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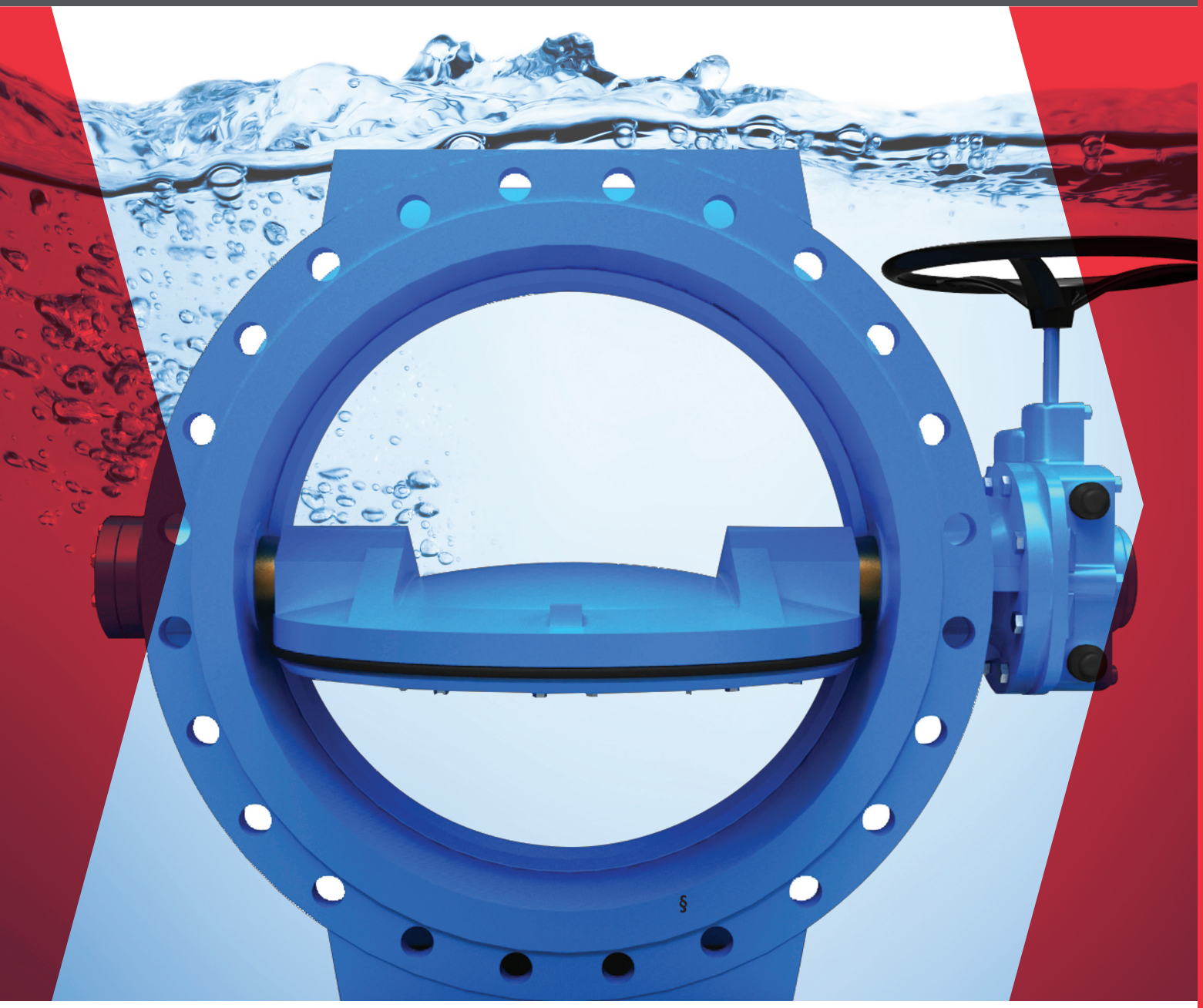
ISO-DE DOUBLE ECCENTRIC BUTTERFLY VALVES

Engineering Creative Solutions for Fluid Systems Since 1901



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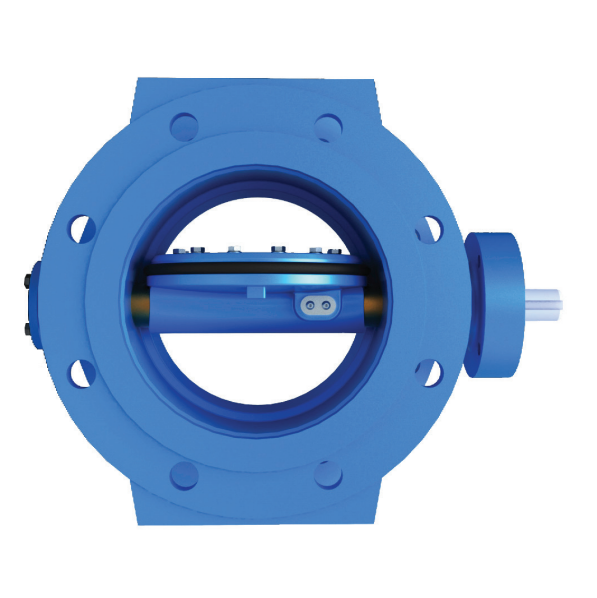
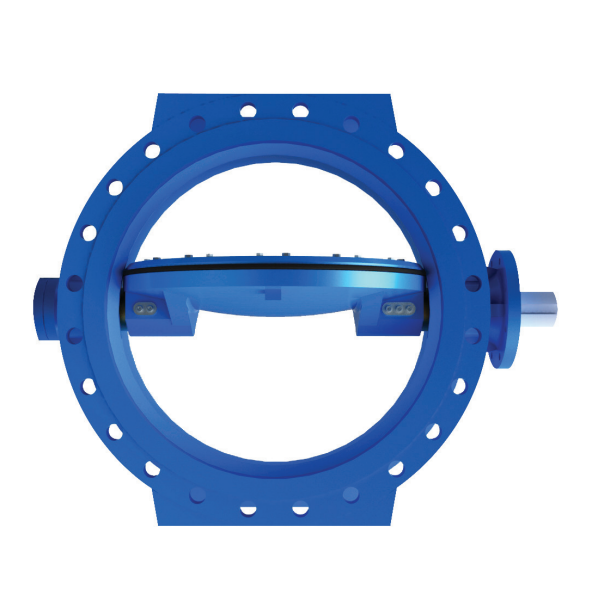
Pratt® ISO-DE Butterfly Valves



DN100 - DN250 SINGLE SHAFT DESIGN



DN300 - DN1800 DUAL SHAFT DESIGN

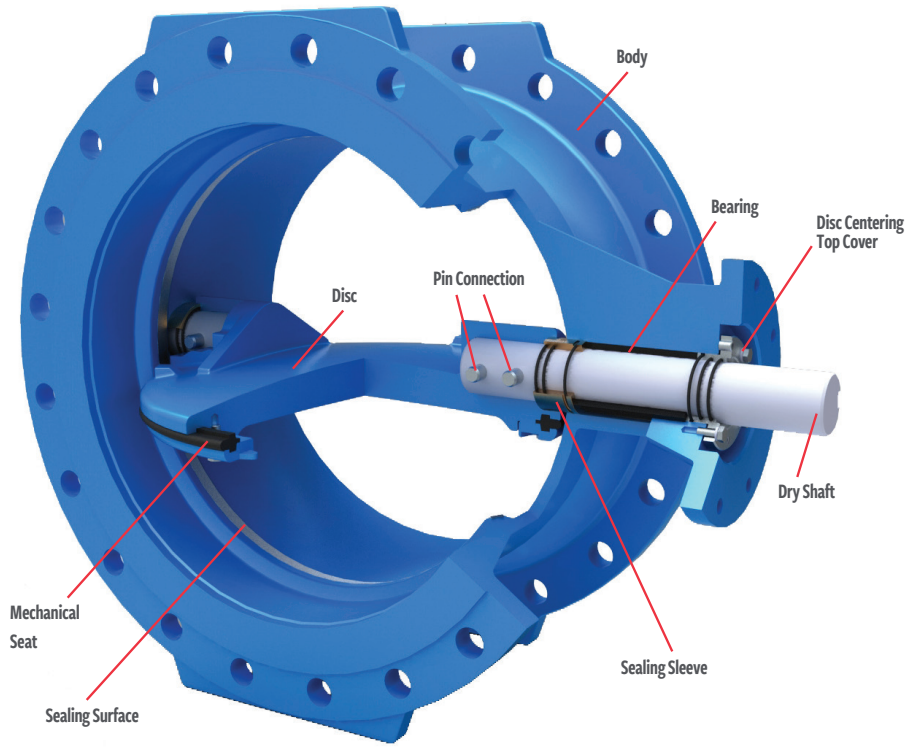
MODEL	ISO-DE Flanged Butterfly Valve
SIZES	DN100 through DN1800
PRESSURE CLASS	PN10 (10 bar) or PN16 (16 bar)
BODY STYLE	Short (ISO-DES) and Long (ISO-DEL) Body face to face, flanged ends drilled in accordance with EN-558-1 / ISO 5752 / BS EN 1092
BODY AND DISC MATERIAL	Ductile iron ASTM A536 Gr. 65-45-12 standard, exceeds DIN-GGG-40 and BS-2789 Grade 420 requirements.
RUBBER SEAT	Rubber seat mechanically retained in disc by means of a specially engineered stainless steel retaining ring and 304 stainless steel nylon lock screws.
ACTUATION OPTIONS	• Gear with handwheel (Standard) • Hydraulic Actuation • Pneumatic Actuation • Electric Actuation
COATING	Epoxy coating system approved for drinking water applications. Fusion bonded epoxy coating on valves up to DN1200 standard. The upset, emergency or faulted conditions will be analyzed concurrently with 5g seismic load applied simultaneously along three major axes. The stress levels will be maintained within the Code allowables.

FEATURES

- Stainless steel dry shaft completely sealed off by rubber O-rings on sealing sleeve and dry pins.
- Teflon lined filament wound bearings for long service life and lower operating torque
- Double-Eccentric design optimizes the seal of the seat retaining ring allowing the disc to seal tightly while retaining the seat in position against high pressure and flow
- Specially engineered seat sealing system adds to longer service life and lower operating torque.

DESIGN DETAILS

Sizes DN100 through DN1800, Pressure Class PN10 (10 Bar) and PN16 (16 bar)



DRY SHAFTS

Corrosion resistant Stainless Steel shafts (either side of the disc) are designed dry (completely enclosed and sealed) to protect the bearing and body surface from corrosive media.

DRY PINS

Corrosion resistant Stainless Steel pins are designed in double shear to provide optimum torque transmission capability of shafts to disc connection. Pins are inserted in blind precise holes and sealed and locked on top. Dry pin design concept keeps corrosive fluids away from the shaft providing long service life.

BEARINGS

Non-metallic, self lubricating, fiberglass backed, Teflon lined bearings are strong and designed dry. The low friction coefficient between shaft and bearing reduces valve operating torque and offers long life without needing replacement. These bearings are our standard design with a proven record for long service life in all pressure class applications.

SEALING SLEEVE

Made of non-metallic, self lubricating, fiberglass backed Teflon, the sealing sleeve provides long and reliable life due to its self lubricating capability and dry shaft operation.

BODY

Standard material is Ductile Iron ASTM A536 Gr. 65-45-12.
Body style is available in long laying length and short laying length.
Flange drilling is in accordance with EN1092-2 / ISO 5752.

DISC

Standard material is Ductile Iron ASTM A536 Gr. 65-45-12. Disc is designed to offer minimum possible resistance to the flow providing higher Kv. Double eccentricity offers reduced seating-unseating torque.

RUBBER SEAT

Pressure activated rubber seat, molded in one piece (no glued joint) is mechanically attached to the disc using retaining ring and stainless steel nylon lock screws. Seat is designed to seal the fluid at rated pressure and offers minimum resistance with smooth mating corrosion resistant surface on the body.

DISC CENTERING TOP COVER

Top and bottom covers are designed to seal the body at both ends and to provide disc centering adjustment along the shaft axis.

SUGGESTED SPECIFICATIONS

Sizes DN100 through DN1800 PN10 or PN16 Rated Pressure

GENERAL

Butterfly valves shall be manufactured in accordance with BS EN 593. The manufacturer shall have produced butterfly valves for a minimum of five years. All valves shall be Pratt® ISO-DE Flanged Butterfly Valves and comply with the following details.

VALVE BODIES

Valve bodies shall be constructed of ASTM A536 Gr.65-45-12 ductile iron. Flanged valves shall be raised faced and drilled in accordance with EN 1092-2 / ISO 5752.

VALVE SEATS

Rubber seats shall be EPDM rubber, of one piece molded construction and mechanically attached to the valve disc by means of seat retaining ring or segments and Stainless Steel nylon lock screws.

VALVE BEARINGS

Valve bearings shall be of a self-lubricating, nonmetallic material to effectively isolate the disc-shaft assembly from the valve body.

VALVE DISC

Valve disc shall be constructed of ASTM A536 Gr.65-45-12 ductile iron. The disc shall be designed to afford minimal pressure drop and line turbulence.

Discs shall be retained by stainless steel dry pins which extend through the shaft in blind holes to withstand the specified line pressure up to valve rating and the torque required to operate the valve. Disc stops located in the flow stream are not allowed.

VALVE SHAFTS

Valve shafts shall be dry (isolated from line media) and shall be of stainless steel AISI 420. Both ends of the valve dry shaft are to be designed with O-rings on sealing sleeves.

COATING

All surfaces of the valve interior shall be clean, dry and free from grease before painting. The valve surfaces except for the disc edge, rubber seat and finished portions shall be evenly coated with epoxy coating approved for drinking water applications. Valve sizes up to DN1200 shall be fusion bonded epoxy.

TESTING

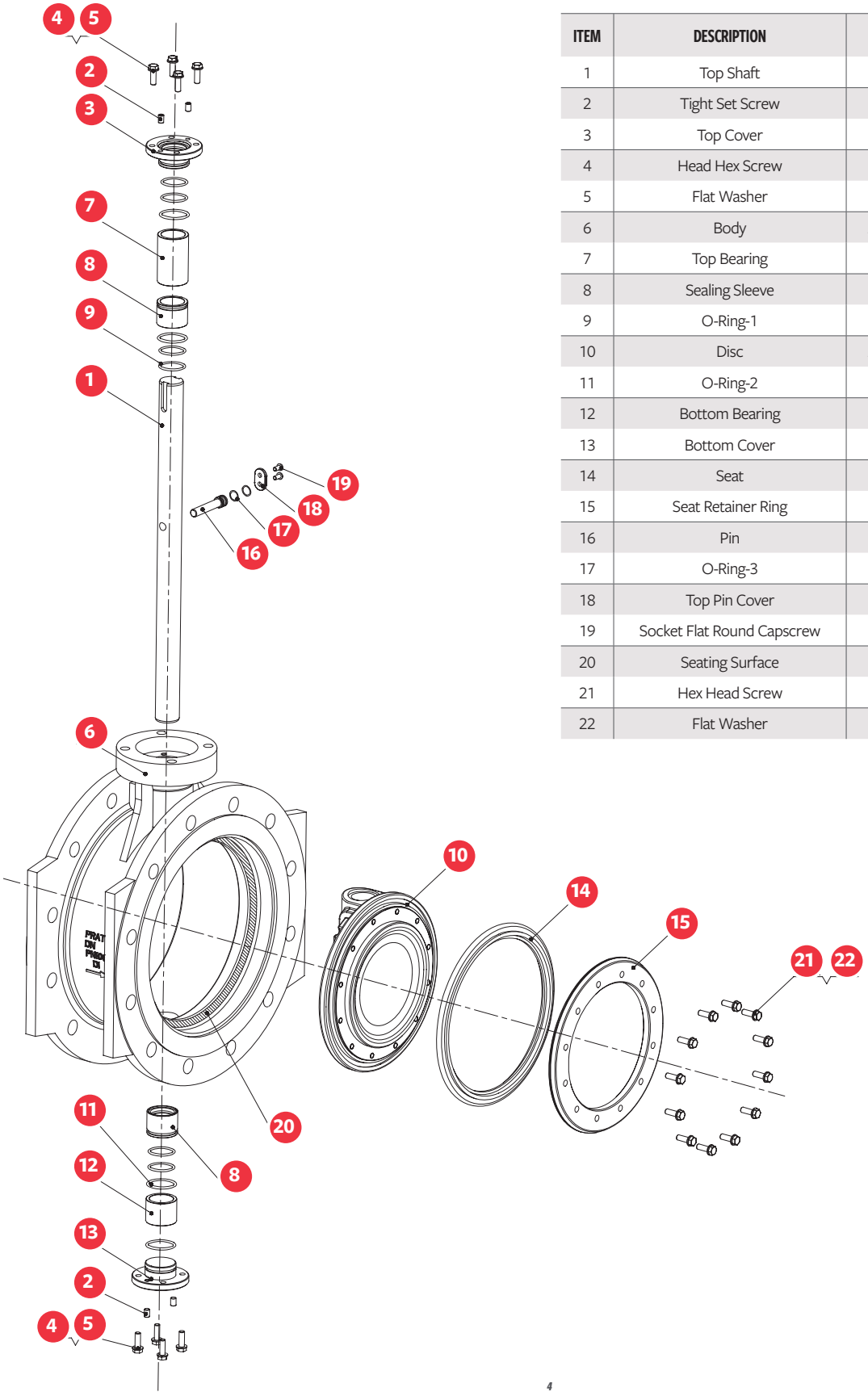
Hydrostatic and seat leakage tests shall be conducted in strict accordance with BS EN 12261-1.

MANUAL ACTUATORS

Manual actuators shall be self-locking type and shall be designed to hold the valve in any intermediate position between fully open and fully closed without creeping or fluttering. Actuators shall be equipped with mechanical stop-limiting devices to prevent over travel of the disc in the open and closed positions. Actuators shall be fully enclosed and designed to produce the specified torque with a maximum rim pull of 356 Nm. on the handwheel. Actuator components shall withstand an input of 1,334 Nm. at extreme operator position without damage.

EXPLODED PART DRAWING

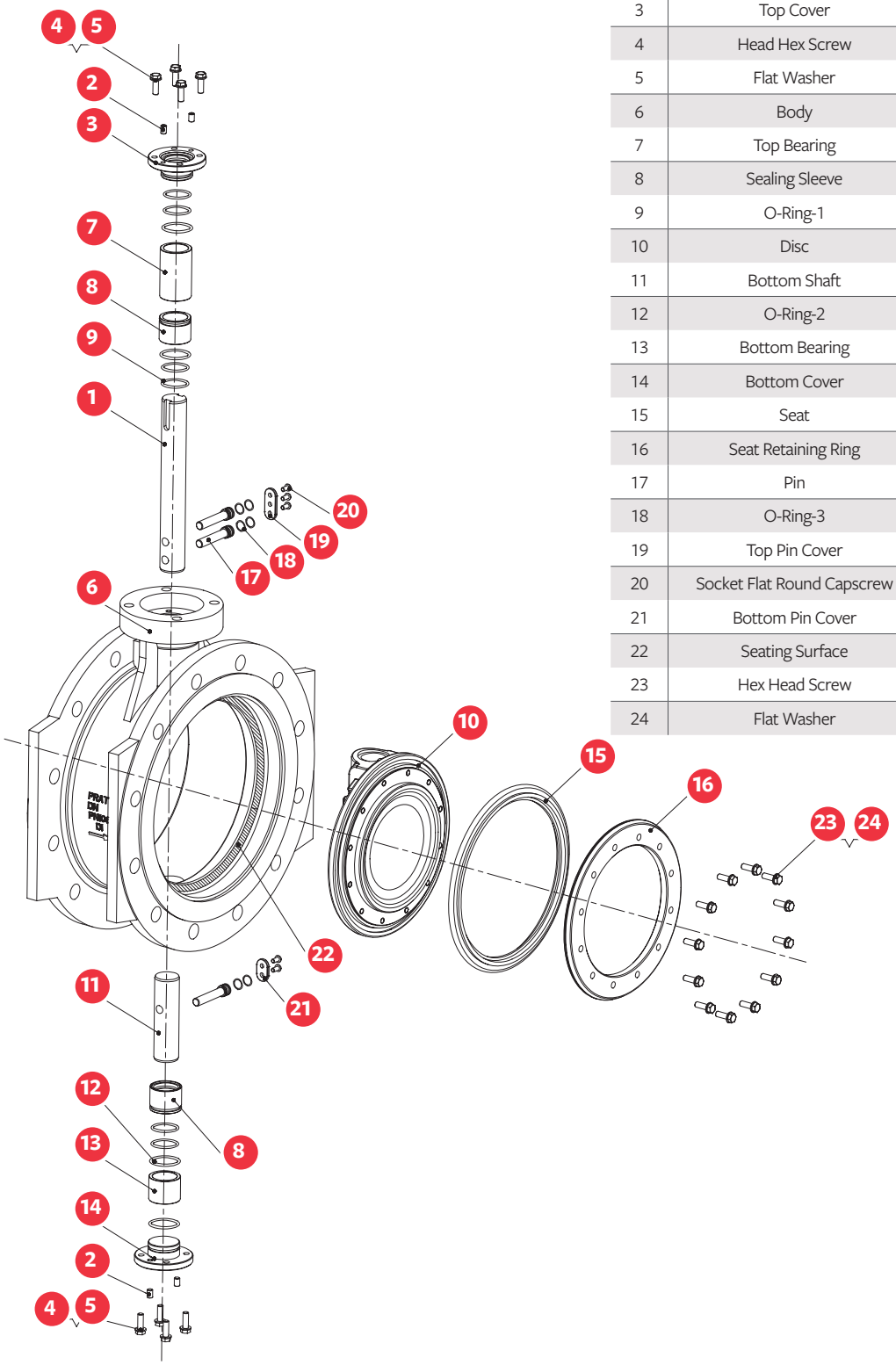
ISO-DE DN100-DN250



ITEM	DESCRIPTION	MATERIAL
1	Top Shaft	AISI 420
2	Tight Set Screw	AISI S30400
3	Top Cover	Carbon Steel
4	Head Hex Screw	AISI S30400
5	Flat Washer	AISI S30400
6	Body	ASTM A536 Gr. 65-45-12, Ductile Iron
7	Top Bearing	Teflon Lined, Fiberglass Backed
8	Sealing Sleeve	Teflon Lined, Fiberglass Backed
9	O-Ring-1	EPDM
10	Disc	ASTM A536 Gr. 65-45-12, Ductile Iron
11	O-Ring-2	EPDM
12	Bottom Bearing	Teflon Lined, Fiberglass Backed
13	Bottom Cover	Carbon Steel
14	Seat	EPDM
15	Seat Retainer Ring	Stainless Steel
16	Pin	AISI 420
17	O-Ring-3	EPDM
18	Top Pin Cover	Carbon Steel
19	Socket Flat Round Capscrew	AISI S30400
20	Seating Surface	NICKEL
21	Hex Head Screw	Stainless Steel Nylon Lock Screws
22	Flat Washer	AISI S30400

EXPLODED PART DRAWING

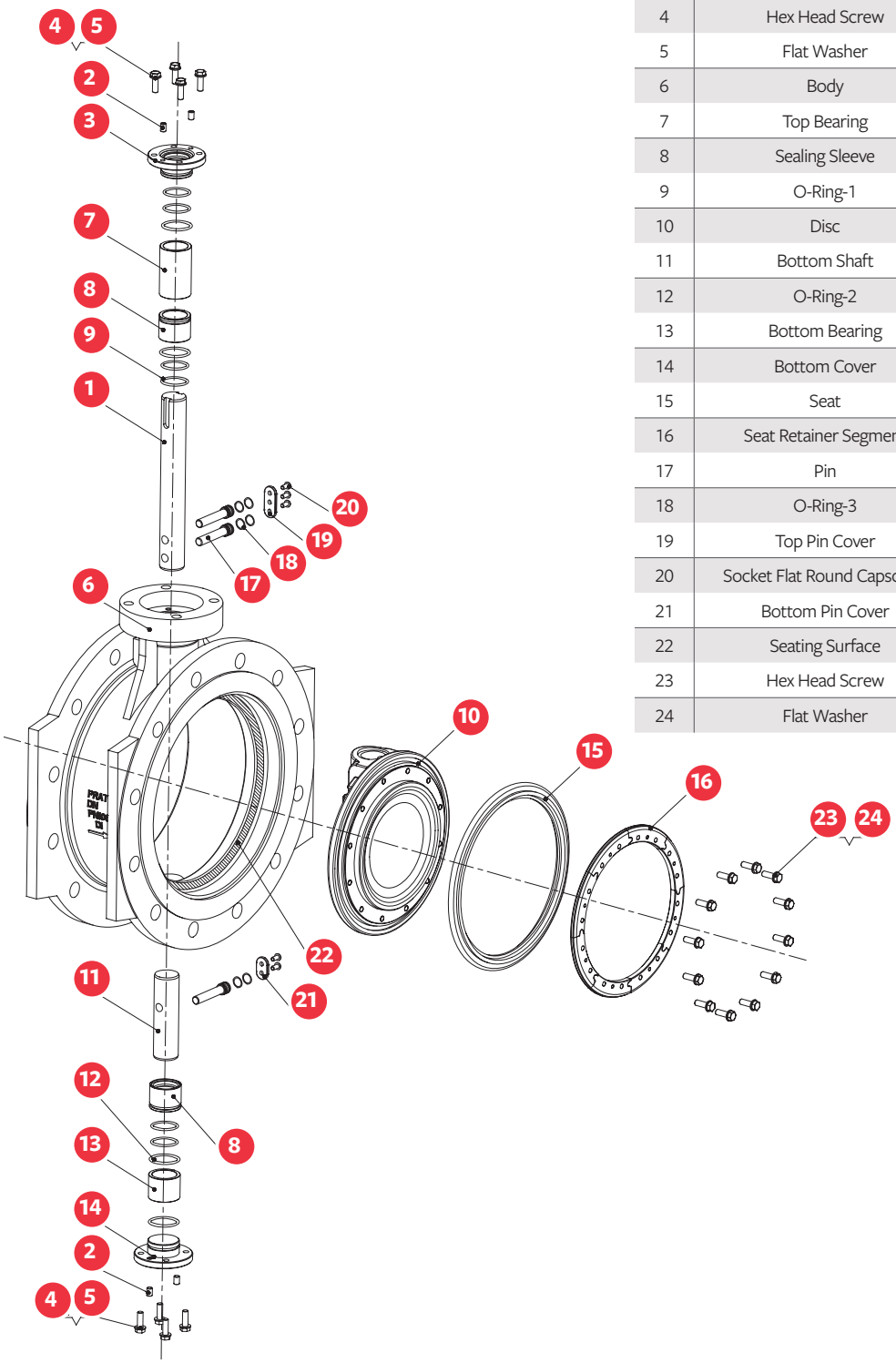
ISO-DE DN300-DN500



ITEM	DESCRIPTION	MATERIAL
1	Top Shaft	AISI 420
2	Tight Set Screw	AISI S30400
3	Top Cover	Carbon Steel
4	Head Hex Screw	AISI S30400
5	Flat Washer	AISI S30400
6	Body	ASTM A536 Gr. 65-45-12, Ductile Iron
7	Top Bearing	Teflon Lined, Fiberglass Backed
8	Sealing Sleeve	Teflon Lined, Fiberglass Backed
9	O-Ring-1	EPDM
10	Disc	ASTM A536 Gr. 65-45-12, Ductile Iron
11	Bottom Shaft	AISI 420
12	O-Ring-2	EPDM
13	Bottom Bearing	Teflon Lined, Fiberglass Backed
14	Bottom Cover	Carbon Steel
15	Seat	EPDM
16	Seat Retaining Ring	Stainless Steel
17	Pin	AISI 420
18	O-Ring-3	EPDM
19	Top Pin Cover	Carbon Steel
20	Socket Flat Round Capscrew	AISI S30400
21	Bottom Pin Cover	Carbon Steel
22	Seating Surface	NICKEL
23	Hex Head Screw	Stainless Steel Nylon Lock Screws
24	Flat Washer	AISI S30400

EXPLODED PART DRAWING

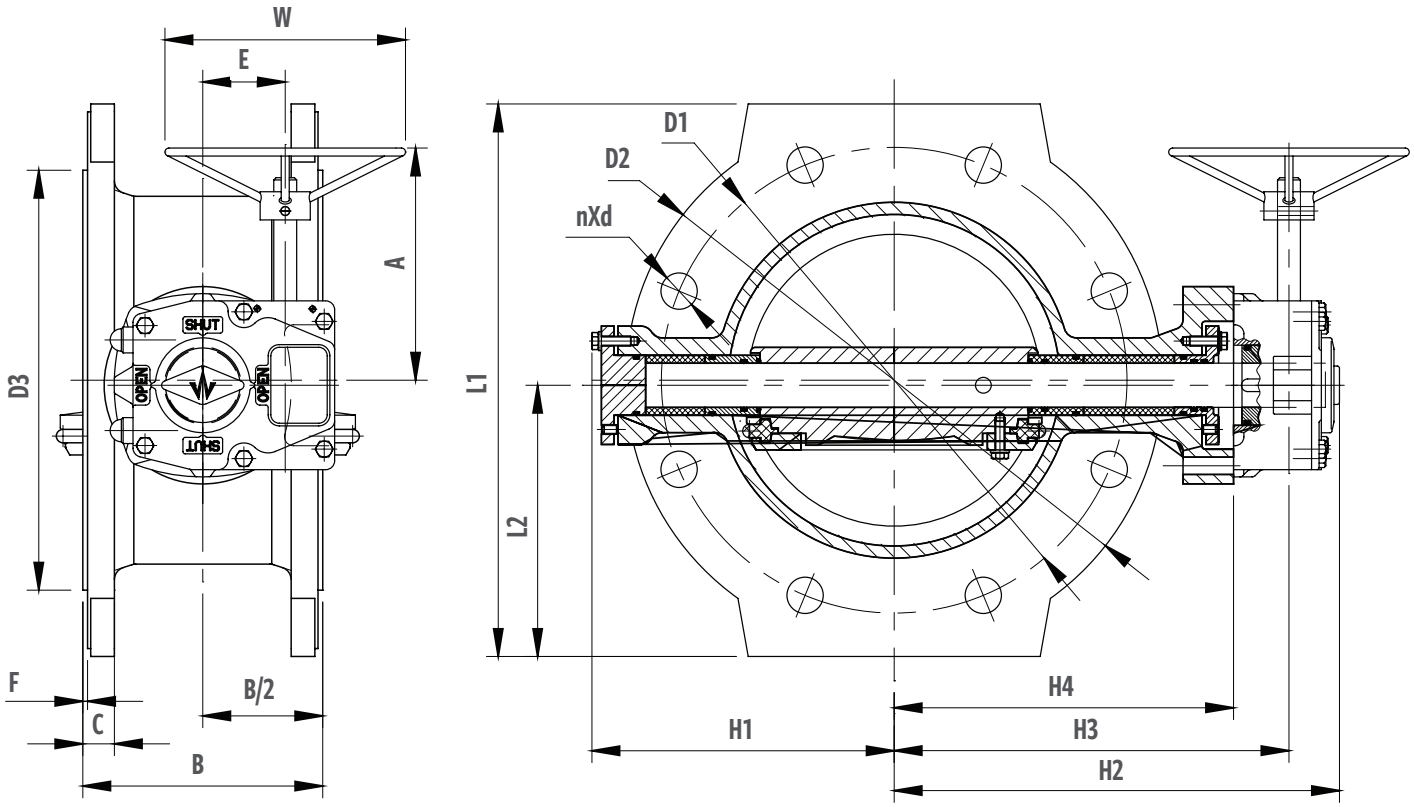
ISO-DE DN600-DN1800



ITEM	DESCRIPTION	MATERIAL
1	Top Shaft	AISI 420
2	Tight Set Screw	AISI S30400
3	Top Cover	Carbon Steel
4	Hex Head Screw	AISI S30400
5	Flat Washer	AISI S30400
6	Body	ASTM A536 Gr. 65-45-12, Ductile Iron
7	Top Bearing	Teflon Lined, Fiberglass Backed
8	Sealing Sleeve	Teflon Lined, Fiberglass Backed
9	O-Ring-1	EPDM
10	Disc	ASTM A536 Gr. 65-45-12, Ductile Iron
11	Bottom Shaft	AISI 420
12	O-Ring-2	EPDM
13	Bottom Bearing	Teflon Lined, Fiberglass Backed
14	Bottom Cover	Carbon Steel
15	Seat	EPDM
16	Seat Retainer Segment	Stainless Steel
17	Pin	AISI 420
18	O-Ring-3	EPDM
19	Top Pin Cover	Carbon Steel
20	Socket Flat Round Capscrew	AISI S30400
21	Bottom Pin Cover	Carbon Steel
22	Seating Surface	Nickel
23	Hex Head Screw	Stainless Steel Nylon Lock Screws
24	Flat Washer	AISI S30400

DIMENSIONAL DATA

ISO-DE BFV, PN 10 (10 bar) - Double Offset Soft Sealing BFV Dimensions

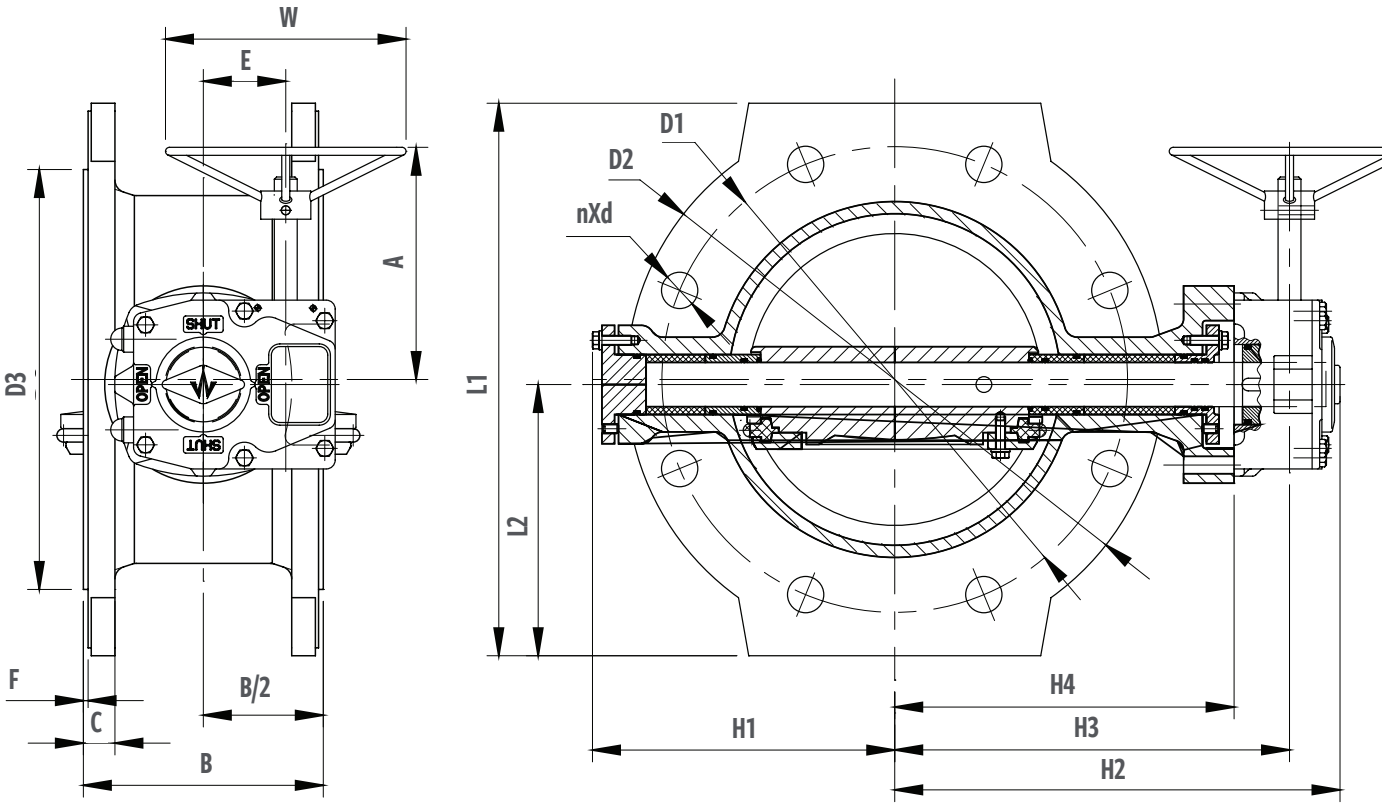


PN10

SIZE	A	B		C	D1	D2	D3	E	F	H1
		SHORT	LONG							
DN100	131.6	127	190	19	180	220	156	38.6	3	110
DN125	131.6	140	200	19	210	250	184	38.6	3	125.6
DN150	141.7	140	210	19	240	285	211	52.1	3	156
DN200	141.7	152	230	20	295	340	266	52.1	3	191.5
DN250	141.7	165	250	22	350	400	319	52.1	3	216.5
DN300	213.6	178	270	24.5	400	455	370	66.8	4	237.4
DN350	213.6	190	290	24.5	460	505	429	66.8	4	276.4
DN400	213.6	216	310	24.5	515	565	480	66.8	4	319.3
DN450	256.0	222	330	25.5	565	615	530	89.4	4	368
DN500	256.0	229	350	26.5	620	670	582	89.4	4	386.4
DN600	355.6	267	390	30	725	780	682	153.9	5	447
DN700	355.6	292	430	32.5	840	895	794	153.9	5	527
DN800	355.6	318	470	35	950	1015	901	153.9	5	589
DN900	456.0	330	510	37.5	1050	1115	1001	185.0	5	654
DN1000	456.0	410	550	40	1160	1230	1112	185.0	5	709
DN1200	591.3	470	630	45	1380	1455	1328	235.0	5	842
DN1400	647.7	530	710	46	1590	1675	1530	305.1	5	980
DN1600	647.7	600	790	49	1820	1915	1750	305.1	5	1123.7
DN1800	647.7	670	870	52	2020	2115	1950	305.1	5	1236.7

DIMENSIONAL DATA

ISO-DE BFV, PN 10 (10 bar) - Double Offset Soft Sealing BFV Dimensions

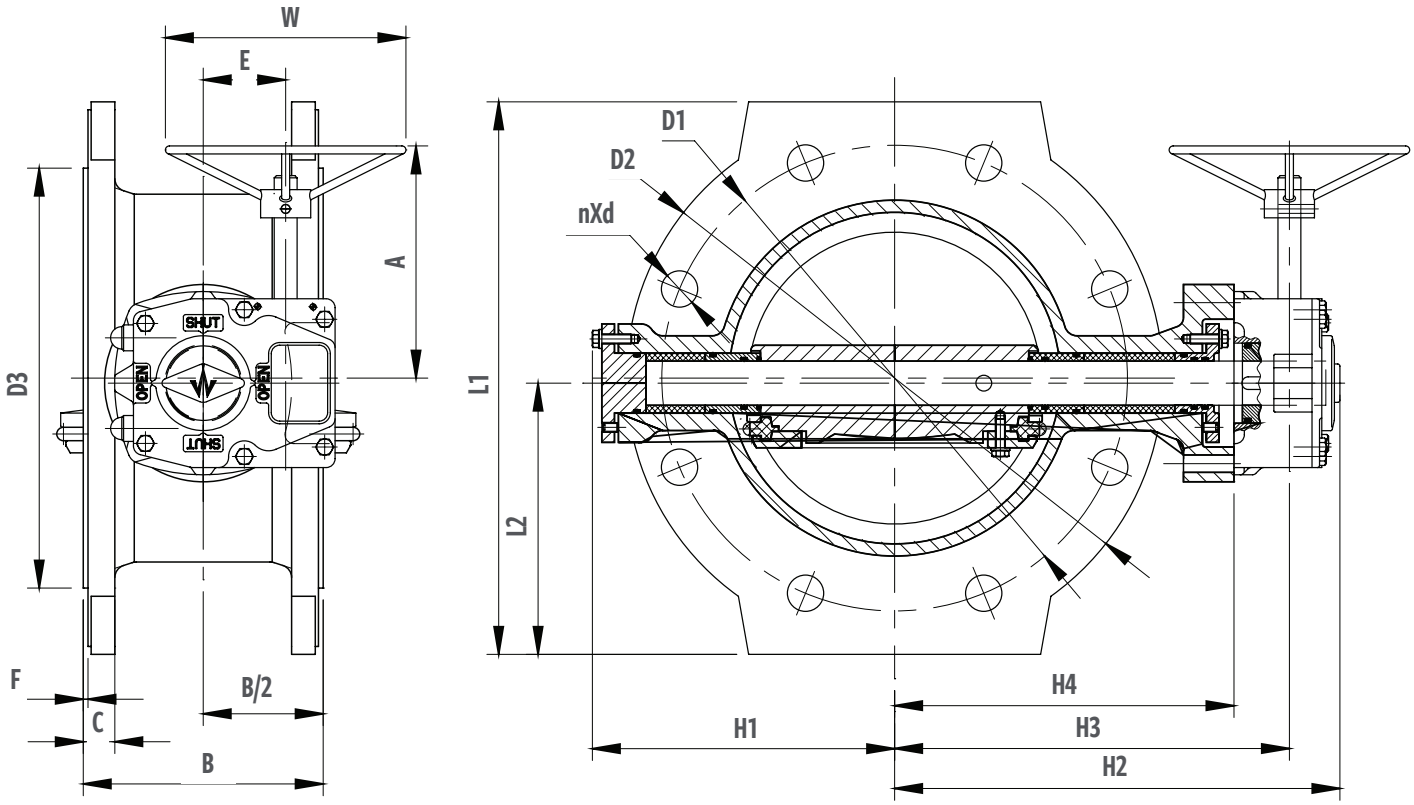


PN10

SIZE	H2	H3	H4	L1	L2	W	N X D	ISO5211	ACTUATOR CODE
DN100	197.9	166.4	140	226	110.5	200	8XØ19	F07	M07
DN125	212.9	181.4	155	256	125.5	200	8XØ19	F07	M07
DN150	252.1	220.1	185	300	147.5	200	8XØ23	F10	M10
DN200	282.1	250.1	215	350	171.8	200	8XØ23	F10	M10
DN250	327.1	295.1	260	410	201.8	200	12xØ23	F10	M10
DN300	361.0	321.9	280	464	228.8	200	12xØ23	F12	M12
DN350	401.0	361.9	320	530	261.8	200	16xØ23	F12	M12
DN400	439.0	399.9	358	576	284.8	200	16xØ28	F12	M12
DN450	478.5	435.0	385	624	308.8	400	20xØ28	F14	M14
DN500	518.5	475.0	425	680	336.8	400	20xØ28	F14	M14
DN600	636.5	560.0	510	790	391	400	20xØ31	F25	M16
DN700	676.5	600.0	550	895	443.7	400	24xØ31	F25	M16
DN800	711.5	635.0	585	1015	503.7	400	24xØ34	F25	M16
DN900	820.0	730.1	650	1115	553.7	500	28xØ34	F30	M30
DN1000	874.0	784.1	704	1230	611.2	500	28xØ37	F30	M30
DN1200	1059.3	930.0	835	1455	723.7	600	32xØ40	F35	M40
DN1400	1258.5	1102.1	987	1675	833.7	600	36xØ43	F40	M50
DN1600	1393.5	1237.1	1122	1915	953.7	600	40xØ49	F40	M50
DN1800	1503.5	1347.1	1232	2115	1053.7	600	44xØ49	F40	M55

DIMENSIONAL DATA

ISO-DE BFV, PN 16 (16 bar)

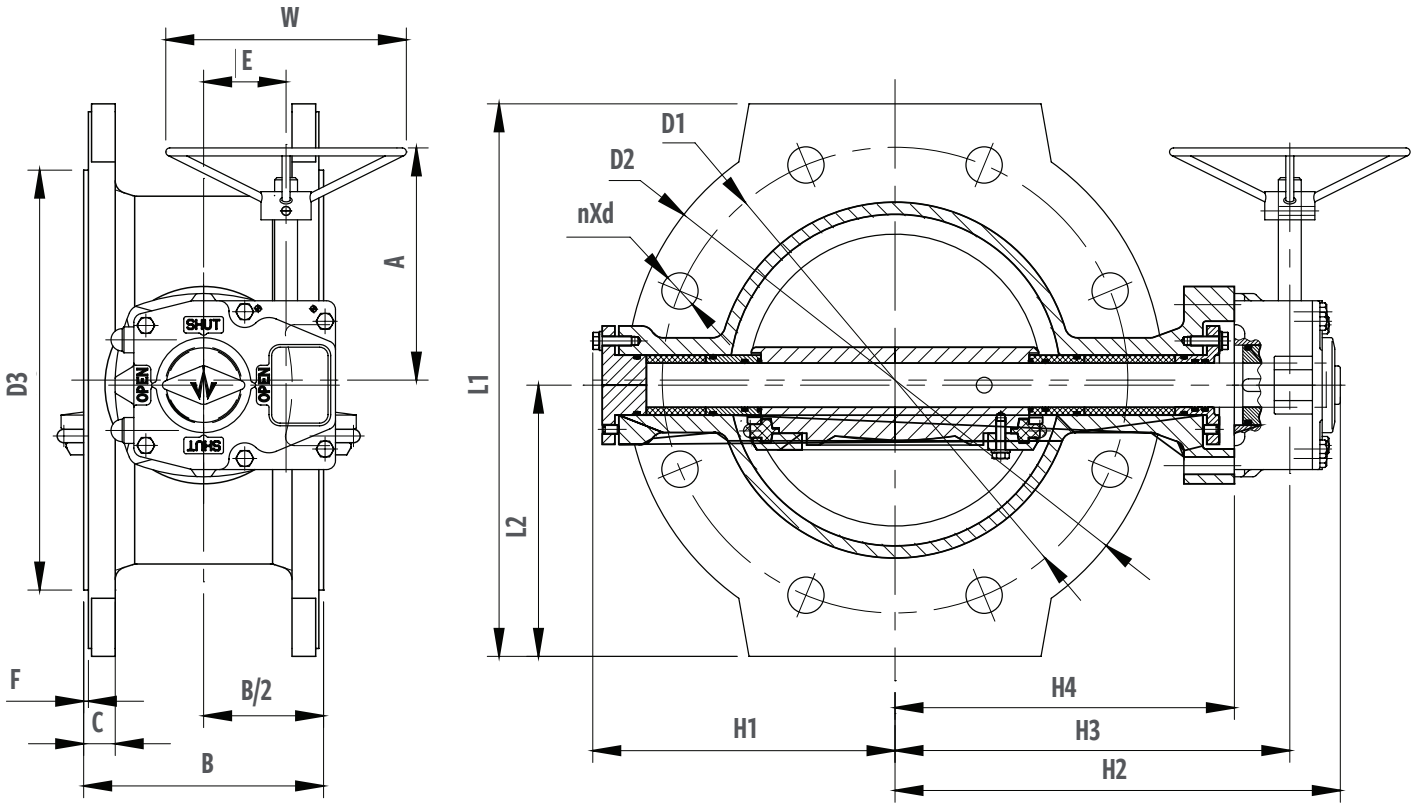


PN16

SIZE	A	B		C	D1	D2	D3	E	F	H1
		SHORT	LONG							
DN100	131.6	127	190	19	180	220	156	38.6	3	110
DN125	131.6	140	200	19	210	250	184	38.6	3	125.6
DN150	141.7	140	210	19	240	285	211	52.1	3	156
DN200	141.7	152	230	20	295	340	266	52.1	3	191.5
DN250	141.7	165	250	22	355	400	319	52.1	3	216.5
DN300	213.6	178	270	24.5	410	455	370	66.8	4	237.4
DN350	213.6	190	290	26.5	470	520	429	66.8	4	276.4
DN400	213.6	216	310	28	525	580	480	66.8	4	319.3
DN450	256.0	222	330	30	585	640	548	89.4	4	368
DN500	343.4	229	350	31.5	650	715	609	122.9	4	386.4
DN600	355.6	267	390	36	770	840	720	153.9	5	447
DN700	355.6	292	430	39.5	840	910	794	153.9	5	527
DN800	421.5	318	470	43	950	1025	901	145.8	5	589
DN900	456.0	330	510	46.5	1050	1125	1001	185.0	5	654
DN1000	559.6	410	550	50	1170	1255	1112	235.0	5	709
DN1200	647.7	470	630	57	1390	1485	1328	305.1	5	842
DN1400	647.7	530	710	60	1590	1685	1530	305.1	5	980
DN1600	647.7	600	790	65	1820	1930	1750	305.1	5	1123.7
DN1800	1014.7	670	870	70	2020	2130	1950	495.3	5	1236.7

DIMENSIONAL DATA

ISO-DE BFV, PN 16 (16 bar)



PN16

SIZE	H2	H3	H4	L1	L2	W	N X D	ISO5211	ACTUATOR CODE
DN100	197.9	166.4	140	226	110.5	200	8XØ19	F07	M07
DN125	212.9	181.4	155	256	125.5	200	8XØ19	F07	M07
DN150	252.1	220.1	185	300	147.5	200	8XØ23	F10	M10
DN200	282.1	250.1	215	350	171.8	200	12XØ23	F10	M10
DN250	312	280	245	410	201.8	200	12XØ28	F10	M10
DN300	361.0	321.9	280	464	228.8	200	12XØ28	F12	M12
DN350	401.0	361.9	320	530	261.8	200	16XØ28	F12	M12
DN400	439.0	399.9	358	590	291.8	200	16XØ31	F14	M12
DN450	478.5	435.0	385	650	321.8	400	20XØ31	F14	M14
DN500	530.4	475.0	425	724	358.8	400	20XØ34	F16	M15
DN600	636.5	560.0	510	850	421	400	20XØ37	F25	M16
DN700	676.5	600.0	550	910	451.2	400	24XØ37	F25	M16
DN800	726.5	643.0	585	1025	508.7	500	24XØ40	F25	M20
DN900	820.0	730.1	650	1125	558.7	500	28XØ40	F30	M30
DN1000	928.3	799.0	704	1255	623.7	600	28XØ43	F30	M40
DN1200	1106.5	950.1	835	1485	738.7	600	32XØ49	F35	M50
DN1400	1258.5	1102.1	987	1685	838.7	600	36XØ49	F40	M50
DN1600	1393.5	1237.1	1122	1930	961.2	600	40XØ56	F40	M50
DN1800	1605.1	1455.5	1232	2130	1061.2	800	44XØ56	F40	M70

NOTES

NOTES

NOTES

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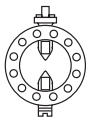
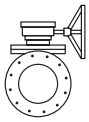
Product Guide

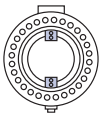


MODEL 2FII

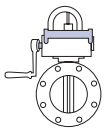
MONOFLANGE MKII



PLUG VALVES

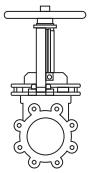


TRITON® XR70

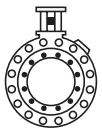


INDICATING BUTTERFLY VALVES UL & FM APPROVED

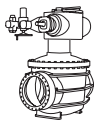
TILTING DISC CHECK VALVES



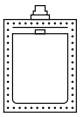
KNIFE GATE VALVES



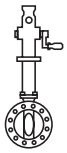
N-STAMP NUCLEAR BUTTERFLY VALVES



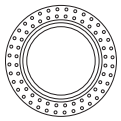
CONE VALVES



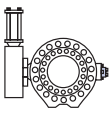
RECTANGULAR



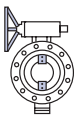
PIVA POST INDICATING VALVES ASSEMBLY UL & FM APPROVED



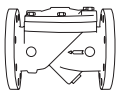
SLEEVE VALVES



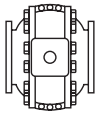
RUBBER SEATED BALL VALVES



TRITON® 250

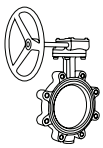


CHECK VALVES

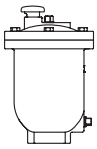


METAL SEATED BALL VALVE

CONTROL SYSTEMS



INDUSTRIAL VALVES



AIR VALVES

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