05

RUITONG
VALVE

FORGED STEEL VALVE SERIES

VALVE ORDER NUMBER

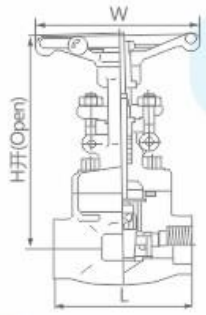
When you ask or order our valves do not have to learn more about our valves order numbering system. As long as you can provide your full description of the selected valve, our sales department can be made up Translated into the corresponding valve order number. The selected valve fully described should be started from the valve type, then there is the valve diameter, pressure level, form of connection on both ends, sealing surface material or according to API 602 Regulation of internal parts and so on.
Below is we give an example, the purpose is to want to use the method of graphic to illustrate a typical valve order number, but if you need to elaborate, please consult us.

F	P	3	Y	2"	15	L	Y	V
Port type	Body and bonnet connection	End connection	Design feaature	Size		Type of valve	Seal disc/seat	Body naterials
Reduced Default	Bolt and bonnet screwed Default	Convex llage 1	"Y"type valves Y	3/8"	Class150 1	Gzte valves G	13Cr/13Cr H	A105 C
Full bore F		Ring connection surface 2	Cryogenic valves D	3/4"	Class300 3	Lift check valves C	STL/STL Y	A350LF2 E
	Bolt and bonnet welded W	Butt welded 3	Bellows valves W	1/2"	Class600 6	Ball check valves B	13Cr/STL HY	A350LF3 F
		Socket welding 4	Body extended valves E	1"	Class800 8	Globe valves L	304/304 S	A182F11 A
	Pressure seal P	Screw 5		1/4"	Class900 9	Swing check valves S	304/PTFE SF	A182F22 V
			Jacket valves B	1/2"	Class1500 15	Ball valves Q	Monel/Monel M	A182F304 P
				2"	Class2500 25	Linear regulating valves T	Inconel I	A182F316 R
						strainer R	Nylon N	A182F304L S
							PTFE F	A182F316L L
							Hastelloy HC	A182F91 Z
								A182F51 B
								Monel M
								Hastelloy H
								20合金Alloy N

Main part materiais list

Part name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHT	F304(L)304(L)	F316(L)316(L)	F51/F51
Body	A105	A105+HF	Lf2	F11+HF	F304	F316	F51
Disc	F6a	F6a	F304	F6aHF	F304(L)	F216(L)	F51
Stem	410	410	304	410	304(L)	316(L)	F51
Gasket	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite
Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
Pin	410	410	410	410	304	304	304
Gland	410	410	304	410	304	316	F51
Gland Eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
Gland Flange	A105	A105	LF2	F304	F304(L)	F316(L)	F304
Hex Nut	2H	2H	7	7	8(M)	8(M)	8M
Stem Nut	410	410	410	410	410	410	410
Locking Nut	35	35	35	35	35	35	35
Nameplate	AL	AL	AL	AL	AL	AL	AL
Handwheel	A197	A197	A197	A197	A197	A197	A197
Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite

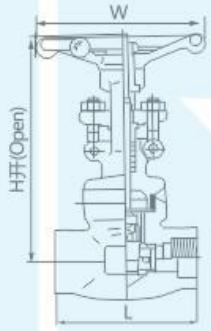
INTERNAL THREAD AND SOCKET WELDING GATE VALVE



CL800

Specification	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face(mm)	L	79	79	92	111	120	120	140	178	180
Handwheel diameter (mm)	W	100	100	100	125	160	160	180	200	220
Height (mm)	H	161	161	163	196	223	251	290	333	370
Flow port dimension (mm)	d	8	10.5	13.5	18	24	29	36.5	45	51
Weight (Kg)		2.22	2.3	4.24	4.24	5.7	7.05	10.9	16.3	24

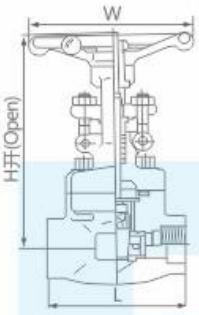
Bolted bonnet,,full port reducing port outside screw and yoke(OS&Y)
Threaded,butt-welded or socket welded ends;desing to APL602



CL800

Specification	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face(mm)	L	79	79	92	111	120	120	140	178	180
Handwheel diameter (mm)	W	100	100	100	125	160	160	180	200	220
Height (mm)	H	161	161	163	196	223	251	290	333	370
Flow port dimension (mm)	d	8	10.5	13.5	18	24	29	36.5	45	51
Weight (Kg)		1.9	1.9	2.1	3.2	5.2	6.9	10.4	15.8	22

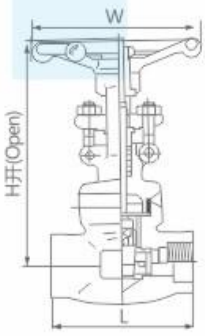
Bolted bonnet,,full port reducing port outside screw and yoke(OS&Y)
Threaded,butt-welded or socket welded ends;desing to APL602



CL900-CL1500

Specification	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face(mm)	L	92	111	111	120	120	140	178	180	-
Handwheel diameter (mm)	W	100	125	125	160	160	180	200	220	-
Height (mm)	H	191	191	192	219	243	296	316	370	-
Flow port dimension (mm)	d	8	10.5	13.5	18	24	29	36.5	45	-
Weight (Kg)		2.4	4.3	4.4	6	7.2	11.4	16	23	-

Bolted bonnet,,full port reducing port outside screw and yoke(OS&Y)
Threaded,butt-welded or socket welded ends;desing to APL602

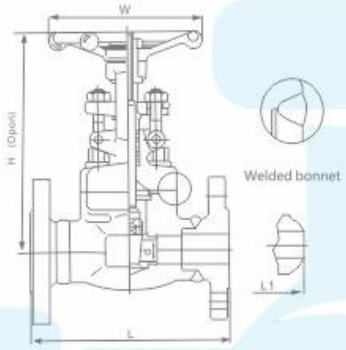


CL900-CL1500

Specification	R.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face(mm)	L	92	111	111	120	120	140	178	180	-
Handwheel diameter (mm)	W	100	125	125	160	160	180	200	220	-
Height (mm)	H	191	191	192	219	243	296	316	370	-
Flow port dimension (mm)	d	8	10.5	13.5	18	24	29	36.5	45	-
Weight (Kg)		2.3	4	4	4.8	7.1	11	16	22.8	-

Bolted bonnet,,full port reducing port outside screw and yoke(OS&Y)
Threaded,butt-welded or socket welded ends;desing to APL602

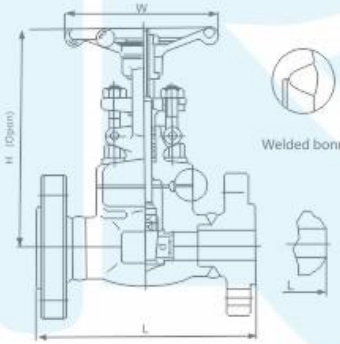
FORGED STEEL FLANGE GATE VALVE



CL150-300-600

Specification			F. P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face(mm)	CL150		L(RF) L1(BW)	-	-	108	117	127	140	165	178	190
	CL300			-	-	140	152	165	178	190	216	241
	CL600			-	-	165	190	216	229	241	292	330
Handwheel diameter (mm)			W	-	-	100	100	125	160	160	180	200
Height (mm)	CL150/CL300		H	-	-	176	184	217	226	250	290	357
	CL600			-	-	161	163	196	226	250	290	357
Flow port dimension (mm)			d	-	-	10	13.5	18	24	29	36.5	45
Weight (Kg)	CL150	RF		-	-	3.4	3.98	6.12	7.2	10.4	15.5	24.5
		BW		-	-	2.8	3.3	5.4	6.5	8.2	12.5	20
	CL300	RF		-	-	3.77	4.89	7.23	9.6	12.64	18	26.2
		BW		-	-	3.5	4.4	6.8	8.1	9.2	15.4	22
	CL600	RF		-	-	4.2	5.8	8.8	12.1	15.6	19.5	32
		BW		-	-	4.5	5.1	8.2	10.5	12.4	20.1	28

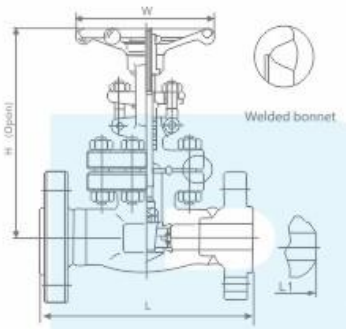
Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Flange-weided or but-welded ends;design to API602;BS5352



CL900-CL1500

Specification	F. P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face(mm)	L(RF)L1(BW)	-	-	216	229	254	279	305	368
	L(RTJ)	-	-	216	229	254	279	305	371
Handwheel diameter (mm)	W	-	-	125	125	160	180	200	220
Height (mm)	H	-	-	191	192	219	257	296	316
Flow port dimension (mm)	d	-	-	13.5	18	24	29	36.5	45
Weight (Kg)		-	-	7.2	11.5	15.6	16.2	22.6	28.2

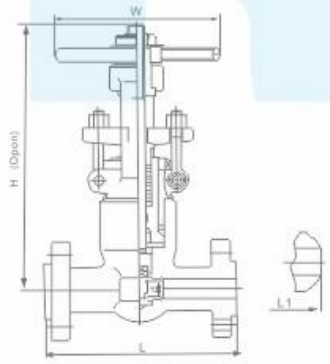
Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Flange-weided or but-welded ends;design to API602;BS5352



CL2500

Specification	F. P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face(mm)	L(RF)L1(BW)	-	-	264	273	305	-	384	451
	L(RTJ)	-	-	264	273	308	-	387	454
Handwheel diameter (mm)	W	-	-	125	160	160	-	200	240
Height (mm)	H	-	-	207	240	258	-	355	370
Flow port dimension (mm)	d	-	-	13.5	13.5	19	-	20	36.5
Weight (Kg)		-	-	19.5	21.5	42	-	65	95

Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Flange-weided or but-welded ends;design to API602;BS5352

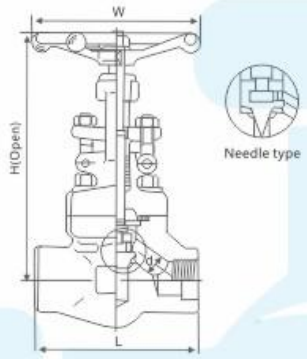


CL2500

Specification	F. P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face(mm)	L(RF)L1(BW)	-	-	264	273	308	-	384	451
	L(RTJ)	-	-	264	273	308	-	387	454
Handwheel diameter (mm)	W	-	-	200	200	200	-	280	300
Height (mm)	H	-	-	325	325	327	-	478	540
Flow port dimension (mm)	d	-	-	13.5	13.5	19	-	30	36.5
Weight (Kg)		-	-	14.6	16.8	17.6	-	25	31.9

Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Flange-weided or but-welded ends;design to API602;BS5352

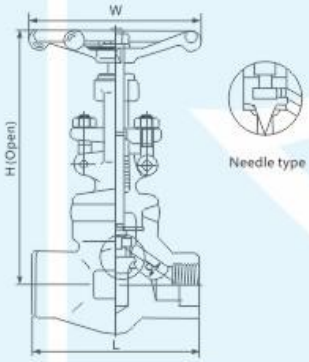
FEMALE THREAD AND SOCKET WELD GLOBE VALVE



CL800

Specification (NPS)	R.P		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face (mm)	L	79	79	92	111	120	152	172	200	-
Handwheel diameter (mm)	W	100	100	100	125	160	160	180	200	-
Height (mm)	H	164	164	164	203	224	260	300	355	-
Flow port dimension (mm)	d	7	9	13	17.5	23	30	35	46	-
Weight (Kg)		1.9	2.28	2.37	4.3	5.75	7.8	12.5	17.5	-

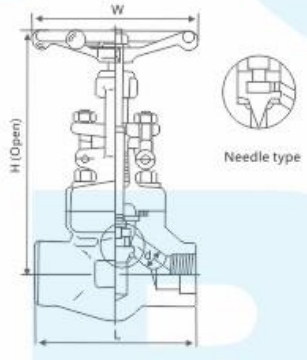
Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Threaded,butt-welded or socket welded ends;design to BS5352



CL800

Specification (NPS)	R.P		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face (mm)	L	79	79	92	111	120	152	172	200	-
Handwheel diameter (mm)	W	100	100	100	125	160	160	180	200	-
Height (mm)	H	164	164	164	203	224	260	300	355	-
Flow port dimension (mm)	d	7	9	13	17.5	23	30	35	46	-
Weight (Kg)		1.7	1.7	1.9	3.3	5.2	6.8	10.6	13.8	-

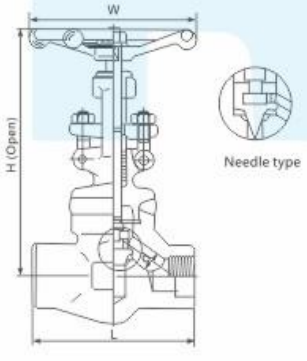
Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Threaded,butt-welded or socket welded ends;design to BS5352



CL900-CL1500

Specification (NPS)	R.P		1/2	3/8	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face (mm)	L	92	111	111	120	152	172	200	220	
Handwheel diameter (mm)	W	100	125	125	160	160	180	200	240	
Height (mm)	H	171	207	207	240	258	330	355	370	
Flow port dimension (mm)	d	7	12	15	20	28	32	40	45	
Weight (Kg)		2.3	3.6	3.7	6.8	7.6	11.6	15	21.9	

Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Threaded,butt-welded or socket welded ends;design to BS5352

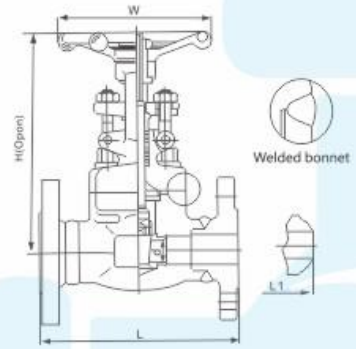


CL900-CL1500

Specification (NPS)	R.P		1/2	3/8	1	1 1/4	1 1/2	2	2 1/2	3
	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face (mm)	L	92	111	111	120	152	172	200	220	
Handwheel diameter (mm)	W	100	125	125	160	160	180	200	240	
Height (mm)	H	171	207	207	240	258	330	355	370	
Flow port dimension (mm)	d		12	15	20	28	32	40	45	
Weight (Kg)		2.2	3.3	3.4	5.6	6.0	10.3	14.2	18.0	

Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Threaded,butt-welded or socket welded ends;design to BS5352

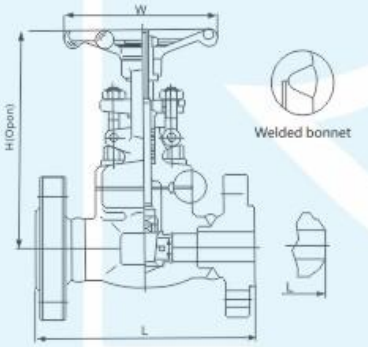
FLANGE AND BUTT WELD GLOBE VALVE



CL150 300 600

Specification (NPS)				1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face (mm)	CL150		L(RF) L1(BW)	-	-	108	117	127	140	165	178	190
	CL300			-	-	140	152	165	178	190	216	241
	CL600			-	-	165	190	216	229	241	292	330
Handwheel diameter (mm)			W	-	-	100	100	125	160	160	180	200
Height (mm)	CL150/CL300		H	-	-	176	184	217	226	250	290	357
	CL600			-	-	161	163	196	226	250	290	357
Flow port dimension (mm)			d	-	-	10	13.5	18	24	29	36.5	45
Weight (Kg)	CL150	RF		-	-	3.4	3.98	6.12	7.2	10.4	15.5	24.5
		BW		-	-	2.8	3.3	5.4	6.5	8.2	12.5	20
	CL300	RF		-	-	3.77	4.89	7.23	9.6	12.64	18	26.2
		BW		-	-	3.5	4.4	6.8	8.1	9.2	15.4	22
	CL600	RF		-	-	4.2	5.8	8.8	12.1	15.6	19.5	32
		BW		-	-	4.5	5.1	8.2	10.5	12.4	20.1	28

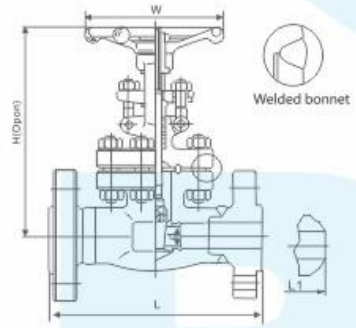
Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Flange-weided or but-welded ends;design to API602;BS5352



CL900-CL1500

Specification (NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face (mm)	L(RF)L1(BW)	-	-	216	229	254	279	305	368
	L(RTJ)	-	-	216	229	254	279	305	371
Handwheel diameter (mm)	W	-	-	125	125	160	180	200	220
Height (mm)	H	-	-	191	192	219	257	296	316
Flow port dimension (mm)	d	-	-	13.5	18	24	29	36.5	45
Weight (Kg)		-	-	7.2	11.5	15.6	16.2	22.6	28.2

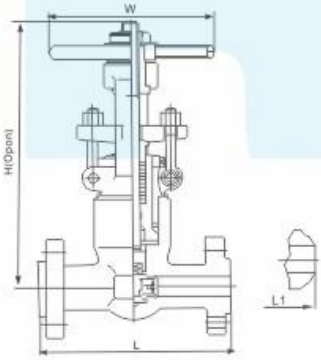
Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Flange-weided or but-welded ends;design to API602;BS5352



CL2500

Specification (NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face (mm)	L(RF)L1(BW)	-	-	264	273	305	-	384	451
	L(RTJ)	-	-	264	273	308	-	387	454
Handwheel diameter (mm)	W	-	-	125	160	160	-	200	240
Height (mm)	H	-	-	207	240	258	-	355	370
Flow port dimension (mm)	d	-	-	13.5	13.5	19	-	20	36.5
Weight (Kg)		-	-	19.5	21.5	42	-	65	95

Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Flange-weided or but-welded ends;design to API602;BS5352



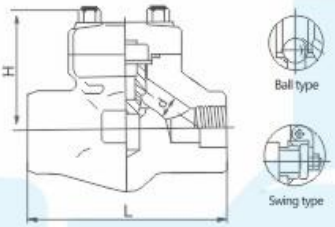
CL2500

Specification (NPS)	F.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face (mm)	L(RF)L1(BW)	-	-	264	273	308	-	384	451
	L(RTJ)	-	-	264	273	308	-	387	454
Handwheel diameter (mm)	W	-	-	200	200	200	-	280	300
Height (mm)	H	-	-	325	325	327	-	478	540
Flow port dimension (mm)	d	-	-	13.5	13.5	19	-	30	36.5
Weight (Kg)		-	-	14.6	16.8	17.6	-	25	31.9

Bolted bonnet,full port reducing port outside screw and yoke(OS&Y)
Flange-weided or but-welded ends;design to API602;BS5352

INTERNAL THREAD AND SOCKET WELD CHECK VALVE

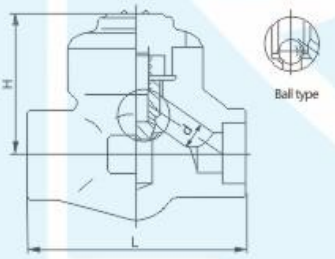
CL800



Specification (NPS)	F.P			3/8	3/4	1	1 1/4	1 1/2	2	2
	R.P		1/4	3/8	1/2	3/4	1	1/4	1 1/2	200
Face to face (mm)	L	Lift	79	79	92	111	120	152	172	178
		Swing	79	79	92	111	120	120	140	132
Height (mm)	H	Lift	61	61	61	78	84	84	118	133
		Swing	61	61	61	78	84	84	120	46
Flow port dimension (mm)	d	Lift	7	9	13	17.5	23	30	35	45
		Swing	8	10.5	13.5	18	24	29	36.5	12.5
Weight (Kg)		Lift	1.2	1.5	1.7	3.3	4.2	4.2	10.5	10.9
		Swing	1.4	1.5	1.7	3.3	4.2	4.2	8.5	

Bolted bonnet,full port & reducing port, Threaded, but-welded or socket welded ends;design to BS5352

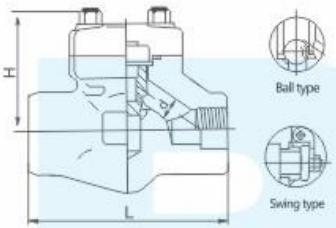
CL800



Specification (NPS)	F.P	-	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	
	R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	
Face to face (mm)	L	79	79	92	111	120	152	172	200	
Height (mm)	H	61	61	61	78	84	103	118	132	
Flow port dimension (mm)	d	7	9	13	17.5	23	30	35	46	
Weight (Kg)		1.2	1.3	1.5	30	3.9	6.0	10	12	

Bolted bonnet,full port & reducing port, Threaded, but-welded or socket welded ends;design to BS5352

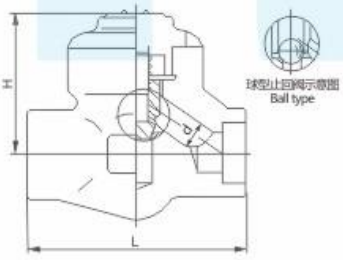
CL900-CL1500



Specification (NPS)	F.P			3/8	3/4	1	1 1/4	1 1/2	2	
	R.P		1/4	3/8	1/2	3/4	1	1/4	1 1/2	2
Face to face (mm)	L	Lift	92	111	111	120	152	172	200	
		Swing	92	111	111	120	120	140	178	
Height (mm)	H	Lift	61	78	78	84	103	118	132	
		Swing	61	78	78	84	101	120	133	
Flow port dimension (mm)	d	Lift	7	12	15	20	28	32	40	
		Swing	8	10.5	13.5	18	24	29	45	
Weight (Kg)		Lift	1.5	3.4	3.3	4.2	6.3	10.5	12.5	
		Swing	1.5	3.3	3.4	4.2	5.0	8.5	10.9	

Bolted bonnet,full port & reducing port, Threaded, but-welded or socket welded ends;design to BS5352

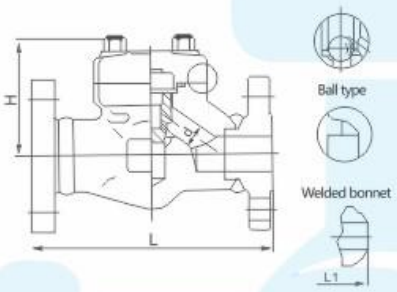
CL900-CL1500



Specification (NPS)	F.P	-	1/2	3/4	1	1 1/4	1 1/2	2		
	R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	
Face to face (mm)	L	92	111	111	120	152	172	200		
Height (mm)	H	61	78	78	84	103	118	132		
Flow port dimension (mm)	d	7	12	15	20	28	32	40		
Weight (Kg)		1.3	3.1	3.1	3.9	5.8	10.0	11.5		

Bolted bonnet,full port & reducing port, Threaded, but-welded or socket welded ends;design to BS5352

FLANGE AND BUTT WELD CHECK VALVE



CL150 300 600

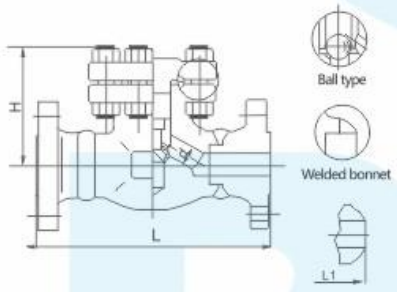
Specification (NPS)			R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face (mm)	CL150		L(RF) L1(BW)	-	-	108	118	127	140	165	203
	CL300			-	-	153	178	203	216	229	267
	CL600			-	-	165	191	216	229	241	292
Height (mm)	CL150		H	-	-	77	81	93	95	103	118
	CL300/CL600			-	-	61	78	84	101	120	133
Flow port dimension (mm)			d	-	-	10	13	17.5	23	30	35
Weight (Kg)	CL150	RF		-	-	3.6	4.6	8.5	9.2	12.5	14.8
		BW		-	-	3.0	3.6	7.6	8.5	11.3	13.6
	CL300	RF		-	-	3.7	4.8	8.8	9.6	13.7	17.8
		BW		-	-	3.2	4.3	8.0	8.6	12.7	16.2
	CL600	RF		-	-	4.0	5.8	9.5	10.4	15.6	24.5
		BW		-	-	3.4	5.1	8.8	9.2	14.8	22.5

Bolted bonnet reducing port , Flange-weided or but-welded ends;design to BS5352

CL150-300-600

Specification (NPS)			R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face (mm)	CL150		L(RF) L1(BW)	-	-	108	118	127	140	165	203
	CL300			-	-	153	178	203	216	229	267
	CL600			-	-	165	191	216	229	241	292
Height (mm)	CL150		H	-	-	77	81	93	95	103	118
	CL300/CL600			-	-	61	78	84	101	120	133
Flow port dimension (mm)			d	-	-	10.5	13.5	18	24	29	36.5
Weight (Kg)	CL150	RF		-	-	3.6	4.6	8.5	9.2	12.5	14.8
		BW		-	-	3.0	3.6	7.6	8.5	11.3	13.6
	CL300	RF		-	-	3.7	4.8	8.8	9.6	13.7	17.8
		BW		-	-	3.2	4.3	8.0	8.6	12.7	16.2
	CL600	RF		-	-	4.0	5.8	9.5	10.4	15.6	24.5
		BW		-	-	3.4	5.1	8.8	9.2	14.8	22.5

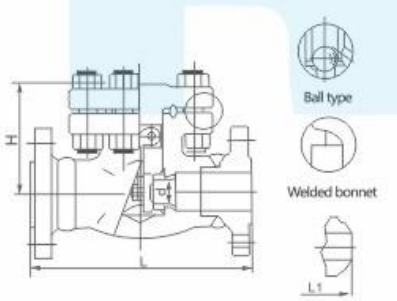
Bolted bonnet reducing port , Flange-weided or but-welded ends;design to BS5352



CL150-300-600

Specification (NPS)			R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face (mm)	CL150		L(RF) L1(BW)	-	-	108	118	127	140	165	203
	CL300			-	-	153	178	203	216	229	267
	CL600			-	-	165	191	216	229	241	292
Height (mm)	CL150		H	-	-	77	81	93	95	103	118
	CL300/CL600			-	-	61	78	84	101	120	133
Flow port dimension (mm)			d	-	-	10	13	17.5	23	30	35
Weight (Kg)	CL150	RF		-	-	3.2	3.5	4.6	5.2	7.0	16
		BW		-	-	2.8	3.0	4.0	4.6	6.3	15
	CL300	RF		-	-	4.6	6.1	9.1	12	16	21
		BW		-	-	4.1	5.7	8.4	11.2	14.5	19.5
	CL600	RF		-	-	4.8	6.3	9.3	13	16.5	22
		BW		-	-	4.4	5.9	8.7	12.1	15.8	20.8

Bolted bonnet reducing port , Flange-weided or but-welded ends;design to BS5352



CL150 300 600

Specification (NPS)			R.P	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face (mm)	CL150		L(RF) L1(BW)	-	-	108	118	127	140	165	203
	CL300			-	-	153	178	203	216	229	267
	CL600			-	-	165	191	216	229	241	292
Height (mm)	CL150		H	-	-	77	81	93	95	103	118
	CL300/CL600			-	-	61	78	84	101	120	133
Flow port dimension (mm)			d	-	-	10.5	13.5	18	24	29	36.5
Weight (Kg)	CL150	RF		-	-	3.6	4.6	8.5	9.2	12.5	14.8
		BW		-	-	3.0	3.6	7.6	8.5	11.3	13.6
	CL300	RF		-	-	3.7	4.8	8.8	9.6	13.7	17.8
		BW		-	-	3.2	4.3	8.0	8.6	12.7	16.2
	CL600	RF		-	-	4.0	5.8	9.5	10.4	15.6	24.5
		BW		-	-	3.4	5.1	8.8	9.2	14.8	22.5

Bolted bonnet reducing port , Flange-weided or but-welded ends;design to BS5352