



US Ver.

《Bellows Valve》

# CVY Series

## Ultra-High Purity Stainless Steel Y-Type Bellows Valves

- Optimal solution for gas distribution systems
- High Flow Cv options
- Short manufacturing lead-time
- Tight shut-off (100% Helium leak checked)
- Cast, forged & raw block body options
- 150psi, 300psi & 1000psi models
- Purge Port options available



*IHARA SCIENCE CORPORATION*

## Product Features

- High Cv and maximum flow capacity
- High purity investment casting & forged stainless steel construction options
- High sealing ability and long durability
- Suitable to high purity gas and chemical distribution systems

## Material and Construction

	Part	Material	Material (ASTM)
①	Body	SCS16A/SUS316L	A351 CF3M/A182 F316L
②	Disk Seat	PTFE or PCTFE	ASTM D4894/ASTM D3595
③	Bellows	SUS316L	A276 316L
④	Gasket	PTFE or PCTFE	ASTM D4894/ASTM D3595
⑤	Bonnet	SCS13A	A351 CF8
⑥	Handwheel	Resin/A5056(2")	Resin/A5056(2")

## Helium Leak Testing

Inboard/ Across the seat	PCTFE	$1 \times 10^{-11}$ Pa·m <sup>3</sup> /sec ( $1 \times 10^{-10}$ scc/sec)	Rated
		$1 \times 10^{-10}$ Pa·m <sup>3</sup> /sec ( $1 \times 10^{-9}$ scc/sec)	Standard
	PTFE	$1 \times 10^{-6}$ Pa·m <sup>3</sup> /sec ( $1 \times 10^{-5}$ scc/sec)	Standard

※ Excluding Permeation of PTFE/PCTFE

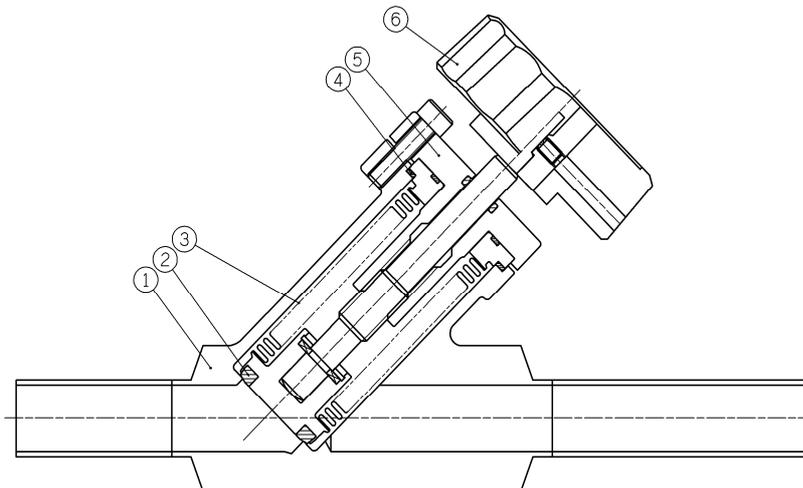
## Specifications

Nominal Size	1/2"	3/4"	1"	1-1/2"	2"
Working Pressure	Vac.~1MPa (150psi) Vac.~2MPa (300psi)				
Temperature	-10~+80°C (14~176°F)				
Cv(Standard)	5	10	11	13	34
Cv(high flow)	N/A	15	20	(PYB)	(PYB)
End Connection	Tube Weld	BI-Lok®		Flanged	
	VTF (Metal gasket seal fittings)				

Nominal Size	1/2"	3/4"	1"	1-1/2"	2"
Working Pressure	Vac.~7MPa (1000psi)				
Temperature	-10~+80°C (14~176°F)				
Cv(Standard)	5	10	18	25	30
Cv(high flow)	-	-	-	-	-
End Connection	Tube Weld	BI-Lok®		Flanged	
	VTF (Metal gasket seal fittings)				

## Construction

### Manual Type Construction



Tube End Type

■ Pneumatic Actuated Type

■ Pull-Tee Type (HV Series)



## ■ Ordering Information

**Casting Body (150/300psi options)**

**CVY - ① ② ③ - ④16⑤ - ⑥ - ⑦ - ⑧ - ⑨ - ⑩**

Sample: CVY-12TW1.65-(blank)16CT-(blank)-(blank)-EP-(blank)

Description: 3/4" cast body, 1.65mm wall tube ends, 150psi, PCTFE/PTFE, standard flow, manual operation, 7Ra EP, no purge ports

**Forged Body (150/300psi options)**

**CVY - F - ① ② ③ - ④6L⑤ - ⑥ - ⑦ - ⑧ - ⑨ - ⑩**

Sample: CVY-F-16VF(blank)-3006LCT-H-NC-EP-IOPP-GD4N

Description: 1" forged body, female VTF/VCR ends, 300psi, PCTFE/PTFE, high flow, normally closed, 7Ra EP, dual purge ports 1/4"

**Machined Raw Block Body (1000psi option only)**

**CVY - F - ① ② ③ - ④6L⑤ - ⑥ - ⑦ - ⑧ - ⑨ - ⑩**

Sample: CVY-F-16TW1.65-10006LC-EP-IOPP-GD4N

Description: 1" raw block body, 0.065" tube weld ends, 1000psi, PCTFE, manual handwheel, 7Ra EP MAX, dual purge ports 1/4"

①	
Mark	Size
8	1/2"
12	3/4"
16	1"
24	1 1/2"
32	2"

②	
Mark	Valve Connection
TW	Tube Weld
PW	Pipe Weld
VM	VTF (Male)
VF	VTF (Female)
D	BI-Lok®

※VM/VF Connection = Up to 1"

TW③	
Mark	Thickness
1.24	1.24mm
1.65	1.65mm

※ TW option only

PW③	
Mark	Thickness
10	Sch10/S
40	Sch40/S
80	Sch80/S

※ PW option only

④	
Mark	Rating
(blank)	1MPa (150psi)
300	2MPa (300psi)
1000	7MPa (1000psi)

⑤		
Mark	Gasket	Seat
T	PTFE	PTFE
CT	PCTFE	PTFE
C	PCTFE	PCTFE

※ PVDF, Polyimide, PEEK seats available

⑥	
Mark	Cv
(blank)	standard flow
H	high flow

⑦	
Mark	Operation
(blank)	Manual
NC	Normal Close
NO	Normal Open
DA	Double Acting

⑧	
Mark	Surface Finish
EP	Electropolish Ra 5µin (7Ra max)
BA	Bright Annealed (Mech Polish) Ra 20µin (32Ra max)

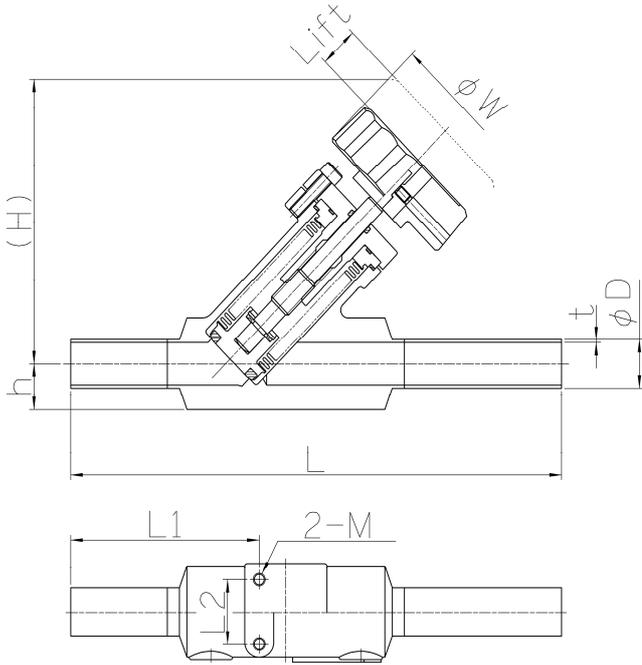
⑨	
Mark	Purge Port
(blank)	None
IOPP	Inlet & Outlet
IPP	Inlet
OPP	Outlet

⑩	
Mark	Purge Port End
(blank)	No Purge Port
GK4N	Male High Flow Gland 1/4" with face-seal cap
GD4N	Male Gland 1/4" with face-seal cap

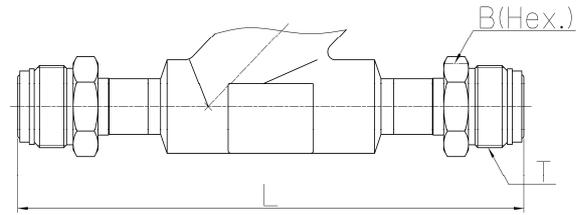
\*To cap the purge port, add "N" at the end of the model number.

# ■ Dimensions

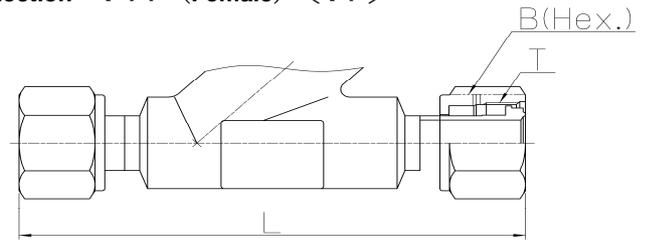
## ■ Connection : Tube (TW)



## ■ Connection : V T F (Male) (VM)



## ■ Connection : V T F (Female) (VF)



### <Dimensions for 1MPa(150psi) and 2MPa(300psi)>

#### ■ Casting Body

TW											
P/N	Size	L	L1	L2	H	h	D	t	M	W	Cv
CVY-8TW	1/2"	183	80.5	25.4	111	18	12.7	1.24	M5	62	5
CVY-12TW	3/4"	203	78	25.4	111	18	19.05	1.24   1.65	M5	62	10
CVY-16TW	1"	234	88	25.4	111	18	25.4	1.65	M5	62	11
CVY-24TW	1 1/2"	246	100	25.4	111	18	38.1	1.65	M5	62	13
CVY-32TW	2"	335.5	129	44.5	172.8	26	50.8	1.65	M6	100	34

VTF(Male)											
P/N	Size	L	L1	L2	H	h	B	T	M	W	Cv
CVY-8VM	1/2"	201.6	89.8	25.4	111	18	23.81	7/8-14UNF	M5	62	5
CVY-12VM	3/4"	202	90	25.4	111	18	33.34	1 1/4-18UNEF	M5	62	10
CVY-16VM	1"	215.8	96.9	25.4	111	18	41.27	1 1/2-20UN	M5	62	11

VTF(Female)											
P/N	Size	L	L1	L2	H	h	B	T	M	W	Cv
CVY-8VF	1/2"	166.4	72.2	25.4	111	18	26.99	7/8-14UNF	M5	62	5
CVY-12VF	3/4"	168	73	25.4	111	18	38.1	1 1/4-18UNEF	M5	62	10
CVY-16VF	1"	178	78	25.4	111	18	44.45	1 1/2-20UN	M5	62	11

## ■ Dimensions

### ■ Forged Body

TW												
P/N	Size	L	L1	L2	H	h	D	t		M	W	Cv
CVY-F-8TW	1/2"	158	68	25.4	111	18	12.7	1.24		M5	62	5
CVY-F-12TW	3/4"	203	78	25.4	111	18	19.05	1.24	1.65	M5	62	10
CVY-F-16TW	1"	234	88	25.4	111	18	25.4	1.65		M5	62	11
CVY-F-24TW	1 1/2"	246	100	25.4	111	18	38.1	1.65		M5	62	13

VTF(Male)												
P/N	Size	L	L1	L2	H	h	B	T		M	W	Cv
CVY-F-8VM	1/2"	163.6	70.8	25.4	111	18	23.81	7/8-14UNF		M5	62	5
CVY-F-12VM	3/4"	202	90	25.4	111	18	33.34	1 1/4-18UNEF		M5	62	10
CVY-F-16VM	1"	215.8	96.9	25.4	111	18	41.27	1 1/2-20UN		M5	62	11

VTF(Female)												
P/N	Size	L	L1	L2	H	h	B	T		M	W	Cv
CVY-F-8VF	1/2"	158	68	25.4	111	18	26.99	7/8-14UNF		M5	62	5
CVY-F-12VF	3/4"	168	73	25.4	111	18	38.1	1 1/4-18UNEF		M5	62	10
CVY-F-16VF	1"	178	78	25.4	111	18	44.45	1 1/2-20UN		M5	62	11

### ■ Lift Dimensions

Lift		
Size	1MPa	2Mpa
1/2"	16	11
3/4"	16	11
1"	16	11
1 1/2"	16	11
2"	24	24

### ■ High Flow Type (2MPa=300psi)

TW													
P/N	Size	L	L1	L2	H	h	D	t		M	W	Lift	Cv
CVY-F-12TW-H	3/4"	243	109	44.5	172.8	26	19.05	1.24	1.65	M6	100	24	15
CVY-F-16TW-H	1"	274	119	44.5	172.8	26	25.4	1.65		M6	100	24	20

\* Other High Flow Types are available upon request.

\* Our final specification for each inquiry is based on each drawing of ours.

\* Dimensions and specification may change without prior notice.



■ Pipe-welded Y-Type Bellows valve  
(size 1" to 12")



■ High Flow Diaphragm Valve



■ Ihara Science Bellows Valves



■ Ihara Science Diaphragm Valves

## WARNING

If you don't select and handle fittings, valves and related accessories in an adequate manner, it may damage human beings and applicable systems.

Within the responsibility and authorization of users and piping designers, fittings, valves and related accessories shall be adequately selected, used and maintained based on the applicable conditions and product conformity to the system to be applied. Please read carefully the operation manual and feel free to contact with Ihara if you have any question or request.

## WARRANTY CLAUSE

### 1. Warranty Period

The warranty period of the products is one (1) year from putting into service or one and half (1.5) years after delivery whichever comes earlier. However, the products specially specified and/or the cases used under deviating from the specification shall be exempted.

### 2. Scope of Warranty

Any failure and damage under maker's responsibility will be found during the warranty period, the substitutes and/or replacement parts shall be provided free of charge. The warranty shall not be applied to a claim for the liquidated damages.



**Ihara Science USA Corporation**  
17971 Sky Park Circle, Suite B,  
Irvine, CA, 92614 U.S.A.

[info@iharascience.com](mailto:info@iharascience.com)  
**TEL: (949)387-3727**  
**Fax: (949)387-3739**