



PRODUCT MANUAL

Singapore's Trusted Partner in Fluid Control



Founded through persistent exploration and engineering practices in precision fluid control technology, ROCK Industrial Group was established to deliver core control technology solutions for global pharmaceutical manufacturing, electronics/semiconductor, food & cosmetics, and beverage industries. With three decades of expertise in precision manufacturing and system design, ROCK Group launched its flagship brand SingTao®, dedicated to R&D and production of high value-added fluid control valves.

Leveraging the strategic layout of Singapore's global operations center and the efficient transportation network of the Strait of Malacca, we will continue to invest in integrating and establishing ISO 9001-certified production and marketing bases in Malaysia and China, progressively building a rapid-delivery supply chain covering Asia, Europe, the Americas, and other regions.

The SingTao® valve system serves critical sectors via dual technological pathways: Pharmaceutical-grade sterile valve assemblies compliant with 3A/SMSI and FDA 21 CFR Part 177 standards meet vaccine production requirements under EU GMP Annex 1 specifications; ASME BPE-compliant ultra-pure fluid valves for semiconductor applications achieve 0.1µm particle control in wafer fabrication cleanrooms. Utilizing SGS-compliant 316L stainless steel and Hastelloy® alloys, our product portfolio covers 18 valve configurations including steam traps, sanitary diaphragm valves, and vacuum control valves. Equipped with electric, pneumatic, and manual actuation modules, 300+ technical

enhancements ensure cross-industry operational adaptability.

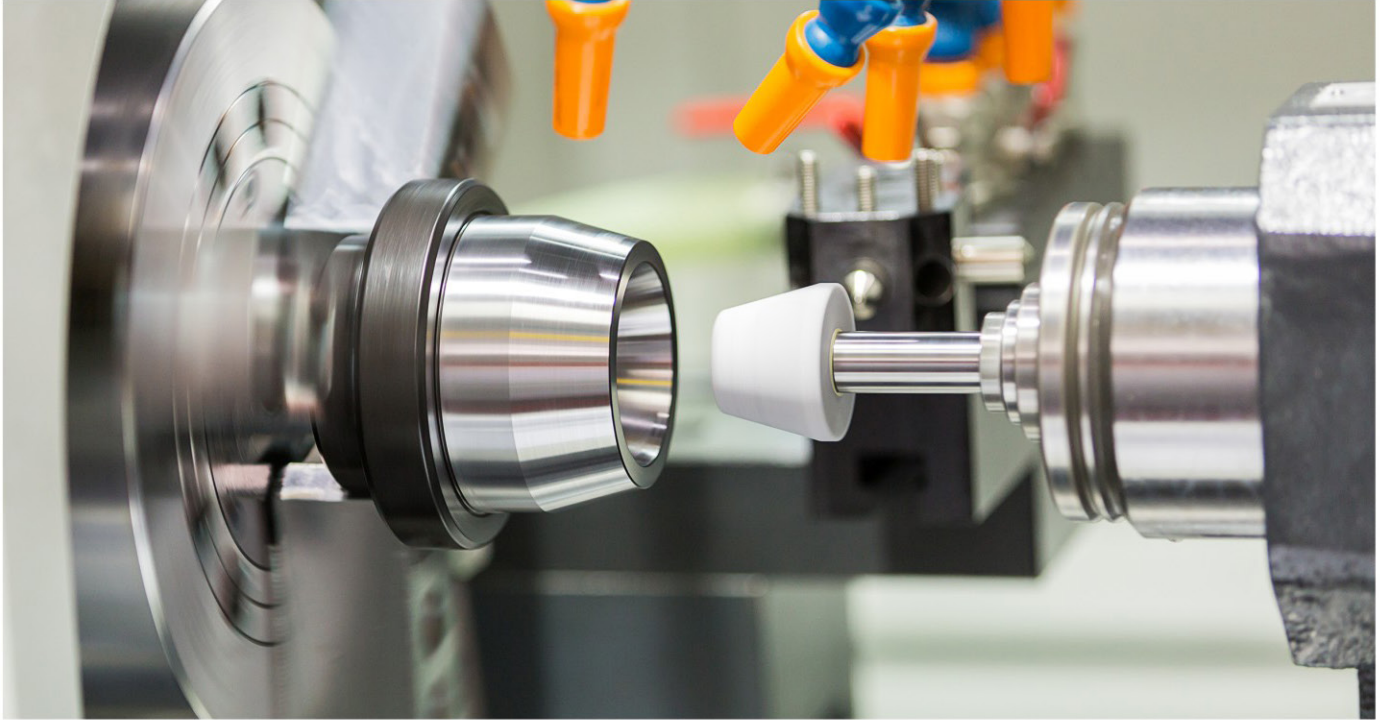
ROCK implements EHEDG/FPSA-compliant end-to-end traceability mechanisms covering raw materials to delivery, backed by 36-month warranty commitments. Currently serving 150+ high-end pharmaceutical and semiconductor manufacturers globally, we achieve 95% on-time delivery within 21 standard working days through three regional centers (Singapore/Malaysia/Suzhou) providing 24/7 emergency response and full-cycle services encompassing working condition analysis, valve selection, and technical support.

By drawing inspiration from the rigorous discipline of advanced manufacturing, the philosophy of continuous technological innovation, and optimized practices for order efficiency enhancement, ROCK engineers empower SingTao® valve systems to establish reliable barriers in stringent cleanliness environments and achieve molecular-level fluid control in semiconductor manufacturing processes. When the advancement of industrial civilization hinges on precision measured in microns, ROCK's accumulated expertise demonstrates that tackling industrial innovation challenges begins with an unwavering commitment to solving fundamental problems.



ENTERPRISE VISION

Singapore Precision, Global Leadership



TRACEABILITY OF PRODUCTS

Each SingTao® product carries permanent markings of the brand logo, material specification, dimensional data, and a unique traceability identifier. These critical data points, combined with customer procurement records, are systematically logged and monitored through ROCK's centralized digital platform, achieving end-to-end visibility from manufacturing to field operation.

KOOL



CONTENTS



Long term goals

Advancing Fluid Control through Innovation: Customized Solutions for Every Stage of Your Operational Lifecycle.

—. SERIES OF MAIN PRODUCTS

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二. APPLICATION SCENARIO

SANITARY VALVES

ASEPTIC DIAPHRAGM VALVES

Two-way Diaphragm Valves



Application: It is designed according to ASME BPE, GMP and other sanitary standards and used in food and beverage, dairy products, bio-pharmaceutical and other fields.

Features: There is no residue and dead angle to the valve body structure, so that the self-exhaustion can be achieved, and the materials contacted with the medium are non-precipitating, non-toxic, high temperature-resistant and corrosion-resistant. It is applicable for all kinds of process pipelines with high sanitary grade, can be used with solenoid valve or positioner, which has the function such as precise flow regulation.

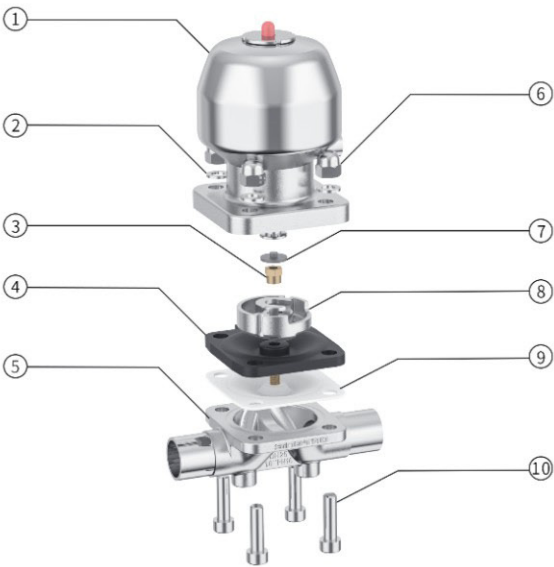
Dimension range: DN10-DN100 (3/8" - 4")	Diaphragm or sealing material: PTFE&EPDM
Working temperature: -10°C - 150°C	Body material: 316L/1.4404/1.4435
Pressure rating: 10bar	Interface form: Welding and clamping
Drive mode: Manual/pneumatic	Standard: ASME BPE and 3A
Automatic control unit: Feedback device and locating device	

Aseptic Diaphragm Valves

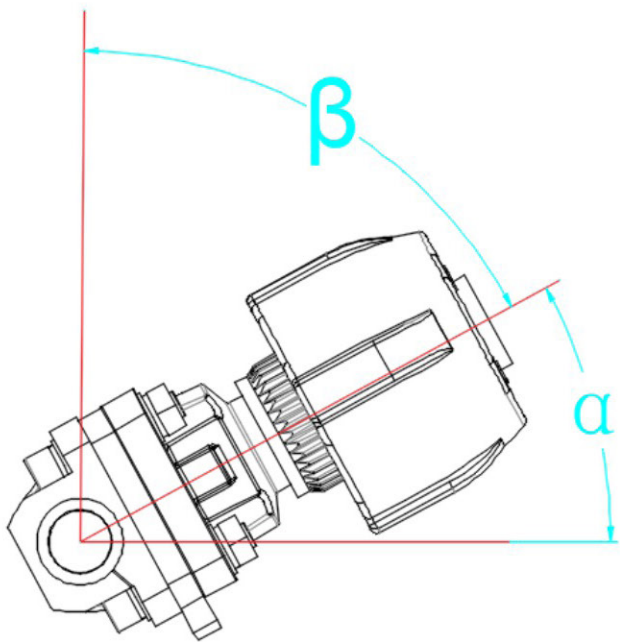
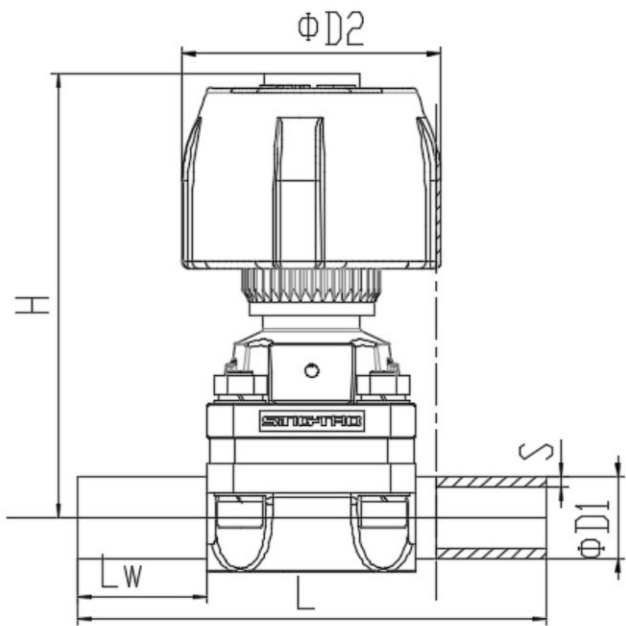
- Zero dead angle and no residue
- Safe and non-toxic material selection
- Excellent self-emission performance
- High temperature-resistant and long-life diaphragm

No.	Description	Material (EN)
1	Handwheel	Nylon PA6
2	Limit block	Nylon PA6
3	Indicator ring	Nylon PA6
4	Cap nut	A194 8M
5	Spring washer	SS 304
6	Valve cover	A351 CF3M
7	Valve stem	A182 F316L
8	Wear pads	PEEK
9	Lock nut	T3
10	Guide block	A351 CF3M
11	Diaphragm lining	EPDM
12	Diaphragm	PTFE
13	Valve body	A351 CF3M/F316L/1.4404/1.4435
14	Inner hexagon screw	A194 B8M

No.	Name	Materials
1	Pneumatic actuator	Stainless steel components
2	Spring washer	SS 304
3	Lock nut	T3
4	Diaphragm lining	EPDM
5	Valve body	A351 CF3M/F316L/1.4404
6	Cap nut	A194 8M
7	Wear pads	PEEK
8	Guide block	A351 CF3M
9	Diaphragm	EPDM+PTFE / EPDM
10	Inner hexagon screw	A194 B8M



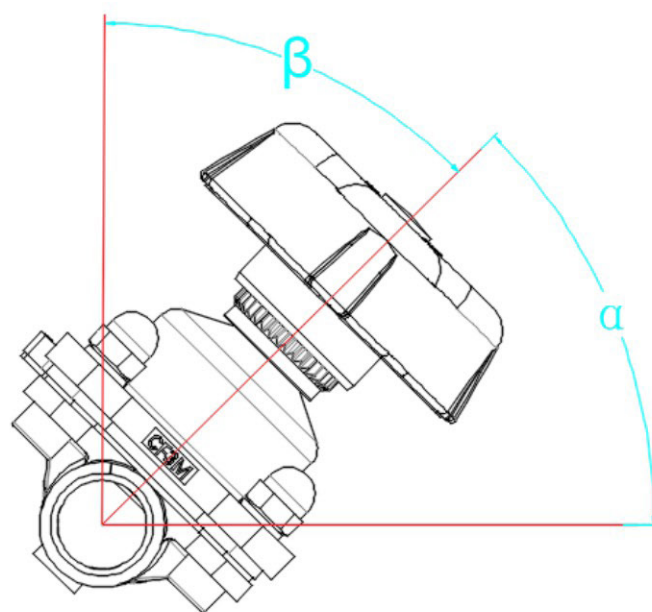
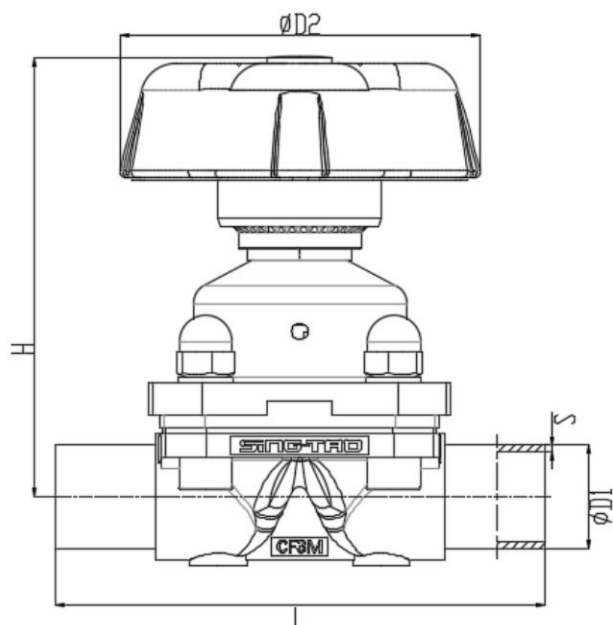
Dimension table of diaphragm valve



Manual welding valve size and discharge angle (small handwheel)

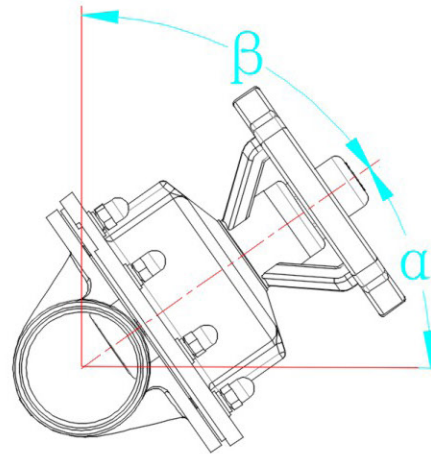
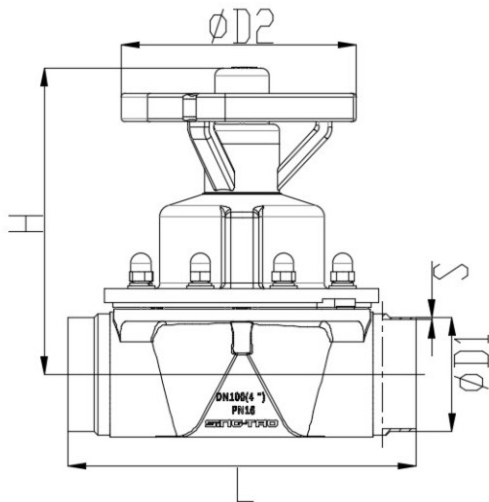
Size	Inch	L	Lw	ΦD1	S	H	ΦD2	Emission angle α	Emission angle β
DN8	1/4	72	DN8	DN8	6.35	70	40	30.5	59.5
DN10	3/8	72	DN10	DN10	9.53	70	40	22	68
DN15	1/2	72	DN15	DN15	12.7	70	40	17	73

Aseptic Diaphragm Valves



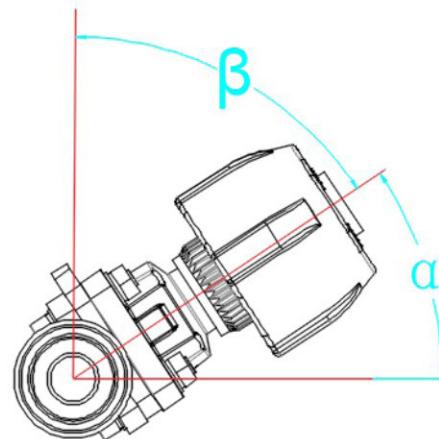
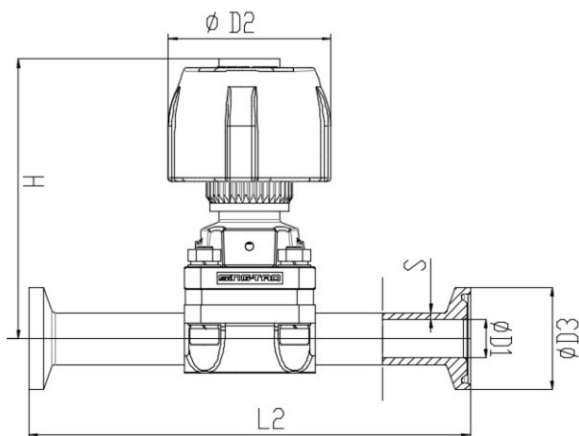
Manual welding valve size and discharge angle (middle handwheel)

Size	Inch	L	Lw	ΦD1	S	H	ΦD2	Emission angle α	Emission angle β
DN20	3/4	108	25	19.1	1.65	89	65	18.5	71.5
DN25	1	120	25	25.4	1.65	108	86	29.5	60.5
DN40	1 1/2	153	30	38.1	1.65	129	108	24	66
DN50	2	173	30	50.8	1.65	150	140	18	72
DN65	2 1/2	173	30	63.5	1.65	154	140	9	81



Manual welding valve size and discharge angle (large handwheel)

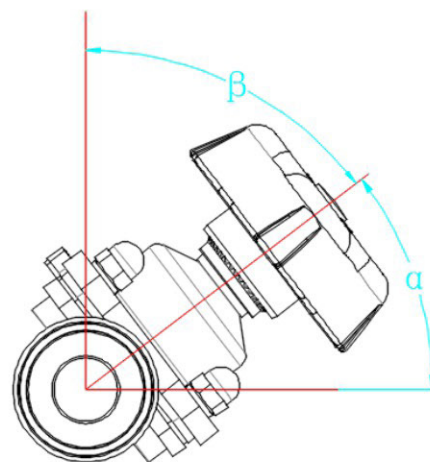
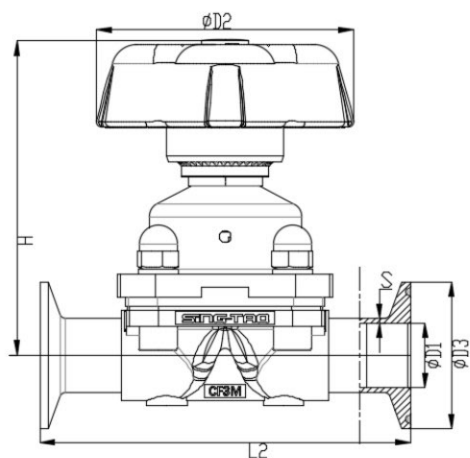
Size	Inch	L	Lw	$\Phi D1$	S	H	$\Phi D2$	Emission angle α	Emission angle β
DN80	3	254	23	76.2	1.65	264	214	20.5	69.5
DN100	4	310	24	101.6	2.11	274	214	19.5	70.5



Manual clamp valve size and discharge angle (small handwheel)

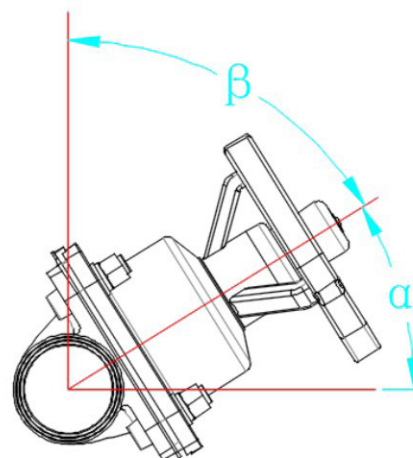
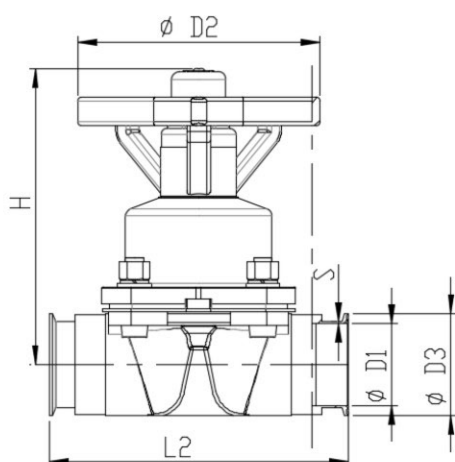
Size	Inch	L2	$\Phi D1$	$\Phi D3$	S	H	$\Phi D2$	Emission angle α	Emission angle β
DN15	1/2	108	12.7	25	1.65	70	40	17	73

Aseptic Diaphragm Valves



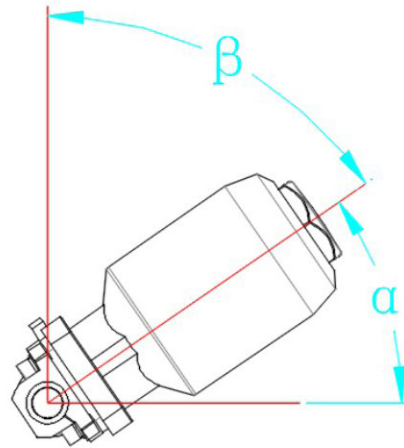
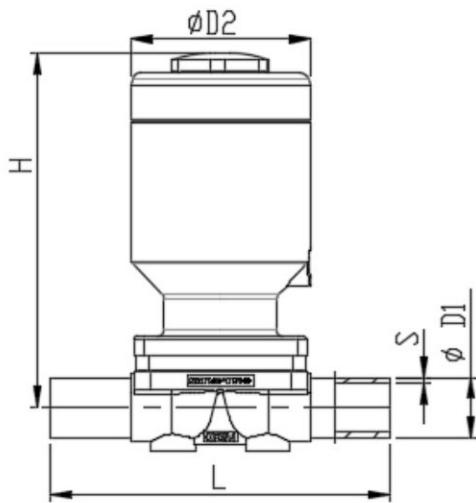
Manual clamp valve size and discharge angle (middle handwheel)

Size	Inch	L2	ØD1	ØD3	S	H	ØD2	Emission angle α	Emission angle β
DN20	3/4	127	19.1	25	1.65	89	65	18.5	71.5
DN25	1	127	25.4	50.4	1.65	108	86	29.5	60.5
DN40	1 1/2	159	38.1	50.4	1.65	129	108	24	66
DN50	2	190	50.8	63.9	1.65	150	140	18	72
DN65	2 1/2	216	63.5	77.5	1.65	154	140	9	81



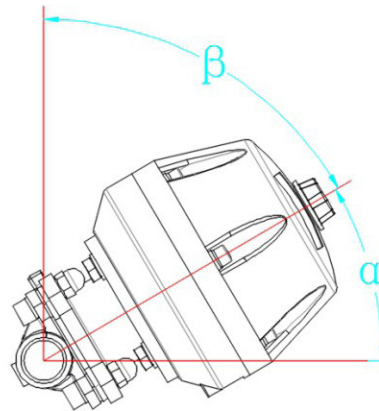
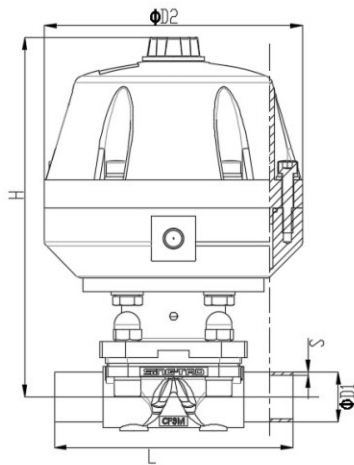
Manual clamp valve size and discharge angle (large handwheel)

Size	Inch	L2	ØD1	ØD3	S	H	ØD2	Emission angle α	Emission angle β
DN80	3	265	76.2	90.9	1.65	264	214	20.5	69.5



Dimensions and discharge angle of pneumatic welding valve (stainless steel actuator)

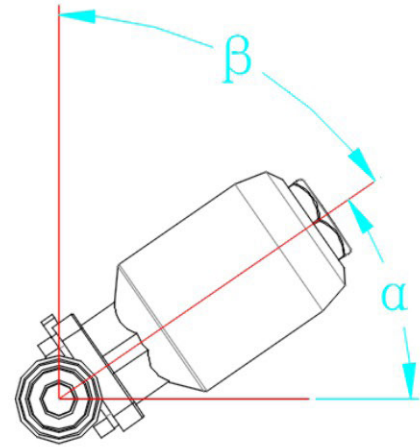
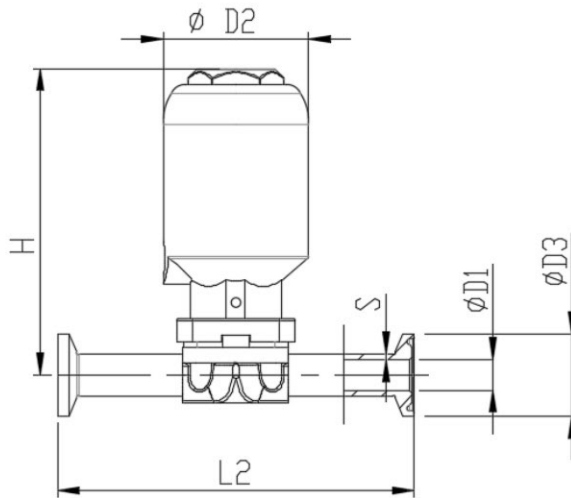
Size	Inch	L	Lw	ΦD1	S	H	ΦD2	Emission angle α	Emission angle β
DN8	1/4	72	20	6.35	0.89	93	44	30.5	59.5
DN10	3/8	72	20	9.53	0.89	93	44	22	68
DN15	1/2	72	20	12.7	1.65	93	44	17	73
DN20	3/4	108	25	19.1	1.65	113	58	18.5	71.5



Dimensions and discharge angle of pneumatic welding valves (plastic actuator)

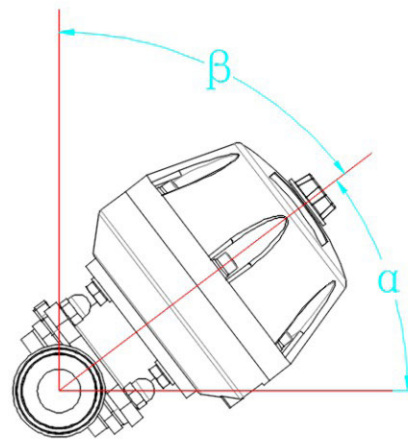
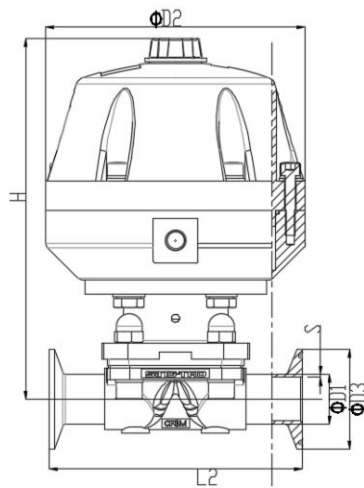
Size	Inch	L	Lw	ΦD1	S	H	ΦD2	Emission angle α	Emission angle β
DN25	1	120	25	25.4	1.65	182	130	29.5	60.5
DN40	1 1/2	153	30	38.1	1.65	225	162	24	66
DN50	2	173	30	50.8	1.65	252	162	18	72
DN65	2 1/2	173	30	63.5	1.65	257	162	9	81

Aseptic Diaphragm Valves



Dimensions and discharge angle of pneumatic clamp valve (stainless steel actuator)

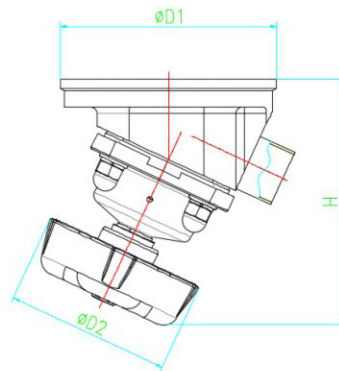
Size	Inch	L2	ØD1	ØD3	S	H	ØD2	Emission angle α	Emission angle β
DN15	1/2	108	12.7	25	1.65	93	44	17	73
DN20	3/4	127	19.1	25	1.65	113	58	18.5	71.5



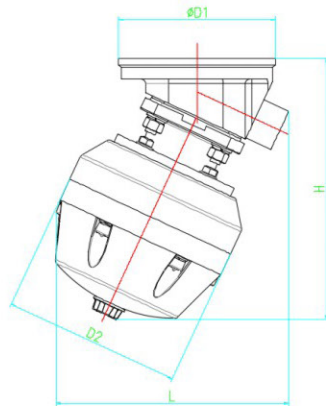
Dimensions and discharge angle of pneumatic clamp valve(plastic actuator)

Size	Inch	L2	ØD1	ØD3	S	H	ØD2	Emission angle α	Emission angle β
DN25	1	127	25.4	50.4	1.65	182	130	29.5	60.5
DN40	1 1/2	159	38.1	50.4	1.65	225	162	24	66
DN50	2	190	50.8	63.9	1.65	252	162	18	72
DN65	2 1/2	216	63.5	77.5	1.65	257	162	9	81

Tank Bottom diaphragm valve



Caliber	Welding joint diameter D1/mm	Handwheel diameter D2/mm	Total height H/mm
DN15	47	40	73.9
DN20	70	63.2	99.4
DN25	105.5	87.9	133.6
DN40	143.2	108.4	162.7
DN50	169.1	139.1	189.1
DN65	179.7	139.1	194.9
DN80	270	214	214.5



Caliber	Welding joint diameter D1/mm	Handwheel diameter D2/mm	Total height H/mm
DN15	47	45	107
DN20	70	58	127
DN25	105.5	130	193
DN40	143.2	162	239
DN50	169.1	162	265
DN65	179.7	162	272

Aseptic Diaphragm Valves

Encoding and coding rules for two-way diaphragm valves/tank bottom diaphragm valves

Tag Number	1	2	3、4	5	6	7	8	9	10	11	12
Code	D	5	15	0	P	6	0	B	F	C	M
Property definition	Valve type	Control form	Caliber	Whether the pneumatic device has a mechanical limit	Caliber standard	Connection form	Whether the pneumatic device has a mechanical limit	Body material	Diaphragm material	Other	Polishing

Tag Number	Code	Valve type
1	D	Two way diaphragm valve
	O	Diaphragm tank bottom valve
2	Code	Control form
	2	Metal handwheel
	7	Plastic handwheel
	3	Plastic pneumatic head
3、4	5	Stainless steel pneumatic head
	Code	Caliber
	08	8 5/16"
	10	10 3/8"
	15	15 1/2"
	20	20 3/4"
	25	25 1"
	32	32 1 1/4"
	40	40 2 1/2 "
	50	50 2"
	65	65 2 1/2 "

Tag Number	Code	Caliber
3、4	80	80 3"
	1A	100 4"
5	Code	With or without electronic signal feedback
	0	Without
	A	ST F1 FPos
	B	ST F2 FPos
6	C	ST F3 FPos
	Code	Caliber standard
	P	ASME BPE
7	I	ISO 2037
	Code	Connection form
	8	Tri-Clamp
	6	Weld
8	7	Tri&Weld
	Code	Whether the pneumatic device has a mechanical limit
	0	Without limit
8	L	With limiters

Aseptic Diaphragm Valves

Tag Number	Code	Body material
9	B	A351 CF3M (Cast 316L)
	E	A182 F316L (Forged 316L)
	F	1.4404 (Forged 316L)
	G	1.4435 (Forged 316L)
10	Code	Diaphragm material
	F	PTFE/EPDM Two-piece
	O	PTFE/EPDM Monolithic
	D	EPDM

Tag Number	Code	Other
11	O	Pneumatic normally open
	C	Pneumatic normally closed
	Z	Manual
	D	Pneumatic normally closed+contact position feedback
	E	Pneumatic normally open+contact position feedback
12	Code	Burnishing
	M	Mechanical polishing
	E	Electrolytic polishing
	O	Other

Description of diaphragm working conditions			
Membrane category	Applicable working conditions		
	Medium temperature		Steam (Sterilization)
	min.	max.	
PTFE/EPDM Two piece type	-10°C	120°C	Continuous temperature * 150 °C
PTFE/EPDM Monolithic	-10°C	120°C	Continuous temperature * 150 °C
EPDM	-10°C	120°C	150 °C, Max.60 min

Surface glossiness description		
Polishing type	Roughness	Technology
Mechanical polishing	Ra ≤ 0.6µm	Internal surface mechanical polishing, external surface glass bead sandblasting
Electropolishing	Ra ≤ 0.4µm	Internal/external electrolytic polishing
Other	Ra ≤ 0.2µm	Internal surface mechanical polishing, external surface glass bead sandblasting

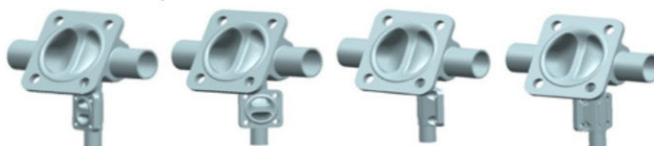
Aseptic Diaphragm Valves



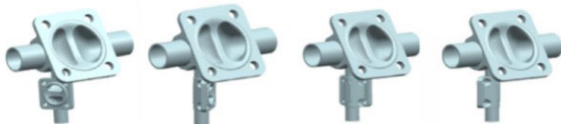
The combined diaphragm valve is welded together by the valve body of the straight diaphragm valve as required specifically by the customer. The different combination azimuth and angles are adopted to reduce the length of the dead angle pipe on the pipeline, but it shall conform to the requirements of $L/D \leq 3$ in principle.

Combination form

The main valve is installed horizontally and in self-exhaustion, and the right side of the branch valve is installed vertically



The main valve is installed horizontally and in self-exhaustion, and the left side of the branch valve is installed vertically.



The main valve is installed horizontally and upward, and the right (left) side of the branch valve is installed vertically.



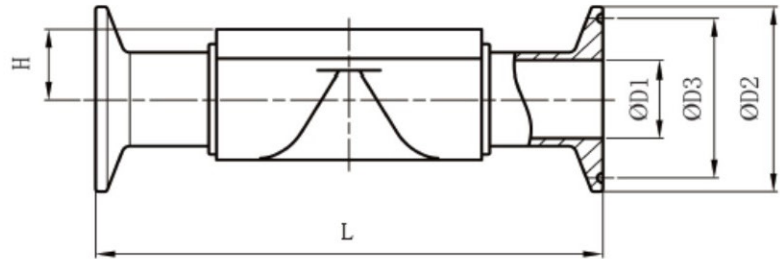
The main valve is installed horizontally and in self-exhaustion, and the left (right) side of the branch valve is installed horizontally and in self-exhaustion.



The main valve is installed vertically, and the upper (lower) part of the branch valve is installed horizontally and in self-exhaustion.

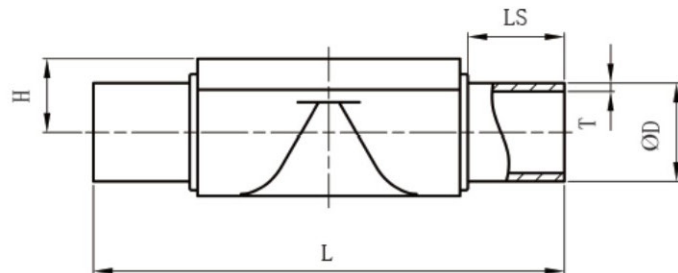


Aseptic Diaphragm Valves



Body dimensions - clamping (mm)

DN	NPS	L	H
DN20	3/4 "	127	12.5
DN25	1"	127	19
DN40	1½ "	159	26
DN50	2"	190	32
DN65	2½ "	216	40



Body dimensions - welding (mm)

DN	NPS	L	LS	H
DN20	3/4 "	108	25	12.5
DN25	1"	120	30	19
DN40	1½ "	153	30	26
DN50	2"	173	30	32
DN65	2½ "	173	36	40

UniBODY



Following the 3D standard, the UniBODY valve is a special structural form based on the GMP or SAP valve. It adopts an integrated valve body and seat, perfectly solving the problem of SAP welding valve residue and retention, greatly reducing dead corners, and no welding in the production area.

The UniBODY valve body has two valve seats and three pipe interfaces, which are processed from forged blanks/blocks and can be used for sampling, steam and condensation processes.

Advantages of UniBODY valves: Compact structure and light weight. 3D standard, vertically installed and self draining. No welding in the production area.

Encoding and coding rules for GMP/UniBODY diaphragm valves

Tag Number	1	2	3、4	5	6	7	8	9	10	11	12
Code	1	3	20	0	P	G	3	B	F	0	M
Property definition	Valve type	Control form	Caliber	Sampling caliber metric/mm	Caliber standard	Connection form	Sampling control form	Body material	Lack of mutual understanding	Other	Polishing

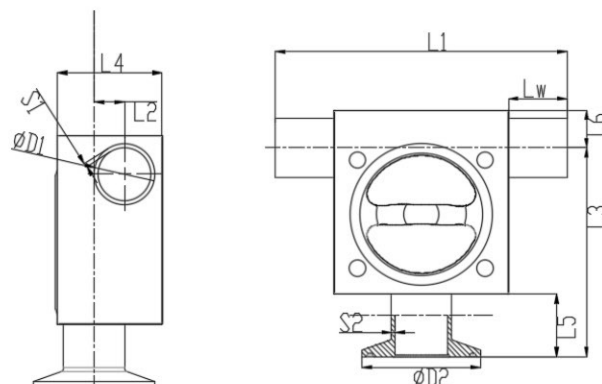
Aseptic Diaphragm Valves

Tag Number	Code	Valve type
1	G	GMP
	I	UniBODY
2	Code	Control form
	2	Metal handwheel
	7	Plastic handwheel
	3	Plastic pneumatic head normally closed
	5	Stainless steel pneumatic head normally closed
	4	Stainless steel pneumatic head normally open
	6	Plastic pneumatic head normally open
3、4	Code	Caliber
	20	20 3/4"
	25	25 1"
	32	32 1 1/4"
	40	40 1 1/2"
	50	50 2"
	65	65 2 1/2"
5	Code	Sampling caliber metric/mm
	B	10
	0	15
6	Code	Caliber standard
	P	ASME BPE
	I	ISO 2037
7	Code	Connection form
	G	Supervisor welding and sampling welding
	5	Supervisor card connection and sampling card connection
	3	Supervisor card connection and sampling welding
	2	Supervisor welding and sampling card connection
	A	Supervisor card welding and sampling welding
	B	Supervisor card welding and sampling card connection

Tag Number	Code	Sampling control form
8	3	Plastic handwheel
	5	Stainless steel pneumatic head normally closed
	4	Stainless steel pneumatic head normally open
9	Code	Body material
	B	A351 CF3M (Cast 316L)
	E	A182 F316L (Forged 316L)
	F	1.4404 (Forged 316L)
	G	1.4435 (Forged 316L)
10	Code	Lack of mutual understanding
	F	PTFE/EPDM two-piece
	O	PTFE/EPDM Monolithic
	D	EPDM
11	Code	Other
	0	Without attachments
	F	Main valve with position feedback
	Q	Main valve with limit
12	Code	Burnishing
	M	Mechanical polishing
	E	Electrolytic polishing
	O	Other

T-shaped diaphragm valve

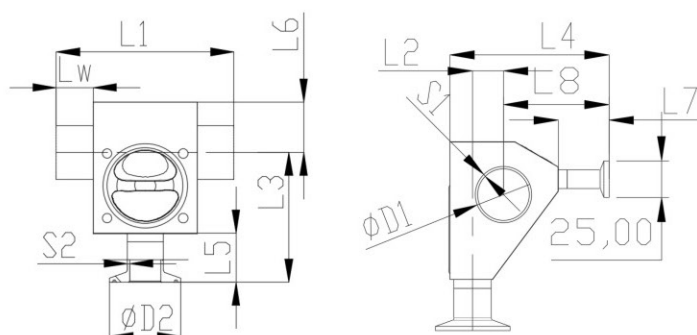
In the application of high clean ingredients or dispensing solutions, the retention area should be controlled to the maximum extent, and the zero dead corner T-type diaphragm valve is the best choice. The biggest feature of this valve is that it is made of a whole piece of stainless steel, with a compact structure, greatly reducing dead corners for sampling or water collection.



Size	Inch	L1	Lw	L2	L3	L4	L5	L6	ØD1	S1	ØD2	S2
DN20/15	0.75"/0.5"	82	25	7.7	77.5	29	34.5	12.4	19.1	1.65	25	1.65
DN20/20	0.75"/0.75"	100	25	6.5	76.6	30.5	34.5	14	19.1	1.65	25	1.65
DN25/15	1"/0.5"	82	25	9.5	69	34	34.5	15.2	25.4	1.65	25	1.65
DN25/20	1"/0.75"	101	25	11.7	81.2	39	34.5	15.8	25.4	1.65	25	1.65
DN25/25	1"/1"	124	25	10.8	96.8	44	34.5	16.1	25.4	1.65	50.4	1.65
DN40/15	1.5"/0.5"	82	25	17.6	75	49	34.5	23	38.1	1.65	25	1.65
DN40/20	1.5"/0.75"	101	25	18.8	89.6	53	34.5	22	38.1	1.65	25	1.65
DN40/25	1.5"/1"	124	25	21	92.5	59	34.5	22.5	38.1	1.65	50.4	1.65
DN40/40	1.5"/1.5"	150	25	14.5	107.5	62	34.5	22.5	38.1	1.65	50.4	1.65
DN50/15	2"/0.5"	92	30	21	79.5	58	34.5	29.5	50.8	1.65	25	1.65
DN50/20	2"/0.75"	111	30	22.5	97	62.5	34.5	29	50.8	1.65	25	1.65
DN50/25	2"/1"	134	30	27	99.5	72	34.5	29.5	50.8	1.65	50.4	1.65
DN50/40	2"/1.5"	160	30	21.7	114.5	75.5	34.5	28	50.8	1.65	50.4	1.65
DN65/15	2.5"/0.5"	92	30	16	83	71	34.5	46.6	63.5	1.65	25	1.65
DN65/20	2.5"/0.75"	111	30	22.8	105	73	34.5	47	63.5	1.65	25	1.65
DN65/25	2.5"/1"	134	30	30.6	106	82	34.5	36.5	63.5	1.65	50.4	1.65
DN65/40	2.5"/1.5"	160	30	28	121.5	89	34.5	35	63.5	1.65	50.4	1.65
DN65/50	2.5"/2"	179	30	25	160	91.5	34.5	35	63.5	1.65	63.9	1.65
DN80/15	3"/0.5"	92	30	34	85	85	34.5	43	76.2	1.65	25	1.65
DN80/20	3"/0.75"	111	30	30	112.5	83	34.5	44	76.2	1.65	25	1.65
DN80/25	3"/1"	134	30	26.5	126	83.5	34.5	46.5	76.2	1.65	50.4	1.65
DN80/40	3"/1.5"	160	30	26.5	138	93	34.5	42	76.2	1.65	50.4	1.65
DN80/50	3"/2"	179	30	20	159	94	34.5	42	76.2	1.65	63.9	1.65
DN80/65	3"/2.5"	179	30	18.5	154	97	34.5	42	76.2	1.65	77.5	1.65

T-shaped diaphragm valve+back diaphragm valve sampling

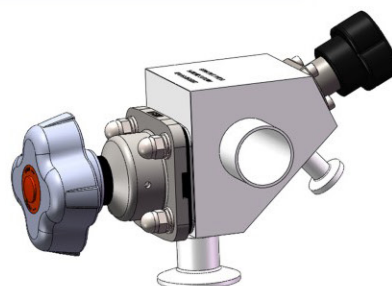
We do not recommend that when the T-type diaphragm valve combines sampling, by welding the small size two-way diaphragm valve, because this inevitably produces liquid storage. SingTao Launch the integrated forging T diaphragm valve with diaphragm valve to achieve sampling function, greatly solve the problem of welding two-way diaphragm valve liquid storage, to achieve a real zero liquid storage.



Size	Inch	L1	Lw	L2	L3	L4	L5	L6	L7	L8	ØD1	S1	ØD2	S2
DN25/20/15	1"/0.75"/0.5"	101	25	12.5	77.5	91.5	34.5	28	34.5	67.5	25.4	1.65	25	1.65
DN40/20/15	1.5"/0.75"/0.5"	101	25	19.5	89.6	103.5	34.5	33.9	34.5	72.5	38.1	1.65	25	1.65
DN40/25/15	1.5"/1"/0.5"	124	25	21	92	114	34.5	36	34.5	71.6	38.1	1.65	50.4	1.65
DN50/20/15	2"/0.75"/0.5"	111	30	22.3	97	118	34.5	36.5	34.5	84.5	50.8	1.65	25	1.65
DN50/25/15	2"/1"/0.5"	134	30	26.8	99	121	34.5	38	34.5	78.8	50.8	1.65	50.4	1.65
DN50/40/15	2"/1.5"/0.5"	160	30	21.7	114.5	124.5	34.5	39	34.5	77.8	50.8	1.65	50.4	1.65
DN65/20/15	2.5"/0.75"/0.5"	111	30	26.5	104.8	122	34.5	42.3	34.5	83.8	63.5	1.65	25	1.65
DN65/25/15	2.5"/1"/0.5"	134	30	31.8	105.6	130.5	34.5	43	34.5	83.5	63.5	1.65	50.4	1.65
DN65/40/15	2.5"/1.5"/0.5"	160	30	30	120	138	34.5	42.5	34.5	83.5	63.5	1.65	50.4	1.65
DN65/50/15	2.5"/2"/0.5"	179	30	24	130.5	139.5	34.5	42.8	34.5	83	63.5	1.65	63.9	1.65
DN80/20/15	3"/0.75"/0.5"	111	30	30.5	104.5	123.5	34.5	53	34.5	80.9	76.2	1.65	25	1.65
DN80/25/15	3"/1"/0.5"	134	30	33	115	130	34.5	53	34.5	80.9	76.2	1.65	50.4	1.65
DN80/40/15	3"/1.5"/0.5"	160	30	33	130.6	139	34.5	53	34.5	80.9	76.2	1.65	50.4	1.65
DN80/50/15	3"/2"/0.5"	179	30	29.8	141	142	34.5	53	34.5	80.9	76.2	1.65	63.9	1.65
DN80/65/15	3"/2.5"/0.5"	179	30	23.5	141	142	34.5	53	34.5	80.9	76.2	1.65	77.5	1.65

T-shaped diaphragm valve+plunger valve sampling

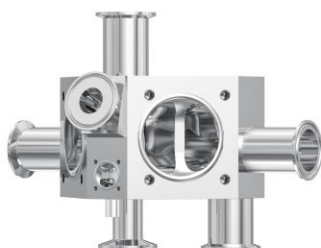
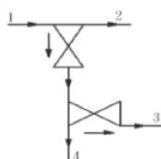
SingTao® innovatively integrates sanitary sampling valves into T-valves, truly achieving and no liquid storage after sampling, no dead corners, no residue before sampling.



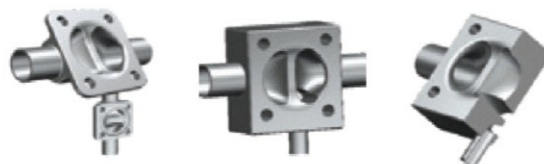
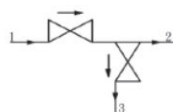
Aseptic Diaphragm Valves



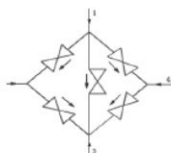
T-valve with sterilization port



Integrated GMP valve



Multichannel valve



Body dimensions - clamping (mm)	
Item	Data
Working pressure	0-10bar, 145psi (EPDM+PTFE)
Working temperature	-10°C-150°C, SIP max150°C
Drive mode	Manual/pneumatic
Valve body material	1.4404(316L), forging block
Surface treatment	Outer surface sandblasting, inner surface $Ra \leq 0.375\mu m$ (Sf4)
Connection mode	Welding ASME BPE, 3A

Customized diaphragm valve coding and coding rules

(Diaphragm tank bottom valve with sampling, diaphragm tank bottom valve with disinfection, T-valve, T-valve with diaphragm sampling, T-valve with plunger sampling, multi-channel valve)

Tag Number	1	2	3、4	5	6	7	8	9	10	11	12	13	14
Code	Q	3	20	0	0	P	A	3	7	E	F	Z	E
Property definition	Valve type	Main valve control form	Caliber	Auxiliary pipe diameter	Auxiliary valve control form	Standard category	Connection form	Sampling caliber	Sampling control form	Material	Diaphragm material	Other	Polishing

Tag Number	Code	valve type
1	M	Multi-channel
	T	T-shaped valve
	U	T-shaped valve with sampling
	Z	T-shaped valve with plunger sampling
	Q	Tank bottom valve with sampling
	R	Tank bottom valve with disinfection
2	Code	Main valve control form
	2	Metal handwheel
	7	Plastic handwheel
	3	Plastic pneumatic head normally closed
	5	Stainless steel pneumatic head normally closed
	4	Stainless steel pneumatic head normally open
	6	Plastic pneumatic head normally open

Tag Number	Code	Caliber
3、4	20	20
	25	25
	32	32
	40	40
	50	50
	65	65
	80	80
5	1A	100
	Code	Auxiliary pipe diameter
	0	Without
	C	15
	D	20
	E	25
	F	32
	G	40
	H	50
	I	65
	J	80
	O	Without
	C	15
	D	20
	E	25
	F	32
	G	40
	H	50

Aseptic Diaphragm Valves

Tag Number	Code	Auxiliary pipe diameter
5	I	65
	J	80
6	Code	Auxiliary valve control form
	0	Without
	2	Metal handwheel
	7	Plastic handwheel
	3	Plastic pneumatic head normally closed
	5	Stainless steel pneumatic head normally closed
	4	Stainless steel pneumatic head normally open
	6	Plastic pneumatic head normally open
7	Code	Standard category
	P	ASME BPE
	I	ISO 2037
8	Code	Connection form
	2	Tank bottom valve body, interface welding
	1	Tank bottom valve body, interface card connection
	3	Tank bottom valve body, outlet clamp, sampling welding
	A	T-shaped main/auxiliary pipe welding
	B	T-shaped main/auxiliary pipe clamp
	C	T-shaped main pipe clamp, secondary pipe welding
	D	T-shaped main pipe welding, secondary pipe clamping
	4	T-shaped+sampling main/secondary pipe welding sampling welding
	5	T-shaped+sampling main/secondary pipe clamp sampling clamp
	6	T-shaped+sampling main/secondary pipe clamping sampling welding
	7	T-shaped+sampling main/secondary pipe welding sampling clamp connection
	8	T-shaped+sampling main pipe welding, secondary pipe clamping, sampling clamping
	9	T-shaped+sampling main pipe welding, secondary pipe clamping, sampling welding
	E	Multi channel card connection

Tag Number	Code	Sampling caliber
9	0	Without
	2	DN10
	3	DN15
10	Code	Sampling control form
	0	Without
	7	Plastic handwheel
	5	Stainless steel pneumatic head normally closed
	4	Stainless steel pneumatic head normally open
11	Code	Material
	E	A182 F316L (Forged 316L)
	F	1.4404 (Forged 316L)
	G	1.4435 (Forged 316L)
12	Code	Diaphragm material
	F	PTFE/EPDM Two-piece
	O	PTFE/EPDM Monolithic
	D	EPDM
13	Code	Other
	Z	Without attachments
	P	With locator
	A	ST F1 FPos with position feedback device
	L	With limiters
14	Code	Burnishing
	M	Mechanical polishing
	E	Electrolytic polishing
	O	Other

**SingTao® diaphragm valve can be used directly
with the following accessories**

Feedback device in
electronic position



Intelligent locator



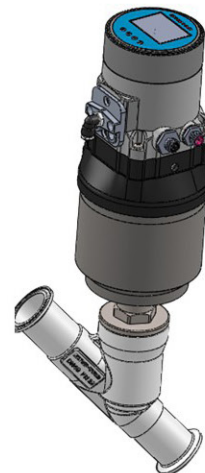
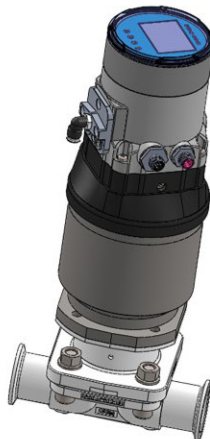
Solenoid valve



Air supply

Positioner, position feedback device

- SingTao® intelligent adjustment locator is a microprocessor based valve opening adjustment.
- The valve opening is set through input signals and advanced algorithms and PWM control technology can be used to quickly and accurately adjust the opening, thereby controlling the flow rate of the medium in the pipeline.
- Simultaneously configuring a signal feedback interface, which can provide real-time feedback on the valve opening situation to the terminal control room.
- Can be used in combination with diaphragm valves and angle seat valves.



ST F1 FPos contact type position feedback device



ST F1 FPos is a contact type position feedback device used for position signal feedback of straight stroke pneumatic valves. It has visual light indication and electrical signal feedback. Through optional mode wiring, the opening and closing signals of the valve can be remotely fed back to the terminal control room or PLC.

ST F1 FPos can be used in conjunction with SingTao® diaphragm valves and angle seat valve series valves.

Operating ambient temperature: -10°C - 80°C	Electrical parameters: 24V/DC, single circuit current Max: 400mA
Degree of protection: 1P66	Multi-mode: 1.Three-wire double feedback (light on) 2. Four-wire double feedback (light on)
Visual: Green light indicates valve closing, red light indicates valve opening	

ST F2 FPos Intelligent Inductive Position Feedback Device



ST F2 FPos is an intelligent induction position feedback device used for position signal feedback of straight stroke pneumatic valves. It has visual light indication and electrical signal feedback. Through standard cable joints, the opening and closing signals of the valve are remotely fed back to the terminal control room or PLC.

ST F2 FPos can be used in conjunction with SingTao® diaphragm valves and angle seat valve series valves.

Visual inspection: Green light on (valve open), yellow light on (valve closed), red light on (fault)
Switch type: Electronic position sensing
Connection form: Cable sealing joint
Features: Easier connection, simple debugging and setting, compared to contact type, more shock-absorbing and shock-absorbing, with low failure rate

PLUNGER TANK BOTTOM VALVES

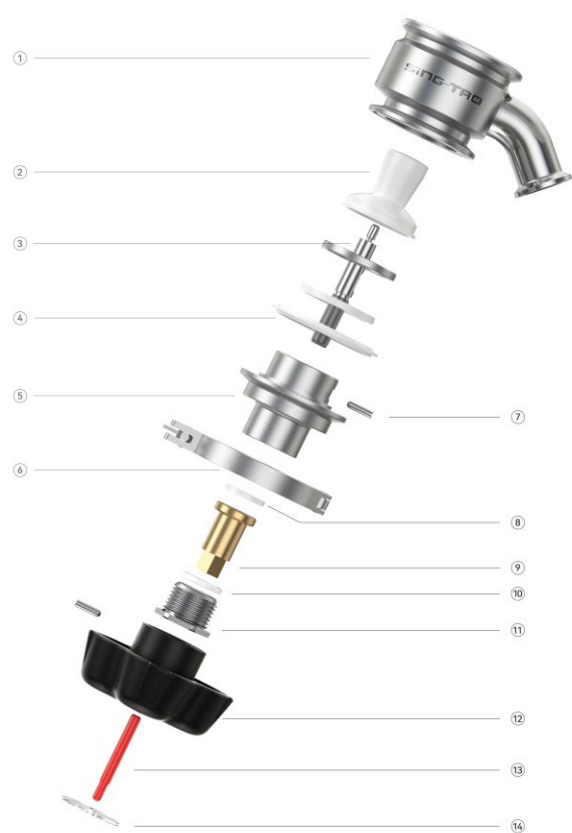


Sanitary tank bottom valve is installed at the bottom of the container, without dead angle and automatic emptying, which is widely used in fermentation tank, batching tank, cleaning tank and other tank equipment, solving the phenomenon that the crystal and solid sediment are blocked and cannot be completely stirred evenly due to too long straight discharge pipe.

Features: With compact structure, it can ensure installation in a small space. It is without dead angle and can be automatically emptied. The valve body is finished by one piece of material. It can meet SIP or CIP and can be sterilized at high temperature, and the internal surface of the body with roughness up to $Ra \leq 0.38 \mu m$. It is designed as a finite element simulation, with large flow and no turbulence. It is easy for welding design and reduces the welding difficulty of tank bottom. The welding diameter is small, which can meet the narrow welding space of the small tank.

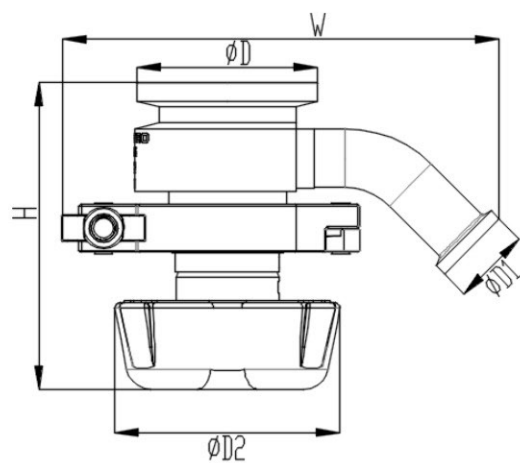
Dimension range: (Outlet) DN20 - DN65 (3/4" - 2½")	Body material: 316L
Working temperature: -10°C - 150°C	Interface form: Clamp
Pressure rating: 10bar	Standard: ASME BPE and 3A
Drive mode: Manual and pneumatic	

Plunger Tank Bottom Valves



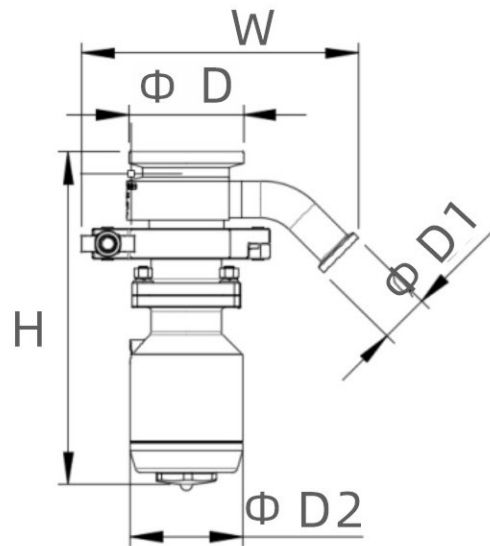
No.	Description	Material (EN)
1	Valve body	A182 F316L
2	Valve clack	PTFE
3	Valve stem	A182 F304/F316L
4	Gasket	PTFE
5	Valve cover	A276 304/316L
6	Clamps	A276 304
7	Anti-rotation screws	A193 B8
8	Anti-friction pads	PTFE
9	Valve rod nut	T3
10	Anti-friction pads	PTFE
11	Nut gland	A276 304/316L
12	Handwheel	NYLON
13	Indicator rod	NYLON
14	Handwheel cover plate	PMMA

External Dimensional Drawing



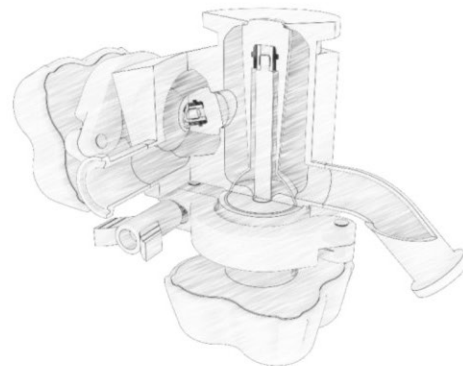
Size	Inch	ΦD	ΦD1	ΦD2	W	H
DN20	3/4	58	25	88	140	99
DN25	1	73	50.4	88	163	115
DN40	1	86	50.4	108	203	136
DN50	2	108	63.9	108	209	150
DN65	2	122	77.5	108	243	168

Plunger Tank Bottom Valves



Size	Inch	ΦD	$\Phi D1$	$\Phi D2$	W	H
DN20	3/4	58	25	57.5	140	168
DN25	1	73	50.4	89	163	197
DN40	1	86	50.4	138	203	274
DN50	2	108	63.9	138	209	293
DN65	2	122	77.5	138	243	302

SingTao® plunger type tank bottom valve, can customize CIP/SIP solutions according to customer needs



Plunger Tank Bottom Valves

Encoding and coding rules for Plunger Tank bottom valves

Tag Number	1	2	3、4	5	6	7	8	9	10	11
Code	P	2	20	A	P	S	E	F	0	M
Property definition	Valve type	Control form	Caliber	Product flow channel	Caliber standard	Connection form	Body material	Sealing material	Other	Polishing

Tag Number	Code	Valve type	
1	P	Plunger tank bottom valve	
2	Code	Control form	
	1	Plastic handwheel	
3、4	2	Stainless steel pneumatic head normally closed	
	Code	Caliber	
	20	20	3/4"
	25	25	1"
	40	40	1½ "
5	50	50	2"
	65	65	2½ "
	Code	Main valve control form	
6	A	Single port	
	B	With disinfection	
6	Code	Caliber standard	
	P	ASME BPE	
	I	ISO 2037	

Tag Number	Code	Connection form
7	S	Chuck
8	Code	Body material
	E	A182 F316L (Forged 316L)
9	D	A182 F304 (Forged 304)
	Code	Sealing material
10	F	PTFE
	Code	Other
	0	Without attachments
	F	Main valve with position feedback
11	Q	Main valve with limit
	Code	Burnishing
	M	Mechanical polishing
	E	Electrolytic polishing
11	O	Other

SAMPLING VALVES



Three-way sampling valve



Two-way sampling valve

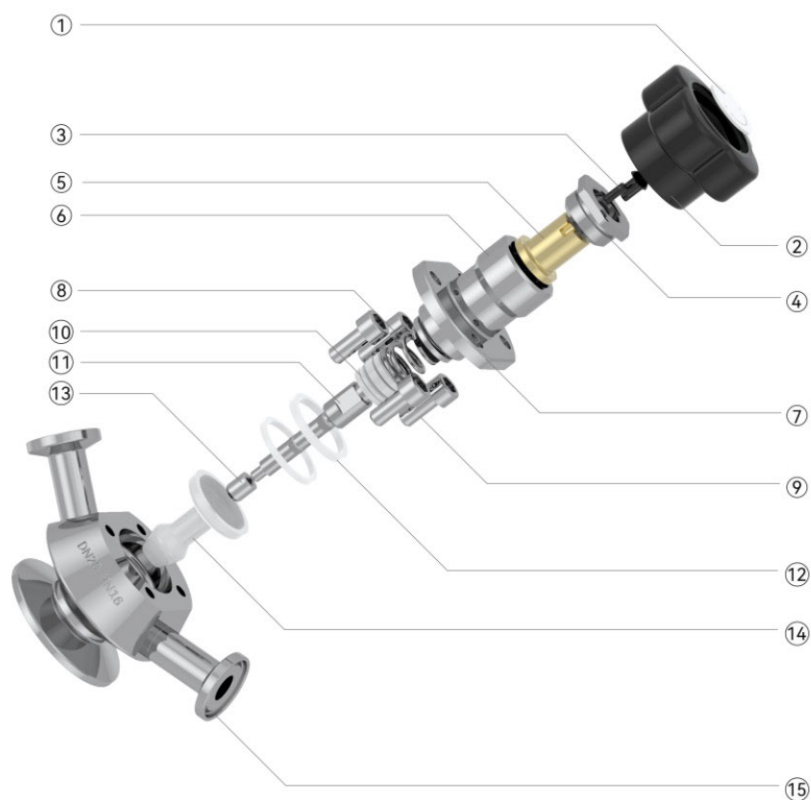
Sterile sampling valves with fully zero dead angle can achieve a disassembled CIP and SIP before and after each sampling, which is applied to biomedicine and other industries.

No dead angles and thorough sterilization. Materials are sealed directly by the diaphragm. Secondary pollution can be eliminated, and it is applicable to both bulk sampling and micro-sampling. Steam can be used for in situ disinfection. The sample is typical with good repeatability.

Completely drained for side mounting. Internal structure with no dead area and no residue design. Compact design and easy operation. Resistant to high temperature and autoclaved sterilization. Applicable to CIP and SIP.

Sampling range: DN15 (1/2")	Seat material: PTFE
Dimension range: (Outlet) DN20 - DN25 (3/4" - 1")	Body material: F316L/1.4404/1.4435
Working temperature: -10°C - 150°C	Interface form: Elbow pipe, clamp and adapter
Pressure rating: 10bar	Standard: ASME BPE and 3A
Drive mode: Manual	

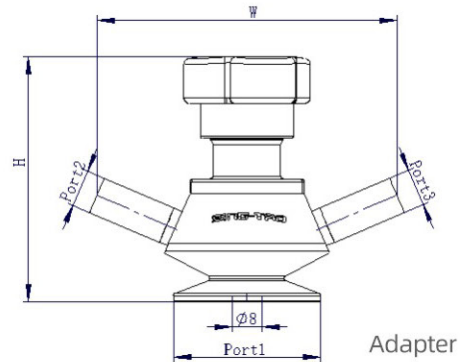
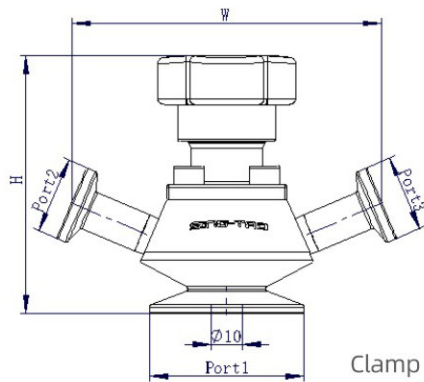
Sampling Valves



No.	Description	Material (EN)
1	Nameplate	Si
2	Handwheel	Nylon
3	Screw	A193 B8/8M
4	Stem nut pressure sleeve	304/316L
5	Stem nut	304/316L
6	Valve cover	304/316L
7	Pressure sleeve	304/316L
8	Spring	304
9	Bolt	A193 B8
10	Gland packing	PTFE
11	Valve rod	304/316L
12	Sealing ring	PTFE
13	Locknut	A194 8/8M
14	Valve clack	PTFE
15	Valve body	F316L/1.4404

Outline dimension diagram

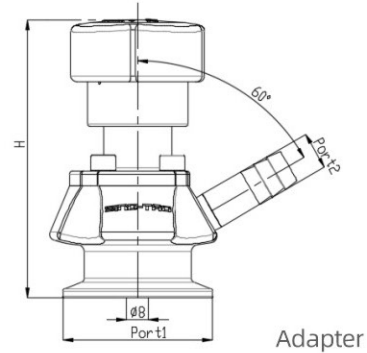
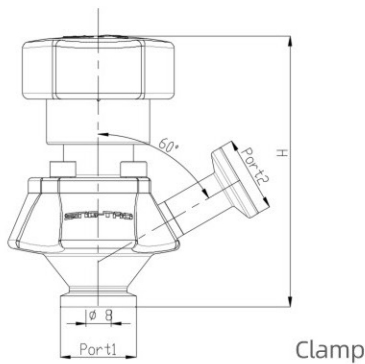
Three-way sampling valve



ASME BPE					
Dimension	H	W	Port1	Port2	Port3
DN20/15	90	80	25	25	25
DN25/15	90	80	50.4	25	25

ASME BPE					
Dimension	H	W	PORT1	Port2	Port3
DN20/15	90	80	25	12.7x1.65	12.7x1.65
DN25/15	90	80	50.4	12.7x1.65	12.7x1.65

Two-way sampling valve



ASME BPE			
Dimension	H	Port1	Port2
DN20/15	90	25	25
DN25/15	90	50.4	25

ASME BPE			
Dimension	H	Port1	Port2
DN20/15	90	25	12.7x1.65
DN25/15	90	50.4	12.7x1.65

Sampling Valves

Code and coding rules for sterile sampling valves

Tag Number	1	2	3、4	5	6	7	8	9	10
Code	S	1	25	A	P	S	E	F	M
Property definition	Valve type	Control form	Caliber	Product flow channel	Caliber standard	Export form	Body material	Sealing material	Polishing

Tag Number	Code	Valve type	
1	S	Sampling valve	
2	Code	Control form	
	1	Plastic handwheel	
	2	Metal pull rod	
3、4	Code	Caliber	
	20	20/15	3/4"
	25	25/15	1"
5	Code	Product flow channel	
	A	Single port	
	B	Double mouth	
6	Code	Caliber standard	
	P	ASME BPE	
	I	ISO 2037	

Tag Number	Code	Export form
7	S	Chuck
	W	Pagoda
	E	Elbow
8	Code	Body material
	E	A182 F316L (Forged 316L)
	F	Forging 1.4404
9	Code	Sealing material
	F	PTFE
10	Code	Burnishing
	M	Mechanical polishing
	E	Electrolytic polishing
	O	Other

DRAIN VALVES

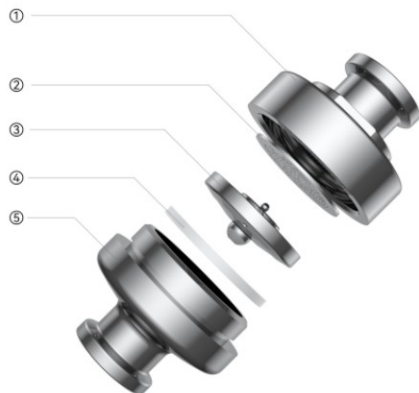
Thermostatic drain valve



Advantages and features:

The corrosion and bacterial growth can be prevented due to internal design of drain valve. All parts are made of stainless steel. The X-element discharges unsaturated steam and rapidly discharges cold air and condensed water. The saturated steam is quicker to enter into the heat exchange equipment, shortening the boot time. The products meet the requirements of sanitary level. It can be used in small reaction still, sterilizer and branch pipe of clean steam system. The condensation water runs through freely, realizing the seamless and no dead angle design in the real sense, which can inhibit bacterial assembly to the maximum extent. It can be ensured that there is no condensate accumulation in the steam space due to the feature of "fault normally open". The valve seat aperture is designed as large opening, which can quickly discharge a large number of air, ensure quick start, prevent clogging and ensure continuous operation. With compact structure, convenient installation and reduction in maintenance costs. Internal electrochemical polishing to $Ra \leq 0.4 \mu m$ effectively prevent the breeding of bacteria.

Cylindrical thermostatic drain valve



*X- element undercooling degree within 15°C. The X- element with undercooling degree within 5°C can also be provided requirements of customers' field conditions.

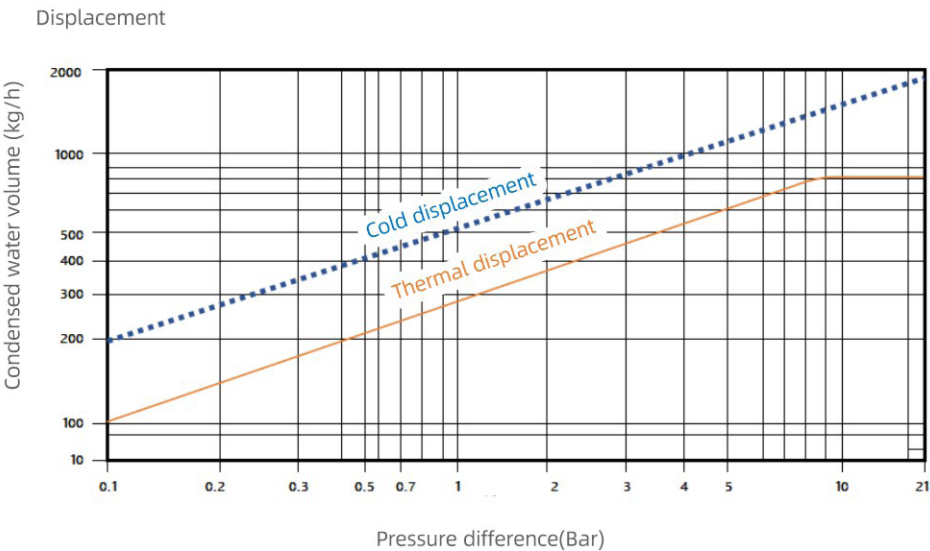
*Surface treatment: Inner surface finish polishing to $Ra \leq 0.6\mu m$ and electrolytic polishing to $Ra \leq 0.4\mu m$.

S/N	Name	Materials
1	Upper valve body	316L
2	Filter screen	316L
3	X-element	316L
4	Sealing gasket	316L
5	Lower valve body	316L

Dimension range: DN15-DN25 (1/2" - 1")	Body material: 316L
Working temperature: 0°C - 200°C	Interface form: Clamp/NPT
Pressure rating: 16bar	Standard: ASME BPE and 3A

Displacement curve

1. Pressure difference refers to the pressure difference between the inlet and outlet of the drain valve.
2. Recommended safety factor: ≥ 2 .



Butterfly thermostatic drain valve



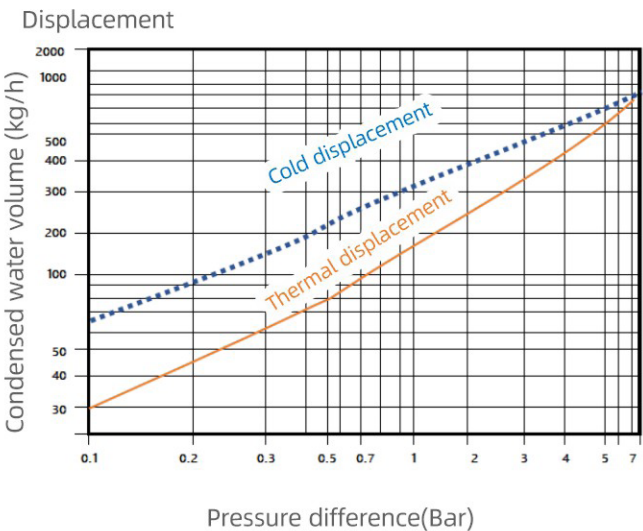
* Body washer fittings (e.g.,O-rings) conform to licensed materials listed in FDA21CFR177.1550 and meet USPVI Class (Non-toxicity).

S/N	Name	Materials
1	Nut	316L
2	Upper valve body	316L
3	Filter screen	316L
4	Body washer	Fluorine rubber
5	X-element	316L
6	Lower valve body	316L
7	Nut	316L

Dimension range: DN15-DN25 (1/2" - 1")	Body material: 316L
Working temperature: 0°C - 150°C	Interface form: Clamp
Pressure rating: 7bar	Standard: ASME BPE and 3A

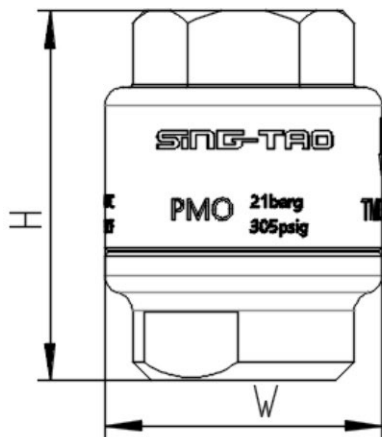
Displacement curve

- 1. Pressure difference refers to the pressure difference between the inlet and outlet of the drain valve.
- 2. Recommended safety factor: ≥ 2.



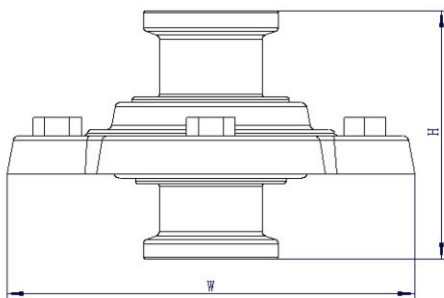
Drain Valves

External Dimensional Drawing



Cylindrical thermostatic drain valve

Size	Clamp		NPT	
	H	H	H	W
DN15	70	45	60	45
DN20	84	45	60	45
DN25	100	50.4	72	45



Butterfly thermostatic drain valve

Clamp		
Size	H	W
DN15	49	75
DN20	49	75
DN25	53	75

Model	NPT Screw thread and clamp
Caliber:	1/2", 3/4", 1" (ASME BPE)
Maximum allowable pressure: PMA	0.7Mpa
Maximum working pressure under saturated steam: PMO	0.7Mpa
Minimum working pressure:	0.1Mpa
Maximum allowable temperature: TMA	170°C
Maximum working temperature: TMO	180°C
Minimum working temperature	0°C

Encoding and coding rules for drain valves

Tag Number	1	2	3、4	5	6	7	8
Code	H	S	15	P	S	E	M
Property definition	Valve type	Supercooling degree of liquid sacs	Caliber	Caliber standard	Connection form	Body material	Polishing

Tag Number	Code	Valve type
1	H	Thermostatic steam trap
	J	Disc drain valve
	L	Lever float drain valve
2	Code	Supercooling degree of liquid sacs
	S	STD 5°C
	H	HIGH 20°C
	L	LOW 3°C
3、4	Code	Caliber
	15	15 1/2"
	20	20 3/4"
	25	25 1"
5	Code	Caliber standard
	P	ASME BPE
	N	NPT

Tag Number	Code	Connection form
6	S	Chuck
	N	NPT thread
7	Code	Body material
	D	A182 F304 (Forged 304)
	E	A182 F316L (Forged 316L)
	W	WCB
8	Code	Burnishing
	M	Mechanical polishing
	E	Electrolytic polishing
	O	Other

SANITARY BALL VALVES

Two-way Ball valve

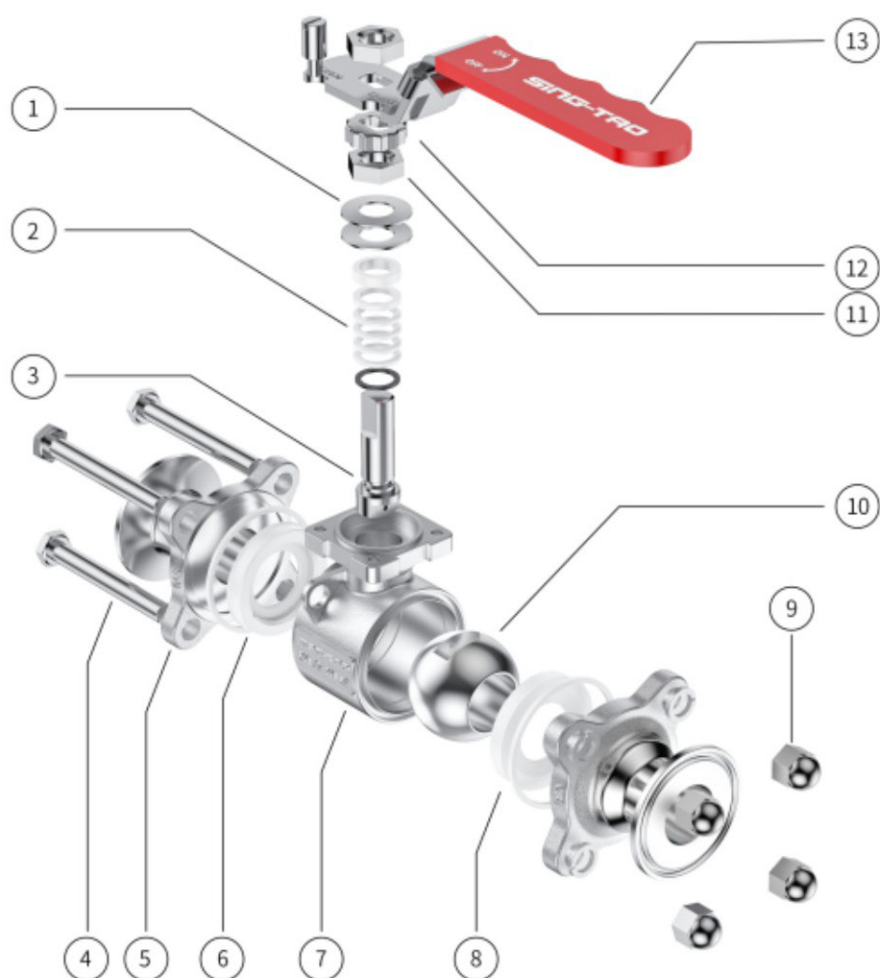


Application: Designed according to 3A and ASME BPE standards, it is used in food and beverage, wine making, biopharmaceutical and other fields.

Features: Ball valve is popular because of its small fluid resistance, quick and convenient opening and closing, small dimension, good sealing, long service life, high safety and reliability, and ball passing and wire sweeping.

Dimension range: DN15-DN100(1/2" - 4")	Seat material: PTFE/TFM
Working temperature: PTFE -10℃ - 150℃	Seat structure: Full-covered/half-covered
Pressure rating: 16bar	Body material: 304/316L
Driving mode: Manual/pneumatic	Interface form: Welding and clamping
Automatic control unit: Feedback device and locator	Standard: ASME BPE and 3A

- Steady engineering design
- Long service life and long warranty period



No.	Description	Material (EN)
1	Belleville spring	InconelX-750
2	Filler	PTFE
3	Valve stem	A182F304/F316L
4	Hexagonal head bolts	A193B8/B8M
5	Valve cover	A351CF8/CF3M
6	Sealing gasket	PTFE
7	Valve body	A351CF8/CF3M

No.	Description	Material (EN)
8	Seat	PTFE
9	Cap nut	A1948/8M
10	Sphere	A182F304/F316L
11	Hexagon nut	A1948/8M
12	Retaining washer	SS304/316L
13	Handle	SS304+PE

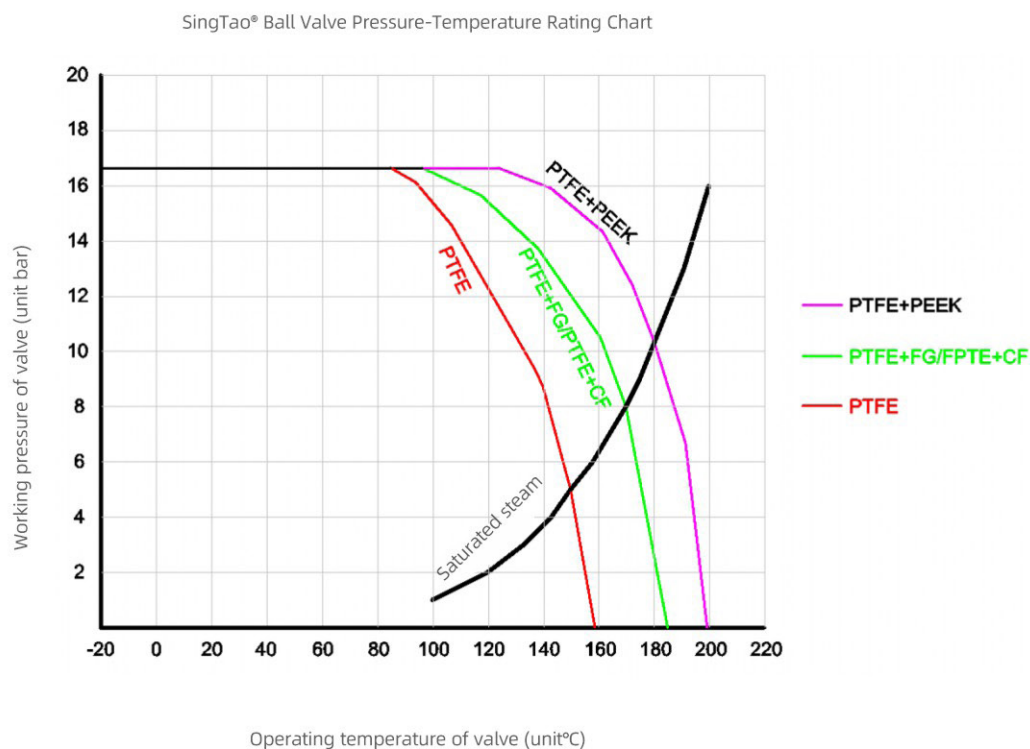
Rated Pressure-temperature Values

The main seal of ball valve is seat, and the performance of seat is one of the main factors that determine the service life of the valve.

The seat materials of SingTao® Ball Valve are TFM and PTFE.

Seat pressure-temperature rating is the maximum allowable working pressure expressed by gauge pressure at the specified temperature. When the temperature rises, the maximum allowable working pressure decreases.

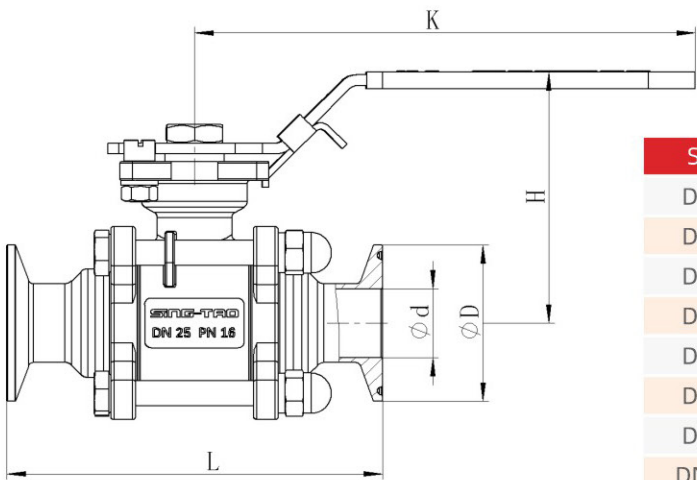
When selecting the type, the appropriate seat material should be determined according to the operating temperature and working pressure of the valve with reference to the pressure-temperature chart.



Notes:

- ① It can be used for SIP (steam) with a temperature of 150°C, which is limited to PTFE sealing material and the valve is fully open.
- ② When welding ball valve is selected, please disassemble it before welding.

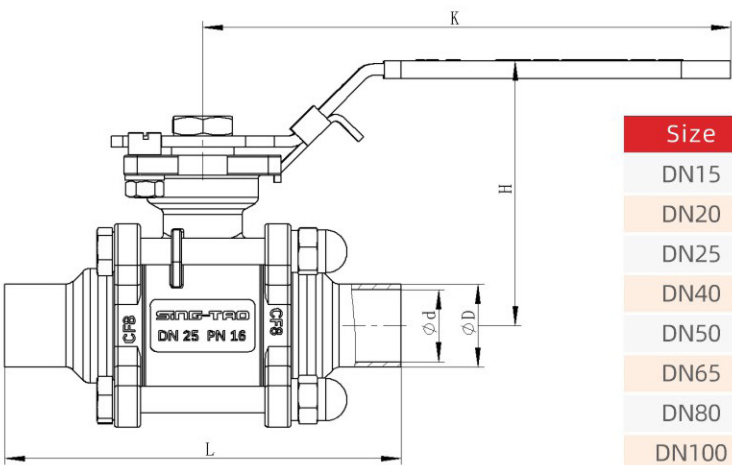
Manual clamping straight-through ball valve



Size	d	D	L	K	H
DN15	9.4	25	90	135	65
DN20	15.8	25	101	135	69
DN25	22.1	50.4	121	155	86
DN40	34.8	50.4	160	185	110
DN50	47.5	63.9	165	185	120
DN65	60.2	77.4	200	230	152
DN80	72.9	90.9	230	345	162
DN100	97.4	119	255	382	183

Dimension table of manual chuck straight-through ball valve

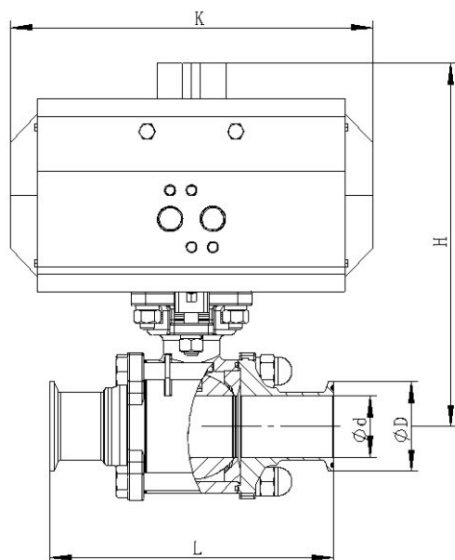
Manual welded straight-through ball valve



Size	d	D	L	K	H
DN15	9.4	12.7	90	135	65
DN20	15.8	19.05	101	135	69
DN25	22.1	25.4	121	155	86
DN40	34.8	38.1	160	185	110
DN50	47.5	50.8	165	185	120
DN65	60.2	63.5	200	230	152
DN80	72.9	76.2	230	345	162
DN100	97.4	101.6	255	382	183

Dimension table of manual welded straight-through ball valve

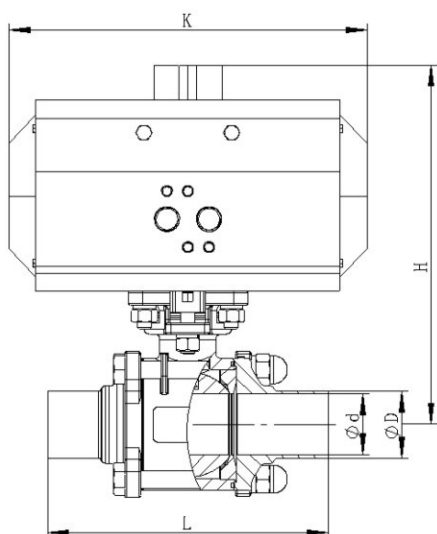
Pneumatic clamping straight-through ball valve



Size	d	D	L	K	H
DN15	9.4	25	90	140	138
DN20	15.8	25	101	158	156
DN25	22.1	50.4	121	158	165
DN40	34.8	50.4	160	248	223
DN50	47.5	63.9	165	268	247
DN65	60.2	77.4	200	268	296
DN80	72.9	90.9	230	315	307
DN100	97.4	119	255	345	341

Dimension table of pneumatic chuck straight-through ball valve

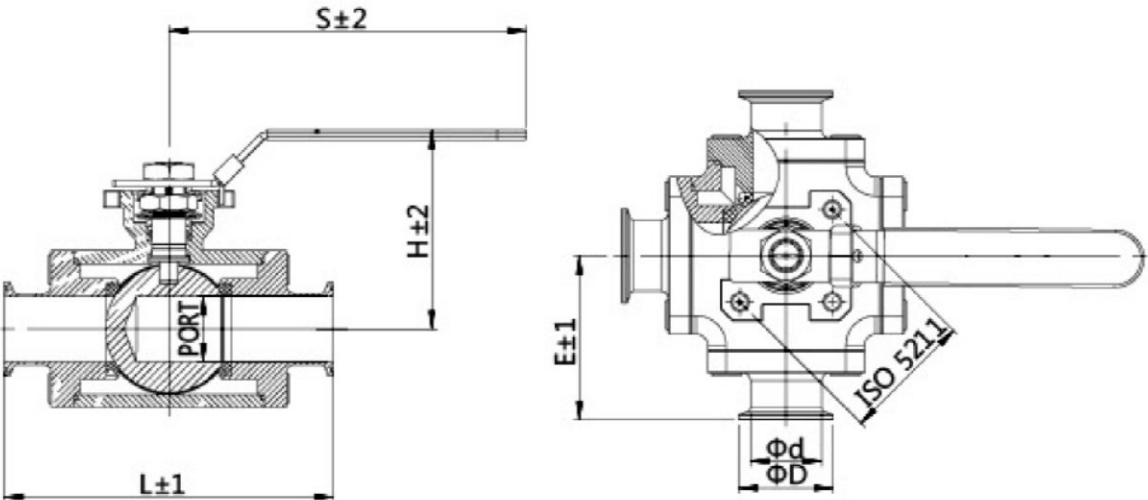
Pneumatic straight-through ball valve



Size	d	D	L	K	H
DN15	9.4	12.7	90	145	138
DN20	15.8	19.05	101	145	156
DN25	22.1	25.4	121	160	165
DN40	34.8	38.1	160	185	223
DN50	47.5	50.8	165	185	247
DN65	60.2	63.5	200	230	296
DN80	72.9	76.2	230	345	307
DN100	97.4	101.6	255	382	341

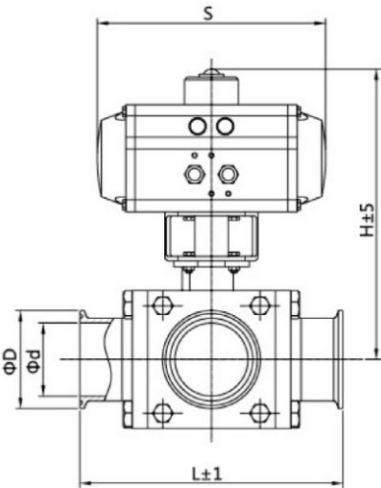
Dimension table of pneumatic straight-through ball valve

3-way ball valve



Dimension table of manual clamping three-way ball valve

Size	PORT	d	D	L	E	H	S
DN15	9.4	12.7	25	110	74	89	187
DN20	15.8	19.05	25	110	78	98	218
DN25	22.1	25.4	50.4	130	84	102	218
DN40	34.8	38.1	50.4	175	110	127	135
DN50	47.5	50.8	63.9	220	122	139	252
DN65	60.2	63.5	77.4	240	135	166	252
DN80	72.9	76.2	90.9	290	146	170	252
DN100	97.4	101.6	119	330	164	193	600



Size	d	D	L	H	S
DN15	9.4	25	110	89	187
DN20	15.8	25	110	98	218
DN25	22.1	50.4	130	102	218
DN40	34.8	50.4	175	127	135
DN50	47.5	63.9	220	139	252
DN65	60.2	77.4	240	166	252
DN80	72.9	90.9	290	170	252
DN100	97.4	119	330	193	600

Sanitary Ball Valves

Code and code rules for ball valves

Tag Number	1	2	3、4	5	6	7	8	9	10	11	12
Code	B	6	20	P	P	S	1	A	F	C	E
Property definition	Valve type	Control form	Caliber	Runner	Caliber standard	Connection form	Structural style	Body material	Seat material	Other	Polishing

Tag Number	Code	Valve type
1	B	Ball valve
2	Code	Control form
	1	Handle
	6	Single acting (Horizontal 90 ° rotation) without accessories
	7	Single acting (Horizontal 90 ° rotation) with position feedback
	8	Double acting (Horizontal 90 ° rotation) without accessories
	9	Single acting (Horizontal 90 ° rotation) with solenoid valve
	A	Dual action (Horizontal 90 ° rotation) with position feedback
	B	Double acting (Horizontal 90 ° rotation) with solenoid valve
3、4	Code	Caliber
	15	15 1/2"
	20	20 3/4"
	25	25 1"
	32	32 1 1/4"
	40	40 1 1/2 "
	50	50 2"
	65	65 2 1/2 "
	80	80 3"
	1A	100 4"

Tag Number	Code	Runner
5	P	Full bore
	R	Reduced diameter
6	Code	Caliber standard
	P	ASME BPE
	I	ISO 2037
7	Code	Connection form
	S	Tri-Clamp
	W	Weld
	7	Tri&Weld
8	Code	Structural style
	1	Through type
	L	Three way L-shaped
	T	Three way T-shaped

Tag Number	Code	Body material
9	A	A351 CF8 (Cast 304)
	B	A351 CF3M (Cast 316L)
	D	A182 F304 (Forged 304)
	E	A182 F316L (Forged 316L)
10	Code	Seat material
	F	PTFE
	M	TFM
11	R	RPTFE
	Code	Other
	Z	Manual
	C	Pneumatic normally closed
12	O	Pneumatic normally open
	Code	Burnishing
	M	Mechanical polishing
	E	Electrolytic polishing
	O	Other

Clamp		
Seat material	Temperature	Steam (Sterilization)
PTFE	-10 - 150°C	Continuous temperature * 150 °C
TFM	-10 - 180°C	Continuous temperature * 180 °C
RPTFE	0 - 130°C	150 °C, max.20 min

Surface glossiness description		
Polishing type	Roughness	Technology
Mechanical polishing	Ra ≤ 0.6μm	Internal surface mechanical polishing, external surface glass bead sandblasting
Electrolytic polishing	Ra ≤ 0.4μm	Internal/external electrolytic polishing
Other	Ra ≤ 0.2μm	Internal surface mechanical polishing, external surface glass bead sandblasting

SANITARY CHECK VALVES



Vertical mounted check valve



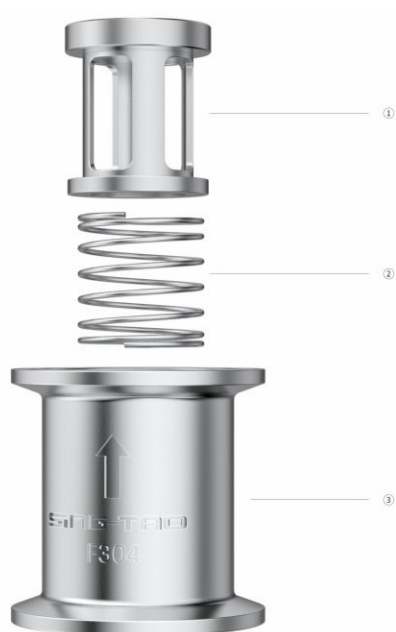
Horizontal mounted check valve

Check valve is used to control the flow direction of process liquid and gas. The valve is easy to install and maintenance-free. At the same time, it can prevent potential damage to pipelines and equipment or system shutdown due to reverse flow, pressure surge, water hammer and air entrainment.

Features:

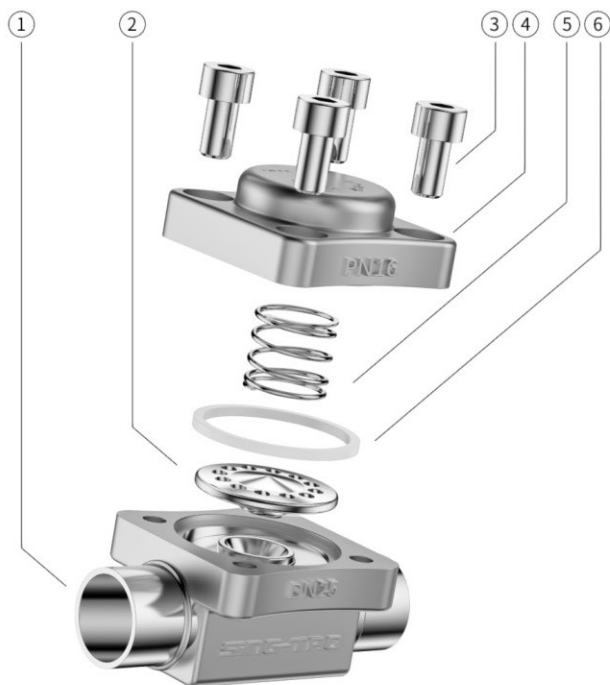
- Balance the pressure in the system by eliminating the vacuum condition, thus protecting the process system from potential damage.
- Ensure equipment safety by preventing backflow and water hammer.
- The whole sanitary structure design, no dead angle, residue.

Dimension range: DN20-DN65 (3/4" - 2½")	Body material: 304/316L
Temperature: -10°C - 130°C	Interface form: Welding and clamping
Pressure rating: 10bar	Standard: ASME BPE and 3A
Driving mode: Automatic	



**Vertical mounted check valve
(hard seal)**

No.	Description	Material (EN)
1	Valve clack	A276304/316L
2	Spring	SS304/316L
3	Valve body	A276304/316L



Horizontal mounted check valve

No.	Description	Material (EN)
1	Valve body	A276304/316L
2	Valve clack	A276304/316L
3	Inner hexagon screw	A193B8/B8M
4	Valve cover	A351 CF8/316L
5	Spring	SS304/316L
6	Sealing gasket	PTFE

Sanitary Check Valves

Code and coding rules for one-way valves

Tag Number	1	2	3、4	5	6	7	8	9
Code	V	S	25	P	S	E	M	N
Property definition	Valve type	Sealing material	Caliber	Caliber standard	Connection form	Body material	Polishing	Opening pressure

Tag Number	Code	Valve type	
1	C	Horizontal check valve	
	V	Vertical check valve	
2	Code	Sealing material	
	E	EPDM	
	S	SUS hard seal	
	F	Fluororubber	
	P	PTFE	
3、4	Code	Caliber	
	20	20	3/4"
	25	25	1"
	40	40	1½"
	50	50	2"
	65	65	2½"
5	Code	Caliber standard	
	P	ASME BPE	
	I	ISO 2037	

Tag Number	Code	Connection form
6	S	Tri-Clamp
	W	Weld
7	Code	Body material
	D	A182 F304 (Forged 304)
	E	A182 F316L (Forged 316L)
	B	A351 CF3M (Cast 316L)
8	Code	Burnishing
	M	Mechanical polishing
	E	Electrolytic polishing
	O	Other
9	Code	Opening pressure
	L	0.08bar
	N	0.3bar
	H	0.6bar

ANGLE SEAT VALVES

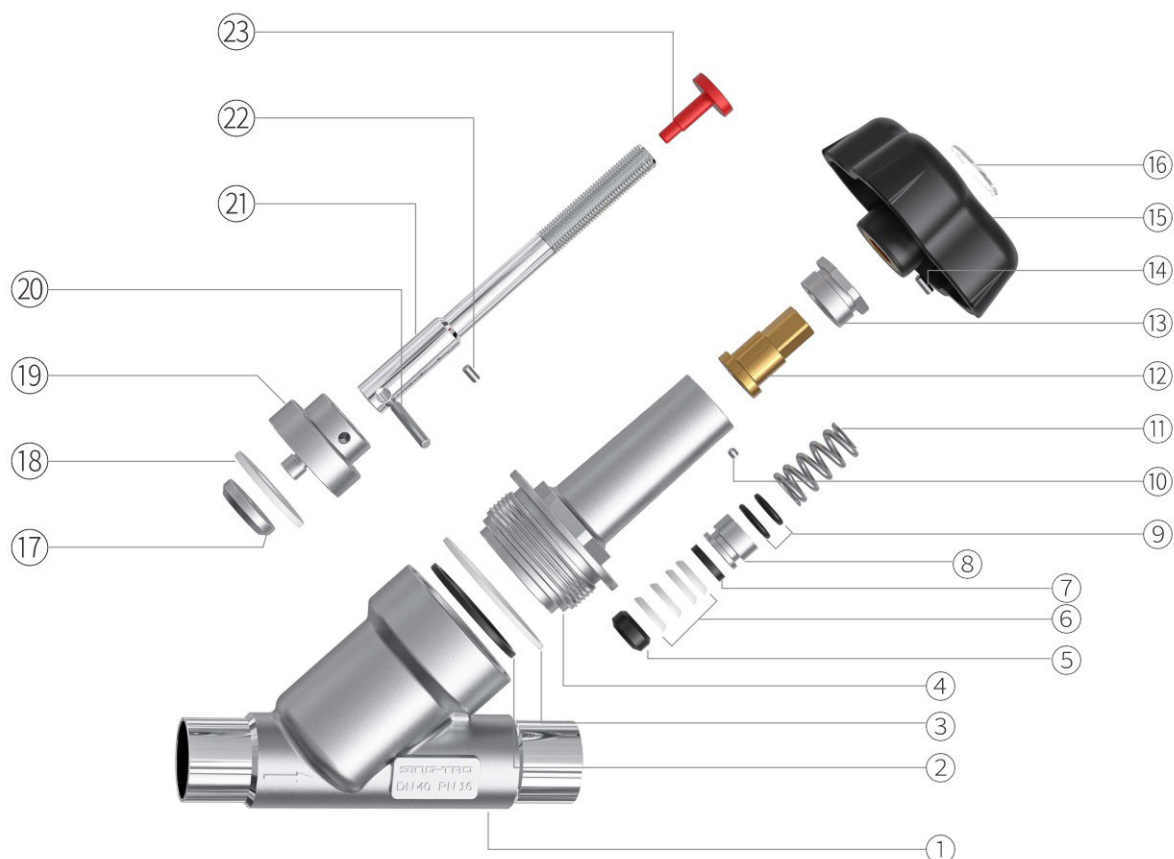


Application: The angle seat valve of SingTao® is designed according to ASME BPE standard, and is mainly used in food and beverage, brewing, biopharmaceuticals and other fields.

Features: Large flow, high pressure resistance, more economy, maintenance-free, easy installation and low energy consumption, so it is very suitable for high-frequency pneumatic operation in a short time. Sensitive response, accurate action, can be used with solenoid valve or positioner, and has the functions of accurate flow regulation. For example, the application of angle seat valve in hot and humid sterilization cabinet can realize the precise control of steam flow.

Dimension range: DN20-DN65 (3/4" - 2½")	Seat material: PTFE
Working temperature: -20°C - 150°C	Body material: 304/316L
Pressure rating: 16bar	Interface form: Welding, clamp and Flange
Driving mode: Manual/pneumatic	Standard: ASME BPE and 3A
Automatic control unit: Feedback device, positioning device	

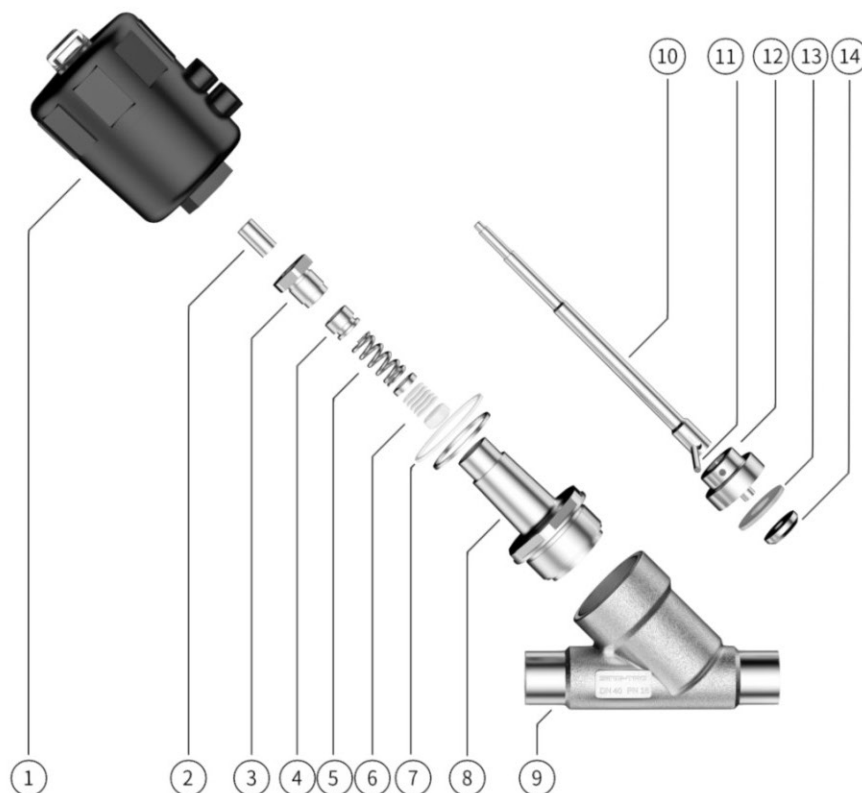
Angle Seat Valves



Manual angle seat valve

No.	Description	Material (EN)
1	Valve body	A351 CF8/CF3M
2	Fireproof gasket	Flexible graphite+304/316L
3	Sealing gasket	PTFE
4	Bonnet	A276 304/316L
5	Lower packing pad	PTFE+CF
6	Packing	PTFE
7	Upper packing	PTFE+CF
8	Sealing ring	A276 304/316L
9	O-ring	VITON
10	Set screw	A193 B8
11	Spring	Inconel X-718
12	Valve rod nut	QAL 9-4

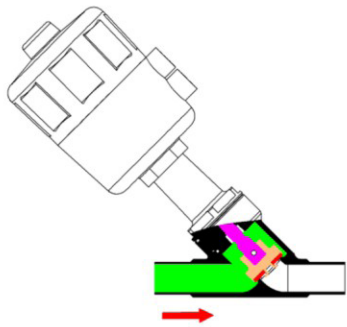
No.	Description	Material (EN)
13	Compression nut	A276 304/316L
14	Set screw	A193 B8
15	Handwheel	Nylon PA66+GF
16	Handwheel cover plate	Pmma
17	Valve seat gland	A276 304/316L
18	Seat	PTFE
19	Valve clack	A276 304/316L
20	Pin	A276 304/316L
21	Valve stem	A182 F304/F316L
22	Pin	A276 304/316L
23	Switch indication	POM



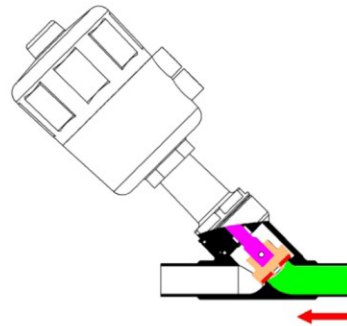
Pneumatic angle seat valve

No.	Description	Material (EN)
1	Pneumatic actuator	NYLON module
2	Oil-free bearing	SS 304 + PTFE
3	Gland	A276 304/316L
4	Seal sleeve	A276 304/316L
5	Spring	A276 304
6	Stem seal assembly	PTFE
7	Sealing gasket	PTFE
8	Valve cover	A276 304/316L
9	Valve body	A351 CF8/CF3M
10	Valve stem	A182 F304/F316L
11	Pin	SS 304/316L
12	Valve clack	A276 304/316L
13	Seat	PTFE
14	Gland nut	A276 304/316L

Rated Pressure-temperature Values



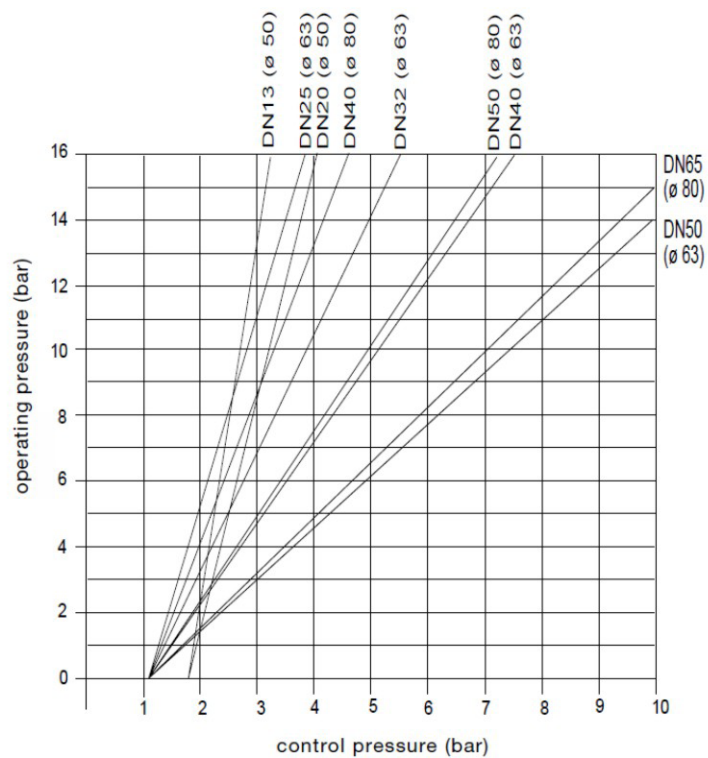
High-inlet and
low-outlet- ordinary type



Low-inlet and
high-outlet - waterproof hammer

Control function B

Actuator 50 - 80 mm



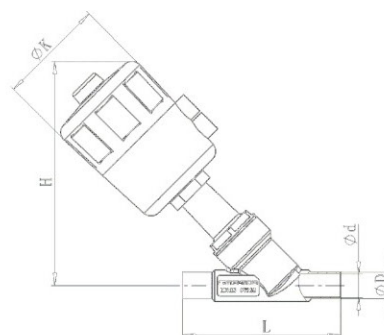
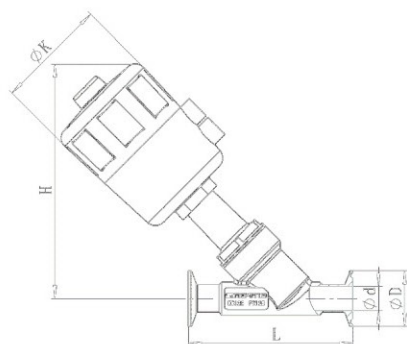
Dimension table of angle seat valve

Manual clamping type - ASME BPE

Size	d	D	L	K	H
DN20	15.8	25	130	85	69
DN25	22.1	50.4	140	85	86
DN40	34.8	50.4	150	110	110
DN50	47.5	63.9	180	110	120
DN65	60.2	77.4	195	130	152

Manual welding type - ASME BPE

Size	d	D	L	K	H
DN20	15.8	19.05	130	85	69
DN25	22.1	25.4	140	85	86
DN40	34.8	38.1	150	110	110
DN50	47.5	50.8	180	110	120
DN65	60.2	63.5	195	130	152



Pneumatic clamp type - ASME BPE

Size	d	D	L	K	H
DN20	15.8	25	130	50	150
DN25	22.1	50.4	140	63	180
DN40	34.8	50.4	150	80	190
DN50	47.5	63.9	180	100	220
DN65	60.2	77.4	195	100	250

Pneumatic welding type - ASME BPE

Size	d	D	L	K	H
DN20	15.8	19.05	130	50	150
DN25	22.1	25.4	140	63	180
DN40	34.8	38.1	150	80	190
DN50	47.5	50.8	180	100	220
DN65	60.2	63.5	195	100	250

Angle Seat Valves

Encoding and coding rules for corner seat valves/proportional control valves

Tag Number	1	2	3、4	5	6	7	8	9	10	11	12
Code	A	3	20	P	P	W	1	A	F	Z	M
Property definition	Valve type	Control form	Caliber	Runner	Caliber standard	Connection form	Structural style	Body material	Seat material	Other	Polishing

Tag Number	Code	Valve type
1	A	Corner seat valve
	E	Proportional control valve
2	Code	Control form
	1	Plastic handwheel
	3	Vertical plastic pneumatic normally closed
	5	Vertical stainless steel pneumatic normally closed
	6	Vertical stainless steel pneumatic normally open
3、4	Code	Caliber
	20	20 3/4"
	25	25 1"
	40	40 1½"
	50	50 2"
	65	65 2½"

Tag Number	Code	Runner
5	P	Full bore
6	Code	Caliber standard
	P	ASME BPE
	I	ISO 2037
7	Code	Connection form
	S	Tri-Clamp
	W	Weld
	7	Tri&Weld
8	Code	Structural style
	1	Waterproof hammer
	2	Non waterproof hammer
9	Code	Body material
	A	A351 CF8 (Cast 304)
	B	A351 CF3M (Cast 316L)

Tag Number	Code	Seat material
10	F	PTFE
	S	SUS
11	Code	Other
	Z	Without attachments
	1	Equipped with intelligent locator ST I1 IPos
	2	ST I2 IPos
	3	ST I3 IPos
	4	ST F1 FPos with position feedback device
	5	ST F2 FPos
	6	ST F3 FPos
12	Code	Burnishing
	M	Mechanical polishing
	E	Electrolytic polishing
	O	Other

SANITARY BUTTERFLY VALVES

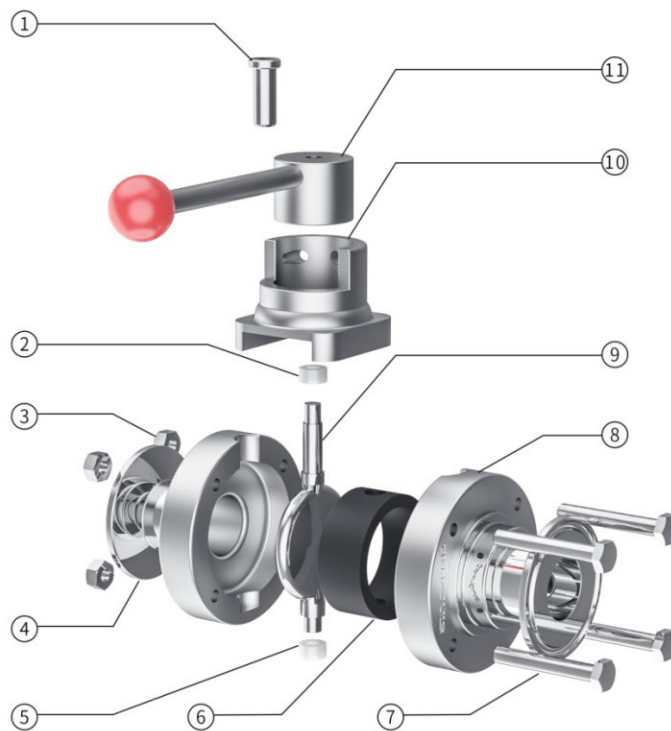


Application: Designed according to ISO, ASME BPE and DIN standards, it is used in food and beverage, brewing, biopharmaceutical and other fields.

Features: Stainless steel butterfly valve is simple in structure, small in dimension, light in weight, low in material consumption, small in installation dimension, small in driving torque, simple and quick to operate, and has good flow regulating function and closing and sealing characteristics. When it is fully opened, it has a small flow resistance, and when it is opened between about 15° and 70°, it can perform sensitive flow control. Therefore, butterfly valves are widely used in the field of large-diameter regulation.

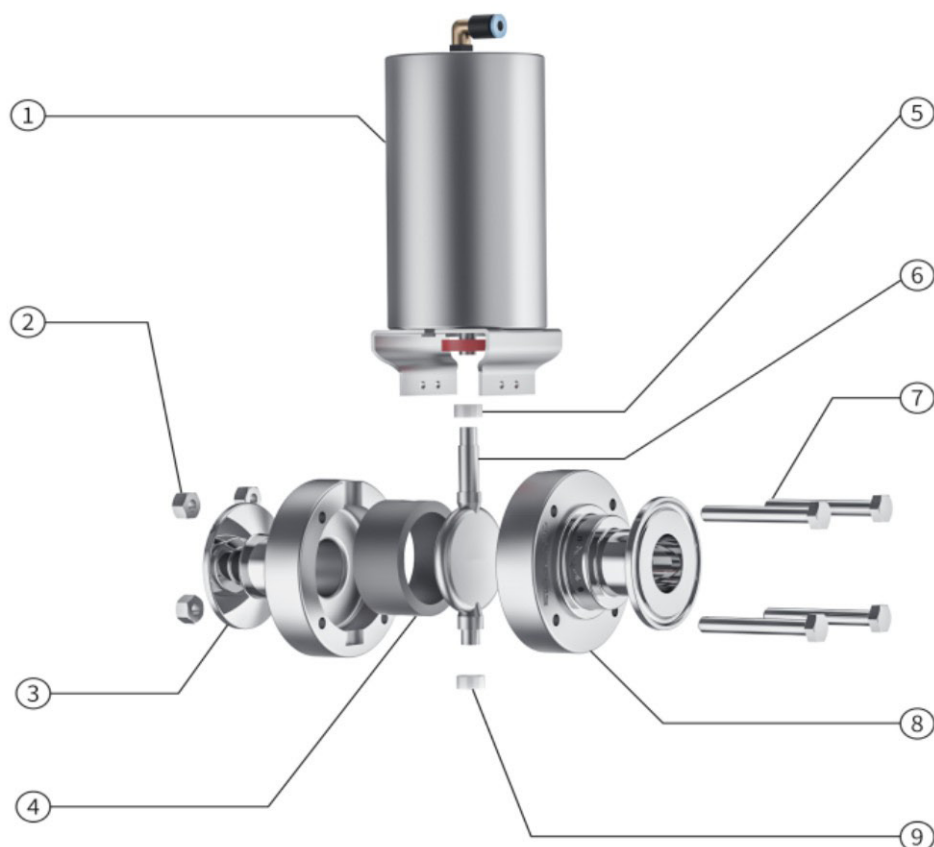
Dimension range: DN25-DN100(1" - 4")	Automatic control unit: Feedback unit
Working temperature: EPDM -20°C - 130°C 、 VITON - 20°C - 150°C SILICON -20°C - 180°C	Seat material: EPDM, VITON, SILICON
	Body material: 304/316L
Pressure rating: 16bar	Interface form: Clamp
Driving mode: Manual/Pneumatic	Standard: ASME BPE and 3A

- The valve stem is inlaid with nylon sleeve, which reduces the risk of valve stem wear and friction, thus making the valve open flexibly and easily.
- The diameter of the valve body is equal to the inner diameter of the pipeline, with large flow and low resistance, and no material accumulation.
- The handle adopts duckbill type or pull rod type, which can obtain larger operating torque.
- The opening and closing can be adjusted, and the operation is convenient.
- All valve bodies adopt detachable connection, with simple structure and convenient maintenance.



No.	Description	Material (EN)
1	Inner hexagon screw	A193B8/B8M
2	Wear-resistant ring	NYLON
3	Nut	A1948/8M
4	Left valve body	F304/F316L
5	Wear-resistant ring	NYLON
6	Sealing ring	EPDM, VITON, SILICON
7	Bolt	A193B8/B8M
8	Right valve body	F304/F316L
9	Butterfly plate	304/316L
10	Valve cover	F304/F316L
11	Handle	S5304

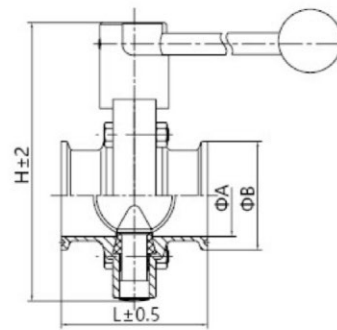
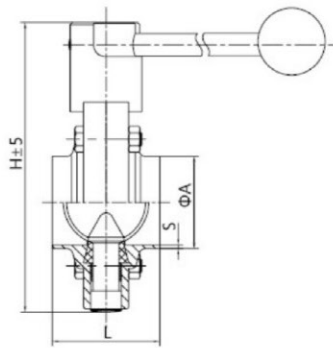
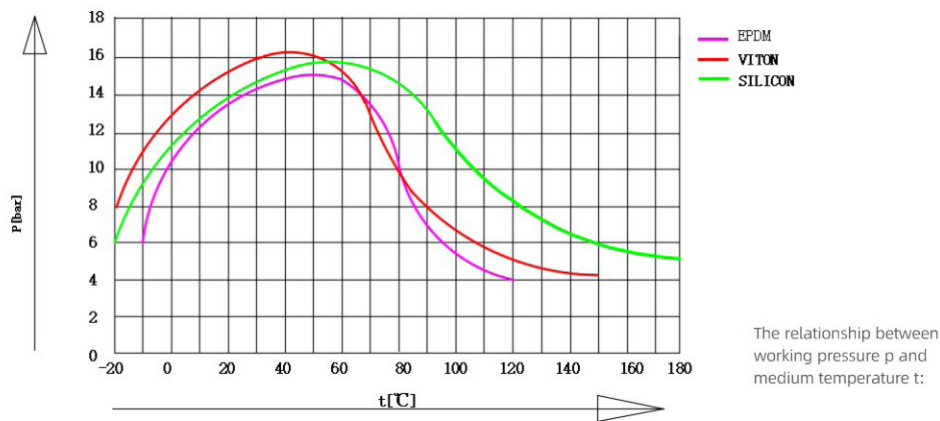
Sanitary Butterfly Valves



No.	Description	Material (EN)
1	Stainless steel pneumatic actuators	SS304
2	Nut	A1948/8M
3	Left valve body	F304/F316L
4	Sealing ring	EPDM, VITON, SILICON
5	Wear-resistant ring	NYLON
6	Butterfly plate	304/316L
7	Bolt	A193B8/B8M
8	Right valve body	F304/F316L
9	Wear-resistant ring	NYLON

Rated Pressure-temperature Values

SingTao® butterfly valve adopts rubber sealing ring, and EPDM and FPM (modified PTFE) are available. The service temperature-pressure rating of sealing ring determines the performance of the valve at different temperatures. Please refer to the following table when selecting the sealing ring material of butterfly valve:



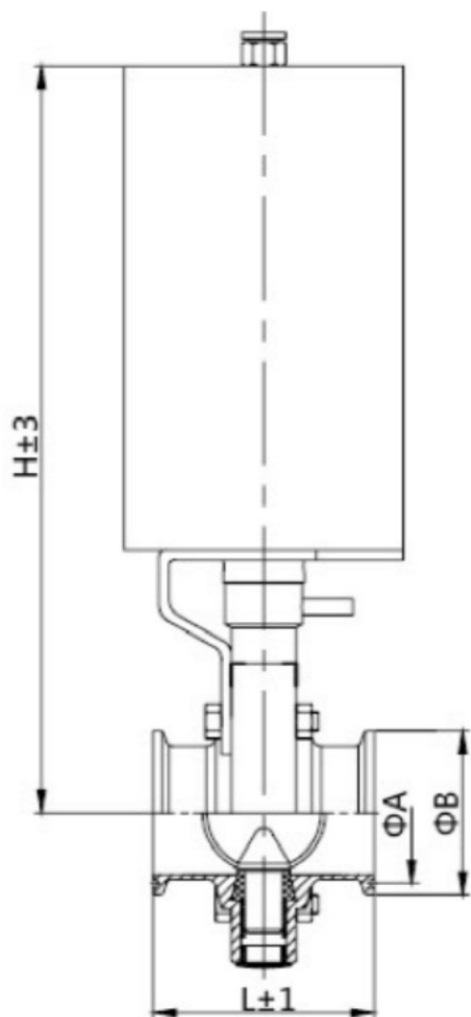
Manual welding type

Size	A	B	L	H
DN20	19.1	25	66	120
DN25	25.4	50.5	66	120
DN40	38.1	50.5	70	130
DN50	50.8	64	76	150
DN65	63.5	77.5	80	170
DN80	76.2	91	84	188
DN100	101.6	119	104	208

Manual clamping type

Size	A	S	L	H
DN20	19.1	1.65	50	120
DN25	25.4	1.65	50	120
DN40	38.1	1.65	50	130
DN50	50.8	1.65	52	150
DN65	63.5	1.65	56	170
DN80	76.2	1.65	56	188
DN100	101.6	2.11	64	208

Sanitary Butterfly Valves



Pneumatic clamping type

Size	A	B	L	H
DN20	19.1	25	66	217
DN25	25.4	50.5	66	217
DN40	38.1	50.5	70	221
DN50	50.8	64	76	229
DN65	63.5	77.5	80	235.5
DN80	76.2	91	84	242
DN100	101.6	119	104	257.5

Pneumatic welding -ASME BPE

Size	A	S	L	H
DN20	19.1	1.65	50	217
DN25	25.4	1.65	50	217
DN40	38.1	1.65	50	221
DN50	50.8	1.65	52	229
DN65	63.5	1.65	56	235.5
DN80	76.2	1.65	56	242
DN100	101.6	2.11	64	257.5

Butterfly valve coding and coding rules

Tag Number	1	2	3、4	5	6	7	8	9	10	11	12
Code	F	1	40	P	P	S	1	D	P	Z	M
Property definition	Valve type	Control form	Caliber	Runner	Caliber standard	Connection form	Butterfly plate form	Body material	Seat material	Other	Polishing

Tag Number	Code	Valve type	
1	F	Butterfly valve	
2	Code	Control form	
	1	Lever handle	
	2	Duck billed handle	
	4	Single acting stainless steel, without accessories	
	7	Single acting stainless steel with position feedback	
	8	Double acting stainless steel, without accessories	
	9	Single acting stainless steel with solenoid valve	
	A	Double acting stainless steel with position feedback	
	B	Double acting stainless steel with solenoid valve	
3、4	Code	Caliber	
	25	25	1"
	32	32	1 1/4"
	40	40	1 1/2"
	50	50	2"
	65	65	2 1/2"
	80	80	3"
	1A	100	4"
5	Code	Runner	
	P	Full bore	
	R	Reduced diameter	
6	Code	Caliber standard	
	P	ASME BPE	
	I	ISO 2037	
7	Code	Connection form	
	S	Tri-Clamp	
	W	Weld	
8	Code	Butterfly plate form	
	1	Axis centered	
	2	Axis eccentric type	
9	Code	Body material	
	D	A182 F304 (Forged 304)	
	E	A182 F316L (Forged 316L)	
10	Code	Seat material	
	P	EPDM	
	V	Fluororubber	
	G	Silicon rubber	
11	Code	Other	
	Z	Manual	
	C	Pneumatic normally closed	
	O	Pneumatic normally open	
12	Code	Burnishing	
	M	Mechanical polishing	
	E	Electrolytic polishing	
	O	Other	

HIGH-PURITY AND ULTRA-HIGH-PURITY VALVES



CORE COMPETITIVE ADVANTAGES

Material Superiority

Utilizing ultra-high-purity 316L stainless steel substrate that strictly complies with SEMI F20 international standard specifications, we implement a dual refining process combining Vacuum Induction Melting (VIM) and Vacuum Arc Remelting (VAR) to perform multidimensional purification treatment on materials. Through precisely controlled thermodynamic parameters during the melting process and specialized interface reaction technology, we effectively eliminate non-metallic inclusions (e.g., oxides, nitrides, sulfides) and interstitial gas components (hydrogen, oxygen, nitrogen), achieving semiconductor-grade cleanliness standards for critical impurity element control. This provides a stable and reliable core material foundation for advanced semiconductor device manufacturing, wafer processing equipment, and precision process components, ensuring enhanced production yield and process stability at the fundamental material level in semiconductor manufacturing.

Element	C	Si	S	Mn	P	Cu	Cr	Ni	Mo	O*	N*	H*
SEMI F20	0.02	0.42	0.008	0.7	0.02	/	16.61	12.28	2.13	/	/	/
316L(VIM+VAR) Ultra-High-Purity Measured Values	≤0.030	≤1.00	≤0.01	≤1.50	≤0.045	0.3	16.0-18.0	10.0-14.0	2.0-3.0	/	/	/
316L (VAR)High-Purity Measured Values	0.005	0.02	0.004	0.3	0.01	0.017	17.44	13.97	2.65	10	32	1.6
316L Standard Measured Values	0.008	0.03	0.005	0.3	0.015	0.02	17.2	13.63	2.52	20	60	2

Non-Metallic Inclusion Testing

ASTM Test Method	0.5	1	1.5	2	2.5	(Grade)
316L(VIM+VAR) UHP						
316L(VAR)HP						
316L						

Core Competitive Advantages

Electropolishing (EP) Technology

The internal surfaces of products undergo Electropolishing (EP) treatment, utilizing electrochemical reactions to precisely refine surface microstructure. This process significantly enhances wall smoothness while promoting the formation of a uniform, dense chromium-enriched passive oxide layer on metal surfaces, thereby effectively improving corrosion resistance. Subsequent passivation processes eliminate residual free iron ions, further elevating chemical purity. Comprehensive analysis via Scanning Electron Microscopy (SEM), X-ray Photoelectron Spectroscopy (XPS), and Auger Electron Spectroscopy (AES), coupled with ASTM standard testing protocols for surface cleanliness (ASTM B912) and corrosion resistance (ASTM A967), confirms full compliance with Semiconductor Equipment and Materials International (SEMI) standards. These measures ensure reliable performance in high-purity semiconductor process environments.

Non-Metallic Inclusion Testing

	HP		UHP		Test Method
	SEMI F19	Control Limit	SEMI F19	Control Limit	
SurfaceRoughness	Ra ≤ 0.25μm	Ra ≤ 0.25μm	Ra ≤ 0.13μm	Ra ≤ 0.13μm	SEMI F37
SurfaceDefects (SEM-detectedDefectCounts)	≤ 30 Average ≤ 50 Max	≤ 30 Average ≤ 50 Max	≤ 10 Average ≤ 20 Max	≤ 10 Average ≤ 20 Max	SEMI F73
(Cr/Fe)	≥ 1.0	≥ 1.5	≥ 1.5	≥ 2	SEMI F60
(CrO/FeO)	≥ 1.0	≥ 3	≥ 2.0	≥ 3	
OxideLayerThickness	≥ 15Å	≥ 20Å	≥ 15Å	≥ 20Å	SEMI F72
ElectrochemicalCritical PittingTemperature(CPT)	≥ 10°C				SEMI G150

Electropolishing (EP) Technology

Process	Compliance Standard	
HeliumLeakTesting	SEMA-90120391B-STD	SEMI F1-96
ParticleContamination	ASTMF1394-92	
IonicCleanliness	ASTMF1374-92(2012)	
Cleaning	SEMIE49.6	
Assembly	SEMIE49.6	
Packaging	SEMIE49.1	

DVM SERIES MANUAL DIAPHRAGM VALVES



Featuring a diaphragm-type hard-sealed structure with metallic bellows and fully welded valve body design to achieve ultra-low leakage rates. Combined with an ergonomic manual operating mechanism that ensures smooth and reliable opening/closing operations. The valve body is constructed from 316L stainless steel, while the seat utilizes perfluoroelastomer sealing, enabling safe handling of ultra-high-purity gases and highly toxic/corrosive media in semiconductor applications. Specifically designed to meet precise process gas control requirements in ultra-large-scale integrated circuit (ULSIC) manufacturing.

Features:

- Ideal for ultra-high-purity gas applications
- Ni-Cr-Mo alloy/UNS N06022 diaphragm material
- Individual helium mass spectrometer leak testing per valve

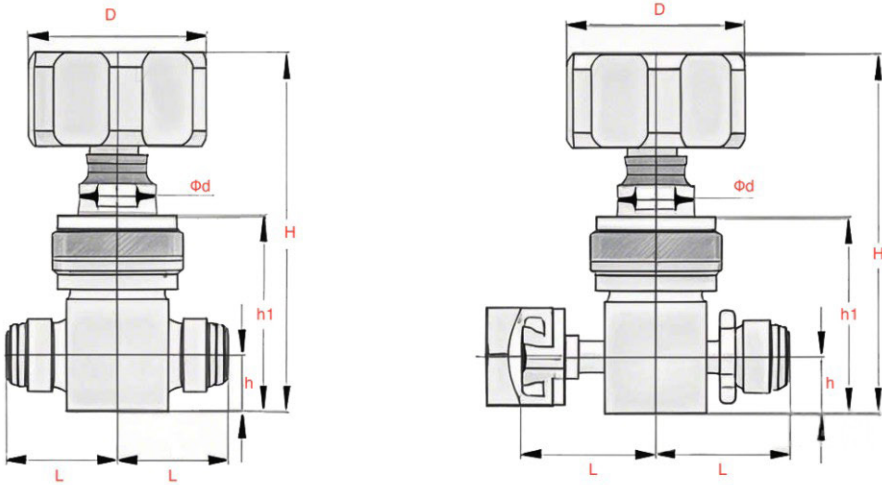
Technical Data

Operating Pressure: Vacuum to 300 psig (Low Pressure), Vacuum to 3000 psig (High Pressure)	Internal Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Burst Pressure: 3000 psig (Low Pressure), 9000 psig (High Pressure)	External Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Operating Temperature: -10 to 60°C (Low Pressure), -10 to 40°C (High Pressure)	Internal Surface Roughness: Ra $\leq 0.13\mu\text{m}$
Flow Coefficient (Cv): 0.25 (1/4"), 0.35 (1/2"), 0.7 (1/2"HF)	

DVM Series Manual Diaphragm Valves

Main Material Components	
Valve Body	316L /316L (VIM+VAR)
Diaphragm	Ni-Cr-Mo alloy/UNS N06022
Gasket	PCTFE
Handle	6063 Aluminum Alloy

Dimensions (mm)



Low-Pressure Connection Type	L		h	h1	H	A	B	C	D	d
74M	29	±0.2	11.1	27.3	71(77)	18	18	27	48	20.5
74MS/74F	35.3	±0.25	11.1	27.3	71(77)	18	18	27	48	20.5
78M	38.1	±0.25	11.2	32	75(81)	20.2	20.2	35	48	20.5
78MS/78F	41.5	±0.25	11.2	32	75(81)	20.2	20.2	35	48	20.5
78M(HF)	38.1	±0.25	16	-	90.6	20.2	20.2	36	48	-
78MS(HF)/78F(HF)	41.5	±0.25	16	-	90.6	20.2	20.2	36	48	-

High-Pressure Connection Type	L		h	h1	H	A	B	C	D	d
74M	29	±0.25	11.1	32.5	71(77)	18	18	27	48	20.5
74MS/74F	35.3	±0.25	11.1	32.5	71(77)	18	18	27	48	20.5
78M	38.1	±0.25	11.2	48	77.7	18	18	27	48	20.5
78MS/78F	41.5	±0.25	11.2	48	77.7	18	18	27	48	20.5

Note: Dimensions are for reference only, final specifications subject to physical product. Custom sizing available upon request.

DVM Series Manual Diaphragm Valves

Coding Rules

Tag Number		1	2	3、4、5	3、4、5	6	7	8
Code	DVM	I	0.1	74M	74M	V2	B	-
Property Definition	Model	Flow Path Type	Operating Pressure	Inlet Connection	Outlet Connection	Valve Body Material	Handle Color	Options

Tag Number	Code	Flow Path Type
1	I	Straight
	JL	Right-Angle (L)
	JR	Right-Angle (R)
	BI	Backside Inlet
	T	Three-Way
	L	Three-Way (L)
	R	Three-Way (R)
	TT	Three-Way (T)
	TL	Three-Way (TL)
	TR	Three-Way (TR)
	HH	Four-Way
	FS	Four-Way (FS)
2	Code	Operating Pressure
	01	0 ~ 300Psig
	02	0 ~ 3000Psig
3、4、5	Code	Inlet/ Outlet Connection
	7	UCR
	4	1/4"
	8	1/2"
	M	Integral Male
	F	Female
	MS	Male Swivel
6	Code	Valve Body Material
	SS	316L
	V2	316L(VIM+VAR)
7	Code	Handle Color
	R	Red
	B	Blue
8	Code	Options
	HF	High-Flow

DVP SERIES PNEUMATIC
DIAPHRAGM VALVES



Featuring a diaphragm-type hard-sealed structure with metallic bellows and fully welded valve body design to achieve ultra-low leakage rates. Integrated with high-precision pneumatic actuators for rapid response performance. The valve body is constructed from 316L stainless steel, while the seat utilizes perfluoroelastomer sealing, enabling safe handling of ultra-high-purity gases and highly toxic/corrosive media in semiconductor applications. Specifically designed for stringent process gas requirements in ultra-large-scale integrated circuit (ULSIC) manufacturing.

Features:

- Ideal for ultra-high-purity gas applications
- Diaphragm material: Ni-Cr-Mo alloy/UNS N06022
- Rapid, repeatable pneumatic actuator performance
- Individual helium mass spectrometer leak testing per valve

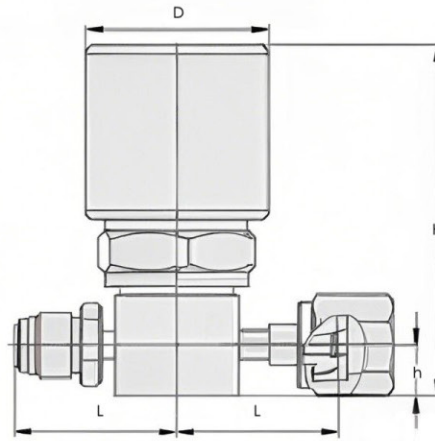
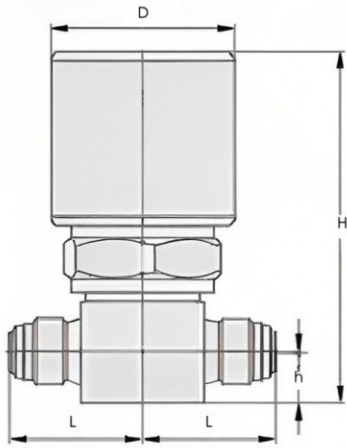
Technical Data

Operating Pressure: Vacuum to 150 psig (Low Pressure), Vacuum to 3000 psig (High Pressure)	Internal Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Burst Pressure: 3000 psig (Low Pressure), 9000 psig (High Pressure)	External Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Operating Temperature: -10 to 60°C (Low Pressure), -10 to 40°C (High Pressure)	Internal Surface Roughness: Ra ≤ 0.13 μ m
Flow Coefficient (Cv): 0.25 (1/4"), 0.7 (1/2"HF)	

Main Material Components	
Valve Body	316L /316L(VIM+VAR)
Diaphragm	Ni-Cr-Mo alloy/UNS N06022
Gasket	PCTFE

DVP Series Pneumatic Diaphragm Valves

Dimensions (mm)



Low-Pressure Connection Type	L		h	H	A	B	C	D
74M	29	±0.25	11.1	71(77)	18	18	27	40
74MS/74F	35.3	±0.25	11.1	71(77)	18	18	27	40
78M(HF)	38.1	±0.25	16	97.6	20.2	20.2	36	55
78MS(HF)/78F(HF)	41.5	±0.25	16	97.6	20.2	20.2	36	55

High-Pressure Connection Type	L		h	H	A	B	C	D
74M	29	±0.25	11.1	106.4	18	18	27	65
74MS/74F	35.3	±0.25	11.1	106.4	18	18	27	65
78M	38.1	±0.25	11.2	156.5	18	18	27	76
78MS/78F	41.5	±0.25	11.2	156.5	18	18	27	76

Note: Dimensions are for reference only, final specifications subject to physical product. Custom sizing available upon request.

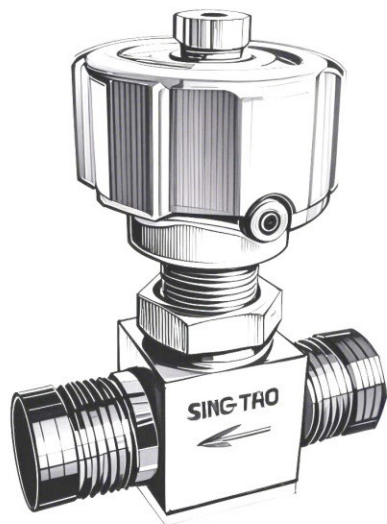
DVP Series Pneumatic Diaphragm Valves

Coding Rules

Tag Number		1	2	3、4、5	3、4、5	6	7	8
Code	DVP	I	01	74M	74M	V2	NC	-
Property Definition	Model	Flow Path Type	Operating Pressure	Inlet Connection	Outlet Connection	Valve Body Material	Actuator	Options

Tag Number	Code	Flow Path Type
1	I	Straight
	JL	Right-Angle (L)
	JR	Right-Angle (R)
	BI	Backside Inlet
	T	Three-Way
	L	Three-Way (L)
	R	Three-Way (R)
	TT	Three-Way (T)
	TL	Three-Way (TL)
	TR	Three-Way (TR)
	HH	Four-Way
	FS	Four-Way (FS)
2	Code	Operating Pressure
	01	0 ~ 150Psig
	02	0 ~ 3000Psig
3、4、5	Code	Inlet/ Outlet Connection
	7	UCR
	4	1/4"
	8	1/2"
	M	Integral Male
	F	Female
	MS	Male Swivel
6	Code	Valve Body Material
	SS	316L
	V2	316L(VIM+VAR)
7	Code	Actuator
	NC	Normally closed
	NO	Normally open
8	Code	Options
	HF	High-Flow

DVMH SERIES MANUAL
DIAPHRAGM VALVES



Incorporating a diaphragm-type hard-sealed structure with metallic bellows and fully welded valve body design to achieve ultra-low leakage rates. Paired with an ergonomic manual operating mechanism for smooth and reliable on/off operations. The valve body is constructed from 316L stainless steel, while the seat utilizes perfluoroelastomer sealing, enabling precise control of ultra-high-purity gases and highly toxic/corrosive media in semiconductor applications. Engineered for critical process gas management in ULSIC fabrication.

Features:

- Ideal for ultra-high-purity gas applications
- Individual helium mass spectrometer leak testing per valve
- Handle with position indicator window
- Extended lifespan (500,000-cycle validated lifespan)
- Standard 180° rotation angle (90° optional)
- Lockout-Tagout (LOTO) optional feature to prevent misuse

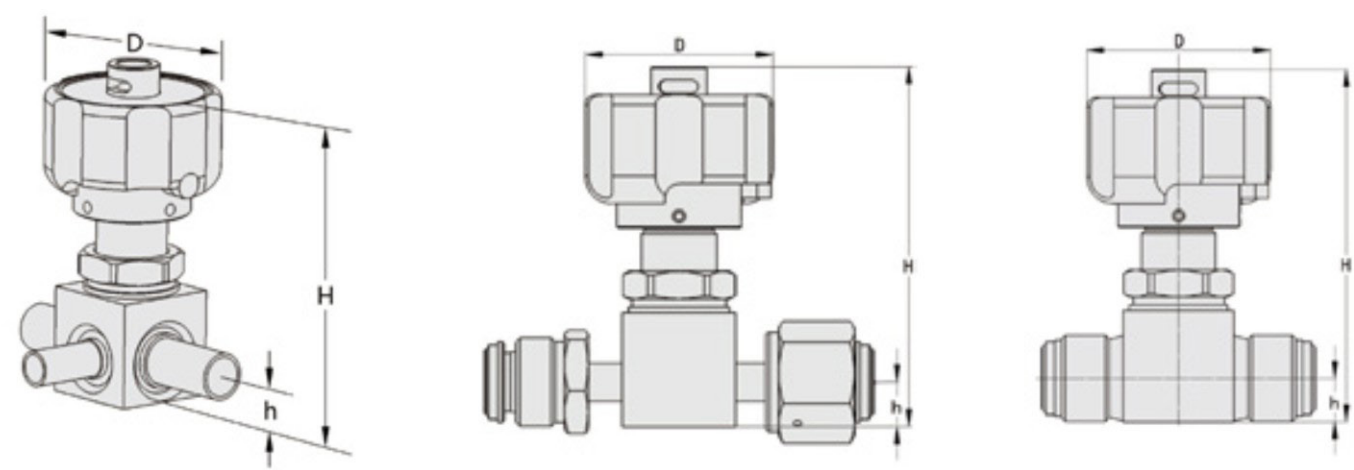
Technical Data

Operating Pressure: Vacuum to 300 psig	Internal Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Burst Pressure: 3000psig	External Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Operating Temperature: -10 - 70°C	Internal Surface Roughness: Ra $\leq 0.13 \mu\text{m}$
Flow Coefficient (Cv): 0.5	

DVMH Series Manual Diaphragm Valves

Main Material Components	
Valve Body	316L /316L (VIM+VAR)
Diaphragm	Ni-Co alloy /UNS R30003
Gasket	PCTFE
Handle	6063 Aluminum Alloy

Dimensions (mm)



Connection Type	L		H	h	D
74M	29	±0.25	91	11.2	47.4
74MS	35.3	±0.25	91	11.2	47.4
74F	35.3	±0.25	91	11.2	47.4
T4	26.9	±0.25	91	11.2	47.4
T6	33.7	±0.25	91	11.2	47.4
T8	33.7	±0.25	91	11.2	47.4
78M	35.3	±0.25	91	11.2	47.4
78MS	49	±0.25	91	11.2	47.4
78F	49	±0.25	91	11.2	47.4

Note: Dimensions are for reference only, final specifications subject to physical product. Custom sizing available upon request.

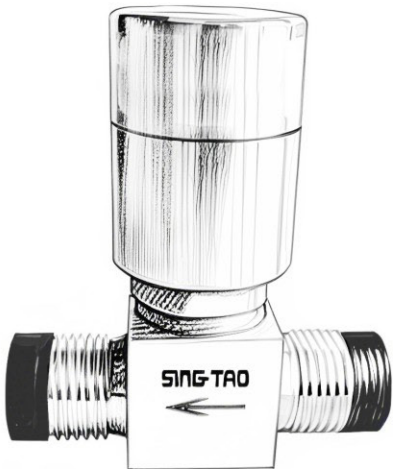
DVMH Series Manual Diaphragm Valves

Coding Rules

Tag Number		1	2	3、4、5	3、4、5	6	7	8
Code	DVM	I	0.1	74M	74M	V2	B	-
Property Definition	Model	Flow Path Type	Operating Pressure	Inlet Connection	Outlet Connection	Valve Body Material	Handle Color	Options

Tag Number	Code	Flow Path Type
1	I	Straight
	JL	Right-Angle (L)
	JR	Right-Angle (R)
	BI	Backside Inlet
	T	Three-Way
	L	Three-Way (L)
	R	Three-Way (R)
	TT	Three-Way (T)
	TL	Three-Way (TL)
	TR	Three-Way (TR)
	HH	Four-Way
	FS	Four-Way (FS)
2	Code	Operating Pressure
	01	0 ~ 300Psig
3、4、5	Code	Inlet/ Outlet Connection
	7	UCR
	T	Tube stubs
	4	1/4"
	6	3/8"
	8	1/2"
	M	Integral Male
	F	Female
	MS	Male Swivel
6	Code	Valve Body Material
	SS	316L
	V2	316L(VIM+VAR)
7	Code	Handle Color
	R	Red
	B	Blue
8	Code	Options
	HF	High-Flow

DVPH SERIES PNEUMATIC
DIAPHRAGM VALVES



Utilizing a diaphragm-type hard-sealed structure with metallic bellows and fully welded valve body design to achieve ultra-low leakage rates. Integrated with high-precision pneumatic actuators for rapid response performance. The valve body is constructed from 316L stainless steel, while the seat utilizes perfluoroelastomer sealing, enabling safe handling of ultra-high-purity gases and highly toxic/corrosive media in semiconductor applications. Specifically designed for stringent process gas requirements in ULSIC manufacturing.

Features:

- Ideal for ultra-high-purity gas applications
- Individual helium mass spectrometer leak testing per valve
- Diaphragm material: Ni-Co alloy/UNS R30003
- Exceptional lifespan(4,000,000-cycle validated lifespan)
- Rapid, repeatable pneumatic actuator performance

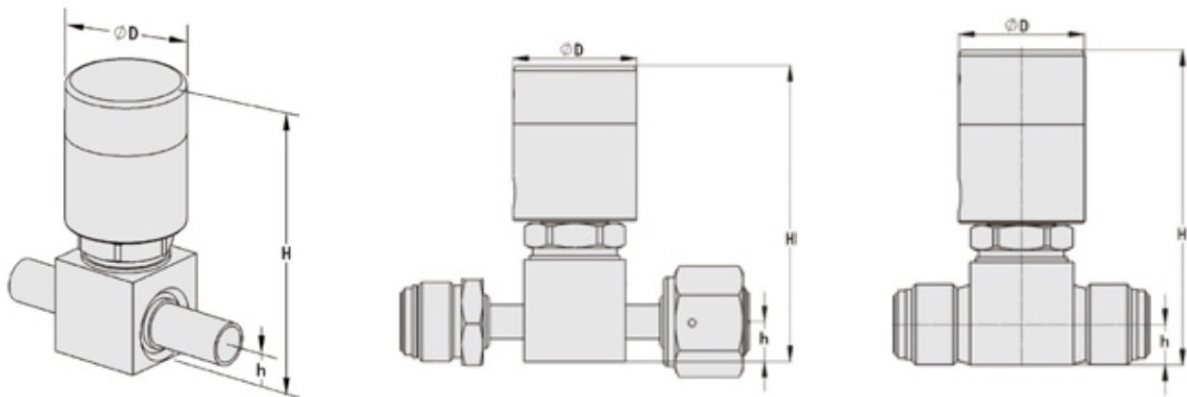
Technical Data

Operating Pressure: Vacuum to 300 psig	Internal Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Burst Pressure: 3000psig	External Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Operating Temperature: -10 - 70°C	Internal Surface Roughness: Ra $\leq 0.13\mu\text{m}$
Flow Coefficient (Cv): 0.5	

DVPH Series Pneumatic Diaphragm Valves

Main Material Components	
Valve Body	316L / 316L(VIM+VAR)
Diaphragm	Ni-Co alloy / UNS R30003
Gasket	PCTFE

Dimensions (mm)



Connection Type	L		H	h	D
74M	29	± 0.25	88	11.2	34.8
74MS	35.3	± 0.25	88	11.2	34.8
74F	35.3	± 0.25	88	11.2	34.8
T4	26.9	± 0.25	88	11.2	34.8
T6	33.7	± 0.25	88	11.2	34.8
T8	33.7	± 0.25	88	11.2	34.8
78M	35.3	± 0.25	88	11.2	34.8
78MS	49	± 0.25	88	11.2	34.8
78F	49	± 0.25	88	11.2	34.8

Note: Dimensions are for reference only, final specifications subject to physical product. Custom sizing available upon request.

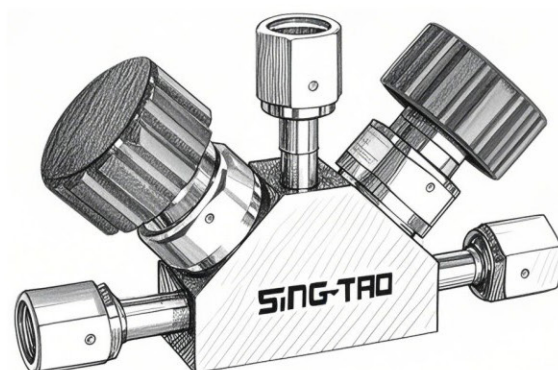
DVPH Series Pneumatic Diaphragm Valves

Coding Rules

Tag Number		1	2	3, 4, 5	3, 4, 5	6	7	8
Code	DVPH	I	01	74M	74M	V2	NC	-
Property Definition	Model	Flow Path Type	Operating Pressure	Inlet Connection	Outlet Connection	Valve Body Material	Actuator	Options

Tag Number	Code	Flow Path Type
1	I	Straight
	JL	Right-Angle (L)
	JR	Right-Angle (R)
	BI	Backside Inlet
	T	Three-Way
	L	Three-Way (L)
	R	Three-Way (R)
	TT	Three-Way (T)
	TL	Three-Way (TL)
	TR	Three-Way (TR)
	HH	Four-Way
	FS	Four-Way (FS)
2	Code	Operating Pressure
	01	0~300Psig
3, 4, 5	Code	Inlet/ Outlet Connection
	7	UCR
	T	Tube stubs
	4	1/4"
	6	3/8"
	8	1/2"
	M	Integral Male
	F	Female
	MS	Male Swivel
6	Code	Valve Body Material
	SS	316L
	V2	316L(VIM+VAR)
7	Code	Actuator
	NC	Normally closed
8	Code	Options
	PI	Polyimide Seat
	PFA	PFA Seat

DVB SERIES DUAL-PORT THREE-WAY DIAPHRAGM VALVES



Featuring a compact integrated valve body design with an optimized purge structure. The absence of internal threads, springs, or redundant components minimizes dead volume and enhances cleanliness. Employing a diaphragm-type hard-sealed structure to achieve ultra-low leakage rates, this valve is engineered for ultra-high-purity gases and highly toxic/corrosive media in semiconductor applications, meeting process gas demands in ULSIC manufacturing.

Features:

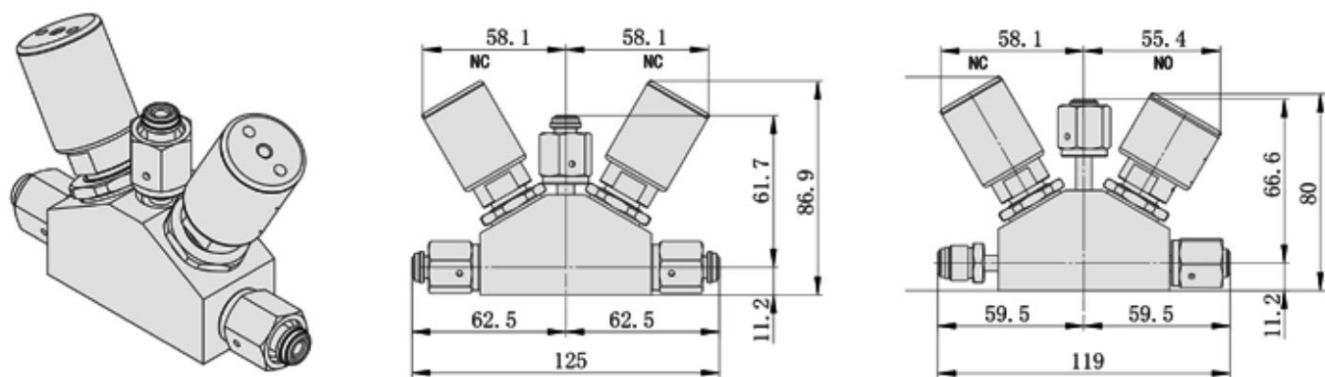
- Ideal for ultra-high-purity gas applications
- Diaphragm material: Ni-Co alloy/UNS R30003
- Rapid, repeatable pneumatic actuator performance
- Individual helium mass spectrometer leak testing per valve
- No internal threads or springs, significantly reducing particle generation and gas entrapment

Technical Data

Operating Pressure: Vacuum to 150 psig	Internal Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Burst Pressure: 3000psig	External Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Operating Temperature: -10 - 80°C	Internal Surface Roughness: Ra $\leq 0.13 \mu\text{m}$
Flow Coefficient (Cv): 0.3	

DVB Series Dual-Port Three-Way Diaphragm Valves

Dimensions (mm)



Note: Dimensions are for reference only, final specifications subject to physical product. Custom sizing available upon request.

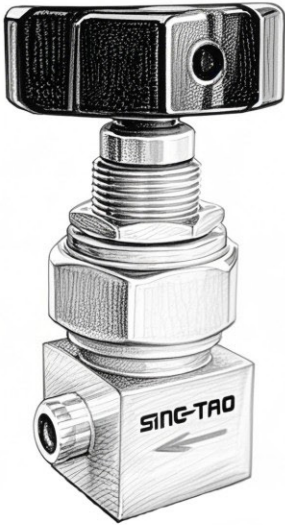
Coding Rules

Tag Number		1	2	3、4、5	3、4、5	3、4、5	6	7、8	9
Code	DVB	BY	01	74F	74F	74F	V2	NC	-
Property Definition	Model	Flow Path Type	Operating Pressure	Inlet Connection	Outlet Connection	Inlet/ Outlet Connection	Valve Body Material	Actuator	Options

DVB Series Dual-Port Three-Way Diaphragm Valves

Tag Number	Code	Flow Path Type
1	BY	Three-Way(Y)
	BV	Three-Way(V)
2	Code	Operating Pressure
	01	0 ~ 150Psig
3、4、5	Code	Inlet Connection、Outlet Connection、 Inlet/ Outlet Connection
	7	UCR
	4	1/4"
	M	Integral Male
	MS	Male Swivel
6	Code	Valve Body Material
	SS	316L
	V2	316L(VIM+VAR)
7、8	Code	Actuator
	PA1	Left Actuator
	PA2	Right Actuator
	NC	Normally closed
	NO	Normally open
9	Code	Options
	A	119×66.6
	Default	125×61.7

DVH SERIES HIGH-PRESSURE DIAPHRAGM VALVES



Achieving ultra-low leakage rates through a diaphragm-type hard-sealed structure, the all-metal housing eliminates packing while incorporating no internal threads or springs to ensure high cleanliness, operational stability, and extended lifespan. With a pressure rating of 3500 psig at ambient temperature, this valve is ideal for applications demanding stringent cleanliness and pressure tolerance.

Features:

- No internal threads or springs
- 3500 psig pressure rating at ambient temperature
- Diaphragm material: Ni-Co alloy/UNS R30003
- Individual helium mass spectrometer leak testing per valve
- ~1¾ turns from fully open to closed position

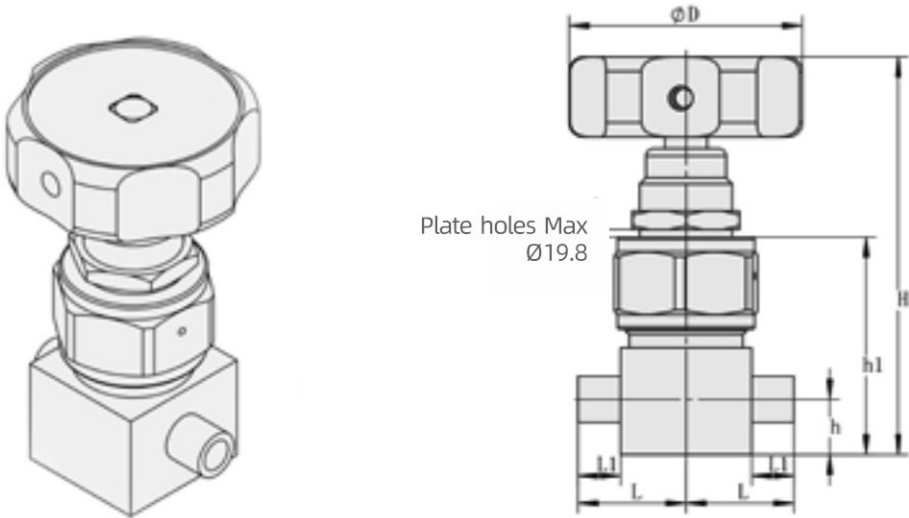
Technical Data

Operating Pressure: Vacuum to 3500 psig	Internal Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Flow Coefficient (Cv): 0.3	External Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Operating Temperature: -73 - 121°C	Internal Surface Roughness: Ra $\leq 0.13 \mu\text{m}$

DVH Series High-Pressure Diaphragm Valves

Main Material Components	
Valve Body	316L
Diaphragm	Ni-Cr-Mo alloy/UNS N06022
Gasket	PCTFE
Handle	6063 Aluminum Alloy

Dimensions (mm)



Connection Type	L		h	h1	H	A	B	D
74M	29.2	±0.25	11.4	44.8	81.9	28.7	26.9	48
74MS/74F	35.35	±0.25	11.4	44.8	81.9	28.7	26.9	48
W4	22.2	±0.25	11.4	44.8	81.9	28.7	26.9	48
T6	22.2	±0.25	11.4	44.8	81.9	28.7	26.9	48

Note: Dimensions are for reference only, final specifications subject to physical product. Custom sizing available upon request.

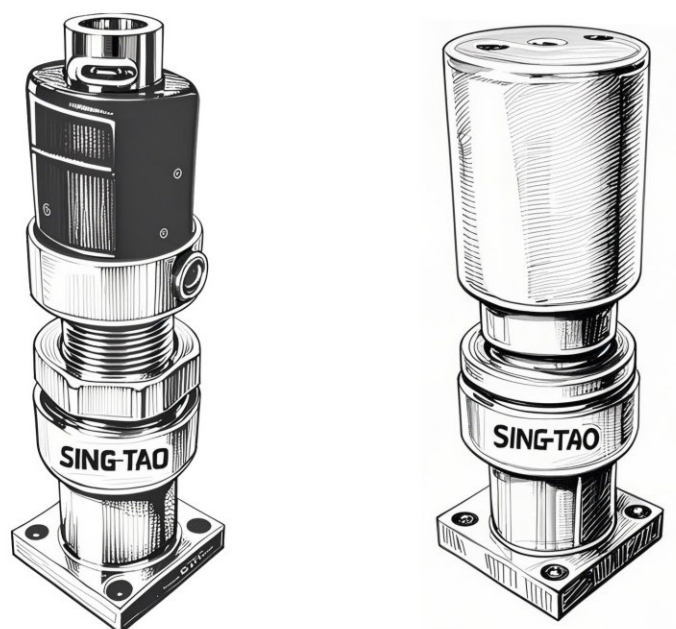
DVH Series High-Pressure Diaphragm Valves

Coding Rules

Tag Number		1	2	3、4、5	3、4、5	6	7
Code	DVH	I	02	W4	T6	SS	B
Property Definition	Model	Flow Path Type	Operating Pressure	Inlet Connection	Outlet Connection	Valve Body Material	Handle Color

Tag Number	Code	Flow Path Type
1	I	Straight
	JL	Right-Angle (L)
	JR	Right-Angle (R)
	BI	Backside Inlet
	T	Three-Way
	L	Three-Way (L)
	R	Three-Way (R)
	TT	Three-Way (T)
	TL	Three-Way (TL)
	TR	Three-Way (TR)
	HH	Four-Way
	FS	Four-Way (FS)
2	Code	Operating Pressure
	02	0 ~ 3500Psig
3、4、5	Code	Inlet/ Outlet Connection
	7	UCR
	W	Socket Weld
	T	Tube stubs
	4	1/4"
	6	3/8"
	M	Integral Male
	F	Female
	MS	Male Swivel
6	Code	Valve Body Material
	SS	316L
7	Code	Handle Color
	R	Red
		Blue

DVI SERIES DIAPHRAGM VALVES



Featuring a diaphragm-type hard-sealed structure with minimal leakage, this valve is designed for ultra-high-purity gases and toxic/corrosive media in semiconductor applications. Its dead-zone-free flow path design facilitates efficient purging to eliminate gas retention. Packing-free diaphragm sealing ensures gas purity, meeting rigorous requirements for stable, safe, and high-purity gas delivery in semiconductor manufacturing.

Features:

- Compatible with modular gas distribution systems
- Dead-zone-free flow path design for easy purging
- Individual helium mass spectrometer leak testing per valve

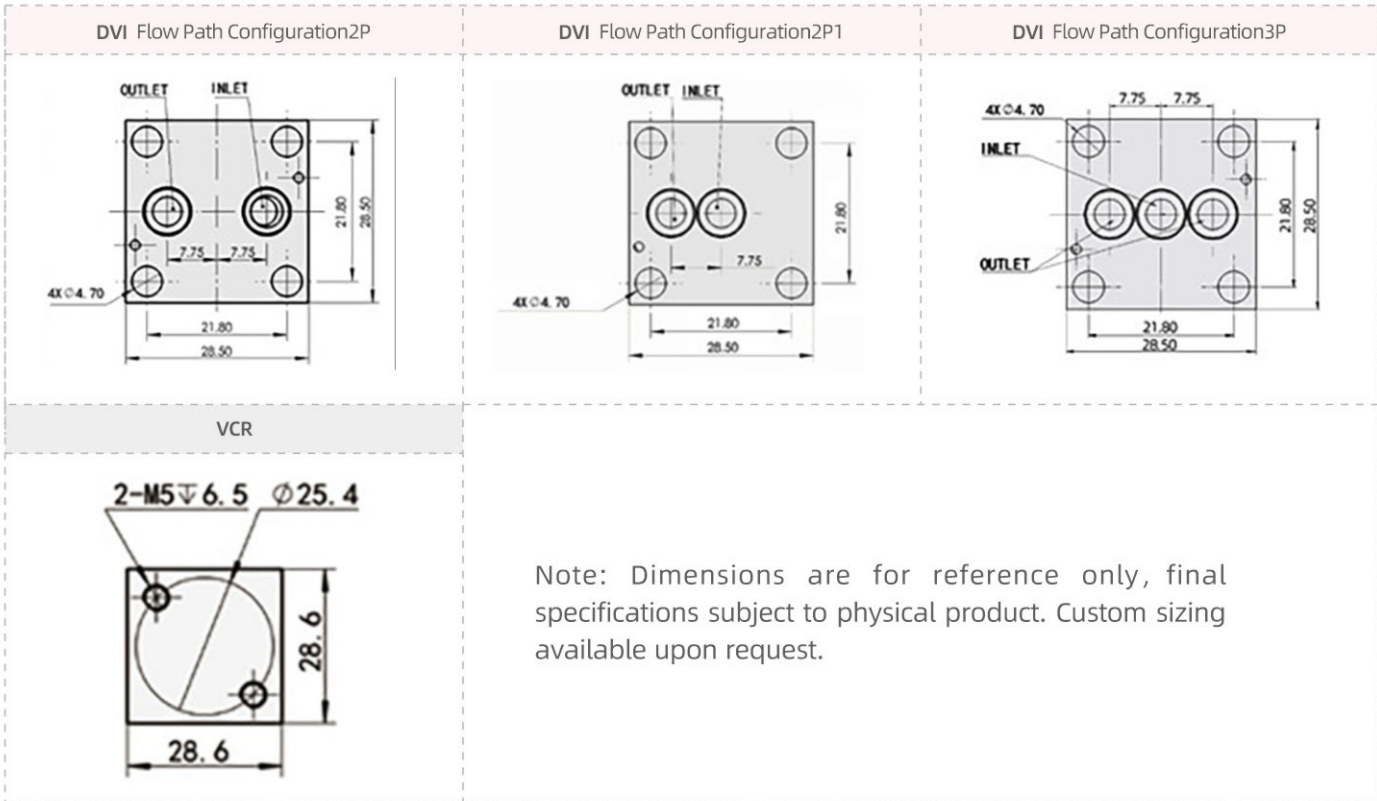
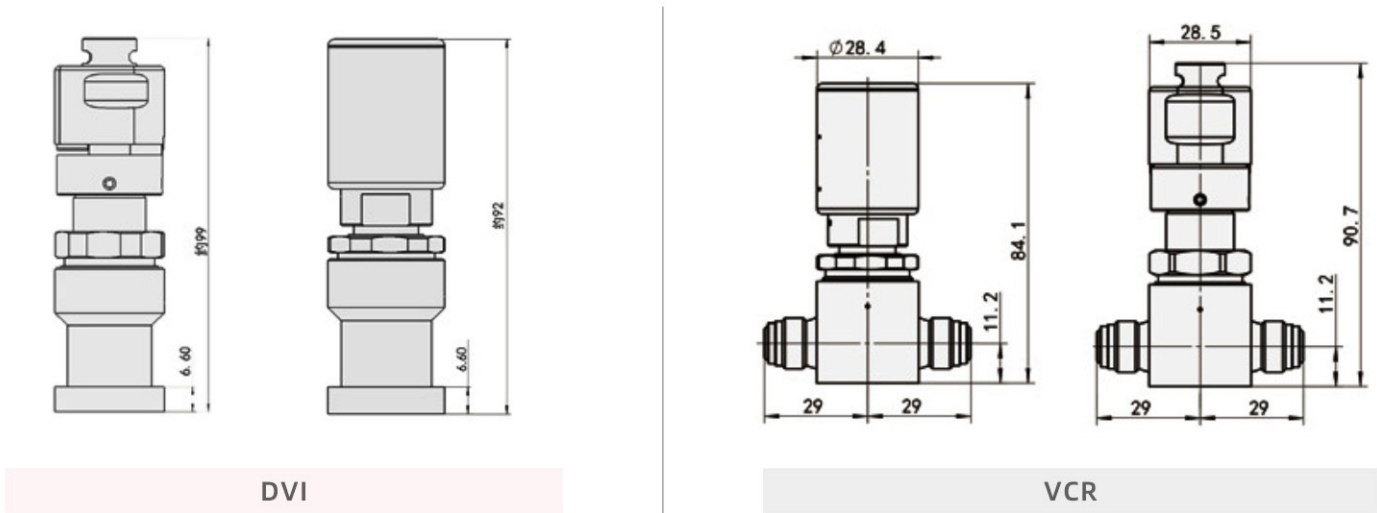
Technical Data

Operating Pressure:150psig	Internal Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Burst Pressure:450psig	External Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Operating Temperature:-10 - 80°C	Internal Surface Roughness:Ra $\leq 0.13\mu\text{m}$
Flow Coefficient (Cv):0.1/0.3HF	

DVI Series Diaphragm Valves

Main Material Components	
Valve Body	316L/316L (VIM+VAR)
Diaphragm	Ni-Co alloy /UNS R30003
Gasket	PCTFE

Dimensions (mm)

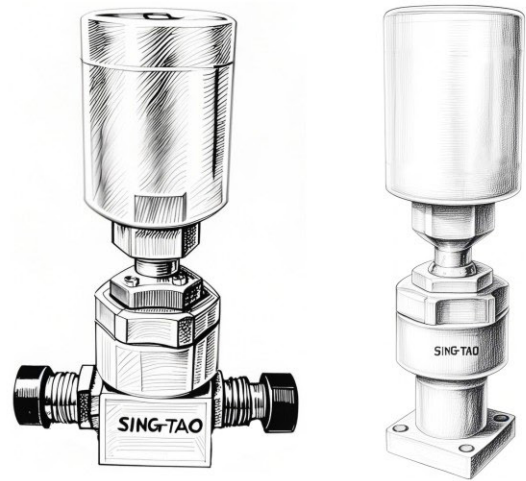


Coding Rules

Tag Number	1	2	3	4	5	5	6
Code	MHDV	2P	1.125C	V2	B	RNC	-
Property Definition	Actuation Type	Flow Path Type	Connection Type	Valve Body Material	Handle Color	Actuator	Options

Tag Number	Code	Flow Path Type
1	MHDV	Manual Diaphragm Valve
	MPDV	Pneumatic Diaphragm Valve
2	Code	Flow Path Configuration
	2P	2-Port
	3P	3-Port
	4P	4-Port
	I	Straight
	JL	Right-Angle (L)
	JR	Right-Angle (R)
	BI	Backside Inlet
	T	Three-Way
	L	Three-Way (L)
	R	Three-Way (R)
	TT	Three-Way (T)
	TL	Three-Way (TL)
	TR	Three-Way (TR)
	HH	Four-Way
	FS	Four-Way (FS)
3	Code	Connection Type
	1.125C	1-1/8" C-seal
	1.5C	1-1/2" C-seal
	74F	1/4" UCR Female
	74M	1/4" UCR Integral Male
	74MS	1/4" UCR Male Swivel
4	Code	Valve Body Material
	SS	316L
	V2	316L(VIM+VAR)
5	Code	Handle Color
	R	Red
	B	Blue
	Code	Actuator
	NC	Normally closed
	NO	Normally open
6	Code	Options
	HF	High-Flow

QVP SERIES DIAPHRAGM VALVES



Engineered with a diaphragm-type hard-sealed structure for ultra-low leakage, extended lifespan, and rapid response. High-temperature-resistant actuator configurations are available. Designed for atomic layer deposition (ALD) systems, this valve delivers ultra-high-purity and toxic/corrosive gases in integrated circuit wafer production. The high-temperature actuator ensures reliable performance in elevated-temperature environments.

Features:

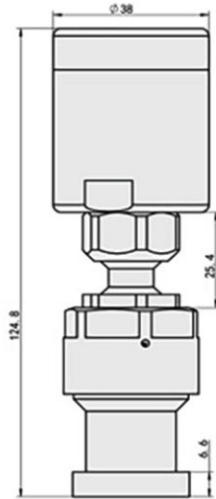
- Long lifespan under rapid cycling
- High-temperature-resistant actuator
- Individual helium mass spectrometer leak testing per valve
- Optional modular surface-mount, tube weld, and VCR end connections

Technical Data

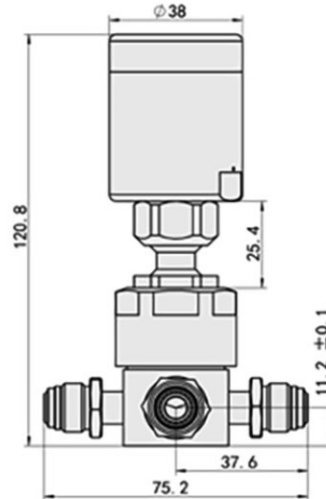
Operating Pressure: Vacuum to 145 psig	Internal Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Operating Temperature: -10 - 70°C, 0 - 200°C(High temperature type)	External Leakage Rate: $\leq 1 \times 10^{-11}$ Pa.m ³ /sec.He
Flow Coefficient (Cv):0.27/0.62	Internal Surface Roughness:Ra $\leq 0.13\mu\text{m}$

Main Material Components	
Valve Body	316L(VIM+VAR)
Diaphragm	Elgiloy
Gasket	PFA
Pneumatic Actuators	6061 Aluminum Alloy

Dimensions (mm)

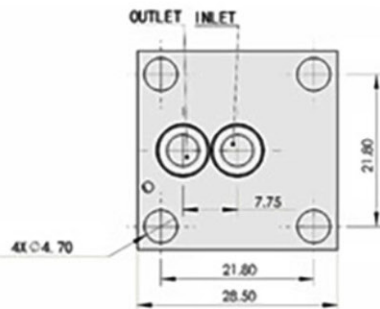


DVI

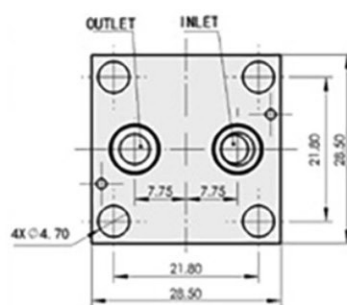


VCR

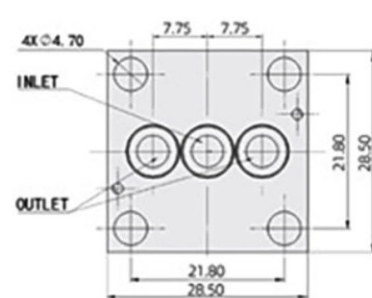
DVI Flow Path Configuration 2P



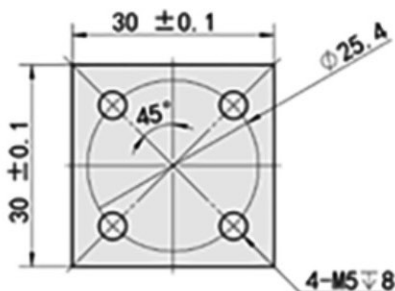
DVI Flow Path Configuration 2P1



DVI Flow Path Configuration 3P



VCR



Note: Dimensions are for reference only, final specifications subject to physical product. Custom sizing available upon request.

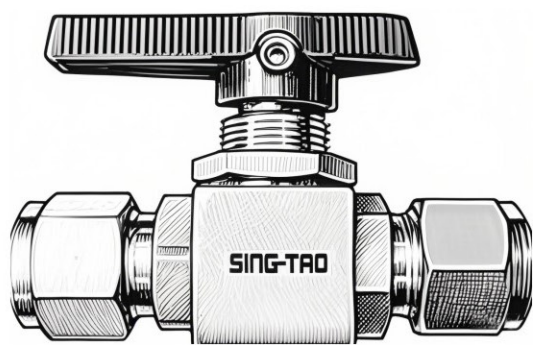
QVP Series Diaphragm Valves

Coding Rules

Tag Number	1	2	3	3	4	5	6	7
Code	QVP	I	74M	74M	V2	NC	HT	SV
Property Definition	Actuation Type	Flow Path Type	Connection Type	Valve Body Material	Actuation Type	Actuator	Operating Temperature	Accessories

Tag Number	Code	Flow Path Type
1	QVP	Quick-Response Pneumatic Diaphragm Valve
	QVPH	High-Flow Quick-Response Pneumatic Diaphragm Valve
2	Code	Flow Path Configuration
	2P	2-Port
	3P	3-Port
	I	Straight
	JL	Right-Angle (L)
	JR	Right-Angle (R)
	BI	Backside Inlet
	T	Three-Way
	L	Three-Way (L)
	R	Three-Way (R)
	TT	Three-Way (T)
	TL	Three-Way (TL)
	TR	Three-Way (TR)
	HH	Four-Way
	FS	Four-Way (FS)
3	Code	Connection Type
	1.125C	1-1/8" C-seal
	1.5C	1-1/2" C-seal
	74F	1/4" UCR Female
	74M	1/4" UCR Integral Male
4	Code	Valve Body Material
	V2	316L(VIM+VAR)
5	Code	Actuator
	NC	Normally closed
	NO	Normally open
6	Code	Operating Temperature
	HT	High-Temperature Configuration
	ST	Standard-Temperature Configuration
7	Code	Accessories
	S	Position Sensor
	V	Solenoid Valve
	H	Heating Cartridge Mounting Hole

BV SERIES BALL VALVES



Optimized transmission mechanism design reduces operating torque, while lightweight materials and compact construction minimize valve size and weight. Each valve undergoes nitrogen/compressed air leak testing under rated pressure to ensure leakage below industry standards, balancing operational ease and sealing reliability.

Features:

- Compact and lightweight
- 90° rotation for open/close operation
- Tube fitting and NPT threaded connections

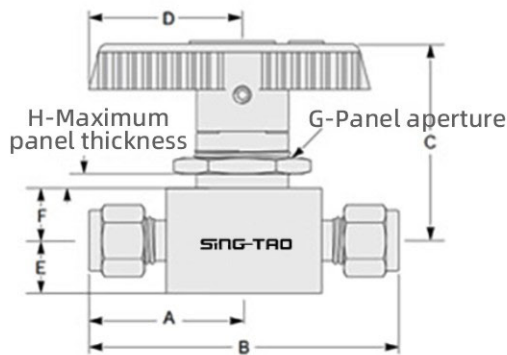
Technical Data

Connection Type	Specification	Nominal Diameter in. (mm)	Flow Coefficient (Cv)	Operating Pressure	Operating Temperature
Tube Fitting	1/16"	0.052(1.3)	0.1	3000PSI	-53 - 158°C
	1/8"	0.093(2.4)	0.2		
	1/4"	0.125(3.2)	0.6		
	1/4"	0.187(4.8)	1.4		
	3/8"	0.187(4.8)	1.5		
	3/8"	0.281(7.1)	6.0		
	1/2"	0.406(10.3)	12.0		
	3/4"	0.406(10.3)	6.4		
	3mm	0.093(2.4)	0.2		
	6mm	0.125(3.2)	0.6		
	6mm	0.187(4.8)	1.4		
	8mm	0.187(4.8)	1.5		
	10mm	0.281(7.1)	6.0		
	12mm	0.406(10.3)	12.0		
NPT Internal Thread	1/8"	0.125(3.2)	0.5	3000PSI	-53 - 158°C
	1/8"	0.187(4.8)	1.2		
	1/4"	0.187(4.8)	0.9		
	1/4"	0.281(7.1)	3		
	3/8"	0.281(7.1)	2.6		
	1/2"	0.406(10.3)	6.3		
NPT External Thread	1/4"	0.187(4.8)	1.2		
ISO Tapered Internal Thread	1/4"	0.187(4.8)	0.9		
	3/8"	0.281(7.1)	2.6		
	1/2"	0.406(10.3)	6.3		

BV Series Ball Valves

Main Material Components	
Valve Body	316L
Valve Ball	316L
Seat	316L
Gasket	PTFE

Dimensions (mm)



Note: Dimensions are for reference only, final specifications subject to physical product. Custom sizing available upon request.

Connection Type	Specification	Nominal Diameter in. (mm)	A	B	C	D	E	F	G	H	I
Tube Fitting	1/16"	0.052(1.3)	0.84(21.3)	1.68(42.6)	1.36(34.5)	1.12(28.4)	0.28(7.1)	0.34(8.6)	0.25(6.4)	0.59(15.1)	-
	1/8"	0.093(2.4)	1.01(25.7)	2.02(51.4)	1.36(34.5)	1.12(28.4)	0.28(7.1)	0.34(8.6)	0.25(6.4)	0.59(15.1)	0.97(24.6)
	1/4"	0.125(3.2)	1.10(27.9)	2.20(55.8)	1.36(34.5)	1.12(28.4)	0.28(7.1)	0.34(8.6)	0.25(6.4)	0.59(15.1)	1.07(27.2)
	1/4"	0.187(4.8)	1.20(30.5)	2.40(61.0)	1.47(37.3)	1.53(38.9)	0.38(9.7)	0.44(11.2)	0.19(4.8)	0.78(19.8)	1.17(29.7)
	3/8"	0.187(4.8)	1.29(32.8)	2.58(65.5)	1.47(37.3)	1.53(38.9)	0.38(9.7)	0.44(11.2)	0.19(4.8)	0.78(19.8)	1.29(32.8)
	3/8"	0.281(7.1)	1.52(38.6)	3.05(77.5)	2.07(52.6)	2.00(50.8)	0.56(14.2)	0.56(14.2)	0.38(9.7)	1.13(28.6)	1.43(36.3)
	1/2"	0.406(10.3)	1.96(49.8)	3.92(99.6)	2.43(61.7)	3.00(76.2)	0.69(17.5)	0.69(17.5)	0.38(9.7)	1.50(38.1)	1.74(44.2)
	3/4"	0.406(10.3)	1.96(49.8)	3.92(99.6)	2.43(61.7)	3.00(76.2)	0.69(17.5)	0.69(17.5)	0.38(9.7)	1.50(38.1)	1.74(44.2)
	3mm	0.093(2.4)	1.01(25.7)	2.02(51.4)	1.36(34.5)	1.12(28.4)	0.28(7.1)	0.34(8.6)	0.25(6.4)	0.59(15.1)	0.97(24.6)
	6mm	0.125(3.2)	1.10(27.9)	2.20(55.8)	1.36(34.5)	1.12(28.4)	0.28(7.1)	0.34(8.6)	0.25(6.4)	0.59(15.1)	1.07(27.2)
	6mm	0.187(4.8)	1.20(30.5)	2.40(61.0)	1.47(37.3)	1.53(38.9)	0.38(9.7)	0.44(11.2)	0.19(4.8)	0.78(19.8)	1.17(29.7)
	8mm	0.187(4.8)	1.23(31.2)	2.46(62.5)	1.47(37.3)	1.53(38.9)	0.38(9.7)	0.44(11.2)	0.19(4.8)	0.78(19.8)	1.17(29.7)
	10mm	0.281(7.1)	1.53(38.9)	3.06(77.8)	2.07(52.6)	2.00(50.8)	0.56(14.2)	0.56(14.2)	0.38(9.7)	1.13(28.6)	1.43(36.3)
	12mm	0.406(10.3)	1.96(49.8)	3.92(99.6)	2.43(61.7)	3.00(76.2)	0.69(17.5)	0.69(17.5)	0.38(9.7)	1.50(38.1)	1.74(44.2)
NPT Internal Thread	1/8"	0.125(3.2)	0.81(20.6)	1.62(41.1)	1.36(34.5)	1.12(28.4)	0.28(7.1)	0.34(8.6)	0.25(6.4)	0.59(15.1)	0.81(20.6)
	1/8"	0.187(4.8)	1.00(25.4)	2.00(50.8)	1.47(37.3)	1.53(38.9)	0.38(9.7)	0.44(11.2)	0.19(4.8)	0.78(19.8)	1.00(25.4)
	1/4"	0.187(4.8)	1.03(26.2)	2.06(52.4)	1.47(37.3)	1.53(38.9)	0.38(9.7)	0.44(11.2)	0.19(4.8)	0.78(19.8)	1.03(26.2)
	1/4"	0.281(7.1)	1.25(31.8)	2.50(63.5)	2.07(52.6)	2.00(50.8)	0.56(14.2)	0.56(14.2)	0.38(9.7)	1.13(28.6)	1.25(31.8)
	3/8"	0.281(7.1)	1.25(31.8)	2.50(63.5)	2.07(52.6)	2.00(50.8)	0.56(14.2)	0.56(14.2)	0.38(9.7)	1.13(28.6)	1.25(31.8)
	1/2"	0.406(10.3)	1.56(39.6)	3.12(79.2)	2.43(61.7)	3.00(76.2)	0.69(17.5)	0.69(17.5)	0.38(9.7)	1.50(38.1)	1.56(39.6)
NPT External Thread	1/4"	0.187(4.8)	1.00(25.4)	2.00(50.8)	1.47(37.3)	1.53(38.9)	0.38(9.7)	0.44(11.2)	0.19(4.8)	0.78(19.8)	1.03(26.2)
ISO Tapered Internal Thread	1/4"	0.187(4.8)	1.03(26.2)	2.06(52.4)	1.47(37.3)	1.53(38.9)	0.38(9.7)	0.44(11.2)	0.19(4.8)	0.78(19.8)	-
	3/8"	0.281(7.1)	1.25(31.8)	2.50(63.5)	2.07(52.6)	2.00(50.8)	0.56(14.2)	0.56(14.2)	0.38(9.7)	1.13(28.6)	-
	1/2"	0.406(10.3)	1.56(39.6)	3.12(79.2)	2.43(61.7)	3.00(76.2)	0.69(17.5)	0.69(17.5)	0.38(9.7)	1.50(38.1)	-

Coding Rules

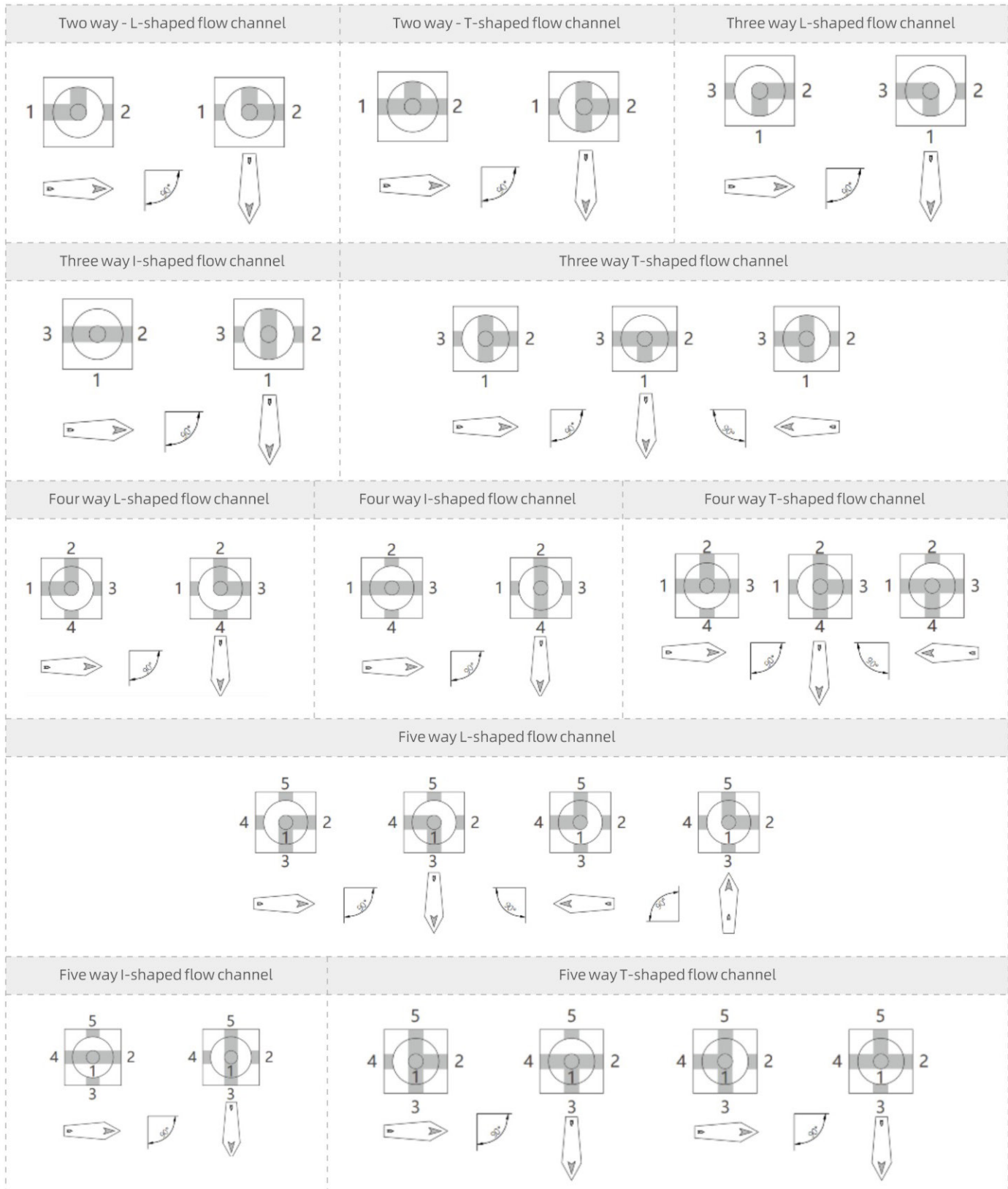
Tag Number		1	2、3、4	2、3、4	5	6
Code	BV	1	268	268	BLA	HF
Property Definition	Model	Flow Path Type	Inlet Connection	Outlet Connection	Handle Color	Options

Tag Number	Code	Flow Path Type
1	1	2-Port, Straight Path
	1L	2-Port Straight Type, L-Flow Path
	1T	2-Port Straight Type, T-Flow Path
	2	2-Port Straight Type, T-Flow Path
	3	3-Port Switching Type
	3L	3-Port Switching Type, L-Flow Path
	3I	3-Port Switching Type, I-Flow Path
	3T	3-Port Switching Type, T-Flow Path
	4	4-Port Cross Type
	4L	4-Port Cross Type, L-Flow Path
	4I	4-Port Cross Type, I-Flow Path
	4T	4-Port Cross Type, T-Flow Path
	5	5-Port Switching Type
	5L	5-Port Switching Type, L-Flow Path
	5I	5-Port Switching Type, I-Flow Path
	5T	5-Port Switching Type, T-Flow Path
	6	6-Port Cross Type
	7	7-Port Switching Type

BV Series Ball Valves

Tag Number	Code	Inlet Connection
2、3、4	5	NPT
	6	Tube Fitting
	8	ISO Thread
	E	Other
	Code	Outlet Connection
	1	1/16"
	2	1/8"
	4	1/4"
	6	3/8"
	8	1/2"
	12	3/4"
	M3	3mm
	M6	6mm
	M8	8mm
	M10	10mm
	M12	12mm
	Code	Connection
	F	Female
5	Code	Handle Color
	BLA	Black
	B	Blue
	G	Green
	R	Red
6	Code	Options
	HF	High-Flow
	LF	Low-Flow

Ball valve flow channel



CV CHECK VALVES



Incorporating precision preset cracking pressure technology and omnidirectional installation capability. The elastomeric sealing seat with dynamic compensation ensures reliable sealing and silent operation, effectively preventing backflow while optimizing installation flexibility and sealing performance.

Features:

- Fixed cracking pressure with omnidirectional installation
- Maximum working pressure: 3000 PSI (206 bar)
- Elastomeric sealing seat for silent backflow prevention

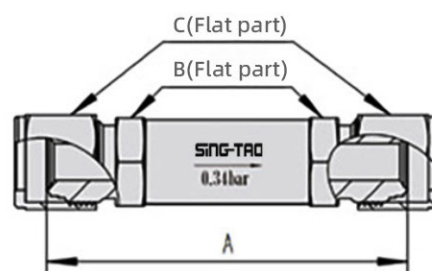
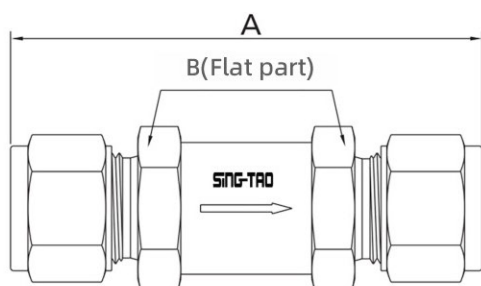
Technical Data

Metric Ferrule	6mm	4.8	0.47	6000PSI (413bar)	-25 - 232°C
	10mm	8	1.68		
Imperial Ferrule	1/4"	4.8	0.47		
	3/8"	7	1.47		
	1/2"	10.2	2.21		
NPT Thread	1/4"	4.8	0.47		
UCR	1/4"	4.8	0.47		
	1/2"	10.2	2.21		

Main Material Components

Valve Body	316L/316L(VIM+VAR)
Lift Core	316L/316L(VIM+VAR)
Valve Body	316L/316L(VIM+VAR)
Seals	FKM / FFKM
Spring	316L/316L(VIM+VAR)

Dimensions (mm)



Nominal Opening Pressure psi (bar)	1/3(0.03)	1(0.07)	5(0.34)	10(0.68)	25(1.7)
Opening Pressure Range psi (bar)	Max3(0.21)	Max4(0.28)	3-9(0.2-0.62)	7-15(0.48-1.0)	20-30(1.3-2.0)
Reclosing Pressure psi (bar)	Max6(0.42)	Max5(0.4)	Max2(0.14)	Minimum3(0.2)	Minimum17(1.1)
Note	※ Cracking Pressure: The pressure differential between inlet and outlet at which initial fluid flow occurs through the valve when achieved. ※ Resealing Pressure: The pressure differential between inlet and outlet at which no fluid flow occurs through the valve when achieved. ※ After prolonged non-activation, the valve's initial cracking pressure may exceed the preset value.				

CV Check Valves

Connection Type	H	A	B	D	Connection Type	H	A	B	D
Metric Ferrule	6mm	60	17	14	NPT Internal Thread	1/4"	50	17	14
	10mm	84	22	19	NPT External Thread	1/4"	50	17	14
Imperial Ferrule	1/4"	60	17	14	VCR	1/4"	59.5	17	-
	3/8"	84	22	19		1/2"	99.2	24	-
	1/2"	84	22	22					

Note: Dimensions are for reference only, final specifications subject to physical product. Custom sizing available upon request.

Coding Rules

Tag Number		1、2、3	1、2、3	4	5
Code	CV	78M	78M	SS	3
Property Definition	Model	Inlet Connection	Outlet Connection	Material	Opening Pressure

Tag Number	Code	Inlet Connection
1、2、3	5	NPT
	6	Ferrule Fitting
	7	UCR
	E	Other
	Code	Outlet Connection
	4	1/4"
	6	3/8"
	8	1/2"
	M6	6mm
	M10	10mm
	E	Other
	Code	Outlet Connection
	SS	External Thread
	V2	Internal Thread
4	Code	Material
	SS	316L
	V2	316L(VIM+VAR)
5	Code	Opening Pressure
	1	0.03Bar
	2	0.07Bar
	3	0.34Bar
	4	0.68Bar
	5	1.7Bar

Application scenarios



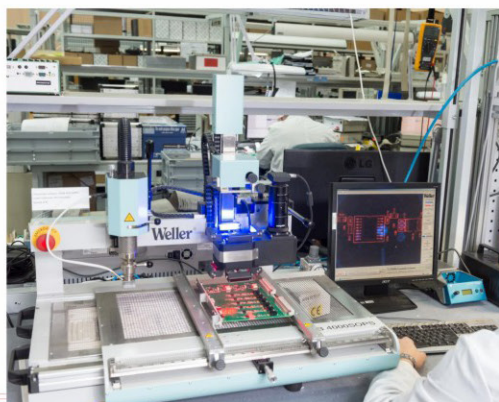
Biological medicine



Daily chemicals and beverages



Food



Electronic semiconductor



QUALITY FIRST



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