WYECO

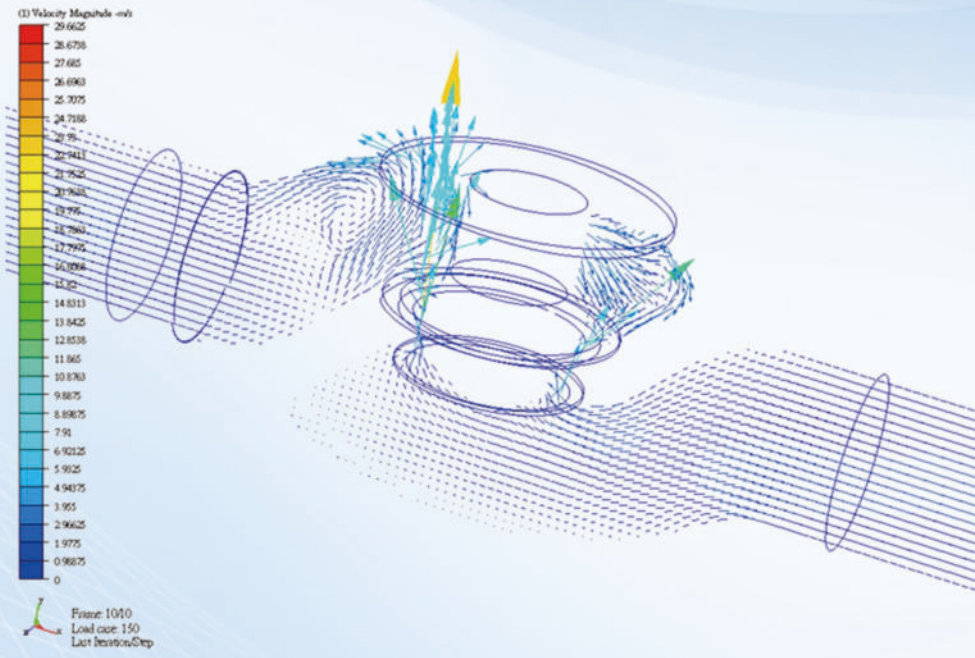
Globe Control Valves

SINCE 1975

www.wyeco.com.tw

WYECO AUTO VALVES CO., LTD.

8000 Series Control Valve



Globe Type Control Valve with Lo-dB &Anti-Cavitation Capabilities

Version 2023.05

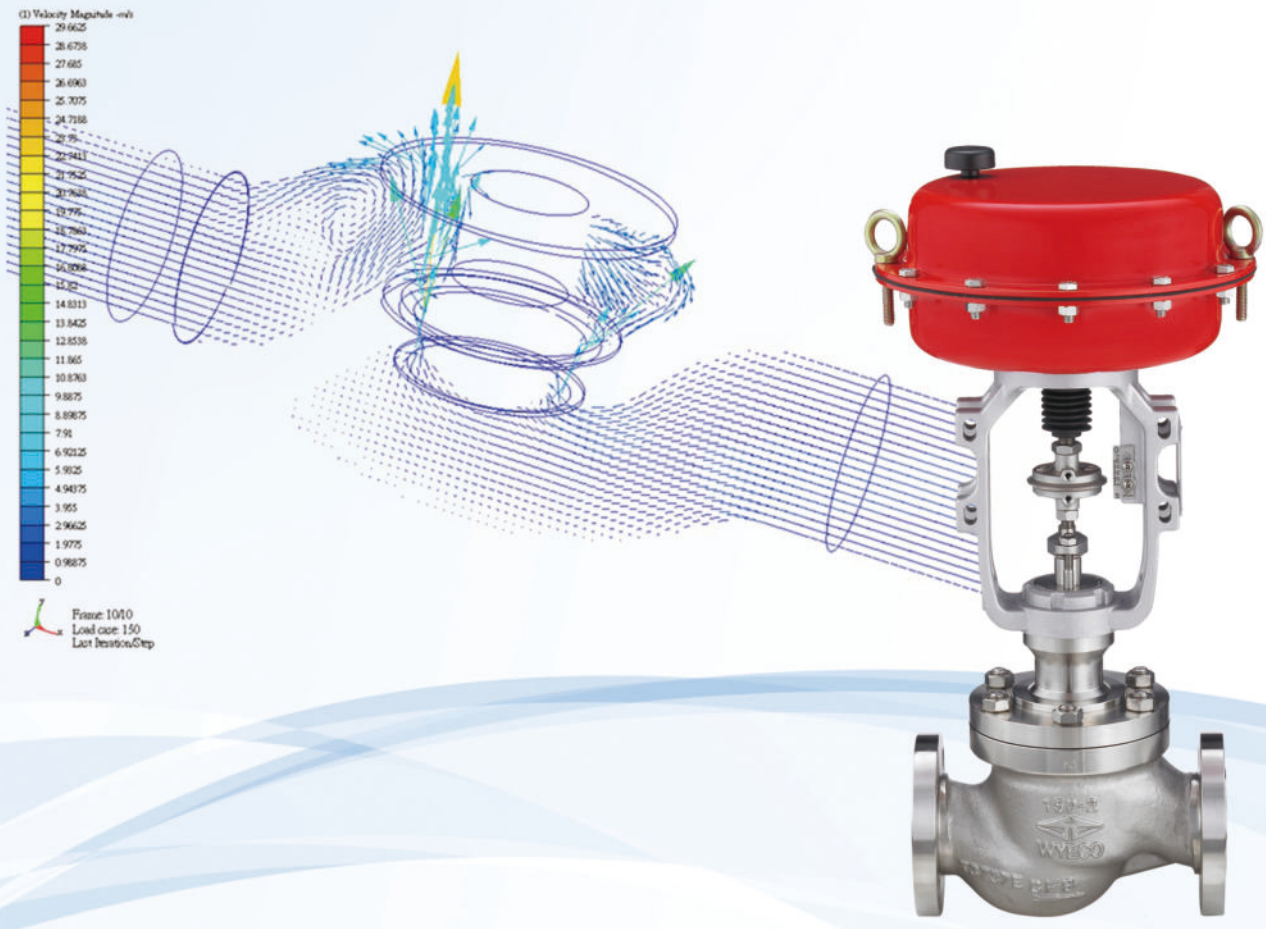


TABLE OF CONTENTS

Features 01
Model Number 02
Description of Valves Data 03
Ratings / Connections 04
Temperature Range / Seat Leakage 05
Construction and Specification of Trim 06
Cv Versus Travel 07
Materials of Construction and Specification 25
Combinations of Trim Materials 27
Dimensions 30
Diaphragm Actuator 42
Sales and Maintains Back Cover

FEATURES

Top Guided / Cage Guided / Port Guided

Making sure valve plug to be stable and firm.

Lo-dB / Anti-cavitation Trim

Replacing the traditional trim with the Lo-dB / Anti-cavitation design to make excellent noise attenuated or cavitation controlled.

Reduced Port

A series of reduced port is available to provide the wide Cv in all valve sizes.

Sizing

A variety of Actuators and trims are available to meet the wide pressure drop range.
Shut-off Pressure of various actuators are fit the specific leakage classes, or can be calculated by using WYECO Sizing Program.

Leakage Class

Class IV is standard. Optional constructions meet IEC 60534-4 and ANSI / FCI 70-2 Class V and VI.

Quick Change Trim

Easy for maintenance.

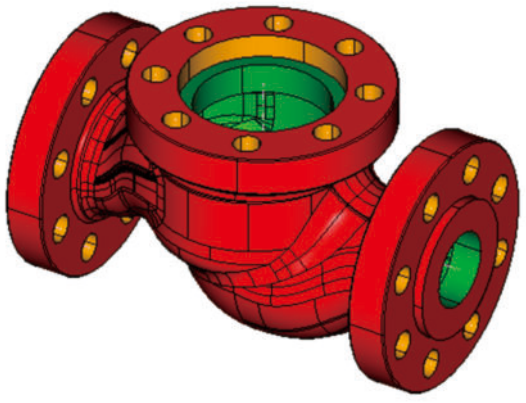
Low Emissions

Low emission packing to assure compliance with latest environmental regulations.

Optional : NACE Compliance

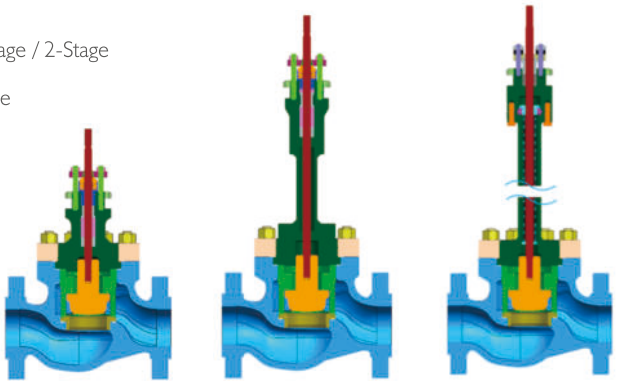
The 8000 Series is available for Serious Service Applications using design and construction methods in accordance with NACE Standard MR 0103.

Applications requiring compliance to NACE Standard MR 0175 / ISO 15156 require engineering review.

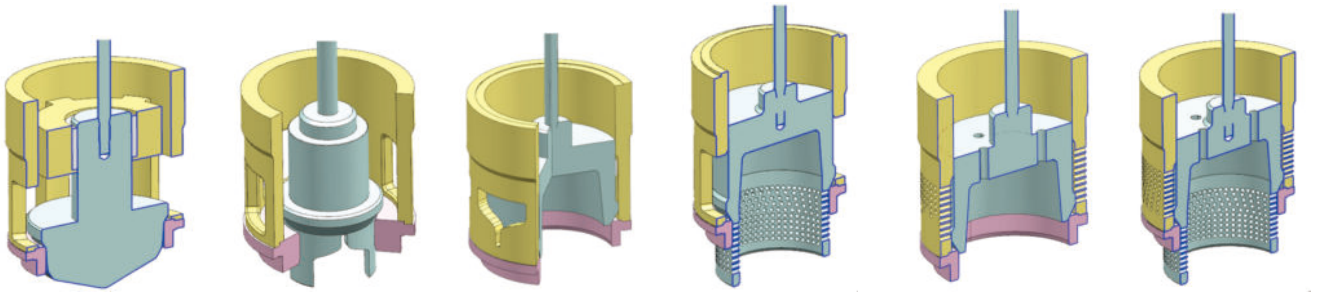


DESIGN FEATURES

- **Trim design :** Contour / V-plug / V-cage / Multi-hole plug / Multi-hole cage / 2-Stage
- **Noise attenuation design :** Multi-hole plug / Multi-hole cage / 2-Stage
- **Balanced / Unbalanced Plug**
- **Easy for maintenance**
- **Erosion Resistance**
- **Leakage Class :** Leakage IV , V (Metal Seat) and VI (Soft Seat)
- **Low Emission Packing**
- **Bonnet Type :** Standard / Extension / Bellows Seal



Standard Seal | Extension Seal | Bellows Seal



Contour | V- Plug | V-Cage | Multi-Hole Plug | Multi-Hole Cage | 2-Stage

MODEL NUMBER

EX : **80-25 J1 4**

TRIM TYPE	
80	**CONTOUR**
81	V-PLUG
82	V-CAGE
83	MULTI-HOLE PLUG
84	MULTI-HOLE CAGE
85	2-STAGE

BODY SIZE	
15	1/2"
20	3/4"
25	**1"**
40	1-1/2"
50	2"
65	2-1/2"
80	3"
04	4"
05	5"
06	6"
08	8"
10	10"
12	12"
14	14"
16	16"

END CONNECTION	
J1	**JIS 10K**
J2	JIS 20K
A1	ANSI Class 150
A2	ANSI Class 300
A3	ANSI Class 600
P1	PN16
P4	PN40
O	Other

BODY MATERIAL	
3	A351 CF8
4	**A351 CF8M**
S	A216 WCB
6	A351 CF3M
H	A494 CW-12MW (Hastelloy C)
M	A494 M35-1 (Monel)
O	Other

Description of Valves Data

Flow Direction	Contour		FTO (Note 1)
	V - Plug		FTO
	V - Cage	Liquid	FTO / FTC (Note 1)
		Gas , Steam	FTO / FTC
	Multi-hole Plug		FTO
	Multi-hole Cage	Liquid	FTC
		Gas	FTO
		Steam	FTO
	2-Stage (Multi-hole Plug + Multi-hole Cage)		FTO
	ON - OFF		FTO
Body Type			High Capacity Globe Type
Bonnet Type			Standard (-29 °C ~ 250 °C)
			Extension (-196 °C ~ 350 °C)
			Bellows (-196 °C ~ 350 °C)
Body and Bonnet Materials			ASTM A216 WCB
			ASTM A351 CF8
			ASTM A351 CF8M
Trim	Type		Contour
			V - Plug
			V - Cage
			Multi - hole Plug
			Multi - hole Cage
			2-Stage (Multi-hole Plug + Multi-hole Cage)
	Seat Ring		Quick Change (Standard)
	Guide		Top Guide
			Cage Guide
			Port Guide
	Capacity		Full Port
			Reduced Port
	Inherent Rangebility		50 : 1
	Flow Characteristic		Linear
			Wyeco Modified Equal Percentage
			Quick Opening
Actuator	Type		Multi Spring Diaphragm
	Handwheel		Optional

Note 1 / FTO : Flow to Open. FTC : Flow to Close.

Ratings / Connections

Specification	Valve Size		ASME Class 150 (PN16)			ASME Class 300 (PN25,40)			ASME Class 600 (PN63,100)			Mat'l
	inch	mm	RF	SW	FF	RF	SW	FF	RF	SW	FF	STD
Face to Face, End to End (ISO 5752) (2)	0.5~2	15A~50A	• (1)	△ (1)	△	•	△	△				WCB CF8 CF8M
	2.5~6	65A~150A	•		△	•		△				
Face to Face, End to End (ISA 75.08.01)	0.5~2	15A~50A	•	△	△	•	△	△	•	△	△	WCB CF8 CF8M
	3~16	80A~400A	•		△	•		△	•		△	

Note / (1) • : Standard. △ : Optional.
(2) Flange specifications, including ASME B16.5, EN 1092-1 (HG 20592), JIS B2220.

Temperature Range / Seat Leakage

Contoured Trim

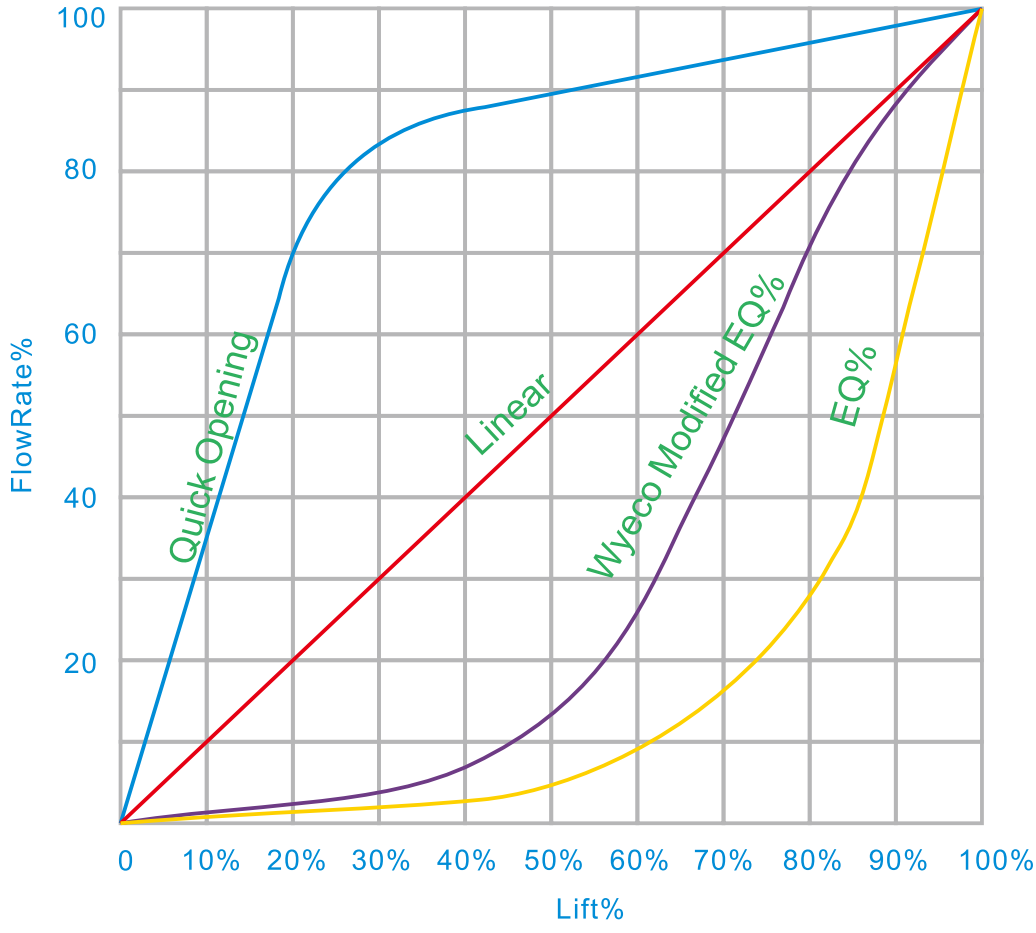
Valve Size		Body Rating	Seat Type	Packing Material	Temperature Range		Seat Leakage Class IEC 60534-4 and ANSI/FCI 70-2	
					Standard Bonnet			
inch	mm				min.	max.		
0.5 to 4	15A to 100A	ASME Class 150 to 300 and Equivalent PN	Metal	PTFE	-40°F (-40°C)	392°F (200°C)	IV	V
				Graphite	-328°F (-200°C)	662°F (350°C)		
			Soft	PTFE	-40°F (-40°C)	392°F (200°C)	VI	

V-Plug / Cage & Multi-hole Plug / Cage & 2-Stage Trim

Valve Size		Body Rating	Seat Type	Packing Material	Temperature Range		Seat Leakage Class IEC 60534-4 and ANSI/FCI 70-2	
					Standard Bonnet			
inch	mm				min.	max.		
1 to 16	25A to 400A	ASME Class 150 to 300 and Equivalent PN	Metal	PTFE	-40°F (-40°C)	392°F (200°C)	IV	V
				Graphite	-328°F (-200°C)	662°F (350°C)		
			Soft	PTFE	-40°F (-40°C)	392°F (200°C)	VI	

Note / (1) Valve of class 600 shall be used braid packing.
(2) Bellow and Extension bonnets might be optional which can increase the using temperature.

Flow Rate Curve



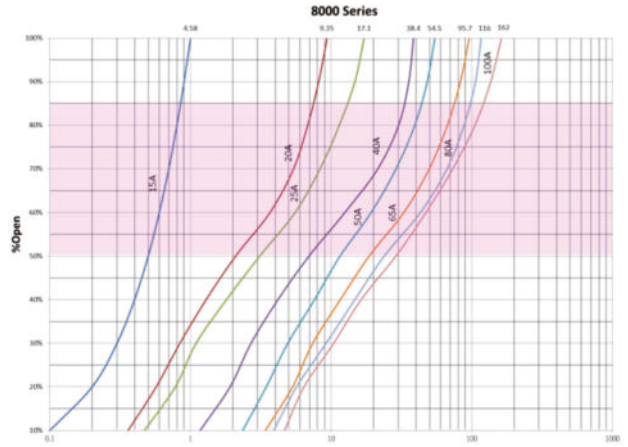
Flow Coefficient & Illustration

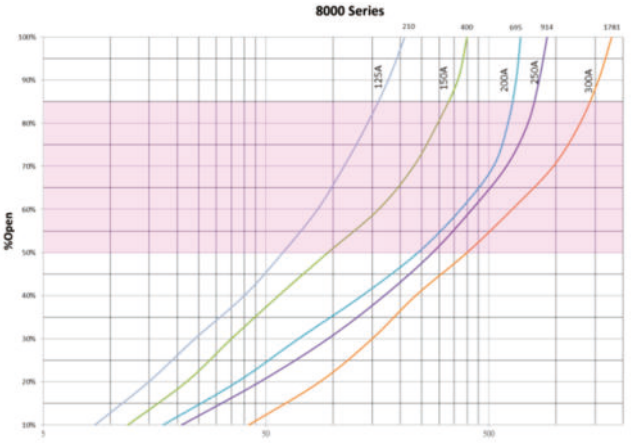
Rated Cv Value

Body Size	mm	15	20	25	40	50	65	80	100	125	150	200	250	300	350	400
	inch	1/2	3/4	1	1-1/2	2	2-1/2	3	4	5	6	8	10	12	14	16
Stroke		20	20	20	20	20	30	30	35	60	60	80	80	100	120	140
Rated Cv		4.59	9.35	17.1	38.4	54.5	95.7	116	198	210	400	695	914	1280	1909	2533

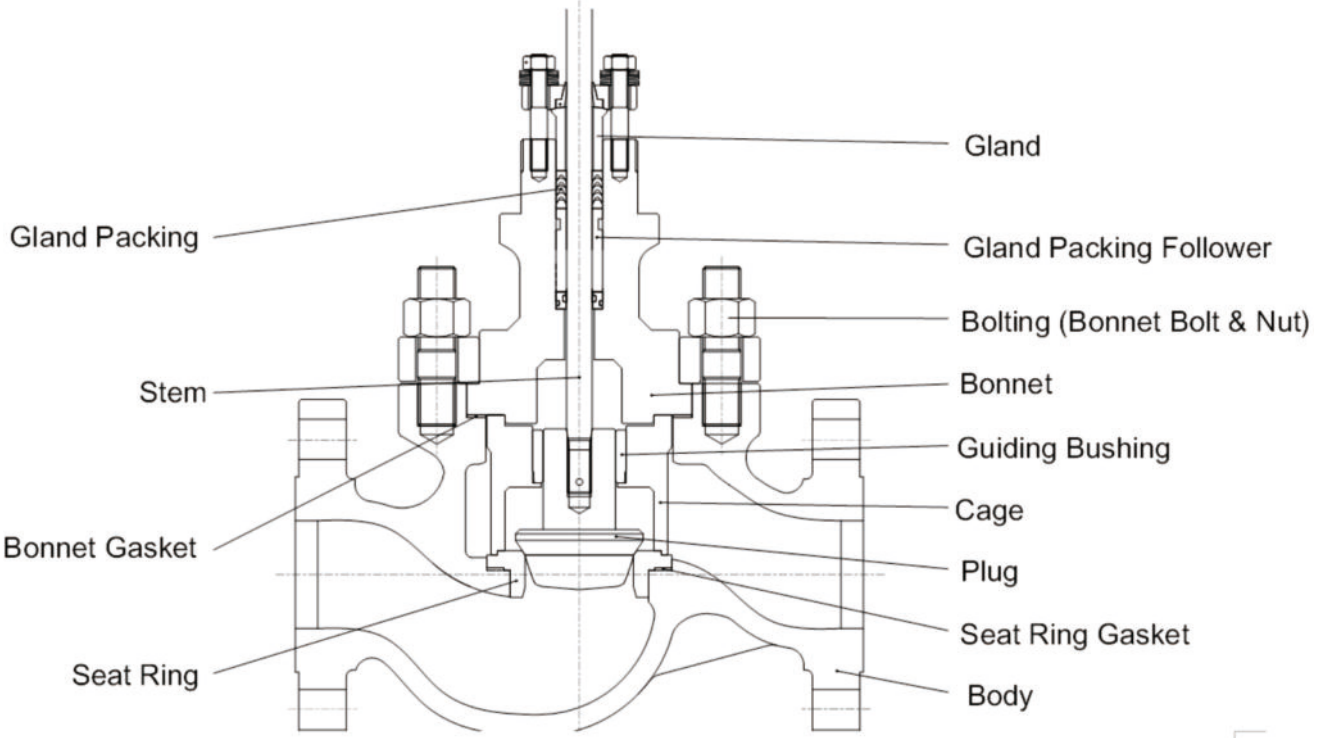
Flow Coefficient

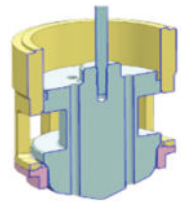
WYECO Modified Equal Percentage





Construction and Specification of Trim



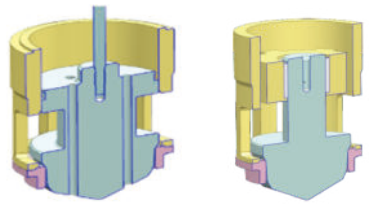


Cv Versus Travel

Trim Type : A Plug Type : Contour Cage Type : Retainer Direction : FTO Flow Characteristic : EQ%

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
0.5	15	Class 150 ~ 600	0.16	4	0.79	20	0.02	0.03	0.04	0.05	0.09	0.16	0.24	0.30	0.36	0.41
			0.16	4			0.02	0.04	0.05	0.06	0.08	0.17	0.27	0.35	0.43	0.49
			0.16	4			0.01	0.02	0.03	0.06	0.11	0.22	0.33	0.44	0.52	0.59
			0.24	6			0.02	0.03	0.05	0.08	0.15	0.30	0.46	0.61	0.74	0.84
			0.24	6			0.02	0.04	0.07	0.12	0.21	0.40	0.60	0.78	0.92	1.04
			0.24	6			0.04	0.07	0.10	0.16	0.27	0.50	0.75	0.98	1.16	1.31
			0.3	8			0.08	0.12	0.17	0.28	0.49	0.91	1.35	1.72	2.04	2.35
			0.4	10			0.08	0.15	0.24	0.37	0.60	1.11	1.64	2.08	2.43	2.73
			0.4	10			0.10	0.18	0.25	0.42	0.81	1.39	2.04	2.60	3.00	3.32
			0.5	12.7			0.25	0.40	0.53	0.82	1.32	2.24	3.13	3.79	4.26	4.59
0.75	20		0.16	4	0.79	20	0.02	0.03	0.04	0.06	0.09	0.16	0.24	0.31	0.37	0.42
			0.16	4			0.02	0.04	0.05	0.06	0.08	0.17	0.27	0.35	0.43	0.49
			0.16	4			0.01	0.02	0.03	0.06	0.11	0.22	0.33	0.44	0.52	0.59
			0.24	6			0.02	0.05	0.07	0.10	0.18	0.31	0.48	0.63	0.75	0.86
			0.24	6			0.04	0.06	0.08	0.12	0.20	0.40	0.60	0.77	0.92	1.06
			0.24	6			0.04	0.07	0.09	0.16	0.27	0.50	0.75	0.98	1.17	1.32
			0.3	8			0.06	0.10	0.17	0.29	0.50	0.92	1.36	1.77	2.11	2.44
			0.4	10			0.09	0.17	0.24	0.36	0.62	1.13	1.67	2.13	2.53	2.86
			0.4	10			0.11	0.19	0.24	0.37	0.69	1.24	1.95	2.61	3.15	3.61
			0.5	12.7			0.18	0.32	0.49	0.76	1.30	2.28	3.37	4.28	5.06	5.60
			0.75	19			0.36	0.57	0.84	1.29	2.09	3.67	5.39	6.80	8.14	9.35
1	25		0.16	4	0.79	20	0.01	0.02	0.03	0.05	0.08	0.15	0.23	0.30	0.36	0.42
			0.16	4			0.02	0.03	0.04	0.06	0.09	0.17	0.27	0.36	0.44	0.50
			0.16	4			0.01	0.02	0.04	0.06	0.12	0.23	0.34	0.44	0.52	0.59
			0.24	6			0.02	0.03	0.05	0.09	0.15	0.30	0.46	0.61	0.73	0.86
			0.24	6			0.03	0.05	0.08	0.11	0.20	0.40	0.60	0.77	0.92	1.06
			0.24	6			0.05	0.07	0.10	0.17	0.29	0.53	0.79	1.01	1.20	1.35

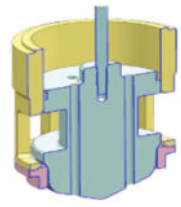
Cv Versus Travel



Trim Type : A Plug Type : Contour Cage Type : Retainer Direction : FTO Flow Characteristic : EQ%(Continued)

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1	25	Class 150 ~ 600	0.3	8	0.79	20	0.08	0.13	0.21	0.32	0.56	1.03	1.50	1.90	2.22	2.54
			0.4	10			0.17	0.24	0.31	0.44	0.67	1.14	1.69	2.18	2.61	2.94
			0.4	10			0.21	0.30	0.36	0.53	0.89	1.46	2.17	2.84	3.36	3.74
			0.5	12.7			0.16	0.29	0.45	0.75	1.25	2.28	3.33	4.32	5.11	5.81
			0.75	19			0.30	0.50	0.73	1.18	2.09	3.78	5.57	7.23	8.78	10.4
			1	25.4			0.47	0.78	1.10	1.80	3.10	5.53	8.32	11.4	14.7	17.1
1.5	40		0.4	10	0.79	20	0.09	0.12	0.18	0.36	0.71	1.22	1.77	2.33	2.87	3.30
			0.5	12.7			0.17	0.23	0.36	0.58	1.18	2.31	3.74	4.85	5.75	6.63
			0.75	19			0.47	0.87	1.18	1.79	2.94	5.27	7.58	9.75	11.7	13.4
			1	25.4			0.84	1.23	1.73	2.72	4.39	7.73	11.4	14.8	18.0	20.9
			1.25	32			1.02	1.59	2.33	3.63	5.88	10.5	15.8	20.5	25.3	29.4
			1.5	38			1.17	1.91	2.69	4.18	6.95	12.5	21.4	30.1	35.6	38.4
2	50		0.5	15	0.79	20	0.17	0.36	0.68	1.15	1.95	3.48	5.23	6.72	7.97	8.95
			1	25.4			0.73	1.19	1.74	2.70	4.38	7.74	11.3	14.4	17.2	19.6
			1.5	38			1.16	2.18	3.13	4.91	8.37	14.3	21.1	27.5	33.7	39.3
			2	51			2.35	3.45	4.91	7.61	11.5	19.2	28.8	39.2	48.1	54.5
2.5	65		1	25.4	1.18	30	0.72	1.24	1.81	2.85	4.68	8.48	12.7	16.4	19.7	23.0
			1.5	38			1.50	2.58	3.66	5.70	9.28	16.5	24.2	31.0	37.8	44.5
			2	51			2.35	3.79	5.28	8.18	13.4	23.7	34.9	45.5	56.2	66.0
			2.5	65			3.40	5.31	7.39	11.6	18.6	32.8	49.7	66.9	82.8	95.7
3	80		1.5	38	1.18	30	1.50	2.30	3.20	4.70	8.20	14.5	20.6	26.8	32.6	38.3
			2	51			1.80	3.20	4.60	7.30	12.2	20.7	30.0	39.8	49.6	58.3
			2.5	65			2.90	4.80	7.10	11.3	18.7	32.1	45.9	61.3	77.3	90.1
			3	76			3.90	5.20	9.20	14.7	23.8	43.0	66.5	87.9	106	116
4	100		2	51	1.38	35	2.17	4.05	5.80	7.40	11.4	23.0	35.5	46.4	56.3	66.3
			2.5	65			3.01	5.15	7.35	11.2	19.4	34.5	50.4	65.1	80.5	94.5
			3	76			5.03	8.04	11.2	17.2	28.6	50.4	73.6	95.7	117	135
			4	101.6			5.60	10.0	14.8	22.1	37.3	74.5	120	155	182	198

Note / (1) FTO : Flow to Open ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Top Guide is approved for all size.
(3) Balance Plug is set over 2.5" , including 2.5" for full port.

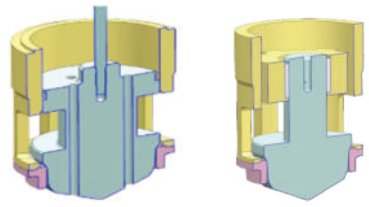


Cv Versus Travel

Trim Type : A Plug Type : Contour Cage Type : Retainer Direction : FTO Flow Characteristic : Linear(Continued)

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
0.5	15	Class 150 ~ 600	0.16	4	0.79	20	0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.32	0.36	0.40
			0.16	4			0.05	0.10	0.15	0.21	0.26	0.31	0.36	0.41	0.46	0.52
			0.16	4			0.07	0.13	0.19	0.26	0.32	0.38	0.44	0.49	0.55	0.61
			0.24	6			0.09	0.17	0.25	0.34	0.43	0.52	0.60	0.68	0.77	0.87
			0.24	6			0.11	0.22	0.33	0.44	0.54	0.65	0.75	0.85	0.95	1.06
			0.24	6			0.15	0.29	0.43	0.57	0.71	0.84	0.97	1.09	1.21	1.33
			0.3	8			0.27	0.51	0.77	1.02	1.25	1.47	1.69	1.91	2.13	2.37
			0.4	10			0.34	0.65	0.96	1.24	1.53	1.78	2.03	2.29	2.53	2.77
			0.4	10			0.39	0.76	1.12	1.47	1.80	2.10	2.38	2.67	2.93	3.23
			0.5	12.7			0.72	1.37	1.94	2.49	2.96	3.40	3.74	4.08	4.40	4.63
0.75	20		0.16	4	0.79	20	0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.32	0.36	0.41
			0.16	4			0.05	0.10	0.16	0.21	0.26	0.31	0.36	0.41	0.47	0.53
			0.16	4			0.07	0.14	0.20	0.26	0.32	0.38	0.45	0.51	0.56	0.61
			0.16	4			0.09	0.18	0.26	0.34	0.43	0.52	0.60	0.69	0.78	0.87
			0.24	6			0.11	0.22	0.33	0.44	0.55	0.65	0.75	0.85	0.96	1.07
			0.24	6			0.15	0.29	0.43	0.57	0.71	0.84	0.97	1.10	1.23	1.36
			0.3	8			0.27	0.52	0.77	1.03	1.27	1.49	1.73	1.96	2.20	2.47
			0.4	10			0.33	0.63	0.94	1.24	1.54	1.83	2.09	2.36	2.62	2.92
			0.4	10			0.32	0.7	1.06	1.44	1.76	2.1	2.42	2.78	2.11	3.47
			0.5	12.7			0.69	1.36	1.97	2.56	3.10	3.63	4.12	4.56	5.01	5.44
			0.75	19			1.15	2.17	3.15	4.07	4.86	5.59	6.25	6.88	7.52	8.22
1	25		0.16	4	0.79	20	0.03	0.07	0.11	0.16	0.20	0.24	0.27	0.31	0.36	0.41
			0.16	4			0.05	0.10	0.16	0.21	0.26	0.31	0.36	0.41	0.47	0.53
			0.16	4			0.07	0.13	0.19	0.25	0.32	0.38	0.44	0.49	0.55	0.61
			0.24	6			0.08	0.17	0.25	0.33	0.42	0.50	0.59	0.67	0.77	0.87
			0.24	6			0.10	0.20	0.31	0.42	0.53	0.63	0.73	0.84	0.94	1.07
			0.24	6			0.14	0.27	0.41	0.56	0.69	0.82	0.95	1.08	1.21	1.36

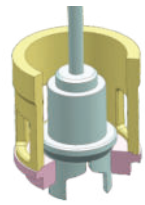
Cv Versus Travel



Trim Type : A Plug Type : Contour Cage Type : Retainer Direction : FTO Flow Characteristic : Linear(Continued)

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1	25	Class 150 ~ 600	0.3	8	0.79	20	0.28	0.53	0.79	1.06	1.31	1.54	1.78	2.02	2.28	2.54
			0.4	10			0.37	0.70	1.03	1.34	1.63	1.91	2.20	2.47	2.72	2.96
			0.4	10			0.36	0.74	1.12	1.15	1.88	2.2	2.54	2.87	3.23	3.62
			0.5	12.7			0.70	1.37	2.00	2.64	3.22	3.80	4.35	4.90	5.49	6.06
			0.75	19			1.12	2.13	3.12	4.13	5.06	6.02	6.96	8.00	9.16	10.6
			1	25.4			1.57	3.05	4.50	5.80	7.19	8.70	10.4	12.5	15.0	17.2
1.5	40		0.4	10	0.79	20	0.33	0.67	1.01	1.35	1.68	2.01	2.33	2.67	3.01	3.36
			0.5	12.7			0.71	1.43	2.12	2.81	3.48	4.18	4.85	5.51	6.19	6.74
			0.75	19			1.55	2.98	4.47	6.04	7.42	8.65	9.90	11.2	12.6	13.9
			1	25.4			2.31	4.48	6.72	9.02	11.0	12.8	14.8	16.9	19.2	21.7
			1.25	32			3.23	6.17	9.18	11.8	14.5	17.2	20.2	23.5	27.2	30.4
			1.5	38			3.91	7.18	10.6	14.0	17.5	21.8	26.2	31.0	35.2	38.5
2	50		0.5	15	0.79	20	1.00	2.01	2.93	3.94	4.89	5.85	6.75	7.64	8.53	9.23
			1	25.4			2.36	4.46	6.64	8.85	11.0	12.9	14.8	16.8	18.9	20.6
			1.5	38			4.08	7.93	12.1	16.1	20.0	24.0	28.0	32.5	37.3	41.7
			2	51			5.04	9.98	15.2	20.4	25.9	31.6	37.8	44.0	50.7	56.9
2.5	65		1	25.4	1.18	30	2.55	4.91	7.27	9.72	12.2	14.6	16.9	19.2	21.4	23.7
			1.5	38			5.18	9.82	14.4	18.8	23.3	27.6	31.7	36.1	40.5	44.6
			2	51			7.06	13.7	20.2	26.6	33.0	39.3	46.0	53.2	60.6	68.9
			2.5	65			9.60	18.8	27.8	36.9	45.8	55.4	65.8	76.4	86.8	97.7
3	80		1.5	38	1.18	30	4.10	8.20	12.4	16.5	20.4	24.2	28.0	32.0	36.0	40.2
			2	51			6.80	12.8	18.4	24.2	30.1	36.0	42.4	49.2	56.2	63.3
			2.5	65			9.30	17.6	25.8	33.6	42.2	51.0	60.8	70.8	82.2	94.2
			3	76			11.5	23.0	34.5	46.5	58.9	72.0	85.6	98.8	110	120
4	100		2	51	1.38	35	7.02	13.4	20.2	26.8	33.6	40.3	47.0	54.0	61.4	69.3
			2.5	65			9.21	18.2	27.6	37.2	47.0	56.1	65.6	76.0	87.0	98.5
			3	76			14.3	27.6	40.8	54.6	67.7	81.2	95.7	111	126	141
			4	101.6			18.8	37.4	56.0	75.6	97.0	118	140	161	182	200

Note / (1) FTO : Flow to Open ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Top Guide is approved for all size.
(3) Balance Plug is set over 2.5" , including 2.5" for full port.



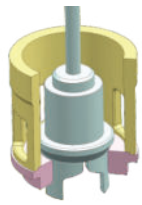
Cv Versus Travel

Trim Type : B Plug Type : V-Plug Cage Type : Retainer Direction : FTO Flow Characteristic : EQ%

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1	25	Class 150 ~ 600	1	25.4	0.79	20	0.30	0.47	0.68	0.96	1.40	2.05	3.10	4.29	5.51	6.58
			1	25.4			0.44	0.87	1.31	1.84	2.95	4.64	6.86	9.34	11.6	13.3
1.5	40		1	25.4	0.79	20	0.35	0.60	0.85	1.12	1.72	2.75	4.09	5.39	6.80	8.04
			1	25.4			0.48	0.90	1.36	1.79	2.75	4.60	7.67	11.1	14.4	16.8
			1.5	38			0.75	1.29	2.06	2.73	4.05	6.62	10.7	15.3	19.4	22.8
			1.5	38			1.07	1.78	2.64	3.88	5.96	9.64	14.3	19.8	25.0	29.0
2	50		1	25.4	1.18	30	0.58	1.00	1.38	1.73	2.37	3.97	5.82	7.66	9.22	10.5
			1	25.4			0.92	1.26	1.72	2.24	3.51	6.37	9.65	12.3	14.2	15.8
			1.5	38			1.33	2.35	3.42	4.38	6.00	9.90	15.5	20.9	25.5	29.5
			1.5	38			0.98	1.93	2.80	4.41	7.81	14.0	22.6	30.4	36.2	40.8
			2	51			1.54	2.54	4.16	5.78	8.00	13.2	21.2	30.8	41.4	48.7
2.5	65		1.5	38	1.18	30	1.07	2.07	3.08	4.10	5.70	9.44	15.6	21.9	26.9	31.1
			2	51			1.43	2.80	4.20	5.70	9.10	16.1	25.9	38.8	50.0	61.3
			2	51			1.69	3.32	5.02	6.89	10.9	18.3	28.7	43.0	57.1	68.0
			2.5	65			2.02	4.08	6.08	8.80	13.4	24.3	39.8	56.6	73.5	86.2
3	80		1.5	38	1.38	30	0.45	1.40	2.28	3.06	4.84	8.44	13.8	18.8	23.2	26.9
			2	51			0.71	2.17	3.43	4.92	7.70	14.0	23.1	34.4	45.4	54.9
			2.5	65			2.23	4.14	6.08	8.02	13.3	22.8	35.3	50.2	64.9	76.5
			3	76			1.82	4.39	6.96	11.0	17.5	28.7	45.6	63.3	80.4	94.5
4	100		2	51	1.38	35	1.06	2.30	3.50	5.20	8.40	14.5	23.0	29.9	36.3	42.3
			2.5	65			1.52	3.67	5.70	8.80	14.4	23.8	37.5	52.3	66.2	77.8
			3	76			2.84	5.60	8.73	11.7	18.3	31.9	51.6	75.3	96.9	114
			4	101.6			3.10	7.02	10.8	16.5	28.6	49.3	71.8	95.2	119	142
5	125		3	76	2	50	2.12	5.43	9.32	12.9	18.0	27.2	41.2	58.1	71.8	83.9
			4	101.6			2.32	8.57	15.4	22.7	34.4	52.9	81.7	115	153	192
			5	127			8.45	17.6	27.1	40.1	58.1	85.2	120	164	212	251

Note / (1) FTO : Flow to Open ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Port Guide is approved for all size.
(3) No Balance Plug.

Cv Versus Travel

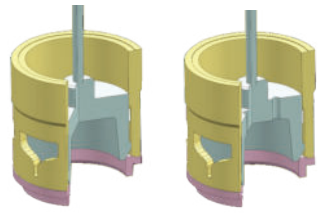


Trim Type : B Plug Type : V-Plug Cage Type : Retainer Direction : FTO Flow Characteristic : Linear

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1	25	Class 150 ~ 600	1	25.4	0.79	20	0.36	0.91	1.62	2.43	3.20	3.99	4.72	5.42	6.10	6.74
			1	25.4			1.05	2.41	3.82	5.30	6.66	8.12	9.50	11.0	12.5	14.0
1.5	40		1	25.4	0.79	20	1.06	1.99	2.86	3.74	4.64	5.48	6.34	7.11	7.81	8.47
			1	25.4			1.34	2.88	4.40	5.90	7.36	8.96	10.7	12.5	14.6	16.9
			1.5	38			1.41	3.20	5.32	7.53	9.54	11.5	13.7	15.6	17.5	19.7
			1.5	38			2.38	4.96	7.88	10.6	13.6	16.8	20.2	24.1	28.6	33.8
2	50		1	25.4	1.2	30	1.33	2.69	3.96	5.14	6.21	7.25	8.18	9.16	10.0	10.8
			1	25.4			1.93	3.92	5.78	7.48	9.12	10.7	12.4	14.1	15.8	17.3
			1.5	38			2.32	5.57	8.86	11.8	15.0	17.8	20.6	23.8	26.8	29.3
			1.5	38			1.90	4.90	8.90	13.6	19.0	24.4	29.8	34.7	39.7	43.8
			2	51			5.72	11.7	17.5	23.5	29.2	34.9	41.0	47.2	53.0	58.7
2.5	65		1.5	38	1.18	30	2.28	5.30	8.48	11.5	14.5	17.5	20.8	24.2	27.7	30.7
			2	51			3.52	8.80	14.6	20.2	26.6	33.4	40.8	49.2	58.1	68.7
			2	51			4.25	9.80	15.8	22.6	30.4	38.7	48.0	57.8	66.8	74.8
			2.5	65			6.25	15.1	24.8	34.9	44.8	55.8	67.2	78.2	88.4	96.1
3	80		1.5	38	1.18	30	1.92	4.76	7.52	10.2	13.0	15.8	18.6	21.5	24.4	27.3
			2	51			3.19	8.22	13.9	19.2	24.8	30.6	37.2	44.8	53.4	63.3
			2.5	65			6.40	14.5	23.1	32.0	41.8	52.0	62.8	73.2	82.8	91.9
			3	76			6.92	15.7	24.9	33.4	42.3	51.8	61.8	73.0	85.6	98.3
4	100		2	51	1.38	35	2.84	7.24	11.8	16.5	21.0	25.1	29.2	32.8	36.3	39.8
			2.5	65			5.40	13.3	22.1	30.5	38.0	45.8	53.8	62.2	70.7	78.5
			3	76			9.62	21.2	34.0	47.8	61.7	76.8	92.5	108	123	137
			4	101.6			11.5	24.8	39.2	54.8	71.2	89.2	108	127	145	161
5	125		3	76	2	50	3.15	12.7	25.4	36.8	47.6	58.0	68.4	77.5	88.0	98.8
			4	101.6			6.33	23.1	48.0	72.2	98.6	123	148	174	202	228
			5	127			23.6	51.7	76.9	107	136	165	195	220	245	268

Note / (1) FTO : Flow to Open ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Port Guide is approved for all size.
(3) No Balance Plug.

Cv Versus Travel

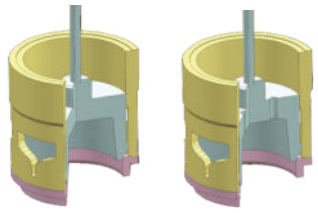


Trim Type : C Plug Type : Balance/Unbalance Cage Type : V-Cage Direction : FTO Flow Characteristic : EQ%

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1.5	40	Class 150 ~ 600	1.5	38	0.79	20	1.20	1.95	2.80	3.49	4.65	8.27	15.1	23.9	31.7	36.3
2	50		2	51	1.18	30	1.72	2.54	3.38	4.64	7.45	12.2	17.6	23.6	30.2	36.0
			2	51			1.10	2.10	3.40	4.60	6.50	11.4	20.3	32.2	44.0	52.9
2.5	65		2.5	65	1.18	30	1.86	3.26	4.81	6.68	9.85	15.5	22.6	30.7	38.7	48.1
			2.5	65			2.24	4.21	6.39	8.79	13.3	22.6	36.4	55.6	72.2	85.0
3	80		3	76	1.18	30	4.61	5.79	7.45	10.1	15.2	22.0	29.9	39.3	49.1	60.0
			3	76			2.90	5.30	8.00	11.2	17.6	29.2	46.7	66.3	83.5	94.3
4	100		4	101.6	1.38	35	5.95	8.40	11.3	15.4	23.6	36.5	51.3	67.5	83.6	101
			4	101.6			3.09	6.85	11.1	16.2	26.5	45.4	71.2	99.2	120	139
5	125		5	127	2	50	7.58	10.9	14.2	19.0	27.5	41.4	57.4	74.2	93.2	112
			5	127			8.54	14.9	24.0	40.0	59.6	85.2	112	143	177	210
6	150		6	152.4	2.36	60	8.70	19.1	33.7	55.7	103.4	163	235	291	340	367
			6	152.4			9.34	19.5	30.3	44.5	65.6	109	172	245	291	302
8	200		8	203.2	3.15	80	15.8	31.4	49.8	72.9	113	186	292	413	460	475
			8	203.2			16.7	33.8	60.9	118	212	312	414	466	492	507
10[3]	250		10	254	3.15	80	13.0	28.2	46.0	80.0	130	224	336	462	587	687
			10	254			20.1	47.2	80.0	118	181	275	475	621	726	787
12[3]	300	Class 150 ~ 300	12	304.8	3.94	100	21.5	42	60.8	88.4	183	342	610	874	1080	1184
14[3]	350	Class150	14.3	364	4.72	120	51	107	173	230	310	481	810	1260	1633	1909
16[3]	400	Class150	16.3	414	5.51	140	67.1	153	246	318	443	731	1215	1834	2169	2470

Note / (1) FTO : Flow to Open ; Suit for Gas , and Steam.
(2) Guiding Way : Cage Guide is approved for all size.
(3) The Cv values of 10" 、12" 、14" and 16" are simulation.
(4) Balance Plug is set over 6" , including 6" .

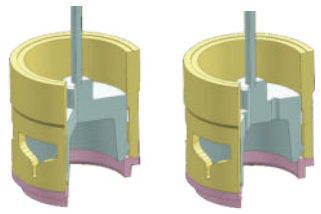
Cv Versus Travel



Trim Type : C Plug Type : Balance/Unbalance Cage Type : V-Cage Direction : FTC Flow Characteristic : EQ%

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1.5	40	Class 150 ~ 600	1.5	38	0.79	20	1.14	1.85	2.60	3.47	4.62	8.44	15.6	26.4	33.7	36.6
2	50		2	51	1.18	30	1.78	2.79	4.07	5.34	8.16	13.3	19.2	25.6	31.7	37.0
			2	51			1.00	2.00	3.20	4.60	6.80	11.9	20.8	33.1	48.6	61.3
2.5	65		2.5	65	1.18	30	1.82	3.32	5.03	6.86	10.3	16.0	23.1	32.4	41.7	50.5
			2.5	65			2.32	4.50	7.30	9.78	14.7	24.6	38.2	54.0	72.5	86.8
3	80		3	76	1.18	30	3.08	4.91	6.42	8.76	12.4	19.0	27.1	36.5	46.6	56.3
			3	76			1.95	4.48	7.10	10.1	16.5	26.5	42.2	61.5	84.2	101
4	100		4	101.6	1.38	35	5.35	8.30	11.5	16.1	24.5	36.0	50.6	67.6	85.7	102
			4	101.6			2.67	6.40	10.4	16.3	28.8	47.1	73.0	105	136	162
5	125		5	127	2	50	7.25	11.1	15.1	19.4	28.8	43.2	61.3	82.1	104	124
			5	127			8.80	13.2	21.2	33.8	52.7	79.8	112	148	179	202
6	150		6	152.4	2.36	60	9.21	21.2	31.8	45.9	69.0	118	186	263	335	374
			6	152.4			7.26	19.1	32.1	53.3	96.5	158	238	316	371	399
8	200		8	203.2	3.15	80	16.2	33.7	52.8	80.2	129	212	323	475	592	637
			8	203.2			17.3	37.2	70.1	135	241	374	525	610	663	695
10[3]	250		10	254	3.15	80	13.4	27.6	45.8	80.4	126	218	327	443	559	663
			10	254			21.0	51.2	82.9	120	180	304	520	722	842	914
12[3]	300	Class 150 ~ 300	12	304.8	3.94	100	23.5	43	65	95	190	360	640	900	1120	1280
14[3]	350	Class150	14.3	364	4.72	120	48.1	99.5	168	224	303	491	839	1244	1541	1705
16[3]	400	Class150	16.3	414	5.51	140	63.9	146	232	305	440	786	1335	1831	2191	2323

Note / (1) FTC : Flow to Close ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Cage Guide is approved for all size.
(3) The Cv values of 10" 、12" 、14" and 16" are simulation.
(4) Balance Plug is set over 6" , including 6" .



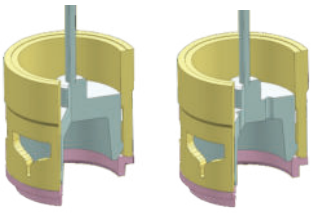
Cv Versus Travel

Trim Type : C Plug Type : Balance/Unbalance Cage Type : V-Cage Direction : FTO Flow Characteristic : Linear

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1.5	40	Class 150 ~ 600	1.5	38	0.79	20	2.36	5.74	9.36	13.0	17.0	21.3	26.0	30.6	34.6	37.4
2	50		2	51	1.18	30	4.57	8.90	13.5	18.4	23.1	28.3	33.5	38.5	43.3	47.5
			2	51			4.70	10.0	15.9	22.8	31.1	39.3	46.9	54.0	58.0	59.9
2.5	65		2.5	65	1.18	30	5.67	11.6	18.0	25.0	32.0	39.2	47.0	55.8	65.0	74.5
			2.5	65			6.68	14.2	22.4	31.8	42.8	54.4	66.8	79.0	91.0	102
3	80		3	76	1.18	30	7.68	13.5	20.5	27.8	35.0	42.3	50.1	57.8	65.1	72.6
			3	76			9.43	18.7	29.1	41.2	57.1	74.4	90.9	100	103	103
4	100		4	101.6	1.38	35	10.6	17.9	27.4	37.5	47.5	57.0	67.4	78.1	88.6	98.6
			4	101.6			12.3	27.6	43.8	61.4	80.6	98.6	115	130	144	156
5	125		5	127	2	50	13.3	27.5	41.4	56.5	72.3	86.5	101	114	125	134
			5	127			16.6	34.5	53.5	73.5	94.3	115	135	152	168	182
6	150		6	152.4	2.36	60	17.8	42.0	66.6	91.9	118	143	169	196	221	244
			6	152.4			28.0	61.0	97.0	142	196	247	274	281	284	298
8	200		8	203.2	3.15	80	31.6	68.5	111	158	206	256	306	352	394	431
			8	203.2			52.0	110	176	245	315	380	438	486	521	550
10(3)	250		10	254	3.15	80	65.0	138	218	300	383	473	565	662	750	832
			10	254			80.1	191	302	419	535	636	723	801	880	943
12(3)	300	Class 150 ~ 300	12	304.8	3.94	100	70	185	369	566	750	950	1100	1220	1270	1320
14(3)	350	Class150	14.3	364	4.72	120	76	271	527	764	961	1188	1453	1679	1860	1929
16(3)	400	Class150	16.3	414	5.51	140	124	446	776	1085	1359	1679	1987	2255	2444	2544

Note / (1) FTO : Flow to Open ; Suit for Gas , and Steam.
(2) Guiding Way : Cage Guide is approved for all size.
(3) The Cv values of 10" 、12" 、14" and 16" are simulation.
(4) Balance Plug is set over 6" , including 6" .

Cv Versus Travel



Trim Type : C Plug Type : Balance/Unbalance Cage Type : V-Cage Direction : FTC Flow Characteristic : Linear

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1.5	40	Class 150 ~ 600	1.5	38	0.79	20	2.08	5.60	9.40	13.3	17.6	22.2	27.0	31.4	35.6	39.1
2	50		2	51	1.18	30	4.73	9.40	14.3	19.6	24.6	29.5	34.2	39.0	43.5	47.0
			2	51			2.38	7.76	14.3	21.8	29.9	38.6	48.5	57.8	66.2	73.2
2.5	65		2.5	65	1.18	30	4.97	10.8	17.4	24.6	31.8	39.5	46.9	54.9	63.0	71.3
			2.5	65			6.41	14.3	23.1	32.8	43.6	56.0	69.4	82.2	94.4	104
3	80		3	76	1.18	30	6.10	12.5	20.0	27.3	34.6	41.5	49.2	56.7	63.5	70.8
			3	76			7.70	17.5	28.6	41.6	55.8	69.6	83.4	96.8	108	119
4	100		4	101.6	1.38	35	8.98	17.5	27.5	37.5	47.5	58.3	69.5	80.5	91.0	102
			4	101.6			12.0	26.2	43.9	64.0	86.0	110	134	156	175	191
5	125		5	127	2	50	13.6	25.0	38.0	51.0	65.0	78.5	92.5	106	121	135
			5	127			18.3	33.5	52.4	71.4	90.5	110	130	150	169	187
6	150		6	152.4	2.36	60	21.0	46.0	71.0	96.8	121	146	171	197	221	244
			6	152.4			30.0	65.0	109	157	204	254	302	346	384	411
8	200		8	203.2	3.15	80	30.6	70.0	117	168	224	276	325	363	394	408
			8	203.2			50.0	114	188	268	348	428	499	565	615	643
10[3]	250		10	254	3.15	80	60.8	132	208	288	370	455	544	642	734	814
			10	254			84.7	200	331	455	580	700	820	920	996	1061
12[3]	300	Class 150 ~ 300	12	304.8	3.94	100	66	205	394	582	755	943	1116	1271	1407	1493
14[3]	350	Class150	14.3	364	4.72	120	73.5	269	546	789	1008	1250	1452	1684	1814	1889
16[3]	400	Class150	16.3	414	5.51	140	123	455	799	1116	1453	1756	2036	2302	2518	2626

Note / (1) FTC : Flow to Close ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Cage Guide is approved for all size.
(3) The Cv values of 10" 、12" 、14" and 16" are simulation.
(4) Balance Plug is set over 6" , including 6" .

Cv Versus Travel

Trim Type : D Plug Type : Multi-hole Plug Cage Type : Retainer Direction : FTO Flow Characteristic : EQ%

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1	25	Class 150 ~ 600	1	25.4	0.79	20	0.22	0.37	0.53	0.77	1.10	1.67	2.48	3.45	4.26	4.84
			1	25.4			0.40	0.50	0.85	1.68	2.93	4.25	5.62	6.61	7.19	7.48
1.5	40		1	25.4	0.79	20	0.43	0.54	0.68	0.98	1.55	2.35	3.35	4.35	5.25	6.09
			1	25.4			0.67	1.02	1.56	2.55	3.75	5.15	6.35	7.38	8.25	9.02
			1.5	38			0.80	1.09	1.39	1.75	2.75	5.00	7.58	9.90	12.1	13.8
			1.5	38			0.64	1.17	1.93	2.71	4.38	7.97	11.5	14.7	17.9	20.2
2	50		1	25.4	1.18	30	1.12	1.37	1.56	1.84	2.62	4.06	6.49	8.65	10.5	11.8
			1.5	38			1.30	1.90	2.50	3.50	5.40	9.30	13.6	17.4	20.5	22.7
			2	51			2.00	2.90	3.70	5.00	7.60	13.9	20.9	27.5	32.6	37.3
2.5	65		1.5	38	1.18	30	0.62	1.19	1.69	2.32	3.71	6.19	9.61	13.2	16.3	18.6
			2	51			0.94	1.60	2.35	3.51	5.70	9.74	16.0	22.8	28.8	33.1
			2.5	65			1.87	3.24	4.42	6.23	10.2	18.4	27.4	37.1	45.7	51.7
3	80		2	51	1.18	30	0.53	1.00	1.54	2.24	3.84	6.96	11.5	16.2	20.3	23.2
			2.5	65			0.53	1.42	2.30	3.61	5.79	10.6	16.7	23.0	29.2	33.6
			3	76			2.30	3.90	5.50	7.20	10.9	21.2	31.3	40.4	49.2	57.3
4	100		2.5	65	1.18	35	0.82	1.72	2.37	3.37	5.61	9.40	14.8	20.4	26.1	30.3
			3	76			1.82	3.37	5.33	7.84	12.1	20.8	32.6	46.2	56.3	64.3
			4	101.6			3.02	5.16	7.32	11.2	19.1	33.0	51.6	68.4	81.0	92.0
5	125		3	76	2	50	2.07	3.96	4.99	6.73	11.4	19.8	32.0	45.1	56.8	64.8
			4	101.6			2.73	4.75	6.83	9.72	16.7	28.3	45.2	60.9	75.9	86.2
			5	127			4.29	7.93	11.6	16.3	26.7	48.6	78.2	105	132	152
6	150		4	101.6	2.36	60	2.23	3.64	5.20	8.09	14.6	25.9	40.6	55.6	69.7	78.9
			5	127			6.68	9.85	13.5	19.6	28.5	50.0	74.6	100	122	139
			6	152.4			4.95	11.1	18.1	28.1	48.7	90.6	132	176	215	250

Note / (1) FTO : Flow to Open ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Port Guide is approved for all size.
(3) Balance Plug is set over 6" , including 6" .

Cv Versus Travel

Trim Type : D Plug Type : Multi-hole Plug Cage Type : Retainer Direction : FTO Flow Characteristic : Linear

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1	25		1	25.4	0.79	20	0.30	0.71	1.15	1.60	2.10	2.60	3.10	3.62	4.14	4.63
			1	25.4			0.76	1.66	2.58	3.51	4.42	5.26	6.07	6.96	7.74	8.57
1.5	40		1	25.4	0.79	20	0.55	1.13	1.68	2.24	2.79	3.35	3.92	4.48	5.03	5.54
			1	25.4			0.76	1.66	2.58	3.51	4.42	5.26	6.07	6.96	7.74	8.57
			1.5	38			1.40	3.10	4.90	6.60	8.40	10.1	11.8	13.5	15.1	16.5
			1.5	38			1.81	4.47	6.95	9.46	11.9	14.4	16.9	19.5	22.1	24.3
2	50		1	25.4	1.18	30	1.04	2.30	3.56	4.80	6.00	7.33	8.58	9.79	10.9	12.0
			1.5	38			3.00	6.40	9.80	13.0	16.1	19.2	22.1	24.9	27.3	29.1
			2	51			4.50	9.90	15.3	20.7	25.9	31.1	36.1	40.4	44.7	48.3
2.5	65	Class	1.5	38			1.87	4.20	6.60	8.98	11.4	13.6	15.9	18.3	20.8	23.3
		150	2	51	1.18	30	3.98	8.58	13.2	17.7	22.3	27.0	31.8	36.4	41.7	47.0
		~	2.5	65			4.86	10.8	17.5	24.2	30.9	37.9	45.3	52.8	60.7	68.5
3	80	600	2	51	1.18	30	1.71	4.97	8.05	11.1	14.1	17.1	20.3	23.8	27.3	30.9
			2.5	65			2.96	7.99	12.5	17.5	22.1	26.9	32.1	37.4	42.5	47.7
			3	76			5.30	11.8	19.2	27.0	34.8	42.9	51.1	58.9	66.5	74.2
4	100		2.5	65	1.18	35	3.55	8.96	14.2	19.5	24.7	30.1	35.2	40.6	46.5	52.5
			3	76			8.45	18.1	27.1	36.5	45.8	55.2	65.4	75.7	86.7	95.7
			4	101.6			9.15	21.2	35.2	48.8	63.2	77.4	92.4	106	120	133
5	125		3	76	2	50	6.58	15.1	23.4	31.2	39.6	48.1	56.8	65.1	73.0	82.2
			4	101.6			9.73	23.3	36.0	49.3	63.1	76.1	89.4	103	117	133
			5	127			15.3	36.5	58.7	80.1	102	122	142	163	186	209
6	150		4	101.6	2.36	60	12.8	29.0	46.7	64.2	82.5	100.1	119	138	158	175
			5	127			20.7	41.6	64.3	86.1	108	130	153	175	198	218
			6	152.4			31.4	66.2	101	139	177	214	250	282	309	334

Note / (1) FTO : Flow to Open ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Port Guide is approved for all size.
(3) Balance Plug is set over 6" , including 6" .

Cv Versus Travel

Trim Type : E Plug Type : Balance/Unbalance Cage Type : Multi-hole Cage Direction : FTC Flow Characteristic : EQ%

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
5	125	Class 150 ~ 600	5	127	2	50	7.50	8.96	10.8	14.8	24.0	37.0	55.0	75.0	92.0	106
			5	127			8.75	13.1	17.7	24.9	40.6	70.6	108	141	171	199
6	150		6	152.4	2.36	60	6.40	9.26	12.8	18.3	29.4	53.4	83.5	113	140	158
			6	152.4			4.79	9.49	17.8	28.3	52.9	96.4	142	188	232	268
8	200		8	203.2	3.15	80	13.4	18.7	25.1	35.8	59.8	102	157	211	258	291
			8	203.2			14.9	25.6	32.8	46.3	80.6	162	245	326	392	441
			8	203.2			16.7	31.4	45.4	66.6	112	207	312	398	472	542
10[3]	250		10	254	3.15	80	4.81	9.41	15.4	26.0	42.0	79.4	120	163	202	228
			10	254			10.0	19.6	31.1	49.0	84.8	162	253	343	431	490
			10	254			11.2	24.8	38.0	62.1	124	217	325	435	532	621

Note / (1) FTO : Flow to Open ; Suit for Gas , and Steam.
(2) Guiding Way : Cage Guide is approved for all size.
(3) The Cv values of 10" are simulation.
(4) Balance Plug is approved for list size.

Cv Versus Travel

Trim Type : E Plug Type : Balance/Unbalance Cage Type : Multi-hole Cage Direction : FTC Flow Characteristic : Linear

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
5	125	Class 150 ~ 600	5	127	2	50	15.4	33.2	52.2	71.3	90.6	110	130	149	167	183
			5	127			19.6	46.5	72.9	99.8	124	149	175	201	226	249
6	150		6	152.4	2.36	60	16.5	37.2	57.5	79.6	102	124	146	166	188	211
			6	152.4			26.2	58.2	95.0	134	172	208	244	276	302	318
8	200		8	203.2	3.15	80	46.2	88.6	132	176	218	263	306	347	381	407
			8	203.2			45.9	102	162	226	290	352	410	468	518	560
			8	203.2			55.0	124	196	270	346	420	490	555	616	668
10[3]	250		10	254	3.15	80	38.0	79.4	124	166	208	254	300	348	396	441
			10	254			43.8	109	174	240	306	373	439	499	560	618
			10	254			64.2	150	236	326	415	504	592	674	755	828

Note / (1) FTO : Flow to Open ; Suit for Gas , and Steam.
(2) Guiding Way : Cage Guide is approved for all size.
(3) The Cv values of 10" are simulation.
(4) Balance Plug is approved for list size.

Cv Versus Travel

Trim Type : E Plug Type : Balance/Unbalance Cage Type : Multi-hole Cage Direction : FTO Flow Characteristic : EQ%

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
5	125	Class 150 ~ 600	5	127	2	50	7.28	8.95	11.2	15.4	22.2	35.7	53.2	69.2	81.0	91.6
			5	127			9.39	13.3	17.9	24.3	39.7	65.8	97.4	131	162	193
6	150		6	152.4	2.36	60	4.67	8.08	11.5	16.8	27.8	50.6	79.8	108	135	156
			6	152.4			4.79	9.49	17.8	28.3	52.9	96.4	142	188	232	268
8	200		8	203.2	3.15	80	14.0	19.6	25.9	36.5	60.6	109	168	231	279	311
			8	203.2			15.0	23.6	33.1	46.7	77.9	147	216	288	359	413
			8	203.2			16.8	30.1	44.6	64.6	105	187	273	359	435	489
10[3]	250		10	254	3.15	80	4.81	9.41	15.4	26.0	42.0	79.4	120	163	202	228
			10	254			9.98	19.6	31.1	49.0	84.8	162	253	343	431	490
			10	254			11.2	24.8	38.0	62.1	124	217	325	435	532	621

Note / (1) FTO : Flow to Open ; Suit for Gas , and Steam.
(2) Guiding Way : Cage Guide is approved for all size.
(3) The Cv values of 10" are simulation.
(4) Balance Plug is approved for list size.

Cv Versus Travel

Trim Type : E Plug Type : Balance/Unbalance Cage Type : Multi-hole Cage Direction : FTO Flow Characteristic : Linear

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
5	125	Class 150 ~ 600	5	127	2	50	16.3	30.8	46.7	63.1	80.3	98.0	115	133	150	167
			5	127			21.4	43.6	66.2	89.2	113	137	162	187	210	232
6	150		6	152.4	2.36	60	16.5	36.5	57.7	80.2	103	127	150	175	198	220
			6	152.4			26.2	58.2	95.0	134	172	208	244	276	302	318
8	200		8	203.2	3.15	80	43.0	91.5	142	190	235	283	330	374	417	453
			8	203.2			47.0	102	158	217	279	334	384	430	468	499
			8	203.2			54.2	123	192	270	348	419	474	508	525	535
10[3]	250		10	254	3.15	80	38.0	79.4	124	166	208	254	300	348	396	441
			10	254			43.8	109	174	240	306	373	439	499	560	618
			10	254			64.2	150	236	326	415	504	592	674	755	828

Note / (1) FTO : Flow to Open ; Suit for Gas , and Steam.
(2) Guiding Way : Cage Guide is approved for all size.
(3) The Cv values of 10" are simulation.
(4) Balance Plug is approved for list size.

Cv Versus Travel

Trim Type : F Plug Type : Multi-hole Plug Cage Type : Multi-hole Cage Direction : FTO Flow Characteristic : EQ%

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1	25	Class 150 ~ 600	1	25.4	0.79	20	0.44	0.65	0.96	1.60	2.64	3.85	4.95	5.83	6.57	6.97
1.5	40		1.5	38	0.79	30	0.61	1.19	1.84	2.56	4.16	7.35	10.5	13.3	16.1	18.5
2	50		1.5	38	1.18	30	1.00	1.60	2.20	3.30	5.50	8.90	12.4	15.3	17.6	19.0
			2	51			2.10	3.00	4.10	5.40	7.60	13.8	19.9	24.8	28.9	32.7
2.5	65		2	51	1.18	30	1.06	1.99	3.08	4.39	6.72	12.2	18.3	24.0	28.8	32.0
			2.5	65			1.89	3.27	4.36	6.17	10.2	17.8	26.2	34.4	40.3	44.9
3	80		2.5	65	1.18	30	2.10	3.40	4.50	6.00	8.40	14.8	21.5	28.1	34.0	38.2
			3	76			2.10	3.70	5.30	7.10	10.3	19.2	28.2	35.6	42.5	48.8
4	100		3	76	1.38	35	1.75	3.52	5.09	7.64	11.7	19.2	30.9	41.8	49.5	55.0
			4	101.6			2.73	5.09	7.28	11.0	18.3	30.6	47.4	61.7	73.7	83.0
5	125		5	127	2	50	3.90	8.02	11.9	16.7	27.0	49.9	77.7	99.3	119	135
6	150		6	152.4	2.36	60	4.87	11.4	18.6	28.3	46.6	85.7	122	155	184	210
8	200		8	203.2	3.15	80	10.5	19.4	29.8	41.0	71.9	122	188	243	292	324
			8	203.2			13.7	25.4	37.6	55.4	88.6	162	228	283	332	379
10[3]	250		10	254	3.15	80	9.69	16.4	28.3	44.1	75.1	131	202	268	321	367
			10	254			10.8	19.1	32.0	50.8	105	174	253	316	371	424

Note / (1) FTO : Flow to Open ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Port Guide is approved for all size.
(3) The Cv values of 10" are simulation.
(4) Balance Plug is set over 6" , including 6" .

Cv Versus Travel

Trim Type : F Plug Type : Multi-hole Plug Cage Type : Multi-hole Cage Direction : FTO Flow Characteristic : Linear

Percent of Travel						10	20	30	40	50	60	70	80	90	100
F_L						0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Valve Size		ASME Rating	Orifice Diameter		Travel		Cv								
inch	mm		inch	mm	inch	mm									
1	25	Class 150 ~ 600	1	25.4	0.79	20	0.80	1.56	2.27	3.00	3.73	4.50	5.31	6.17	7.10	7.85
1.5	40		1.5	38	0.79	30	1.54	3.67	5.59	7.65	9.76	11.9	14.1	16.5	19.0	21.3
2	50		1.5	38	1.18	30	2.80	5.80	8.40	11.1	13.5	15.8	18.0	20.1	21.9	23.4
			2	51			3.90	8.32	12.7	17.3	21.7	26.0	30.2	34.0	37.5	40.7
2.5	65		2	51	1.18	30	2.18	5.92	10.0	14.2	18.5	22.7	26.8	31.1	35.3	39.7
			2.5	65			4.38	9.86	15.0	20.4	25.8	31.6	37.9	44.2	50.7	56.0
3	80		2.5	65	1.18	30	4.50	9.20	14.4	19.6	24.7	29.8	35.1	40.9	46.2	51.1
			3	76			4.70	10.5	16.6	22.2	28.6	35.2	41.5	48.6	55.5	61.6
4	100		3	76	1.38	35	7.00	14.6	22.3	29.8	37.4	45.4	53.2	60.9	68.7	76.9
			4	101.6			7.79	18.2	29.9	41.3	52.5	64.2	77.0	89.3	101	113
5	125		5	127	2	50	13.5	28.5	45.6	62.4	79.0	96.4	114	131	149	166
6	150		6	152.4	2.36	60	22.7	48.0	75.4	101	130	160	189	216	242	266
8	200		8	203.2	3.15	80	34.8	78.4	123	169	212	259	301	347	379	431
			8	203.2			38.2	86.6	140	194	249	299	343	397	441	484
10[3]	250		10	254	3.15	80	34.6	79.0	127	180	234	284	335	386	436	487
			10	254			40.0	96.4	153	216	279	348	416	481	547	596

Note / (1) FTO : Flow to Open ; Suit for Liquid , Gas , and Steam.
(2) Guiding Way : Port Guide is approved for all size.
(3) The Cv values of 10" are simulation.
(3) Balance Plug is set over 6" , including 6" .

Material of Construction and Specification

Table I : Standard Materials for WCB/WCC Body.
Fluid : water & Heat transfer oil (-29°C~343°C) & Saturated steam or Oil (350°C max.)...etc.
Non or Low corrosion environment (CL600 and under)

Service Temperature		-29°C	200°C	250°C	350°C
Item	Part Name	Material Specifications			
1	Body	WCC / WCB Casting Carbon Steel, ASTM A216			
2	Seat Ring	304, ASTM A479	ASTM A564 Gr. 630		
3	Seat Ring Gasket	316 Sheet with Flex Graphite / Spiral Wound 316 SST with Flexible Graphite			
4	Plug	304, ASTM A479	ASTM A564 Gr. 630		
5	Body Gasket	Gylon / SUS316 + Graphite / Spiral Wound 316 SST with PTFE or Graphite			
6	Cage	CF8, CF8M, CF3M, ASTM A351	ASTM A564 Gr. 630		
7	Bonnet Bolt	ASTM A193, Gr. B7			
8	Bonnet Nut	ASTM A194, Gr. 2H			
9	Bonnet	(1) Bar : Carbon Steel, JIS G4051 S20C			
		(2) Casting : WCC / WCB Carbon Steel, ASTM A216			
10	Gland Packing	PTFE V-Packing (-40°C ~ 200°C)	Other options		
		Graphite (-200°C ~ 350°C)			
		Flexible Graphite (Low emission available)			
11	Plug Stem	304, ASTM A479 + Chrome	ASTM A564 Gr. 630, H1150 + Chrome		
12	Optional Trim	Trim combination and selection			
Service Temperature		-20°F	392°F	482°F	662°F

Note / (1) The maximum operation pressure and temperature for class rating of WCB / WCC body material should comply with ASME B16.34 Standard.
(2) Soft Seat Trim, Please Refer to Combinations of Trim Materials (See page 28).

Material of Construction and Specification

Table II : Standard Materials for CF8/CF8M/CF3M Body.
Fluid : water & pure water, LNG (extension bonnet), N2, O2, H2, sour & alkali (-29°C~343°C) & optional trim (up to 427°C max.) ...etc. Corrosion environment(CL600 and under)

Service Temperature		-29°C	200°C	300°C	350°C
Item	Part Name	Material Specifications			
1	Body	CF8 / CF8M / CF3 / CF3M / Casting Stainless Steel, ASTM 351			
2	Seat Ring	304 / 316 / 304L / 316L, ASTM A479	304 / 316 / 304L / 316L, ASTM A479 + Stellite		
3	Seat Ring Gasket	Gylon / Spiral Wound PTFE	Spiral Wound 316 SST with Flexible Graphite		
4	Plug	304 / 316 / 304L / 316L, ASTM A479	304 / 316 / 304L / 316L, ASTM A479 + Stellite		
5	Body Gasket	Gylon / Spiral Wound PTFE	SUS316 + Graphite / Spiral Wound 316 + Flexible Graphite		
6	Cage	304 / 316 / 304L / 316L, ASTM A479			
7	Bonnet Bolt	ASTM A193, B8 / B8M (special material optional)			
8	Bonnet Nut	ASTM A194, Gr. 8 or 8M (special material optional)			
9	Bonnet	(1) Bar : 304 / 316 / 304L / 316L, ASTM A479			
		(2) Casting : CF8 / CF8M / CF3 / CF3M, ASTM 351			
10	Gland Packing	PTFE V-Packing (-40°C ~ 200°C)	Other options		
		Graphite (-200°C ~ 350°C)			
		Flexible Graphite (Low emission available)			
11	Plug Stem	304 / 316 / 304L / 316L, ASTM A479 + Chrome			
12	Optional Trim	Trim combination and selection			
Service Temperature		-20°F	392°F	572°F	662°F

Note / (1) The maximum operation pressure and temperature for class rating of CF8 / CF8M / CF3 / CF3M body material should comply with ASME B16.34 Standard.
(2) Soft Seat Trim, Please Refer to Combinations of Trim Materials (See page 28).

Combinations of Trim Materials

Contribution:

Trim Code	Plug	Cage	Seat	Stem	Bushing	Body Available
★ Suit for Water, Heat Transfer Oil (-40℃~343℃), Saturated Steam (300℃ Max.) and Some Corrosion Environment (CL600 Below)						
52	ASTM A564 630 H900	ASTM A564 630 H900	ASTM A564 630 H900	ASTM A564 630 H1150 + Chrome	ASTM A564 630 H900	★ WCB CF8
★ 【NACE AVAILABLE】Suit for Water, Heat Transfer Oil (300℃~343℃), Saturated Steam (300℃~343℃) and Some Corrosion Environment Especially in Acid Gases (CL600 Below)						
53	ASTM A564 630 H1150 + Stellite	ASTM A564 630 H900	ASTM A564 630 H1150 + Stellite	ASTM A564 630 H1150 + Chrome	ASTM A564 630 H900	★ WCB CF8
★ Suit for Pure Water, LNG, Nitrogen, Oxygen, Hydrogen Gases and Some Corrosion Environment (-198℃~343℃ and CL300 Below) which harden trim is needed. ★ For CL600, bushing must use Nictronic 50 , ASTM A276 Cold Finish , HRC 35 max.						
54	ASTM A479 304 + Stellite	ASTM A479 304	ASTM A479 304 + Stellite	ASTM A479 304 + Chrome	ASTM A276 UNS S21800 Nitronic 60	CF8
55	ASTM A479 316 + Stellite	ASTM A479 316	ASTM A479 316 + Stellite	ASTM A479 316 + Chrome	ASTM A276 UNS S21800 Nitronic 60	CF8M
56	ASTM A479 316 + Full Stellite	ASTM A479 316	ASTM A479 316 + Full Stellite	ASTM A479 316 + Chrome	ASTM A276 UNS S21800 Nitronic 60	
62	ASTM A479 316L + Stellite	ASTM A479 316L	ASTM A479 316L + Stellite	ASTM A479 316L + Chrome	ASTM A479 316L	CF3M
63	ASTM A479 316L + Full Stellite	ASTM A479 316L	ASTM A479 316L + Full Stellite	ASTM A479 316L + Chrome	ASTM A479 316L	

Combinations of Trim Materials

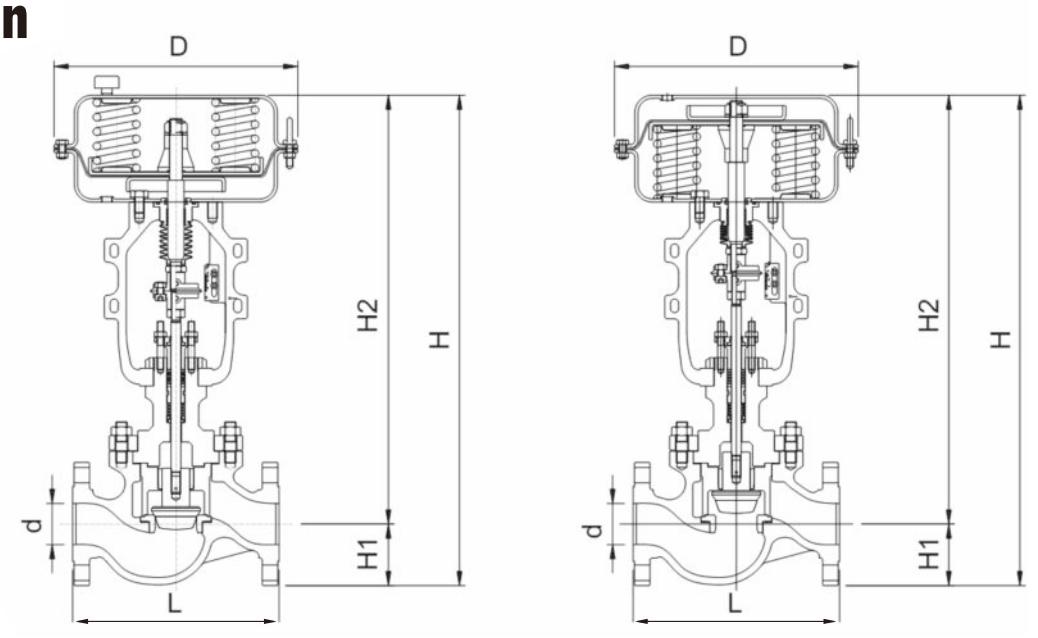
Trim Designation	Plug	Cage	Seat	Stem	Bushing	Body Available
★ Suit for Pure Water, LNG, Nitrogen, Oxygen, Hydrogen Gases and Some Corrosion Environment (-29℃～150℃ and CL300 Below)						
57S	ASTM A479 304	ASTM A479 304 (Soft seat:PTFE)	ASTM A479 304	ASTM A479 304 + Chrome	ASTM A276, UNS S21800 Nitronic 60	CF8
60S	ASTM A479 316	ASTM A479 316 (Soft seat:PTFE)	ASTM A479 316	ASTM A479 316 + Chrome	ASTM A276, UNS S21800 Nitronic 60	CF8M
61S	ASTM A479 316L	ASTM A479 316L (Soft seat:PTFE)	ASTM A479 316L	ASTM A479 316L + Chrome	ASTM A479 316L	CF3M
64	ASTM A479 304	ASTM A479 304 (Soft seat:TFM4215)	ASTM A479 304	ASTM A479 304 + Chrome	ASTM A276, UNS S21800 Nitronic 60	CF8
65	ASTM A479 316	ASTM A479 316 (Soft seat:TFM4215)	ASTM A479 316	ASTM A479 316 + Chrome	ASTM A276, UNS S21800 Nitronic 60	CF8M
66	ASTM A479 316L	ASTM A479 316L (Soft seat:TFM4215)	ASTM A479 316L	ASTM A479 316L + Chrome	ASTM A479 316L	CF3M
67	ASTM A479 304	ASTM A479 304 (Soft seat:PCTFE)	ASTM A479 304	ASTM A479 304 + Chrome	ASTM A276, UNS S21800 Nitronic 60	CF8
68	ASTM A479 316	ASTM A479 316 (Soft seat:PCTFE)	ASTM A479 316	ASTM A479 316 + Chrome	ASTM A276, UNS S21800 Nitronic 60	CF8M
69	ASTM A479 316L	ASTM A479 316L (Soft seat:PCTFE)	ASTM A479 316L	ASTM A479 316L + Chrome	ASTM A479 316L	CF3M

Combinations of Trim Materials

Trim Designation	Plug	Cage	Seat	Stem	Bushing	Body Available
★ Suit for Corrosion Environment, Especially in Acid Fluid (-198°~343°C) (CL 600 Below)						
58	ASTM B626 (Hastelloy C-276)	ASTM B626 (Hastelloy C-276)	ASTM B626 (Hastelloy C-276)	ASTM B626 (Hastelloy C-276)	ASTM B626 (Hastelloy C-276)	CW-12MW (Hastelloy C)
59	ASTM B164 (Monel 400)	ASTM B164 (Monel 400)	ASTM B164 (Monel 400)	ASTM B164 (Monel 400)	ASTM B164 (Monel 400)	M35-1 (Monel)
★ Suit for Pure Water, LNG, Nitrogen, Oxygen, Hydrogen Gases and Some Corrosion Environment (0℃~150℃ and 10K Below)						
57	ASTM A479 304	ASTM A479 304	ASTM A479 304	ASTM A479 304 + Chrome	ASTM A276, UNS S21800 Nitronic 60	CF8
★ Suit for Pure Water, LNG, Nitrogen, Oxygen, Hydrogen Gases and Some Corrosion Environment (-198℃~343℃ and CL300 Below)						
60	ASTM A479 316	ASTM A479 316	ASTM A479 316	ASTM A479 316 + Chrome	ASTM A276, UNS S21800 Nitronic 60	CF8M
61	ASTM A479 316L	ASTM A479 316L	ASTM A479 316L	ASTM A479 316L + Chrome	ASTM A479 316L	CF3M

Note / WCB Body is recommended to use within -29°C ~ 427°C.

Dimension



STANDARD TYPE BONNET WITHOUT TOP MOUNT Unit : mm

Valve Size (ISO)	L		ANSI H1		DIN H1			JIS H1		D
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K	
15A	130	130	45	48	48	48	48	48	48	250
20A	150	150	49	59	53	53	53	50	50	250
25A	160	160	54	62	58	58	58	63	63	250
40A	200	200	64	78	75	75	75	70	70	300
50A	230	230	76	83	83	83	83	78	78	300
65A	290	290	89	95	93	93	93	88	88	300
80A	310	310	95	105	100	100	100	93	100	350
100A	350	350	115	127	110	118	118	105	113	350
125A	400	400	127	140	125	135	135	125	135	460

STANDARD TYPE BONNET WITHOUT TOP MOUNT Unit : mm

Valve Size (ISO)	H2		ANSI H		DIN H			JIS H	
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K
15A	489	489	534	537	537	537	537	537	537
20A	489	489	538	548	542	542	542	539	539
25A	489	489	543	551	547	547	547	552	552
40A	517	517	581	595	592	592	592	587	587
50A	529	529	605	612	612	612	612	607	607
65A	576	576	665	671	669	669	669	664	664
80A	675	675	770	780	775	775	775	768	775
100A	705	705	820	832	815	823	823	810	818
125A	816	816	943	956	941	951	951	941	951

Note / H2 in ANSI, DIN, and JIS standards are the same.

STANDARD TYPE BONNET WITHOUT TOP MOUNT

Unit : mm

Valve Size (IEC)	L			ANSI H1			DIN H1			D
	CL150	CL300	CL600	CL150	CL300	CL600	PN16	PN25	PN40	
15A	184	190	203	45	48	48	48	48	48	250
20A	184	194	206	49	59	59	53	53	53	250
25A	184	197	210	54	62	62	58	58	58	250
40A	222	235	251	64	78	78	75	75	75	300
50A	254	267	286	76	83	83	83	83	83	300
80A	298	318	337	95	105	105	100	100	100	350
100A	352	368	394	115	127	137	110	118	118	350
150A	451	473	508	140	159	178	143	150	150	460
200A	543	568	610	172	191	210	170	180	188	465
250A	673	708	752	203	222	254	203	213	225	465
300A	737	775	N/A	265	280	N/A	N/A	N/A	N/A	660

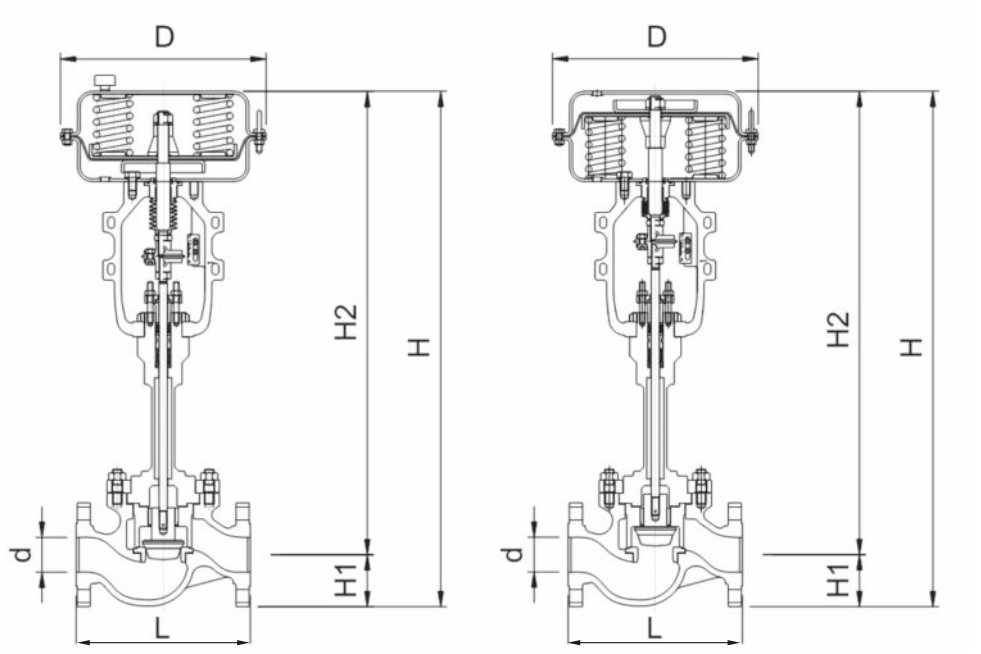
STANDARD TYPE BONNET WITHOUT TOP MOUNT

Unit : mm

Valve Size (IEC)	H2			ANSI H			DIN H		
	CL150	CL300	CL600	CL150	CL300	CL600	PN16	PN25	PN40
15A	489	489	505	534	537	553	537	537	537
20A	489	489	505	538	548	564	542	542	542
25A	489	489	505	543	551	567	547	547	547
40A	517	517	534	581	595	612	592	592	592
50A	529	529	546	605	612	629	612	612	612
80A	675	675	675	770	780	780	775	775	775
100A	705	705	705	820	832	842	815	823	823
150A	856	856	856	996	1015	1034	999	1006	1006
200A	1134	1134	1134	1306	1325	1344	1304	1314	1322
250A	1159	1159	1159	1362	1381	1413	1362	1372	1384
300A	1378	1378	N/A	1643	1658	N/A	N/A	N/A	N/A

Note / H2 in ANSI and DIN Standards are the same.

Dimension



EXTENDED TYPE BONNET WITHOUT TOP MOUNT										Unit : mm
Valve Size (ISO)	L		ANSI H1		DIN H1			JIS H1		D
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K	
15A	130	130	45	48	48	48	48	48	48	250
20A	150	150	49	59	53	53	53	50	50	250
25A	160	160	54	62	58	58	58	63	63	250
40A	200	200	64	78	75	75	75	70	70	300
50A	230	230	76	83	83	83	83	78	78	300
65A	290	290	89	95	93	93	93	88	88	300
80A	310	310	95	105	100	100	100	93	100	350
100A	350	350	115	127	110	118	118	105	113	350
125A	400	400	127	140	125	135	135	125	135	460

EXTENDED TYPE BONNET WITHOUT TOP MOUNT									Unit : mm
Valve Size (ISO)	H2		H		H			JIS H	
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K
15A	650	650	695	698	698	698	698	698	698
20A	660	660	709	719	713	713	713	710	710
25A	670	670	724	732	728	728	728	733	733
40A	696	696	760	774	771	771	771	766	766
50A	678	678	754	761	761	761	761	756	756
65A	790	790	879	885	883	883	883	878	878
80A	835	835	930	940	935	935	935	928	935
100A	874	874	989	1001	984	992	992	979	987
125A	1036	1036	1163	1176	1161	1171	1171	1161	1171

Note / H2 in ANSI, DIN, and JIS standards are the same.

EXTENDED TYPE BONNET WITHOUT TOP MOUNT

Unit : mm

Valve Size (IEC)	L			ANSI H1			DIN H1			D
	CL150	CL300	CL600	CL150	CL300	CL600	PN16	PN25	PN40	
15A	184	190	203	45	48	48	48	48	48	250
20A	184	194	206	49	59	59	53	53	53	250
25A	184	197	210	54	62	62	58	58	58	250
40A	222	235	251	64	78	78	75	75	75	300
50A	254	267	286	76	83	83	83	83	83	300
80A	298	318	337	95	105	105	100	100	100	350
100A	352	368	394	115	127	137	110	118	118	350
150A	451	473	508	140	159	178	143	150	150	460
200A	543	568	610	172	191	210	170	180	188	465
250A	673	708	752	203	222	254	203	213	225	465

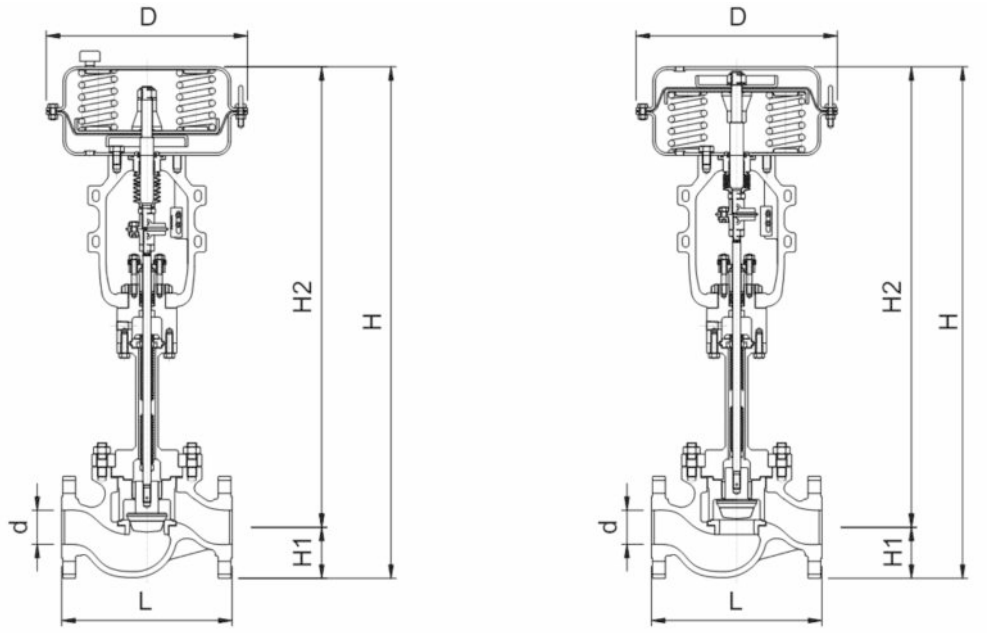
EXTENDED TYPE BONNET WITHOUT TOP MOUNT

Unit : mm

Valve Size (IEC)	H2			H			H		
	CL150	CL300	CL600	CL150	CL300	CL600	PN15	PN25	PN40
15A	650	650	667	695	698	715	698	698	698
20A	660	660	677	709	719	736	713	713	713
25A	670	670	687	724	732	749	728	728	728
40A	696	696	763	760	774	841	771	771	771
50A	678	678	802	754	761	885	761	761	761
80A	835	835	885	930	940	990	935	935	935
100A	874	874	940	989	1001	1077	984	992	992
150A	1072	1072	1291	1212	1231	1469	1215	1222	1222
200A	1567	1567	1567	1739	1758	1777	1737	1747	1755
250A	1589	1589	1589	1792	1811	1843	1792	1802	1814

Note / H2 in ANSI and DIN standards are the same.

Dimension



BELLOW TYPE BONNET WITHOUT TOP MOUNT										Unit : mm
Valve Size (ISO)	L		ANSI H1		DIN H1			JIS H1		D
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K	
15A	130	130	45	48	48	48	48	48	48	250
20A	150	150	49	59	53	53	53	50	50	250
25A	160	160	54	62	58	58	58	63	63	250
40A	200	200	64	78	75	75	75	70	70	300
50A	230	230	76	83	83	83	83	78	78	300
65A	290	290	89	95	93	93	93	88	88	300
80A	310	310	95	105	100	100	100	93	100	350
100A	350	350	115	127	110	118	118	105	113	350
125A	400	400	127	140	125	135	135	125	135	460

BELLOW TYPE BONNET WITHOUT TOP MOUNT									Unit : mm
Valve Size (ISO)	H2		ANSI H		DIN H			JIS H	
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K
15A	663	706	708	754	711	754	754	711	754
20A	663	706	712	765	716	759	759	713	756
25A	663	706	717	768	721	764	764	726	769
40A	690	733	754	811	765	808	808	760	803
50A	686	729	762	812	769	812	812	764	807
65A	841	934	930	1029	934	1027	1027	929	1022
80A	936	1029	1031	1134	1036	1129	1129	1029	1129
100A	944	1036	1059	1163	1054	1154	1154	1049	1149
125A	1189	1288	1316	1428	1314	1423	1423	1314	1423

Note / H2 in ANSI, DIN, and JIS standards are the same.

BELLOW TYPE BONNET WITHOUT TOP MOUNT

Unit : mm

Valve Size (IEC)	L			ANSI H1			DIN H1			D
	CL150	CL300	CL600	CL150	CL300	CL600	PN16	PN25	PN40	
15A	184	190	203	45	48	48	48	48	48	250
20A	184	194	206	49	59	59	53	53	53	250
25A	184	197	210	54	62	62	58	58	58	250
40A	222	235	251	64	78	78	75	75	75	300
50A	254	267	286	76	83	83	83	83	83	300
80A	298	318	337	95	105	105	100	100	100	350
100A	352	368	394	115	127	137	110	118	118	350
150A	451	473	508	140	159	178	143	150	150	460
200A	543	568	N/A	172	191	N/A	170	180	N/A	465
250A	673	708	N/A	203	222	N/A	203	213	N/A	465

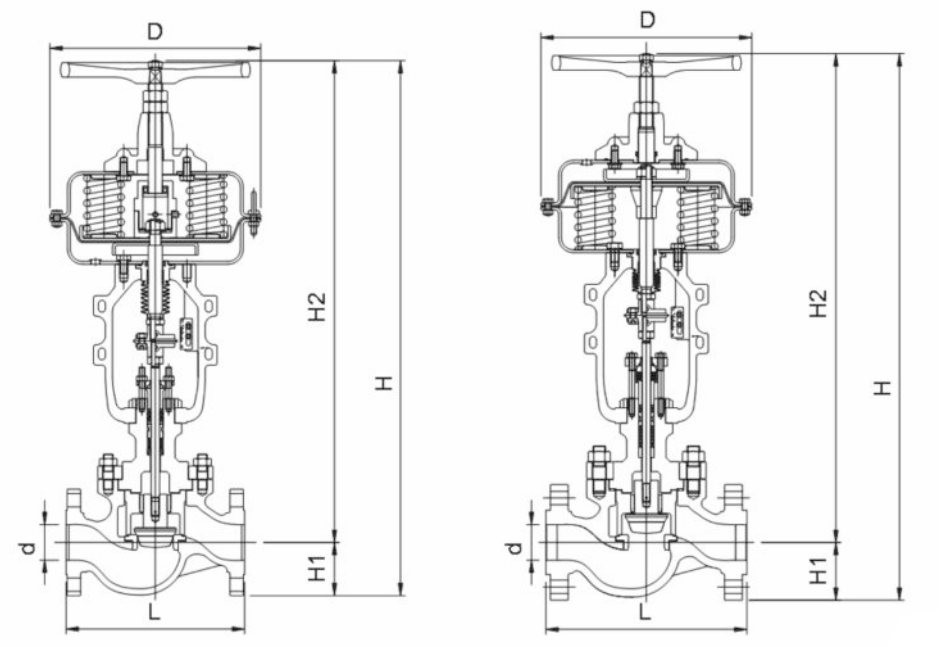
BELLOW TYPE BONNET WITHOUT TOP MOUNT

Unit : mm

Valve Size (IEC)	H2			ANSI H			DIN H		
	CL150	CL300	CL600	CL150	CL300	CL600	PN16	PN25	PN40
15A	663	706	825	708	754	873	711	754	754
20A	663	706	841	712	765	900	716	759	759
25A	663	706	841	717	768	903	721	764	764
40A	690	733	851	754	811	929	765	808	808
50A	686	729	849	762	812	932	769	812	812
80A	936	1029	1171	1031	1134	1276	1036	1192	1192
100A	944	1036	1179	1059	1163	1316	1054	1129	1129
150A	1214	1309	1518	1354	1468	1696	1357	1459	1459
200A	1574	1574	N/A	1746	1765	N/A	1744	1754	1762
250A	1596	1596	N/A	1799	1818	N/A	1799	1809	1821

Note / H2 in ANSI and DIN standards are the same.

Dimension



STANDARD TYPE BONNET WITH TOP MOUNT										Unit : mm
Valve Size (ISO)	L		ANSI H1		DIN H1			JIS H1		D
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K	
15A	130	130	45	48	48	48	48	48	48	250
20A	150	150	49	59	53	53	53	50	50	250
25A	160	160	54	62	58	58	58	63	63	250
40A	200	200	64	78	75	75	75	70	70	300
50A	230	230	76	83	83	83	83	78	78	300
65A	290	290	89	95	93	93	93	88	88	300
80A	310	310	95	105	100	100	100	93	100	350
100A	350	350	115	127	110	118	118	105	113	350
125A	400	400	127	140	125	135	135	125	135	460

STANDARD TYPE BONNET WITH TOP MOUNT																Unit : mm
Valve Size (ISO)	ATO H2	ATO ANSI H		ATO DIN H			ATO JIS H		ATC H2	ATC ANSI H		ATC DIN H			ATC JIS H	
		CL150	CL300	PN16	PN25	PN40	10K	20K		CL150	CL300	PN16	PN25	PN40	10K	20K
15A	647	692	695	695	695	695	695	695	641	686	689	689	689	689	689	689
20A	647	696	706	700	700	700	697	697	641	690	700	694	694	694	691	691
25A	648	702	710	706	706	706	711	711	641	695	703	699	699	699	704	704
40A	676	740	754	751	751	751	746	746	669	733	747	744	744	744	739	739
50A	688	764	771	771	771	771	766	766	681	757	764	764	764	764	759	759
65A	734	823	829	827	827	827	822	822	728	817	823	821	821	821	816	816
80A	862	957	967	962	962	962	955	962	861	956	966	961	961	961	954	961
100A	893	1008	1020	1003	1011	1011	998	1006	891	1006	1018	1001	1009	1009	996	1004
125A	1120	1247	1260	1245	1255	1255	1245	1255	1080	1207	1220	1205	1215	1215	1205	1215

Note / H2 in ANSI, DIN, and JIS standards are the same.

STANDARD TYPE BONNET WITH TOP MOUNT

Unit : mm

Valve Size (IEC)	L			ANSI H1			DIN H1			D
	CL150	CL300	CL600	CL150	CL300	CL600	PN16	PN25	PN40	
15A	184	190	203	45	48	48	48	48	48	250
20A	184	194	206	49	59	59	53	53	53	250
25A	184	197	210	54	62	62	58	58	58	250
40A	222	235	251	64	78	78	75	75	75	300
50A	254	267	286	76	83	83	83	83	83	300
80A	298	318	337	95	105	105	100	100	100	350
100A	352	368	394	115	127	137	110	118	118	350
150A	451	473	508	140	159	178	143	150	150	460
200A	543	568	610	172	191	210	170	180	188	465
250A	673	708	752	203	222	254	203	213	225	465

STANDARD TYPE BONNET WITH MOUNT

Unit : mm

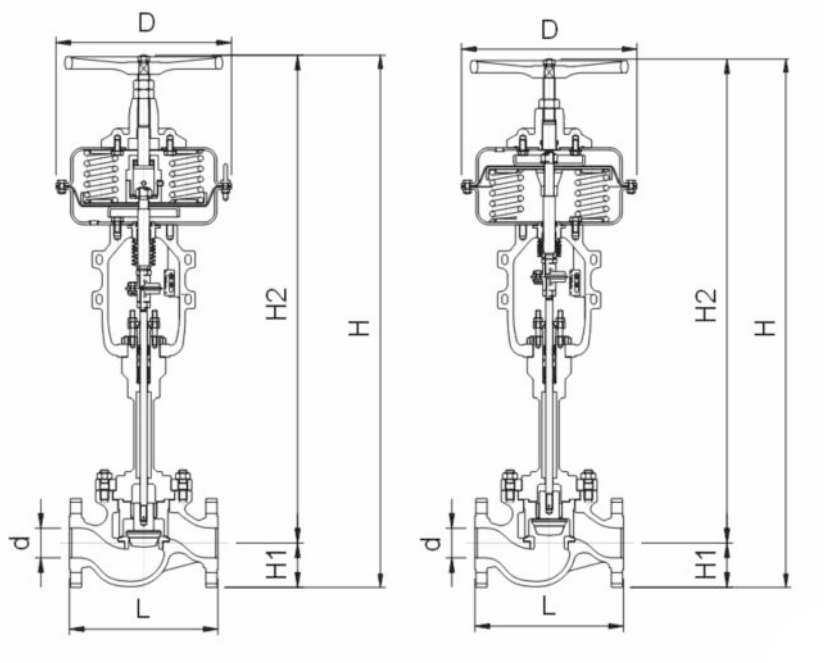
Valve Size (IEC)	ATO ANSI H2			ATO ANSI H			ATC ANSI H2			ATC ANSI H		
	CL150	CL300	CL600	CL150	CL300	CL600	CL150	CL300	CL600	CL150	CL300	CL600
15A	647	647	664	692	695	712	641	641	657	686	689	705
20A	647	647	664	696	706	723	641	641	657	690	700	716
25A	648	648	664	702	710	726	641	641	657	695	703	719
40A	676	676	692	740	754	770	669	669	689	733	747	767
50A	688	688	704	764	771	787	681	681	698	757	764	781
80A	862	862	862	957	967	967	861	861	861	956	966	966
100A	893	893	893	1008	1020	1030	891	891	891	1006	1018	1028
150A	1160	1160	1160	1300	1319	1338	1122	1122	1122	1262	1281	1300
200A	1387	1387	1387	1559	1578	1597	1457	1457	1457	1629	1648	1667
250A	1413	1413	1413	1616	1635	1667	1483	1483	1483	1686	1705	1737

STANDARD TYPE BONNET WITH MOUNT

Unit : mm

Valve Size (IEC)	ATO DIN H2			ATO DIN H			ATC DIN H2			ATC DIN H		
	PN16	PN25	PN40	PN16	PN25	PN40	PN16	PN25	PN40	PN16	PN25	PN40
15A	647	647	647	695	695	695	641	641	641	689	689	689
20A	647	647	647	700	700	700	641	641	641	694	694	694
25A	648	648	648	706	706	706	641	641	641	699	699	699
40A	676	676	676	751	751	751	669	669	669	744	744	744
50A	688	688	688	771	771	771	681	681	681	764	764	764
80A	862	862	862	962	962	962	861	861	861	961	961	961
100A	893	893	893	1003	1011	1011	891	891	891	1001	1009	1009
150A	1160	1160	1160	1303	1310	1310	1122	1122	1122	1265	1272	1272
200A	1387	1387	1387	1557	1567	1575	1457	1457	1457	1627	1637	1645
250A	1413	1413	1413	1616	1626	1638	1483	1483	1483	1686	1696	1708

Dimension



EXTENDED TYPE BONNET WITH TOP MOUNT Unit : mm

Valve Size (ISO)	L		ANSI H1		DIN H1			JIS H1		D
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K	
15A	130	130	45	48	48	48	48	48	48	250
20A	150	150	49	59	53	53	53	50	50	250
25A	160	160	54	62	58	58	58	63	63	250
40A	200	200	64	78	75	75	75	70	70	300
50A	230	230	76	83	83	83	83	78	78	300
65A	290	290	89	95	93	93	93	88	88	300
80A	310	310	95	105	100	100	100	93	100	350
100A	350	350	115	127	110	118	118	105	113	350
125A	400	400	127	140	125	135	135	125	135	460

EXTENDED TYPE BONNET WITH MOUNT Unit : mm

Valve Size (ISO)	ATO H2	ATO ANSI H		ATO DIN H			ATO JIS H		ATC H2	ATC ANSI H		ATC DIN H			ATC JIS H	
		CL150	CL300	PN16	PN25	PN40	10K	20K		CL150	CL300	PN16	PN25	PN40	10K	20K
15A	809	854	857	857	857	857	857	857	802	847	850	850	850	850	850	850
20A	818	867	877	871	871	871	868	868	812	861	871	865	865	865	862	862
25A	828	882	890	886	886	886	891	891	822	876	884	880	880	880	885	885
40A	854	918	932	929	929	929	924	924	848	912	926	923	923	923	918	918
50A	836	912	919	919	919	919	914	914	830	906	913	913	913	913	908	908
65A	948	1037	1043	1041	1041	1041	1036	1036	942	1031	1037	1035	1035	1035	1030	1030
80A	1022	1117	1127	1122	1122	1122	1115	1122	1021	1116	1126	1121	1121	1121	1114	1121
100A	1062	1177	1189	1172	1180	1180	1167	1175	1060	1175	1187	1170	1178	1178	1165	1173
125A	1340	1467	1480	1465	1475	1475	1465	1475	1302	1429	1442	1427	1437	1437	1427	1437

Note / H2 in ANSI, DIN, and JIS standards are the same.

EXTENDED TYPE BONNET WITH TOP MOUNT

Unit : mm

Valve Size (IEC)	L			ANSI H1			DIN H1			D
	CL150	CL300	CL600	CL150	CL300	CL600	PN16	PN25	PN40	
15A	184	190	203	45	48	48	48	48	48	250
20A	184	194	206	49	59	59	53	53	53	250
25A	184	197	210	54	62	62	58	58	58	250
40A	222	235	251	64	78	78	75	75	75	300
50A	254	267	286	76	83	83	83	83	83	300
80A	298	318	337	95	105	105	100	100	100	350
100A	352	368	394	115	127	137	110	118	118	350
150A	451	473	508	140	159	178	143	150	150	460
200A	543	568	610	172	191	210	170	180	188	465
250A	673	708	752	203	222	254	203	213	225	465

EXTENDED TYPE BONNET WITH MOUNT

Unit : mm

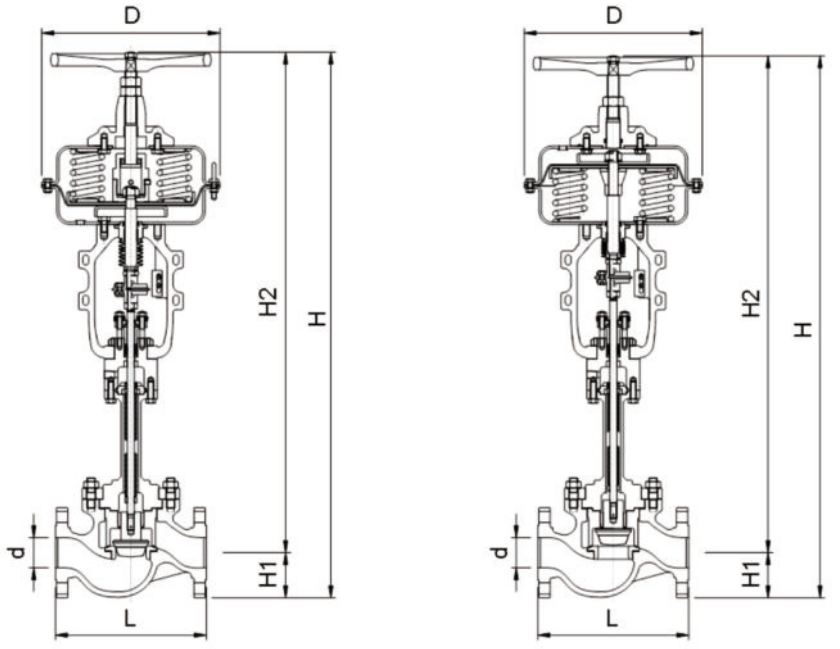
Valve Size (IEC)	ATO ANSI H2			ATO ANSI H			ATC ANSI H2			ATC ANSI H		
	CL150	CL300	CL600	CL150	CL300	CL600	CL150	CL300	CL600	CL150	CL300	CL600
15A	809	809	826	854	857	874	802	802	819	847	850	867
20A	818	818	836	867	877	895	812	812	829	861	871	888
25A	828	828	846	882	890	908	822	822	839	876	884	901
40A	854	854	921	918	932	999	848	848	915	912	926	993
50A	836	836	960	912	919	1043	830	830	954	906	913	1037
80A	1022	1022	1072	1117	1127	1177	1021	1021	1071	1116	1126	1176
100A	1062	1062	1128	1177	1189	1265	1060	1060	1126	1175	1187	1263
150A	1376	1376	1595	1516	1535	1773	1338	1338	1557	1478	1497	1735
200A	1821	1821	1821	1993	2012	2031	1891	1891	1891	2063	2082	2101
250A	1843	1843	1843	2046	2065	2097	1913	1913	1913	2116	2135	2167

EXTENDED TYPE BONNET WITH MOUNT

Unit : mm

Valve Size (IEC)	ATO DIN H2			ATO DIN H			ATC DIN H2			ATC DIN H		
	PN16	PN25	PN40	PN16	PN25	PN40	PN16	PN25	PN40	PN16	PN25	PN40
15A	809	809	809	857	857	857	802	802	802	850	850	850
20A	818	818	818	871	871	871	812	812	812	865	865	865
25A	828	828	828	886	886	886	822	822	822	880	880	880
40A	854	854	854	929	929	929	848	848	848	923	923	923
50A	836	836	836	919	919	919	830	830	830	913	913	913
80A	1022	1022	1022	1122	1122	1122	1021	1021	1021	1121	1121	1121
100A	1062	1062	1062	1172	1180	1180	1060	1060	1060	1170	1178	1178
150A	1376	1376	1376	1519	1526	1526	1338	1338	1338	1481	1488	1488
200A	1821	1821	1821	1991	2009	2009	1891	1891	1891	2061	2079	2079
250A	1843	1843	1843	2046	2068	2068	1913	1913	1913	2116	2138	2138

Dimension



BELLOWTYPE BONNET WITH TOP MOUNT Unit : mm

Valve Size (ISO)	L		ANSI H1		DIN H1			JIS H1		D
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K	
15A	130	130	45	48	48	48	48	48	48	250
20A	150	150	49	59	53	53	53	50	50	250
25A	160	160	54	62	58	58	58	63	63	250
40A	200	200	64	78	75	75	75	70	70	300
50A	230	230	76	83	83	83	83	78	78	300
65A	290	290	89	95	93	93	93	88	88	300
80A	310	310	95	105	100	100	100	93	100	350
100A	350	350	115	127	110	118	118	105	113	350
125A	400	400	127	140	125	135	135	125	135	460

BELLOW TYPE BONNET WITH TOP MOUNT Unit : mm

Valve Size (ISO)	ATO H2		ATO ANSI H		ATO DIN H			ATO JIS H		ATC H2		ATC ANSI H		ATC DIN H			ATC JIS H	
	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K	CL150	CL300	CL150	CL300	PN16	PN25	PN40	10K	20K
15A	821	864	866	912	869	912	912	869	912	815	858	860	906	863	906	906	863	906
20A	821	864	870	923	874	917	917	871	914	815	858	864	917	868	911	911	865	908
25A	821	864	875	926	879	922	922	884	927	815	858	869	920	873	916	916	878	921
40A	848	891	912	969	923	966	966	918	961	841	884	905	962	916	959	959	911	954
50A	844	887	920	970	927	970	970	922	965	838	881	914	964	921	964	964	916	959
65A	999	1092	1088	1187	1092	1185	1185	1087	1180	993	1086	1082	1181	1086	1179	1179	1081	1174
80A	1124	1216	1219	1321	1224	1316	1316	1217	1316	1122	1215	1217	1320	1222	1315	1315	1215	1315
100A	1131	1224	1246	1351	1241	1342	1342	1236	1337	1130	1222	1245	1349	1240	1340	1340	1235	1335
125A	1493	1592	1620	1732	1618	1727	1727	1618	1727	1455	1554	1582	1694	1580	1689	1689	1580	1689

Note / H2 in ANSI, DIN, and JIS standards are the same.

BELLOW TYPE BONNET WITH TOP MOUNT

Unit : mm

Valve Size (IEC)	L			ANSI H1			DIN H1			D
	CL150	CL300	CL600	CL150	CL300	CL600	PN16	PN25	PN40	
15A	184	190	203	45	48	48	48	48	48	250
20A	184	194	206	49	59	59	53	53	53	250
25A	184	197	210	54	62	62	58	58	58	250
40A	222	235	251	64	78	78	75	75	75	300
50A	254	267	286	76	83	83	83	83	83	300
80A	298	318	337	95	105	105	100	100	100	350
100A	352	368	394	115	127	137	110	118	118	350
150A	451	473	508	140	159	178	143	150	150	460
200A	543	568	N/A	172	191	210	170	180	188	465
250A	673	708	N/A	203	222	254	203	213	225	465

BELLOW TYPE BONNET WITH MOUNT

Unit : mm

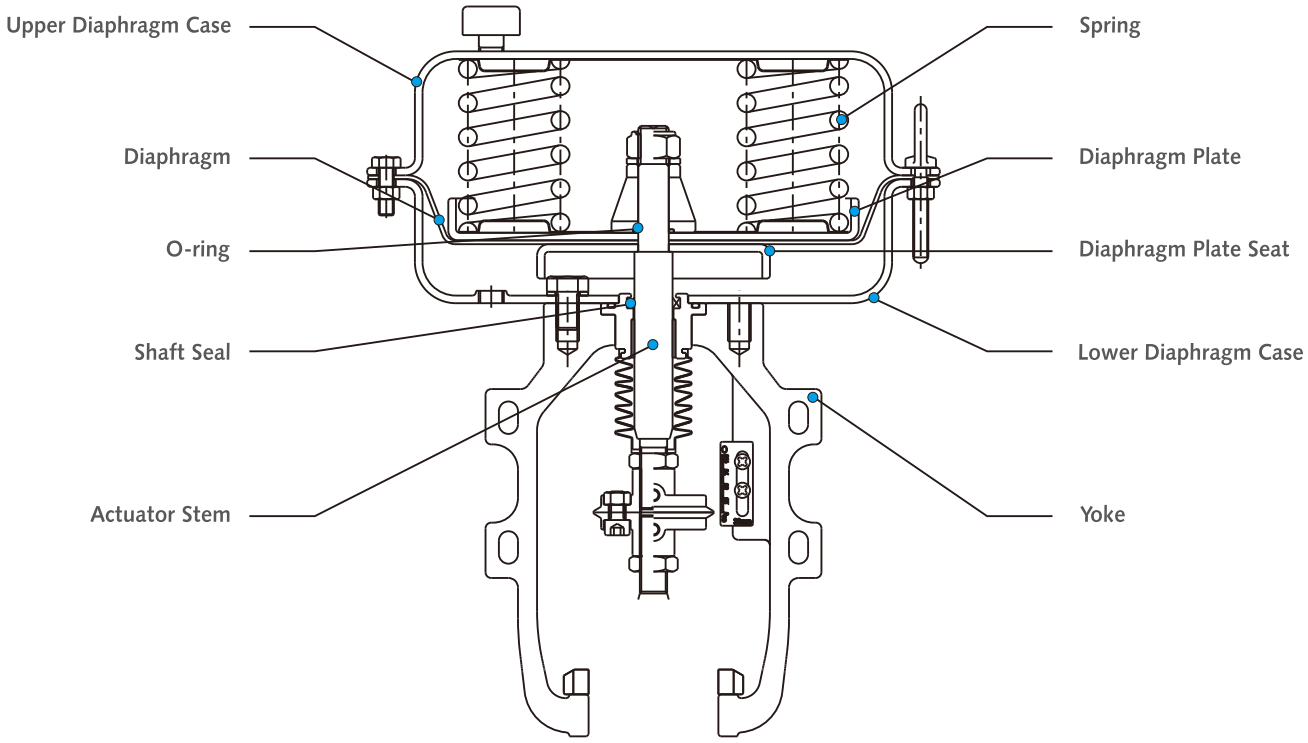
Valve Size (IEC)	ATO ANSI H2			ATO ANSI H			ATC ANSI H2			ATC ANSI H		
	CL150	CL300	CL600	CL150	CL300	CL600	CL150	CL300	CL600	CL150	CL300	CL600
15A	821	864	1000	866	912	1048	815	858	993	860	906	1041
20A	821	864	1000	870	923	1059	815	858	993	864	917	1052
25A	821	864	1000	875	926	1062	815	858	993	869	920	1055
40A	848	891	1009	912	969	1087	841	884	1003	905	962	1081
50A	844	887	1007	920	970	1090	838	881	999	914	964	1082
80A	1124	1216	1359	1219	1321	1464	1122	1215	1357	1217	1320	1462
100A	1131	1224	1366	1246	1351	1503	1130	1222	1365	1245	1349	1502
150A	1516	1612	1822	1656	1771	2000	1478	1574	1784	1618	1733	1962
200A	1828	1828	N/A	2000	2019	N/A	1898	1898	N/A	2070	2089	N/A
250A	1850	1850	N/A	2053	2072	N/A	1920	1920	N/A	2123	2142	N/A

BELLOW TYPE BONNET WITH MOUNT

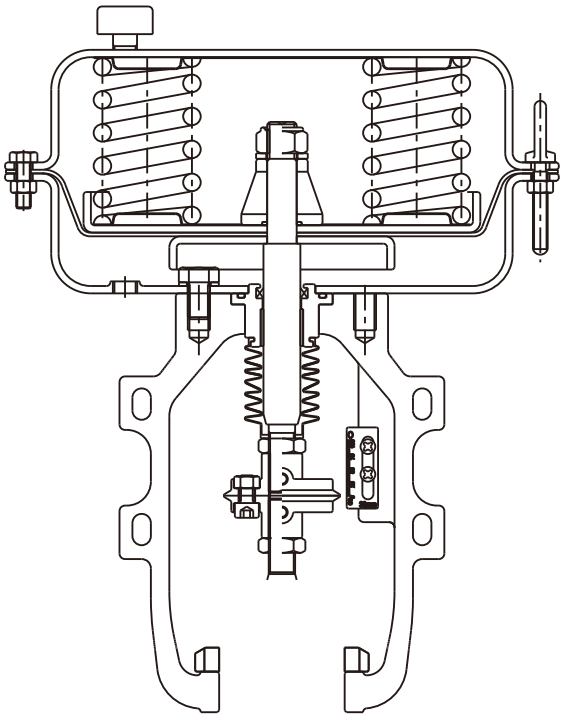
Unit : mm

Valve Size (IEC)	ATO DIN H2			ATO DIN H			ATC DIN H2			ATC DIN H		
	PN16	PN25	PN40	PN16	PN25	PN40	PN16	PN25	PN40	PN16	PN25	PN40
15A	821	864	864	869	912	912	815	858	858	863	906	906
20A	821	864	864	874	917	917	815	858	858	868	911	911
25A	821	864	864	879	922	922	815	858	858	873	916	916
40A	848	891	891	923	966	966	841	884	884	916	959	959
50A	844	887	887	927	970	970	838	881	881	921	964	964
80A	1124	1216	1216	1224	1316	1316	1122	1215	1215	1222	1315	1315
100A	1131	1224	1224	1241	1342	1342	1130	1222	1222	1240	1340	1340
150A	1516	1612	1612	1659	1762	1762	1478	1574	1574	1621	1724	1724
200A	1828	1828	1828	1998	2008	2016	1898	1898	1898	2068	2078	2086
250A	1850	1850	1850	2053	2063	2075	1920	1920	1920	2123	2133	2145

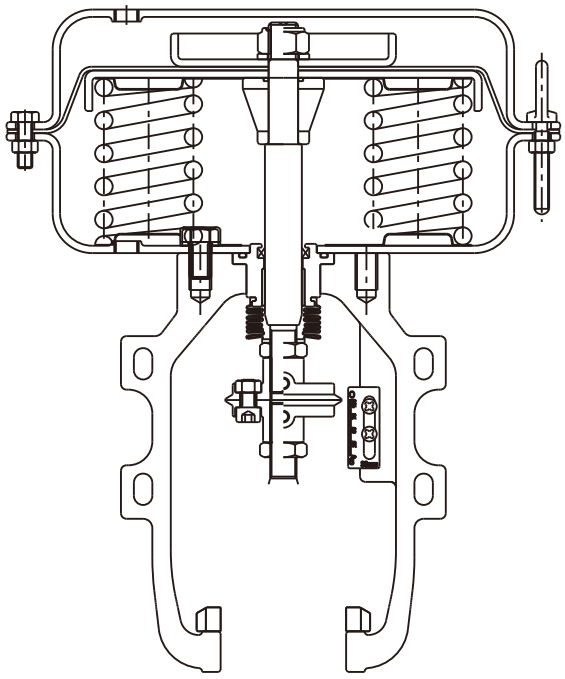
Diaphragm Actuator



Note : ** Mandatory spare parts.
* Recommend spare parts.



Air to Retract



Air to Extend

Allowable Shut-off pressure

(Maximum Allowable Differential Pressure of fluid.)

The air pressure flow into actuator must less than 4 kg/cm^2

Standard ATO Actuator for Normal Metal Seat in Leakage Class IV

Valve Size	Actuator Size	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)
15A	250a	3	0.59~1.1	49	4	-	-	6	-	-	-	-	-
20A	250a	3	0.6~1.1	29	4	0.73~1.48	49	6	-	-	-	-	-
25A	250a	3	0.6~1.1	15	4	0.7~1.49	29	6	1.1~2.1	39	-	-	-
	300a	3	0.64~1.2	31	5	0.96~1.95	47	6	-	-	-	-	-
40A	250a	3	0.73~1.1	5	4	0.7~1.43	6	6	0.93~2.07	11	-	-	-
	300a	3	0.48~1.0	7	5	1.0~2.0	20	6	1.2~2.3	25	-	-	-
	350a	3L	0.61~0.94	25	6L	1.15~1.81	40	6L4S	-	-	6L6S	-	-
50A	250a	3	-	-	4	0.67~1.4	3	6	1.05~2.0	9	-	-	-
	300a	3	0.48~1.0	8	5	1.0~2.0	18	6	1.2~2.2	19	-	-	-
	350a	3L	0.61~0.95	15	6L	1.15~1.81	25	6L4S	1.51~2.38	28	6L6S	1.62~2.66	30
65A	300a	-	-	-	5	0.92~2.4	3	6	0.97~2.8	6	-	-	-
	350a	3L	0.66~1.1	4	6L	1.2~2.2	14	6L4S	1.58~2.8	19	6L6S	1.73~3.1	22
80A	350a	3L	0.54~1.0	3	6L	1.2~2	9	6L4S	1.56~2.9	12	6L6S	1.8~3	15
	460c	3L	-	-	6L	0.9~1.73	15	6L4S	1.2~2.24	22	6L6S	1.3~2.49	25
100A	350a	3L	-	-	6L	1.1~2.2	4	6L4S	1.55~3.03	5	6L6S	1.5~3.2	7
	460c	3L	-	-	6L	0.76~1.85	6	6L4S	1.13~2.4	8	6L6S	1.32~2.67	9
150A	460c	3L	-	-	6L	-	-	6L4S	1.3~3.22	4	6L6S	1.42~3.59	5

Balanced ATO Actuator for Normal Metal Seat in Leakage Class IV

Valve Size	Actuator Size	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)
150A	460a	3L	-	-	6L	-	-	10L	1.1~2.5	12	10L5S	1.5~3.2	20
200A	465a	3L	-	-	6L	2.0~3.3	20	-	-	-	-	-	-
250A	465a	3L	-	-	6L	2.0~3.3	8	-	-	-	-	-	-
300A	660a	-	-	-	6L	-	-	-	-	-	-	-	-

Note / L means Large Spring ; S means Small Spring

Standard ATO Actuator for Normal Metal Seat in Leakage Class V

Valve Size	Actuator Size	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)
15A	250a	3	0.59~1.1	49	-	-	-	-	-	-	-	-	-
20A	250a	3	0.6~1.1	13	4	0.73~1.48	49	6	-	-	-	-	-
25A	250a	3	0.6~1.1	13	4	0.7~1.49	25	6	1.1~2.1	33	-	-	-
	300a	3	0.64~1.2	25	5	0.96~1.95	44	6	-	-	-	-	-
40A	250a	3	0.73~1.1	1	4	0.7~1.43	2	6	0.93~2.07	7	-	-	-
	300a	3	0.48~1.0	3	5	1.0~2.0	16	6	1.2~2.3	21	-	-	-
	350a	3L	0.61~0.94	21	6L	1.15~1.81	36	6L4S	-	-	6L6S	-	-
50A	250a	3	-	-	4	-	-	6	1.05~2.0	8	-	-	-
	300a	3	0.48~1.0	7	5	1.0~2.0	16	6	1.2~2.2	18	-	-	-
	350a	3L	0.61~0.95	12	6L	1.15~1.81	22	6L4S	1.51~2.38	25	6L6S	1.62~2.66	27
65A	300a	-	-	-	5	-	-	6	0.97~2.8	2	-	-	-
	350a	3L	0.66~1.1	2	6L	1.2~2.2	11	6L4S	1.58~2.8	16	6L6S	1.73~3.1	20
80A	350a	3L	0.54~1.0	1	6L	1.2~2.0	6	6L4S	1.56~2.9	9	6L6S	1.8~3.0	13
	460c	3L	-	-	6L	0.9~1.73	9	6L4S	1.2~2.24	10	6L6S	1.3~2.49	20
100A	350a	-	-	-	6L	1.1~2.2	2	6L4S	1.55~3.03	4	6L6S	1.5~3.2	5
	460c	3L	-	-	6L	0.76~1.85	3	6L4S	1.13~2.4	7	6L6S	1.32~2.67	8
150A	460c	-	-	-	-	-	-	6L4S	-	-	6L6S	1.42~3.59	2

Balanced ATO Actuator for Normal Metal Seat in Leakage ClassV

Valve Size	Actuator Size	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)	Spring Quantities	Control Signals (kg/cm²)	Allowable Shut-off Pressure (kg/cm²)
150A	460a	3L	-	-	6L	-	-	10L	1.1~2.5	5	10L5S	1.5~3.2	13
200A	465a	3L	-	-	6L	2.0~3.3	12	-	-	-	-	-	-
250A	465a	-	-	-	-	-	-	-	-	-	-	-	-
300A	660a	-	-	-	6L	-	-	-	-	-	-	-	-

Note / L means Large Spring ; S means Small Spring

Standard ATC Actuator for Normal Metal Seat in Leakage Class IV

Valve Size	Actuator Size	Spring Quantities	Control Signals (kg/cm2)	Allowable Shut-off Pressure (kg/cm2)
15A	250a	3	0.42~0.97 (2.0)	30 ↑
20A	250a	3	0.42~0.97 (2.0)	30 ↑
25A	250a	3	0.42~0.97 (2.0)	30 ↑
40A	300a	3	0.4~1.0 (2.6)	39
50A	300a	3	0.52~1.09 (2.6)	20
65A	300a	3	0.35~1.35 (2.8)	9
65A	350a	3L	0.38~0.9 (2.6)	17
80A	350a	3L	0.36~0.9 (2.6)	15
100A	350a	3L	0.33~0.9 (2.6)	7
150A	460c	3L	0.35~1.2 (2.8)	5

Note / L means Large Spring.

Balanced ATC Actuator for Normal Metal Seat in Leakage Class IV

Valve Size	Actuator Size	Spring Quantities	Control Signals (kg/cm2)	Allowable Shut-off Pressure (kg/cm2)
150A	460a	5L	0.7~2.7 (3.0)	34
200A	465a	4L	1.4~2.9 (3.5)	21
250A	465a	4L	1.2~3.8 (4)	15
300A	660a	-	-	-

Note / L means Large Spring.

Standard ATC Actuator for Normal Metal Seat in Leakage Class V

Valve Size	Actuator Size	Spring Quantities	Control Signals (kg/cm2)	Allowable Shut-off Pressure (kg/cm2)
15A	250a	3	0.42~0.97 (2.0)	30 ↑
20A	250a	3	0.42~0.97 (2.0)	30 ↑
25A	250a	3	0.42~0.97 (2.0)	30 ↑
40A	300a	3	0.4~1.0 (2.6)	29
50A	300a	3	0.52~1.09 (2.6)	15
65A	300a	3	0.35~1.35 (2.8)	7
65A	350a	3L	0.38~0.9 (2.6)	12
80A	350a	3L	0.36~0.9 (2.6)	11
100A	350a	3L	0.33~0.9 (2.6)	5
150A	460c	3L	0.35~1.2 (2.8)	3

Note / L means Large Spring.

Balanced ATC Actuator for Normal Metal Seat in Leakage Class V

Valve Size	Actuator Size	Spring Quantities	Control Signals (kg/cm2)	Allowable Shut-off Pressure (kg/cm2)
150A	460a	5L	0.7~2.7 (3.0)	27
200A	465a	4L	1.36~2.9 (3.5)	9
250A	465a	4L	1.2~3.8 (4)	8
300A	660a	-	-	-

Note / L means Large Spring.

◎ Gylon 適用溫度：−210℃~260℃　　◎ 旋夾316+PTFE 適用溫度：<260℃

◎ 石墨+316 適用溫度：−240℃~400℃　　◎ 旋夾316+石墨 適用溫度：−200℃~500℃.

NO.	零件名稱 (Part Name)	15A		20A		25A		40A	
1	閥體軟件包 襯墊 (Gasket)	Gylon	8B150218	Gylon	8B200218	Gylon	8B250218	Gylon	8B400218
		石墨+316	8B150229	石墨+316	8B200229	石墨+316	8B250229	石墨+316	8B400229
		50A		65A		80A		100A	
		Gylon	8B500218	旋夾316+PTFE	8B650630	Gylon	8B800218	Gylon	8B040218
		石墨+316	8B500229	旋夾316+石墨	8B650629	石墨+316	8B800229	石墨+316	8B040229
		旋夾316+PTFE	8B500630			旋夾316+PTFE	8B800630	旋夾316+PTFE	8B040630
		旋夾316+石墨	8B500629			旋夾316+石墨	8B800629	旋夾316+石墨	8B040629
		125A		150A		200A		250A	
		旋夾316+PTFE	8B050630	旋夾316+PTFE	8B060630	旋夾316+PTFE	8B080630	旋夾316+PTFE	8B100630
		旋夾316+石墨	8B050629	旋夾316+石墨	8B060629	旋夾316+石墨	8B080629	旋夾316+石墨	8B100629
		旋夾316+PTFE (Balanced)	8B050630 8B05B630	旋夾316+PTFE (Balanced)	8B060630 8B06B630	旋夾316+PTFE (Balanced)	8B080630 8B08B630	旋夾316+PTFE (Balanced)	8B100630 8B10B630
		旋夾316+石墨 (Balanced)	8B050629 8B05B629	旋夾316+石墨 (Balanced)	8B060629 8B06B629	旋夾316+石墨 (Balanced)	8B080629 8B08B629	旋夾316+石墨 (Balanced)	8B100629 8B10B629

2	填料室零件包 (Gland Packing)	連桿直徑		Bonnet	PTFE V-ring		Graphite		PM7	
					中座零件包	中座軟件包	中座零件包	中座軟件包	中座零件包	中座軟件包
		15A 20A 25A 40A 50A	Ø12	Standard	8S112V45L	8S112V45LP	8S112RC4L	8S112RC4LP	8S112B45L	8S112B45LP
				Extended	8E112V45L	8E112V45LP	8E112RC4L	8E112RC4LP	8E112B45L	8E112B45LP
				Bellows	8B112V45L	8B112V45LP	8B112RC4L	8B112RC4LP	8B112B45L	8B112B45LP
		65A 80A 100A	Ø16	Standard	8S116V45L	8S116V45LP	8S116RC4L	8S116RC4LP	8S116B45L	8S116B45LP
				Extended	8E116V45L	8E116V45LP	8E116RC4L	8E116RC4LP	8E116B45L	8E116B45LP
				Bellows	8B116V45L	8B116V45LP	8B116RC4L	8B116RC4LP	8B116B45L	8B116B45LP
		125A 150A	Ø16	Standard	8S116V45L	8S116V45LP	8S116RC4L	8S116RC4LP	8S116B45L	8S116B45LP
			Ø25	Extended	8E125V45L	8E125V45LP	8E125RC4L	8E125RC4LP	8E125B45L	8E125B45LP
				Bellows	8B125V45L	8B125V45LP	8B125RC4L	8B125RC4LP	8B125B45L	8B125B45LP
		200A 250A	Ø25	Standard	8S125V45L	8S125V45LP	8S125RC4L	8S125RC4LP	8S125B45L	8S125B45LP
				Extended	8E125V45L	8E125V45LP	8E125RC4L	8E125RC4LP	8E125B45L	8E125B45LP
				Bellows	8B125V45L	8B125V45LP	8B125RC4L	8B125RC4LP	8B125B45L	8B125B45LP

連桿直徑		Bonnet	EVSP9000		PM7 (600LB)		EVSP9000 (600LB)	
			中座零件包	中座軟件包	中座零件包	中座軟件包	中座零件包	中座軟件包
15A 20A 25A 40A 50A	Ø12	Standard	8S112BD3L	8S112BD3LP	8S112B45H	8S112B45HP	8S112BD3H	8S112BD3HP
		Extended	8E112BD3L	8E112BD3LP	8E112B45H	8E112B45HP	8E112BD3H	8E112BD3HP
		Bellows						
65A 80A 100A	Ø16	Standard	8S116BD3L	8S116BD3LP	8S116B45H	8S116B45HP	8S116BD3H	8S116BD3HP
		Extended	8E116BD3L	8E116BD3LP	8E116B45H	8E116B45HP	8E116BD3H	8E116BD3HP
		Bellows						
125A 150A	Ø16	Standard	8S116BD3L	8S116BD3LP	8S116B45H	8S116B45HP	8S116BD3H	8S116BD3HP
	Ø25	Extended	8E125BD3L	8E125BD3LP	8E125B45H	8E125B45HP	8E125BD3H	8E125BD3HP
		Bellows						
200A 250A	Ø25	Standard	8S125BD3L	8S125BD3LP	8S125B45H	8S125B45HP	8S125BD3H	8S125BD3HP
		Extended	8E125BD3L	8E125BD3LP	8E125B45H	8E125B45HP	8E125BD3H	8E125BD3HP
		Bellows						

PTFE V-ring：(a).用途：泛用型，(b).產品適用溫度：−40℃~+200℃，(c).ISO 15848-1 認證適用溫度範圍：+5℃~+200℃，(d).PH值範圍：PH0~PH14，(e).適用流體：水、蒸氣.

Graphite：(a).用途：泛用型，(b).適用溫度：−200℃~+350℃，(c).PH值範圍：PH0~PH14，(d).適用流體：水、蒸氣、熱媒油，非強氧化流體及非潔淨流體均可使用.

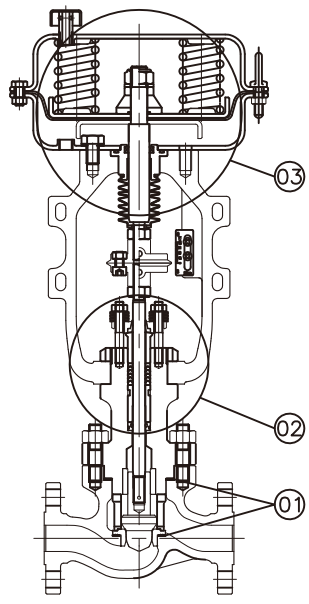
PM7：(a).用途：泛用型，(b).適用溫度：−268℃~+260℃，(c).PH值範圍：PH0~PH14，(d).適用流體：水、蒸氣、熱媒油、酸鹼、溶劑、天然氣、油.

EVSP9000：(a).用途：VOC專用，(b).適用溫度：−200℃~+455℃，(c).PH值範圍：PH0~PH14，(d).適用流體：455℃以下，非強氧化環境及非潔淨環境下均可使用.
※通過API-622測試50ppm以下及ISO15848:1-2006 ClassBH驗證 31ppm

PM7 (600LB)：(a).用途：高壓泛用型(600LB使用)，(b).適用溫度：−268℃~+260℃，(c).PH值範圍：PH0~PH14，(d).適用流體：水、蒸氣、熱媒油、酸鹼、溶劑、天然氣、油.

EVSP9000 (600LB)：(a).用途：高壓VOC專用(600LB使用)，(b).適用溫度：−200℃~+455℃，(c).PH值範圍：PH0~PH14，(d).適用流體：455℃以下，非強氧化環境及非潔淨環境下均可使用. ※通過API-622測試50ppm以下及ISO15848:1-2006 ClassBH驗證 31ppm

NO.	零件名稱 (Part Name)	驅動部尺寸 (Actuators Size)	Bonnet material	ATO/ATC	HandWheel	驅動部零件包	驅動部軟件包
3	(Actuators Parts package) 驅動部 零件包	ø250	SPHC P-0	ATO	Without	8D250RCN	8D250RN
			SUS304	ATO	Without	8D250RSN	8D250RN
			SPHC P-0	ATC	Without	8D250DCN	8D250DN
			SUS304	ATC	Without	8D250DSN	8D250DN
			SPHC P-0	ATO	Top	8D250RCT	8D250RT
			SUS304	ATO	Top	8D250RST	8D250RT
			SPHC P-0	ATC	Top	8D250DCT	8D250DT
			SUS304	ATC	Top	8D250DST	8D250DT
		ø300	SPHC P-0	ATO	Without	8D300RCN	8D300RN
			SUS304	ATO	Without	8D300RSN	8D300RN
			SPHC P-0	ATC	Without	8D300DCN	8D300DN
			SUS304	ATC	Without	8D300DSN	8D300DN
			SPHC P-0	ATO	Top	8D300RCT	8D300RT
			SUS304	ATO	Top	8D300RST	8D300RT
			SPHC P-0	ATC	Top	8D300DCT	8D300DT
			SUS304	ATC	Top	8D300DST	8D300DT
		ø350	SPHC P-0	ATO	Without	8D350RCN	8D350RN
			SUS304	ATO	Without	8D350RSN	8D350RN
			SPHC P-0	ATC	Without	8D350DCN	8D350DN
			SUS304	ATC	Without	8D350DSN	8D350DN
			SPHC P-0	ATO	Top	8D350RCT	8D350RT
			SUS304	ATO	Top	8D350RST	8D350RT
			SPHC P-0	ATC	Top	8D350DCT	8D350DT
			SUS304	ATC	Top	8D350DST	8D350DT
		ø460	SPHC P-0	ATO	Without	8D460RCN	8D460RN
			SUS304	ATO	Without	8D460RSN	8D460RN
			SPHC P-0	ATC	Without	8D460DCN	8D460DN
			SUS304	ATC	Without	8D460DSN	8D460DN
			SPHC P-0	ATO	Top	8D460RCT	8D460RT
			SUS304	ATO	Top	8D460RST	8D460RT
			SPHC P-0	ATC	Top	8D460DCT	8D460DT
			SUS304	ATC	Top	8D460DST	8D460DT
		ø465	SPHC P-0	ATO	Without	9D465RCN	9D465RN
			SUS304	ATO	Without	9D465RSN	9D465RN
			SPHC P-0	ATC	Without	9D465DCN	9D465DN
			SUS304	ATC	Without	9D465DSN	9D465DN
			SPHC P-0	ATO	Top	9D465RCT	9D465RT
			SUS304	ATO	Top	9D465RST	9D465RT
			SPHC P-0	ATC	Top	9D465DCT	9D465DT
			SUS304	ATC	Top	9D465DST	9D465DT
		ø560	SPHC P-0	ATO	Without	9D560RCN	9D560RN
			SUS304	ATO	Without	9D560RSN	9D560RN
			SPHC P-0	ATC	Without	9D560DCN	9D560DN
			SUS304	ATC	Without	9D560DSN	9D560DN
			SPHC P-0	ATO	Top	9D560RCT	9D560RT
			SUS304	ATO	Top	9D560RST	9D560RT
			SPHC P-0	ATC	Top	9D560DCT	9D560DT
			SUS304	ATC	Top	9D560DST	9D560DT



歡迎聯繫我們, 以獲得更多資訊
Please contact us for more details

偉 允 閥 業 股 份 有 限 公 司
WYECO AUTO VALVES CO., LTD.

- **台北總公司 Taipei Office**
  地址：10482 台北市中山區建國北路三段98號4樓　TEL : +886-2-2502-5166(REP)　FAX : +886-2-2501-2863
  ADD : 4F., No. 98, Sec. 3, Jianguo N. Rd., Zhongshan Dist., Taipei City 10482, Taiwan　VAT NUMBER : 14078921

- **桃　園　廠 Taoyuan Factory**
  地址：33841 桃園市蘆竹區山林路三段二巷6號　TEL : +886-3-324-5116　FAX : +886-3-324-5196
  ADD : No. 6, Ln. 2, Sec. 3, Shanlin Rd., Luzhu Dist., Taoyuan City 33841, Taiwan

- **麥　寮　廠 Mailiao Factory**
  地址：63861 雲林縣麥寮鄉三盛村工業路505巷55弄250號　TEL : +886-5-691-7552　FAX : +886-5-691-5618
  ADD : No. 250, Aly. 55, Ln. 505, Gongye Rd., Mailiao Township, Yunlin County 63861, Taiwan

- **高　雄　廠 Kaohsiung Factory**
  地址：81465 高雄市仁武區鳳仁路293之2號　TEL : +886-7-373-5236　FAX : +886-7-373-5239
  ADD : No. 293-2, Fengren Rd., Renwu Dist., Kaohsiung City 81465, Taiwan

- **偉奘貿易(上海)有限公司 Weizhuang Trade (Shanghai) Co., Ltd.**
  地址：上海市闵行区沪闵路2988号2号楼　TEL : +86-021-54436001　FAX : +86-021-54436860
  ADD : No. 2988, HuMin Rd., MinHang Dist, Shanghai, 201109 P.R.C.

- **客服中心 Customer Service Center**
  Mobile/ +886-972-229-310
  Email / wyecoservice@wyeco.com.tw

- Website / www.wyeco.com.tw
- Email / wyeco@wyeco.com.tw

- 控制閥專業設計製造、維修、改裝、CV值測試、安裝諮詢服務、化工控制系統評估。
  Professionally designing, manufacture, maintenance, modification, CV testing, assembly consultant, and chemical process for control valve.

DISTRIBUTOR