Coreline

2pc PTFE lined butterfly valve

Fig.225 : Wafer
Fig.226 : Lug

www.coreline.dk

General information

Specifications

Connection:	Fig.225 wafer, Fig.226 lug	
Nominal diameter:	DN40-DN800	
	(Bigger sizes available on request)	
Working pressure:	DN40-DN150	≤ 16bar
	DN200-DN350	≤ 10bar
	DN400-DN450	≤ 8bar
	DN500	≤ 6bar
	DN600	≤ 4bar
	DN700-DN800	= 1bar
Flange:	EN1092 PN10, PN16. ASME B16.5 Class150	
Face to face:	EN558 Series 20, API609 Table 1	
Top flange:	ISO5211	
Body:	Ductile iron, carbon steel, stainless steel	
Disc:	PTFE, PFA, SS304, SS316, SS316L, EN 1.4410, EN 1.4529	
Seat:	PTFE + EPDM backup: T≤110℃	
	PTFE + FPM backup: T≤130℃	
	PTFE + Silicone backup: T≤160℃	

CE FDA **SIL3**

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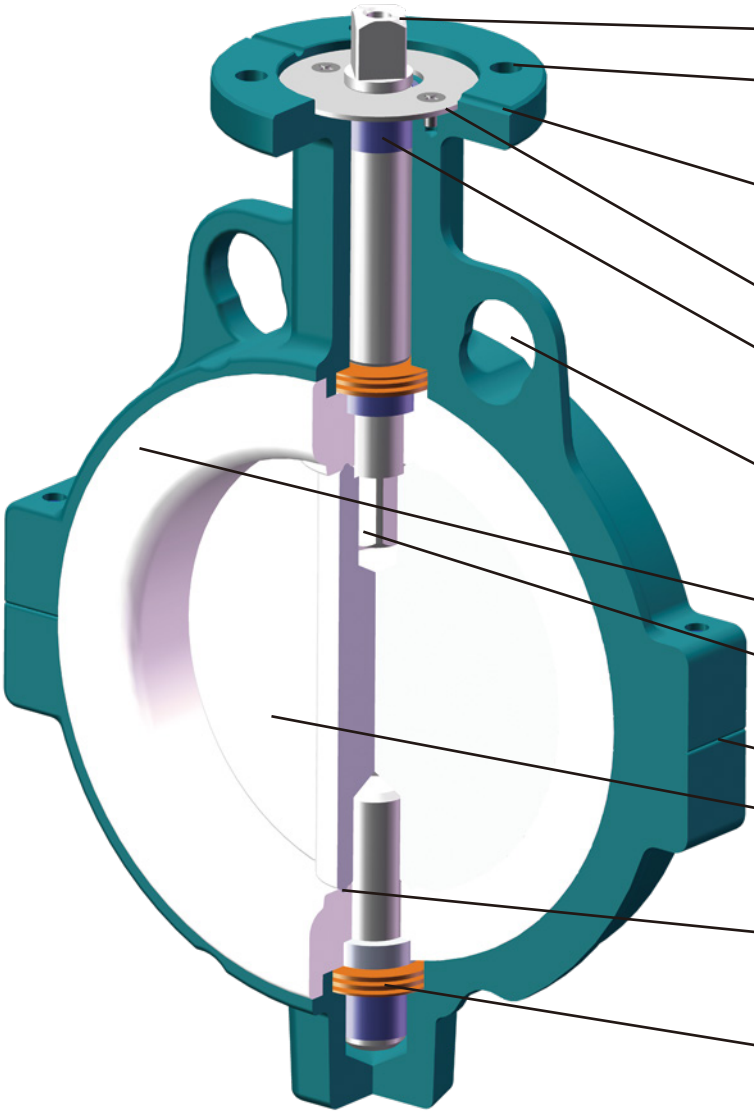
Specifications

- 2-pcs body construction makes it possible to replace seats.
- EPDM or FPM energized backup behind PTFE seat ensures perfect tightness - ISO5208 Rate A.
- Removalbe Silicone backup behind PTFE seat provides reliable sealing as well as wider range of working temperature.
- Suitable for a variety of applications: water and sewage, chemical and petrochemical industry, pharmaceutical/sanitary industry, food/beverage, paper industry, colouring, varnish, dyeing industries etc.

Design features



Groove on the stem showing direction of the disc

Top flange according to ISO5211, together with square stem, makes it suitable for direct mounting of actuators, without using bracket

Unique groove on the top flange getting rid of wetness, gives a very good protection to actuators

Stainless steel retainer preventing stem blow-out

RPTFE+graphite bearings provide excellent support, especially if actuators are used for automation purposes

Multi-standard alignment holes suitable for various standard of flanges: EN1092 PN10, PN16. ASME B16.5 Class150

Extra wide sealing face for corrosion resistance

Square transmission between disc and shaft is strong and reliable

Two piece body design

Streamline disc for better Kv with enough strength

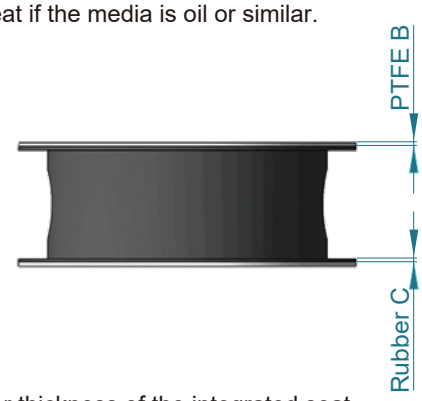
Chevron shape interface between disc and seat for better sealing

Spring loaded back up together with V-chevron sealing, to ensure safe tightness

Integrated seat - PTFE with EPDM/FPM backup

PTFE with EPDM backup seat: Temperature ≤ 110°C.
PTFE with FPM backup seat: Temperature ≤ 130°C.

PTFE seat is resistant to chemically toxic and high corrosion, but we specially recomend you to use PTFE with FPM backup or PTFE with silicone bar seat if the media is oil or similar.



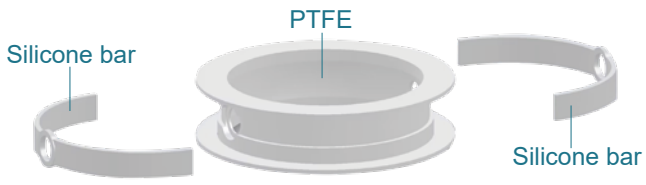
Below you can find PTFE and rubber thickness of the integrated seat.

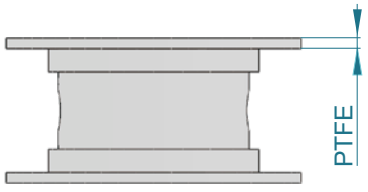
Size	PTFE thickness B [mm]	Rubber thickness C [mm]	Size	PTFE thickness B [mm]	Rubber thickness C [mm]
DN50	2	2	DN250	2.5	3
DN65	2	2	DN300	2.5	3
DN80	2	2	DN350	2.8	3
DN100	2.3	2.2	DN400	3	3
DN125	2.4	2.6	DN450	3	3
DN150	2.4	2.6	DN500	3.5	3.5
DN200	2.4	2.6	DN600	3.5	3.5

Split seat - PTFE with Silicone backup

PTFE with Silicone backup seat: Temperature ≤ 160°C.

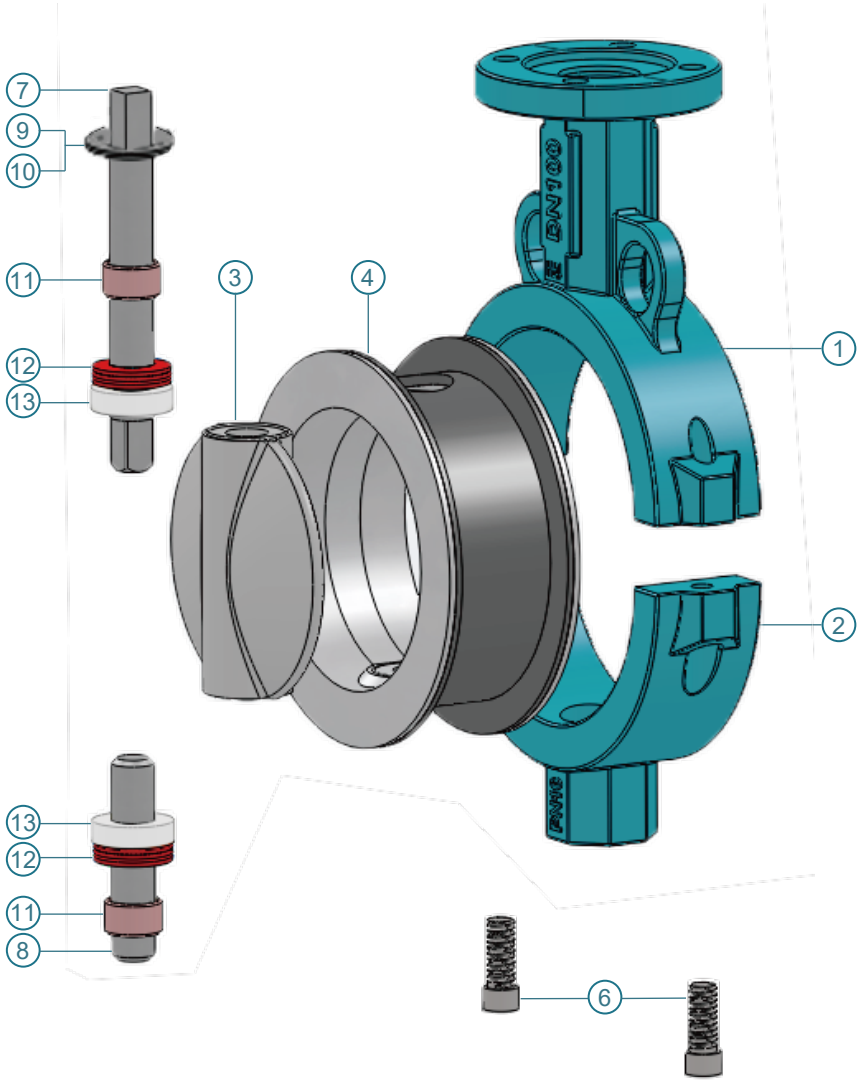
PTFE and Silicone can be seperated from each other. The thicker PTFE layer can maximizly reduce the media's penetration.





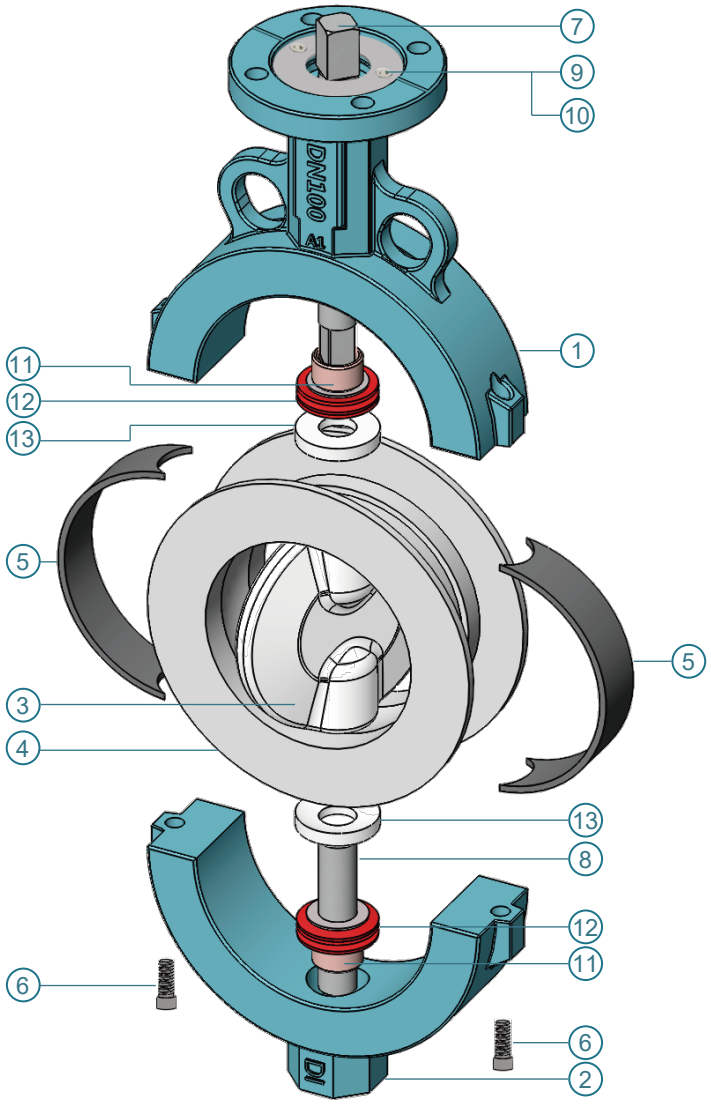
Size	PTFE thickness minimum [mm]	Size	PTFE thickness minimum [mm]
DN50	3.5	DN250	4
DN65	3.5	DN300	4.5
DN80	3.5	DN350	5
DN100	3.5	DN400	5
DN125	3.7	DN450	5
DN150	3.7	DN500	7~8
DN200	4	DN600	7~8

Material part list - Valve with PTFE + rubber backup seat



No.	Part name	Material	Specification	No.	Part name	Material
1/2	Body	Ductile iron	EN1563 JS1030	6	Body bolt	SS304
		Carbon steel	ASTM A216 WCB	7/8	Stem	SS420
		Stainless steel	ASTM A351 CF8M	9	Preventing plate	SS304
3	Disc	Stainless steel	ASTM A351 CF8	10	Screw	SS304
			ASTM A351 CF8M	11	Bearing	RPTFE with graphite
		Alloy steel	1.4469 (SAF2507)	12	Spring	Spring steel
			1.4462 (SAF2205)	13	Packing ring	PTFE
		PTFE	PTFE coated CF8M			
		PFA	PFA coated CF8M			
4	Seat	PTFE with EPDM backup	-20℃~+110℃			
		PTFE with FPM backup	-20℃~+130℃			

Material part list - Valve with PTFE + silicone backup seat



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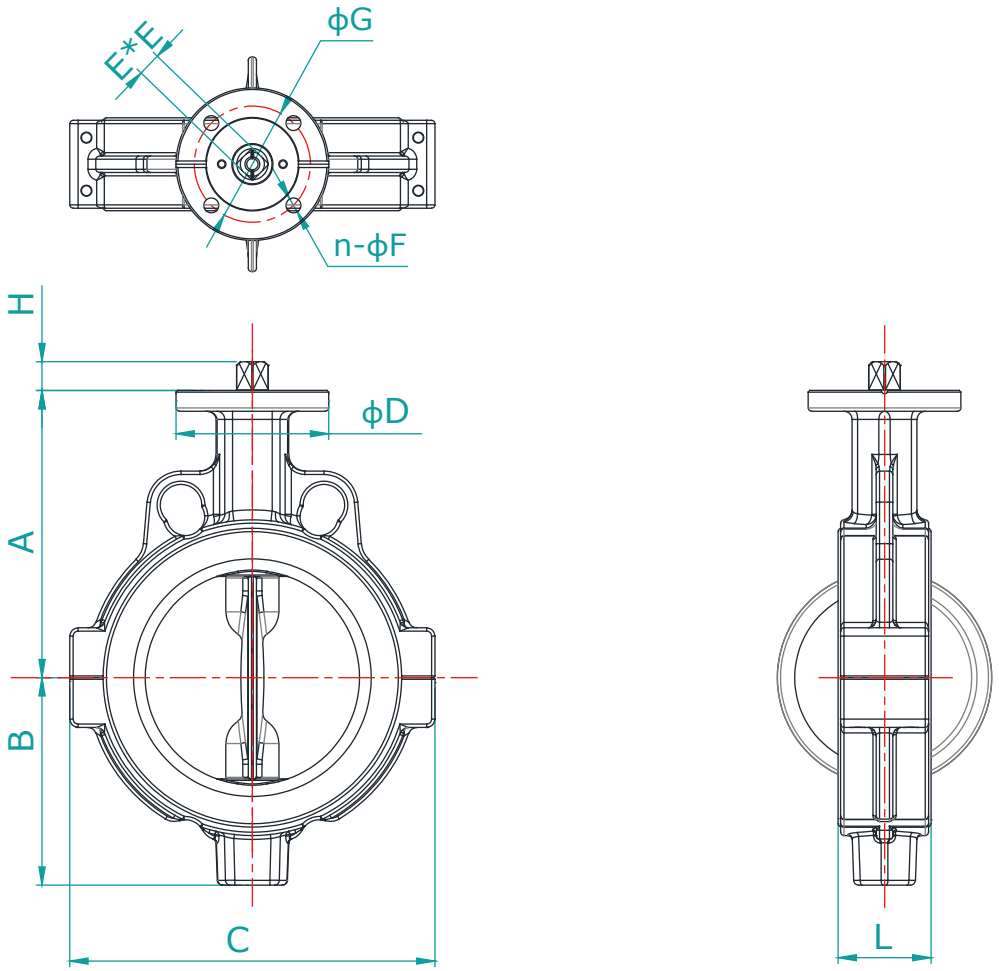
			ASTM A351 CF8M	11	Bearing	RPTFE with graphite
		Alloy steel	1.4469 (SAF2507)	12	Spring	Spring steel
			1.4462 (SAF2205)	13	Packing ring	PTFE
		PTFE	PTFE coated CF8M			
		PFA	PFA coated CF8M			
4	Seat	PTFE	-20℃~+160℃			
5	Rubber back	Silicone				

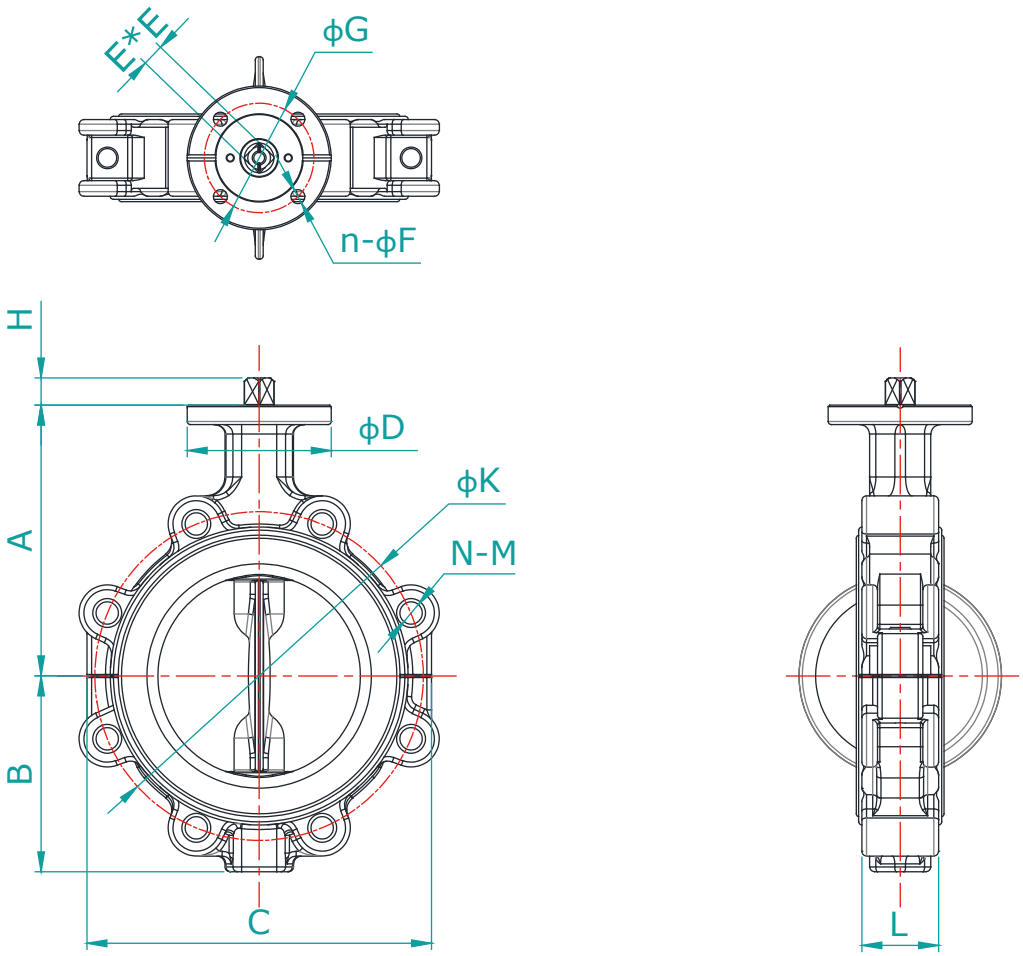
Dimensions - Fig.225



Dimensions - Fig.225

DN	INCH	A	B	C	D	E	n	F	G	H	L	Weight [kg]
50	2"	136	62	112	65	11	4	7	50	13.5	47	2
65	2 ½"	138	70	126	65	11	4	7	50	13.5	50	2.5
80	3"	140	78	142	65	11	4	7	50	13.5	50	3
100	4"	158	105	168	90	14	4	10	70	17.5	55.5	4
125	5"	180	122	240	90	14	4	10	70	17.5	59	6
150	6"	186	134	265	90	17	4	10	70	18.5	59	7
200	8"	234	165	320	125	22	4	14	102	24.5	63	13
250	10"	273	194	385	125	22	4	14	102	24.5	73	20
300	12"	302	224	450	125	27	4	14	102	30.5	81	30
350	14"	333	255	460	150	27	4	14	125	30.5	81	56
400	16"	408	298	585	175	27	4	18	140	30.5	92	80
450	18"	422	315	616	175	36	4	18	140	39	116.5	120
500	20"	480	356	685	210	36	4	22	165	39	130	160
600	24“	562	440	818	210	46	4	22	165	49	157	200
700	28“	625	520	910	300	φ63.1	8	18	254	90	165	270
800	32“	672	590	1050	300	φ63.1	8	18	254	90	188	370

Dimensions - Fig.226



Dimensions - Fig.226

DN	INCH	A	B	C	D	E	n	F	G	H	L	ANSI150		DIN PN 10		DIN PN 16		Weight [kg]
												ϕK	N-M	ϕK	N-M	ϕK	N-M	
50	2"	136	66	149	65	11	4	7	50	13.5	47	120.7	4-5/8"	125.0	4-M16	125.0	4-M16	3
65	2 ½"	138	70	159	65	11	4	7	50	13.5	50	139.7	4-5/8"	145.0	4-M16	145.0	4-M16	3.5
80	3"	140	92	182	65	11	4	7	50	13.5	50	152.4	4-5/8"	160.0	8-M16	160.0	8-M16	4.3
100	4"	158	108	217	90	14	4	10	70	17.5	55.5	190.5	8-5/8"	180.0	8-M16	180.0	8-M16	6.8
125	5"	170	120	240	90	14	4	10	70	17.5	59	215.9	8-3/4"	210	8-M16	210	8-M16	8
150	6"	190	134	267	90	17	4	10	70	18.5	59	241.3	8-3/4"	240.0	8-M20	240.0	8-M20	9
200	8"	232	160	320	125	22	4	14	102	24.5	63	298.5	8-3/4"	295.0	8-M20	295.0	12-M20	15
250	10"	270	200	400	125	22	4	14	102	24.5	73	362	12-7/8"	350	12-M20	355	12-M24	23
300	12"	300	233	465	125	27	4	14	102	30.5	81	431.8	12-7/8"	400	12-M20	410	12-M24	33
350	14"	333	258	512	150	27	4	14	125	30.5	81	476.3	12-1"	460.0	16-M20	470.0	16-M24	66
400	16"	403	292	585	175	27	4	18	140	30.5	92	539.8	16-1"	515.0	16-M24	525.0	16-M27	88
450	18"	422	315	616	175	36	4	18	140	39	116.5	577.9	16-1 1/8"	565.0	20-M24	585.0	20-M27	150
500	20"	480	356	685	210	36	4	22	165	39	130	635	20-1 1/8"	620	20-M24	650	20-M30	200
600	24“	562	440	818	210	46	4	22	165	49	157	749.3	20-1 1/4"	725.0	20-M27	770.0	20-M33	260
700	28“	625	520	910	300	φ63.1	8	18	254	90	165	863.6	28-1 1/4"	840.0	24-M27	840.0	24-M33	300
800	32“	672	590	1050	300	φ63.1	8	18	254	90	188	977.9	28-1 1/2"	950.0	24-M30	950.0	24-M36	420

Torque - Nm

DN	INCH	[1] Valve torque [Nm]	[2] MAST value [Nm]		
			SS420	SS431	17-4PH
50	2"	30	58	77	150
65	2 ½"	35	58	77	150
80	3"	55	58	77	150
100	4"	65	124	165	321
125	5"	115	124	165	321
150	6"	150	213	283	553
200	8"	250	461	614	1198
250	10"	360	461	614	1198
300	12"	450	852	1136	2214
350	14"	600	1478	1970	3843
400	16"	1350	1478	1970	3843
450	18"	1950	2528	3370	6574
500	20"	2300	2528	3370	6574
600	24“	3250	4212	5616	10950
700	28“	5000	6114	8152	15896
800	32“	8000	6114	8152	15896

1) Torques above are measured at standard pressure and room temperature, without load and without safety factor. Add a safety factor of 1.2–1.3 for sizing or consult Coreline under certain working conditions.

2) MAST: Maximum Allowable Stem Torque. Please contact Coreline for MAST values for other materials.

Kv value - m³/h at 1bar △P

DN	INCH	Opening angle - Full lined butterfly valve Kv [M³/H at 1Bar △P]								
		10°	20°	30°	40°	50°	60°	70°	80°	90°
50	2"	0.1	3.9	11	21	39	52	78	104	113
65	2 ½"	0.2	5.6	18	33	57	78	122	174	182
80	3"	0.3	8.7	20	35	61	100	156	238	260
100	4"	0.4	15	32	65	117	199	303	450	520
125	5"	0.7	24	52	113	200	334	537	796	866
150	6"	1.6	35	83	174	308	520	822	1212	1298
200	8"	2.6	74	163	347	619	1039	1644	2431	2596
250	10"	3.5	130	270	592	1085	1713	2769	4180	4499
300	12"	4.3	200	403	866	1566	2596	4326	6488	7077
350	14"	5.2	260	606	1298	2385	3893	6229	8660	10005
400	16"	6.9	390	834	1818	3084	5364	8218	12847	14004

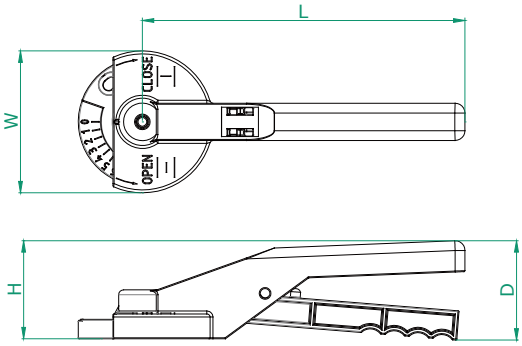
DN	INCH	Opening angle - Half lined butterfly valve Kv [M³/H at 1Bar △P]								
		10°	20°	30°	40°	50°	60°	70°	80°	90°
50	2"	0.9	4	12	23	43	58	86	115	124
65	2 ½"	0.9	6	20	37	62	86	134	191	200
80	3"	1.7	10	21	39	67	110	172	262	286
100	4"	2.6	16	35	72	129	219	334	495	571
125	5"	3.5	27	58	124	220	367	590	876	952
150	6"	4.3	38	91	192	339	571	904	1333	1428
200	8"	6.9	81	179	382	681	1142	1808	2674	2855
250	10"	8.7	143	297	651	1194	1885	3045	4597	4949
300	12"	14	219	443	953	1723	2855	4758	7137	7784
350	14"	16	286	667	1428	2623	4283	6852	9526	11005
400	16"	24	428	917	2000	3392	5900	9040	14131	15404

Note:
Fully lined butterfly valve - PTFE/PFA lined seat + PTFE/PFA lined disc.
Half lined butterfly valve - PTFE/PFA lined seat + Stainless/alloy disc.

Valve with hand lever

Fig.500 Aluminium hand lever

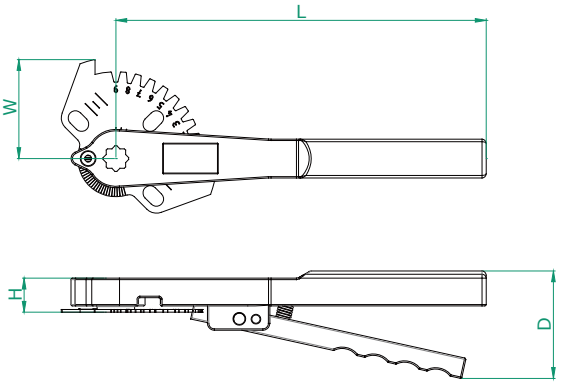
- Excellent design and comfortable operating 90° in 10 positions. The lever is fixed by screw on top of stem to avoid the lever getting loose by operation or vibrations. For safety, the hand lever can be locked in position by bolt/nut or a locker.
- Material is AL-Si alloy, which has better performance than Al-Mg and Al-Zn alloy.
- Electrophoresed surface treatment, which has stronger adhesion than traditional painting and much better resistance to corrosion.



Valve Size	D	H	L	W	Stem drive	[kg]
DN40-DN80	56	65	195	74	F05 - 11×11	0.28
DN100-DN125	78	82	269	101	F07 - 14×14	0.63

Fig.503 GGG40 and CF8M hand lever

- GGG40 and CF8M hand lever have the same shape and share the same angle place and locker.
- GGG40 hand lever has strong electrophoresed surface treatment. CF8M hand lever is with precise casting which has very smooth surface.
- Locker and plate in stainless steel SS316 and spring in SS321.
- Good design and comfortable operating 90° in 10 positions, but also adjustable screw to choose any position for regulation.
- The lever is fixed by screw on top of stem and not by side of stem, to avoid the lever getting loose by operation or vibrations. For safety, the hand lever can be locked in position by bolt/nut or a padlock.



Valve Size	D	H	L	W	Stem drive	[kg]
DN40-DN80	53	23	195	60	F05 - 11×11	0.8
DN100-DN125	77	30	267	73	F07 - 14×14	1.2

Fig.520 Aluminium gear box

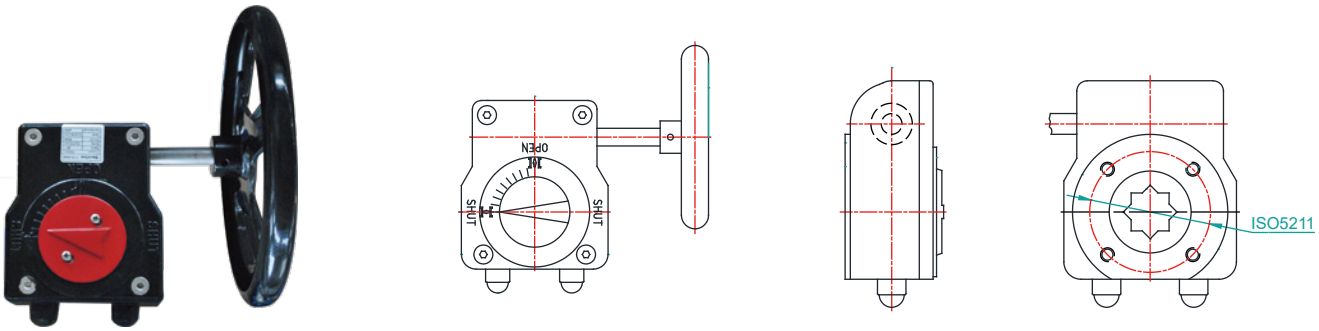


Fig.521 Cast iron, CF8M gear box

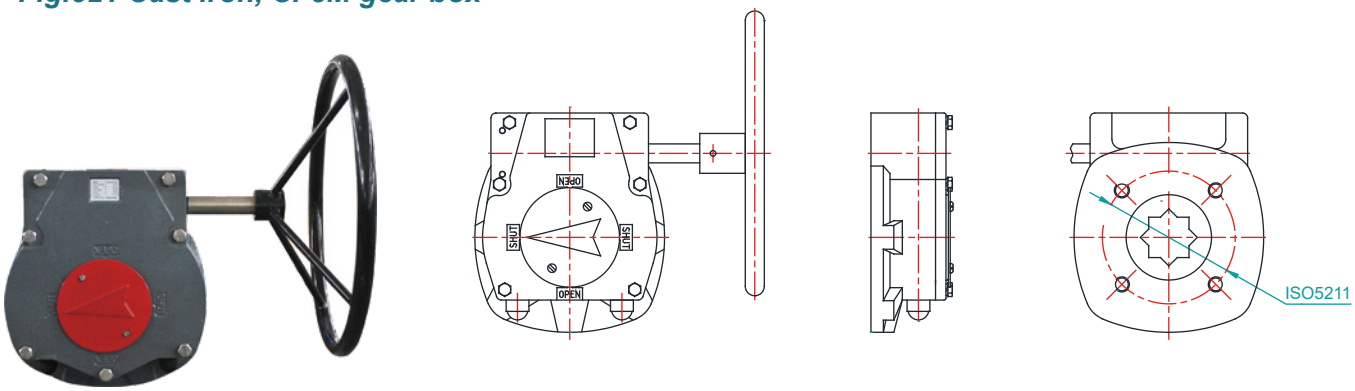


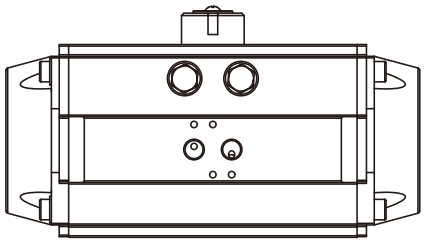
Fig.225/226			Gear Box						
DN	INCH	Torque [Nm]	Model	Output [Nm]	Ratio	Input [Nm]	ISO5211	[kg]	Material
50	2"	30	520-10S	150	40:1	13	F05+F07	1.3	**Housing:** Aluminium/ CF8M **Input shaft:** SS410/ SS304/SS316 **Gear:** Ductile iron Alu-Bronze
65	2-1/2"	35							
80	3“	55							
100	4“	65							
125	5“	115	520--10AS	250	40:1	25	F05+F07	1.7	
150	6"	150							
200	8"	250	520-15S	500	37:1	50	F07+F10	3.1	
250	10"	360							
300	12"	450	520-50	750	45:1	83	F10	5.2	
350	14"	600	520-50S	900	45:1	90	F10+F12	3.5	
400	16"	1350	521-MX14	2000	60:1	150	F14	14	**Housing:** Cast iron/CF8M **Worm shaft:** SS410/ SS304/SS316 **Gear:** Ductile iron/ Alu-Bronze
450	18"	1950	521-MX15	2800	70:1	185	F14	19	
500	20"	2300	521-MX16	4000	88:1	200	F16+F25	33	
600	24"	3250	521-M16	4400	88:1	169	F16	44	
700	28"	5000	521-M36	8000	210:1	180	F25	66	
800	32"	8000	521-M50S	11000	250:1	180	F25	109	

Notes:

1. Gearbox sizing is based on the torque of Fig. 225/226 valves under standard pressure.

2. Standard gearbox is supplied with C3 painting. For other materials or painting requirements, contact Coreline.

Pneumatic actuator sizing - 6bar air supply



Sizing - Fig.540N Air/air (Double acting)

Fig.225/226				Sizing - Fig.540N Double acting - Air supply 6bar		
DN	INCH	ISO5211	Torque /Nm	Size	ISO5211	Output torque /Nm
50	2"	F05	30	65	F03+F05+F07	45.9
65	2 ½"	F05	35	65	F03+F05+F07	45.9
80	3"	F05	55	85	F05+F07	98.1
100	4"	F07	65	85	F05+F07	98.1
125	5"	F07	115	95	F05+F07	147
150	6"	F07	150	110	F07+F10	199.5
200	8"	F10	250	125	F07+F10	318.1
250	10"	F10	360	140	F10+F12	526.4
300	12"	F10	450	160	F10+F12	802.2
350	14"	F12	600	160	F10+F12	802.2
400	16"	F14	1350	210	F14	1579.4
450	18"	F14	1950	240	F14	2320.7
500	20"	F16	2300	270	F16	3524.6
600	24“	F16	3250	270	F16	3524.6

Sizing - Fig.541N Air/spring (Sping return)

Fig.225/226				Sizing - Fig.541N Spring return - Air supply 6bar			
DN	INCH	ISO5211	Torque /Nm	Size	ISO5211	Torque air /Nm 0° - 90°	Torque spring /Nm 90° - 0°
50	2"	F05	30	85	F05+F07	62.1 - 35.7	62.4 - 36
65	2 ½"	F05	35	95	F05+F07	88.2 - 58.9	88.1 - 58.8
80	3"	F05	55	95	F05+F07	88.2 - 58.9	88.1 - 58.8
100	4"	F07	65	110	F07+F10	116.5 - 68	131.5 - 83
125	5"	F07	115	125	F07+F10	188.5 - 129.5	188.6 - 129.6
200	8"	F10	250	160	F10+F12	455.9 - 275.2	527 - 346.3
250	10"	F10	360	190	F10+F14	741.6 - 468	744 - 470.4

Note: Please consider a safety factor of 1.2~1.3 on valve torque for sizing for actuators; Please note that the torque can be adjusted according to the actual working pressure for special requirements. Please contact Coreline for details.

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