

**tyco**

*Flow Control*

## KEYSTONE

### Features

- The one-piece wafer thin disc stem provides the very minimum obstruction to flow.
- Rounded, polished disc edge gives full concentric sealing, lower torques, longer seat life and bubble-tight shut-off.
- Wafer type split-body for easier maintenance.
- Body locating holes provide easy installation and a perfect centring of the valve between the flanges.
- Primary stem sealing by preloaded contact between flatted seat surface and rounded polished disc hub area exceeds the pressure rating of the valve and prevents leakage through shaft area to atmosphere.
- A secondary sealing is provided by the interference fit between shaft and shaft hole in seat at all positions.
- Top bushing absorbs actuator side thrust loads.
- A moulded-in O-ring provides flange sealing and eliminates need for gaskets.
- The seat is field replaceable and fully isolates the body and stem from the flow.
- AS 2129 Table E and ANSI Class 150 end connections as standard. Others available on request.
- The F990 is not recommended for dead end service.
- PED approved for valves 25-300mm.

The F990 has smooth flow characteristics, abrasion, erosion and corrosion resistance with a crevice free internal contour.



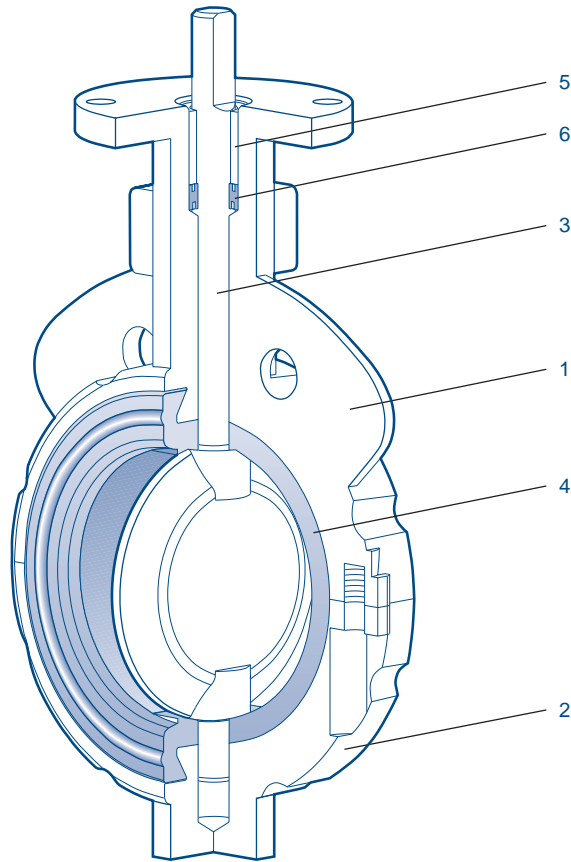
### General Applications

Food and beverage processing, chemical, dry bulk conveying, paper mills, slurry handling etc. These valves are for any service where a bubble-tight shut-off with maximum flow area is required.

It has a one piece disc stem, a field replaceable seat and a wide range of material combinations to meet most severe applications.

# Butterfly Valves - Figure 990

Sizes 25 - 500mm



## Size range

25 to 500mm.  
50 to 500mm for urethane and ceramic trims.

## Pressure rating

1000 kPa in 25 - 300mm S/S trims.  
700 kPa in 50 - 300mm with rubber discs, Teflon or Urethane trims.  
500 kPa in 350 - 500mm for all trims.  
350 kPa in 25 - 300mm White Buna-N.

## Temperature rating

Minus 40°C to 120°C with EPDM seats.  
Minus 18°C to 100°C with Buna N seats.  
Minus 15°C to 120°C with Teflon lined Buna N seats.  
Minus 30°C to 150°C with Teflon lined EPDM seats.  
Minus 20°C to 80°C with Urethane seats.

**Note:** PED approved valves have a temperature limitation of minus 10°C for all seat options.

## Parts List

No.	Description	Standard Material	Material Specification
1	Upper Body	Cast Iron	ASTM A-126 - B
2	Lower Body	Cast Iron	ASTM A-126 - B
3	Disc Stem	316 Stainless Steel EPDM Encapsulated Carbon Steel Teflon Encapsulated Carbon Steel Urethane Encapsulated Carbon Steel Ceramic Coated	ASTM A743 CF8M / ASTM A-276 UNS S31600 - - EM-D1-9 EM-D1-10
4	Seat	EPDM# Buna N# Teflon - Buna N backed Teflon - EPDM backed Urethane	EM-D1-32 EM-D1-2 - - EM-D1-9
5	Shaft Bush	Acetal	-
6	Shaft Seal	Buna N	-
7*	Body Screws	304 Stainless Steel	ISO 3506-1

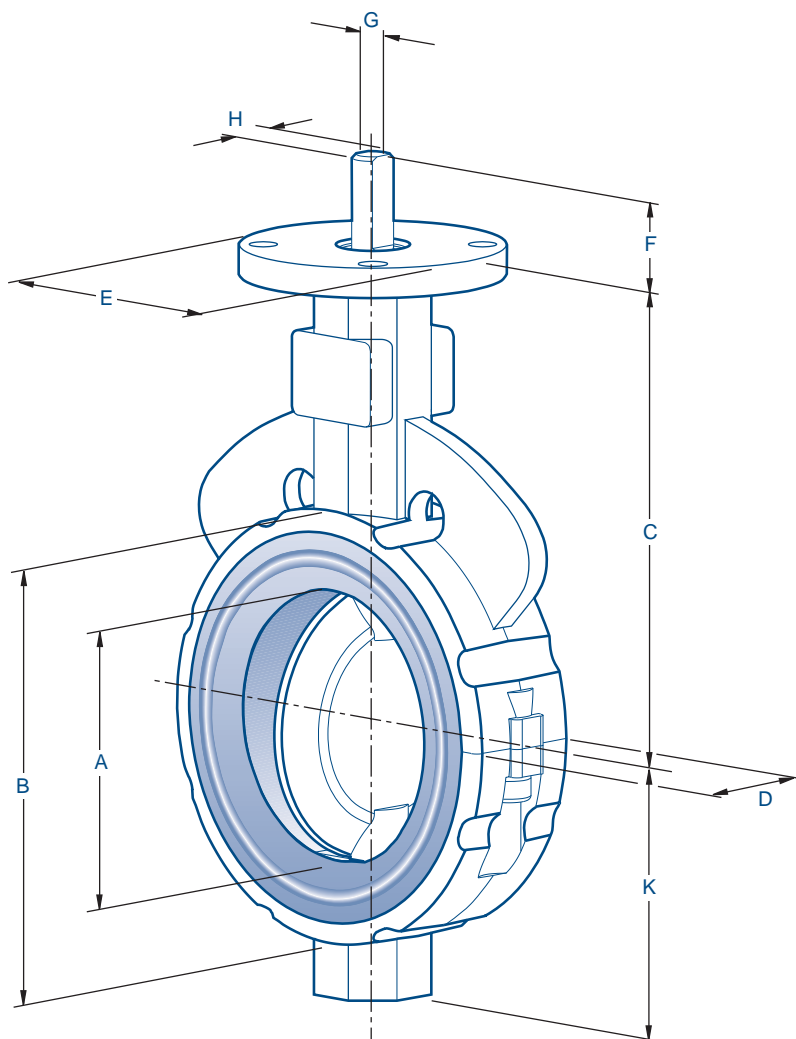
### Note:

\* Body Screws not shown in illustration.

# Food grade seat.

# Butterfly Valves - Figure 990

Sizes 25 - 500mm



## Dimensions (mm)

Valve Size mm	Stem Conn. Code	Shaft Dia. inches	A	B	C	D	E	F	K	Q	Stem Conn. H x G inches	Key inches	Top Plate			Kv @ Full Open	
													PCD. mm	No. Holes	Hole Dia. mm		Mass kg
25	AAA	3/8	32	62	79	29	57	19	31	15	3/8 x 1/4		44	4	6	0.7	52
40	AAA	3/8	47	82	94	30	57	19	41	36	3/8 x 1/4		44	4	6	1	120
50	BAB	9/16	52	105	140	41	102	32	70	32	9/16 x 3/8		83	4	11	3	320
65	BAB	9/16	65	117	152	44	102	32	76	48	9/16 x 3/8		83	4	11	4	430
80	BAB	9/16	78	130	159	44	102	32	88	65	9/16 x 3/8		83	4	11	5	590
100	BAC	5/8	103	162	178	51	102	32	102	90	5/8 x 7/16		83	4	11	6	960
125	BAD	3/4	129	187	191	54	102	32	119	118	3/4 x 1/2		83	4	11	8	1510
150	BAD	3/4	148	216	203	54	102	32	133	138	3/4 x 1/2		83	4	11	9	2000
200	CAE	7/8	198	271	242	64	152	32	170	188	7/8 x 5/8		127	4	14	15	3550
250	CAF	1 1/8	249	330	273	64	152	51	210	241	Ø11/8	1/4 x 1/4	127	4	14	22	5800
300	CAF	1 1/8	300	375	311	76	152	51	238	291	Ø11/8	1/4 x 1/4	127	4	14	34	8460
350	CAG	1 3/8	339	429	305	76	152	76	248	331	Ø13/8	5/16 x 5/16	127	4	14	42	9460
400	CAH	1 5/8	390	489	336	102	152	69	279	377	Ø15/8	3/8 x 3/8	127	4	14	61	12000
450	DAJ	1 7/8	441	546	368	108	203	108	314	428	Ø17/8	1/2 x 3/8	165	4	21	88	15500
500	DAJ	2 1/8	491	603	403	127	203	108	349	475	Ø17/8	1/2 x 3/8	165	4	21	112	18900

### Notes:

"Q" is the disc cordal dimension at face of valve for disc clearance into pipe fittings or flange.

"H" dimension is the stem connection.

"G" dimension is across the stem flats

Kv = 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) @ 20°C.

Cv = 1.155Kv

Mass may vary depending on materials used.

Dimensions are nominal to ±1mm.

PED approved valve range is limited to 25 to 300mm

# Butterfly Valves - Figure 990

Sizes 25 - 500mm

## Typical Specifying Sequence

<b>Example:</b>	<b>100</b>	<b>F990</b>	<b>805</b>	<b>AE</b>
	Valve Size	Figure No.	Trim Code	End Connections

## Valve Trims

Figure No.	Trim Code		Body	Disc	Shaft	Seat	Bush	Packing
	Numeric	Alpha						
<b>F990</b>	805	CEE2	Cast Iron	316 S/S	316 S/S	EPDM	Acetal	Buna N
<b>F990</b>	723	CEE3	Cast Iron	316 S/S	316 S/S	Buna N	Acetal	Buna N
<b>F990</b>	620	CEE4	Cast Iron	316 S/S	316 S/S	Teflon/EPDM	Acetal	Buna N
<b>F990</b>	727	CEE5	Cast Iron	316 S/S	316 S/S	Teflon/Buna N	Acetal	Buna N
<b>F990</b>	507	CEEU	Cast Iron	316 S/S	316 S/S	Urethane	Acetal	Buna N
<b>F990</b>	508	CUEU	Cast Iron	Urethane/Steel	316 S/S	Urethane	Acetal	Buna N
<b>F990</b>	509	CWEU	Cast Iron	Ceramic ctd. 316 S/S	316 S/S	Urethane	Acetal	Buna N
<b>F990</b>	398	C2E2	Cast Iron	EPDM/Steel	329 S/S	EPDM	Acetal	Buna N
<b>F990</b>	622	C4E4	Cast Iron	Teflon/Steel	329 S/S	Teflon/EPDM	Acetal	Buna N
<b>F990</b>	624	C4E4	Cast Iron	Teflon/Steel	316 S/S	Teflon/EPDM	Acetal	Buna N
<b>F990</b>	535	C4E5	Cast Iron	Teflon/Steel	329 S/S	Teflon/Buna N	Acetal	Buna N
<b>F990<sup>#</sup></b>	369	GEE3	Gunmetal	316 S/S	316 S/S	Buna N	Acetal	Buna N

### End Connections

- AE = AS 2129 table E
- AN = ANSI B16.5 Class 150
- Others available on request.

**Note:** # is not a PED approved trim option.

## Available Actuators & Accessories

Figure No.	Description
<b>F79U</b>	Aluminium Pneumatic actuators, double acting or spring return.
<b>F79B</b>	Ductile Iron Pneumatic actuators, double acting or spring return.
<b>F79S</b>	Stainless Steel Pneumatic actuators, double acting or spring return.
<b>F777</b>	Electric actuators.
<b>F77Q</b>	Heavy Duty Electric actuators.
<b>F791</b>	Solenoid valves.
<b>F792</b>	Limit switches.
<b>F793</b>	Positioners.
<b>F401</b>	Handle Kits
<b>F427</b>	Gear operators.