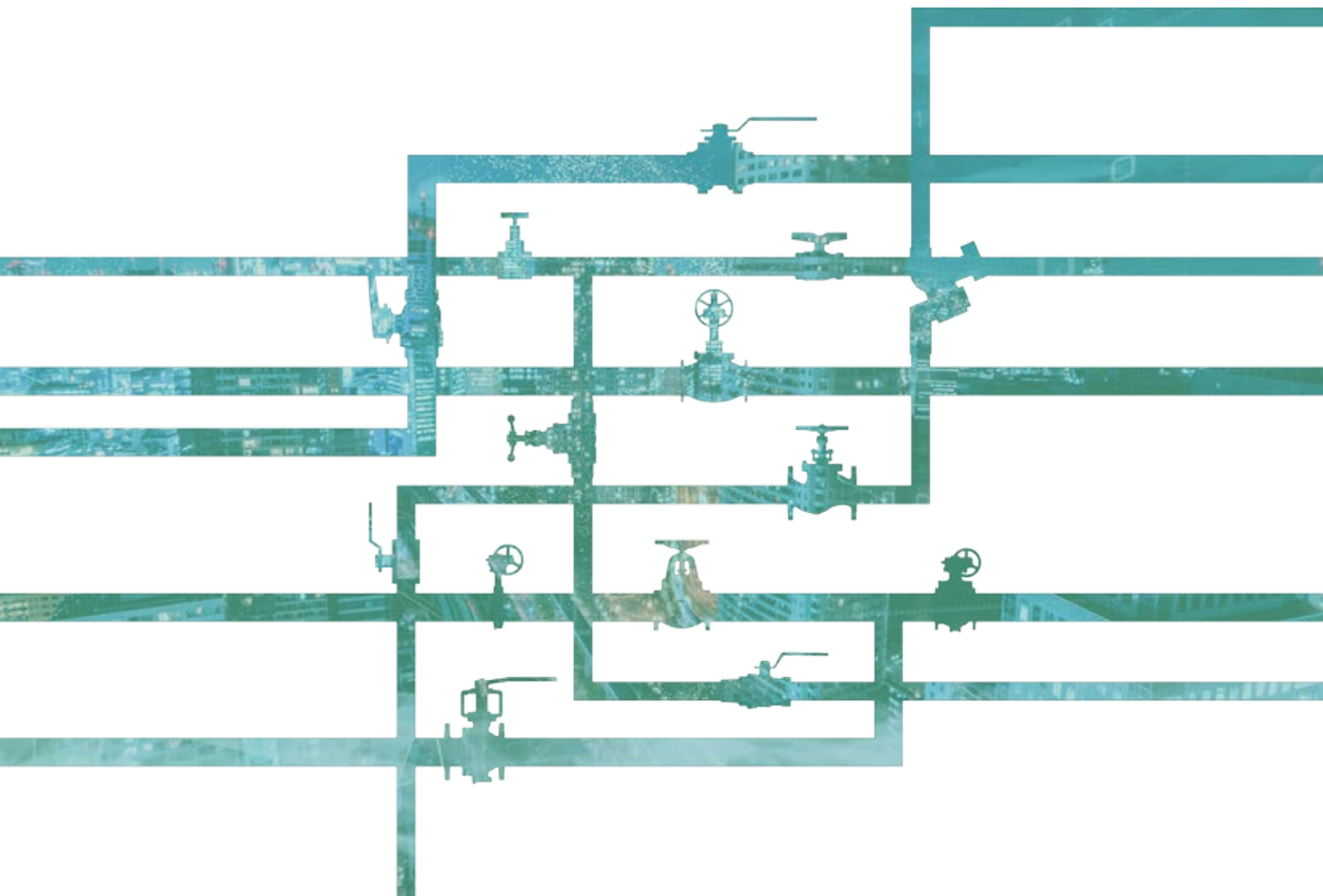


KITZ

GENERAL CATALOG

Stainless Steel



INDEX

Series	Body Material	Type	Class	End Connection	Features/Design		Size Range	Fig		Page				
A		Gate/Globe	150		-	ASME B16.34	$\frac{1}{2}^B - 24^B / \frac{1}{2}^B - 12^B$	150UMAM/150UMAMT	150UPAM/150UPAMT/ G-150UPAM	SS3 212				
		Check			Lift/Swing		$\frac{1}{2}^B - 1\frac{1}{2}^B / 1\frac{1}{2}^B - 24^B$	150UNAM	150UOAM					
		Gate/Globe	300		-		$\frac{1}{2}^B - 24^B / \frac{1}{2}^B - 10^B$	300UMAM	300UPAM/G-300UPAM					
		Check			Lift/Swing		$\frac{1}{2}^B - 1\frac{1}{2}^B / 1\frac{1}{2}^B - 18^B$	300UNAM	300UOAM					
HA		Gate/Globe	600		-		$\frac{1}{2}^B - 12^B / \frac{1}{2}^B - 8^B$	600UMAM	600UPAM/G-600UPAM	SS4 213				
		Check			Swing		$\frac{1}{2}^B - 12^B$	600UOAM						
		Gate	150/300		-		API 603	$\frac{1}{2}^B - 24^B$	150UMHAM		300UMHAM			
		Gate/Globe			-			$\frac{1}{2}^B - 24^B / \frac{1}{2}^B - 12^B$	10UMA/10UMAT		10UPA/10UPAT/G-10UPA			
A		Check	10K		Lift/Swing		$\frac{1}{2}^B - 1\frac{1}{2}^B / 1\frac{1}{2}^B - 24^B$	10UNA	10UOA	SS5 214				
		Strainer			-		$2\frac{1}{2}^B - 24^B$	10UYA						
		Gate/Globe	20K		-		$\frac{1}{2}^B - 24^B / \frac{1}{2}^B - 10^B$	20UMA/20UMAT	20UPA/20UPAT/G-20UPA	SS6 215				
		Check			Lift/Swing		$\frac{1}{2}^B - 1\frac{1}{2}^B / 1\frac{1}{2}^B - 18^B$	20UNA	20UOA					
A		Strainer			-		$\frac{1}{2}^B - 12^B$	20UYA		SS7 216				
		Globe	150		Bellows Seal		ASME B16.34	$\frac{1}{2}^B - 6^B$	150UPAWM		150UPDAWM (Soft Seated/PTFE)			
			300					300UPAWM						
			10K					$\frac{1}{2}^B - 6^B / \frac{1}{2}^B - 10^B$	10UPAW		10UPDA/G-10UPDA (Soft Seated/PTFE)			
A		10K/20K					$\frac{1}{2}^B - 6^B$	10UPDAW (Soft Seated/PTFE)	20UPAW	SS8 217				
		Gate/Globe	150		-		$\frac{1}{2}^B - 6^B / \frac{1}{2}^B - 4^B$	150UMAJM	150UPAJM					
		Check			Lift / Swing		$\frac{1}{2}^B - 1\frac{1}{2}^B / 2^B - 6^B$	150UNAJM	150UOAJM					
		Gate/Globe	300		-		$\frac{1}{2}^B - 6^B / \frac{1}{2}^B - 4^B$	300UMAJM	300UPAJM					
A		Check			Lift / Swing		$\frac{1}{2}^B - 1\frac{1}{2}^B / 2^B - 6^B$	300UNAJM	300UOAJM	SS9 218				
		Gate/Globe	10K		-		$\frac{1}{2}^B - 6^B / \frac{1}{2}^B - 4^B$	10UMAJ	10UPAJ					
		Check			Lift / Swing		$\frac{1}{2}^B - 1\frac{1}{2}^B / 2^B - 6^B$	10UNAJ	10UOAJ					
		Gate/Globe	20K		-		$\frac{1}{2}^B - 6^B / \frac{1}{2}^B - 4^B$	20UMAJ	20UPAJ					
A		Check			Lift / Swing		$\frac{1}{2}^B - 1\frac{1}{2}^B / 2^B - 6^B$	20UNAJ	20UOAJ	SS10 219				
		Gate/Globe	150		-		API 600/ISO 10434/ BS 1873	$\frac{1}{2}^B - 24^B / \frac{1}{2}^B - 8^B$	150UMCM		150UPCM			
		Check			Swing		BS1868	$\frac{1}{2}^B - 24^B$	150UOCM					
		Gate/Globe	300		-		API 600/ISO 10434/ BS 1873	$\frac{1}{2}^B - 24^B / \frac{1}{2}^B - 8^B$	300UMCM		300UPCM			
A		Check			Swing		$\frac{1}{2}^B - 24^B$	300UOCM		SS11 220				
		Gate/Globe	600		-		API 600/ISO 10434/ BS 1873	$\frac{1}{2}^B - 12^B / \frac{1}{2}^B - 8^B$	600UMCM		600UPCM/G-600UPCM			
		Check			Swing		BS1868	$\frac{1}{2}^B - 12^B$	600UOCM					
		Gate/Globe	900		-		API 600/ISO 10434/ BS 1873	$2^B - 12^B / 3^B - 8^B$	900UMCM		900UPCM/G-900UPCM			
A		Check			Swing		$3^B - 8^B$	900UOCM		SS12 221				
		Gate/Globe	1500		-		API 600/ISO 10434/ BS 1873	$2^B - 8^B / 1^B - 8^B$	1500UMCM		1500UPCM/G-1500UPCM			
		Check			-		BS1868	$2^B - 6^B$	1500UOCM					
		Check	150/300		Swing, Internal Hinge Pin		API 594/BS 1868	$2^B - 12^B$	150UOCHM		300UOCHM			
600	600UOCHM													
A		Gate/Globe	150		Category II, (-104°C / -155°F)		$\frac{1}{2}^B - 16^B / \frac{1}{2}^B - 8^B$	150UMAXY/G-150UMAXY	150UPAXY/G-150UPAXY	SS13 222				
		Check					$1\frac{1}{2}^B - 16^B$	150UOAXY						
		Gate/Globe	300				$\frac{1}{2}^B - 14^B / \frac{1}{2}^B - 8^B$	300UMAXY/G-300UMAXY	300UPAXY/G-300UPAXY					
		Check					$1\frac{1}{2}^B - 12^B$	300UOAXY						
A		Gate	150/300			ASME B16.34	$2^B - 24^B$	150UMALMY/G-150UMALMY	300UMALMY/G-300UMALMY	SS14 223				
		600	$2^B - 12^B$				600UMALMY/G-600UMALMY							
		Gate/Globe	150				$\frac{1}{2}^B - 24^B / \frac{1}{2}^B - 8^B$	150UMCLMY/G-150UMCLMY	150UPCLMY/G-150UPCLMY					
		Check					$\frac{1}{2}^B - 24^B$	150UOCLMY						
C		Gate/Globe	300		Category III, (-196°C / -51°F)		$\frac{1}{2}^B - 24^B / \frac{1}{2}^B - 8^B$	300UMCLMY/G-300UMCLMY	300UPCLMY/G-300UPCLMY	SS15 224				
		Check					$\frac{1}{2}^B - 24^B$	300UOCLMY						
		Gate/Globe	600				$\frac{1}{2}^B - 24^B / \frac{1}{2}^B - 8^B$	600UMCLMY/G-600UMCLMY	600UPCLMY/G-600UPCLMY					
		Check					$1^B - 12^B$	600UOCLMY						
C		Gate	150/300			API 623 (ASME B16.34, MSS SP-134, ISO 28921-1)	$2^B - 8^B$	150UPCRLMD/G-150UPCRLMD	300UPCRLMD/G-300UPCRLMD	SS16 225				
		600	600UPCRLMD/G-600UPCRLMD											
		Gate/Globe	150					TE	-		ASME B16.34	$\frac{1}{2}^B - 2^B$	AK150UMM	AK150UPM
		Check							-				AK150UOM	
Gate/Globe		SW	-	AW150UMM	AW150UPM									
Check			-	AW150UOM										
D		Gate/Globe	300		TE			AK300UMM	AK300UPM	SS18 227				
		Check						-	AK300UOM					
		Gate/Globe						SW	-		AW300UMM	AW300UPM		
		Check							-		AW300UOM			
D		Gate	600		TE/SW			AK600UMM	AW600UMM	SS19 228				
		600	-											

*(Abbreviation) TE: Threaded Ends, FE: Flanged Ends, RF: Raised Face Ends, SW: Socket Welding Ends

PRODUCT CODING

Stainless & High Alloy Steel Valves

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

G - **W** **150** **U** **M** **C** **L** **M** **Y**

1 2 3 4 5 6 7 8 9

1 Operation

None Manual Handwheel
G Gear

2 End Connection

None RF Flanged Ends
W Butt Welding Ends
AK Threaded Ends (NPT)
AW Socket Welding Ends

3 Pressure Class

10 10K
20 20K
150 Class 150
300 Class 300
600 Class 600
900 Class 900
1500 Class 1500

4 Shell Material Code

U Stainless/High Alloy

5 Valve Type

M Gate
P Globe
PD Soft Seated Globe
O Swing Check
N Lift Check
Y Strainer

6 Valve Design Code Series

None Series D
A Series A
HA Series HA
C Series C

7 Special Design

None Standard
W Bellows Seal Globe
H Internal Hinge Pin Swing Check
X -104°C Service
L -196°C Service
J Jacketed

8 Shell Material

None CF8 (304)
M CF8M (316)
O CF3M (316L)
V CF3 (304L)
CB CF8C (321)
CG CG8M (317)
CK CK20 (310)
SD Super Duplex
CN CN7M (Alloy20)
HB N-12MV (Hastelloy B)
HC CW-12MW (Hastelloy C)

9 Body/Disc Seat Surface Material

None Same as Shell Material
D Disc Seat Surface HF
B Body Seat Surface HF
Y Both Seat Surface HF

Note: Product codes suffixed "T" stands for valves provided with ceramic filled PTFE gaskets & PTFE packings. (Ex. 10UAMT, 10UPAMT etc)

Design Specification

Stainless & High Alloy Steel Valves

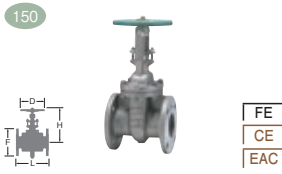
Series	A	HA	C	D
Shell Wall Thickness & Valve Design	ASME B16.34	API 603	API 600/ISO 10434 (Gate) BS1873/API623*1 (Globe) BS 1868/API594*2 (Swing check)	ASME B16.34
P-T Rating	ASME B16.34 (JIS B2220 for 10K & 20K)			ASME B16.34
Face to Face Dimension	ASME B16.10 (JIS B2002 for 10K & 20K, KITZ Std for Jacketed valves)			KITZ Standard
Flanged Ends Dimension	ASME B16.5*3 (JIS B2220 for 10K & 20K)			-
Butt or Socket Welding Ends Dimension	-		ASME B16.25, ISO10434(Gate), BS1873(Globe)/1868(Check)	ASME B16.11
Threaded Ends Dimension	-			ASME B1.20.1
Pressure Test	API 598/ISO 5208			
Fugitive Emission Test (Up to Class 600)	ISO 15848-1	API 624/ISO 15848-1		-
Cryogenic/Low Temperature Test*4	ISO 28921-1	-	ISO 28921-1	-

*1 API623 is for 150/300/600UPCRLM only

*2 API594 is for Internal Hinge Pin Swing Check only

*3 Pipe Connection Dimensions shall be indicated in millimeters converted from dimensions in inches according to ASME B16.5

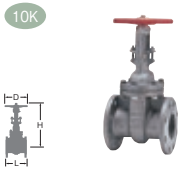
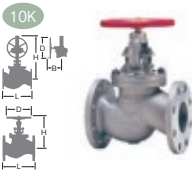
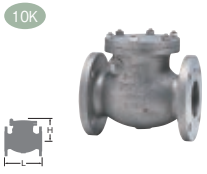
*4 For X, L (Cryogenic Service Valves)

Type	A Series (Gate)					A Series (Globe)					A Series (Lift Check)			A Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)																
Fig	150UMAM/150UMAMT					150UPAM/150UPAMT/G-150UPAM					150UNAM			150UOAM		
End Connection	ASME B16.5 Class 150 RF					ASME B16.5 Class 150 RF					ASME B16.5 Class 150 RF			ASME B16.5 Class 150 RF		
inch	mm	L	H	D		L	H	D	B		L	H	D	L	H	D
1/2	15	108	201	90		108	166	90			108	74				
3/4	20	117	210	90		117	168	90			117	76				
1	25	127	224	100		127	173	100			127	76				
1 1/2	40	165	284	140		165	204	140			165	86		165	109	
2	50	178	336	160		203	235	160						203	119	
2 1/2	65	190	374	180		216	248	180						216	134	
3	80	203	444	200		241	292	200						241	148	
4	100	229	523	225		292	324	225						292	164	
5	125	254	606	250		356	382	250						330	192	
6	150	267	711	250		406	453	350						356	214	
8	200	292	924	300		495	556	400						495	264	
10	250	330	1126	350		622	923	500	280					622	286	
12	300	356	1336	400		698	1013	500	280					698	315	
14	350	381	1491	450										787	363	
16	400	406	1692	600										864	407	
18	450	432	1891	600										978	475	
20	500	457	2102	680										978	505	
24	600	508	2463	760										1295	595	
Body/Bonnet	CF8M					CF8M					CF8M			CF8M		
Stem	316SS					316SS										
Disc	CF8M					CF8M					CF8M			CF8M		
Gland Packing	Refer to Page SS22					Refer to Page SS22					Refer to Page SS22			Refer to Page SS22		
Gasket	Refer to Page SS22					Refer to Page SS22					Refer to Page SS22			Refer to Page SS22		
Bonnet B/N	B8/8					B8/8					B8/8			B8/8		
P-T Rating	ASME B16.34					ASME B16.34					ASME B16.34			JIS B2220		
F-to-F Dimension	ASME B16.10					ASME B16.10					ASME B16.10			ASME B16.10		
Wall Thickness	ASME B16.34					ASME B16.34					ASME B16.34			ASME B16.34		
Approval	ISO15848-1, PED/CE TR-CU/EAC					ISO15848-1, PED/CE TR-CU/EAC					PED/CE TR-CU/EAC			PED/CE TR-CU/EAC		
Remarks	Flexible Wedge															

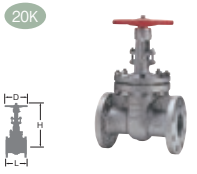
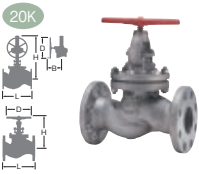
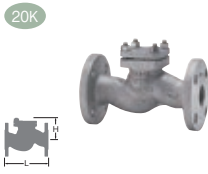
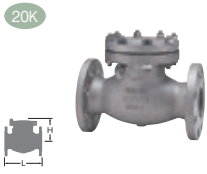
Type	A Series (Gate)					A Series (Globe)					A Series (Lift Check)			A Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)																
Fig	300UMAM					300UPAM/G-300UPAM					300UNAM			300UOAM		
End Connection	ASME B16.5 Class 300 RF					ASME B16.5 Class 300 RF					ASME B16.5 Class 300 RF			ASME B16.5 Class 300 RF		
inch	mm	L	H	D		L	H	D	B		L	H	D	L	H	D
1/2	15	140	209	100		152	184	100			152	80				
3/4	20	152	220	100		178	182	100			178	78				
1	25	165	239	100		203	185	100			203	80				
1 1/2	40	190	293	140		229	234	160			229	100				
2	50	216	355	180		267	286	180						241	123	
2 1/2	65	241	404	180		292	296	200						267	142	
3	80	283	472	225		318	341	250						292	165	
4	100	305	560	250		356	396	300						318	180	
5	125	381	625	300		400	493	350						356	203	
6	150	403	753	350		444	563	400						400	234	
8	200	419	968	400		559	874	500	280					444	259	
10	250	457	1177	450		622	1048	600	350					533	298	
12	300	502	1378	500										622	356	
14	350	562	1590	600										711	373	
16	400	622	1810	600										838	442	
18	450	682	2030	600										864	480	
20	500	742	2250	680										978	585	
24	600	862	2690	760												
Body/Bonnet	CF8M					CF8M					CF8M			CF8M		
Stem	316SS					316SS					316SS					
Disc	CF8M					CF8M					CF8M			CF8M		
Gland Packing	Refer to Page SS22					Refer to Page SS22					Refer to Page SS22			Refer to Page SS22		
Gasket	Refer to Page SS22					Refer to Page SS22					Refer to Page SS22			Refer to Page SS22		
Bonnet B/N	B8/8					B8/8					B8/8			B8/8		
P-T Rating	ASME B16.34					ASME B16.34					ASME B16.34			ASME B16.34		
F-to-F Dimension	ASME B16.10					ASME B16.10					ASME B16.10			ASME B16.10		
Wall Thickness	ASME B16.34					ASME B16.34					ASME B16.34			ASME B16.34		
Approval	ISO15848-1, PED/CE TR-CU/EAC					ISO15848-1, PED/CE TR-CU/EAC					PED/CE TR-CU/EAC			PED/CE TR-CU/EAC		
Remarks	Flexible Wedge															

Type	A Series (Gate)				A Series (Globe)				A Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
	600UMAM				600UPAM/G-600UPAM				600UOAM		
End Connection	ASME B16.5 Class 600 RF				ASME B16.5 Class 300 RF				ASME B16.5 Class 600 RF		
inch	mm	L	H	D	L	H	D	B	L	H	D
1/2	15	165	211	100	165	213	120		165	93.5	
3/4	20	190	224	100	190	210	120		190	97.4	
1	25	216	251	140	216	246	160		216	112	
1 1/2	40	241	334	180	241	283	200		241	127	
2	50	292	452	200	292	374	225		292	203	
2 1/2	65	330	483	225	330	413	250		330	213	
3	80	356	546	250	356	492	350		356	239	
4	100	432	677	350	432	586	400		432	279	
6	150	559	905	450	559	750	600	280	559	339	
8	200	660	1129	500	660	864	600	350	660	414	
10	250	787	1330	600					787	430	
12	300	838	1522	680					838	470	
Body/Bonnet	CF8M				CF8M				CF8M		
Stem	316SS				316SS						
Disc	CF8M				CF8M				CF8M		
Gland Packing	Refer to Page SS22				Refer to Page SS22						
Gasket	Refer to Page SS22				Refer to Page SS22				Refer to Page SS22		
Bonnet B/N	B8/8				B8/8				B8/8		
P-T Rating	ASME B16.34				ASME B16.34				ASME B16.34		
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10		
Wall Thickness	ASME B16.34				ASME B16.34				ASME B16.34		
Approval	ISO15848-1, PED/CE TR-CU/EAC				ISO15848-1, PED/CE TR-CU/EAC				PED/CE TR-CU/EAC		
Remarks	Flexible Wedge										

Type	HA Series (Gate)				HA Series (Gate)			
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)								
	150UMHAM				300UMHAM			
End Connection	ASME B16.5 Class 150 RF				ASME B16.5 Class 300 RF			
inch	mm	L	H	D	L	H	D	
1/2	15	108	216	100	140	207	100	
3/4	20	117	220	100	152	217	100	
1	25	127	231	100	165	270	160	
1 1/2	40	165	277	140	190	325	180	
2	50	178	335	160	216	356	180	
2 1/2	65	190	373	180	241	405	180	
3	80	203	443	200	283	472	225	
4	100	229	522	225	305	560	250	
6	150	267	710	250	403	753	350	
8	200	292	924	300	419	968	400	
10	250	330	1125	350	457	1177	450	
12	300	356	1328	400	502	1378	500	
14	350	381	1491	450	762	1590	600	
16	400	406	1692	600	838	1750	600	
18	450	432	1889	600	914	1930	680	
20	500	457	2102	680	991	2140	760	
24	600	508	2484	760	1143	2530	910	
Body/Bonnet	CF8M				CF8M			
Stem	316SS				316SS			
Disc	CF8M				CF8M			
Gland Packing	Refer to Page SS22				Refer to Page SS22			
Gasket	Refer to Page SS22				Refer to Page SS22			
Bonnet B/N	B8/8				B8/8			
P-T Rating	ASME B16.34				ASME B16.34			
F-to-F Dimension	ASME B16.10				ASME B16.10			
Wall Thickness	API 603				API 603			
Approval	ISO15848-1, PED/CE TR-CU/EAC				ISO15848-1, PED/CE TR-CU/EAC			
Remarks	Flexible Wedge				Flexible Wedge			

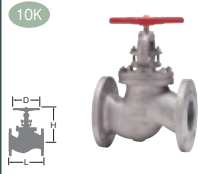
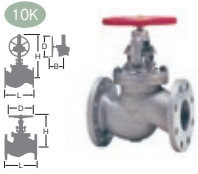
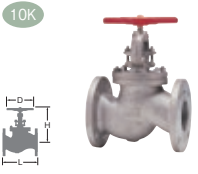
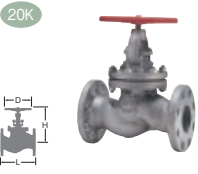
Type	A Series (Gate)				A Series (Globe)				A Series (Lift Check)			A Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)														
	10UMA/10UMAT				10UPA/10UPAT/G-10UPA				10UNA			10UOA		
End Connection	JIS B2220 10K RF				JIS B2220 10K RF				JIS B2220 10K RF			JIS B2220 10K RF		
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D
1/2	15	108	201	90	108	166	90		108	74				
3/4	20	117	210	90	117	168	90		117	76				
1	25	127	224	100	127	173	100		127	76				
1 1/4	32	140	240	100										
1 1/2	40	165	284	140	165	204	140		165	86		165	109	
2	50	178	336	160	203	235	160					203	119	
2 1/2	65	190	374	180	216	248	180					216	134	
3	80	203	444	200	241	292	200					241	148	
4	100	229	523	225	292	324	225					292	164	
5	125	254	606	250	356	382	250					330	192	
6	150	267	711	250	406	453	350					356	214	
8	200	292	924	300	495	556	400					495	264	
10	250	330	1126	350	622	923	500	280				622	286	
12	300	356	1336	400	698	1013	500	280				698	315	
14	350	381	1491	450								787	363	
16	400	406	1692	600								864	407	
18	450	432	1891	600								978	475	
20	500	457	2102	680								978	505	
24	600	508	2463	760								1295	595	
Body/Bonnet	CF8				CF8				CF8			CF8		
Stem	304SS				304SS									
Disc	CF8				CF8				CF8			CF8		
Gland Packing	Refer to Page SS22				Refer to Page SS22									
Gasket	Refer to Page SS22				Refer to Page SS22				Refer to Page SS22			Refer to Page SS22		
Bonnet B/N	B8/8				B8/8				B8/8			B8/8		
P-T Rating	JIS B2220				JIS B2220				JIS B2220			JIS B2220		
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10			ASME B16.10		
Wall Thickness	ASME B16.34				ASME B16.34				ASME B16.34			ASME B16.34		
Remarks	Flexible Wedge													

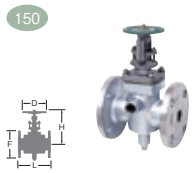
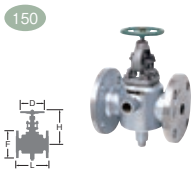
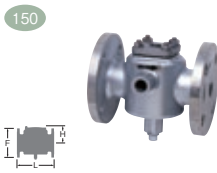
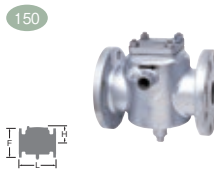
Type	A Series (Y-Strainer)				
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)	10K 				
	Fig 10UYA				
End Connection	JIS B2220 10K RF				
inch	mm	L	H	H1*	
21/2	65	270	154	214	
3	80	290	189	263	
4	100	350	227	320	
5	125	390	268	383	
6	150	440	316	451	
8	200	540	384	554	
10	250	760	536	753	
12	300	870	636	891	
Body/Bonnet	CF8				
Disc/Screen	304SS				
Gasket	Refer to Page SS22				
Bonnet B/N	B8/8				
P-T Rating	JIS B2220				
F-to-F Dimension	KITZ Standard				
Wall Thickness	KITZ Standard				
Remarks	40-mesh stainless wire net reinforced with punched stainless steel plate				
	*Height for removing the screen				

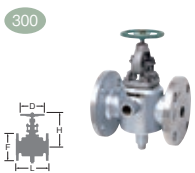
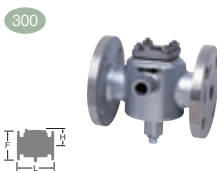
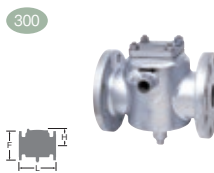
Type	A Series (Gate)				A Series (Globe)				A Series (Lift Check)			A Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)														
	20UMA/20UMAT				20UPA/20UPAT/G-20UPA				20UNA			20UOA		
Fig	JIS B2220 20K RF				JIS B2220 20K RF				JIS B2220 20K RF			JIS B2220 20K RF		
End Connection	JIS B2220 20K RF				JIS B2220 20K RF				JIS B2220 20K RF			JIS B2220 20K RF		
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D
1/2	15	140	209	100	152	184	100		152	80				
3/4	20	152	220	100	178	182	100		178	78				
1	25	165	239	100	203	185	100		203	80				
1 1/2	40	190	293	140	229	234	160		229	100		241	123	
2	50	216	355	180	267	286	180					267	142	
2 1/2	65	241	404	180	292	296	200					292	165	
3	80	283	472	225	318	341	250					318	180	
4	100	305	560	250	356	396	300					356	203	
5	125	381	625	300	400	493	350					400	234	
6	150	403	753	350	444	563	400					444	259	
8	200	419	968	400	559	874	500	280				533	298	
10	250	457	1177	450	622	1048	600	350				622	356	
12	300	502	1378	500								711	373	
14	350	762	1590	600								838	442	
16	400	838	1810	600								864	480	
18	450	914	1980	680								978	585	
20	500	991	2190	760										
24	600	1143	2580	910										
Body/Bonnet	CF8				CF8				CF8			CF8		
Stem	304SS				304SS									
Disc	CF8				CF8				CF8			CF8		
Gland Packing	Refer to Page SS22				Refer to Page SS22									
Gasket	Refer to Page SS22				Refer to Page SS22				Refer to Page SS22			Refer to Page SS22		
Bonnet B/N	B8/8				B8/8				B8/8			B8/8		
P-T Rating	JIS B2220				JIS B2220				JIS B2220			JIS B2220		
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10			ASME B16.10		
Wall Thickness	ASME B16.34				ASME B16.34				ASME B16.34			ASME B16.34		
Remarks	Flexible Wedge													

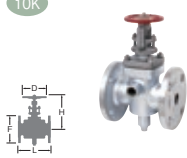
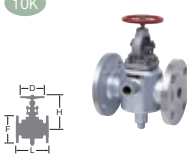
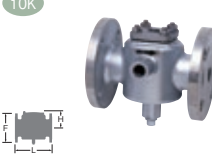
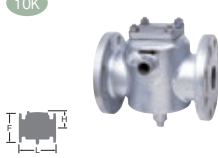
Type	A Series (Y-Strainer)				
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)					
	20UYA				
Fig	JIS B2220 20K RF				
End Connection	JIS B2220 20K RF				
inch	mm	L	H	H1*	
1/2	15	160	68	79	
3/4	20	160	77	90	
1	25	190	89	109	
1 1/2	40	240	123	145	
2	50	250	147	172	
2 1/2	65	300	182	223	
3	80	320	209	271	
4	100	380	245	325	
6	150	550	341	460	
8	200	600	430	607	
10	250	760	536	753	
12	300	870	636	894	
Body/Bonnet	CF8				
Disc/Screen	304SS				
Gasket	Refer to Page SS22				
Bonnet B/N	B8/8				
P-T Rating	JIS B2220				
F-to-F Dimension	KITZ Standard				
Wall Thickness	KITZ Standard				
Remarks	40-mesh stainless wire net reinforced with punched stainless steel plate				
	*Height for removing the screen				

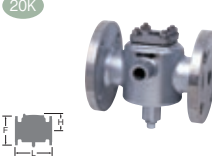
Type	A Series (Bellows Seal Globe)				A Series (Bellows Seal Globe)				A Series (Bellows Seal Globe)			
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)	150 				150 				300 			
												
Fig	150UPAWM				150UPDAWM				300UPAWM			
End Connection	ASME B16.5 Class 150 RF				ASME B16.5 Class 150 RF				ASME B16.5 Class 300 RF			
inch	mm	L	H	D	L	H	D	L	H	D		
1/2	15	108	164	90	108	164	90	152	185	100		
3/4	20	117	166	90	117	166	90	178	183	100		
1	25	127	170	100	127	170	100	203	185	100		
1 1/2	40	165	202	140	165	202	140	229	234	160		
2	50	203	230	160	203	230	160	267	287	180		
2 1/2	65	216	245	180	216	245	180	292	293	200		
3	80	241	284	200	241	284	200	318	402	250		
4	100	292	360	225	292	360	225	356	454	300		
5	125	356	425	250	356	425	250	400	539	350		
6	150	406	493	350	406	483	350	444	607	400		
Body/Bonnet	CF8M				CF8M				CF8M			
Stem	304SS				304SS				304SS			
Disc	316 or CF8M				PTFE				316 or CF8M			
Gland Packing	Carbon Fiber Coil Packing				Carbon Fiber Coil Packing				Carbon Fiber Coil Packing			
Gasket	Flexible Graphite				Flexible Graphite				Flexible Graphite			
Bellows	316L				316L				316L			
Bonnet B/N	B8/8				B8/8				B8/8			
P-T Rating	ASME B16.34				ASME B16.34				ASME B16.34			
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10			
Wall Thickness	ASME B16.34				ASME B16.34				ASME B16.34			

Type	A Series (Bellows Seal Globe)				A Series (Soft Seated Globe)				A Series (Bellows Seal Globe)				A Series (Bellows Seal Globe)				
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)																	
																	
Fig	10UPAW				10UPDA/G-10UPDA				10UPDAW				20UPAW				
End Connection	JIS B2220 10K RF				JIS B2220 10K RF				JIS B2220 10K RF				JIS B2220 20K RF				
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D			
1/2	15	108	164	90	108	166	90		108	164	90	152	185	100			
3/4	20	117	166	90	117	168	90		117	166	90	178	183	100			
1	25	127	170	100	127	173	100		127	170	100	203	185	100			
1 1/4	32				140	192	120										
1 1/2	40	165	202	140	165	204	140		165	202	140	229	234	160			
2	50	203	230	160	203	235	160		203	230	160	267	287	180			
2 1/2	65	216	245	180	216	248	180		216	245	180	292	293	200			
3	80	241	284	200	241	292	200		241	284	200	318	402	250			
4	100	292	360	225	292	324	225		292	360	225	356	454	300			
5	125	356	425	250	356	382	250		356	425	250	400	539	350			
6	150	406	493	350	406	453	350		406	483	350	444	607	400			
8	200				495	556	400										
10	250				622	923	500	280									
Body/Bonnet	CF8				CF8					CF8				CF8			
Stem	304SS				304SS					304SS				304SS			
Disc	316 or CF8M				PTFE					PTFE				316 or CF8M			
Gland Packing	Carbon Fiber Coil Packing				Refer to Page SS22					Carbon Fiber Coil Packing				Carbon Fiber Coil Packing			
Gasket	Flexible Graphite				Refer to Page SS22					Flexible Graphite				Flexible Graphite			
Bellows	316L									316L				316L			
Bonnet B/N	B8/8				B8/8					B8/8				B8/8			
P-T Rating	JIS B2220				JIS B2220					JIS B2220				JIS B2220			
F-to-F Dimension	ASME B16.10				ASME B16.10					ASME B16.10				ASME B16.10			
Wall Thickness	ASME B16.34				ASME B16.34					ASME B16.34				ASME B16.34			

Type	AJ Series (Jacketed Gate)					AJ Series (Jacketed Globe)					AJ Series (Jacketed Lift Check)					AJ Series (Jacketed Swing Check)					
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)	150 					150 					150 					150 					
	150UOAJM					150UPAJM					150UNAJM					150UOAJM					
Fig	150UOAJM					150UPAJM					150UNAJM					150UOAJM					
End Connection		ASME B16.5 Class 150 RF					ASME B16.5 Class 150 RF					ASME B16.5 Class 150 RF					ASME B16.5 Class 150 RF				
inch	mm	L	H	D	F*	L	H	D	F*	L	H	D	F*	L	H	D	F*				
1/2	15	165	210	100	11/2	152	184	100	11/2	152	78		11/2								
3/4	20	165	221	100	11/2	152	182	100	11/2	152	76		11/2								
1	25	177	240	100	2	190	185	100	2	190	77		2								
1 1/2	40	187	293	140	2 1/2	213	234	160	2 1/2	213	102		2 1/2								
2	50	203	344	160	3	241	237	160	3					241	125		3				
3	80	229	444	200	4	292	294	200	4					292	152		4				
4	100	267	523	225	6	356	325	225	6					356	169		6				
6	150	292	711	250	8									406	219		8				
Body/Bonnet		CF8M					CF8M					CF8M					CF8M				
Stem		3164SS					3164SS														
Disc		CF8M					CF8M					316SS					316SS				
Gland Packing		Flexible Graphite					Flexible Graphite														
Hinge Pin/Plug																	316SS				
Gasket		Flexible Graphite					Flexible Graphite					Flexible Graphite					Flexible Graphite				
Jacket		Carbon Steel					Carbon Steel					Carbon Steel					Carbon Steel				
Bonnet B/N		B8/8					B8/8					B8/8					B8/8				
P-T Rating		ASME B16.34					ASME B16.34					ASME B16.34					ASME B16.34				
F-to-F Dimension		KITZ Standard					KITZ Standard					KITZ Standard					KITZ Standard				
Wall Thickness		ASME B16.34					ASME B16.34					ASME B16.34					ASME B16.34				
Remarks		Rating for Jacket: 260°C/1.0MPa Flexible Wedge F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size				

Type	AJ Series (Jacketed Gate)					AJ Series (Jacketed Globe)					AJ Series (Jacketed Lift Check)					AJ Series (Jacketed Swing Check)					
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)	300 					300 					300 					300 					
	300UOAJM					300UPAJM					300UNAJM					300UOAJM					
End Connection		ASME B16.5 Class 300 RF					ASME B16.5 Class 300 RF					ASME B16.5 Class 300 RF					ASME B16.5 Class 300 RF				
inch	mm	L	H	D	F*	L	H	D	F*	L	H	D	F*	L	H	D	F*				
1/2	15	178	211	211	11/2	165	184	184	11/2	165	78		11/2								
3/4	20	178	221	221	11/2	165	182	182	11/2	165	76		11/2								
1	25	190	240	240	2	203	185	185	2	203	77		2								
11/2	40	203	294	294	21/2	229	234	234	21/2	229	102		21/2								
2	50	283	355	355	3	267	286	286	3					267	150		3				
3	80	305	472	472	4	318	341	341	4					330	179		4				
4	100	403	560	560	6	356	396	396	6					400	203		6				
6	150	457	753	753	8									444	260		8				
Body/Bonnet		CF8M					CF8M					CF8M					CF8M				
Stem		3164SS					3164SS														
Disc		CF8M					CF8M					316SS					316SS				
Gland Packing		Flexible Graphite					Flexible Graphite														
Hinge Pin/Plug																	316SS				
Gasket		Flexible Graphite					Flexible Graphite					Flexible Graphite					Flexible Graphite				
Jacket		Carbon Steel					Carbon Steel					Carbon Steel					Carbon Steel				
Bonnet B/N		B8/8					B8/8					B8/8					B8/8				
P-T Rating		ASME B16.34					ASME B16.34					ASME B16.34					ASME B16.34				
F-to-F Dimension		KITZ Standard					KITZ Standard					KITZ Standard					KITZ Standard				
Wall Thickness		ASME B16.34					ASME B16.34					ASME B16.34					ASME B16.34				
Remarks		Rating for Jacket: 260°C/1.0MPa Flexible Wedge F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size				

Type	AJ Series (Jacketed Gate)					AJ Series (Jacketed Globe)					AJ Series (Jacketed Lift Check)					AJ Series (Jacketed Swing Check)									
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)	10K 					10K 					10K 					10K 									
	Fig					10UPAJ					10UNAJ					10UOAJ									
	End Connection					JIS B2220 10K RF					JIS B2220 10K RF					JIS B2220 10K RF					JIS B2220 10K RF				
	inch	mm	L	H	D	F*	L	H	D	F*	L	H	D	F*	L	H	D	F*							
1/2	15	169	210	100	11/2	156	184	100	11/2	156	83		11/2												
3/4	20	169	221	100	11/2	156	182	100	11/2	156	76		11/2												
1	25	177	240	100	2	190	185	100	2	190	76		2												
1 1/2	40	188	293	140	2 1/2	214	234	160	2 1/2	214	101		2 1/2												
2	50	201	343	160	3	239	237	160	3					239	125		3								
3	80	217	444	200	4	280	294	200	4					280	152		4								
4	100	260	523	225	6	349	325	225	6					349	169		6								
6	150	279	711	250	8									393	219		8								
Body/Bonnet	CF8					CF8					CF8					CF8									
Stem	304SS					304SS																			
Disc	CF8					CF8					304SS					304SS									
Gland Packing	Flexible Graphite					Flexible Graphite																			
Hinge Pin/Plug																304SS									
Gasket	Flexible Graphite					Flexible Graphite					Flexible Graphite					Flexible Graphite									
Jacket	Carbon Steel					Carbon Steel					Carbon Steel					Carbon Steel									
Bonnet B/N	B8/8					B8/8					B8/8					B8/8									
P-T Rating	JIS B2220					JIS B2220					JIS B2220					JIS B2220									
F-to-F Dimension	KITZ Standard					KITZ Standard					KITZ Standard					KITZ Standard									
Wall Thickness	ASME B16.34					ASME B16.34					ASME B16.34					ASME B16.34									
Remarks	Rating for Jacket: 260°C/1.0MPa Flexible Wedge F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size									

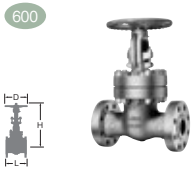
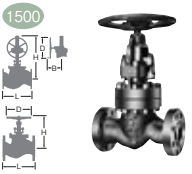
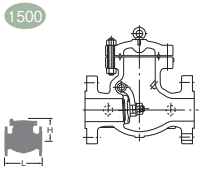
Type	AJ Series (Jacketed Gate)					AJ Series (Jacketed Globe)					AJ Series (Jacketed Lift Check)					AJ Series (Jacketed Swing Check)				
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)	20K 					20K 					20K 					20K 				
	20UMAJ					20UPAJ					20UNAJ					20UOAJ				
	JIS B2220 20K RF					JIS B2220 20K RF					JIS B2220 10K RF					JIS B2220 20K RF				
	inch	mm	L	H	D	F*	L	H	D	F*	L	H	D	F*	L	H	D	F*		
1/2	15	173	210	100	11/2	160	184	100	11/2	160	78		11/2							
3/4	20	173	221	100	11/2	160	182	100	11/2	160	76		11/2							
1	25	181	240	100	2	194	185	100	2	194	77		2							
1 1/2	40	192	294	140	2 1/2	218	234	160	2 1/2	218	102		2 1/2							
2	50	270	355	180	3	254	286	180	3					254	150		3			
3	80	289	472	225	4	302	341	250	4					314	179		4			
4	100	386	560	250	6	339	396	300	6					383	203		6			
6	150	434	753	350	8									421	262		8			
Body/Bonnet	CF8					CF8					CF8					CF8				
Stem	304SS					304SS														
Disc	CF8					CF8					304SS					304SS				
Gland Packing	Flexible Graphite					Flexible Graphite														
Hinge Pin/Plug																304SS				
Gasket	Flexible Graphite					Flexible Graphite					Flexible Graphite					Flexible Graphite				
Jacket	Carbon Steel					Carbon Steel					Carbon Steel					Carbon Steel				
Bonnet B/N	B8/8					B8/8					B8/8					B8/8				
P-T Rating	JIS B2220					JIS B2220					JIS B2220					JIS B2220				
F-to-F Dimension	KITZ Standard					KITZ Standard					KITZ Standard					KITZ Standard				
Wall Thickness	ASME B16.34					ASME B16.34					ASME B16.34					ASME B16.34				
Remarks	Rating for Jacket: 260°C/1.0MPa Flexible Wedge F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size					Rating for Jacket: 260°C/1.0MPa F*: Flange Size				

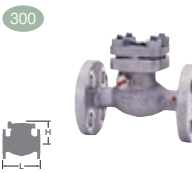
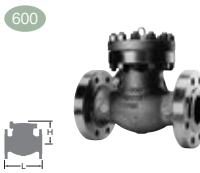
Type	C Series (Gate)					C Series (Globe)			C Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
											
Fig	150UMCM					150UPCM			150UOCM		
End Connection	ASME B16.5 Class 150 RF					ASME B16.5 Class 150 RF			ASME B16.5 Class 150 RF		
inch	mm	L	H	D		L	H	D	L	H	D
1/2	15	108	218	90		108	196	90	108	78	
3/4	20	117	231	100		117	202	100	117	83	
1	25	127	278	120		127	233	120	127	98	
1 1/2	40	165	341	160		165	273	160	165	113	
2	50	178	382	200		203	328	200	203	159	
2 1/2	65	190	429	200		216	356	225	216	165	
3	80	203	507	250		241	390	250	241	189	
4	100	229	589	250		292	456	250	292	205	
6	150	267	764	300		406	506	350	356	253	
8	200	292	961	350		495	613	400	495	281	
10	250	330	1172	400					622	345	
12	300	356	1371	450					698	385	
14	350	381	1524	500					787	396	
16	400	406	1692	600					864	438	
18	450	432	1888	600					978	465	
20	500	457	2123	680					978	590	
24	600	508	2490	760					1295	670	
Body/Bonnet	CF8M					CF8M			CF8M		
Stem	316SS					316SS					
Disc	CF8M					CF8M			CF8M		
Gland Packing	Refer to Page SS22					Refer to Page SS22					
Gasket	Refer to Page SS22					Refer to Page SS22			Refer to Page SS22		
Bonnet B/N	B8/8					B8/8			B8/8		
P-T Rating	ASME B16.34					ASME B16.34			ASME B16.34		
F-to-F Dimension	ASME B16.10					ASME B16.10			ASME B16.10		
Wall Thickness	API 600					API 600			API 600		
Approval	ISO15848-1, PED/CE TR-CU/EAC					ISO15848-1, PED/CE TR-CU/EAC			PED/CE TR-CU/EAC		
Remarks	Solid Wedge $\leq 4^\circ$, Flexible Wedge $\geq 6^\circ$										

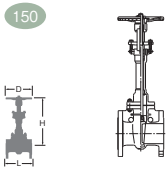
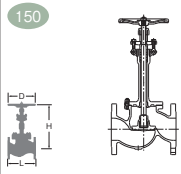
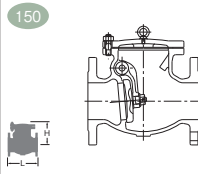
Type	C Series (Gate)					C Series (Globe)			C Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
											
Fig	300UMCM					300UPCM			300UOCM		
End Connection	ASME B16.5 Class 300 RF					ASME B16.5 Class 300 RF			ASME B16.5 Class 300 RF		
inch	mm	L	H	D		L	H	D	L	H	D
1/2	15	140	227	100		152	220	100	140	81	
3/4	20	152	250	100		178	222	100	152	84	
1	25	165	310	120		203	259	140	216	101	
1 1/2	40	190	378	200		229	302	180	241	118	
2	50	216	416	200		267	352	200	267	165	
2 1/2	65	241	455	200		292	400	250	292	190	
3	80	283	528	250		318	440	250	318	205	
4	100	305	615	250		356	509	350	356	225	
6	150	403	798	350		444	677	450			
8	200	419	1020	400					444	272	
10	250	457	1222	450					533	330	
12	300	502	1442	500					622	360	
14	350	562	1575	600					711	406	
16	400	638	1745	600					838	480	
18	450	714	1945	680					864	527	
20	500	791	2155	760					978	555	
24	600	1143	2555	910					1346	732	
Body/Bonnet	CF8M					CF8M			CF8		
Stem	316SS					316SS					
Disc	CF8M					CF8M			CF8		
Gland Packing	Refer to Page SS22					Refer to Page SS22					
Gasket	Refer to Page SS22					Refer to Page SS22			Refer to Page SS22		
Bonnet B/N	B8/8					B8/8			B8/8		
P-T Rating	ASME B16.34					ASME B16.34			ASME B16.34		
F-to-F Dimension	ASME B16.10					ASME B16.10			ASME B16.10		
Wall Thickness	API 600					API 600			API 600		
Approval	ISO15848-1, PED/CE TR-CU/EAC					ISO15848-1, PED/CE TR-CU/EAC			PED/CE TR-CU/EAC		
Remarks	Solid Wedge $\leq 4^\circ$, Flexible Wedge $\geq 6^\circ$										

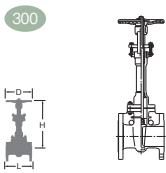
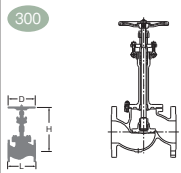
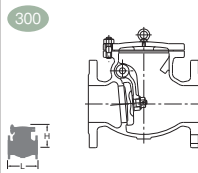
Type	C Series (Gate)				C Series (Globe)				C Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
Fig	600UMCM				600UPCM/G-600UPCM				600UOCM		
End Connection	ASME B16.5 Class 600 RF				ASME B16.5 Class 600 RF				ASME B16.5 Class 600 RF		
inch	mm	L	H	D	L	H	D	B	L	H	D
1/2	15	165	267	100	165	280	140		165	130	
3/4	20	190	276	140	190	275	140		190	135	
1	25	216	331	160	216	290	160		216	142	
1 1/2	40	241	395	200	241	340	200		241	172	
2	50	292	463	200	292	413	250		292	193	
3	80	356	569	250	356	529	350		356	220	
4	100	432	696	300	432	947	500	254	432	256	
6	150	559	905	450	559	1031	500	280	559	316	
8	200	660	1086	500	660	1232	600	350	660	358	
10	250	787	1275	600					787	415	
12	300	838	1498	680					838	462	
Body/Bonnet	CF8M				CF8M				CF8M		
Stem	316SS				316SS						
Disc	CF8M								CF8M		
Gland Packing	Refer to Page SS22				Refer to Page SS22						
Gasket	Refer to Page SS22				Refer to Page SS22				Refer to Page SS22		
Bonnet B/N	B8/8				B8/8				B8/8		
P-T Rating	ASME B16.34				ASME B16.34				ASME B16.34		
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10		
Wall Thickness	API 600				API 600				API 600		
Approval	ISO15848-1, PED/CE TR-CU/EAC				ISO15848-1, PED/CE TR-CU/EAC				PED/CE TR-CU/EAC		
Remarks	Solid Wedge $\leq 11/2^{\text{nd}}$, Flexible Wedge $\geq 2^{\text{nd}}$										

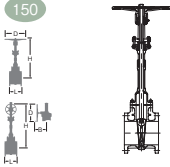
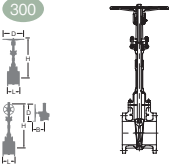
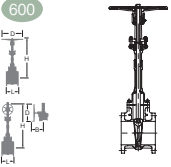
Type	C Series (Gate)				C Series (Globe)				C Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
Fig	900UMCM				900UPCM/G-900UPCM				900UOCM		
End Connection	ASME B16.5 Class 900 RF				ASME B16.5 Class 900 RF				ASME B16.5 Class 900 RF		
inch	mm	L	H	D	L	H	D	B	L	H	D
2	50	368	521	250							
3	80	381	620	350	TBA	TBA	TBA	TBA	381	294	
4	100	457	705	350	TBA	TBA	TBA	TBA	457	348	
6	150	610	901	500	TBA	TBA	TBA	TBA	610	441	
8	200	737	1087	600	TBA	TBA	TBA	TBA	737	527	
10	250	838	1285	680							
12	300	965	1499	760							
Body/Bonnet	CF8M				CF8M				CF8M		
Stem	316SS				316SS						
Disc	CF8M				CF8M				CF8M		
Gland Packing	Refer to Page SS22				Refer to Page SS22						
Gasket	Refer to Page SS22				Refer to Page SS22				Refer to Page SS22		
Bonnet B/N	B8/8				B8/8				B8/8		
P-T Rating	ASME B16.34				ASME B16.34				ASME B16.34		
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10		
Wall Thickness	API 600				API 600				API 600		
Approval	PED/CE TR-CU/EAC				PED/CE TR-CU/EAC				PED/CE TR-CU/EAC		
Remarks	Flexible Wedge										

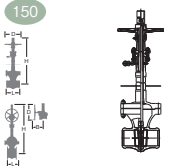
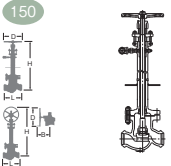
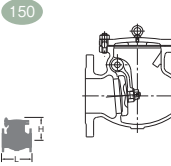
Type	C Series (Gate)				C Series (Globe)				C Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
											
Fig	1500UMCM				1500UPCM/G-1500UPCM				1500UOCM		
End Connection	ASME B16.5 Class 1500 RF				ASME B16.5 Class 1500 RF				ASME B16.5 Class 1500 RF		
inch	mm	L	H	D	L	H	D	B	L	H	D
2	50	368	562	250	368	546	350		368	290	
2 1/2	65	419	639	300					419	316	
3	80	470	684	350	TBA	TBA	TBA	TBA	470	347	
4	100	546	770	400	TBA	TBA	TBA	TBA	546	391	
6	150	705	1040	600	TBA	TBA	TBA	TBA	705	515	
8	200	832	1250	680					832	650	
Body/Bonnet	CF8M				CF8M				CF8M		
Stem	316SS				316SS						
Disc	CF8M				CF8M				CF8M		
Gland Packing	Refer to Page SS22				Refer to Page SS22						
Gasket	Refer to Page SS22				Refer to Page SS22				Refer to Page SS22		
Bonnet B/N	B8/8				B8/8				B8/8		
P-T Rating	ASME B16.34				ASME B16.34				ASME B16.34		
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10		
Wall Thickness	API 600				API 600				API 600		
Approval	PED/CE TR-CU/EAC				PED/CE TR-CU/EAC				PED/CE TR-CU/EAC		
Remarks	Flexible Wedge										

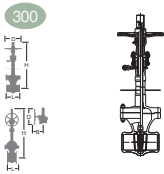
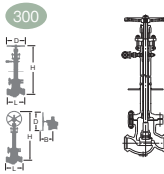
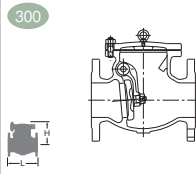
Type	C Series (Swing Check)				C Series (Swing Check)				C Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
											
Fig	150UOCHM				300UOCHM				600UOCHM		
End Connection	ASME B16.5 Class 150 RF				ASME B16.5 Class 300 RF				ASME B16.5 Class 600 RF		
inch	mm	L	H	D	L	H	D		L	H	D
2	50	203	158		267	162			292	190	
2 1/2	65	216	165								
3	80	241	188		318	203			356	222	
4	100	292	204		356	233			432	257	
6	150	356	252		444	280			559	318	
8	200	495	281		533	330			660	359	
10	250	622	344		622	367			787	415	
12	300	698	385		711	423			838	462	
Body/Bonnet	CF8M				CF8M				CF8M		
Disc	CF8M				CF8M				CF8M		
Gasket	Refer to Page SS22				Refer to Page SS22				Refer to Page SS22		
Bonnet B/N	B8/8				B8/8				B8/8		
P-T Rating	ASME B16.34				ASME B16.34				ASME B16.34		
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10		
Wall Thickness	API 594				API 594				API 594		
Approval	PED/CE TR-CU/EAC				PED/CE TR-CU/EAC				PED/CE TR-CU/EAC		
Remarks	Internal Hinge Pin as per API594 Type B				Internal Hinge Pin as per API594 Type B				Internal Hinge Pin as per API594 Type B		

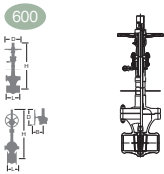
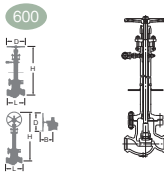
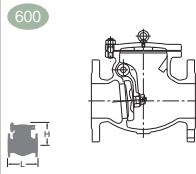
Type	A Series (Gate-104°C)				A Series (Globe-104°C)				A Series (Swing Check-104°C)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
Fig	150UMAXY/G-150UMAXY				150UPAXY/G-150UPAXY				150UOAXY		
End Connection	ASME B16.5 Class 150 RF				ASME B16.5 Class 150 RF				ASME B16.5 Class 150 RF		
inch	mm	L	H	D	L	H	D	B	L	H	D
1/2	15	108	343	90	108	302	90				
3/4	20	117	352	90	117	315	90				
1	25	127	375	100	127	331	100				
1 1/2	40	165	436	140	165	366	140		165	111	
2	50	178	497	160	203	416	160		203	121	
2 1/2	65	190	536	180	216	422	180		216	134	
3	80	203	630	200	241	481	200		241	148	
4	100	229	722	225	292	535	225		292	162	
5	125	254	828	250	356	610	250		330	192	
6	150	267	935	250	406	675	350		356	217	
8	200	292	1136	300	495	776	400		495	264	
10	250	330	1367	350					622	287	
12	300	356	1571	400					698	315	
14	350	381	1747	450					787	363	
16	400	406	1921	600					864	407	
Body	CF8+HF (Co-Cr-W Alloy)				CF8+HF (Co-Cr-W Alloy)				CF8+HF (Co-Cr-W Alloy)		
Bonnet	CF8				CF8				CF8		
Cover									CF8		
Stem	304SS				304SS						
Disc	CF8+HF (Co-Cr-W Alloy)				CF8+HF (Co-Cr-W Alloy)				CF8+HF (Co-Cr-W Alloy)		
Gland Packing	Flexible Graphite+PTFE Braided				Flexible Graphite+PTFE Braided						
Gasket	PTFE Spiral Wound				PTFE Spiral Wound				PTFE Spiral Wound		
Bonnet B/N	B8 CL2/8				B8 CL2/8				B8 CL2/8		
P-T Rating	ASME B16.34				ASME B16.34				ASME B16.34		
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10		
Wall Thickness	ASME B16.34				ASME B16.34				ASME B16.34		
Remarks	Gear for 8" & above				Gear for 6" & above						

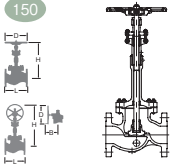
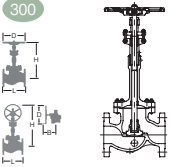
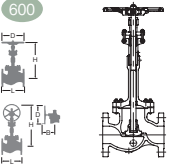
Type	A Series (Gate-104°C)				A Series (Globe-104°C)				A Series (Swing Check-104°C)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
Fig	300UMAXY/G-300UMAXY				300UPAXY/G-300UPAXY				300UOAXY		
End Connection	ASME B16.5 Class 300 RF				ASME B16.5 Class 300 RF				ASME B16.5 Class 300 RF		
inch	mm	L	H	D	L	H	D	B	L	H	D
1/2	15	140	338	100	152	316	100				
3/4	20	152	348	100	178	325	100				
1	25	165	377	100	203	338	100				
1 1/2	40	190	440	140	229	387	160		241	121	
2	50	216	515	180	267	450	180		267	143	
2 1/2	65				292	464	200		292	163	
3	80	283	655	225	318	533	250		318	178	
4	100	305	751	250	356	603	300		356	201	
5	125	381	840	300	400	714	350		400	231	
6	150	403	961	350	444	785	400		444	259	
8	200	419	1180	400	559	907	560		533	292	
10	250	457	1414	450					622	356	
12	300	502	1617	500					711	373	
14	350	762	TBA	TBA							
Body	CF8+HF (Co-Cr-W Alloy)				CF8+HF (Co-Cr-W Alloy)				CF8+HF (Co-Cr-W Alloy)		
Bonnet	CF8				CF8				CF8		
Cover									CF8		
Stem	304SS				304SS						
Disc	CF8+HF (Co-Cr-W Alloy)				CF8+HF (Co-Cr-W Alloy)				CF8+HF (Co-Cr-W Alloy)		
Gland Packing	Flexible Graphite+PTFE Braided				Flexible Graphite+PTFE Braided						
Gasket	Ceramics PTFE				Ceramics PTFE				PTFE Spiral Wound		
Bonnet B/N	B8 CL2/8				B8 CL2/8				B8 CL2/8		
P-T Rating	ASME B16.34				ASME B16.34				ASME B16.34		
F-to-F Dimension	ASME B16.10				ASME B16.10				ASME B16.10		
Wall Thickness	ASME B16.34				ASME B16.34				ASME B16.34		
Remarks	Gear for 8" & above				Gear for 8" & above						

Type	A Series (Gate(-196°C))					A Series (Gate(-196°C))					A Series (Gate(-196°C))				
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)															
	150UMALMY/G-150UMALMY					300UMALMY/G-300UMALMY					600UMALMY/G-600UMALMY				
End Connection	ASME B16.5 Class 150 RF					ASME B16.5 Class 300 RF					ASME B16.5 Class 600 RF				
inch	mm	L	H	D	B	L	H	D	B		L	H	D	B	
2	50	178	634	200		216	634	200			292	764	300		
3	80	203	761	200		283	836	300			356	926	300		
4	100	229	876	200		305	955	300			432	1121	600		
6	150	267	1138	350		403	1210	600			559	1348	500	253	
8	200	292	1317	500		419	1500	500	253		660	1547	500	253	
10	250	330	1678	500	253	457	1669	500	253		787	2016	500	282	
12	300	356	1802	500	253	502	1921	500	253		838	2112	600	350	
14	350	381	2049	500	253	762	2109	500	281						
16	400	406	2271	500	253	838	2296	500	281						
18	450	432	2474	500	281	914	2532	500	281						
20	500	457	2696	500	281	991	2857	600	350						
24	600	508	3314	600	350	1143	3374	600	456						
Body	CF8M+HF (Co-Cr-W Alloy)					CF8M+HF (Co-Cr-W Alloy)					CF8M+HF (Co-Cr-W Alloy)				
Bonnet/Cover	CF8M+HF (Co-Cr-W Alloy)					CF8M+HF (Co-Cr-W Alloy)					CF8M+HF (Co-Cr-W Alloy)				
Stem	316SS					316SS					316SS				
Disc	CF8M+HF (Co-Cr-W Alloy)					CF8M+HF (Co-Cr-W Alloy)					CF8M+HF (Co-Cr-W Alloy)				
Gland Packing	RTFE+Graphite					RTFE+Graphite					RTFE+Graphite				
Gasket	Flexible Graphite Spiral Wound					Flexible Graphite Spiral Wound					Flexible Graphite Spiral Wound				
Bonnet B/N	B8 CL2/8					B8 CL2/8					B8 CL2/8				
P-T Rating	ASME B16.34					ASME B16.34					ASME B16.34				
F-to-F Dimension	ASME B16.10					ASME B16.10					ASME B16.10				
Wall Thickness	ASME B16.34					ASME B16.34					ASME B16.34				
Remarks	Gear for 10" & above					Gear for 8" & above					Gear for 6" & above				

Type	C Series (Gate(-196°C))					C Series (Globe(-196°C))					C Series (Swing Check(-196°C))				
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)															
	150UMCLMY/G-150UMCLMY					150UPCLMY/G-150UPCLMY					150UOCLMY				
End Connection	ASME B16.5 Class 150 RF					ASME B16.5 Class 150 RF					ASME B16.5 Class 150 RF				
inch	mm	L	H	D	B	L	H	D	B		L	H	D		
1/2	15	108	446	100		108	425	100							
3/4	20	117	460	100		117	434	120							
1	25	127	503	120		127	461	160							
1 1/2	40	165	612	200		165	TBA	TBA							
2	50	178	675	250		203	595	200			203	156			
2 1/2	65	190	718	250		216	703	250			216	164			
3	80	203	825	250		241	713	250			241	TBA			
4	100	229	924	300		292	807	350			292	TBA			
5	125	254	TBA	TBA											
6	150	267	1259	400		406	TBA	TBA			356	TBA			
8	200	292	1444	500		495	1283	500	254		495	TBA			
10	250	330	1785	500	254						622	TBA			
12	300	356	2041	500	254						698	TBA			
14	350	381	2112	500	254						787	TBA			
16	400	406	2311	500	280										
18	450	432	2495	500	280										
20	500	457	2782	600	350										
24	600	508	3170	600	350										
Body	CF8M+HF up to 11/2", CF8M					CF8M+HF up to 11/2", CF8M					CF8M+HF				
Bonnet/Cover	CF8M+HF up to 1", CF8M					CF8M+HF up to 1", CF8M					CF8M				
Stem	316SS+HF					316SS+HF					316SS+HF				
Disc	CF8M+HF					CF8M+HF					CF8M+HF				
Gland Packing	Flexible Graphite					Flexible Graphite					Flexible Graphite				
Gasket	PTFE Spiral Wound					Flexible Graphite Spiral Wound					Flexible Graphite Spiral Wound				
Body Seat Ring	316SS+HF					316SS+HF					316SS+HF				
Bonnet B/N	B8 CL2/8					B8 CL2/8					B8 CL2/8				
P-T Rating	ASME B16.34					ASME B16.34					ASME B16.34				
F-to-F Dimension	ASME B16.10					ASME B16.10					ASME B16.10				
Wall Thickness	API 600					API 600					API 600				
Remarks	Gear for 10" & above					Gear for 8" & above									

Type	C Series (Gate(-196°C))					C Series (Globe(-196°C))					C Series (Swing Check(-196°C))		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)													
Fig	300UMCLMY/G-300UMCLMY					300UPCLMY/G-300UPCLMY					300UOCLMY		
End Connection	ASME B16.5 Class 300 RF					ASME B16.5 Class 300 RF					ASME B16.5 Class 300 RF		
inch	mm	L	H	D	B	L	H	D	B		L	H	D
1/2	15	455	455	100		152	426	100			140	TBA	
3/4	20	456	456	100		178	434	120			152	TBA	
1	25	531	531	120		203	461	160			216	TBA	
1 1/2	40	639	639	250		229	TBA	TBA			241	TBA	
2	50	675	675	300		267	592	225			267	161	
2 1/2	65	TBA	TBA	TBA		292	TBA	TBA			292	TBA	
3	80	825	825	300		318	736	350			318	204	
4	100	957	957	350		356	833	500			356	292	
5	125	1259	1259	400									
6	150	1259	1259	400		444	1329	500	280		444	TBA	
8	200	1637	1637	500	254	559	TBA	TBA	TBA		533	TBA	
10	250	1785	1785	500	254						622	TBA	
12	300	2041	2041	500	280						711	423	
14	350	2435	2435	600	456						838	TBA	
16	400	2595	2595	600	456						864	TBA	
18	450	2755	2755	600	456						978	TBA	
20	500	2862	2862	600	456						1016	TBA	
24	600	3320	3320	610	456						1346	TBA	
Body	CF8M+HF up to 11/2 ^o , CF8M					CF8M+HF up to 11/2 ^o , CF8M					CF8M+HF		
Bonnet/Cover	CF8M+HF up to 1 ^o , CF8M					CF8M+HF up to 1 ^o , CF8M					CF8M		
Stem	316SS+HF					316SS+HF							
Disc	CF8M+HF					CF8M+HF					CF8M+HF		
Gland Packing	Flexible Graphite					Flexible Graphite							
Gasket	PTFE Spiral Wound					Flexible Graphite Spiral Wound					Flexible Graphite Spiral Wound		
Body seat ring	316SS+HF					316SS+HF							
Bonnet B/N	B8 CL2/8					B8 CL2/8					B8 CL2/8		
P-T Rating	ASME B16.34					ASME B16.34					ASME B16.34		
F-to-F Dimension	ASME B16.10					ASME B16.10					ASME B16.10		
Wall Thickness	API 600					API 600					API 600		
Remarks	Gear for 8 ^o & above					Gear for 6 ^o & above							

Type	C Series (Gate(-196°C))					C Series (Globe(-196°C))					C Series (Swing Check(-196°C))		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)													
Fig	600UMCLMY/G-600UMCLMY					600UPCLMY/G-600UPCLMY					600UOCLMY		
End Connection	ASME B16.5 Class 600 RF					ASME B16.5 Class 600 RF					ASME B16.5 Class 600 RF		
inch	mm	L	H	D	B	L	H	D	B		L	H	D
1/2	15	165	TBA	TBA		165	472	140					
3/4	20	190	TBA	TBA		190	TBA	TBA					
1	25	216	TBA	TBA		216	TBA	TBA			216	TBA	
1 1/2	40	241	TBA	TBA		241	TBA	TBA			241	TBA	
2	50	292	750	300		292	676	350			292	TBA	
2 1/2	65	330	TBA	TBA		330	TBA	TBA					
3	80	356	886	350		356	1091	500	254		356	210	
4	100	432	1111	500		432	1181	500	254		432	248	
6	150	559	1600	500	254	559	TBA	TBA	TBA		559	TBA	
8	200	660	1546	500	254	660	1470	600	350		660	TBA	
10	250	787	2030	600	456						787	TBA	
12	300	838	2245	600	282						838	484	
14	350	889	2375	600	337								
16	400	991	2560	600	417								
18	450	1092	2623	600	456								
20	500	1194	2960	610	456								
24	600	1397	3158	610	456								
Body	CF8M+HF up to 11/2 ^o , CF8M					CF8M+HF up to 11/2 ^o , CF8M					CF8M+HF		
Bonnet/Cover	CF8M+HF up to 1 ^o , CF8M					CF8M+HF up to 1 ^o , CF8M					CF8M		
Stem	316SS+HF					316SS+HF							
Disc	CF8M+HF					CF8M+HF					CF8M+HF		
Gland Packing	Flexible Graphite					Flexible Graphite							
Gasket	PTFE Spiral Wound					Flexible Graphite Spiral Wound					Flexible Graphite Spiral Wound		
Body Seat Ring	316SS+HF					316SS+HF							
Bonnet B/N	B8 CL2/8					B8 CL2/8					B8 CL2/8		
P-T Rating	ASME B16.34					ASME B16.34					ASME B16.34		
F-to-F Dimension	ASME B16.10					ASME B16.10					ASME B16.10		
Wall Thickness	API 600					API 600					API 600		
Remarks	Gear for 6 ^o & above					Gear for 3 ^o & above							

Type	CR Series (Globe(-196°C))					CR Series (Globe(-196°C))					CR Series (Globe(-196°C))				
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)	150					300					600				
															
	Fig 150UPCRLMD/G-150UPCRLMD					300UPCRLMD/G-300UPCRLMD					600UPCRLMD/G-600UPCRLMD				
	End Connection ASME B16.5 Class 150 RF					ASME B16.5 Class 300 RF					ASME B16.5 Class 600 RF				
inch	mm	L	H	D	B	L	H	D	B		L	H	D	B	
2	50	203	580	152		267	576	165			292	624	165		
2 1/2	65	216	TBA	TBA		292	TBA	TBA			330	TBA	TBA		
3	80	241	698	190		318	727	210			356	791	210		
4	100	292	743	229		356	791	254			432	1152	273	253	
6	150	406	900	279		444	1252	318	281		559	1243	356	281	
8	200	495	1272	343	253	559	1302	381	281		660	1430	419	350	
Body	CF8M					CF8M					CF8M				
Bonnet/Cover	CF8M					CF8M					CF8M				
Stem	316SS					316SS					316SS				
Disc	CF8+HF (Co-Cr-W Alloy)					CF8+HF (Co-Cr-W Alloy)					CF8+HF (Co-Cr-W Alloy)				
Gland Packing	RTFE+Graphite					RTFE+Graphite					RTFE+Graphite				
Gasket	Flexible Graphite Spiral Wound					Flexible Graphite Spiral Wound					Flexible Graphite Spiral Wound				
Bonnet B/N	B8 CL2/8					B8 CL2/8					B8 CL2/8				
P-T Rating	ASME B16.34					ASME B16.34					ASME B16.34				
F-to-F Dimension	ASME B16.10					ASME B16.10					ASME B16.10				
Wall Thickness	API 623					API 623					API 623				
Remarks	Gear for 8" & above					Gear for 6" & above					Gear for 4" & above				

Type	D Series (Gate)					D Series (Globe)			D Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)	150   EAC					150   EAC			150   EAC		
	Fig	AK150UMM					AK150UPM			AK150UOM	
End Connection	ASME B1.20.1 (NPT)					ASME B1.20.1 (NPT)			ASME B1.20.1 (NPT)		
inch	mm	L	H	D	L	H	D	L	H	D	
1/2	15	70	197	90	86	164	90	95	75		
3/4	20	76	204	90	95	166	90	95	80		
1	25	89	220	100	108	169	100	127	85		
1 1/2	40	114	276	140	140	198	140	152	107		
2	50	121	336	160	165	228	160	165	115		
Body	CF3M				CF3M			CF3M			
Bonnet/Cover	CF8M				CF8M			CF8M			
Stem/Hinge Pin	316SS				316SS						
Disc	CF8M				CF8M			CF8M			
Gland Packing	Refer to Page SS22				Refer to Page SS22						
Gasket	Refer to Page SS22				Refer to Page SS22			Refer to Page SS22			
Bonnet B/N	B8/8				B8/8			B8/8			
P-T Rating	ASME B16.34				ASME B16.34			ASME B16.34			
F-to-F Dimension	KITZ Standard				KITZ Standard			KITZ Standard			
Wall Thickness	ASME B16.34				ASME B16.34			ASME B16.34			
Remarks	TR-CU/EAC Flexible Wedge				TR-CU/EAC Flexible Wedge			TR-CU/EAC			

Type	D Series (Gate)					D Series (Globe)			D Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)	150   EAC					150   EAC			150   EAC		
	Fig	AW150UMM					AW150UPM			AW150UOM	
End Connection	ASME B16.11					ASME B16.11			ASME B16.11		
inch	mm	L	H	D		L	H	D	L	H	D
1/2	15	67	197	90		83	164	90	92	75	
3/4	20	73	204	90		92	166	90	92	80	
1	25	86	220	100		105	169	100	124	85	
1 1/2	40	111	276	140		137	198	140	149	107	
2	50	118	336	160		162	228	160	162	115	
Body	CF3M					CF3M			CF3M		
Bonnet/Cover	CF8M					CF8M			CF8M		
Stem	316SS					316SS					
Disc	CF8M					CF8M			CF8M		
Gland Packing	Refer to Page SS22					Refer to Page SS22					
Gasket	Refer to Page SS22					Refer to Page SS22			Refer to Page SS22		
Bonnet B/N	B8/8					B8/8			B8/8		
P-T Rating	ASME B16.34					ASME B16.34			ASME B16.34		
F-to-F Dimension	KITZ Standard					KITZ Standard			KITZ Standard		
Wall Thickness	ASME B16.34					ASME B16.34			ASME B16.34		
Remarks	TR-CU/EAC Flexible Wedge					TR-CU/EAC			TR-CU/EAC		

Type	D Series (Gate)					D Series (Globe)			D Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
	AK300UMM					AK300UPM			AK300UOM		
	ASME B1.20.1 (NPT)					ASME B1.20.1 (NPT)			ASME B1.20.1 (NPT)		
	inch	mm	L	H	D	L	H	D	L	H	D
	1/2	15	76	202	100	95	184	100	114	81	
	3/4	20	83	212	100	108	182	100	127	87	
	1	25	95	230	100	127	185	100	140	91	
	1 1/2	40	127	285	140	165	233	160	152	117	
	2	50	146	355	180	190	289	180	165	139	
Body	CF3M					CF3M			CF3M		
Bonnet/Cover	CF8M					CF8M			CF8M		
Stem/Hinge Pin	316SS					316SS			316SS		
Disc	CF8M					CF8M			CF8M		
Gland Packing	Refer to Page SS22					Refer to Page SS22					
Gasket	Refer to Page SS22					Refer to Page SS22			Refer to Page SS22		
Bonnet B/N	B8/8					B8/8			B8/8		
P-T Rating	ASME B16.34					ASME B16.34			ASME B16.34		
F-to-F Dimension	KITZ Standard					KITZ Standard			KITZ Standard		
Wall Thickness	ASME B16.34					ASME B16.34			ASME B16.34		
Remarks	TR-CU/EAC Flexible Wedge					TR-CU/EAC			TR-CU/EAC		

Type	D Series (Gate)					D Series (Globe)			D Series (Swing Check)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)											
	Fig AW300UMM					Fig AW300UPM			Fig AW300UOM		
	End Connection ASME B16.11					End Connection ASME B16.11			End Connection ASME B16.11		
	inch	mm	L	H	D	L	H	D	L	H	D
	1/2	15	73	202	100	92	184	100	111	81	
	3/4	20	80	212	100	105	182	100	124	87	
	1	25	92	230	100	124	185	100	137	91	
	1 1/2	40	124	285	140	162	230	160	149	117	
	2	50	143	355	180	187	284	180	162	139	
Body	CF3M					CF3M			CF3M		
Bonnet/Cover	CF8M					CF8M			CF8M		
Stem/Hinge Pin	316SS					316SS			316SS		
Disc	CF8M					CF8M			CF8M		
Gland Packing	Refer to Page SS22					Refer to Page SS22					
Gasket	Refer to Page SS22					Refer to Page SS22			Refer to Page SS22		
Bonnet B/N	B8/8					B8/8			B8/8		
P-T Rating	ASME B16.34					ASME B16.34			ASME B16.34		
F-to-F Dimension	KITZ Standard					KITZ Standard			KITZ Standard		
Wall Thickness	ASME B16.34					ASME B16.34			ASME B16.34		
Remarks	TR-CU/EAC Flexible Wedge					TR-CU/EAC			TR-CU/EAC		

Type		D Series (Gate)			D Series (Gate)		
Stainless Steel & High Alloy Steel Valves (GGC & Strainer)							
		EAC			EAC		
Fig		AK600UMM			AW600UMM		
End Connection		ASME B1.20.1 (NPT)			ASME B16.11		
inch	mm	L	H	D	L	H	D
1/2	15	76	201	100	73	201	100
3/4	20	83	215	100	80	215	100
1	25	95	240	140	92	240	140
1 1/2	40	127	325	180	124	325	180
2	50	146	385	200	143	385	200
Body		CF3M			CF3M		
Bonnet		CF8M			CF8M		
Stem		316SS			316SS		
Disc		CF8M			CF8M		
Gland Packing		Refer to Page SS22			Refer to Page SS22		
Gasket		Refer to Page SS22			Refer to Page SS22		
Bonnet B/N		B8/8			B8/8		
P-T Rating		ASME B16.34			ASME B16.34		
F-to-F Dimension		KITZ Standard			KITZ Standard		
Wall Thickness		ASME B16.34			ASME B16.34		
Remarks		TR-CU/EAC Flexible Wedge			TR-CU/EAC Flexible Wedge		

Corrosion Resistance of KITZ Stainless and High Alloy Steel Valves

KITZ stainless and high alloy steel valves are widely utilized in chemical, petrochemical, food and beverage, pulp and paper, pharmaceutical and other industrial processing plants throughout the world, constitute one of the major product lines of KITZ Corporation, Japan's largest manufacturer of industrial valves.

KITZ stainless and high alloy steel valves are designed, manufactured, and inspected to strictly conform with the requirements of ASTM, ASME, API, BS, JIS and other internationally recognized standards, with all quality elements meeting the critical service conditions needed for corrosive industrial applications.

KITZ stainless and high alloy steel valves are characterized by unsurpassed corrosion resistance and reliability, providing users with the lowest cost of ownership and the longest total life cycle performance in the industry. As an ISO 9001 certified valve manufacturer, KITZ Corporation has achieved a high degree of product standardization by the ideal combination of its updated technical know-how and uniquely integrated system of production adopted at its Nagasaka Plant, Yamanashi, Japan, the home of KITZ stainless and high alloy steel valves.

Electronically controlled steel foundries, multi-station transfer machining systems and state-of-the-art test and inspection facilities, are all put together at KITZ Nagasaka Plant, to ensure the quality and reliability of all products that it releases to the global market.



KITZ Nagasaka Plant, Japan



KITZ Corporation of Taiwan



KITZ Corporation of Kunshan

Features of Austenitic Stainless Steel as Valve Material

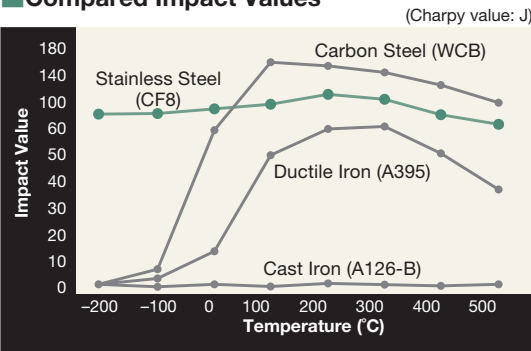
Stainless steel is divided into three main categories depending on its chemical composition. They are martensitic stainless steel containing 13% chromium, ferritic stainless steel containing 18% chromium, and austenitic stainless steel containing 18% chromium and 8% nickel. Among them, austenitic stainless steel is widely used for both valve shells and trims, which require high pressure resistant characteristic. Martensitic stainless steel is used mainly for trims of carbon steel valves. The features and characteristics of these stainless steels are compared below:

Features of Stainless Steel by Types

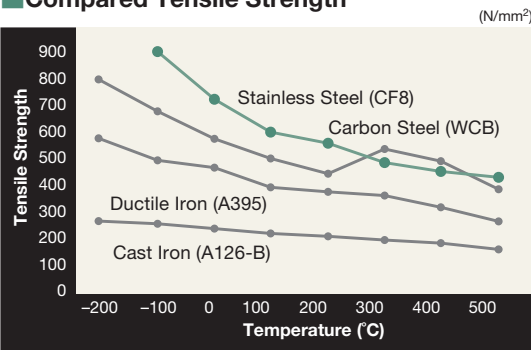
Types	Martensitic	Ferritic	Austenitic
Typical Material	AISI 410	AISI 430	ASTM CF8M/F316
Magnetization	Yes		No
Hardening by Heat Treatment	Yes	No	
Hardening by Machining	Same as soft steel		Less
Corrosion and Acid Resistance	Good		Excellent
Impact Resistance and Elongation	Good		Excellent
Weldability	Poor	Fair	Good
Lowest Service Temperature	-29°C	-10°C	-269°C

As shown below, austenitic stainless steel has an excellent impact value in subzero temperature range and been almost exclusively used for cryogenic service applications. It also features higher heat resistance than carbon steel. Its tensile strength is also superior to other valve materials and its high resistance against destructive tensile load in a wide range of service temperatures is unrivaled by other valve materials. Corrosive fluid cannot generally affect these excellent mechanical properties of austenitic stainless steel.

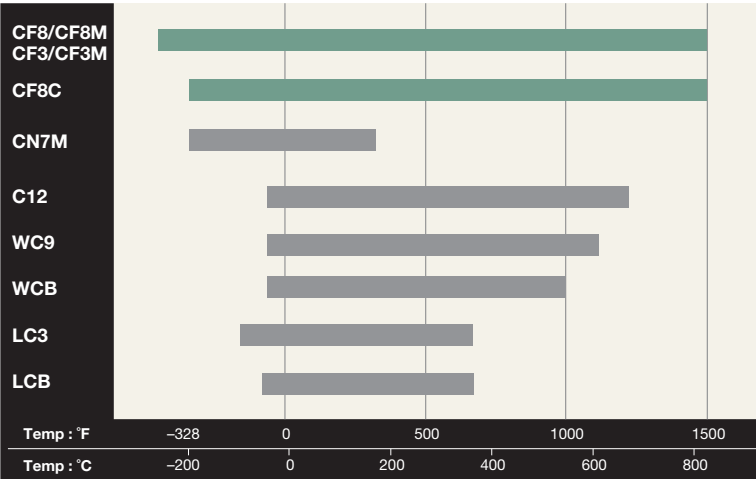
Compared Impact Values



Compared Tensile Strength



Steel Castings: Maximum Working Temperature Range



This data reflects ASTM specifications for general steel castings, and does not necessarily apply to valves made of these materials, which are subject to highly demanding service conditions as pressure containing vessels.

On the other hand, austenitic stainless steel is known as a very mild metal having no effect on the quality of the materials it comes into contact with. Line fluid is not contaminated while traveling through austenitic stainless steel pipelines. This advantages makes austenitic stainless steel valves the important fluid handling media for food, beverage and pharmaceutical processing plants. In addition, austenitic stainless steel CF8M or F316 has higher resistance to sea water erosion and is widely used for the valves installed in seawater desalination plants, offshore exploration facilities and ocean structures.

General Design Specifications

Series	Normal Pressure	Pressure-Temperature Ratings*	Face to Face Dimensions	End Connection Dimensions	Wall Thickness
A	10K	JIS B2220	JIS B2002	JIS B2220 10K Flanged	ASME B16.34 Class 150
	20K			JIS B2220 20K Flanged	ASME B16.34 Class 300
	Class 150/300/600	ASME B16.34	ASME B16.10	ASME B16.5 Flanged	ASME B16.34
HA	Class 150/300	ASME B16.34	ASME B16.10	ASME B16.5 Flanged	API 603
C	Class 150/300/600/900/1500	ASME B16.34	ASME B16.10	ASME B16.5 Flanged	API 600/API594
B	5K	0.5 MPa 150°C	JIS B2011 KITZ Std.	JIS B0203 Threaded JIS B2220 5K 10K Flanged	JIS B2011 KITZ Std.
	10K	1.0 MPa 180°C			
	20K	2.0 MPa 180°C			
	Type 200	KITZ Std.		ASME B1.20.1 Threaded	
D	Class 150/300/600	ASME B16.34	KITZ Std.	ASME B1.20.1 Threaded ASME B16.11 Socket Welded	ASME B16.34
AJ	10K	JIS B2220		JIS B2220 10K Flanged	ASME B16.34 Class 150
	20K		JIS B2220 20K Flanged	ASME B16.34 Class 300	
	Class 150/300	ASME B16.34	KITZ Std.	ASME B16.5 Flanged	ASME B16.34

*Actual pressure-temperature rating in service depends on the materials of gland packing and gasket chosen for valves.

Bonnet Gasket Materials

Depending on class ratings and service conditions, following gasket materials are available* for body/bonnet flange gaskets of KITZ stainless and high alloy steel valves. Specify your gasket material in your purchase order.

Series	Class	Material	Maximum Service Temperature
A, D	10K, 20K, 150, 300	Ceramics PTFE	200°C
		Stainless Foil Inserted Flexible Graphite	400°C
	600	PTFE Spiral Wound	300°C
		Flexible Graphite Spiral Wound	450°C
HA	150	Ceramics PTFE	200°C
		Stainless Foil Inserted Flexible Graphite	400°C
	300	PTFE Spiral Wound	260°C
		Flexible Graphite Spiral Wound	450°C
C	150	Ceramics PTFE	200°C
	300, 600	Stainless Foil Inserted Flexible Graphite	400°C
		PTFE Spiral Wound	300°C
		Non-Asbestos Spiral Wound	450°C
		Flexible Graphite Spiral Wound	450°C
	600, 900, 1500	Stainless Steel (Ring Joint)	500°C
B	5K, 10K	Reinforced PTFE	180°C
AJ	10K, 150 20K, 300	Flexible Graphite	400°C

Note: Refer to Page SS23 for bonnet gaskets used for KITZ low emission service valves.

Gland Packing Materials

Following packing materials can be chosen for KITZ stainless and high alloy steel valves, depending on service conditions, or market requirements. Specify your packing material in your purchase order.

Series	Class	Material	Maximum Service Temperature
A, D	10K, 20K 150, 300, 600	Flexible Graphite + PTFE Braided Packing	300°C
		PTFE Cup & Cone	150°C
		Flexible Graphite	500°C
		Carbon Core + PTFE Braided Packing	260°C
HA	150, 300	Flexible Graphite	500°C
		Carbon Core + PTFE Braided Packing	260°C
C	150, 300	Flexible Graphite + PTFE Braided Packing	300°C
	600, 900, 1500	Flexible Graphite	500°C
		Flexible Graphite	500°C
B	5K, 10K, Type200	Plastic Graphite Packing	180°C
AJ	10K, 150 20K, 300	Flexible Graphite + PTFE Braided Packing	300°C

Note: Refer to Page SS23 for gland packing sets used for KITZ low emission service valves. *455°C (850°F) for oxidizing atmosphere.

Contact KITZ Corporation or your KITZ distributors for optional requirement of gasket or gland packing materials other than listed above.

Disc Construction

Series	Nominal Pressure	Solid Wedge 	Flexible Wedge 
A	10K/20K, Class 150/300/600	—	All sizes
HA	Class 150/300	—	All sizes
C	Class 150/300	4 and smaller	6 and larger
	Class 600	1½ and smaller	2 and larger
	Class 900/1500	—	All sizes
B	5K/10K/20K, Type 200	All sizes	—
D	Class 150/300/600	—	All sizes
AJ	10K/20K, Class 150/300	—	All sizes

Pressure-Temperature Ratings for Series B (KITZ Standard)

Temperature	MPa		
	W 120°C below	G ₁ 150°C below	G ₂ 180°C below
5K	0.7	0.5	—
10K	1.4	1.1	1.0
20K	2.0	1.2	1.0

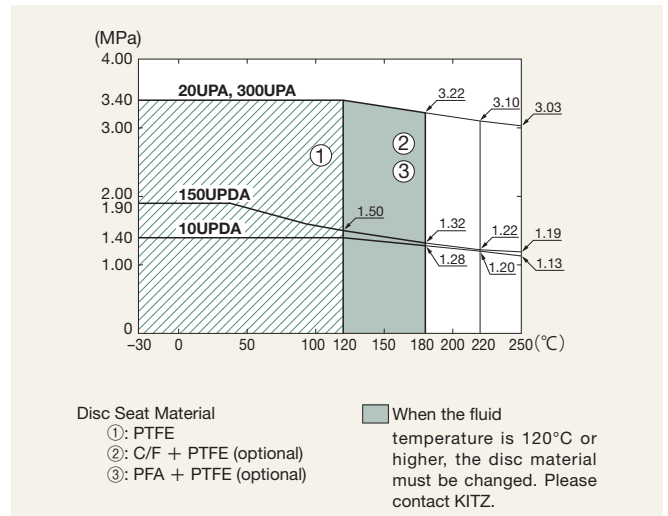
W: Static water without pressure variation

G₁, G₂: Steam, air, non-inflammable gas and oil (lubricant and machining oil)

Note: Actual pressure-temperature rating in service depends on the materials of gland packing and gasket chosen for valves.

When using B-Series Globe Valves with PTFE Disc at a temperature exceeding 120°C, please contact KITZ for further assistance.

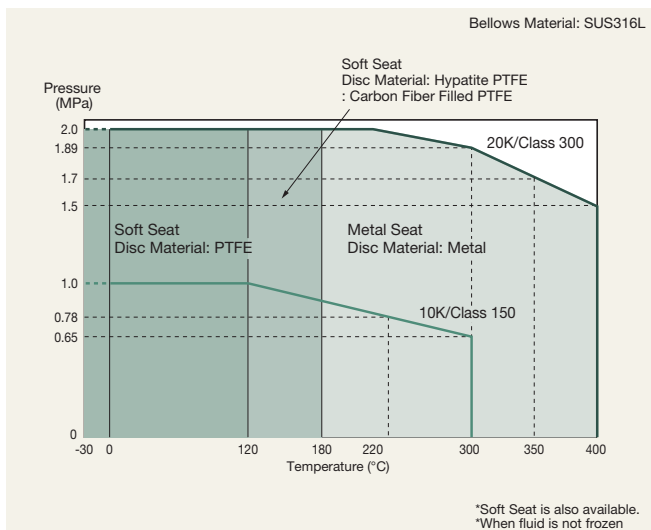
Pressure-Temperature Ratings for Globe Valves with A Series Disc



Usage Range of Bellows Seal Globe Valves

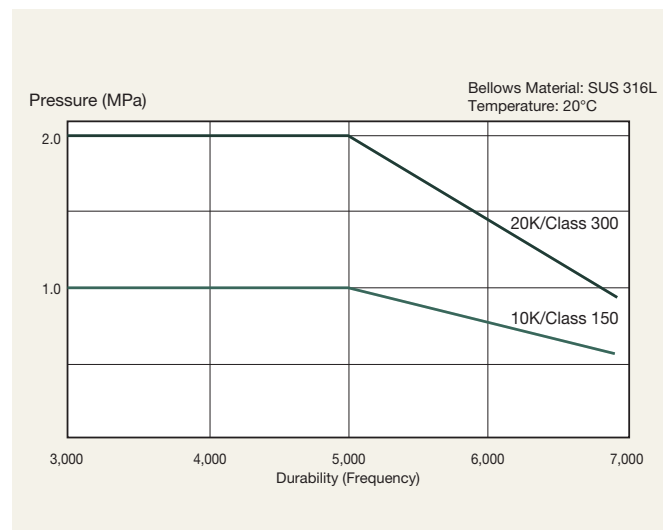
• Pressure-Temperature Ratings

Although valve bodies are designed to comply with the pressure and temperature standard of JIS B 2220/ASME B16.34, pressure and durability of bellows should be considered. If you are using products beyond this usage range, please contact KITZ. The standard may not be applicable depending on the fluid state.



• Relation between Pressure and Service Duration

The value shown below which was obtained by the bellows valve durability test indicates the repeated opening and closing durability. If you need a longer product usage, please consult us. (Conforming to MSS SP 117)



Pressure-temperature Ratings ASME B16.34-2009 Series A, Series HA, Series C, Series E, Series S

Class		150																				
Service Temperature		CF8 [SCS13A]			CF8M [SCS14A]			CF3M-CF3 [SCS16A-SCS19A]			CF8C [SCS21]			CK20 [SCS18]			CN7M [SCS23]			SDPV ^{®3} SASV ^{®4}		
°C	°F	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}
-29 to 38	-20.2 to 100.4	19.0	275.6	1.90	19.0	275.6	1.90	15.9	230.6	1.59	19.0	275.6	1.90	17.8	258.2	1.78	15.9	230.6	1.59	20.0	290.1	2.00
50	122	18.3	265.4	1.83	18.4	266.9	1.84	15.3	221.9	1.53	18.7	271.2	1.87	17.0	246.6	1.70	15.4	223.4	1.54	19.5	282.8	1.95
100	212	15.7	227.7	1.57	16.2	235.0	1.62	13.3	192.9	1.33	17.4	252.4	1.74	14.4	208.9	1.44	13.5	195.8	1.35	17.7	256.7	1.77
150	302	14.2	206.0	1.42	14.8	214.7	1.48	12.0	174.0	1.20	15.8	229.2	1.58	13.4	194.4	1.34	12.3	178.4	1.23	15.8	229.2	1.58
200	392	13.2	191.4	1.32	13.7	198.7	1.37	11.2	162.4	1.12	13.8	200.2	1.38	12.9	187.1	1.29	11.3	163.9	1.13	13.8	200.2	1.38
250	482	12.1	175.5	1.21	12.1	175.5	1.21	10.5	152.3	1.05	12.1	175.5	1.21	12.1	175.5	1.21	10.4	150.8	1.04	12.1	175.5	1.21
300	572	10.2	147.9	1.02	10.2	147.9	1.02	10.0	145.0	1.00	10.2	147.9	1.02	10.2	147.9	1.02	9.7	140.7	0.97	10.2	147.9	1.02
325	617	9.3	134.9	0.93	9.3	134.9	0.93	9.3	134.9	0.93	9.3	134.9	0.93	9.3	134.9	0.93	9.3	134.9	0.93	9.3	134.9	0.93
350	662	8.4	121.8	0.84	8.4	121.8	0.84	8.4	121.8	0.84	8.4	121.8	0.84	8.4	121.8	0.84				8.4	121.8	0.84
375	707	7.4	107.3	0.74	7.4	107.3	0.74	7.4	107.3	0.74	7.4	107.3	0.74	7.4	107.3	0.74				7.4	107.3	0.74
400	752	6.5	94.3	0.65	6.5	94.3	0.65	6.5	94.3	0.65	6.5	94.3	0.65	6.5	94.3	0.65				6.5	94.3	0.65
425	797	5.5	79.8	0.55	5.5	79.8	0.55	5.5	79.8	0.55	5.5	79.8	0.55	5.5	79.8	0.55						
450	842	4.6	66.7	0.46	4.6	66.7	0.46	4.6	66.7	0.46	4.6	66.7	0.46	4.6	66.7	0.46						
475	887	3.7	53.7	0.37	3.7	53.7	0.37				3.7	53.7	0.37	3.7	53.7	0.37						
500	932	2.8	40.6	0.28	2.8	40.6	0.28				2.8	40.6	0.28	2.8	40.6	0.28						
538	1000.4	1.4	20.3	0.14	1.4	20.3	0.14				1.4	20.3	0.14	1.4	20.3	0.14						
550	1022	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14						
575	1067	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14						
600	1112	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14						
625	1157	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14						
650	1202	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14						
675	1247	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14						
700	1292	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14						
725	1337	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14						
750	1382	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14						
775	1427	1.4 ^{*2}	20.3	0.14	1.4 ^{*2}	20.3	0.14				1.4 ^{*2}	20.3	0.14	1.2 ^{*2}	17.4	0.12						
800	1472	1.2 ^{*2}	17.4	0.12	1.2 ^{*2}	17.4	0.12				1.2 ^{*2}	17.4	0.12	0.9 ^{*2}	13.1	0.09						
816	1500.8	1.0 ^{*2}	14.5	0.10	1.0 ^{*2}	14.5	0.10				1.0 ^{*2}	14.5	0.10	0.7 ^{*2}	10.2	0.07						

* 1: Figures shown in psi/MPa columns are calculated values.

* 2: Applied to welding end valves only. Flanged end valve ratings terminate at 538°C (1000.4°F).

* 3: SDPV[®] is the trademark registered for KITZ Super Duplex Stainless Steel, which is comparable to 25Cr-7Ni-4Mo-N castings. Ratings terminate at 300°C (572°F).

* 4: SASV is the trademark registered for KITZ Super Austenite Stainless Steel, which is comparable to 21Cr-25Ni-6.5Mo-N castings.

Class		300																				
Service Temperature		CF8 [SCS13A]			CF8M [SCS14A]			CF3M-CF3 [SCS16A-SCS19A]			CF8C [SCS21]			CK20 [SCS18]			CN7M [SCS23]			SDPV [®] 3 SASV [®] 4		
°C	°F	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}
-29 to 38	-20.2 to 100.4	49.6	719.4	4.96	49.6	719.4	4.96	41.4	600.5	4.14	49.6	719.4	4.96	46.3	671.5	4.63	41.4	600.5	4.14	51.7	749.8	5.17
50	122	47.8	693.3	4.78	48.1	697.6	4.81	40.0	580.2	4.00	48.8	707.8	4.88	44.5	645.4	4.45	40.1	581.6	4.01	51.7	749.8	5.17
100	212	40.9	593.2	4.09	42.2	612.1	4.22	34.8	504.7	3.48	45.3	657.0	4.53	37.5	543.9	3.75	35.3	512.0	3.53	50.7	590.3	4.07
150	302	37.0	536.6	3.70	38.5	558.4	3.85	31.4	455.4	3.14	42.5	616.4	4.25	34.9	506.2	3.49	32.0	464.1	3.20	45.9	665.7	4.59
200	392	34.5	500.4	3.45	35.7	517.8	3.57	29.2	423.5	2.92	39.9	578.7	3.99	33.5	485.9	3.35	29.4	426.4	2.94	42.7	619.3	4.27
250	482	32.5	471.4	3.25	33.4	484.4	3.34	27.5	398.9	2.75	37.8	548.2	3.78	32.6	472.8	3.26	27.2	394.5	2.72	40.5	587.4	4.05
300	572	30.9	448.2	3.09	31.6	458.3	3.16	26.1	378.5	2.61	36.1	523.6	3.61	31.7	459.8	3.17	25.4	368.4	2.54	38.9	564.2	3.89
325	617	30.2	438.0	3.02	30.9	448.2	3.09	25.5	369.8	2.55	35.4	513.4	3.54	31.2	452.5	3.12	24.4	353.9	2.44	38.2	554.0	3.82
350	662	29.6	429.3	2.96	30.3	439.5	3.03	25.1	364.0	2.51	34.8	504.7	3.48	30.6	443.8	3.06				37.6	545.3	3.76
375	707	29.0	420.6	2.90	29.9	433.7	2.99	24.8	359.7	2.48	34.2	496.0	3.42	29.8	432.2	2.98				37.4	542.4	3.74
400	752	28.4	411.9	2.84	29.4	426.4	2.94	24.3	352.4	2.43	33.9	491.7	3.39	29.1	422.1	2.91				36.5	529.4	3.65
425	797	28.0	406.1	2.80	29.1	422.1	2.91	23.9	346.6	2.39	33.6	487.3	3.36	28.3	410.5	2.83						
450 ^{*2}	842 ^{*2}	27.4	397.4	2.74	28.8	417.7	2.88	23.4	339.4	2.34	33.5	485.9	3.35	27.6	400.3	2.76						
475	887	26.9	390.2	2.69	28.7	416.3	2.87				31.7	459.8	3.17	26.7	387.3	2.67						
500	932	26.5	384.4	2.65	28.2	409.0	2.82				28.2	409.0	2.82	25.8	374.2	2.58						
538	1000.4	24.4	353.9	2.44	25.2	365.5	2.52				25.2	365.5	2.52	23.3	337.9	2.33						
550	1022	23.6	342.3	2.36	25.0	362.6	2.50				25.0	362.6	2.50	22.9	332.1	2.29						
575	1067	20.8	301.7	2.08	24.0	348.1	2.40				24.0	348.1	2.40	21.7	314.7	2.17						
600	1112	16.9	245.1	1.69	19.9	288.6	1.99				21.6	313.3	2.16	19.4	281.4	1.94						
625	1157	13.8	200.2	1.38	15.8	229.2	1.58				18.3	265.4	1.83	16.8	243.7	1.68						
650	1202	11.3	163.9	1.13	12.7	184.2	1.27				14.1	204.5	1.41	14.1	204.5	1.41						
675	1247	9.3	134.9	0.93	10.3	149.4	1.03				12.4	179.8	1.24	11.5	166.8	1.15						
700	1292	8.0	116.0	0.80	8.4	121.8	0.84				10.1	146.5	1.01	8.8	127.6	0.88						
725	1337	6.8	98.6	0.68	7.0	101.5	0.70				7.9	114.6	0.79	6.3	91.4	0.63						
750	1382	5.8	84.1	0.58	5.9	85.6	0.59				5.9	85.6	0.59	4.5	65.3	0.45						
775	1427	4.6	66.7	0.46	4.6	66.7	0.46				4.6	66.7	0.46	3.1	45.0	0.31						
800	1472	3.5	50.8	0.35	3.5	50.8	0.35				3.5	50.8	0.35	2.3	33.4	0.23						
816	1500.8	2.8	40.6	0.28	2.8	40.6	0.28				2.8	40.6	0.28	1.9	27.6	0.19						

Class		600																				
Service Temperature		CF8 [SCS13A]			CF8M [SCS14A]			CF3M-CF3 [SCS16A-SCS19A]			CF8C [SCS21]			CK20 [SCS18]			CN7M [SCS23]			SDPV [®] SASV [®]		
°C	°F	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}
-29 to 38	-20.2 to 100.4	99.3	1440.2	9.93	99.3	1440.2	9.93	82.7	1199.5	8.27	99.3	1440.2	9.93	92.7	1344.5	9.27	82.7	1199.5	8.27	103.4	1499.7	10.34
50	122	95.6	1386.6	9.56	96.2	1395.3	9.62	80.0	1160.3	8.00	97.5	1414.1	9.75	89.0	1290.8	8.90	80.3	1164.7	8.03	103.4	1499.7	10.34
100	212	81.7	1185.0	8.17	84.4	1224.1	8.44	69.6	1009.5	6.96	90.6	1314.0	9.06	75.1	1089.2	7.51	70.6	1024.0	7.06	101.3	1469.2	10.13
150	302	74.0	1073.3	7.40	77.0	1116.8	7.70	62.8	910.8	6.28	84.9	1231.4	8.49	69.8	1012.4	6.98	64.1	929.7	6.41	91.9	1332.9	9.19
200	392	69.0	1000.8	6.90	71.3	1034.1	7.13	58.3	845.6	5.83	79.9	1158.9	7.99	67.1	973.2	6.71	58.7	851.4	5.87	85.3	1237.2	8.53
250	482	65.0	942.7	6.50	66.8	968.9	6.68	54.9	796.3	5.49	75.6	1096.5	7.56	65.2	945.6	6.52	54.4	789.0	5.44	80.9	1173.4	8.09
300	572	61.8	896.3	6.18	63.2	916.6	6.32	52.1	755.6	5.21	72.2	1047.2	7.22	63.4	919.5	6.34	50.8	736.8	5.08	77.7	1126.9	7.77
325	617	60.4	876.0	6.04	61.8	896.3	6.18	51.0	739.7	5.10	70.7	1025.4	7.07	62.4	905.0	6.24	48.8	707.8	4.88		1106.6	7.63
350	662	59.3	860.1	5.93	60.7	880.4	6.07	50.1	726.6	5.01	69.5	1008.0	6.95	61.2	887.6	6.12				75.3	1092.1	7.53
375	707	58.1	842.7	5.81	59.8	867.3	5.98	49.5	717.9	4.95	68.4	992.1	6.84	59.7	865.9	5.97				74.7	1083.4	7.47
400	752	56.9	825.3	5.69	58.9	854.3	5.89	48.6	704.9	4.86	67.8	983.4	6.78	58.2	844.1	5.82				73.3	1063.1	7.33
425	797	56.0	812.2	5.60	58.3	845.6	5.83	47.7	691.8	4.77	67.2	974.7	6.72	56.7	822.4	5.67						
450 ^{*2}	842 ^{*2}	54.8	794.8	5.48	57.7	836.9	5.77	46.8	678.8	4.68	66.9	970.3	6.69	55.2	800.6	5.52						
475	887	53.9	781.8	5.39	57.3	831.1	5.73				63.4	919.5	6.34	53.5	776.0	5.35						
500	932	53.0	768.7	5.30	56.5	819.5	5.65				56.5	819.5	5.65	51.7	749.8	5.17						
538	1000.4	48.9	709.2	4.89	50.0	725.2	5.00				50.0	725.2	5.00	46.6	675.9	4.66						
550	1022	47.1	683.1	4.71	49.8	722.3	4.98				49.8	722.3	4.98	45.9	665.7	4.59						
575	1067	41.7	604.8	4.17	47.9	694.7	4.79				47.9	694.7	4.79	43.3	628.0	4.33						
600	1112	33.8	490.2	3.38	39.8	577.3	3.98				42.9	622.2	4.29	38.8	562.7	3.88						
625	1157	27.6	400.3	2.76	31.6	458.3	3.16				36.6	530.8	3.66	33.7	488.8	3.37						
650	1202	22.5	326.3	2.25	25.3	366.9	2.53				28.1	407.6	2.81	28.1	407.6	2.81						
675	1247	18.7	271.2	1.87	20.6	298.8	2.06				25.2	365.5	2.52	23.0	333.6	2.30						
700	1292	16.1	233.5	1.61	16.8	243.7	1.68				20.0	290.1	2.00	17.5	253.8	1.75						
725	1337	13.5	195.8	1.35	14.0	203.1	1.40				15.4	223.4	1.54	12.7	184.2	1.27						
750	1382	11.6	168.2	1.16	11.7	169.7	1.17				11.7	169.7	1.17	8.9	129.1	0.89						
775	1427	9.0	130.5	0.90	9.0	130.5	0.90				9.0	130.5	0.90	6.3	91.4	0.63						
800	1472	7.0	101.5	0.70	7.0	101.5	0.70				7.0	101.5	0.70	4.6	66.7	0.46						
816	1500.8	5.9	85.6	0.59	5.9	85.6	0.59				5.9	85.6	0.59	3.8	55.1	0.38						

* 1: Figures shown in psi/MPa columns are calculated values.
* 2: Use beyond 450°C (842°F) is not allowed.
* 3: SDPV[®] is the trademark registered for KITZ Super Duplex Stainless Steel, which is comparable to 25Cr-7Ni-4Mo-N castings. Ratings terminate at 300°C (572°F).
* 4: SASV is the trademark registered for KITZ Super Austenite Stainless Steel, which is comparable to 21Cr-25Ni-6.5Mo-N castings.

Class		900																				
Service Temperature		CF8 [SCS13A]			CF8M [SCS14A]			CF3M-CF3 [SCS16A-SCS19A]			CF8C [SCS21]			CK20 [SCS18]			CN7M [SCS23]			SDPV [®] 3 SASV [®] 4		
°C	°F	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}
-29 to 38	-20.2 to 100.4	148.9	2159.6	14.89	148.9	2159.6	14.89	124.1	1799.9	12.41	148.9	2159.6	14.89	139.0	2016.0	13.90	124.1	1799.9	12.41	155.1	2249.5	15.51
50	122	143.5	2081.3	14.35	144.3	2092.9	14.43	120.1	1741.9	12.01	146.3	2121.9	14.63	133.4	1934.8	13.34	120.4	1746.3	12.04	155.1	2249.5	15.51
100	212	122.6	1778.2	12.26	126.6	1836.2	12.66	104.4	1514.2	10.44	135.9	1971.1	13.59	112.6	1633.1	11.26	105.9	1535.9	10.59	152.0	2204.6	15.20
150	302	111.0	1609.9	11.10	115.5	1675.2	11.55	94.2	1366.3	9.42	127.4	1847.8	12.74	104.7	1518.5	10.47	96.1	1393.8	9.61	137.8	1998.6	13.78
200	392	103.4	1499.7	10.34	107.0	1551.9	10.70	87.5	1269.1	8.75	119.8	1737.6	11.98	100.6	1459.1	10.06	88.1	1277.8	8.81	128.0	1856.5	12.80
250	482	97.5	1414.1	9.75	100.1	1451.8	10.01	82.4	1195.1	8.24	113.4	1644.7	11.34	97.8	1418.5	9.78	81.7	1185.0	8.17	121.4	1760.8	12.14
300	572	92.7	1344.5	9.27	94.9	1376.4	9.49	78.2	1134.2	7.82	108.3	1570.8	10.83	95.2	1380.8	9.52	76.1	1103.7	7.61	116.6	1691.1	11.66
325	617	90.7	1315.5	9.07	92.7	1344.5	9.27	76.4	1108.1	7.64	106.1	1538.9	10.61	93.6	1357.6	9.36	73.3	1063.1	7.33	114.5	1660.7	11.45
350	662	88.9	1289.4	8.89	91.0	1319.8	9.10	75.2	1090.7	7.52	104.3	1512.7	10.43	91.7	1330.0	9.17				112.9	1637.5	11.29
375	707	87.1	1263.3	8.71	89.6	1299.5	8.96	74.3	1077.6	7.43	102.6	1488.1	10.26	89.5	1298.1	8.95				112.1	1625.9	11.21
400	752	85.3	1237.2	8.53	88.3	1280.7	8.83	72.9	1057.3	7.29	101.7	1475.0	10.17	87.3	1266.2	8.73				109.8	1592.5	10.98
425	797	84.0	1218.3	8.40	87.4	1267.6	8.74	71.6	1038.5	7.16	100.8	1462.0	10.08	85.0	1232.8	8.50						
450 ^{*2}	842 ^{*2}	82.2	1192.2	8.22	86.5	1254.6	8.65	70.2	1018.2	7.02	100.4	1456.2	10.04	82.8	1200.9	8.28						
475	887	80.8	1171.9	8.08	86.0	1247.3	8.60				95.1	1379.3	9.51	80.2	1163.2	8.02						
500	932	79.5	1153.1	7.95	84.7	1228.5	8.47				84.7	1228.5	8.47	77.5	1124.0	7.75						
538	1000.4	73.3	1063.1	7.33	75.2	1090.7	7.52				75.2	1090.7	7.52	70.0	1015.3	7.00						
550	1022	70.7	1025.4	7.07	74.8	1084.9	7.48				74.8	1084.9	7.48	68.8	997.9	6.88						
575	1067	62.5	906.5	6.25	71.8	1041.4	7.18				71.8	1041.4	7.18	65.0	942.7	6.50						
600	1112	50.6	733.9	5.06	59.7	865.9	5.97				64.2	931.1	6.42	58.2	844.1	5.82						
625	1157	41.4	600.5	4.14	47.4	687.5	4.74				54.9	796.3	5.49	50.5	732.4	5.05						
650	1202	33.8	490.2	3.38	38.0	551.1	3.80				42.5	616.4	4.25	42.2	612.1	4.22						
675	1247	28.0	406.1	2.80	31.0	449.6	3.10				37.6	545.3	3.76	34.6	501.8	3.46						
700	1292	24.1	349.5	2.41	25.1	364.0	2.51				29.8	432.2	2.98	26.3	381.4	2.63						
725	1337	20.3	294.4	2.03	21.0	304.6	2.10				23.2	336.5	2.32	19.0	275.6	1.90						
750	1382	17.3	250.9	1.73	17.6	255.3	1.76				17.6	255.3	1.76	13.4	194.4	1.34						
775	1427	13.7	198.7	1.37	13.7	198.7	1.37				13.7	198.7	1.37	9.4	136.3	0.94						
800	1472	10.5	152.3	1.05	10.5	152.3	1.05				10.5	152.3	1.05	6.9	100.1	0.69						
816	1500.8	8.6	124.7	0.86	8.6	124.7	0.86				8.6	124.7	0.86	5.7	82.7	0.57						

Class		1500																				
Service Temperature		CF8 ^{*2} [SCS13A]			CF8M ^{*2} [SCS14A]			CF3M-CF3 ^{*3} [SCS16A-SCS19A]			CF8C ^{*2} [SCS21]			CK20 ^{*2} [SCS18]			CN7M [SCS23]			SDPV ^{®4} SASV ^{*5}		
°C	°F	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}	bar	psi ^{*1}	MPa ^{*1}
-29 to 38	-20.2 to 100.4	248.2	3599.8	24.82	248.2	3599.8	24.82	206.8	2999.4	20.68	248.2	3599.8	24.82	231.7	3360.5	23.17	206.8	2999.4	20.68	258.6	3750.7	25.86
50	122	239.1	3467.9	23.91	240.6	3489.6	24.06	200.1	2902.2	20.01	243.8	3536.0	24.38	222.4	3225.6	22.24	200.7	2910.9	20.07	258.6	3750.7	25.86
100	212	204.3	2963.1	20.43	211.0	3060.3	21.1	173.9	2522.2	17.39	226.5	3285.1	22.65	187.7	2722.4	18.77	176.5	2559.9	17.65	253.3	3673.8	25.33
150	302	185.0	2683.2	18.50	192.5	2792.0	19.25	157.0	2277.1	15.7	212.4	3080.6	21.24	174.4	2529.5	17.44	160.2	2323.5	16.02	229.6	3330.1	22.96
200	392	172.4	2500.5	17.24	178.3	2586.0	17.83	145.8	2114.7	14.58	199.7	2896.4	19.97	167.7	2432.3	16.77	146.8	2129.2	14.68	213.3	3093.7	21.33
250	482	162.4	2355.4	16.24	166.9	2420.7	16.69	137.3	1991.4	13.73	189.1	2742.7	18.91	163.1	2365.6	16.31	136.1	1974.0	13.61	202.3	2934.1	20.23
300	572	154.6	2242.3	15.46	158.1	2293.1	15.81	130.3	1889.8	13.03	180.4	2616.5	18.04	158.6	2300.3	15.86	126.9	1840.5	12.69	194.3	2818.1	19.43
325	617	151.1	2191.5	15.11	154.4	2239.4	15.44	127.4	1847.8	12.74	176.8	2564.3	17.68	156.1	2264.0	15.61	122.1	1770.9	12.21	190.8	2767.3	19.08
350	662	148.1	2148.0	14.81	151.6	2198.8	15.16	125.4	1818.8	12.54	173.8	2520.8	17.38	152.9	2217.6	15.29				188.2	2729.6	18.82
375	707	145.2	2106.0	14.52	149.4	2166.9	14.94	123.8	1795.6	12.38	171.0	2480.1	17.1	149.2	2164.0	14.92				186.8	2709.3	18.68
400	752	142.2	2062.4	14.22	147.2	2135.0	14.72	121.5	1762.2	12.15	169.5	2458.4	16.95	145.5	2110.3	14.55				183.1	2655.6	18.31
425	797	140.0	2030.5	14.00	145.7	2113.2	14.57	119.3	1730.3	11.93	168.1	2438.1	16.81	141.7	2055.2	14.17						
450	842	137.0	1987.0	13.70	144.2	2091.4	14.42	117.1	1698.4	11.71	167.3	2426.5	16.73	138.0	2001.5	13.8						
475	887	134.7	1953.7	13.47	143.4	2079.8	14.34				158.2	2294.5	15.82	133.7	1939.2	13.37						
500	932	132.4	1920.3	13.24	140.9	2043.6	14.09				140.9	2043.6	14.09	129.2	1873.9	12.92						
538	1000.4	122.1	1770.9	12.21	125.5	1820.2	12.55				125.5	1820.2	12.55	116.6	1691.1	11.66						
550	1022	117.8	1708.5	11.78	124.9	1811.5	12.49				124.9	1811.5	12.49	114.7	1663.6	11.47						
575	1067	104.2	1511.3	10.42	119.7	1736.1	11.97				119.7	1736.1	11.97	108.3	1570.8	10.83						
600	1112	84.4	1224.1	8.44	99.5	1443.1	9.95				107.0	1551.9	10.7	97.1	1408.3	9.71						
625	1157	68.9	999.3	6.89	79.1	1147.3	7.91				91.2	1322.7	9.12	84.1	1219.8	8.41						
650	1202	56.3	816.6	5.63	63.3	918.1	6.33				70.7	1025.4	7.07	70.4	1021.1	7.04						
675	1247	46.7	677.3	4.67	51.6	748.4	5.16				62.7	909.4	6.27	57.6	835.4	5.76						
700	1292	40.1	581.6	4.01	41.9	607.7	4.19				49.7	720.8	4.97	43.8	635.3	4.38						
725	1337	33.8	490.2	3.38	34.9	506.2	3.49				38.6	559.8	3.86	31.7	459.8	3.17						
750	1382	28.9	419.2	2.89	29.3	425.0	2.93				29.6	429.3	2.96	22.3	323.4	2.23						
775	1427	22.8	330.7	2.28	22.8	330.7	2.28				22.8	330.7	2.28	15.7	227.7	1.57						
800	1472	17.4	252.4	1.74	17.4	252.4	1.74				17.4	252.4	1.74	11.4	165.3	1.14						
816	1500.8	14.1	204.5	1.41	14.1	204.5	1.41				14.1	204.5	1.41	9.5	137.8	0.95						

* 1: Figures in psi/MPa columns are calculated values.

* 2: Flanged end valve ratings terminate at 538°C (1000°F).

* 3: Use beyond 425°C is not allowed.

* 4: SDPV[®] is the trademark registered for KITZ Super Duplex Stainless Steel, which is comparable to 25Cr-7Ni-4Mo-N castings. Ratings terminate at 300°C (572°F).

* 5: SASV is the trademark registered for KITZ Super Austenite Stainless Steel, which is comparable to 21Cr-25Ni-6.5Mo-N castings.

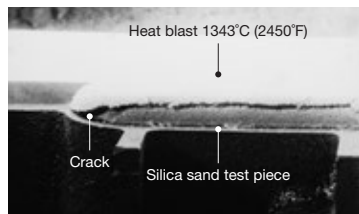
Valve Closure Test Pressures

Series	B (KITZ Std.)		
	Hydrostatic		Air
	Shell	Seat	Seat
5K	1.05	0.7	0.6
10K	2.10	1.4	
20K	3.00	2.0	—

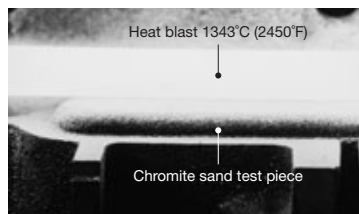
Note: Test pressure for check valves to JIS B2003

Sand Molds for Stainless Steel Valve Castings

Silica Sand

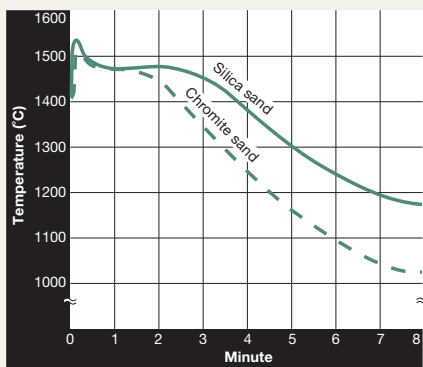


Chromite Sand



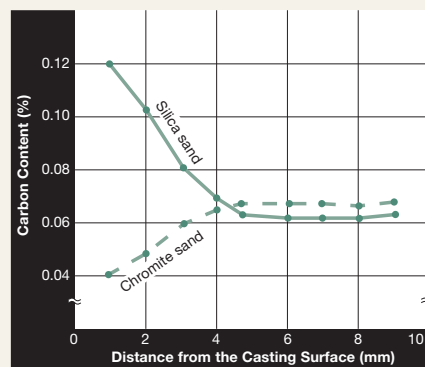
Unlike its competitors, KITZ Corporation employs casting molds made of mixture of chromite sand and silica sand at its Nagasaka stainless and high alloy steel foundries, instead of 100% silica sand which is rather common in the industry. The specific gravity of chromite sand is twice as much as that of silica sand and loading 1.5 MPa (210 psi) surface pressure during molding enables uncomparably solid, hard and uniform structure of casting molds with high precision.

Mold Sands: Cooling Effect



Much higher cooling effect of chromite sand solidifies the molten metal faster to result in very sound castings without concern of blowholes and other casting defects.

Mold Sands: Decarbonization



Chromite sand decarbonizes the surface area of stainless steel castings is much better. So, the fine casting surface and high corrosion resistance are guaranteed.

KITZ Low Emission Service Valves

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

Our low emission valves, the proud fruits of several years of trial and error at our laboratory, are designed, engineered, manufactured and tested to now meet the 100 ppm maximum emission level. This is the standard specification in North America for KITZ Class 150, 300 and 600 Series A and C stainless and high alloy steel valves. In other markets, all these low emission valves are optionally available. Major design considerations for having upgraded our standard valves to the low emission performers are introduced below.

Gland packing

Series A: Choice of PTFE or flexible graphite packing.

- (1) Braided PTFE fiber packing with spun carbon core
- (2) KITZ original "SEALEVER®" packing set consisting of 4 dieformed flexible graphite rings* and 2 braided flexible graphite wiper rings with a pure carbon spacer bush for Class 300 and 600.

Series HA:

- (1) Braided PTFE fiber packing with spun carbon core
- (2) KITZ original "SEALEVER®" packing set consisting of 4 dieformed flexible graphite rings* and 2 braided flexible graphite wiper rings with a pure carbon spacer bush for Class 300.

Series C: KITZ original "SEALEVER®" graphite packing set with a pure carbon spacer bush for Class 300 and 600.

*US Patent No.5522603 & 5573253. Other patents registered or pending worldwide.

Bonnet gaskets and check valve cover gaskets

Series A: Choice of PTFE or flexible graphite gasket.

- (1) Class 150: Reinforced PTFE, Class 300: PTFE filled spiral wound with inner ring. Class 600: PTFE filled spiral wound
- (2) Class 150: S/S inserted flexible graphite seat designed with permeation protective barrier
Class 300: Spiral wound flexible graphite with inner ring. Class 600: Spiral wound flexible graphite

Series HA: Choice of PTFE or flexible graphite gasket.

- (1) Class 150: Reinforced PTFE, Class 300: PTFE filled spiral wound with inner ring.
- (2) Class 150: S/S inserted flexible graphite seat designed with permeation protective barrier, corrugated metal flexible graphite (6B OVER).
Class 300: Spiral wound flexible graphite with inner ring.

Series C:

- Class 150: Flexible graphite seat with stainless steel insert and permeation protective barrier for low emission service.
- Class 300: Spiral wound (flexible graphite filler and stainless steel hoop) with a stainless steel inner ring
- Class 600: Ring joint metal gasket

Diametrical Interface Clearance

20 to 32 mils (0.5 to 0.8 mm): Stem to Gland

20 to 32 mils (0.5 to 0.8 mm): Stem to Bonnet Bushing (Series C)

16 to 28 mils (0.4 to 0.7 mm): Stem to Backseat (Series A, HA)

4 to 12 mils (0.1 to 0.3 mm): Gland to Stuffing Box

Stem

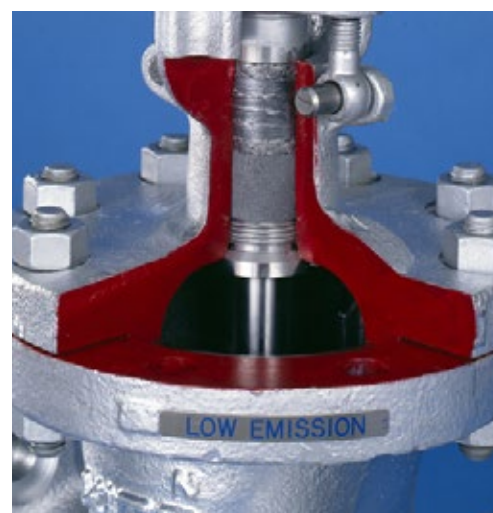
16 to 32 RMS surface finish. Straightness and roundness are precisely controlled according to KITZ design and manufacturing standards.

Stuffing Box

Maximum 125 RMS surface finish. Cylindricity and verticality are precisely controlled according to KITZ design and manufacturing standards.

Product Identification

Stainless steel ID plate with the letters "LOW EMISSION" is welded on the bonnet flange.



Inspection and Warranty Policy of KITZ Corporation

Every piece of KITZ stainless and high alloy steel valves are subjected to 100% pressure tests, according to API 598 or BS 6755 Part 1 requirements. Manufacturer's material test reports and inspection certificates are available on request, while each valve is guaranteed for 12 months after placement in service, but not exceeding 18 months after shipment from the factories of KITZ Corporation.

Various tests and inspection of valves made by KITZ Corporation include the following. Unless otherwise specified, all KITZ stainless and high alloy steel valves shall be subjected to these test or inspection methods and evaluation criteria.

Test/Inspection Item	Method	Evaluation
Chemical Composition Analysis		Relevant ASTM Stds.
Mechanical Property Test	ASTM A370	Relevant ASTM Stds.
Pressure Tests	API 598 or BS 6755 Part 1	API 598
Radiographic Inspection	ASTM E186/280/446	ASME B16.34
Wet Magnetic Particle Inspection	ASTM E709	
Liquid Penetrant Inspection	ASTM E165	
Low Temperature Impact Test	ASTM E23	ASTM A352
Dimensional Inspection		Relevant Valve Stds.
Visual Inspection		MSS SP-55
Emission Test*	EPA Method 21 and KITZ Std.	KITZ Std.

*Applicable to low emission service valves

KITZ Low Temperature and Cryogenic Service Valves

KITZ Corporation offers Series A and C stainless steel gate, globe and check valves for processing, storage, shipment and distribution of ethylene, LPG, LNG and other low temperature or cryogenic services down to -196°C (-321°F). Here, extended bonnets are provided as an insulation vapor column to protect gland packing rings from freezing or shrinking for their trouble-free sealing function. Detailed design information and cryogenic test reports are available on request.

Please refer to our "Low Temperature and Cryogenic Valves" catalog. (No. E-426)



KITZ cryogenic service gate valve



Cryogenic pressure test



KITZ cryogenic service globe valve

SS

Stainless Steel