

**PT. MAXI TIGA INDONESIA**

**FORGED STEEL VALVE**



**“Maxi Valve for Maximum  
Performance”**

[www.maxi-valve.co.id](http://www.maxi-valve.co.id)

## ABOUT US

PT MAXI TIGA INDONESIA is an API 6D, API 600, ISO 9001, ISO 45001, ISO 14001 certified company specializing in manufacturing industrial valves including ball valves, gate valves, globe valves, check valves, plug valves and butterfly valves in carbon steel, stainless steel, duplex stainless and alloy materials. Our products conform to the latest industry standards in accordance to ANSI, ASME and API.

MTI today has over 3000 square feet of manufacturing facilities. Through its conviction to provide only the finest quality products and services to match the need of our customers, MTI has now established itself as a serious player in the valve business.

We consider product quality and customer satisfaction as our highest priority. We look forward to new customer relationships by providing value, quality, customer service, honesty, integrity and the commitment to maintain product consistency with each and every order.

## MISSION STATEMENT

We at MTI commit to taking ACTION:

- Adopt the latest technology to take the product quality to the next level;
- Consistently provide on-time services to our customers;
- Train and develop talented people with strong work ethics to deliver effective performance;
- Improve and enhance engineering designs to ensure product performance;
- Optimize management systems and increase productivity;
- Never forget our customer and employee needs.



# FORGED STEEL VALVE

TABLE OF INDEX	PAGE
Introduction, <i>Features</i>	3
Scope of Products & Flow Coefficient(CV)	4
<b>Overview Gate Valve</b>	5
Dimensions and Weights	6
<i>Class 800 ~CL2500 (SW/NPT)</i>	6
<i>Class 150 ~CL1500 (RF/RTJ)</i>	7
<i>Class 900 ~CL2500 (Pressure Seal Bonnet)</i>	8
<b>Overview, T-Type Globe Valve</b>	9
Dimensions and Weights	10
<i>Class 800 ~CL2500 (SW/NPT)</i>	10
<i>Class 150 ~CL1500 (RF/RTJ)</i>	11
<i>Class 900 ~CL2500 (Pressure Seal Bonnet)</i>	11-12
<b>Overview, Y-Type Globe Valve</b>	13
Dimensions and Weights	14
<i>Class 800 ~CL2500 (SW/NPT)</i>	14-15
<b>Overview, Check Valve</b>	16
Dimensions and Weights	17
<i>Class 800 ~CL2500 (Swing Type ,SW/NPT)</i>	17
<i>Class 800 ~CL2500 (Lift Type ,SW/NPT)</i>	18
<i>Class 150 ~CL1500 (RF/RTJ)</i>	19
<i>Class 900 ~CL2500 (Pressure Seal Bonnet)</i>	20
<i>Overview Special Type</i>	21
Valve Figure Number, <i>How To Order</i>	22-23

### INTRODUCTION

MTI forged steel valve has the advantages of small volume and compact type. Bolted bonnet, welded bonnet, pressure bonnet, bellow seal bonnet, high/low temperature extended bonnet and ISO 15848 fugitive emission designed valves are available upon different request of services.

### Forged Steel Gate Valve

MTI forged steel gate valves adopts solid gate, renewable seat, rising stem and non-ring hand wheel. It plays the role of pipe opening and closing ultimately through the rotation of the hand wheel to drive the lifting of gate.



### Forged Steel Globe Valve

MTI forged globe valve offers non-renewable seat by default with rising stem and hand wheel. It blocks the flow of pipeline through the rotation and lifting of hand wheel as well as stem to drive the lift of disc. There is no relative friction between disc and body sealing surface. The globe valves has the feature of long service life for opening and closing, it can be used a shut-off valve for small size pipeline.

### Forged Steel Check Valve

MTI forged check valve is to provide with single disc. With the force of medium, the disc will automatically open or close around the fixed pin shaft. When the media stops the flow, the disc will be closed under its own force. No manual intervention is involved in the whole process;

Check valve is mainly to prevent the media reverse flow and ensure one-way flow of media channels only. It prevents accidents while a sudden loss of power in the pipeline medium such as the power equipment like pump damages, and the medium reserve flow against power source.





# FORGED STEEL VALVE

## SCOPE OF PRODUCTS

*Forged Steel Valve (Gate, Globe, Check)*

**Legends:** **A** – Available in Bolted Bonnet  
**B** – Available in Welded Bonnet

**C** – Available in Pressure Seal Bonnet  
**D** – Not Usually Required

Size in/mm	Class 150 PN 20	Class 300 PN 50	Class 600 PN 100	Class 800 PN 136	Class 900 PN 150	Class 1500 PN 250	Class 2500 PN 420
3/8 10	AB	AB	AB	ABC	ABC	ABC	BC
1/2 15	AB	AB	AB	ABC	ABC	ABC	BC
3/4 20	AB	AB	AB	ABC	ABC	ABC	BC
1 25	AB	AB	AB	ABC	ABC	ABC	BC
1-1/4 32	AB	AB	AB	ABC	ABC	ABC	BC
1-1/2 40	AB	AB	AB	ABC	ABC	ABC	BC
2 50	AB	AB	AB	ABC	ABC	ABC	BC
2-1/2 65	AB	AB	AB	A	C	D	D
3 65	D	D	D	D	D	D	D

1. The sizes listed above are normal diameters. Contact our sales representative if any other dimensions are requested;

## FLOW COEFFICIENT (Cv)

Nominal Size in/mm	Gate Valve		Globe Valve / Piston Check valve			Swing Check Valve	
	Regular Port	Full Port	T-Type		Y-Type	Regular Port	Full Port
			Regular Port	Full Port	Full Port		
3/8 10	-	3.9	-	2.2	3	-	4.8
1/2 15	3.7	6.7	2	3.8	5.4	4.6	7.7
3/4 20	6.4	11.7	3.6	6	11.4	7.4	14.5
1 25	11.4	22.5	5.7	9.4	18	14.1	25.5
1-1/4 32	22	35.4	8.8	14.7	29.2	25.1	37
1-1/2 40	35	54.5	14.3	21.5	45.6	36.7	60.2
2 50	53.9	-	21.1	-	72	59.7	-

The above data remains the same based on different pressure rating;

## CALCULATION OF FLOW COEFFICIENT

Flow coefficient Cv is the rate of flow in gallon per minute with the pressure drop of 1 psi across the valve. The flow coefficients shown in the above table are determined with equations as follows:

**For liquids:**

$$Q_l = C_v(\Delta P / SG)^{1/2}$$

Where:

Q<sub>l</sub> = Flow of liquid (gallon/minute)  
ΔP = Pressure drop in psi (P<sub>1</sub>-P<sub>2</sub>)  
SG = Specific gravity (1 for liquid)

**For gases (non-critical):**

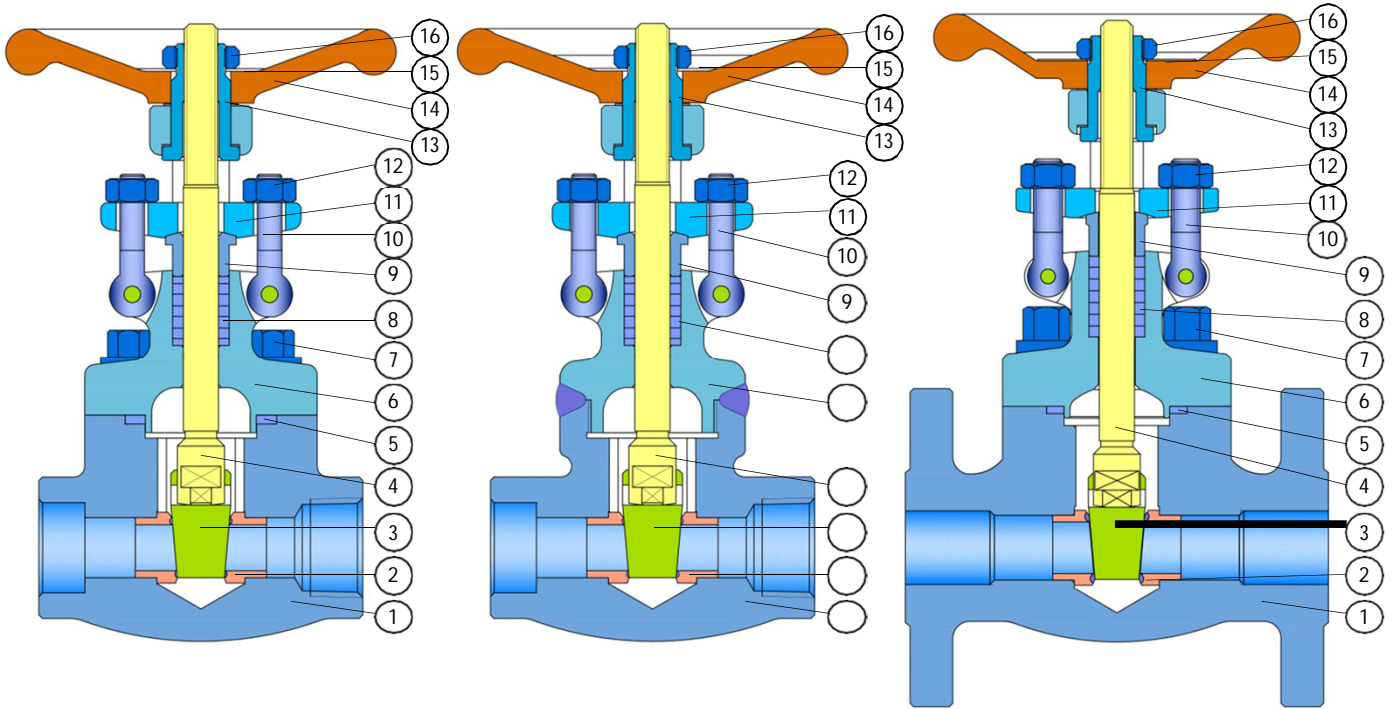
$$Q_g = 61 \cdot C_v(P_2 \cdot P_1 / SG)^{1/2}$$

Where:

Q<sub>g</sub> = Flow of gases (SFH at STP)  
P<sub>2</sub> = Outlet pressure (psi)  
P<sub>1</sub> = Inlet pressure (psi)  
SG = Specific gravity (1 for gas)

# FORGED STEEL VALVE

## OVERVIEW(Gate Valve)



### Part List

① Body	⑤ Gasket	⑨ Gland	⑬ Stem Nut
② Seat Ring	⑥ Bonnet	⑩ Eyes Bolt	⑭ Handwheel
③ Disc	⑦ Bolt	⑪ Gland Flange	⑮ Nameplate
④ Stem	⑧ Packing	⑫ Nut	⑯ Nut

### Standards

Design & Manufacture API 602, ISO 15761, ASME B16.34

Face-to-face MTI'STD, ASME B16.10

End Dimension  
 ASME B1.20.1 (NPT)  
 ASME B16.11 (SW)  
 ASME B16.25 (BW)  
 ASME B16.5 (RF, RTJ),

Test & Inspection API 598

Typical Materials  
 Body, Bonnet, Disc A105, A350 LF2, LF3, LF5, A182 F304, F304L, F316, F316L, F51, F53, F5, F11, F22, F91, Monel, Inconel, Hastelloy  
 Stem A276 410, F304, F304L, F316, F316L, F51, F53, Monel, Inconel, Hastelloy

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Gate Valve)

	<b>CL800</b>	<i>Bolt Bonnet (BB)/Welding Bonnet (WB), Reduce Port (RP)/Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Thread (NPT), Socket Weld (SW), Butt Weld (BW),</i>							
	Size (NPS)	<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
		<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	L	79	92	111	120	120	140	178
	Handwheel Diameter	W	100	100	125	160	160	180	200
	Height	H	165	169	207	230	249	283	333
	Flow Port Diameter	d	10.3	13.5	18	23	29	36	45
	Weight (Kg)	<b>B.B</b>	2.2	2.4	4.1	5.5	7.5	10	19
		<b>W.B</b>	2.1	2.3	4	5.5	7.3	9.5	18.5

	<b>CL900~CL1500</b>	<i>Bolt Bonnet (BB)/Welding Bonnet (WB), Reduce Port (RP)/Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Thread (NPT), Socket Weld (SW), Butt Weld (BW)</i>							
	Size (NPS)	<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
		<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	L	92	111	120	120	140	178	
	Handwheel Diameter	W	100	125	160	160	180	200	
	Height	H	169	207	230	249	283	333	
	Flow Port Diameter	d	10.3	13.5	18	23	29	36	
	Weight (Kg)	<b>B.B</b>	2.4	4.1	6.2	6.2	8.7	12.5	
		<b>W.B</b>	2.2	4	6	6	8.5	12	

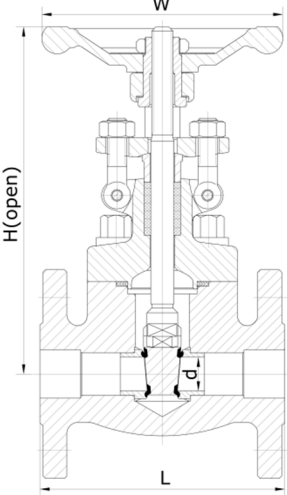
	<b>CL2500</b>	<i>Welding Bonnet (WB), Reduce Port (RP)/Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Thread (NPT), Socket Weld (SW), Butt Weld (BW)</i>							
	Size (NPS)	<b>R.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	L		120	120	120	140	178	178
	Handwheel Diameter	W		160	160	160	180	200	200
	Height	H		230	235	249	283	333	333
	Flow Port Diameter	d		10.3	13.5	18	23	29	36
	Weight (Kg)	<b>W.B</b>		6.5	6.5	6.5	9	13	13

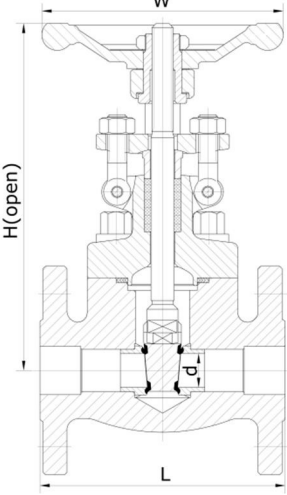
The dimension and weights are for reference only and subject to change without notice.

1. For more size or dimensional information, please contact our sales representative.
2. CL800 covers CL150, CL300, CL600, CL1500 covers CL900, CL1500.

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Gate Valve)

	<b>CL150~CL600</b>		<i>Bolt Bonnet (BB), Reduce Port (RP), Outside Screw and Yoke (OS&amp;Y), Flanged (RF/RTJ)</i>							
	Size (NPS)	<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	
	Face To Face	CL150	<b>L (RF)</b>	108	117	127	140	165	178	
		CL300		140	152	165	178	190	216	
		CL600		165	190	216	229	241	292	
	Handwheel Diameter	<b>W</b>	100	100	125	160	160	180		
	Height	<b>H</b>	165	169	207	230	249	283		
	Flow Port Diameter	<b>d</b>	10.3	13.5	18	23	29	36		
	Weight (Kg)	CL150	<b>B.B</b>	4.1	4.8	7.1	10	11.6	20	
		CL300		4.8	6.7	10	13.6	17.2	24	
CL600		5.4		7.4	10.6	15	19.2	28.8		

	<b>CL900~CL1500</b>		<i>Bolt Bonnet (BB), Reduce Port (RP), Outside Screw and Yoke (OS&amp;Y), Flanged (RF/RTJ)</i>							
	Size (NPS)	<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	
	Face To Face	CL90	<b>L (RF)</b>	216	229	254	279	305	368	
		CL1500								
	Handwheel Diameter	<b>W</b>	125	125	160	160	180	180		
	Height	<b>H</b>	169	207	230	249	283	333		
	Flow Port Diameter	<b>d</b>	10.3	13.5	18	23	29	36		
	Weight (Kg)	CL900	<b>B.B</b>	10.1	13	18.3	26	32.8	54	
		CL1500								

The dimension and weights are for reference only and subject to change without notice.

1. The flanged valve are defaulted by integral flange;
2. For more size or dimensional information, please contact our sales representative.

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Gate Valve - Pressure Seal Bonnet)

	<b>CL900~CL2500</b>		<i>Pressure Seal Bonnet (PSB), Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Thread(NPT), Socket Weld(SW), Butt Weld (BW)</i>							
	Size (NPS)		<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL900 CL1500	L	140	140	140	140	178	178	216
		CL2500		182	182	182	182	232	232	272
	Handwheel Diameter	CL900 CL1500 CL2500	W	200	200	200	200	280	280	300
	Height	CL900 CL1500	H	308	308	315	315	446	446	540
		CL2500		325	325	325	325	460	460	550
	Flow Port Diameter		d	8	10.3	13.5	18	23	29	36
Weight (Kg)	CL900 CL1500	<b>PSB</b>	9	9	9	9	26	26	36	
	CL2500		11.9	11.9	11.8	11.7	30	28	42	

	<b>CL900~CL2500</b>		<i>Pressure Seal Bonnet (PSB), Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Flanged (RF/RTJ)</i>							
	Size (NPS)		<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL900 CL1500	L (RF)		216	229	254	279	305	368
		CL2500			264	273	308	349	384	451
	Handwheel Diameter	CL900 CL1500 CL2500	W		200	200	200	280	280	300
	Height	CL900 CL1500	H		308	315	315	446	446	540
		CL2500			325	325	325	460	460	550
	Flow Port Diameter		d		10.3	13.5	18	23	29	36
Weight (Kg)	CL900 CL1500	<b>PSB</b>		11.9	13.7	18	36.8	37	45	
	CL2500			13	17	22	30	42	58	

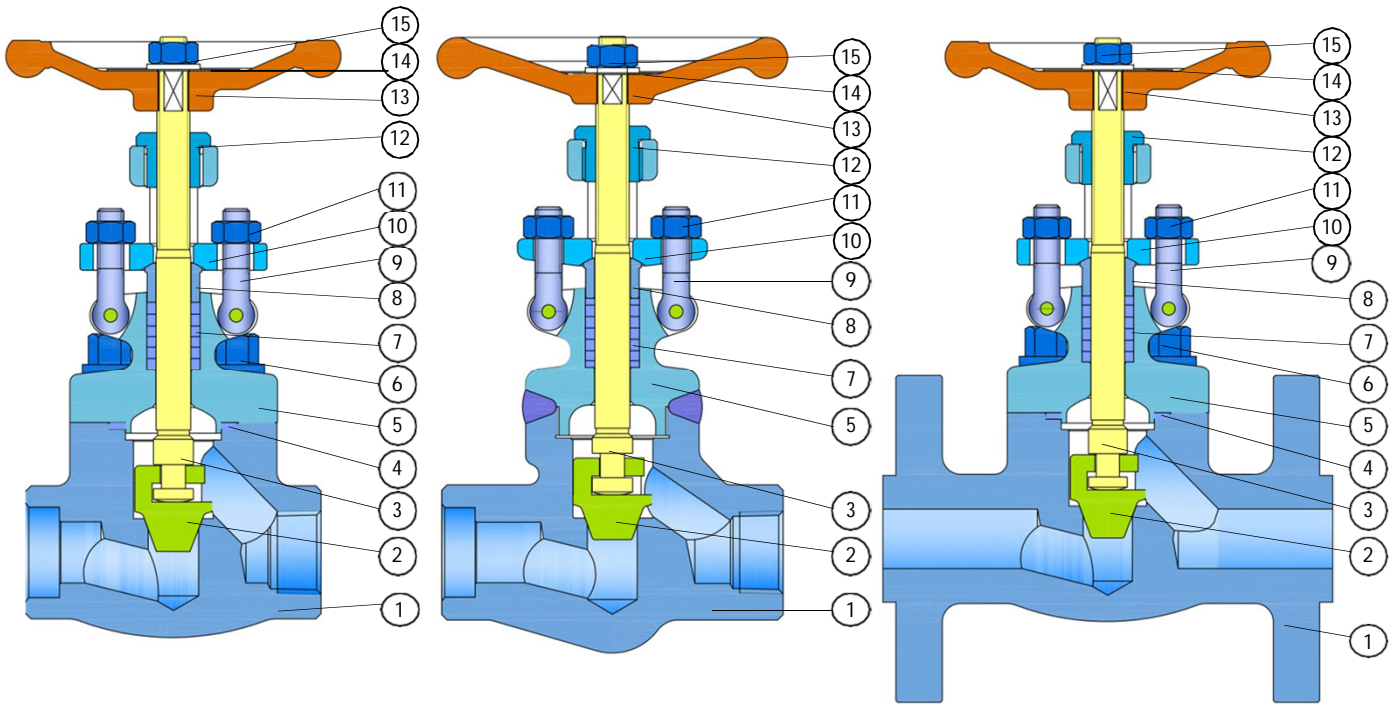
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1. The flanged valve are defaulted by integral flange;
2. For more size or dimensional information, please contact our sales representative.



# FORGED STEEL VALVE

## OVERVIEW (Globe Valve)



### Part List

① Body	⑤ Bonnet	⑨ Eyes Bolt	⑬ Handwheel
② Disc	⑥ Bolt	⑩ Gland Flange	⑭ Nameplate
③ Stem	⑦ Packing	⑪ Nut	⑮ Nut
④ Gasket	⑧ Gland	⑫ Stem Nut	

### Standards

Design & Manufacture API 602, ISO 15761, ASME B16.34

Face-to-face MTI'STD, ASME B16.10

End Dimension  
 ASME B1.20.1 (NPT)  
 ASME B16.11 (SW)  
 ASME B16.25 (BW)  
 ASME B16.5 (RF, RTJ),

Test & Inspection API 598

Typical Materials  
 Body, Bonnet, Disc A105, A350 LF2, LF3, LF5, A182 F304, F304L, F316, F316L, F51, F53, F5, F11, F22, F91, Monel, Inconel, Hastelloy  
 Stem A276 410, F304, F304L, F316, F316L, F51, F53, Monel, Inconel, Hastelloy

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Globe Valve)

	<b>CL800</b>	<i>Bolt Bonnet (BB)/ Welding Bonnet(WB), Reduce Port (RP)/Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Thread (NPT), Socket Weld (SW), Butt Weld (BW)</i>							
	Size (NPS)	<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
		<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	<b>L</b>	79	92	111	120	152	172	220
	Handwheel Diameter	<b>W</b>	100	100	125	160	160	180	200
	Height	<b>H</b>	170	172	207	228	270	320	356
	Flow Port Diameter	<b>d</b>	10.5	13.5	17	22	28	34	44
	Weight (Kg)	<b>B.B</b>	2.2	2.4	4.1	5.7	7.6	12.2	21
		<b>W.B</b>	1.9	2.1	3.9	5.5	7.4	11.6	19.7

	<b>CL900~CL1500</b>	<i>Bolt Bonnet (BB)/ Welding Bonnet (WB), Reduce Port (RP)/Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Thread (NPT), Socket Weld (SW), Butt Weld (BW)</i>							
	Size (NPS)	<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
		<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	<b>L</b>	92	111	120	152	172	220	
	Handwheel Diameter	<b>W</b>	100	125	160	160	180	200	
	Height	<b>H</b>	172	207	228	270	320	387	
	Flow Port Diameter	<b>d</b>	10.5	13.5	17	22	28	34	
	Weight (Kg)	<b>B.B</b>	4.1	5.6	6.7	7.6	12.2	21	
		<b>W.B</b>	3.8	5.4	6.5	7.4	12	20.2	

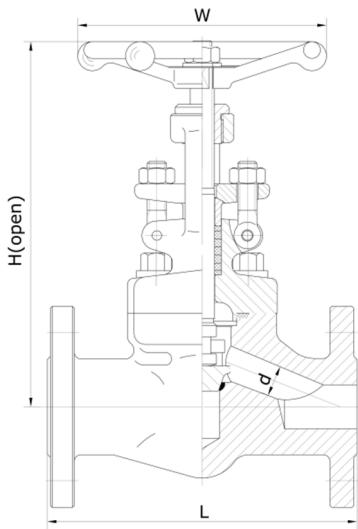
	<b>CL2500</b>	<i>Welding Bonnet (WB), Reduce Port (RP)/Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Thread (NPT), Socket Weld (SW), Butt Weld (BW)</i>							
	Size (NPS)	<b>R.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	<b>L</b>		120	120	152	172	220	220
	Handwheel Diameter	<b>W</b>		160	160	160	180	200	200
	Height	<b>H</b>		228	228	270	320	387	396
	Flow Port Diameter	<b>d</b>		10.5	13.5	17	22	28	34
	Weight (Kg)	<b>W.B</b>		6.7	6.5	7.6	12.2	21	20.7

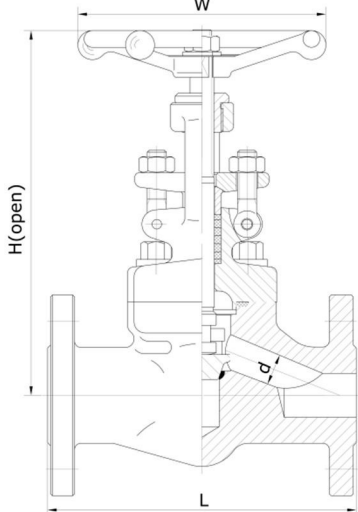
The dimension and weights are for reference only and subject to change without notice.

1. For more size or dimensional information, please contact our sales representative.

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Globe Valve)

	<b>CL150-CL600</b>		<i>Bolt Bonnet (BB), Reduce Port (RP), Outside Screw and Yoke (OS&amp;Y), Flanged (RF/RTJ)</i>							
	Size (NPS)		<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
	Face To Face	CL150	<b>L (RF)</b>	108	117	127	140	165	203	
		CL300		152	178	203	216	229	267	
		CL600		165	190	216	229	241	292	
	Handwheel Diameter		<b>W</b>	100	100	125	160	160	180	
	Height		<b>H</b>	170	172	207	228	270	320	
	Flow Port Diameter		<b>d</b>	10.5	13.5	17	22	28	34	
	Weight (Kg)	CL150	<b>B.B</b>	4.1	4.8	7.1	10	12.7	21	
		CL300		4.8	6.7	10	14.5	18.3	25.2	
CL600		5.4		7.4	11	16	19.2	28.8		

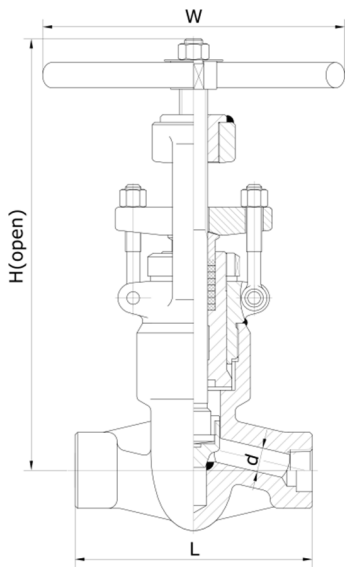
	<b>CL900-CL1500</b>		<i>Bolt Bonnet (BB), Reduce Port (RP), Outside Screw and Yoke (OS&amp;Y), Flanged (RF/RTJ)</i>							
	Size (NPS)		<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
	Face To Face	CL900	<b>L (RF)</b>	216	229	254	279	305	368	
		CL1500								
	Handwheel Diameter		<b>W</b>	100	100	125	160	160	180	
	Height		<b>H</b>	170	172	207	228	270	320	
	Flow Port Diameter		<b>d</b>	10.5	13.5	17	22	28	34	
	Weight (Kg)	CL900	<b>B.B</b>	10.1	13	18.3	26	32.8	54	
		CL1500								

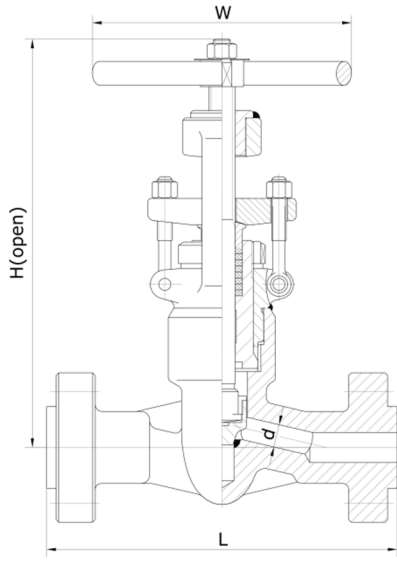
The dimension and weights are for reference only and subject to change without notice.

1. The flanged valve are defaulted by integral flange;
2. For more size or dimensional information, please contact our sales representative.

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Globe Valve-Pressure Seal Bonnet)

	<b>CL900~CL2500</b>		<i>Pressure Seal Bonnet (PSB), Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Thread (NPT), Socket Weld (SW), Butt Weld (BW)</i>							
	Size (NPS)		F.P	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL900 CL1500	L	140	140	140	140	178	178	216
		CL2500		182	182	182	182	232	232	272
	Handwheel Diameter	CL900 CL1500 CL2500	W	160	160	160	160	180	180	200
	Height	CL900 CL1500	H	325	325	325	325	430	430	495
		CL2500		330	330	330	330	480	480	530
	Flow Port Diameter		d	8	13.5	17	22	28	34	42
Weight (Kg)	CL900 CL1500	PSB	9	9	8.9	8.8	26	25.6	45	
	CL2500		12.3	12.3	11.6	11	26	28.4	60	

	<b>CL900~CL2500</b>		<i>Pressure Seal Bonnet (PSB), Full Port (FP), Outside Screw and Yoke (OS&amp;Y), Flanged (RF/RTJ)</i>							
	Size (NPS)		F.P	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL900 CL1500	L (RF)		216	229	254	279	305	368
		CL2500			264	273	308	349	384	451
	Handwheel Diameter	CL900 CL1500 CL2500	W		160	160	160	180	180	200
	Height	CL900 CL1500	H		325	325	325	430	430	495
		CL2500			330	330	330	480	480	530
	Flow Port Diameter		d		13.5	17	22	28	34	42
Weight (Kg)	CL900 CL1500	PSB		11.9	13.7	18	36.8	37	45	
	CL2500			13	17	22	30	42	58	

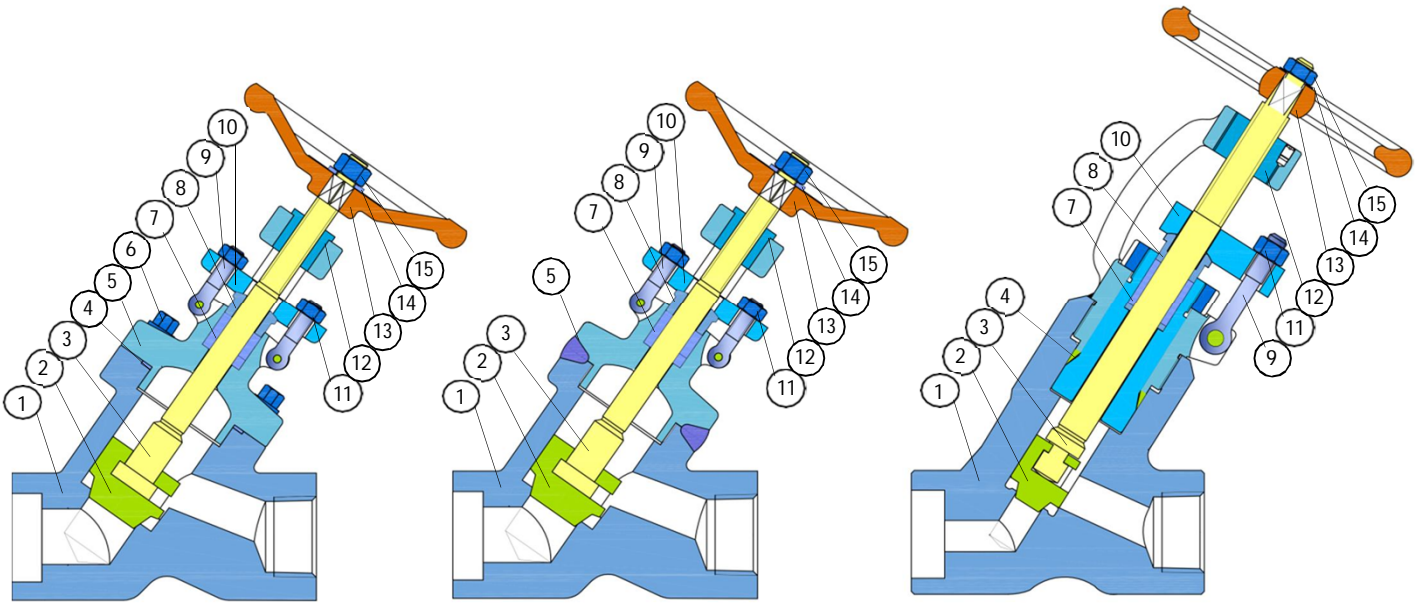
The dimension and weights are for reference only and subject to change without notice.

3. The flanged valve are defaulted by integral flange;

4. For more size or dimensional information, please contact our sales representative.

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Globe Valve-Y-Type)



### Part List

① Body	⑤ Bonnet	⑨ Eyes Bolt	⑬ Handwheel
② Disc	⑥ Bolt	⑩ Gland Flange	⑭ Nameplate
③ Stem	⑦ Packing	⑪ Nut	⑮ Nut
④ Gasket	⑧ Gland	⑫ Stem Nut	

### Standards

Design & Manufacture ASME B16.34

Face-to-face MTI'STD

End Dimension ASME B1.20.1 (NPT)  
ASME B16.11 (SW)  
ASME B16.25 (BW)  
ASME B16.5 (RF, RTJ),

Test & Inspection API 598

Typical Materials  
 Body, Bonnet, Disc A105, A350LF2, LF3, LF5, A182 F304, F304L, F316, F316L, F51, F53, F5, F11, F22, F91, Monel, Inconel, Hastelloy  
 Stem A276 410, F304, F304L, F316, F316L, F51, F53, Monel, Inconel, Hastelloy



# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Globe Valve-Y-Type)

	<b>CL800</b>	Bolt Bonnet ( <b>BB</b> ) / Welding Bonnet ( <b>WB</b> ), Full Port ( <b>FP</b> ), Outside Screw and Yoke ( <b>OS&amp;Y</b> ), Thread ( <b>NPT</b> ), Socket Weld ( <b>SW</b> ), Butt Weld ( <b>BW</b> )							
	Size (NPS)	<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	<i>L</i>	100	100	100	120	140	140	172
	Handwheel Diameter	<i>W</i>	100	125	160	160	160	180	200
	Height	<i>H</i>	180	180	188	280	280	295	350
	Flow Port Diameter	<i>d</i>	10	13.5	17	22	28	34	42
	Weight (Kg)	<b>B.B</b>	3.8	4.6	4.6	9.3	14	14	19.6
	<b>W.B</b>	3.7	4.5	4.5	9	13.5	13.5	19.1	

	<b>CL900~CL1500</b>	Bolt Bonnet ( <b>BB</b> ) / Welding Bonnet ( <b>WB</b> ), Full Port ( <b>FP</b> ), Outside Screw and Yoke ( <b>OS&amp;Y</b> ), Thread ( <b>NPT</b> ), Socket Weld ( <b>SW</b> ), Butt Weld ( <b>BW</b> )							
	Size (NPS)	<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	<i>L</i>	100	100	120	140	140	172	220
	Handwheel Diameter	<i>W</i>	125	160	160	160	180	200	200
	Height	<i>H</i>	180	188	280	280	295	350	365
	Flow Port Diameter	<i>d</i>	10	13.5	17	22	28	34	42
	Weight (Kg)	<b>B.B</b>	4.6	4.6	9.3	14	14	19.6	38.6
	<b>W.B</b>	4.5	4.5	9	13.5	13.5	19.1	38	

	<b>CL2500</b>	Welding Bonnet ( <b>WB</b> ), Full Port ( <b>FP</b> ), Outside Screw and Yoke ( <b>OS&amp;Y</b> ), Thread ( <b>NPT</b> ), Socket Weld ( <b>SW</b> ), Butt Weld ( <b>BW</b> )							
	Size (NPS)	<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	<i>L</i>		120	140	140	172	220	232
	Handwheel Diameter	<i>W</i>		160	160	180	200	200	250
	Height	<i>H</i>		280	280	295	350	365	400
	Flow Port Diameter	<i>d</i>		17	22	28	34	42	55
	Weight (Kg)	<b>W.B</b>		9.3	14	14	19.6	38.6	53.5

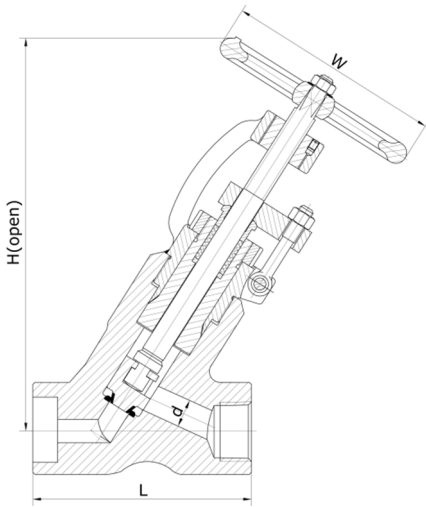
The dimension and weights are for reference only and subject to change without notice.

1. For more size or dimensional information, please contact our sales representative.

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Globe Valve-Pressure Seal Bonnet)

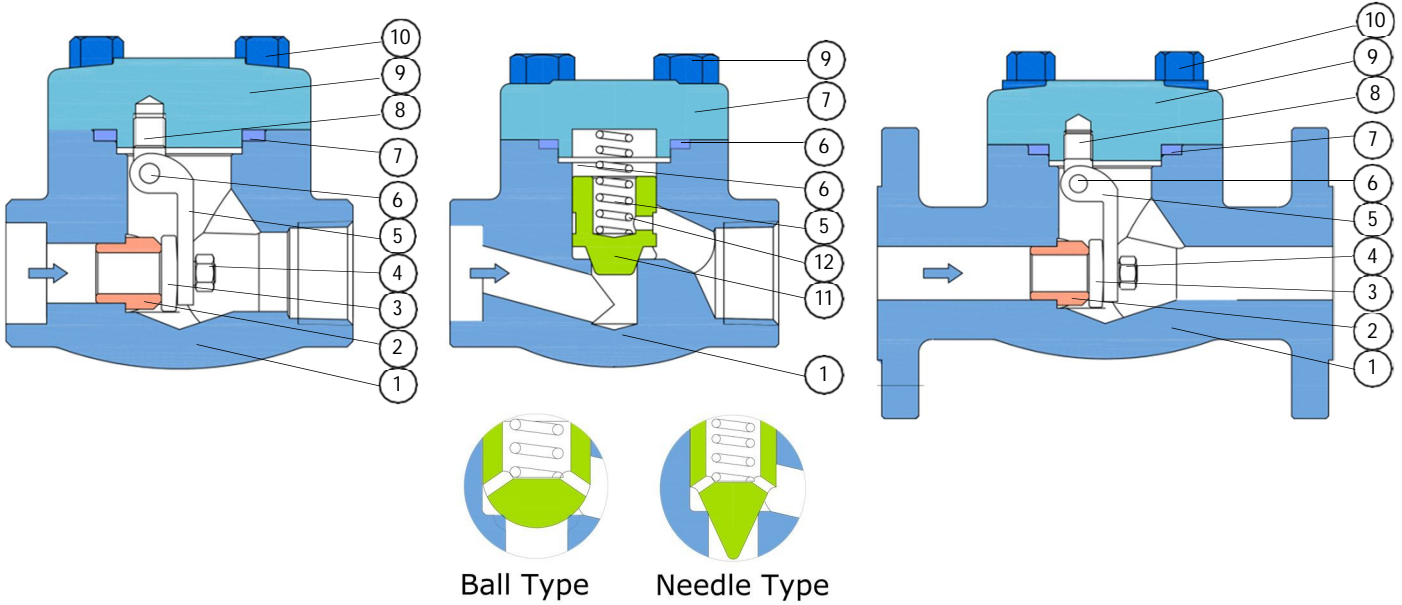
CL900-CL2500		Pressure Seal Bonnet (PSB), Full Port (FP), OutSide Screw and Yoke (OS&Y), Thread (NPT), Socket Weld (SW), Butt Weld (BW)							
		Size (NPS)	F.P	3/8	1/2	3/4	1	1-1/4	1-1/2
Face To Face	CL900	L	140	140	140	140	232	232	232
	CL1500								
	CL2500								
Handwheel Diameter	CL900	W	160	160	160	180	200	200	250
	CL1500								
	CL2500								
Height	CL900	H	280	280	280	295	350	365	400
	CL1500								
	CL2500								
Flow Port Diameter		d	13	17	22	28	34	42	55
Weight (Kg)	CL900	PSB	12.5	12.5	12.5	12.5	28	26.5	36
	CL1500								
	CL2500								



The dimension and weights are for reference only and subject to change without notice.  
 1. For more size or dimensional information, please contact our sales representative.

# FORGED STEEL VALVE

## OVERVIEW (Check Valve)



### Part List

① Body	⑤ Hinge	⑨ Cover
② Seat	⑥ Pin	⑩ Bolt
③ Disc	⑦ Gasket	⑪ Plug
④ Nut	⑧ Bolt	⑫ Spring

### Standards

Design & Manufacture API 602, ISO 15761, ASME B16.34

Face-to-face MTI'STD, ASME B16.10

End Dimension  
 ASME B1.20.1 (NPT)  
 ASME B16.11 (SW)  
 ASME B16.25 (BW)  
 ASME B16.5 (RF, RTJ),

Test & Inspection API 598

Typical Materials

Body, Cover Disc	A105, A350 LF2, LF3, LF5, A182 F304, F304L, F316, F316L, F51, F53, F5, F11, F22, F91, Monel, Inconel, Hastelloy
Hinge	A351 CF8M, Monel, Inconel, Hastelloy

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Check Valve - Swing Type)

	<b>CL800</b>	Bolt Cover (BC)/ Welding Cover (WC) Reduce Port (RP)/Full Port (FP) Thread (NPT), Socket Weld (SW), Butt Weld (BW)							
	Size (NPS)	<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
		<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	L	79	92	111	120	120	140	
	Height	H	55	60	80	90	100	105	
	Flow Port Diameter	d	10.5	13.5	17	22	28	34	
	Weight (Kg)	<b>B.B</b>	1.8	2	3.8	4.5	5.5	9	
<b>W.B</b>		1.7	1.9	3.6	4.3	5.3	8.7		

	<b>CL900</b> <b>CL1500</b>	Bolt Cover (BC)/ Welding Cover (WC) Reduce Port (RP)/Full Port (FP) Thread (NPT), Socket Weld (SW), Butt Weld (BW)							
	Size (NPS)	<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
		<b>F.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	L	92	111	120	120	140	178	
	Height	H	60	80	90	100	105	115	
	Flow Port Diameter	d	10.5	13.5	17	22	28	34	
	Weight (Kg)	<b>B.B</b>	2	3.9	4.5	5.5	9	16	
<b>W.B</b>		1.9	3.6	4.3	5.3	8.7	15.5		

	<b>CL2500</b>	Welding Cover (WC), Reduce Port (RP)/Full Port (FP) Thread (NPT), Socket Weld (SW), Butt Weld (BW)							
	Size (NPS)	<b>R.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	L		120	120	120	140	178	178
	Height	H		90	100	105	115	115	115
	Flow Port Diameter	d		10.5	13.5	17	22	28	34
	Weight (Kg)	<b>W.B</b>		4.5	5.5	9	16	23	23

The dimension and weights are for reference only and subject to change without notice.

1. For more size or dimensional information, please contact our sales representative.

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Check Valve - Lift Type)

	<b>CL800</b>	Bolt Cover (BC)/ Welding Cover (WC) Reduce Port (RP)/ Full Port (FP) Thread (NPT), Socket Weld (SW), Butt Weld (BW)							
	Size (NPS)	R.P	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
		F.P	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	L	79	92	111	120	152	172	
	Height	H	55	55	65	80	85	105	
	Flow Port Diameter	d	10.5	13.5	17	22	28	34	
Weight (Kg)	B.B	1.2	1.5	2.1	3.5	4.8	7.6		
	W.B	1.1	1.3	2	3.3	4.6	7.4		

	<b>CL900</b> <b>CL1500</b>	Bolt Cover (BC)/ Welding Cover (WC) Reduce Port (RP)/ Full Port (FP) Thread (NPT), Socket Weld (SW), Butt Weld (BW)							
	Size (NPS)	R.P	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
		F.P	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	L	92	111	120	152	172	220	
	Height	H	55	65	80	85	105	115	
	Flow Port Diameter	d	10.5	13.5	17	22	28	34	
Weight (Kg)	B.B	1.5	2.1	3.5	4.8	7.6	12.5		
	W.B	1.3	2	3.3	4.6	7.4	12.1		

	<b>CL2500</b>	Welding Cover (WC), Reduce Port (RP)/ Full Port (FP) Thread (NPT), Socket Weld (SW), Butt Weld (BW)							
	Size (NPS)	R.P	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	L		120	120	152	172	220	220
	Height	H		80	80	85	105	115	115
	Flow Port Diameter	d		10.5	13.5	17	22	28	34
	Weight (Kg)	W.B		3.5	3.5	4.8	7.6	12.5	12.5

The dimension and weights are for reference only and subject to change without notice.

1. For more size or dimensional information, please contact our sales representative.



# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Check Valve)

	<b>CL800</b>		<b>Bolt Cover (BC)/ Welding Cover (WC)</b>						
	<b>CL900~CL1500</b>		<b>Full Port (FP)</b>						
			<b>Thread (NPT), Socket Weld (SW), Butt Weld (BW)</b>						
	Size (NPS)		<b>F.P</b>	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL800	L	100	100	120	140	140	172
		CL900 CL1500		100	120	140	140	172	220
	Height		H	70	70	70	100	110	120
	Flow Port Diameter		d	13.5	17	22	28	34	44
Weight (Kg)	CL800	<b>B.B</b>	2.2	2.2	2.2	4.2	9	9	
		<b>W.B</b>	2.1	2.1	2.1	4	8.8	8.8	
	CL900 CL1500	<b>B.B</b>	4.2	9	9	10	18.6	20	
		<b>W.B</b>	4	8.8	8.8	9.7	18.2	19.5	

	<b>CL150~CL600</b>		<b>Bolt Cover (BC)/ Welding Cover (WC)</b>						
			<b>Reduce Port (RP),</b>						
			<b>Flanged (RF/RTJ)</b>						
	Size (NPS)		<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL150	L (RF)	108	117	127	140	165	203
		CL300		152	178	203	216	229	267
		CL600		165	190	216	229	241	292
	Height		H	55	55	65	80	85	105
Flow Port Diameter		d	10.5	13.5	17	22	28	34	
Weight (Kg)	CL150	<b>B.B</b>	3.5	3.5	4.7	8.5	11.5	13	
	CL300		3.5	3.5	5.6	8.6	12	14	
	CL600		3.5	3.5	6.5	10.5	16	22	

	<b>CL900</b>		<b>Bolt Cover (BC)/ Welding Cover (WC)</b>						
	<b>CL1500</b>		<b>Reduce Port (RP),</b>						
			<b>Flanged (RF/RTJ)</b>						
	Size (NPS)		<b>R.P</b>	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL900 CL1500	L (RF)	216	229	254	279	305	368
	Height		H	55	55	65	80	85	105
	Flow Port Diameter		d	10.5	13.5	17	22	28	34
Weight (Kg)	CL150 CL300	<b>B.B</b>	4.5	5.8	8.7	14.5	22	32	

The dimension and weights are for reference only and subject to change without notice.

1. The flanged valve are defaulted by integral flange.
2. For more size or dimensional information, please contact our sales representative.

# FORGED STEEL VALVE

## DIMENSIONS AND WEIGHTS (Check Valve - Pressure Seal Cover)

	<b>CL900~CL2500</b>		Pressure Seal Bonnet ( <b>PSB</b> ), Reduce Port ( <b>RP</b> ), Thread ( <b>NPT</b> ), Socket Weld ( <b>SW</b> ), Butt Weld ( <b>BW</b> )							
	Size (NPS)		<b>R.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL900 CL1500	L	140	140	140	140	178	178	216
		CL2500		182	182	182	182	232	232	272
	Height		H	115	115	115	115	150	150	195
	Flow Port Diameter		d	8	10.3	13.5	18	23	29	36
Weight (Kg)	CL900 CL1500	<b>PSB</b>	7.5	7.5	7.5	7.5	10.5	10.3	22	
	CL2500		11.8	11.8	11	11	23	26.5	39	

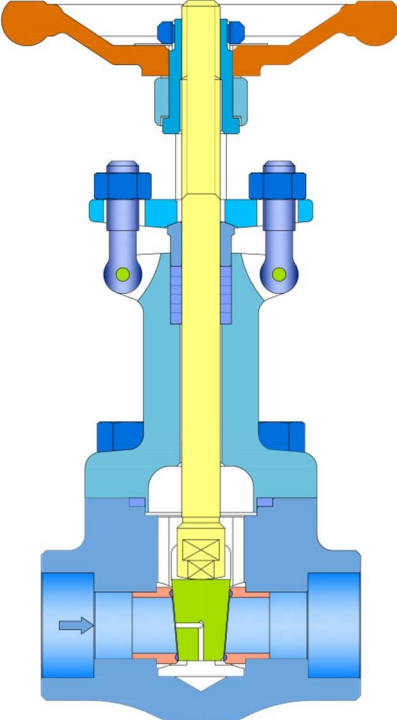
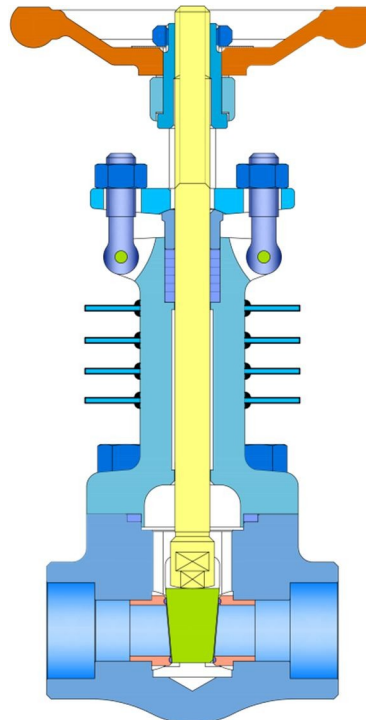
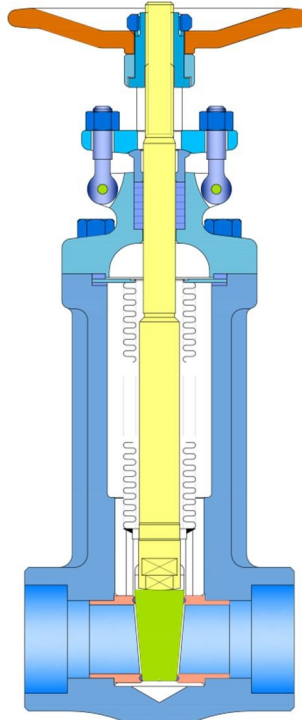
	<b>CL900~CL2500</b>		Pressure Seal Bonnet ( <b>PSB</b> ), Full Port ( <b>FP</b> ), Outside Screw and Yoke ( <b>OS&amp;Y</b> ), Thread ( <b>NPT</b> ), Socket Weld ( <b>SW</b> ), Butt Weld ( <b>BW</b> )							
	Size (NPS)		<b>R.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL900 CL1500	L	140	140	140	140	178	178	216
		CL2500		182	182	182	182	232	232	272
	Height		H	115	115	115	115	150	150	195
	Flow Port Diameter		d	8	13.5	17	22	28	34	42
Weight (Kg)	CL900 CL1500	<b>PSB</b>	7.5	7.5	7.5	7.5	10.5	10.3	22	
	CL2500		11.8	11.8	11	11	23	26.5	39	

	<b>CL900~CL2500</b>		Pressure Seal Bonnet ( <b>PSB</b> ), Reduce Port ( <b>RP</b> ), Flanged ( <b>RF/RTJ</b> )							
	Size (NPS)		<b>R.P</b>	3/8	1/2	3/4	1	1-1/4	1-1/2	2
	Face To Face	CL900 CL1500	L (RF)		216	229	254	279	305	368
		CL2500		264	273	308	349	384	451	
	Height		H		115	115	115	150	150	195
	Flow Port Diameter		d		13.5	17	22	28	34	42
Weight (Kg)	CL900 CL1500	<b>PSB</b>		10.5	12	14	20	27	33	
	CL2500		13	15	17	25	30	35		

1. The flanged valve are defaulted by integral flange.
2. The dimension and weights are for reference only and subject to change without notice.
3. For more dimensional information, please contact our sales representative.

# FORGED STEEL VALVE

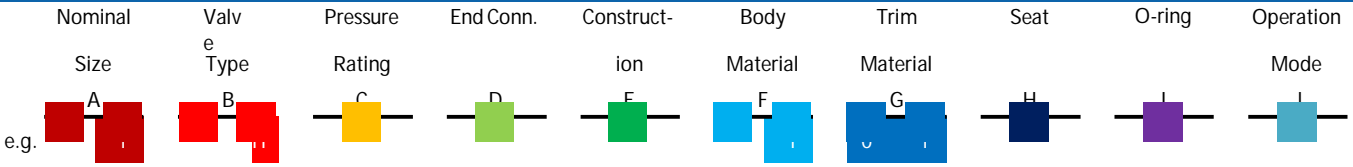
## OVERVIEW (Special Type Forge Steel Valve)

		
<p>Low Temperature Extension</p>	<p>High Temperature Extension</p>	<p>Bellow Seal Extension</p>
<p>Structure characteristics:</p> <ol style="list-style-type: none"> <li>1. The bonnet are extended for low temperature service, the packing position are raised to avoid the freeze of packing which will affect packing sealing performance;</li> <li>2. The gate valve shall have relief hole on upstream direction while the pressure may remain in the cavity;</li> <li>3. Low temperature cold isolation can be an option to prevent cold heat exchange</li> </ol>	<p>Structure characteristics:</p> <ol style="list-style-type: none"> <li>1. The high temperature extended structure is mainly to prevent scald operator during operation.</li> <li>2. The cooling fin can be selected to help heat radiation.</li> </ol>	<p>Structure characteristics:</p> <ol style="list-style-type: none"> <li>1. Bellow seal extension has the bellow inside of the cavity, the effective compression of the bellows must be greater than the opening stroke of the valve;</li> <li>2. Bellow seal structure can effectively reduce the leakage of valve stem, the primary seal is for bellows and secondary seal as a filler.</li> </ol>
<ol style="list-style-type: none"> <li>1. The above schematics for extension are based on gate valves , it can apply to both forged gate and globe valve;</li> <li>2. Welded bonnet is available other than the above mentioned bolted bonnet.</li> </ol>		

# FORGED STEEL VALVE

## VALVE FIGURE NUMBER

## HOW TO ORDER



e.g. is a NPS 1x3/4 Class 800, Check Valve, Swing Type, Socket Welding, A105 body, 13Cr Trim, Renewable Seat, No O-ring, No operation.

**A** Nominal Size

<b>00</b> Special	<b>R0</b> 3/4 RB	<b>F5</b> 1 ½ (DN 40)	<b>3R</b> 2 ½ RB
<b>F1</b> 3/8 (DN 10)	<b>01</b> 1 (DN 25)	<b>2R</b> 1 ½ RB	<b>03</b> 3 (DN 80)
<b>F2</b> 1/2 (DN 15)	<b>R1</b> 1 RB	<b>02</b> 2 (DN 50)	<b>R3</b> 3 RB
<b>OR</b> 1/2 RB	<b>F4</b> 1 ¼ (DN 32)	<b>R2</b> 2 RB	<b>04</b> 4 (DN 100)
<b>F3</b> 3/4 (DN 20)	<b>1R</b> 1 ¼ RB	<b>F6</b> 2 ½ (DN 65)	<b>R4</b> 4 RB

### **B** Valve Type

- GA** Gate Valve
- GL** Globe Valve
- CH** Check Valve

### **C** Pressure Rating

- |                     |                          |
|---------------------|--------------------------|
| <b>0</b> Special    | <b>7</b> Class 2500      |
| <b>1</b> Class 150  | <b>9</b> Class 900       |
| <b>3</b> Class 300  | <b>8</b> Class 800       |
| <b>5</b> Class 1500 | <b>2</b> Class 125(PN16) |
| <b>6</b> Class 600  | <b>4</b> Class 400(PN64) |

### **D** End Connection

- |                      |                           |
|----------------------|---------------------------|
| <b>X</b> Special     | <b>B</b> Butt-Weld (BW)   |
| <b>R</b> RF Flanged  | <b>S</b> Socket-Weld (SW) |
| <b>J</b> RTJ Flanged |                           |
| <b>F</b> FF Flanged  |                           |
| <b>T</b> Threaded    |                           |

### **E** Construction

- |                                   |                            |
|-----------------------------------|----------------------------|
| <b>GA</b>                         | <b>CH</b>                  |
| 1 Flexible wedge, Bolted Bonnet   | 1 Swing, Bolt Cover        |
| 2 Flexible wedge, Welded Bonnet   | 2 Swing, welded Cover      |
| 3 Flexible wedge, Pressure Seal   | 3 Swing, Pressure Seal     |
| 4 Flexible wedge, Bellow Seal     | 4 Lift Type, Bole Cover    |
| 5 Solid wedge, Bolted Bonnet      | 5 Lift Type, Welded Cover  |
| 6 Solid wedge, Welded Bonnet      | 6 Single Plate, Wafer      |
| 7 Solid wedge, Pressure Seal      | 7 Dual Plate               |
| 8 Solid wedge, Bellow Seal        | 8 Lift Type, Pressure Seal |
| <b>GL</b>                         |                            |
| 1 Straight pattern, Bolted Bonnet |                            |
| 2 Straight pattern, Welded Bonnet |                            |
| 3 Straight pattern, Pressure Seal |                            |
| 4 Y-pattern, Bolted Bonnet        |                            |
| 5 Y-pattern, Welded Bonnet        |                            |
| 6 Y-pattern, Pressure Seal        |                            |

### **F** Body Material

- |                         |                      |
|-------------------------|----------------------|
| <b>X0</b> Special       | <b>L7</b> A350 LF5   |
| <b>C1</b> A105          | <b>L9</b> A350 LF6   |
| <b>M1</b> A182 F1       | <b>LA</b> A350 LF9   |
| <b>M3</b> A182 F2       | <b>S1</b> A182 F304  |
| <b>M5</b> A182 F12 CL 2 | <b>S3</b> A182 F304L |
| <b>M7</b> A182 F11 CL 2 | <b>S5</b> A182 F316  |
| <b>M9</b> A182 F22 CL 3 | <b>S7</b> A182 F316L |
| <b>E1</b> A182 F5       | <b>S9</b> A182 F347  |
| <b>E5</b> A182 F9       | <b>D1</b> A182 F51   |
| <b>E7</b> A182 F91      | <b>D3</b> A182 F53   |
| <b>L1</b> A350 LF1      | <b>D5</b> A182 F55   |
| <b>L3</b> A350 LF2      |                      |
| <b>L5</b> A350 LF3      |                      |

### **G** Trim Material

- |                                 |                                 |
|---------------------------------|---------------------------------|
| <b>00</b> Special               | 15 Stellite /Stellite /304      |
| <b>01</b> 13Cr/13Cr/13Cr        | 16 Stellite /Stellite /316      |
| <b>02</b> 304/304/304           | 17 Stellite /Stellite /347      |
| <b>03</b> 310/310/310           | 18 Stellite /Stellite /Alloy 20 |
| 4. Hard 13Cr/Hard 13Cr/13Cr     | <b>20</b> 304L /304L /304L      |
| 5. Stellite /Stellite /13Cr     | <b>21</b> 316L /316L /316L      |
| 6. 13Cr/Cu-Ni/13Cr              | <b>22</b> 321 /321 /321         |
| 7. 13Cr/Hard 13Cr /13Cr         | <b>23</b> F55 /F55 /F55         |
| 8. 13Cr/Stellite /13Cr          | <b>24</b> F51 /F51 /F51         |
| 9. Monel /Monel /Monel          | <b>25</b> F53 /F53 /F53         |
| <b>10</b> 316/316/316           | 32 316L /Stellite /316L         |
| 11 Monel /Stellite /Monel       | 33 Stellite /Stellite /316L     |
| 12 316 /Stellite /316           | 34 304L /Stellite /304L         |
| 13 Alloy 20 /Alloy 20 /Alloy 20 | 35 Stellite /Stellite /304L     |
| 14 Alloy 20 /Stellite /Alloy 20 |                                 |

### **H** Seat

- R** Renewable Metal
- N** Non Renewable Metal

### **I** O-Ring

- 0** None

### **J** Operation

- B** Bare Stem
- H** Hand Wheel
- G** Gearbox
- P** Pneumatic
- E** Electric
- C** Gear w/ Chain
- N.** Pneumatic-Hydraulic
- O.** Solid Hand Wheel
- V** Hand Wheel with locking
- X** No Operation

## HOW THE FIGURE NUMBER SYSTEM WORKS

**Introduction.** Figure number system uses a code consisting 14 digits of letters and numbers to represent the specification of a valve of certain specification. Among 14 digits, they are separated into 10 groups identified by letters from A to J. Each group represents a parameter of a valve, together they contain almost all the essential parameters of the valve.

**Uses.** Using the figure number system to generate a code is easy. Under each group, the code is shown on the left while on the right is the meaning of the code. Start by selecting a code from group A, through group J. If the specification of the valve is not listed, select the code for "Special ". The total length of the figure number shall be exactly 14 digits.

**Cautions.** It is advised that you have as detailed the specification as possible to generate a figure number, which means eliminating "Specials". If you don't have enough specification or information about the valve you are ordering, or you're not sure how to use the system to generate a figure number, contact one of our sales representatives for help.

Note: MTI reserves the right to make any modifications without notice.





Offshore



Pipeline



Onshore



Refinery



**IMPORTANT NOTICE**

- All dimensions in inches not listed in standards are converted from millimeters. Weights in lbs (pounds) are converted from kilograms.
- Data listed in the catalog, including dimensions, weights, specifications and other valve related data are intended to provide general information and guidance only.
- MTI Inc. assumes no responsibility for errors or inadequacy relevant to any information provided in this catalog. Any information provided in this catalog is subject to change without notice.



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