



Centered disc butterfly valves with AMRING® elastomer liner

240 PSI:
1½" to 8"

150 PSI :
10" to 24"

Design in accordance with ISO 10631
Manual, electrical, pneumatical control

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 14 °F (-10 °C) minimum up to 230 °F (+110 °C) maximum.
- Allowable pressure (PS) at ambient temperature:
 - 240 psig (16 bar): NPS 1½" (DN 40) to 8" (DN 200),
 - 150 psig (10 bar): NPS 10" (DN 250) to 24" (DN 600).

Materials

See page 2.

Design

- Semi lug type body (Type 2): NPS 1½" (DN 40) to 12" (DN 300) (NPS 1½" to 12" may be installed as a wafer valve)
- Full-lug type body with raised faces (Type 4): NPS 1½" (DN 40) to 24" (DN 600)
- Possible downstream dismantling and end of line for bodies Type 2 and 4.
- Elastomer liner design includes an extra volume of rubber at the shaft passage areas. This provides additional compression to the disc and shafts for perfect shaft sealing.
- Spherical machined disc ensures perfect upstream/downstream sealing.
- Face-to-face dimensions in accordance with ISO 5752 series 20, EN 558-1 series 20, API-609 Category A standards.
- Connection standard defined on page 7.
- Marking in accordance with EN 19.
- Valves provide tight shut-off (no visible leakage) in either flow direction, in accordance with EN 12266-1 leak level A and ISO 5208 category A standards.

- Design in accordance with ISO 10631.
- Contains no asbestos, PCB and substances impairing paint wetting.
- Body coated with polyurethane paint, thickness 3 mils (80 µm), color blue ref. RAL 5012 conforming with the water specifications.
- The valves meet the safety requirements of the Pressure Equipments Directive 97/23/EC (PED) appendix I for liquids of the group 1 and fluids of the group 2.
- A remote valve can be considered as a partly completed machine in compliance with the requirements of the machinery directive 2006/42/EC.
- The valves comply with the requirements of the REACH regulation.

Standard Operators + Accessories

- CR handles
- MG or MR gears
- C series pneumatic double acting or spring return actuators
- NAMUR VDI/VDE 3845 mount limit switches
- NAMUR VDI/VDE 3845 mount positioners
- NAMUR mount solenoid valves

Remarks

- Operating instructions 8411.801/.-90

Data to be supplied when ordering

- ISORIA valve in accordance with type leaflet 8448.1/2-EN-US.
- Size.
- Working conditions: nature of fluid, pressure, flow, temperature.
- Flange connection.
- Actuation.



Materials

Body		KSB code
Type 2: Ductile iron JS 1030	NPS 1½" to 12"	3g
Type 4: Ductile iron JS 1030	NPS 1½" to 24"	3g
Shafts		KSB code
Stainless steel 1.4029 (13 % Cr)	NPS 1½" to 24"	6k
Disc		KSB code
Aluminium-bronze CC333G/C95800	NPS 1½" to 24"	2
Ductile iron JS 1030	NPS 1½" to 24"	3g
Stainless steel 1.4401 / AISI 316 SS	NPS 1½" to 8"	6
Stainless steel 1.4408 / ASTM A351 gr. CF8M (316 SS)	NPS 10" to 24"	6
AMRING® liner		KSB code
E.P.D.M		XC
Temperature: from 14 °F (-10 °C) minimum up to 230 °F (+110 °C) maximum		
E.P.D.M. For Drinking Water NSF Certified by WQA to NSF / ANSI 61 & 372		XC-NSF
Temperature: from 14 °F (-10 °C) minimum up to 230 °F (+110 °C) maximum		
High content nitrile		K
Temperature: from 23 °F (-5 °C) minimum up to 194 °F (+90 °C) maximum		

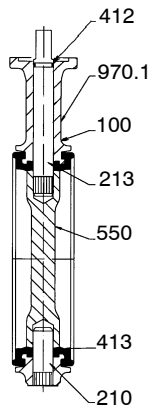
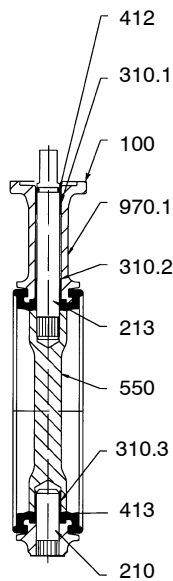
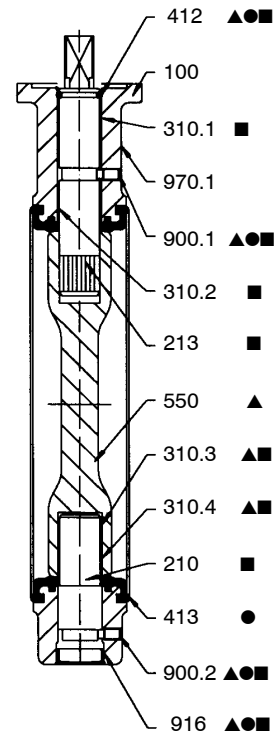
Vacuum limits

NPS	DN	Minimum pressure	Maximum temperature
inch	mm	psia	
1½" to 12"	40 to 300	0.0002 (10 ⁻² torr)	194 °F (90° C)
14" to 24"	350 to 600	4.35	194 °F (90° C)



Certified by
WQA to NSF/
ANSI 61 & 372

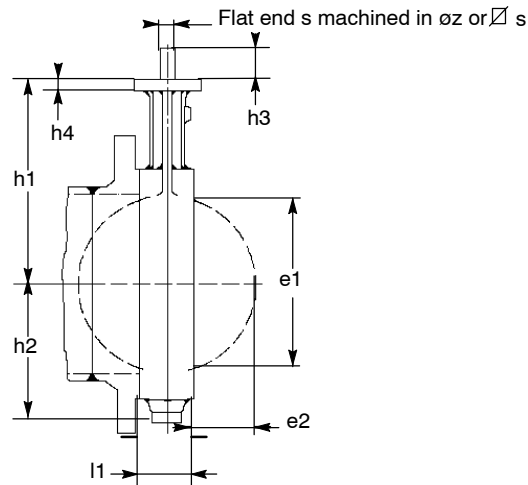
Construction

NPS 1½" to 6"

NPS 8" to 12"

NPS 14" to 24"


● Spare parts included in the liner kit ▲ Spare parts included in the disc kit ■ Spare parts in the shaft kit

Item	Designation	NPS	Materials
100	Body	1½" to 24"	Refer to materials paragraph page 2
210	Shaft	1½" to 24"	Stainless steel
213	Operating shaft	1½" to 24"	Stainless steel
310.1	Plain bearing	8" to 24"	PTFE filled on steel casing
310.2	Plain bearing	8" to 24"	PTFE filled on steel casing
310.3	Plain bearing	8" to 24"	PTFE filled on steel casing
310.4	Plain bearing	14" to 24"	PTFE filled on steel casing
412	O-ring	1½" to 24"	Nitrile
413	Liner	1½" to 24"	Refer to materials paragraph page 2
550	Disc	1½" to 24"	Refer to materials paragraph page 2
900.1	Anti blow-out screw	14" to 24"	Stainless steel
900.2	Anti blow-out screw	14" to 24"	Stainless steel
916	Plug	14" to 24"	Polyethylene
970.1	Identity plate	1½" to 24"	Polyester + adhesive

To order spare parts in the kit, it is necessary to have the valve code from the identity plate.

Dimensions


NPS	DN	Face to face l1			Mounting plate ISO 5211		Flat shaft end			Square shaft end		Disc clearance	
					n°	h4	s	øz	h3	∅ s	h3	e1	e2
inch	mm		h1	h2									
1 1/2	40	33	105	51	F05	10	11	14	24			32	4
2	50	43	109	55	F05	10	11	14	24			33	4
2 1/2	65	46	136	67	F05	10	11	14	24			55	11
3	80	46	142	73	F05	10	11	14	24			71	17
4	100	52	163	92	F05	10	14	18	24			90	23
5	125	56	176	105	F05	10	14	18	30			119	35
6	150	56	194	120	F07	12	14	18	30			144	46
8	200	60	222	150	F07	12	19	25	35			196	69
10	250	68	255	194	F10	15	19	25	35			249	92
12	300	78	282	226	F12	18	22	28	40			297	111
14	350	78	335	269	F12	23				25	45	326	127
16	400	102	380	298	F14	23				36	55	370	140
18	450	114	410	329	F14	23				36	55	422	160
20	500	127	440	359	F14	27				36	55	470	178
24	600	154	495	439	F16	27				50	65	566	215

Hydraulic characteristics

NPS	DN	Valve flow coefficient in fully open position
inch	mm	Cvo
1 ½	40	75
2	50	151
2 ½	65	319
3	80	580
4	100	870
5	125	1,914
6	150	3,016
8	200	4,756
10	250	7,598
12	300	9,918
14	350	12,876
16	400	16,936
18	450	21,112
20	500	25,636
24	600	35,032

Operating torques*

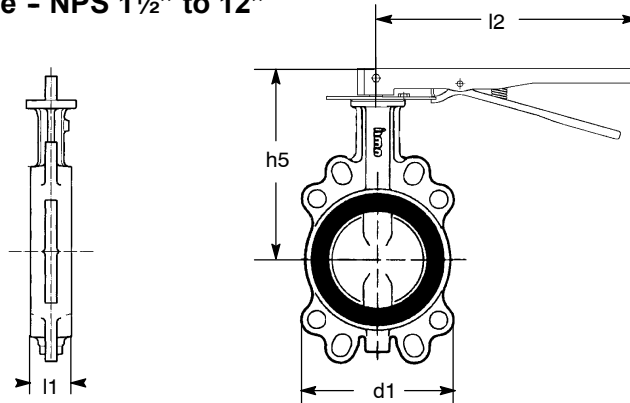
NPS	DN	Operating torques* (in-lbs)		
		150 psig (10 bar) lubricated	150 psig (10 bar) non lubricated	240 psig (16 bar) lubricated
inch	mm			
1 ½	40	89	177	177
2	50	177	265	265
2 ½	65	265	354	354
3	80	354	443	443
4	100	531	620	620
5	125	708	885	885
6	150	1,150	1,239	1,239
8	200	1,504	1,858	1,858
10	250	1,947	2,921	
12	300	3,360	4,602	
14	350	4,425	6,372	
16	400	5,752	8,673	
18	450	7,080	10,620	
20	500	8,850	13,275	
24	600	12,390	18,585	

* The safety factor for actuator sizing is included in the torque value.

Manual control

Operator sizing is based on a maximum velocity of 10 FT/sec liquid and 165 FT/sec gas. Higher velocities are possible through the valve but may require a longer handle. Please consult AMRI for longer handle, gear, or other actuator recommendations.

Manual control - CR handle - NPS 1½” to 12”



NPS inch	DN mm	Control by CR handle				Weight* (lbs)	
		l1	d1	l2	h5	Semi-lug type body (T2)	Full-lug type body (T4)
1 ½	40	33	108	CR 165	157	3.3	5.0
2	50	43	118		162	3.9	6.1
2 ½	65	46	132		188	5.5	7.2
3	80	46	138		194	6.8	10.5
4	100	52	150	CR 300	215	10.3	12.7
5	125	56	234		249	13.4	20.9
6	150	56	260		266	18.3	25.3
8	200	60	322	CR 510**	305	29.7	59.5
10	250	68	394		338	42.7	92.5
12	300	78	462		365	72.7	107.9

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

** Only for lubricated application

Connections

The ISORIA valves can be fitted between the connections EN 1092 PN 10, EN 1092 PN 16, ASME B16.5 cl.150 and ASME B16.1 cl.125 .
Other connections on request.

Semi-lug type body - Type 2 - NPS 1½" to 12" (NPS 1½" to 12" can be installed as a wafer valve)

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

Fitting allowed

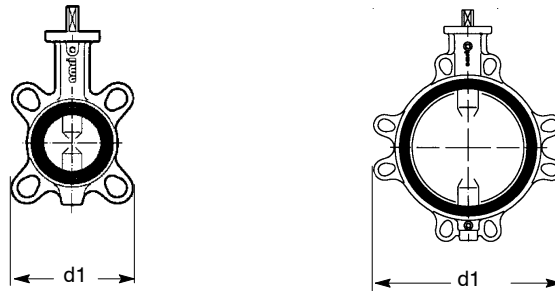
▲ When used as a semi-lug valve, insert a washer between the nut and the rib of the valve

Full-lug body with raised faces - Type 4 - NPS 1½" to 24"

NPS	DN	Connection	
		ASME B16.1 cl.125	ASME B16.5 cl.150
1 ½	40	✓	✓
2	50	✓	✓
2 ½	65	✓	✓
3	80	✓	✓
4	100	✓	✓
5	125	✓	✓
6	150	✓	✓
8	200	✓	✓
10	250	✓	✓
12	300	✓	✓
14	350	✓	✓
16	400	✓	✓
18	450	✓	✓
20	500	✓	✓
24	600	✓	✓

Fitting allowed

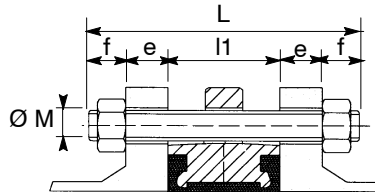
Bolting and weight for semi-lug type body - Type 2



These are representative drawings only and may not reflect the actual number of threaded and plain bolt holes

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

- L : Min. length of stud bolts
- l1 : Face to face of the valve
- e : Flange thickness
(customer specification)
- f : Nut thickness
+ in addition to the stud bolt

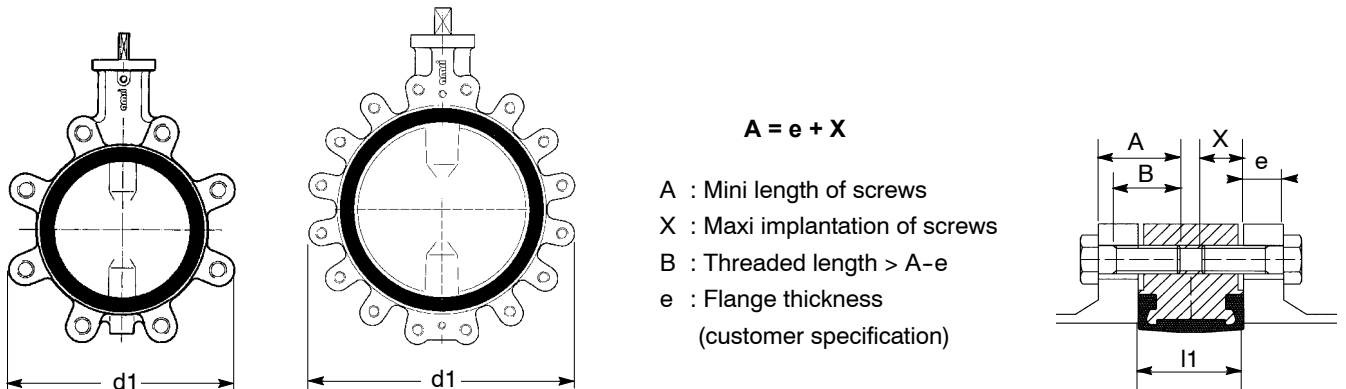


NOTE: Bolting to be supplied by customer

NPS	DN	d1	l1	EN 1092 PN 10			EN 1092 PN 16			ASME B16.5 cl.150 ASME B16.1 cl.125			Weight lbs
				ØM	Stud bolt * f	Qty	ØM	Stud bolt * f	Qty	UNC	Stud bolt * f	Qty	
1 1/2	40	108	33	M16	20	4	M16	20	4	1/2"	17	4	2.4
2	50	118	43	M16	20	4	M16	20	4	5/8"	20	4	2.8
2 1/2	65	132	46	M16	20	4	M16	20	4	5/8"	20	4	4.2
3	80	138	46	M16	20	8	M16	20	8	5/8"	20	4	5.5
4	100	150	52	M16	20	8	M16	20	8	5/8"	20	8	8.6
5	125	234	56	M16	20	8	M16	20	8	3/4"	24	8	10.3
6	150	260	56	M20	24	8	M20	24	8	3/4"	24	8	15.2
8	200	322	60	M20	24	8	M20	24	12	3/4"	24	8	23.1
10	250	394	68	M20	24	12	M24	29	12	7/8"	29	12	36.1
12	300	462	78	M20	24	12	M24	29	12	7/8"	29	12	66

* Quantity of nuts = quantity of stud bolts x 2

Bolting and weight for lug type body with raised faces - Type 4



These are representative drawings only and may not reflect the actual number of threaded and plain bolt holes

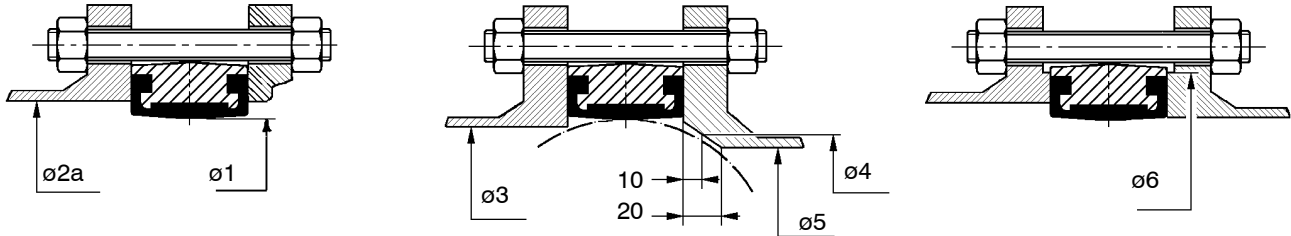
NOTE: Bolting to be supplied by customer

NPS	DN	d1	l1	ASME B16.5 cl.150 ASME B16.1 cl.125			Weight
				UNC	X	Qty *	
1 1/2	40	108	33	1/2"	14	4	4.4
2	50	120	43	5/8"	18	4	5.5
2 1/2	65	134	46	5/8"	20	4	6.6
3	80	140	46	5/8"	20	4	8.8
4	100	210	52	5/8"	22	8	12.1
5	125	236	56	3/4"	23	8	19.8
6	150	260	56	3/4"	26	8	24
8	200	312	60	3/4"	26	8	53
10	250	396	68	7/8"	28	12	86
12	300	466	78	7/8"	28	12	101
14	350	510	78	1"	30	12	137
16	400	598	102	1"	34	16	223
18	450	622	114	1 1/8"	37	16	269
20	500	708	127	1 1/8"	37	20	395
24	600	822	154	1 1/4"	42	20	564

* Quantity of screws by face

Flange Dimensions

ISORIA valves are designed for assembly between any type of flange and connection standard currently used. The liner is directly compressed by the flanges, so it is necessary to verify that proper liner compression and disc clearance will be provided. The recommended flange dimensions in this table are the same for all body types.

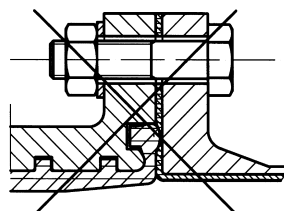


- $\phi 2a$ and $\phi 3$: diameter on the supporting area of the flange face.

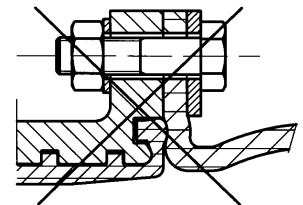
NPS	DN	Optimum dia.	Max. dia tolerated	Min. dia. tolerated face of flange	Min. dia. 10 mm from face of flange	Min. dia. 20 mm from face of flange	Min. dia. tolerated of shoulder of raised face flange
		$\phi 1$	$\phi 2a$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$
1 1/2	40	40	54	32	---	---	77
2	50	49	63	33	---	---	86
2 1/2	65	65	80	55	13	---	107
3	80	77	93	71	50	---	121
4	100	96	116	90	74	40	141
5	125	123	141.5	119	107	87	171
6	150	146	170.5 *	144	134	120	196
8	200	196	222 *	196	189	178	250
10	250	249	276.5 *	249	243	234	306
12	300	298	327.5 *	297	291	283	358
14	350	330	361	326	321	314	399
16	400	380	412	370	366	358	452
18	450	430	463	422	416	409	505
20	500	480	515	470	464	457	558
24	600	580	617	566	560	554	664

* Verify that the valve body is centered in the pipeline flanges.

NB:
Direct fitting on rubber coated flange or rubber expansion joint is not recommended. Please, consult us.



Rubber coated flange

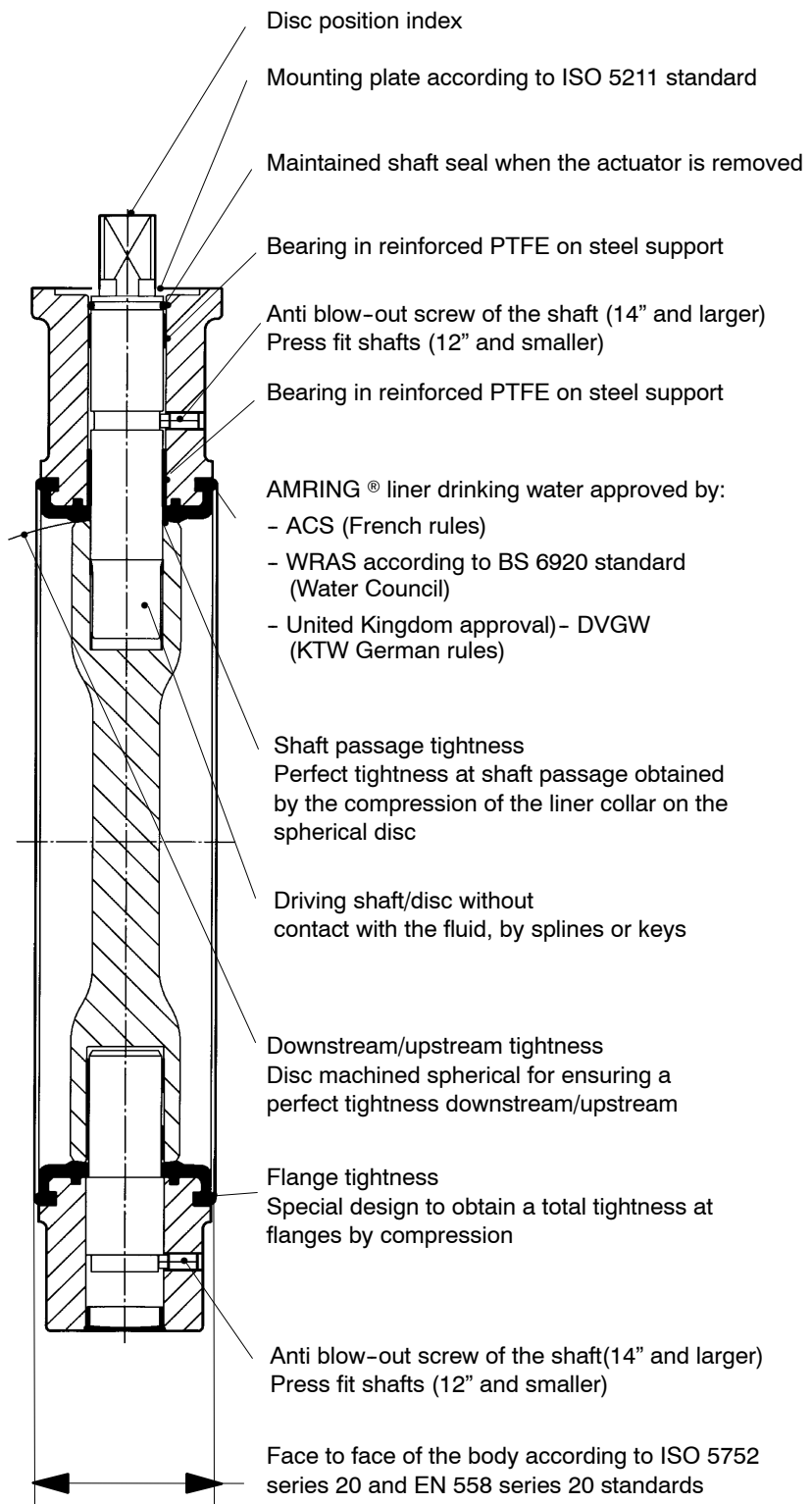


Rubber expansion joint

Product features - to our customers' benefit



ISORIA



Valve design shown: NPS 14" and larger

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

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