



KEYSTONE FIGURE 627PQ DOUBLE FLANGED BUTTERFLY VALVES

The F627PQ is a double flanged double eccentric resilient seated butterfly valve



FEATURES

- Eccentric action reduces torque and seat contact during operation extending valve life
- Suitable for on/off and modulating service.
- Face to face is in accordance with ISO 5752, AS 4795 and EN558-1 Series 13 double flange butterfly valves.
- Epoxy back seat ensures no corrosion behind the seating area.
- Dovetail seat locking construction eliminates the need for seat retaining mechanisms that can loosen and corrode.
- Subject to size and damage, the seat can be repaired in the field and in certain cases, repaired from outside the valve without disassembly from the main line.
- All iron parts are fusion bonded epoxy coated for corrosion resistance and long life.
- Lifting lugs and foot mounting points are integral to the body for easy transportation.
- Fully rated bi-directional design.
- Top plates are in compliance to ISO 5211, for mounting actuators.
- Disc connection to shaft is by blind bolting eliminating potential leak paths.
- Body and disc construction is ductile iron for higher strength and lighter weight.
- All valves have raised face flanges.
- Optional 316 stainless steel disc edge coating using HVOF process.
- All flange holes are drilled through.

GENERAL APPLICATION

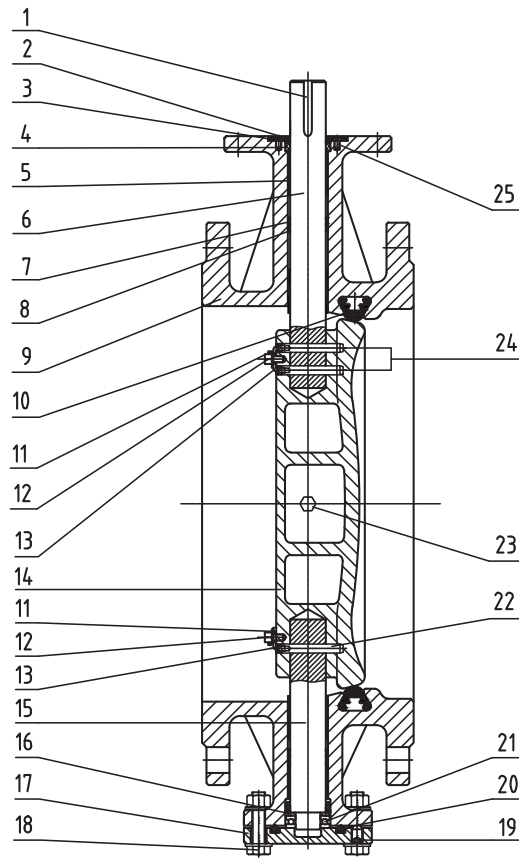
For the isolation or control of drinking water in below or above ground applications.

TECHNICAL DATA

Size range:	DN 350 - 1400
Pressure rating:	16 bar
Temperature range:	0°C to 70°C
End connection:	PN16, AS4087 CL16

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DN 350 - 1400

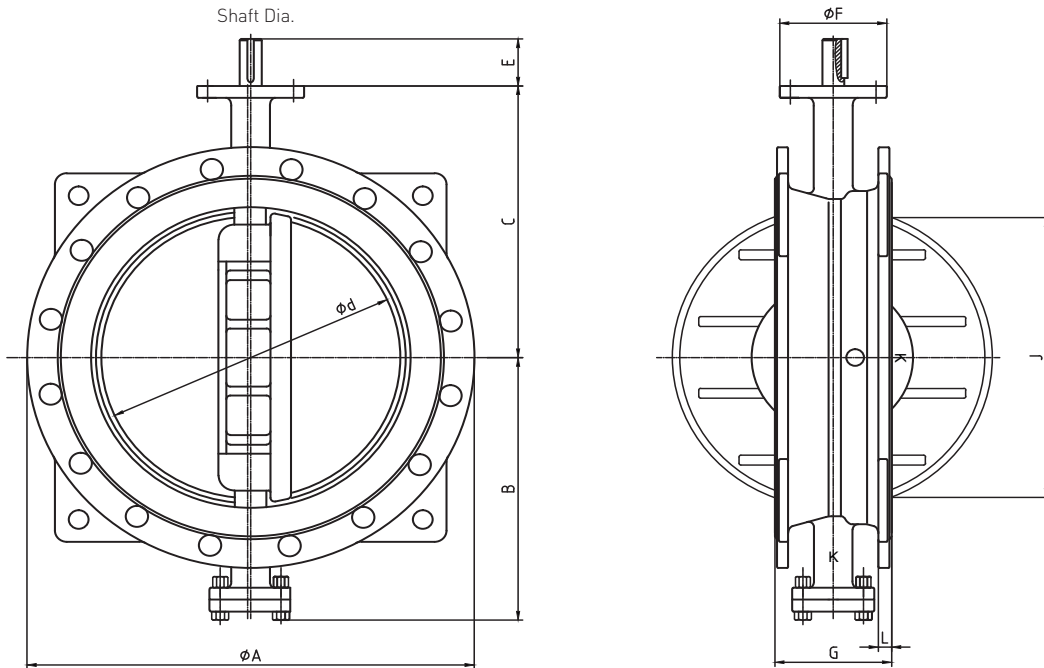


PARTS LIST

No.	Part name	Material	Standard	Grade
1	Shaft key	Carbon steel	ASTM A29/29M	AISI 1045
2	Retaining plate	Zinc coated steel	ASTM A29/29M	AISI A570 GR.A
3	Back up rings	PTFE	N/A	Commercial
4	Replaceable O-rings	NBR	EN681-1	NBR
5	Shaft bearings	PTFE & Zinc coated steel	ISO3547-4	PTFE+1020
6	Upper stub shaft	Stainless steel	ASTM A276	AISI 420
7	O-rings	NBR/EPDM	EN681-1	NBR/EPDM-70
8	Back up rings	PTFE	N/A	Commercial
9	Valve body	Ductile iron/FBE coated	EN1563	EN-JS 1040
10	Seat ring (seal)	EPDM (optional NBR)	EN681-1	EPDM-70
11	Locking washer	Stainless steel	ASTM A276	AISI 304
12	Fasteners	Stainless steel	ASTM A276	AISI 304
13	Formed pin retainer	Stainless steel	ASTM A276	AISI 304
14	Valve disc	Ductile iron/FBE coated	EN1563	EN-JS 1040
15	Lower stub shaft	Stainless steel	ASTM A276	AISI 420
16	Spacer	Stainless steel	ASTM A276	AISI 304
17	Bearing cover plate	Ductile iron/FBE coated	EN1563	EN-JS 1040
18	Cover fasteners	Stainless steel	ASTM A276	AISI 304
19	Bearing tension set screws	Stainless steel	ASTM A276	AISI 304
20	Bearing cover plate O-ring	NBR/EPDM	EN681-1	NBR/EPDM-70
21	Thrust bearing	Ball bearing	N/A	Commercial
22	Shaft disc pins	Carbon steel	ASTM A29/29M	AISI 1045
23	Epoxy seal plug (in body)	Brass	ASTM B111/111M	C28000
24	Shaft disc pins	Stainless steel	ASTM A276	AISI 420
25	Top plate set screws	Stainless steel	ASTM A276	AISI 304

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BARE SHAFT DIMENSIONS (Double ranged DN 350 - 1400)



DIMENSIONS (mm)

Valve size										ISO 5211 Top flange data					
DN	A	B	C	d	E	F	G	J	L	Fig No.	Shaft	Key (W x H)	PCD dia	No. of holes	Hole dia.
350	520	311	330	332	50	150	190	299	26.5	F12	Ø35	10 x 8	125	4	14
400	580	353	365	382	75	150	216	342	28.0	F12	Ø35	10 x 8	125	4	14
450	640	377	400	434	75	150	222	400	30.0	F12	Ø45	14 x 9	125	4	14
500	715	421	445	484	75	210	229	453	31.5	F16	Ø50	14 x 9	165	4	22
600	840	530	485	583	75	210	267	548	36.0	F16	Ø50	14 x 9	165	4	22
700	910	608	564	677	105	300	292	638	39.5	F25	Ø75	20 x 12	254	8	18
800	1025	670	624	779	105	300	318	739	43.0	F25	Ø75	20 x 12	254	8	18
900	1125	685	670	879	105	300	330	848	46.5	F25	Ø75	20 x 12	254	8	18
1000	1255	722	755	979	118	350	410	937	50.0	F30	Ø100	28 x 16	298	8	22
1200	1485	840	880	1179	122	350	470	1112	57.0	F30	Ø120	32 x 18	298	8	22
1400	1685	1000	950	1370	145	415	530	1313	60.0	F35	Ø150	36 x 20	356	8	34

NOTES

1. Dimension 'J' is the minimum allowable pipe or flange inside diameter at the center body face to protect the disc sealing edge against damage when opening the valve.
2. The standard connection flange is ISO 7005.2 PN 16, for other drillings please contact factory.

ANTICIPATED SEATING AND UNSEATING TORQUE VALUES - Nm

Valve size DN	Standard-FBE disc edge		316 SS Disc edge	
	10 bar	16 bar	10 bar	16 bar
350	520	630	650	790
400	700	830	880	1040
450	860	940	1080	1180
500	1050	1350	1320	1690
600	1600	1920	2000	2400
700	2100	2370	2630	2970
800	2850	3750	3560	4690
900	4000	4800	5000	6000
1000	6050	8000	7600	10000
1200	8600	12300	10800	15400
1400	12800	17300	16000	21600

NOTES

1. The charted seating and unseating torques are the sum of all friction and for opening and closing of the disc against the indicated pressure differential for normal service.
2. Medium is clean liquid service at temperatures between minus 0°C to 70°C with no internal deposition or chemical attack. Operated once per day.
3. The relationships between values are linear, therefore you can interpolate between nominated values.
4. The effect of dynamic torque is not considered in tabulation.
5. In sizing operators it is not necessary to include safety factors.

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FLOWRATE CO-EFFICIENTS - K_v VALUES

Valve size DN	K _v Values vs. travel position								
	10	20	30	40	50	60	70	80	90
350	32	300	620	1150	1700	2200	3650	6150	7300
400	50	350	760	1400	2140	2820	4600	7600	8400
450	54	412	950	1630	2520	3400	5600	8960	11000
500	50	470	1075	1920	2570	4580	7920	11810	14240
600	79	748	1716	3060	4096	7302	12610	18800	22680
700	96	866	2166	3980	5176	9270	16050	23430	28850
800	192	1389	3035	5575	7765	12700	22150	33470	46280
900	288	1760	3900	6970	9580	16820	28220	43450	52900
1000	360	2187	5055	8500	11440	21050	36160	52100	63400
1200	504	2731	6745	12260	15970	29200	48900	73800	90800
1400	660	3800	8700	15000	22500	38100	62500	96000	117300

Note: K_v = The volume of water in m³/hr that will pass through a valve with a pressure drop of 1 bar (100 kPa) at 20°C.

SIMPLIFIED SIZING FORMULAS

$$K_v = Q \sqrt{\frac{S.G.}{\Delta P}}$$

Where
 Q = Flow through valve (m³/hr)
 S.G. = Specific gravity (water = 1)
 ΔP = Pressure drop across valve (bar)

$$K_v = \frac{Q}{28.5} \sqrt{\frac{S.G.}{P_2 \Delta P}}$$

Where
 Q = Flow through valve (m³/hr)
 S.G. = Specific gravity (water = 1)
 ΔP = Pressure drop across valve (bar)
 [Less than ½ inlet pressure (bar)]
 P₂ = Outlet pressure (bar)

$$K_v = \frac{10.194 \Delta P}{S.G.}$$

Where
 HL = Head Loss (m)
 S.G. = Specific gravity (water = 1)
 ΔP = Pressure drop across valve (bar)

SELECTION GUIDE

Example:	600	F627PQ	400	G	16
Valve size					
DN 350 - 1400 (ie 600 = DN 600)					
Figure no.					
Trim code					
List as below					
Operation type					
B Bare shaft					
G Worm gear actuator					
E Electric actuator					
A Pneumatic actuator					
End connection: (raised face)					
16 PN16					
AE AS 4087 Table E					
AD AS 4087 Table D					

STANDARD TRIMS

Body	Disc	Disc edge	Shaft	Seat
Ductile iron	Ductile iron	Ductile iron/Epoxy	420 S/S	EPDM
Ductile iron	Ductile iron	Ductile iron/316 S/S	420 S/S	EPDM
Ductile iron	Ductile iron	Ductile iron/316 S/S	316 S/S	EPDM

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