

# Bronze & Brass Valves

JIS 5K/10K, ASME Class 125/150/300, KITZ Type 100/125/150/300/400/600





As a world leading manufacturer of general service valves, KITZ Corporation is glad to present you a broad range of our KITZ bronze/brass valves for your commercial and industrial applications.

KITZ bronze/brass valves are produced in modern factories used exclusively for valve manufacturing. Each phase of the manufacturing process, from selection of raw materials to casting, forging, machining, assembly and testing, has been improved with automated production facilities and unparalleled production technology. Standardization and automation yield KITZ bronze/brass valves of superior quality and higher uniformity at competitive prices supported by incomparably prompt delivery.

KITZ bronze/brass valves are all designed by the state-of-the-art computers, built by automation and inspected by the people who care the quality.

## Presenting Design Features of KITZ Bronze/Brass Valves

### Human Engineering in Handwheel Design

Computer designed handwheels of all KITZ bronze/brass valves, the product of KITZ human engineering, are featured with an ideal combination of an operational efficiency and high mechanical strength for reliability.

### Asbestos-free Gland Packings

All KITZ bronze/brass gate and globe valves employ Aramid Fiber PTFE as the material of asbestos-free gland packing, meeting the latest industrial demand to minimize pollutional concerns. With its leak-free sealing performance and reduced valve operating torque, Aramid Fiber PTFE is considered a reliable substitution for conventional asbestos sheet for service of water, oil, gas and saturated steam pressure of maximum 300psi within the temperature range up to 300°C.

### Pressure Rating

The pressure rating designation of KITZ valves follows the accepted practice of the valve and pipe fitting industry today. Each product is rated for W.O.G. (Non-shock cold water, oil, and gas\*) and Saturated steam pressure service.

### Inspection and Testing

KITZ valves are manufactured under strict quality control throughout all stages of production, beginning with inspection of chemical composition and mechanical properties of materials. Extra care is given to inspection and testing at all machine shops and assembly plants, utilizing up-to-date precision equipment. All KITZ valves are subjected to strict pressure testing of body and seat sealing to assure long-life service and quality performance.

\*The valves introduced in this catalog are not designed to handle toxic gases. Use specially designed or certified valves for flammable gas service.

KITZ Corporation, Nagasaka Plant, Japan (ISO 9001)



KITZ (Thailand) Ltd, Bangkok Plant, Thailand (ISO 9002)



This catalog use MPa, a SI unit, for indication of pressures. For readers' convenience, however psi is also used for ASME and JIS related products respectively. The products introduced in this catalog are all covered by the ISO 9001 Certification.

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## KITZ "K-Metal": Unique Dezincification Resistant Brass (UNS No. C35350)

Water pollution and employment of new piping material have amplified valve dezincification problems.

### What is dezincification?

The copper alloy used in bronze valves contains zinc, tin, and lead with copper as a base. When bronze valves are subjected to unfavorable service conditions, the zinc component contained in the copper alloy separates from the copper base, and the metal corrodes. This is called dezincification.

In case of bronze valve, the body, bonnet, and other cast bronze parts hardly corrode due to the small percent of zinc contained in the alloy. But brass valve parts such as stems, which contain 40% zinc, often corrodes due to extreme dezincification.

### What causes dezincification?

The following factors cause dezincification. These factors are generally believed to occur together, rather than independently.

- 1 Excessive aqueous solution in acidity.
- 2 Warm water containing excessive free carbonic acid with high electric conductivity.
- 3 High electric conductivity with excessive presence of chlorides and sulfides.
- 4 Copper or vinyl chloride pipes.
- 5 Excessive dissolved oxygen.

### What is K-Metal?

To combat dezincification, KITZ Corporation developed **K-Metal** as the stem material of bronze/brass valves. The test data given below compare the properties of **K-Metal** with JIS B124, B16 and B62, and also with another dezincification resistant material introduced by one of our competitors in Japan.

The comparisons prove **K-Metal's** overall high performance and explain why KITZ bronze/brass valves offer longer service life. The extent of the corrosion and dezincification compared here are the values recorded after two weeks of laboratory experiments. Australian Standard C-316 was applied to the measurement of dezincification depth.

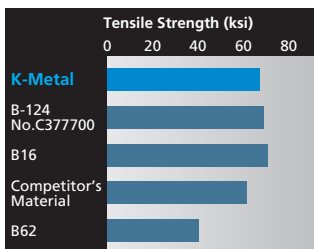


Fig. 1 Compared tensile strength

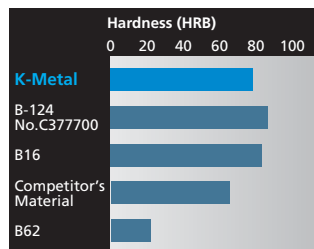


Fig. 2 Compared hardness

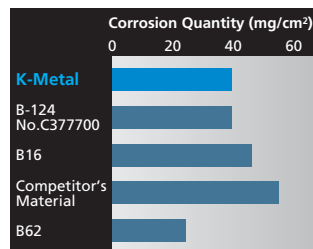


Fig. 3 Compared corrosion (1mg/cm²=0.014mlb/in²)

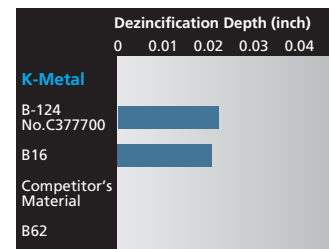


Fig. 4 Compared dezincification (to AS C316)


### Bronze/Brass Valve Solder Joints

Copper tubing is widely used with bronze/brass valves in steam and water-line applications in schools, hospitals, hotels, and private houses because of excellent physical characteristics. It resists corrosion, meets sanitation requirements, and is easy to install.

**Copper Tubes:** There are three types of copper tubing for complying with ASTM B88 shown below.

Each type is provided with a different wall thickness to meet application requirements.

<b>Type K</b>	For use in steam, oil and gas lines for underground installation and/or severe conditions.
<b>Type L</b>	For general cooling and heating systems and related water piping and ventilation systems.
<b>Type M</b>	For home air-conditioning and heating applications.

 <b>CAUTION</b>	Solder joint end valves should not be used in service where the temperature of the line fluid if higher than the softening point of solder.
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### Soldering Leak-free Joints

Use solder of 95-5 tin-antimony or 96-4 tin-silver, and an open-flame torch. Keep torch temperature relatively low to assure a firmly soldered joint. Because the solder melting point ranges 500°F (260°C) solder jointed valves cannot be used for high temperature service.

### Solder P-T Rating

Solder	Max. temp. (°C)	Max. working pressure					
		size 1/4"~1"		size 1/4"~2"		size 2 1/4"~4"	
		MPa	psi	MPa	psi	MPa	psi
95-5 tin-antimony [H95 Sb-5A]	38	3.45	500	2.76	400	2.07	300
	66	2.76	400	2.41	350	1.90	275
96-4 tin-silver [H96 Ag-3.5A]	93	2.07	300	1.72	250	1.38	200
	121	1.38	200	1.21	175	1.03	150

## KITZ Bronze and Brass Materials to JIS Standards

### JIS H5120-2006 (Copper & Copper Alloy Castings)

Cast bronze Class 6	Designation	Chemical composition (%)										Mechanical property	
		Cu	Sn	Zn	Pb	Ni	Fe	P	Sb	Al	Si	Tensile strength 195 Min. (N/mm <sup>2</sup> )	Elongation (%) 15 Min.
	CAC406 (BC6)	83.0-87.0	4.0-6.0	4.0-6.0	4.0-6.0	1.0 Max.	0.3 Max.	0.05 Max.	0.2 Max.	0.01 Max.	0.01 Max.		

### JIS H3250-2006 (Copper & Copper Alloy Rods and Bars)

Forged brass Alloy No. 3771	Designation		Chemical composition (%)				Mechanical property	
	Extruded	Drawn	Cu	Pb	Fe + Sn	Zn	Tensile strength 315 Min. (N/mm <sup>2</sup> )	Elongation (%) 15 Min.
	C3771BE	C3771BD	57.0-61.0	1.0-2.5	1.0 Max.	Remainder		

### JIS H3250-2006 (Copper & Copper Alloy Rods and Bars)

Free-cutting brass Alloy No. 3604	Designation		Chemical composition (%)					Mechanical property	
	Extruded	Drawn	Cu	Pb	Fe	Fe + Sn	Zn	Tensile strength 335 Min. (N/mm <sup>2</sup> )	Elongation (%) —
	C3604BE	C3604BD	57.0-61.0	1.8-3.7	0.5 Max.	1.0 Max.	Remainder		

## KITZ Bronze and Brass Materials to ASTM Standards

### ASTM B62-2002

Chemical composition (%)											Mechanical properties		
Copper	Tin	Lead	Zinc	Nickel & cobalt	Iron	Sulfur	Phosphorus	Antimony	Aluminum	Silicon	Minimum		
84.0-86.0	4.0-6.0	4.0-6.0	4.0-6.0	1.0 Max.	0.30 Max.	0.08 Max.	0.05 Max.	0.25 Max.	0.005 Max.	0.005 Max.	Tensile strength 30 ksi	Yield strength 14 ksi	Elongation in 2 in. 20%

### ASTM B584 C84400-2004

Chemical composition (%)											Mechanical properties		
Copper	Tin	Lead	Zinc	Nickel & cobalt	Iron	Sulfur	Phosphorus	Antimony	Aluminum	Silicon	Minimum		
78.0-82.0	2.3-3.5	6.0-8.0	7.0-10.0	1.0 Max.	0.40 Max.	0.08 Max.	0.02 Max.	0.25 Max.	0.005 Max.	0.005 Max.	Tensile strength 29 ksi	Yield strength 13 ksi	Elongation in 2 in. 18%

### ASTM B283 C37700-2004

Chemical composition (%)				Mechanical properties		
Copper	Lead	Iron	Zinc	Minimum		
58.0-61.0	1.5-2.5	0.30 Max.	Remainder	Tensile strength 50 ksi	Yield strength 18 ksi	Elongation in 4x thickness 25%

## Compliance with RoHS Requirements.

Aiming to reduce the negative environmental health impact, KITZ CORPORATION can offer products which meet the restriction of the use of six hazardous substances imposed by RoHS\* directive of EU, namely mercury, lead, cadmium, hexavalent chromium, PBB and PBDE, to the market. The products meeting this requirement bear the symbol shown below. Please consult KITZ for more details on these products.



\*The Restriction of the use of certain Hazardous Substances in electrical and electronic equipment

# CLASS 100 BRONZE GLOBE VALVE

Screwed Bonnet, Rising Stem  
Threaded ends to BS21 (JIS B0203) or NPT

W.O.G. non-shock 1.03 MPa (150 psi), Saturated steam pressure 0.7 MPa (100 psi)

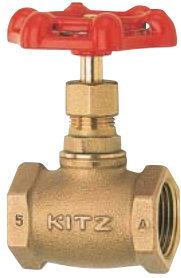
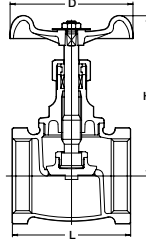


Fig. A

- Threaded end to BS21 (JIS B0203)

Fig. AKA

- Threaded end to ASME B1.20.1



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

\*Size 4 only

### Dimensions

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
L Threaded end to end	mm	8	10	15	20	25	32	40	50	65	80	100	
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	

# BRONZE GLOBE VALVE

Screwed Bonnet, Rising Stem, Soft seated disc  
Threaded ends to BS21 (JIS B0203)

W.O.G. non-shock 0.86 MPa (125 psi)

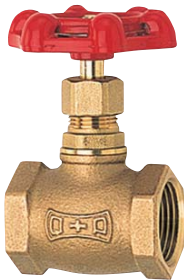


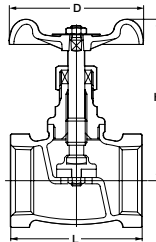
Fig. Q

- Rubber Disc



Fig. QA

- PTFE Disc (for oil service)



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	Urethane rubber/PTFE
Gland Packing	Aramid Fibers Graphite

### Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	mm
L Threaded end to end	mm	15	20	25	32	40	50	
H Height, valve open		70	73	86	108	132	150	
D Handwheel diam		50	55	60	80	90	100	

# CLASS 150 BRONZE GLOBE VALVE

Screwed Bonnet, Rising Stem  
Threaded ends to BS21 (JIS B0203) or NPT

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)

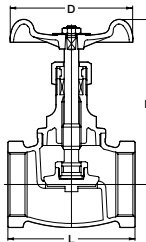


Fig. C

- Threaded end to BS21 (JIS B0203)

Fig. AKC

- Threaded end to ASME B1.20.1



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

\*Size 3 only

### Dimensions

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded end to end	mm	8	10	15	20	25	32	40	50	65	80	
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, Angle type body, Rising Stem  
Threaded ends to BS21 (JIS B0203) or NPT

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)

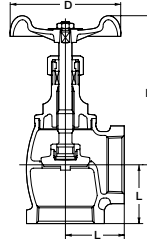


Fig. CA

- Threaded end to BS21 (JIS B0203)

Fig. AKCA

- Threaded end to ASME B1.20.1



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

\*Size 3 only

### Dimensions

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded 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  
Flanged ends drilled or undrilled optionally.

W.O.G. non-shock 1.55 MPa (225 psi), Saturated steam pressure 1.03 MPa (150 psi)

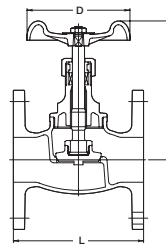


Fig. B

- Undrilled unless drilling is specified as an option

Fig. BH

- Drilled according to JIS 10K



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

\*Size 3 and 4

### Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
L Threaded end to end	83	88	100	113	120	145	165	177	200		
H Height, valve open	79	94	105	127	145	174	198	215	250		
D Handwheel diam	95	100	125	135	140	155	175	185	210		
t* Thickness	8.5	9.5	9.5	9.5	11.5	12.5	13	14	17		

\*Shall not be in accordance with JIS B 2240

## CLASS 125 BRONZE GLOBE VALVE

Union Bonnet\*, Rising Stem, Soft seated disc  
Threaded ends to BS21 (JIS B0203) or NPT

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)

\*Size 4; Screw Bonnet

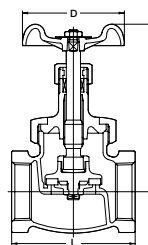


Fig. G

- Threaded end to BS21 (JIS B0203)

Fig. AGK

- Threaded end to ASME B1.20.1



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Reinforced PTFE
Gland Packing	Aramid Fibers Graphite

\*Size 2 1/2 and 3

### Dimensions

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded 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

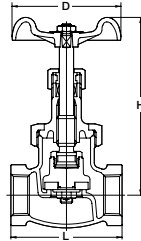
Union Bonnet, Rising Stem, Soft seated disc  
Threaded ends to BS21 (JIS B0203)

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)



Fig. D

• Threaded end to BS21 (JIS B0203)



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Reinforced PTFE
Gland Packing	Aramid Fibers Graphite

\*Size 1½ & 2

### Dimensions

Nominal Size	inch	1/2	3/4	1	1¼	1½	2	mm	
	mm	15	20	25	32	40	50	64	78
L	Threaded end to end	64	78	90	105	120	145	145	145
H	Height, valve open	113	138	156	184	187	212	212	212
D	Handwheel diam	60	90	100	115	115	135	135	135

# CLASS 150 BRONZE GLOBE VALVE

Union Bonnet\*, Rising Stem, Soft seated disc  
Flanged ends drilled or undrilled optionally.

W.O.G. non-shock 1.55 MPa (225 psi), Saturated steam pressure 1.03 MPa (150 psi)

\*Size 2½ and larger : Bolted bonnet

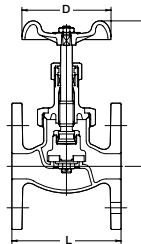


Fig. DB

• Undrilled unless drilling is specified as an option

Fig. DBH

• Drilled according to JIS 10K



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Reinforced PTFE
Gland Packing	Aramid Fibers Graphite/ PTFE fiber braid**

\*Size 1½ & larger  
\*\*Size 4 only

### Dimensions

Nominal Size	inch	1/2	3/4	1	1¼	1½	2	2½	3	4	mm
	mm	15	20	25	32	40	50	65	80	100	15
L	Threaded end to end	82	95	108	120	140	165	190	220	270	270
H	Height, valve open	113	138	156	184	187	212	244	281	321	321
D	Handwheel diam	60	90	100	115	115	135	155	180	225	225
t*	Thickness	8	9	10	11	12	13	14	15	17	17

\*Shall not be in accordance with JIS B 2240

# CLASS 125 BRASS GATE VALVE

Screwed Bonnet, Non-rising Stem  
Threaded ends to BS21 (JIS B0203) or NPT,  
or solder joint ends.

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)



Fig. FR

• Threaded end to BS21 (JIS B0203)

Fig. AKFS

• Threaded end to ASME B1.20.1

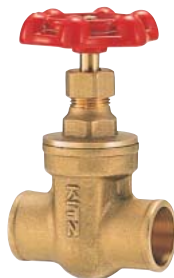
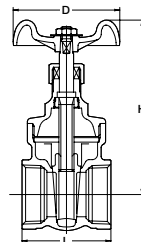


Fig. CFS

• Solder joint ends to ASME B16.18



### Materials

Parts	Material
Body	Brass
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	Brass
Gland Packing	Aramid Fibers Graphite

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

### Dimensions

Nominal Size	inch	3/8	1/2	3/4	1	1¼	1½	2	2½	3	mm
	mm	10	15	20	25	32	40	50	65	80	10
L	Threaded end to end	38	42	47	50	60	63	72	80	90	90
L1	Solder		45	60	70	77	86	102			
H	Height, valve open	73	73	87	97	117	126	154	167	200	200
D	Handwheel diam	50	50	55	60	70	80	90	100	115	115

\*2½ and 3 = AKFS only

# CLASS 125 BRASS GATE VALVE

Screwed Bonnet, Non-rising Stem  
Threaded ends to BS21 (JIS B0203) or NPT,  
or solder joint ends.

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)



Fig. FH

- Threaded end to BS21 (JIS B0203)

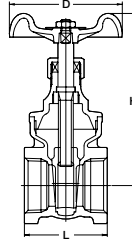
Fig. AKFH

- Threaded end to ASME B1.20.1



Fig. CFH

- Solder joint ends to ASME B16.18



### Materials

Parts	Material
Body	Brass
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	Brass
Gland Packing	Aramid Fibers Graphite

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

### Dimensions

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded end to end	mm	8	10	15	20	25	32	40	50	65	80	
L1 Solder			37	45	60	70	77	86	104	115	127	
H Height, valve open		70	73	73	87	97	118	126	154	187	205	
D Handwheel diam		50	50	50	55	60	70	80	90	100	115	

# CLASS 125 BRONZE GATE VALVE

Screwed Bonnet, Non-rising Stem  
Threaded ends to BS21 (JIS B0203) or NPT,  
or solder joint ends.

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)

3/8 to 2 Screwed-over-bonnet



Fig. H

- Threaded end to BS21 (JIS B0203)

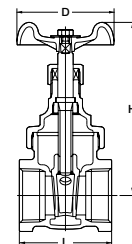
Fig. AKH

- Threaded end to ASME B1.20.1



Fig. CH

- Solder joint ends to ASME B16.18



### Materials

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Dezincification Resistant Brass
Disc	Dezincification Resistant Brass/Bronze*
Gland Packing	Aramid Fibers Graphite

\*Size 3/4 & larger

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

### Dimensions

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
L Threaded end to end	mm	10	15	20	25	32	40	50	65	80	100	
L1 Solder			39	46	61	72	78	87	102	115	130	173
H Height, valve open		74	80	90	105	118	135	159	202	223	280	
D Handwheel diam		50	50	55	60	70	80	90	115	135	155	

# CLASS 125 BRONZE GATE VALVE

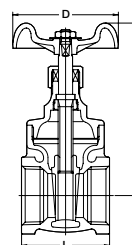
Screwed Bonnet, Non-rising Stem,  
Threaded ends to BS21 (JIS B0203)

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)



Fig. S

- Threaded end to JIS B0203



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	Brass
Gland Packing	Aramid Fibers Graphite

### Dimensions

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded end to end	mm	10	15	20	25	32	40	50	65	80	
L Height, valve open		38	42	47	50	60	63	72	80	90	
H Height, valve open		75	75	86	97	117	126	154	164	200	
D Handwheel diam		50	50	55	60	70	80	90	100	115	

## CLASS 150 BRONZE GATE VALVE

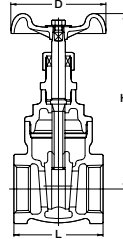
Screwed Bonnet, Non-rising Stem  
Threaded ends to BS21 (JIS B0203) or NPT

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)



Fig. E

• Threaded end to BS21 (JIS B0203)



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

\*Size 2 1/2 & 3

### Dimensions

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

## CLASS 150 BRONZE GATE VALVE

Screwed Bonnet, Non-rising Stem  
Flanged ends drilled or undrilled optionally.

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)

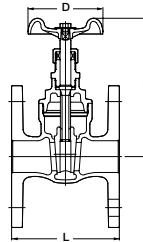


Fig. EB

• Undrilled unless drilling is specified as an option

Fig. EBH

• Drilled according to JIS 10K



### Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

\*Size 2 1/2 & larger

### Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
L Threaded end to end	mm	15	20	25	32	40	50	65	80	100	
H Height, valve open		75	80	95	110	120	140	165	190	230	
D Handwheel diam		96	111	122	142	165	197	225	264	309	
t* Thickness		55	60	70	80	90	100	115	155	225	
		8	9	9.5	10.5	11.5	13	14.5	16	19.5	

\*Shall not be in accordance with JIS B 2240

## CLASS 150 BRONZE LIFT CHECK VALVE

Screwed cap, Lift type disc  
Threaded ends to BS21 (JIS B0203)

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)

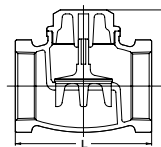


Fig. F

• Threaded end to BS21 (JIS B0203)

Fig. AKF

• Threaded end to ASME B1.20.1



### Materials

Parts	Material
Body	Bronze
Cap	Brass/Bronze*
Disc	Bronze

\*Size 2 1/2 & 3

### Dimensions

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

**CLASS 125**

**BRONZE SWING CHECK VALVE**

Screwed Cap, Swing type disc  
Threaded ends to BS21 (JIS B0203) or NPT, or solder joint ends.

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)



**Fig. R**

- Threaded end to BS21 (JIS B0203)

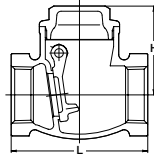


**Fig. CR**

- Solder joint ends to JIS B2011 / ASME B16.18 (2 1/2 & 3)

**Fig. AKR**

- Threaded end to ASME B1.20.1



**Materials**

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

\*Size 4 only

**Caution**

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

**Dimensions**

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
L Threaded end to end	53	60	70	80	92	102	122	150	165	195		
L1 Solder	56	67	89	104	120	134	164	193	213			
H Height	39	39	45	52	62	67	79	91	102	119		

**CLASS 125**

**BRONZE Y-PATTERN SWING CHECK VALVE**

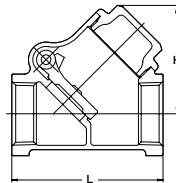
Screwed cap, Swing type disc  
Threaded ends to BS21 (JIS B0203)

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)



**Fig. YR**

- Threaded end to BS21



**Materials**

Parts	Material
Body	Bronze
Cap	Brass
Hinge pin	Copper
Disc	Bronze

**Caution**

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

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded end to end	56	70	80	95	110	128	158	184		
H Height	40	49	58	71	80	95	114	131		
H Solder	38	47	56	69	77	92	111	127		

**CLASS 150**

**BRONZE LIFT CHECK VALVE**

Screwed Cap, Lift type disc  
Threaded ends to BS21 (JIS B0203) or NPT, or solder joint ends.

W.O.G. non-shock 1.72 MPa (250 psi)



**Fig. RF**

- Threaded end to BS21 (JIS B0203)

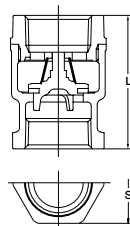


**Fig. CAF**

- Solder joint ends to ASME B16.18

**Fig. AKAF**

- Threaded end to ASME B1.20.1



**Materials**

Parts	Material
Body	Bronze
Cap	Bronze
Disc	NBR

**Dimensions**

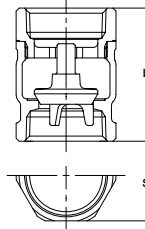
Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	mm
L Threaded end to end	53	59	67	78	84	98		
L1 Solder	61	76	89	97	110	132		
S (AKAF)	26	32	39	48	54	67		
S (RF)	28	34	41	50	57	70		

5K

BRONZE LIFT CHECK VALVE

Screwed cap, Lift type disc  
Threaded ends

W.O.G. non-shock 120°C (0.49 MPa)



Materials

Parts	Material
Body	Bronze
Cap	Bronze
Disc	Bronze

Fig. VF

• Threaded end to BS21

Dimensions

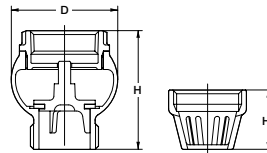
Nominal Size	inch	1 1/4	1 1/2	2	mm
	mm	32	40	50	
L Threaded end to end		62	69	82	
S		45	52	63	

5K

BRONZE LIFT CHECK VALVE

Screwed cap, Lift type disc  
Threaded ends to B21 (JIS B0203)

Water 80°C (0.49 MPa)



Materials

Parts	Material
Body	Bronze
Cap	Bronze
Disc	NBR

Fig. FT

• Threaded end to BS21 (JIS B0203)

Fig. FTS

(Screen)

Dimensions

Nominal Size	inch	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
	mm	20	25	32	40	50	65	80	
H Height		48	58	62	70	80	90	100	
D		41	52	62	70	83	102	116	
H1 Screen		25	29	32	35	43	50	51	

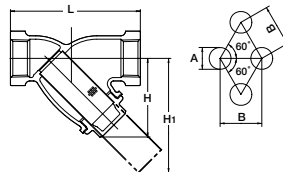
CLASS 150

Y-PATTERN STRAINER

Y-Pattern body, Screwed cap, 304 stainless steel screen  
Threaded ends to BS21 (JIS B0203) or NPT,  
or solder joint ends.

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi) up to size 2\*

\*Contact KITZ for larger sizes



Materials

Parts	Material
Body	Bronze
Body cap	Brass
Screen	Type 304 stainless steel

	A	B
3/8 to 2	1.4	2.4
2 1/2 to 3	1.5	2.5

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

Fig. Y

• Threaded end to BS21 (JIS B0203)

Fig. AKY

• Threaded end to ASME B1.20.1

Fig. CY

• Solder joint ends to JIS B2011 / ASME B16.18 (2 1/2 & 3)

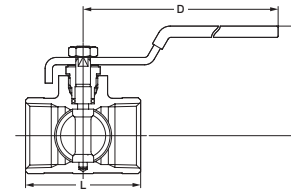
Dimensions

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
	mm	10	15	20	25	32	40	50	65	80	
L Threaded end to end		70	80	100	115	135	160	195	230	240	
L1 Solder			80	105	125	145	170	210	250	280	
H Height		44	49	57	70	82	98	121	148	180	
H1		61	68	83	105	124	149	188	216	267	

# CLASS 175 BRASS BUTTERFLY VALVE

NBR lined disc, Balancing stop hand lever  
Threaded ends

W.O.G. non-shock 1.21 MPa (175 psi)



### Materials

Parts	Material
Body	Brass
Stem	Type 304 stainless steel
Disc	Type 304 stainless steel + white-NBR
O-ring	NBR

### Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	15	20	25	32	40	50	
L Threaded 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	

Fig. FV

• Threaded end to BS21 (JIS B0203)



10K

JIS 10K BRONZE GLOBE VALVE

Screwed Bonnet\*, Rising Stem  
Designed to JIS B2011  
Threaded end to JIS B0203 (also to BS21)

Water, non-shock 120°C (1.4 MPa), Oil & water 120°C (1.0 MPa), Saturated steam pressure 1.0MPa

\*Size 3 : Bolted Bonnet

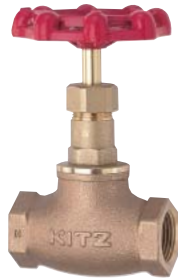
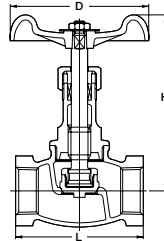


Fig. J



Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Non-asbestos packing

\*Size 1 & larger

Dimensions

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
	mm	8	10	15	20	25	32	40	50	65	80	
L Threaded end to end		50	55	65	80	90	105	120	140	180	200	
H Height, valve open		86	87	93	122	135	157	171	196	232	268	
D Handwheel diam		50	55	60	80	90	100	115	135	155	180	

10K

10K BRONZE GLOBE VALVE

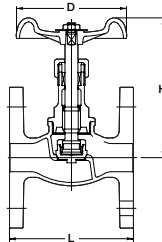
Screwed Bonnet\*, Rising Stem,  
Designed to JIS B2011  
Flanged end to JIS B2011

Water, non-shock 120°C (1.4 MPa), Oil & water 120°C (1.0 MPa), Saturated steam pressure 1.0MPa

\*Size 3 & larger : Bolted Bonnet



Fig. JB



Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Non-asbestos packing

\*Size 1 & larger

Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
	mm	15	20	25	32	40	50	65	80	100	
L Threaded end to end		85	95	110	130	150	180	210	240	280	
H Height, valve open		93	122	135	157	171	196	232	268	323	
D Handwheel diam		60	80	90	100	115	135	155	180	225	
t* Thickness		10	10	12	12	14	14	16	16	18	

\*Shall not be in accordance with JIS B 2011

5K

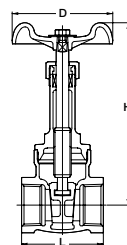
JIS 5K BRONZE GATE VALVE

Screwed Bonnet, Rising Stem  
Designed to JIS B2011  
Threaded end to JIS B0203 (also to BS21)

Water, non-shock 120°C (0.7 MPa), Oil & water 120°C (0.5 MPa), Saturated steam pressure 0.2MPa



Fig. M



Materials

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Non-asbestos packing

Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
	mm	15	20	25	32	40	50	65	80	
L Threaded end to end		50	60	65	75	85	95	115	130	
H Height, valve open		126	145	170	213	244	294	253	283	
D Handwheel diam		60	60	70	90	100	115	135	155	

10K

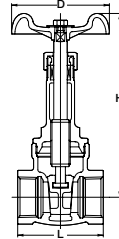
JIS 10K BRONZE GATE VALVE

Screwed Bonnet, Rising Stem  
Designed to JIS B2011  
Threaded ends to JIS B0203 (also to BS21)

Water, non-shock 120°C (1.4 MPa), Oil & water 120°C (1.0 MPa), Saturated steam pressure 0.7MPa



Fig. L



Materials

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Non-asbestos packing

Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
	mm	15	20	25	32	40	50	65	80	
L Threaded end to end		55	65	70	80	90	100	120	140	
H Height, valve open		126	153	178	223	254	302	260	282	
D Handwheel diam		60	70	80	90	100	115	155	180	

10K

10K BRONZE GATE VALVE

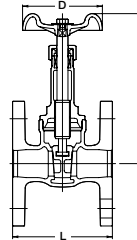
Screwed Bonnet\*, Rising Stem,  
Designed to JIS B2011  
Flanged ends to JIS B2011

Water, non-shock 120°C (1.4 MPa), Oil & water 120°C (1.0 MPa), Saturated steam pressure 0.7MPa

\*Size 4 : Bolted Bonnet



Fig. LB



Materials

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Non-asbestos packing

Dimensions

Nominal Size	inch	3/4**	1	1 1/4	1 1/2	2	2 1/2	3	4**	mm
	mm	20**	25	32	40	50	65	80	100**	
L Threaded end to end		90	100	110	125	140	170	190	220	
H Height, valve open		153	178	223	254	302	376	436	327	
D Handwheel diam		70	80	90	100	115	155	180	225	
t* Thickness		10	12	12	14	14	16	16	18	

\*t\* Shall not be in accordance with JIS B 2011 \*\*3/4 & 4 shall not be in accordance with JIS B2011

10K

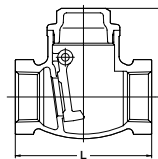
JIS 10K BRONZE SWING CHECK VALVE

Screwed Bonnet, Swing type disc  
Designed to JIS B2011, Threaded  
ends to JIS B0203 (also to BS21)

Water, non-shock 120°C (1.4 MPa), Oil & water 120°C (1.0 MPa), Saturated steam pressure 0.7MPa



Fig. O



Materials

Parts	Material
Body	Bronze
Cap	Brass
Hinge pin	Brass
Disc	Bronze

Dimensions

Nominal Size	inch	1/4	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
	mm	10	15	20	25	32	40	50	65	80	
L Threaded end to end		55	65	80	90	105	120	140	180	200	
H Height, valve open		38.5	43	51.5	58.5	67	73.5	86	97	108	



10K

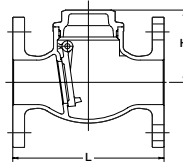
10K BRONZE SWING CHECK VALVE

Screwed Bonnet,  
Swing type disc,  
Flanged end to JIS B2240

Water, non-shock 120°C (1.4 MPa), Oil & water 120°C (1.0 MPa), Saturated steam pressure 0.7MPa



Fig. OB



Materials

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Hinge pin	Brass
Disc	Bronze

\*Size 4 only

Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
	mm	15	20	25	32	40	50	65	80	100	
L Threaded end to end		85	95	110	130	150	180	210	240	280	
H Height		43	52	59	67	74	86	97	108	127	
t* Thickness		10	10	12	12	14	14	16	16	18	

"t" Shall not be in accordance with JIS B2240

10K

BRONZE WAFER TYPE CHECK VALVE

Double plate  
Wafer connection JIS 10K

Water, non-shock 80°C (1.37 MPa), Oil & Gas 80°C (0.98 MPa)

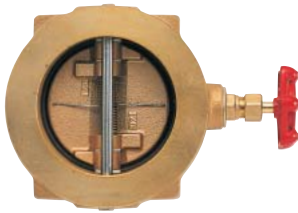
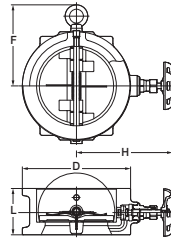


Fig. 10BW

• With by-pass

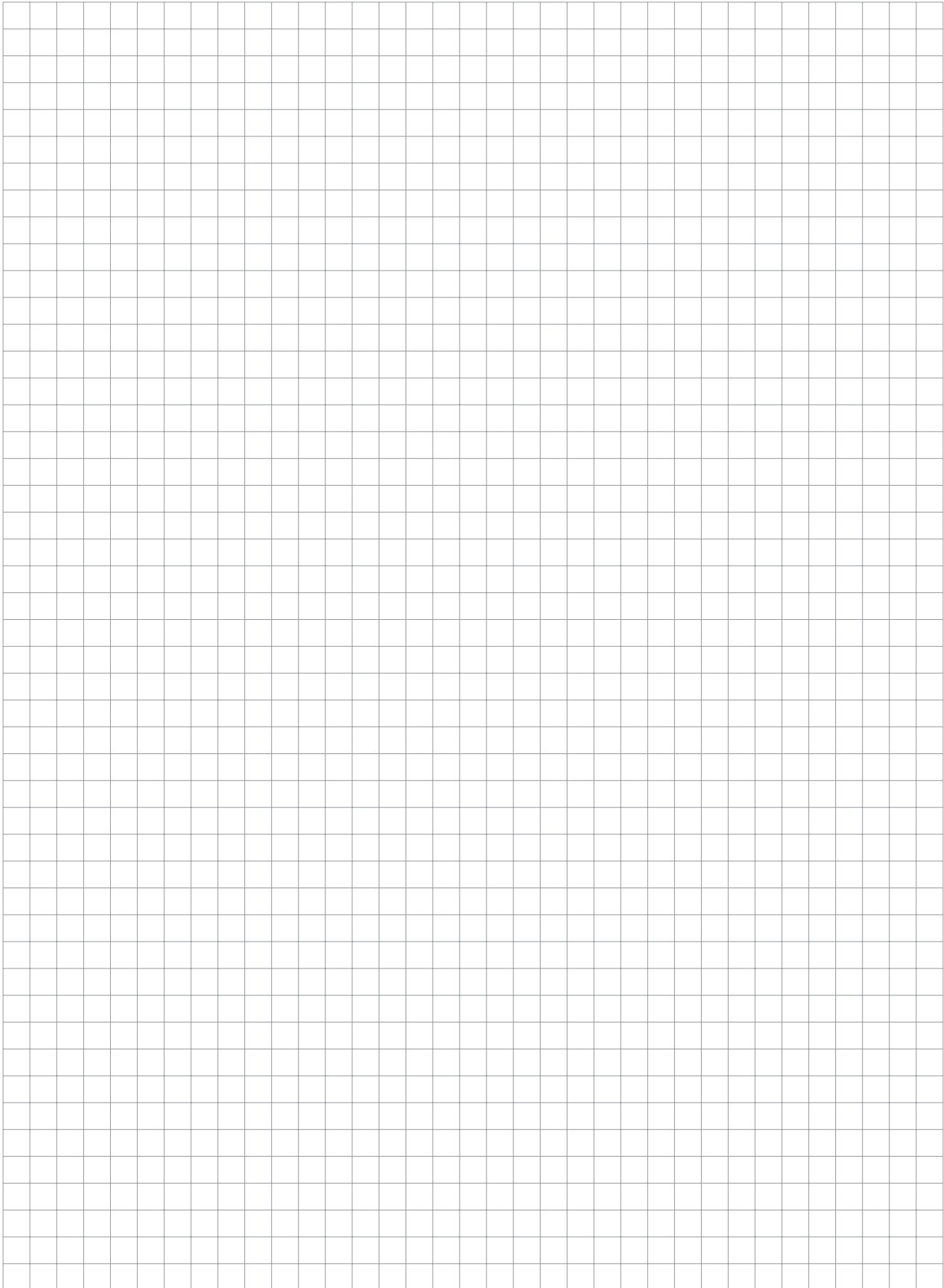


Materials

Parts	Material
Body	Bronze + NBR
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc A	Bronze
Disc B	PTFE

Dimensions

Nominal Size	inch	2	2 1/2	3	4	5	6	8	10	12	mm
	mm	50	65	80	100	125	150	200	250	300	
L Threaded end to end		54	54	57	64	70	76	95	108	144	
H Height		118	128	135	147	183	196	224	277	302	
D Handwheel diam		101	121	131	156	187	217	267	330	375	
F						135	150	177	216	240	



## CLASS 125 BRONZE GATE VALVE

Screwed Bonnet, Rising Stem, Designed to MSS SP-80 Type 2  
Threaded ends to NPT or solder joint ends.

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)



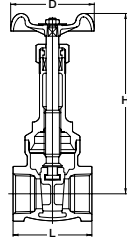
Fig. AK125M

- Threaded end to ASME B1.20.1



Fig. C125M

- Solder joint end to ASME B16.18



### Materials

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

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

### Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded end to end	51	56	66	68	74	84	115	130		
L1 Solder	49	64	76	82	86	109				
H Height, valve open	129	155	180	216	257	296	371	432		
D Handwheel diam	55	60	70	80	90	100	135	155		

## CLASS 125 BRONZE GATE VALVE

Screwed Bonnet, Non-rising Stem, Designed to MSS SP-80 Type 1A  
Threaded ends to NPT or solder joint ends.

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)

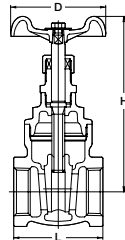


Fig. AK125E

- Threaded end to ASME B1.20.1

Fig. C125E

- Solder joint end to ASME B16.18



### Materials

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

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

### Dimensions

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
L Threaded end to end	43	49	53	61	64	68	74		
L1 Solder	39	46	60	71	79	88	108		
H Height, valve open	86	93	110	126	145	170	189		
D Handwheel diam	50	55	60	70	80	90	100		

## CLASS 150 BRONZE GATE VALVE

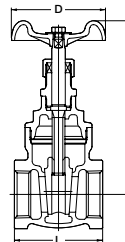
Screwed Bonnet, Non-rising Stem, Designed to MSS SP-80 Type 1A  
Threaded ends to NPT

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)



Fig. AK150E

- Threaded end to ASME B1.20.1



### Materials

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

### Dimensions

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
L Threaded end to end	43	49	53	61	68	74	84		
H Height, valve open	86	98	114	126	145	176	201		
D Handwheel diam	50	55	70	70	80	90	100		

**CLASS 150**

**BRONZE GATE VALVE**

Screwed Bonnet, Rising Stem, Designed to MSS SP-80 Type 2 Threaded ends to NPT or solder joint ends.

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)



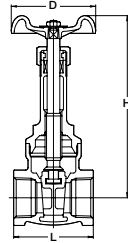
**Fig. AK150L**

• Threaded end to ASME B1.20.1



**Fig. C150L**

• Solder joint end to ASME B16.18



**Materials**

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

**Caution**

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

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
	mm	15	20	25	32	40	50	65	80	
L Threaded end to end		51	56	66	68	74	84	120	140	
L1 Solder		49	64	76	82	86	109			
D Height, valve open		137	157	180	216	257	296	385	432	
D Handwheel diam		55	70	70	80	90	100	155	155	

**CLASS 150**

**BRONZE GATE VALVE**

Union Bonnet, Rising Stem, Designed to MSS SP-80 Type 2 Threaded ends to NPT or solder joint ends.

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)



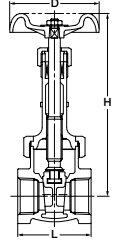
**Fig. AK150LU**

• Threaded end to ASME B1.20.1



**Fig. C150LU**

• Solder joint end to ASME B16.18



**Materials**

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Bronze
Gland Packing	Flexible graphite & Aluminum

**Caution**

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

**Dimensions**

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	15	15	15	20	25	32	40	50	
L Threaded end to end		45	46	51	56	66	68	74	84	
L1 Solder				49	64	76	82	86	109	
D Height, valve open		108	108	137	157	180	216	257	297	
D Handwheel diam		50	50	55	70	70	80	90	100	

**CLASS 300**

**BRONZE GATE VALVE**

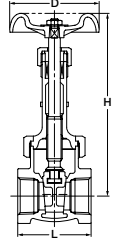
Union Bonnet, Rising Stem, Designed to MSS SP-80 Type 2 Threaded ends to NPT

W.O.G. non-shock 6.89 MPa (1000 psi), Saturated steam pressure 2.07 MPa (300 psi)



**Fig. AK300LU**

• Threaded end to ASME B1.20.1



**Materials**

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Copper-nickel alloy
Gland Packing	Flexible graphite & Aluminum

**Dimensions**

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	10	15	20	25	32	40	50	
L Threaded end to end		46	51	56	66	74	84	98	
H Height, valve open		125	149	173	194	228	274	313	
D Handwheel diam		60	70	80	80	100	115	135	

**CLASS 125**

**BRONZE GLOBE VALVE**

Screwed Bonnet, Rising Stem, Designed to MSS SP-80 Type 1 Threaded ends to NPT or solder joint ends.

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)



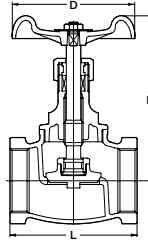
**Fig. AK125C**

• Threaded end to ASME B1.20.1



**Fig. C125C**

• Solder joint end to ASME B16.18



**Materials**

Parts	Material
Body	Bronze
Bonnet	Brass/Bronze*
Stem	Bronze
Disc	Bronze
Gland Packing	Aramid Fibers Graphite

\*Size 2 1/2 & 3

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded end to end	53	65	77	85	100	119	150	178		
L1 Solder	64	84	100	115	130	155	192	232		
H Height, valve open	76	98	108	137	160	180	202	246		
D Handwheel diam	60	70	80	90	100	115	135	155		

**CLASS 150**

**BRONZE GLOBE VALVE**

Union Bonnet\*, Rising Stem, Designed to MSS SP-80 Type 2 Threaded end to NPT or solder joint ends.

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)

\*Size 2 1/2 and larger = Bolted bonnet



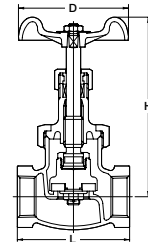
**Fig. AK150D**

• Threaded end to ASME B1.20.1



**Fig. C150D**

• Solder joint end to ASME B16.18



**Materials**

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Reinforced PTFE
Gland Packing	Aramid Fibers Graphite

**Caution**

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

**Dimensions**

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
L Threaded end to end	53	55	64	78	90	105	120	145	170	200	245		
L1 Solder	58	61	72	95	112	126	145	180	205	244	312		
H Height, valve open	109	109	116	136	149	173	182	209	247	275	298		
D Handwheel diam	60	60	70	90	100	115	115	135	155	180	225		

**CLASS 300**

**BRONZE GLOBE VALVE**

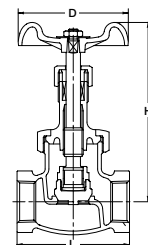
Union Bonnet, Rising Stem, Designed to MSS SP-80 Type 1 Threaded ends to NPT

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 2.07 MPa (300 psi)



**Fig. AK300J**

• Threaded end to ASME B1.20.1



**Materials**

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Bronze
Gland Packing	Flexible Graphite & Aluminum

**Dimensions**

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
L Threaded end to end	53	55	64	78	90	105	120	145		
H Height, valve open	113	113	126	139	159	187	195	224		
D Handwheel diam	60	60	80	90	100	115	135	155		

**CLASS 300**

**BRONZE GLOBE VALVE**

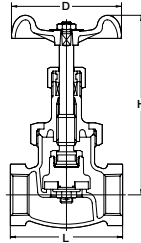
Union Bonnet, Rising Stem, Designed to MSS SP-80 Type 2 Threaded end to NPT

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 2.07 MPa (300 psi)



**Fig. AK300D**

• Threaded end to ASME B1.20.1



**Materials**

Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Bronze
Disc	Reinforced PTFE
Gland Packing	Flexible graphite & aluminum

**Dimensions**

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	8	10	15	20	25	32	40	50	
L Threaded end to end		53	55	64	78	90	105	120	145	
H Height, valve open		113	113	126	139	157	187	192	221	
D Handwheel diam		60	60	80	90	100	115	135	155	

**CLASS 125**

**BRONZE Y-PATTERN SWING CHECK VALVE**

Screwed cap, Swing type disc, Designed to MSS SP-80 Type 3 Threaded ends to NPT or solder joint ends.

W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)



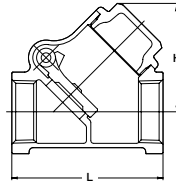
**Fig. AKYR**

• Threaded end to ASME B1.20.1



**Fig. CYR**

• Solder joint end to ASME B16.18



**Materials**

Parts	Material
Body	Bronze
Cap	Brass
Hinge pin	Copper
Disc	Bronze

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

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
	mm	15	20	25	32	40	50	65	80	
L Threaded end to end		56	70	80	95	110	128	158	184	
L1 Solder		67	86	105	121	137	170	194	222	
H Height		40	49	58	71	80	95	114	131	
H Solder		38	47	56	69	77	92	111	127	

**CLASS 150**

**BRONZE Y-PATTERN SWING CHECK VALVE**

Screwed cap, Swing type disc, Designed to MSS SP-80 Type 3 Threaded ends to NPT or solder joint ends.

W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)



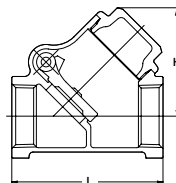
**Fig. AK150YR**

• Threaded end to ASME B1.20.1



**Fig. C150YR**

• Solder joint end to ASME B16.18



**Materials**

Parts	Material
Body	Bronze
Cap	Brass
Hinge pin	Copper
Disc	Bronze

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

**Dimensions**

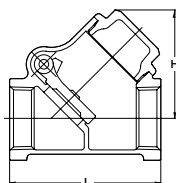
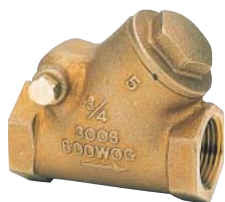
Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
	mm	10	15	20	25	32	40	50	65	80	
L Threaded end to end		54	60	72	84	99	113	131	162	186	
L1 Solder		61	67	86	105	121	137	170	194	222	
H Height		39	39	49	58	70	79	95	114	132	

**CLASS 300**

**BRONZE Y-PATTERN SWING CHECK VALVE**

Screwed cap, Swing type disc,  
Designed to MSS SP-80 Type 3  
Threaded ends to NPT

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 2.07 MPa (300 psi)



**Materials**

Parts	Material
Body	Bronze
Cap	Bronze
Hinge pin	Copper
Disc	Bronze

**Fig. AK300YR**

• Solder joint end to ASME B1.20.1

**Dimensions**

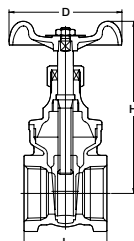
Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	15	20	25	32	40	50	
<b>L</b> Threaded end to end		60	72	84	99	113	131	
<b>H</b> Height, valve open		42	51	61	74	83	98	

**PN16**

**BRASS GATE VALVE AS 1628**

Screwed Bonnet, Non-rising Stem,  
Designed to AS 1628-2001  
Threaded ends to AS 1722.1

Working temperature and pressure, non-shock 99°C /1.6 MPa



**Materials**

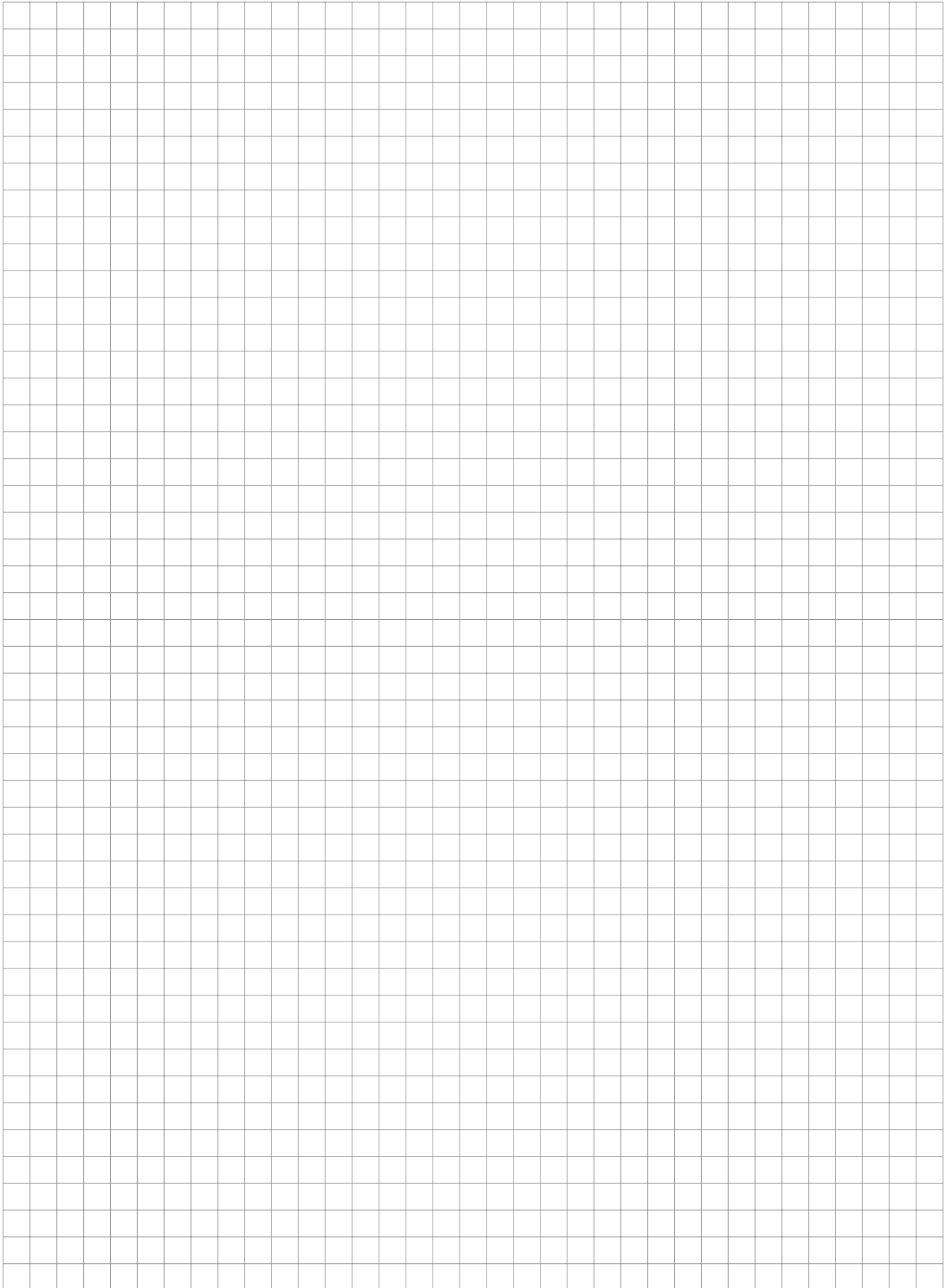
Parts	Material	AS Designation
Body	Brass	AS 2345
Bonnet	Brass	AS 2345
Stem	Brass	AS 2345
Disc	Brass	AS 2345
Gland Packing	Aramid Fibers Graphite	Asbestos free packing

**Fig. AS-FH**

• Australian Standard AS 1628 Lic No WMKA02054

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	15	20	25	32	40	50	
<b>L</b> Threaded end to end		55	60	68	78	81	94	
<b>H</b> Height, valve open		74	86	94	116	128	158	
<b>D</b> Handwheel diam		50	55	60	70	80	90	



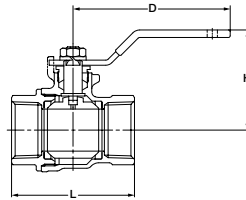


**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Screwed body cap, Blowout-proof Stem  
Threaded ends to ASME B1.20.1

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass (chrome free plated)
Ball seat	PTFE
Gland Packing	PTFE

**Fig. AKTAF**

• Threaded end to ASME B1.20.1

Approvals (up to 2)

NSF/ANSI61-8	CSA (US/C)	UL	FM APPROVED

**Dimensions**

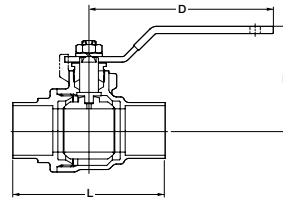
Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
L Threaded end to end	41	42	53	60	72	82	92	105		
H Height	39	39	42	51	59	64	73	80		
D Length of Handle	82	82	82	100	130	130	150	150		

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Screwed body cap, Blowout-proof Stem  
Solder joint ends to ASME B16.18

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Dezincification Resistant Brass
Ball	Brass** (Size 2 1/2, 3) Brass (chrome free plated) (Size 3/8 to 2)
Ball seat	PTFE
Gland Packing	PTFE

\*Size 2 1/2 & 3  
\*\*Chrome or Nickel-chrome plated  
**Caution** Solder joint end valves should not be used in service where the temperature of line fluid is higher than the softening point of solder.

**Fig. CTAF**

• Solder joint end to ASME B16.18

Approvals (up to 2)

NSF/ANSI61-8	UL	FM APPROVED

**Dimensions**

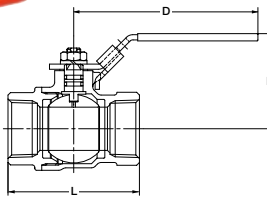
Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded end to end	46	54	73	88	100	115	140	163	187		
H Height	39	42	51	59	64	73	80	108	122		
D Length of Handle	82	82	100	130	130	150	150	198	300		

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Screwed body cap, Blowout-proof stem.  
Double O-ring stem seals  
Threaded ends to NPT or solder joint ends.

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)  
Maximum pressure temperature limitation: 150 psi at 300°F



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
O-ring	NBR, FKM

\*Chrome or Nickel-chrome plated  
**Caution** Solder joint end valves should not be used in service where the temperature of line fluid is higher than the softening point of solder.

**Fig. AKTFL**

• Threaded end to ASME B1.20.1

**Fig. CTFL**

• Solder joint end to ASME B16.18

Approvals (up to 2)  
AKTFL only

NSF/ANSI61-8	UL

**Dimensions**

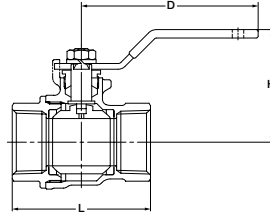
Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
L Threaded end to end	41	42	53	60	72	82	92	105		
L1 Solder				54	73	88	100	115	140	
H Height	35	35	39	47	55	59	67	75		
D Length of Handle	82	82	82	100	130	130	150	150		

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Stainless steel trim  
Screwed body cap, Blowout-proof Stem  
Threaded ends to NPT or solder joint ends.

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)



**Fig. AKTAFM**

- Threaded end to ASME B1.20.1

**Fig. CTAFM**

- Solder joint end to ASME B16.18

Approvals (up to 2)

\*AKTAFM only NSF/ANSI 61-8 NSF (NSF) SP (US/C) UL (UL)

**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Stainless Steel (type 316)
Ball	Stainless Steel (type 316 or Gr. CF8M)
Ball seat	PTFE
Gland Packing	PTFE

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

**Dimensions**

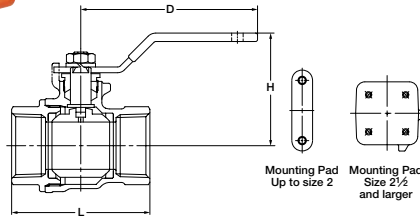
Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	8	10	15	20	25	32	40	50	
L Threaded end to end		41	42	53	60	72	82	92	105	
L1 Solder				46	54	73	88	100	115	140
H Height		39	39	42	51	58	64	73	80	
D Length of Handle		82	82	82	100	130	130	150	150	

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Mounting pad  
Screwed body cap, Blowout-proof Stem  
Threaded ends to ASME B1.20.1

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)



**Fig. AKTAFP**

- Threaded end to ASME B1.20.1

Approvals (up to 2)

UL (UL)

**Materials**

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Dezincification Resistant Brass
Ball	Brass**
Ball seat	PTFE
Gland Packing	PTFE

\*Size 2 1/2 and larger  
\*\*Chrome or Nickel-chrome plated

**Dimensions**

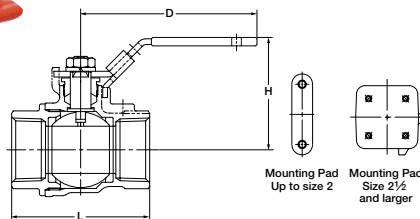
Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
	mm	8	10	15	20	25	32	40	50	65	80	100	
L Threaded end to end		41	42	53	60	72	82	92	105	135	156	192	
H Height		39	39	42	52	59	65	74	81	109	123	141	
D Length of Handle		82	82	82	100	130	130	150	150	200	300	300	

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

250 WSP Steam trim, Mounting pad  
Screwed body cap, Blowout-proof stem.  
Threaded ends to ASME B1.20.1

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.72 MPa (250 psi)



**Fig. AKTAFPM**

- Threaded end to ASME B1.20.1

Approvals (up to 2)

UL (UL)

**Materials**

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Stainless Steel (type 316)
Ball	Stainless Steel (type 316 or Gr. CF8M)
Ball seat	Reinforced PTFE
Gland Packing	Reinforced PTFE

\*Size 2 1/2 and larger

**Dimensions**

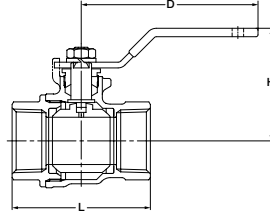
Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
	mm	8	10	15	20	25	32	40	50	65	80	100	
L Threaded end to end		41	42	53	60	72	82	92	105	135	156	192	
H Height		39	39	42	51	59	64	73	80	108	122	140	
D Length of Handle		81	81	81	100	130	130	150	150	200	300	300	

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Drainable, Screwed body cap, Blowout-proof Stem, Drain port Threaded ends to ASME B1.20.1

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
Gland Packing	PTFE

\*Chrome or Nickel-chrome plated

**Fig. AKTAFD**

• Threaded end to ASME B1.20.1

**Fig. CTAFD**

• Solder joint end to ASME B16.18

**Dimensions**

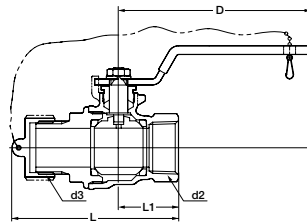
Nominal Size	inch	1/2	3/4	1
	mm	15	20	25
L Threaded end to end		55	62	73
L1 Solder		54	73	88
H Height		42	51	59
D Length of Handle		82	100	130

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Threaded end 3/4 Hose connection with cap & chain, Blowout-proof stem, Threaded/Hose connection (ASME B1.20.1/ASME B1.20.7 3/4 11.5NHR)

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
Gland Packing	PTFE

\*Chrome or Nickel-chrome plated

**Fig. AKTAFD**

• Threaded end to ASME B1.20.1

**Fig. CTAFD**

• Solder joint end to ASME B16.18

**Dimensions**

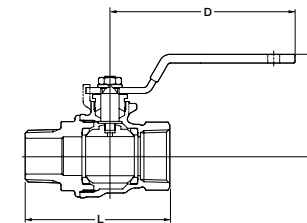
Nominal Size	inch	1/2	3/4
	mm	15	20
L Threaded end to end		74	84
L1 Solder		75	90
H Height		42	51
D Length of Handle		82	100
d2 Threaded		NPT 1/2	NPT 1/2
d3 Hose		3/4-11.5 NHR	3/4-11.5 NHR

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Screwed body cap, Blowout-proof Stem, Male & Female, Threaded ends to ASME B1.20.1

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
Gland Packing	PTFE

\*Chrome or Nickel-chrome plated

**Fig. AKTAFO**

• Threaded end to ASME B1.20.1

**Dimensions**

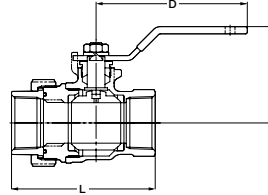
Nominal Size	inch	1/4	3/8	1/2	3/4	1
	mm	8	10	15	20	25
L Threaded end to end		52	53	66	73	88
H Height		39	39	42	51	59
D Length of Handle		82	82	82	100	130

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Single union, Screwed body cap,  
Blowout-proof Stem,  
Threaded ends to ASME B1.20.1

W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
Gland Packing	PTFE

\*Chrome or Nickel-chrome plated

**Fig. AKTAFU**

• Threaded end to ASME B1.20.1

**Dimensions**

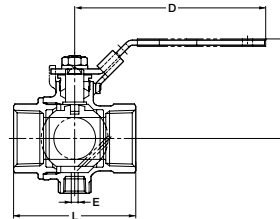
Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	8	10	15	20	25	32	40	50	
L Threaded end to end		52	52	63	75	88	98	113	126	
H Height		39	39	42	51	59	64	73	80	
D Length of Handle		82	82	82	100	130	130	150	150	

**TYPE 200**

**BRASS BALL VALVE, FULL PORT**

Safety exhaust, Screwed body cap,  
Blowout-proof stem, Latch lock handle  
Threaded ends to ASME B1.20.1

W.O.G. non-shock 1.38 MPa (200 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
Gland Packing	PTFE

\*Chrome or Nickel-chrome plated

**Fig. AKTAFS**

• Threaded end to ASME B1.20.1

**Dimensions**

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	8	10	15	20	25	32	40	50	
L Threaded end to end		41	42	53	60	72	82	92	105	
H Height		39	39	42	51	59	64	73	80	
E Exhaust hole		4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
D Length of Handle		81	81	81	100	130	130	150	150	

\*Exhaust hole diameter : 4.1mm (all nominal size)

## TYPE 400/600 BRASS BALL VALVE

Screwed body cap, Blowout-proof Stem, Double O-ring stem seals  
Threaded ends to BS21 or solder joint ends.

**CTH** W.O.G. non-shock 4.14 MPa (600 psi), W.O.G. 150°C non-shock 0.69 MPa (100 psi)  
**TH** W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C non-shock 0.69 MPa (100 psi)

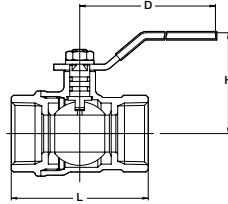


**Fig. TH**

• Threaded end to BS21

**Fig. CTH**

• Solder joint end to ASME B16.18



### Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

\*Chrome or Nickel-chrome plated

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

### Dimensions

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded end to end	mm	8	10	15	20	25	32	40	50	65	80	
L1 Solder		44	45	56	63	74	82	91	104	127	153	
H Height		41	41	45	48	54	58	63	74	91	105	
H1 Height solder		41	41	45	48	54	58	63	74	89	103	
D Length of Handle		60	60	80	80	110	110	110	140	200	300	

\*TH: 1/4 to 2

## TYPE 400 BRASS BALL VALVE

Screwed body cap, Blowout-proof Stem, Double O-ring stem seals  
Threaded ends to BS21 or NPT

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)



**Fig. T**

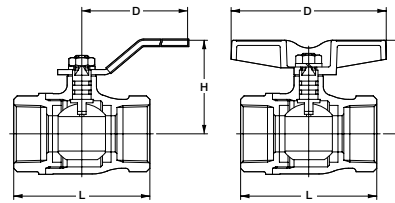
• Threaded end to BS21

**Fig. TT**

• Threaded end to BS21

**Fig. AKT**

• Threaded end to ASME B1.20.1



### Materials

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Dezincification Resistant Brass
Ball	Brass**
Ball seat	PTFE
O-ring	FKM

\*Size 4 only

\*\*Nickel-chrome plated

### Dimensions

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
L Threaded end to end	mm	50	50	65	68	79	86	96	109	127	153	179	
H Height		45	45	45	50	55	60	65	75	91	105	124	
H1 TT: Height		41	41	44	48	55	61	66	80				
D Length of Handle		60	60	80	80	110	110	110	140	200	300	400	
D1 TT: Length of Handle		65	65	80	80	90	105	105	120				

\*TT: 1/4 to 2

## TYPE 400 BRASS BALL VALVE

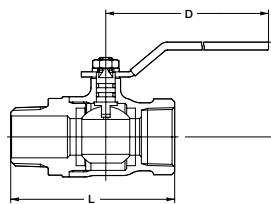
Screwed body cap, Blowout-proof Stem, Double O-ring stem seals  
Male & Female Threaded ends to BS21

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)



**Fig. TO**

• Threaded end to BS21



### Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

\*Nickel-chrome plated

### Dimensions

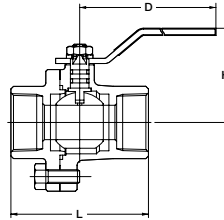
Nominal Size	inch	1/4	3/8	1/2	3/4	1	mm
L Threaded end to end	mm	59	60	74	80	94	
H Height		45	45	45	50	55	
D Length of Handle		60	60	80	80	110	

**TYPE 400**

**BRASS BALL VALVE**

Bolted body and cap, Blowout-proof Stem, Double O-ring stem seals, Threaded ends to BS21

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

\*Chrome or Nickel-chrome plated

**Fig. TM**

• Threaded end to BS21

**Dimensions**

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	mm
L Threaded end to end	56	60	68	80	86	101	117	136	160	160	
H Height	45	45	49	55	60	65	75	91	105	105	
D Length of Handle	60	80	80	110	110	110	140	200	300	300	

**TYPE 600**

**BRASS BALL VALVE**

One-piece body, Blowout-proof Stem, Threaded ends to BS21 or NPT

W.O.G. non-shock 4.14 MPa (600 psi), W.O.G. 150°C 1.03 MPa (150 psi)



**Fig. TK**

• Threaded end to BS21

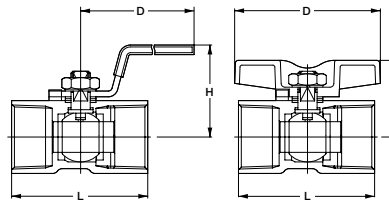


**Fig. TKT**

• Threaded end to BS21

**Fig. AKTK**

• Threaded end to ASME B1.20.1  
• AKTK 1/4 to 2



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	Reinforced PTFE
Grand packing	Reinforced PTFE

\*Chrome or Nickel-chrome plated

**Dimensions**

Nominal Size	inch	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
L Threaded end to end	32	39	44	56.5	59	71	78	83	100	100	
H Height	31	31	36	41	44	48	54	65	72	72	
H1 TKT: Height	23	23	27	31	34	42	48	53	60	60	
D Length of Handle	60	60	70	85	85	100	100	125	125	125	
D1 TKT: Length of Handle	35	35	40	60	60	76	76	100	100	100	

**TYPE 600**

**BRASS BALL VALVE**

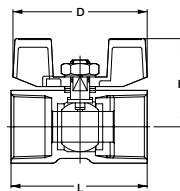
One-piece body, Blowout-proof Stem, with Wing handle Threaded ends to BS21 or NPT

W.O.G. non-shock 4.14 MPa (600 psi), W.O.G. 150°C 1.03 MPa (150 psi)



**Fig. TKW**

• Threaded end to BS21



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	Reinforced PTFE
Grand packing	Reinforced PTFE

\*Chrome or Nickel-chrome plated

**Dimensions**

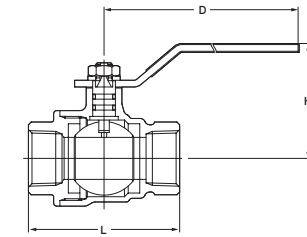
Nominal Size	inch	1/8	1/4	3/8	1/2	3/4	1	mm
L Threaded end to end	32	39	44	56.5	59	71	71	
H Height	25	25	29	35	39	41	41	
D Length of Handle	35	35	40	55	55	69	69	

**TYPE 400**

**BRASS BALL VALVE, FULL PORT**

Screwed body cap, Blowout-proof Stem, Double O-ring stem seals  
Threaded ends to BS21

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)



**Materials**

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Dezincification Resistant Brass
Ball	Brass**
Ball seat	PTFE
O-ring	FKM

\*Size 2 only  
\*\*Nickel-chrome plated

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	15	20	25	32	40	50	
L Threaded end to end		62	73	85	98	108	124	
H Height		48	54	58	64	75	84	
D Length of Handle		80	110	110	110	140	150	

**Fig. TF**

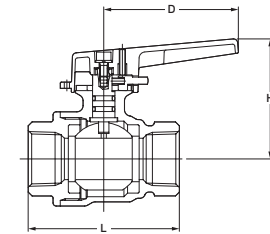
• Threaded end to BS21

**TYPE 400**

**BRASS BALL VALVE, FULL PORT**

Locking device, Screwed body cap, Blowout-proof Stem, Double O-ring stem seals  
Threaded ends to BS21

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)



**Materials**

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Dezincification Resistant Brass
Ball	Brass**
Ball seat	PTFE
O-ring	FKM

\*Size 2 only  
\*\*Nickel-chrome plated

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	15	20	25	32	40	50	
L Threaded end to end		62	73	85	98	108	124	
H Height		53	58	67	72	90	98.5	
D Length of Handle		65	65	90	90	110	110	

**Fig. TFJ**

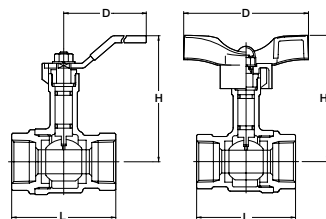
• Threaded end to BS21

**TYPE 400**

**BRASS BALL VALVE**

Screwed body cap, Blowout-proof Stem, Double O-ring stem seals  
Threaded end to BS21 or solder joint end

TL, CTL W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi),  
TLT W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 80°C 1.96 MPa (286 psi)



**Materials**

Parts	Material
Body	Bronze
Body cap	Bronze
Stem	Dezincification Resistant Brass
Ball	Stainless Steel (Type 304)
Ball seat	PTFE
O-ring	FKM

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

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	15	20	25	32	40	50	
L Threaded end to end		56	65	78	86	96	109	
L1 Solder		58	73	88	99	114	135	
H Height		75	79	83	98	102	109	
H1 Height: TLT		79	83	90	105	109	124	
D Length of Handle: TL & CTL		80	80	110	110	110	140	
D Length of Handle: TLT		82	82	94	94	94	120	

**Fig. TL**

• Threaded end to BS21

**Fig. CTL**

• Solder joint end to ASME B16.18

**Fig. TLT**

• Threaded end to BS21

## TYPE 400 BRONZE BALL VALVE

Single union, Screwed body and cap, Blowout-proof stem, Double O-ring stem seals, Threaded ends to BS21 or solder joint ends

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 80°C 1.96 MPa (286 psi)

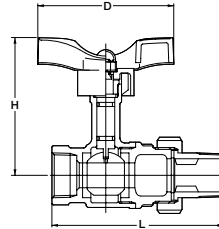


**Fig. TLTU**

• Threaded end to BS21

**Fig. CTLTU**

• Solder joint end to ASME B16.18



### Materials

Parts	Material
Body	Bronze
Body cap	Bronze
Stem	Dezincification Resistant Brass
Ball	Stainless Steel (Type 304)
Ball seat	PTFE
O-ring	FKM

### Dimensions

Nominal Size	inch	1/2	3/4	1	mm
	mm	15	20	25	
L Threaded end to end		90.5	103.5	119	
L1 Solder		89.5	107.5	124	
H Height		79	83	90	
D Length of Handle		82	82	94	

## 10K BRONZE BALL VALVE

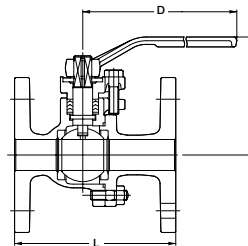
Bolted body cap, Full bore Fringed ends to JIS B2240 10K

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



**Fig. TB**

• Flanged ends to JIS 10K



### Materials

Parts	Material
Body	Bronze
Body cap	Bronze
Stem	Dezincification Resistant Brass
Ball	Brass**/ Stainless Steel*
Ball seat	PTFE
Grand packing	PTFE

\*Size 4 only

\*\*Chrome or Nickel-chrome plated

### Dimensions

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	mm
	mm	15	20	25	32	40	50	65	80	100	
L Threaded end to end		110	120	130	140	165	180	190	200	230	
H Height		85	88	95	100	115	122	153	162	190	
D Length of Handle		130	130	160	160	230	230	400	400	460	

## TYPE 600 BRASS BALL VALVE, FULL PORT

Three piece body with Mounting pad Threaded end to ASME B1.20.1 Solder jointed to ASME B16.18

W.O.G. non-shock 2.76 MPa (600 psi), W.O.G. 150°C 1.03 MPa (150 psi)

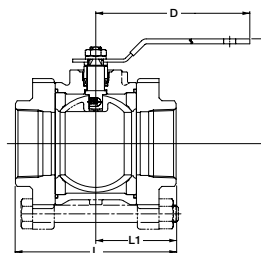


**Fig. AK3TM**

• Threaded end to ASME B1.20.1

**Fig. C3TM\***

• Solder joint end to ASME B16.18  
\*C3TM 3/8 to 2 1/2



### Materials

Parts	Material
Body	Brass/Bronze*
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass (chrome free plated)
Ball seat	PTFE
Grand packing	PTFE

\*Size 2 1/2 only

### Caution

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

### Dimensions

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	mm
	mm	8	10	15	20	25	32	40	50	65	
L Threaded end to end		49	49	61	70	83	99	117	139	167	
L1 Solder			49	61	73	88	99	117	139	167	
H Height		39	39	48	55	63	69	78	85	108	
D Length of Handle		82	82	82	100	130	130	150	150	200	

Approvals  
(up to 2)



NSF/ANSI61-8

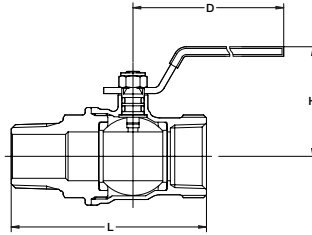
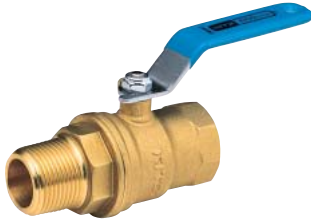


**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Screwed body cap, Blowout-proof Stem,  
Double O-ring stem seals  
Male & Female Threaded ends to BS21

W.O.G. non-shock 4.14 MPa (600 psi), W.O.G. 150°C 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Brass (nickel plated)
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

\*Chrome or Nickel-chrome plated

**Fig. ZO**

• Threaded end to BS21

**Dimensions**

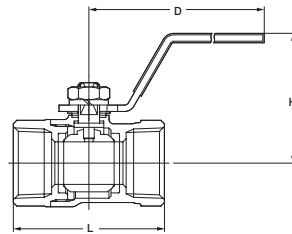
Nominal Size	inch	1/4	3/8	1/2	3/4	1	mm
	mm	8	10	15	20	25	
L Threaded end to end		59	60	74	80	94	
H Height		37	37	40	44	50	
D Length of Handle		70	70	80	80	110	

**TYPE 400**

**BRASS BALL VALVE, FULL PORT**

Screwed body cap, Blowout-proof Stem,  
Threaded ends to BS21

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi), Saturated steam pressure 0.98 MPa (142 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
Grand packing	Reinforced PTFE

\*Chrome or Nickel-chrome plated

**Fig. ZS**

• Threaded end to BS21

**Dimensions**

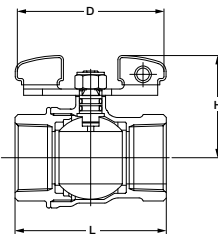
Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	8	10	15	20	25	32	40	50	
L Threaded end to end		42	43	51	59	71	78	88	99	
H Height		44	44	45	49	63	67	71	76	
D Length of Handle		72	72	87	87	116	116	117	117	

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Screwed body cap, Blowout-proof Stem,  
Double O-ring stem seals  
Threaded ends to BS21

W.O.G. non-shock 4.14 MPa (600 psi), W.O.G. 150°C 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Brass (nickel plated)
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

\*Chrome or Nickel-chrome plated

**Fig. ZET**

• Threaded end to BS21

**Dimensions**

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	mm
	mm	8	10	15	20	25	32	40	50	
L Threaded end to end		42	42	52	60	72	84	92	110	
H Height		35	35	41	45	54	59	75	82	
D Length of Handle		55	55	70	70	100	100	130	130	

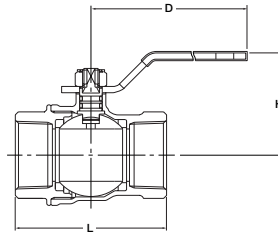
**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Bolted body and cap, Blowout-proof Stem, Double O-ring stem seals, Threaded ends to ASME B1.20.1 or solder joint ends.

W.O.G. non-shock 4.14 MPa (600 psi)\*, W.O.G. 150°C 1.03 MPa (150 psi)

\*Size 4 : W.O.G. non-shock 2.76MPa (400psi), W.O.G. 150°C 0.69MPa (100psi)



**Materials**

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Brass (nickel plated)*
Ball	Brass (chrome free plated (Size 1/4 to 3)) Brass (chrome plated (Size 4))
Ball seat	PTFE
O-ring	FKM

\*Size 4 only

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

**Dimensions**

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	mm	8	10	15	20	25	32	40	50	65	80	100
L Threaded end to end		42	42	53	60	72	84	92	110	138	167	193
L1 Solder			46	54	73	88	100	115	140	164	187	
H Height		37	37	40	43	50	55	65	72	100	112	131
H1 Solder			37	40	44	50	55	65	72	100	112	
D Length of Handle		70	70	80	80	110	110	150	150	200	300	300

Fig. AKSZA

Fig. CSZA

• Threaded end to ASME B1. 20. 1 • Solder joint to ASMB 16.18



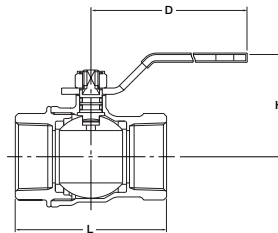
\*AKSZA: Size 1/4 to 3, \*\*AKSZA only

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Bolted body and cap, Blowout-proof Stem, Double O-ring stem seals, Threaded ends to BS21

W.O.G. non-shock 4.14 MPa (600 psi), W.O.G. 150°C 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Brass (nickel plated)
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

\*Chrome or Nickel-chrome plated

**Dimensions**

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L Threaded end to end		42	42	52	60	72	84	92	110
H Height		36	36	40	43	50	54	64	72
D Length of Handle		70	70	80	80	110	110	150	150

Fig. SZA

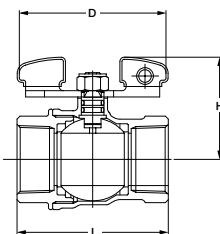
• Threaded end to BS21

**TYPE 600**

**BRASS BALL VALVE, FULL PORT**

Bolted body and cap, Blowout-proof Stem, Double O-ring stem seals, Threaded ends to ASME B1.20.1 or solder joint ends.

W.O.G. non-shock 4.14 MPa (600 psi), W.O.G. 150°C 1.03 MPa (150 psi)



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Brass
Ball	Brass (chrome free plated)
Ball seat	PTFE
O-ring	FKM

**Dimensions**

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L Threaded end to end		42	42	53	60	72	84	92	110
L1 Solder			46	54	73	88	100	115	141
H Height		34	35	41	45	54	59	75	82
H1 Solder			35	41	45	54	59	75	82
D Length of Handle		55	55	70	70	100	100	130	130

Fig. AKSZAW

Fig. CSZAW

• Threaded end to ASME B1. 20. 1 • Solder joint to ASME B16.18



\*AKSZAW only

**TYPE 400**

**3-WAY BRASS BALL VALVE**

Screwed body cap, 2-seat, L-port design, Blowout-proof Stem, Double O-ring stem seals\* Threaded ends to BS21 or NPT, or solder joint ends.

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)

\*Size 1/2 and larger



**Fig. TN**

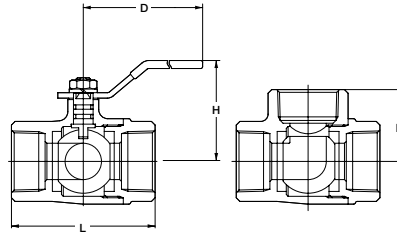
- Threaded end to BS21

**Fig. AKTN**

- Threaded end to ASME B1.20.1

**Fig. CTN**

- Solder joint end to ASME B16.18
- CTN 1/2 to 2



**Materials**

\*Size 2 1/2 and 3

Parts	Material
Body	Brass/Bronze*
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass**
Ball seat	PTFE
O-ring	FKM

\*\*Chrome or Nickel-chrome plated

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

**Dimensions**

Nominal Size	inch	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 Threaded end to end		40	46	67	68	79	89	100	115	138	166
L1 Solder				56	74	88	99	114	136		
H Height		30	34	45	48	55	60	65	75	91	105
H1 Height solder				45	48	55	60	65	75		
D Length of Handle		60	70	80	80	110	110	110	140	200	300

Port position fig: Position 1 & 2

**TYPE 400**

**3-WAY BRONZE BALL VALVE**

Screwed body cap, 4-seat, L or T-port design, Blowout-proof Stem, Double O-ring stem seals Threaded ends to BS21 or NPT

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)



**Fig. T4T**

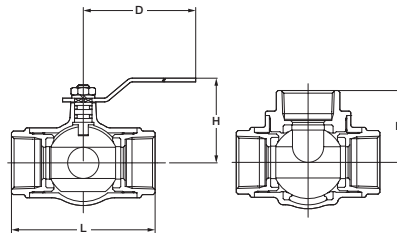
- Threaded end to BS21

**Fig. AKT4T**

- Threaded end to ASME B1.20.1

**Fig. T4L**

- Threaded end to BS21



**Materials**

Parts	Material
Body	Bronze
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

\*Chrome or Nickel-chrome plated

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L Threaded end to end		70	85	100	115	130	150
H Height		52	56	63	68	94.5	102
D Length of Handle		130	130	150	150	230	230

T4T/AKT4T: Port position fig: Position 1,2,3 & 4 T4L: Port position fig: Position 1 & 2

**TYPE 400**

**3-WAY BRONZE BALL VALVE, with MOUNTING PAD**

Screwed body cap, 2-seat, L-port design, Blowout-proof Stem, Double O-ring stem seals Threaded ends to BS21 or NPT

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)

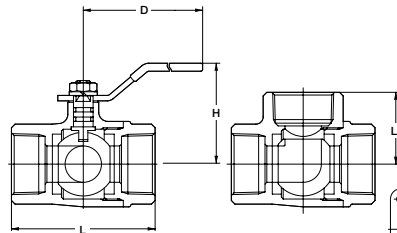


**Fig. AKTNP**

- Threaded end to ASME B1.20.1

**Fig. CTNP**

- Solder joint end to ASME B16.18



**Materials**

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

\*Chrome or Nickel-chrome plated

Mounting Pad

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L Threaded end to end		67	68	79	89	110	115
H Height		45	48	55	60	65	75
D Length of Handle		80	80	110	110	130	140

Port position fig: Position 1 & 2

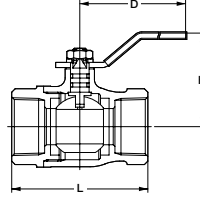
# ALLOWABLE PORT ORIENTATION

Valve Design	Form	Fluid Passage
3-Way 2-seat L-port ball valve	<p>Top View</p> <p>Form 1      Form 2</p>	<ol style="list-style-type: none"> <li>Flow is between Ports "A" and "C" in Form 1. Flow is between Ports "B" and "C" in Form 2. Flow paths in Form 1 and Form 2 can be changed each other.</li> <li>When the fluid pressure P2 in the closed path is higher than P1 in the open path, a little fluid leakage may occur to P1 through the ball seat of the closed path.</li> </ol>
	<p>Top View</p> <p>Form 1      Form 2</p>	<ol style="list-style-type: none"> <li>Flow is between Ports "A" and "C" in Form 1. Flow is between Ports "B" and "C" in Form 2. Flow paths in Form 1 and Form 2 can be changed each other.</li> <li>When the fluid pressure P2 in the closed path is higher than P1 in the open path, a little fluid leakage may occur to P1 through the ball seat of the closed path.</li> </ol>
3-Way 2-seat T-port ball valve	<p>Top View</p> <p>Form 1      Form 2</p> <p>Form 3 Not Available      Form 4</p>	<ol style="list-style-type: none"> <li>All ports are open in Form 1. Flow is between Ports "B" and "C" in Form 2. Flow is between Ports "A" and "C" in Form 4. Flow can be switched from Form 1 to Form 2, (Standard operation pattern) or from Form 1 to Form 4 in either direction. The stopper is assembled for the standard operation pattern.</li> <li>When the fluid pressure P2 in the closed path is higher than P1 in the open path, a little fluid leakage may occur to P1 through the ball seat of the closed path.</li> </ol> <p>■ Operation patterns available</p> <ul style="list-style-type: none"> <li>• Pattern 1 : From Form 1 to Form 4</li> <li>• Pattern 2 : From Form 1 to Form 2 (Standard)</li> </ul> <p>Please select one of the above operation patterns at time of order.</p>
	<p>Top View</p> <p>Form 1      Form 2</p> <p>Form 3      Form 4</p>	<ol style="list-style-type: none"> <li>All ports are open in Form 1. Flow is between Ports "B" and "C" in Form 2. Flow is between Ports "A" and "B" in Form 3. Flow is between Ports "A" and "C" in Form 4. All forms are available for switching, diverging or mixing of flows. The stopper is assembled for standard operation pattern to switch flow from Form 1 to Form 2.</li> <li>When the fluid pressure P2 in the closed path is higher than P1 in the open path, a little fluid leakage may occur to P1 through the ball seat of the closed path.</li> </ol> <p>■ Operation patterns available</p> <ul style="list-style-type: none"> <li>• Pattern 1 : From Form 1 to Form 4</li> <li>• Pattern 2 : From Form 1 to Form 2 (Standard)</li> <li>• Pattern 3 : From Form 3 to Form 4</li> <li>• Pattern 4 : From Form 2 to Form 3</li> </ul> <p>Please select one of the above operation patterns at time of order.</p>

## BRASS BALL VALVE, DESIGNED FOR GAS SERVICE

Screwed body cap,  
Blowout-proof Stem, Double O-ring stem seals  
Threaded ends to BS21

Gas service 40°C 0.98 MPa (142 psi)



### Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
O-ring	NBR

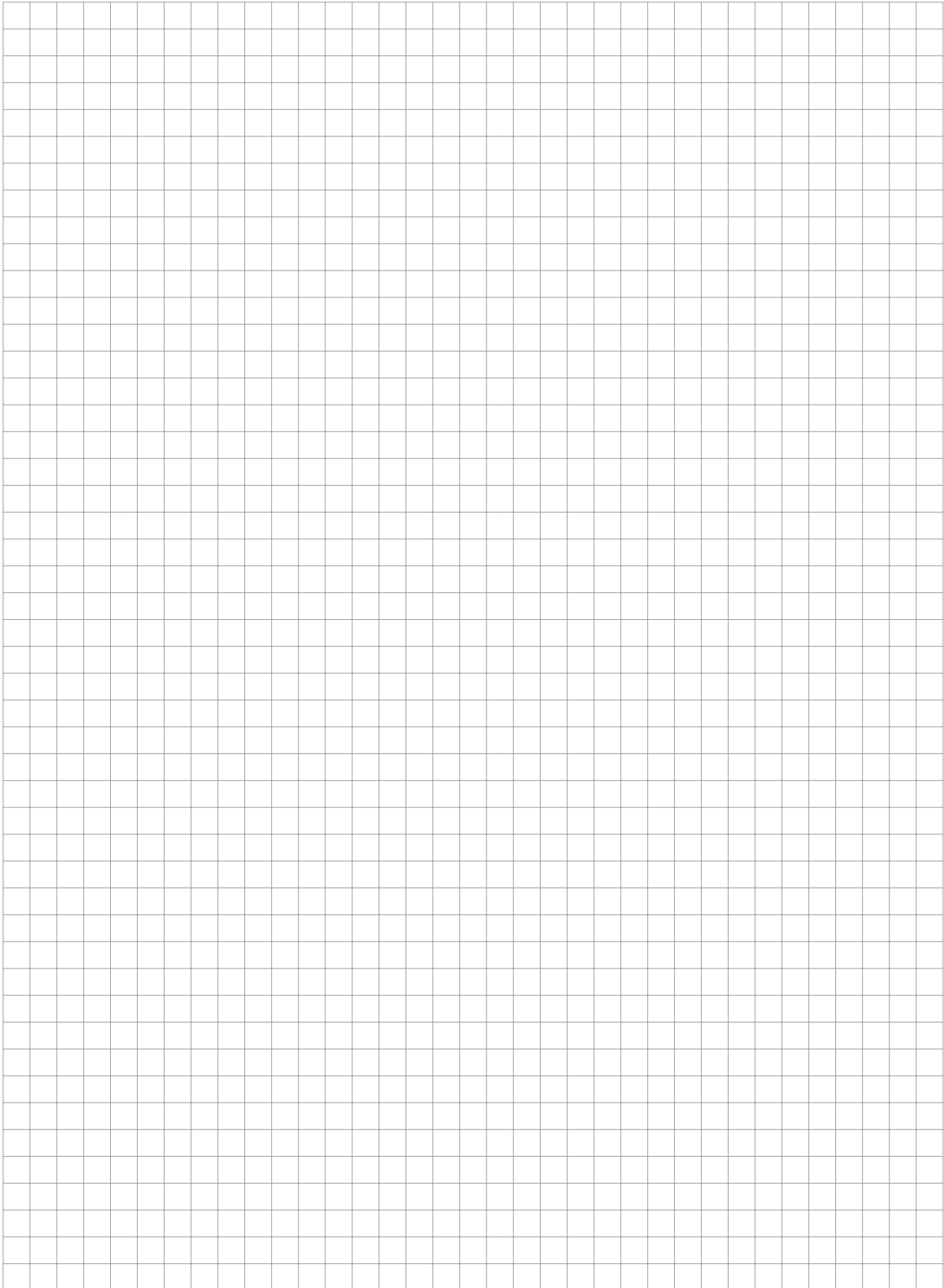
\*Nickel-chrome plated

### Dimensions

Nominal Size	inch	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 Threaded end to end		50	50	65	68	79	86	96	109	127	153
H Height		45	45	45	50	55	60	65	75	91	105
D Length of Handle		60	60	80	80	110	110	110	140	200	300

Fig. TG



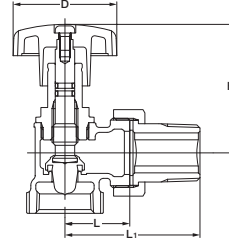


**CLASS 200**

**FANCOIL VALVES, BRONZE, FLOW CONTROL, ANGLE TYPE**

Female & Male Threaded ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Materials**

Parts	Material
Body	Bronze
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	PTFE
O-ring	FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1
	mm	15	20	25
L Threaded end to end		27	30	35
L1		57	62.5	70.5
H Height		68	68	77
D Length of Handle		46	46	46

**Fig. NAH**

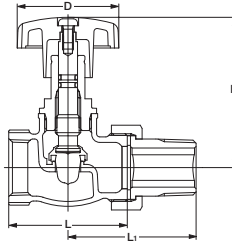
• Flow Control Valves

**CLASS 200**

**FANCOIL VALVES, BRONZE, FLOW CONTROL, GLOBE TYPE**

Female & Male Threaded ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Materials**

Parts	Material
Body	Bronze
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	PTFE
O-ring	FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1
	mm	15	20	25
L Threaded end to end		52	56	63
L1		56	60.5	67
H Height		77	79	90
D Length of Handle		47.5	47.5	47.5

**Fig. NSH**

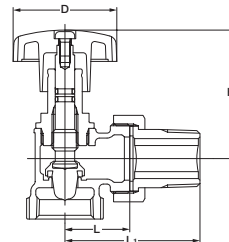
• Flow Control Valves

**CLASS 200**

**FANCOIL VALVES, BRONZE, FLOW CONTROL, ANGLE TYPE**

Indicator Female & Male Threaded ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Materials**

Parts	Material
Body	Bronze
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	PTFE
O-ring	FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4
	mm	15	20	25	32
L Threaded end to end		27	30	35	41
L1		57	62.5	70.5	81
H Height		68	68	77	88
D Length of Handle		46	46	46	46

**Fig. INAH**

• Flow Control Valves with Indicators

**CLASS 200**

**FANCOIL VALVES, BRONZE, FLOW CONTROL, GLOBE TYPE**

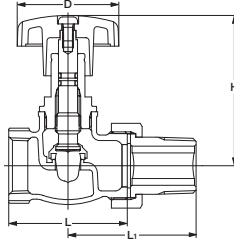
Indicator  
Female & Male Threaded ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Fig. INSH**

• Flow Control Valves with Indicators



**Materials**

Parts	Material
Body	Bronze
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	PTFE
O-ring	FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4
	mm	15	20	25	32
L Threaded end to end		52	56	63	70
L1		56	60.5	67	75
H Height		77	79	90	96
D Length of Handle		47.5	47.5	47.5	47.5

**CLASS 200**

**FANCOIL VALVES, BRONZE, ON-OFF, ANGLE TYPE**

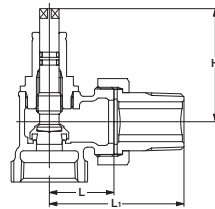
Female & Male Threaded ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Fig. RAH**

• On-off Valves



**Materials**

Parts	Material
Body	Bronze
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	PTFE
O-ring	FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4
	mm	15	20	25	32
L Threaded end to end		27	30	35	41
L1		57	62.5	70.5	81
H Height		61	61	70	81

**CLASS 200**

**FANCOIL VALVES, BRONZE, ON-OFF, GLOBE TYPE**

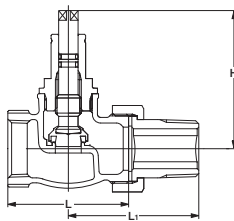
Female & Male Threaded ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Fig. RSH**

• On-off Valves



**Materials**

Parts	Material
Body	Bronze
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	PTFE
O-ring	FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4
	mm	15	20	25	32
L Threaded end to end		52	56	63	70
L1		56	60.5	67	75
H Height		70	72	83	89



**CLASS 200**

**FANCOIL VALVES, BRONZE, FLOW CONTROL, ANGLE TYPE**

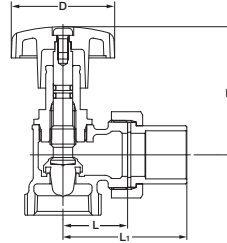
Female & Solder joint ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Fig. CNAH**

• Flow Control Valves



**Materials**

Parts		Material
Body		Bronze
Bonnet		Brass
Stem		Dezincification Resistant Brass
Disc		PTFE
O-ring		FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	mm
	mm	15	20	25	
L Threaded end to end		27	30	35	
L1		48.5	57.5	67.5	
H Height		68	68	77	
D Length of Handle		46	46	46	

**CLASS 200**

**FANCOIL VALVES, BRONZE, FLOW CONTROL, GLOBE TYPE**

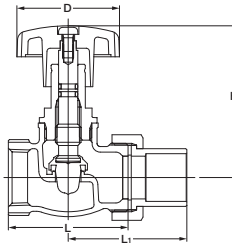
Female & Solder joint ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Fig. CNSH**

• Flow Control Valves



**Materials**

Parts		Material
Body		Bronze
Bonnet		Brass
Stem		Dezincification Resistant Brass
Disc		PTFE
O-ring		FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	mm
	mm	15	20	25	
L Threaded end to end		52	56	63	
L1		47.5	55.5	63	
H Height		77	79	90	
D Length of Handle		46	46	46	

**CLASS 200**

**FANCOIL VALVES, BRONZE, ON-OFF, ANGLE TYPE**

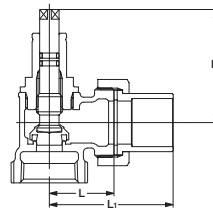
Female & Solder joint ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Fig. CRAH**

• On-off Valves



**Materials**

Parts		Material
Body		Bronze
Bonnet		Brass
Stem		Dezincification Resistant Brass
Disc		PTFE
O-ring		FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	1 1/4	mm
	mm	15	20	25	32	
L Threaded end to end		27	30	35	41	
L1		48.5	57.5	67.5	76	
H Height		61	61	70	81	

**CLASS 200**

**FANCOIL VALVES, BRONZE, ON-OFF, GLOBE TYPE**

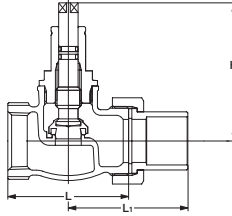
Female & Solder joint ends to BS21

W.O.G. 60°C 1.57 MPa, W.O.G. 120°C 1.37 MPa



**Fig. CRSH**

• On-off Valves



**Materials**

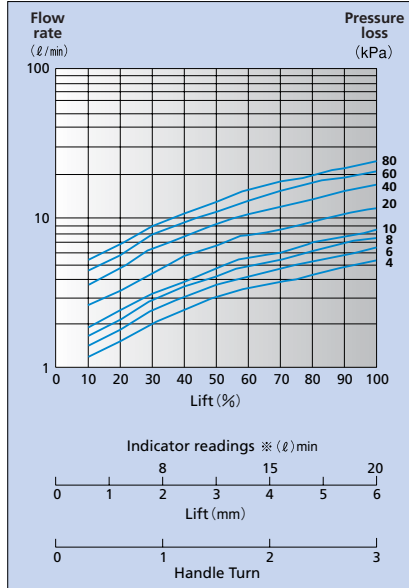
Parts	Material
Body	Bronze
Bonnet	Brass
Stem	Dezincification Resistant Brass
Disc	PTFE
O-ring	FKM

**Dimensions**

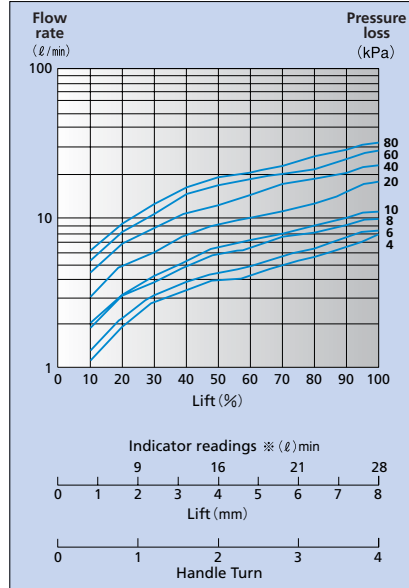
Nominal Size	inch	1/2	3/4	1	1 1/4	mm
	mm	15	20	25	32	
L Threaded end to end		52	56	63	70	
L1		47.5	55.5	69	70	
H Height		70	72	83	89	

**FLOW CHARACTERISTICS**

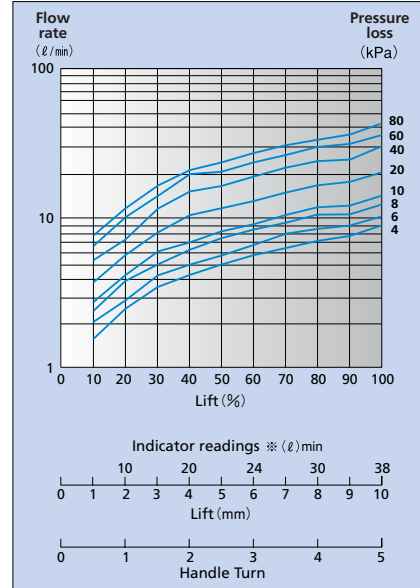
■ Nominal size: 1/2 Cv=1.8



■ Nominal size: 3/4 Cv=2.6



■ Nominal size: 1, 1 1/4 Cv=3.3



※ Indicator readings refer to flow rates when the pressure loss is 60 kPa.

10K

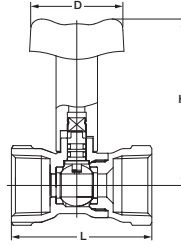
**BRONZE BALL VALVES with DETACHABLE HANDLE FOR FANCOIL UNIT**

Screwed body cap, Blowout-proof Stem, Double O-ring stem seals Threaded ends to BS21

Water 0°C to 90°C 0.98 MPa (Not Freezing)



Fig. RTRM



**Materials**

Parts	Material
Body	Bronze
Body cap	Bronze
Stem	Dezincification Resistant Brass
Ball	Brass (Nickel-chrome plated)
Ball seat	PTFE
O-ring	EPDM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	mm
	mm	15	20	25	
L Threaded end to end		56	61	70.5	
H Height		72	72	75.5	
D Length of Handle		40	40	40	

10K

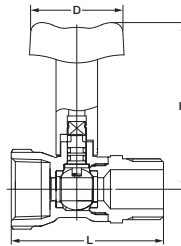
**BRONZE BALL VALVES with DETACHABLE HANDLE FOR FANCOIL UNIT**

Screwed body cap, Blowout-proof Stem, Double O-ring stem seals Male (parallel) & Female Threaded ends to BS21

Water 0°C to 90°C 0.98 MPa (Not Freezing)



Fig. RTRQ



**Materials**

Parts	Material
Body	Bronze
Body cap	Bronze
Stem	Dezincification Resistant Brass
Ball	Brass (Nickel-chrome plated)
Ball seat	PTFE
O-ring	EPDM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	mm
	mm	15	20	25	
L Threaded end to end		62	66	75.5	
H Height		72	72	75.5	
D Length of Handle		40	40	40	

10K

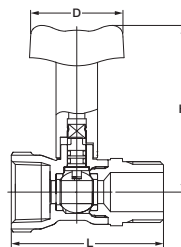
**BRONZE BALL VALVES with DETACHABLE HANDLE FOR FANCOIL UNIT**

Screwed body cap, Blowout-proof Stem, Double O-ring stem seals Male & Female Threaded ends to BS21

Water 0°C to 90°C 0.98 MPa (Not Freezing)



Fig. RTRR



**Materials**

Parts	Material
Body	Bronze
Body cap	Bronze
Stem	Dezincification Resistant Brass
Ball	Brass (Nickel-chrome plated)
Ball seat	PTFE
O-ring	EPDM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	mm
	mm	15	20	25	
L Threaded end to end		62	66	75.5	
H Height		72	72	75.5	
D Length of Handle		40	40	40	

10K

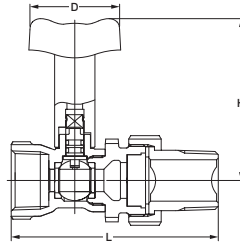
**BRONZE BALL VALVES with DETACHABLE HANDLE FOR FANCOIL UNIT**

Screwed body cap, Blowout-proof Stem, Double O-ring stem seals, Female & Male (union) Threaded ends to BS21

Water 0°C to 90°C 0.98 MPa (Not Freezing)



Fig. RTRU



**Materials**

Parts	Material
Body	Bronze
Body cap	Bronze
Stem	Dezincification Resistant Brass
Ball	Brass (Nickel-chrome plated)
Ball seat	PTFE
O-ring	EPDM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	mm
	mm	15	20	25	
L Threaded end to end		88	92.5	104	
H Height		72	72	75.5	
D Length of Handle		40	40	40	



10K

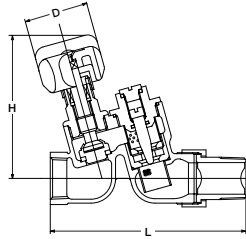
**BRONZE BALANCING VALVES  
with BUILT-IN SCREEN**

Constant flow control valve  
Female & Male (union nipple)  
Threaded ends to BS21

Max working pressure 0.98 MPa, Working temperature Water 0°C to 90°C,  
Control range 0.05 MPa to 0.49 MPa, Flow rate 4 to 30 L/min



Fig. BS



**Materials**

Parts	Material
Body	Bronze
Bonnet	Brass
Cap	Brass
Stem	Dezincification Resistant Brass
Disc	Reinforced PTFE

**Dimensions**

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		118.5	121.5	
H Height		89	89	
D Length of Handle		40	40	

10K

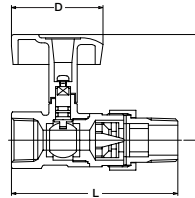
**BRONZE BALANCING VALVES  
LOW-NOISE TYPE**

Constant flow control valve, Ball valve type  
Female & Male (union nipple)  
Threaded ends to BS21

Max working pressure 0.98 MPa, Working temperature Water 0°C to 80°C,  
Control range 0.05 MPa to 0.49 MPa, Flow rate 3 to 40 L/min



Fig. BSS



**Materials**

Parts	Material
Body	Bronze
Cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass (chrome plated)
Ball seats	PTFE
O-ring	FKM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	mm
	mm	15	20	25	
L Threaded end to end		94.5	100.5	115.5	
H Height		63.5	63.5	66.5	
D Length of Handle		55	55	55	

10K

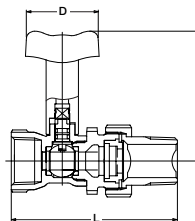
**"SADAMARU"  
CONSTANT FLOW CONTROL**

Ball Valve  
Female & Male (union nipple)  
Threaded ends to BS21

Max working pressure 1.0 MPa, Working temperature Water 0°C to 60°C,  
Control range 0.15 MPa to 0.49 MPa, Flow rate 3 to 30 L/min



Fig. RTUC



**Materials**

Parts	Material
Body	Bronze
Cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass (Nickel-chrome plated)
Ball seats	PTFE
O-ring	EPDM

**Dimensions**

Nominal Size	inch	1/2	3/4	1	mm
	mm	15	20	25	
L Threaded end to end		88	92.5	104	
H Height		72	72	75.5	
D Length of Handle		40	40	40	

## Predetermined Flow Rates and Product Coding for Balancing Valves and Balancers "SADAMARU"

### ● Predetermined Flow Rate

**Product Code: BS [Controllable flow rate ±10%]** (ℓ/min)

Nominal Size (mm)	4	5	7.5	10	12.5	15	17.5	20	25	30
15	●	●	●	●	●	●	●	●	●	●
20	●	●	●	●	●	●	●	●	●	●

**Product Code: BSS [Controllable flow rate ±10%]** (ℓ/min)

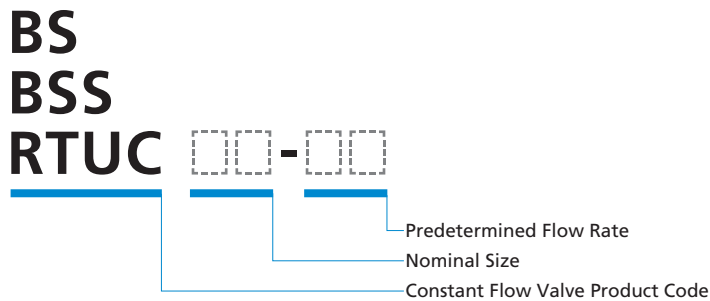
Nominal Size (mm)	3	4	5	6	7.5	10	12.5	15	17.5	20	25	30	35	40
15	●	●	●	●	●	●	●	●						
20		●	●	●	●	●	●	●	●	●	●	●		
25											●	●	●	●

**Product Code: RTUC [Controllable flow rate ±15%, ±20% (5 ℓ/min only)]** (ℓ/min)

Nominal Size (mm)	5	6	7.5	8	10	12.5	15	17.5	20	25	30
15	●	●	●	●	●	●	●	●			
20	●	●	●	●	●	●	●	●	●	●	●
25										●	●

Note: Flow rates marked with ● are available.

### Product Coding



Example : RTUC, Nominal size 20, Predetermined flow rate: 10 ℓ/min

**RTUC20-10**

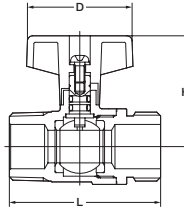
## UTILITY BALL VALVES, STRAIGHT TYPE

Male & Male (parallel) Threaded ends to BS21

0.98 MPa water, -20°C to +100°C (Not Freezing)



Fig. S1



### Materials

Parts	Material
Body	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	Reinforced PTFE
O-ring	EPDM

\*Chrome or Nickel-chrome plated

### Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		52.5	58	
H Height		39	42	
D Length of Handle		40	40	

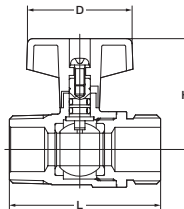
## UTILITY BALL VALVES, STRAIGHT TYPE

Chrome plated body  
Male & Male (parallel) Threaded ends to BS21

0.98 MPa water, -20°C to +100°C (Not Freezing)



Fig. S2



### Materials

Parts	Material
Body	Brass (Nickel-chrome plated)
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	Reinforced PTFE
O-ring	EPDM

\*Chrome or Nickel-chrome plated

### Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		52.5	58	
H Height		39	42	
D Length of Handle		40	40	

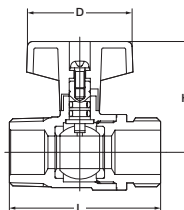
## UTILITY BALL VALVES, STRAIGHT TYPE

Chrome plated body, For kerosene service  
Male & Male (parallel) Threaded ends to BS21

0.98 MPa water, -20°C to +100°C (Not Freezing)



Fig. S22



### Materials

Parts	Material
Body	Brass (Nickel-chrome plated)
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	Reinforced PTFE
O-ring	NBR

\*Chrome or Nickel-chrome plated

### Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		52.5	58	
H Height		39	42	
D Length of Handle		40	40	

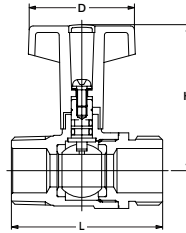
## UTILITY BALL VALVES, STRAIGHT TYPE

Long Handle  
Male & Male (parallel) Threaded ends to BS21

0.98 MPa water, -20°C to +100°C (Not Freezing)



Fig. S3



## Materials

Parts	Material
Body	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	Reinforced PTFE
O-ring	EPDM

\*Chrome or Nickel-chrome plated

## Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		52.5	58	
H Height		52	55	
D Length of Handle		40	40	

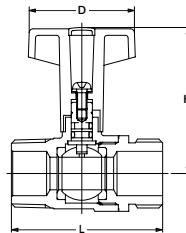
## UTILITY BALL VALVES, STRAIGHT TYPE

Chrome plated body, Long Handle  
Male & Male (parallel) Threaded ends to BS21

0.98 MPa water, -20°C to +100°C (Not Freezing)



Fig. S4



## Materials

Parts	Material
Body	Brass (Nickel-chrome plated)
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	Reinforced PTFE
O-ring	EPDM

\*Chrome or Nickel-chrome plated

## Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		52.5	58	
H Height		52	55	
D Length of Handle		40	40	

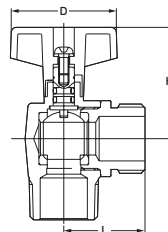
## UTILITY BALL VALVES, ANGLE TYPE

Chrome plated body  
Male & Male (parallel) Threaded ends to BS21

0.98 MPa water, -20°C to +100°C (Not Freezing)



Fig. S5



## Materials

Parts	Material
Body	Brass (Nickel-chrome plated)
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	Reinforced PTFE
O-ring	EPDM

\*Chrome or Nickel-chrome plated

## Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		28.5	31	
H Height		39	42	
D Length of Handle		40	40	



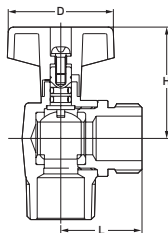
## UTILITY BALL VALVES, ANGLE TYPE

Chrome plated body, For kerosene service  
Male & Male (parallel) Threaded ends to BS21

0.98 MPa water, -20°C to +100°C (Not Freezing)



Fig. S52



### Materials

Parts	Material
Body	Brass (Nickel-chrome plated)
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	Reinforced PTFE
O-ring	NBR

\*Chrome or Nickel-chrome plated

### Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		28.5	31	
H Height		39	42	
D Length of Handle		40	40	

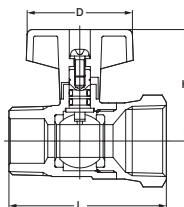
## UTILITY BALL VALVES, STRAIGHT TYPE

Male & Female Threaded ends to BS21

0.98 MPa water, -20°C to +100°C (Not Freezing)



Fig. S6



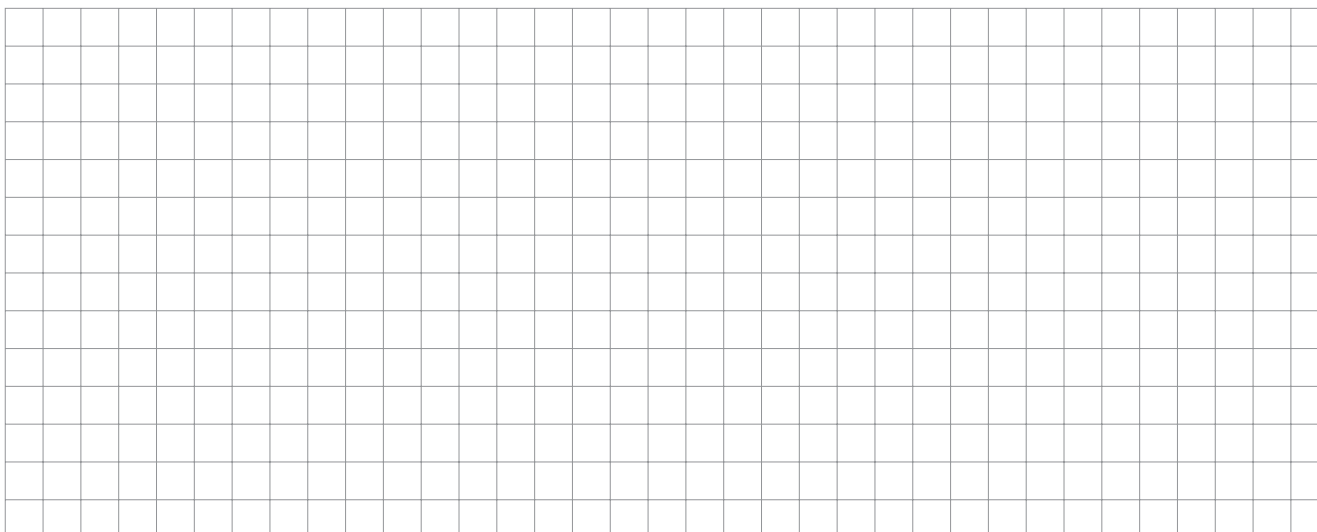
### Materials

Parts	Material
Body	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	Reinforced PTFE
O-ring	EPDM

\*Chrome or Nickel-chrome plated

### Dimensions

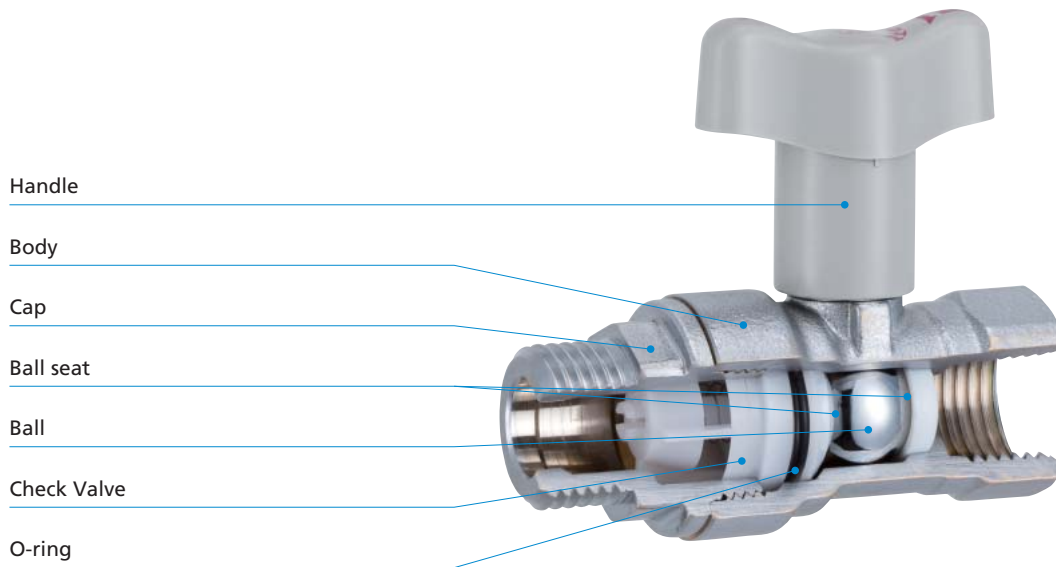
Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		54	59	
H Height		39	42	
D Length of Handle		40	40	



## Design feature of KITZ S Ball Valve, check valve built-in ball valves body.

Compact design with a check valve built in the ball valve body.  
 Prevention of reverse flow by automatic closing of the spring-loaded built-in check valve ( Water hammer proof ).  
 Quarter turn operation with detachable handle for easy valve mounting or maintenance, and piping insulation.  
 Direct installation of the valves to flexible pipes on the downstream side.

### Cross-sectional illustration of the check-valve-built-in ball valves



## UTILITY BALL VALVES, STRAIGHT TYPE

A Check Valve Built-in Ball Valve  
 Male & Male (parallel) Threaded ends to BS21

0.98 MPa water, 0°C to +80°C (Not Freezing)

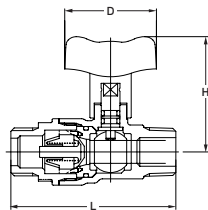
Direct flow 40°C MAX, Reverse flow 80°C MAX



Fig. S23N

Fig. S23LN

• Long handle



### Materials

Parts	Material
Body	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	PTFE
Check valve	Polyacetal + NBR
O-ring	EPDM

\*Chrome or Nickel-chrome plated

### Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		72	74	
H Height		51	51	
H Long Handle		63	63	
D Length of Handle		40	40	

## UTILITY BALL VALVES, STRAIGHT TYPE

A Check Valve Built-in Ball Valve  
Male & Male (parallel) Threaded ends to BS21

0.98 MPa clean water, 0°C to +80°C (Not Freezing)

Direct flow 40°C MAX, Reverse flow 80°C MAX

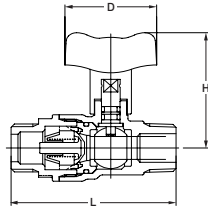


**Fig. S24N**

- Chrome plated body

**Fig. S24LN**

- Chrome plated body, Long handle



### Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		72	74	
H Height		51	51	
H Long Handle		63	63	
D Length of Handle		40	40	

### Materials

Parts	Material
Body	Brass (Nickel-chrome plated)
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	PTFE
Check valve	Polyacetal + NBR
O-ring	EPDM

\*Chrome or Nickel-chrome plated

## UTILITY BALL VALVES, STRAIGHT TYPE

A Check Valve Built-in Ball Valve  
Female & Female Threaded ends to BS21

0.98 MPa clean water, 0°C to +80°C (Not Freezing)

Direct flow 40°C MAX, Reverse flow 80°C MAX

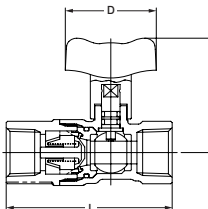


**Fig. S25N**

- Chrome plated body

**Fig. S25LN**

- Chrome plated body, Long handle



### Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		73	75	
H Height		51	51	
H Long Handle		63	63	
D Length of Handle		40	40	

### Materials

Parts	Material
Body	Brass (Nickel-chrome plated)
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	PTFE
Check valve	Polyacetal + NBR
O-ring	EPDM

\*Chrome or Nickel-chrome plated

## UTILITY BALL VALVES, STRAIGHT TYPE

A Check Valve Built-in Ball Valve  
Female & Male (parallel) Threaded ends to BS21

0.98 MPa clean water, 0°C to +80°C (Not Freezing)

Direct flow 40°C MAX, Reverse flow 80°C MAX

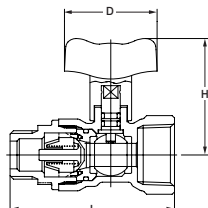


**Fig. S28N**

- Chrome plated body

**Fig. S28LN**

- Chrome plated body, Long handle



### Dimensions

Nominal Size	inch	1/2	3/4	mm
	mm	15	20	
L Threaded end to end		70.5	72.5	
H Height		51	51	
H Long Handle		63	63	
D Length of Handle		40	40	

### Materials

Parts	Material
Body	Brass (Nickel-chrome plated)
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	PTFE
Check valve	Polyacetal + NBR
O-ring	EPDM

\*Chrome or Nickel-chrome plated

## UTILITY BALL VALVES, STRAIGHT TYPE

A Check Valve Built-in Ball Valve  
Female & Male (parallel) Threaded ends to BS21

0.98 MPa clean water, 0°C to +80°C (Not Freezing)

Direct flow 40°C MAX, Reverse flow 80°C MAX

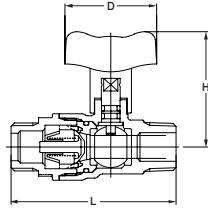


**Fig. S24N - 3/4 x**

- Chrome plated body

**Fig. S24LN - 3/4 x**

- Chrome plated body, Long handle



### Dimensions

Nominal Size	inch	mm
	3/4 x 1/2	20 x 15
<b>L</b> Threaded end to end		73
<b>H</b> Height		51
<b>H</b> Long Handle		63
<b>D</b> Length of Handle		40

### Materials

Parts	Material
<b>Body</b>	Brass (Nickel-chrome plated)
<b>Stem</b>	Dezincification Resistant Brass
<b>Ball</b>	Brass*
<b>Ball seats</b>	PTFE
<b>Check valve</b>	Polyacetal + NBR
<b>O-ring</b>	EPDM

\*Chrome or Nickel-chrome plated

## UTILITY BALL VALVES, STRAIGHT TYPE

A Check Valve Built-in Ball Valve  
Female & Male (parallel) Threaded ends to BS21

0.98 MPa clean water, 0°C to +80°C (Not Freezing)

Direct flow 40°C MAX, Reverse flow 80°C MAX

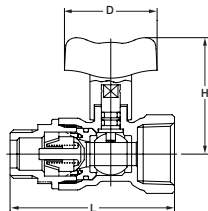


**Fig. S28N - 3/4 x**

- Chrome plated body

**Fig. S28LN - 3/4 x**

- Chrome plated body, Long handle



### Dimensions

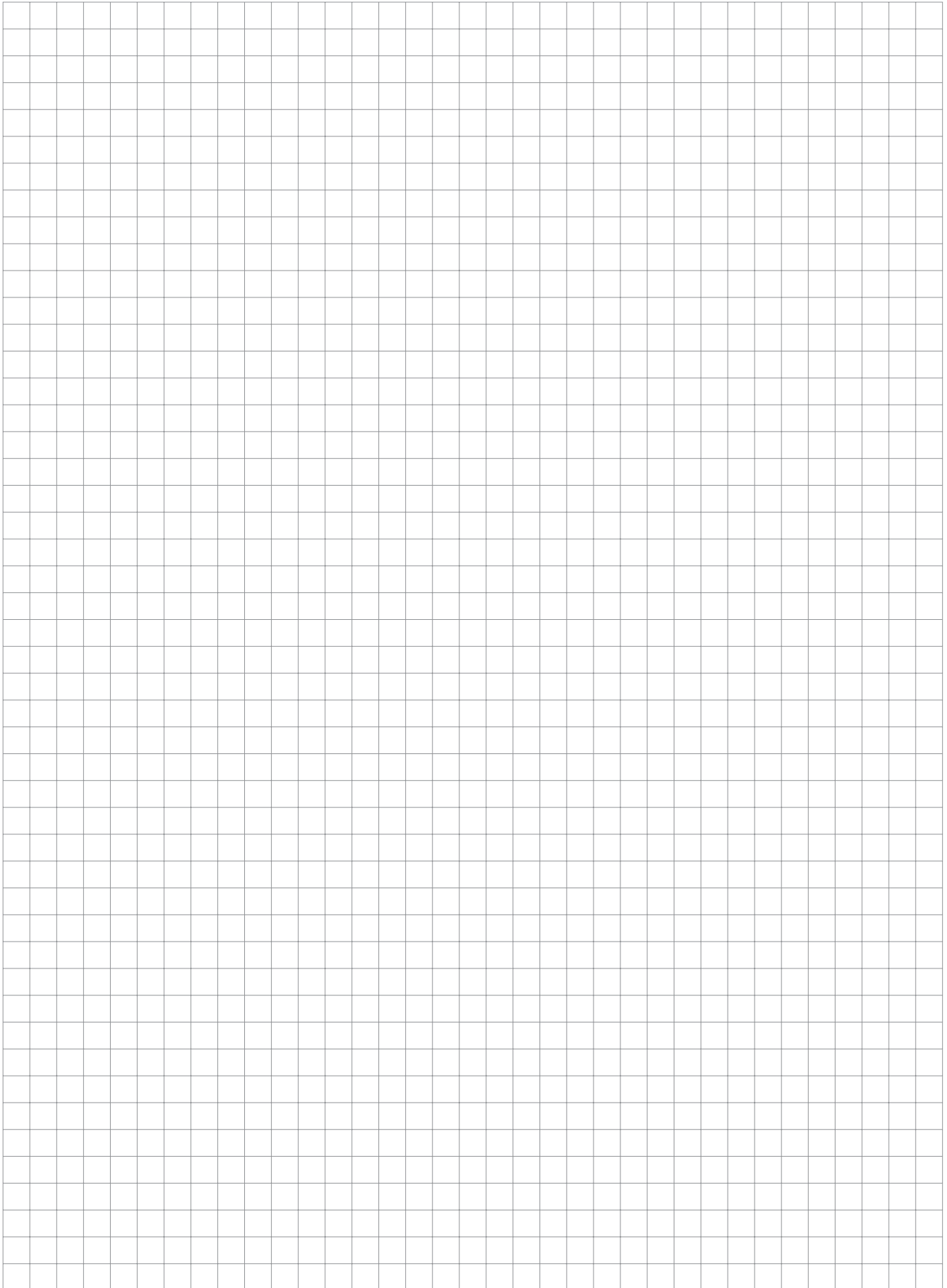
Nominal Size	inch	mm
	3/4 x 1/2	20 x 15
<b>L</b> Threaded end to end		71.5
<b>H</b> Height		51
<b>H</b> Long Handle		63
<b>D</b> Length of Handle		40

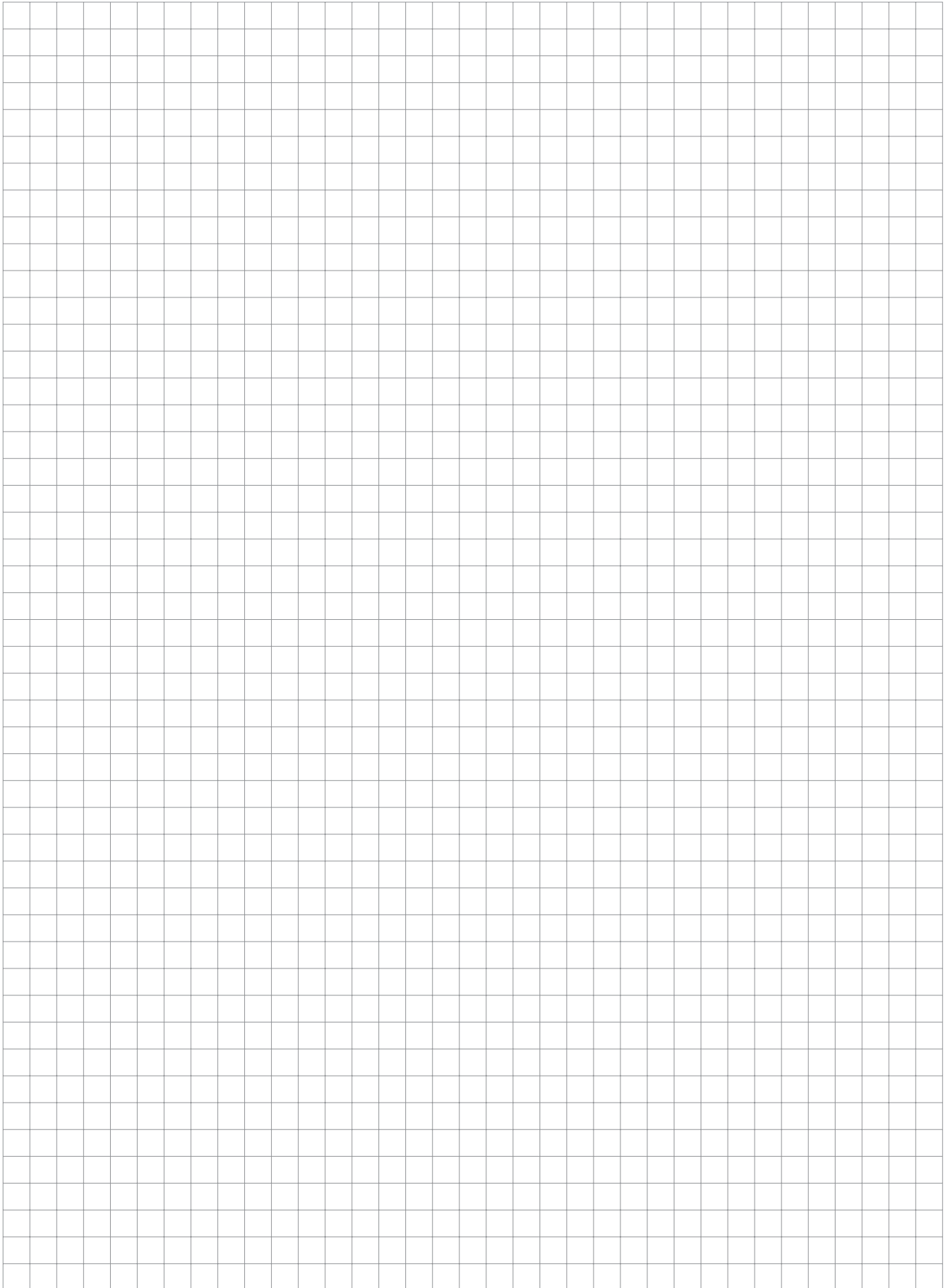
### Materials

Parts	Material
<b>Body</b>	Brass (Nickel-chrome plated)
<b>Stem</b>	Dezincification Resistant Brass
<b>Ball</b>	Brass*
<b>Ball seats</b>	PTFE
<b>Check valve</b>	Polyacetal + NBR
<b>O-ring</b>	EPDM

\*Chrome or Nickel-chrome plated







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Read instruction manual carefully before use.

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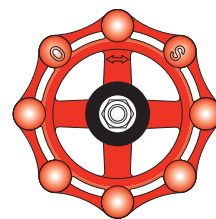
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