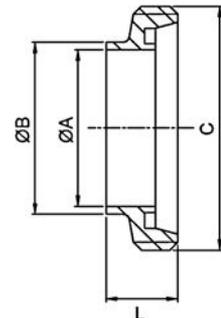
SIZE	ØA	ØB	C	L
DN10	9	12	RD28x1/8	17.0
DN15	15	18	RD34x1/8	17.0
DN20	19	22	RD44x1/6	19.0
DN25	25	28	RD52x1/6	22.0
DN32	31	34	RD58x1/6	22.0
DN40	37	40	RD65x1/6	22.0
DN50	49	52	RD78x1/6	23.0
DN60	57	61	RD85x1/6	23.0
DN65	66	70	RD95x1/6	25.0
DN80	81	85	RD110x1/4	25.0
DN90	89	93	RD120x1/4	30.0
DN100	100	104	RD130x1/4	30.0
DN125	125	129	RD160x1/4	35.5
DN150	150	154	RD190x1/4	40.0

### DIN14DS Short Welding Liner



SIZE	ØA	ØB	ØC	L
DN10	10	13	22.5	13.0
DN15	16	19	28.5	13.0
DN20	20	23	36.5	13.0
DN25	26	29	44.0	15.0
DN32	32	35	50.0	15.0
DN40	38	41	56.0	15.0
DN50	50	53	68.5	16.0
DN60	57	61	76.0	16.0
DN65	66	70	86.0	17.0
DN80	81	85	100	17.0
DN100	100	104	121	20.0
DN125	125	129	150	23.5
DN150	150	154	176	27.0

### DIN15DS Short Welding Male

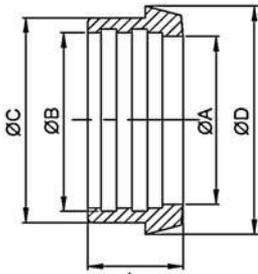


SIZE	ØA	ØB	C	L
DN10	10	13	RD28x1/8	17.0
DN15	16	19	RD34x1/8	17.0
DN20	20	23	RD44x1/6	19.0
DN25	26	29	RD52x1/6	22.0
DN32	32	35	RD58x1/6	22.0
DN40	38	41	RD65x1/6	22.0
DN50	50	53	RD78x1/6	23.0
DN60	57	61	RD85x1/6	23.0
DN65	66	70	RD95x1/6	25.0
DN80	81	85	RD110x1/4	25.0
DN90	89	93	RD120x1/4	30.0
DN100	100	104	RD130x1/4	30.0
DN125	125	129	RD160x1/4	35.5
DN150	150	154	RD190x1/4	40.0

## DIN-11851 Unions

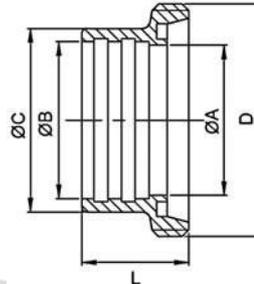
Dimension (mm)

### DIN14R Expanding Liner



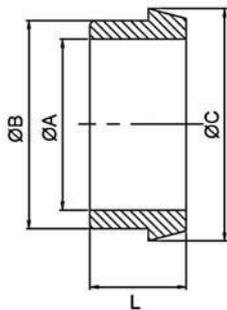
SIZE	ØA	ØB	ØC	ØD	L
DN10	10	12.2	18	22.5	17
DN15	16	18.2	24	28.5	17
DN20	20	22.2	30	36.5	18
DN25	26	28.2	35	44.0	22
DN32	32	34.2	41	50.0	25
DN40	38	40.3	48	56.0	26
DN50	50	52.3	61	68.5	28
DN65	66	70.4	79	86.0	32
DN80	81	85.4	93	100	37
DN100	100	105	114	121	44
DN125	125	129	137	150	34
DN150	150	154	163	176	37

### DIN15R Expanding Male



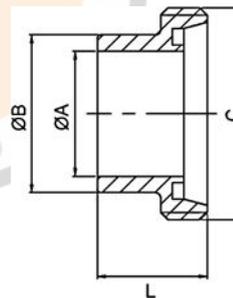
SIZE	ØA	ØB	ØC	D	L
DN10	10	12.2	18	RD28x1/8	21
DN15	16	18.2	24	RD34x1/8	21
DN20	20	22.2	30	RD44x1/6	24
DN25	26	28.2	35	RD52x1/6	29
DN32	32	34.2	41	RD58x1/6	32
DN40	38	40.3	48	RD65x1/6	33
DN50	50	52.3	61	RD78x1/6	35
DN65	66	70.4	79	RD95x1/6	40
DN80	81	85.4	93	RD110x1/4	45
DN100	100	105	114	RD130x1/4	54
DN125	125	129	137	RD160x1/4	46
DN150	150	154	163	RD190x1/4	50

### DIN14T Welding Liner



SIZE	ØA	ØB	ØC	L
DN10	10	18	22.5	17
DN15	16	24	28.5	17
DN20	20	30	36.5	18
DN25	26	35	44.0	22
DN32	32	41	50.0	25
DN40	38	48	56.0	26
DN50	50	61	68.5	28
DN65	66	79	86.0	32
DN80	81	93	100	37
DN100	99	112	121	44
	100	114		
DN125	125	137	150	34
DN150	150	163	176	37

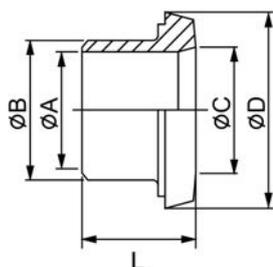
### DIN15T Welding Male



SIZE	ØA	ØB	C	L
DN10	10	18	RD28x1/8	21
DN15	16	24	RD34x1/8	21
DN20	20	30	RD44x1/6	24
DN25	26	35	RD52x1/6	29
DN32	32	41	RD58x1/6	32
DN40	38	48	RD65x1/6	33
DN50	50	61	RD78x1/6	35
DN65	66	79	RD95x1/6	40
DN80	81	93	RD110x1/4	45
DN100	99	112	RD130x1/4	54
	100	114		
DN125	125	137	RD160x1/4	46
DN150	150	163	RD190x1/4	50

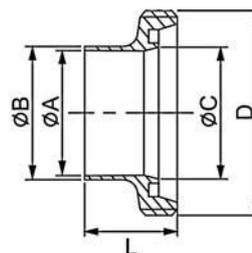
## DIN (Imperial) Union

### DIN14M Imperial Welding Liner



SIZE	ØA	ØB	ØC	ØD	L
1/2"	9.40	12.70	10	22.5	17
3/4"	15.75	19.05	20	36.5	18
1"	22.10	25.40	26	44.0	22
1-1/4"	28.45	31.75	32	50.0	25
1-1/2"	34.80	38.10	38	56.0	26
2"	47.50	50.80	50	68.5	28
2-1/2"	60.20	63.50	66	86.0	32
3"	72.90	76.20	81	100	37
4"	97.60	101.6	100	121	44

### DIN15M Imperial Welding Male

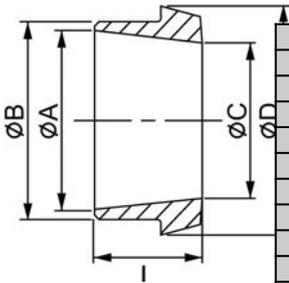


SIZE	ØA	ØB	ØC	D	L
1/2"	9.40	12.70	10	RD28x1/8	21
3/4"	15.75	19.05	20	RD44x1/6	24
1"	22.10	25.40	26	RD52x1/6	29
1-1/4"	28.45	31.75	32	RD58x1/6	32
1-1/2"	34.80	38.10	38	RD65x1/6	33
2"	47.50	50.80	50	RD78x1/6	35
2-1/2"	60.20	63.50	66	RD95x1/6	40
3"	72.90	76.20	81	RD110x1/4	45
4"	97.60	101.6	100	RD130x1/4	54

## DIN ISO Unions

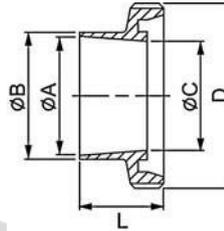
Dimension (mm)

### DIN14I ISO Welding Liner



SIZE	ØA	ØB	ØC	ØD	L
DN10	14.0	18.0	10	22.5	17
DN15	18.1	21.3	16	28.5	17
DN20	23.7	26.9	20	36.5	18
DN25	29.7	33.7	26	44.0	22
DN32	38.4	42.4	32	50.0	25
DN40	44.3	48.3	38	56.0	26
DN50	56.3	60.3	50	68.5	28
DN65	71.6	76.1	66	86.0	32
DN80	84.3	88.9	81	100	37
DN100	109.1	114.3	100	121	44

### DIN15I ISO Welding Male

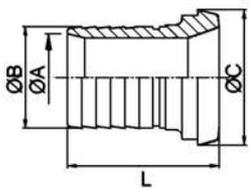


SIZE	ØA	ØB	ØC	D	L
DN10	14.0	18.0	10	RD28x1/8	17
DN15	18.1	21.3	16	RD34x1/8	17
DN20	23.7	26.9	20	RD44x1/6	18
DN25	29.7	33.7	26	RD52x1/6	22
DN32	38.4	42.4	32	RD58x1/6	25
DN40	44.3	48.3	38	RD65x1/6	26
DN50	56.3	60.3	50	RD78x1/6	28
DN65	76.1	76.1	66	RD95x1/6	32
DN80	84.3	88.9	81	RD110x1/4	37
DN100	109.1	114.3	100	RD130x1/4	44

## DIN-11851 Unions

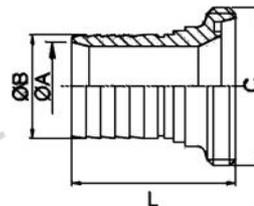
Dimension (mm)

### DIN14AHR Liner Hose Adapter



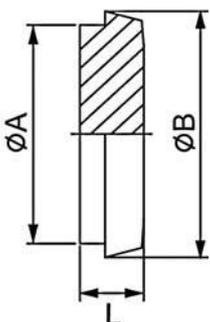
Size	ØA	ØB	ØC	L
DN25	22.2	25.0	44	67
DN32	28.7	32.2	50	71
DN40	34.0	38.0	56	78
DN50	47.0	50.5	68	89
DN65	59.0	63.2	86	100
DN80	71.5	75.5	100	108
DN100	95.0	100.8	121	120

### DIN15AHR Male Hose Adapter



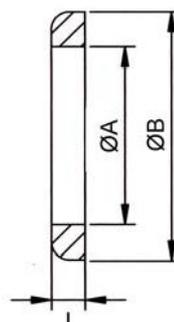
Size	ØA	ØB	C	L
DN25	22.2	25.0	RD52x1/6	67
DN32	28.7	32.2	RD58x1/6	71
DN40	34.0	38.0	RD65x1/6	78
DN50	47.0	50.5	RD78x1/6	89
DN65	59.0	63.2	RD95x1/6	100
DN80	71.5	75.5	RD110x1/4	108
DN100	95.0	100.8	RD130x1/4	120

### DIN16A Blank End Cap



SIZE	ØA	ØB	L
DN10	18	22.5	9
DN15	24	28.5	9
DN20	30	36.5	11
DN25	35	44.0	13
DN32	41	50.0	13
DN40	48	56.0	13
DN50	61	68.5	14
DN65	79	86.0	16
DN80	93	100	16
DN90	103	111	19
DN100	114	121	20
DN125	137	150	22
DN150	163	176	24

### GSTUD Seal For DIN Union

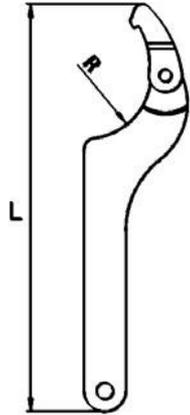


SIZE	ØA	ØB	L
DN10	12	20	4.5
DN15	18	26	4.5
DN20	23	33	4.5
DN25	30	40	5.0
DN32	36	46	5.0
DN40	42	52	5.0
DN50	54	64	5.0
DN65	71	81	5.0
DN75	78	88	5.0
DN80	85	95	5.0
DN100	104	114	5.0
DN125	130	142	7.0
DN150	155	167	7.0

## DIN-11851 Unions

Dimension (mm)

### DINHWS Hook Wrench Cast



SIZE	R	L
DN10~DN20	22.0	175
DN25~DN40	31.0	247
DN50~DN100	49.0	290
DN125~DN150	82.5	515

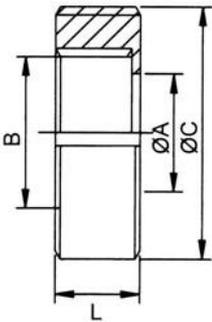


Delta INC

## DANSK Unions

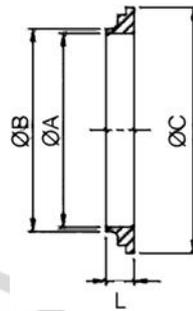
Dimension (mm)

### DANSK13R Round Nut 4 Slots



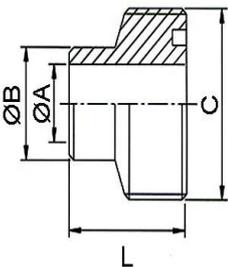
SIZE	ØA	B	ØC	L
25	35.0	RD44X1/6	57	20
38	48.5	RD58x1/6	71	20
51	62.5	RD72x1/6	86	22
63.5	76.5	RD88x1/6	103	24
76.1	88.5	RD100x1/6	115	25
101.6	117	RD130x1/6	147	28

### DANSK14 Welding Liner



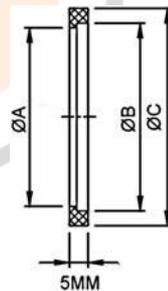
SIZE	ØA	ØB	ØC	L
25	22.5	25.6	39.5	11
38	35.5	38.5	53.5	11
51	48.6	51.5	67.5	11
63.5	60.3	63.9	83.5	12
76.1	72.9	76.6	95.7	12
101.6	97.6	102.3	124.0	12

### DANSK15 Welding Male



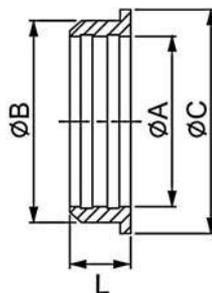
SIZE	ØA	ØB	C	L
25	22.5	25.6	RD44x1/6	18.5
38	35.5	38.5	RD58x1/6	20.0
51	48.6	51.5	RD72x1/6	20.0
63.5	60.3	63.9	RD88x1/6	24.0
76.1	72.9	76.6	RD100x1/6	24.0
101.6	97.6	102.3	RD130x1/6	24.0

### GSTUK Seal For DANSK Union



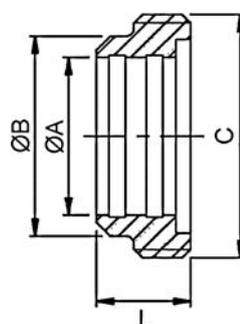
SIZE	ØA	ØB	ØC
25	22.5	25.0	32.0
38	35.5	38.0	47.0
51	48.5	51.0	59.0
63.5	60.3	63.5	74.5
76.1	72.9	76.0	88.0
101.6	97.6	102.0	112.5

### DANSK14R Expanding Liner



SIZE	ØA	ØB	ØC	L
1"	25.2	33.8	39.5	16
1-1/2"	38.2	47.5	53.5	18
2"	51.0	61.5	67.5	20
2-1/2"	63.7	75.5	83.5	22
3"	76.4	87.5	95.5	24
4"	102.0	115.0	124	29

### DANSK15R Expanding Male Part

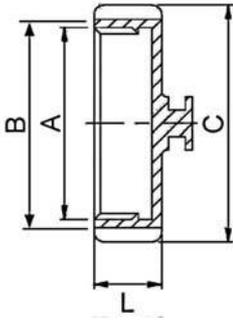


SIZE	ØA	ØB	C	L
1"	25.2	34.0	RD44x1/6	20
1-1/2"	38.2	47.5	RD58x1/6	22
2"	51.1	61.5	RD72x1/6	24
2-1/2"	63.7	75.5	RD88x1/6	26
3"	76.4	87.5	RD100x1/6	28
4"	102.0	115.0	RD130x1/6	34

## DANSK Unions

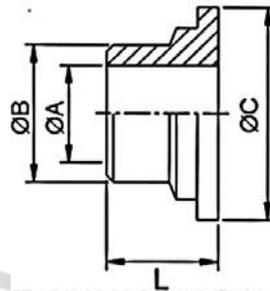
Dimension (mm)

### DANSK13RBN Round Blank Nut



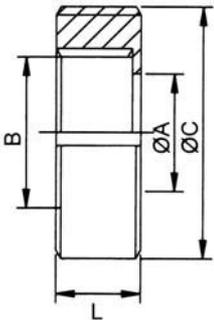
SIZE	A	B	C	L
1"	RD44x1/6	49	57	20
1-1/4"	RD52x1/6	57	65	20
1-1/2"	RD58x1/6	63	72	20
2"	RD72x1/6	78	86	22
2-1/2"	RD88x1/6	95	103	24
3"	RD100x1/6	107	115	25
4"	RD130x1/6	139	148	31

### DANSK14W Welding Liner



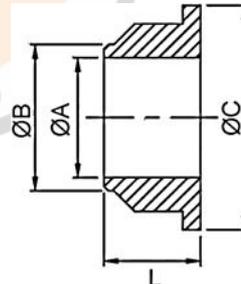
SIZE	ØA	ØB	ØC	L
1"	22.5	28.6	40.0	16
1-1/4"	29.0	35.0	48.0	18
1-1/2"	35.0	41.3	54.0	18
2"	47.5	54.0	68.0	20
2-1/2"	60.0	66.7	84.0	22
3"	72.5	79.4	96.0	24
4"	97.5	110.0	123.5	29

### DS13R Round Nut 4 Slots



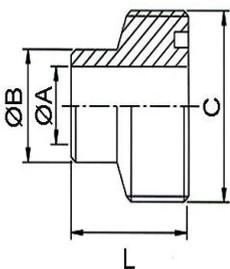
SIZE	ØA	B	ØC	L
1"	34.8	RD44x1/6	57	20
1-1/4"	42.3	RD52x1/6	65	20
1-1/2"	48.1	RD58x1/6	71	20
2"	62.0	RD72x1/6	86	22
2-1/2"	76.0	RD88x1/6	103	24
3"	88.3	RD100x1/6	115	25
4"	116.0	RD130x1/4	148	31
5"	140.0	RD160x1/4	178	32
6"	161.0	RD175x1/4	193	32

### DS14 Welding Liner



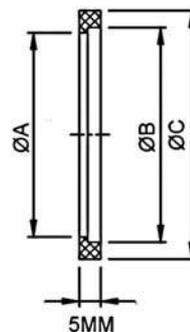
SIZE	ØA	ØB	ØC	L
1"	22.4	29.0	39.5	16
1-1/4"	28.5	35.0	47.5	16
1-1/2"	35.0	41.0	54.0	18
2"	47.0	54.0	67.5	20
2-1/2"	60.0	66.0	84.0	22
3"	72.5	80.0	95.5	24
4"	97.5	105.0	123.0	30
5"	123	132.0	153.5	30
6"	148	155.4	168.0	24

### DS15 Welding Male



SIZE	ØA	ØB	C	L
1"	22.4	28.6	RD44x1/6	20
1-1/4"	28.5	35.0	RD52x1/6	20
1-1/2"	35.0	41.3	RD58x1/6	22
2"	47.0	55.0	RD72x1/6	24
2-1/2"	60.0	67.0	RD88x1/6	26
3"	72.2	80.0	RD100x1/6	28
4"	97.5	104.8	RD130x1/4	34
5"	123.0	135.0	RD160x1/4	36
6"	148.0	160.0	RD175x1/4	37

### GSTUDS Seal For DANSK Union

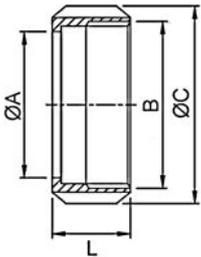


SIZE	ØA	ØB	ØC
1"	22.5	25.0	32.0
1-1/4"	29.0	31.8	41.0
1-1/2"	35.0	38.1	47.0
2"	47.5	50.8	59.0
2-1/2"	60.0	63.5	74.5
3"	72.5	76.2	88.0
4"	97.6	101.6	116.0

## JIS Unions

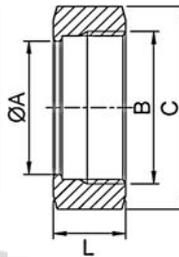
Dimension (mm)

### IDF13R Round Nut 6 Slots



SIZE	ØA	B	ØC	L
1"	30.5	34.49x8T ACME	48	30.0
1-1/2"	43.5	48.01x8T ACME	64	30.0
2"	57.0	61.52x8T ACME	77	30.0
2-1/2"	70.7	75.03x8T ACME	91	30.0
3"	83.3	88.55x8T ACME	106	30.0
4"	110	115.56x8T ACME	135	34.9

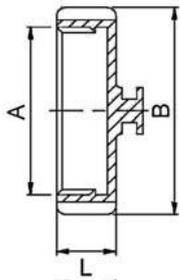
### IDF13H Hex. Nut



SIZE	ØA	B	C	L
1"	30.5	34.49x8T ACME	46	30.0
1-1/2"	43.5	48.01x8T ACME	60	30.0
2"	57.0	61.52x8T ACME	75	30.0
2-1/2"	70.7	75.03x8T ACME	90	30.0
3"	83.3	88.55x8T ACME	105	30.0
4"	112	122.20x6T ACME	133	34.9

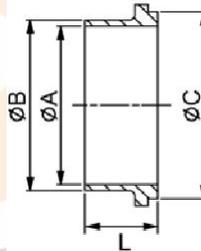
### IDF13HBN Nut

### Hex. Blank



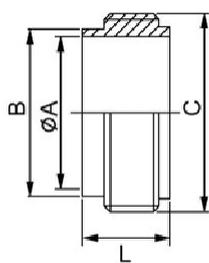
SIZE	A	B	L
1"	34.49x8T ACME	46	30.0
1-1/2"	48.01x8T ACME	60	30.0
2"	61.52x8T ACME	75	30.0
2-1/2"	75.03x8T ACME	90	30.0
3"	88.55x8T ACME	105	30.0
4"	122.20x8T ACME	133	34.9

### JIS14 Welding Liner



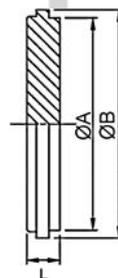
SIZE	ØA	ØB	ØC	L
1"	23.0	25.4	33.8	21.5
1-1/2"	35.7	38.1	47.0	21.5
2"	47.8	50.8	60.5	21.5
2-1/2"	59.5	63.5	74.0	21.5
3"	72.3	76.3	87.5	30.0
4"	97.6	101.6	120.6	30.0

### JIS15 Welding Male



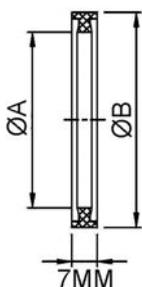
SIZE	ØA	B	C	L
1"	23.0	25.4	36.97x8T ACME	21.5
1-1/2"	35.7	38.1	50.49x8T ACME	21.5
2"	47.8	50.8	64.00x8T ACME	21.5
2-1/2"	59.5	63.5	77.51x8T ACME	21.5
3"	72.3	76.2	91.03x8T ACME	21.5
4"	97.6	101.6	125.69x6T ACME	30.0

### IDF16A Blank End Cap



SIZE	ØA	ØB	L
1"	29.2	33.8	10.5
1-1/2"	42.7	47.0	10.5
2"	56.2	60.5	10.5
2-1/2"	69.9	74.0	10.5
3"	82.6	87.5	10.5
4"	108.8	114.1	12.6
	111.1	120.6	

### GSTUJ Seal For JIS Union

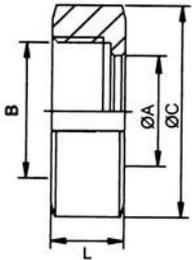


SIZE	ØA	ØB
1"	23.0	32.5
1-1/2"	36.0	46.0
2"	49.0	59.5
2-1/2"	60.7	73.2
3"	73.2	86.5
4"	98.0	113.0
		119.0

### CIP Unions

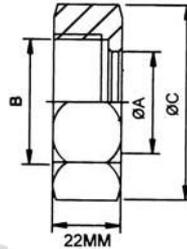
Dimension (mm)

**RJT13R Round Slotted Nut**



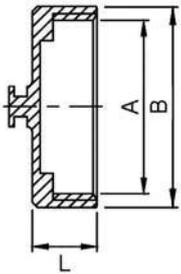
SIZE	ØA	B	ØC	L	SLOT
1"	33.3	42.6x8T	58.5	22.2	4
1-1/2"	46.0	55.3x8T	74.0	22.2	6
2"	58.7	68.3x6T	85.5	22.2	6
2-1/2"	71.4	80.9x6T	98.5	22.2	6
3"	84.1	93.6x6T	111.6	22.2	6
4"	109.5	119.1x6T	139.0	22.2	6
5"	136.0	144.1x6T	172.5	24.0	8
6"	163.0	169.7x6T	197.0	23.5	8

**RJT13H Hex. Nut**



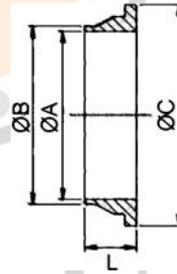
SIZE	ØA	B	ØC
1"	33.3	42.6x8T	50.8
1-1/2"	46.0	55.3x8T	65.0
2"	58.7	68.3x6T	79.4
2-1/2"	71.4	80.9x6T	92.1
3"	84.1	93.6x6T	104.6
4"	109.5	119.1x6T	130.2
5"	134.9	144.1x6T	155.6
6"	160.3	169.7x6T	181.0

**RJT13HBN Hex. Blank Nut**



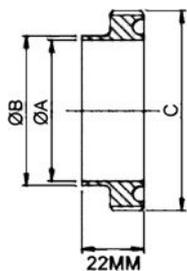
SIZE	A	B	L
1"	42.6x1/8T	50.8	24
1-1/2"	55.3x1/8T	65.0	24
2"	68.3x1/6T	79.3	25
2-1/2"	80.9x1/6T	92.0	26
3"	93.6x1/6T	104.7	26
4"	119.1x1/6T	130	25

**CIP14 Flat Face Welding Liner**



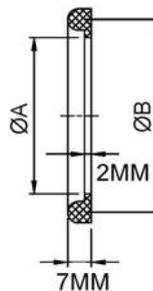
SIZE	ØA	ØB	ØC	L
1"	22.2	25.4	41.3	19
1-1/2"	34.9	38.1	54.0	19
2"	47.6	50.8	66.7	19
2-1/2"	60.3	63.5	79.4	19
3"	73.0	76.2	92.1	19
4"	97.6	101.6	117.5	19
5"	123.8	127.0	142.9	25
6"	149.2	152.4	168.3	27

**CIP15 Flat Face Welding Male**



SIZE	ØA	ØB	C
1"	22.2	25.4	45.7x8T
1-1/2"	34.9	38.1	58.4x8T
2"	47.6	50.8	72.7x6T
2-1/2"	60.3	63.5	85.4x6T
3"	73.0	76.2	98.1x6T
4"	98.4	101.6	123.5x6T
5"	123.8	127.0	148.9x6T
6"	149.2	152.4	174.3x6T

**GSTUC Seal For CIP Union**

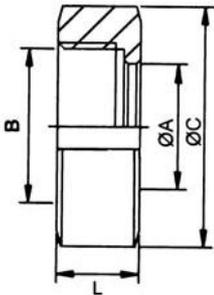


SIZE	ØA	ØB
1"	22.2	33.3
1-1/2"	34.9	46.0
2"	47.6	58.7
2-1/2"	60.3	71.4
3"	72.9	84.1
4"	98.4	109.5
5"	123.8	134.9
6"	149.2	160.3

## RJT Unions

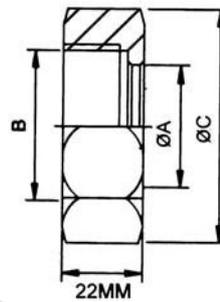
Dimension (mm)

**RJT13R Round Slotted Nut**



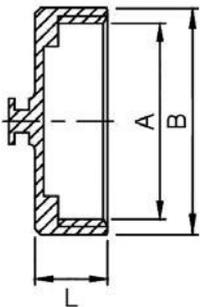
SIZE	ØA	B	ØC	L	SLOT
1"	33.3	42.6x8T	58.5	22.2	4
1-1/2"	46.0	55.3x8T	74.0	22.2	6
2"	58.7	68.3x6T	85.5	22.2	6
2-1/2"	71.4	80.9x6T	98.5	22.2	6
3"	84.1	93.6x6T	111.6	22.2	6
4"	109.5	119.1x6T	139.0	22.2	6
5"	136.0	144.1x6T	172.5	24.0	8
6"	163.0	169.7x6T	197.0	23.5	8

**RJT13H Hex. Nut**



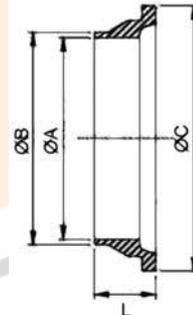
SIZE	ØA	B	ØC
1"	33.3	42.6x8T	50.8
1-1/2"	46.0	55.3x8T	65.0
2"	58.7	68.3x6T	79.4
2-1/2"	71.4	80.9x6T	92.1
3"	84.1	93.6x6T	104.6
4"	109.5	119.1x6T	130.2
5"	134.9	144.1x6T	155.6
6"	160.3	169.7x6T	181.0

**RJT13HBN Hex. Blank Nut**



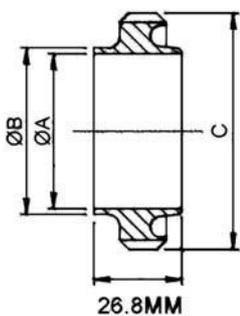
SIZE	A	B	L
1"	42.6x1/8T	50.8	24
1-1/2"	55.3x1/8T	65.0	24
2"	68.3x1/6T	79.3	25
2-1/2"	80.9x1/6T	92.0	26
3"	93.6x1/6T	104.7	26
4"	119.1x1/6T	130	25

**RJT14 Welding Liner**



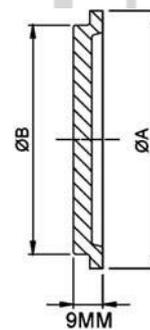
SIZE	ØA	ØB	ØC	L
1"	22.2	25.4	41.3	19
1-1/2"	34.9	38.1	54.0	19
2"	47.6	50.8	66.7	19
2-1/2"	60.3	63.5	79.4	19
3"	73.0	76.2	92.1	19
4"	98.4	101.6	117.5	19
5"	123.8	127.0	142.9	25
6"	149.2	152.4	168.3	27

**RJT15 Welding Male**



SIZE	ØA	ØB	C
1"	22.2	25.4	45.7x8T
1-1/2"	34.9	38.1	58.4x8T
2"	47.6	50.8	72.7x6T
2-1/2"	60.3	63.5	85.4x6T
3"	73.0	76.2	98.1x6T
4"	98.4	101.6	123.5x6T
5"	123.8	127.0	148.9x6T
6"	149.2	152.4	174.3x6T

**RJT16A Blank End Cap**



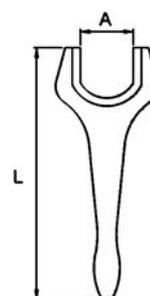
SIZE	ØA	ØB
1"	41.3	32.5
1-1/2"	54.0	45.2
2"	66.7	57.9
2-1/2"	79.4	70.6
3"	92.1	83.3
4"	117.5	108.7
5"	142.9	134.0
6"	168.3	159.5

**GSTUR Seal For RJT Union-O-Ring**



SIZE	ØA
1"	33.3
1-1/2"	46.0
2"	58.7
2-1/2"	71.4
3"	84.1
4"	109.5
5"	134.9
6"	160.3

**RJTHS RJT Hexagonal Spanner**

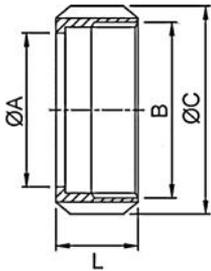


SIZE	A	L
1"	51.8	240
1-1/2"	66.0	288
2"	80.4	300
2-1/2"	93.2	326
3"	106.3	440
4"	139.1	448

## IDF Unions

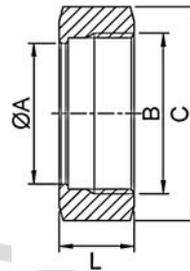
Dimension (mm)

### IDF13R Round Nut 6 Slots



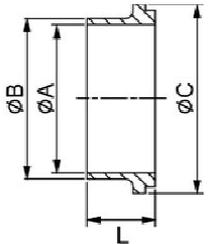
SIZE	ØA	B	ØC	L
1"	30.5	38.02x1/8T	48	30
1-1/2"	43.5	51.54x1/8T	64	30
2"	57.0	65.05x1/8T	77	30
2-1/2"	70.7	78.56x1/8T	91	30
3"	83.3	92.08x1/8T	106	30
4"	112	126.79x1/6T	142	35

### IDF13H Hex. Nut



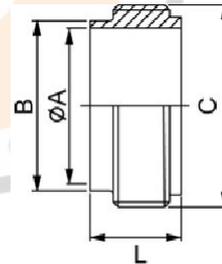
SIZE	ØA	B	C	L
1"	30.5	38.02x1/8T	46	30
1-1/2"	43.5	51.54x1/8T	60	30
2"	57.0	65.05x1/8T	70	30
2-1/2"	70.7	78.56x1/8T	90	30
3"	83.3	92.08x1/8T	105	30
4"	112	126.79x1/6T	133	35

### IDF14 Welding Liner



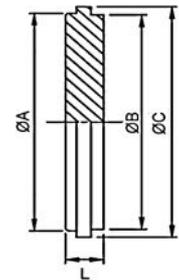
SIZE	ØA	ØB	ØC	L
1"	22.2	25.65	33.8	21.5
1-1/2"	34.9	38.35	47.0	21.5
2"	47.6	51.05	60.5	21.5
2-1/2"	60.3	63.75	74.0	21.5
3"	73.0	76.45	87.5	21.5
4"	97.6	101.85	120.6	30.0

### IDF15 Welding Male



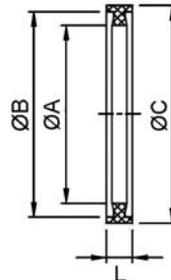
SIZE	ØA	B	C	L
1"	22.2	25.65	37.13x1/8	21.5
1-1/2"	34.9	38.35	50.65x1/8	21.5
2"	47.6	51.05	64.16x1/8	21.5
2-1/2"	60.3	63.73	77.67x1/8	21.5
3"	73.0	76.45	91.19x1/8	21.5
4"	97.6	101.85	125.90x1/6	30.0

### IDF16A Blank End Cap



SIZE	ØA	ØB	ØC	L
1"	29.2	29.5	33.8	10.5
1-1/2"	42.7	42.5	47.0	10.5
2"	56.2	55.7	60.5	10.5
2-1/2"	69.9	68.8	74.0	10.5
3"	82.6	81.9	87.5	10.5
4"	111.1	111.0	120.6	12.6

### GSTUI Seal For IDF Union

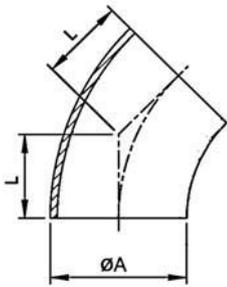


SIZE	ØA	ØB	ØC	L
1"	23.2	29.2	32.5	7.0
1-1/2"	35.9	42.7	46.0	7.0
2"	48.6	56.2	59.5	7.0
2-1/2"	61.3	69.9	73.2	7.0
3"	74.0	82.6	86.5	7.0
4"	98.6	111.0	119.6	9.6

### 3A Weld Fittings

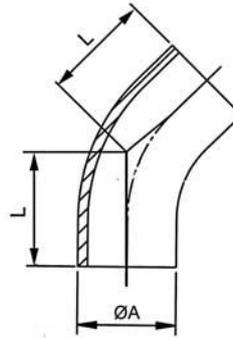
Dimension (mm)

#### 2KW 45° Short Elbow



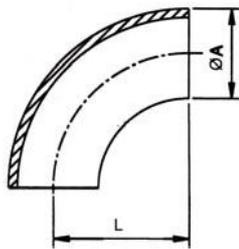
SIZE	ØA	T	L
1/2"	12.70	1.65	7.90
3/4"	19.05	1.65	11.90
1"	25.40	1.65	15.90
1-1/2"	38.10	1.65	23.80
2"	50.80	1.65	31.80
2-1/2"	63.50	1.65	39.70
3"	76.20	1.65	47.60
4"	101.60	2.10	63.50
5"	127.00	2.77	78.91
6"	152.40	2.77	95.30
8"	203.20	3.05	126.25
10"	254.00	3.05	157.82
12"	304.80	3.05	189.38

#### 2KS 45° Long Elbow



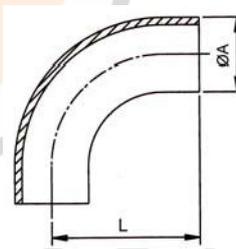
SIZE	ØA	T	L
1/2"	12.70	1.65	30.20
3/4"	19.05	1.65	30.20
1"	25.40	1.65	30.20
1-1/2"	38.10	1.65	41.30
2"	50.80	1.65	58.70
2-1/2"	63.50	1.65	76.20
3"	76.20	1.65	93.70
4"	101.60	2.10	122.20
5"	127.00	2.77	142.41
6"	152.40	2.77	158.20
8"	203.20	3.05	189.75
10"	254.00	3.05	234.02
12"	304.80	3.05	265.58

#### 2WC 90° Short Elbow



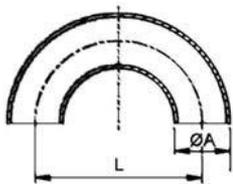
SIZE	ØA	T	L
1/2"	12.70	1.65	19.05
3/4"	19.05	1.65	28.60
1"	25.40	1.65	38.10
1-1/4"	31.80	1.65	47.70
1-1/2"	38.10	1.65	57.20
2"	50.80	1.65	76.20
2-1/2"	63.50	1.65	95.30
3"	76.20	1.65	114.30
4"	101.60	2.10	152.40
5"	127.00	2.77	190.50
6"	152.40	2.77	228.60
8"	203.20	2.77	304.80
10"	254.00	3.05	381.00
12"	304.80	3.05	457.20

#### 2S 90° Long Elbow



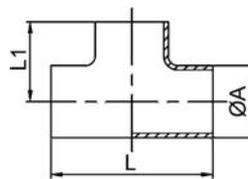
SIZE	ØA	T	L
1/2"	12.70	1.65	76.20
3/4"	19.05	1.65	76.20
1"	25.40	1.65	52.40
1-1/2"	38.10	1.65	74.60
2"	50.80	1.65	103.20
2-1/2"	63.50	1.65	131.80
3"	76.20	1.65	160.30
4"	101.60	2.10	211.10
5"	127.00	2.77	254.00
6"	152.40	2.77	292.10
8"	203.20	3.05	368.30
10"	254.00	3.05	457.20
12"	304.80	3.05	533.40

#### 2WUL 180° Return Bend



SIZE	ØA	T	L
1/2"	12.70	1.65	38.10
3/4"	19.05	1.65	57.16
1"	25.40	1.65	76.20
1-1/2"	38.10	1.65	114.40
2"	50.80	1.65	152.40
2-1/2"	63.50	1.65	190.50
3"	76.20	1.65	228.50
4"	101.60	2.10	304.80
6"	152.40	2.77	457.20
8"	203.20	3.05	609.60
10"	254.00	3.05	762.00
12"	304.80	3.05	914.40

#### 7WWW Short Equal Tee

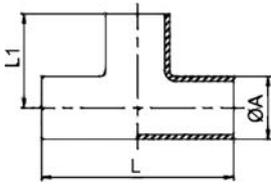


SIZE	ØA	T	L1	L
1/2"	12.7	1.65	22.5	45.0
3/4"	19.1	1.65	28.6	57.2
1"	25.4	1.65	28.6	57.2
1-1/4"	31.8	1.65	38.1	76.2
1-1/2"	38.1	1.65	42.1	84.2
2"	50.8	1.65	52.4	104.8
2-1/2"	63.5	1.65	59.5	119.0
3"	76.2	1.65	65.9	131.8
4"	101.6	2.10	87.3	174.4
5"	127.0	2.77	127.0	254.0
6"	152.4	2.77	127.0	254.0
8"	203.2	3.05	177.8	355.6
10"	254.0	3.05	215.9	431.8
12"	304.8	3.05	254.0	508.0

### 3A Weld Fittings

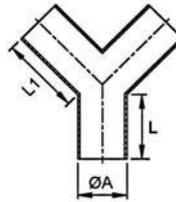
Dimension (mm)

**7W Long Equal Tee**



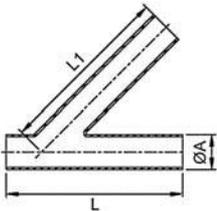
SIZE	ØA	T	L1	L
1/2"	12.7	1.65	53.9	107.9
3/4"	19.05	1.65	53.9	107.9
1"	25.4	1.65	47.6	95.3
1-1/2"	38.1	1.65	57.2	114.4
2"	50.8	1.65	76.2	152.4
2-1/2"	63.5	1.65	76.2	152.4
3"	76.2	1.65	82.6	165.1
4"	101.6	2.10	98.5	196.9
5"	127.0	2.77	142.9	285.8
6"	152.4	2.77	127.0	254.0
8"	203.2	3.05	177.8	355.6
10"	254.0	3.05	215.9	431.8
12"	304.8	3.05	254.0	508.0

**28W 90° True WYE**



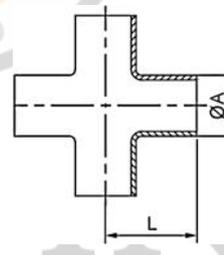
SIZE	ØA	T	L1	L
1/2"	12.7	1.65	48.17	48.17
3/4"	19.05	1.65	46.85	46.85
1"	25.4	1.65	61.90	50.80
1-1/2"	38.1	1.65	61.90	50.80
2"	50.8	1.65	82.60	66.70
2-1/2"	63.5	1.65	104.80	85.60
3"	76.2	1.65	123.80	101.60
4"	101.6	2.10	136.60	136.60
6"	152.4	2.77	171.46	171.64

**28WA 45° Equal Lateral WYE**



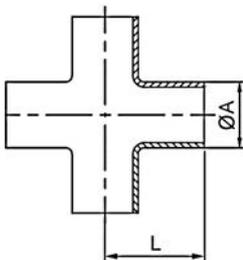
SIZE	ØA	T	L1	L
1/2"	12.7	1.65	127.0	152.4
3/4"	19.05	1.65	127.0	152.4
1"	25.4	1.65	127.0	152.4
1-1/2"	38.1	1.65	157.3	187.3
2"	50.8	1.65	181.0	222.3
2-1/2"	63.5	1.65	215.9	254.0
3"	76.2	1.65	225.4	273.0
4"	101.6	2.10	271.5	324.0
6"	152.4	2.77	374.7	470.0

**9WWW Short Equal Cross**



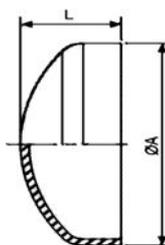
SIZE	ØA	T	L
1/2"	12.70	1.65	19.05
3/4"	19.05	1.65	28.60
1"	25.40	1.65	28.60
1-1/2"	38.10	1.65	42.10
2"	50.80	1.65	52.40
2-1/2"	63.50	1.65	59.50
3"	76.20	1.65	65.90
4"	101.60	2.10	87.30

**9W Long Equal Cross**



SIZE	ØA	T	L
1/2"	12.70	1.65	47.60
3/4"	19.05	1.65	47.60
1"	25.40	1.65	47.60
1-1/2"	38.10	1.65	57.20
2"	50.80	1.65	76.20
2-1/2"	63.50	1.65	76.20
3"	76.20	1.65	82.60
4"	101.60	2.10	98.40

**16W Weld Cap**

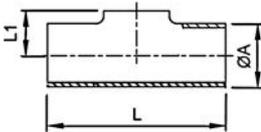


SIZE	ØA	T	L
1"	25.4	1.65	9.5
1-1/2"	38.1	1.65	14.3
2"	50.8	1.65	19.1
2-1/2"	63.5	1.65	25.4
3"	76.2	1.65	31.8
4"	101.6	2.10	38.1
6"	152.4	2.77	50.8
8"	203.2	3.05	63.5

### 3A Butt-welding Fittings

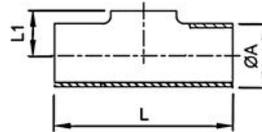
Dimension (mm)

#### 7WWWS Short Pull Tee



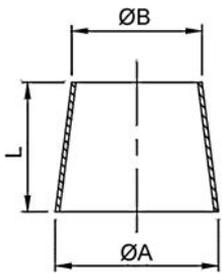
SIZE	ØA	T	L1	L
1"	25.4	1.65	16.0	57.2
1-1/2"	38.1	1.65	22.0	84.2
2"	50.8	1.65	29.0	104.8
2-1/2"	63.5	1.65	35.0	119.0
3"	76.2	1.65	41.0	131.8
4"	101.6	2.10	54.0	174.6

#### 7WS Long Pull Tee



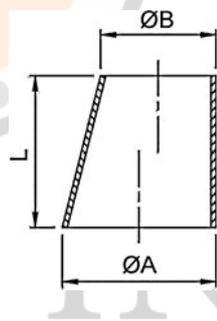
SIZE	ØA	T	L1	L
1/2"	12.7	1.65	9.35	95.2
3/4"	19.05	1.65	12.52	95.2
1"	25.4	1.65	16.0	95.2
1-1/2"	38.1	1.65	22.0	114.4
2"	50.8	1.65	29.0	152.4
2-1/2"	63.5	1.65	35.0	152.4
3"	76.2	1.65	41.0	165.2
4"	101.6	2.10	54.0	196.8

#### 31W Concentric Reducer



SIZE	ØA	T	ØB	T	L
3/4"x1/2"	19.05	1.65	12.7	1.65	25.4
1"x1/2"	25.4	1.65	12.7	1.65	50.8
1"x3/4"	25.4	1.65	19.05	1.65	25.4
1-1/4"x1"	31.8	1.65	25.4	1.65	25.4
1-1/2"x1/2"	38.1	1.65	12.7	1.65	101.6
1-1/2"x3/4"	38.1	1.65	19.05	1.65	76.2
1-1/2"x1"	38.1	1.65	25.4	1.65	50.8
1-1/2"x1-1/4"	38.1	1.65	31.8	1.65	38.1
2"x1/2"	50.8	1.65	12.7	1.65	152.4
2"x3/4"	50.8	1.65	19.05	1.65	127.0
2"x1"	50.8	1.65	25.4	1.65	101.6
2"x1-1/4"	50.8	1.65	31.8	1.65	50.8
2"x1-1/2"	50.8	1.65	38.1	1.65	50.8
2-1/2"x1"	63.5	1.65	25.4	1.65	152.4
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	101.6
2-1/2"x2"	63.5	1.65	50.8	1.65	50.8
3"x1"	76.2	1.65	25.4	1.65	203.2
3"x1-1/2"	76.2	1.65	38.1	1.65	152.4
3"x2"	76.2	1.65	50.8	1.65	101.6
3"x2-1/2"	76.2	1.65	63.5	1.65	50.8
4"x1"	101.6	2.10	25.4	1.65	304.8
4"x1-1/2"	101.6	2.10	38.1	1.65	254.0
4"x2"	101.6	2.10	50.8	1.65	203.2
4"x2-1/2"	101.6	2.10	63.5	1.65	152.4
4"x3"	101.6	2.10	76.2	1.65	101.6
6"x2"	152.4	2.77	50.8	1.65	139.7
6"x2-1/2"	152.4	2.77	63.5	1.65	139.7
6"x3"	152.4	2.77	76.2	1.65	139.7
6"x4"	152.4	2.77	101.6	2.10	139.7

#### 32W Eccentric Reducer

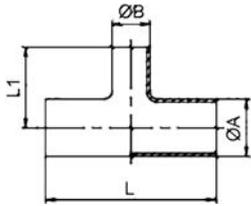


SIZE	ØA	T	ØB	T	L
3/4"x1/2"	19.05	1.65	12.7	1.65	25.4
1"x1/2"	25.4	1.65	12.7	1.65	50.8
1"x3/4"	25.4	1.65	19.05	1.65	25.4
1-1/2"x1/2"	38.1	1.65	12.7	1.65	101.6
1-1/2"x3/4"	38.1	1.65	19.05	1.65	76.2
1-1/2"x1"	38.1	1.65	25.4	1.65	50.8
2"x1/2"	50.8	1.65	12.7	1.65	152.4
2"x3/4"	50.8	1.65	19.05	1.65	127.0
2"x1"	50.8	1.65	25.4	1.65	101.6
2"x1-1/2"	50.8	1.65	38.1	1.65	50.8
2-1/2"x1"	63.5	1.65	25.4	1.65	152.4
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	101.6
2-1/2"x2"	63.5	1.65	50.8	1.65	50.8
3"x1"	76.2	1.65	25.4	1.65	203.2
3"x1-1/2"	76.2	1.65	38.1	1.65	152.4
3"x2"	76.2	1.65	50.8	1.65	101.6
3"x2-1/2"	76.2	1.65	63.5	1.65	50.8
4"x1"	101.6	2.10	25.4	1.65	304.8
4"x1-1/2"	101.6	2.10	38.1	1.65	254.0
4"x2"	101.6	2.10	50.8	1.65	203.2
4"x2-1/2"	101.6	2.10	63.5	1.65	152.4
4"x3"	101.6	2.10	76.2	1.65	101.6
6"x2"	152.4	2.77	50.8	1.65	139.7
6"x2-1/2"	152.4	2.77	63.5	1.65	139.7
6"x3"	152.4	2.77	76.2	1.65	139.7
6"x4"	152.4	2.77	101.6	2.10	139.7

### 3A Butt-welding Fittings

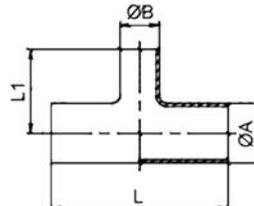
Dimension (mm)

#### 7RWWW Short Reducing Tee



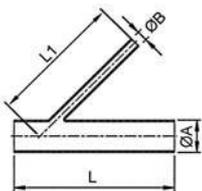
SIZE	ØA	T	ØB	T	L1	L
3/4"x1/2"	19.05	1.65	12.7	1.65	15.9	95.3
1"x1/2"	25.4	1.65	12.7	1.65	28.3	57.5
1"x3/4"	25.4	1.65	19.05	1.65	28.3	57.5
1-1/2"x1/2"	38.1	1.65	12.7	1.65	35.0	84.1
1-1/2"x3/4"	38.1	1.65	19.05	1.65	34.5	84.1
1-1/2"x1"	38.1	1.65	25.4	1.65	34.9	84.1
2"x1/2"	50.8	1.65	12.7	1.65	38.1	104.8
2"x3/4"	50.8	1.65	19.05	1.65	41.4	104.8
2"x1"	50.8	1.65	25.4	1.65	41.6	104.8
2"x1-1/2"	50.8	1.65	38.1	1.65	48.4	104.8
2-1/2"x1"	63.5	1.65	25.4	1.65	47.6	119.0
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	51.7	119.0
2-1/2"x2"	63.5	1.65	50.8	1.65	58.1	119.0
3"x1"	76.2	1.65	25.4	1.65	54.0	132.0
3"x1-1/2"	76.2	1.65	38.1	1.65	62.0	132.0
3"x2"	76.2	1.65	50.8	1.65	65.4	132.0
3"x2-1/2"	76.2	1.65	63.5	1.65	67.4	132.0
4"x1"	101.6	2.10	25.4	1.65	66.7	174.6
4"x1-1/2"	101.6	2.10	38.1	1.65	73.8	174.6
4"x2"	101.6	2.10	50.8	1.65	77.8	174.6
4"x2-1/2"	101.6	2.10	63.5	1.65	78.6	174.6
4"x3"	101.6	2.10	76.2	1.65	78.6	174.6
6" x1"	152.4	2.77	25.4	1.65	111.0	254.0
6"x1-1/2"	152.4	2.77	38.1	1.65	114.3	254.0
6"x2"	152.4	2.77	50.8	1.65	117.5	254.0
6"x2-1/2"	152.4	2.77	63.5	1.65	120.7	254.0
6"x3"	152.4	2.77	76.2	1.65	120.7	254.0
6"x4"	152.4	2.77	101.6	2.10	123.8	254.0

#### 7RW Long Reducing Tee



SIZE	ØA	T	ØB	T	L1	L
3/4"x1/2"	19.05	1.65	12.7	1.65	25.4	95.2
1"x1/2"	25.4	1.65	12.7	1.65	43.5	95.2
1"x3/4"	25.4	1.65	19.05	1.65	50.8	95.0
1-1/2"x1/2"	38.1	1.65	12.7	1.65	56.4	114.4
1-1/2"x3/4"	38.1	1.65	19.05	1.65	48.5	114.4
1-1/2"x1"	38.1	1.65	25.4	1.65	54.0	114.4
2"x1/2"	50.8	1.65	12.7	1.65	74.6	152.4
2"x3/4"	50.8	1.65	19.05	1.65	60.3	152.4
2"x1"	50.8	1.65	25.4	1.65	60.3	152.4
2"x1-1/2"	50.8	1.65	38.1	1.65	63.5	152.4
2-1/2"x1"	63.5	1.65	25.4	1.65	69.9	152.4
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	69.9	152.4
2-1/2"x2"	63.5	1.65	50.8	1.65	76.2	152.4
3"x1"	76.2	1.65	25.4	1.65	76.2	165.2
3"x1-1/2"	76.2	1.65	38.1	1.65	85.7	165.2
3"x2"	76.2	1.65	50.8	1.65	89.4	165.2
3"x2-1/2"	76.2	1.65	63.5	1.65	89.4	165.2
4"x1"	101.6	2.10	25.4	1.65	101.6	196.8
4"x1-1/2"	101.6	2.10	38.1	1.65	101.6	196.8
4"x2"	101.6	2.10	50.8	1.65	101.6	196.8
4"x2-1/2"	101.6	2.10	63.5	1.65	94.2	196.8
4"x3"	101.6	2.10	76.2	1.65	95.3	196.8
6"x2"	152.4	2.77	50.8	1.65	120.7	254.0
6"x2-1/2"	152.4	2.77	63.5	1.65	120.7	285.8
6"x3"	152.4	2.77	76.2	1.65	123.8	254.0
6"x4"	152.4	2.77	101.6	2.10	120.7	254.0

#### 28WAR 45° Reducing Lateral WYE

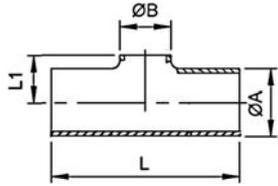


SIZE	ØA	T	ØB	T	L1	L
1-1/2"x1/2"	38.1	1.65	12.7	1.65	157.1	187.3
1-1/2"x1"	38.1	1.65	25.4	1.65	157.1	187.3
2"x1/2"	50.8	1.65	12.7	1.65	181.0	222.3
2"x3/4"	50.8	1.65	19.05	1.65	181.0	222.3
2"x1"	50.8	1.65	25.4	1.65	181.0	222.3
2"x1-1/2"	50.8	1.65	38.1	1.65	181.0	222.3

### 3A Butt-welding Fittings

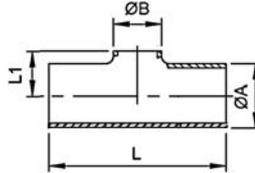
Dimension (mm)

#### 7RWWWS Short Reducing Pull Tee



SIZE	ØA	T	ØB	T	L1	L
3/4"x1/2"	19.05	1.65	12.7	1.65	12.5	57.2
1"x1/2"	25.4	1.65	12.7	1.65	16	57.2
1"x3/4"	25.4	1.65	19.05	1.65	16	57.2
1-1/2"x1/2"	38.1	1.65	12.7	1.65	22	84.2
1-1/2"x3/4"	38.1	1.65	19.05	1.65	22	84.2
1-1/2"x1"	38.1	1.65	25.4	1.65	22	84.2
2"x1/2"	50.8	1.65	12.7	1.65	29	104.8
2"x3/4"	50.8	1.65	19.05	1.65	29	104.8
2"x1"	50.8	1.65	25.4	1.65	29	104.8
2"x1-1/2"	50.8	1.65	38.1	1.65	29	104.8
2-1/2"x1"	63.5	1.65	25.4	1.65	35	119.0
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	35	119.0
2-1/2"x2"	63.5	1.65	50.8	1.65	35	119.0
3"x1"	76.2	1.65	25.4	1.65	41	132.0
3"x1-1/2"	76.2	1.65	38.1	1.65	41	132.0
3"x2"	76.2	1.65	50.8	1.65	41	132.0
3"x2-1/2"	76.2	1.65	63.5	1.65	41	132.0
4"x1"	101.6	2.10	25.4	1.65	54	196.8
4"x1-1/2"	101.6	2.10	38.1	1.65	54	196.8
4"x2"	101.6	2.10	50.8	1.65	54	196.8
4"x2-1/2"	101.6	2.10	63.5	1.65	54	196.8
4"x3"	101.6	2.10	76.2	1.65	54	196.8

#### 7RWS Long Reducing Pull Tee



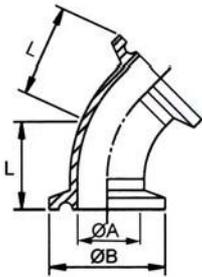
SIZE	ØA	T	ØB	T	L1	L
3/4"x1/2"	19.05	1.65	12.7	1.65	12.5	95.5
1"x1/2"	25.4	1.65	12.7	1.65	16	95.5
1"x3/4"	25.4	1.65	19.05	1.65	16	95.5
1-1/2"x1/2"	38.1	1.65	12.7	1.65	22	114.3
1-1/2"x3/4"	38.1	1.65	19.05	1.65	22	114.3
1-1/2"x1"	38.1	1.65	25.4	1.65	22	114.3
2"x1/2"	50.8	1.65	12.7	1.65	29	152.4
2"x3/4"	50.8	1.65	19.05	1.65	29	152.4
2"x1"	50.8	1.65	25.4	1.65	29	152.4
2"x1-1/2"	50.8	1.65	38.1	1.65	29	152.4
2-1/2"x1"	63.5	1.65	25.4	1.65	35	152.4
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	35	152.4
2-1/2"x2"	63.5	1.65	50.8	1.65	35	152.4
3"x1"	76.2	1.65	25.4	1.65	41	165.1
3"x1-1/2"	76.2	1.65	38.1	1.65	41	165.1
3"x2"	76.2	1.65	50.8	1.65	41	165.1
3"x2-1/2"	76.2	1.65	63.5	1.65	41	165.1
4"x1"	101.6	2.10	25.4	1.65	54	235.0
4"x1-1/2"	101.6	2.10	38.1	1.65	54	235.0
4"x2"	101.6	2.10	50.8	1.65	54	235.0
4"x2-1/2"	101.6	2.10	63.5	1.65	54	235.0
4"x3"	101.6	2.10	76.2	1.65	54	235.0

Delta INC

### 3A Clamp Fittings

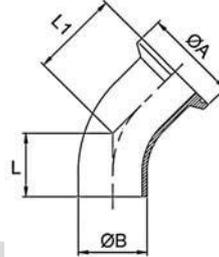
Dimension (mm)

**2KMP 45° Elbow**



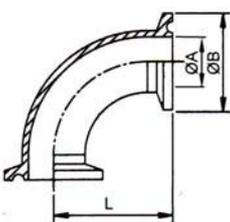
SIZE	ØA	ØB	Thickness	L
1/2"	12.7	25.2	1.65	19.8 35.5
3/4"	19.05	25.2	1.65	24.6 34.4
1"	25.4	50.5	1.65	28.6
1-1/2"	38.1	50.5	1.65	36.5
2"	50.8	64.0	1.65	44.5
2-1/2"	63.5	77.5	1.65	52.4
3"	76.2	91.0	1.65	60.3
4"	101.6	119.00	2.10	79.4
5"	127.0	144.45	2.77	94.71
6"	152.4	166.80	2.77	133.40
8"	203.2	217.67	3.05	147.75
10"	254.0	268.47	3.05	179.32
12"	304.8	319.27	3.05	210.88

**L2KM 45° Elbow Clamp x Weld End**



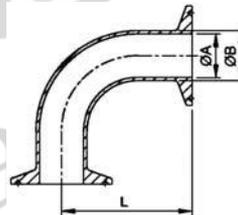
SIZE	ØA	ØB	Thickness	L1	L
1"	50.5	25.4	1.65	45.9	30.2
1-1/2"	50.5	38.1	1.65	54.0	41.3
2"	64.0	50.8	1.65	71.4	58.7
2-1/2"	77.5	63.5	1.65	88.9	76.2
3"	91.0	76.2	1.65	106.4	93.7
4"	119.0	101.6	1.65	138.1	122.2

**2CMP 90° Elbow**



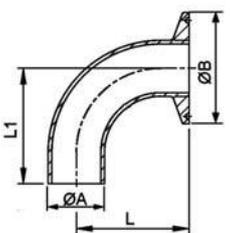
SIZE	ØA	ØB	T	L
1/2"	12.7	25.2	1.65	41.3
3/4"	19.05	25.2	1.65	41.3
1"	25.4	50.5	1.65	50.8
1-1/2"	38.1	50.5	1.65	59.9
2"	50.8	64.0	1.65	88.9
2-1/2"	63.5	77.5	1.65	108.0
3"	76.2	91.0	1.65	127.0
4"	101.6	119.00	2.10	168.3
5"	127.0	144.45	2.77	206.3
6"	152.4	166.87	2.77	266.7
8"	203.2	217.67	3.05	326.3
10"	254.0	268.47	3.05	402.5
12"	304.8	319.27	3.05	478.7

**L2CMP 90° Long Elbow**



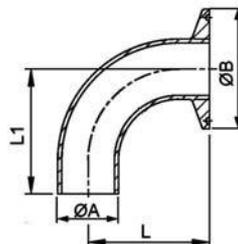
SIZE	ØA	ØB	T	L
1/2"	12.7	25.2	1.65	57.7
3/4"	19.05	25.2	1.65	72.7
1"	25.4	50.5	1.65	65.1
1-1/2"	38.1	50.5	1.65	87.3
2"	50.8	64.0	1.65	115.9
2-1/2"	63.5	77.5	1.65	144.5
3"	76.2	91.0	1.65	173.0
4"	101.6	119.00	2.10	226.9
5"	127.0	144.45	2.77	269.8
6"	152.4	166.87	2.77	313.6
8"	203.2	217.67	3.05	389.8
10"	254.0	268.47	3.05	478.7
12"	304.8	319.27	3.05	554.9

**L2CM 90° Elbow Clamp x Weld End**



SIZE	ØA	ØB	T	L1	L
1"	25.4	50.5	1.65	52.4	65.1
1-1/2"	38.1	50.5	1.65	74.6	87.3
2"	50.8	64.0	1.65	103.2	115.9
2-1/2"	63.5	77.5	1.65	131.8	144.5
3"	76.2	91.0	1.65	160.3	173.0
4"	101.6	119.0	2.10	211.1	227.0

**2CM 90° Short Elbow Clamp x Weld End**

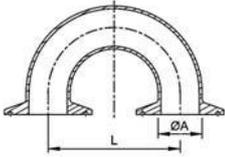


SIZE	ØA	ØB	T	L1	L
1"	25.4	50.5	1.65	38.1	50.8
1-1/2"	38.1	50.5	1.65	57.2	69.9
2"	50.8	64.0	1.65	76.2	88.9
2-1/2"	63.5	77.5	1.65	95.3	108.0
3"	76.2	91.0	1.65	114.3	127.0
4"	101.6	119.0	2.10	152.4	168.3

### 3A Clamp Fittings

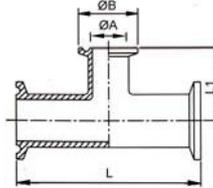
Dimension (mm)

#### 2WUMP 180° Return Bend



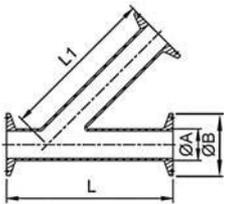
SIZE	ØA	Thickness	L
3/4"	19.05	1.65	57.16
1"	25.4	1.65	76.20
1-1/2"	38.1	1.65	114.40
2"	50.8	1.65	152.40
2-1/2"	63.5	1.65	190.50
3"	76.2	1.65	228.60
4"	101.6	2.10	304.80
6"	152.4	2.77	457.20
8"	203.2	3.05	609.60
10"	254.0	3.05	762.00
12"	304.8	3.05	914.40

#### 7MP Equal Tee



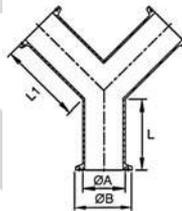
SIZE	ØA	ØB	T	L1	L
1/2"	12.7	25.4	1.65	41.3	82.6
				66.7	133.4
3/4"	19.05	25.4	1.65	41.3	82.6
				66.7	133.4
1"	25.4	50.5	1.65	60.3	120.6
1-1/2"	38.1	50.5	1.65	70.0	140.0
2"	50.8	64.0	1.65	88.9	177.8
2-1/2"	63.5	77.5	1.65	88.9	177.8
3"	76.2	91.0	1.65	95.3	190.6
4"	101.6	119.0	2.10	114.4	228.8
5"	127.0	166.8	2.77	158.7	317.4
6"	152.4	167.0	2.77	165.1	330.2
8"	203.2	217.7	3.05	199.3	398.6
10"	254.0	268.0	3.05	237.4	474.8
12"	304.8	319.0	3.05	275.5	551.0

#### 28AMP 45° Equal Lateral



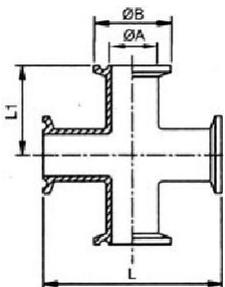
SIZE	ØA	ØB	T	L1	L
1/2"	12.7	25.2	1.65	139.7	177.8
3/4"	19.05	25.2	1.65	139.7	177.8
1"	25.4	50.5	1.65	139.7	177.8
1-1/2"	38.1	50.5	1.65	169.8	212.7
2"	50.8	64.0	1.65	193.7	247.7
2-1/2"	63.5	77.5	1.65	228.6	279.4
3"	76.2	91.0	1.65	238.1	298.4
4"	101.6	119.0	2.10	287.3	355.6
6"	152.4	166.8	2.77	390.5	501.7

#### 28BMP 90° True WYE



SIZE	ØA	ØB	T	L1	L
1/2"	12.7	25.2	1.65	60.87	60.87
3/4"	19.05	25.2	1.65	59.55	59.55
1"	25.4	50.5	1.65	74.60	63.50
1-1/2"	38.1	50.5	1.65	74.60	63.50
2"	50.8	64.0	1.65	95.30	79.40
2-1/2"	63.5	77.5	1.65	117.50	98.30
3"	76.2	91.0	1.65	136.50	114.30
4"	101.6	119.0	2.10	152.40	152.40
6"	152.4	166.8	2.77	193.14	193.14

#### 9MP Equal Cross

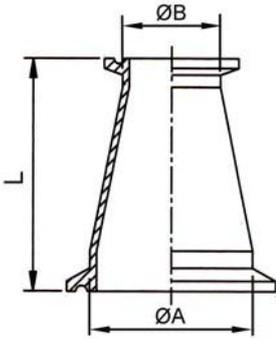


SIZE	ØA	ØB	T	L1	L
3/4"	19.05	25.4	1.65	41.3	82.6
				66.7	133.4
1"	25.4	50.5	1.65	60.3	120.6
1-1/2"	38.1	50.5	1.65	70.0	140.0
2"	50.8	64.0	1.65	88.9	177.8
2-1/2"	63.5	77.5	1.65	88.9	177.8
3"	76.2	91.0	1.65	95.3	190.6
4"	101.6	119.0	2.10	114.4	228.8

### 3A Clamp Fittings

Dimension (mm)

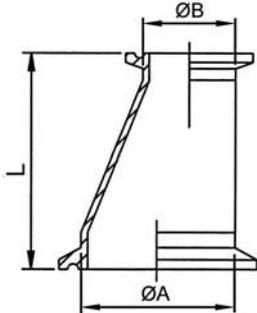
#### 3114MP Concentric Reducer



SIZE	ØA	T	ØB	T	L
3/4"x1/2"	19.05	1.65	12.7	1.65	50.8
1"x1/2"	25.4	1.65	12.7	1.65	76.2
1"x3/4"	25.4	1.65	19.05	1.65	50.8
1-1/2"x1/2"	38.1	1.65	12.7	1.65	127.0
1-1/2"x3/4"	38.1	1.65	19.05	1.65	101.6
1-1/2"x1"	38.1	1.65	25.4	1.65	76.2
2"x1/2"	50.8	1.65	12.7	1.65	177.8
2"x3/4"	50.8	1.65	19.05	1.65	152.4
2"x1"	50.8	1.65	25.4	1.65	127.0
2"x1-1/2"	50.8	1.65	38.1	1.65	76.2
2-1/2"x1"	63.5	1.65	25.4	1.65	177.8
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	127.0
2-1/2"x2"	63.5	1.65	50.8	1.65	76.2

SIZE	ØA	T	ØB	T	L
3"x1"	76.2	1.65	25.4	1.65	228.6
3"x1-1/2"	76.2	1.65	38.1	1.65	177.8
3"x2"	76.2	1.65	50.8	1.65	127.0
3"x2-1/2"	76.2	1.65	63.5	1.65	76.2
4"x1"	101.6	2.10	25.4	1.65	333.3
4"x1-1/2"	101.6	2.10	38.1	1.65	282.5
4"x2"	101.6	2.10	50.8	1.65	231.7
4"x2-1/2"	101.6	2.10	63.5	1.65	181.0
4"x3"	101.6	2.10	76.2	1.65	130.2
6"x2"	152.4	2.77	50.8	1.65	173.9
6"x2-1/2"	152.4	2.77	63.5	1.65	173.9
6"x3"	152.4	2.77	76.2	1.65	173.9
6"x4"	152.4	2.77	101.6	2.77	177.0

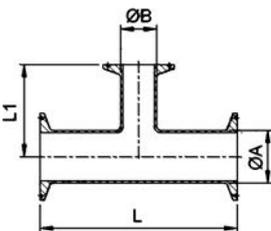
#### 3214MP Eccentric Reducer



SIZE	ØA	T	ØB	T	L
3/4"x1/2"	19.05	1.65	12.7	1.65	50.8
1"x1/2"	25.4	1.65	12.7	1.65	76.2
1"x3/4"	25.4	1.65	19.05	1.65	50.8
1-1/2"x1/2"	38.1	1.65	12.7	1.65	127.0
1-1/2"x3/4"	38.1	1.65	19.05	1.65	101.6
1-1/2"x1"	38.1	1.65	25.4	1.65	76.2
2"x1/2"	50.8	1.65	12.7	1.65	177.8
2"x3/4"	50.8	1.65	19.05	1.65	152.4
2"x1"	50.8	1.65	25.4	1.65	127.0
2"x1-1/2"	50.8	1.65	38.1	1.65	76.2
2-1/2"x1"	63.5	1.65	25.4	1.65	177.8
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	127.0
2-1/2"x2"	63.5	1.65	50.8	1.65	76.2

SIZE	ØA	T	ØB	T	L
3"x1"	76.2	1.65	25.4	1.65	228.6
3"x1-1/2"	76.2	1.65	38.1	1.65	177.8
3"x2"	76.2	1.65	50.8	1.65	127.0
3"x2-1/2"	76.2	1.65	63.5	1.65	76.2
4"x1"	101.6	2.10	25.4	1.65	333.3
4"x1-1/2"	101.6	2.10	38.1	1.65	282.5
4"x2"	101.6	2.10	50.8	1.65	231.7
4"x2-1/2"	101.6	2.10	63.5	1.65	181.0
4"x3"	101.6	2.10	76.2	1.65	130.2
6"x2"	152.4	2.77	50.8	1.65	173.9
6"x2-1/2"	152.4	2.77	63.5	1.65	173.9
6"x3"	152.4	2.77	76.2	1.65	173.9
6"x4"	152.4	2.77	101.6	2.77	177.0

#### 7RMP Reducing Tee



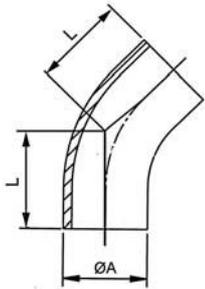
SIZE	ØA	T	ØB	T	L	L1
3/4"x1/2"	19.05	1.65	12.7	1.65	120.9	60.30
1"x1/2"	25.4	1.65	12.7	1.65	120.6	60.20
1"x3/4"	25.4	1.65	19.05	1.65	120.6	60.20
1-1/2"x1/2"	38.1	1.65	12.7	1.65	139.8	66.80
1-1/2"x3/4"	38.1	1.65	19.05	1.65	139.8	66.80
1-1/2"x1"	38.1	1.65	25.4	1.65	139.8	66.80
2"x1/2"	50.8	1.65	12.7	1.65	177.8	73.00
2"x3/4"	50.8	1.65	19.05	1.65	177.8	73.00
2"x1"	50.8	1.65	25.4	1.65	177.8	73.00
2"x1-1/2"	50.8	1.65	38.1	1.65	177.8	76.20
2-1/2"x1"	63.5	1.65	25.4	1.65	177.8	83.00
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	177.8	83.00
2-1/2"x2"	63.5	1.65	50.8	1.65	177.8	95.20

SIZE	ØA	T	ØB	T	L	L1
3"x1"	76.2	1.65	25.4	1.65	190.6	90.50
3"x1-1/2"	76.2	1.65	38.1	1.65	190.6	89.00
3"x2"	76.2	1.65	50.8	1.65	190.6	101.60
3"x2-1/2"	76.2	1.65	63.5	1.65	190.6	95.40
4"x1"	101.6	2.10	25.4	1.65	228.4	104.78
4"x1-1/2"	101.6	2.10	38.1	1.65	228.6	114.30
4"x2"	101.6	2.10	50.8	1.65	228.6	114.30
4"x2-1/2"	101.6	2.10	63.5	1.65	228.6	107.90
4"x3"	101.6	2.10	76.2	1.65	228.6	107.90
6"x2"	152.4	2.77	50.8	1.65	328.8	133.35
6"x2-1/2"	152.4	2.77	63.5	1.65	328.8	133.35
6"x3"	152.4	2.77	76.2	1.65	328.8	133.35
6"x4"	152.4	2.77	101.6	2.10	328.8	133.60

## SMS Fittings

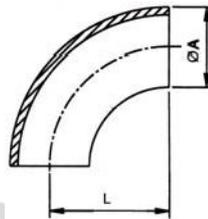
Dimension (mm)

**2KS-S 45° Long Elbow**



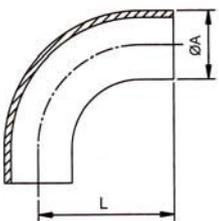
SIZE	ØA	Thickness		L
DN25	25	1.25	1.50	42.33
DN38	38	1.25	1.50	48.72
DN50	51	1.25	1.50	58.15
DN63	63.5	1.50	1.50	75.30
DN76	76.1	1.60	2.00	79.37
DN100	101.6 104.0	2.00	2.00	85.54

**2WC-S 90° Short Elbow**



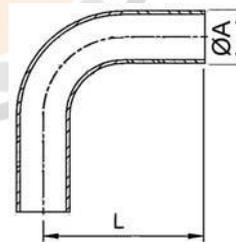
SIZE	ØA	Thickness		L
DN25	25	1.25	1.50	37.5
DN38	38	1.25	1.50	57.0
DN50	51	1.25	1.50	76.5
DN63	63.5	1.50	1.50	95.3
DN76	76.1	1.60	2.00	114.2
DN100	101.6 104.0	2.00	2.00	152.1

**2S-S 90° Long Elbow**



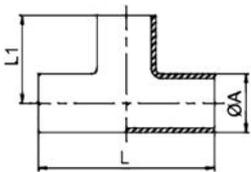
SIZE	ØA	Thickness		L
DN25	25	1.25	1.50	55
DN38	38	1.25	1.50	70
DN50	51	1.25	1.50	82
DN63	63.5	1.50	1.50	105
DN76	76.1	1.60	2.00	110
DN100	101.6 104.0	2.00	2.00	150

**2S3D-S 90° Long 3D Elbow**



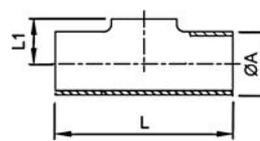
SIZE	ØA	Thickness		L
DN25	25	1.2		115
DN38	38	1.2		138
DN40	40	1.5		170
DN50	51	1.2		180
DN63	63.5	1.5		230
DN76	76.1	1.6		250

**7W-S Tee with Straight End**



SIZE	ØA	Thickness		L1	L
DN25	25	1.25	1.50	55	110
DN38	38	1.25	1.50	70	140
DN50	51	1.25	1.50	82	164
DN63	63.5	1.50	1.50	105	210
DN76	76.1	1.60	2.00	110	220
DN100	104	2.00	2.00	150	300

**7WS-S Tee without Straight End**

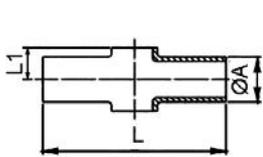


SIZE	ØA	Thickness		L1	L
DN25	25	1.25	1.50	14.0	110
DN38	38	1.25	1.50	21.0	140
DN50	51	1.25	1.50	28.5	164
DN63	63.5	1.50	1.50	36.0	210
DN76	76.1	1.60	2.00	43.0	220
DN100	104	2.00	2.00	58.0	300

## SMS Fittings

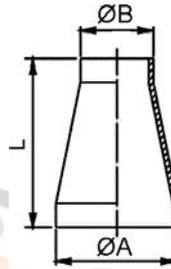
Dimension (mm)

### 9WS-S Cross with Straight End



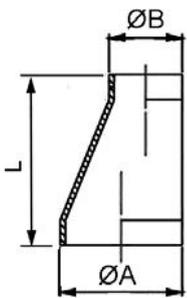
SIZE	ØA	Thickness		L1	L
DN25	25	1.25	1.50	14.0	110
DN38	38	1.25	1.50	21.0	140
DN50	51	1.25	1.50	28.5	164
DN63	63.5	1.50	1.50	36.0	210
DN76	76.1	1.60	2.00	43.0	220
DN100	104	2.00	2.00	58.0	300

### 31W-S Concentric Reducer



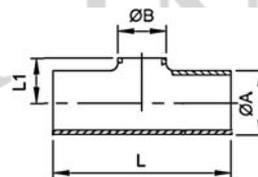
DN	ØA	T	ØB	T	L
38x25	38	1.25	25	1.25	39
50x25	51	1.25	25	1.25	57
50x38	51	1.25	38	1.25	39
63x25	63.5	1.5	25	1.25	74
63x38	63.5	1.5	38	1.25	57
63x50	63.5	1.5	51	1.25	39
76x25	76.1	1.6	25	1.25	92
76x38	76.1	1.6	38	1.25	74
76x50	76.1	1.6	51	1.25	57
76x63	76.1	1.6	63.5	1.50	39
100x50	104	2.0	51	1.25	95
100x63	104	2.0	63.5	1.50	78
100x76	104	2.0	76.1	1.60	60

### 32W-S Eccentric Reducer



DN	ØA	T	ØB	T	L
38x25	38	1.25	25	1.25	46
50x25	51	1.25	25	1.25	68
50x38	51	1.25	38	1.25	47
63x25	63.5	1.50	25	1.25	92
63x38	63.5	1.50	38	1.25	70
63x50	63.5	1.50	51	1.25	44
76x25	76.1	1.60	25	1.25	
76x38	76.1	1.60	38	1.25	92
76x50	76.1	1.60	51	1.25	68
76x63	76.1	1.60	63.5	1.50	47
100x50	104	2.0	51	1.25	117
100x63	104	2.0	63.5	1.50	94
100x76	104	2.0	76.1	1.60	74

### 7RWS-S Reducing Tee without Straight End

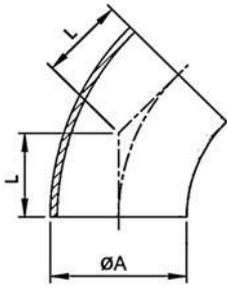


DN	ØA	ØB	Thickness	L1	L
38x25	38.0	25.0	1.25	1.5	21.0
50x25	51.0	25.0	1.25	1.5	29.0
50x38	51.0	38.0	1.25	1.5	29.0
63x25	63.5	25.0	1.5	1.5	34.5
63x38	63.5	38.0	1.5	1.5	35.0
63x50	63.5	51.0	1.5	1.5	36.0
76x25	76.1	25.0	1.6	2.0	41.0
76x38	76.1	38.0	1.6	2.0	42.0
76x50	76.1	51.0	1.6	2.0	43.0
76x63	76.1	63.5	1.6	2.0	43.0
100x25	104	25.0	2.0	2.0	56.0
100x38	104	38.0	2.0	2.0	56.0
100x50	104	51.0	2.0	2.0	57.0
100x63	104	63.5	2.0	2.0	58.0
100x76	104	76.1	2.0	2.0	58.0

## DIN Fittings

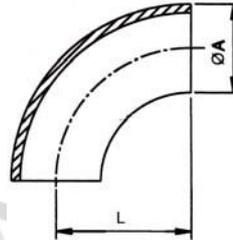
Dimension (mm)

**2KW-D 45° Short Elbow**



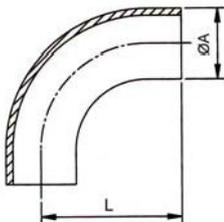
SIZE	ØA	Thickness	L
DN10	12/13	1.5	10.77
DN15	18/19	1.5	14.50
DN20	22/23	1.5	16.60
DN25	28/29	1.5	20.70
DN32	34/35	1.5	22.80
DN40	40/41	1.5	24.90
DN50	52/53	1.5	29.00
DN65	70	2.0	33.10
DN80	85	2.0	37.30
DN100	104	2.0	41.40
DN125	129	2.0	77.67
DN150	154	2.0	93.2
DN200	204	2.0	124.26
DN250	254	2.0	155.53
DN300	306	3.0	186.40

**2WC-D 90° Short Elbow**



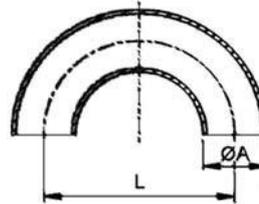
SIZE	ØA	Thickness	L
DN10	12/13	1.5	26.0
DN15	18/19	1.5	35.0
DN20	22/23	1.5	40.0
DN25	28/29	1.5	50.0
DN32	34/35	1.5	55.0
DN40	40/41	1.5	60.0
DN50	52/53	1.5	70.0
DN65	70	2.0	80.0
DN80	85	2.0	90.0
DN100	101.6	2.0	152.4
	104.0	2.0	100.0
DN125	129	2.0	187.5
DN150	154	2.0	225.0
DN200	204	2.0	300.0
DN250	254	2.0	375.0
DN300	306	3.0	450.0

**2S-D 90° Long Elbow**



SIZE	ØA	Thickness	L
DN10	12/13	1.5	51.0
DN15	18/19	1.5	60.0
DN20	22/23	1.5	52.0
DN25	28/29	1.5	65.0
DN32	34/35	1.5	73.0
DN40	40/41	1.5	80.0
DN50	52/53	1.5	92.0
DN65	70	2.0	105.0
DN80	85	2.0	119.0
DN100	101.6	2.0	175.0
	104.0	2.0	140.0
DN125	129	2.0	251.0
DN150	154	2.0	288.5
DN200	204	2.0	363.5
DN250	254	2.0	451.2
DN300	306	3.0	526.2

**2WUL-D 180° Return Bend**

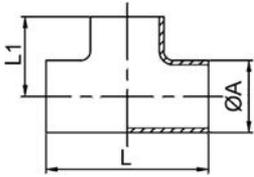


SIZE	ØA	Thickness	L
DN10	12/13	1.5	52
DN15	18/19	1.5	70
DN20	22/23	1.5	80
DN25	28/29	1.5	100
DN32	34/35	1.5	110
DN40	40/41	1.5	120
DN50	52/53	1.5	140
DN65	70	2.0	160
DN80	85	2.0	180
DN100	104	2.0	200
DN125	129	2.0	375

## DIN Fittings

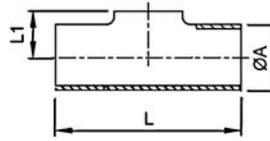
Dimension (mm)

### 7W-D Equal Tee



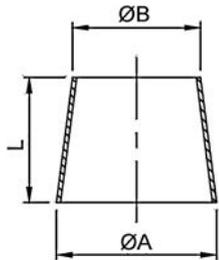
SIZE	ØA	Thickness	L1	L
DN10	12/13	1.5	26	52
DN15	18/19	1.5	35	70
DN20	22/23	1.5	40	80
DN25	28/29	1.5	50	100
DN32	34/35	1.5	55	110
DN40	40/41	1.5	60	120
DN50	52/53	1.5	70	140
DN65	70	2.0	80	160
DN80	85	2.0	90	180
DN100	101.6	2.0	150	300
	104.0		100	200
DN125	129	2.0	187.5	375
DN150	154	2.0	225	450
DN200	204	2.0	300	600
DN250	254	2.0	300	600
DN300	306	3.0	300	600

### 7WS-D Pull Tee



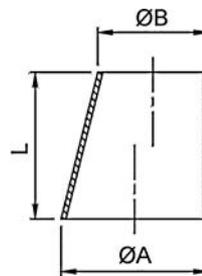
SIZE	ØA	Thickness	L1	L
DN10	12/13	1.5	11.0	52
DN15	18/19	1.5	11.0	70
DN20	22/23	1.5	13.0	80
DN25	28/29	1.5	16.0	100
DN32	34/35	1.5	19.5	110
DN40	40/41	1.5	23.0	120
DN50	52/53	1.5	30.0	140
DN65	70	2.0	40.0	160
DN80	85	2.0	47.5	180
DN100	101.6	2.0	56.0	300
	104.0		58.0	200
DN125	129	2.0	74.0	375
DN150	154	2.0	90.0	450
DN200	204	2.0	115	600
DN250	254	2.0	140	600
DN300	306	3.0	166	600

### 31W-D Concentric Reducer



SIZE(DN)	ØA	T	ØB	T	L
15x10	18/19	1.5	12/13	1.5	11
20x10	22/23	1.5	12/13	1.5	18
20x15	22/23	1.5	18/19	1.5	7
25x15	28/29	1.5	18/19	1.5	18
25x20	28/29	1.5	22/23	1.5	11
32x20	34/35	1.5	22/23	1.5	22
32x25	34/35	1.5	28/29	1.5	25
40x20	40/41	1.5	22/23	1.5	33
40x25	40/41	1.5	28/29	1.5	23
40x32	40/41	1.5	34/35	1.5	23
50x25	52/53	1.5	28/29	1.5	27
50x32	52/53	1.5	34/35	1.5	28
50x40	52/53	1.5	40/41	1.5	27
65x25	70	2.0	28/29	1.5	35
65x40	70	2.0	40/41	1.5	39
65x50	70	2.0	52/53	1.5	29
80x50	85	2.0	52/53	1.5	45
80x65	85	2.0	70	2.0	33
100x50	104	2.0	52/53	1.5	50
100x65	104	2.0	70	2.0	44
100x80	104	2.0	85	2.0	60
125x80	129	2.0	85	2.0	79
125x100	129	2.0	104	2.0	45
150x100	154	2.0	104	2.0	90
150x125	154	2.0	129	2.0	45
200x150	204	2.0	154	2.0	90

### 32W-D Eccentric Reducer

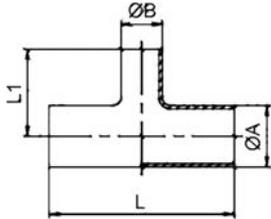


SIZE(DN)	ØA	T	ØB	T	L
32x25	34/35	1.5	28/29	1.5	16.5
40x25	40/41	1.5	28/29	1.5	33.0
40x32	40/41	1.5	34/35	1.5	16.5
50x25	52/53	1.5	28/29	1.5	66.0
50x32	52/53	1.5	34/35	1.5	49.5
50x40	52/53	1.5	40/41	1.5	33.0
65x40	70	2.0	40/41	1.5	77.0
65x50	70	2.0	52/53	1.5	44.0
80x50	85	2.0	52/53	1.5	85.0
80x65	85	2.0	70	2.0	41.2
100x50	104	2.0	52/53	1.5	137.5
100x65	104	2.0	70	2.0	93.5
100x80	104	2.0	85	2.0	52.5

## DIN Fittings

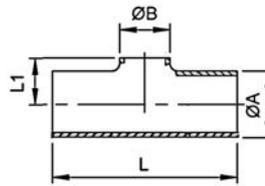
Dimension (mm)

**7RW-D Reducing Tee**



SIZE(DN)	ØA	T	ØB	T	L1	L
15x10	18/19	1.5	12/13	1.5	29.0	70
20x10	22/23	1.5	12/13	1.5	31.0	80
20x15	22/23	1.5	18/19	1.5	37.0	80
25x15	28/29	1.5	18/19	1.5	40.0	100
25x20	28/29	1.5	22/23	1.5	43.0	100
32x15	34/35	1.5	18/19	1.5	43.0	110
32x20	34/35	1.5	22/23	1.5	46.0	110
32x25	34/35	1.5	28/29	1.5	53.0	110
40x20	40/41	1.5	22/23	1.5	49.0	120
40x25	40/41	1.5	28/29	1.5	56.0	120
40x32	40/41	1.5	34/35	1.5	58.0	120
50x25	52/53	1.5	28/29	1.5	62.0	140
50x32	52/53	1.5	34/35	1.5	64.0	140
50x40	52/53	1.5	40/41	1.5	66.0	140
65x32	70	2.0	34/35	1.5	72.5	160
65x40	70	2.0	40/41	1.5	74.5	160
65x50	70	2.0	52/53	1.5	78.5	160
80x40	85	2.0	40/41	1.5	82.0	180
80x50	85	2.0	52/53	1.5	86.0	180
80x65	85	2.0	70	2.0	87.5	180
100x50	104	2.0	52/53	1.5	95.5	200
100x65	104	2.0	70	2.0	97.0	200
100x80	104	2.0	85	2.0	99.5	200
125x65	129	2.0	70	2.0	109.5	375
125x80	129	2.0	85	2.0	112.0	375
125x100	129	2.0	104	2.0	112.5	375
150x80	154	2.0	85	2.0	124.5	450
150x100	154	2.0	104	2.0	125.0	450
150x125	154	2.0	129	2.0	200.0	450
200x100	204	2.0	104	2.0	150.0	600
200x125	204	2.0	129	2.0	225.0	600
200x150	204	2.0	154	2.0	250.0	600

**7RWS-D Reducing Pull Tee**



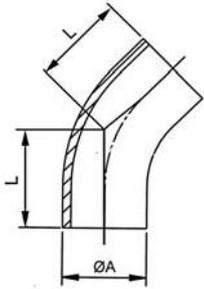
SIZE(DN)	ØA	T	ØB	T	L1	L
15x10	18/19	1.5	12/13	1.5	10.5	70
20x10	22/23	1.5	12/13	1.5	12.5	80
20x15	22/23	1.5	18/19	1.5	13.0	80
25x15	28/29	1.5	18/19	1.5	16.0	100
25x20	28/29	1.5	22/23	1.5	16.0	100
32x15	34/35	1.5	18/19	1.5	19.0	110
32x20	34/35	1.5	22/23	1.5	19.0	110
32x25	34/35	1.5	28/29	1.5	19.0	110
40x20	40/41	1.5	22/23	1.5	22.0	120
40x25	40/41	1.5	28/29	1.5	22.0	120
40x32	40/41	1.5	34/35	1.5	22.5	120
50x25	52/53	1.5	28/29	1.5	28.0	140
50x32	52/53	1.5	34/35	1.5	28.5	140
50x40	52/53	1.5	40/41	1.5	29.0	140
65x32	70	2.0	34/35	1.5	37.0	160
65x40	70	2.0	40/41	1.5	37.5	160
65x50	70	2.0	52/53	1.5	38.5	160
80x40	85	2.0	40/41	1.5	45.0	180
80x50	85	2.0	52/53	1.5	46.0	180
80x65	85	2.0	70	2.0	47.5	180
100x50	104	2.0	52/53	1.5	55.5	200
100x65	104	2.0	70	2.0	57.0	200
100x80	104	2.0	85	2.0	57.0	200
125x65	129	2.0	70	2.0	69.5	375
125x80	129	2.0	85	2.0	69.5	375
125x100	129	2.0	104	2.0	70.5	375
150x80	154	2.0	85	2.0	82.0	450
150x100	154	2.0	104	2.0	83.0	450
150x125	154	2.0	129	2.0	86.5	450
200x100	204	2.0	104	2.0	108.0	600
200x125	204	2.0	129	2.0	111.5	600
200x150	204	2.0	154	2.0	115.0	600

0

## AS Fittings

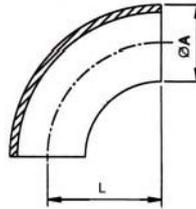
Dimension (mm)

**2KS-A 45° Long Elbow**



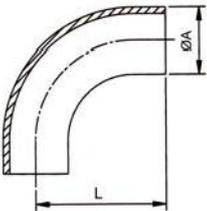
SIZE	ØA	Thickness	L
1/2"	12.7	1.6	37.91
3/4"	19.1	1.6	41.85
1"	25.4	1.6/2	45.78
1-1/4"	31.8	1.6/2	49.76
1-1/2"	38.1	1.6/2	53.61
2"	50.8	1.6/2	61.56
2-1/2"	63.5	1.6/2	69.35
3"	76.2	1.6/2	77.30
4"	101.6	1.6/2	93.13

**2WC-A 90° Short Elbow**



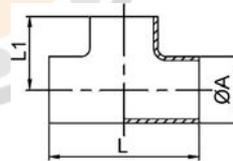
SIZE	ØA	Thickness	L
1/2"	12.7	1.6	19.1
3/4"	19.1	1.6	28.6
1"	25.4	1.6/2	38.1
1-1/4"	31.8	1.6/2	47.7
1-1/2"	38.1	1.6/2	57.0
2"	50.8	1.6/2	76.2
2-1/2"	63.5	1.6/2	95.0
3"	76.2	1.6/2	114.2
4"	101.6	1.6/2	152.4
6"	152.4	1.6/2	228.5

**2S-A 90° Long Elbow**



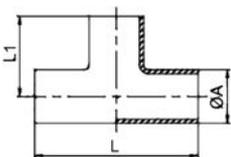
SIZE	ØA	Thickness	L
1/2"	12.7	1.6/2	49.1
3/4"	19.1	1.6/2	58.6
1"	25.4	1.6/2	68.1
1-1/4"	31.8	1.6/2	77.7
1-1/2"	38.1	1.6/2	87.0
2"	50.8	1.6/2	106.2
2-1/2"	63.5	1.6/2	125.0
3"	76.2	1.6/2	144.2
4"	101.6	1.6/2	182.4

**7WWW-A Short Equal Tee**



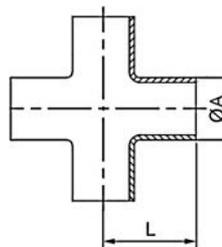
SIZE	ØA	Thickness	L1	L
1/2"	12.7	1.6/2	19.1	38.2
3/4"	19.1	1.6/2	28.6	57.2
1"	25.4	1.6/2	38.1	76.2
1-1/4"	31.8	1.6/2	47.7	95.4
1-1/2"	38.1	1.6/2	57.0	114.0
2"	50.8	1.6/2	76.2	152.4
2-1/2"	63.5	1.6/2	95.0	190.0
3"	76.2	1.6/2	144.2	228.4
4"	101.6	1.6/2	152.4	304.8

**7W-A Long Equal Tee**



SIZE	ØA	Thickness	L1	L
1/2"	12.7	1.6/2	49.1	98.2
3/4"	19.1	1.6/2	58.6	117.2
1"	25.4	1.6/2	68.1	136.2
1-1/4"	31.8	1.6/2	77.7	155.4
1-1/2"	38.1	1.6/2	87.0	174.0
2"	50.8	1.6/2	106.2	212.4
2-1/2"	63.5	1.6/2	125.0	250.0
3"	76.2	1.6/2	144.2	288.4
4"	101.6	1.6/2	182.4	364.8

**9WWW-A Short Equal Cross**

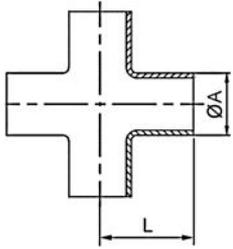


SIZE	ØA	Thickness	L
1/2"	12.7	1.6/2	38.2
3/4"	19.1	1.6/2	57.2
1"	25.4	1.6/2	76.2
1-1/4"	31.8	1.6/2	95.4
1-1/2"	38.1	1.6/2	114.0
2"	50.8	1.6/2	152.4
2-1/2"	63.5	1.6/2	190.0
3"	76.2	1.6/2	228.4
4"	101.6	1.6/2	304.8

## AS Fittings

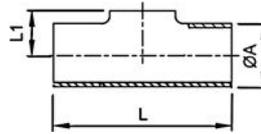
Dimension (mm)

**9W-A Long Equal Cross**



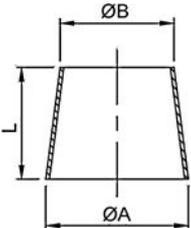
SIZE	ØA	Thickness	L
1/2"	12.7	1.6/2	98.2
3/4"	19.1	1.6/2	117.2
1"	25.4	1.6/2	136.2
1-1/4"	31.8	1.6/2	155.4
1-1/2"	38.1	1.6/2	174.0
2"	50.8	1.6/2	212.4
2-1/2"	63.5	1.6/2	250.0
3"	76.2	1.6/2	288.4
4"	101.6	1.6/2	364.8

**7WS-A Equal Tee without Straight End**



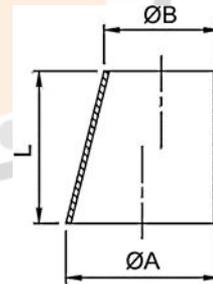
SIZE	ØA	Thickness	L1	L
1/2"	12.7	1.6/2	9.35	38.2
3/4"	19.1	1.6/2	12.55	57.2
1"	25.4	1.6/2	15.70	76.2
1-1/4"	31.8	1.6/2	18.90	95.4
1-1/2"	38.1	1.6/2	22.05	114.0
2"	50.8	1.6/2	28.40	152.4
2-1/2"	63.5	1.6/2	34.75	190.0
3"	76.2	1.6/2	41.10	228.4
4"	101.6	1.6/2	53.80	304.8

**31W-A Concentric Reducer**



SIZE	ØA	T	ØB	T	L
3/4"x1/2"	19.1	1.6/2	12.7	1.6/2	19.1
1"x1/2"	25.4	1.6/2	12.7	1.6/2	25.4
1"x3/4"	25.4	1.6/2	19.1	1.6/2	25.4
1-1/4"x3/4"	31.8	1.6/2	19.1	1.6/2	31.8
1-1/4"x1"	31.8	1.6/2	25.4	1.6/2	31.8
1-1/2"x3/4"	38.1	1.6/2	19.1	1.6/2	38.1
1-1/2"x1"	38.1	1.6/2	25.4	1.6/2	38.1
1-1/2"x1-1/4"	38.1	1.6/2	31.8	1.6/2	38.1
2"x1/2"	50.8	1.6/2	12.7	1.6/2	50.8
2"x3/4"	50.8	1.6/2	19.1	1.6/2	50.8
2"x1"	50.8	1.6/2	25.4	1.6/2	50.8
2"x1-1/4"	50.8	1.6/2	31.8	1.6/2	50.8
2"x1-1/2"	50.8	1.6/2	38.1	1.6/2	50.8
2-1/2"x1"	63.5	1.6/2	25.4	1.6/2	63.5
2-1/2"x1-1/4"	63.5	1.6/2	31.8	1.6/2	63.5
2-1/2"x1-1/2"	63.5	1.6/2	38.1	1.6/2	63.5
2-1/2"x2"	63.5	1.6/2	50.8	1.6/2	63.5
3"x1"	76.2	1.6/2	25.4	1.6/2	76.2
3"x1-1/4"	76.2	1.6/2	31.8	1.6/2	76.2
3"x1-1/2"	76.2	1.6/2	38.1	1.6/2	76.2
3"x2"	76.2	1.6/2	50.8	1.6/2	76.2
3"x2-1/2"	76.2	1.6/2	63.5	1.6/2	76.2
4"x1"	101.6	1.6/2	25.4	1.6/2	101.6
4"x1-1/4"	101.6	1.6/2	31.8	1.6/2	101.6
4"x1-1/2"	101.6	1.6/2	38.1	1.6/2	101.6
4"x2"	101.6	1.6/2	50.8	1.6/2	101.6
4"x2-1/2"	101.6	1.6/2	63.5	1.6/2	101.6
4"x3"	101.6	1.6/2	76.2	1.6/2	101.6
5"x2"	127.0	1.6/2	50.8	1.6/2	127.0
5"x3"	127.0	1.6/2	76.2	1.6/2	127.0
5"x4"	127.0	1.6/2	101.6	1.6/2	127.0
6"x2"	152.4	1.6/2	50.8	1.6/2	152.4
6"x2-1/2"	152.4	1.6/2	63.5	1.6/2	152.4
6"x3"	152.4	1.6/2	76.2	1.6/2	152.4
6"x4"	152.4	1.6/2	101.6	1.6/2	152.4
6"x5"	152.4	1.6/2	127.0	1.6/2	152.4

**32W-A Eccentric Reducer**

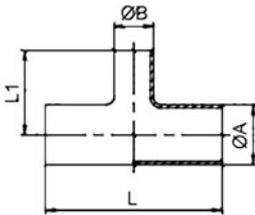


SIZE	ØA	T	ØB	T	L
3/4"x1/2"	19.1	1.6/2	12.7	1.6/2	19.1
1"x1/2"	25.4	1.6/2	12.7	1.6/2	25.4
1"x3/4"	25.4	1.6/2	19.1	1.6/2	25.4
1-1/4"x3/4"	31.8	1.6/2	19.1	1.6/2	31.8
1-1/4"x1"	31.8	1.6/2	25.4	1.6/2	31.8
1-1/2"x3/4"	38.1	1.6/2	19.1	1.6/2	38.1
1-1/2"x1"	38.1	1.6/2	25.4	1.6/2	38.1
1-1/2"x1-1/4"	38.1	1.6/2	31.8	1.6/2	38.1
2"x1/2"	50.8	1.6/2	12.7	1.6/2	50.8
2"x3/4"	50.8	1.6/2	19.1	1.6/2	50.8
2"x1"	50.8	1.6/2	25.4	1.6/2	50.8
2"x1-1/4"	50.8	1.6/2	31.8	1.6/2	50.8
2"x1-1/2"	50.8	1.6/2	38.1	1.6/2	50.8
2-1/2"x1"	63.5	1.6/2	25.4	1.6/2	63.5
2-1/2"x1-1/4"	63.5	1.6/2	31.8	1.6/2	63.5
2-1/2"x1-1/2"	63.5	1.6/2	38.1	1.6/2	63.5
2-1/2"x2"	63.5	1.6/2	50.8	1.6/2	63.5
3"x1"	76.2	1.6/2	25.4	1.6/2	76.2
3"x1-1/4"	76.2	1.6/2	31.8	1.6/2	76.2
3"x1-1/2"	76.2	1.6/2	38.1	1.6/2	76.2
3"x2"	76.2	1.6/2	50.8	1.6/2	76.2
3"x2-1/2"	76.2	1.6/2	63.5	1.6/2	76.2
4"x1"	101.6	1.6/2	25.4	1.6/2	101.6
4"x1-1/4"	101.6	1.6/2	31.8	1.6/2	101.6
4"x1-1/2"	101.6	1.6/2	38.1	1.6/2	101.6
4"x2"	101.6	1.6/2	50.8	1.6/2	101.6
4"x2-1/2"	101.6	1.6/2	63.5	1.6/2	101.6
4"x3"	101.6	1.6/2	76.2	1.6/2	101.6
5"x2"	127.0	1.6/2	50.8	1.6/2	127.0
5"x3"	127.0	1.6/2	76.2	1.6/2	127.0
5"x4"	127.0	1.6/2	101.6	1.6/2	127.0
6"x2"	152.4	1.6/2	50.8	1.6/2	152.4
6"x2-1/2"	152.4	1.6/2	63.5	1.6/2	152.4
6"x3"	152.4	1.6/2	76.2	1.6/2	152.4
6"x4"	152.4	1.6/2	101.6	1.6/2	152.4
6"x5"	152.4	1.6/2	127.0	1.6/2	152.4

## AS Fittings

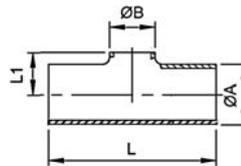
Dimension (mm)

**7RW-A Reducing Tee**



SIZE	ØA	ØB	T	L1	L
1-1/2"x1"	38.1	25.4	1.6/2	80.0	160.0
2"x1"	50.8	25.4	1.6/2	80.0	160.0
2"x1-1/2"	50.8	38.1	1.6/2	80.0	160.0
2-1/2"x1-1/2"	63.5	38.1	1.6/2	80.0	160.0
2-1/2"x2"	63.5	50.8	1.6/2	80.0	160.0
3"x1-1/2"	76.2	38.1	1.6/2	80.0	160.0
3"x2"	76.2	50.8	1.6/2	80.0	160.0
3"x2-1/2"	76.2	63.5	1.6/2	95.3	190.5
4"x2"	101.6	50.8	1.6/2	80.0	160.0
4"x2-1/2"	101.6	63.5	1.6/2	95.3	190.5
4"x3"	101.6	76.2	1.6/2	114.3	228.6

**7RWS-A Reducing Pull Tee**



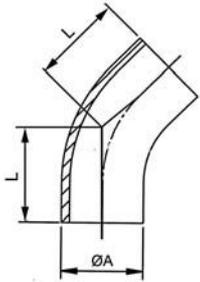
SIZE	ØA	ØB	T	L1	L
1-1/2"x1"	38.1	25.4	1.6/2	22.05	160.0
2"x1"	50.8	25.4	1.6/2	28.40	160.0
2"x1-1/2"	50.8	38.1	1.6/2	28.40	160.0
2-1/2"x1-1/2"	63.5	38.1	1.6/2	34.75	160.0
2-1/2"x2"	63.5	50.8	1.6/2	37.75	160.0
3"x1-1/2"	76.2	38.1	1.6/2	41.10	160.0
3"x2"	76.2	50.8	1.6/2	41.10	160.0
3"x2-1/2"	76.2	63.5	1.6/2	41.10	190.5
4"x2"	101.6	50.8	1.6/2	53.80	160.0
4"x2-1/2"	101.6	63.5	1.6/2	53.80	190.5
4"x3"	101.6	76.2	1.6/2	53.80	228.6

Delta INC

## BS Fittings

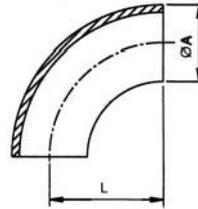
Dimension (mm)

**2KS-B 45° Long Elbow**



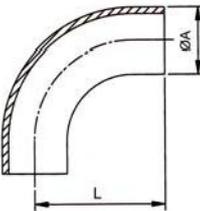
SIZE	ØA	Thickness	L
1"	25.4	1.65	30.2
1-1/2"	38.1	1.65	41.3
2"	50.8	1.65	58.7
2-1/2"	63.5	1.65	76.2
3"	76.2	1.65	93.7
4"	101.6	2.10	122.2

**2WC-B 90° Short Elbow**



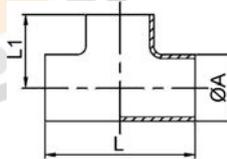
SIZE	ØA	Thickness	L
1"	25.4	1.65	43.5
1-1/2"	38.1	1.65	63.5
2"	50.8	1.65	88.5
2-1/2"	63.5	1.65	113.5
3"	76.2	1.65	133.5
4"	101.6	2.10	173.5

**2S-B 90° Long Elbow**



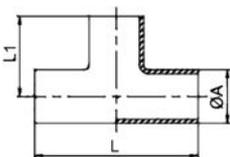
SIZE	ØA	Thickness	L
1/2"	12.70	1.65	45
3/4"	19.05	1.65	60
1"	25.40	1.65	65
1-1/2"	38.10	1.65	85
2"	50.80	1.65	110
2-1/2"	63.50	1.65	135
3"	76.20	1.65	155
4"	101.60	2.10	195

**7WWW-B Short Equal Tee**



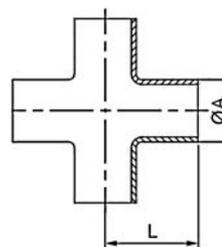
SIZE	ØA	Thickness	L1	L
1"	25.4	1.65	43.5	87
1-1/2"	38.1	1.65	63.5	127
2"	50.8	1.65	88.5	177
2-1/2"	63.5	1.65	113.5	227
3"	76.2	1.65	133.5	267
4"	101.6	2.10	173.5	347

**7W-B Long Equal Tee**



SIZE	ØA	Thickness	L1	L
1/2"	12.7	1.65	54	107
3/4"	19.05	1.65	54	108
1"	25.4	1.65	65	130
1-1/2"	38.1	1.65	85	170
2"	50.8	1.65	110	220
2-1/2"	63.5	1.65	135	270
3"	76.2	1.65	155	310
4"	101.6	2.10	195	390

**9W-B Long Equal Cross**

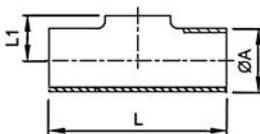


SIZE	ØA	Thickness	L
1"	25.4	1.65	130
1-1/2"	38.1	1.65	170
2"	50.8	1.65	220
2-1/2"	63.5	1.65	270
3"	76.2	1.65	310
4"	101.6	2.10	390

## BS Fittings

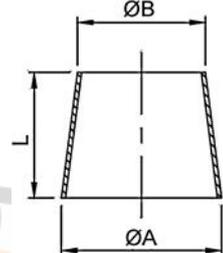
Dimension (mm)

**7WS-B Pull Tee**



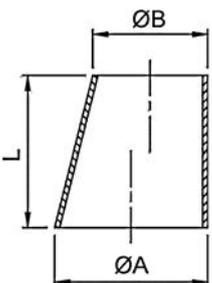
SIZE	ØA	Thickness	L1	L
1"	25.4	1.65	13.8	87
1-1/2"	38.1	1.65	19.9	127
2"	50.8	1.65	27.6	177
2-1/2"	63.5	1.65	34.9	227
3"	76.2	1.65	42.9	267
4"	101.6	2.10	54.7	347

**31W-B Concentric Reducer**



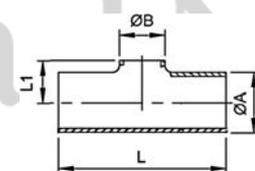
SIZE	ØA	T	ØB	T	L
1"x1/2"	25.4	1.65	12.7	1.65	25.4
1"x3/4"	25.4	1.65	19.05	1.65	25.4
1-1/2"x1"	38.1	1.65	25.4	1.65	48.0
2"x1"	50.8	1.65	25.4	1.65	50.0
2"x1-1/2"	50.8	1.65	38.1	1.65	66.0
2-1/2"x1"	63.5	1.65	25.4	1.65	68.0
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	48.0
2-1/2"x2"	63.5	1.65	50.8	1.65	66.0
3"x1"	76.2	1.65	25.4	1.65	98.0
3"x1-1/2"	76.2	1.65	38.1	1.65	75.0
3"x2"	76.2	1.65	50.8	1.65	70.0
3"x2-1/2"	76.2	1.65	63.5	1.65	72.0
4"x1-1/2"	101.6	2.10	38.1	1.65	60.0
4"x2"	101.6	2.10	50.8	1.65	60.0
4"x2-1/2"	101.6	2.10	63.5	1.65	76.0
4"x3"	101.6	2.10	76.2	1.65	77.0

**32W-B Eccentric Reducer**



SIZE	ØA	T	ØB	T	L
3/4"x1/2"	19.05	1.65	12.7	1.65	25.4
1"x1/2"	25.4	1.65	12.7	1.65	38.1
1"x3/4"	25.4	1.65	19.05	1.65	25.4
1-1/2"x1"	38.1	1.65	25.4	1.65	33.0
2"x1"	50.8	1.65	25.4	1.65	66.0
2"x1-1/2"	50.8	1.65	38.1	1.65	33.0
2-1/2"x1"	63.5	1.65	25.4	1.65	73.0
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	68.0
2-1/2"x2"	63.5	1.65	50.8	1.65	39.0
3"x1"	76.2	1.65	25.4	1.65	95.0
3"x1-1/2"	76.2	1.65	38.1	1.65	70.0
3"x2"	76.2	1.65	50.8	1.65	48.0
3"x2-1/2"	76.2	1.65	63.5	1.65	40.0
4"x1-1/2"	101.6	2.10	38.1	1.65	98.0
4"x2"	101.6	2.10	50.8	1.65	98.0
4"x2-1/2"	101.6	2.10	63.5	1.65	70.0
4"x3"	101.6	2.10	76.2	1.65	77.0

**7RWS-B Reducing Pull Tee**



SIZE	ØA	T	ØB	T	L1	L
1"x1/2"	25.4	1.65	12.7	1.65	27	100
1"x3/4"	25.4	1.65	19.05	1.65	27	100
1-1/2"x1"	38.1	1.65	25.4	1.65	22	127
2"x1/2"	50.8	1.65	12.7	1.65	27.4	177
2"x3/4"	50.8	1.65	19.05	1.65	27.4	177
2"x1"	50.8	1.65	25.4	1.65	29	177
2"x1-1/2"	50.8	1.65	38.1	1.65	29	177
2-1/2"x1"	63.5	1.65	25.4	1.65	35	227
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	35	227
2-1/2"x2"	63.5	1.65	50.8	1.65	35	227
3"x1"	76.2	1.65	25.4	1.65	41	267
3"x1-1/2"	76.2	1.65	38.1	1.65	41	267
3"x2"	76.2	1.65	50.8	1.65	41	267
3"x2-1/2"	76.2	2.10	63.5	1.65	41	267
4"x1"	101.6	2.10	25.4	1.65	55	347
4"x1-1/2"	101.6	2.10	38.1	1.65	55	347
4"x2"	101.6	2.10	50.8	1.65	55	347
4"x2-1/2"	101.6	2.10	63.5	1.65	55	347
4"x3"	101.6	2.10	76.2	1.65	55	347

### 3 Piece Ball Valve

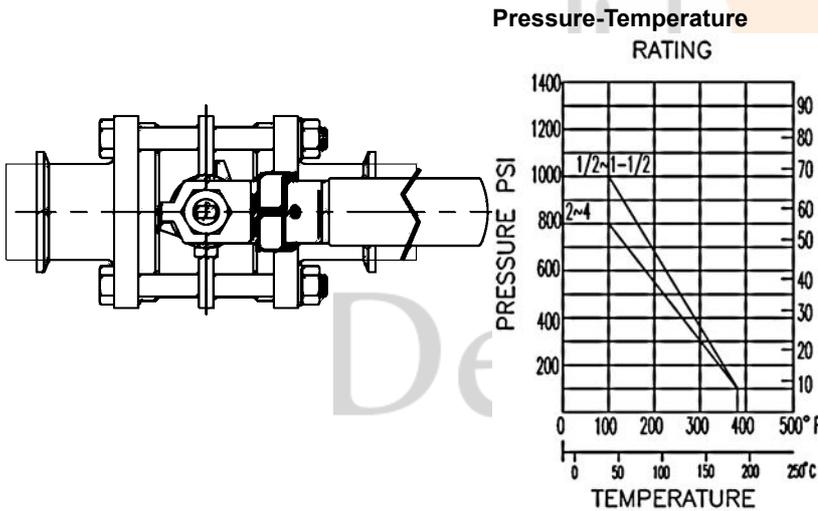
**Features:**

1. Connection type: Clamp end and Weld end
2. Investment casting
3. For food and general chemical service application
4. Working Pressure: 1/2" ~ 1-1/2" 1000PSI, 2" ~ 4" 800PSI
5. 100% air tested under water at 100PSI, open and closed positions.
6. Hydrostatic test pressure :  
Body: W.P. 1000PSI  
Tube end: W.P. 200PSI
7. Teflon encapsulated seats maintain sanitary environment.
8. Blow-out proof stem design.



**Options:**

1. Locking device is available if requested.
2. Cavity filled and non-cavity filled available.

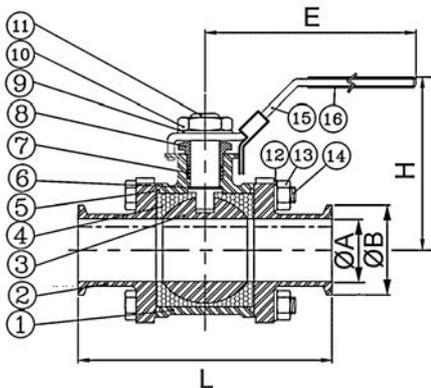


**Material List**

NO.	PART NAME	MATERIAL
1	BODY	ASTM CF8/CF8M/CF3M
2	CAP	ASTM CF8/CF8M/CF3M
3	BALL	ASTM CF8/CF8M/CF3M
4	SEAT	PTFE/TFM1600
5	GASKET	PTFE
6	THRUST WASHER	PTFE
7	STEM PACKING	PTFE
8	GLAND NUT	AISI304
9	HANDLE WASHER	AISI304
10	HANDLE NUT	AISI304
11	STEM	AISI316
12	BOLT WASHER	AISI304
13	NUT	AISI304
14	BOLT	AISI304
15	HANDLE	AISI304
16	HANDLE SLEEVE	PLASTIC

Dimension (mm)

**VBM3H 3 Piece Ball Valve Clamp End**

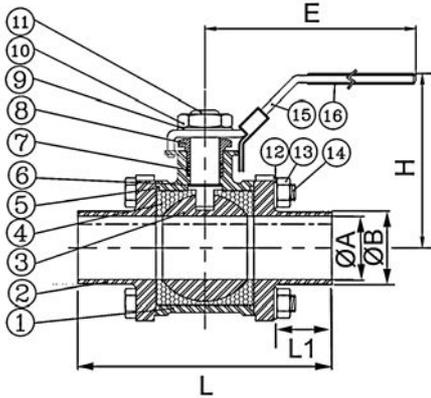


SIZE		ØA	ØB	L±1.0	H±3.0	E±3.0	TORQUE
DN	INCH						INCH/LBS
15	1/2"	9.5	25.4	89	52	106	110
20	3/4"	15.9	25.4	101	55	106	130
25	1"	22.2	50.4	114	70	135	170
32	1-1/4"	28.5	50.4	124	79	135	230
40	1-1/2"	35.0	50.4	140	89	182	280
50	2"	47.6	63.6	156	89	182	480
65	2-1/2"	60.2	77.5	197	135	263	650
80	3"	73.0	90.8	229	145	263	1150
100	4"	97.4	118.5	241	184	285	1400

### 3 Piece Ball Valve

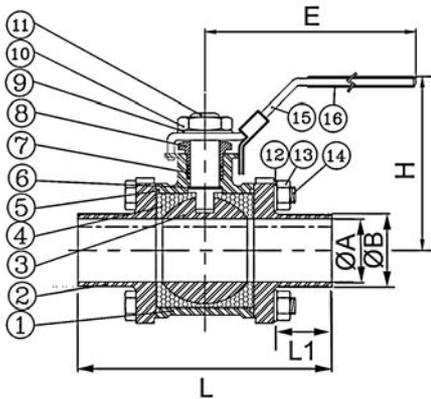
Dimension (mm)

#### VBM3W 3 Piece Ball Valve Weld End



SIZE		ØA	ØB	L±1.0	L1±1.0	H±3.0	E±3.0	TORQUE	
DN	INCH							INCH/LBS	
15	1/2"	9.5	12.7	89	18	52	106	110	
20	3/4"	15.9	19.1	101	21	55	106	130	
25	1"	22.2	25.4	114	25	70	135	170	
32	1-1/4"	28.5	31.8	124	28	79	135	230	
40	1-1/2"	35.0	38.1	140	28	89	182	280	
50	2"	47.6	50.8	156	25	89	182	480	
65	2-1/2"	60.2	63.5	197	35	135	263	650	
80	3"	73.0	76.2	229	43	145	263	1150	
100	4"	97.4	101.6	241	37	184	285	1400	

#### VBM3WL 3 Piece Ball Valve Long Weld End



SIZE		ØA	ØB	L±1.0	L1±1.0	H±3.0	E±3.0	TORQUE	
DN	INCH							INCH/LBS	
15	1/2"	9.5	12.7	137.0	42.0	52	106	110	
20	3/4"	15.9	19.1	147.0	44.0	55	106	130	
25	1"	22.2	25.4	168.0	52.0	70	135	170	
40	1-1/2"	35.0	38.1	186.0	51.0	89	182	280	
50	2"	47.6	50.8	223.0	58.5	89	182	480	
65	2-1/2"	60.2	63.5	250.4	61.0	135	263	650	
80	3"	73.0	76.2	302.0	79.0	145	263	1150	
100	4"	97.4	101.6	317.5	75.0	184	285	1400	

### 3 Piece Ball Valve Mounting Pad ISO 5211

**Features:**

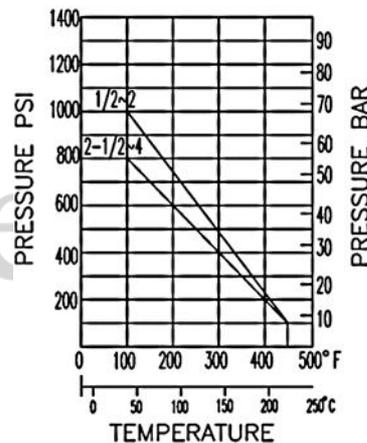
1. Connection type : Clamp end and Weld end
2. Investment casting
3. For food and general chemical service application
4. Working Pressure : 1/2" ~ 2" 1000PSI, 2-1/2" ~ 4" 800PSI
5. 100% air tested under water at 100PSI, open and closed positions.
6. Hydrostatic test pressure :  
Body : W.P. 1000PSI  
Tube end : W.P. 200PSI
7. Teflon encapsulated seats maintain sanitary environment.
8. Blow-out proof stem design.
9. Mechanic Polished  $\leq Ra0.4$   
Mechanic Polished and Electro Polished  $\leq Ra0.4$



**Options:**

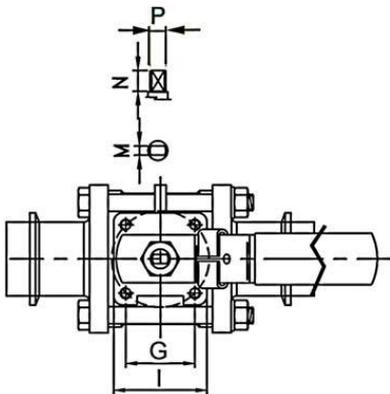
1. Locking device is available if requested.
2. Cavity filled and non-cavity filled available

**Pressure-Temperature RATING**



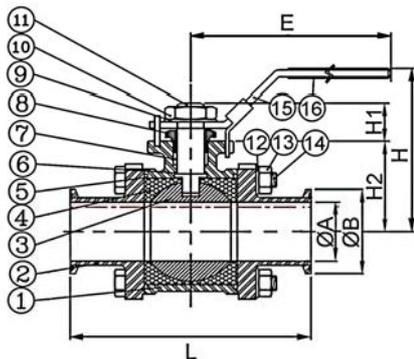
**Material List**

NO.	PART NAME	MATERIAL
1	BODY	ASTM CF8/CF8M/CF3M
2	CAP	ASTM CF8/CF8M/CF3M
3	BALL	ASTM CF8/CF8M/CF3M
4	SEAT	PTFE/TFM1600
5	BODY SEAT	PTFE
6	THRUST WASHER	PTFE
7	STEM PACKING	PTFE
8	GLAND NUT	AISI304
9	STEM WASHER	AISI304
10	STEM NUT	AISI304
11	STEM	AISI304/316
12	BOLT WASHER	AISI304
13	NUT	AISI304
14	BOLT	AISI304
15	HANDLE	AISI304
16	HANDLE SLEEVE	PLASTIC



**M3HSC 3 Piece Ball Valve Mounting Pad ISO5211 Clamp End**

Dimension (mm)

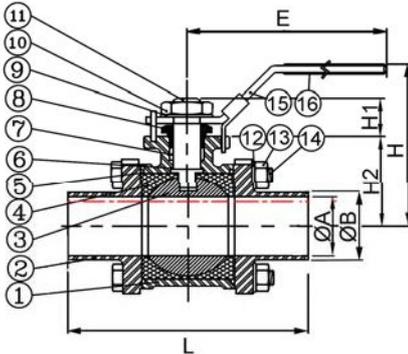


SIZE	ISO-5211	ØA ±0.2	ØB	L±1.0	H±3.0	H1	H2	E±3.0	G	I	M	N	P	TURTEQ INCH/LBS
15 1/2"	F03	36	9.5	25.5	89	63	18.0	29.0	140	25.5	37	5.0	13.0	M8x1.25 110
20 3/4"	F03	36	15.9	25.5	101	66	19.0	33.0	140	25.5	37	5.0	13.0	M8x1.25 130
25 1"	F04	42	22.2	50.4	114	71	19.5	37.5	140	29.7	42	6.5	14.0	7/16-14 170
40 1-1/2"	F05	50	35.0	50.4	140	93	27.5	48.5	195	35.4	50	8.5	17.5	M12x1.7 5 290
50 2"	F05	50	47.6	63.6	156	100	25.5	58.5	195	35.4	50	8.5	17.5	M12x1.7 5 480
65 2-1/2"	F07	70	60.2	77.5	197	140	37.0	79.5	262	49.5	72	12.0	27.5	3/4-10 700
80 3"	F07	70	73.0	90.8	229	155	42.0	83.5	262	49.5	72	12.0	27.5	3/4-10 1200
100 4"	F10	102	97.4	118.5	241	180	49.5	110.5	290	72.1	95	16.0	35.5	1-8 1560

### 3 Piece Ball Valve Mounting Pad ISO 5211

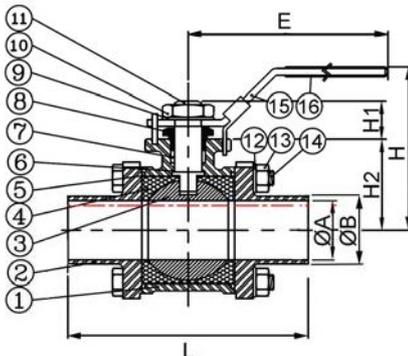
Dimension (mm)

#### M3HSW 3 Piece Ball Valve Mounting Pad ISO5211 Weld End



SIZE		ISO-5211	ØA ±0.2	ØB	L±1.0	H±3.0	H1	H2	E±3.0	G	I	M	N	P	TURTEQ INCH/LBS	
MM	INCH															
15	1/2"	F03	36	9.5	12.7	89	63	18.0	29.0	140	25.5	37	5.0	13.0	M8x1.25	110
20	3/4"	F03	36	15.9	19.1	101	66	19.0	33.0	140	25.5	37	5.0	13.0	M8x1.25	130
25	1"	F04	42	22.2	25.4	114	71	19.5	37.5	140	29.7	42	6.5	14.0	7/16-14	170
40	1-1/2"	F05	50	35.0	38.1	140	93	27.5	48.5	195	35.4	50	8.5	17.5	M12x1.75	290
50	2"	F05	50	47.6	50.8	156	100	25.5	58.5	195	35.4	50	8.5	17.5	M12x1.75	480
65	2-1/2"	F07	70	60.2	63.5	197	140	37.0	79.5	262	49.5	72	12.0	27.5	3/4-10	700
80	3"	F07	70	73.0	76.2	229	155	42.0	83.5	262	49.5	72	12.0	27.5	3/4-10	1200
100	4"	F10	102	97.4	101.6	241	180	49.5	110.5	290	72.1	95	16.0	35.5	1-8	1560

#### M3HSL 3 Piece Ball Valve Mounting Pad ISO5211 Long Weld End



SIZE		ISO-5211	ØA ±0.2	ØB	L±1.0	H±3.0	H1	H2	E±3.0	G	I	M	N	P	TURTEQ INCH/LBS	
MM	INCH															
15	1/2"	F03	36	9.5	12.7	137.0	63	18.0	29.0	140	25.5	37	5.0	13.0	M8x1.25	110
20	3/4"	F03	36	15.9	19.1	147.0	66	19.0	33.0	140	25.5	37	5.0	13.0	M8x1.25	130
25	1"	F04	42	22.2	25.4	168.0	71	19.5	37.5	140	29.7	42	6.5	14.0	7/16-14	170
40	1-1/2"	F05	50	35.0	38.1	186.0	93	27.5	48.5	195	35.4	50	8.5	17.5	M12x1.75	290
50	2"	F05	50	47.6	50.8	223.0	100	25.5	58.5	195	35.4	50	8.5	17.5	M12x1.75	480
65	2-1/2"	F07	70	60.2	63.5	250.0	140	37.0	79.5	262	49.5	72	12.0	27.5	3/4-10	700
80	3"	F07	70	73.0	76.2	302.0	155	42.0	83.5	262	49.5	72	12.0	27.5	3/4-10	1200
100	4"	F10	102	97.4	101.6	317.5	180	49.5	110.5	290	72.1	95	16.0	35.5	1-8	1560



### 3 Piece Ball Valve Direct Mount ISO 5211

**Features:**

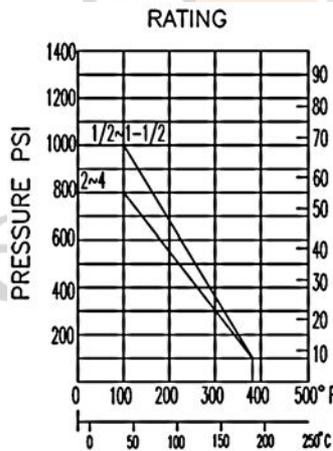
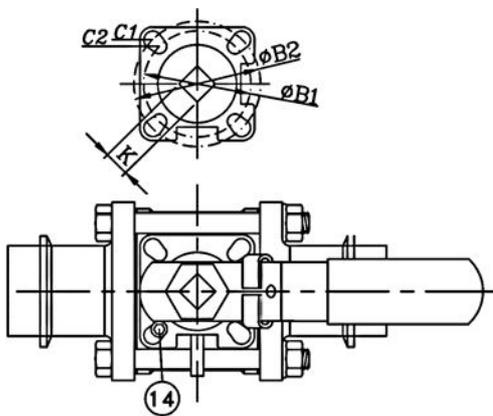
1. Connection type: Clamp end and Weld end
2. Investment casting
3. For food and general chemical service application
4. Working Pressure: 1/2" ~ 1-1/2" 1000PSI, 2" ~ 4" 800PSI
5. 100% air tested under water at 100PSI, open and closed positions.
6. Hydrostatic test pressure:  
Body: W.P. 1000PSI  
Tube end: W.P. 200PSI
7. Teflon encapsulated seats maintain sanitary environment.
8. Blow-out proof stem design.
9. Inside Polished  $\leq Ra0.4$



**Options:**

1. Locking device is available if requested.
2. Cavity filled and non-cavity filled available.

**Pressure-Temperature**

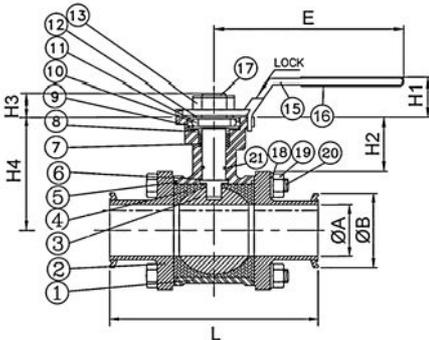


**Material List**

NO.	PART NAME	MATERIAL
1	BODY	ASTM CF8/CF8M/CF3M
2	CAP	ASTM CF8/CF8M/CF3M
3	BALL	ASTM CF8/CF8M/CF3M
4	SEAT	PTFE/TFM1600/25% CARBON
5	GASKET	PTFE/TFM1600/25% CARBON
6	THRUST PACKING	PTFE/TFM1600/25% CARBON
7	STEM PACKING	PTFE/TFM1600/25% CARBON
8	RING	AISI304
9	BELLEVILLE WASHER	AISI304
10	STEM NUT	AISI304
11	LOCK WASHER	AISI304
12	RING	AISI304
13	HANDLE NUT	AISI304
14	STOP PIN	AISI304
15	HANDLE	AISI304
16	HANDLE SLEEVE	PLASTIC
17	STEM	AISI316
18	SPRING WASHER	AISI304
19	BOLT NUT	AISI304
20	BOLT	AISI304
21	O-RING	VITON

**M3HDC 3 Piece Ball Valve Direct Mount Clamp End**

Dimension (mm)

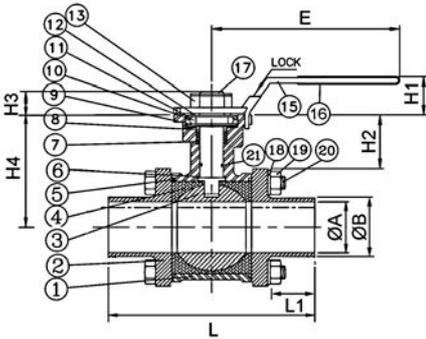


SIZE	ISO-5211	ØA ±0.2	ØB	L±1.0	H1	H2	H3±1.5	H4	E	ØB1	ØB2	C1	C2	K	TURTEQ INCH/LBS	
15	1/2"	F03-F04	9.5	25.4	89	26	15.5	9	37.0	143	36	42	6	6	9	90
20	3/4"	F03-F04	15.9	25.4	101	26	20.6	9	47.0	143	36	42	6	6	9	100
25	1"	F04-F05	22.2	50.4	114	34	29.0	11	57.2	160	42	50	6	8	11	160
32	1-1/4"	F04-F05	28.5	50.4	124	34	29.0	11	62.5	160	42	50	6	8	11	295
40	1-1/2"	F05-F07	35.0	50.4	140	43	39.0	14	78.2	187	50	70	8	10	14	240
50	2"	F05-F07	47.6	63.8	156	43	42.0	14	86.2	187	50	70	8	10	14	450
65	2-1/2"	F07-F10	60.2	77.6	197	53	48.0	17	109.2	265	70	102	10	12	17	600
80	3"	F07-F10	73.0	91.0	229	53	48.7	17	116.2	265	70	102	10	12	17	1050
100	4"	F10-F12	97.4	119.0	241	56	34.0	22	133.5	393	102	125	12	14	22	1300

### 3 Piece Ball Valve Direct Mount ISO 5211

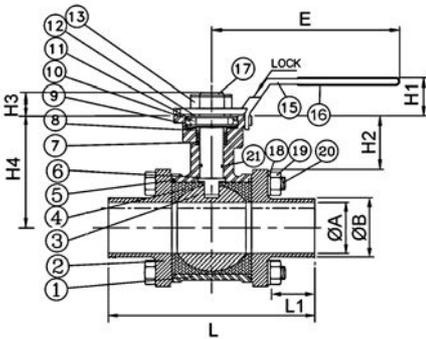
Dimension (mm)

#### M3HDB 3 Piece Ball Valve Direct Mount Butt Weld End



SIZE MM	INCH	ISO-5211	ØA ±0.2	ØB	L±1.0	L1	H1	H2	H3±1.5	H4	E	ØB1	ØB2	C1	C2	K	TURTEQ INCH/LBS
15	1/2"	F03-F04	9.5	12.7	89	18	26	15.5	9	37.0	143	36	42	6	6	9	90
20	3/4"	F03-F04	15.9	19.1	101	21	26	20.6	9	47.0	143	36	42	6	6	9	100
25	1"	F04-F05	22.2	25.4	114	25	34	29.0	11	57.2	160	42	50	6	8	11	160
32	1-1/4"	F04-F05	28.5	31.8	124	27	34	29.0	11	62.5	160	42	50	6	8	11	295
40	1-1/2"	F05-F07	35.0	38.1	140	28	43	39.0	14	78.2	187	50	70	8	10	14	240
50	2"	F05-F07	47.6	50.8	156	25	43	42.0	14	86.2	187	50	70	8	10	14	450
65	2-1/2"	F07-F10	60.2	63.5	197	35	53	48.0	17	109.2	265	70	102	10	12	17	600
80	3"	F07-F10	73.0	76.2	229	43	53	48.7	17	116.2	265	70	102	10	12	17	1050
100	4"	F10-F12	97.4	101.6	241	37	56	34.0	22	133.5	393	102	125	12	14	22	1300

#### M3HDL 3 Piece Ball Valve Direct Mount Long Butt Weld End



SIZE MM	INCH	ISO-5211	ØA ±0.2	ØB	L±1.0	L1	H1	H2	H3±1.5	H4	E	ØB1	ØB2	C1	C2	K	TURTEQ INCH/LBS
15	1/2"	F03-F04	9.5	12.7	137.0	42.0	26	15.5	9	37.0	143	36	42	6	6	9	90
20	3/4"	F03-F04	15.9	19.1	147.0	44.0	26	20.6	9	47.0	143	36	42	6	6	9	100
25	1"	F04-F05	22.2	25.4	168.0	52.0	34	29.0	11	57.2	160	42	50	6	8	11	160
40	1-1/2"	F05-F07	35.0	38.1	186.0	51.0	43	39.0	14	78.2	187	50	70	8	10	14	240
50	2"	F05-F07	47.6	50.8	223.0	58.5	43	42.0	14	86.2	187	50	70	8	10	14	450
65	2-1/2"	F07-F10	60.2	63.5	250.4	61.0	53	48.0	17	109.2	265	70	102	10	12	17	600
80	3"	F07-F10	73.0	76.2	302.0	79.0	53	48.7	17	116.2	265	70	102	10	12	17	1050
100	4"	F10-F12	97.4	101.6	317.5	75.0	56	34.0	22	133.5	393	102	125	12	14	22	1300

### 3-Way Ball Valve Direct Mount ISO5211

**Features:**

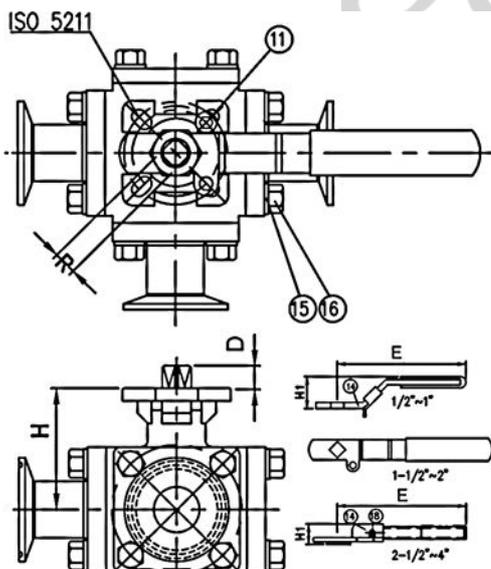
1. Connection type: Clamp end and Weld end
2. Investment casting body and cap
3. For food and general chemical service application
4. Working Pressure: 1/2" ~ 2" 1000PSI, 2-1/2" ~ 4" 800PSI
5. 100% air tested under water at 100PSI, open and closed positions. Hydrostatic test pressure:  
Body: W.P. 1000PSI  
Tube end: W.P. 200PSI
7. Teflon encapsulated seats maintain sanitary environment.
8. Blow-out proof stem and solid ball design.
9. Inside Polished  $\leq$  Ra0.4



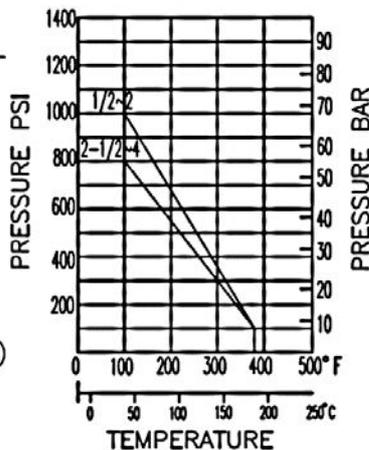
**Options:**

1. Locking device is available if requested.
2. Cavity filled and non-cavity filled available.
3. T-Port and L-Port for choice.

TURN PORT	0°	90°	180°	270°
L				
T				



Pressure-Temperature RATING



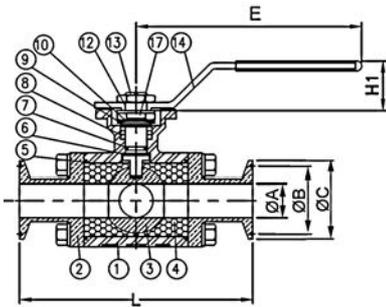
**Material List**

NO.	PART NAME	MATERIAL
1	BODY	A351 CF8M/CF3M
2	CAP	A351 CF8M/CF3M
3	BALL	A351 CF8M/CF3M
4	SEAT	PTFE/TFM-1600
5	GASKET	PTFE/TFM-1600
6	THRUST WASHER	PTFE/TFM-1600
7	O-RING	VITON
8	STEM PACKING	PTFE/TFM-1600
9	RING	AISI304
10	BEVEL WASHER	AISI304
11	STOP PIN	AISI304/
12	NUT	AISI304
13	STEM	AISI316/316L
14	HANDLE	AISI304
15	SPRING WASHER	AISI304
16	BOLT	AISI304
17	PREVALING DEVICE	AISI304
18	NUT	AISI304

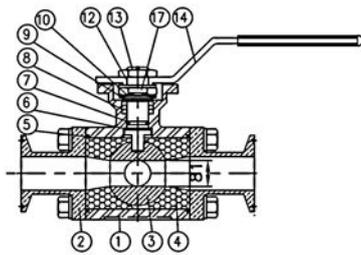
### 3-Way Ball Valve Direct Mount ISO5211

Dimension (mm)

#### 3W-40HC 3-Way Ball Valve Direct Mount Clamp End



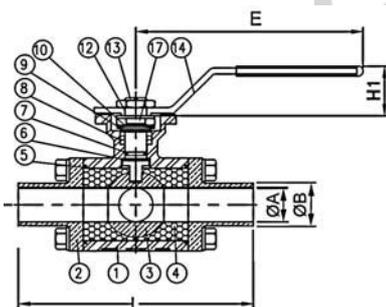
SIZE: 1/2"~3"



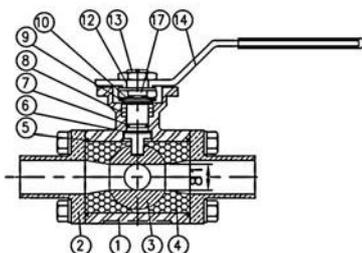
SIZE: 4"

SIZE		ISO-5211	ØA	ØB	ØC	L	D	H	H1	E	R	TURTEQ
MM	INCH											
15	1/2"	F03-F04	9.5	21.9	25.4	118.0	9	44.5	26	143	9	79
20	3/4"	F03-F04	15.8	21.9	25.4	127.0	9	48.0	26	143	9	85
25	1"	F04-F05	22.2	43.5	50.4	152.4	11	59.0	32	160	11	110
40	1-1/2"	F05-F07	35.0	43.5	50.4	175.0	14	72.0	42	215	14	290
50	2"	F05-F07	47.6	56.5	63.9	190.0	14	82.0	42	215	14	680
65	2-1/2"	F07-F10	60.2	70.5	77.5	228.0	17	100.0	37	400	17	1060
80	3"	F10-F12	73.0	83.5	90.9	260.0	23	125.5	37	400	22	1770
100	4"	F10-F12	97.4	110.0	118.9	289.0	23	132.5	37	400	22	1900

#### 3W-40HB 3-Way Ball Valve Direct Mount Weld End



SIZE: 1/2"~3"



SIZE: 4"

SIZE		ISO-5211	ØA	ØB	L±1.0	D	H	H1	E	R	TURTEQ
MM	INCH										
15	1/2"	F03-F04	9.5	12.7	117.0	9	44.5	26	143	9	79
20	3/4"	F03-F04	15.8	19.1	125.0	9	48.0	26	143	9	85
25	1"	F04-F05	22.2	25.4	152.4	11	59.0	32	160	11	110
40	1-1/2"	F05-F07	35.0	38.1	175.0	14	72.0	42	215	14	290
50	2"	F05-F07	47.6	50.8	190.0	14	82.0	42	215	14	680
65	2-1/2"	F07-F10	60.2	63.5	228.0	17	100.0	37	400	17	1060
80	3"	F10-F12	73.0	76.2	260.0	23	125.5	37	400	22	1770
100	4"	F10-F12	97.4	101.6	289.0	23	132.5	37	400	22	1900

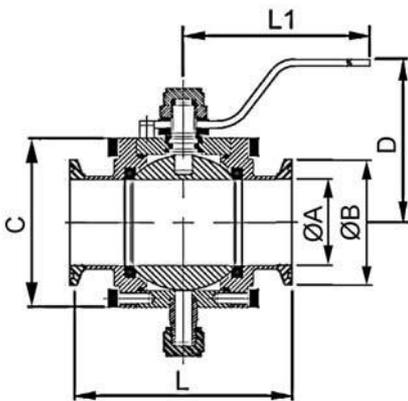
## High Purity Ball Valve

### Features:

1. Blow-out proof stem / solid ball.
2. Investment cast stainless steel CF8M or CF3M.
3. Ball and end polished rate 20RA.
4. Size: 1" ~ 3"

### Options:

1. Full cavity filled PTFE seats or Half cavity seat.
2. Locking device available



Dimension (mm)

SIZE	ØA	ØB	L	L1	C	D
1"	22.2	50.4	95.3	163.5	58.7	60.3
1-1/2"	35.0	50.4	108.0	163.5	77.8	71.4
2"	47.6	63.9	119.0	163.5	93.7	79.4
2-1/2"	60.2	77.5	135.0	163.5	106.4	85.7
3"	73.0	90.9	165.1	163.5	125.4	95.3

# Delta INC

## Butterfly Valve

### Features:

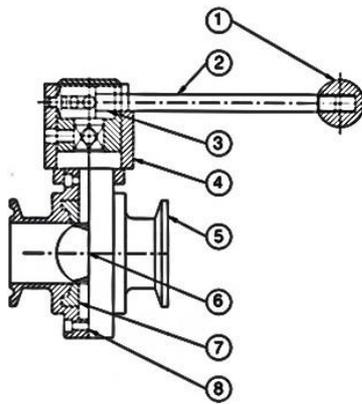
1. Connection : clamp, butt-weld, male part, union type
2. Working Pressure : 1" ~ 4" 145PSI at 68°F
3. Temperature Range : -15°F to 200°F (-10°C to 95°C)

### Options:

1. 4 position pull type handle,
2. 12 position gripper type handle
3. Actuator : 5.5 Bar air to spring, full open and close

### Materials:

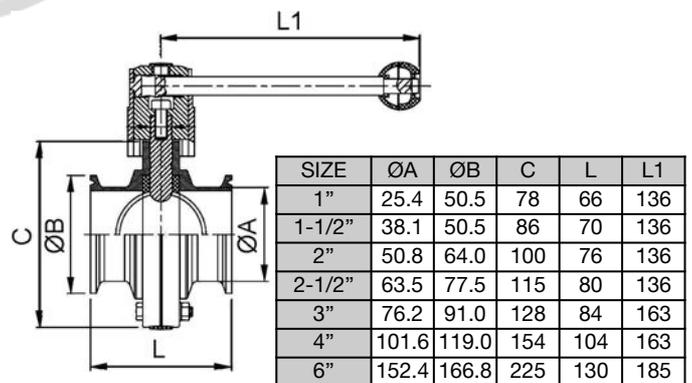
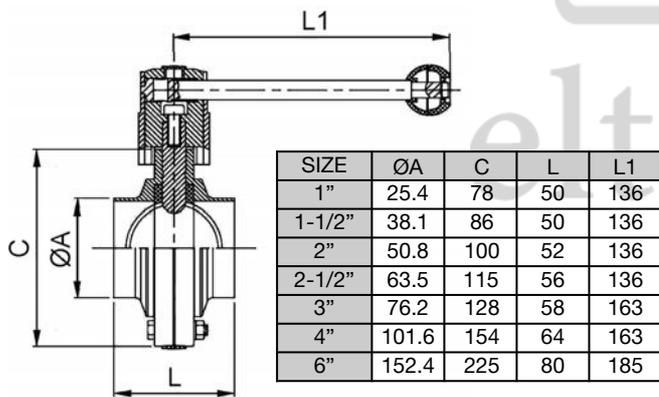
- ① KNOB: Plastic
- ② Shaft Bar: SS304
- ③ Spring: SS304
- ④ Holder: SS304
- ⑤ Body: SS304, 316, 316L available
- ⑥ Disc: SS304, 316, 316L available
- ⑦ Gasket: Silicon, EPDM available
- ⑧ Bolt: SS304



Dimension (mm)

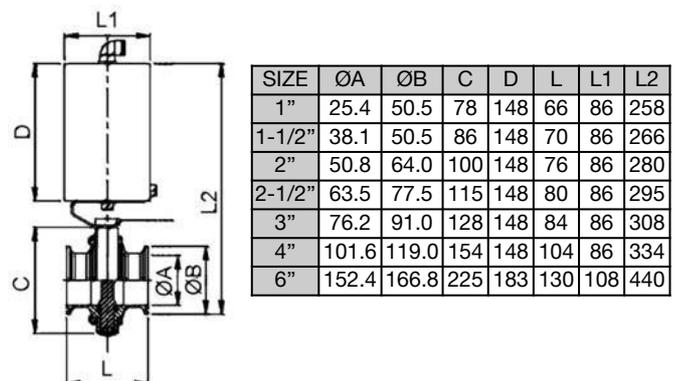
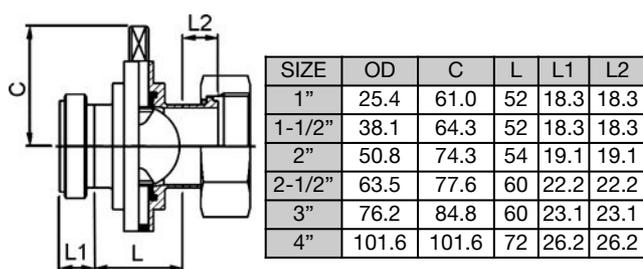
### BFYW Butterfly Valve Weld End

### BFYC Butterfly Valve Clamp End



### BFYU Butterfly Valve Union type

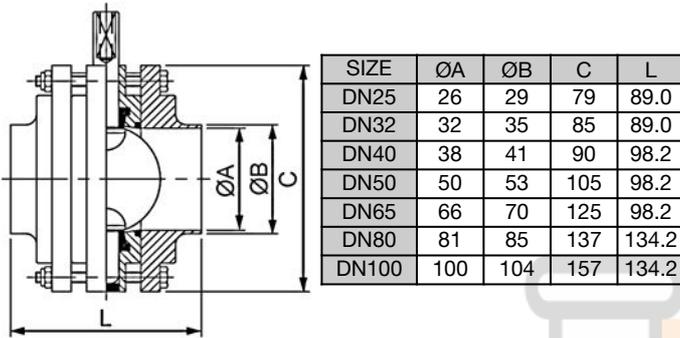
### BFYC-A Actuator Butterfly Valve Clamp End



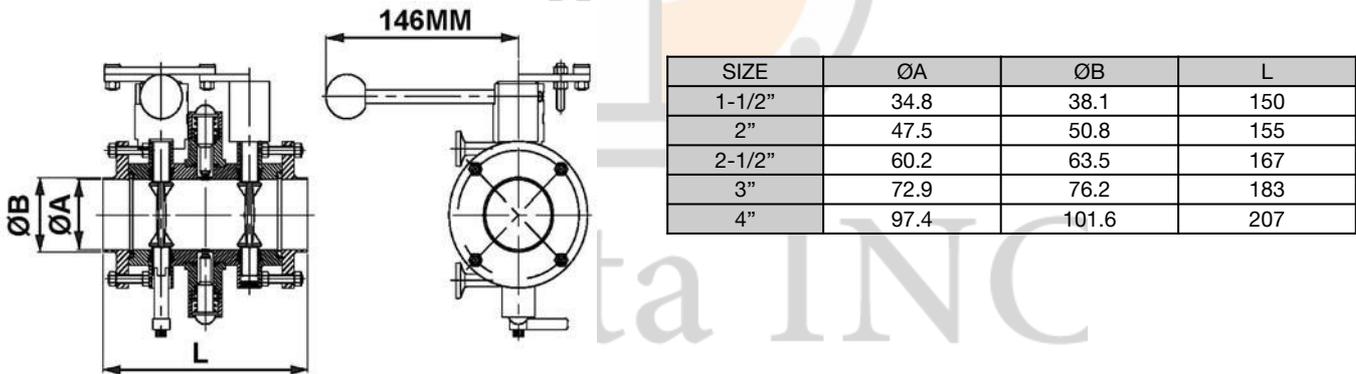
## Butterfly Valve

Dimension (mm)

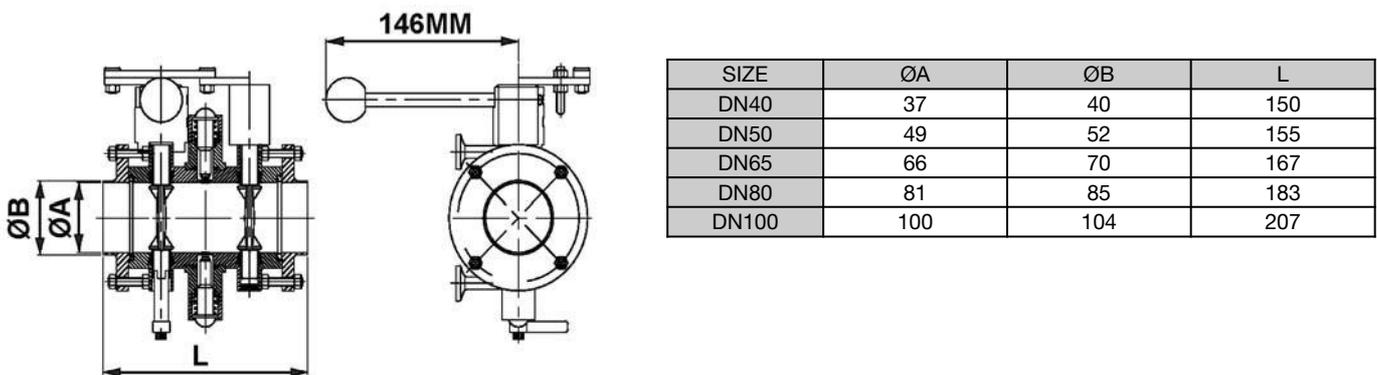
### BFYW3-D DIN 3PC Butterfly Valve Weld End G Type



### BFYWP Mix-Proof Butterfly Valve Weld End



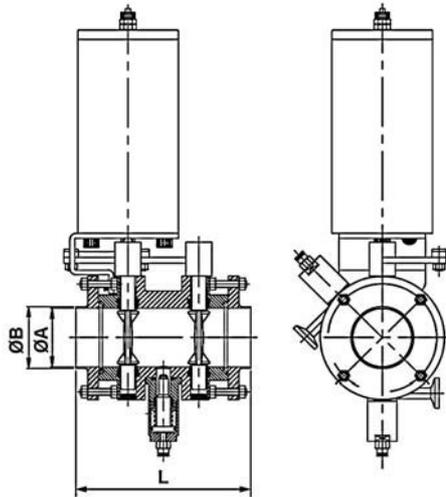
### BFYWP-D DIN Mix-Proof Butterfly Valve Weld End



## Butterfly Valve

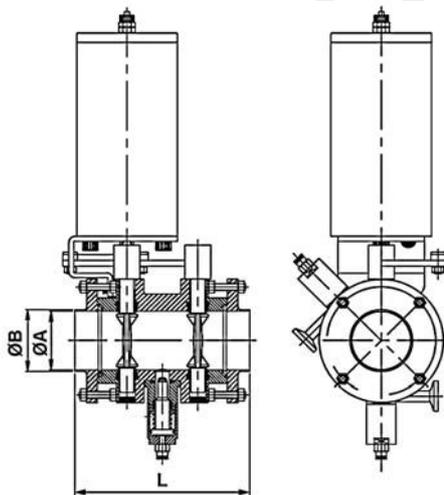
Dimension (mm)

### BFYWP-A Actuator Mix-Proof Butterfly Valve Weld End



SIZE	ØA	ØB	L
1-1/2"	34.8	38.1	143
2"	47.5	50.8	148
2-1/2"	60.2	63.5	160
3"	72.9	76.2	176
4"	97.4	101.6	200

### BFYWP-AD Actuator DIN Mix-Proof Butterfly Valve Weld End



SIZE	ØA	ØB	L
DN40	37	40	143
DN50	49	52	148
DN65	66	70	160
DN80	81	85	176
DN100	100	104	200



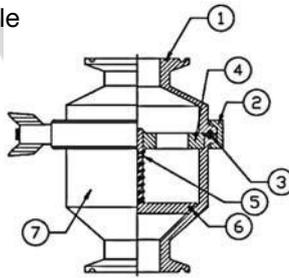
## Check Valve

**Features:**

1. Connection: clamp, butt-weld, union type
2. Working Pressure: 0.6 bar ~ 10 bar
3. Temperature Range: -20°C ~ 120°C.
4. Fully precision machined and polished.
5. Angle design to keep low friction and easy for open & close.
6. Middle with clamp or flange design for easy maintenance and clean.
7. Fit for Food, Pharmaceutical and I.C industry.

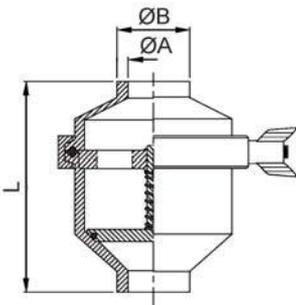
**Materials:**

- ① Outlet: SUS304, SUS316, SUS316L available
- ② Clamp: SUS304
- ③ Gasket: Viton, EPDM, Silicon available
- ④ Plate: SUS304, 316, 316L available
- ⑤ Spring: SUS304, 316 available
- ⑥ Seal: Viton, EPDM, Silicon available
- ⑦ Inlet: SUS304, SUS316, SUS316L available



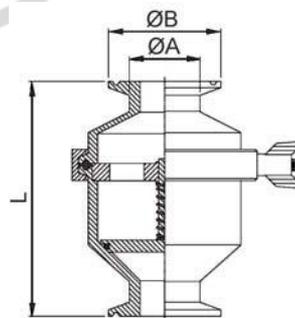
Dimension (mm)

**NRVW Check Valve Weld End**



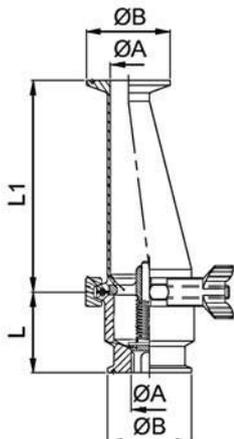
SIZE	ØA	ØB	L
1"	22.1	25.4	77.5
1-1/2"	34.8	38.1	80.5
2"	47.5	50.8	85.5
2-1/2"	60.2	63.5	96.5
3"	72.9	76.2	104.5
4"	97.4	101.6	104.5

**NRVC Check Valve Clamp End**



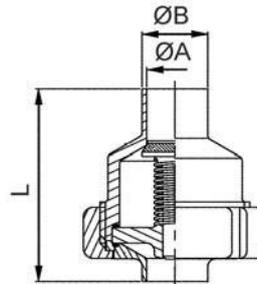
SIZE	ØA	ØB	L
1"	25.4	50.5	87.5
1-1/2"	38.1	50.5	95.5
2"	50.8	64.0	104.5
2-1/2"	63.5	77.5	116.2
3"	76.2	91.0	123.5
4"	101.6	119.0	123.5

**NRVE Eccentric Check Valve Clamp End**



SIZE	ØA	ØB	L	L1
1"	22.1	50.5	48	127.3
1-1/2"	34.8	50.5	48	127.3
2"	47.5	64.0	48	127.3
2-1/2"	60.2	77.5	48	127.3

**NRVU Check Valve Weld End Union Type**



SIZE	ØA	ØB	L
1"	22.1	25.4	75
1-1/2"	34.8	38.1	76
2"	47.5	50.8	76
2-1/2"	60.2	63.5	78
3"	72.9	76.2	78
4"	97.6	101.6	80

## 2 Way and 3 Way Plug Valve

**Features:**

1. Connection : clamp, butt-weld, male end
2. Max working pressure: 3 bar ~ 10 bar
3. Temperature: below 100°F
4. Plugs are available in rubber or stainless steel
5. For use with non-hazardous products

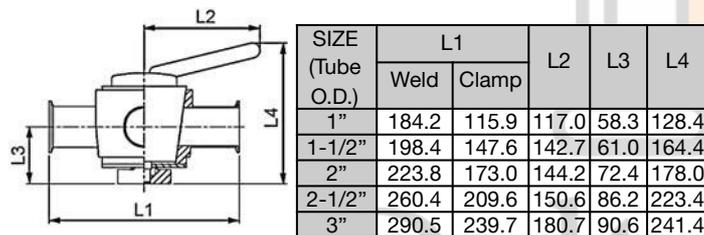
**Materials:**

SUS304 / SUS316L with hard/thick chrome coating

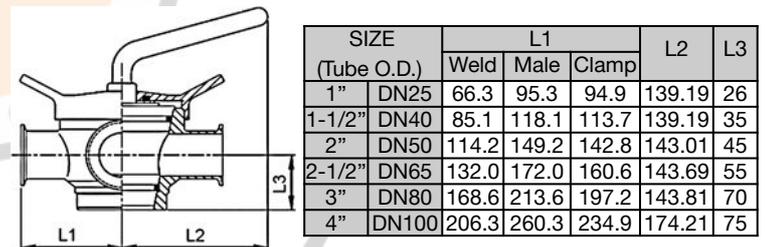


Dimension (mm)

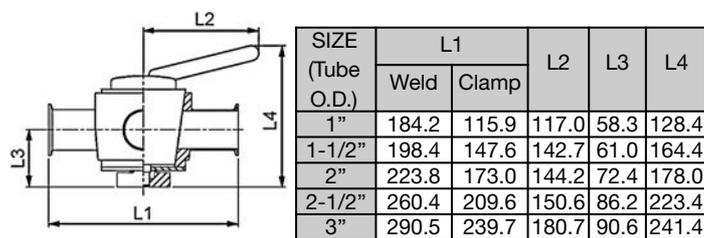
**2WPA 2-Way Plug Valve**



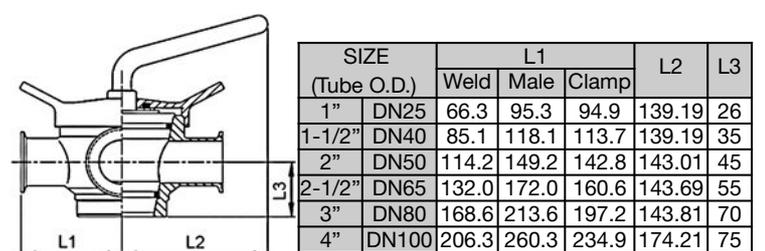
**2WPE 2-Way Plug Valve**



**3WPA 3-Way Plug Valve**



**3WPE 3-Way Plug Valve**



## Divert Valve Manual

**Features:**

1. Max. production pressure: 1000kpa (10 bar)
2. Temperature: -10°C to 140°C (EPDM)
3. Surface finish: Mirror, Satin, Sand Blast
4. To be equipped with a rapid pitch screw with protection against unscrewing

**Materials:**

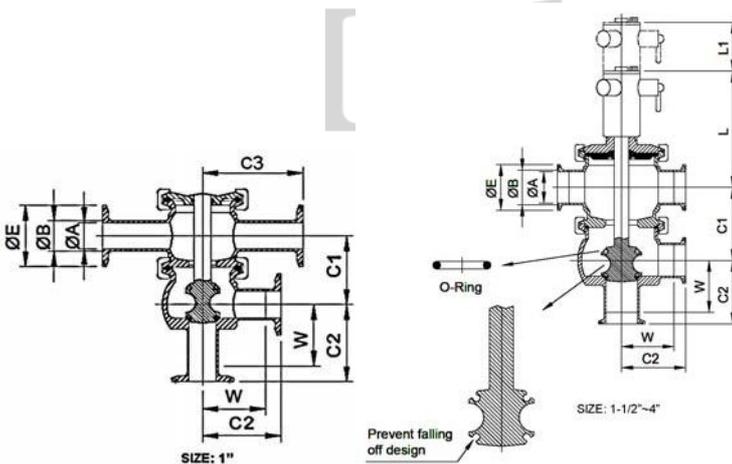
1. Flow area: AISI 316L
2. Other steel parts: AISI 304
3. Plug stem: AISI 316L with chrome plated surface
4. Seal for flow area: EPDM / NBR / FKM / PTFE
5. Other seals: NBR and FPM



**Flow types:**

L	T	Y	F
			
L/L	T/L	L/T	T/T
			

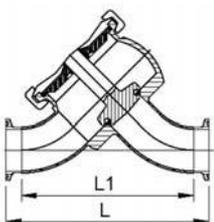
**STL Manual Divert Valve T/L-Type**



Dimension (mm)

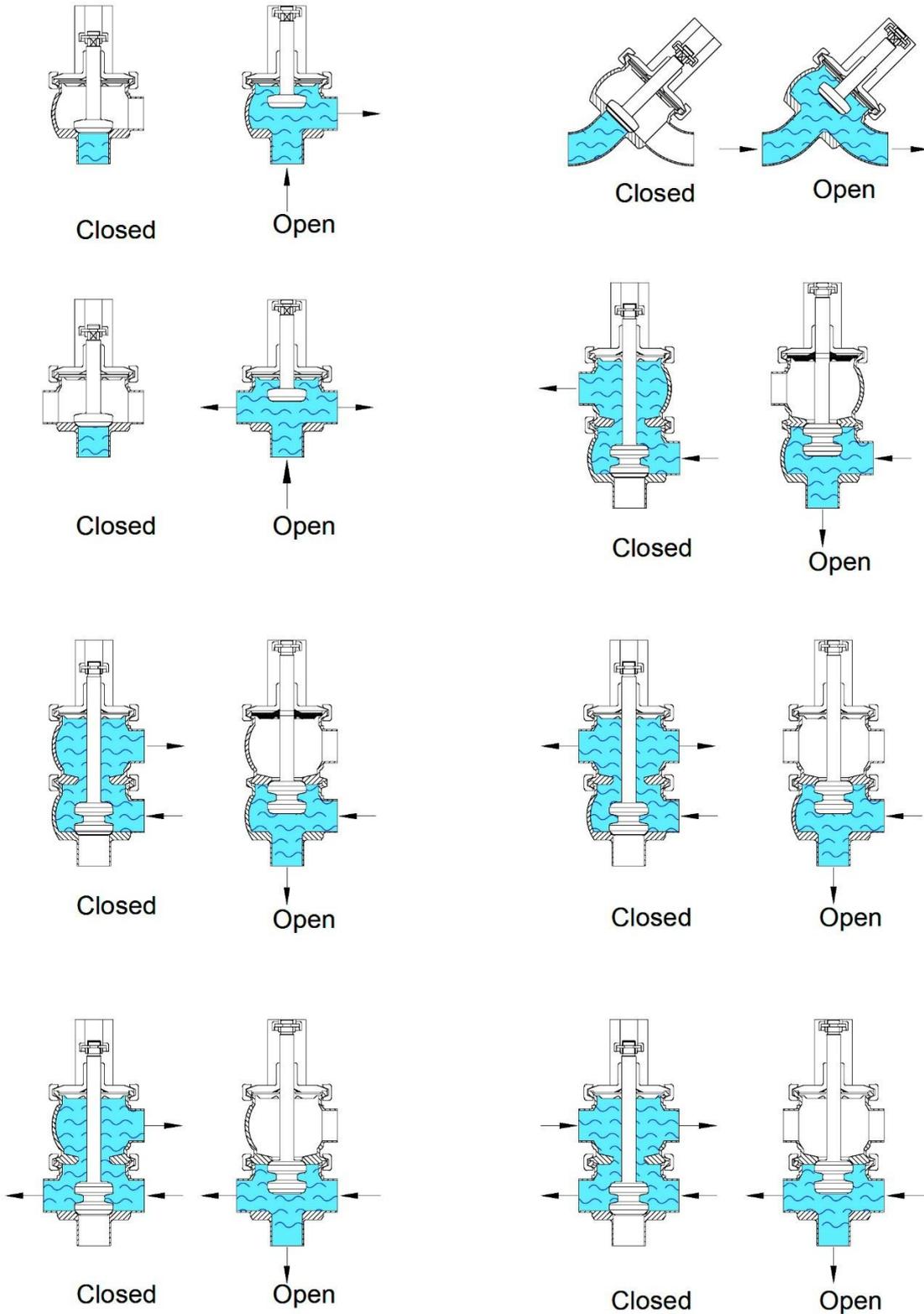
SIZE	ØA	ØB	ØE	C1	C2	C3	W	L	L1
1"	22.1	25.4	50.5	56.7	63.5	81.4	50.8	101	17
1-1/2"	34.8	38.1	50.5	80.0	69.9	-	57.2	126	25
2"	47.5	50.8	64.0	92.4	88.9	-	76.2	135	25
2-1/2"	60.2	63.5	77.5	120.0	88.9	-	76.2	167	32
3"	72.9	76.2	91.0	128.0	95.3	-	82.6	170	36
4"	97.4	101.6	119.0	150.8	114.3	-	98.5		38

**SY Manual Divert Valve Y-Type**



SIZE	L1	L
1"	96.1	121.5
1-1/2"	142.3	167.7
2"	168.6	194
2-1/2"	211.6	237
3"	244.7	270.1
4"	303.1	334.7

### Configuration and Flow Direction



## Divert Valve Auto Control

**Features::**

1. Max. production pressure: 10 bar
2. Temperature: -10°C to 140°C (EPDM)
3. Air pressure: 5 bar to 7 bar
4. Compressed air: R1/8" (BSP), internal thread

**Materials:**

1. All parts connected with fluid: AISI 316/316L
2. Other metal parts: 304
3. Seal: EPDM / Silicone / Viton (FKM) / PTFE



Flow types:	T	Y	F	L/L	T/L	L/T	T/T
							

**Opening/Closing Time:**

1. The air supply (air pressure)
2. The length and dimensions of the air hose
3. Number of valves connected to same air hose
4. Use of single solenoid valve for serial connection
5. Product pressure

**Operation Instruction:**

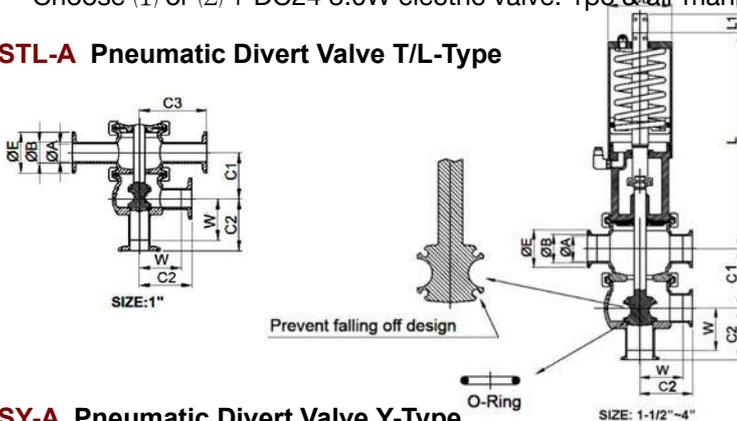
Air/Spring (simple effect) or Air/Air (double effect) for auto control can use automatic control box to get signal transfer and complete individual valve control

-Signal transfer: (1) with 10 VDC ~ 30 VDC proximity switch connection: 1 or 2pcs (PNP or NPN)  
 (2) or 3A 125 VAC, 30 VDC micro switch connection: 1 or 2pcs

-Complete individual valve control:

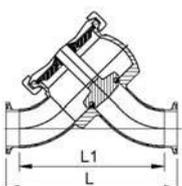
Choose (1) or (2) + DC24 3.0W electric valve: 1pc & air manifold for complete control box

**STL-A Pneumatic Divert Valve T/L-Type**



Size	ØA	ØB	ØE	ØD	C1	C2	C3	W	L	L1
1"	22.1	25.4	50.5	60	56.7	63.5	81.4	50.8	153.6	17
1-1/2"	34.8	38.1	50.5	85	80.0	69.9	-	57.2	290.0	25
2"	47.5	50.8	64.0	85	92.4	88.9	-	76.2	296.3	25
2-1/2"	60.2	63.5	77.5	133	120.0	88.9	-	76.2	365.8	32
3"	72.9	76.2	94.0	133	128.0	95.3	-	82.6	368.9	36
4"	97.4	101.6	119.0	133	150.8	114.3	-	98.5	645.7	38

**SY-A Pneumatic Divert Valve Y-Type**



SIZE	L1	L
1"	96.1	121.5
1-1/2"	142.3	167.7
2"	168.6	194
2-1/2"	211.6	237
3"	244.7	270.1
4"	303.1	334.7

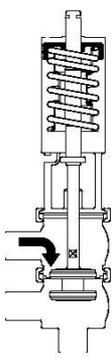
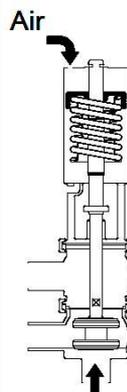
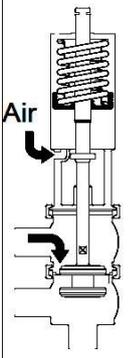
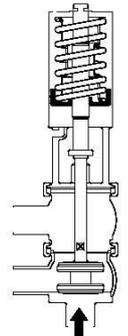
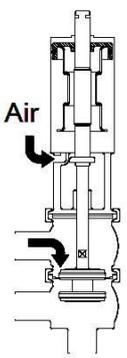
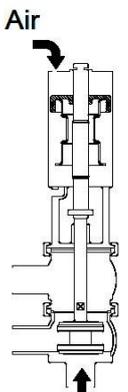
**Operation Instructions:**

Max. flow tube pressure without leakage of valve seat.

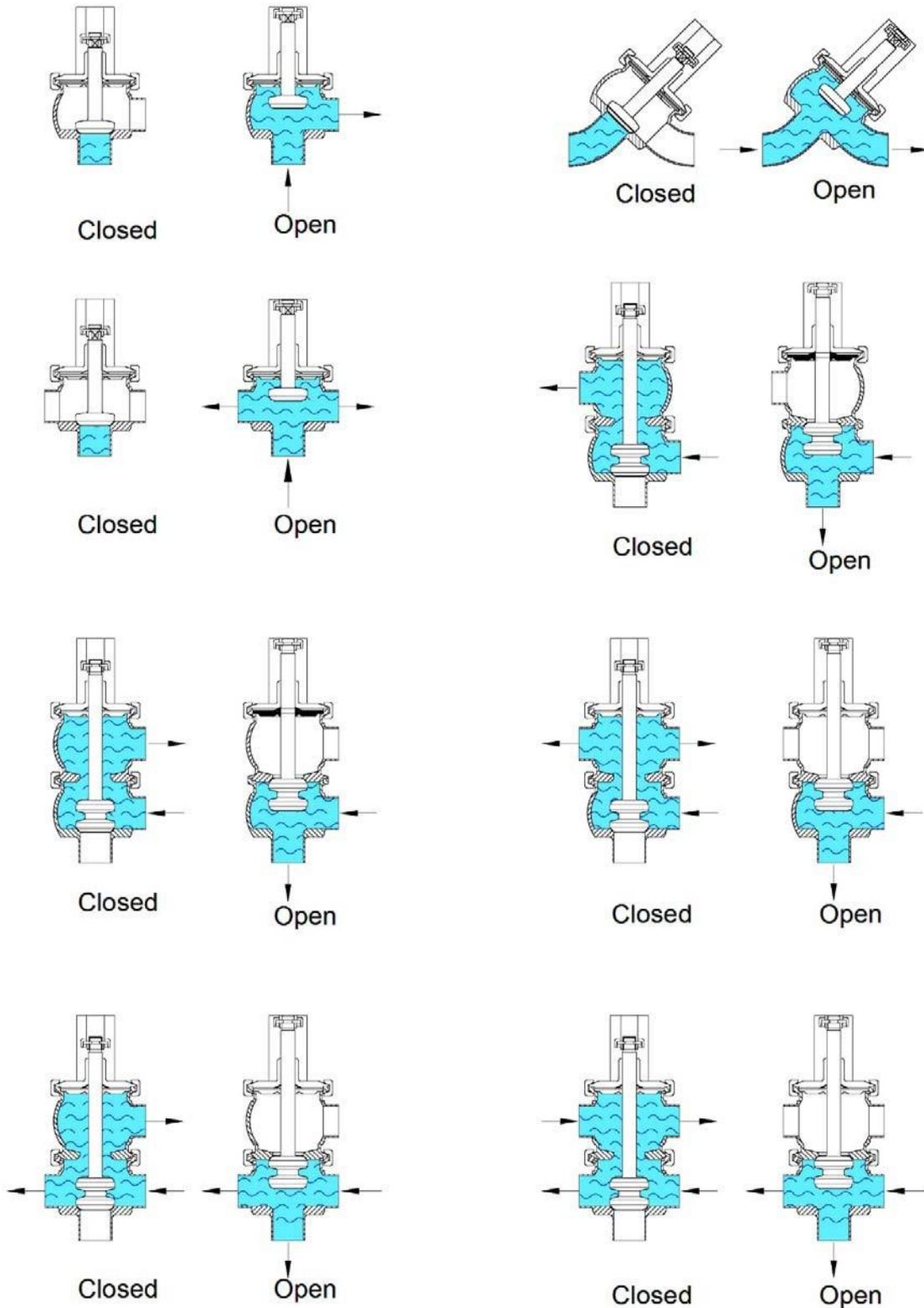
If over table Max. Pressure, adding proof mix. valve is suggested.

Actuator type / function:

- (10) SA. Pneumatic downward movement, spring return (NO-lower seat)
- (20) AS. Pneumatic upward movement, spring return (NC-lower seat)
- (30) AA. Pneumatic upward and downward movement (A/A)

<p>NO : Normal open NC : Normal close A/A : Air/Air doubt action</p> <p>Stop and change-over valves- Max. pressure without leakage at the valve seat</p> <p>○ = Max. air input pressure is 8 bar ➔ = Tube-Line flow pressues</p> <p>Actuator/Valve body combination and direction of pressure</p>													
		Spring closes	Air closes	Air closes	Spring closes	Air closes	Air closes						
Air pressure (bar)			5	8	5		5	8	5	8			
Actuator Type/Function		10 (NO)	10	(NO)	20 (NC)	20 (NC)	30	30	30	30			
Valve size (Max. Pressure)	DN25 ( 1.0")	9.5	10	10	9.5	10	10	10	10	10	10	10	10
	DN38 ( 1.5")	4.5	7.0	10	4.5	7.0	9.0	10	10	10	10	10	10
	DN51 ( 2.0")	4.5	4.0	5.0	4.5	5.0	9.0	10	9.0	10	9.0	10	10
	DN63.5 ( 2.5")	3.0	3.0	4.0	3.0	7.0	8.0	9.0	6.0	7.0	6.0	7.0	7.0
	DN76 ( 3.0")	5.0	4.0	6.0	4.5	6.0	10	10	10	10	10	10	10

### Configuration and Flow Direction



## Diaphragm Valve

### Features:

1. Control mode: pneumatic type and manual Type
2. Connection type: clamp, weld or other.
3. Type: 2-way, 3-way (T-type and U-type)
4. Operation: Normal Open & Normal Close design
5. Working temperature: Assembling Diaphragm:  
EPDM (-40°C ~ 110°C),  
PTFE / EPDM (-10°C ~ 150°C)
6. Working pressure: Max 10 Bar
7. Surface: ID/OD Mirror Polished  
ID Ra  $\leq$  0.5 $\mu$ m, OD Sand Blasted

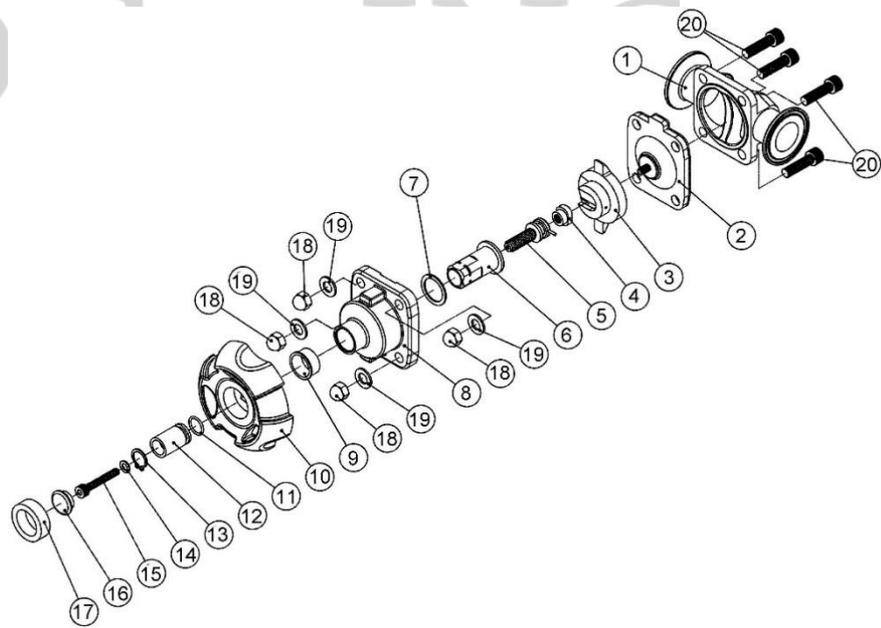
### Materials:

Body: Forged / 316L Diaphragm: EPDM  
+ PTFE / NC or NO

The seal of Diaphragm is exchangeable with GEMU

### Parts List:

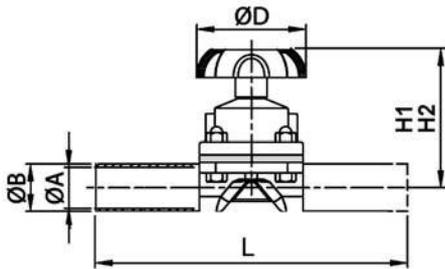
- ① Body: SUS316L
- ② Seal: EPDM + PTFE
- ③ Seat: SUS304
- ④ Screw: SUS304
- ⑤ Bolt: SUS304
- ⑥ Bolt Sleeve: SUS304
- ⑦ Seal: PTFE
- ⑧ Bonnet: SUS304
- ⑨ Sleeve: PEEK
- ⑩ Handle wheel: EPDM + PTFE
- ⑪ O-ring: NBR
- ⑫ Positioning Index: MC (Blue)
- ⑬ Circlip: SUS304
- ⑭ Washer: SUS304
- ⑮ Screw: SUS304
- ⑯ Cover: MC (Blue)
- ⑰ Cap: EPDM + PTFE
- ⑱ Nut: SUS304
- ⑲ Washer: SUS304
- ⑳ Screw: SUS304



## Manual Diaphragm Valve

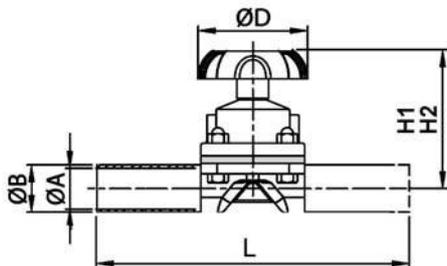
Dimension (mm)

### 2DW Manual 316L 3A 2-Way Diaphragm Valve Weld End



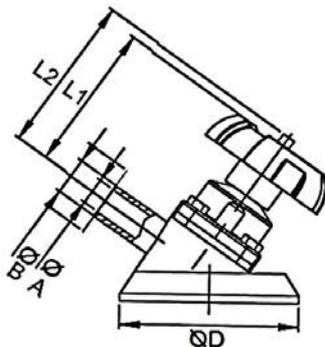
SIZE	ØA	ØB	ØD	L	H1	H2
1/2"	9.4	12.7	60	124.0	74	83
3/4"	15.75	19.05	60	135.0	74	83
1"	22.1	25.4	95	141.2	100	113
1-1/2"	34.8	38.1	95	168.4	119	134
2"	47.5	50.8	118	190.5	135	153

### 2DW-D Manual 316L DIN 2-Way Diaphragm Valve Weld End



SIZE	ØA	ØB	ØD	L	H1	H2
DN10	10	13	-	124.0	74	83
DN20	20	23	60	135.0	100	113
DN25	26	29	60	141.2	100	113
DN32	32	35	95	168.4	119	134
DN40	38	41	95	168.4	119	134
DN50	50	53	118	190.5	135	153

### DTBW Manual 316L Diaphragm Tank Bottom Valve Weld End

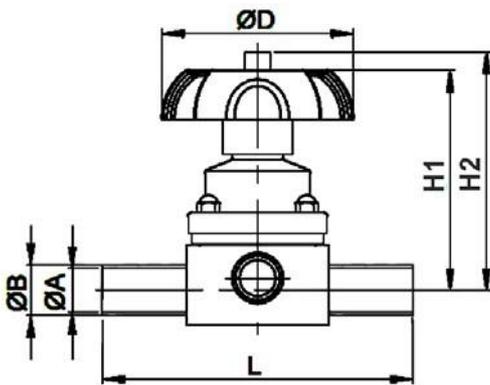


SIZE	ØA	ØB	ØD	L1	L2
1/2"	9.4	12.7	100	74	83
3/4"	15.75	19.05	100	74	83
1"	22.1	25.4	120	100	113
1-1/2"	34.8	38.1	160	119	134
2"	47.5	50.8	160	135	153

## Manual Diaphragm Valve

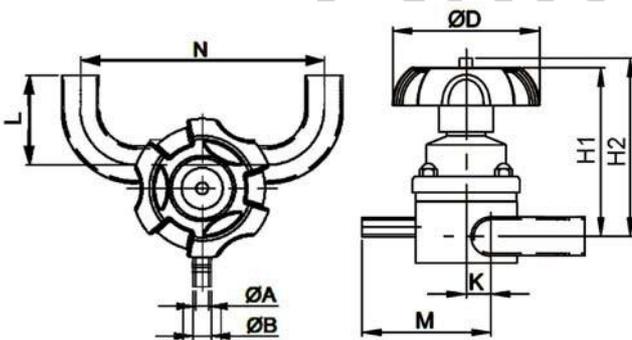
Dimension (mm)

### 3DTW Manual 316L 3-Way Diaphragm Valve T-type Weld End



SIZE	ØA	ØB	ØD	L	H1	H2
1/2"	9.4	12.7	60	139.7	74	83
3/4"x1/2"	15.75	19.05	60	139.7	74	83
3/4"	15.75	19.05	60	139.7	74	83
1"x1/2"	22.1	25.4	60	154.0	74	83
1"x3/4"	22.1	25.4	60	153.6	74	83
1"	22.1	25.4	95	172.6	100	113
1-1/2"x1/2"	34.8	38.1	60	153.6	74	83
1-1/2"x3/4"	34.8	38.1	60	153.6	74	83
1-1/2"x1"	34.8	38.1	95	172.6	100	113
1-1/2"	34.8	38.1	95	197.6	119	134
2"x1/2"	47.5	50.8	60	153.6	74	83
2"x3/4"	47.5	50.8	60	153.6	74	83
2"x1"	47.5	50.8	95	172.6	100	113
2"x1-1/2"	47.5	50.8	95	197.6	119	134
2"	47.5	50.8	118	211.6	135	153

### 3DUW Manual 316L 3-Way Diaphragm Valve U-type Weld End

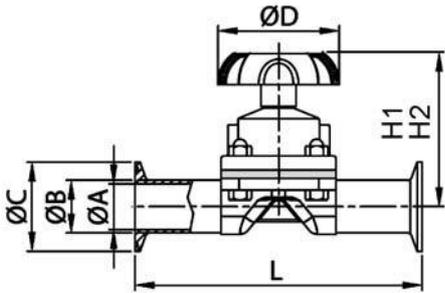


SIZE	ØA	ØB	ØD	K	M	N	L	H1	H2
1/2"	9.4	12.7	60	6.80	69.40	101.7	57.15	74	83
3/4"x1/2"	15.75	19.05	60	9.98	72.85	120.7	66.68	74	83
3/4"	15.75	19.05	60	9.98	72.58	120.7	66.68	74	83
1"x1/2"	22.1	25.4	60	13.15	75.75	165.1	76.20	74	83
1"x3/4"	22.1	25.4	60	13.15	72.75	165.1	76.20	74	83
1"	22.1	25.4	95	16.05	70.60	165.1	76.20	100	113
1-1/2"x1/2"	34.8	38.1	60	19.50	82.10	203.3	95.30	74	83
1-1/2"x3/4"	34.8	38.1	60	19.50	82.10	203.3	95.30	74	83
1-1/2"x1"	34.8	38.1	95	22.40	93.00	203.3	95.30	100	113
1-1/2"	34.8	38.1	95	22.40	105.00	228.7	95.30	119	134
2"x1/2"	47.5	50.8	60	25.85	88.45	241.3	120.7	74	83
2"x3/4"	47.5	50.8	60	25.85	88.45	241.3	120.7	74	83
2"x1"	47.5	50.8	95	28.75	99.35	241.3	120.7	100	113
2"x1-1/2"	47.5	50.8	95	28.75	113.35	266.7	120.7	119	134
2"	47.5	50.8	118	28.75	123.75	285.8	120.7	135	153

## Manual Diaphragm Valve

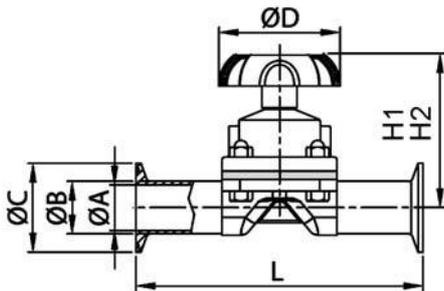
Dimension (mm)

### 2DC Manual 316L 3A 2-Way Diaphragm Valve Clamp End



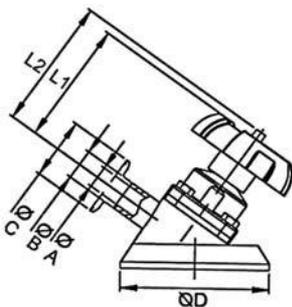
SIZE	ØA	ØB	ØC	ØD	L	H1	H2
1/2"	9.4	12.7	25.0	60	88.9	74	83
3/4"	15.75	19.05	25.0	60	101.6	74	83
1"	22.1	25.4	50.5	95	114.3	100	113
1-1/2"	34.8	38.1	50.5	95	139.7	119	134
2"	47.5	50.8	64.0	118	158.8	135	153

### 2DC-D Manual 316L DIN 2-Way Diaphragm Valve Clamp End



SIZE	ØA	ØB	ØC	ØD	L	H1	H2
DN10	10	13	34.0	-	88.9	74	83
DN20	20	23	34.0	60	101.6	100	113
DN25	26	29	50.5	60	114.3	100	113
DN32	32	35	50.5	95	139.7	119	134
DN40	38	41	50.5	95	139.7	119	134
DN50	50	53	64.0	118	158.8	135	153

### DTBC Manual 316L Diaphragm Tank Bottom Valve

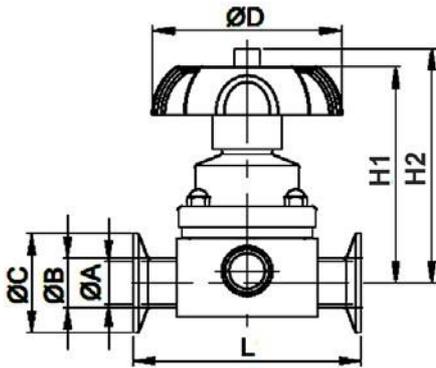


SIZE	ØA	ØB	ØC	ØD	L1	L2
1/2"	9.4	12.7	25.0	100	74	83
3/4"	15.75	19.05	25.0	100	74	83
1"	22.1	25.4	50.5	120	100	113
1-1/2"	34.8	38.1	50.5	160	119	134
2"	47.5	50.8	64.0	160	135	153

## Manual Diaphragm Valve

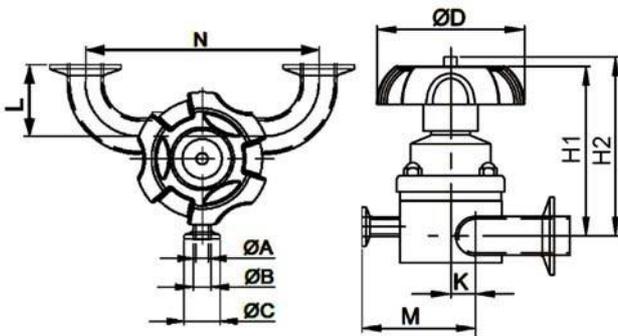
Dimension (mm)

### 3DTC Manual 316L 3-Way Diaphragm Valve T-type Clamp End



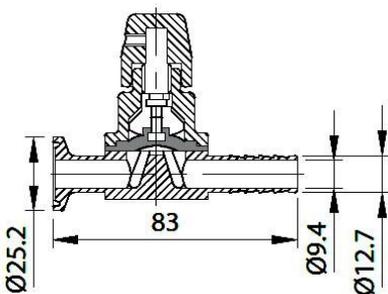
SIZE	ØA	ØB	ØC	ØD	L	H1	H2
1/2"	9.4	12.7	25.2	60	88.9	74	83
3/4"x1/2"	15.75	19.05	25.2	60	88.9	74	83
3/4"	15.75	19.05	25.2	60	88.9	74	83
1"x1/2"	22.1	25.4	50.5	60	114.3	74	83
1"x3/4"	22.1	25.4	50.5	60	114.3	74	83
1"	22.1	25.4	50.5	95	114.3	100	113
1-1/2"x1/2"	34.8	38.1	50.5	60	114.3	74	83
1-1/2"x3/4"	34.8	38.1	50.5	60	114.3	74	83
1-1/2"x1"	34.8	38.1	50.5	95	114.3	100	113
1-1/2"	34.8	38.1	50.5	95	139.7	119	134
2"x1/2"	47.5	50.8	64.0	60	114.3	74	83
2"x3/4"	47.5	50.8	64.0	60	114.3	74	83
2"x1"	47.5	50.8	64.0	95	114.3	100	113
2"x1-1/2"	47.5	50.8	64.0	95	139.7	119	134
2"	47.5	50.8	64.0	118	158.8	135	153

### 3DUC Manual 316L 3-Way Diaphragm Valve U-type Clamp End

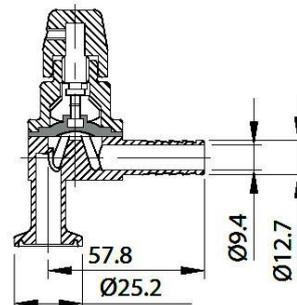


SIZE	ØA	ØB	ØC	ØD	K	M	N	L	H1	H2
1/2"	9.4	12.7	25.2	60	6.80	51.00	101.7	31.75	74	83
3/4"x1/2"	15.75	19.05	25.2	60	9.98	54.18	120.7	41.25	74	83
3/4"	15.75	19.05	25.2	60	9.98	54.18	120.7	41.28	74	83
1"x1/2"	22.1	25.4	50.5	60	13.15	57.35	165.1	50.80	74	83
1"x3/4"	22.1	25.4	50.5	60	13.15	57.35	165.1	50.80	74	83
1"	22.1	25.4	50.5	95	16.05	68.25	165.1	50.80	100	113
1-1/2"x1/2"	34.8	38.1	50.5	60	19.50	63.70	203.3	69.90	74	83
1-1/2"x3/4"	34.8	38.1	50.5	60	19.50	68.70	203.3	69.90	74	83
1-1/2"x1"	34.8	38.1	50.5	95	22.40	74.60	203.3	69.90	100	113
1-1/2"	34.8	38.1	50.5	95	22.40	86.60	228.7	69.90	119	134
2"x1/2"	47.5	50.8	64.0	60	25.85	70.05	241.3	88.90	74	83
2"x3/4"	47.5	50.8	64.0	60	25.85	70.05	241.3	88.90	74	83
2"x1"	47.5	50.8	64.0	95	28.75	80.95	241.3	88.90	100	113
2"x1-1/2"	47.5	50.8	64.0	95	28.75	92.95	266.7	88.90	119	134
2"	47.5	50.8	64.0	118	28.75	98.95	285.8	88.90	135	153

### SDV1 Diaphragm Sample Valve Type 1



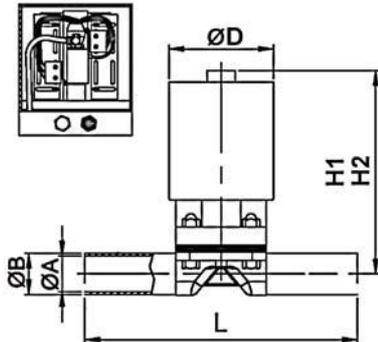
### SDV2 Diaphragm Sample Valve Type 2



## Pneumatic Diaphragm Valve

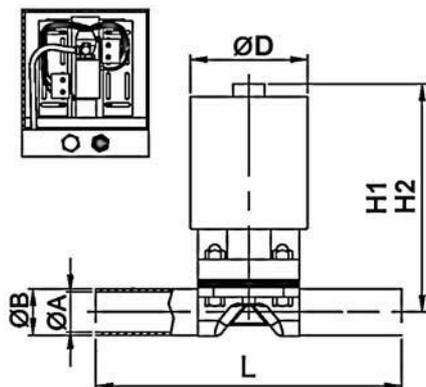
Dimension (mm)

### 2DW-A Pneumatic 316L 3A 2-Way Diaphragm Valve Weld End



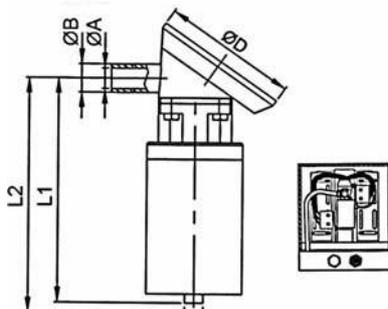
SIZE	ØA	ØB	ØD	L	H1	H2
1/2"	9.4	12.7	60	124.0	122	131
3/4"	15.75	19.05	60	135.0	122	131
1"	22.1	25.4	85	141.2	212	225
1-1/2"	34.8	38.1	85	168.4	217	232
2"	47.5	50.8	133	190.5	315	333

### 2DW-AD Pneumatic 316L DIN 2-Way Diaphragm Valve Weld End



SIZE	ØA	ØB	ØD	L	H1	H2
DN10	10	13	60	124.0	122	131
DN20	20	23	85	135.0	212	225
DN25	26	29	85	141.2	212	225
DN32	32	35	85	168.4	217	232
DN40	38	41	85	168.4	217	232
DN50	50	53	133	190.5	315	333

### DTBW-A Pneumatic 316L Diaphragm Tank Bottom Valve Weld End

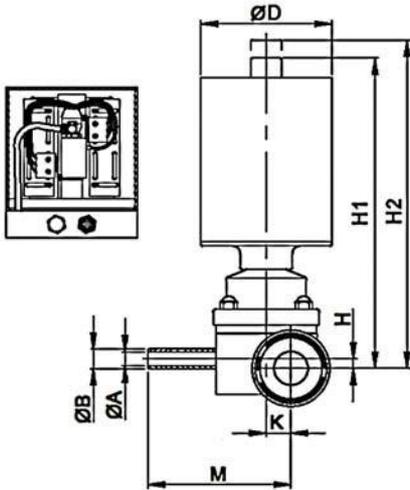


SIZE	ØA	ØB	ØD	L1	L2
1/2"	9.4	12.7	100	122	131
3/4"	15.75	19.05	100	122	131
1"	22.1	25.4	120	212	225
1-1/2"	34.8	38.1	160	217	232
2"	47.5	50.8	160	315	333

## Pneumatic Diaphragm Valve

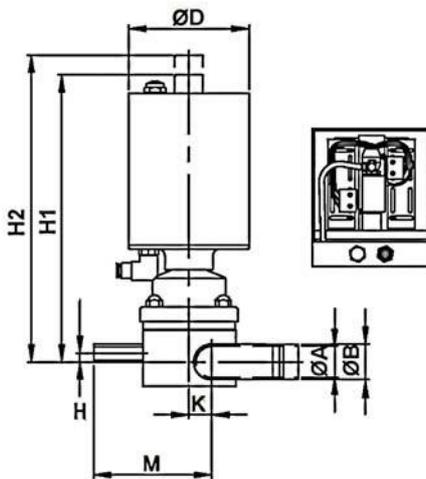
Dimension (mm)

### 3DTW-A Pneumatic 316L 3-Way Diaphragm Valve T-type Weld End



SIZE	ØA	ØB	ØD	H	H1	H2	K	M
1/2"	9.4	12.7	60	-	122	131	6.80	69.40
3/4"x1/2"	9.4	19.05	60	6.18	122	131	9.98	72.58
3/4"	15.75	19.05	60	4.50	122	131	9.98	72.58
1"x1/2"	9.4	25.4	60	13.20	122	131	13.15	75.75
1"x3/4"	15.75	25.4	60	10.70	122	131	13.15	75.75
1"	22.1	25.4	85	6.20	212	225	16.05	86.65
1-1/2"x1/2"	9.4	38.1	60	19.50	122	131	19.50	82.10
1-1/2"x3/4"	15.75	38.1	60	17.50	122	131	19.50	82.10
1-1/2"x1"	22.1	38.1	95	14.50	212	225	22.40	93.00
1-1/2"	34.8	38.1	85	6.20	217	232	22.40	105.00
2"x1/2"	9.4	50.8	60	19.50	122	131	25.85	88.45
2"x3/4"	15.75	50.8	60	17.50	122	131	25.85	88.45
2"x1"	22.1	50.8	95	18.40	212	225	28.75	99.35
2"x1-1/2"	34.8	50.8	95	13.70	217	232	28.75	111.35
2"	47.5	50.8	118	-	315	333	28.75	123.75

### 3DUW-A Pneumatic 316L 3-Way Diaphragm Valve U-type Weld End

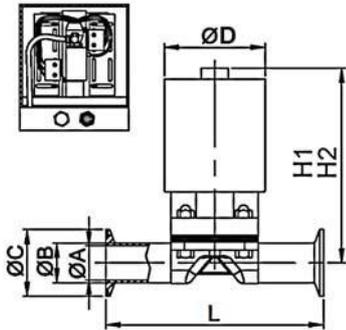


SIZE	ØA	ØB	ØD	H	H1	H2	K	M
1/2"	9.4	12.7	60	-	122	131	6.80	69.40
3/4"x1/2"	15.75	19.05	60	6.18	122	131	9.98	72.58
3/4"	15.75	19.05	60	4.50	122	131	9.98	72.58
1"x1/2"	22.1	25.4	60	13.20	122	131	13.15	75.75
1"x3/4"	22.1	25.4	60	10.70	122	131	13.15	75.75
1"	22.1	25.4	85	6.20	212	225	16.05	86.65
1-1/2"x1/2"	34.8	38.1	60	19.50	122	131	19.50	82.10
1-1/2"x3/4"	34.8	38.1	60	17.50	122	131	19.50	82.10
1-1/2"x1"	34.8	38.1	95	14.50	212	225	22.40	93.00
1-1/2"	34.8	38.1	85	6.20	217	232	22.40	105.00
2"x1/2"	47.5	50.8	60	19.50	122	131	25.85	88.45
2"x3/4"	47.5	50.8	60	17.50	122	131	25.85	88.45
2"x1"	47.5	50.8	95	18.40	212	225	28.75	99.35
2"x1-1/2"	47.5	50.8	95	13.70	217	232	28.75	111.35
2"	47.5	50.8	118	-	315	333	28.75	123.75

## Pneumatic Diaphragm Valve

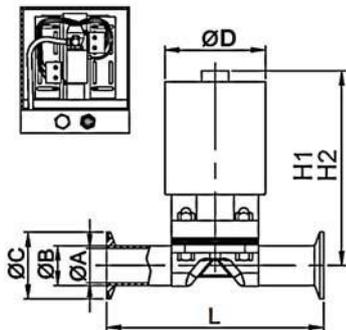
Dimension (mm)

### 2DC-A Pneumatic 316L 3A 2-Way Diaphragm Valve Clamp End



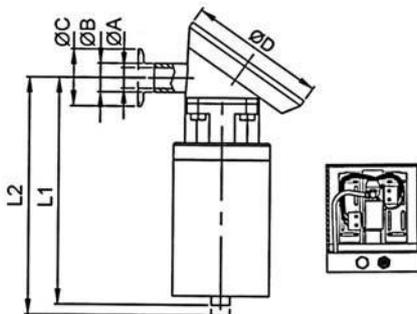
SIZE	ØA	ØB	ØC	ØD	L	H1	H2
1/2"	9.4	12.7	25.0	60	88.9	122	131
3/4"	15.75	19.05	25.0	60	101.6	122	131
1"	22.1	25.4	50.5	85	114.3	212	225
1-1/2"	34.8	38.1	50.5	85	139.7	217	232
2"	47.5	50.8	64.0	133	158.8	315	333

### 2DC-AD Pneumatic 316L DIN 2-Way Diaphragm Valve Clamp End



SIZE	ØA	ØB	ØC	ØD	L	H1	H2
DN10	10	13	34	60	88.9	122	131
DN20	20	23	34	85	101.6	212	225
DN25	26	29	50.5	85	114.3	212	225
DN32	32	35	50.5	85	139.7	217	232
DN40	38	41	50.5	85	139.7	217	232
DN50	50	53	64	133	158.8	315	333

### DTBC-A Pneumatic 316L Diaphragm Tank Bottom Valve Clamp End

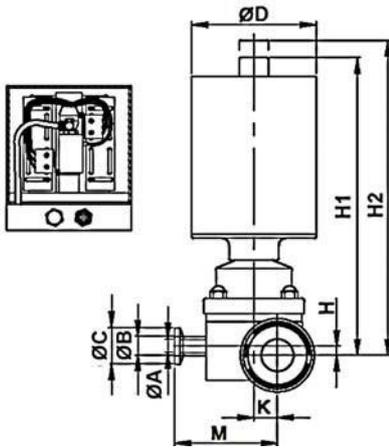


SIZE	ØA	ØB	ØC	ØD	L1	L2
1/2"	9.4	12.7	25.0	100	122	131
3/4"	15.75	19.05	25.0	100	122	131
1"	22.1	25.4	50.5	120	212	225
1-1/2"	34.8	38.1	50.5	160	217	232
2"	47.5	50.8	64.0	160	315	333

## Pneumatic Diaphragm Valve

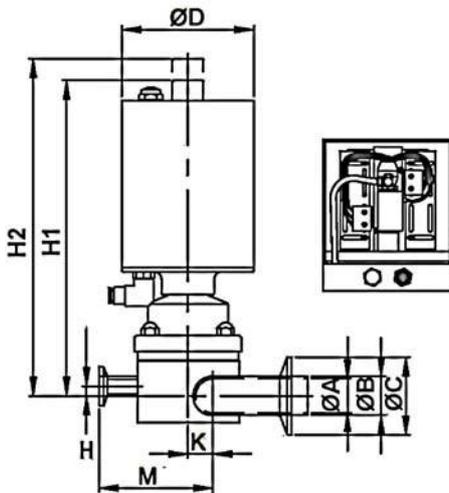
Dimension (mm)

### 3DTC-A Pneumatic 316L 3-Way Diaphragm Valve T-type Clamp End



SIZE	ØA	ØB	ØC	ØD	H	H1	H2	K	M
1/2"	9.4	12.7	25.2	60	-	122	131	6.80	51.00
3/4"x1/2"	9.4	19.05	25.2	60	6.18	122	131	9.98	54.18
3/4"	15.75	19.05	25.2	60	4.50	122	131	9.98	54.18
1"x1/2"	9.4	25.4	50.5	60	13.20	122	131	13.15	57.35
1"x3/4"	15.75	25.4	50.5	60	10.70	122	131	13.15	57.35
1"	22.1	25.4	50.5	85	6.20	212	225	16.05	70.60
1-1/2"x1/2"	9.4	38.1	50.5	60	19.50	122	131	19.50	63.70
1-1/2"x3/4"	15.75	38.1	50.5	60	17.50	122	131	19.50	63.70
1-1/2"x1"	22.1	38.1	50.5	95	14.50	212	225	22.40	74.60
1-1/2"	34.8	38.1	50.5	85	6.20	217	232	22.40	86.60
2"x1/2"	9.4	50.8	64.0	60	19.50	122	131	25.85	70.05
2"x3/4"	15.75	50.8	64.0	60	17.50	122	131	25.85	70.05
2"x1"	22.1	50.8	64.0	95	18.40	212	225	28.75	80.95
2"x1-1/2"	34.8	50.8	64.0	95	13.70	217	232	28.75	92.95
2"	47.5	50.8	64.0	118	-	315	333	28.75	98.95

### 3DUC-A Pneumatic 316L 3-Way Diaphragm Valve U-type Clamp End



SIZE	ØA	ØB	ØC	ØD	H	H1	H2	K	M
1/2"	9.4	12.7	25.2	60	-	122	131	6.80	51.00
3/4"x1/2"	15.75	19.05	25.2	60	6.18	122	131	9.98	54.18
3/4"	15.75	19.05	25.2	60	4.50	122	131	9.98	54.18
1"x1/2"	22.1	25.4	50.5	60	13.20	122	131	13.15	57.35
1"x3/4"	22.1	25.4	50.5	60	10.70	122	131	13.15	57.35
1"	22.1	25.4	50.5	85	6.20	212	225	16.05	70.60
1-1/2"x1/2"	34.8	38.1	50.5	60	19.50	122	131	19.50	63.70
1-1/2"x3/4"	34.8	38.1	50.5	60	17.50	122	131	19.50	63.70
1-1/2"x1"	34.8	38.1	50.5	95	14.50	212	225	22.40	74.60
1-1/2"	34.8	38.1	50.5	85	6.20	217	232	22.40	86.60
2"x1/2"	47.5	50.8	64.0	60	19.50	122	131	25.85	70.05
2"x3/4"	47.5	50.8	64.0	60	17.50	122	131	25.85	70.05
2"x1"	47.5	50.8	64.0	95	18.40	212	225	28.75	80.95
2"x1-1/2"	47.5	50.8	64.0	95	13.70	217	232	28.75	92.95
2"	47.5	50.8	64.0	118	-	315	333	28.75	98.95

## Tank Valve

**Features:**

1. Connection type: clamp, butt-weld
2. Temperature range: EPDM ( -10°C ~ 140°C )
3. Max production pressure: 1000 Kpa ( 10 Bar )
4. Surface finish: mirror / satin / sand blast

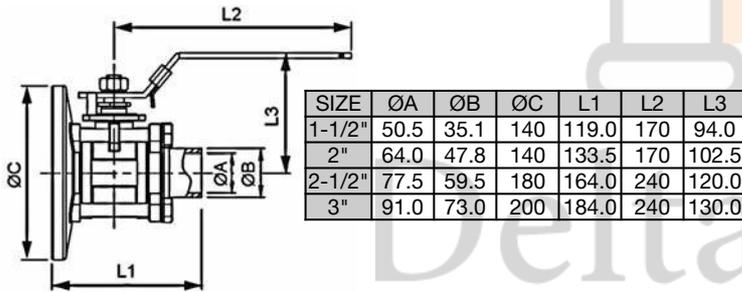
**Materials:**

Flow area: AISI 304, 316. 316L available  
 Other steel parts: AISI 304  
 Gasket for flow area: EPDM / FKM / PTFE  
 Other seals: NBR and EPDM  
 Plug stem: AISI 316L with chromium plated surface

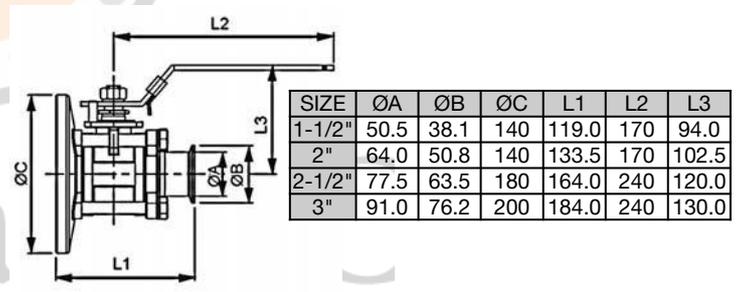


Dimension (mm)

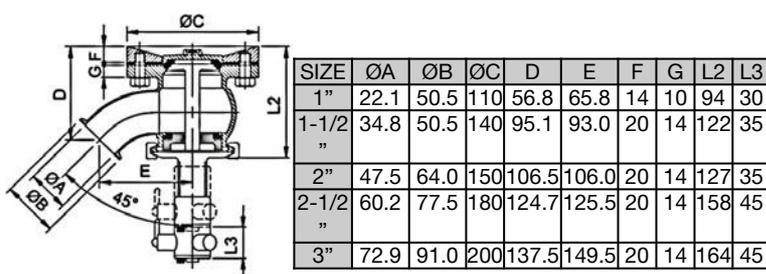
**TW Manual Tank Valve Weld End**



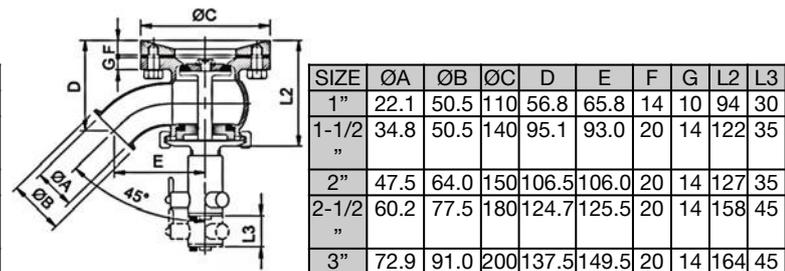
**TC Manual Tank Valve Clamp End**



**TCO Manual Tank Valve Clamp End, Up to Open**



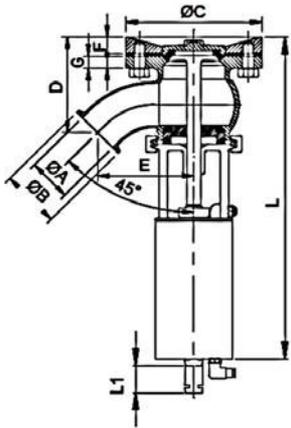
**TCC Manual Tank Valve Clamp End, Up to Close**



### Tank Valve

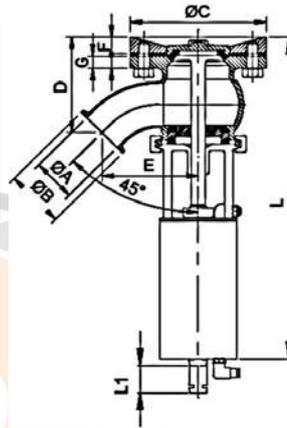
Dimension (mm)

**TCO-A Auto Control Tank Valve Clamp End, Up to Open**



SIZE	ØA	ØB	ØC	D	E	F	G	L	L1
1"	22.1	50.5	110	56.8	65.8	14	10	94	30
1-1/2"	34.8	50.5	140	95.1	93.0	20	14	122	35
"									
2"	47.5	64.0	150	106.5	106.0	20	14	127	35
2-1/2"	60.2	77.5	180	124.7	125.5	20	14	158	45
"									
3"	72.9	91.0	200	137.5	149.5	20	14	164	45

**TCC-A Auto Control Tank Valve Clamp End, Up to Close**



SIZE	ØA	ØB	ØC	D	E	F	G	L	L1
1"	22.1	50.5	110	56.8	65.8	14	10	94	30
1-1/2"	34.8	50.5	140	95.1	93.0	20	14	122	35
"									
2"	47.5	64.0	150	106.5	106.0	20	14	127	35
2-1/2"	60.2	77.5	180	124.7	125.5	20	14	158	45
"									
3"	72.9	91.0	200	137.5	149.5	20	14	164	45

Delta INC

## Modulating Valve

### Features

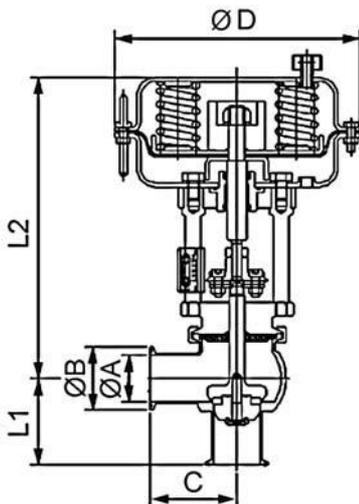
1. Connection type: clamp connections accord to ISO 2852
2. Leakage standard: PTFE material soft seats meet FDA
3. Travel: 20mm for DN25 (1") ~ DN50 (2"), 30mm for DN65 (2-1/2") ~ DN100 (4")
4. Quick change trim: each size has 2 to 4 flow capacity plug choose, and allows to quickly change the plug. Easy to maintenance.
5. Stainless steel diaphragm actuator cases make resist to get rusty out door, and accept polish finish optional case. Supply fail to open and close.
6. Surface finish: 0.4µm for Internal, 0.8µm for external



### Materials:

1. Flow area: AISI 316L
2. Other steel parts: AISI 304
3. Gasket for flow area: EPDM / NBR / FKM / PTFE
4. Other seals: NBR and EPDM

### MV-A Pneumatic Modulating Valve L-Type Clamp End



Dimension (mm)						
SIZE	ØA	ØB	C	ØD	L1	L2
1"	22.1	50.5	58.5	250	50.6	489
1-1/2"	34.8	50.5	81.2	300	61.0	557
2"	47.5	54.0	85.7	300	65.4	564
2-1/2"	60.2	77.5	103.1	300	72.1	580
3"	72.9	91.0	116.4	350	79.7	651

## Bellow Sterile Valve

**Features:**

1. Connection type: clamp connections accord to ISO 2852
2. Surface finish : mirror / satin / sand blast

**Materials:**

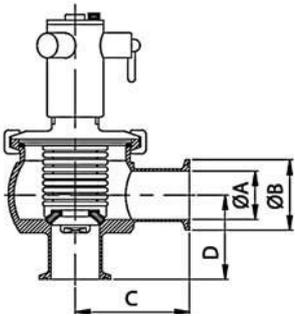
Flow area: AISI 316L  
 Other steel parts: AISI 304  
 Gasket for flow area: EPDM / NBR / FKM / PTFE  
 Other seals: NBR and EPDM



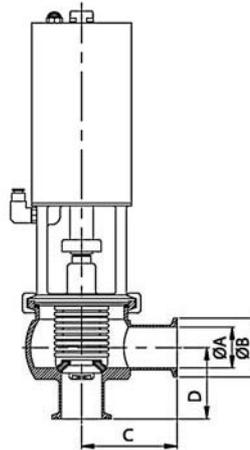
Dimension (mm)

**BSV** Bellow Sterile Valve Clamp End

**BSV-A** Pneumatic Bellow Sterile Valve Clamp End



SIZE	ØA	ØB	C	D
1"	22.1	50.5	58.5	50.6
1-1/2"	34.8	50.5	81.2	61.0
2"	47.5	64.0.	85.7	65.4



SIZE	ØA	ØB	C	D
1"	22.1	50.5	58.5	50.6
1-1/2"	34.8	50.5	81.2	61.0
2"	47.5	64.0.	85.7	65.4

## Relief Valve

**Features:**

1. Surface: polished, electric polished available  
ID Ra < 0.8µm or 0.4µm
2. Working pressure: 0.1kgs/cm<sup>2</sup> ~ 7kgs/cm<sup>2</sup>
3. Air release valve is relief out over-load air pressure on your tank or pipe line.
4. Air blow valve is applied for air out the pipe line.

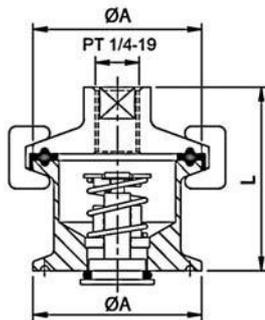


**Materials:**

Body: SUS 304, SUS 316L available  
Made by Forged or Solid Bar

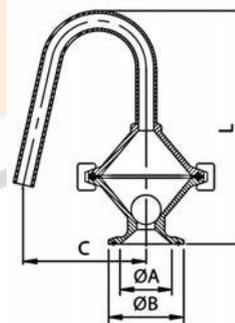
Dimension (mm)

**ABV Air Blow Valve**



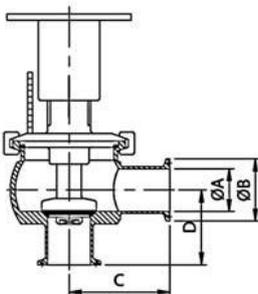
SIZE	ØA	L
1"	50.5	55
1-1/2"	50.5	55
2"	64.0	55

**ARV Air Release Valve**



SIZE	ØA	ØB	C	L
1"	22.1	50.5	82	158
1-1/2"	34.8	50.5	82	158
2"	47.5	64.0	82	158

**RV Relief Valve**



SIZE	ØA	ØB	C	D
1"	22.1	50.5	63.50	63.50
1-1/2"	34.8	50.5	69.85	69.85
2"	47.5	64.0	88.90	88.90
2-1/2"	60.2	77.5	88.90	88.90
3"	60.2	91.0	95.25	95.25

## Filling Valve Auto Control

**Features:**

1. Max. product pressure ( depending on valve specifications ) : 1000kpa ( 10bar )
2. Min. product pressure : full vacuum
3. Temperature : -10°C to 140°C ( EPDM )
4. Air pressure : 5 bar to 7 bar
5. Air connections : R1/8" BSP female thread

**Materials:**

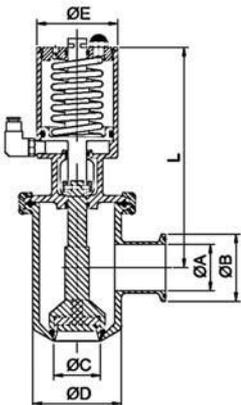
1. Product wetted steel parts : AISI 316L
2. Other steel parts : AISI 304
3. Plug stem : AISI 316L with hard chrome plated stem surface
4. Product wetted seals : EPDM rubber
5. Other seals : NBR
6. Finish : semi bright

**Opening/Closing Time** will be effected by the following:-

1. The air supply ( air pressure )
2. The length and dimensions of the air hose
3. Number of valves connected to same air hose
4. Use of single solenoid valve for serial connected air actuator functions
5. Product pressure



**FV Filling Valve**



Dimension (mm)						
SIZE	ØA	ØB	ØC	ØD	ØE	L
1"x1"	22.1	50.5	22.1	55	60	165
1"x1-1/2"	34.8	50.5	22.1	55	60	165
1"x2"	47.5	64.0	22.1	66	85	292
1-1/2"x1-1/2"	34.8	50.5	34.8	66	60	165
1-1/2"x2"	47.5	64.0	34.8	66	85	292

Delta INC

## Strainer Filter

**Features:**

1. Connection type: clamp, weld, male or female End.
2. Mesh: 20 ~ 400
3. Aperture Size: 1mm ~ 10mm
4. P.D. Press: 0.05 Mpa ~ 0.2 Mpa

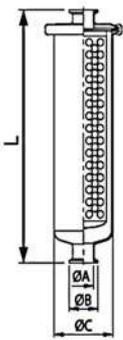
**Materials:**

SUS304, 316, 316L available



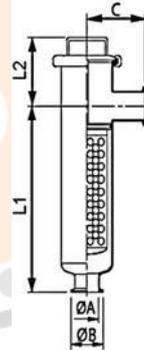
Dimension (mm)

**FI Inline Straight Filter**



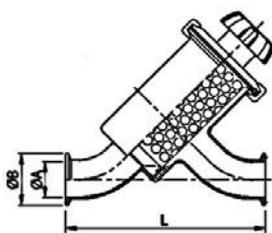
SIZE	ØA	ØB	ØC	L
1"	22.2	50.5	101.6	380
1-1/2"	34.8	50.5	101.6	380
2"	47.5	64.0	101.6	380
2-1/2"	60.2	77.5	101.6	450
3"	72.9	91.0	101.6	550

**FA Angle Side Outlet Filter**



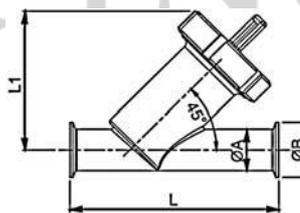
SIZE	ØA	ØB	C	L1	L2
1"	22.1	50.5	104.8	310	110
1-1/2"	34.8	50.5	104.8	310	110
2"	47.5	64.0	114.3	310	110
2-1/2"	60.2	77.5	108.0	410	110
3"	72.9	91.0	108.0	490	110

**FY Filter Y-Type**



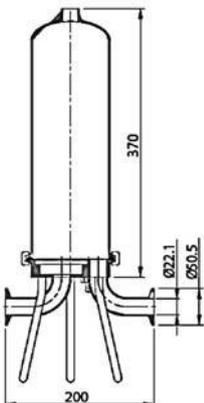
SIZE	ØA	ØB	L
1"	22.2	50.5	155
1-1/2"	34.8	50.5	192
2"	47.5	64.0	208
2-1/2"	60.2	77.5	252
3"	72.9	91.0	300

**F45 Filter Y-Type**



SIZE	ØA	ØB	L	L1
1"	25.4	50.5	145	95
1-1/4"	31.8	50.5	165	110
1-1/2"	38.1	50.5	180	120
2"	50.8	64.0	220	140
2-1/2"	63.5	77.5	280	175
3"	76.2	91.0	350	195
4"	101.6	119.0	500	260

**FS Filter S-Type**



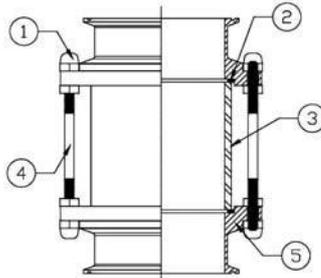
## Sight Glass

**Features:**

1. Connection : clamp, butt-weld, ball type
2. Fully precision machined and polished.
3. Fit for Food and Pharmaceutical industry.

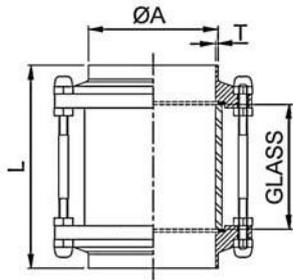
**Materials:**

- ① Screw Nut : SUS304
- ② Seal : Viton, EPDM, Silicon available
- ③ Glass : Non-Toxic
- ④ Screw Bolt : SUS304
- ⑤ Body : SUS304, 316, 316L available



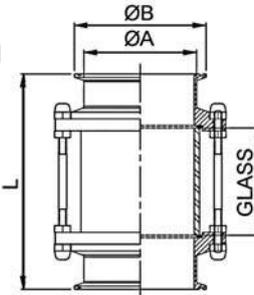
Dimension (mm)

**SG-W Sight Glass Weld End**



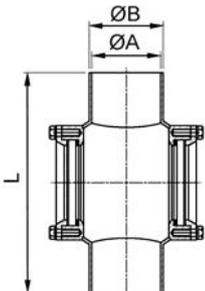
SIZE	ØA	T	Glass	L
1"	25.4	1.65	100	145.0
1-1/2"	38.1	1.65	100	163.5
2"	50.8	1.65	100	170.0
2-1/2"	63.5	1.65	100	150.0
3"	76.2	1.65	100	155.0
4"	101.6	2.10	100	158.0

**SG-C Sight Glass Clamp End**



SIZE	ØA	ØB	Glass	L
1"	25.4	50.5	100	159.0
1-1/2"	38.1	50.5	100	163.5
2"	50.8	64.0	100	170.0
2-1/2"	63.5	77.5	100	173.3
3"	76.2	91.0	100	178.0
4"	101.6	119.0	100	196.0

**SG-WB Sight Glass Weld End Ball Type**



SIZE	ØA	ØB	L
1"	22.1	25.4	120
1-1/2"	34.8	38.1	120
2"	47.5	50.8	154
2-1/2"	60.2	63.5	200
3"	72.9	76.2	210
4"	97.4	101.6	240

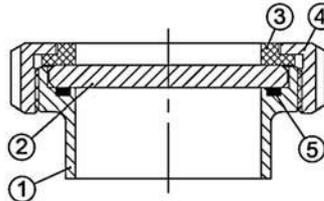
## Sight Glass

**Features:**

1. Connection : SMS weld end, DIN weld end
2. Fully precision machined and polished.
3. Fit for Food and Pharmaceutical industry.

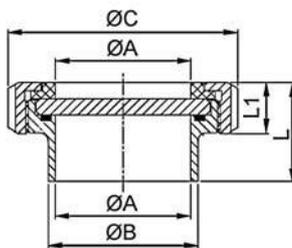
**Materials:**

- ① Body : SUS304, 316L available
- ② High Press Clean Glass
- ③ Teflon Gasket
- ④ Nut : SUS304
- ⑤ Seal : Viton, Silicon, FKM available



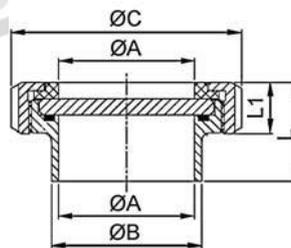
Dimension (mm)

**SGDW DIN Sight Glass Weld End Union Type**



SIZE	ØA	ØB	ØC	L1	L
DN25	26	35	63	21	37.0
DN32	32	41	70	21	40.0
DN40	38	48	78	21	41.0
DN50	50	61	92	22	42.5
DN65	66	79	112	25	48.5
DN80	81	93	127	29	52.5
DN100	100	114	148	31	61.5

**SGSW SMS Sight Glass Weld End Union Type**

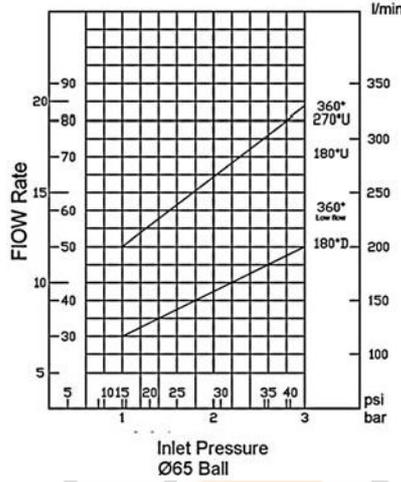
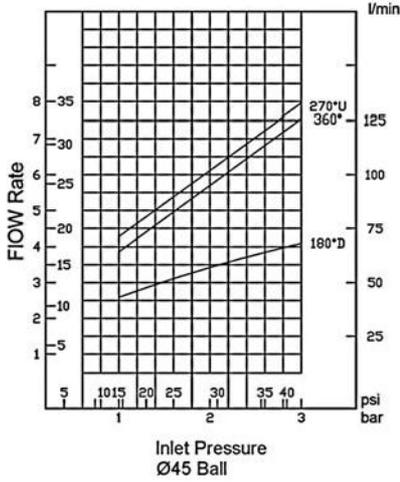


SIZE	ØA	ØB	ØC	L1	L
DN25	22.5	25	51	19	34
DN38	35.5	38	74	23	40
DN50	48.5	51	84	24	42
DN63	60.5	63.5	100	28	46
DN76	72.9	76.1	114	30	47
DN100	100	105	138	31	49

## Cleaning Spray Ball

**Specification:**

Flow Rate: m<sup>3</sup>/h. USgpm



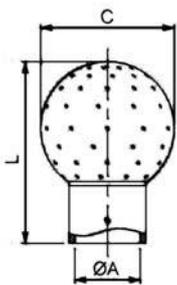
**Materials:**

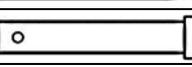
SUS304, SUS316L available

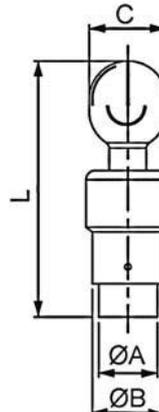
Dimension (mm)

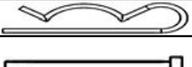
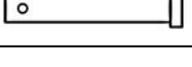
**SBS Static Spray Ball**

**SBR Rotary Spray Ball**



SIZE	ØA	ØB	L	Pin Type
1"	25.8	53.0	71.5	
1-1/4"	32.2	63.5	85.7	
1-1/2"	38.5	65.0	89.0	
2"	51.2	76.2	97.9	
2-1/2"	63.8	100.0	130.0	



SIZE	ØA	ØB	ØC	L	Pin Type
3/4"	19.05	25.0	22.5	84.0	
1"	25.4	45.0	29.0	149.0	
1-1/2"	38.1	52.5	41.5	152.0	
2"	50.8	64.5	54.5	173.0	

## Pressure Gauge

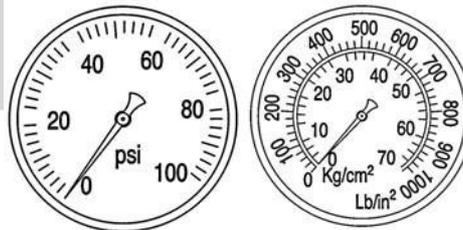
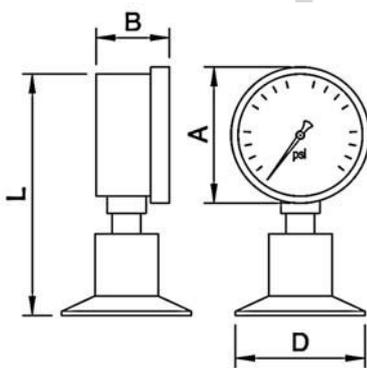
**Features:**

1. Sanitary pressure gauges are stainless steel products specifically designed to meet the demanding sanitary requirements for food dairy, beverage, pharmaceutical and biotech applications.
2. Complies with 3A sanitary standard, water-proof, shock resistant, and closed structures are durable and accurate, good for long time running.
3. All series are liquid-filled, special materials movement and bourdon tube have lasting durability. It is applicable to the places of both strong fluctuation and non-corrosive fluid, such as air, water and oil.



**Materials:**

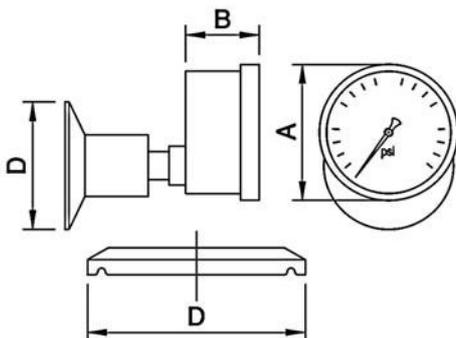
1. Process connection: 1-1/2", 2", 2-1/2" Quick-release clamp piping system
2. Suitable Pressure Ranges: 15psi ~ 600psi
3. Instrument Connection: 1/4"NPT / BSPT or 1/2"NPT / BSPT
4. Fill Fluid: Glycerine ( Vegetable oil )
5. Max temperature: standard type-120°C, special type-150°C
6. Case & Movement Material: SS304
7. Connection / Diaphragm / Bourdon Tube: SUS316L
8. Ferrule: SUS304, SUS316L available
9. Lens: Safety Glass



SIZE	A	B	L
Ø50	56	30	100
Ø63	69	30	122
Ø80	89	30	140
Ø100	112	47	166
Ø160	160	50	224

Dimension (mm)

SIZE	D (Tri-Clamp)
1"	50.5
1-1/2"	50.5
2"	64.0
2-1/2"	77.5
3"	91.0
4"	119.0



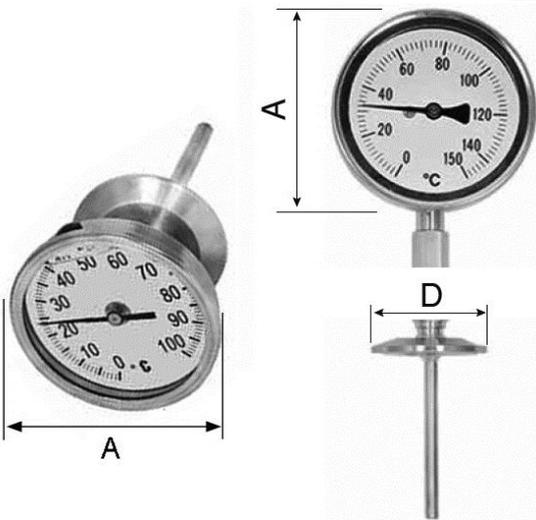
## Thermometer

**Features:**

1. Sanitary thermometers are stainless steel products specifically designed to meet the demanding sanitary requirements for food dairy, beverage, pharmaceutical and biotech applications.
2. Complies with 3A sanitary standard, water-proof, shock resistant, and closed structures are durable and accurate, good for long time running.
3. All series are liquid-filled, special materials movement and bourdon tube have lasting durability. It is applicable to the places of both strong fluctuation and non-corrosive fluid, such as air, water and oil.

**Materials:**

1. Process connection: 1-1/2" ~ 4" Quick-release clamp piping system
2. Case & Movement Material: SS304
3. Ferrule: SUS304, SUS316L available
4. Lens: safety glass



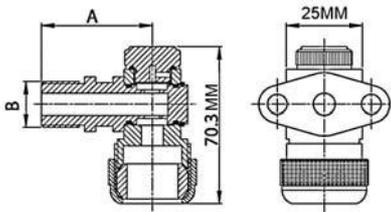
SIZE	A
Ø50	56
Ø63	69
Ø80	89
Ø100	112
Ø160	160

Dimension (mm)	
SIZE	D (Tri-Clamp)
1"	50.5
1-1/2"	50.5
2"	64.0
2-1/2"	77.5
3"	91.0
4"	119.0

## Sample Cock Valve

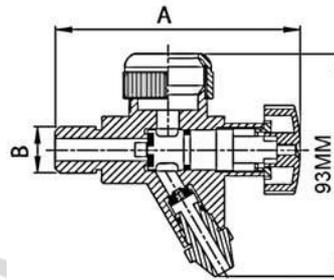
Dimension (mm)

### UV Upper Valve



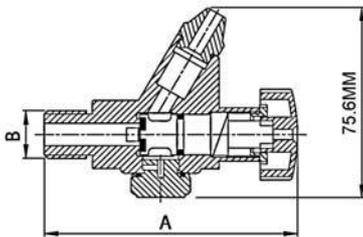
Connection End	A	B
16AMP	51.0	Ø50.5
Ferrule	66.4	Ø50.5
Male	51.0	1/2"-PF
Flange	52.6	60x29

### LV Level Valve



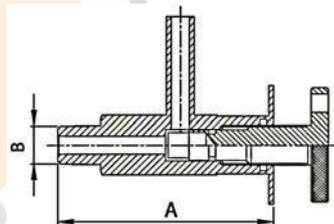
Connection End	A	B
16AMP	81.8	Ø50.5
Ferrule	95.2	Ø50.5
Male	109.0	1/2"-PF
Flange	81.5	60x29

### TV Test Valve



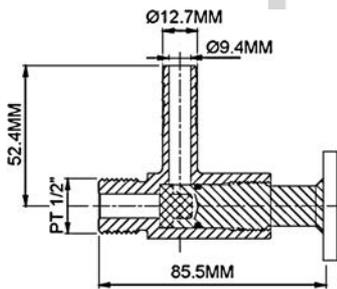
Connection End	A	B
16AMP	81.80	Ø50.5
Ferrule	95.33	Ø50.5
Male	109.00	1/2"-PF
Flange	81.50	60x29

### SCV1 Sample Cock Valve

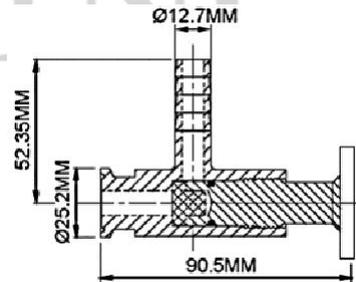


Connection End	A	B
16AMP	66.4	Ø50.5
Ferrule	79.9	Ø50.5
Male	75.0	1/4"NPT 3/8"NPT 1/2"NPT
Flange	81.5	60x29

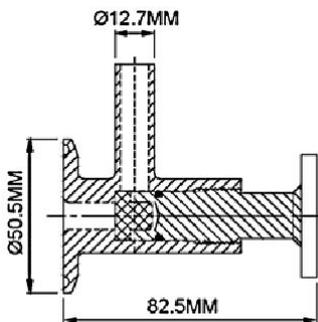
### SCV2 Sample Cock Valve



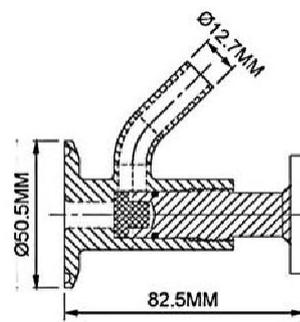
### SCV3 Sample Cock Valve



### SCV4 Sample Cock Valve



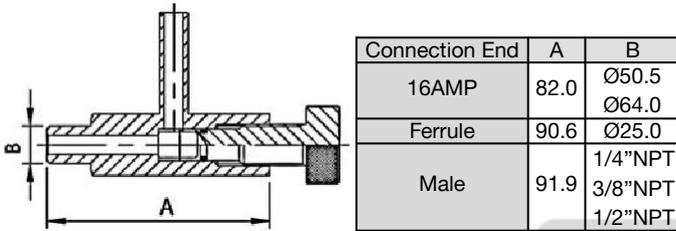
### SCV5 Sample Cock Valve



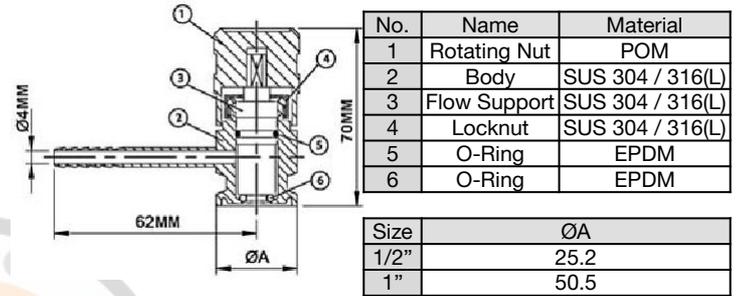
## Sample Cock Valve

Dimension (mm)

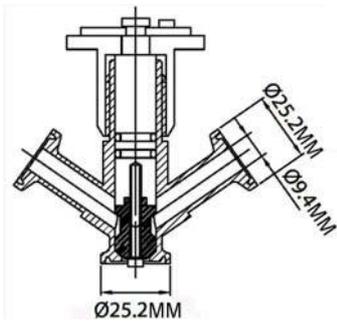
**SCV6** Sample Cock Valve



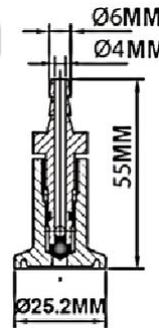
**SCV7** Sample Cock Valve



**SCV8** Sample Cock Valve

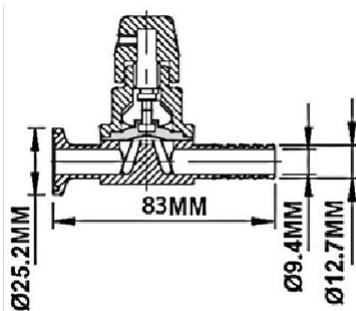


**SCV9** Sample Cock Valve

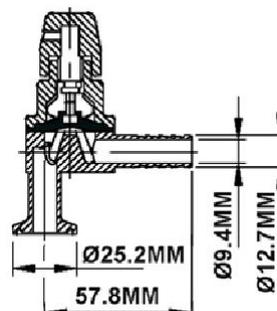


## Diaphragm Sample Valve

**SDV1** Diaphragm Sample Valve



**SDV2** Diaphragm Sample Valve

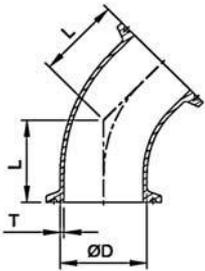


### ASME BPE Fittings

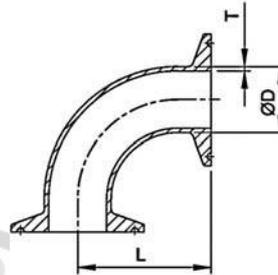
Dimension (mm)

**BPE 45° Elbow Clamp End DT-4.1.1-6 (DT-17)**

**BPE 90° Elbow Clamp End DT-4.1.1-3 (DT-16)**



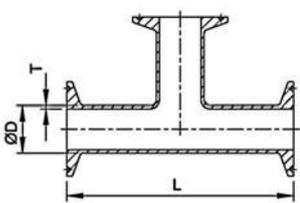
SIZE	ØD	T	L
1/2"	12.7	1.65	25.40
3/4"	19.05	1.65	25.40
1"	25.4	1.65	28.58
1-1/2"	38.1	1.65	36.50
2"	50.8	1.65	44.45
2-1/2"	63.5	1.65	52.40
3"	76.2	1.65	60.33
4"	101.6	2.11	79.38
6"	152.4	2.77	133.35



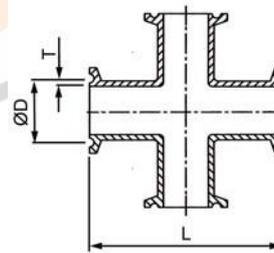
SIZE	ØD	T	L
1/2"	12.7	1.65	41.28
3/4"	19.05	1.65	41.28
1"	25.4	1.65	50.80
1-1/2"	38.1	1.65	69.85
2"	50.8	1.65	88.90
2-1/2"	63.5	1.65	107.95
3"	76.2	1.65	127.00
4"	101.6	2.11	168.28
6"	152.4	2.77	266.70

**BPE Equal Tee Clamp End DT-4.1.2-4 (DT-18)**

**BPE Equal Cross Clamp End DT-4.1.2-4 (DT-18)**



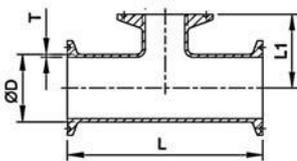
SIZE	ØD	T	L
1/2"	12.7	1.65	114.30
3/4"	19.05	1.65	120.66
1"	25.4	1.65	133.36
1-1/2"	38.1	1.65	146.06
2"	50.8	1.65	171.46
2-1/2"	63.5	1.65	182.16
3"	76.2	1.65	196.86
4"	101.6	2.11	241.30
6"	152.4	2.77	361.96



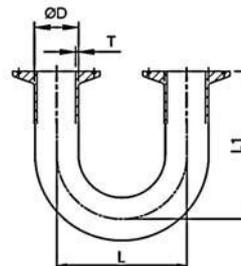
SIZE	ØD	T	L
1/2"	12.7	1.65	114.30
3/4"	19.05	1.65	120.66
1"	25.4	1.65	133.36
1-1/2"	38.1	1.65	146.06
2"	50.8	1.65	171.46
2-1/2"	63.5	1.65	184.16
3"	76.2	1.65	196.88
4"	101.6	2.11	241.30
6"	152.4	2.77	361.96

**BPE Short Outlet Tee Clamp End DT-4.1.2-5 (DT-27)**

**(DT-24)**



SIZE	ØD	T	L	L1
1/2"	12.7	1.65	57.15	25.40
3/4"	19.05	1.65	60.33	28.58
1"	25.4	1.65	66.68	28.58
1-1/2"	38.1	1.65	73.03	34.93
2"	50.8	1.65	85.73	41.28
2-1/2"	63.5	1.65	92.08	47.63
3"	76.2	1.65	98.43	53.98
4"	101.6	2.11	120.65	69.85
6"	152.4	2.77	180.98	117.48

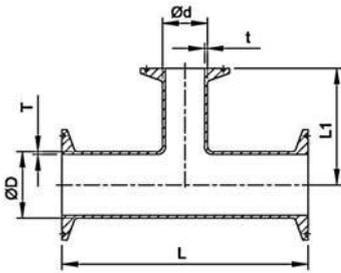


SIZE	ØD	T	L	L1
1/2"	12.7	1.65	114.3	88.90
3/4"	19.05	1.65	114.3	88.90
1"	25.4	1.65	76.2	88.90
1-1/2"	38.1	1.65	114.3	127.00
2"	50.8	1.65	152.4	139.70
2-1/2"	63.5	1.65	190.5	158.78
3"	76.2	1.65	228.6	177.80
4"	101.6	2.11	304.8	231.78
6"	152.4	2.77	457.2	330.20

### ASME BPE Fittings

Dimension (mm)

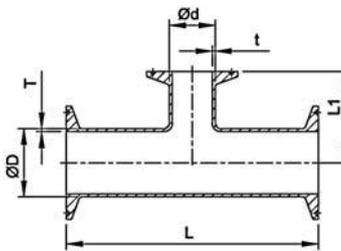
#### BPE Reducing Tee Clamp End DT-4.1.2-8 (DT-19)



SIZE	ØD	T	Ød	t	L1	L
3/4"x1/2"	19.05	1.65	12.7	1.65	63.50	127.00
1"x1/2"	25.40	1.65	12.7	1.65	66.68	133.36
1"x3/4"	25.40	1.65	19.05	1.65	66.68	133.36
1-1/2"x1/2"	38.10	1.65	12.7	1.65	73.03	146.06
1-1/2"x3/4"	38.10	1.65	19.05	1.65	73.03	146.06
1-1/2"x1"	38.10	1.65	25.4	1.65	73.03	146.06
2"x1/2"	50.80	1.65	12.7	1.65	79.38	171.46
2"x3/4"	50.80	1.65	19.05	1.65	79.38	171.46
2"x1"	50.80	1.65	25.4	1.65	79.38	171.46
2"x1-1/2"	50.80	1.65	38.1	1.65	79.38	171.46
2-1/2"x1/2"	63.50	1.65	12.7	1.65	85.73	184.16
2-1/2"x3/4"	63.50	1.65	19.05	1.65	85.73	184.16
2-1/2"x1"	63.50	1.65	25.40	1.65	85.73	184.16
2-1/2"x1-1/2"	63.50	1.65	38.1	1.65	85.73	184.16
2-1/2"x2"	63.50	1.65	50.8	1.65	85.73	184.16

SIZE	ØD	T	Ød	t	L1	L
3"x1/2"	76.2	1.65	12.7	1.65	92.08	196.86
3"x3/4"	76.2	1.65	19.05	1.65	92.08	196.86
3"x1"	76.2	1.65	25.4	1.65	92.08	196.86
3"x1-1/2"	76.2	1.65	38.1	1.65	92.08	196.86
3"x2"	76.2	1.65	50.8	1.65	92.08	196.86
3"x2-1/2"	76.2	1.65	63.5	1.65	92.08	196.86
4"x1/2"	101.6	2.11	12.7	1.65	104.78	241.3
4"x3/4"	101.6	2.11	19.05	1.65	104.78	241.3
4"x1"	101.6	2.11	25.4	1.65	104.78	241.3
4"x1-1/2"	101.6	2.11	38.1	1.65	104.78	241.3
4"x2"	101.6	2.11	50.8	1.65	111.13	241.3
4"x2-1/2"	101.6	2.11	63.5	1.65	111.13	241.3
4"x3"	101.6	2.11	76.2	1.65	111.13	241.3
6"x3"	152.4	2.77	76.2	1.65	136.53	361.96
6"x4"	152.4	2.77	101.6	2.11	146.05	361.96

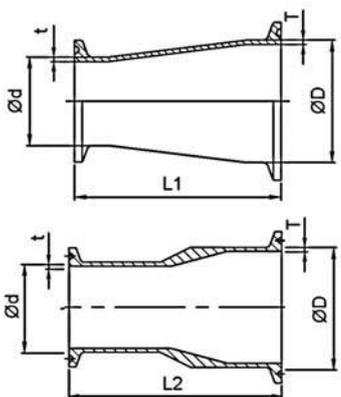
#### BPE Short Outlet Reducing Tee Clamp End DT-4.1.2-9 (DT-20)



SIZE	ØD	T	Ød	t	L1	L
3/4"x1/2"	19.05	1.65	12.7	1.65	25.40	127.00
1"x1/2"	25.4	1.65	12.7	1.65	28.58	133.36
1"x3/4"	25.4	1.65	19.05	1.65	28.58	133.36
1-1/2"x1/2"	38.1	1.65	12.7	1.65	34.93	146.06
1-1/2"x3/4"	38.1	1.65	19.05	1.65	34.93	146.06
1-1/2"x1"	38.1	1.65	25.4	1.65	34.93	146.06
2"x1/2"	50.8	1.65	12.7	1.65	41.28	171.46
2"x3/4"	50.8	1.65	19.05	1.65	41.28	171.46
2"x1"	50.8	1.65	25.4	1.65	41.28	171.46
2"x1-1/2"	50.8	1.65	38.1	1.65	41.28	171.46
2-1/2"x1/2"	63.5	1.65	12.7	1.65	47.63	184.16
2-1/2"x3/4"	63.5	1.65	19.05	1.65	47.63	184.16
2-1/2"x1"	63.5	1.65	25.4	1.65	47.63	184.16
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	47.63	184.16
2-1/2"x2"	63.5	1.65	50.8	1.65	47.63	184.16
3"x1/2"	76.2	1.65	12.7	1.65	53.98	196.86
3"x3/4"	76.2	1.65	19.05	1.65	53.98	196.86
3"x1"	76.2	1.65	25.4	1.65	53.98	196.86

SIZE	ØD	T	Ød	t	L1	L
3"x1-1/2"	76.2	1.65	38.1	1.65	53.98	196.86
3"x2"	76.2	1.65	50.8	1.65	53.98	196.86
3"x2-1/2"	76.2	1.65	63.5	1.65	53.98	196.86
4"x1/2"	101.6	2.11	12.7	1.65	66.68	241.30
4"x3/4"	101.6	2.11	19.05	1.65	66.68	241.30
4"x1"	101.6	2.11	25.4	1.65	66.68	241.30
4"x1-1/2"	101.6	2.11	38.1	1.65	66.68	241.30
4"x2"	101.6	2.11	50.8	1.65	66.68	241.30
4"x2-1/2"	101.6	2.11	63.5	1.65	66.68	241.30
4"x3"	101.6	2.11	76.2	1.65	66.68	241.30
6"x1/2"	152.4	2.77	12.7	1.65	92.08	361.96
6"x3/4"	152.4	2.77	19.05	1.65	92.08	361.96
6"x1"	152.4	2.77	25.4	1.65	92.08	361.96
6"x1-1/2"	152.4	2.77	38.1	1.65	92.08	361.96
6"x2"	152.4	2.77	50.8	1.65	92.08	361.96
6"x2-1/2"	152.4	2.77	63.5	1.65	92.08	361.96
6"x3"	152.4	2.77	76.2	1.65	92.08	361.96
6"x4"	152.4	2.77	101.6	2.11	95.25	361.96

#### BPE Concentric Reducer Clamp End DT-4.1.3-3 (DT-21)



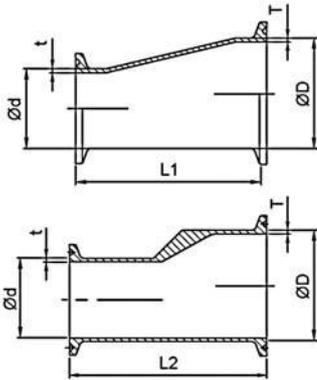
SIZE	ØD	T	Ød	t	L1	L2
3/4"x1/2"	19.05	1.65	12.7	1.65	50.8	79.38
1"x1/2"	25.4	1.65	12.7	1.65	63.5	88.90
1"x3/4"	25.4	1.65	19.05	1.65	50.8	79.38
1-1/2"x1/2"	38.1	1.65	12.7	1.65	88.9	101.60
1-1/2"x3/4"	38.1	1.65	19.05	1.65	76.2	101.60
1-1/2"x1"	38.1	1.65	25.4	1.65	76.2	88.90
2"x1/2"	50.8	1.65	12.7	1.65	139.7	111.13
2"x3/4"	50.8	1.65	19.05	1.65	127.0	111.13
2"x1"	50.8	1.65	25.4	1.65	127.0	111.13
2" x 1-1/2"	50.8	1.65	38.1	1.65	76.2	88.90
2-1/2"x1/2"	63.5	1.65	12.7	1.65	190.5	-
2-1/2"x3/4"	63.5	1.65	19.05	1.65	177.8	-
2-1/2"x1"	63.5	1.65	25.4	1.65	177.8	111.13

SIZE	ØD	T	Ød	t	L1	L2
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	127.0	111.13
2-1/2"x2"	63.5	1.65	50.8	1.65	76.2	88.90
3"x1"	76.2	1.65	25.4	1.65	288.6	133.35
3"x1-1/2"	76.2	1.65	38.1	1.65	117.8	133.35
3"x2"	76.2	1.65	50.8	1.65	127.0	111.13
3"x2-1/2"	76.2	1.65	63.5	1.65	76.2	92.08
4"x1"	101.6	2.11	25.4	1.65	333.4	-
4"x1-1/2"	101.6	2.11	38.1	1.65	282.6	-
4"x2"	101.6	2.11	50.8	1.65	231.8	158.75
4"x2-1/2"	101.6	2.11	63.5	1.65	181.0	136.53
4"x3"	101.6	2.11	76.2	2.11	130.2	127.00
6"x3"	152.4	2.77	76.2	1.65	-	215.90
6"x4"	152.4	2.77	101.6	2.11	193.7	177.80

### ASME BPE Fittings

Dimension (mm)

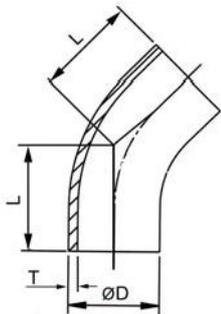
#### BPE Eccentric Reducer Clamp End DT-4.1.3-3 (DT-21)



SIZE	ØD	T	Ød	t	L1	L2
3/4"x1/2"	19.05	1.65	12.7	1.65	50.8	79.38
1"x1/2"	25.4	1.65	12.7	1.65	63.5	88.90
1"x3/4"	25.4	1.65	19.05	1.65	50.8	79.38
1-1/2"x1/2"	38.1	1.65	12.7	1.65	88.9	101.60
1-1/2"x3/4"	38.1	1.65	19.05	1.65	76.2	101.60
1-1/2"x1"	38.1	1.65	25.4	1.65	76.2	88.90
2"x1/2"	50.8	1.65	12.7	1.65	139.7	111.13
2"x3/4"	50.8	1.65	19.05	1.65	127.0	111.13
2"x1"	50.8	1.65	25.4	1.65	127.0	111.13
2"x1-1/2"	50.8	1.65	38.1	1.65	76.2	88.90
2-1/2"x1/2"	63.5	1.65	12.7	1.65	190.5	-
2-1/2"x3/4"	63.5	1.65	19.05	1.65	177.8	-
2-1/2"x1"	63.5	1.65	25.4	1.65	177.8	111.13

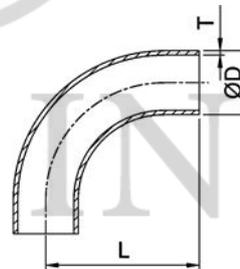
SIZE	ØD	T	Ød	t	L1	L2
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	127.0	111.13
2-1/2"x2"	63.5	1.65	50.8	1.65	76.2	88.90
3"x1"	76.2	1.65	25.4	1.65	288.6	133.35
3"x1-1/2"	76.2	1.65	38.1	1.65	117.8	133.35
3"x2"	76.2	1.65	50.8	1.65	127.0	111.13
3"x2-1/2"	76.2	1.65	63.5	1.65	76.2	92.08
4"x1"	101.6	2.11	25.4	1.65	333.4	-
4"x1-1/2"	101.6	2.11	38.1	1.65	282.6	-
4"x2"	101.6	2.11	50.8	1.65	231.8	158.75
4"x2-1/2"	101.6	2.11	63.5	1.65	181.0	136.53
4"x3"	101.6	2.11	76.2	2.11	130.2	127.00
6"x3"	152.4	2.77	76.2	1.65	-	215.90
6"x4"	152.4	2.77	101.6	2.11	193.7	177.80

#### BPE 45° Elbow Weld End DT-4.1.1-4 (DT-8)



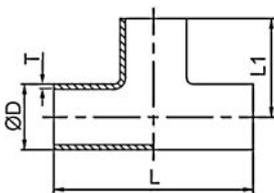
SIZE	ØD	T	L
1/2"	12.7	1.65	57.15
3/4"	19.05	1.65	57.15
1"	25.4	1.65	57.15
1-1/2"	38.1	1.65	63.50
2"	50.8	1.65	76.20
2-1/2"	63.5	1.65	85.73
3"	76.2	1.65	92.08
4"	101.6	2.11	114.30
6"	152.4	2.77	158.75

#### BPE 90° Elbow Weld End DT-4.1.1-1 (DT-7)



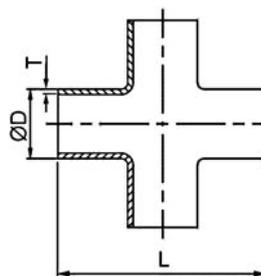
SIZE	ØD	T	L
1/2"	12.7	1.65	76.20
3/4"	19.05	1.65	76.20
1"	25.4	1.65	76.20
1-1/2"	38.1	1.65	95.25
2"	50.8	1.65	120.65
2-1/2"	63.5	1.65	139.70
3"	76.2	1.65	158.75
4"	101.6	2.11	203.20
6"	152.4	2.77	292.10

#### BPE Equal Tee Weld End DT-4.1.2-1 (DT-9)



SIZE	ØD	T	L1	L
1/2"	12.7	1.65	47.63	95.26
3/4"	19.05	1.65	50.80	101.60
1"	25.4	1.65	53.98	107.96
1-1/2"	38.1	1.65	60.33	120.66
2"	50.8	1.65	73.03	146.06
2-1/2"	63.5	1.65	79.38	158.76
3"	76.2	1.65	85.73	171.46
4"	101.6	2.11	104.78	209.56
6"	152.4	2.77	142.88	285.76

#### BPE Equal Cross Weld End DT-4.1.2-1 (DT-9)

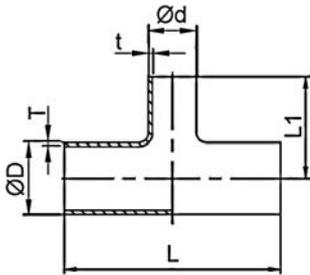


SIZE	ØD	T	L
1/2"	12.7	1.65	95.26
3/4"	19.05	1.65	101.60
1"	25.4	1.65	107.96
1-1/2"	38.1	1.65	120.66
2"	50.8	1.65	146.06
2-1/2"	63.5	1.65	158.76
3"	76.2	1.65	171.46
4"	101.6	2.11	209.56
6"	152.4	2.77	285.76

### ASME BPE Fittings

Dimension (mm)

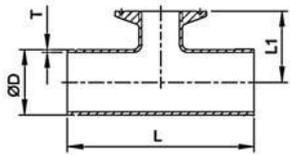
#### BPE Reducing Tee Weld End DT-4.1.2-6 (DT-10)



SIZE	ØD	T	Ød	t	L1	L
3/4"x1/2"	19.05	1.65	12.7	1.65	50.80	101.60
1"x1/2"	25.4	1.65	12.7	1.65	53.98	107.96
1"x3/4"	25.4	1.65	19.05	1.65	53.98	107.96
1-1/2"x1/2"	38.1	1.65	12.7	1.65	60.33	120.66
1-1/2"x3/4"	38.1	1.65	19.05	1.65	60.33	120.66
1-1/2"x1"	38.1	1.65	25.4	1.65	60.33	120.66
2"x1/2"	50.8	1.65	12.7	1.65	66.68	146.06
2"x3/4"	50.8	1.65	19.05	1.65	66.68	146.06
2"x1"	50.8	1.65	25.4	1.65	66.68	146.06
2"x1-1/2"	50.8	1.65	38.1	1.65	66.68	146.06
2-1/2"x1/2"	63.5	1.65	12.7	1.65	73.03	158.76
2-1/2"x3/4"	63.5	1.65	19.05	1.65	73.03	158.76
2-1/2"x1"	63.5	1.65	25.4	1.65	73.03	158.76
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	73.03	158.76
2-1/2"x2"	63.5	1.65	50.8	1.65	73.03	158.76

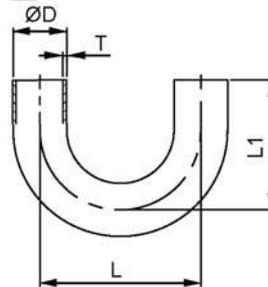
SIZE	ØD	T	Ød	t	L1	L
3"x1/2"	76.2	1.65	12.7	1.65	79.38	171.46
3"x3/4"	76.2	1.65	19.05	1.65	79.38	171.46
3"x1"	76.2	1.65	25.4	1.65	79.38	171.46
3"x1-1/2"	76.2	1.65	38.1	1.65	79.38	171.46
3"x2"	76.2	1.65	50.8	1.65	79.38	171.46
3"x2-1/2"	76.2	1.65	63.5	1.65	79.38	171.46
4"x1/2"	101.6	2.11	12.7	1.65	92.08	209.56
4"x3/4"	101.6	2.11	19.05	1.65	92.08	209.56
4"x1"	101.6	2.11	25.4	1.65	92.08	209.56
4"x1-1/2"	101.6	2.11	38.1	1.65	92.08	209.56
4"x2"	101.6	2.11	50.8	1.65	98.43	209.56
4"x2-1/2"	101.6	2.11	63.5	1.65	98.43	209.56
4"x3"	101.6	2.11	76.2	1.65	98.43	209.56
6"x3"	152.4	2.77	76.2	1.65	123.83	285.76
6"x4"	152.4	2.77	101.6	2.11	130.18	285.76

#### BPE Equal Outlet Tee Weld x Clamp End DT-4.1.2-2 (DT-15)



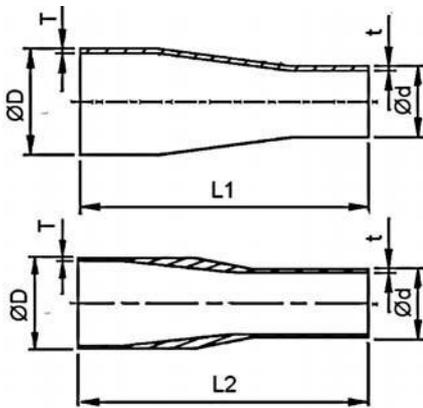
SIZE	ØD	T	L	L1
1/2"	12.7	1.65	47.63	25.40
3/4"	19.05	1.65	50.80	28.58
1"	25.4	1.65	53.98	28.59
1-1/2"	38.1	1.65	60.33	34.39
2"	50.8	1.65	73.03	41.28
2-1/2"	63.5	1.65	79.38	47.63
3"	76.2	1.65	85.73	53.98
4"	101.6	2.11	104.78	69.85

#### BPE 180° Elbow Weld End DT-4.1.1-7 (DT-23)



SIZE	ØD	T	L1	L
1/2"	12.7	1.65	76.2	114.3
3/4"	19.05	1.65	76.2	114.3
1"	25.4	1.65	76.2	76.2
1-1/2"	38.1	1.65	114.3	114.3
2"	50.8	1.65	127.0	152.4
2-1/2"	63.5	1.65	146.05	190.5
3"	76.2	1.65	165.1	228.6
4"	101.6	2.11	215.9	304.8
6"	152.4	2.77	292.1	457.2

#### BPE Concentric Reducer Weld End DT-4.1.3-1 (DT-11)



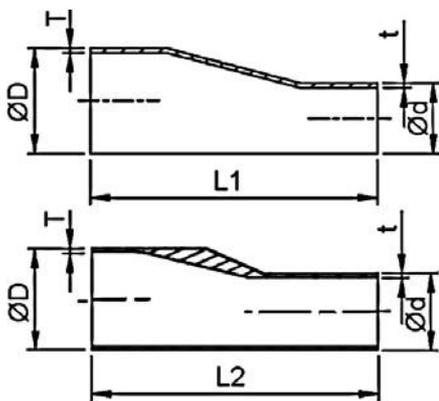
SIZE	ØD	T	Øb	t	L1	L2
3/4"x1/2"	19.05	1.65	12.7	1.65	101.6	53.93
1"x1/2"	25.4	1.65	12.7	1.65	114.3	63.50
1"x3/4"	25.4	1.65	19.05	1.65	101.6	53.93
1-1/2"x1/2"	38.1	1.65	12.7	1.65	139.7	76.20
1-1/2"x3/4"	38.1	1.65	19.05	1.65	127.0	76.20
1-1/2"x1"	38.1	1.65	25.4	1.65	127.0	63.50
2"x1/2"	50.8	1.65	12.7	1.65	196.9	85.73
2"x3/4"	50.8	1.65	19.05	1.65	184.2	85.73
2"x1"	50.8	1.65	25.4	1.65	184.2	85.73
2"x1-1/2"	50.8	1.65	38.1	1.65	133.4	63.50
2-1/2"x1/2"	63.5	1.65	12.7	1.65	247.7	-
2-1/2"x3/4"	63.5	1.65	19.05	1.65	235.0	-
2-1/2"x1"	63.5	1.65	25.4	1.65	235.0	85.73

SIZE	ØD	T	Ød	t	L1	L2
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	184.2	85.73
2-1/2"x2"	63.5	1.65	50.8	1.65	139.7	63.50
3"x1"	76.2	1.65	25.4	1.65	285.8	107.95
3"x1-1/2"	76.2	1.65	38.1	1.65	235.0	107.95
3"x2"	76.2	1.65	50.8	1.65	190.5	85.73
3"x2-1/2"	76.2	1.65	63.5	1.65	139.7	66.08
4"x1"	101.6	2.11	25.4	1.65	393.7	-
4"x1-1/2"	101.6	2.11	38.1	1.65	342.9	-
4"x2"	101.6	2.11	50.8	1.65	298.5	130.18
4"x2-1/2"	101.6	2.11	63.5	1.65	247.7	107.95
4"x3"	101.6	2.11	76.2	1.65	196.9	98.43
6"x3"	152.4	2.77	76.2	1.65	-	184.15
6"x4"	152.4	2.77	101.6	2.11	254.0	142.88

### ASME BPE Fittings

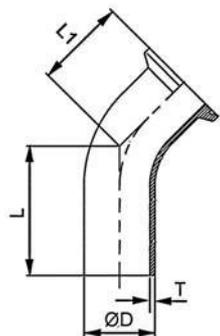
Dimension (mm)

#### BPE Eccentric Reducer Weld End DT-4.1.3-1 (DT-11)



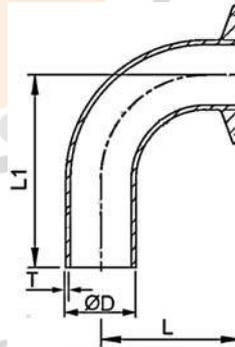
SIZE	ØD	T	Ød	t	L1	L2	SIZE	ØD	T	Ød	t	L1	L2
3/4"x1/2"	19.05	1.65	12.7	1.65	101.6	53.93	2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	184.2	85.73
1"x1/2"	25.4	1.65	12.7	1.65	114.3	63.50	2-1/2"x2"	63.5	1.65	50.8	1.65	139.7	63.50
1"x3/4"	25.4	1.65	19.05	1.65	101.6	53.93	3"x1"	76.2	1.65	25.4	1.65	285.8	107.95
1-1/2"x1/2"	38.1	1.65	12.7	1.65	139.7	76.20	3"x1-1/2"	76.2	1.65	38.1	1.65	235.0	107.95
1-1/2"x3/4"	38.1	1.65	19.05	1.65	127.0	76.20	3"x2"	76.2	1.65	50.8	1.65	190.5	85.73
1-1/2"x1"	38.1	1.65	25.4	1.65	127.0	63.50	3"x2-1/2"	76.2	1.65	63.5	1.65	139.7	66.08
2"x1/2"	50.8	1.65	12.7	1.65	196.9	85.73	4"x1"	101.6	2.11	25.4	1.65	393.7	-
2"x3/4"	50.8	1.65	19.05	1.65	184.2	85.73	4"x1-1/2"	101.6	2.11	38.1	1.65	342.9	-
2"x1"	50.8	1.65	25.4	1.65	184.2	85.73	4"x2"	101.6	2.11	50.8	1.65	298.5	130.18
2"x1-1/2"	50.8	1.65	38.1	1.65	133.4	63.50	4"x2-1/2"	101.6	2.11	63.5	1.65	247.7	107.95
2-1/2"x1/2"	63.5	1.65	12.7	1.65	247.7	-	4"x3"	101.6	2.11	76.2	1.65	196.9	98.43
2-1/2"x3/4"	63.5	1.65	19.05	1.65	235.0	-	6"x3"	152.4	2.77	76.2	1.65	-	184.15
2-1/2"x1"	63.5	1.65	25.4	1.65	235.0	85.73	6"x4"	152.4	2.77	101.6	2.11	254.0	142.88

#### BPE 45° Elbow Clamp x Weld End DT-4.1.1-5 (DT-13)



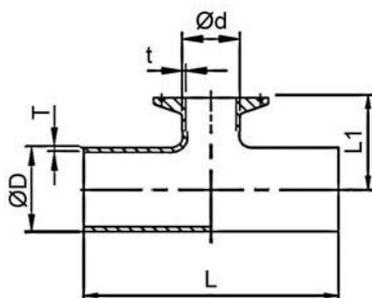
SIZE	ØD	T	L1	L
1/2"	12.7	1.65	25.40	57.15
3/4"	19.05	1.65	25.40	57.15
1"	25.4	1.65	28.58	57.15
1-1/2"	38.1	1.65	36.53	63.50
2"	50.8	1.65	44.45	76.20
2-1/2"	63.5	1.65	52.40	85.73
3"	76.2	1.65	60.33	92.08
4"	101.6	2.11	79.38	114.30
6"	152.4	2.77	133.35	158.75

#### BPE 90° Elbow Clamp x Weld End DT-4.1.1-2 (DT-12)



SIZE	ØD	T	L1	L
1/2"	12.7	1.65	76.20	41.28
3/4"	19.05	1.65	76.20	41.28
1"	25.4	1.65	76.20	50.80
1-1/2"	38.1	1.65	95.25	69.85
2"	50.8	1.65	120.65	88.90
2-1/2"	63.5	1.65	139.70	107.95
3"	76.2	1.65	158.75	127.00
4"	101.6	2.11	203.20	168.28
6"	152.4	2.77	292.10	266.70

#### BPE Short Outlet Reducing Tee Clamp x Weld End DT-4.1.2-7 (DT-14)



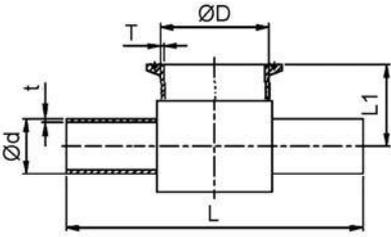
SIZE	ØD	T	Ød	t	L	L1
3/4"x1/2"	19.05	1.65	12.7	1.65	101.60	25.40
1"x1/2"	25.4	1.65	12.7	1.65	107.96	28.58
1"x3/4"	25.4	1.65	19.05	1.65	107.96	28.58
1-1/2"x1/2"	38.1	1.65	12.7	1.65	120.66	34.93
1-1/2"x3/4"	38.1	1.65	19.05	1.65	120.66	34.93
1-1/2"x1"	38.1	1.65	25.4	1.65	120.66	34.93
2"x1/2"	50.8	1.65	12.7	1.65	146.06	41.28
2"x3/4"	50.8	1.65	19.05	1.65	146.06	41.28
2"x1"	50.8	1.65	25.4	1.65	146.06	41.28
2"x1-1/2"	63.5	1.65	38.1	1.65	146.06	41.28
2-1/2"x1/2"	63.5	1.65	12.7	1.65	158.76	47.63
2-1/2"x3/4"	63.5	1.65	19.05	1.65	158.76	47.63
2-1/2"x1"	63.5	1.65	25.4	1.65	158.76	47.63
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	158.76	47.63
2-1/2"x2"	63.5	1.65	50.8	1.65	158.76	47.63
3"x1/2"	76.2	1.65	12.7	1.65	171.46	53.98
3"x3/4"	76.2	1.65	19.05	1.65	171.46	53.98
3"x1"	76.2	1.65	25.4	1.65	171.46	53.98

SIZE	ØD	T	Ød	t	L	L1
3"x1-1/2"	76.2	1.65	38.1	1.65	171.46	53.98
3"x2"	76.2	1.65	50.8	1.65	171.46	53.98
3"x2-1/2"	76.2	1.65	63.5	1.65	171.46	53.98
4"x1/2"	101.6	2.11	12.7	1.65	209.56	66.68
4"x3/4"	101.6	2.11	19.05	1.65	209.56	66.68
4"x1"	101.6	2.11	25.4	1.65	209.56	66.68
4"x1-1/2"	101.6	2.11	38.1	1.65	209.56	66.68
4"x2"	101.6	2.11	50.8	1.65	209.56	66.68
4"x2-1/2"	101.6	2.11	63.5	1.65	209.56	66.68
4"x3"	101.6	2.11	76.2	1.65	209.56	66.68
6"x1/2"	152.4	2.77	12.7	1.65	285.76	92.08
6"x3/4"	152.4	2.77	19.05	1.65	285.76	92.08
6"x1"	152.4	2.77	25.4	1.65	285.76	92.08
6"x1-1/2"	152.4	2.77	38.1	1.65	285.76	92.08
6"x2"	152.4	2.77	50.8	1.65	285.76	92.08
6"x2-1/2"	152.4	2.77	63.5	1.65	285.76	92.08
6"x3"	152.4	2.77	76.2	1.65	285.76	92.08
6"x4"	152.4	2.77	101.6	2.11	285.76	92.08

### ASME BPE Fittings

Dimension (mm)

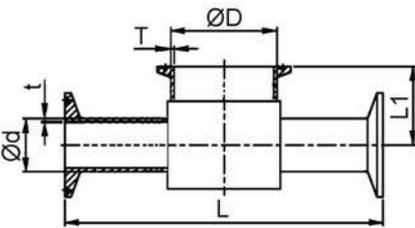
#### BPE Instrument Tee Clamp x Weld End DT-4.1.2-10 (DT-28)



SIZE	ØD	T	Ød	t	L1	L
1-1/2"x1/2"	38.1	1.65	12.7	1.65	22.23	127.0
1-1/2"x3/4"	38.1	1.65	19.05	1.65	25.40	127.0
1-1/2"x1"	38.1	1.65	25.4	1.65	28.58	127.0
2"x1/2"	50.8	1.65	12.7	1.65	25.40	139.7
2"x3/4"	50.8	1.65	19.05	1.65	28.58	139.7
2"x1"	50.8	1.65	25.4	1.65	31.75	139.7
2"x1-1/2"	50.8	1.65	38.1	1.65	38.10	139.7
2-1/2"x1/2"	63.5	1.65	12.7	1.65	35.00	170.0
2-1/2"x3/4"	63.5	1.65	19.05	1.65	38.10	170.0
2-1/2"x1"	63.5	1.65	25.4	1.65	41.30	170.0
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	44.50	170.0
2-1/2"x2"	63.5	1.65	50.8	1.65	48.00	170.0

SIZE	ØD	T	Ød	t	L1	L
3"x1/2"	76.2	1.65	12.7	1.65	38.1	180.0
3"x3/4"	76.2	1.65	19.05	1.65	41.3	180.0
3"x1"	76.2	1.65	25.4	1.65	44.5	180.0
3"x1-1/2"	76.2	1.65	38.1	1.65	48.0	180.0
3"x2"	76.2	1.65	50.8	1.65	50.8	180.0
3"x2-1/2"	76.2	1.65	63.5	1.65	54.0	180.0
4"x1/2"	101.6	1.65	12.7	1.65	79.4	220.0
4"x3/4"	101.6	1.65	19.05	1.65	82.6	220.0
4"x1"	101.6	2.11	25.4	1.65	85.7	220.0
4"x1-1/2"	101.6	2.11	38.1	1.65	88.9	220.0
4"x2"	101.6	2.11	50.8	1.65	95.2	220.0
4"x2-1/2"	101.6	2.11	63.5	1.65	98.4	220.0
4"x3"	101.6	2.11	76.2	1.65	101.6	220.0

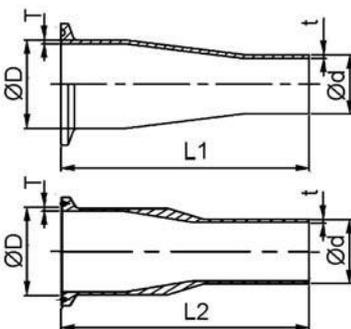
#### BPE Instrument Tee Clamp End DT-4.1.2-11 (DT-29)



SIZE	ØD	T	Ød	t	L1	L
1-1/2"x1/2"	38.1	1.65	12.7	1.65	22.23	152.4
1-1/2"x3/4"	38.1	1.65	19.05	1.65	25.40	152.4
1-1/2"x1"	38.1	1.65	25.4	1.65	28.58	152.4
2"x1/2"	50.8	1.65	12.7	1.65	25.40	165.1
2"x3/4"	50.8	1.65	19.05	1.65	28.58	165.1
2"x1"	50.8	1.65	25.4	1.65	31.75	165.1
2"x1-1/2"	50.8	1.65	38.1	1.65	38.10	165.1
2-1/2"x1/2"	63.5	1.65	12.7	1.65	35.00	195.4
2-1/2"x3/4"	63.5	1.65	19.05	1.65	38.10	195.4
2-1/2"x1"	63.5	1.65	25.4	1.65	41.30	195.4
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	44.50	195.4
2-1/2"x2"	63.5	1.65	50.8	1.65	48.00	195.4

SIZE	ØD	T	Ød	t	L1	L
3"x1/2"	76.2	1.65	12.7	1.65	38.1	205.4
3"x3/4"	76.2	1.65	19.05	1.65	41.3	205.4
3"x1"	76.2	1.65	25.4	1.65	44.5	205.4
3"x1-1/2"	76.2	1.65	38.1	1.65	48.0	205.4
3"x2"	76.2	1.65	50.8	1.65	50.8	205.4
3"x2-1/2"	76.2	1.65	63.5	1.65	54.0	205.4
4"x1/2"	101.6	1.65	12.7	1.65	79.4	245.4
4"x3/4"	101.6	1.65	19.05	1.65	82.6	245.4
4"x1"	101.6	2.11	25.4	1.65	85.7	245.4
4"x1-1/2"	101.6	2.11	38.1	1.65	88.9	245.4
4"x2"	101.6	2.11	50.8	1.65	95.2	245.4
4"x2-1/2"	101.6	2.11	63.5	1.65	98.4	245.4
4"x3"	101.6	2.11	76.2	1.65	101.6	245.4

#### BPE Concentric Reducer Clamp x Weld End DT-4.1.3-2 (DT-26)



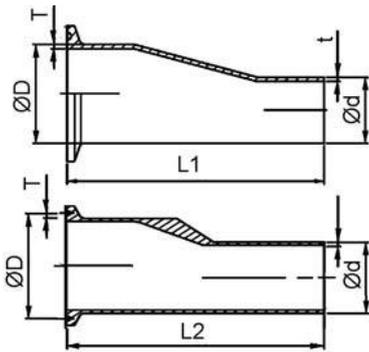
SIZE	ØD	T	Ød	t	L1	L2
3/4"x1/2"	19.05	1.65	12.7	1.65	76.2	66.68
1"x1/2"	25.4	1.65	12.7	1.65	88.9	76.20
1"x3/4"	25.4	1.65	19.05	1.65	76.2	66.68
1-1/2"x1/2"	38.1	1.65	12.7	1.65	-	88.90
1-1/2"x3/4"	38.1	1.65	19.05	1.65	101.6	88.90
1-1/2"x1"	38.1	1.65	25.4	1.65	101.6	76.20
2"x1/2"	50.8	1.65	12.7	1.65	-	98.43
2"x3/4"	50.8	1.65	19.05	1.65	-	98.43
2"x1"	50.8	1.65	25.4	1.65	152.4	98.43
2"x1-1/2"	50.8	1.65	38.1	1.65	101.6	76.20
2-1/2"x1"	63.5	1.65	25.4	1.65	-	98.43

SIZE	ØD	T	Ød	t	L1	L2
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	152.4	98.43
2-1/2"x2"	63.5	1.65	50.8	1.65	107.9	76.20
3"x1"	76.2	1.65	25.4	1.65	-	120.65
3"x1-1/2"	76.2	1.65	38.1	1.65	203.2	120.65
3"x2"	76.2	1.65	50.8	1.65	158.8	98.43
3"x2-1/2"	76.2	1.65	63.5	1.65	108.0	79.38
4"x2"	101.6	2.11	50.8	1.65	263.5	146.05
4"x2-1/2"	101.6	2.11	63.5	1.65	212.7	123.83
4"x3"	101.6	2.11	76.2	1.65	161.9	114.30
6"x3"	152.4	2.77	76.2	2.77	228.6	203.20
6"x4"	152.4	2.77	101.6	2.77	228.6	161.93

## ASME BPE Fittings

Dimension (mm)

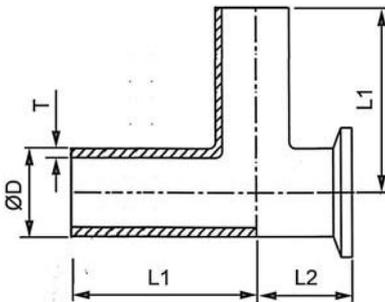
### BPE Eccentric Reducer Clamp x Weld End DT-4.1.3-2 (DT-26)



SIZE	ØD	T	Ød	t	L1	L2
3/4"x1/2"	19.05	1.65	12.7	1.65	76.2	66.68
1"x1/2"	25.4	1.65	12.7	1.65	88.9	76.20
1"x3/4"	25.4	1.65	19.05	1.65	76.2	66.68
1-1/2"x1/2"	38.1	1.65	12.7	1.65	-	88.90
1-1/2"x3/4"	38.1	1.65	19.05	1.65	101.6	88.90
1-1/2"x1"	38.1	1.65	25.4	1.65	101.6	76.20
2"x1/2"	50.8	1.65	12.7	1.65	-	98.43
2"x3/4"	50.8	1.65	19.05	1.65	-	98.43
2"x1"	50.8	1.65	25.4	1.65	152.4	98.43
2"x1-1/2"	50.8	1.65	38.1	1.65	101.6	76.20
2-1/2"x1"	63.5	1.65	25.4	1.65	-	98.43

SIZE	ØA	T	ØB	t	L1	L2
2-1/2"x1-1/2"	63.5	1.65	38.1	1.65	152.4	98.43
2-1/2"x2"	63.5	1.65	50.8	1.65	107.9	76.20
3"x1"	76.2	1.65	25.4	1.65	-	120.65
3"x1-1/2"	76.2	1.65	38.1	1.65	203.2	120.65
3"x2"	76.2	1.65	50.8	1.65	158.8	98.43
3"x2-1/2"	76.2	1.65	63.5	1.65	108.0	79.38
4"x2"	101.6	2.11	50.8	1.65	263.5	146.05
4"x2-1/2"	101.6	2.11	63.5	1.65	212.7	123.83
4"x3"	101.6	2.11	76.2	1.65	161.9	114.30
6"x3"	152.4	2.77	76.2	2.77	228.6	203.20
6"x4"	152.4	2.77	101.6	2.77	228.6	161.93

### BPE Short Outlet Run Tee Weld x Clamp End DT-4.1.2-3 (DT-25)



SIZE	ØD	T	L1	L2
1/2"	12.7	1.65	47.63	22.23
3/4"	19.05	1.65	50.80	25.40
1"	25.4	1.65	53.98	28.58
1-1/2"	38.1	1.65	60.33	34.93
2"	50.8	1.65	73.03	41.28
2-1/2"	63.5	1.65	79.38	47.63
3"	76.2	1.65	85.73	53.98
4"	101.6	2.11	104.78	69.85
6"	152.4	2.77	142.88	117.48

## ASME BPE Fittings

### Surface Options:

#### Ra Reading for Tubing

As drawing and / or Mechanically Polished		
Surface Designation	Ra Average	
	μ-in	μ-m
SF1	15	0.500
SF2	20	0.625
SF3	20	0.625

Mechanically Polished and Electropolished		
Surface Designation	Ra Average	
	μ-in	μ-m
SF3	10	0.375
SF4	15	0.500
SF4	15	0.500

Outer surface:  $Ra \leq 32\mu\text{in}$  ( $0.8\mu\text{m}$ )

#### Ra Reading for Fittings

Mechanically Polished		
Surface Designation	Ra Average	
	μ-in	μ-m
SF1	20	0.50
SF2	25	0.63
SF3	30	0.76

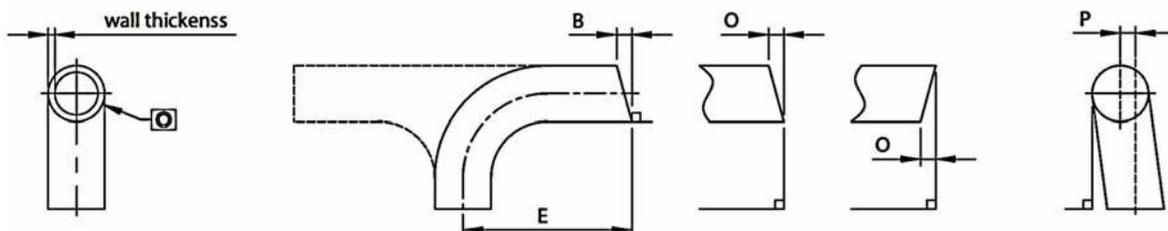
Mechanically Polished and Electropolished		
Surface Designation	Ra Average	
	μ-in	μ-m
SF4	15	0.38
SF5	20	0.50
SF6	25	0.63

Outer surface:  $Ra \leq 32\mu\text{in}$  ( $0.8\mu\text{m}$ )

### Dimension and Tolerance:

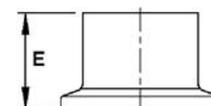
Unit: Millimeter

Size	OD	Wall Thickness		Squareness face to tangent	Off Angle	Off Plane
		Mechanical Polish	Electropolish	B	O	P
1/2"	±0.13	+0.13/-0.20	+0.13/-0.25	0.13	0.36	0.76
3/4"	±0.13	+0.13/-0.20	+0.13/-0.25	0.13	0.46	0.76
1"	±0.13	+0.13/-0.20	+0.13/-0.25	0.20	0.64	0.76
1-1/2"	±0.20	+0.13/-0.20	+0.13/-0.25	0.20	0.86	1.27
2"	±0.20	+0.13/-0.20	+0.13/-0.25	0.20	1.09	1.27
2-1/2"	±0.25	+0.13/-0.20	+0.13/-0.25	0.25	1.37	1.27
3"	±0.25	+0.13/-0.20	+0.13/-0.25	0.41	1.73	1.27
4"	±0.38	+0.20/-0.25	+0.20/-0.30	0.41	2.18	1.52



Note: Tolerance on E end-to-end and center-to-end: 1.27mm.

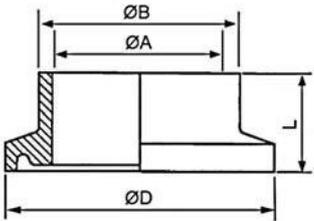
Tolerance on for centerline radius (CLR) is ±10% of the nominal dimension.



## ASME BPE Ferrule

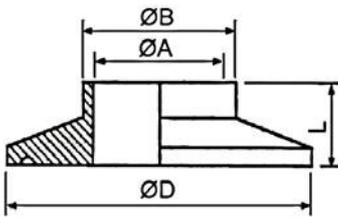
Dimension (mm)

## BPE Ferrule Clamp x Weld End DT-4.1.4-1 (DT-22)



SIZE	ØD	ØA	ØB	L		
				Long	Medium	Short
1/4"	25	4.57	6.35	44.45	28.58	12.70
3/8"	25	7.75	9.53	44.45	28.58	12.70
1/2"	25	9.40	12.70	44.45	28.58	12.70
3/4"	25	15.75	19.05	44.45	28.58	12.70
1"	34	22.10	25.40	44.45	28.58	12.70

## BPE Ferrule Clamp x Weld End DT-4.1.4-1 (DT-22)



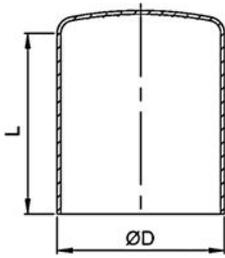
SIZE	ØD	ØA	ØB	L		
				Long	Medium	Short
1"	50.39	22.10	25.40	44.45	28.58	12.70
1-1/2"	50.39	34.80	38.10	44.45	28.58	12.70
2"	63.91	47.50	50.80	57.15	28.58	12.70
2-1/2"	77.39	60.20	63.50	57.15	28.58	12.70
3"	90.91	72.90	76.20	57.15	28.58	12.70
4"	118.92	97.38	101.60	57.15	28.58	15.88
6"	166.88	146.86	152.40	76.20	38.10	19.05

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## ASME BPE Cap

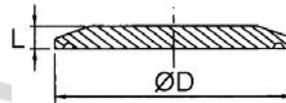
Dimension (mm)

BPE Weld Cap DT-4.1.5-1 (DT-30)



SIZE	ØD	L
1/2"	12.70	38.10
3/4"	19.05	38.10
1"	25.40	38.10
1-1/2"	38.10	38.10
2"	50.80	38.10
2-1/2"	63.50	38.10
3"	76.20	44.45
4"	101.60	50.80
6"	152.40	63.50

BPE Solid End Cap DT-4.1.5-2 (DT-31)



SIZE	ØD	L
1/4"	25.00	4.75
3/8"	25.00	4.75
1/2"	25.00	4.75
3/4"	25.00	4.75
1"	34.00	6.35
	50.39	
1-1/2"	50.39	6.35
2"	63.91	6.35
2-1/2"	77.39	6.35
3"	90.91	6.35
4"	118.92	7.92
6"	166.88	11.10

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## ASME BPE 2-Way Diaphragm Valve

### Features:

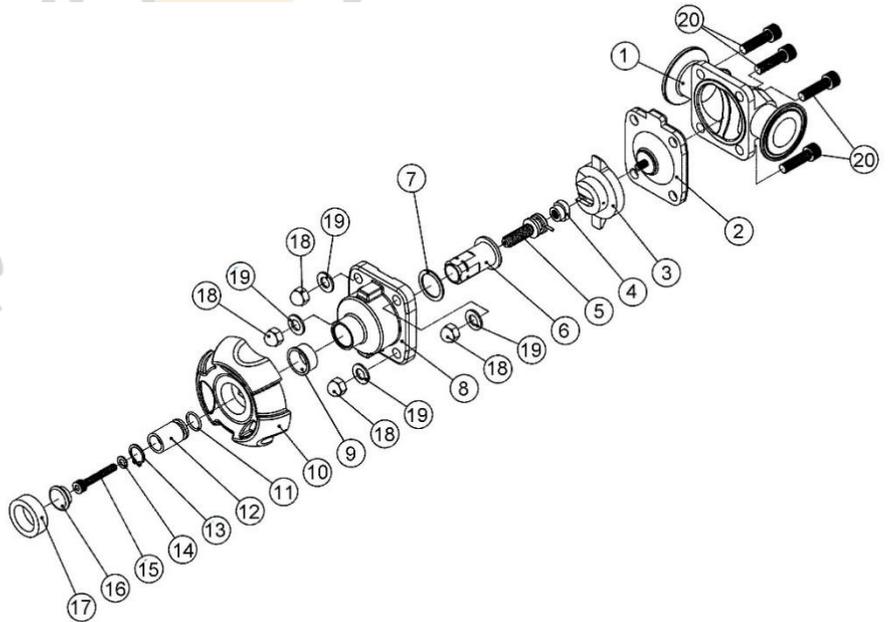
1. Control mode: pneumatic type and manual Type
2. Connection type: clamp or weld end.
3. Operation: normal open & normal close design
4. Working temperature: assembling diaphragm:  
EPDM ( -40°C ~ 110°C ),  
PTFE / EPDM ( -10°C ~ 150°C )
5. Working pressure: Max 10 Bar
6. Surface: ID/OD Mirror Polished  
ID Ra  $\leq$  0.5 $\mu$ m, OD Sand Blasted

### Materials:

Body: Forged / 316L  
Diaphragm: EPDM + PTFE / NC or NO  
The seal of Diaphragm is exchangeable with GEMU

### Parts List:

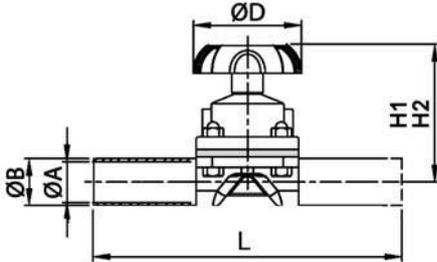
- ① Body : SUS316L
- ② Seal : EPDM + PTFE
- ③ Seat : SUS304
- ④ Screw : SUS304
- ⑤ Bolt : SUS304
- ⑥ Bolt Sleeve : SUS304
- ⑦ Seal : PTFE
- ⑧ Bonnet : SUS304
- ⑨ Sleeve : PEEK
- ⑩ Handle wheel : EPDM + PTFE
- ⑪ O-ring : NBR
- ⑫ Positioning Index : MC (Blue)
- ⑬ Circlip : SUS304
- ⑭ Washer : SUS304
- ⑮ Screw : SUS304
- ⑯ Cover : MC (Blue)
- ⑰ Cap : EPDM + PTFE
- ⑱ Nut : SUS304
- ⑲ Washer : SUS304
- ⑳ Screw : SUS304



## ASME BPE 2-Way Diaphragm Valve

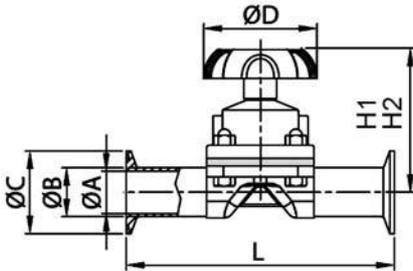
### BPE2DW BPE 2-Way Diaphragm Valve Weld End

Dimension (mm)



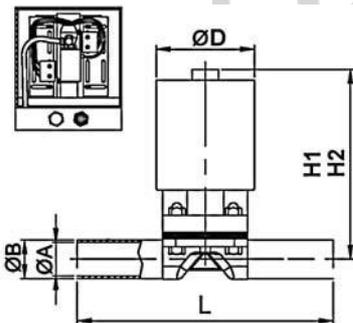
SIZE	ØA	ØB	ØD	L	H1	H2
1/2"	9.4	12.7	60	124.0	74	83
3/4"	15.75	19.05	60	135.0	74	83
1"	22.1	25.4	95	141.2	100	113
1-1/2"	34.8	38.1	95	168.4	119	134
2"	47.5	50.8	118	190.5	135	153

### BPE2DC BPE 2-Way Diaphragm Valve Clamp End



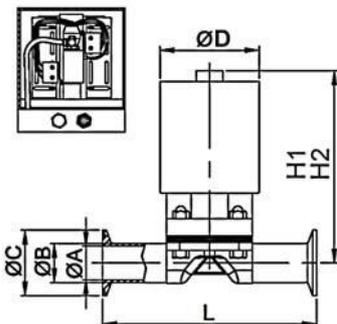
SIZE	ØA	ØB	ØC	ØD	L	H1	H2
1/2"	9.4	12.7	25.00	60	88.9	74	83
3/4"	15.75	19.05	25.00	60	101.6	74	83
1"	22.1	25.4	25.00	95	114.3	100	113
			50.39				
1-1/2"	34.8	38.1	50.39	95	139.7	119	134
2"	47.5	50.8	63.91	118	158.8	135	153

### BPE2DW-A BPE Pneumatic 2-Way Diaphragm Valve Weld End



SIZE	ØA	ØB	ØD	L	H1	H2
1/2"	9.4	12.7	60	124.0	122	131
3/4"	15.75	19.05	60	135.0	122	131
1"	22.1	25.4	95	141.2	212	225
1-1/2"	34.8	38.1	95	168.4	217	232
2"	47.5	50.8	118	190.5	315	333

### BPE2DC-A BPE Pneumatic 2-Way Diaphragm Valve Clamp End



SIZE	ØA	ØB	ØC	ØD	L	H1	H2
1/2"	9.4	12.7	25.00	60	88.9	122	131
3/4"	15.75	19.05	25.00	60	101.6	122	131
1"	22.1	25.4	25.00	95	114.3	212	225
			50.39				
1-1/2"	34.8	38.1	50.39	95	139.7	315	333
2"	47.5	50.8	63.91	118	158.8	135	153

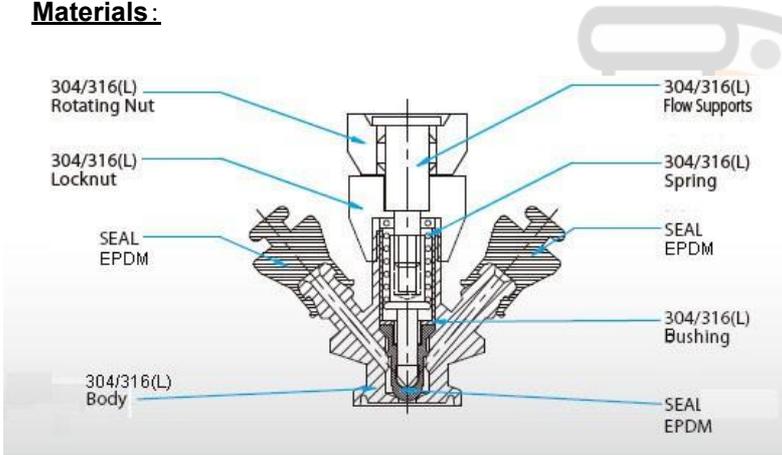
### ASME BPE Sample Valve

**Features:**

1. Connection type: clamp or weld or other
2. Operation: normal open & normal close design
3. Working temperature: full vacuum: -10°C ~ 140°C (EPDM)
4. Working pressure: Max 10 Bar
5. Surface finish: mirror polished / satin / sand blasted



**Materials:**

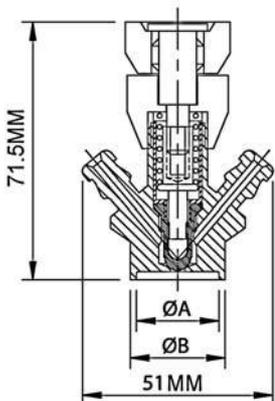


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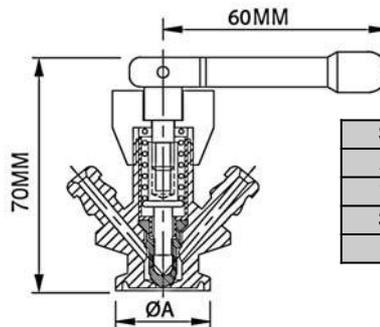
Dimension (mm)

**BPESVW** Hygienic Sample Valve for BPE, Weld End

**BPESVC** Hygienic Sample Valve for BPE, Clamp End



Size	ØA	ØB
1/2"	9.4	12.7
3/4"	15.75	19.05
1"	22.1	25.4



Size	ØA
A37	34.0
1/2"	25.2
3/4"	25.2
1"	50.5

## Wine Macon Butterfly Valve

### Features:

1. Connection: clamp, butt-weld, male part
2. Pressure: 1" ~ 4" 145PSI at 68°F
3. Temperature Range: -15°F to 200°F (-10°C to 95°C)

### Materials:

Body: 304, 316 and 316L available

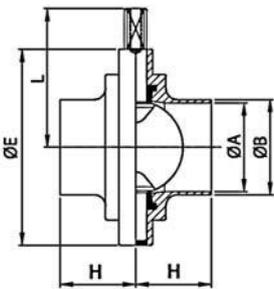
### Options:

1. Handle: 12 position gripper handle and 4 position pull handle
2. Actuator: 5.5 Bar air to spring, full open and close



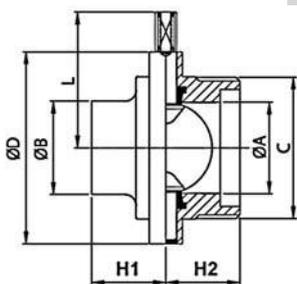
Dimension (mm)

### BFYW-W Wine Butterfly Valve Weld / Weld End



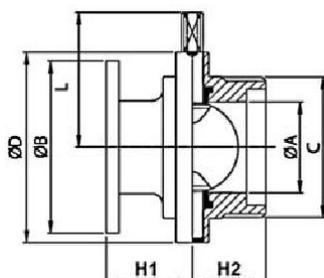
SIZE	ØA	ØB	ØE	H	L
DN40/43	40	43	90	37	61.0
DN50/53	50	53	105	40	64.3
DN60/63	60	63	112	40	74.3
DN70/73	70	73	125	41	77.6
DN80/83	80	83	137	40	84.8
DN100/103	100	103	157	44	101.6

### BFYWM-W Wine Butterfly Valve Weld / Male End



SIZE	ØA	ØB	C	ØD	H1	H2	L
DN40/43	40	43	M55x3	90	37	37	61.0
DN50/53	50	53	M67x3	105	40	40	64.3
DN60/63	60	63	M79x3.5	112	40	40	74.3
DN70/73	70	73	M90x3.5	125	41	41	77.6
DN80/83	80	83	M102x4	137	40	40	84.8
DN100/103	100	103	M125x4	157	44	45	101.6

### BFYWF-W Wine Butterfly Valve Weld / Flange End



SIZE	ØA	ØB	C	ØD	H1	H2	L
DN40/43	40	100	M55x3	90	45	37	61.0
DN50/53	50	100	M67x3	105	48	40	64.3
DN60/63	60	120	M79x3.5	112	50	40	74.3
DN70/73	70	120	M90x3.5	125	51	41	77.6
DN80/83	80	140	M102x4	137	50	40	84.3
DN100/103	100	140	M125x4	157	55	44	101.6

## Wine Ball Valve Manual

### Features:

1. Connection : male / flange end
2. Max. Working Pressure : 10 bar
3. Temperature Range : -15°F to 200°F ( -10°C to 95°C )
4. Pull Handle

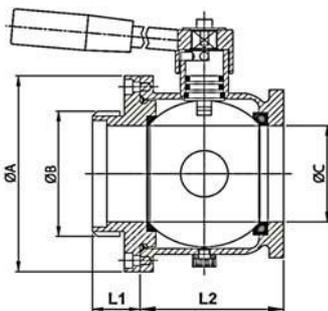
### Materials:

1. Body : 304, 316 and 316L available
2. Gasket : EPDM / PTFE



Dimension (mm)

### Wine Ball Valve Male / Flange End



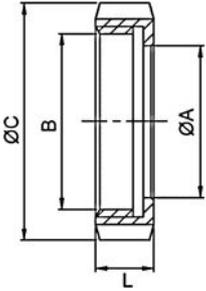
SIZE	ØA	ØB	ØC	L1	L2
DN43	94	M55x3.0	40	32.6	72
DN53	105	M67x3.0	50	33.0	79
DN73	140	M90x3.5	69	33.0	100

# Delta INC

## Wine Macon Union

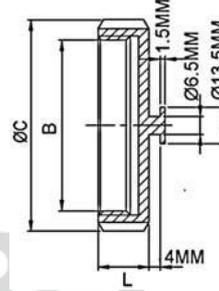
Dimension (mm)

### 13MR Macon Nut 4 Slots



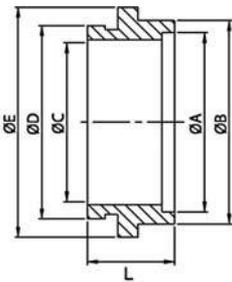
SIZE	ØA	B	ØC	L
DN33	37	39x11TP1 WHIT	50	25
DN43	47	M55xP3.0	70	25
DN53	57	M67xP3.0	80	25
DN63	67	M79xP3.5	95	25
DN73	77	M90xP3.5	106	25
DN83	90	M102xP4.0	118	25
DN103	112	M125xP4.0	139	26

### 13MRBN Macon Nut 4 Slots



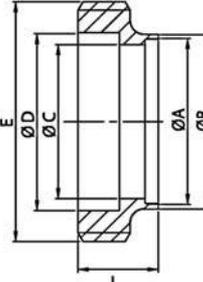
SIZE	B	ØC	L
DN33	39x11TP1 WHIT	50	25
DN43	M55xP3.0	70	25
DN53	M67xP3.0	80	25
DN63	M79xP3.5	95	25
DN73	M90xP3.5	106	25
DN83	M102xP4.0	118	25
DN103	M125xP4.0	139	26

### 14M Macon Liner



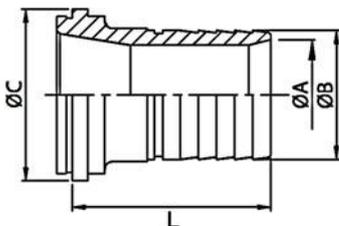
SIZE	ØA	ØB	ØC	ØD	ØE	L
DN33	33.3	36.0	28.0	31.5	38.0	22
DN38	38.2	46.0	35.9	44.5	50.0	29
DN40/43	43.3	46.3	40.0	44.5	50.0	22
DN50/53	53.3	56.3	50.0	54.5	62.5	22
DN51	51.2	56.0	48.5	54.5	62.5	29
DN60/63	63.3	66.3	60.0	64.5	73.5	22
DN70/73	73.3	76.3	70.0	74.5	85.0	22
DN76	72.0	76.0	70.0	74.5	85.0	22
DN80/83	83.3	86.3	80.0	84.5	96.0	22
DN103	104.2	108.0	100.0	104.5	119.0	22

### 15M Macon Male



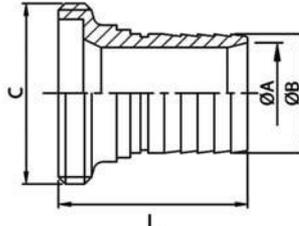
SIZE	ØA	ØB	ØC	ØD	E	L
DN33	33.3	36.3	30.0	32	40.5x11TP1 WHIT	22
DN38	38.2	46.0	35.9	45	M55xP3.0	30
DN43	43.3	46.3	40.0	45	M55xP3.0	22
DN51	51.2	56.0	48.5	55	M67xP3.0	30
DN53	53.3	56.3	50.0	55	M67xP3.0	22
DN60/63	63.3	66.3	60.0	66	M79xP3.5	22
DN70/73	73.3	76.3	70.0	76	M90xP3.5	22
DN76	72.0	76.0	70.0	76	M90xP3.5	22
DN80/83	83.3	86.3	80.0	86	M102xP4.0	22
DN103	104.2	108.0	100.0	106	M125xP4.0	22

### 14MH Macon Liner Hose Adapter



SIZE	ØA	ØB	ØC	L
DN40/43	40.0	43.0	50.8	79
DN50/53	50.0	53.0	63.0	79
DN60/63	59.0	53.2	75.0	102
DN70/73	70.0	73.0	85.0	79
DN80/83	71.5	75.5	97.0	110

### 15MH Macon Male Hose Adapter



SIZE	ØA	ØB	C	L
DN40/43	40.0	43.0	M55xP3.0	79
DN50/53	50.0	53.0	M67xP3.0	79
DN60/63	59.0	53.2	M79xP3.5	104
DN70/73	70.0	73.0	M90xP3.5	79
DN80/83	71.5	75.5	M102xP4.0	112

### Chemical Composition Table

Specification ASTM	Material	C (%)	Si (%)	Mn (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation (%)
A351	CF8	≤0.08	≤2.0	≤1.5	≤0.04	≤0.04	8-11	18-21	-	≥485	≥205	≥35
	CF3	≤0.03	≤2.0	≤1.5	≤0.04	≤0.04	8-12	17-21	-	≥485	≥205	≥35
	CF8M	≤0.08	≤1.5	≤1.5	≤0.04	≤0.04	9-12	18-21	2-3	≥485	≥205	≥30
	CF3M	≤0.03	≤1.5	≤1.5	≤0.04	≤0.04	9-13	17-21	2-3	≥485	≥205	≥30

Specification ASTM	Material	C (%)	Si (%)	Mn (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation (%)
A182	304	≤0.08	≤1.0	≤2.0	≤0.045	≤0.03	8-11	18-20	-	≥515	≥205	≥30
	304L	≤0.03	≤1.0	≤2.0	≤0.045	≤0.03	8-13	18-20	-	≥485	≥170	≥30
	316	≤0.08	≤1.0	≤2.0	≤0.045	≤0.03	10-14	16-18	2-3	≥515	≥205	≥30
	316L	≤0.03	≤1.0	≤2.0	≤0.045	≤0.03	10-14	16-18	2-3	≥485	≥170	≥30

Specification ASTM	Material	C (%)	Si (%)	Mn (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation (%)
A276	304	≤0.08	≤1.0	≤2.0	≤0.045	≤0.03	8-11	18-20	-	≥515	≥205	≥40
	304L	≤0.03	≤1.0	≤2.0	≤0.045	≤0.03	8-12	18-20	-	≥485	≥170	≥30
	316	≤0.08	≤1.0	≤2.0	≤0.045	≤0.03	10-14	16-18	2-3	≥515	≥205	≥40
	316L	≤0.03	≤1.0	≤2.0	≤0.045	≤0.03	10-14	16-18	2-3	≥485	≥170	≥30

Specification ASTM	Material	C (%)	Si (%)	Mn (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation (%)	Hardness (HB)
A270	304	≤0.08	≤1.0	≤2.0	≤0.045	≤0.03	8-11	18-20	-	≥515	≥205	≥35	≤90
	304L	≤0.035	≤1.0	≤2.0	≤0.045	≤0.03	8-12	18-20	-	≥485	≥170	≥35	≤90
	316	≤0.08	≤1.0	≤2.0	≤0.045	≤0.03	10-14	16-18	2-3	≥515	≥205	≥35	≤90
	316L	≤0.035	≤1.0	≤2.0	≤0.045	≤0.03	10-14	16-18	2-3	≥485	≥170	≥35	≤90

Specification ASTM	Material	C (%)	Si (%)	Mn (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation (%)	Hardness (HB)
A240	304	≤0.08	≤0.75	≤2.0	≤0.045	≤0.03	8-10.5	18-20	-	≥515	≥205	≥40	≤92
	304L	≤0.03	≤0.75	≤2.0	≤0.045	≤0.03	8-12	18-20	-	≥485	≥170	≥40	≤92
	316	≤0.08	≤0.75	≤2.0	≤0.045	≤0.03	10-14	16-18	2-3	≥515	≥205	≥40	≤95
	316L	≤0.03	≤0.75	≤2.0	≤0.045	≤0.03	10-14	16-18	2-3	≥485	≥170	≥40	≤95

## Elastomer Compound Performance Properties

PROPERTY	NITRILE BUNA-N	ETHYLENE-PROPYLENE (EPDM)	SILICONE	FLOUROELASTOMER (VITON)	TEFLON (PTFE)
TENSILE STRENGTH (PSI)	2400PSI	2100PSI	1200PSI	1800PSI	4000PSI ASTM D4894-98a
ELECTRICAL PROPERTIES	SUITABLE	GOOD	GOOD	GOOD	GOOD
WEATHER RESISTANCE	POOR	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT
OZONE RESISTANCE	UNACCEPTABLE	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT
ALKALI RESISTANCE	SUITABLE	GOOD	UNACCEPTABLE	SUITABLE	EXCELLENT
COMPRESSION SET	GOOD	SUITABLE	SUITABLE	GOOD	GOOD
TEMPERATURE MAX. (°C)	100°C	100°C	220°C	250°C	260°C
TEAR RESISTANCE	GOOD	POOR	UNACCEPTABLE	POOR	EXCELLENT 350% ASTM D4894-98a
ABRASION RESISTANCE	GOOD	GOOD	UNACCEPTABLE	POOR	EXCELLENT
ACID RESISTANCE	SUITABLE	GOOD	POOR	GOOD	EXCELLENT
PETROLEUM OIL RESISTANCE	SUITABLE	UNACCEPTABLE	POOR	EXCELLENT	EXCELLENT
FLAME RESISTANCE	SUITABLE	SUITABLE	GOOD	EXCELLENT	EXCELLENT
VEGETABLE OIL RESISTANCE	EXCELLENT	GOOD	SUITABLE	EXCELLENT	EXCELLENT

## Pressure Rating for Clamps

Unit: PSI

Model	13LAH (13MHH) Single Pin Heavy Duty Clamp		13MHM / 13MHHA / 13CS Double Pin Heavy Duty Clamp		13MHHS 3PC Segmental Clamp		13MHP Bolted High Pressure. Clamp	
	21°C/70°F	121°C/250°F	21°C/70°F	121°C/250°F	21°C/70°F	121°C/250°F	21°C/70°F	121°C/250°F
1/2"	1200	1000	1200	1000	-	-	1500	1200
3/4"	1200	1000	1200	1000	-	-	1500	1200
1"	500	250	500	250	600	300	1500	1200
1-1/2"	500	250	500	250	600	300	1500	1200
2"	450	250	450	250	550	275	1000	800
2-1/2"	400	200	400	200	450	225	1000	800
3"	350	150	350	150	350	160	1000	800
4"	200	125	200	125	350	150	1000	800
6"	150	75	150	75	-	-	300	200
8"	100	50	100	50	-	-	-	-
10"	100	50	-	-	-	-	-	-
12"	80	40	-	-	-	-	-	-

Note: with Wing Nut tightened to 25 inch-lb of Torque