

# FVC

## CAST IRON CHECK VALVE CLASS 10K



# INTRODUCTION

FVC Cast Iron Valves are internationally accepted for general flow control services in all fields where meticulous attention is required to control the flow of water, oil and gas.

The best are expected from the FVC Cast Iron Valves produced by the FURUKAWA KOGYO CO.,LTD. Superb quality is ensured through stringent inspection and tests conducted at every phase of the manufacturing process; from selection of raw materials to casting, machining and assembly.

As such, FVC Cast Iron Valves are natural valves of distinction.

**FURUKAWA KOGYO CO., LTD.**

# MATERIALS

The materials shown below with their chemical and mechanical properties tables are main material regularly used in our iron valve production. They are of those specified in the relevant standards with generous excess in the mechanical properties of the minimum material standard requirements.

## CAST IRON : ASTM A126 CLASS B

The Grey Cast Iron used in Furukawa Valves conformed strictly to the ASTM A126 Class B requirements. It is manufactured with strict control of the metallurgical structure. They have good corrosion resistance, strength, ductility and pressure tightness. The material is mainly used in the casting of the main components of the valves such as bodies, bonnets and disc.

Chemical Composition	Max.	Min.	Mechanical Properties	Max.	Min.
PHOSPHORUS	0.75	-	TENSILE STRENGTH	-	31 MPA (214 KSI)
SULFUR	0.15	-	TRANSVERSE TEST:	-	
			FORCE AT CENTER	-	3300 lb (14.65 KN)
			DEFLECTION AT CENTER	-	0.12 inch (3.0 MM)

## GUNMETAL. ASTM B62

The Gunmetal used are of the ASTM B62 type. Their material is characterised by its superior pressure tightness quality and high corrosion resistance and impact strength. It is used for trim components of valve such as the discs, body seats and disc seats.

Chemical Composition	Max.	Min.	Mechanical Properties	Max.	Min.
COPPER	86.0	84.0	TENSILE STRENGTH	-	30 KSI (205 MPA)
TIN	6.0	4.0	YIELD STRENGTH	-	14 KSI (95 MPA)
LEAD	6.0	4.0	ELONGATION IN 2 INCH	-	20%
ZINC	6.0	4.0			

## BRASS. ASTM B124-C37700

The Furukawa offered the ASTM B124-C37700 quality Brass with excellent properties such as corrosion and wear resistance. It also has good bearing quality and is used mainly as the valve stems.

Chemical Composition	Max.	Min.
COPPER	61.0	61.0
LEAD	2.5	1.5
IRON	0.30	
ZINC	REMAINDER	



# JIS CAST IRON 10K SWING CHECK VALVE, FLANGED

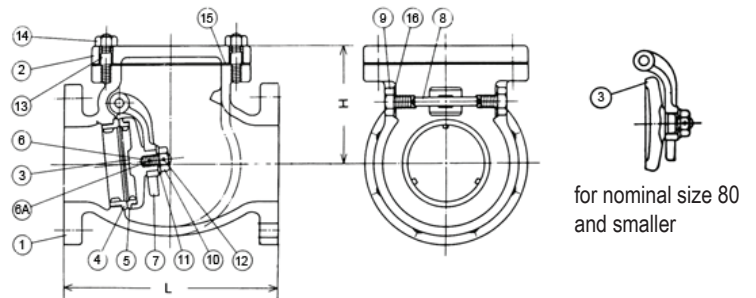
## JIS B 2031 (Previous B2045)

### Working Pressure

Condition of fluid	Maximum working pressure
Pulsating water at 120°C or under	10kgf/cm <sup>2</sup> {0.98 MPa}
Saturated steam	7kgf/cm <sup>2</sup> {0.69 MPa}
Non-shock water at 120°C or under	14kgf/cm <sup>2</sup> {1.37 MPa}

### Hydrostatic Test Pressure

Nominal pressure	10kgf/cm <sup>2</sup> {0.98 MPa}		
	Nominal size	300 and smaller	350 and larger
Test pressure	Shell	21 kgf/cm <sup>2</sup> {2.06 MPa}	15 kgf/cm <sup>2</sup> {1.47 MPa}
	Seat	16 kgf/cm <sup>2</sup> {1.57 MPa}	10 kgf/cm <sup>2</sup> {0.98 MPa}



### Dimensions

Unit: mm

Nominal size	L	H
* 40	190	113
50	200	123
65	220	142
80	240	160
100	290	172
125	360	200
150	410	230
200	500	260
* 250	620	338
* 300	700	376
*350	787	400
*400	914	470
*450	914	550
*500	1016	610
*600	1143	700

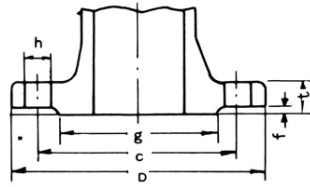
\* Nonstandardization

D: Flange dimensions of JIS B2212 10kgf/cm<sup>2</sup> see next page

### Materials

Part No.	Description	Material		
		BC Trim	SUS Trim	
1	Body	FC200		
2	COVER	FC200		
3	Disc	65 and smaller	BC 6	SUS403
		80 and larger	FC200	
4	Body seat ring	BC 6	SUS403	
5	Disc seat ring	BC 6	SUS403	
6	Disc bolt	S 25C		
6A	Set pin	SS41		
7	Hinge	FCD 450		
8	Hinge pin	SUS403		
9	Plug	SS41		
10	Hexagon nut	SS41		
11	Washer	SS41		
12	Set pin	SUS304		
13	Cover bolt	SS41		
14	Nut for cover bolt	SS41		
15	Gasket	V/#1500		
16	Gasket	V/#1500		





**JIS CAST IRON FLANGE DIMENSIONS**

Unit : mm

Size	JIS B2211 5 kgf/cm <sup>2</sup>								JIS B2212 10 kgf/cm <sup>2</sup>							
	D	C	t	h	g	f	No. of Bolts	Dia. of Bolts	D	C	t	h	g	f	No. of Bolts	Dia. of Bolts
40	120	95	16	15	78	2	4	M12	140	105	20	19	85	2	4	M16
50	130	105	16	15	88	2	4	M12	155	120	20	19	100	2	4	M16
65	155	130	18	15	112	2	4	M12	175	140	22	19	120	2	4	M16
80	180	145	18	19	125	2	4	M16	185	150	22	19	130	2	8	M16
100	200	165	20	19	145	2	8	M16	210	175	24	19	155	2	8	M16
125	235	200	20	19	180	2	8	M16	250	210	24	23	185	2	8	M20
150	265	230	22	19	210	2	8	M16	280	240	26	23	215	2	8	M20
200	320	280	24	23	255	2	8	M20	330	290	26	23	265	2	12	M20
250	385	345	26	23	320	2	12	M20	400	355	30	25	325	2	12	M22
300	430	390	28	23	365	3	12	M20	445	400	32	25	370	3	16	M22
350	480	435	30	25	405	3	12	M22	490	445	34	25	415	3	16	M22
400	540	495	30	25	465	3	16	M22	560	510	36	27	475	3	16	M24
450	605	555	30	25	525	3	16	M22	620	565	38	27	530	3	20	M24
500	655	605	32	25	575	3	20	M22	675	620	40	27	585	3	20	M24
550	720	665	32	27	630	3	20	M24	745	680	42	33	640	3	20	M30
600	770	715	32	27	680	3	20	M24	795	730	44	33	690	3	24	M30

**BS10 TABLE E FLANGE DIMENSIONS**  
**BS10 TABLE F FLANGE DIMENSIONS**

Unit : inch

Size	BS10 Table E						BS10 Table F					
	D	C	t	h	No. of Bolts	Dia. of Bolts	D	C	t	h	No. of Bolts	Dia. of Bolts
1 1/2	5 1/4	3 7/8	5/8	-	4	W 1/2	5 1/2	4 1/8	5/8	-	4	W 5/8
2	6	4 1/2	3/4	-	4	W 5/8	6 1/2	5	3/4	-	4	W 5/8
2 1/2	6 1/2	5	3/4	-	4	W 5/8	7 1/4	5 3/4	3/4	-	8	W 5/8
3	7 1/4	5 3/4	3/4	-	4	W 5/8	8	6 1/2	3/4	-	8	W 5/8
4	8 1/2	7	7/8	-	8	W 5/8	9	7 1/2	7/8	-	8	W 5/8
5	10	8 1/4	7/8	-	8	W 5/8	11	9 1/4	1	-	8	W 3/4
6	11	9 1/4	7/8	-	8	W 3/4	12	10 1/4	1	-	12	W 3/4
8	13 1/4	11 1/2	1	-	8	W 3/4	14 1/2	12 3/4	1 1/8	-	12	W 3/4
10	16	14	1	-	12	W 3/4	17	15	1 1/8	-	12	W 7/8
12	18	16	1 1/8	-	12	W 7/8	19 1/4	17 1/4	1 1/4	-	16	W 7/8
14	20 3/4	18 1/2	1 1/4	-	12	W 7/8	21 3/4	19 1/2	1 3/8	-	16	W1
16	22 3/4	20 1/2	1 1/4	-	12	W 7/8	24	21 3/4	1 3/8	-	20	W1
18	25 1/4	23	1 3/8	-	16	W 7/8	26 1/2	24	1 1/2	-	20	W1 1/8
20	27 3/4	25 1/4	1 1/2	-	16	W 7/8	29	26 1/2	1 5/8	-	24	W1 1/8
24	32 1/2	29 3/4	1 5/8	-	16	W1 1/8	33 1/2	30 3/4	1 3/4	-	24	W1 1/4



# CORROSION DATA

Ratings : A - Excellent  
 B - Good  
 C - Fair  
 D - Not Recommended  
 Blank - Insufficient Data

This information provides a rough guide in the selection of valve materials. Choice of materials must take into consideration specific conditions-temperature, pressure, surges, velocity and the other. The final selection of materials should be decided by the specific requirements of the environment.

Media	Ductile Iron	Bronze	Carbon Steel	304 Stainless Steel	316 Stainless Steel	Alloy 20	Hastelloy	Nitrile Rubber NBR	Viton	Teflon
Acetaldehyde	C	D	C	A	A	A	A	D	C	A
Acetylene	A	B	A	A	A	A	A	A	A	A
Alcohols	C	B	B	B	A	A	A	A	A	A
Ammonia Solutions	B	D	B	A	A	A	A	B	A	A
Benzene	B	B	B	B	A	A	B	A	A	A
Butane	B	A	B	A	A	A	A	A	A	A
Calcium Carbonate	D	C	D	B	A	B	B	A	A	A
Calcium Chloride	C	B	C	C	B	B	A	A	A	A
Calcium Hydroxide	C	A	C	B	B	B	A	A	A	A
Carbonic Acid	D	D	D	B	A	B	A	A	A	A
Carbon Tetrachloride (Dry)	B	C	B	A	A	B	B	D	B	A
Carbon Tetrachloride (Wet)	D	D	D	B	B	B	B	D	B	A
Chlorine Gas (Dry)	B	C	B	B	B	B	B	C	B	A
Chlorine Gas (Wet)	D	D	D	D	D	D	D	D	D	A
Coke Oven Gas	B	C	B	A	A	A	A	B	B	A
Ethane	B	A	B	A	A	A	A	A	A	A
Ethyl Chloride (Dry)	B	B	B	A	A	A	B	C		A
Ethyl Chloride (Wet)	D	C	D	B	B	A	B	C		A
Fatty Acids	D	B	D	B	A	A	A	B	A	A
Fluorine	D	D	D	D	D	B				A
Gasoline	B	A	A	A	A	A	A	C	A	A
Heptane	B	A	B	A	A	B	A	A	A	A
Hexane	B	B	B	A	A	B		A	A	A
Hydrochloric Acid	D	D	D	D	D	D	B	B	A	A
Hydrogen Gas	B	B	B	A	A	A		B	A	A
Hydrogen Peroxide	D	D	D	B	B	B	B	D		A
Hydrogen Sulfide	B	C	B	A	A	A	B	C	A	A
Hypo	C	C	D	A	A	B		A	A	A
Hypochlorites Sodium	D	D	D	D	C	C	C	C	A	A
Jet Fuel	A	A	A	A	A	A	A	A	A	A
Kerosene	B	A	B	A	A	A	A	A	A	A
Liquefied Pet. Gas	B	A	B	A	A	B		A	A	A
Methane	B	A	B	A	A	A	A	A	A	A
Naphtha	B	B	B	A	A	B	B	A	A	A
Natural Gas	B	B	B	A	A			A	A	A
Nitric Acid (10%)	D	D	D	A	A	A	C	C	A	A
Nitric Acid (80%)	D	D	D	A	A	A	C	D	B	A
Propane	B	A	B	A	A	A	A	A	A	A
Sea Water	D	B	D	A	A	A	A	A	A	A
Sodium Chloride	C	B	C	B	B	B	B	A	A	A
Sodium Hydroxide (Cold)	A	A	A	A	A	A	A	A	B	A
Sodium Hydroxide (50% Hot)	B	A	B	B	B	A	B	B	C	A
Sodium Hydroxide (70% Hot)	B	A	B	C	C	B	B		C	A
Sulfuric Acid (0~7%)	D	C	D	C	B	A	B	B	A	A
Sulfuric Acid (20%)	D	C	D	D	D	A	B	C	A	A
Sulfuric Acid (100%)	B	A	B	A	A	A	B	D	B	A
Sulfurous Acid	D	C	D	C	B	B	C	C	A	A
Toluene	A	A	A	A	A	A	A	D	B	A
Urea	C	B	C	B	B	B	B			A
Xylene	B	A	B	A	A	A		D	B	A

