Type 400 Brass Ball Valve

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

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

Fig. T
Fig. AKT

Fig. TT

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

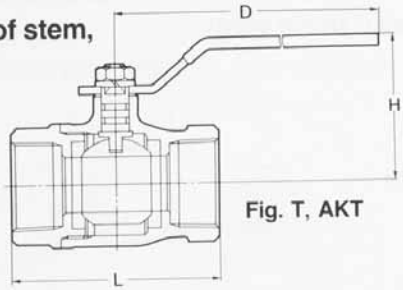
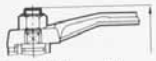


Fig. T, AKT



Size 2½" and larger (T, AKT)

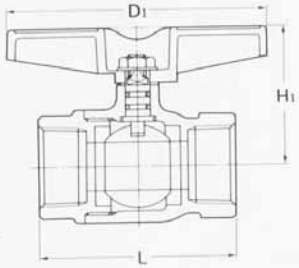


Fig. TT

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)	
¼" ~ 2"	Stainless steel (vinyl grip)
2½" ~ 4"	Ductile iron
Handle (TT)	
¼" ~ 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

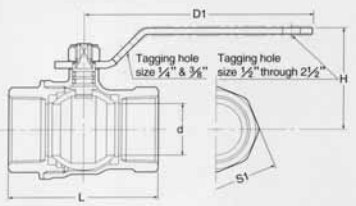
mm

	Valve size (inch / mm)	¼ 8	⅜ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80	4 100
	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
[Code#58]



Nominal size	d mm	d inch	H mm	H inch	D1 mm	D1 inch	L mm	L inch	S1 mm	S1 inch	Cv Value
¼	10	0.39	37	1.46	70	2.76	42	1.65	20	0.79	4.2
⅜	10	0.39	37	1.46	70	2.76	42	1.65	22	0.87	7.6
½	15	0.59	40	1.57	80	3.15	53	2.08	26	1.02	20.0
¾	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
1¼	32	1.26	55	2.16	110	4.33	84	3.31	48	1.89	85.0
1½	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
2½	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** (¼" through 2")
CSA : ½ psig at the appliance
CSA : 5 psig from the appliance to the meter
CSA : 125 psig from the meter to the street

●**AKSZA / CSZA** (¼" 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: Saturated Steam	Cold Water, Oil, Gas: ¼"~3"	Cold Water, Oil, Gas: 4"	Test Pressure: Shell (Hydrostatic) ¼"~3"	Test Pressure: Shell (Hydrostatic) 4"	Test Pressure: 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/cm²	10	42	28	63	42	6

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

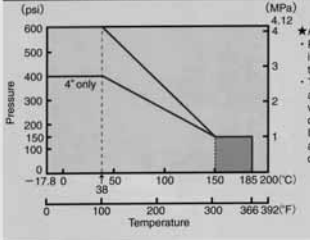
Effecttive Length of Thread

unit : mm (inch)

Size	¼"	⅜"	½"	¾"	1"	1¼"	1½"
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)
ZA/AKZA	7.5 (0.295)	8 (0.315)	10 (0.394)	11 (0.433)	12 (0.472)	13 (0.512)	14 (0.552)

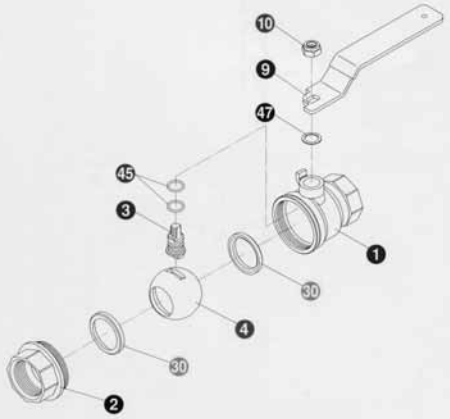
Size	2"	2½"	3"	4"
Super Z	19.5 (0.768)	22.0 (0.866)	25.0 (0.984)	30.0 (1.181)
ZA/AKZA	16.5 (0.650)	—	—	—

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) ★1
2	Body Cap	1	Forged Brass (B283 No. C37700)/Cast Bronze (B584 No. C84400) ★1
3	Stem	1	Brass Rod (B16) ★2
4	Ball	1	Forged Brass (B283 No. C37700) ★3/Cast Brass ★3★4
9	Handle	1	Carbon Steel ★4/Ductile Iron ★5
10	Handle Nut	1	Carbon Steel
30	Ball Seat	2	PTFE
45	O-ring	2	FPM ★6
47	Thrust Washer	1	PBT ★7/PTFE ★8

Note:
★1 2½" through 4"
★2 Ni plating
★3 Cr plating
★4 Plastic covering
★5 3" and 4"
★6 Fluorocarbon Elastomer
★7 Polybutylene Terephthalate
★8 2½" 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

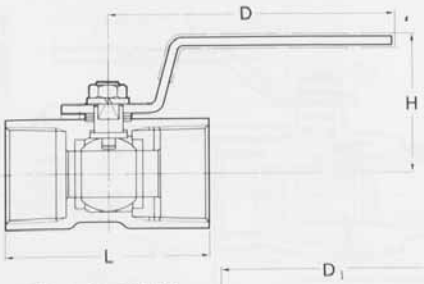


Fig. TK, AKTK

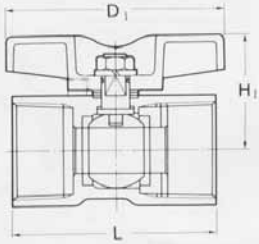


Fig. TKT

Materials

Parts	Material
Body	Brass
Stem	K-Metal☆
Ball	Brass (chrome plated)
Ball seat	Reinforced PTFE
Gland packing	Reinforced PTFE
Handle (TK/AKTC) (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

mm

	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_1	Height (TKT)	23	23	27	31	34	42	48	53	60
D_1	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.

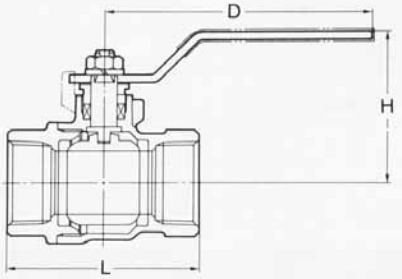
4.14 MPa (600 psi) W.O.G. non-shock
1.03 MPa (150 psi) W.S.P. saturated

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
: FM APPROVED 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 2½" and larger.

Test pressure: Shell 6.20 MPa (900 psi) (Hydrostatic)
Seat 0.55 MPa (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	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	Lengfth 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*

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

Fig. TN, AKTN

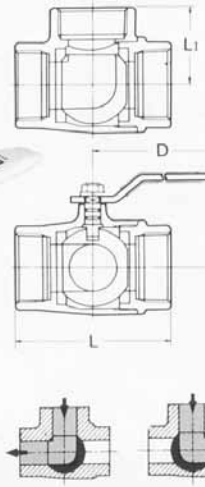
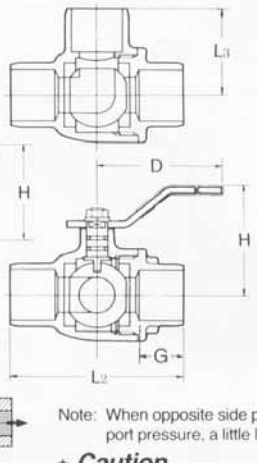
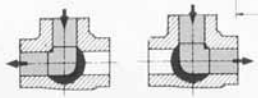


Fig. CTN





Position 1 Position 2

Materials

Parts	Material
Body	Brass / bronze*
Body cap	Brass
Stem	K-Metal☆
Ball	Brass (chrome plated)
Ball seat	PTFE
O-ring	FPM
Handle (¼"-2")	Stainless steel (vinyl grip)
(2½" & 3")	Ductile iron

☆ K-Metal is a special brass developed for anti-dezincification.
* Bronze for 2½" and larger.

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

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.

Dimensions

mm

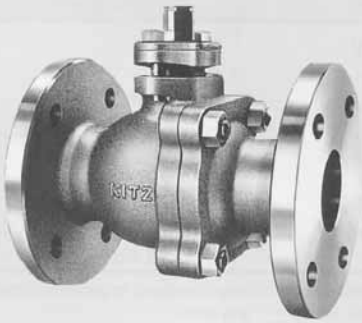
	Valve size inch / mm	¼ 8	⅜ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80
	Bore size	4.5	6.8	10	15	20	25	32	40	50	65
L	Threaded end to end	40	46	67	68	79	89	100	115	138	166
L_1	Center to end (TN / AKTN)	20	23	33.5	34	39.5	44.5	50	57.5	69	83
L_2	Solder end to end	—	—	56	74	88	99	114	136	—	—
L_3	Center 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	—	—

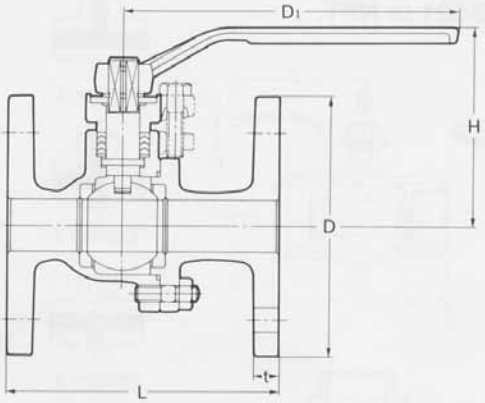
10K Bronze Ball Valve

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

W.O.G. non-shock ..... 1.37 MPa (14 kgf/cm²)
W.O.G. 150°C ..... 0.68 MPa (7 kgf/cm²)

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/cm²) Hydrostatic
Seat 0.59 MPa (6 kgf/cm²) Air

Dimensions

mm

	Valve size inch / mm	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 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
D_1	Length of handle	130	130	160	160	230	230	400	400	460

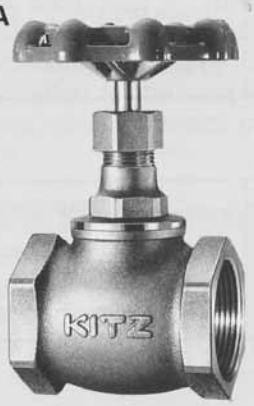
☆ Flange dimensions conform to JIS B2240 Std. (Except flange thickness)

Class 100 Bronze Globe Valve

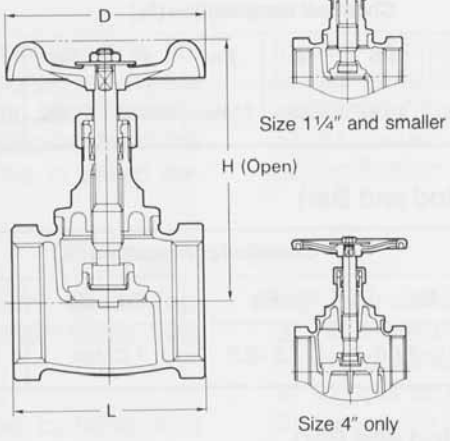
Screwed bonnet, Rising stem, Swivel disc,
Integral seat, Threaded ends to BS21 or NPT.

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☆
Disc	Bronze
Lock nut	Brass rod
Packing nut	Brass
Gland	Brass rod
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc (¼"~1") Die-cast aluminum (1¼"~3") Cast iron (4")

☆ 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	¼ 8	⅜ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 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

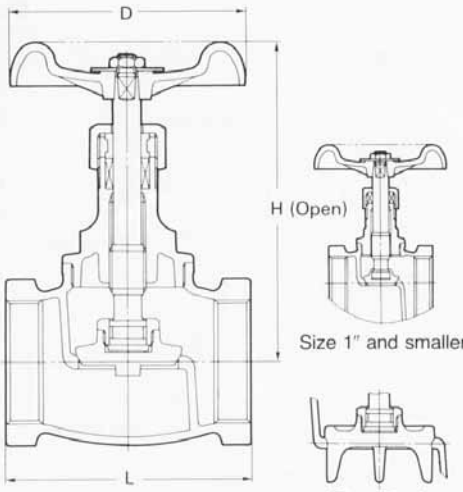
Class 150 Bronze Globe Valve

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☆
Disc	Bronze
Lock nut	Brass
Packing nut	Brass
Gland	Brass rod
Gland packing	Aramid fiber PTFE
Handwheel	Die-cast zinc (¼"~¾") 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

mm

	Valve size inch / mm	¼ 8	⅜ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 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

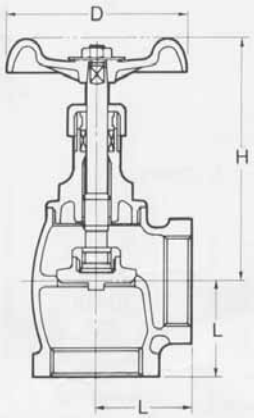
Class 150 Bronze Angle Valve

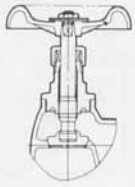
Inside screw, Angle type body, Rising stem, Screwed bonnet, Threaded ends to BS21 or NPT.

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





Size 1″ and smaller

Size 3″ only

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 (¼″~¾″) 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 mm

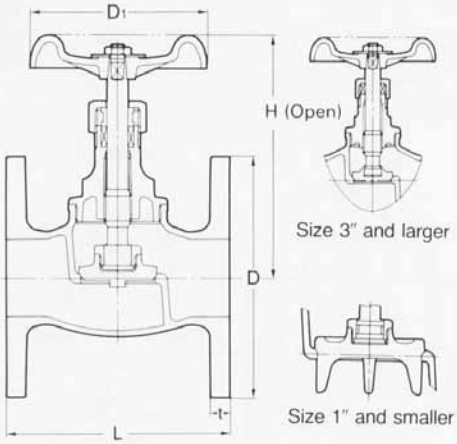
	Valve size inch / mm	¼ 8	⅜ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80
L	End to end	21	24	28	34	40	47	52	61	74	85
H	Height, valve open	66	68	79	93	104	127	145	174	199	215
D	Handwheel diam.	50	50	60	70	80	90	100	115	135	155

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



Size 3″ and larger

Size 1″ and smaller

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 (½″~¾″) 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 mm

	Valve size inch / mm	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80	4 100
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

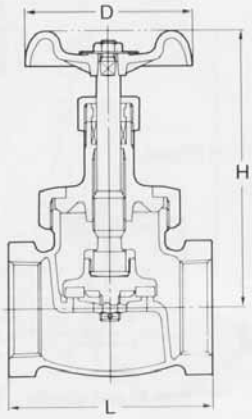
Class 125 Bronze Globe Valve

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 ¼" 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 (¼"~¾") Die-cast aluminum (1"~3")

☆ K-Metal is a special brass developed for anti-dezincification.
* Bronze for 2½" and larger.

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

Dimensions mm

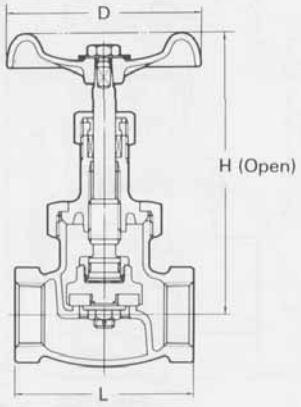
	Valve size inch / mm	¼ 8	⅜ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80
L	End to end	47	53	57	66	76	88	100	120	147	162
H	Height, valve open	68	88	100	110	120	140	156	185	210	229
D	Handwheel diam.	50	55	60	70	80	90	100	115	135	155

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 1½" and larger.

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

Dimensions mm

	Valve size inch / mm	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 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

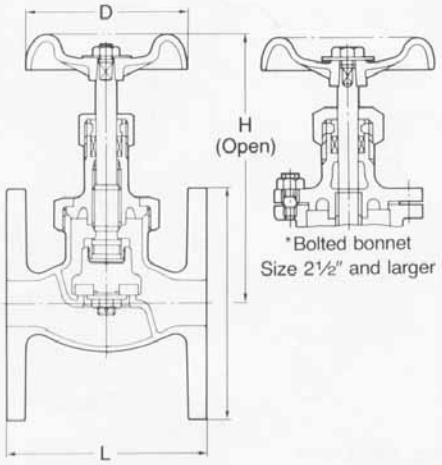


Fig. DB is undrilled unless drilling is specified as an option
Fig. DBH is drilled according to JIS 10K.

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 (½"~3")/ PTFE fiber braid (4")
Handwheel	Die-cast zinc (½") Die-cast aluminum (¾"~2½") Ductile iron (3"~4")

☆ K-Metal is a special brass developed for anti-dezincification.
* Bronze for 1½" and larger.

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

Dimensions mm

	Valve size inch / mm	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80	4 100
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_1	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*

FH... Threaded ends to BS21
AKFH... Threaded ends to ASME B1.20.1
CFH... Solder joint ends to ASME B16.18

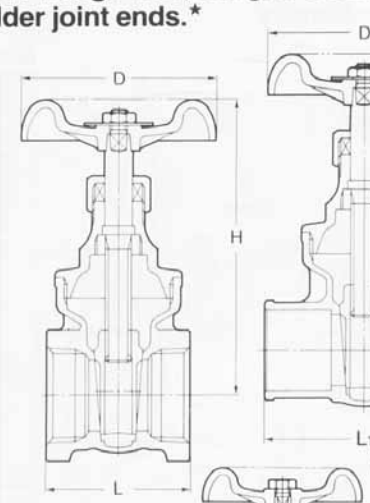


Fig. FH, AKFH

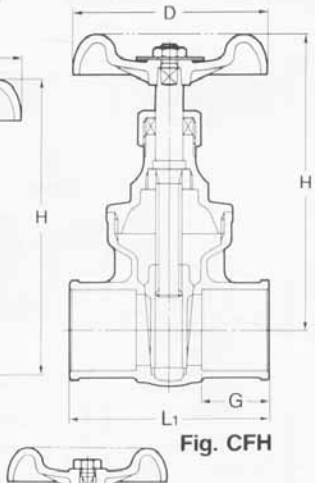
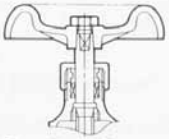


Fig. CFH



Size 2" and larger

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 (¼"~1¼") Die-cast aluminum (1½"~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 mm

	Valve size inch / mm	¼ 8	⅜ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80
L	Threaded end to end	35	38	42	47	50	60	63	72	82	92
L_1	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 *

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

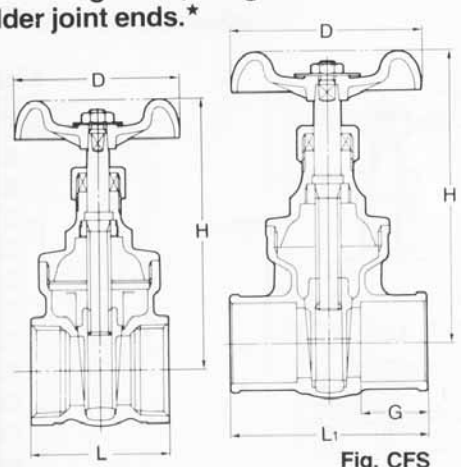
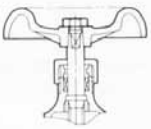


Fig. FR, AKFS — Fig. CFS



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.

Dimensions

mm

	Valve size (inch / mm)	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	Threaded end to end	38	42	47	50	60	63	72	80	90
L1	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 *

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

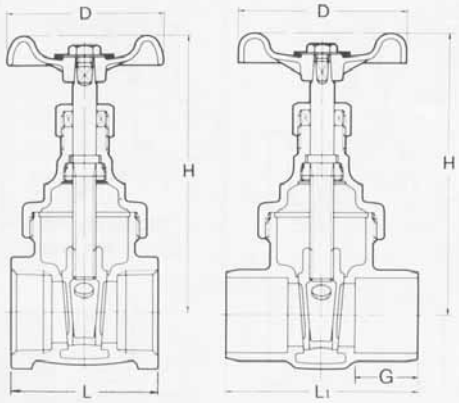


Fig. H, AKH Size 3/8" to 2" Fig. CH

* 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)

Dimensions

mm

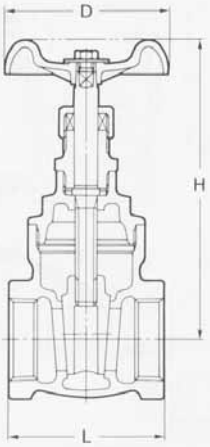
	Valve size (inch / mm)	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80	4 100
L	Threaded end to end	42	45	50	57	61	67	74	90	100	121
L1	Solder end to end	39	46	61	72	78	87	102	115	130	173
H	Height	74	80	90	105	118	135	159	202	223	280
D	Handwheel diam.	50	50	55	60	70	80	90	115	135	155
G		9.7	12.7	19.1	23.1	24.6	27.7	34	37.4	42.2	54.9

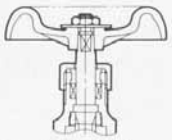
Class 150 Bronze Gate Valve

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 1¼" and larger

Materials

Parts	Material
Body	Bronze
Bonnet	Brass / bronze*
Stem	K-Metal☆
Disc	Bronze
Packing nut	Brass
Gland**	Brass rod
Gland packing	Aramid fiber PTFE
Stuffing box	Brass rod / brass
Handwheel	Die-cast zinc (⅜"~1") Die-cast aluminum (1¼"~3")

☆ K-Metal is a special brass developed for anti-dezincification.
* Bronze for 2½" and larger.
** Size 1¼" and larger.

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

Dimensions mm

	Valve size — inch	⅜	½	¾	1	1¼	1½	2	2½	3
	Valve size — mm	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

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

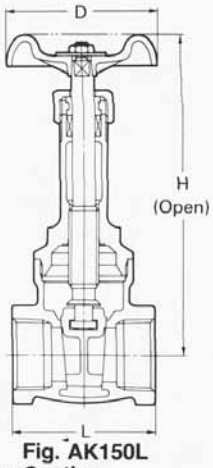


Fig. AK150L

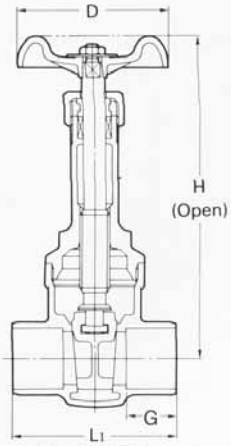


Fig. C150L

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 (½"~1") Die-cast aluminum (1¼"~3")

Test pressure: Shell 3.10 MPa (450 psi) (Hydrostatic)
Seat 2.07 MPa (300 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.

Dimensions mm

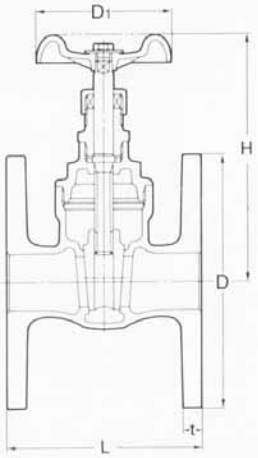
	Valve size — inch	½	¾	1	1¼	1½	2	2½	3
	Valve size — mm	15	20	25	32	40	50	65	80
L	Threaded end to end	51	56	66	68	74	84	120	140
L_1	Solder end to end	49	64	76	82	86	109	—	—
H	Height, valve open	137	157	180	216	257	296	385	432
D	Handwheel diam.	55	70	70	80	90	100	155	155
G		12.7	19.1	23.1	24.6	27.7	34	—	—

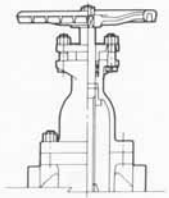
Class 150 Bronze Gate Valve

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





*Bolted bonnet
Size 5" and larger

Size 1¼" and larger

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☆
Disc	Bronze
Packing nut	Brass
Gland**	Brass rod
Gland packing	Aramid fiber PTFE (½"~4") Braided PTFE fiber (5" & 6")
Handwheel	Die-cast zinc (½"~1") Die-cast aluminum (1¼"~3") Ductile iron (4"~6")

☆ K-Metal is a special brass developed for anti-dezincification.
* Brass for 2" and smaller.
** Size 1¼" and larger.

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

Dimensions mm

	Valve size inch / mm	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80	4 100	5 125	6 150
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
D1	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

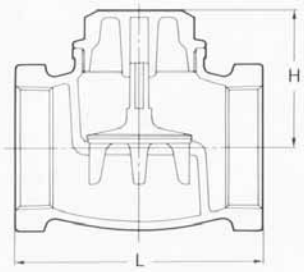
Class 150 Bronze Lift Check Valve

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 2½" and larger.

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

Dimensions mm

	Valve size inch / mm	⅜ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 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

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*

R... Threaded ends to BS21
AKR... Threaded ends to ASME B1.20.1
CR... Solder joint ends to JIS B2011 / ASME B16.18 (2½" & 3")

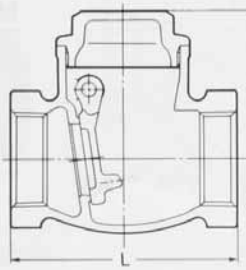
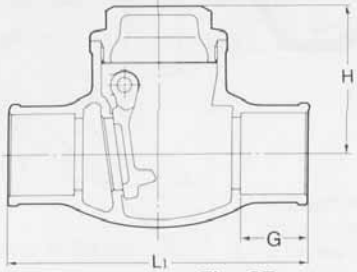


Fig. R, AKR



Copper tubes to ASTM B88. **Fig. CR**

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 mm

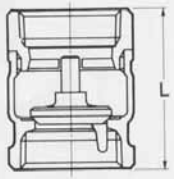
	Valve size inch / mm	⅜ 10	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80	4 100
L	Threaded end to end	53	60	70	80	92	102	122	150	165	195
L_1	Solder end to end	56	67	89	104	120	134	164	193	213	—
H	Height	39	39	45	52	62	67	79	91	102	119
G		9.7	12.7	19.1	23.1	24.6	27.7	34	37.4	42.2	—

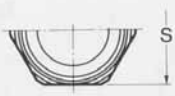
5K Bronze Lift Check Valve

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

W.O.G. non-shock 120°C .... 0.49 MPa (5 kgf/cm²)

Fig. VF





Materials

Parts	Material
Body	Bronze
Cap	Bronze
Disc	Bronze

Test pressure: Shell / seat
0.98 MPa (10 kgf/cm²) Hydrostatic
Seat 0.59 MPa (6 kgf/cm²) Air

Dimensions mm

	Valve size inch / mm	½ 15	¾ 20	1 25	1¼ 32	1½ 40	2 50
L	End to end	37	44	51	62	69	82
S		24	30	36	45	52	63

Class 150 Bronze Y-Patern 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")

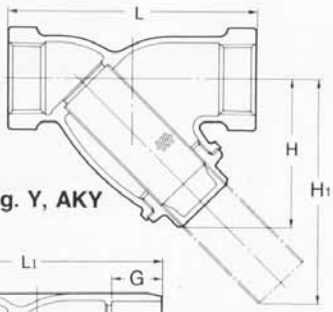


Fig. Y, AKY

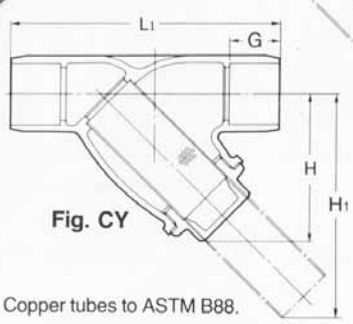


Fig. CY

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") piches 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

mm

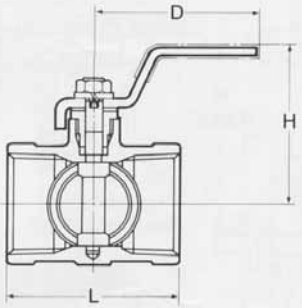
	Valve size inch / mm	3/8 10	1/2 15	3/4 20	1 25	1¼ 32	1½ 40	2 50	2½ 65	3 80
L	Threaded end to end	70	80	100	115	135	160	195	230	240
L1	Solder end to end	—	80	105	125	145	170	210	250	280
H	Height	44	49	57	70	82	98	121	148	180
H1		61	68	84	106	125	150	189	217	268
G		—	12.7	19.1	23.1	24.6	27.7	34.0	37.4	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/cm²) Hydrostatic
Seat 0.59 MPa (6 kgf/cm²) Air

Dimensions

mm

	Valve size inch / mm	1/2 15	3/4 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