

# 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** [Code#58] ( for NPT threaded ends - ASME B 1.20.1 )



**CSZA** [Code#59] ( 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 with a chrome plated brass ball
- 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 (1/4" through 2")



**CSA** : 1/2 psig at the appliance  
**CSA** : 5 psig from the appliance to the meter  
**CSA** : 125 psig from the meter to the street

● AKSZA / CSZA (1/4" through 2")



**UL / FM** : for fire protection

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

## Application

Water, Oil, Gas, and Steam

## Maximum Working Pressure

Unit	Working Pressure Non-Shock			Test Pressure		
	Saturated Steam	Cold Water, Oil, Gas 1/4"~3"	4"	Shell (Hydrostatic) 1/4"~3"	4"	Seat (Air)
psi	150	600	400	900	600	80
MPa	0.98	4.12	2.75	6.18	4.12	0.59
Bar	9.8	41.2	27.5	61.8	41.2	5.9
kgf/cm <sup>2</sup>	10	42	28	63	42	6

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

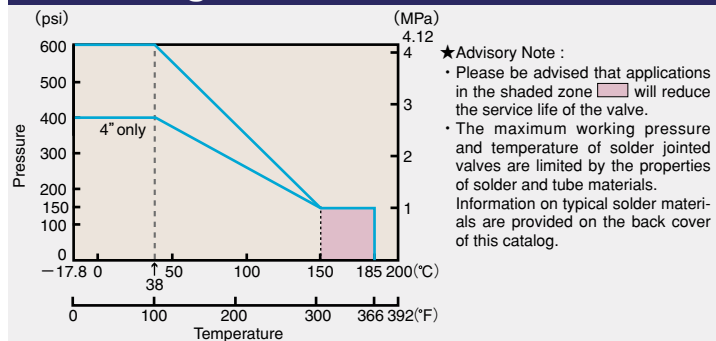
## Effective Length of Thread

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

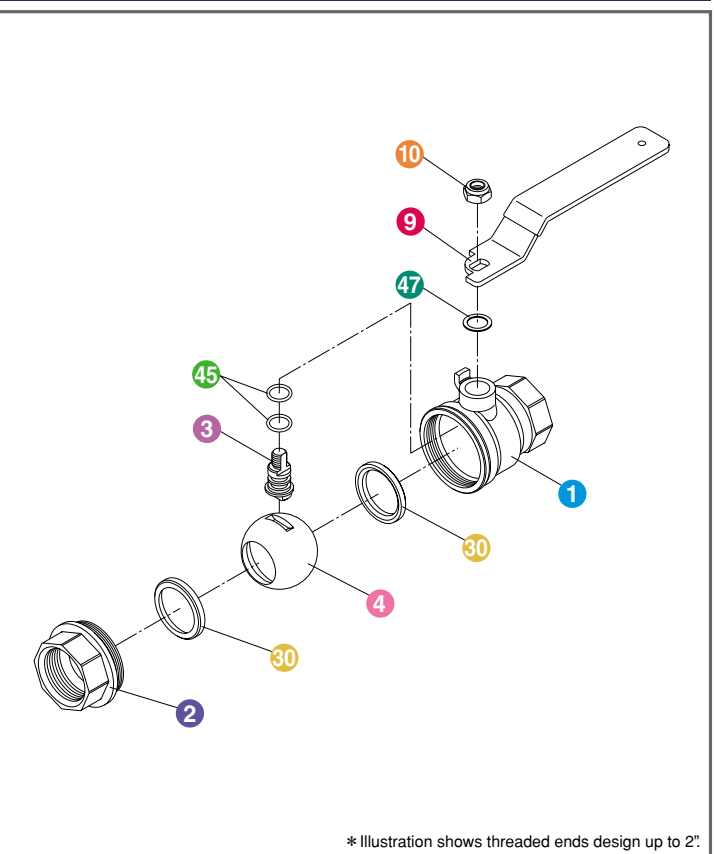
  

Size	2"			2 1/2"			3"			4"		
	19.5 (0.768)	22.0 (0.866)	25.0 (0.984)	30.0 (1.181)								
Super Z												
ZA/AKZA												

## P-T Rating



## Construction and Materials



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

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



## Information for a Sound Solder Joint

### 1. Solders

Recommended :

Soft solders having a maximum melting point of 299°C (570 °F).

**E.G. :** 95-5 tin-antimony = 238°C (460 °F)  
96-4 tin-silver = 221°C (430 °F)

### CAUTION

Don't use a hard solder with melting point of 449°C (840 °F) 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 °C (°F)	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:

Valve 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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