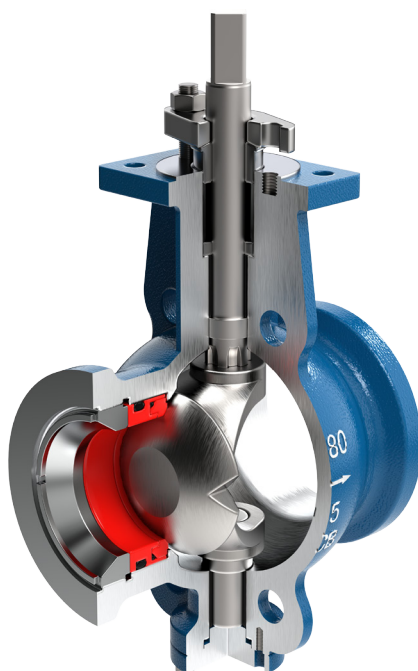


V Port Segment Ball Valves

Type VA3033.V

V port segment ball valve is concentric segmental ball valve for modulating and cutting-off applications. V-notch cut at disc makes rangeability larger and creates shearing effect by disc and seal ring. Therefore, suitable to large rangeability service and/or control of fluids with fiber and/or slurry.



TECHNICAL PARAMETERS

Nominal Dimensions	DN 25 (1") – DN 600 (12")	Leakage Class (IEC60534 – 4)	class V – metal seat standard class VI – optional with soft seats
Nominal Pressure	PN 10 – PN 63 Class 150 – Class 600	Body Material	carbon steel A216 WCB stainless steel AST A351 CF8M stainless steel CF8
Working Temperature Range	-40°C to + 425°C	Inner Parts Material	stainless steel 17-4PH stainless steel 1.4571 stainless steel 1.4571 + Stellite stainless steel 1.4057 stainless steel 1.4057 + heat treated stainless steel CF8
Flow Characteristic	equal percent	Connection	flanged, wafer
Flow Coefficient kvs	27 – 23000 [m3.h-1]	Actuator Types	pneumatic diaphragm or piston electric, electro-hydraulic, hydraulic

V PORT SEGMENT BALL VALVES

DESIGN FEATURES

1. Body

Single-piece body prevents leaks caused by separate flanges or locking rings.

2. Stem

Stem is finely ground to match actuator excellently, which prevents rocking motion and potential failure of the v-port segmented valve.

3. Self-lubricating bearings

The upper and lower valve stems are fixed by self-lubricating bearings, which have high rotation precision and good rotation stability.

4. V-port segment ball

Designed with a specially shaped V-notch to allow the valve to have approximately equal percentage flow characteristics. At the same time, a large shear force will be generated between the segment ball and the seat during the movement.

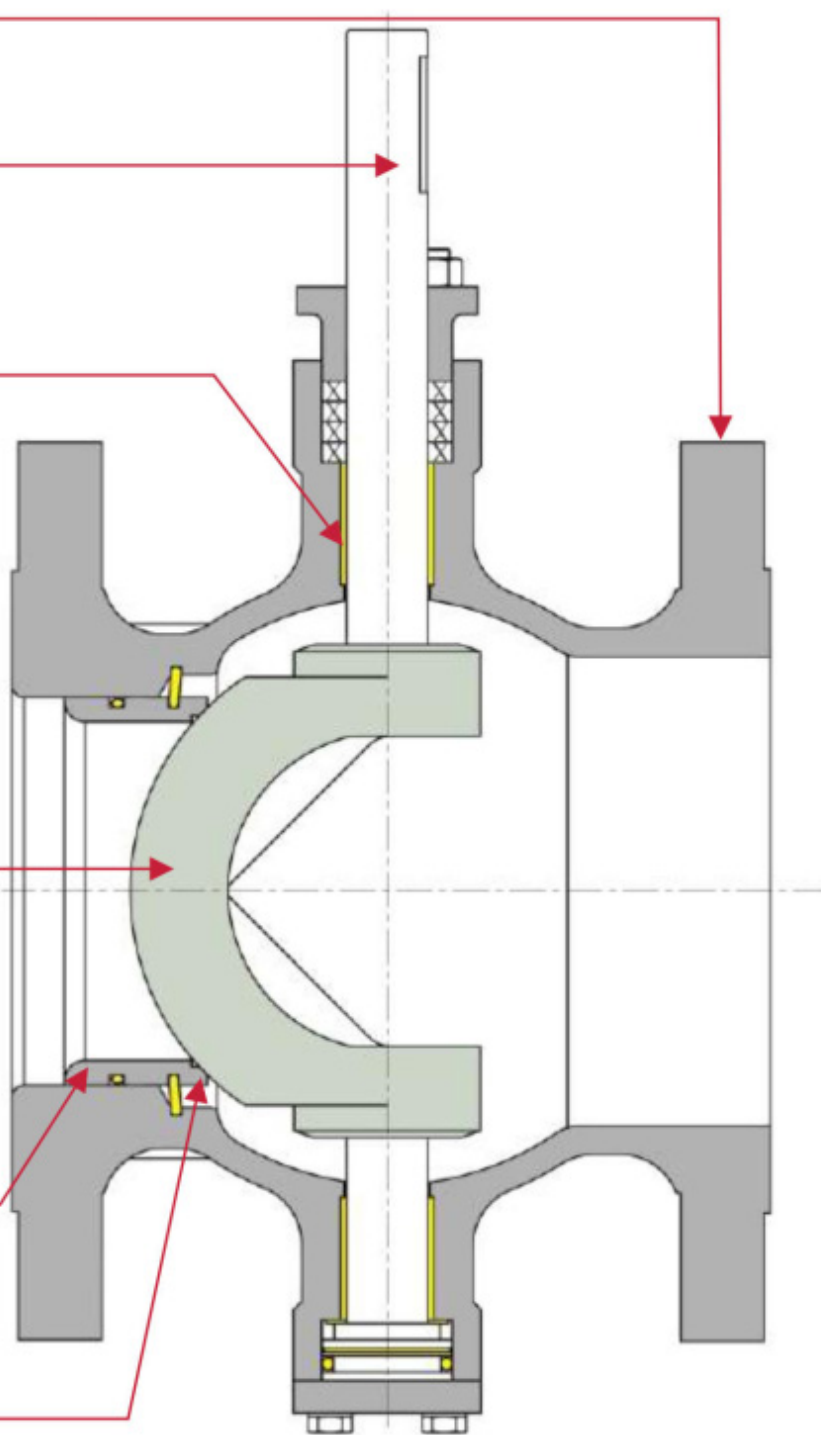
It has excellent wiping performance and is especially suitable for applications with viscous media, fibers and solid particles.

5. Seat

The valve seat is preloaded by a disc spring, so that the seat is always in close contact with the segment ball, and the sealing performance is good, it can automatically compensate the sealing pair, ensure reliable sealing.

6. Seal Surface

Nitriding/Tungsten Carbide/Stellite Alloy/Nickle Base Alloy plating are available for abrasive media.



STANDARD SPECIFICATION

Standard Specification	
Type	V port segment ball valve
Body size	1"~20"(DN25~DN500)
Seat form	Reduced bore
Plug form	Segmental ball disc with V-notch cut.
Body rating	ANSI Class 150-300 PN 16-40
Body connections	Flanged (RF): 1"~20"(DN25~DN500) Wafer: 1"~10"(DN25~DN250)
Body & Bonnet Material	WCB, CF8, CF8M , and other alloy steels.
Trim Material Trim treatment	See Table 1.
Temp, range	Soft seat : -29~+150°C Metal seat : -29~+350°C
Face to face	Flanged: ISA S75.04, IEC/DIN 534-3-2 Wafer: Manufacturer's standard
Painting	Silver, or other specified color. In the case of stainless steel body, no painting is standard.
Actuator type	Manual, Pneumatic, Electric
Performance	
Rated Cv	See Table 2.
Flow characteristics	Approximate EQ%
Rangeability	200:1
Seat Leakage	ANSI Class V(Metal seat) ANSI Class VI(Soft seat)
Valve torque	See Table 3.

BODY STRUCTURE

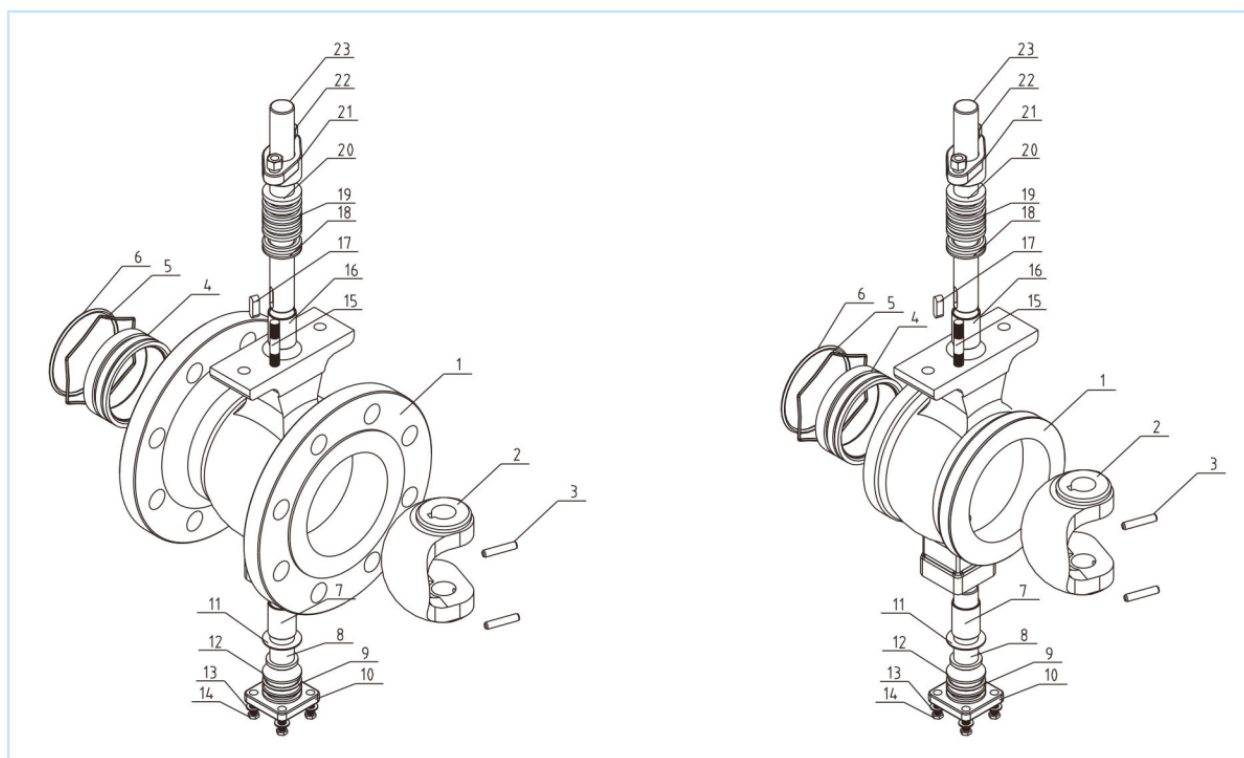
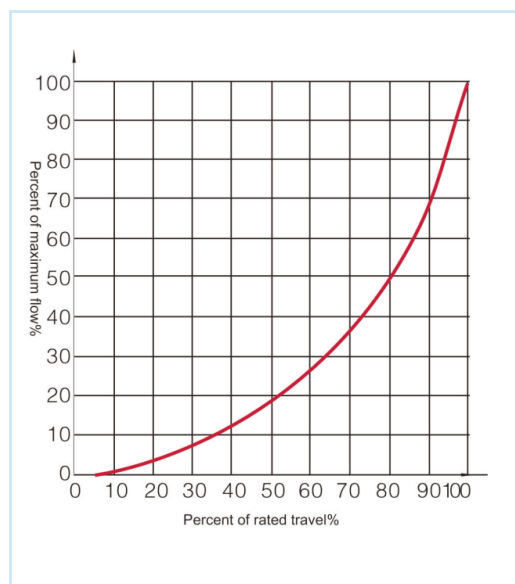
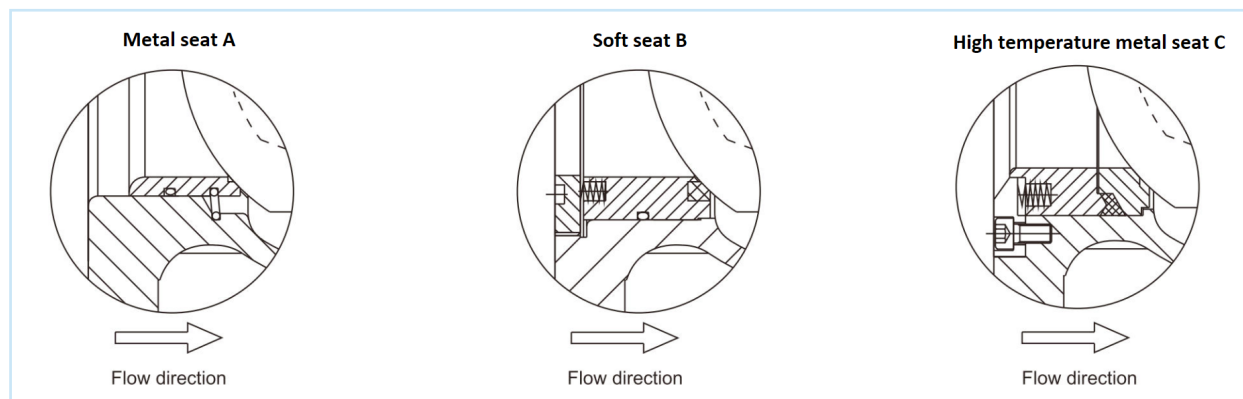


TABLE 1. MATERIAL LIST

Item No.	Part name	Material		
1	Body	WCB	CF8	CF8M
2	V port segment ball	CF8+Hcr	CF8+Hcr	CF8M+Hcr
3	Pin	304	304	316
4	Seat	304+STL	304+STL	316+STL
5	Spring	316L		
6	O ring	Viton		
7	Bearing	304+PTFE	304+PTFE	316+PTFE
8	Lower stem	304	304	316
9	O ring	Viton		
10	Bottom gasket cover	WCB	CF8	CF8M
11/12	Gasket	PTFE	PTFE	PTFE
13	Washer	Q235	304	316
14/15	Bolt	B7	B8	B8M
16	Bearing	304+PTFE	304+PTFE	316+PTFE
17	Key	304	304	316
18/19/20	Packing	PTFE or Graphite		
21	Packing gland	WCB	CF8	CF8M
22	Nut	B7	B8	B8M
23	Upper stem	304	304	316

TABLE 2. RATED CV AND FLOW CHARACTERISTIC


Nominal size inch(mm)	Rated Cv EQ%	Nominal size inch (mm)	Rated Cv EQ%
1(25)	36	6(150)	1424
1 1/4(32)	56	8(200)	2176
1 1/2(40)	94	10(250)	3532
2(50)	152	12(300)	5732
2 1/2(65)	262	14(350)	8245
3(80)	358	16(400)	10651
4(100)	540	18(450)	12878
5(125)	906	20(500)	16343

SEAT OPTIONS


Part Name	Material			
	Metal seat A		Soft seat B	High temperature metal seat C
Seat	304/316+STL		PTFE	304/316+STL
Spring	17-7PH		17-7PH/316L	17-7PH/316L
V port segment ball	304/316+STL, Her, Nitriding, Tungsten Carbide			
O ring	Viton	High temp.Viton	Viton	Graphite
Packing	PTFE	Graphite	PTFE	Graphite
Temp, range °C	-29~150	-29~220	-29~150	-29~+350

TABLE 3. VALVE TORQUE(1.3 SAFETY FACTOR)

[Unit: N.m]

Nominal size inch(mm)	PN16 10 bar* Metal seat	PN16 10 bar* Soft seat	PN25 20 bar* Metal/Soft seat	PN40 30 bar* Metal/Soft seat	PN63 50 bar* Metal /Soft seat
1(25)	20	20	30	70	150
1 1/4(32)	25	25	36	90	230
1 1/2(40)	30	30	40	140	270
2(50)	35	35	42	150	520
2 1/2(65)	50	50	62	300	640
3(80)	60	80	95	300	640
4(100)	80	120	140	420	900
5(125)	110	180	220	600	1600
6(150)	170	300	360	950	1600
8(200)	240	500	590	1500	2700
10(250)	430	900	1100	2300	4700
12(300)	600	1400	1500	3500	7000
14(350)	1200	2000	2500	6200	9300
16(400)	1800	3200	4000	7200	13000
18(450)	3000	4500	5600	11000	17600
20(500)	4600	6500	8200	12500	22000

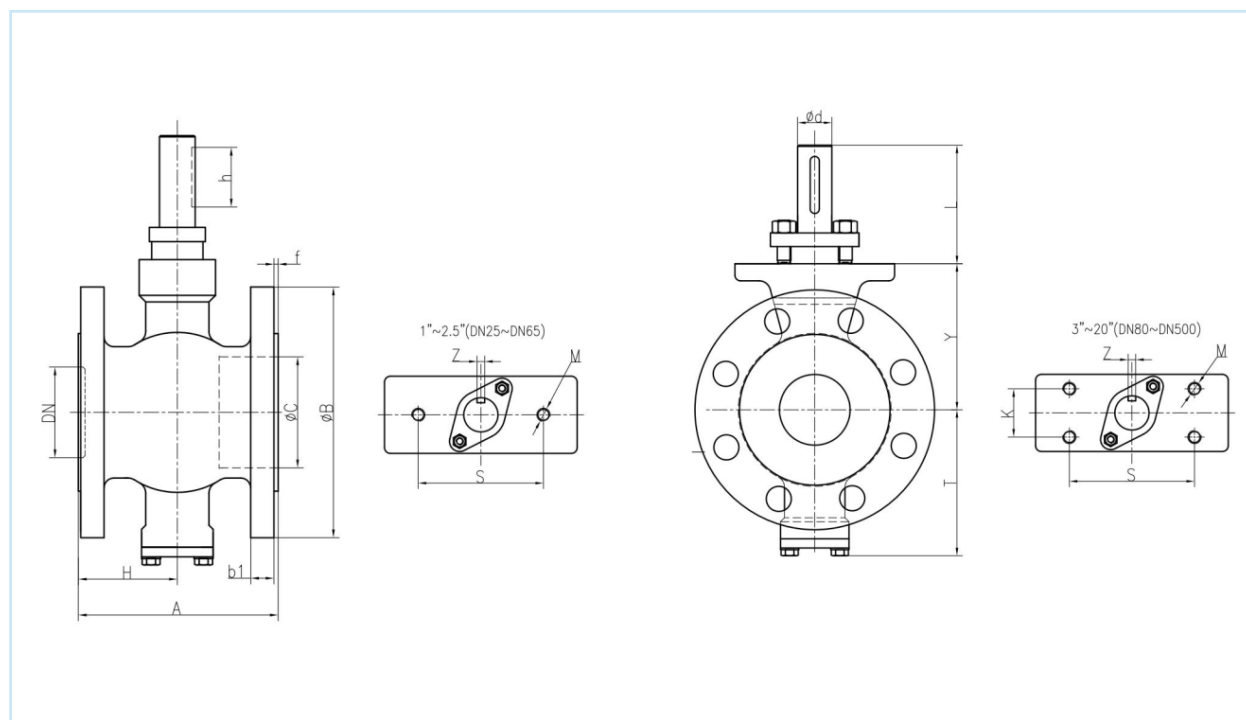
[Unit: N.m]

Nominal size inch(mm)	150LB 10 bar* Metal seat	150LB 10 bar* Soft seat	150LB 20 bar* Metal/Soft seat	300LB 35 bar* Metal/Soft seat	600LB 70 bar* Metal /Soft seat
1(25)	20	20	30	85	210
1 1/4(32)	25	25	36	105	320
1 1/2(40)	30	30	40	180	380
2(50)	35	35	42	190	730
2 1/2(65)	50	50	62	380	930
3(80)	60	80	95	380	1000
4(100)	80	120	140	530	1000
5(125)	110	180	220	720	2200
6(150)	170	300	360	1180	2500
8(200)	240	500	590	1750	3800
10(250)	430	900	1100	2800	6500
12(300)	600	1400	1500	4000	10000
14(350)	1200	2000	2500	7800	13100
16(400)	1800	3200	4000	9000	18000
18(450)	3000	4500	5600	13700	24000
20(500)	4600	6500	8200	15500	31000

Note(1):*The maximum shut-off pressure

DIMENSIONS AND WEIGHT

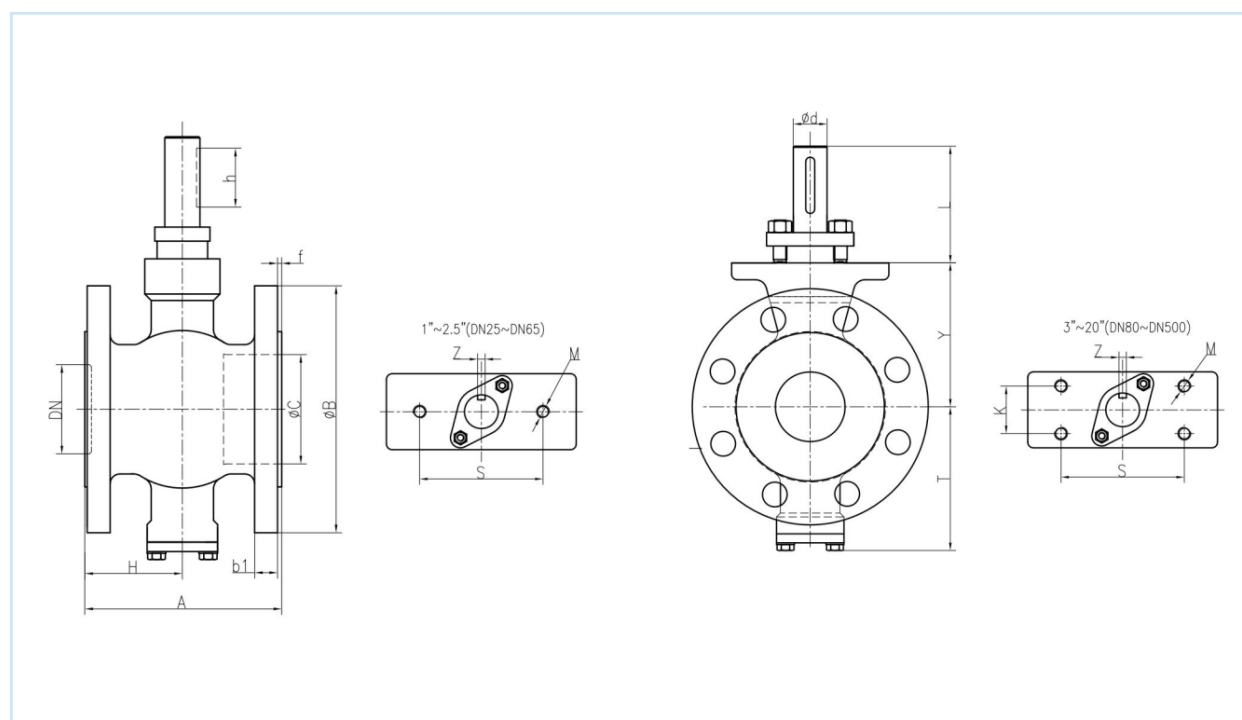
TABLE 4. DIN PN16 FLANGED



[Unit: mm]															Weight (kg)
Size (mm)	A	B	b1	f	C	T	Y	L	d	h	S	K	M	Z	
25	102	115	16	2	38	81	73	75	16	35	75	/	2-M10	5	4.9
32	102	140	18	2	45	86	78	75	16	35	75	/	2-M10	5	6.6
40	114	150	18	2	50	90	80	75	16	35	75	/	2-M10	5	7.6
50	124	165	20	2	62	93	90	75	16	35	75	/	2-M10	5	9.5
65	145	185	20	2	73	108	105	75	16	35	75	/	2-M10	5	12.4
80	165	200	20	2	90	123	118	75	20	35	90	28	4-M10	6	15.5
100	194	220	22	2	115	138	130	75	20	35	90	28	4-M10	6	20.6
125	194	250	22	2	134	148	145	80	25	40	90	28	4-M10	8	28.6
150	229	285	24	2	164	170	170	94	30	50	110	40	4-M12	8	42.5
200	243	340	24	2	206	200	201	94	30	50	110	40	4-M12	8	59.5
250	297	405	26	2	260	240	237	98	40	60	135	40	4-M16	12	99
300	338	460	28	2	316	286	282	98	40	60	135	40	4-M16	12	148
350	400	520	30	2	372	330	337	125	50	60	140	64	4-M16	14	216
400	400	580	32	2	420	367	372	172	60	80	170	80	4-M20	18	285
450	520	640	40	2	470	422	432	172	70	90	190	90	4-M24	20	370
500	600	715	44	2	516	490	498	180	80	100	190	90	4-M24	22	480

DIMENSIONS AND WEIGHT

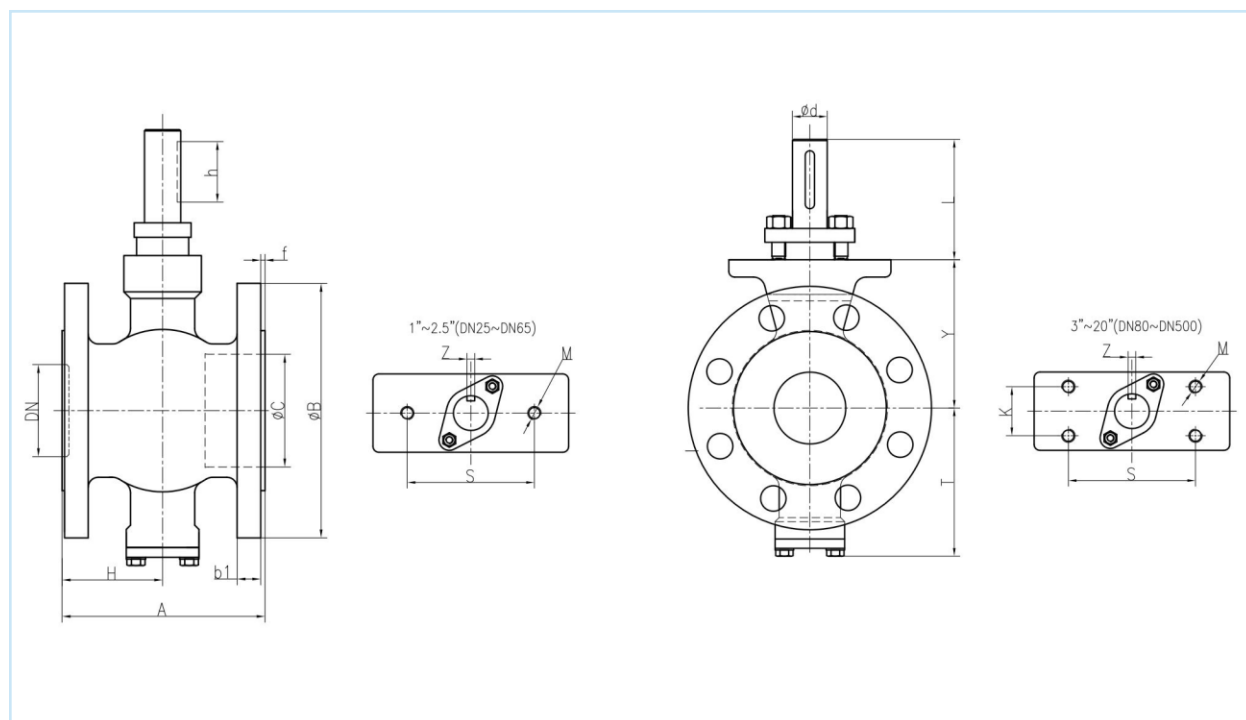
TABLE 5. DIN PN25 FLANGED



[Unit: mm]															Weight (kg)
Size (mm)	A	B	b1	f	C	T	Y	L	d	h	S	K	M	Z	
25	102	115	16	2	40	88	86	75	20	35	90	28	4-M10	6	5.4
32	102	140	18	2	48	90	90	75	20	35	90	28	4-M10	6	7.3
40	114	150	18	2	56	95	93	80	25	35	90	28	4-M10	8	8.4
50	124	165	20	2	65	98	98	80	25	35	90	28	4-M10	8	10.5
65	145	185	22	2	81	130	125	95	30	35	110	40	4-M12	8	13.2
80	165	200	24	2	95	128	128	95	30	35	110	40	4-M12	8	17.7
100	194	235	24	2	115	142	142	95	30	35	110	40	4-M12	8	24.7
125	194	270	26	2	138	175	170	100	40	40	135	40	4-M16	12	34.5
150	229	300	28	2	170	215	215	125	50	50	140	64	4-M16	14	50.7
200	243	360	30	2	208	228	228	125	50	50	140	64	4-M16	14	72.7
250	297	425	32	2	265	260	260	150	60	60	170	80	4-M20	18	116
300	338	485	34	2	320	310	310	150	60	60	170	80	4-M20	18	169

DIMENSIONS AND WEIGHT

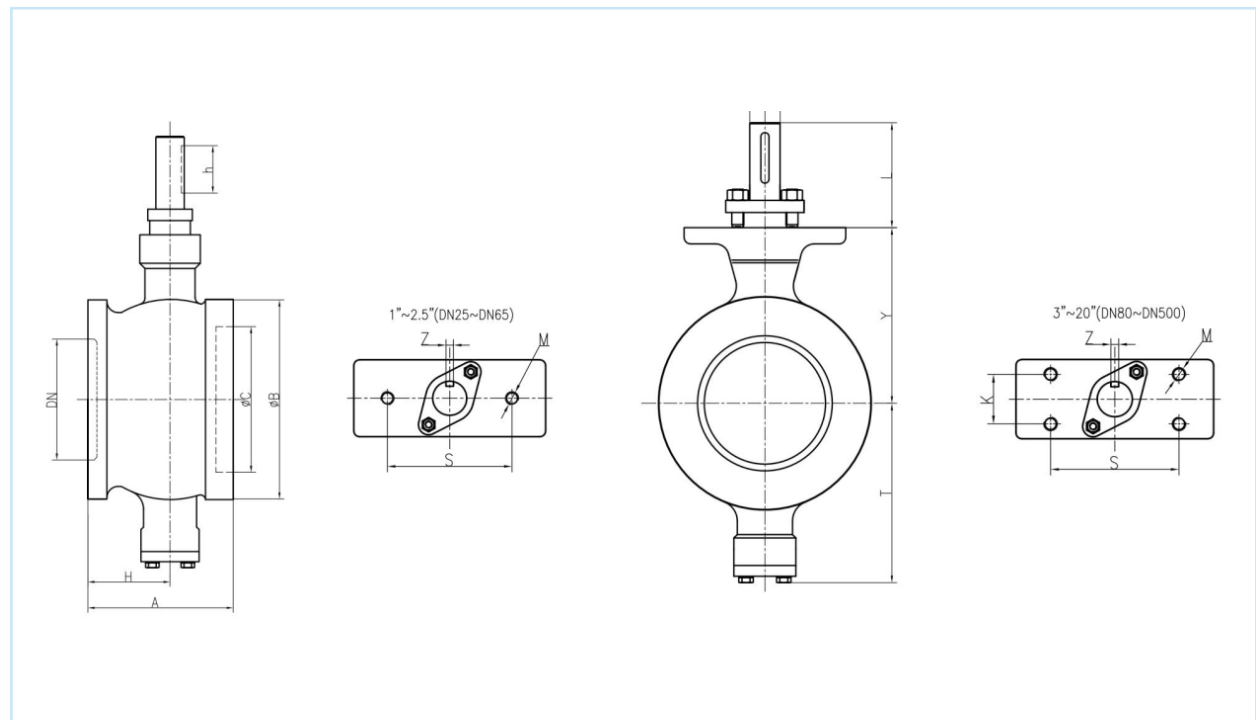
TABLE 6. ANSI150 FLANGED



[Unit: mm]															Weight (kg)
Size inch (mm)	A	B	b1	f	C	T	Y	L	d	h	S	K	M	Z	
1"	102	108	14.5	2	38	81	73	75	16	35	75	/	2-M10	5	5.4
1 1/4"	102	115	14.5	2	45	86	78	75	16	35	75	/	2-M10	5	7.3
1 1/2"	114	127	14.5	2	50	90	80	75	16	35	75	/	2-M10	5	8.4
2"	124	152	16.3	2	62	93	90	75	16	35	75	/	2-M10	5	10.5
2 1/2"	145	180	18	2	73	1408	105	75	16	35	75	/	2-M10	5	13.2
3"	165	191	19.5	2	90	123	115	75	20	35	90	28	4-M10	6	17.7
4"	194	230	24	2	115	138	130	75	20	35	90	28	4-M10	6	24.7
5"	194	255	24.3	2	134	148	145	50	25	40	90	28	4-M10	8	34.5
6"	229	280	26	2	164	170	170	94	30	50	110	40	4-M12	8	50.7
8"	243	340	29	2	206	200	201	94	30	50	110	40	4-M12	8	72.7
10"	297	405	30.6	2	260	240	137	98	40	6	135	40	4-M16	12	116
12"	338	485	32.2	2	316	186	182	98	40	060	135	40	4-M16	12	169
14"	400	535	25.4	2	372	330	337	125	50	60	140	64	4-M16	14	249
16"	400	595	37	2	420	367	372	172	60	80	170	80	4-M20	18	326
18"	520	635	40.1	2	470	422	432	172	70	90	190	90	4-M24	20	410
20"	600	700	44	2	516	490	498	180	80	100	190	90	4-M24	22	510

DIMENSIONS AND WEIGHT

TABLE 7. DIN PN10/16/25, ANSI 150 WAFER



[Unit: mm]														
Size inch (mm)	A	B	C	T	Y	L	d	h	S	K	M	Z	Weight(kg)	
													PN10/16	PN25,150LB
1(25)	50	68	38	81	73	75	16	35	75	/	2-M10	5	2.6	2.9
1 1/4(32)	60	76	45	86	78	75	16	35	75	/	2-M10	5	3	3.3
1 1/2(40)	60	84	50	90	80	75	16	35	75	/	2-M10	5	3.5	4
2(50)	75	100	62	93	90	75	16	35	75	/	2-M10	5	4.5	5
2 1/2(65)	100	118	73	108	105	75	16	35	75	/	2-M10	5	6	7
3(80)	100	132	90	123	115	75	20	35	90	8	4-M10	6	8	9
4(100)	115	158	115	138	130	75	20	35	90	28	4-M10	6	12	13
5(125)	129	184	134	148	145	80	25	40	90	28	4-M10	8	19	20
6(150)	160	216	164	170	170	94	30	50	110	40	4-M12	8	30	33
8(200)	200	268	206	200	201	94	30	50	110	40	4-M12	8	47	51
10(250)	240	326	260	240	237	98	40	60	135	40	4-M16	12	79	87

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