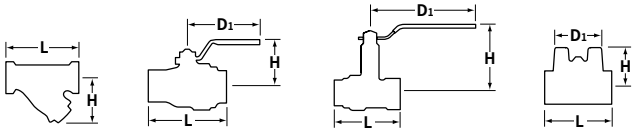


Solder End Valves

Design		TOYO Standard		MSS SP-110								TOYO Standard			
Type		Strainer		Ball Valves											
Class		150		600								400			
				 Full bore				 Full bore				 Std. bore			
Fig.		387A		5049A				5049W				5014			
Size		L	H	d	L	H	D_1	d	L	H	D_1	d	L	H	D_1
15 (mm)	½"	80	49	15	54	40	80	15	54	39	70	10	58	75	80
20	¾"	105	57	20	73	44	80	20	73	43	70	15	73	79	80
25	1"	125	70	25	88	50	110	25	88	52	100	20	88	83	110
32	1¼"	145	82	32	100	55	110	32	100	58	100	25	99	98	110
40	1½"	170	98	40	115	65	150	40	115	73	130	32	114	102	110
50	2"	210	121	50	140	72	150	50	140	81	130	40	135	109	140
65	2½"			65	164	100	200								
80	3"			80	187	112	300								
Material	Body	Bronze		Brass				Brass				Bronze			
	Stem	Screen	SUS304	DZR Brass				DZR Brass				DZR Brass			
	Ball			Brass / Chrome Plated				Brass / Chrome Plated				SUS304			
	Seat			PTFE				PTFE				PTFE			
Service conditions		2.06MPa (300psi) WOG non-shock 1.03MPa (150psi) Saturated steam See Solder P-T rating on page 25		4.13MPa (600psi) WOG non-shock See Solder P-T rating on page 25								2.75MPa (400psi) WOG non-shock See Solder P-T rating on page 25			
Remarks		14-16 meshes/perforated screen						T-Handle				Long neck for thermal insulation			

Toyo DZR brass (Dezincification Resistant brass)

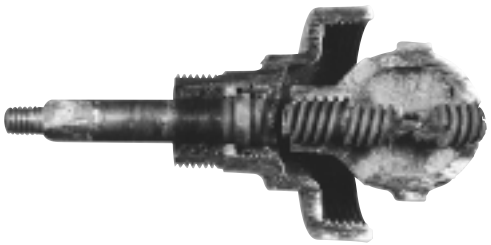
Water pollution and employment of new piping material have amplified valve dezincification problems.

The copper alloy used in bronze valves contains zinc, tin, and lead with copper as a base. When bronze valves are subjected to unfavorable service conditions, the zinc component contained in the copper alloy separates from the copper base, and the metal corrodes. This is called dezincification.
In case of bronze valve, the body, bonnet, and other cast bronze parts hardly corrode due to the small percent of zinc contained in the alloy. But brass valve parts such as stems, which contain 40% zinc, often corrodes due to extreme dezincification.

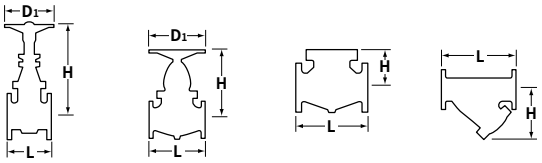
The following factors cause dezincification. These factors are generally believed to occur together, rather than independently.
1) Excessive aqueous solution in acidity.
2) Warm water containing excessive free carbonic acid with high electric conductivity.
3) High electric conductivity with excessive presence of chlorides and sulfides.
4) Copper or vinyl chloride pipes.
5) Excessive dissolved oxygen.

To struggle with dezincification corrosion, Toyo Valve developed TOYO DZR brass as the stem material of bronze/brass valves. Our test data show excellent corrosion resistance to be comparable to bronze continuous casting bars.
TOYO bronze/brass valves have these DZR brass or bronze stems in standard specification, and offer longer service life.

Normal brass stem embrittled and broken by dezincification corrosion



Cast Iron Valves

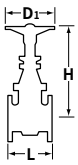


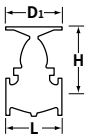
Design		MSS Standard										
Type		Gate Valves						Globe Valve			Swing Check Valve	
Class		125										
		 MSS SP-70/Non-rising			 MSS SP-70/Rising			 MSS SP-85			 MSS SP-71	
Fig.		415AE			421AE/511AE			400A/510			435A/512	
Size		L	H	D_1	L	H	D_1	L	H	D_1	L	H
50(mm)	2"	178	319	180	178	357	180	203	294	180	203	115
65	2½"	190	350	180	190	412	180	216	316	180	216	125
80	3"	203	401	200	203	482	200	241	354	230	241	146
100	4"	229	457	250	229	569	250	292	406	280	292	163
125	5"	254	523	280	254	672	280	330	485	300	330	194
150	6"	267	602	300	267	783	300	356	531	360	356	281
200	8"	292	711	360	292	985	355	495	634	400	495	323
250	10"	330	842	400	330	1196	400	622	671	400	622	362
300	12"	356	941	450	356	1390	450	698	757	450	698	417
350	14"											
400	16"											
Material	Body	Cast Iron			Cast Iron			Cast Iron			Cast Iron	
	Stem/Pin	Brass			Brass/SUS403			Brass/SUS403			Brass/SUS403	
	Disc	Cast Iron			Cast Iron			Cast Iron or same material as seat			Cast Iron or same material as seat	
	Seat	Bronze			Bronze/SUS403			Bronze/SUS403			Bronze/SUS403	
Service conditions		1.37MPa (200psi) WOG 0.86MPa (125psi) Saturated steam										
Remarks		PN16 Flanged available										

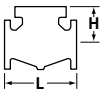
Design		TOYO Standard	
Type		Strainer	
Class		125	
			
Fig.		381A	
Size		L	H
40(mm)	1½"		
50	2"	250	167
65	2½"	286	193
80	3"	318	210
100	4"	378	255
125	5"	457	318
150	6"	518	364
200	8"	610	442
250	10"	749	530
300	12"	857	598
350	14"		
400	16"		
Material	Body	Cast Iron	
	Screen	SUS304	
		(SUS316 Screen available)	
Service conditions		1.37MPa (200psi) WOG 0.86MPa (125psi) Saturated steam	
Remarks		14-16 meshes/perforated screen PN16 Flanged available	

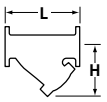
Trim Combination

Fig.	Stem/Pin	Disc	Seat
421AE	Brass	C.I./Same material as Seat	Bronze
511AE	13%Cr		13%Cr
400A	Brass		Bronze
510	13%Cr		13%Cr
435A	Brass		Bronze
512	13%Cr		13%Cr
425J	Brass		Bronze
425JS	13%Cr		13%Cr
425JU	SUS304		SUS304
405J	Brass		Bronze
405JS	13%Cr		13%Cr
405JU	SUS304		SUS304
435J	Brass		Bronze
435JS	13%Cr		13%Cr
435JU	SUS304		SUS304









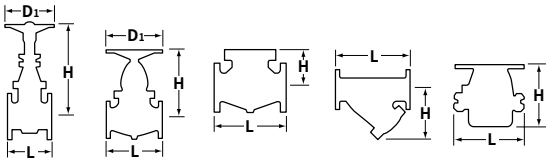
JIS Cast Iron Valves

Design		JIS Standard											
Type		Gate Valves									Globe Valve		
Class		10K			5K			10K					
		 JIS B2031/Non-rising			 JIS B2031/Rising			 JIS B2031/Rising			 JIS B2031		
Fig.		415J			424J			425J/JS/JU			405J/JS/JU		
Size		L	H	D_1	L	H	D_1	L	H	D_1	L	H	D_1
40 (mm)	1½"	*165	285	160				*165	306	160	190	260	160
50	2"	180	313	180	160	328	160	180	343	180	200	277	180
65	2½"	190	344	180	170	382	180	190	389	180	220	307	180
80	3"	200	401	200	180	436	180	200	462	200	240	353	230
100	4"	230	444	250	200	532	200	230	547	250	290	404	280
125	5"	250	517	280	220	627	230	250	648	280	360	454	300
150	6"	270	577	300	240	726	250	270	759	300	410	533	360
200	8"	290	693	360	260	919	280	290	956	360	500	642	450
250	10"	330	814	400	300	1134	360	330	1168	400	*620	665	450
300	12"	350	925	450				350	1363	450	*700	883	500
350	14"							*381	1560	500			
Material	Body	Cast Iron			Cast Iron			Cast Iron			Cast Iron		
	Stem	Brass			Brass			Brass/SUS403/SUS304			Brass/SUS403/SUS304		
	Disc	Cast Iron or same material as seat			Cast Iron or same material as seat			Cast Iron or same material as seat			Cast Iron or same material as seat		
	Seat	Bronze			Bronze			Bronze/SUS403/SUS304			Bronze/SUS403/SUS304		
Service conditions		120°C water, non-shock 1.37MPa 120°C oil, water, air 0.98MPa Saturated steam 0.20MPa			120°C water, non-shock 0.69MPa 120°C oil, water, air 0.49MPa Saturated steam 0.20MPa			120°C water, non-shock 1.37MPa 120°C oil, water, air 0.98MPa Saturated steam 0.69MPa			120°C water, non-shock 1.37MPa 120°C oil, water, air 0.98MPa Saturated steam 0.69MPa		
Remarks		*TOYO Standard						*TOYO Standard			*TOYO Standard		

Design		JIS Standard		TOYO Standard			
Type		Swing Check Valves				Strainer	
Class		10K					
		 JIS B2031					
Fig.		435J/JS/JU		437J		450	
Size		L	H	L	H	L	H
40 (mm)	1½"	*190	106				
50	2"	200	111	200	111	250	167
65	2½"	220	121	220	121	285	193
80	3"	240	145	240	145	315	210
100	4"	290	165	290	165	370	256
125	5"	360	207	360	207	450	318
150	6"	410	225	410	225	410	364
200	8"	500	268	500	268	600	507
250	10"	*620	315			740	600
300	12"					850	673
350	14"					950	757
400	16"					1050	845
Material	Body	Cast Iron		Cast Iron		Cast Iron	
	Pin	Brass/SUS403/SUS304		SUS304		Screen	SUS304
	Disc	Cast Iron or same material as seat		Cast Iron or same material as seat			
	Seat	Bronze/SUS403/SUS304		SUS304			
Service conditions		120°C water, non-shock 1.37MPa 120°C oil, water, air 0.98MPa Saturated steam 0.69MPa		120°C water, non-shock 1.4MPa 120°C oil, water, air 1.0MPa Saturated steam 0.69MPa		120°C water, oil, air below size 200 1.1MPa above size 250 0.7MPa Saturated steam below size 200 0.7MPa above size 250 0.20MPa	
Remarks		*TOYO Standard		c/w counter weight		Perforated screen equivalent to 12-16 meshes	

—Rusty Water-Proof Series—

JIS Nylon Lined Cast Iron Valves



Design		JIS Standard										
Type		Gate Valves						Globe Valve			Check Valve	
Class		5K			10K							
		 JIS B2031			 JIS B2031			 JIS B2031			 JIS B2031	
Fig.		419			429			409			439	
Size		L	H	D_1	L	H	D_1	L	H	D_1	L	H
50 (mm)	2"				180	343	180					
65	2½"	170	382	180	190	389	180	220	307	180	220	121
80	3"	180	436	180	200	462	200	240	353	230	240	145
100	4"	200	532	200	230	547	250	290	404	280	290	165
125	5"	220	627	230	250	648	280	360	454	300	360	207
150	6"	240	726	250	270	759	300	410	533	360	410	225
200	8"	260	919	280	290	956	360	500	642	450	500	268
250	10"	300	1134	360	330	1168	400					
300	12"				350	1363	450					
Material	Body	Cast Iron/Nylon Lined			Cast Iron/Nylon Lined			Cast Iron/Nylon Lined			Cast Iron/Nylon Lined	
	Stem	Brass			Brass			Brass			Brass	
	Disc	Bronze			Bronze			Bronze			Bronze	
	Seat	Bronze			Bronze			Bronze			Bronze	
Service conditions		60°C water, non-shock 0.69MPa 60°C oil, water, air 0.49MPa			60°C water, non-shock 1.37MPa 60°C oil, water, air 0.98MPa							
Remarks												

Design		TOYO Standard			
Type		Strainer		Foot Valve	
Class		10K			
					
Fig.		459		469	
Size		L	H	L	H
65 (mm)	2½"	285	193	173	161
80	3"	315	210	193	188
100	4"	370	256	236	229
125	5"	450	318	271	289
150	6"	510	364	305	335
200	8"	600	507	388	449
250	10"	740	600		
300	12"	850	673		
Material	Body	Cast Iron/Nylon Lined		Cast Iron/Nylon Lined	
	Screen	SUS304		Seat	EPDM
				Ball	Polycarbonate
Service conditions		60°C water 0.7MPa		60°C water 0.2MPa	
Remarks					

■ Features

- Toyo Nylon Lined Cast Iron Valves conform to JIS B2031.(Gate, Globe & Check Valves)
- There is no RUSTY-WATER accrual from valves since all surface of cast iron in direct contact with water is lined by Nylon 11.
- Nylon 11 can be used for a wide range of fluid with having its corrosion resistance, sea water-proof nature & chemical resistance. (Please consult Toyo sales staff for details.
- Nylon 11 can be used in food industries.
- Electrolytic corrosion does not occur, as Nylon 11 is an insulator.

■ Specifications

● Lining material

Nylon 11 Special Grade Resin (Heat-resistance)
Color : White Film thickness : Above 300 μm

● Service temperature

Addicted service temperature : 0°C～60°C

● Trim material

Standard trim material for gate, globe & swing check valves

Seat : CAC406(BC6)	Stem : Brass

*Screen material of a strainer is SUS304.