KITZ

Ball Valves

KITZ CORPORATION

KITZ Ball Valves

KITZ Ball Valve는 생산 장소에 상관없이 ISO 9001에 따라 설계된 동일한 품질의 시스템으로 제조됩니다.

KITZ Corporation of Taiwan, Kaohsiung Plant, Taiwan (ISO 9001)

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)

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Product Range

Flanged Floating Ball Valves

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	20K	20SCTDZ	F	Split		●	●	●		●	●	●	●	●	●	●	●			*3
	20K	G-20SCTDZ	F	Split										▲	▲	▲	▲			*3
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	Class 150	150UTB	F	Split		●	●	●		●	●	●	●	●	●	●	●			12
	Class 150	150UTBM	F	Split		●	●	●		●	●	●	●	●	●	●	●			12
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	Class 300	300UTAZM	R	Uni		●	●	●		●	●		●	●		●	●	●		26
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	Class 1500	1500UTBM	F	Uni		●	●	●		●										13
	Class 150	150UTDZXL	F	Split/Extended bonnet		●	●	●	●	●	●	●	●	●						30
	Class 150	150UTDZXLM	F	Split/Extended bonnet		▲	▲	▲		▲	▲		▲	▲						30
	Class 150	G-150UTDZXL	F	Split/Extended bonnet									▲	▲	●	●	●	●		30
	Class 150	G-150UTDZXLM	F	Split/Extended bonnet												▲	▲	▲		30
	Class 300	300UTDZXL	F	Split/Extended bonnet		▲	▲	▲		▲	▲	▲	▲							31
	Class 300	300UTDZXLM	F	Split/Extended bonnet		●	●	●	●	●	●	●	●							31
	Class 300	G-300UTDZXL	F	Split/Extended bonnet										▲		▲	▲			31
	Class 300	G-300UTDZXLM	F	Split/Extended bonnet												▲				31
	Class 150	150UTAZLM	R	Uni/Extended bonnet		▲	▲	▲		▲	▲		▲	▲						27
	Class 150	G-150UTAZLM	R	Uni/Extended bonnet												▲	▲	▲		27
	Class 300	300UTAZLM	R	Uni/Extended bonnet		▲	▲	▲		▲	▲		▲							27
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	Class 300	G-300UTDZLM	F	Split/Extended bonnet									▲	▲		▲	▲			29
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*1 Bore design: F=Full bore, R=Reduced bore
*2 Worm gear operation in standard for the Products with the prefix "G-"
*3 Please contact KITZ Corporation for details.
▲: Custom orders. Please contact KITZ Corporation.

Product Range

Flanged Floating Ball Valves

Shell Material	Class	KITZ Product Code	Bore *1	Design Body \ Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	Page
					DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	
Stainless Steel	20K	20UTDZLM	F	Split/Extended bonnet		●	▲	▲	▲	▲	▲	▲								29
	20K	G-20UTDZL	F	Split/Extended bonnet									●	●	▲	▲	▲			29
	Class 150	150UTR	R	Split							●	▲	●	●	●	●	●	●		*3
	Class 150	150UTRM	R	Split							●	●	●	●	●	●	●	●		*3
	Class 150	G-150UTR	R	Split										▲	▲	●	●	●	●	*3
	Class 150	G-150UTRM	R	Split									▲	▲	●	●	●	●	●	*3
	Class 300	300UTR	R	Split							●		●	●		●	●	●		*3
	Class 300	300UTRM	R	Split							●		●	●		●	●	●		*3
	Class 300	G-300UTR	R	Split												●	●	●		*3
	10K	10UTDZ	F	Split		●	●	●	●	●	●	●	●	●	●	●	●			*3
	10K	10UTDZM	F	Split		●	●	●	●	●	●	●	●	●	●	●	●			*3
	10K	G-10UTDZ	F	Split									▲		●	●	●	●		*3
	10K	G-10UTDZM	F	Split									▲		●	●	●	●		*3
	20K	20UTDZ	F	Split		●	●	●	●	●	●	●	●	●	●	●	●			*3
	20K	20UTDZM	F	Split		●	●	●	●	●	●	●	●	●	●	●	●			*3
	20K	G-20UTDZ	F	Split									▲	●	●	●	●			*3
	20K	G-20UTDZM	F	Split									▲	●	●	●	▲			*3
	Class 150	150UTB2L	F	Split/3-way·2-seats				●		●	●		●	▲						23
	Class 150	150UTB2LM	F	Split/3-way·2-seats				▲		▲	▲		▲	▲						23
	Class 150	150UTB2T	F	Split/3-way·2-seats				▲		▲	▲		▲	▲						23
	Class 150	150UTB2TM	F	Split/3-way·2-seats				▲		▲	▲		▲	▲						23
	Class 150	150UTR2L	R	Split/3-way·2-seats												▲				24
	Class 150	150UTR2LM	R	Split/3-way·2-seats												●				24
	Class 150	150UTR2TM	R	Split/3-way·2-seats												●				24
	Class 150	150UTB4LA	F	Split/3-way·4-seats		▲	▲	▲		▲	▲	▲	▲	▲		▲				23
	Class 150	150UTB4LAM	F	Split/3-way·4-seats		●	●	●		●	●	●	●	●		▲				23
	Class 150	G-150UTB4LA	F	Split/3-way·4-seats												▲	▲			23
	Class 150	150UTR4LA	R	Split/3-way·4-seats												▲				24
	Class 150	150UTR4LAM	R	Split/3-way·4-seats											▲	●	▲			24
	Class 150	G-150UTR4LA	R	Split/3-way·4-seats												▲	▲			24
	Class 150	150UTR4TA	R	Split/3-way·4-seats												▲				24
	Class 150	G-150UTR4TA	R	Split/3-way·4-seats													▲			24
	Class 150	150UTR4TAM	R	Split/3-way·4-seats											▲	●	▲			24
	10K	10UTB2L	F	Split/3-way·2-seats				●		●	●	●	●	●						*3
	10K	10UTB2LM	F	Split/3-way·2-seats				●		●	●	●	●	●						*3
	10K	10UTB2T	F	Split/3-way·2-seats				●		●	●	●	●	●						*3
	10K	10UTB2TM	F	Split/3-way·2-seats				●		●	●	●	●	●						*3
	10K	10UTR2L	R	Split/3-way·2-seats												●				*3
	10K	10UTR2LM	R	Split/3-way·2-seats												●				*3
	10K	10UTR2T	R	Split/3-way·2-seats												●				*3
	10K	10UTR2TM	R	Split/3-way·2-seats												●				*3
	10K	10UTB4LA	F	Split/3-way·4-seats		●	●	●		●	●	●	●	●	▲	▲				*3
	10K	10UTB4LAM	F	Split/3-way·4-seats		●	●	●		●	●	●	●	●	▲	▲				*3
	10K	G-10UTB4LA	F	Split/3-way·4-seats												▲	▲			*3
	10K	G-10UTB4LAM	F	Split/3-way·4-seats												▲	▲			*3
	10K	10UTB4TA	F	Split/3-way·4-seats		●	●	●		●	●	●	●	●	●	●				*3
	10K	10UTB4TAM	F	Split/3-way·4-seats		●	●	●		●	●	●	●	●	●	●				*3
	10K	G-10UTB4TA	F	Split/3-way·4-seats										▲	▲	▲	▲			*3
	10K	G-10UTB4TAM	F	Split/3-way·4-seats										▲	▲	▲	▲			*3
	10K	10UTR4LA	R	Split/3-way·4-seats											●	●	●			*3
	10K	10UTR4LAM	R	Split/3-way·4-seats											●	●	●			*3
	10K	G-10UTR4LA	R	Split/3-way·4-seats												▲	▲			*3
	10K	G-10UTR4LAM	R	Split/3-way·4-seats												▲	▲			*3
	10K	10UTR4TA	R	Split/3-way·4-seats											●	●	●			*3
	10K	10UTR4TAM	R	Split/3-way·4-seats											●	●	●			*3
	10K	G-10UTR4TA	R	Split/3-way·4-seats											▲	●	●			*3
	10K	G-10UTR4TAM	R	Split/3-way·4-seats											▲	▲	▲			*3
	Class 150	150UTBP	F	Split/Pocketless		●	●	●		●	●	●	●	●	●	●	●			22
	Class 150	150UTBPM	F	Split/Pocketless		●	●	●		●	●	●	●	●	●	●	●			22
	Class 150	G-150UTBP	F	Split/Pocketless									▲	▲	▲	▲	▲			22
	Class 150	G-150UTBPM	F	Split/Pocketless												▲	▲			22

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Flanged Floating Ball Valves

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					DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	
Stainless Steel	Class 150	150UTBJ	F	Jacketed		●	●	●		●	●	●								22
	Class 150	150UTBJM	F	Jacketed		●	●	●		●	●	●								22
	10K	10UTBJ	F	Jacketed		●	●	●		●	●	●		●						*3
	10K	10UTBJM	F	Jacketed		●	●	●		●	●	●		●						*3
	10K	G-10UTBJ	F	Jacketed												●				*3
	10K	G-10UTBJM	F	Jacketed								▲				▲				*3
	Class 150	150UTRJ	R	Jacketed									▲	▲		▲				*3
	Class 150	150UTRJM	R	Jacketed									●	●		●				*3
	Class 150	G-150UTRJ	R	Jacketed										▲		▲				*3
	10K	10UTRJ	R	Jacketed									●	●		●				*3
	10K	10UTRJM	R	Jacketed									●	●		●				*3
	10K	G-10UTRJ	R	Jacketed												▲				*3
	10K	G-10UTRJM	R	Jacketed												▲				*3
	Class 150	150UTBT	F	Split/Tank ball				●		●	▲	▲	▲	▲	▲	▲				25
	Class 150	150UTBTM	F	Split/Tank ball				●		●	●	●	●	●	▲	●				25
	Class 150	G-150UTBT	F	Split/Tank ball													▲	▲		25
	Class 150	G-150UTBTM	F	Split/Tank ball													▲	▲		25
	10K	10UTBT	F	Split/Tank ball				●		●	●	●	●	●	●	●				*3
	10K	10UTBTM	F	Split/Tank ball				●		●	●	●	●	●	●	●				*3
	10K	G-10UTBT	F	Split/Tank ball													▲	▲		*3
	10K	G-10UTBTM	F	Split/Tank ball													▲	▲		*3
	Class 150	150UTBLN	F	Split/PFA lined		●	●	●		●	●	●	●	●						25
	10K	10UTBLN	F	Split/PFA lined		●	●	●		●	●	●	●	●						*3
Ductile Iron	10K	10STBF	F	Split		●	●	●	●	●	●	●	●	●	●	●	●			32
	10K	G-10STBF	F	Split								▲	▲	▲	▲	▲	▲			32
	10K	10STLBF	F	Split/Gas service		●	●	●	●	●	●	●	●	●	●	●	●			32
	10K	G-10STLBF	F	Split/Gas service								▲	▲	▲	▲	▲	▲			32
	20K	20STLB	F	Split/Gas service		●	●	●	●	●	●	●	●	●		●	●			32
	20K	G-20STLB	F	Split/Gas service												▲	▲			32
	10K	10STB4LAF/4TAF	F	Split/3-way·4-seats						●	●	●	●	●						33
	10K	10STR4LAF/4TAF	R	Split/3-way·4-seats											●	●	●			33
Cast Iron	Class 125	125FCTB	F	Split							●	●	●	●		●	●			34
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	10K	10FCTB	F	Split		●	●	●	●	●	●	●	●	●	●	●	●			35
	10K	G-10FCTB	F	Split								▲	▲	▲	●	●	●	●		35
	Class 125	125FCTR	R	Split												●	●	●		34
	10K	10FCTR	R	Split											●	●	●	●		35
	10K	G-10FCTR	R	Split											●	●	●	●		35
	10K	10FCTB2L	F	Split/3-way·2-seats						●	●	●	●	●						36
	10K	10FCTR2L	R	Split/3-way·2-seats											●	●	●			36
	10K	G-10FCTR2L	R	Split/3-way·2-seats												▲	▲			36
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Flanged Ball Valves

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					DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
Λ-port Stainless Steel	Class 150	L-150UVC *2	F	Split/For control				●		●	●	●	●	●	▲	●	●				53
	Class 150	L-150UVCM *2	F	Split/For control				▲		▲	▲	▲	▲	▲	▲	▲	▲				53
	Class 150	L-150UVCT *2	F	Split/For control				●		●	●	●	●	●	▲	●	●				53
	Class 150	L-150UVCTM *2	F	Split/For control				▲		▲	▲	▲	▲	▲	▲	▲	▲				53
	Class 150	G-150UVC *2	F	Split/For control												●	●	●	●	▲	53
	Class 150	G-150UVCM *2	F	Split/For control												▲	▲	●	▲	▲	53
	Class 150	G-150UVCT *2	F	Split/For control												▲	▲	●	▲	▲	53
	Class 150	G-150UVCTM *2	F	Split/For control												▲	▲	●	▲	▲	53
	Class 300	L-300UVC *2	F	Split/For control				▲		▲	▲	▲	▲	▲	▲	▲	▲				54
	Class 300	L-300UVCM *2	F	Split/For control				●		●	●	●	●	●	●	●	●				54
	Class 300	L-300UVCT *2	F	Split/For control				▲		▲	▲	▲	▲	▲	▲	▲	▲				54
	Class 300	L-300UVCTM *2	F	Split/For control				●		●	●	●	●	●	●	●	●				54
	Class 300	G-300UVC *2	F	Split/For control												▲	▲	▲			54
	Class 300	G-300UVCM *2	F	Split/For control												●	●	●			54
	Class 300	G-300UVCT *2	F	Split/For control												▲	▲	▲			54
	Class 300	G-300UVCTM *2	F	Split/For control												●	●	●			54
	10K	L-10UVC *2	F	Split/For control				●		●	●	●	●	●	▲	●	●				53
	10K	L-10UVCM *2	F	Split/For control				●		●	●	●	●	●	●	●	●				53
	10K	L-10UVCT *2	F	Split/For control				●		●	●	●	●	●	●	●	●				53
	10K	L-10UVCTM *2	F	Split/For control				●		●	●	●	●	●	●	●	●				53
	10K	G-10UVC *2	F	Split/For control											▲	▲	▲	●	▲	▲	53
	10K	G-10UVCM *2	F	Split/For control											▲	▲	▲	▲	▲	▲	53
	10K	G-10UVCT *2	F	Split/For control											▲	▲	▲	●	▲	▲	53
	10K	G-10UVCTM *2	F	Split/For control											▲	▲	▲	▲	▲	▲	53
	20K	L-20UVC *2	F	Split/For control				▲		▲	▲	▲	▲	▲		▲					54
	20K	L-20UVCM *2	F	Split/For control				▲		▲	▲	▲	▲	▲		▲					54
	20K	L-20UVCT *2	F	Split/For control				▲		▲	▲	▲	▲	▲		▲					54
	20K	L-20UVCTM *2	F	Split/For control				▲	▲	▲	▲	▲	▲	▲		▲					54
	20K	G-20UVC *2	F	Split/For control												▲	▲	▲			54
	20K	G-20UVCM *2	F	Split/For control												▲		▲			54
	20K	G-20UVCT *2	F	Split/For control												▲	▲	▲			54
FILLTITE® Seated Carbon and Stainless Steel	Class 150	150SCTDZ1H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●							15
	Class 150	G-150SCTDZ1H	F	Split/Max. 300℃											●	●	●	●			15
	Class 150	150UTDZ1H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							15
	Class 150	150UTDZ1HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							15
	Class 150	G-150UTDZ1H	F	Split/Max. 300℃										▲	●	●	●	●			15
	Class 150	G-150UTDZ1HM	F	Split/Max. 300℃											●	●	●	●			15
	Class 300	300SCTDZ1H	F	Split/Max. 300℃		●	●	●		●	●	●	●								15
	Class 300	G-300SCTDZ1H	F	Split/Max. 300℃										●	▲	●	●				15
	Class 300	300UTDZ1H	F	Split/Max. 300℃		●	●	●	▲	●	●	●	●								15
	Class 300	300UTDZ1HM	F	Split/Max. 300℃		●	●	●	▲	●	●	●	●								15
	Class 300	G-300UTDZ1H	F	Split/Max. 300℃										●		●	●				15
	Class 300	G-300UTDZ1HM	F	Split/Max. 300℃										●	▲	●	●				15
	10K	10SCTDZ1H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●							*4
	10K	G-10SCTDZ1H	F	Split/Max. 300℃											●	●	●	●			*4
	10K	10UTDZ1H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							*4
	10K	10UTDZ1HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							*4
	10K	G-10UTDZ1H	F	Split/Max. 300℃											●	●	●	●			*4
	10K	G-10UTDZ1HM	F	Split/Max. 300℃											●	●	●	●			*4
	20K	20SCTDZ1H	F	Split/Max. 300℃		●	●	●		●	●	●	●								*4
	20K	G-20SCTDZ1H	F	Split/Max. 300℃										●	●	●	●				*4
	20K	20UTDZ1H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●								*4
	20K	20UTDZ1HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●								*4
	20K	G-20UTDZ1H	F	Split/Max. 300℃										●	●	●	●				*4
	20K	G-20UTDZ1HM	F	Split/Max. 300℃										●	●	●	●				*4

*1 Bore design: F=Full bore
*2 Operation: L=Lever, G=Gear
*3 Worm gear operation in standard for the Products with the prefix "G-"
*4 Please contact KITZ Corporation for details.
▲: Custom orders. Please contact KITZ Corporation.

Product Range

Flanged Ball Valves

Shell Material	Nominal Pressure	KITZ Product Code	Bore*1	Body Design \ Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	Page
					DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
Graphite Seated Carbon and Stainless Steel	Class 150	150SCTDZ3H	F	Split/Max. 425℃		●	●	●		●	●	●	●	●							16
	Class 150	G-150SCTDZ3H	F	Split/Max. 425℃											●	●	●				16
	Class 150	150UTDZ3H	F	Split/Max. 500℃		●	●	●	●	●	●	●	●	●							16
	Class 150	150UTDZ3HM	F	Split/Max. 500℃		●	●	●	●	●	●	●	●	●							16
	Class 150	G-150UTDZ3H	F	Split/Max. 500℃										▲	●	●	●				16
	Class 150	G-150UTDZ3HM	F	Split/Max. 500℃										▲	●	●	●				16
	Class 300	300SCTDZ3H	F	Split/Max. 425℃		●	●	●		●	●	●	●								17
	Class 300	G-300SCTDZ3H	F	Split/Max. 425℃										●	▲	●	●				17
	Class 300	300UTDZ3H	F	Split/Max. 500℃		●	●	●	▲	●	●	●	●								17
	Class 300	300UTDZ3HM	F	Split/Max. 500℃		●	●	●	▲	●	●	●	●								17
	Class 300	G-300UTDZ3H	F	Split/Max. 500℃										●	▲	●	●				17
	Class 300	G-300UTDZ3HM	F	Split/Max. 500℃										●	▲	●	●				17
	10K	10SCTDZ3H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●							16
	10K	G-10SCTDZ3H	F	Split/Max. 300℃											●	●	●				16
	10K	10UTDZ3H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							16
	10K	10UTDZ3HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							16
	10K	G-10UTDZ3H	F	Split/Max. 300℃											●	●	●				16
	10K	G-10UTDZ3HM	F	Split/Max. 300℃											●	●	●				16
	20K	20SCTDZ3H	F	Split/Max. 425℃		●	●	●		●	●	●	●								17
	20K	G-20SCTDZ3H	F	Split/Max. 425℃										●	▲	●	●				17
	20K	20UTDZ3H	F	Split/Max. 425℃		●	●	●	●	●	●	●	●								17
	20K	20UTDZ3HM	F	Split/Max. 425℃		●	●	●	●	●	●	●	●								17
	20K	G-20UTDZ3H	F	Split/Max. 425℃										●	●	●	●				17
	20K	G-20UTDZ3HM	F	Split/Max. 425℃										●	●	●	●				17
Metal Seated Carbon and Stainless Steel	Class 150	150SCTDZ5H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●							18
	Class 150	G-150SCTDZ5H	F	Split/Max. 300℃											●	●	●				18
	Class 150	150UTDZ5H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							18
	Class 150	150UTDZ5HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							18
	Class 150	G-150UTDZ5H	F	Split/Max. 300℃											●	●	●				18
	Class 150	G-150UTDZ5HM	F	Split/Max. 300℃											●	●	●				18
	Class 300	300SCTDZ5H	F	Split/Max. 300℃		●	●	●		●	●	●	●								19
	Class 300	G-300SCTDZ5H	F	Split/Max. 300℃										●	▲	●	●				19
	Class 300	300UTDZ5H	F	Split/Max. 300℃		●	●	●	▲	●	●	●	●		▲						19
	Class 300	300UTDZ5HM	F	Split/Max. 300℃		●	●	●	▲	●	●	●	●		▲						19
	Class 300	G-300UTDZ5H	F	Split/Max. 300℃										●	▲	●	●				19
	Class 300	G-300UTDZ5HM	F	Split/Max. 300℃										●	▲	●	●				19
	10K	10SCTDZ5H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●							18
	10K	G-10SCTDZ5H	F	Split/Max. 300℃											●	●	●				18
	10K	10UTDZ5H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							18
	10K	10UTDZ5HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							18
	10K	G-10UTDZ5H	F	Split/Max. 300℃											●	●	●				18
	10K	G-10UTDZ5HM	F	Split/Max. 300℃											●	●	●				18
	20K	20SCTDZ5H	F	Split/Max. 300℃		●	●	●		●	●	●	●								19
	20K	G-20SCTDZ5H	F	Split/Max. 300℃										●	▲	●	●				19
	20K	20UTDZ5H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●								19
	20K	20UTDZ5HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●								19
	20K	G-20UTDZ5H	F	Split/Max. 300℃										●	●	●	●				19
	20K	G-20UTDZ5HM	F	Split/Max. 300℃										●	●	●	●				19

*1 Bore design: F=Full bore
*2 Worm gear operation in standard for the Products with the prefix "G-"
▲: Custom orders. Please contact KITZ Corporation.

Product Range

Flanged Ball Valves

Shell Material	Nominal Pressure	KITZ Product Code	Bore *1	Body Design \ Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	Page
					DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
Metal Seated Carbon and Stainless Steel	Class 150	150SCTDZ6H	F	Split/Max. 425℃		●	●	●		●	●	●	●	●							20
	Class 150	G-150SCTDZ6H	F	Split/Max. 425℃											●	●	●				20
	Class 150	150UTDZ6H	F	Split/Max. 500℃		●	●	●	●	●	●	●	●	●							20
	Class 150	150UTDZ6HM	F	Split/Max. 500℃		●	●	●	●	●	●	●	●	●							20
	Class 150	G-150UTDZ6H	F	Split/Max. 500℃										▲	●	●	●				20
	Class 150	G-150UTDZ6HM	F	Split/Max. 500℃										▲	●	●	●				20
	Class 300	300SCTDZ6H	F	Split/Max. 425℃		●	●	●		●	●	●	●								21
	Class 300	G-300SCTDZ6H	F	Split/Max. 425℃										●		●	●				21
	Class 300	300UTDZ6H	F	Split/Max. 500℃		●	●	●	▲	●	●	●	●								21
	Class 300	300UTDZ6HM	F	Split/Max. 500℃		●	●	●	▲	●	●	●	●								21
	Class 300	G-300UTDZ6H	F	Split/Max. 500℃										●		●	●				21
	Class 300	G-300UTDZ6HM	F	Split/Max. 500℃										●	▲	●	●				21
	10K	10SCTDZ6H	F	Split/Max. 300℃		●	●	●		●	●	●	●	●							20
	10K	G-10SCTDZ6H	F	Split/Max. 300℃											●	●	●				20
	10K	10UTDZ6H	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							20
	10K	10UTDZ6HM	F	Split/Max. 300℃		●	●	●	●	●	●	●	●	●							20
	10K	G-10UTDZ6H	F	Split/Max. 300℃											●	●	●				20
	10K	G-10UTDZ6HM	F	Split/Max. 300℃											●	●	●				20
	20K	20SCTDZ6H	F	Split/Max. 425℃		●	●	●		●	●	●	●								21
	20K	G-20SCTDZ6H	F	Split/Max. 425℃										●	●	●	●				21
	20K	20UTDZ6H	F	Split/Max. 425℃		●	●	●	●	●	●	●	●								21
	20K	20UTDZ6HM	F	Split/Max. 425℃		●	●	●	●	●	●	●	●								21
	20K	G-20UTDZ6H	F	Split/Max. 425℃										●	●	●	●				21
	20K	G-20UTDZ6HM	F	Split/Max. 425℃										●	●	●	●				21

*1 Bore design: F=Full bore
*2 Worm gear operation in standard for the Products with the prefix "G-"
▲: Custom orders. Please contact KITZ Corporation.

Flanged Trunnion Mounted Ball Valves

Shell Material	Nominal Pressure	KITZ Product Code	Bore *1	Body Design \ Nominal Size	NPS	2	3	4	6	8	10	12	14	16	18	20	22	24	Page
					DN	50	80	100	150	200	250	300	350	400	450	500	550	600	
Carbon Steel	Class 150	T60S/150SF3TCS	F	3-Piece/Fire-safe		●	●	●	●										60
	Class 150	T60S/G-150SF3TCS	F	3-Piece/Fire-safe				●	●	●	●	●	●	●	●	●	●	●	60
	Class 300	T60S/300SF3TCS	F	3-Piece/Fire-safe		●	●	●	●										61
	Class 300	T60S/G-300SF3TCS	F	3-Piece/Fire-safe			●	●	●	●	●	●	●	●	●	●	●	●	61
	Class 600	T60S/600SF3TCS	F	3-Piece/Fire-safe		●	●	●											62
	Class 600	T60S/G-600SF3TCS	F	3-Piece/Fire-safe				●	●	●	●	●	●	●	●	●	●	●	62
	Class 150	T60S/150SF3TCRS	R	3-Piece/Fire-safe			●	●	●	●									60
	Class 150	T60S/G-150SF3TCRS	R	3-Piece/Fire-safe							●	●	●	●	●	●	●	●	60
	Class 300	T60S/300SF3TCRS	R	3-Piece/Fire-safe			●	●	●	●									61
	Class 300	T60S/G-300SF3TCRS	R	3-Piece/Fire-safe						●	●	●	●	●	●	●	●	●	61
	Class 600	T60S/600SF3TCRS	R	3-Piece/Fire-safe			●	●	●										62
	Class 600	T60S/G-600SF3TCRS	R	3-Piece/Fire-safe						●	●	●	●	●	●	●	●	●	62
Stainless Steel	Class 150	T60S/150UF3TCSM	F	3-Piece/Fire-safe		●	●	●	●										60
	Class 150	T60S/G-150UF3TCSM	F	3-Piece/Fire-safe						●	●	●	●	●	●	●	●	●	60
	Class 300	T60S/300UF3TCSM	F	3-Piece/Fire-safe		●	●	●	●										61
	Class 300	T60S/G-300UF3TCSM	F	3-Piece/Fire-safe						●	●	●	●	●	●	●	●	●	61
	Class 600	T60S/600UF3TCSM	F	3-Piece/Fire-safe		●	●	●											62
	Class 600	T60S/G-600UF3TCSM	F	3-Piece/Fire-safe					●	●	●	●	●	●	●	●	●	●	62
	Class 150	T60S/150UF3TCRSM	R	3-Piece/Fire-safe			●	●	●	●									60
	Class 150	T60S/G-150UF3TCRSM	R	3-Piece/Fire-safe							●	●	●	●	●	●	●	●	60
	Class 300	T60S/300UF3TCRSM	R	3-Piece/Fire-safe			●	●	●	●									61
	Class 300	T60S/G-300UF3TCRSM	R	3-Piece/Fire-safe							●	●	●	●	●	●	●	●	61
	Class 600	T60S/600UF3TCRSM	R	3-Piece/Fire-safe			●	●	●										62
	Class 600	T60S/G-600UF3TCRSM	R	3-Piece/Fire-safe						●	●	●	●	●	●	●	●	●	62

*1 Bore design: F=Full bore, R: Reduced Bore
*2 Worm gear operation in standard for the Products with the prefix "G-"
*3 Non fire-safe types are also available.

Product Range

Flanged Trunnion Mounted Ball Valves

Shell Material	Nominal Pressure	KITZ Product Code	Bore *1	Body Design \ Nominal Size	NPS	2	3	4	6	8	10	12	14	16	18	20	22	24	Page
					DN	50	80	100	150	200	250	300	350	400	450	500	550	600	
Metal Seated Carbon and Stainless Steel	Class 150	T60M/150SF3TC6H	F	3-Piece/Max. 525℃		●													63
	Class 150	T60M/G-150SF3TC6H	F	3-Piece/Max. 525℃			●	●	●	●	●	●	●	●	●	●	●	●	63
	Class 150	T60M/150UF3TC6HM	F	3-Piece/Max. 525℃		●													63
	Class 150	T60M/G-150UF3TC6HM	F	3-Piece/Max. 525℃			●	●	●	●	●	●	●	●	●	●	●	●	63
	Class 300	T60M/300SF3TC6H	F	3-Piece/Max. 525℃		●													64
	Class 300	T60M/G-300SF3TC6H	F	3-Piece/Max. 525℃			●	●	●	●	●	●	●	●	●	●	●	●	64
	Class 300	T60M/300UF3TC6HM	F	3-Piece/Max. 525℃		●													64
	Class 300	T60M/G-300UF3TC6HM	F	3-Piece/Max. 525℃			●	●	●	●	●	●	●	●	●	●	●	●	64
	Class 600	T60M/G-600SF3TC6H	F	3-Piece/Max. 525℃		●	●	●	●	●	●	●	●	●	●	●	●	●	65
	Class 600	T60M/G-600UF3TC6HM	F	3-Piece/Max. 525℃		●	●	●	●	●	●	●	●	●	●	●	●	●	65
	Class 150	T60M/150SF3TCR6H	R	3-Piece/Max. 525℃			●												63
	Class 150	T60M/G-150SF3TCR6H	R	3-Piece/Max. 525℃				●	●	●	●	●	●	●	●	●	●	●	63
	Class 150	T60M/150UF3TCR6HM	R	3-Piece/Max. 525℃			●												63
	Class 150	T60M/G-150UF3TCR6HM	R	3-Piece/Max. 525℃				●	●	●	●	●	●	●	●	●	●	●	63
	Class 300	T60M/300SF3TCR6H	R	3-Piece/Max. 525℃			●												64
	Class 300	T60M/G-300SF3TCR6H	R	3-Piece/Max. 525℃				●	●	●	●	●	●	●	●	●	●	●	64
	Class 300	T60M/300UF3TCR6HM	R	3-Piece/Max. 525℃			●												64
	Class 300	T60M/G-300UF3TCR6HM	R	3-Piece/Max. 525℃				●	●	●	●	●	●	●	●	●	●	●	64
	Class 600	T60M/G-600SF3TCR6H	R	3-Piece/Max. 525℃			●	●	●	●	●	●	●	●	●	●	●	●	65
	Class 600	T60M/G-600UF3TCR6HM	R	3-Piece/Max. 525℃			●	●	●	●	●	●	●	●	●	●	●	●	65

*1 Bore design: F=Full bore, R: Reduced Bore
*2 Worm gear operation in standard for the Products with the prefix "G-"

Threaded or Welded Ball Valves

Shell Material	Nominal Pressure	KITZ Product Code	Bore *1	Body Design \ Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	Page
					DN	8	10	15	20	25	32	40	50	65	80	
Carbon Steel	Type 600	SCTK *2	R	Uni/Threaded ends		●	●	●	●	●	●	●	●			70
	Class 800	(AW) 800SCTK *3	R	Seal welded/Threaded or Socket welded ends		●	●	●	●	●	●	●	●			71,72
	Type 1500/2000	AKSCTHZM *4	R	Split/Threaded ends		●	●	●	●	●	●	●	●			70
	Type 1500/2000	AKSCTHWZM *4	R	Seal welded/Threaded ends		●	●	●	●	●	●	●	●			71
	Type 3000	(AW) 3000SCTK *3	R	Seal welded/Threaded or Socket welded ends		●	●	●	●	●	●	●	●			71,72
Stainless Steel	Type 600	UTKM *2	R	Uni/Threaded ends		●	●	●	●	●	●	●	●			72
	Type 800	UTHM *2	R	Split/Threaded ends				●	●	●	●	●	●			73
	Type 1000	UTFM *2	F	Split/Threaded ends				●	●	●	●	●	●			73
	Type 800	UTH4LM/4TM	R	Split/3-way·4-seat/Threaded ends				●	●	●	●	●	●			76
	Type 1000	U3TZFM *3	F	3-piece/Threaded or Socket welded ends		●	●	●	●	●	●	●				75
	Type 1000	U3TZM *3	R	3-piece/Threaded or Socket welded ends				●	●	●	●	●	●			75
	Type 1500/2000	AKUTHZM *4	R	Split/Threaded ends		●	●	●	●	●	●	●	●			74
	Type 1500/2000	AKUTHWZM *4	R	Seal welded/Threaded ends		●	●	●	●	●	●	●	●			74
	10K	10UTM	F	Split/Threaded ends			▲	▲	▲	▲	▲	▲	▲	▲	▲	76
Ductile Iron	20K	20ST	R	Split/Threaded ends				●	●	●	●	●	●	●		77
	20K	20STL	R	Split/Threaded ends				●	●	●	●	●	●	●	●	77
	Type 400	STZ	R	Split/Threaded ends		●	●	●	●	●	●	●	●			77
Cast Iron	10K	10FCT	R	Split/Threaded ends			●	●	●	●	●	●	●	●	●	77

*1 Bore design: F=Full bore, R=Reduced bore
*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.

Product Range

Threaded or Solder Joint Ball Valves

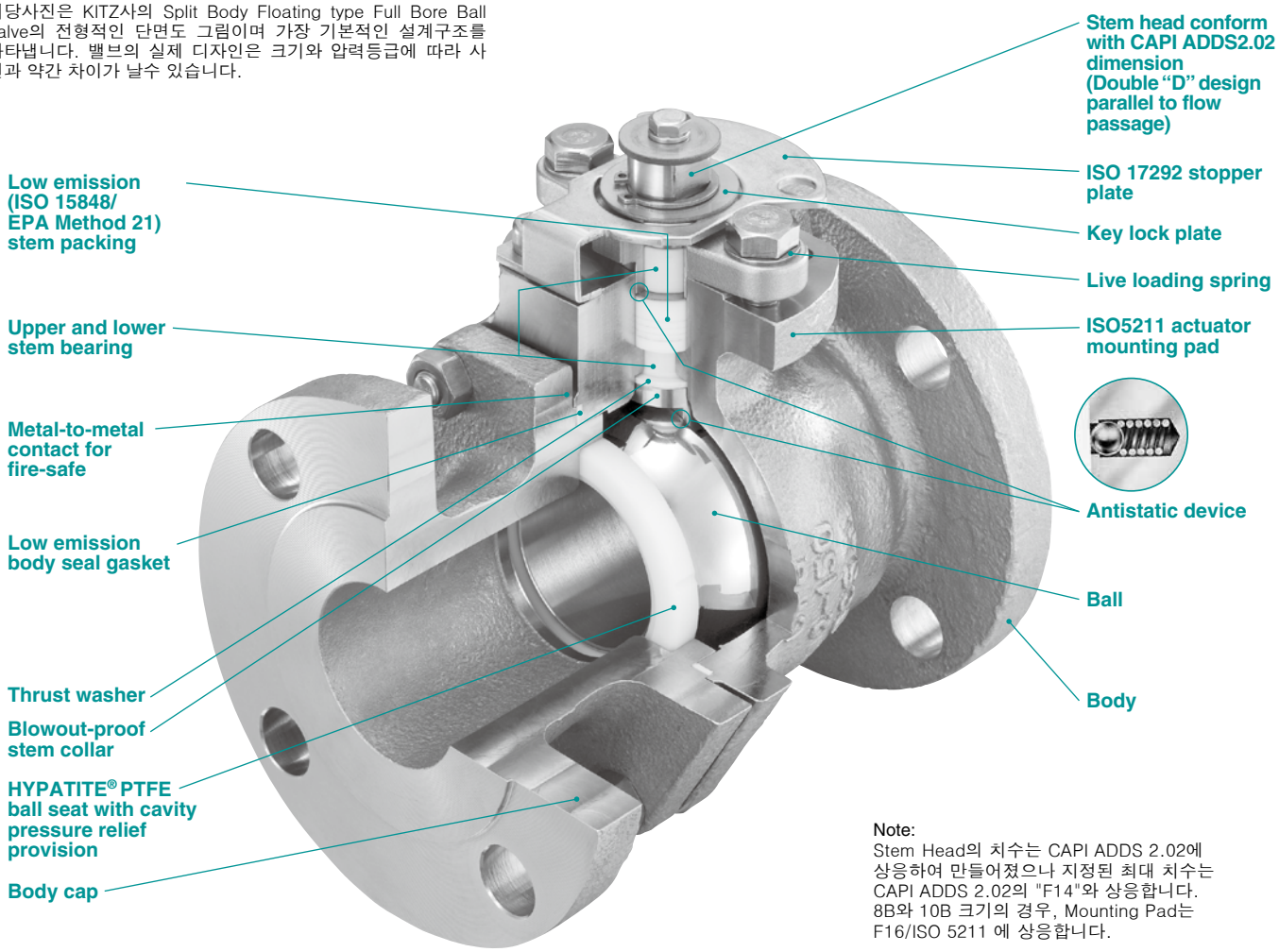
Shell Material	Class	KITZ Product Code	Bore *1	Design Body \ Nominal Size	NPS	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	Page
					DN	6	8	10	15	20	25	32	40	50	65	80	100	
Bronze and Brass	600	AKTAF *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				78
	600	CTAF	F	2-Piece/Solder Joint ends				●	●	●	●	●	●	●	●	●		78
	600	AKTFLL *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				78
	600	CTFLL	F	2-Piece/Solder Joint ends					●	●	●	●	●	●				78
	600	AKTAFM *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				79
	600	AKTAFP *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●	●	79
	600	AKTAFPM *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●	●	79
	600	AKTAFC *2	F	2-Piece/Threaded ends					●	●								80
	600	CTAFC	F	2-Piece/Solder Joint ends					●	●								80
	600	AKTAFO	F	2-Piece/Threaded ends (M&F)			●	●	●	●	●							80
	600	AKTAFU *2	F	2-Piece/Threaded ends (F&Union)			●	●	●	●	●	●	●	●				80
	600	AKTAFS *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				81
	400	T	S	2-Piece/Threaded ends			●	●	●	●	●			●	●	●	●	81
	400	TT	S	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				81
	400	AKT *2	S	2-Piece/Solder Joint ends			●	●	●	●	●	●	●	●	●	●	●	81
	400	TO	S	2-Piece/Threaded ends (M&F)			●	●	●	●	●							81
	400	TM	S	Split/Threaded ends				●	●	●	●	●	●	●	●	●		82
	600	TK	R	Uni/Threaded ends		●	●	●	●	●	●	●	●	●				82
	600	TKT	R	Uni/Threaded ends		●	●	●	●	●	●	●	●	●				82
	600	AKTK *2	R	Uni/Threaded ends			●	●	●	●	●	●	●	●				82
	600	TKW	R	Uni/Threaded ends		●	●	●	●	●	●							82
	150	TFJ	F	2-Piece/Threaded ends					●	●	●	●	●	●				83
	400	TL	S	2-Piece/Threaded ends					●	●	●	●	●	●				83
	400	TLT	S	2-Piece/Threaded ends					●	●	●	●	●	●				83
	400	CTLTU	S	2-Piece/Solder Joint end &Union					●	●	●							83
	600	AK3TM *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				84
	600	C3TM	F	3-Piece/Solder Joint ends				●	●	●	●	●	●	●				84
	600	ZO	F	2-Piece/Threaded ends (M&F)			●	●	●	●	●							84
	400	ZS	S	2-Piece/Threaded ends			●	●	●		●	●	●	●				84
	600	ZET	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				85
	600	AKSZA *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●	●	●	●	85
	600	CSZA	F	2-Piece/Solder Joint ends				●	●	●	●	●	●	●	●	●		85
	600	SZA	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	▲	●	●	●	85
	600	AKSZAW *2	F	2-Piece/Threaded ends			●	●	●	●	●	●	●	●				86
	400	CSZAW	F	2-Piece/Solder Joint ends				●	●	●	●	●	●	●				86
	400	TN	S	3-Way/Threaded ends			●	●	●	●	●	●	●	●	●	●		86
	400	AKTN *2	S	3-Way/Threaded ends			●	●	●	●	●	●	●	●	●	●		86
	400	T4T	S	3-Way/Threaded ends					●	●	●	●	●	●				86
	400	T4L	S	3-Way/Threaded ends					●	●	●	●	●	●				86
	400	AKTNP *2	S	3-Way/Threaded ends					●	●	●	●	●	●				87
		TG	S	2-Piece/Threaded ends			●	●	●		●	●	●	●	●	●		87

*1 Bore design: F=Full bore, S=Standard (Regular) bore, R=Reduced bore
*2 Rc threaded ends are standard. Prefix “AK” means NPT threaded end.

Floating Ball Valves

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

해당사진은 KITZ사의 Split Body Floating type Full Bore Ball Valve의 전형적인 단면도 그림이며 가장 기본적인 설계구조를 나타냅니다. 밸브의 실제 디자인은 크기와 압력등급에 따라 사진과 약간 차이가 날수 있습니다.



Note:
Stem Head의 치수는 CAPI ADDS 2.02에 상응하여 만들어졌으나 지정된 최대 치수는 CAPI ADDS 2.02의 "F14"와 상응합니다. 8B와 10B 크기의 경우, Mounting Pad는 F16/ISO 5211 에 상응합니다.

150UTDZ Size 2

Bubble-tight sealing 성능의 HYPATITE® PTFE ball seats

KITZ 볼밸브의 가장 기본적인 Stem Seal인 HYPATITE PTFE Ball Seat는 분자적으로 강화된 PTFE 복합기인 변성 PTFE로 제작되었으며, 밸브의 높은 양방향 밀봉성능(Bidirectional Sealing Performance)과 장기간 사용 수명을 위해 특별히 설계되었습니다. 고온과 저온, Creep현상, 압축현상, 마모 및 부식현상에도 뛰어납니다. 선택사항으로, 주로 PFA로 만드는 KITZ SWELLESS Ball Seat는 Monomer용으로 사용하기에 적합합니다. 새로운 Seat의 획기적인 발명은 Styrene과 Butadiene용으로 사용되는 밸브에서 Seat의 변형과 밸브 차단기능에 심각한 영향을 미치는 분자구조("Swelling"문제로 알려져 있음)에 Monomer가 침투하는것을 방지합니다.

편리한 Actuator 장착

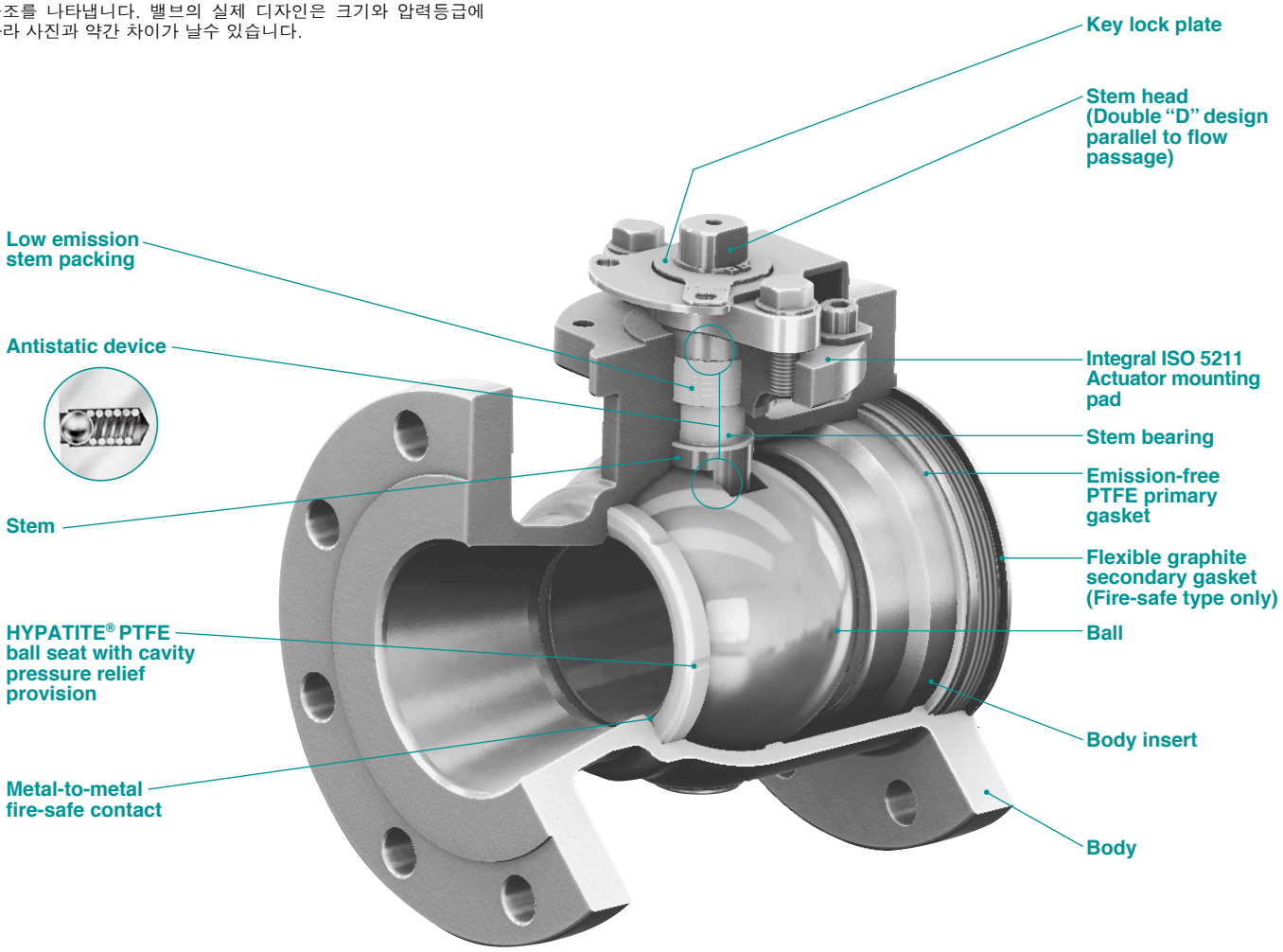
150/300SCTDZ/UTDZM과 SCTAZ/UTAZ(M) 시리즈 볼밸브의 경우, Actuator Mounting Pad는 ISO 5211 치수 요건에 따라 설계된 Valve Mounting Flange와 함께 제공되는 모든 Actuator의 균일하고 단순화된 Mounting을 위해 필수적으로 제공됩니다. 150UTBM 시리즈 볼밸브의 경우, KITZ 표준 Actuator Mounting Pad가 제공됩니다.

쉬운 유지보수

Split Body 형태로 디자인된 KITZ의 SCTDZ/UTDZM 시리즈 볼밸브는 처리공장(Process Plant)에 필수적으로 요구되는 매우 간편한 유지보수의 편의성을 제공합니다.
KITZ 150/300SCTAZ/UTAZM의 유지보수를 위해서, Uni-body side entry Floating Ball Valve의 경우 나사를 풀면 insert를 자체에서 제거할수 있습니다.

KITZ 150/300SCTAZ/UTAZM Series
Reduced Bore, Uni-body, End Entry Ball Valves

해당사진은 KITZ사의 Uni-Body Floating type Rduced Bore Ball Valve의 전형적인 단면도 그림이며 가장 기본적인 설계 구조를 나타냅니다. 밸브의 실제 디자인은 크기와 압력등급에 따라 사진과 약간 차이가 날수 있습니다.



150SCTAZ Size 1½

안전 고려사항의 극대화

KITZ 볼밸브는 사용자들을 위하여 광범위한 안전을 고려하여 설계되었습니다. 누수방지 Stem, 잠금장치, 레버 불량 방지 등은 현장에서 밸브를 사용 시 문제없는(Trouble-free)작동을 위해 제공되는 안전장치 입니다. 방전장치(Antistatic Device), 화재 안전 설계(Fire-safe)및 이상승압 방지(Cavity Pressure Relief) 특징들은 순조롭고 안정적인 공장 가동을 통한 경제적 이익을 보장합니다. Low Emission 설계에서 KITZ의 발전은 제품손실로 인한 비용을 크게 감소시키면서, 배출물에 대항하는 세계적인 경쟁에 기여합니다.

산성 서비스

KITZ의 Class 150/300 Steel Ball Valve의 Body, Body Cap/Insert, Ball 및 Stem 재질의 경도는 적절한 열처리로 제어되고 NACE MR0175의 경도 수준에 일치합니다.
위와 더불어, 아래 사항들이 추가적으로 요구될 수 있습니다.

-산성환경(Sour Environment)에 노출되는 밸브의 Bolting
-Class 600 및 이상의 Steel Ball Valve에 대한 NACE요청
자세한 문의는 KITZ에 연락 바랍니다.

7개의 안전 고려사항
for KITZ 150/300SCTDZ/UTDZ(M) 150UTB(M) and 150/300SCTAZ/UTAZ(M) Series Ball Valves

1. 이중 "D"(Double "D") Stem Head 설계는 레버핸들을 항상 흐름통로와 병렬(Parallel)로 장착할수 있도록 합니다. 이 기능은 레버핸들이 잘못된 방향으로 설치되는것을 방지합니다. (Fig. 1)

2. Stem의 아래쪽 끝부분은 누수를 방지하기 위하여(Blowout-proof) Stem Collar와 일체형으로 설계되었습니다. (Fig.2)

3. 정전기 방지기능(Antistatic Feature)은 Ball, Stem 그리고 Body간의 전기적연속성(Electrical Continuity)을 보장하는 특징이 있습니다.

4. 돌발상황을 막기위한 잠금장치 설비도 제공됩니다.

5. Soft-seated Ball Valve의 경우 Resilient Sealing Material(복원력있는 밀폐재)의 손상에 의한 유체누출 가능성 때문에 공장화재가 심각한 문제사항 입니다.
   KITZ 볼밸브는 Fire-safety로 설계되었고, 화재 발생시 유체의 내.외부 유출을 최소화 하기 위하여 성공적으로 방화 테스트 과정을 거쳤습니다. 밸브들은 아래와 같이 Sealing 부분에 Post fire metal-to-metal 접촉면을 가지고 있습니다.

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

   Valve Bore를 통한 유체의 외부누출은 화재발생 시 누출된 유체가 화재의 연료가 될수 있기 때문에 내부누출보다 더 심각합니다. 이러한 현상을 막기 위하여, KITZ에서는 초고온에도 잘 견디고 화재에 의해 영향을 받지않는 Flexible Graphite Packing과 Gasket을 사용한 볼밸브를 제작합니다.

6. Stem과 Stuffing Box(패킹상자)의 표면과 Stem-gland, Stem-body, Gland-stuffing Box간의 경계면 간격(Interface Clearance)은 기계로 정확하게 조정되고, Low-Emission Service를 위해 조립됩니다. Low-emision Service의 경우 볼트의 재조임을 최소화 하기 위하여 Gland Bolt위에 Belleville Spring Washer가 사용됩니다.

7. 일부 유체는 종종 Ball-body의 Cavity에 잔류할 수 있습니다. 유체는 주위 온도나 배관온도로 인하여 영향을 받아서 퍼지기도 합니다. 밸브에 적절한 압력완화 장치가 없는 경우, 지나친 Cavity압력이 밸브 Seat나 Ball에 손상을 가할수도 있습니다. Trunnion mounted ball valve는 일반적으로 이러한 문제 상황에 대해 완벽한 보호작용을 합니다. 자세한 문의는 KITZ Corporation으로 해주십시오.

   그러나 Floating Ball Valve의 경우, 다소 단순한 Seating원리로 인해 휘발성이 높은 유체가 빈번하고 큰 온도 변동을 겪으면서 밸브가 자주 작동하지 않을 경우 과도한 Cavity 압력 상승으로 부터 어느정도 특별한 보호가 필요합니다. KITZ 150/300 SCTDZ/UTDZ(M) 그리고 150/300 SCTAZ/UTAZ(M) 시리즈 볼밸브는 HYPATITE PTFE Ball Seat에 설계되어 있는 표준 기능으로서, 자발적으로 과도한 Cavity 압력을 조절합니다.

   Floating Ball Valve의 기타 일반적인 해결책으로서, 자동 압력 완화 장치를 부착하거나 Ball에 Pressure Equalization 구멍을 뚫습니다. 만약 염화물질(Chloride)에 사용될때 Cavity압력이 치명적이라면 KITZ Corporation으로 연락하거나 기술적 조언을 위해 현지 대리점에 문의해주십시오.

   해당 성능은 다양한 변수에 의해 영향을 받을 수 있습니다. : 유체 특성, 다양한 범위의 압력, 온도, 열 순환.

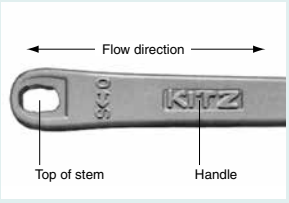


Fig. 1

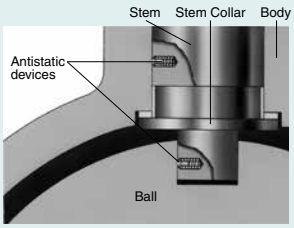


Fig. 2

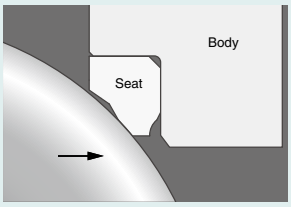


Fig. 3 (Before fire)

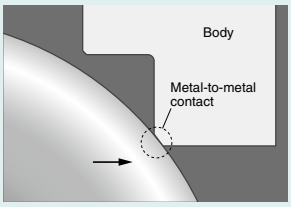


Fig. 4 (After fire)

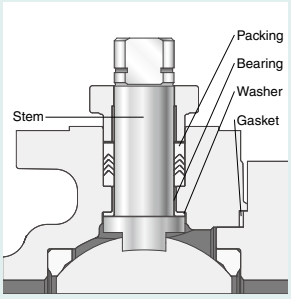


Fig. 5 (Before fire)

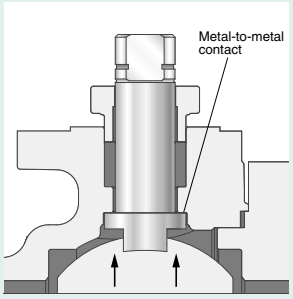


Fig. 6 (After fire)

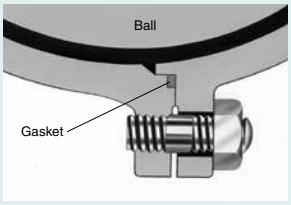


Fig. 7 (Before fire)

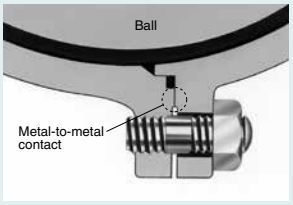


Fig. 8 (After fire)

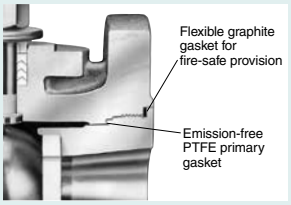


Fig. 9 (Uni-body insert)

누출없는 PTFE Gasket이 기본 Body Seal로 제공됩니다. Flexible Graphite Gasket은 화재 안전 기능을 위해 보조 Body Seal로 추가적으로 사용될 수 있습니다.

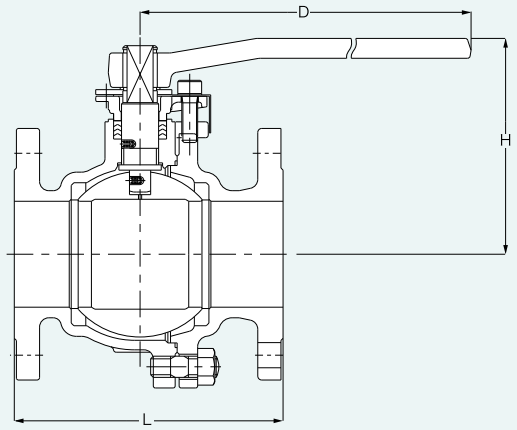
Full bore, Split body, Side entry design

Features

- ●정전기 방지 장치(Antistatic device)
- ●이탈방지 스템(Blowout-proof stem)
- ●Double “D” stem head
- ●High performance **HYPATITE® PTFE** ball seats

Page 99 for Pressure-Temperature Ratings.
Page 44 for Construction and Materials.

(G-)150UTB(M)



Dimensions of 150UTB(M)

Unit: mm

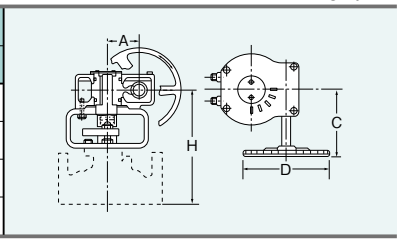
Nominal Size													
	NPS	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8	10
	DN	15	20	25	40	50	65	80	100	125	150	200	250
Ball bore		15	20	25	40	50	65	80	100	125	150	200	250
L		108	117	127	165	178	190	203	229	356	394	457	533
H		102	105	124	115	120	155	165	200	220	295	355	Gear operation
D		130	130	160	230	230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

Valve operator
NPS 1/2 to 8: Lever operation
NPS 5 to 8: Optional gear operation
NPS 10: Standard gear operation

Gear Operation

Unit: mm

Nominal Pressure	Class 150	Gear Operator			
		H	D	C	A
Nominal size (NPS)	5	312	310	165	65.5
	6	337	310	165	65.5
	8	414	360	210	88.5
	10	477	500	363	93.5



부드러운 밸브 작동을 위해 옵션으로 KITZ 볼 밸브에 웜 기어(Worm Gear) 오퍼레이터를 장착할 수 있다. 전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있다. 밸브 액추에이터의 적절한 선택 및 사이징은 KITZ 에 문의하십시오.

Refer to “Product Range” on Page 1.

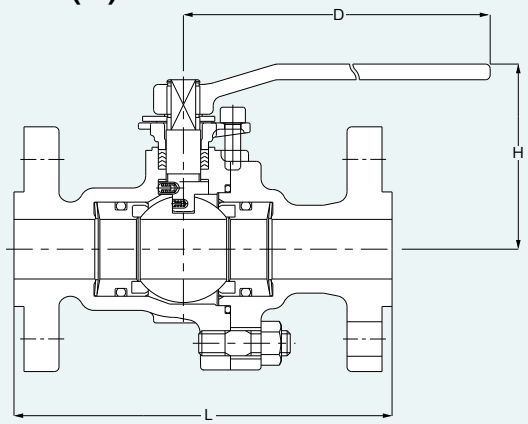
Full bore, Split body, Side entry design

Features

- ●정건기 방지장치 (Antistatic device)
- ●이탈발지 스템 (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 100 for Pressure-Temperature Ratings.
Page 46 to 49 for Construction and Materials.

600UTB(M)/600SCTB
1500UTB(M)/1500SCTB



Dimensions of 600UTB(M), 600SCTB

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/2
	DN	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
★Flexible graphite packing and flexible graphite spiral wound gasket (See Pages 11, 46 and 47)
● Carbon Steel Valve경우 Ball, Stem 재질을 316ss로 가능합니다. (요청 시)

Dimensions of 1500UTB(M), 1500SCTB

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/2
	DN	15	20	25	40
Ball bore		13	19	25	38
L		216	229	254	305
H		134	117	123	148
D		160	230	230	400

Valve operator
Lever operation

Options
★Flexible graphite packing and flexible graphite spiral wound gasket (See Pages 11, 48 and 49)
● Carbon Steel Valve경우 Ball, Stem 재질을 316ss로 가능합니다. (요청 시)

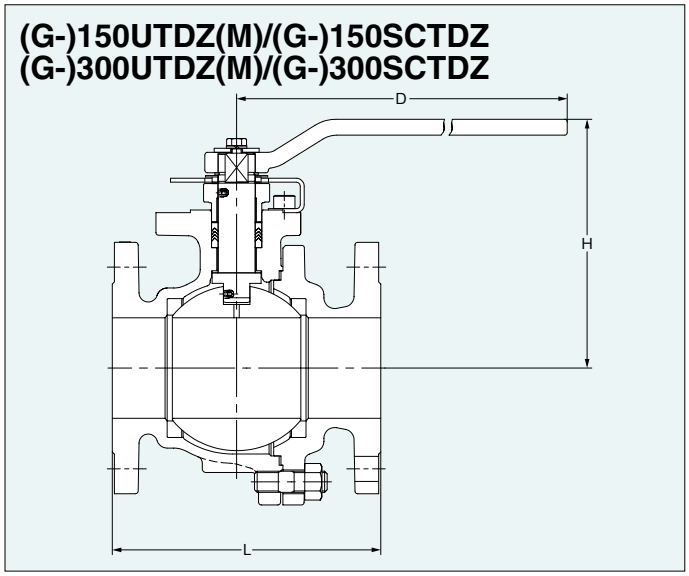
Full bore, Split body, Side entry design

Features

- Antistatic device
- Blowout-proof stem
- Fire test certification★(API 607, ISO 10497)
- Stem head conform to CAPI ADDS 2.02 dimensions
- High performance **HYPATITE® PTFE** ball seats
- Actuator mounting pad to ISO 5211
- NACE MR0175에 적합한 body, body cap, stem and ball의 강도

Page 96 for Pressure-Temperature Ratings.
Page 43 for Construction and Materials.
Page 93 for Dimension of Actuator Mounting Pad.

(G-)150UTDZ(M)/(G-)150SCTDZ
(G-)300UTDZ(M)/(G-)300SCTDZ



Dimensions of 150UTDZ(M), 150SCTDZ

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8	10
	DN	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	224	240	315	406	Gear operation
D		130	130	160	160	230	230	400	400	460	460	1000	1500	Gear operation

Valve operator
NPS 1/2 to 8: Lever operation
NPS 5 to 8: Optional gear operation
NPS 10: Standard gear operation

Option
★Flexible graphite packing and gasket (See Pages 11 and 43)
● Carbon Steel Valve경우 Ball, Stem 재질을 316ss로 가능합니다. (요청 시)

Dimensions of 300UTDZ(M), 300SCTDZ

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	DN	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

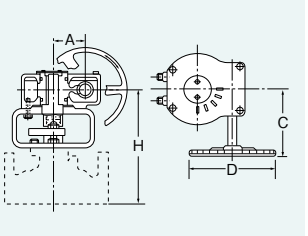
Valve operator
NPS 1/2 to 8: Lever operation
NPS 4 to 8: Optional gear operation

Option
★Flexible graphite packing and gasket (See Pages 11 and 43)
● Carbon Steel Valve경우 Ball, Stem 재질을 316ss로 가능합니다. (요청 시)

Gear Operation

Unit: mm

Nominal Pressure	Class 150	Class 300	Gear Operator H		D		C		A	
			150	300	150	300	150	300	150	300
Nominal size (NPS)		4		258		310		165		65.5
	5		274		254		165		65.5	
	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	–



부드러운 밸브 작동을 위해 옵션으로 KITZ 볼 밸브에 웜 기어(Worm Gear) 오퍼레이터를 장착할 수 있습니다. 전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있습니다. 밸브 액추에이터의 적절한 선택 및 사이징은 KITZ 에 문의하십시오.

Refer to "Product Range" on Page 1.

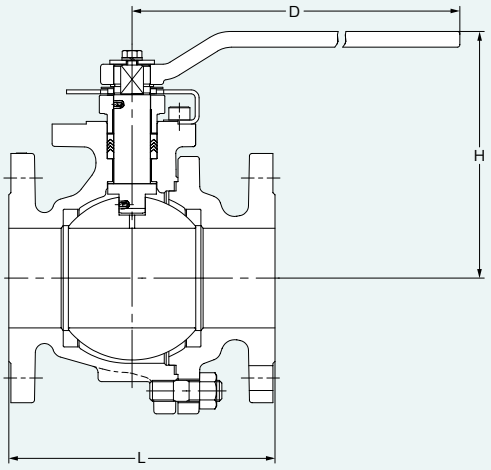
Full bore, Split body, Side entry design

Features

- FILLTITE® ball seats. Temperature range: –29℃ to 300℃
- Antistatic device
- Blowout-proof stem
- Fire test certification (API 607, ISO 10497)
- Stem head conform to CAPI ADDS2.02 dimensions
- Actuator mounting pad to ISO 5211
- NACE MR0175에 적합한 body, body cap, stem and ball의 강도

Page 97 for Pressure-Temperature Ratings.
Page 37 for Construction and Materials.

(G-)150UTDZ1H(M)/(G-)150SCTDZ1H
(G-)300UTDZ1H(M)/(G-)300SCTDZ1H



Dimensions of 150UTDZ1H(M), 150SCTDZ1H

Unit: mm

Nominal Size	NPS	½	¾	1	1¼	1½	2	2½	3	4	5	6	8	10
	DN	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
NPS ½ to 4: Lever operation
NPS 5 to 10: Standard gear operation

Dimensions of 300UTDZ1H(M), 300SCTDZ1H

Unit: mm

Nominal Size	NPS	½	¾	1	1½	2	2½	3	4	6	8
	DN	15	20	25	40	50	65	80	100	150	200
Ball bore		14	19	24	38	50	64	76	100	151	202
L		140	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
NPS ½ to 3: Lever operation
NPS 4 to 8: Standard gear operation

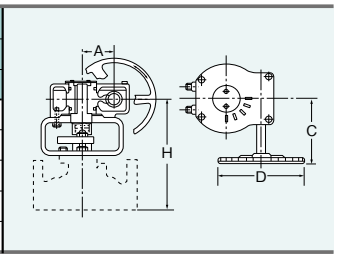
Options

- Carbon Steel Valve경우 Ball, Stem 재질을 316ss로 가능합니다. (요청 시)

Gear Operation

Unit: mm

Nominal Pressure	Class 150	Class 300	Gear Operator H 150	H 300	D 150	D 300	C 150	C 300	A 150	A 300
Valve size (NPS)		4		258		310		165		65.5
	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	

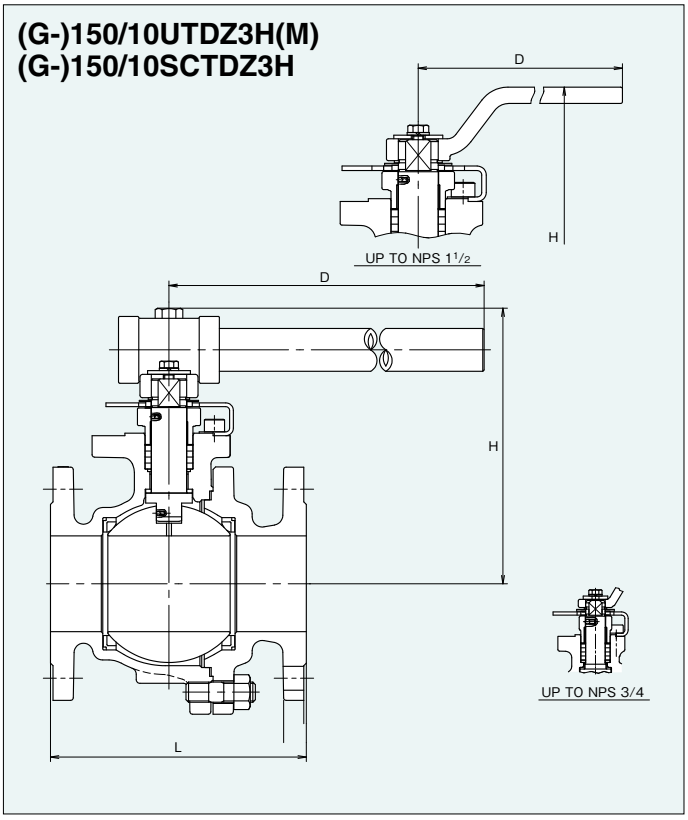


전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있습니다.
밸브 액추에이터의 적절한 선택 및 사이징은 KITZ 종판에 문의하십시오.

Refer to "Product Range" on Page 4.

Hard Graphite Seated Floating Ball Valve (Trim 3H)

(G-)150/10UTDZ3H(M)
(G-)150/10SCTDZ3H



Page 97 for Pressure-Temperature Ratings.
Page 39 for Construction and Materials.

Dimensions of 150UTDZ3H(M), 150SCTDZ3H

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	DN	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(M), 10SCTDZ3H

Unit: mm

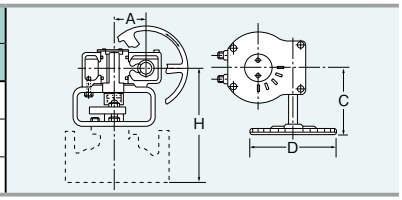
Nominal Size	NPS	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	DN	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		108	111	124	128	134	148	209	219	251	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	600	1000	Gear operation	Gear operation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

*10UTDZ3H only.

Gear Operation

Unit: mm

Nominal Pressure	Class 150	10K	Gear Operator			
			H	D	C	A
Nominal size (NPS)	5	5	247	310	165	66.5
	6	6	335	360	210	88.5
	8	8	417	500	377	134.0



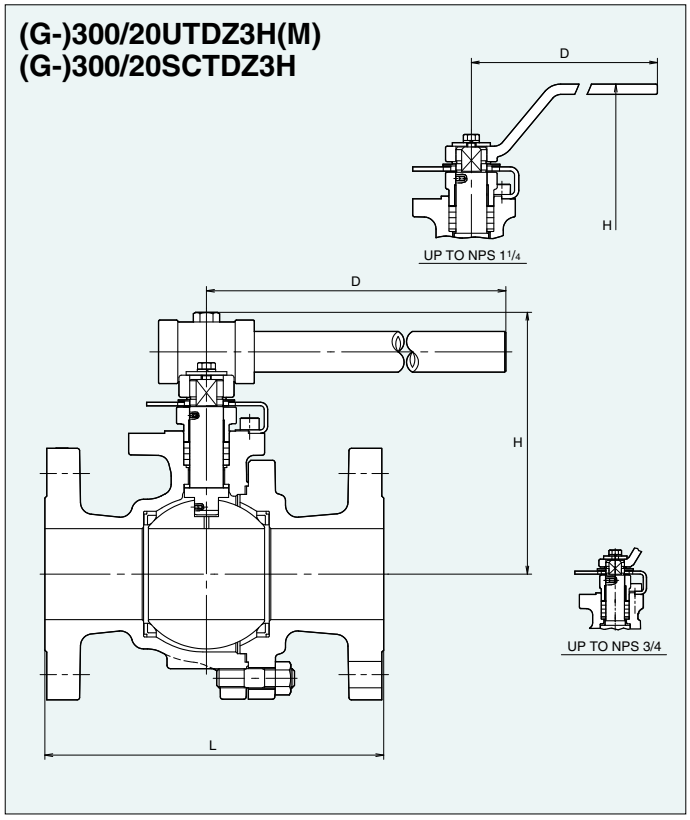
Refer to “Product Range” on Page 5.

Valve operator
NPS 1/2 to 4: Lever operation
NPS 5 to 8: Standard gear operation

부드러운 밸브 작동을 위해 옵션으로 KITZ 볼 밸브에 웜 기어(Worm Gear) 오퍼레이터를 장착할 수 있습니다. 전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있습니다. 밸브 액추에이터의 적절한 선택 및 사이징은 KITZ에 문의하십시오.

Hard Graphite Seated Floating Ball Valve (Trim 3H)

(G-)300/20UTDZ3H(M)
(G-)300/20SCTDZ3H



Page 97 for Pressure-Temperature Ratings.
Page 39 for Construction and Materials.

Dimensions of 300UTDZ3H(M), 300SCTDZ3H

Unit: mm

Nominal Size	NPS	½	¾	1	1¼*	1½	2	2½	3	4	5	6	8
	DM	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(M), 20SCTDZ3H

Unit: mm

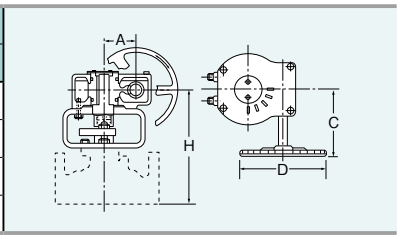
Nominal Size	NPS	½	¾	1	1¼*	1½	2	2½	3	4	5	6	8
	DM	15	20	25	32	40	50	65	80	100	125	150	200
L		140	152	165	178	190	216	241	283	305	381	403	502
H		108	111	124	128	139	148	209	219	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	600	600	1000	1000	Gear operation	Gear operation	Gear operation	Gear operation

*20UTDZ3H only.

Gear Operation

Unit: mm

Nominal Pressure	Class 300	20K	Gear Operator			
			H	D	C	A
Valve size (NPS)	4	4	286	360	210	88.5
	5	5	302	360	210	88.5
	6	6	360	500	377	134.0
	8	8	489	500	377	213.0



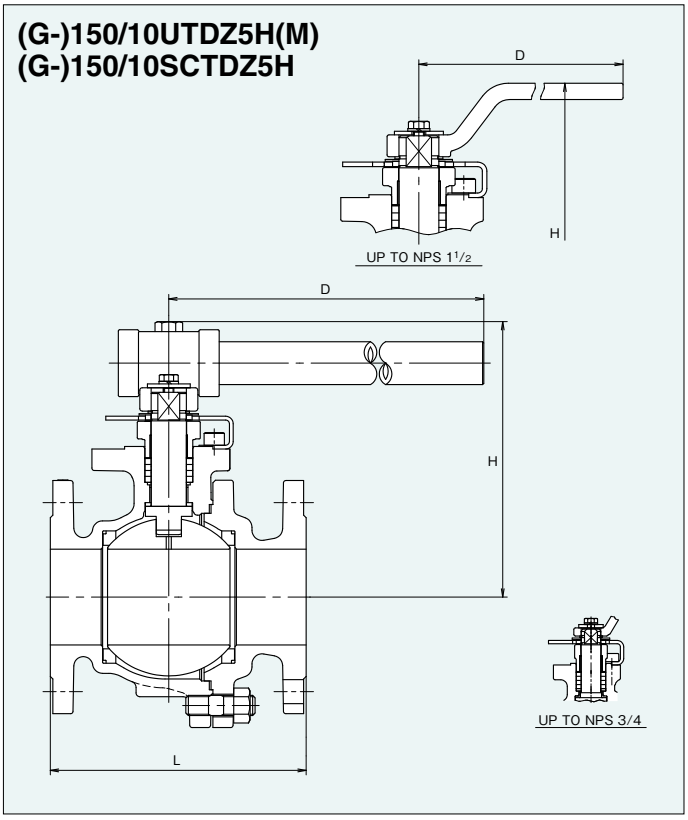
Refer to “Product Range” on Page 5.

Valve operator
NPS ½ to 3: Lever operation
NPS 4 to 8: Standard gear operation

부드러운 밸브 작동을 위해 옵션으로 KITZ 볼 밸브에 웜 기어(Worm Gear) 오퍼레이터를 장착할 수 있습니다. 전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있습니다. 밸브 액추에이터의 적절한 선택 및 사이징은 KITZ 에 문의하십시오.

Metal Seated Floating Ball Valve (Trim 5H)

(G-)150/10UTDZ5H(M)
(G-)150/10SCTDZ5H



Page 98 for Pressure-Temperature Ratings.
Page 40 for Construction and Materials.

Dimensions of 150UTDZ5H(M), 150SCTDZ5H

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	DM	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(M), 10SCTDZ5H

Unit: mm

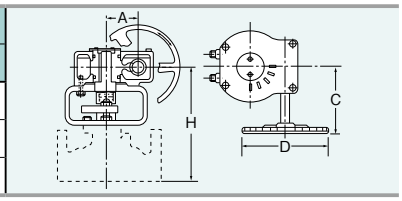
Nominal Size	NPS	1/2	3/4	1	1 1/4*	1 1/2	2	2 1/2	3	4	5	6	8
	DM	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		108	111	124	128	134	148	209	219	251	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	600	1000	Gear operation	Gear operation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

*10UTDZ5H only.

Gear Operation

Unit: mm

Nominal Pressure	Class 150	10K	Gear Operator			
			H	D	C	A
Nominal size (NPS)	5	5	302	360	210	88.5
	6	6	335	360	210	88.5
	8	8	417	500	377	134.0

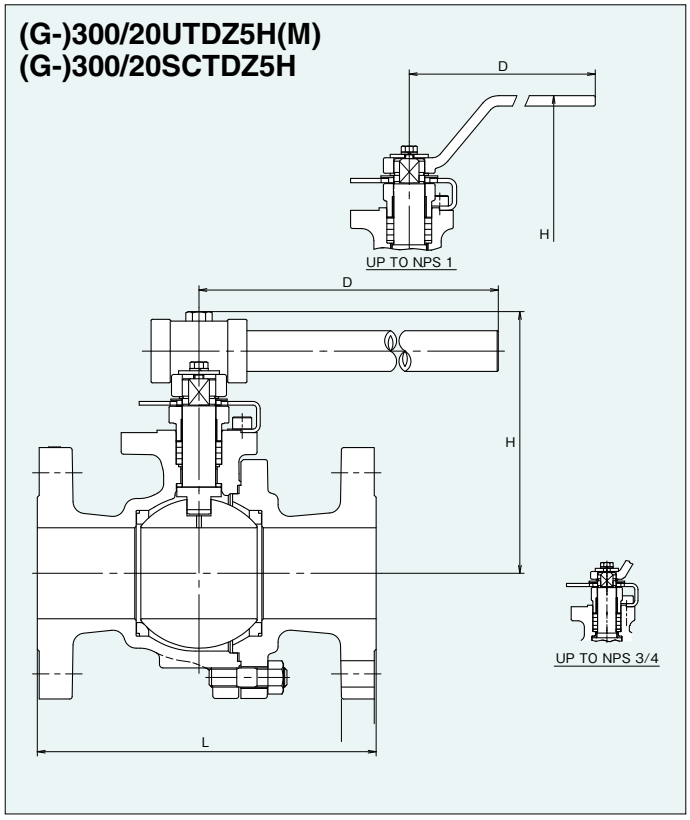


Valve operator
NPS 1/2 to 4: Lever operation
NPS 5 to 8: Standard gear operation

부드러운 밸브 작동을 위해 옵션으로 KITZ 볼 밸브에 웜 기어(Worm Gear) 오퍼레이터를 장착할 수 있습니다. 전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있습니다. 밸브 액추에이터의 적절한 선택 및 사이징은 KITZ 에 문의하십시오.

Metal Seated Floating Ball Valve (Trim 5H)

(G-)300/20UTDZ5H(M)
(G-)300/20SCTDZ5H



Page 98 for Pressure-Temperature Ratings.
Page 40 for Construction and Materials.

Dimensions of 300UTDZ5H(M), 300SCTDZ5H

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
	DN	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(M), 20SCTDZ5H

Unit: mm

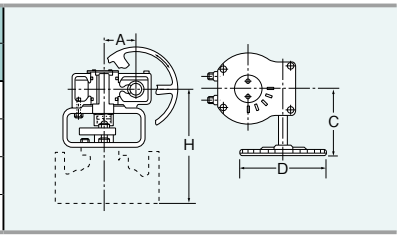
Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
	DN	15	20	25	32	40	50	65	80	100	125	150	200
L		140	152	165	178	190	216	241	283	305	381	403	502
H		108	111	124	128	139	148	209	219	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	600	600	1000	1000	Gear operation	Gear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

Valve operator
NPS 1/2 to 3: Lever operation
NPS 4 to 8: Standard gear operation

Gear Operation

Unit: mm

Nominal Pressure	Class 300	20K	Gear Operator			
			H	D	C	A
Nominal size (NPS)	4	4	286	360	210	88.5
	5	5	299	500	363	93.5
	6	6	360	500	377	134.0
	8	8	489	500	377	213.0

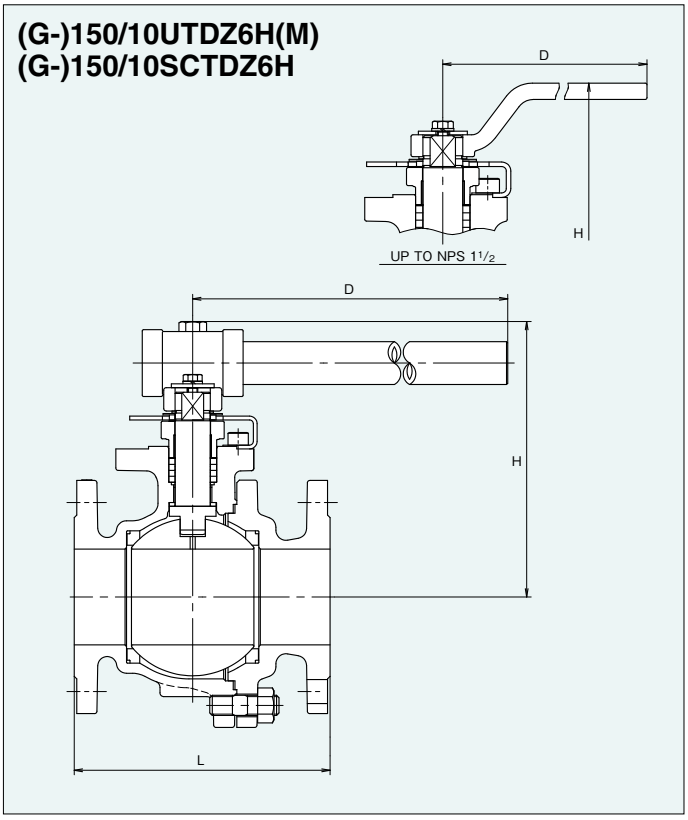


부드러운 밸브 작동을 위해 옵션으로 KITZ 볼 밸브에 웜 기어(Worm Gear) 오퍼레이터를 장착할 수 있습니다. 전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있습니다. 밸브 액추에이터의 적절한 선택 및 사이징은 KITZ 에 문의하십시오.

Refer to "Product Range" on Page 5.

Metal Seated Floating Ball Valve (Trim 6H)

(G-)150/10UTDZ6H(M)
(G-)150/10SCTDZ6H



Page 98 for Pressure-Temperature Ratings.
Page 41 for Construction and Materials.

Dimensions of 150UTDZ6H(M), 150SCTDZ6H

Unit: mm

Nominal Size	NPS	½	¾	1	1¼*	1½	2	2½	3	4	5	6	8
	DN	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(M), 10SCTDZ6H

Unit: mm

Nominal Size	NPS	½	¾	1	1¼*	1½	2	2½	3	4	5	6	8
	DN	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

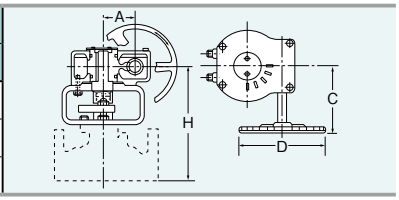
*10UTDZ6H only.

Valve operator
NPS ½ to 4: Lever operation
NPS 5 to 8: Standard gear operation

Gear Operation

Unit: mm

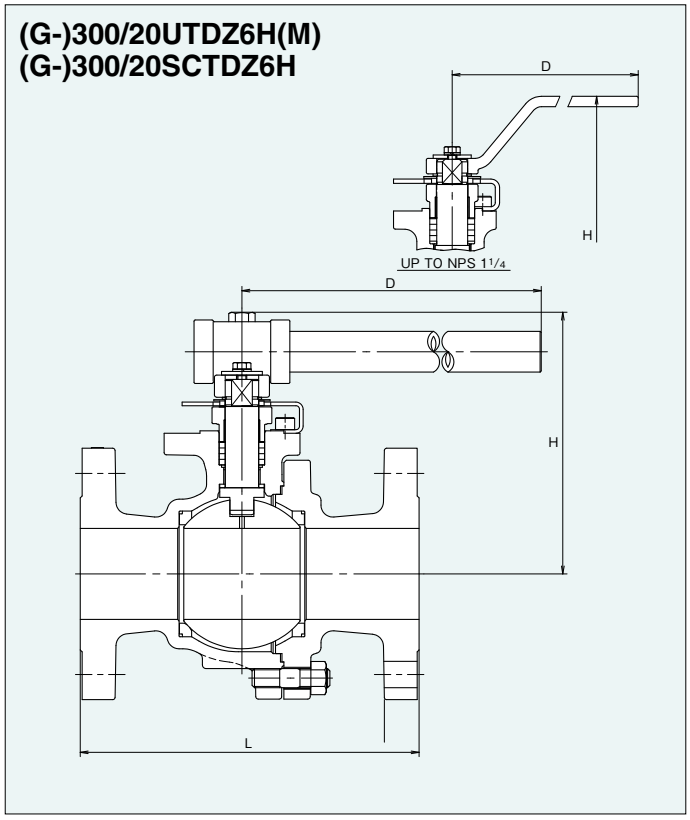
Nominal Pressure	Class 150	10K	Gear Operator			
			H	D	C	A
Nominal size (NPS)	5	5	302	360	210	88.5
	6	6	335	360	210	88.5
	8	8	417	500	377	134.0



부드러운 밸브 작동을 위해 옵션으로 KITZ 볼 밸브에 웜 기어(Worm Gear) 오퍼레이터를 장착할 수 있습니다. 전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있습니다. 밸브 액추에이터의 적절한 선택 및 사이징은 KITZ 에 문의하십시오.

Metal Seated Floating Ball Valve (Trim 6H)

(G-)300/20UTDZ6H(M)
(G-)300/20SCTDZ6H



Page 98 for Pressure-Temperature Ratings.
Page 41 for Construction and Materials.

Dimensions of 300UTDZ6H(M), 300SCTDZ6H

Unit: mm

Nominal Size	NPS	½	¾	1	1¼*	1½	2	2½	3	4	5	6	8
	DN	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(M), 20SCTDZ6H

Unit: mm

Nominal Size	NPS	½	¾	1	1¼*	1½	2	2½	3	4	5	6	8
	DN	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

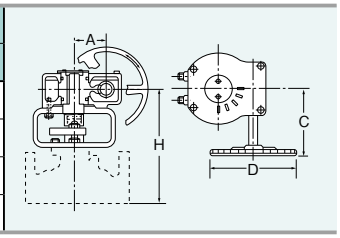
＊20UTDZ6H only.

Valve operator
NPS ½ to 3: Lever operation
NPS 4 to 8: Standard gear operation

Gear Operation

Unit: mm

Nominal Pressure	Class 300	20K	Gear Operator H	D	C	A
Nominal size (NPS)	4	4	286	360	210	88.5
	5	5	299	500	363	93.5
	6	6	360	500	377	134.0
	8	8	489	500	377	213.0



부드러운 밸브 작동을 위해 옵션으로 KITZ 볼 밸브에 웜 기어(Worm Gear) 오퍼레이터를 장착할 수 있습니다. 전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있습니다. 밸브 액추에이터의 적절한 선택 및 사이징은 KITZ 에 문의하십시오.

Refer to "Product Range" on Page 6.

Class 150 Stainless Steel Pocketless Ball Valves

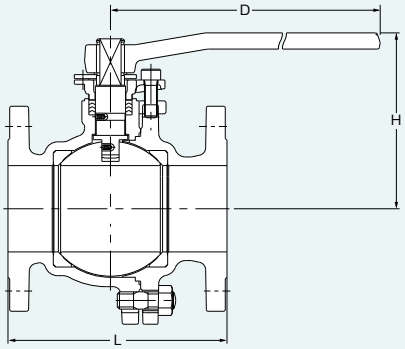
Full bore, Split body, Side entry design

Page 99 for Pressure-Temperature Ratings.

Features

- ●고유한 충진 Cavity가 Seat 간 Media 증가 및/또는 정체에 탁월한 저항 제공
- ●Antistatic device
- ●Blowout-proof stem
- ●Double “D” stem head
- ●High performance **HYPATITE®** **PTFE** ball seats
- ●Actuator mounting pad to KITZ standard

(G-)150UTBP(M)



Valve operator
NPS ½ to 8: Lever operation
NPS 3 to 8: Optional gear operation

Dimensions of 150UTBP(M)

Unit: mm

Nominal Size	NPS	½	¾	1	1½	2	2½	3	4	5	6	8
	DN	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

※Please contact KITZ or KITZ distributors for details about gear operated products.

Class 150 Stainless Steel Jacketed Ball Valves

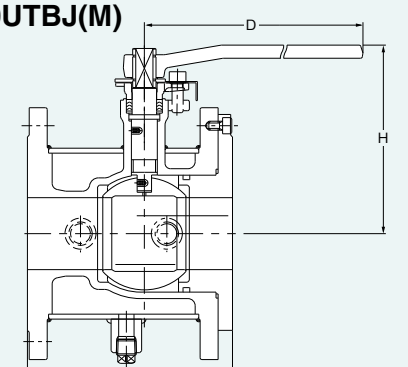
Full bore

Page 99 for Pressure-Temperature Ratings.

Features

- ●유체 온도 유지를 위한 Full Jacket
- ●Antistatic device
- ●Double “D” stem head
- ●High performance **HYPATITE®** **PTFE** ball seats
- ●Actuator mounting pad to KITZ standard

150UTBJ(M)



Valve operator
NPS ½ to 6: Lever operation
NPS 6: Optional gear operation

Note
·최고 사용 압력은 1.4 MPa (200 psi) at 260˚C (500˚F).
·10K 가능.

Dimensions of 150UTBJ(M)

Unit: mm

Nominal Size	NPS	½	¾	1	1½	2	2½	3*	4*	6*
	DN	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

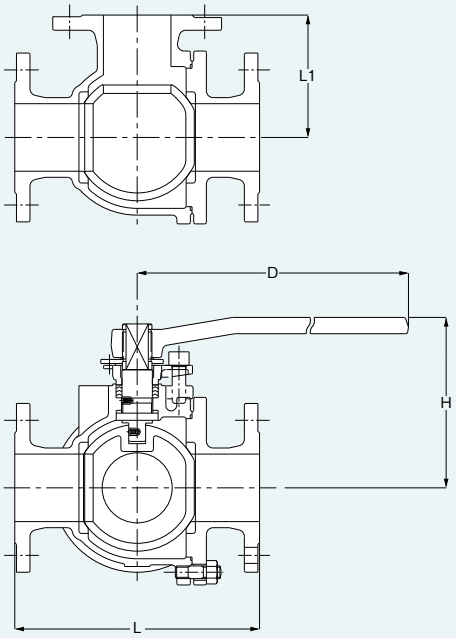
Full bore, 2-seated or 4-seated, Split body, Side entry design

Features

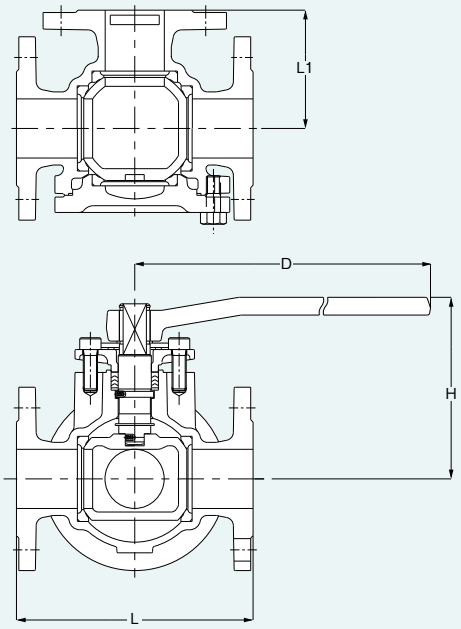
- ●유체의 혼합 및 방향 전환용 사용
- ● 3방향 밸브 한 개로 여러 개의 밸브와 관련 배관 Piece를 교체할 수 있음
- ●Antistatic device
- ●Blowout-proof stem
- ●Double “D” stem head
- ●High performance **HYPATITE® PTFE** ball seats
- ●Actuator mounting pad to KITZ standard

150UTB2L/2T: Page 96 for Pressure-Temperature Ratings. (See UTDZ Series)
150UTB4LA/4TA: Page 100 for Pressure-Temperature Ratings.
Page 106 for Allowable Port Orientation.

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



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



Dimensions of 150UTB2L(M), 150UTB2T(M) Unit: mm

Nominal Size							
NPS		1	1 1/2	2	3	4	6*
DN		25	40	50	80	100	150
Ball bore		25	38	51	76	102	127
L		165	210	220	262	342	437
L1		82.5	105	110	131	171	218.5
H		124	115	123	165	200	220
D		160	230	230	400	460	460

Valve operator
NPS 1 to 6: Lever operation
NPS 6: Optional gear operation

Note
·10K 가능

Dimensions of 150UTB4LA(M), 150UTB4TA(M) Unit: mm

Nominal Size									
NPS		1/2	3/4	1	1 1/2	2	2 1/2	3	4
DN		15	20	25	40	50	65	80	100
Ball bore		15	19	25	38	51	64	76	102
L		120	135	154	177	200	240	262	342
L1		65	67.5	77	88.5	100	120	131	171
H		128	132	135	146	155	185	198	267
D		160	160	160	400	400	460	460	1000

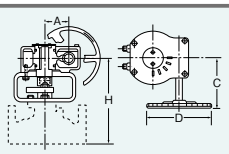
Valve operator
NPS 1/2 to 8: Lever operation
NPS 6 to 8: Optional gear operation

Note
·10K 가능

Refer to “Product Range” on Page 2.

Gear Operation Unit: mm

Nominal Pressure	Class 150	Gear Operator			
		H	D	C	A
	6	399	360	210	88.5
	8	467	500	363	93.5



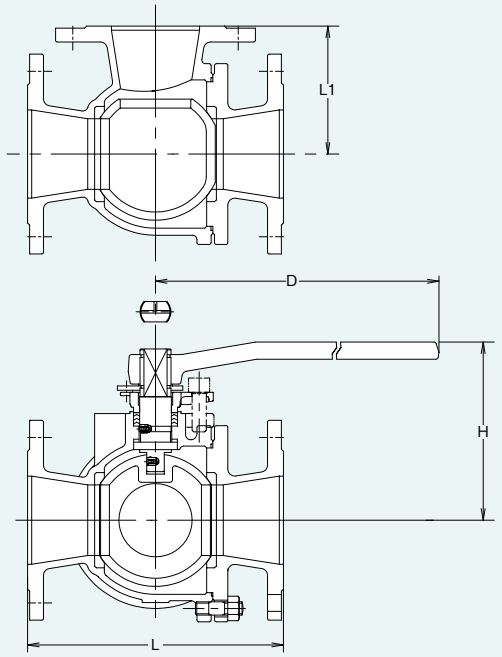
Reduced bore, 2-seated or 4-seated, Split body, Side entry design

Features

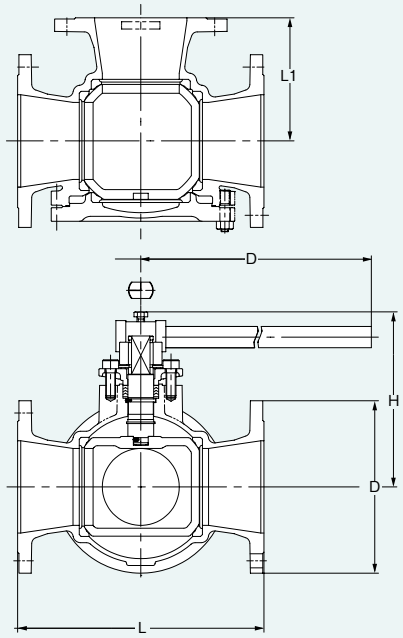
- ●유체의 혼합 및 방향 전환용 사용
- ● 3방향 밸브 한 개로 여러 개의 밸브와 관련 배관 Piece를 교체할 수 있음
- ●Antistatic device
- ●Blowout-proof stem
- ●Double “D” stem head
- ●High performance **HYPATITE® PTFE** ball seats
- ●Actuator mounting pad to KITZ standard

150UTR2L/2T: Page 96 for Pressure-Temperature Ratings. (See UTDZ Series)
150UTR4LA/4TA: Page 100 for Pressure-Temperature Ratings
Page 106 for Allowable Port Orientation.

150UTR2L(M) (L-port, 2-seated)
150UTR2TM (T-port, 2-seated)



(G-)150UTR4LA(M) (L-port, 4-seated)
(G-)150UTR4TA(M) (T-port, 4-seated)



Dimensions of 150UTR2L(M), 150UTR2TM

Unit: mm

Nominal Size	NPS	6
	DN	150
Ball bore		127
L		437
L1		218.5
H		220
D		460

Valve operator
NPS 6: Lever operation
NPS 6: Optional gear operation

Note
·10K 가능

Dimensions of 150UTR4LA(M), 150UTR4TA(M)

Unit: mm

Nominal Size	NPS	6	8
	DN	150	200
Ball bore		125	150
L		407	463
L1		203.5	231.5
H		289	335
D		1000	1500

Valve operator
NPS 6,8: Lever operation
NPS 6,8: Optional gear operation

Note
·10K 가능

Refer to “Product Range” on Page 2.
※Please contact KITZ or KITZ distributors for details about gear operated products.

Class 150 Stainless Steel Tank Ball Valves

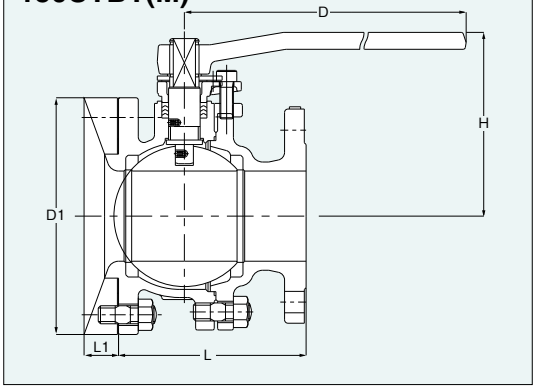
Full bore, Split body, Side entry design

Page 99 for Pressure-Temperature Ratings.

Features

- 탱크 하단 Direct 장착
- Tank 유체의 균일화
- Antistatic device
- Blowout-proof stem
- Double “D” stem head
- High performance **HYPATITE®** **PTFE** ball seats
- Actuator mounting pad to KITZ standard

150UTBT(M)



Valve operator
NPS 1 to 6: Lever operation

Note
·최고 사용 가능 온도 : 200˚C (392˚F).
·Class 300 and 10K/20K type 가능

Dimensions of 150UTBT(M)

Unit: mm

Nominal Size	NPS	1	1 1/2	2	2 1/2	3	4	5	6	8	10
	DN	25	40	50	65	80	100	125	150	200	250
Ball bore		25	40	50	65	80	100	125	150	상기 Size는 KITZ 의뢰 부탁	
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

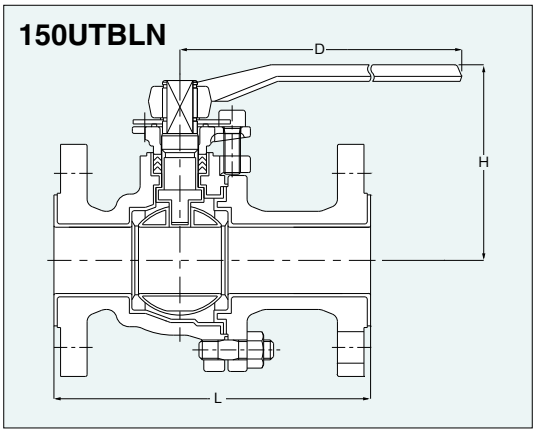
Full bore, Split body, Side entry design

Page 100 for Pressure-Temperature Ratings.

Features

- 높은 부식저항(고내식성)의 PFA Lining
- Pinhole 없는 Fine Lining
- 높은 열저항성의 PFA
- 첨가물 및 Paint 없음.
- Double “D” stem head
- High performance **HYPATITE®** **PTFE** ball seats
- Actuator mounting pad to KITZ standard

150UTBLN



Valve operator
NPS 1/2 to 4: Lever operation

Dimensions of 150UTBLN

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/2	2	2 1/2	3	4
	DN	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

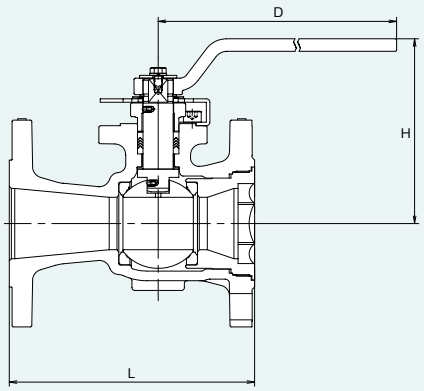
Reduced bore, Uni-body, End entry design

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 96 for Pressure-Temperature Ratings.
Page 42 and 45 for Construction and Materials.
Page 94 for Dimension of Actuator Mounting Pad.

(G-)150UTAZM/150SCTAZM
(G-)300UTAZM/300SCTAZM



Dimensions of 150UTAZM/150SCTAZM

Unit: mm

Nominal Size											
	NPS	1/2	3/4	1	1 1/2	2	3	4	6	8	10
	DN	15	20	25	40	50	80	100	150	200	250
Ball bore		10	12.5	17.5	30	38	58	76	100	151	187
L		108	117	127	165	178	203	229	267	292	330
H		92	95	110	127	134	173	189	224	315	392
D		130	130	130	160	230	400	400	460	1000	1500

Valve operator
NPS 1/2 to 10: Lever operation
NPS 6 to 10: Optional gear operation

Options
★Flexible graphite packing and gasket
(See Pages 11 and 45)
● Ball and stem to CF8M (316) (150SCTAZM)

Dimensions of 300UTAZM/300SCTAZM

Unit: mm

Nominal Size											
	NPS	1/2	3/4	1	1 1/2	2	3	4	6	8	10
	DN	15	20	25	40	50	80	100	150	200	250
Ball bore		10	12.5	17.5	30	38	58	76	100	151	187
L		140	152	165	190	216	283	305	403	419	457
H		92	95	110	127	134	173	189	251	315	392
D		130	130	130	160	230	400	400	750	1000	1500

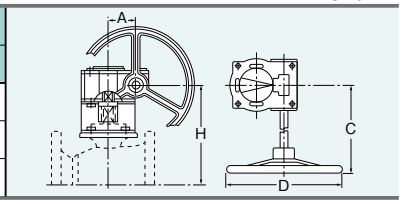
Valve operator
NPS 1/2 to 10: Lever operation
NPS 6 to 10: Optional gear operation

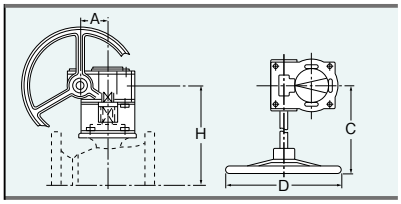
Options
★Flexible graphite packing and gasket
(See Pages 11 and 45)
● Ball and stem to CF8M (316) (300SCTAZM)

Gear Operation

Unit: mm

Nominal Pressure	Class 150	Class 300	Gear Operator			
			H	D	C	A
Nominal size (NPS)	6	6	267	300	283	71
	8	8	336	300	283	71
	10	10	400	400	337	86



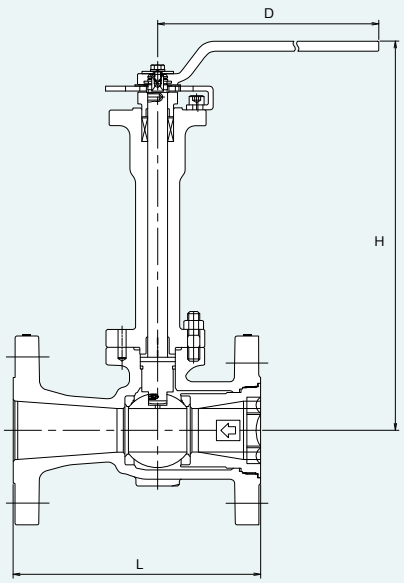


부드러운 밸브 작동을 위해 옵션으로 KITZ 볼 밸브에 웜 기어(Worm Gear) 오퍼레이터를 장착할 수 있습니다. 전기 또는 공압식 액추에이터도 선택적으로 사용할 수 있습니다. 밸브 액추에이터의 적절한 선택 및 사이징은 KITZ에 문의하십시오.

*Handwheel의 위치는 Size 및 Class에 따라 다를 수 있습니다. 사양에 대한 자세한 내용은 KITZ에 의뢰 하십시오

Refer to "Product Range" on Page 1.

(G-)150/300UTAZL(M)



Page 104 for Pressure-Temperature Ratings.

Design Specifications

Items	
Wall thickness	ASME B16.34
Face to face dimensions	ASME B16.10
Flange	ASME B16.5

Materials

Name of Parts	Materials
Body	CF8（CF8M）
Bonnet	316SS
Insert	316SS
Stem	316SS/XM-19H
Seat spring	INCONEL®X-750 (NPS 3 & larger)
Ball	316SS
Gland	CF8M
Gland packing	Flexible graphite
Ball seat (Body side)	PCTFE（NPS 2 and smaller）
	HYPATITE® PTFE (NPS 3 and larger)
Ball seat (insert side)	HYPATITE® PTFE
Gasket	Flexible graphite spiral wound
	PTFE+Flexible graphite
Bonnet bolt	A320 Gr. B8M
Bonnet nut	A194 Gr. 8M

Dimensions of Class 150 RF-flanged 150UTAZLM

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/2	2	3	4	6	8	10
	DN	15	20	25	40	50	80	100	150	200	250
L		108	117	127	165	178	203	229	267	292	330
H		307	309	331.7	405	421	549.6	565.6	※	※	※
D		130	130	130	160	230	700	700	※	※	※

Dimensions of Class 300 RF-flanged 300UTAZLM

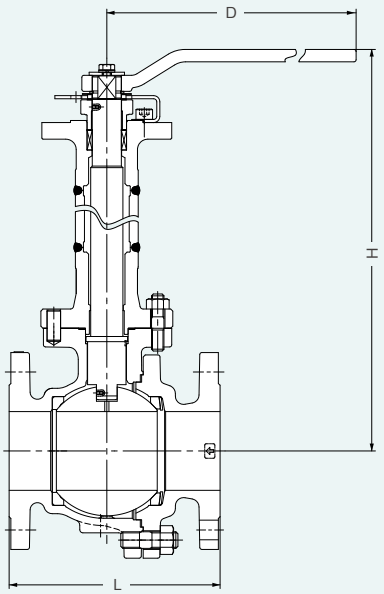
Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/2	2	3	4	6	8	10
	DN	15	20	25	40	50	80	100	150	200	250
L		140	152	165	190	216	283	305	403	419	457
H		307	309	331.7	405	421	549.6	※	※	※	※
D		130	130	130	160	400	700	※	※	※	※

※Gear 작동만 가능합니다. 자세한 문의는 KITZ Corporation으로 해주십시오.

Class 150/10K Low Temperature Service Ball Valves (Full Bore)

(G-)150/10UTDZL(M)



Page 105 for Pressure-Temperature Ratings.

Design Specifications

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

Materials

Name of Parts	Materials
Body	CF8 (CF8M*1)
Body cap	CF8 (CF8M*1)
Bonnet	Type304 (316*1)
Stem	Type304*2 (316*1 *2)
Seat spring	Type304*3 (NPS 2 & larger)
Ball	304SS (316*1)
Ball seat (Body cap side)	HYPATITE® PTFE
Ball seat (Body side)	HYPATITE® PTFE
	PCTFE (NPS 1 1/2 & smaller)
Gasket	Flexible graphite spiral wound
	Flexible graphite sheet
Cap& bonnet bolt	A193 Gr.B8
Cap& bonnet nut	A194 Gr.8
Gland packing	Flexible graphite

*1 CF8M/316 are available for (M).
*2 A638 Gr.660 are available for NPS 10
*3 INCONEL® X-750 are available for (M).

Dimensions of 150UTDZL(M)

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
	DN	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	Gear operation	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	230	400	400	Gear operation	Gear operation	Gear operation	Gear operation	Gear operation

Dimensions of 10UTDZL(M)

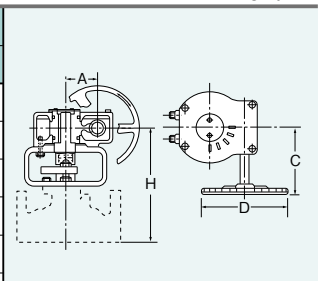
Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
	DN	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	Gear operation	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	230	400	400	Gear operation	Gear operation	Gear operation	Gear operation	Gear operation

Gear Operation

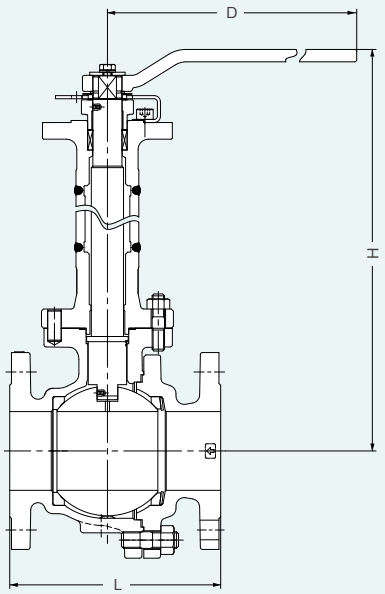
Unit: mm

Nominal Pressure	Class 150	10K	Gear Operator H	D	C	A
Nominal size (NPS)	4	4	619	310	165	65.5
	5	5	635	310	165	65.5
	6	6	758	360	210	88.5
		8	841	500	363	93.5
	8		849	500	377	134
	10	10	937	500	377	134



Refer to "Product Range" on Page 1.

(G-)300/20UTDZL(M)



Page 105 for Pressure-Temperature Ratings.

Design Specifications

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

Standard Materials

Name of Parts	Materials
Body	CF8 (CF8M*1)
Body cap	CF8 (CF8M*1)
Bonnet	Type304 (316*1)
Stem	Type304*2 (316*1 *2)
Seat spring	Type304*3 (NPS 2 & larger)
Ball	304SS (316*1)
Ball seat A (Body cap side)	HYPATITE® PTFE
Ball seat B (Body side)	HYPATITE® PTFE
	PCTFE (NPS 1 1/2 & smaller)
Gasket	Flexible graphite spiral wound
	Flexible graphite spiral wound
Cap& bonnet bolt	A193 Gr.B8
Cap& bonnet nut	A193 Gr.8
Gland packing	Flexible graphite

*1 CF8M/316 are available for (M).
*2 A638 Gr.660 are available for NPS 10 and 20K/ Class300 NPS 2 and larger.
*3 INCONEL® X-750 are available for (M).

Dimensions of 300UTDZL(M)

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
	DN	15	20	25	32	40	50	65	80	100	125	150	200
L		140	152	165	—	190	216	241	283	305	—	403	502
H		330	333	354	—	421	435	557	Gear operation	Gear operation	—	Gear operation	Gear operation
D		130	130	160	—	230	300	600	Gear operation	Gear operation	—	Gear operation	Gear operation

Dimensions of 20UTDZL(M)

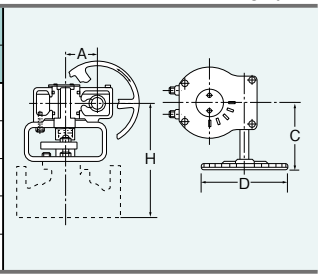
Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
	DN	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		330	333	354	358	421	435	557	Gear operation	Gear operation	Gear operation	Gear operation	Gear operation
D		130	130	160	160	230	300	600	Gear operation	Gear operation	Gear operation	Gear operation	Gear operation

Gear Operation

Unit: mm

Nominal Pressure	Class 300	20K	Gear Operator			
			H	D	C	A
Nominal size (NPS)	3	3	557	310	165	65.5
	4	4	619	310	165	65.5
		5	663	360	210	88.5
	6	6	755	500	363	93.5
	8	8	849	500	377	134



Refer to "Product Range" on Page 1.

Full bore, Split body, Side entry design

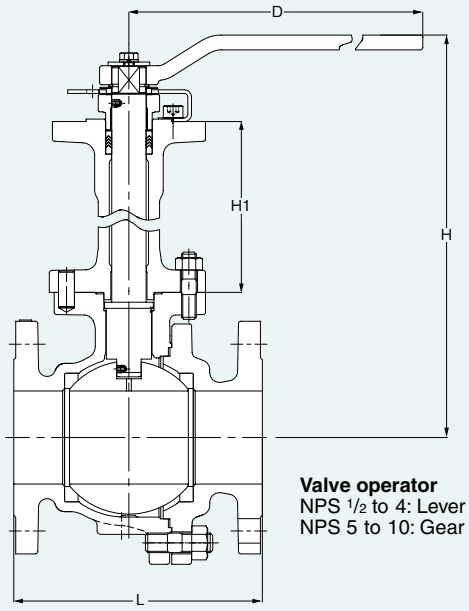
Features

- Stem seal & 동결 방지를 위한 Bonnet Exteded
- Bolted bonnet with body seal gasket.
- Stem의 상단부, 하단부 2개의 베어링을 사용하여, 스템 정렬 보호

Page 100 for Pressure-Temperature Ratings.

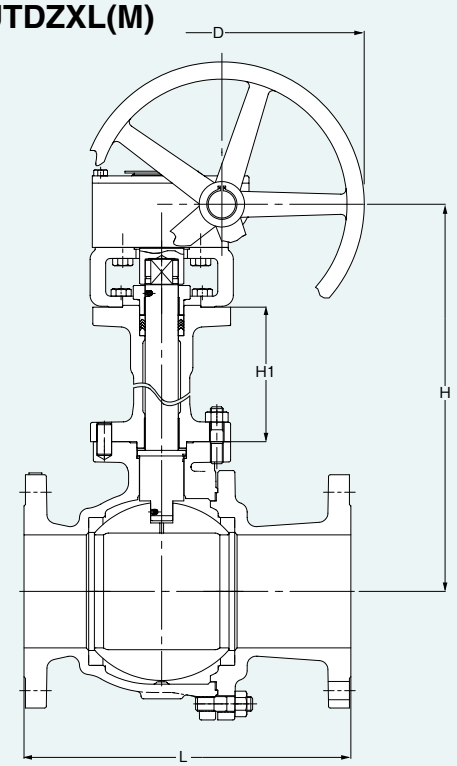
Lowest working temperature: −104℃

150UTDZXL(M)



Valve operator
NPS ½ to 4: Lever operation
NPS 5 to 10: Gear operation

G-150UTDZXL(M)



Refer to Page 37 and 38 for the basic construction and materials.

Dimensions of 150UTDZXL(M)

Unit: mm

Nominal Size	NPS	½	¾	1	1¼	1½	2	2½	3	4
	DN	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(M)

Unit: mm

Nominal Size	NPS	5	6	8	10
	DN	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

Refer to “Product Range” on Page 1.

Materials

Parts	Materials
Body	CF8 (CF8M*)
Body cap	CF8 (CF8M*)
Bonnet	CF8 (CF8M*)
Stem	Type304 (316*)
Ball	Type304(316*)/CF8(CF8M*)
Gland	CF8
Gland packing	PTFE
Ball seat	HYPATITE® PTFE
Gasket	Flexible graphite spiral wound
	Ceramic filled PTFE
Cap& bonnet bolt	A193 Gr.B8
Cap&bonnet nut	A194 Gr.8

*CF8M/316 are available for (M).

Full bore, Split body, Side entry design

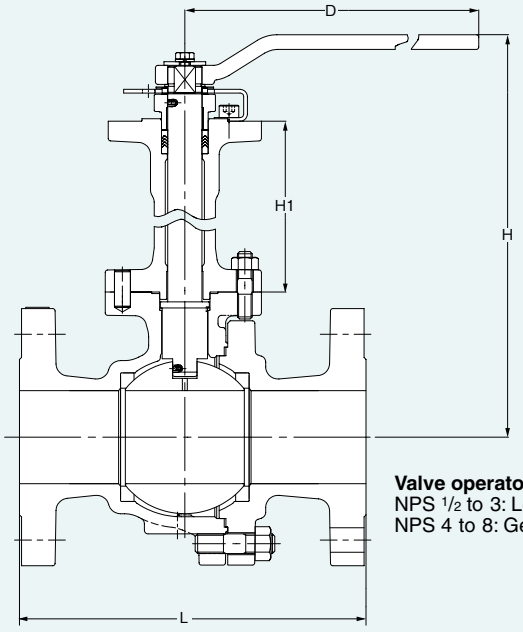
Features

- Stem seal & 동결 방지를 위한 Bonnet Exteded
- Bolted bonnet with body seal gasket.
- Stem의 상단부, 하단부 2개의 베어링을 사용하여, 스템 정렬 보호

Page 100 for Pressure-Temperature Ratings.

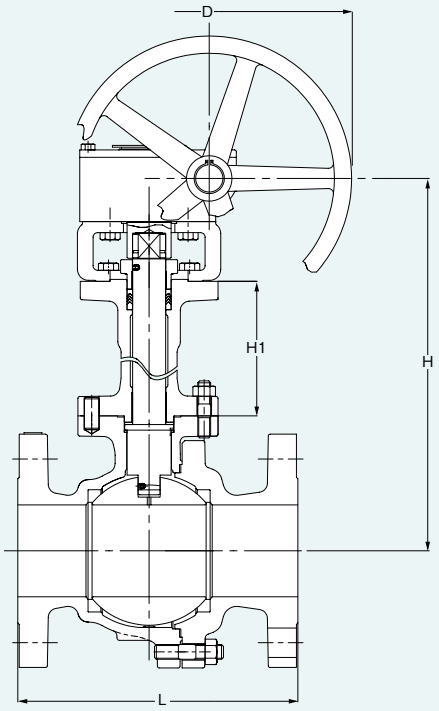
Lowest working temperature: −104℃

300UTDZXL(M)



Valve operator
NPS 1/2 to 3: Lever operation
NPS 4 to 8: Gear operation

G-300UTDZXL(M)



Refer to Page 37 and 38 for the basic construction and materials.

Dimensions of 300UTDZXL(M) Unit: mm

Nominal Size								
NPS		1/2	3/4	1	1 1/2	2	2 1/2	3
DN		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(M) Unit: mm

Nominal Size				
NPS		4	6	8
DN		100	150	200
Bore size		100	151	202
L		305	403	502
H		466	569	685
H1		207	236	268
D		310	500	500

※Nominal size NPS 1 1/4 and 5 are available.
Refer to “Product Range” on Page 1.

Materials

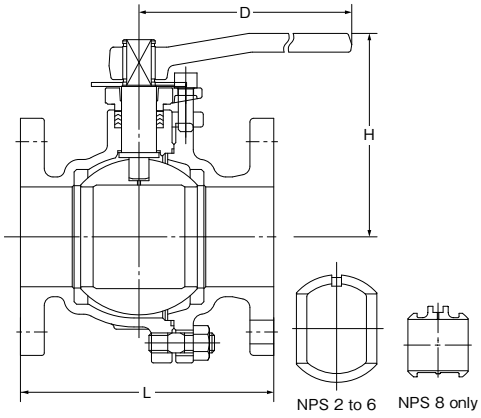
Parts	Materials
Body	CF8 (CF8M*)
Body cap	CF8 (CF8M*)
Bonnet	CF8 (CF8M*)
Stem	Type304 (316*)
Ball	Type304(316*)/CF8(CF8M*)
Gland	CF8
Gland packing	PTFE
Ball seat	HYPATITE® PTFE
Gasket	Flexible graphite spiral wound
	Ceramic filled PTFE
Cap& bonnet bolt	A193 Gr.B8
Cap&bonnet nut	A194 Gr.8

*CF8M/316 are available for (M).

10K Ball Valve (Full Bore)

(G-)10STBF
(G-)10STLBF (Gas service)

FF-flanged



Face to face dimensions : ASME B16.10
End flanges : JIS B 2239 10K (FF)

Dimensions of 10STBF, 10STLBF

Unit: mm

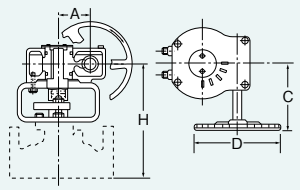
Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
	DN	15	20	25	32	40	50	65	80	100	125	150	200
L		108	117	127	140	165	178	190	203	229	356	394	457
H		106	109	130	135	115	120	153	162	199	219	293	352
D		130	130	160	160	230	230	400	400	460	460	1000	1500

※RF-flanged ends are optionally available.

Gear Operation

Unit: mm

Nominal Pressure	10K	Gear Operator			
		H	D	C	A
Nominal size (NPS)	2 1/2	260	175	140	65.5
	3	269	185	150	65.5
	4	292	210	175	65.5
	5	312	250	210	65.5
	6	337	280	240	65.5
	8	414	330	290	88.5



Maximum Service Pressure

Code	Valve Size	Temperature	Pressure
10STBF	All size	-10~120℃ W.O.G.	1.4 MPa
10STLBF	All size	-10~80℃ gas	1.2 MPa

●윤활유 사용에 적합하다.

Materials

Parts	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
Gasket	PTFE
Packing washer	SUS 304 (1/2 to 1 1/4)
Ball seat	HYPATITE® PTFE*1
Cap bolt/nut	SS 400*2
Gland bolt	Alloy steel
O ring*3	NBR
Stopper	SUS 430
Name plate*3	SUS 304

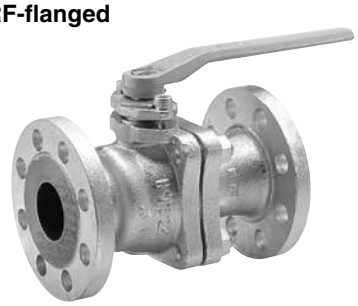
*1PTFE or C/F PTFE는 Option으로 가능.
*2온도 범위 0 ~225 초과 시 다른 재질의 Bolt/Nut 필요 함 KITZ로 기술 자문 부탁 합니다.
*3for 10STLB only

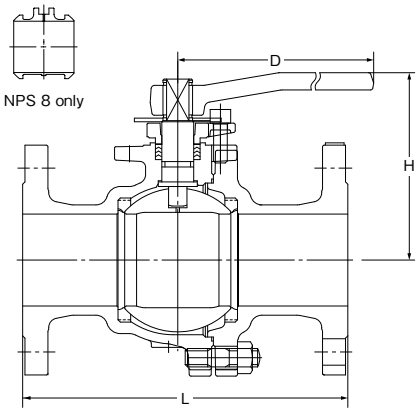
Contact KITZ Corporation for use of valve actuators.

20K Ball Valve for Gas Service (Full Bore)

(G-) 20STLB

RF-flanged





Face to face dimensions : ASME B16.10
End flanges : JIS B 2239 20K

Dimensions of 20STLB

Unit: mm

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

Refer to "Product Range" on Page 3.

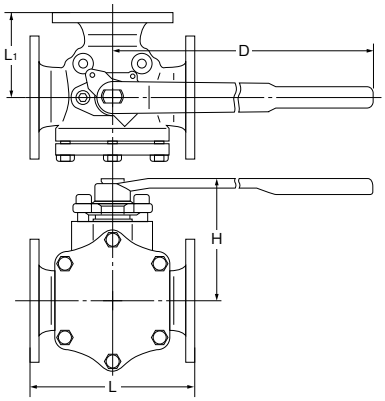
※Please contact KITZ or KITZ distributors for details about gear operated products.

-10~80℃ Gas ..... 2.4 MPa

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
Packing washer	SUS 304 (NPS 1 1/4 & smaller)
Ball seat	HYPHTITE® PTFE
O-ring	NBR
Cap bolt/nut	Carbon steel
Stopper	SUS 430
Snap ring	SK5

10STB4LAF
(L-port. Full Bore NPS 1 1/2 to 4)
10STB4TAF
(T-port. Full Bore NPS 1 1/2 to 4)
10STR4LAF
(L-port. Reduced Bore NPS 5 and larger)
10STR4TAF
(T-port. Reduced Bore NPS 5 and larger)



End to end dimensions : KITZ Std.
End flanges : JIS B 2239 10K (FF)

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

Nominal Size	NPS	1 1/2	2	2 1/2	3	4	5	6	8
	DN	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	183	190	259	—	—	—
	(STR)	—	—	—	—	—	267	289	334
D	(STB)	400	400	460	460	1000	—	—	—
	(STR)	—	—	—	—	—	1000	1000	1500

※RF-flanged ends are optionally available.

-10～90℃ W.O.G. ..... 1.4 MPa

Materials

Code	JIS Material
Body	FCD-S
Body cap	FCD-S
Ball	SCS 13A or SUS304
Stem	SUS 304
Ball seat	HYPATITE® PTFE
Gland packing	PTFE

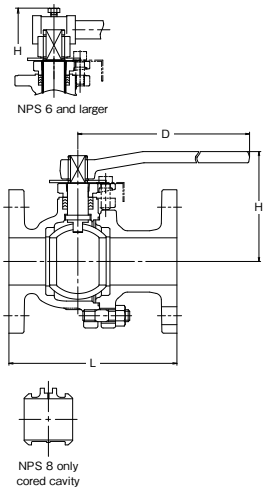
Gear operators may be optionally used for NPS 6 and 8.

● Page 106 for Allowable Port Orientation.

CLASS 125 Iron Ball Valves (Full Bore)

(G-)125FCTB

Blowout-proof stem



Page 99 for Pressure-Temperature Ratings.

Materials

Parts	Material	ASTM 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	

Design Specifications

Items	
Shell wall thickness and general valve design	KITZ standard
Face to face dimensions End to end dimensions	ASME B16.10 Class 150
End flange dimensions Gasket contact facing	ASME B16.1 Class 125

Dimensions of 125FCTB

Unit: mm

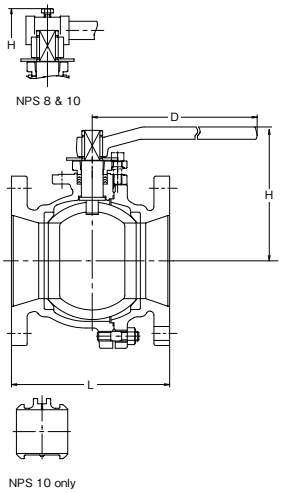
Nominal Size	NPS	2	2½	3	4	6	8
	DN	50	65	80	100	150	200
L		178	190	203	229	394	457
H		120	155	165	200	295	355
D		230	400	400	460	1000	1500

※Please contact KITZ or KITZ distributors for details about gear operated products.

CLASS 125 Iron Ball Valves (Reduced Bore)

125FCTR

Blowout-proof stem



Page 99 for Pressure-Temperature Ratings.

Materials

Parts	Material	ASTM Spec.
Body	Cast iron	A126 CL. B
Body cap	Cast iron	A126 CL. B
Stem	Stainless steel	A276 Type 403
Ball	Stainless steel	A312 Gr.TP304 or A351 Gr.CF8
Grand packing	PTFE	
Gasket	PTFE	
Ball seat	PTFE	
Cap bolt	Carbon steel	

Design Specifications

Items	
Shell wall thickness and general valve design	KITZ standard
Face to face dimensions End to end dimensions	ASME B16.10 Class 150
End flange dimensions Gasket contact facing	ASME B16.1 Class 125

Dimensions of 125FCTR

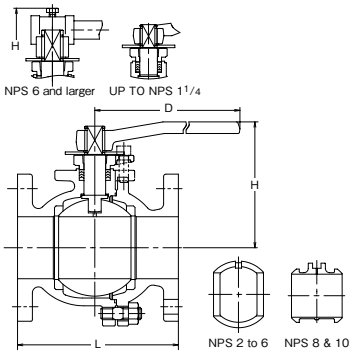
Unit: mm

Nominal Size	NPS	6	8	10
	DN	150	200	250
L		267	292	330
H		220	295	355
D		460	1000	1500

10K Iron Ball Valves (Full Bore)

(G-)10FCTB

Blowout-proof stem



Page 99 for Pressure-Temperature Ratings.

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

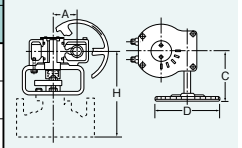
Design Specifications

Items	
Shell wall thickness and general valve design	KITZ standard
Face to face dimensions	KITZ standard
End flange dimensions Gasket contact facing	JIS B2239 10K (FF)

Gear Operation

Unit: mm

Nominal Pressure	10K	Gear Operator			
		H	D	C	A
Nominal size (NPS)	5	312	310	165	65.5
	6	337	310	165	65.5
	8	414	360	210	88.5
	10	477	500	363	93.5



Dimensions of 10FCTB

Unit: mm

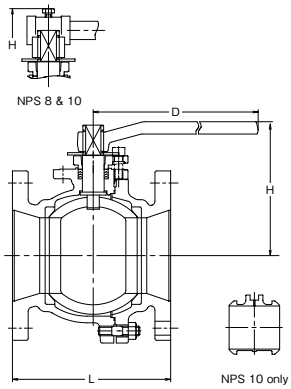
Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
	DN	15	20	25	32	40	50	65	80	100	125	150	200	250*
L		110	120	130	140	165	180	190	200	230	300	340	450	533
H		102	105	124	128	114	121	154	163	199	219	292	352	477
D		130	130	160	160	230	230	400	400	460	460	1000	1500	—

Refer to "Product Range" on Page 3.

JIS 10K Iron Ball Valves (Reduced Bore)

(G-)10FCTR

Blowout-proof stem



Page 99 for Pressure-Temperature Ratings.

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

Design Specifications

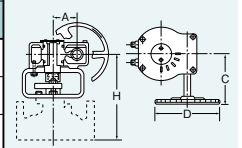
Items	
Shell wall thickness and general valve design	KITZ standard
Face to face dimensions	JIS B2002*
End flange dimensions Gasket contact facing	JIS B2239 10K (FF)

*For NPS 5=KITZ standard

Gear Operation

Unit: mm

Nominal Pressure	10K	Gear Operator			
		H	D	C	A
Nominal size (NPS)	5	292	310	165	65.5
	6	312	310	165	65.5
	8	337	310	165	65.5
	10	414	360	210	88.5



Dimensions of 10FCTR

Unit: mm

Nominal Size	NPS	5	6	8	10
	DN	125	150	200	250
L		250	270	290	330
H		200	220	295	355
D		460	460	1000	1500

Refer to "Product Range" on Page 3.

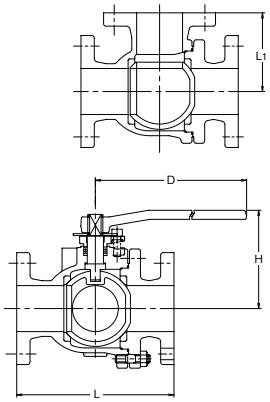
10K Iron Ball Valves 3-way (Full or Reduced Bore)

Page 99 for Pressure-Temperature Ratings.

10FCTB2L
• Full Bore: NPS 1 1/2 to 4

10FCTR2L
• Reduced Bore: NPS 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

● Page 106 for Allowable Port Orientation.

Design Specifications

Items	
Shell wall thickness	JIS B2031
Face to face dimensions	KITZ standard
End flange dimensions Gasket contact facing	JIS B2239 10K (FF)

Dimensions of 10FCTB2L, 10FCTR2L

Unit: mm

Nominal Size	NPS	1 1/2	2	2 1/2	3	4	5	6	8
	DN	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	120	155	165	200	205	225	295
D		230	230	400	400	460	460	460	1000

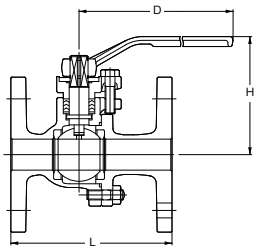
※Please contact KITZ or KITZ distributors for details about gear operated products.

Bronze Ball Valves

W.O.G. non-shock 1.4 MPa
W.O.G. 150°C 0.7 MPa

Bolted body cap, Full bore
Flanged 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*1/SCS13A*2/SUS304*3
Ball seat	PTFE
Grand packing	PTFE

*1 Chrome or Nickel-chrome plated
*2 NPS 2-3
*3 NPS 4

Dimensions of TB

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	DN	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	Fire-safe
		150/300SCTDZ	150/300SCTDZ-FS
1	Body*1	A216 Gr.WCB	
2	Body cap*1	A216 Gr.WCB	
3	Stem	A276 Type 304	
4	Ball*2	A276 Type 304 or A351 Gr.CF8 or A182 Gr.F304	
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	Stainless steel	
19	Gasket	PTFE	Flexible graphite
20	Packing washer*4	A276 Type 316L	
30	Ball seat	HYPATITE® PTFE	
33	Cap nut	A194 Gr.2H	
35	Cap bolt	A193 Gr.B7	
36	Gland bolt	Stainless steel	
40	Key-lock plate	Stainless steel	
43	Handle-lock plate	Stainless steel	
48	Snap ring	Stainless steel	
49	Stopper	Stainless steel	
51	Stopper plate	Stainless steel	
57	Gland bush	G/F PTFE	
58	Gland washer	A276 Type 304	
67	Stem bearing	G/F PTFE	
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 등 저온 서비스 재질 Option으로 가능
*2 Ball & Ball 재질 CF8M or Type 316 가능(Option)
*3 Class 150: Bar type handle used for NPS 6 and 8.
Class 300: Bar type handle used for NPS 4 and 8.
*4 Up to NPS 1

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 valve		Carbon steel valve	Stainless steel valve		Carbon steel valve
		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 or A182 Gr.F304	A276 Type 316 or A351 Gr.CF8M or A182 Gr.F316	A276 Type 304 or A351 Gr.CF8 or A182 Gr.F304	SUS304 or SCS13A or SUS F304	SUS316 or SCS14A or SUS F316	SUS304 or SCS14A or SUS F304
7	Gland	A351 Gr.CF8			SCS13A		
8	Gland packing	Flexible graphite			Flexible graphite		
9	Handle*1	Ductile iron			FCD450-10		
9A	Handle bar*1	Carbon steel			SGP		
9B	Handle head*1	Ductile iron			FCD450-10		
16	Name plate	Stainless steel			Stainless steel		
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	A194 Gr.8		A194 Gr.2H
35	Cap bolt	A193 Gr.B8		A193 Gr.B7	A193 Gr.B8		A193 Gr.B7
36	Gland bolt	Stainless steel			Stainless steel		
40	Key-lock plate	Stainless steel			Stainless steel		
43	Handle-lock plate	Stainless steel			Stainless steel		
47	Thrust washer	Carbon (size 1 & over)			Carbon		
48	Snap ring	Stainless steel			Stainless steel		
49	Stopper	Stainless steel			Stainless steel		
51	Stopper plate	A276 Type 304			Stainless steel		
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	NPS 1/2 to 3	NPS 1/2 to 3
Bar type	NPS 4	
Gear	NPS 5 to 8	NPS 4 to 8

Page 38의 그림을 참조하십시오.

Construction and Materials

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

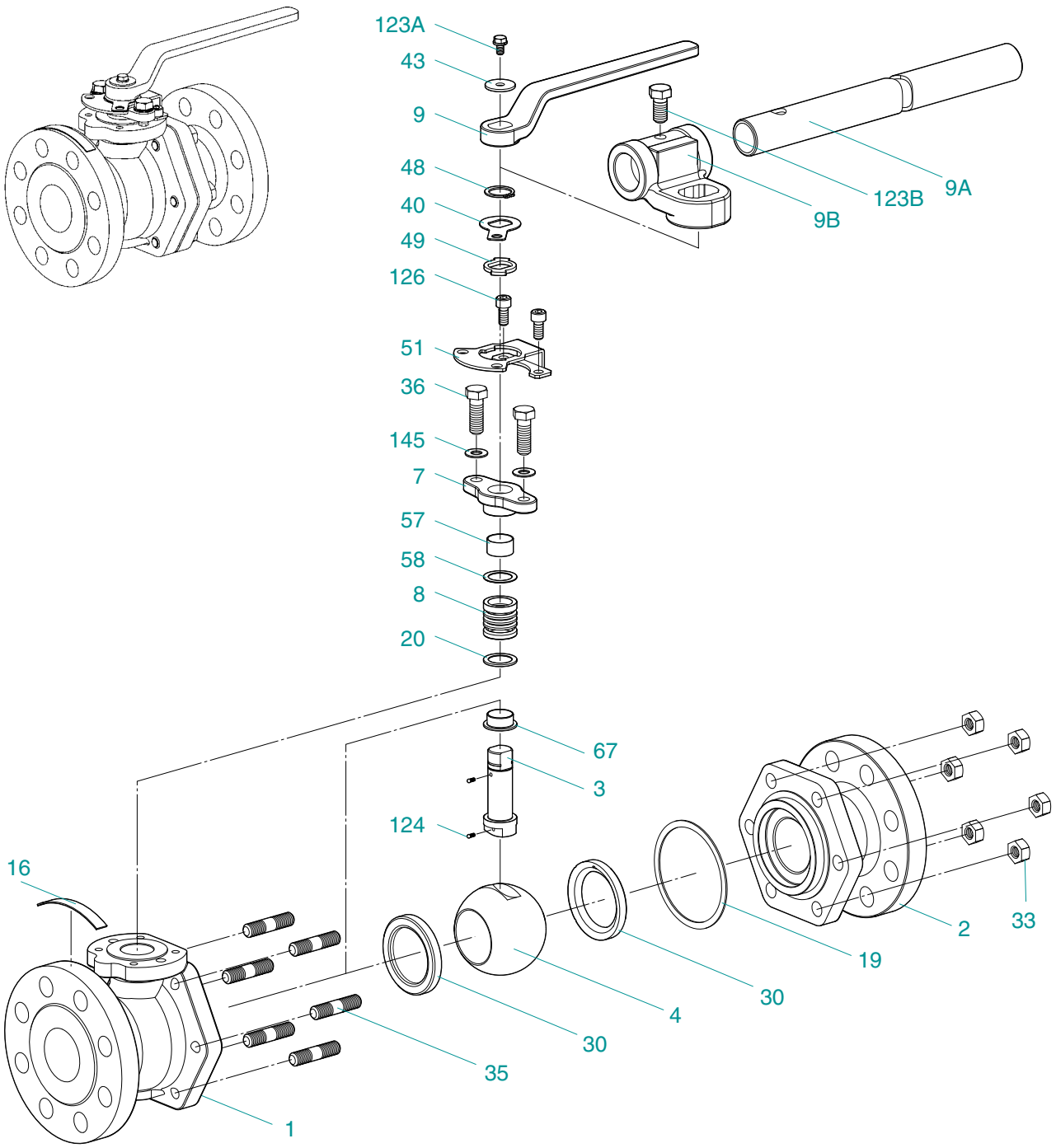


Illustration shows NPS 4 design.

Construction and Materials

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

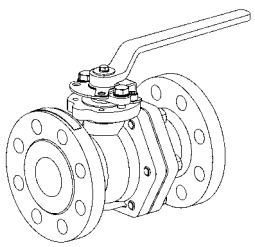
No.	Parts	ASTM Material Designation (Trim 3H)			JIS Material Designation (Trim 3H)		
		Stainless steel valve		Carbon steel valve	Stainless steel valve		Carbon steel valve
		150/300UTDZ3H	150/300UTDZ3HM	150/300SCTDZ3H	10/20UTDZ3H	10/20UTDZ3HM	10/20SCTDZ3H
1	Body	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	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 or A182 Gr.F304	A276 Type 316 or A182 Gr.F316	A276 Type 304 or A182 Gr.F304	SUS304 or SUS F304	SUS316 or SUS F316	SUS304 or SUS F304
7	Gland	A351 Gr.CF8			SCS13A		
8	Gland packing	Flexible graphite			Flexible graphite		
9	Handle*1	Ductile iron			FCD450-10		
9A	Handle bar*1	Carbon steel			SGP		
9B	Handle head*1	Ductile iron			FCD450-10		
16	Name plate	Stainless steel			Stainless steel		
19	Gasket	Flexible graphite			Flexible graphite		
20	Packing washer	A276 Type 316L			SUS316L		
30	Ball seat	Carbon + JIS SUS329J1*2			Carbon + SUS329J1		
33	Cap nut	A194 Gr.8		A194 Gr.2H	A194 Gr.8		A194 Gr.2H
35	Cap bolt	A193 Gr.B8		A193 Gr.B7	A193 Gr.B8		A193 Gr.B7
36	Gland bolt	Stainless steel			Stainless steel		
40	Key-lock plate	Stainless steel			Stainless steel		
43	Handle-lock plate	Stainless steel			Stainless steel		
47	Thrust washer	Carbon			Carbon		
48	Snap ring	Stainless steel			Stainless steel		
49	Stopper	Stainless steel			Stainless steel		
51	Stopper plate	Stainless steel			Stainless steel		
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		

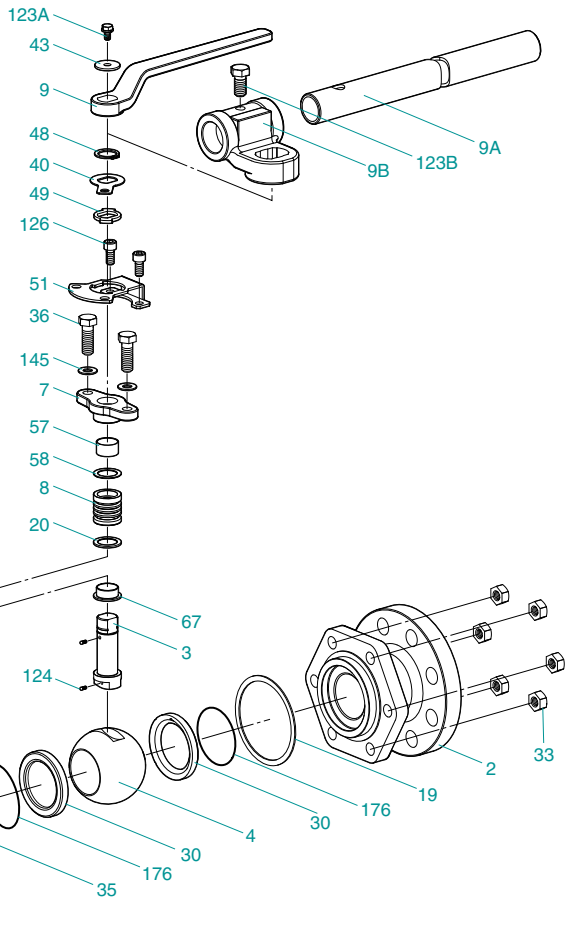
*1 Refer to the following table.

*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	NPS 1/2 to 11/2	NPS 1/2 to 11/4
Bar type	NPS 2 to 4	NPS 11/2 to 3
Gear	NPS 5 to 8	NPS 4 to 8





Construction and Materials

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

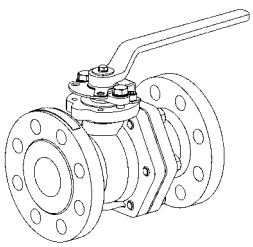
No.	Parts	ASTM Material Designation (Trim 5H)			JIS Material Designation (Trim 5H)		
		Stainless steel valve		Carbon steel valve	Stainless steel valve		Carbon steel valve
		150/300UTDZ5H	150/300UTDZ5HM	150/300SCTDZ5H	10/20UTDZ5H	10/20UTDZ5HM	10/20SCTDZ5H
1	Body	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
2	Body cap	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
3	Stem	SUS630 or A564 Type 630			SUS630 or A564 Type630		
4	Ball	A276 Type 316 or A182 Gr.F316 with Cr. plating			SUS316 (or SUS F316) with Cr. plating		
7	Gland	A351 Gr.CF8			SCS13A		
8	Gland packing	Flexible graphite			Flexible graphite		
9	Handle*1	Ductile iron			FCD450-10		
9A	Handle bar*1	Carbon steel			SGP		
9B	Handle head*1	Ductile iron			FCD450-10		
16	Name plate	Stainless steel			Stainless steel		
19	Gasket	Flexible graphite			Flexible graphite		
20	Packing washer	A276 Type 316L			SUS316L		
30	Ball seat	A276 Type 316 + Ni-Cr alloy hard facing*2			SUS 316 + Ni-Cr alloy hard facing*2		
33	Cap nut	A194 Gr.8		A194 Gr.2H	A194 Gr.8		A194 Gr.2H
35	Cap bolt	A193 Gr.B8		A193 Gr.B7	A193 Gr.B8		A193 Gr.B7
36	Gland bolt	Stainless steel			Stainless steel		
40	Key-lock plate	Stainless steel			Stainless steel		
43	Handle-lock plate	Stainless steel			Stainless steel		
47	Thrust washer	Carbon			Carbon		
48	Snap ring	Stainless steel			Stainless steel		
49	Stopper	Stainless steel			Stainless steel		
51	Stopper plate	Stainless steel			Stainless steel		
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		

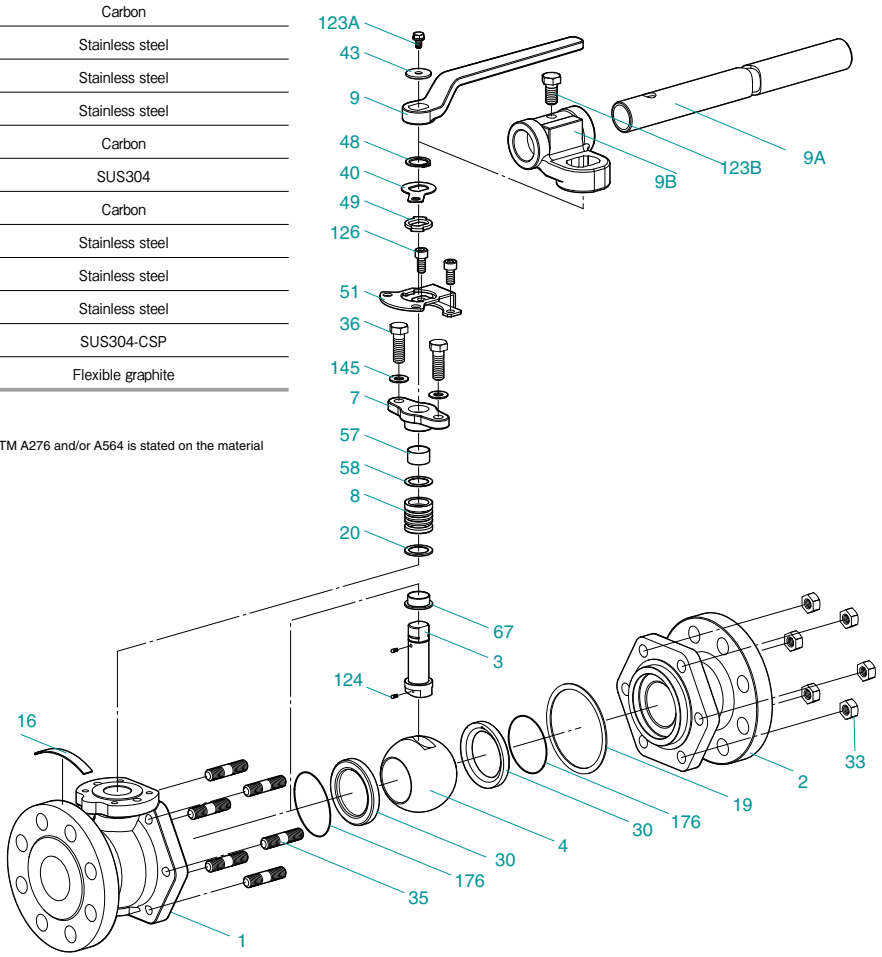
*1 Refer to the following table.

*2 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	NPS 1/2 to 11/2	NPS 1/2 to 1
Bar type	NPS 2 to 4	NPS 11/2 to 3
Gear	NPS 5 to 8	NPS 4 to 8





Construction and Materials

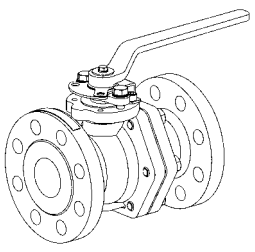
■Class 150/300, 10/20K Metal Seated Floating Ball Design Valve (Trim 6H)

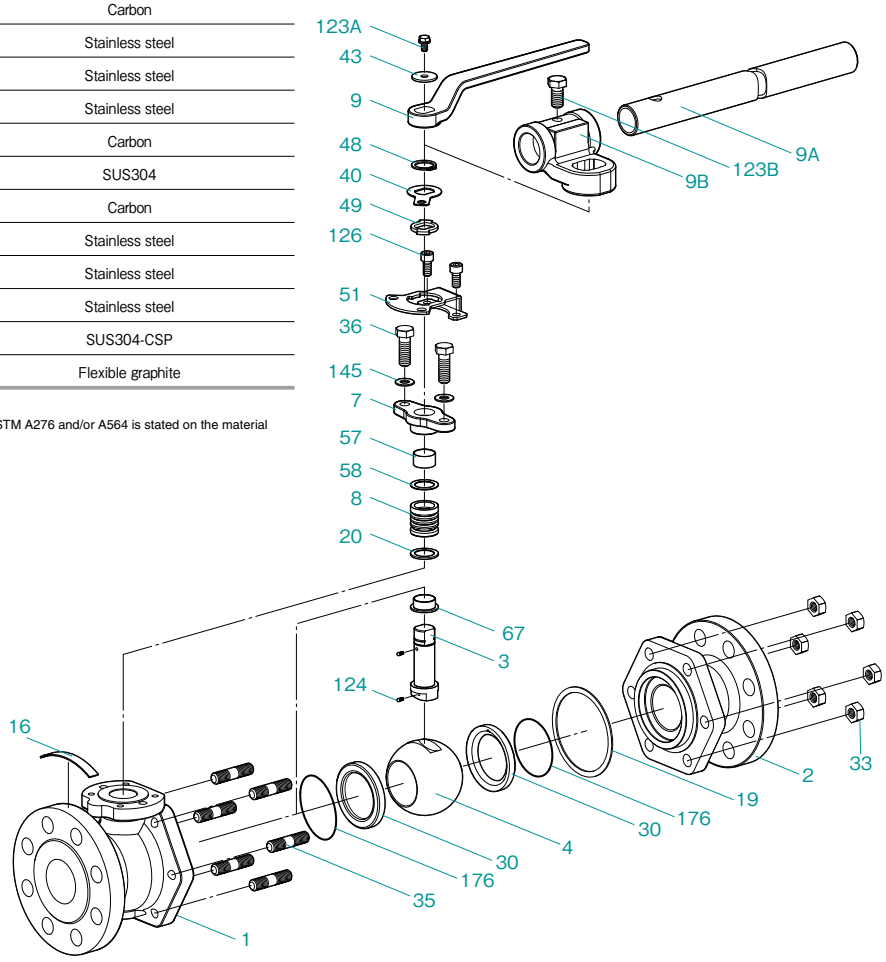
No.	Parts	ASTM Material Designation (Trim 6H)			JIS Material Designation (Trim 6H)		
		Stainless steel valve		Carbon steel valve	Stainless steel valve		Carbon steel valve
		150/300UTDZ6H	150/300UTDZ6HM	150/300SCTDZ6H	10/20UTDZ6H	10/20UTDZ6HM	10/20SCTDZ6H
1	Body	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
2	Body cap	A351 Gr.CF8	A351 Gr.CF8M	A216 Gr.WCB	SCS13A	SCS14A	SCPH2
3	Stem	SUS630 or A564 Type 630			SUS630 or A564 Type630		
4	Ball	A276 Type 316 or A182 Gr.F316 with Ni-Cr alloy hard facing			SUS316 or SUS F316 with Ni-Cr alloy hard facing		
7	Gland	A351 Gr.CF8			SCS13A		
8	Gland packing	Flexible graphite			Flexible graphite		
9	Handle*1	Ductile iron			FCD450-10		
9A	Handle bar*1	Carbon steel			SGP		
9B	Handle head*1	Ductile iron			FCD450-10		
16	Name plate	Stainless steel			Stainless steel		
19	Gasket	Flexible graphite			Flexible graphite		
20	Packing washer	A276 Type 316L			SUS316L		
30	Ball seat	316SS + Ni-Cr alloy hard facing			316SS + Ni-Cr alloy hard facing		
33	Cap nut	A194 Gr.8		A194 Gr.2H	A194 Gr.8		A194 Gr.2H
35	Cap bolt	A193 Gr.B8		A193 Gr.B7	A193 Gr.B8		A193 Gr.B7
36	Gland bolt	Stainless steel			Stainless steel		
40	Key-lock plate	Stainless steel			Stainless steel		
43	Handle-lock plate	Stainless steel			Stainless steel		
47	Thrust washer	Carbon			Carbon		
48	Snap ring	Stainless steel			Stainless steel		
49	Stopper	Stainless steel			Stainless steel		
51	Stopper plate	Stainless steel			Stainless steel		
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 Refer to the following table.

- 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	NPS 1/2 to 11/2	NPS 1/2 to 11/4
Bar type	NPS 2 to 4	NPS 1 1/2 to 3
Gear	NPS 5 to 8	NPS 4 to 8





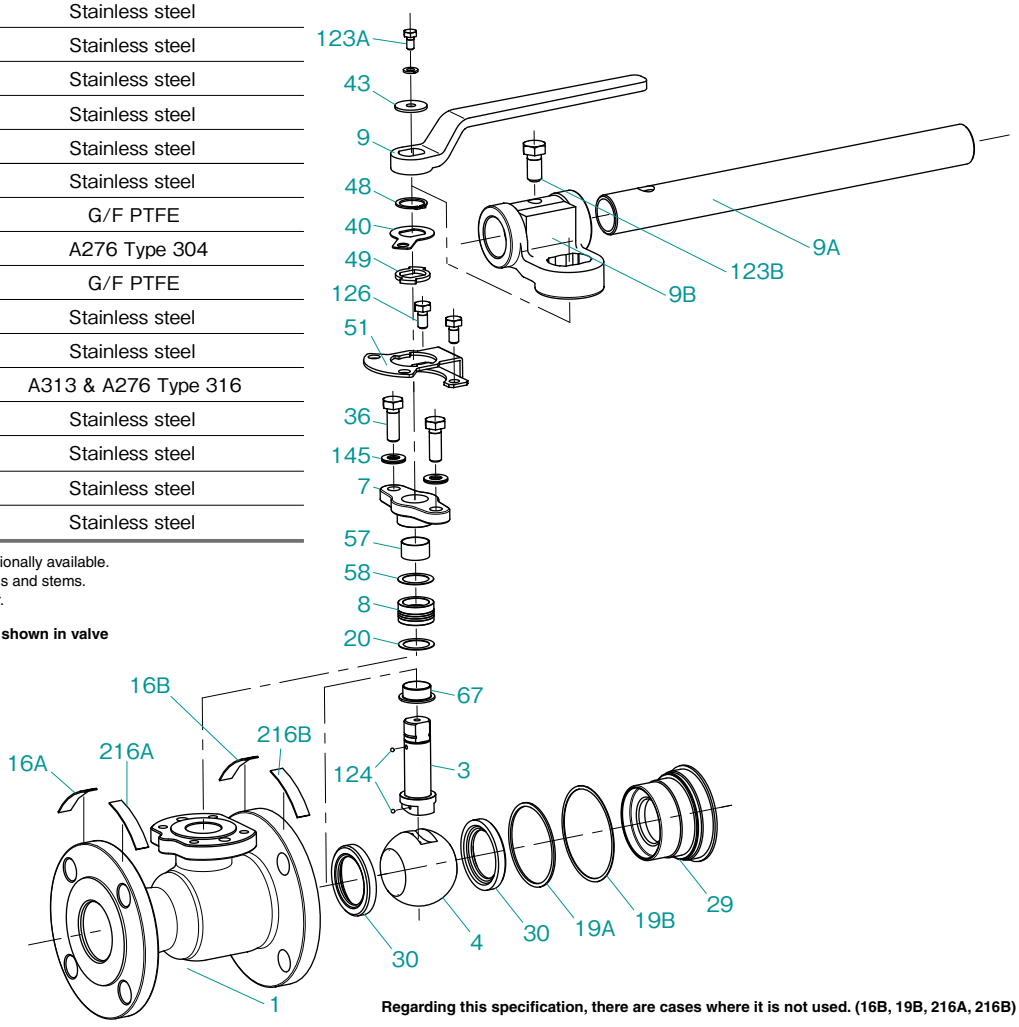
Construction and Materials

■Sour service에는 표준 재질 구성 적용가능

No.	Parts	Standard	Fire-safe
		150SCTAZM 300SCTAZM	150SCTAZM-FS 300SCTAZM-FS
1	Body	A216 Gr. WCB *1	
3	Stem	A276 Type 316*2	
4	Ball	A276 Type 316 / A351 Gr. CF8M	
7	Gland	A351 Gr. CF8M	
8	Gland packing	PTFE	Flexible graphite
9	Handle*3	Ductile iron	
9A	Handle bar	Carbon steel	
9B	Handle head	Ductile iron	
16A	Name plate	Stainless steel	
16B	Lev plate	Stainless steel	
19A	Gasket	PTFE	
19B	Gasket	—	Flexible graphite
20	Packing washer	A276 Type 316L	
29	Insert	A216 Gr. WCB / A105	
30	Ball seat	HYPATITE®PTFE	
36	Gland bolt	Stainless steel	
40	Key-lock plate	Stainless steel	
43	Handle-lock plate	Stainless steel	
48	Snap ring	Stainless steel	
49	Stopper	Stainless steel	
51	Stopper plate	Stainless steel	
57	Gland bush	G/F PTFE	
58	Gland washer	A276 Type 304	
67	Stem bearing	G/F PTFE	
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	
216A	Ce plate	Stainless steel	
216B	Atex plate	Stainless steel	

*1 A352 low-temperature service materials are optionally available.
*2 CF8M or Type 316 is optionally available for balls and stems.
*3 Bar type handles are used for NPS 6 and larger.

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



Regarding this specification, there are cases where it is not used. (16B, 19B, 216A, 216B)

Illustration shows NPS ½ design.

Construction and Materials

No.	Parts	Standard		Fire-safe	
		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 or A182 Gr.F304	A276 Type 316 or A351 Gr.CF8M or A182 Gr.F316	A276 Type 304 or A351 Gr. CF8 or A182 Gr.F304	A276 Type 316 or A351 Gr. CF8M or A182 Gr.F316
7	Gland	A351 Gr.CF8			
8	Gland packing	PTFE		Flexible graphite	
9	Handle	Ductile iron			
9A	Handle bar*2	Carbon steel			
9B	Handle head*2	Ductile iron			
16	Name plate	Stainless steel			
19	Gasket	PTFE		Flexible graphite	
20	Packing washer	A276 Type 316L (up to size 1)			
30	Ball seat	HYPATITE® PTFE			
33	Cap nut	A194 Gr.8			
35	Cap bolt	A193 Gr.B8			
36	Gland bolt	Stainless steel			
40	Key-lock plate	Stainless steel			
43	Handle-lock plate	Stainless steel			
48	Snap ring	Stainless steel			
49	Stopper	Stainless steel			
51	Stopper plate	Stainless steel			
57	Gland bush	G/F PTFE			
58	Gland washer	A276 Type 304			
67	Stem bearing	G/F PTFE			
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 and stems.
*2 Class 150: Bar type handle used for NPS 6 and 8.
Class 300: Bar type handle used for NPS 4 to 8.

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

■Sour service에는 표준 재질 구성 적용가능

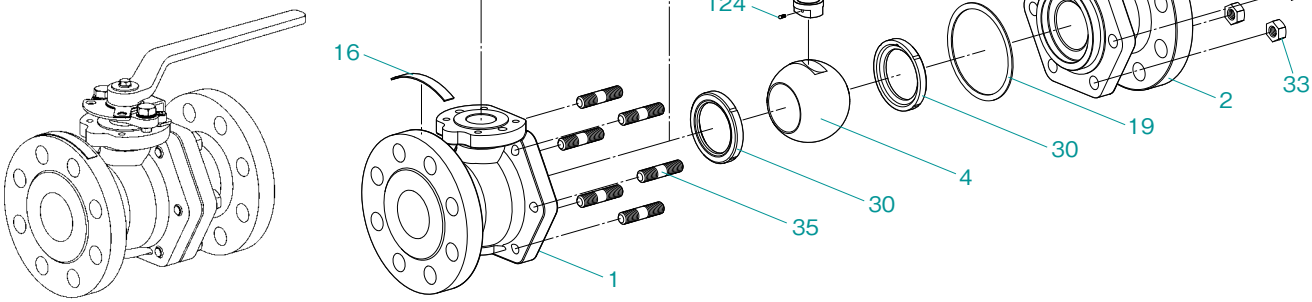


Illustration shows NPS 4 design.

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	A276 Type 316
4	Ball		A276 Type 304 or A351 Gr. CF8 or A182 Gr.F304	A276 Type 316 or A351 Gr. CF8M or A182 Gr.F316
7	Gland		A351 Gr. CF8	
8	Gland packing		PTFE	
9	Handle*1		Ductile iron	
16A	Name plate		Aluminum	
16B	Washer		Carbon steel	
19	Gasket		PTFE	
20	Packing washer*2		A276 Type 316L	
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		G/F PTFE (size 4 & over)	
48	Snap ring		Stainless steel	
49	Stopper		Stainless steel	
67	Stem bearing		G/F PTFE	
123	Handle bolt	NPS 6 to 10	Carbon steel	
124A	Spring & pin	NPS 2 1/2 to 10	A313 & A276 Type 316	
124B	Spring	NPS 1/2 to 2	A313 Type 316	

*1 Bar type handles are used for NPS 6 and 8. Worm gear operations are used for NPS10.
*2 Packing washers are used only for NPS 1 and smaller.

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

■Sour service에는 표준 재질 구성 적용가능

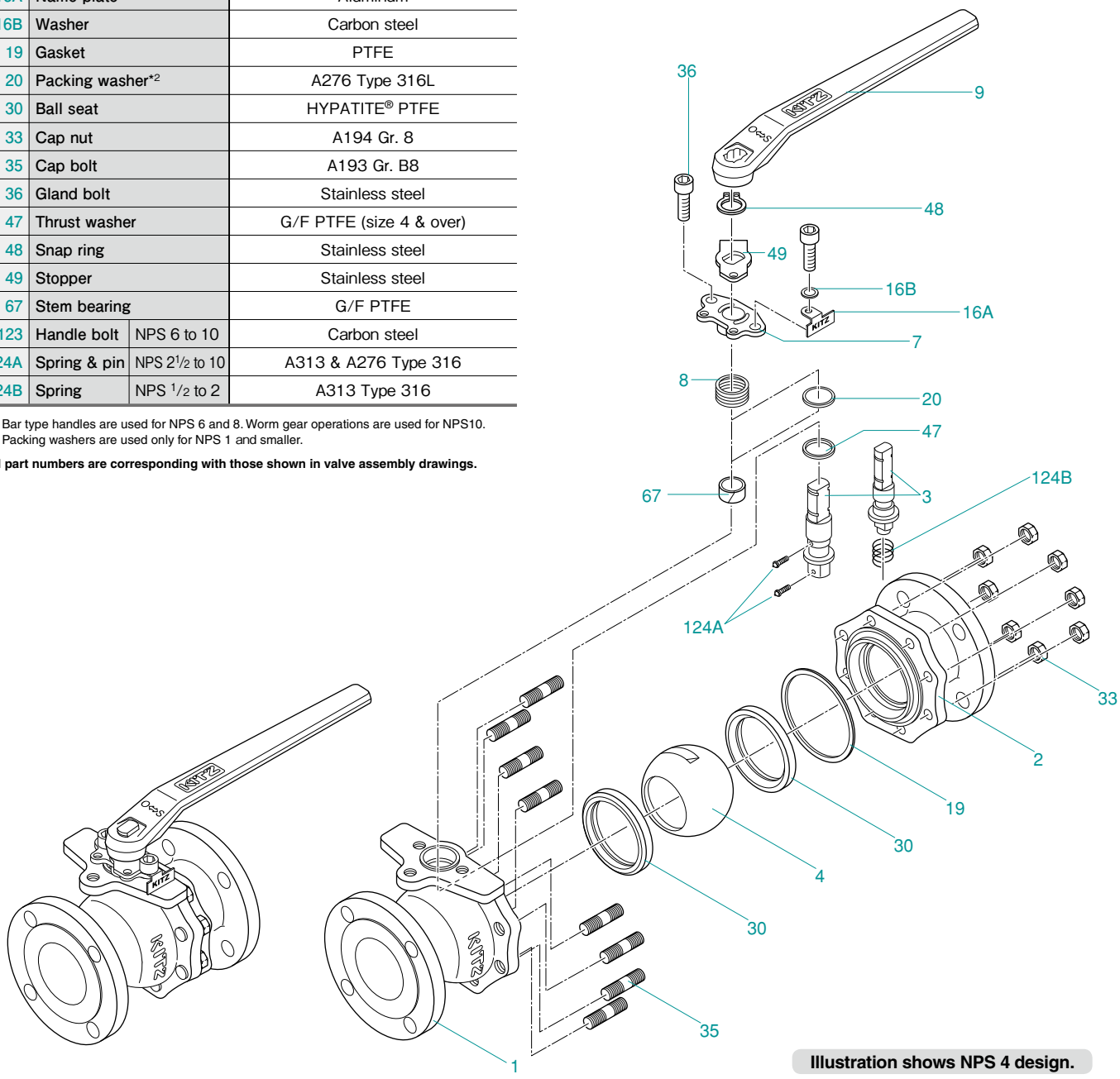


Illustration shows NPS 4 design.

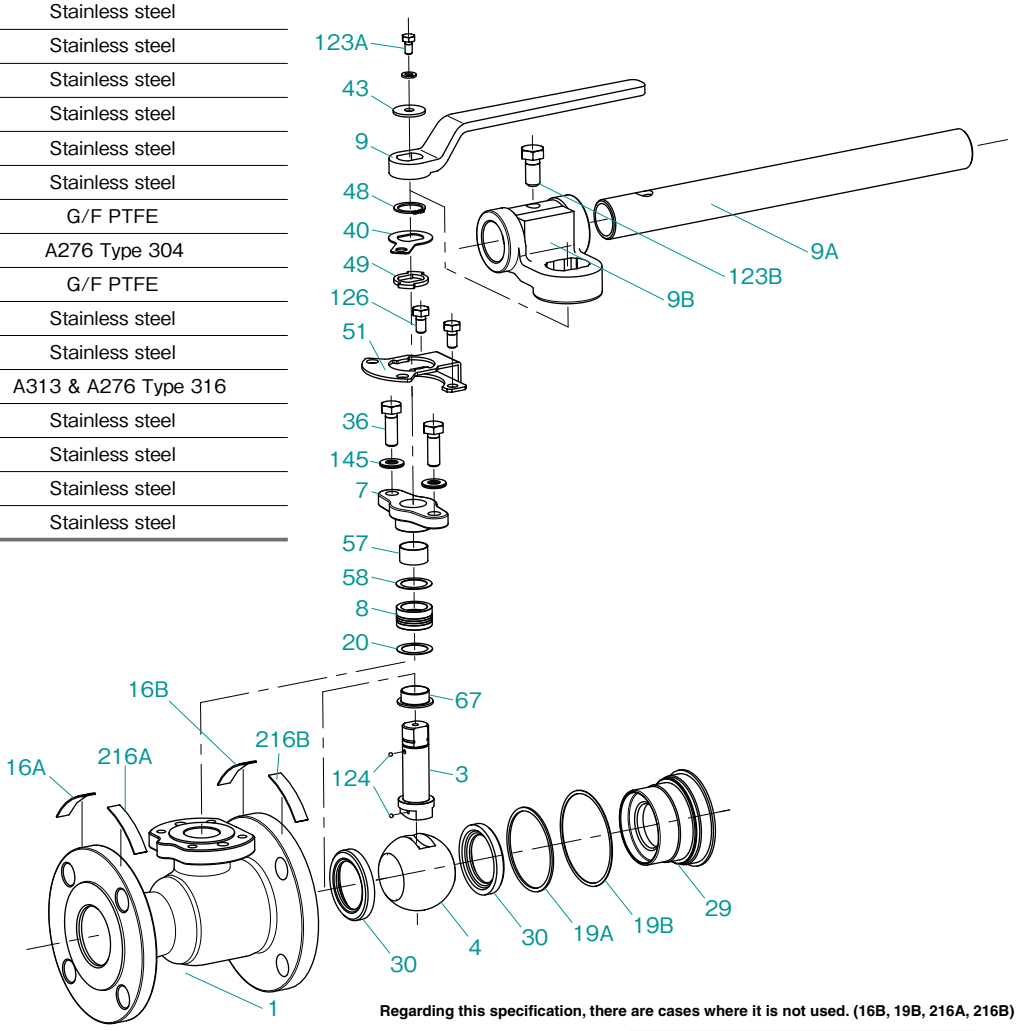
Construction and Materials

No.	Parts	Standard 150UTAZM 300UTAZM	Fire-safe 150UTAZM-FS 300UTAZM-FS
1	Body	A351 Gr. CF8M	
3	Stem	A276 Type 316	
4	Ball	A276 Type 316/A351 Gr. CF8M	
7	Gland	A351 Gr. CF8M	
8	Gland packing	PTFE	Flexible graphite
9	Handle*	Ductile iron	
9A	Handle bar	Carbon steel	
9B	Handle head	Ductile iron	
16A	Name plate	Stainless steel	
16B	Lev plate	Stainless steel	
19A	Gasket	PTFE	
19B	Gasket	—	Flexible graphite
20	Packing washer	A276 Type 316L	
29	Insert	A351 Gr. CF8M/A182 Gr. F316/A276 Type 316	
30	Ball seat	HYPATITE® PTFE	
36	Gland bolt	Stainless steel	
40	Key-lock plate	Stainless steel	
43	Handle-lock plate	Stainless steel	
48	Snap ring	Stainless steel	
49	Stopper	Stainless steel	
51	Stopper plate	Stainless steel	
57	Gland bush	G/F PTFE	
58	Gland washer	A276 Type 304	
67	Stem bearing	G/F PTFE	
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	
216A	Ce plate	Stainless steel	
216B	Atex plate	Stainless steel	

* Bar type handles are used for NPS 6 and larger.

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

■Sour service에는 표준 재질 구성 적용가능



Regarding this specification, there are cases where it is not used. (16B, 19B, 216A, 216B)

Illustration shows NPS 1/2 design.

Construction and Materials

No.	Parts	Standard		Fire-safe
		600UTB	600UTBM	600UTBS/UTBSM
1	Body	A351 Gr. CF8*2	A351 Gr. CF8M*2	A351 Gr. CF8/ CF8M*2
2	Body cap			
3	Stem	A276 Type 304*2	A276 Type 316*2	A276 Type 304/316*2
4	Ball			
7	Gland	A351 Gr. CF8		
8	Gland packing	PTFE		Flexible graphite
9	Handle	Ductile iron		
16	Name plate	Stainless steel		
19	Gasket*1	–		Flexible graphite spiral wound
20	Packing washer NPS 1/2 to 1	A276 Type 316L		
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	Stainless steel		
49	Stopper	Stainless steel		
67	Stem bearing	G/F PTFE		
124	Spring & pin	A313 & A276 Type 316		
143	Seat spring	A276 Type 304	INCONEL® X-750	A276 Type 304/ INCONEL® X-750
150	Seat retainer	A276 Type 304	A276 Type 316	A276 Type 304/316
155	Spacer*1	–	–	PTFE
175	Retainer gland*1	–	–	A276 Type 304
176	Retainer packing*1	–	–	Flexible graphite

*1 이 부품은 Super-Fire safe에만 사용 된다
*2 다른 Stainless Steel도 Option 으로 가능하다.
모든 부품 번호는 밸브 조립 도면에 표시된 번호와 일치한다.

■Sour service에 표준 재료 구성을 적용할 수 있다.

No.	Parts	Standard	Fire-safe
		600SCTB	600SCTBS
1	Body	A105*1	
2	Body cap		
3	Stem	A276 Type 304*2	
4	Ball		
7	Gland	A351 Gr. CF8	
8	Gland packing	PTFE	Flexible graphite
9	Handle	Ductile iron	
16	Name plate	Stainless steel	
19	Gasket*3	–	Flexible graphite spiral wound
20	Packing washer NPS 1/2 to 1	A276 Type 316L	
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	Stainless steel	
67	Stem bearing	G/F PTFE	
124	Spring & pin	A313 & A276 Type 316	
143	Seat spring	A276 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 저온용 재질도 Option으로 가능
*2 Type 316 & 다른 Stainless 재질의 Ball과 Stem 가능(Option)
*3 이러한 부품은 Super-Fire safe에만 사용 된다
모든 부품 번호는 밸즈 조립 도면에 표시된 번호와 일치한다.

■Sour Service에는 선택적 재료 구성이 가능하다

Page 47의 그림을 참조하십시오.

Construction and Materials

■Class 600 Floating Ball Valve

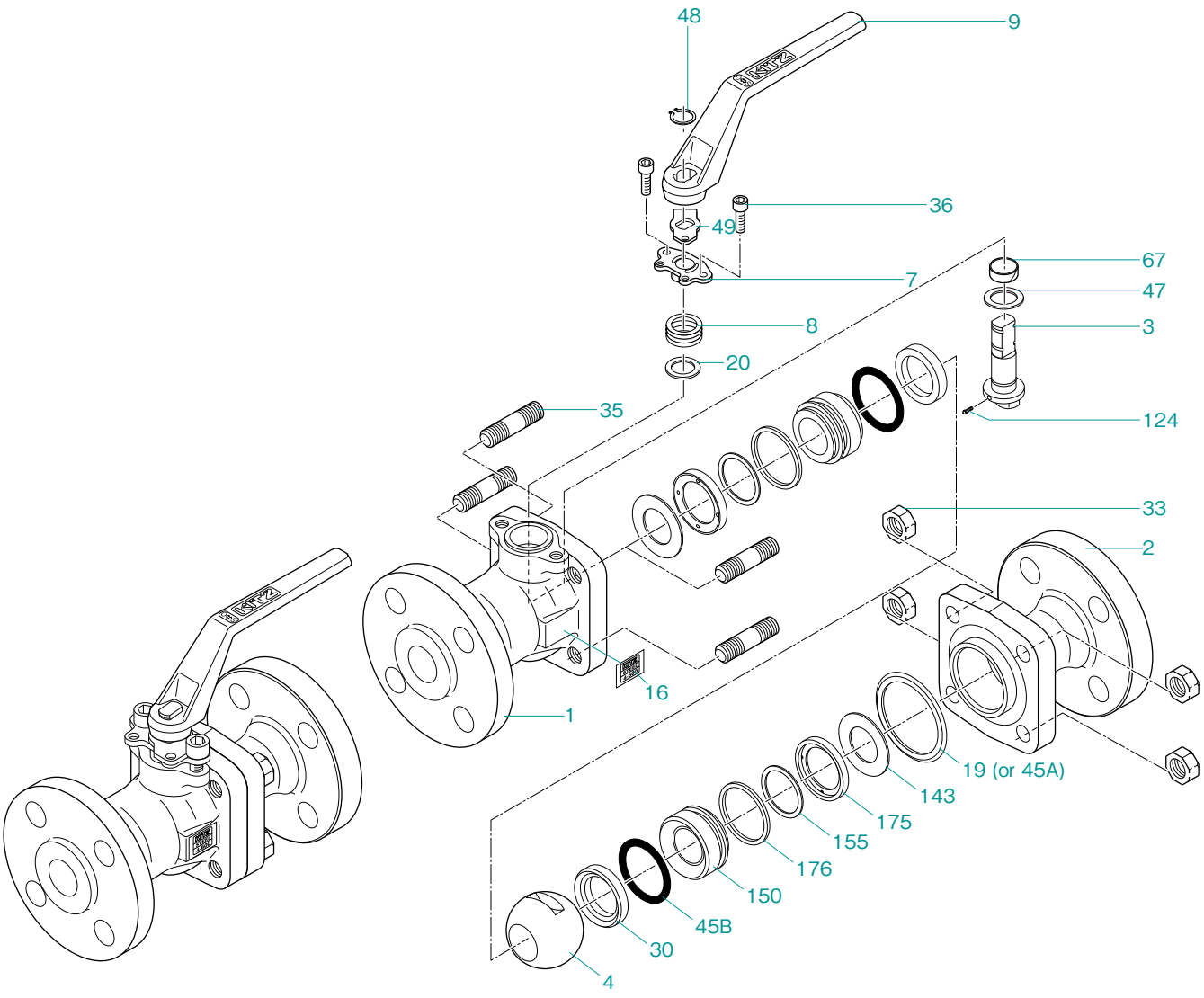


Illustration shows NPS 1/2 design.

Construction and Materials

No.	Parts	Standard	
		1500UTB(S)	1500UTB(S)M
1	Body	A351 Gr. CF8*2	A351 Gr. CF8M*2
2	Body cap		
3	Stem	A276 Type 304*2	A276 Type 316*2
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	
33	Cap nut	A194 Gr. 8	
35	Cap bolt	A193 Gr.B8	
36	Grand bolt	Stainless steel	
45A	O-ring	FKM	
45B	O-ring	FKM	
47	Thrust washer	Metal-backed PTFE	
48	Snap ring	A276 Type 304	
49	Stopper	A276 Type 304	
67	Stem bearing	G/F PTFE	
85	Plug	A276 Type 316	
124	Spring & pin	A313 & A276 Type 316	
143	Seat spring	A276 Type 304	INCONEL® X-750
146	Back-up ring	PTFE	
150	Seat retainer	A276 Type 304	A276 Type 316
155	Spacer*1	PTFE	
175	Retainer gland*1	A276 Type 304	A276 Type 316
176	Retainer packing*1	Flexible graphite	

*1 부품은 Super Firesafe에만 적용 가능
*2 다른 Stainless 재질도 가능(Option)
*모든 부품 번호는 밸브 조립 도면에 표시된 번호와 일치한다.

■Standard materials can be used for to sour service.

No.	Parts	Standard	Fire-safe
		1500SCTB	1500SCTBS
1	Body	A216 Gr. WCB*1	
2	Body cap		
3	Stem	A276 Type 304*2	
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	
33	Cap nut	A194 Gr. 2H	
35	Cap bolt	A193 Gr. B7	
36	Gland bolt	Alloy steel	
45A	O-ring	NBR	—
45B	O-ring	NBR	
47	Thrust washer	Metal-backed PTFE	
48	Snap ring	Carbon steel	
49	Stopper	Stainless steel	
67	Stem bearing	G/F PTFE	
85	Plug	A576 Gr. 1025 Zn plating	
124	Spring & pin	A313 & A276 Type 316	
143	Seat spring	A276 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 저온용 재질도 Option으로 가능
*2 Type 316 재질의 Ball과 Stem 가능(Option)
*3 이러한 부품은 Fire safe에만 사용 된다

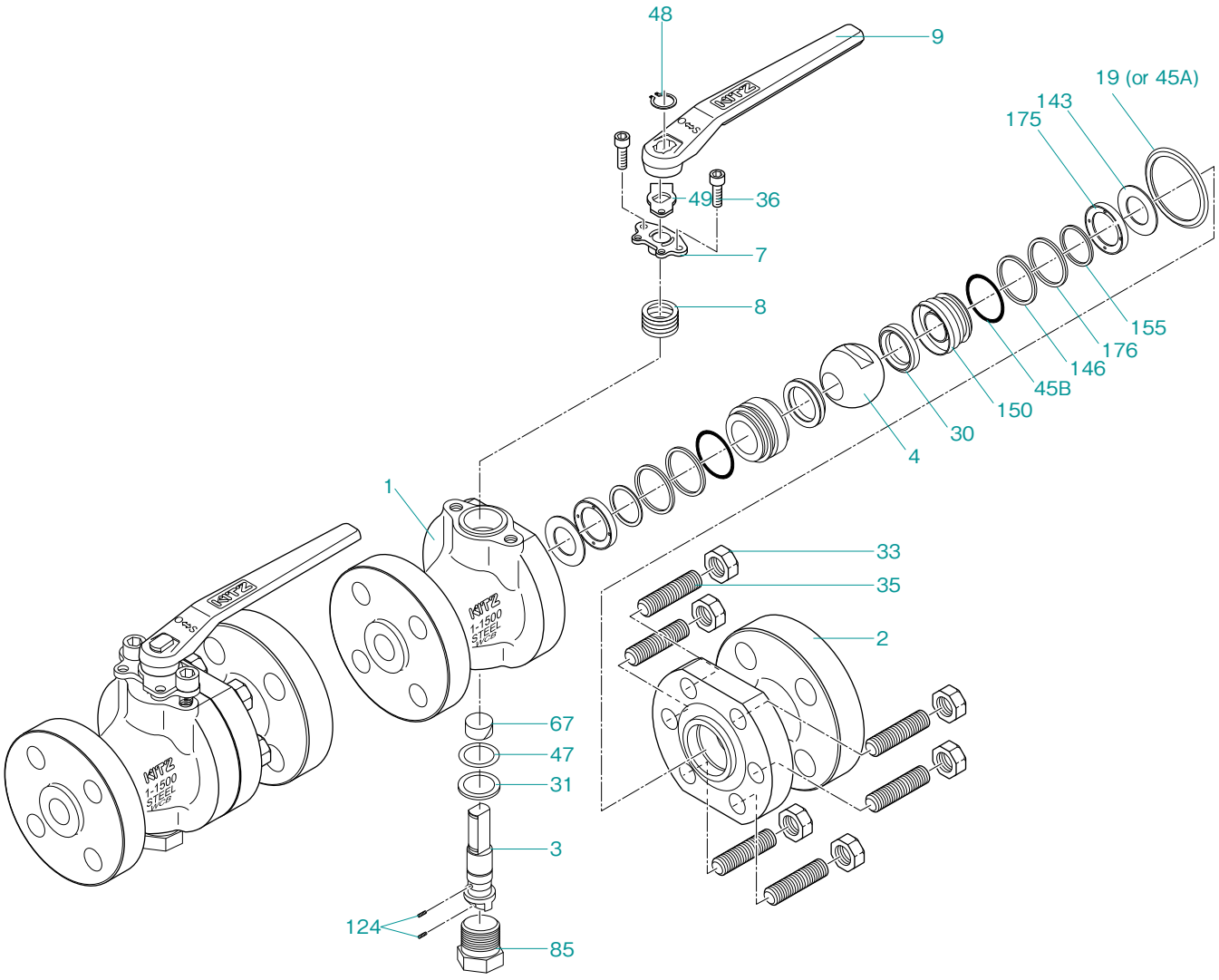
모든 부품 번호는 밸브 조립 도면에 표시된 번호와 일치한다.

■Optional materials are available for sour service.

Page 49의 그림을 참조하십시오.

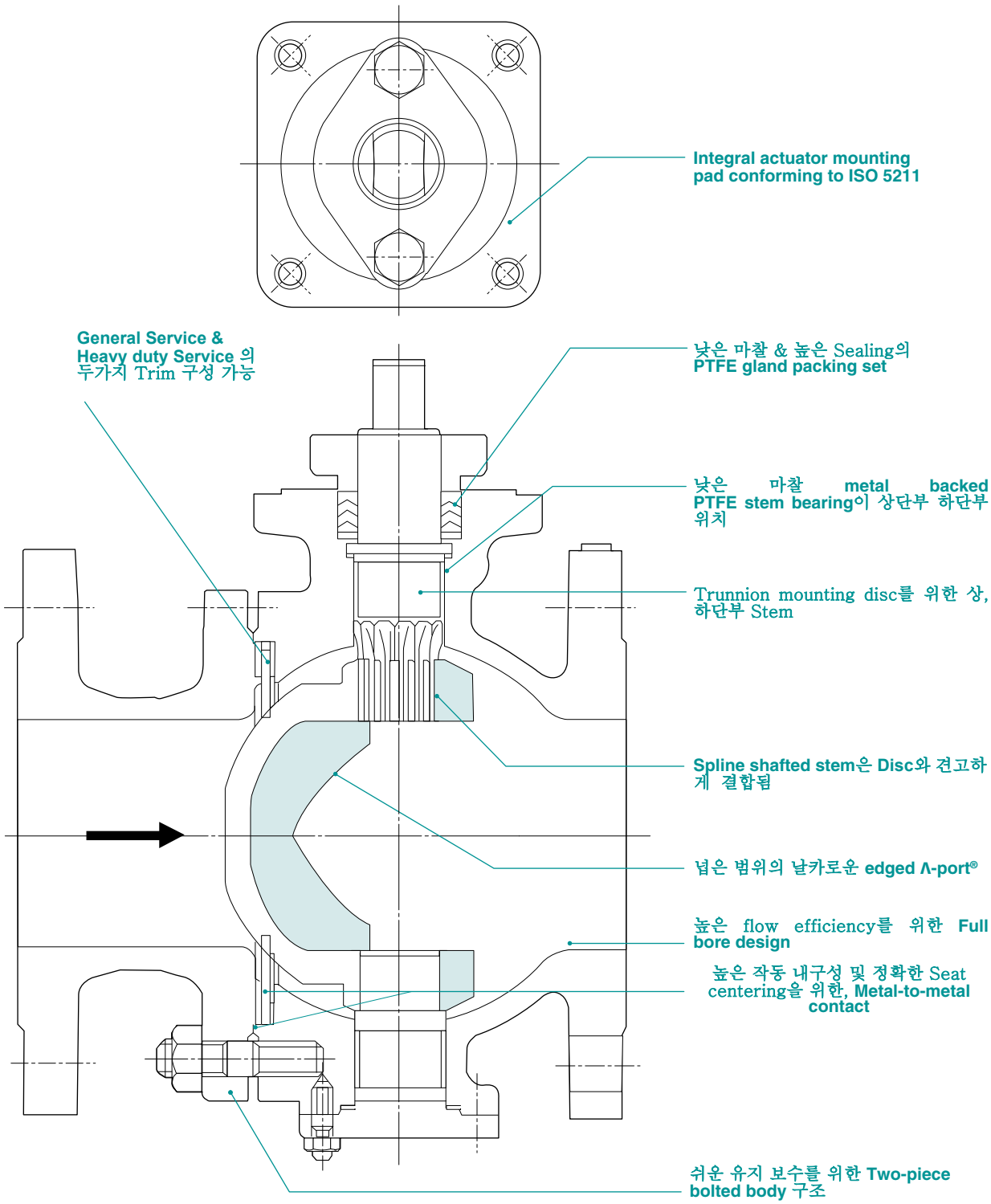
Construction and Materials

■Class 1500 Floating Ball Valve



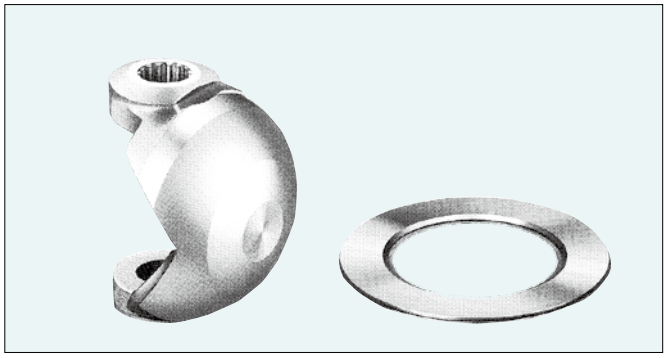
Λ (Lambda)-Port® Control Valves

Design Features



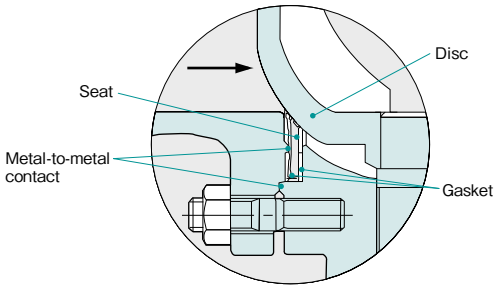
Design Features

1. Sharp solid cutting
Trunnion Mounted disc는 유체에 혼합된 고형물과 섬유질 물체를 절단하여 밸브 닫힘 작동을 원활하게 하도록 하고, 밸브 Bore내부의 유체잔류물을 최소화하기 위하여 모서리가 날카로운 모양으로 형성되어 있습니다.

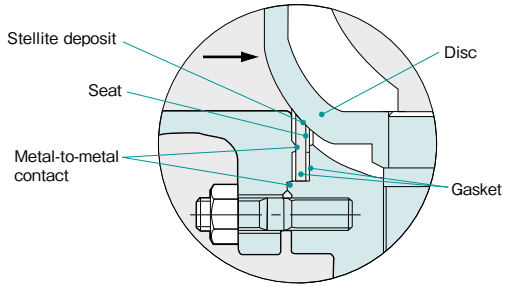


2. 두 가지 Trim 선택
사용 조건에 따라서 두가지의 Trim중 선택이 가능합니다.

FLEAKSEAT : Spring Steel Type 316으로 제작된 FLEAKSEAT는 Hard-Chromium 도금 CF8M Disc와의 접촉에 탄성을 부여하여 Sealing 성능을 향상시켜 줍니다. 이 Seat는 밸브를 차단할 때 보다 높은 Sealing 성능이 요구되는 펄프 및 제지 공장 프로세스 제어 및 서비스에 사용이 권장 됩니다. 해당 Seat는 조절서비스(Throttling Service)에 적합합니다. (KITZ Fig. UVC)



KNIFESEAT : Stellite 강재타입 316으로 제조된 KNIFESEAT는 하드크롬 도금 CF8M Disc와 접촉하여, Heavy Duty 환경에도 사용이 가능합니다.슬러리(Slurry)를 사용하거나 마모가 될수 있는 환경에서도 해당 Seat의 사용을 추천합니다. 또한 펄프나 제지와 같은 점성이 높은 공정과정에서 사용가능하며 조절서비스(Throttling Service) 분야에서 사용하는것도 추천드립니다. (KITZ Fig. UVCT)



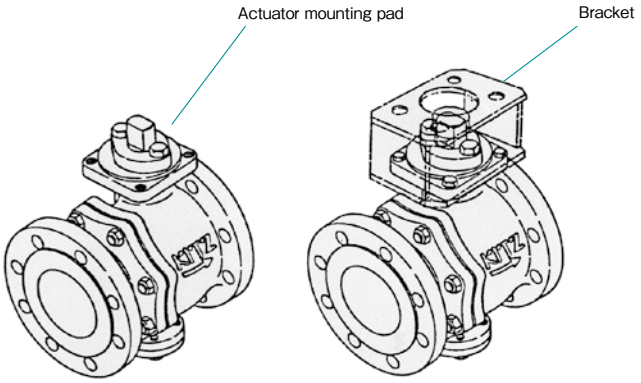
3. 구조의 신뢰성
Metal-to-metal의 연결은 Seat의 정확한 Centering(중심조절)과 적절한 가압력을 위해 Body와 Cap, Seat와 Cap사이에 공간을 만듭니다. Spline Shafted Stem의 끝 부분은 Disc와 단단히 결합되어 정확한 Centering과 높은 작동 내구성을 제공합니다. 또한, Disc의 Trunnion mounting은 밸브의 구조적 확실성을 비정상적인 배관응력(Piping Stress)로 부터 향상시키는데 도움이 됩니다.

4. 안정화된 작동 torque
Metal Backed PTFE Stem Bearing은 밸브작동 토르크(Torque)를 최소화하고 안정화하기 위하여 Stem의 위아래에 사용됩니다. 정교하게 가공된 Disc 표면과 Sliding Part의 표면이 밸브작동을 순조롭게 하는데 도움이 됩니다.

5. 쉬운 유지보수
Two-Piece Split Body 구조는 항상 점성(Viscous)또는 섬유성유체(Fibrous Fluid)를 취급하는데 있어 매우 중요한 유지보수를 용이하게 해줍니다.

6. 높은 유량 효율
Full Bore 디자인은 압력손실을 최소화하면서, 최대화되고 선형적인 흐름특성을 보장하여 점성 또는 섬유성 유체가 밸브 Bore를 부드럽게 통과할수 있도록 도와줍니다.

7. 밸브 자동화
Quarter-turn 밸브 구동 메커니즘을 통해 전기 및 공압 액츄에이터 같은 밸브 자동화 수단을 기술적으로 쉽게 장착할 수 있습니다. 일체형 패드(Integral pad)는 ISO표준에 따라 현장에서 밸브 Gland가 분해되지 않고 쉽고 안전하며 확실한 액츄에이터 장착을 위해 제공됩니다.
Note: 고객사들은 아래그림과 같이 밸브작동을 위하여 선택한 Mounting Bracket과 Connector를 사전에 준비해야 합니다.



Caution: KITZ Λ-*port*® control valves 는 단방향(uni-directional) 흐름 제어를 위해 설계 되었다. 흐름 방향이 밸브 Body에 주조된 화살표 표시의 방향과 일치하도록 밸브를 올바르게 장착하십시오

Design Data

Design Specifications

Valve Structure	Split body side entry, RF-flanged, full bore, trunnion mounted disc
Wall thickness	ASME B16.34 Class 150/Class 300
F-F dimensions	JIS B2002 or ASME B16.10 Class 150/Class 300 for ball valves
End connection	RF-flanged to JIS B2220 10K/20K or ASME B16.5 Class 150/Class 300
Actuator mounting pad	ISO 5211
P-T rating	JIS B2220 10K/20K or ASME B16.34 Class 150/Class 300
Operation	Quarter-turn

Test Pressure

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

Maximum Allowable Seat Leakage {Per minute under 0.4 MPa test pressure}

Nominal Size		FLEKSEAT (UVC)			KNIFESEAT (UVCT)	
NPS	DN	Cv at full opening	Hydrostatic (cc/min)	Pneumatic (NL/min)	Cv at full opening	Hydrostatic (L/min)
1	25	25	3.6	1.08	31	4.45
1½	40	85	12.2	3.66	100	14.4
2	50	145	20.8	6.24	160	23.0
2½	65	240	34.5	10.35	265	38.1
3	80	380	54.6	16.38	400	57.5
4	100	550	79.0	23.70	585	84.1
5	125	960	138	41.40	1010	145
6	150	1500	216	46.80	1550	223
8	200	2700	388	116.40	2750	395
10	250	4300	618	185.40	4400	632
12	300	6200	891	267.30	6300	905
14	350	8200	1178	353.40	8300	1193

Condition: Absolute air pressure 0.1 MPa at 20℃

Class 150/10K Lever Oprated Λ-port® Control Valves

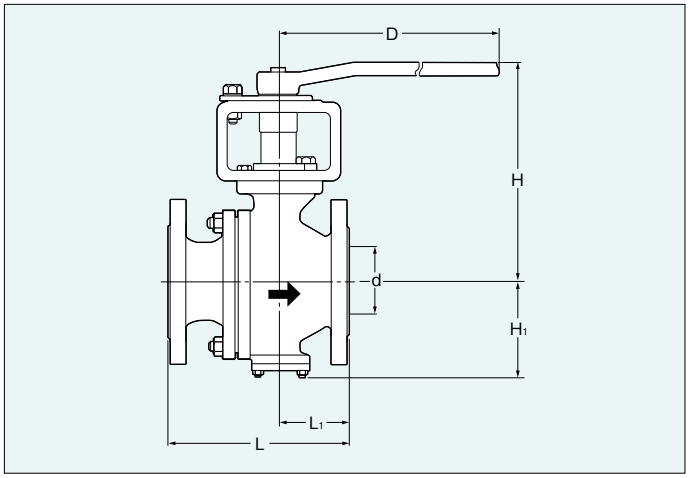
Trim
FLEKSEAT
KNIFESEAT

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

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

CF8M valve body일 경우, KITZ Fig.에 "M".이 붙음

Page 101 for Pressure-Temperature Ratings.



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

Unit: mm

Nominal Size	NPS	1	1½	2	2½	3	4	5	6	8
	DN	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		181	198	204	245	252	283	305.5	392	460
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

Refer to "Product Range" on Page 4.

Class 150/10K Gear Oprated Λ-port® Control Valves

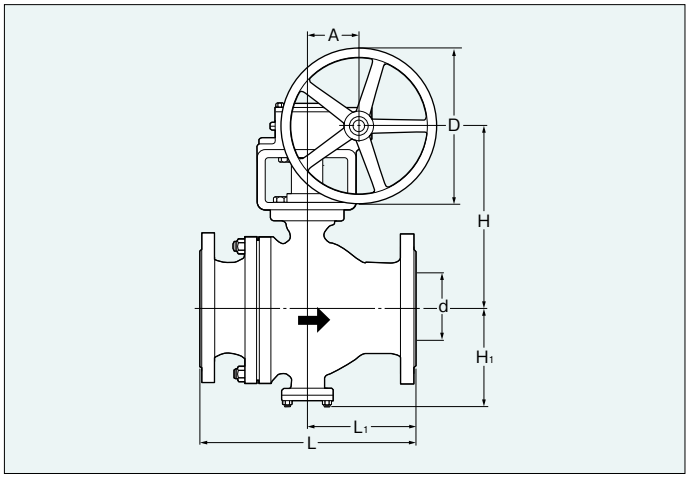
Trim
FLEKSEAT
KNIFESEAT

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

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

CF8M valve body 일 경우, KITZ Fig.에 "M".이 붙음

Page 101 for Pressure-Temperature Ratings.



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

Unit: mm

Nominal Size	NPS	5	6	8	10	12	14
	DN	125	150	200	250	300	350
d		127	152	203	254	305	337
L		356	394	457	533	610	686
L_1		158	197	228.5	266.5	260	293
H		311	330	410	446	524	547.5
H_1		157	182	226.5	268.5	365.5	403.5
D		310	310	360	500	500	500
A		65.5	65.5	88.5	93.5	134	134

Refer to "Product Range" on Page 4.

Class 300/20K Lever Oprated Λ-port® Control Valves

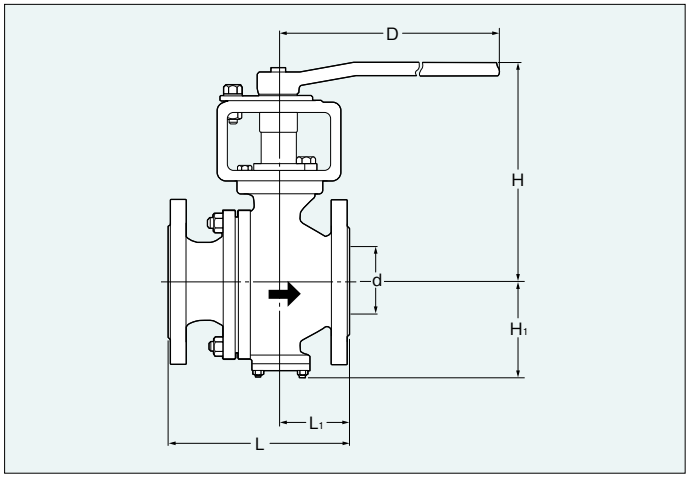
Trim
FLEKSEAT
KNIFESEAT

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

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

CF8M valve body 일 경우, KITZ Fig.에 "M".이 붙음

Page 101 for Pressure-Temperature Ratings.



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

Unit: mm

Nominal Size	NPS	1	1½	2	2½	3	4	5	6	8
	DN	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		181	198	204	245	252	283	305.5	392	460
H_1		72	79	88	100	109	135	157	182	226.5
D		160	230	230	400	400	460	460	1000	1500

Refer to "Product Range" on Page 4.

Class 300/20K Gear Oprated Λ-port® Control Valves

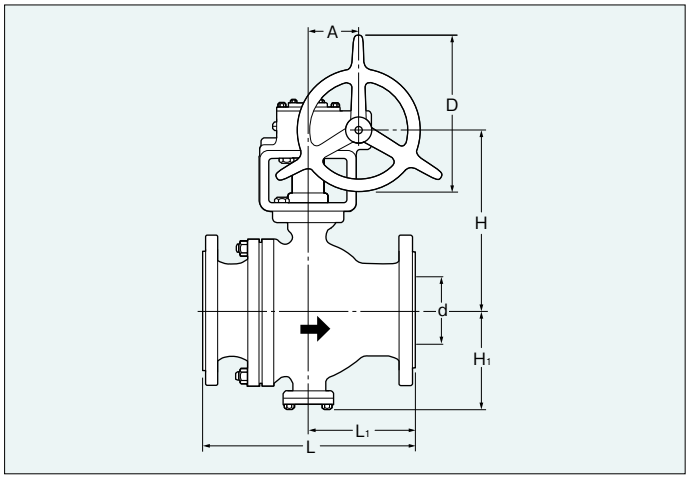
Trim
FLEKSEAT
KNIFESEAT

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

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

CF8M valve body 일 경우, KITZ Fig.에 "M".이 붙음

Page 101 for Pressure-Temperature Ratings.



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

Unit: mm

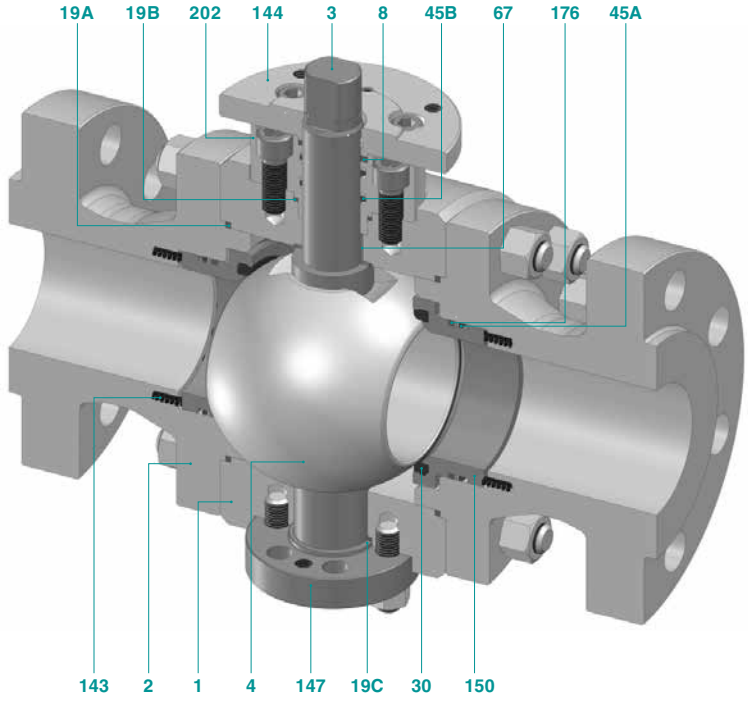
Nominal Size	NPS	6	8	10
	DN	150	200	250
d		152	203	254
L		403	502	568
L_1		182	228.5	242.5
H		330	410	446
H_1		182	226.5	268.5
D		310	360	500
A		65.5	88.5	93.5

Refer to "Product Range" on Page 4.

T60S Soft Seated 3-Piece Body Trunnion Mounted Ball Valves

Component Drawing

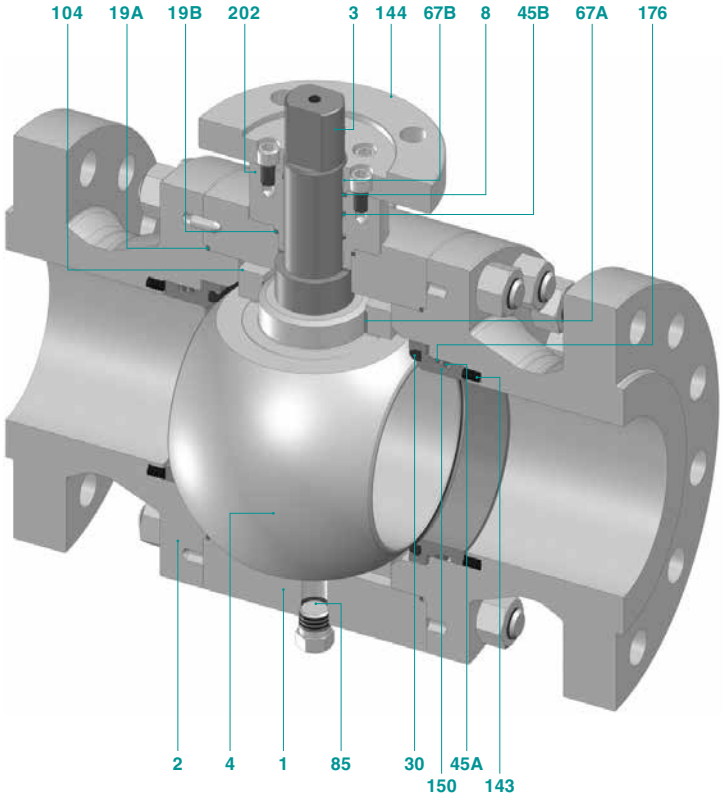
Up to NPS 4



1	Body*
2	Cap*
3	Stem
4	Precision machined ball
8	Fire-safe gland packing (Flexible graphite)
19A	Gasket (Flexible graphite)
19B	Gasket (Flexible graphite)
19C	Gasket (Flexible graphite)
30	Ball seat
45A	O-ring
45B	O-ring
67	Stem bearing (Metal + R-PTFE)
143	Seat spring
144	Gland plate
147	End plate
150	Seat retainer
176	Fire-safe retainer packing (Flexible graphite)
202	Bonnet

*Note: Made of forged carbon steel, low alloy steel and high alloy steel. Made of forged or cast austenitic stainless steel, duplex stainless steel and other special alloy materials. Contact KITZ for current available materials.

NPS 6 and over



1	Body*
2	Cap*
3	Stem
4	Precision machined ball
8	Fire-safe gland packing (Flexible graphite)
19A	Gasket (Flexible graphite)
19B	Gasket (Flexible graphite)
30	Ball seat
45A	O-ring
45B	O-ring
67A	Curl bearing (Metal + R-PTFE)
67B	Stem bearing (PTFE)
85	Plug
104	Trunnion plate
143	Seat spring
144	Gland plate
150	Seat retainer
176	Fire-safe retainer packing (Flexible graphite)
202	Bonnet

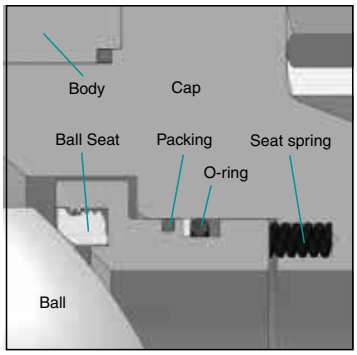
*The illustration shown in this catalog represents the typical structure of Class 600 valves.
The structure may differ depending on sizes and classes. Please consult KITZ for more details on the specifications and structure of the valve.

Design Features

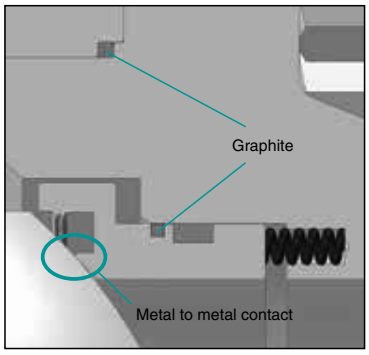
1. Fire Safe Design

(1) Internal Leakage Prevention (내부 누출 방지)
공장 내 화재로 인하여 Resilient Sealing 자제가 손상되거나 파괴되면 Seat Spring에 의해 사전 설치된 상.하부 Metal Seat Retainer의 가장자리가 Ball 과 접하여 밸브 Bore를 통한 내부 누출을 최소화 합니다. 그리고 KITZ 설계의 Flexible Graphite Seat Retainer Packing Ring은 공장 화재 발생 중 또는 발생 후에 밸브 Cap과 Seat Retainer 사의의 유류(Oil) 누출을 방지합니다.

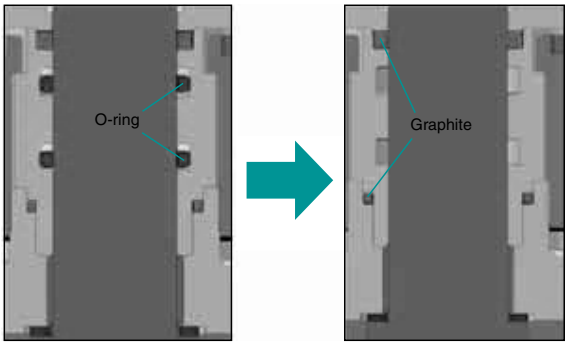
(2) External Leakage Prevention (외부 누출 방지)
Stem 주변의 외부누출은 O-ring의 이중밀봉과 Flexible Graphite Gland Packing Ring에 의해 예방됩니다. 밸브 Body Joint를 통한 누출은 Flexible Graphite Gasket으로 부터 보호됩니다. 화재 발생후, O-ring이 손상되더라도, Flexible Graphite Gland Packing Ring과 Gasket이 온전히 남아있기 때문에 외부누출을 차단할수 있습니다.



Before



After



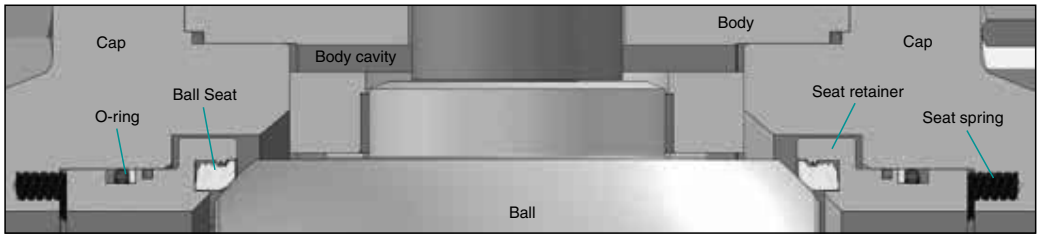
Before After

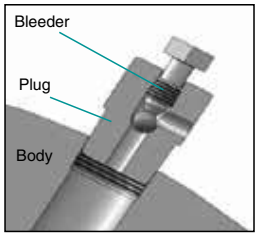
2. Tight Shut-off Sealing Mechanism

Resilient Seat 디자인은 Seat Retainer 뒤에 삽입된 Seat Spring의 힘을 제거하여 각 상부 하부 Ball Seat를 Ball 과 적절하게 접촉시킵니다. 유체 압력은 이러한 연결방식에 도움이 됩니다. 이러한 Sealing 메커니즘은 상.하부 Ball Seat의 실패 없는 Thru-the-bore sealing의 특징을 가지고 있습니다.

3. Double Block and Bleed Function

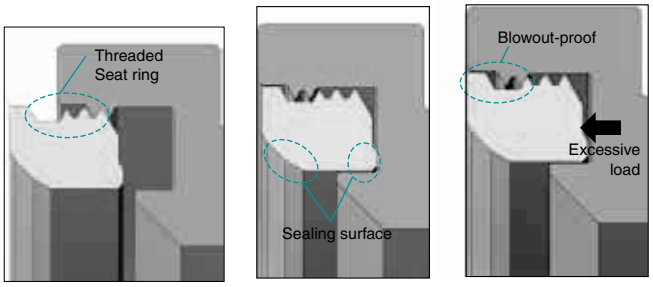
Ball Seat는 Ball의 상,하부에 있는 유체를 독립적으로 차단합니다. 밸브 Bore 및 Body Cavity도 밸브가 압력을 받을 때 환기밸브(Vent Valve)와 배출 플러그(Drain Plug)를 사용하여 배출 될 수 있습니다. 환기 밸브는 안전한 방전(discharge)을 위하여 Blowout-proof Bleeder와 함께 설치됩니다. 안전한 배출을 위하여 Cavity 압력을 낮추는것이 좋습니다.





4. Blowout-proof Ball Seat Assembly

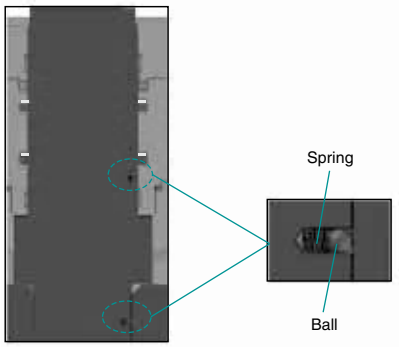
아래 그림과 같이, Ball Seat는 나사산이 없는(Unthreaded) Seat Retainer 뒤에 끼워져 Seat Retainer의 안쪽 벽과 하단 Shoulder 부위까지 닿아 표면과 접촉면을 단단히 봉합니다. 이러한 독특한 디자인은 Ball Seat가 부수적인 Cavity 압력 상승으로 인해 역압에 의해 과도하게 적재될 때 쉬운 유지보수와 Blowout-proof Seat Assembly를 제공합니다.



Assembly　Fully closed　During operation

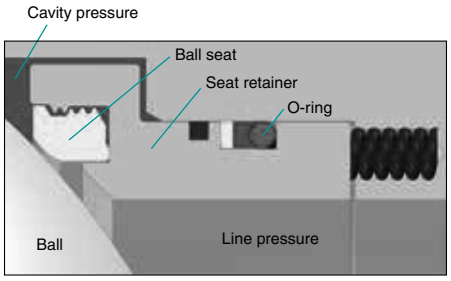
5. Antistatic Design

Stem과 Bonnet 사이에, Stem과 Ball 사이에 조립된 스프링 장착 볼(Spring Loaded Ball)은 모든 금속밸브 구성품들을 통해 전기전도성(Electric Conductivity)을 허용합니다.



6. Cavity Pressure Relief

사용온도 및 주변온도가 상승할 경우, 액화가스 또는 휘발성이 높은 액체가 Body Cavity 내에 갇힐수 있으며, 이로 인해 Cavity압이 과도하게 상승할 수 있습니다. 안전을 위해 Cavirty압력이 Line압력을 초과할 경우, 두 Ball Seat중 하나가 Seat Retainer와 함께 Ball 표면에서 약간 떨어져 밸브 Bore로 유입되는 Cavity압력을 완화합니다.



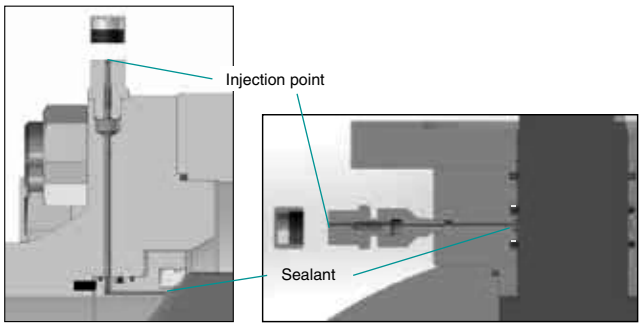
7. Low Emission Guaranteed Design

Resilient Seated 밸브와 Metal Seated밸브에 대한 비산배출 억제 설계(The Fugitive Emission Suppressing Desing)는 ISO 15848 tightness class "B"에 의해 인증됩니다. (Stem 누출일 경우 . 10-4 mg/s-1 ·m-1 미만, Body 누출일 경우 50ppmv미만). 이는 밸브의 Sealing 매커니즘의 Low Emission 성능이 뛰어나다는 점을 입증합니다.

8. Options*1

(1) Emergency Seal Restoration*2

사고로 발생할수 있는 Ball Stem 또는 Sealing Area 부위에서 일어나는 누수는, 밀폐재(Sealant Supply)가 선택적으로 제공될수 있습니다. 화재나 기타 우발적인 사고로 인하여 Sealing Part가 손상을 입거나 분해되는 경우, 이 메커니즘에 Sealant 주입을 통해 일시적으로 누출을 방지하거나 줄일 수 있습니다.



Ball seat area　Stem area

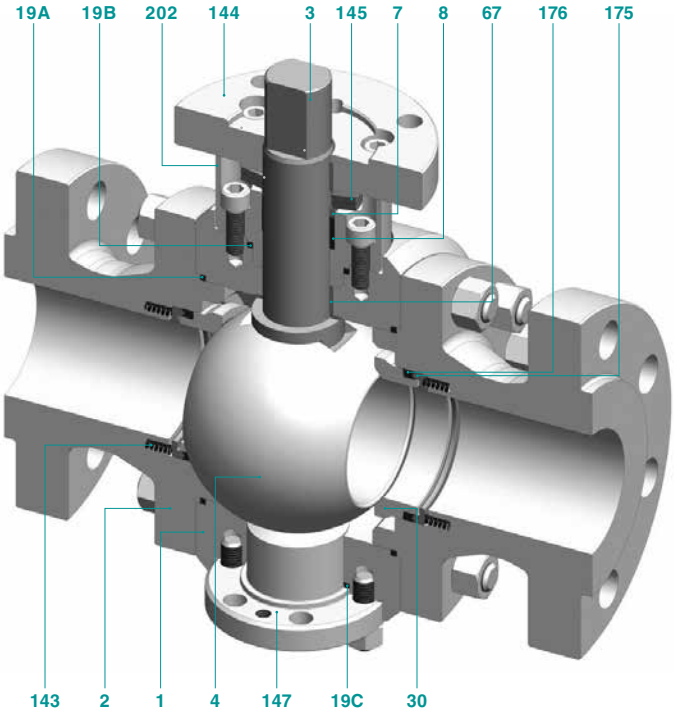
(2) Special Shell and Trim Materials
(3) Special Sealing Component Materials
(4) Butt-weld Piping Connection
(5) Pipe Pups Welded to Valve Ends
(6) DIB: Double Isolation and Bleed (Double Seal)*3
(7) Stem Extension
(8) Overlay for Bore and Cavity
(9) Actuation (Pneumatic and Electric)

*1 For all optional provisions, please contact your local KITZ agents or distributors.
*2 Standard design for North America.
*3 Any combination of DPE (Double Piston Effect)/SPE (Single Piston Effect) is available.

T60M Metal Seated 3-Piece Body Trunnion Mounted Ball Valves

Component Drawing

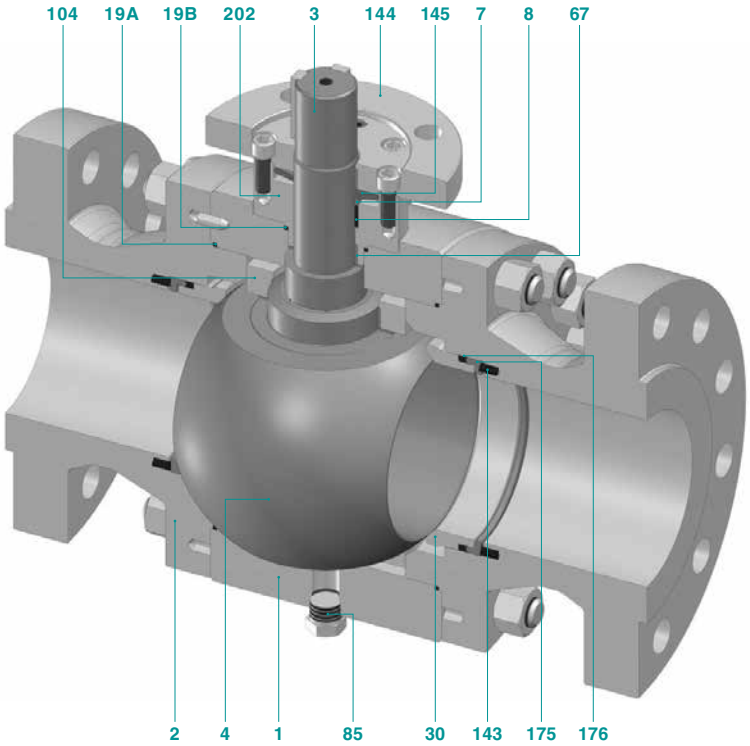
Up to NPS 4



1	Body*
2	Cap*
3	Stem
4	Precision machined ball
7	Gland
8	Gland packing (Flexible graphite)
19A	Gasket (Flexible graphite)
19B	Gasket (Flexible graphite)
19C	Gasket (Flexible graphite)
30	Ball seat
67	Stem bearing
143	Seat spring
144	Gland plate
145	Coned disc spring
147	End plate
175	Retainer gland
176	Seat packing (Flexible graphite)
202	Bonnet

*Note: Made of forged carbon steel, low alloy steel and high alloy steel. Made of forged or cast austenitic stainless steel, duplex stainless steel and other special alloy materials. Contact KITZ for current available materials.

NPS 6 and over



1	Body*
2	Cap*
3	Stem
4	Precision machined ball
7	Gland
8	Gland packing (Flexible graphite)
19A	Gasket (Flexible graphite)
19B	Gasket (Flexible graphite)
30	Ball seat
67	Stem bearing
85	Plug
104	Trunnion plate
143	Seat spring
144	Gland plate
145	Coned disc spring
175	Retainer gland
176	Seat packing (Flexible graphite)
202	Bonnet

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

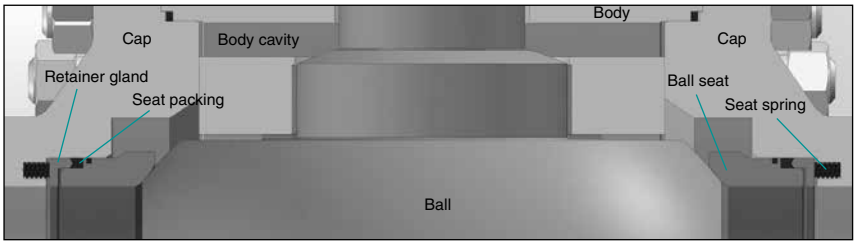
Design Features

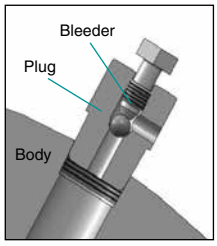
1. Tight Shut-off Sealing Mechanism

Metal Seat 디자인은 Resilient Seat 디자인처럼 Seat Retainer 뒤에 삽입된 Seat Spring의 힘을 제거하여 Ball Seat의 상부와 하부를 Ball과 적절하게 접촉시킵니다. Line압력도 이러한 연결방식에 도움이 됩니다. 이러한 Sealing Mechanism은 Side Ball Seat 상.하부동시에 실패없는 Thru-the-Bore-Sealing 기능을 제공합니다. Ball과 Ball Seat의 접하는 표면은 고 합금 물질이 열에의해 분사됩니다. 이러한 방식은 고온이나 연마성이 높은 환경에서 강한 내마모성(Wear Resistance)및 내구성(Durability)을 제공합니다.

2. Double Block and Bleed Function

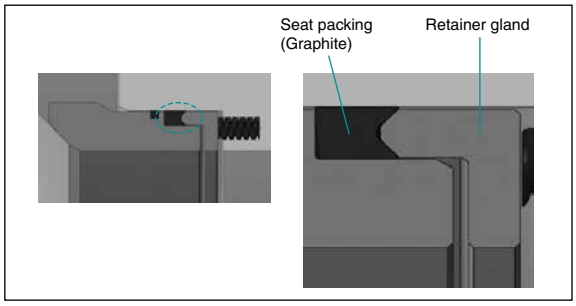
Ball Seat는 독립적으로 Ball의 상.하부에서 유체와의 흐름을 차단할 수도 있습니다. 밸브가 개폐될 때, 밸브의 Bore와 Body Cavity는 서로에게서 멀어집니다. 이러한 상황에서 Cavity압력은 Vent밸브와 Drain Plug에 의해서 낮아질수 있습니다. Vent밸브는 안전한 방전을 위해 Blowout-proof Bleeder 장치가 장착되어 있습니다. Cavity 압력을 안전하게 줄이기 위해서는 Vent 밸브 사용을 권장합니다.





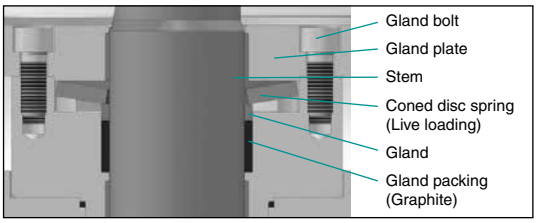
3. High Performance Seat Packing

Retainer Gland와 함께 제공되는 특수 Graphite Seat Packing Ring은 밸브를 사용하는 동안 확실한 Shut-off Sealing 기능을 합니다. (특허 진행중)



4. Live Loaded Packing Structure

Gland Packing Ring은 고깔모양 Disc Spring으로 압축되어 압력완화를 방지합니다. 이러한 Lived Loaded Packing System이 Packing의 재조임없이 내구성이 뛰어난 Sealing 성능을 제공합니다.



5. Cavity Pressure Relief

6. Low Emission Design

Please refer to Page 57.

7. Options

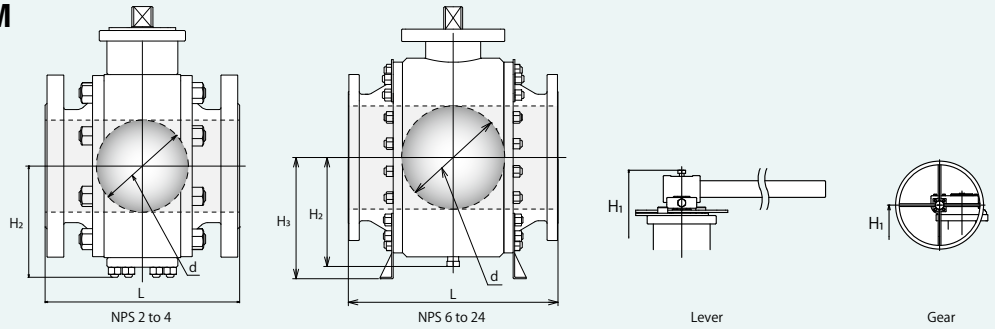
(1) Special Shell and Trim Materials
(2) Special Sealing Component Materials
(3) Butt-welding Piping Connection
(4) Pipe Pups Welded on Valve Ends
(5) Stem Extension
(6) Overlay
(7) Actuation (Pneumatic and Electric)

*For all optional provisions, please contact your local KITZ agents or distributors.

Class 150 Stainless Steel/Carbon Steel Ball Valves

3-Piece body, Side entry design

T60S/(G-)150UF3TCSM
(Full Bore)
T60S/(G-)150SF3TCS
(Full Bore)



Dimensions of T60S/(G-)150UF3TCSM, T60S/(G-)150SF3TCS

Page 95 for Pressure-Temperature Ratings.

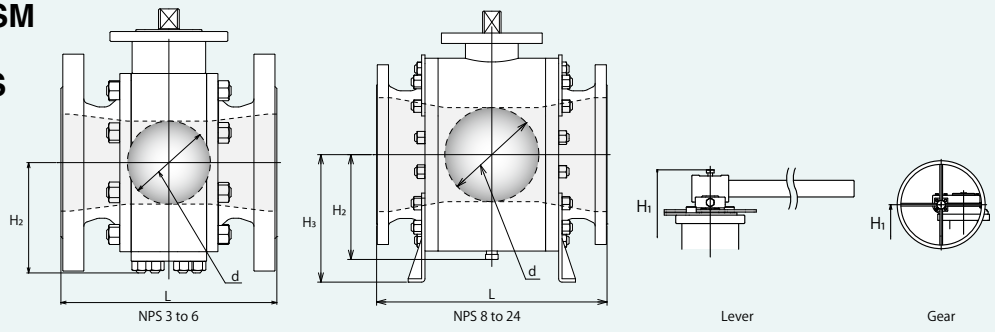
Nominal Size	NPS	2	3	4	6	8	10	12	14	16	18	20	24
	DN	50	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever				Gear							
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19	23.19
	mm	49	74	100	150	201	252	303	334	385	436	487	589
L	in.	7	8	9	15.5	18	21	24	27	30	34	36	42
	mm	178	203	229	394	457	533	610	686	762	864	914	1067
H_1	in.	6.26	7.91	10.24	12.83	12.44	14.65	16.02	17.36	20.12	21.69	24.13	27.05
	mm	159	201	260	326	316	372	407	441	511	551	613	687
H_2	in.	3.78	4.57	5.83	7.28	8.7	10.83	-	-	-	-	-	-
	mm	96	116	148	185	221	275	-	-	-	-	-	-
H_3	in.	-	-	-	-	-	-	16.77	17.48	19.61	20.71	24.33	27.44
	mm	-	-	-	-	-	-	426	444	498	526	618	697

Refer to "Product Range" on Page 6.

Class 150 Stainless Steel/Carbon Steel Ball Valves

3-Piece body, Side entry design

T60S/(G-)150UF3TCRSM
(Reduced Bore)
T60S/(G-)150SF3TCRS
(Reduced Bore)



Dimensions of T60S/(G-)150UF3TCRSM, T60S/(G-)150SF3TCRS

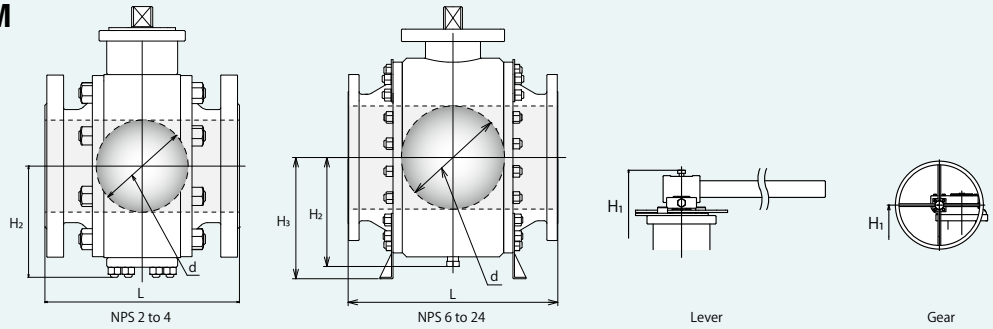
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	3	4	6	8	10	12	14	16	18	20	24
	DN	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever				Gear						
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19
	mm	49	74	100	150	201	252	303	334	385	436	487
L	in.	8	9	15.5	18	21	24	27	30	34	36	42
	mm	203	229	394	457	533	610	686	762	864	914	1067
H_1	in.	6.26	7.91	10.24	12.83	12.44	14.65	16.02	17.36	20.12	21.69	24.13
	mm	159	201	260	326	316	372	407	441	511	551	613
H_2	in.	3.78	4.57	5.83	7.28	8.7	10.83	-	-	-	-	-
	mm	96	116	148	185	221	275	-	-	-	-	-
H_3	in.	-	-	-	-	-	-	16.77	17.48	19.61	20.71	24.33
	mm	-	-	-	-	-	-	426	444	498	526	618

Class 300 Stainless Steel/Carbon Steel Ball Valves

3-Piece body, Side entry design

T60S/(G-)300UF3TCSM
(Full Bore)
T60S/(G-)300SF3TCS
(Full Bore)



Dimensions of T60S/(G-)300UF3TCSM, T60S/(G-)300SF3TCS

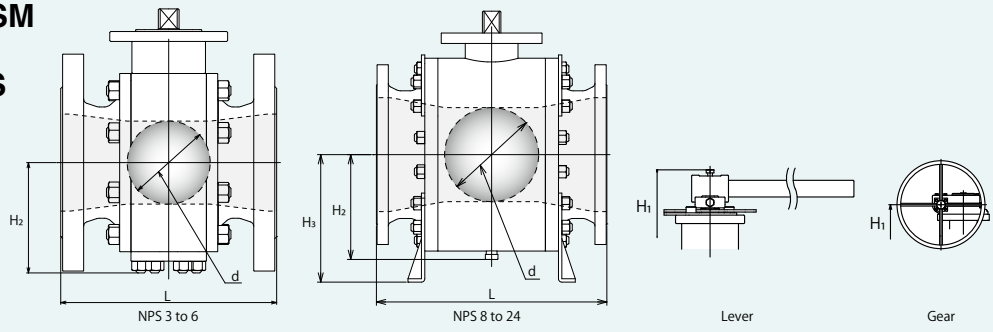
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	2	3	4	6	8	10	12	14	16	18	20	24
	DN	50	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever				Gear							
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19	23.19
	mm	49	74	100	150	201	252	303	334	385	436	487	589
L	in.	8.5	11.13	12	15.88	19.75	22.38	25.5	30	33	36	39	45
	mm	216	283	305	403	502	568	648	762	838	914	991	1143
H_1	in.	6.26	7.91	10.24	12.83	12.44	14.65	16.34	17.36	20.12	21.69	24.13	27.36
	mm	159	201	260	326	316	372	415	441	511	551	613	695
H_2	in.	3.78	4.57	5.83	7.28	8.7	10.83	-	-	-	-	-	-
	mm	96	116	148	185	221	275	-	-	-	-	-	-
H_3	in.	-	-	-	-	-	-	16.85	17.48	19.61	20.71	24.33	27.44
	mm	-	-	-	-	-	-	428	444	498	526	618	697

Class 300 Stainless Steel/Carbon Steel Ball Valves

3-Piece body, Side entry design

T60S/(G-)300UF3TCRSM
(Reduced Bore)
T60S/(G-)300SF3TCRS
(Reduced Bore)



Dimensions of T60S/(G-)300UF3TCRSM, T60S/(G-)300SF3TCRS

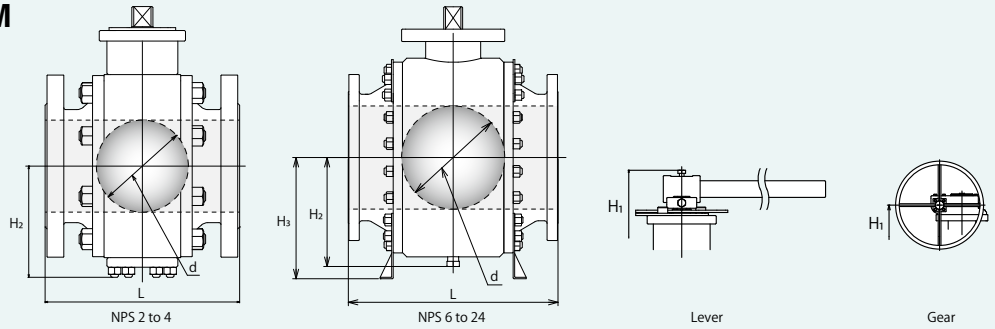
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	3	4	6	8	10	12	14	16	18	20	24
	DN	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever				Gear						
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19
	mm	49	74	100	150	201	252	303	334	385	436	487
L	in.	11.13	12	15.88	19.75	22.38	25.5	30	33	36	39	45
	mm	283	305	403	502	568	648	762	838	914	991	1143
H_1	in.	6.26	7.91	10.24	12.83	12.44	14.65	16.34	17.36	20.12	21.69	24.13
	mm	159	201	260	326	316	372	415	441	511	551	613
H_2	in.	3.78	4.57	5.83	7.28	8.7	10.83	-	-	-	-	-
	mm	96	116	148	185	221	275	-	-	-	-	-
H_3	in.	-	-	-	-	-	-	16.85	17.48	19.61	20.71	24.33
	mm	-	-	-	-	-	-	428	444	498	526	618

Class 600 Stainless Steel/Carbon Steel Ball Valves

3-Piece body, Side entry design

T60S/(G-)600UF3TCSM
(Full Bore)
T60S/(G-)600SF3TCS
(Full Bore)



Dimensions of T60S/(G-)600UF3TCSM, T60S/(G-)600SF3TCS

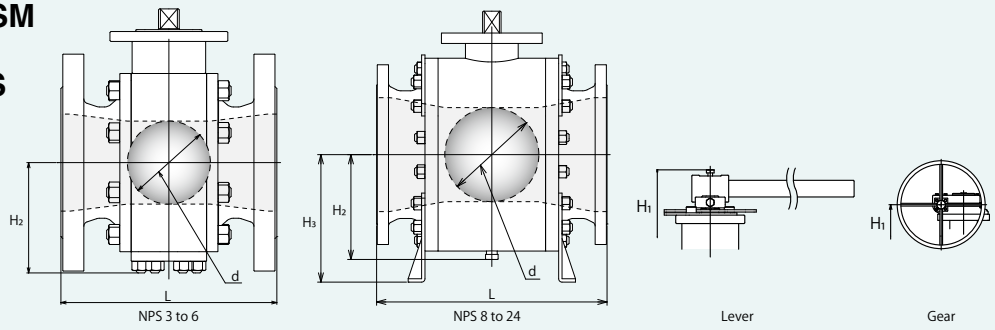
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	2	3	4	6	8	10	12	14	16	18	20	24
	DN	50	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever			Gear								
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19	23.19
	mm	49	74	100	150	201	252	303	334	385	436	487	589
L	in.	11.5	14	17	22	26	31	33	36	39	43	47	55
	mm	292	356	432	559	660	787	838	889	991	1092	1194	1394
H_1	in.	7.17	9.29	10.35	11.1	13.19	15.04	17.64	18.82	21.26	23.15	25.67	29.49
	mm	182	236	263	282	335	382	448	478	540	588	652	749
H_2	in.	3.86	4.72	5.91	7.52	9.33	-	-	-	-	-	-	-
	mm	98	120	150	191	237	-	-	-	-	-	-	-
H_3	in.	-	-	-	-	-	15.08	18.81	18.07	19.57	21.77	25.31	28.39
	mm	-	-	-	-	-	383	427	459	497	553	643	721

Class 600 Stainless Steel/Carbon Steel Ball Valves

3-Piece body, Side entry design

T60S/(G-)600UF3TCRSM
(Reduced Bore)
T60S/(G-)600SF3TCRS
(Reduced Bore)



Dimensions of T60S/(G-)600UF3TCRSM, T60S/(G-)600SF3TCRS

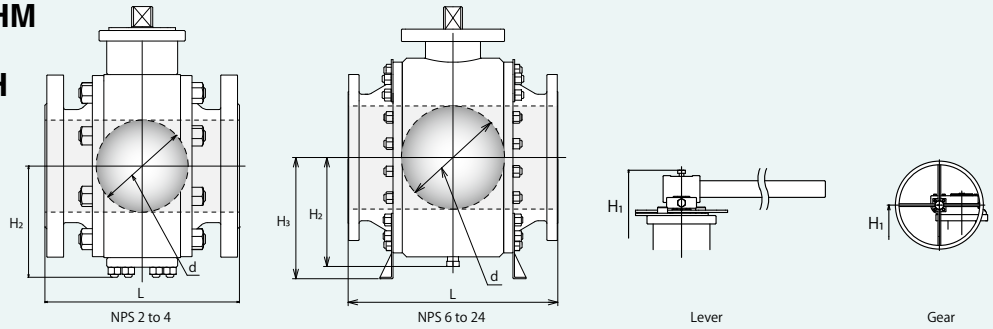
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	3	4	6	8	10	12	14	16	18	20	24
	DN	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever			Gear							
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19
	mm	49	74	100	150	201	252	303	334	385	436	487
L	in.	14	17	22	26	31	33	36	39	43	47	55
	mm	356	432	559	660	787	838	889	991	1092	1194	1394
H_1	in.	7.17	9.29	10.35	11.1	13.19	15.04	17.64	18.82	21.26	23.15	25.67
	mm	182	236	263	282	335	382	448	478	540	588	652
H_2	in.	3.86	4.72	5.91	7.52	9.33	-	-	-	-	-	-
	mm	98	120	150	191	237	-	-	-	-	-	-
H_3	in.	-	-	-	-	-	15.08	18.81	18.07	19.57	21.77	25.31
	mm	-	-	-	-	-	383	427	459	497	553	643

Class 150 Metal Seated Stainless Steel/Carbon Steel Ball Valves (Trim 6H)

3-Piece body, Side entry design

T60M/(G-)150UF3TC6HM
(Full Bore)
T60M/(G-)150SF3TC6H
(Full Bore)



Dimensions of T60M/(G-)150UF3TC6HM, T60M/(G-)150SF3TC6H

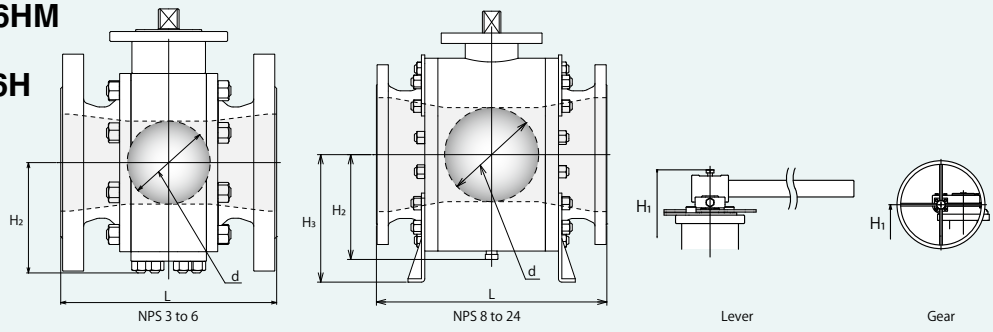
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	2	3	4	6	8	10	12	14	16	18	20	24
	DN	50	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever	Gear										
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19	23.19
	mm	49	74	100	150	201	252	303	334	385	436	487	589
L	in.	7.00	8.00	9.00	15.50	18.00	21.00	24.00	27.00	30.00	34.00	36.00	42.00
	mm	178	203	229	394	457	533	610	686	762	864	914	1067
H_1	in.	7.44	7.28	9.21	11.14	13.74	15.67	18.23	19.02	22.91	24.09	28.5	31.77
	mm	182	188	234	283	349	398	463	483	582	612	724	807
H_2	in.	3.94	4.84	5.94	7.52	9.33	11.18	–	–	–	–	–	–
	mm	100	123	151	191	237	284	–	–	–	–	–	–
H_3	in.	–	–	–	–	–	–	16.89	17.52	19.61	20.75	24.37	27.44
	mm	–	–	–	–	–	–	427	445	499	526	619	698

Class 150 Metal Seated Stainless Steel/Carbon Steel Ball Valves (Trim 6H)

3-Piece body, Side entry design

T60M/(G-)150UF3TCR6HM
(Reduced Bore)
T60M/(G-)150SF3TCR6H
(Reduced Bore)



Dimensions of T60M/(G-)150UF3TCR6HM, T60M/(G-)150SF3TCR6H

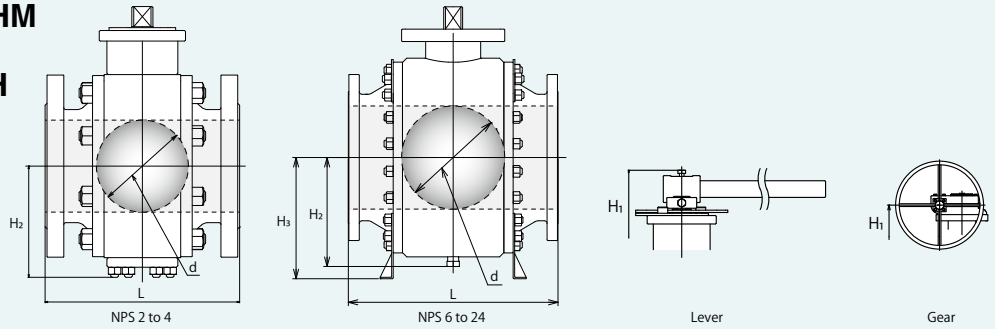
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	3	4	6	8	10	12	14	16	18	20	24
	DN	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever	Gear									
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19
	mm	49	74	100	150	201	252	303	334	385	436	487
L	in.	8.00	9.00	15.50	18.00	21.00	24.00	27.00	30.00	34.00	36.00	42.00
	mm	203	229	394	457	533	610	686	762	864	914	1067
H_1	in.	7.24	7.28	9.21	11.14	13.74	15.67	18.23	19.02	22.91	24.09	28.5
	mm	187	185	233	283	345	399	464	478	583	611	712
H_2	in.	3.94	4.84	5.94	7.52	9.33	11.18	–	–	–	–	–
	mm	96	123	154	197	241	294	–	–	–	–	–
H_3	in.	–	–	–	–	–	–	16.89	17.52	19.61	20.75	24.37
	mm	–	–	–	–	–	–	436	451	507	534	602

Class 300 Metal Seated Stainless Steel/Carbon Steel Ball Valves (Trim 6H)

3-Piece body, Side entry design

T60M/(G-)300UF3TC6HM
(Full Bore)
T60M/(G-)300SF3TC6H
(Full Bore)



Dimensions of T60M/(G-)300UF3TC6HM, T60M/(G-)300SF3TC6H

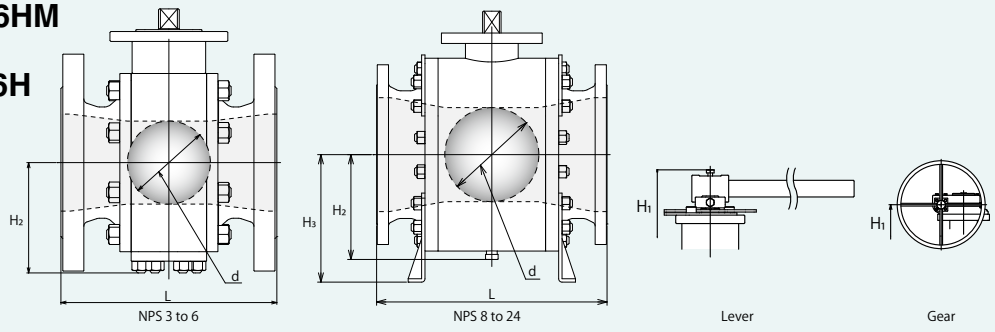
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	2	3	4	6	8	10	12	14	16	18	20	24
	DN	50	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever	Gear										
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19	23.19
	mm	49	74	100	150	201	252	303	334	385	436	487	589
L	in.	8.50	11.13	12.00	15.88	19.75	22.38	25.50	30.00	33.00	36.00	39.00	45.00
	mm	216	283	305	403	502	568	648	762	838	914	991	1143
H_1	in.	7.24	7.28	9.53	11.69	13.7	15.67	18.58	19.37	22.91	24.29	28.5	31.81
	mm	182	188	242	297	348	398	472	492	582	617	724	808
H_2	in.	3.94	4.84	5.94	7.52	9.33	11.18	–	–	–	–	–	–
	mm	100	123	151	191	237	284	–	–	–	–	–	–
H_3	in.	–	–	–	–	–	–	16.89	17.52	19.61	20.75	24.37	27.52
	mm	–	–	–	–	–	–	429	445	498	529	618	699

Class 300 Metal Seated Stainless Steel/Carbon Steel Ball Valves (Trim 6H)

3-Piece body, Side entry design

T60M/(G-)300UF3TCR6HM
(Reduced Bore)
T60M/(G-)300SF3TCR6H
(Reduced Bore)



Dimensions of T60M/(G-)300UF3TCR6HM, T60M/(G-)300SF3TCR6H

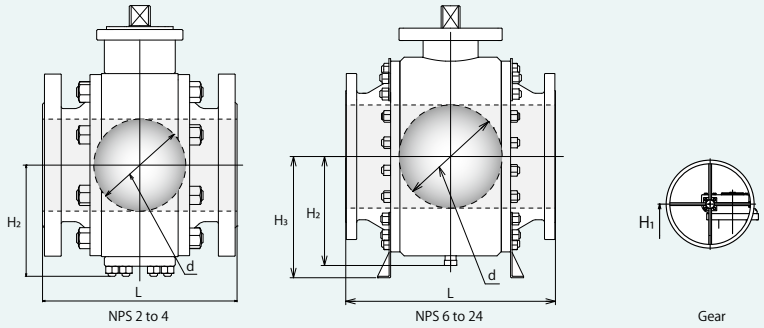
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	3	4	6	8	10	12	14	16	18	20	24
	DN	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Lever	Gear									
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19
	mm	49	74	100	150	201	252	303	334	385	436	487
L	in.	11.13	12.00	15.88	19.75	22.38	25.50	30.00	33.00	36.00	39.00	45.00
	mm	283	305	403	502	568	648	762	838	914	991	1143
H_1	in.	7.24	7.28	9.53	11.69	13.7	15.67	18.58	19.37	22.91	24.29	28.5
	mm	187	185	241	297	344	399	472	487	583	618	726
H_2	in.	3.94	4.84	5.94	7.52	9.33	11.18	–	–	–	–	–
	mm	96	123	154	197	241	294	–	–	–	–	–
H_3	in.	–	–	–	–	–	–	16.89	17.52	19.61	20.75	24.37
	mm	–	–	–	–	–	–	436	451	507	534	602

Class 600 Metal Seated Stainless Steel/Carbon Steel Ball Valves (Trim 6H)

3-Piece body, Side entry design

T60M/G-600UF3TC6HM
(Full Bore)
T60M/G-600SF3TC6H
(Full Bore)



Dimensions of T60M/G-600UF3TC6HM, T60M/G-600SF3TC6H

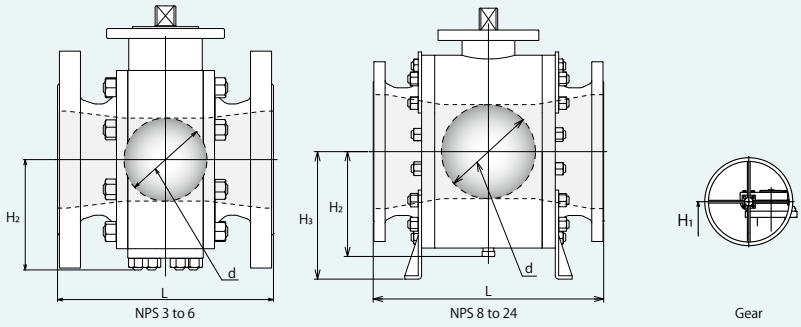
Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	2	3	4	6	8	10	12	14	16	18	20	24
	DN	50	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Gear											
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19	23.19
	mm	49	74	100	150	201	252	303	334	385	436	487	589
L	in.	11.50	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00
	mm	292	356	432	559	660	787	838	889	991	1092	1194	1397
H_1	in.	6.50	8.7	10.35	11.65	14.33	15.83	18.39	21.5	23.66	26.97	28.54	32.2
	mm	168	221	263	296	364	402	467	546	601	685	725	818
H_2	in.	4.06	5.28	6.5	7.52	9.69	–	–	–	–	–	–	–
	mm	103	134	165	191	246	–	–	–	–	–	–	–
H_3	in.	–	–	–	–	–	15.12	16.81	18.11	19.61	21.81	24.53	28.39
	mm	–	–	–	–	–	384	427	460	498	554	643	721

Class 600 Metal Seated Stainless Steel/Carbon Steel Ball Valves (Trim 6H)

3-Piece body, Side entry design

T60M/G-600UF3TCR6HM
(Reduced Bore)
T60M/G-600SF3TCR6H
(Reduced Bore)



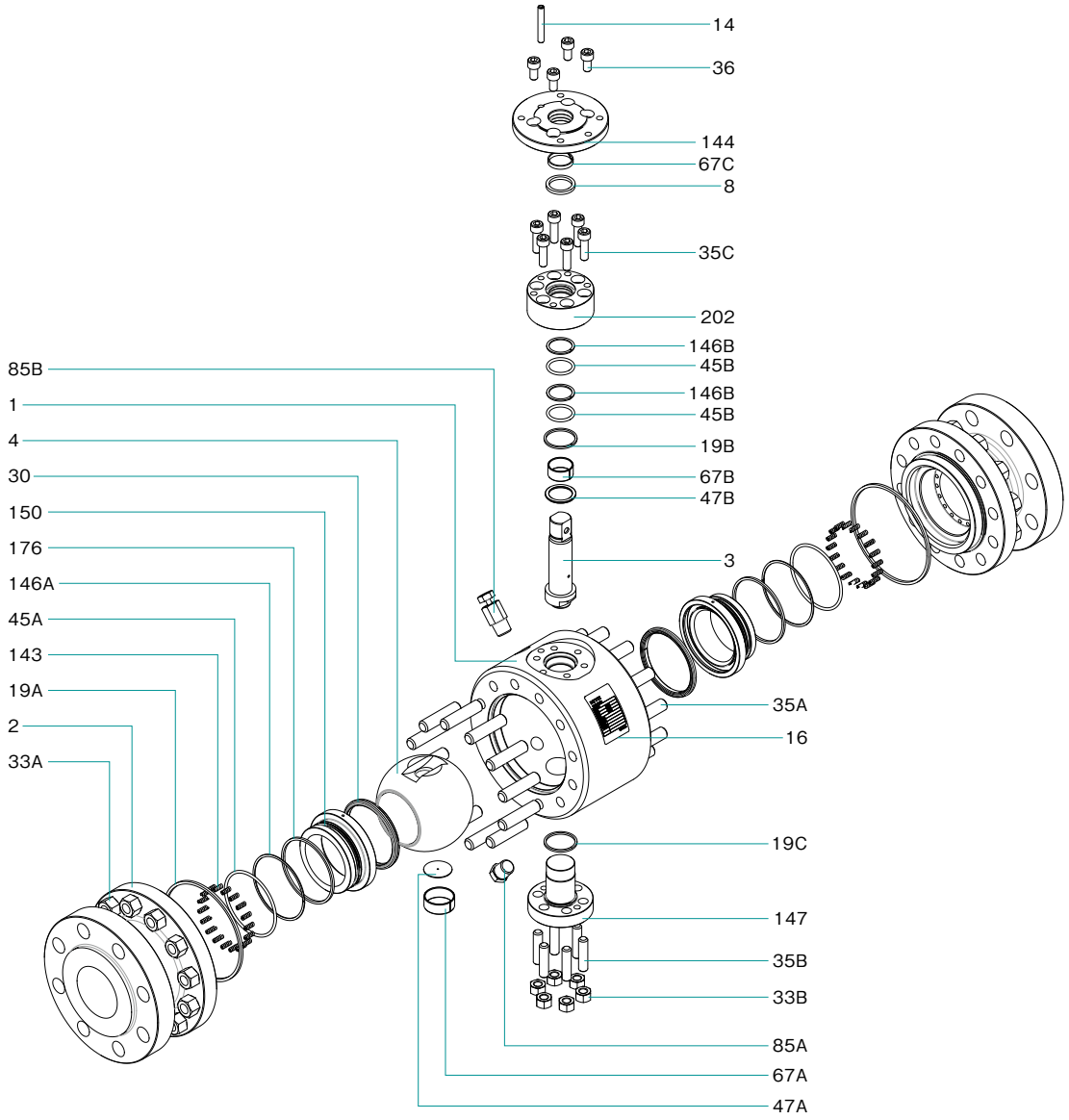
Dimensions of T60M/G-600UF3TCR6HM, T60M/G-600SF3TCR6H

Page 95 for Pressure-Temperature Ratings.

Nominal Size	NPS	3	4	6	8	10	12	14	16	18	20	24
	DN	80	100	150	200	250	300	350	400	450	500	600
Valve operator		Gear										
Ball bore	in.	1.94	2.94	3.94	5.94	7.94	9.94	11.94	13.19	15.19	17.19	19.19
	mm	49	74	100	150	201	252	303	334	385	436	487
L	in.	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00
	mm	356	432	559	660	787	838	889	991	1092	1194	1397
H_1	in.	6.50	8.7	10.35	11.65	14.33	15.83	18.39	21.5	23.66	26.97	28.54
	mm	165	220	262	296	364	403	468	547	602	685	727
H_2	in.	4.06	5.28	6.50	7.52	9.69	–	–	–	–	–	–
	mm	103	133	165	197	252	–	–	–	–	–	–
H_3	in.	–	–	–	–	–	15.12	16.81	18.11	19.61	21.81	24.53
	mm	–	–	–	–	–	394	436	469	507	563	602

Construction

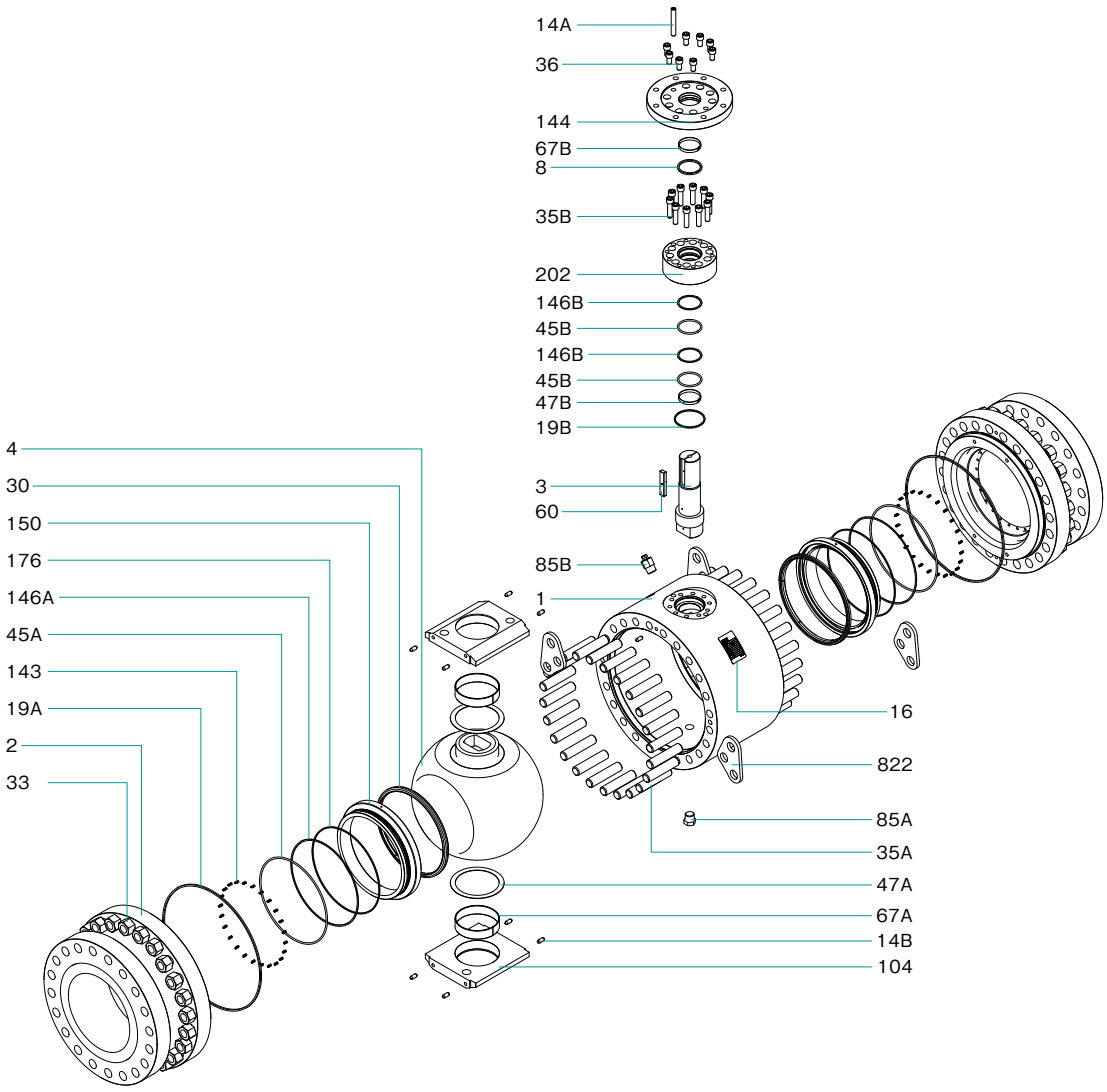
■Class 150/300/600 Soft Seated 3-Piece Body Trunnion Ball Valves up to NPS 4



No	Name of Parts
1	Body
2	Cap
3	Stem
4	Ball
8	Gland packing
14	Set pin
16	Name plate
19A	Gasket
19B	Gasket
19C	Gasket
30	Ball seat
33A	Cap nut
33B	Cover nut
35A	Cap bolt
35B	Cover bolt
35C	Bonnet bolt
36	Gland bolt
45A	O-ring
45B	O-ring
47A	Thrust washer
47B	Thrust washer
67A	Curl bearing
67B	Stem bearing
67C	Stem bearing
85A	Plug
85B	Vent valve
143	Seat spring
144	Gland plate
146A	Back-up ring
146B	Back-up ring
147	End plate
150	Seat retainer
176	Retainer packing
202	Bonnet

Construction

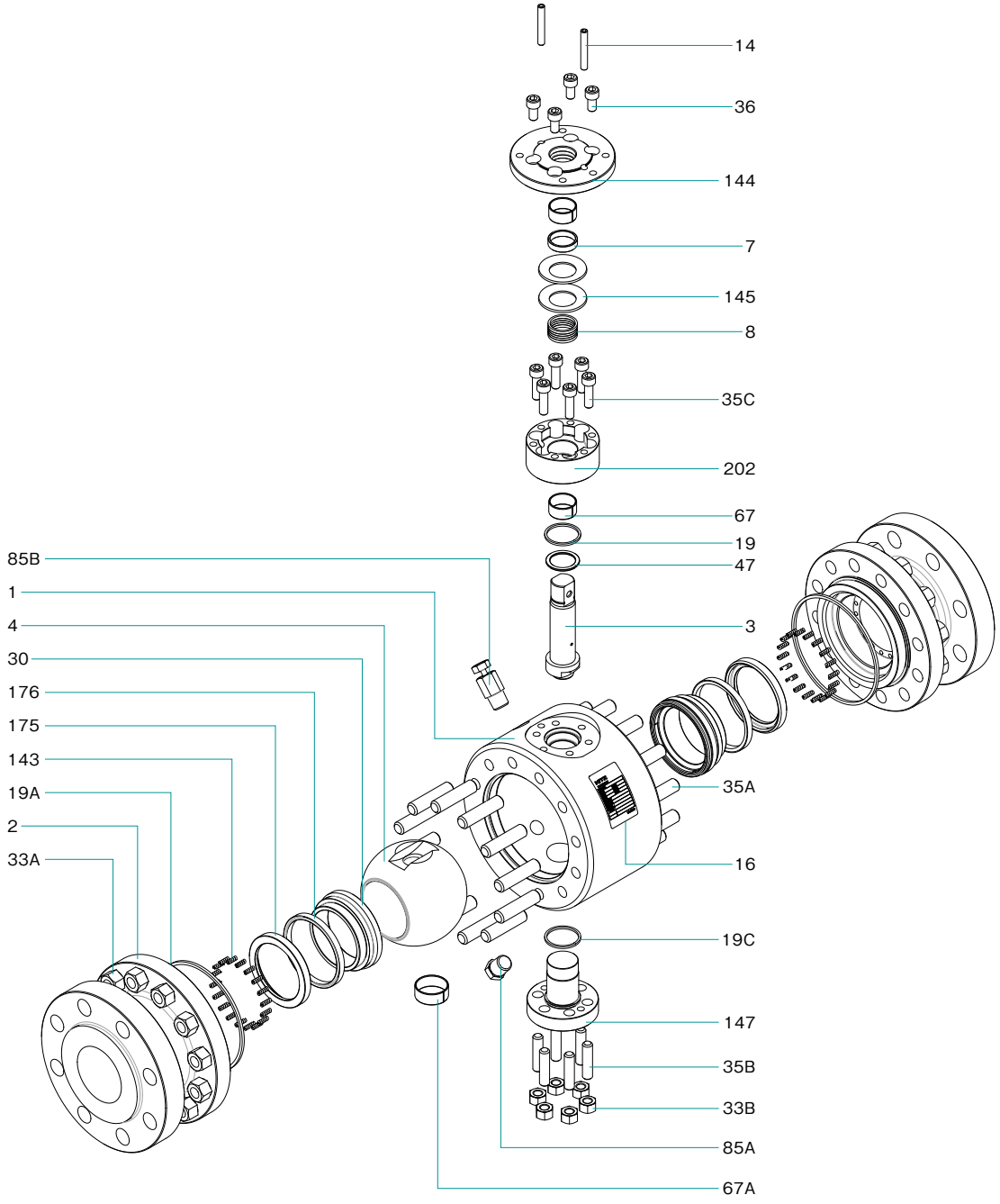
■Class 150/300/600 Soft Seated 3-Piece Body Trunnion Ball Valves NPS 6 and larger



No	Name of Parts
1	Body
2	Cap
3	Stem
4	Ball
8	Gland packing
14A	Set pin
14B	Set pin
16	Name plate
19A	Gasket
19B	Gasket
30	Ball seat
33	Cap nut
35A	Cap bolt
35B	Bonnet bolt
36	Gland bolt
45A	O-ring
45B	O-ring
47A	Thrust washer
47B	Thrust washer
60	Key
67A	Curl bearing
67B	Stem bearing
85A	Plug
85B	Vent valve
104	Trunnion plate
143	Seat spring
144	Gland plate
146A	Back-up ring
146B	Back-up ring
150	Seat retainer
176	Retainer packing
202	Bonnet
822	Lifting lug

Construction

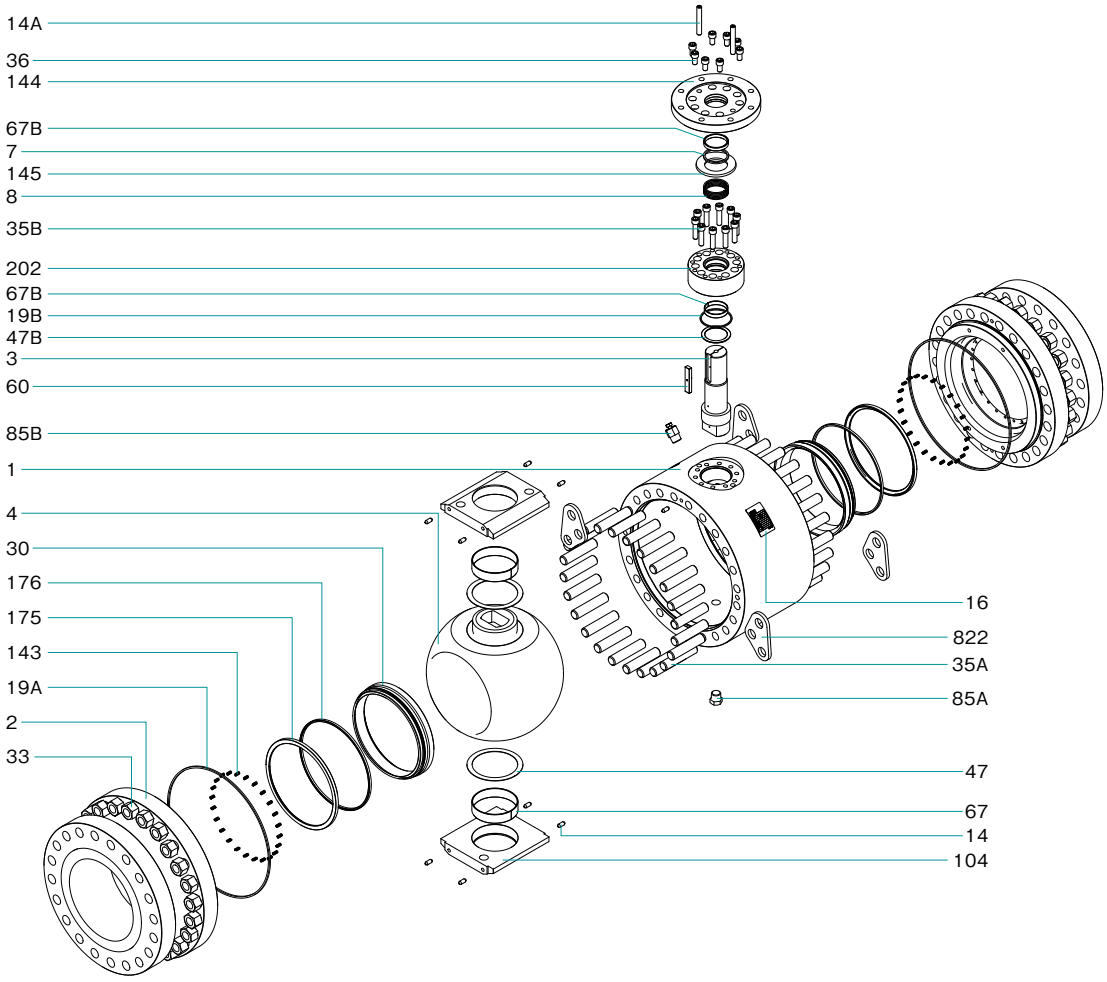
■Class 150/300/600 Metal Seated 3-Piece Body Trunnion Ball Valves up to NPS 4



No	Name of Parts
1	Body
2	Cap
3	Stem
4	Ball
7	Gland
8	Gland packing
14	Set pin
16	Name plate
19A	Gasket
19B	Gasket
19C	Gasket
30	Ball seat
33A	Cap nut
33B	Cover nut
35A	Cap bolt
35B	Cover bolt
35C	Bonnet bolt
36	Gland bolt
47	Thrust washer
67A	Curl bearing
67B	Stem bearing
85A	Plug
85B	Vent valve
143	Seat spring
144	Gland plate
145	Coned disc spring
147	End plate
175	Retainer gland
176	Seat packing
202	Bonnet

Construction

■Class 150/300/600 Metal Seated 3-Piece Body Trunnion Ball Valves NPS 6 and larger



No	Name of Parts
1	Body
2	Cap
3	Stem
4	Ball
7	Gland
8	Gland packing
14A	Set pin
14B	Set pin
16	Name plate
19A	Gasket
19B	Gasket
30	Ball seat
33	Cap nut
35A	Cap bolt
35B	Bonnet bolt
36	Gland bolt
47A	Thrust washer
47B	Thrust washer
60	Key
67A	Curl bearing
67B	Stem bearing
85A	Plug
85B	Vent valve
104	Trunnion plate
143	Seat spring
144	Gland plate
145	Coned disc spring
175	Retainer gland
176	Retainer packing
202	Bonnet
822	Lifting lug

Floating Ball Valves (Threaded or Solder Joint)

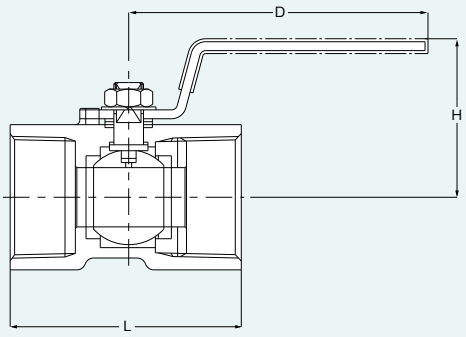
Type 600 Carbon Steel Ball Valves

Reduced bore, Uni-body design, Threaded ends

Page 102 for Pressure-Temperature Ratings.

Features
- Blowout-proof stem
- Choice of threaded ends:
  - Rc threads to JIS B0203 (BS 21) (Fig. SCTK)
  - NPT threads to ASME B1.20.1 (Fig. AKSCTK)

SCTK



Materials

Parts	Materials
Body	A216 Gr. WCB
Ball	A276 Type 316 or 304*1
Stem	A276 Type 316 or 304*2
Ball seat	G/F PTFE
Gland packing	G/F PTFE
Handle	Plastic covered S.S.

*1 304 for NPS 1/2 and larger
*2 304 for NPS 3/4 and larger

End to end dimensions: KITZ standard

Dimensions of SCTK

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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	39	43	48	53	62	70
D		60	70	85	85	100	100	125	125

Valve operator
Lever operation
T-type handle as option (NPS 3/4 and larger)

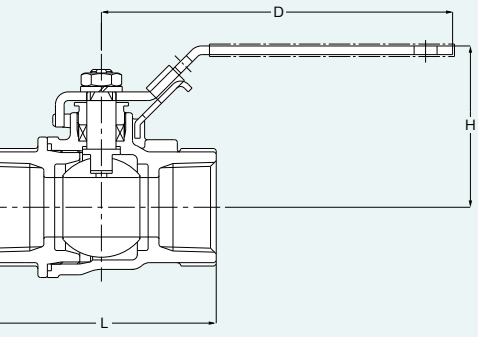
Type 1500/2000 Carbon Steel Ball Valves

Reduced bore, Split body design, Threaded ends

Page 103 for Pressure-Temperature Ratings.

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

AKSCTHZM



Materials

Parts	Materials
Body	A216 Gr. WCB
Body cap	A216 Gr. WCB
Ball	A276 Type 316
Stem	A276 Type 316
Seat	HYPATITE® PTFE
Gland packing	PTFE*
Gasket	PTFE*
Handle	Plastic covered C.S.

*API 607 fire-safe flexible graphite is optionally available.

End to end dimensions: KITZ standard

Dimensions of AKSCTHZM

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

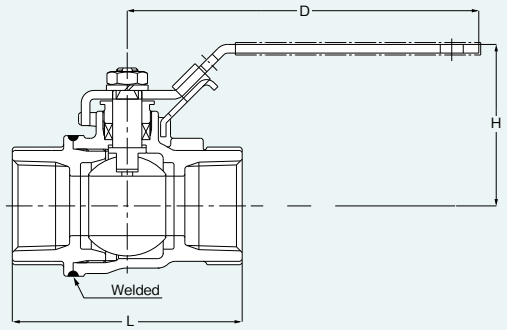
Reduced bore, Welded body design, Threaded ends

Page 103 for Pressure-Temperature Ratings.

Features

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

AKSCTHWZM



Materials

Parts	Materials
Body	A216 Gr. WCB
Body cap	A216 Gr. WCB
Ball	A276 Type 316
Stem	A276 Type 316
Seat	HYPATITE® PTFE
Gland packing	PTFE*
Handle	Plastic covered C.S.

* API 607 fire-safe flexible graphite is optionally available.

End to end dimensions: KITZ standard

Dimensions of AKSCTHWZM

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

Class 800 and Type 3000 Carbon Steel Ball Valves

Reduced bore, Welded body design, Threaded ends

Page 103 for Pressure-Temperature Ratings.

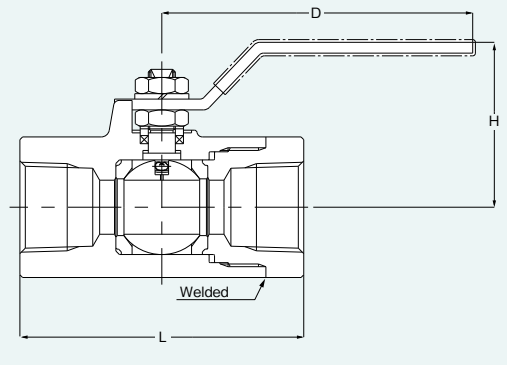
Features

- Antistatic device
- Blowout-proof stem
- Fire test certification (800SCTK only)★
- Choice of threaded ends:
  - Rc threads to JIS B0203 (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 3000 psi.

800/3000SCTK



Materials

Parts	Materials
Body	A105
Body cap	A105
Stem	A276 Type 316 (Class 800) SUS 329J1 (Type 3000)
Ball	A276 Type 316
Gland packing	PTFE
Ball seat	PTFE (Class 800) PCTFE* (Type 3000)

* Polychloro-Trifluoro-Ethylene.

Dimensions of 800SCTK, 3000SCTK

Unit: mm

Nominal Size		NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
		DN	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	Class 800		45	45	45	54	58	65	70	80
	Type 3000		45	45	45	54	58	67	72	82
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

Option

★Flexible graphite packing.

Class 800 and Type 3000 Carbon Steel Ball Valves

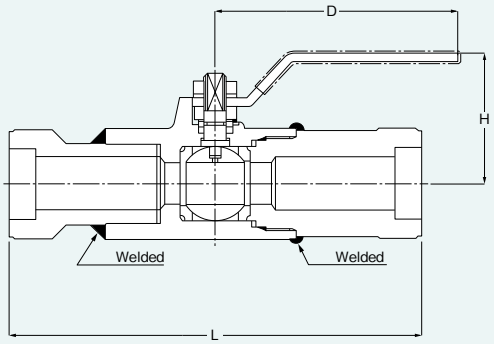
Reduced bore, Split body design, Socket welding ends

Page 102 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 3000 psi.

AW800/3000SCTK



Materials

Parts	Materials
Body	A105
Body cap	A105
Stem	A276 Type 316 (Class 800) SUS 329J1 (Type 3000)
Ball	A276 Type 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, AW3000SCTK

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

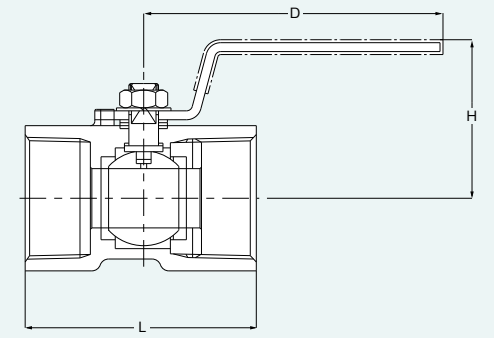
Type 600 Stainless Steel Ball Valves

Reduced bore, Uni-body design, Threaded ends

Page 102 for Pressure-Temperature Ratings.

Features
- Blowout-proof stem
- Choice of threaded ends:
  - Rc threads to JIS B0203 (BS 21) (Fig. UTKM)
  - NPT threads to ASME B1.20.1 (Fig. AKUTKM)

UTK(M)



Materials

Parts	Materials
Body	A351 Gr.CF8 (A351 Gr.CF8M)
Ball	A276 Type 304 or A351 Gr.CF8 (A276 Type 316* or A351 Gr.CF8M*)
Stem	A276 Type 316 or 304
Seat	G/F PTFE
Gland packing	G/F PTFE
Handle	Plastic covered S.S.

End to end dimensions: KITZ standard
*CF8M/316 are available for (M).

Dimensions of UTK(M)

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

Type 800 Stainless Steel Ball Valves

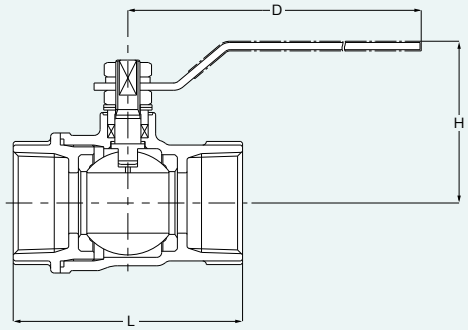
Reduced bore, Split body design, Threaded ends

Page 102 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Choice of threaded ends:
  - Rc threads to JIS B0203 (BS 21) (Fig. UTHM)
  - NPT threads to ASME B1.20.1 (Fig. AKUTHM)

UTH(M)



Materials

Parts	Materials
Body	A351 Gr.CF8 (A351 Gr.CF8M)
Body cap	A351 Gr.CF8 (A351 Gr.CF8M)
Ball	A276 Type 304 or A351 Gr.CF8 (A276 Type 316* or A351 Gr.CF8M*)
Stem	A276 Type 316 or 304
Seat	PTFE
Gland packing	PTFE
Handle	Plastic covered S.S.

End to end dimensions: KITZ standard
*CF8M/316 are available for (M).

Dimensions of UTH(M)

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

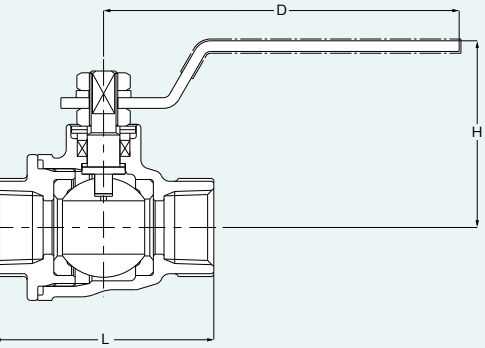
Full port, Split body design, Threaded ends

Page 102 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Choice of threaded ends:
  - Rc threads to JIS B0203 (BS 21) (Fig. UTFM)
  - NPT threads to ASME B1.20.1 (Fig. AKUTFM)

UTFM



Materials

Parts	Materials
Body	A351 Gr.CF8M
Body cap	A351 Gr.CF8M
Ball	A276 Type 316 or A351 Gr.CF8M
Stem	A276 Type 316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

End to end dimensions: KITZ standard

Dimensions of UTFM

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

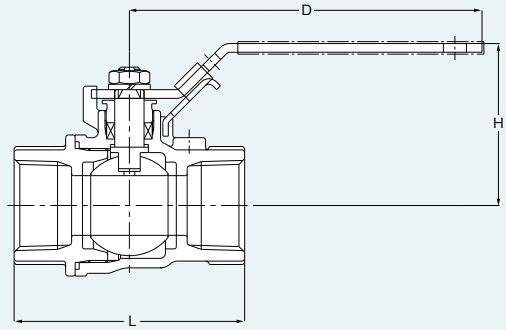
Type 1500/2000 Stainless Steel Ball Valves

Reduced bore, Split body design, Threaded ends

Page 103 for Pressure-Temperature Ratings.

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

AKUTHZM



Materials

Parts	Materials
Body	A351 Gr.CF8M
Body cap	A351 Gr.CF8M
Ball	A276 Type 316
Stem	A276 Type 316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

* API 607 fire-safe flexible graphite is optionally available.

End to end dimensions: KITZ standard

Dimensions of AKUTHZM

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

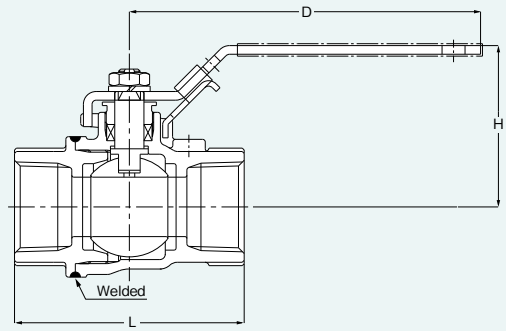
Type 1500/2000 Stainless Steel Ball Valves

Reduced bore, Welded body design, Threaded ends

Page 103 for Pressure-Temperature Ratings.

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

AKUTHWZM



Materials

Parts	Materials
Body	A351 Gr.CF8M
Body cap	A351 Gr.CF8M
Ball	A276 Type 316
Stem	A276 Type 316
Seat	HYPATITE® PTFE
Gland packing	PTFE
Handle	Plastic covered S.S.

* API 607 fire-safe flexible graphite is optionally available.

End to end dimensions: KITZ standard

Dimensions of AKUTHWZM

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

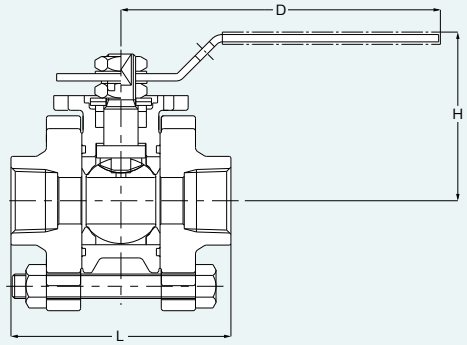
Full bore, 3-piece body design, Threaded or socket welding ends

Page 102 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Swing-away body for maintenance ease
- Choice of threaded ends:
  - Rc threads to JIS B0203 (BS 21) (Fig. U3TZFM)
  - NPT threads to ASME B1.20.1 (Fig. AKU3TZFM)
  - Socket welding ends to JIS B2316 (BS 5351)/ ASME B16.11 (Fig. SWU3TZFM)
  - Socket welding ends to ASME B16.11 (Fig. AWU3TZFM)

U3TZFM



Materials

Parts	Materials
Body	A351 Gr.CF8M
Body cap	A351 Gr.CF8M
Ball	A276 Type 316 or A351 Gr.CF8M
Stem	A276 Type 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

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
	DN	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 NPS 2.

Type 1000 Stainless Steel Ball Valves

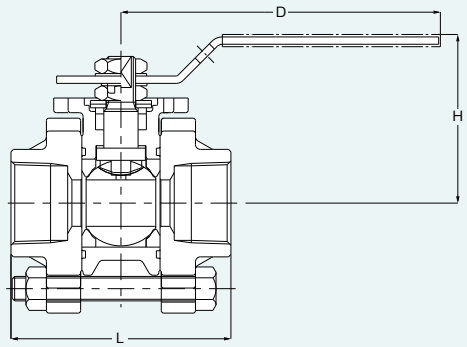
Reduced bore, 3-piece body design, Threaded or socket welding ends

Page 102 for Pressure-Temperature Ratings.

Features

- Blowout-proof stem
- Swing-away body for maintenance ease
- Choice of threaded ends:
  - Rc threads to JIS B0203 (BS 21) (Fig. U3TZM)
  - NPT threads to ASME B1.20.1 (Fig. AKU3TZM)
  - Socket welding ends to JIS B2316 (BS 5351)/ ASME B16.11(Fig. SWU3TZM)
  - Socket welding ends to ASME B16.11 (Fig. AWU3TZM)

U3TZM



Materials

Parts	Materials
Body	A351 Gr.CF8M
Body cap	A351 Gr.CF8M
Ball	A276 Type 316 or A351 Gr.CF8M
Stem	A276 Type 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

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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 NPS 1/4 and 3/8.

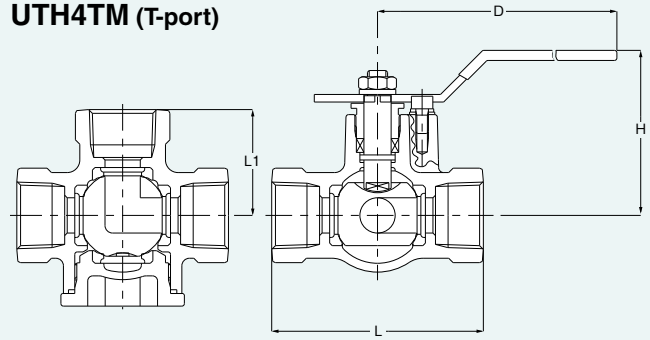
Type 800 Stainless Steel 3-way Ball Valves

Reduced bore, 4-seated, Split body, Threaded ends

Page 102 for Pressure-Temperature Ratings.

- L-port and T-port
- Rc threads to JIS B0203 (BS 21)

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



This drawing shows L-port design.

Materials

Parts	Materials
Body	SCS14A
Body cap	SCS14A
Ball	SUS316 or SCS14A
Stem	SUS316 Cr. plated
Seat	HYPATITE® PTFE
Gland packing	PTFE
Gasket	PTFE
Handle	Plastic covered S.S.

End to end dimensions: KITZ standard

Page 106 for Allowable Port Orientation.

Valve operator
Lever operation

Dimensions of UTH4LM, UTH4TM

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

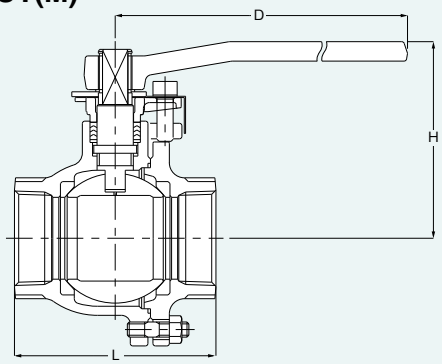
10K Stainless Steel Ball Valves

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

Page 103 for Pressure-Temperature Ratings.

- Choice of threaded ends:
  - Rc threads to JIS B0203 (BS 21) (Fig. 10UTM)

10UT(M)



Materials

Parts	Materials
Body	SCS13A (SCS14A*)
Body cap	SCS13A (SCS14A*)
Ball	SUS316 or SCS14A
Stem	SUS304 (SUS316*)
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
*SCS14A/SUS316 are available for (M).

Valve operator
Lever operation

Dimensions of 10UT(M)

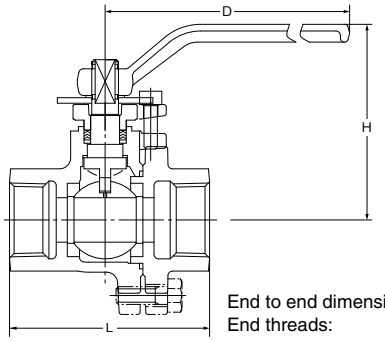
Unit: mm

Nominal Size	NPS	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	DN	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

Refer to "Product Range" on Page 7.

20K Ball Valves (Reduced Bore)

20ST
20STL (Gas service)



End to end dimensions: KITZ Std.
End threads: JIS B 0203

Maximum Service Pressure

Code	Temperature	Pressure
20ST	110℃ W.O.G.	2.8 MPa
	140℃ W.O.G.	2.0 MPa
20STL	80℃ gas.	2.4 MPa

●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	Alloy steel
Cap bolt	Carbon steel
Handle	FCD 400-15
Name plate★	SUS 304

★for 20STL only

Dimensions of 20ST, 20STL

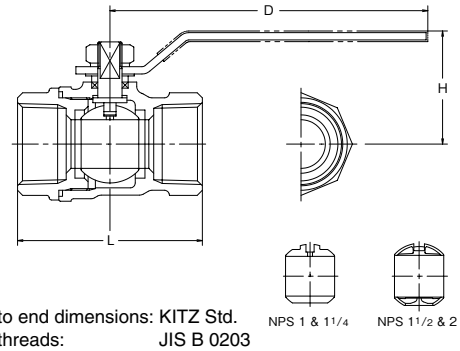
Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2	3
	DN	15	20	25	32	40	50	80
L		75	80	90	105	115	130	180
H		106	106	107	129	133	114	154
D		130	130	130	160	160	230	400

NPS3 : Only 20STL

Type 400 Ball Valves (Reduced Bore)

STZ



End to end dimensions: KITZ Std.
End threads: JIS B 0203

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

Materials

Parts	JIS Material
Body	FCD-S
Cap	FCD-S
Ball	C3771BE★1
Stem	C3531★1
Gland packing	PTFE
Ball seat	G/F PTFE
Gland	C3604BD★2
Gasket	PTFE
Handle nut	SS 400★3
Handle	SUS 430★4

★1Ni + Cr electroplated
★2Zinc electroplated
★3Zinc dichromate electroplated
★4Plastic covering

Dimensions of STZ

Unit: mm

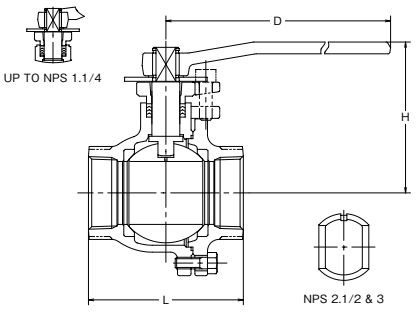
Nominal Size	NPS	1/2	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	8	10	15	20	25	32	40	50
L		46	51	57	65	76	86	95	115
H		38	38	42	49	52	57	63	68
D		80	80	100	130	130	130	130	150

10K Iron Threaded Ball Valves (Full Bore)

120°C non-shock water 1.4 MPa, 120°C W.O.G. 1.0 MPa
Saturated steam 0.7 MPa

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 connection	JIS B0203

Dimensions of 10FCT

Unit: mm

Nominal Size	NPS	3/8	1/2	1/2	1	1 1/4	1 1/2	2	2 1/2	3
	DN	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 Valves (Full Bore)

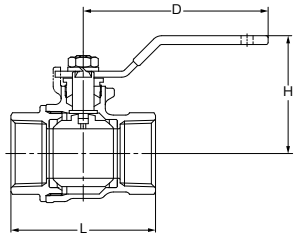
W.O.G. non-shock 4.12 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)

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): CSA (US/C), UL, FM



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Brass: SnNi plated (NPS 1/4 to 1) TEA plated (NPS 1 1/4 to 2)
Ball seat	PTFE
Gland packing	PTFE

Dimensions of AKTAF

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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 Valves (Full Bore)

W.O.G. non-shock 4.12 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)

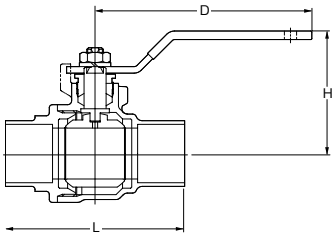
Screwed body cap, Blowout-proof stem,
Solder joint ends to ASME B16.18

CTAF

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

Approvals (up to 2): UL, FM

Refer to "Product Range" on Page 8.



Materials

*NPS 2 1/2 & 3

Parts	Material
Body	Forged Brass/Cast Bronze*
Body cap	Forged Brass/Cast Bronze*
Stem	Dezincification resistant brass
Ball	Forged Brass: SnNi plated (NPS 3/8 to 1) Forged Bass: TEA® plated (NPS 1 1/4 to 3)
Ball seat	PTFE
Gland packing	PTFE

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

Dimensions of CTAF

Unit: mm

Nominal Size	NPS	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	DN	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 Valves (Full Bore)

W.O.G. non-shock 4.12 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

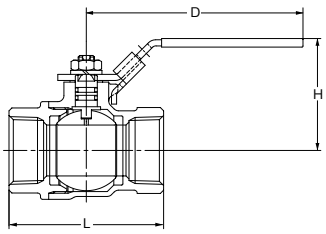
- **Threaded end to ASME B1.20.1**

CTFLL

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

Approvals (up to 2): CSA (US/C)*, UL**

*AKTFLL only **CTFLL only



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass: Cr plating
Ball seat	PTFE
O-ring	NBR, FKM

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

Dimensions of AKTFLL, CTFLL

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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 Valves (Full Bore)

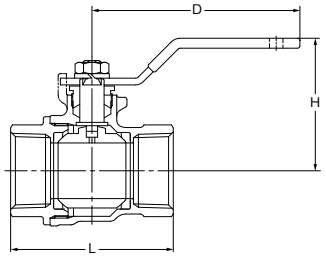
W.O.G. non-shock 4.12 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)

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

Approvals (up to 2) *AKTAFM only — CSA (US/C), UL



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Stainless steel (A276 Type 316)
Ball	Stainless steel (A276 Type 316 or A351 Gr. CF8M)
Ball seat	PTFE
Gland packing	PTFE

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

Dimensions of AKTAFM

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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 Valves (Full Bore)

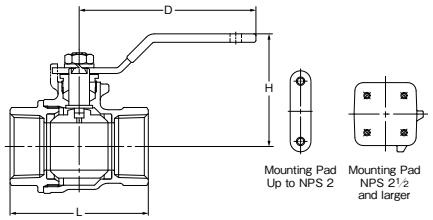
W.O.G. non-shock 4.12 MPa (600 psi), Saturated steam pressure 0.98 MPa (150 psi)

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	Forged Brass/Cast Bronze*
Body cap	Forged Brass/Cast Bronze*
Stem	Dezincification resistant brass
Ball	Forged Brass: Cr plating
Ball seat	PTFE
Gland packing	PTFE

*NPS 2 1/2 and larger

Dimensions of AKTAFP

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	DN	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 Valves (Full Bore)

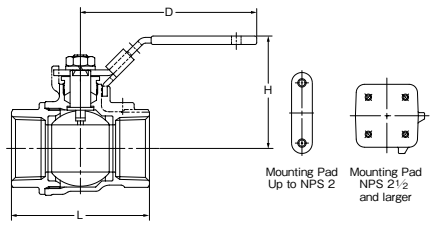
W.O.G. non-shock 4.12 MPa (600 psi), Saturated steam pressure 1.72 MPa (250 psi)

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	Forged Brass/Cast Bronze*
Body cap	Forged Brass/Cast Bronze*
Stem	Stainless steel (A276 Type 316)
Ball	Stainless steel (A276 Type 316 or A351 Gr. CF8M)
Ball seat	Reinforced PTFE
Gland packing	Reinforced PTFE

*NPS 2 1/2 and larger

Dimensions of AKTAFPM

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	DN	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 Valves (Full Bore)

W.O.G. non-shock 4.12 MPa (600 psi), Saturated steam pressure 1.03 MPa (150 psi)

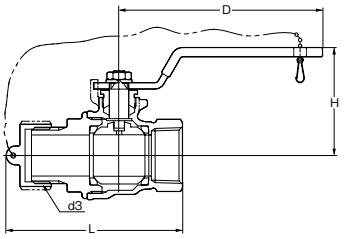
Threaded end 3/4 Hose connection, with cap & chain, Blowout-proof stem, Threaded/Hose connection (ASME B1.20.1/ASME B1.20.7 3/4 11.5NHR)

AKTAFC

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

CTAFC

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



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass: Cr plated
Ball seat	PTFE
Gland packing	PTFE

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

Dimensions of AKTAFC, CTAFC

Unit: mm

Nominal Size	NPS	1/2	3/4
	DN	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

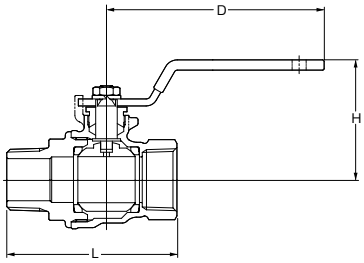
Type 600 Brass Ball Valves (Full Bore)

W.O.G. non-shock 4.12 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	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass: Cr plated
Ball seat	PTFE
Gland packing	PTFE

Dimensions of AKTAFO

Unit: mm

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

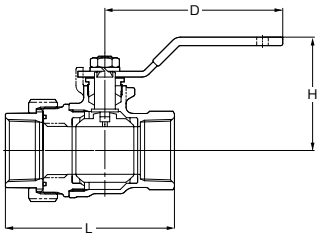
Type 600 Brass Ball Valves (Full Bore)

W.O.G. non-shock 4.12 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	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass: Cr plated
Ball seat	PTFE
Gland packing	PTFE

Dimensions of AKTAFU

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

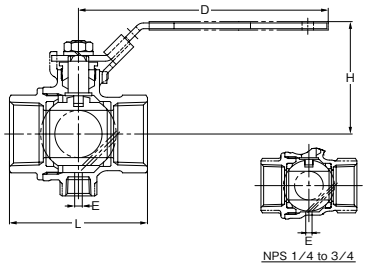
Type 200 Brass Ball Valves (Full Bore)

W.O.G. non-shock 1.37 MPa (200 psi), –18°C to + 93°C (Avoid freezing the value)

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	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass: Cr plated
Ball seat	PTFE
Gland packing	PTFE

Dimensions of AKTAFS

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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: 4 mm (all nominal size)

Type 400 Brass Ball Valves (Standard Bore)

W.O.G. non-shock 2.75 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 JIS B0203 (BS21) or NPT

T*

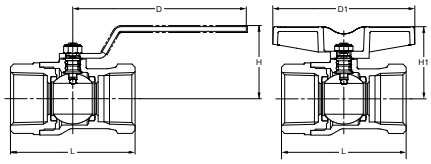
- **Threaded end to JIS B0203 (BS21)**

TT*

- **Threaded end to JIS B0203 (BS21)**

AKT

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



*The length of useful threads and the positions of gauge planes are built on KITZ standard.
Taper pipe threads for connection shall refer to JIS B0203 standards.

Materials

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

*NPS 4 only
**Nickel-chrome plated

Dimensions of T, TT, AKT

Unit: mm

Nominal Size	NPS.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
	DN	8	10	15	20	25	32	40	50	65	80	100
L		50	50	65	68	79	86	96	109	127	153	179
L1		50	50	65	68	79	86	96	109	–	–	–
H		39	39	39	42	46	51	56	65	82	105	124
H1		34	34	37	40	46	52	57	71	–	–	–
D		60	60	80	80	110	110	110	140	200	300	400
D1		65	65	80	80	90	105	105	120	–	–	–

*TT: 1/4 to 2

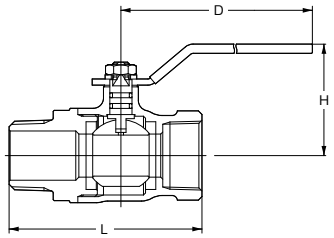
Type 400 Brass Ball Valves (Standard Bore)

W.O.G. non-shock 2.8 MPa (400 psi), W.O.G. 150°C 0.7 MPa (100 psi)

Screwed body cap, Blowout-proof stem,
Double O-ring stem seals,
Male & Female Threaded ends to JIS B0203 (BS21)

TO

- **Threaded end to JIS B0203 (BS21)**



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass*
Ball seat	PTFE
O-ring	FKM

*Nickel-chrome plated

Dimensions of TO

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1
	DN	8	10	15	20	25
L		59	60	74	80	94
H		39	39	39	42	46
D		60	60	80	80	110

Type 400 Brass Ball Valves (Standard Bore)

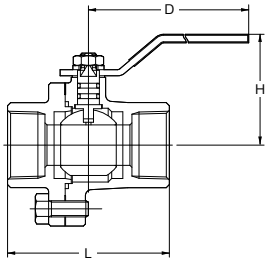
W.O.G. non-shock 2.75 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi)

Bolted body and cap, Blowout-proof stem,
Double O-ring stem seals, Threaded ends to JIS B0203 (BS21)

TM*

- **Threaded end to JIS B0203 (BS21)**

*The length of useful threads and the positions of gauge planes are built on KITZ standard.
Taper pipe threads for connection shall refer to JIS B0203 standards.



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass*/SCS13A**
Ball seat	PTFE
O-ring	FKM

*Cr plated **NPS 2½ only

Dimensions of TM

Unit: mm

Nominal Size	NPS	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	DN	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 Valves (Reduced bore)

W.O.G. non-shock 4.12 MPa (600 psi), W.O.G. 150°C 0.98 MPa (142 psi)

One-piece body, Blowout-proof stem,
Threaded ends to JIS B0203 (BS21) or NPT

TK

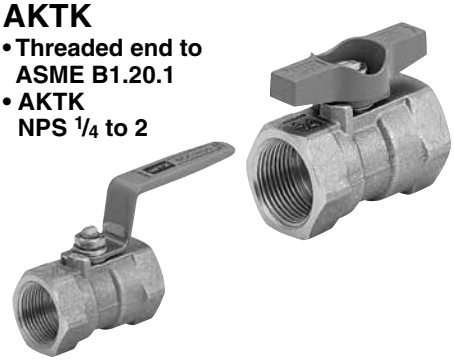
- **Threaded end to JIS B0203 (BS21)**

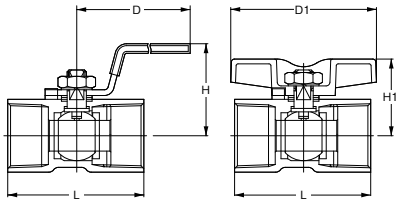
TKT

- **Threaded end to JIS B0203 (BS21)**

AKTK

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





Materials

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

*Cr plated

Dimensions of TK, TKT, AKTK

Unit: mm

Nominal Size	NPS	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

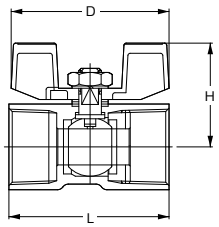
Type 600 Brass Ball Valves (Reduced Bore)

W.O.G. non-shock 4.12 MPa (600 psi), W.O.G. 150°C 0.98 MPa (142 psi)

One-piece body, Blowout-proof stem, with Wing handle,
Threaded ends to JIS B0203 (BS21)

TKW

- **Threaded end to JIS B0203 (BS21)**



Materials

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

*Cr plated

Dimensions of TKW

Unit: mm

Nominal Size	NPS	1/8	1/4	3/8	1/2	3/4	1
	DN	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

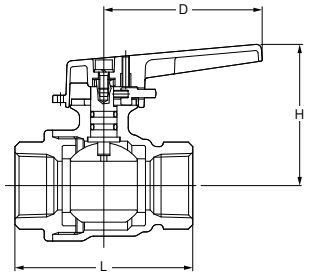
Type 150 Brass Ball Valves (Full Bore)

W.O.G. non-shock 0.98 MPa (142 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 JIS B0203 (BS21)

TFJ

- **Threaded end to JIS B0203 (BS21)**



Materials

Parts	Material
Body	Forged Brass/Cast Bronze*
Body cap	Forged Brass/Cast Bronze*
Stem	Dezincification resistant brass
Ball	Forged Brass**
Ball seat	PTFE
O-ring	FKM

*NPS 2 only
**NiCr plated

Dimensions of TFJ

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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 Brass Ball Valves (Standard Bore)

TL, CTL W.O.G. non-shock 2.75 MPa (400 psi), W.O.G. 150°C 0.69 MPa (100 psi),
TLT W.O.G. non-shock 2.75 MPa (400 psi), W.O.G. 80°C 1.96 MPa (286 psi)

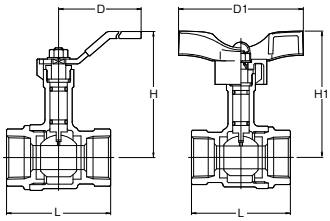
Screwed body cap, Blowout-proof stem,
Double O-ring stem seals,
Threaded ends to JIS B0203 (BS21) or solder joint ends

TL

- **Threaded end to JIS B0203 (BS21)**

TLT

- **Threaded end to JIS B0203 (BS21)**



Materials

Parts	Material
Body	Cast Bronze
Body cap	Cast Bronze
Stem	Dezincification resistant brass
Ball	SCS13A
Ball seat	PTFE
O-ring	FKM

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

Dimensions of TL, TLT

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2
	DN	15	20	25	32	40	50
L		56	65	78	86	96	109
L (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

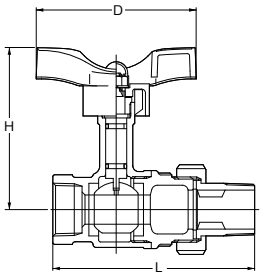
Type 400 Brass Ball Valves (Standard Bore)

W.O.G. non-shock 2.75 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 JIS B0203 (BS21) or solder joint ends

CTLTU

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



Materials

Parts	Material
Body	Cast Bronze
Body cap	Cast Bronze
Stem	Dezincification resistant brass
Ball	SCS13A
Ball seat	PTFE
O-ring	FKM

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

Dimensions of CTLTU

Unit: mm

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

Type 600 Brass Ball Valves (Full Bore)

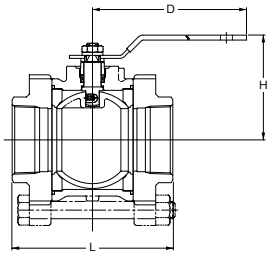
W.O.G. non-shock 2.75 MPa (600 psi), W.O.G. 150ºC 1.03 MPa (150 psi)

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 NPS 3/8 to 2 1/2**



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass: SnNi plated (NPS 1/4 to 1) TEA® plated (NPS 1 1/4 to 2)
Ball seat	PTFE
Grand packing	PTFE

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

Dimensions of AK3TM, C3TM

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	8	10	15	20	25	32	40	50
L		49	49	61	70	83	99	117	139
L (Solder)		–	49	61	73	88	99	117	139
H		39	39	48	55	63	69	78	85
D		82	82	82	100	130	130	150	150

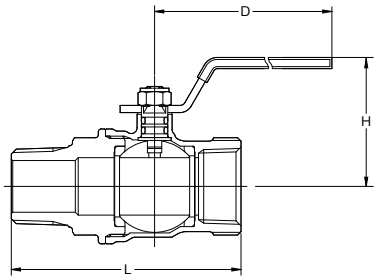
Refer to "Product Range" on Page 8.

Type 600 Brass Ball Valves (Full Bore)

W.O.G. non-shock 4.12 MPa (600 psi), W.O.G. 150ºC 0.98 MPa (142 psi)

Screwed body cap, Blowout-proof stem,
Double O-ring stem seals,
Male & Female threaded ends to JIS B0203 (BS21)

ZO
- **Threaded end to JIS B0203 (BS21)**



Materials

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

*NiCr plated

Dimensions of ZO

Unit: mm

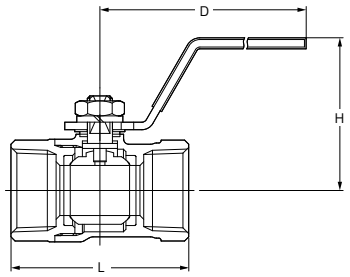
Nominal Size	NPS	1/4	3/8	1/2	3/4	1
	DN	8	10	15	20	25
L		59	60	74	80	94
H		37	37	40	44	50
D		70	70	80	80	110

Type 400 Brass Ball Valves (Standard Bore)

W.O.G. non-shock 2.75 MPa (400 psi), W.O.G. 150ºC 0.69 MPa (100 psi), Saturated steam pressure 0.98 MPa (142 psi)

Screwed body cap, Blowout-proof stem,
Threaded ends to JIS B0203 (BS21)

ZS*
- **Threaded end to JIS B0203 (BS21)**



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass*/SCS13A**
Ball seat	PTFE
Grand packing	G/F PTFE

*Cr plated **NPS 1 1/2 only

Dimensions of ZS

Unit: mm

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

*The length of useful threads and the positions of gauge planes are built on KITZ standard.
Taper pipe threads for connection shall refer to JIS B0203 standards.

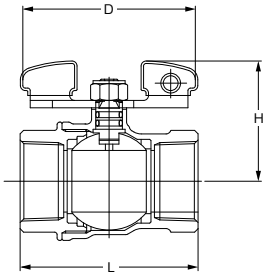
Type 600 Brass Ball Valves (Full Bore)

W.O.G. non-shock 4.12 MPa (600 psi), W.O.G. 150°C 0.98 MPa (142 psi)

Screwed body cap, Blowout-proof stem,
Double O-ring stem seals,
Threaded ends to JIS B0203 (BS21)

ZET

• Threaded end to JIS B0203 (BS21)



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Brass: Ni plated
Ball	Forged Brass*/SCS13A**
Ball seat	PTFE
O-ring	FKM

*NiCr plated **NPS 1¼ or 2

Dimensions of ZET

Unit: mm

Nominal Size	NPS	¼	⅜	½	¾	1	1¼	1½	2
	DN	8	10	15	20	25	32	40	50
L		42	42	53	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 Valves (Full Bore)

W.O.G. non-shock 4.12 MPa (600 psi)*, W.O.G. 150°C 1.03 MPa (150 psi)

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

*NPS 4 : W.O.G. non-shock 2.8 MPa (400 psi), W.O.G. 150°C 0.7 MPa (100 psi)

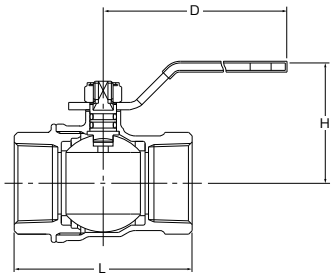
AKSZA

• Threaded end to ASME B1. 20. 1

CSZA

• Solder joint to ASMB 16.18

Approvals (up to 2)
CSA (US/C)* UL FM
*AKSZA only



Materials

Parts	Material
Body	Brass/Bronze*
Body cap	Brass/Bronze*
Stem	Brass: Nickel plated
Ball	Forged Brass: SnNi plated (NPS ¼ to 1) TEA® plated (NPS 1¼ to 2½) Brass: NiCr plated (NPS 4) SCS13A (NPS3)
Ball seat	PTFE
O-ring	FKM

*NPS 4 only

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

Dimensions of AKSZA, CSZA

Unit: mm

Nominal Size	NPS	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4
	DN	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	44	50	55	65	72	101	113	131
D		70	70	80	80	110	110	150	150	200	300	300

Refer to "Product Range" on Page 8.

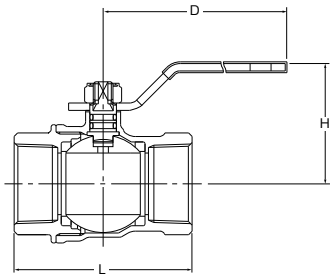
Type 600 Brass Ball Valves (Full Bore)

W.O.G. non-shock 4.12 MPa (600 psi), W.O.G. 150°C 1.03 MPa (150 psi)

Screwed body and cap, Blowout-proof stem,
Double O-ring stem seals,
Threaded ends to JIS B0203 (BS21)

SZA

• Threaded end to JIS B0203 (BS21)



Materials

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

*NiCr plated

Dimensions of SZA

Unit: mm

Nominal Size	NPS	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4
	DN	8	10	15	20	25	32	40	50	65	80	100
L		42	42	53	60	72	84	92	110	138	167	193
H		37	37	40	44	50	55	65	72	101	113	131
D		70	70	80	80	110	110	150	150	200	300	300

Type 600 Brass Ball Valves (Full Bore)

W.O.G. non-shock 4.12 MPa (600 psi), W.O.G. 150ºC 1.03 MPa (150 psi)

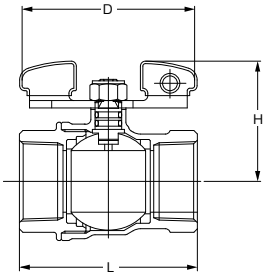
Screwed body and cap, Blowout-proof stem,
Double O-ring stem seals,
Threaded ends to ASME B1.20.1 or
solder joint ends to ASME B16.18.

AKSZAW
- Threaded end to ASME B1. 20. 1

CSZAW
- Solder joint to ASME B16.18

Approvals (up to 2): CSA (US/C)* | UL | FM

*AKSZAW only



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Brass: Ni plated
Ball	Brass: SnNi plated (NPS 1/4 to 1) TEA® plated (NPS 1 1/4 to 2)
Ball seat	PTFE
O-ring	FKM

Dimensions of AKSZAW, CSZAW

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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 Valves (Standard Bore)

W.O.G. non-shock 2.75 MPa (400 psi), W.O.G. 150ºC 0.69 MPa (100 psi)

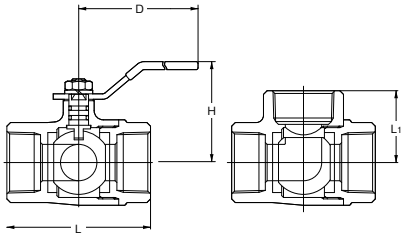
Screwed body cap, 2-seat, L-port design,
Blowout-proof stem, Double O-ring stem seals*,
Threaded ends to JIS B0203 (BS21) or NPT, or solder joint ends

*NPS 1/2 and larger

TN*
- Threaded end to JIS B0203 (BS21)

AKTN
- Threaded end to ASME B1.20.1

*The length of useful threads and the positions of gauge planes are built on KITZ standard.
Taper pipe threads for connection shall refer to JIS B0203 standards.



Materials

Parts	Material
Body	Forged Brass/Cast Bronze*
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass**
Ball seat	PTFE
O-ring	FKM

*NPS 2 1/2 and 3
**Cr plated

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

Dimensions of TN, AKTN

Unit: mm

Nominal Size	NPS	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	DN	8	10	15	20	25	32	40	50	65	80
L		40	46	67	68	79	89	100	115	138	166
L1		20	23	33.5	34	39.5	44.5	50	57.5	69	83
L1 (Solder)				28	37	44	50.5	59	71.5		
H		30	35	45	48	55	60	65	75	91	105
D		60	70	80	80	110	110	110	140	200	300

Page 106 for Allowable Port Orientation.

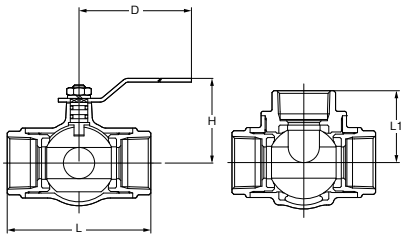
Type 400 3-Way Bronze Ball Valves (Standard Bore)

W.O.G. non-shock 2 MPa (290 psi), W.O.G. 150ºC 0.62 MPa (90 psi)

Screwed body cap, 4-seat, L or T-port design,
Blowout-proof stem, Double O-ring stem seals,
Threaded ends to JIS B0203 (BS21) or NPT

T4T
- Threaded end to JIS B0203 (BS21)

T4L
- Threaded end to JIS B0203 (BS21)



Materials

Parts	Material
Body	Cast Bronze
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Brass*
Ball seat	PTFE
O-ring	FKM

*Cr plated

Dimensions of T4T, T4L

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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 106 for Allowable Port Orientation.

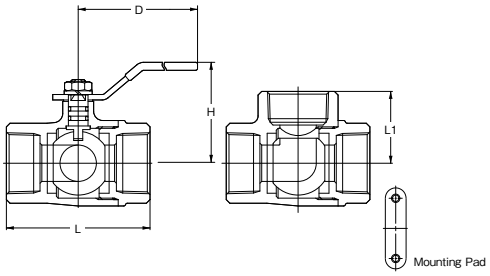
Type 400 3-Way Bronze Ball Valves, with Mounting Pad (Standard Bore)

W.O.G. non-shock 2.75 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 NPT

AKTNP

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



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass*
Ball seat	PTFE
O-ring	FKM

*Cr plated

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

Dimensions of AKTNP

Unit: mm

Nominal Size	NPS	1/2	3/4	1	1 1/4	1 1/2	2
	DN	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

Page 106 for Allowable Port Orientation.

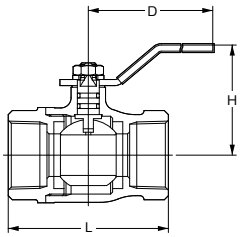
Brass Ball Valves, Designed for Gas Service (Standard Bore)

Gas service 40°C 0.98 MPa (142 psi)

Screwed body cap,
Blowout-proof stem, Double O-ring stem seals,
Threaded ends to JIS B0203 (BS21)

TG*

- **Threaded end to JIS B0203 (BS21)**



Materials

Parts	Material
Body	Forged Brass
Body cap	Forged Brass
Stem	Dezincification resistant brass
Ball	Forged Brass*/SCS13A**
Ball seat	PTFE
O-ring	NBR

*NiCr plated **NPS 1 1/2, 2

*The length of useful threads and the positions of gauge planes are built on KITZ standard.
Taper pipe threads for connection shall refer to JIS B0203 standards.

Dimensions of TG

Unit: mm

Nominal Size	NPS	1/4	3/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3
	DN	8	10	20	25	32	40	50	65	80
L		50	50	68	79	86	96	109	127	153
H		39	39	42	46	51	56	65	82	105
D		60	60	80	110	110	110	140	200	300

Technical Information

KITZ Ball Seat Materials

아래에 열거된 Seat 재질은 KITZ에서 제공이 가능한 재질 입니다.

Material	Features	Maximum Service Temperature
Virgin PTFE	높은 내화학성 및 작동 효율성	200℃
HYPATITE® PTFE	Monomer 투과성이 낮고 압축 (Compression) 및 Creeping에 대한 저항성이 다른 PTFE 소재보다 높음	260℃ /270℃ *1
Carbon filled PTFE	우수한 내열 및 내마모성	260℃ /270℃ *1
FILLTITE® *	PTFE 기반 재료 중 최고의 내열성	300℃ *2
Graphite	고온 서비스에 적합	500℃
Metal	고온 및 연마(abrasive) 서비스에 적합	500℃ /525℃ *3
PEEK	높은 내열성과 기계적 강도	270℃
Glass fiber filled PTFE with MoS_2	높은 내마모성 및 작동 효율성	230℃
Nylon with MoS_2	높은 기계적 강도	140℃

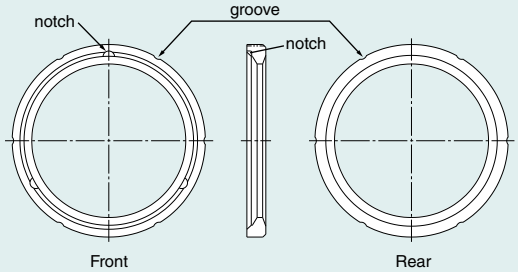
*: FILLTITE는 특수강화 Ball Seat로서, 내열성(Heat Resistance)과 내마모성(Abrasion Resistance)을 개선한 기존의 Carbon Filled PTFE보다 Carbon Based Filler를 더 많이 사용하였습니다. 이 재질은 300도의 고온에서도 우수한 작동성(Operability), 내구성(Durability), 화학적 저항성(Chemical Resistance) 및 밀폐기능(Sealing Performance)을 선보입니다. 뿐만 아니라, 이 Ball Seat는 기존의 Ball Seat와 교체가 가능하기 때문에 비용면에서 큰 장점을 나타냅니다.

*1 270℃: SCTDZ/UTDZM Series only.
*2 Uni-body design: 260℃
*3 525℃: T60M/SF3TC 6H UF3TC6HM Series only.

HYPATITE® PTFE Ball Seats (Carbon and Stainless Steel Valves)

KITZ Ball밸브는 제조사의 기준으로 변성 PTFE(Denatured PTFE)로 만들어진 HYPATITE Ball Seat가 비치되며, 보다 분자적으로 강화된 PTFE 복합기(PTFE Copolymer)이며, 다음과 같은 고성능을 위해 특수설계 되었습니다.

- -29℃(-20F) ~ 270℃(518F) SCTDZ/UTDZ(M) Series, 260℃(500F) UTB 및 SCTAZ/UTAZ(M) Series의 넓은 서비스 온도 범위
  이는 표준 밸브 설계 및 중 · 고온 서비스에 사용되는 재료에 대한 것이다. 낮은 온도 범위는 -196℃(-321F)까지 연장할 수 있다. Exteded bonnet design and Special low temperatuer service 시
- Virgin PTFE 대비 높은 내 화학성.
- 다른PTFE 소재보다 낮은 Monomer 투과성.
- 긴 사용을 위한 다른 PTFE 재료보다 우수한 압축(comperssion) 및 Creeping(cold flow)에 대한 높은 기계적 강도
- Virgin PTFE와 동일한 비중(Specific gravity)과 마찰 계수(Friction coefficient)를 가지고 있어 원활한 작동
- Virgin PTFE 비교 성능 안정되어 공정 Line의 오염방지
- PTFE의 대표적인 특징인 복원력(Resiliency)이 가져다 주는 높은 밀봉 성능.



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

FILLTITE® Ball Seats

PTFE 기반 재료 중 최고의 내열성.

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

1. Choice of trim for heated abrasive service

Metal Seated Ball 밸브는 최고온도 300'C(572'F)(Trim Symbol 5H) 및 500'C(932'F)(Trim Symbol 6H*1*2) 에서 사용할수 있습니다. Hard Graphite Seated Ball 밸브의 경우, 최고온도 500'C(932'F)(Trim Symbol 3H*2)에서 사용할수 있습니다. 내열성(Heat Resistant) Sealing 및 Trim 재질은 이러한 밸브의 열 및 연마성 성능(Heat and Abrasive Service)을 검증합니다. 기존의 Soft Seated Ball 밸브는 한정적인 내열성 및 기계적 특성 때문에 이러한 환경에서 제대로된 사용이 불가능 합니다.
"FILLTITE"는 특수강화 Ball Seat로서, 기존의 Carbon filled PTFE보다 Carbon based filler를 더 많이 사용하여 내열성(Heat Resistance)과 내마모성(Abrasion Resistance)을 개선하였습니다. 이 재질은 300도의 고온에서도 우수한 작동성(Operability), 내구성(Durability), 화학적 저항성(Chemical Resistance)및 밀폐기능(Sealing Performance)을 선보입니다. 뿐만아니라, 이 Ball Seat는 기존의 Ball Seat와 교체가 가능하기 때문에 비용면에서도 큰 장점을 나타냅니다.

*1 Temperature is limited to 450°C (842°F) for trunnion mounted ball valves with trim 6H
*2 Shell material WCB: Upon prolonged exposure to temperatures above 425°C (797°F), the carbide phase of steel may be converted to graphite.
Permissible, but not recommended for prolonged usage above 425°C (797°F).

2. Unconditional fire-safe provision

Metal 또는 Hard Graphite Seat는 내열성이 매우 높은 반면에, Gland Packing 및 Flange Gaasket과 같은 기타 Sealing 구성요소는 내열성 물질인 Flexible Graphite로 만들어져 밸브의 어떤 부분도 비정상적으로 가열된 환경에의해 영향을 받지 않습니다. 또한, 내부 구성부품 간 전지전도성 때문에 정전기 방지 장치가 필요하지 않습니다.

3. Maintenance ease

밸브 Body의 Split Body Construction은 Slurry나 점성유를 다룰 때 발생하는 치명적인 손상으로 부터 손쉬운 유지보수가 가능합니다.

4. Valve automation

Quarter-turn 밸브작동 메커니즘을 통해 전기 및 공압 액츄에이터(Actuator)와 같은 밸브 자동화장치를 쉽게 장착할 수 있습니다. KITZ Floating Ball Valve는 Gland를 분해하지 않고 액츄에이터의 즉각적인 장착을 가능하게 하기위하여 ISO 5211 및 CAPI를 준수하여 만들어진 일체형 액츄에이터 Mounting Pad를 사용합니다.

5. High flow efficiency

Full Port 디자인은 유체흐름이 밸브 Bore를 통과할 때, 압력손실을 최소화하면서 최대화되고 선형적인 유체흐름으로 바꿔줍니다. 특히 Slurry나 점성유를 다를 때 문제없는(Trouble-free) 성능을 제공하기 위하여 필요한 디자인 입니다.

6. FILLTITE® seated ball valves (Trim1H)

● PTFE 기반 재료 중 최고의 내열성

Valve Design		Floating Ball Valve	Trunnion Mounted 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

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

● **양방향 흐름**
● 마모가 적은 서비스에 권장

Valve Design		Floating Ball Valve
Trim symbol		3H*5
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	Carbon + 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
*5 Shell material WCB: Upon prolonged exposure to temperatures above 425°C (797°F), the carbide phase of steel may be converted to graphite.
Permissible, but not recommended for prolonged usage above 425°C (797°F).

Caution:
● 조절(throttling) 서비스에는 권장되지 않음.
● 마모가 높은 서비스에는 권장하지 않음.
● 고온공기 등 산화 (oxidizing)서비스를 위한 최대 작업온도는 450˚C(842˚F)이다

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

Ball과 Seat간의 완전한 금속성 접촉(Metallic Contac)으로 인한 견고한 구조와 Trim 재료의 높은 내구성(Durability)으로 인해 KITZ Metal Seated Ball Valve는 Slurry와 점성유체(Viscous Fluid)와 같은 마찰력이 높은 유체환경에서 사용하기 적합합니다.

● **Trim materials**

Valve Design		Floating Ball Valve		Trunnion Mounted Ball Valve	
				Split body	3-piece body
Trim symbol		5H	6H *3	6H	
Temp.		300°C	500°C	450°C	525°C
		572°F	932°F	842°F	977°F
Seat leakage*1		ANSI FCI 70-2 Class Ⅵ			ISO 5208 RateD/ANSI FCI 70-2 Class Ⅵ *4
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	316 Stainless steel + SFNi *2
	Ball seat	ASTM A276 Type 316 + SFNi *2	ASTM A276 Type 316 + SFNi *2	ASTM A276 Type304 + SFNi *2	316 Stainless steel + SFNi *2
	Stem	ASTM A 564 Type 630	ASTM A 564 Type 630	ASTM A276 Type304 + SFNi *2	~343°C/649°F : ASTM A564 Type630 ~525°C/977°F : EN 1.4980

*1 Maximum allowable seat leakage *2 Ni-Cr alloy thermal spraying
*3 Shell material WCB: Upon prolonged exposure to temperatures above 425°C (797°F), the carbide phase of steel may be converted to graphite.
Permissible, but not recommended for prolonged usage above 425°C (797°F).
*4 Please contact your local KITZ agents or distributors.

● 내구성이 뛰어난 Metal seat 설계와 소재 또한 완전히 보장된 조절(throttling) 서비스 성능을 제공하므로 KITZ Metal Seat 볼 밸브가 신뢰할 수 있는 제어(Control) 밸브로 기능할 수 있다
● 양방향 흐름.

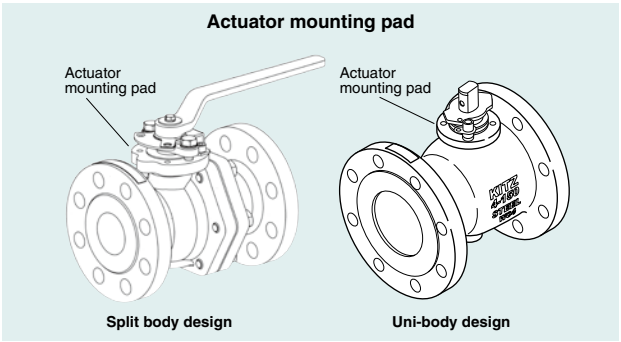
Caution:
● Throttling(조절)서비스에 사용할 경우 Gear 또는 Valve Actuator를 사용하여 밸브 위치를 고정하십시오.

Dimension of Actuator Mounting Pads

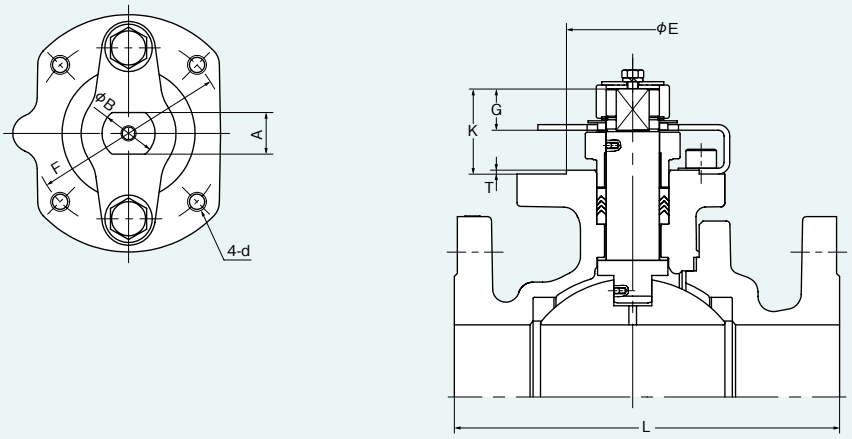
Integral Actuator Mounting Pads

KITZ Ball Valve 중 150/300 SCTDZ/UTDZ(M) 시리즈와 150/300 SCTAZM/UTAZ(M)시리즈는 ISO 5211사양에 의해 설계되고 공장에서 조립된 Integral Actuator Mounting Pad(일체형 액츄에이터 Mounting Pad)를 갖추고 있습니다. 이러한 특징은 밸브에 ISO 5211 Mount Flange가 있는 액츄에이터를 쉽게 설치할수 있도록 합니다. Mounting Pad와 Stem Head 치수는 CAPI ADDS 2.02를 준수합니다.

Note : 고객들은 밸브자동화를 위해 장착할 액츄에이터를 위해 Mounting Bracket과 Connector를 준비해야합니다. 액츄에이터는 밸브 Gland없이 KITZ Ball Valve에 설치될 수 없습니다.



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



Dimensions

Unit: mm

Nominal Pressure	Nominal Size (NPS)	-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
Class 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
Class 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

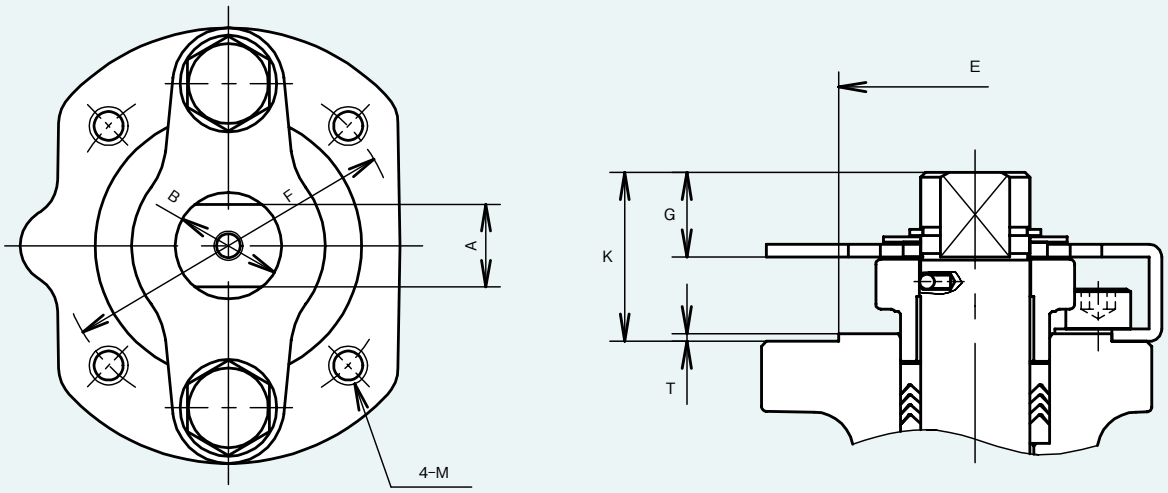
***KITZ product codes:**

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

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 Reduced Bore, Uni-body, End Entry Design Ball Valves



Dimensions

Unit: mm

Nominal Pressure	Nominal Size (NPS)	Mounting Dimensions for Actuator								ISO 5211 Flange Type
		A	B	E	F	G	K	T	M	
Class 150	1/2	7	10	25	36	8.5	18	1	M5	F03(2)
	3/4	7	10	25	36	8.5	18	1	M5	F03(2)
	1	9	12	25	36	9	22	1	M5	F03
	1 1/2	14	18	35	50	14	30	1.5	M6	F05
	2	17	22	55	70	17	34	1.5	M8	F07
	3	22	28	70	102	22	45	2	M10	F10
	4	22	28	70	102	22	45	2	M10	F10
	6	27	36	85	125	27	52	2	M12	F12
	8	36	48	100	140	36	63	2	M16	F14
	10	46	60	130	165	46	79	2	M20	F16
Class 300	1/2	7	10	25	36	8.5	18	1	M5	F03(2)
	3/4	7	10	25	36	8.5	18	1	M5	F03(2)
	1	9	12	25	36	9	22	1	M5	F03
	1 1/2	14	18	35	50	14	30	1.5	M6	F05
	2	17	22	55	70	17	34	1.5	M8	F07
	3	22	28	70	102	22	45	2	M10	F10
	4	22	28	70	102	22	45	2	M10	F10
	6	27	36	85	125	27	52	2	M12	F12
	8	36	48	100	140	36	63	2	M16	F14
	10	46	60	130	165	46	79	2	M20	F16

∗These dimensions are specified as F03S by CAPI.

★UNC threads optionally available.

KITZ product codes:
(1) 150SCTAZ (3) 300SCTAZ
(2) 150UTAZ(M) (4) 300UTAZ(M)

Pressure-Temperature Ratings

Ball Valve의 압력 온도 등급은 밸브 Shell 재질 뿐만 아니라 Ball Seat, Gland Packing, Gasket에 사용되는 Sealing 재질에 의해서 결정됩니다. Sealing 재질은 고분자(High Molecular) 또는 고무일지 모르나, 유체특성, 작동 온도와 압력, 유체흐름의 속도 및 밸브 작동 빈도에 따라 선택항목이 정해집니다.
예상가능한 모든 조건에서 모든 종류의 유체에 대한 정확한 압력 온도 등급을 예측하는것은 매우 어렵기 때문에, 현장 및 자체 실험실에서 겪었던 이전의 경험들을 바탕으로 Non-shock 유체 서비스에 대한 일반적인 등급 차트를 준비했습니다.

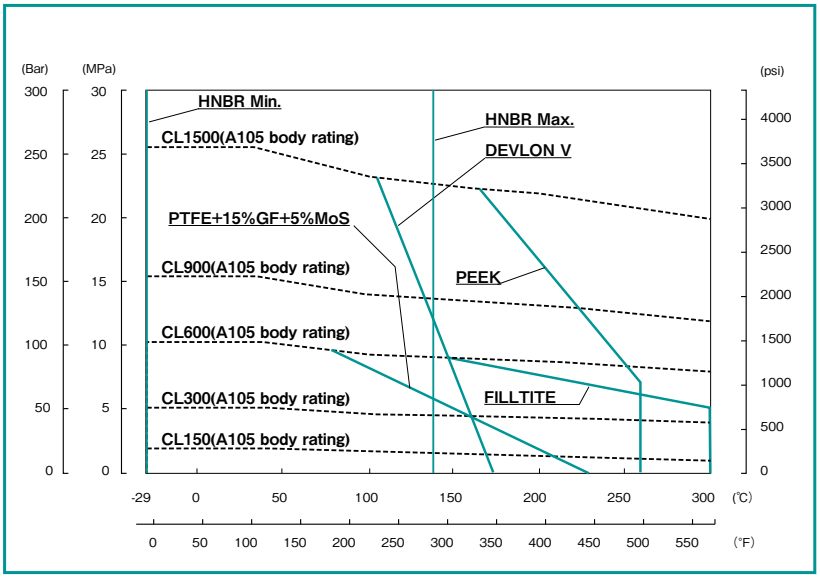
특수 서비스 조건은 아래에 열거 되어 있으며, 기술적 사항은 KITZ Corporation 또는 현지 대리점에 문의하여 주십시오.

1. 밸브가 고온 또는 고압에 장기간 노출될 경우 반드시 밸브는 완전히 잠긴 상태를 유지해야 합니다.
2. 밸브는 고온 또는 차압(Differential Pressure) 조건에서 자주 작동하여야 합니다.
3. Line압력 또는 온도가 자주 변경됩니다.

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.

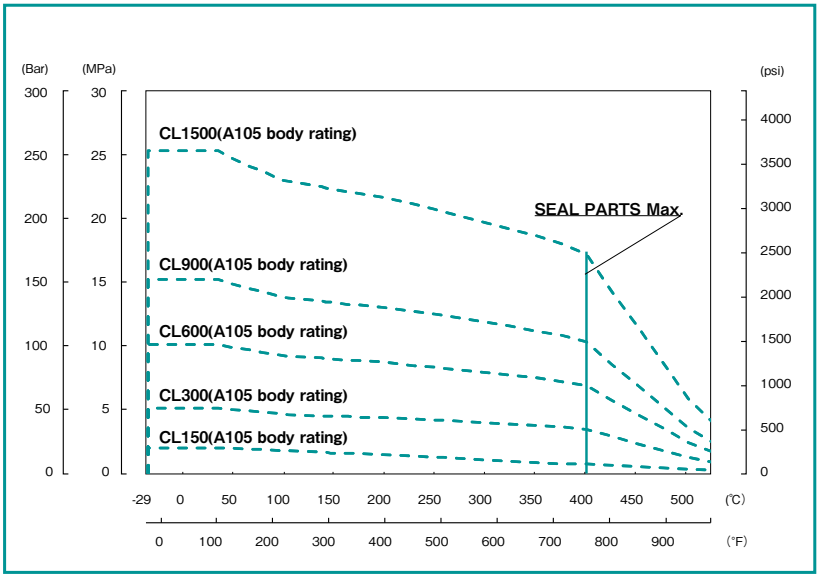
FILLTITE® is a specially reinforced ball seat, made by using carbon based fillers into PTFE at higher rate than conventional carbon filled PTFE, which greatly improves heat and abrasion resistance. The material shows excellent operability, durability, chemical resistance and sealing performance at a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

Soft Seated 3-Piece trunnion mounted ball valves



O-Ring Material	Min.Temp. (℃/°F)	Max.Temp. (℃/°F)
NBR	-30/-22	80/176
HNBR	-30/-22	140/284
L-NBR	-50/-58	80/176
L-HNBR	-46/-50	140/284
FKM	-20/-4	200/392

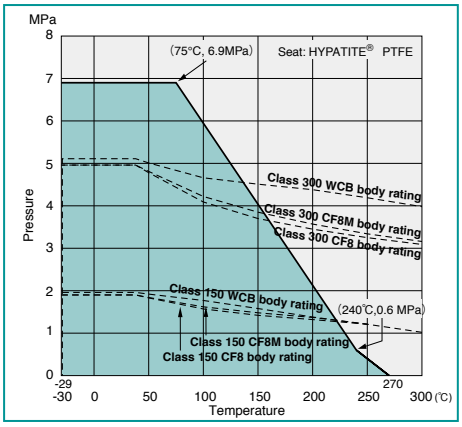
Metal Seated 3-Piece trunnion mounted ball valves: Trim 6H



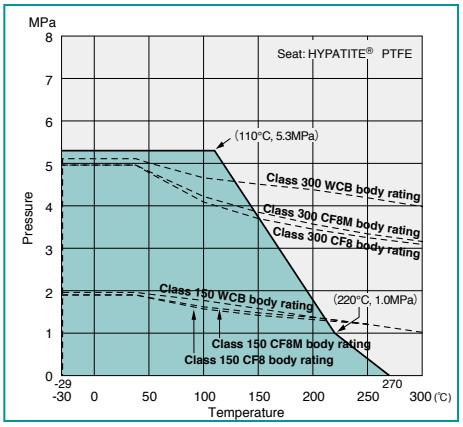
NOTE : In case of using at higher than 400℃ please contact KITZ Corporation.

Pressure-Temperature Ratings

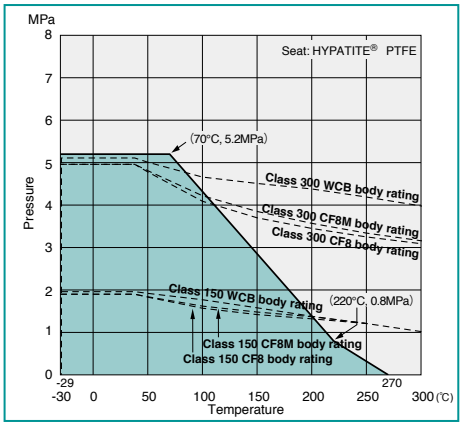
150/300UTDZ(M)/SCTD : NPS ½, ¾



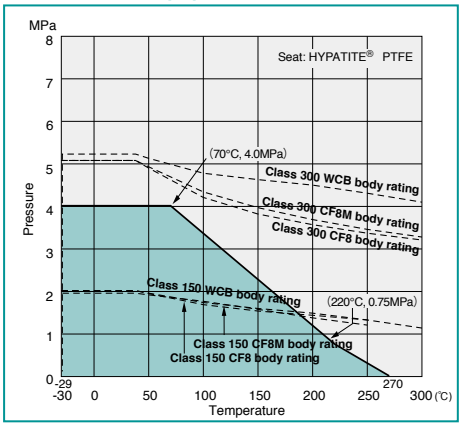
150/300UTDZ(M)/SCTD : NPS 1 to 2½



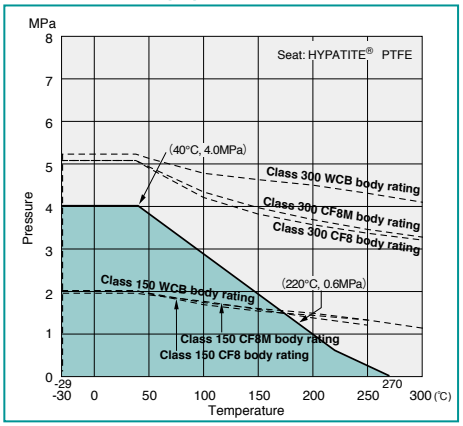
150/300UTDZ(M)/SCTD : NPS 3, 4



150/300UTDZ(M)/SCTD : NPS 5, 6

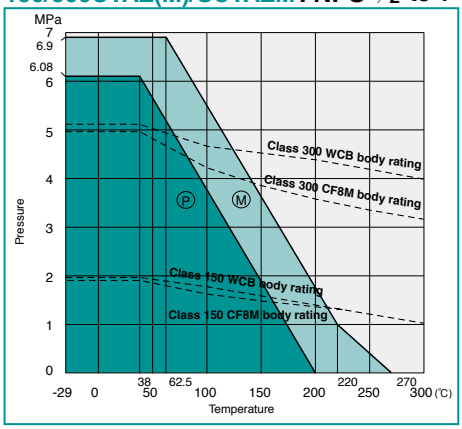


150/300UTDZ(M)/SCTD : NPS 8, 10

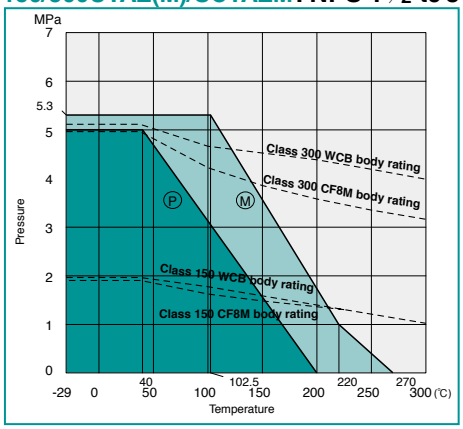


Note: Lowest working temperature for WCB is −29°C.

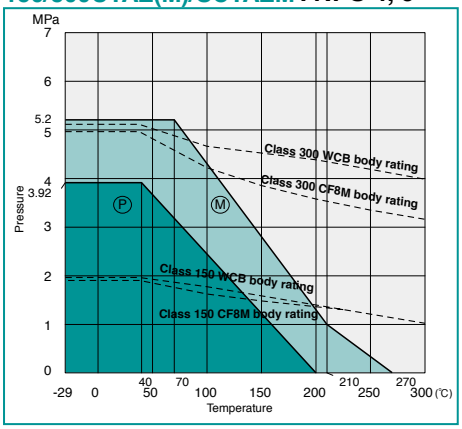
150/300UTAZ(M)/SCTAZM : NPS ½ to 1



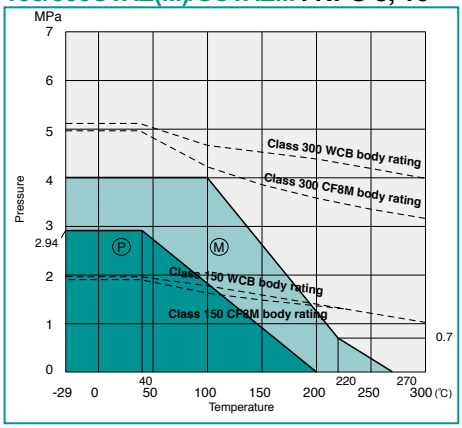
150/300UTAZ(M)/SCTAZM : NPS 1½ to 3



150/300UTAZ(M)/SCTAZM : NPS 4, 6



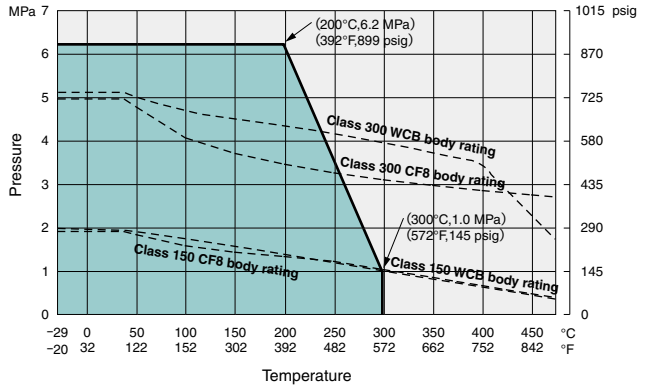
150/300UTAZ(M)/SCTAZM : NPS 8, 10



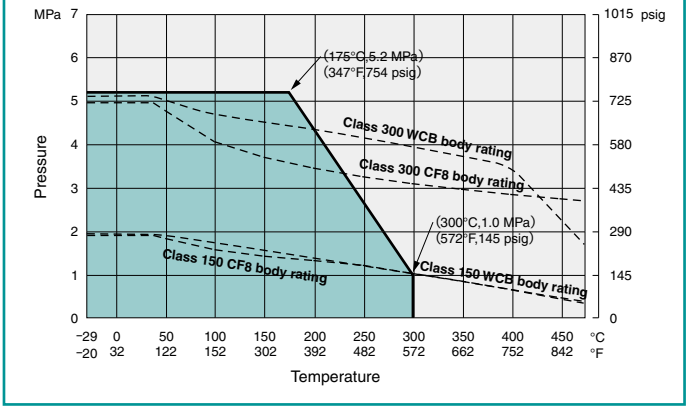
Seat: Ⓟ Virgin PTFE
Ⓜ HYPATITE® PTFE/ Carbon-filled PTFE

Pressure-Temperature Ratings

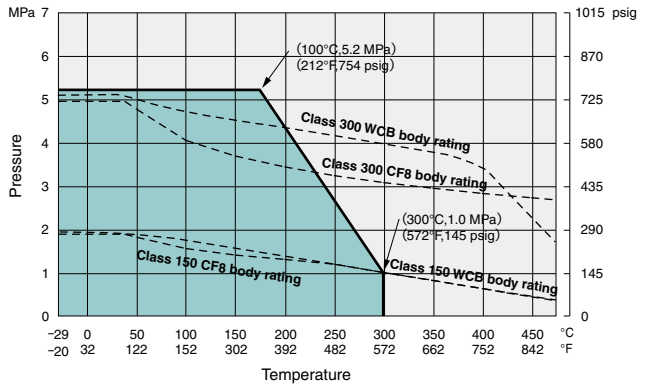
● FILLTITE® seated floating ball valves: Trim 1H: NPS 1 to 2½



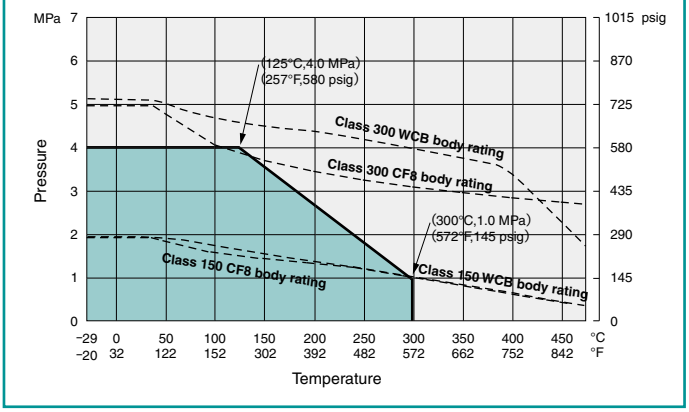
● FILLTITE® seated floating ball valves: Trim 1H: NPS 3, 4



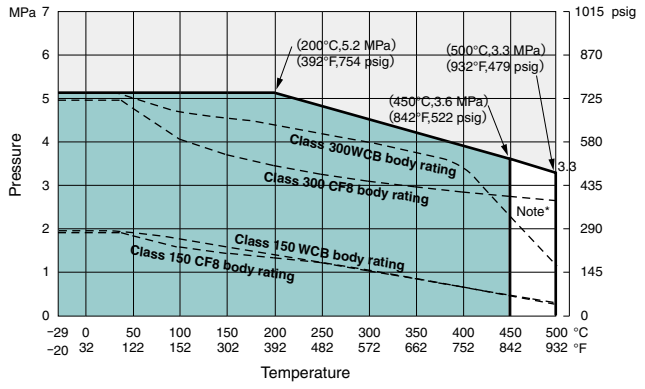
● FILLTITE® seated floating ball valves: Trim 1H: NPS 5, 6



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



● Hard graphite seated floating ball valves: Trim 3H

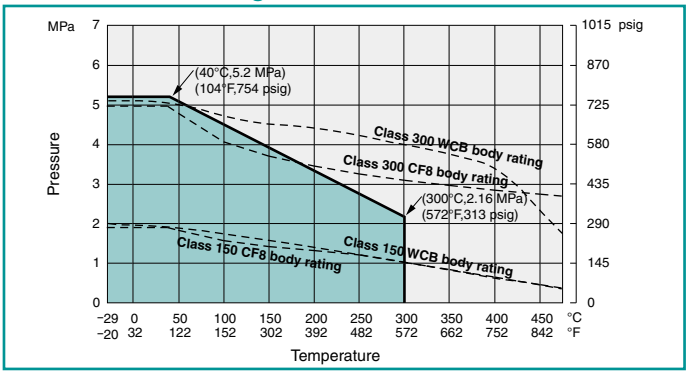


Note* Maximum working temperature for oxidizing service, such as high temperature air, is 450°C (842°F).

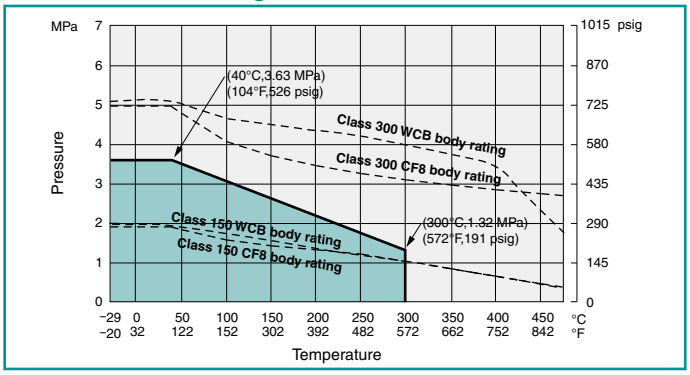
Note: **3H** Maximum working temperature for oxidizing service, such as high temperature air, is 450°C (842°F).
Note: **3H/6H** Serviceable temperature terminates at 300℃ (572°F) for JIS 10K and at 425℃ (797F°) for JIS 20K.
Note: **3H/6H** Shell material WCB: Upon prolonged exposure to temperatures above 425°C (797°F), the carbide phase of steel may be converted to graphite.
Permissible, but not recommended for prolonged usage above 425°C (797°F).

Pressure-Temperature Ratings

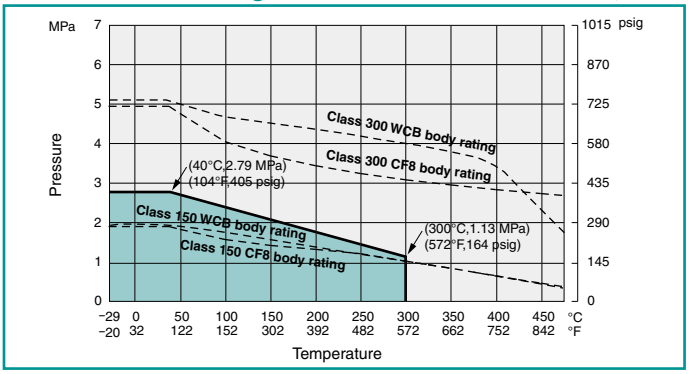
Metal seated floating ball valves: Trim 5H: NPS ½ to 1¼



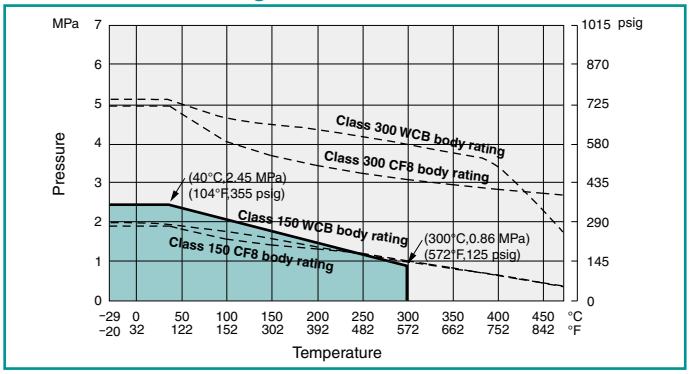
Metal seated floating ball valves: Trim 5H: NPS 1½, 2



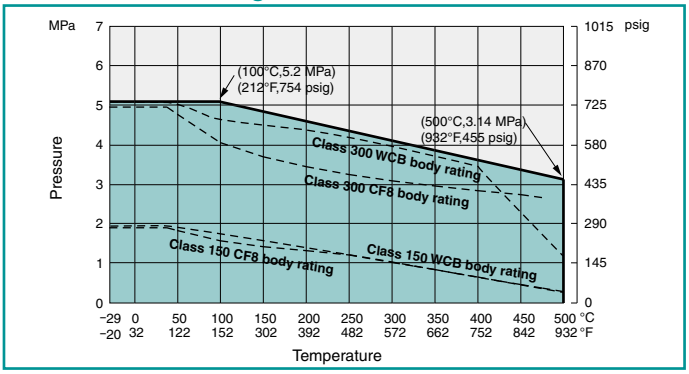
Metal seated floating ball valves: Trim 5H: NPS 2½, 4



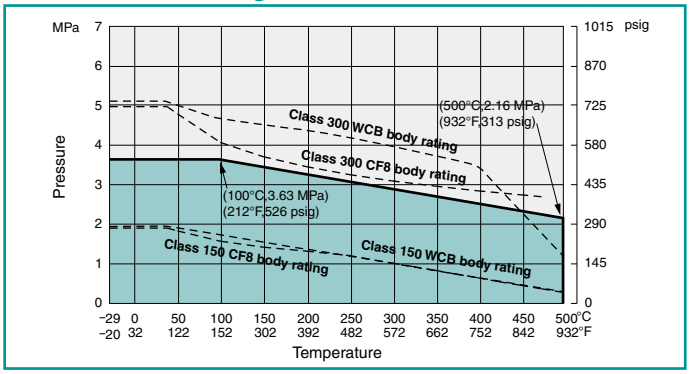
Metal seated floating ball valves: Trim 5H: NPS 5 to 8



Metal seated floating ball valves: Trim 6H: NPS ½ to 5

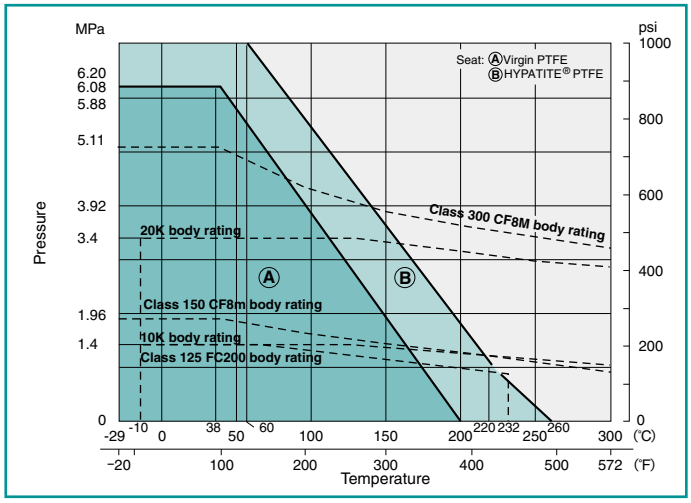


Metal seated floating ball valves: Trim 6H: NPS 6, 8

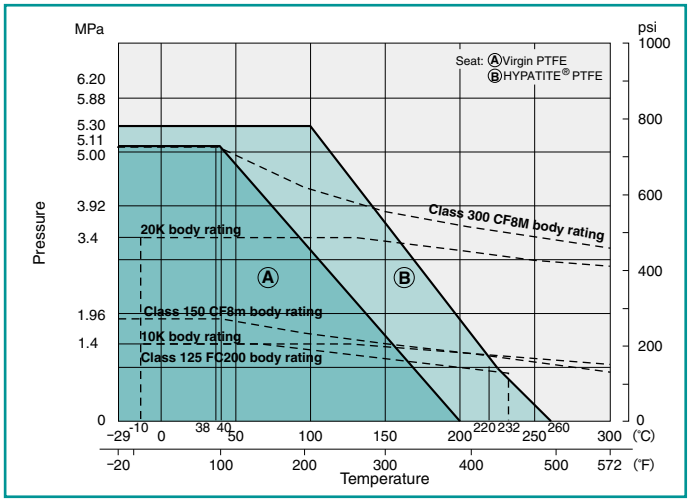


Pressure-Temperature Ratings

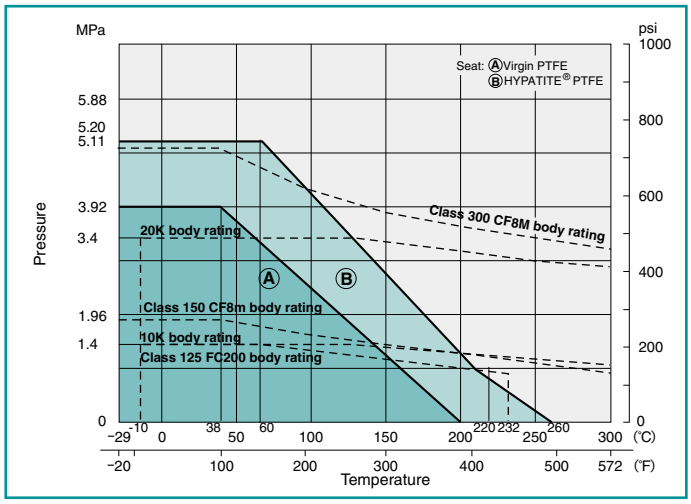
150UTB(M)/150UTBT/10/125FCTB(2L) : NPS ½, ¾
10/125FCTR(2L) : NPS ½ to 1



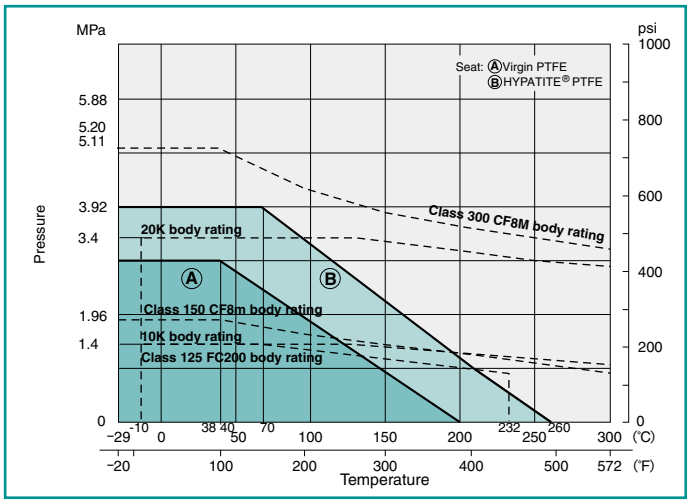
150UTB(M)/150UTBT/10/125FCTB(2L) : NPS 1 to 2½
10/125FCTR(2L) : NPS 1½ to 3



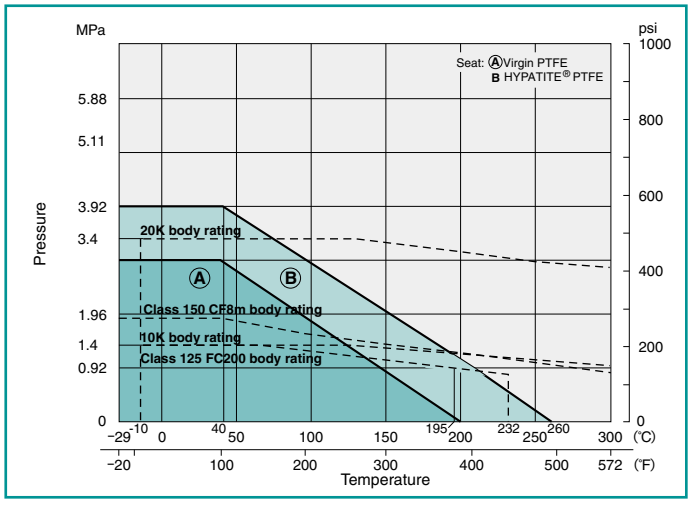
150UTB(M)/150UTBT/10/125FCTB(2L) : NPS 3, 4
10/125FCTR(2L) : NPS 4, 5



150UTB(M)/150UTBT/10/125FCTB(2L) : NPS 5, 6
10/125FCTR(2L) : NPS 6, 8

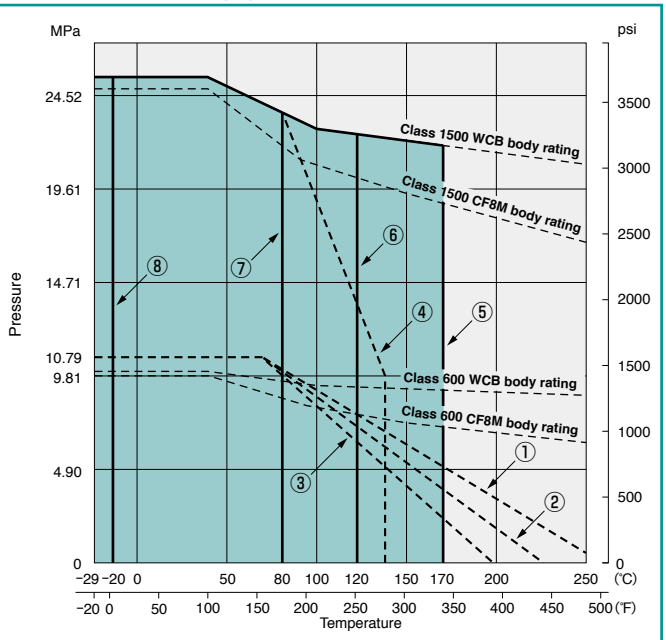


150UTB(M)/10/125FCTB(2L) : NPS 8, 10
10/125FCTR(2L) : NPS 10, 12



Pressure-Temperature Ratings

600/1500SCTB/UTB(M)



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

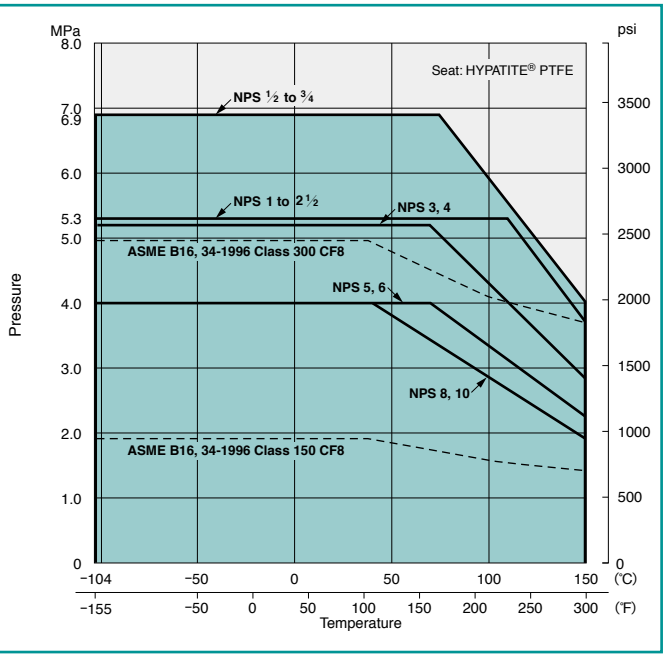
⑤:(1) FKM
(2) Low-temperature FKM
⑥:(1) EPDM
(2) ECO (Epichlorohydrin Copolymer)
⑦:(1) NBR
(2) Low-temperature NBR

O-ring Lower Limit

⑧: FKM

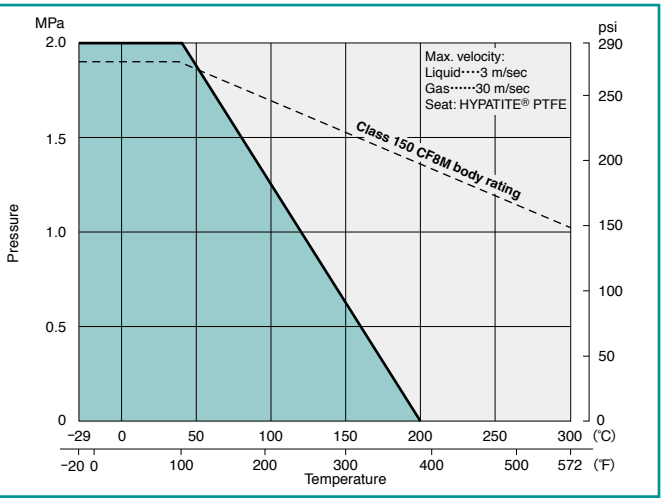
* O-rings made of others than FKM can with stand −29℃ (−20℉)

150/300UTDZXL(M)

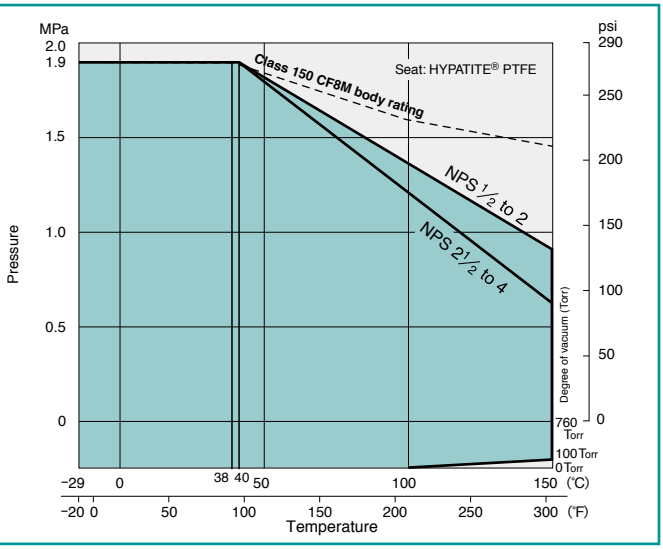


3-way: 150UTB/TR4LA(M)/4TA(M)

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

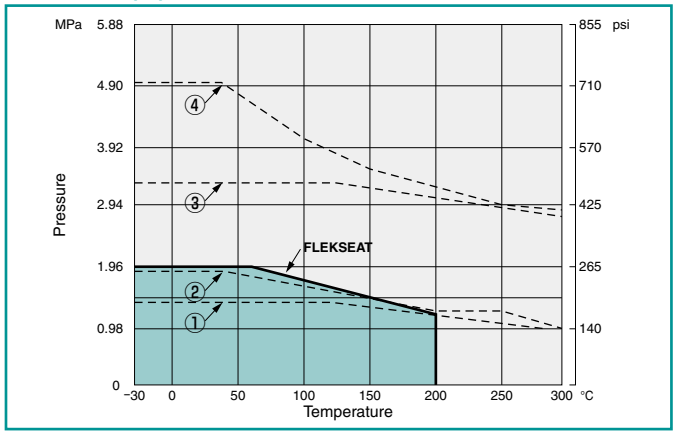


PFA Lined: 150UTBLN



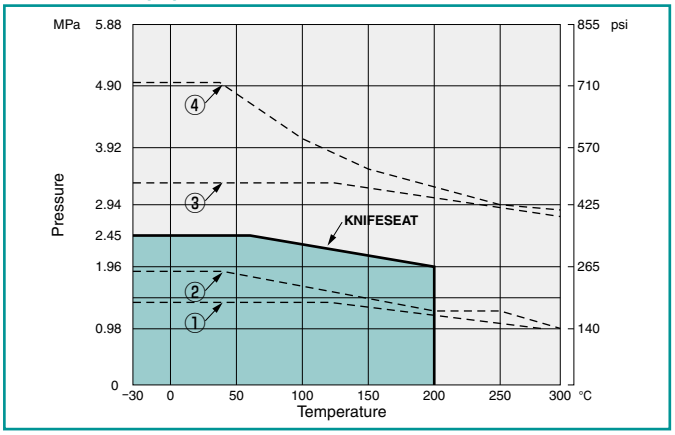
Pressure-Temperature Ratings

150/300UVC(M)
60/20UVC(M)



①: Valve body rating to JIS B2220 10K steel
②: Valve body rating to ASME B16.34 Class 150 CF8
③: Valve body rating to JIS B2220 20K steel
④: Valve body rating to ASME B16.34 Class 300 CF8

150/300UVCT(M)
10/20UVCT(M)

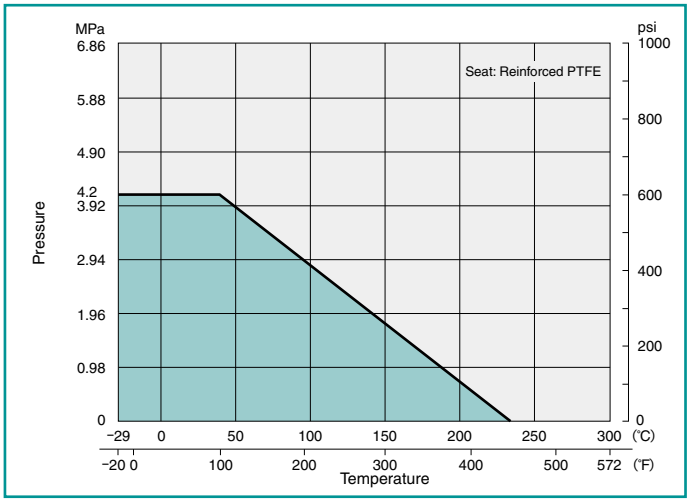


①: Valve body rating to JIS B2220 10K steel
②: Valve body rating to ASME B16.34 Class 150 CF8
③: Valve body rating to JIS B2220 20K steel
④: Valve body rating to ASME B16.34 Class 300 CF8

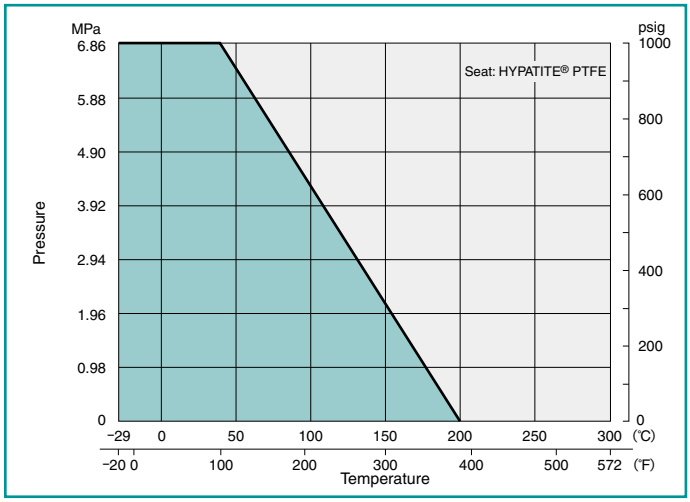
The products introduced in this catalog are all covered by the ISO 9001 Certification awarded KITZ Corporation in 1989, the earliest in the valve industry in Japan.

Pressure-Temperature Ratings

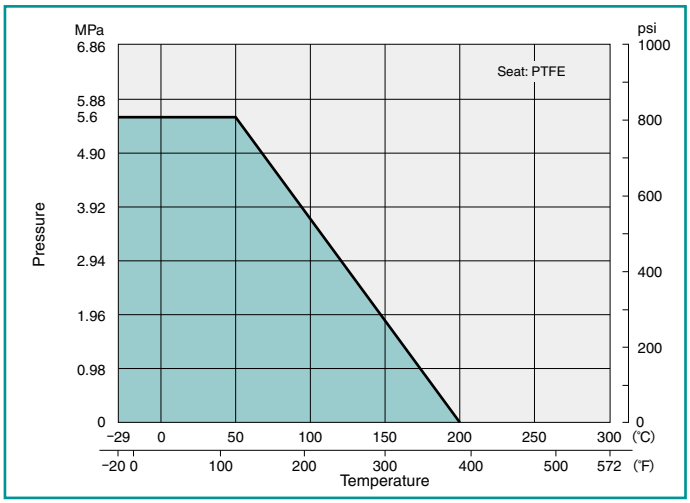
Type 600 : SCTK/UTK(M)



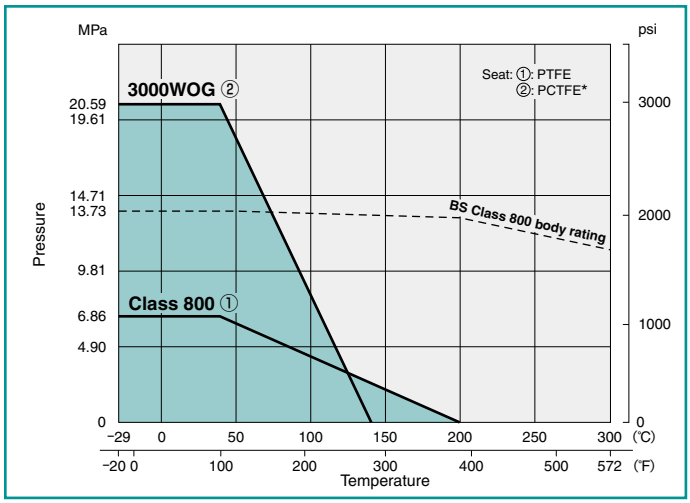
Type 1000 : UTFM



Type 800 : UTH(M)

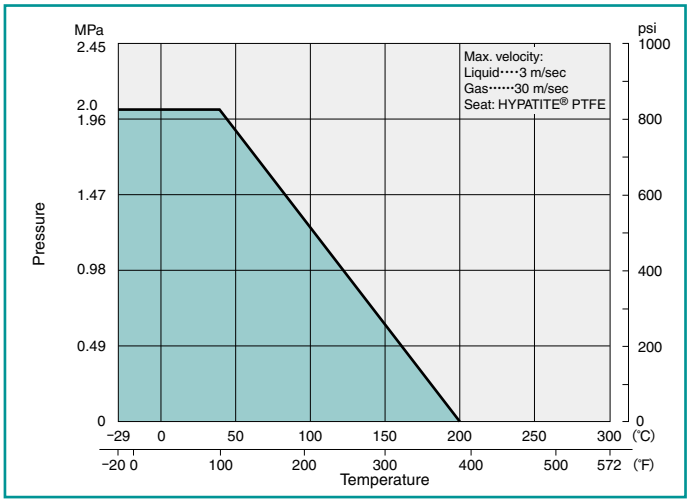


Class 800 and Type 3000 : SCTK

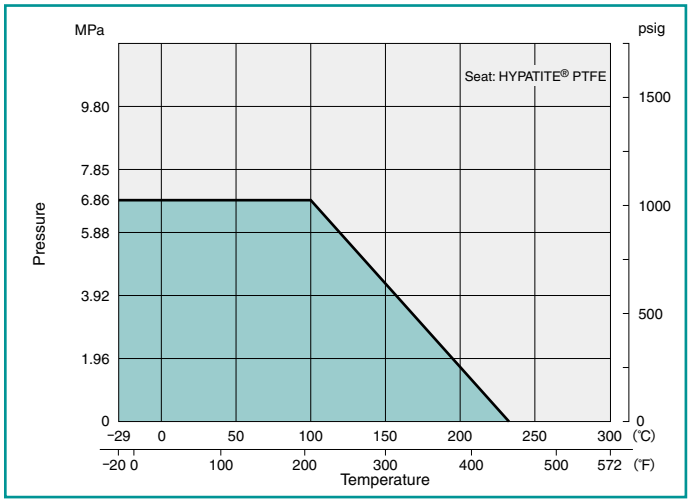


* Polychloro-Trifluoro-Ethylene

Type 800 : UTH4LM/4TM



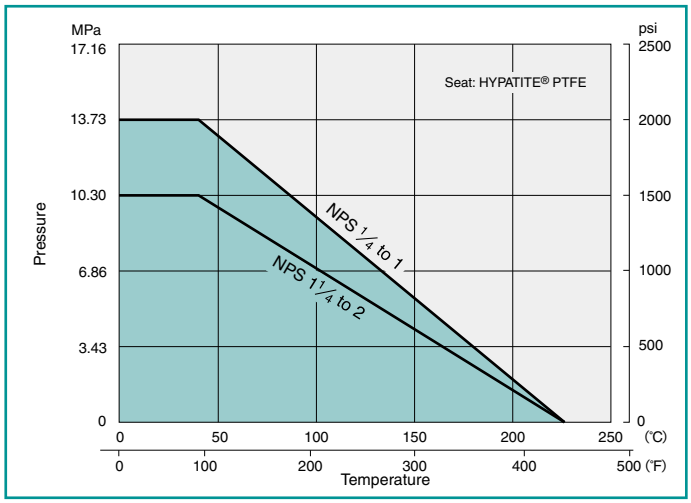
Type 1000 : SC3TZ/U3TZ Series



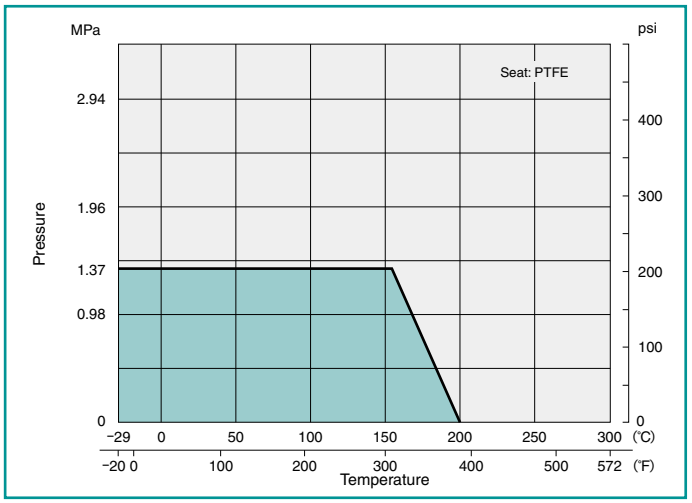
Note: Type 1500 is optionally available

Pressure-Temperature Ratings

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

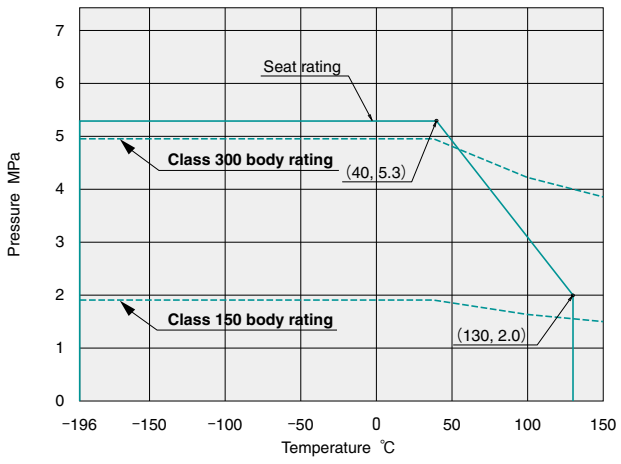


Class 150: AK150UT(M)

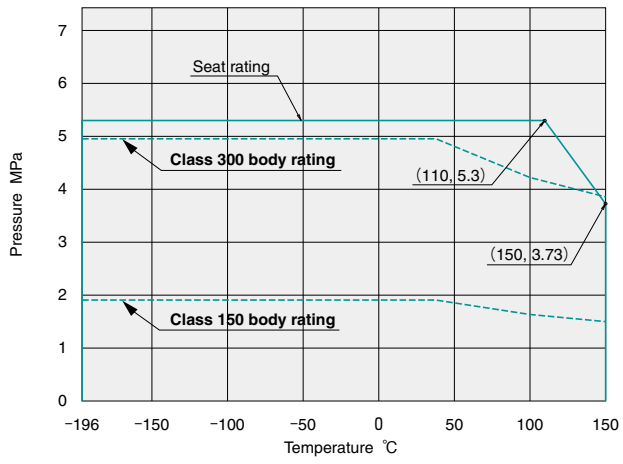


Pressure-Temperature Ratings (Seat rating)

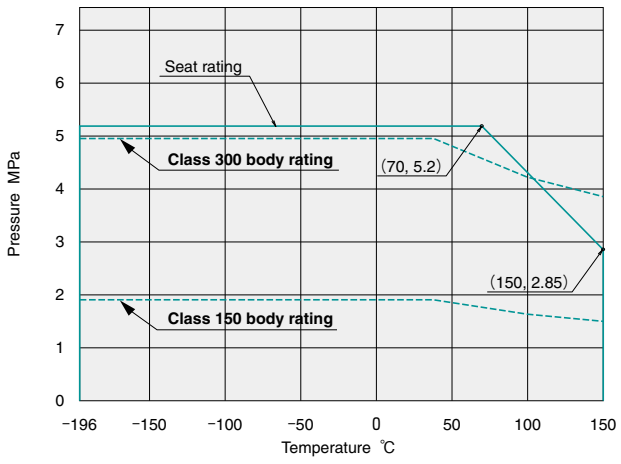
150/300UTAZL(M): NPS ½ to 2



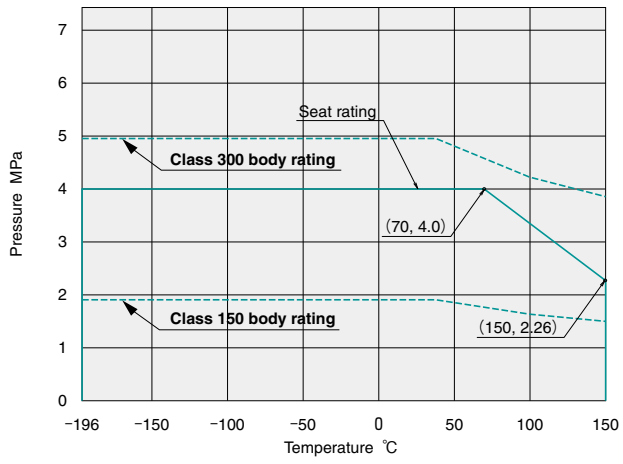
150/300UTAZL(M): NPS 3



150/300UTAZL(M): NPS 4, 6

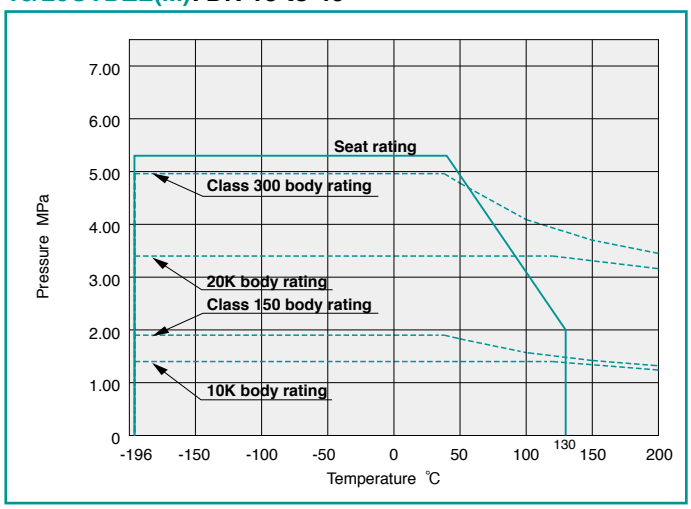


150/300UTAZL(M): NPS 8, 10

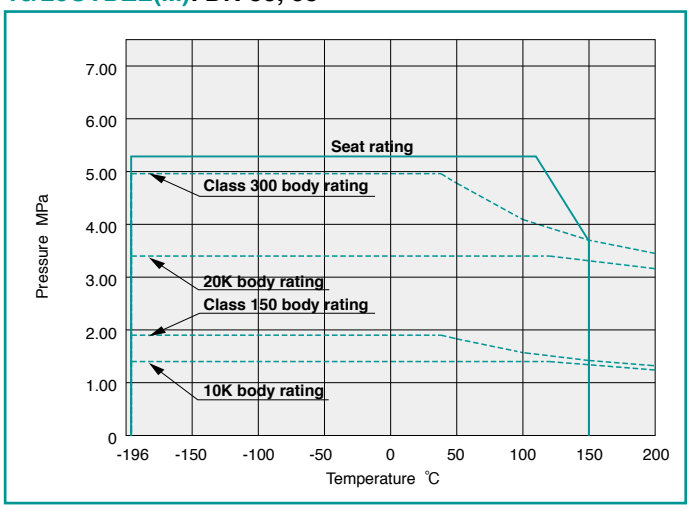


Pressure-Temperature Ratings (Seat rating)

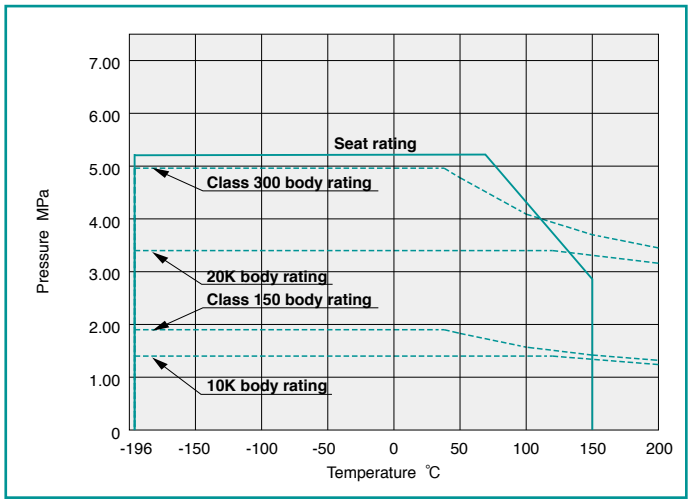
150/300UTDZL(M): NPS ½ to 1½
10/20UTDZL(M): DN 15 to 40



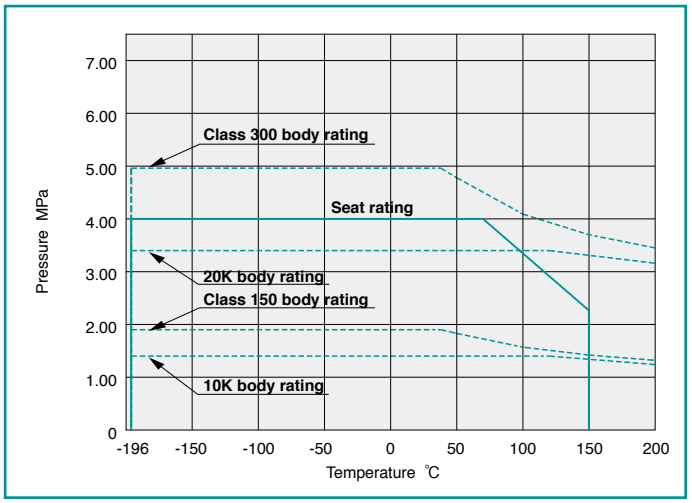
150/300UTDZL(M): NPS 2, 2½
10/20UTDZL(M): DN 50, 65



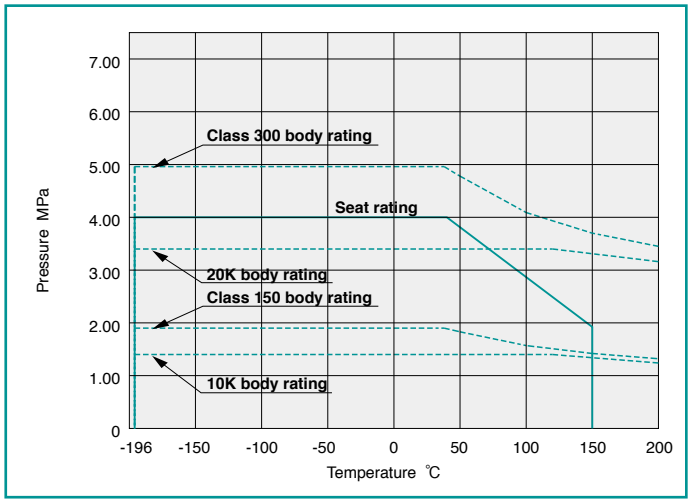
150/300UTDZL(M): NPS 3, 4
10/20UTDZL(M): DN 80, 100



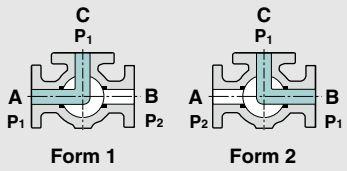
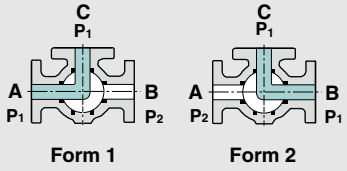
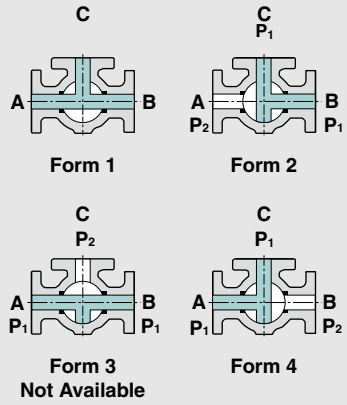
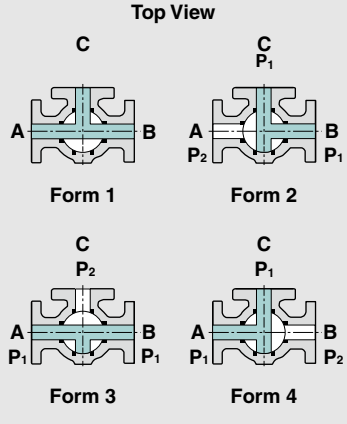
150/300UTDZL(M): NPS 5, 6
10/20UTDZL(M): DN 125, 150



150/300UTDZL(M): NPS 8, 10
10/20UTDZL(M): DN 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 Form 1의 유로방향은 포트 "A"와 "C"사이로 흐릅니다. 포트 "B"와 "C" 사이의 유로방향은 Form 2 입니다. Form 1과 2의 유로방향은 변경이 가능합니다. 2 닫힌 통로의 유체압력인 P2가 열린 통로의 유체압력인 P1보다 높을 경우 닫힌 통로의 볼 Seat를 통해 P1에서 약간의 누수가 생길 수 있습니다.
3-Way 4-Seat L-port ball valve	Top View  Form 1 Form 2	1 Form 1의 유로방향은 포트 "A"와 "C"사이로 흐릅니다. 포트 "B"와 "C"사이의 유로방향은 Form 2 입니다. Form 1과 2의 유로방향은 변경이 가능합니다. 2 닫힌 통로의 유체압력인 P2가 열린 통로의 유체압력인 P1보다 높을 경우 닫힌 통로의 볼 Seat를 통해 P1에서 약간의 누수가 생길 수 있습니다.
3-Way 2-Seat T-port ball valve	Top View  Form 1 Form 2 Form 3 Not Available Form 4	1 Form1 에서 모든 포트들은 개방되어 있습니다. Form 2에서 유체는 포트 "B"와 "C" 사이로 흐릅니다. Form 4의 유로방향은 포트 "A"와 "C" 사이 입니다. 유로방향은 Form 1에서 2로 변경이 가능하며 (표준 작동 유형) Form 1에서 4로도 변경이 가능합니다. Stopper는 표준 작동 유형으로 조립됩니다. 2 닫힌 통로의 유체압력인 P2가 열린통로의 유체압력인 P1보다 높을 경우 닫힌 통로의 볼 Seat를 통해서 P1에서 약간의 누수가 생길 수 있습니다. **■작동 가능한 유형** • Pattern 1: From Form 1 to Form 4 • Pattern 2: From Form 1 to Form 2 (Standard) 주문서 작성 시 위의 작동 유형중 하나를 선택하여 주십시오.
3-Way 4-Seat T-port ball valve	Top View  Form 1 Form 2 Form 3 Form 4	1 Form 1에서 모든 포트들은 개방되어 있습니다. Form 2에서 유체는 포트 "B"와 "C" 사이로 흐릅니다. Form 4의 유로방향은 포트 "A"와 "C"사이입니다. 유로방향은 모든 Form으로 전환되거나 나뉘어지거나 혹은 섞일 수 있습니다. Stopper는 유로방향이 Form 1에서 2로 바뀌는 표준작동 유형으로 조립됩니다. 2 닫힌 통로의 유체압력인 P2가 열린 통로의 유체압력인 P1보다 높을 경우 닫힌 통로의 볼 Seat를 통해서 P1에서 약간의 누수가 생길 수 있습니다. **■작동 가능한 유형** • 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 주문서 작성 시 위의 작동유형 중 하나를 선택하여 주십시오.

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

1. Excessive Cavity Pressure

중요한 사항이니 8페이지를 참고하십시오.

2. High-Temperature and High-Pressure Service

제조업체에 의해 공표되는 압력 온도 등급은 Ball Valve가 견딜수 있는 최대 압력과 온도에 대한 지침이 됩니다. 그러나 KITZ사는 Ball Valve가 아래의 조건에 따라야 할 경우, 밸브의 적합성을 보장하기 위하여 밸브 배급 업체 또는 제조업체에 이와같은 사항을 언급하는 것을 권장합니다.

a: ***Floating ball valves***가 닫힌상태에서 고온과 차압에 장기간 노출되는 경우.
b: ***Floating ball valves***가 고온과 차압의 조건에서 자주 작동하는 경우.
c: ***Floating ball valves***가 라인압력(Line Pressure) 또는 온도가 자주 변경되는 환경에서 사용될 경우.

3. Liquids with High Velocity

Ball 밸브가 매우 빠른 유속에서 자주 작동하거나, 특히 고온의 환경에서 고압을 받을때, Seat의 변형을 최소화 하기위하여 적절한 장치를 제조사 및배급사와 함께 확인 하여야 합니다.

4. Valve Selection

밸브가 사용되는 환경의 압력과 온도조건을 만족시키는 사양을 갖춘 밸브를 선택하여야 합니다. 연마재를 함유한 유체에 사용할 밸브의 경우, 밸브 Seat에 사용되는 고분자물질이 분해될 수 있으므로 특히 주의하여 선택합니다.

5. Valve Mounting

밸브를 장착하기 전, 배관 Bore속 용접 잔여물, 인분(Scale) 또는 녹이 내부에 남아있는지 확인하여야 합니다. Mounting Flanged 밸브는, Flange 볼트를 사선으로 교차하여 조여야 합니다.

6. Degree of Valve Opening

Ball Valve는 기본적으로 ON/OFF 밸브로만 여겨지며, 완전히 열리거나 닫히는지 주의하여야 합니다. Ball Valve를 일부만 열 경우, Seat의 부식이 발생하여 누수의 원이 될수도 있습니다. 조절서비스(Throttling Service)를 위해 Ball Valve를 사용해야하는 배관의 경우, 밸브가 완전히 닫혔을 때 발생할 수 있는 Seat 누설량을 고려하여 설계되어야 합니다. Ball Valve를 보관할때에는 반드시 밸브가 열린상태에서 보관되어야 한다는것을 유념하십시오.

7. Valve Actuation

자사공장에서는 두가지 타입의 공압 액츄에이터(KITZ B-Series, F-Seres)가 사용이 가능합니다. 또한 KITZ "KELMO"전동 액츄에이터 또는 기타 브랜드의 공압액츄에이터도 사용이 가능합니다.
그러나 사용자가 소지하고있는 액츄에이터를 KITZ Ball Valve에 달 경우, 부적절한 액츄에이터의 크기 때문에 심각한 문제가 일어날수 있으므로, KITZ 또는 현지 대리점에 적절한 기술적 조언을 참조하셔야 합니다. 아래에 나열된 서비스 조건에따라 지정된 밸브 작동 토르크(Operating Torque)의 실제 값이 달라질수 있다는점을 참고하십시오.

(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

보수작업을 위해 밸브가 배관으로부터 분리되어야 할 경우, 밸브 내부에 남은 유체를 완전히 제거하여야 합니다.
배관 속 유체가 없더라도 Body나 Cavity(Body, Ball,두개의 Seat를 둘러싼 공간)속 잔류유체가 있을 수도 있습니다. 밸브를 분리하기 전 Body, Cavity 속 압력 또한 완전히 제거되어야 한다는 점을 유념하십시오.

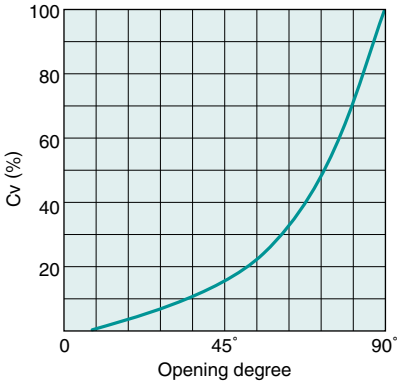
Inspection and Warranty

각 KITZ Ball Valve는 API 598 또는 BS 6755 Part.1에 의해 지정된 100% 자체검수를 실시합니다. 해당 테스트는 수압 Shell 테스트(Hydrostatic Shell Test)와 공압식 저압력 Seat 테스트(Pneumatic Low-pressure Seat Test)를 포함합니다. 제조사의 재질증명 테스트 보고서는 요구에 따라 제공이 가능합니다. 각 KITZ Ball Valve는 설치 후 12개월 품질보장이 가능하지만 공장 출하 후 18개월이 넘은 품목에는 해당사항이 없습니다.

Flow Characteristics

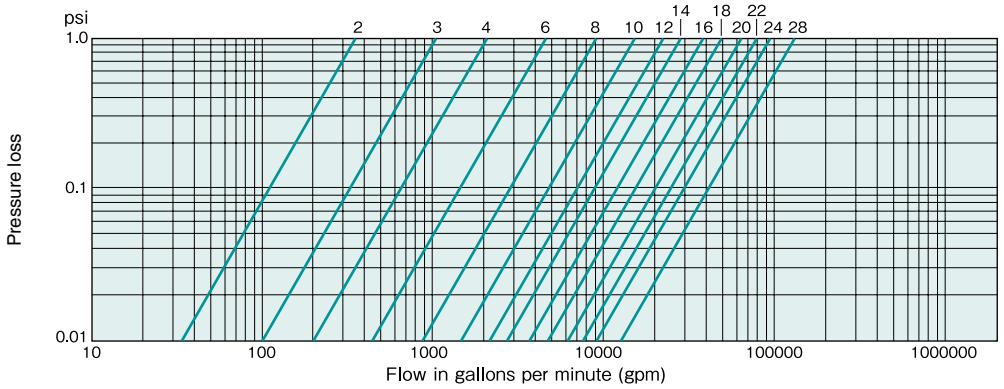
Ball Valve의 장점 중 하나는 주어진 Bore 크기당 모든 흐름이 다른 유형의 밸브보다 크다는 점 입니다. 유체는 와류(Eddy Currents) 또는 파동(Pulsation)에 의해 훨씬 덜 방해를 받습니다. 밸브 개방 당 유량의 수치를 얻으려면, 주어진 유량(%)과 압력손실 VS 유량 표에 주어진 해당 값을 곱하면 됩니다.

Valve opening vs. Cv

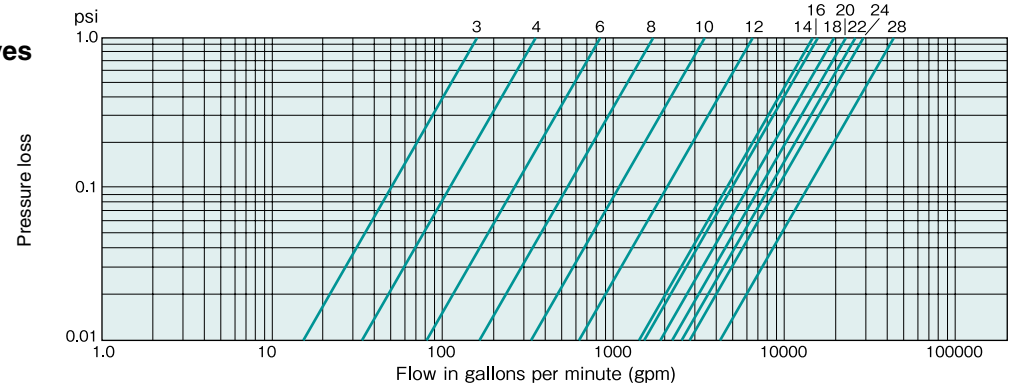


Pressure Loss vs. Flow Rate

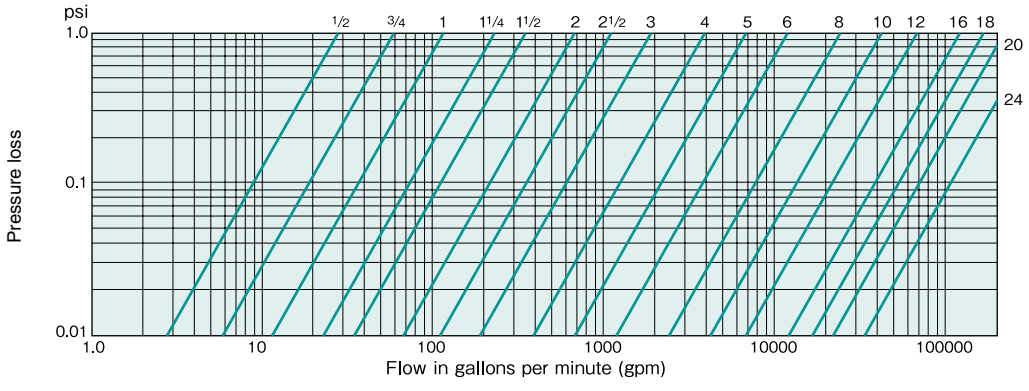
Full port valves



Reduced port valves



Schedule 40 steel pipe (10m)



⚠ CAUTION

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

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

While this catalog has been compiled with the utmost care, we assume no responsibility for errors, impropriety, or inadequacy. Any information provided in this catalog is subject to from-time-to-time change without notice for error rectification, product discontinuation, design modification, new product introduction or any other cause that KITZ Corporation considers necessary. This edition cancels all previous issues.

Read the instruction manual carefully before use.

⚠ NOTICE

If any products designated as strategic material in the Foreign Exchange and Foreign Trade Law, Cabinet Ordrer Concerning Control of Export Trade, Cabinet order Concerning Control of Foreign Exchange and other related laws and ordinances ("Foreign Exchange Laws") are exported to any foreign country or countries, an export license issued by the Japanese Government will be required under the Foreign Exchange Laws.

Further, there may be cases where an export license issued by the government of the United States or other country will be required under the applicable export-related laws and ordinances in such relevant countries.

The contract shall become effective subject to the fact that a relevant export license is obtained from the Japanese Government.

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

ISO 9001 certified since 1989

KITZ

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