E-211=05

KITZ

600WOG/150WSP Full Port Two-piece Brass Ball Valves

Super Z



KITZ CORPORATION

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Fig.

SZA	(for BS21 threaded ends)
AKSZA	(for NPT threaded ends - ASME B 1.20.1)
CSZA	(for solder joint ends - ASME B 16.18)

Features

- All sizes rated 600 WOG / 150 WSP (400WOG for 4)
- Conforms to specification of MSS-SP-110 (AKSZA / CSZA)
- Maintenance Free, Double "O"-ring stem seal and PTFE seats
- Two-piece construction
- Blowout - proof stem
- Quick quarter-turn for easy operation
- Three types of end connection design
  - ·BS21 threaded end connection
  - ·NPT threaded end connection
  - ·Solder joint end connection

Approvals

●**AKSZA** (¼ through 2)

CSA : ½ psig at the appliance
CSA : 2 psig / 5 psig from the appliance to the meter
CSA : 125 psig from the meter to the street

●**AKSZA / CSZA** (¼ through 2)

UL / FM : for fire protection

Note : **NSF/ANSI 61-8** - Drinking Water system Compornents Health Effects : Optionaly abailable
CSA-Canadian Standards Association
Consolidation of the American Gas Association (AGA) and the Canadian Gas Association (CGA)
UL - Underwriters Laboratories
FM - Factory Mutual

Application (except for approved products)

Water, Oil, Gas, and Steam

Maximum Working Pressure

Unit	Working Pressure Non-Shock		
	Saturated Steam	Cold Water, Oil, Gas	
		¼～3	4
psi	150	600	400
MPa	1.03	4.12	2.75
Bar	10.3	41.2	27.5
kgf/cm²	10	42	28

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

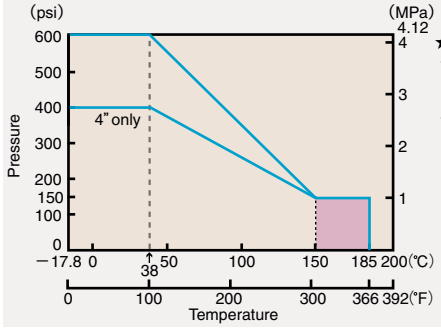
Effecttive Length of Thread

unit : mm (inch)

Nominal Size	¼	⅜	½	¾	1	1¼	1½
Super Z	8.5 (0.335)	9 (0.354)	12 (0.472)	13 (0.512)	15.5 (0.610)	16.5 (0.650)	16.5 (0.650)

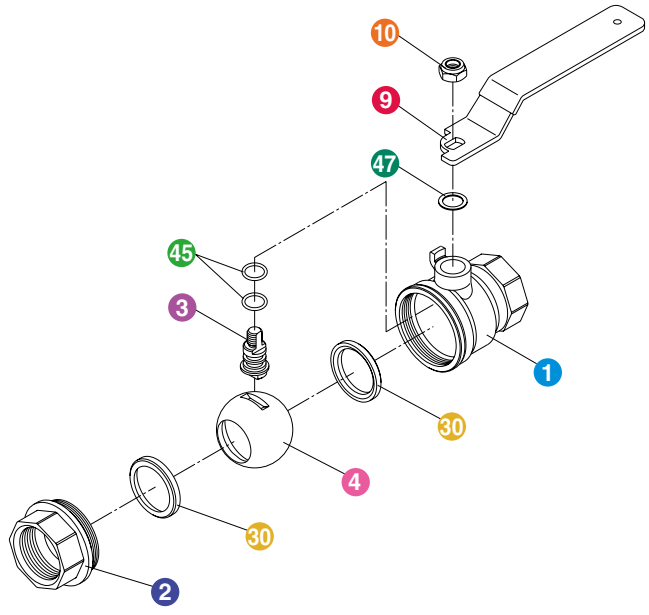
Nominal Size	2	2½	3	4
Super Z	19.5 (0.768)	22.0 (0.866)	25.0 (0.984)	30.0 (1.181)

P-T Rating



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

Construction and Materials



＊Illustration shows threaded ends design up to 2".

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

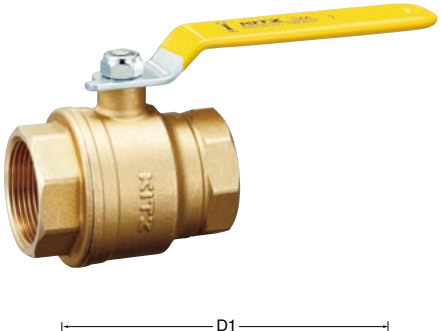
Note:
★1 4 only
★2 Ni plating
★3 Ni-Cr plating
★4 Plastic covering
★5 2½" and over
★6 Fluorocarbon Elastomer
★7 Polybutylene Terephthalate
★8 2½ and over

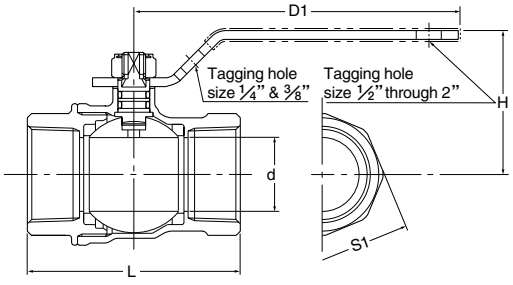


Dimensions and Cv Value

Threaded Ends Design

Fig. **SZA** : BS21 thread
AKSZA : NPT thread



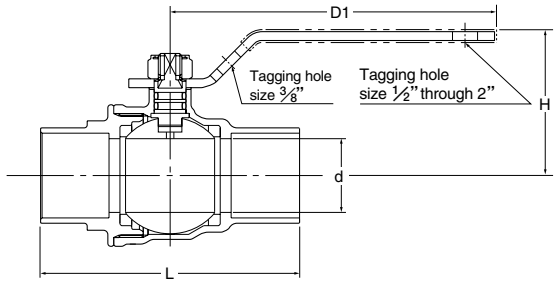


Nominal size	d		H		D1		L		S1		Cv Value
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
¼	10	0.39	37	1.46	70	2.76	42	1.65	20	0.79	4.2
⅜	10	0.39	37	1.46	70	2.76	42	1.65	22	0.87	7.6
½	15	0.59	40	1.57	80	3.15	53	2.08	26	1.02	20.0
¾	20	0.79	43	1.69	80	3.15	60	2.36	32	1.26	29.0
1	25	0.98	50	1.97	110	4.33	72	2.83	39	1.54	40.0
1¼	32	1.26	55	2.16	110	4.33	84	3.31	48	1.89	85.0
1½	40	1.57	65	2.56	150	5.90	92	3.62	55	2.17	145.0
2	50	1.97	72	2.83	150	5.90	110	4.33	68	2.68	210.0
2½	65	2.56	101	3.98	200	7.87	138	5.43	84	3.31	405.0
3	76	2.99	112	4.42	300	11.81	167	6.57	99	3.90	615.0
4	100	3.94	131	5.15	300	11.81	193	7.60	125	4.92	1150.0

Solder Joint Ends Design

Fig. **CSZA** : Solder joint





Nominal size	d		H		D1		L		Cv Value
	mm	inch	mm	inch	mm	inch	mm	inch	
—	—	—	—	—	—	—	—	—	—
⅜	10	0.39	37	1.46	70	2.76	46	1.81	7.6
½	15	0.59	40	1.57	80	3.15	54	2.13	20.0
¾	20	0.79	43	1.69	80	3.15	73	2.87	29.0
1	25	0.98	50	1.97	110	4.33	88	3.46	40.0
1¼	32	1.26	55	2.16	110	4.33	100	3.96	85.0
1½	40	1.57	65	2.56	150	5.90	115	4.53	145.0
2	50	1.97	72	2.83	150	5.90	140	5.53	210.0
2½	65	2.56	101	3.98	200	7.87	164	6.45	405.0
3	76	2.99	112	4.42	300	11.81	187	7.38	615.0

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Information for a Sound Solder Joint

1. Solders

Recommended :
Soft solders having a maximum melting point of 299℃ (570 ℉).
E.G. : 95-5 tin-antimony = 238℃ (460 ℉)
96-4 tin-silver = 221℃ (430 ℉)

⚠ CAUTION

Don't use a hard solder with melting point of 449℃ (840 ℉) or higher, because resultant crack on the valve surface may cause fluid leakage. Also, don't use a solder of 50-50 tin-lead rating, which is hazardous to human health.

2. Copper Tubes

Prepare copper tubes conforming to ASTM B 88
"Seamless Copper Water Tubes"

3. P-T Rating of Solder Jointed Valves

The maximum service pressure and temperature of solder jointed valves are limited by the properties of solder and tube materials. Information on typical solder materials are provided below :

Solders	Max. temp ℃ (℉)	Maximum working pressure					
		Size 1/4 ~ 1		Size 1 1/4 ~ 2		Size 2 1/2 ~ 3	
		MPa	psi	MPa	psi	MPa	psi
95-5 tin-antimony (H95 Sb-5A)	38(100)	3.45	500	2.76	400	2.07	300
	66(150)	2.76	400	2.41	350	1.90	275
96-4 tin-silver (H96 Ag-3.5A)	93(200)	2.07	300	1.72	250	1.38	200
	121(250)	1.38	200	1.21	175	1.03	150

⚠ CAUTION

- To determine the maximum working pressure of solder jointed valves, apply those of valve themselves or employed solder materials, whichever is lower.
- Copper tubes should not be used for steam service.
- Don't exceed a service velocity greater than 1.8m/sec (6ft/sec), to prevent erosion of copper tube. Erosion results in a considerable damage partially to the surface of metal, due to the fluid corrosion accelerated by mechanical stress of high fluid velocity.

⚠ CAUTION

- Don't use valves for super-heated steam service. Refer to the maximum working pressure shown in the pressure-temperature rating.
- Don't use valves with intermediate opening positions. Pressurizing partly open valves will cause seat deformation, and internal fluid leakage.
- Don't apply any external force counterclockwise to the valve cap. It may affect the assembly of valve body to cap, and cause external fluid leakage.
- Don't apply an excessive force when threading pipes into valve bores. It will cause seat deformation, and operational difficulty. Adequate threading torques are given below:

Nominal Size	1/4~1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3~4
Threading Torque (N·m)	20~29	39~49	49~59	59~69	69~78	78~88	108~118	127~137

⚠ 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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Read instruction manual carefully before use.

Distributed by

A chrysanthemum-handle is a symbol of KITZ, the brand of valve reliability

ISO 9001 certified since 1989

KITZ CORPORATION
1-10-1, Nakase, Mihama-ku, Chiba 261-8577, Japan
International Sales Dept. Phone : 81-43-299-1730, 1732 and 1733
Fax : 81-43-299-0121
www.kitz.com

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