KITZ

Bronze & Brass Valves

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

KITZ CORPORATION

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 computors, 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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	S24 (L) N			10K	Ball (Built in Check)	Brass	Threaded	50
	S25 (L) N			10K	Ball (Built in Check)	Brass	Threaded	50
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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.

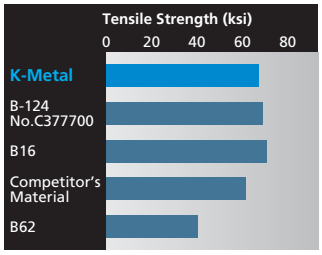


Fig. 1 Compared tensile strength

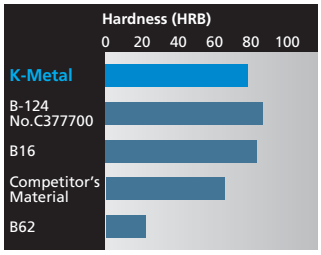


Fig. 2 Compared hardness

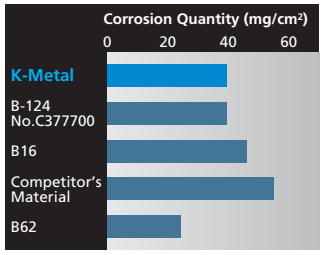


Fig. 3 Compared corrosion (1mg/cm²=0.014mlb/in²)

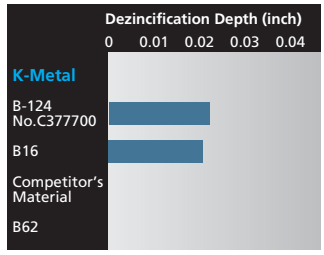


Fig. 4 Compared dezincification (to AS C316)

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.

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

⚠CAUTION	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.

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)

	Designation	Chemical composition (%)										Mechanical property	
		Cu	Sn	Zn	Pb	Ni	Fe	P	Sb	Al	Si	Tensile strength 195 Min. (N/mm²)	Elongation (%) 15 Min.
Cast bronze Class 6	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)

	Designation		Chemical composition (%)				Mechanical property	
	Extruded	Drawn	Cu	Pb	Fe + Sn	Zn	Tensile strength 315 Min. (N/mm²)	Elongation (%) 15 Min.
Forged brass Alloy No. 3771	C3771BE	C3771BD	57.0-61.0	1.0-2.5	1.0 Max.	Remainder		

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

	Designation		Chemical composition (%)					Mechanical property	
	Extruded	Drawn	Cu	Pb	Fe	Fe + Sn	Zn	Tensile strength 335 Min. (N/mm²)	Elongation (%) —
Free-cutting brass Alloy No. 3604	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	Sulfer	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	Sulfer	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.

Symbol

*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)

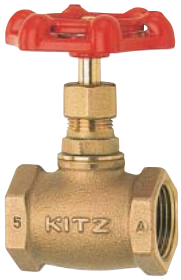
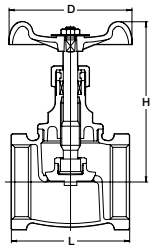


Fig. A
• Threaded end to BS21 (JIS B0203)

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 mm

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		40	42	48	53	63	73	81	94	115	131	171
H Height, valve open		66	67	69	80	94	104	127	147	179	200	250
D Handwheel diam		50	50	55	60	70	80	90	100	115	135	180

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)

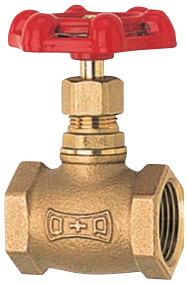
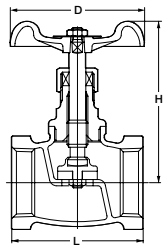


Fig. Q
• Rubber Disc

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 mm

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		44	50	63	73	81	94
H Height, valve open		70	73	86	108	132	150
D Handwheel diam		50	55	60	80	90	100

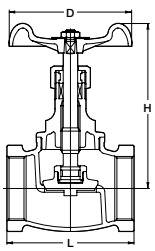
CLASS 150 BRONZE GLOBE VALVE

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 mm

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		44	44	53	65	77	85	100	119	139	158
H Height, valve open		66	68	79	93	104	127	145	174	199	215
D Handwheel diam		50	50	60	70	80	90	100	115	135	155

CLASS 150 BRONZE GLOBE VALVE

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

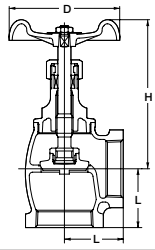
W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)

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

mm

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		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.

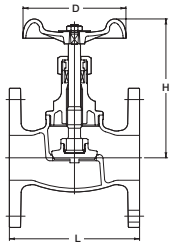
W.O.G. non-shock 1.55 MPa (225 psi), Saturated steam pressure 1.03 MPa (150 psi)

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

mm

Nominal Size		inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
		mm	15	20	25	32	40	50	65	80	100
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)

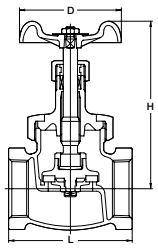
*Size 4; Screw Bonnet

Fig. G

• Threaded end to BS21 (JIS B0203)

Fig. AKG

• 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 2½ and 3

Dimensions

mm

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		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

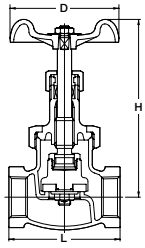
CLASS 150 BRONZE GLOBE VALVE

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 mm

Nominal Size	inch	½	¾	1	1¼	1½	2
	mm	15	20	25	32	40	50
L Threaded end to end		64	78	90	105	120	145
H Height, valve open		113	138	156	184	187	212
D Handwheel diam		60	90	100	115	115	135

CLASS 150 BRONZE GLOBE VALVE

Union Bonnet*, Rising Stem, 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)

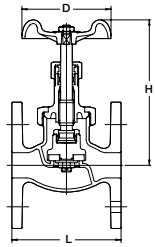
*Size 2½ and larger : Bolted bonnet

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 mm

Nominal Size	inch	½	¾	1	1¼	1½	2	2½	3	4
	mm	15	20	25	32	40	50	65	80	100
L Threaded end to end		82	95	108	120	140	165	190	220	270
H Height, valve open		113	138	156	184	187	212	244	281	321
D Handwheel diam		60	90	100	115	115	135	155	180	225
t* Thickness		8	9	10	11	12	13	14	15	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

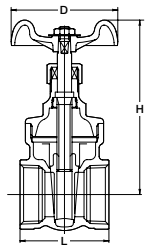
• Threaded end to BS21 (JIS B0203)

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 mm

Nominal Size	inch	⅜	½	¾	1	1¼	1½	2	2½	3
	mm	10	15	20	25	32	40	50	65	80
L Threaded end to end		38	42	47	50	60	63	72	80	90
L1 Solder			45	60	70	77	86	102		
H Height, valve open		73	73	87	97	117	126	154	167	200
D Handwheel diam		50	50	55	60	70	80	90	100	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

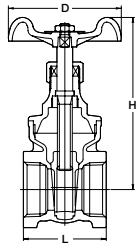
• Threaded end to BS21 (JIS B0203)

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 mm

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		35	38	42	47	50	60	63	72	82	92
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

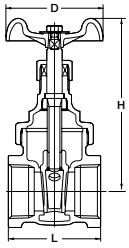


Fig. CH

• 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 mm

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	mm	10	15	20	25	32	40	50	65	80	100
L Threaded end to end		42	45	50	57	61	67	74	90	100	121
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

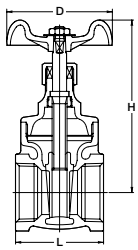
CLASS 125 BRONZE GATE VALVE

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

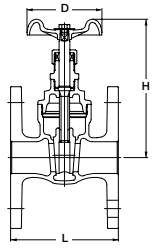


Materials

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

Dimensions mm

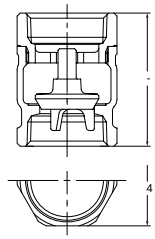
Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	mm	10	15	20	25	32	40	50	65	80
L Threaded end to end		38	42	47	50	60	63	72	80	90
H Height, valve open		75	75	86	97	117	126	154	164	200
D Handwheel diam		50	50	55	60	70	80	90	100	115


D
H
L

5K BRONZE LIFT CHECK VALVE

Screwed cap, Lift type disc
Threaded ends

W.O.G. non-shock 120 ℃ (0.49 MPa)



Materials

Parts	Material
Body	Bronze
Cap	Bronze
Disc	Bronze

Dimensions mm

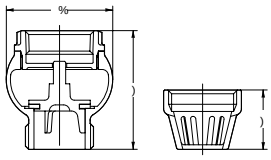
Nominal Size	inch	1 1/4	1 1/2	2
	mm	32	40	50
L Threaded end to end		62	69	82
S		45	52	63

¥ Threaded end to BS21

5K BRONZE LIFT CHECK VALVE

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

Water 80 ℃ (0.49 MPa)



Materials

Parts	Material
Body	Bronze
Cap	Bronze
Disc	NBR

Dimensions mm

Nominal Size	inch	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	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

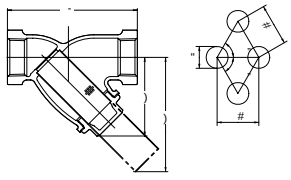
¥ Threaded end to BS21 (JIS B0203) (Screen)

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 lager 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.

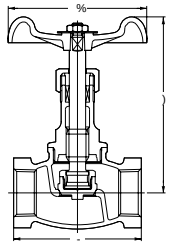
Dimensions mm

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	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

¥ Threaded end to BS21 (JIS B0203)

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

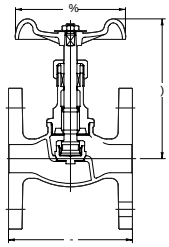
¥ Threaded end to ASME B1.20.1



Dimensions

mm

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	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

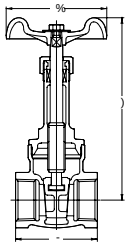


Dimensions

mm

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	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



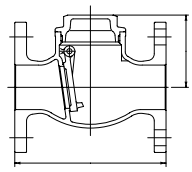
Materials

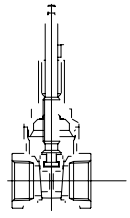
Parts	Material
Body	Bronze
Bonnet	Bronze
Stem	Dezincification Resistant Brass
Disc	Bronze
Gland Packing	Non-asbestos packing

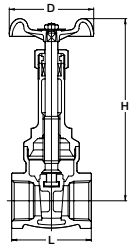
Dimensions

mm

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	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



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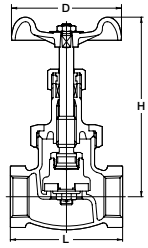
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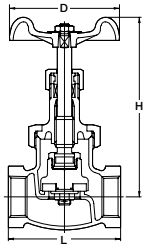
CLASS 300 BRONZE GLOBE VALVE

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	Reinfoced PTFE
Gland Packing	Flexible graphite & aluminum

Dimensions mm

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		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.

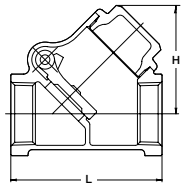
W.O.G. non-shock 1.38 MPa (200 psi), Saturated steam pressure 0.86 MPa (125 psi)

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 mm

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	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.

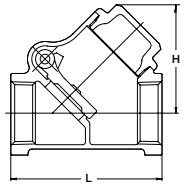
W.O.G. non-shock 2.07 MPa (300 psi), Saturated steam pressure 1.03 MPa (150 psi)

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 mm

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	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)

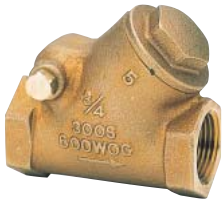
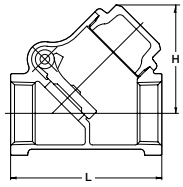


Fig. AK300YR

• Solder joint end to ASME B1.20.1



Materials

Parts	Material
Body	Bronze
Cap	Bronze
Hinge pin	Copper
Disc	Bronze

Dimensions mm

Nominal Size	inch	½	¾	1	1¼	1½	2
	mm	15	20	25	32	40	50
L Threaded end to end		60	72	84	99	113	131
H Height, valve open		42	51	61	74	83	98

PN16 BRASS GATE VALVE AS 1628

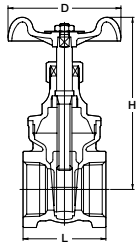
Screwed Bonnet, Non-rising Stem,
Designed to AS 1628-2001
Threaded ends to AS 1722.1

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

WaterMark

Fig. AS-FH

• Australian Standard AS 1628 Lic No WMKA02054



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

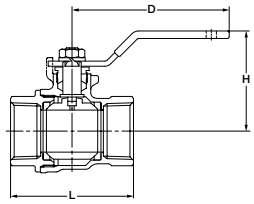
Dimensions mm

Nominal Size	inch	½	¾	1	1¼	1½	2
	mm	15	20	25	32	40	50
L Threaded end to end		55	60	68	78	81	94
H Height, valve open		74	86	94	116	128	158
D 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

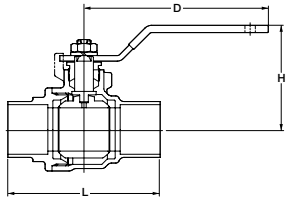
Dimensions mm

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		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 *Size 2½ & 3

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Dezincification Resistant Brass
Ball	Brass** (Size 2½, 3) Brass (chrome free plated (Size 3/8 to 2))
Ball seat	PTFE
Gland Packing	PTFE

**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

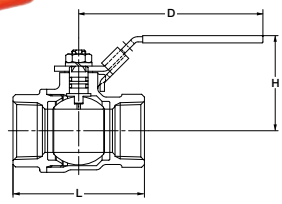
Dimensions mm

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	mm	10	15	20	25	32	40	50	65	80
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. AKTFLL

• Threaded end to ASME B1.20.1

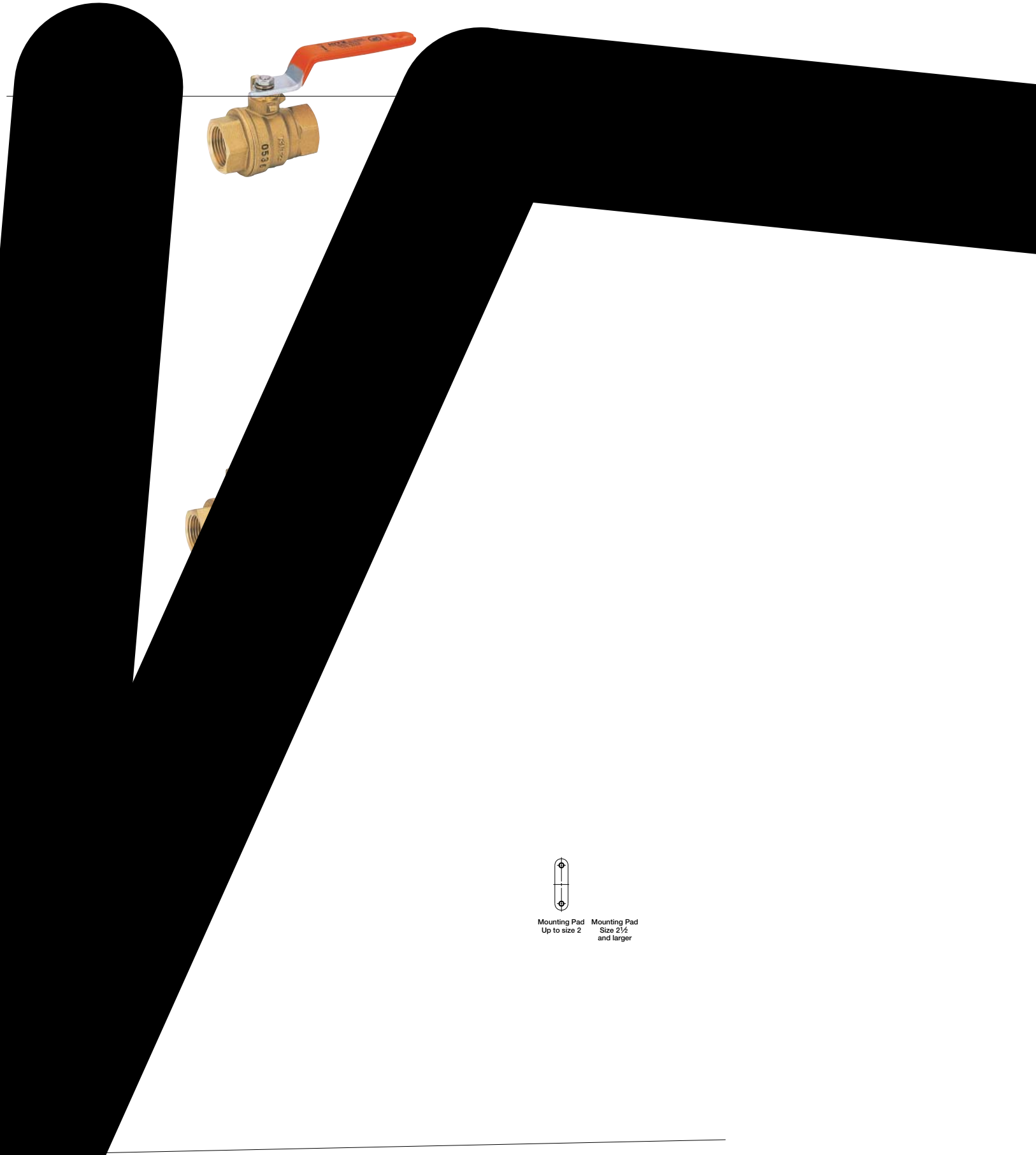
Fig. CTFLL

• Solder joint end to ASME B16.18

Approvals (up to 2) AKTFLL only: CSA (US/C)

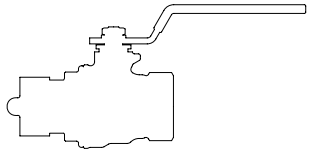
Dimensions mm

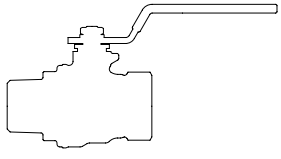
Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L Threaded end to end		41	42	53	60	72	82	92	105
L1 Solder				54	73	88	100	115	140
H Height		35	35	39	47	55	59	67	75
D Length of Handle		82	82	82	100	130	130	150	150



Mounting Pad
Up to size 2

Mounting Pad
Size 2½
and larger

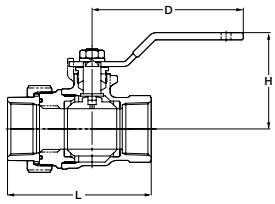




TYPE 600 BRASS BALL VALVE, FULL PORT

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

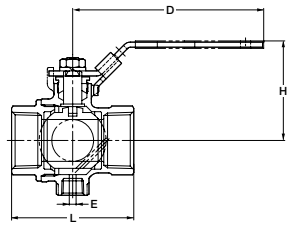
Dimensions mm

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		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 mm

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		41	42	53	60	72	82	92	105
H Height		39	39	42	51	59	64	73	80
E Exhoust 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℃ non-shock 0.69 MPa (100 psi)**
***TH* W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150℃ non-shock 0.69 MPa (100 psi)**

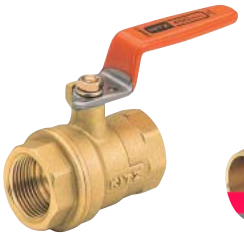
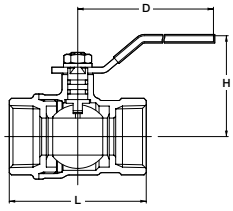


Fig. TH
• Threaded end to BS21

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 mm

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		44	45	56	63	74	82	91	104	127	153
L1 Solder		47	47	54	73	88	98	113	135	147	177
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

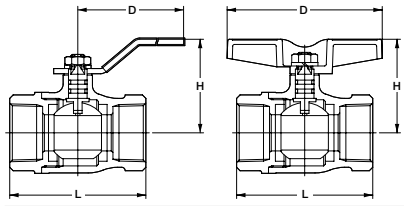
Screwed body cap, Blowout-proof Stem, Double O-ring stem seals
Threaded ends to BS21 or NPT

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150℃ 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 mm

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		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			

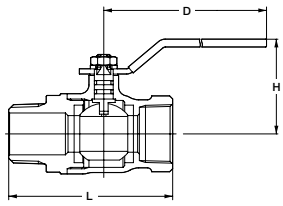
*TT: 1/4 to 2

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℃ 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

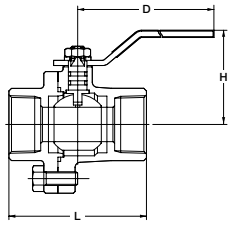
Dimensions mm

Nominal Size	inch	1/4	3/8	1/2	3/4	1
	mm	8	10	15	20	25
L Threaded end to end		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℃ 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

Dimensions mm

Nominal Size	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	mm	10	15	20	25	32	40	50	65	80
L Threaded end to end		56	60	68	80	86	101	117	136	160
H Height		45	45	49	55	60	65	75	91	105
D Length of Handle		60	80	80	110	110	110	140	200	300

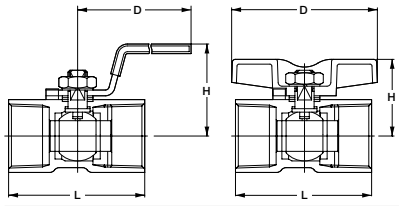
Fig. TM

• Threaded end to BS21

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℃ 1.03 MPa (150 psi)



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 mm

Nominal Size	inch	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	8	10	15	20	25	32	40	50
L Threaded end to end		32	39	44	56.5	59	71	78	83	100
H Height		31	31	36	41	44	48	54	65	72
H1 TKT: Height		23	23	27	31	34	42	48	53	60
D Length of Handle		60	60	70	85	85	100	100	125	125
D1 TKT: Length of Handle		35	35	40	60	60	76	76	100	100

Fig. TK

• Threaded end to BS21

Fig. AKTK

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

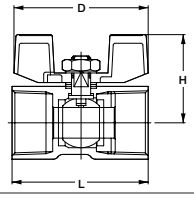
Fig. TKT

• Threaded end to BS21

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℃ 1.03 MPa (150 psi)



Materials

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

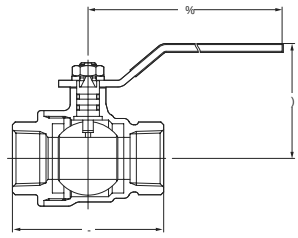
*Chrome or Nickel-chrome plated

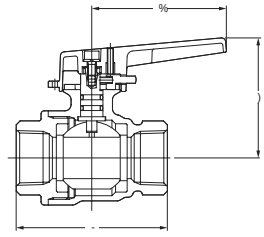
Dimensions mm

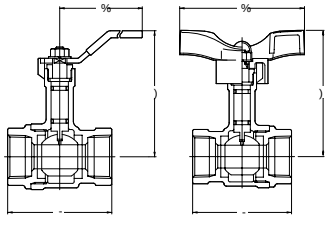
Nominal Size	inch	1/8	1/4	3/8	1/2	3/4	1
	mm	6	8	10	15	20	25
L Threaded end to end		32	39	44	56.5	59	71
H Height		25	25	29	35	39	41
D Length of Handle		35	35	40	55	55	69

Fig. TKW

• Threaded end to BS21







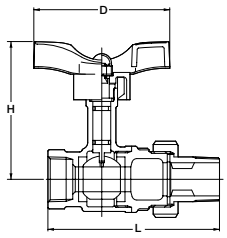
TYPE 400 BRONZE BALL VALVE

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℃ 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 mm

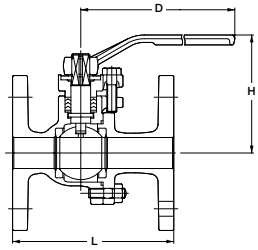
Nominal Size	inch	1/2	3/4	1
	mm	15	20	25
L Threaded end to end		90.5	103.5	119
L1 Solder		89.5	107.5	124
H Height		79	83	90
D Length of Handle		82	82	94

10K BRONZE BALL VALVE

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

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

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 mm

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	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

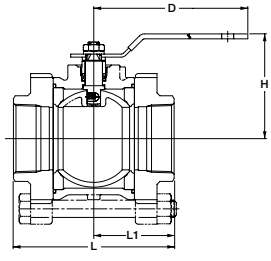
W.O.G. non-shock 2.76 MPa (600 psi), W.O.G. 150℃ 1.03 MPa (150 psi)

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

Approvals (up to 2) NSF NSF/ANSI61-8



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.

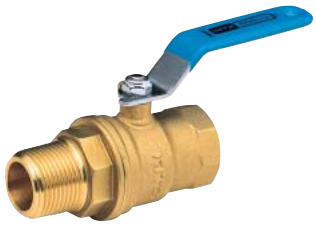
Dimensions mm

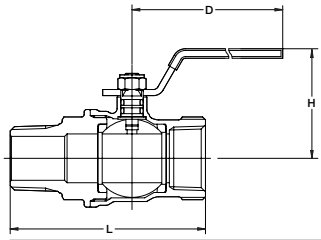
Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
	mm	8	10	15	20	25	32	40	50	65
L Threaded end to end		49	49	61	70	83	99	117	139	167
L1 Solder			49	61	73	88	99	117	139	167
H Height		39	39	48	55	63	69	78	85	108
D Length of Handle		82	82	82	100	130	130	150	150	200

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℃ 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 mm

Nominal Size	inch	1/4	3/8	1/2	3/4	1
	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

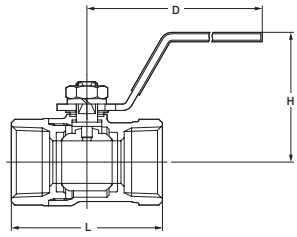
Fig. ZO

• Threaded end to BS21

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℃ 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

Dimensions mm

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	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

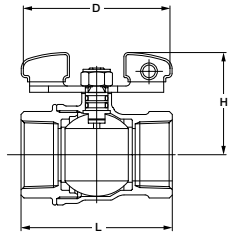
Fig. ZS

• Threaded end to BS21

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℃ 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 mm

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		35	35	41	45	54	59	75	82
D Length of Handle		55	55	70	70	100	100	130	130

Fig. ZET

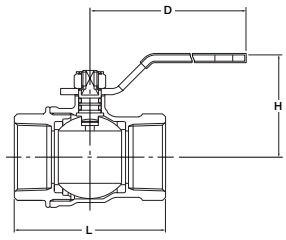
• Threaded end to BS21

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℃ 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 ¼ 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.

Fig. AKSZA **Fig. CSZA**

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

Approvals (up to 2): NSF/ANSI61-8*, CSA (US/C)**, UL, FM

*AKSZA: Size ¼ to 3, **AKSZA only

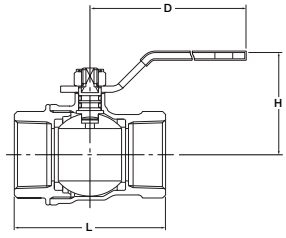
Dimensions mm

Nominal Size	inch	¼	⅜	½	¾	1	1¼	1½	2	2½	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

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℃ 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. SZA

• Threaded end to BS21

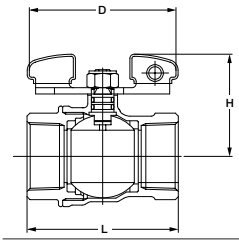
Dimensions mm

Nominal Size	inch	¼	⅜	½	¾	1	1¼	1½	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

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℃ 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

Fig. AKSZAW **Fig. CSZAW**

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

Approvals (up to 2) *AKSZAW only: NSF/ANSI61-8, CSA (US/C)*, UL, FM

Dimensions mm

Nominal Size	inch	¼	⅜	½	¾	1	1¼	1½	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

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.

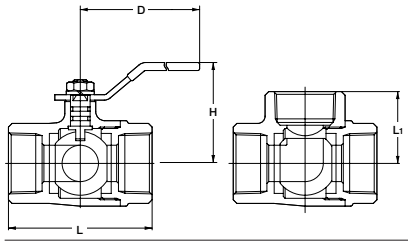
W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150℃ 0.69 MPa (100 psi)

*Size ½ 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 ½ to 2



Materials *Size 2½ 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 mm

Nominal Size	inch	¼	⅜	½	¾	1	1¼	1½	2	2½	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

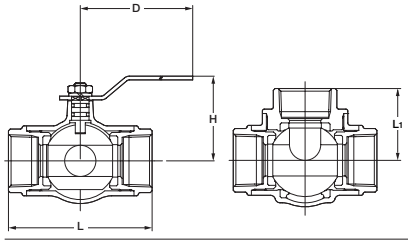
Screwed body cap, 4-seat, L or T-port design, Blowout-proof Stem, Double O-ring stem seals Threaded ends to BS21 or NPT

W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150℃ 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 mm

Nominal Size	inch	½	¾	1	1¼	1½	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℃ 0.69 MPa (100 psi)

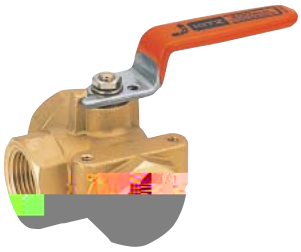
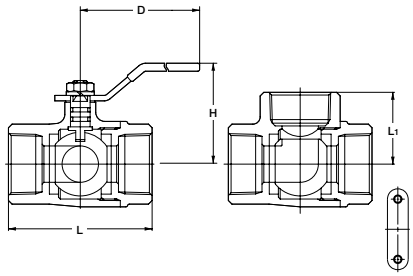


Fig. AKTNP
- Threaded end to ASME B1.20.1

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

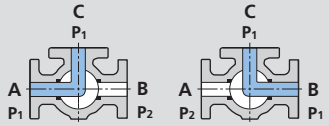
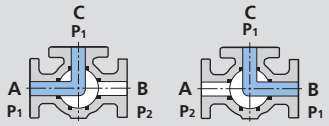
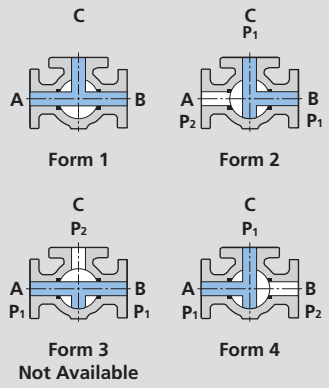
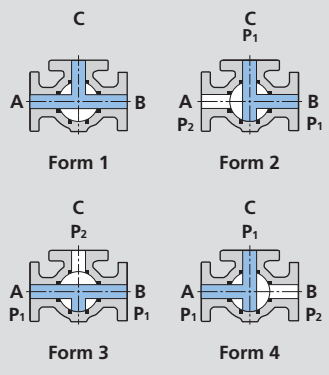
*Chrome or Nickel-chrome plated

Dimensions mm

Nominal Size	inch	½	¾	1	1¼	1½	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

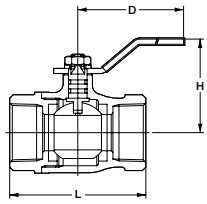
Valve Design	Form	Fluid Passage
3-Way 2-seat L-port ball valve	Top View  Form 1 Form 2	1 Flow is between Ports "A" and "C" in Form 1. Flow is between Ports "B" and "C" in Form 2. Flow paths in Form 1and Form 2 can be changed each other. 2 When the fluid pressure P2 in the closed path is higher than P1 in the open path, a little fluid leakage may occur to P1 through the ball seat of the closed path.
3-Way 4-seat L-port ball valve	Top View  Form 1 Form 2	1 Flow is between Ports "A" and "C" in Form 1. Flow is between Ports "B" and "C" in Form 2. Flow paths in Form 1and Form 2 can be changed each other. 2 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.
3-Way 2-seat T-port ball valve	Top View  Form 1 Form 2 Form 3 Not Available Form 4	1 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. 2 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. ■ **Operation patterns available** • Pattern 1 : From Form 1 to Form 4 • Pattern 2 : From Form 1 to Form 2 (Standard) Please select one of the above operation patterns at time of order.
3-Way 4-seat T-port ball valve	Top View  Form 1 Form 2 Form 3 Form 4	1 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. 2 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. ■ **Operation patterns available** • Pattern 1 : From Form 1 to Form 4 • Pattern 2 : From Form 1 to Form 2 (Standard) • Pattern 3 : From Form 3 to Form 4 • Pattern 4 : From Form 2 to Form 3 Please select one of the above operation patterns at time of order.

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)

Fig. TG



Materials

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

*Nickel-chrome plated

Dimensions

mm

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

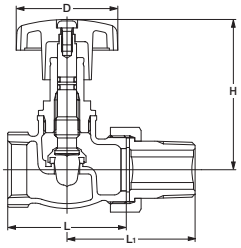
CLASS 200 FANCOIL VALVES, BRONZE, FLOW CONTROL, GLOBE TYPE

Indicator
Female & Male Threaded ends to BS21

W.O.G. 60℃ 1.57 MPa, W.O.G. 120℃ 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 mm

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

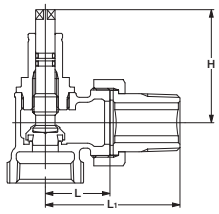
CLASS 200 FANCOIL VALVES, BRONZE, ON-OFF, ANGLE TYPE

Female & Male Threaded ends to BS21

W.O.G. 60℃ 1.57 MPa, W.O.G. 120℃ 1.37 MPa

Fig. RAH

• On-off Valves



Materials

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

Dimensions mm

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

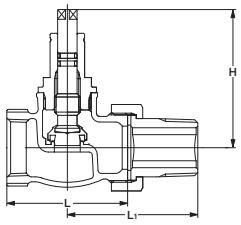
CLASS 200 FANCOIL VALVES, BRONZE, ON-OFF, GLOBE TYPE

Female & Male Threaded ends to BS21

W.O.G. 60℃ 1.57 MPa, W.O.G. 120℃ 1.37 MPa

Fig. RSH

• On-off Valves

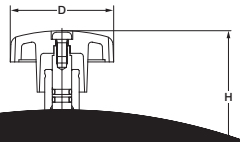


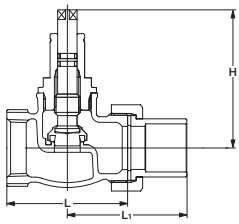
Materials

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

Dimensions mm

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

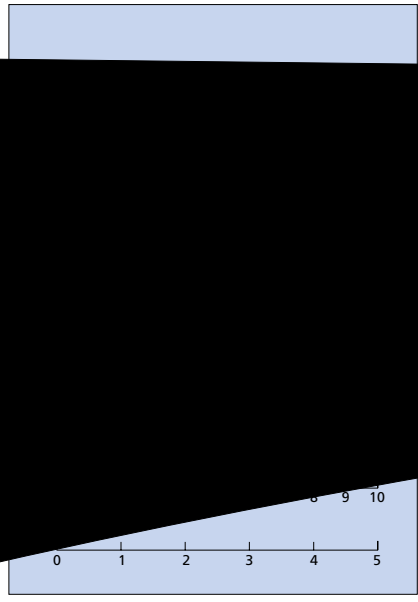

D
H



Cv=1.8

Nominal size: ¾ **Cv=**2.6

Nominal size: 1, 1¼ **Cv=**3.3

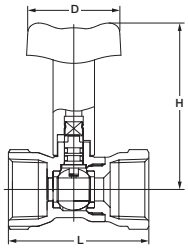


10K BRONZE BALL VALVES with DETACHABLE HANDLE FOR FANCOIL UNIT

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

Water 0℃ to 90℃ 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 mm

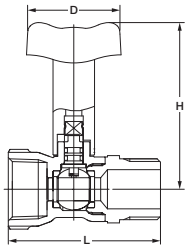
Nominal Size	inch	1/2	3/4	1
	mm	15	20	25
L Threaded end to end		56	61	70.5
H Height		72	72	75.5
D Length of Handle		40	40	40

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℃ to 90℃ 0.98 MPa (Not Freezing)

Fig. RTRO



Materials

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

Dimensions mm

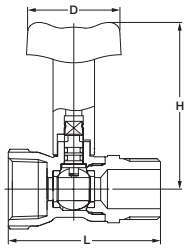
Nominal Size	inch	1/2	3/4	1
	mm	15	20	25
L Threaded end to end		62	66	75.5
H Height		72	72	75.5
D Length of Handle		40	40	40

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℃ to 90℃ 0.98 MPa (Not Freezing)

Fig. RTRR

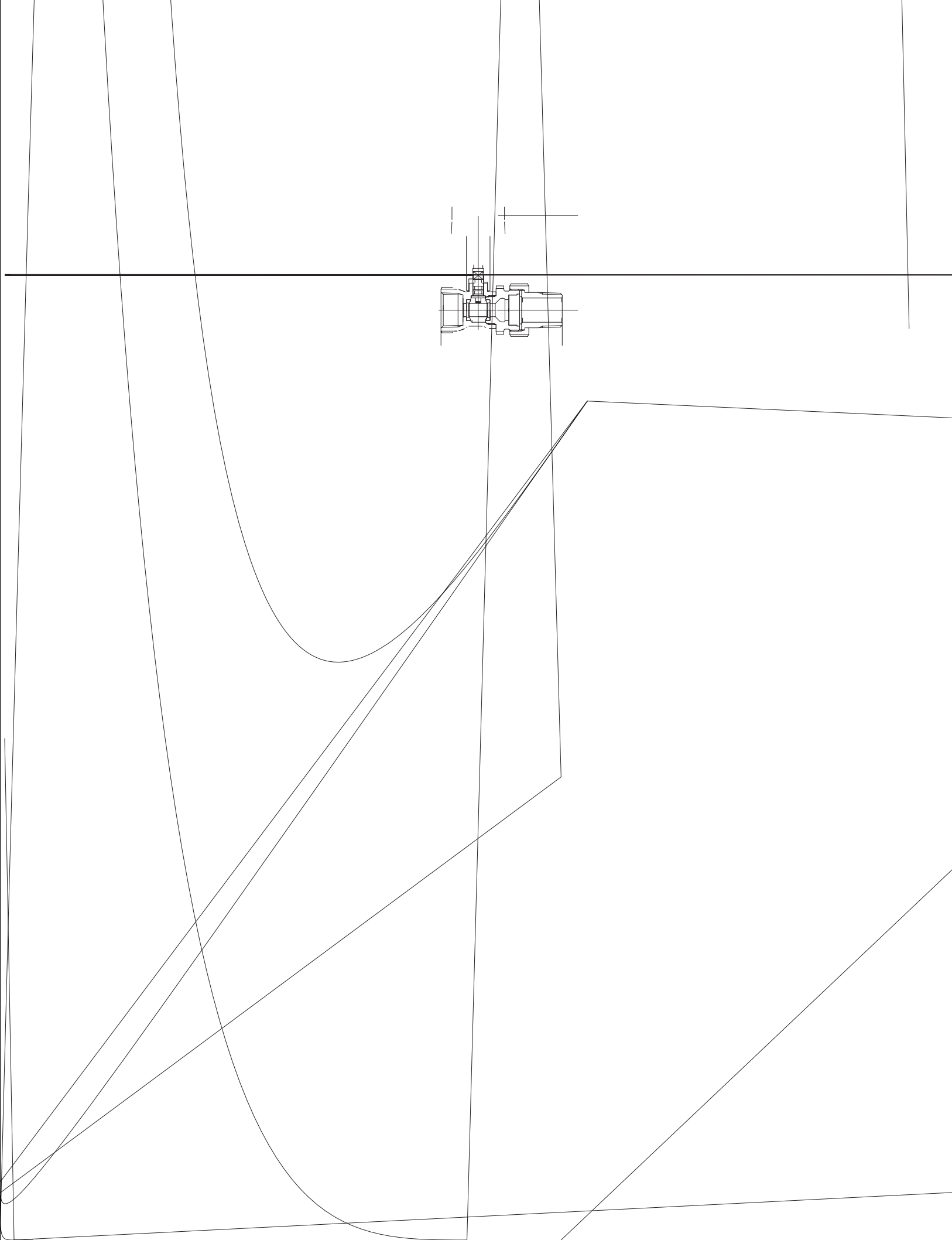


Materials

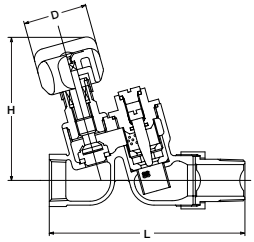
Parts	Material
Body	Bronze
Body cap	Bronze
Stem	Dezincification Resistant Brass
Ball	Brass (Nickel-chrome plated)
Ball seat	PTFE
O-ring	EPDM

Dimensions mm

Nominal Size	inch	1/2	3/4	1
	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



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



Materials

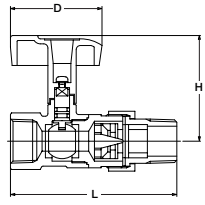
Parts	Material
Body	Bronze
Bonnet	Brass
Cap	Brass
Stem	Dezincification Resistant Brass
Disc	Reinforced PTFE

Dimensions

mm

Nominal Size	inch	
	mm	
Threaded end to end		
Lehgth of Handle1 SCN	255.1150Tj 65	

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



Materials

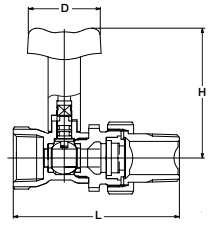
Parts	
Body	Bronze
Cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass (chrome plated)
Ball seats	PTFE
O-ring	FKM

Dimensions

mm

Nominal Size	inch	1/2	3/4	1
	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

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



Materials

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

Dimensions

mm

Nominal Size	inch	1/2	3/4	1
	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% (5ℓ/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

BS
BSS
RTUC □□-□□

- Predetermined Flow Rate
- Nominal Size
- Constant Flow Valve Product Code

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

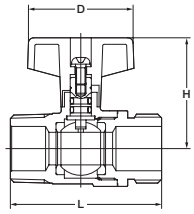
RTUC20-10

UTILITY BALL VALVES, STRAIGHT TYPE

Male & Male (parallel) Threaded ends to BS21

0.98 MPa water, -20℃ to +100℃ (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 mm

Nominal Size	inch	1/2	3/4
	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℃ to +100℃ (Not Freezing)

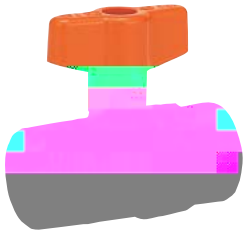
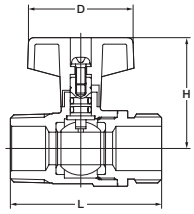


Fig. S2



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 mm

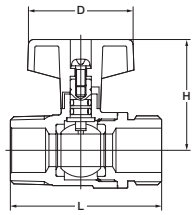
Nominal Size	inch	1/2	3/4
	mm	15	20
L Threaded end to end		52.5	58
H Height		39	42
D Length of Handle		40	40

UTILITY BALL VALVES, STRAIGHT TYPE

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

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

Fig. S22



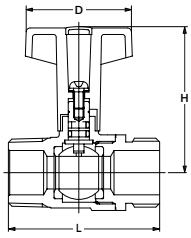
Materials

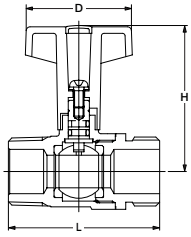
Parts	Material
Body	Brass (Nickel-chrome plated)
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seats	Reinforced PTFE
O-ring	NBR

*Chrome or Nickel-chrome plated

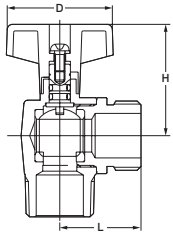
Dimensions mm

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





Materials



Materials

Parts	Material
	Brass (Nickel-chrome plated)
	Dezincification Resistant Brass
	Brass*
	Reinforced PTFE
	EPDM

*Chrome or Nickel-chrome plated

Dimensions

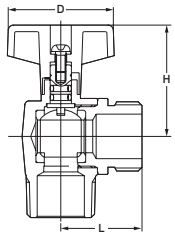
mm

Nominal Size	inch	1/2	3/4
	mm	15	20
L	Threaded end to end	28.5	31
H	Height	[illegible]	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℃ to +100℃ (Not Freezing)



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 mm

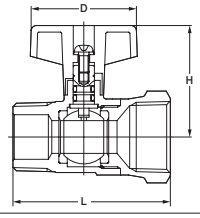
Nominal Size	inch	1/2	3/4
	mm	15	20
L Threaded end to end		28.5	31
H Height		39	42
D Length of Handle		40	40

Fig. S52

UTILITY BALL VALVES, STRAIGHT TYPE

Male & Female Threaded ends to BS21

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



Materials

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

*Chrome or Nickel-chrome plated

Dimensions mm

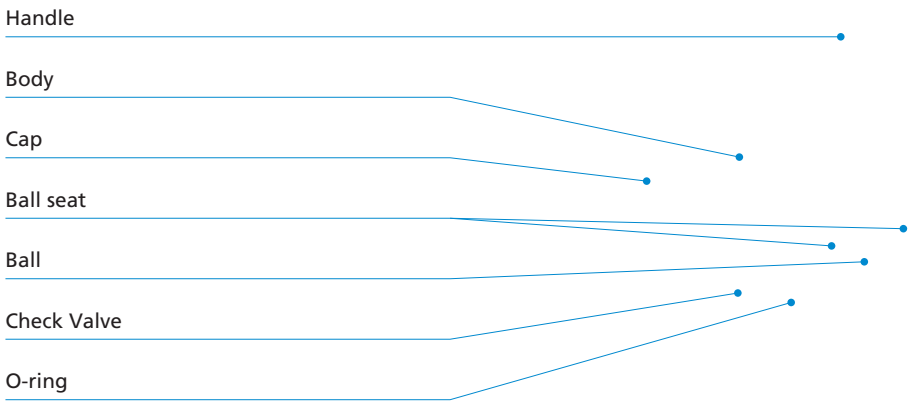
Nominal Size	inch	1/2	3/4
	mm	15	20
L Threaded end to end		54	59
H Height		39	42
D Length of Handle		40	40

Fig. S6

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

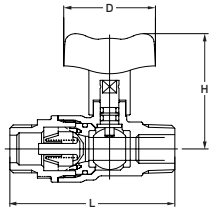
0.98 MPa water, 0˚C to +80˚C (Not Freezing)

Direct flow 40ºC MAX, Reverse flow 80ºC 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

mm

Nominal Size	inch	1/2	3/4
	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

⚠ CAUTION

Pressure-temperature ratings and other performance data published in this catalog have been developed from our design calculation, in-house testing, field reports provided by our customers and/or published official standards or specifications. They are good only to cover typical applications as a general guideline to users of KITZ products introduced in this catalog.

For any specific application, users are kindly requested to contact KITZ Corporation for technical advice, or to carry out their own study and evaluation for proving suitability of these products to such an application. Failure to follow this request could result in property damage and/or personal injury, for which we shall not be liable.

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KITZ

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