

KEYSTONE

The Figure 320/322 is an economical resilient seated butterfly valve with dimensions according ISO standards.

Features

- Bubble-tight shut-off at full rating in both directions.
- One piece, specially profiled, wafer thin disc stem.
- Extended body neck allows free access to actuator in case of pipe insulation.
- The seat and disc are the only two parts in contact with the medium.
- Face-to-face dimensions according ISO 5752.
- Four flange locating holes for end of line service under certain conditions.
- Standard Actuation
 - Handle (F414) on 2" thru 8" Valves
 - Gear Operators (F455) on 10" thru 12"
- Suitable for bi-directional and end of line service.



General application

Figure 320/322 is designed for applications requiring shut-off control. The valve has a non-replaceable seat and can be used with a manual handle or a gear operator.

Technical data

Size Range:

Figure 320 (wafer style) 2" thru 12"
Figure 322 (lugged style) 2" thru 12"

Pressure:

232 psig (in line and end of line)

Temperature:

-18°F to 225°F (EPDM seat)
0°F to 212°F (BUNA-N seat)

End Connections:

PN6,10 16, ANSI 150, AS 2129 E

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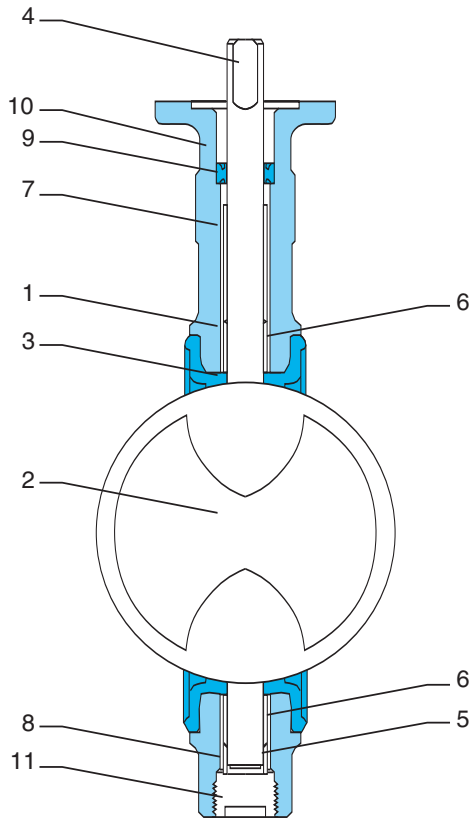
Total Flow Control Solutions

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Keystone Butterfly Valves - Figure 320/322

2" thru 12"

Specifications



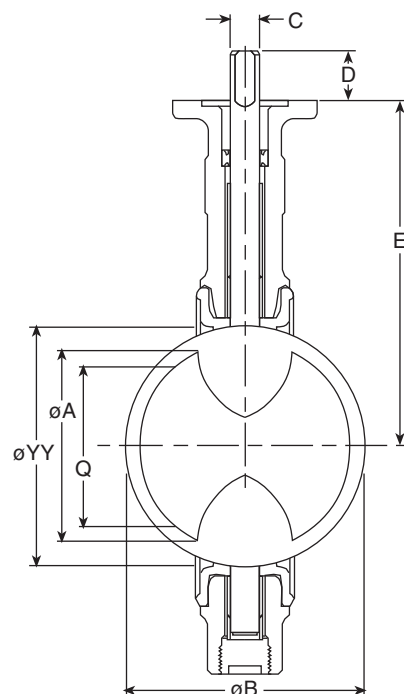
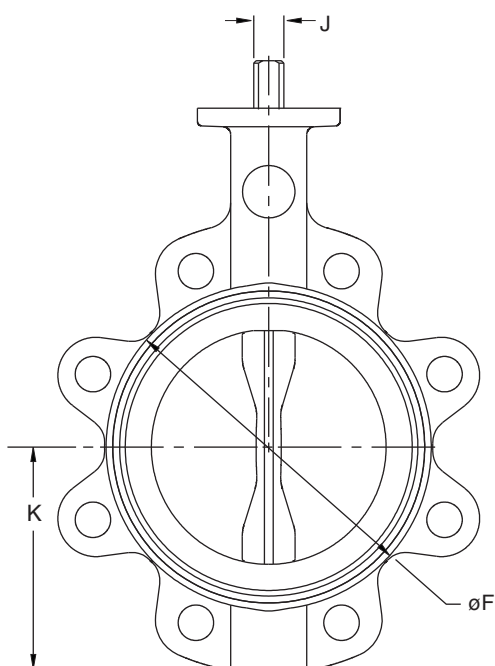
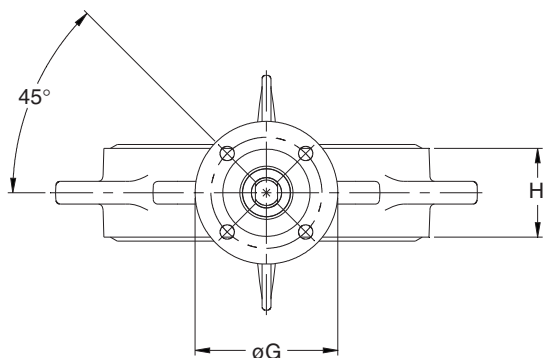
Part list

No.	Description	Material	Standard
1	Body	Ductile Iron	ASTM A 536 Gr 65-45-12
2	Disc	Stainless Steel Aluminum Bronze	ASTM A 351 Gr CF8M ASTM B 148 UNS C95200
3	Seat	EPDM BUNA-N	- -
4	Top stem	416 S/S	ASTM A 582, 416 cond. H
5	Bottom stem	416 S/S	ASTM A 582, 416 cond. H
6	Bushing	Sintered Bronze	ASTM B438
7	Upper spacer	Sintered Iron	
8	Lower bushing	Sintered Iron	
9	Packing	BUNA-N	
10	Upper bushing	Thermoplastic Polymer	ASTM D 4507
11	Plug	Steel	ASTM A 307

C_v

Size, inches [mm]	10	20	30	40	50	60	70	80	90
2 [50]	-	1.04	5.54	16	34	55	83	114	125
2.5 [65]	-	2.7	13	31	58	90	142	199	248
3 [80]	-	6.9	32.5	63	106	163	248	351	472
4 [100]	-	16.5	66	126	204	306	471	693	932
5 [125]	-	32	98	182	289	449	728	1,113	1,446
6 [150]	8.2	60	150	261	424	668	1,140	1,791	2,251
8 [200]	26	133	267	468	746	1,188	2,048	3,361	4,066
10 [250]	39	200	391	740	1,132	1,786	3,092	5,138	6,714
12 [300]	57	292	572	1,079	1,652	2,604	4,511	7,750	10,302

Dimensions



Dimensions (inches)

Size, in	A	B1	D	E	F	G	H	DIA C	X	J	ISO TYPE	K	Q	Weight -lbs Fully Open			
														YY	F320	F322	C _v
2	2.0	6.2	1.0	5.3	3.9	2.5	1.7	0.472	X	0.315	F05	3.1	1.22	3.4	8	10	125
2½	2.5	7.0	1.2	5.9	4.6	3.5	1.8	0.625	X	0.433	F07	3.3	1.85	3.9	13	14	248
3	3.0	7.6	1.2	6.3	5.0	3.5	1.8	0.625	X	0.433	F07	3.6	2.48	4.5	14	17	472
4	4.1	11.1	1.2	7.1	6.1	3.5	2.0	0.625	X	0.433	F07	4.1	3.54	5.7	17	21	932
5	5.0	10.0	1.2	7.7	7.2	3.5	2.2	0.787	X	0.551	F07	5.0	4.57	6.6	21	28	1446
6	5.8	11.0	1.2	8.3	8.1	3.5	2.2	0.787	X	0.551	F07	5.5	5.39	7.8	25	31	2251
8	7.8	13.2	1.2	9.4	10.4	3.5	2.4	0.787	X	0.551	F07	6.9	7.48	10.2	36	45	4066
10	9.8	16.0	2.0	10.8	12.5	5.9	2.7	1.181	X	0.866	F12	8.0	9.49	12.2	77	95	6714
12	11.8	18.7	2.0	12.2	14.7	5.9	3.1	1.181	X	0.866	F12	9.3	11.46	13.9	101	122	10302

Notes

Dimensions are nominal $\pm 1/32$ ".

- Q is the disc chordal dimension at face of valve for disc clearance into pipe fitting or equipment.
 - Valves 2" thru 8" are supplied standard with handles (F414).
Valves 10" thru 12" are supplied standard with gear operators (F455).
 - YY is outside diameter of seat face.
- # The weight shown includes the standard operator.

ISO 5211 Mounting Details

Type	PCD	Bolt Holes
F05	1.96	4 x 0.28
F07	2.75	4 x 0.35
F12	4.92	4 x 0.55

Keystone Butterfly Valves - Figure 320/322

2" thru 12"

Ordering Information

Typical Specifying Sequence

Example	100	F320	112	AE
	Valve Size	Figure No.	Trim Code	End Connection

Size Range: 2" thru 12"

Figure No.: F320 = wafer style
F322 = lugged style

Trim codes

Figure No.	Trim Code	Body	Disc	Shaft	Seat
F320/322	112	Ductile Iron	S/S	S/S	EPDM
F320/322	116	Ductile Iron	S/S	S/S	BUNA-N
F320/322	333	Ductile Iron	AIBz	S/S	EPDM
F320/322	334	Ductile Iron	AIBz	S/S	BUNA-N

End Connections

AE = AS 2129 table E
AN = ANSI 150

D6 + DIN PN6
D10 + DIN PN10
D16 + DIN PN16

Consult factory for other flange drillings.

Note

EPDM seats are suitable for -18°F to 225°F
[-28°C to 120°C]

BUNA-N seats are suitable for 0°F to 212°F
[-15°C to 100°C]

Notes

- Application I: Water, seawater, lubricating types of hydrocarbons.
Temp.: 32°F - 175°F; Valve opens at least once a month.
Application II: All other liquid applications and lubricating gasses.
Application III: Non lubricating and dry media.
- The charted maximum sizing operating torque is the sum of all friction and resistance for opening and closing of the disc against the indicated pressure differential.
- The effect of dynamic torque is not considered in tabulation.
- In sizing operators it is not necessary to include safety-factors.
- Rated C_v = The number of U.S. gallons per minute of 60°F water at a 1 psi pressure drop.

Sizing Torques in (in-lbs)

	Dp in psig	2	2½	3	4	5	6	8	10	12
Application 1	50	115	168	230	327	513	717	1310	2133	3053
	100	115	177	239	354	558	779	1452	2399	3425
	145	124	186	266	389	620	876	1664	2788	3992
	200	133	204	292	434	708	1000	1938	3310	4744
	232	133	212	310	451	752	1062	2080	3567	5116
Application 2	50	124	186	257	372	584	823	1496	2425	3469
	100	124	195	274	398	628	885	1637	2682	3841
	145	133	204	292	434	690	982	1841	3071	4408
	200	142	230	319	478	779	1106	2124	3593	5160
	232	150	239	336	496	823	1168	2257	3850	5532
Application 3	50	133	204	283	425	655	929	1682	2708	3885
	100	142	212	301	443	699	991	1823	2974	4257
	145	142	230	319	478	761	1080	2027	3363	4824
	200	150	248	354	522	850	1204	2310	3885	5567
	232	159	257	363	540	894	1266	2443	4142	5948

Maximum Allowable Shaft Torques in (in-lbs)

Size	2	2½	3	4	5	6	8	10	12
Torque	434	416	814	761	2717	2567	3478	5514	6877

Tyco Valves & Controls

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