



KEYSTONEFIGURE 320/322 ELASTIC LOCKING BUTTERFLY VALVES

Figure 320 (wafer) and Figure 322 (lugged) are cost-effective, resilient-locking butterfly valves sized to ISO standards.



MAIN FEATURES

- Tight seal at full load in both directions.
- One-piece design, special profile wafer thin disk and rod.
- The extended body neck provides easy access to the drive in cases where the pipeline is thermally insulated.
- Only two parts (seat and disc) are in contact with the medium.
- Wafer distances according to ISO 3202 Part 3, K1 (ISO 5752 series 20) and DIN EN 558-1 series 20
- Wafer version F320 has four flanged holes for positioning in end-of-line applications under certain conditions.
- Standard actuation:
 - Handle (F414) for valves DN 50-200.
 - Manual gear drive (F455) for valves DN 250-300.
- Lug version F322 is suitable for double-sided end-of-line applications.
- Suitable for use with pneumatic, electric and hydraulic drives.

GENERAL APPLICATION

Figure 320/322 is designed for applications requiring closed control. The valve has a permanent seat and can be used in combination with manual or gear operated or any other conventional type of pneumatic, electric or hydraulic actuators.

SPECIFICATIONS

Size range:	Figure 320 (in wafer body) DN 50-300 Figure 322 (with lugs)
Pressure:	DN 50-300 16 bar (in line and at end of line)
Temperature (°C):	Heavy duty (EPDM) saddle -29°C to 150°C (Up to 120°C for production date in October 2019 or earlier) Heavy duty (NBR) seat -15°C to 100°C

End connections

F320

Between flanges

DN 50-300: PN 6-PN-PN
ANSI 150

At the end of the line

DN 50-300: PN 16
ANSI 150

DN 50-150: PN 10

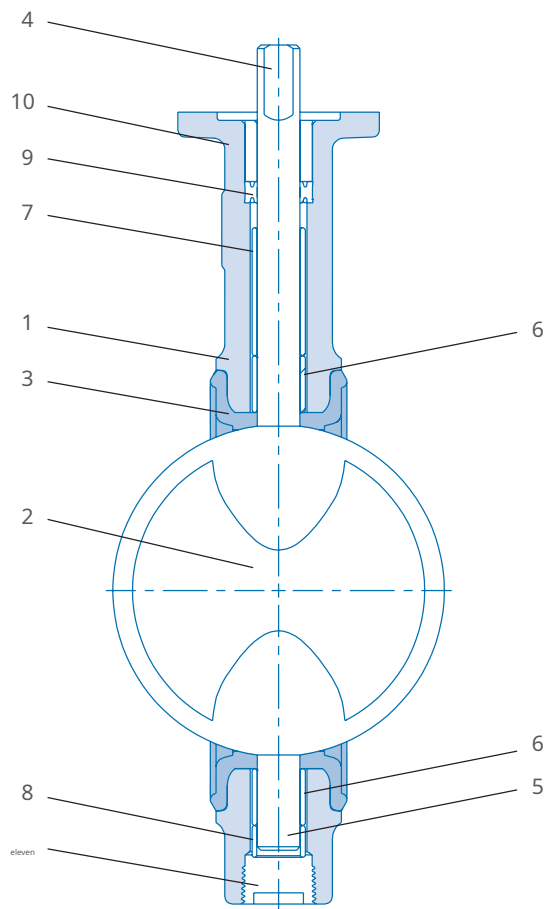
F322

DN 50-300: PN 6-10-16
ANSI 150

DN 50-300: PN 6-10-16
ANSI 150



**KEYSTONEFIGURE 320/322 ELASTIC
LOCKING BUTTER VALVES**



PARTS LIST

Pos.	Description	Material	Standard	Material number
1	Frame	Cast iron	ASTM 536 Gr 65-45-12	DIN 0.7040
2	Disk	Stainless steel	ASTM A 351 Gr CF8M	DIN 1.4408
		Aluminum bronze	ASTM B 148 UNS C95200 A	DIN 2.0940.01
		Nickel aluminum bronze	BS EN 1982 CC 333G	DIN 2.0975.01
3	Saddle	EPDM	-	-
		NBR	-	-
4	Upper rod	416 Stainless steel	ASTM A 582, 416 cond. H	-
5	Lower rod	417 Stainless steel	ASTM A 582, 416 cond. H	-
6	Sleeve	Sintered bronze	ASTM B438	-
7	Upper spacer	-	-	-
8	Lower spacer	-	-	-
9	stuffing	-	-	-
10	Upper bushing	Thermoplastic polyester	ASTM D 4507 TPES 110M10	A22310
eleven	Stub	-	-	-

KEYSTONE FIGURE 320/322 ELASTIC
LOCKING BUTTER VALVES

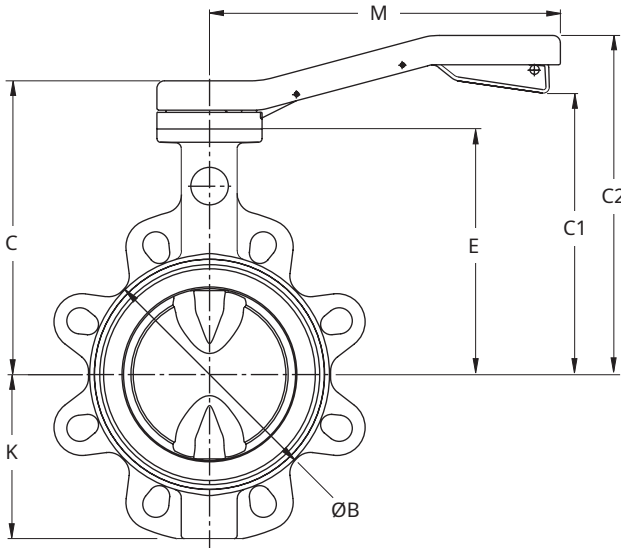
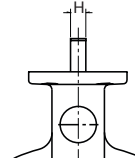
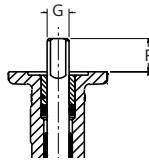
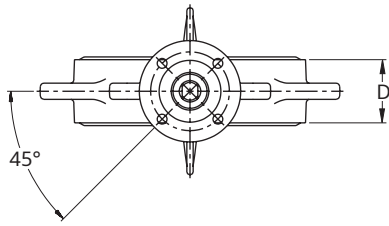


Figure 320 (waffle)

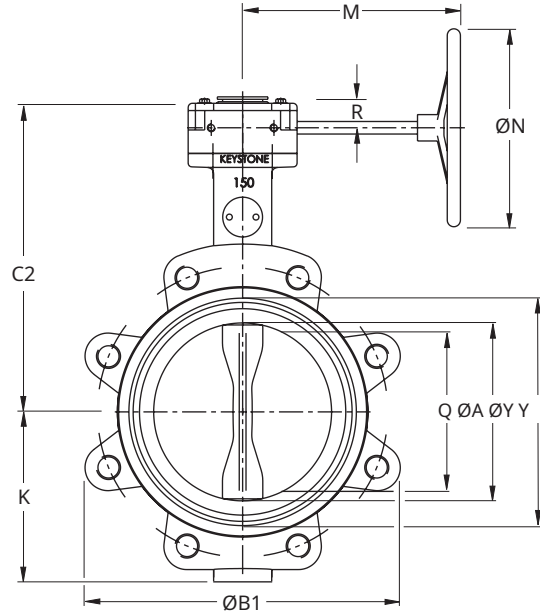


Figure 322 (with eyes)

DIMENSIONS (mm)

Standard size	ØA	ØB	ØB1	C	C1	C2	D	E	Rod connections			ISO type	K	M	ØN	Q	R	ØYY	Weight kg*		Kv fully open
									F	ØGh9	H _{0,05}								F320	F322	
50	52	98	157	172	147	197	43	135	25	12.00	8	F05	78	230	31	87	3.7	4.4	108		
65	64	116	177	194	180	230	46	150	thirty	15.88	eleven	F07	83	300	47	98	5.9	6.5	217		
80	77	126	192	204	190	240	46	160	thirty	15.88	eleven	F07	91	300	63	114	6.4	7.6	409		
100	103	156	225	224	110	260	52	180	thirty	15.88	eleven	F07	105	300	90	146	7.9	9.7	807		
125	128	182	254	239	225	275	56	195	thirty	20.00	14	F07	127	300	116	168	9.4	12.7	1251		
150	147	207	279	254	240	290	56	210	thirty	20.00	14	F07	140	300	137	197	11.3	14.1	1946		
200	198	264	336	240		311	60	240	thirty	20.00	14	F07	174	327	300	190	37	258	26.1	30.2	3516
250	249	317	406	275		346	68	275	50	30.00	22	F12	203	327	300	241	37	309	35.0	43.0	5806
300	300	373	476	310		381	78	310	50	30.00	22	F12	235	327	300	291	37	354	46.1	55.4	8910

NOTES

Dimensions are nominal ± 1 mm.

- Q is the chordal distance of the disc on the valve surface for disc clearance when installed in a pipeline or equipment.
- Valves DN 50-200 are supplied with handles (F414) as standard.
Valves DN 250-300 are supplied as standard with manual gear drives (F455).
- YY is the outer diameter of the seat surface.

* Weights shown include standard drivetrain.

ISO 5211 MOUNTING PARTS

Type	Diam. beginning surrounding	Bolt holes
F05	50	4 x Ø7
F07	70	4 x Ø9
F12	125	4 x Ø14

**KEYSTONEFIGURE 320/322 ELASTIC
LOCKING BUTTER VALVES**

TORQUES FOR SELECTION (Nm)

ΔP in kPa	DN size								
	50	65	80	100	125	150	200	250	300
I*									
350	13	19	26	37	58	81	148	241	345
700	13	20	27	40	63	88	164	271	387
1000	14	21	29	44	70	99	188	315	451
1400	15	23	33	49	80	113	219	374	536
1600	15	24	35	51	85	120	235	403	578
II*									
350	14	21	29	42	66	93	169	274	392
700	14	22	31	45	71	100	185	303	434
1000	15	23	33	49	78	111	208	347	498
1400	16	26	36	54	88	125	240	406	583
1600	17	27	38	56	93	132	255	435	625
III*									
350	15	23	32	48	74	105	190	306	439
700	16	24	34	50	79	112	206	336	481
1000	16	26	36	54	86	122	229	380	545
1400	17	28	40	59	96	136	261	439	629
1600	18	29	41	61	101	143	276	468	672

* Application I, II, III

NOTES

- Application I:**Water, sea water, hydrocarbons such as lubricants. Pace.:0-80°C; the shutters open, at least once a month.
Application II:All other liquids and gases are lubricated.
Application III:No lubrication and dry environment.
- The given maximum operating torque for selecting a standard size is the sum of all frictional forces and resistance to opening and closing the disk against the specified pressure drop.
- The effect of dynamic torque is not taken into account in the table.
- When selecting a manual drive, there is no need to take into account safety factors.
- Estimated value K_v = volume of water in m3/hour that will pass through a given opening with a pressure difference of 1 bar.

EXECUTION CODES

Figure No.	Execution code	Frame	Disk	Shaft	Saddle
F320/322	112	Cast iron	Stainless steel Steel	Stainless steel Steel	EPDM
F320/322	116	Cast iron	Stainless steel Steel	Stainless steel Steel	NBR
F320/322	135	Cast iron	Nickel Alum. Bronze	Stainless steel Steel	EPDM
F320/322	137	Cast iron	Nickel Alum. Bronze	Stainless steel Steel	NBR
F320/322	333	Cast iron	Aluminum Bronze	Stainless steel Steel	EPDM
F320/322	334	Cast iron	Aluminum Bronze	Stainless steel Steel	NBR

**MAXIMUM ALLOWABLE VALUES OF
TORQUES ON THE SHAFT (Nm)**

DN size	Moments
50	75
65	184
80	184
100	184
125	374
150	374
200	374
250	1353
300	1353

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