

TRIPLE OFFSET BUTTERFLY VALVES

Class 150, 300, & 600 - Metal Seated



Triple Offset Valves

The triple offset design incorporates torque in seating for tight shutoff or control even in the roughest applications. Industries where the triple offset butterfly valves are widely used include Power, Refining, Petrochemical, Chemical and Pulp & Paper.

FEATURES:

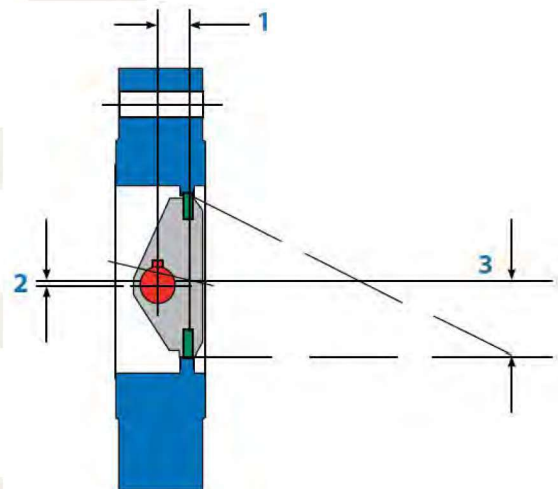
- **SIZES 2" through 60"**
- **Metal Seated**
- **ISO 5211 Mounting Pad**
- **Wafer, Lug or Flanged**
- **Tightest Shut-Off**
- **Blow-out Proof Stem**
- **CS or SS Bodies**
- **Class 150, 300, 600**
- **Bare Stem or Automated**

What is triple offset?

First Offset: The shaft is offset from the sealing surface – 1

Second Offset: The shaft is offset from the centerline of the pipe – 2

Third Offset: The third offset is at the sealing face. The sealing surface of the disc is similar to a slice taken from a cone shape. This cone shape is offset from the centerline of the pipeline - 3

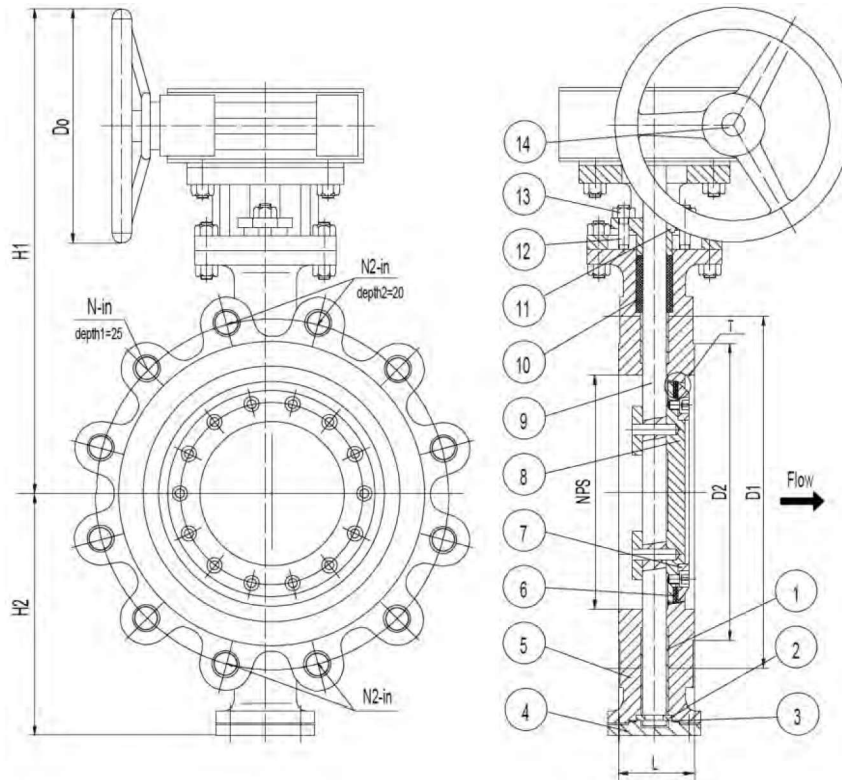


SEAL DESIGN:



LAMINATED METAL SEAL

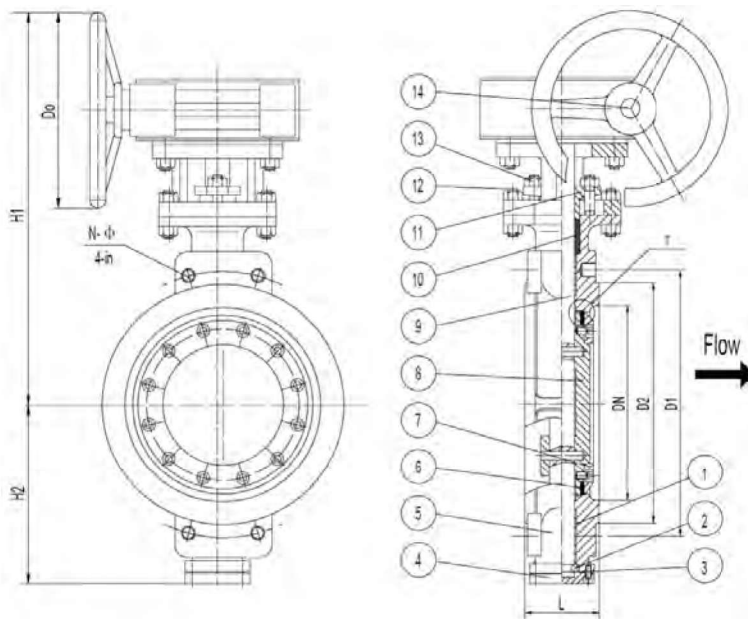
- Disc seal is laminate of alternating SS & Graphite layers.
- Reliable tightness with zero leakage.
- Bi-Directional sealing.
- Torqued in seating – *A tight seal even at low pressures.*
- Corrosion and abrasion resistant.
- Long life and reliable service.



TRIPLE OFFSET BUTTERFLY VALVE

STANDARD MATERIALS OF CONSTRUCTION

Item No.	Description	WCB BODY	CF8M BODY	CF8 BODY
1	Lower Bushing	Bronze	SS316	SS304
2	Retainer Ring	ASTM A105	ASTM A182 F316	ASTM A182 F304
3	Sealing Shim	Graphite	Graphite	Graphite
4	Bottom Cap	ASTM A216 WCB	ASTM A351 CF8M	ASTM A351 CF8
5	Body	ASTM A216 WCB+13Cr	ASTM A351 CF8M	ASTM A351 CF8
6	Sealing Ring	SS304+Graphite //F6a	SS316+Graphite //SS316	SS304+Graphite //SS304
7	Seat Protection Ring	ASTM A105	ASTM A182 F316	ASTM A182 F304
8	Disc	ASTM A216 WCB	ASTM A351 CF8M	ASTM A351 CF8
9	Stem	ASTM A276 410	ASTM A276 316	ASTM A276 304
10	Packing	Graphite	Graphite	Graphite
11	Flange Gland	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8
12	Bolt	ASTM A193 B7	ASTM 193 B8M	ASTM A193 B8
13	Nut	ASTM A194 2H	ASTM A194 8M	ASTM A194 8
14	Worm Gear			

**TRIPLE OFFSET BUTTERFLY VALVE****DIMENSIONS - Wafer Type, Class 150**

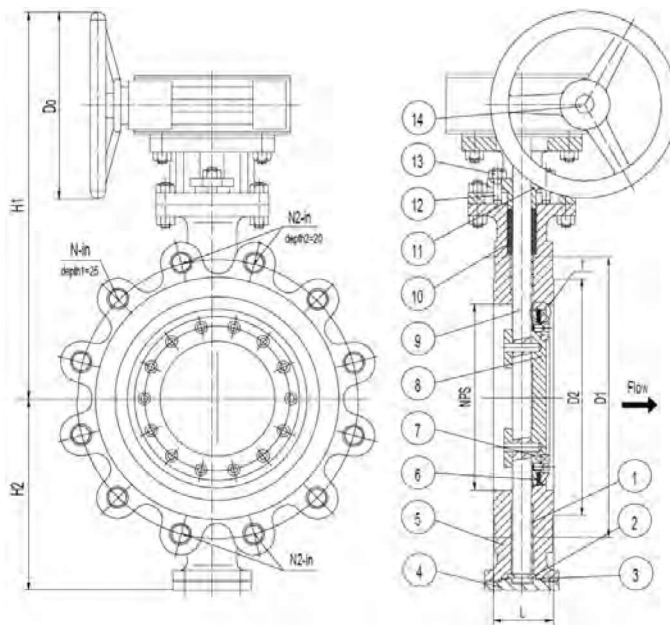
units = inches

Size	L	D1	D2	N - Ø	4 - in	H1	H2	Do
2"	1.7	4.7	3.6	4 - 0.75	-	11.8	4.1	6.3
3"	1.9	6.0	5.0	4 - 0.75	-	12.8	4.9	6.3
4"	2.1	7.5	6.2	4 - 0.75	-	14.2	5.9	6.3
6"	2.0	9.5	8.5	4 - 0.88	-	18.7	7.3	11.0
8"	2.5	11.8	10.6	4 - 0.88	-	20.1	9.6	9.8
10"	2.8	14.3	12.8	-	4 - 7/8"-9 UN	21.9	10.8	9.8
12"	3.2	17.0	15.0	-	4 - 7/8"-9 UN	26.0	12.4	12.6
14"	3.6	18.7	16.3	-	4 - 1"-8 UN	27.2	13.0	12.6
16"	4.0	21.3	18.5	-	4 - 1"-8 UN	31.1	14.8	12.6
18"	4.5	22.8	21.0	-	4 - 1 1/8"-8 UN	31.5	15.4	12.6
20"	5.0	25.0	23.0	-	4 - 1 1/8"-8 UN	35.0	16.9	15.7
24"	6.1	29.5	27.2	-	4 - 1 1/4"-8 UN	36.8	18.7	15.7

DIMENSIONS - Wafer Type, Class 300

units = inches

Size	L	D1	D2	N - Ø	4 - in	H1	H2	Do
2"	1.7	5.0	3.6	4 - 0.75	-	15.0	4.3	11.0
3"	1.9	6.6	5.0	4 - 0.88	-	15.9	5.3	11.0
4"	2.1	7.9	6.2	4 - 0.88	-	16.9	6.5	11.0
6"	2.3	10.6	8.5	4 - 0.88	-	19.5	8.3	9.8
8"	2.9	13.0	10.6	4 - 1.00	-	22.0	10.0	11.8
10"	3.3	15.3	12.8	-	4 - 1"-8 UN	24.6	11.2	12.6
12"	3.6	17.8	15.0	-	4 - 1 1/8"-7 UN	26.6	13.0	12.6
14"	4.6	20.3	16.3	-	4 - 1 1/8"-7 UN	27.6	14.4	12.6
16"	5.2	22.5	18.5	-	4 - 1 1/4"-7 UN	29.7	15.0	13.8
18"	5.9	24.7	21.0	-	4 - 1 1/4"-7 UN	31.3	16.5	13.8
20"	6.3	27.0	23.0	-	4 - 1 1/4"-7 UN	35.0	18.1	15.7
24"	7.1	32.0	27.2	-	4 - 1 1/2"-6 UN	39.2	20.9	15.7

**TRIPLE OFFSET BUTTERFLY VALVE****DIMENSIONS - Lug Type, Class 150**

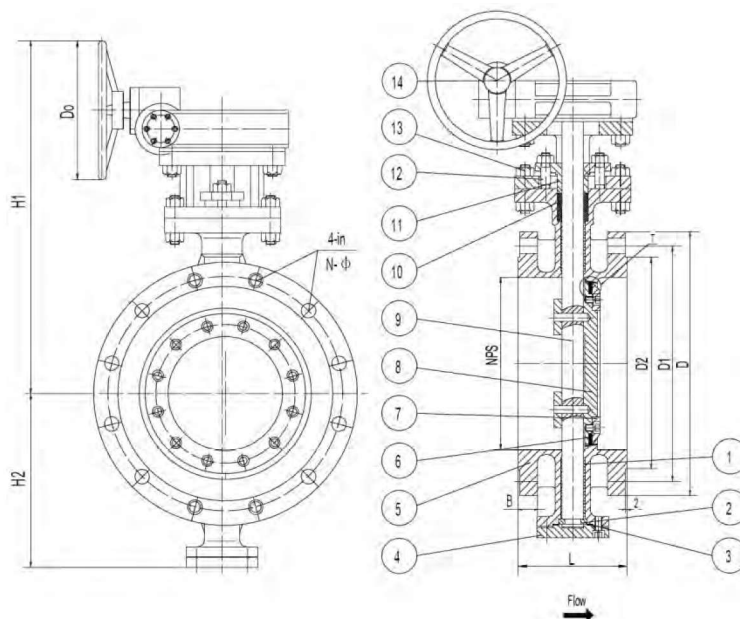
units = inches

Size	L	D1	D2	N - in	N2 - in	H1	H2	Do
2"	1.7	4.7	3.6	4- $\frac{5}{8}$ "-11 UNC	-	11.8	4.1	6.3
3"	1.9	6.0	5.0	4- $\frac{5}{8}$ "-11 UNC	-	12.8	4.9	6.3
4"	2.1	7.5	6.2	8- $\frac{5}{8}$ "-11 UNC	-	14.2	5.9	6.3
6"	2.2	9.5	8.5	8- $\frac{3}{4}$ "-10 UNC	-	18.7	7.3	11.0
8"	2.5	11.8	10.6	8- $\frac{3}{4}$ "-10 UNC	-	20.1	9.6	9.8
10"	2.8	14.3	12.8	12- $\frac{7}{8}$ "-9 UNC	-	21.9	10.8	9.8
12"	3.2	17.0	15.0	12- $\frac{7}{8}$ "-9 UNC	-	26.0	12.4	12.6
14"	3.6	18.7	16.3	12-1"-8 UN	-	27.2	13.0	12.6
16"	4.0	21.3	18.5	16-1"-8 UN	-	31.1	14.8	12.6
18"	4.5	22.8	21.0	12-1 $\frac{1}{8}$ "-8 UN	4-1 $\frac{1}{8}$ "-8 UN	31.5	15.4	12.6
20"	5.0	25.0	23.0	16-1 $\frac{1}{4}$ "-8 UN	4-1 $\frac{1}{4}$ "-8 UN	35.0	16.9	15.7
24"	6.1	29.5	27.2	16-1 $\frac{1}{4}$ "-8 UN	4-1 $\frac{1}{4}$ "-8 UN	36.8	18.7	15.7

DIMENSIONS - Lug Type, Class 300

units = inches

Size	L	D1	D2	N - in	N2 - in	H1	H2	Do
2"	1.7	5.0	3.6	8- $\frac{5}{8}$ "-11 UNC	-	15.0	4.3	11.0
3"	1.9	6.6	5.0	8- $\frac{3}{4}$ "-10 UNC	-	15.9	5.1	11.0
4"	2.1	7.9	6.2	8- $\frac{3}{4}$ "-10 UNC	-	17.1	6.5	11.0
6"	2.3	10.6	8.5	12- $\frac{3}{4}$ "-10 UNC	-	19.5	8.3	9.8
8"	2.9	13.0	10.6	12- $\frac{7}{8}$ "-9 UNC	-	22.0	9.6	11.8
10"	3.3	15.3	12.8	16-1"-8 UN	-	24.6	11.4	12.6
12"	3.6	17.8	15.0	16-1 $\frac{1}{8}$ "-8 UN	-	26.6	13.0	12.6
14"	4.6	20.3	16.3	16-1 $\frac{1}{4}$ "-8 UN	-	27.6	14.4	12.6
16"	5.2	22.5	18.5	16-1 $\frac{1}{4}$ "-8 UN	-	30.3	15.0	13.8
18"	5.9	24.7	21.0	20-1 $\frac{1}{4}$ "-8 UN	4-1 $\frac{1}{4}$ "-8 UN	32.3	16.5	13.8
20"	6.3	27.0	23.0	20-1 $\frac{1}{4}$ "-8 UN	4-1 $\frac{1}{4}$ "-8 UN	35.6	18.1	15.7
24"	7.1	32.0	27.2	20-1 $\frac{1}{2}$ "-8 UN	4-1 $\frac{1}{2}$ "-8 UN	39.8	20.9	15.7

**TRIPLE OFFSET BUTTERFLY VALVE****DIMENSIONS - Flanged Type, Class 150**

units = inches

Size	L	D	D1	D2	N - in	4 - in	B	H1	H2	Do
2"	4.3	6.0	4.7	3.6	4 - 0.75	-	0.75	12.0	4.3	6.3
3"	4.5	7.5	6.0	5.0	4 - 0.75	-	0.94	13.0	5.5	6.3
4"	5.0	9.0	7.5	6.2	8 - 0.75	-	0.94	14.2	5.5	6.3
6"	5.5	11.0	9.5	8.5	8 - 0.88	-	1.00	18.7	6.9	11.0
8"	6.0	13.5	11.8	10.6	8 - 0.88	-	1.12	20.1	9.4	9.8
10"	6.5	16.0	14.3	12.8	12 - 1.00	-	1.18	21.5	10.8	9.8
12"	7.0	19.0	17.0	15.0	12 - 1.00	-	1.26	24.8	12.4	12.6
14"	7.5	21.0	18.7	16.3	12 - 1.12	-	1.38	27.6	13.6	12.6
16"	8.5	23.5	21.3	18.5	16 - 1.12	-	1.44	29.9	15.0	12.6
18"	8.7	25.0	22.8	21.0	16 - 1.25	4-1/8"-8 UN	1.56	31.1	15.9	12.6
20"	9.0	27.5	25.0	23.0	20 - 1.25	4-1/8"-8 UN	1.69	33.9	17.1	15.7
24"	10.5	32.0	29.5	27.2	20 - 1.38	4-1/4"-8 UN	1.89	37.4	19.7	15.7

DIMENSIONS - Flanged Type, Class 300

units = inches

Size	L	D	D1	D2	N - in	4 - in	B	H1	H2	Do
2"	5.9	6.5	5.0	3.6	8 - 0.75	-	0.89	14.6	4.5	11.0
3"	7.1	8.2	6.6	5.0	8 - 0.88	-	1.12	15.7	5.5	11.0
4"	7.5	10.0	7.9	6.2	8 - 0.88	-	1.26	16.7	6.1	9.8
6"	8.3	12.5	10.6	8.5	12 - 0.88	-	1.44	19.3	8.5	9.8
8"	9.1	15.0	13.0	10.6	12 - 1.00	-	1.61	22.0	9.4	11.8
10"	9.8	17.5	15.3	12.8	16 - 1.12	-	1.89	25.0	11.4	12.6
12"	10.6	20.5	17.8	15.0	16 - 1.25	-	2.01	26.2	12.8	12.6
14"	11.4	23.0	20.3	16.3	20 - 1.25	-	2.13	28.0	14.2	12.6
16"	12.2	25.5	22.5	18.5	20 - 1.38	-	2.24	30.7	15.6	13.8
18"	13.0	28.0	24.7	21.0	24 - 1.38	4-1/4"-8 UN	2.38	32.1	16.3	13.8
20"	13.8	30.5	27.0	23.0	24 - 1.38	4-1/4"-8 UN	2.50	36.0	18.5	15.7
24"	15.4	36.0	32.0	27.2	24 - 1.62	4-1/2"-8 UN	2.76	40.4	21.5	17.7

How To Order - Butterfly Valves

LBTC 12 S 30 / W / TM / DA L

1

2

3

4

5

6

7

8

1 Pneucon Valve Series

LBT	Triple Offset Butterfly	LBTC	Automated TO Butterfly
-----	-------------------------	------	------------------------

2 Valve Size

Valve Size, In Inches, Two Digits	eg: 06 for 06" Butterfly Valve
-----------------------------------	--------------------------------

3 Body Material

C	WCB Carbon Steel	P	CF8 Stainless Steel - SS304
S	CF8M Stainless Steel - SS316		

4 Pressure Class

15	ANSI Class 150	60	ANSI Class 600
30	ANSI Class 300		

5 End Connection

W	Wafer	F	Flanged
L	Lug		

6 Seat Type

TM	Triple Offset Metal Seat		
----	--------------------------	--	--

7 Automation

B	Bare Stem	SR	SR Actuator
L	Lever Handle	DA	DA Actuator
G	Gear Operator		

8 Fail Position

C	Fail Closed	L	Fail Last
O	Fail Open		