



## AWWA C504 - BUTTERFLY VALVES



**Intertek**<sup>™</sup>



**VAHN-TECH International Inc.**, headquartered in Toronto, Canada is a unique company within the Flow Control Industry.

- ✳ 'vt' brand = high quality certified products (API, NSF, CSA, WRAS etc.)
- ✳ Valves, Actuators and Accessories – all 'vt' branded
- ✳ Width and Depth of Product Offerings
- ✳ Flexibility to customize products to customer needs
- ✳ Specialized user-friendly products including large sizes
- ✳ Quick Response
- ✳ Reduced Delivery times
- ✳ Efficient after sales service
- ✳ Competitive Pricing

**VAHN-TECH International Inc.** is a customer focused organization based on “Value-Add” and “Quality Service” principles. Achieving long term partnership with our customers and being their supplier of choice is our prime mission.

We develop, manufacture and market VAHN-TECH (vt) branded Valves, Actuators, Automatic Control Valves and Accessories for variety of Industrial Applications. Our product range includes:



Oil and Gas



Water and Sewage,  
Desalination



Chemicals



Paper and Pulp



Irrigation



Power Plants



Various  
Industrial Applications

We can supply all types of valves with following materials of construction like:

Ductile Iron, Cast Iron, Carbon Steel, Stainless Steel – SS304, SS304L, SS316, SS316L, Duplex Stainless Steel, Super Duplex, Alloy, Monel and Inconel with variety of seating and stem configurations.



## Table of Contents

Features . . . . .	1
Parts List . . . . .	2
Flat Disc	
Arch Disc	
Main Dimensions (inch/mm) . . . . .	4
Flat Disc (6" - 20")	
Arch Disc (14" - 72")	
Operating Torque . . . . .	6
How To Order . . . . .	8

## AWWA C504 - BUTTERFLY VALVE (Flange Type)

Butterfly Valves are used in water and wastewater systems for shut off of liquids and gas medium. Double eccentric design with resilient seat provides tight shutoff, are easy to operate even with large pressure differential and requires little space for installation.



### Design Features:

- ✦ High strength ductile iron body used for lowering the weight and improving long term durability.
- ✦ Valves can be used for isolation or throttling application.
- ✦ Double eccentric design butterfly is used for lowering the friction between the disc and the seat.
- ✦ Dovetail seat design with multiple raised ring is used to increase contact with the disc while lowering friction during closure. Seat is fixed using epoxy resin based adhesive.
- ✦ 14" to 72" valve disc is designed with arch shape and through disc to provide better flow capacity, increase strength and reduce weight.
- ✦ The shaft and disc are connected by tangential pins. These provide a strong connection and are exchangeable to increase the lifetime of the valve.
- ✦ All iron parts are coated inside & outside with fusion bonded epoxy for corrosion resistance as per AWWA C550.
- ✦ Valve design is compliant with AWWA C504 & API 609.
- ✦ Valves are certified NSF61 for Drinking Water and NSF372 for Lead Content.

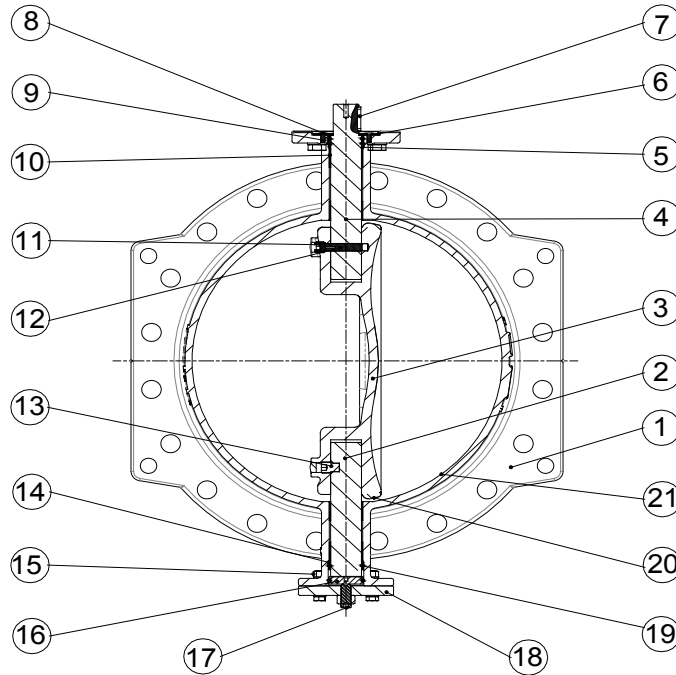
### Typical Applications:

Water System, Waste Water, Water Distribution, HVAC, Petrochemical Industry, Power Plants etc.

### Technical Specifications:

Design Standard:	AWWA C504 / API 609 / MSS SP 67
Size Range:	3" – 72"
Pressure Rating:	150 / 250 psi
Working Temperature:	-10°C ~ 80°C
End Connection:	ASME B16.1 / ASME B16.5 / ASME B 16.47
Face to face Standard:	AWWA C504
Test & Inspection:	AWWA C504 / API 609 / MSS SP 67

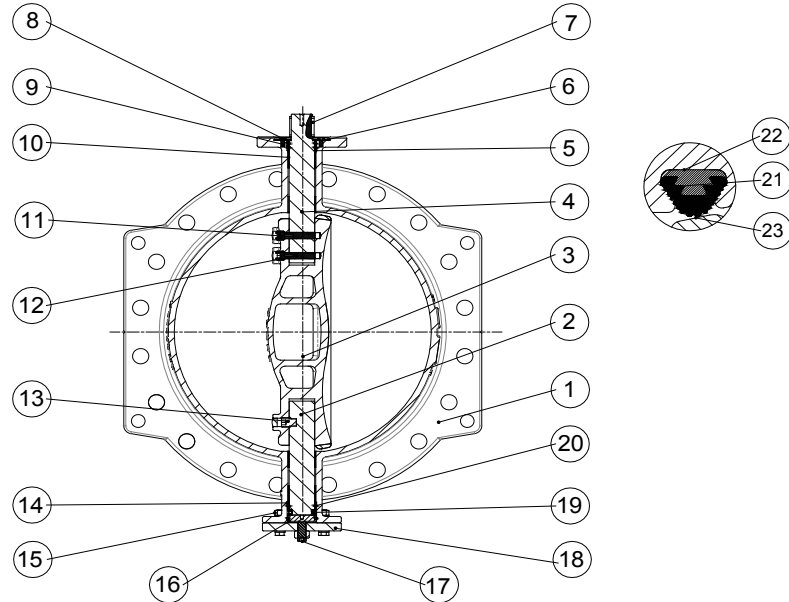
## Butterfly Valve - Flat Disc



### Parts List & Materials

No.	Part Name	Material	Standard
1	Body	Ductile Iron	ASTM A536 Gr. 65-45-12
2	Lower Shaft	Stainless Steel	SS420 / 304 / 316
3	Disc	Ductile Iron	ASTM A536 Gr. 65-45-12
4	Main Shift	Stainless Steel	SS420 / 304 / 316
5	Backup Ring	Plastic	PTFE
6	Retaining Plate	Carbon Steel	#45 + EPDM Coated
7	Shaft Key	Carbon Steel	Commercial
8	Hex Bolt	Carbon Steel	Commercial
9	O-Ring	Rubber	NBR
10	Shaft Bearing	Carbon Steel + Bronze / PTFE	Commercial
11	Hex Bolt	Carbon Steel	Commercial
12	Pin	Stainless Steel	SS431
13	Hex Bolt	Carbon Steel	Commercial
14	Shaft Bearing	Carbon Steel + Bronze / PTFE	Commercial
15	Hex Bolt	Carbon Steel	Commercial
16	Position Plate	Ductile Iron	ASTM A536 Gr. 65-45-12
17	Hex Bolt	Carbon Steel	Commercial
18	Bottom Flange	Ductile Iron	ASTM A536 Gr. 65-45-12
19	O-Ring	Rubber	EPDM / NBR
20	Disc Seat	Ductile Iron + Epoxy / Stainless Steel	ASTM A536 Gr. 65-45-12 + Powder Epoxy / SS316L
21	Body Seat	Rubber	EPDM / NBR

## Butterfly Valve - Arch Disc



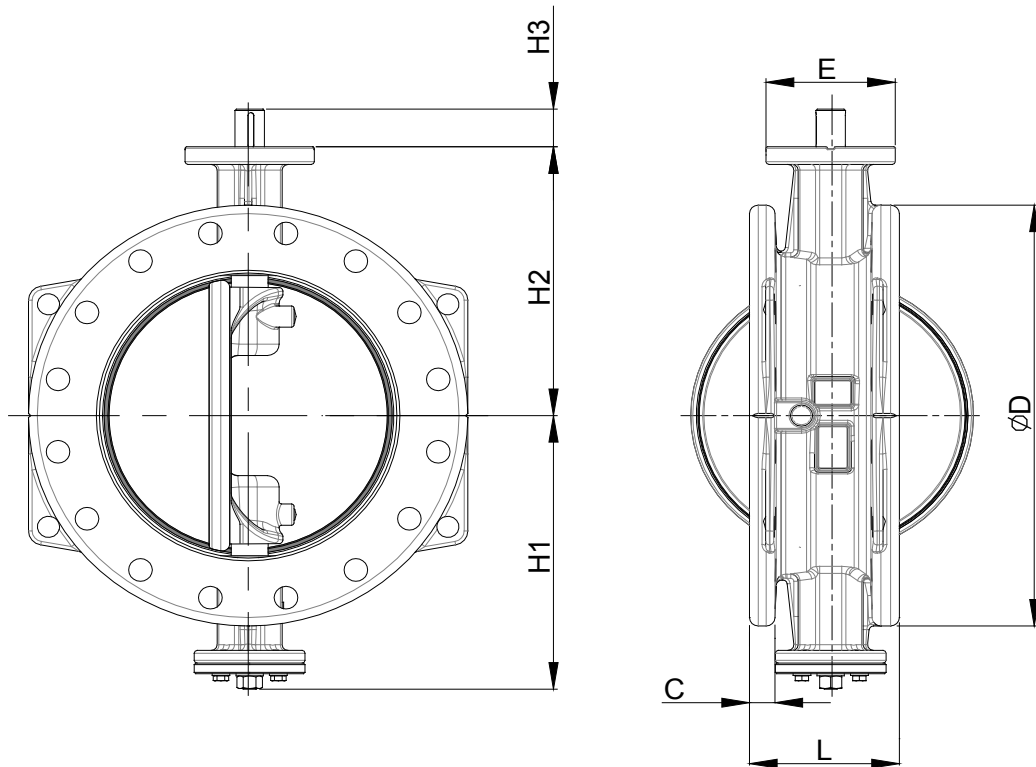
### Parts List & Materials

No.	Part Name	Material	Standard
1	Body	Ductile Iron	ASTM A536 Gr. 65-45-12
2	Lower Shaft	Stainless Steel	SS420 / 304 / 316
3	Disc	Ductile Iron	ASTM A536 Gr. 65-45-12
4	Main Shaft	Stainless Steel	SS420 / 304 / 316
5	Backup Ring	Platic	PTFE
6	Retaining Plate	Carbon Steel	#45 + EPDM Coated
7	Shaft Key	Carbon Steel	Commercial
8	Hex Bolt	Carbon Steel	Commercial
9	O-Ring	Rubber	NBR
10	Shaft Bearing	Carbon Steel + Bronze / PTFE	Commercial
11	Hex Bolt	Carbon Steel	Commercial
12	Pin	Stainless Steel	SS431
13	Hex Bolt	Carbon Steel	Commercial
14	Shaft Bearing	Carbon Steel + Bronze / PTFE	Commercial
15	Hex Bolt	Carbon Steel	Commercial
16	Position Plate	Ductile Iron	ASTM A536 Gr. 65-45-12
17	Hex Bolt	Carbon Steel	Commercial
18	Bottom Flange	Ductile Iron	ASTM A536 Gr. 65-45-12
*19	Thrust Bearing	Steel	ASTM E52100
20	O-Ring	Rubber	EPDM / NBR
21	Body Seat	Rubber	EPDM / NBR
22	Wedge	Epoxy	Commercial
23	Disc Seat	Ductile Iron + Epoxy / Stainless Steel	ASTM A536 Gr. 65-45-12 + Powder Epoxy / SS316L

\* For size  $\geq 30''$

VAHN-TECH International Inc. reserves the right to change the technical data without prior notice.

## Butterfly Valve - Flat Disc (6" - 20")



### Main Dimensions

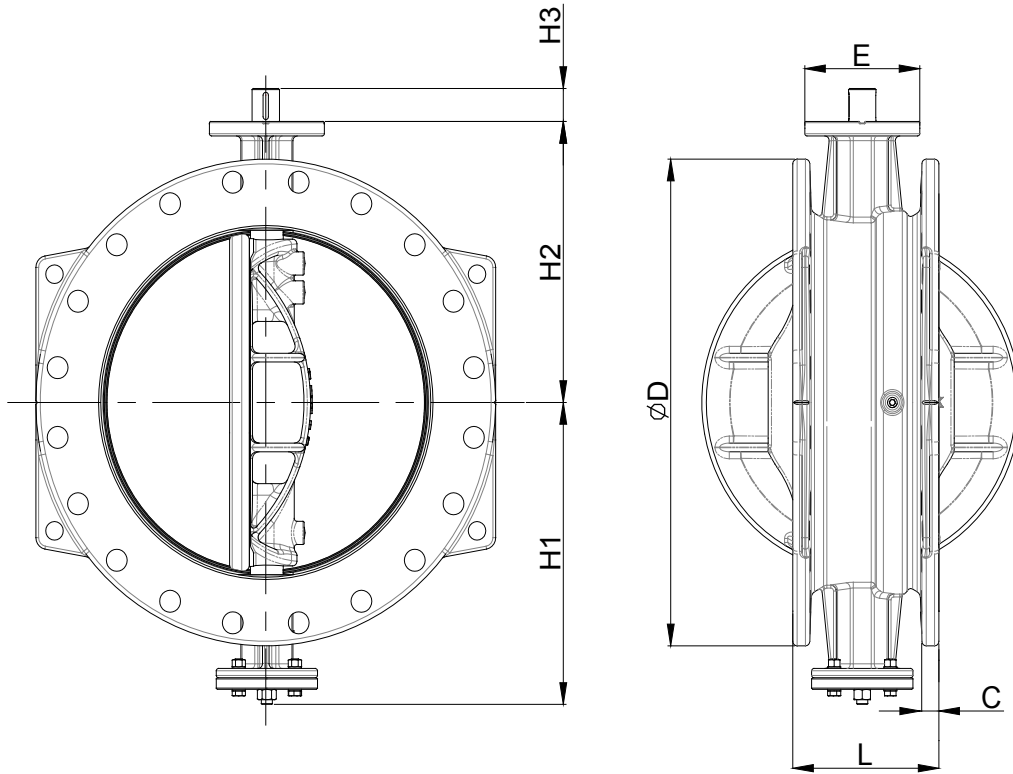
unit: inch

NPS	L	H1	H2	H3	C (Class 125)	D	E (ISO 5211)
6"	5	5	6 ½	1	1	11	F07
8"	6	6	8	1 ½	1 ⅛	13 ⅝	F10
10"	8	7 ½	9 ½	1 ½	1 ¼	16	F10
12"	8	8 ¾	10 ¾	1 ½	1 ¼	19 ⅛	F12
14"	8	12 ¼	13 ½	2	1 ⅜	21 ⅛	F12
16"	8	14	15	3	1 ½	23 ⅜	F14
18"	8	14 ½	16 ½	3	1 ⅔	25	F14
20"	8	16 ½	17 ½	3	1 ⅝	27 ⅞	F14

unit: mm

DN	L	H1	H2	H3	C (Class 125)	D	E (ISO 5211)
150	127	127	165	25	25.4	280	F07
200	152	152	203	38	28.6	345	F10
250	203	191	241	38	30.2	405	F10
300	203	222	273	38	31.8	485	F12
350	203	311	343	51	34.9	535	F12
400	203	356	381	76	36.5	595	F14
450	203	375	419	76	39.7	635	F14
500	203	419	445	76	42.9	700	F14

## Butterfly Valve - Arch Disc (14" - 72")



### Main Dimensions

unit: inch

NPS	L	H1	H2	H3	C (Class 125)	D	E (ISO 5211)
14"	8	12 1/4	13 1/2	2	1 3/8	21 1/8	F12
16"	8	14	15	3	1 4/9	23 3/8	F14
18"	8	14 3/4	16 1/2	3	1 4/7	25	F14
20"	8	16 1/2	17 1/2	3	1 2/5	27 1/2	F14
24"	8	20 3/4	21 1/4	3	1 7/8	32 1/8	F16
30"	12	24 1/2	24 3/4	4 1/4	2 1/8	38 3/4	F25
36"	12	28 1/4	28 3/4	4 1/4	2 3/8	46 1/8	F25
42"	12	31 1/2	32 3/4	5	2 3/8	53	F25
48"	15	35 3/4	37 1/2	5	2 3/4	59 1/2	F25
54"	15	38 3/4	40	5	3	66 3/8	F30
60"	15	43 3/4	44 1/2	5	3 1/8	73	F30
66"	18	45	46 3/4	6	3 3/8	80	F30
72"	18	52 1/4	52 3/4	6	3 1/2	86 3/8	F35

unit: mm

DN	L	H1	H2	H3	C (Class 125)	D	E (ISO 5211)
350	203	311	343	51	35	535	F12
400	203	356	381	76	37	595	F14
450	203	375	419	76	40	635	F14
500	203	419	445	76	43	700	F14
600	203	527	540	76	48	815	F16
750	305	622	629	108	54	985	F25
900	305	718	730	108	60	1170	F25
1050	305	800	832	127	67	1345	F25
1200	381	908	953	127	70	1510	F25
1350	381	984	1016	127	76	1685	F30
1500	381	1111	1130	127	79	1855	F30
1650	457	1143	1187	152	86	2032	F30
1800	457	1327	1340	152	89	2195	F35



## Operating Toque (N.m)

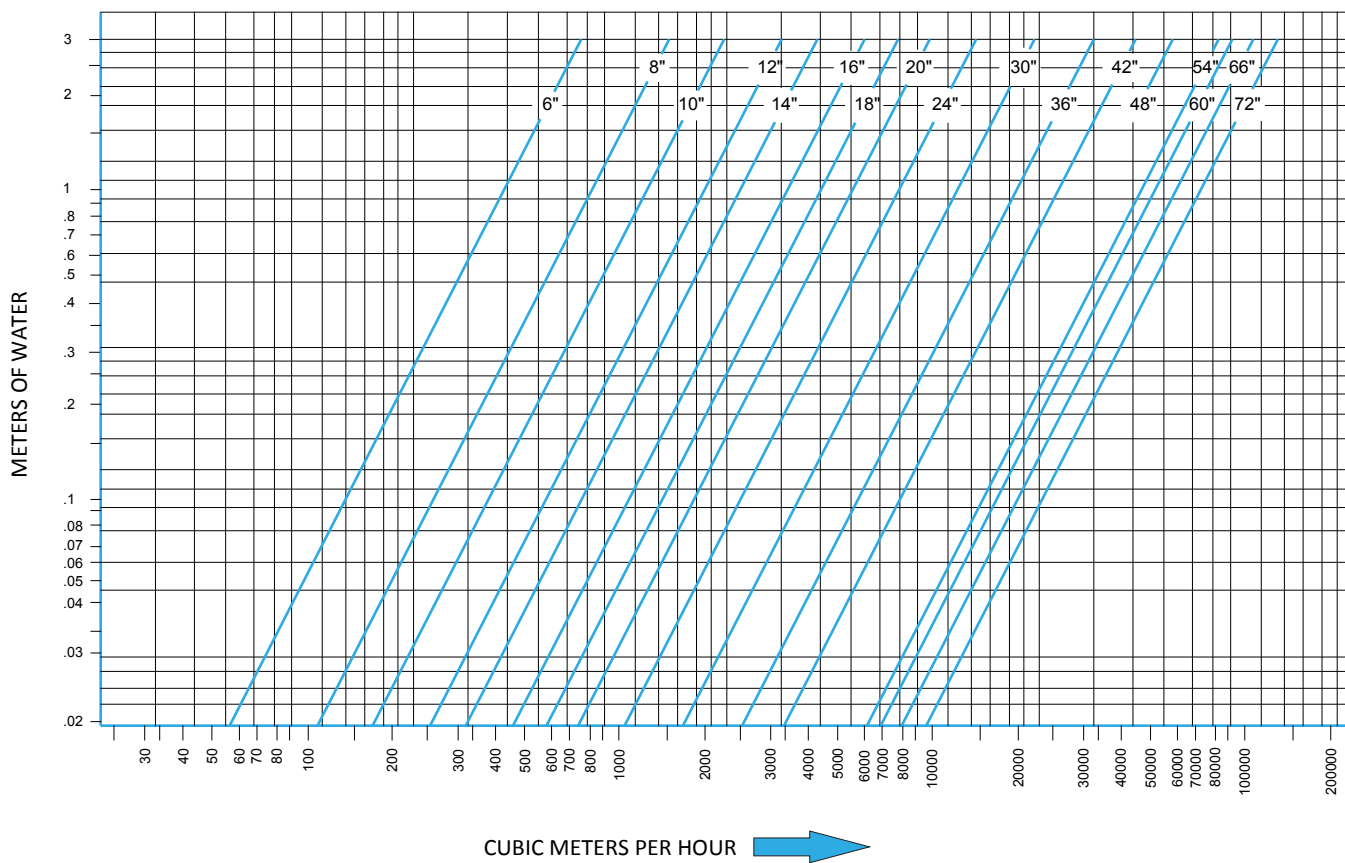
NPS	DN	Torque Value (N.m)		Torque Value (In.lbs)	
		150 psi	250 psi	150 psi	250 psi
4"	100	70	85	620	752
6"	150	118	128	1044	1133
8"	200	190	210	1682	1859
10"	250	228	250	2018	2213
12"	300	345	372	3054	3292
14"	350	600	760	5310	6727
16"	400	960	1160	8497	10267
18"	450	972	1280	8603	11329
20"	500	1040	1680	9205	14869
24"	600	1800	2500	15931	22127
30"	750	1944	2592	17206	22941
36"	900	4100	5300	36288	46909
42"	1050	5850	7245	51777	64124
48"	1200	8280	13320	73284	117892

♦ Safety factor are not included in the above design data.

## Kv - Value

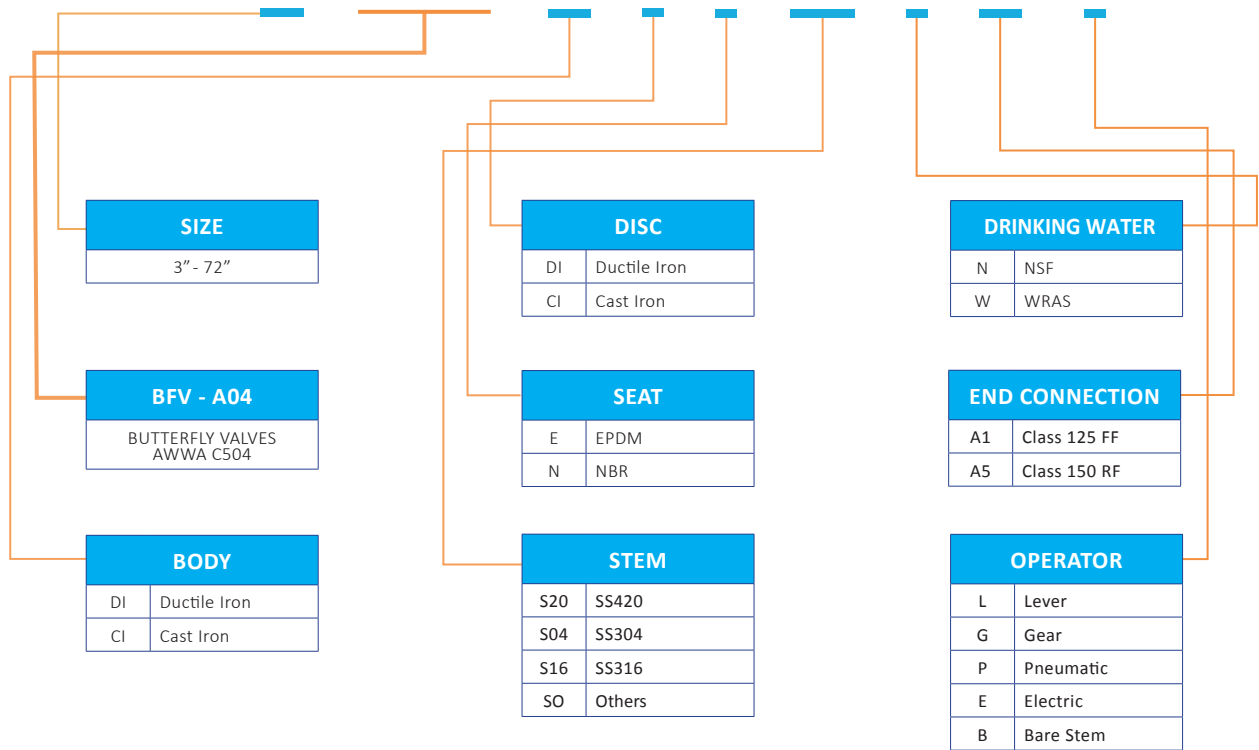
NPS	OPEN ANGLE (°)								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
6"	37	62	113	200	321	475	656	875	1035
8"	43	102	218	377	600	911	1295	1730	2110
10"	58	175	392	651	1025	1576	2260	3062	3929
12"	72	263	585	910	1405	2394	3321	4605	5980
14"	98	302	622	1152	1702	2203	3652	6152	7302
16"	122	351	761	1402	2142	2822	4602	7602	8402
18"	178	414	952	1632	2522	3402	5602	8962	11002
20"	227	472	1077	1922	2572	4582	7922	11812	14242
24"	342	750	1718	3062	4100	7304	12612	18802	22682
30"	653	868	2168	3982	5178	9272	16052	23432	28852
36"	947	1762	3902	6972	9582	16822	28222	43452	52902
42"	1362	3980	7426	12881	17460	27292	38982	49117	53478
48"	2016	5260	10057	17075	22646	35820	51945	64491	67162

# Head Loss



## PRODUCT SELECTION

**VT - XX - BFV-A04 - XX - X - X - XXX - X - XX - X**





**VAHN-TECH International Inc.**

10-755 Queensway East, Mississauga, Ontario L4Y 4C5, Canada

Tel.: +1 416 342 0001 E-mail: [info@vahn-tech.com](mailto:info@vahn-tech.com)

[www.vahn-tech.com](http://www.vahn-tech.com)