

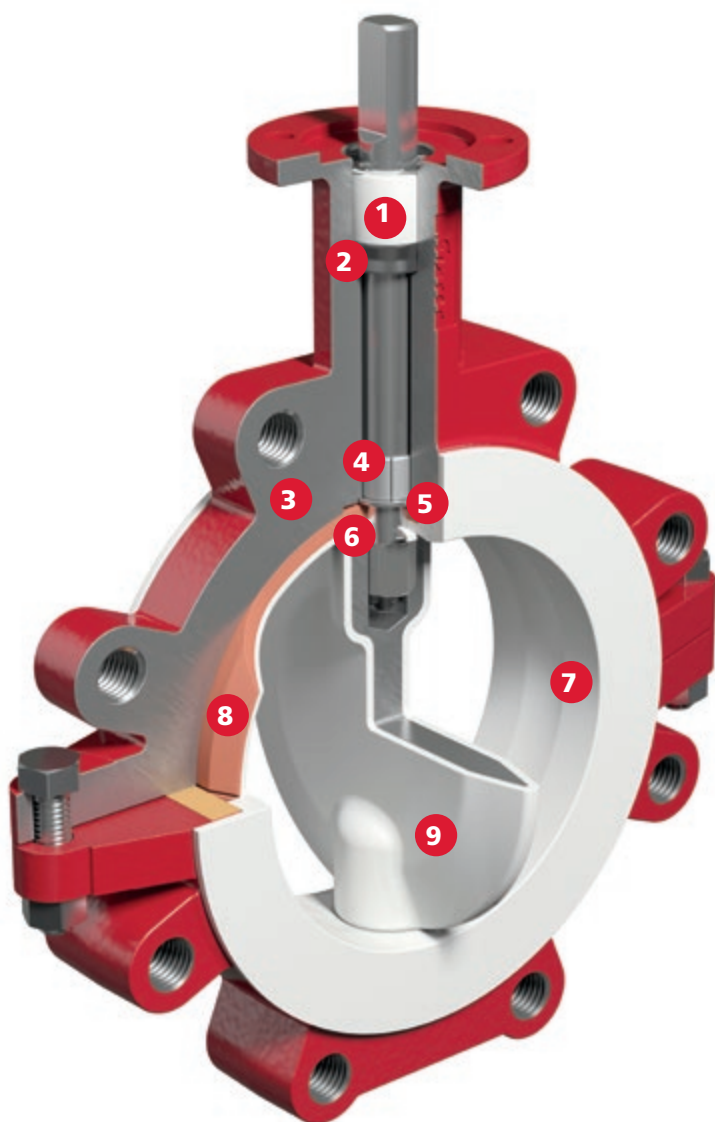
Extensive field research and engineering have developed this design which provides bubble tight shutoff and high Cv values. The Series 22/23 features a stainless steel disc that can be encapsulated in PTFE, PFA, or UHMWPE to fit a wide range of customer applications. The PTFE seat is isostatically molded to provide superior chemical resistance.

PRESSURE RATINGS

BIDIRECTIONAL BUBBLE TIGHT SHUT OFF Downstream flanges and disc in closed position		
All Valves	2"-24" (50-600mm)	150 psi (10.3 bar)
DEAD END SERVICE Lug bodies, no downstream flanges and disc in closed position		
All Valves	2"-12" (50-300mm)	75 psi (5.2 bar)
	14"-24" (350-600mm)	50 psi (3.4 bar)
BODY: 150 psi (10.3 bar)		

VELOCITY LIMITS FOR ON/OFF SERVICES

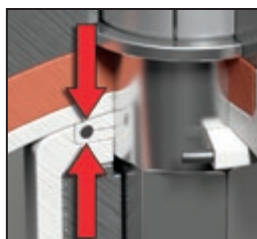
FLUIDS: 30 ft/sec (9 m/s)	GASES: 175 ft/sec (54 m/s)
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- 1 – UPPER STEM BUSHING:** An upper stem bushing, retained by a stainless steel ring, is provided to absorb actuator side thrusts and is acetal as standard or PTFE as an option.
- 2 – UPPER STEM SEAL:** Keeps environmental contaminants from entering the stem bore.
- 3 – BODY:** Bodies are two piece wafer or lug style and are polyester coated. All bodies meet full ASME Class 150 OR DIN 3840 flange drilling requirements (24" body is double flanged).
- 4 – BEARINGS:** PTFE impregnated steel bearings provided for the precision alignment of the upper and lower stem.
- 5 – BLOWOUT PROOF STEM:** A shoulder is machined into the upper stem. The stem and the disc are pressed together during assembly creating a positive stem to disc connection.
- 6 – PRIMARY SEAL:** The primary seal is achieved by an interference fit between the extra wide disc hubs and contoured seat.
- 7 – SEAT DESIGN:** The unique seat geometry lowers seating and unseating torque while reducing wear on the contacting parts.
- 8 – SEAT ENERGIZER:** A resilient seat energizer extends completely around the seat, including the disc hub providing uniform force sufficient for bubble tight shutoff
- 9 – DISC:** The encapsulated disc has 1/8" (3 mm) minimum thickness of virgin PTFE or PFA lined over stainless steel.

Seal Capsule

The secondary seal is achieved using a seal capsule which fully isolates the valve body and stem from the line media. The seal capsule is made of a virgin PTFE enclosing the internal energizer. The capsule fits into grooves machined in the upper and lower disc hubs. When compressed between the disc and seat during assembly, the capsule becomes energized, exerting both upward and downward pressure on disc and seat surfaces.



Body Seals

Reinforced PTFE gaskets are placed between the body halves. These bidirectional seals eliminate contamination from external environmental conditions and potential leak paths from the line media.



Accessories

Tapped port can be provided in the body neck below the stem seal for fugitive emissions detection.

Grounding cable is offered to protect against static charge build-up. The cable mounts to the valve body.



MATERIAL SELECTION OPTIONS

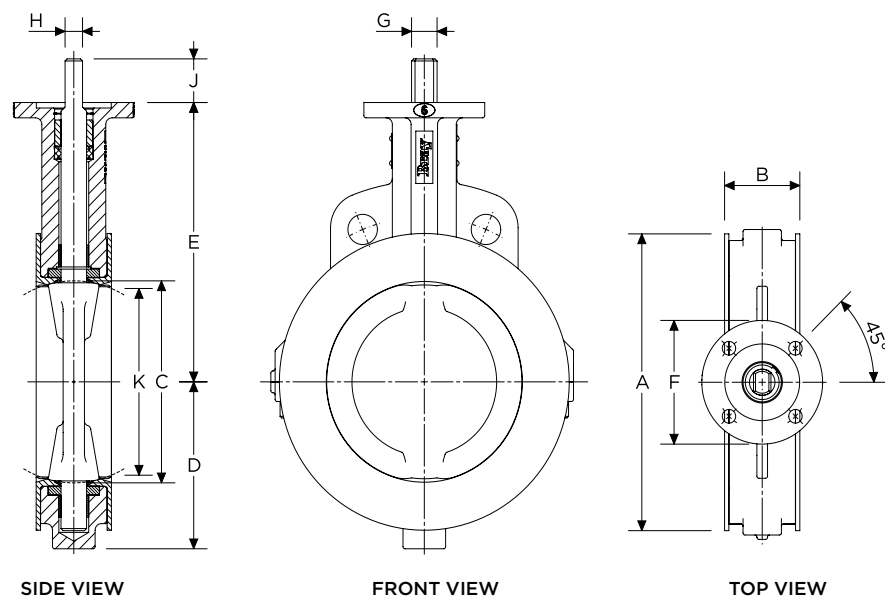
COMPONENT	MATERIAL	COMPONENT	MATERIAL
Body	Ductile Iron* Stainless Steel Carbon Steel	Bushing	Acetal* PTFE
		Upper Stem Seal	BUNA-N* FKM*
		Seal Capsule	PTFE / FKM
Disc	Stainless Steel* PTFE molded over stainless steel* PFA molded over stainless steel UHMWPE molded over stainless steel Hastelloy® Titanium	Bearing	PTFE / Steel
		Seat Energizer	Silicone* FKM*
Upper Stem	17-4 PH Stainless Steel	Body Seal	Reinforced PTFE
Lower Stem	17-4 PH Stainless Steel		
Seat	PTFE* Conductive PTFE UHMWPE		

*Standard Option

*FKM is the ASTM D1418 designation for fluorinated hydrocarbon elastomers (also called fluoroelastomers).

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Material availability depends on valve size and series. Other materials are available. Please consult your local Bray representative for your specific application.



FLANGE ACCOMMODATION

DN	PN 10			PN 16		
	Bolt Circle Ø	No of Holes	Threads	Bolt Circle Ø	No of Holes	Threads
50	125	4	M16	125	4	M16
65	145	4	M16	145	4	M16
80	160	8	M16	160	8	M16
100	180	8	M16	180	8	M16
125	210	8	M16	210	8	M16
150	240	8	M20	240	8	M20
200	295	8	M20	295	12	M20
250	350	12	M20	355	12	M24
300	400	12	M20	410	12	M24

Above information according to EN 1092.
Contact factory for individual bolt information.

DIMENSIONS [MM]

DN	A	B	Ø C	E	Ø F	Top Plate Drilling				Ø G	H	J	K	L	Weight (Kg)
						ISO	Bolt circle Ø	No of Holes	Hole Ø						
50	98	43	51	140	90	F07	70	4	10.0	14	10	32	29	58	3.0
65	111	46	64	152	90	F07	70	4	10.0	14	10	32	45	63	3.5
80	127	46	76	159	90	F07	70	4	10.0	14	10	32	62	71	4.0
100	159	52	102	178	90	F07	70	4	10.0	16	11	32	88	104	6.0
125	187	56	127	190	90	F07	70	4	10.0	19	13	32	115	117	7.0
150	216	56	146	203	90	F07	70	4	10.0	19	13	32	136	129	9.0
200	270	60	197	241	150	F12	125	4	14.0	22	16	32	189	155	17.0
250	324	68	248	273	150	F12	125	4	14.0	30	22	51	239	195	28.0
300	378	78	298	311	150	F12	125	4	14.0	30	22	51	289	229	34.0

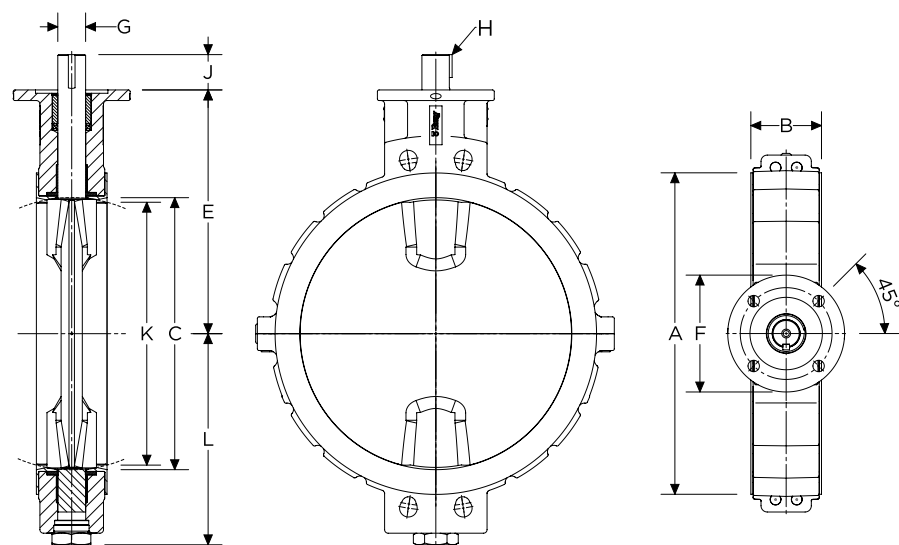
Note:

K is disc chordal dimension at face of valve.

Above drawing shows a Series 22 size DN150

Drawings are for reference only.

The right to change or modify product design or product without prior notice is reserved.



SIDE VIEW

FRONT VIEW

TOP VIEW

FLANGE ACCOMMODATION

DN	PN 10			PN 16		
	Bolt Circle Ø	No of Holes	Threads	Bolt Circle Ø	No of Holes	Threads
350	460	16	M20	470	16	M24
400	515	16	M24	525	16	M27
450	565	20	M24	585	20	M27
500	620	20	M24	650	20	M30
600	725	20	M27	770	20	M33

Above information according to EN 1092.
Contact factory for individual bolt information.

DIMENSIONS [MM]

DN	A	B	Ø C	E	Ø F	Top Plate Drilling				Ø G	H Key Size [mm]	J	K	L	Weight (Kg)
						ISO	Bolt circle Ø	No of Holes	Hole Ø						
350	433	78	337	346	150	F12	125	4	14.0	35	10x10	51	330	255	52.0
400	488	102	387	375	150	F12	125	4	14.0	35	10x10	51	375	305	82.0
450	536	114	438	406	210	F16	165	4	21.0	50	10x12	64	423	354	109.0
500	591	127	489	438	210	F16	165	4	21.0	50	10x12	64	476	379	145.0

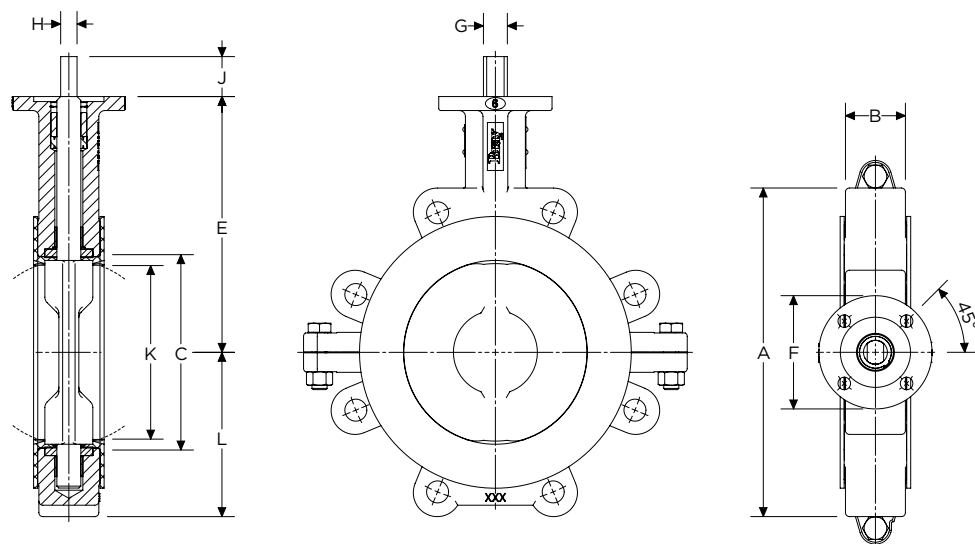
Note:

K is disc chordal dimension at face of valve.

Above drawing shows a Series 22 size DN500

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SIDE VIEW
FRONT VIEW
TOP VIEW
FLANGE ACCOMMODATION

DN	PN 10			PN 16		
	Bolt Circle Ø	No of Holes	Threads	Bolt Circle Ø	No of Holes	Threads
50	125	4	M16	125	4	M16
65	145	4	M16	145	4	M16
80	160	8	M16	160	8	M16
100	180	8	M16	180	8	M16
125	210	8	M16	210	8	M16
150	240	8	M20	240	8	M20
200	295	8	M20	295	12	M20
250	350	12	M20	355	12	M24
300	400	12	M20	410	12	M24

Above information according to EN 1092.
Contact factory for individual bolt information.

DIMENSIONS [MM]

DN	A	B	Ø C	E	Ø F	Top Plate Drilling				Ø G	H	J	K	L	Weight (Kg)
						ISO	Bolt circle Ø	No of Holes	Hole Ø						
50	98	43	51	140	90	F07	70	4	10.0	14	10	32	29	58	3.5
65	111	46	64	152	90	F07	70	4	10.0	14	10	32	45	63	4.5
80	127	46	76	159	90	F07	70	4	10.0	14	10	32	62	71	5.0
100	159	52	102	178	90	F07	70	4	10.0	16	11	32	88	104	8.0
125	187	56	127	190	90	F07	70	4	10.0	19	13	32	115	117	9.5
150	216	56	146	203	90	F07	70	4	10.0	19	13	32	136	129	13.0
200	270	60	197	241	150	F12	125	4	14.0	22	16	32	189	155	23.5
250	324	68	248	273	150	F12	125	4	14.0	30	22	51	239	195	34.5
300	378	78	298	311	150	F12	125	4	14.0	30	22	51	289	229	52.5

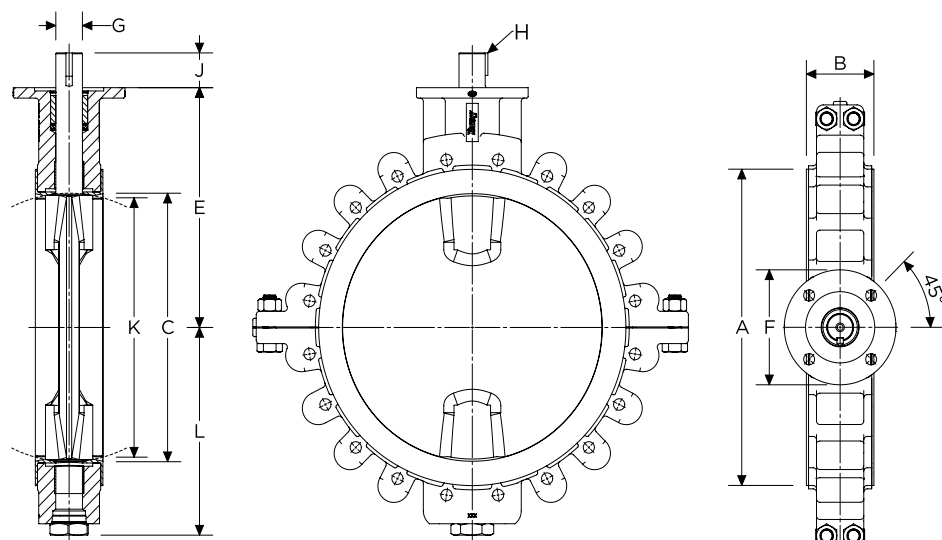
Note:

K is disc chordal dimension at face of valve.

Above drawing shows a Series 23 size DN150

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SIDE VIEW

FRONT VIEW

TOP VIEW

FLANGE ACCOMMODATION

DN	PN 10			PN 16		
	Bolt Circle Ø	No of Holes	Threads	Bolt Circle Ø	No of Holes	Threads
350	460	16	M20	470	16	M24
400	515	16	M24	525	16	M27
450	565	20	M24	585	20	M27
500	620	20	M24	650	20	M30
600	725	20	M27	770	20	M33

Above information according to EN 1092.
Contact factory for individual bolt information.

DIMENSIONS [MM]

Top Plate Drilling

DN	A	B	Ø C	E	Ø F	ISO	Bolt circle Ø	No of Holes	Hole Ø	Ø G	H Key Size [mm]	J	K	L	Weight (Kg)
350	433	78	337	346	150	F12	125	4	14.0	35	10x10	51	330	255	67.0
400	488	102	387	375	150	F12	125	4	14.0	35	10x10	51	375	305	99.0
450	536	114	438	406	210	F16	165	4	21.0	50	10x12	64	423	354	124.0
500	591	127	489	438	210	F16	165	4	21.0	50	10x12	64	476	379	167.0
600*	838	154	591	495	210	F16	165	4	21.0	63.5	15.8x15.8	102	576	445	210.0

Note:

K is disc chordal dimension at face of valve.

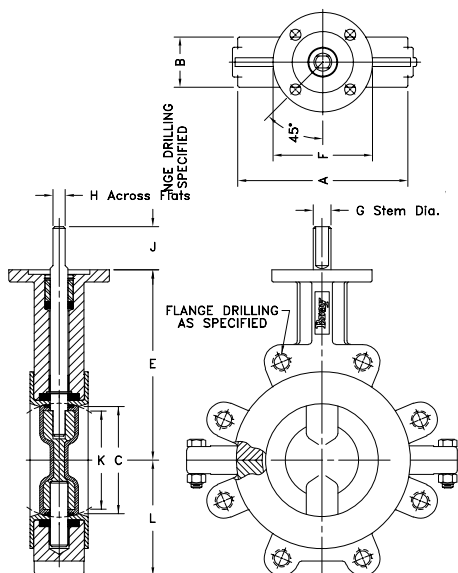
* DN600: Double Flanged Body

Above drawing shows a Series 23 size DN500

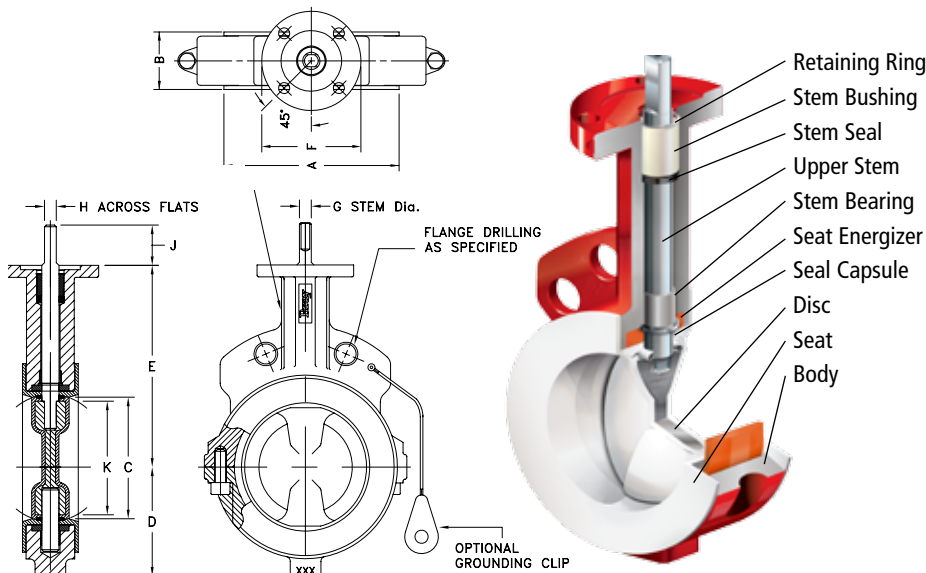
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Series 23 Lug



Series 22 Wafer



IMPERIAL DIMENSIONS: Inches

Valve Size	A	B	C	E	F	Top Plate Drilling			G	H	J	K	L		Adapter Code	Weight (lbs.)		Bolt Circle	No of Holes	Threads ISO Coarse
						BC	No of Holes	Hole Diameter					Wafer	Lug		Wafer	Lug			
2	3.88	1.69	2.00	5.50	3.54	2.76	4	.39	.55	.39	1.25	1.13	2.22	2.30	A	6.5	8.0	4.75	4	5/8-11
2 ½	4.38	1.81	2.50	6.00	3.54	2.76	4	.39	.55	.39	1.25	1.77	2.47	2.57	A	7.5	10.0	5.50	4	5/8-11
3	5.00	1.81	3.00	6.25	3.54	2.76	4	.39	.55	.39	1.25	2.44	2.81	2.81	A	8.5	11.0	6.00	4	5/8-11
4	6.25	2.05	4.00	7.00	3.54	2.76	4	.39	.63	.43	1.25	3.48	3.56	4.09	B	13.5	17.5	7.50	8	5/8-11
5	7.38	2.20	5.00	7.50	3.54	2.76	4	.39	.75	.51	1.25	4.53	4.28	4.61	C	16.0	21.0	8.50	8	3/4-10
6	8.50	2.20	5.75	8.00	3.54	2.76	4	.39	.75	.51	1.25	5.35	4.78	5.06	C	20.5	28.5	9.50	8	3/4-10
8	10.62	2.36	7.75	9.50	5.91	4.92	4	.57	.87	.63	1.25	7.43	6.03	6.05	D	38.5	51.5	11.75	8	3/4-10
10	12.75	2.68	9.75	10.75	5.91	4.92	4	.57	1.18	.87	2.00	9.42	7.41	7.69	E	62.0	76.0	14.25	12	7/8-9
12	14.88	3.07	11.75	12.25	5.91	4.92	4	.57	1.18	.87	2.00	11.39	8.41	9.02	E	76.0	116.0	17.00	12	7/8-9

Note: K dimension is disc chordal dimension at valve face.

METRIC DIMENSIONS: Millimeters

Valve Size	A	B	C	E	F	Top Plate Drilling			G	H	J	K	L		Adapter Code	Weight (Kg)		Bolt Circle	No of Holes	Threads ISO Coarse
						BC	No of Holes	Hole Diameter					Wafer	Lug		Wafer	Lug			
50	98	43	51	140	90	70	4	10	14	10	32	29	56	58	A	3	3.5	121	4	5/8-11
65	111	46	64	152	90	70	4	10	14	10	32	45	63	63	A	3.5	4.5	140	4	5/8-11
80	127	46	76	159	90	70	4	10	14	10	32	62	71	71	A	4	5	152	4	5/8-11
100	159	52	102	178	90	70	4	10	16	11	32	88	90	104	B	6	8	191	8	5/8-11
125	187	56	127	190	90	70	4	10	19	13	32	115	109	117	C	7	10	216	8	3/4-10
150	216	56	146	203	90	70	4	10	19	13	32	136	121	129	C	9	13	241	8	3/4-10
200	270	60	197	241	150	125	4	14	22	16	32	189	153	155	D	17	23	298	8	3/4-10
250	324	68	248	273	150	125	4	14	30	22	51	239	188	195	E	28	34	362	12	7/8-9
300	378	78	298	311	150	125	4	14	30	22	51	289	214	229	E	34	53	432	12	7/8-9

Note: K dimension is disc chordal dimension at valve face.

Drawings are for reference only. Please refer to Bray ES drawings on the Bray website, www.bray.com. Bray reserves the right to change product dimensions without notice.

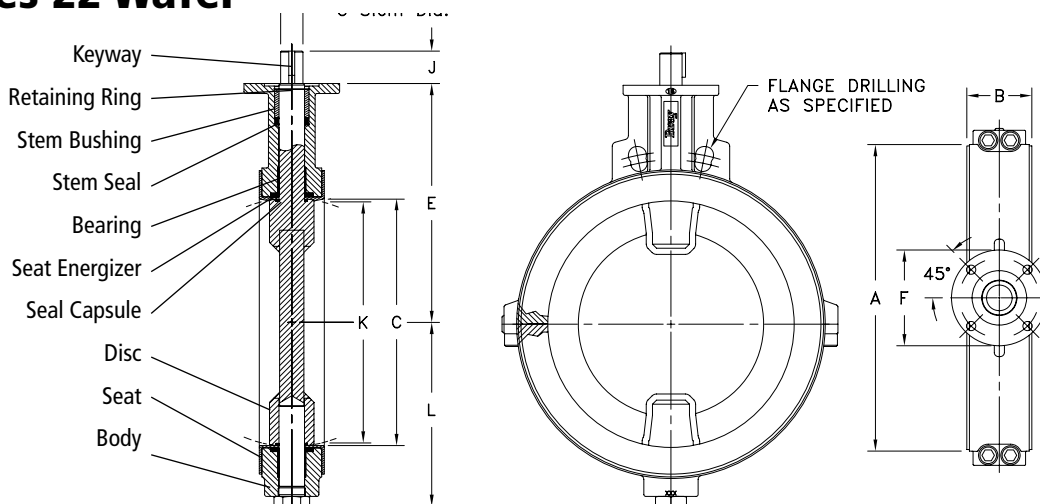
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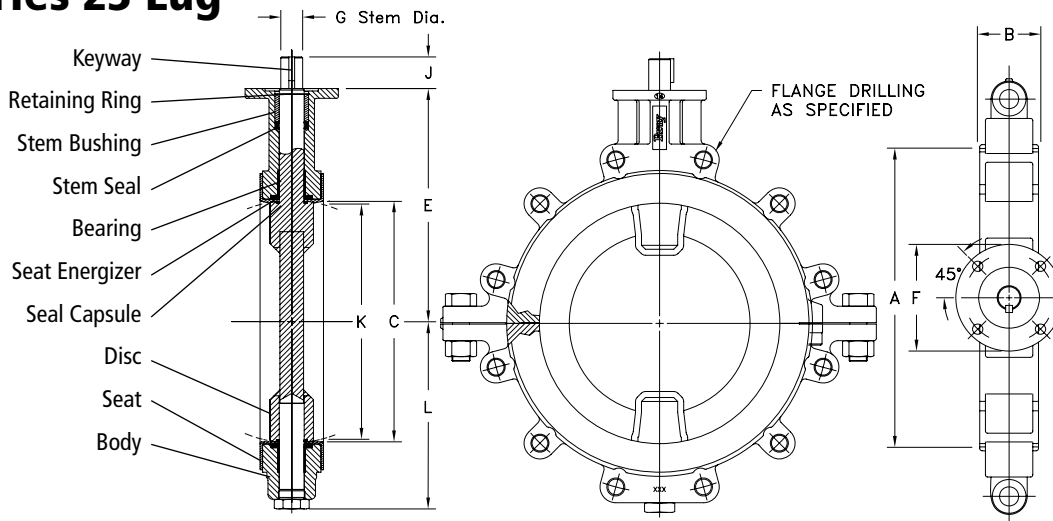
SR Drawing #22/23-2/12-im January - 2015

Customer/Project: _____

Series 22 Wafer



Series 23 Lug



IMPERIAL DIMENSIONS: Inches

Valve Size	A	B	C	E	F	Top Plate Drilling			G	J	Key Size	K	L		Adapter Code	Weight (lbs.)		Lug Bolting Data		
						BC	No of Holes	Hole Diameter					Wafer	Lug		Wafer	Lug	Bolt Circle	No of Holes	Threads ISO Coarse
14	17.05	3.07	13.25	13.62	5.91	4.92	4	.57	1.38	2.00	.39x.39	13.00	10.02	10.02	F	125	148	18.75	12	1.00-8
16	19.21	4.02	15.25	14.75	5.91	4.92	4	.57	1.38	2.00	.39x.39	14.75	11.99	11.99	F	180	218	21.25	16	1.00-8
18	21.12	4.49	17.25	16.00	8.27	6.50	4	.81	1.97	2.50	.39x.47	16.65	13.94	13.94	G	240	273	22.75	16	1.13-7
20	23.25	5.00	19.25	17.25	8.27	6.50	4	.81	1.97	2.50	.39x.47	18.73	14.94	14.94	G	320	368	25.00	20	1.13-7

Note: K dimension is disc chordal dimension at valve face.

METRIC DIMENSIONS: Millimeters

Valve Size	A	B	C	E	F	Top Plate Drilling			G	J	Key Size	K	L		Adapter Code	Weight (Kg)		Lug Bolting Data		
						BC	No of Holes	Hole Diameter					Wafer	Lug		Wafer	Lug	Bolt Circle	No of Holes	Threads ISO Coarse
350	433	78	337	346	150	125	4	14	35	51	10x10	330	255	255	F	57	67	476	12	1.00-8
400	488	102	387	375	150	125	4	14	35	51	10x10	375	305	305	F	82	99	540	16	1.00-8
450	536	114	438	406	210	165	4	21	50	64	10x12	423	354	354	G	109	124	578	16	1.13-7
500	591	127	489	438	210	165	4	21	50	64	10x12	476	379	379	G	145	167	635	20	1.13-7

Note: K dimension is disc chordal dimension at valve face.

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SR Drawing #22/23-14/20-im January - 2015

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Bray Order No.: _____