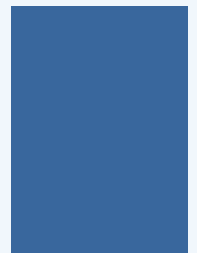




**NEEL Industrial**<sup>TM</sup>  
SOLUTIONS PVT. LTD  
*Technology for process line*



# 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**

**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.)

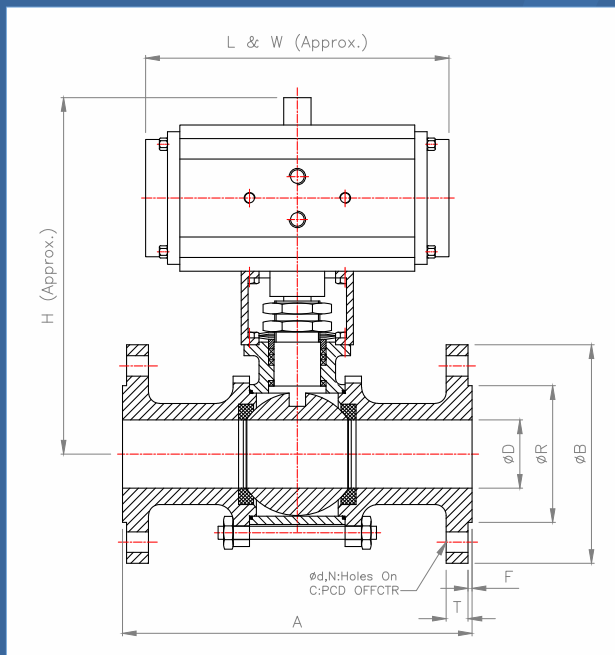
**Ball MOC :** SS 304, SS 316, SS 304L, SS 316L

**End connection :** Flanged end, TC end, Screwed end

**Make :** Neel industrial solution.



**Purity Ball Valve - Cavity Filler Valve**



Ball Valve (Actuated &amp; Manual) - Flange End

**BALL VALVE (ACTUATED & MANUAL)**

| SIZE | ØD   | A    | H   | L   | W   |
|------|------|------|-----|-----|-----|
| 15   | 1/2" | 12.5 | 108 | 114 | 100 |
| 20   | 3/4" | 19   | 118 | 150 | 100 |
| 25   | 1"   | 25   | 127 | 170 | 116 |
| 40   | 1.5" | 38   | 165 | 200 | 134 |
| 50   | 2"   | 50   | 178 | 210 | 134 |
| 65   | 2.5" | 64   | 190 | 228 | 158 |
| 80   | 3"   | 76   | 203 | 250 | 158 |
| 100  | 4"   | 100  | 229 | 305 | 185 |

**FLANGE DIMENSIONS - 150# RF**

| SIZE | ØB   | T   | ØR   | F   | Ød  | N  | C:PCD |
|------|------|-----|------|-----|-----|----|-------|
| 15   | 1/2" | 89  | 11.2 | 35  | 1.6 | 16 | 4     |
| 20   | 3/4" | 98  | 11.2 | 43  | 1.6 | 16 | 4     |
| 25   | 1"   | 108 | 11.2 | 51  | 1.6 | 16 | 4     |
| 40   | 1.5" | 127 | 14.3 | 73  | 1.6 | 16 | 4     |
| 50   | 2"   | 152 | 16   | 92  | 1.6 | 19 | 4     |
| 65   | 2.5" | 178 | 17.5 | 105 | 1.6 | 19 | 4     |
| 80   | 3"   | 190 | 19.2 | 127 | 1.6 | 19 | 4     |
| 100  | 4"   | 229 | 24   | 157 | 1.6 | 19 | 8     |

## 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

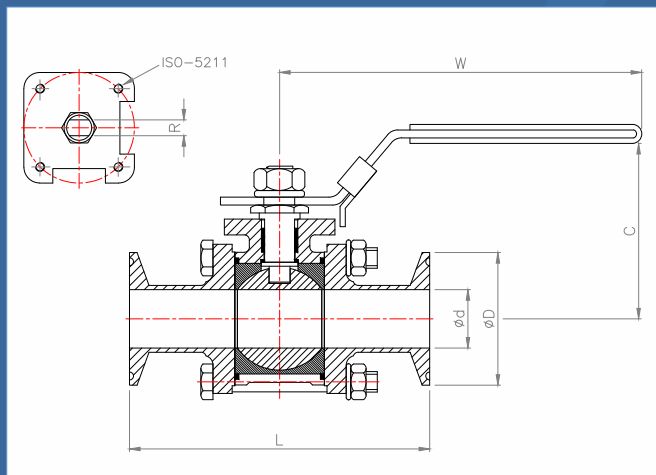
**Seat MOC:** PTFE (Compliance with FDA 21 CFR 177.2600 and USP Class VI.)

**End Connection:** TC End, Weld End, SMS End, DIN End, Flanged End.



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

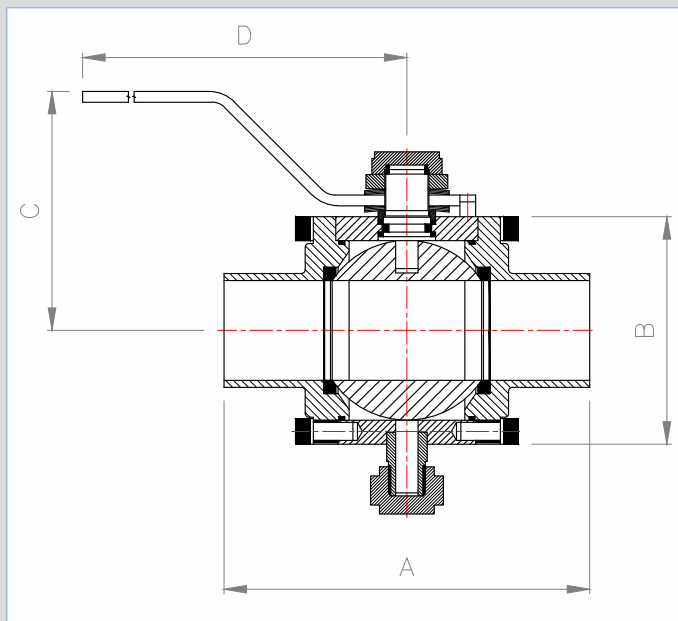
**Ball MOC:** SS 304, SS 316, SS 304L, SS 316L

**End Connection:** TC End, Weld End, SMS End, DIN End.

**Application:** Cosmectic, Food, Pharmaceutical,



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

www.neelpharma.com

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



Purity Ball Valve 3-Way

## Features :

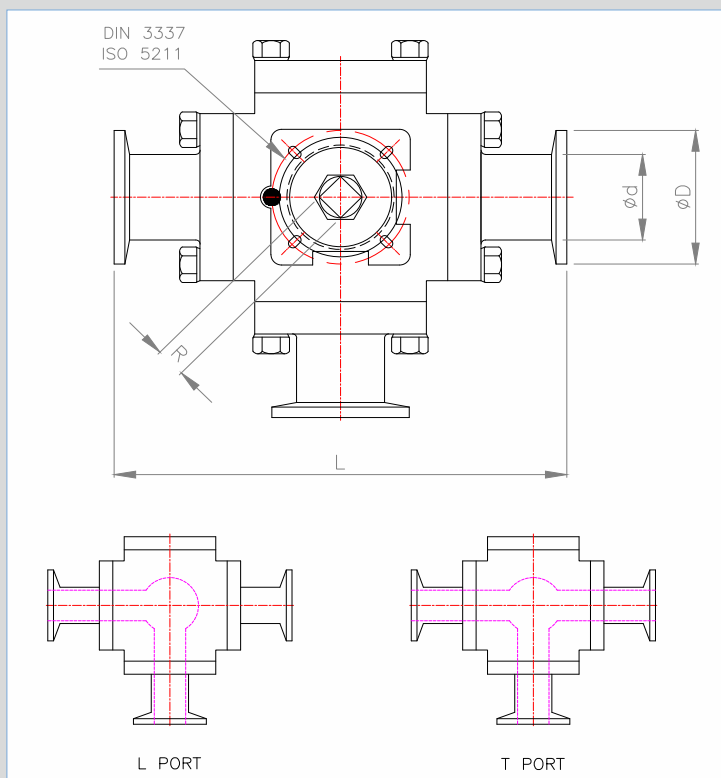
Suitable for High Purity / Pure Steam application and will not leave Liquid

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

| SIZE |      | ISO-5211 | $\phi d$ | $\phi D$ | 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 |

Purity Ball Valve- 3way (Cavity Filler)



# Diaphragm Valve / Zero Dead Leg Valve / Aseptic Valve

www.neelpharma.com

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



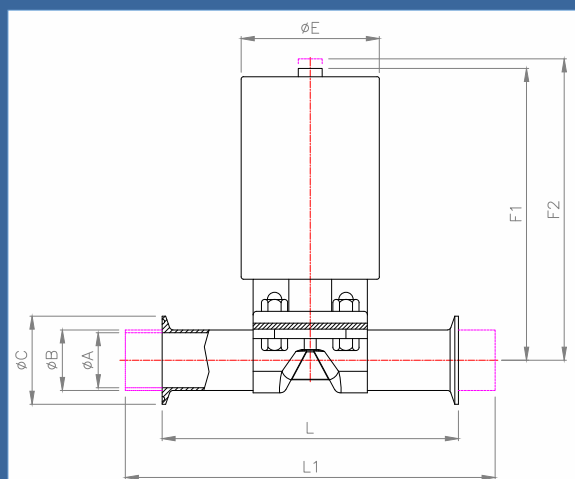
Diaphragm Valve - Metal Hand Wheel  
Forge L type Body



Diaphragm Valve (2Way) - Manual

# Diaphragm Valve / Zero Dead Leg Valve / Aseptic Valve

www.neelpharma.com



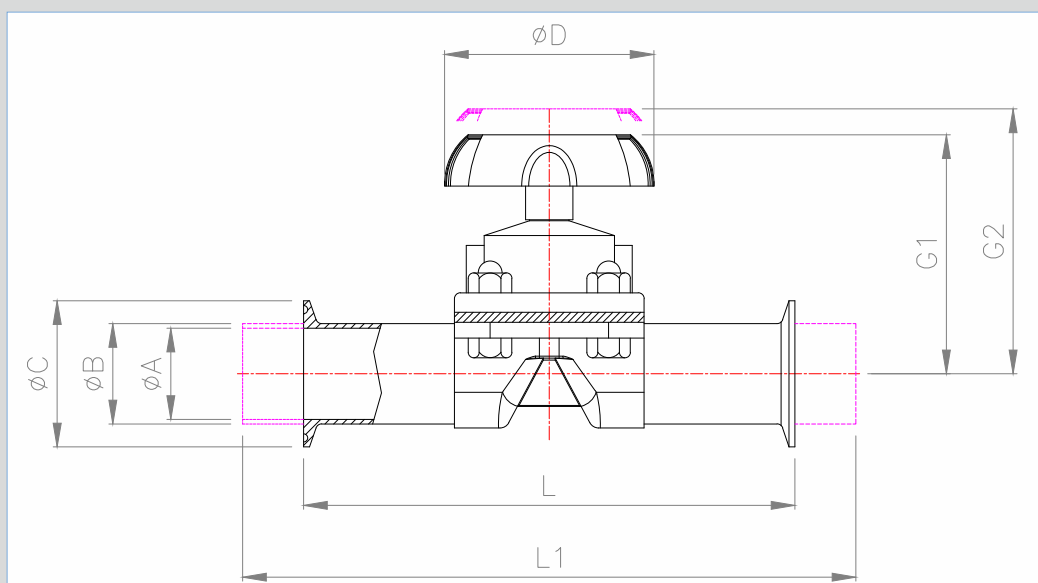
## DIAPHRAGM VALVE / ZERO DEAD VALVE / ASEPTIC VALVE

| 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 |

### Diaphragm Valve (2Way) - Pneumatic

| 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

www.neelpharma.com

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  $Ra \leq 0.38\mu m$

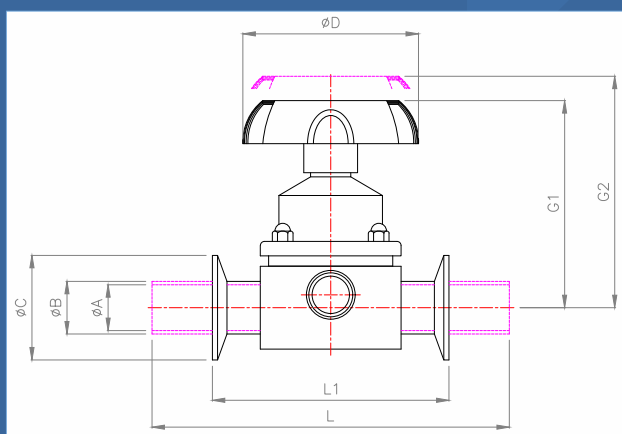
Design Conform to ASME BPE Standard

ID / OD mirror Polished and

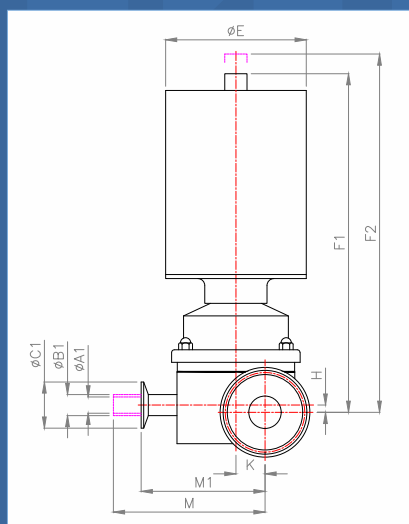
ID  $Ra \leq 0.5 \mu m$  / OD Sand blasted.



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"x 1" | 1/2"x1.5" | 1/2"x 2" | 3/4"x3/4" | 3/4"x 1" | 3/4"x1.5" | 3/4"x 2" | 1"x 1" | 1"x 1.5" | 1"x 2" | 1.5"x 1.5" | 1.5"x 2" | 2"x 2" |
|------|-----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|--------|----------|--------|------------|----------|--------|
| 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

www.neelpharma.com

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



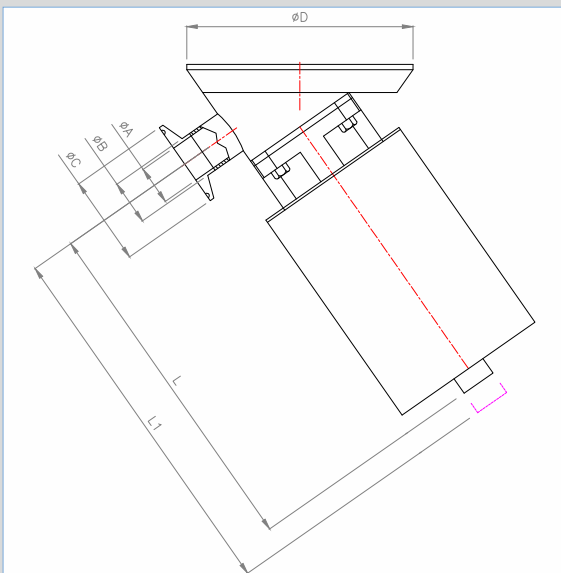
Diaphragm Valve (2Way) - Manual

**Pneumatic Actuator** :  
Actuator MOC : SS 304  
Spring MOC : SS 304  
Piston MOC : SS 304

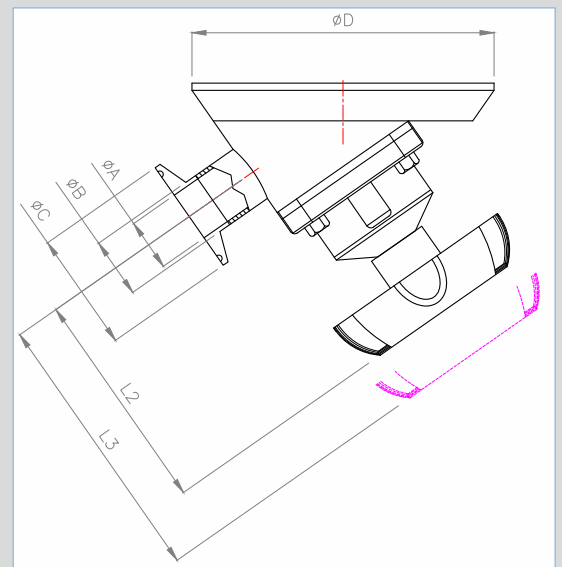
| TANK BOTTOM DIAPHRAGM VALVE |       |       |      |     |     |     |     |     |
|-----------------------------|-------|-------|------|-----|-----|-----|-----|-----|
| SIZE                        | ØA    | ØB    | ØC   | ØD  | L   | L1  | L2  | L3  |
| 1/2"                        | 9.4   | 12.7  | 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.



TANK Bottom Diaphragm Valve-Model 1



TANK Bottom Diaphragm Valve-Model 2

# Multi-Port & Blocks Diaphragm Valve

www.neelpharma.com

**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



Multi-Port Diaphragm Valve

# Hygienic Sample Valve for BPE

www.neelpharma.com

**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.

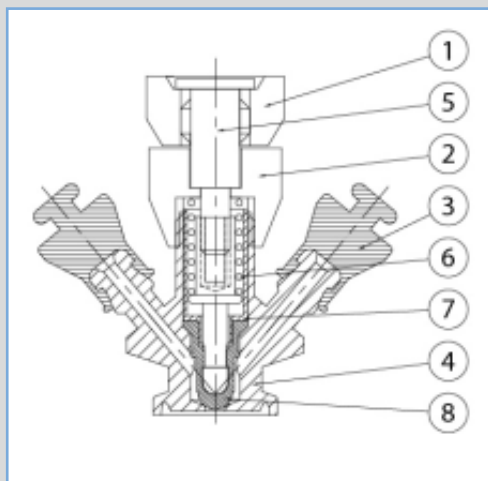
**Connection:** Weld End, Clamp End



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

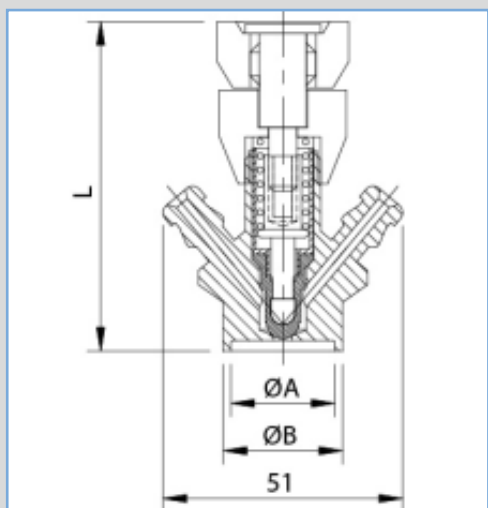
### Weld End

| 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 |

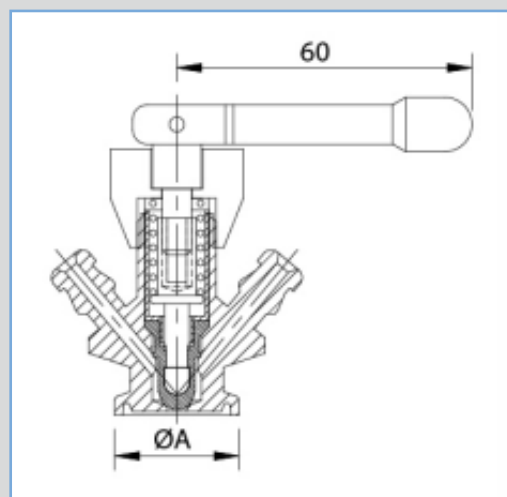
## Hygienic Sample Valve for BPE

### 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

www.neelpharma.com

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 :**

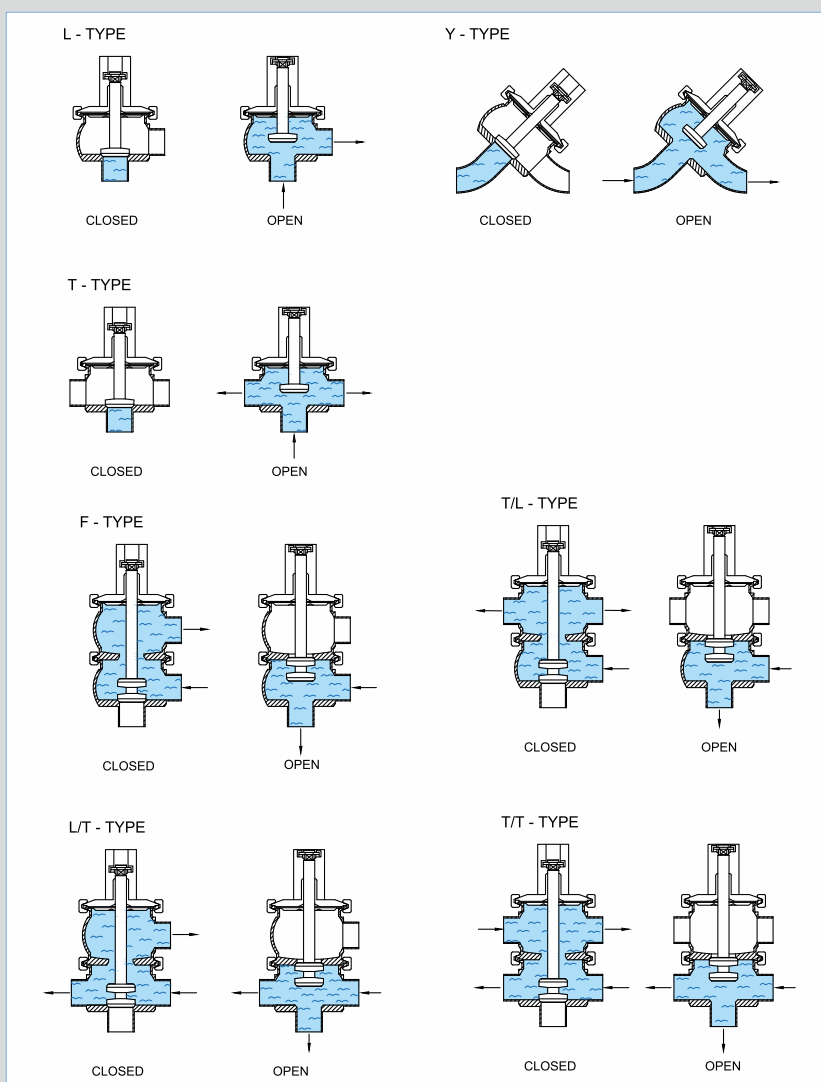
Actuator MOC : SS 304

Spring MOC: SS 304

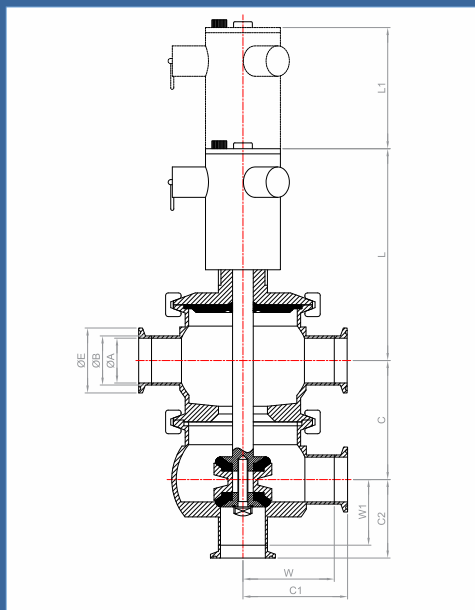
Piston MOC : SS 304



Aseptic-Valve



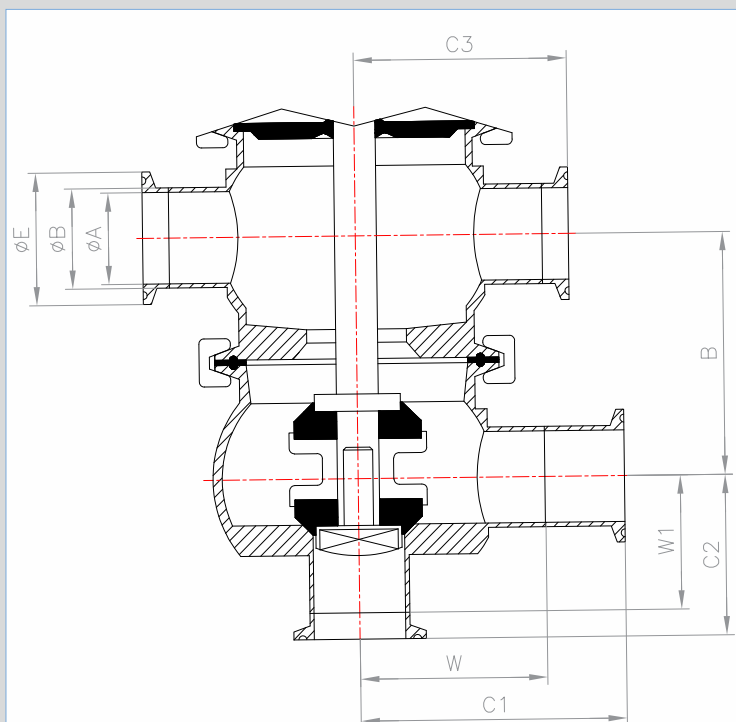
Divert Valve-Configuration & Flow direction



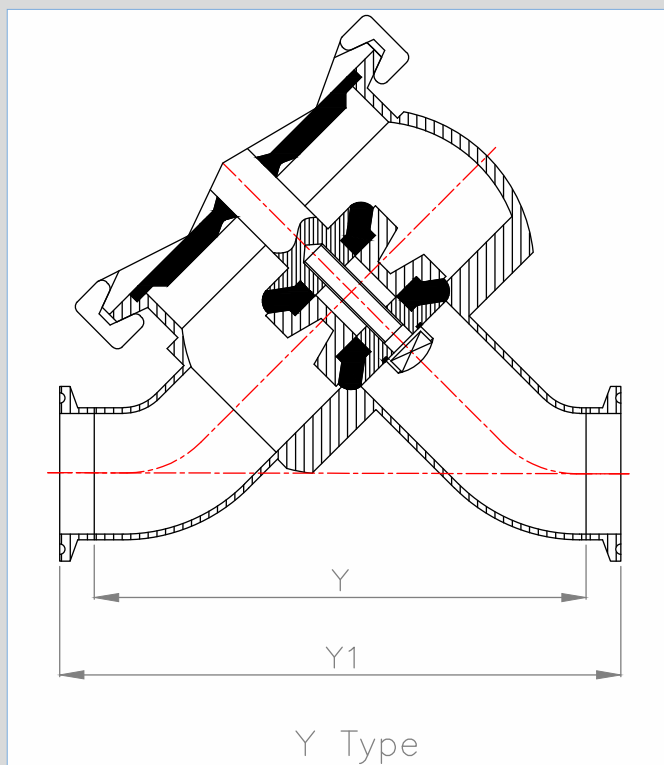
Divert Valve-Model 2

### 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  |
| ØB              | 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    | -     |



Divert Valve-Model 1



Divert Valve-Y type Model

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.



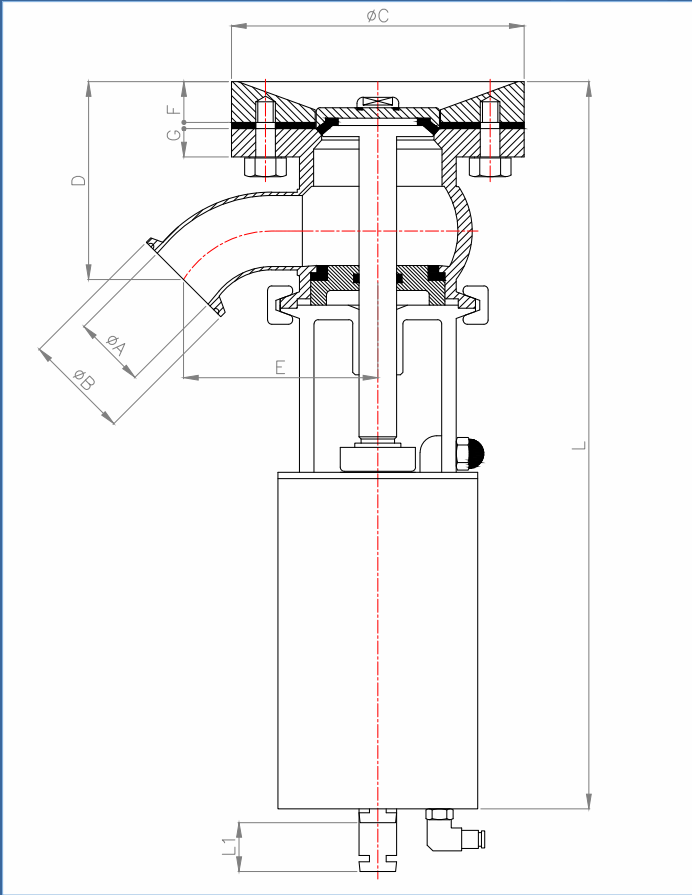
Tank Bottom Valve Actuator

## Features

Easy to clean and no corrosion problems.

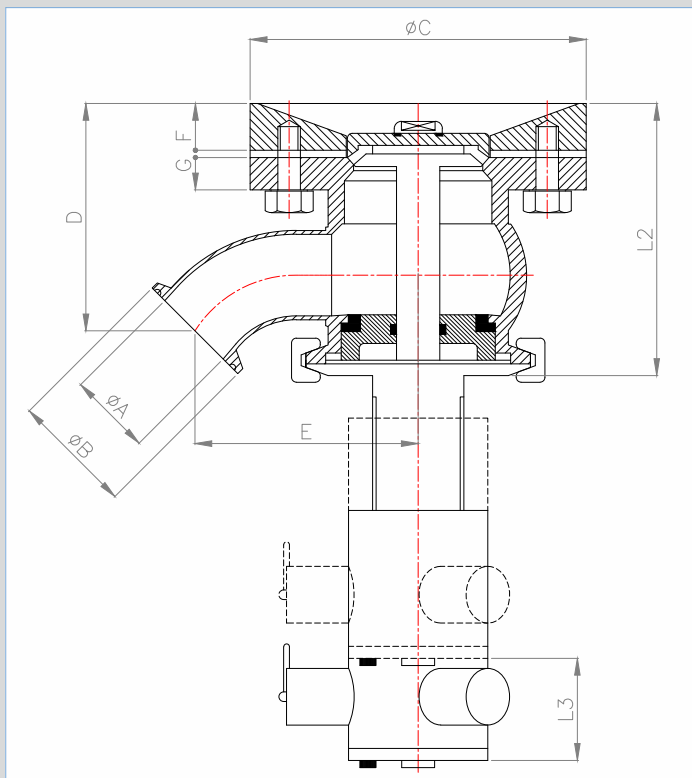
Compact design and easy to handle.





Tank Valve-Model-1

| TANK VALVE |      |      |       |       |       |
|------------|------|------|-------|-------|-------|
| SIZE       | 1"   | 1.5" | 2"    | 2.5"  | 3"    |
| ØA         | 22.1 | 34.8 | 47.5  | 60.2  | 72.9  |
| ØB         | 50.5 | 50.5 | 64    | 77.5  | 91    |
| ØC         | 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

| 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               |

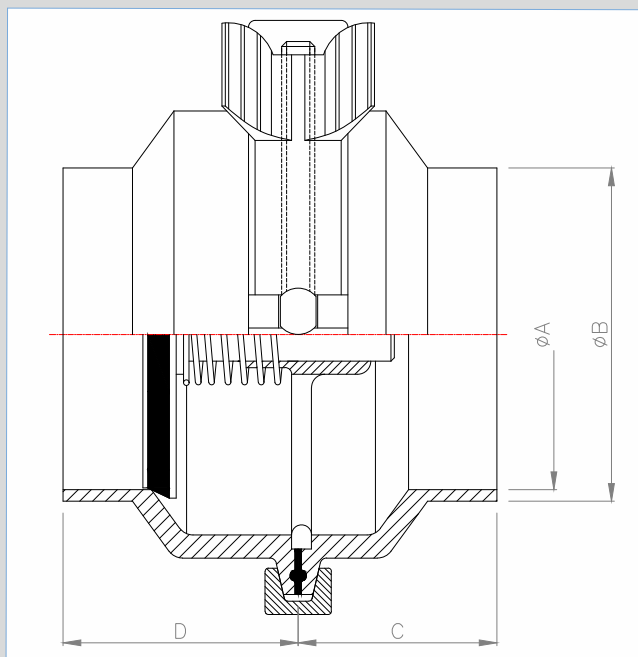


Non Return Valve

## 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

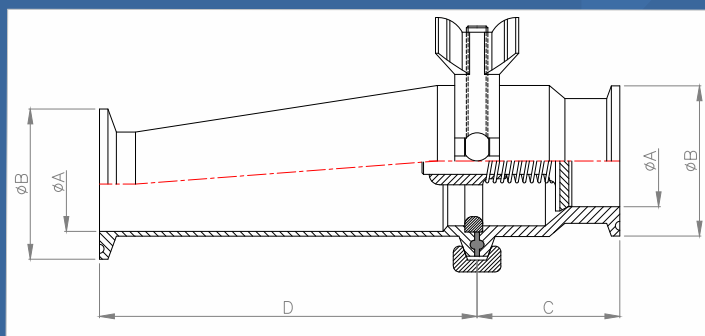
Surface : SF1: OD  $\leq 0.5\mu\text{m}$

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

## Special Feature



Chek Valve Eccentric Body - Horizontal Mounting



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



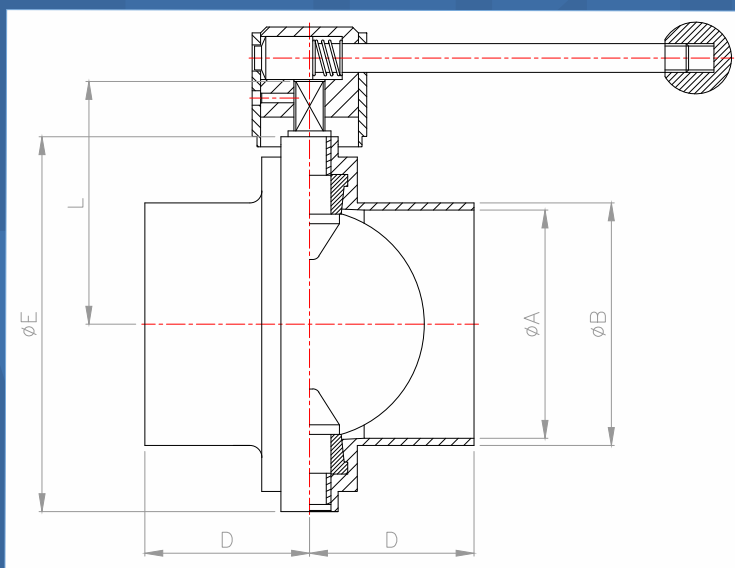
Butterfly Valve

**BUTTERFLY VALVE**

| <b>WELD END</b> |        |       |    |       |        |
|-----------------|--------|-------|----|-------|--------|
| 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   | 63.5  | 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**

| <b>CLAMP END</b> |        |        |    |       |       |
|------------------|--------|--------|----|-------|-------|
| 3A               | 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"               | 97.6   | 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

www.neelpharma.com

**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

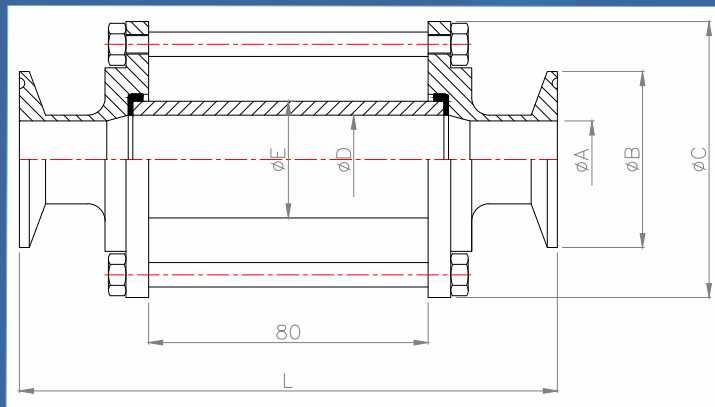
**Seal MOC :** EPDM, Silicone and Viton



Hygienic Sight Glass



Hygienic Sight Glass

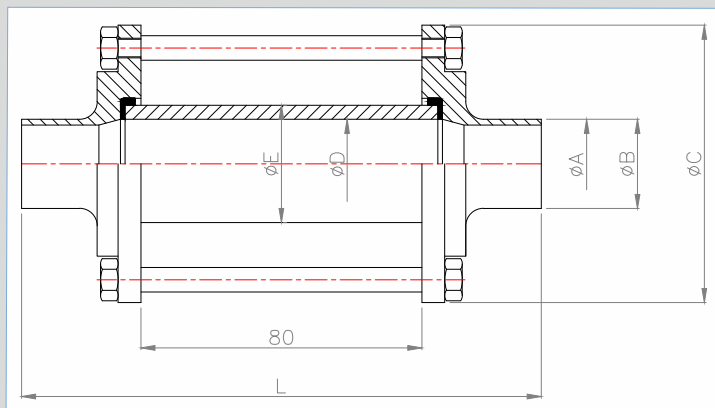


Hygienic Sight Glass-1

## 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  | 110 | 156 |



Hygienic Sight Glass-2

## 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 |

## Safety Relief Valve

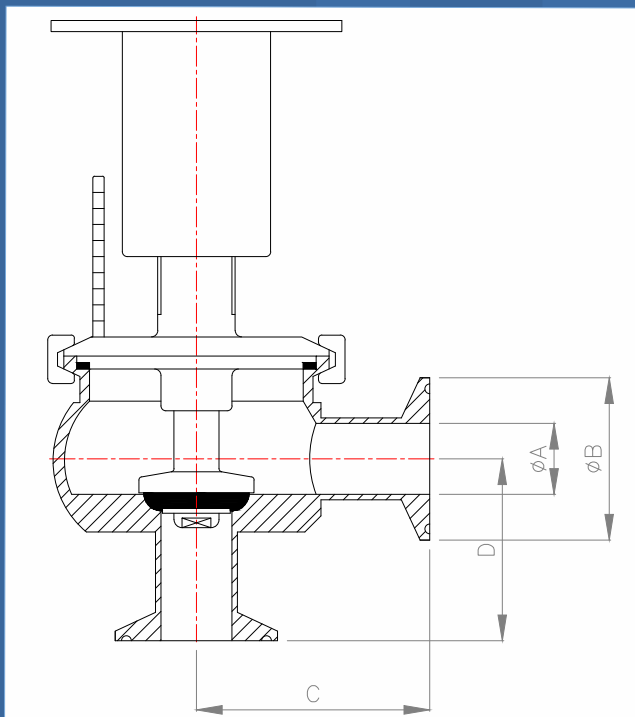
**Size :** 25mm to 80 mm Size (1" to 3")

**Working Pressure :** 0.1 -7Kgs/cm<sup>2</sup>.

**Body MOC :** SS 304, SS 316L, Forged or Solid Bar Body

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

**Surface :** Polished, Electro 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 :** 25mm to 50 mm Size (1" to 2")

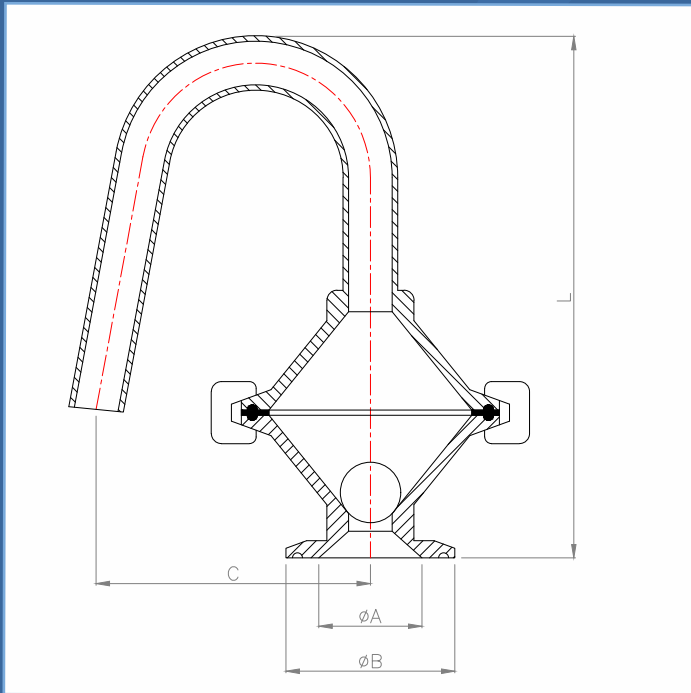
**Body MOC :** SS 304, SS 316L, Forged or Solid Bar Body

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



Air Release Valve





Air Release Valve-Model

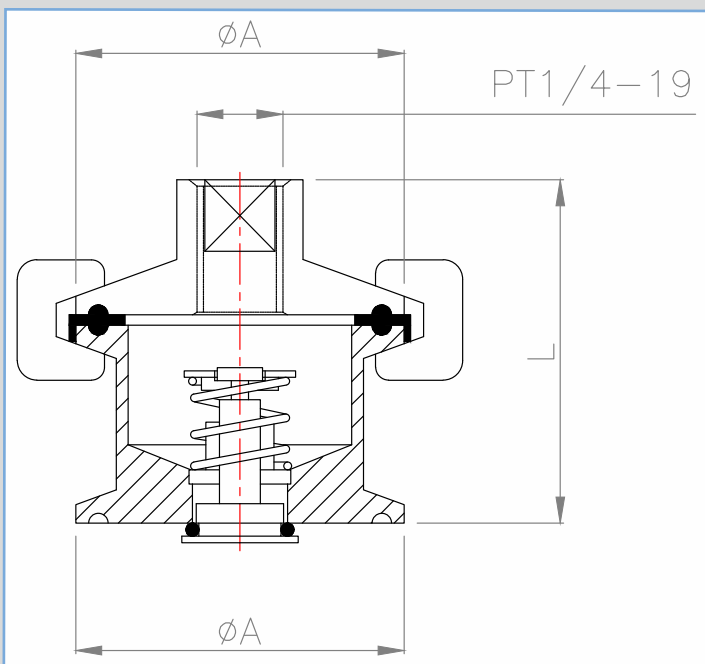
| AIR RELEASE VALVE |      |      |    |     |
|-------------------|------|------|----|-----|
| SIZE              | ØA   | ØB   | C  | L   |
| 1"                | 22.1 | 50.5 | 82 | 158 |
| 1.5"              | 34.8 | 50.5 | 82 | 158 |
| 2"                | 47.5 | 64   | 82 | 158 |

## Air Blow Valve

**Size :** 25mm to 50 mm Size (1" to 2")

**Body MOC :** SS 304, SS 316L, Forged or Solid Bar Body

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



Air Blow Valve-Model



Air Blow Valve

| AIR BLOW VALVE |      |   |
|----------------|------|---|
| SIZE           | ØA   | L |
| 1"             | 50.5 |   |
| 55             |      |   |
| 1.5"           | 50.5 |   |

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

www.neelpharma.com

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, 304L, 316L

**Spec :** ASTM A269, A270

**Surface & Roughness :**

1) OD/ID Pickle (  $Ra \leq 1.0 \mu m$  )

**2) Polished :**

1) ID Polished to 180Grit (  $Ra \leq 0.8 \mu m$  )

2) ID Polished to 240Grit (  $Ra \leq 0.6 \mu m$  )

## 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 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 stainless 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)

**CSE BPE EP products with following advantages:**

Homogeneously EP layer to minimize roughing

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.**



**BPE Stainless Steel Tubing**

# Spray Ball

**Size :** 25 mm to 65 mm Size (1" to 2.5"), DN 10 to DN 50

**Body MOC :** SS 316L

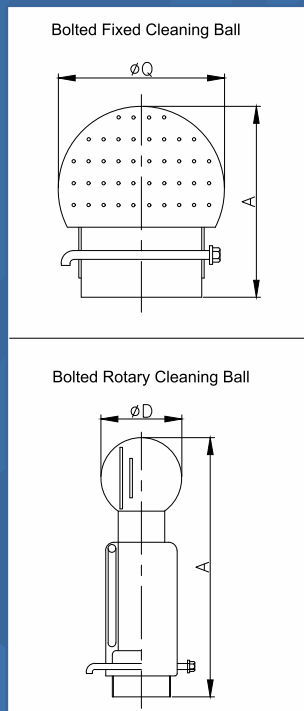
**Type :** Fix, Rotary



**Bolted Fixed Cleaning Ball**



**Bolted Rotary Cleaning Ball**



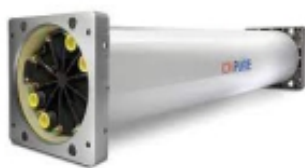
| BOLTED FIXED CLEANING BALL |       |       |
|----------------------------|-------|-------|
| SIZE                       | A     | Q     |
| 1"                         | 95.0  | 63.0  |
| 1.5"                       | 110.0 | 76.0  |
| 2"                         | 125.0 | 91.0  |
| 2.5"                       | 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 | 63.0 |
| 2.5"                        | 190.0 | 76.0 |

## OTHER SANITARY PRODUCTS



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**TC CLAMP**

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