



**NEEL Industrial**™  
SOLUTIONS PVT.LTD  
*Technology for process line*

# DIVISION PROCESS LINE & PRODUCT



## Ball Valve Actuated & Manual Type

- Actuator body MOC: Extruded Aluminium alloy (He30), it is hard anodized to protect the internal & external components from corrosion.
- Operating pressure: 5 to 6 bar.
- Actuator rotation: 0 to 90 degree turn rotation motion.
- Actuator end caps MOC: Die cast Aluminium are powder coated to provides longer life cycle, against corrosion and reduces wearing resistance.
- Piston MOC: Die cast Aluminium are equipped with slide guides and seals in high engineered plastic. Pistons are identical on both sides which allow reverse rotation simply by inverting the pistons.
- Pinion (drive shaft) MOC: Anti blow out proof alloy steel pinion is electroless nickel plated to reduce friction, provide maximum wear resistance and protection against corrosion under severe conditions as it fully conforms to the latest standards of ISO 5211, DIN 3337 Namur.
- Position indicator: All Actuator are equipped with regular position indicator showing the current state of the Actuator and valves. On top of Actuator has a Namur slot to engage with all popular sensor, positioner and accessories.
- Seals: NBR rubber o-rings provide trouble free operation at standard temperature ranges between -20°C to +80°C temperature range, for high & low temperature we can provide special material seals as per applications.
- Fastner: Stainless steel fastners are provided for long life corrosion resistance application.



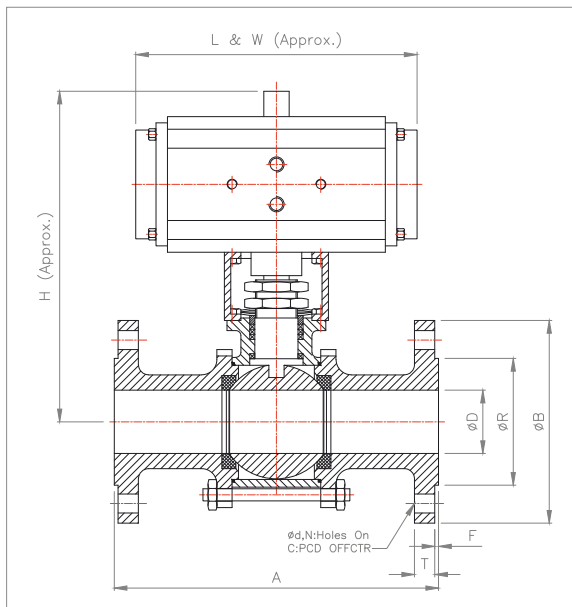
Actuator for Ball Valve

## Purity Ball Valve - Cavity Filler Valve

- Valve size: 15mm to 150 mm size (1/2" to 6")
- Valve ratings: 150#
- Body MOC: WCB, CF8, CF8M, CF3, CF3M (special alloy on request.)
- Ball MOC: SS304, SS316, SS 304L, SS316L
- End connection: Flanged end, TC end, Screwed end
- Make: Neel Industrial Solution



Purity Ball Valve - Cavity Filler Valve



**Ball Valve (Actuated & Manual) - Flange End**

BALL VALVE (ACTUATED & MANUAL)						
SIZE	ØD	A	H	L	W	
15	1/2"	12.5	108	114	100	60
20	3/4"	19	118	150	100	60
25	1"	25	127	170	116	73
40	1.5"	38	165	200	134	80
50	2"	50	178	210	134	80
65	2.5"	64	190	228	158	93
80	3"	76	203	250	158	93
100	4"	100	229	305	185	110

FLANGE DIMENSIONS - 150# RF								
SIZE	ØB	T	ØR	F	Ød	N	C:PCD	
15	1/2"	89	11.2	35	1.6	16	4	60.5
20	3/4"	98	11.2	43	1.6	16	4	70
25	1"	108	11.2	51	1.6	16	4	79.3
40	1.5"	127	14.3	73	1.6	16	4	98.5
50	2"	152	16	92	1.6	19	4	120.5
65	2.5"	178	17.5	105	1.6	19	4	139.5
80	3"	190	19.2	127	1.6	19	4	152.5
100	4"	229	24	157	1.6	19	8	190.5

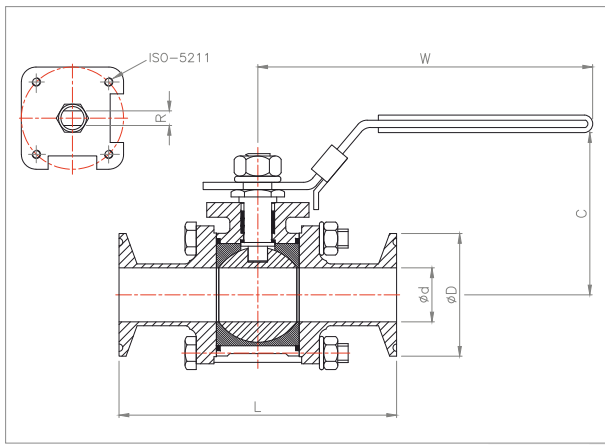
## Purity Ball Valve - Cavity Filler Valve

- Ball Valve Actuated & Manual Type
- Valve Size: 15mm to 100 mm Size (1/2" to 4")
- Body MOC: A 351 CF8M
- Ball MOC: SS 304, SS 316, SS 304L, SS 316L
- Seat MOC: PTFE (Compliance with FDA 21 CFR 177.2600 and USP Class VI.)
- End Connection: TC End, Weld End, SMS End, DIN End, Flanged End.
- Specially for Food, Pharmaceutical & Biotech application.



**Purity Ball Valve - Cavity Filler**

Part	Material
Body	ASTM-A351-CF8M
Cap	ASTM-A351-CF8M
Ball	A 351-CF8M
Seat	PTFE
Gasket	PTFE
Stem	Su316
Thrust Washer	PTFE
Stem Packing	PTFE
Bolt	SUS304
Hex Nut	SUS304
Bolt Washer	SUS304
Gland	SUS304
Washer	SUS304
Nut	SUS304
Handle	SUS304
Plastic Cover	Plastic
Lock Device	SUS304
Stop Pin	SUS304



**Purity Ball Valve - 2way (Cavity Filler)-Model**

**PURITY BALL VALVE - CAVITY FILLER VALVE - 2WAY**

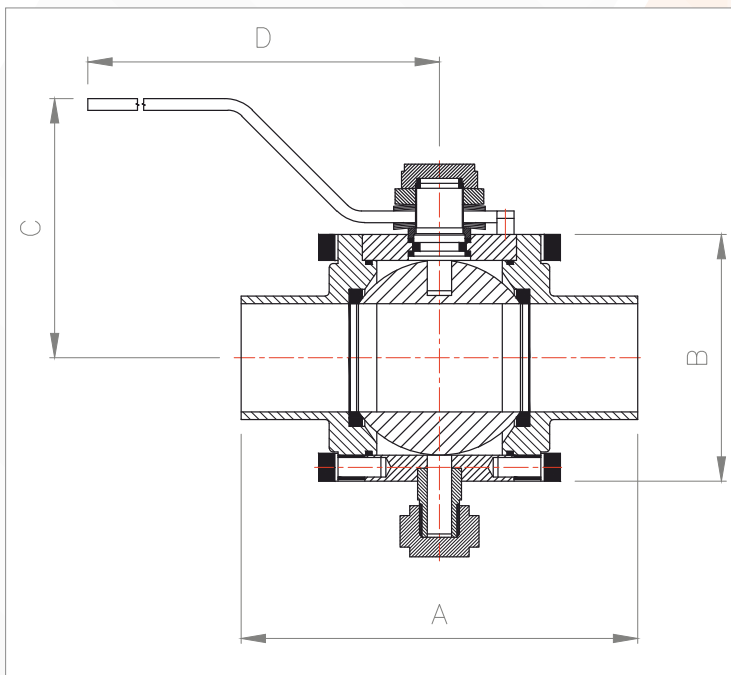
SIZE	ISO-5211	C	Ød	ØD	L	R	W	
15	1/2"	F03	58.3	9.4	25.2	89	5	130
20	3/4"	F03	62.9	15.75	25.2	101	5	130
25	1"	F04	68	22.1	50.5	114	6.5	166.7
40	1.5"	F05	87	34.8	50.5	140	8.5	194.3
50	2"	F05	95	47.5	64	156	8.5	194.3
65	2.5"	F07	127	60.2	77.5	197	12	252
80	3"	F07	136	72.9	91	229	12	252
100	4"	F10	159	97.4	119	243	16	333

## High Purity Ball Valve

- Ball Valve Manual Type
- **Valve Size:** 15mm to 80 mm Size (1/2" to 3")
- **Body MOC:** SS 304, SS 316, SS 304L, SS 316L
- **Ball MOC:** SS 304, SS 316, SS 304L, SS 316L
- **End Connection:** TC End, Weld End, SMS End, DIN End.
- **Application:** Cosmectic, Food, Pharmaceutical, Semiconductor Etc.



**High Purity Ball Valve**



**High Purity Ball Valve**

**HIGH PURITY BALL VALVE**

SIZE	A	B	C	D	
25	1"	95.3	58.7	60.3	163.5
40	1.5"	108	77.8	71.4	163.5
50	2"	119	93.7	79.4	163.5
65	2.5"	135	106.4	85.7	163.5
80	3"	165.1	125.4	95.3	163.5

# Purity Ball Valve 3-Way

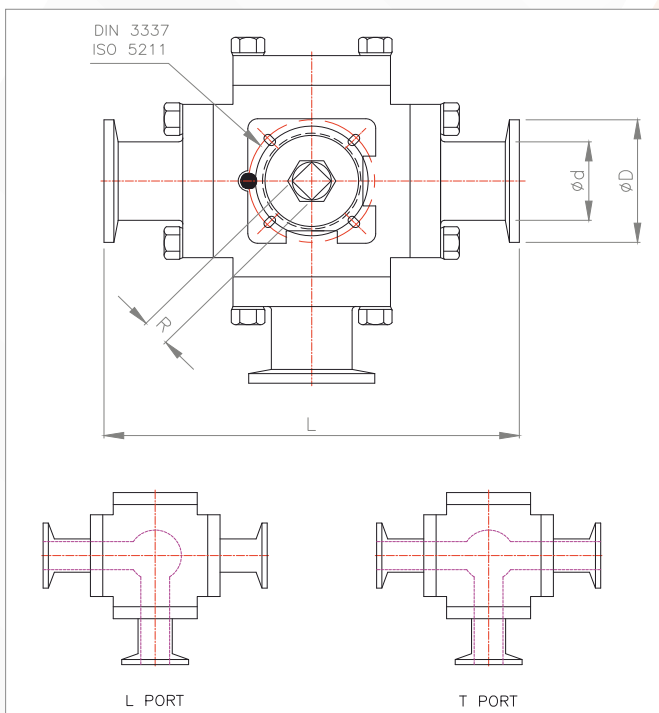
- Ball Valve Actuated & Manual Type
- **Valve Size:** 15mm to 100 mm Size (1/2" to 4")
- **Body MOC:** SS 304, SS 316, SS 304L, SS 316L
- **Ball MOC:** SS 304, SS 316, SS 304L, SS 316L
- **End Connection:** TC End, Weld End, SMS End, DIN End Flanged End.
- **Design:** T-Port & L-Port Design
- Specially for Food, Pharmaceutical & Biotech application.



**Purity Ball Valve 3-Way**

## Features:

- Suitable for High Purity/Pure Steam application and will not leave Liquid
- Have Variety of End Connections.
- A Simple Design and easy cleaning maintenance helps to Residue on the Valve Body, incomplete cleaning causes bacterial growth.
- Having Variety of Design.
- Our Ball Valve is design for Pigging Application.



**Purity Ball Valve-3way (Cavity Filler)**

HIGH PURITY BALL VALVE						
SIZE		ISO-5211	Ød	ØD	L	R
15	1/2"	F03	9.5	25.4	118	9
20	3/4"	F03	15.8	25.4	127	9
25	1"	F04	22.2	50.4	152.6	11
40	1.5"	F05	35	50.4	175	14
50	2"	F05	47.6	63.9	190	14
65	2.5"	F07	60.2	77.5	228	17
80	3"	F10	73	90.9	260.6	22
100	4"	F10	97.4	118.9	290	22

## Diaphragm Valve / Zero Dead Leg Valve / Aseptic Valve

All the diaphragms meet Sanitary and Pharmaceutical Standards, Compliance with FDA 21 CFR 177.2600 and USP Class VI.

Diaphragm Valve Actuated & Manual Type

**Valve Size:** 15mm to 100 mm Size (1/2" to 4")

**Valve Type:** 2-Way

**Standard:** BPE, 3A, DIN

**Body MOC:** Casting, Forged, SS 316L

**Diaphragm MOC:** EPDM + PTFE (10 Degree C to 150 Degree C)

Compliance with FDA 21 CFR 177.2600 and USP Class VI.

**End Connection:** Weld End, Clamp End,

**Surface:** SF1: ID polished to  $Ra \leq 0.5\mu m$

SF4: EP finished to  $Ra \leq 0.38\mu m$

Design conform to ASME BPE standard

ID/OD mirror polished and

ID  $Ra \leq 0.5\mu m$  / OD Sand blasted



Diaphragm Valve-(2-Way) Pneumatic

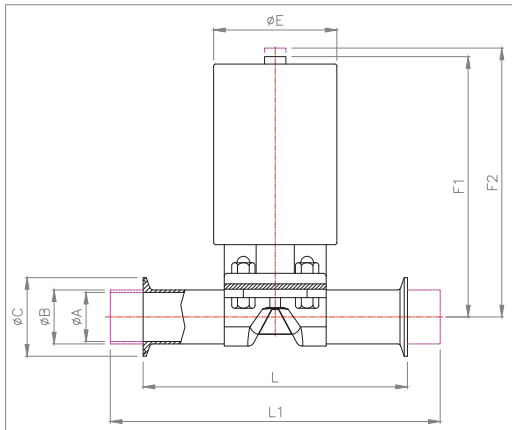


Diaphragm Valve - Metal Hand Wheel  
Forge L type Body



Diaphragm Valve (2Way) - Manual

# Diaphragm Valve / Zero Dead Leg Valve / Aseptic Valve



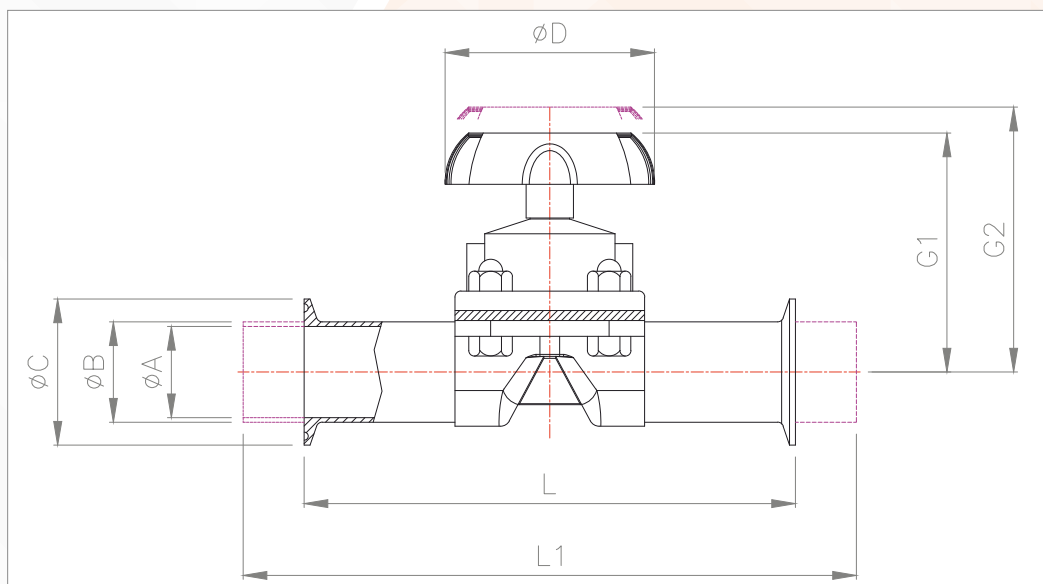
**Diaphragm Valve (2Way) - Pneumatic**

## DIAPHRAGM VALVE / ZERO DEAD VALVE /ASEPTIC VALVE

	1/2"	3/4"	1"	1.5"	2"
3A	1/2"	3/4"	1"	1.5"	2"
ØA	9.4	15.75	22.1	34.8	47.5
ØB	12.7	19.05	25.4	38.1	50.8
ØC	25	25	50.5	50.5	64
ØD	60	60	95	95	118
ØE	60	60	85	85	133
F1	122	122	212	217	315
F2	131	131	225	232	333
G1	74	74	100	119	135
G2	83	83	113	134	153
L	88.9	101.6	114.3	139.7	158.8
L1	124	135	141.2	168.4	190.5

BPE	1/2"	3/4"	1"	1.5"	2"
ØA	9.4	15.75	22.1	34.8	47.5
ØB	12.7	19.05	25.4	38.1	50.8
ØC	25	25	25/50.39	50.39	63.91
ØD	60	60	95	95	118
ØE	60	60	85	85	133
F1	122	122	212	217	315
F2	131	131	225	232	333
G1	74	74	100	119	135
G2	83	83	113	134	153
L	88.9	101.6	114.3	139.7	158.8
L1	124	135	141.2	168.4	190.5

DIN	DN10	DN20	DN25	DN32	DN40	DN50
ØA	10	20	26	32	38	50
ØB	13	23	29	35	41	53
ØC	34	34	50.5	50.5	50.5	64
ØD	-	60	60	95	95	118
ØE	60	85	85	85	85	133
F1	122	212	212	217	217	315
F2	131	225	225	232	232	333
G1	74	100	100	119	119	135
G2	83	113	113	134	134	153
L	88.9	101.6	114.3	139.7	139.7	158.8
L1	124	135	141.2	168.4	168.4	190.5



**Diaphragm Valve (2Way) - Manual**

# Diaphragm Valve 3 - Way / U - Bend

Diaphragm Valve Actuated and Manual Type

Valve Size: 15mm to 100 mm Size (1/2" to 4")

Valve Type: 3-Way/U-Bend

Standard: BPE, 3A, DIN

Body MOC: Forged, SS 316L

Diaphragm MOC: EPDM + PTFE (10 Degree C to 150 Degree C)

Compliance with FDA and USV Class VI

End Connection: Weld End, Clamp End,

Surface: SF1: ID Polished to  $Ra \leq 0.5 \mu m$

SF4: EP Finished to  $Ra \leq 0.38 \mu m$

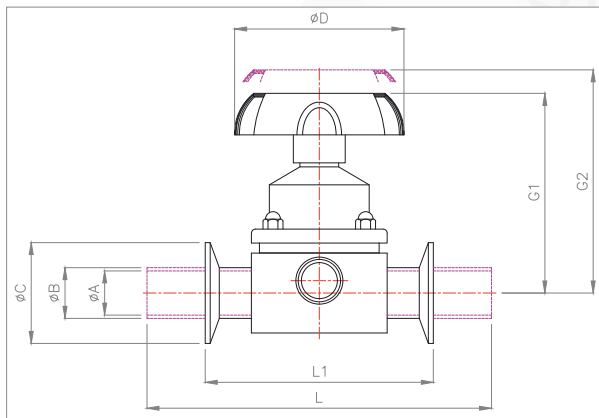
Design Conform to ASME BPE Standard

ID/OD mirror Polished and

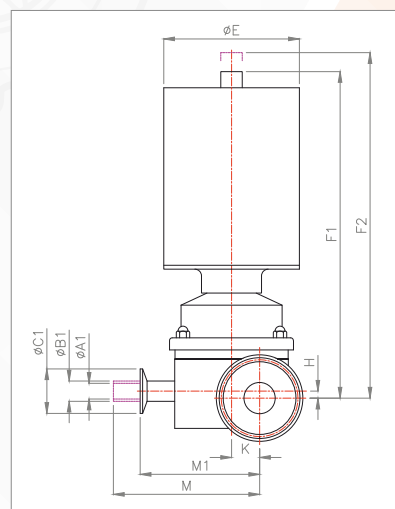
ID  $Ra \leq 0.5 \mu m$  / OD Sand blasted.



**Diaphragm Valve 3-Way**



**Diaphragm Valve (3WAY) - Manual**



**Diaphragm Valve (3WAY) - Pneumatic**



**Diaphragm Valve U-Bend**

## DIAPHRAGM VALVE - 3 WAY / U BEND (PNEUMATIC / MANUAL)

SIZE	1/2"X1/2"	1/2"X3/4"	1/2"X1"	1/2"X1.5"	1/2"X2"	3/4"X3/4"	3/4"X1"	3/4"X1.5"	3/4"X2"	1"X1"	1"X1.5"	1"X2"	1.5"X1.5"	1.5"X2"	2"X2"
ØA	9.4	15.75	22.1	34.8	47.5	15.75	22.1	34.8	47.5	22.1	34.8	47.5	34.8	47.5	47.5
ØB	12.7	19.05	25.4	38.1	50.8	19.05	25.4	38.1	50.8	25.4	38.1	50.8	38.1	50.8	50.8
ØC	25	25	50.5	50.5	64	25	50.5	50.5	64	50.5	50.5	64	50.5	64	64
ØA1	9.4	9.4	9.4	9.4	9.4	15.75	15.75	15.75	15.75	22.1	22.1	22.1	34.8	34.8	47.5
ØB1	12.7	12.7	12.7	12.7	12.7	19.05	19.05	19.05	19.05	25.4	25.4	25.4	38.1	38.1	50.8
ØC1	25	25	25	25	25	25	25	25	25	50.5	50.5	50.5	50.5	50.5	64
ØD	60	60	60	60	60	60	60	60	60	95	95	95	95	95	118
ØE	60	60	60	60	60	60	60	60	60	85	85	85	85	85	133
F1	122	122	122	122	122	122	122	122	122	212	212	212	217	217	315
F2	131	131	131	131	131	131	131	131	131	225	225	225	232	232	333
G1	74	74	74	74	74	74	74	74	74	100	100	100	119	119	135
G2	83	83	83	83	83	83	83	83	83	113	113	113	134	134	153
H	-	6.18	13.2	19.5	19.5	4.5	10.7	17.5	17.5	6.2	14.5	18.4	6.2	13.7	-
K	6.8	9.98	13.15	19.5	25.85	9.98	13.15	19.5	25.85	16.05	22.4	28.75	22.4	28.75	28.75
L	139.7	139.7	154	153.6	153.6	139.7	153.6	153.6	153.6	172.6	172.6	172.6	197.6	197.6	211.6
L1	88.9	88.9	114.3	114.3	114.3	88.9	114.3	114.3	114.3	114.3	114.3	114.3	139.7	139.7	158.8
M	69.4	72.58	75.75	82.1	88.45	72.58	75.75	82.1	88.45	86.65	93	99.35	105	111.35	123.75
M1	51	54.18	57.35	63.7	70.05	54.18	57.35	63.7	70.05	70.6	74.6	80.95	86.6	92.95	98.95

# Tank Bottom Diaphragm Valve

Tank Bottom Diaphragm Valve Actuated & Manual Type

**Valve Size:** 15mm to 100 mm Size (1/2" to 4")

**Valve Type:** 2-Way

**Standard:** BPE, 3A, DIN

**Body MOC:** Forged, SS 316L

**Diaphragm MOC:** EPDM + PTFE (10 Degree C to 150 Degree C)

Compliance with FDA 21 CFR 177.2600 and USP Class VI.

**End Connection:** Weld End, Clamp End,

**Surface:** SF1:ID polished to  $Ra \leq 0.5 \mu m$

**Sf4:** EP finished to  $Ra \leq 0.38 \mu m$

Design Conform to ASME BPE standard

ID/OD mirror polished and

ID  $Ra \leq 0.5 \mu m$  / OD Sand blasted

**Pneumatic Actuator :**

Actuator MOC : SS 304

Spring MOC : SS 304

Piston MOC : SS 304

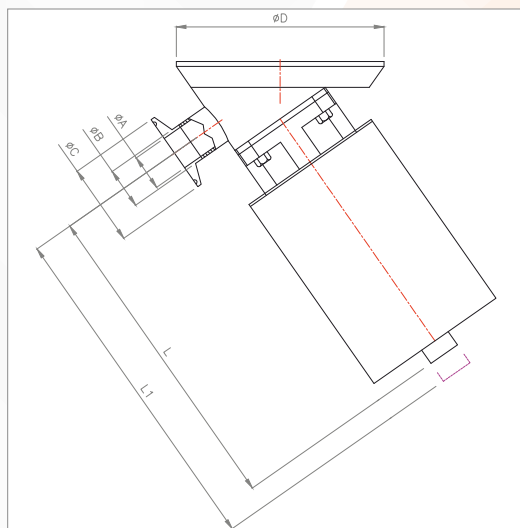


**Diaphragm Valve (2Way) - Manual**

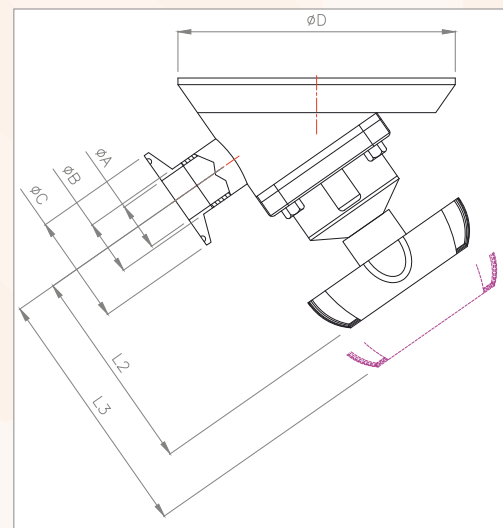
TANK BOTTOM DIAPHRAGM VALVE								
SIZE	ØA	ØB	ØC	ØD	L	L1	L2	L3
1/2"	9.4	12.7	25	100	122	131	74	83
3/4"	15.75	19.05	25	100	122	131	74	83
1"	22.1	25.4	50.5	120	212	225	100	113
1.5"	34.8	38.1	50.5	160	217	232	119	134
2"	47.5	50.8	64	160	315	333	135	153

## Features

- Easy to clean & no corrosion problems.
- Precision design & machining for high torque out-put
- Low noise and smooth functions
- Auto control box available with various accessories.
- Multiple design available in diaphragm sampling valve
- Recommended for CIP & SIP system.
- Suitable for aseptic application.



**TANK Bottom Diaphragm Valve-Model 1**



**TANK Bottom Diaphragm Valve-Model 2**

## Multi-Port & Blocks Diaphragm Valve

**Valve Size:** 15mm to 100 mm Size (1/2" to 4")

**Standard:** BPE, 3A, DIN

**Body MOC:** Forged, SS 316L

**Diaphragm MOC:** EPDM + PTFE (10 Degree C to 150 Degree C)

**End Connection:** Weld End, Clamp End,

**Surface:** SF1: ID Polished to  $Ra \leq 0.5\mu m$

**Sf4:** EP Finished to  $Ra \leq 0.38\mu m$

Design Conform to ASME BPE Standard

ID/OD mirror polished and

ID  $Ra \leq 0.5 \mu m$  / OD Sand blasted

Multi-port Diaphragm valve design is helping to streamline the fitting line and is taking the advantages of the combination of traditional valve position and assembly, and there are options of a variety of angles and positions in series to choose from for venting or steering, often using for sampling or steam.

The Block Diaphragm valve body is designed to be no gap which can ensure completely drain and zero dead angle and optimize the complex tubing line system of safe fluid configuration, recommended for horizontal installation position.

## Features

- Customized specific design
- Combination of many different nominal Diameter
- Optimized drain ability and minimize dead leg
- Reduction of using fittings, tubing and welding jobs in a system
- All end connections and materials are available according to the customer's specification.



**Multi-Port Diaphragm Valve**

# Hygienic Sample Valve for BPE

**Valve Size:** 15mm to 25 mm Size (1/2" to 1")

**Body MOC:** SS 316L

**Plug Stem MOC:** SS 316L

**Seal MOC:** EPDM (-10 Degree C to 140 Degree C)

Compliance with FDA 21 CFR 177.2600 and USP Class VI.

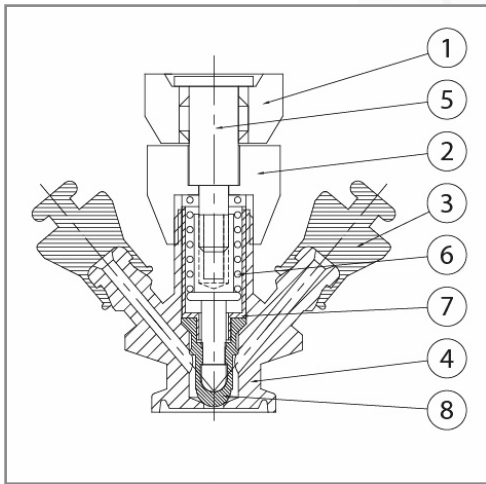
**Connection:** Weld End, Clamp End



**Sampling Valve DB Type**



**Sampling Valve DA Type**

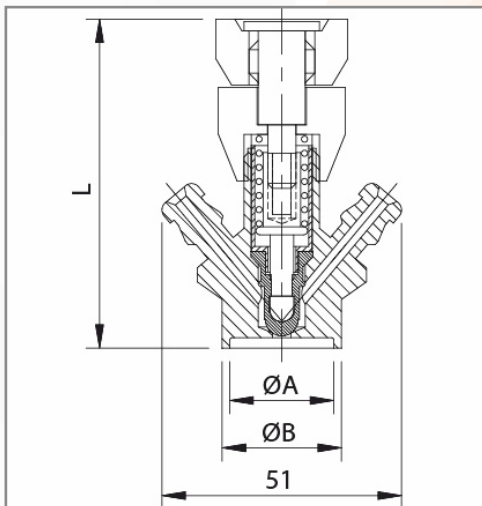


**Sampling Valve DA Type**

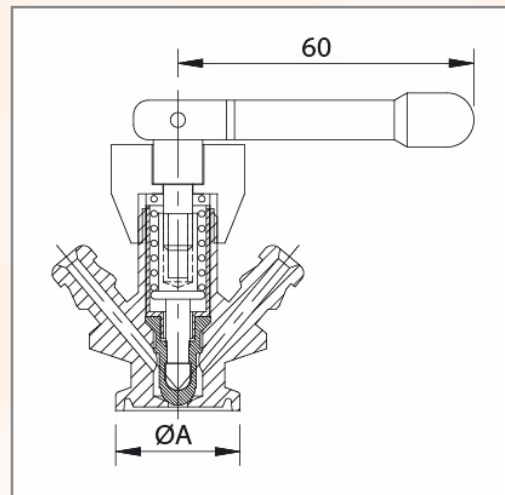
Part List			
Item	Parts Name	QTY	Material
1	Rotating Nut	1	SUS304/316L
2	Locknut	1	SUS304/316L
3	Seal	1	EPDM
4	Body	1	SUS304/316L
5	Flow Supports	1	SUS304/316L
6	Spring	1	SUS304/316L
7	Bushing	1	SUS304/316L
8	Seal	1	EPDM

Hygienic Sample Valve for BPE			
Weld End			
SIZE	ØA	ØB	L
1/2"	9.4	12.7	71.5
3/4"	15.75	19.05	71.5
1"	22.1	25.4	71.5

Hygienic Sample Valve for BPE		
Clamp End		
SIZE	ØA	L
A37	34	70
1/2"	25.2	70
3/4"	25.2	70
1"	50.5	70



**Sampling Valve DA Type**



**Sampling Valve DB Type**

# Divert Aseptic Valve / Shut-Off Valve

Divert Aseptic Valve / Shut Off Valve Actuated & Manual Type

**Valve Size:** 15mm to 100 mm Size (1/2" to 4")

**Body MOC:** SS 316L

**Plug Stem MOC:** SS 316L Chromium Plated Surface.

**End Connection:** Weld End, Clamp End, SMS, DIN

**Gasket for Flow area:** EPDM / Silicone / Viton (FKM)/PTFE  
(Compliance with FDA 21CFR 177.2600 and USP Class VI.)

Specially for Food, Pharmaceutical & Biotech application.

**Pneumatic Actuator :**

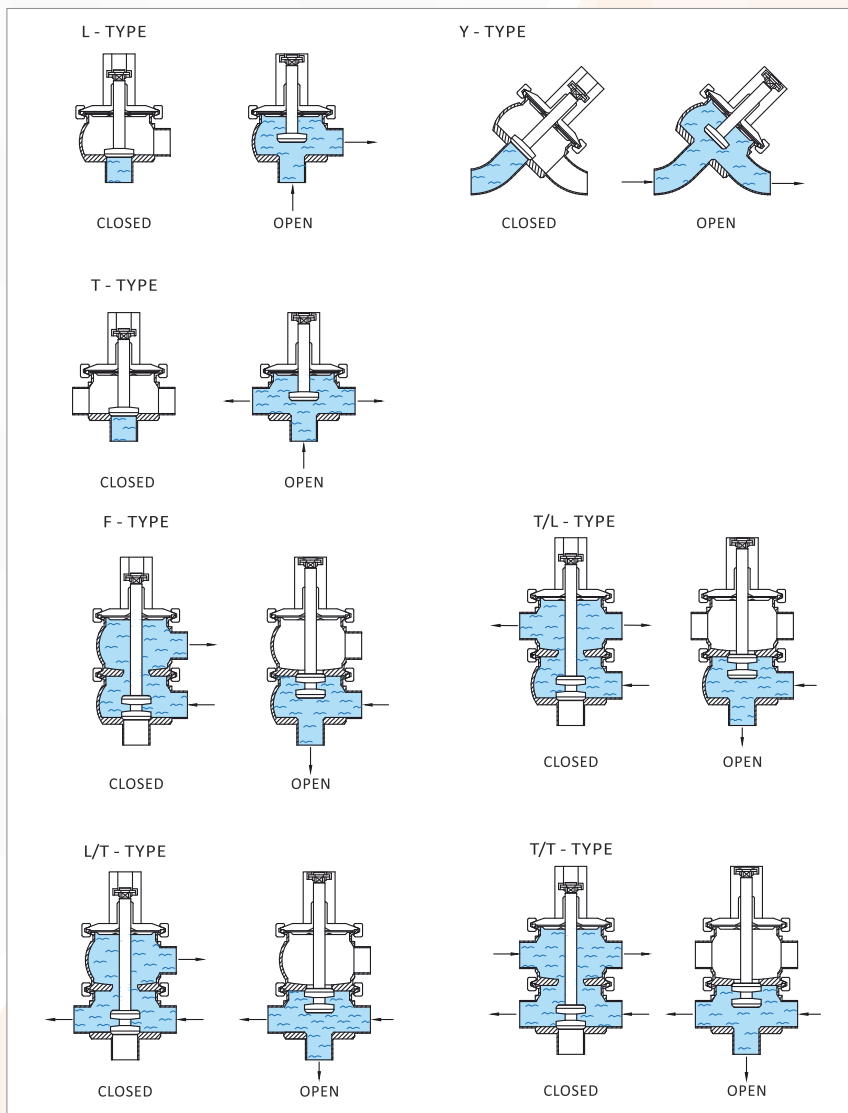
Actuator MOC: SS 304

Spring MOC: SS 304

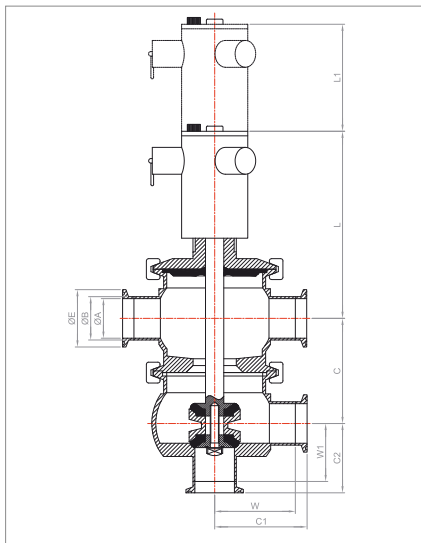
Piston MOC: SS 304



**Aseptic-Valve**

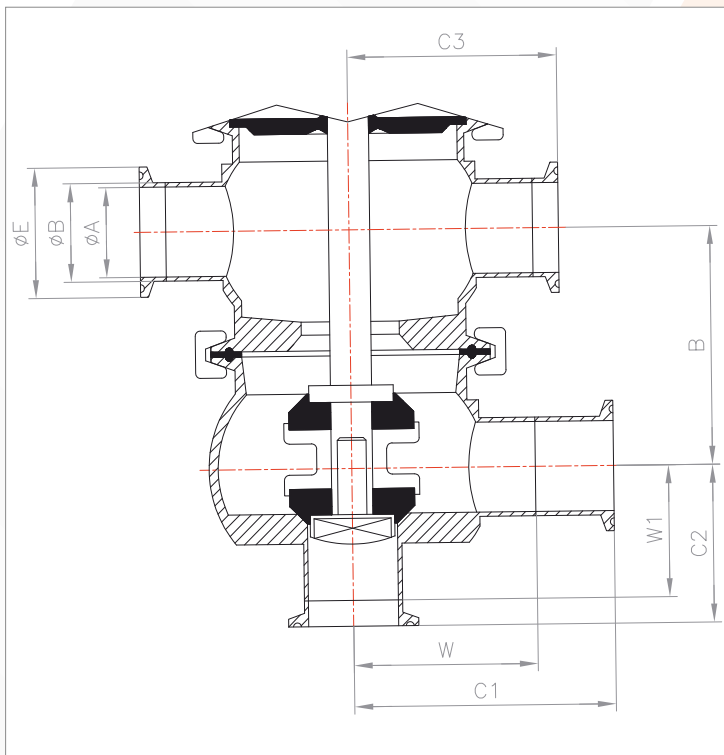


**Divert Valve - Configuration & Flow direction**

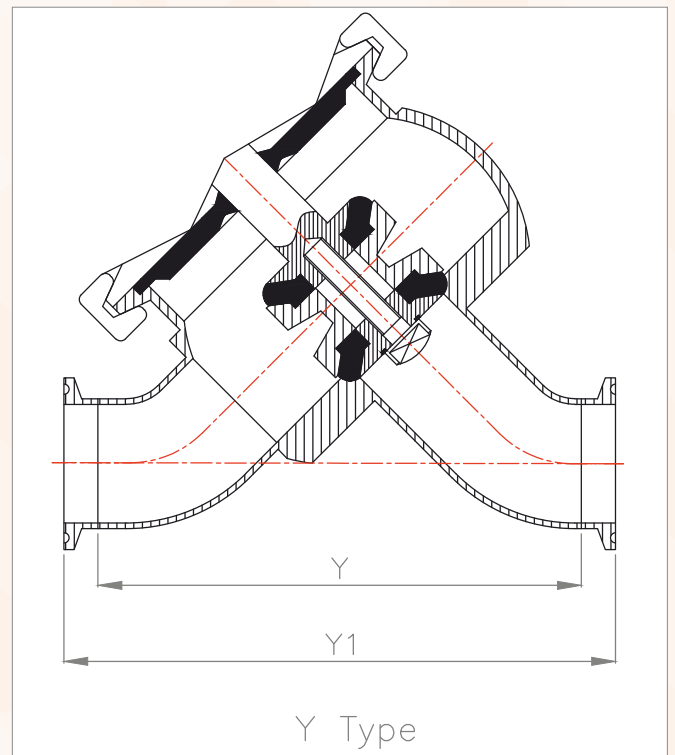


**Direct Valve-Model 2**

DIVERT ASEPTIC VALVE						
SIZE	1"	1.5"	2"	2.5"	3"	4"
ØA	22.1	34.8	47.5	60.2	72.9	97.4
ØA	25.4	38.1	50.8	63.5	76.2	101.6
C	56.7	80	92.4	120	128	150.8
C1	63.5	69.9	88.9	88.9	95.3	114.3
C2	63.5	69.9	88.9	88.9	95.3	114.3
C3	81.4	-	-	-	-	-
E	50.5	50.5	64	77.5	91	119
W	50.8	57.2	76.2	76.2	82.6	98.5
W1	50.8	57.2	76.2	76.2	82.6	98.5
L	101	126	135	167	170	645.7
L1	17	25	25	32	36	38
Y	96.1	142.3	168.6	211.6	244.7	303.1
Y1	121.5	167.7	194	237	270.1	334.7
(W/W1)+SMS Male	19	23	23	27	27	-
(W/W1)+IDF Male	21.5	21.5	21.5	21.5	21.5	-
(W/W1)+RJT Male	27	27	27	27	27	-



**Direct Valve-Model 1**



**Direct Valve-Y type Model**

## Features

- Valve Equiped with different type of Flow, F,L,T,Y,T/T
- The design of the Valve is preventing the bacteria to polluting the valve inner chamber when the spindle moves up for contact with outside not sterilization air.
- The sterilization chamber uses high temperature steam to completely sterilize the spindle to avoid any pollution into the Valve Inner chamber.
- The valve body adopts 316L anti-corrosion material and Aseptic special PTFE seat.
- Control box for auto actuator & Divert Valve
- Auto control box available with various accessories.



## Tank Bottom Valve Actuated & Manual Type

**Valve Size:** 15mm to 100 mm Size (1/2" to 4")

**Body MOC:** SS 316L

**Plug Stem MOC:** SS 316L

**Inlet & Outlet Connection:**

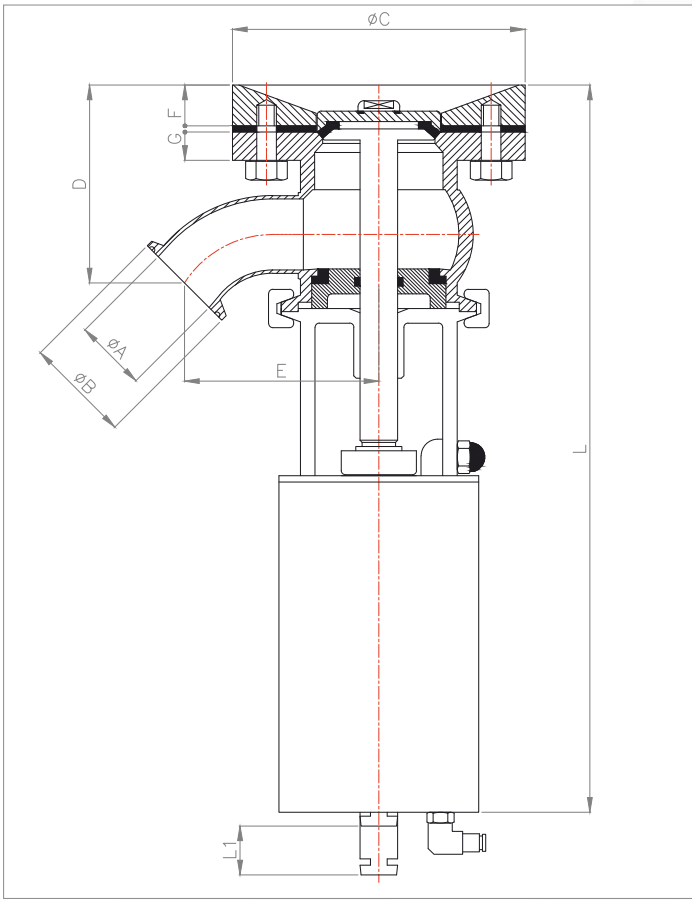
**Design:** Inside Valve Opening & Outside (Inside Vessel) Opening.  
Specially for Food, Pharmaceutical & Biotech Application.

## Features

- Easy to clean and no corrosion problems.
- Compact design and easy to handle.

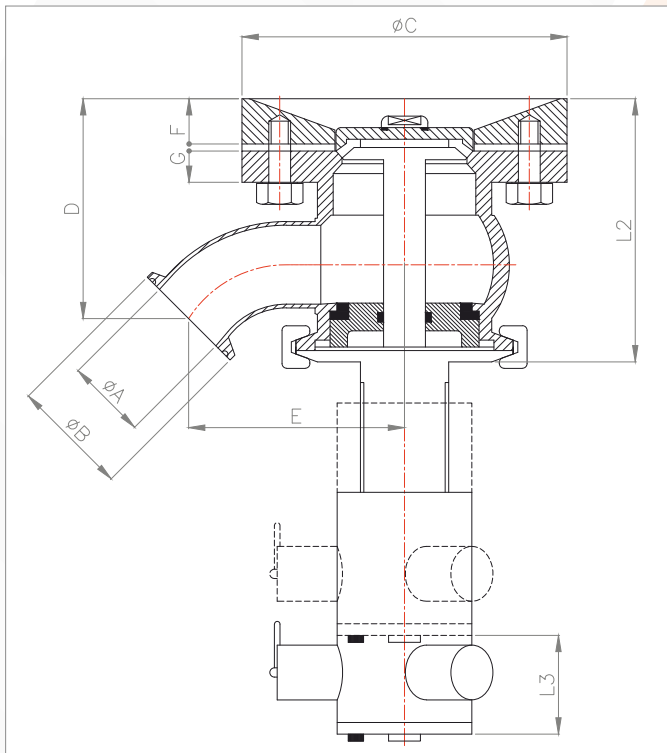


**Tank Bottom Valve Actuator**



**Tank Valve-Model-1**

TANK VALVE					
SIZE	1"	1.5"	2"	2.5"	3"
$\phi A$	22.1	34.8	47.5	60.2	72.9
$\phi B$	50.5	50.5	64	77.5	91
$\phi C$	110	140	150	180	200
D	56.8	95.1	106.5	124.7	137.5
E	65.8	93	106	125.5	149.5
F	14	20	20	20	20
G	10	14	14	14	14
L	190	354	360	446	450
L1	22	31	31	39	39
L2	94	122	127	158	164
L3	30	35	35	45	45



**Tank Valve-Model-2**



**Tank Bottom Valve-Manual**

# Non Return Valve (NRV) / Check Valve

**Valve Size:** 15mm to 100 mm Size (1/2" to 4")

**Body MOC:** SS 316L

**End Connection:** TC End, Weld End

**Seal Rings:** EPDM Rubber or Silicone / Viton

(Compliance with FDA 21CFR 177.2600 and USP Class VI)

**Gasket:** EPDM Rubber or Silicone/Viton/NBR/PTFE

(Compliance with FDA & USV Class VI)

**Surface:** SF1:  $OD \leq 0.5\mu m$

**Sf4:** EP finished to  $Ra \leq 0.38\mu m$

$ID \leq 0.38\mu m$  or as per requirement.

No.	Name
1	Short Body
2	Long Body
3	Clamp
4	13PG
5	Seal-Ring
6	ST.ST Spring
7	Flow Support Plate
8	Disc

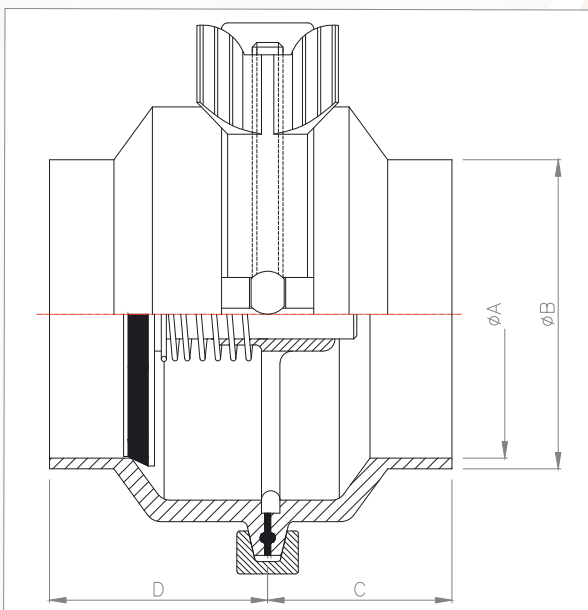


**Non Return Valve**

## NON RETURN VALVE / CHECK VALVE

### CLAMP END

3A / BS	ØA	ØB	C	D
1/2"	9.4	25.2	28.5	39.5
3/4"	15.75	25.2	28.5	39.5
1"	22.1	50.5	34	48
1.5"	34.8	50.5	36	48
2"	47.5	64	36	48
2.5"	60.2	77.5	36	48
3"	72.9	91	36	48
4"	97.6	119	47	54



**Check Valve (Middle Clamp-Weld End)**

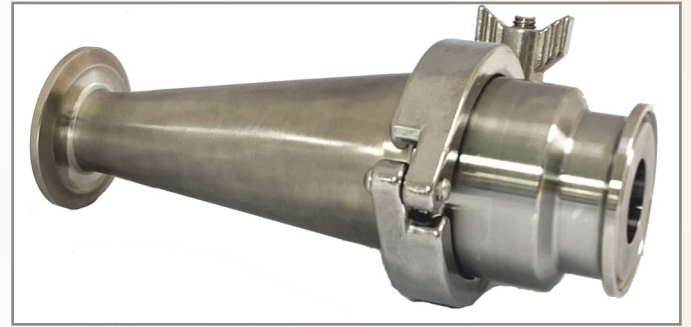
## NON RETURN VALVE / CHECK VALVE

### WELD END

3A / BS	ØA	ØB	C	D
1/2"	9.4	12.7	24	34
3/4"	15.75	19.05	24	34
1"	22.1	25.4	34	48
1.5"	34.8	38.1	36	48
2"	47.5	50.8	36	48
2.5"	60.2	63.5	36	48
3"	72.9	76.2	36	48
4"	97.6	101.6	47	54

## 3A Eccentric Check Valve for Horizontal line

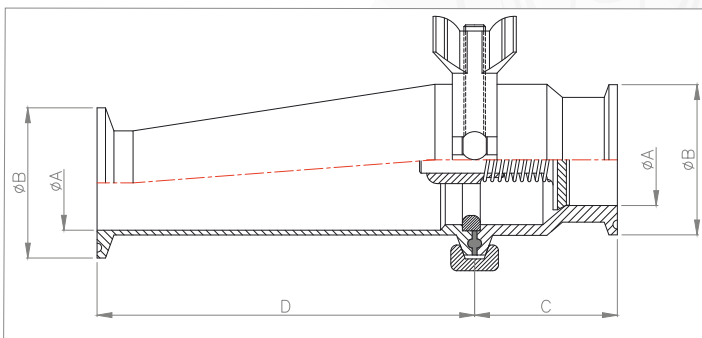
- **Valve Size:** 15mm to 100 mm Size (1/2" to 4")
- **Body MOC:** SS 316L
- **End Connection:** TC End, Weld End
- **Surface:** SF1:  $OD \leq 0.5\mu\text{m}$
- **Sf4:** EP finished to  $Ra \leq 0.38\mu\text{m}$
- **ID**  $\leq 0.38\mu\text{m}$  or as per requirement.



**Check Valve Eccentric Body - Horizontal Mounting**

## Special Features

- **Self Drain Design**



**Eccentric Non Return Valve**

### ECCENTRIC NON RETURN VALVE

3A	ØA	ØB	C	D
1"	22.1	50.5	48	127.3
1.5"	34.8	50.5	48	127.3
2"	47.5	64	48	127.3
2.5"	60.2	77.5	48	127.3

## Butterfly Valve Actuated & Manual Type

- Valve Size:** 15mm to 100 mm Size (1/2" to 4")
- Body MOC:** SS 316L
- End Connection:** TC End, Weld End, SMS End, DIN End.
- Auto Control Actuator for Butterfly Valve
- Actuator MOC:** SS 304
- Spring MOC:** SS 304
- Cylinder MOC:** SS 304
- Auto Control Actuator Features
- Shut-Off Time:** 1.5 & 1.7 Second
- Air Consumption:** 0.266 Litre & 0.550 Litre at 5 Bar
- Output Torque:** 20N/M & 30N/M
- Valve Position:** Normally Open / Normally Close
- Various Model available as per requirement
- Auto Control box available with various accessories.



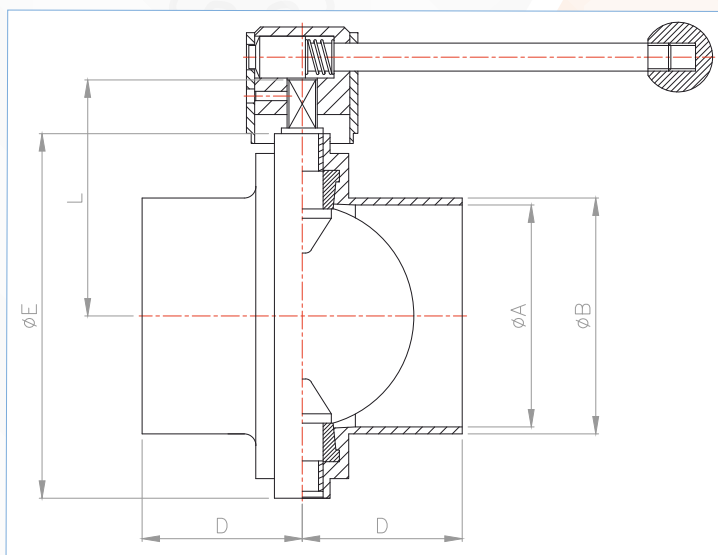
**Butterfly Valve Manual**



**Butterfly Valve**

BUTTERFLY VALVE					
WELD END					
3A/BS	ØA	ØB	D	ØE	L
1/2"	9.4	12.7	34	79	61
3/4"	15.75	19.05	34	79	61
1"	22.1	25.4	34	79	61
1.5"	34.8	38.1	38	85	64.3
2"	47.5	50.8	40	105	74.3
2.5"	60.2	93.5	40	112	77.6
3"	72.9	76.2	41	125	84.8
4"	97.4	101.6	44	157	101.75
6"	146.86	152.4	40	216.5	132.5

BUTTERFLY VALVE					
CLAMP END					
3A/BS	ØA	ØB	D	ØE	L
1/2"	9.4	25.2	34	79	61
3/4"	15.75	25.2	34	79	61
1"	22.1	50.5	33	79	61
1.5"	34.8	50.5	33	85	64.3
2"	47.5	64	35	105	74.3
2.5"	60.2	77.5	35	112	77.6
3"	72.9	91	38	125	84.8
4"	97.4	119	38	157	101.7
6"	146.86	166.87	70	216.5	132.5



**Butterfly Valve (Weld End)**

## Features

- Easy to Clean & No Corrosion Problems.
- Auto Control Box Available with Various Accessories.
- Recommended for CIP & SIP System.

DIN WELD							
DIN	A TYPE		B TYPE		D	ØE	L
	ØA	ØB	ØA	ØB			
DN10	10	13	9	12	34	79	61
DN15	16	19	15	18	34	79	61
DN20	20	23	19	22	34	79	61
DN25	26	29	25	28	34	79	61
DN32	32	35	31	34	38	85	64.3
DN40	38	41	37	40	38	90	66.7
DN50	50	53	49	52	40	105	77.6
DN65	66	70	66	70	41	125	84.8
DN80	81	85	81	85	42	137	91.6
DN100	97.6/100	101.6/104	97.6/100	101.6/104	44	157	101.75

# Hygienic Sight Glass

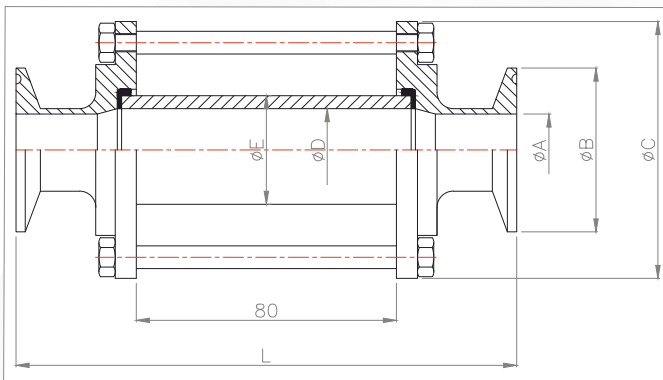
- **Size:** 15mm to 100 mm Size (1/2" to 4")
- **Body MOC:** SS 304, SS 316L
- **End Connection:** TC End, Weld End, Long End, SMS End, DIN End.
- **Glass MOC:** PYREX Borosilicate Glass
- **Seal MOC:** EPDM, Silicone and Viton
- **Screw Bolt MOC:** Full Stainless Steel



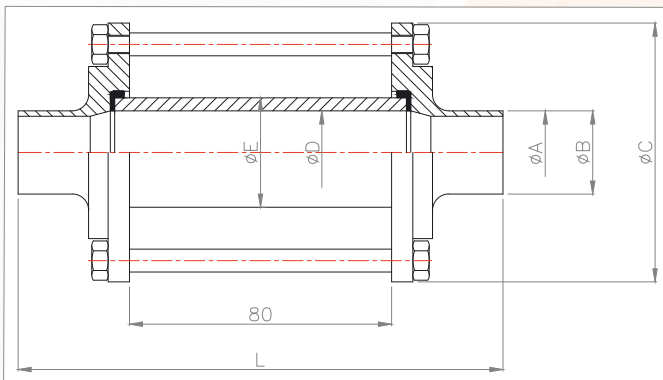
Hygienic Sight Glass



Hygienic Sight Glass



Hygienic Sight Glass-1



Hygienic Sight Glass-2

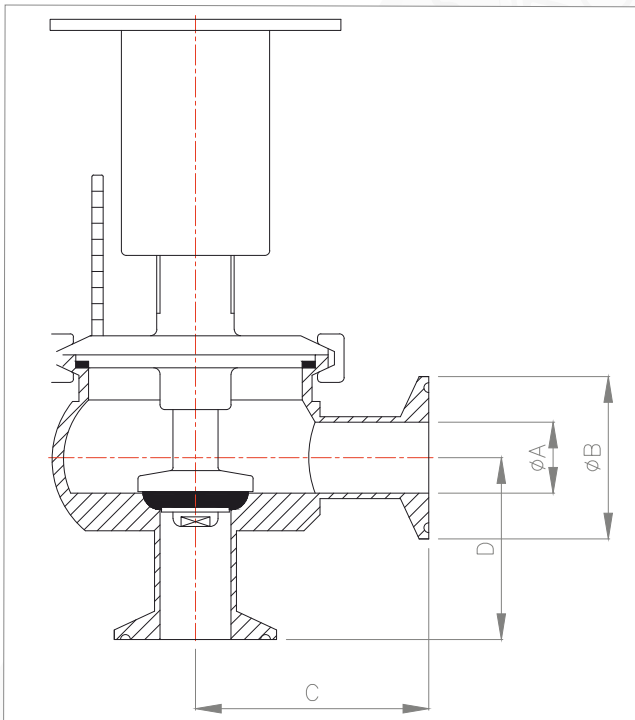
HYGIENIC SIGHT GLASS						
3A / BS CLAMP END						
SIZE	ØA	ØB	ØC	ØD	ØE	L
1/2"	9.4	25.2	47	10.2	15	116
3/4"	15.75	25.2	47	17	22	116
1"	22.1	50.5	79	26	32	143
1.5"	34.8	50.5	85	34	40	146
2"	47.5	64	105	50	60	150
2.5"	60.2	77.5	112	65	75	150
3"	72.9	91	125	75.4	85	156
4"	97.6	119	157	100	100	156

HYGIENIC SIGHT GLASS						
3A / BS WELD END						
SIZE	ØA	ØB	ØC	ØD	ØE	L
1/2"	9.4	12.7	47	10.2	15	106
3/4"	15.75	19.05	47	17	22	106
1"	22.1	25.4	79	26	32	148
1.5"	34.8	38.1	85	34	40	156
2"	47.5	50.8	105	50	60	160
2.5"	60.2	63.5	112	65	75	160
3"	72.9	76.2	125	75.4	85	162
4"	97.6	101.6	157	100	110	167

## Special Valves

### Safety Relief Valve

- **Size :** 25 mm to 80 mm Size (1" to 3")
- **Working Pressure :** 0.1-7 Kgs/cm<sup>2</sup>.
- **Body MOC:** SS 304, SS 316L, Forged or Solid Bar Body
- **End Connection :** TC End, Weld End
- **Surface :** Polished, Electric Polished. IDRa < 0.8 μm, or 0.4 μm.



**Safety Relief Valve**



**Air Relief Valve**

SAFETY RELIEF VALVE				
SIZE	ØA	ØB	C	D
1"	22.1	50.5	63.5	63.5
1.5"	34.8	50.5	69.85	69.85
2"	47.5	64	88.9	88.9
2.5"	60.2	77.5	88.9	88.9
3"	60.2	91	95.25	95.25

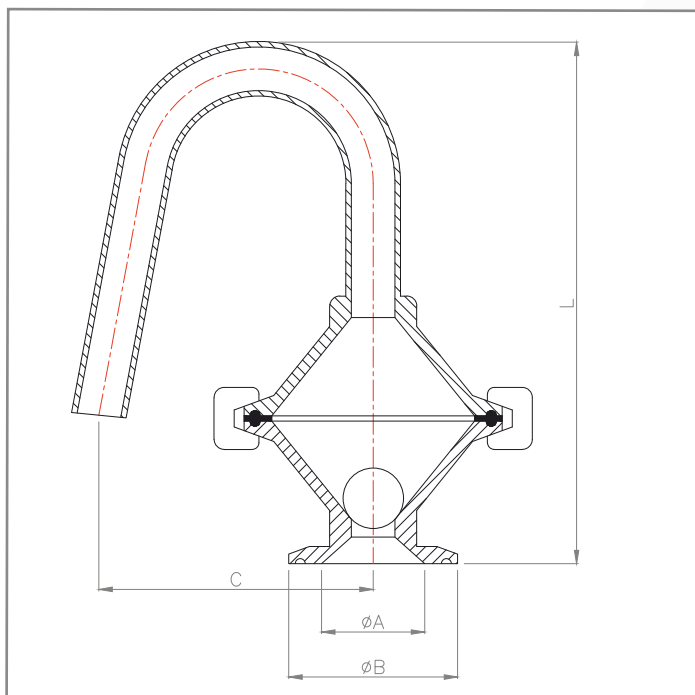
### Air Release Valve

- **Size :** 25 mm to 50 mm Size (1" to 2")
- **Body MOC:** SS 304, SS 316L, Forged or Solid Bar Body
- **End Connection :** TC End, Weld End
- **Surface :** Polished, Electric Polished. IDRa < 0.8 μm, or 0.4 μm.



**Air Release Valve**

## Special Valves

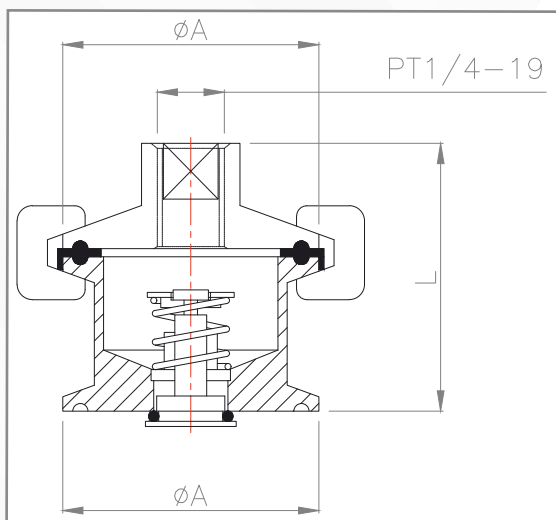


**Air Release Valve - Model**

AIR RELEASE VALVE				
SIZE	ØA	ØB	C	L
1"	22.1	50.5	82	158
1.5"	34.8	50.5	82	158
2"	47.5	64	82	158

## Air Blow Valve

- **Size** : 25 mm to 50 mm Size (1" to 2")
- **Body MOC**: SS 304, SS 316L, Forged or Solid Bar Body
- **End Connection** : TC End, Weld End
- **Surface** : Polished, Electric Polished. IDRa < 0.8 µm, or 0.4 µm.



**Air Blow Valve-Model**



**Air Blow Valve**

AIR BLOW VALVE		
SIZE	ØA	L
1"	50.5	55
1.5"	50.5	55
2"	64	55

## CSE Sanitary Tubes for Pharmaceutical, Semiconductor, Cosmetic, Food and Dairy Industry Etc.

It can be equipped with different types connection ends, as 45°/90° elbow, Tee, concentric/eccentric 0° reducers..... weld, clamp, unions..... standard type 3A, SMS, DIN, BS, BPE....etc.

- Surface:**
- 1) ID/OD polishing
  - 2) Only ID polishing
  - 3) Only OD polishing
  - 4) unpolished

**Roughness:** #400, #320, #240, #180.....

Ra < 0.8µm, 0.6µm, 0.5µm, 0.4µm..... (Other Surface finished can be ordered)

CSE Sanitary tubes for Pharmaceutical, Semiconductor, Cosmetic, Food and Dairy Industry etc.

BPE Standard			3A STANDARD			SMS STANDARD			DIN 11850 / 11865				
Size	OD	T	Size	OD	T	Size	OD	T	Size	OD-DB	OD-DA	OD(11865)	T
1/4"	6.35	0.89	1/4"	6.35	1.245	-	-	-	DN6	-	-	8	1
3/8"	9.53	0.89	3/8"	9.525	1.245	-	-	-	DN8	-	-	10	1
1/2"	12.7	1.65	1/2"	12.7	1.65	-	-	-	DN10	12	13	13	1.5
3/4"	19.05	1.65	3/4"	19.05	1.65	-	-	-	DN15	18	19	19	1.5
1"	25.4	1.65	1"	25.4	1.65	-	-	-	DN20	22	23	23	1.5
1.5"	38.1	1.65	1.5"	38.1	1.65	DN25	25	1.25/1.5	DN25	28	29	29	1.5
2"	50.8	1.65	2"	50.8	1.65	DN38	38	1.25/1.5	DN32	34	35	35	1.5
2.5"	63.5	1.65	2.5"	63.5	1.65	-	-	-	DN40	40	41	41	1.5
3"	76.2	1.65	3"	76.2	1.65	DN50	51	1.25/1.5	DN50	52	53	53	1.5
4"	101.6	2.11	4"	101.6	2.1	DN63	63.5	1.5	DN65	70		70	2
-	-	-	5"	127	2.77	DN76	76.1	1.6/2	DN80	85		85	2
6"	152.4	2.77	6"	152.4	2.77	DN100	101.6/104	2	DN100	104		104	2
-	-	-	8"	203.2	2.77	-	-	-	DN125	129		129	2



**CSE Sanitary Tubes**

- **Material:** ASTM 304, 3041, 3161
- **Spec:** ASTM A269, A270
- **Surface & Roughness:**
- 1) OD/ID Pickle ( Ra ≤ 1µm )
- **2) Polished:**
- 1) ID Polished to 180Grit (Ra ≤0.8 µm)
- 2) ID Polished to 240Grit (Ra ≤0.6 µm)
- 3) ID Polished to 320Grit (Ra ≤ 0.5 µm)
- 4) ID Polished to 420Grit (Ra ≤0.4 µm)
- **5) Electro Polished:**
- (5-1). ID Electro polished Ra ≤0.5 µm )
- (5-2). ID Electro polished a ≤0.38 µm )

## BPE Stainless Steel Tubing and Fittings

- Absolutely hygienic conditions are necessary for the entire production cycle of pharmaceutical and ultra high industries. Therefore Tubes and Fittings with a smooth internal surface and extensively installed with the advantages of cleaning easily and avoiding bacteria contamination.
- According to to the **ASME BPE** Specification Tubes Grade with **ASTM SS316L** content low Sulphur of **0.005%** to **0.017%** in surface finish of **SF1 & SF4**.
- **CSE** only offers tubes that are manufactured, quality controlled, marked, and certified according to the highest standards for hygienic equipment design and guarantees extended quality and trace ability.
- **CSE BPE** tubing significantly reduces inspection requirements prior to installation by utilizing only the highest quality stainless steel materials.
- **CSE** delivers directly from stock the following stain less steel tubes in grade **TP316L** with low sulfur content of **0.005% to 0.0017%** and **SF1** and **SF4** finishes (according to the ASME BPE specification)



**BPE Stainless Steel Tubing**

### CSE BPE EP products with following advantages:

- Homogeneously EP layer to minimize rouging
- Higher chrome concentration for better corrosion resistance”
- Guaranteed smoothness of all internal surfaces to reduce Bio film”

We have wide range in **Elbow, TEE, Reducers, TC Ferrule, Clamp, etc. in BPE, 3A, DIN, BS, SMS.**

# Spray Ball

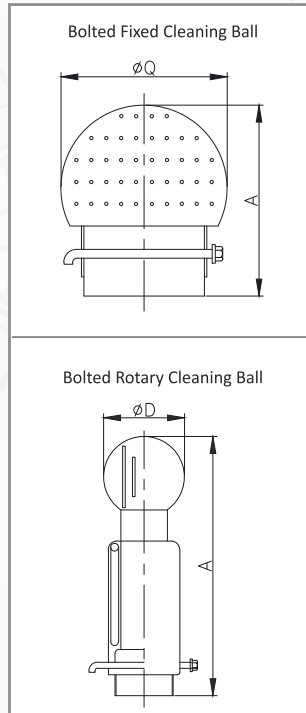
- **Size:** 25 mm to 65 mm Size (1" to 2.5"), DN 10 to DN 50
- **Body MOC:** SS 316L
- **Type:** Fix, Rotary
- **End Connection:** Bolted, TC End



**Bolted Fixed Cleaning Ball**



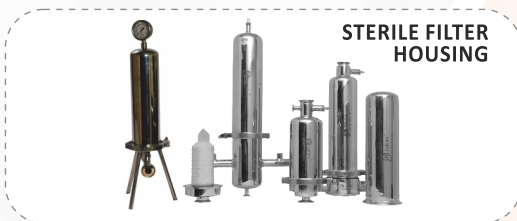
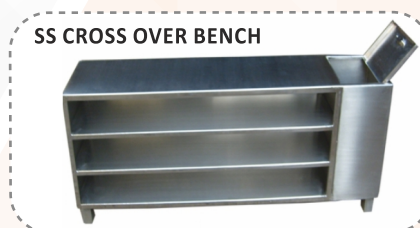
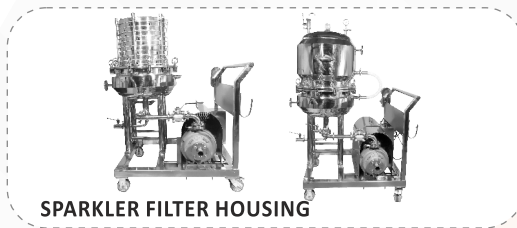
**Bolted Rotary Cleaning Ball**



BOLTED FIXED CLEANING BALL		
SIZE	A	Q
1"	95.0	63.0
1.5"	110.0	76.0
2"	125.0	91.0
2.5"	135.0	100.0

BOLTED ROTARY CLEANING BALL		
SIZE	A	Q
1"	135.0	53.0
1.25"	137.0	53.0
1.5"	137.0	53.0
2"	168.0	76.0
2.5"	190.0	63.0

## OTHER SANITARY PRODUCTS





Our Products are delicately built to comply with different standards, Such as 3A, SMS, BS and ASME BPE to suit customer requirements. We have types of Tubes and Fittings. Size 1/4" to 6".

**Plot No. C-9, Office No. 310, 3rd Floor, Globe Estate M.I.D.C., Phase-1, Dombivli (East)- 421203.**

**Mumbai, Maharashtra, India. Office No.: 86574 53269 | 86574 53270**

✉ [marketing@neelpharma.com](mailto:marketing@neelpharma.com)

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