Butterfly Valve Dubex
DN150 - DN3000

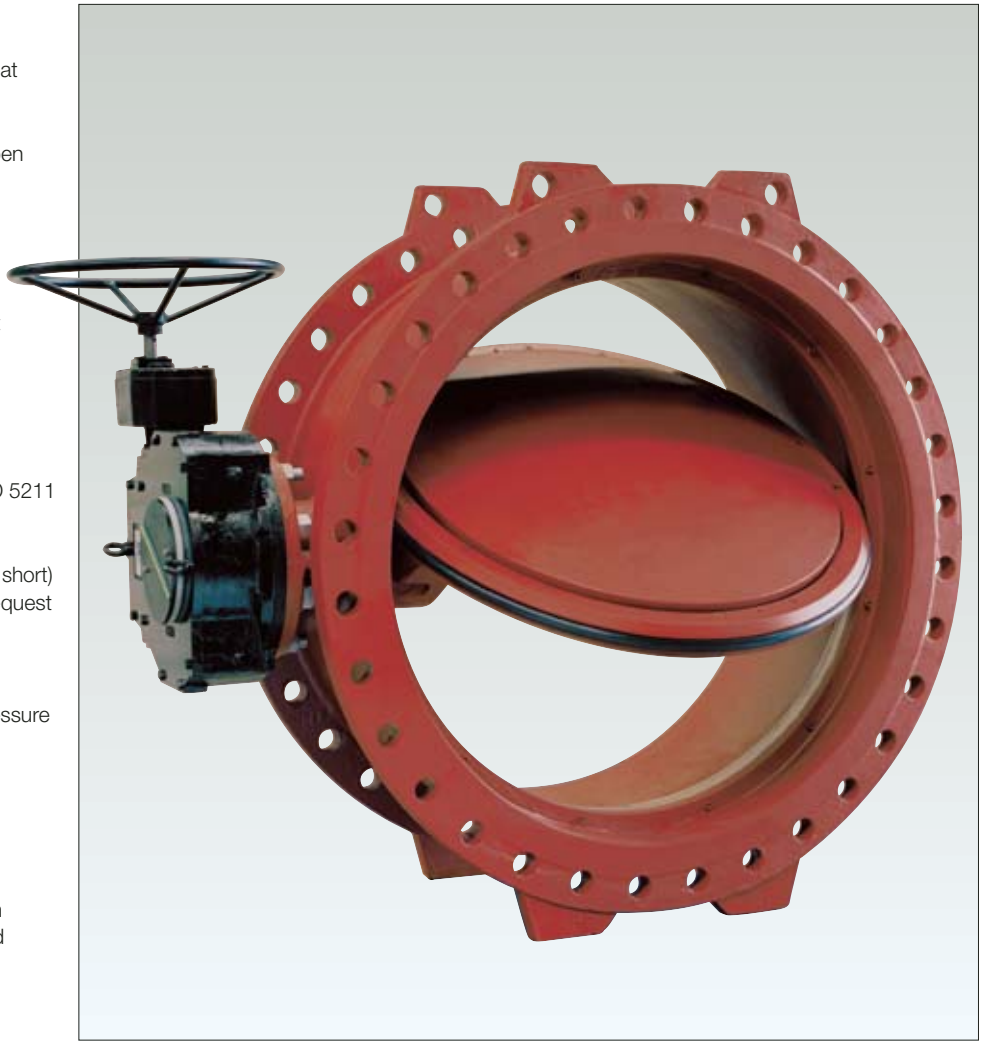
tyco
Flow Control

RMI

The Dubex is a double flanged valve design for services in the water industry like:
- drinking water pump station and transportation/distribution
- waste water effluent and treatment plant
- cooling water systems

Features

- Triple eccentric design
  1st Offset of seat for endless seat and seat landing area
  2nd Offset of shaft versus disc center to prevent compression set of seat in full open position
  3rd Offset of cone center line to get advantages of torque closing valve
- Resilient seat in disc
- Fully adjustable endless seat
- In-line replaceable and re-adjustable seat
- Standard body seat ring SS 316; other materials on request
- Uni- or bidirectional sealing
- Horizontal or vertical shaft mounting
- Low head loss, throttling services
- Actuator flange dimensions according ISO 5211
- Face-to-face:
  ≤ DN2000 ISO 5752 flanged long;
  > DN2000 0.4x size - 50 (ca. ISO flanged short)
- Alternative face-to-face dimensions on request (e.g. AWWA C504)
- Hydrostatic seat testing on 1.1x working pressure
- Body shell strength test 1.5x working pressure
- Clockwise closing
- Manual gear, electric actuation available
- Hydraulic drop weight drive for pump protection system available



General application

The Dubex valve offers an excellent solution for water- and waste water applications and industrial applications.

Approvals

KIWA, KTW, PED/CE, ATEX.

Technical data

Pressure (bar)	: 6/10/16*/25**
Temperature (°C)	: -20 to +80
Sizes (mm)	: 150 - 3000***
Flange accommodation	: ISO flange PN10, PN16, PN25 (standard); other international standards on request

* 16 bar pressure: till DN2200
** 25 bar pressure: contact factory
*** larger sizes: contact factory

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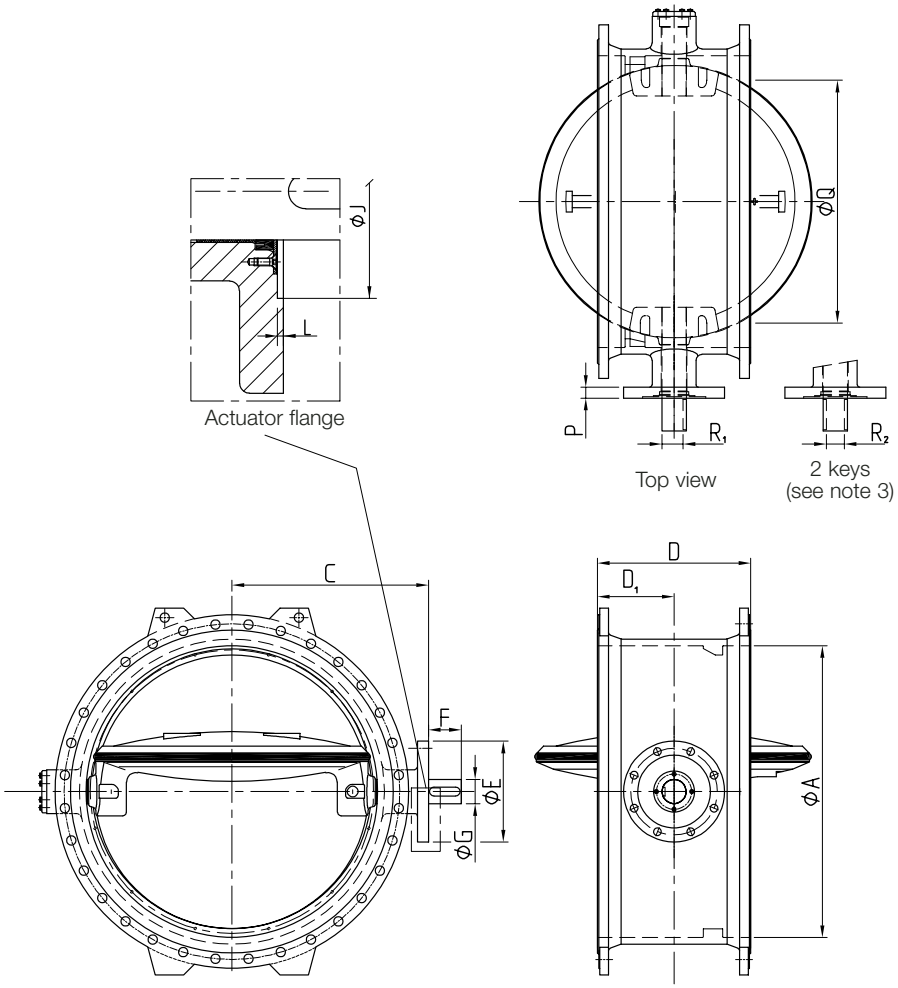


- Drawn is size DN1200
- Flange drillings are according ISO 7005 (PN10, PN16, PN25)
- Other flange types on request

Notes

1) Sizes DN150-2000: face-to-face ISO 5752 - table 4 - flanged long series
1) Sizes DN2100-3000: length = 0.4x size - 50 (≈ ISO 5752 - table 4 - flanged short series)
2) Q is the minimum allowable inside diameter of connecting pipe without any clearance
3) Some valve sizes have a double keyway (see [3]) in table)

Contact factory for blank or not listed values.
Contact factory for alternative flanges and ratings.

Valve dimensions

Size	Facte to Face[1]			PN6-flanges/rating				PN10-flanges/rating				PN16-flanges/rating				PN25-flanges/rating				Approx
					Actuator	Shaft			Actuator	Shaft			Actuator	Shaft			Actuator	Shaft		
DN (A)	D	D1	Q[2]	C	flange	F	G	C	flange	F	G	C	flange	F	G	C	flange	F	G	Mass
[mm]	[mm]	[mm]	[mm]	[mm]	[-]	[mm]	[mm]	[mm]	[-]	[mm]	[mm]	[mm]	[-]	[mm]	[mm]	[mm]	[-]	[mm]	[mm]	[Kg]
150	210	105	0	142	F07	35	25	142	F07	35	25	142	F07	35	25	162	F07	35	30	50
200	230	115	0	186	F10	42	30	186	F10	42	30	186	F10	42	30	196	F10	42	35	70
250	250	125	49	218	F12	52	35	218	F12	52	35	218	F12	52	35	228	F12	52	40	90
300	270	135	106	254	F12	52	40	254	F12	52	40	264	F12	52	45	264	F12	52	45	110
350	290	145	209	292	F14	60	45	292	F14	60	45	292	F14	60	45	304	F14	60	50	170
400	310	155	240	310	F14	60	45	310	F14	60	45	330	F14	60	50	330	F14	60	50	190
450	330	165	288	336	F14	60	50	336	F14	60	50	360	F16	75	60	360	F16	75	60	240
500	350	175	341	384	F16	75	55	384	F16	75	55	390	F16	75	60	390	F16	75	60	285
600	390	195	438	436	F16	75	60	436	F16	75	60	460	F25	105	70	460	F25	105	70	450
700	430	215	526	470	F25	105	70	470	F25	105	70	538	F25	105	80	538	F25	105	80	610
750	450	225	577	506	F25	105	70	506	F25	105	70	584	F25	110	90	584	F25	105	90	720
800	470	235	628	568	F25	105	80	568	F25	105	80	608	F30	105	90	608	F30	130	90	830
900	510	255	724	638	F30	115	80	638	F30	115	80	688	F30	115	100	688	F30	130	100	1050
1000	550	275	818	688	F30	115	90	688	F30	115	90	748	F35	150	120	748	F35	165	120	1435
1100	590	295	915	738	F30	130	100	738	F30	130	100	828	F35	165	120	828	F35	150	120[3]	1515
1200	630	315	1000	808	F35	165	100	808	F35	165	100	848	F35	165	120	878	F35	150	140[3]	1830
1300	670	335	1088	868	F35	165	120	868	F35	165	120	898	F40	190	140	-	-	-	-	2412
1400	710	355	1175	918	F35	165	120	918	F35	165	120	978	F40	190	140	-	-	-	-	2995
1500	750	375	1271	994	F40	190	140	994	F40	190	140	1042	F40	190	160	-	-	-	-	3675
1600	790	395	1357	1046	F40	190	140	1046	F40	190	140	1092	F48	210	160	-	-	-	-	4290
1800	870	435	1546	1172	F40	165	160[3]	1172	F40	165	160[3]	1212	F48	210	180[3]	-	-	-	-	5250
2000	950	475	1723	1272	F48	210	180	1272	F48	210	180	1332	F48	190	200[3]	-	-	-	-	6245
2100	790	395	1912	1342	F48	210	180	1342	F48	210	180	1402	F48	190	200[3]	-	-	-	-	7100
2200	830	415	2007	1412	F48	200	180[3]	1412	F48	200	180[3]	1452	F60	190	220[3]	-	-	-	-	7955
2400	910	455	2369	1458	F48	200	180[3]	1532	F60	200	200[3]	-	-	-	-	-	-	-	-	9960
2500	950	475	2496	1522	F48	200	180[3]	1602	F60	200	200[3]	-	-	-	-	-	-	-	-	11400
2600	990	495	2555	1572	F48	200	180[3]	1652	F60	225	220[3]	-	-	-	-	-	-	-	-	13300
2700	1030	515	2652	1622	F60	200	200[3]	1702	F60	260	220	-	-	-	-	-	-	-	-	14700
2800	1070	535	2749	1692	F60	225	200[3]	1752	F60	260	240	-	-	-	-	-	-	-	-	15700
3000	1150	575	2974	1800	F60	225	220[3]	1860	F60	330	240	-	-	-	-	-	-	-	-	18100

Actuator Flange dimensions

Type	Actuator flange dimensions acc ISO 5211						
	E	J	L	P	PCD	Hole	No of holes
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[-]
F07	90	55	4	12	70	9	4
F10	125	70	4	15	102	11	4
F12	150	85	4	18	125	14	4
F14	175	100	5	24	140	18	4
F16	210	130	6	30	165	22	4
F25	300	200	6	24	254	18	8
F30	350	230	6	30	298	22	8
F35	415	260	6	45	356	32	8
F40	475	300	9	54	406	38	8
F48	560	370	9	54	483	38	12
F60	686	470	9	54	603	38	20

Keyway dimensions

Shaft size [mm]	Key size width x height [mm]	R_1 [mm]	R_2 [mm]	Shaft size [mm]	Key size width x height [mm]	R_1 [mm]	R_2 [mm]
25	8 x 7	21	-	100	28 x 16	90	-
30	8 x 7	26	-	120	32 x 18	109	98
35	10 x 8	30	-	140	36 x 20	128	116
40	12 x 8	35	-	160	40 x 22	147	134
45	14 x 9	39.5	-	180	45 x 25	165	150
50	14 x 9	54.5	-	200	45 x 25	185	170
55	16 x 10	49	-	220	50 x 28	203	186
60	18 x 11	53	-	240	56 x 32	220	-
70	20 x 12	62.5	-	260	56 x 32	240	-
80	22 x 14	71	-	280	63 x 32	260	-
90	25 x 14	81	-				

Actuator selection

Actuator type

Manual gear
Electric gear
Hydraulic drive
Pneumatic drive
Drop weight

K_V values

Disc opening \ Size in mm	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	1100
10	37	65	102	147	200	261	331	408	588	800	918	1045	1322	1632	1975
20	73	131	204	294	400	522	661	816	1175	1600	1836	2090	2645	3265	3950
30	137	244	381	549	747	976	1235	1524	2195	2988	3430	3903	4939	6098	7378
40	218	388	606	873	1188	1552	1964	2425	3491	4752	5455	6207	7855	9698	11735
50	340	605	945	1360	1851	2418	3060	3778	5441	7406	8501	9673	12242	15113	18287
60	528	939	1468	2113	2876	3757	4755	5870	8453	11506	13208	15028	19019	23481	28412
70	858	1525	2383	3431	4670	6100	7720	9531	13725	18681	21446	24400	30882	38125	46132
80	1116	1984	3226	4646	6324	8260	10453	12906	19410	26420	30329	34507	43673	53917	65240
90	1272	2262	3951	5690	7745	10116	12803	15806	25447	34636	39761	45239	57256	70686	85531

	1200	1300	1400	1500	1600	1800	2000	2100	2200	2400	2500	2600	2700	2800	3000
10	2351	2759	3200	3673	4179	5289	6530	7199	7901	9403	10203	11035	11900	12798	14692
20	4701	5518	6399	7346	8358	10578	13059	14398	15802	18806	20405	22070	23801	25597	29384
30	8781	10305	11952	13720	15610	19757	24391	26891	29514	35124	38112	41221	44453	47807	54881
40	13965	16390	19008	21821	24827	31422	38792	42769	46939	55861	60613	65559	70699	76033	87283
50	21763	25542	29622	34005	38690	48967	60454	66650	73149	87053	94459	102166	110177	118489	136020
60	33812	39682	46022	52832	60111	76078	93923	103550	113647	135249	146755	158730	171175	184089	211327
70	54901	64432	74726	85782	97601	123526	152502	168133	184527	219602	238284	257728	277934	298903	343129
80	77641	91120	105678	121314	138029	174693	226196	249382	273698	325723	353432	382272	412243	443345	508942
90	108816	127708	148111	170026	193451	244837	341004	375957	412615	491046	532819	576297	621480	668368	899691

Notes

1. Listed data are valid for PN10 rated valve only.
2. Rated K_V = volume of water in m^3/hr that will pass through valve at a given valve opening at a pressure drop of 1 bar.
3. Values may change without notice.
4. K_V-values are based on best data available however no responsibility is assumed for inaccuracies.
5. Allowable flow velocity ≤ DN1200: 3.5 m/s; ≥ DN2000: 2.5 m/s. For higher velocity, please contact factory.

Pressure-Temperature Diagram

Seat material	Disc material	Body material	Size range DN [mm]	Valve Rating [bar]	Temperature [°C] -40 -20 0 20 40 60 80 100 120	Trims
EPDM	all	all	2400-3000	6	6 bar -unidirectional [1]	804, 817
			150-3000	10	10 bar -unidirectional [1]	804, 817
			150-2200[2]	16	16 bar -unidirectional [1]	804, 817
			150-1200[2]	25	25 bar -unidirectional [1]	804, 817
NBR	all	all	2400-3000	6	6 bar -unidirectional [1]	800, 814
			150-3000	10	10 bar -unidirectional [1]	800, 814
			150-2200[2]	16	16 bar -unidirectional [1]	800, 814
			150-1200[2]	25	25 bar -unidirectional [1]	800, 814

Notes

1) Preferred pressure direction, high pressure on shaftside. Contact factory for bidirectional applications.
2) For larger sizes and/or higher pressures rating contact factory.

Material selection

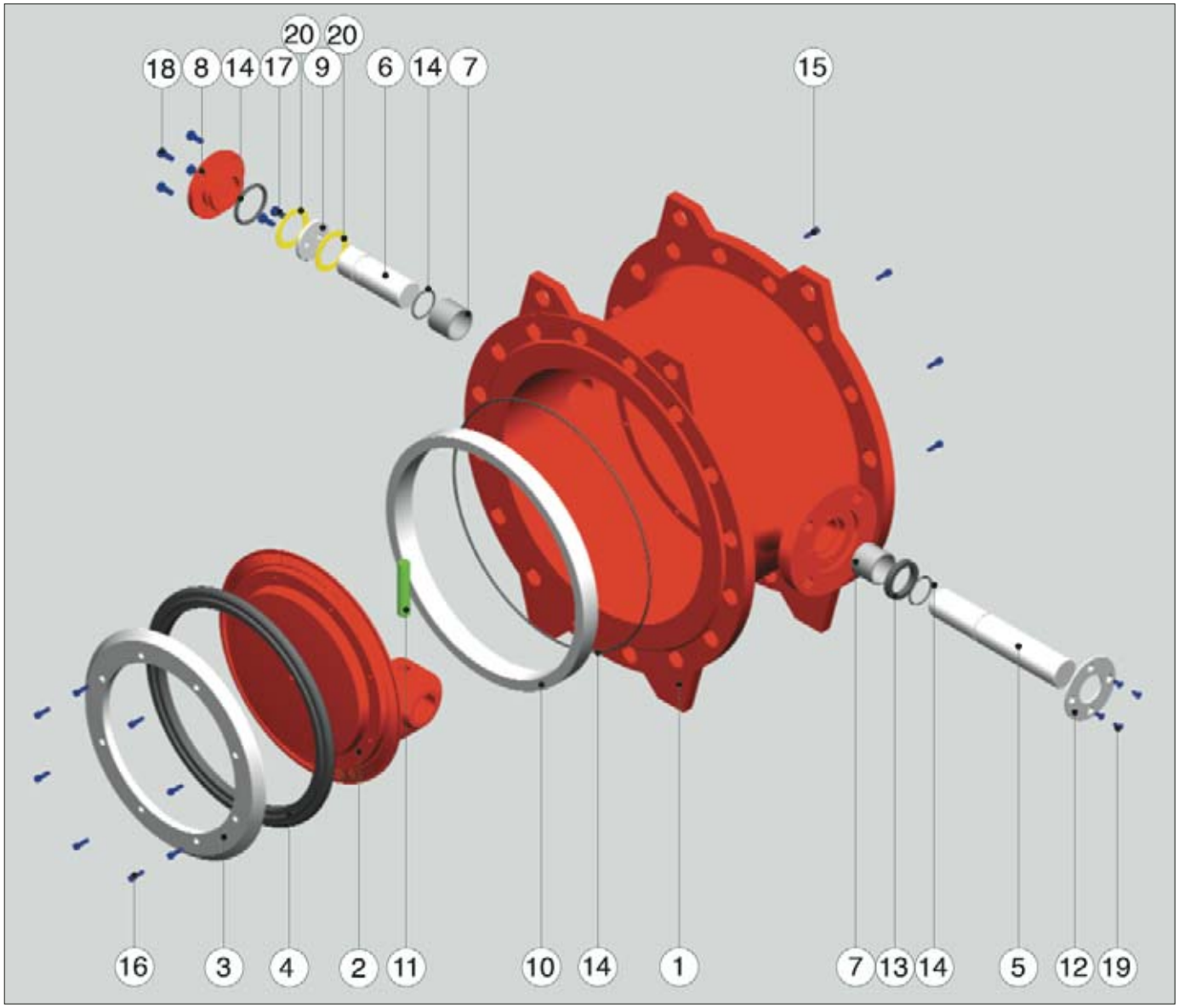
Body	Disc	Shaft	Seat	Body seat	Retaining ring	Trim no.
Ductile Iron (A)	Ductile Iron (A)	Stainless steel	NBR	Stainless steel	Stainless steel	800
			EPDM			804
Ductile Iron (B)	Ductile Iron (B)	Stainless steel	NBR	Stainless steel	Stainless steel	814
			EPDM			817

Notes

All ductile iron parts are coated with a high quality epoxy coating.
Specify size, figure number, part name, material and flange accommodation when ordering spare parts.
Contact factory for other materials and trims.

Material specification

Partname	Material	Material number	Remark
Body	Ductile Iron (A)	EN GJS-400-15	Equivalent to GGG 40
	Ductile Iron (B)	BS 2789 gr.420-12	
	Other materials on request	e.g. EN GJS-500-7, A 536 Gr.60-40-18, A 536 Gr.65-45-12, ASTM A 216 WCB, ASTM A 352 LCB, etc.	
Disc	Ductile Iron (A)	EN GJS-400-15	Equivalent to GGG 40
	Ductile Iron (B)	BS 2789 gr.420-12	
	Other materials on request	e.g. EN GJS-500-7, A 536 Gr.60-40-18, A 536 Gr.65-45-12, ASTM A 216 WCB, ASTM A 352 LCB, ASTM A 351-CF8M, EN 1.4408, etc	
Retaining ring	Stainless steel	EN 1.4404	Equivalent to SS 316L
	Other materials on request	e.g. EN GJS-400-15, BS 2789 gr.420-12, etc	
Seat	EPDM		Temperature range -20°C to +80°C. Permitted peak temperature of 100°C
	NBR		Temperature range -20°C to +80°C. Permitted peak temperature of 100°C
Shaft	Stainless steel	EN 1.4057	Equivalent to ASTM A 276-431
	Other materials on request	e.g. EN 1.4401 (SS316), 1.4462 (Duplex SS)	
Bearings	Self lubricating PTFE-lined		
	Other materials on request	e.g. Bronze bearings	
Body-seat	Stainless steel	EN 1.4404	Equivalent to SS 316L
	Other materials on request	e.g Epasfill lined ductile iron, rubber lined	
Disc pin	Stainless steel	EN 1.4104	Equivalent to ASTM A 582-430F
	Other materials on request	e.g. 1.4462 (Duplex SS)	
Seal cover	Stainless steel	EN 1.4401	Equivalent to SS 316
Bottomcover	Ductile Iron (A)	EN GJS-400-15	Equivalent to GGG 40
Axial positioning ring	Stainless steel	EN 1.4401	Equivalent to SS 316
O-rings and seal	NBR-rubber		
Internal screws	Stainless steel	A4 (EN 1.4401)	Equivalent to SS 316
Axial bearings	Glass cloth reinforced PTFE		



Parts list

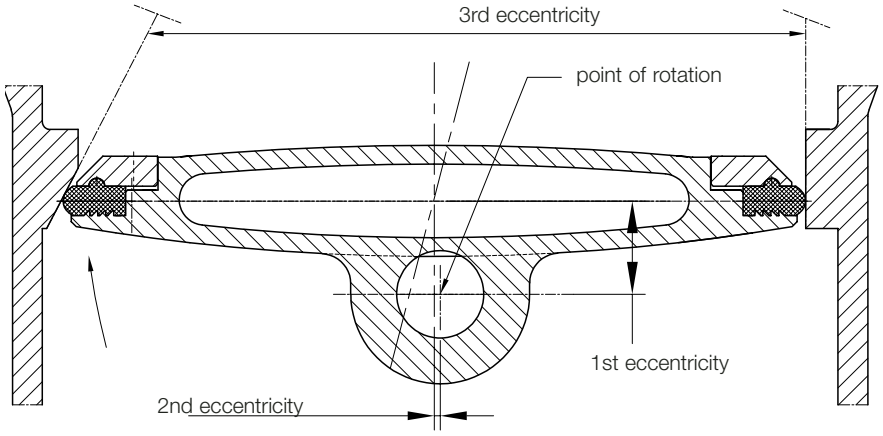
Part	name
1	Body
2	Disc
3	Retaining-ring
4	Seat
5	Top shaft
6	Bottom shaft
7	Bearings
8	Bottom cover
9	Axial positioning ring
10	Body seat [1]
11	Disc pin
12	Seal cover
13	Shaft seal
14	O-ring
15	Screws body seat
16	Screws retaining ring
17	Screws bottom shaft
18	Screws bottom cover
19	Screws seal [2]
20	Axial bearing

Notes

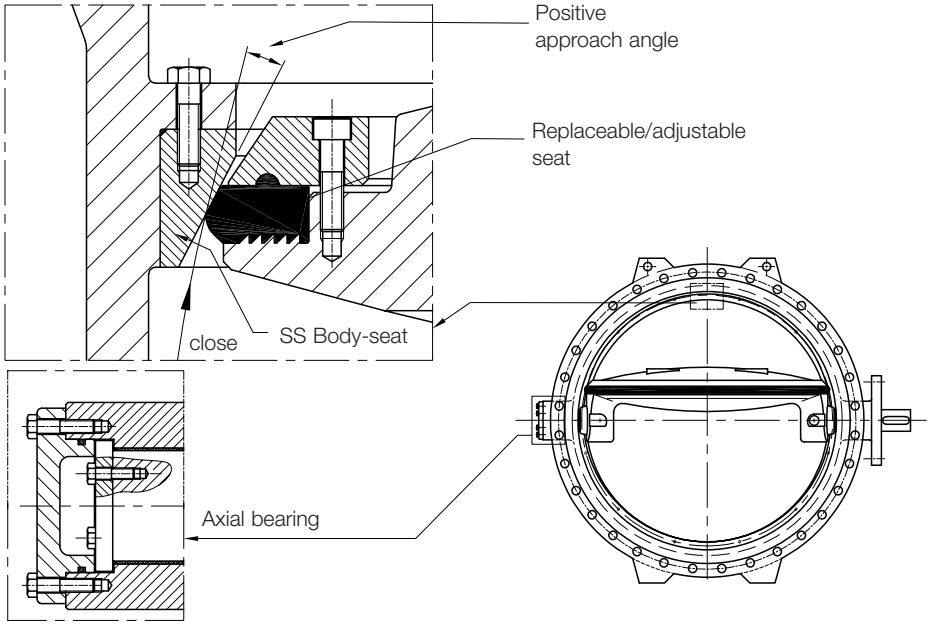
1) DN150 to 350 are equipped with a body-seat sleeve instead of body-seat ring.
2) DN150 to 200 have a circlip instead of screws.
Pictured is valve size DN450

Design features

Triple eccentric design

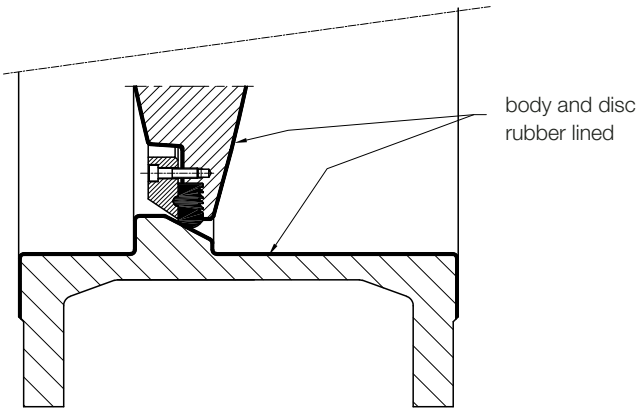


Replaceable/adjustable seat and stainless steel body/seat



Options

Rubber lined



Resin covered body-seat