



Centred disc butterfly valves
with special AMRING® elastomer liner



ND 50 to 200 mm
Allowable pressure p_s 16 bar
ND 250 to 600 mm
Allowable pressure p_s 10 bar

Application

General industry, Sugar, HVAC and Process industry for water, air, non-aggressive and medium corrosive media.

Operating Data

- Pressure range upto 10/16 bar
- Temperature upto 130°C
 - EPDM liner (XV) upto 130°C
 - NITRILE liner (k) upto 90°C

Body Type

- Wafer Type (Type 1)
- Semi lug Type (Type 2)

Design

- As per EN 593 (BS 5155)
- Face to face as per ISO 5752 Series 20
- Topflange as per ISO 5211
- Testing as per API 598

Material

- Ductile Iron - A536-Gr 60-40-18
Uts \geq 400 Mpa, Yp \geq 250 Mpa, El.A% \geq 15
- Cast Iron - A48 cl.35
Uts \geq 250 Mpa
- Stainless Steel - A351-CF8M
Uts \geq 530, Yp \geq 240 Mpa, El.A% \geq 35

Flange Connections

The natural connection for an ISORIA valve is the one corresponding to its allowable pressure P_s , but the valve can be fitted on to various other flange connection standards.

The shade of the body has been so designed as to allow fitting on to currently used flange connection standards, mainly

- PN 10 and 16
- ANSI B 16-1 class 125 and B 16-5 class 150
- MSS SP 44 class 150
- AWWAC 207 class B, D and E
- AS 2129 tables D and E
- BS 10 tables D and E
- JIS B 2210 - 5K, 10K and 16K

Coating

The body of ISORIA valves are coated with polyurethane paint, colour blue RAL 5002.

The discs made of ductile iron (AMRI-KSB code 3g) are coated with epoxy paint or polyurethane paint, colour grey white RAL 7035.

Variants on Request

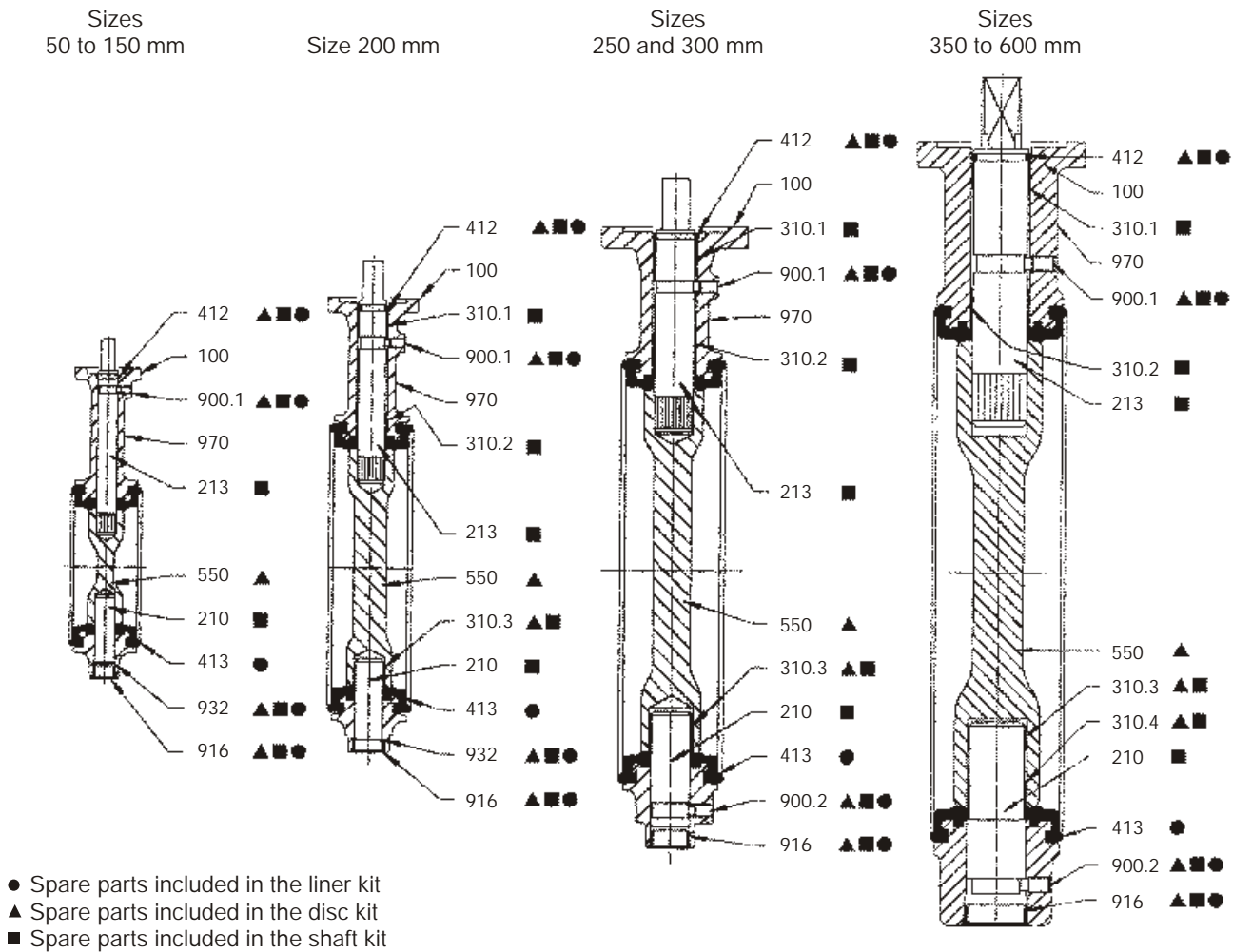
- Pneumatic / Electric Actuation
- Other liner / Disc on request

On all enquiries / orders please specify

1. Body type
2. Pressure rating
3. Size
4. Design pressure / Temp.
5. Operating pressure / Temp.
6. Flow velocity
7. Flow medium & concentration
8. Type of pipe connection
9. Supply air pressure for pneumatic actuation
10. Variants/accessories
11. Leaflet No.

Construction - Sizes 50 to 600 mm (2 to 24")

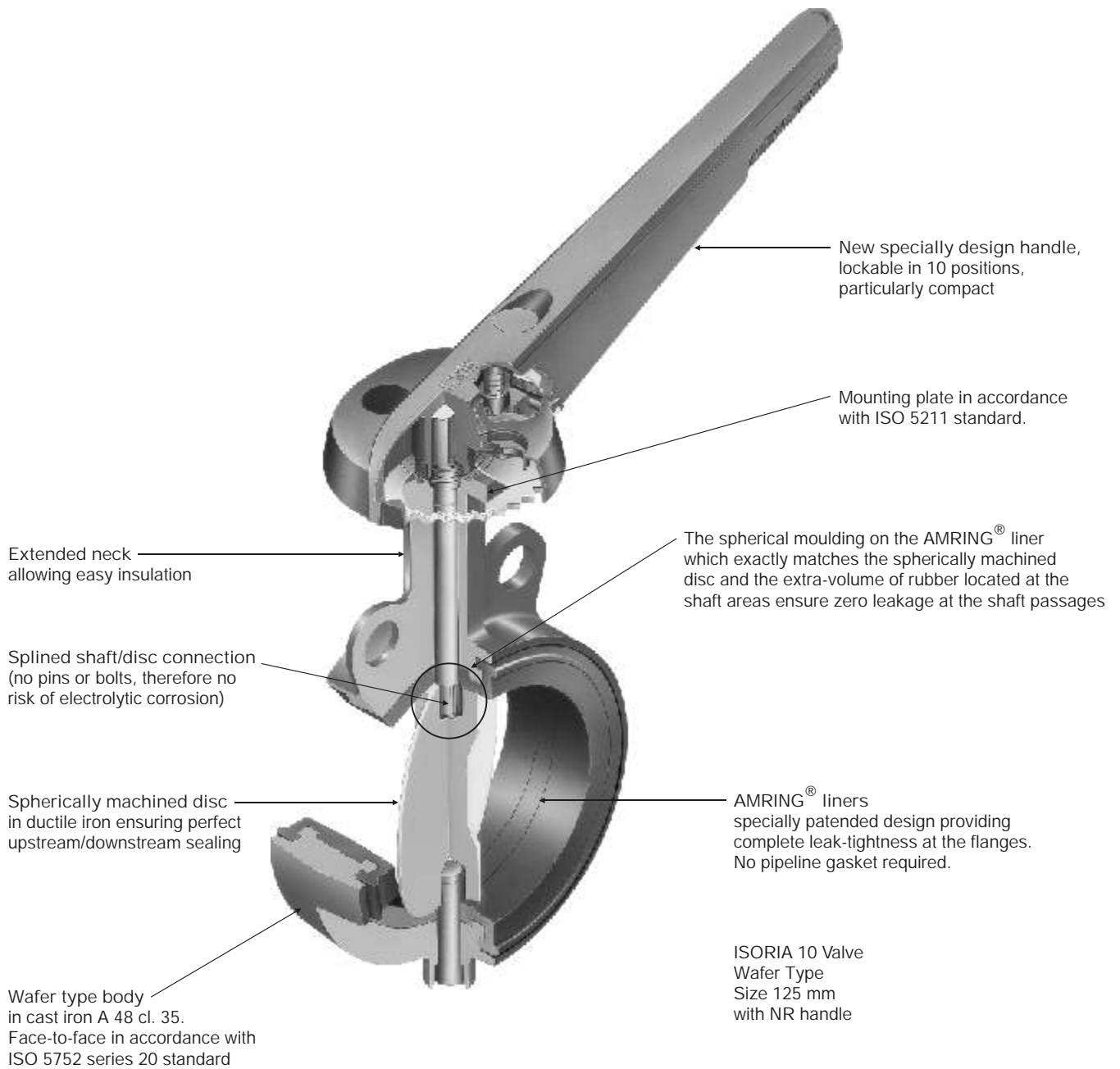
The drawing below show the sections of ISORIA valve type 1. Except the external shape of the body, the construction is the same for all the types.



Item	Designation	Size (mm)	Materials
100	Body	50 to 600	Type 1 : EN-GJL-250* (code 3t) / A48 cl.35 Type 2 : EN-GJS-400-15** ductile iron (code 3g) / A536-Gr 60-40-18
210	Shaft	50 to 600	13% chromium stainless steel
213	Operating Shaft	50 to 600	13% chromium stainless steel
310.1	Plain bearing	200 to 600	PTFE filled on steel casing
310.2	Plain bearing	200 to 600	PTFE filled on steel casing
310.3	Plain bearing	200 to 600	PTFE filled on steel casing
310.4	Plain bearing	350 to 600	PTFE filled on steel casing
412	O-Ring	50 to 600	Nitrile
413	Liner	50 to 600	E.P.D.M. approved WRC
550	Disc	50 to 600	A 536 - gr.60-40-18 ductile iron (code 3g) or 18-12 type stainless steel (code 6)
900.1	Anti blow-out screw	50 to 600	Stainless steel
900.2	Anti blow-out screw	250 to 600	Stainless steel
916	Plug	50 to 600	LDPE
932	Spring retaining ring	50 to 600	Steel
970	Identity	50 to 600	Stainless steel

* Previous standards : DIN : GG 25 / NF : FGL 250

** Previous standards : DIN : GGG 40 / NF : FGS 400-15



Sealing Concept

The elastomer liner protects the body and the shaft from corrosion and ensures leak-tightness at three levels :

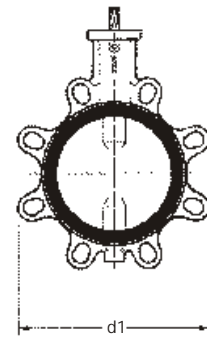
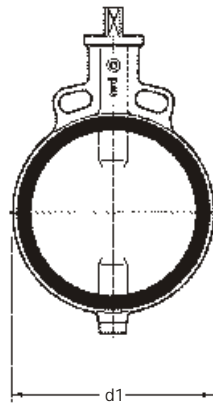
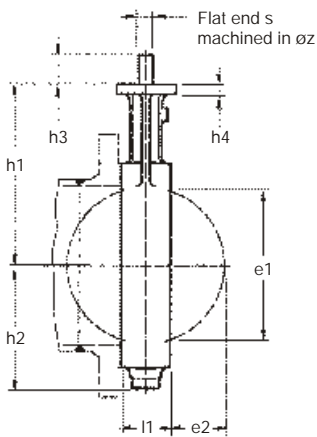
- upstream/downstream, by the compression of the liner between the body and the edge of the spherically machined disc,
- at the shaft passages, by means of a spherical moulding on the liner which exactly matches the spherically machined disc, and by the extra volume of rubber located at the shaft areas,
- at the flanges, by compression of the liner cheeks between the valve body and the pipe flanges.



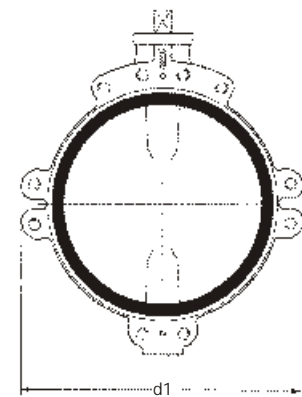
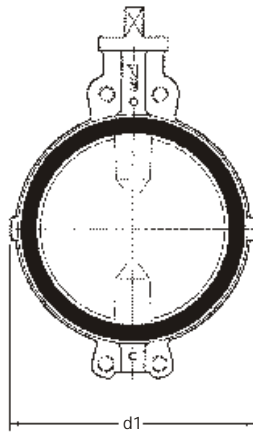
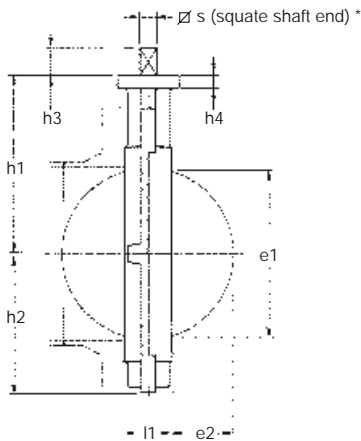
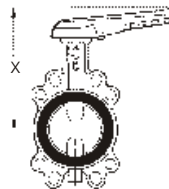
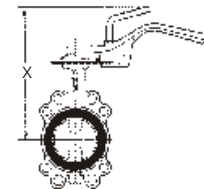
Sizes 50 to 300

Wafer type body - Type 1

Semi-lug type body - Type 2



Sizes 350 to 600


 Lever operated
 Sizes 50 to 150

 Lever operated
 Sizes 200 to 300


Dimensions (mm)

Size		Face to Face l1	Wafer Type Body Type 1			Semi Lug Type Body Type 2			Mounting plate* ISO 5211		Flat shaft end *			□s*	X*	Disc* clearance	
Mm	inch		d1	h1	h2	d1	h1	h2	n ⁰	h4	s	oz	h3			e1	e2
50	2	43	118	109,5	55,5	118	109,5	59	F05	10	9	12	24	-	162	33	4
60	2½	46	133	136	67,5	132	136	66	F05	10	9	12	24	-	188	55	11
80	3	46	138	142	73,5	138	142	89	F05	10	9	12	24	-	194	71	17
100	4	52	144	163	92	150	163	103	F05	10	11	14	24	-	235	90	23
125	5	56	174	176,5	105,5	234	176,5	117	F05	10	11	14	24	-	249	119	35
150	6	56	198	194	120	260	194	130	F07	12	14	18	30	-	266	144	46
200	8	60	252	222	150,5	322	222	161	F07	12	17	22	30	-	322	196	69
250	10	68	310	255	194,5	394	255	197	F10	15	19	25	35	-	355	249	92
300	12	78	362	282	226	462	282	231	F12	18	22	28	40	-	382	297	111
350	14	78	433	335	269	538	335	269	F12	23	-	-	45	25	-	326	127
400	16	102	490	380	298	604	380	302	F14	23	-	-	55	36	-	370	140
450	18	114	546	410	329	656	410	328	F14	23	-	-	55	36	-	422	160
500	20	127	600	440	359	716	440	358	F14	27	-	-	55	36	-	470	178
600	24	154	714	495	439	836	495	439	F16	27	-	-	65	50	-	566	215

* Dimensions are common for Type 1 and Type 2.

Installation

ISORIA valves are bi-directional valves, used for on/off or throttling applications. They can be installed in any position.

Wafer type body - Type 1

The wafer type ISORIA valves can be fitted between all the previously listed flange connection standards. Its fitting between flanges is achieved by means of tie-rods, without pipe line gasket.

The design of the body allows dead-end service.

For sizes 350 to 600 mm, if the body has threaded holes at the shaft passages, the threads are in accordance with the connection standard (ISO UNC or UN)

Semi lug type body - Type 2

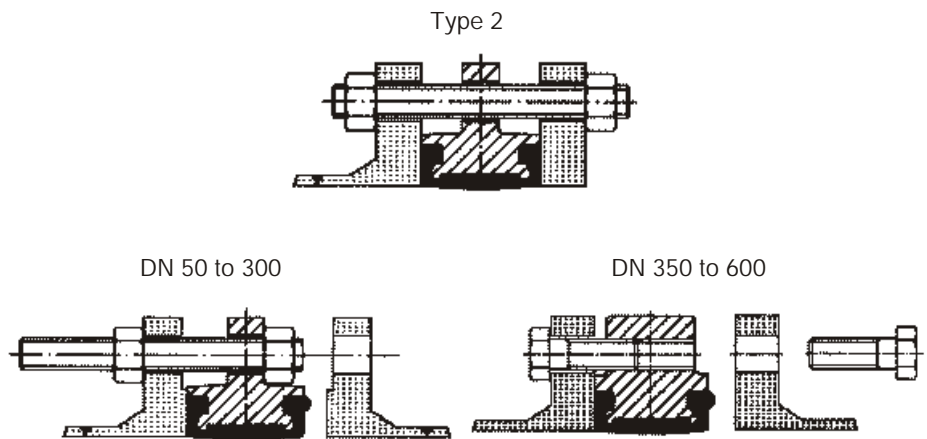
Dead end service

The design of valves type 2 allows dead-end service under the allowable pressure (p_s).

This mounting requires the use of counter flange fitted on downstream side of the valve. Up-stream/down-stream leak-tightness is preserved and the valve can be operated.

Downstream pipe dismantling

The down-stream pipe dismantling under the allowable pressure (p_s) is possible for ISORIA valves type 2. This type of mounting allows an intervention in the down-stream pipe. During this intervention, the valve must not be operated.



The semi-lug type ISORIA valves can be fitted between all the previously listed flange connection standards. Its fitting between flanges is achieved by means of tie-rods (sizes 50 to 300 mm) and by screws and tie-rods (sizes 350 to 600 mm). For sizes 350 to 600 mm, the holes of the lugs are threaded in accordance with the connection standard (ISO, UNC or UN).

The design of the body allows the downstream pipe dismantling and the dead-end service under p_s . The table below shows for sizes 50 to 300 mm the various possibilities of downstream pipe dismantling relating to the connection standards. For sizes 350 to 600 mm, downstream dismantling is allowed in any case.

Size		Connection in accordance with standards														Max. Tightening Torque **
		PN		ANSI		MSS SP 44	JIS B 2210			AWWA C 207	BS 10		AS 2129			
mm	inch	10	16	B 16-1 cl. 1125	B 16-5 cl. 150	cl. 150	5K	10K	16K	B, D & E	Table D	Table E	Table D	Table E		
50	2								●							13 Nm
65	2½															16 Nm
80	3															27 Nm
100	4										●			●		30 Nm
125	5								●							32 Nm
150	6								●		■			■		47 Nm
200	8	■		■	■				●	■	■	■	■	■	■	60 Nm
250	10	■							●		●	■	●	■		81 Nm
300	12							●	●		■			■		134 Nm

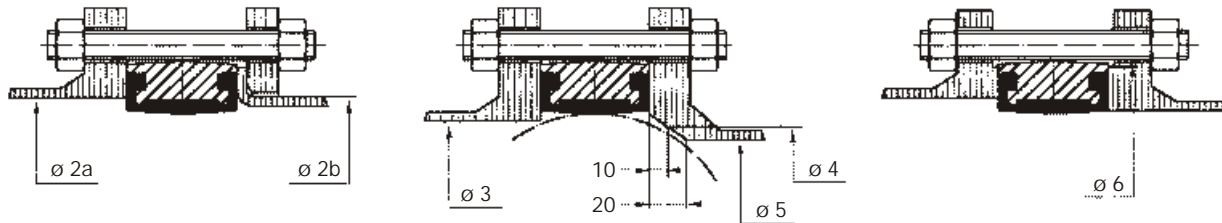
Key

	Downstream dismantling allowed		Connection not defined by this standard
●	Downstream dismantling not allowed	■	Insert a washer between the nut and the rib of the valve

** Maximum tightening torque from the bolting accessories for downstream pipe dismantling, sizes 50 to 300 mm.

ISORIA valves are designed for assembly between any type of flanges and connection standards currently used. For non-standard flanges (for example : slip-on, lap joint...) and raised face flanges, it is necessary to check the general compatibility of the connection by checking against the dimensions shown in the table below.

The following drawing shows the valve figure type 1 mounted between flanges. The flanging dimensions mentioned in the table are the same for all the types.



- Fitting between flat flanges : $\varnothing 2a$ internal max. tolerated dia. of the supporting area of the flange face.
- Fitting between loose plate flange with lapped pipe end : $\varnothing 2b$ external dia. of the pipe

Size		Max. dia tolerated		Mini dia. tolerated on face of flange	Mini dia. 10 mm from face of flange	Mini dia. 20 mm from face of flange	Mini dia. tolerated of shoulder of raised face flange
Mm	inch	$\varnothing 2a$	$\varnothing 2b$	$\varnothing 3$	$\varnothing 4$	$\varnothing 5$	$\varnothing 6$
50	2	63	61	33	--	--	86
65	2½	80	77	55	13	--	107
80	3	93	89	71	50	--	121
100	4	112	115	90	74	40	141
125	5	140	140	119	107	87	171
150	6	164	169	144	134	120	196
200	8	215	220	196	189	178	250
250	10	269	273	249	243	234	306
300	12	319	324	397	391	283	358
350	14	361	356	326	321	314	399
400	16	412	407	370	366	358	452
450	18	463	457	422	416	409	505
500	20	515	508	470	464	457	558
600	24	617	610	566	560	554	664

AMRING® liner : In house-designed, formulated and manufactured, it ensures the leak-tightness at the shaft passages, the flanges and upstream/downstream. It is the only part with the disc in contact with the fluid. Flexible and interchangeable, its replacement is easy.

AMRING Code	Elastomer Group	General Properties	Applications
XA	E.P.D.M.	Good mechanical characteristics. Exceptional resistance to oxydation, ketones, alcohols, mineral and organics acids, acid neutral or alkaline salts, esters, vegetable or animals oils.	Fresh water, industrial water, sea water, hot water, ventilation, ozone derivatives, weak acid circuits, aldehydes, amines, ketones, esters, dairy products, foodstuffs, alcohols for human consumption, wine, beer, fruit juice... APPROVED FOR FOODSTUFFS (I.A.N.E.S.C.O.)
XV	Hightemp. E.P.D.M.	Special formulation for resistance to Temperature (up to 2660F / 1300C).	Sugar industry : massecuite, juices, steam. Hot water and urban heating.
K	High content nitrile	Good mechanical characteristics. Good resistance to hydrocarbons.	Hydrocarbons and oils with low aromatic content. General service compressed air, water, fuel.

On request, the whole range of AMRING liners can be proposed on ISORIA 10 butterfly valves.