

DOUBLE OFFSET BUTTERFLY VALVES

Proudly Manufactured in South Africa

Features:

LVSA is pleased to offer top-of-the-line products in pipeline flow control. The LVSA Double offset Butterfly Valve Series 60 & 61 has been developed with extensive application, design and manufacturing expertise. These products are produced by employing modern manufacturing practices under a robust quality assurance system. These practices ensure consistent product quality and dependable performance. The LVSA Double offset Butterfly valve series 60 & 61 has been designed to include state-of-the-art features that are described in this bulletin.

1. BODY

Flanged body styles offer UNIDIRECTIONAL sealing as a standard in conformance with full ASME class 150, PN 10, PN 16 rating. The body rib is a machined stopper on the inner surface of the body that locates the discs in the seat to achieve maximum seat and seal life. The body rib is designed to prevent the disc from rotating in the wrong direction.

2. BODY RING OR SEAT RING

Body ring is a machined part which is fixed to the body rib.

3. DISC TRIM

Seat ring or disc trim is a machined part which is mounted on a disc and is used to control the leakage when in contact with body ring.

4. DISC

The Disc has been engineered to maximize flow and minimize resistance to provide a high flow coefficient(Cv) .

5. STEM

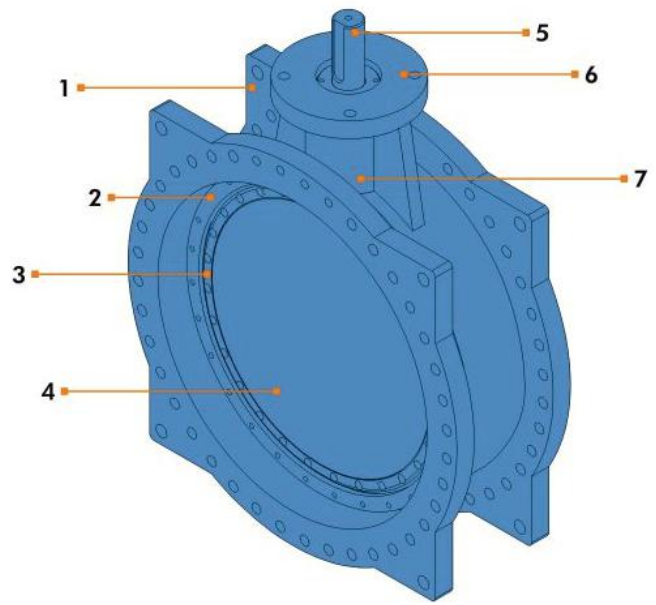
Stem provides maximum strength for high torque applications

6. TOP FLANGE

The top flanges drilled as per ISO 5211 to accommodate direct mounting of a wide range of actuators.

5. EXTENDED NECK

Extended neck allows insulation and easy access to stem packing adjustment and actuator mounting.



THRUST PAD

Thrust pad acts as a thrust or load absorber. The thrust pad is located between the end cover plate and stub shaft. This thrust pad is used to reduce the load of valve assembly acting on bottom of the body.

BEARINGS

Top and bottom bearings, consisting of a 316 stainless steel/PTFE liner bearing surface, securely support the stem.

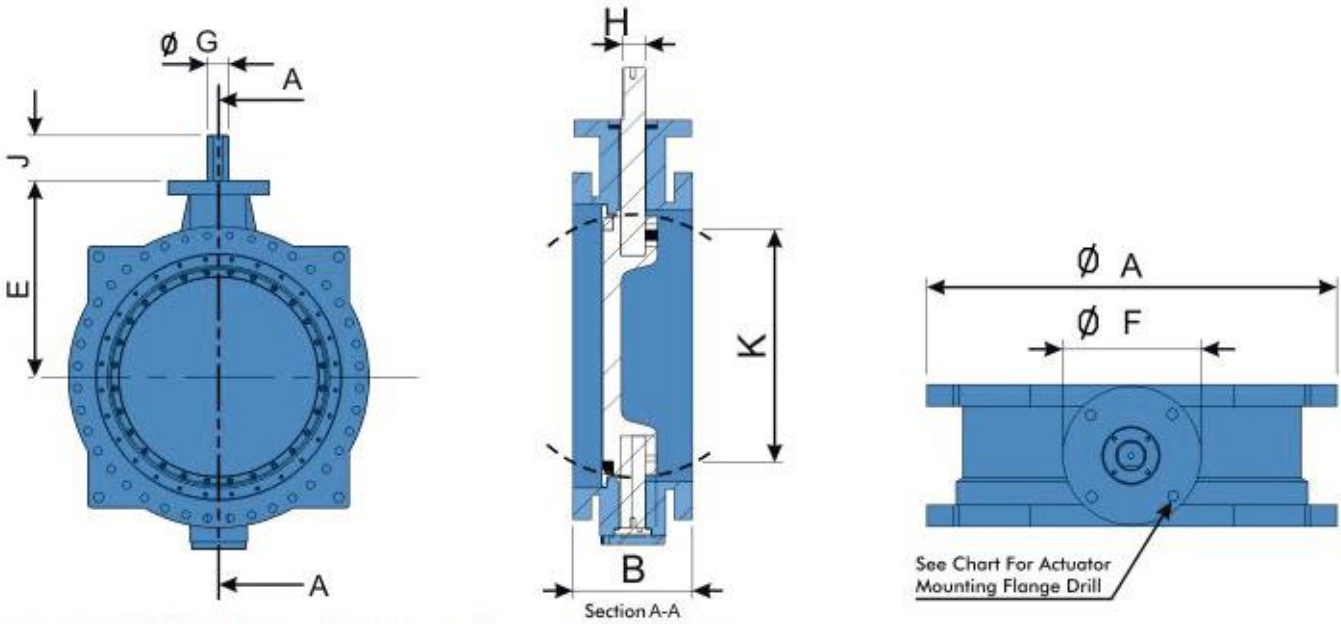
SHAFT PIN

Shaft pin is used to lock the disc with shaft so that the motion is carried without any failure.

PACKING GLANDS

Stem assembly is “live loaded” with bearing bushes, gland plate and O ring. This gland ensures continuous compression of packing and sealing contact with the stem and body. The packing gland is used to adjust packing while the valve is pressurized with fluid.





Valve Size		ØA	B	E	ØF	Top Plate Drilling			ØG	H	J	Key Size	K	Weights in Kg
Inches	DN					BC	No of Holes	Hole Dia.						
2"	50	95	43	125	102	50	4	10	14	10	32	-	39.8	7
2 1/2"	65	105	46	146	102	50	4	10	16	11	32	-	53.3	8
3"	80	127	114	151	102	50	4	10	16	11	32	-	66	9.8
4"	100	157	127	172	102	70	4	10	16	11	32	-	86.4	14.2
5"	125	186	127	188	125	70	4	10	19	13	32	-	114.3	17.8
6"	150	216	140	209	125	70	4	10	19	13	32	-	139.7	22.6
8"	200	343	152	215	175	102	4	14	22	16	37	-	180.3	65
10"	250	407	165	260	215	102	4	14	30	22	57	-	229	83
12"	300	483	178	300	215	102	4	14	30	22	57	-	282	95
14"	350	534	190	330	230	102	4	14	35	-	62	10x8	324	110
16"	400	597	216	370	260	140	4	14	35	-	62	10x8	376	135
18"	450	635	222	405	285	140	4	21	50	-	72	14x9	426	160
20"	500	700	229	450	210	140	4	21	60	-	90	18x11	466.1	180
24"	600	815	267	535	330	165	4	21	70	-	100	20x12	576	260
26"	650	869	292	560	300	165	8	18	88.9	-	102	25x14	605	300
28"	700	927	292	600	300	254	8	18	88.9	-	102	25x14	660.5	385
30"	750	984	318	640	350	254	8	18	88.9	-	102	25x14	715	450
32"	800	1060	318	670	350	254	8	18	101.6	-	134	28x16	767	525
36"	900	1168	330	705	350	254	8	21	101.6	-	134	28x16	864.2	775
40"	1000	1289	410	810	415	254	8	21	120	-	150	32x18	945	1100
44"	1100	1403	410	845	415	254	8	33	120	-	150	32x18	1040	1275
48"	1200	1511	470	915	415	298	8	33	120	-	150	32x18	1125	1435
56"	1400	1746	530	1000	500	450	8	33	120	-	150	32x18	1362	1685

Note:
 Valves above 56" can be supplied as per the customer requirements.
 Face to face dimension "B", Generally conforming to MSSP68 Table1/API609 category B/ BS EN558-1/ ASME B16.10. All bolt holes 1 1/8" and larger have an 8-unthread series as per MSS SP 68 & API 609.
 Flanged end connection are considered as per ANSI B16.5 (size upto 24") & ANSI B16.47 (above 24")



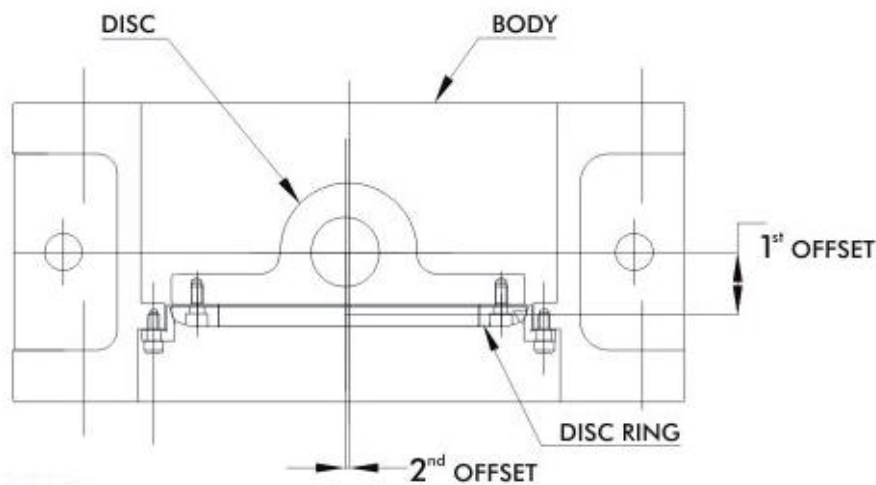
Feature & Selection

Double Offset Disc Design

The offset disc produces a cam-like action, pulling the disc from the seat. The action reduces leakage of fluid as compared to the normal design. Due to offsetting of disc, the valve achieves a tight shutoff.

Open Condition: When the valve is under opened or in a slight open condition, the contact period between the seat and the body is reduced. This action drastically reduced the wear and increase the life time of the seat. Due to a shorter contact period, the torque required to operate the valve is also reduced.

Closed condition: When the valve is under closed or in a tight shut off condition, the cam-like action makes the disc pushes into the seat more effectively. This makes the seat have tight contact with the body and reduces the leakage through the valve.



Material of Construction:

Body Material

- C.I. ASTM A126 Class B. / IS 210 FG260
- D.I. ASTM A 536 Gr. (65-45-12)
- ASTM A351 CF8M/CF8/CF3M/CF3
- ASTM A216 Gr.WCB

Disc Material

- D.I ASTM A536 65-45-12 (NYLON PA12 COATED)
- ASTM A351 CF8M/CF8/CF3M/CF3
- AL BRZ ASTM B148-C95400
- ASTM A216 Gr.WCB
- Other special alloy materials

Stem Material

- EPDM (Ethylene Propylene Diene Monomer), BUNA-N,
- SILICON, VITON, PTFE, NEOPRENE
- SS 304 / SS410 / SS420 (METAL SEATED) / SS316

Codes and standards

- General design and manufacturing: API 609 Category B / MSS-SP-68 / EN 593
- Inspection and Testing: API 598 / MSS-SP-68 / EN 12266-1 / AISI FCI 70-2
- Pressure temperature rating: ASME B16.34

Application

LVSA Butterfly valves are extremely adaptable and have numerous application possibilities, including:

- Water Treatment
- Chemical Industry
- Waste effluent treatment plant
- Paper industry
- Sugar industry
- Construction industry
- Oil rings
- Heating and Air conditioning
- Cooling water circulation
- Pneumatic conveyors
- Gas plants
- Desulphurization plants
- Power plants
- Metallurgy Industries
- Balance of plants
- Desalination Plants



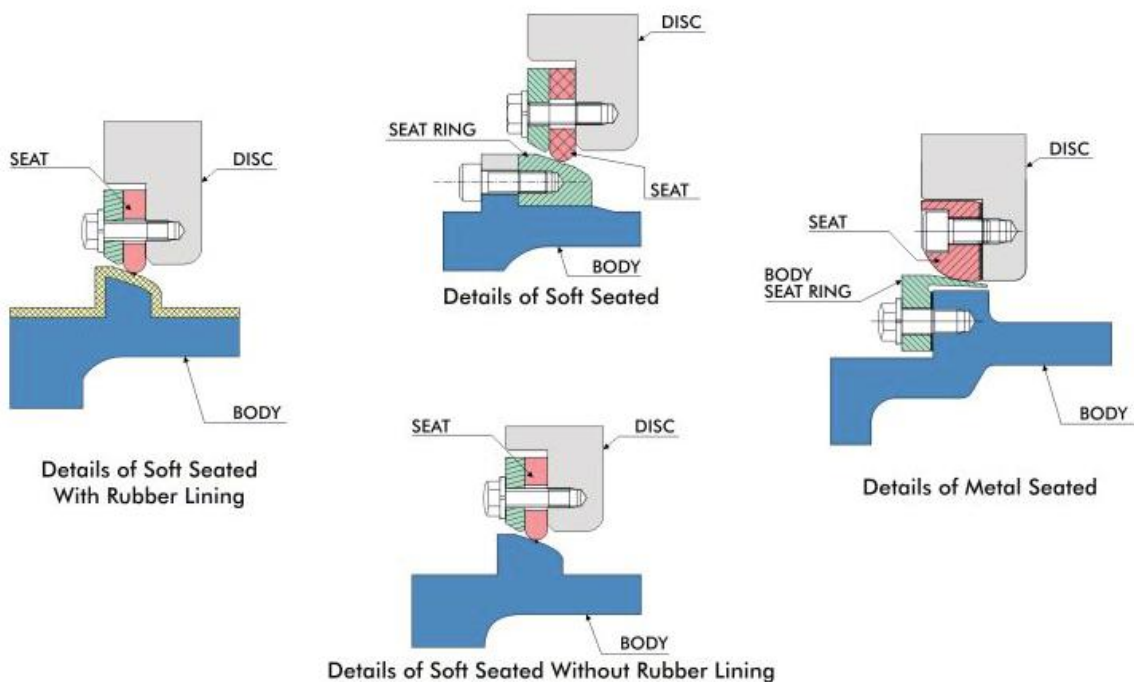
Torque (Nm)

Maximum seating & Unseating Torque

Soft Seated Valve Size		Differential Pressure			
Inches	DN	PN 3.5	PN 10	PN 16	Class 150
2	50	24	27	28	29
2.5	65	27	29	31	32
3	80	32	34	37	40
4	100	43	49	53	83
5	125	59	70	78	68
6	150	88	104	116	124
8	200	148	181	199	214
10	250	193	323	283	315
12	300	235	480	413	465
14	350	389	716	735	836
16	400	496	972	936	1076
18	450	646	1275	1224	1409
20	500	862	1638	1663	1897
24	600	1305	1765	2558	2958
26	650	1597	2210	2610	3170
28	700	1755	2490	2830	3360
30	750	2395	3429	4256	4825
32	800	3099	4529	5456	6325
36	900	3865	5659	7094	8081
40	1000	6102	9100	11499	13152
44	1100	7725	10320	13040	14910
48	1200	9950	14770	18806	21420

Metal Seated Valve Size		Differential Pressure			
Inches	DN	PN 3.5	PN 10	PN 16	Class 150
2	50	58	63	66	70
2.5	65	68	73	76	79
3	80	84	91	94	99
4	100	107	117	125	134
5	125	119	143	159	171
6	150	201	236	265	280
8	200	333	394	446	482
10	250	490	624	707	795
12	300	747	964	1118	1254
14	350	880	1132	1347	1485
16	400	1015	1365	1654	1839
18	450	1302	1944	2506	2829
20	500	1814	2789	3638	4149
24	600	2880	3957	4876	5388
28	700	-	1766	-	-
32	800	-	2746	-	-
48	1200	-	13000	-	-
56	1400	-	16157	-	-

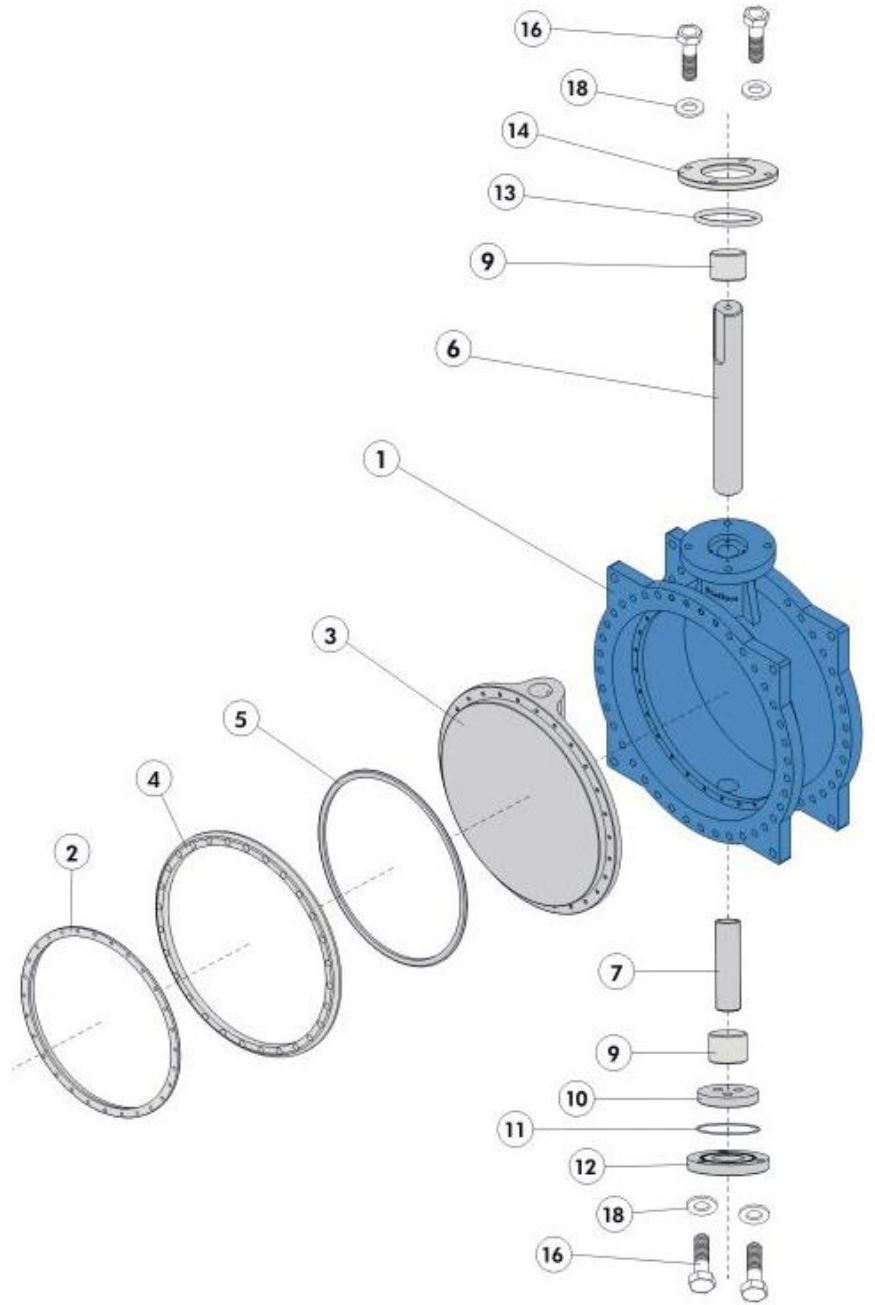
Note: Above torque values are indicative and defined for flow in preferred direction i.e Seat retainer upstream. Torque values for flow in non preferred direction i.e seat retainer down stream, multiply the above values by 1.25



Bill of Materials

S.No	Description
1	BODY
2	BODY SEAT RING
3	DISC
4	DISC RING
5	SEAT
6	DRIVE SHAFT
7	STUB SHAFT
8	SHAFT PIN
9	BEARING BUSH
10	THRUST PAD
11	END COVER PLATE O RING
12	END COVER PLATE
13	GLAND PLATE O RING
14	GLAND PLATE
15	KEY
16	HEXBOLTS
17	HEX NUTS
18	WASHER PLATE
19	FULL THREAD STUD
20	NAME PLATE

Not shown in the figure



Lever handles:

Valves up to 6” for class 150 can be supplied with lever handles for manual operation, optional accessories for hand-lever operation can be provided for various flow control requirements



Gear operated:

Valves up to size 48” can be direct mounted with gear operators for manual operation. Gear operators can also be attached with chain-wheel operators for opening or closing valves located on pipelines at high elevations.



Actuators:

All valves can be direct mounted with pneumatic actuators or electric actuators and accessories for complete automation options such as fail open/close and positioner controlled. Valves can be mounted with manual overrides.



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