

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

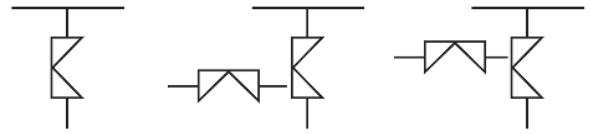
Materials:

- » 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

* See page 5 & 6 for GENERAL FEATURES and GENERAL SPECIFICATIONS regarding features and specifications that apply to all diaphragm 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

BONNET / ACTUATOR SPECIFICATIONS

Manual Bonnet Assembly:

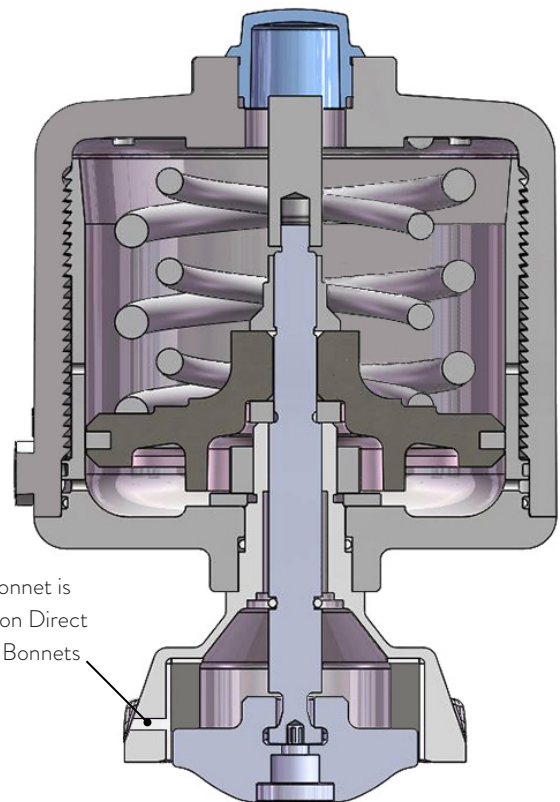
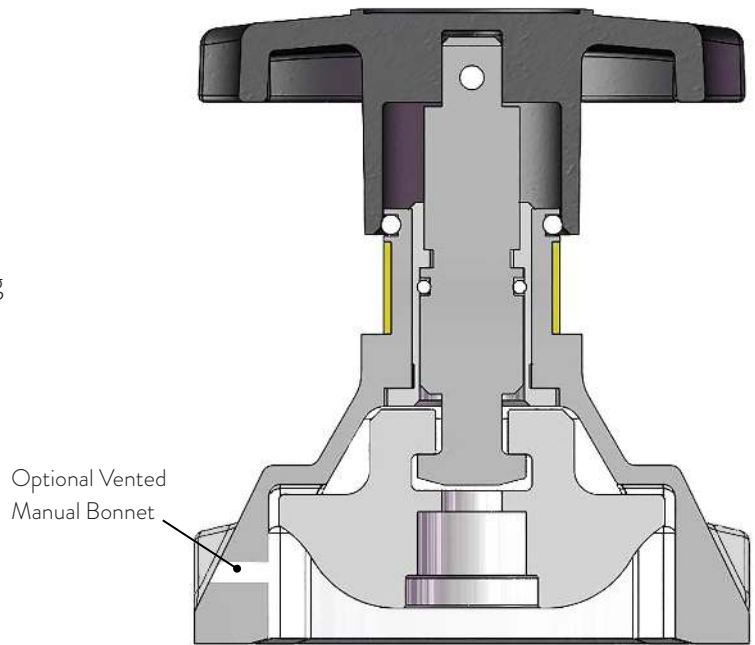
- » Available for sizes: 1/2" - 4" (DN15 - DN100)
- » Closing Stop: adjustable
- » Bright visual position indicator
- » Options: contact factory for proximity switches, locking devices and stroke limiter

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; 3" & 4" (DN80 & DN100) optional
- » 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

Example drawings of some available configurations

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]

FOR MAXIMUM DRAINABILITY, INSTALL VALVE HORIZONTALLY AS SHOWN.

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	12/30/20
DR. BY	JCH	SV491423611	
CHK. BY	ATP		
		CINCINNATI, OH U.S.A. MODEL: SV491423611	

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

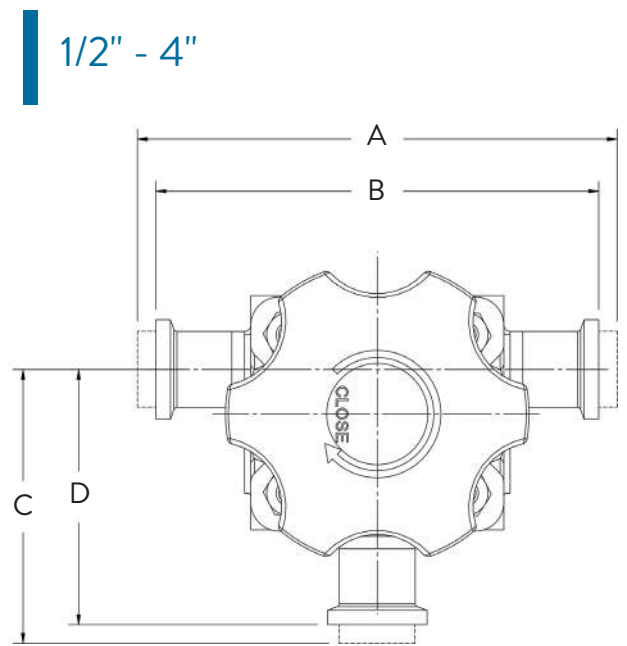
FOR MAXIMUM DRAINABILITY, INSTALL VALVE VERTICALLY AS SHOWN

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	12/29/20
DR. BY	JCH	SV4-5	
CHK. BY	ATP		
		CINCINNATI, OH U.S.A. MODEL: SV4-5	

DIMENSIONS (ZERO STATIC TEE BLOCK VALVE)

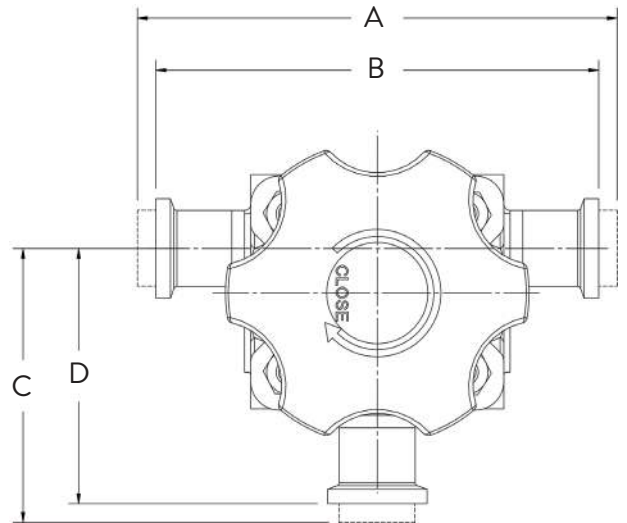
INCHES					
RUN SIZE	DROP SIZE	TUBE A	CLAMP B	TUBE C	CLAMP D
1/2"	1/2"	5.375	3.375	2.918	1.918
3/4"	1/2"	5.375	3.375	3.045	2.045
	3/4"	5.875	3.875	3.285	2.285
1"	1/2"	5.375	4.625	3.17	2.17
	3/4"	5.875	4.625	3.17	2.17
	1"	6.25	5.5	3.578	3.203
1-1/2"	1/2"	5.375	4.625	3.42	2.42
	3/4"	5.875	5.125	3.657	2.657
	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

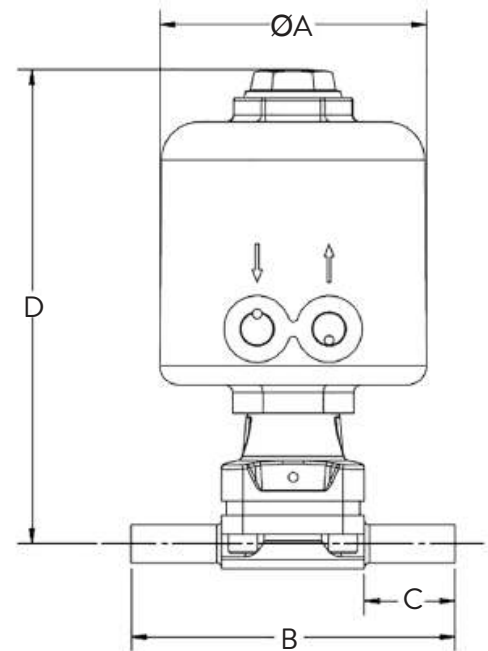


DIMENSIONS (WITH ECLIPSE PNEUMATIC ACTUATOR)

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

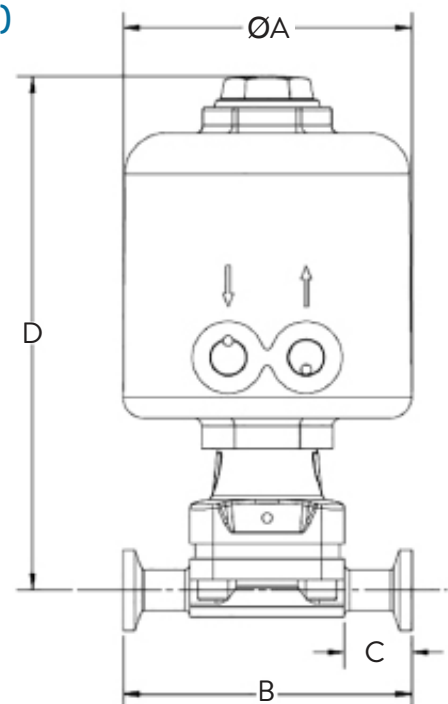


1/2" - 2" TRI-CLAMP ENDS

DIMENSIONS (WITH ECLIPSE PNEUMATIC ACTUATOR)

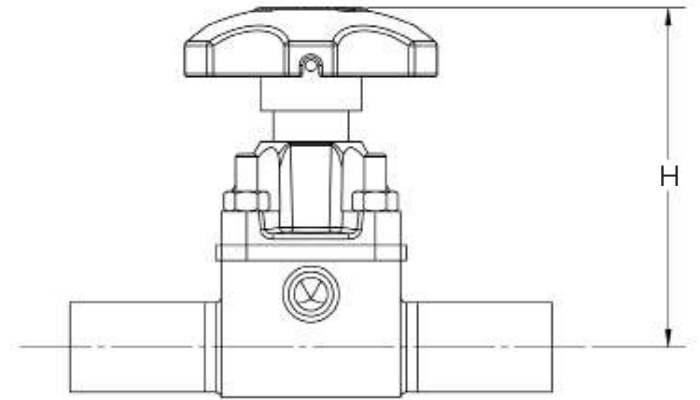
INCHES				
SIZE	A	B	C	D
1/2"	3.5	3.5	13/16	6.23
3/4"	4.3	4.0	27/32	6.84
1"	4.3	4.5	31/32	7.25
1-1/2"	6.13	5.5	15/16	9.88
2"	6.13	6.25	1.0	10.83

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



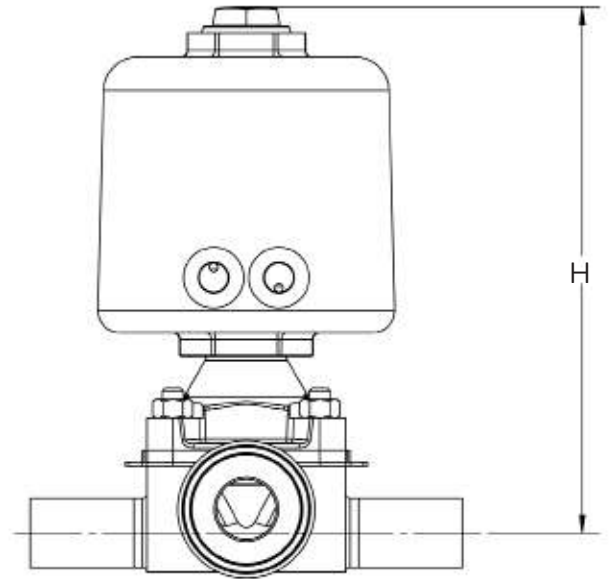
DIMENSIONS (ZERO STATIC TEE BLOCK VALVE WITH MANUAL ACTUATOR)

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 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")

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

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



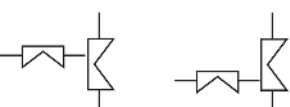
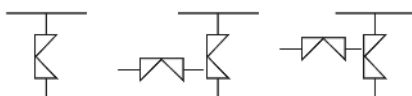
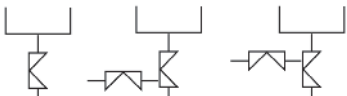
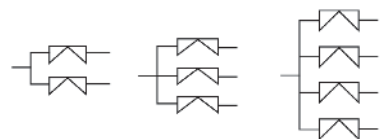

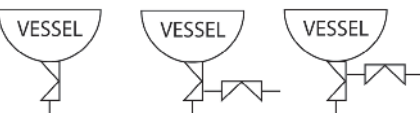
- » Steriflow Unicert; Certificate of Compliance for:
 - Material, including MTR's
 - Surface Finish
 - FDA/USP <88>, <87> Class VI
 - ADI/TSE Free cert available upon request
- » Each Unicert document lists the order's individual valve Serial/Suffix numbers and wetted component Heat numbers. MTR's for 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

CERTIFICATION

- » CRN No.: 0C22893.5



VALVE TYPE BY APPLICATION

- » 2 - Ways 
- » Ported 
- » Tandem Access 
- » Zero Static T-Block 
- » Zero Static POU 
- » Divert Block 
- » Custom Blocks 
- » Tank Bottom 

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)

BONNET/ACTUATOR SPECIFICATIONS*

Manual Bonnet Assembly:

- » Available for valve 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
- » Bushing: Brass
- » Stem: Stainless Steel
- » Handwheel: PPS (1/4" - 2"); Stainless Steel (2-1/2" - 4")

Air Actuated Bonnets:

- » Available for sizes: 1/2" - 2" (DN15 - DN50) standard; 3" & 4" (DN80 & DN100) optional
- » 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

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