



SANITARY DIAPHRAGM VALVES

PHARMA QUALITY AND RELIABILITY - DELIVERED ON TIME

STERIFLOWVALVE.COM

High performance,
high quality sanitary
valves and accessories.....

delivered on time



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Certifications, Credentials, & Affiliations

CERTIFICATIONS

- » All Material Test Reports comply with the requirements of BSEN 10204, Type 3.1
- » Plastic and elastomer Certifications of Compliance included with every order:
 - FDA CFR Title 21, Paragraph 177.1550 for plastic materials FDA
 - FDA CFR Title 21, Paragraph 177.2600 for elastomer materials
 - U.S. Pharmacopeia XXVIII Class VI, Chapter 88 Biological Reactivity Test in Vivo
 - U.S. Pharmacopeia XXVIII, Chapter 87 Biological Reactivity Test in Vitro
 - ADI/TSE Free Certificate
 - Batch lot traceability for elastomer and plastic components

DOCUMENTATION & TRACEABILITY

- » All Steriflow Valves have serial numbers that are directly traceable to our Unicert, and to the heat numbers on the type 3.1 material test reports attached.
- » Refer to Unicert Sample on opposite page

AFFILIATIONS

- » ASME BPE (membership & committee member)
- » ISPE
- » FCI (membership and Chairman)
- » P.E. Registered Professional Engineer - State of Ohio, USA

CREDENTIALS

- » ISO 9001:2008
- » CRN No.: 0C22893.5



CERTIFICATE OF COMPLIANCE

ORDER INFORMATION

Customer Name: XYZ Company
 P.O. Number: XXXX
 Order Date: XX/XX/XXXX

Factory Order No: Serial # PrefixXXXX

- **CERTIFICATION OF MATERIAL COMPLIANCE:** Traceable material certification and MTR's for this order are attached to this document.
- **CERTIFICATION OF SURFACE FINISH:** The interior, wettable surfaces of the valves furnished on the above-referenced order have a maximum surface finish of 20Ra (0.50µm). The exterior, non-wettable surfaces have a maximum surface finish of 40Ra µin (1.00 µm), except the spring housing will have a casting finish.

Wettable components are certified to be electro-polished.

Note: The above statement does not apply to models CGDM CSDT, Sample Cooler or Sight Glass models without EP order code option. The model MK93 body is not electro-polished as standard.

- **CERTIFICATION TO FDA & USP CLASS VI:** Steriflow by Jordan Valve certifies that the WETTED elastomer, Teflon, PTFE-resin and perfluorolastomer compounds utilized in our sanitary products have been manufactured in accordance with prescribed procedures for pharmaceutical products and have been tested and certified to be in compliance with:
 - Title 21, Paragraph 177.1550 of the FDA Code Federal Regulations for plastic materials for repeated use in contact with food.
 - Title 21, Paragraph 177.2600 of the FDA Code Federal Regulations for rubber and rubber-like materials for repeated use in contact with food.
 - U.S. Pharmacopeia XXVIII Class VI, Section 88 Biological Reactivity Test in Vivo.

The following materials used in Richards Industries' Steriflow Products are certified to FDA and USP Class VI per the following:

<u>FDA APPROVED MATERIAL</u>	<u>Diaphragm Materials</u>		
EPDM/NYLON, TFE-VITON	<u>FDA AND USP VI APPROVED MATERIAL</u>		
	Jorlon		
	<u>O-Ring/Gasket Materials</u>		
<u>FDA APPROVED MATERIAL</u>	<u>FDA AND USP VI APPROVED MATERIAL</u>		
BUNA-N	TFE-SILICON	TEFLON	TFE-VITON
	TUF-STEEL™	KALREZ	SILVERBACK™
	EPDM	SILICON	VITON
	JORLON	FLUORAZ	TUF-FLEX®
	TFE-EPDM		
	<u>Seat Materials</u>		
	<u>FDA AND USP VI APPROVED MATERIAL</u>		
	PEEK	PERLAST™	JORLON
	TFM 1600	TEFLON	
	<u>SVC-SHC Disc Poppet</u>		
<u>FDA APPROVED MATERIAL</u>	<u>FDA AND USP VI APPROVED MATERIAL</u>		
316L/EPDM	TEFLON	PEEK	316L/SILICON

We certify that the components on the above referenced purchase order meet the requirements of the purchase order, applicable drawing(s) and our ISO 9001:2008 manufacturing, testing, and inspection procedures to assure an acceptable quality level applicable to the product.

TRACEABLE CERTIFICATE OF CERTIFICATION

Serial # Suffix	Valve	Description	Material Type, Spec, Size	Heat #
A	96-100-6L	BODY	ASME SA-479 316/316L	8SF0165-90
		FERRULE	UNS S31603	E130287////F
		LWR DIAPH PLT	ASTM A479, S31603	E151151
		STEM	ASTM A479, S31603	V4L6
		SEAL RETAINER	ASTM A479, S31603	WOYO

Quality Manager _____ Date _____

The attached material certifications are for materials used in the manufacture of this order. In the case of dual-certified material, refer to the properties to verify certification

SANITARY DIAPHRAGM VALVES

Manual or Air Actuated Forged 2-way or Cast 2-way, Ported and Tandem valves. Barstock Zero Static T-Block, Point of Use T-Block, Divert Tank Bottom and Custom Block Body valves

FEATURES

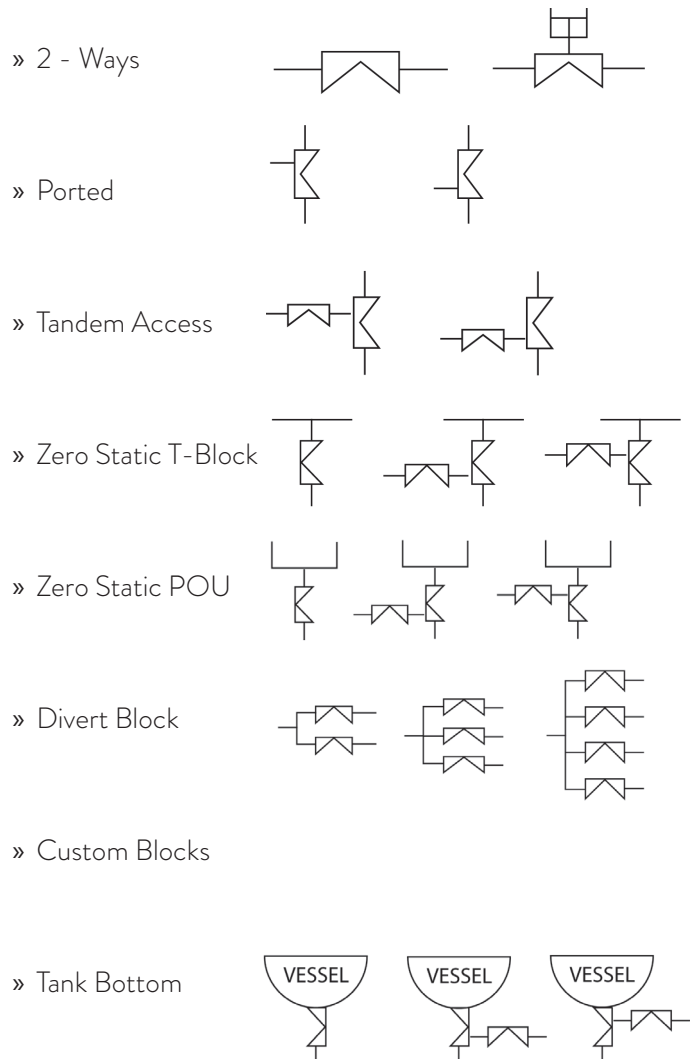
- » Body & Trim Material: traceable ASME and DIN grade of 316L and Super-Austenitic Stainless Steel and Super Alloys readily available
- » Size Range: 1/4" - 4" (DN8 - DN100)
- » Manual or Air Actuated
- » Surface Finish:
 - Wetted Interior: ASME BBE SF5 20 Ra μm (0.5 Ra μm). Electropolish standard, SF4 and better finish available
 - Exterior: See individual model specifications
- » Diaphragm: All FDA, FDA/USP <88>, <87> Class VI, ADI-TSE Free
 - TFM/EPDM Backer
 - EPDM - Peroxide Cured

DOCUMENTATION

- » Steriflow Unicert; Certificate of Compliance for:
 - Material, including MTR's
 - Surface Finish
 - FDA/USP <88>, <87> Class VI
 - ADI/TSE Free cert available upon request
- » Each Unicert document lists the order's individual valve Serial/Suffix numbers and wetted component Heat numbers. MTR's for each Heat number follow on attached pages. The Serial numbers and Heat numbers are directly traceable to each individual valve
- » Valve Sizing information with quotation
- » Signed valve Leak Test report upon request



VALVE TYPE BY APPLICATION



GENERAL VALVE SPECIFICATIONS*

Line Size: 1/4" - 4" (DN8 - DN100)

End Connections: ASME BPE, DIN, ISO, Contact Factory

- » Tri-Clamp
- » Tube Weld End

Body Materials

- » Forgings: EN 10272:2000 GR 1.4435 316L standard
- » Bar Stock: ASME SA479 316L (UNS 31603) standard; EN 10272:2000 GR 1.4435, AL-6XN®, Hastelloy® C-22 and others readily available options

Diaphragm Material/Max Temperature: all diaphragms are FDA, USP <88> Class VI and <87> compliant and ADI-free

- » TFM/EPDM Backer / -14°F to 266°F (-26°C to 130°C) ≤300°F (150°C) at 50 psig (3,45 barg) max during SIP
- » EPDM Peroxide Cured / -14°F to 266°F (-26°C to 130°C) ≤300°F (150°C) at 50 psig (3,45 barg) max during SIP

Surface Finish: see individual valve specifications

Pressure at Maximum Temperature: 50 psig @ 300°F (3,45 barg @ 150°C)

Maximum Operating Pressure:

- » 1/4" - 1": 200 psi @ 100°F (13,8 bar @ 38°C)
- » 1-1/2" - 2": 175 psi @ 100°F (12,1 bar @ 38°C)
- » 2-1/2" - 4": 150 psi @ 100°F (10,3 bar @ 38°C)

Seat Leakage: ANSI FCI Class VI

FLOW COEFFICIENT CV (KV)

CONNECTION SIZE	VALVE DESCRIPTION	FLOW COEFFICIENT CV (KV)
1/4" - 1/2"	Compact valve/weir	1.16 (1,0)
1/2"	Any standard forged, barstock or cast body valve with catalog standard weir	5.2 (4,5)
3/4"		8.7 (7,52)
1"		13.9 (12,02)
1-1/2"		34.8 (30,1)
2"		59.7 (51,6)
3"		185 (160)
4"		272 (235)

* Most valve types meet all of these general features and specifications. However, available sizes may vary depending upon product selected. See individual product page for specific details about each model.

BONNET / ACTUATOR SPECIFICATIONS

Manual Bonnet Assembly:

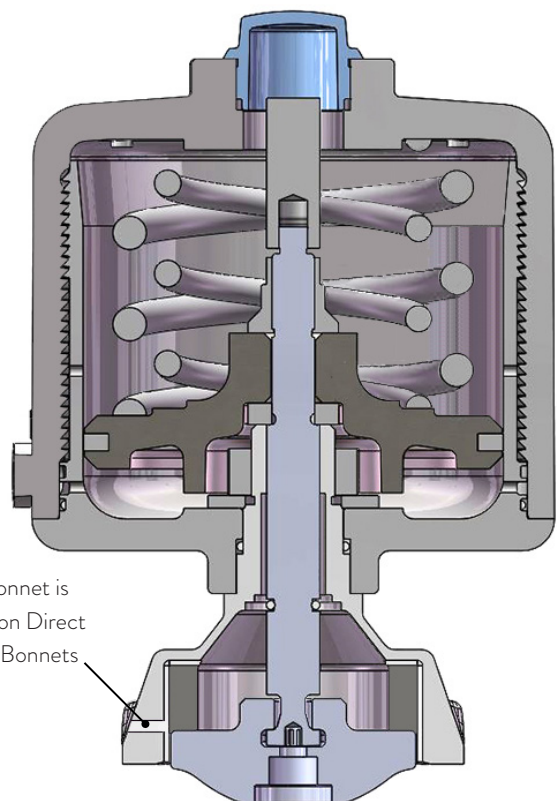
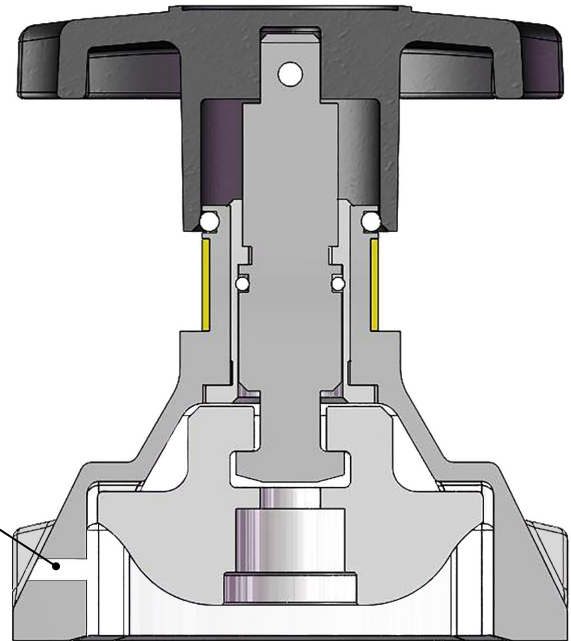
- » Available for sizes: 1/2" - 4" (DN15 - DN100)
- » Closing Stop: adjustable
- » Bright visual position indicator
- » Options: contact factory for proximity switches, locking devices and stroke limiter

Bonnet Materials

- » Bonnet: electropolished Stainless Steel
- » Compressor: Stainless Steel
- » Insert: brass
- » Thrust Washer: PTFE
- » Compressor Pin: Stainless Steel
- » Indicator: Polyolefin
- » Stem: Stainless Steel
- » Handwheel: PPS (1/4" - 2") (DN8 - DN50); Stainless Steel (2-1/2" - 4") (DN65 - DN100)

Air Actuated Bonnets:

- » Available for sizes: 1/2" - 2" (DN15 - DN50) standard
- » Air Actuator Materials: Polyamide, Stainless Steel, Stainless Steel base standard for all configurations
- » Actuator Seal: Actuator springs and seals can be replaced without exposing process
- » Orientation: Swivel feature allows 360° orientation of air inlet
- » Air Connections: NPT Stainless Steel base standard for all configurations
- » Function: Change from Normally Open or Normally Closed by inverting the actuator housing
- » Control System Interface: Available with optional switch packages for on/off control or with positioners for flow control and modulation



* Dimensions for Manual Bonnet or Air Actuator on individual product data sheets

SV1, SV2: ASEPTIC 2-WAY DIAPHRAGM VALVE

Standard, Compact, Manual or Pneumatically Actuated

SPECIFICATIONS AND FEATURES*

Available Sizes:

- » Compact Valve: 1/4", 3/8", 1/2" (DN8, DN10, DN15)
- » Standard Valve: 1/2" - 4" (DN15 - DN100)

Connection Type:

- » All forged 2-way valves have integral tri-clamp or weld end connections - no welding required during manufacture
- » Compact Valve: Tri-clamp, Extended Tube End, standard; optional connections including Hose Barb upon request
- » Standard Valve: Tri-clamp, Extended Tube End

Materials:

- » Standard: Forged EN 10272:2000 GR 1.4435 316L
- » Optional: Contact factory

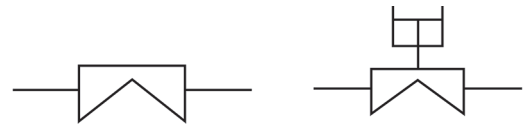
Surface Finish:

- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra μm (0,5 Ra μm)
 - ASME BPE SF5, 20 Ra μm (0,5 Ra μm), Electropolish
 - Optional:
 - ASME BPE SF4, 15 Ra μm (0,4 Ra μm) Electropolish. Better finish upon request.
- » Exterior:
 - Standard: 63 Ra μm (1,6 Ra μm)

Certification:

- » CRN No.: 0C22893.5

* See pages 6 - 8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves

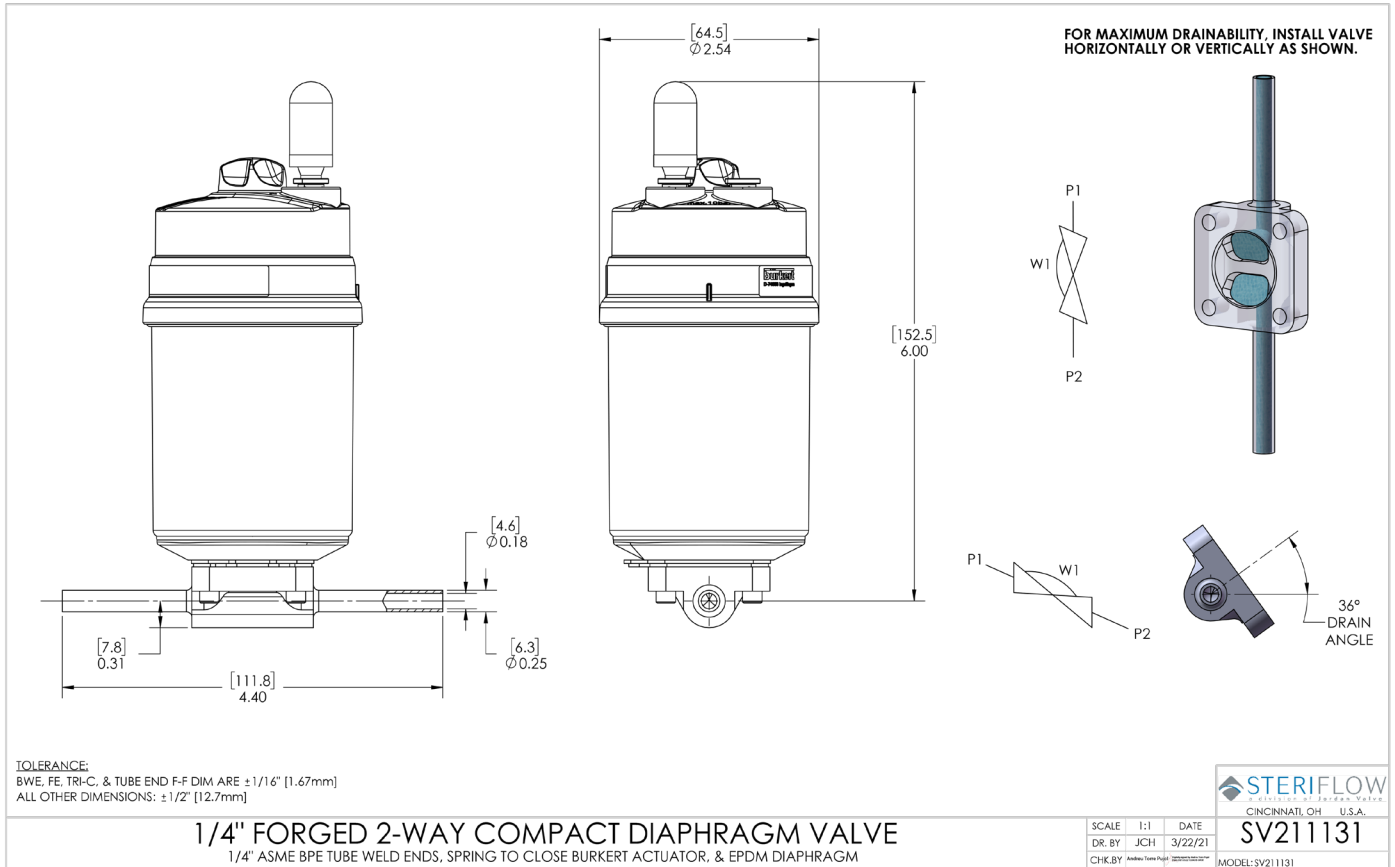


APPLICATIONS

Single Valve Wier Manual on/off or Air Actuated Flow Control of Drug Process Additives, Drug Product and Clean Utilities

- » Upstream:
 - Bioreactor/Fermenter: For control of WFI, growth media, intermediate drug product, clean dry air and gas, clean steam and clean utility fluids
 - Perfused Bioreactors: Retentate or permeate fluid control
- » Downstream:
 - For control of WFI, buffers, solvent, intermediate and finished drug product, clean dry air and gas, clean steam, and clean utility fluids in the following production area
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish
- » Buffer and Media prep:
 - For control of WFI, buffers, growth media, clean steam and clean utility fluids

EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS

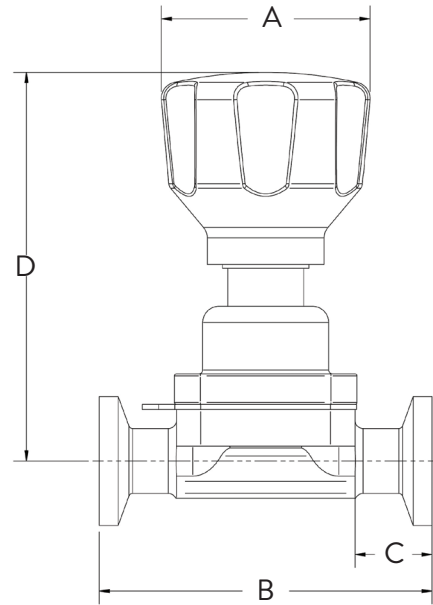


DIMENSIONS (WITH MANUAL ACTUATOR)

INCHES				
SIZE	A	B	C	D
1/4"	1.609	2.563	0.594	2.989
1/2"	1.609	2.563	0.594	2.989

METRIC				
SIZE	A	B	C	D
DN8	40,87	65,10	15,09	75,9
DN10	40,87	65,10	15,09	75,9

1/4" -1/ 2" TRI-CLAMP ENDS

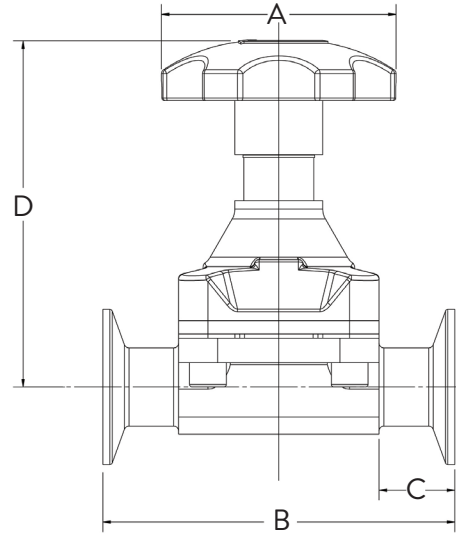


DIMENSIONS (WITH MANUAL ACTUATOR)

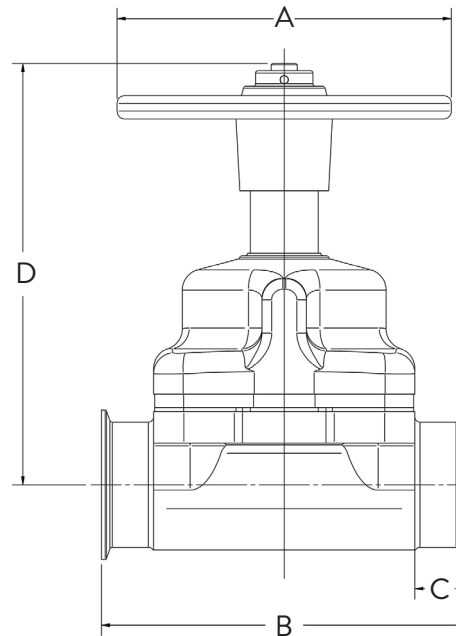
INCHES				
SIZE	A	B	C	D
1/2"	3.0	3.5	13/16	3.61
3/4"	3.0	4.0	27/32	4.00
1"	3.0	4.5	31/32	4.41
1-1/2"	4.75	5.5	15/16	6.72
2"	4.75	6.25	1.0	7.67

METRIC				
SIZE	A	B	C	D
DN15	76,2	88,9	20,6	91,6
DN20	76,2	101,6	21,4	101,6
DN32	76,2	114,3	24,6	112,0
DN40	120,7	139,7	23,8	170,7
DN50	120,7	158,8	25,4	194,8

1/2" - 2" TRI-CLAMP ENDS



2-1/2" - 4" TRI-CLAMP ENDS



INCHES				
SIZE	A	B	C	D
2-1/2"	8.0	8.25	1.0	9.5
3"	8.0	8.75	1.25	10.09
4"	10.0	11.5	1.2	11.44

METRIC				
SIZE	A	B	C	D
DN65	203	210	25,4	241
DN80	203	222	31,75	256
DN100	254	292	30,48	291

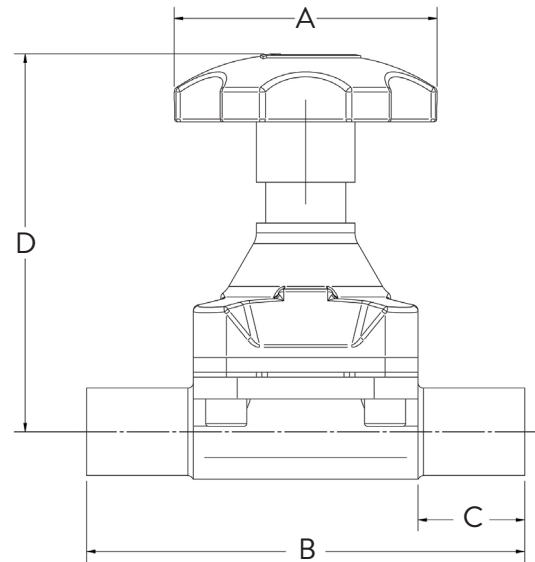
Please Contact Factory for dimensions of Compact Forged 2-way valves.

DIMENSIONS (WITH MANUAL ACTUATOR)

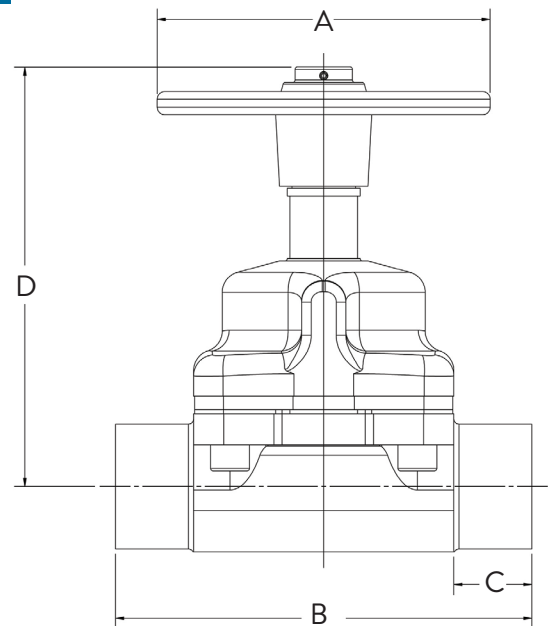
INCHES				
SIZE	A	B	C	D
1/2"	3.0	4.25	1.1875	3.61
3/4"	3.0	4.625	1.1563	3.98
1"	3.0	5.0	1.2188	4.31
1-1/2"	4.75	6.25	1.3125	6.76
2"	4.75	7.25	1.5	7.61

METRIC				
SIZE	A	B	C	D
DN15	76,2	108	30,16	91,6
DN20	76,2	117	29,37	101,1
DN32	76,2	127	30,96	109
DN40	120,7	159	33,34	178
DN50	120,7	184	38,1	193

1/2" - 2" TUBE ENDS



2-1/2" - 4" TUBE ENDS



INCHES				
SIZE	A	B	C	D
2-1/2"	8.0	9.25	1.5	10.09
3"	8.0	10.0	1.875	10.09
4"	10.0	12.5	1.7	11.44

METRIC				
SIZE	A	B	C	D
DN65	203	235	38,1	256
DN80	203	254	47,6	256
DN100	254	318	43,2	290

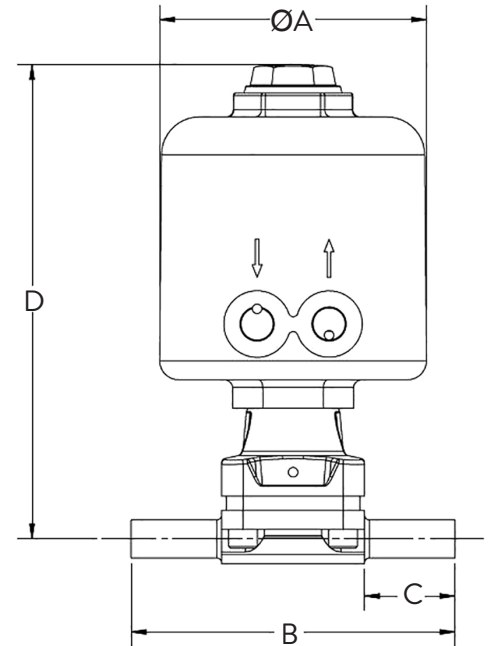
Please Contact Factory for dimensions of Compact Forged 2-way valves.

DIMENSIONS (WITH ECLIPSE PNEUMATIC ACTUATOR)

INCHES				
SIZE	A	B	C	D
1/2"	3.5	4.25	1.1875	6.23
3/4"	4.3	4.625	1.1563	6.84
1"	4.3	5.0	1.2188	7.25
1-1/2"	6.13	6.25	1.3125	9.88
2"	6.13	7.25	1.5	10.83

METRIC				
SIZE	A	B	C	D
DN15	88,9	108	30,16	158,2
DN20	109,22	117	29,37	173,7
DN32	109,2	127	30,96	184,2
DN40	155,7	159	33,34	251
DN50	155,7	184	38,1	275

1/2" - 2" TUBE ENDS

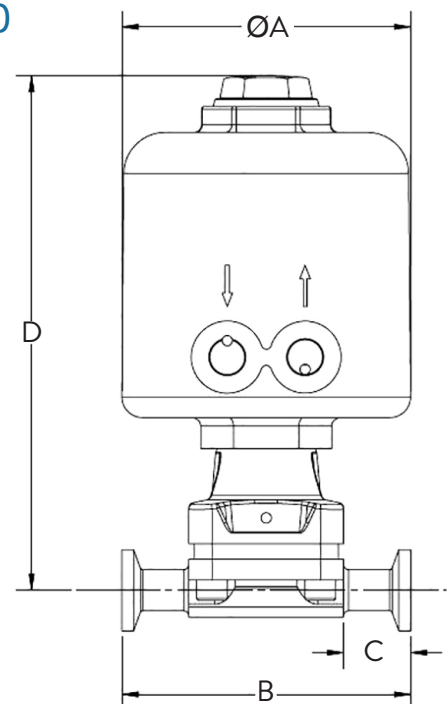


1/2" - 2" TRI-CLAMP ENDS

DIMENSIONS (WITH ECLIPSE PNEUMATIC ACTUATOR)

INCHES				
SIZE	A	B	C	D
1/2"	3.5	3.5	13/16	6.23
3/4"	4.3	4.0	27/32	6.84
1"	4.3	4.5	31/32	7.25
1-1/2"	6.13	5.5	15/16	9.88
2"	6.13	6.25	1.0	10.83

METRIC				
SIZE	A	B	C	D
DN15	88,9	88,9	20,6	158,2
DN20	109,22	101,6	21,4	173,7
DN32	109,2	114,3	24,6	184,2
DN40	155,7	139,7	23,8	251
DN50	155,7	158,8	25,4	275



ORDERING SCHEMATIC (STANDARD & COMPACT FORGED 2 WAY VALVES)

MODEL	TYPE	SIZE	CONNECTION	FINISH	ACTUATION	DIAPHRAGM	ACCESSORIES	COMPLIANCE
SV								

1	TYPE
1	Standard Forged 2-Way
2	Compact Forged 2-Way

2	SIZE
1	1/4" Compact
2	3/8" Compact
3	1/2" Compact
4	1/2"
5	3/4"
6	1"
7	1-1/2"
8	2"
9	2-1/2"
A	3"
B	4"

3	CONNECTION
1	OD Tube
2	Clamp
3	OD Tube x Clamp
Z	Non-standard

4	INTERNAL SURFACE FINISH
1	SF1 20Ra µin
2	SF4 15Ra µin (0,4 Ra µm) EP
3	SF5 20Ra µin (0,5 Ra µm) EP
Z	Non-standard, consult factory

5	ACTUATION
1	Manual
2	Manual Vented
3	2 1/2" - 4", and Compact Actuator, Spring to Close
4	2 1/2" - 4", and Compact Actuator, Spring to Open
5	Eclipse Actuator, Double Acting (1/2" - 2" standard)
6	Eclipse Actuator, Spring to Close (1/2" - 2" standard)
7	Eclipse Actuator, Spring to Open (1/2" - 2" standard)

6	DIAPHRAGM
1	EPDM
2	TFM/EPDM
Z	Non-standard

7	ACCESSORIES
1	Switch 2 Position
2	Positioner 4-20 mA
Z	Non-standard, consult factory

8	CE/PED COMPLIANCE
OG	SEP (0.25" to 1")
OF	CE Category 1 (1-1/2" to 4")

SFB1: CAST BODY, 2-WAY DIAPHRAGM VALVE

Manual or Pneumatically Actuated Cast Body 2-way Valves

Steriflow cast body 2-way valves offer an economical alternative to forged body valves when customer process requirements or specifications allow. Steriflow's manufacturing, assembling, documentation and valve traceability practices remain the same whether the valve is made from 316L cast or forged material.

SPECIFICATIONS AND FEATURES*

Available Sizes:

- » Standard Valve: 1-1/2", 2", 3", 4"

Connection Type:

- » Standard Valve: Tri-clamp, Extended Tube End

Materials:

- » Standard: Cast 316L, ASTM A351 CF3M

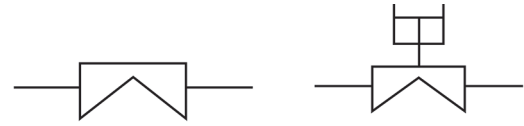
Surface Finish:

- » Wetted Interior:
 - 32 Ra μin (0,81 Ra μm)
 - 32 Ra μin (0,81 Ra μm) Electropolish
 - ASME BPE SF1 20 Ra μin (0,5 Ra μm)
 - ASME BPE SF5 20 Ra μin (0,5 Ra μm) Electropolish
- » Exterior:
 - Standard: As cast, Electropolished

Certification:

- » CRN No.: 0C22893.5

* See pages 6 - 8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves



APPLICATIONS

Single Valve Manual on/off or Air Actuated Flow Control of Drug Process Additives, Drug Products and Clean Utilities

- » Upstream:
 - Bioreactor/Fermenter: For control of WFI, growth media, intermediate drug product, clean dry air and gas, clean steam and clean utility fluids
 - Perfused Bioreactors: Retentate or permeate fluid control
- » Downstream:
 - For control of WFI, buffers, solvent, intermediate and finished drug product, clean dry air and gas, clean steam, and clean utility fluids in the following production area
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish
- » Buffer and Media Prep:
 - For control of WFI, buffers, growth media, clean steam and clean utility fluids

ORDERING SCHEMATIC (CAST BODY, 2-WAY DIAPHRAGM VALVE)

MODEL	TYPE	SIZE	CONN.	FINISH	ACTUATION	DIAPHRAGM	ACC'Y	COMP.
SFB								

1	TYPE
1	Cast Body 2-way

2	SIZE
7	1-1/2"
8	2"
A	3"
B	4"

3	CONNECTION
1	OD Tube
2	Clamp
3	OD Tube x clamp
Z	Non-standard

4	INTERNAL SURFACE FINISH
1	20Ra µin (0,5 Ra µm)
2	20Ra µin (0,5 Ra µm) EP
3	32Ra µin (0,81 Ra µm)
4	32Ra µin (0,81 Ra µm) EP
Z	Non-standard, consult factory

5	ACTUATION
1	Manual
2	Manual Vented
3	2 1/2" - 4" Actuator Spring to Close
4	2 1/2" - 4" Actuator Spring to Open
5	Eclipse Actuator, Double Acting (1 1/2" - 2" standard)
6	Eclipse Actuator, Spring to Close (1 1/2" - 2" standard)
7	Eclipse Actuator, Spring to Open (1 1/2" - 2" standard)

6	DIAPHRAGM
1	EPDM
2	TFM/EPDM
Z	Non-standard

7	ACCESSORIES
1	Switch 2 Position
2	Positioner 4-20 mA
Z	Non-standard, consult factory

8	CE/PED COMPLIANCE
OG	SEP (0.25" to 1")
OF	CE Category 1 (1-1/2" to 4")

Please Contact Factory regarding dimensional drawings. All queries are welcome.

SV8: PORTED, 2-WAY VALVE

Manual or Pneumatically Actuated Forged body 2-way valves with access port

Ported valves provide access to the interior of the body at the lowest possible cross section of the valve's inlet or outlet when the body is oriented at the optimal drain angle. This access port can be used for sampling, steam sterilization, purging or condensate drainage. Final configuration detail is confirmed with you prior to fabrication.

SPECIFICATIONS AND FEATURES*

Available Sizes:

- » Inlet and Outlet: 1/2" - 4" (DN15 - DN100)
- » Access Port: 1/2" - 1" (DN15 - DN25)

Connection Type:

- » Tri-clamp, Extended Tube End

Materials:

- » Standard: Forged EN10272:2000 Gr 1.4435 316L
- » Optional: Contact factory

Surface Finish:

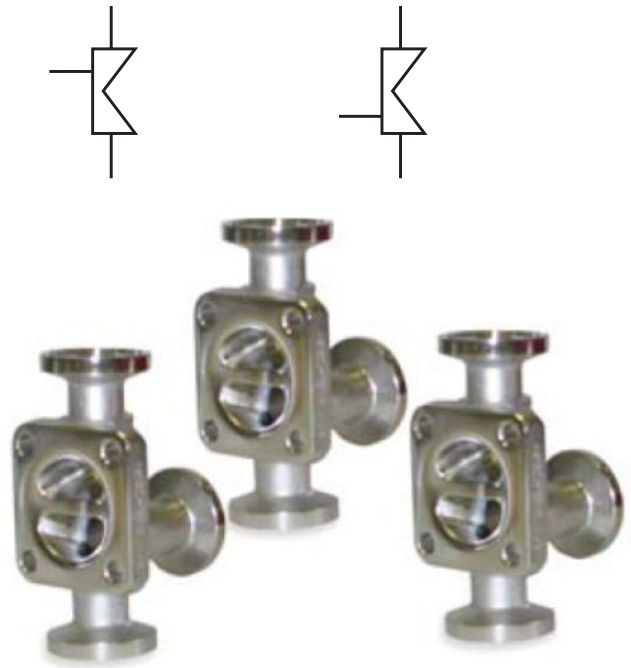
- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra μm (0,5 Ra μm)
 - ASME BPE SF5, 20 Ra μm (0,5 Ra μm) Electropolish
 - Optional:
 - ASME BPE SF4, 15 Ra μm (0,4 Ra μm) Electropolish. Better finish upon request
- » Exterior: as forged, Electropolished

Certification:

- » CRN No.: 0C22893.5

* See pages 6 - 8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves

Please Contact Factory regarding dimensional drawings and how to order. All queries are welcome.



APPLICATIONS

Single Valve Wier valve with access port for sampling, SIP, purging or condensate drainage. Manual on/off or Air Actuated Control of Drug Process Additives, Drug Products and Clean Utilities

- » Upstream:
 - Bioreactor/Fermenter: For use on WFI, growth media, intermediate drug product, clean steam and clean utility fluids
 - Perfused Bioreactors: Retentate fluid
- » Downstream:
 - For use on WFI, buffers, solvent, intermediate and finished drug product, clean dry air and gas, clean steam, and clean utility fluids in the following production area
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish
- » Buffer and Media Prep:
 - For sampling, purging or draining of WFI, buffers, growth media or clean utility fluids

SV7: TANDEM ACCESS VALVE

Manual or Pneumatically Actuated Forged body 2-way valves with access port

Tandem access valves (like ported valves) provide access to the interior of the body at the lowest possible cross section when the body is oriented at the optimal drain angle. However, a secondary valve is included so that you can control the flow for sampling, steam sterilization, purging or condensate drainage. Final configuration detail is confirmed with you prior to fabrication.

SPECIFICATIONS AND FEATURES*

Available Sizes:

- » Inlet and Outlet: 1/2" - 4" (DN15 - DN100)
- » Access Port: 1/2" - 1" (DN15 - DN25)

Connection Type:

- » Tri-clamp, Extended Tube End

Materials:

- » Standard: Forged EN10272:2000 Gr 1.4435 316L
- » Optional: Contact factory

Surface Finish:

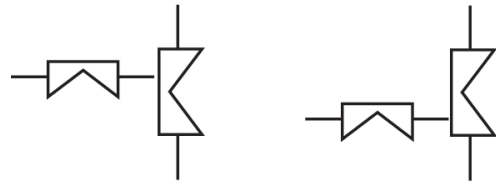
- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra μm (0,5 Ra μm)
 - ASME BPE SF5, 20 Ra μm (0,5 Ra μm) Electropolish
 - Optional:
 - ASME BPE SF4, 15 Ra μm (0,4 Ra μm) Electropolish. Better finish upon request
- » Exterior: as forged, Electropolished

Certification:

- » CRN No.: 0C22893.55

* See pages 6 - 8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves

Please Contact Factory regarding dimensional drawings and how to order. All queries are welcome.

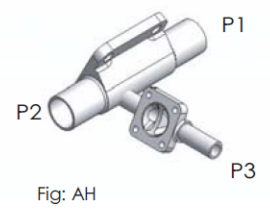
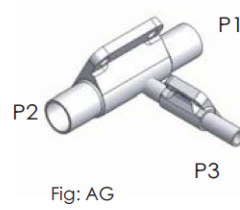
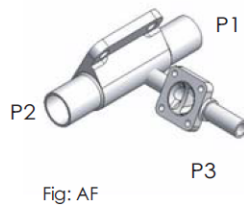
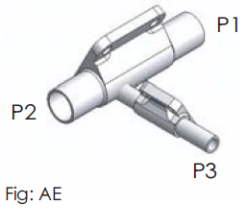
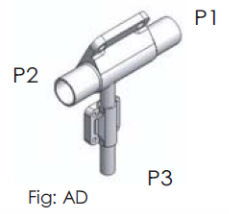
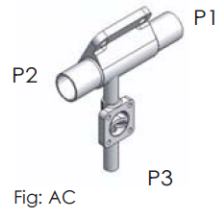
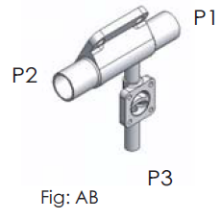
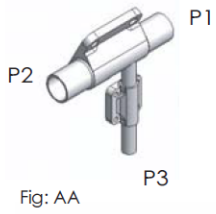
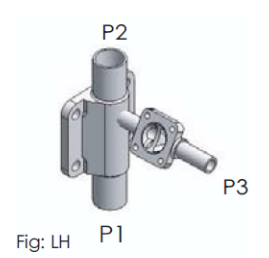
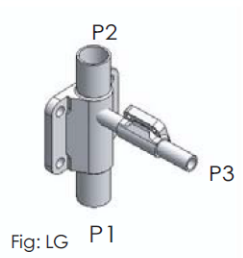
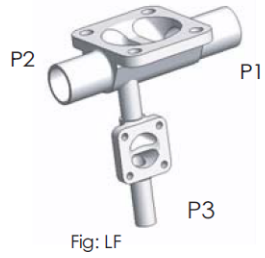
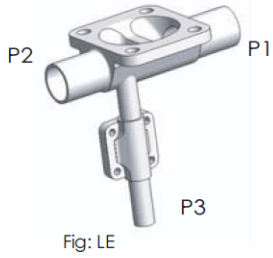
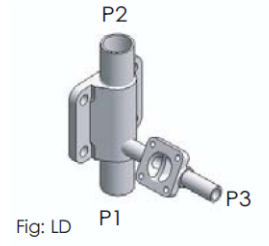
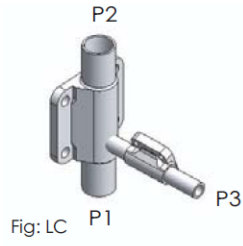
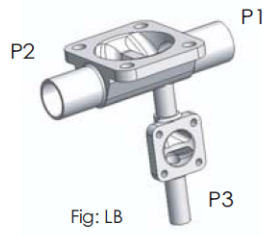
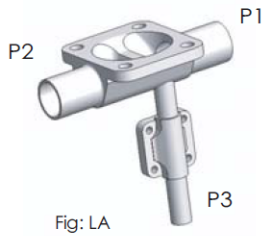


APPLICATIONS

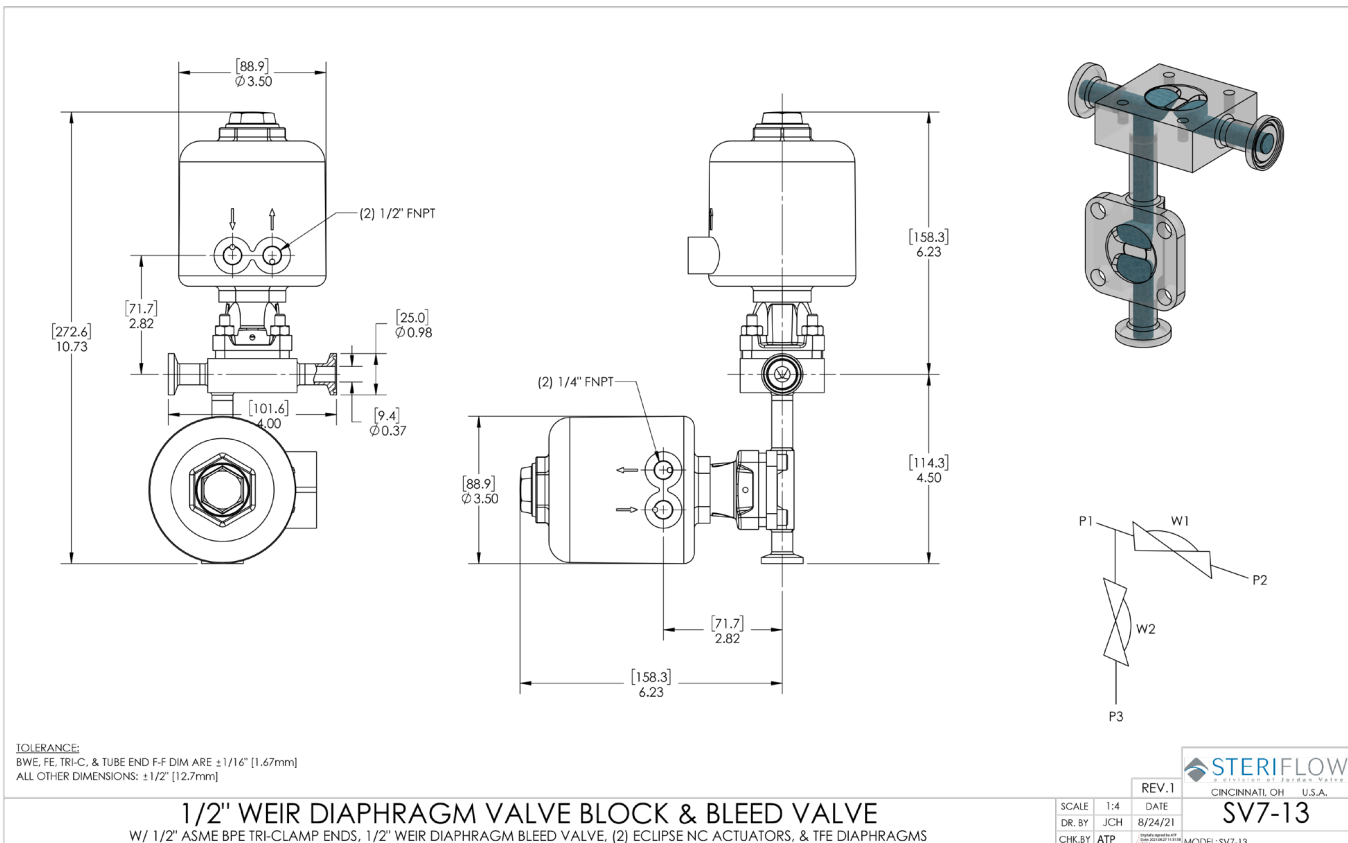
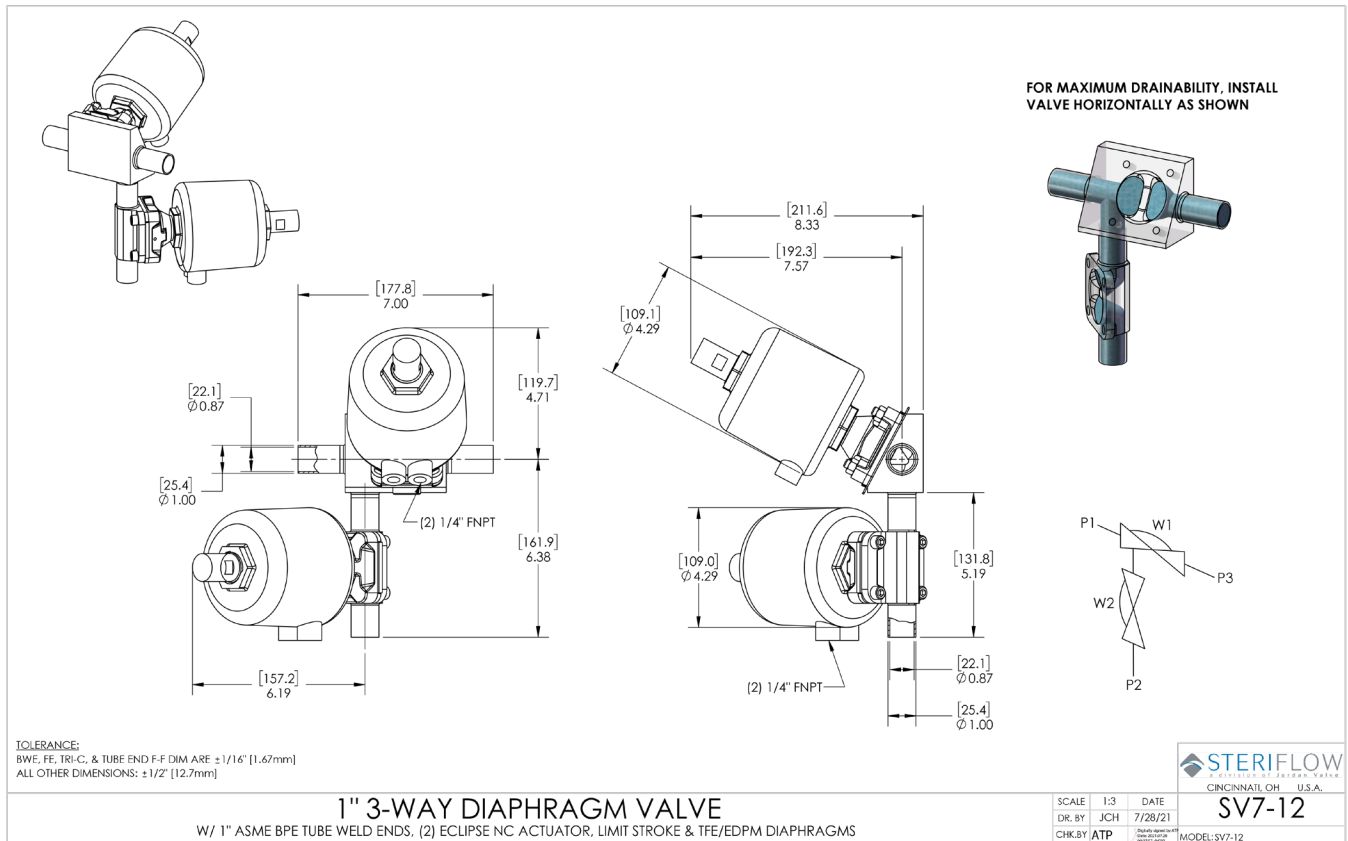
Single Valve Wier valve with access port for sampling, SIP, purging or condensate drainage. Manual on/off or Air Actuated Control of Drug Process Additives, Drug Products and Clean Utilities

- » Upstream:
 - Bioreactor/Fermenter: For use on WFI, growth media, intermediate drug product, clean steam and clean utility fluids
 - Perfused Bioreactors: Retentate fluid
- » Downstream:
 - For use on WFI, buffers, solvent, intermediate and finished drug product, clean dry air and gas, clean steam, and clean utility fluids in the following production area
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish
- » Buffer and Media Prep:
 - For sampling, purging or draining of WFI, buffers, growth media or clean utility fluids

TANDEM INSTALLATION CONFIGURATIONS



EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS



SV4: ZERO STATIC TEE BLOCK VALVE

Manual or Pneumatically Actuated Inline Barstock Zero Static Use Point Valve

SPECIFICATIONS AND FEATURES*

Available Sizes:

- » Run Connections: 1/2" - 4" (DN15 - DN100)
- » Drop Connection: 1/2" - 4" (DN15 - DN100); drop connection must be \leq the run connection

Connection Type:

- » Tri-clamp, Extended Tube End standard. Other drop connection types available upon request
- » Additional ports or tandem access configurations available as special options

Materials:

- » Standard: Barstock, ASME SA479 316L (UNS 31603) or EN 10272:2000 GR 1.4435
- » Optional: AL-6XN®, Hastelloy® C-22 and others readily available

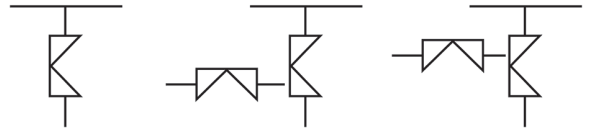
Surface Finish:

- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra μm (0,5 Ra μm)
 - ASME BPE SF5, 20 Ra μm (0,5 Ra μm) Electropolish.
 - Optional:
 - ASME BPE SF4, 15 Ra μm (0,4 Ra μm) Electropolish. Better finish upon request
- » Exterior:
 - Standard: 40 Ra μm (1,0 Ra μm) and better as option
 - Optional: 20 Ra μm (0,5 Ra μm) and better upon request

Certification:

- » CRN No.: 0C22893.5

* See pages 6 - 8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves



APPLICATIONS

Single Weir Zero Static Use Point for Manual on/off or Air Actuated Flow Control for Transfer or Diversion of Drug Process Additives, WFI and other critical system fluids

- » Upstream:
 - Bioreactor/Fermenter: For sampling or transfer of critical process fluids, inputs or WFI upstream of, and prior to opening the main valve
- » Downstream:
 - For sampling or transfer of critical process fluids, buffers, or WFI upstream of and prior to, opening the main valve in the following areas:
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish
- » Buffer and Media Prep:
 - For sampling or transfer of critical process fluids, buffers or WFI upstream of, and prior to opening the main valve

EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS

FOR MAXIMUM DRAINABILITY, INSTALL VALVE HORIZONTALLY AS SHOWN.

NOTES:
 ▲ DIMENSION WILL VARY SLIGHTLY DEPENDING ON ADAPTER USED. CERTIFIED DIMENSION IS AVAILABLE AT THE TIME OF ORDER.

TOLERANCE:
 BWE, FE, TRI-C, & TUBE END F-F DIM ARE ±1/16" [1.67mm]
 ALL OTHER DIMENSIONS: ±1/2" [12.7mm]

T-BLOCK DIAPHRAGM VALVE
 2 1/2" RUN TUBE END X 1/2" TRI-CLAMP DROP, ECLIPSE NC ACTUATOR & STONEL LIMIT SWITCH

SCALE	1:2	DATE	SV491423611
DR. BY	JCH	12/30/20	
CHK. BY	ATP		MODEL:SV491423611

FOR MAXIMUM DRAINABILITY, INSTALL VALVE VERTICALLY AS SHOWN.

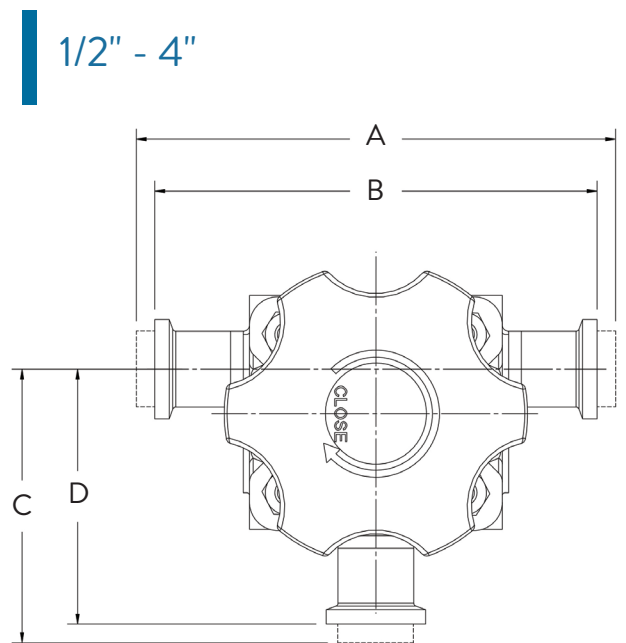
TOLERANCE:
 BWE, FE, TRI-C, & TUBE END F-F DIM ARE ±1/16" [1.67mm]
 ALL OTHER DIMENSIONS: ±1/2" [12.7mm]

T-BLOCK DIAPHRAGM VALVE
 2" RUN TUBE END X 1" TRI-CLAMP DROP X 1/2" SAMPLE TRI-CLAMP. ECLIPSE STC ACTUATOR X HANDWHEEL

SCALE	1:2.5	DATE	SV4-5
DR. BY	JCH	12/29/20	
CHK. BY	ATP		MODEL:SV4-5

DIMENSIONS (ZERO STATIC TEE BLOCK VALVE)

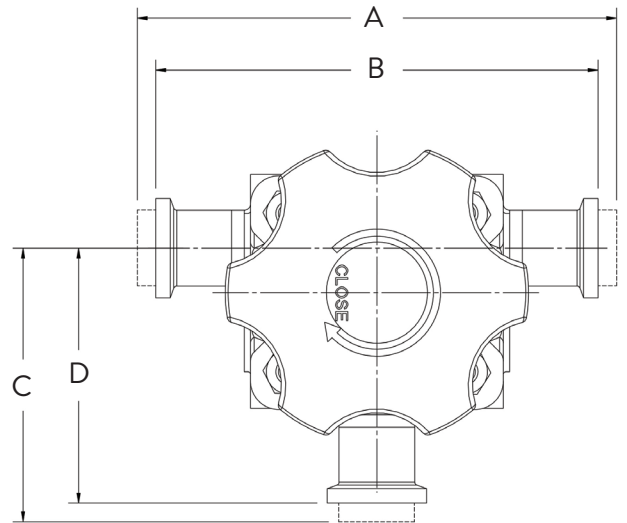
INCHES					
RUN SIZE	DROP SIZE	TUBE A	CLAMP B	TUBE C	CLAMP D
1/2"	1/2"	5.375	3.375	2.918	1.918
3/4"	1/2"	5.375	3.375	3.045	2.045
	3/4"	5.875	3.875	3.285	2.285
1"	1/2"	5.375	4.625	3.17	2.17
	3/4"	5.875	4.625	3.17	2.17
	1"	6.25	5.5	3.578	3.203
1-1/2"	1/2"	5.375	4.625	3.42	2.42
	3/4"	5.875	5.125	3.657	2.657
	1"	6.25	5.5	3.578	3.455
	1-1/2"	7.375	6.625	4.405	4.03
2"	1/2"	5.375	4.625	3.67	2.67
	3/4"	5.875	5.125	3.907	2.907
	1"	6.25	5.5	4.08	3.705
	1-1/2"	7.375	6.625	4.654	4.279
	2"	8.375	7.625	5.086	4.711
2-1/2"	1/2"	5.375	4.625	3.92	2.92
	3/4"	5.875	5.125	4.158	3.158
	1"	6.25	5.5	4.33	3.955
	1-1/2"	7.375	6.625	4.904	4.529
	2"	8.375	7.625	5.331	4.956
	2-1/2"	9.125	8.375	5.819	5.444
3"	1/2"	5.875	4.625	4.17	3.17
	3/4"	6.375	5.125	4.408	3.408
	1"	6.75	5.5	4.58	4.205
	1-1/2"	7.875	6.625	5.154	4.779
	2"	8.875	7.625	5.581	5.206
	2-1/2"	9.625	8.375	6.07	5.695
	3"	11.375	10.125	6.817	6.192
4"	1/2"	8.375	4.625	4.652	3.652
	3/4"	8.875	5.125	4.89	3.89
	1"	9.25	5.5	5.063	4.688
	1-1/2"	10.375	6.625	5.633	5.258
	2"	11.375	7.625	6.062	5.687
	2-1/2"	12.125	8.375	6.553	6.178
	3"	13.88	10.125	7.299	6.674
	4"	15.38	11.63	8.99	8.112



DIMENSIONS (ZERO STATIC TEE BLOCK VALVE)

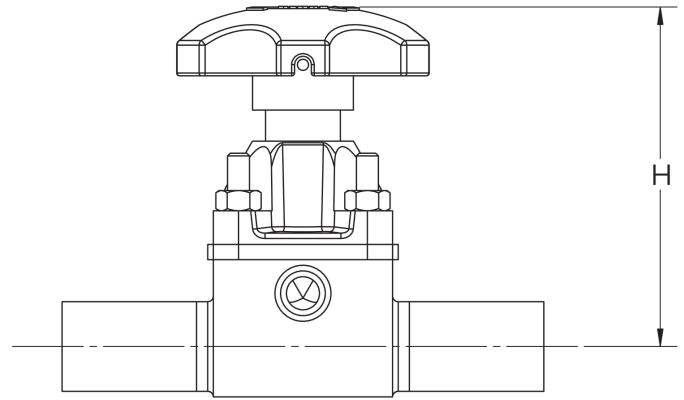
METRIC					
RUN SIZE	DROP SIZE	TUBE A	CLAMP B	TUBE C	CLAMP D
DN15	DN15	136,53	85,73	74,12	48,72
DN20	DN15	136,53	85,73	77,34	51,94
	DN20	149,23	98,43	83,44	58,04
DN32	DN15	136,53	117,48	80,52	55,12
	DN20	149,23	117,48	80,52	55,12
	DN32	158,75	139,7	90,88	81,36
DN40	DN15	136,53	117,48	86,87	61,47
	DN20	149,23	130,18	92,89	67,49
	DN32	158,75	139,7	90,88	87,76
	DN40	187,33	168,28	111,89	102,36
DN50	DN15	136,53	117,48	93,22	67,82
	DN20	149,23	130,18	99,24	73,84
	DN32	158,75	139,7	103,63	94,11
	DN40	187,33	168,28	118,21	108,69
	DN50	212,73	193,68	129,18	119,66
DN65	DN15	136,53	117,48	99,67	74,17
	DN20	149,23	130,18	105,61	80,21
	DN32	158,75	139,7	109,98	100,46
	DN40	187,33	168,28	124,56	115,04
	DN50	212,73	193,68	135,41	125,90
	DN65	231,78	212,73	147,80	138,28
DN80	DN15	149,23	117,48	105,92	80,52
	DN20	161,93	130,18	111,96	86,56
	DN32	171,45	139,7	116,33	106,81
	DN40	200,03	168,28	130,91	121,39
	DN50	225,43	193,68	141,76	132,23
	DN65	244,48	212,73	154,18	144,65
	DN80	288,93	257,18	173,15	157,28
DN100	DN15	212,73	117,48	118,16	92,76
	DN20	225,98	130,18	124,21	98,81
	DN32	235,95	139,7	128,60	119,08
	DN40	263,53	168,28	143,08	133,55
	DN50	212,73	193,68	153,97	144,45
	DN65	307,98	212,73	166,45	156,92
	DN80	352,43	257,18	185,39	169,52
	DN100	390,53	295,28	228,27	206,04

DN15 - DN100



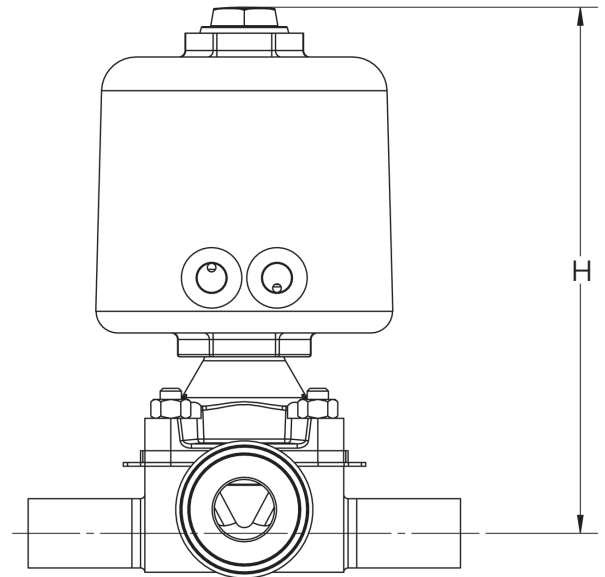
DIMENSIONS (ZERO STATIC TEE BLOCK VALVE WITH MANUAL ACTUATOR)

INCHES			
RUN SIZE	DROP SIZE	H (INCHES)	H (METRIC)
1/2"	1/2"	3.51	89
3/4"	1/2"	4.00	102
3/4"	3/4"	4.23	107
1"	1/2"	4.18	106
1"	3/4"	4.41	112
1"	1"	4.65	118
1-1/2"	1/2"	4.53	115
1-1/2"	3/4"	4.69	119
1-1/2"	1"	5.08	129
1-1/2"	1-1/2"	7.20	183
2"	1/2"	4.65	118
2"	3/4"	4.92	125
2"	1"	5.27	134
2"	1-1/2"	7.52	191
2"	2"	8.23	209
2-1/2"	1/2"	4.84	123
2-1/2"	3/4"	5.10	130
2-1/2"	1"	5.44	138
2-1/2"	1-1/2"	7.77	197
2-1/2"	2"	8.07	205
2-1/2"	2-1/2"	8.27	210
3"	1/2"	4.70	119
3"	3/4"	4.93	125
3"	1"	5.44	138
3"	1-1/2"	7.26	184
3"	2"	8.10	206
3"	2-1/2"	10.36	275
3"	3"	10.83	275
4"	1/2"	4.98	126
4"	3/4"	5.24	133
4"	1"	5.69	145
4"	1-1/2"	7.73	196
4"	2"	8.51	216
4"	2-1/2"	10.86	276
4"	3"	11.40	290
4"	4"	13.69	348



DIMENSIONS (ZERO STATIC TEE BLOCK VALVE WITH ECLIPSE PNEUMATIC ACTUATOR)

INCHES			
RUN SIZE	DROP SIZE	H (INCHES)	H (METRIC)
1/2"	1/2"	6.49	165
3/4"	1/2"	4.98	126
3/4"	3/4"	7.80	198
1"	1/2"	7.16	182
1"	3/4"	7.98	203
1"	1"	7.99	203
1-1/2"	1/2"	7.51	191
1-1/2"	3/4"	8.26	210
1-1/2"	1"	8.42	214
1-1/2"	1-1/2"	11.20	284
2"	1/2"	7.63	194
2"	3/4"	8.49	216
2"	1"	8.61	219
2"	1-1/2"	11.52	293
2"	2"	11.60	295
2-1/2"	1/2"	7.82	199
2-1/2"	3/4"	8.08	205
2-1/2"	1"	8.78	223
2-1/2"	1-1/2"	11.77	299
2-1/2"	2"	11.30	287
2-1/2"	2-1/2"	--	--
3"	1/2"	7.68	195
3"	3/4"	8.50	216
3"	1"	8.78	223
3"	1-1/2"	11.26	286
3"	2"	11.47	291
3"	2-1/2"	--	--
3"	3"	--	--
4"	1/2"	7.96	202
4"	3/4"	8.81	224
4"	1"	9.03	229
4"	1-1/2"	11.73	298
4"	2"	11.88	302
4"	2-1/2"	--	--
4"	3"	--	--
4"	4"	--	--



ORDERING SCHEMATIC (ZERO STATIC TEE BLOCK VALVE)

MODEL	TYPE	RUN SIZE	CONN.	DROP SIZE	CONN.	FINISH	ACTUATION	DIAPH.	ACCY	COMP.
SV										

1	TYPE
4	Zero Static Tee

2	RUN SIZE
4	1/2"
5	3/4"
6	1"
7	1-1/2"
8	2"
9	2-1/2"
A	3"
B	4"

3	CONNECTION
1	OD Tube
2	Clamp
Z	Non-standard

4	DROP SIZE
4	1/2"
5	3/4"
6	1"
7	1-1/2"
8	2"
9	2-1/2"
A	3"
B	4"

NOTE: Drop Connection size must be <= Run Connection size

5	CONNECTION
1	OD Tube
2	Clamp
Z	Non-standard

6	INTERNAL SURFACE FINISH
1	SF1, 20Ra µm
2	SF4 15Ra µm (0,4 Ra µm) EP
3	SF5 20Ra µm (0,5 Ra µm) EP
Z	Non-standard

7	ACTUATION
1	Manual
2	Manual Vented
3	2 1/2" - 4" Actuator Spring to Close
4	2 1/2" - 4" Actuator Spring to Open
5	Eclipse Actuator, Double Acting (1/2" - 2" standard)
6	Eclipse Actuator, Spring to Close (1/2" - 2" standard)
7	Eclipse Actuator, Spring to Open (1/2" - 2" standard)

8	DIAPHRAGM
1	EPDM
2	TFM/EPDM
Z	Non-standard

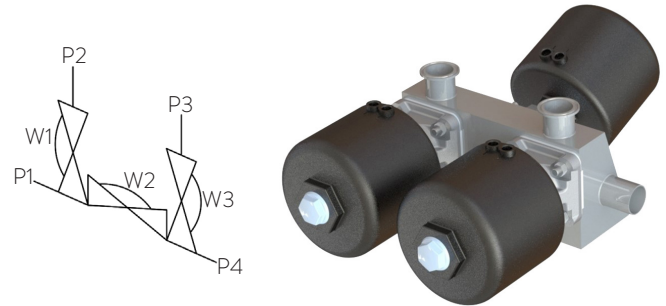
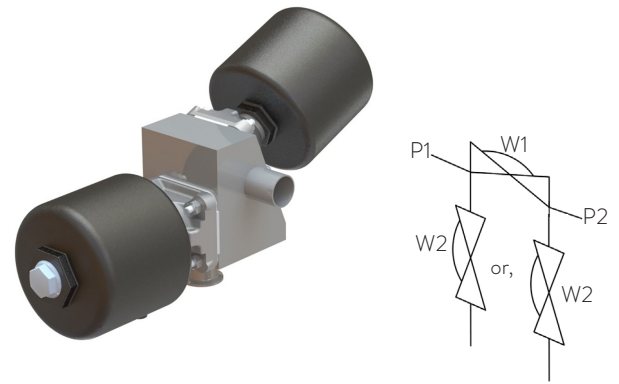
9	ACCESSORIES
1	Switch 2 Position
2	Positioner 4-20 mA
Z	Non-standard, consult factory

10	CE/PED COMPLIANCE
OG	SEP (0.25" to 1")
OF	CE Category 1 (1-1/2" to 4")

Please Contact Factory for special configurations or connection sizes. All queries are welcome.

SVA: STERILE ACCESS BLOCK VALVE

Barstock Single Block Valve with Single or Double Sterile Access, Manual or Pneumatically Actuated



SPECIFICATIONS AND FEATURES*

Available Sizes:

- » Run Connections: 1/2" - 4" (DN15 - DN100)
- » Access Port Connection: 1/2" - 4" (DN15 - DN100); drop connection must be <= the run connection

Connection Type:

- » ASME BPE Tri-clamp, Extended Tube End standard. Additional connection types available as options upon request
- » Sample port configurations available as special options

Materials:

- » Standard: Barstock, ASME SA479 316L (UNS 31603) or EN 10272:2000 GR 1.4435
- » Optional: AL-6XN®, Hastelloy® C-22 and others readily available

Surface Finish:

- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra µin (0,5 Ra µm)
 - ASME BPE SF5, 20 Ra µin (0,5 Ra µm) Electropolish.
 - Optional:
 - ASME BPE SF4, 15 Ra µin (0,4 Ra µm) Electropolish. Better finish upon request
- » Exterior:
 - Standard: 40 Ra µin (1,0 Ra µm) and better as option
 - Optional: 20 Ra µin (0,5 Ra µm) and better upon request

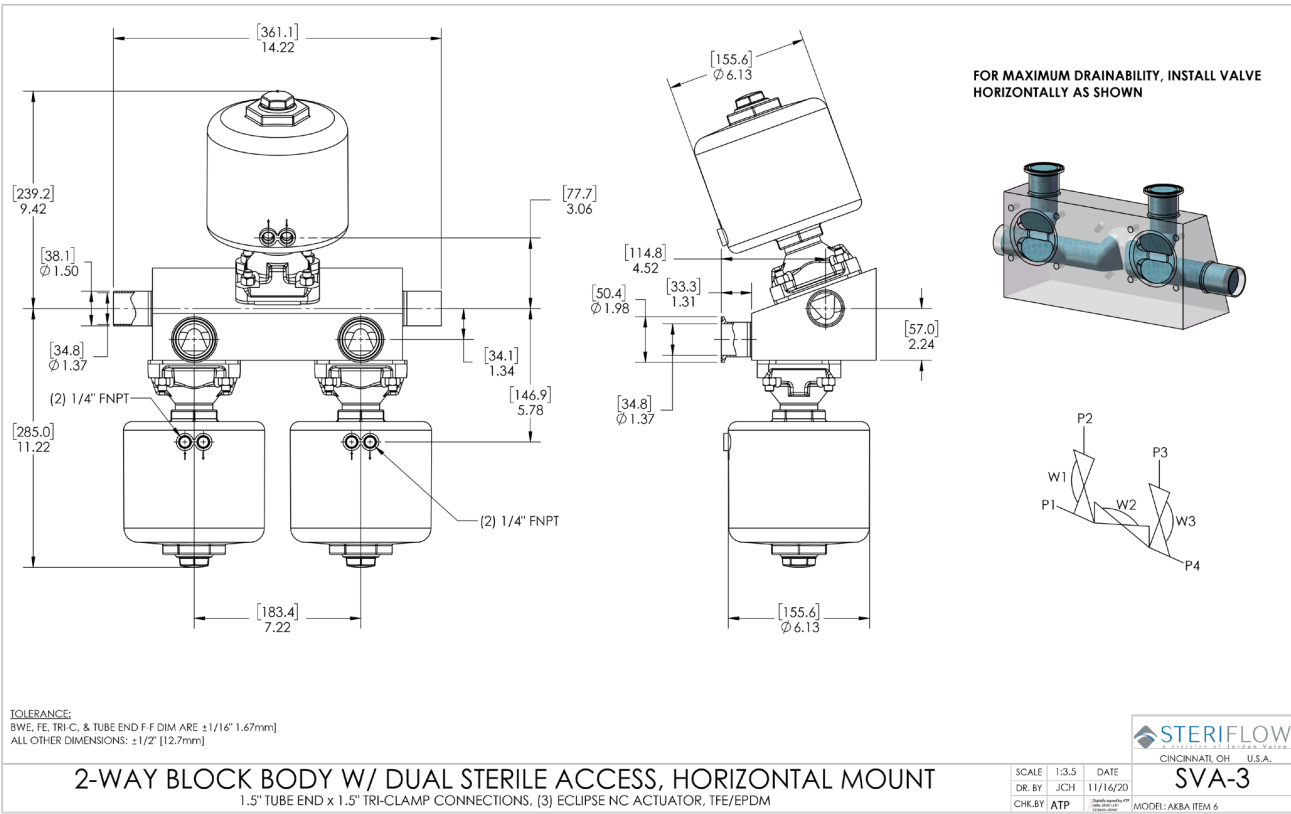
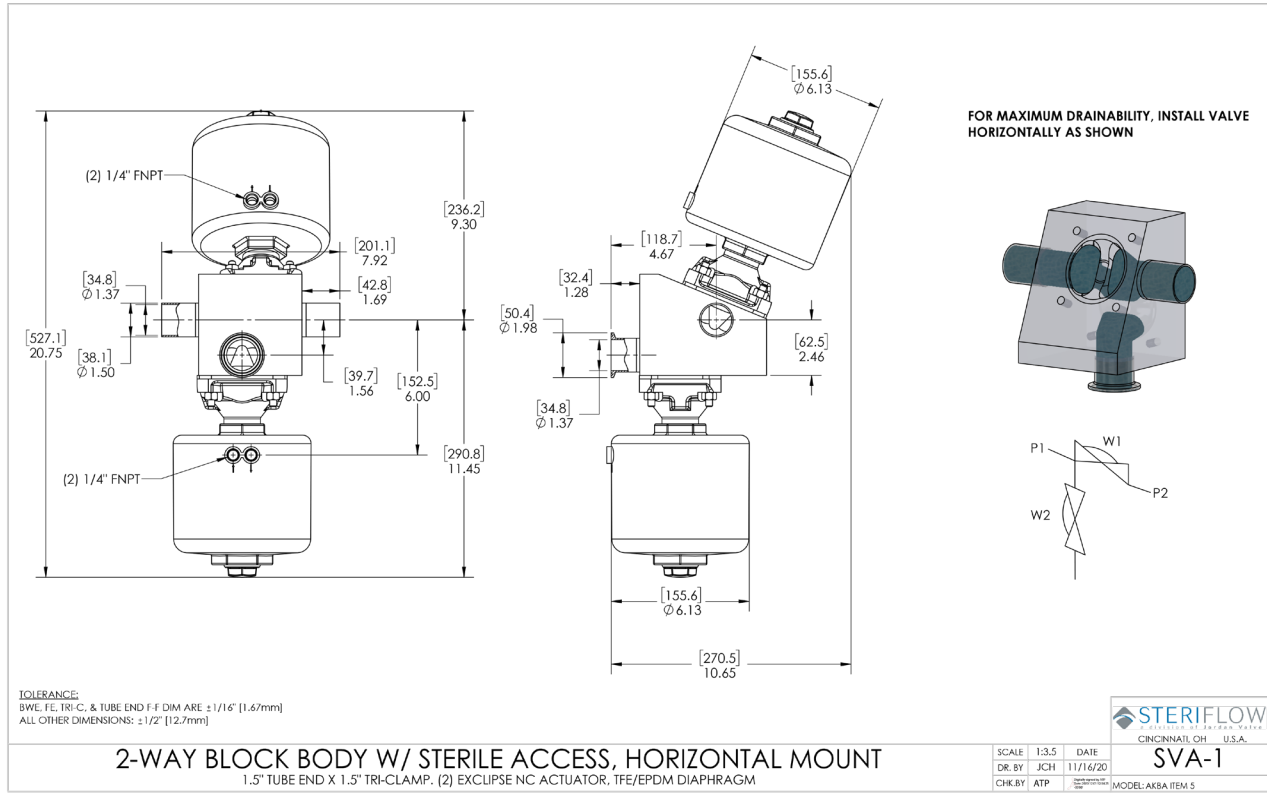
* See pages 6 - 8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves

APPLICATIONS

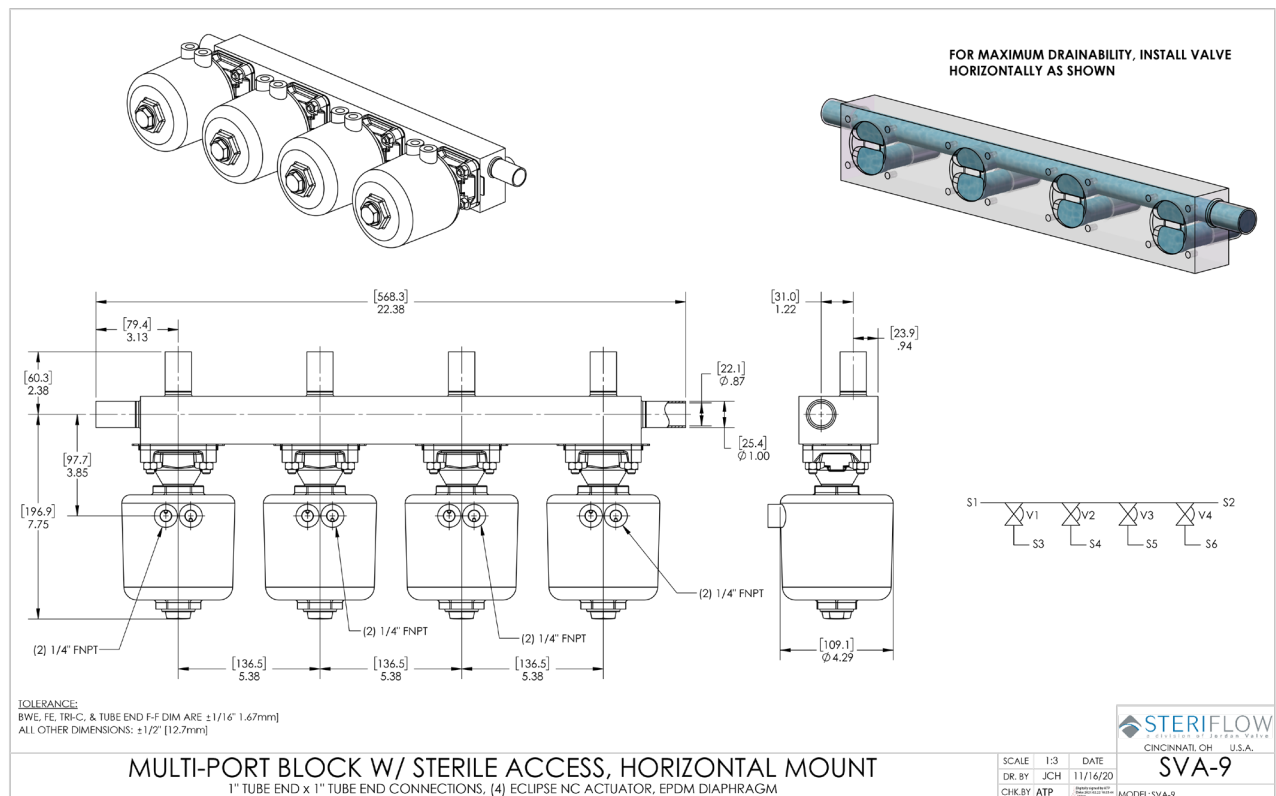
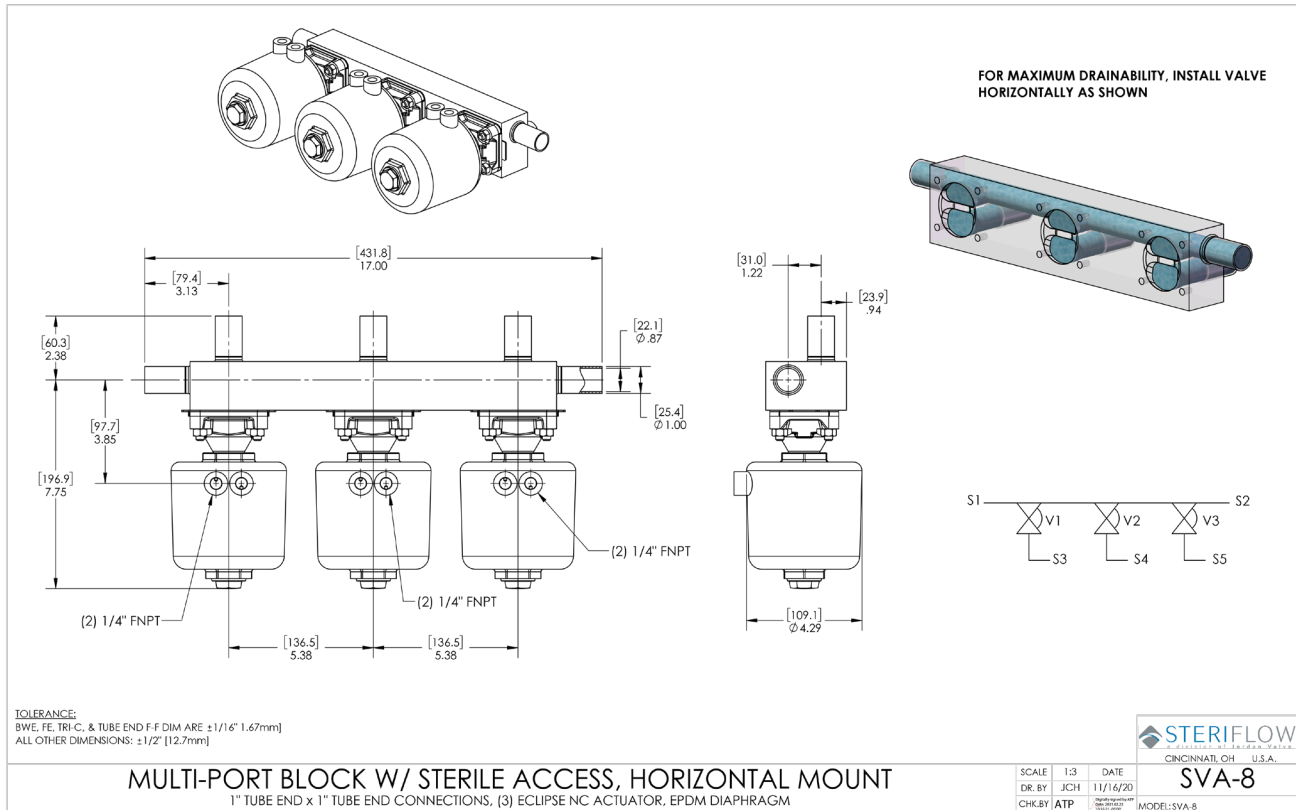
Single Block Valve with Single or Double Sterile Access valves for manual on/off or Air Actuated Flow Control for Transfer, Diversion or Sample of Drug Process Additives, WFI and other critical system fluids

- » Upstream:
 - Bioreactor/Fermenter: For sampling or transfer of critical process fluids, inputs or WFI upstream of, and prior to opening the main valve
- » Downstream:
 - For sampling or transfer of critical process fluids, buffers, or WFI upstream of and prior to, opening the main valve in the following areas:
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish
- » Buffer and Media Prep:
 - For sampling or transfer of critical process fluids, buffers or WFI upstream of, and prior to opening the main valve

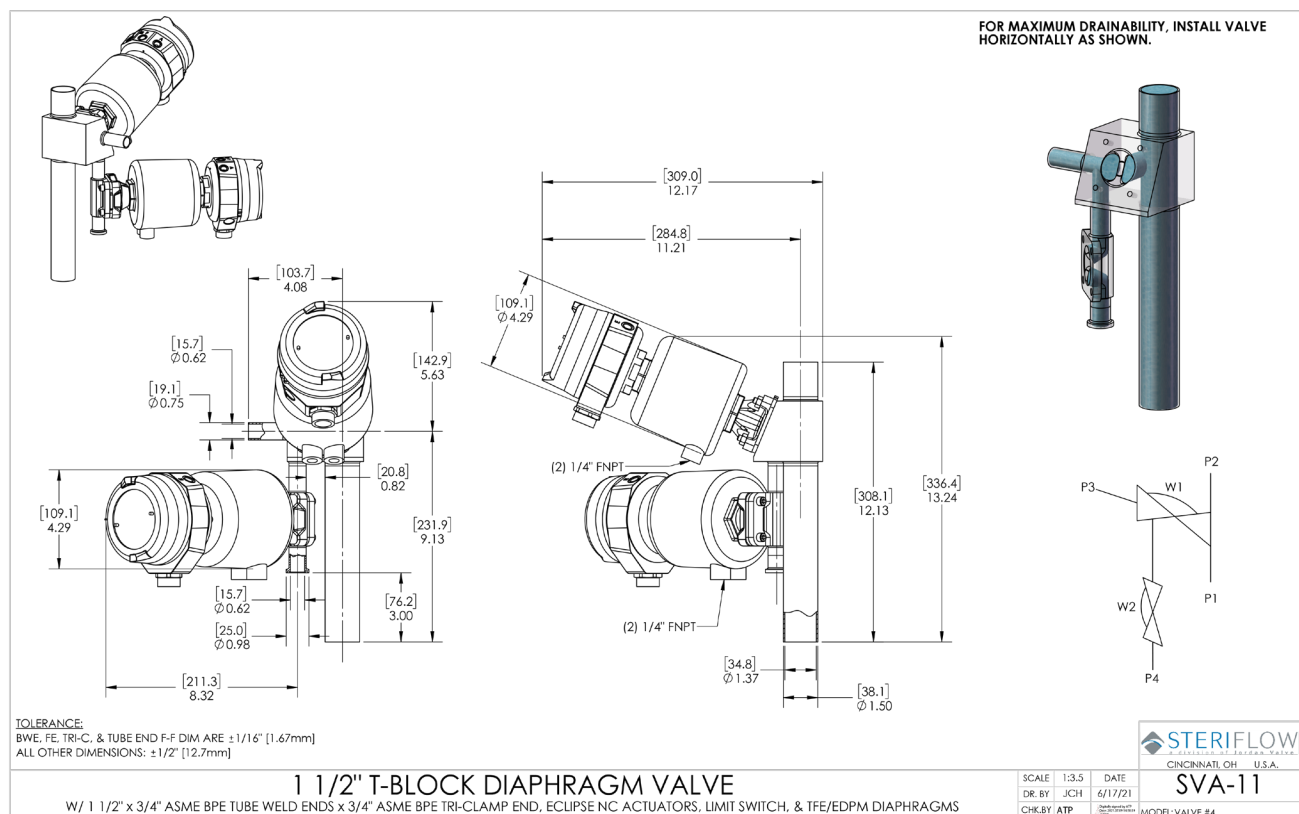
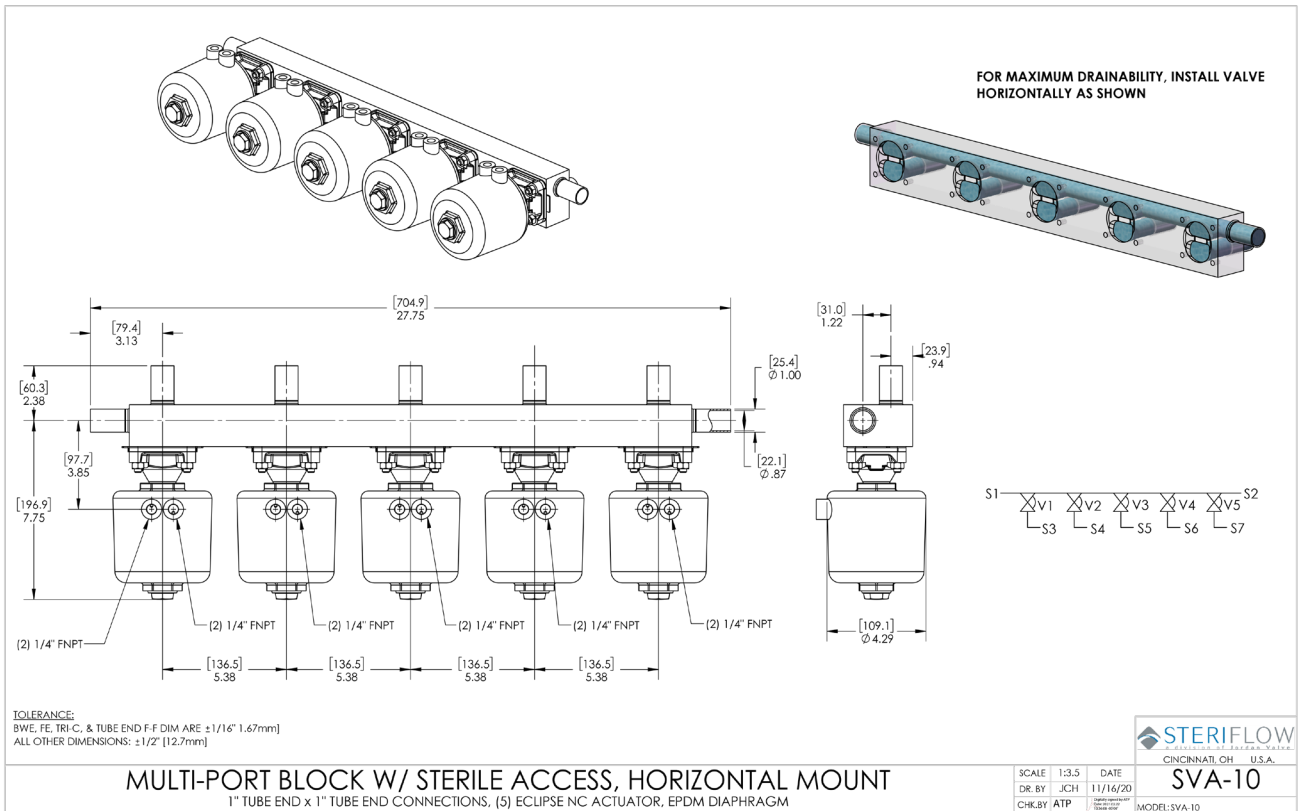
EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS



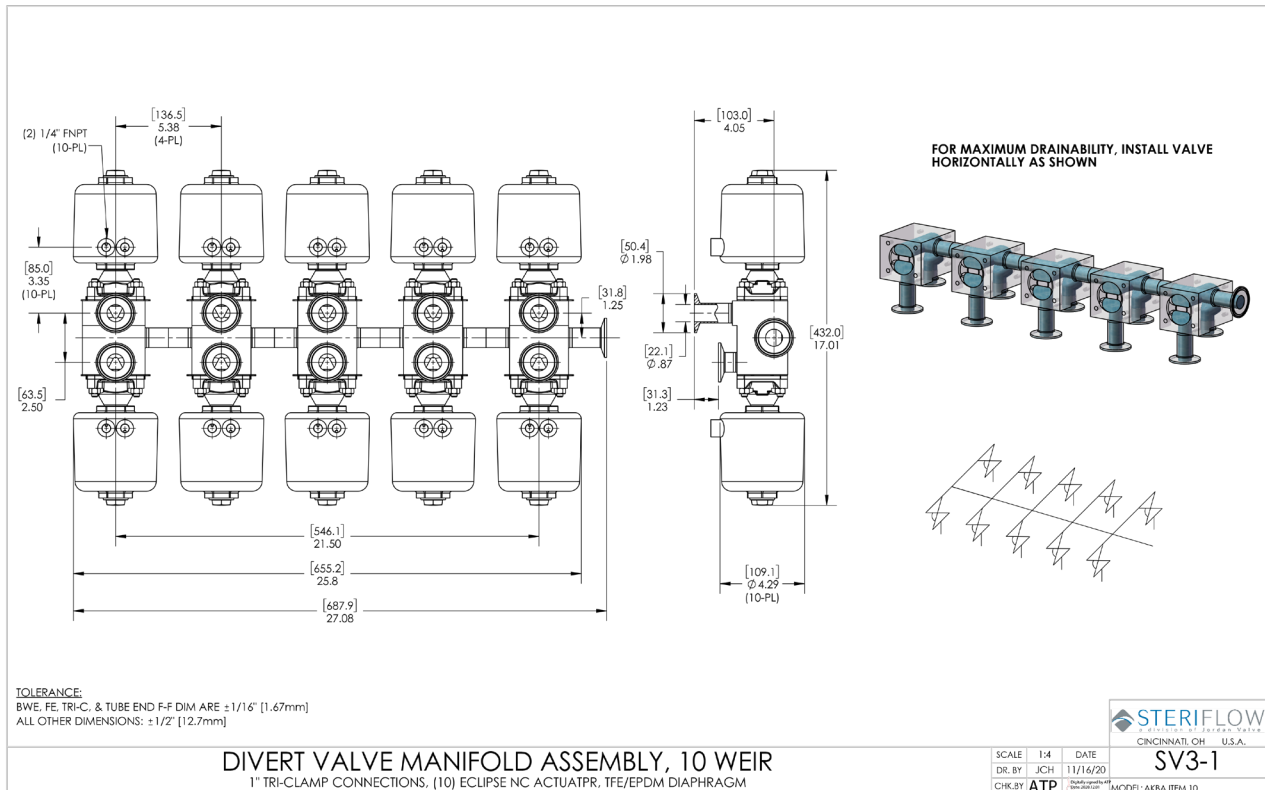
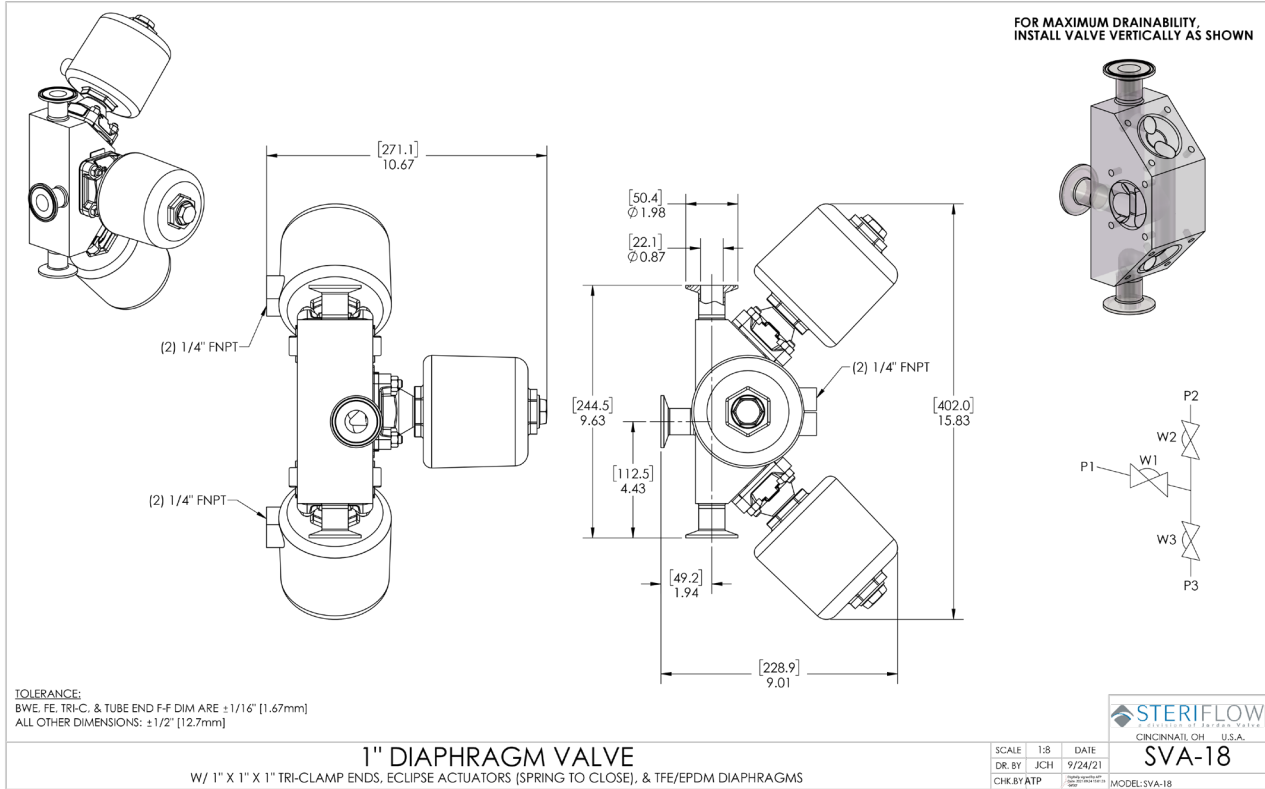
EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS



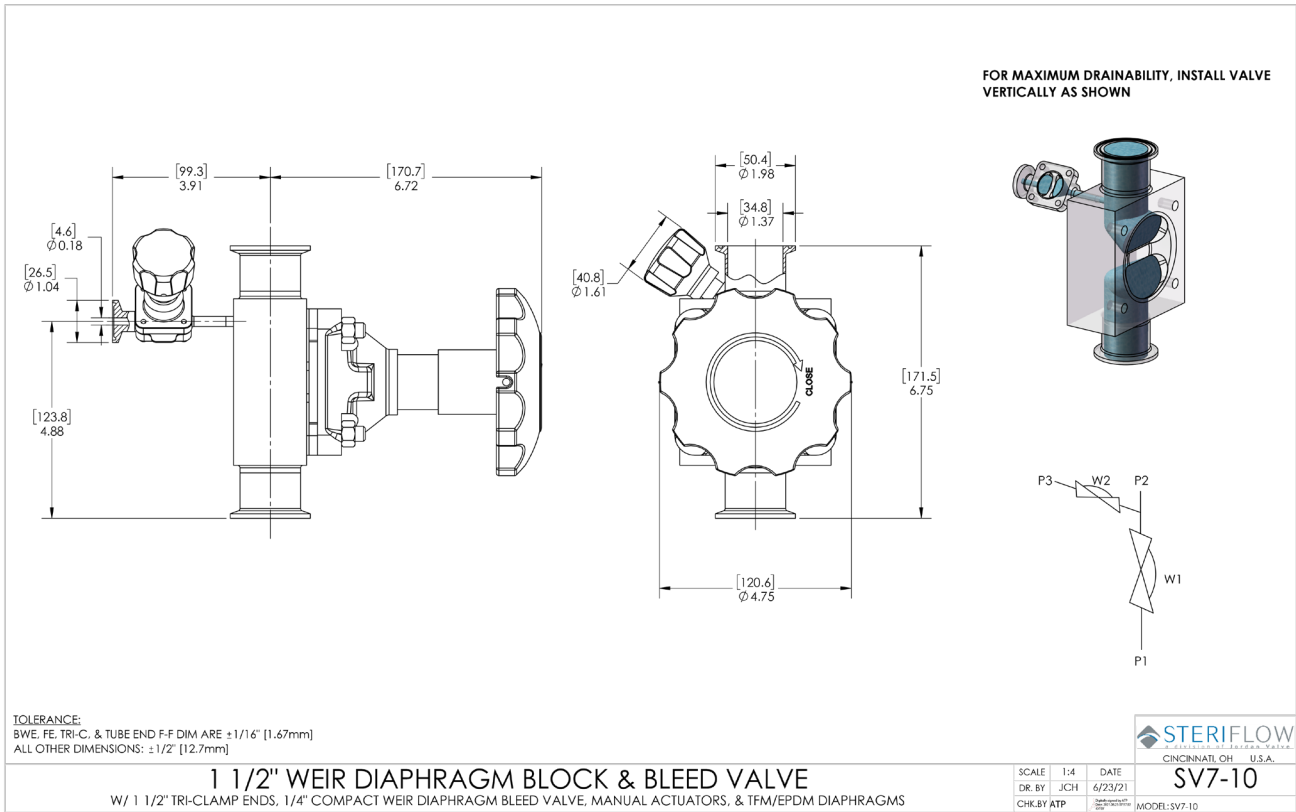
EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS



EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS



EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS



SV5: ZERO STATIC POINT OF USE VALVE

Standard, Compact, Manual or Pneumatically Actuated Point of Use (POU) Valve

SPECIFICATIONS AND FEATURES*

Available Sizes:

- » Run Connection: 1/2" - 4" (DN15 - DN100)
- » Drop Connection: 1/2" - 4" (DN15 - DN100); drop connection must be \leq the run connection

Connection Type:

- » Tri-clamp, Extended Tube End standard. Other drop connection types upon request
- » Additional ports or tandem access configurations available for purge, drain or sample use as special options

Materials:

- » Standard: Barstock, ASME SA479 316L (UNS 31603) or EN 10272:2000 GR 1.4435
- » Optional: AL-6XN®, Hastelloy® C-22 and others readily available

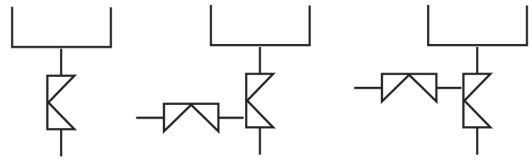
Surface Finish:

- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra μin (0,5 Ra μm)
 - ASME BPE SF5, 20 Ra μin (0,5 Ra μm) Electropolish
 - Optional:
 - ASME BPE SF4, 15 Ra μin (0,4 Ra μm) Electropolish. Better finish upon request
- » Exterior:
 - Standard: 63 Ra μin (1,6 Ra μm)
 - Optional: 40 Ra in (1,0 Ra μm) and better upon request

Certification:

- » CRN No.: 0C22893.5

* See pages 6 - 8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves

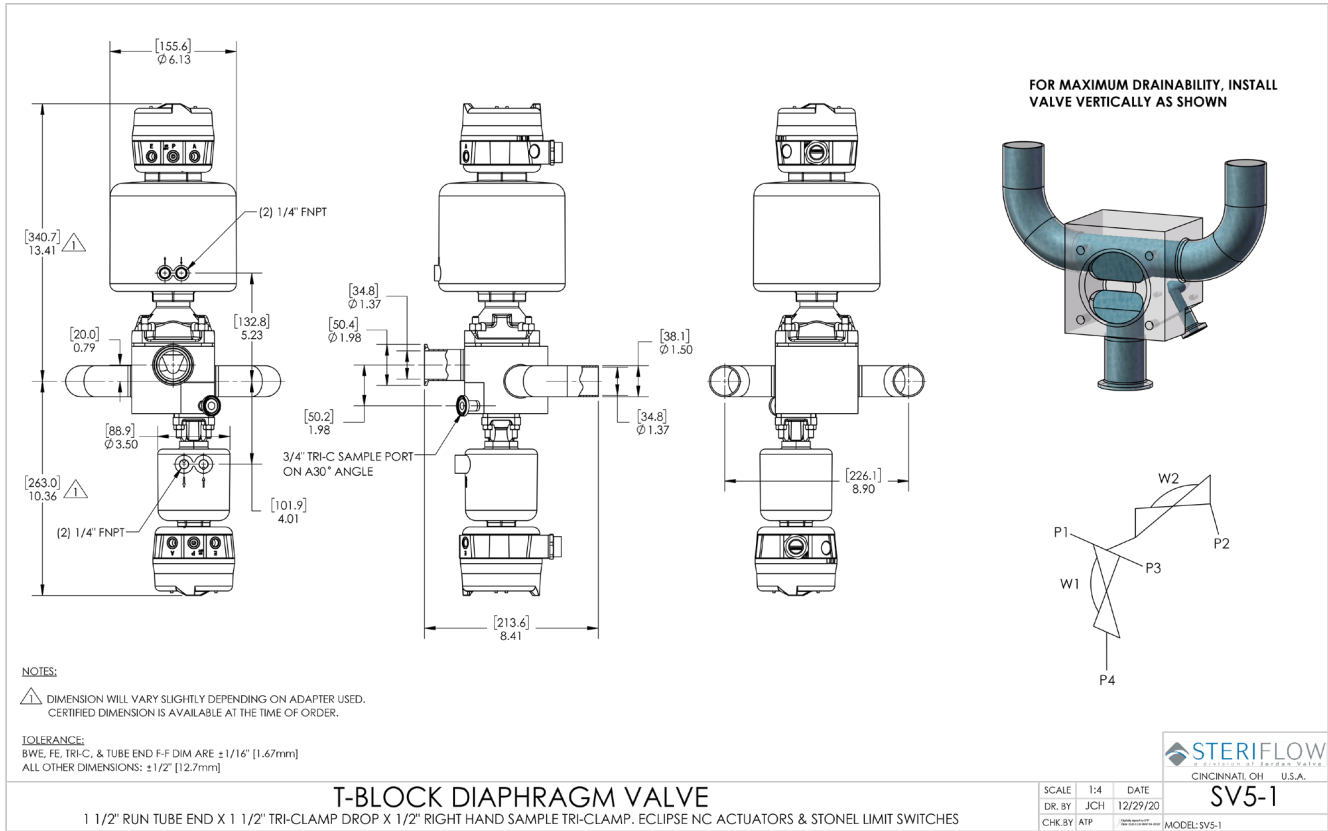


APPLICATIONS

Single Wier Zero Static Point of Use Valve for Manual on/off or Air Actuated Dispersion of WFI or USP Purified Water from Distribution Loop

- » Upstream:
 - Bioreactor/Fermenter: For dispersion control of WFI or USP purified water
- » Downstream:
 - For dispersion flow control of WFI or USP purified water in the following production areas:
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish
- » Buffer and Media Prep:
 - For dispersion control of WFI or USP purified water

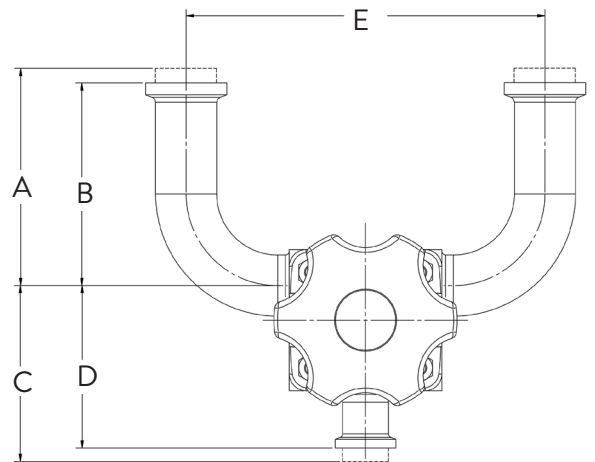
EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS



DIMENSIONS (ZERO STATIC POINT OF USE (POU) VALVE)

INCHES						
RUN SIZE	DROP SIZE	TUBE A	TUBE B	TUBE C	CLAMP D	E
1"	1/2"	3.0	2.625	3.17	2.17	5.375
	3/4"	3.0	2.625	3.17	2.17	5.875
	1"	3.0	2.625	3.578	3.203	6.25
1-1/2"	1/2"	3.75	3.375	3.42	2.42	6.875
	3/4"	3.75	3.375	3.657	2.657	7.375
	1"	3.75	3.375	3.578	3.455	7.75
2"	1-1/2"	3.75	3.375	4.405	4.03	8.875
	1/2"	4.5	4.125	3.67	2.67	8.375
	3/4"	4.5	4.125	3.907	2.907	8.875
2-1/2"	1"	4.5	4.125	4.08	3.705	9.25
	1-1/2"	4.5	4.125	4.654	4.279	10.375
	2"	4.5	4.125	5.086	4.711	11.375
3"	1/2"	5.25	4.875	3.92	2.92	9.875
	3/4"	5.25	4.875	4.158	3.158	10.375
	1"	5.25	4.875	4.33	3.955	10.75
	1-1/2"	5.25	4.875	4.904	4.529	11.875
	2"	5.25	4.875	5.331	4.956	12.875
	2-1/2"	5.25	4.875	5.819	5.444	13.625
4"	1/2"	6.0	5.625	4.17	3.17	11.375
	3/4"	6.0	5.625	4.408	3.408	11.875
	1"	6.0	5.625	4.58	4.205	12.875
	1-1/2"	6.0	5.625	5.154	4.779	13.375
	2"	6.0	5.625	5.581	5.206	14.375
	2-1/2"	6.0	5.625	6.07	5.695	15.125
4"	3"	6.0	5.625	6.817	6.192	16.875
	1/2"	7.5	7.125	4.652	3.652	14.375
	3/4"	7.5	7.125	4.89	3.89	14.875
	1"	7.5	7.125	5.063	4.688	15.25
	1-1/2"	7.5	7.125	5.633	5.258	16.375
	2"	7.5	7.125	6.062	5.687	17.375
	2-1/2"	7.5	7.125	6.553	6.178	18.125
	3"	7.5	7.125	7.299	6.674	19.875
4"	7.5	7.125	8.987	8.112	21.375	

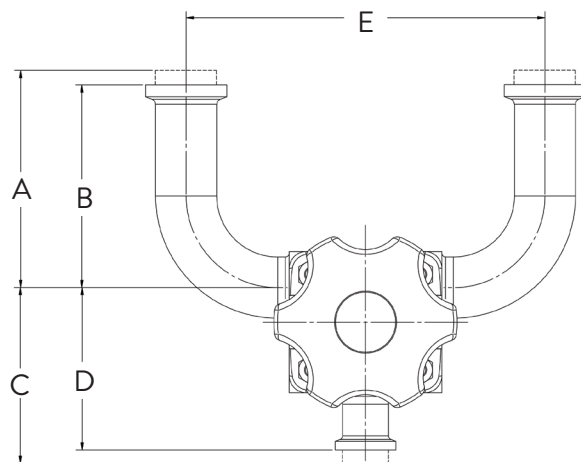
1/2" - 4"



DIMENSIONS (ZERO STATIC POINT OF USE (POU) VALVE)

METRIC						
RUN SIZE	DROP SIZE	TUBE A	TUBE B	TUBE C	CLAMP D	E
DN32	DN15	76,2	66,68	80,52	55,12	136,53
	DN20	76,2	66,68	80,52	55,12	149,23
	DN32	76,2	66,68	90,88	81,36	158,75
DN40	DN15	95,25	85,73	86,87	61,47	174,63
	DN20	95,25	85,73	92,89	67,49	187,33
	DN32	95,25	85,73	90,88	87,76	196,85
	DN40	95,25	85,73	111,89	102,36	225,4
DN50	DN15	114,3	104,78	93,22	67,82	212,7
	DN20	114,3	104,78	99,24	73,84	225,4
	DN32	114,3	104,78	103,63	94,11	235,0
	DN40	114,3	104,78	118,21	108,69	263,5
	DN50	114,3	104,78	129,18	119,66	288,9
DN65	DN15	133,35	123,83	99,67	74,17	250,8
	DN20	133,35	123,83	105,61	80,21	263,5
	DN32	133,35	123,83	109,98	100,46	273,1
	DN40	133,35	123,83	124,56	115,04	301,6
	DN50	133,35	123,83	135,41	125,90	327,0
	DN65	133,35	123,83	147,80	138,28	346,1
DN80	DN15	152,4	142,88	105,92	80,52	288,9
	DN20	152,4	142,88	111,96	86,56	301,6
	DN32	152,4	142,88	116,33	106,81	327,0
	DN40	152,4	142,88	130,91	121,39	339,7
	DN50	152,4	142,88	141,76	132,23	365,2
	DN65	152,4	142,88	154,18	144,65	384,2
	DN80	152,4	142,88	173,15	157,28	428,6
DN100	DN15	190,5	180,98	118,16	92,76	365,1
	DN20	190,5	180,98	124,21	98,81	377,8
	DN32	190,5	180,98	128,60	119,08	387,4
	DN40	190,5	180,98	143,08	133,55	415,9
	DN50	190,5	180,98	153,97	144,45	441,3
	DN65	190,5	180,98	166,45	156,92	460,4
	DN80	190,5	180,98	185,39	169,52	504,8
	DN100	190,5	180,98	228,27	206,04	542,9

DN15 - DN100



ORDERING SCHEMATIC (ZERO STATIC POINT OF USE (POU) VALVE)

MODEL	TYPE	RUN SIZE	CONNECTION	DROP SIZE	CONNECTION	FINISH	ACTUATION	DIAPH.	ACC'Y	COMP.
SV										

1	TYPE
5	POINT OF USE (POU) Valve

2	RUN SIZE
4	1/2"
5	3/4"
6	1"
7	1-1/2"
8	2"
9	2-1/2"
A	3"
B	4"

3	CONNECTION
1	OD Tube
2	Clamp
Z	Non-standard

4	DROP SIZE
4	1/2"
5	3/4"
6	1"
7	1-1/2"
8	2"
9	2-1/2"
A	3"
B	4"

NOTE: Drop Connection size must be <= Run Connection size

5	CONNECTION
1	OD Tube
2	Clamp
Z	Non-standard

6	INTERNAL SURFACE FINISH
1	SF1, 20Ra µin
2	SF4 15Ra µin (0,4 Ra µm) EP
3	SF5 20Ra µin (0,5 Ra µm) EP
Z	Non-standard

7	ACTUATION
1	Manual
2	Manual Vented
3	2 1/2" - 4" Actuator Spring to Close
4	2 1/2" - 4" Actuator Spring to Open
5	Eclipse Actuator, Double Acting (1/2" - 2" standard)
6	Eclipse Actuator, Spring to Close (1/2" - 2" standard)
7	Eclipse Actuator, Spring to Open (1/2" - 2" standard)

8	DIAPHRAGM
1	EPDM
2	TFM/EPDM
Z	Non-standard

9	ACCESSORIES
1	Switch 2 Position
2	Positioner 4-20 mA
Z	Non-standard, consult factory

10	CE/PED COMPLIANCE
OG	SEP (0.25" to 1")
OF	CE Category 1 (1-1/2" to 4")

SV3: DIVERT MULTI-PATH, BLOCK VALVE

Manual or Pneumatically Actuated Barstock Multiple Path Diversion Valves

Steriflow's patented divert valve in 316L offers exceptional drainage and optimal flow rates due to the fully swept flow path. Divert valves allow process fluids to be diverted, mixed or sampled. These are available from 1/2" - 3" in several combinations of outlets and sizes.

SPECIFICATIONS AND FEATURES*

Available Sizes:

- » Standard Valve: 1/2" - 3" (DN15 - DN80)

Connection Type:

- » Tri-clamp, Extended Tube End, Custom including Hose Barb

Materials:

- » Standard: Barstock, ASME SA479 316L (UNS 31603) or EN 10272:2000 GR 1.4435
- » Optional: AL-6XN®, Hastelloy® C-22 and others readily available

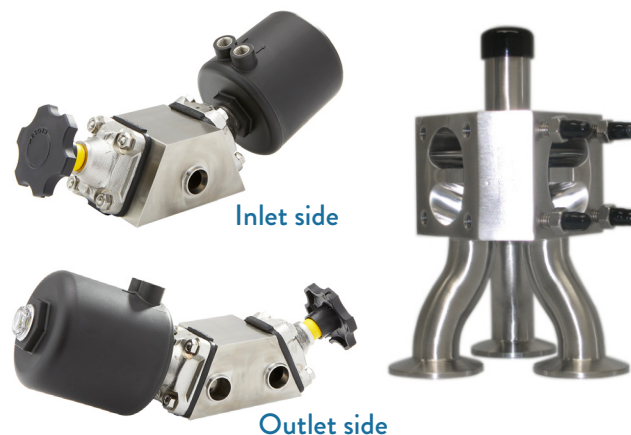
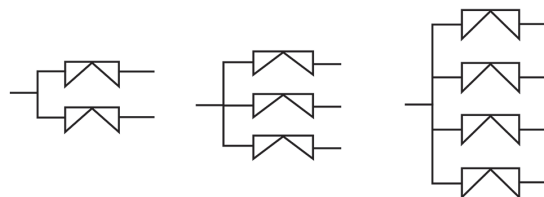
Surface Finish:

- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra μin (0,5 Ra μm)
 - ASME BPE SF5, 20 Ra μin (0,5 Ra μm) Electropolish
 - Optional:
 - ASME BPE SF4, 15 Ra μin (0,4 Ra μm) Electropolish. Better finish upon request.
- » Exterior:
 - Standard: 40 Ra μin (1,0 Ra μm) and better upon request

Certification:

- » CRN No.: 0C22893.5

* See pages 6 - 8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves



APPLICATIONS

Multiple Wier Manual on/off or Air Actuated for multi-path diversion of Drug Process Additives, Drug Product and Clean Utilities for mixing, sampling or other purposes.

- » Upstream:
 - Bioreactor/Fermenter: For diversion of WFI, growth media, intermediate drug product, clean dry air and gas, clean steam and clean utility fluids
- » Downstream:
 - For diversion of WFI, buffers, solvent, intermediate and finished drug product, clean dry air and gas, clean steam, and clean utility fluids in the following production area
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish
- » Buffer and Media Prep:
 - For diversion control of WFI, buffers and growth media

EXAMPLE DRAWINGS OF SOME AVAILABLE CONFIGURATIONS

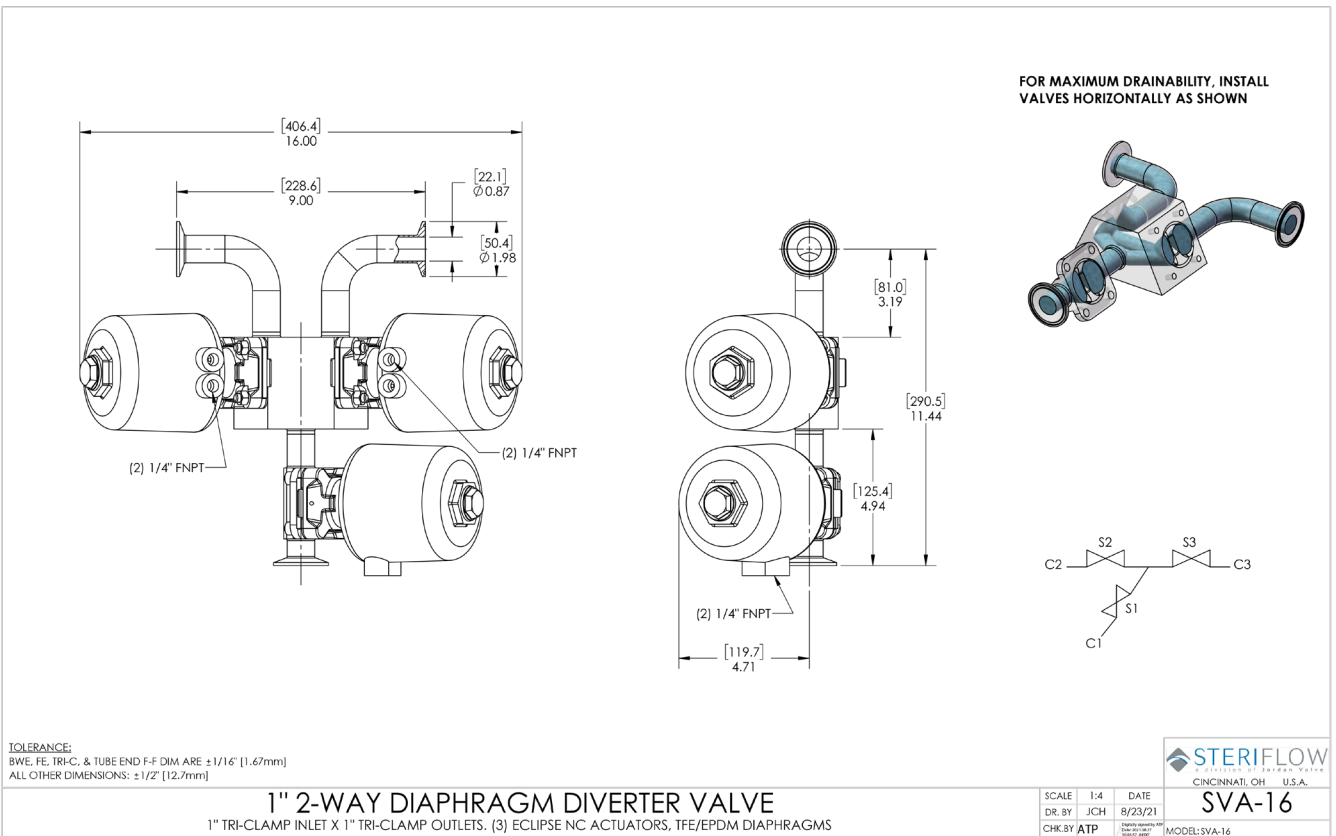
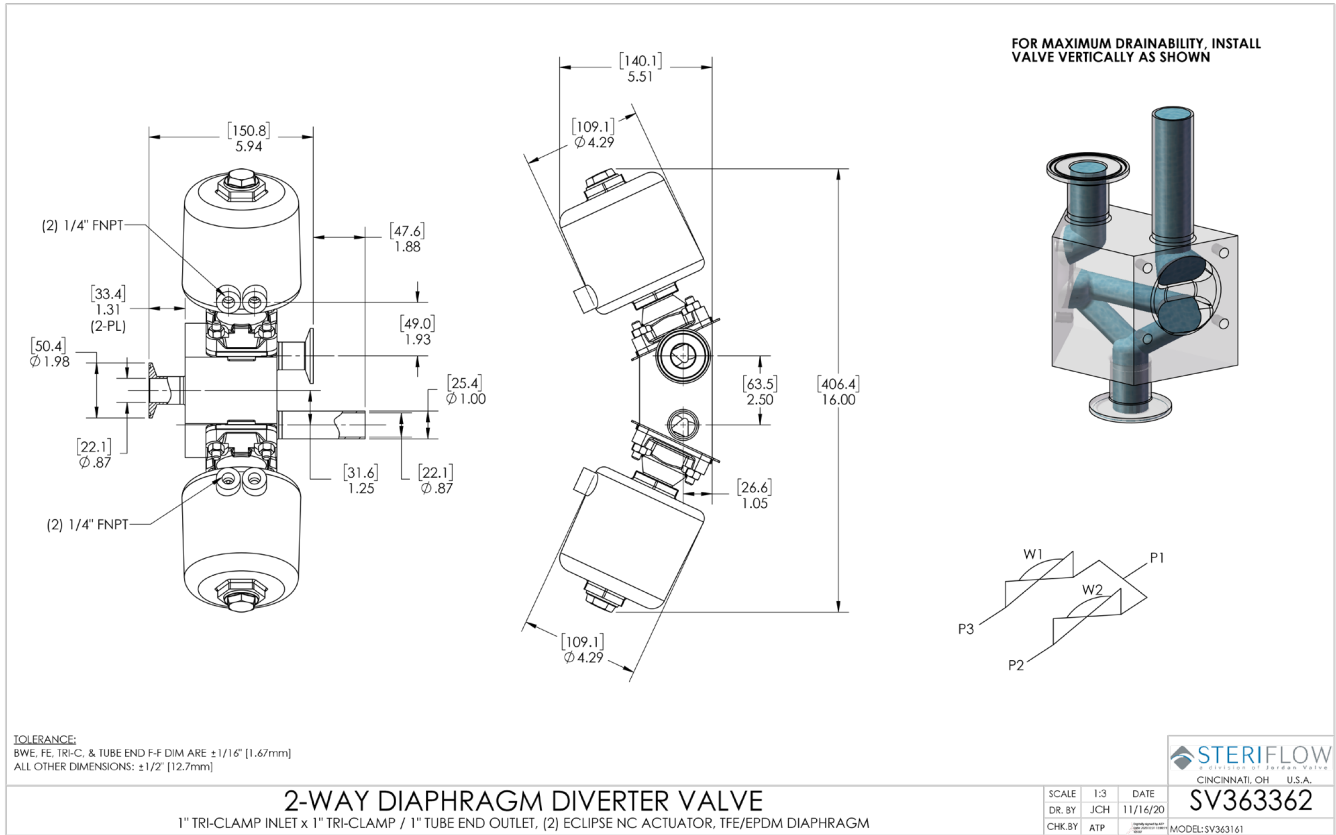
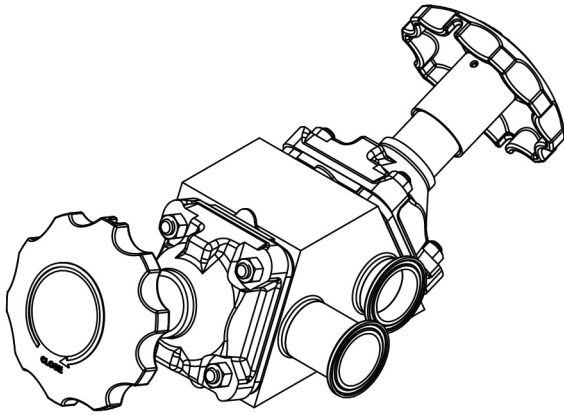
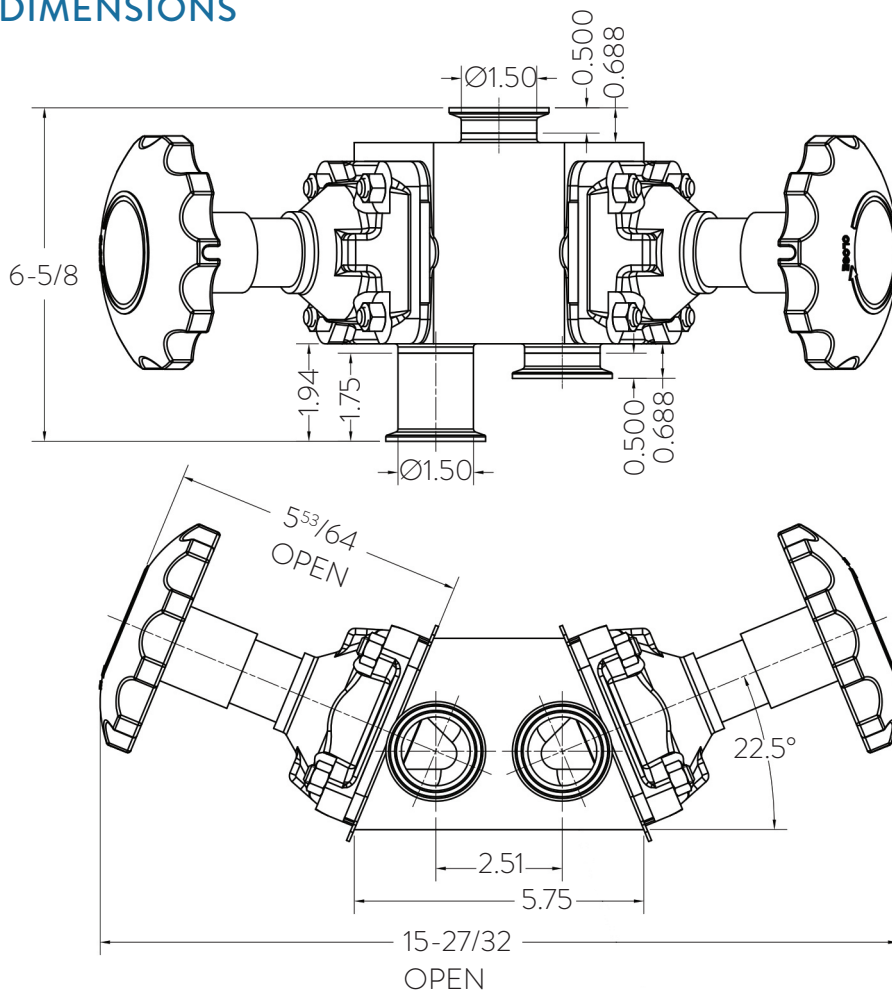


ILLUSTRATION (DIVERT, MULTI-PATH BLOCK VALVE)



DIMENSIONS

1-1/2" Size



Please Contact Factory regarding additional sized dimensional drawings or special requests.

ORDERING SCHEMATIC (DIVERT, MULTI-PATH BLOCK VALVE)

MODEL	TYPE	SIZE	CONN.	FINISH	ACTUATION	DIAPHRAGM	ACC'Y	COMP.
SV								

1	TYPE
3	Divert Block, 2-way Valve

2	SIZE (INLET & OUTLET)
4	1/2"
5	3/4"
6	1"
7	1-1/2"
8	2"
9	2-1/2"
A	3"

3	CONNECTION
1	OD Tube
2	Clamp
3	OD Tube x Clamp
Z	Non-standard

4	INTERNAL SURFACE FINISH
1	SF1, 20Ra µin
2	SF4 15Ra µin (0,4 Ra µm) EP
3	SF5 20Ra µin (0,5 Ra µm) EP
Z	Non-standard, consult factory

5	ACTUATION
1	Manual
2	Manual Vented
3	2 1/2" - 4" Actuator Spring to Close
4	2 1/2" - 4" Actuator Spring to Open
5	Eclipse Actuator, Double Acting (1/2" - 2" standard)
6	Eclipse Actuator, Spring to Close (1/2" - 2" standard)
7	Eclipse Actuator, Spring to Open (1/2" - 2" standard)

6	DIAPHRAGM
1	EPDM
2	TFM/EPDM
Z	Non-standard

7	ACCESSORIES
1	Switch 2 Position
2	Positioner 4-20 mA
Z	Non-standard, consult factory

8	CE/PED COMPLIANCE
OG	SEP (0.25" to 1")
OF	CE Category 1 (1-1/2" to 4")

Please Contact Factory for special configurations or connection sizes. All queries are welcome.

CUSTOM BLOCK BODY VALVES, CLUSTERS

Manual or Pneumatically Actuated Custom Barstock Valves and Valve Clusters

Block valves evolved in this industry for a good reason. They transformed what used to be large multiple valve and tubing assemblies into a smaller, compact block valve that reduced process contact surface area, dead legs and hold up volume. Steriflow will custom design valves specifically for your process requirements using our rapid prototype process.

SPECIFICATIONS AND FEATURES*

Available Sizes:

- » Standard Valve: 1/2" - 3" (DN15 - DN80)

Connection Type:

- » Tri-clamp, Extended Tube End, Custom including Hose Barb

Materials:

- » Standard: Barstock, ASME SA479 316L (UNS 31603) or EN 10272:2000 GR 1.4435
- » Optional: AL-6XN®, Hastelloy® C-22 and others readily available

Surface Finish:

- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra μin (0,5 Ra μm)
 - ASME BPE SF5, 20 Ra μin (0,5 Ra μm) Electropolish
 - Optional:
 - ASME BPE SF4, 15 Ra μin (0,4 Ra μm) Electropolish. Better finish upon request.
- » Exterior:
 - Standard: 40 Ra μin (1,0 Ra μm) and better upon request

Certification:

- » CRN No.: 0C22893.55

* See pages 6 - 8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves



APPLICATIONS

Multiple Wier Manual on/off or Air Actuated block valves or block valve clusters for diversion of Drug Process, Media Buffers, Clean Utilities for a variety of upstream and downstream requirements

» Upstream:

- Bioreactor/Fermenter: For diversion of WFI, growth media, intermediate drug product, clean dry air and gas, clean steam and clean utility fluids
- Perfusion: Permeate diversion

» Downstream:

- For diversion of WFI, buffers, solvent, intermediate and finished drug product and clean utility fluids in the following production area:
 - Separation
 - Filtration
 - buffer exchange
 - Chromatography
 - column input buffer distribution
 - column outlet distribution
 - Fill Finish: low hold-up drug product distribution

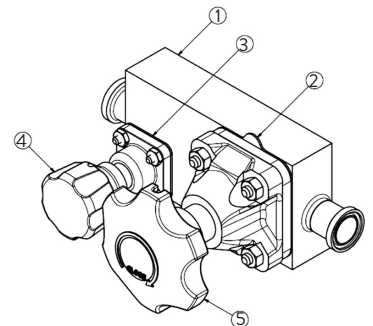
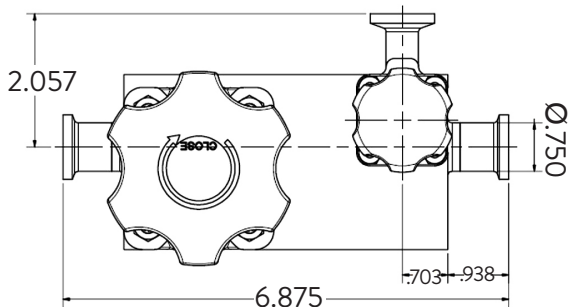
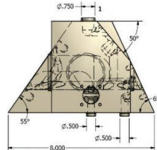
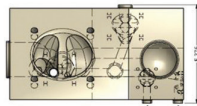
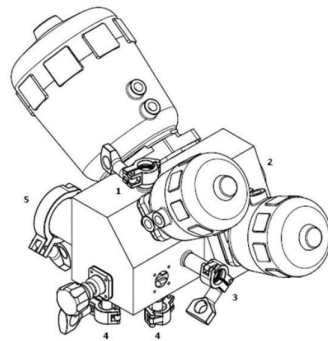
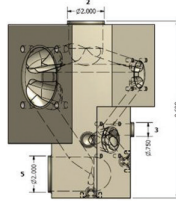
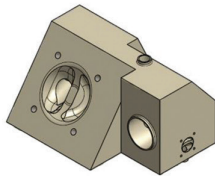
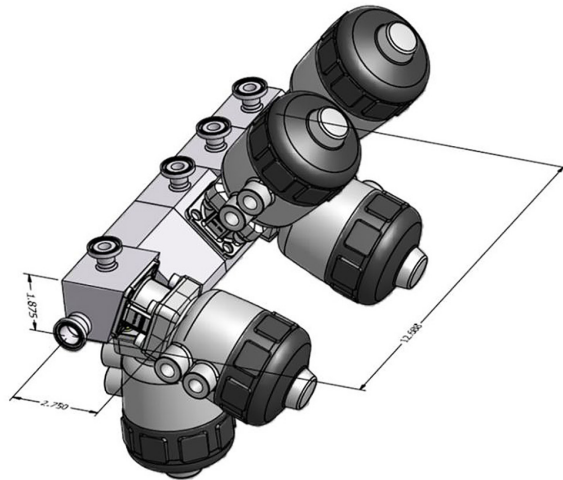
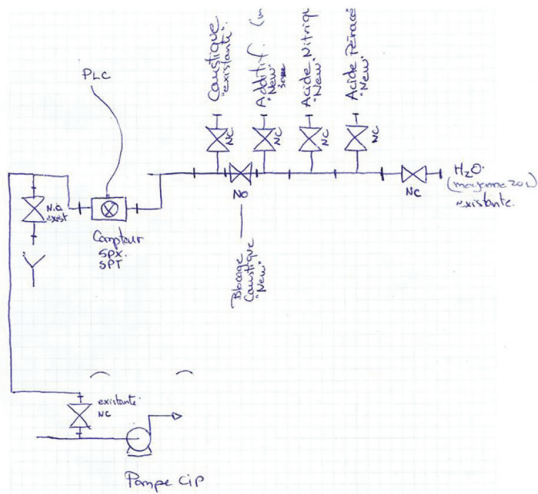
» Buffer and Media Prep:

- Blocks for diversion control of WFI, buffers and growth media

RPP SYSTEM (CUSTOM BLOCK BODY VALVES, CLUSTER)

Steriflow Valve will custom design valves specifically for your process requirements using our RPP System (Rapid Prototype Process).

Our program will take your 'pen to paper' design and translate it into a SOLIDWORKS® design. Our software will rapidly transform your tweaks into a solid model for your evaluation and approval. Depending upon complexity, we can usually render a design and SOLID model and send it to you in your desired file format in as quickly as one to two weeks. Contact us at RPP@richardsind.com.



SV6: TANK BOTTOM DIAPHRAGM VALVE

Manual or Pneumatically Actuated Vessel Outlet Valve

Tank bottom diaphragm valves are sterile vessel outlet valves. They are designed for use at the bottom of vessels to enable draining of process fluids while minimizing dead leg to prevent waste entrapment and contamination from bacteria or microorganisms.

SPECIFICATIONS AND FEATURES*

Connection Size:

- » Standard Valve: 1/2" - 4" (DN15 - DN100)

Outlet Connection Type:

- » Standard Valve: Tri-clamp, Extended Tube End

Additional Ports or Tandem Access Valve:

- » As special Option

Materials:

- » Standard: Barstock, ASME SA479 316L (UNS 31603) or EN 10272:2000 GR 1.4435
- » Optional: AL-6XN®, Hastelloy® C-22 and others readily available

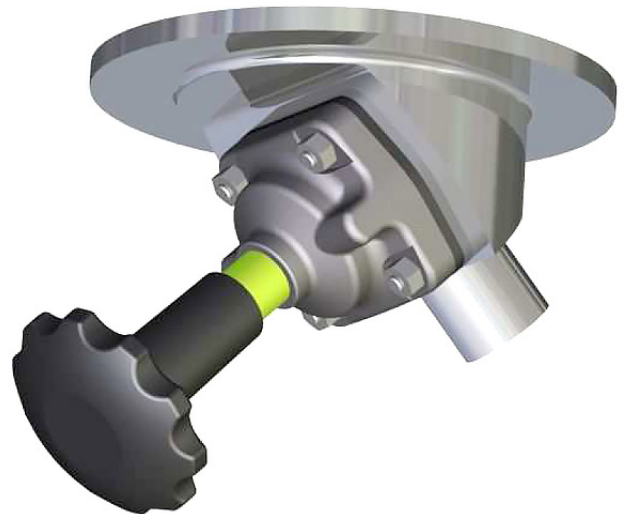
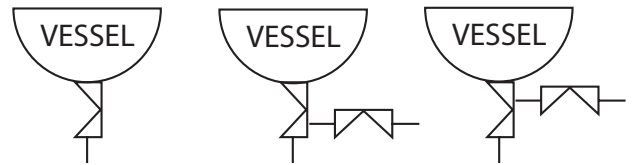
Surface Finish:

- » Wetted Interior:
 - Standard:
 - ASME BPE SF1, 20 Ra μm (0,5 Ra μm)
 - ASME BPE SF5, 20 Ra μm (0,5 Ra μm) Electropolish
 - Optional:
 - ASME BPE SF4, 15 Ra μm (0,4 Ra μm) Electropolish. Better finish upon request.
- » Exterior:
 - Optional: 40 Ra μm (1,0 Ra μm) and better upon request

Certification:

- » CRN No.: 0C22893.5

* See pages 6 -8 for GENERAL FEATURES, GENERAL SPECIFICATIONS regarding features and specifications that apply to all valves

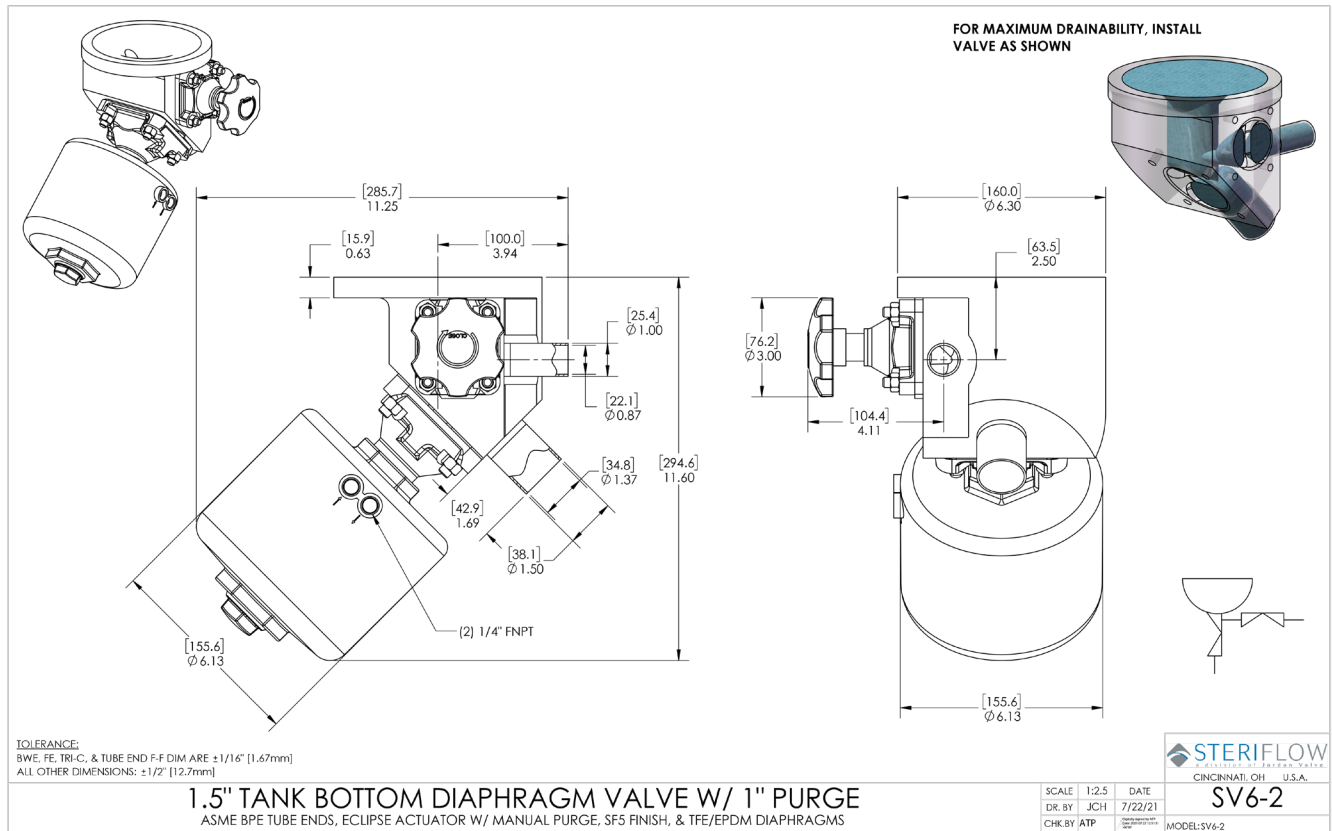


APPLICATIONS

Manual or Air Actuated Outlet Valve for sterile vessel

- » Upstream:
 - Bioreactor/Fermenter: vessels
 - Perfused Bioreactors: Retentate or permeate vessels
- » Downstream:
 - Outlet valve for process vessels in the following production areas:
 - Separation
 - Filtration
 - Chromatography
 - Formulation
 - Fill Finish

EXAMPLE DRAWING OF AVAILABLE CONFIGURATIONS



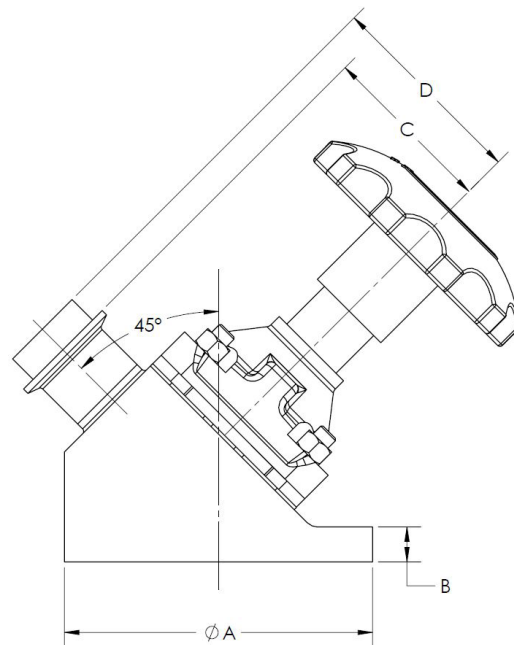
DIMENSIONS (TANK BOTTOM DIAPHRAGM VALVE)

INCHES				
SIZE	A \varnothing	B	C	D
1/2"	3.0	0.5	According to BPE or as specified	
3/4"	3.5	0.5		
1"	4.5	0.5		
1-1/2"	5.5	0.56		
2"	7.0	0.5		
2-1/2"	9.0	0.75		
3"	10.0	0.75		
4"	14.0	1.0		

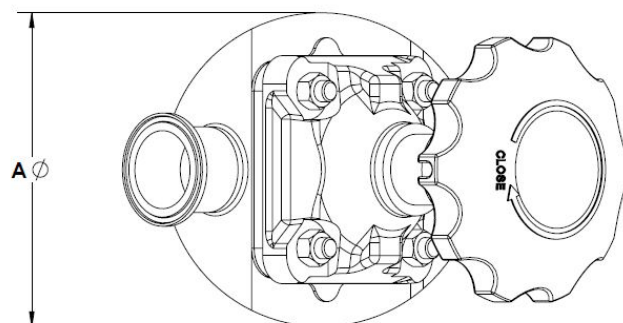
METRIC				
SIZE	A	B	C	D
DN15	76,2	12,7	According to BPE or as specified	
DN20	88,9	12,7		
DN32	114,3	12,7		
DN40	139,7	14,2		
DN50	177,8	12,7		
DN65	228,6	19,1		
DN80	254,0	19,1		
DN100	355,6	25,4		

Please Contact Factory for special vessel connection sizes or valve configurations. All queries are welcome.

1/2" - 4" (DN15-DN100) SIDE VIEW



TOP VIEW



ORDERING SCHEMATIC (TANK BOTTOM DIAPHRAGM VALVE)

MODEL	TYPE	SIZE	CONN.	FINISH	ACTUATION	DIAPHRAGM	ACCY	COMP.
SV								

1	TYPE
6	Tank Bottom Valve

2	SIZE
4	1/2"
5	3/4"
6	1"
7	1-1/2"
8	2"
9	2-1/2"
A	3"
B	4"

3	CONNECTION
1	OD Tube
2	Clamp
Z	Non-standard

4	FINISH
1	SF1, 20Ra µin
2	SF4 15Ra µin (0,4 Ra µm) EP
3	SF5 20Ra µin (0,5 Ra µm) EP
Z	Non-standard, consult factory

5	ACTUATION
1	Manual
2	Manual Vented
3	2 1/2" - 4" Actuator Spring to Close
4	2 1/2" - 4" Actuator Spring to Open
5	Eclipse Actuator, Double Acting (1/2" - 2" standard)
6	Eclipse Actuator, Spring to Close (1/2" - 2" standard)
7	Eclipse Actuator, Spring to Open (1/2" - 2" standard)

6	DIAPHRAGM
1	EPDM
2	TFM/EPDM
Z	Non-standard

7	ACCESSORIES
1	Switch 2 Position
2	Positioner 4-20 mA
Z	Non-standard, consult factory

8	CE/PED COMPLIANCE
OG	SEP (0.25" to 1")
OF	CE Category 1 (1-1/2" to 4")



3170 Wasson Road
Cincinnati, OH 45209 USA

www.steriflowvalve.com

513.533.5600 (telephone)

513.871.0105 (fax)

steriflow@richardsind.com (email)

SteriflowValve.com (website)