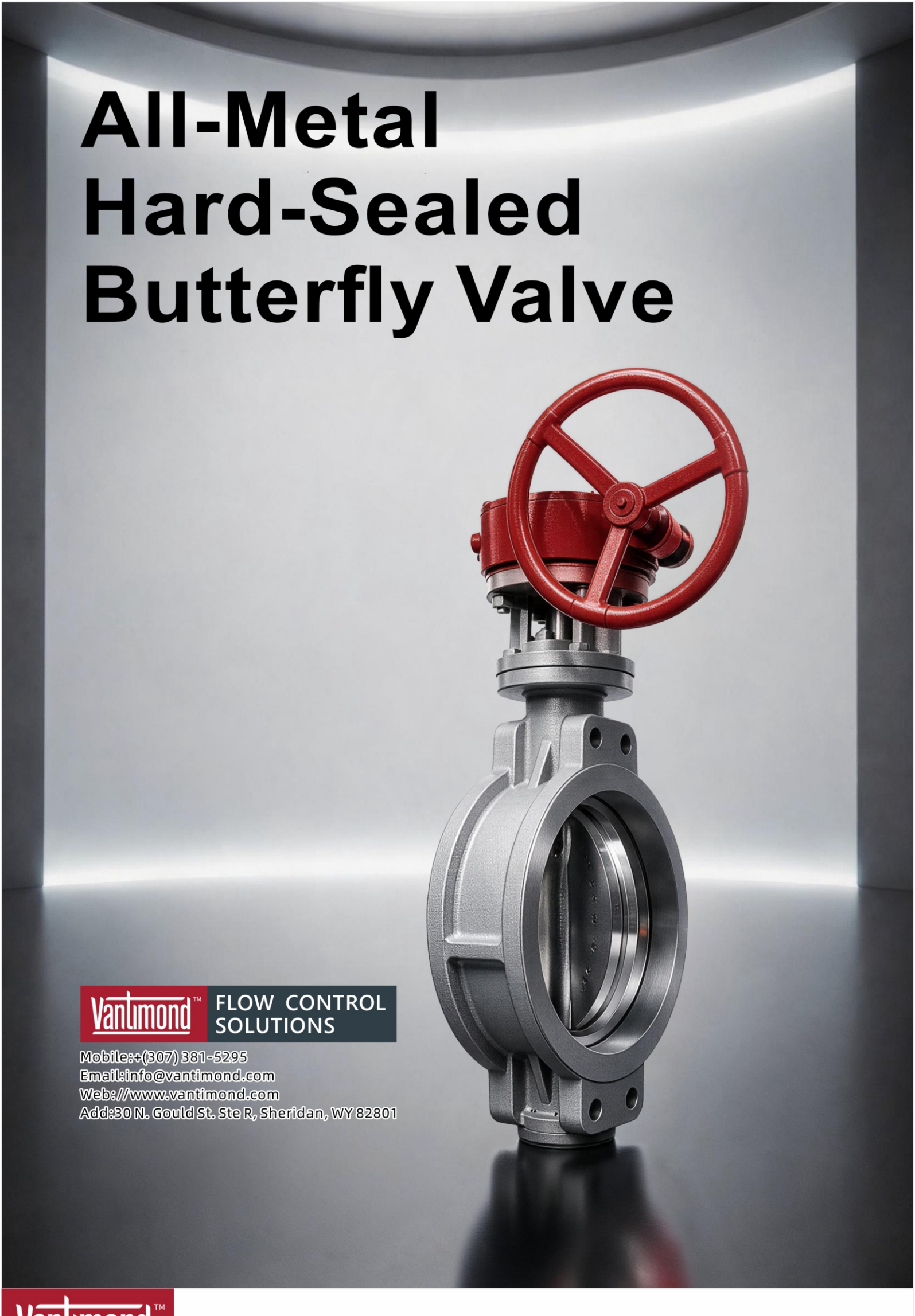
All-Metal Hard-Sealed Butterfly Valve



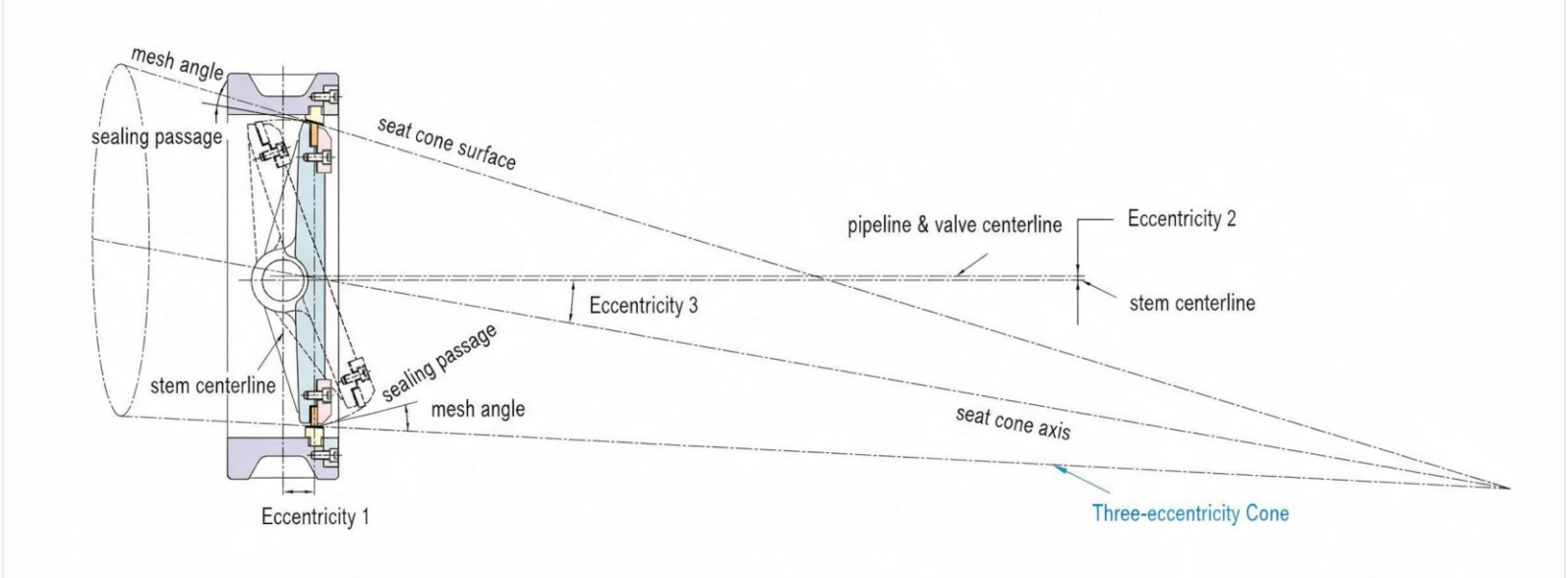
Vantimond FLOW CONTROL SOLUTIONS
Mobile:+1(307) 381-5285
Email:info@vantimond.com
Web://www.vantimond.com
Add:30 N. Gould St. Ste R, Sheridan, WY 82801

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WORKING PRINCIPLE

The triple eccentric metal hard-sealed butterfly valve features bi-directional tight shut-off. Its triple eccentric design ensures the disc seal only contacts the seat when fully closed, virtually eliminating friction and wear. Through torque applied by the stem, uniform and consistent sealing around the seat is achieved.

(Triple Eccentric Structure Analysis Diagram)



TRIPLE ECCENTRIC GEOMETRY

Eccentric 1 The stem axis is positioned behind the seat axis, allowing the seal to make complete tight circumferential contact with the entire seat.

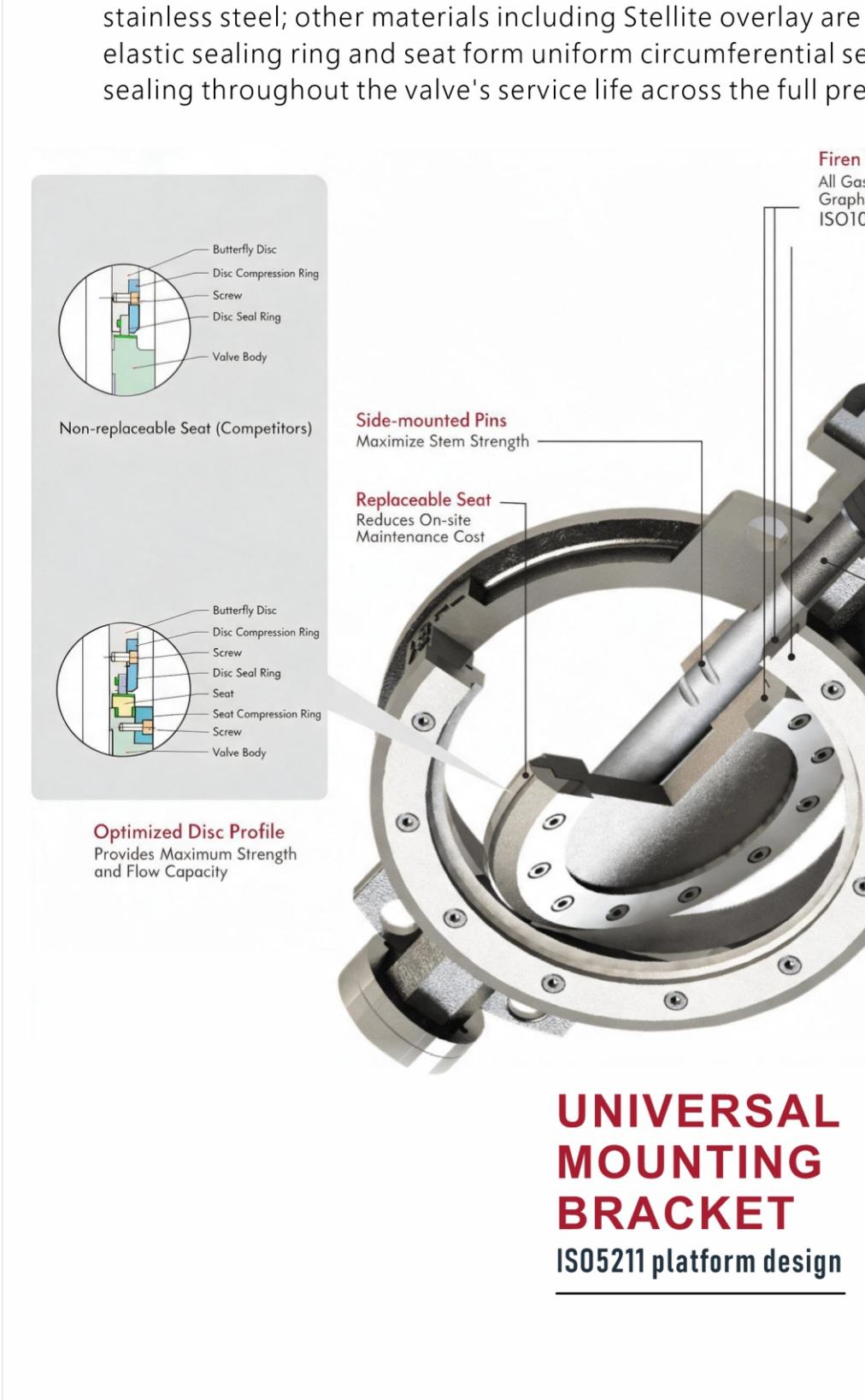
Eccentric 2 The stem centerline deviates from the pipe and valve centerlines, eliminating interference during valve opening and closing.

Eccentric 3 The seat cone axis deviates from the stem centerline, eliminating friction during opening and closing, and achieving uniform compression sealing around the entire seat.

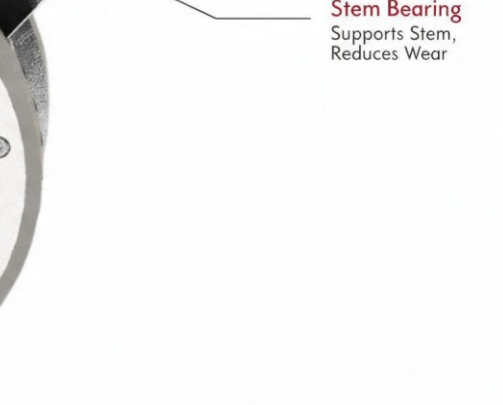
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PRODUCT INTRODUCTION

The K1 triple eccentric hard-sealed butterfly valve provides sealing at minimum torque; fire-safe is the unique feature of metal hard seat sealing. Standard seat and seal materials are stainless steel; other materials including Stellite overlay are also available. The all-metal elastic sealing ring and seat form uniform circumferential sealing pressure, ensuring sealing throughout the valve's service life across the full pressure/temperature range.



UNIVERSAL MOUNTING BRACKET
ISO5211 platform design



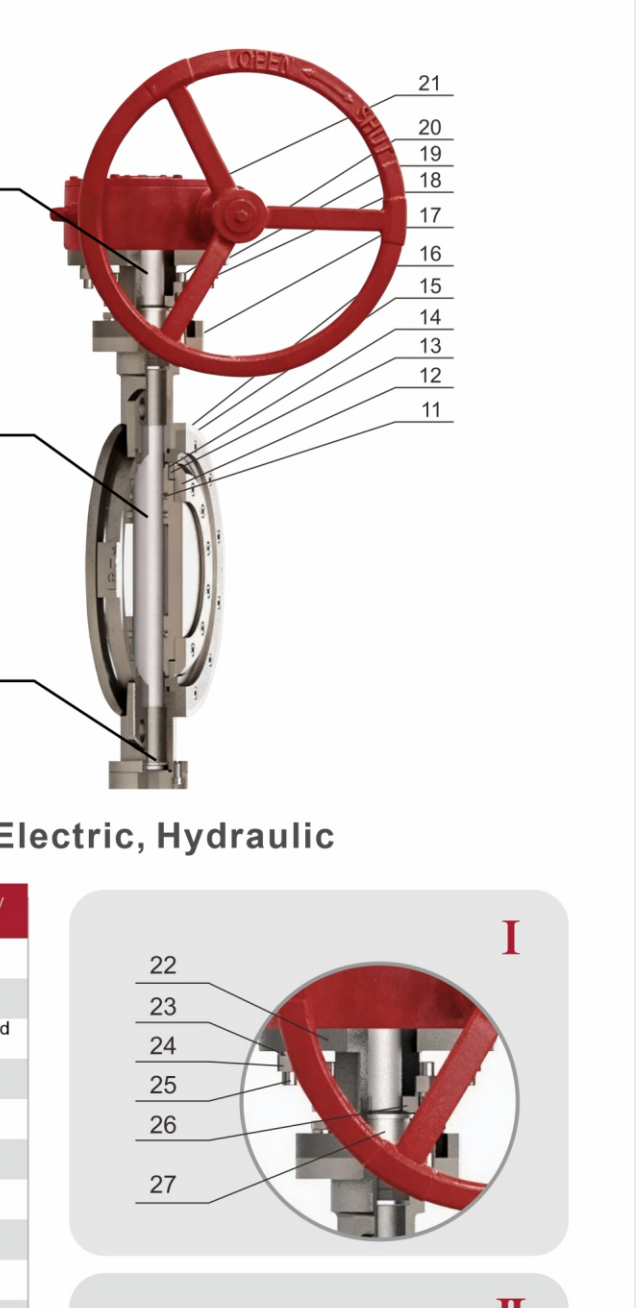
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VM-BT370 VM-BT371
VM-BT320 VM-BT321

Design Specifications (US Standard):

Design Standard:API609
Pressure Rating: CLASS150~300
Face-to-Face: API609
Flange End: ASME B16.5
Pressure Test: API598
Min. Wall Thickness: ASME B16.34
Applicable Temperature: -29°C~425°C

Other standard products also available



● Drive Type: Manual, Pneumatic, Electric, Hydraulic

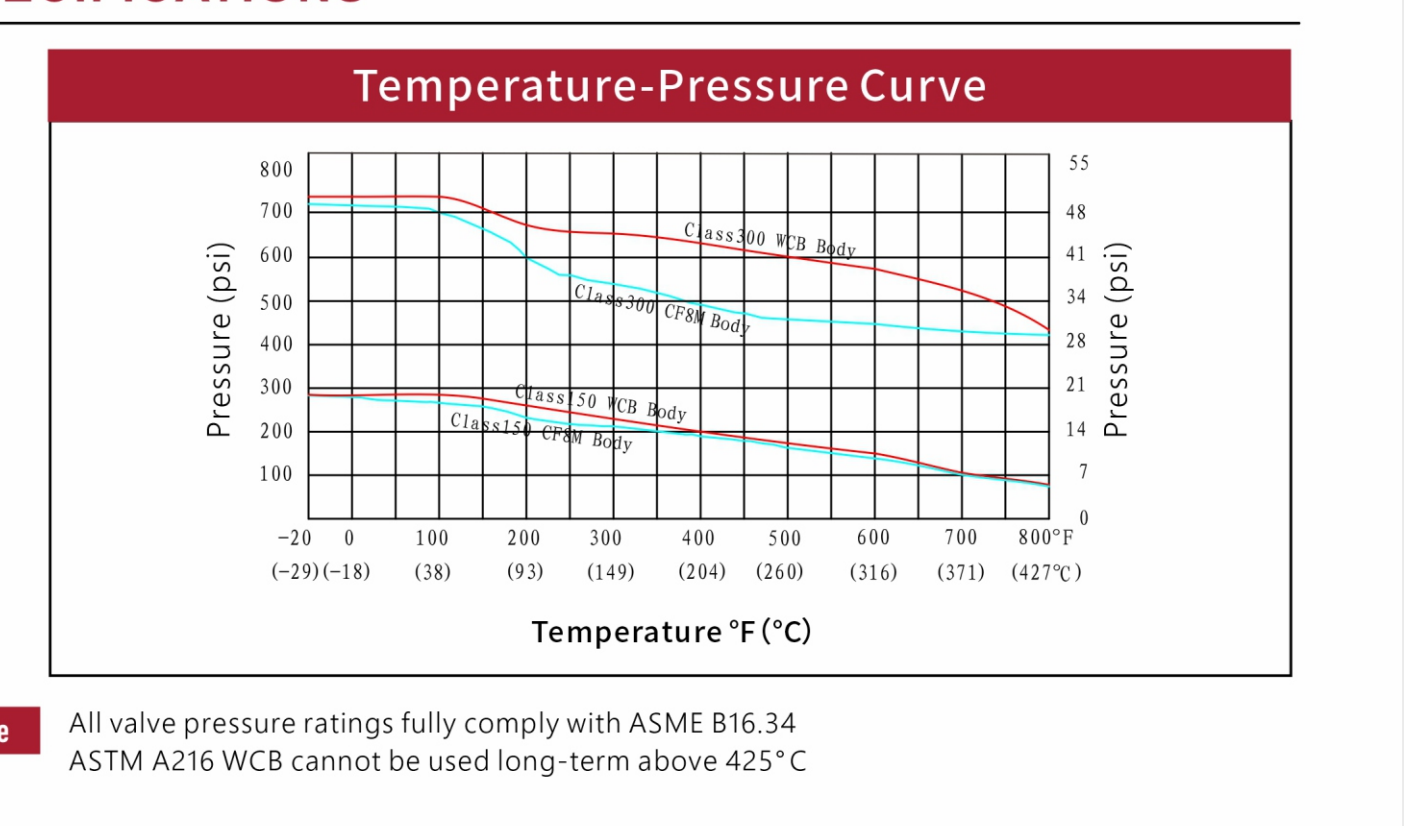
No.	Part Name	Carbon Steel Body Material	Stainless Steel Body Material
1	Bottom Cover	A105	F304/F316
2	Hex Socket Head Cap Screw	8.8	A2-70
3	Bottom Cover Gasket	304 + Spiral-wound Graphite	304 + Spiral-wound Graphite
4	Split Ring	304	304
5	Shaft Sleeve	316+QPQ	316+QPQ
6	Valve Body	WCB	CF8/CF8M
7	Hex Socket Head Cap Screw	A2-70	A2-70
8	Hex Socket Head Cap Screw	A2-70	A2-70
9	Stem	A276-410	17-4PH
10	Disc	WCB	CF8/CF8M
11	Taper Pin	329	329
12	Disc Retainer	A105	F304/F316
13	Disc Gasket	304 + Graphite (Composite Gasket)	304 + Graphite (Composite Gasket)
14	Disc Seal Ring	17-4PH/304+STL	17-4PH/316+STL
15	Body Gasket	304 + Graphite	304 + Graphite
16	Seat	F304+STL	F316+STL
17	Graphite Packing	Flexible Graphite	Flexible Graphite
18	Spring Washer	SUS301	SUS301
19	Nut	8	A2-70
20	Disc Bolt	8.8	A2-70
21	Full-Thread Bolt	Subassembly (Bought-out)	Subassembly (Bought-out)
22	Stent	WCB	WCB
23	Full-Thread Bolt	8.8	A2-70
24	Nut	8	A2-70
25	Spring Washer	SUS301	SUS301
26	Gland Follower	WCB	CF8/CF8M
27	Gland	A105	F304/F316



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TECHNICAL SPECIFICATIONS

Temperature-Pressure Curve



Note All valve pressure ratings fully comply with ASME B16.34. ASTM A216 WCB cannot be used long-term above 425°C.

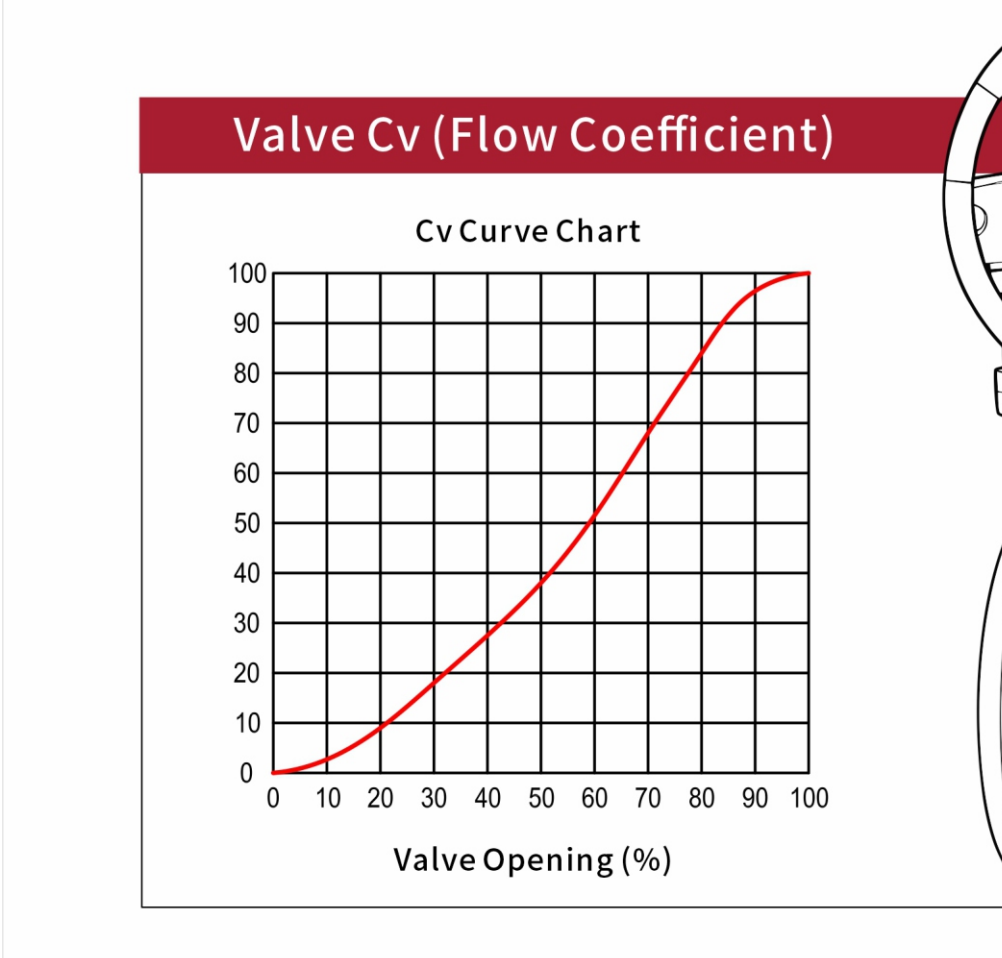
Reference Torque (N·m)

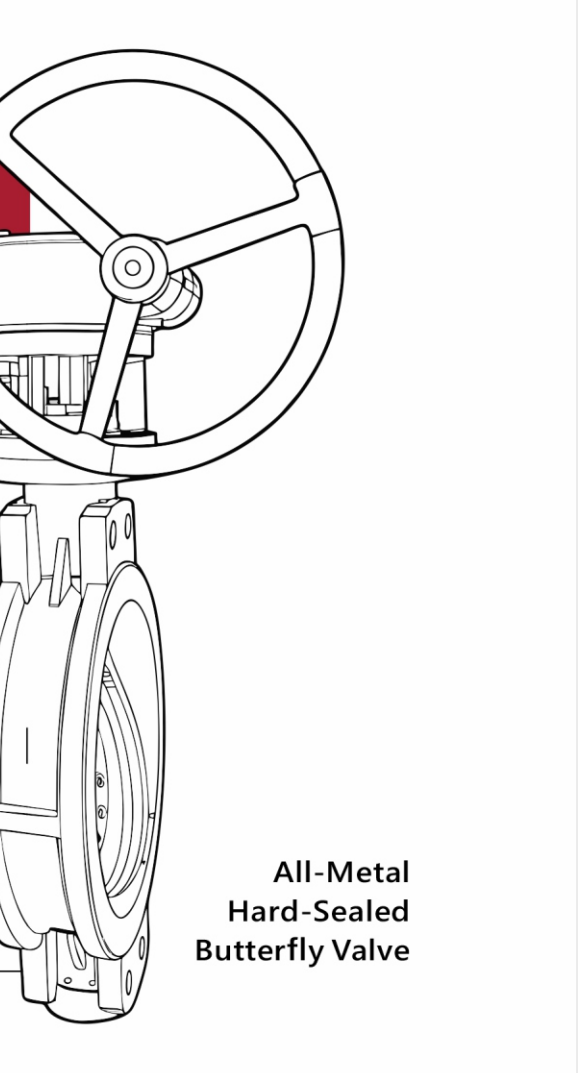
Valve Size		Pressure Differential (bar)			
		20		50	
NPS	DN	CLOSING	OPENING	CLOSING	OPENING
3	80	79	89	134	154
4	100	108	132	188	236
6	150	150	267	334	430
8	200	265	423	525	1063
10	250	475	750	969	1724
12	300	678	1122	1371	2537
14	350	818	1529	1655	3283
16	400	1078	2099	2186	5613
18	450	1371	2783	2770	6405
20	500	1490	3277	3000	8327
24	600	2162	5456	4324	12821
28	700	5458	18389	—	—
30	750	6259	25311	—	—
32	800	7219	28900	—	—
36	900	10632	36319	—	—
40	1000	13159	44889	—	—
42	1050	14611	57523	—	—
48	1200	22853	70641	—	—

Note
1. Reference torque values are based on room temperature with media flowing in the stem-forward direction.
2. For other pressure/specification torques, please contact us.
3. For actuator selection, multiply the listed torque by 1.3.

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Valve Cv (Flow Coefficient)





All-Metal Hard-Sealed Butterfly Valve

Class150

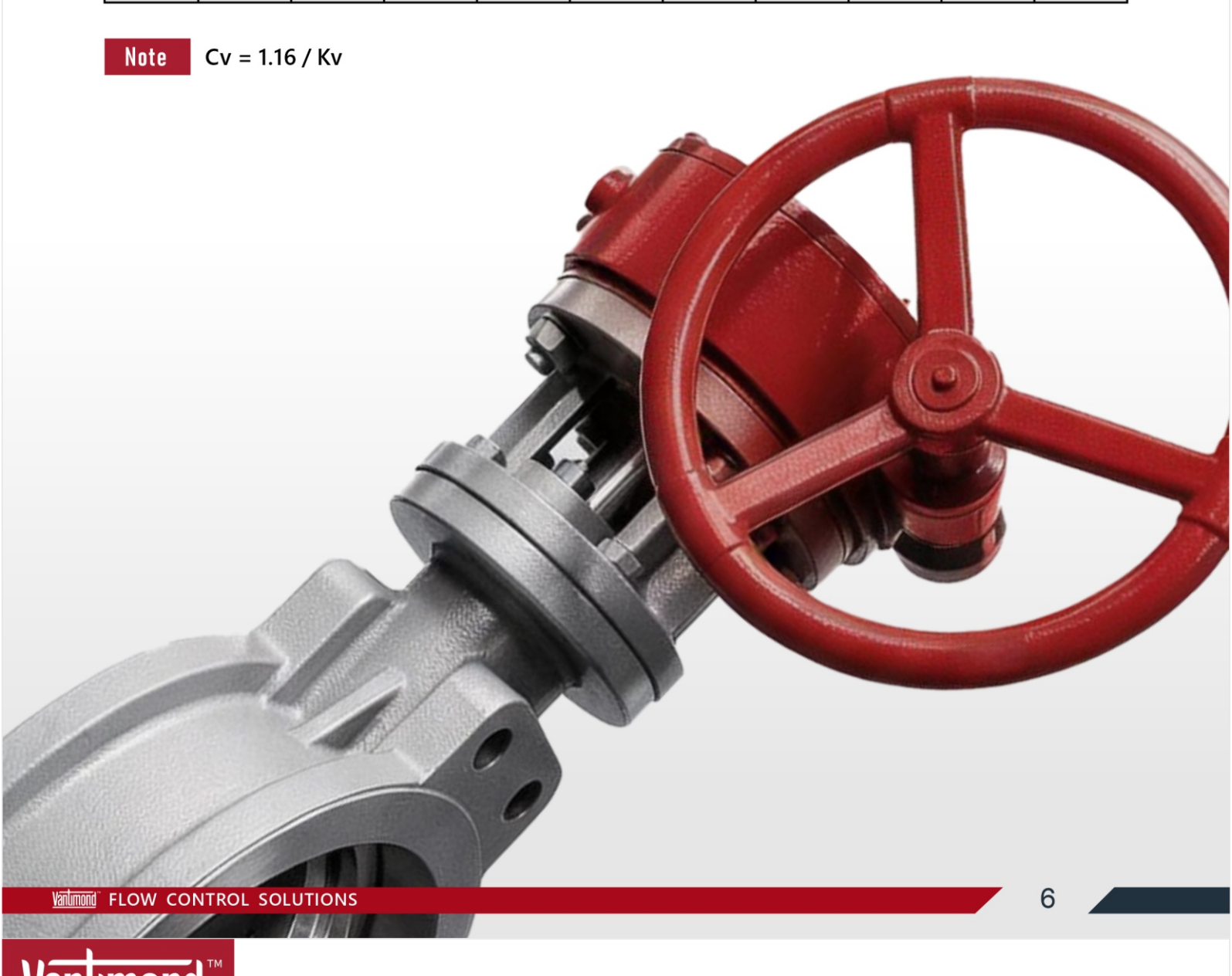
Valve Size	Disc Travel (%)									
NPS	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
3	10	23	37	53	75	99	123	136	146	155
4	19	44	77	123	163	213	276	335	351	369
6	36	108	185	263	370	507	688	875	1011	1063
8	55	172	315	462	626	889	1123	1423	1623	1678
10	103	255	468	846	1093	1378	1845	2371	2790	2956
12	166	415	701	1054	1515	2050	2720	3401	4038	4191
14	229	526	904	1304	1840	2833	3707	5517	7220	7527
16	383	554	988	1621	2552	3837	5590	7607	9442	10208
18	484	809	1470	2433	3680	5242	6921	8759	10657	12287
20	539	1342	2475	4000	6146	9166	12772	16189	20629	23338
24	688	1535	2662	4521	6776	10420	15895	22110	29294	30800
28	715	1725	3293	5724	9254	14274	21723	30037	33550	34650
30	748	1828	3489	6065	9803	15121	23014	31821	37664	39600
32	867	2247	4316	7943	12596	19674	29850	42130	46871	49280
36	1320	3025	5720	9790	15098	24090	32670	44017	60576	63690
40	1432	3190	6160	10120	16500	25520	39050	55000	67980	71500
42	1485	3460	6681	10976	17896	27679	42354	59654	73732	77550
48	1656	4000	7724	12689	20686	31998	48963	68961	85237	89650

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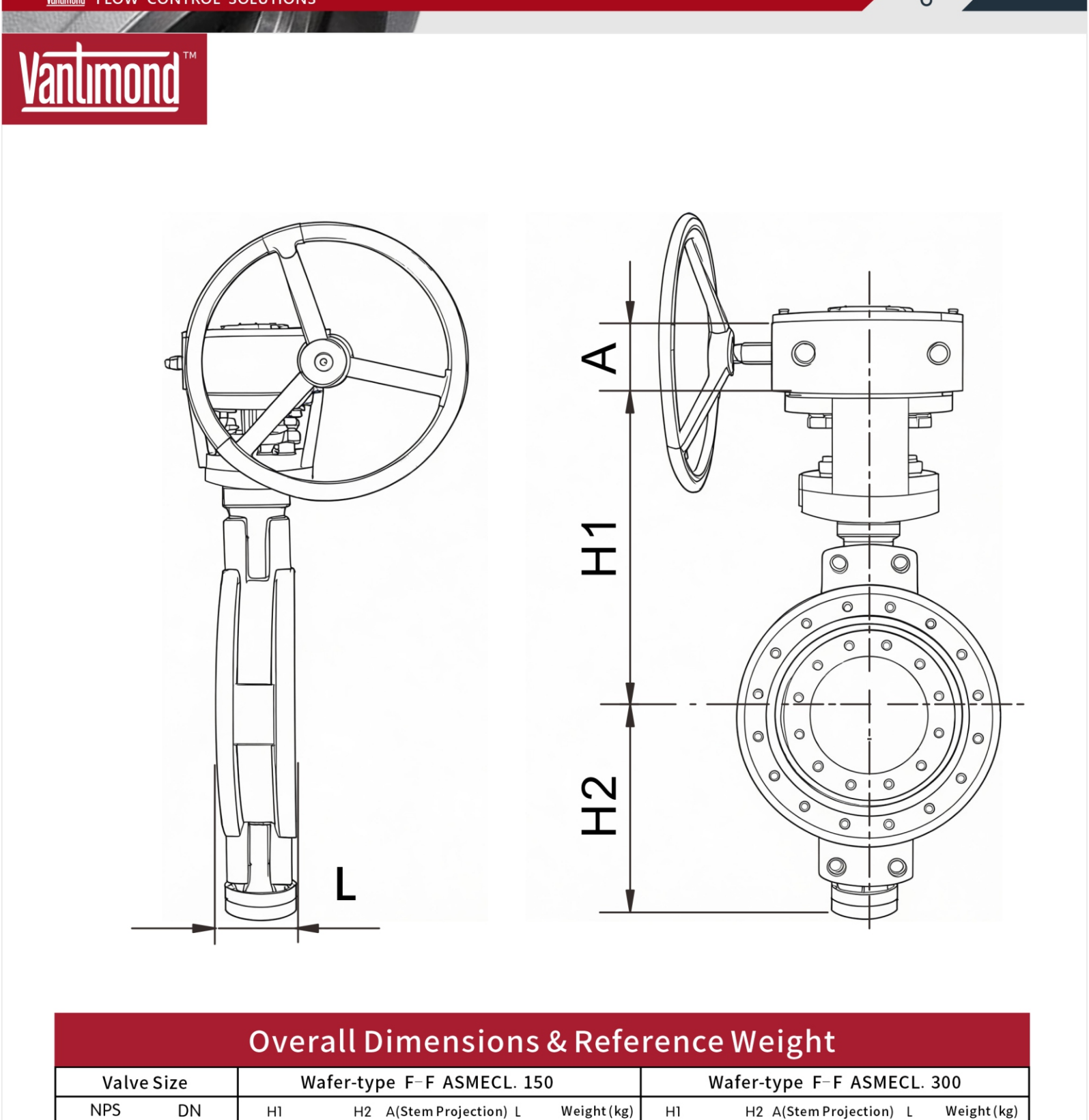
Class300

Valve Size	Disc Travel (%)									
NPS	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
3	9	17	30	48	64	94	120	130	141	150
4	14	42	74	118	132	177	205	227	245	260
6	33	86	161	254	313	418	483	567	646	661
8	52	95	279	415	605	847	1079	1190	1364	1390
10	101	152	451	682	986	1299	1593	1921	2609	2641
12	130	307	669	1035	1433	1918	2428	2885	3213	3425
14	205	398	706	1140	1654	2357	2879	3496	4311	4770
16	241	499	942	1604	2211	3529	4826	5939	7295	7636
18	286	726	1311	2177	2937	4698	6145	7662	9216	10029
20	385	1073	1816	2834	4320	6140	8415	10538	12934	14010
24	419	1087	2088	3713	5098	8078	10685	13416	16653	17992
28	472	1222	2300	3841	6000	10229	15752	22000	25905	26950
30	545	1394	2459	4322	6700	12210	19030	26180	31790	33330
32	550	1540	2970	5390	7800	13310	20460	29150	33990	35310
36	671	1738	3740	7040	11100	19360	29180	38610	44880	46750

Note Cv = 1.16 / Kv



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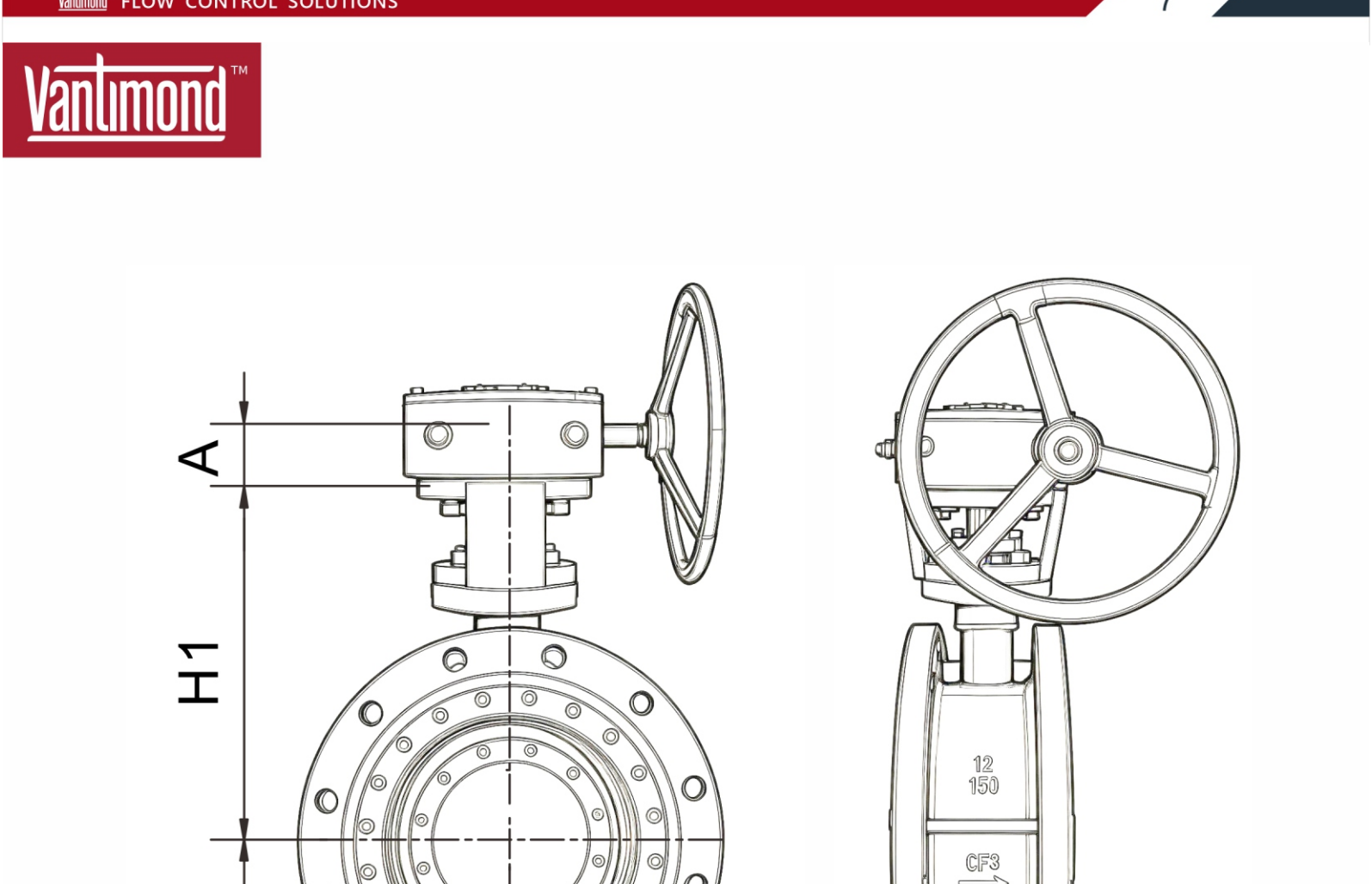


Overall Dimensions & Reference Weight

Valve Size		Wafer-type F-F ASMECL. 150					Wafer-type F-F ASMECL. 300				
NPS	DN	H1	H2	A(Stem Projection)	L	Weight (kg)	H1	H2	A(Stem Projection)	L	Weight (kg)
3	80	260	125	36	48	10	260	125	36	48	14
4	100	290	141	36	54	15	290	141	36	54	15
6	150	330	165	40	57	20	350	189	40	59	29
8	200	385	214	40	64	34	415	236	56	73	50
10	250	425	243	40	71	45	455	272	56	83	75
12	300	490	286	56	81	73	490	310	80	92	109
14	350	525	312	56	92	97	545	335	80	117	164
16	400	545	350	80	102	123	575	389	140	133	228
18	450	580	383	80	114	164	660	422	140	149	285
20	500	580	414	80	127	220	700	462	140	159	343
24	600	690	484	140	154	324	785	531	160	181	513
28	700	740	518	150	165	615	/	/	/	/	/
32	800	800	590	170	190	830	/	/	/	/	/
36	900	820	620	190	203	1071	/	/	/	/	/
40	1000	840	660	190	216	1419	/	/	/	/	/
48	1200	1050	850	210	254	1845	/	/	/	/	/

● Please contact us for other sizes and specifications.

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Overall Dimensions & Reference Weight

Valve Size		Flange-type F-F ASMECL. 150					Flange-type F-F ASMECL. 300					
NPS	DN	H1	H2	A(Stem Projection)	L	Weight (kg)	H1	H2	A(Stem Projection)	L	L(Series 2)	Weight (kg)
3	80	260	125	36	114	22	260	125	36	114	180	22
4	100	290	141	36	127	28	290	141	36	127	190	33
6	150	330	155	40	140	40	330	189	40	140	210	61
8	200	385	214	40	152	61	415	236	56	152	230	86
10	250	425	243	40	165	83	455	272	56	165	250	100
12	300	490	286	56	178	127	490	310	80	178	270	175
14	350	525	312	56	190	156	545	335	80	190	290	284
16	400	545	350	80	216	138	575	389	140	216	310	340
18	450	580	383	80	222	229	660	422	140	222	330	487
20	500	580	414	80	229	311	700	462	140	229	350	529
24	600	690	484	140	267	433	785	531	160	267	390	834
28	700	795	556	140	292	732	880	617	160	292	430	1382
30	750	865	611	160	318	848	1000	671	180	318	450	1595
32	800	865	611	160	318	1015	1000	671	180	318	470	1805
36	900	1000	736	160	330	1495	1150	801	200	330	510	2215
40	1000	1130	801	180	410	2035	1150	801	200	410	550	2270
42	1050	1130	801	180	410	2155	1215	900	250	410	570	2756
48	1200	1267	866	200	470	3045	1300	991	280	470	630	3400

● Please contact us for other sizes and specifications.

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MANUAL BALL VALVE

PRODUCT INTRODUCTION

- Full bore, floating ball valve
- Standards: ASME, DIN, BS, JIS, GB
- Class 150, Class 300, Class 600 ,GB PN10~PN100 ,EN PN10~PN40 ,JIS 10K, 20K
- Blow-out proof and anti-static stem design
- Double disc spring design ensures constant packing preload
- Stem sealing structure certified by German TÜV TA-Luft fugitive emissions test
- ISO 5211 mounting pad design
- Castings certified per TÜV AD2000-Merkblatt W0



KV-040 (Standard Type) Kv-060 (Fire-Safe Type)

Standard	American Standard	German Standard
Pressure Rating	B16.34 Class 150 B16.34 Class 300	EN 12516-1 PN10~PN40
Face-to-Face Dimension	B16.10	DIN 3202 F4 DIN 3202 F1 EN558 Series1/Series27
Connection Face	B16.5RF Serrated Finish(AAR200 or Ra 6.3 μm)	DIN EN1092-1
Inspection & Testing	API 598	DIN 3230/3 EN 12266-1
Quality Assurance System	ISO 9001 AD 2000-Merkblatt WO PED 2014/68/EU C€ 0036	

Optional Items

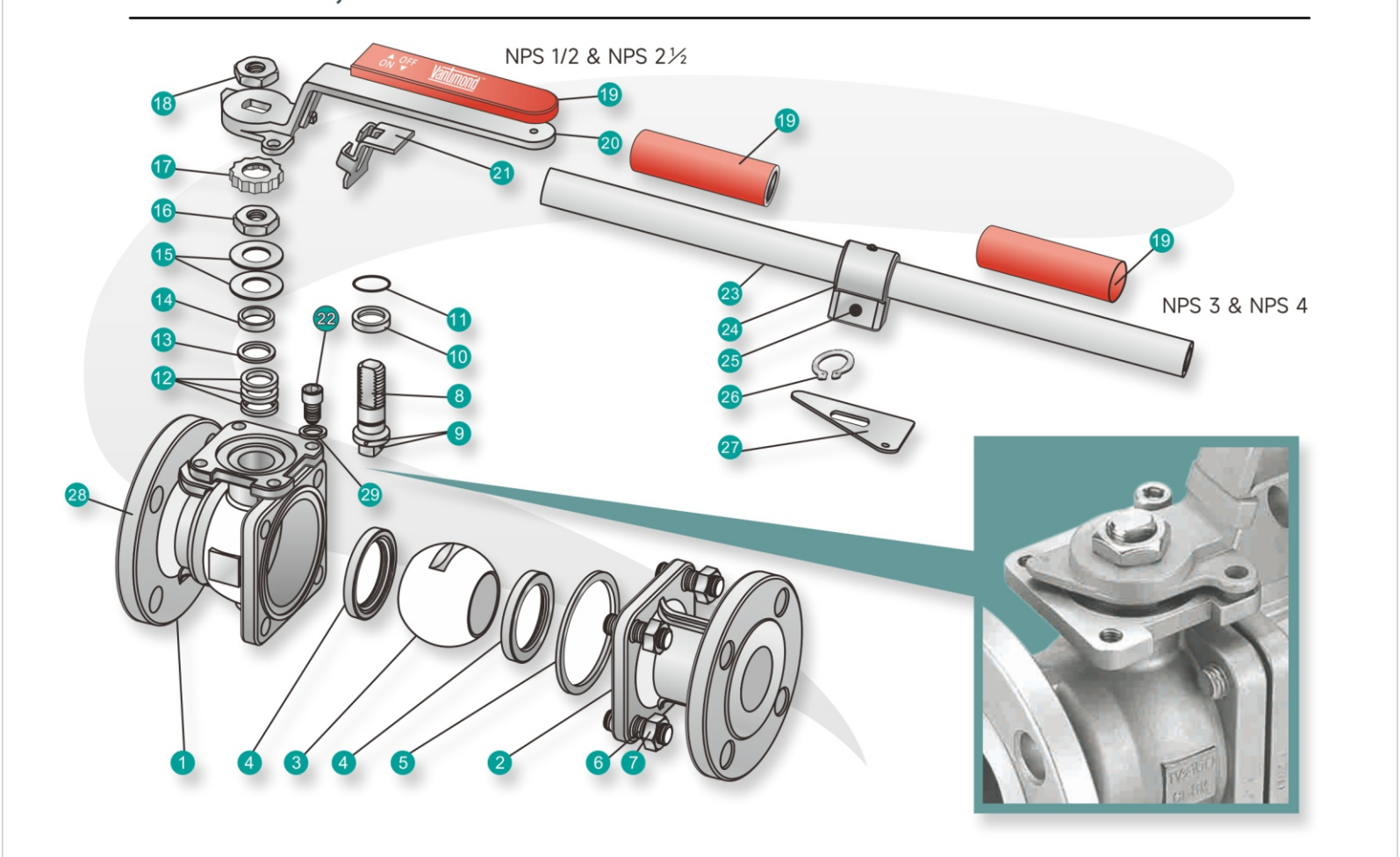
- Other alloy steels are available for selection
- Products manufactured in a ccordance with NACE MR-01-75 & Mr-01-03
- Castings manufactured per EN 10204 3.2 standard
- (EN 10204 3.1 documents provided free-of-charge)

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VM-BV210
VM-BV220

MANUAL BALL VALVE

TWO-PIECE, FULL-PORT FLANGED BALL VALVE FITTING MATERIAL



Fitting Material Table

No.	Part Name	Material		
		ANSI / JIS / DIN / GB	ANSI / JIS / DIN / GB	ANSI / JIS / DIN / GB
1	Body	A351-CF8M / SCS14A / 1.4408 / CF8M	A351-CF8 / SCS13A / 1.4308 / CF8	A216-WCB / SCPH2 / 1.0619 / WCB
2	Bonnet	A351-CF8M / SCS14A / 1.4408 / CF8M	A351-CF8 / SCS13A / 1.4308 / CF8	A216-WCB / SCPH2 / 1.0619 / WCB
3	Ball	CF8M / 316	CF8 / 304	
4	Seat	TFM1600 / PTFE / RTFE		
5	Bonnet Gasket	TFM1600 / PTFE / 316 SPIRALWOUND+GRAPHITE*		
6	Bolt	A193-B8 / A2-70		A193-B7 / 8.8
7	Bolt Nut	A194-8 / A2-70		A194-2H / 8
8	Stem	316	304	
9	Antistatic Device	316	304	
10	Thrust Washer	PTFE		
11	O-Ring	FKM		
12	Stem Packing	PTFE / GRAPHITE*		
13	Seal Bushing	50%SS+50%PTFE / 304*		
14	Nameplate *	316		
15	Disc Spring (Belleville Washer)	301		
16	Stem Nut	A194-8		
17	Locking Clip	304		
18	Handle Nut (NPS 1/2 – NPS 2½)	A194-8		
19	Handle Sleeve	PVC		
20	Handle (NPS 1/2 – NPS 2½)	CF8		
21	Padlock Device (NPS 1/2 – NPS 2½)	304		
22	Set Screw	A2-70		
23	Handle	A53+Zn PLATED		
24	Handle Adapter (NPS 3 & NPS 4)	A351-CF8		
25	Locking Screw (NPS 3 & NPS 4)	A2-70		
26	Snap Ring (NPS 3 & NPS 4)	304		
27	Locating Plate (NPS 3 & NPS 4)	304		
28	Nameplate	304		
29	Stop Washer	304		

VM-BV220 SERIES FIRE-SAFE FITTING MATERIAL