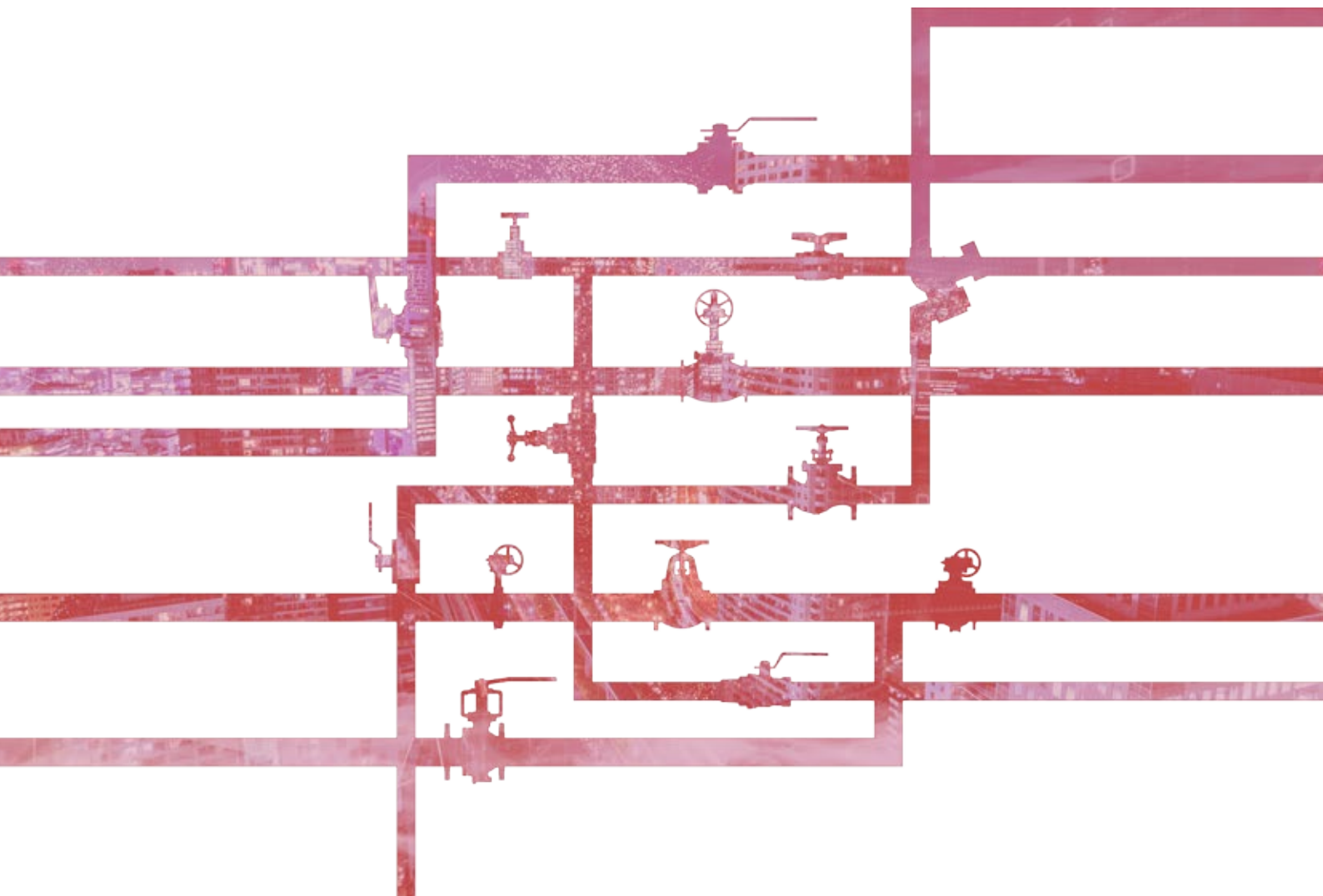


KITZ

GENERAL CATALOG

Bronze & Brass



INDEX

Title	Body Material	Type	Class	End Connection	Features	Fig	Page		
KITZ Standard Gate, Globe, Check, Angle, & Butterfly Valves, Y-Strainers	Bronze	Globe	100	TE	Soft Seated (Rubber or PTFE)	A AKA	BR5 8		
			EN PN16			PN16A			
			EN PN25			PN25A			
			100			Q QA			
			150			C AKC			
		Gate	125	FE/FF	Angle Type	CA AKCA	BR6 9		
			150			B BH			
			125			G AKG			
			150			D DB			
			150			DBH			
	Brass	Gate	125	TE,SE	NRS	FR AKFS CFS FH AKFH CFH	BR7 10		
	Special Brass		EN PN16 PN16 (AS1628)	TE		PN16FH	BR8 11		
			125	TE,SE		H AKH CH			
	Bronze		Check	EN PN16 EN PN25		TE		S PN16S PN25S E	BR9 12
				150		FE/FF		AKE EB EBH	
				150		TE	F AKF		
				125		TE,SE	R AKR		
			Strainer	EN PN16 EN PN25		TE	PN16R PN25R	BR10 13	
				125		TE,SE	YR		
				150		TE,SE	RF AKA F CAF		
		5K		TE	VF				
	-	TE		FT&FTS					
	10K	Wafer		Dual Plate, Water Hammer Prevention, Bypass Valve Mounted	10BWZ				
	Brass	Butterfly	150	TE,SE	NBR Lined Disc, Balancing Stop Handle Lever	Y AKY CY	BR11 14		
			EN PN16 EN PN25	TE		PN16YE PN25YE			
			175	TE		FV			
	JIS Standard Gate, Globe & Check Valves	Bronze	Globe	5K	TE	NBR Lined Disc, Balancing Stop Handle Lever	K	BR12 15	
				10K	FE/FF		J JB		
				5K	TE		M		
			Gate	10K	FE/FF		L LB		
				Check	10K		TE		O OB
					10K		FE/FF		
	MSS SP-80 Gate, Globe & Check Valves	Bronze	Gate	125	TE	RS	AK125M AK125E AK150E	BR13 16	
150				TE,SE	NRS	AK150L C150L			
				TE	RS	AK150LU AK300LU			
				300	TE,SE		AK125C		
Globe			150	TE	Soft Seated (G/F PTFE)	AK150D C150D	BR14 17		
			300	TE	Soft Seated (G/F PTFE)	AK300J AK300D			
			125	TE,SE	Y-type Swing	AKYR CYR			
Check			150	TE	AK150YR				
			300	TE	AK300YR				
Ball Valves			Brass	Ball	600	M & F	FB	ZO	BR15 18
	400	TE			SB, For Steam Service	ZS			
	600				FB, Compact Series	ZET SZA			
	EN PN40					(WR)PN40SZA			
	600	SE			FB	AKSZA CSZA AKSZAW CSZAW	BR16 19		
	600	TE			SB	T AKT TT			
	400	M & F			SB, For Gas Service	TG			
	600	TE			SB	TO			
					SB, 2pc Split Type	TM			
					RB	TK AKTK			
	Bronze	3 Way Ball	400	TE,SE	RB, Wing Handle	TKT TKW	BR17 20		
			150	TE	FB, Locking Device	TFJ TL			
	Bronze	3 Way Ball	400	TE,SE	SB, Long Neck Type for Thermal Insulation	TLT	BR18 21		
			10K	FE/FF	FB, 2pc Split Type	TB			
			600	TE,SE	FB, Swing Away 3pc Body, Mounting Pad	AK3TM			
			400	TE	SB, 3-Way, 2-Seat	TN AKTN AKTNP			
	Brass	Ball	600	TE	SB, 3-Way, 4-Seat	T4T T4L	BR19 22		
					SB, Vertical Type, 3-Way, 2-Seat	TV2T TV2L			
					TE	FB, Gland Packing		AKTAFLL CTAF	
					SE	FB, Double O-ring		AKTFLL CTFLL	
TE					FB, Gland Packing, 316 Stem & Ball	AKTAFM CTAFM			
SE					FB, Double O-ring, 316 Stem & Ball	AKTFMLL CTFMLL			
TE					FB, Gland Packing, Mounting Pad	AKTAFP			
SE					FB, Gland Packing, 316 Stem & Ball	AKTAFPM			
M & F					FB, Gland Packing	AKTAFO			
TE					FB, Gland Packing, Single Union	AKTAFU			
200	TE	FB, Gland Packing, Safety Exhaust	AKTAFS						

Title	Body Material	Type	Class	End Connection	Features	Fig	Page
Lead Free Valves	Bronze (Lead Free)	Globe	125	TE	G/F PTFE	GN	BR21 24
		Gate	125		NRS	HN	
			10K		NRS, Buried Type	WN	
		Check	125	TE,SE	Swing	RN CRN	BR22 25
			10K	TE	Lift (Soft,Spring)	RFN	
				Wafer	Wafer	10BWZN	
		Globe	10K	TE		JN	BR23 26
		Gate	5K	TE,SE	RS	MN CMN	
			10K			LN CLN	
	Brass (Lead Free)	Check	10K	TE	Swing	ON	BR24 27
		Strainer	10K			YNK CYNK	
		Ball	400	TE,SE	SB, Long Neck Type for Thermal Insulation	TLN TLNT CTLN	
				TE	FB, Long Neck Type for Thermal Insulation	TLNF TLNFT	BR25 28
		Gate	125	TE,SE	NRS	AKFSN	
					Swing	AKHN CHN	BR26 29
		Check	125		Y-type Swing	AKRN CRN	
						AKYRN CYRN	BR27 30
			150		Lift (Soft,Spring)	AKYRNT CYRNT	
		Globe	125			AKAFN CAFN	
Fancoil Valves	Bronze	Ball	10K	TE		AK125CN C125CN	BR28 31
				M (G) & F	RB, Detachable Long Handle	AKTAFN CTAFN	
				M & F		AKTAFMN CTAFMN	
				TE	RB, Detachable Long Handle, Single Union	AKTFMNL CTFMNLL	BR29 32
				M (G) & F	FB, Detachable Long Handle	AK3TMN C3TMN	
				TE	FB, Detachable Long Handle, Single Union	AK3TMMN C3TMMN	
		Globe	200	M & F	FB, Long Neck Type for Thermal Insulation	AKSZAN CSZAN	BR30 33
					FB, Long Neck Type for Thermal Insulation	AKSZANW CSZANW PCTAFMN	
						AKTNN CTNN	
Balancing Valves	Bronze	Balancing	10K	TE (F x Union nipple)	Constant Flow Control, with Built-in Screen	BS15- BS20- BSS15- BSS20- BSS25-	BR30 34
		Ball	10K		Constant Flow Control, Detachable Handle	RTUC	
Utility Ball Valves	Brass	Ball	10K	M (Rc x G)	Back flow prevention by automatic closing of spring-loaded built-in check valve (Water Hammer Proof), Detachable 2-way Handle (Short ' Long), Straight Type	S23N- S24N- S24N-3/4X S25N- S26N- S27N- S28N- S28N-3/4X S38A-	BR31 35
	Brass (Ni-Cr Plated Body)			TE		S1- S2- S5- S6- S8-	
	Brass			TE (F x Union nut)			
	Brass (Ni-Cr Plated Body)			M (G) x F (Rc)			
	Brass			M (G) x F (Rc)	Ditto, but Angle Type		BR32 36
	Brass (Ni-Cr Plated Body)			M (Rc x G)	Straight Type		
	Brass			M (Rc x G)	Angle Type		
	Brass (Ni-Cr Pl)			M x F	Straight Type		

* (Abbreviation) TE: Threaded Ends, FE: Flanged Ends, RF: Raised Face Ends,
SB: Screwed Bonnet, NRS: Non Rising Stem, RS: Rising Stem, FB: Full Bore, RB: Reduced Bore



CAUTION

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

PRODUCT CODING

BC/BS Valves Except Fancoil/Balancing/Utility

(Note: Some products do not follow this coding system)

AK **125** **C** **N**

1 2 3 4

1 End Connection

None Threaded Ends (BS21/JIS B0203)
 Flanged Ends
 AK Threaded Ends (ASME B1.20.1)
 C Solder Ends

2 Pressure Class

None KITZ Std., JIS, Ball Valve
 10 10K (Wafer Check Only)
 125 MSS SP-70 Class 125
 150 MSS SP-70 Class 150
 300 MSS SP-70 Class 300
 PN16 PN Rating
 PN25 PN Rating

3 Valve Type

A,Q/QA,C,CA,B/BH,G,D,DB/DBH,K,J,JB Globe
 FR/FS/FH,H,S,E,EB/EBH,LU,M,L,LB Gate
 F Check (Lift)
 R,O,OB Check (Swing)
 YR Check (Y Swing)
 RF,AF,VF Check (In-line Lift)
 BWZ Check (Wafer)
 Zxx,ZExx,SZxx,Txx,3Txx Ball
 Y,YU,YE Strainer

4 Lead Free Valves

N Lead Free

Fancoil (Ball)

RT **R** **M**

1 2 3

1 Design

RT Detachable T Type Long Handle
 TL Long Neck

2 Bore Type

R Reduced Bore
 F Full Bore

3 Connection or Handle* Type

M F x F (Taper)
 O F (Taper) x M (Parallel)
 U F (Taper) x Union Nipple (M (Parallel))
 T* Reinforced Nylon Handle

*None 403SS Lever

Fancoil (Globe)

I **NAH**

1 2

1 Indicator

None Without
 I With

2 Type

NAH Angle Type
 NSH Straight Type

Balancing Valves

BS 15 - 5

1 2 3

1 Type

BS With Built-in Screen
BSS Low Noise Type
RTUC Constant Flow Control

2 Nominal

15, 20, 25 (mm)

3 Predetermined Flow Rate

3 ~ 40 (L/min)

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

Predetermined Flow Rate

Product Code: BS [Controllable Flow Rate $\pm 10\%$]

(L/min)

Normal Size (mm)	3	4	5	6	7.5	8	10	12	12.5	15	16	17.5	20	25	30	35	40
15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		

Product Code: BSS [Controllable Flow Rate $\pm 10\%$]

(L/min)

Normal Size (mm)	3	4	5	6	7.5	8	10	12	12.5	15	16	17.5	20	25	30	35	40
15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Product Code: RTUC [Controllable Flow Rate $\pm 15\%$, $\pm 20\%$ (5 L/min only)]

(L/min)

Normal Size (mm)	3	4	5	6	7.5	8	10	12	12.5	15	16	17.5	20	25	30	35	40
15			●	●	●		●		●	●		●	●				
20			●	●	●		●		●	●		●	●	●	●		
25														●	●		

Note: Flow rates marked with ● are available.

Utility Ball Valves

S 24 N - 3/4X

1 2 3 4

1 Series

S S Ball & Orange Ball

2 Design & Connection

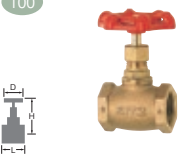
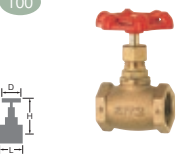
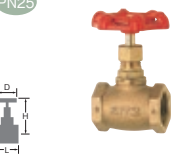
1 Straight, Brass Body, M (T) x M (P)
2 Straight, Cr. Plating Body, M (T) x M (P)
5 Angle, Cr. Plating Body, M (T) x M (P)
6 Straight, Brass Body, M (T) x F (T)
8 Straight, Cr. Plating Body, M (T) x M (P)
23 Straight, Brass Body, M (T) x M (P)
24 Straight, Cr. Plating Body, M (T) x M (P)
25 Straight, Cr. Plating Body, F (T) x F (F)
26 Straight, Cr. Plating Body, M (T) x Union Nut F (P)
27 Straight, Cr. Plating Body, F (T) x Union Nut F (P)
28 Straight, Cr. Plating Body, F (T) x M (P)
38 Angle, Cr. Plating Body, F (T) x M (P)

3 Type

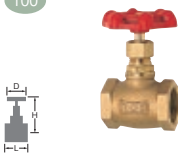
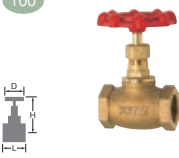
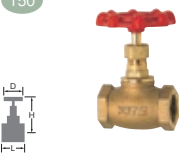
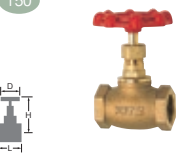
N Straight
A Angle

4 Type

3/4X 3/4x1/2

Type	Globe					Globe					Globe					Globe				
Bronze & Brass KITZ Standard																				
	SB IS					SB IS					SB IS					SB IS				
Fig	A					AKA					PN16A					PN25A				
End Connection	*BS21 (JIS B0203)					*ASME B1.20.1					*BS21 (JIS B0203)					*BS21 (JIS B0203)				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/4	8	40	66	50		40	66	50												
3/8	10	42	67	50		42	67	50												
1/2	15	48	69	55		48	69	55			48	69	55			48	69	55		
3/4	20	53	80	60		53	80	60			53	80	60			53	80	60		
1	25	63	94	70		63	94	70			63	94	70			63	94	70		
1 1/4	32	73	104	80		73	104	80			73	104	80			73	104	80		
1 1/2	40	81	127	90		81	127	90			81	127	90			81	127	90		
2	50	94	147	100		94	147	100			94	147	100			94	147	100		
2 1/2	65	115	179	115		115	179	115												
3	80	131	200	135		131	200	135												
4	100	171	250	180		171	250	180												
Body	Cast Bronze					Cast Bronze					Cast Bronze					Cast Bronze				
Bonnet	Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze				
Stem	Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass				
Disc	Cast Bronze					Cast Bronze					Cast Bronze					Cast Bronze				
Gland Packing	Aramid Fibers Graphite					Aramid Fibers Graphite					Aramid Fibers Graphite					Aramid Fibers Graphite				
Hand Wheel	Aluminum Die-Cast/CI					Aluminum Die-Cast/CI					Aluminum Die-Cast/CI					Aluminum Die-Cast/CI				
Standard/Approval											WSD: PN16A<ZH1W2>									
Service Conditions	W.O.G. Non-shock 1.03MPa(150psi), Saturated Steam Pressure 0.7MPa(100psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.03MPa(150psi), Saturated Steam Pressure 0.7MPa(100psi) (Do not use for flammable gas or toxic gas.)					16 bar at 100°C, 7 bar at 170°C (Do not use for flammable gas or toxic gas.)					25 bar at 100°C, 10.5 bar at 186°C (Do not use for flammable gas or toxic gas.)				
Reference Page											P-T Rating : Page BR39					P-T Rating : Page BR39				
Remarks	EAC: Option					EAC: Option					WSD: Option									

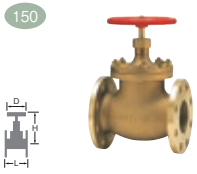
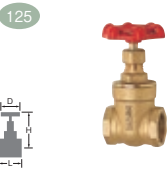
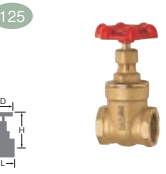
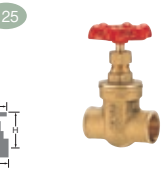
*The length of useful threads & the positions of gauge planes are built on KITZ standard.

Type	Globe					Globe					Globe					Globe				
Bronze & Brass KITZ Standard																				
	SB IS					SB IS					SB IS					SB IS				
Fig	Q					QA					C					AKC				
End Connection	*BS21 (JIS B0203)					*BS21 (JIS B0203)					BS21 (JIS B0203)					ASME B1.20.1				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/4	8										44	66	50			44	66	50		
3/8	10										44	68	50			44	68	50		
1/2	15	44	70	50		44	70	50			53	79	60			53	79	60		
3/4	20	50	73	55		50	73	55			65	93	70			65	93	70		
1	25	63	86	60		63	86	60			77	104	80			77	104	80		
1 1/4	32					73	108	80			85	127	90			85	127	90		
1 1/2	40					81	132	90			100	145	100			100	145	100		
2	50					94	150	100			119	174	115			119	174	115		
2 1/2	65										139	199	135			139	199	135		
3	80										158	215	155			158	215	155		
Body	Cast Bronze					Cast Bronze					Cast Bronze					Cast Bronze				
Bonnet	Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze				
Stem	Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass				
Disc	Urethane Rubber					PTFE					Cast Bronze					Cast Bronze				
Gland Packing	Aramid Fibers Graphite					Aramid Fibers Graphite					Aramid Fibers Graphite					Aramid Fibers Graphite				
Hand Wheel	Aluminum Die-Cast/ZDC					Aluminum Die-Cast/ZDC					Aluminum Die-Cast					Aluminum Die-Cast				
Standard/Approval											RoHS: C<GS101> up to 1 ^B									
Service Conditions	W.O.G. Non-shock 0.78MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 0.78MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				
Remarks	For Water/Hot Water EAC: Option					For Oil Tank EAC: Option					RoHS: Option EAC: Option					EAC: Option				

*The length of useful threads & the positions of gauge planes are built on KITZ standard.

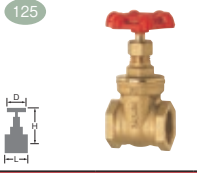
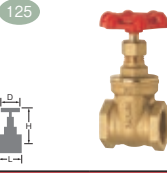
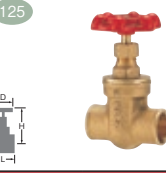
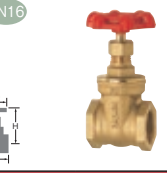
Type	Angle Globe					Angle Globe					Globe					Globe				
Bronze & Brass KITZ Standard																				
Fig	CA					AKCA					B					BH				
End Connection	BS21 (JIS B0203)					ASME B1.20.1					JIS B2240					JIS B2240				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/4	8	21	66	50		21	66	50												
3/8	10	24	68	50		24	68	50												
1/2	15	28	79	60		28	79	60		83	79	60				83	79	60		
3/4	20	34	93	70		34	93	70		88	94	70				88	94	70		
1	25	40	104	80		40	104	80		100	105	80				100	105	80		
1 1/4	32	47	127	90		47	127	90		113	127	90				113	127	90		
1 1/2	40	52	145	100		52	145	100		120	145	100				120	145	100		
2	50	61	174	115		61	174	115		145	174	115				145	174	115		
2 1/2	65	74	199	135		74	199	135		165	198	135				165	198	135		
3	80	85	215	155		85	215	155		177	215	155				177	215	155		
4	100									220	250	180				220	250	180		
Body	Cast Bronze					Cast Bronze					Cast Bronze					Cast Bronze				
Bonnet	Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze				
Stem	Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass				
Disc	Cast Bronze					Cast Bronze					Cast Bronze					Cast Bronze				
Gland Packing	Aramid Fibers Graphite					Aramid Fibers Graphite					Aramid Fibers Graphite					Aramid Fibers Graphite				
Hand Wheel	Aluminum Die-Cast/ZDC					Aluminum Die-Cast/ZDC					Aluminum Die-Cast/ZDC/DI					Aluminum Die-Cast/ZDC/DI				
Service Conditions	W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				
Remarks	EAC: Option					EAC: Option					Flanged Ends Undrilled EAC: Option					Flanged end drilled according to JIS 10K. EAC: Option				

Type	Globe					Globe					Globe					Globe				
Bronze & Brass KITZ Standard																				
Fig	G					AKG					D					DB				
End Connection	BS21 (JIS B0203)					ASME B1.20.1					BS21 (JIS B0203)					JIS B2240				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/4	8	47	68	50		47	68	50												
3/8	10	53	87	55		53	87	55												
1/2	15	57	87	60		57	87	60		64	113	60				82	113	60		
3/4	20	66	102	70		66	102	70		78	138	90				95	138	90		
1	25	76	113	80		76	113	80		90	156	100				108	156	100		
1 1/4	32	88	138	90		88	138	90		105	184	115				120	184	115		
1 1/2	40	100	154	100		100	154	100		120	187	115				140	187	115		
2	50	120	183	115		120	183	115		145	212	135				165	212	135		
2 1/2	65	147	210	135		147	210	135								190	244	155		
3	80	162	229	155		162	229	155								220	281	180		
4	100															270	321	225		
Body	Cast Bronze					Cast Bronze					Cast Bronze					Cast Bronze				
Bonnet	Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze				
Stem	Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass				
Disc	G/F PTFE					G/F PTFE					G/F PTFE					G/F PTFE				
Gland Packing	Aramid Fibers Graphite					Aramid Fibers Graphite					Aramid Fibers Graphite					Aramid Fibers Graphite/PTFE				
Hand Wheel	Aluminum Die-Cast					Aluminum Die-Cast					Aluminum Die-Cast					Aluminum Die-Cast/ZDC/DI				
Service Conditions	W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.55MPa(225psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				
Remarks	EAC: Option					EAC: Option					EAC: Option					Flanged Ends Undrilled EAC: Option				

Type	Globe					Gate			Gate			Gate		
Bronze & Brass KITZ Standard	  					  			  			  		
	150					125			125			125		
	UB/BB IS					SB IS NRS			SB IS NRS			SB IS NRS		
	EAC					EAC			EAC			EAC		
Fig	DBH					FR			AKFS			CFS		
End Connection	JIS B2240					*BS21 (JIS B0203)			*ASME B1.20.1			**ASME B16.18		
inch	mm	L	H	D		L	H	D	L	H	D	L	H	D
3/8	10					38	73	50	38	73	50			
1/2	15	82	113	60		42	73	50	42	73	50	45	75	50
3/4	20	95	138	90		47	87	55	47	87	55	60	86	55
1	25	108	156	100		50	97	60	50	97	60	70	97	60
1 1/4	32	120	184	115		60	118	70	60	118	70	77	117	70
1 1/2	40	140	187	115		63	126	80	63	126	80	86	126	80
2	50	165	212	135		72	154	90	72	154	90	104	154	90
2 1/2	65	190	244	155					80	167	100			
3	80	220	281	180					90	200	115			
4	100	270	321	225										
Body	Cast Bronze					Forged Brass			Forged Brass			Forged Brass		
Bonnet	Forged Brass/Cast Bronze					Forged Brass			Forged Brass			Forged Brass		
Stem	Dezincification Resistant Brass					Dezincification Resistant Brass			Dezincification Resistant Brass			Dezincification Resistant Brass		
Disc	G/F PTFE					Forged Brass			Forged Brass			Forged Brass		
Gland Packing	Aramid Fibers Graphite/PTFE					Aramid Fibers Graphite			Aramid Fibers Graphite			Aramid Fibers Graphite		
Hand Wheel	Aluminum Die-Cast/ZDC/DI					Aluminum Die-Cast			Aluminum Die-Cast			Aluminum Die-Cast		
Service Conditions	W.O.G. Non-shock 1.55MPa(225psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)		
Reference Page												P-T Rating : Page BR34		
Remarks	Flanged end drilled according to JIS 10K. EAC: Option					EAC: Option								

*The length of useful threads & the positions of gauge planes are built on KITZ standard.

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

Type	Gate					Gate			Gate			Gate		
Bronze & Brass KITZ Standard	  					  			  			  		
	125					125			125			PN16		
	SB IS NRS					SB IS NRS			SB IS NRS			SB IS NRS		
	EAC RoHS					EAC			EAC			EAC		
Fig	FH					AKFH			CFH			PN16FH		
End Connection	*BS21 (JIS B0203)					*ASME B1.20.1			**ASME B16.18			*BS21 (JIS B0203)		
inch	mm	L	H	D		L	H	D	L	H	D	L	H	D
1/4	8	35	70	50		35	70	50				35	70	50
3/8	10	38	73	50		38	73	50	37	77	50	38	73	50
1/2	15	42	73	50		42	73	50	45	77	50	42	73	50
3/4	20	47	87	55		47	87	55	60	87	55	47	87	55
1	25	50	97	60		50	97	60	70	97	60	50	97	60
1 1/4	32	60	118	70		60	118	70	77	118	70	60	118	70
1 1/2	40	63	126	80		63	126	80	86	126	80	63	126	80
2	50	72	154	90		72	154	90	104	154	90	72	154	90
2 1/2	65	82	187	100		82	187	100	115	187	100			
3	80	92	205	115		92	205	115	127	205	115			
Body	Forged Brass					Forged Brass			Forged Brass			Forged Brass		
Bonnet	Forged Brass/Cast Bronze					Forged Brass/Cast Bronze			Forged Brass/Cast Bronze			Forged Brass/Cast Bronze		
Stem	Dezincification Resistant Brass					Dezincification Resistant Brass			Dezincification Resistant Brass			Dezincification Resistant Brass		
Disc	Forged Brass					Forged Brass			Forged Brass			Forged Brass		
Gland Packing	Aramid Fibers Graphite					Aramid Fibers Graphite			Aramid Fibers Graphite			Aramid Fibers Graphite		
Hand Wheel	Aluminum Die-Cast					Aluminum Die-Cast			Aluminum Die-Cast			Aluminum Die-Cast		
Standard/Approval	RoHS: FH<GS101> up to 1 ^B													
Service Conditions	W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)			16 bar at 100°C, 7 bar at 170°C (Do not use for flammable gas or toxic gas.)		
Reference Page									P-T Rating : Page BR34			P-T Rating : Page BR39		
Remarks	RoHS: Option EAC: Option					EAC: Option								

*The length of useful threads & the positions of gauge planes are built on KITZ standard.

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

Type	Gate				Gate				Gate				Gate			
Bronze & Brass KITZ Standard																
Fig	AS-FH				H				AKH				CH			
End Connection	AS 1722.1				*BS21 (JIS B0203)				*ASME B1.20.1				**ASME B16.18			
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D	L	D	
3/8	10				38	73	50	38	73	50	37	73	50			
1/2	15	55	74	55	42	73	50	42	73	50	45	73	50			
3/4	20	60	86	55	47	85	55	47	85	55	60	85	55			
1	25	68	94	60	50	96	60	50	96	60	72	96	60			
1 1/4	32	78	116	70	60	115	70	60	115	70	78	115	70			
1 1/2	40	81	128	80	63	125	80	63	125	80	87	125	80			
2	50	94	158	90	72	155	90	72	155	90	102	155	90			
2 1/2	65				90	202	115	90	202	115	115	202	115			
3	80				100	223	135	100	223	135	130	223	135			
4	100				121	280	155	121	280	155	173	280	155			
Body	Special Brass (AS 2345)				Cast Bronze				Cast Bronze				Cast Bronze			
Bonnet	Special Brass (AS 2345)				Cast Bronze				Cast Bronze				Cast Bronze			
Stem	Special Brass (AS 2345)				Dezincification Resistant Brass				Dezincification Resistant Brass				Dezincification Resistant Brass			
Disc	Special Brass (AS 2345)				Forged Brass/Cast Bronze				Forged Brass/Cast Bronze				Forged Brass/Cast Bronze			
Gland Packing	Aramid Fibers Graphite				Aramid Fibers Graphite				Aramid Fibers Graphite				Aramid Fibers Graphite			
Hand Wheel	Ductile Iron				Alminum Die-Cast				Alminum Die-Cast				Alminum Die-Cast			
Standard/Approval																
Service Conditions	Working Temperature and Pressure, Non-shock 99°C/1.6MPa				W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)			
Reference Page													P-T Rating : Page BR34			
Remarks	AS: Austrarian standard				EAC: Option				EAC: Option							

*The length of useful threads & the positions of gauge planes are built on KITZ standard.

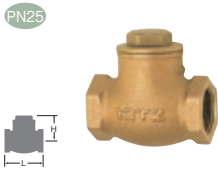
**Solder jointed end valves should not be used in service where the temperature of line fluid is higher than the softening point of the solder.

Type	Gate				Gate				Gate				Gate			
Bronze & Brass KITZ Standard																
Fig	S				PN16S				PN25S				E			
End Connection	*BS21 (JIS B0203)				*BS21 (JIS B0203)				*BS21 (JIS B0203)				BS21 (JIS B0203)			
inch	mm	L	H	D	L	H	D		L	H	D		L	H	D	
3/8	10	38	75	50									43	86	50	
1/2	15	42	75	50	42	75	50		42	75	50		48	96	55	
3/4	20	47	86	55	47	86	55		47	86	55		53	111	60	
1	25	50	97	60	50	97	60		50	97	60		62	122	70	
1 1/4	32	60	117	70	60	117	70		60	117	70		69	141	80	
1 1/2	40	63	126	80	63	126	80		63	126	80		75	164	90	
2	50	72	154	90	72	154	90		72	154	90		86	197	100	
2 1/2	65	80	167	100									105	225	115	
3	80	90	200	115									116	261	135	
Body	Cast Bronze				Cast Bronze				Cast Bronze				Cast Bronze			
Bonnet	Forged Brass				Forged Brass				Forged Brass				Forged Brass/Cast Bronze			
Stem	Dezincification Resistant Brass				Dezincification Resistant Brass				Dezincification Resistant Brass				Dezincification Resistant Brass			
Disc	Forged Brass				Forged Brass				Forged Brass				Cast Bronze			
Gland Packing	Aramid Fibers Graphite				Aramid Fibers Graphite				Aramid Fibers Graphite				Aramid Fibers Graphite			
Hand Wheel	Aluminum Die-Cast				Aluminum Die-Cast				Aluminum Die-Cast				Aluminum Die-Cast			
Standard/Approval					WRAS: (WR)PN16S, WSD: PN16S<ZH1W1>				WRAS: (WR)PN25S							
Service Conditions					16 bar at 100°C, 7 bar at 170°C (Do not use for flammable gas or toxic gas.)				25 bar at 100°C, 10.5 bar at 186°C (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)			
Reference Page					P-T Rating : Page BR39				P-T Rating : Page BR39							
Remarks	EAC: Option				WRAS, WSD: Option				WRAS: Option				EAC: Option			

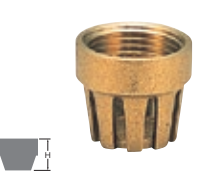
*The length of useful threads & the positions of gauge planes are built on KITZ standard.

Type	Gate					Gate					Gate					Lift Check				
Bronze & Brass KITZ Standard																				
Fig	AKE					EB					EBH					F				
End Connection	ASME B1.20.1					JIS B2240					JIS B2240					BS21 (JIS B0203)				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
3/8	10	43	86	50												44	26			
1/2	15	48	96	55		75	96	55			75	96	55			53	28			
3/4	20	53	111	60		80	111	60			80	111	60			65	34			
1	25	62	122	70		95	122	70			95	122	70			77	42			
1 1/4	32	69	141	80		110	142	80			110	142	80			85	50			
1 1/2	40	75	164	90		120	165	90			120	165	90			100	56			
2	50	86	197	100		140	197	100			140	197	100			119	67			
2 1/2	65	105	225	115		165	225	115			165	225	115			139	79			
3	80	116	261	135		190	264	155			190	264	155			158	91			
4	100					230	309	225			230	309	225							
5	125					190	381	225			190	381	225							
6	150					210	427	250			210	427	250							
Body	Cast Bronze					Cast Bronze					Cast Bronze					Cast Bronze				
Bonnet	Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze				
Stem	Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass									
Disc	Cast Bronze					Cast Bronze					Cast Bronze					Cast Bronze				
Gland Packing	Aramid Fibers Graphite					Aramid Fibers Graphite/PTFE					Aramid Fibers Graphite/PTFE									
Hand Wheel	Aluminum Die-Cast					Aluminum Die-Cast/ZDC/DI					Aluminum Die-Cast/ZDC/DI									
Service Conditions	W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				
Remarks	EAC: Option					Flanged Ends Undrilled EAC: Option					Flanged end drilled according to JIS 10K. EAC: Option					EAC: Option				

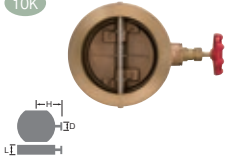
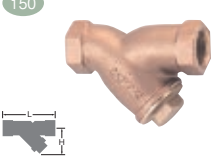
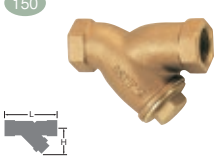
Type	Lift Check					Swing Check					Swing Check					Swing Check				
Bronze & Brass KITZ Standard																				
Fig	AKF					R					AKR					PN16R				
End Connection	ASME B1.20.1					BS21 (JIS B0203)					ASME B1.20.1					BS21 (JIS B0203)				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
3/8	10	44	26			53	39				53	39				53	39			
1/2	15	53	28			60	39				60	39				61	45			
3/4	20	65	34			70	45				70	45				70	50			
1	25	77	42			80	52				80	52				81	58			
1 1/4	32	85	50			92	62				92	62				91	65			
1 1/2	40	100	56			102	67				102	67				109	75			
2	50	119	67			122	79				122	79								
2 1/2	65	139	79			150	91				150	91								
3	80	158	91			165	102				165	102								
4	100					195	119				195	119								
Body	Cast Bronze					Cast Bronze					Cast Bronze					Cast Bronze				
Bonnet	Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass				
Stem/Hinge Pin						Brass					Brass					Brass				
Disc	Cast Bronze					Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass				
Standard/Approval						RoHS: R<GS101> up to 1 ⁹														
Service Conditions	W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					16 bar at 100°C, 7 bar at 170°C (Do not use for flammable gas or toxic gas.)				
Reference Page																P-T Rating : Page BR39				
Remarks	EAC: Option					EAC: Option RoHS: Option					EAC: Option									

Type	Swing Check				Y-Pattern Swing Check				Vertical Lift Check			Vertical Lift Check		
Bronze & Brass KITZ Standard														
	PN25R				YR				RF			AKAF		
End Connection	BS21 (JIS B0203)				*BS21 (JIS B0203)				BS21 (JIS B0203)			ASME B1.20.1		
inch	mm	L	H	D	L	H	D		L	H	D	L	H	D
3/8	10				54	40								
1/2	15	53	39		56	40			53			53		
3/4	20	61	45		70	49			59			59		
1	25	70	50		80	58			67			67		
1 1/4	32	81	58		95	71			78			78		
1 1/2	40	91	65		110	80			84			84		
2	50	109	75		128	95			98			98		
Body	Cast Bronze				Cast Bronze				Cast Bronze			Cast Bronze		
Bonnet	Forged Brass				Forged Brass				Cast Bronze			Cast Bronze		
Stem/Hinge Pin	Brass				Copper				Spring: P Bronze			Spring: P Bronze		
Disc	Forged Brass				Cast Bronze				NBR			FKM		
Standard/Approval					WSD: YR<ZH1W3>									
Service Conditions	25 bar at 100°C, 10.5 bar at 186°C (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 1.72MPa(250psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 1.72MPa(250psi) (Do not use for flammable gas or toxic gas.)		
Reference Page	P-T Rating : Page BR39													
Remarks					EAC: Option, WSD: Option									

*The length of useful threads & the positions of gauge planes are built on KITZ standard.

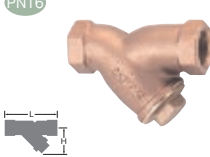
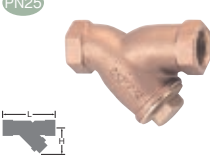
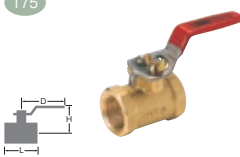
Type	Vertical Lift Check				Vertical Lift Check				Vertical Lift Check			Screen for FT		
Bronze & Brass KITZ Standard														
	CAF				VF				FT			FTS		
End Connection	**ASME B16.18				BS21 (JIS B0203)				BS21 (JIS B0203xB0202)			BS21 (JIS B0202)		
inch	mm	L	H	D	L	H	D		L	H	D	L	H	D
1/2	15	61			37							25		
3/4	20	76			44				48			29		
1	25	89			51				58			32		
1 1/4	32	97			62				62			35		
1 1/2	40	110			69				70			43		
2	50	132			82				80			50		
2 1/2	65								90					
3	80								100			51		
Body	Cast Bronze				Cast Bronze				Cast Bronze			Cast Bronze		
Bonnet	Cast Bronze													
Stem	Spring: P Bronze													
Disc	FKM				Special Brass/Cast Bronze				NBR			Cast Bronze		
Service Conditions	W.O.G. Non-shock 1.72MPa(250psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 120°C(0.5MPa) (Do not use for flammable gas or toxic gas.)				W.O.G. 80°C(0.5MPa) (Do not use for flammable gas or toxic gas.)			W.O.G. 80°C(0.5MPa) (Do not use for flammable gas or toxic gas.)		
Remarks									Threading: Taper for Male, Parallel for Female			Threading: Parallel		

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

Type	Wafer Check				Y-Pattern Strainer			Y-Pattern Strainer			Y-Pattern Strainer		
Bronze & Brass KITZ Standard													
	Dual				EAC RoHS			EAC			EAC		
Fig	10BWZ				Y			AKY			CY		
End Connection	Wafer (JIS 10K)				BS21 (JIS B0203)			ASME B1.20.1			**JIS B2011/ASME B16.18		
inch	mm	L	H	D	L	H	***H1	L	H	***H1	L	H	***H1
3/8	10				70	43	61	70	43	61			
1/2	15				80	48	68	80	48	68	80	48	68
3/4	20				100	57	83	100	57	83	105	57	83
1	25				115	70	105	115	70	105	125	70	105
1 1/4	32				135	82	124	135	82	124	145	82	124
1 1/2	40	54	132	55	160	98	149	160	98	149	170	98	149
2	50	56	139	70	195	121	188	195	121	188	210	121	188
2 1/2	65	56	146	70	230	149	216	230	149	216	250	149	216
3	80	59	152	70	240	182	267	240	182	267	280	182	267
4	100	66	165	70									
5	125	72	183	70									
6	150	78	208	80									
8	200	96	237	80									
10	250	109	289	90									
12	300	145	316	90									
Body	Cast Bronze + NBR				Cast Bronze			Cast Bronze			Cast Bronze		
Bonnet/Cap/Cover					Forged Brass			Forged Brass			Forged Brass		
Hinge Pin/Spring	304SS												
Disc/Screen	Brass/Cast Bronze				304SS			304SS			304SS		
Gland Packing/Gasket	Aramid Fiber Graphite				Gasket: Non Asbestos (V6500) up to 2 ^B , FKM for 21/2 ^B & 3 ^B			Gasket: Non Asbestos (V6500) up to 2 ^B , FKM for 21/2 ^B & 3 ^B			Gasket: Non Asbestos (V6500) up to 2 ^B , FKM for 21/2 ^B & 3 ^B		
Hand Wheel	Aluminum Die Cast/ZDC												
Standard/Approval					RoHS: Y<GS101> up to 1 ^B								
Service Conditions	W.O.G. 80°C(1.4MPa) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) up to 2 ^B (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) up to 2 ^B (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) up to 2 ^B (Do not use for flammable gas or toxic gas.)		
Reference Page	Features: Page BR36										P-T Rating : Page BR34		
Remarks	Built-in Bypass Valve, Dual Plate Type				EAC: Option, RoHS: Option			EAC: Option			JIS B2011 up to 2 ^B		

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

***Height for removing the screen

Type	Y-Pattern Strainer				Y-Pattern Strainer			Butterfly		
Bronze & Brass KITZ Standard										
	WSD				WRAS					
Fig	PN16YE				PN25YE			FV		
End Connection	BS21 (JIS B0203)				BS21 (JIS B0203)			BS21 (JIS B0203)		
inch	mm	L	H	***H1	L	H	***H1	L	H	D
1/2	15	65	42	56	65	42	56	47	44	85
3/4	20	80	52	72	80	52	72	51	47	85
1	25	92	60	89	92	60	89	58	50	85
1 1/4	32	110	72	107	110	72	107	67	60	110
1 1/2	40	122	81	121	122	81	121	73	63	110
2	50	150	101	150	150	101	150	82	70	110
Body	Cast Bronze				Cast Bronze			Forged Brass		
Bonnet/Cap/Cover	Forged Brass				Forged Brass					
Hinge Pin/Spring								304SS		
Disc/Screen	304SS				304SS			304SS + W-NBR		
Gland Packing/Gasket	Gasket: Non Asbestos (V6500)				Gasket: Non Asbestos (V6500)			NBR		
Hand Wheel								430SS		
Standard/Approval	WSD: PN16YE<ZH1W4>				WRAS					
Service Conditions	16 bar at 100°C, 7 bar at 170°C (Do not use for flammable gas or toxic gas.)				25 bar at 100°C, 10.5 bar at 186°C (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 1.21MPa(175psi) (Do not use for flammable gas or toxic gas.)		
Reference Page	P-T Rating : Page BR39				P-T Rating : Page BR39					
Remarks	WSD: Option				WRAS: Option			Balancing Stop Handle Lever		

***Height for removing the screen

Type	Globe				Globe				Globe				Gate			
Bronze JIS Standard																
Fig	K				J				JB				M			
End Connection	JIS B0203				JIS B0203				JIS B2011				JIS B0203			
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D			
1/4	8				50	83	50									
3/8	10	50	87	55	55	85	55									
1/2	15	60	90	60	65	91	60	85	93	60	50	126	60			
3/4	20	70	102	70	80	120	80	95	122	80	60	145	60			
1	25	80	112	80	90	135	90	110	135	90	65	169	70			
1 1/4	32	100	137	90	105	156	100	130	157	100	75	209	90			
1 1/2	40	110	142	100	120	169	115	150	171	115	85	239	100			
2	50	135	173	115	140	194	135	180	196	135	95	285	115			
2 1/2	65	160	203	135	180	231	155	210	232	155	115	366	135			
3	80	190	233	155	200	267	180	240	268	180	130	428	155			
4	100							280	323	225						
Body	CAC406				CAC406				CAC406				CAC406			
Bonnet	C3771/CAC406				C3771/CAC406				C3771/CAC406				CAC406			
Stem	C3531				C3531				C3531				C3531			
Disc	CAC406C/CAC406				CAC406C/CAC406				CAC406C/CAC406				CAC406			
Gland Packing	Aramid Fibers Graphite				Aramid Fibers Graphite				Aramid Fibers Graphite/PTFE for JB 4 ^B				Aramid Fibers Graphite			
Hand Wheel	Alminum Die-Cast				Alminum Die-Cast/DI				Alminum Die-Cast/ZDC/DI				Alminum Die-Cast/ZDC			
Standard/Approval	JIS B2011 except 3/8 ^B				JIS B2011								JIS B2011			
Service Conditions	0.7MPa at -29°C to +120°C, 0.5MPa at 159°C (Do not use for flammable gas or toxic gas.)				1.4MPa at -29°C to +120°C, 1MPa at 185°C (Do not use for flammable gas or toxic gas.)				1.4MPa at -29°C to +120°C, 1MPa at 185°C (Do not use for flammable gas or toxic gas.)				0.7MPa at -29°C to +120°C, 0.5MPa at 134°C (Do not use for flammable gas or toxic gas.)			
Reference Page	P-T Rating : Page BR38				P-T Rating : Page BR38				P-T Rating : Page BR38				P-T Rating : Page BR38			
Remarks									Wall Thickness: KITZ Standard							

Type	Gate				Gate				Swing Check				Swing Check				
Bronze JIS Standard																	
Fig	L				LB				O				OB				
End Connection		JIS B0203				JIS B2011				JIS B0203				JIS B2040			
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D				
3/8	10							55	38.5								
1/2	15	55	126	60				65	43		85	43					
3/4	20	65	151	70	90	151	70	80	51.5		95	52					
1	25	70	176	80	100	176	80	90	58.5		110	59					
1 1/4	32	80	219	90	110	219	90	105	67		130	67					
1 1/2	40	90	250	100	125	250	100	120	73.5		150	74					
2	50	100	292	115	140	292	115	140	86		180	86					
2 1/2	65	120	376	155	170	376	155	180	97		210	97					
3	80	140	436	180	190	436	180	200	108		240	108					
4	100				220	327	225				280	127					
Body		CAC406				CAC406				CAC406				CAC406			
Bonnet		CAC406				CAC406				C3771/CAC406				C3771/CAC406			
Stem		C3531				C3531				CAC406/C3604				CAC406/C3604			
Disc		CAC406				CAC406				CAC406				CAC406			
Gland Packing		Aramid Fibers Graphite				Aramid Fibers Graphite											
Hand Wheel		Alminum Die-Cast/ZDC/DI				Alminum Die-Cast/ZDC/DI											
Standard/Approval		JIS B2011								JIS B2011							
Service Conditions		1.4MPa at -29°C to +120°C, 1MPa at 171°C (Do not use for flammable gas or toxic gas.)				1.4MPa at -29°C to +120°C, 1MPa at 171°C (Do not use for flammable gas or toxic gas.)				1.4MPa at -29°C to +120°C, 1MPa at 185°C (Do not use for flammable gas or toxic gas.)				1.4MPa at -29°C to +120°C, 1MPa at 185°C (Do not use for flammable gas or toxic gas.)			
Reference Page		P-T Rating : Page BR38				P-T Rating : Page BR38				P-T Rating : Page BR38				P-T Rating : Page BR38			
Remarks						Wall Thickness: KITZ Standard								Wall Thickness: KITZ Standard			

Type	Gate				Gate				Gate				Gate											
Bronze MSS SP-80																								
Fig	AK125M				AK125E				AK150E				AK150L											
End Connection		ASME B1.20.1				ASME B1.20.1				ASME B1.20.1				ASME B1.20.1										
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D	L	H	D								
3/8	10				43	86	50	43	86	50														
1/2	15	51	129	55	49	93	55	49	98	55	51	137	55											
3/4	20	56	155	60	53	110	60	53	114	70	56	157	70											
1	25	66	180	70	61	126	70	61	126	70	66	180	70											
1 1/4	32	68	216	80	64	145	80	68	145	80	68	216	80											
1 1/2	40	74	257	90	68	170	90	74	176	90	74	257	90											
2	50	84	296	100	74	189	100	84	201	100	84	296	100											
2 1/2	65	115	371	135							120	385	155											
3	80	130	432	155							140	432	155											
Body		B62				B62				B62				B62										
Bonnet		B62				B62				B62				B62										
Stem		B62				B62				B62				B62										
Disc		B62				B62				B62				B62										
Gland Packing		Aramid Fibers Graphite				Aramid Fibers Graphite				Aramid Fibers Graphite				Aramid Fibers Graphite										
Hand Wheel		Alminum Die-Cast				Alminum Die-Cast				Alminum Die-Cast				Alminum Die-Cast										
Standard/Approval		MSS SP-80				MSS SP-80				MSS SP-80				MSS SP-80										
Service Conditions		W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)										
Reference Page		P-T Rating : Page BR39				P-T Rating : Page BR39				P-T Rating : Page BR39				P-T Rating : Page BR39										
Remarks		EAC: Option				EAC: Option				EAC: Option				EAC: Option										

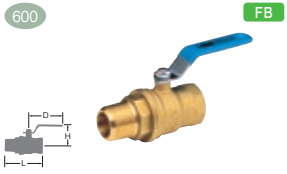
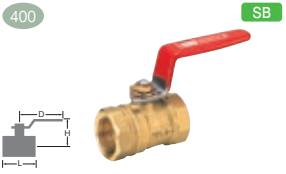
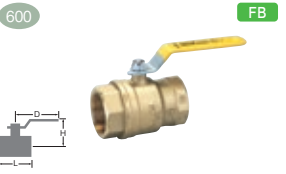
Type	Gate				Gate				Gate				Globe			
Bronze MSS SP-80																
Fig	C150L				AK150LU				AK300LU				AK125C			
End Connection		**ASME B16.18			ASME B1.20.1			ASME B1.20.1			ASME B1.20.1					
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D			
1/4	8				45	108	50									
3/8	10				46	108	50	46	125	60						
1/2	15	49	137	55	51	137	55	51	149	70	53	76	60			
3/4	20	64	157	70	56	157	70	56	173	80	65	98	70			
1	25	76	180	70	66	180	70	66	194	80	77	108	80			
1 1/4	32	82	216	80	68	216	80	74	228	100	85	137	90			
1 1/2	40	86	257	90	74	257	90	84	274	115	100	160	100			
2	50	109	296	100	84	297	100	98	313	135	119	180	115			
2 1/2	65										150	202	135			
3	80										178	246	155			
Body	B62				B62				B61				B62			
Bonnet	B62				B62				B61				B62/C3771			
Stem	B62				B62				B62				B62			
Disc	B62				B62				B61				B62			
Gland Packing	Aramid Fibers Graphite				Flex. Graphate & Aluminum				Flex. Graphate & Aluminum				Aramid Fibers Graphite			
Hand Wheel	Aluminum Die-Cast				Aluminum Die-Cast				Aluminum Die-Cast				Aluminum Die-Cast			
Standard/Approval	MSS SP-80				MSS SP-80				MSS SP-80				MSS SP-80			
Service Conditions	W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 6.89MPa(1000psi), Saturated Steam Pressure 2.07MPa(300psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)			
Reference Page	P-T Rating : Page BR34 and BR39				P-T Rating : Page BR39				P-T Rating : Page BR39				P-T Rating : Page BR39			
Remarks	EAC: Option				EAC: Option								EAC: Option			

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

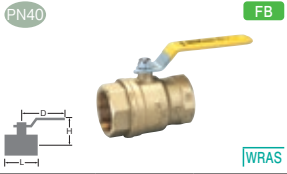
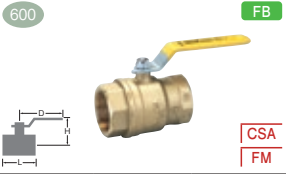
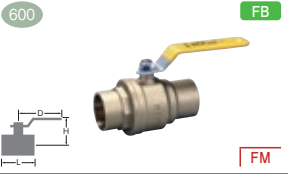
Type	Globe					Globe					Globe					Globe				
Bronze MSS SP-80																				
																				
																				
																				
Fig	AK150D					C150D					AK300J					AK300D				
End Connection	ASME B1.20.1					**ASME B16.18					ASME B1.20.1					ASME B1.20.1				
inch	L					L					L					L				
mm	H					H					H					H				
1/4	8	53	109	60		58	109	60			53	113	60			53	113	60		
3/8	10	55	109	60		61	109	60			55	113	60			55	113	60		
1/2	15	64	116	70		72	116	70			64	126	80			64	126	80		
3/4	20	78	136	90		95	136	90			78	139	90			78	139	90		
1	25	90	149	100		112	149	100			90	159	100			90	157	100		
1 1/4	32	105	173	115		126	173	115			105	187	115			105	187	115		
1 1/2	40	120	182	115		145	182	115			120	195	135			120	192	135		
2	50	145	209	135		180	209	135			145	224	155			145	221	155		
2 1/2	65	170	247	155		205	247	155												
3	80	200	275	180		244	275	180												
4	100	245	298	225		312	298	225												
Body	B62					B62					B61					B61				
Bonnet	B62					B62					B61					B61				
Stem	B62					B62					B61					B61				
Disc	G/F PTFE					G/F PTFE					B61					G/F PTFE				
Gland Packing	Aramid Fibers Graphite/PTFE					Aramid Fibers Graphite/PTFE					Flex. Graphate & Aluminum					Flex. Graphate & Aluminum				
Hand Wheel	Aluminum Die-Cast/DI					Aluminum Die-Cast/DI					Aluminum Die-Cast					Aluminum Die-Cast				
Standard/Approval	MSS SP-80					MSS SP-80					MSS SP-80					MSS SP-80				
Service Conditions	W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), Saturated Steam Pressure 2.07MPa(300psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), Saturated Steam Pressure 2.07MPa(300psi) (Do not use for flammable gas or toxic gas.)				
Reference Page	P-T Rating : Page BR39					P-T Rating : Page BR34 and BR39					P-T Rating : Page BR39					P-T Rating : Page BR39				
Remarks	EAC: Option					EAC: Option					EAC: Option					EAC: Option				

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

Type	Y-Pattern Swing Check					Y-Pattern Swing Check					Y-Pattern Swing Check					Y-Pattern Swing Check				
Bronze MSS SP-80																				
																				
																				
																				
Fig	AKYR					CYR					AK150YR					AK300YR				
End Connection	ASME B1.20.1					**ASME B16.18					ASME B1.20.1					ASME B1.20.1				
inch	L					L					L					L				
mm	H					H					H					H				
3/8	10										54	39								
1/2	15	56	40			67	38				60	39				60	42			
3/4	20	70	49			86	47				72	49				72	51			
1	25	80	58			105	56				84	58				84	61			
1 1/4	32	95	71			121	69				99	70				99	74			
1 1/2	40	110	80			137	77				113	79				113	83			
2	50	128	95			170	92				131	95				131	98			
2 1/2	65	156	114			194	111				162	114								
3	80	184	131			222	127				186	132								
Body	B62					B62					B62					B61				
Bonnet	C3771					C3771					C3771					B61				
Stem/Hinge Pin	Copper					Copper					Copper					Copper				
Disc	B62					B62					B62					B61				
Standard/Approval	MSS SP-80					MSS SP-80					MSS SP-80					MSS SP-80				
Service Conditions	W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.07MPa(300psi), Saturated Steam Pressure 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), Saturated Steam Pressure 2.07MPa(300psi) (Do not use for flammable gas or toxic gas.)				
Reference Page	P-T Rating : Page BR39					P-T Rating : Page BR34 and BR39					P-T Rating : Page BR39					P-T Rating : Page BR39				
Remarks	EAC: Option					EAC: Option					EAC: Option					EAC: Option				

Type	Ball					Ball			Ball			Ball		
Brass Z Ball Series														
														
Fig	ZO					ZS			ZET			SZA		
End Connection	BS21 (JIS B0203)					*BS21 (JIS B0203)			BS21 (JIS B0203)			BS21 (JIS B0203)		
inch	mm	L	H	D		L	H	D	L	H	D	L	H	D
1/4	8	59	37	70		42	42	72	42	34	55	42	37	70
3/8	10	60	37	70		43	42	72	42	34	55	42	37	70
1/2	15	74	40	80		51	44	87	53	40	70	53	40	80
3/4	20	80	44	80		59	48	87	60	44	70	60	44	80
1	25	94	50	110		71	61	116	72	54	100	72	50	110
1 1/4	32					78	65	116	84	59	100	84	55	110
1 1/2	40					88	71	117	92	75	130	92	65	150
2	50					99	76	117	110	82	130	110	72	150
2 1/2	65											138	101	200
3	80											167	113	300
4	100											193	131	300
Body & Cap	Forged Brass					Forged Brass			Forged Brass			Forged Brass/Cast Bronze		
Stem	Brass + Ni Plated					Brass + Cr Plated			Brass + Ni Plated			Brass + Ni Plated		
Ball	Forged Brass + Ni Plated					Forged Brass+Cr Plated/304SS			Forged Brass+Cr Plated/304SS			Forged Brass+N-Cri Plated/304SS		
Ball Seat	PTFE					PTFE			PTFE			PTFE		
Gland Packing/O ring	FKM					G/F PTFE			FKM			FKM		
Handle	430SS					430SS			CS + Zn Plated			CS + Zn Plated/DI		
Bore	Full Bore					Standard Bore			Full Bore			Full Bore		
Service Conditions	W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi), Saturated Steam Pressure 0.98MPa(142psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 4.14MPa(600psi)/4 ^B : 2.76MPa(400psi) , W.O.G 150°C 1.03MPa(150psi)/4 ^B : 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)		
Remarks	BS21: Male & Female Full Bore, Double O-ring					Standard Bore			Full Bore, Double O-ring Butterfly (Wing) Handle			Full Bore, Double O-ring		

*The length of useful threads & the positions of gauge planes are built on KITZ standard.

Type	Ball					Ball			Ball			Ball		
Brass Z Ball Series														
														
Fig	PN40SZA					AKSZA			CSZA			AKSZAW		
End Connection	BS21 (JIS B0203)					ASME B1.20.1			**ASME B16.18			ASME B1.20.1		
inch	mm	L	H	D		L	H	D	L	H	D	L	H	D
1/4	8					42	37	70				42	34	55
3/8	10					42	37	70	46	37	70	42	34	55
1/2	15	53	40	80		53	40	80	54	40	80	53	40	70
3/4	20	60	43	80		60	44	80	73	44	80	60	44	70
1	25	72	50	110		72	50	110	88	50	110	72	53	100
1 1/4	32	84	55	110		84	55	110	100	55	110	84	58	100
1 1/2	40	92	65	150		92	65	150	115	65	150	92	74	130
2	50	110	72	150		110	72	150	140	72	150	110	81	130
2 1/2	65					138	101	200	164	101	200			
3	80					167	113	300	187	113	300			
4	100					193	131	300						
Body & Cap	Forged Brass					Forged Brass/Cast Bronze			Forged Brass			Forged Brass		
Stem	Brass + Ni Plated					Brass + Ni Plated			Brass + Ni Plated			Brass + Ni Plated		
Ball	Forged Brass + Cr Plated					Forged Brass+Sn-Ni Plated/304SS			Forged Brass+Sn-Ni Plated/304SS			Forged Brass+Sn-Ni Plated/304SS		
Ball Seat	PTFE					PTFE			PTFE			PTFE		
Gland Packing/O ring	FKM					FKM			FKM			FKM		
Handle	CS + Zn Plated					CS + Zn Plated/DI			CS + Zn Plated/DI			CS + Zn Plated/DI		
Bore	Full Bore					Full Bore			Full Bore			Full Bore		
Standard/Approval	WRAS:(WR)PN40SZA					CSA, FM			UL, FM			CSA, UL		
Service Conditions	40 bar for W.O.G. Non-shock, 10 bar at 150°C (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi)/4 ^B : 2.76MPa(400psi) , W.O.G 150°C 1.03MPa(150psi)/4 ^B : 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 4.14MPa(600psi)/4 ^B : 2.76MPa(400psi) , W.O.G 150°C 1.03MPa(150psi)/4 ^B : 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 4.14MPa(600psi)/4 ^B : 2.76MPa(400psi) , W.O.G 150°C 1.03MPa(150psi)/4 ^B : 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)		
Reference Page									P-T Rating : Page BR34					
Remarks	Full Bore, Double O-ring WRAS: Option					Full Bore, Double O-ring			Full Bore, Double O-ring			Full Bore, Double O-ring Butterfly (Wing) Handle		

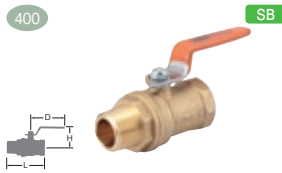
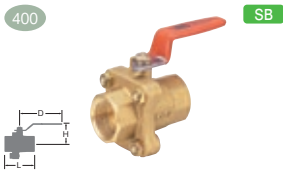
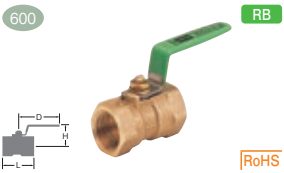
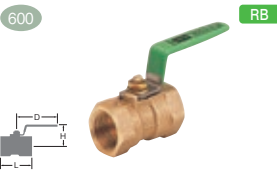
**Solder jointed end valves should not be used in service where the temperature of line fluid is higher than the softening point of the solder.

Type	Ball				
Brass Z Ball Series	600		 NO IMAGE		
Fig	CSZAW				
End Connection	**ASME B16.18				
inch	mm	L	H	D	
3/8	10	46	34	55	
1/2	15	54	40	70	
3/4	20	73	44	70	
1	25	88	53	100	
1 1/4	32	100	58	100	
1 1/2	40	115	74	130	
2	50	140	81	130	
Body & Cap		Forged Brass			
Stem		Brass + Ni Plated			
Ball		Forged Brass+Sn-Ni Plated/304SS			
Ball Seat		PTFE			
Gland Packing/O ring		FKM			
Handle		CS + Zn Plated/DI			
Bore		Full Bore			
Standard/Approval		UL			
Service Conditions		W.O.G. Non-shock 4.14MPa(600psi)/4 ^B : 2.76MPa(400psi) , W.O.G 150°C 1.03MPa(150psi)/4 ^B : 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)			
Reference Page		P-T Rating : Page BR34			
Remarks		Full Bore, Double O-ring Butterfly (Wing) Handle			

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

Type	Ball					Ball					Ball					Ball				
Bronze & Brass T Ball Series	400  SB 					400  SB					400  SB					400  SB				
																				
Fig	T					AKT					TT					TG				
End Connection	*BS21 (JIS B0203)					ASME B1.20.1					*BS21 (JIS B0203)					*BS21 (JIS B0203)				
inch	mm	L	H	D		L	H	D		L	H	D		L	H	D				
1/4	8	50	39	60		50	39	60		50	34	65		50	39	60				
3/8	10	50	39	60		50	39	60		50	34	65		50	39	60				
1/2	15	65	39	80		65	39	80		65	37	80		65	39	80				
3/4	20	68	42	80		68	42	80		68	40	80		68	42	80				
1	25	79	46	110		79	46	110		79	46	90		79	46	110				
1 1/4	32	86	51	110		86	51	110		86	52	105		86	51	110				
1 1/2	40	96	56	110		96	56	110		96	57	105		96	56	110				
2	50	109	65	140		109	65	140		109	71	120		109	65	140				
2 1/2	65	127	85	200		127	85	200						127	85	200				
3	80	153	105	300		153	105	300						153	105	300				
4	100	179	126	400		179	126	400												
Body & Cap	Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass					Forged Brass/Cast Bronze				
Stem	Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass				
Ball	Forged Brass+Ni-Cr Plated/304SS					Forged Brass+Ni-Cr Plated/304SS					Forged Brass+Ni-Cr Plated/304SS					Forged Brass+Ni-Cr Plated/304SS				
Ball Seat	PTFE					PTFE					PTFE					PTFE				
Gland Packing/O ring	FKM					FKM					FKM					NBR				
Handle	430SS/DI					ZDC					430SS/DI					430SS/DI				
Bore	Standard Bore					Standard Bore					Standard Bore					Standard Bore				
Standard/Approval	RoHS: T<GS101> up to 1 ^B																			
Service Conditions	W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)					Room temperature gas up to 40°C				
Remarks	RoHS:Option Standard Bore, Double O-ring					Standard Bore, Double O-ring					T Handle Standard Bore, Double O-ring					For Gas Service Standard Bore, Double O-ring				

*The length of useful threads & the positions of gauge planes are built on KITZ standard. (1 1/4^B & above)

Type	Ball				Ball				Ball				Ball			
Bronze & Brass T Ball Series																
																
Fig	TO				TM				TK				AKTK			
End Connection	BS21 (JIS B0203)				*BS21 (JIS B0203)				BS21 (JIS B0203)				ASME B1.20.1			
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D			
1/8								32	30	60						
1/4	8	59	39	60				39	30	60	39	30	60			
3/8	10	60	39	60	56	45	60	44	35	70	44	35	70			
1/2	15	74	39	80	60	45	80	56.5	38	85	56.5	38	85			
3/4	20	80	42	80	68	49	80	59	42	85	59	42	85			
1	25	94	46	110	80	55	110	71	47	100	71	47	100			
1 1/4	32				86	60	110	78	52	100	78	52	100			
1 1/2	40				101	65	110	83	63	125	83	63	125			
2	50				117	75	140	100	70	125	100	70	125			
2 1/2	65				136	91	200									
3	80				160	105	300									
Body & Cap	Forged Brass				Forged Brass				Forged Brass				Forged Brass			
Stem	Dezincification Resistant Brass				Dezincification Resistant Brass				Dezincification Resistant Brass				Dezincification Resistant Brass			
Ball	Forged Brass+Ni-Cr Plated/304SS				Forged Brass+Ni-Cr Plated/304SS				Forged Brass+Cr Plated				Forged Brass+Cr Plated			
Ball Seat	PTFE				PTFE				G/F PTFE				G/F PTFE			
Gland Packing/O ring	FKM				FKM				G/F PTFE				G/F PTFE			
Handle	430SS/DI				430SS/DI				430SS				430SS			
Bore	Standard Bore				Standard Bore				Reduced Bore				Reduced Bore			
Standard/Approval									RoHS: TK<GS101> up to 1 ^B							
Service Conditions	W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G. 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G. 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)			
Remarks	BS21: Male & Female				Split Type				RoHS:Option Reduced Bore, One-piece Body				Reduced Bore, One-piece Body			

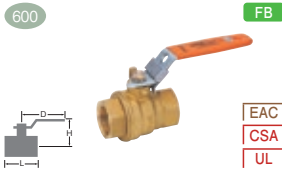
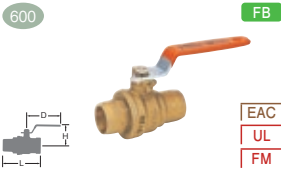
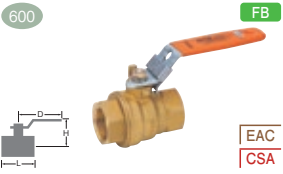
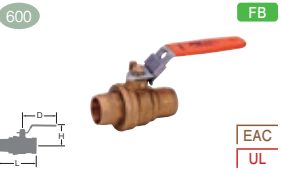
*The length of useful threads & the positions of gauge planes are built on KITZ standard. (1 1/4^B & above)

Type	Ball				Ball				Ball				Ball			
Bronze & Brass T Ball Series	600  RB  JWWA RoHS				600  RB  RoHS				150  FB 				400  SB 			
	Fig	TKT				TKW				TFJ				TL		
End Connection	BS21 (JIS B0203)				BS21 (JIS B0203)				BS21 (JIS B0203)				BS21 (JIS B0203)			
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D			
1/8		32	22	35	32	24	35									
1/4	8	39	22	35	39	24	35									
3/8	10	44	26	40	44	29	40									
1/2	15	56.5	29	60	56.5	34	55									
3/4	20	59	33	60	59	37	55	62	53	65	56	75	80			
1	25	71	46	76	71	41	69	73	58	65	65	79	80			
1 1/4	32	78	45	76				85	67	90	78	83	110			
1 1/2	40	83	51	100				98	72	90	86	98	110			
2	50	100	58	100				108	90	110	96	102	110			
2 1/2								124	98.5	110	109	109	140			
Body & Cap	Forged Brass				Forged Brass				Forged Brass/Cast Bronze				Cast Bronze			
Stem	Dezincification Resistant Brass				Dezincification Resistant Brass				Dezincification Resistant Brass				Dezincification Resistant Brass			
Ball	Forged Brass+Cr Plated				Forged Brass+Cr Plated				Forged Brass+Ni-Cr Plated				CF8 (SCS13A)			
Ball Seat	G/F PTFE				G/F PTFE				PTFE				PTFE			
Gland Packing/O ring	G/F PTFE				G/F PTFE				FKM				FKM			
Handle	ZDC				ZDC				ZDC				430SS			
Bore	Reduced Bore				Reduced Bore				Full Bore				Standard Bore			
Standard/Approval	RoHS: TKT<GS101> up to 1 ^B JWWA E-2 up to 1 1/2 ^B				RoHS: TKW<GS101> up to 1 ^B											
Service Conditions	W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 1.03MPa(150psi) , W.O.G 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)			
Remarks	RoHS:Option, T Handle Reduced Bore, One-piece Body				RoHS:Option, Wing Handle Reduced Bore, One-piece Body				Full Bore, Double O-ring Locking Device				Standard Bore, Double O-ring For Thermal Insulation			

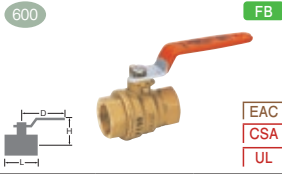
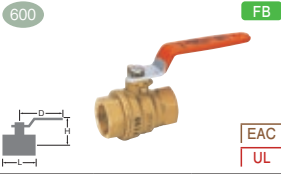
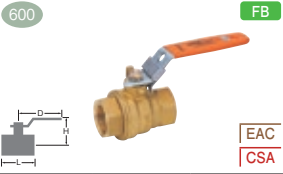
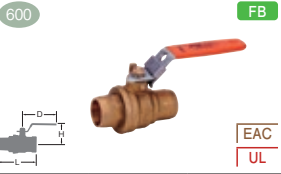
Type	Ball				Ball				Ball				3-Way Ball (2-seat, L-port)			
Bronze & Brass T Ball Series																
	SB				FB				FB				SB			
Fig	TLT				TB				AK3TM				TN			
End Connection	BS21 (JIS B0203)				JIS B2240				BS21 (JIS B0203)				*BS21 (JIS B0203)			
inch	mm	L	H	D	L	H	D		L	H	D		L	H	D	L1
1/4	8								49	39	82		40	30	60	20
3/8	10								49	39	82		46	35	70	23
1/2	15	56	79	82	110	85	130		61	42	82		67	44	80	33.5
3/4	20	65	83	82	120	88	130		70	51	100		68	49	80	34
1	25	78	90	94	130	95	160		83	59	130		79	55	110	39.5
1 1/4	32	86	105	94	140	98	160		99	64	130		89	59	110	44.5
1 1/2	40	96	109	94	165	115	230		117	73	150		100	64	110	50
2	50	109	124	120	180	121	230		139	80	150		115	74	140	57.5
2 1/2	65				190	152	400						138	91	200	69
3	80				200	161	400						166	105	300	83
4	100				230	190	460									
Body & Cap	Cast Bronze				Cast Bronze				Forged Brass				Forged Brass/Cast Bronze			
Stem	Dezincification Resistant Brass				Dezincification Resistant Brass				Dezincification Resistant Brass				Dezincification Resistant Brass			
Ball	304SS				Forged Brass+Ni-Cr Plated/304SS				Forged Brass+Sn-Ni Plated				Forged Brass+Cr Plated			
Ball Seat	PTFE				PTFE				PTFE				PTFE			
Gland Packing/O ring	FKM				FKM				PTFE				G/F PTFE up to 3/8" & FKM			
Handle	Reinforced nylon				DI				CS				430SS/DI			
Bore	Standard Bore				Full Bore				Full Bore				Standard Bore			
Standard/Approval													RoHS: TN<GS101> up to 1" JWWA E-2 up to 1 1/2"			
Service Conditions	W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 80°C 1.96MPa(296psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 1.4MPa(14KGF/CM2), W.O.G. 150°C 0.69MPa(7KGF/CM2) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)			
Reference Page													Port Orientation : Page TECH1			
Remarks	Standard Bore, Double O-ring, T Handle, For Thermal Insulation				For Gas Service, Full Bore, Double O-ring				Full Bore, 3-piece Body w/Mounting Pad				Standard Bore, Double O-ring, L-port, RoHS&JWWA:Option			

*The length of useful threads & the positions of gauge planes are built on KITZ standard. (1 1/4" & above)

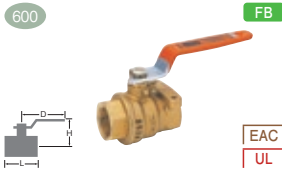
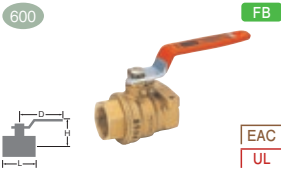
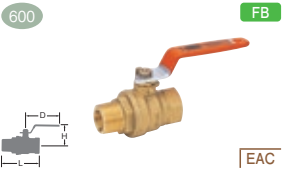
Type	3-Way Ball (2-seat, L-port)						3-Way Ball (2-seat, L-port)						3-Way Ball (4-seat, L/T-port)						3-Way Ball (2-seat, L/T-port)					
Bronze & Brass T Ball Series	400 SB						400 SB						400 SB						400 SB					
Fig	AKTN						AKTNP						T4T/T4L						TV2T/TV2L					
End Connection	ASME B1.20.1						ASME B1.20.1						BS21 (JIS B0203)						BS21 (JIS B0203)					
inch	mm	L	H	D	L1		L	H	D	L1		L	H	D	L1		L	H	D	L1				
1/4	8	40	30	60	20												40	31	60	20				
3/8	10	46	35	70	23												46	35	80	23				
1/2	15	67	44	80	33.5		67	44	80	33.5		70	52	130	35		67	45	100	33.5				
3/4	20	68	49	80	34		68	49	80	34		85	56	130	42.5		68	50	100	34				
1	25	79	55	110	39.5		79	55	110	39.5		100	63	150	50		79	56	130	39.5				
1 1/4	32	89	59	110	44.5		89	59	110	44.5		115	68	150	57.5		89	60	130	44.5				
1 1/2	40	100	64	110	50		100	64	110	50		130	94.5	230	65		100	66	130	50				
2	50	115	74	140	57.5		115	74	140	57.5		150	102	230	75		115	75	150	57.5				
2 1/2	65	138	91	200	69																			
3	80	166	105	300	83																			
Body & Cap	Forged Brass/Cast Bronze						Forged Brass/Cast Bronze						Body: Cast Bronze/Cap: Forged Brass						Body: Cast Bronze/Cap: Forged Brass					
Stem	Dezincification Resistant Brass						Dezincification Resistant Brass						Dezincification Resistant Brass						Dezincification Resistant Brass					
Ball	Forged Brass+Cr Plated						Forged Brass+Cr Plated						Forged Brass+Cr Plated						Forged Brass+Cr Plated					
Ball Seat	PTFE						PTFE						PTFE						PTFE					
Gland Packing/O ring	G/F PTFE up to 3/8" & FKM						G/F PTFE up to 3/8" & FKM						FKM						G/F PTFE up to 3/8" & FKM					
Handle	430SS/DI						430SS/DI						430SS/DI						430SS					
Bore	Standard Bore						Standard Bore						Standard Bore						Standard Bore					
Standard/Approval	RoHS: TN<GS101> up to 1"						RoHS: TN<GS101> up to 1"																	
Service Conditions	W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)						W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)						W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)						W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)					
Reference Page	Port Orientation : Page TECH1						Port Orientation : Page TECH1						Port Orientation : Page TECH1						Port Orientation : Page TECH2					
Remarks	Standard Bore, Double O-ring, L-port,						Standard Bore, Double O-ring, L-port, with Mounting Pad						Standard Bore, Double O-ring L-port or T-port						Standard Bore, Double O-ring L-port or T-port, Vertical Type					

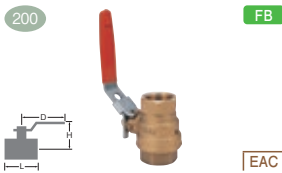
Type	Ball					Ball					Ball					Ball				
Bronze & Brass T Ball Series																				
	600					600					600					600				
Fig	AKTAFLL					CTAF					AKTFLL					CTFLL				
End Connection	ASME B1.20.1					**ASME B16.18					ASME B1.20.1					**ASME B16.18				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/4	8	41	39	81							41	35	81							
3/8	10	42	39	81		46	39	82			42	35	81							
1/2	15	53	42	81		54	42	82			53	38	81			54	38	81		
3/4	20	60	51	100		73	51	100			60	47	100			73	47	100		
1	25	72	58	130		88	59	130			72	54	130			88	54	130		
1 1/4	32	82	64	130		100	64	130			82	59	130			100	59	130		
1 1/2	40	92	73	150		115	73	150			92	67	150			115	67	150		
2	50	105	80	150		140	80	150			105	75	150			140	75	150		
2 1/2	65					163	108	200												
3	80					187	122	300												
Body & Cap	Forged Brass					Forged Brass/ Cast Bronze					Forged Brass					Forged Brass				
Stem	Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass					Dezincification Resistant Brass				
Ball	Forged Brass + Cr Plated					Forged Brass/304SS					Forged Brass + Cr Plated					Forged Brass + Cr Plated				
Ball Seat	PTFE					PTFE					PTFE					PTFE				
Gland Packing/O ring	PTFE					PTFE					FKM+NBR					FKM+NBR				
Handle	CS + Zn Plated					CS + Zn Plated					CS + Zn Plated					CS + Zn Plated				
Bore	Full Bore					Full Bore					Full Bore					Full Bore				
Standard/ Approval	CSA, UL					UL, FM					CSA					UL				
Service Conditions	W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				
Reference Page						P-T Rating : Page BR34										P-T Rating : Page BR34				
Remarks	Latch Lock Handle EAC: Option					EAC: Option					Latch Lock Handle EAC: Option					Latch Lock Handle EAC: Option				

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

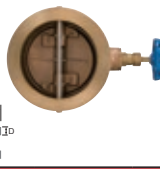
Type	Ball					Ball					Ball					Ball				
Bronze & Brass T Ball Series																				
	600					600					600					600				
Fig	AKTAFM					CTAFM					AKTFMLL					CTFMLL				
End Connection	ASME B1.20.1					**ASME B16.18					ASME B1.20.1					**ASME B16.18				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/4	8	41	39	82							41	35	81							
3/8	10	42	39	82		46	39	82			42	35	81							
1/2	15	53	42	82		54	42	82			53	38	81			54	38	81		
3/4	20	60	51	100		73	51	100			60	47	100			73	47	100		
1	25	72	58	130		88	59	130			72	54	130			88	54	130		
1 1/4	32	82	64	130		100	64	130			82	59	130			100	59	130		
1 1/2	40	92	73	150		115	73	150			92	67	150			115	67	150		
2	50	105	80	150		140	80	150			105	75	150			140	75	150		
Body/Cap	Forged Brass					Forged Brass					Forged Brass					Forged Brass				
Stem	316SS					316SS					316SS					316SS				
Ball	316SS					316SS					316SS					316SS				
Ball Seat	PTFE					PTFE					PTFE					PTFE				
Gland Packing/O ring	PTFE					PTFE					FKM+NBR					FKM+NBR				
Handle	CS + Zn Plated					CS + Zn Plated					CS + Zn Plated					CS + Zn Plated				
Bore	Full Bore					Full Bore					Full Bore					Full Bore				
Standard/ Approval	CSA, UL					UL					CSA					UL				
Service Conditions	W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				
Reference Page						P-T Rating : Page BR34										P-T Rating : Page BR34				
Remarks	316SS Trim EAC: Option					316SS Trim EAC: Option					Latch Lock Handle 316SS Trim, EAC: Option					Latch Lock Handle EAC: Option				

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

Type	Ball					Ball					Ball					Ball				
Bronze & Brass T Ball Series																				
	600					600					600					600				
Fig	AKTAFP					AKTAFPM					AKTAFO					AKTAFU				
End Connection	ASME B1.20.1					ASME B1.20.1					ASME B1.20.1					ASME B1.20.1				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/4	8	41	39	82		41	39	81			52	39	82			52	39	82		
3/8	10	42	39	82		42	39	81			53	39	82			52	39	82		
1/2	15	53	42	82		53	42	81			66	42	82			63	42	82		
3/4	20	60	51	100		60	51	100			73	51	100			75	51	100		
1	25	72	59	130		72	59	130			88	59	130			88	59	130		
1 1/4	32	82	64	130		82	64	130								98	64	130		
1 1/2	40	92	74	150		92	73	150								113	73	150		
2	50	105	81	150		105	80	150								126	80	150		
2 1/2	65	135	109	200		135	108	200												
3	80	156	123	300		156	122	300												
4	100	192	141	300		192	140	300												
Body & Cap	Forged Brass/Cast Bronze					Forged Brass/Cast Bronze					Forged Brass					Forged Brass				
Stem	Dezincification Resistant Brass					316SS					Dezincification Resistant Brass					Dezincification Resistant Brass				
Ball	Forged Brass/304SS					316SS					Forged Brass + Cr Plated					Forged Brass + Cr Plated				
Ball Seat	PTFE					Reinforced PTFE					PTFE					PTFE				
Gland Packing/O ring	PTFE					PTFE					PTFE					PTFE				
Handle	CS + Zn Plated					CS + Zn Plated					CS + Zn Plated					CS + Zn Plated				
Bore	Full Bore					Full Bore					Full Bore					Full Bore				
Standard/Approval	UL					UL														
Service Conditions	W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				
Remarks	With Mounting Pad EAC: Option					Latch Lock Handle, With mounting pad, 316SS Trim, EAC: Option					Male & Female EAC: Option					Single Union Gasket : FKM, EAC: Option				

Type	Ball					
Bronze & Brass T Ball Series						
	200					
Fig	AKTAFS					
End Connection	ASME B1.20.1					
inch	mm	L	H	E	D	
1/4	8	41	39	4	81	
3/8	10	42	39	4	81	
1/2	15	53	42	4	81	
3/4	20	60	51	4	100	
1	25	72	59	4	130	
1 1/4	32	82	64	4	130	
1 1/2	40	92	73	4	150	
2	50	105	80	4	150	
Body & Cap	Forged Brass					
Stem	Dezincification Resistant Brass					
Ball	Forged Brass + Cr Plated					
Ball Seat	PTFE					
Gland Packing/O ring	PTFE					
Handle	CS + Zn Plated					
Bore	Full Bore					
Service Conditions	W.O.G. Non-shock 1.38MPa(200psi), -18°C to +93°C(not freezing) (Do not use for flammable gas or toxic gas.)					
Remarks	Exhaust Hole, Latch Lock Handle Gasket for 2 nd : NBR, EAC: Option					

Type	Globe				Gate			Gate			Swing Check					
Lead Free Bronze & Brass KEEPALLOY®	125			UB IS	125			SB/SOB IS NRS	10K			SB IS NRS	125			SC
		JWWA				JWWA			JWWA			JWWA				
Fig	GN				HN			WN			RN					
End Connection	BS21 (JIS B0203)				BS21 (JIS B0203)			BS21 (JIS B0203)			BS21 (JIS B0203)					
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D			
3/8	10										53	39				
1/2	15	57	87	60	45	80	50	55	104	60	60	39				
3/4	20	66	102	70	50	90	55	65	112	70	70	45				
1	25	76	113	80	57	105	60	70	135	80	80	52				
1 1/4	32	88	138	90	61	118	70	80	157	90	92	62				
1 1/2	40	100	154	100	67	135	80	90	175	100	102	67				
2	50	120	183	115	74	159	90	100	201	120	122	79				
2 1/2	65				90	202	115				150	91				
3	80				100	223	135									
4	100				121	280	155									
Body	CAC911				CAC911			CAC911			CAC911					
Bonnet/ Cap/ Cover	C6803				CAC911			CAC911			C6803/ Forged Brass					
Stem/ Hinge Pin	C6803				C6803			C6803			C1100					
Disc	G/ F PTFE				C6803/ CAC911			CAC911			C6803/ Forged Brass					
Gland Packing/ O ring	Aramid Fibers Graphite				Aramid Fibers Graphite			NBR								
Hand Wheel	Alminum Die-Cast				Alminum Die-Cast/ ZDC			C3771BE								
Standard/ Approval	JWWA E-1				JWWA E-1			JWWA E-1			JWWA E-464					
Service Conditions	Stream Water up to 100°C 1.18MPa				Stream Water up to 100°C 1.18MPa			Stream Water up to 80°C 1.4MPa, Pulsating Water up to 80°C 1.0MPa			Stream Water up to 100°C 1.18MPa					
Remarks								Buried Type, Brass Hand Wheel								

Type	Swing Check			Vertical Lift Check			Wafer Check			Globe		
Lead Free Bronze & Brass KEEPALLOY®	125		SC	150			10K		Dual	10K		SB/BB RS
Fig	CRN			RFN			10BWZN			JN		
End Connection	**JIS B2011			BS21 (JIS B0203)			Wafer (JIS 10K)			JIS B0203		
inch	mm	L	H	D	L	S	L	H	D	L	H	D
1/4	8									50	83	50
3/8	10	56	39							55	85	55
1/2	15	67	39		53	28				65	91	60
3/4	20	89	45		59	34				80	120	80
1	25	104	52		67	41				90	135	90
1 1/4	32	120	62		78	50				105	156	100
1 1/2	40	134	67		84	57	54	132	55	120	169	115
2	50	164	79		98	70	56	139	70	140	194	135
2 1/2	65						56	146	70			
3	80						59	152	70			
4	100						66	165	70			
5	125						72	183	70			
6	150						78	208	80			
8	200						96	237	80			
Body	CAC911			CAC911			CAC911+NBR			CAC911		
Bonnet/Cap/Cover	C6803/Forged Brass			CAC911						CAC911		
Hinge Pin/Spring	C1100			Spring: P Bronze(C519W-H)			304SS			C6803		
Disc/Screen	C6803/Forged Brass			FKM			CAC911			C6803/CAC911		
Gland Packing/Gasket							Aramid Fiber Graphite			Aramid Fiber Graphite		
Hand Wheel							Aluminum Die-Cast/DI			Aluminum Die-Cast/DI		
Standard/Approval	JWWA E-464			JWWA F-68			JWWA E-628			JIS B2011		
Service Conditions	Stream Water up to 100°C 1.18MPa			Stream Water up to 85°C 1.4MPa, Pulsating Water up to 85°C 1.0MPa			Stream Water up to 80°C 1.4MPa, Pulsating Water up to 80°C 1.0MPa			Stream Water up to 100°C 1.4MPa, Pulsating Water up to 100°C 1.0MPa		
Reference Page	P-T Rating : Page BR34						Features: Page BR36					
Remarks							Built-in Bypass Valve, Dual Plate Type					

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

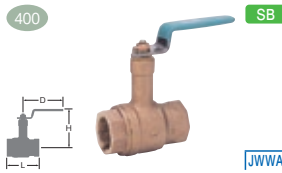
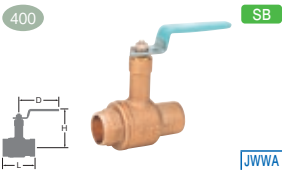
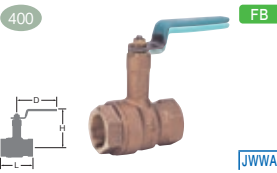
Type	Gate					Gate					Gate					Gate				
Lead Free Bronze & Brass KEEPALLOY®	5K					5K					10K					10K				
																				
																				
	SB RS					SB RS					SB RS					SB RS				
Fig	MN					CMN					LN					CLN				
End Connection	JIS B0203					**JIS B2011					JIS B0203					**JIS B2011				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/2	15	50	126	60		50	126	60			55	126	60			50	124	60		
3/4	20	60	145	60		65	145	60			65	151	70			65	149	70		
1	25	65	169	70		75	169	70			70	176	80			75	173	80		
1 1/4	32	75	209	90		80	209	90			80	219	90			82	217	90		
1 1/2	40	85	239	100		88	239	100			90	250	100			92	248	100		
2	50	95	285	115		108	285	115			100	292	115			110	292	115		
2 1/2	65	115	366	135							120	376	155							
3	80	130	428	155							140	436	180							
Body	CAC911					CAC911					CAC911					CAC911				
Bonnet	CAC911					CAC911					CAC911					CAC911				
Stem	C6803					C6803					C6803					C6803				
Disc	CAC911/C6803					CAC911/C6803					CAC911					CAC911				
Gland Packing	Aramid Fibers Graphite/PTFE					Aramid Fibers Graphite/PTFE					Aramid Fibers Graphite					Aramid Fibers Graphite				
Hand Wheel	Aluminum Die-Cast/ZDC					Aluminum Die-Cast/ZDC					Aluminum Die-Cast/ZDC/DI					Aluminum Die-Cast/ZDC/DI				
Standard/Approval	JIS B2011					JIS B2011					JIS B2011					JIS B2011				
Service Conditions	Stream Water up to 100°C 0.7MPa, Pulsating Water up to 100°C 0.5MPa					Stream Water up to 100°C 0.7MPa, Pulsating Water up to 100°C 0.5MPa					Stream Water up to 100°C 1.4MPa, Pulsating Water up to 100°C 1.0MPa					Stream Water up to 100°C 1.4MPa for up to 1 ^B , 1.2MPa for 1 1/4 ^B & over, Pulsating Water up to 100°C 1.0MPa for up to 1 ^B , 0.8MPa for 1 1/4 ^B & over				
Reference Page						P-T Rating : Page BR34										P-T Rating : Page BR34				

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

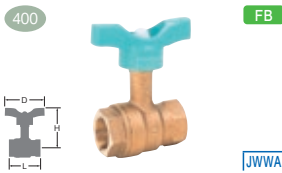
Type	Swing Check					Y-Pattern Swing Check					Y-Pattern Swing Check				
Lead Free Bronze & Brass KEEPALLOY®	10K					150					150				
															
															
	SC					SC					SC				
Fig	ON					YNK					CYNK				
End Connection	JIS B0203					JIS B0203					**JIS B2011				
inch	mm	L	H	D		L	H	***H1			L	H	***H1		
3/8	10	55	38.5												
1/2	15	65	43			80	50	68			80	51	68		
3/4	20	80	51.5			100	59	83			105	59	83		
1	25	90	58.5			115	71	105			125	72	105		
1 1/4	32	105	67			135	84	124			145	84	124		
1 1/2	40	120	73.5			160	100	149			170	100	149		
2	50	140	86			195	123	188			210	123	188		
Body	CAC911					CAC911					CAC911				
Bonnet/Cap/Cover	C6803					C6803					C6803				
Stem/Hinge Pin	Copper														
Disc/Screen	CAC911					304SS					304SS				
O ring						FKM					FKM				
Standard/Approval						JWWA Z-49					JWWA Z-49				
Service Conditions	Stream Water up to 100°C 1.4MPa, Pulsating Water up to 100°C 1.0MPa					Stream Water up to 85°C 1.4MPa, Pulsating Water up to 85°C 1.0MPa					Stream Water up to 85°C 1.4MPa, Pulsating Water up to 85°C 1.0MPa				
Reference Page											P-T Rating : Page BR34				
Remarks						40 mesh									

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

***Height for removing the screen

Type	Ball					Ball			Ball			Ball		
Lead Free Bronze & Brass KEEPALLOY®														
	Fig					Fig			Fig			Fig		
	End Connection					End Connection			End Connection			End Connection		
	BS21 (JIS B0203)					BS21 (JIS B0203)			**JIS B2011			BS21 (JIS B0203)		
	inch	mm	L	H	D	L	H	D	L	H	D	L	H	D
1/2	15	56	75	80	56	79	82	58	75	80	56	75	80	
3/4	20	65	79	80	65	83	82	73	79	80	65	79	80	
1	25	78	83	110	78	90	94	88	83	110	77	85	110	
1 1/4	32	86	98	110	86	105	94	99	98	110	90	102	110	
1 1/2	40	96	102	110	96	109	94	114	102	110	98	110	140	
2	50	109	109	140	109	124	120	135	109	140	119	118	140	
Body & Cap	CAC911				CAC911			CAC911			CAC911			
Stem	C6803				C6803			C6803			304SS			
Ball	304SS				304SS			304SS			304SS			
Ball Seat	PTFE				PTFE			PTFE			PTFE			
Gland Packing/O ring	FKM				FKM			FKM			FKM			
Handle	430SS				Reinforced Nylon			430SS			430SS			
Bore	Standard Bore				Standard Bore			Standard Bore			Full Bore			
Standard/Approval	JWWA E-1				JWWA E-1			JWWA E-1			JWWA E-1			
Service Conditions	Stream Water up to 85°C 1.4MPa. Pulsating Water up to 85°C 1.0MPa				Stream Water up to 85°C 1.4MPa. Pulsating Water up to 85°C 1.0MPa			Stream Water up to 85°C 1.4MPa. Pulsating Water up to 85°C 1.0MPa			Stream Water up to 85°C 1.4MPa. Pulsating Water up to 85°C 1.0MPa			
Reference Page								P-T Rating : Page BR34						
Remarks	Standard Bore, Double O-ring For Thermal Insulation				Standard Bore, Double O-ring T Handle, For Thermal Insulation			Standard Bore, Double O-ring For Thermal Insulation			Full Bore, Double O-ring For Thermal Insulation			

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

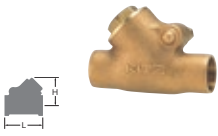
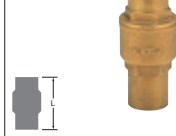
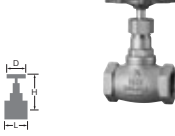
Type	Ball				
Lead Free Bronze & Brass KEEPALLOY®					
	Fig				
	End Connection				
	BS21 (JIS B0203)				
	inch	mm	L	H	D
1/2	15	56	80	82	56
3/4	20	65	84	82	65
1	25	77	93	94	77
1 1/4	32	90	110	94	90
1 1/2	40	98	125	120	98
2	50	119	134	120	119
Body & Cap	CAC911				
Stem	304SS				
Ball	304SS				
Ball Seat	PTFE				
Gland Packing/O ring	FKM				
Handle	Reinforced Nylon				
Bore	Full Bore				
Standard/Approval	JWWA E-1				
Service Conditions	Stream Water up to 85°C 1.4MPa, Pulsating Water up to 85°C 1.0MPa				
Remarks	Full Bore, Double O-ring T Handle, For Thermal Insulation				

Type	Gate					Gate					Gate					Swing Check				
Lead Free Bronze & Brass NSF61-G																				
	125					125					125					125				
	SB IS NRS					SB/SOB IS NRS					SB/SOB IS NRS					SC				
	NSF					NSF					NSF					NSF				
	Fig					Fig					Fig					Fig				
End Connection	ASME B1.20.1					ASME B1.20.1					**ASME B16.18					ASME B1.20.1				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/2	15	42	75	50		45	80	50			46	80	50			60	39			
3/4	20	47	86	55		50	90	55			61	90	55			70	45			
1	25	50	97	60		57	105	60			72	105	60			80	52			
1 1/4	32	60	117	70		61	118	70			78	118	70			92	62			
1 1/2	40	63	126	80		67	135	80			87	135	80			102	67			
2	50	72	154	90		74	159	90			102	159	90			122	79			
Body	Forged Brass					CAC911					CAC911					CAC911				
Bonnet/Cap	Forged Brass					CAC911					CAC911					Forged Brass				
Stem/Hinge Pin	Forged Brass					Forged Brass					Forged Brass					Copper				
Disc	Forged Brass					Forged Brass/CAC911					Aramid Fibers Graphite					Forged Brass				
Gland Packing	Aramid Fibers Graphite					Aramid Fibers Graphite					Aramid Fibers Graphite									
Hand Wheel	Aluminum Die-Cast					Aluminum Die-Cast					Aluminum Die-Cast									
Standard/Approval	NSF					NSF					NSF					NSF				
Service Conditions	W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)				
Reference Page											P-T Rating : Page BR34									

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

Type	Swing Check					Y-Pattern Swing Check					Y-Pattern Swing Check					Y-Pattern Swing Check				
Lead Free Bronze & Brass NSF61-G																				
	125					125					125					125				
	SC					SC					SC					SC				
	NSF					MSS NSF					MSS NSF					MSS NSF				
	Fig					Fig					Fig					Fig				
End Connection	**ASME B16.18					ASME B1.20.1					**ASME B16.18					ASME B1.20.1				
inch	mm	L	H	D		L	H	D			L	H	D			L	H	D		
1/2	15	67	39			56	40				67	38				56	40			
3/4	20	89	45			70	49				86	47				70	49			
1	25	104	52			80	58				105	56				80	58			
1 1/4	32	120	62			95	71				121	69				95	71			
1 1/2	40	134	67			110	80				137	77				110	80			
2	50	164	79			128	95				170	92				128	95			
Body	CAC911					B584 C89530					B584 C89530					B584 C89530				
Bonnet/Cap	Forged Brass					B283 C46750					B283 C46750					B283 C46750				
Stem/Hinge Pin	Copper					Copper (CDA No. C11000)					Copper (CDA No. C11000)					Copper (CDA No. C11000)				
Disc	Forged Brass					B584 C89530					B584 C89530					PTFE				
Standard/Approval	NSF					MSS SP-80, NSF					MSS SP-80, NSF					MSS SP-80, NSF				
Service Conditions	W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)				
Reference Page	P-T Rating : Page BR34										P-T Rating : Page BR34									

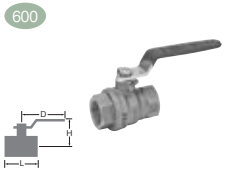
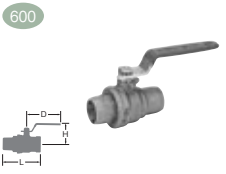
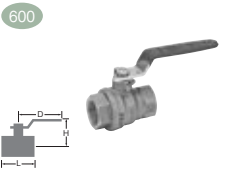
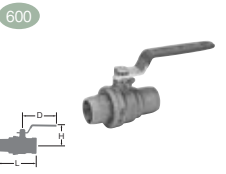
**Solder jointed end valves should not be used in service where the temperature of line fluid is higher than the softening point of the solder.

Type	Y Swing Check					Vertical Lift Check			Vertical Lift Check			Globe		
Lead Free Bronze & Brass NSF61-G														
														
Fig	CYRNT					AKAFN			CAFN			AK125CN		
End Connection	ASME B16.18					ASME B1.20.1			**ASME B16.18			ASME B1.20.1		
inch	mm	L	H	D		L	H	D	L	H	D	L	H	D
1/2	15	67	38			53			61			53	76	60
3/4	20	86	47			59			76			65	98	70
1	25	105	56			67			89			77	108	80
1 1/4	32	121	69			78			97			85	137	90
1 1/2	40	137	77			84			110			100	160	100
2	50	170	92			98			132			119	180	115
Body	B584 C89530					CAC911			CAC911			CAC911		
Bonnet/Cap	B283 C46750					CAC911			CAC911			Forged Brass		
Stem/Hinge Pin	Copper (CDA No. C11000)					Spring: P Bronze			Spring: P Bronze			Forged Brass		
Disc	PTFE					FKM			FKM			Forged Brass		
Gland Packing												Aramid Fibers Graphite		
Hand Wheel												Aluminum Die-Cast		
Standard/Approval	MSS SP-80, NSF					NSF			NSF			NSF		
Service Conditions	W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)					W.O.G. Non-shock 1.72MPa(250psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 1.72MPa(250psi) (Do not use for flammable gas or toxic gas.)			W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)		
Reference Page	P-T Rating : Page BR34					Features : Page BR34			P-T Rating, Features : Page BR34					

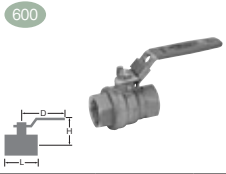
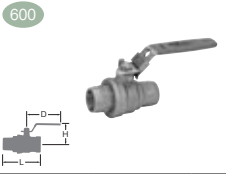
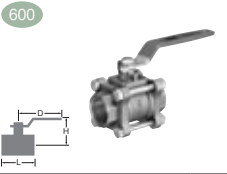
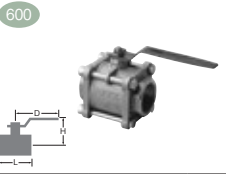
**Solder jointed end valves should not be used in service where the temperature of line fluid is higher than the softening point of the solder.

Type	Globe				
Lead Free Bronze & Brass NSF61-G					
					
Fig	C125CN				
End Connection	**ASME B16.18				
inch	mm	L	H	D	
1/2	15	64	76	60	
3/4	20	84	98	70	
1	25	100	108	80	
1 1/4	32	115	137	90	
1 1/2	40	130	160	100	
2	50	155	180	115	
Body	CAC911				
Bonnet	Forged Brass				
Stem	Forged Brass				
Disc	Forged Brass				
Gland Packing	Aramid Fibers Graphite				
Hand Wheel	Aluminum Die-Cast				
Standard/Approval	NSF				
Service Conditions	W.O.G. Non-shock 1.38MPa(200psi), Saturated Steam Pressure 0.86MPa(125psi) (Do not use for flammable gas or toxic gas.)				
Reference Page	P-T Rating : Page BR34				

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

Type	Ball				Ball				Ball				Ball			
Lead Free Bronze & Brass NSF61-G																
	600 FB NSF				600 FB NSF				600 FB NSF				600 FB NSF			
Fig	AKTAFN				CTAFN				AKTAFMN				CTAFMN			
End Connection	ASME B1.20.1				**ASME B16.18				ASME B1.20.1				**ASME B16.18			
inch	mm	L	H	D	L	H	D		L	H	D		L	H	D	
1/4	8	41	39	82					41	39	82		46	39	82	
3/8	10	42	39	82	46	39	82		42	39	82		46	39	82	
1/2	15	53	42	82	54	42	82		53	42	82		54	42	82	
3/4	20	60	51	100	73	51	100		60	51	100		73	51	100	
1	25	72	59	130	88	59	130		72	59	130		88	59	130	
1 1/4	32	82	64	130	100	64	130		82	64	130		100	64	130	
1 1/2	40	92	73	150	115	73	150		92	73	150		115	73	150	
2	50	105	80	150	140	80	150		105	80	150		140	80	150	
Body & Cap	Forged Brass				Forged Brass				Forged Brass				Forged Brass			
Stem	Forged Brass				Forged Brass				316SS				316SS			
Ball	Forged Brass/304SS				Forged Brass/304SS				316SS				316SS			
Ball Seat	PTFE				PTFE				PTFE				PTFE			
Gland Packing	PTFE				PTFE				PTFE				PTFE			
Handle	CS + Zn Plated				CS + Zn Plated				CS + Zn Plated				CS + Zn Plated			
Bore	Full Bore				Full Bore				Full Bore				Full Bore			
Standard/ Approval	NSF				NSF				NSF				NSF			
Service Conditions	W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)			
Reference Page					P-T Rating : Page BR34								P-T Rating : Page BR34			
Remarks									316SS Trim				316SS Trim			

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

Type	Ball				Ball				Ball				Ball			
Lead Free Bronze & Brass NSF61-G																
	600 FB NSF				600 FB NSF				600 FB NSF				600 FB NSF			
Fig	AKTFMNL				CTFMNL				AK3TMN				C3TMN			
End Connection	ASME B1.20.1				**ASME B16.18				ASME B1.20.1				**ASME B16.18			
inch	mm	L	H	D	L	H	D		L	H	D		L	H	D	
1/2	15	53	39	81	54	39	81		61	42	82		61	42	82	
3/4	20	60	47	100	73	47	100		70	51	100		73	51	100	
1	25	72	55	130	88	55	130		83	59	130		88	59	130	
1 1/4	32	82	59	130	100	59	130		99	64	130		99	64	130	
1 1/2	40	92	67	150	115	67	150		117	73	150		117	73	150	
2	50	105	75	150	140	75	150		139	80	150		139	80	150	
Body & Cap	Forged Brass				Forged Brass				Forged Brass				Forged Brass			
Stem	316SS				316SS				Forged Brass				Forged Brass			
Ball	316SS				316SS				Forged Brass/304SS				Forged Brass/304SS			
Ball Seat	PTFE				PTFE				PTFE				PTFE			
Gland Packing/O ring	FKM+NBR				FKM+NBR				PTFE, Gasket: FKM				PTFE, Gasket: FKM			
Handle	CS + Zn Plated				CS + Zn Plated				CS + Zn Plated				CS + Zn Plated			
Bore	Full Bore				Full Bore				Full Bore				Full Bore			
Standard/ Approval	NSF				NSF				NSF				NSF			
Service Conditions	W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)			
Reference Page					P-T Rating : Page BR34								P-T Rating : Page BR34			
Remarks	Latch Lock Handle 316SS Trim				Latch Lock Handle 316SS Trim				Full Bore				Full Bore			

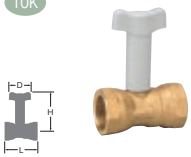
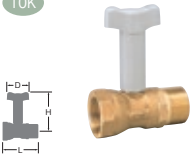
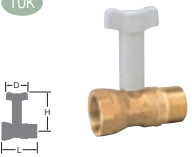
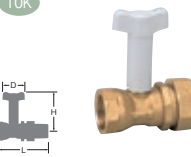
**Solder jointed end valves should not be used in service where the temperature of line fluid is higher than the softening point of the solder.

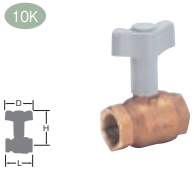
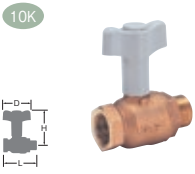
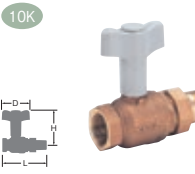
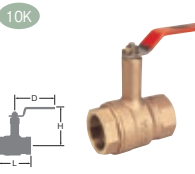
Type	Ball				Ball				Ball				Ball						
Lead Free Bronze & Brass NSF61-G	600  FB NSF				600  FB NSF				600  FB NSF UL				600  FB NSF						
	Fig				AK3TMMN				C3TMMN				AKSZAN				CSZAN		
End Connection		ASME B1.20.1				**ASME B16.18				ASME B1.20.1				**ASME B16.18					
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D						
1/4	8							42	37	70									
3/8	10							42	37	70	46	37	70						
1/2	15	61	42	82	61	42	82	53	40	80	54	40	80						
3/4	20	70	51	100	73	51	100	60	44	80	73	44	80						
1	25	83	59	130	88	59	130	72	50	110	88	50	110						
1 1/4	32	99	64	130	99	64	130	84	55	110	100	55	110						
1 1/2	40	117	73	150	117	73	150	92	65	150	115	65	150						
2	50	139	80	150	139	80	150	110	72	150	140	72	150						
2 1/2	65							138	101	200	164	101	200						
3	80							167	112	300	187	112	300						
4	100							193	131	300									
Body & Cap		Forged Brass				Forged Brass				Forged Brass				Forged Brass					
Stem		316SS				316SS				Forged Brass				Forged Brass					
Ball		316SS				316SS				Forged Brass/304SS				Forged Brass/304SS					
Ball Seat		PTFE				PTFE				PTFE				PTFE					
Gland Packing/O ring		PTFE, Gasket: FKM				PTFE, Gasket: FKM				FKM				FKM					
Handle		CS + Zn Plated				CS + Zn Plated				CS + Zn Plated				CS + Zn Plated					
Bore		Full Bore				Full Bore				Full Bore				Full Bore					
Standard/Approval		NSF				NSF				NSF, UL				NSF					
Service Conditions		W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi), W.O.G 150°C 1.03MPa(150psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi)/4 ⁹ : 2.76MPa(400psi) , W.O.G 150°C 1.03MPa(150psi)/4 ⁹ : 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi)/4 ⁹ : 2.76MPa(400psi) , W.O.G 150°C 1.03MPa(150psi)/4 ⁹ : 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)					
Reference Page						P-T Rating : Page BR34								P-T Rating : Page BR34					
Remarks		Full Bore				Full Bore				Full Bore, Double O-ring				Full Bore, Double O-ring					

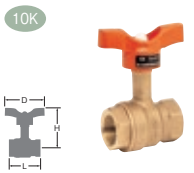
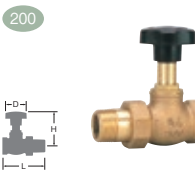
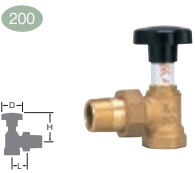
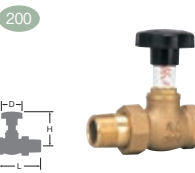
**Solder jointed end valves should not be used in service where the temperature of line fluid is higher than the softening point of the solder.

Type	Ball				Ball				Ball				3-Way Ball (2-seat, L-port)						
Lead Free Bronze & Brass NSF61-G	600			FB	600			FB	600			FB	400			SB			
					NSF					NSF					NSF				
Fig	AKSZANW				CSZANW				PCTAFMN				AKTNN						
End Connection	ASME B1.20.1				**ASME B16.18				ASME B16.51				ASME B1.20.1						
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D	L1					
1/4	8	42	34	55															
3/8	10	42	34	55	46	34	55												
1/2	15	53	39	70	54	39	70	106	42	15	67	45	80	33.5					
3/4	20	60	43	70	73	43	70	130	51	20	68	48	80	34					
1	25	72	52	100	88	52	100	147	59	25	79	55	110	39.5					
1 1/4	32	84	58	100	100	58	100	165	64	32	89	60	110	44.5					
1 1/2	40	92	73	130	115	73	130	199	73	40	100	65	110	50					
2	50	110	81	130	140	81	130	237	81	50	115	75	140	57.5					
Body & Cap	Forged Brass				Forged Brass				KSB-4XA				Forged Brass						
Stem	Forged Brass				Forged Brass				316SS				Forged Brass						
Ball	Forged Brass/304SS				Forged Brass/304SS				A351 Gr.CF8M/SCS14A				Forged Brass+Sn-Ni Plated						
Ball Seat	PTFE				PTFE				PTFE				PTFE						
Gland Packing/O ring	FKM				FKM				PTFE				FKM						
Handle	CS + Zn Plated				CS + Zn Plated				Carbon Steel				430SS						
Bore	Full Bore				Full Bore				Full Bore				Standard Bore						
Standard/Approval	NSF				NSF				NSF61/372				NSF						
Service Conditions	W.O.G. Non-shock 4.14MPa(600psi)/4 ⁹ : 2.76MPa(400psi) , W.O.G 150°C 1.03MPa(150psi)/4 ⁹ : 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)				W.O.G. Non-shock 4.14MPa(600psi)/4 ⁹ : 2.76MPa(400psi) , W.O.G 150°C 1.03MPa(150psi)/4 ⁹ : 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)				-17 to 121°C 2.06MPa				W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)						
Reference Page					P-T Rating : Page BR34								Port Orientation : Page TECH1						
Remarks	Full Bore, Double O-ring Butterfly (Wing) Handle				Full Bore, Double O-ring Butterfly (Wing) Handle				Solder tube connection, Stainless trim, Press connection				Standard Bore, Double O-ring, L-port						

Type	3-Way Ball (2-seat, L-port)				
Lead Free Bronze & Brass NSF61-G	400  NO IMAGE SB NSF				
	CTNN				
	**ASME B16.18				
Fig					
End Connection					
inch	mm	L	H	D	L1
1/2	15	56	45	80	28
3/4	20	74	48	80	37
1	25	88	55	110	44
1 1/4	32	99	60	110	50.5
1 1/2	40	114	65	110	59
2	50	136	75	140	71.5
Body & Cap		Forged Brass			
Stem		Forged Brass			
Ball		Forged Brass+Sn-Ni Plated			
Ball Seat		PTFE			
O ring		FKM			
Handle		430SS			
Bore		Standard Bore			
Standard/Approval		NSF			
Service Conditions		W.O.G. Non-shock 2.76MPa(400psi), W.O.G. 150°C 0.69MPa(100psi) (Do not use for flammable gas or toxic gas.)			
Reference Page		P-T Rating : Page BR34, Port Orientation : Page TECH1			
Remarks		Standard Bore, Double O-ring, L-port			

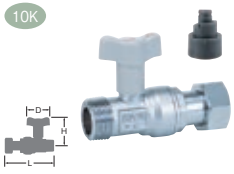
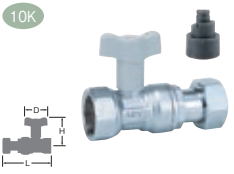
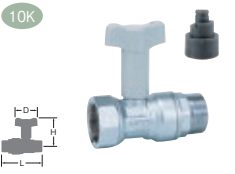
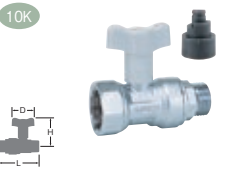
Type	Ball for Fancoil Unit			Ball for Fancoil Unit			Ball for Fancoil Unit			Ball for Fancoil Unit		
Bronze & Brass Fancoil Valves	10K  RB			10K  RB			10K  RB			10K  RB		
	RTRM			RTRO			RTRR			RTRU		
	BS21 (JIS B0203)			BS21(JIS B0203xB0202)			BS21 (JIS B0203)			BS21 (JIS B0203)		
End Connection	inch	mm	L	H	D	L	H	D	L	H	D	L
	1/2	15	56	72	40	62	72	40	62	72	40	88
	3/4	20	61	72	40	66	72	40	66	72	40	92.5
	1	25	70.5	75.5	40	75.5	75.5	40	75.5	75.5	40	104
Body & Cap	CAC406			CAC406			CAC406			CAC406		
Stem	C3531			C3531			C3531			C3531		
Ball	C3771 + Ni-Cr Plating			C3771 + Ni-Cr Plating			C3771 + Ni-Cr Plating			C3771 + Ni-Cr Plating		
Ball Seat	PTFE			PTFE			PTFE			PTFE		
O ring	EPDM			EPDM			EPDM			EPDM		
Handle	Polyacetal			Polyacetal			Polyacetal			Polyacetal		
Bore	Reduced Bore			Reduced Bore			Reduced Bore			Reduced Bore		
Service Conditions	Stream Water 0°C to 90°C 1.0MPa (not freezing)			Stream Water 0°C to 90°C 1.0MPa (not freezing)			Stream Water 0°C to 90°C 1.0MPa (not freezing)			Stream Water 0°C to 90°C 1.0MPa (not freezing)		
Remarks	Taper Thread Detachable & T Type Long Handle			Taper Thread (Female) x Parallel Thread (Male) Detachable & T Type Long Handle			Taper Thread (Female) x Taper Thread (Male) Detachable & T Type Long Handle			Female x Male (Union Nipple) Detachable & T Type Long Handle		

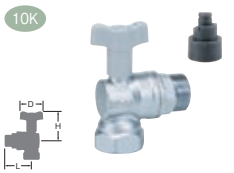
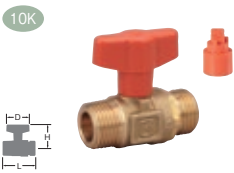
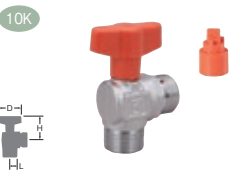
Type	Ball for Fancoil Unit				Ball for Fancoil Unit				Ball for Fancoil Unit				Ball for Fancoil Unit			
Bronze & Brass Fancoil Valves																
Fig	RTFM				RTFO				RTFU				TLF			
End Connection	BS21 (JIS B0203)				BS21(JIS B0203xB0202)				BS21 (JIS B0203)				BS21 (JIS B0203)			
inch	mm	L	H	D	L	H	D		L	H	D		L	H	D	
1/2	15	59	76	61	73	76	61		96	76	61		56	75	80	
3/4	20	67.5	79	61	82	79	61		106	79	61		65	79	80	
1	25	78.5	97	100	96	97	100		120	97	100		77	85	110	
1 1/4	32												90	102	110	
1 1/2	40												98	110	140	
2	50												119	118	140	
Body & Cap	CAC406				CAC406				CAC406				CAC406			
Stem	C3531				C3531				C3531				304SS			
Ball	316SS				316SS				316SS				304SS			
Ball Seat	G/F PTFE				G/F PTFE				G/F PTFE				PTFE			
O ring	EPDM				EPDM				EPDM				FKM			
Handle	Polyacetal				Polyacetal				Polyacetal				430SS			
Bore	Full Bore				Full Bore				Full Bore				Full Bore			
Service Conditions	Stream Water 0°C to 100°C 1.4MPa, Pulsating Water 0°C to 100°C 1.0MPa (not freezing)				Stream Water 0°C to 100°C 1.4MPa, Pulsating Water 0°C to 100°C 1.0MPa (not freezing)				Stream Water 0°C to 100°C 1.4MPa, Pulsating Water 0°C to 100°C 1.0MPa (not freezing)				Stream Water up to 80°C 1.4MPa, (Pulsating Water).O.G. up to 80°C 1.0MPa (Do not use for flammable gas or toxic gas.)			
Remarks	Taper Thread Detachable & T Type Long Handle				Taper Thread (Female) x Parallel Thread (Male) Detachable & T Type Long Handle				Female x Male (Union Nipple) Detachable & T Type Long Handle				Full Bore, Double O-ring For Thermal Insulation			

Type	Ball for Fancoil Unit				Flow Control, Globe				Flow Control, Angle				Flow Control, Globe			
Bronze & Brass Fancoil Valves																
Fig	TLFT				NSH				INAH				INSH			
End Connection	BS21 (JIS B0203)				BS21 (JIS B0203)				BS21 (JIS B0203)				BS21 (JIS B0203)			
inch	mm	L	H	D	L	H	D		L	H	D		L	H	D	
1/2	15	56	80	82	50.5	77	47.5		25.5	68	47.5		50.5	77	47.5	
3/4	20	65	84	82	54.5	79	47.5		28.5	68	47.5		54.5	79	47.5	
1	25	77	93	94	61.5	90	47.5		35.5	77	47.5		61.5	90	47.5	
1 1/4	32	90	110	94					39.5	88	47.5		68.5	96	47.5	
1 1/2	40	98	125	120												
2	50	119	134	120												
Body & Cap/Bonnet	CAC406				CAC406/C3771				CAC406/C3771				CAC406/C3771			
Stem	304SS				C3531				C3531				C3531			
Disk & Ball	304SS				PTFE				PTFE				PTFE			
Ball Seat	PTFE															
O ring	FKM				FKM				FKM				FKM			
Gasket					Non Asbestos Sheet (T#1995)				Non Asbestos Sheet (T#1995)				Non Asbestos Sheet (T#1995)			
Handle	Reinforced Nylon				Polycarbonate				Polycarbonate				Polycarbonate			
Bore	Full Bore															
Service Conditions	Stream Water up to 80°C 1.4MPa, W(Pulsating Water).O.G. up to 80°C 1.0MPa (Do not use for flammable gas or toxic gas.)				W.O. 60°C 1.57MPa, W.O. 120°C 1.37MPa, (Not freezing.)				W.O. 60°C 1.57MPa, W.O. 120°C 1.37MPa, (Not freezing.)				W.O. 60°C 1.57MPa, W.O. 120°C 1.37MPa, (Not freezing.)			
Reference Page					Flow Characteristic: Page BR37				Flow Characteristic: Page BR37				Flow Characteristic: Page BR37			
Remarks	Full Bore, Double O-ring T Handle, For Thermal Insulation Ambient Temperature: -20°C~+60°C				Female x Male (Union Nipple) Controllable Range 1/2": 0~20l/min 3/4": 0~30l/min 1": 0~40l/min Pressure Loss: up to 60kPa				Female x Male (Union Nipple) Controllable Range 1/2": 0~20l/min 3/4": 0~30l/min 1" & 1 1/4": 0~40l/min Pressure Loss: up to 60kPa				Female x Male (Union Nipple) Controllable Range 1/2": 0~20l/min 3/4": 0~30l/min 1" & 1 1/4": 0~40l/min Pressure Loss: up to 60kPa			

Type	Globe w/ Built-in Screen				Ball (Low Noise Type)			Ball (Constant Flow)				
Bronze & Brass Balancing Valves	10K  IS RS				10K  FB			10K  FB				
												
	Fig				BS15-/BS20-			RTUC				
	End Connection				BS21 (JIS B0203)			BS21 (JIS B0203)			BS21 (JIS B0203)	
inch	mm	L	H	D	L	H	D	L	H	D		
1/2	15				94.5	63.5	55	88	72	40		
3/4x1/2	20x15	118.5	89	40								
3/4	20	121.5	89	40	100.5	63.5	55	92.5	72	40		
1	25				115.5	66.5	55	104	75.5	40		
Body & Bonnet	CAC406/C3771				CAC406			CAC406				
Stem	C3531				C3531			C3531				
Disk & Ball	G/F PTFE				C3604 + Cr Plating			C3771 + Ni-Cr Plating				
Ball Seat					PTFE			PTFE				
O ring	H-NBR				H-NBR/NBR for 35&40l/min			POM + Silicon Rubber				
Gasket	Non Asbestos/NBR/Silicon				FKM			EPDM				
Handle	Phenolic Resin				Polyacetal			Polyacetal				
Bore					Full Bore			Full Bore				
Service Conditions	Max Working Pressure 1.0MPa, Working Temperature Water 0°C to 80°C				Max Working Pressure 1.0MPa, Working Temperature Water 0°C to 80°C			Max Working Pressure 1.0MPa, Working Temperature Water 0°C to 60°C				
Reference Page	Predetermined Flow Rate: Page BR4				Predetermined Flow Rate: Page BR4			Predetermined Flow Rate: Page BR4				
Remarks	Female x Male (Union Nipple) Control Range 0.05 MPa to 0.49 MPa, Flow Rate 3 to 30 L/min, Contorollable Flow Rate ±10%				Female x Male (Union Nipple) Control Range 0.05 MPa to 0.49 MPa, Flow Rate 3 to 40 L/min, Contorollable Flow Rate ±20%			Female x Male (Union Nipple) Control Range 0.15 MPa to 0.49 MPa, Flow Rate 5 to 30 L/min, Contorollable Flow Rate ±10%,±20% for 5L/min				

Type	S Ball (Straight)				S Ball (Straight)				S Ball (Straight)				S Ball (Straight)			
Bronze & Brass S Ball Series for Water Heater																
	10K				10K				10K				10K			
	JWWA				JWWA				JWWA				JWWA			
																
Fig	S23N-				S24N-				S24N-3/4X				S25N-			
End Connection	BS21 (JIS B0203xB0202)				BS21 (JIS B0203xB0202)				BS21 (JIS B0203xB0202)				BS21 (JIS B0203)			
inch	mm	L	H	D	L	H	D	L	H	D	L	H	D			
1/2	15	72	51/63*	40	72	51/63*	40	73	51/63*	40	73	51/63*	40			
3/4	20	74	51/63*	40	74	51/63*	40				75	51/63*	40			
Body & Bonnet	C3771				C3771 + Ni-Cr Plating				C3771 + Ni-Cr Plating				C3771 + Ni-Cr Plating			
Stem	C3531				C3531				C3531				C3531			
Ball	C3771 + Sn-Ni Plating				C3771 + Sn-Ni Plating				C3771 + Sn-Ni Plating				C3771 + Sn-Ni Plating			
Ball Seat	PTFE				PTFE				PTFE				PTFE			
Check Valve	Polyacetal				Polyacetal				Polyacetal				Polyacetal			
O ring / Spring	EPDM, NBR / 304SS				EPDM, NBR / 304SS				EPDM, NBR / 304SS				EPDM, NBR / 304SS			
Handle/Attachment	Polyacetal				Polyacetal				Polyacetal				Polyacetal			
Standard/Approval	JWWA E-3				JWWA E-3				JWWA E-3				JWWA E-3			
Service Conditions	1.0 MPa Water, 0°C+40°C (Not Freezing) Direct Flow 40°C max, Reserve Flow 80°C max				1.0 MPa Water, 0°C+40°C (Not Freezing) Direct Flow 40°C max, Reserve Flow 80°C max				1.0 MPa Water, 0°C+40°C (Not Freezing) Direct Flow 40°C max, Reserve Flow 80°C max				1.0 MPa Water, 0°C+40°C (Not Freezing) Direct Flow 40°C max, Reserve Flow 80°C max			
Reference Page	Features: Page BR37				Features: Page BR37				Features: Page BR37				Features: Page BR37			
Remarks	Male (Parallel) x Male (Taper) With Spring-loaded Built-in Check Valve (Water Hammer Proof). Detachable T Handle with attachment for extension of handle. * For adding attachment				Male (Parallel) x Male (Taper) With Spring-loaded Built-in Check Valve (Water Hammer Proof). Detachable T Handle with attachment for extension of handle. * For adding attachment				Male (Parallel) x Male (Taper) With Spring-loaded Built-in Check Valve (Water Hammer Proof). Detachable T Handle with attachment for extension of handle. * For adding attachment				Female (Taper) x Female (Taper) With Spring-loaded Built-in Check Valve (Water Hammer Proof). Detachable T Handle with attachment for extension of handle. * For adding attachment			

Type	S Ball (Straight)			S Ball (Straight)			S Ball (Straight)			S Ball (Straight)		
Bronze & Brass S Ball Series for Water Heater												
Fig	S26N-			S27N-			S28N-			S28N-3/4X		
End Connection	BS21(JIS B0203xB0202)			BS21(JIS B0203xB0202)			BS21(JIS B0203xB0202)			BS21(JIS B0203xB0202)		
inch	L H D			L H D			L H D			L H D		
1/2	15 86.5 51/63* 40			85 51/63* 40			70.5 51/63* 40			71.5 51/63* 40		
3/4	20 91 51/63* 40			89.5 51/63* 40			72.5 51/63* 40					
Body & Bonnet	C3771 + Ni-Cr Plating			C3771 + Ni-Cr Plating			C3771 + Ni-Cr Plating			C3771 + Ni-Cr Plating		
Stem	C3531			C3531			C3531			C3531		
Ball	C3771 + Sn-Ni Plating			C3771 + Sn-Ni Plating			C3771 + Sn-Ni Plating			C3771 + Sn-Ni Plating		
Ball Seat	PTFE			PTFE			PTFE			PTFE		
Check Valve	Polyacetal			Polyacetal			Polyacetal			Polyacetal		
O ring / Spring	EPDM, NBR / 304SS			EPDM, NBR / 304SS			EPDM, NBR / 304SS			EPDM, NBR / 304SS		
Handle/Attachment	Polyacetal			Polyacetal			Polyacetal			Polyacetal		
Standard/Approval	JWWA E-3			JWWA E-3			JWWA E-3			JWWA E-3		
Service Conditions	1.0 MPa Water, 0°C+40°C (Not Freezing) Direct Flow 40°C max, Reserve Flow 80°C max			1.0 MPa Water, 0°C+40°C (Not Freezing) Direct Flow 40°C max, Reserve Flow 80°C max			1.0 MPa Water, 0°C+40°C (Not Freezing) Direct Flow 40°C max, Reserve Flow 80°C max			1.0 MPa Water, 0°C+40°C (Not Freezing) Direct Flow 40°C max, Reserve Flow 80°C max		
Reference Page	Features: Page BR37			Features: Page BR37			Features: Page BR37			Features: Page BR37		
Remarks	Male (Taper) x Union Nut (Female (Parallel)) With Spring-loaded Built-in Check Valve (Water Hammer Proof). Detachable T Handle with attachment for extension of handle. * For adding attachment			Female (Taper) x Union Nut (Female (Parallel)) With Spring-loaded Built-in Check Valve (Water Hammer Proof). Detachable T Handle with attachment for extension of handle. * For adding attachment			Female (Taper) x Male (Parallel) With Spring-loaded Built-in Check Valve (Water Hammer Proof). Detachable T Handle with attachment for extension of handle. * For adding attachment			Female (Taper) x Male (Parallel) With Spring-loaded Built-in Check Valve (Water Hammer Proof). Detachable T Handle with attachment for extension of handle. * For adding attachment		

Type	S Ball (Angle)			Orange Ball (Straight)			Orange Ball (Straight)			Orange Ball (Angle)		
Bronze & Brass S Ball Series for Water Heater Orange Ball Series												
Fig	S38A-			S1-			S2-			S5-		
End Connection	BS21(JIS B0203xB0202)			BS21(JIS B0203xB0202)			BS21(JIS B0203xB0202)			BS21(JIS B0203xB0202)		
inch	L H D			L H D			L H D			L H D		
1/2	15 47.3 52/64* 40			52.5 39/52* 40			52.5 39/52* 40			13 39 40		
3/4	20 48.3 52/64* 40			58 42/55* 40			58 42/55* 40			14 42 40		
Body & Bonnet	C3771 + Ni-Cr Plating			C3771/C3604			C3771/C3604+Ni-Cr Plating			C3771/C3604+Ni-Cr Plating		
Stem	C3531			C3531			C3531			C3531		
Ball	C3771 + Sn-Ni Plating			C3771 + Sn-Ni Plating			C3771 + Sn-Ni Plating			C3771 + Sn-Ni Plating		
Ball Seat	PTFE			G/F PTFE			G/F PTFE			G/F PTFE		
Check Valve	Polyacetal+NBR											
O ring / Spring	EPDM, NBR / 304SS			EPDM			EPDM			EPDM		
Handle/Attachment	Polyacetal			Polyacetal			Polyacetal			Polyacetal		
Bore				Standard Bore			Standard Bore			Standard Bore		
Standard/Approval	JWWA E-3			JWWA E-2			JWWA E-2			JWWA E-2		
Service Conditions	1.0 MPa Water, 0°C+40°C (Not Freezing) Direct Flow 40°C max, Reserve Flow 80°C max			1.0 MPa Water, -20°C to +100°C (Not Freezing)			1.0 MPa Water, -20°C to +100°C (Not Freezing)			1.0 MPa Water, -20°C to +100°C (Not Freezing)		
Reference Page	Features: Page BR37											
Remarks	Female (Taper) x Male (Parallel) With Spring-loaded Built-in Check Valve (Water Hammer Proof). Detachable T Handle with attachment for extension of handle. * For adding attachment			Male (Parallel) x Male (Taper) T Handle. * For adding attachment			Male (Parallel) x Male (Taper) T Handle. * For adding attachment			Male (Parallel) x Male (Taper) T Handle. * For adding attachment		

Type	Orange Ball (Straight)				Orange Ball (Straight)			
Bronze & Brass S Ball Series for Water Heater Orange Ball Series								
	S6-				S8-			
	BS21 (JIS B0203)				BS21(JIS B0203xB0202)			
	inch	mm	L	H	D	L	H	D
1/2	15	54	39/52*	40	52.5	44	40	
3/4	20	59	42/55*	40	58	46.5	40	
Body & Bonnet	C3771				C3771 / C3604+Ni-Cr Plating			
Stem	C3531				C3531			
Ball	C3771 + Sn-Ni Plating				C3771 + Sn-Ni Plating			
Ball Seat	G/F PTFE				G/F PTFE			
O ring / Spring	EPDM				EPDM			
Handle/Attachment	Polyacetal				ZDC2			
Bore	Standard Bore				Standard Bore			
Standard/Approval	JWWA E-2				JWWA E-2			
Service Conditions	1.0 MPa Water, -20°C to +100°C (Not Freezing)				1.0 MPa Water, -20°C to +100°C (Not Freezing)			
Remarks	Male (Taper) x FemMale (Taper) T Handle. * For adding attachment				Male (Parallel) x Male (Taper) T Handle			

As a world leader in manufacturing general service valves, KITZ Corporation is glad to offer a broad range of bronze/brass valves for commercial and industrial applications.

KITZ bronze/brass valves are exclusively produced in modern factories used for valve manufacturing. Each phase of manufacturing process, from selection of raw materials to casting, forging, machining, assembly and testing, have 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 designed by state-of-the-art computers, built by automation, and inspected by people who care about quality.



Design Features of KITZ Bronze/Brass Valves

Human Engineering in Hand Wheel Design

Computer designed hand wheels of all KITZ bronze/brass valves, the product of KITZ human engineering, feature the ideal combination of operational efficiency and high mechanical strength for reliability.

Asbestos-free Gland Packing

All KITZ bronze/brass gate and globe valves employ Aramid Fiber PTFE as the material in the asbestos-free gland packing, which meets the latest industrial requirement to minimize concerns about pollution. With the leak-free sealing performance and reduced valve operating torque, Aramid Fiber PTFE is considered a reliable substitute for conventional asbestos sheets for the service of water, oil, gas, and saturated steam pressure at a maximum 300psi at temperatures up to 300°C.

Pressure Rating

The pressure rating designation of KITZ valves follows accepted practice of today's valve and pipe fitting industry. 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 requirements throughout all stages of production, beginning with the inspection of chemical composition and mechanical properties of the materials. Extra care is given to inspection and testing at all machine shops and assembly plants by using up-to-date precision equipment. All KITZ valves meet strict pressure testing specifications for the body and seat seals to assure a long service life and quality performance.

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

KITZ Corporation, Chino Plant, Japan (ISO 9001)



KITZ (Thailand) Ltd, Bangplee Plant, Thailand (ISO 9001)



This catalog uses MPa, an SI unit, to indicate pressure. For reader convenience, however, psi is also used for ASME and JIS related products, respectively. The products in this catalog are all covered by ISO 9001 certification.

HSE (Health, Safety & Environment) Conscious Products

Lead-free Bronze & Brass (KEEPALLOY®): N in suffix of Fig. "Ex, JN, AKSZAN"

(1) MHLW (Ministry of Health, Labour and Welfare) Ordinance No. 138, April 1, 2003.

Restriction of leaching lead less than 0.01 mg/little. JIS H5120 CAC911, JIS H3250 C6803

(2) NSF/ANSI 61-8 Annex G & NSF/ANSI 372

January 4, 2014 "Reduction of lead in drinking water act" : Less than 0.25% of lead by weight

RoHS, Reach, WRAS and WSD

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?

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

In case of bronze valve, body, bonnet, and other cast bronze parts rarely corrode, because of the small percentage of zinc contained in the alloy. However, brass valve parts such as stem, which contains 40 % zinc, often corrode because of extreme dezincification.

What causes dezincification?

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

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

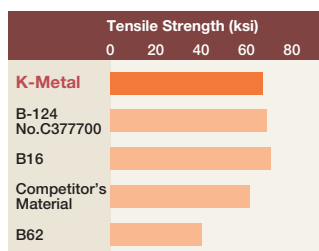


Fig. 1 Comparison of tensile strength

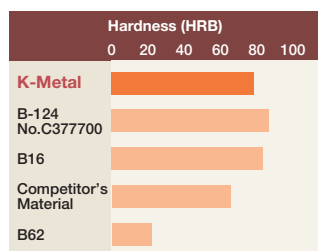


Fig. 2 Comparison of hardness

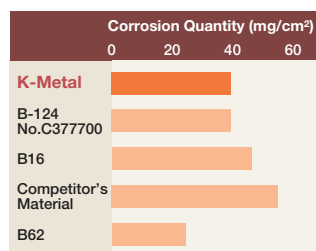


Fig. 3 Comparison of corrosion
(1 mg/cm²=0.014 mlb/in²)

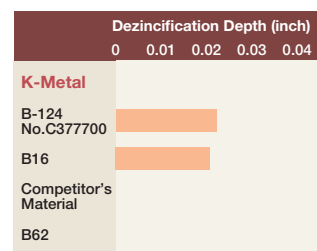


Fig. 4 Comparison of dezincification
(to AS C316)

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 its excellent physical characteristics. It resists corrosion, meets sanitation requirements, and is easy to install.

Copper Tubes: Three types of copper tubing have been developed for complying with ASTM B88, as listed 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.

Soldering of Leak Free Joints

Use solder of 95-5 tin-antimony or 96-4 tin-silver, and an open-flame torch. Keep the torch temperature relatively low to ensure firm soldered joint. Because the melting point of solder is around 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 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



CAUTION

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

KITZ Bronze and Brass Materials to JIS Standards

JIS H5120 (Copper & Copper Alloy Castings)

Cast Bronze Class 6	Designation	Chemical Composition (%)										Mechanical Properties	
		Cu	Sn	Zn	Pb	Ni	Fe	P	Sb	Al	Si	Tensile Strength 195 Min. (N/mm ²)	Elongation (%) 15 Min.
	CAC406 (BC6)	83.0-87.0	4.0-6.0	4.0-6.0	4.0-6.0	1.0 Max.	0.3 Max.	0.05 Max.	0.2 Max.	0.01 Max.	0.01 Max.		

JIS H3250 (Copper & Copper Alloy Rods and Bars)

Forged Brass Alloy No. 3771	Designation		Chemical Composition (%)				Mechanical Properties	
	Extruded	Drawn	Cu	Pb	Fe + Sn	Zn	Tensile Strength 315 Min. (N/mm ²)	Elongation (%) 15 Min.
	C3771BE	C3771BD	57.0-61.0	1.0-2.5	1.0 Max.	Remainder		

JIS H3250 (Copper & Copper Alloy Rods and Bars)

Free-cutting Brass Alloy No. 3604	Designation		Chemical Composition (%)					Mechanical Properties	
	Extruded	Drawn	Cu	Pb	Fe	Fe + Sn	Zn	Tensile Strength 335 Min. (N/mm ²)	Elongation (%) —
	C3604BE	C3604BD	57.0-61.0	1.8-3.7	0.5 Max.	1.0 Max.	Remainder		

KITZ Bronze and Brass Materials to ASTM Standards

ASTM B61

Chemical Composition (%)											Mechanical Properties		
Copper	Tin	Lead	Zinc	Nickel & cobalt	Iron	Sulfur	Phosphorus	Antimony	Aluminum	Silicon	Minimum		
86.0-90.0	5.5-6.5	1.0-2.0	3.0-5.0	1.0 Max.	0.25 Max.	0.05 Max.	0.05 Max.	0.25 Max.	0.005 Max.	0.005 Max.	Tensile Strength 34 ksi	Yield Strength 16 ksi	Elongation in 2 in. 24%

ASTM B62

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

ASTM B283 C37700

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%

In-line Lift Check Valve with Spring (RF, AKAF)

Reduction of water hammer

Excellent sealing performance by means of rubber seats & spring

KITZ Wafer Check Valve (10BWZ(N), 10FWZ, 10/20SWZU, 20SWZ, 10UW, 10/20UWS)

Construction:

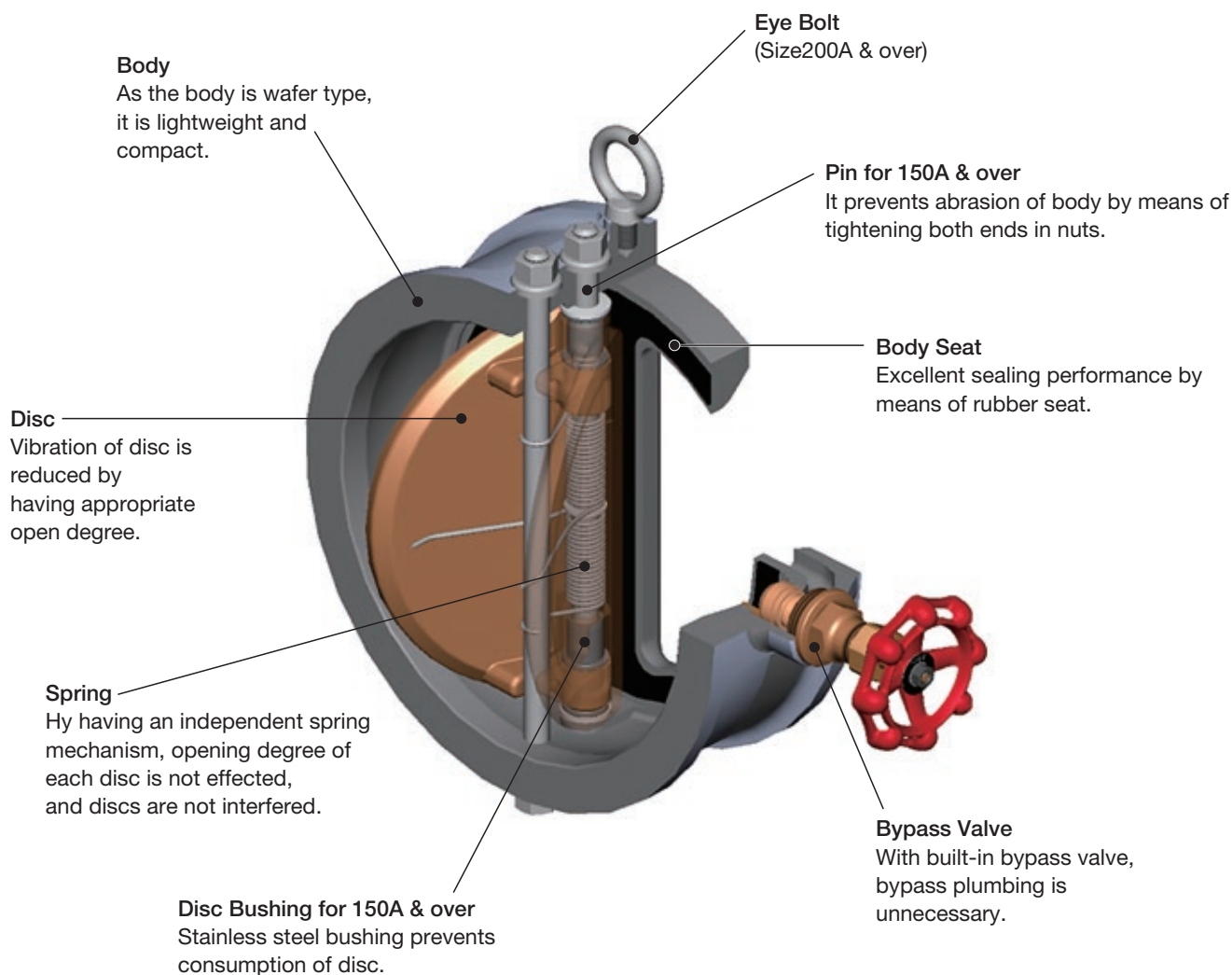
Single Plate (stainless steel wafer check) and Dual Plate (others except SS)

Features

- (1) Reduction of water hammer by closing the disc with independent helical spring mechanism
- (2) Built-in Bypass Valve
- (3) Excellent sealing performance by means of rubber seats & spring mechanism
- (4) Direct mounting of pump. (*stainless steel wafer check valves are not available due to single plate construction.
Provide straight runs of pipe at least two times of the valve bore (three times in case when pipe expansion is used to pump discharge) to the both sides of the valve.
- (5) Compact and Light Mass

Spring Serviceable Range:

- (1) Standard Torque Spring (2)High Torque Spring (3)Low Torque Spring

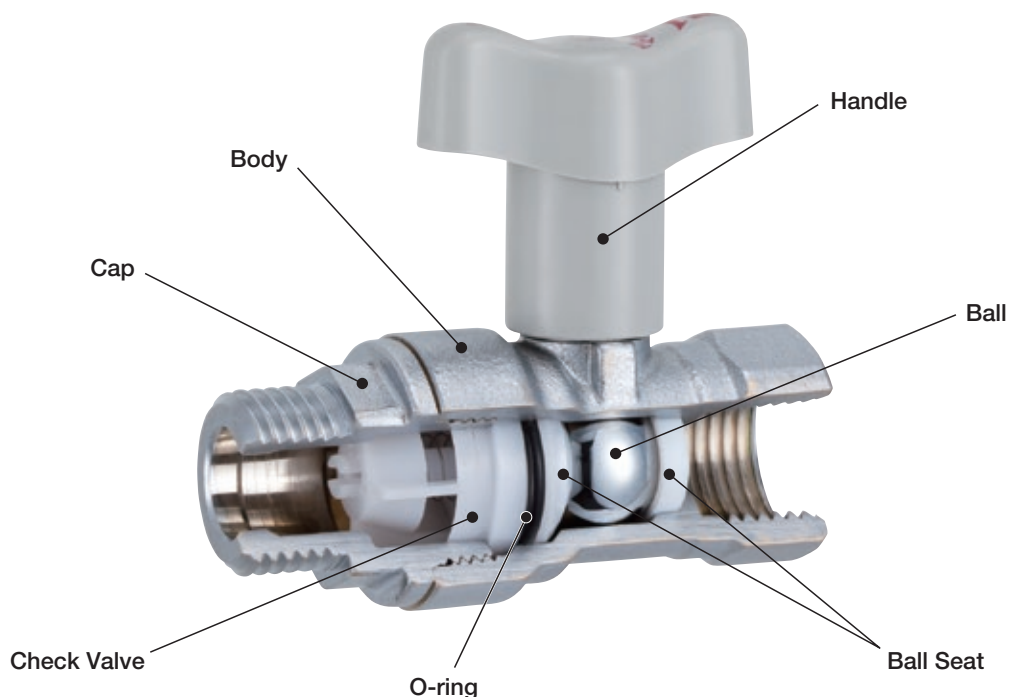


Design Features of KITZ S Ball Valve: Ball Valve with Built-in Check Valve in its Body

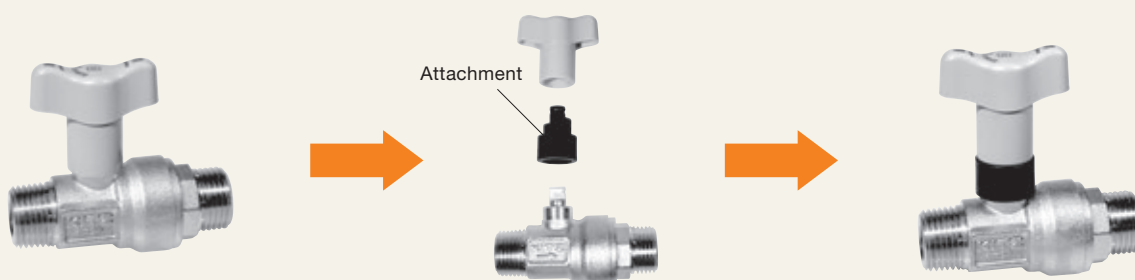
Compact design with a built-in check valve in the body of ball valve.

Prevents back flow by automatic closing of spring-loaded built-in check valve (water hammer proof).

Cross-sectional illustration of ball valves with built-in check valves



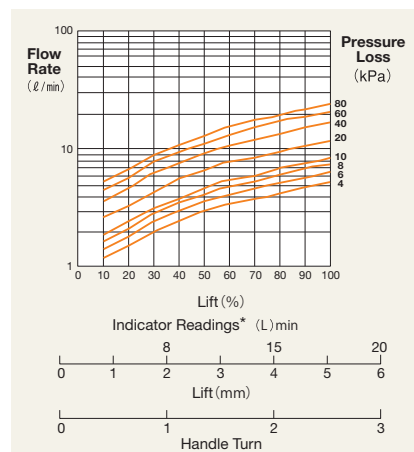
2-Way Handle



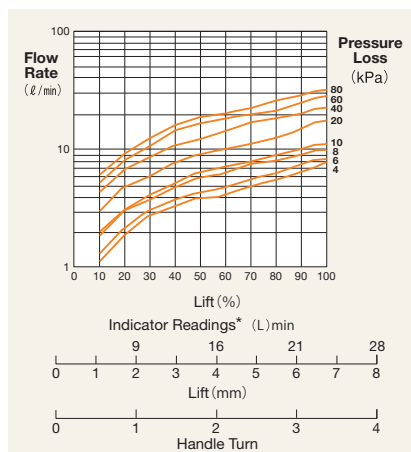
Flow Characteristics of KITZ Fancoil Valve, Flow Control, Globe Type

B

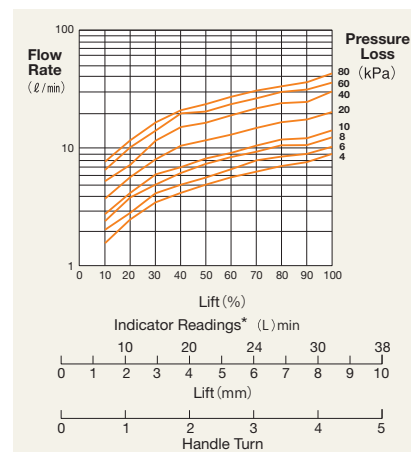
■ Nominal Size: $\frac{1}{2}$ "^B Cv=1.8



■ Nominal Size: $\frac{3}{4}$ "^B Cv=2.6



■ Nominal Size: 1"^B, $1\frac{1}{4}$ "^B Cv=3.3



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

Technical Data of Pressure and Temperature Ratings in JIS Standard Bronze Valves

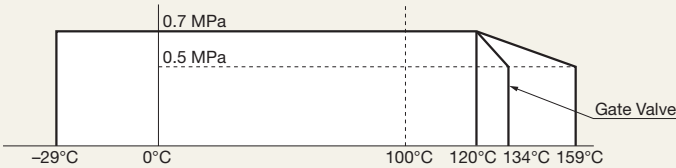
- 1 Fluid
- Water, oil, gas, air and steam.
However, flammable gas and toxic gas are excluded.
- 2 Relationship between the temperature of the fluid and the maximum permissible pressure (hereinafter referred to as the “pressure-temperature criteria”) shall be in accordance with Table 1. However, the fluid shall not be frozen.
- 3 In case where use of valves is prohibited or restricted by the High Pressure Gas Safety Act and other regulations, the user shall use them within the framework of laws and ordinances.

Table 1 Pressure-Temperature Criteria

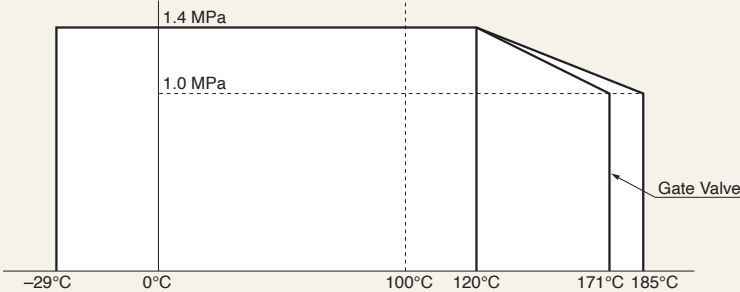
Nominal Pressure	Temperature of Fluid °C	Maximum Permissible Working Pressure ^{c)} MPa
5K	−29 to 120	0.7
	159 ^{a)}	0.5
10K	−29 to 120	1.4
	185 ^{b)}	1.0

Notes: a) Maximum service temperature. In case of gate valves, it will be 144°C.
b) Maximum service temperature. In case of gate valves, it will be 171°C.
c) Maximum permissible pressure at intermediate temperature between temperature above 120°C and the maximum service temperature shall be obtained by proportional interpolation.

■ Nominal Pressure 5K



■ Nominal Pressure 10K



Pressure and Temperature Ratings of PN Bronze Valves

Temperature of Fluid °C	Maximum Permissible Working Pressure MPa	
	PN16	PN25
-10 to 100	1.60	2.50
120	1.35	2.18
150	0.95	1.65
170	0.70	1.28
180	-	1.13
186	-	1.05

Pressure and Temperature Ratings of Class 125, 150, 300 Bronze Valves (Extracted from MSS SP-80)

Temperature of Fluid		Maximum Permissible Working Pressure MPa (psi)			
°C	°F	CL125	CL150	CL300	
Fig.		AK125M AK125E AK125C AKYR CYR	AK150E AK150L C150L AK150LU AK150D C150D AK150YR	AK300J AK300D AK300YR	AK300LU
-29 to 66	-20 to 150	1.38 (200)	2.07 (300)	4.14 (600)	6.89 (1000)
93	200	1.28 (185)	1.86 (270)	3.86 (560)	6.34 (920)
121	250	1.17 (170)	1.65 (240)	3.62 (525)	5.72 (830)
149	300	1.07 (155)	1.45 (210)	3.38 (490)	5.10 (740)
177	350	0.97 (140)	1.24 (180)	3.10 (450)	4.48 (650)
204	400	-	-	2.83 (410)	3.86 (560)
208	406	0.86 (125)	1.03 (150)	-	-
232	450	-	-	2.59 (375)	3.31 (480)
260	500	-	-	2.34 (340)	2.69 (390)
288	550	-	-	2.07 (300)	2.07 (300)
Saturated Steam		0.86 (125)	1.03 (150)	2.07 (300)	2.07 (300)