

Applications

- General circuits: water, fuel, oil, gas.
- O.E.M.
- Flow shut-off or regulation functions in the sectors including water supply, treatment, distribution, sewage, irrigation.

Working conditions

- Temperature: from -10 °C minimum up to +110 °C maximum.
- Allowable pressure (PS):
 - 16 bar: DN 40 to 200 mm at ambient temperature,
 - 10 bar: DN 250 to 300 mm at ambient temperature.

Materials

See page 2.

Design

- Semi lug type body (Type 2): DN 40 to 300
- Elastomer liner: an extra volume of rubber, located at the shaft passages areas, provides by compression between the valve body and the disc edge a perfect leak-tightness at the shaft passages.
- Spherical machined disc ensures perfect upstream/downstream sealing: zero leakage visible to the naked eye.
- Possible downstream dismantling and end of line for bodies Type 2.
- Face-to-face dimensions in accordance with:
ISO 5752 series 20, EN 558-1 series 20.
- Connection standard:
 - EN 1092 PN 6, 10 and 16,
 - ASME B16-1 class 125 and B16-5 class150,
 - JIS B2238 and B2239 5K, 10K and 16K.

- Mounting plate meeting the ISO 5211 standards.
- Marking in accordance with EN 19.
- Valves perfectly tight shut-off (no visible leakage at the naked eye) in either flow direction, in accordance with the following standards: EN 12266-1/leak level A and ISO 5208 category A.
- Design in accordance with EN 593
- Body coated with polyurethane paint, thickness 80 µm, light blue colour ref. RAL 5012.conforming with the water specifications.

Data to be supplied when ordering

- BOAX[®]-B series valve in accordance with type series booklet 8409.12-10.
- Size.
- Working conditions:
 - nature of fluid,
 - Pressure,
 - Flow,
 - Temperature.
- Connection.



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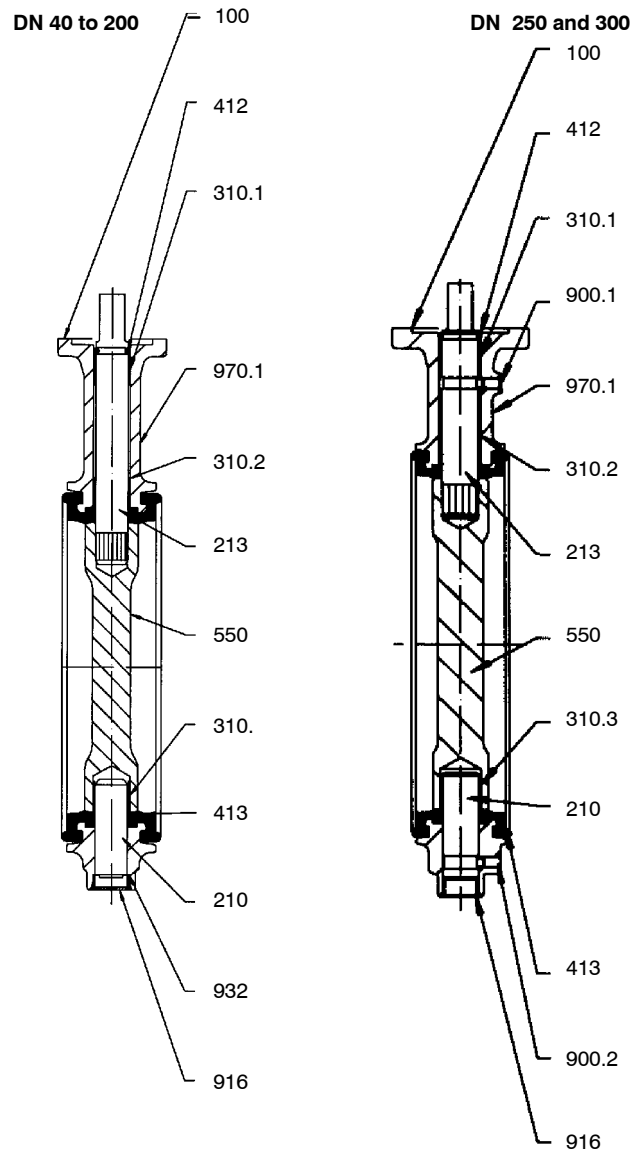


Materials

Body	KSB code	
Type 2: Spheroidal graphite cast iron JS 1030	DN 40 to 300	3g
Shafts	KSB code	
Stainless steel 1.4029 (13 % Cr)	DN 40 to 300	6k
Disc	KSB code	
Spheroidal graphite cast iron JS 1030	DN 40 to 300	3g
Stainless steel 1.4308 ASTM A351 gr. CF8	DN 40 to 300	6g
AMRING® liner	KSB code	
E.P.D.M approved for drinking water; Temperature: from -10 °C min. up to +110 °C max.		XC
High content nitrile; Temperature: from -5 °C min. up to +90 °C max.		K

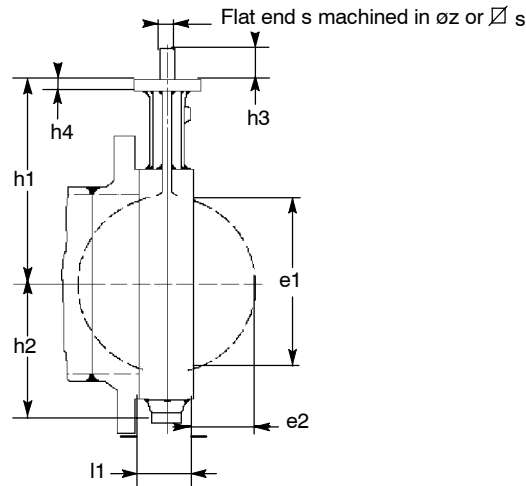
Vacuum limits

DN	NPS	Liner mounting	Minimum pressure (in absolute bar)	Vacuum limits	
				Maximum temperature	
40 to 150	1 ½ to 6	Without sticking (Standard)	$1,33 \cdot 10^{-5}$ (10^{-2} torr)	90° C	
200 to 300	8 to 12	Without sticking (Standard)	0,3 bar	90° C	
		With sticking (Option)	$1,33 \cdot 10^{-5}$ (10^{-2} torr)	80° C	

Construction


Item	Designation	DN	Materials
100	Body	250 and 300	Refer to materials paragraph page 2
210	Shaft	250 and 300	Stainless steel
213	Operating shaft	250 and 300	Stainless steel
310.1	Plain bearing	250 and 300	PTFE filled on steel casing
310.2	Plain bearing	250 and 300	PTFE filled on steel casing
310.3	Plain bearing	250 and 300	PTFE filled on steel casing
412	O-ring	250 and 300	Nitrile
413	Liner	250 and 300	Refer to materials paragraph page 2
550	Disc	250 and 300	In accordance with fluid
900.1	Anti blow-out screw	250 and 300	Stainless steel
900.2	Anti blow-out screw	250 and 300	Stainless steel
916	Plug	250 and 300	Polyethylene
932	Self locking	250 and 300	Steel
970.1	Identity plate	250 and 300	Polyester + adhesive

Dimensions



mm

DN	NPS	Face to face l1	Mounting plate ISO 5211		Flat shaft end			Square shaft end		Disc clearance			
			h1	h2	n°	h4	s	øz	h3	∅ s	h3	e1	e2
40	1 ½	33	105	51	F05	10	11	14	24			32	4
50	2	43	109	55	F05	10	11	14	24			33	4
65	2 ½	46	136	67	F05	10	11	14	24			55	11
80	3	46	142	73	F05	10	11	14	24			71	17
100	4	52	163	92	F05	10	14	18	24			90	23
125	5	56	176	105	F05	10	14	18	30			119	35
150	6	56	194	120	F07	12	14	18	30			144	46
200	8	60	222	150	F07	12	19	25	35			196	69
250	10	68	255	194	F10	15	19	25	35			249	92
300	12	78	282	226	F12	18	22	28	40			297	111

Hydraulic characteristics

DN	NPS	Flow coefficient valve in fully open position		Zeta
		Kvo	Cvo	
40	1 ½	65	75	0,97
50	2	130	150	0,59
65	2 ½	276	316	0,38
80	3	500	575	0,26
100	4	750	863	0,28
125	5	1 650	1 898	0,14
150	6	2 600	2 990	0,12
200	8	5 300	6 095	0,09
250	10	9 900	11 385	0,06
300	12	11 000	12 650	0,11

Operating torques*

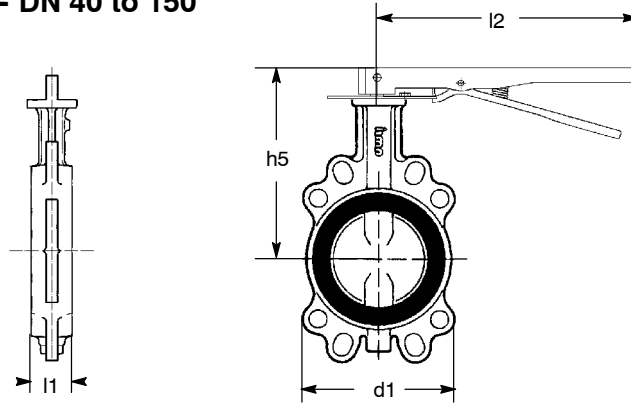
DN	NPS	Operating torques* (in Nm)	
		10 bar (lubricated medium)	10 bar (non lubricated medium) 16 bar (lubricated medium)
40	1 ½	10	20
50	2	20	30
65	2 ½	30	40
80	3	40	50
100	4	60	70
125	5	80	100
150	6	130	140
200	8	170	210
250	10	220	330
300	12	380	520

* The safety coefficient to define the adapted actuator is included in the torque value.

Manual control

The actuator selection for lubricated medium proposed in the table below are defined for the maximum fluid velocity mentioned. According to the working conditions and the hydraulic characteristics, upper fluid velocities can be admitted, therefore other actuators selections can be proposed: please consult us.

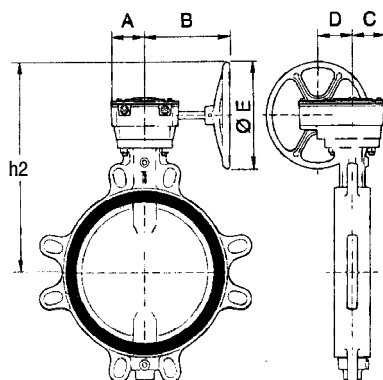
Manual control - CR handle - DN 40 to 150



DN		Control by CR handle					Weight* (kg) Semi-lug type body (T2)
mm	NPS	l1	d1	l2	h5		
40	1 1/2	33	108	CR 165	157	1,5	
50	2	43	118		162	1,8	
65	2 1/2	46	132		188	2,5	
80	3	46	138		194	3,1	
100	4	52	150	CR 230	215	4,7	
125	5	56	234	CR 300	249	6,1	
150	6	56	260		266	8,3	
200	8	60	322	CR 510	305	13,5	
250	10	68	394		338	19,4	
300	12	78	462		365	33,0	

* The indicated weights are those of the unit valve + handle.

MR reducers



DN	NPS	Maxi. fluid velocity (m/s)	Actuator	A (mm)	B (mm)	C (mm)	D (mm)	Ø E (mm)	h2 (mm)	Weight MR (kg)
Lubricated medium										
40	1 1/2	3,0	MR 25	56	181	53	55	225	251	5,2
50	2								255	
65	2 1/2								282	
80	3								288	
100	4								309	
125	5								322	
150	6								340	
200	8								368	
250	10								401	
300	12								496	
Non lubricated medium										
40	1 1/2	3,0	MR 25	56	181	53	55	225	251	5,2
50	2								255	
65	2 1/2								282	
80	3								288	
100	4								309	
125	5								322	
150	6								340	
200	8								368	
250	10								469	
300	12								496	

Connections

The BOAX® -B valves can be fitted between all the connections defined hereafter (Others connections on request).

- EN 1092 PN 6, 10 and 16 - ASME B16-1 class125 and B16-5 class150 - JIS B2238 and B2239 5K, 10K and 16K

Semi-lug type body - Type 2

DN	NPS	Connection							
		EN 1092			ASME		JIS B2238-B2239		
		PN 6	PN 10	PN 16	B16.1 cl. 125	B 16.5 cl. 150	5 K	10 K	16 K
40	1 ½	✓▲	✓	✓	✓	✓	✓	✓	✓
50	2	✓	✓	✓	✓	✓	✓	✓	✓■
65	2 ½	✓	✓	✓	✓	✓	✓	✓	✓■
80	3	✓	✓	✓	✓	✓	✓	✓	✓
100	4	✓	✓	✓	✓	✓	✓	✓	✓
125	5	✓	✓	✓	✓	✓	✓	✓	✓■
150	6	✓	✓	✓	✓	✓	✓	✓	✓■
200	8	✓	✓▲	✓	✓▲	✓▲	✓	✓▲	✓■
250	10	✓	✓▲	✓	✓	✓	✓	✓	✓■
300	12	✓	✓	✓	✓	✓	✓	✓■	✓■

✓ Fitting allowed

▲ Insert a washer between the nut and the rib of the valve

■ Downstream dismantling not allowed

End of line and downstream dismantling

The BOAX® -B valves type 2 are fitted between pipe flanges, by tie-rod, without gasket.

They are bi-directional and can be mounted in all positions.

Use as end of line and downstream dismantling of the standard valves at room temperature for DN and the differential pressure (Δ PS) defined hereafter:

Gas or liquids*		Liquids*	
Hazardous**	Non hazardous**	hazardous**	non hazardous**
All sizes: not authorized	Sizes \leq 200: Δ PS = 10 bar maxi Sizes 250 to 300: Δ PS = 7 bar maxi	Sizes \leq 200: Δ PS = 10 bar maxi Sizes 250 to 300: Δ PS = 7 bar maxi	Sizes \leq 200: Δ PS = 12 bar maxi Sizes 250 to 300: Δ PS = 7 bar maxi

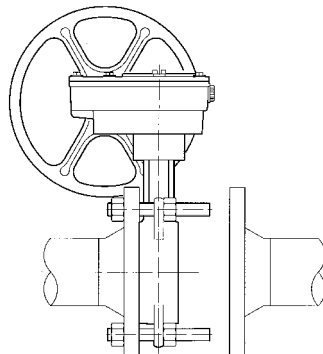
* Liquids having a vapour pressure at the maximum allowable temperature of not more than 0,5 bar above atmospheric pressure 1013 mbar.

** Fluids hazardous and not hazardous.

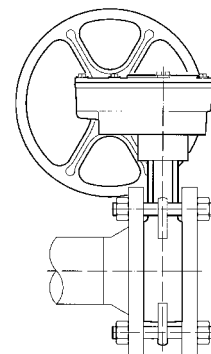
NB: A valve fitted at the end of a pipe with a blind flange downstream is not to be considered as an end of pipe service.

Downstream dismantling

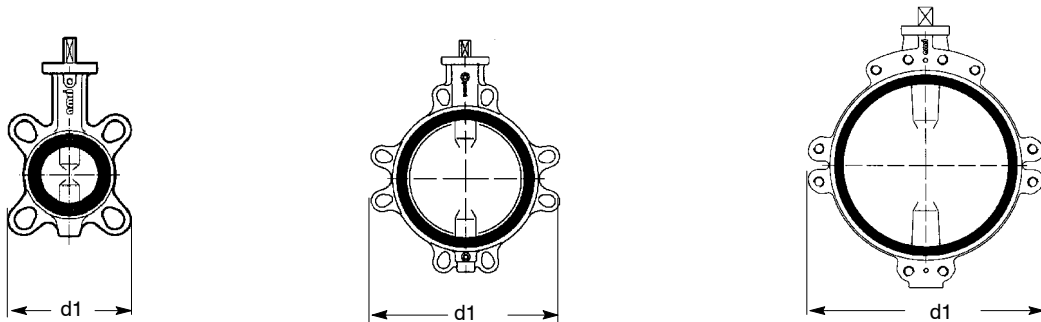
Dismantling phase:
working successively on
diametrically opposite
tie-rods.



End of line mounting



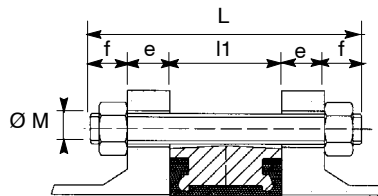
Bolting and weight for semi-lug type body - Type 2



The drawings are not the correct representation concerning our manufacture (quantities for semi lug and plain holes)

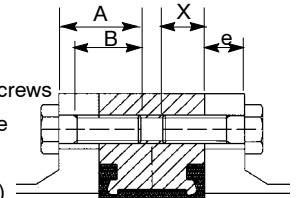
$$L = l1 + 2e + 2f$$

- L : Mini length of tie-rods
- l1 : Face to face of the valve
- e : Flange thickness
(customer specification)
- f : Nut thickness
+ overlength of the tie-rod



$$A = e + X$$

- A : Maxi length of screws
- X : Maxi implantation of screws
- B : Threaded length > A-e
- e : Flange thickness
(customer specification)



NB: We do not supply the bolting

mm

DN	NPS	d1	l1	EN 1092 PN 10				EN 1092 PN 16				ASME B16-5 class 150				JIS B2238-B2239 10K				Weight kg				
				ØM	f	Qty	X	Qty**	ØM	f	Qty	X	Qty**	UNC	f	Qty	X	Qty**	Ø M		f	Qty	X	Qty**
40	1 1/2	108	33	M16	20	4			M16	20	4			1/2"	17	4			M16	20	4			1,1
50	2	118	43	M16	20	4			M16	20	4			5/8"	20	4			M16	20	4			1,3
65	2 1/2	132	46	M16	20	4			M16	20	4			5/8"	20	4			M16	20	4			1,9
80	3	138	46	M16	20	8			M16	20	8			5/8"	20	4			M16	20	8			2,5
100	4	150	52	M16	20	8			M16	20	8			5/8"	20	8			M16	20	8			3,9
125	5	234	56	M16	20	8			M16	20	8			3/4"	24	8			M20	24	8			4,7
150	6	260	56	M20	24	8			M20	24	8			3/4"	24	8			M20	24	8			6,9
200	8	322	60	M20	24	8			M20	24	12			3/4"	24	8			M20	24	12			10,5
250	10	394	68	M20	24	12			M24	29	12			7/8"	29	12			M22	26	12			16,4
300	12	462	78	M20	24	12			M24	29	12			7/8"	29	12			M22	26	16			30

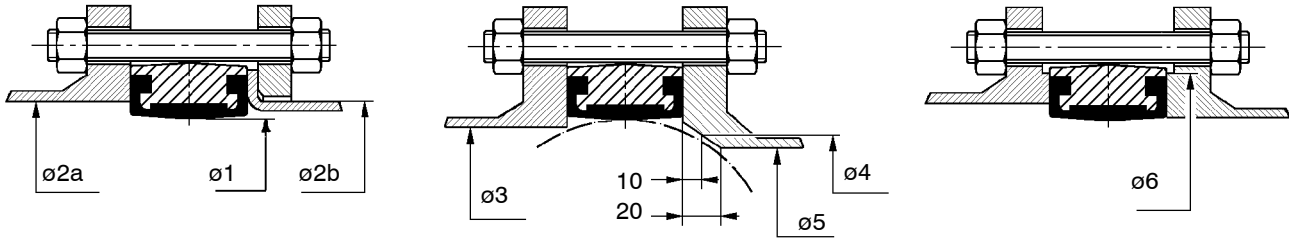
* Quantity nuts = quantity tie-rods x 2

** Quantity of screws by face*

Flanging dimensions

BOAX® -B valves are designed for assembly between any type of flanges and connection standards currently used. The liner allows directly the tightness concerning the flanges. It is necessary to verify the general compatibility of the connection by checking against the dimensions shown in the table below.

The flanging dimensions mentioned in this table are the same for all types body.



- $\varnothing 2a$ and $\varnothing 3$: diameter on the supporting area of the flange face.
- $\varnothing 2b$: external diameter of the butt-weld ends with lapped pipe end.

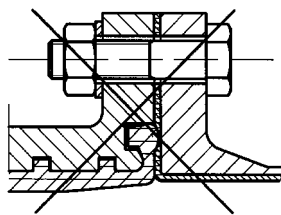
mm

DN	NPS	Optimum dia.	Max. dia tolerated		Min. dia. tolerated face of flange	Min. dia. 10 mm from face of flange	Min. dia. 20 mm from face of flange	Min. dia. tolerated of shoulder of raised face flange
		$\varnothing 1$	$\varnothing 2a$	$\varnothing 2b$	$\varnothing 3$	$\varnothing 4$	$\varnothing 5$	$\varnothing 6$
40	1 ½	40	54	49	32	---	---	77
50	2	49	63	61	33	---	---	86
65	2 ½	65	80	77	55	13	---	107
80	3	77	93	89	71	50	---	121
100	4	96	116	115	90	74	40	141
125	5	123	141,5	140	119	107	87	171
150	6	146	170,5 *	169	144	134	120	196
200	8	196	222 *	220	196	189	178	250
250	10	249	276,5 *	273	249	243	234	306
300	12	298	327,5 *	324	297	291	283	358

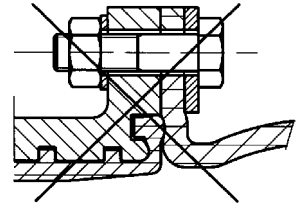
* Please check the body is well centred between the tie-rods.

NB:

Direct fitting on rubber coated flange and with dilatation joint is not authorized. Please, consult us.

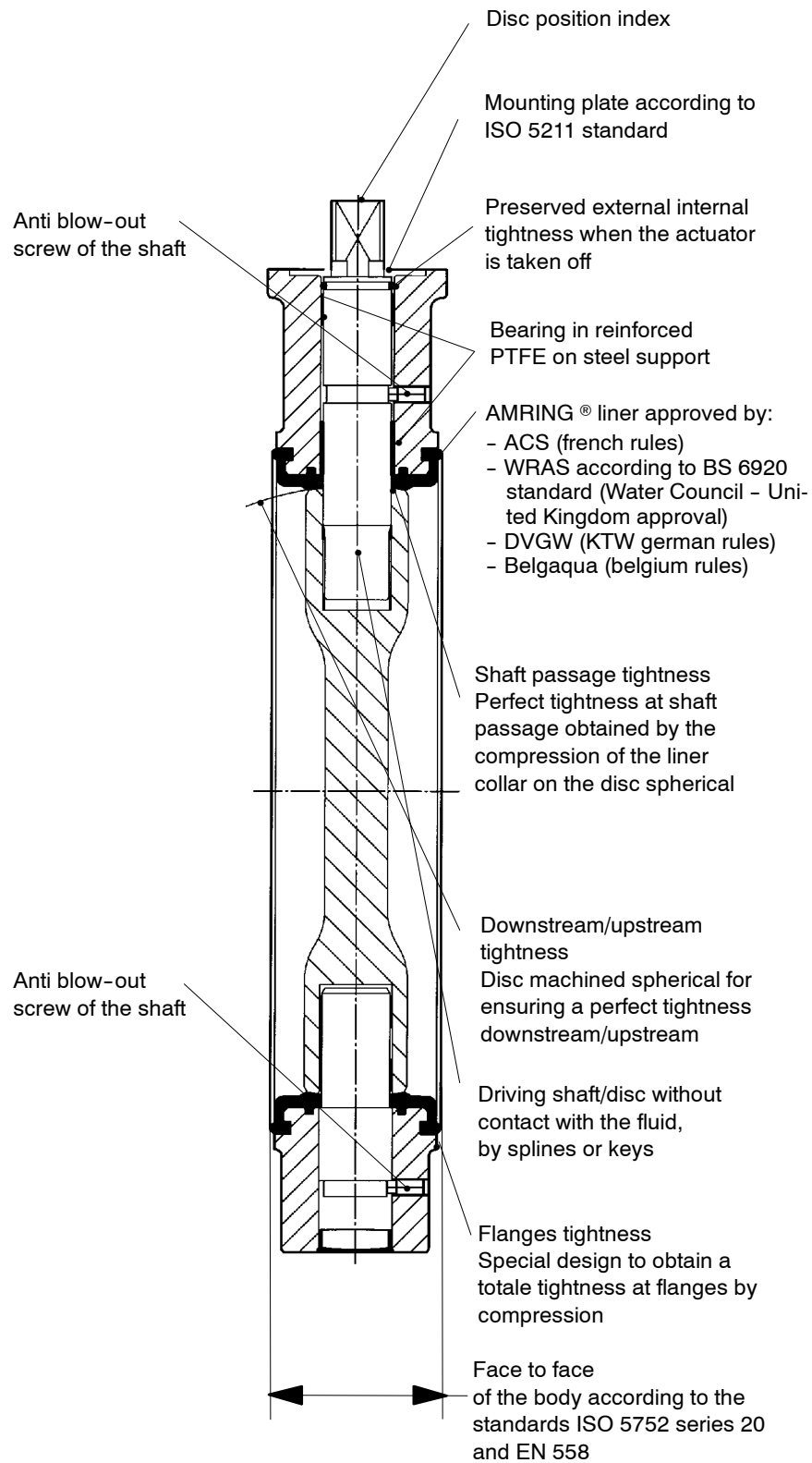


Rubber coated flange



Dilatation joint

Product features - to our customers' benefit



This leaflet is not contractual and may be amended without notice.

24.01.06

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