



## KEYSTONE FIGURE 139 BUTTERFLY VALVE

DN 50 - 500

Heavy duty bronze trim butterfly valve for marine applications



### FEATURES

- Bubble tight shut off at full pressure rating.
- Wafer style body.
- Field replaceable steel reinforced seat.
- Disc secured with bolts and O-ring sealed.
- Suitable for offshore or onshore applications.
- Specially selected trims to provide superior corrosion resistance.
- Full traceability on major components.
- Direct mounting to Keystone actuators eliminates the need for mounting brackets.
- Every valve pressure tested.
- Conforms to military shock and vibration tests
  - MIL-S-901C
  - MIL-STD-167B on selected trims only.
- Fire tested by Lloyds Register Certificate No. HOU-1094.

### GENERAL APPLICATION

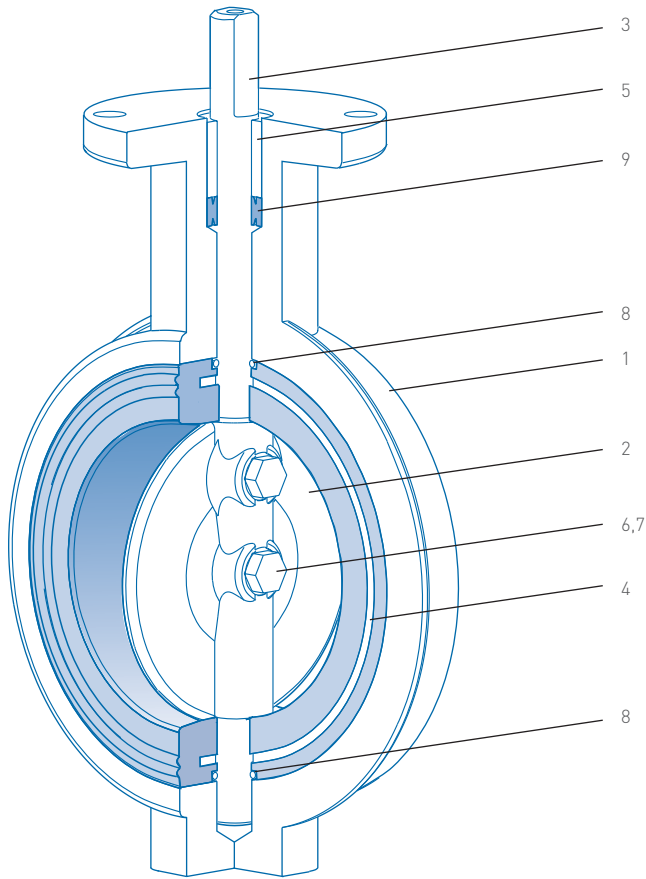
The ideal valve for platform deluge systems or water ballast where salt water corrosion is a problem.

### TECHNICAL DATA

Size range:	DN 50 - 500
Temperature rating:	Minus 30°C to 105°C
Pressure rating:	Full vacuum to 1400 kPa (14 bar)
Standard flange drilling:	AS 2129 table E ASME B16.5 class 150

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## PARTS LIST

No.	Description	Material
1	Body	Nickel al. bronze S.G. iron
2	Disc	Nickel al. bronze Monel 316 S/S
3	Shaft	17.4 PH S/S Monel
4	Seat	Buna N with carbon steel reinforcing ring
5	Shaft bush	Delrin
6	Disc screw	Monel 316 S/S
7	Disc screw	O-ring nitrile
8	Shaft O-ring	Nitrile
9	Shaft seal	Nitrile

## CERTIFICATION

Full traceability on body, discs and shaft with chemical and mechanical certification by a NATA approved laboratory.

For S.G. Iron components, only mechanical certificates offered.

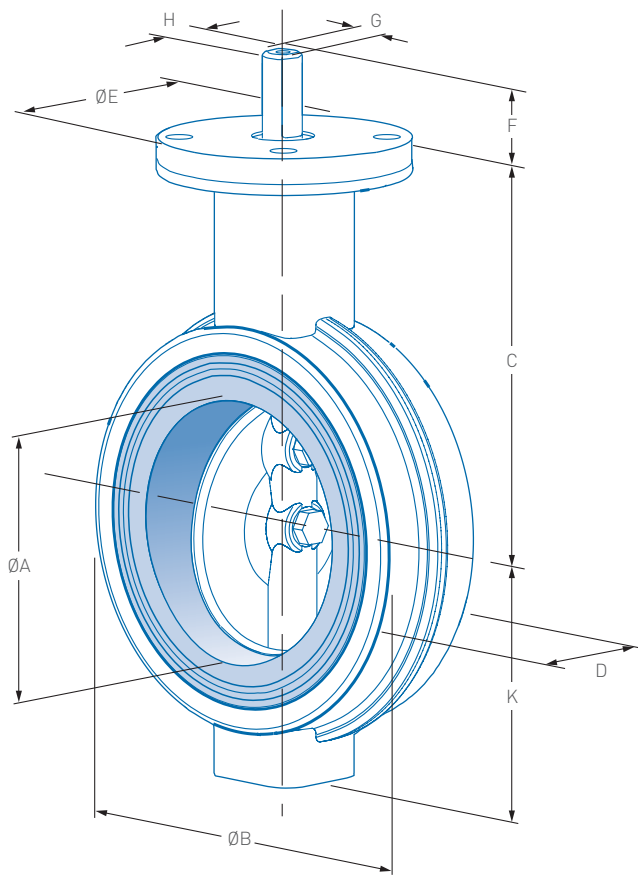
Each valve is tagged with individual Keystone serial numbers to allow full traceability without having to remove the valve from the pipeline.

## AVAILABLE ACTUATORS/ACCESSORIES

- F401 Handles - S/S recommended.
- F420 Marine gearboxes in S.G. (ductile) iron or bronze.
- F427 Cast Iron gearboxes.
- F79U Pneumatic actuators, double acting or spring return in hard anodized aluminium, with optional F454 declutchable gear override.
- F79S Stainless steel double acting or spring return actuator.
- F79B S.G. Iron double acting or spring return actuator.
- F02 Electric actuators.
- Various extensions and accessories.

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## DIMENSIONS (mm)

Valve size DN	Stem conn. code	Shaft dia. (in)	ØA	ØB	C	D	ØE	F	K	Q	Stem conn. H x G (in)	Key (in)	Top plate data			Mass (kg)	K <sub>v</sub> at full open
													PCD.	No. holes	Hole dia.		
50	BAB	9/16	51	105	100	41	102	32	68	33	9/16 x 3/8	-	83	4	11	3.0	190
65	BAB	9/16	64	124	114	44	102	32	78	48	9/16 x 3/8	-	83	4	11	3.6	280
80	BAB	9/16	76	137	124	44	102	32	87	64	9/16 x 3/8	-	83	4	11	4.0	430
100	BAC	5/8	102	175	152	51	102	32	102	90	5/8 x 7/16	-	83	4	11	6.3	710
125	BAC	5/8	127	197	152	54	102	32	116	117	5/8 x 7/16	-	83	4	11	7.0	1120
150	BAD	3/4	152	222	165	54	102	32	137	145	3/4 x 1/2	-	83	4	11	8.3	1630
200	CAE	7/8	203	279	211	64	152	32	167	195	7/8 x 5/8	-	127	4	14	16.0	2840
250	CAF	1 1/8	254	340	229	64	152	51	201	248	1 1/8	1/4 x 1/4	127	4	14	23.0	4640
300	CAF	1 1/8	305	406	270	76	152	51	235	292	1 1/8	1/4 x 1/4	127	4	14	36.0	6880
350	CAG	1 3/8	330	448	305	76	152	76	270	324	1 3/8	5/16 x 5/16	127	4	14	51.0	8600
400	CAH	1 5/8	381	514	329	102	152	76	318	370	1 5/8	3/8 x 3/8	127	4	14	94.0	11200
450	DAJ	1 7/8	432	546	368	108	203	108	343	421	1 7/8	1/2 x 3/8	165	4	21	107.0	15500
500	DAJ	2 1/8	483	603	403	127	203	108	378	468	1 7/8	1/2 x 3/8	165	4	21	141.0	18900

## NOTES

Q = The disc cordal dimension at face of valve for disc clearance into pipe fittings or flanges.

H = Dimension is the stem connection.

G = Dimension is across the stem flats.

K<sub>v</sub> = The flow rate of water in m<sup>3</sup>/hr that will pass through a valve with a differential pressure of 1 bar (100 kPa) at 20°C.

C<sub>v</sub> = 1.155 K<sub>v</sub>

Dimensions are nominal to ±1 mm.

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## ANTICIPATED SEATING AND UNSEATING TORQUE VALUES - Nm

Valve size DN	Shut off pressure kPa									
	Normal service					Severe service				
	0	350	700	1000	1400	0	350	700	1000	1400
50	25	26	27	28	29	37	38	40	41	42
65	30	32	33	34	35	45	46	47	49	50
80	36	38	41	43	45	54	56	59	61	63
100	54	58	61	64	68	81	85	88	92	95
125	73	79	85	90	96	110	116	121	127	133
150	102	113	124	136	147	152	164	175	186	198
200	169	192	215	237	260	254	277	299	322	345
250	260	294	328	362	395	390	424	458	492	525
300	350	407	463	520	576	525	582	638	695	751
350	486	576	667	757	847	729	819	910	1000	1090
400	621	757	893	1028	1164	932	1068	1203	1339	1475
450	780	983	1186	1390	1593	1170	1373	1576	1780	1977
500	960	1243	1525	1808	2090	1441	1723	2006	2288	2570

## NOTES

- The charted seating and unseating torques are the sum of all friction and resistance for opening and closing of the disc against the indicated pressure differential for normal and severe services respectively.
- Normal service:**  
Valve must be regularly operated on liquid service at moderate temperatures with no internal deposition or chemical attack.
- Severe service:**  
All other conditions including - dry service, infrequent operation, very low or high temperatures, any significant media build-up or chemical attack.
- The relationship between values are linear, therefore you can interpolate between nominated values.
- The effect of dynamic torque is not considered in tabulation.
- In sizing operators it is not necessary to include safety-factors.

## TYPICAL SPECIFYING SEQUENCE

100	F139	833	AS 2129 E
Valve size	Figure number	Trim code	End connections

## VALVE TRIMS

Figure no.	Trim code alpha	Disc numeric	Body	Disc	Shaft	Seat	Bearing	Packing	Screws
F139	-	830	Ni Al Bronze	Ni Al Bronze	17.4 P.H S/S	Buna N	Delrin	Buna N	316 S/S
F139	-	831	Ni Al Bronze	316 S/S	17.4 P.H S/S	Buna N	Delrin	Buna N	316 S/S
F139	-	832	Ni Al Bronze	Monel	Monel	Buna N	Delrin	Buna N	Monel
F139*	-	833	Ni Al Bronze	Ni Al Bronze	Monel	Buna N	Delrin	Buna N	Monel
F139	-	834	S.G.Iron	Ni Al Bronze	17.4 P.H S/S	Buna N	Delrin	Buna N	316 S/S
F139	-	835	S.G.Iron	316 S/S	17.4 P.H S/S	Buna N	Delrin	Buna N	316 S/S
F139	-	836	S.G.Iron	Monel	Monel	Buna N	Delrin	Buna N	Monel
F139	-	837	S.G.Iron	Ni Al Bronze	Monel	Buna N	Delrin	Buna N	Monel

## NOTES

Others trims available upon request.

\* Conforms to military shock and vibration tests. MIL-S-901C and MIL-STD-167B.

End connections (to suit):

- AS 2129 Table E
- ASME B16.5 class 150
- Other flange drillings available upon request.

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