

KEYSTONE HYGIENIC BUTTERFLY VALVE - FIGURE 250 & 251

WELD / CLAMP / THREAD END CONNECTIONS

Stainless steel hygienic butterfly valves

- F250 for imperial tubing
- F251 for metric tubing



FEATURES

- Keystone technology.
- Quarter turn operation.
- Isolation or regulation control.
- Equal percentage characteristics.
- Bi-directional capability.
- Fully machined 316L stainless steel body.
- Optional end connections.
- One-piece disc and stem assembly.
- High C_v slim profile disc.
- Integral valve position indicator.
- High grade seat material options.
- Combination dual or multi position handle assembly.
- High impact reinforced polymer handle with a stainless steel drive (full stainless steel option available).
- Integral padlocking as standard on manual valves.
- Maintenance friendly.
- Site repairable.
- Full range of optional accessories.

GENERAL APPLICATION

A universal valve for isolation and control, in the food, dairy, brewing, pharmaceutical, beverage and chemical industries.

The Figure 250 and 251 are designed to be easily automated with any of Keystone's actuators and controls. From the Figure 257 Vertical Actuator and Figure 783E Electronic Control Head, to the Figure 79E/U or Figure 79S actuator.

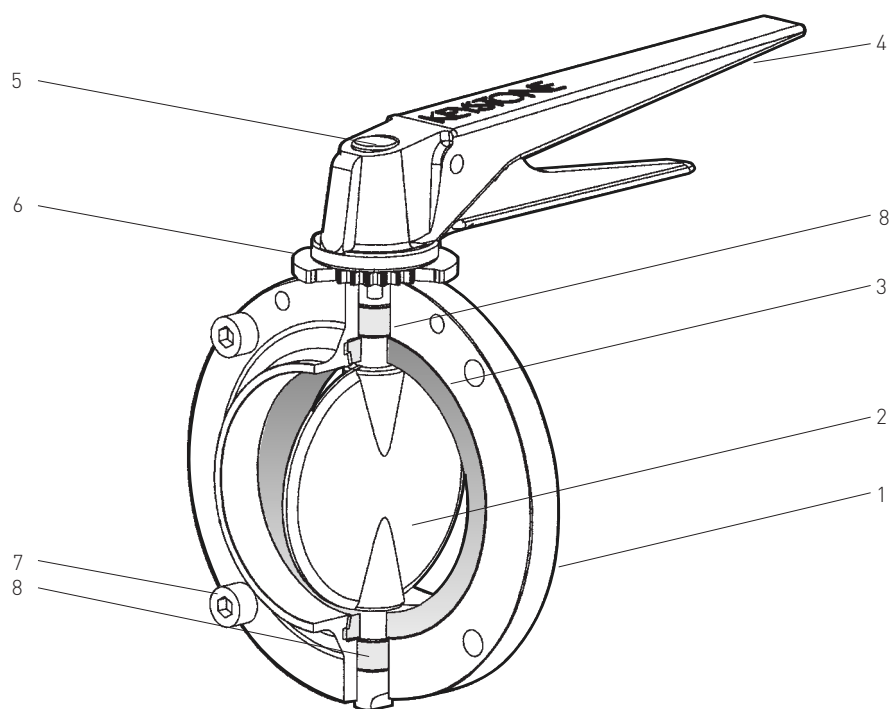
TECHNICAL DATA

Max. product pressure at 20°C:	10 bar (1000 kPa)
Min. product pressure at 20°C:	Full vacuum
Recommended operating pressure at 20°C:	6 bar (600 kPa)
Recommended temperature range:	-5°C to 95°C



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PARTS LIST

No.	Description	Material	Standard
1	Body	316L stainless steel	ASTM A276
2	Disc stem	316 stainless steel	ASTM A743 CF8M
3	Seat	Silicon (white)	FDA
		EPDM (black)	FDA
		Nitrile (black)	FDA
		HNBR (black)	FDA
		FPM (red)	FDA
4	Handle assembly	High impact glass reinforced polymer or 304 stainless steel	-
5	Handle plug/Screw	Santoprene / 304 stainless steel	Commercial
6	Notch plate	304 stainless steel	ASTM A743 CF8
7	Body fasteners	304 stainless steel	ASTM A276
8	Bearings	PVDF	Commercial

TECHNICAL DATA

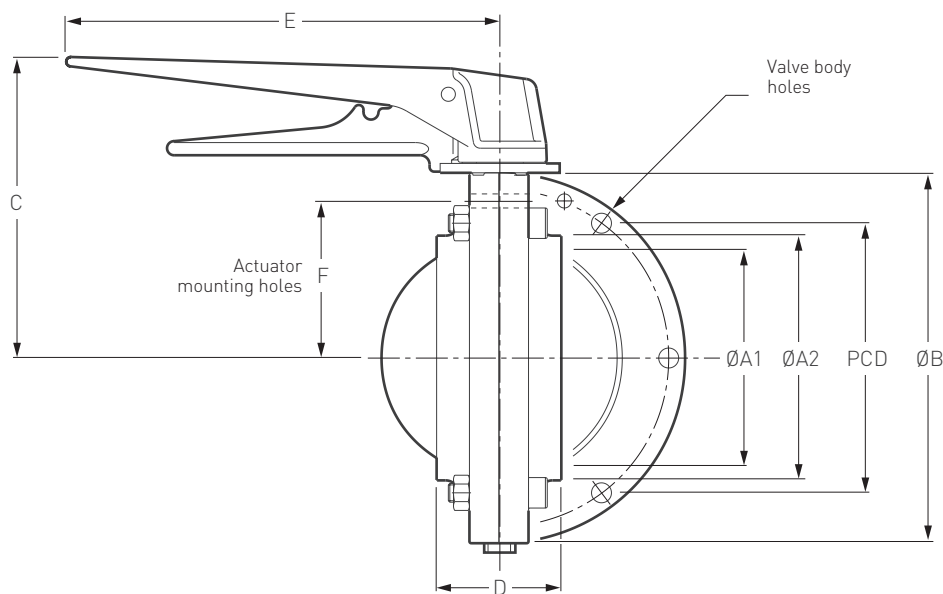
Max static temperature:	Silicon:	240°C
	EPDM:	120°C
	Nitrile:	100°C
	HNBR:	150°C
	FPM:	230°C

NOTE

Although the various seat materials available can withstand temperatures above the max. recommended operating temperature for short periods of time, such as for sterilisation and certain applications, the servicability of these seats at elevated temperatures does vary depending on the media, pressure and other variables. Therefore, this is best determined from experience gained with the application concerned.

KEYSTONE HYGIENIC BUTTERFLY VALVE - FIGURE 250 & 251

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F250 IMPERIAL VALVE DIMENSIONS (mm)

Valve size		ØA1	ØA2	ØB	C	D	E	F	PCD	No. holes	Hole dia.	Stem conn.	Mass (kg)	K _v (Fully open)
DN	NPS													
25	1"	22.3	25.4	69	83.5	50	156	26.5	59	4	6	8mm sq.	0.7	17
40	1½"	35.0	38.1	79	88.5	50	156	31.5	69	4	6	8mm sq.	0.8	64
50	2"	47.7	50.8	94	96.0	50	156	38.0	84	4	6	8mm sq.	1.1	131
65	2½"	60.4	63.5	104	101.0	50	156	43.0	95	4	6	8mm sq.	1.5	220
80	3"	73.1	76.2	124	112.0	60	185	50.0	111	4	8	10mm sq.	2.0	333
100	4"	98.0	101.6	151	125.5	70	185	63.5	139	6	8	12mm sq.	3.3	726
125	5"	123.0	127.0	198	171.0	71	266	90.4	177	6	10	15mm sq.	7.5	1370
150	6"	148.4	152.4	223	183.5	80	266	98.5	207	6	10	15mm sq.	8.2	2050

F251 METRIC VALVE DIMENSIONS (mm)

Valve size		ØA1	ØA2	ØB	C	D	E	F	PCD	No. holes	Hole dia.	Stem conn.	Mass (kg)	K _v (Fully open)
DN	Metric													
25	025	26	29	74	86.0	50	156	29.0	63	4	6	8mm sq.	0.8	19
32	032	32	35	79	88.5	50	156	31.5	69	4	6	8mm sq.	0.7	41
40	040	38	41	87	92.5	50	156	35.5	76	4	6	8mm sq.	0.9	69
50	050	50	54	99	98.5	50	156	40.5	89	4	6	8mm sq.	1.4	137
65	065	66	70	123	111.5	50	185	49.5	109	4	8	10mm sq.	2.5	263
80	080	81	85	138	119.0	54	185	57.0	124	4	8	10mm sq.	3.0	381
100	100	100	104	158	129.0	54	185	67.0	144	6	8	12mm sq.	4.5	689
125	125	125	129	198	171.0	74	266	90.4	177	6	10	15mm sq.	7.5	1370
150	150	150	154	223	183.5	80	266	99.5	203	6	10	15mm sq.	8.2	2050

NOTE

Dimensions 'D' and 'A2' shown above, are for the butt weld configuration only. For other types of connections, refer to attached End connection data.

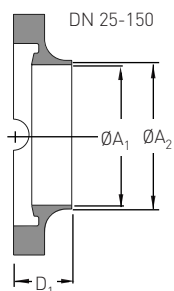
Dimension 'E' is the maximum clearance length for either handle.

Masses shown are for bare shafted butt weld valves only.

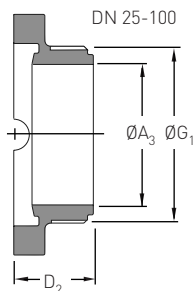
KEYSTONE HYGIENIC BUTTERFLY VALVE - FIGURE 250 & 251

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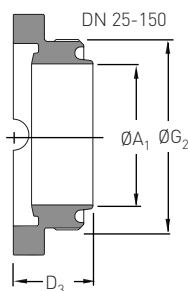
F250 IMPERIAL VALVE - AVAILABLE END CONNECTIONS



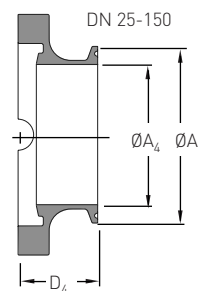
Butt weld (std) for inch tubing (O.D. tubes)
ISO 2037, BS 4825-1 AS 1528-1 & ASME BPE



IDF/FIL male part connection
ISO 2853 & BS 4825-4



RJT/BSM male part connection
BS 4825-5



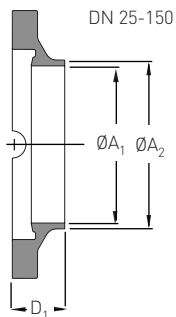
Clamp connection
ISO 2852

DIMENSIONS (mm)

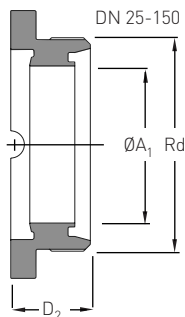
DN	NPS	ØA ₁	ØA ₂	ØA ₃	ØA ₄	ØA ₅	ØG ₁	ØG ₂	D ₁		D ₂		D ₃		D ₄	
									M*	F*	M*	F*	M*	F*	M*	F*
25	1"	22.3	25.4	23.0	23.0	50.5	IDF 1"	RJT 1"	25.0	40	46.0	40	50.5	40	37	
40	1½"	35.0	38.1	35.6	35.6	50.5	IDF 1½"	RJT 1½"	25.0	40	46.0	40	50.5	40	37	
50	2"	47.7	50.8	47.7	47.7	64.0	IDF 2"	RJT 2"	25.0	40	46.0	40	50.5	40	37	
65	2½"	60.4	63.5	59.4	60.4	77.5	IDF 2½"	RJT 2½"	25.0	50	46.0	50	50.5	40	37	
80	3"	73.1	76.2	72.2	73.1	91.0	IDF 3"	RJT 3"	30.0	50	51.0	46	55.5	40	42	
100	4"	98.5	101.6	98.5	98.0	119.0	IDF 4"	RJT 4"	35.0	52	64.5	52	60.5	46	50	
125	5"	123.0	127.0	-	123.0	-	-	RJT 5"	35.5	-	-	-	62.5	-	58	
150	6"	148.4	152.4	-	148.4	167.0	-	RJT 6"	40.0	-	-	-	65.5	55	-	

Note: BSM modified version is available upon request, deduct 4.7 mm from dimension D₃.

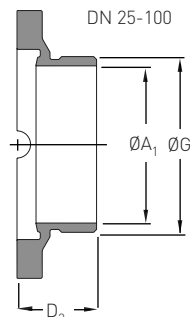
F251 METRIC VALVE - AVAILABLE END CONNECTIONS



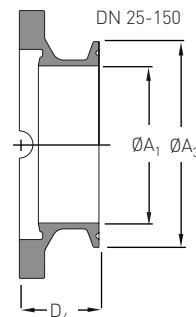
Butt weld (std) for tubing
DIN 11850, sheet 1-3



Connection male part
DIN 11851 & 11887



BSP male DIN ISO 228



Clamp Connection
DIN 32676

DIMENSIONS (mm)

DN	Size Metric	ØA ₁	ØA ₂	ØA ₃	Rd	ØG	D ₁		D ₂		D ₃		D ₄	
							M*	F*	M*	F*	M*	F*	M*	F*
25	025	26	29	50.5	Rd 52 x ¼"	G 1"	25	37	53.5	34	34	46.0		
32	032	32	35	50.5	Rd 58 x ¼"	G 1½"	25	37	56.5	34	34	46.0		
40	040	38	41	50.5	Rd 65 x ¼"	G 1½"	25	37	57.5	34	34	46.0		
50	050	50	54	64.0	Rd 78 x ¼"	G 2"	25	37	59.5	34	34	46.0		
65	065	66	70	91.0	Rd 95 x ¼"	G 2½"	25	41	64.5	37	37	52.5		
80	080	81	85	106.0	Rd 110 x ¼"	G 3"	27	45	66.5	41	41	54.5		
100	100	100	104	119.0	Rd 130 x ¼"	G 4"	27	45	80.5	41	41	54.5		
125	125	125	129	155.0	Rd 160 x ¼"	-	37	58	82.5	50	50	64.5		
150	150	150	154	183.0	Rd 190 x ¼"	-	40	66	89.5	55	55	67.5		

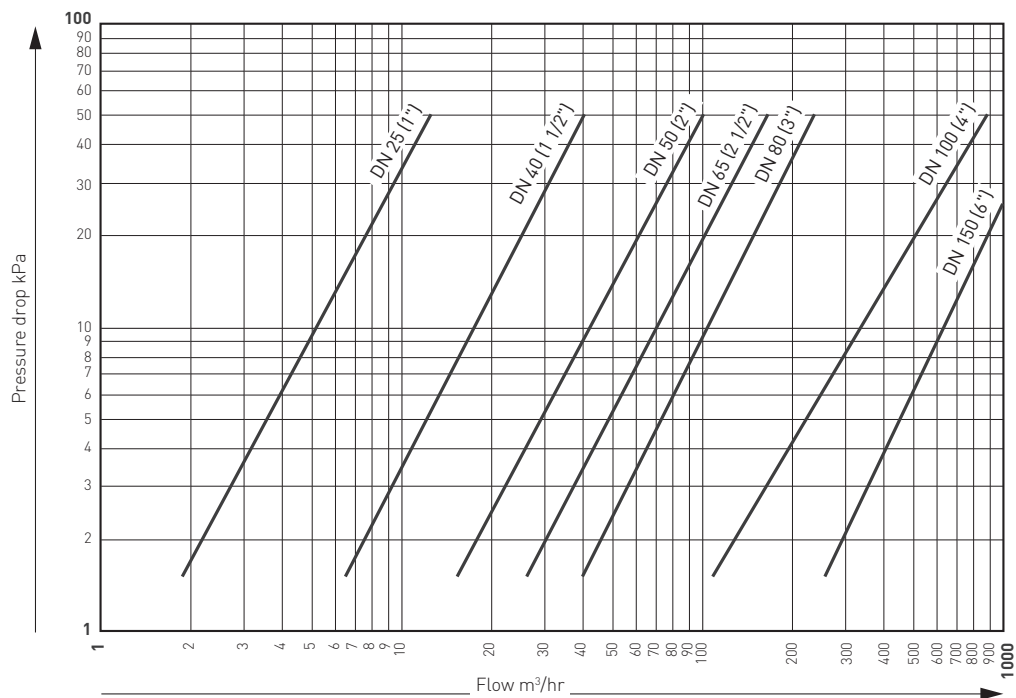
Note: M* = Machined 1 piece body (Standard)

F* = Fabricated 2 piece body (May apply for Imperialised DIN thread or other special cases)

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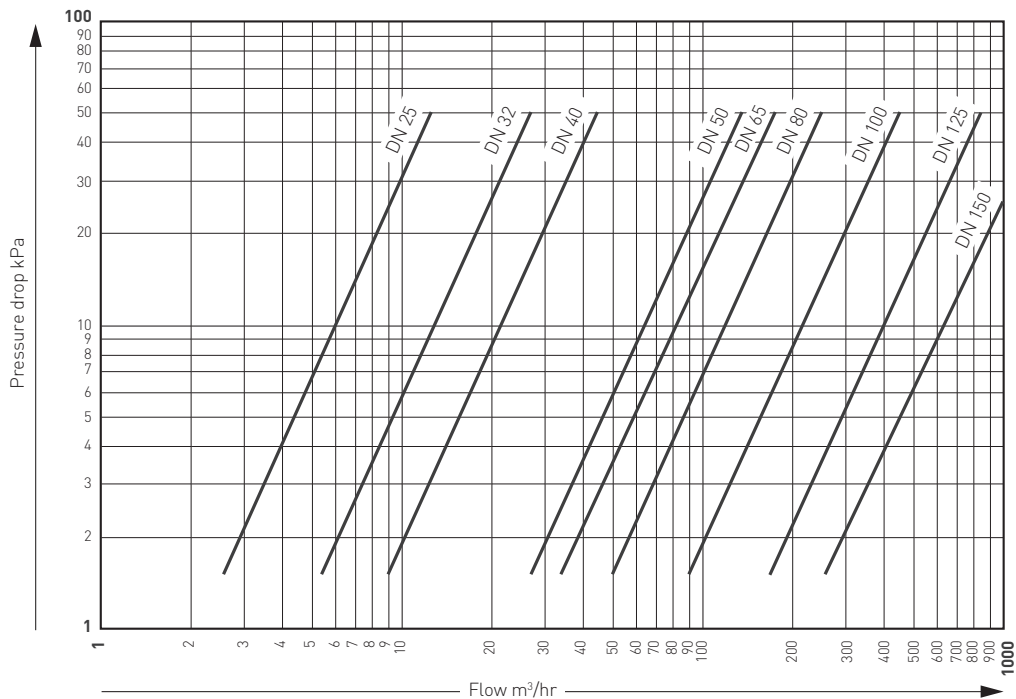
F250 PRESSURE DROP / FLOWRATES GRAPH



NOTE

This chart is based on a F250 valve fully open, using water at 20°C.

F251 PRESSURE DROP / FLOWRATES GRAPH



NOTE

This chart is based on a F251 valve fully open, using water at 20°C.

KEYSTONE HYGIENIC BUTTERFLY VALVE - FIGURE 250 & 251

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SELECTION GUIDE

Example:			050	F250	255	CLP	H8S
Valve size:							
1"	025	DN 25					
1.25"	032	DN 32					
1.5"	040	DN 40					
2"	050	DN 50					
2.5"	065	DN 65					
3"	080	DN 80					
4"	100	DN 100					
5"	125	DN 125					
6"	150	DN 150					
Figure:							
F250	Imperial tubing butterfly valve						
F251	Metric tubing butterfly valve						
Trim	Seat	Body	Disc	Bearing			
255	EPDM	304L	316L	PVDF			
256	Silicon	304L	316L	PVDF			
252	HNBR	304L	316L	PVDF			
258	FPM	304L	316L	PVDF			
259	FPM	316L	316L	PVDF			
262	EPDM	316L	316L	PVDF			
263	Silicon	316L	316L	PVDF			
253	HNBR	316L	316L	PVDF			
End connections:							
Weld ends				Thread ends			
BW	butt weld			BSP	internal thread (BSPT)		
BWD	butt weld DIN tube			DIN	DIN thread (fabricated)		
PAP	BW extension tube 101.6mm long			HEX	hexagonal nut & liner, RJT		
WAF*	wafer valve & BW flanges			HXM	hexagonal nut & liner mod, RJT		
WAO*	wafer valve without flanges			IDF	BS/ISO/Japanese standard		
Clamp ends				NPT	NPT taper thread (machined)		
CLF	ISO clamp ends (fabricated)			NPF	NPT taper thread (fabricated)		
CLP	ISO clamp ends (machined)			RJF	RJT male part (fabricated)		
DCL	DIN clamp end, DIN sizing			RJL	RJT male part long (machined)		
ILN	I line, male spigot			RJM	RJT male part (machined) (BSM) modified spigot		
				RJT	RJT male part (machined)		
				RND	round nut & liner, RJT		
				SMS	SMS male part, external thread 6 TPI (machined)		
				SMF	SMS male part, external thread 6 TPI (fabricated)		
Extended definer:							
H7P	F397 polymer handle						
H7S	F397 304 stainless handle						
H8S	F398 304 stainless handle						

NOTES

* For information on the wafer style valve refer to separate literature sheet.