Coreline

High performance butterfly valves

English

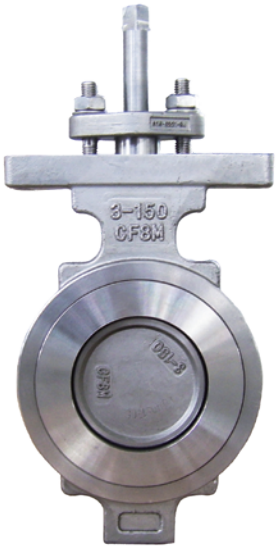
Fig.263

www.coreline.dk

General specifications

General specifications

Nominal diameter:	DN50 - DN600 (Bigger sizes available on request)
Connection:	Wafer, lug
Flange accommodation:	PN10/16//25/40
	Class150/300
Face to face:	API609 Table 2
Material:	Carbon steel, Stainless steel
Temperature range:	-40℃ ~ +260°C (depending on pressure, medium and material)
Tightness test:	API598

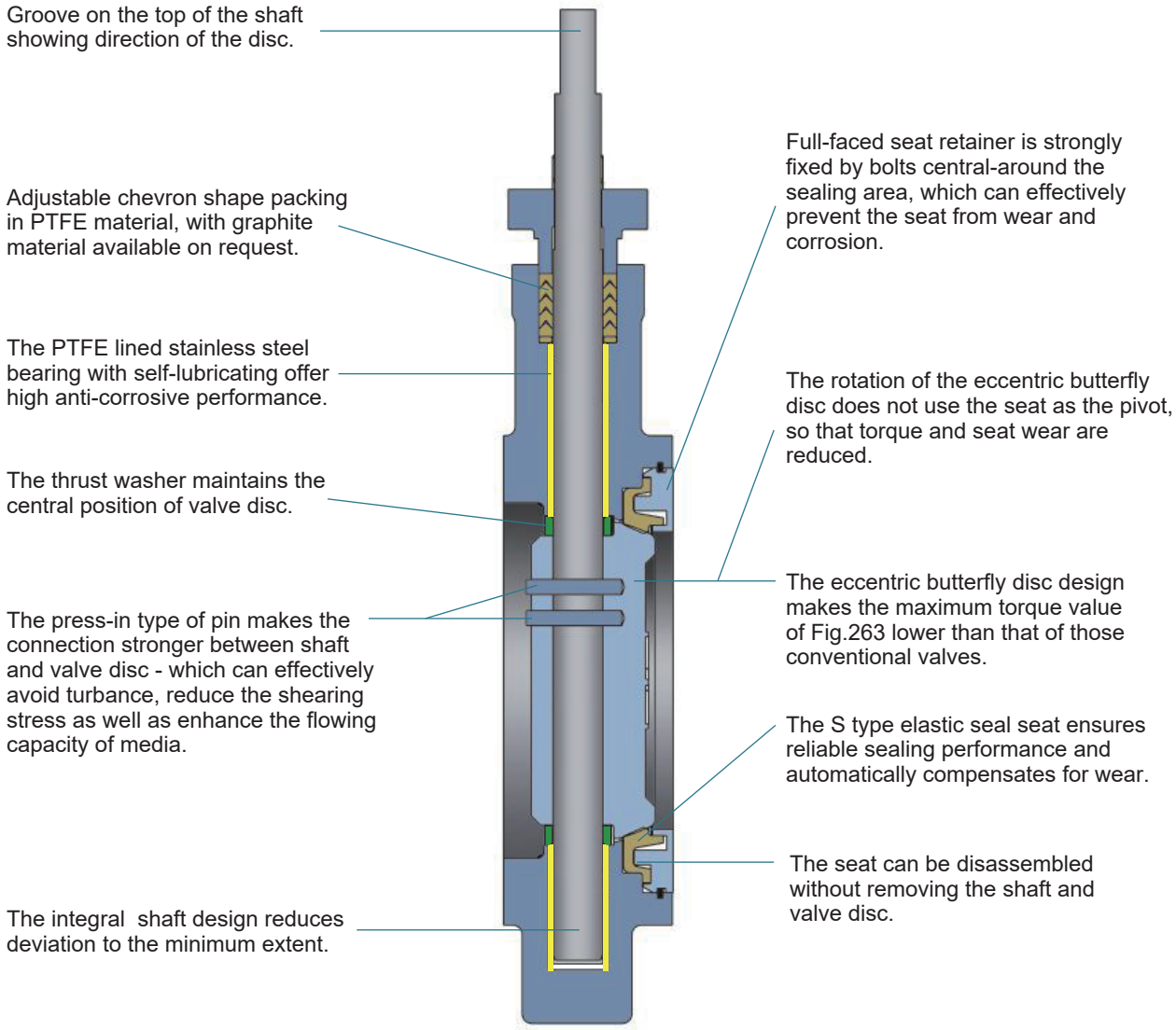


Index

General features

- □ Double eccentric bidirectional sealing.
- □ Disc with eccentric spherical geometry.
- □ Dynamic lip design of seat with zero leakage on both sides.
- □ Low torque figures reduces cost for actuator and ensure longer lifetime.
- □ Different packing options, including life loaded.

Integral structure of the valve



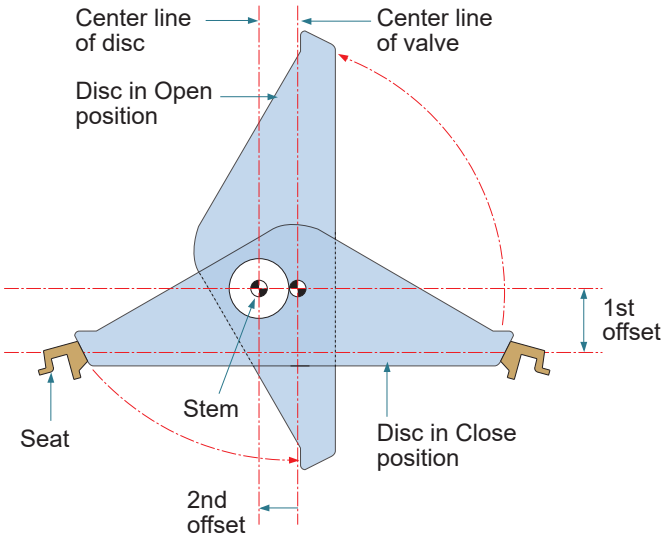
Double offset stem and disc design

The double offset design reduces the seat wear as well as ensures the bidirectional sealing sealing with zero leakage.

□ No contact between the seat and the disc, when the valve is in open position.

□ No wearing points at the upper and lower parts of the seat.

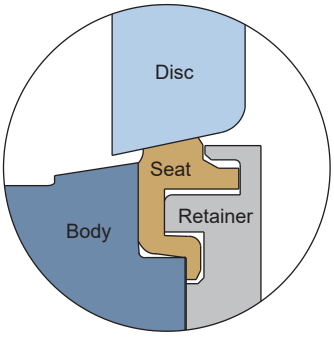
□ Low torque valve which saves the operation costs.



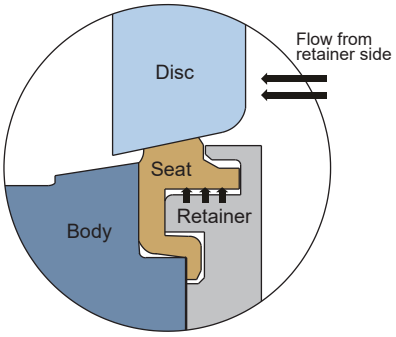
Unique seat sealing structure

The S type elastic seat of Fig.263 high performance butterfly valve uses a good elasticity and long service life RPTFE material as standard. The special sealing design can automatically compensate for the changes of temperature and pressure, and it can also offer sealing compensation due to the wearing of seat during usage. The seat can be replaced by removing the seat retainer without disassembling shaft and valve.

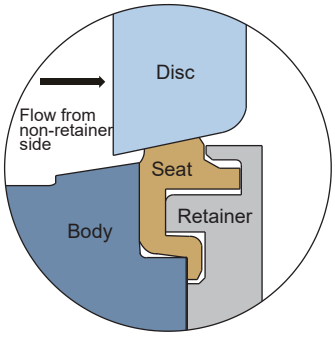
Fig.263 high performance butterfly valve can achieve as prescribed no bubble sealing according to MSS-SP61.



When the valve is closed, the closing disc makes the seat slightly deform. The deformation excites the seat. The excitation of the seat sealing face enables tight sealing to be maintained between the seat and the disc edge.



Flow from the seat retainer side: the pressure is exerted at the bottom of the seat edge - which can further enhance the sealing force between the disc and the seat.



Flow from non-retainer side: the disc will be pushed towards the seat. As the disc is with ball shape design, the further the disc is pushed towards the seat, the tighter the valve is closed. The groove contact between the seat and the retainer can limit the excessive movement of the seat.

Different options

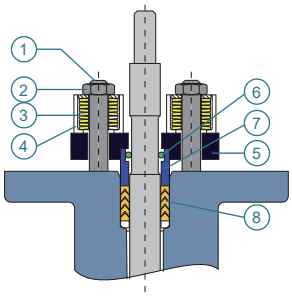
Gland packing options

Fig.263 high performance butterfly valves is designed with a live-loaded gland packing system for low fugitive emission application.
It uses a set of V-rings made of RPTFE(up to 200℃) as standard.
For vacuum application a second upper set of V-rings positioned in reverse directionis available.
LFE gland packing consisting of V-PTFE rings and O-rings for low fugitive emission available.
* Please note that the operating torque of valves with live-loaded packing system will increase.

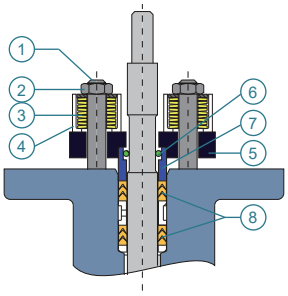
Gland packing part list

Item No.	Part name
1	Gland stud
2	Nut
3	Spring
4	Sleeve
5	Gland flange
6	Anti-blowout ring
7	Bushing
8	V-packing
9	Monitoring ring

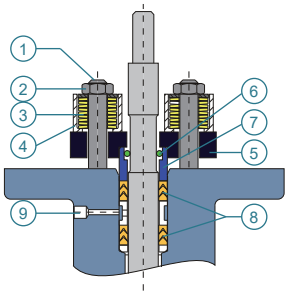
Live-loaded packing sealing system (Standard)



Live-loaded sealing system with double V-packing

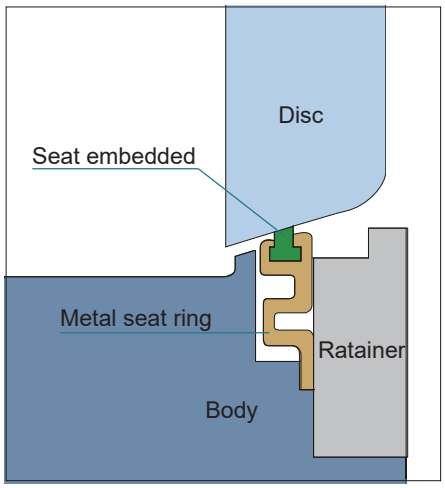


Live-loaded sealing with double V-packing and monitoring port

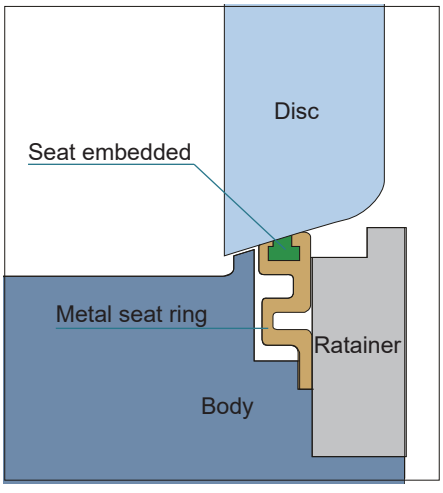


Fire resistant type available

The fire resistant type butterfly valve is designed and made fire test according to API607. In the event of fire at the during usage of the valve, when the seal ring made of non-metal materials such as PTFE is decomposed or damaged under high temperature, the metal can be used to help the internal pressure self-sealing structure and play the function of auxiliary sealing, so as to effectively prevent media from large amounts of leakage and stop fire spreading.



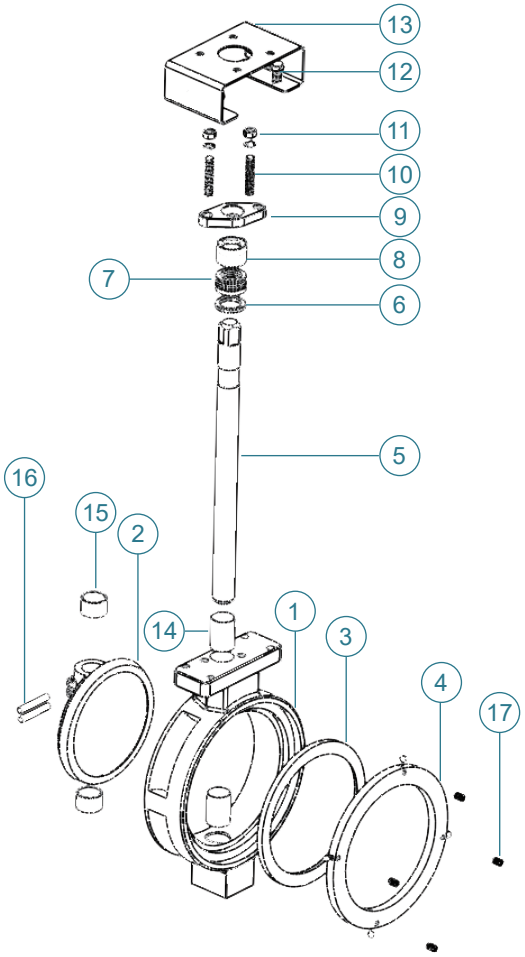
Before fire



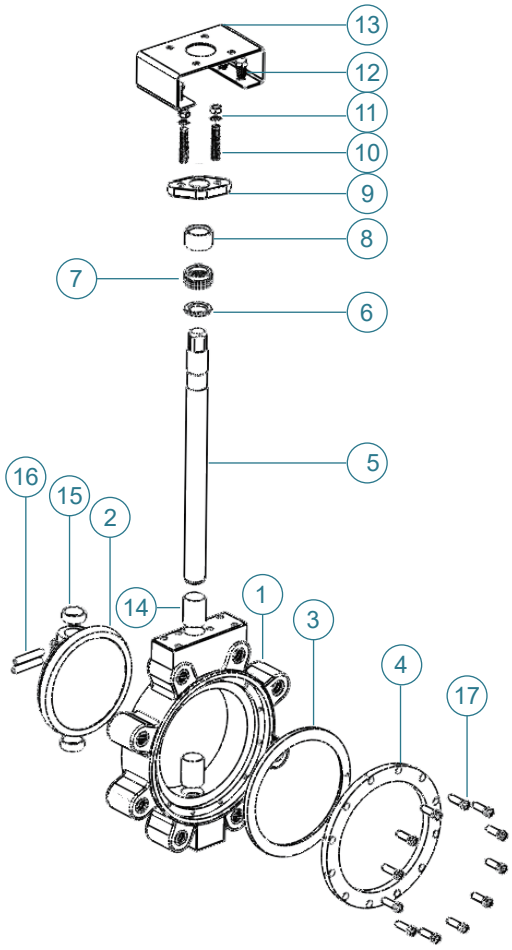
During fire and after fire

Material part list

Wafer type

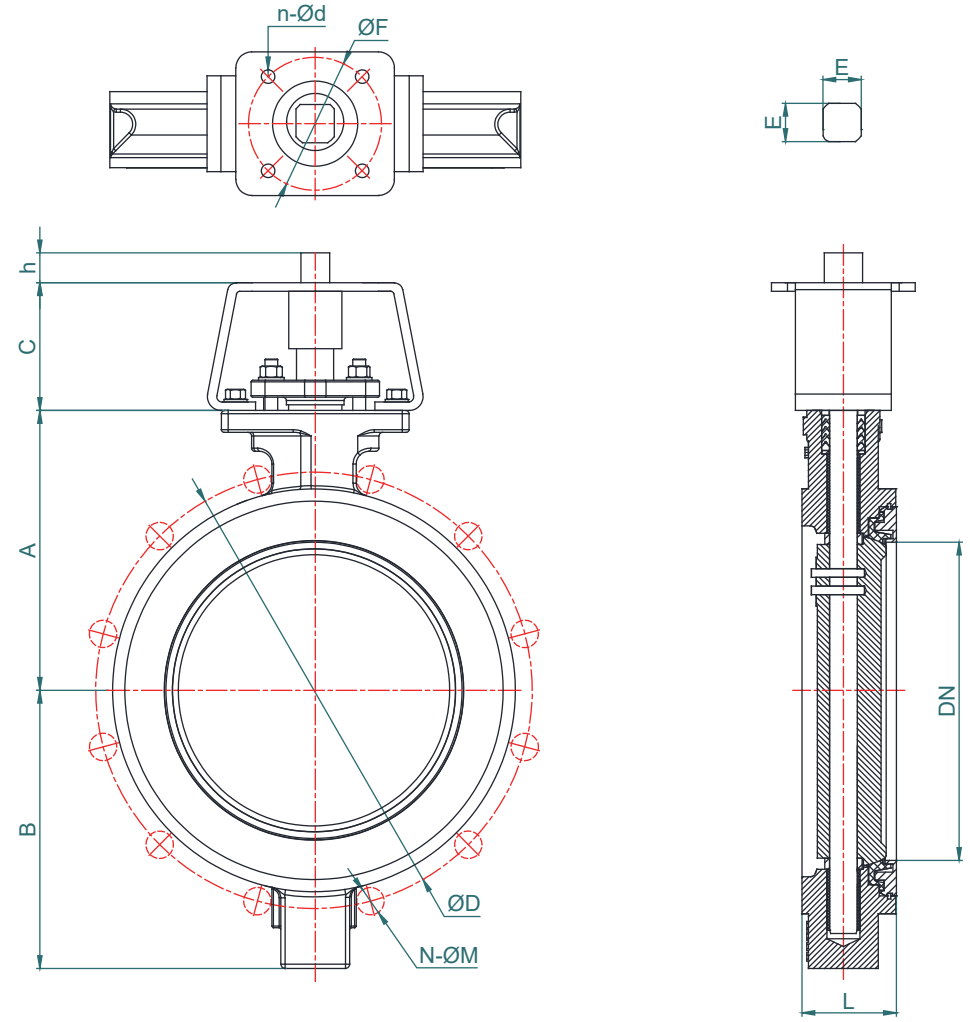


Lug type



Item No.	Part name	Material
1	Body	WCB / CF8 / CF8M / CF3M
2	Disc	CF8 / CF8M / CF3M
3	Seat	PTFE / RPTFE / TFM / PPL / PEEK
4	Seat retainer	20# / CF8 / CF8M / CF3M
5	Stem	17-4 PH / SS316
6	Spacer	SS316
7	V-packing	PTFE
8	Gland bearing	SS316
9	Gland flange	CF8
10	Gland stud	SS304
11	Nut+spring washer	SS304
12	Bracket bolt	SS304
13	Bracket	WCB
14	Bearing	316+RPTFE
15	Thrust bearing	SS316
16	Pin	17-4 PH / SS316
17	Screw	SS304

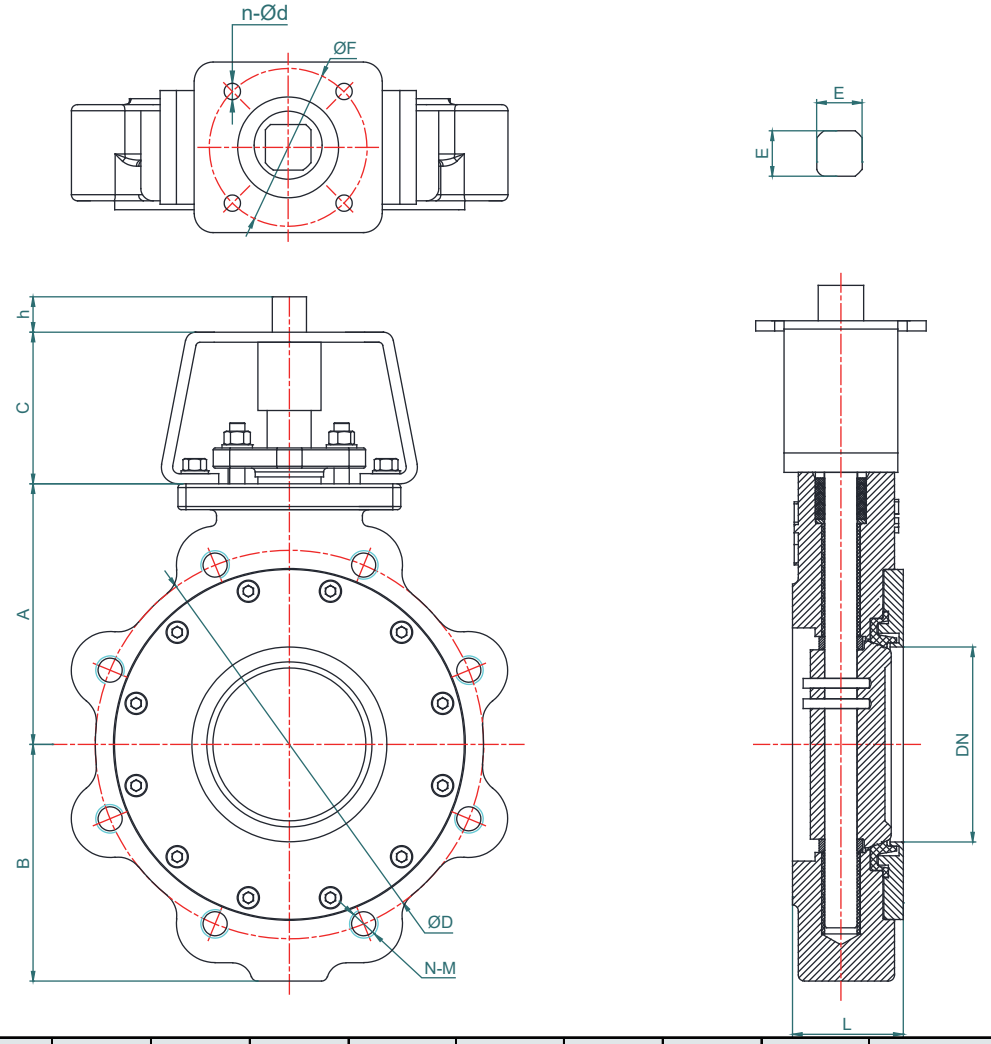
Dimensions - Wafer type Class150, PN10/16/20



SIZE		A	B	C	D				N-ΦM				E	h	F	n-Φd	L
DN	NPS				ANSI150	PN10	PN16	PN20	ANSI150	PN10	PN16	PN20					
50	2"	86	62	51	120.6	125	125	120.5	4-Φ19.1	4-Φ19	4-Φ19	4-Φ18	11	12	50	4-Φ8	43
65	2 1/2"	111	82	90	139.7	145	145	139.5	4-Φ19.1	4-Φ19	4-Φ19	4-Φ18	14	15	70	4-Φ10	49
80	3"	121	104	90	152.4	160	160	152.5	4-Φ19.1	8-Φ19	8-Φ19	4-Φ18	14	15	70	4-Φ10	49
100	4"	133	110	90	190.5	180	180	190.5	8-Φ19.1	8-Φ19	8-Φ19	8-Φ18	17	18	70	4-Φ10	54
125	5"	135	127	90	215.9	210	210	216	8-Φ22.2	8-Φ19	8-Φ19	8-Φ22	17	18	70	4-Φ10	57
150	6"	153	143	100	241.3	240	240	241.5	8-Φ22.2	8-Φ23	8-Φ23	8-Φ22	17	18	102+125	4-Φ11 / 4-Φ13	57
200	8"	188	172	100	298.5	295	295	298.5	8-Φ22.2	8-Φ23	12-Φ23	8-Φ22	17	18	102+125	4-Φ11 / 4-Φ13	64
250	10"	233	202	120	362	350	355	362	12-Φ25.4	12-Φ23	12-Φ28	12-Φ26	22	24	102+125	4-Φ11 / 4-Φ13	71
300	12"	265	238	120	431.8	400	410	432	12-Φ25.4	12-Φ23	12-Φ28	12-Φ26	22	24	102+125	4-Φ11 / 4-Φ13	81
350	14"	309	293	120	476.3	460	470	476	12-Φ28.6	16-Φ23	16-Φ28	12-Φ29.5	27	28	140	4-Φ17	92
400	16"	331	305	150	539.8	515	525	540	16-Φ28.6	16-Φ28	16-Φ31	16-Φ29.5	27	28	140	4-Φ17	102
450	18"	356	335	150	577.9	565	585	578	16-Φ31.8	20-Φ28	20-Φ31	16-Φ32.5	36	38	140	4-Φ17	114
500	20"	377	340	150	635	620	650	635	20-Φ31.8	20-Φ28	20-Φ34	20-Φ32.5	46	48	165	4-Φ22	127
600	24"	490	442	150	749.3	725	770	749.5	20-Φ34.9	20-Φ31	20-Φ37	20-Φ35.5	46	48	165	4-Φ22	154

Notes:
1) Bigger sizes available on request.
2) Please contact Coreline for available flange connections for all inquiries / orders.
3) Stem head (E, h) can be customized, contact Coreline for special requirement.

Dimensions - Lug type Class150



SIZE		A	B	C	D	N-M	E	h	F	n-Φd	L
DN	NPS				ANSI150						
50	2"	80	62	51	120.6	4-5/8"	11	12	50	4-Φ8	43
65	2 1/2"	111	83	90	139.7	4-5/8"	14	15	70	4-Φ10	49
80	3"	121	94	90	152.4	4-5/8"	14	15	70	4-Φ10	49
100	4"	133	110	90	190.5	8-5/8"	17	18	70	4-Φ10	54
125	5"	135	127	90	215.9	8-3/4"	17	18	70	4-Φ10	57
150	6"	152	143	100	241.3	8-3/4"	17	18	102+125	4-Φ11 / 4-Φ13	57
200	8"	187	172	100	298.5	8-3/4"	17	18	102+125	4-Φ11 / 4-Φ13	64
250	10"	232	202	120	362	12-7/8"	22	24	102+125	4-Φ11 / 4-Φ13	71
300	12"	260	238	120	431.8	12-7/8"	22	24	102+125	4-Φ11 / 4-Φ13	81
350	14"	309	273	120	476.3	12-1"	27	28	140	4-Φ17	92
400	16"	331	300	150	539.8	16-1"	27	28	140	4-Φ17	102
450	18"	356	323	150	577.9	16-1 1/8"	36	38	140	4-Φ17	114
500	20"	377	363	150	635	20-1 1/8"	46	48	165	4-Φ22	127
600	24"	489	454	150	749.3	20-1 1/4"	46	48	165	4-Φ22	154

Notes:
1) Bigger sizes available on request.
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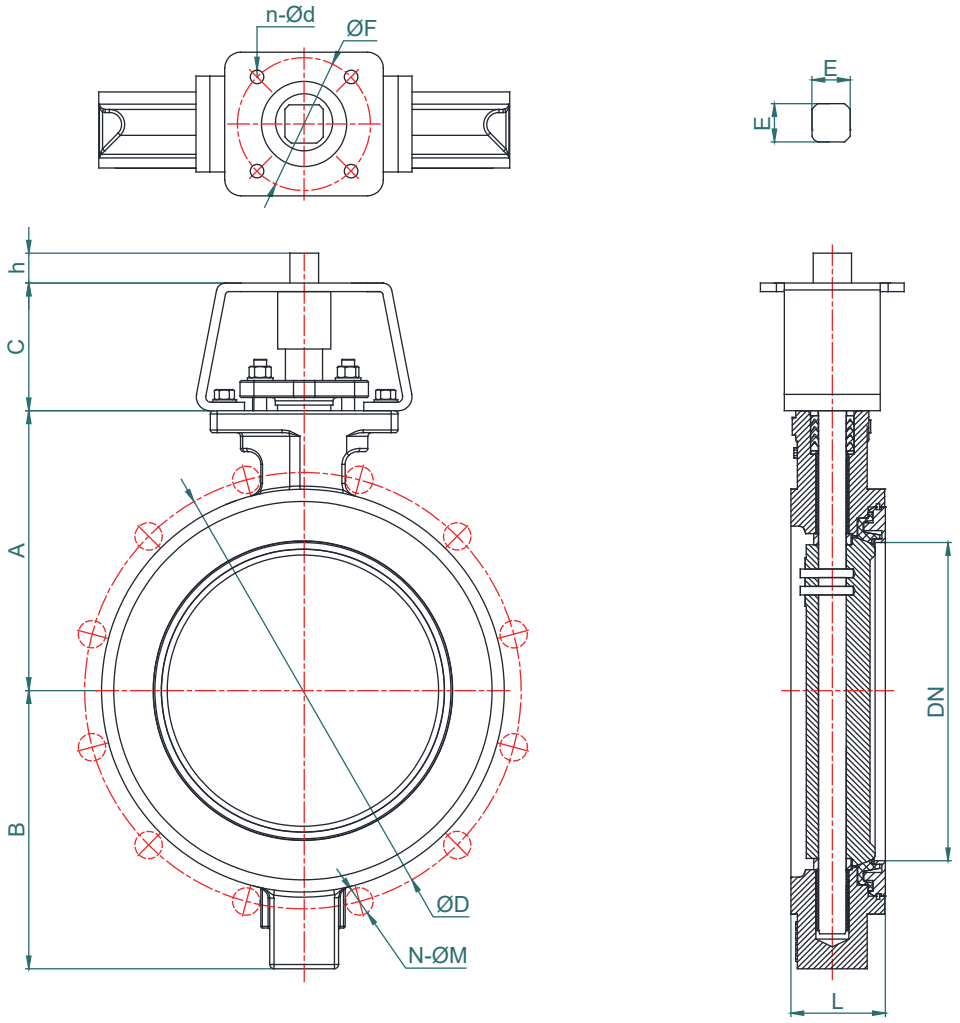
Dimensions - Wafer type Class300, PN25/40



SIZE		A	B	C	D			N-ΦM			E	h	F	n-Φd	L
DN	NPS				ANSI300	PN25	PN40	ANSI300	PN25	PN40					
50	2"	86	62	51	127	125	125	8-Φ19.1	4-Φ18	4-Φ18	14	15	50	4-Φ8	43
65	2 1/2"	111	82	90	149.2	145	145	8-Φ22.2	8-Φ18	8-Φ18	14	15	70	4-Φ10	49
80	3"	121	104	90	168.3	160	160	8-Φ22.2	8-Φ18	8-Φ18	14	15	70	4-Φ10	49
100	4"	133	116	90	184.2	190	190	8-Φ22.2	8-Φ22	8-Φ22	17	18	70	4-Φ10	54
125	5"	153	118	90	200	220	220	8-Φ22.2	8-Φ26	8-Φ26	17	18	70	4-Φ10	59
150	6"	175	153	100	235	250	250	12-Φ22.2	8-Φ26	8-Φ26	17	18	102+125	4-Φ11 / 4-Φ13	59
200	8"	213	180	120	269.9	310	320	12-Φ22.2	12-Φ26	12-Φ30	22	24	102+125	4-Φ11 / 4-Φ13	73
250	10"	254	231	120	330.2	370	385	16-Φ25.4	12-Φ30	12-Φ33	27	28	102+125	4-Φ11 / 4-Φ13	83
300	12"	283	279	120	387.4	430	450	16-Φ28.6	16-Φ30	16-Φ33	27	28	140	4-Φ17	92
350	14"	325	293	150	450.8	490	510	20-Φ31.8	16-Φ33	16-Φ36	36	38	140	4-Φ17	117
400	16"	351	335	150	514.4	550	585	20-Φ34.9	16-Φ36	16-Φ39	46	48	165	4-Φ22	133
450	18"	425	367	150	628.6	600	610	24-Φ34.9	20-Φ36	20-Φ39	46	48	165	4-Φ22	149
500	20"	447	435	150	685.8	660	670	24-Φ34.9	20-Φ36	20-Φ42	46	48	165	4-Φ22	159
600	24"	501	483	150	812.8	770	795	24-Φ41.3	20-Φ39	20-Φ48	46	48	254	8-Φ18	181

Notes:
1) Bigger sizes available on request.
2) Please contact Coreline for available flange connections for all inquiries / orders.
3) Stem head (E, h) can be customized, contact Coreline for special requirement.

Bracket and coupling, torque values

Torque values

SIZE		Torque [Nm] - Class150, PN10/16/20			Torque [Nm] - Class300, PN25/40					
DN	INCH	6.9bar	13.8bar	19.7bar	20.7bar	27.6bar	34.5bar	41.4bar	48.3bar	51bar
DN50	2"	30	31	34	44	47	53	59	62	62
DN65	2 ½"	38	40	43	44	47	53	59	62	62
DN80	3"	44	48	51	55	60	66	72	78	81
DN100	4"	61	77	75	91	103	114	127	138	140
DN125	5"	85	99	112	150	172	196	220	242	251
DN150	6"	126	147	150	209	244	278	314	348	362
DN200	8"	213	251	270	407	478	549	621	692	721
DN250	10"	289	356	400	624	744	863	983	1103	1110
DN300	12"	377	507	580	867	1027	1187	1346	1506	1570
DN350	14"	638	889	1050	1452	1784	2115	2447	2779	2911
DN400	16"	816	1139	1413	1742	2136	2530	2923	3315	3420
DN450	18"	1061	1487	1850	22664	2753	3276	3751	4250	4449
DN500	20"	1427	2010	2504	3008	3695	4380	5067	5752	6026
DN600	24"	2175	3099	3878	4070	4992	5888	6836	7758	8127

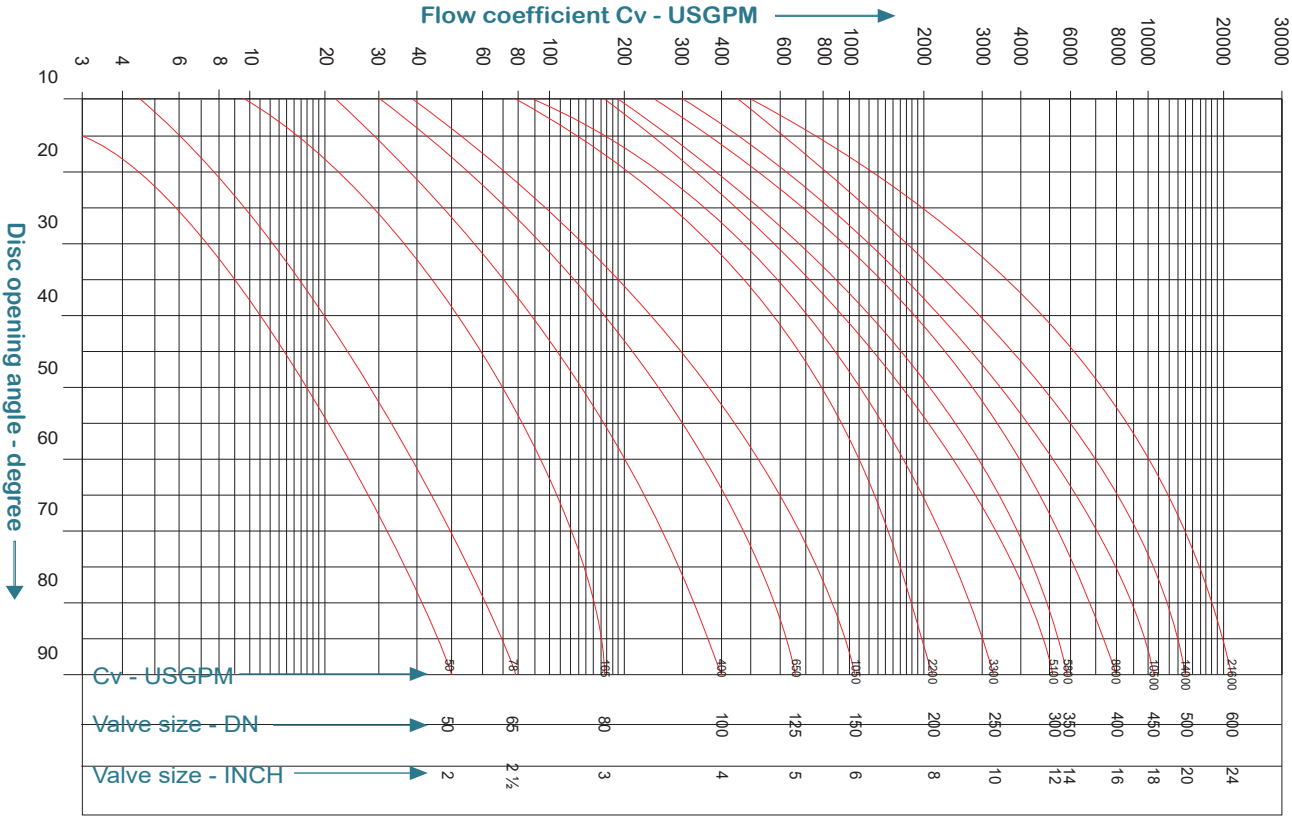
Note: The torque values are including 30% safety.

Cv values

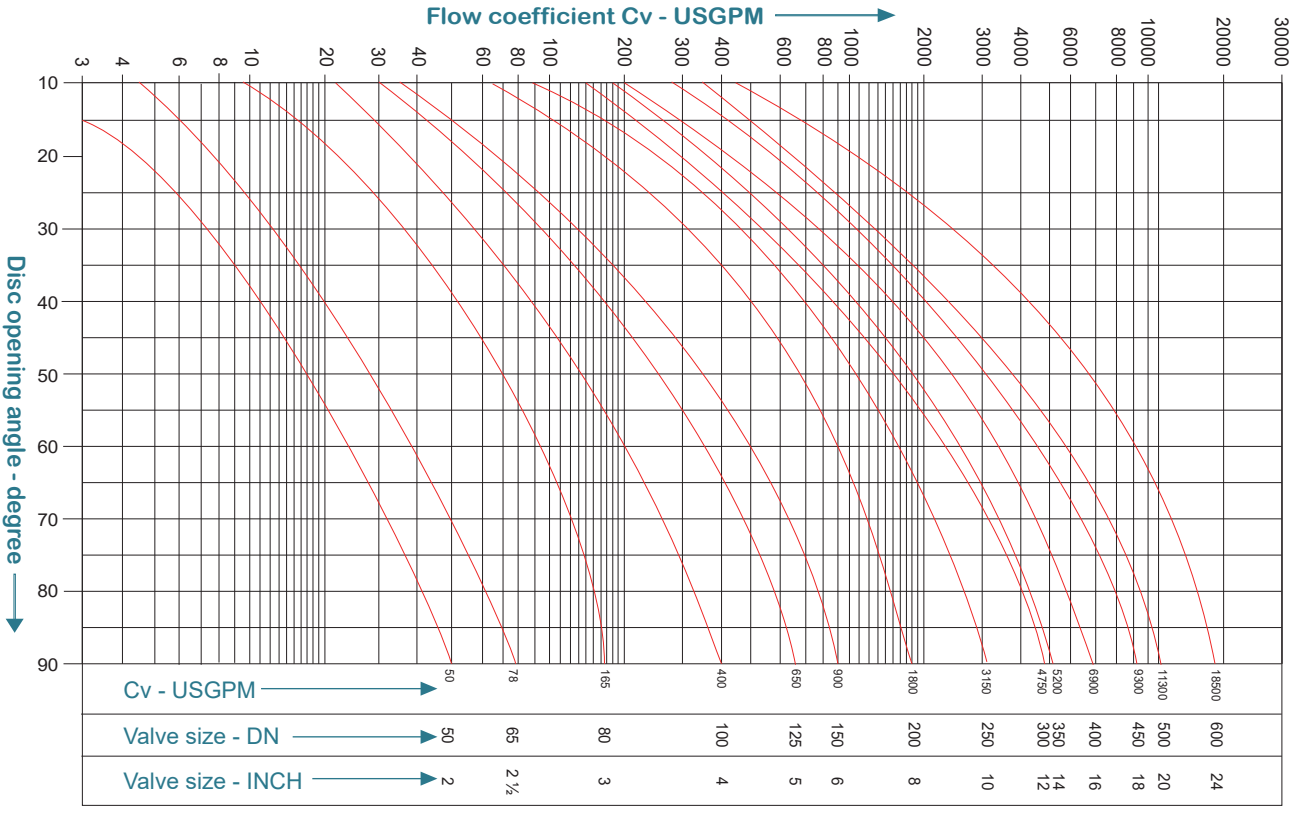
SIZE		Opening angle - Class150, PN10/16/20 valves		Opening angle - Class300, PN25/40 valves	
DN	INCH	60°	90°	60°	90°
50	2"	25	50	25	50
65	2 ½"	39	78	39	78
80	3"	83	165	83	165
100	4"	200	400	200	400
125	5"	325	650	325	650
150	6"	525	1050	500	1050
200	8"	1100	2200	900	1800
250	10"	1650	3300	1575	3150
300	12"	2550	5100	2375	4750
350	14"	2900	5800	2600	5200
400	16"	4000	8000	3450	6900
450	18"	5250	10500	4650	9300
500	20"	7000	14000	5650	11300
600	24"	10800	21600	9250	18500

Cv curves

Cv curve - Class150, PN10/16/20 valves



Cv curve - Class300, PN25/40 valves



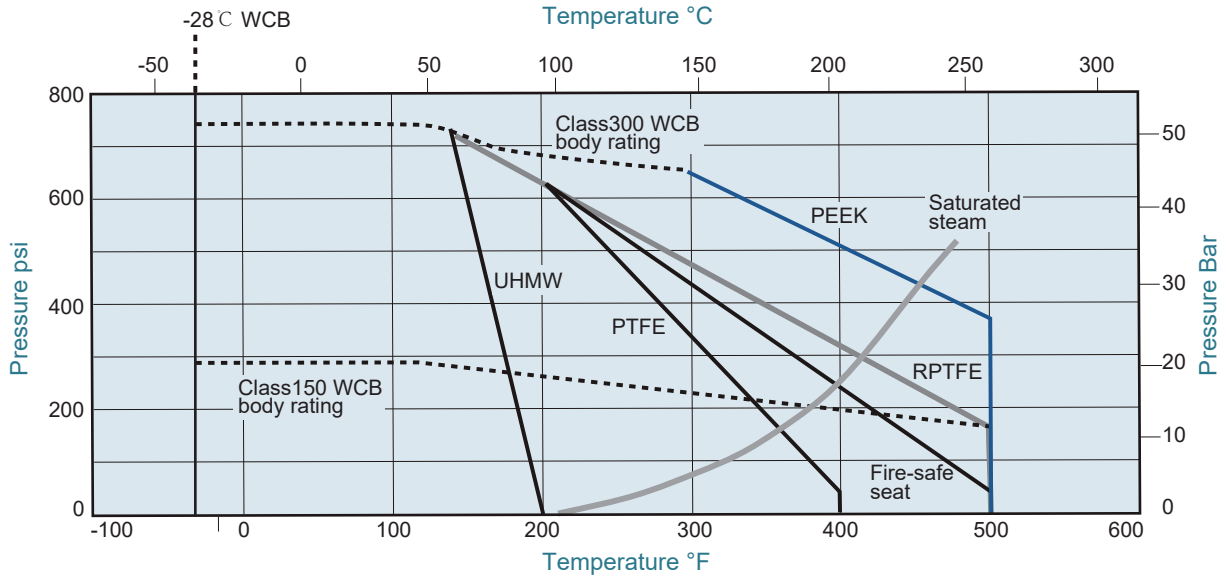
Body rating [bar] - Class150, PN10/16/20

Temp. / ℃	WCB	SS316	Alloy 20	Monel
-29 to 38	19.6	19	15.9	15.9
100	17.7	16.2	13.5	13.7
150	15.8	14.8	12.3	13.1
200	13.8	13.7	11.3	12.8
250	12.1	12.1	10.4	11.9
Test pressure / bar	30	29	24	24

Body rating [bar] - Class300, PN25/40

Temp. / ℃	WCB	SS316	Alloy 20	Monel
-29 to 38	51.1	49.6	41.4	41.3
100	46.6	42.2	35.3	36.2
150	45.1	38.5	32	34.1
200	43.8	35.7	29.4	33.1
250	41.9	33.4	27.2	32.8
Test pressure / bar	77	75	63	63

Seat rating



DN350-DN600 Class150 valves equipped with SS316 or Alloy 20 shafts are rated for a maximum differential pressure of 10.35 bar.
DN80-DN600 Class300 valves with SS316 or Alloy 20 shafts are rated for a maximum differential pressure of 20.7bar.
These values are just for general service. Previous experience in a process or new developments and alternative seat materials may allow applications with ratings above those values above mentioned.

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