

700G/705G/704G

Standard specification for 700G/705G/704G

Model	700G (Wafer)			704G (Full lugged)	
Valve nominal size	40 to 300 mm	350 to 500 mm	600 mm	50 to 300 mm	350 to 600 mm
Applicable flange standard	JIS 5K-10K, ANSI 125Lb-150Lb DIN PN10,PN16 BS 4504 NP10,NP16, BS 10 "E"	JIS 5K-10K	JIS 5K, ANSI 125Lb-150Lb DIN PN10, BS 4504 NP10, (exclude JIS 10K)	JIS 5K-10K, ANSI 125Lb-150Lb BS 4504 NP10-NP16, DIN PN10, PN16 BS 10 "E" (excluding 400, 500 and 600 mm)	
Face-to-face dimensions	API 609 / ISO 5752 (20 series)				
Max. working pressure	0.98 MPa (10 kgf/cm ² G) *4				
Body shell test (Hydraulic)	1.47 MPa (15 kgf/cm ² G)				
Seat leak test (Pneumatic)	1.08 MPa (11 kgf/cm ² G)				
Working temperature range *1,*2	NBR: -10 to 80°C, EPDM: -20 to 120°C				
Standard materials	Body *3	Ductile iron, FCD 450/A395	Cast iron, JIS FC 250/A126. CLASS B	Ductile iron, FCD 450/A395	
	Disc	316 Stainless steel, SCS 14/CF8M or SUS F 316/A182	304 Stainless steel, SCS 13/CF8 316 Stainless steel, SCS 14/CF8M	316 Stainless steel, SCS 14/CF8M or SUS F 316/A182	304 Stainless steel, SCS 13/CF8 316 Stainless steel, SCS 14/CF8M
		PPS (50 to 200 mm) Aluminum Bronze ALBC ₂ /B148 (50 to 600 mm)	Aluminum Bronze ALBC ₂ /B148	PPS (50 to 200 mm) Aluminum Bronze ALBC ₂ /B148 (50 to 600 mm)	Aluminum Bronze ALBC ₂ /B148
		Carbon steel, SF 490A/A668 with Dacro coating (65 to 300 mm)	Ductile iron, FCD 450/A395 with hard chrome plating	Carbon steel, SF 490A/A668 (65 to 300 mm)	Ductile iron, FCD 450/A395 with hard chrome plating
		Carbon steel, SF 490A/A668 with Nylon coating *5		Carbon steel, SF490A/A668 with Nylon coating *5	
	Stem	SUS 420 J2 / SUS 392 J1			
Seat ring	NBR, EPDM *6				
Coating	Epoxy primer finish (Munsell N7)				

*1 Working temperature range varies depending on combination of disc materials and seating, so please consult us whenever using valves.

*2 Please consult us when using NBR and EPDM seating continuously above 60°C and 100°C respectively.

*3 Cast steel body or stainless steel body is also available.

*4 16 bar finish is also available subject to working condition.

*5 Nylon coated disc is available from 40 to 300 mm. Max. working temperature of Nylon coated Disc is 60°C. Dacro coating is a surface treatment which is superior to electric zinc coating. DACROTIZED® is a registered trademark of Diamond shamrock corporation and is registered throughout the world.

*6 Heat resistant EPDM, FPM, SEP, CR, White-NBR seat are also available.

700G/705G/704G

Standard specification for 700G/705G/704G

Model	705G (Semi lugged)		
Valve nominal size	50 to 300 mm	350 to 600 mm	
Applicable flange standard	JIS 5K-10K, ANSI 125Lb-150Lb, DIN PN10, PN16, BS 4504 NP10, NP16 BS 10 "E"	JIS 5K-10K, ANSI 125Lb-150Lb, DIN PN10, BS 4504 NP10, NP16 BS 10 "E"	
Face-to-face dimensions	API 609 / ISO 5752 (20 series)		
Max. working pressure	0.98 MPa (10 kgf/cm ² G) *4		
Body shell test (Hydraulic)	1.47 MPa (15 kgf/cm ² G)		
Seat leak test (Pneumatic)	1.08 MPa (11 kgf/cm ² G)		
Working temperature range *1, *2	NBR: -10 to 80°C, EPDM: -20 to 120°C		
Standard materials	Body *3	Ductile iron, FCD 450/A395	Cast iron, FC 250/A126. CLASS B Ductile iron, FCD 450/A395
	Disc	316 Stainless steel, SCS 14/CF8M or SUS F 316	304 Stainless steel, SCS 13/CF8 316 Stainless steel, SCS 14/CF8M
		PPS (50 to 200 mm) Aluminum Bronze ALBC ₂ /B148 (50 to 600 mm)	Aluminum Bronze ALBC ₂ /B148
		Carbon steel, SF 490A/A105 with Dacro coating (65 to 300 mm)	Ductile iron, FCD 450/A395 with hard chrome plating
		Carbon steel, SF 490A/A105 with Nylon coating *5	
	Stem	SUS 420 J2 / SUS 392 J1	
Seat ring	NBR, EPDM *6		
Coating	Epoxy primer finish (Munsell N7)		

*1 Working temperature range varies depending on combination of disc materials and seating, so please consult us whenever using valves.

*2 Please consult us when using NBR and EPDM seating continuously above 60°C and 100°C respectively.

*3 Cast steel body or stainless steel body is also available.

*4 16 bar finish is also available subject to working condition.

*5 Nylon coated disc is available from 40 to 300 mm. Max. working temperature of Nylon coated Disc is 60°C. Dacro coating is a surface treatment which is superior to electric zinc coating. DACROTIZED® is a registered trademark of Diamond shamrock corporation and is registered throughout the world.

*6 Heat resistant EPDM, FPM, SEP, CR, White-NBR seat are also available.

700G/705G/704G Actuator selection chart

Valve nominal size		3I		3Q · 3R		3Y · 3A			
mm	inch	Standard	Heavy duty	Standard	Heavy duty	Standard	Heavy duty		
40	1 1/2	Type 1		Type 1		Z-06			
50	2			Type 2					
65	2 1/2								
80	3								
100	4	Type 2		Type 3		Z-08			
125	5			Z-11					
150	6	Type 3		Type 4		Z-11			
200	8			Type 4					
250	10	Type 4				Z-13			
300	12					TGA-100		TGA-125	
350	14					TGA-125		TGA-140	
400	16					TGA-140			
450	18					TGA-160			
500	20					TGA-180		TGA-200	
600	24								

Valve nominal size		3X · 3W · 3T · 3S		4I		4E	
mm	inch	Standard	Heavy duty	Standard	Heavy duty	Standard	Heavy duty
40	1 1/2	Z-06S		Type 1		SRE-010	
50	2						
65	2 1/2	Z-08S					
80	3	Z-11S					
100	4	Z-11S		Type 2		SRE-020	
125	5						
150	6	Z-12S		Z-13S		SRE-060	
200	8	Z-13S		AW-13S			
250	10	AW-13S		Type 2.5		SRE-060	
300	12	AW-17S		Type 3 (ON-OFF)			
350	14	AW-20S				LTKD-01 -0.2KW	
400	16					LTKD-01 -0.4KW	
450	18						
500	20	AW-28S				LTKD-01 -0.4KW	
600	24					LTKD-05 -0.75KW	

* The selection chart for 704G is the same as for 700G · 705G.

* The control specification of 4I means one of following specifications.

① New MICOM ELMY ② With servo unit ③ With speed controller ④ Throttling use with potentiometer

* The selection of pneumatic cylinder is based on 0.39 MPa air supply.

700G/705G/704G Basic torque chart

(Unit: N·m)

Type		Rubber seat
Size		700G · 705G · 704G
mm	inch	
40	1 ½	5.9
50	2	8.8
65	2 ½	13.7
80	3	17.6
100	4	36.3
125	5	53.9
150	6	76.4
200	8	137.2
250	10	176.4
300	12	284.2
350	14	362.6 (274.4)
400	16	597.8 (401.8)
450	18	803.6 (578.2)

(Unit: N·m)

Type		Rubber seat
Size		700G · 705G · 704G
mm	inch	
500	20	970.2 (774.2)
600	24	1862.0 (1342.6)

* Note

- The data shows seating torque of butterfly valves. It can be used for basic torque for actuator sizing.
- () figures represent dynamic torque for concentric design butterfly valves (700 series & 800 series) based on the followings
 Valve opening degree : 30 degree
 ΔP : 0.2 MPa

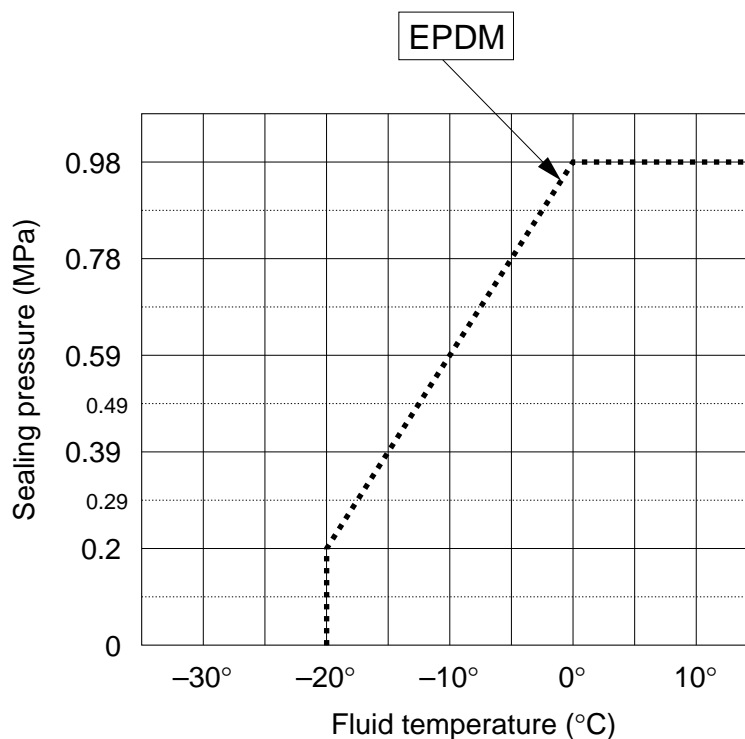
* Special note for "Basic torque"

The seating torques, especially for concentric rubber seated butterfly valves, are subject to working conditions, such as type of fluid, temperature, duration at closed position, frequency of operation, material of rubber, combinations of materials etc. Therefore, various considerations should be given when using butterfly valves.

700G Low temperature working range

Size: 40 to 200 mm

See JIS B 2032 for positive temperature



(Notes)

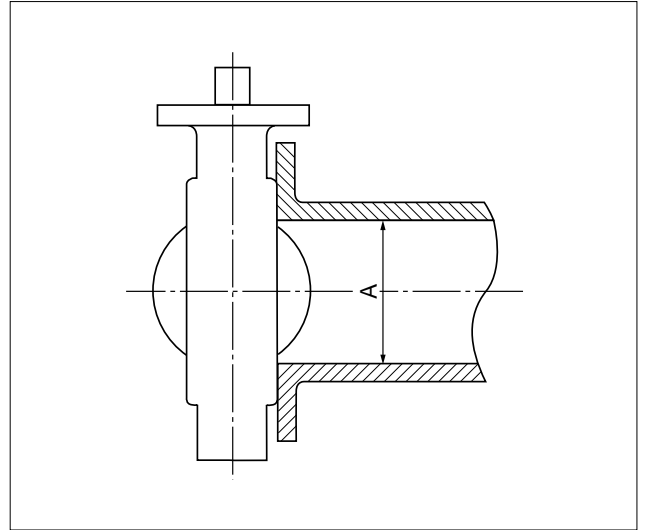
Below 0°C : Body : SCPH₂ (WCB) or SCS 13 (CF8) Ductile iron (FCD450/A395) is also workable up to -10°C.
 Disc : SCS 13 (CF8)
 Stem : SUS 420 J2 (As standard)

It is out of JIS B 2032 (Rubber seat butterfly valves) in case of 0°C or below.

Minimum internal piping diameter for 700G/705G/704G

(Unit: mm)

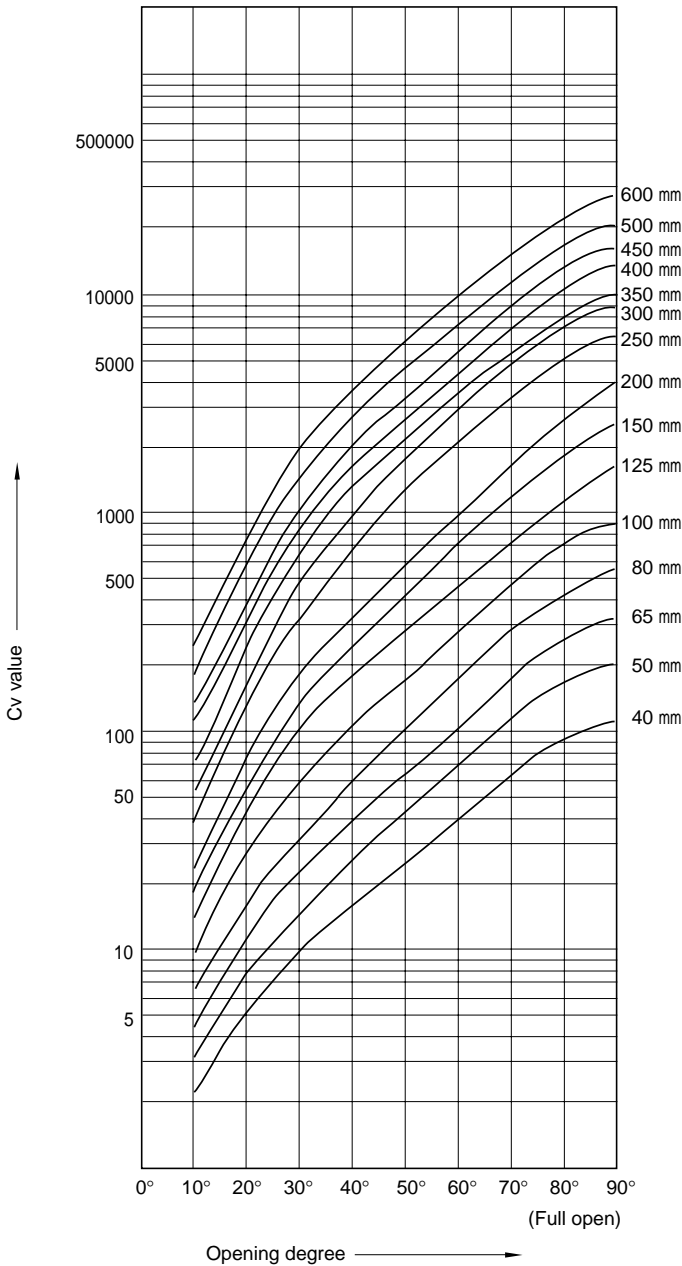
Size		Minimum diameter A
mm	inch	
40	1½	25
50	2	34
65	2½	51
80	3	70
100	4	91
125	5	118
150	6	144
200	8	194
250	10	246
300	12	294
350	14	330
400	16	381
450	18	427
500	20	477
600	24	569



700G/705G/704G

700G/705G/704G Cv value

Cv value is defined as follows:
 The flow rate expressed as US gal./min. at which a fresh water of 60°F flows when the pressure difference across the valve is maintained at 1 psi.



Cv value · Pressure loss coefficient

700G/705G/704G Cv value chart

Size		Opening degree							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
40	1½	5	9	16	25	39	61	95	121
50	2	8	15	25	40	64	103	160	200
65	2½	12	25	41	64	102	162	260	320
80	3	15	33	57	95	163	271	450	580
100	4	27	58	100	162	269	444	749	880
125	5	45	109	189	295	453	719	1144	1590
150	6	60	148	262	423	685	1147	1897	2800
200	8	67	188	347	576	969	1698	2902	4300
250	10	130	351	675	1225	2125	3375	5091	6200
300	12	194	487	972	1764	3011	4966	7412	8900
350	14	232	662	1350	2030	3294	5167	7832	9620
400	16	468	964	1648	2724	4529	6815	10553	12700
450	18	583	1202	2068	3448	5692	8384	13116	15500
500	20	758	1555	2656	4379	7214	10845	17100	19800
600	24	1037	2141	3681	6129	10106	14911	22827	27300

700G/705G/704G Pressure loss coefficient

Size		Opening degree							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
40	1½	246	76.1	24.1	9.86	4.05	1.66	0.683	0.421
50	2	258	73.3	26.4	10.3	4.03	1.55	0.644	0.412
65	2½	280	64.5	24.0	9.84	3.88	1.54	0.596	0.394
80	3	354	73.0	24.5	8.81	2.99	1.08	0.393	0.236
100	4	321	69.6	23.4	8.92	3.24	1.19	0.417	0.302
125	5	271	46.2	15.4	6.31	2.68	1.06	0.420	0.217
150	6	309	50.7	16.2	6.21	2.37	0.845	0.309	0.142
200	8	761	96.6	28.4	10.3	3.64	1.18	0.405	0.185
250	10	485	66.5	18.0	5.46	1.81	0.719	0.316	0.213
300	12	447	71.0	17.8	5.41	1.86	0.683	0.306	0.213
350	14	491	60.3	14.5	6.41	2.43	0.989	0.431	0.285
400	16	206	48.5	16.6	6.07	2.20	0.970	0.405	0.279
450	18	212	49.9	16.9	6.07	2.23	1.03	0.419	0.300
500	20	194	46.1	15.8	5.81	2.14	0.947	0.381	0.284
600	24	217	50.8	17.2	6.20	2.28	1.05	0.447	0.313

