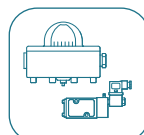
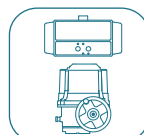
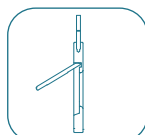
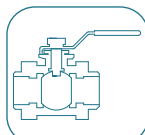
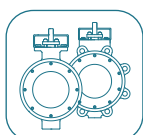


Rubber seat butterfly valve

Fig.211N: Wafer and lug



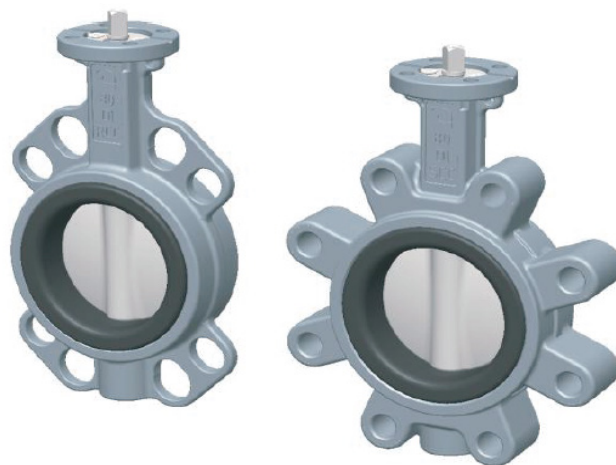
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Specifications

Specifications

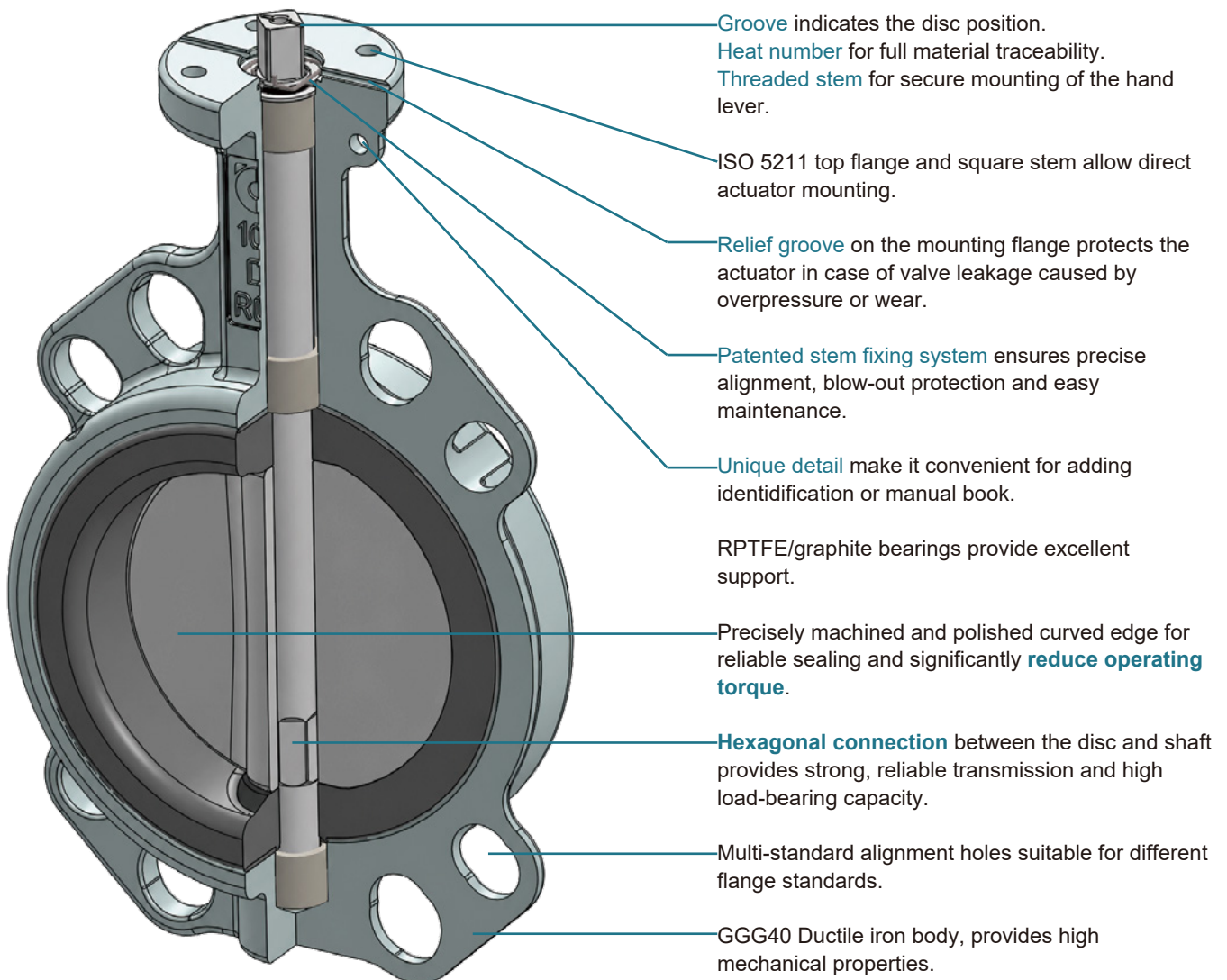
Nominal diameter:	DN25-DN300
Standard working pressure:	16bar for DN25-DN150
Flange accommodation:	10bar for DN200-DN300 EN1092 PN6, PN10, PN16 ASME B16.5 Class150 JIS B2239 10K, 16K BS10 Table D, Table E
Face to face:	EN558 series 20, API 609 table 1
Top flange:	EN ISO 5211
Working temperature:	-20°C to +150°C (depending on pressure, medium and material)
Tightness test:	ISO 5208 Rate A; EN 12266-1 Rate A; ANSI/FCI 70-2 Class VI



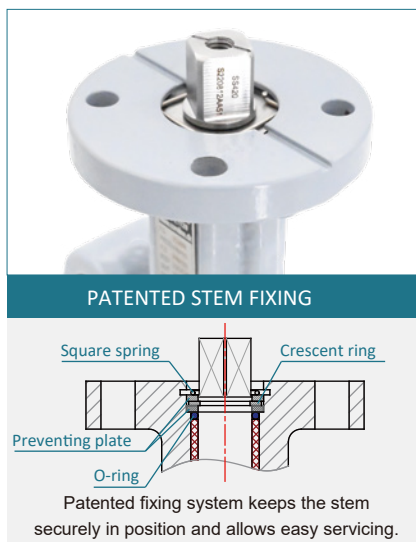
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page 5	Dimensions
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page 7	Manual operation
page 8	Solutions for demanding applications

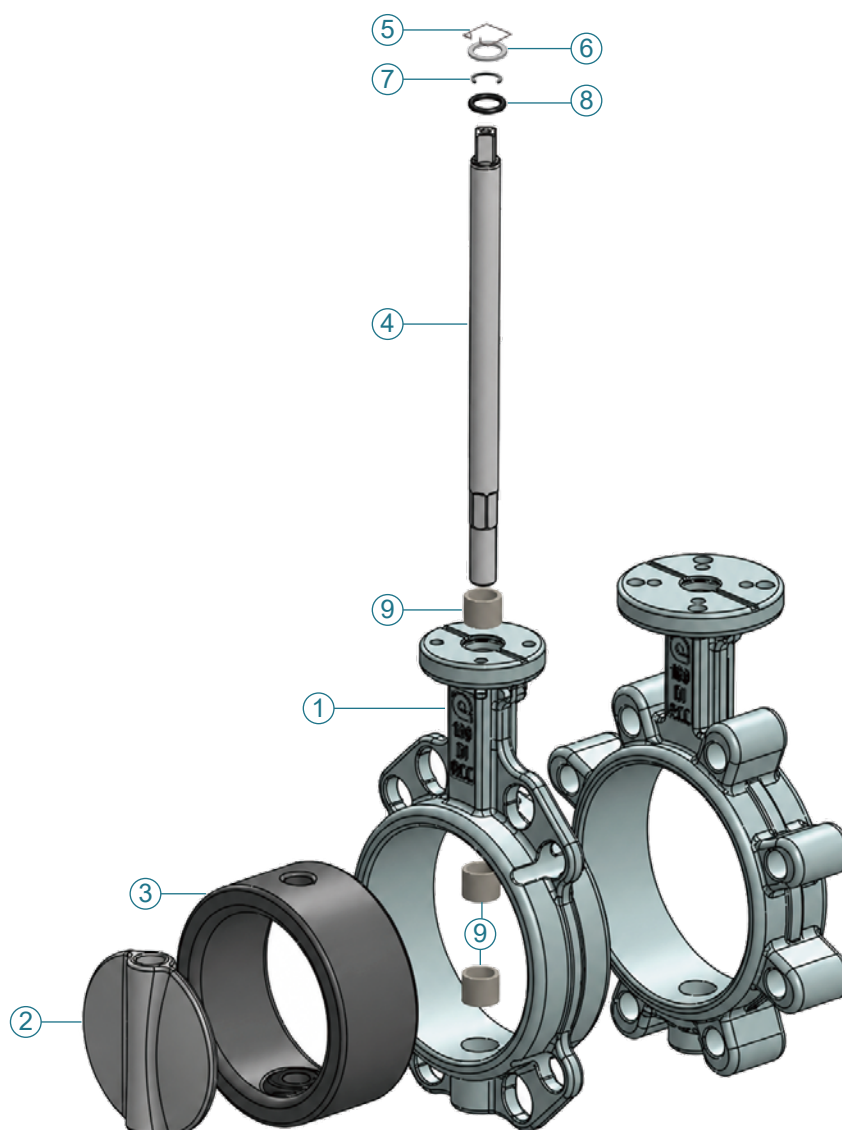
Design features



Key features



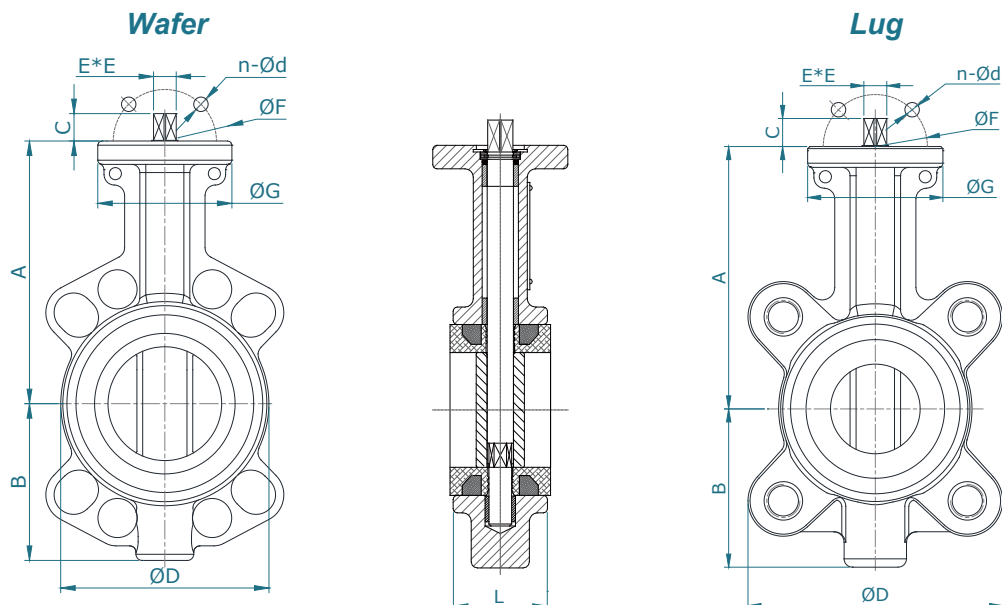
Material part list



No.	Part name	Material	Specification	No.	Part name	Material
1	Body	Ductile iron	EN1563 EN-GJS-400-15	4	Stem	SS420
2	Disc	Stainless steel	ASTMA351 CF8			SS431
			ASTMA351 CF8M	5	Square spring	SS304
			SS201	6	Preventing plate	SS201
		Alloy steel	1.4462 (SAF2205)	7	Crescent ring	65Mn, Dacromet Coated
			1.4469 (SAF2507)	8	O-ring	NBR
		Aluminium bronze	C95800	9	Bearing	PTFE + Graphite
3	Seat *)	Ductile iron	Nylon, Halar coated			
		NBR	-15 °C~+85 °C			
		EPDM	-20 °C~+120 °C			
		FPM	-15 °C~+150 °C			
		EPDM, FDA (black)	-20 °C~+110 °C			
		EPDM, WRAS (black)	-20 °C~+85 °C			

*) The above temperature range for the valve seats are provided as reference for general working conditions. Please note that the actual applications may vary due to the different media, pressure etc. in the pipeline. Contact Coreline for other materials or special requirements.

Dimensions



Dimensions - Wafer

SIZE		A	B	C	D	E	F	n	d	G	L	Weight [kg]
DN	INCH											
25/32	1" / 1 ¼"	108	60	13.5	72	9	50	4	8	65	32	1.1
40	1 ½"	113	67.5	14	85	9	50	4	8	65	33	1.5
50	2"	126	74	14.5	99	9	50	4	8	65	43	1.8
65	2 ½"	134	80	14.5	113	9	50	4	8	65	46	2.3
80	3"	138	93	14.5	129	9	50	4	8	65	46	2.9
100	4"	167	110	18.5	157	11	50+70	4+4	8+10	90	52	4.4
125	5"	180	126	18.5	190	14	70	4	10	90	56	5.7
150	6"	203	139	18.5	213	14	70	4	10	90	56	6.9
200	8"	228	169	21.5	266	17	70+102	4	10+12	125	60	10.9
250	10"	266	209	21.5	324	22	102	4	12	125	68	16.6
300	12"	291	238	22	377	22	102+125	4+4	12+14	150	76	23.2

Dimensions - Lug

SIZE		A	B	C	D	E	F	n	d	G	L	Weight [kg]
DN	INCH											
40	1 ½"	113	67.5	10	113	9	50	4	8	65	33	2
50	2"	126	74	10	118	9	50	4	8	65	43	2.4
65	2 ½"	134	80	10	131	9	50	4	8	65	46	3
80	3"	138	93	10	177	9	50	4	8	65	46	3.3
100	4"	167	110	13	206	11	50+70	4+4	8+10	90	52	5.8
125	5"	180	126	13	235	14	70	4	10	90	56	8
150	6"	203	139	13	258	14	70	4	10	90	56	8.8
200	8"	228	169	13	321	17	70+102	4	10+12	125	60	13.8
250	10"	266	209	15	395	22	102	4	12	125	68	22.4
300	12"	291	238	15	461	22	102+125	4+4	12+14	150	76	32.5

Different pressure may cause different dimension of "D".

Technical data

Torque values (Nm)

DN	INCH	Pressure Rating	Torque [Nm]	MAST [Nm] - SS420
25/32	1" / 1 ¼"	PN16	9	55
40	1 ½"	PN16	10	55
50	2"	PN16	10	55
65	2 ½"	PN16	12	55
80	3"	PN16	19	55
100	4"	PN16	23	100
125	5"	PN16	44	206
150	6"	PN16	60	206
200	8"	PN10	110	370
250	10"	PN10	150	801
300	12"	PN10	240	801

(1) The torque values above are tested with water at the stated working pressure. No safety factor is included.

(2) MAST: Maximum Allowable Stem Torque. Contact Coreline for MAST values for other stem materials.

Service and medium factor - Actuator Sizing

Service factor [SF]	Multiply by	Medium factor [MF]	Multiply by	Medium factor [MF]	Multiply by
ON/OFF operation	1.15	Lubricating liquid/gas	0.9	For dry service(Dry gas/air)	1.25
Modulating operation	1.25	Viscous Liquids,Molasses	1.3	Dirty air slurry,natural gas,dirt slurry	1.5-1.8
*)2 cycle/day "NC"	1.15	Degreasing liquid	1.25	Lime water,chlorin gas,oxygen,powder	1.5-1.8
**)1 cycle/week "NC"	1.5	Saturated steam	1.2	Hydrodynamic torque	NA

NOTE: Apply 100% of the specified butterfly valve torque from 0° to 6°, and 33% from 7° to 90°. Long periods without operation may increase the breakaway torque.

ACTUATOR SIZING EXAMPLE

Fig.211N DN100 PN16 · ON/OFF · Molasses: $1.15 [SF] \times 1.30 [MF] \times 23 \text{ Nm} = 34.4 \text{ Nm}$

Apply one Service Factor [SF] and one Medium Factor [MF] only.

Kv values (m³/h at 1bar ΔP)

DN	INCH	10°	20°	30°	40°	50°	60°	70°	80°	90°
40	1 ½"	-	1	3	7	14	26	38	47	52
50	2"	-	1	5	11	25	45	65	90	100
65	2 ½"	-	3	9	25	46	72	115	165	210
80	3"	-	5	26	50	85	135	201	290	365
100	4"	-	17	35	75	132	220	388	560	640
125	5"	-	25	80	148	235	370	589	900	1070
150	6"	6	47	122	215	340	545	935	1440	1740
200	8"	20	110	220	385	610	980	1690	2580	2960
250	10"	31	160	320	605	930	1460	2560	3950	5010
300	12"	47	235	465	880	1360	2150	3700	6100	7080

Kv Calculation

For control applications, valve size should be selected according to the operating conditions and required Kv value, not only the pipe size.

Fig.211N butterfly valves have an approximately equal-percentage flow characteristic up to an opening angle of 65°. Use the formulas below to calculate the Kv value and select the valve size.

Liquid:

$$K_v = Q \times \sqrt{\frac{W}{\Delta p}}$$

Gas:

$$K_v = \frac{V_N}{514} \sqrt{\frac{G \times T}{\Delta p \times p_d}}$$

K_v = Flow coefficient

Q = Max. flow volume in m³/h

w = Exact weight in kg/m³

Δp = Pressure drop in bar

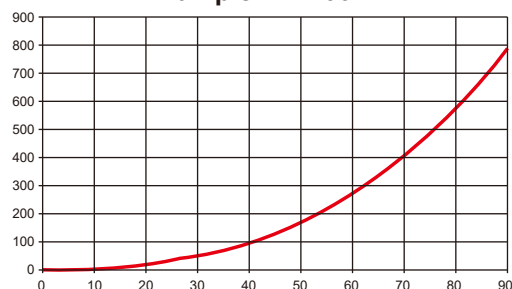
V_N = Max. flow in Nm³/h

G = Exact weight in kg/Nm³

T = Absolute temp. in ° Kelvin

P_d = Absolute pressure downstream in bar

Example: DN100



Manual operation

Hand lever operation

- 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. The positionplate for F10 is in stainless steel SS304.

CF8M handle lever is available on request.

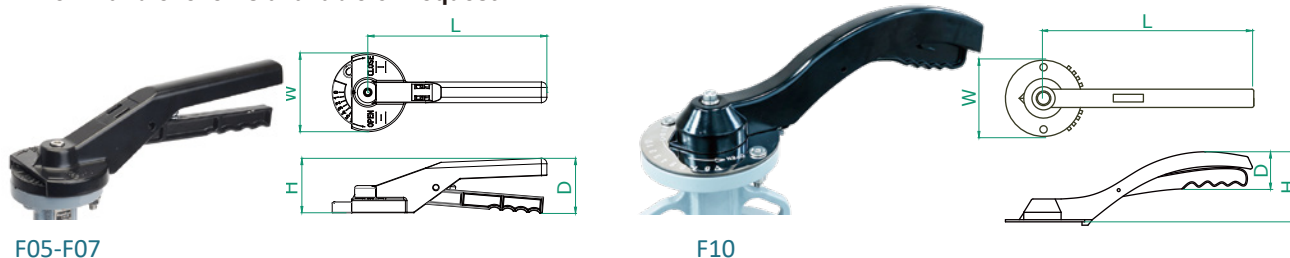


Fig.211N	D	H	L	W	Stem drive	[kg]
DN25-DN80	56	65	195	74	F05 - 9×9	0.28
DN100	78	82	269	101	F07 - 11×11	0.63
DN125-DN150	78	82	269	101	F07 - 14×14	0.63
DN200	80	115	345	125	F10 - 17×17	1.46

Gearbox operation

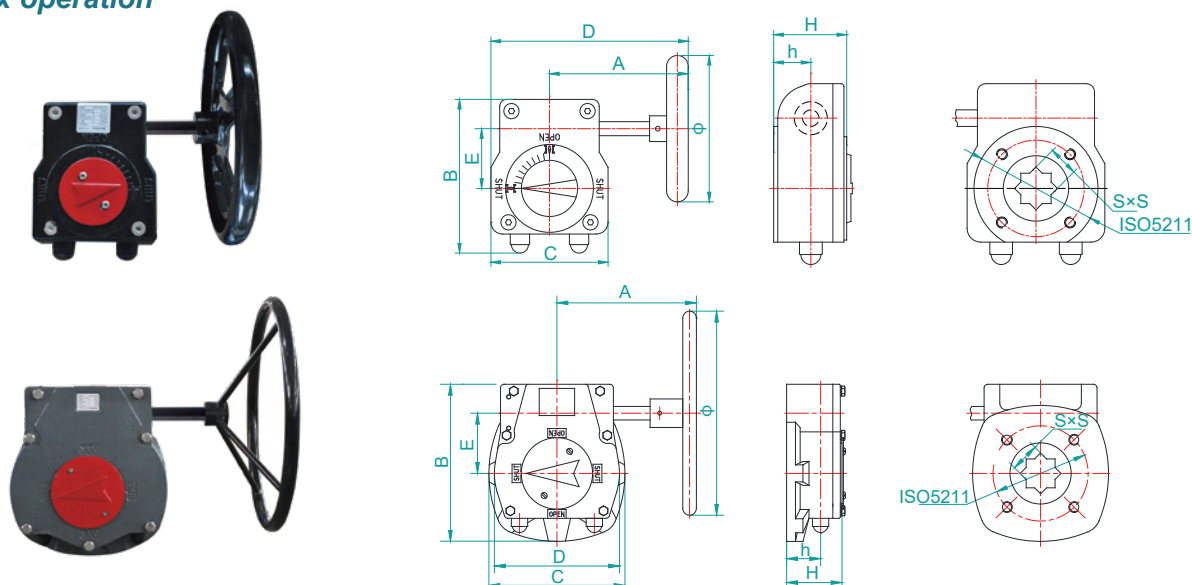


Fig.211N	Gearbox Model	Material	Output [Nm]	Ratio	Input [Nm]	A	B	C	D	E	Φ	h	H	ISO5211	S	[kg]
DN25-DN80	520-10S	Housing: Aluminium + C3 (Optional C4, C5)	150	40:1	13	115	114	80	155	40	121	24	49	F05+F07	□9	1.3
DN100															□11	
DN125-DN150															□14	
DN200	520-10AS	Input shaft: SS410/SS304/SS316	250	40:1	25	178	114	80	218	40	200	26	52	F05+F07	□17 → □14	1.7
DN250-DN300	520-15S	Gear: Ductile iron (Optional Alu. bronze)	500	37:1	50	200	132	100	250	50	250	30	60	F07+F10	□22	3.1

Notes:

1. Gearbox sizing is based on the torque of Fig.211N butterfly valves at standard working pressure, with a safety factor of 1.3.
2. Standard gearboxes are supplied with C3 coating. Contact Coreline for other materials or coating requirements.

Solutions for demanding applications

ABS MARINE APPROVAL



Product Design Assessment

Approved butterfly valves for marine applications.

Certificate No.: [25-0254693-PDA]

JOTUN COATING SYSTEM

Premium Two-Component Coatings from JOTUN - A trusted Norwegian Coating Brand

Penguard EXA II

Epoxy primer

Futura Classic

Polyurethane topcoat

C3

CORELINE STANDARD

Industrial applications

120 µm

C4

OPTIONAL

Marine environments

180 µm

C5

OPTIONAL

Highly corrosive environments

240 µm

APPLICATION OPTIONS



Nylon-coated disc

Suitable for seawater and corrosive water service.

Stem extension

Suitable for underground installations or areas with limited access.



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