

# Type 400 Brass Ball Valve

Screwed body cap, PTFE seats, Blowout-proof stem, Threaded ends to BS21 or NPT.

Fig. T  
Fig. AKT



Fig. TT



T & TT... Threaded ends to BS21  
AKT... Threaded ends to ASME B1.20.1

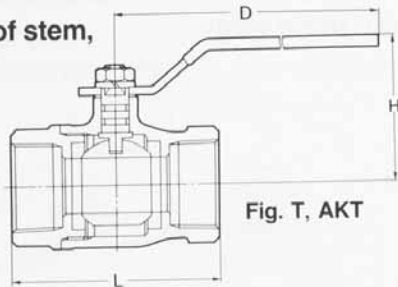


Fig. T, AKT

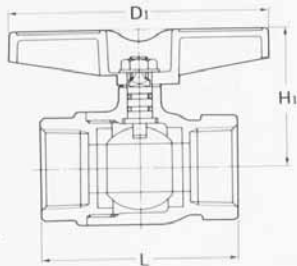


Fig. TT

Size 2 1/2" and larger (T, AKT)

400 psi. W.O.G. non-shock  
100 psi. W.O.G. 150°C

## Materials

Parts	Material
Body	Brass / bronze*
Body cap	Brass / bronze*
Stem	K-Metal*
Ball	Brass (chrome plated)
Ball seat	PTFE
O-ring	FPM
Handle (T / AKT) 1/4" ~ 2"	Stainless steel (vinyl grip) Ductile iron
2 1/2" ~ 4"	
Handle (TT) 1/4" ~ 2"	Die-cast zinc

\* K-Metal is a special brass developed for anti-dezincification.  
\* Bronze for 4".

Test pressure: Shell 600 psi. (Hydrostatic.)  
Seat 80 psi. (Air)

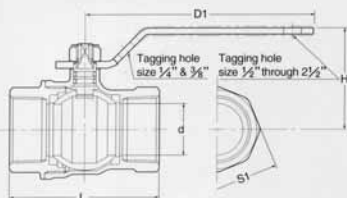
## Dimensions

Valve size	inch	mm	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Bore size			10	10	10	15	20	25	32	40	50	65	80
L	End to end		50	50	65	68	79	86	96	109	127	153	179
H	Height (T/AKT)		45	45	45	50	55	60	65	75	91	105	124
H1	Height (TT)		41	41	44	48	55	61	66	80	—	—	—
D	Length of handle (T/AKT)		80	80	100	100	130	130	130	150	200	300	400
D1	Length of handle (TT)		65	65	80	80	90	105	105	120	—	—	—

## Dimensions and Cv Value

### Threaded Ends Design

Fig. SZA : BS21 thread  
AKSZA : NPT thread



Nominal size	d		H		D1		L		S1		Cv Value
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
1/4	10	0.39	37	1.46	70	2.76	42	1.65	20	0.79	4.2
3/8	10	0.39	37	1.46	70	2.76	42	1.65	22	0.87	7.6
1/2	15	0.59	40	1.57	80	3.15	53	2.08	26	1.02	20.0
3/4	20	0.79	43	1.69	80	3.15	60	2.36	32	1.26	29.0
1	25	0.98	49	1.97	110	4.33	72	2.83	39	1.54	40.0
1 1/4	32	1.26	55	2.16	110	4.33	84	3.31	48	1.89	85.0
1 1/2	40	1.57	64	2.52	150	5.90	92	3.62	55	2.17	145.0
2	50	1.97	72	2.83	150	5.90	110	4.33	68	2.68	210.0
2 1/2	65	2.56	101	3.98	200	7.87	138	5.43	84	3.31	405.0
3	76	2.99	112	4.42	300	11.81	167	6.57	99	3.90	615.0
4	100	3.94	131	5.15	300	11.81	193	7.60	125	4.92	1150.0

## Approvals

● AKSZA (1/4" through 2")  
CSA : 1/2 psig at the appliance  
CSA : 5 psig from the appliance to the meter  
CSA : 125 psig from the meter to the street

● AKSZA / CSA (1/4" through 2")  
UL / FM : for fire protection

Note : CSA - Canadian Standards Association  
Consolidation of the American Gas Association (AGA) and the Canadian Gas Association (CGA)  
UL - Underwriters Laboratories  
FM - Factory Mutual

## Application

Water, Oil, Gas, and Steam

## Maximum Working Pressure

Unit	Working Pressure Non-Shock			Test Pressure		
	Saturated Steam	Cold Water, Oil, Gas	Shell (Hydrostatic)	Seat (Air)		
psi	150	600	400	900	600	80
MPa	0.98	4.12	2.75	6.18	4.12	0.59
Bar	9.8	41.2	27.5	61.8	41.2	5.9
kgf/cm <sup>2</sup>	10	42	28	63	42	6

Note : For more details, please refer to P-T rating chart.

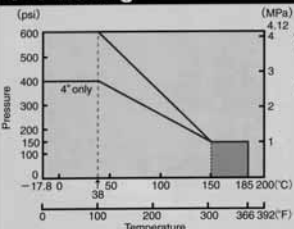
## Effective Length of Thread

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
Super Z	8.5 (0.335)	9 (0.354)	12 (0.472)	13 (0.512)	15.5 (0.610)	16.5 (0.650)	16.5 (0.650)
Z/AKZA	7.5 (0.295)	8 (0.315)	10 (0.394)	11 (0.433)	12 (0.472)	13 (0.512)	14 (0.552)

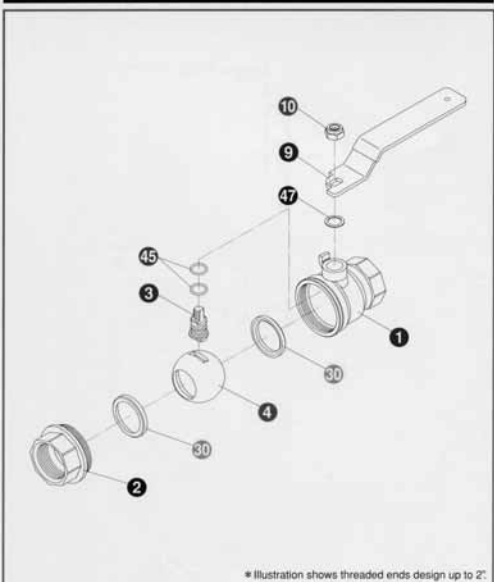
Size	2"	2 1/2"	3"	4"
Super Z	19.5 (0.768)	22.0 (0.866)	25.0 (0.984)	30.0 (1.181)
Z/AKZA	16.5 (0.650)	—	—	—

## P-T Rating



★ Advisory Note :  
Please be advised that applications in the shaded zone will reduce the service life of the valve.  
The maximum working pressure and temperature of solder jointed valves are limited by the properties of solder and tube materials.  
Information on typical solder materials are provided on the back cover of this catalog.

## Construction and Materials



\* Illustration shows threaded ends design up to 2".

No.	Parts	Q'TY	Materials (ASTM)
1	Body	1	Forged Brass (B283 No. C37700)/Cast Bronze (B584 No. C84400) *
2	Body Cap	1	Forged Brass (B283 No. C37700)/Cast Bronze (B584 No. C84400) *
3	Stem	1	Brass Rod (B16)**
4	Ball	1	Forged Brass (B283 No. C37700)* / Cast Brass **
5	Handle	1	Carbon Steel ** / Ductile Iron **
6	Handle Nut	1	Carbon Steel
7	Ball Seat	2	PTFE
8	O-ring	2	FPM**
9	Thrust Washer	1	PBT** / PTFE**

Note:  
★ 1 2 1/2" through 4"  
★ 2 Ni plating  
★ 3 Cr plating  
★ 4 Plastic covering  
★ 5 3" and 4"  
★ 6 Fluorocarbon Elastomer  
★ 7 Polybutylene Terephthalate  
★ 8 2 1/2" and up

# Type 600 Brass Ball Valve

One-piece body, Reinforced PTFE seats,  
Blowout-proof stem, Threaded ends to BS21 or NPT.

600 psi. W.O.G. non-shock  
150 psi. W.O.G. 150°C

Fig. TK  
Fig. AKTK

Fig. TKT



TK & TKT... Threaded ends to BS21  
AKTK... Threaded ends to ASME B1.20.1

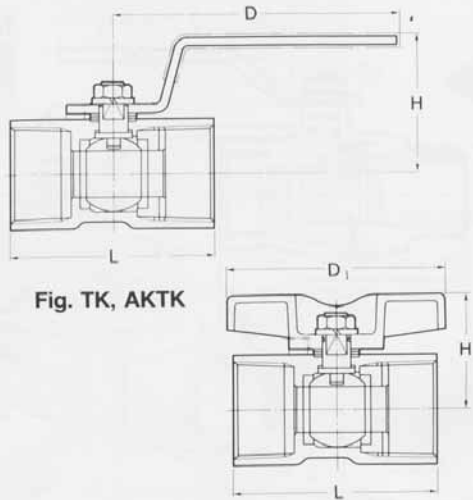


Fig. TK, AKTK

Fig. TKT

## Materials

Parts	Material
Body	Brass
Stem	K-Metal*
Ball	Brass (chrome plated)
Ball seat	Reinforced PTFE
Gland packing	Reinforced PTFE
Handle (TK/AKTK) (TKT)	Stainless steel (vinyl grip) Die-cast zinc

\* K-Metal is a special brass developed for anti-dezincification.

Test pressure: Shell 900 psi. (Hydrostatic.)  
Seat 80 psi. (Air)

## Dimensions

Valve size	inch	mm	1/8* 6	1/4 8	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
Bore size			4.5	5	7	9.2	12.5	16	20	24.5	32
L End to end			32	39	44	56.5	59	71	78	83	100
H Height (TK/AKTK)			31	31	36	41	44	48	54	65	72
D Length of handle (TK/AKTK)			60	60	70	85	85	100	100	125	125
H <sub>1</sub> Height (TKT)			23	23	27	31	34	42	48	53	60
D <sub>1</sub> Length of handle (TKT)			35	35	40	60	60	76	76	100	100

\* 1/8" = TK, TKT only

# Type 600 Brass Ball Valve, Full Port

Screwed body cap, Blowout-proof stem, PTFE seats,  
Threaded ends to NPT.

4.14 MPa (600 psi) W.O.G. non-shock  
1.03 MPa (150 psi) W.S.P. saturated

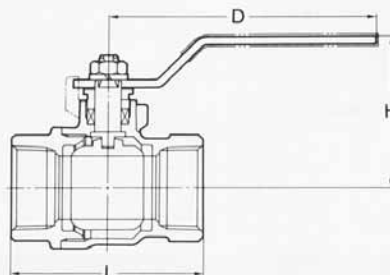
Fig. AKTAF



AKTAF... Threaded ends to ASME B1.20.1

Specifications : MSS-SP-110

Approvals : American Gas Association, USA  
 Canadian Gas Association, CANADA  
 Underwriters Laboratories, USA  
 Factory Mutual Engineering, USA



## Materials

Parts	Material
Body	Brass / bronze*
Cap	Brass / bronze*
Stem	K-Metal*
Ball	Brass / bronze (chrome plated)
Ball seat	PTFE
Gland packing	PTFE
Handle	Carbon steel

\* K-Metal is a special brass developed for anti-dezincification.  
\* Bronze for 2 1/2" and larger.

Test pressure: Shell 6.20 MPa (900 psi)  
(Hydrostatic)  
Seat 0.55 MPa (80 psi) (Air)

## Dimensions

Valve size	inch	mm	1/4 8	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80	4 100
L Threaded end to end			41	42	53	60	72	82	92	105	135	156	192
H Height			39	39	42	51	58	64	73	80	108	122	140
D Length of Handle			80	80	80	100	130	130	150	150	200	300	300

# Type 400 3-Way Brass Ball Valve

3-Way body, Screwed body cap, L-port ball, PTFE seats, Blowout-proof stem, Threaded ends to BS21 or NPT, or solder joint ends.\*

400 psi. W.O.G. non-shock  
100 psi. W.O.G. 150°C

Fig. TN  
Fig. AKTN



Fig. CTN\*



Fig. TN, AKTN

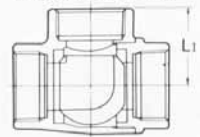
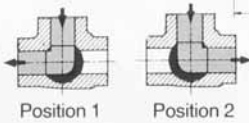
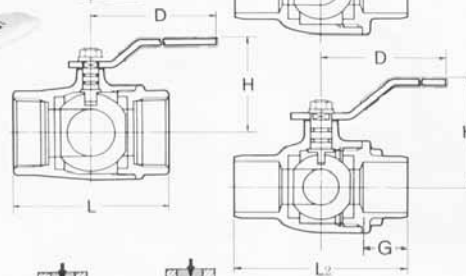
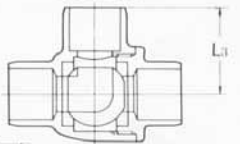


Fig. CTN



Note: When opposite side port pressure is higher than closed port pressure, a little leakage may be detected.

**\* Caution**

Solder joint end valves should not be used in service where the temperature of the line fluid is higher than the softening point of solder.

**Materials**

Parts	Material
Body	Brass / bronze*
Body cap	Brass
Stem	K-Metal*
Ball	Brass (chrome plated)
Ball seat	PTFE
O-ring	FPM
Handle (1/4"-2")	Stainless steel (vinyl grip)
(2 1/2" & 3")	Ductile iron

\* K-Metal is a special brass developed for anti-dezincification.

\* Bronze for 2 1/2" and larger.

Test pressure: Shell 600 psi. (Hydrostatic.)  
Seat 80 psi. (Air)

TN... Threaded ends to BS21  
AKTN... Threaded ends to ASME B1.20.1  
CTN... Solder joint ends to ASME B16.18

**Dimensions**

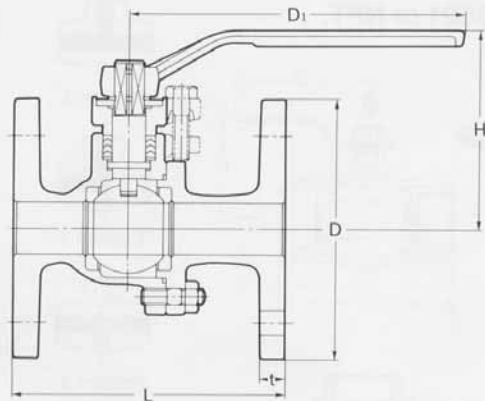
Valve size	inch mm	1/4 8	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80
Bore size		4.5	6.8	10	15	20	25	32	40	50	65
L Threaded end to end		40	46	67	68	79	89	100	115	138	166
L1 Center to end (TN / AKTN)		20	23	33.5	34	39.5	44.5	50	57.5	69	83
L2 Solder end to end		—	—	56	74	88	99	114	136	—	—
L3 Center to end (CTN)		—	—	28	37	44	50.5	59	71.5	—	—
H Height		30	34	45	48	55	60	65	75	91	105
D Length of handle		60	80	100	100	130	130	130	150	200	300
G		—	—	12.7	19.1	23.1	24.6	27.7	34.0	—	—

# 10K Bronze Ball Valve

Bolted body cap, Full bore flow passage, PTFE seats, Flanged ends to JIS 10K.

W.O.G. non-shock ..... 1.37 MPa (14 kgf/cm<sup>2</sup>)  
W.O.G. 150°C ..... 0.68 MPa (7 kgf/cm<sup>2</sup>)

Fig. TB



**Materials**

Parts	Material
Body	Bronze
Body cap	Bronze
Stem	K-Metal*
Ball	Brass (chrome plated) SCS13 stainless steel*
Ball seat	PTFE
Gland packing	PTFE
Handle	Ductile iron

\* K-Metal is a special brass developed for anti-dezincification.

\* SCS13 stainless steel for 4".

Test pressure: Shell 2.06 MPa (21 kgf/cm<sup>2</sup>) Hydrostatic  
Seat 0.59 MPa (6 kgf/cm<sup>2</sup>) Air

**Dimensions**

Valve size	inch mm	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80	4 100
Bore size		15	20	25	32	40	50	65	80	100
L Face to face		110	120	130	140	165	180	190	200	230
H Height		85	88	95	100	115	122	153	162	190
D Flange diam.		95	100	125	135	140	155	175	185	210
t Flange thickness		10	10	12	12	14	14	16	16	18
D1 Length of handle		130	130	160	160	230	230	400	400	460

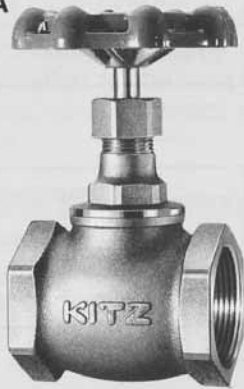
\* Flange dimensions conform to JIS B2240 Std. (Except flange thickness)

## Class 100 Bronze Globe Valve

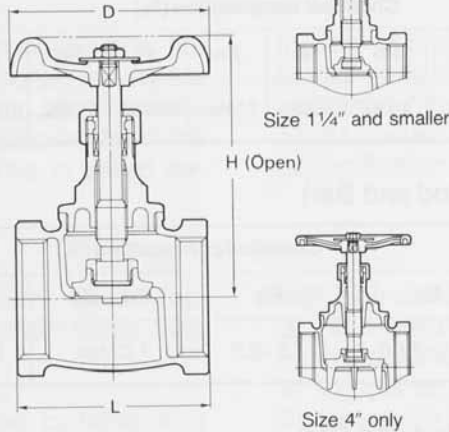
Screwed bonnet, Rising stem, Swivel disc,  
Integral seat, Threaded ends to BS21 or NPT.

150 psi. W.O.G. non-shock  
100 psi. S.P. saturated

Fig. A  
Fig. AKA



A... Threaded ends to BS21  
AKA... Threaded ends to ASME B1.20.1



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass / bronze*
Stem	K-Metal <sup>☆</sup>
Disc	Bronze
Lock nut	Brass rod
Packing nut	Brass
Gland	Brass rod
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc (1/4"~1") Die-cast aluminum (1 1/4"~3") Cast iron (4")

<sup>☆</sup> K-Metal is a special brass developed for anti-dezincification.  
\* Bronze for 4".

Test pressure: Shell 225 psi. (Hydrostatic)  
Seat 150 psi. (Hydrostatic)  
Seat 80 psi. (Air)

### Dimensions

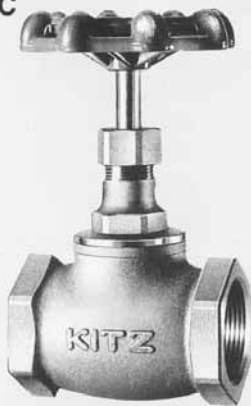
		mm										
Valve size	inch mm	1/4 8	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80	4 100
L	End to end	40	42	48	53	63	73	81	94	115	131	171
H	Height, valve open	66	67	69	80	94	104	127	147	179	200	250
D	Handwheel diam.	50	50	55	60	70	80	90	100	115	135	180

## Class 150 Bronze Globe Valve

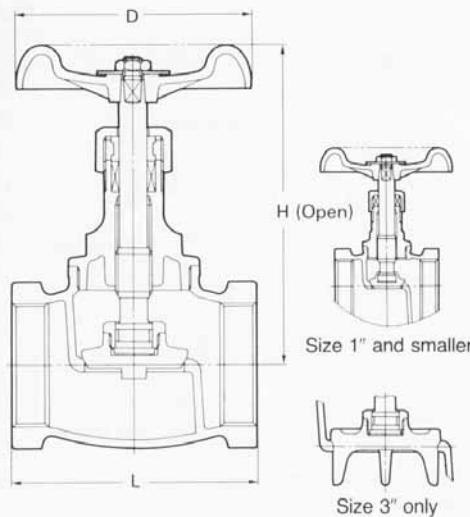
Screwed bonnet, Rising stem, Swivel disc,  
Integral seat, Threaded ends to BS21 or NPT.

300 psi. W.O.G. non-shock  
150 psi. S.P. saturated

Fig. C  
Fig. AKC



C... Threaded ends to BS21  
AKC... Threaded ends to ASME B1.20.1



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass / bronze*
Stem	K-Metal <sup>☆</sup>
Disc	Bronze
Lock nut	Brass
Packing nut	Brass
Gland	Brass rod
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc (1/4"~3/4") Die-cast aluminum (1"~3")

<sup>☆</sup> K-Metal is a special brass developed for anti-dezincification.  
\* Bronze for 3" only.

Test pressure: Shell 450 psi. (Hydrostatic)  
Seat 300 psi. (Hydrostatic)  
Seat 80 psi. (Air)

### Dimensions

		mm										
Valve size	inch mm	1/4 8	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80	
L	End to end	44	44	53	65	77	85	100	119	139	158	
H	Height, valve open	66	68	79	93	104	127	145	174	199	215	
D	Handwheel diam.	50	50	60	70	80	90	100	115	135	155	

## Class 150 Bronze Angle Valve

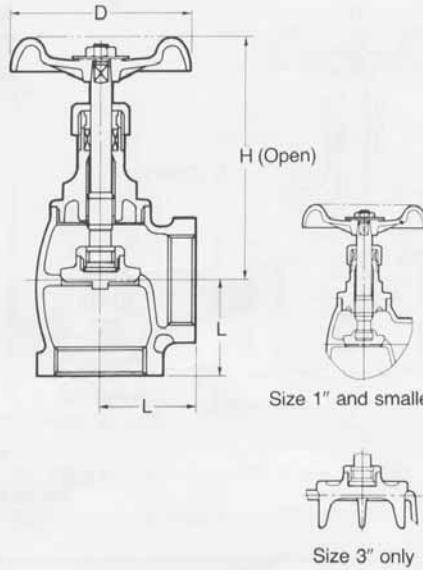
Inside screw, Angle type body, Rising stem, Screwed bonnet, Threaded ends to BS21 or NPT.

300 psi. W.O.G. non-shock  
150 psi. S.P. saturated

Fig. CA  
Fig. AKCA



CA... Threaded ends to BS21  
AKCA... Threaded ends to ASME B1.20.1



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass / bronze*
Stem	K-Metal*
Disc	Bronze
Gland	Brass rod
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc (1/4"~3/4") Die-cast aluminum (1"~3")

\* K-Metal is a special brass developed for anti-dezincification.  
\* Bronze for 3" only.

Test pressure: Shell 450 psi. (Hydrostatic)  
Seat 300 psi. (Hydrostatic)  
Seat 80 psi. (Air)

### Dimensions

Valve size	inch	mm	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
			8	10	15	20	25	32	40	50	65	80
L	End to end		21	24	28	34	40	47	52	61	74	85
H	Height, valve open		66	68	79	93	104	127	145	174	199	215
D	Handwheel diam.		50	50	60	70	80	90	100	115	135	155

## Class 150 Bronze Globe Valve

Screwed bonnet, Rising stem, Swivel disc, Integral seat, Flanged ends drilled or undrilled optionally.

225 psi. W.O.G. non-shock  
150 psi. S.P. saturated

Fig. B  
Fig. BH

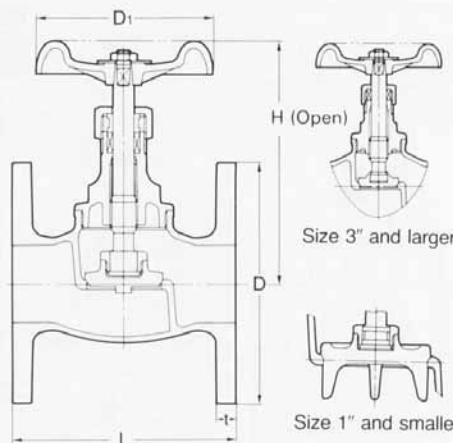


Fig. B is undrilled unless drilling is specified as an option.  
Fig. BH is drilled according to JIS 10K.

### Materials

Parts	Material
Body	Bronze
Bonnet*	Brass / bronze
Stem	K-Metal*
Disc	Bronze
Lock nut	Brass
Packing nut	Brass
Gland	Brass rod
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc (1/2"~3/4") Die-cast aluminum (1"~3") Ductile iron (4")

\* K-Metal is a special brass developed for anti-dezincification.  
\* Bronze for 3" and larger.

Test pressure: Shell 450 psi. (Hydrostatic)  
Seat 300 psi. (Hydrostatic)  
Seat 80 psi. (Air)

### Dimensions

Valve size	inch	mm	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
			15	20	25	32	40	50	65	80	100
L	Face to face		83	88	100	113	120	145	165	177	220
H	Height, valve open		79	94	105	127	145	174	198	215	250
D1	Handwheel diam.		60	70	80	90	100	115	135	155	180
D	Flange diam.		95	100	125	135	140	155	175	185	210
t	Flange thickness		8.5	9.5	9.5	9.5	11.5	12.5	13.0	14.0	17.0

## Class 125 Bronze Globe Valve

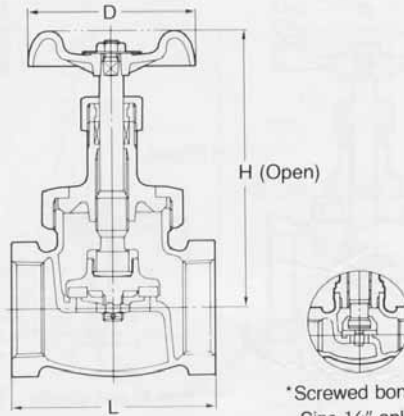
Union bonnet,\* Rising stem, Reinforced PTFE disc,  
Integral seat, Threaded ends to BS21 or NPT.

200 psi. W.O.G. non-shock  
125 psi. S.P. saturated

Fig. G  
Fig. AKG



G... Threaded ends to BS21  
AKG... Threaded ends to ASME B1.20.1



\* Screwed bonnet  
Size 1/4" only

### Materials

Parts	Material
Body	Bronze
Bonnet*	Brass / bronze
Bonnet ring*	Brass / bronze
Stem	K-Metal*
Disc	Reinforced PTFE
Disc holder	Brass
Disc nut	Brass rod / brass
Packing nut	Brass
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc (1/4"~3/4") Die-cast aluminum (1"~3")

☆ K-Metal is a special brass developed for anti-dezincification.  
\* Bronze for 2 1/2" and larger.

Test pressure: Shell 300 psi. (Hydrostatic)  
Seat 200 psi. (Hydrostatic)  
Seat 80 psi. (Air)

### Dimensions

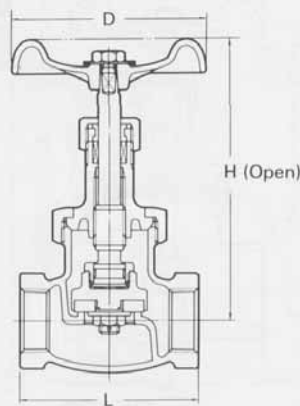
Valve size	inch	mm	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
			8	10	15	20	25	32	40	50	65	80	
L	End to end		47	53	57	66	76	88	100	120	147	162	
H	Height, valve open		68	88	100	110	120	140	156	185	210	229	
D	Handwheel diam.		50	55	60	70	80	90	100	115	135	155	

## Class 150 Bronze Globe Valve

Union bonnet, Rising stem, Reinforced PTFE disc,  
Integral seat, Threaded ends to BS21.

300 psi. W.O.G. non-shock  
150 psi. S.P. saturated

Fig. D



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass / bronze*
Bonnet ring	Brass
Stem	K-Metal*
Disc	Reinforced PTFE
Disc holder	Brass / bronze*
Disc nut	Brass rod
Packing nut	Brass
Gland	Brass rod
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc

☆ K-Metal is a special brass developed for anti-dezincification.  
\* Bronze for 1 1/2" and larger.

Test pressure: Shell 450 psi. (Hydrostatic)  
Seat 300 psi. (Hydrostatic)

### Dimensions

Valve size	inch	mm	1/2	3/4	1	1 1/4	1 1/2	2	mm
			15	20	25	32	40	50	
L	End to end		64	78	90	105	120	145	
H	Height, valve open		113	138	156	184	187	212	
D	Handwheel diam.		60	90	100	115	115	135	

# Class 150 Bronze Globe Valve

Union bonnet,\* Rising stem, Reinforced PTFE disc,  
Integral seat, Flanged ends drilled or undrilled optionally

225 psi. W.O.G. non-shock  
150 psi. S.P. saturated

Fig. DB  
Fig. DBH

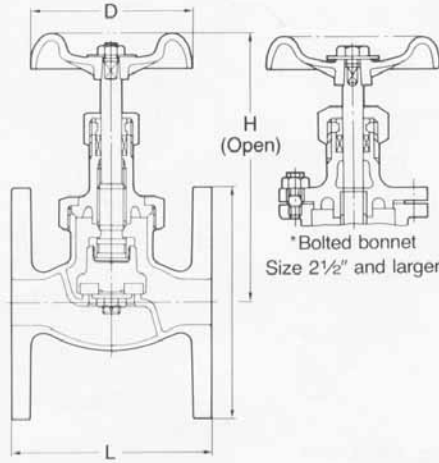


Fig. DB is undrilled unless drilling is specified as an option  
Fig. DBH is drilled according to JIS 10K.

### Materials

Parts	Material
Body	Bronze
Bonnet	Brass / bronze*
Bonnet ring	Brass
Stem	K-Metal*
Disc	Reinforced PTFE
Disc nut	Brass rod / brass
Packing nut	Brass
Gland	Brass rod
Gland packing	Aramid fiber PTFE (1/2"~3")/ PTFE fiber braid (4")
Handwheel	Die-cast zinc (1/2") Die-cast aluminum (3/4"~2 1/2") Ductile iron (3"~4")

☆ K-Metal is a special brass developed for anti-dezincification.  
\* Bronze for 1 1/2" and larger.

Test pressure: Shell 450 psi. (Hydrostatic)  
Seat 300 psi. (Hydrostatic)

### Dimensions

Valve size	inch	mm	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
L	Face to face		82	95	108	120	140	165	190	220	270
H	Height, valve open		113	138	156	184	187	212	244	281	321
D <sub>1</sub>	Handwheel diam.		60	90	100	115	115	135	155	180	225
D	Flange diam.		95	100	125	135	140	155	175	185	210
t	Flange thickness		8	9	10	11	12	13	14	15	17

# Class 125 Brass Gate Valve

Screwed bonnet, Non-rising stem, Solid wedge disc, Integral seats,  
Threaded ends to BS21 or NPT, or solder joint ends.\*

200 psi. W.O.G. non-shock  
125 psi. S.P. saturated

Fig. FH  
Fig. AKFH



Fig. CFH\*

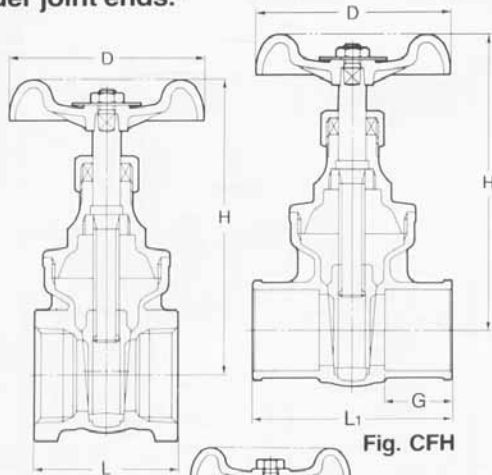
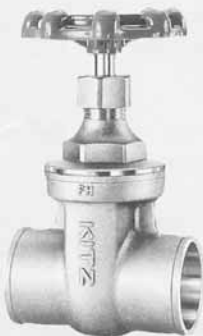


Fig. FH, AKFH

Fig. CFH

### Materials

Parts	Material
Body	Brass
Bonnet	Brass
Stem	K-Metal*
Disc	Brass
Packing nut	Brass
Gland*	Brass rod
Gland packing	Aramid fiber PTFE
Lock nut	Brass rod
Handwheel	Die-cast zinc (1/4"~1 1/4") Die-cast aluminum (1 1/2"~3")

☆ K-Metal is a special brass developed for anti-dezincification.  
\* Size 2" and larger.

Test pressure: Shell 300 psi. (Hydrostatic)  
Seat 200 psi. (Hydrostatic)  
Seat 80 psi. (Air)

### \* Caution

Solder joint end valves should not be used in service where the temperature of the line fluid is higher than the softening point of solder.

### Dimensions

Valve size	inch	mm	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
L	Threaded end to end		35	38	42	47	50	60	63	72	82	92
L <sub>1</sub>	Solder end to end		—	37	45	60	70	77	86	104	115	127
H	Height		70	77	77	87	97	118	126	154	187	205
D	Handwheel diam.		50	50	50	55	60	70	80	90	100	115
G			—	9.7	12.7	19.1	23.1	24.6	27.7	34.0	37.4	42.2

## Class 125 Brass Gate Valve

Screwed bonnet, Non-rising stem, Solid wedge disc, Integral seat,  
Threaded ends to BS21 or NPT, or solder joint ends.\*

1.38 MPa (200 psi) W.O.G. non-shock  
0.86 MPa (125 psi) S.P. saturated

Fig. FR  
Fig. AKFS



Fig. CFS \*

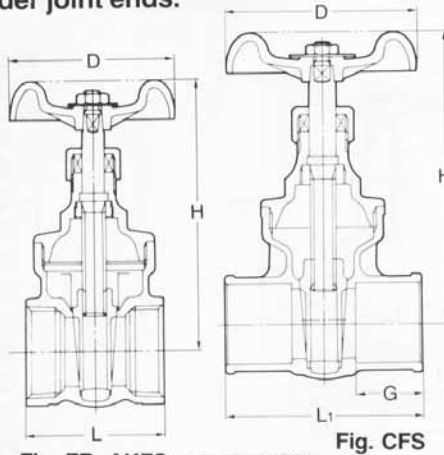
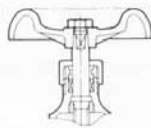


Fig. FR, AKFS

Fig. CFS



Size 2" and larger

### Materials

Parts	Material
Body	Brass (Brass / bronze: AKFS)
Bonnet	Brass
Stem	K-Metal*
Disc	Brass
Packing nut	Brass
Gland*	Brass rod
Gland packing	Aramid fiber PTFE
Lock nut	Brass rod
Handwheel	Die-cast zinc (3/8"~1 1/4") Die-cast aluminum (1 1/2"~3")

\* K-Metal is a special brass developed for anti-dezincification.  
\* Size 2" and larger.

Test pressure: Shell 2.07 MPa (300 psi) (Hydrostatic)  
Seat 1.38 MPa (200 psi) (Hydrostatic)  
Seat 0.55 MPa (80 psi) (Air)

### \* Caution

Solder joint end valves should not be used in service where the temperature of the line fluid is higher than the softening point of solder.

FR... Threaded ends to BS21  
AKFS... Threaded ends to ASME B1.20.1  
CFS... Solder joint ends to ASME B16.18

### Dimensions

Valve size	inch	mm	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
			10	15	20	25	32	40	50	65	80
L	Threaded end to end		38	42	47	50	60	63	72	80	90
L <sub>1</sub>	Solder end to end		—	45	60	70	77	86	102	—	—
H	Height		75	75	86	97	117	126	154	167	200
D	Handwheel diam.		50	50	55	60	70	80	90	100	115
G			—	12.7	19.1	23.1	24.6	27.7	34	—	—

2 1/2" & 3" = AKFS only

## Class 125 Bronze Gate Valve

Inside screw, Non-rising stem, Screwed-over-bonnet,\*  
Solid wedge disc, Threaded ends to BS21 or NPT, or solder joint ends.\*

200 psi. W.O.G. non-shock  
125 psi. S.P. saturated

Fig. H  
Fig. AKH



Fig. CH \*

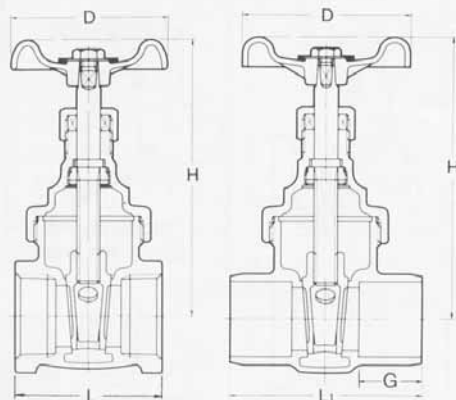


Fig. H, AKH Size 3/8" to 2" Fig. CH

\* Screwed bonnet for 2 1/2" & larger sizes

### \* Caution

Solder joint end valves should not be used in service where the temperature of the line fluid is higher than the softening point of solder.

### Materials

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	K-Metal*
Disc	Bronze / K-Metal**
Lock nut	Brass rod
Packing nut	Brass
Gland**	Brass rod
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc (3/8"~1 1/4") Die-cast aluminum (1 1/2"~4")

\* K-Metal is a special brass developed for anti-dezincification.

\* 3/8" and 1/2" for H.

\*\* Size 1 1/2" and larger.

Test pressure: Shell 300 psi. (Hydrostatic)  
Seat 200 psi. (Hydrostatic)  
Seat 80 psi. (Air)

H... Threaded ends to BS21  
AKH... Threaded ends to ASME B1.20.1  
CH... Solder joint ends to ASME B16.18

### Dimensions

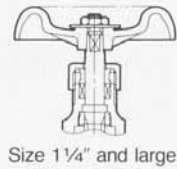
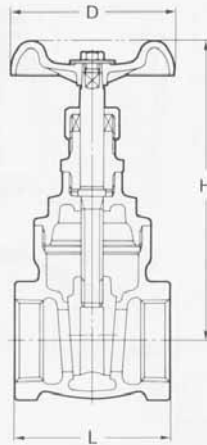
Valve size	inch	mm	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
			10	15	20	25	32	40	50	65	80	100
L	Threaded end to end		42	45	50	57	61	67	74	90	100	121
L <sub>1</sub>	Solder end to end		39	46	61	72	78	87	102	115	130	173
H	Height		74	80	90	105	118	135	159	202	223	280
D	Handwheel diam.		50	50	55	60	70	80	90	115	135	155
G			9.7	12.7	19.1	23.1	24.6	27.7	34	37.4	42.2	54.9

## Class 150 Bronze Gate Valve

Inside screw, Non-rising stem, Screwed bonnet,  
Solid wedge disc, Threaded ends to BS21.

300 psi. W.O.G. non-shock  
150 psi. S.P. saturated

Fig. E



Size 1 1/4" and larger

### Materials

Parts	Material
Body	Bronze
Bonnet	Brass / bronze*
Stem	K-Metal <sup>☆</sup>
Disc	Bronze
Packing nut	Brass
Gland**	Brass rod
Gland packing	Aramid fiber PTFE
Stuffing box	Brass rod / brass
Handwheel	Die-cast zinc (3/8"~1") Die-cast aluminum (1 1/4"~3")

<sup>☆</sup> K-Metal is a special brass developed for anti-dezincification.

\* Bronze for 2 1/2" and larger.

\*\* Size 1 1/4" and larger.

Test pressure: Shell 450 psi. (Hydrostatic)  
Seat 300 psi. (Hydrostatic)

### Dimensions

Valve size	inch	mm	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
			10	15	20	25	32	40	50	65	80
L	End to end		43	48	53	62	69	75	86	105	116
H	Height		86	96	111	122	141	164	197	225	261
D	Handwheel diam.		50	55	60	70	80	90	100	115	135

mm

## Class 150 Bronze Gate Valve

Screwed bonnet, Rising stem, Solid wedge disc, Integral seat, Threaded ends to NPT or solder joint ends\*, Designed to MSS SP-80.

2.07 MPa (300 psi) W.O.G. non-shock  
1.03 MPa (150 psi) S.P. saturated

Fig. AK150L

Fig. C150L\*



AK150L... Threaded ends to ASME B1.20.1  
C150L... Solder joint ends to ASME B16.18

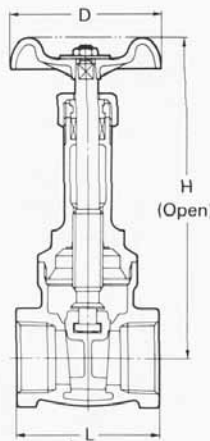


Fig. AK150L

\* Caution

Solder joint end valves should not be used in service where the temperature of the line fluid is higher than the softening point of solder.

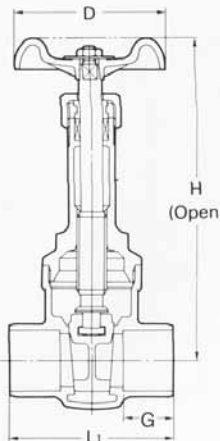


Fig. C150L

### Materials

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Bronze
Packing nut	Brass
Gland	Brass rod
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc (1/2"~1") Die-cast aluminum (1 1/4"~3")

Test pressure: Shell 3.10 MPa (450 psi) (Hydrostatic)  
Seat 2.07 MPa (300 psi) (Hydrostatic)  
Seat 0.55 MPa (80 psi) (Air)

### Dimensions

Valve size	inch	mm	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
			15	20	25	32	40	50	65	80
L	Threaded end to end		51	56	66	68	74	84	120	140
L <sub>1</sub>	Solder end to end		49	64	76	82	86	109	—	—
H	Height, valve open		137	157	180	216	257	296	385	432
D	Handwheel diam.		55	70	70	80	90	100	155	155
G			12.7	19.1	23.1	24.6	27.7	34	—	—

mm

## Class 150 Bronze Gate Valve

Screwed bonnet,\* Non-rising stem, Solid wedge disc, Integral seat, Flanged ends drilled or undrilled optionally.

225 psi. W.O.G. non-shock  
150 psi. S.P. saturated

Fig. EB  
Fig. EBH

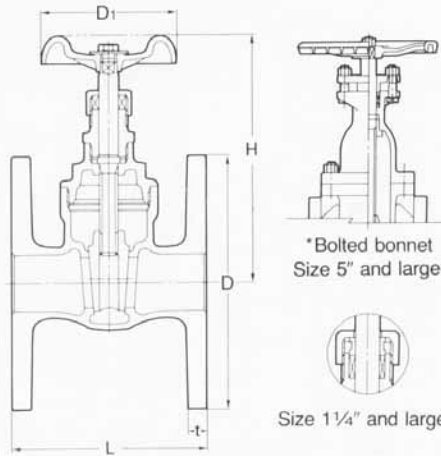


Fig. EB is undrilled, unless drilling is specified as an option.  
Fig. EBH is drilled according to JIS 10K

### Materials

Parts	Material
Body	Bronze
Bonnet	Bronze / brass*
Stem	K-Metal <sup>☆</sup>
Disc	Bronze
Packing nut	Brass
Gland**	Brass rod
Gland packing	Aramid fiber PTFE (1/2"~4") Braided PTFE fiber (5" & 6")
Handwheel	Die-cast zinc (1/2"~1") Die-cast aluminum (1 1/4"~3") Ductile iron (4"~6")

<sup>☆</sup> K-Metal is a special brass developed for anti-dezincification.  
<sup>\*</sup> Brass for 2" and smaller.  
<sup>\*\*</sup> Size 1 1/4" and larger.

Test pressure: Shell 450 psi. (Hydrostatic)  
Seat 300 psi. (Hydrostatic)

### Dimensions

Valve size	inch	mm	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
			15	20	25	32	40	50	65	80	100	125	150
L	Face to face		75	80	95	110	120	140	165	190	230	190	210
H	Height		96	111	122	142	165	197	225	264	309	381	427
D <sub>1</sub>	Handwheel diam.		55	60	70	80	90	100	115	155	225	225	250
D	Flange diam.		95	100	125	135	140	155	175	185	210	250	280
t	Flange thickness		8	9	9.5	10.5	11.5	13	14.5	16	19.5	20	22

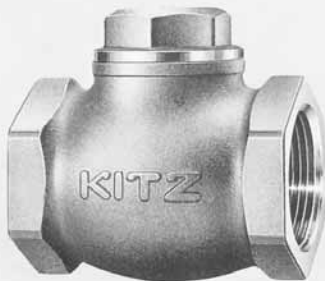
mm

## Class 150 Bronze Lift Check Valve

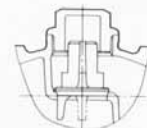
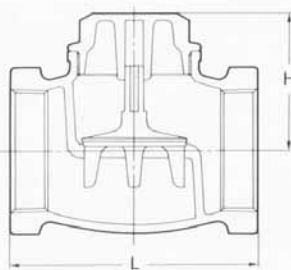
Screwed cap, Lift type disc, Integral seat, Threaded ends to BS21 or NPT.

300 psi. W.O.G. non-shock  
150 psi. S.P. saturated

Fig. F  
Fig. AKF



F... Threaded ends to BS21  
AKF... Threaded ends to ASME B1.20.1



Size 1" and smaller

### Materials

Parts	Material
Body	Bronze
Cap	Brass / bronze*
Disc	Bronze

\* Bronze for 2 1/2" and larger.

Test pressure: Shell 450 psi. (Hydrostatic)  
Seat 300 psi. (Hydrostatic)

### Dimensions

Valve size	inch	mm	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
			10	15	20	25	32	40	50	65	80
L	End to end		44	53	65	77	85	100	119	139	158
H	Height		26	28	34	42	50	56	67	79	91

mm

# Class 125 Bronze Swing Check Valve

Screwed cap, Swing type disc, Integral seat,  
Threaded ends to BS21 or NPT, or solder joint ends.\*

200 psi. W.O.G. non-shock  
125 psi. S.P. saturated

Fig. R  
Fig. AKR



Fig. CR\*

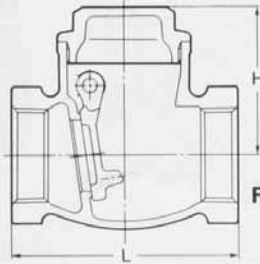


Fig. R, AKR

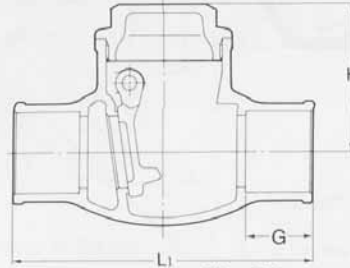


Fig. CR

Copper tubes to ASTM B88.

R... Threaded ends to BS21  
AKR... Threaded ends to ASME B1.20.1  
CR... Solder joint ends to JIS B2011 / ASME B16.18 (2 1/2" & 3")

## Materials

Parts	Material
Body	Bronze
Cap	Brass / bronze*
Disc	Brass / bronze*
Hinge pin	Brass

\* Bronze for 4"

Test pressure: Shell 300 psi. (Hydrostatic)  
Seat 200~70 psi. (Hydrostatic)  
Seat 80 psi. (Air)

## \* Caution

Solder joint end valves should not be used in service where the temperature of the line fluid is higher than the softening point of solder.

## Dimensions

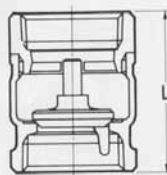
Valve size	inch	mm	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
			10	15	20	25	32	40	50	65	80	100	
L	Threaded end to end		53	60	70	80	92	102	122	150	165	195	
L <sub>1</sub>	Solder end to end		56	67	89	104	120	134	164	193	213	—	
H	Height		39	39	45	52	62	67	79	91	102	119	
G			9.7	12.7	19.1	23.1	24.6	27.7	34	37.4	42.2	—	

# 5K Bronze Lift Check Valve

Screwed cap, Lift type disc, Threaded ends to BS21.

W.O.G. non-shock 120°C .... 0.49 MPa (5 kgf/cm<sup>2</sup>)

Fig. VF



## Materials

Parts	Material
Body	Bronze
Cap	Bronze
Disc	Bronze

Test pressure: Shell / seat  
0.98 MPa (10 kgf/cm<sup>2</sup>) Hydrostatic  
Seat 0.59 MPa (6 kgf/cm<sup>2</sup>) Air

## Dimensions

Valve size	inch	mm	1/2	3/4	1	1 1/4	1 1/2	2	mm
			15	20	25	32	40	50	
L	End to end		37	44	51	62	69	82	
S			24	30	36	45	52	63	

# Class 150 Bronze Y-Pattern Strainer

Y-Pattern body, Screwed cap, 304 stainless steel screen,  
Threaded ends or BS21 or NPT, or solder joint ends.\*

300 psi. W.O.G. non-shock  
150 spi. S.P. saturated

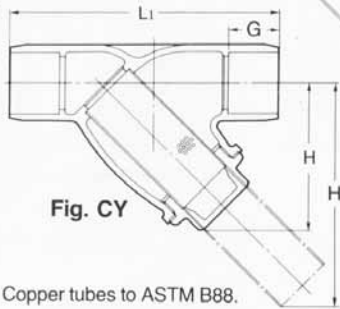
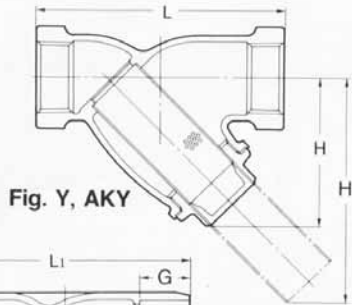
Fig. Y  
Fig. AKY



Fig. CY\*



Y... Threaded ends to BS21  
AKY... Threaded ends to ASME B1.20.1  
CY... Solder joint ends to JIS B2011 / ASME B16.18 (2½" & 3")



Copper tubes to ASTM B88.

## Materials

Parts	Material
Body	Bronze
Body cap	Brass
Gasket	Non asbestos
Screen*	Type 304 stainless steel

\* Screen is made of stainless steel plate which has 1.4ø (2" & smaller) or 1.5ø (2½" & 3") diameter × 2.4 (2" & smaller) or 2.5 (2½" & 3") pitches punched holes.

Test pressure: Shell 450 psi. (Hydrostatic)

## \* Caution

Solder joint end valves should not be used in service where the temperature of the line fluid is higher than the softening point of solder.

## Dimensions

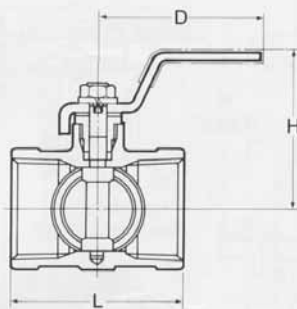
Valve size	inch mm	¾ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80
L	Threaded end to end	70	80	100	115	135	160	195	230	240
L <sub>1</sub>	Solder end to end	—	80	105	125	145	170	210	250	280
H	Height	44	49	57	70	82	98	121	148	180
H <sub>1</sub>		61	68	84	106	125	150	189	217	268
G		—	12.7	19.1	23.1	24.6	27.7	34.0	37.4	42.2

# Class 175 Brass Butterfly Valve

Brass body, NBR lined disc, Balancing stop hand lever,  
Threaded ends to BS21.

175 psi. W.O.G. non-shock

Fig. FV



## Materials

Parts	Material
Body	Brass
Stem	Type 304 stainless steel
Disc	Type 304 and NBR
Gland	Brass
O-ring	NBR
Handle	Type 430 stainless steel

Test pressure: Shell 1.81 MPa (18.5 kgf/cm<sup>2</sup>) Hydrostatic  
Seat 0.59 MPa (6 kgf/cm<sup>2</sup>) Air

## Dimensions

Valve size	inch mm	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50
L	End to end	47	51	58	67	73	82
H	Height	45	47	50	60	64	70
D	Handwheel diam.	85	85	85	110	110	110