KITZ

Ball Valves

KITZ CORPORATION

KITZ Ball Valves

The products introduced in this catalog are all covered by ISO 9001 and 9002 certification awarded KITZ Corporation, KITZ Corporation of Europe, S.A. and KITZ Corporation of Taiwan.

KITZ Corporation of Taiwan, Kaohsiung Plant, Taiwan
(ISO 9002)

KITZ Corporation of Europe, S.A., Barcelona Plant, Spain
(ISO 9001)

KITZ Corporation, Ina Plant, Japan (ISO 9001)

KITZ Corporation, Nagasaka Plant, Japan
(ISO 9001)

Contents

Product Range

Flanged Floating Ball Valves

Shell Material	Class	KITZ Product Code	Bore*1	Size / Body Design	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	Page
					mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	
Carbon Steel	150	150SCTDZ	F	Split		●	●	●		●	●	●	●	●	●	●	●	■		11
	150	150SCTA	R	Uni		●	●	●		●	●		●	●		●	●	●		25
	300	300SCTDZ	F	Split		●	●	●		●	●	●	●	●	●	●	●			11
	300	300SCTA	R	Uni		●	●	●		●	●		●	●		●	●	●		22
	600	600SCTB	F	Split		●	●	●		●										10
	1500	1500SCTB	F	Split		●	●	●		●										10
	150	150SCTR	R	Split											●	●	●	●	■	*3
	300	300SCTR	R	Split												●	●	●		*3
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	150	150UTBM	F	Split		●	●	●		●	●	●	●	●	●	●	●	■		9
	150	150UTAM	R	Uni		●	●	●		●	●		●	●		●	●	●		22
	300	300UTDZM	F	Split		●	●	●	●	●	●	●	●	●	●	●	●			11
	300	300UTAM	R	Uni		●	●	●		●	●		●	●		●	●	●		22
	600	600UTBM	F	Split		●	●	●		●										10
	1500	1500UTBM	F	Split		●	●	●		●										10
	150	150UTDZXL	F	Split/Extended bonnet		●	●	●	●	●	●	●	●	●	■	■	■	■		25
	300	300UTDZXL	F	Split/Extended bonnet		●	●	●	●	●	●	●	●	■	■	■	■	■		26
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	150	150UTDZL	F	Split		●	●	●	●	●	●	●	●	■	■	■	■			24
	300	300UTDZL	F	Split		●	●	●		●	●	●	■	■	■	■	■	■		24
	10	10UTDZL	F	Split		●	●	●	●	●	●	●	●	■	■	■	■			24
	20	20UTDZL	F	Split		●	●	●	●	●	●	●	■	■	■	■	■			24
	150	150UTRM	R	Split							●	●	●	●	●	●	●	●	■	*3
	300	300UTRM	R	Split							●		●	●		●	●	●		*3
	10K	10UTDZM	F	Split		●	●	●	●	●	●	●	●	●	●	●	●	■		*3
	20K	20UTDZM	F	Split		●	●	●	●	●	●	●	●	●	●	●	●			*3
	150	150UTB2L/2T	F	Split/3-way･2-seat				●		●	●	●	●	●		●*4				20
	150	150UTB4LA/4T	F	Split/3-way･4-seat		●	●	●		●	●	●	●	●	●*4	●*4	●*4			20
	10K	10UTB2LM/2TM	F	Split/3-way･2-seat				●		●	●	●	●	●		●*4				*3
	10K	10UTB4LAM/4TAM	F	Split/3-way･4-seat		●	●	●		●	●	●	●	●	●*4	●*4	●*4			*3
	150	150UTBPM	F	Split/Pocketless		●	●	●		●	●	●	●	●	●	●	●			19
	150	150UTBJM	F	Jacketed		●	●	●		●	●	●								19
	10K	10UTBJM	F	Jacketed		●	●	●		●	●	●								*3
	150	150UTRJM	R	Jacketed									●	●		●				*3
	10K	10UTRJM	R	Jacketed									●	●		●				*3
	150	150UTBTM	F	Split/Tank ball				●		●	●	●	●	●	●	●	■			21
	10K	10UTBTM	F	Split/Tank ball				●		●	●	●	●	●	●	●	■			*3
	150	150UTBLN	F	Split/PFA lined		●	●	●		●	●	●	●	●						*3
	10K	10UTBLN	F	Split/PFA lined		●	●	●		●	●	●	●	●						21
Ductile Iron	10K	10STBF	F	Split		●	●	●	●	●	●	●	●	●	●	●	●			27
	10K	10STLBF	F	Split/Gas service		●	●	●	●	●	●	●	●	●	●	●	●			27
	20K	20STLB	F	Split/Gas service		●	●	●	●	●	●	●	●	●		●	●			27
	10K	10STB4LAF/4TAF	F	Split/3-way･4-seat						●	●	●	●	●						28
	10K	10STR4LAF/4TAF	R	Split/3-way･4-seat											●	●	●			28
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	125	125FCTR	R	Split												●	●	●		29
	10	10FCTR	R	Split											●	●	●	●		30
	10K	10FCTB2L	F	Split/3-way･2-seat						●	●	●	●	●						31
	10K	10FCTR2L	R	Split/3-way･2-seat											●	●	●			31
Bronze		TB	F	Split		●	●	●	●	●	●	●	●	●						31

*1 Bore design: F=Full port, R=Reduced port
*2 Worm gear operation is standardised for the sizes marked ■ with the prefix “G-” on each KITZ product code.
*3 Please contact KITZ Corporation for details.
*4 Reduced port.

Product Range

Flanged High Performance Ball Valves

Shell Material	Class	KITZ Product Code	Bore *1	Size / Body Design	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	Page
					mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
∧-port Stainless Steel	150	L-150UVC(T)M*2	F	Split/For control				●		●	●	●	●	●	●	●	●				48
	150	G-150UVC(T)M*2	F	Split/For control												●	●	●	●	●	48
	300	L-300UVC(T)M*2	F	Split/For control				●		●	●	●	●	●	●	●	●				49
	300	G-300UVC(T)M*2	F	Split/For control												●	●	●			49
	10K	L-10UVC(T)M*2	F	Split/For control				●		●	●	●	●	●	●	●	●				48
	10K	G-10UVC(T)M*2	F	Split/For control												●	●	●	●	●	48
	20K	L-20UVC(T)M*2	F	Split/For control				●		●	●	●	●	●	●	●	●				49
	20K	G-20UVC(T)M*2	F	Split/For control												●	●	●			49
FILLTITE® Seated Carbon Steel and Stainless Steel	150	150SCTDZ1H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●	■	■	■	■			12
	150	150UTDZ1H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●	■	■	■	■			12
	300	300SCTDZ1H	F	Split/Max. 300℃		●	●	●		●	●	●	●	■	■	■	■				12
	300	300UTDZ1H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	■	■	■	■				12
	10K	10SCTDZ1H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●	■	■	■	■			*4
	10K	10UTDZ1HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●	■	■	■	■			*4
	20K	20SCTDZ1H	F	Split/Max. 300℃		●	●	●		●	●	●	●	■	■	■	■				*4
	20K	20UTDZ1HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	■	■	■	■				*4
Graphite Seated Carbon and Stainless Steel	150	150SCTDZ3H	F	Split/Max. 500℃		●	●	●		●	●	●	●	●	■	■	■				13
	150	150UTDZ3H	F	Split/Max. 500℃		●	●	●	●	●	●	●	●	●	■	■	■				13
	300	300SCTDZ3H	F	Split/Max. 500℃		●	●	●		●	●	●	●	■	■	■	■				14
	300	300UTDZ3H	F	Split/Max. 500℃		●	●	●	●	●	●	●	●	■	■	■	■				14
	10K	10SCTDZ3H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●	■	■	■				13
	10K	10UTDZ3H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●	■	■	■				13
	20K	20SCTDZ3H	F	Split/Max. 425℃		●	●	●		●	●	●	●	■	■	■	■				14
	20K	20UTDZ3HM	F	Split/Max. 425℃		●	●	●	●	●	●	●	●	■	■	■	■				14
Metal Seated Carbon and Stainless Steel	150	150SCTDZ5H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●	■	■	■				15
	150	150UTDZ5H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●	■	■	■				15
	300	300SCTDZ5H	F	Split/Max. 300℃		●	●	●		●	●	●	●	■	■	■	■				16
	300	300UTDZ5H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	■	■	■	■				16
	10K	10SCTDZ5H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●	■	■	■				15
	10K	10UTDZ5H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●	■	■	■				15
	20K	20SCTDZ5H	F	Split/Max. 300℃		●	●	●		●	●	●	●	■	■	■	■				16
	20K	20UTDZ5H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	■	■	■	■				16
Metal Seated Carbon and Stainless Steel	150	150SCTDZ6H	F	Split/Max. 500℃		●	●	●		●	●	●	●	●	■	■	■				17
	150	150UTDZ6H	F	Split/Max. 500℃		●	●	●	●	●	●	●	●	●	■	■	■				17
	300	300SCTDZ6H	F	Split/Max. 500℃		●	●	●		●	●	●	●	■	■	■	■				18
	300	300UTDZ6H	F	Split/Max. 500℃		●	●	●	●	●	●	●	●	■	■	■	■				18
	10K	10SCTDZ6H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●	■	■	■				17
	10K	10UTDZ6H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●	■	■	■				17
	20K	20SCTDZ6H	F	Split/Max. 425℃		●	●	●		●	●	●	●	■	■	■	■				18
	20K	20UTDZ6H	F	Split/Max. 425℃		●	●	●	●	●	●	●	●	■	■	■	■				18

* 1 Bore design: F=Full port
* 2 Operation: L=Lever, G=Gear
* 3 Worm gear operation is standardised for the sizes marked ■ with the prefix “G-” on each KITZ product code.
* 4 Please contact KITZ Corporation for details.

Product Range

Flanged High Performance Ball Valves

Shell Material	Class	KITZ Product Code	Bore *1	Size / Body Design	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	Page
					mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
Titanium	150	150TTB	F	Split		●	●	●		●	●	●	●	●	●	●	●				*
	300	300TTB	F	Split		●	●	●		●	●	●	●	●		●	●				*
	10K	10TTB	F	Split		●	●	●		●	●	●	●	●	●	●	●				*
	20K	20TTB	F	Split		●	●	●		●	●	●	●	●		●	●				*

* Please contact KITZ Corporation for details.

Flanged Trunnion Mounted Ball Valves

Shell Material	Class	KITZ Product Code	Bore *1	Size / Body Design	in.	2	3	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	Page
					mm	50	80	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	
Carbon Steel	150	150SCTCS	F	Super-firesafe *3		●	●	●	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	■	52
	300	300SCTCS	F	Super-firesafe *3		●	●	●	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	■	53
	600	600SCTCS	F	Super-firesafe *3		●	●	●	●	■	■	■	■	■	■	■		■	■	■	■				54
	900	900SCTCS	F	Super-firesafe *3		●	●	●	■	■	■	■	■	■	■	■		■							55
	1500	1500SCTCS	F	Super-firesafe *3		●	●	■	■	■	■	■	■	■	■	■									56
	150	150SCTCRS	R	Super-firesafe *3			●	●	●	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	52
	300	300SCTCRS	R	Super-firesafe *3			●	●	●	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	53
	600	600SCTCRS	R	Super-firesafe *3			●	●	●	●	●	■	■	■	■	■		■	■	■	■				54
	900	900SCTCRS	R	Super-firesafe *3			●	●	●	■	■	■	■	■	■	■		■							55
	1500	1500SCTCRS	R	Super-firesafe *3			●	●	■	■	■	■	■	■	■	■									56
Stainless Steel	150	150UTCS	F	Super-firesafe *3		●	●	●	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	■	52
	300	300UTCS	F	Super-firesafe *3		●	●	●	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	■	53
	600	600UTCS	F	Super-firesafe *3		●	●	●	●	■	■	■	■	■	■	■		■	■	■	■				54
	900	900UTCS	F	Super-firesafe *3		●	●	●	■	■	■	■	■	■	■	■		■							55
	1500	1500UTCS	F	Super-firesafe *3		●	●	■	■	■	■	■	■	■	■	■									56
	150	150UTCRS	R	Super-firesafe *3			●	●	●	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	52
	300	300UTCRS	R	Super-firesafe *3			●	●	●	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	53
	600	600UTCRS	R	Super-firesafe *3			●	●	●	●	●	■	■	■	■	■		■	■	■	■				54
	900	900UTCRS	R	Super-firesafe *3			●	●	●	■	■	■	■	■	■	■		■							55
	1500	1500SCTCRS	R	Super-firesafe *3			●	●	■	■	■	■	■	■	■	■									56
FILLTITE® Seated Carbon Steel and Stainless Steel	150	150SCTC1H	F	Split/MAX. 300°C		●	●	●			■	■	■	■	■	■									57
	150	150UTC1H	F	Split/MAX. 300°C		●	●	●			■	■	■	■	■	■									57
	300	300SCTC1H	F	Split/MAX. 300°C		●	●	■	■	■	■	■													58
	300	300UTC1H	F	Split/MAX. 300°C		●	●	■	■	■	■	■													58
	600	600SCTC1H	F	Split/MAX. 300°C		●	●	■	■	■	■	■													59
	600	600UTC1H	F	Split/MAX. 300°C		●	●	■	■	■	■	■													59
	10K	10SCTC1H	F	Split/MAX. 300°C		●	●	●			■	■	■	■	■	■									57
	10K	10UTC1H	F	Split/MAX. 300°C		●	●	●			■	■	■	■	■	■									57
	20K	20SCTC1H	F	Split/MAX. 300°C		●	●	■	■	■	■	■													58
	20K	20UTC1H	F	Split/MAX. 300°C		●	●	■	■	■	■	■													58
Metal Seated Carbon	600	600SCTC6H	F	Split/MAX. 500°C		●																			60
	600	600UTC6H	F	Split/MAX. 500°C		●																			60

* 1 Bore design: F=Full port (Reduced port type is also available.)
* 2 Worm gear operation is standard for the sizes marked ■ with the prefix "G-" on each KITZ product code.
* 3 Non firesafe types are also available.

Product Range

Threaded or Welded Ball Valves

Shell Material	Class	KITZ Product Code	Bore *1	Size / Body Design	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	Page
					mm	8	10	15	20	25	32	40				
Carbon Steel	600WOG	SCTK *2	D	Uni / Threaded ends		●	●	●	●	●	●	●	●			64
	800	800SCTK *3	R	Seal welded / Threaded or Socket welded ends		●	●	●	●	●	●	●	●			65,66
	1000WOG	SC3TZF *3	F	3-piece / Threaded or Socket welded ends		●	●	●	●	●	●	●				66
	1000WOG	SC3TZ *3	R	3-piece / Threaded Socket or welded ends				●	●	●	●	●	●			67
	1500/2000 WOG	AKSCTHZM *4	R	Split / Threaded ends		●	●	●	●	●	●	●	●			64
	1500/2000 WOG	AKSCTHWZM *4	R	Seal welded / Threaded ends		●	●	●	●	●	●	●	●			65
	3000WOG	3000SCTK *3	R	Seal welded / Threaded or Socket welded ends		●	●	●	●	●	●	●	●			65,66
Stainless Steel	600WOG	UTKM *2	D	Uni / Threaded ends		●	●	●	●	●	●	●	●			67
	800WOG	UTHM *2	R	Split / Threaded ends				●	●	●	●	●	●			68
	1500WOG	UTFM *2	F	Split / Threaded ends				●	●	●	●	●	●			68
	800WOG	UTH4LM/4TM	R	Split/3-way･4-seat / Threaded ends				●	●	●	●	●	●			71
	1000WOG	U3TZFM *3	F	3-piece / Threaded or Socket or welded ends		●	●	●	●	●	●	●				70
	1000WOG	U3TZM *3	R	3-piece / Threaded or Socket or welded ends				●	●	●	●	●	●			70
	1500/2000 WOG	AKUTHZM *4	R	Split / Threaded ends		●	●	●	●	●	●	●	●			69
	1500/2000 WOG	AKUTHWZM *4	R	Seal welded / Threaded ends		●	●	●	●	●	●	●	●			71
	150	AK150UTM *4	F	Split / Threaded ends			●	●	●	●	●	●	●	●	●	71
	10K	10UTM	F	Split / Threaded ends			●	●	●	●	●	●	●	●	●	71
Ductile Iron	20K	20ST	R	Split / Threaded ends				●	●	●	●	●	●			72
	400WOG	STZ	R	Split / Threaded ends		●	●	●	●	●	●	●	●			72
Cast Iron	10K	10FCT	R	Split / Threaded ends			●	●	●	●	●	●	●	●	●	72

*1 Bore design: F=Full port, R=Regular port, D=Reduced port
*2 Rc threaded ends are standard. Prefix “AK” means NPT threaded end.
*3 Rc threaded ends are standard. Prefix “AK” means NPT threaded ends and “AW” means socket welded ends.
*4 NPT threaded ends are only available.
*5 Please contact KITZ Corporation for details.

● Λ-port Ball Valve

Product Range

Threaded or Solder Ball Valves

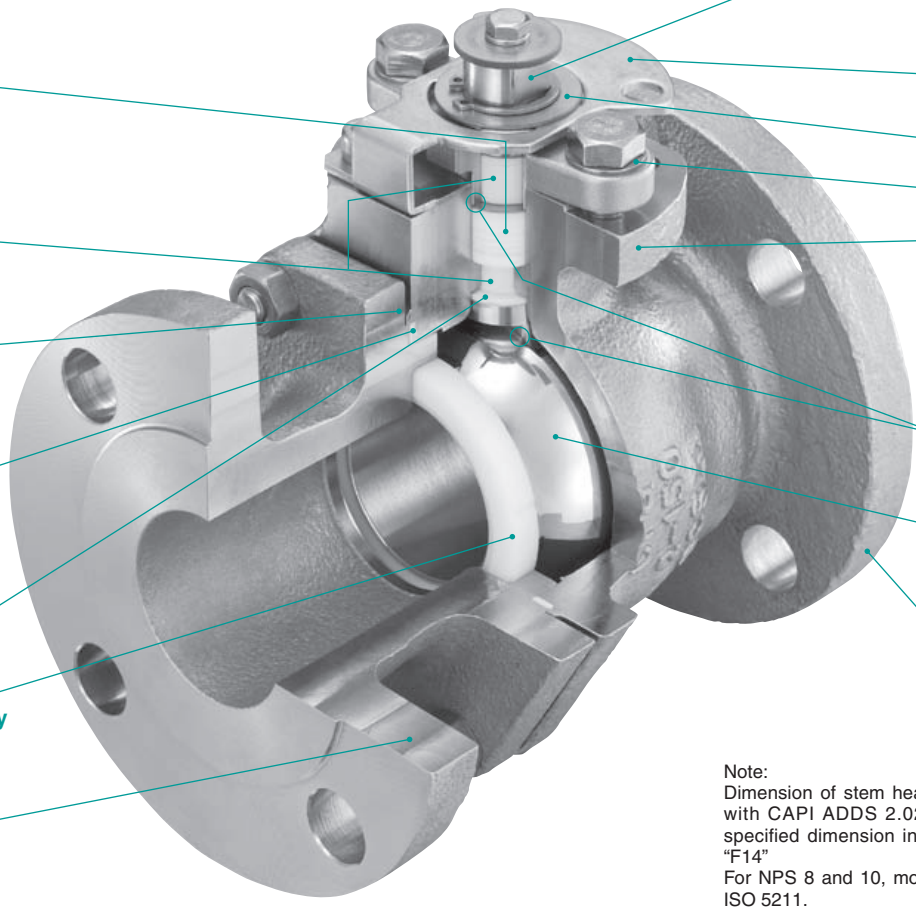
Shell Material	Class	KITZ Product Code	Bore *1	Design Body \ Size	in.	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	Page
					mm	6	10	10	15	20	25	32	40	50	65	80	100	
Bronze and Brass	600	AKTAF *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				73
	600	CTAF	F	2-Piece/Solder ends			●	●	●	●	●	●	●	●	●	●		73
	600	AKTFLL *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				73
	600	CTFLL	F	2-Piece/Solder ends					●	●	●	●	●	●				73
	600	AKTAFM *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				74
	600	CTAFM	F	2-Piece/Solder ends				●	●	●	●	●	●	●				74
	600	AKTAFP *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●	●	74
	600	AKTAFPM *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●	●	74
	600	AKTAFD *2	F	2-Piece/Threaded ends					●	●	●							75
	600	CTAFD	F	2-Piece/Solder ends					●	●	●							75
	600	AKTAFC *2	F	2-Piece/Threaded ends					●	●								75
	600	CTAFC	F	2-Piece/Solder ends					●	●								75
	600	AKTKFO *2	F	2-Piece/Threaded ends (M&F)			●	●	●	●	●							75
	600	AKTAFU *2	F	2-Piece/Threaded ends (F&Union)			●	●	●	●	●	●	●	●				76
	600	AKTAFS *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				76
	400	TH	R	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●		77
	600	CTH	R	2-Piece/Solder ends			●	●	●	●	●	●	●	●	●	●		77
	400	T	R	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●	●	77
	400	TT	R	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●	●	77
	400	AKT *2	R	2-Piece/Solder ends			●	●	●	●	●	●	●	●	●	●	●	77
	400	TO	R	2-Piece/Threaded ends (M&F)			●	●	●	●	●							77
	400	TM	R	Split/Threaded ends				●	●	●	●	●	●	●	●	●		78
	600	TK	R	Uni/Threaded ends		●	●	●	●	●	●	●	●	●				78
	600	TKT	R	Uni/Threaded ends		●	●	●	●	●	●	●	●	●				78
	600	AKTK *2	R	Uni/Threaded ends		●	●	●	●	●	●	●	●	●				78
	600	TKW	R	Uni/Threaded ends		●	●	●	●	●	●							78
	400	TF	F	2-Piece/Threaded ends					●	●	●	●	●	●				79
	150	TFJ	F	2-Piece/Threaded ends					●	●	●	●	●	●				79
	400	TL	R	2-Piece/Threaded ends					●	●	●	●	●	●				79
	400	CTL	R	2-Piece/Solder ends					●	●	●	●	●	●				79
	400	TLT	R	2-Piece/Threaded ends					●	●	●	●	●	●				79
	400	TLTU	R	2-Piece/Threaded end M&Union					●	●	●							80
	400	CTLTU	R	2-Piece/Solder end &Union					●	●	●							80
	600	AK3TM *2	F	2-Piece/Threaded ends				●	●	●	●	●	●	●	●			80
	600	C3TM	F	3-Piece/Solder ends			●	●	●	●	●	●	●	●	●			80
	600	ZO	R	2-Piece/Threaded ends (M&F)			●	●	●	●	●							80
	400	ZS	R	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				81
	600	ZET	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				81
	600	AKSZA *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●	●	81
	600	CSZA	F	2-Piece/Solder ends				●	●	●	●	●	●	●	●	●	●	81
	600	SZA	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				82
	600	AKSZAW *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				82
	400	CSZAW	F	2-Piece/Solder ends				●	●	●	●	●	●	●				82
	400	TN	R	3-Way/Threaded ends			●	●	●	●	●	●	●	●	●	●		82
	400	CTN	R	3-Way/Solder ends			●	●	●	●	●	●	●	●	●	●		82
	400	AKTN *2	R	3-Way/Threaded ends			●	●	●	●	●	●	●	●	●	●		82
	400	T4T	R	3-Way/Threaded ends					●	●	●	●	●	●				83
	400	AKT4T *2	R	3-Way/Threaded ends					●	●	●	●	●	●				83
	400	T4L	R	3-Way/Threaded ends					●	●	●	●	●	●				83
	400	AKTNP *2	R	3-Way/Threaded ends					●	●	●	●	●	●				83
	400	CTNP	R	3-Way/Solder ends					●	●	●	●	●	●				83
		TG	R	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●		83

*1 Bore design: F=Full port, R=Reduced Port
*2 Rc threaded ends are standard. Prehix “AK” means NPT threaded end.

Flooting Ball Valves

KITZ 150/300SCTDZ/UTDZM Series
Full Port, Split Body, Side Entry Ball Valves

This is an illustrated cross-section of a typical KITZ split body floating type full port ball valve to exhibit the basic design concept. The actual design of a valve may be slightly different from this illustration, depending on its size and pressure class.



Note:
Dimension of stem head are in accordance with CAPI ADDS 2.02, but the maximum specified dimension in CAPI ADDS 2.02 is "F14"
For NPS 8 and 10, mounting pads are F16/ ISO 5211.

2˝ KITZ 150UTDZ

Bubble-tight sealing performance with HYPATITE® PTFE ball seats

HYPATITE® PTFE ball seats, standard stem seals of KITZ ball valves, are made of denatured PTFE, a molecularly reinforced PTFE copolymer, and specifically engineered for high **bidirectional** sealing performance and prolonged service life of valves. Its resistance to high or low temperature, creep or compression, abrasion and corrosion is all outstanding. As an option, KITZ **SWELLESS®** ball seats principally made of PFA are recommended specifically for monomer service. This epoch-making new seat maximizes resistance to the permeation of monomer into its molecular structure (generally known as a "swelling" problem) which causes seat deformation and seriously affects shut-off function of valves in styrene and butadiene monomer service.

Simplified actuator mounting

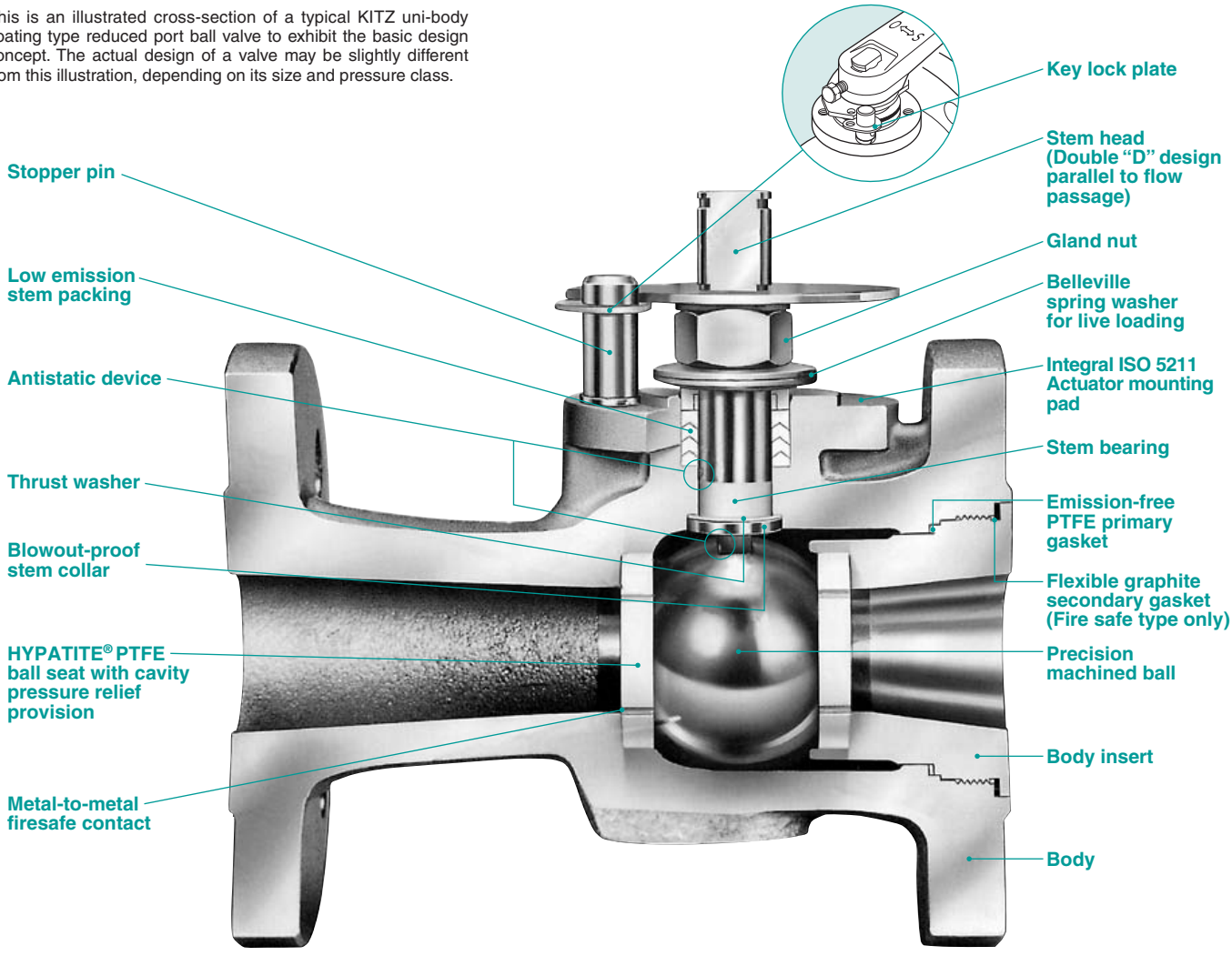
For 150/300SCTDZ/UTDZM and SCTA/UTAM Series ball valves, **ISO 5211** actuator mounting pad is integrally provided for uniformly simplified mounting of any actuators provided with valve mounting flanges designed to ISO 5211 dimensional requirement. 150UTBM Series ball valves are provided with KITZ standard integral actuator mounting pad.

Easy maintenance

Split body design for KITZ SCTDZ/UTDZM Series provides the convenience of very easy maintenance critically required for process plants. Body inserts of uni-body, end entry design for KITZ 150/300SCTA/UTAM Series are threaded into the valve body with provision of unthreading for valve disassembly in case of maintenance operation.

KITZ 150/300SCTA/UTAM Series
Reduced Port, Uni-body, End Entry Ball Valves

This is an illustrated cross-section of a typical KITZ uni-body floating type reduced port ball valve to exhibit the basic design concept. The actual design of a valve may be slightly different from this illustration, depending on its size and pressure class.



1 1/2˝ KITZ 150SCTA

Extensive safety considerations

KITZ ball valves are designed with extensive safety considerations for users. Blow-out proof stems, provision of locking devices and prevention of misalignment of lever handles provide safe handling in the field and trouble-free operation in the plant. Antistatic devices, firesafe seal design and cavity pressure relief features all assure the economic benefits of smooth, steady plant operation. KITZ advancements in low emission design features contribute to the global battle against fugitive emissions while greatly reducing costs caused by product loss.

For sour service

Hardness of body, body cap/insert, ball and stem material of KITZ Class 150/300 steel ball valves are controlled by appropriate heat treatment and conformed to the hardness requirements in NACE MR0175, as standard.
In addition to the above, following requirements are optionally available.
-Bolting for valves exposed to sour environment.
-NACE requirements for Class 600 and higher steel ball valves.
Please contact KITZ for those requirements.

Seven Safety Considerations for KITZ 150/300SCTDZ/UTDZM 150UTBM and 150/300SCTA/UTAM Series Ball Valves

1. **Double "D"** stem head design provides mounting of the lever handle always in parallel to the flow passage. Misaligment of the handle is thus prevented. (Fig. 1)

2. The lower end of the stem is designed with an integral collar to be **blowout-proof**. It also func-tions as the backseat for assured stem sealing. (Fig. 2)

3. An **antistatic feature** is provided to ensure electrical continuity between ball, stem, and body. (Fig. 2)

4. Facility for mounting a **locking device** for preven-tion of accidental valve operation is provided.

5. **Plant fires** are a serious concern for soft-seated ball valves because of possible fluid leakage and consequent increase of the fire magnitude caused by deterioration of resilient sealing materials.

   KITZ ball valves are engineered for firesafety and successfully **fire tested** to minimize both external and internal fluid leakage after plant fires. They have **post-fire metal-to-metal contact** of all sealing areas such as:

   - Contact between ball and valve shell (Fig. 3 & 4)
   - Contact between stem and valve shell (Fig. 5 & 6)
   - Valve shell coupling flanges of split body design (Fig. 7 & 8)
   - Contact between valve body and insert of uni-body design (Fig. 9)

   The problem of external fluid leakage is more serious than internal leakage through the valve bore because of the fear of fueling the fire. To prevent this, KITZ ball valves may be ordered with **flexible graphite packing** and **gaskets**, which are extremely heat resistant, and not affected by the fire.

6. The surface of stem and stuffing box, and interface clearance of stem-to-gland, stem-to-body and gland-to-stuffing box are precision controlled on machining and assembly for **low emission service**. A Belleville spring washer is employed for live loading on gland packing rings, to minimize need of gland retightening for **low emission service.**

7. Some line fluid is usually left trapped inside the ball-body cavity. This fluid can expand under the influence of high ambient or line temperature. An abnormal increase of such cavity pressure may sometimes damage the valve seats or balls, unless the valve has an adequate cavity pressure relief provision. **Trunnion mounted ball valves generally provide perfect protection from this problem**. Please contact KITZ Corporation for details.

   In case of floating ball valves, however, their rather simple seating principle requires some special protection from excessive cavity pressure rise **when highly volatile liquid in service is subject to frequent and large temperature variation, while the valve is not frequently operated**. KITZ 150/300SCTDZ/UTDZM and 150/300SCTA/UTAM Series ball valves offer **self-relieving of excessive cavity pressure** as a standard feature engineered in **HYPATITE® PTFE** ball seats.

   Other general solutions for floating ball valves include employment of automatic pressure relief valves or drilling pressure equalization holes on the ball. If the requirement of automatic cavity pressure relief is as critical as in chlorine service, be sure to contact KITZ Corporation or its distributors for technical advice.

   This capability is influenced by many variables including: fluid characteristics, variations in pressure, temperature and thermal cycles.

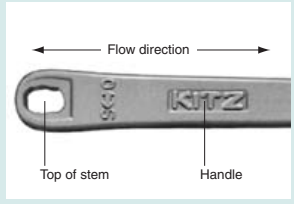


Fig. 1

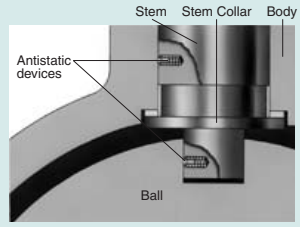


Fig. 2

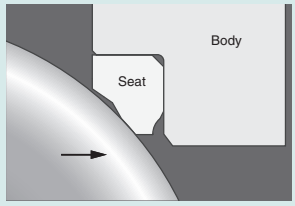


Fig. 3 (Before fire)

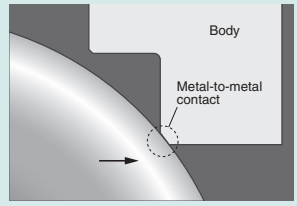


Fig. 4 (After fire)

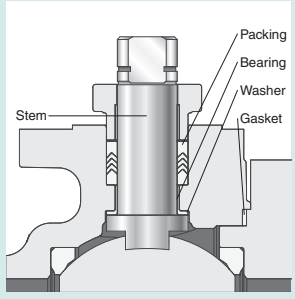


Fig. 5 (Before fire)

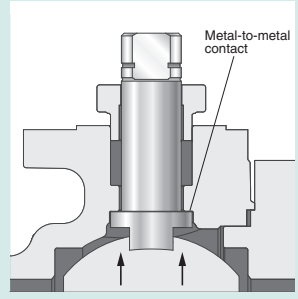


Fig. 6 (After fire)

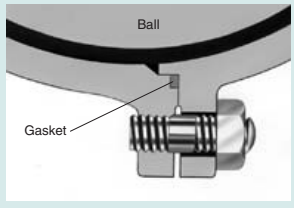


Fig. 7 (Before fire)

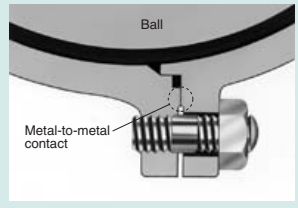


Fig. 8 (After fire)

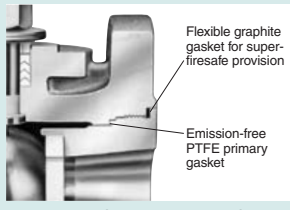


Fig. 9 (Uni-body insert)

As the primary body seal, emission free PTFE gasket is always provided. Flexible graphite gasket may be additionally employed as the secondary body seal for super-firesafe provision.

Class 150 Stainless Steel Ball Valves

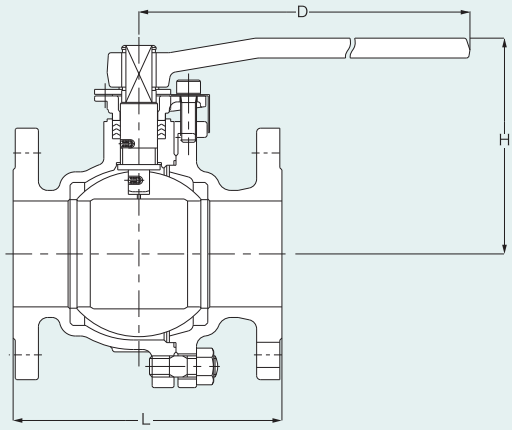
Full port, Split body, Side entry design

Features

- Antistatic device
- Blowout-proof stem
- Double “D” stem head
- High performance **HYPATITE® PTFE** ball seats

Page 93 for Pressure-Temperature Ratings.
Page 36 for Construction and Materials.

150UTBM



Dimensions of 150UTBM

Unit: mm

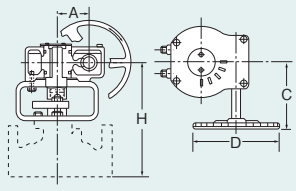
Valve Size													
	in.	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8	10
	mm	15	20	25	40	50	65	80	100	125	150	200	250
Ball Bore		15	20	25	40	50	65	80	100	125	150	200	250
L		108	117	127	165	178	190	203	229	356	394	457	533
H		102	105	124	115	120	155	165	200	220	295	355	Gear operation
D		130	130	160	230	230	400	400	460	460	1000	1500	Gear operation

Valve operator
1/2″～8″: Lever operation
5″～8″: Optional gear operation
10″: Standard gear operation

Gear Operation

Unit: mm

Class	150	Gear Operator			
		H	D	C	A
Valve Size (inch)	5	312	310	165	65.5
	6	337	310	165	65.5
	8	414	360	210	88.5
	10	477	500	363	93.5



Worm gear operators may be mounted on KITZ ball valves at your option for the smoothest valve operation. Electric or pneumatic actuators are also optionally available. Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Class 600/1500 Stainless Steel/Carbon Steel Ball Valves

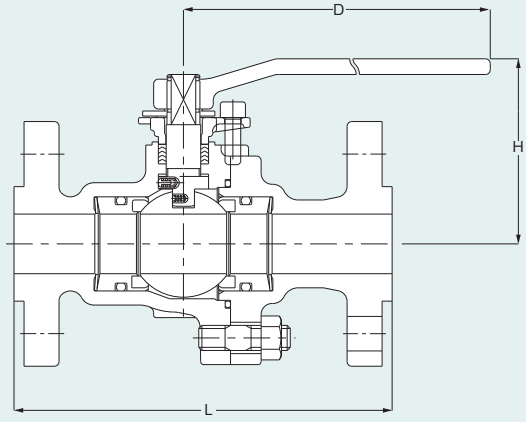
Full port, Split body, Side entry design

Features

- Antistatic device
- Blowout-proof stem
- Fire test certification★ (API 607) ...Carbon Steel only
- Double "D" stem head
- Ball seats: Reinforced PTFE with MoS_2 for Class 600
  Nylon with MoS_2 for Class 1500

Page 94 for Pressure-Temperature Ratings.
Page 38 to 41 for Construction and Materials.

600UTBM/600SCTB
1500UTBM/1500SCTB



Dimensions of 600UTBM, 600SCTB

Unit: mm

Valve Size					
	in.	1/2	3/4	1	1 1/2
	mm	15	20	25	40
Ball Bore		13	19	25	38
L		165	190	216	241
H		105	108	130	118
D		130	130	160	230

Valve operator
Lever operation

Options (Carbon Steel only)
★Flexible graphite packing and flexible graphite spiral wound gasket
(See Page 8 and 38 and 39)
● Ball and stem to 316

Dimensions of 1500UTBM, 1500SCTB

Unit: mm

Valve Size					
	in.	1/2	3/4	1	1 1/2
	mm	15	20	25	40
Ball Bore		13	19	25	38
L		216	229	254	305
H		132	117	123	157
D		160	230	230	400

Valve operator
Lever operation

Options (Carbon Steel only)
★Flexible graphite packing and flexible graphite spiral wound gasket
(See Page 8 and 40 and 41)
● Ball and stem to 316

Class 150/300 Stainless Steel/Carbon Steel Ball Valves

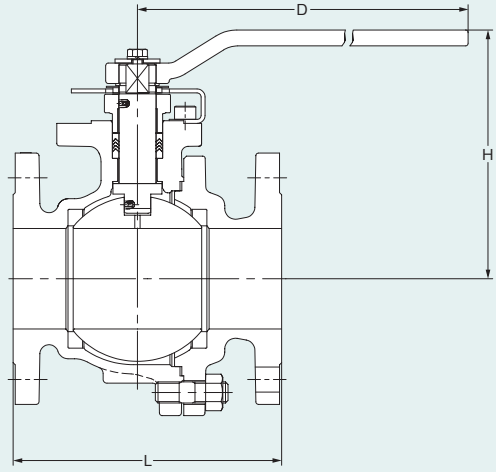
Full port, Split body, Side entry design

Features

- Antistatic device
- Blowout-proof stem
- Fire test certification★(API 607, ISO 10497)
- Stem head conform with CAPI ADDS 2.02 dimensions
- High performance **HYPATITE® PTFE** ball seats
- Actuator mounting pad to ISO 5211
- Conform to NACE MR0175 for hardness of body, body cap, stem and ball.

Page 90 for Pressure-Temperature Ratings.
Page 35 for Construction and Materials.
Page 87 for Dimension of Actuator Mounting Pad.

150UTDZM/150SCTDZ
300UTDZM/300SCTDZ



Dimensions of 150UTDZM, 150SCTDZ

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8	10
	mm	15	20	25	32*	40	50	65	80	100	125	150	200	250
Ball Bore		14	19	24	32	38	50	64	76	100	123	151	202	
L		108	117	127	140	165	178	190	203	229	356	394	457	
H		108	111	124	128	134	143	179	189	224	240	315	406	Gear operation
D		130	130	160	160	230	230	400	400	460	460	1000	1500	Gear operation

*for Stainless Steel

Valve operator
1/2″~8″: Lever operation
5″~8″: Optional gear operation
10″: Standard gear operation

Option
★Flexible graphite packing and gasket
(See Page 8 and 35)
- Ball and stem to CF8M (316) (150SCTDZ)

Dimensions of 300UTDZM, 300SCTDZ

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32*	40	50	65	80	100	125	105	200
Ball Bore		14	19	24	32	38	50	64	76	100	123	151	202
L		140	152	165	178	190	216	241	283	305	381	403	502
H		108	111	124	128	134	143	179	189	251	267	315	406
D		130	130	160	160	230	230	400	400	750	750	1000	1500

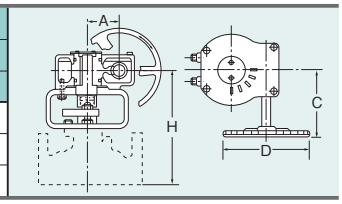
Valve operator
1/2″~8″: Lever operation
6″~8″: Optional gear operation

Option
★Flexible graphite packing and gasket
(See Page 8 and 35)
- Ball and stem to CF8M (316) (300SCTDZ)

Gear Operation

Unit: mm

Class	150	300	Gear Operator							
			H		D		C		A	
			150	300	150	300	150	300	150	300
Valve Size (inch)	6	6	322	335	310	360	165	210	66.5	88.5
	8	8	412	412	360	360	210	210	88.5	88.5
	10		448	—	500	—	363	—	93.5	—



Worm gear operators may be mounted on KITZ ball valves at your option for the smoothest valve operation. Electric or pneumatic actuators are also optionally available. Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Class 150/300 Stainless Steel/Carbon Steel Ball Valves

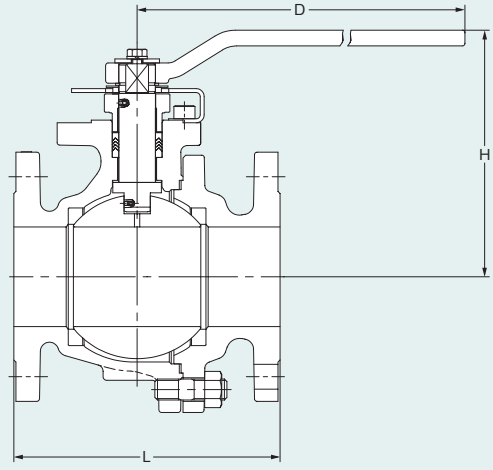
Full port, Split body, Side entry design

Features

- FILLTITE® ball seats. Temperature range: –29℃ to 300℃
- Antistatic device
- Blowout-proof stem
- Fire test certification (API 607, ISO 10497)
- Stem head conform with CAPI ADDS2.02 dimensions
- Actuator mounting pad to ISO 5211
- Conform to NACE MR0175 for hardness of body, body cap, stem and ball

Page 90 for Pressure-Temperature Ratings.

150UTDZ1H/150SCTDZ1H
300UTDZ1H/300SCTDZ1H



Dimensions of 150UTDZ1H, 150SCTDZ1H Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
	mm	15	20	25	32	40	50	65	80	100	125	150	200	250
Ball Bore		14	19	24	32	38	50	64	76	100	123	151	202	253
L		108	117	127	140	165	178	190	203	229	356	394	457	533
H		108	111	124	128	134	143	179	189	251	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	230	400	400	750	Gear operation	Gear operation	Gear operation	Gear operation

Valve operator
1/2″～4″: Lever operation
5″～10″: Standard gear operation

Dimensions of 300UTDZ1H, 300SCTDZ1H Unit: mm

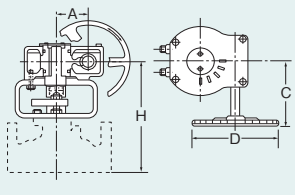
Valve Size	in.	1/2	3/4	1	1 1/2	2	2 1/2	3	4	6	8
	mm	15	20	25	40	50	65	80	100	150	200
Ball Bore		14	19	24	38	50	64	76	100	151	202
L		149	152	165	190	216	241	283	305	403	502
H		108	111	124	134	143	179	189	Gear operation	Gear operation	Gear operation
D		130	130	160	230	230	400	400	Gear operation	Gear operation	Gear operation

Valve operator
1/2″～3″: Lever operation
4″～8″: Standard gear operation

Options
● Ball and stem to CF8M (316)

Gear Operation Unit: mm

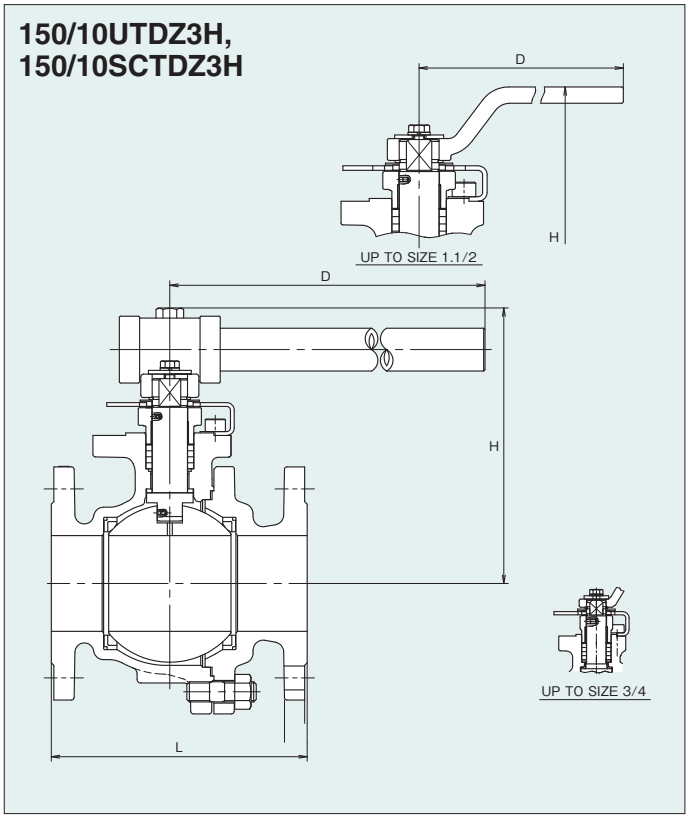
Class	150	300	Gear Operator							
			H		D		C		A	
			150	300	150	300	150	300	150	300
Valve Size (inch)		4		258		310		165		65.5
	5	5	274		310		165		65.5	
	6	6	335	332	360	500	210	363	88.5	93.5
	8	8	409	417	500	500	363	377	93.5	134.0
	10		456		500		377		134.0	



Electric or pneumatic actuators are also optionally available.
Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Hard graphite seated floating ball design valve (Trim 3H)

150/10UTDZ3H, 150/10SCTDZ3H



Page 91 for Pressure-Temperature Ratings.

Dimensions of 150UTDZ3H, 150SCTDZ3H

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		108	111	124	128	134	148	209	219	251	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	600	1000	Gear operation	Gear operation	Gear operation

*150UTDZ3H only.

Dimensions of 10UTDZ3H, 10SCTDZ3H

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		108	111	124	128	134	148	209	219	251	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	600	1000	Gear operation	Gear operation	Gear operation

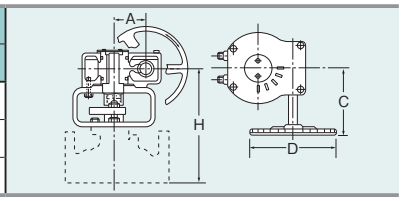
*10UTDZ3H only.

Valve operator
1/2″～4″: Lever operation
5″～8″: Standard gear operation

Gear Operation

Unit: mm

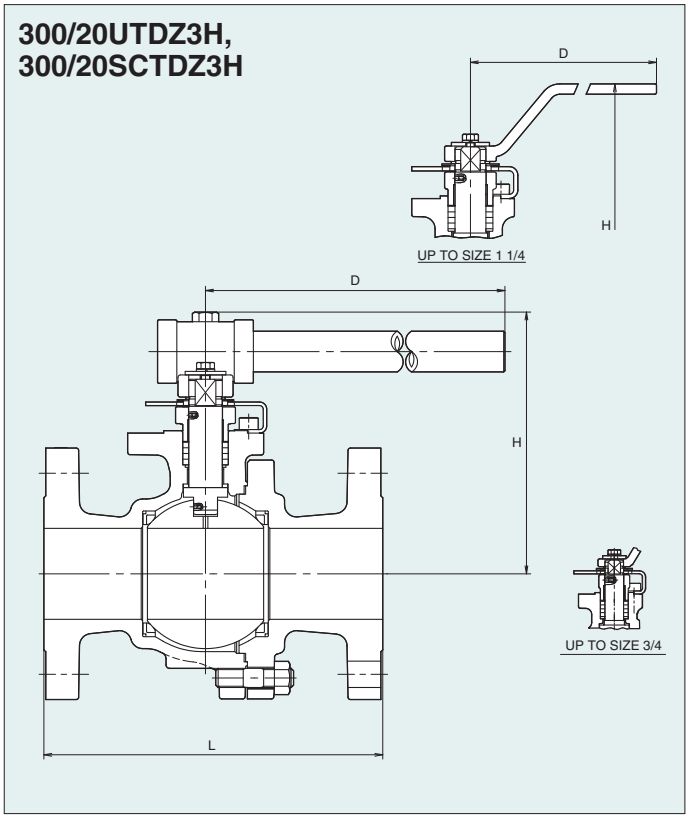
Class	150	10	Gear Operator			
			H	D	C	A
Valve Size (inch)	5	5	247	310	165	66.5
	6	6	335	360	210	88.5
	8	8	417	500	377	134.0



Worm gear operators may be mounted on KITZ ball valves at your option for the smoothest valve operation. Electric or pneumatic actuators are also optionally available. Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Hard graphite seated floating ball design valve (Trim 3H)

300/20UTDZ3H, 300/20SCTDZ3H



Page 91 for Pressure-Temperature Ratings.

Dimensions of 300UTDZ3H, 300SCTDZ3H

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		140	152	165	178	190	216	241	283	305	381	403	502
H		108	111	124	128	139	148	209	219	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	600	600	1000	1000	Gear operation	Gear operation	Gear operation	Gear operation

＊300UTDZ3H only.

Dimensions of 20UTDZ3H, 20SCTDZ3H

Unit: mm

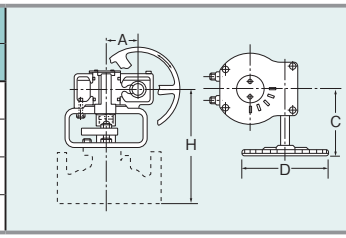
Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		140	152	165	178	190	216	241	283	305	381	403	502
H		108	111	124	128	139	148	209	219	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	600	Gear operation	Gear operation	Gear operation	Gear operation

＊20UTDZ3H only.

Gear Operation

Unit: mm

Class	300	20	Gear Operator			
			H	D	C	A
Valve Size (inch)	5	5	286	360	210	88.5
	6	6	302	360	210	88.5
	8	8	360	500	377	134.0
	10	10	417	500	377	213.0

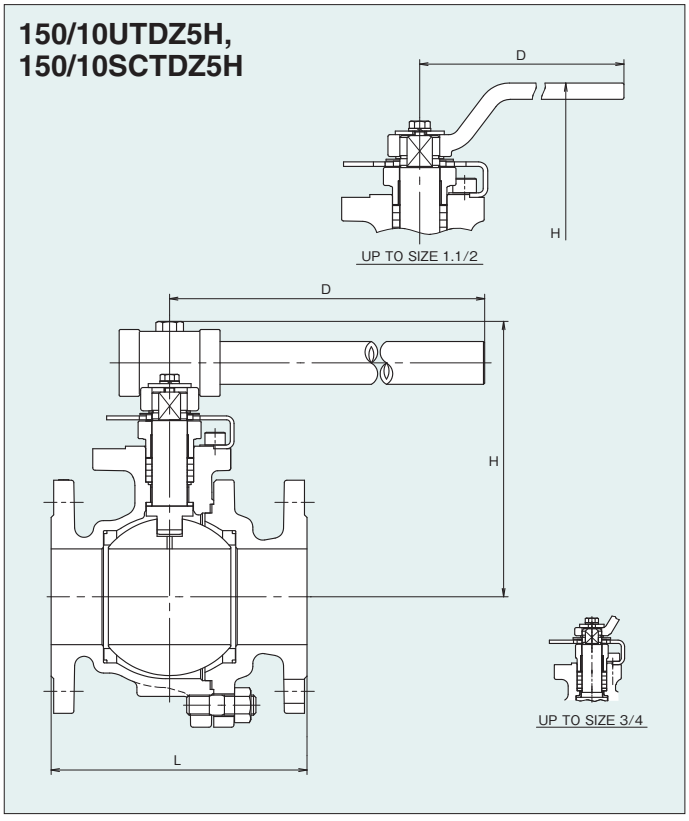


Valve operator
1/2″～3″: Lever operation
4″～8″: Standard gear operation

Worm gear operators may be mounted on KITZ ball valves at your option for the smoothest valve operation. Electric or pneumatic actuators are also optionally available. Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Metal seated floating ball design valve (Trim 5H)

150/10UTDZ5H, 150/10SCTDZ5H



Page 92 for Pressure-Temperature Ratings.

Dimensions of 150UTDZ5H, 150SCTDZ5H

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		108	111	124	128	134	148	209	219	251	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	600	1000	Gear operation	Gear operation	Gear operation

*150UTDZ5H only.

Dimensions of 10UTDZ5H, 10SCTDZ5H

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		108	111	124	128	134	148	209	219	251	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	1000	1000	Gear operation	Gear operation	Gear operation

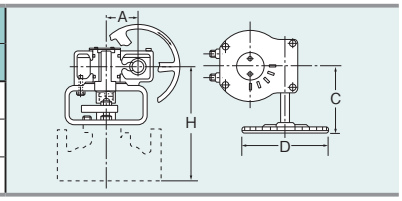
*150UTDZ5H only.

Valve operator
1/2″～4″: Lever operation
5″～8″: Standard gear operation

Gear Operation

Unit: mm

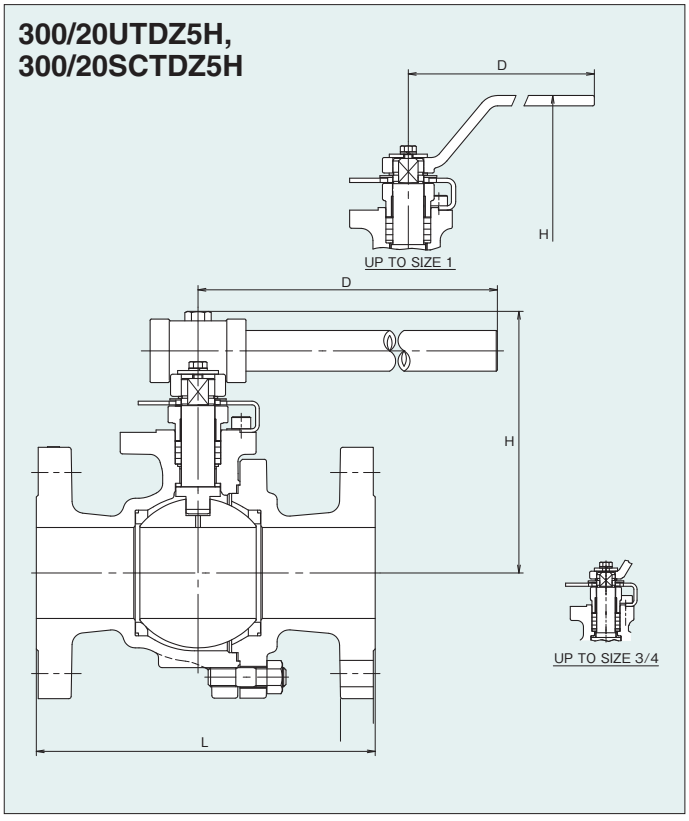
Class	150	10	Gear Operator			
			H	D	C	A
Valve Size (inch)	5	5	302	360	210	88.5
	6	6	335	360	210	88.5
	8	8	417	500	377	134.0



Worm gear operators may be mounted on KITZ ball valves at your option for the smoothest valve operation. Electric or pneumatic actuators are also optionally available. Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Metal seated floating ball design valve (Trim 5H)

300/20UTDZ5H, 300/20SCTDZ5H



Page 92 for Pressure-Temperature Ratings.

Dimensions of 300UTDZ5H, 300SCTDZ5H

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		140	152	165	178	190	216	241	283	305	381	403	502
H		108	111	124	128	139	148	209	219	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	600	600	1000	1000	Gear operation	Gear operation	Gear operation	Gear operation

Dimensions of 20UTDZ5H, 20SCTDZ5H

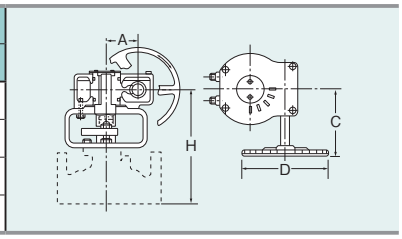
Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		140	152	165	178	190	216	241	283	305	381	403	502
H		108	111	124	128	139	148	209	219	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	600	600	1000	1000	Gear operation	Gear operation	Gear operation	Gear operation

Gear Operation

Unit: mm

Class	300	20	Gear Operator			
			H	D	C	A
Valve Size (inch)	4	4	286	360	210	88.5
	5	5	299	500	210	88.5
	6	6	360	500	377	134.0
	8	8	489	500	377	213.0

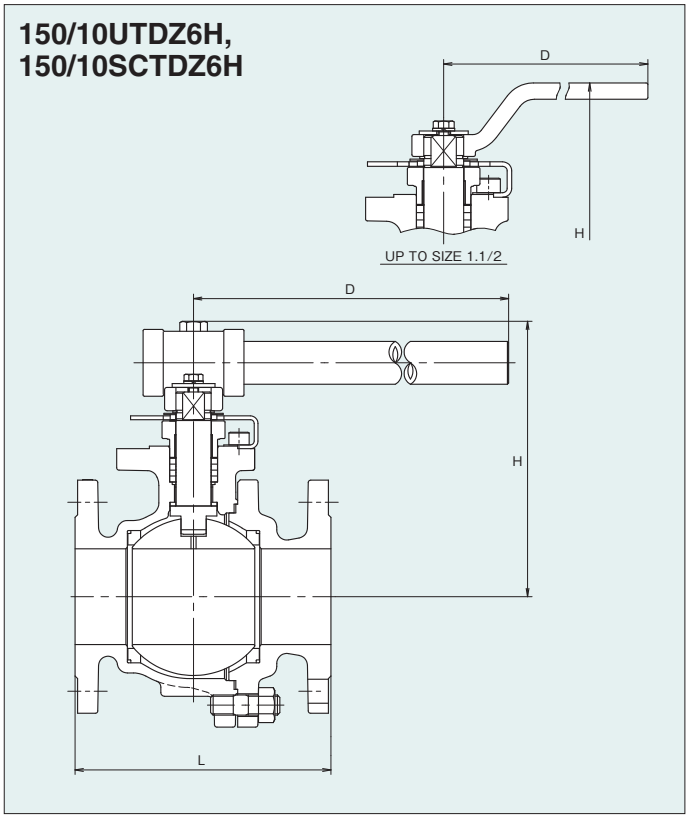


Valve operator
1/2″～3″: Lever operation
4″～8″: Standard gear operation

Worm gear operators may be mounted on KITZ ball valves at your option for the smoothest valve operation. Electric or pneumatic actuators are also optionally available. Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Metal seated floating ball design valve (Trim 6H)

150/10UTDZ6H, 150/10SCTDZ6H



Page 92 for Pressure-Temperature Ratings.

Dimensions of 150UTDZ6H, 150SCTDZ6H

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		108	111	124	128	134	148	209	219	251	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	600	1000	Gear operation	Gear operation	Gear operation

*150UTDZ6H only.

Dimensions of 10UTDZ6H, 10SCTDZ6H

Unit: mm

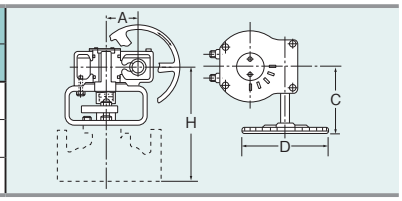
Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		108	111	124	128	134	148	209	219	251	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	600	1000	Gear operation	Gear operation	Gear operation

*10UTDZ6H only.

Gear Operation

Unit: mm

Class	150	10	Gear Operator			
			H	D	C	A
Valve Size (inch)	5	5	302	360	210	88.5
	6	6	335	360	210	88.5
	8	8	417	500	377	134.0

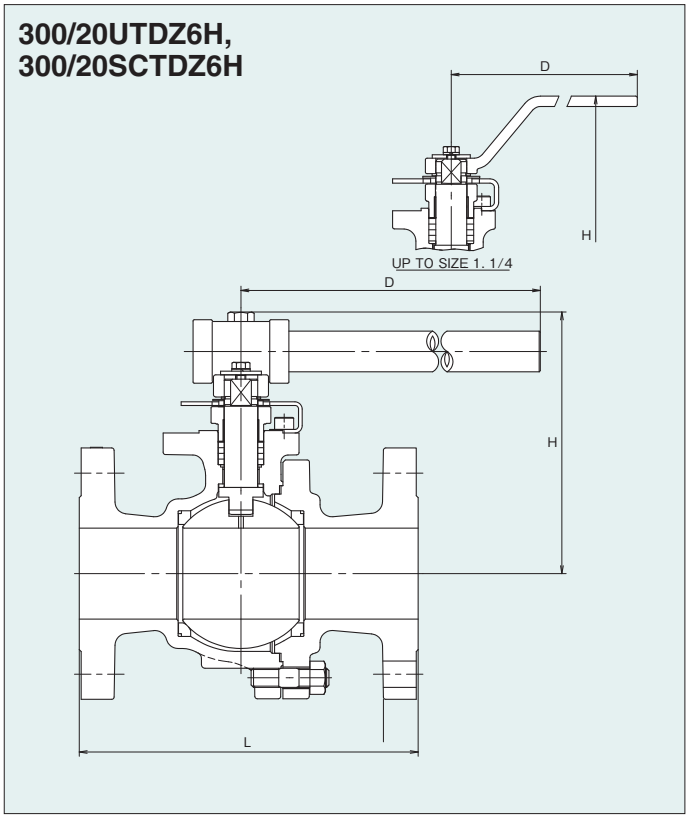


Valve operator
1/2″～4″: Lever operation
4″～8″: Standard gear operation

Worm gear operators may be mounted on KITZ ball valves at your option for the smoothest valve operation. Electric or pneumatic actuators are also optionally available. Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Metal seated floating ball design valve (Trim 6H)

300/20UTDZ6H, 300/20SCTDZ6H



Page 92 for Pressure-Temperature Ratings.

Dimensions of 300UTDZ6H, 300SCTDZ6H

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		140	152	165	178	190	216	241	283	305	381	403	502
H		108	111	124	128	139	148	209	219	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	600	600	1000	1000	Gear operation	Gear operation	Gear operation	Gear operation

*300UTDZ6H only.

Dimensions of 20UTDZ6H, 20SCTDZ6H

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		140	152	165	178	190	216	241	283	305	381	403	502
H		108	111	124	128	139	148	209	219	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	600	600	1000	1000	Gear operation	Gear operation	Gear operation	Gear operation

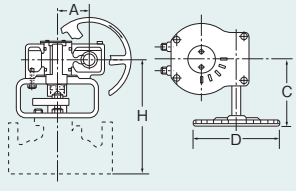
*20UTDZ6H only.

Valve operator
1/2″～3″: Lever operation
4″～8″: Standard gear operation

Gear Operation

Unit: mm

Class	300	20	Gear Operator							
			H		D		C		A	
			300	20	300	20	300	20	300	20
Valve Size (inch)	4	4	286	286	360	360	210	210	88.5	88.5
	5	5	299	299	500	500	210	363	88.5	93.5
	6	6	360	360	500	500	377	377	134.0	134.0
	8	8	489	489	500	500	377	377	213.0	213.0



Worm gear operators may be mounted on KITZ ball valves at your option for the smoothest valve operation. Electric or pneumatic actuators are also optionally available. Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Class 150 Stainless Steel Pocketless Ball Valves

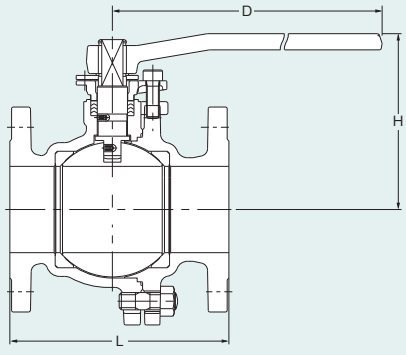
Full port, Split body, Side entry design

Page 93 for Pressure-Temperature Ratings.

Features

- Unique filled cavity provides excellent resistance to media build up and/or stagnation between seats
- Antistatic device
- Blowout-proof stem
- Double “D” stem head
- High performance **HYPATITE® PTFE** ball seats
- Actuator mounting pad to KITZ standard

150UTBPM



Valve operator
1/2″～8″: Lever operation
5″～8″: Optional gear operation

Dimensions of 150UTBPM

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	40	50	65	80	100	125	150	200
Ball Bore		15	20	25	40	50	65	80	100	125	150	200
L		108	117	127	165	178	190	203	229	356	394	457
H		102	105	124	115	120	155	165	200	220	295	355
D		130	130	160	230	230	400	400	460	460	1000	1500

Class 150 Stainless Steel Jacketed Ball Valves

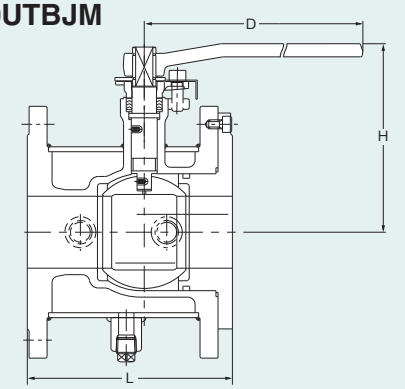
Full port

Page 93 for Pressure-Temperature Ratings.

Features

- Fully jacketed to maintain media temperature
- Antistatic device
- Double “D” stem head
- High performance **HYPATITE® PTFE** ball seats
- Actuator mounting pad to KITZ standard

150UTBJM



Valve operator
1/2″～6″: Lever operation
6″: Optional gear operation

Note
・Maximum allowable pressure is 1.37MPa (199psi) at 260˚C (500˚F).
・10K type is also available.

Dimensions of 150UTBJM

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/2	2	2 1/2	3*	4*	6*
	mm	15	20	25	40	50	65	80	100	150
Ball Bore		15	20	25	40	50	65	65	80	125
L		110	120	130	165	180	190	200	230	270
H		131	135	150	150	157	188	188	213	258
D		130	130	160	230	230	400	400	400	460

*150UTRJM

Class 150 Stainless Steel 3-way Ball Valves

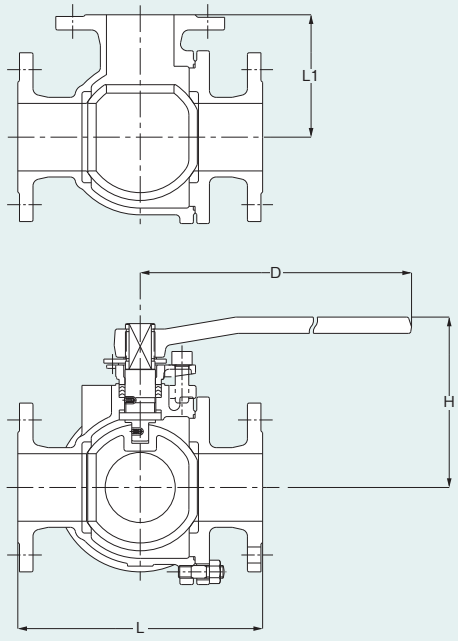
Full port, 2-seated or 4-seated, Split body, Side entry design

Features

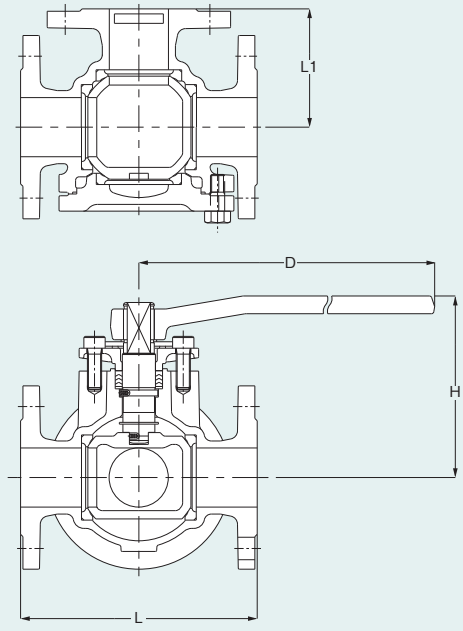
- Used for diverting or mixing process media
- One 3-way valve can replace several other valves plus the associated piping pieces
- Antistatic device
- Blowout-proof stem
- Double “D” stem head
- High performance **HYPATITE® PTFE** ball seats
- Actuator mounting pad to KITZ standard

150UTB 2L/2T: Page 90 for Pressure-Temperature Ratings. (See UTB Series)
150UTB 4LA/4TA: Page 94 for Pressure-Temperature Ratings.

150UTB2L (L-port, 2-seated)
150UTB2T (T-port, 2-seated)



150UTB4LA (L-port, 4-seated)
150UTB4TA (T-port, 4-seated)



Dimensions of 150UTB2L, 150UTB2T

Unit:mm

Valve Size	in.	1	1½	2	2½	3	4	6*
	mm	25	40	50	65	80	100	150
Ball Bore		25	38	51	65	76	102	127
L		165	210	220	250	262	342	437
L1		82.5	105	110	125	131	171	218.5
H		124	115	123	155	165	200	220
D		160	230	230	400	400	460	460

*150UTR2LM, 150UTR2TM

Valve operator
1″～6″: Lever operation
6″: Optional gear operation

Note
·10K type is also available.

Dimensions of 150UTB4LA, 150UTB4TA

Unit:mm

Valve Size	in.	½	¾	1	1½	2	2½	3	4	5*	6*	8*
	mm	15	20	25	40	50	65	80	100	125	150	200
Ball Bore		15	19	25	38	51	64	76	102	100	125	150
L		120	140	160	180	200	242	262	342	348	407	463
L1		65	70	80	90	100	121	131	171	174	203.5	231.5
H		128	132	135	146	155	185	198	267	267	289	335
D		160	160	160	400	400	460	460	1000	1000	1000	1500

*150UTR4LAM, 150UTB4TM

Valve operator
½″～8″: Lever operation
5″～8″: Optional gear operation

Note
·10K type is also available.

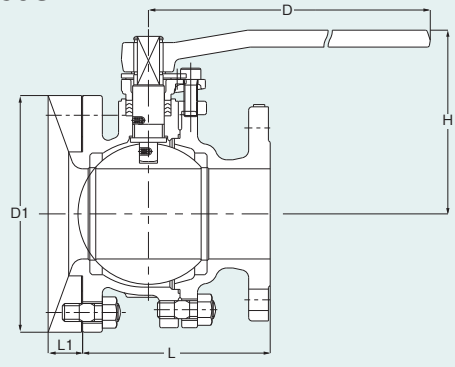
Class 150 Stainless Steel Tank Ball Valves

Full port, Split body, Side entry design

Page 93 for Pressure-Temperature Ratings.

Features
- Direct mounting to tank bottom
- Churning media evenly
- Antistatic device
- Blowout-proof stem
- Double “D” stem head
- High performance **HYPATITE®** **PTFE** ball seats
- Actuator mounting pad to KITZ standard

150UTBTM



Valve operator
1″～6″: Lever operation

Note
- Maximum allowable temperature is 200˚C (392˚F).
- Class 300 and 10K/20K types are also available.

Dimensions of 150UTBTM

Unit: mm

Valve Size	in.	1	1½	2	2½	3	4	5	6	8	10
	mm	25	40	50	65	80	100	125	150	200	250
Ball Bore		25	40	50	65	80	100	125	150	For these sizes, please contact KITZ Corporation.	
L		102	125	142	160	171	176	255	292		
H		150	134	143	177	187	222	242	312		
D		160	230	230	400	400	460	460	1000		
L1		35	35	41	43	45	53	53	53		
D1		135	155	175	185	210	280	305	330		

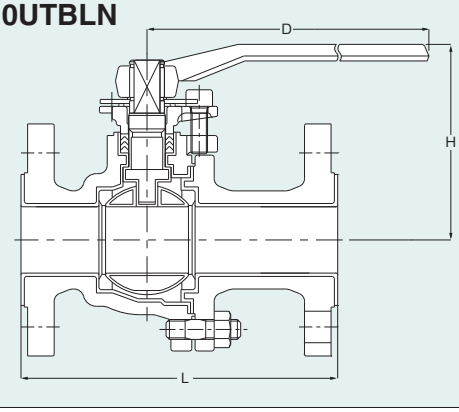
10K Stainless Steel PFA Lined Ball Valves

Full port, Split body, Side entry design

Page 94 for Pressure-Temperature Ratings.

Features
- Highly corrosion-resistant PFA lining
- Fine lining without a pinhole
- Highly heat-resistant PFA
- No additives or paints are included
- Double “D” stem head
- High performance **HYPATITE®** **PTFE** ball seats
- Actuator mounting pad to KITZ standard

10UTBLN



Valve operator
½″～4″: Lever operation

Note
- Class 150 type is also available.

Dimensions of 10UTBLN

Unit: mm

Valve Size	in.	½	¾	1	1½	2	2½	3	4
	mm	15	20	25	40	50	65	80	100
Ball Bore		15	20	25	40	50	65	80	100
L		140	152	165	191	216	240	250	280
H		104	106	129	118	124	157	166	204
D		130	130	160	230	230	400	400	460

Class 150/300 Stainless Steel/Carbon Steel Ball Valves

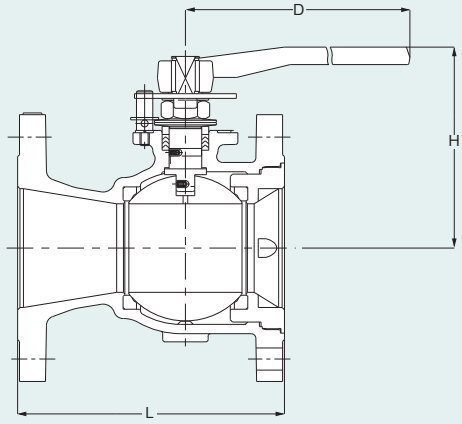
Regular port, Uni-body, End entry design

Features

- Antistatic device
- Blowout-proof stem
- Fire test certification★ (API 607)
- Double “D” stem head
- High performance **HYPATITE® PTFE** ball seats
- Actuator mounting pad to ISO 5211
- Conform to NACE MR0175 for hardness of body, body insert, stem and ball.

Page 93 for Pressure-Temperature Ratings.
Page 37 for Construction and Materials.
Page 88 for Dimension of Actuator Mounting Pad.

150UTAM/150SCTA
300UTAM/300SCTA



Dimensions of 150UTAM/150SCTA

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/2	2	3	4	6	8	10
	mm	15	20	25	40	50	80	100	150	200	250
Ball Bore		10	12.5	17	30	38	58	76	114	144	187
L		108	117	127	165	178	203	229	267	292	330
H		89	91	100	127	132	197	213	246	293	346
D		140	140	160	180	230	400	400	750	1000	1500

Valve operator
1/2″~10″: Lever operation
6″~10″: Optional gear operation

Options
★Flexible graphite packing and gasket
(See Page 8 and 37)
● Ball and stem to CF8M (316) (150SCTA)

Dimensions of 300UTAM/300SCTA

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/2	2	3	4	6	8	10
	mm	15	20	25	40	50	80	100	150	200	250
Ball Bore		10	12.5	17	30	38	58	76	114	144	187
L		140	152	165	190	216	283	305	403	419	457
H		89	91	100	127	132	197	213	246	293	346
D		140	140	160	180	230	400	400	750	1000	1500

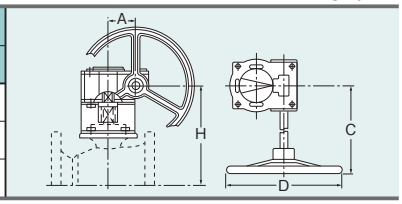
Valve operator
1/2″~10″: Lever operation
6″~10″: Optional gear operation

Options
★Flexible graphite packing and gasket
(See Page 8 and 37)
● Ball and stem to CF8M (316) (300SCTA)

Gear Operation

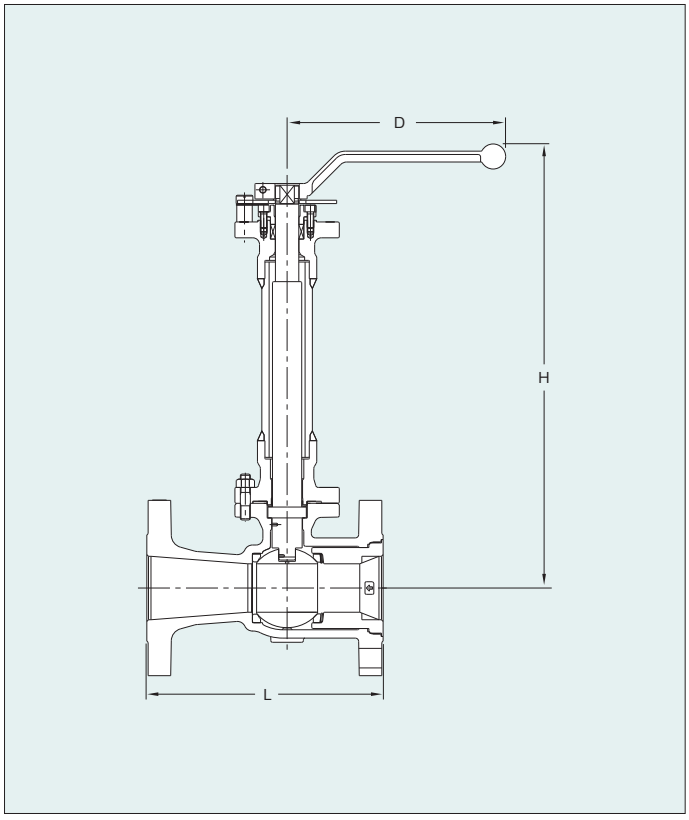
Unit: mm

Class	150	300	Gear Operator			
			H	D	C	A
Valve Size (inch)	6	6	257	300	283	71
	8	8	306	300	283	71
	10	10	364	400	337	86



Worm gear operators may be mounted on KITZ ball valves at your option for the smoothest valve operation. Electric or pneumatic actuators are also optionally available. Contact KITZ distributors for appropriate choice and sizing of valve actuators.

Class150/300 Stainless Steel Floating Ball Design (Reduced Port)



Page 98 for Pressure-Temperature Ratings.

Design Specifications

Items	
Wall thickness	BS 5351
Cryogenic valve citation standard	MESC
Face to face dimensions	ASME B16.10
Flange	ASME B16.5

Materials

Name of parts	Materials
Body	SCS14A
Bonnet	SCS14A
Insert	SCS14A
Stem	SUS630
Seat spring	SUS304CSP (Size 3B over)
Ball	SCS14A
Gland	SCS14A
Gland packing	Flexible graphite cored PTFE braided packing + Flexible graphite die mold packing
Ball seat	HYPATITE PTFE
Handle	FCD400
Gasket	Flexible graphite spiral wound
	Flexible graphite seat
	PTFE
Bonnet bolt	A320 Gr. B8M CL2
Bonnet nut	A194 Gr. 8M

Dimensions of Class 150 RF-flanged 150UTALM

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/2	2	3	4	6	8	10
	mm	15	20	25	40	50	80	100	150	200	250
L		108	117	127	165	178	203	229	267	292	330
H		312	314	275.5	405	421	532	548	※	※	※
D		140	140	160	180	230	400	400	※	※	※

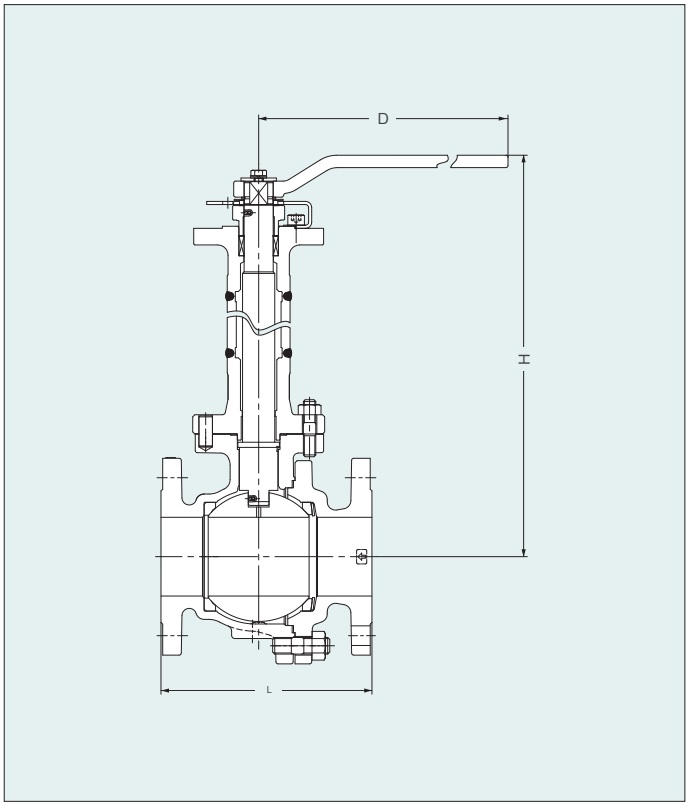
Dimensions of Class 300 RF-flanged 300UTALM

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/2	2	3	4	6	8	10
	mm	15	20	25	40	50	80	100	150	200	250
L		140	152	165	190	216	283	305	403	419	457
H		312	314	268	405	421	532	548	※	※	※
D		140	140	160	180	230	400	400	※	※	※

※Gear operation only Please contact KITZ Corporation for detailes.

Class 150/300 10/20K Stainless Steel Floating Ball Design (Full Port)



Page 99 for Pressure-Temperature Ratings.

Design Specifications

Items	
Wall thickness	ASME B16.34
Face to face dimensions	ASME B16.10
Flange	JIS B 2220 (10K／20K)
	ASME B16.5 (150／300)

Materials

Name of parts	Materials
Body	SCS13A
Body cap	SCS13A
Bonnet	SUS304
Stem	SUS304
Seat spring	SUS304CSP (Size 2B over)
Ball	SUS304 or SCS13A
Ball seat A	HYPATITE PTFE
Ball seat B	HYPATITE PTFE
	PCTFE (Size 1 1/2B under)
Gasket	Flexible graphite spiral wound
	Flexible graphite seat
Bonnet bolt	SUS304 (B8)
Bonnet nut	SUS304 (8)
Gland packing	Flexible graphite die mold packing

Dimensions of Class 150 RF-flanged 150UTDZL

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
	mm	15	20	25	32	40	50	65	80	100	125	150	200	250
L		108	117	127	140	165	178	190	203	229	356	394	457	533
H		330	333	354	358	421	430	526	536	619	635	758	849	937
D		130	130	160	160	230	230	400	400	※	※	※	※	※

Dimensions of Class 300 RF-flanged 300UTDZL

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
	mm	15	20	25	32	40	50	65	80	100	125	150	200	250
L		140	152	165	—	190	216	241	283	305	—	403	502	—
H		330	333	354	—	421	435	557	557	619	—	755	849	—
D		130	130	160	—	230	300	600	※	※	—	※	※	—

Dimensions of Class 10K RF-flanged 10UTDZL

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
	mm	15	20	25	32	40	50	65	80	100	125	150	200	250
L		108	117	127	140	165	178	190	203	229	356	394	457	533
H		330	333	354	358	421	430	526	536	619	635	758	841	937
D		130	130	160	160	230	230	400	400	※	※	※	※	※

Dimensions of Class 20K RF-flanged 20UTDZL

Unit: mm

Nominal size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
	mm	15	20	25	32	40	50	65	80	100	125	150	200	250
L		140	152	165	178	190	216	241	283	305	381	403	502	—
H		330	333	354	358	421	435	557	557	619	663	755	849	—
D		130	130	160	160	230	300	600	※	※	※	※	※	—

※Gear operation only Please contact KITZ Corporation for detailes.

Class 150 Low Temperature Service Ball Valves

Full port, Split body, Side entry design

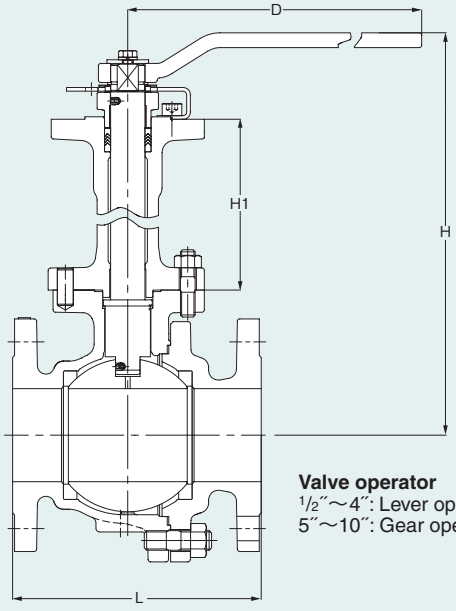
Features

- Extended bonnet for assured stem seal and freezing prevention.
- Bolted bonnet with body seal gasket.
- Protection of stem alignment by means of two bearings built on top and bottom of stem extension.

Page 94 for Pressure-Temperature Ratings.

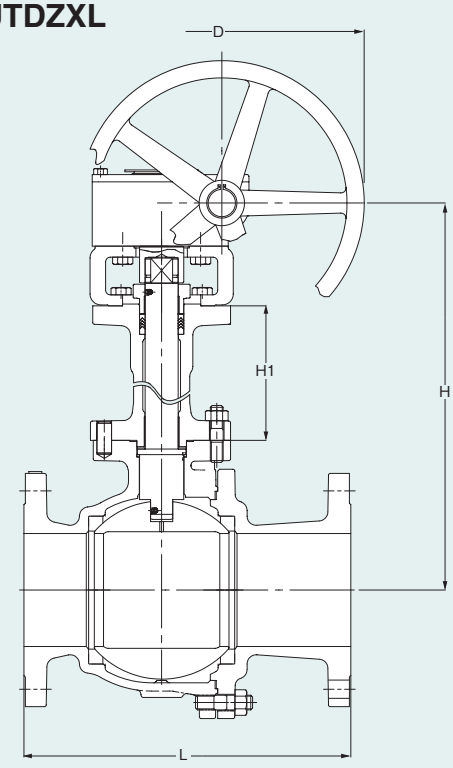
Lowest working temperature: −104℃

150UTDZXL



Valve operator
1/2″～4″: Lever operation
5″～10″: Gear operation

G-150UTDZXL



Refer to Page 32 and 33 for the basic construction and materials.

Dimensions of 150UTDZXL

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	mm	15	20	25	32	40	50	65	80	100
Ball Bore		14	19	24	32	38	50	64	76	100
L		108	117	127	140	165	178	190	203	229
H		228	231	268	272	300	309	373	383	458
H1		120	120	143	143	165	165	194	194	207
D		130	130	160	160	230	230	400	400	750

Dimensions of G-150UTDZXL

Unit: mm

Valve Size	in.	5	6	8	10
	mm	125	150	200	250
Ball Bore		123	151	202	253
L		356	394	457	533
H		482	572	685	724
H1		207	236	268	268
D		310	360	500	500

Standard materials

Parts	Materials
Body	CF8*
Body cap	CF8*
Bonnet	CF8
Stem	304
Ball	304/CF8
Gland	CF8
Gland packing	PTFE
Ball seat	HYPATITE® PTFE
Gasket	Ceramic filled PTFE
Bonnet bolt/nut	B8/8
Cap bolt/nut	B8/8

*CF8M are available

Class 300 Low Temperature Service Ball Valves

Full port, Split body, Side entry design

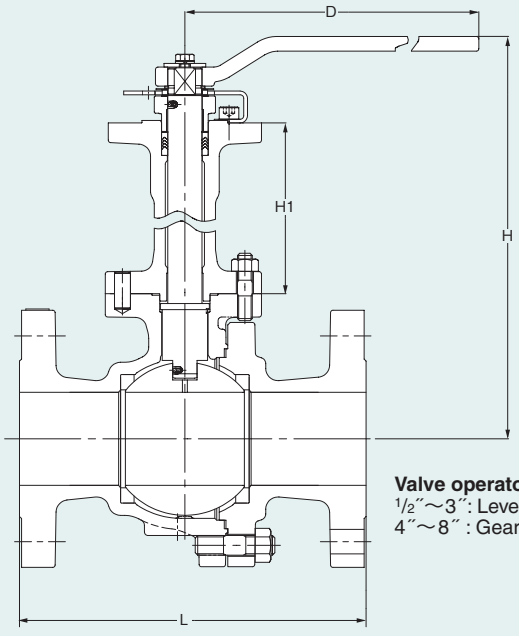
Features

- Extended bonnet for assured stem seal and freezing prevention.
- Bolted bonnet with body seal gasket.
- Protection of stem alignment by means of two bearings built on top and bottom of stem extension.

Page 94 for Pressure-Temperature Ratings.

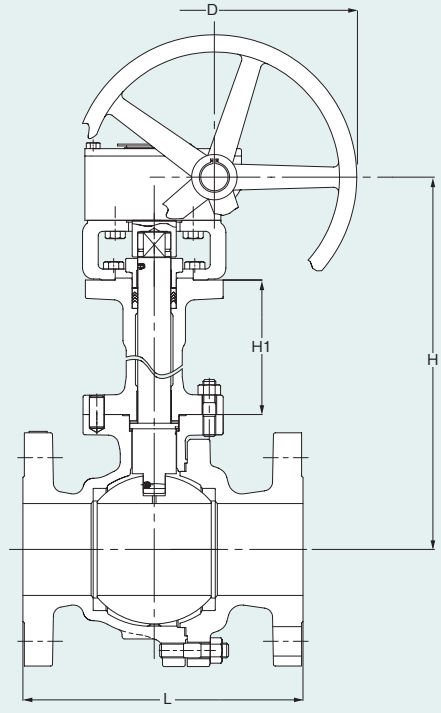
Lowest working temperature: −104℃

300UTDZXL



Valve operator
1/2″～3″: Lever operation
4″～8″ : Gear operation

G-300UTDZXL



Refer to Page 32 and 33 for the basic construction and materials.

Dimensions of 300UTDZXL

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/2	2	2 1/2	3
	mm	15	20	25	40	50	65	80
Bore Size		14	19	24	38	50	64	76
L		140	152	165	190	216	241	283
H		228	231	268	300	309	373	383
H1		120	120	143	165	165	194	194
D		130	130	160	230	230	400	400

Dimensions of G-300UTDZXL

Unit: mm

Valve Size	in.	4	6	8
	mm	100	150	200
Bore Size		100	151	202
L		305	403	502
H		466	569	685
H1		207	236	268
D		310	500	500

※Valve size 1 1/4″ and 5″ are available

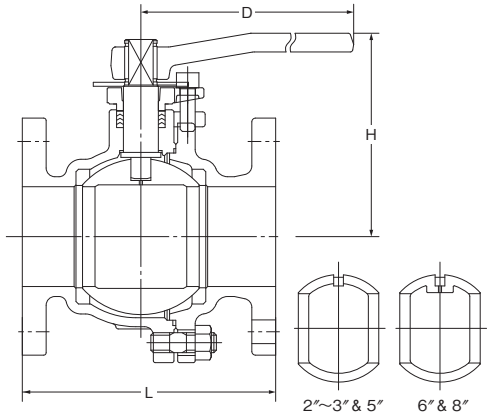
Standard materials

Parts	Materials
Body	CF8*
Body cap	CF8*
Bonnet	CF8
Stem	304
Ball	304/CF8
Gland	CF8
Gland packing	PTFE
Ball seat	HYPATITE® PTFE
Gasket	Ceramic filled PTFE
Bonnet bolt/nut	B8/8
Cap bolt/nut	B8/8

*CF8M are available

10K Ball Valve (Full Port)

10STBF
10STLBF (Gas service)
FF-flanged



F-F dimension : ASME B16.10
End flanges : JIS B 2239 10K

Dimensions of 10STBF, 10STLBF Unit: mm

size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
	mm	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		106	109	130	135	115	120	153	162	199	219	293	352
D		130	130	160	160	230	230	400	400	460	460	1000	1500

※RF-flanged ends shall be optionally available.

Maximum Service Pressure

Code	Valve size	Temperature	Pressure
10STBF	All size	120℃ W.O.G.	1.37MPa
	4″ and smaller	160℃ W.O.G.	0.98MPa
	5″ to 8″	140 W.O.G.	0.98MPa
10STLBF	F03	80℃ gas	1.18MPa

●Use for lubricating or hydraulic oil is acceptable.

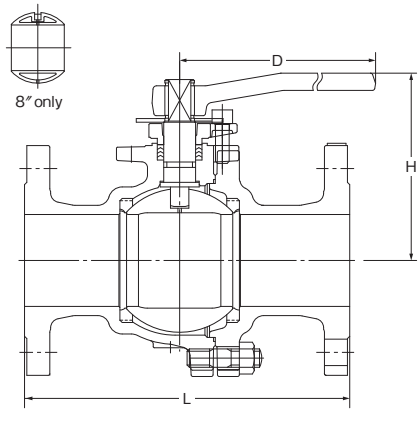
Materials

Code	JIS material
Body	FCD-S
Body cap	FCD-S
Stem	SUS 403
Ball	SUS 304 / SCS 13A / SUS 304TP
Gland	FCD-S
Gland packing	PTFE
Handle	FCD 400
Gasket	PTFE
Packing washer	SUS 304 (1/2″ ~1 1/4″)
Ball seat	HYPATITE PTFE*1
Cap bolt / nut	SS 400*2
Gland bolt	SCM 435
O ring*3	NBR
Stopper	SUS 430
Name plate*3	SUS 304

*1PTFE or C/F PTFE is optionally available.
*2Different bolt / nut material is required for service exceeding temperature range of 0~225℃ .
Contact KITZ Corporation for technical advice.
*3for 10STLB only
Contact KITZ Corporation for use of valve actuators.

20K Ball Valve for Gas Service (Full Port)

20STLB
RF-flanged



F-F dimension : ASME B16.10
End flanges : JIS B 2239 20K

Dimensions of 20STLB Unit: mm

size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8
	mm	15	20	25	32	40	50	65	80	100	150	200
L		140	152	165	178	190	216	241	283	305	403	502
H(open)		106	109	130	135	115	120	153	162	241	293	352
D		130	130	160	160	230	230	400	400	750	1000	1500

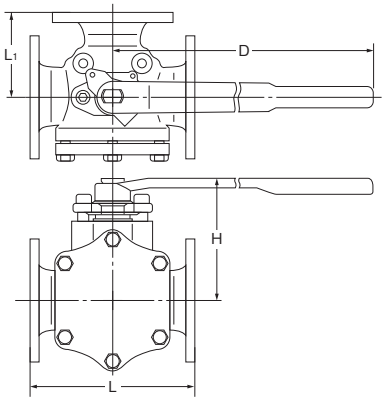
80℃ Gas 2.4MPa

Materials

Code	JIS material
Body	FCD-S
Body cap	FCD-S
Stem	SUS 403
Ball	SUS 304 / SCS 13A
Gland	FCD-S
Gland packing	PTFE
Gasket	PTFE
Ball seat	HYPHTITE PITFE
O-ring	NBR
Cap bolt / nut	S45C
Stopper	SUS 430
Snap ring	SK5
Handle	FCD 400-15

10K Ball Valve 3-way 4-seat

10STB4LAF
(L port. Full Port 1 1/2″~4″)
10STB4TAF
(T port. Full Port 1 1/2″~4″)
10STR4LAF
(L port. Reduced Port 5″ & larger)
10STR4TAF
(T port. Reduced Port 5″ & larger)



E-E dimension : KITZ Std.
End flanges : JIS B 2239 10K

120℃ W.O.G. 1.0MPa
150℃ W.O.G. 0.4MPa

Materials

Code	JIS material
Body	FCD-S
Body cap	FCD-S
Ball	SCS 13A
Stem	SUS 304
Ball seat	HYPATITE PTFE
Gland packing	PTFE

Gear operators may be optionally used for 6″ and 8″.

● Page 100 for Allowable Port Orientation.

Dimensions of 10STB4LAF, 10STB4TAF, 10STR4LAF, 10STR4TAF Unit: mm

size	in.	1 1/2	2	2 1/2	3	4	5	6	8
	mm	40	50	65	80	100	125	150	200
L	(STB)	180	200	240	260	330	—	—	—
	(STR)	—	—	—	—	—	340	400	450
L_1	(STB)	90	100	120	130	165	—	—	—
	(STR)	—	—	—	—	—	170	200	225
H	(STB)	143	152	177	190	259	—	—	—
	(STR)	—	—	—	—	—	259	281	323
D	(STB)	400	400	460	460	1000	—	—	—
	(STR)	—	—	—	—	—	1000	1000	1500

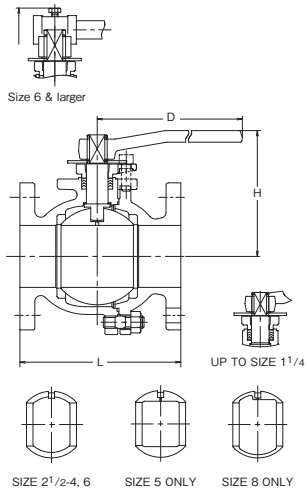
※RF-flanged ends shall be optionally available.

CLASS 125 IRON BALL VALVE (Full Port)

120ºC Non-shock water 1.37MPa, 120ºC Water, oil, gas 0.98MPa
Saturated steam 0.69MPa

125FCTB

Blowout-proof stem



Materials

Parts	Material	JIS Spec.
Body	Cast Iron	A126 CL. B
Body cap	Cast Iron	A126 CL. B
Stem	Stainless Steel	A276 Type403
Ball	Stainless Steel	A276 Type 304 or A312 Gr.TP304 orA351 Gr.CF8
Grand packing	PTFE	
Gasket	PTFE	
Ball Seat	PTFE	
Cap bolt	Carbon Steel	
Handle	Ductile Iron	

Design Specifications

Items	
Shell wall thickness and general valve design	KITZ Standard
Face-to-face dimensions End-to-end dimensions	ASME B16.10 Class150
End flange dimensions Gasket contact facing	ASME B16.1 Class125

Dimensions of 125FCTB

Unit: mm

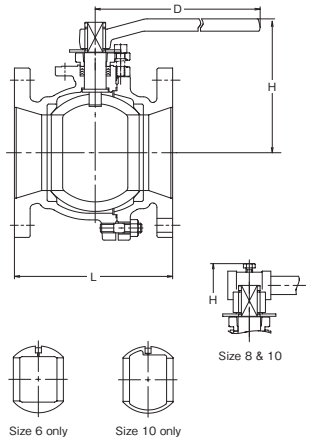
Valve Size	in.	2	2 1/2	3	4	6	8
	mm	50	65	80	100	150	200
L		178	190	203	229	394	457
H		120	155	165	200	295	355
D		230	400	400	460	1000	1500

CLASS 125 IRON BALL VALVE (Reduced Port)

120ºC Non-shock water 1.37MPa, 120ºC Water, oil, gas 0.98MPa
Saturated steam 0.69MPa

125FCTR

Blowout-proof stem



Materials

Parts	Material	JIS Spec.
Body	Cast Iron	A126 CL. B
Body cap	Cast Iron	A126 CL. B
Stem	Stainless Steel	A276 Type403
Ball	Stainless Steel	A312 Gr.TP304 or A351 Gr.CF8
Grand packing	PTFE	
Gasket	PTFE	
Ball Seat	PTFE	
Cap bolt	Carbon Steel	
Handle	Ductile Iron	

Design Specifications

Items	
Shell wall thickness and general valve design	KITZ Standard
Face-to-face dimensions End-to-end dimensions	ASME B16.10 Class150
End flange dimensions Gasket contact facing	ASME B16.1 Class125

Dimensions of 125FCTR

Unit: mm

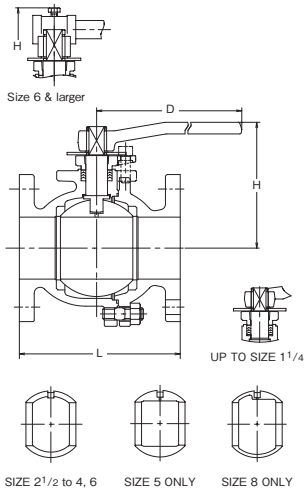
Valve Size	in.	6	8	10
	mm	150	200	250
L		267	292	330
H		220	295	355
D		460	1000	1500

10K IRON BALL VALVE (Full Port)

120ºC Non-shock water 1.37MPa, 120ºC Water, oil, gas 0.98MPa
Saturated steam 0.69MPa

10FCTB

Blowout-proof stem



Materials

Parts	Material	JIS Spec.
Body	Cast Iron	FC200
Body cap	Cast Iron	FC200
Stem	Stainless Steel	SUS403
Ball	Stainless Steel	SCS13A or SUS304 or SUS304TP
Grand packing	PTFE	
Gasket	PTFE	
Ball Seat	PTFE	
Cap bolt	Carbon Steel	SS400
Handle	Ductile Iron	FCD400

Design Specifications

Items	
Shell wall thickness and general valve design	KITZ Standard
Face-to-face dimensions End-to-end dimensions	ASME B16.10 Class150
End flange dimensions Gasket contact facing	ASME B16.1 Class125

Dimensions of 10FCTB

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
	mm	15	20	25	32	40	50	65	80	100	125	150	200	250*
L		110	120	130	140	165	180	190	200	230	300	340	450	533
H		102	105	124	128	114	121	154	163	199	219	292	352	477
D		130	130	160	160	230	230	400	400	460	460	1000	1500	—

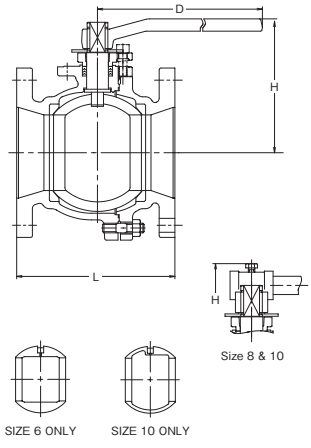
*Note: Gear Operated. Contact KITZ or KITZ distributors for details.

JIS 10K IRON BALL VALVE (Reduced Port)

120ºC Non-shock water 1.37MPa, 120ºC Water, oil, gas 0.98MPa
Saturated steam 0.69MPa

10FCTR

Blowout-proof stem



Materials

Parts		Material	JIS Spec.
Body		Cast Iron	FC200
Bonnet		Cast Iron	FC200
Stem		Forged Brass	C3771BD
Disc		Cast Iron	FC200
Disc seat ring		Bronze	CAC406
Body seat ring		Bronze	CAC406
Gland		Ductile Iron	FCD-S
Gland packing		Asbestos-free	
Gasket		Asbestos-free	
Gland bolt/nut		Carbon Steel	SS400
Bonnet bolt/nut		Carbpn Steel	SS400
Bonnet bushing		Bronze	CAC406
Hand wheel	11/2 to 8	Cast Iron	FC250
	10 to 12	Ductile Iron	FCD400

Design Specifications

Items	
Shell wall thickness and general valve design*	KITZ Standard
Face-to-face dimensions End-to-end dimensions	JIS B2002
End flange dimensions Gasket contact facing	JIS B2239 10K

*Nominal size 11/4, shall not be in accordance with JIS B2031

Dimensions of 10FCTR

Unit: mm

Valve Size	in.	5	6	8	10
	mm	125	150	200	250
L		250	270	290	330
H		200	220	295	355
D		460	460	1000	1500

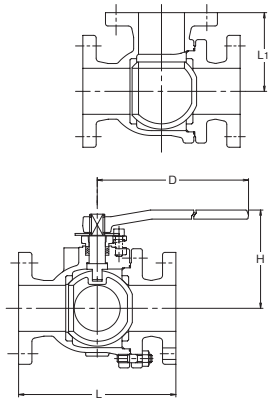
10K IRON GATE VALVE (Full or Reduced Port)

120°C Non-shock water 1.37MPa, 120°C Water, oil, gas 0.98MPa Saturated steam 0.69MPa

10FCTB2L
• **Full Bore: Size 1 1/2 to 4**

10FCTR2L
• **Reduced Bore: Size 5 to 8**

Blowout-proof stem



Materials

Parts	Material	JIS Spec.
Body	Cast Iron	FC200
Body cap	Cast Iron	FC200
Stem	Stainless Steel	SUS403
Ball	Stainless Steel	SCS13
Grand packing	PTFE	
Gasket	PTFE	
Ball Seat	PTFE	
Cap bolt/nut	Carbon Steel	SS400
Handle	Ductile Iron	FCD400

● Page 100 for Allowable Port Orientation.

Design Specifications

Items	
Shell wall thickness and general valve design	JIS B2031
Face-to-face dimensions End-to-end dimensions	KITZ Standard
End flange dimensions Gasket contact facing	JIS B2239 10K

Dimensions of 10FCTB2L, 10FCTR2L

Unit: mm

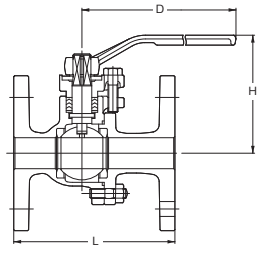
Valve Size	in.	1 1/2	2	2 1/2	3	4	5	6	8
	mm	40	50	65	80	100	125	150	200
L		210	220	250	260	330	370	430	540
L_1		105	110	125	130	165	185	215	270
H		115	123	155	163	205	205	225	295
D		230	230	400	400	460	460	460	1000

BRONZE BALL VALVE

W.O.G. non-shock 1.4 MPa (14kgf/cm2), W.O.G. 150°C 0.69 MPa (7kgf/cm2)

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

TB
• **Flanged ends to JIS 10K**



Materials

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

＊Size 4 only
＊＊Chrome or Nickel-chrome plated

Dimensions of TB

Unit: mm

Nominal Size	in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	mm	15	20	25	32	40	50	65	80	100
L		110	120	130	140	165	180	190	200	230
H		85	88	95	100	115	122	153	162	190
D		130	130	160	160	230	230	400	400	460

Construction and Materials

No.	Parts	Standard	Super-firesafe
		150/300SCTDZ	150/300SCTDZ-FS
1	Body*1	A216 Gr.WCB	
2	Body cap*1	A216 Gr.WCB	
3	Stem	A276 Type 304*5	
4	Ball*2	A276 Type 304 or A351 Gr.CF8	
7	Gland	A351 Gr.CF8	
8	Gland packing	PTFE	Flexible graphite
9	Handle*3	Ductile iron	
9A	Handle bar*3	Carbon steel	
9B	Handle head*3	Ductile iron	
16	Name plate	A276 Type 304*5	
19	Gasket	PTFE	Flexible graphite
20	Packing washer*4	A276 Type 316L*6	
30	Ball seat	HYPATITE® PTFE (Trim 1H: FILLTITE®)*7	
33	Cap nut	A194 Gr.2H	
35	Cap bolt	A193 Gr.B7	
36	Gland bolt	Stainless steel	
40	Keylock plate	A276 Type 304*5	
43	Handle-lock plate	A276 Type 304*5	
48	Snap ring	A276 Type 304*5	
49	Stopper	A276 Type 304*5	
51	Stopper plate	A276 Type 304*5	
57	Gland bush	Reinforced PTFE (Trim 1H: Carbon)*7	
58	Gland washer	A276 Type 304*5	
67	Stem bearing	Reinforced PTFE (Trim 1H: Carbon)*7	
123A	Handle-lock plate bolt	Stainless steel	
123B	Handle bolt	Stainless steel	
124	Spring & pin	A313 & A276 Type 316	
126	Stopper plate bolt	Stainless steel	
145	Coned disc spring	Stainless steel	

*1 A352 Gr. LCC low-temperature service materials are optionally available.
*2 CF8M or Type 316 is optionally available for balls & stems.
*3 Class 150: Bar type handle used for size 6″ & 8″.
Class 300: Bar type handle used for size 4″ to 8″.
*4 Up to size 1″.
*5 A276 Type 304 or equal.
*6 A276 Type 316 or equal.
*7 Trim 1H (150/300SCTDZ1H)

All part numbers are corresponding with those shown in valve assembly drawings.

Parts List :1H

No.	Parts	ASTM Material Designation			JIS Material Designation		
		Stainless steel shell		Carbon steel shell	Stainless steel shell		Carbon steel shell
		150/300UTDZ1H	150/300UTDZ1HM	150/300SCTDZ1H	10/20UTDZ1H	10/20UTDZ1HM	10/20SCTDZ1H
1	Body	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
2	Body cap	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
3	Stem	A276 Type 304	A276 Type 316	A276 Type 304	SUS304	SUS316	SUS304
4	Ball	A276 Type 304 or A351 Gr.CF8	A276 Type 316 or A351 Gr.CF8M	A276 Type 304 or A351 Gr.CF8	SUS304 or SCS13A	SUS316 or SCS14A	SUS304 or SCS14A
7	Gland	A351 Gr.CF8			SCS13A		
8	Gland packing	Flexible graphite			Flexible graphite		
9	Handle*1	Ductile iron			FCD400-10		
9A	Handle bar*1	Carbon steel			SGP		
9B	Handle head*1	Ductile iron			FCD400-10		
16	Name plate	A276 Type 304			SUS304		
19	Gasket	Flexible graphite			Flexible graphite		
20	Packing washer	A276 Type 316L			SUS316L		
30	Ball seat	FILLTITE® PTFE			FILLTITE® PTFE		
33	Cap nut	A194 Gr.8		A194 Gr.2H	SUS304		S45C
35	Cap bolt	A193 Gr.B8		A193 Gr.B7	SUS304		SNB7
36	Gland bolt	Stainless steel			Stainless steel		
40	Keylock plate	A276 Type 304			SUS304		
43	Handle-lock plate	A276 Type 304			SUS304		
47	Thrust washer	Carbon			Carbon		
48	Snap ring	A276 Type 304			SUS304		
49	Stopper	A276 Type 304			SUS304		
51	Stopper plate	A276 Type 304			SUS304		
57	Gland bush	Carbon			Carbon		
58	Gland washer	A276 Type 304			SUS304		
67	Stem bearing	Carbon			Carbon		
123A	Handle-lock plate bolt	Stainless steel			Stainless Steel		
123B	Handle bolt	Stainless steel			Stainless Steel		
124	Spring & pin	A313 & A276 Type 316			SUS316-WPA & SUS316		
126	Stopper plate bolt	Stainless steel			Stainless Steel		
145	Coned disc spring	Stainless steel			SUS304-CSP		

*1) Refer to the following table *2) Equivalent to AISI Type 329

• The substitutional equivalent materials may be used for valve part materials where ASTM A276 and/or A564 is stated on the material descriptions in this catalog.

Operation (Standard)	Class 150/10K	Class 300/20K
Lever type	Size 1/2 to 3	Size 1/2 to 3
Bar type	Size 4	
Gear	Size 5 to 8	Size 4 to 8

Refer to illustration on Page.

Construction and Materials

■Class 150/300 10/20 Floating Ball Design Valve

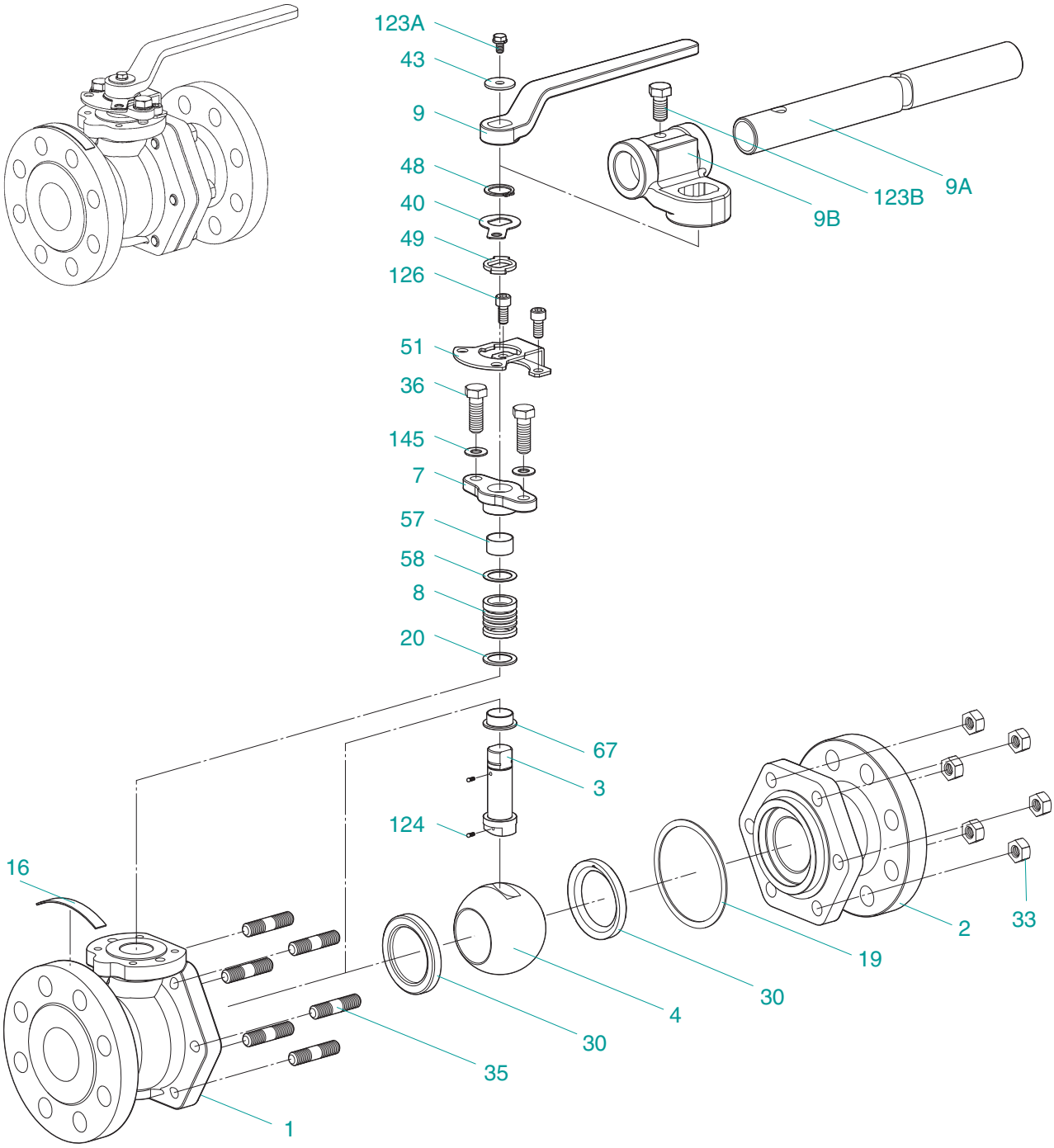


Illustration shows Size 4˝ design.

Construction and Materials

No.	Parts		Standard 150SCTA 300SCTA	Super-firesafe 150SCTA-FS 300SCTA-FS
1	Body		A216 Gr. WCB *1	
3	Stem		A276 Type 304*2 *4	
4	Ball		A276 Type 304 / A351 Gr. CF8	
7	Gland	1/2″~1 1/2″	A276 Type 316*5	
		2″~ 10″	A351 Gr. CF8	
8	Gland packing		PTFE	Flexible graphite
9	Handle*3	1/2″~1″	Carbon steel	
		1 1/2″~	Ductile iron	
10	Handle nut	1/2″~1 1/2″	Stainless steel	
16	Nameplate		Stainless steel	
19A	Primary gasket		PTFE	
19B	Secondary gasket		—	Flexible graphite
20	Packing washer	1 1/2″only	A276 Type 316*5	
29	Body-insert	1/2″~1 1/2″	A216 Gr. WCB	
		3″~ 6″	A105N	
30	Ball seat		HYPATITE® PTFE	
34	Gland nut	1/2″~1″	Stainless steel	
		1 1/2″~4″	Carbon steel	
36	Gland bolt	2″~10″	Stainless steel	
40	Key lock plate		Stainless steel	
43	Corned disc spring	1/2″~1 1/2″	Stainless steel	
47	Thrust washer	1/2″~2″	Reinforced PTFE	
48	Snap ring	2″~10″	Carbon steel	
49	Stopper	1 1/2″~10″	Stainless steel	
67	Stem bearing	3″~10″	Reinforced PTFE	
123	Handle bolt		Carbon steel	
124	Spring + pin		Stainless steel	
126	Stopper pin		Stainless steel	

*1 A352 low-temperature service materials are optionally available.
*2 CF8M or Type 316 is optionally available for balls & stems.
*3 Bar type handles are used for 6″ and larger.
*4 A276 Type 304 or equal.
*5 A276 Type 316 or equal.

All part numbers are corresponding with those shown in valve assembly drawings.

■Standard material configuration can be applied to sour service.

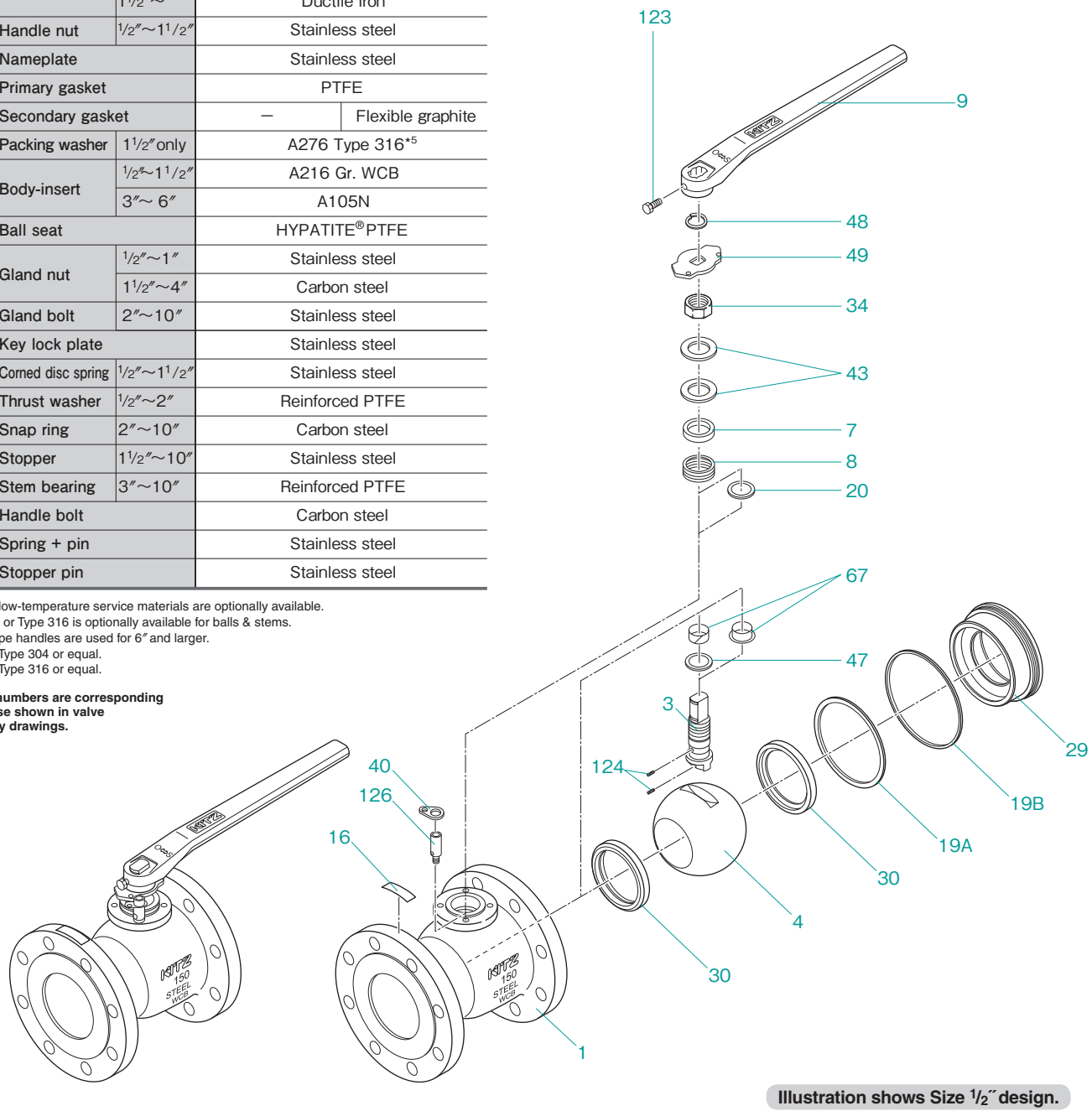


Illustration shows Size 1/2˝ design.

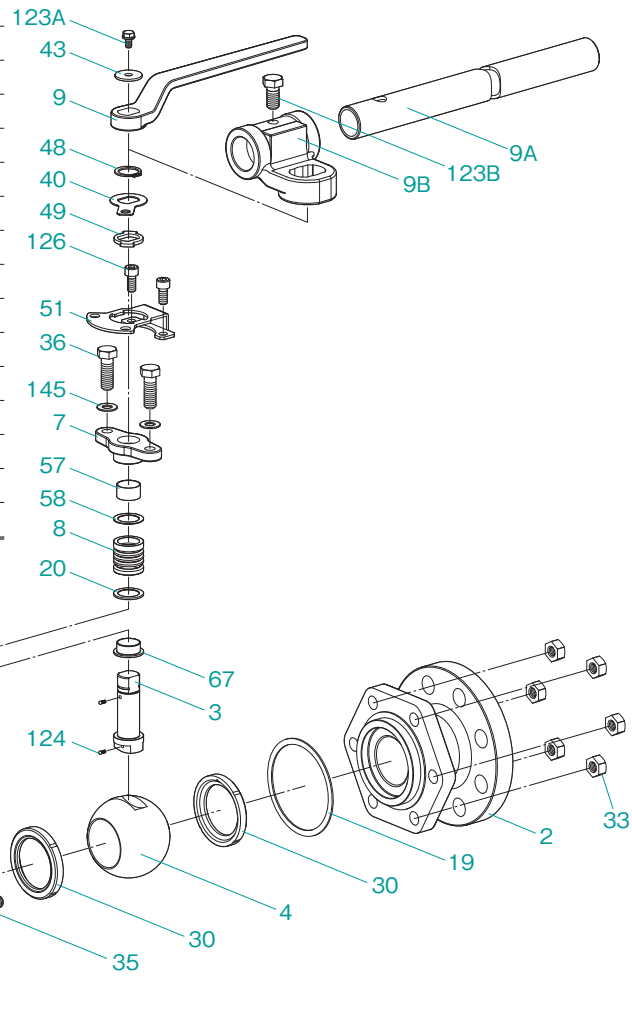
Construction and Materials

No.	Parts	Standard		Super-firesafe	
		150UTDZ 300UTDZ	150UTDZM 300UTDZM	150UTDZ-FS 300UTDZ-FS	150UTDZM-FS 300UTDZM-FS
1	Body	A351 Gr.CF8	A351 Gr.CF8M	A351 Gr.CF8	A351 Gr.CF8M
2	Body cap	A351 Gr.CF8	A351 Gr.CF8M	A351 Gr.CF8	A351 Gr.CF8M
3	Stem	A276 Type 304	A276 Type 316	A276 Type 304	A276 Type 316
4	Ball*2	A276 Type 304 or A351 Gr.CF8	A276 Type 316 or A351 Gr.CF8M	A276 Type 304 or A351 Gr. CF8	A276 Type 316 or A351 Gr. CF8M
7	Gland	A351 Gr.CF8			
8	Gland packing	PTFE		Flexible graphite	
9	Handle*3	Ductile iron			
9A	Handle bar*3	Carbon steel			
9B	Handle head*3	Ductile iron			
16	Name plate	A276 Type 304*4			
19	Gasket	PTFE		Flexible graphite	
20	Packing washer*4	A276 Type 316L*5			
30	Ball seat	HYPATITE® PTFE (Trim 1H: FILLTITE®)*6			
33	Cap nut	A194 Gr.8			
35	Cap bolt	A193 Gr.B8			
36	Gland bolt	Stainless steel			
40	Keylock plate	A276 Type 304*4			
43	Handle-lock plate	A276 Type 304*4			
48	Snap ring	A276 Type 304*4			
49	Stopper	A276 Type 304*4			
51	Stopper plate	A276 Type 304*4			
57	Gland bush	Reinforced PTFE (Carbon: Trim 1H)*6			
58	Gland washer	A276 Type 304*4			
67	Stem bearing	Reinforced PTFE (Carbon: Trim 1H)*6			
123A	Handle-lock plate bolt	Stainless steel			
123B	Handle bolt	Stainless steel			
124	Spring & pin	A313 & A276 Type 316			
126	Stopper plate bolt	Stainless steel			
145	Coned disc spring	Stainless steel			

*1 CF8M or Type 316 is optionally available for balls & stems.
*2 Class 150: Bar type handle used for size 6˝ & 8˝.
Class 300: Bar type handle used for size 4˝ to 8˝.
*3 Up to size 1¼˝.
*4 A276 Type 304 or equal.
*5 A276 Type 316 or equal.
*6 Trim 1H (150/300UTDZ1H)

All part numbers are corresponding with those shown in valve assembly drawings.

■Standard material configuration can be applied to sour service.



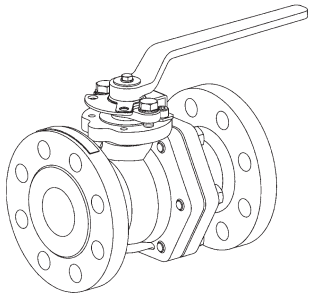


Illustration shows Size 4˝ design.

Construction and Materials

No.	Parts		Standard	
			150UTB	150UTBM
1	Body		A351 Gr. CF8	A351 Gr. CF8M
2	Body cap		A351 Gr. CF8	A351 Gr. CF8M
3	Stem		A276 Type 304*3	A276 Type 316*4
4	Ball		A276 Type 304*3 or A351 Gr. CF8	A276 Type 316*4 or A351 Gr. CF8M
7	Gland		A351 Gr. CF8	
8	Gland packing		PTFE	
9	Handle*1		Ductile iron	
16A	Nameplate		Aluminum	
16B	Washer		Carbon steel	
19	Gasket		PTFE	
20	Packing washer*2		A276 Type 316*4	
30	Ball seat		HYPATITE® PTFE	
33	Cap nut		A194 Gr. 8	
35	Cap bolt		A193 Gr. B8	
36	Gland bolt		Stainless Steel	
47	Thrust washer		Reinforced PTFE	
48	Snap ring		A276 Type 304*3	
49	Stopper		A276 Type 304*3	
67	Stem bearing		Reinforced PTFE	
123	Handle bolt	6″~10″	Carbon steel	
124A	Spring & pin	2½″~10″	A313 & A276 Type 316	
124B	Spring	½″~2″	A313 Type 316*4	

*1 Bar type handles are used for 6″ and 8″ . Worm gear operations are used for 10″ .
*2 Packing washers are used only for 1″ and smaller.
*3 A276 Type 304 or equal.
*4 A276 Type 316 or equal.

All part numbers are corresponding with those shown in valve assembly drawings.

■Standard material configuration can be applied to sour service.

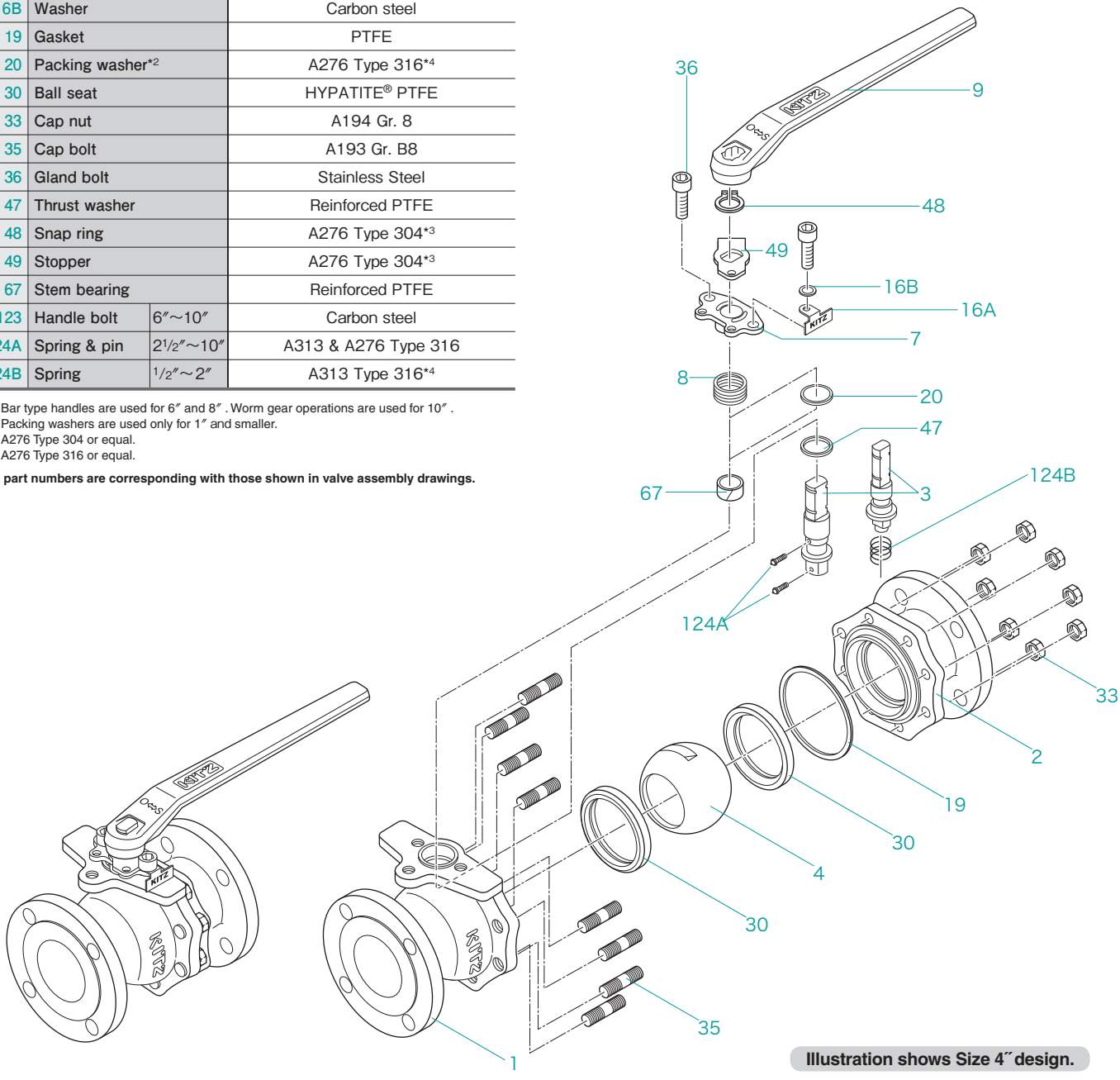


Illustration shows Size 4″ design.

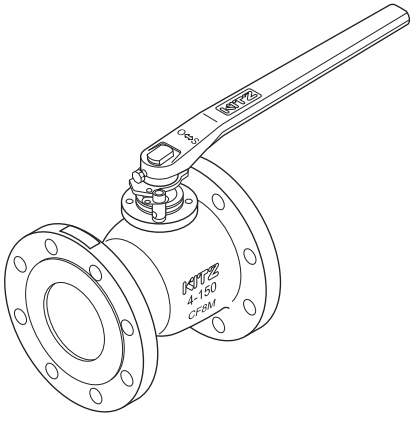
Construction and Materials

No.	Parts		Standard		Super-firesafe
			150UTA 300UTA	150UTAM 300UTAM	150UTA-FS/UTAM-FS 300UTA-FS/UTAM-FS
1	Body		A351 Gr. CF8	A351 Gr. CF8M	A351 Gr. CF8/CF8M
3	Stem		A276 Type 304*2	A276 Type 316*3	A276 Type 304*2/316*3
4	Ball		A276 Type 304*2	A276 Type 316*3	A276 Type 304*2/316*3
			A351 Gr. CF8	A351 Gr. CF8M	A351 Gr. CF8/CF8M
7	Gland	1/2″~1 1/2″	A276 Type 316*3		
		2″~10″	A351 Gr. CF8		
8	Gland packing		PTFE		Flexible graphite
9	Handle*1	1/2″~1″	Stainless steel		
		1 1/2″~	Ductile iron		
10	Handle nut	1/2″~1 1/2″	Stainless steel		
16	Nameplate		Stainless steel		
19A	Gasket		PTFE		
19B	Secondary gasket		—		Flexible graphite
20	Packing washer	1 1/2″only	A276 Type 316*3		
29	Insert	1/2″~4″	A351 Gr. CF8	A351 Gr. CF8M	A351 Gr. CF8/CF8M
		6″~10″	A182 Gr. F304	A182 Gr. F316	A182 Gr. F304/F316
30	Ball seat		HYPATITE® PTFE		
34	Gland nut	1/2″~1 1/2″	Stainless steel		
36	Gland bolt	2″~10″	Stainless steel		
40	Key lock plate		Stainless steel		
43	Coned disc spring	1/2″~1 1/2″	Stainless steel		
47	Thrust washer	1/2″~2″	Reinforced PTFE		
48	Snap ring	2″~10″	Stainless steel		
49	Stopper	1 1/2″~10″	Stainless steel		
67	Stem bearing	3″~10″	Reinforced PTFE		
123	Handle bolt		Carbon steel		
124	Spring & pin		Stainless steel		
126	Stopper pin		Stainless steel		

*1 Bar type handles are used for 6″and larger.
*2 A276 Type 304 or equal.
*3 A276 Type 316 or equal.

All part numbers are corresponding with those shown in valve assembly drawings.

■Standard material configuration can be applied to sour service.



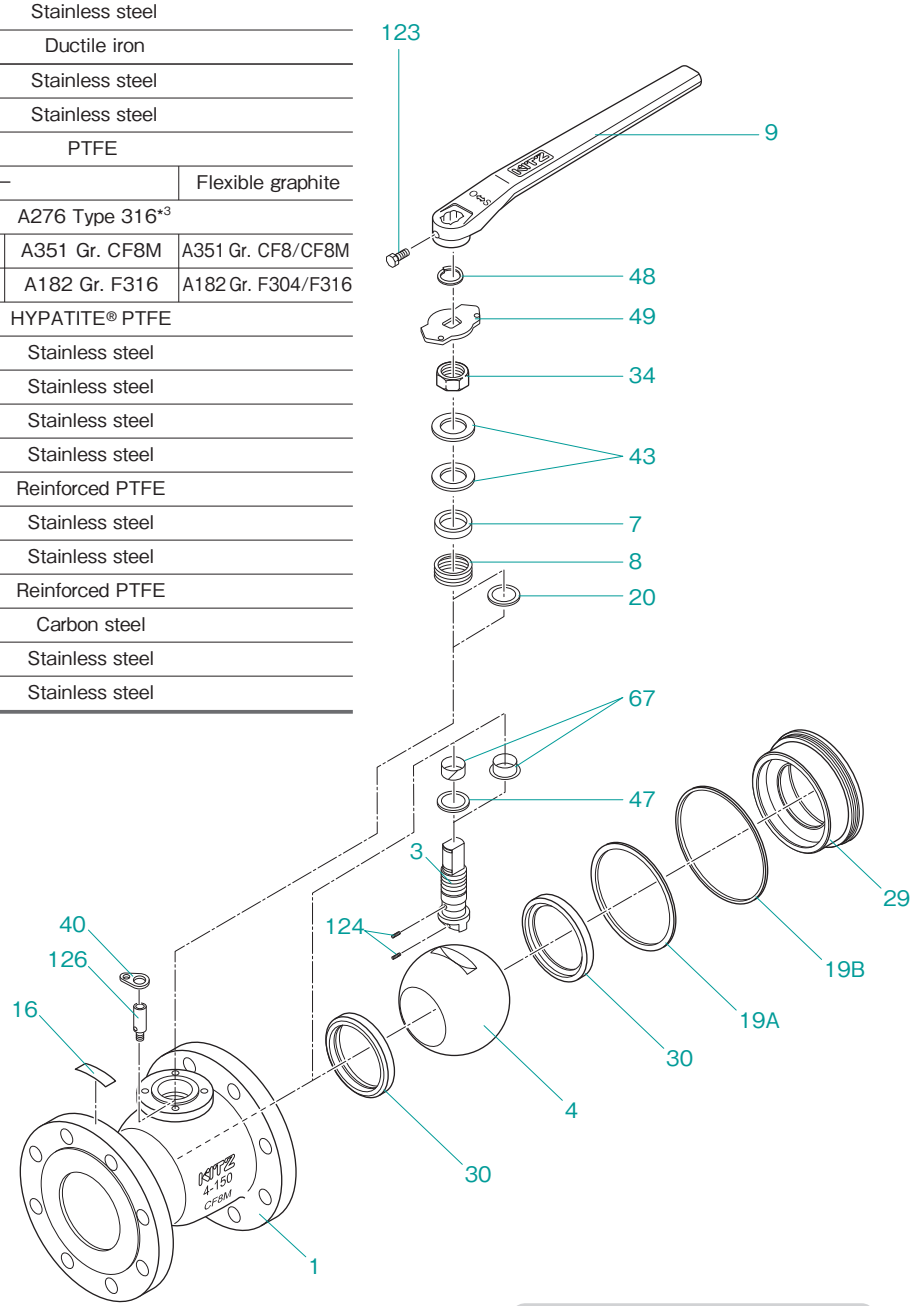


Illustration shows Size 1/2″ design.

Construction and Materials

No.	Parts	Standard		Super-firesafe
		600UTB	600UTBM	600UTBS/UTBMS
1	Body	A351 Gr. CF8*2	A351 Gr. CF8M*2	A351 Gr. CF8/ CF8M*2
2	Body Cap			
3	Stem	A276 Type 304*2*3	A276 Type 316*2*4	A276 Type 304*3/316*2*4
4	Ball			
7	Gland	A351 Gr. CF8		
8	Gland packing	PTFE		Flexible graphite
9	Handle	Ductile iron		
16	Nameplate	Stainless steel		
19	Gasket*1	—		Flexible graphite spiral wound
20	Packing washer 1/2″~1″	A276 Type 316*4		
30	Ball seat	Reinforced PTFE with MoS_2		
33	Cap nut	A194 Gr. 8		
35	Cap bolt	A193 Gr. B8		
36	Gland bolt	Stainless Steel		
45A	O-ring	FKM		—
45B	O-ring	FKM		
47	Thrust washer	Metal-backed PTFE		
48	Snap ring	A276 Type 304*3		
49	Stopper	A276 Type 304*3		
67	Stem bearing	Reinforced PTFE		
124	Spring & pin	A313 & A276 Type 316		
143	Seat spring	A167 Type 304	INCONEL X-750	A167 Type 304/ INCONEL X-750
150	Seat retainer	A276 Type 304*3	A276 Type 316*4	A276 Type 304*3/316*4
155	Spacer*1	—	—	PTFE
175	Retainer gland*1	—	—	A276 Type 304*3
176	Retainer packing*1	—	—	Flexible graphite

*1 This parts are used only for super-firesafe provision.
*2 Other stainless steel are optionally available.
*3 A276 Type 304 or equal.
*4 A276 Type 316 or equal.

All part numbers are corresponding with those shown in valve assembly drawings.

■Standard material configuration can be applied to sour service.

No.	Parts	Standard	Super-firesafe
		600SCTB	600SCTBS
1	Body	A105*1	
2	Body cap		
3	Stem	A276 Type 304*2*4	
4	Ball		
7	Gland	A351 Gr. CF8	
8	Gland packing	PTFE	Flexible graphite
9	Handle	Ductile iron	
16	Nameplate	Stainless steel	
19	Gasket*3	—	Flexible graphite spiral wound
20	Packing washer 1/2″~1″	A276 Type 316*5	
30	Ball seat	Reinforced PTFE with MoS_2	
33	Cap nut	A194 Gr. 2H	
35	Cap bolt	A193 Gr. B7	
36	Gland bolt	Cr-Mo steel	
45A	O-ring	NBR	—
45B	O-ring	NBR	
47	Thrust washer	Metal-backed PTFE	
48	Snap ring	Carbon steel	
49	Stopper	A276 Type 304*4	
67	Stem bearing	Reinforced PTFE	
124	Spring & pin	A313 & A276 Type 316	
143	Seat spring	A167 Type 304	
150	Seat retainer	A105 Zn plating	
155	Spacer*3	—	PTFE
175	Retainer gland*3	—	A105
176	Retainer packing*3	—	Flexible graphite

*1 A350 low-temperature service materials are optionally available.
*2 Type 316 and other stainless steels are optionally available for ball & stem.
*3 These parts are used only for super-firesafe provision.
*4 A276 Type 304 or equal.
*5 A276 Type 316 or equal.

All part numbers are corresponding with those shown in valve assembly drawings.

■An optional material configuration is available for sour service.

Refer to the illustration on Page 39.

Construction and Materials

■Class 600 Floating Ball Design Valve

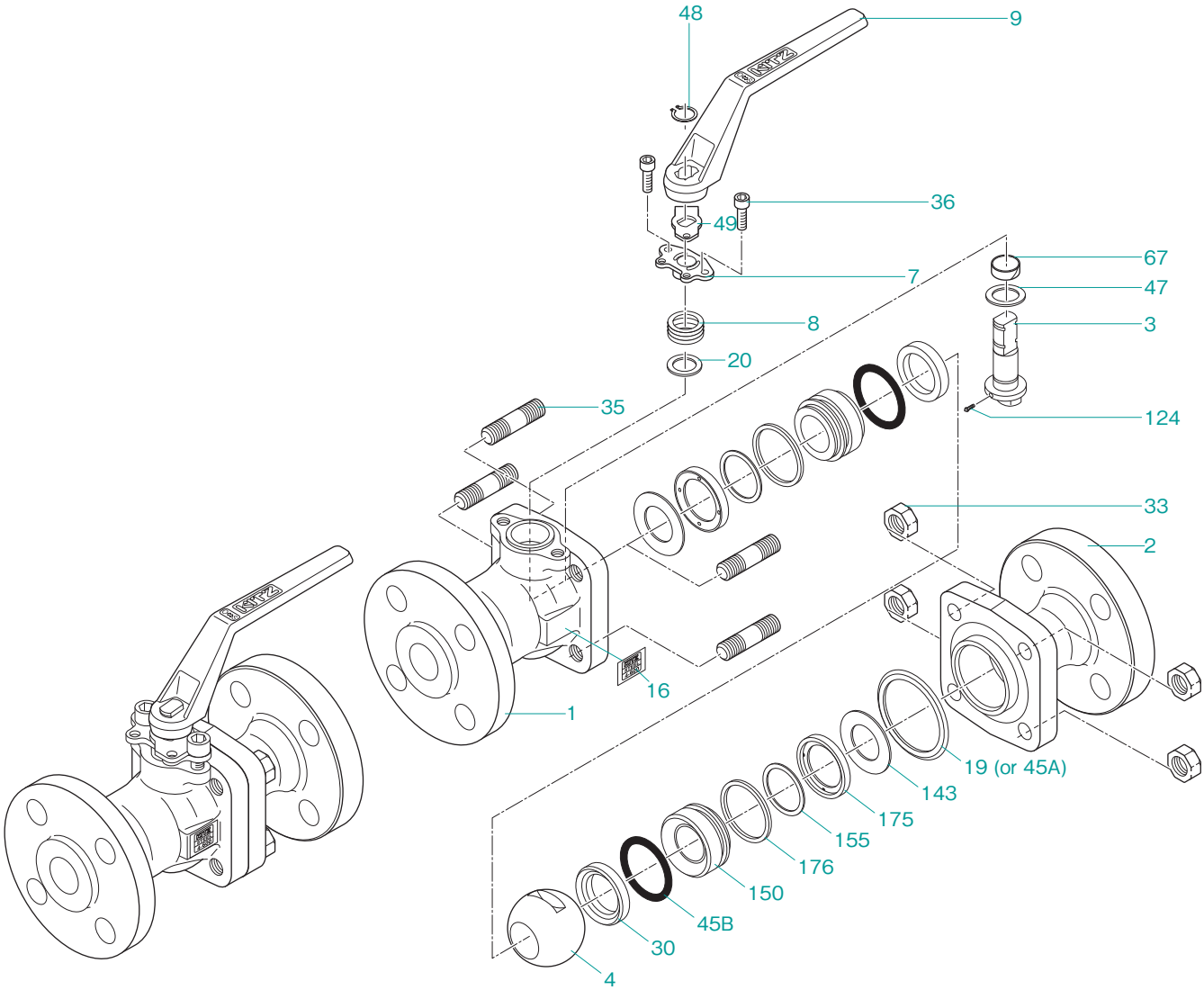


Illustration shows Size ½˝ design.

Construction and Materials

No.	Parts	Standard	
		1500UTB	1500UTBM
1	Body	A351 Gr. CF8*2	A351 Gr. CF8M*2
2	Body Cap		
3	Stem	A276 Type 304*2*3	A276 Type 316*2*4
4	Ball		
7	Gland	A351 Gr. CF8	
8	Gland packing	PTFE	
9	Handle	Ductile iron	
19	Gasket*1	—	
30	Ball seat	Nylon with MoS_2	
31	Stem washer	A276 Type 316*4	
33	Cap nut	A194 Gr. 8	
35	Cap bolt	Stainless Steel	
36	Grand bolt	A193 Gr. B8	
45A	O-ring	FPM	
45B	O-ring	FPM	
47	Thrust washer	Metal-backed PTFE	
48	Snap ring	A276 Type 304*3	
49	Stopper	A276 Type 304*3	
67	Stem bearing	Reinforced PTFE	
85	Plug	A276 Type 316*4	
124	Spring & pin	A313 & A276 Type 316	
143	Seat spring	A167 Type 304	INCONEL X-750
146	Back-up ring	PTFE	
150	Seat retainer	A276 Type 304*3	A276 Type 316*4
155	Spacer*1	—	—
175	Retainer gland*1	—	—
176	Retainer packing*1	—	—

*1 These parts are used only for super-firesafe provision.
*2 Other stainless steel are optionally available.
*3 A276 Type 304 or equal.
*4 A276 Type 316 or equal.

All part numbers are corresponding with those shown in valve assembly drawings.

■Standard material configuration can be applied to sour service.

No.	Parts	Standard	Super-firesafe
		1500SCTB	1500SCTBS
1	Body	A216 Gr. WCB*1	
2	Body cap		
3	Stem	A276 Type 304*2*4	
4	Ball		
7	Gland	A351 Gr. CF8	
8	Gland packing	PTFE	Flexible graphite
9	Handle	Ductile iron	
19	Gasket*3	—	Flexible graphite spiral wound
30	Ball seat	Nylon with MoS_2	
31	Stem washer	A276 Type 316*5	
33	Cap nut	A194 Gr. 2H	
35	Cap bolt	A193 Gr. B7	
36	Gland bolt	Cr-Mo steel	
45A	O-ring	NBR	—
45B	O-ring	NBR	
47	Thrust washer	Metal-backed PTFE	
48	Snap ring	Carbon steel	
49	Stopper	A276 Type 304*4	
67	Stem bearing	Reinforced PTFE	
85	Plug	A576 Gr. 1025 Zn plating	
124	Spring & pin	A313 & A276 Type 316	
143	Seat spring	A167 Type 304	
146	Back-up ring	PTFE	
150	Seat retainer	A105 Zn plating	
155	Spacer*3	—	PTFE
175	Retainer gland*3	—	A105
176	Retainer packing*3	—	Flexible graphite

*1 A352 low-temperature service materials are optionally available.
*2 Type 316 is optionally available for ball & stem.
*3 These parts are used only for super-firesafe provision.
*4 A276 Type 304 or equal.
*5 A276 Type 316 or equal.

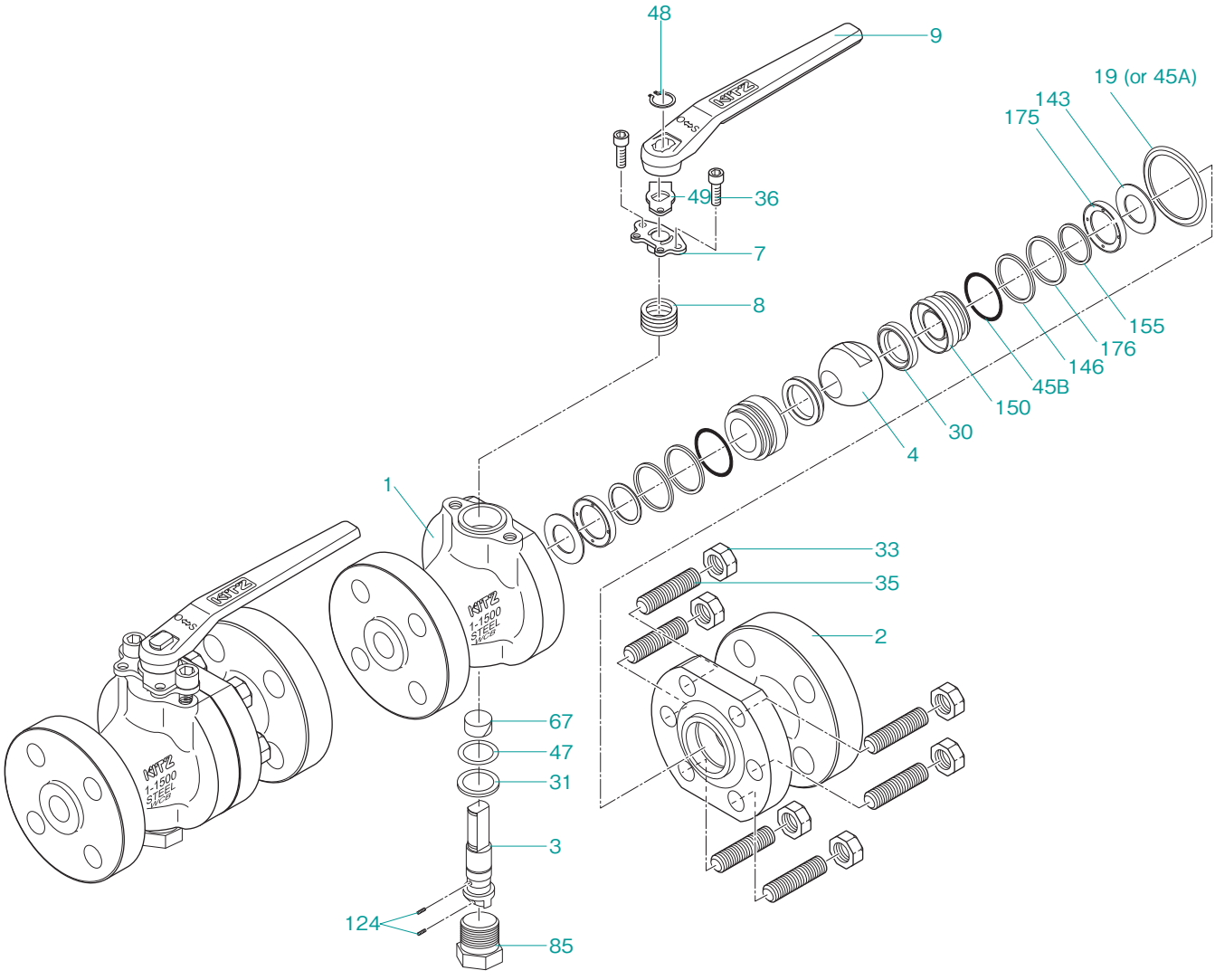
All part numbers are corresponding with those shownin valve assembly drawings.

■An optional material configuration is available for sour service.

Refer to the illustration on Page 41.

Construction and Materials

■Class 1500 Floating Ball Design Valve



Construction and Materials

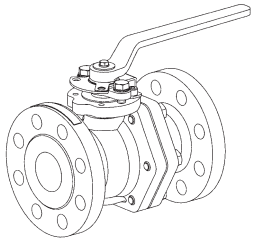
■Class 150/300, 10/20 Metal Seated Floating Ball Design Valve (Trim 3H)

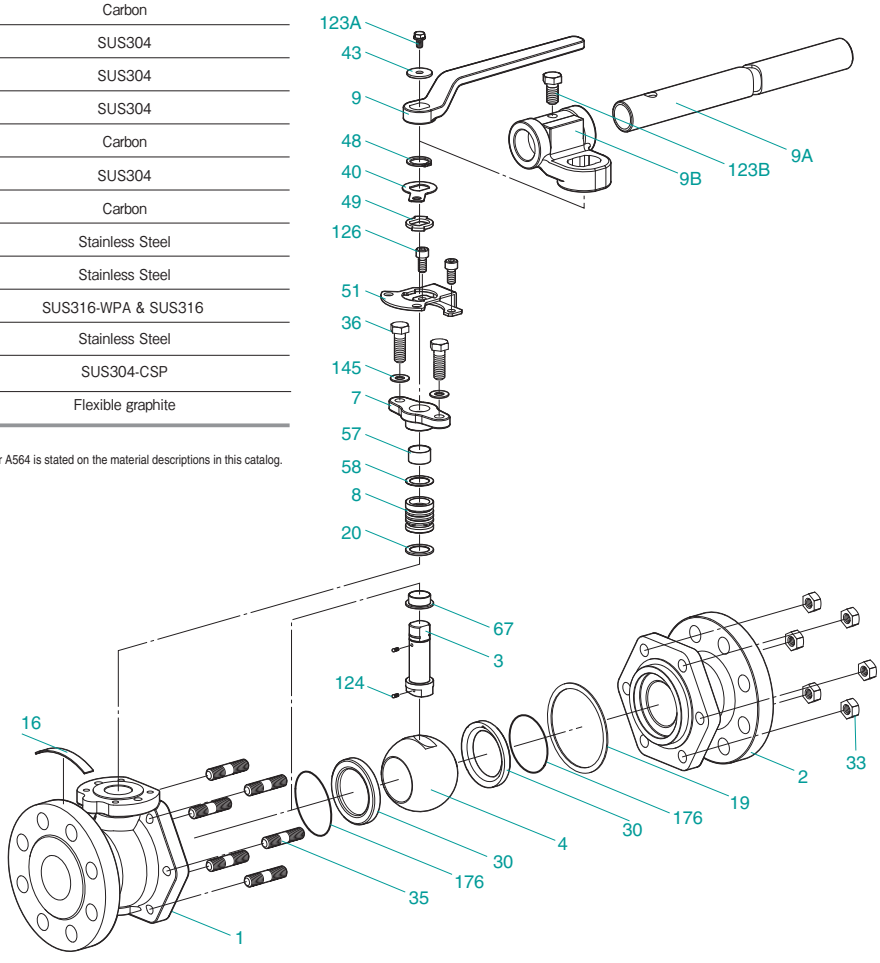
No.	Parts	ASTM Material Designation (Trim 3H)			JIS Material Designation (Trim 3H)		
		Stainless steel shell		Carbon steel shell	Stainless steel shell		Carbon steel shell
		150/300UTDZ3H	150/300UTDZ3HM	150/300SCTDZ3H	10/20UTDZ3H	10/20UTDZ3HM	10/20SCTDZ3H
1	Body	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
2	Body cap	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
3	Stem	A276 Type 304	A276 Type 316	A276 Type 304	SUS304	SUS630	SUS304
4	Ball	A276 Type 304	A276 Type 316	A276 Type 304	SUS304	SUS316	SUS304
7	Gland	A351 Gr.CF8			SCS13A		
8	Gland packing	Flexible graphite			Flexible graphite		
9	Handle*1	Ductile iron			FCD400-10		
9A	Handle bar*1	Carbon steel			SGP		
9B	Handle head*1	Ductile iron			FCD400-10		
16	Name plate	A276 Type 304			SUS304		
19	Gasket	Flexible graphite			Flexible graphite		
20	Packing washer	A276 Type 316L			SUS316L		
30	Ball seat	Carbon + JIS SUS329J1*1			Carbon + SUS329J1		
33	Cap nut	A194 Gr.8		A194 Gr.2H	SUS304		S45C
35	Cap bolt	A193 Gr.B8		A193 Gr.B7	SUS304		SNB7
36	Gland bolt	Stainless steel			Stainless steel		
40	Keylock plate	A276 Type 304			SUS304		
43	Handle-lock plate	A276 Type 304			SUS304		
47	Thrust washer	Carbon			Carbon		
48	Snap ring	A276 Type 304			SUS304		
49	Stopper	A276 Type 304			SUS304		
51	Stopper plate	A276 Type 304			SUS304		
57	Gland bush	Carbon			Carbon		
58	Gland washer	A276 Type 304			SUS304		
67	Stem bearing	Carbon			Carbon		
123A	Handle-lock plate bolt	Stainless steel			Stainless Steel		
123B	Handle bolt	Stainless steel			Stainless Steel		
124	Spring & pin	A313 & A276 Type 316			SUS316-WPA & SUS316		
126	Stopper plate bolt	Stainless steel			Stainless Steel		
145	Coned disc spring	Stainless steel			SUS304-CSP		
176	Seat packing	Flexible graphite			Flexible graphite		

*1) Equivalent to AISI Type 329

• The substitutional equivalent materials may be used for valve part materials where ASTM A276 and/or A564 is stated on the material descriptions in this catalog.

Operation (Standard)	Class 150/10K	Class 300/20K
Lever type	Size 1/2 to 11/2	Size 1/2 to 11/4
Bar type	Size 2 to 4	Size 11/2 to 3
Gear	Size 5 to 8	Size 4 to 8





Construction and Materials

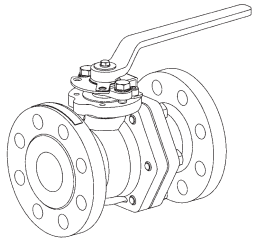
■Class 150/300, 10/20 Metal Seated Floating Ball Design Valve (Trim 5H)

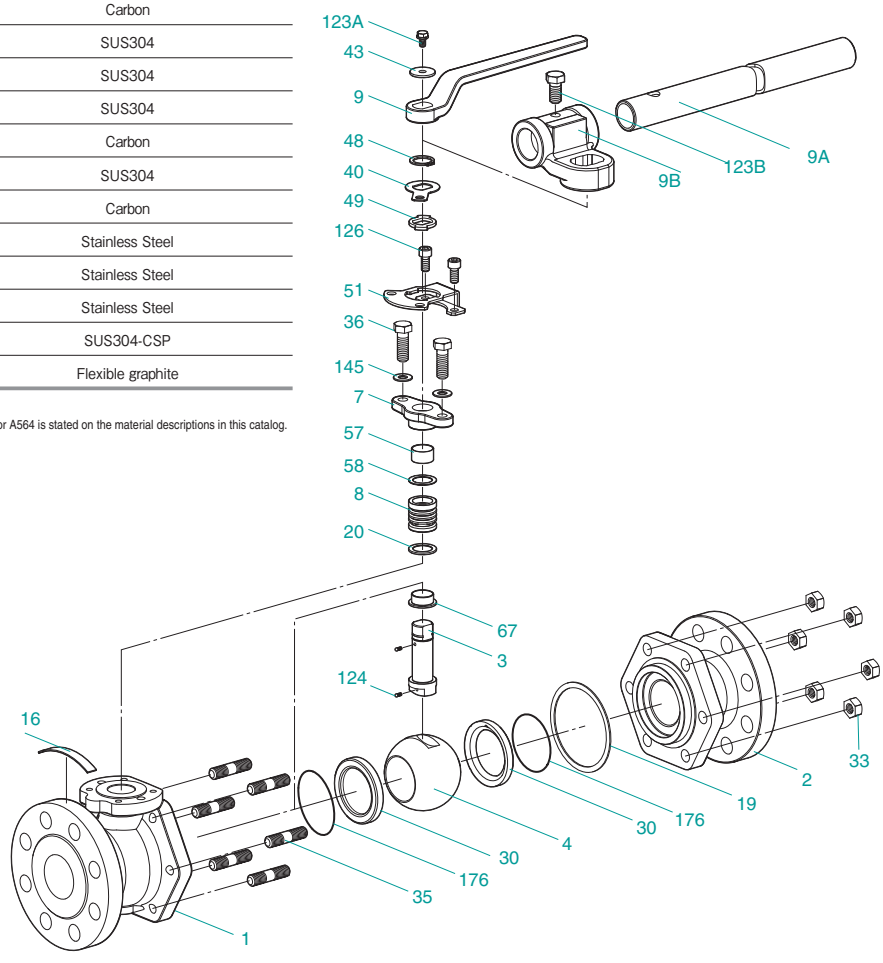
No.	Parts	ASTM Material Designation (Trim 5H)			JIS Material Designation (Trim 5H)		
		Stainless steel shell		Carbon steel shell	Stainless steel shell		Carbon steel shell
		150/300UTDZ5H	150/300UTDZ5HM	150/300SCTDZ5H	10/20UTDZ5H	10/20UTDZ5HM	10/20SCTDZ5H
1	Body	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
2	Body cap	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
3	Stem	A564 Type 630			SUS630		
4	Ball	A276 Type 316 with Cr. plating			SUS316 with Cr. plating		
7	Gland	A351 Gr.CF8			SCS13A		
8	Gland packing	Flexible graphite			Flexible graphite		
9	Handle*1	Ductile iron			FCD400-10		
9A	Handle bar*1	Carbon steel			SGP		
9B	Handle head*1	Ductile iron			FCD400-10		
16	Name plate	A276 Type 304			SUS304		
19	Gasket	Flexible graphite			Flexible graphite		
20	Packing washer	A276 Type 316L			SUS316L		
30	Ball seat	A276 Type 316 + Ni-Cr alloy hard facing*1			SUS 316 + Ni-Cr alloy hard facing*1		
33	Cap nut	A194 Gr.8		A194 Gr.2H	SUS304		S45C
35	Cap bolt	A193 Gr.B8		A193 Gr.B7	SUS304		SNB7
36	Gland bolt	Stainless steel			Stainless steel		
40	Keylock plate	A276 Type 304			SUS304		
43	Handle-lock plate	A276 Type 304			SUS304		
47	Thrust washer	Carbon			Carbon		
48	Snap ring	A276 Type 304			SUS304		
49	Stopper	A276 Type 304			SUS304		
51	Stopper plate	A276 Type 304			SUS304		
57	Gland bush	Carbon			Carbon		
58	Gland washer	A276 Type 304			SUS304		
67	Stem bearing	Carbon			Carbon		
123A	Handle-lock plate bolt	Stainless steel			Stainless Steel		
123B	Handle bolt	Stainless steel			Stainless Steel		
126	Stopper plate bolt	Stainless steel			Stainless Steel		
145	Coned disc spring	Stainless steel			SUS304-CSP		
176	Seat packing	Flexible graphite			Flexible graphite		

*1) Equivalent to METCO Type 16C

• The substitutional equivalent materials may be used for valve part materials where ASTM A276 and/or A564 is stated on the material descriptions in this catalog.

Operation (Standard)	Class 150/10K	Class 300/20K
Lever type	Size 1/2 to 11/2	Size 1/2 to 1
Bar type	Size 2 to 4	Size 11/2 to 3
Gear	Size 5 to 8	Size 4 to 8





Construction and Materials

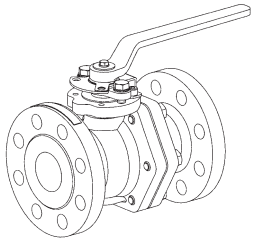
■Class 150/300, 10/20 Metal Seated Floating Ball Design Valve (Trim 6H)

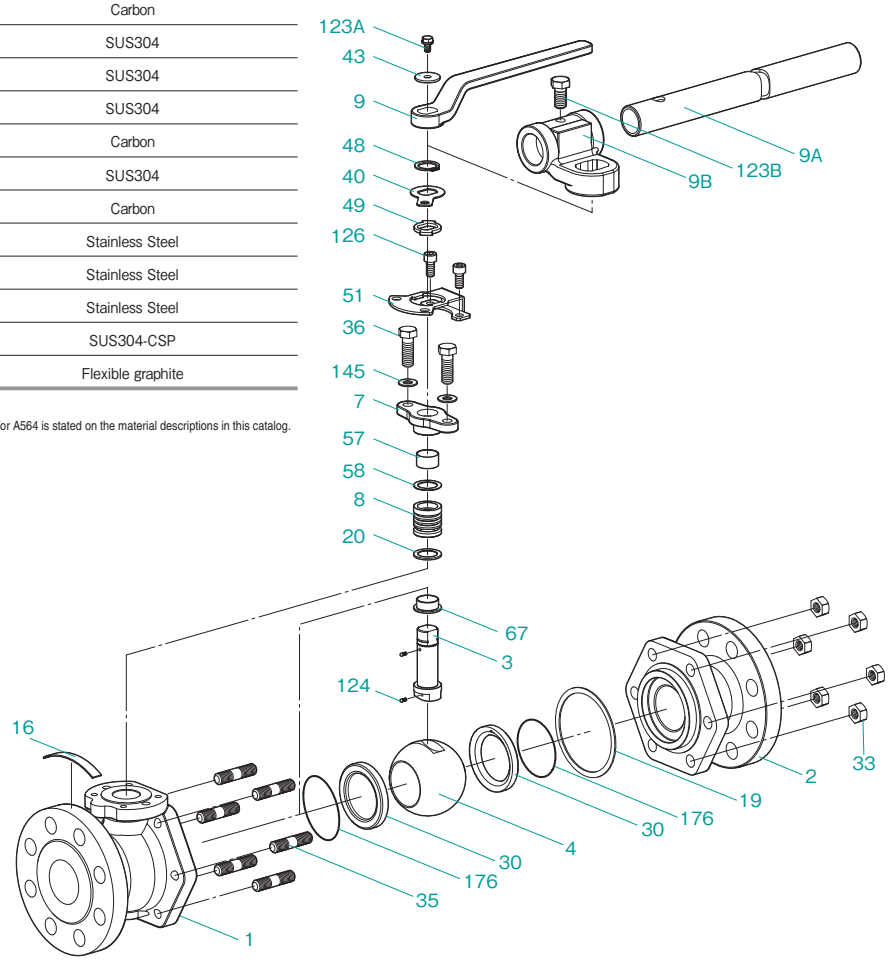
No.	Parts	ASTM Material Designation (Trim 6H)			JIS Material Designation (Trim 6H)		
		Stainless steel shell		Carbon steel shell	Stainless steel shell		Carbon steel shell
		150/300UTDZ6H	150/300UTDZ6HM	150/300SCTDZ6H	10/20UTDZ6H	10/20UTDZ6HM	10/20SCTDZ6H
1	Body	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
2	Body cap	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
3	Stem	A564 Type 630			SUS630		
4	Ball	A276 Type 316 with Ni-Cr alloy hard facing*2			SUS316 with Ni-Cr alloy hard facing*2		
7	Gland	A351 Gr.CF8			SCS13A		
8	Gland packing	Flexible graphite			Flexible graphite		
9	Handle*1	Ductile iron			FCD400-10		
9A	Handle bar*1	Carbon steel			SGP		
9B	Handle head*1	Ductile iron			FCD400-10		
16	Name plate	A276 Type 304			SUS304		
19	Gasket	Flexible graphite			Flexible graphite		
20	Packing washer	A276 Type 316L			SUS316L		
30	Ball seat	A276 Type 316 + Ni-Cr alloy hard facing*1			SUS 316 + Ni-Cr alloy hard facing*1		
33	Cap nut	A194 Gr.8		A194 Gr.2H	SUS304		S45C
35	Cap bolt	A193 Gr.B8		A193 Gr.B7	SUS304		SNB7
36	Gland bolt	Stainless steel			Stainless steel		
40	Keylock plate	A276 Type 304			SUS304		
43	Handle-lock plate	A276 Type 304			SUS304		
47	Thrust washer	Carbon			Carbon		
48	Snap ring	A276 Type 304			SUS304		
49	Stopper	A276 Type 304			SUS304		
51	Stopper plate	A276 Type 304			SUS304		
57	Gland bush	Carbon			Carbon		
58	Gland washer	A276 Type 304			SUS304		
67	Stem bearing	Carbon			Carbon		
123A	Handle-lock plate bolt	Stainless steel			Stainless Steel		
123B	Handle bolt	Stainless steel			Stainless Steel		
126	Stopper plate bolt	Stainless steel			Stainless Steel		
145	Coned disc spring	Stainless steel			SUS304-CSP		
176	Seat packing	Flexible graphite			Flexible graphite		

*1) Equivalent to METCO Type 16C

• The substitutional equivalent materials may be used for valve part materials where ASTM A276 and/or A564 is stated on the material descriptions in this catalog.

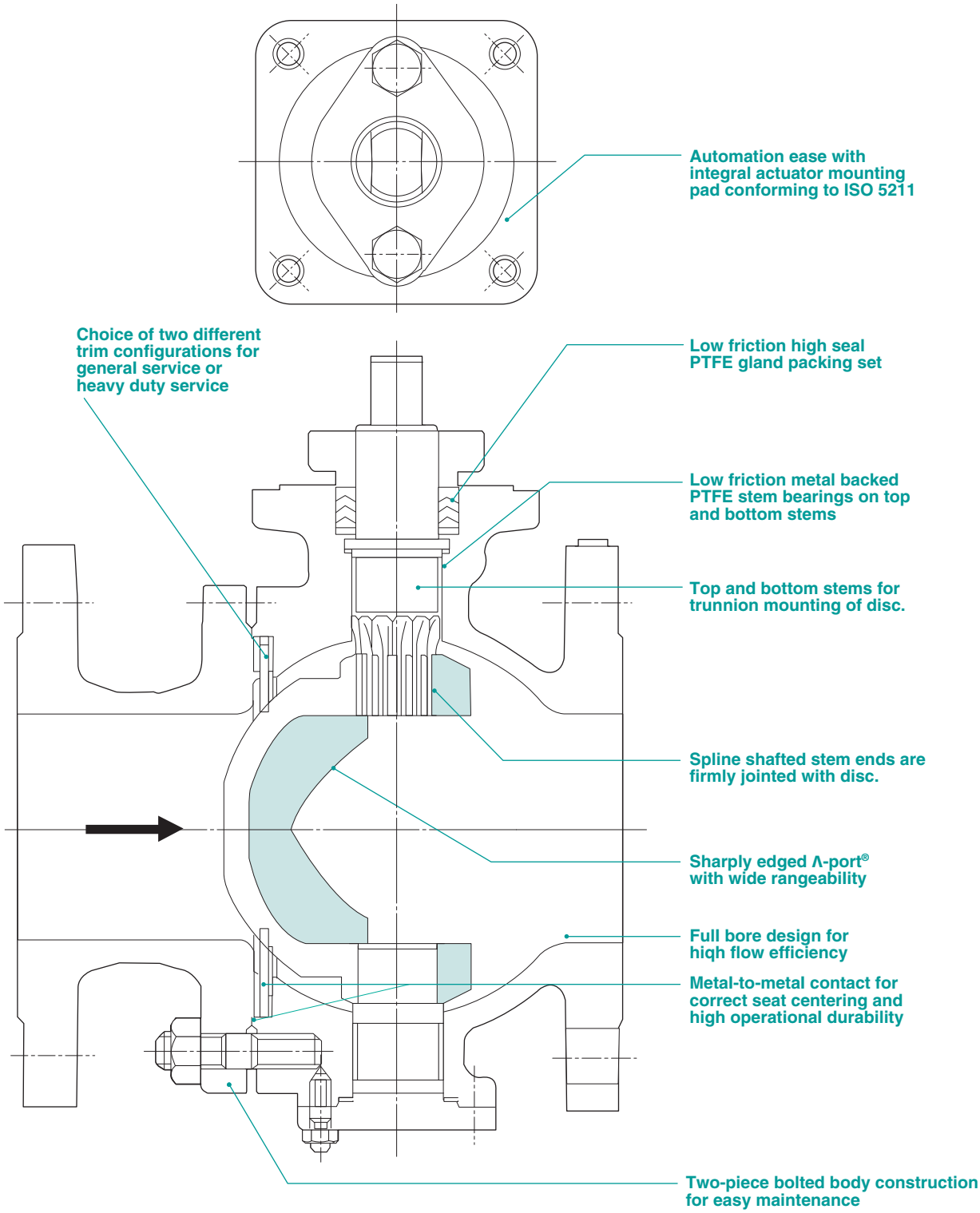
Operation (Standard)	Class 150/10K	Class 300/20K
Lever type	Size 1/2 to 11/2	Size 1/2 to 11/4
Bar type	Size 2 to 4	Size 11/2 to 3
Gear	Size 5 to 8	Size 4 to 8





Λ-Port Control Valves

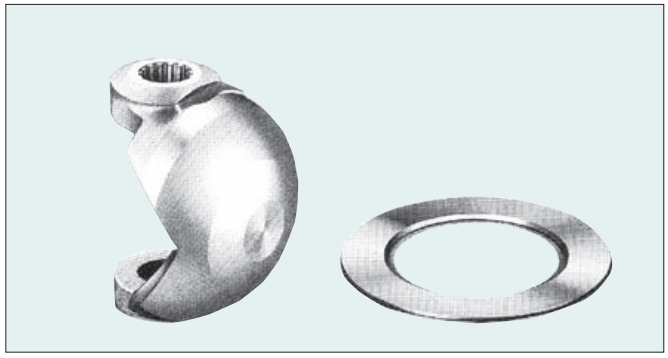
Design Features



Design Features

1. Sharp solid cutting

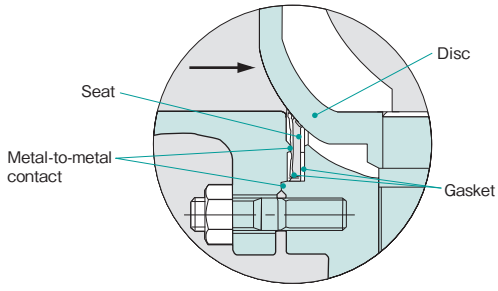
A trunnion mounted disc is sharply edged for cutting solids and fibrous objects mixed in line fluids, preventing disturbance to valve closing operation, and minimizlng fluid residue within the valve bore.



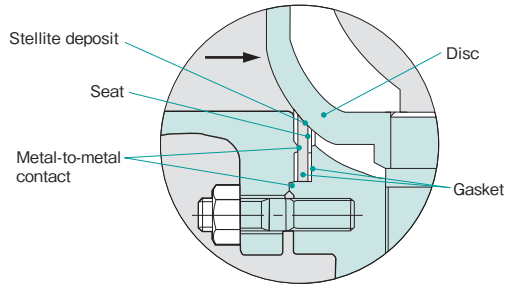
2. Choice of trims

Choice of two different trim configurations is available, depending on the planned service condition:

FLEKSEAT, made of spring Steel Type 316, provides elasticity in its contact with the hard-chromium plated CF8M disc for higher sealing performance. Recommended for pulp and paper mill process control and services where higher sealing performance is critically required on valve shut-off. Always good for throttling service. (KITZ Fiq. UVC)



KNIFESEAT, made of Stellite deposited steel Type 316, contacts hard-chromium plated CF8M disc for heavy duty services. Recommended for slurry service, and all other abrasion services. Also good for high viscosity services including pulp and paper mill processes. Always recommended for throttling service. (KITZ Fig. UVCT)



3. Structural reliability

Metal-to-metal contact is accommodated between body and cap, and between seat and cap, for correct seat centering and adequate depressing force. Spline shafted stem ends are firmly jointed with the disc for correct disc centering and higher operational durability. In addition, trunnion mounting of the disc oh the body helps increase total structural reliability of the valve against extraordinary piping stress.

4. Stabilized operating torque

Metall backed PTFE stem bearings are employed on top and bottom stems for minimized and stabilized torque of valve operation. Fine finish of the disc surface and other sliding surfaces of components also helps smooth operation of the valve

5. Maintenance ease

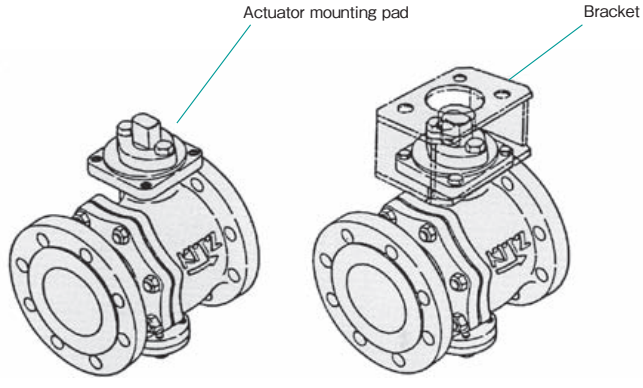
Two-Piece split body construction provides the convenience of easy maintenance which is always critically required for handling viscous or fibrous line fluids

6. High flow effcieney

Full bore deslgn guarantees maximized and linearized flow characteristics with minimized pressure loss, helping viscous or fibrous line fluids pass through the valve bore smoothly.

7. Valve automation

Quarter-turn valve drive mechanism enables technically easier mounting of valve automation measures such as electric and pneumatic actuators. Integral pads are provided for easy, safe and assured on-the-
spot actuator mounting without disassembly of valve glands, as required by ISO standard.
Note: Customers are requested to prepare mounting brackets and connectors chosen for their valve actuation as illustrated here.



Caution: KITZ Λ-*port*® control valves are designed for uni-directional flow control. Be sure to mount the valve correctly so that the direction of line flow matches the direction of the arrow mark cast on the valve body.

Design Data

Design specifications

Valve structure	Split body side entry, RF-flanged, full bore, trunnion mounted disc
Wall thickness	ASME B16.34 Class150/Class300
F-F dimensions	JIS B2002 or ASME B16.10 Class150/Class 300 for ball valves
End connection	RF-flanged to JIS B2238 10K/20K or ASME B16.5 Class 150/Class 300
Actuator mounting pad	ISO 5211
P-T rating	JIS B223810K/20K or ASME B16.34 Class 150/Class 300
Operation	Quarter-turn

Test Pressure

Seat test Hydrostatic or pneumatic at 0.39MPa (4kgf/cm² or 60 psi)	FLEKSEAT for general service	Allowable leakage 0.0005% of Nominal Cv to IEC 534-4 Class IV-SI ANSI FCI 70-2 Class IV×0.05
	KNIFESEAT for heavy duty service	Allowable leakage 0.5% of Nominal Cv to IEC 534-4 Class II ANSI FCI 70-2 Class II

Maximum Allowable Seat Leakage {Per minute under 0.39MPa(4kaf/cm²) test pressure}

Valve size		FLEKSEAT (UVC)			KNIFESEAT (UVCT)		
inch	mm	Cv at full opening	Hyd rostatic (cc)	Pneumatic (Nl)	Cv at full opening	Hydrostatic (l)	Pneumatic (Nl)
1	25	25	3.6	0.16	31	4.42	193
1½	40	85	12.1	0.53	100	14.2	622
2	50	145	20.7	0.90	160	22.8	994
2½	65	240	34.2	1.49	265	37.8	1646
3	80	380	54.1	2.36	400	57.0	2486
4	100	550	78.3	3.42	585	83.4	3636
5	125	960	137	5.97	1010	144	6276
6	150	1500	214	9.32	1550	220	9632
8	200	2700	385	16.8	2750	392	17090
10	250	4300	613	26.7	4400	626	27340
12	300	6200	883	38.5	6300	898	39140
14	350	8200	1168	51.0	8300	1182	51580

Condition : Absolute air pressure 0.010MPa(1.033kgf/cm²) A at 20℃

Class 150 / 10K Lever oprated Λ-port® control valves

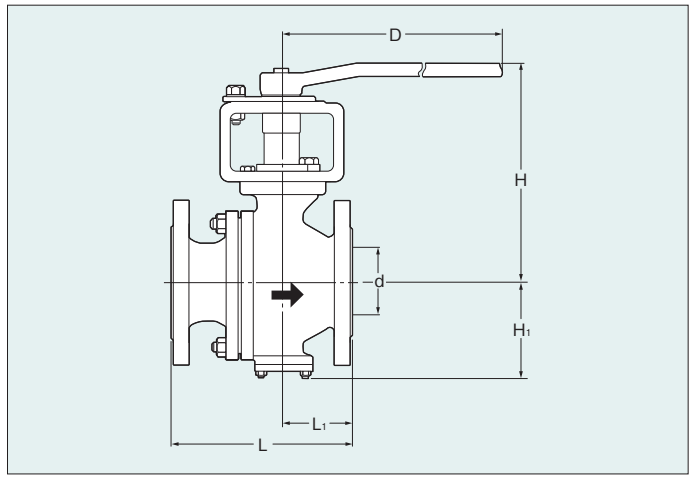
Trim
FLEKSEAT
KNIFESEAT

ASME Class 150
L-150UVC (M)
L-150UVCT (M)

10K
L-10UVC (M)
L-10UVCT (M)

In case of CF8M valve body, KITZ Fig. shall be suffixed with “M”.

Page 95 for Pressure-Temperature Ratings.



Dimensions of L-150UVC (M), L-150UVCT (M), L-10UVC (M), L-10UVCT (M)

Unit: mm

Valve size	in.	1	1 1/2	2	2 1/2	3	4	5	6	8
	mm	25	40	50	65	80	100	125	150	200
d		25	38	51	64	76	102	127	152	203
L		127	165	178	190	203	229	356	394	457
L_1		48	67	69	76	77	89	158	197	228.5
H		190	199	205.5	252.5	259	292.5	315	397	471.5
H_1		68.5	76	84.5	97	106	133.5	157	182	226.5
D		160	230	230	400	400	460	460	1000	1500

Class 150 / 10K Gear oprated Λ-port® control valves

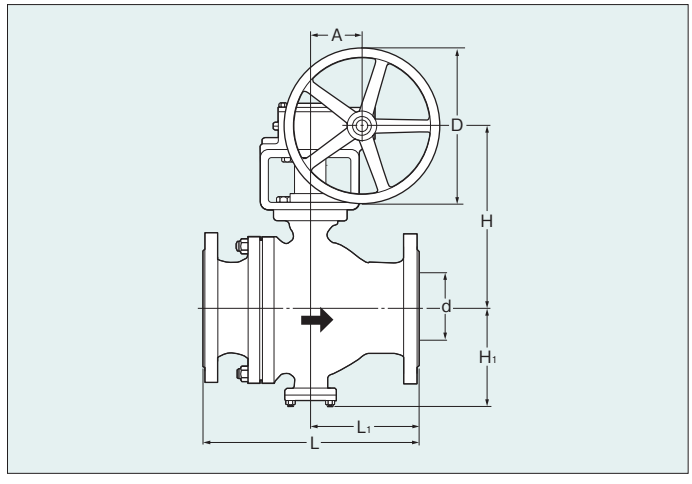
Trim
FLEKSEAT
KNIFESEAT

ASME Class 150
G-150UVC (M)
G-150UVCT (M)

10K
G-10UVC (M)
G-10UVCT (M)

In case of CF8M valve body, KITZ Fig. shall be suffixed with “M”.

Page 95 for Pressure-Temperature Ratings.



Dimensions of G-150UVC (M), G-150UVCT (M), G-10UVC (M), G-10UVCT (M)

Unit: mm

Valve Size	in.	5	6	10	12	14
	mm	125	150	250	300	350
d		152	203	254	305	337
L		394	457	533	610	686
L_1		197	228.5	266.5	260	293
H		330	410	446	524	547.5
H_1		182	226.5	268.5	365.5	403.5
D		310	360	500	500	500
A		65.5	88.5	93.5	134	134

Class 300 / 20K Lever oprated Λ-port® control valves

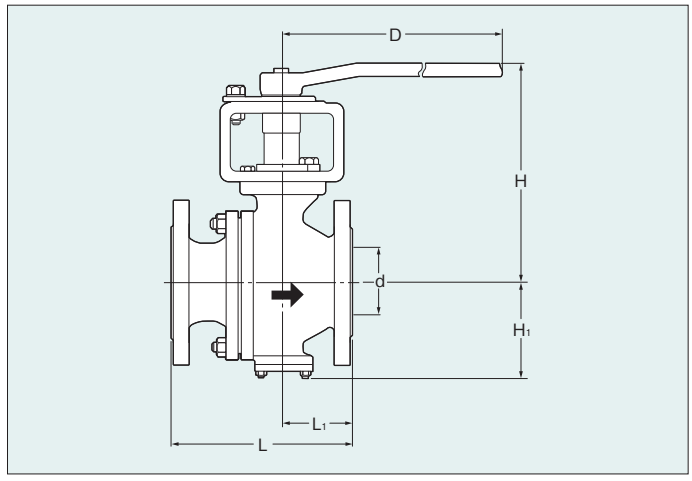
Trim
FLEKSEAT
KNIFESEAT

ASME Class 150
L-300UVC (M)
L-300UVCT (M)

10K
L-20UVC (M)
L-20UVCT (M)

In case of CF8M valve body, KITZ Fig. shall be suffixed with “M”.

Page 95 for Pressure-Temperature Ratings.



Dimensions of L-300UVC (M), L-300UVCT (M), L-20UVC (M), L-20UVCT (M)

Unit: mm

Valve size	in.	1	1 1/2	2	2 1/2	3	4	5	6	8
	mm	25	40	50	65	80	100	125	150	200
d		25	38	51	64	76	102	127	152	203
L		165	190	216	241	283	305	381	403	502
L_1		68	73.5	87.5	102	120.5	125	158	182	228.5
H		190	199	205.5	252.5	259	292.5	315	397	471.5
H_1		71.5	79	87.5	100	109	133.5	157	182	226.5
D		160	230	230	400	400	460	460	1000	1500

Class 300 / 20K Gear oprated Λ-port® control valves

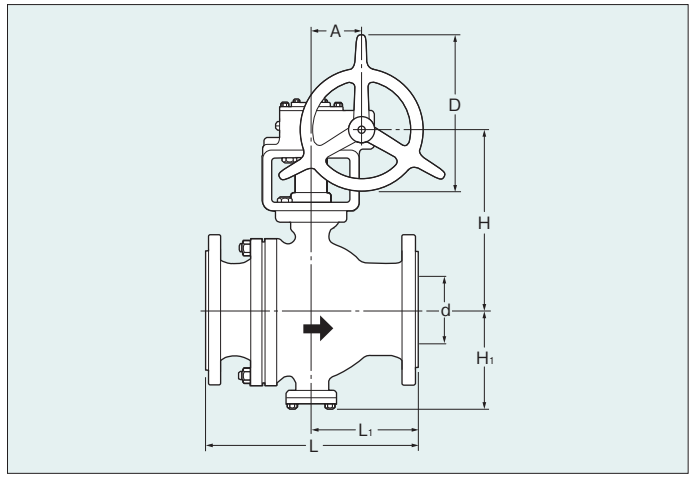
Trim
FLEKSEAT
KNIFESEAT

ASME Class 150
G-300UVC (M)
G-300UVCT (M)

10K
G-20UVC (M)
G-20UVCT (M)

In case of CF8M valve body, KITZ Fig. shall be suffixed with “M”.

Page 95 for Pressure-Temperature Ratings.



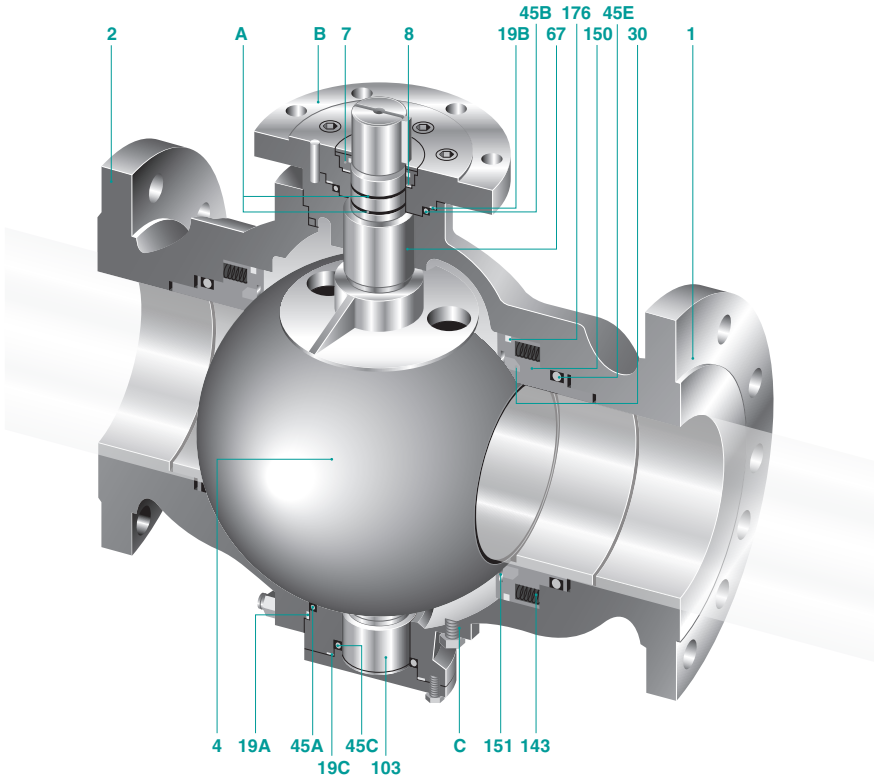
Dimensions of G-300UVC (M), G-300UVCT (M), G-20UVC (M), G-20UVCT (M)

Unit: mm

Valve Size	in.	6	8	10
	mm	150	200	250
d		152	203	254
L		403	502	568
L_1		182	228.5	242.5
H		330	410	446
H_1		182	226.5	268.5
D		310	360	500
A		65.5	88.5	93.5

Trunnion Mounted Ball Valves

Component Drawing



2	Cap
A	O-ring stem seal
B	Gland plate
7	Gland (Threaded)
8	Firesafe gland packing(Flexible graphite)
19B	Firesafe gasket(Flexible graphite)
45B	O-ring
67	Stem bearing
176	Firesafe retainer packing(Flexible graphite)
150	Seat retainer
45E	O-ring
30	Ball seat
1	Body
4	Precision Machined ball
19A	Firesafe gasket(Flexible graphite)
45A	O-ring
19C	Firesafe gasket(Flexible graphite)
45C	O-ring
103	Bottom Stem (Trunnion)
C	Drain port
151	Retainer Ring
143	Seat spring

Where requirement of the firesafe provision is less stringent,valves may be optionally provided with sealing materials other than flexible graphite,for economic advantage.Contact KITZ Corporation for more details.

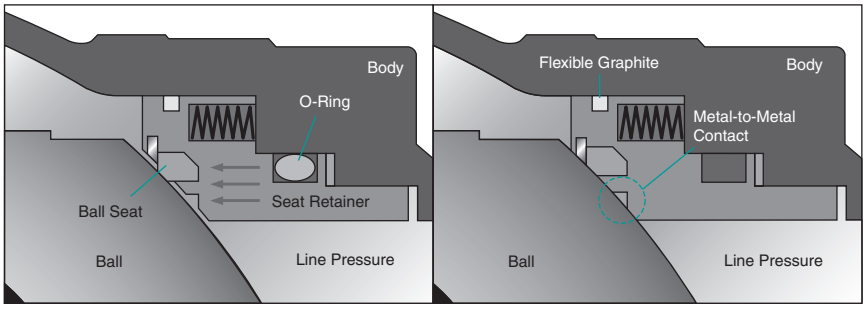
*The illustration shown in this catalog represents the typical structure of class 600 valves.
The structure may differ depending on size and class. Please consult KITZ for more details on the specifications and structure of the valve.

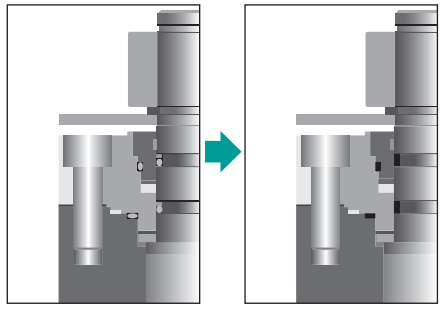
Design Features

1.Super-firesafe Design.

(1) Internal leakage prevention:
When resilient sealing materials are decomposed or deteriorated by a plant fire,the edge of the metal seat retainer preloaded by the seat spring comes into contact with the ball to shut off the line fluid to minimize internal leakage through the valve bore.The seat retainer also compresses KITZ originally designed flexible graphite retainer packings to prevent fluid leakage form between the valve body and the seat retainer(PATENTED).

(2) External leakage prevention
Leakage from the valve stem area is prevented by double sealing with O-ring and flexible graphite gland packings.Leakage through the valve body joint is also protected by double sealing with O-rings and flexible graphite gaskets. After a fire has deteriorated O-rings, flexible graphite packings and gaskets are the measure that prevents external fluid leakage.



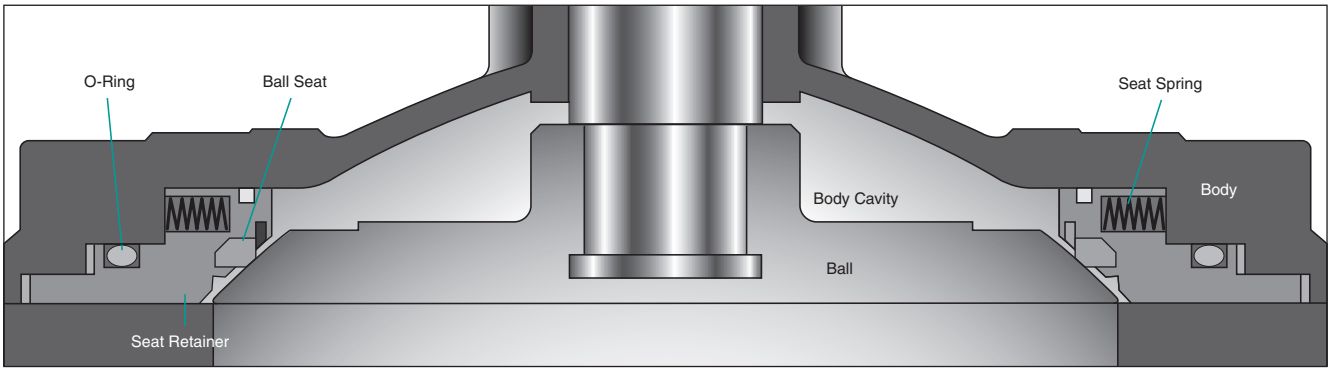


2.Tight Shut-off Sealing Mechanism

A floating seat design is employed so that each of the upstream and downstream seats is adequately maintained in contact with the ball by means of a seat spring.Line pressure helps this contact method. It features excelletnt sealing performance independently on both side seats at the same time.

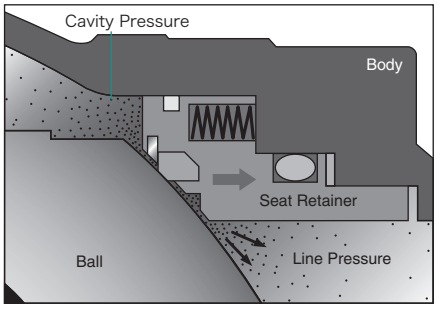
3.Block and Bleed Function.

Ball seats shut off the line fluid independently on the upsteam and downsteam side of the ball.The valve bore and the body cavity are isolated from each other when the valve is fully opened or closed so that the residue within the body cavity may be disposed through the drain port or an optional vent valve mounted on the bottom of the valve body.The design prevents fluid contamination within the valve interior and easily detects seat leakage from both flow directions,without dismantling the vavle from the pipeline.



4.Cavity Pressure Relief.

In case of an unusually high increase of servicing or ambient temperature,liquefied gas or highly volatile liquid trapped within the body cavity may evaporate,and cause an excessive rise in the cavity pressure.For safety consideration, a provision is made so that when the cavity pressure exceeds the line pressure,the ball seat will move slightly away from the ball surface to relieve the excessive cavity pressure into the valve bore.



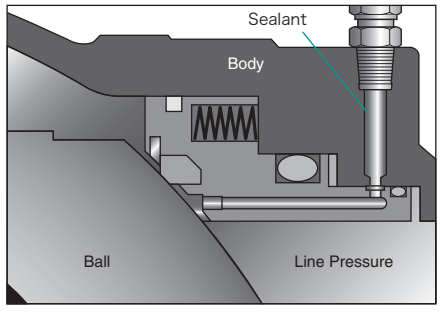
5.Low Emission Design

The emission suppressing design of KITZ trunnion mounted ball valves is guaranteed by the production test carried out at factories prior to shipment.In the United States, the Federal Clean Air Act was dramatically amended in 1990, to realize the new environmental protection policy of a 95% reduction in fugitive emission or leak levels of toxic gases and chemicals from plant equipment. Promulgated in April, 1994, the new law requires all plants handling the toxic gas specified by the Environmental Protection Agency, to periodically monitor their plant equipment for detection of leaks exceeding 500 ppm, and repair or replace all defective parts immediately. California has exceeded the Federal law with a state regulation requiring 100 ppm maximum leak level for an astonishing 99% reduction of such an environmental pollution for the Northern California Region after 1997.

6.Options

(1) Emergency Seal Restoration.

For accidental leakage form the seat or stem sealing area, a sealant supply mechanism may be provided as an option.Should the sealing material be damaged or decomposed by fire or other accidental causes, leakage can be temporarily prevented by injection of the sealant into this mechanism.



(2) Low Temparture,cryogenic Temperature.

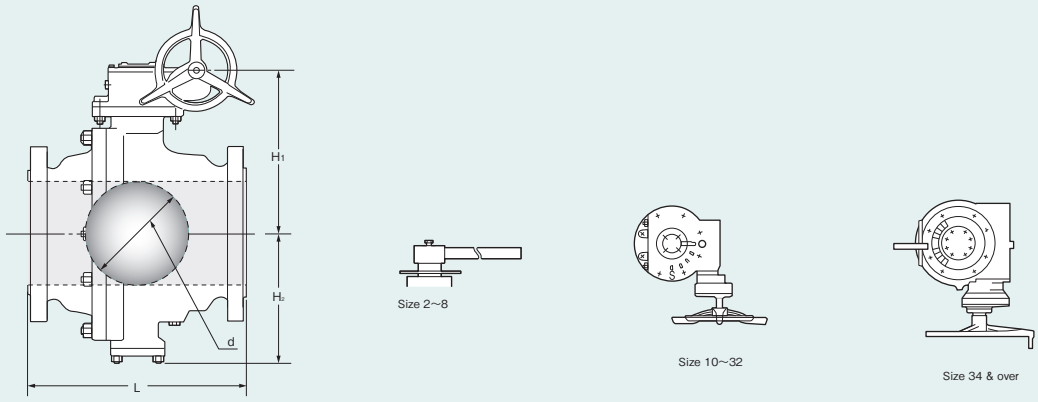
(3) Stem Extetion.

Please contact your KITZ agent or distributor.

Class 150 Stainless Steel/Carbon Steel Ball Valves

Split body, side entry design

(G-)150UTCS
(Full Port)
(G-)150SCTCS
(Full Port)



Dimensions of (G-)150UTCS, (G-)150SCTCS

Page 89 for Pressure-Temperature Ratings.

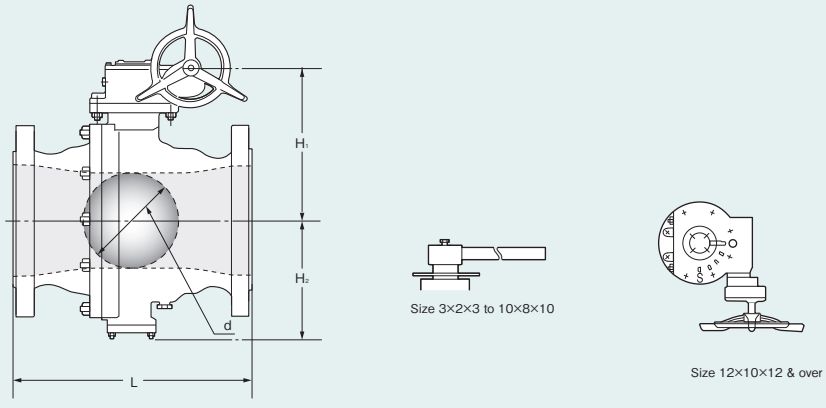
Unit: mm

Nominal Size		2	3	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	mm	50	80	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
d (bore)	in.	2	3	4	6	8	10	12	13.25	15.25	17.25	19.25	21.25	23.25	25	27	29	30.75	32.75	34.5
	mm	51	76	102	152	203	254	305	337	387	438	489	540	591	635	686	737	781	832	876
L	in.	7	8	9	15.5	18	21	24	27	30	34	36	40	42	45	49	51	54	58	60
	mm	178	203	229	394	457	533	610	686	762	864	914	1016	1067	1143	1245	1295	1372	1473	1524
H_1	in.	6.50	7.60	9.09	12.95	15.47	15.47	17.36	18.94	23.54	25.31	27.87	31.42	33.98	33.86	35.42	37.01	38.98	39.65	41.14
	mm	165	193	231	329	393	393	441	481	598	643	708	798	863	860	895	940	990	1007	1045
H_2	in.	3.98	5.04	6.02	8.62	10.75	13.35	15.16	16.69	18.54	20.24	22.80	24.72	27.17	26.97	28.35	30.51	32.48	34.21	35.71
	mm	101	128	153	219	273	339	385	424	471	514	579	628	690	685	720	775	825	869	907

Class 150 Stainless Steel/Carbon Steel Ball Valves

Split body, side entry design

(G-)150UTCRS
(Reduced Port)
(G-)150SCTCRS
(Reduced Port)



Dimensions of (G-)150UTCRS, (G-)150SCTRS

Page 89 for Pressure-Temperature Ratings.

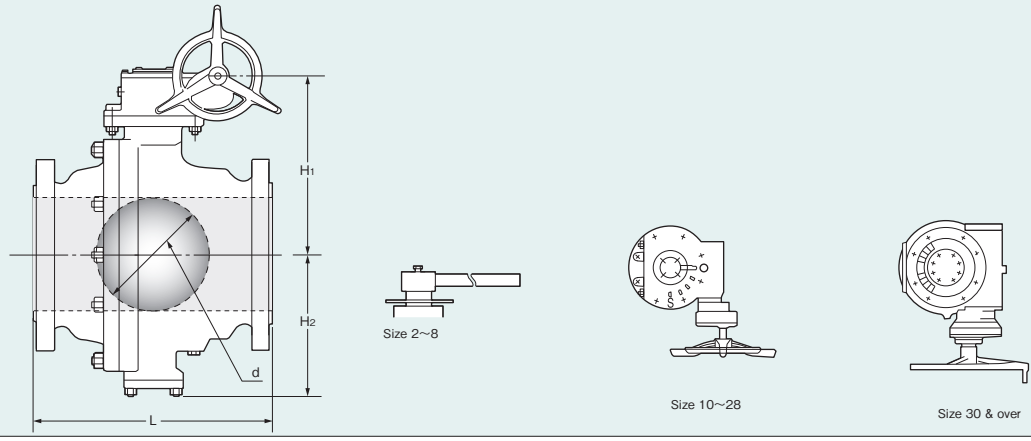
Unit: mm

Nominal Size		3	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	mm	80	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
d (bore)	in.	2	3	4	6	8	10	12	13.25	15.25	17.25	17.25	19.25	21.25	23.25	23.25	25	27	29
	mm	51	76	102	152	203	254	305	337	387	438	438	489	540	591	591	635	686	737
L	in.	8	9	15.5	18	21	24	27	30	34	36	40	42	45	49	51	54	58	60
	mm	203	229	394	457	533	610	686	762	864	914	1016	1067	1143	1245	1295	1372	1473	1524
H_1	in.	6.50	7.60	9.09	12.95	15.47	15.47	17.36	18.94	23.54	25.31	25.31	27.87	31.42	33.98	33.98	33.86	35.42	37.01
	mm	165	193	231	329	393	393	441	481	598	643	643	708	798	863	863	860	895	940
H_2	in.	3.98	5.04	6.02	8.62	10.75	13.35	15.16	16.69	18.54	20.24	20.24	22.80	24.72	27.17	27.17	26.97	28.35	30.51
	mm	101	128	153	219	273	339	385	424	471	514	514	579	628	690	690	685	720	775

Class 300 Stainless Steel/Carbon Steel Ball Valves

Split body, side entry design

(G-)300UTCS
(Full Port)
(G-)300SCTCS
(Full Port)



Dimensions of (G-)300UTCS, (G-)300SCTCS

Page 89 for Pressure-Temperature Ratings.

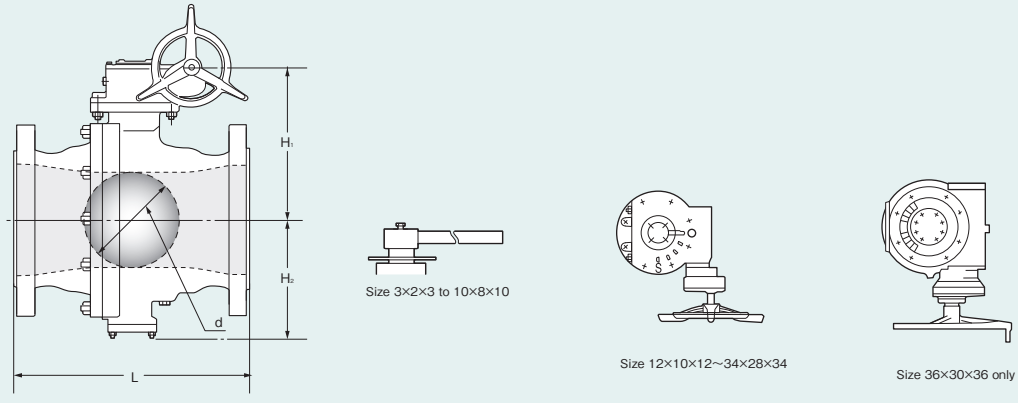
Unit: mm

Nominal Size		2	3	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	in.	50	80	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
d (bore)	in.	2	3	4	6	8	10	12	13.25	15.25	17.25	19.25	21.25	23.25	25	27	29	30.75	32.75	34.5
	mm	51	76	102	152	203	254	305	337	387	438	489	540	591	635	686	737	781	832	876
L	in.	8.5	11.125	12	403	19.75	22.375	25.5	30	33	36	39	43	45	49	53	55	60	64	68
	mm	216	283	305	403	502	568	648	762	838	914	991	1092	1143	1245	1346	1397	1524	1626	1727
H_1	in.	6.50	7.60	9.09	8.62	15.47	15.47	17.36	18.94	23.54	25.31	27.87	31.42	33.98	35.04	37.20	37.80	39.76	42.52	44.02
	mm	165	193	231	329	393	393	441	481	598	643	708	798	863	890	945	960	1010	1080	1118
H_2	in.	3.98	5.04	6.02	8.62	10.75	13.35	15.16	16.69	18.54	20.24	22.80	24.72	27.17	28.15	30.31	32.09	34.06	35.79	37.28
	mm	101	128	153	219	273	339	385	424	471	514	579	628	690	715	770	815	865	909	947

Class 300 Stainless Steel/Carbon Steel Ball Valves

Split body, side entry design

(G-)300UTCRS
(Reduced Port)
(G-)300SCTCRS
(Reduced Port)



Dimensions of (G-)300UTCRS, (G-)300SCTCRS

Page 89 for Pressure-Temperature Ratings.

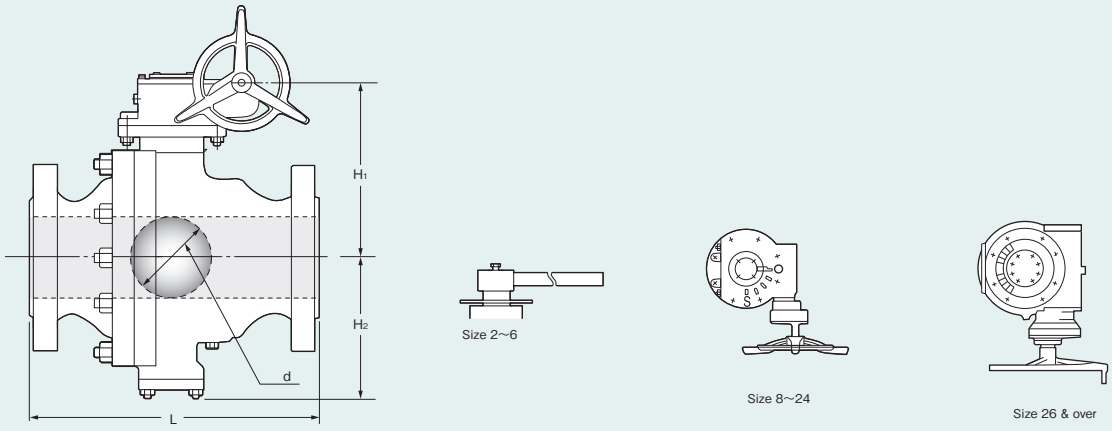
Unit: mm

Nominal Size		3	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	in.	80	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
d (bore)	in.	2	3	4	6	8	10	12	13.25	15.25	17.25	17.25	19.25	21.25	23.25	23.25	25	27	29
	mm	51	76	102	152	203	254	305	337	387	438	438	489	540	591	591	635	686	737
L	in.	11.125	12	15.875	19.75	22.375	25.5	30	33	36	39	43	45	49	53	55	60	64	68
	mm	283	305	403	502	568	648	762	838	914	991	1092	1143	1245	1346	1397	1524	1626	1727
H_1	in.	6.50	7.60	9.09	12.95	15.47	15.47	17.36	18.94	23.54	25.31	25.31	27.87	31.42	33.98	33.98	35.04	37.20	37.80
	mm	165	193	231	329	393	393	441	481	598	643	643	708	798	863	863	890	945	960
H_2	in.	3.98	5.04	6.02	8.62	10.75	13.35	15.16	16.69	18.54	20.24	20.24	22.80	24.72	27.17	27.17	28.15	30.31	32.09
	mm	101	128	153	219	273	339	385	424	471	514	514	579	628	690	690	715	770	815

Class 600 Stainless Steel/Carbon Steel Ball Valves

Split body, side entry design

(G-)600UTCS
(Full Port)
(G-)600SCTCS
(Full Port)



Dimensions of (G-)600UTCS, (G-)600SCTCS

Page 89 for Pressure-Temperature Ratings.

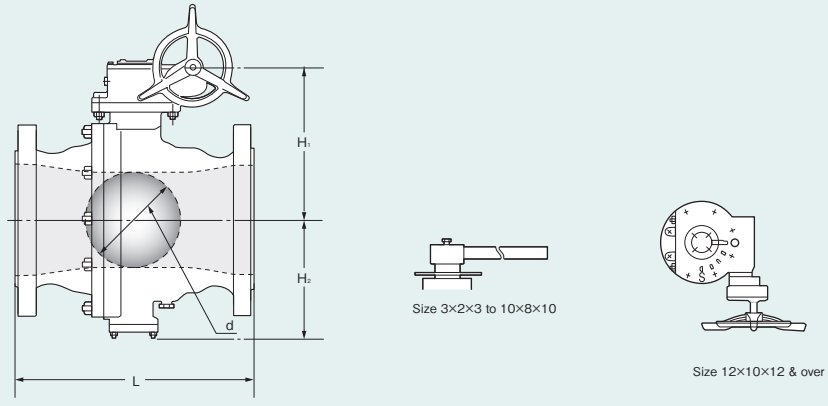
Unit: mm

Nominal Size		2	3	4	6	8	10	12	14	16	18	20	24	26	28	30
	mm	50	80	100	150	200	250	300	350	400	450	500	600	650	700	750
d (bore)	in.	2	3	4	6	8	10	12	13.25	15.25	17.25	19.25	23.25	25	27	29
	mm	51	76	102	152	203	254	305	337	387	438	489	591	635	686	737
L	in.	11.5	14	17	22	26	31	33	35	39	43	47	55	57	61	65
	mm	292	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1549	1651
H_1	in.	6.93	9.72	10.87	14.29	14.29	16.77	21.57	23.54	25.51	29.13	31.89	36.22	37.20	40.87	42.83
	mm	176	247	276	363	363	426	548	598	648	740	810	920	945	1038	1088
H_2	in.	4.69	5.79	6.77	9.84	12.52	14.65	17.09	19.06	21.02	23.23	25.91	30.16	32.48	35.04	36.93
	mm	119	147	172	250	318	372	434	484	534	590	658	766	825	890	938

Class 600 Stainless Steel/Carbon Steel Ball Valves

Split body, side entry design

(G-)600UTCRS
(Reduced Port)
(G-)600SCTCRS
(Reduced Port)



Dimensions of (G-)600UTCRS, (G-)600SCTCRS

Page 89 for Pressure-Temperature Ratings.

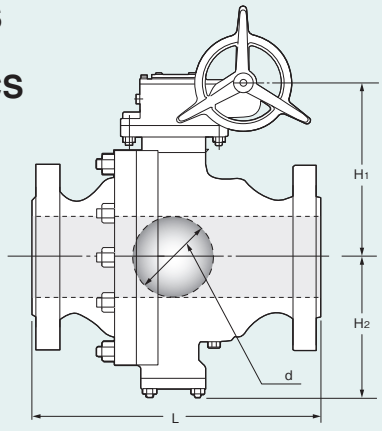
Unit: mm

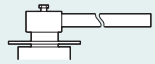
Nominal Size		3	4	6	8	10	12	14	16	18	20	24	26	28	30
	mm	80	100	150	200	250	300	350	400	450	500	600	650	700	750
d (bore)	in.	2	3	4	6	8	10	12	13.25	15.25	17.25	19.25	21.25	23.25	23.25
	mm	51	76	102	152	203	254	305	337	387	438	489	540	591	591
L	in.	14	17	22	26	31	33	35	39	43	47	55	57	61	65
	mm	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1549	1651
H_1	in.	6.93	9.72	10.87	14.29	14.29	16.77	21.57	23.54	25.51	29.13	31.89	34.06	36.22	36.22
	mm	176	247	276	363	363	426	548	598	648	740	810	865	920	920
H_2	in.	4.69	5.79	6.77	9.84	12.52	14.65	17.09	19.06	21.02	23.23	25.91	27.99	30.16	30.16
	mm	119	147	172	250	318	372	434	484	534	590	658	711	766	766

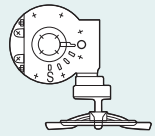
Class 900 Stainless Steel/Carbon Steel Ball Valves

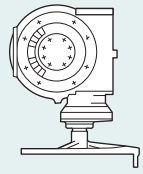
Split body, side entry design

(G-)900UTCS
(Full Port)
(G-)900SCTCS
(Full Port)




Size 2~4


Size 6~18


Size 20 & 24

Dimensions of (G-)900UTCS, (G-)900SCTCS

Page 89 for Pressure-Temperature Ratings.

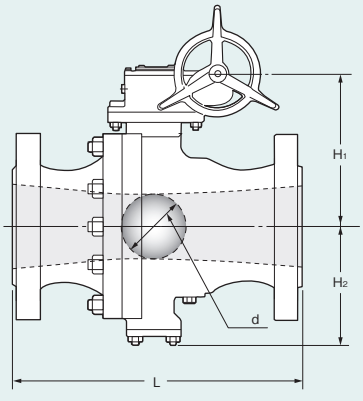
Unit: mm

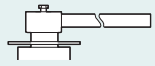
Nominal Size		2	3	4	6	8	10	12	14	16	18	20	24
	in.	2	3	4	6	8	10	12	12.75	14.75	16.75	18.625	22.5
d (bore)	mm	51	76	102	152	203	254	305	324	375	426	473	572
	in.	14.5	15	18	24	29	33	38	40.5	44.5	48	52	61
L	mm	368	381	457	610	737	838	965	1029	1130	1219	1321	1549
	in.	7.56	10.98	12.40	12.72	15.00	20.39	22.36	26.18	28.74	31.30	32.48	38.31
H_1	mm	192	279	315	323	381	518	568	665	730	795	825	973
	in.	5.59	6.77	8.07	10.71	13.19	15.98	18.15	20.20	22.95	25.43	27.80	32.72
H_2	mm	142	172	205	272	335	406	461	513	583	646	706	831

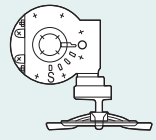
Class 900 Stainless Steel/Carbon Steel Ball Valves

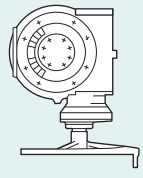
Split body, side entry design

(G-)900UTCRS
(Reduced Port)
(G-)900SCTCRS
(Reduced Port)




Size 3×2×3~6×4×6


Size 8×6×8~20×18×20


Size 24×20×24 only

Dimensions of (G-)600UTCRS, (G-)600SCTCRS

Page 89 for Pressure-Temperature Ratings.

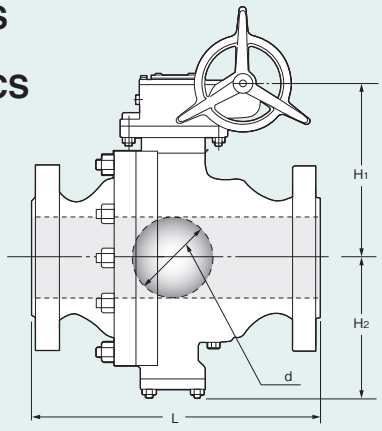
Unit: mm

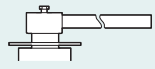
Nominal Size		3	4	6	8	10	12	14	16	18	20	24
	in.	3	4	6	8	10	12	14	16	18	20	24
d (bore)	mm	80	100	150	200	250	300	350	400	450	500	600
	in.	2	3	4	6	8	10	12	12.75	14.75	16.75	18.625
L	mm	51	76	102	152	203	254	305	324	375	426	473
	in.	15	18	24	29	33	38	40.5	44.5	48	52	61
H_1	mm	381	457	610	737	838	965	1029	1130	1219	1321	1549
	in.	7.56	10.98	12.40	12.72	15.00	20.39	22.36	26.18	28.74	31.30	32.48
H_2	mm	192	279	315	323	381	518	568	665	730	795	825
	in.	5.59	6.77	8.07	10.71	13.19	15.98	18.15	20.20	22.95	25.43	27.80
H_2	mm	142	172	205	272	335	406	461	513	583	646	706

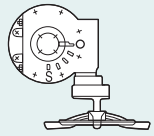
Class 1500 Stainless Steel/Carbon Steel Ball Valves

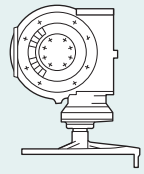
Split body, side entry design

(G-)1500UTCS
(Full Port)
(G-)1500SCTCS
(Full Port)




Size 2 & 3


Size 4~14


Size 16 & over

Dimensions of (G-)1500UTCS, (G-)1500SCTCS

Page 89 for Pressure-Temperature Ratings.

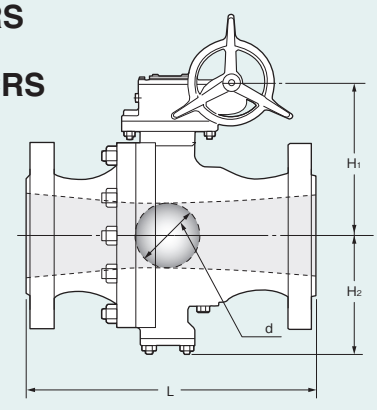
Unit: mm

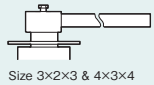
Nominal Size		2	3	4	6	8	10	12	14	16	18	20
	in.	2	3	4	5.75	7.625	9.5	11.375	12.5	14.25	16.125	17.875
d (bore)	mm	51	76	102	146	194	241	289	318	362	410	454
	in.	14.5	18.5	21.5	27.75	32.74	39	44.5	49.5	54.5	60.5	65.5
L	mm	368	470	546	705	832	991	1130	1257	1384	1537	1664
	in.	9.92	11.81	10.71	13.43	19.41	22.24	27.56	29.41	31.30	34.53	38.78
H_1	mm	252	300	272	341	493	565	700	747	795	877	985
	in.	6.50	8.07	8.90	11.77	15.28	18.07	21.85	23.78	26.93	29.80	32.68
H_2	mm	165	205	226	299	388	459	555	604	684	757	830

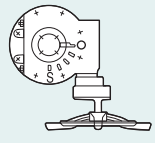
Class 1500 Stainless Steel/Carbon Steel Ball Valves

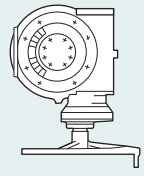
Split body, side entry design

(G-)1500UTCRS
(Reduced Port)
(G-)1500SCTCRS
(Reduced Port)




Size 3×2×3 & 4×3×4


Size 6×4×6~16×14×16


Size 18×16×18 & 20×18×20

Dimensions of (G-)1500UTCRS, (G-)1500SCTCRS

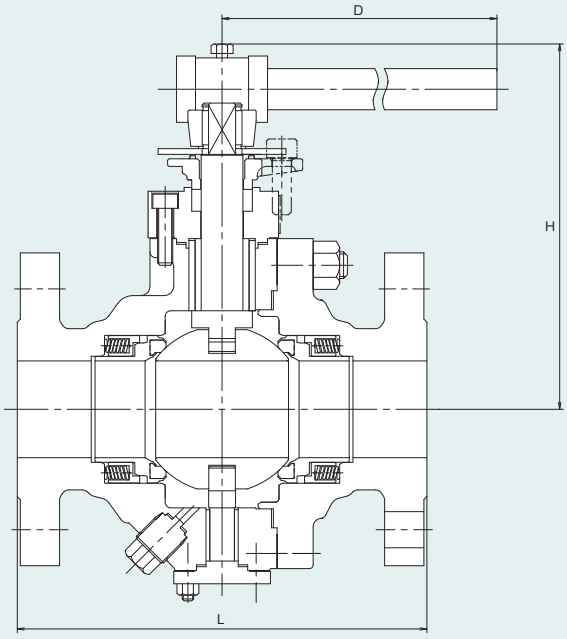
Page 89 for Pressure-Temperature Ratings.

Unit: mm

Nominal Size		3	4	6	8	10	12	14	16	18	20
	in.	3	4	6	8	10	12	14	16	18	20
d (bore)	mm	80	100	150	200	250	300	350	400	450	500
	in.	2	3	4	5.75	7.625	9.5	11.38	12.5	14.25	16.125
L	mm	51	76	102	146	194	241	289	318	362	410
	in.	18.5	21.5	27.75	32.74	39	44.5	49.5	54.5	60.5	65.5
H_1	mm	470	546	705	832	991	1130	1257	1384	1537	1664
	in.	9.92	11.81	10.71	13.42	19.41	22.24	27.56	29.41	31.30	34.53
H_2	mm	252	300	272	341	493	565	700	747	795	877
	in.	6.50	8.07	8.90	11.77	15.28	18.07	21.85	23.78	26.93	29.80
	mm	165	205	226	299	388	459	555	604	684	757

FILLTITE® seated trunnion ball design valves (Trim 1H)

150/10UTC1H, 150/10SCTC1H



Dimensions of 150UTC1H, 150SCTC1H

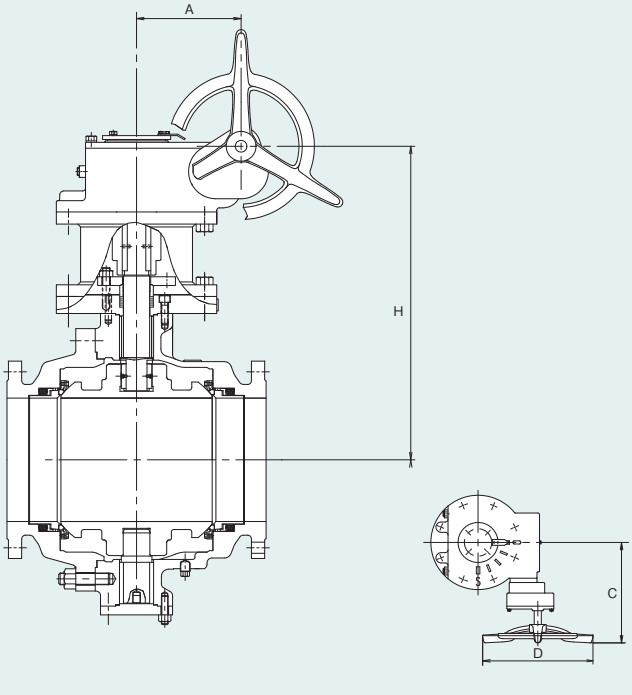
Unit: mm

Nominal size	in.	2	3	4
	mm	50	80	100
L		178	203	229
H		165	193	231
D		230	400	460

NOTE (1) Allowable seat leakage (ml/min.) = 21.75 × Port dia (inch) × Pressure (Mpa)

Page 91 for Pressure-Temperature Ratings.

G-150/10UTC1H, G-150/10SCTC1H



Dimensions of G-150UTC1H, G-150SCTC1H

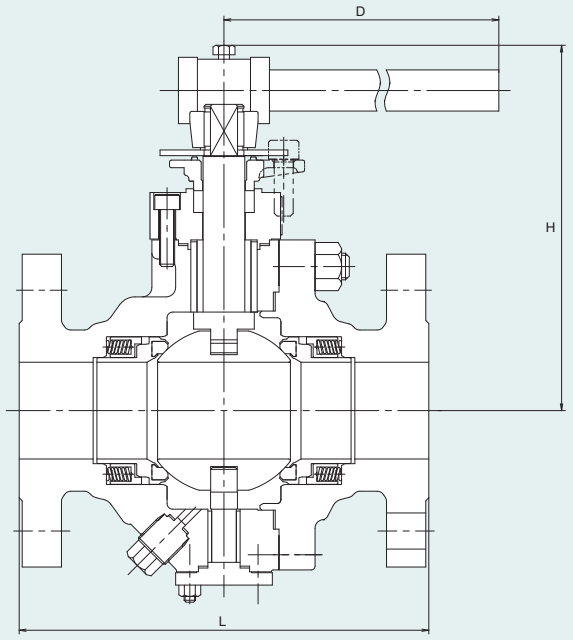
Unit: mm

Nominal size	in.	10	12	14	16	18	20
	mm	250	300	350	400	450	500
H		647	722	762	883	928	953
D		500	500	500	500	500	500
A		213	213	213	277	277	277
C		377	377	377	457	457	457

NOTE (1) Allowable seat leakage (ml/min.) = 21.75 × Port dia (inch) × Pressure (Mpa)
(2) 10K: Please contact KITZ Corporation for details.

Page 91 for Pressure-Temperature Ratings.

300/20UTC1H, 300/20SCTC1H



Dimensions of 300UTC1H, 300SCTC1H

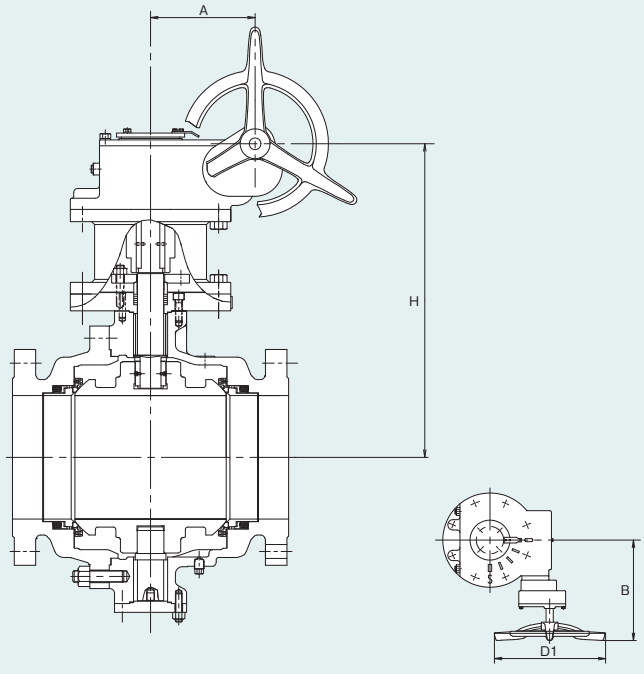
Unit: mm

Nominal size	in.	2	3
	mm	50	80
L		216	283
H		191	245
D		600	1000

NOTE (1) Allowable seat leakage (ml/min.) = 21.75 × Port dia (inch) × Pressure (Mpa)
(2) 20K: Please contact KITZ Corporation for details.

Page 91 for Pressure-Temperature Ratings.

G-300/20UTC1H, G-300/20SCTC1H



Dimensions of G-300UTC1H, G-300SCTC1H

Unit: mm

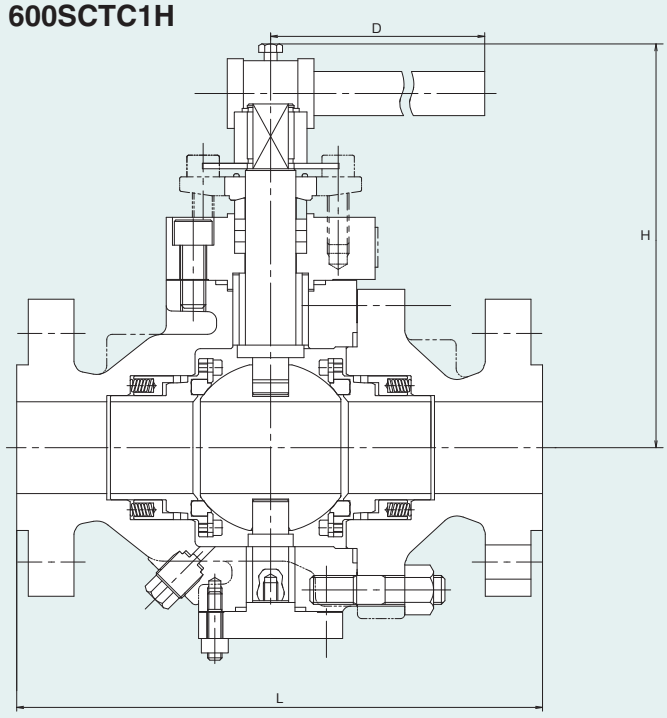
Nominal size	in.	4	6	8	10	12
	mm	100	150	200	250	300
H		334	440	484	673	798
D		500	500	500	500	500
A		93.5	93.5	134	213	277
C		363	363	377	377	457

NOTE (1) Allowable seat leakage (ml/min.) = 21.75 × Portdia (inch) × Pressure (MPa)
(2) 20K: Please contact KITZ Corporation for details.

Page 91 for Pressure-Temperature Ratings.

FILLTITE® seated trunnion ball design valves (Trim 1H)

600UTC1H, 600SCTC1H



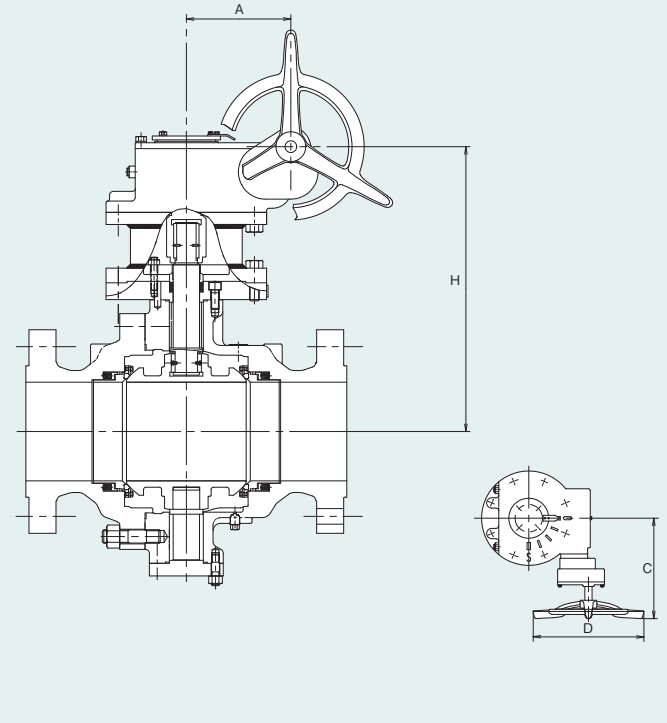
Dimensions of 600UTC1H, 600SCTC1H Unit: mm

Nominal size	in.	2	3
	mm	50	80
L		292	356
H		230	265
D		1000	1500

NOTE (1) Allowable seat leakage (ml/min.) = 21.75 × Port dia (inch) × Pressure (Mpa)

Please contact KITZ Corporation for Pressure-Temperature Rating.

G-600UTC1H, G-600SCTC1H



Dimensions of G-600UTC1H, G-600SCTC1H Unit: mm

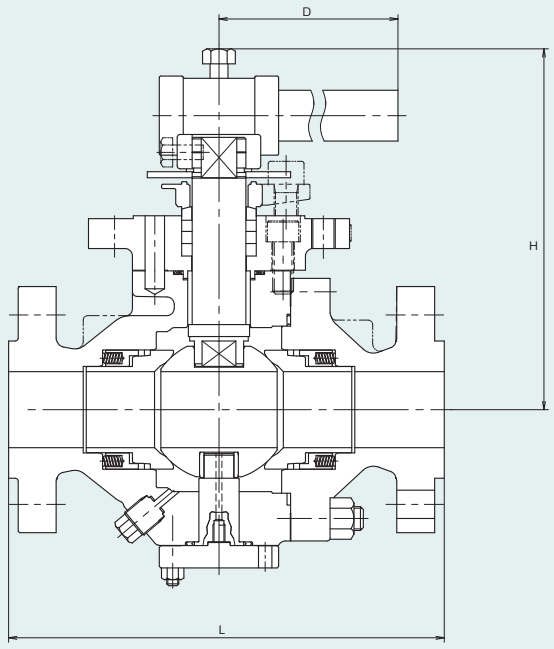
Nominal size	in.	3	4	6	8	10	12
	mm	80	100	150	200	250	300
H		307	304	454	647	783	818
D		500	500	500	500	500	500
A		93.5	93.5	134	213	277	277
C		363	363	377	377	457	457

NOTE (1) Allowable seat leakage (ml/min.) = 21.75 × Port dia (inch) × Pressure (Mpa)

Please contact KITZ Corporation for Pressure-Temperature Rating.

Metal seated trunnion ball design valve (Trim 6H)

600UTC6H, 600SCTC6H



Dimensions of 600UTC6H, 600SCTC6H

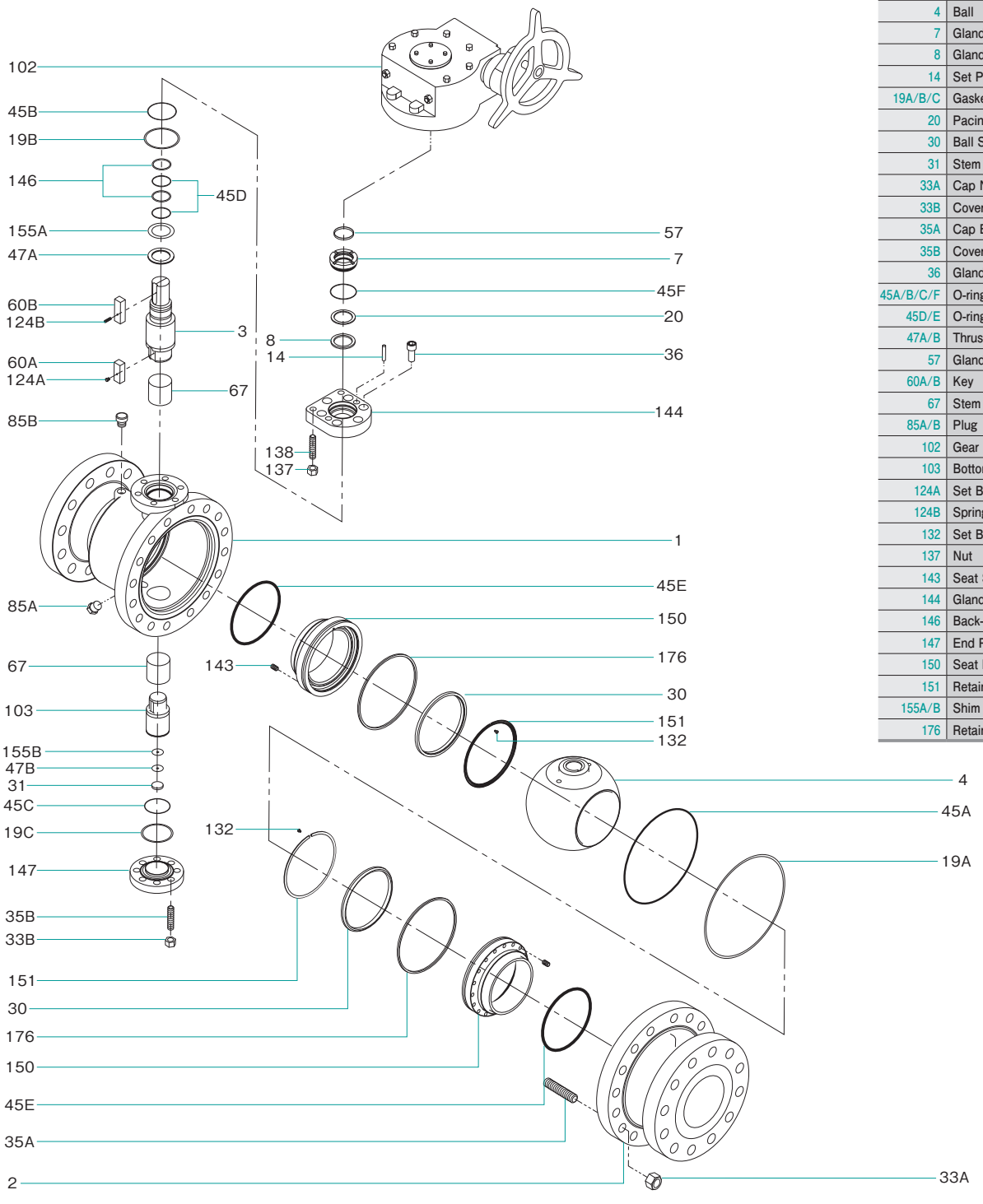
Unit: mm

Nominal size	in.	1	2
	mm		50
L			292
H			242
D			1000

- Reduced bore is also available. : 600UTCR6H(M)
- Reduced bore is also available. : 600SCTCR6H

Please contact KITZ Corporation for Pressure-Temperature Rating.

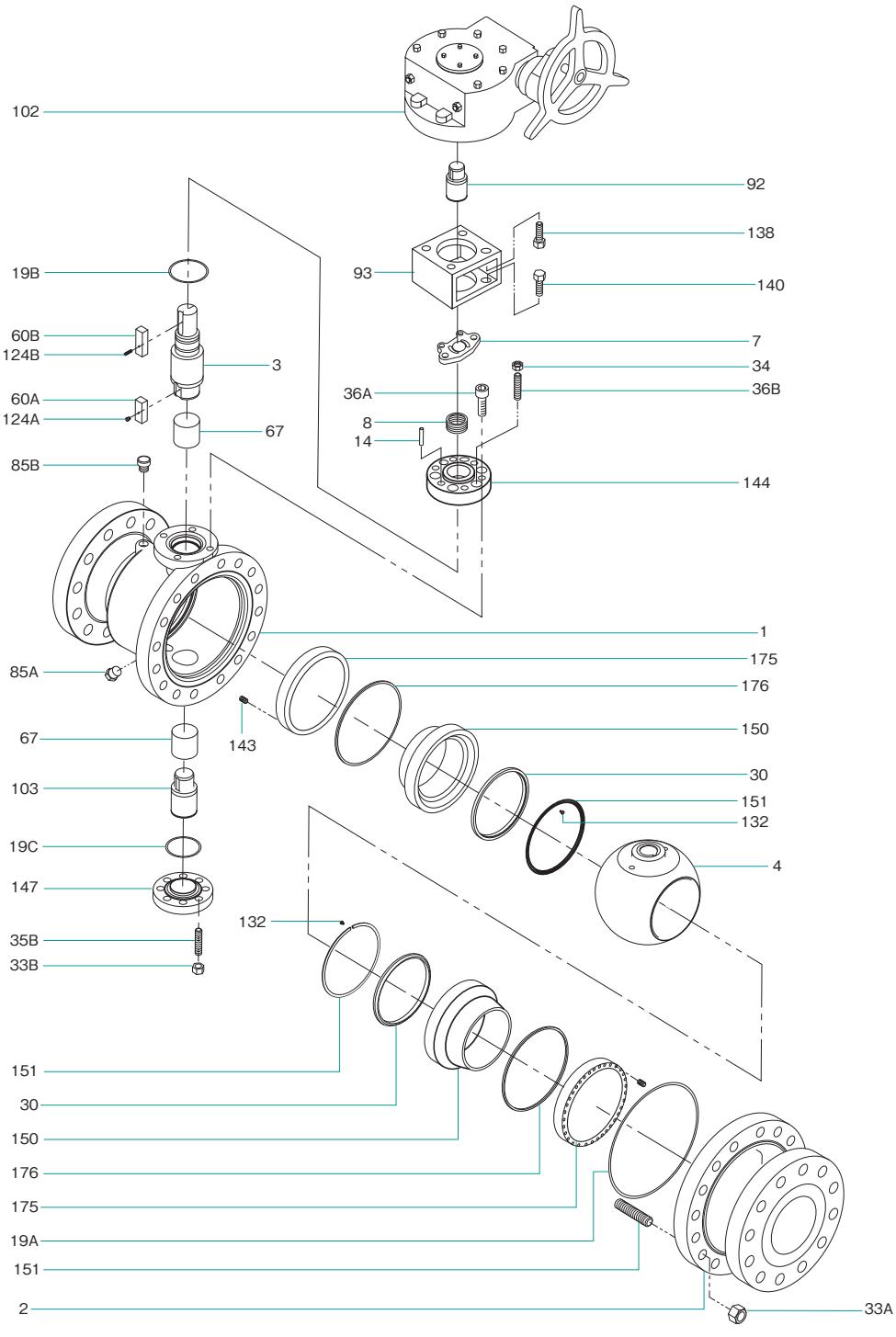
Construction



No	Name of Parts	Quantity
1	Body	1
2	Body Cap	1
3	Stem	1
4	Ball	1
7	Gland	1
8	Gland Packing	1
14	Set Pin	1set
19A/B/C	Gasket	1each
20	Pacing Washer	1
30	Ball Seat	2
31	Stem Washer	1
33A	Cap Nut	1set
33B	Cover Nut	1set
35A	Cap Bolt	1set
35B	Cover Bolt	1set
36	Gland Bolt	1set
45A/B/C/F	O-ring	1each
45D/E	O-ring	2each
47A/B	Thrust Washer	1each
57	Gland Bush	1
60A/B	Key	1each
67	Stem Bearing	2
85A/B	Plug	1each
102	Gear Unit	1
103	Bottom Stem	1
124A	Set Bolt	1
124B	Spring & Pin	1
132	Set Bolt	2
137	Nut	1set
143	Seat Spring	1set
144	Gland Plate	1
146	Back-up Ring	2
147	End Plate	1
150	Seat Retainer	2
151	Retainer Ring	2
155A/B	Shim	1set
176	Retainer Packing	2

Construction

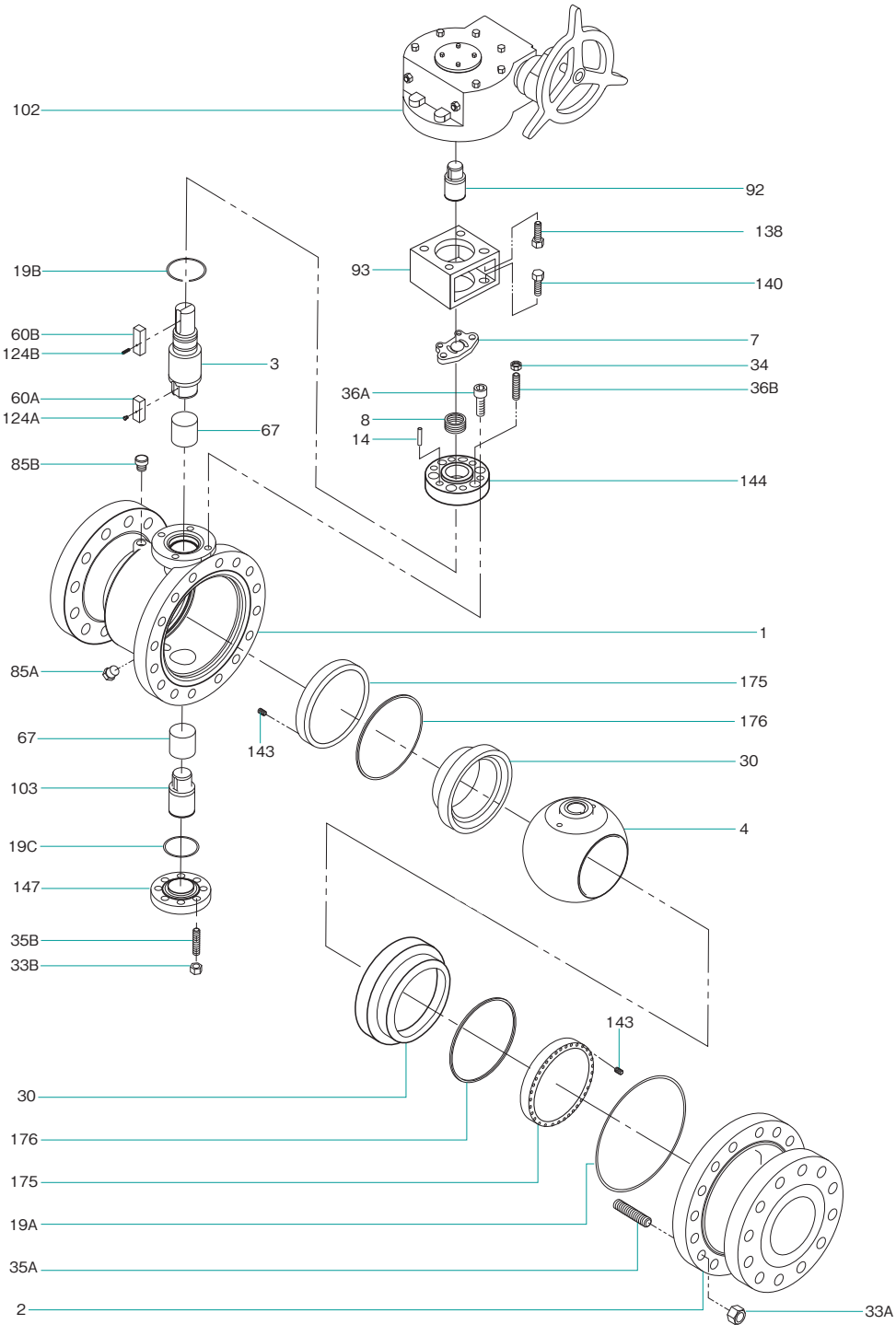
■Class 150/300/600 FILLTITE® Seated Trunnion Ball Design Valve (Trim 1H)



No	Name of Parts	Quantity
1	Body	1
2	Body Cap	1
3	Stem	1
4	Ball	1
7	Gland	1
8	Gland Packing	1set
14	Set Pin	1set
19A/B/C	Gasket	1each
30	Ball Seat	2
33A	Cap Nut	1set
33B	Cover Nut	1set
34	Gland Nut	1set
35A	Cap Bolt	1set
35B	Cover Bolt	1set
36	Gland Bolt	1set
46	Flange	1
60A/B	Key	1set
67	Stem Bearing	2
85A/B	Plug	1each
102	Gear Unit	1
103	Bottom Stem	1
124A	Set Bolt	1
124B	Spring & Pin	1
132	Set Bolt	2
143	Seat Spring	1set
144	Gland Plate	1
147	End Plate	1
150	Seat Retainer	2
151	Outer Ring	2
175	Retainer Grand	2
176	Retainer Packing	2set
146	Back-up Ring	2
147	End Plate	1
150	Seat Retainer	2
151	Retainer Ring	2
155A/B	Shim	1set
176	Retainer Packing	2

Construction

■Class 150/300/600 Meatl Seated Trunnion Ball Design Valve (Trim 6H)



No	Name of Parts	Quantity
1	Body	1
2	Body Cap	1
3	Stem	1
4	Ball	1
7	Gland	1
8	Gland Packing	1
14	Set Pin	1set
19A/B/C	Gasket	1each
30	Ball Seat	2
33A	Cap Nut	1set
33B	Cover Nut	1set
34	Gland Nut	1set
35A	Cap Bolt	1set
35B	Cover Bolt	1set
36	Gland Bolt	1set
46	Flange	1
60A/B	Key	1set
67	Stem Bearing	2
85A/B	Plug	1each
102	Gear Unit	1
103	Bottom Stem	1
124A	Set Bolt	1
124B	Spring & Pin	1
137	Nut	1set
138	Bolt	1set
143	Seat Spring	2set
144	Gland Plate	1
147	End Plate	1
175	Retainer Gland	2
176	Retainer Packing	2set
176	Retainer Packing	2set
146	Back-up Ring	2
147	End Plate	1
150	Seat Retainer	2
151	Retainer Ring	2
155A/B	Shim	1set
176	Retainer Packing	2

Floating Ball Valves (Threaded or soldered)

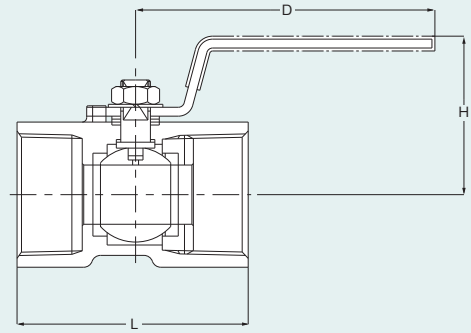
Type 600 Carbon Steel Ball Valves

Reduced port, Uni-body design, Threaded ends

Page 96 for Pressure-Temperature Ratings.

Features
- Blowout-proof stem
- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. SCTK)
  - NPT threads to ASME B1.20.1 (Fig. AKSCTK)

SCTK



Standard materials

Parts	Materials
Body	WCB
Ball	316 or 304*1
Stem	316 or 304*2
Ball seat	Glass filled PTFE
Gland packing	Glass filled PTFE
Handle	Plastic covered S.S.

*1 304 for 1/2″ & larger
*2 304 for 3/4″ & larger

End-to-end dimensions: KITZ standard

Dimensions of SCTK

Unit: mm

Valve Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
Ball Bore		4.5	6.8	9.2	12.5	16	20	24.5	32
L		39	44	56.5	59	71	78	83	100
H		31	36	41	44	48	54	65	72
D		60	70	85	85	100	100	125	125

Valve operator
Lever operation
T-type handle as option (3/4″ & larger only)

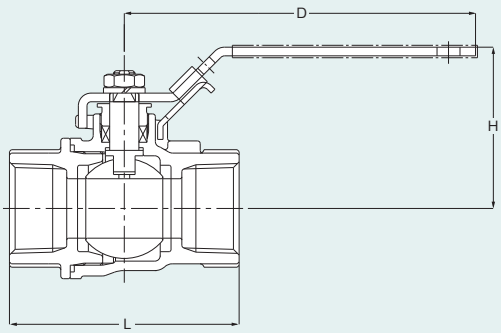
Type 1500/2000 Carbon Steel Ball Valves

Regular port, Split body design, Threaded ends

Page 97 for Pressure-Temperature Ratings.

Features
- Blowout-proof stem
- API 607 firesafe type as option
- NPT threaded ends to ASME B1.20.1

AKSCTHZM



Standard materials

Parts	Materials
Body	WCB
Body cap	WCB
Ball	316
Stem	316
Seat	HYPATITE® PTFE
Gland packing	PTFE*
Gasket	PTFE*
Handle	Plastic covered C.S.

*API 607 firesafe flexible graphite is optionally available.

End-to-end dimensions: KITZ standard

Dimensions of AKSCTHZM

Unit: mm

Valve Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
Ball Bore		9.5	9.5	10	15	20	25	32	40
L		53	53	62	72	85	94	107	120
H		50.5	50.5	58.5	64	63.5	67.5	83	89
D		100	100	115	115	135	135	155	190

Valve operator
Lever operation with latch lock
Oval handle as option

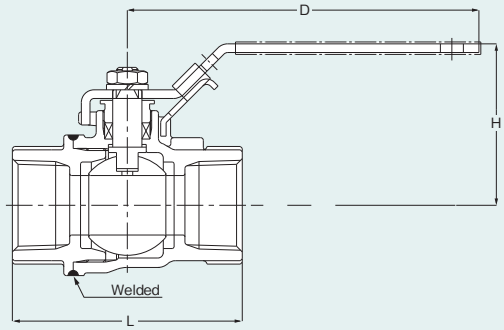
Type 1500/2000 Carbon Steel Ball Valves

Regular port, Welded body design, Threaded ends

Page 97 for Pressure-Temperature Ratings.

Features
- Blowout-proof stem
- API 607 firesafe type as option
- NPT threaded ends to ASME B1.20.1

AKSCTHWZM



Standard materials

Parts	Materials
Body	WCB
Body cap	WCB
Ball	316
Stem	316
Seat	HYPATITE® PTFE
Gland packing	PTFE*
Gasket	PTFE*
Handle	Plastic covered C.S.

* API 607 firesafe flexible graphite is optionally available.

End-to-end dimensions: KITZ standard

Valve operator
Lever operation with latch lock
Oval handle as option

Dimensions of AKSCTHWZM

Unit: mm

Valve Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
Ball Bore		9.5	9.5	10	15	20	25	32	40
L		53	53	62	72	85	94	107	120
H		50.5	50.5	58.5	64	63.5	67.5	83	89
D		100	100	115	115	135	135	155	190

Class 800 and Type 3000 Carbon Steel Ball Valves

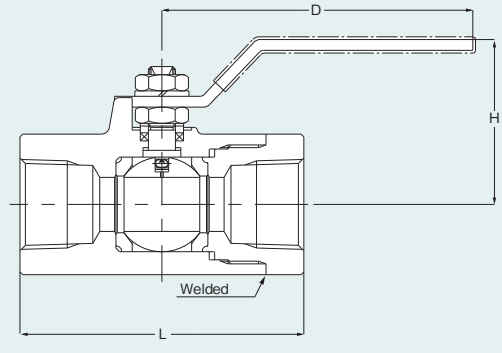
Regular port, Welded body design, Threaded ends

Page 96 for Pressure-Temperature Ratings.

Features
- Antistatic device
- Blowout-proof stem
- Fire test certification(800SCTK only)★
- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. 800/3000SCTK)
  - NPT threads to ASME B1.20.1 (Fig. AK800/3000SCTK)

Note
1. Class 800 ball valves are designed to BS 5351.
2. Type 3000 ball valves are designed to KITZ standard for servicing water, oil and gaseous fluid under the maximum working pressure of 3000psi.

800/3000 SCTK



Standard materials

Parts	Materials
Body	A105
Body cap	A105
Stem	316 (Class 800) 329 (Type 3000)
Ball	316
Gland packing	PTFE
Ball seat	PTFE (Class 800) PCTFE* (Type 3000)

* Polychloro-Trifluoro-Ethylene.

Valve operator
Lever operation

Option
★Flexible graphite packing and gasket.

Dimensions of 800SCTK, 3000SCTK

Unit: mm

Valve Size		in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
		mm	8	10	15	20	25	32	40	50
Ball Bore			10	10	10	15	20	25	32	38
L			88	88	88	90	105	117	130	150
H			44	44	44	54	57	64	69	80
D	Class 800		100	100	100	115	115	135	135	150
	Type 3000		100	100	100	115	115	160	160	230

Class 800 and Type 3000 Carbon Steel Ball Valves

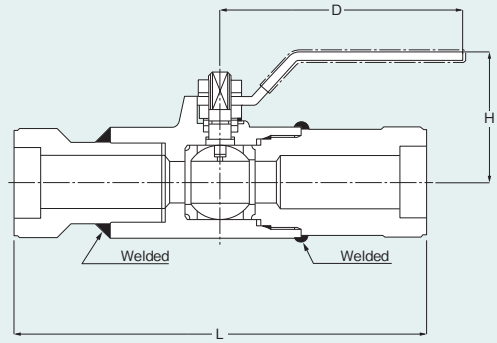
Regular port, Split body design, Socket welding ends

Page 96 for Pressure-Temperature Ratings.

Features
- Antistatic device
- Blowout-proof stem
- Socket welding ends to ASME B16.11

Note
1. Class 800 ball valves are designed to BS 5351.
2. Type 3000 ball valves are designed to KITZ standard for servicing water, oil and gaseous fluid under the maximum working pressure of 3000psi.

AW800/3000 SCTK



Standard materials

Parts	Materials
Body	A105
Body cap	A105
Stem	316 (Class 800) 329 (Type 3000)
Ball	316
Gland packing	Flexible graphite
Ball seat	PTFE (Class 800) PCTFE* (Type 3000)

* Polychloro-Trifluoro-Ethylene.

End-to-end dimensions: KITZ standard

Dimensions of AW800SCTK, AW300SCTK

Unit: mm

Valve Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
Ball Bore		10	10	10	15	20	25	32	38
L		170	170	170	176	196	210	226	262
H		44	44	44	54	57	65	70	81
D	Class 800	100	100	100	115	115	135	135	150
	Type 3000	100	100	100	115	115	160	160	230

Valve operator
Lever operation

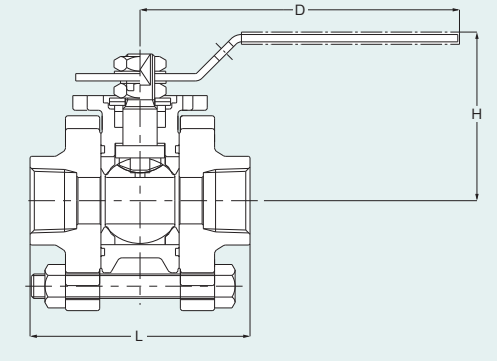
Type 1000 Carbon Steel Ball Valves

Full port, Three-piece body design, Threaded or socket welding ends

Page 96 for Pressure-Temperature Ratings.

Features
- Blowout-proof stem
- Swing-away body for maintenance ease
- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. SC3TZF)
  - NPT threads to ASME B1.20.1 (Fig. AKSC3TZF)
  - Socket welding ends to BS 5351 (Fig. SWSC3TZF)
  - Socket welding ends to ASME B16.11 (Fig. AWSC3TZF)

SC3TZF



Standard materials

Parts	Materials
Body	WCB
Body cap	WCB
Ball	CF8M/316
Stem	316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

End-to-end dimensions: KITZ standard

Dimensions of SC3TZF

Unit: mm

Valve Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
	mm	8	10	15	20	25	32	40
Ball Bore		10	10	14	19	24	30	38
L		63	63	71	90	103	110	127
H		48	48	60	69	82	88	104
D		120	120	130	130	150	150	180

Valve operator
Lever operation
Oval handle as option

Note
·Use SC3TZ for size 2″.

Type 1000 Carbon Steel Ball Valves

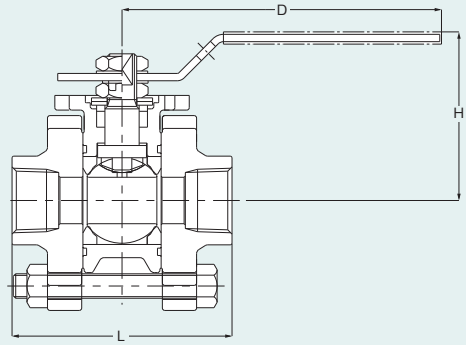
Regular port, Three-piece body design, Threaded or socket welding ends

Page 96 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Swing-away body for maintenance ease
- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. SC3TZ)
  - NPT threads to ASME B1.20.1 (Fig. AKSC3TZ)
  - Socket welding ends to BS 5351 (Fig. SWSC3TZ)
  - Socket welding ends to ASME B16.11 (Fig. AWSC3TZ)

SC3TZ



Standard materials

Parts	Materials
Body	WCB
Body cap	WCB
Ball	CF8M/316
Stem	316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

End-to-end dimensions: KITZ standard

Dimensions of SC3TZ

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
Ball Bore		10	14	19	24	30	38
L		63	71	90	103	110	127
H		48	60	69	83	88	104
D		120	130	130	150	150	180

Valve operator
Lever operation
Oval handle as option

Note
·Use SC3TZF for sizes 1/4″ & 3/8″.

Type 600 Stainless Steel Ball Valves

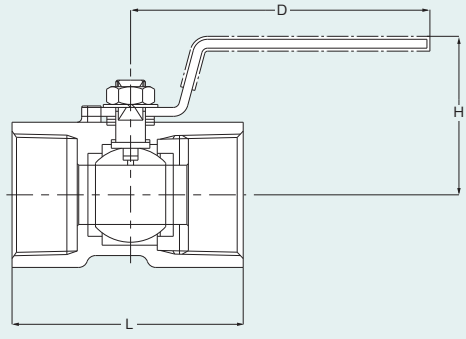
Reduced port, Uni-body design, Threaded ends

Page 96 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. UTKM)
  - NPT threads to ASME B1.20.1 (Fig. AKUTKM)

UTKM



Standard materials

Parts	Materials
Body	CF8M
Ball	316
Stem	316
Seat	Glass filled PTFE
Gland packing	Reinforced PTFE
Handle	Plastic covered S.S.

End-to-end dimensions: KITZ standard

Dimensions of UTKM

Unit: mm

Valve Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
Ball Bore		4.5	6.8	9.2	12.5	16	20	24.5	32
L		39	44	56.5	59	71	78	83	100
H		31	36	41	44	48	54	65	75
D		60	70	85	85	100	100	125	125

Valve operator
Lever operation
T-type handle as option

Type 800 Stainless Steel Ball Valves

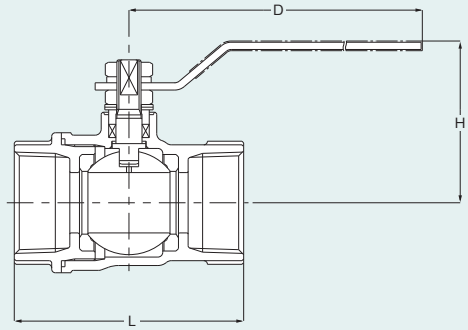
Regular port, Split body design, Threaded ends

Page 96 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. UTHM)
  - NPT threads to ASME B1.20.1 (Fig. AKUTHM)

UTHM



Standard materials

Parts	Materials
Body	CF8M
Body cap	CF8M
Ball	316
Stem	316 Cr plated
Seat	PTFE
Gland packing	PTFE
Handle	Plastic covered S.S.

End-to-end dimensions: KITZ standard

Dimensions of UTHM

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
Ball Bore		10	15	20	25	32	40
L		60	70	80	95	108	124
H		49	54	64	68	79	85
D		100	100	130	130	150	150

Valve operator
Lever operation

Type 1000 Stainless Steel Ball Valves

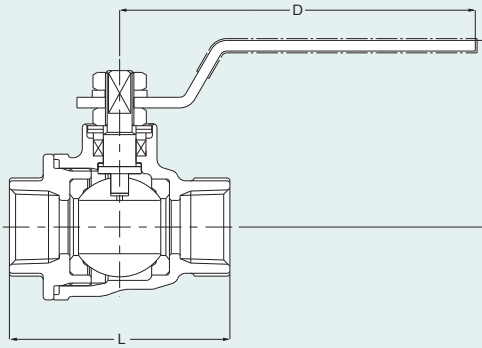
Full port, Split body design, Threaded ends

Page 96 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. UTFM)
  - NPT threads to ASME B1.20.1 (Fig. AKUTFM)

UTFM



Standard materials

Parts	Materials
Body	CF8M
Body cap	CF8M
Ball	316
Stem	316 Cr plated
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

End-to-end dimensions: KITZ standard

Dimensions of UTFM

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
Ball Bore		15	20	25	32	40	50
L		62	73	85	98	108	124
H		53	63	67	75	81	102
D		100	130	130	150	150	200

Valve operator
Lever operation

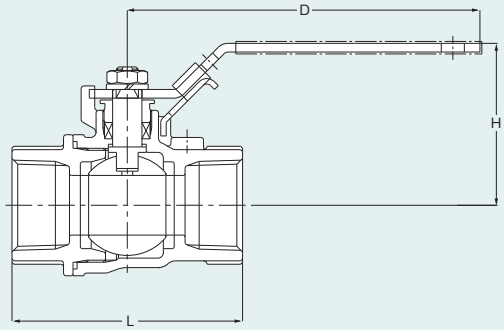
Type 1500/2000 Stainless Steel Ball Valves

Regular port, Split body design, Threaded ends

Page 97 for Pressure-Temperature Ratings.

Features
- Blowout-proof stem
- API 607 firesafe type as option
- NPT threads to ASME B1.20.1

AKUTHZM



Standard materials

Parts	Materials
Body	CF8M
Body cap	CF8M
Ball	316
Stem	316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

* API 607 firesafe flexible graphite is optionally available.

End-to-end dimensions: KITZ standard

Dimensions of AKUTHZM

Unit: mm

Valve Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
Ball Bore		9.5	9.5	10	15	20	25	32	40
L		53	53	62	72	85	94	107	120
H		50.5	50.5	58.5	64	63.5	67.5	83	89
D		100	100	115	115	135	135	155	190

Valve operator
Lever operation with latch lock
Oval handle as option

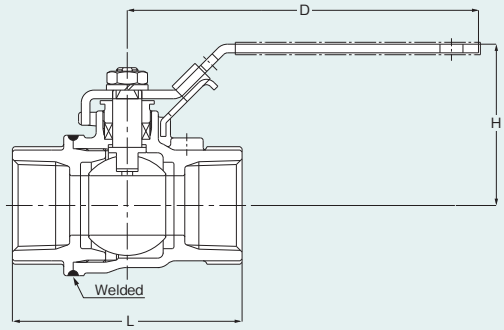
Type 1500/2000 Stainless Steel Ball Valves

Regular port, Welded body design, Threaded ends

Page 97 for Pressure-Temperature Ratings.

Features
- Blowout-proof stem
- API 607 firesafe type as option
- NPT threads to ASME B1.20.1

AKUTHWZM



Standard materials

Parts	Materials
Body	CF8M
Body cap	CF8M
Ball	316
Stem	316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

* API 607 firesafe flexible graphite is optionally available.

End-to-end dimensions: KITZ standard

Dimensions of AKUTHWZM

Unit: mm

Valve Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
Ball Bore		9.5	9.5	10	15	20	25	32	40
L		53	53	62	72	85	94	107	120
H		50.5	50.5	58.5	64	63.5	67.5	83	89
D		100	100	115	115	135	135	155	190

Valve operator
Lever operation with latch lock
Oval handle as option

Type 1000 Stainless Steel Ball Valves

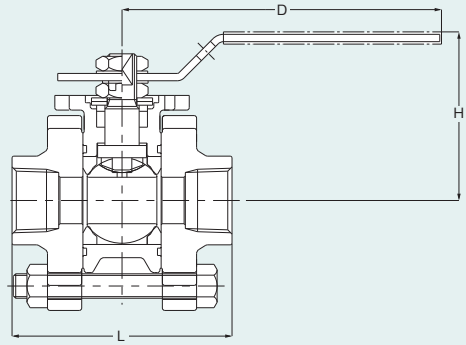
Full port, 3-pce body design, Threaded or socket welding ends

Page 96 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Swing-away body for maintenance ease
- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. U3TZFM)
  - NPT threads to ASME B1.20.1 (Fig. AKU3TZFM)
  - Socket welding ends to BS 5351 (Fig. SWU3TZFM)
  - Socket welding ends to ASME B16.11 (Fig. AWU3TZFM)

U3TZFM



Standard materials

Parts	Materials
Body	CF8M
Body cap	CF8M
Ball	316 or CF8M
Stem	316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

End-to-end dimensions: KITZ standard

Dimensions of U3TZFM

Unit: mm

Valve Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
	mm	8	10	15	20	25	32	40
Ball Bore		10	10	14	19	24	30	38
L		63	63	71	90	103	110	127
H		48	48	60	69	82	88	104
D		120	120	130	130	150	150	180

Valve operator
Lever operation
Oval handle as option

Note
·Use U3TZM for size 2″.

Type 1000 Stainless Steel Ball Valves

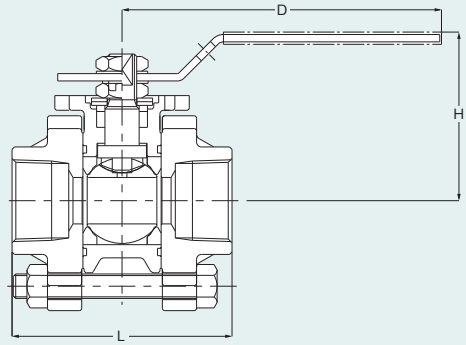
Regular port, 3-pce body design, Threaded or socket welding ends

Page 96 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Swing-away body for maintenance ease
- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. U3TZM)
  - NPT threads to ASME B1.20.1 (Fig. AKU3TZM)
  - Socket welding ends to BS 5351 (Fig. SWU3TZM)
  - Socket welding ends to ASME B16.11 (Fig. AWU3TZM)

U3TZM



Standard materials

Parts	Materials
Body	CF8M
Body cap	CF8M
Ball	316 or CF8M
Stem	316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

End-to-end dimensions: KITZ standard

Dimensions of U3TZM

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
Ball Bore		10	14	19	24	30	38
L		63	71	90	103	110	127
H		48	60	69	83	88	104
D		120	130	130	150	150	180

Valve operator
Lever operation
Oval handle as option

Note
·Use U3TZFM for sizes 1/4″ & 3/8″.

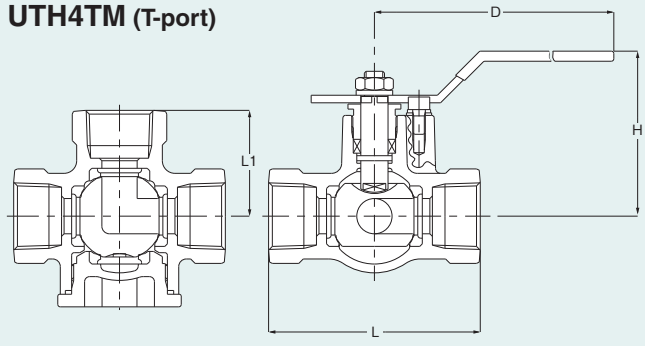
Type 800 Stainless Steel 3-way Ball Valves

Regular port, 4-seated, Split body, Threaded ends

Page 96 for Pressure-Temperature Ratings.

- L-port and T-port
- Rc threads to BS 21

UTH4LM (L-port)
UTH4TM (T-port)



This drawing shows L-port design.

Standard materials

Parts	Materials
Body	CF8M
Body cap	CF8M
Ball	316 or CF8M
Stem	316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

End-to-end dimensions: KITZ standard

Page 100 for Allowable Port Orientation.

Valve operator
Lever operation

Dimensions of UTH4LM, UTH4TM

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
Ball Bore		10	14	19	25	32	38
L		69	84	96	114	132	150
L1		34.5	42	48	57	66	75
H		63	65	75.5	79.5	95.5	101
D		130	130	150	150	230	230

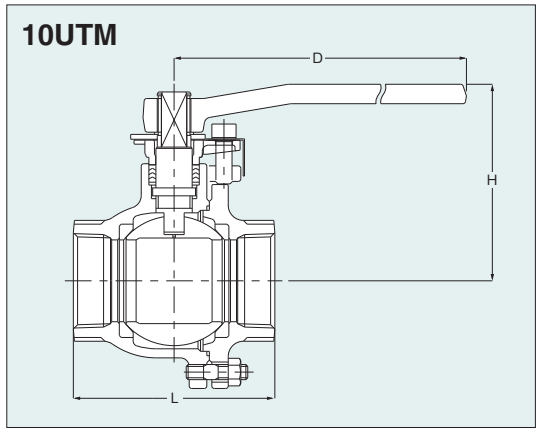
10K Stainless Steel Ball Valves

Full port, Split body, Side entry design, Threaded ends

Page 97 for Pressure-Temperature Ratings.

- Choice of threaded ends:
  - Rc threads to BS 21 (Fig. 10UTM)

10UTM



Standard materials

Parts	Materials
Body	CF8M
Body cap	CF8M
Ball	316
Stem	316 or CF8M
Seat	PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

End-to-end dimensions: KITZ standard
Wall thickness: ASME B16.34 Class 150

Valve operator
Lever operation

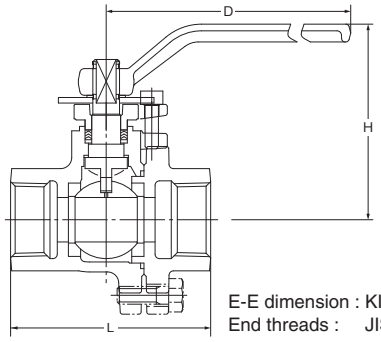
Dimensions of 10UTM

Unit: mm

Valve Size	in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	mm	10	15	20	25	32	40	50	65	80
Ball Bore		10	15	20	25	32	40	50	65	80
L		62	65	80	90	110	120	140	160	182
H		71	102	105	124	130	115	120	155	165
D		130	130	130	160	160	230	230	400	400

20K Ball Valve (Reduced Port)

20ST
20STL (Gas service)



E-E dimension : KITZ Std.
End threads : JIS B 0203

Maximum Service Pressure

Code	Temperature	Pressure
20ST	110℃ W.O.G.	2.75MPa
	140℃ W.O.G.	1.96MPa
20STL	80℃ gas.	2.4MPa

●Use for lubricating or hydraulic oil is acceptable.

Materials

Parts	JIS material
Body	FCD-S
Body cap	FCD-S
Stem	SUS 403
Ball	SUS 304 / SCS 13A
Gland	FCD-S
Gland packing	PTFE
Gasket	PTFE
Ball seat	HYPATITE PTFE
O ring*	NBR
Gland bolt	SCM 435
Cap bolt	S45C
Handle	FCD 400
Name plate*	SUS 304

*for 20STL only

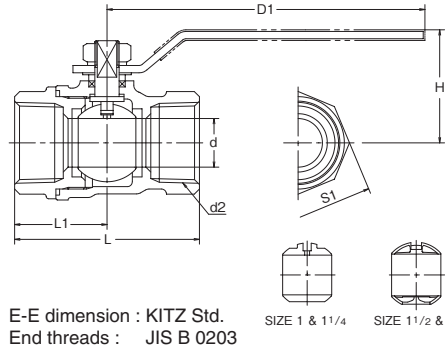
Dimensions of 20ST, 20STL

Unit: mm

Valve Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		75	80	90	105	115	130
H		106	106	107	129	133	114
D		130	130	130	160	160	230

Class 400 Ball Valve (Reduced Port)

STZ



E-E dimension : KITZ Std.
End threads : JIS B 0203

W.O.G. at Room temp 2.75MPa
Saturated steam 0.98MPa
●Use for lubricating or hydraulic oil is acceptable.

Materials

Parts	JIS material
Body	FCD-S
Cap	FCD-S
Ball	C3771BE*1
Stem	Dezincification Resistant Brass
Gland packing	PTFE
Ball seat	Reinforced PTFE
Gland	C3604BD*2
Gasket	PTFE
Handle nut	SS 400*3
Handle	SUS 430*4

*1Ni + Cr electroplated
*2Zinc electroplated
*3Zinc dicromate electoroplated
*4Plastic covering

Dimensions of STZ

Unit: mm

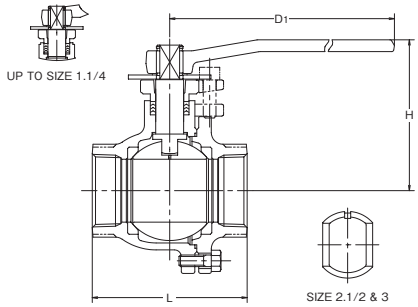
Valve Size	in.	1/2	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		46	51	57	65	76	86	95	115
H		38	38	42	49	52	57	63	68
D		80	80	100	130	130	130	130	150

10K IRON THREADED BALL VALVE (Full Port)

120°C Non-shock water 1.37MPa, 120°C Water, oil, gas 0.98MPa
Saturated steam 0.69MPa

10FCT

Blowout-proof stem



Materials

Parts	Material	JIS Spec.
Body	Cast Iron	FC200
Body cap	Cast Iron	FC200
Stem	Stainless Steel	SUS403
Ball	Stainless Steel	SCS13A or SUS304 or SUS304TP
Grand packing	PTFE	
Gasket	PTFE	
Ball Seat	PTFE	
Cap bolt	Carbon Steel	SS400
Handle	Ductile Iron	FCD400

Design Specifications

Items	
Shell wall thickness and general valve design	KITZ Standard
Face-to-face dimensions End-to-end dimensions	KITZ Standard
End flange dimensions Gasket contact facing	JIS B0203

Dimensions of 10FCT

Unit: mm

Valve Size	in.	3/8	1/2	1/2	1	1 1/4	1 1/2	2	2 1/2	3
	mm	10	15	20	25	32	40	50	65	80
L		72	80	85	95	120	120	140	160	182
H		71	102	105	125	130	115	120	155	165
D		130	130	130	160	160	230	230	400	400

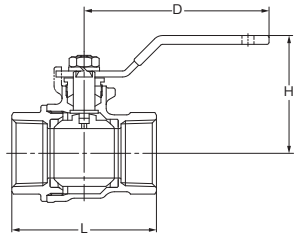
TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

AKTAF

- **Threaded end to ASME B1.20.1**



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

Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass (TEA Plating)
Ball seat	PTFE
Gland Packing	PTFE

Dimensions of AKTAF

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		41	42	53	60	72	82	92	105
H		39	39	42	51	59	64	73	80
D		82	82	82	100	130	130	150	150

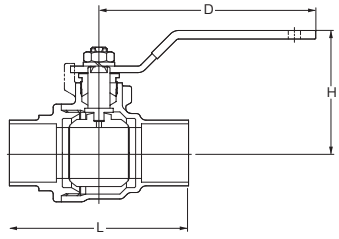
TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

CTAF

- **Solder joint end to ASME B16.18**



Approvals (up to 2): NSF/ANSI61-8, UL, FM

Materials

*Size 2 1/2 & 3

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Dezincification Resistant Brass
Ball	Brass: TEA Plating (Size 3/8 to 2) Brass: Nickel-Chrome Plating (Size 2 1/2 & 3)
Ball seat	PTFE
Gland Packing	PTFE

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

Dimensions of CTAF

Unit: mm

Nominal Size	in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	mm	10	15	20	25	32	40	50	65	80
L		46	54	73	88	100	115	140	163	187
H		39	42	51	59	64	73	80	108	122
D		82	82	100	130	130	150	150	200	300

TYPE 600 BRASS BALL VALVE (FULL PORT)

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

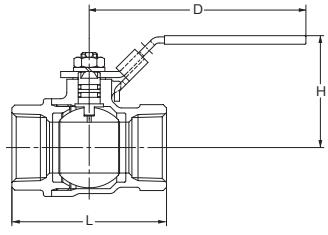
Screwed body cap, Blowout-proof stem.
Double O-ring stem seals
Threaded ends to NPT or solder joint ends.

AKTFLL

- **Threaded end to ASME B1.20.1**

CTFLL

- **Solder joint end to ASME B16.18**



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

Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass: Nickel-Chrome Plating
Ball seat	PTFE
O-ring	NBR, FKM: CTFLL only

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

Dimensions of AKTFLL, CTFLL

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		41	42	53	60	72	82	92	105
L1 (Solder)				54	73	88	100	115	140
H		35	35	39	47	55	59	67	75
D		82	82	82	100	130	130	150	150

TYPE 600 BRASS BALL VALVE (FULL PORT)

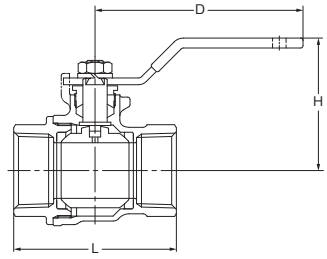
W.O.G. non-shock 4.14 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)

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

AKTAFM
- **Threaded end to ASME B1.20.1**

CTAFM
- **Solder joint end to ASME B16.18**

Approvals (up to 2) *AKTAFM only — NSF/ANSI61-8 — CSA (US/C) — UL



Materials

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

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

Dimensions of AKTAFM, CTAFM

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		41	42	53	60	72	82	92	105
L1 (Solder)			46	54	73	88	100	115	140
H		39	39	42	51	59	64	73	80
D		82	82	82	100	130	130	150	150

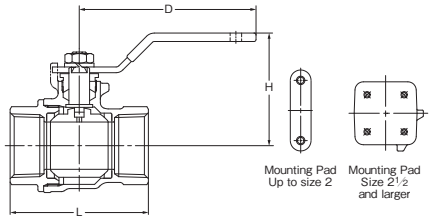
TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

AKTAFP
- **Threaded end to ASME B1.20.1**

Approvals (up to 2) — UL



Materials

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Dezincification Resistant Brass
Ball	Brass: NIckel-Chrome Plating
Ball seat	PTFE
Gland Packing	PTFE

*Size 2 1/2 and larger

Dimensions of AKTAFP

Unit: mm

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

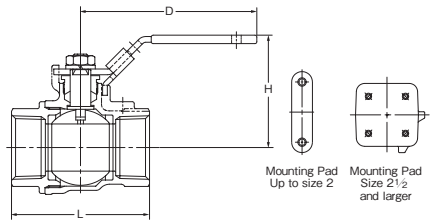
TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

AKTAFPM
- **Threaded end to ASME B1.20.1**

Approvals (up to 2) — UL



Materials

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

*Size 2 1/2 and larger

Dimensions of AKTAFPM

Unit: mm

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

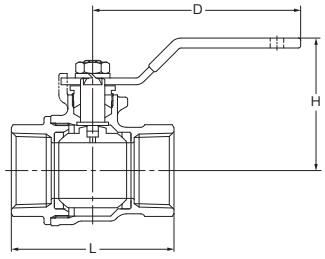
TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

AKTAFD
- Threaded end to ASME B1.20.1

CTAFD
- Solder joint end to ASME B16.18



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass: Nickel-Chrome Plating
Ball seat	PTFE
Gland Packing	PTFE

Dimensions of AKTAFD, CTAFD

Unit: mm

Nominal Size	in.	1/2	3/4	1
	mm	15	20	25
L		55	62	73
L1 (Solder)		54	73	88
H		42	51	59
D		82	100	130

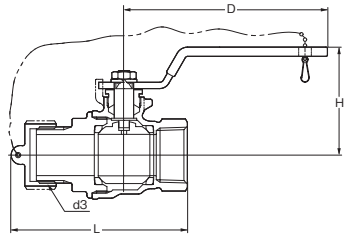
TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

AKTAFC
- Threaded end to ASME B1.20.1

CTAFC
- Solder joint end to ASME B16.18



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass: Nickel-Chrome Plating
Ball seat	PTFE
Gland Packing	PTFE

Dimensions of AKTAFC, CTAFC

Unit: mm

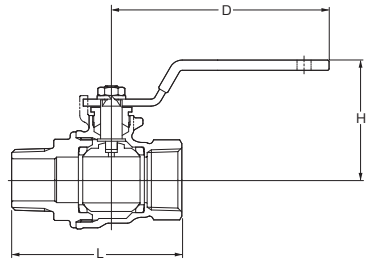
Nominal Size	in.	1/2	3/4
	mm	15	20
L		74	84
L1 (Solder)		75	90
H		42	51
D		82	100
d3		3/4-11.5 NHR	3/4-11.5 NHR

TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

AKTAFO
- Threaded end to ASME B1.20.1



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass: Nickel-Chrome Plating
Ball seat	PTFE
Gland Packing	PTFE

Dimensions of AKTAFO

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1
	mm	8	10	15	20	25
L		52	53	66	73	88
H		39	39	42	51	59
D		82	82	82	100	130

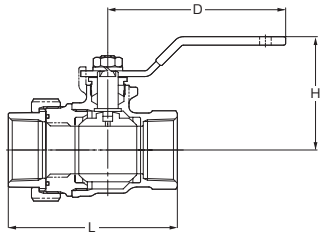
TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

AKTAFU

- **Threaded end to ASME B1.20.1**



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass: Nickel-Chrome Plating
Ball seat	PTFE
Gland Packing	PTFE

Dimensions of AKTAFU

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		52	52	63	75	88	98	113	126
H		39	39	42	51	59	64	73	80
D		82	82	82	100	130	130	150	150

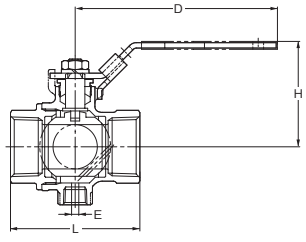
TYPE 200 BRASS BALL VALVE (FULL PORT)

W.O.G. non-shock 1.38 MPa (200 psi), –18ºC to + 93ºC (Not Freezing)

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

AKTAFS

- **Threaded end to ASME B1.20.1**



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass: Nickel-Chrome Plating
Ball seat	PTFE
Gland Packing	PTFE

Dimensions of AKTAFS

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		41	42	53	60	72	82	92	105
H		39	39	42	51	59	64	73	80
E		4	4	4	4	4	4	4	4
D		82	82	82	100	130	130	150	150

● Exhaust hole diameter : 4mm (all nominal size)

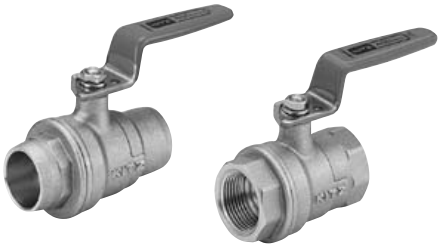
TYPE 400/600 BRASS BALL VALVE

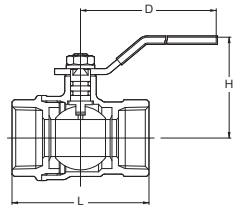
CTH W.O.G. non-shock 4.14 MPa (600 psi), W.O.G. 150°C non-shock 0.69 MPa (100 psi)
TH W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C non-shock 0.69 MPa (100 psi)

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

TH
- Threaded end to BS21

CTH
- Solder joint end to ASME B16.18





Materials

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

*Nickel-Chrome Plated

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

Dimensions of TH, CTH

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	mm	8	10	15	20	25	32	40	50	65	80
L		44	45	56	63	74	82	91	104	–	–
L1 (Solder)		47	47	54	73	88	98	113	135	147	177
H		41	41	45	48	54	58	63	74	89	103
D		60	60	80	80	110	110	110	140	200	300

*TH: 1/4 to 2

TYPE 400 BRASS BALL VALVE

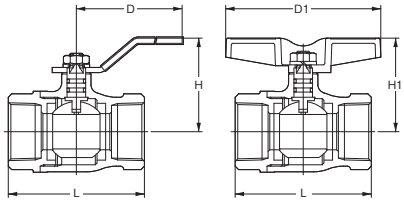
W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)

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

T
- Threaded end to BS21

TT
- Threaded end to BS21

AKT
- Threaded end to ASME B1.20.1



Materials

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

*Size 4 only
**Nickel-chrome plated

Dimensions of T, TT, AKT

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	mm	8	10	15	20	25	32	40	50	65	80	100
L		50	50	65	68	79	86	96	109	127	153	179
L1		45	45	45	50	55	60	65	75	91	105	124
H1		41	41	44	48	55	61	66	80			
D		60	60	80	80	110	110	110	140	200	300	400
D1		65	65	80	80	90	105	105	120			

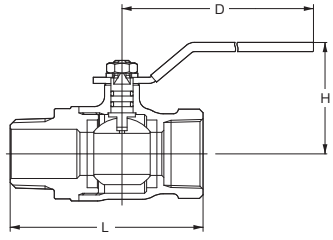
*TH: 1/4 to 2

TYPE 400 BRASS BALL VALVE

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

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

TO
- Threaded end to BS21



Materials

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

*Nickel-chrome plated

Dimensions of TO

Unit: mm

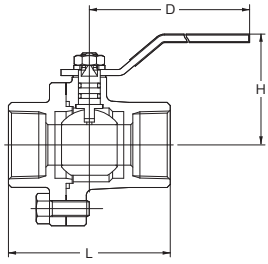
Nominal Size	in.	1/4	3/8	1/2	3/4	1
	mm	8	10	15	20	25
L		59	60	74	80	94
H		45	45	45	50	55
D		60	60	80	80	110

TYPE 400 BRASS BALL VALVE

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

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

TM
- **Threaded end to BS21**



Materials

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

*Chrome or Nickel-chrome plated

Dimensions of TM

Unit: mm

Nominal Size	in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	mm	10	15	20	25	32	40	50	65	80
L		56	60	68	80	86	101	117	136	160
H		45	45	49	55	60	65	75	91	105
D		60	80	80	110	110	110	140	200	300

TYPE 600 BRASS BALL VALVE

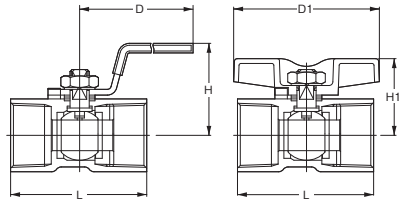
W.O.G. non-shock 4.14 MPa (600 psi), W.O.G. 150°C 1.03 MPa (150 psi)

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

TK
- **Threaded end to BS21**

TKT
- **Threaded end to BS21**

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



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	G/F PTFE
Grand packing	G/F PTFE

*Chrome or Nickel-chrome plated

Dimensions of TK, TKT, AKTK

Unit: mm

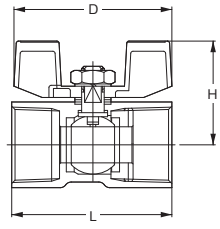
Nominal Size	in.	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	8	10	15	20	25	32	40	50
L		32	39	44	56.5	59	71	78	83	100
H		31	31	36	41	44	48	54	65	72
H1		23	23	27	31	34	42	48	53	60
D		60	60	70	85	85	100	100	125	125
D1		35	35	40	60	60	76	76	100	100

TYPE 600 BRASS BALL VALVE

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

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

TKW
- **Threaded end to BS21**



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	G/F PTFE
Grand packing	G/F PTFE

*Chrome or Nickel-chrome plated

Dimensions of TKW

Unit: mm

Nominal Size	in.	1/8	1/4	3/8	1/2	3/4	1
	mm	6	8	10	15	20	25
L		32	39	44	56.5	59	71
H		25	25	29	35	39	41
D		35	35	40	55	55	69

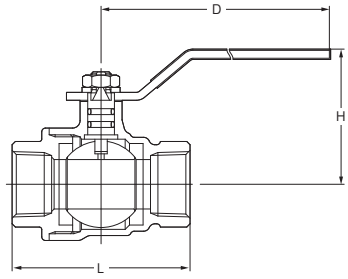
TYPE 400 BRASS BALL VALVE (FULL PORT)

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

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

TF

- Threaded end to BS21



Materials

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

*Size 2 only
**Nickel-chrome plated

Dimensions of TF

Unit: mm

Nominal Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		62	73	85	98	108	124
H		48	54	58	64	75	84
D		80	110	110	110	140	150

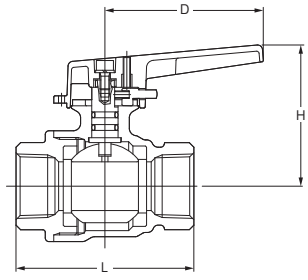
TYPE 150 BRASS BALL VALVE (FULL PORT)

W.O.G. non-shock 1.03 MPa (150 psi), W.O.G. 150°C 0.69 MPa (100 psi)

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

TFJ

- Threaded end to BS21



Materials

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

*Size 2 only
**Nickel-chrome plated

Dimensions of TFJ

Unit: mm

Nominal Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		62	73	85	98	108	124
H		53	58	67	72	90	98.5
D		65	65	90	90	110	110

TYPE 400 BRONZE BALL VALVE

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

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

TL

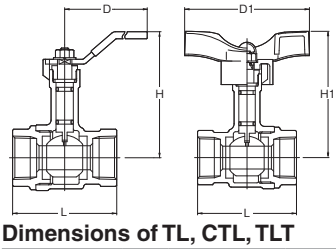
- Threaded end to BS21

CTL

- Solder joint end to ASME B16.18

TLT

- Threaded end to BS21



Materials

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

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

Dimensions of TL, CTL, TLT

Unit: mm

Nominal Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		56	65	78	86	96	109
L1 (Solder)		58	73	88	99	114	135
H		75	79	83	98	102	109
H1		79	83	90	105	109	124
D		80	80	110	110	110	140
D1		82	82	94	94	94	120

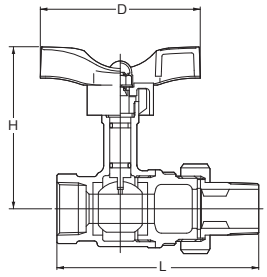
TYPE 400 BRONZE BALL VALVE

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

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

TLTU
- Threaded end to BS21

CTLTU
- Solder joint end to ASME B16.18



Materials

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

Dimensions of TLTU, CTLTU

Unit: mm

Nominal Size	in.	1/2	3/4	1
	mm	15	20	25
L		90.5	103.5	119
L1 (Solder)		89.5	107.5	124
H		79	83	90
D		82	82	94

TYPE 600 BRASS BALL VALVE (FULL PORT)

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

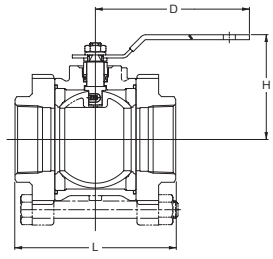
Three piece body with Mounting pad
Threaded end to ASME B1.20.1
Solder jointed to ASME B16.18

AK3TM
- Threaded end to ASME B1.20.1

C3TM*
- Solder joint end to ASME B16.18

*C3TM 3/8 to 2 1/2

Approvals (up to 2) NSF/ANSI61-8



Materials

*Size 2 1/2 only

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

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

Dimensions of AK3TM, C3TM

Unit: mm

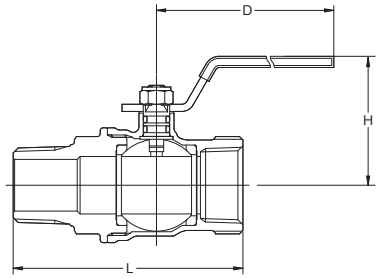
Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
	mm	8	10	15	20	25	32	40	50	65
L		49	49	61	70	83	99	117	139	167
L1 (Solder)			49	61	73	88	99	117	139	167
H		39	39	48	55	63	69	78	85	108
D		82	82	82	100	130	130	150	150	200

TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

ZO
- Threaded end to BS21



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Brass: Nickel plated
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

*Chrome or Nickel-chrome plated

Dimensions of ZO

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1
	mm	8	10	15	20	25
L		59	60	74	80	94
H		37	37	40	44	50
D		70	70	80	80	110

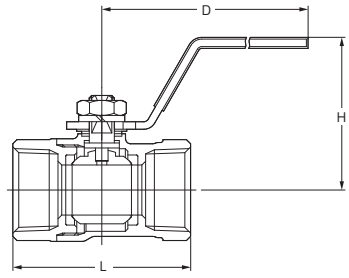
TYPE 400 BRASS BALL VALVE

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

ZS

- Threaded end to BS21

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



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Dezincification Resistant Brass
Ball	Brass*
Ball seat	PTFE
Grand packing	G/F PTFE

*Chrome or Nickel-chrome plated

Dimensions of ZS

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		42	43	51	59	71	78	88	99
H		44	44	45	49	63	67	71	76
D		72	72	87	87	116	116	117	117

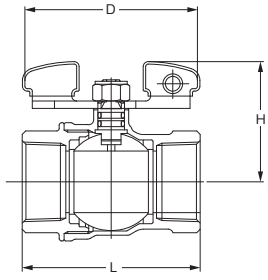
TYPE 600 BRASS BALL VALVE (FULL PORT)

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

ZET

- Threaded end to BS21

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



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Brass: Nickel plated
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

*Chrome or Nickel-chrome plated

Dimensions of ZET

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		42	42	52	60	72	84	92	110
H		35	35	41	45	54	59	75	82
D		55	55	70	70	100	100	130	130

TYPE 600 BRASS BALL VALVE (FULL PORT)

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

AKSZA

- Threaded end to ASME B1. 20. 1

CSZA

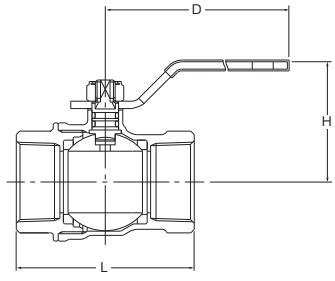
- Solder joint to ASMB 16.18

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

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

Approvals (up to 2): NSF* (NSF/ANSI61-8) · SP® C US** (CSA (US/C)) · UL (UL) · FM APPROVED (FM)

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



Materials *Size 4 only

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

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

Dimensions of AKSZA, CSZA

Unit: mm

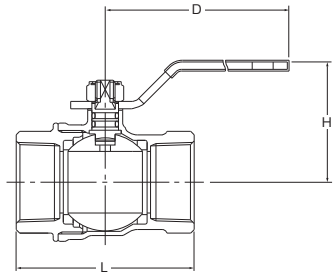
Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	mm	8	10	15	20	25	32	40	50	65	80	100
L		42	42	53	60	72	84	92	110	138	167	193
L1 (Solder)			46	54	73	88	100	115	140	164	187	
H		37	37	40	43	50	55	65	72	100	112	131
D		70	70	80	80	110	110	150	150	200	300	300

TYPE 600 BRASS BALL VALVE (FULL PORT)

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

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

SZA
- **Threaded end to BS21**



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Brass: Nickel plated
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

*Nickel-chrome plated

Dimensions of SZA

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		42	42	53	60	72	84	92	110
H		37	37	40	43	50	55	65	72
D		70	70	80	80	110	110	150	150

TYPE 600 BRASS BALL VALVE (FULL PORT)

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

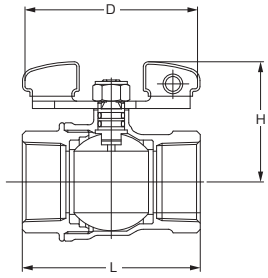
Bolted body and cap, Blowout-proof Stem,
Double O-ring stem seals,
Threaded ends to ASME B1.20.1 or
solder joint ends.

AKSZAW
- **Threaded end to ASME B1. 20. 1**

CSZAW
- **Solder joint to ASME B16.18**

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

*AKSZAW only



Materials

Parts	Material
Body	Brass
Body cap	Brass
Stem	Brass: Nickel plated
Ball	Brass: Chrome free plated
Ball seat	PTFE
O-ring	FKM

Dimensions of AKSZAW, CSZAW

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		42	42	53	60	72	84	92	110
L1 (Solder)			46	54	73	88	100	115	140
H		35	35	41	45	54	59	75	82
D		55	55	70	70	100	100	130	130

TYPE 400 3-WAY BRASS BALL VALVE

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

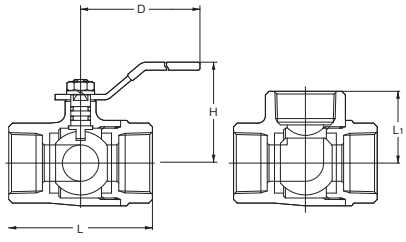
Screwed body cap, 2-seat, L-port design,
Blowout-proof Stem, Double O-ring stem seals*
Threaded ends to BS21 or NPT, or solder joint ends.

*Size 1/2 and larger

TN
- **Threaded end to BS21**

AKTN
- **Threaded end to ASME B1.20.1**

CTN
- **Solder joint end to ASME B16.18**
- **CTN1/2 to 2**



Materials

*Size 2 1/2 and 3

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

**Chrome or Nickel-chrome plated

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

Dimensions of TN, CTN, AKTN

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	mm	8	10	15	20	25	32	40	50	65	80
L		40	46	67	68	79	89	100	115	138	166
L1 (Solder)		20	23	33.5	34	39.5	44.5	50	57.5	69	83
H		30	35	45	48	55	60	65	75	91	105
D		60	70	80	80	110	110	110	140	200	300

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TYPE 400 3-WAY BRONZE BALL VALVE

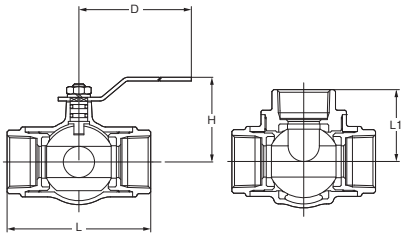
W.O.G. non-shock 2.76 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)

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

T4T
- Threaded end to BS21

AKT4T
- Threaded end to ASME B1.20.1

T4L
- Threaded end to BS21



Materials

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

*Chrome or Nickel-chrome plated

Dimensions of T4T, AKT4T, T4L

Unit: mm

Nominal Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		70	85	100	115	130	150
L1		35	42.5	50	57.5	65	75
H		52	56	63	68	94.5	102
D		130	130	150	150	230	230

Page loo for Allowable Port Orientation.

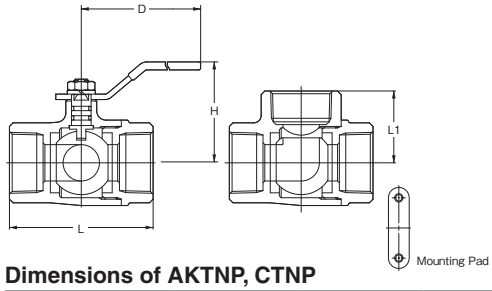
TYPE 400 3-WAY BRONZE BALL VALVE, with MOUNTING PAD

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

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

AKTNP
- Threaded end to ASME B1.20.1

CTNP
- Solder joint end to ASME B16.18



Materials

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

*Chrome or Nickel-chrome plated

Dimensions of AKTNP, CTNP

Unit: mm

Nominal Size	in.	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		67	68	79	89	100	115
L1		33.5	34	40	44.5	50	57.5
H		45	48	55	60	65	75
D		80	80	110	110	130	140

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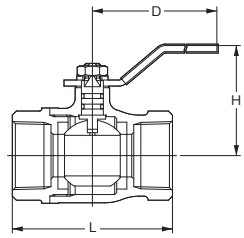
BRASS BALL VALVE, DESIGNED FOR GAS SERVICE

Gas service 40°C 0.98 MPa (142 psi)

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

TG



Materials

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

*Nickel-chrome plated

Dimensions of TG

Unit: mm

Nominal Size	in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	mm	8	10	15	20	25	32	40	50	65	80
L		50	50	65	68	79	86	96	109	127	153
H		45	45	45	50	55	60	65	75	91	105
D		60	60	80	80	110	110	110	140	200	300

Technical Information

KITZ Ball Seat Materials

The following seat materials are available.

Material	Features	Maximum Service Temperature
Virgin PTFE	High chemical resistance and operation efficiency	200℃
HYPATITE® PTFE	Monomer permeability is lower and resistance against compression and creeping is higher than other PTFE materials	260℃ /270℃ *1
Carbon filled PTFE	Excellent heat and abrasion resistance	260℃ /270℃ *1
＊FILLTITE®	Highest heat resistance among PTFE based materials	300℃ *2
Graphite	Excellent for high temperature service	500℃
Metal	Excellent for high temperature and abrasive service	500℃
PEEK	Higher heat resistance and mechanical strength	270℃
Glass fiber filled PTFE with MoS_2	Higher abrasion resistance and operation efficiency	230℃
Nylon with MoS_2	Higher mechanical strength	140℃

＊: FILLTITE® is a specially reinforced ball seat, made by using more carbon based fillers into PTFE than conventional carbon filled PTFE, which greatly improves heat and abrasion resistance. The material shows excellent operability, durability, chemical resistance and sealing performance at a high temperature of 300℃ . In addition, the ball seat is replaceable with the most of our conventional ball seats, so it also has the cost advantage.

＊1 270℃ : SCTDZ/UTDZM Series only.

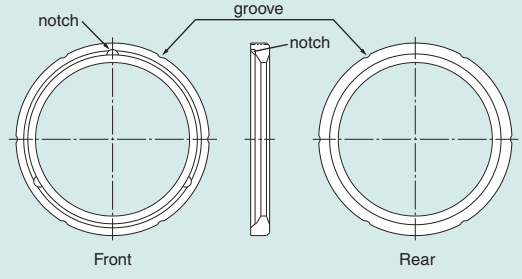
＊2 Uni-body design: 260℃

HYPATITE® PTFE Ball Seats

KITZ ball valves are furnished, as the manufacturer's standard, with **HYPATITE® PTFE** ball seats made of denatured PTFE, a molecularly reinforced PTFE copolymer, and specially engineered for high performance which include:

- Wide service temperature range of −29˚C (−20˚F) through 270˚C (518˚F) SCTDZ/UTDZM Series, 260˚C (500˚F) UTB and SCTA/UTAM Series.

  This is for standard valve design and materials used for medium to high temperature services. The lower temper-ature range can be extended down to −196˚C (−321˚F) by means of extended bonnet design and special low temperature service materials.
- High chemical resistance is comparable to virgin PTFE.
- Monomer permeability is lower than other PTFE materials.
- Resistance against compression and creeping (cold flow) is higher than other PTFE materials to guarantee long life cycle.
- Specific gravity and friction coefficient are equal to those of virgin PTFE for smooth valve operation.
- Purity of processed products is guaranteed as highly as virgin PTFE.
- Resiliency is as high as other PTFE materials for bubble-tight sealing performance.



A typical HYPATITE® PTFE seat used for 4" KITZ 150SCTDZ ball valves.

FILLTITE® Ball Seats

Highest heat resistance amond PTFE based materials.

- Service temperature range: −29℃ to 300℃
- Trim symbol: 1H

1. Choice of trim for heated abrasive service

Metal seated ball valves are guaranteed for a maximum service temperature of 300°C(572˚F) (Trim symbol 5H) and 500°C(932˚F) (Trim symbol 6H*). For hard graphite seated ball valves, a maximum service temperature of 500°C(932˚F) is also guaranteed (Trim symbol 3H). Heat resistant sealing and trim materials qualify these valves for heated abrasive service which cannot be properly handled by conventional soft seated ball valves due to the limited heat resistant characteristics and mechanical properties of their soft seats.

"FILLTITE® is a specially reinforced ball seat, made by using more carbon based fillers into PTFE than conventional carbon filled PTFE, which greatly improves heat and abrasion resistance. The material shows excellent operability, durability, chemical resistance and sealing performance at a high temperature of 300°C. In addition, the ball seat is replaceable with the most of our conventional ball seats, so it also has the cost advantage.

* Temperature is limited to 450°C(842°F) for trunnion mounted ball vavles with trim 6H"

2. Unconditional firesafe provision

While metal or hard graphite seats are extremely heat resistant, other sealing components such as gland packing and flange gaskets are made of flexible graphite, another heat resistant material, so that no part of the valve will be affected by extraordinarily heated environments. Also the provision of an anti-static device is not required because of inter-component electric conductivity.

3. Maintenance ease

Split body construction of the valve body provides the convenience of easy maintenance, a critical requirement for handling slurries and other viscous fluids.

4. Valve automation

Quarter-turn valve drive mechanism makes mounting of valve automation measures such as electric and pneumatic actuators technically easier. KITZ floating ball valves employ integral actuator mounting pads, complying with ISO 5211 and CAPI, for easy, safe and assured on-the-spot actuator mounting without disassembly of valve glands.

5. High flow efficiency

Full port design provides maximized and linearized flow characteristic with minimal pressure loss as the line flow travels through the valve bore. This is a necessary design requirement particularly for trouble-free service of slurries and other viscous fluids.

6. Metal seated ball valves (Trim 5H/6H)

Rigid construction with full metallic contact between the ball and seats, and high durability of trim materials make KITZ metal seated ball valves ideally suited to highly abrasive services handling slurries and other viscous fluids.

● **Trim materials (Floating)**

Valve Design		Floating Ball Valve		Trunnion Mounting Ball Valve
Trim symbol		5H	6H	6H
Temp.		300°C	500°C	450°C
		572°F	932°F	842°F
Seat leakage*1		ANSI FCI 70-2 Class Ⅵ		
Parts	Ball	ASTM A276 Type 316 or ASTM A351 CF8M + Cr plated	ASTM A276 Type 316 or A351 Gr.CF8M + SFNi *2	ASTM A276 Type 304 + SFNi *2
	Ball Seat	ASTM A276 Type 316 + SFNi *2	ASTM A276 Type 316 + SFNi *2	ASTM A276 Type304 + SFNi *2
	Stem	A 564 Type 630	A 564 Type 630	ASTM A276 Type304 + SFNi *2

*1 Maximum allowable seat leakage *2 Ni-Cr alloy thermal spraying

● Durable metal seat design and material also provides fully guaranteed throttling service performance, which makes KITZ metal seated ball valves function as a reliable control valve.

● Bi-directional flow.

Caution:

● Use a gear operator or valve actuator to fix the valve position when used for throttling service.

7. Hard graphite seated ball valves (Trim 3H)

● Bi-directional flow.

● Recommended for low abrasion service.

Valve Design		Floating Ball Valve
Trim symbol		3H
Temp.		500°C
		932°F
Seat leakage*1		ANSI FCI 70-2 Class Ⅵ
Parts	Ball	ASTM A276
		Type 304*1 or A351 Gr.CF8*2
	Ball Seat	Cabon + JIS SUS329J1*3
	Stem	ASTM A276 Type 304*4

*1 Maximum allowable seat leakage *2 Shell material CF8M; Ball Type 316 or CF8M
*3 Equivalent to AISI Type 329 *4 Shell material CF8M; Stem Type 316

Caution:

● Not recommended for throttling service.

● Not recommended for high abrasion service.

● Maximum working temperature for oxidizing service, such as high temperature air, is 450˚C (842˚F).

8. FILLTITE® seated ball valves (Trim1H)

● Highest heat resistance amond PTFE based materials.

Valve Design		Floating Ball Valve	Trunnion Mounting Ball Valve
Trim symbol		1H	
Temp.		300°C	
		572°F	
Parts	Ball	ASTM A276 Type 304*1 or A351 Gr.CF8*1	
	Ball Seat	FILLTITE® PTFE	
	Stem	ASTM A276 Type 304*2 ASTM A276 Type 316*2	

*1 Shell material CF8M; Ball Type 316 or CF8M
*2 Shell material CF8M; Stem Type 316

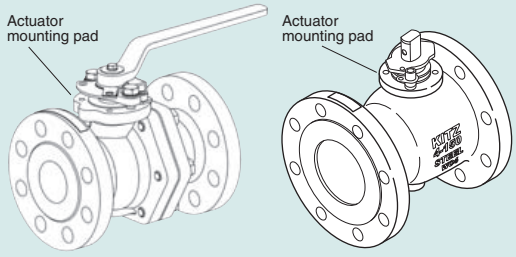
Dimension of Actuator Mounting Pads

Integral Actuator Mounting Pads

KITZ 150/300 SCTDZ/UTDZM series and 150/300 SCTA/UTAM series ball valves are furnished with an integral actuator mounting pad designed and factory-drilled according to ISO 5211 specification. This easily and uniformly enable mouthing of any actuators provided with ISO 5211 valve mounting flanges. Mounting pad and stem head dimension also conforms to CAPI ADDS 2.02.

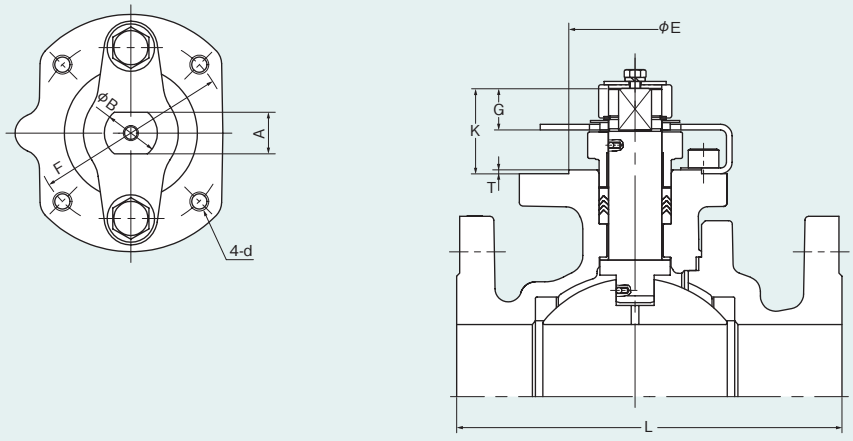
Note: Customers are requested to prepare mounting brackets and connectors for the actuators chosen for their valve automation. Actuators can be mounted on KITZ ball valves without disassembly of valve glands.

Actuator mounting pad



Split body design　　Uni-body design

Dimensions of ISO 5211 Actuator Mounting Pad for Class 150 / 300 Full Port, Split Body, Side Entry Design Ball Valves



Dimensions

Unit: mm

Class	Nominal size (in.)	-0.05 -0.10 A	-0.1 -0.2 φB	-0.1 -0.2 φE	±0.2 φF	G	K	L	d M thread	T	ISO 5211 Flange Type
150	1/2	9	12	25	36	9	22	108	M5	1	F03
	3/4	9	12	25	36	9	22	117	M5	1	F03
	1	14	18	35	50	14	30	127	M6	1.5	F05
	1 1/4	14	18	35	50	14	30	140	M6	1.5	F05
	1 1/2	17	22	55	70	17	34	165	M8	1.5	F07
	2	17	22	55	70	17	34	178	M8	1.5	F07
	2 1/2	22	28	70	102	22	45	190	M10	2	F10
	3	22	28	70	102	22	45	203	M10	2	F10
	4	27	36	85	125	27	52	229	M12	2	F12
	5	27	36	85	125	27	52	356	M12	2	F12
	6	36	48	100	140	36	63	394	M16	2	F14
	8	46	60	130	165	46	79	457	M20	2	F16
	10	46	60	130	165	46	79	533	M20	2	F16
300	1/2	9	12	25	36	9	22	140	M5	1	F03
	3/4	9	12	25	36	9	22	152	M5	1	F03
	1	14	18	35	50	14	30	165	M6	1.5	F05
	1 1/2	17	22	55	70	17	34	190	M8	1.5	F07
	2	17	22	55	70	17	34	216	M8	1.5	F07
	2 1/2	22	28	70	102	22	45	241	M10	2	F10
	3	22	28	70	102	22	45	283	M10	2	F10
	4	27	36	85	125	27	52	305	M12	2	F12
	6	36	48	100	140	36	63	403	M16	2	F14
	8	46	60	130	165	46	79	502	M20	2	F16

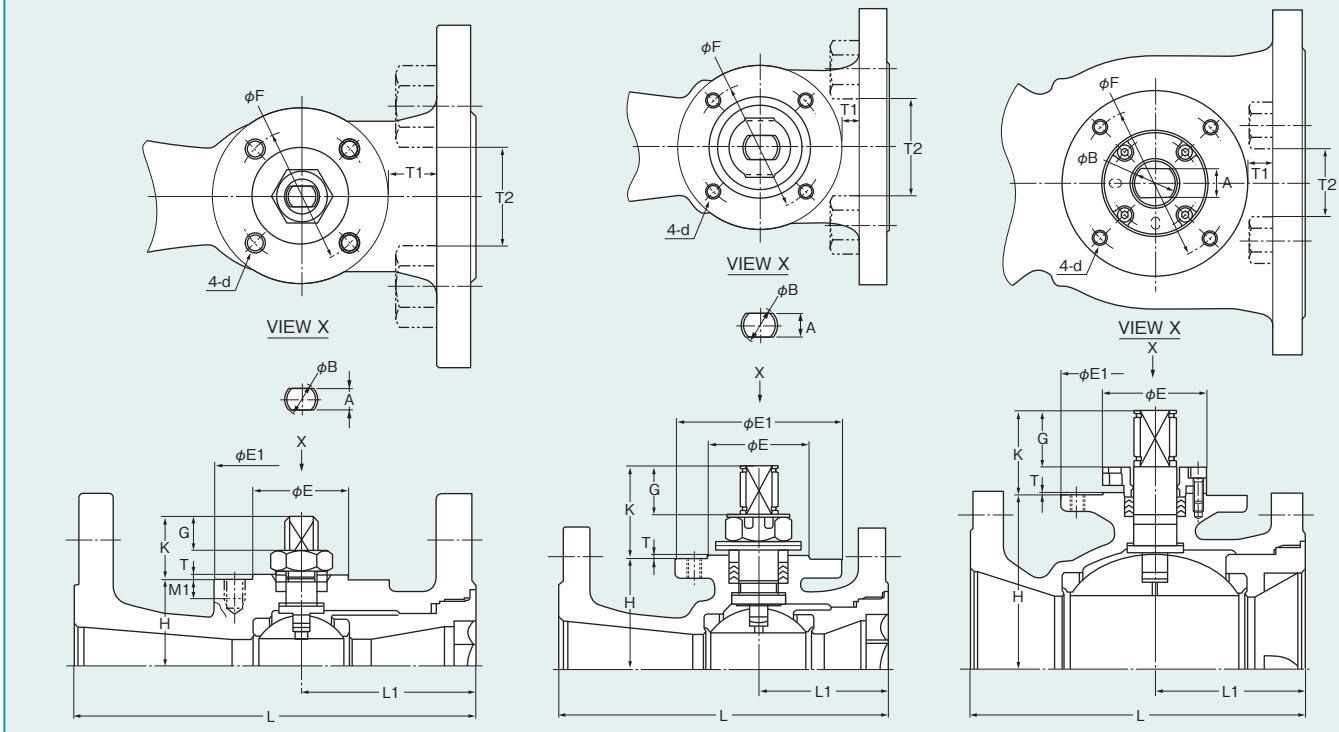
***KITZ product codes:**

(1) 150UTDZ　**(4) 300SCTDZ**
(2) 150SCTDZ　**(5) 150UTDZXL**
(3) 300UTDZ　**(6) 300UTDZXL**

Note: Dimension of stem head are in accordance with CAPI ADDS 2.02, but the maximum specified dimension in CAPI ADDS 2.02 is "F14". For NPS 8 and 10, mounting pads are F16/ISO 5211.

Dimension of Actuator Mounting Pads

Dimensions of ISO 5211 Actuator Mounting Pad for Class 150 / 300 Regular Port, Uni-body, End Entry Design Ball Valves



for 1/2″ to 1″ | for 1 1/2″ only | for 2″ to 10″

Dimensions

Unit: mm

Class	Nominal size (in.)	−0.02 −0.06 A	−0.1 −0.2 ϕB	−0.1 −0.2 ϕE	ϕE1	±0.2 ϕF	G	H	K	L	L1	d		M1	T	T1	T2	ISO 5211 flange type
												M thread	UNC thread★					
150	1/2	7*	10	25	48	36	7.2	18.5	16	108	48	M5	1/4-20 UNC	6	1.5	11.5	17	F03
	3/4	7*	10	25	48	36	7.2	21	16	117	48	M5	1/4-20 UNC	6	1.5	11.5	24	F03
	1	9	12	25	55	36	10	27	21.5	127	55	M5	1/4-20 UNC	6	1.5	14	30.5	F03
150	1 1/2	14	18	35	65	50	14	48	32	165	58	M6	1/4-20 UNC	—	2	9.5	44	F05
	2	17	22	55	90	70	17	59	34	178	70	M8	5/16-18 UNC	—	2	6	54	F07
	3	22	28	70	125	102	22	102	45	203	75	M10	3/8-16 UNC	—	2	8	76.5	F10
	4	22	28	70	125	102	22	118	45	229	85	M10	3/8-16 UNC	—	2	13	13	F10
	6	27	36	85	150	125	27	136.5	50	267	120	M12	1/2-13 UNC	—	2	16.5	—	F12
	8	36	48	100	175	140	36	166	63	292	131	M16	5/8-11 UNC	—	2	12	—	F14
	10	46	60	130	210	165	46	202	78	330	164	M20	3/4-10 UNC	—	2	27	—	F16
300	1/2	7*	10	25	48	36	7.2	18.5	16	140	52	M5	1/4-20 UNC	6	1.5	12	21.5	F03
	3/4	7*	10	25	48	36	7.2	21	16	152	57	M5	1/4-20 UNC	6	1.5	14	27	F03
	1	9	12	25	55	36	10	27	21.5	165	62	M5	1/4-20 UNC	6	1.5	14	31.5	F03
300	1 1/2	14	18	35	65	50	14	48	32	190	65	M6	1/4-20 UNC	—	2	9	44	F05
	2	17	22	55	90	70	17	59	34	216	90	M8	5/16-18 UNC	—	2	19.5	17.5	F07
	3	22	28	70	125	102	22	102	45	283	98	M10	3/8-16 UNC	—	2	21.5	27.5	F10
	4	22	28	70	125	102	22	118	45	305	100	M10	3/8-16 UNC	—	2	20.5	39.5	F10
	6	27	36	85	150	125	27	136.5	50	403	138	M12	1/2-13 UNC	—	2	23.5	33	F12
	8	36	48	100	175	140	36	166	63	419	158	M16	5/8-11 UNC	—	2	26	43	F14
	10	46	60	130	210	165	46	202	78	457	189	M20	3/4-10 UNC	—	2	33.5	28	F16

* These dimensions are specified as F03S by CAPI.

★UNC threads optionally available.

KITZ product codes:
150SCTA
150UTAM
300SCTA
300UTAM

Pressure-Temperature Ratings

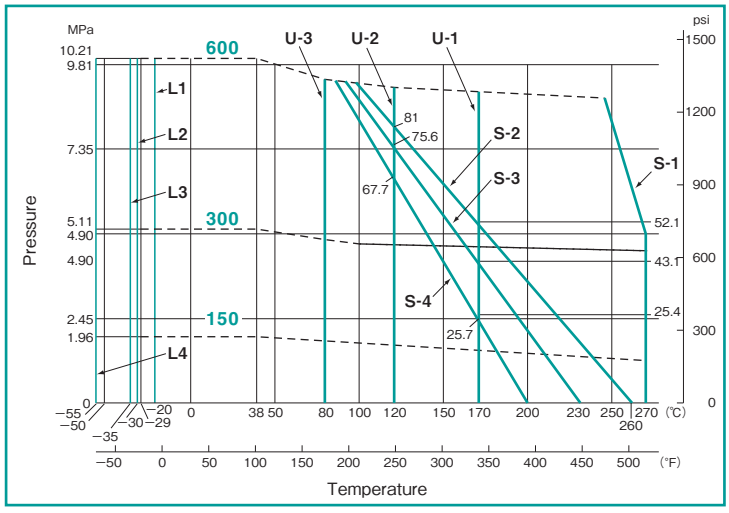
The pressure-temperature ratings of ball valves are determined, not only by valve shell materials, but more essentially by sealing materials, used for ball seats, gland packing and gaskets. Sealing materials may be high molecule, or rubber, but the choice is limited by the characteristics of the service fluid, working temperatures, working pressures, velocity of fluid, and operational frequency of valves.
As it is very difficult to predetermine the exact pressure-temperature rating for all kinds of fluid under all imaginable conditions, we have prepared general rating charts for non-shock fluid service here, based on our past experiences both in the field and in our laboratory.
In case of extraordinary service conditions as mentioned below, contact KITZ Corporation or its distributors for technical advice:

1. Valves shall be left fully closed for a long period of time under high temperature or high differential pressure.
2. Valves shall be frequently operated under high temperature or high differential pressure.
3. Frequent change of line pressure or temperature.

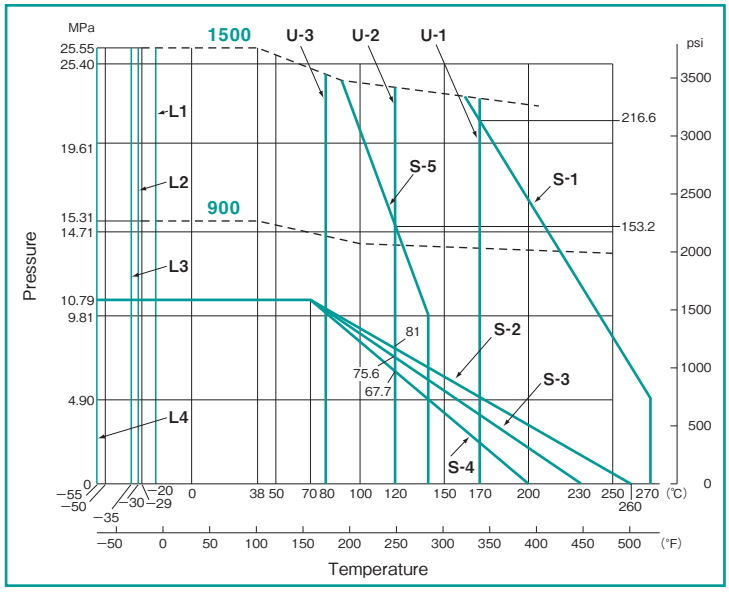
HYPATITE® PTFE is the standard seat material for KITZ ball valves. Specify virgin PTFE or carbon-filled PTFE when required. The body ratings shown here are for ASTM A216 Gr. WCB and A351 Gr. CF8M. For the pressure ratings of other valve shell materials, refer to the latest edition of ASME B16.34.

FILLTITE® is a specially reinforced ball seat, made by using carbon based fillers into PTFE at higher rate than conventional carbon filled PTFE, which greatly improves heat and abrasion resistance. The material shows excellent operability, durability, chemical resistance and sealing performance at a high temperature of 300℃ . In addition, the ball seat is replaceable with the most of our conventional ball seats, so it also has the cost advantage.

Class 150/300/600/SCTCS/SCTCRS/UTCS/UTCRS



Class 900/1500SCTCS/SCTCRS/UTCS/UTCRS



Ball Seat Rating

S-1 : Modfied PEEK*
S-2 : Carbon-filled PTFE
S-3 : (1)KITZ HYPATITE®
(2)Glass-filled PTFE
(3)Glass-filled PTFE with MoS2
(Standard for Class 150,300,&600)
S-4 : Virgin PTFE
S-5 : Reinforced Nylon
(Standard for Class 900&1500)

Modfied PEEK* : Lower temperature limit is -30℃(-22° F).
Special care should be taken to select Modified PEEK based on chemical compatibility with the service.
Contact KITZ Corporation for application engineering details.
Modfied PEEK is available for 12 and smaller valves.

* Poly Ether Ether Ketone.

O-ring Upper Limits

U-1 : (1)FKM(Standard for stainless steel valves)
(2)Low-temperature FKM
U-2 : (1)EPDM
U-3 : (1)NBR(Standard for carbon steel valves)
(2)Low-temperature NBR

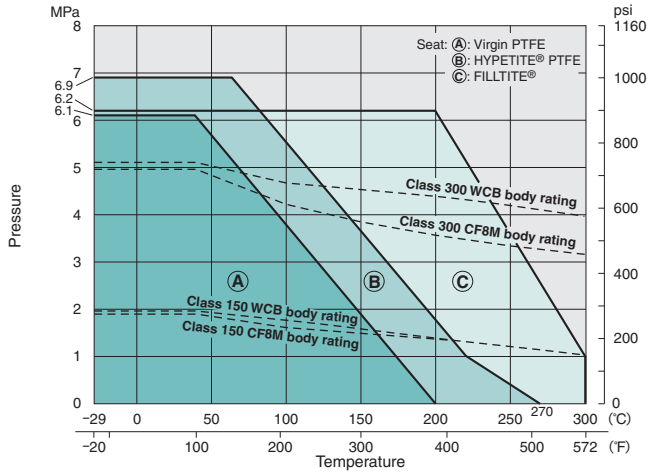
O-ring Lower Limits

L-1 : (1)FKM(Standard for stainless steel valves)
L-2 : (1)EPDM
(2)NBR(Standard for carbon steel valves)
L-3 : Low-temperature FKM
L-4 : Low-temperature NBR

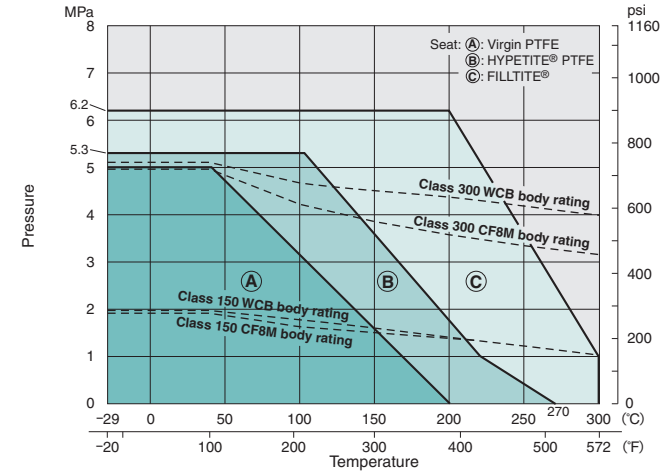
Body ratings shown above are for ASTM A216 Gr.WCB.For ratings of other valve shell materials,refer to the latest edition of ASME B16.34

Pressure-Temperature Ratings

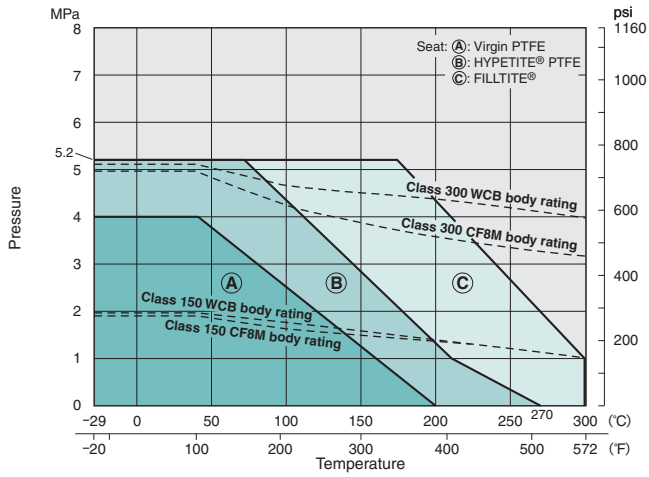
150/300UTDZM/SCTDZ: ½″, ¾″



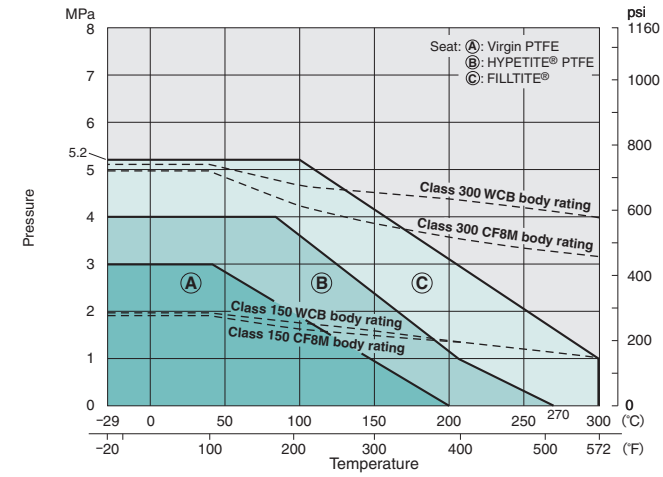
150/300UTDZM/SCTDZ: 1″～2½″



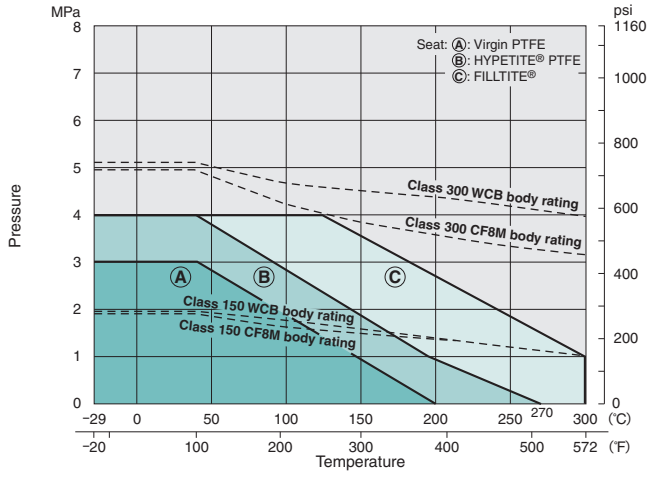
150/300UTDZM/SCTDZ: 3″, 4″



150/300UTDZM/SCTDZ: 5″, 6″

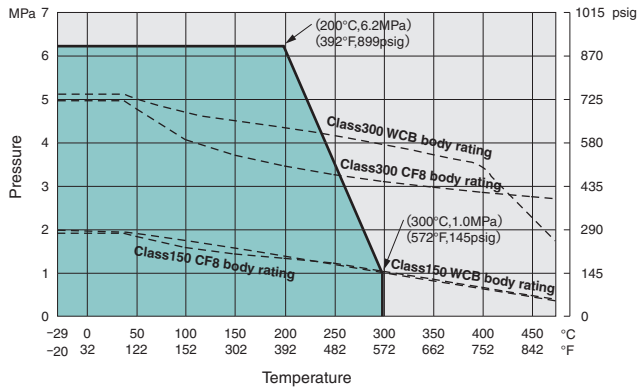


150/300UTDZM/SCTDZ: 8″, 10″

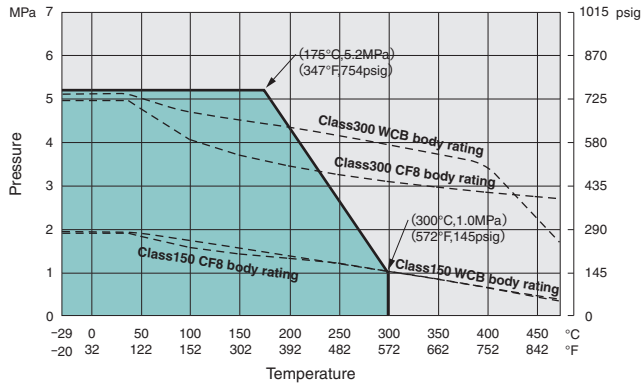


Pressure-Temperature Ratings

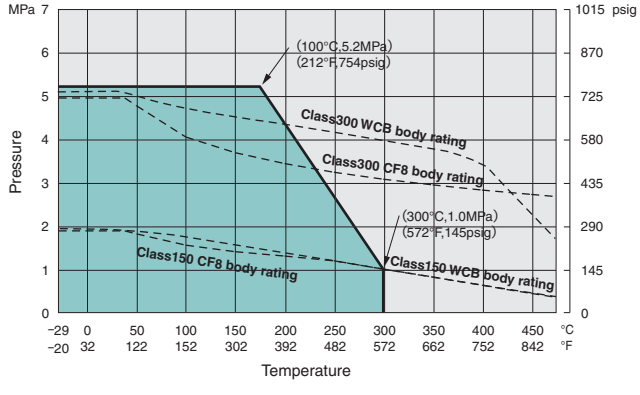
● FILLTITE® seated floating ball valves: Trim 1H: 1″～2½″



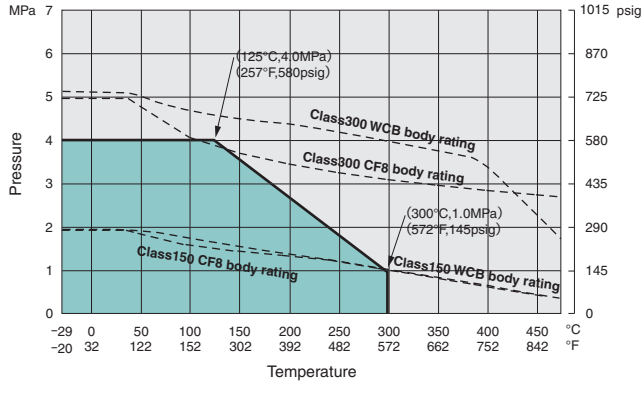
● FILLTITE® seated floating ball valves: Trim 1H: 3″, 4″



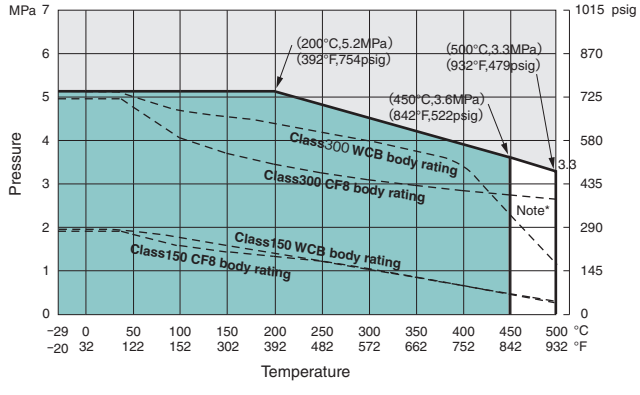
● FILLTITE® seated floating ball valves: Trim 1H: 5″, 6″



● FILLTITE® seated floating ball valves: Trim 1H: 8″, 10″



● Hard graphite seated floating ball valves: Trim 3H

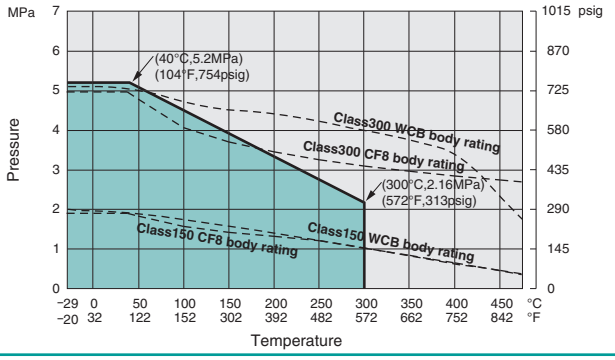


Note* Maximum working temperature for oxidizing service, such as high temperature air, is 450°C(842°F).

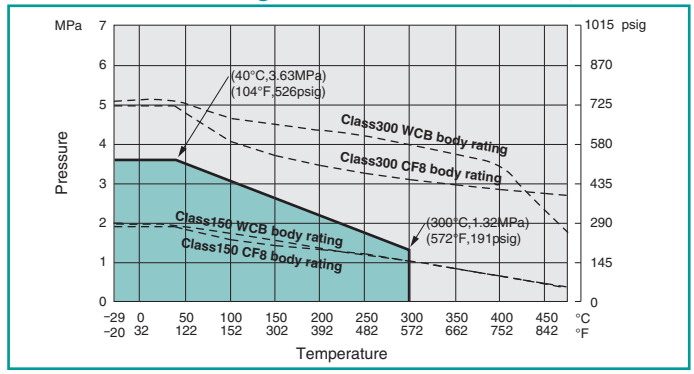
Note: **3H** Maximum working temperature for oxidizing service, such as high temperature air, is 450°C(842°F).
Note: **3H/5H/6H** Serviceable temperature terminates at 300℃(572°F) for JIS 10K and at 425℃(797F°) for JIS 20K.

Pressure-Temperature Ratings

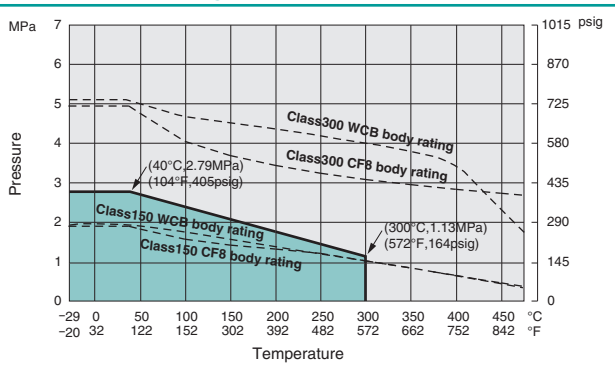
● Metal seated floating ball valves: Trim 5H: 1/2″~1 1/4″



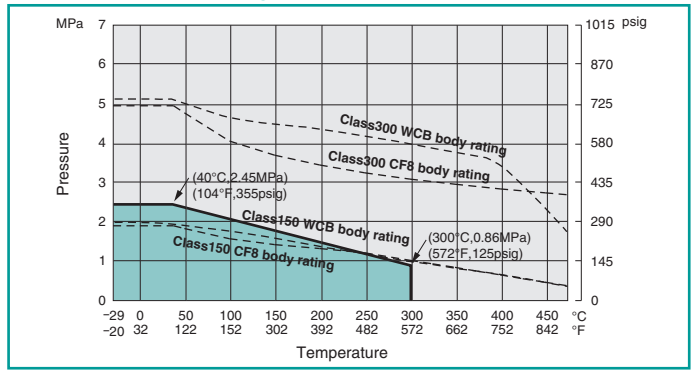
● Metal seated floating ball valves: Trim 5H: 1 1/2″, 2″



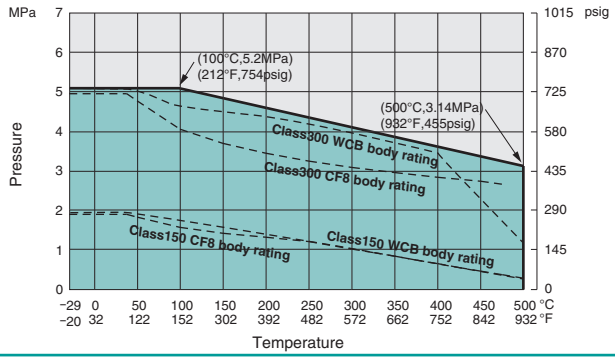
● Metal seated floating ball valves: Trim 5H: 2 1/2″, 4″



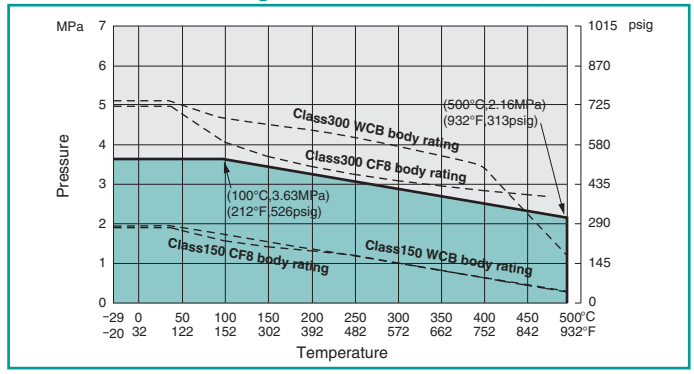
● Metal seated floating ball valves: Trim 5H: 5″~8″



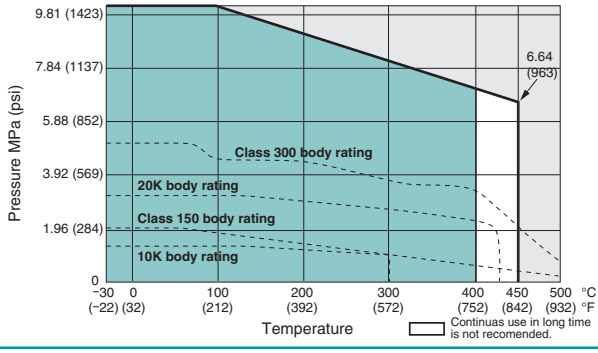
● Metal seated floating ball valves: Trim 6H: 1/2″~5″



● Metal seated floating ball valves: Trim 6H: 6″, 8″



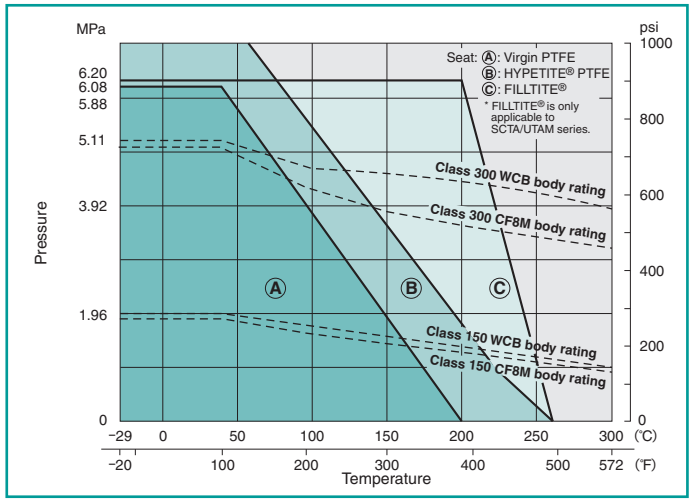
● Metal seated trunnion mounted ball valves: Trim 6H



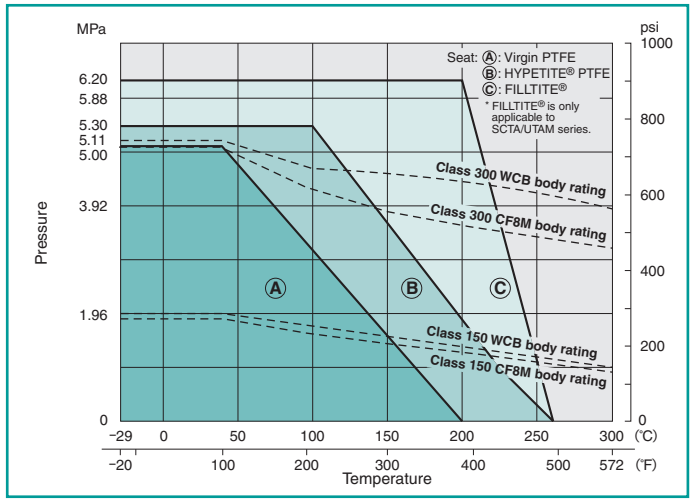
Note: Maximum working temperature for oxidizing service, such as high temperature air, is 400°C(752°F).

Pressure-Temperature Ratings

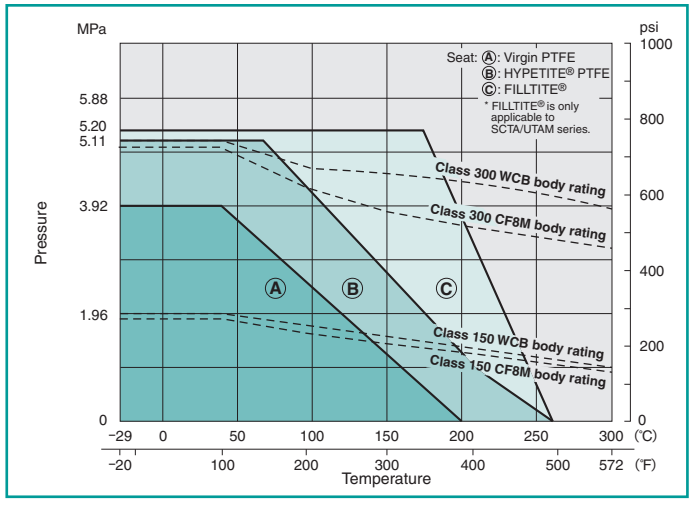
150UTBM : 1/2″, 3/4″
150/300SCTA/UTAM : 1/2″~1″



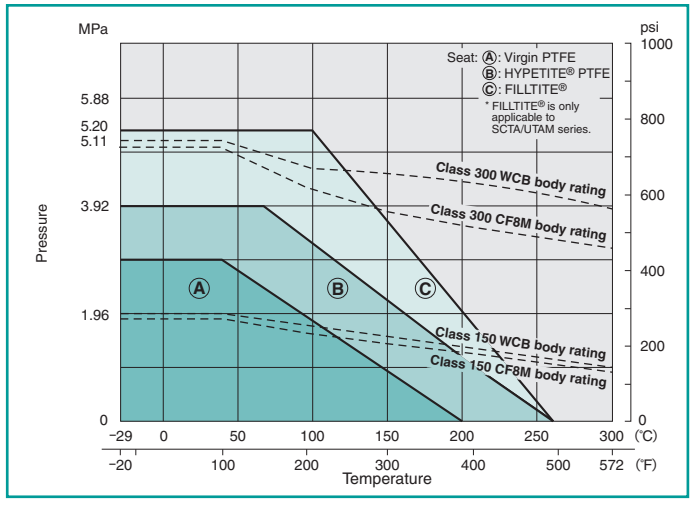
150UTBM : 1″~2 1/2″
150/300SCTA/UTAM : 1 1/2″~3″



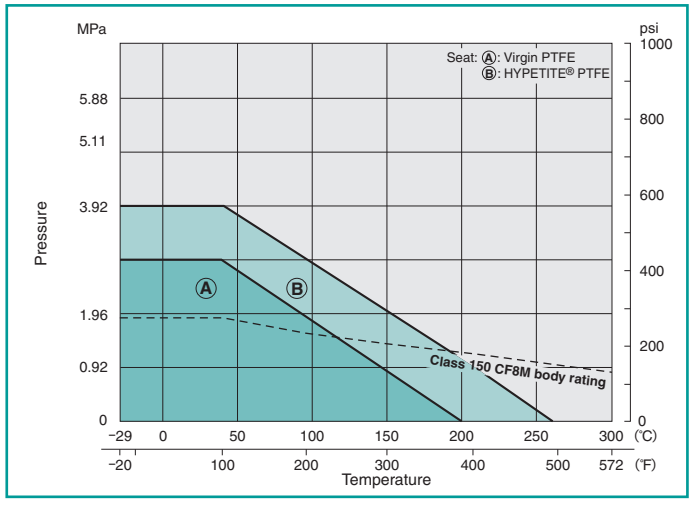
150UTBM : 3″, 4″*
150/300SCTA/UTAM : 4″, 6″



150UTBM : 5″, 6″
150/300SCTA/UTAM : 8″, 10″

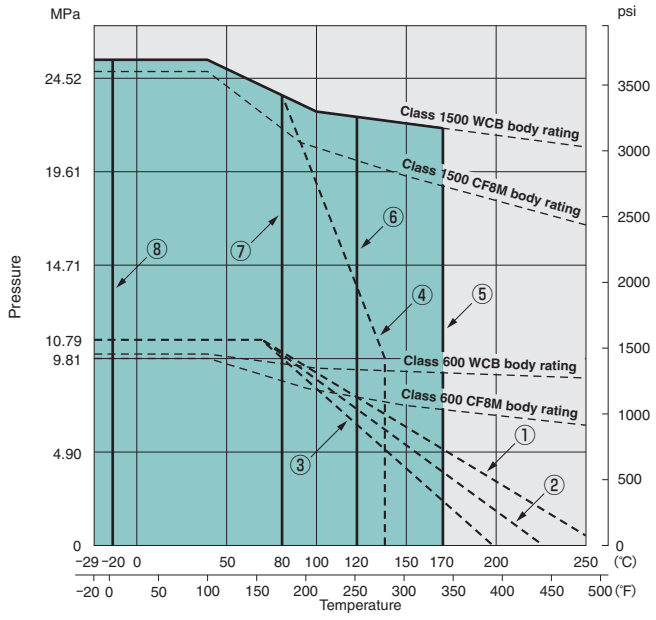


150UTBM : 8″, 10″



Pressure-Temperature Ratings

600/1500SCTB/UTBM



Ball Seat Materials

①: KITZ HYPATITE® or Carbon-filled PTFE
②: Glass-filled PTFE with MoS_2
③: Virgin PTFE
④: Nylon with MoS_2

O-ring Upper Limit

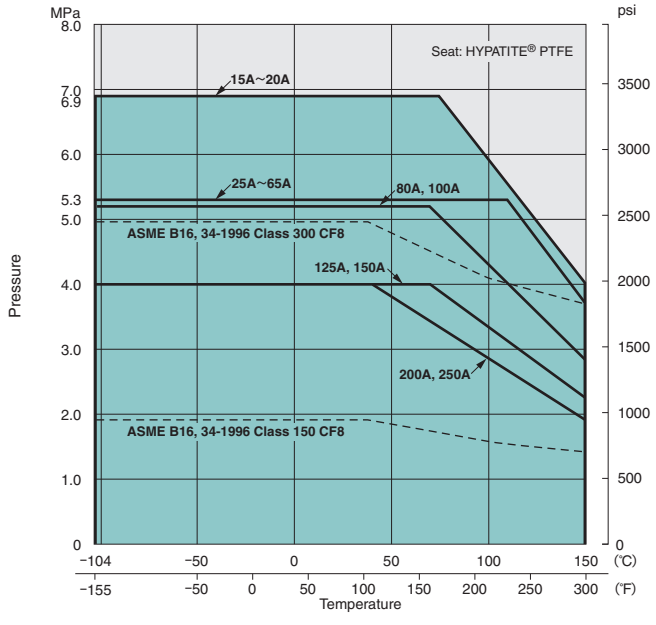
⑤: (1) FKM
(2) Low-temperature FKM
⑥: (1) EPDM
(2) ECO (Epichlorohydrin Copolymer)
⑦: (1) NBR
(2) Low-temperature NBR

O-ring Lower Limit

⑧: FKM

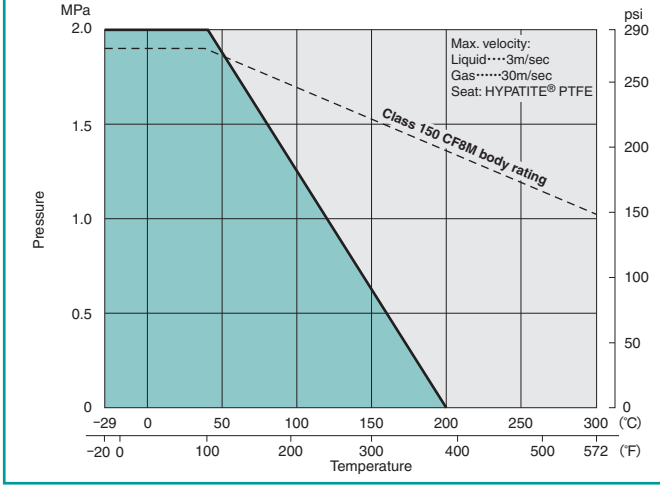
* O-rings made of others than FKM can wichstand −29˚C (−20˚F)

150/300UTDZXL

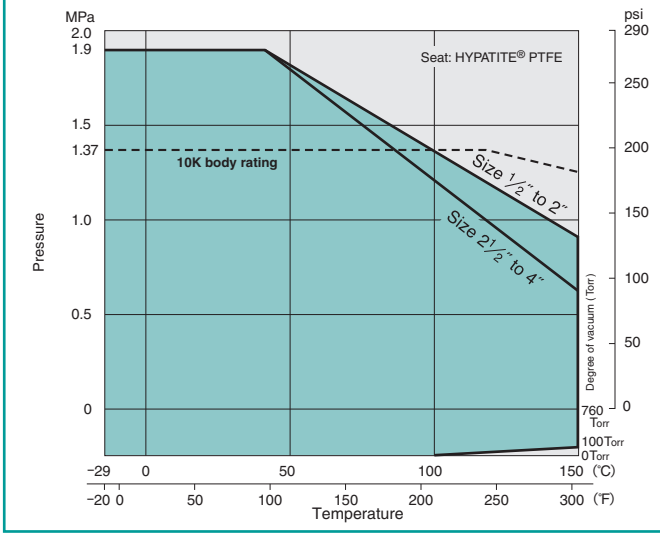


3-way: 150UTB4LAM/4TAM

*Refer to 150UTBM ratings for 150UTB2LM/2TM

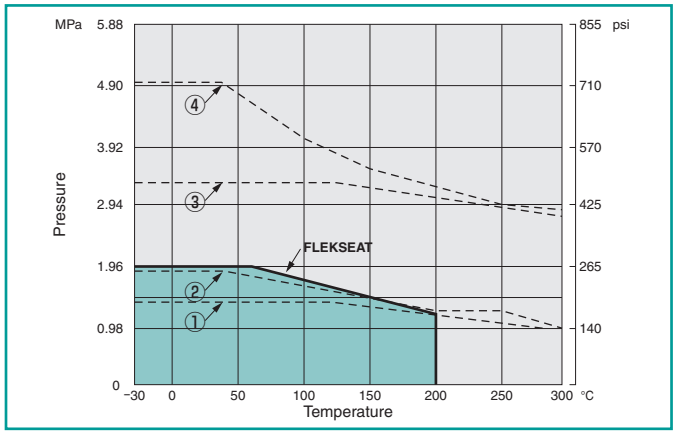


PFA Lined: 10UTBLN



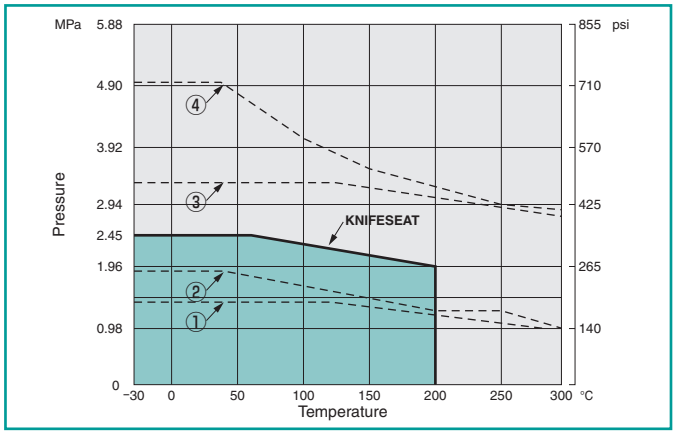
Pressure-Temperature Ratings

150/300UVC
60/20UVC



①: Valve body rating to JIS B2238 10K steel
②: Valve body rating to ASME B16.34 Class 150 CF8
③: Valve body rating to JIS B2238 20K steel
④: Valve body rating to ASME B16.34 Class 300 CF8

150/300UVC
10/20UVC



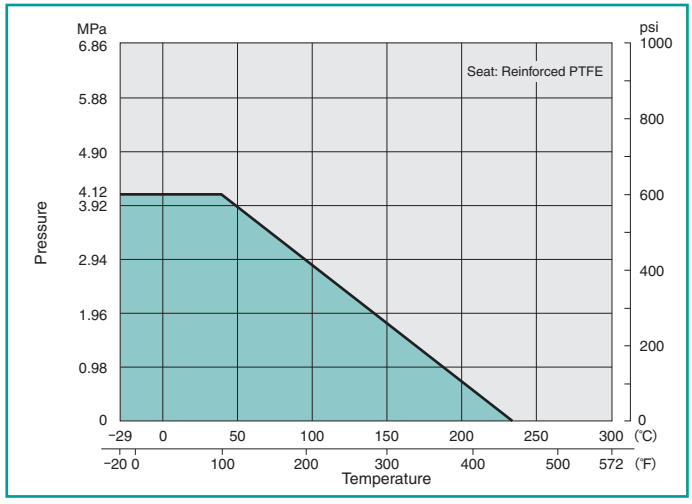
①: Valve body rating to JIS B2238 10K steel
②: Valve body rating to ASME B16.34 Class 150 CF8
③: Valve body rating to JIS B2238 20K steel
④: Valve body rating to ASME B16.34 Class 300 CF8

KNIFESEAT made of hard-feced heavy stainless steel is coupled with hard-faced stainless steel ball for handling slurries under high differential pressure, and handling fluid of high viscosity.
FLEKSEAT made of hard-feced flexible stainless steel and supported by stainless steel spring recommended where higher sealing performance is required.

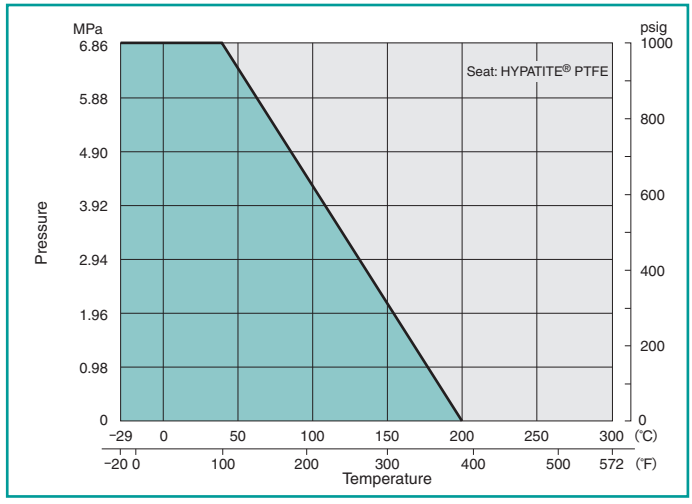
The products introduced in this catalog are all covered by the ISO 9001 Certification awarded KITZ Corporation in 1989, the earliest in the valve industry.

Pressure-Temperature Ratings

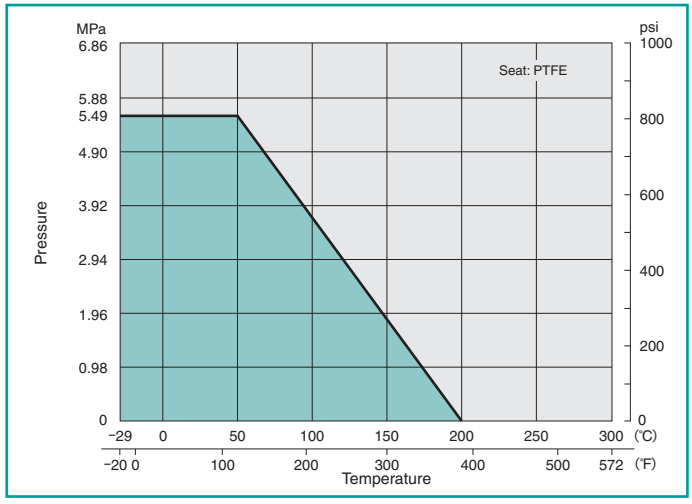
Type 600 : SCTK/UTKM



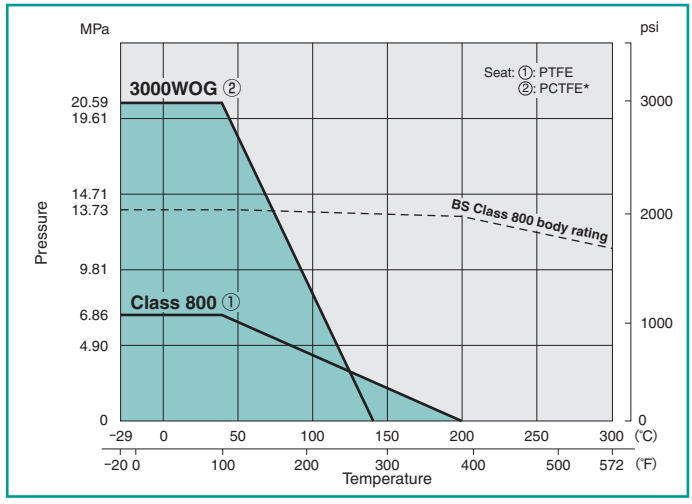
Type 1000 : UTFM



Type 800 : UTHM

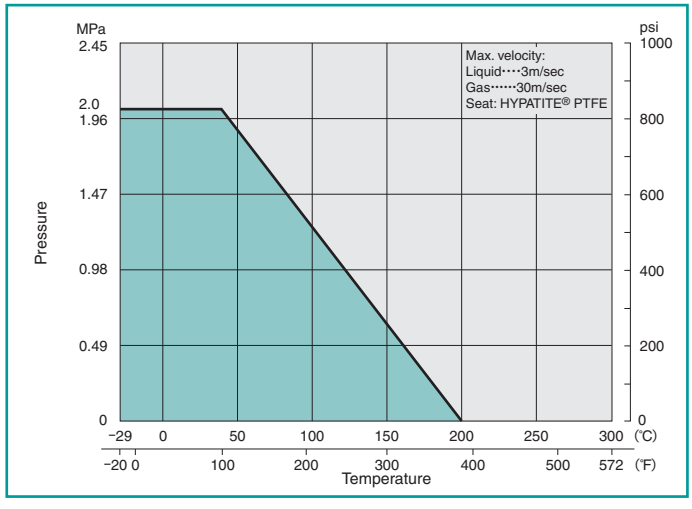


Class 800 and Type 3000 : SCTK

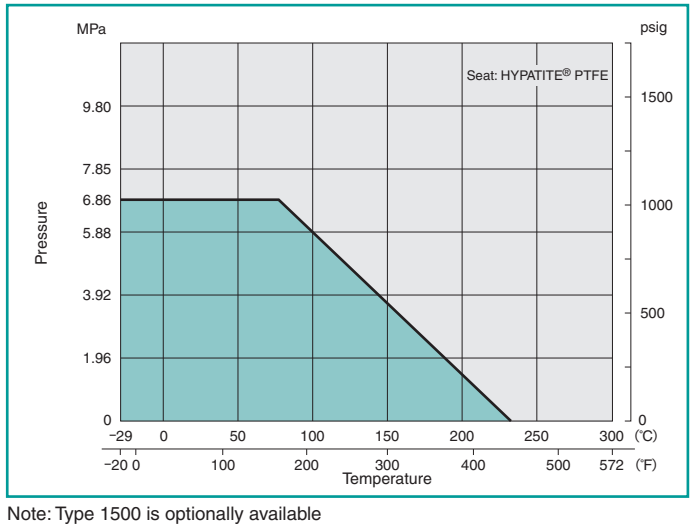


* Polychloro-Trifluoro-Ethylene

Type 800 : UTH4LM/4TM



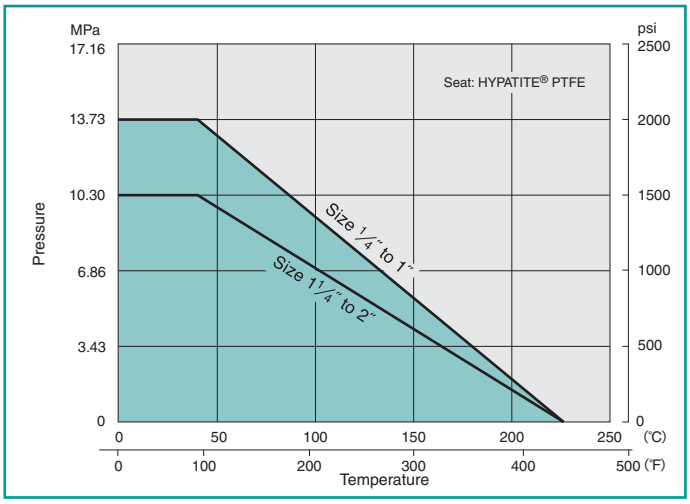
Type 1000 : SC3TZ/U3TZ Series



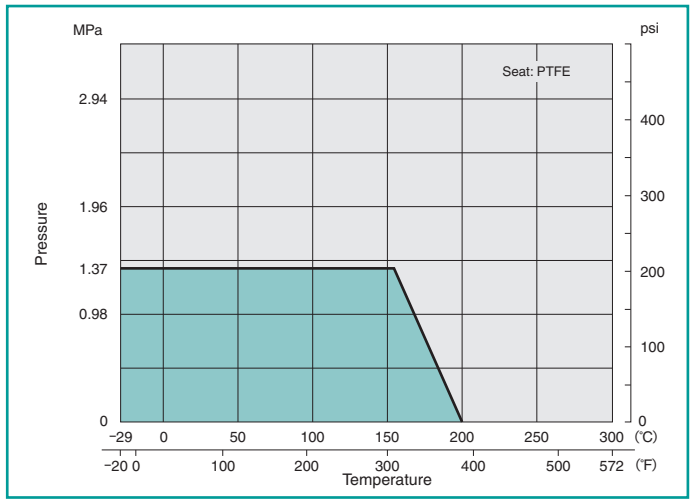
Note: Type 1500 is optionally available

Pressure-Temperature Ratings

Type 1500/2000:
AKSCTHZM/AKSCTHWZM/AKUTHZM/AKUTHWZM

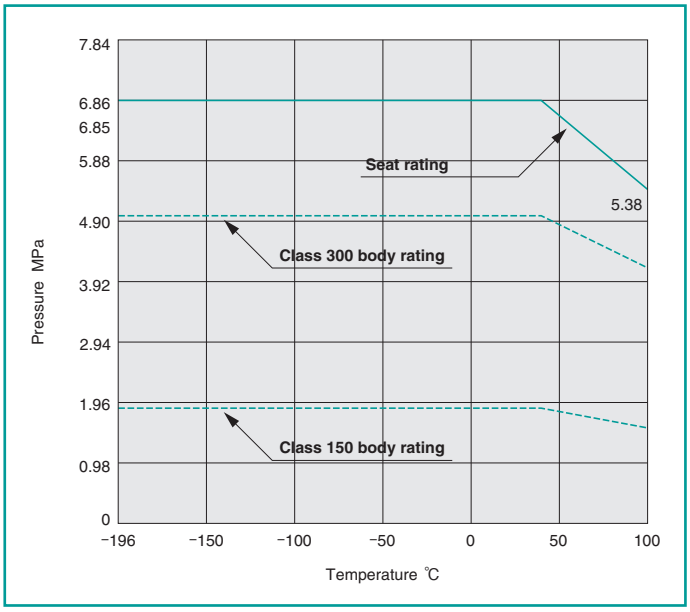


Class 150: AK150UTM

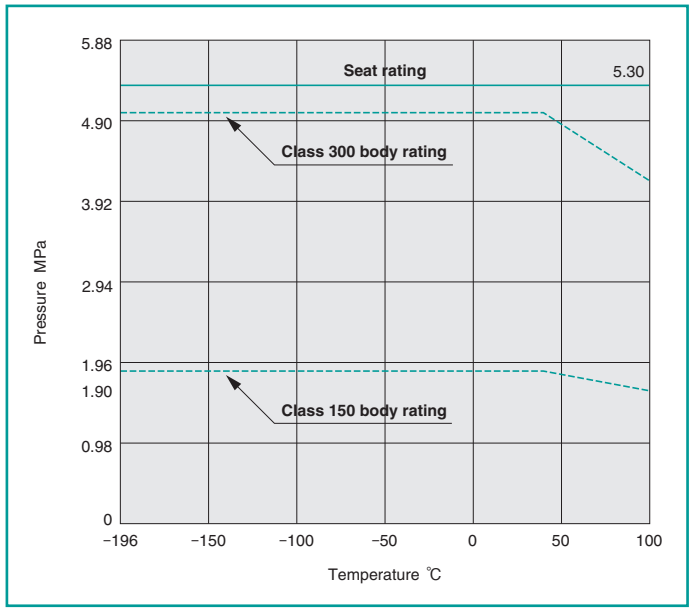


Pressure-Temperature Ratings (Seat rating)

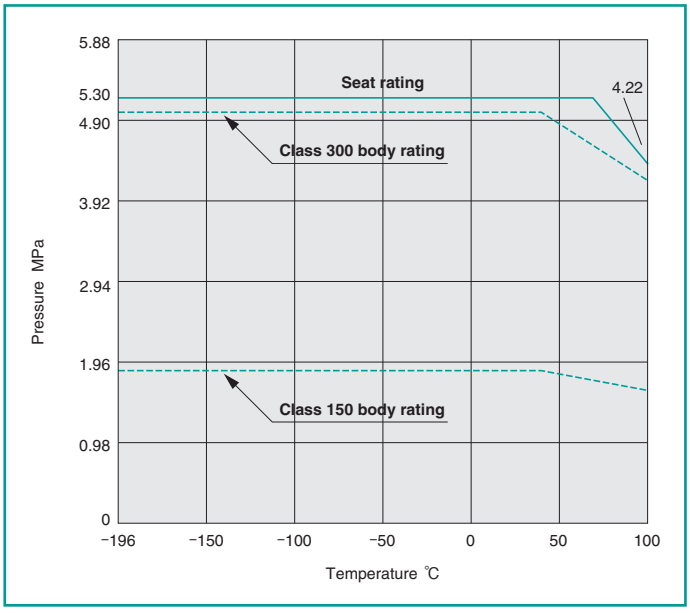
150/300UTALM: ½″~1″



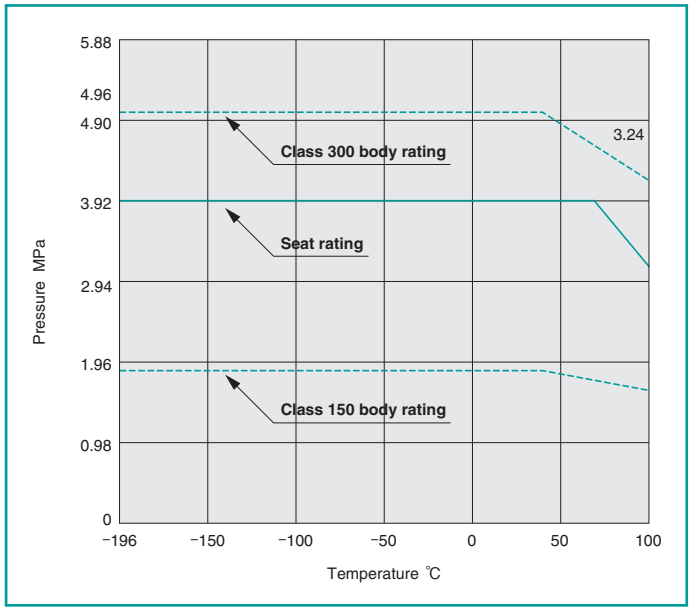
150/300UTALM: ½″~3″



150/300UTALM: 4″, 6″

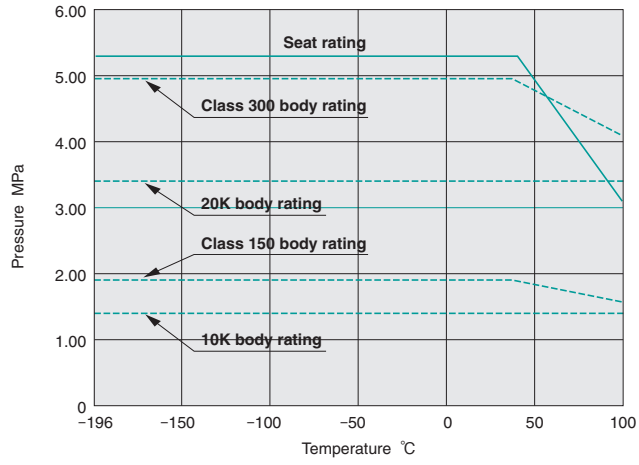


150/300UTALM: 8″, 10″

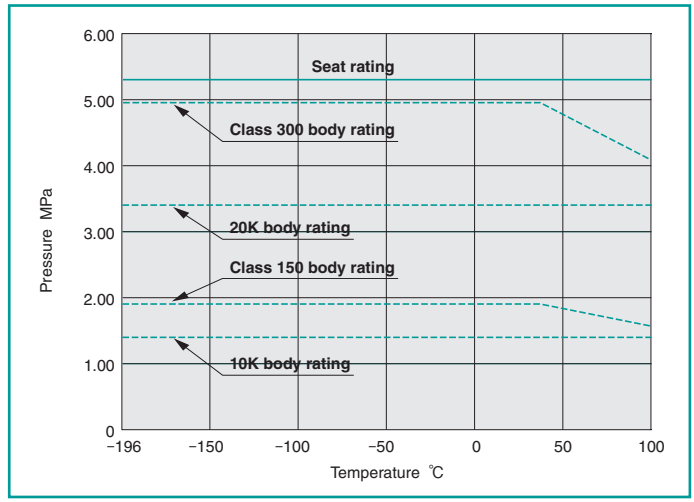


Pressure-Temperature Ratings (Seat rating)

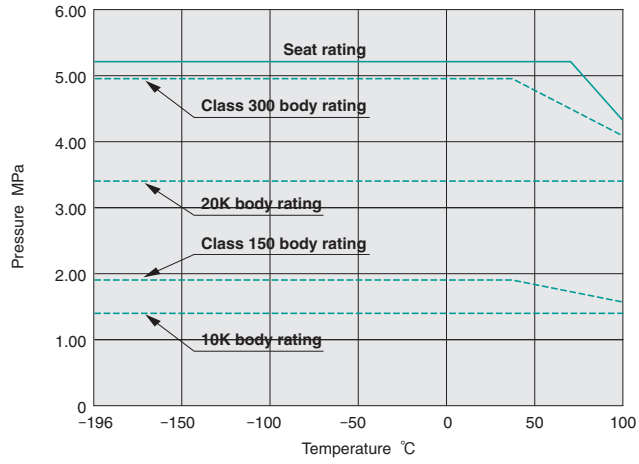
150/300UTDZL: 1/2″~1 1/2″
10/20UTDZL: 15~40



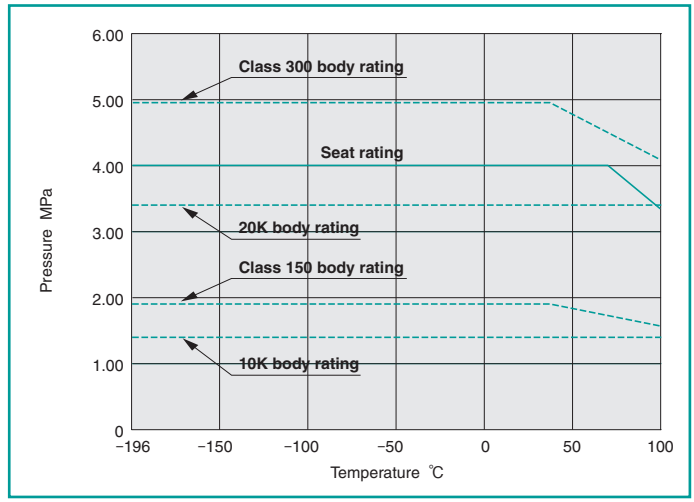
150/300UTDZL: 2″, 2 1/2″
10/20UTDZL: 50, 65



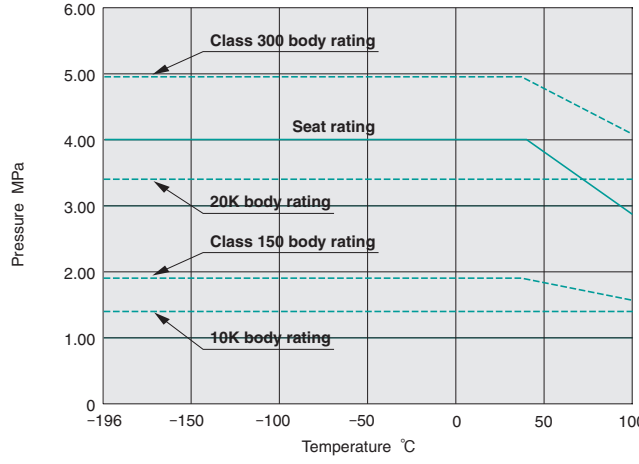
150/300UTDZL: 3″, 4″
10/20UTDZL: 80, 100



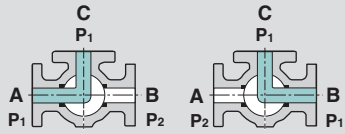
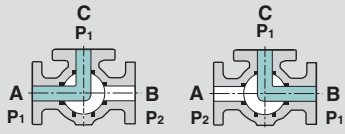
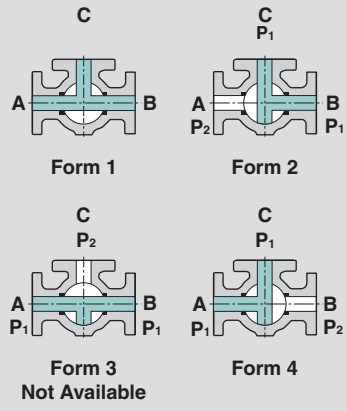
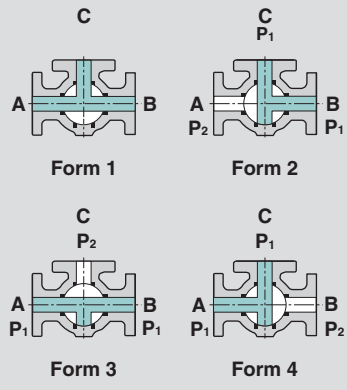
150/300UTDZL: 5″, 6″
10/20UTDZL: 125, 150



150/300UTDZL: 8″, 10″
10/20UTDZL: 200, 250



Allowable Port Orientation

Valve Design	Form	Fluid Passage
3-Way 2-seat L-port ball valve	Top View  Form 1 Form 2	1 Flow is between Ports ”A” and ”C” in Form 1. Flow is between Ports ”B” and ”C” in Form 2. Flow paths in Form 1and Form 2 can be changed each other. 2 When the fluid pressure P2 in the closed path is higher than P1 in the open path, a little fluid leakage may occur to P1 through the ball seat of the closed path.
3-Way 4-seat L-port ball valve	Top View  Form 1 Form 2	1 Flow is between Ports ”A” and ”C” in Form 1. Flow is between Ports ”B” and ”C” in Form 2. Flow paths in Form 1and Form 2 can be changed each other. 2 When the fluid pressure P2 in the closed path is higher than P1 in the open path, a little fluid leakage may occur to P1 through the ball seat of the closed path.
3-Way 2-seat T-port ball valve	Top View  Form 1 Form 2 Form 3 Not Available Form 4	1 All ports are open in Form 1. Flow is between Ports ”B” and ”C” in Form 2. Flow is between Ports ”A” and ”C” in Form 4. Flow can be switched from Form 1 to Form 2, (Standard operation pattern) or from Form 1 to Form 4 in either direction. The stopper is assembled for the standard operation pattern. 2 When the fluid pressure P2 in the closed path is higher than P1 in the open path, a little fluid leakage may occur to P1 through the ball seat of the closed path. ■ **Operation patterns available** • Pattern 1 : From Form 1 to Form 4 • Pattern 2 : From Form 1 to Form 2 (Standard) Please select one of the above operation patterns at time of order.
3-Way 4-seat T-port ball valve	Top View  Form 1 Form 2 Form 3 Form 4	1 All ports are open in Form 1. Flow is between Ports ”B” and ”C” in Form 2. Flow is between Ports ”A” and ”B” in Form 3. Flow is between Ports ”A” and ”C” in Form 4. All forms are available for switching, diverging or mixing of flows. The stopper is assembled for standard operation pattern to switch flow from Form 1 to Form 2. 2 When the fluid pressure P2 in the closed path is higher than P1 in the open path, a little fluid leakage may occur to P1 through the ball seat of the closed path. ■ **Operation patterns available** • Pattern 1 : From Form 1 to Form 4 • Pattern 2 : From Form 1 to Form 2 (Standard) • Pattern 3 : From Form 3 to Form 4 • Pattern 4 : From Form 2 to Form 3 Please select one of the above operation patterns at time of order.

General Precautions for Trouble-free Operation of Soft-seated Ball Valves

1. Excessive Cavity Pressure

Refer to Page 8. Very important

2. High-Temperature and High-Pressure Service

The pressure-temperature ratings published by manufacturers are usually considered an appropriate guide to the maximum temperature and pressure that such ball valves may withstand. KITZ recommends, however, reference to the valve distributor or manufacturer for an assurance of suitability when ball valves are to be subjected to the following conditions:

a: ***Floating ball valves*** are left closed for a long period of time under high temperature or high differential pressure.

b: ***Floating ball valves*** are operated frequently for long period of time under high temperature or high differential pressure.

c: ***Floating ball valves*** are subjected to frequent change of the line pressure or service temperature.

3. Liquids with High Velocity

When ball valves must be operated frequently on liquids with very high velocity, a check should be made with the valve distributor or manufacturer for appropriate advice to minimize the possibility of seat deformation, especially when they are highly pressurized on high-temperature lines.

4. Valve Selection

Be sure to select a valve with design specifications which meet the pressure and temperature conditions required. Take special care to select the valve to be used for the fluid containing abrasives, since the high molecular materials employed in the seats could suffer degradation.

5. Valve Mounting

Before mounting the valve, the pipe bore should be checked to confirm that no weld spatter, scale or rust particles remain inside. For mounting flanged valves, diagonally located flange bolts should be tightened evenly.

6. Degree of Valve Opening

Ball valves should basically be considered as ON/OFF valves only and care should be taken to ensure that they are fully closed or open. Opening ball valves partially will result in seat erosion and cause seat leakage. Pipelines that require the use of ball valves for throttling service should be designed in consideration of the amount of the seat leakage which may occur in its fully closed position. Note that ball valves should be stored in a fully open position.

7. Valve Actuation

Two types of pneumatic valve actuator (KITZ B-Series, F-Series) are available for our factory mounting. Also KITZ "KELMO" electric actuators are available. Electric actuators or pneumatic actuators of any other specified brands are also available for our factory mounting.

In case of user's mounting their own actuators on KITZ ball valves, however, all users are recommended to contact KITZ or its authorized distributors for adequate technical advice, because any improper sizing of actuators may cause serious problems in the field. It must be carefully noted that the actual value of the operating torque of any given valve may vary, depending on the service conditions listed below:

(1) Fluid
  a. Kind of fluid
  b. Line pressure
  c. Line temperature
  d. Fluid volume
(2) Ambient temperature
(3) Opening/closing degree
(4) Type of actuator
(5) Frequency and pattern of change of line pressure
(6) Frequency and pattern of change of line and ambient temperatures

8. Valve Disassembly

The line fiuid should be completely removed from the internal of the valves before they are dismantled from the pipeline for maintenance.

Even after the line fluid has been discharged through the pipeline, some fluid is always trapped inside the body and body cavity (the room surrounded by the body, ball and two seats).

Be sure to completely discharge the pressure trapped in the body cavity, before valve disassembly.

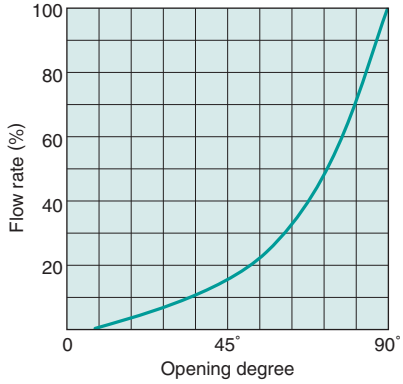
Inspection and Warranty

Each KITZ ball valve is subjected to 100% in-house inspection designated by API 598 or BS 6755 Part 1. This includes hydrostatic shall tests and pneumatic low-pressure seat test. Manufacturer's material certificates and test reports are available upon request. Each KITZ ball valve is guaranteed for 12 months after placement in service, but not exceeding 18 months after shipment from KITZ factories.

Flow Characteristics

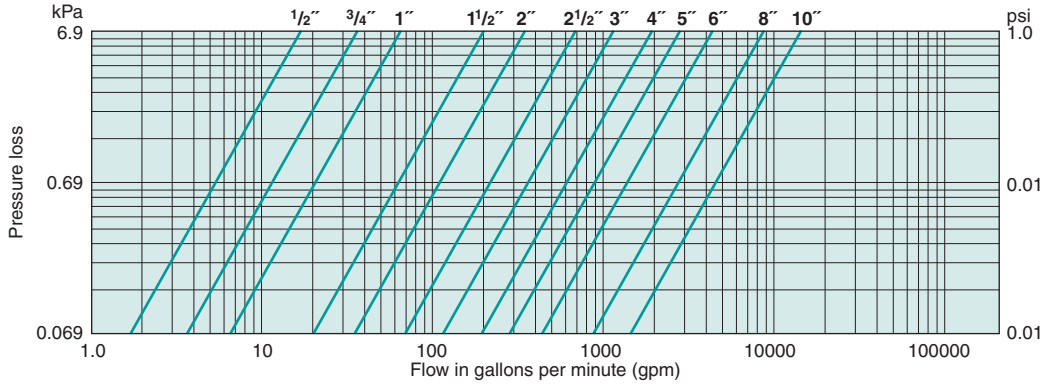
One of the best advantages of ball valves is that every flow per any given bore size is larger than other types of valves. Fluid is much less disturbed by eddy currents or pulsation. To obtain the figure of flow per valve opening, simply multiply the flow rate (%) given here by the corresponding value given in the table of Pressure Loss vs. Flow Rate.

Valve opening vs. flow rate

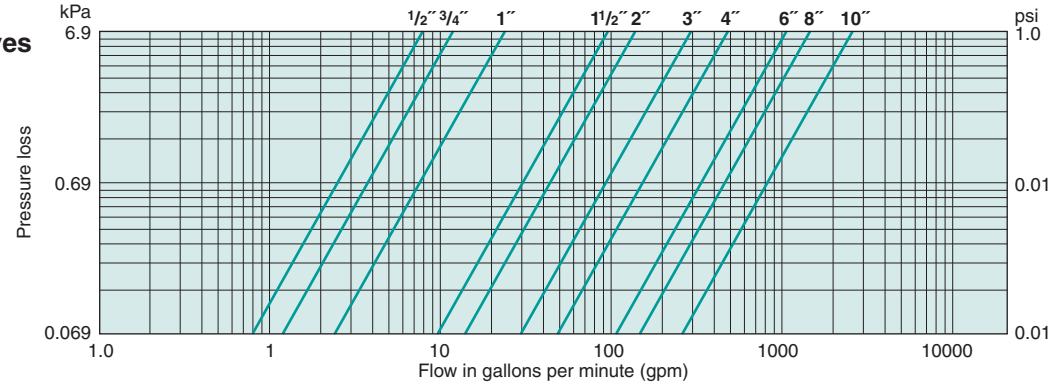


Pressure Loss vs. Flow Rate

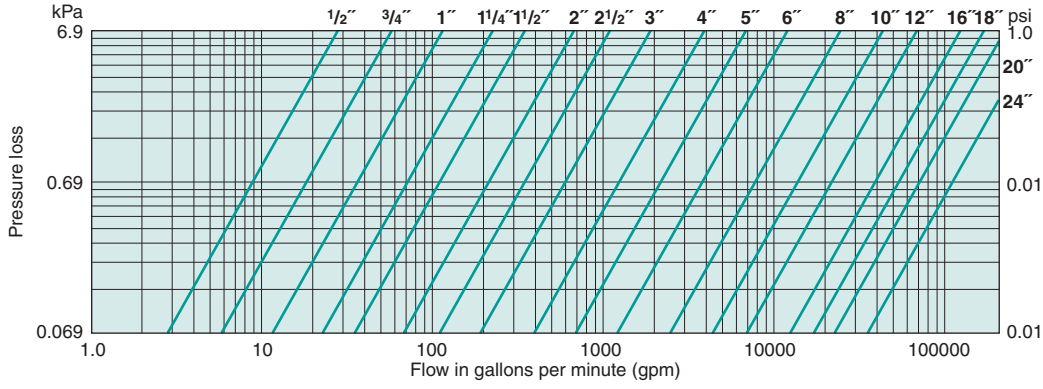
Full port valves

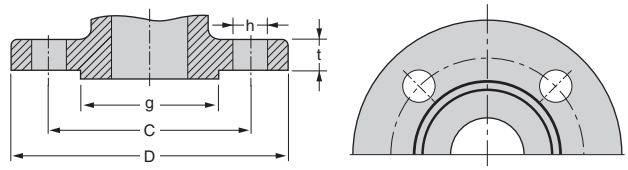


Reduced port valves



Schedule 40 steel pipe (10m)





ASME B16.5-1996
Class 150 RF, Class 300 RF

Class 150 steel pipe flange dimensions

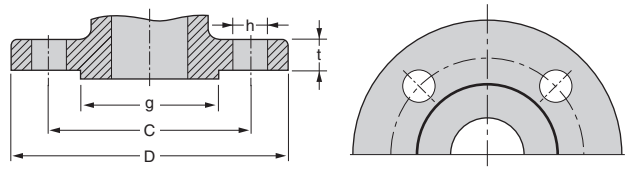
Nominal Size		D		C		g		t		h (Bolt hole)		Bolt	
inch	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Number	Diam.
1/2	15	3.50	89	2.38	60.5	1.38	35	0.44	11.2	0.62	16	4	1/2
3/4	20	3.88	98	2.75	70.0	1.69	43	0.50(0.44)	12.7(11.2)	0.62	16	4	1/2
1	25	4.25	108	3.12	79.5	2.00	51	0.56(0.44)	14.3(11.2)	0.62	16	4	1/2
1 1/4	32	4.62	117	3.50	89.0	2.50	64	0.62(0.50)	15.9(12.7)	0.62	16	4	1/2
1 1/2	40	5.00	127	3.88	98.5	2.88	73	0.69(0.56)	17.5(14.3)	0.62	16	4	1/2
2	50	6.00	152	4.75	120.5	3.62	92	0.75(0.62)	19.1(15.9)	0.75	19	4	5/8
2 1/2	65	7.00	178	5.50	139.5	4.12	105	0.88(0.69)	22.3(17.5)	0.75	19	4	5/8
3	80	7.50	190	6.00	152.5	5.00	127	0.94(0.75)	23.9(19.1)	0.75	19	4	5/8
4	100	9.00	229	7.50	190.5	6.19	157	0.94	23.9	0.75	19	8	5/8
5	125	10.00	254	8.50	216.5	7.31	186	0.94	23.9	0.88	22	8	3/4
6	150	11.00	279	9.50	241.5	8.50	216	1.00	25.4	0.88	22	8	3/4
8	200	13.50	343	11.75	298.5	10.62	270	1.12	28.6	0.88	22	8	3/4
10	250	16.00	406	14.25	362.0	12.75	324	1.19	30.2	1.00	25	12	7/8
12	300	19.00	483	17.00	432.0	15.00	381	1.25	31.8	1.00	25	12	7/8
14	350	21.00	533	18.75	476.5	16.25	413	1.38	35.0	1.12	29	12	1
16	400	23.50	597	21.25	539.5	18.50	470	1.44	36.6	1.12	29	16	1
18	450	25.00	635	22.75	578.0	21.00	533	1.56	39.7	1.25	32	16	1 1/8
20	500	27.50	698	25.00	635.0	23.00	584	1.69	42.9	1.25	32	20	1 1/8
24	600	32.00	813	29.50	749.5	27.25	692	1.88	47.7	1.38	35	20	1 1/4

Height of raised face is 0.06 inch (1.6 mm) each. Dimensions in ( ) are for valve flanges.

Class 300 steel pipe flange dimensions

Nominal Size		D		C		g		t		h (Bolt hole)		Bolt	
inch	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Number	Diam.
1/2	15	3.75	95	2.62	66.5	1.38	35	0.56	14.3	0.62	16	4	1/2
3/4	20	4.62	117	3.25	82.5	1.69	43	0.62	15.9	0.75	19	4	5/8
1	25	4.88	124	3.50	89.0	2.00	51	0.69	17.5	0.75	19	4	5/8
1 1/4	32	5.25	133	3.88	98.5	2.50	64	0.75	19.1	0.75	19	4	5/8
1 1/2	40	6.12	156	4.50	114.5	2.88	73	0.81	20.7	0.88	22	4	3/4
2	50	6.50	165	5.00	127.0	3.62	92	0.88	22.3	0.75	19	8	5/8
2 1/2	65	7.50	190	5.88	149.0	4.12	105	1.00	25.4	0.88	22	8	3/4
3	80	8.25	210	6.62	168.0	5.00	127	1.12	28.6	0.88	22	8	3/4
4	100	10.00	254	7.88	200.0	6.19	157	1.25	31.8	0.88	22	8	3/4
5	125	11.00	279	9.25	235.0	7.31	186	1.38	35.0	0.88	22	8	3/4
6	150	12.50	318	10.62	270.0	8.50	216	1.44	36.6	0.88	22	12	3/4
8	200	15.00	381	13.00	330.0	10.62	270	1.62	41.3	1.00	25	12	7/8
10	250	17.50	444	15.25	387.5	12.75	324	1.88	47.7	1.12	29	16	1
12	300	20.50	521	17.75	451.0	15.00	381	2.00	50.8	1.25	32	16	1 1/8
14	350	23.00	584	20.25	514.5	16.25	413	2.12	54.0	1.25	32	20	1 1/8
16	400	25.50	648	22.50	571.5	18.50	470	2.25	57.2	1.38	35	20	1 1/4
18	450	28.00	711	24.75	628.5	21.00	533	2.38	60.4	1.38	35	24	1 1/4
20	500	30.50	775	27.00	686.0	23.00	584	2.50	63.5	1.38	35	24	1 1/4
24	600	36.00	914	32.00	813.0	27.25	692	2.75	69.9	1.62	41	24	1 1/2

Height of raised face is 0.06 inch (1.6 mm) each.

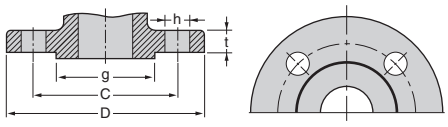


Class 600 RF

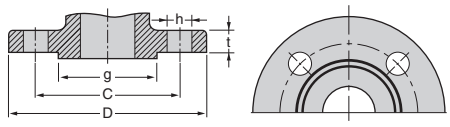
Class 600 steel pipe flange dimensions

Nominal Size		D		C		g		t		h (Bolt hole)		Bolt	
inch	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Number	Diam.
1/2	15	3.75	95	2.62	66.5	1.38	35	0.56	14.3	0.62	16	4	1/2
3/4	20	4.62	117	3.25	82.5	1.69	43	0.62	15.9	0.75	19	4	5/8
1	25	4.88	124	3.50	89.0	2.00	51	0.69	17.5	0.75	19	4	5/8
1 1/4	32	5.25	133	3.88	98.5	2.50	64	0.81	20.7	0.75	19	4	5/8
1 1/2	40	6.12	156	4.50	114.5	2.88	73	0.88	22.3	0.88	22	4	3/4
2	50	6.50	165	5.00	127.0	3.62	92	1.00	25.4	0.75	19	8	5/8
2 1/2	65	7.50	190	5.88	149.0	4.12	105	1.12	28.6	0.88	22	8	3/4
3	80	8.25	210	6.62	168.0	5.00	127	1.25	31.8	0.88	22	8	3/4
4	100	10.75	273	8.50	216.0	6.19	157	1.50	38.1	1.00	25	8	7/8
5	125	13.00	330	10.50	266.5	7.31	186	1.75	44.5	1.12	29	8	1
6	150	14.00	356	11.50	292.0	8.50	216	1.88	47.7	1.12	29	12	1
8	200	16.50	419	13.75	349.0	10.62	270	2.19	55.6	1.25	32	12	1 1/8
10	250	20.00	508	17.00	432.0	12.75	324	2.50	63.5	1.38	35	16	1 1/4
12	300	22.00	559	19.25	489.0	15.00	381	2.62	66.7	1.38	35	20	1 1/4
14	350	23.75	603	20.75	527.0	16.25	413	2.75	69.9	1.50	38	20	1 3/8
16	400	27.00	686	23.75	603.0	18.50	470	3.00	76.2	1.62	41	20	1 1/2
18	450	29.25	743	25.75	654.0	21.00	533	3.25	82.6	1.75	45	20	1 5/8
20	500	32.00	813	28.50	724.0	23.00	584	3.50	88.9	1.75	45	24	1 5/8
24	600	37.00	940	33.00	838.0	27.25	692	4.00	101.6	2.00	51	24	1 7/8

Height of raised face is 0.25 inch (6.4 mm) each.



Class 600 to 1500



Class 150, 300

Class 1500 RF

Class 1500 steel pipe flange dimensions

Nominal Size		D		C		g		t		h (Bolt hole)		Bolt	
inch	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Number	Diam.
1/2	15	4.75	121	3.25	82.5	1.38	35	0.88	22.4	0.88	22	4	3/4
3/4	20	5.12	130	3.50	89.0	1.69	43	1.00	25.4	0.88	22	4	3/4
1	25	5.88	149	4.00	101.5	2.00	51	1.12	28.5	1.00	25	4	7/8
1 1/4	32	6.25	159	4.38	111.0	2.50	64	1.12	28.5	1.00	25	4	7/8
1 1/2	40	7.00	178	4.88	124.0	2.88	73	1.25	31.8	1.12	29	4	1
2	50	8.50	216	6.50	165.0	3.62	92	1.50	38.1	1.00	25	8	7/8
2 1/2	65	9.62	244	7.50	190.5	4.12	105	1.62	41.2	1.12	29	8	1
3	80	10.50	267	8.00	203.0	5.00	127	1.88	47.8	1.25	32	8	1 1/8
4	100	12.25	311	9.50	241.5	6.19	157	2.12	53.9	1.38	35	8	1 1/4
5	125	14.75	375	11.50	292.0	7.31	186	2.88	73.2	1.62	41	8	1 1/2
6	150	15.50	394	12.50	317.5	8.50	216	3.25	82.6	1.50	38	12	1 3/8
8	200	19.00	483	15.50	393.5	10.62	270	3.62	92.0	1.75	45	12	1 5/8
10	250	23.00	584	19.00	482.5	12.75	324	4.25	108.0	2.00	51	12	1 7/8
12	300	26.50	673	22.50	571.5	15.00	381	4.88	124.0	2.12	54	16	2
14	350	29.50	749	25.00	635.0	16.25	413	5.25	133.4	2.38	60	16	2 1/4
16	400	32.50	826	27.75	705.0	18.50	470	5.75	146.1	2.62	67	16	2 1/2
18	450	36.00	914	30.50	774.5	21.00	533	6.38	162.1	2.88	73	16	2 3/4
20	500	38.75	984	32.75	832.0	23.00	584	7.00	177.8	3.12	79	16	3
24	600	46.00	1168	39.00	990.5	27.25	692	8.00	203.2	3.62	92	16	3 1/2

Height of raised face is 0.25 inch (6.4 mm) each.

ASME B16.47-1996 (Series A)

Class 150 steel pipe flange dimensions

Nominal Size		D		C		g		t		h (Bolt hole)		Bolt	
inch	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Number	Diam.
26	650	34.25	870	31.75	806.5	29.50	749	2.69	68.4	1.38	35	24	1 1/4
28	700	36.50	927	34.00	863.5	31.50	800	2.81	71.4	1.38	35	28	1 1/4
30	750	38.75	984	36.00	914.5	33.75	857	2.94	74.7	1.38	35	28	1 1/4
32	800	41.75	1060	38.50	978.0	36.00	914	3.18	80.8	1.62	41	28	1 1/2
34	850	43.75	1111	40.50	1029.0	38.00	965	3.25	82.6	1.62	41	32	1 1/2
36	900	46.00	1168	42.75	1086.0	40.25	1022	3.56	90.5	1.62	41	32	1 1/2

Height of raised face is 0.06 inch (1.6 mm) each.

Class 300 steel pipe flange dimensions

Nominal Size		D		C		g		t		h (Bolt hole)		Bolt	
inch	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Number	Diam.
26	650	38.25	972	34.50	876.5	29.50	749	3.12	79.3	1.75	45	28	1 5/8
28	700	40.75	1035	37.00	940.0	31.50	800	3.38	85.9	1.75	45	28	1 5/8
30	750	43.00	1092	39.25	997.0	33.75	857	3.62	92.0	1.88	48	28	1 3/4
32	800	45.25	1149	41.50	1054.0	36.00	914	3.88	98.6	2.00	51	28	1 7/8
34	850	47.50	1207	43.50	1105.0	38.00	965	4.00	101.6	2.00	51	28	1 7/8
36	900	50.00	1270	46.00	1168.5	40.25	1022	4.12	104.7	2.12	54	32	2

Height of raised face is 0.06 inch (1.6 mm) each.

Class 600 steel pipe flange dimensions

Nominal Size		D		C		g		t		h (Bolt hole)		Bolt	
inch	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Number	Diam.
26	650	40.00	1016	36.00	914.5	29.50	749	4.25	108.0	2.00	51	28	1 7/8
28	700	42.25	1073	38.00	965.0	31.50	800	4.38	111.3	2.12	54	28	2
30	750	44.50	1130	40.25	1022.5	33.75	857	4.50	114.3	2.12	54	28	2

Height of raised face is 0.25 inch (6.4 mm) each.

⚠ CAUTION

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

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