

Product Warranty

Within eighteen months of completion inspection or within twelve months of the start of usage, whichever is shortest, Hitachi Valve will repair or replace products or the faulty components of products free of charge in the event of failure under normal usage attributable to inadequate design or manufacturing on the part of Hitachi Valve.

However, repairs or replacements will be charged in any of the following cases. Also note that if a separate agreement is in effect, that agreement shall take precedence.

- (1)When the product has been used in an incorrect manner which deviates from the catalog or instruction manual;
- (2)When the product failure is due to careless handling such as jamming with foreign substances or the sticking of excessive water stains;
- (3)When the product has been disassembled, repaired or altered by a third party other than Hitachi Valve;
- (4)When the product has been subject to causes beyond the control of Hitachi Valve including natural disasters such as wind or flood damage, earthquakes and electrical storms, fire, pollution (special environments), salt damage, war or acts of terror;
- (5)When a failure is due to any other factor not deemed to be the responsibility of Hitachi Valve.



- The product specifications, performance values and prices listed in this catalog are based on general conditions of use and are intended as guidelines for selecting models. Please confirm product specifications and conditions including fluids, temperatures and pressures before selecting a product.
- The products listed in this catalog are not designed or manufactured for applications that require a special quality level, such as medical equipment, nuclear generation facilities or airplanes.
- Please note that to improve this catalog, the contents may be changed or revised without prior notice. Please be aware that product catalogs published prior to such revisions are not valid.
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- When using a product listed in this catalog, please follow the precautions listed in its instruction manual and use it properly.
- The products listed in this catalog are designed to be used within Japan. When exporting the products, the exporter will need to obtain an export license from the Ministry of Economy, Trade and Industry based on the provisions of the Export Control Order under the Foreign Exchange and Foreign Trade Act.

Agent

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[Obtained ISO9001 & ISO14001 certifications]

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GOURD BRAND Malleable/Ductile Iron Valves

FCMB-S35 Malleable iron casting
FCD-S Ductile iron casting

 **Hitachi Valve, Ltd.**

Malleable/Ductile Iron Valve Features

The history of Malleable Iron valves dates back more than half a century.

The history of Malleable Iron valves began in 1942. The first Malleable Iron valve was the so-called "land fuel model" developed in response to a request from the army arsenal at the time to develop valves using Malleable Iron that was proved to be successful with screwed-in malleable cast iron pipe fittings.

Manufacturing of this valve came to a stop with the end of the war, but we first started to produce and sell bronze valves, partly to learn valve technology. Based on our experience of using the land fuel valve, we applied hard facing to sheets, improved valve functions, and started to develop VA proposals for cast iron valves in the 1.96 MPa medium pressure range in 1956. By the time we launched the products in 1958, we had already built an acclaimed track record for 1.96 MPa steam or heat lines and other cast iron valves. Since then, we have responded to the demands of users and expanded our product line to 10K valves and general purpose valves.

A strong valve that uses Malleable Iron for the main body, and stainless steel for the main parts

The main body, i.e. the valve body, and the bonnet are mainly made with tensile iron castings such as Malleable Iron castings and ductile iron castings. Main parts such as the valve disc and the stem are mostly made with 13Cr stainless steel with excellent resistance to abrasion and corrosion.

A valve with a wide-ranging track record for steam, LP gas etc.

With regard to general-purpose items, Malleable Iron valves are reliable, compliant with the JV standard, and widely used from JIS compatible general-purpose products to 20K valves. (Please refer to pages 4 and 5.)

Malleable Iron materials

Malleable Iron is ferrite (pure iron), but since the carbon agglomerates into clumps or spheroids as indicated in the photograph, it is strong and does not have the notch effect of gray cast iron. Rather, it has a strength that is close to cast steel. The photo at top left shows the microstructure for malleable iron, the one on bottom left for ductile iron. The black clumps are annealed carbon and the white area indicates the ferrite structure.

Free carbon is present in the structure of gray cast iron shown at top right, and the shape of the carbon is thin and broad. Since the tips are also pointed, they cause a notch effect and lower the mechanical properties.

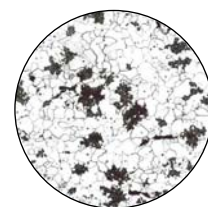
Even though the quality of material for malleable iron is the same cast iron, it is clear that it has excellent properties.



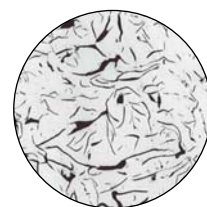
The Gourd mark casted stands for the ideal cast metal that is "more tensile, smoother, and more beautifully curved." Highly acclaimed and widely known as "Gourd Brand," the Gourd mark is a familiar brand overseas and in Japan, in fields ranging from industry to daily life.

Malleable Iron

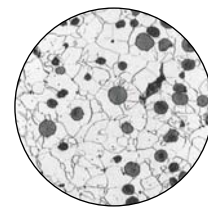
Malleable Iron is a registered trademark relating to tensile iron castings such as blackheart malleable cast iron (JIS G 5702), malleable iron castings for pressure vessels, and ductile iron castings (JIS B8270-1993 Annex 5).



Malleable iron microstructure



Gray cast iron microstructure



Ductile iron microstructure

Malleable Iron features suited to valves

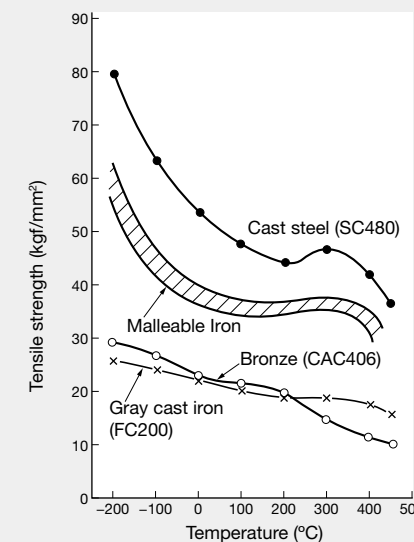
The ratio of yield point to tensile strength is high, and the material is not easily deformed.

As indicated by Fig. 1 and Fig. 2 below, the ratio of yield point to tensile strength for Malleable Iron is extremely high. The yield point indicates the point where the material is permanently deformed, so for valve materials it is more important feature than tensile strength. One reason for the excellence of Malleable Iron as a material for valves is that the ratio of yield point to tensile strength is higher than other materials. Even if it doesn't break, if a valve is permanently deformed causing, for example, seat leakage, it no longer serves its purpose.

Stable mechanical properties in regard to temperature change

Valves are installed in places where temperatures fluctuate widely and require materials with mechanical properties that remain stable when the temperatures change. On this point as well, Malleable Iron is an appropriate material for valves.

Fig. 1 Temperature characteristics for tensile strength



As indicated in Fig. 1 to 4 below, even with temperatures ranging widely from -30°C to 350°C, Malleable Iron is strong enough to vary little from normal temperature.

Bronze, on the other hand, stretches and loses its tensile strength and shock resistance when temperatures rise above the 200°C limit, while sudden low-temperature brittleness is apparent in cast copper from around room temperatures. The disadvantages of gray cast iron are low tensile strength, extreme susceptibility to impacts, and it becomes brittle at high temperatures due to volume expansion, or the so-called growth of cast iron.

Creep properties are important for materials used at high temperatures. The creep range for Malleable Iron is 380°C and up.

Outstanding castability and machinability

The castability and machinability of Malleable Iron are far better than those of cast steel. Since valves have complicated shapes, these properties are important for mass production, which is why the shape of Gourd marked Malleable Iron valves is more refined and precise.

Fig. 2 Temperature characteristics for yield points

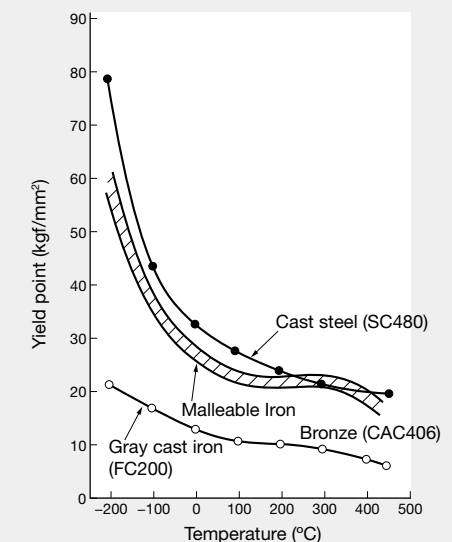


Fig. 3 Temperature characteristics for elongation

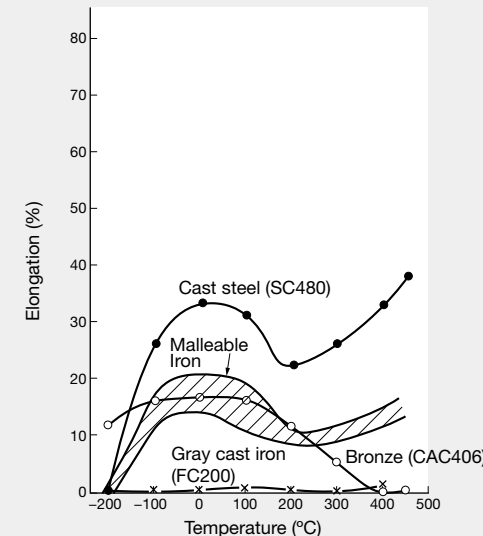
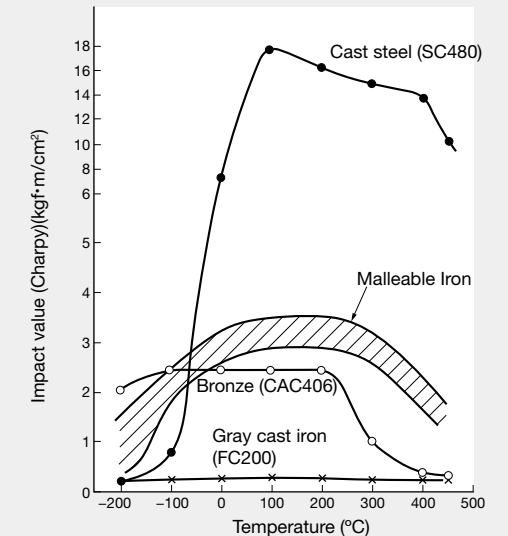


Fig. 4 Temperature characteristics for impact



Applications

Fluid Type	Primary FluidSteam
Steam	Steam
Oil	Heavy Oil, Cutting oil, Lubricant.
Gas	Compressed air, City gas, LPG, Inert gas.
Water supply	Sewage Water, Drainage, Hot water, Industrial water, Potable water, Drinking water.
Other	Coagulant, Condensate, Other

△Please consult us when it is used for various fluids other than the above.



Mixed solvent unit



Cooling water supply unit



Gas recovery unit



Solvent recovery unit



Plant cold water unit



Drain transfer unit

Malleable Iron material quality and valve standards

	JIS B 2051 Malleable iron 10K screwed valves	FCMB340
1	JVMA Standards (*1) JV4-2 (MD small valve) JV4-3 (MD valve)	FCMB340 or FCD400 As above
2	JVMA Standards JV4-4 (MDS small valve) JV4-5 (MDS valve) High Pressure Gas Safety Act applies	FCMB-S35 or FCD-S

		JIS code	ASTM code
1) Bronze castings		CAC406 (BC6)	C83600 (B62)
2) Gray cast iron castings		FC200	A126-B
3) Tensile iron castings	Blackheart malleable iron castings	FCMB340	A47-32510
	Malleable iron castings	FCMB-S35	A338 (Same as A47)
	Spheroidal graphite iron castings	FCD400	A536-60-40-18
	Ductile iron castings	FCD-S	A395
4) Cast steel products	Carbon steel	SCPH2, SCPL1	A216-WCB, A352-LCB
	Stainless steel	SCS13A, SCS14A	A351-CF8, A351-CF8M
5) Steel forgings	Carbon steel	SFVC2A	A105
	Stainless steel	SUSF304	A182-F304
6) Resin products	Polyethylene		
	Vinyl chloride		

Note: *1 JVMA mean it as Japan Valve Manufacturers' Association.

Chemical components and mechanical properties of malleable iron castings (FCMB-S35) and ductile iron castings (FCD-S)

Chemical analysis

	Carbon	Silicon	Phosphorus	Remarks
Ductile iron castings (FCD-S)	3.00% or more	2.50% or less	0.08% or less	However, with silicon in the 2.75% range, it is possible to increase silicon by 0.08% for every 0.01% reduction in phosphorus.
Malleable iron castings (FCMB-S35)	—	—	—	No specification

Mechanical properties

	Tensile strength	0.2% proof stress	Elongation rate	Brinell hardness	Charpy absorbed energy value ⁽¹⁾
Ductile iron castings (FCD-S)	412N/mm ² or more	275N/mm ² or more	18% or more	More than 143, less than 187	Average value for the three is 15J or more Minimum value is 13J or less
Malleable iron castings (FCMB-S35)	340N/mm ² or more	205N/mm ² or more	10% or more	No specification	Same as above

1) The Charpy test specimen is 10 mm × 10 mm with a 2 mm notch. The test temperature is 23°C ±5°C. However, in case of use at cold temperatures below -10°C, the test temperature is below the minimum temperature.
2) The legal usage limits are the same as for malleable iron castings (FCMB-S35) and ductile iron castings (FCD-S) indicated in the Hitachi Malleable valve catalog.

Graphite packing and gaskets

Valves are used for all types of plant piping and they normally serve to stop the flow of liquids. They are used within a set range of pressures and temperatures, and how they perform in terms of internal and external leakage is important. For external leaks, in particular, management standards are becoming stricter, and gland packing and gaskets are required to be maintenance-free with no leakage for reasons of safety, resource conservation and energy conservation.

For these reasons, and due to the recent requirement not to use asbestos, Hitachi Valve has adopted packing and gaskets made with Graphite.

The stable sealing performance of Graphite gaskets punched and manufactured to specific dimensions and shapes, and molded packing compressed and formed in molds means that the material is increasingly used as an alternative for asbestos.

We are convinced that you will be satisfied with Hitachi malleable valves made with Graphite packing and gaskets.

A flexible material with excellent resistance to heat, cold and chemicals, Graphite is made by causing the expansion of natural graphite particles instantaneously at high temperatures (it is also referred to as expanded graphite) and forming the particles into compressed sheets to the specified density and dimension.

The material can be used at temperatures ranging from -200°C to 400°C and even at a pressure of 20 MPa. The material is made from graphite and can be used with most chemicals, but since the oxygen contained in the air causes it to oxidize at high temperatures, the operating temperature in air is set to below 400°C. As indicated below, heat loss and stress relaxation performance is excellent.

Compression rate ASTM F36/A 40-55%
Decompression rate ASTM F36/A 10-15%



CONTENTS

Nominal Pressure	Type	Connection	Feature		Product Code	Page	inch(B) mm(A)	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4	5	6	8	10	12	14	16	18	20	
General-purpose	Globe	Screwed	SB:¼-2B 10-50A BB:2½-3B 65-80A	PTFE Disc	HM10KSG	11	●	●	●	●	●	●	●	●	●	●	●											
		Flanged			HM10KFG	11	●	●	●	●	●	●	●	●	●	●	●											
		Screwed			HM10KSD	12	●	●	●	●	●	●	●	●	●	●	●											
		Flanged			HM10KFD	12		●	●	●	●	●	●	●	●	●	●											
		Screwed			HM10KSDG	12	●	●	●	●	●	●	●	●	●	●	●											
		Flanged		HM10KFDG	12		●	●	●	●	●	●	●	●	●	●	●											
	Gate	Screwed			HM10KSS	13			●	●	●	●	●	●	●	●	●	●										
		Flanged			HM10KFS	13			●	●	●	●	●	●	●	●	●											
	Strainer	Screwed			HM10KST	13	●	●	●	●	●	●	●	●	●	●	●											
		Check Valve (Lift)		Screwed		HM10KSC	14			●	●	●	●	●	●	●	●	●	●	●								
	Flanged			HM10KFC	14		●	●	●	●	●	●	●	●	●	●	●	●										
	Screwed		PTFE Disc	HM10KSCD	14		●	●	●	●	●	●	●	●	●													
	Flanged			HM10KFCD	14		●	●	●	●	●	●	●															
	Screwed			NBR Disc	HM10KSCR	15		●	●	●	●	●	●	●	●													
	Flanged		HM10KFCR		15		●	●	●	●	●	●	●	●														
	Check Valve (Swing)	Screwed			HM10SCS	15			●	●	●	●	●	●	●	●												
	Check Valve (In-line)	Screwed			BSCI	15			●	●	●	●																
	Mini-Ball	Screwed	Lever Handle	2 stage Reduced Bore	MB2	16	●	●	●	●	●	●	●	●	●	●												
			T-Handle		MBT2	16	●	●	●	●	●	●	●	●	●	●												
			Lever Handle	1 stage Reduced Bore	MB1	16	●	●	●	●	●	●	●	●	●	●												
			T-Handle		MBT1	16	●	●	●	●	●	●	●	●	●	●												
			Lever Handle	For LPG	ML1	17			●	●	●	●	●	●	●	●												
			T-Handle		MLC1	17			●	●	●	●	●	●	●													
			Lever Handle	For City Gas	MG1	18	●	●	●	●	●	●	●	●	●	●												
			T-Handle		MGC1	18			●	●	●	●	●	●	●													
Lever Handle			MGR0		18				●	●	●	●	●	●	●													
10K			Globe	Screwed	UB,IS	PTFE Disc	M10KSG	20		●	●	●	●	●	●	●	●	●										
	Flanged	M10KFG		20				●	●	●	●	●	●	●	●	●												
	Screwed			M10KFGI			20			●	●	●	●	●	●	●												
				M10KFGO			20				●	●	●	●	●	●	●	●										
	Flanged	M10KSD		21				●	●	●	●	●	●	●	●	●	●											
	Screwed			M10KFD			21		●	●	●	●	●	●	●	●												
				M10KFDI			21			●	●	●	●	●	●	●	●	●										
	Flanged	M10KFDO		21					●	●	●	●	●	●	●	●												
	Needle	Screwed	UB,IS		M10KSN		22		●	●	●	●	●	●	●	●	●	●										
		Flanged			M10KFN		22		●	●	●	●	●	●	●	●	●											
	Bellows	Flanged	BB,OS	PTFE Disc	M10KFGB	23			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
					M10KFDB	23			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	Gate	Screwed	BB,IS		M10KSS	24			●	●	●	●	●	●	●	●												
		Flanged		M10KFS	24		●	●	●	●	●	●	●	●	●													
		BB,OS			M10KFSD	24					●	●	●	●	●	●	●	●	●	●	●	●	●					
					M10KFSD	24					●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	Lift Check	Screwed	UC	PTFE Disc	M10KSC	25			●	●	●	●	●	●	●	●	●											
		Flanged			M10KFC	25		●	●	●	●	●	●	●	●	●	●											
		Screwed			M10KSCD	25		●	●	●	●	●	●	●	●	●	●											
		Flanged			M10KFCD	25		●	●	●	●	●	●	●	●	●	●											
		Screwed		NBR Disc	M10KSCR	26		●	●	●	●	●	●	●	●	●	●											
		Flanged			M10KFCR	26		●	●	●	●	●	●	●	●	●	●											
	Swing Check	Flanged	BC		M10KFCS	26			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	Strainer	Flanged			M10KFT	26			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	Ball	Screwed	1 Stage Reduced Bore		BM10KS2B	27			●	●	●	●	●	●	●	●	●											
					BM10KF2B	27				●	●	●	●	●	●	●	●	●	●	●	●	●	●					
			Full Bore		BM10KF0B	28			●	●	●	●	●	●	●	●	●	●	●									
					BM10KF1B	28			●	●	●	●	●	●	●	●	●	●										
		Screwed	1 Stage Reduced Bore	For Gas	BM10KS2L	29			●	●	●	●	●	●	●	●	●											
		Flanged			BM10KF2L	29			●	●	●	●	●	●	●	●	●	●	●	●	●							
					Full Bore			BM10KF0L	29			●	●	●	●	●	●	●	●	●	●	●	●	●	●			
		Screwed	1 Stage Reduced Bore					For Underground Gas line	BM10KS2G	30			●	●	●	●	●	●	●	●	●	●						
	Flanged			BM10KF2G	30						●	●	●	●	●	●	●	●	●	●	●	●						
									BM10KF0G	30			●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	20K	Globe	Screwed						UB,IS	PTFE Disc For Gas	M20KSG	32		●	●	●	●	●	●	●	●							
Flanged			M20KFG	32		●	●	●			●	●	●	●	●	●												
Screwed			M20KFGI	32			●	●			●	●	●	●	●													
			M20KFGO	32				●			●	●	●	●	●	●	●											
Flanged			M20KSDL	33		●	●	●			●	●	●	●	●	●	●											
Screwed			UB,IS	M20KFDO	33		●	●	●		●	●	●	●	●	●												
BB,OS				M20KFDL	33		●	●	●		●	●	●	●	●													
				M20KFDLO	33			●	●		●	●	●	●	●	●	●	●	●	●	●	●	●					
Gate		Screwed	BB,IS		M20KSS	34			●	●	●	●	●	●	●	●	●											
				Flanged			M20KFS	34			●	●	●	●	●	●	●											
							M20KFSD	34				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	BB,OS			Heating Medium type	M20KFSD	34				●	●	●	●	●	●	●	●	●	●	●	●	●	●					
					M20KFSD	34					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			

GENERAL TYPE VALVE

►ECONOMICAL TYPE

10K	GENERAL TYPE		10K
	CHECK VALVE	SWING	10
	IN-LINE		—
END CONNECTION			CODE
SCREWED			S
FLANGED			F
VALVE TYPE		SEATING MATERIAL	CODE
GLOBE VALVE	13Cr.S.S.		G
	Reinforced PTFE		D
	PTFE		DG
GATE VALVE		13Cr.S.S.	S
CHECK VALVE	LIFT	13Cr.S.S.	C
		Reinforced PTFE	CD
		NBR	CR
	SWING	13Cr.S.S.	CS
		FPM	CI
IN-LINE			CI
STRAINER			T

HM

10K

S

G

3/4B

PRODUCTION SIZE

►STANDARD TYPE

		JIS 10K	10K	
		JIS 20K	20K	
		ASME 150lb	150	
		ASME 300lb	300	
		END CONNECTION	CODE	
		SCREWED	S	
		FLANGED	F	
		VALVE TYPE	SEATING MATERIAL	CODE
	GLOBE VALVE	METAL SEAT	G	
		Reinforced PTFE	D	
		PTFE (FOR LPG)	DL	
		NEEDLE	N	
		Y-GLOBE VALVE	GY	
		ANGLE VALVE	A	
	GATE VALVE	13Cr.S.S.	S	
		HEATING MEDIUM TYPE	SH	
	CHECK VALVE	LIFT	METAL SEAT	C
			PTFE	CD
			NBR	CR
		SWING	METAL SEAT	CS
			PTFE	CSD
		SCREW DOWN	STRAIGHT	GC
	ANGLE		AC	
	STRAINER	FOR GENERAL APPLICATION		T
		EXCLUSIVE APPLICATION FOR LPG		TLM
		TYPE OF BONNET	CODE	
	GLOBE VALVE	INSIDE SCREW	UNION BONNET	—
			BOLTED BONNET	I
		OUTSIDE SCREW	UNION	—
			BOLTED BONNET	O
		GATE VALVE	BELLOWS BUILT-IN	B
		INSIDE	—	
		OUTSIDE	O	

M10KFGO50A

PRODUCTION SIZE

BALL VALVE

►ECONOMICAL TYPE (MINI-BALL)

VALVE SPECIFICATION/CONNECTION		CODE
ECONOMICAL		B
FOR LPG	SCREWD	L
	SINGLE UNION	U
CITY GAS		G
HANDLE TYPE		CODE
STANDARD LEVER		—
T-LEVER		T
COCK HANDLE		C
WITH MULTI-LOCK FUNCTION		R
BORE DIAMETER		CODE
FULL BORE		0
REDUCED	ONE SIZE	1
	TWO SIZE	2
SPECIAL SPECIFICATION		CODE
STANDARD		—
WITH FLOW CONTROL FUNCTION		S
STAINLESS STEEL BALL/STEM		U

MB 2 3/4B

PRODUCTION SIZE

►STANDARD TYPE

10K	MALLEABLE	10K
	STANDARD	20K
	*HIGH PRESSURE GAS FACILITY TEST PRODUCTS	20
20K	SHORT END-TO-END DIMENSION	
150lb	MALLEABLE	150

END CONNECTION		CODE
SCREWED		S
FLANGED		F

BORE DIAMETER		CODE
FULL-BORE		0
FULL-BORE (WITH FIRE SAFE FUNCTION)		1
REDUCED BORE		2
STRAINER BUILT-IN		—

VALVE SPECIFICATION		CODE
FOR GENERAL APPLICATION		B
FOR GAS	GENERAL PIPING	L
	SHORT END-TO-END DIMENSION	LS
	BURIED PIPING	G
	STRAINER BUILT-IN	T

BM

10K

F

0

B

50A

PRODUCTION SIZE

1)Body & Bonnet

Abbreviation	Description	JIS	ASTM (Reference only)
FCMB-S35	Black heart malleable iron castings (Impact test applied)	B8270 (1993) FCMB-S35	A338
FCMB340	Black heart malleable iron castings	G5702 FCMB340	A47-32510
FCMB270 (Cap of Strainer)	Black heart malleable iron castings	G5702 FCMB270 (Cap of Strainer)	
FCD-S	Spheroidal graphite (Ductile) iron castings (Impact test applied)	B8270 (1993) FCD-S	A395
SUS403	13Cr-low Si stainless steel plate, sheet and strip	G4304 SUS403	A240-S30400
SS400	Rolled steels for general structure	G3101 SS400	A36
S25C	Carbon steels for machine structural use	G4051 S25C	-
S45C	Carbon steels for machine structural use	G4051 S25C	-

2)Stem

Abbreviation	Description	JIS	ASTM (Reference only)
SUS403	13Cr-low Si stainless steel bars	G4303 SUS403	A276-S403000
C3604	Copper and copper alloy rods and bars	H3250 C3604	B16-C36000

3)Disc

Abbreviation	Description	JIS	ASTM (Reference only)
SUS403	13Cr-low Si stainless steel	G4304, G4305 SUS403 G4303 SUS403	A240-S30400(Plate, sheet and strip) A276-S40300(Bar)
SUS403+Hard Facing	13Cr-low Si stainless steel, hard facing		
SUS304+Hard Facing	18Cr-8Ni stainless steel, hard facing		
SCS1	13Cr. stainless steel castings	G5121 SCS1	A743-CA15
S28C+13Cr.	Carbon steels for machine structural use, 13%Cr.stainless steel depositing	S28C+13Cr	-
S28C+Hard Facing	Carbon steels for machine structural use, hard facing	S28C+Hard Facing	-
S25C+Hard Facing	Carbon steels for machine structural use, hard facing	S25C+Hard Facing	-
SCPH2+13Cr	Steel casting for high temperature and high pressure service use, 13%Cr. stainless steel depositing		A216-WCB
SCPH2+Hard Facing	Carbon steels for machine structural use, hard facing	G5151 SCPH2+Z3221 D410	
CAC406	Copper and copper alloy castings (BC6)	SCPH2+Hard Facing H5120 CAC406	B271-C83600(centrifugal casting) B584-C83600(sand mold casting)

4)Ball

Abbreviation	Description	JIS	ASTM (Reference only)
SUS316	18Cr-12Ni-2.5Mo stainless steel bars	G4303 SUS316	A276-S31600
SUS304	18Cr-8Ni stainless steel bars	G4303 SUS304	A276-S30400
SCS13A	18Cr-8Ni below 1.5Mn stainless steel castings	G5121 SCS13A	A351-CF8
SCS13	18Cr-8Ni below 2.0Mn stainless steel castings	G5121 SCS13	-
	18Cr-8Ni stainless steel castings		
C3604+Ni-Cr	Copper and copper alloy rods and bars, Ni-Cr plating	H3250 C3604+Ni-Cr	B16-C36000

5)Disc Sert / Seat Ring

Abbreviation	Description	JIS	ASTM (Reference only)
PTFE reinforced with filler	Polytetrafluoroethylene, reinforced with filler	PTFE reinforced with filler	
PTFE	Polytetrafluoroethylene	PTFE	
FPM	Fluorine-contained rubber	FPM	
NBR	Acrylonitrile-Butadiene rubber	NBR	
FT-seat	Perfluoroalkoxyl Alkane (PFA) +Polytetrafluoroethylene (PTFE)	FT-seat	

6)Body Seat Ring

Abbreviation	Description	JIS	ASTM (Reference only)
SUS403	13Cr-Low Si stainless steel bars	G4303 SUS403	A276-S40300
SUS403+Hard Facing	13Cr-Low Si stainless steel, +hard facing	G4303 SUS403	
S28C+Hard Facing	Carbon steel + hard facing	G4051S28C + Hard Facing	-

Materials of Main Parts

7)Handwheel / Handle Boss / Lever Handle

Abbreviation	Description	JIS	ASTM (Reference only)
FCMB340	Black heart malleable iron castings	G5702 FCMB340	A47-32510
FCMB340+STPG	Black heart malleable iron castings + carbon steel pipes for pressure service	G5702 FCMB340 + G3454 STPG	A47-32510+A53
FCD450	Spheroidal graphite (Ductile) iron castings	G5502 FCD450	-
SUS403	13Cr-Low Si stainless steel bars	G4304 SUS403 G4305 SUS403	A240-S30400
SUS430+PVC Coating	18Cr. stainless steel sheet + PVC coating	G4305 SUS430	
SS400	Rolled steels for general structure	G3101 SS400	A36
ADC12	Aluminium alloy die castings	H5302 ADC12	-
ZDC2	Zine alloy die castings	H5301 ZDC2	B86-AG40A

8)Gasket

Abbreviation	Description	JIS	ASTM (Reference only)
H1215	Expanded graphite sheets are adhered to both sides of type 304 stainless steel sheet (0.2mm thick)	H1215	
C1100P	Copper and copper alloy sheet, plates and strips	H3100 C1100P	B152-C11000
PTFE reinforced with filler	PTFE reinforced with filler	PTFE reinforced with filler	
PTFE	Polytetrafluoroethylene	PTFE	
H1804GR	Spiral wound SUS304 hoops, expanded graphite tape filler,	H1804GR	
SUS304	18Cr-8Ni stainless steel bars	G4303	A276-S30400
H1215	Grafoil Sheet on both side of plain SUS304 sheet		
H1804GR	Spiral wound gasket filled pure grahite with SUS304 inner ring.		
H1806GR	Spiral wound gasket filled pure grahite with SUS316 inner ring.		

9)Packing

Abbreviation	Description
H2200	Packing made from expanded graphite cut into strips and shaped into rings in a mold.
H350	Expanded graphite strips reinforced with SUS304 staiiness steel wire are braided. Round expanded graphite core, surface-treated with PTFE and pressed in a mold.
H2661-V	V Packing of NBR (NBR : Aerylonitrile-butadiene rubber)
H9077	Non-asbestos packing made from carbon fiber impregnated with PTFE
PTFE	Polyttetrafluoroethylene

10)Bellows

Abbreviation	Description	JIS	ASTM (Reference only)
SUS316L	18Cr-12Ni-2.5Mo-Low C stainless steel	SUS316L	

11)Screen

Abbreviation	Description	JIS	ASTM (Reference only)
SUS304/20,40,50,150mesh	18Cr-8Ni stainless steel wires, 20, 40, 50, 150 mesh	G4309 SUS304 / 20, 40, 50,150 Mesh	A313-S30400
SUS304/Punched metal	18Cr-8Ni stainless steel sheet	SUS304 / Punched metal	

12)Overlaying surface of body seat and disc seat

Abbreviation	Description	JIS	ASTM (Reference only)
HF	Hard facing (Co.Cr-W Alloy depositing)	Z3251 DCoCrA	A5.13 DCoCr-A
13Cr	13Cr stainless steel depositing	Z3221 D410	A5.9 ER410

General-purpose

Features

1. This is the economical Malleable/ Ductile iron valve. A ready substitute for bronze valves installed with steam piping. A tensile valve.
2. The main parts are mostly stainless steel, which is far more resistant to abrasion than bronze valves.
3. Perfect for iron pipes and resistant to corrosion because of the contact potential difference.

Product Types

Globe, Gate, Check, Strainer and Mini ball valves

- △Caution: Oil specification
1. Can be used with: Heavy oil (A, B, C), lubricant oil, turbine oil (#90 and up), coal tar, pitch
 2. Not recommended for use with: Crude oil, naphthalene, gasoline, heating oil (kerosene), light oil, turbine oil (#80 and down), heat transfer oil

Fluid•Temperature•Pressure

Unit: MPa

Service temperature limit by fluid used (°C)		Steady water flow			Steam, air, gas, oil, pulsating water					LPG		City gas
		50	80	120	80	120	160	183	220	80	120	120
Globe	Maximum working pressure by product type MPa											
	Standard			1.37					0.98			
	Reinforced PTFE disc			1.37				0.98				
Check	For LPG					0.98				0.19		
	Gate/Strainer			1.37					0.98			
	Standard			1.37					0.98			
	Reinforced PTFE disc			1.37					0.98			
Mini ball	NBR disc		1.37		0.98							
	Inline			1.37			0.98					
	600 model	4.11			0.98 (air)	1.96 (oil)		0.98 (steam)				
	400 model	2.74			0.98 (air)	1.96 (oil)		0.98 (steam)				
	For LPG									0.19		
For city gas												0.098

Test Pressure

Unit: MPa

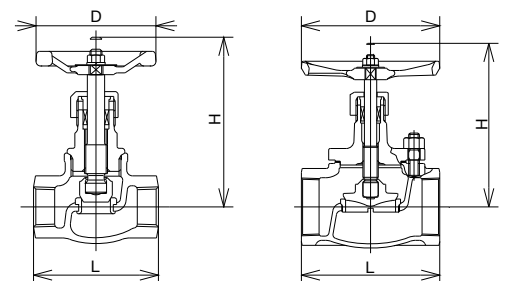
Test description		Valve body pressure resistance		Valve seat leakage	
		Water pressure	Air pressure	Water pressure	Air pressure
Globe, Gate, check valves		2.06		1.51	
Globe valve for LPG		0.78			0.29
Strainer		2.06			
Mini ball	MB2•MBT2•UB2•UBT2	6.18			0.59
	MB1•MBT1	4.12			0.59
	ML1•MLC1		0.29		0.29
	MG1•MGC1•MGR0		0.15		0.15

Product Code **HM10KSG**

General-purpose 10K

Globe Screwed

Product Name	Material	Remarks
Body	FCMB-S35	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Red / Nominal diameter: ¼-2B
	Gasket	Color: Red/Nominal diameter: 2½, 3B
Gasket	H1215	Nominal diameter: 2½, 3B
Gland Packing	H2200	



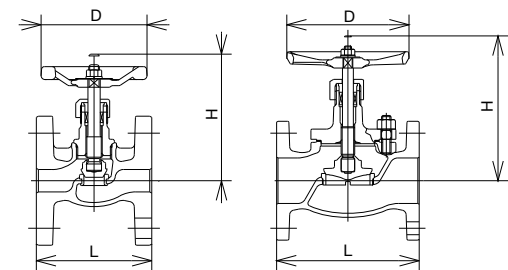
Nominal diameter (B)	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½	3
L	50	55	65	80	90	105	120	140	180	200
H	90	90	92	106	128	145	156	183	225	260
D	70	70	70	80	90	100	120	140	180	180

Product Code **HM10KFG**

General-purpose 10K

Globe Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Red / Nominal diameter: 10-50A
	FCD450	Color: Red / Nominal diameter: 65-80A
Gasket	H1215	Nominal diameter: 65-80A
Gland Packing	H2200	

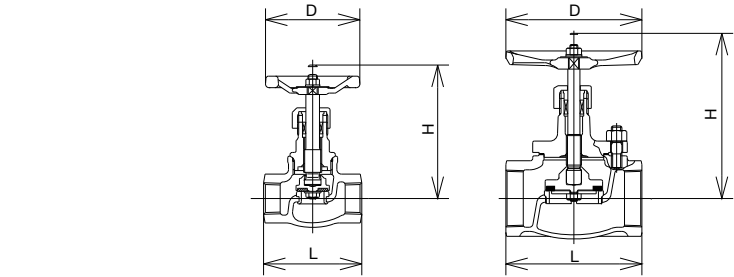


Nominal diameter (A)	10	15	20	25	32	40	50	65	80
L	85	85	95	110	130	150	180	210	240
H	88	88	99	125	142	156	179	225	260
D	70	70	80	90	100	120	140	180	180

General-purpose

Product Code **HM10KSD** General-purpose 10K **Globe** Screwed Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCMB-S35	
Cover	FCD-S	
Stem	SUS403	
Disc seat	Reinforced PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Orange / Nominal diameter: ¼-2B
	FCD450	Color: Orange / Nominal diameter: 2½, 3B
Gasket	C1100P	Nominal diameter: 2½, 2B
	H1215	Nominal diameter: 2½, 3B
Gland Packing	H2200	

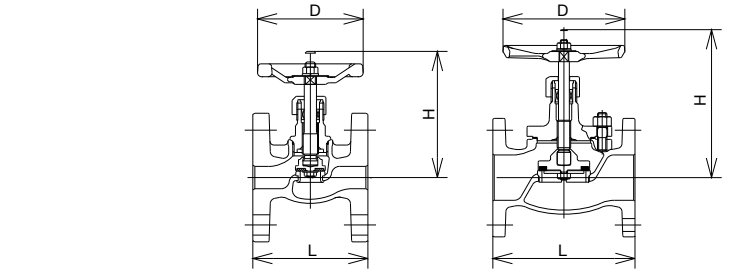


Nominal diameter (B)	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½	3
L	50	55	65	80	90	105	120	140	180	200
H	85	85	87	99	115	135	150	172	222	255
D	70	70	70	70	80	90	100	120	180	180

△Name plate: PTFE display

Product Code **HM10KFD** General-purpose 10K **Globe** Flanged Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc seat	Reinforced PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Orange / Nominal diameter: 10-50A
	FCD450	Color: Orange / Nominal diameter: 65-80A
Gasket	C1100P	Nominal diameter: 40-50A
	H1215	Nominal diameter: 65-80
Gland Packing	H2200	

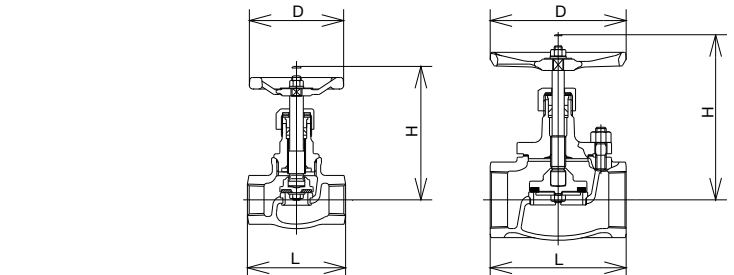


Nominal diameter (A)	10	15	20	25	32	40	50	65	80
L	85	85	95	110	130	150	180	210	240
H	87	87	99	115	136	150	173	222	255
D	70	70	70	80	90	100	120	180	180

△Name plate: PTFE display

Product Code **HM10KSDG** General-purpose 10K **Globe** PTFE disc for LPG

Product Name	Material	Remarks
Body	FCMB-S35	
Cover	FCD-S	
Stem	SUS403	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Green / Nominal diameter: ¼-2B
	FCD450	Color: Green / Nominal diameter: 2½, 3B
Gasket	C1100P	Nominal diameter: 1½, 2B
	H1215	Nominal diameter: 2½, 3B
Gland Packing	PTFE	

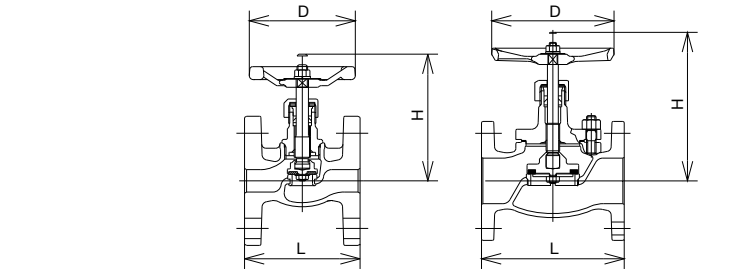


Nominal diameter (B)	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½	3
L	50	55	65	80	90	105	120	140	180	200
H	85	85	87	99	115	135	150	172	222	255
D	70	70	70	70	80	90	100	120	180	180

△Name plate: PTFE display

Product Code **HM10KFDG** General-purpose 10K **Globe** PTFE disc for LPG

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Green / Nominal diameter: 10-50A
	FCD450	Color: Green / Nominal diameter: 65-80A
Gasket	C1100P	Nominal diameter: 10-50A
	H1215	Nominal diameter: 65-80A
Gland Packing	PTFE	



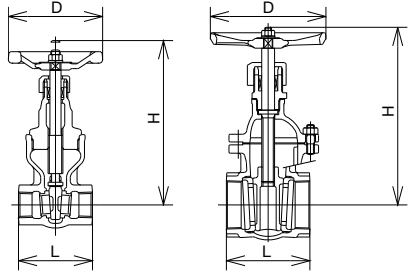
Nominal diameter (A)	10	15	20	25	32	40	50	65	80
L	85	85	95	110	130	150	180	210	240
H	87	87	99	115	136	150	173	222	255
D	70	70	70	80	90	100	120	180	180

△Name plate: PTFE display

General-purpose

Product Code **HM10KSS** General-purpose 10K **Gate** Screwed

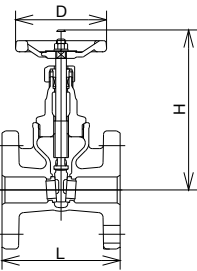
Product Name	Material	Remarks
Body	FCMB-S35	
Cover	FCD-S	Nominal diameter: 2½, 3B
Stem	SUS403	
Wedge	SCS1	Nominal diameter: 2B or less
	CAC406	Nominal diameter: 2½, 3B
Seat ring	SUS403	
Handwheel	FCMB340	Color: Red / Nominal diameter: ½-2B
	FCD450	Color: Red / Nominal diameter: 2½, 3B
Gasket	H1215	Nominal diameter: 2½, 3B
Gland Packing	H2200	



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2	2½	3
L	60	70	75	85	95	105	130	145
H	145	165	197	245	275	320	280	310
D	70	70	90	120	120	140	180	180

Product Code **HM10KFS** General-purpose 10K **Gate** Flanged SUS Seat

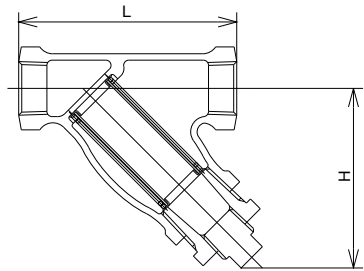
Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Red
Gland Packing	H2200	



Nominal diameter (A)	15	20	25	32	40	50
L	90	100	110	120	130	140
H	145	145	165	197	245	275
D	80	80	80	90	120	120

Product Code **HM10KST** General-purpose 10K **Strainer** Screwed

Product Name	Material	Remarks
Body	FCMB-S35	
Cover	FCMB270	
Screen	SUS304	20 mesh
L-ring	SUS304	
Spring	SWC	
Plug	S20C	Nominal diameter: ¼-¾B
	FCMB270	Nominal diameter: 1-2B



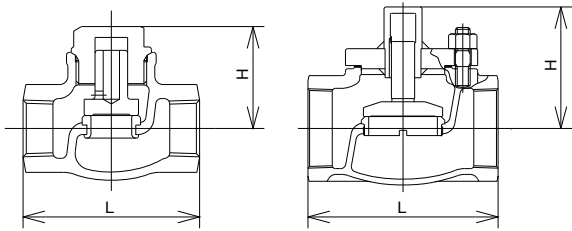
Nominal diameter (B)	1/4	3/8	1/2	3/4	1	1¼	1½	2
L	65	70	85	85	100	120	135	160
H	54	55	70	75	82	94	106	125

General-purpose

Product Code **HM10KSC** General-purpose 10K Check valve (Lift) Screwed

Product Name	Material	Remarks
Body	FCMB-S35	
Cover	SUS403	Nominal diameter: ½-2B
	SCS1	Nominal diameter: 2½-3B
Disc	SUS403	
Seat ring	SUS403	
Gasket	H1215	Nominal diameter: 2½-3B

△Cover top: No marks
(Marked with "S" if a spring is contained)

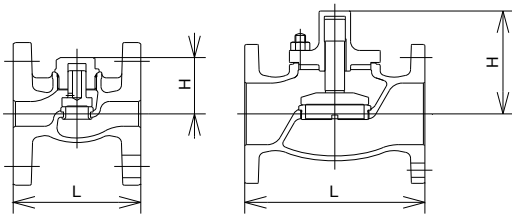


Nominal diameter (B)	1/2	3/4	1	1¼	1½	2	2½	3
L	65	80	90	105	120	140	180	200
H	37.5	43.5	47.5	54	62	70.5	114	137

Product Code **HM10KFC** General-purpose 10K Check valve (Lift) Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	SUS403	Nominal diameter: 10-50A
	SCS1	Nominal diameter: 65-80A
Disc	SUS403	
Seat ring	SUS403	
Gasket	H1215	Nominal diameter: 65-80A

△Cover top: No marks
(Marked with "S" if a spring is contained)

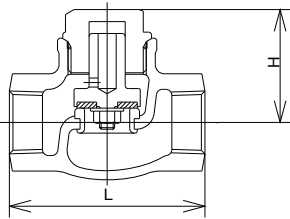


Nominal diameter (A)	10	15	20	25	32	40	50	65	80
L	85	85	95	110	130	150	180	210	240
H	37.5	37.5	43.5	47.5	54	62	70.5	114	137

Product Code **HM10KSCD** General-purpose 10K Check valve (Lift) Screwed Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCMB-S35	
Cover	SUS403	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	Reinforced PTFE	

△Cover top: Marked with "D"
("DS" if a spring is contained)

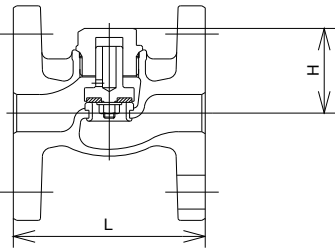


Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	65	80	90	105	120	140
H	37.5	43.5	47.5	54	62	70.5

Product Code **HM10KFCD** General-purpose 10K Check valve (Lift) Flanged Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SUS403	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	Reinforced PTFE	

△Cover top: Marked with "D"
("DS" if a spring is contained)



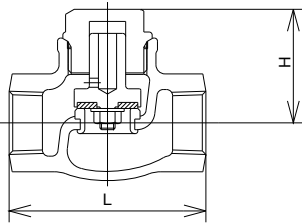
Nominal diameter (A)	10	15	20	25	32	40	50
L	85	85	95	110	130	150	180
H	37.5	37.5	43.5	47.5	54	62	70.5

General-purpose

Product Code **HM10KSCR** General-purpose 10K Check valve (Lift) Screwed NBR disc

Product Name	Material	Remarks
Body	FCMB-S35	
Cover	SUS403	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	NBR	

△Cover top: Marked with "R"
("RS" if a spring is contained)

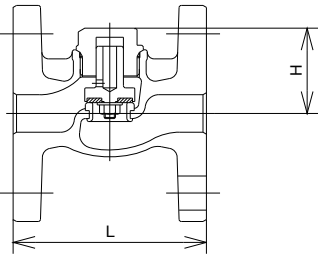


Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	65	80	90	105	120	140
H	37.5	43.5	47.5	54	62	70.5

Product Code **HM10KFCR** General-purpose 10K Check valve (Lift) Flanged NBR disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SUS403	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	NBR	

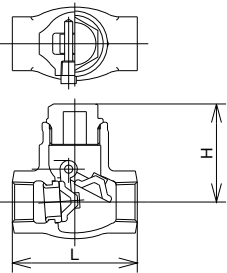
△Cover top: Marked with "R"
("RS" if a spring is contained)



Nominal diameter (A)	10	15	20	25	32	40	50
L	85	85	95	110	130	150	180
H	37.5	37.5	43.5	47.5	54	62	70.5

Product Code **HM10SCS** General-purpose 10K Check valve (Swing) Screwed

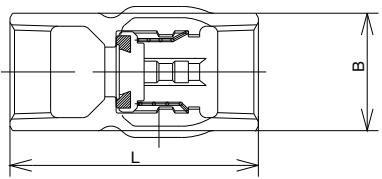
Product Name	Material	Remarks
Body	FCMB-S35	
Cover	SUS403	
Disc	SCS1	
Seat ring	SUS403	
Hinge pin	SUS416	
Plug	SWCH10K	



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	65	80	90	105	120	140
H	51	57	61	73	81	92

Product Code **BSCI** General-purpose 10K Check valve (Inline) Screwed

Product Name	Material	Remarks
Body	CAC406	
Disc	SUS303	
Rubber sheet	FPM	
Spring	SUS304-WPB	

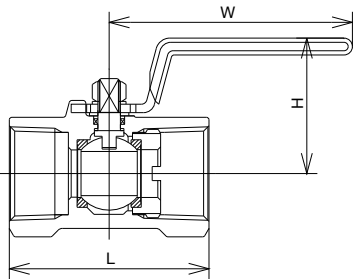


Nominal diameter (B)	1/2	3/4	1
L	55	60	70
B	26	32	40

General-purpose

Product Code **MB2** General-purpose 10K Mini Ball Valve for General Use Lever Handle, 2-stage Reduced Bore

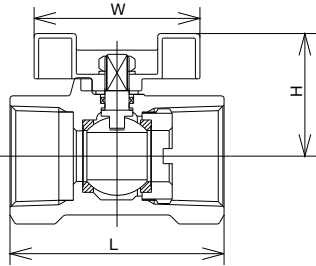
Product Name	Material	Remarks
Body	FCMB340	Hot dip galvanizing Electrogalvanizing
Ball	C3604	Ni-Cr plating
Stem	C3604	Ni-Cr plating
Seat ring	Reinforced PTFE	
Gland Packing	Reinforced PTFE	
Handle	SUS430	PVC coating Color: Orange



Nominal diameter (B)	1/4	3/8	1/2	3/4	1	1¼	1½	2
L	43	46.5	54	61	71	82	88.5	105
H	32	40	42	47	50	58	62	69
W	62	72	72	87	87	127	127	127

Product Code **MBT2** General-purpose 10K Mini Ball Valve for General Use T-handle, 2-stage Reduced Bore

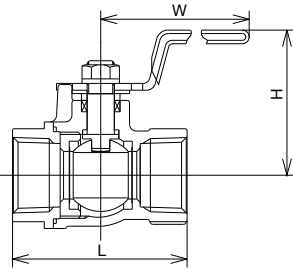
Product Name	Material	Remarks
Body	FCMB340	Hot dip galvanizing Electrogalvanizing
Ball	C3604	Ni-Cr plating
Stem	C3604	Ni-Cr plating
Seat ring	Reinforced PTFE	
Gland Packing	Reinforced PTFE	
Handle	ADC12	Color: Black



Nominal diameter (B)	1/4	3/8	1/2	3/4	1
L	43	46.5	54	61	71
H	27	30	33	40	42
W	45	45	45	55	55

Product Code **MB1** General-purpose 10K Mini Ball Valve for General Use Lever Handle, 1-stage Reduced Bore

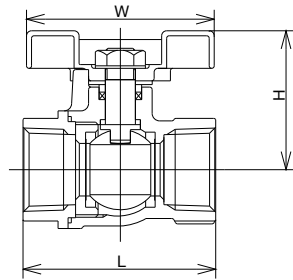
Product Name	Material	Remarks
Body	FCMB340	Hot dip galvanizing Electrogalvanizing
Ball	C3604	Ni-Cr plating
Stem	C3604	Ni-Cr plating
Seat ring	Reinforced PTFE	
Gland Packing	Reinforced PTFE	
Handle	SUS430	PVC coating Color: Orange
Gasket	Reinforced PTFE	



Nominal diameter (B)	1/4	3/8	1/2	3/4	1	1¼	1½	2
L	46	49	57.5	65	77	88	97	116
H	49	49	53	55	63	66	72	79
W	72	72	87	87	127	127	127	152

Product Code **MBT1** General-purpose 10K Mini Ball Valve for General Use T-handle, 1-stage Reduced Bore

Product Name	Material	Remarks
Body	FCMB340	Hot dip galvanizing Electrogalvanizing
Ball	C3604	Ni-Cr plating
Stem	C3604	Ni-Cr plating
Seat ring	Reinforced PTFE	
Gland Packing	Reinforced PTFE	
Handle	ADC12	Color: Black
Gasket	Reinforced PTFE	

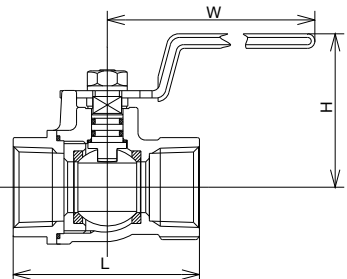


Nominal diameter (B)	1/4	3/8	1/2	3/4	1
L	46	49	57.5	65	77
H	38	38	46	48	58
W	45	45	55	55	75

General-purpose

Product Code **ML1** General-purpose 10K Mini Ball Valve for LPG Lever Handle, 1-stage Reduced Bore

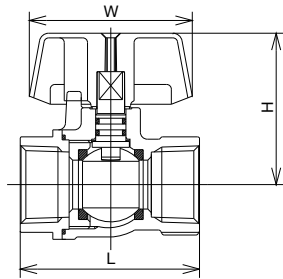
Product Name	Material	Remarks
Body	FCMB340	Hot dip galvanizing Electrogalvanizing
Ball	C3604	Ni-Cr plating
Stem	C3604	Ni-Cr plating
Seat ring	PTFE	
Handle	SUS430	PVC coating Color: Yellow
Gasket	PTFE	



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	57.5	65	77	88	97	116
H	53	55	63	66	72	79
W	87	87	127	127	127	152

Product Code **MLC1** General-purpose 10K Mini Ball Valve for LPG T-handle, 1-stage Reduced Bore

Product Name	Material	Remarks
Body	FCMB340	Hot dip galvanizing Electrogalvanizing
Ball	C3604	Ni-Cr plating
Stem	C3604	
Seat ring	PTFE	
Handle	ADC12	Color: Black
Gasket	PTFE	

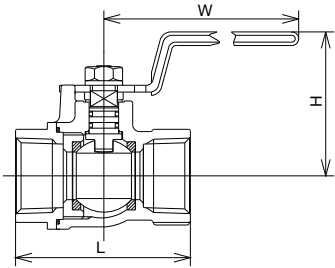


Nominal diameter (B)	1/2	3/4	1
L	57.5	65	77
H	54.5	56.5	65
W	52	52	70

General-purpose

Product Code **MG1** General-purpose 10K Mini Ball Valve for City Gas Lever Handle, 1-stage Reduced Bore

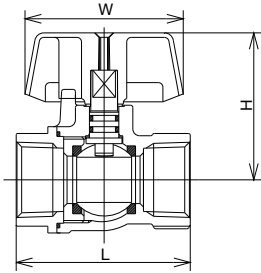
Product Name	Material	Remarks
Body	FCMB340	Hot dip galvanizing Electrogalvanizing
Ball	C3604	Ni-Cr plating
Stem	C3604	Ni-Cr plating
Seat ring	PTFE	
Handle	SUS430	PVC coating Color: Green
Gasket	PTFE	



Nominal diameter (B)	1/4	3/8	1/2	3/4	1	1¼	1½	2
L	46	49	57.5	65	77	88	97	116
H	49	49	53	55	63	66	72	79
W	72	72	87	87	127	127	127	152

Product Code **MGC1** General-purpose 10K Mini Ball Valve for City Gas T-handle, 1-stage Reduced Bore

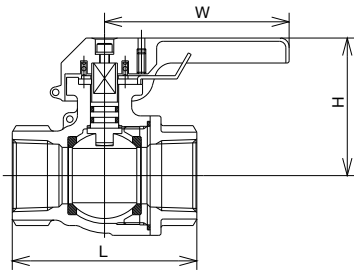
Product Name	Material	Remarks
Body	FCMB340	Hot dip galvanizing Electrogalvanizing
Ball	C3604	Ni-Cr plating
Stem	C3604	
Seat ring	PTFE	
Handle	ADC12	Color: Black
Gasket	PTFE	



Nominal diameter (B)	1/2	3/4	1
L	57.5	65	77
H	54.5	56.5	65
W	52	52	70

Product Code **MGR0** General-purpose 10K Mini Ball Valve for City Gas Cock handle, Full bore

Product Name	Material	Remarks
Body	FCD-S	Hot dip galvanizing Electrogalvanizing
Ball	C3604	Ni-Cr plating
Stem	C3604	
Seat ring	PTFE	
Handle	ZDC2	Color: Black
Gasket	PTFE	



Nominal diameter (B)	3/4	1	1¼	1½	2
L	75	85	100	110	130
H	63	66	72	80	87
W	85	85	85	130	130

10K

Features

1. A general valve based on the 20K type. Can be used for a range of specifications.
2. Support for special fluids by exchanging the packing, gasket and main parts. Please consult with us separately. – We also undertake maintenance using genuine parts.
3. The main parts are made with 13cr stainless steel and can be used up to 300°C.

Product Types

Globe, Gate, Check, Needle, Bellows seal, Ball valves and Strainers

- △Caution:
- A cobalt-base alloy (Co-Cr-W alloy) for the valve seat surface is recommended in case of use in the following conditions.
1. In case of steam piping with a nominal diameter of 150A (6B) or higher.
 2. In case of steam piping when the pressure is 0.98 MPa or higher, and the frequency of opening and closing is high.
 3. In case of use with fluids in a dry state.
 4. In case of piping for chemicals where corrosion resistance is required, and the main parts of the valve are 18Cr-8Ni stainless steel



Fluid•Temperature•Pressure

Unit: MPa

Service temperature limit by fluid (°C) Maximum working pressure by product type MPa			Steady water flow		Oil, air, steam, pulsating water						LPG		City gas	
			80	120	80	120	183	220	250	300	120	80	120	
Globe	Standard, needle valve Bellows			1.37				1.18		0.98				
	Reinforced PTFE disc			1.37			1.18							
	V-port valve				0.98							0.98		
Gate				1.37				1.18		0.98				
Check	Standard			1.37				1.18		0.98				
	Reinforced PTFE disc			1.37				0.98						
	NBR disc		1.37		1.37									
Ball	For general use			1.37			1.28		0					
	For gas										1.18		0.98	

*1 Heat-resistant coating is recommended in case the service temperature exceeds 180°C

Test Pressure

Unit: MPa

Test description	Body pressure resistance		Valve seat leakage	
	Water pressure	Air pressure	Water pressure	Air pressure
Globe, needle, V-port, gate, check, ball valves	2.10		1.54	
Bellows seal valve		1.00		1.00
Ball valve for gas		1.80		1.32

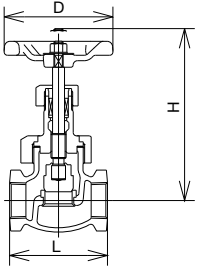
Product Code

M10KSG

10K

Globe Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	64	70	80	90	110	120	140
H	115	130	135	155	175	190	215
D	80	80	80	100	120	120	140

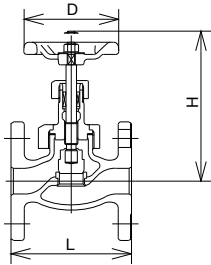
Product Code

M10KFG

10K

Globe Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	10	15	20	25	32	40	50
L	108	108	117	127	140	165	203
H	130	130	135	155	175	190	215
D	80	80	80	100	120	120	140

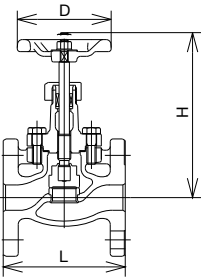
Product Code

M10KFGI

10K

Globe Flanged BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Blue / Nominal diameter: 15-40A
	FCD450	Color: Blue / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	15	20	25	32	40	50
L	108	117	127	140	165	203
H	154	156	178	203	231	261
D	80	80	100	120	140	180

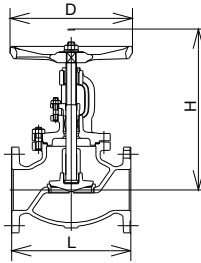
Product Code

M10KFGO

10K

Globe Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Nominal diameter: 50-150A
	S28C+13Cr	Nominal diameter: 200-300A
Seat ring	SUS403	Nominal diameter: 50-150A
	S28C	Nominal diameter: 200-300A Hard facing
Handwheel	FCD450	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	50	65	80	100	125	150	200	250	300
L	203	216	241	292	356	406	495	622	698
H	295	325	355	390	435	505	595	690	779
D	224	224	250	300	315	355	400	450	560

Product Code

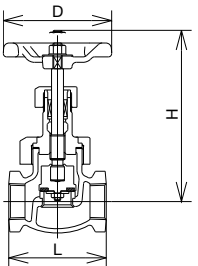
M10KSD

10K

Globe Screwed Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc seat	Reinforced PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Orange
Gasket	H1215	
Gland Packing	H350+H2200	

△Name plate: PTFE display



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	64	70	80	90	110	120	140
H	116	131	133	153	176	192	216
D	80	80	80	100	120	120	140

Product Code

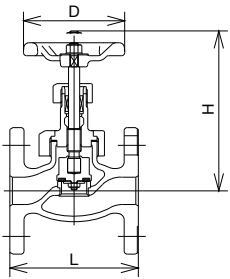
M10KFD

10K

Globe Flanged Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc seat	Reinforced PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB 340	Color: Orange
Gasket	H1215	
Gland Packing	H350+H2200	

△Name plate: PTFE display



Nominal diameter (A)	10	15	20	25	32	40	50
L	108	108	117	127	140	165	203
H	131	131	133	153	176	192	216
D	80	80	80	100	120	120	140

Product Code

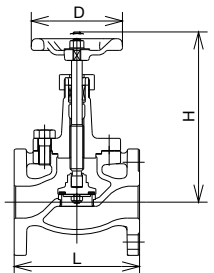
M10KFDI

10K

Globe Flanged Reinforced PTFE disc BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc seat	Reinforced PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB 340	Color: Orange / Nominal diameter: 15-40A
	FCD450	Color: Orange / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	

△Name plate: PTFE display



Nominal diameter (A)	15	20	25	32	40	50
L	108	117	127	140	165	203
H	152	154	178	203	231	262
D	80	80	100	120	140	180

Product Code

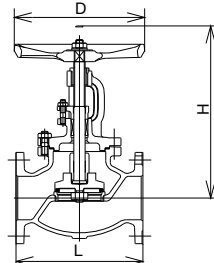
M10KFDO

10K

Globe Flanged Reinforced PTFE disc OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc seat	Reinforced PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCD450	Color: Orange
Gasket	H1215	
Gland Packing	H350+H2200	

△Name plate: PTFE display



Nominal diameter (A)	50	65	80	100	125	150	200	250
L	203	216	241	292	356	406	495	622
H	295	335	365	405	455	530	630	732
D	224	224	250	300	315	355	400	450

Product Code

M10KSN

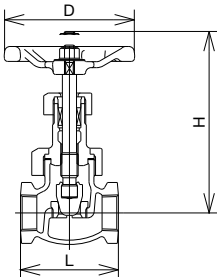
10K

Needle Valve

Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB 340	Color: Blue / Nominal diameter: ¾-1½B
	FCD450	Color: Blue / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips:
Marked "N"/The cover is clearly marked
"Needle valve"



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	64	70	80	90	110	120	140
H	125	135	145	170	180	200	230
D	80	80	100	120	120	140	180

Product Code

M10KFN

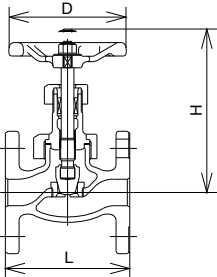
10K

Needle Valve

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB 340	Color: Blue / Nominal diameter: 10-40A
	FCD450	Color: Blue / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips:
Marked "N"/The cover is clearly marked
"Needle valve"



Nominal diameter (A)	10	15	20	25	32	40	50
L	108	108	117	127	140	165	203
H	125	135	145	170	180	200	230
D	80	80	100	120	120	140	180

Product Code

M10KFGB

10K

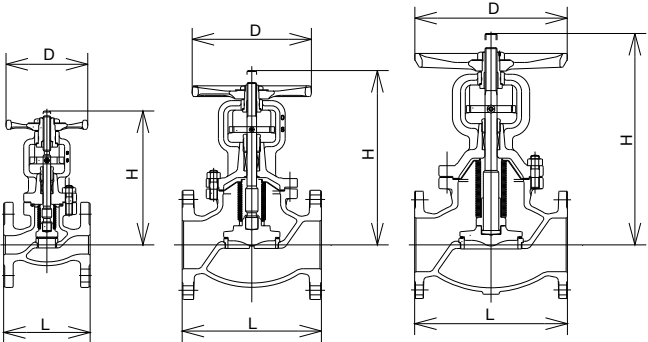
Bellows Seal Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS410	
Seat ring	SUS410	Hard facing
Disc	SUS304	Hard facing (Nominal diameter: 50A or less)
	A182-F304	Hard facing (Nominal diameter: 65-100A)
	SCS1 T1	Hard facing (Nominal diameter: 125A or more)
Bellows	SUS316L	
Handwheel	FCMB340	Color: Black
Gasket	H1215	
Gland Packing	H350+H2200	

△The glands of the bellows seal valve are maintenance-free, but since the cover bolts may loosen due to vibrations and heat stress, they will need regular maintenance.



Nominal diameter (A)	15	20	25	32	40	50	65	80	100	125	150	200	250
L	108	117	127	140	165	203	216	241	292	356	406	495	622
H	181	191	196	208	243	253	278	328	365	421	487	609	754
D	100	100	120	120	160	180	224	224	250	300	355	400	450

Product Code

M10KFDB

10K

Bellows Seal Valve

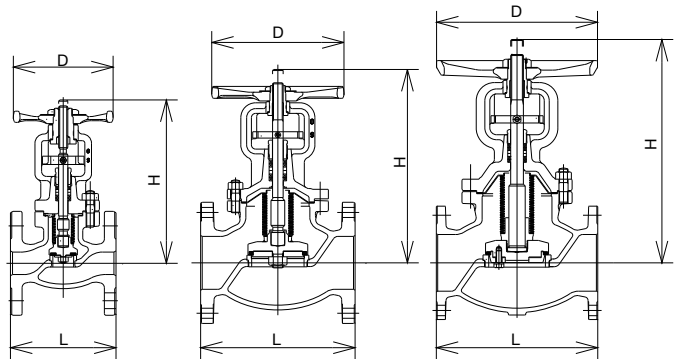
Flanged

Reinforced PTFE disc

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS410	
Seat ring	SUS410	
Disc seat	Reinforced PTFE	
Disc	A182-F304	Nominal diameter: 50A or less• 125A or more
	SUS410	Nominal diameter: 65-100A
Bellows	SUS316L	
Handwheel	FCMB340	Color: Black
Gasket	H1215	
Gland Packing	H350+H2200	

△The glands of the bellows seal valve are maintenance-free, but since the cover bolts may loosen due to vibrations and heat stress, they will need regular maintenance.



Nominal diameter (A)	15	20	25	32	40	50	65	80	100	125	150	200	250
L	108	117	127	140	165	203	216	241	292	356	406	495	622
H	181	191	196	208	243	253	278	328	365	421	487	609	754
D	100	100	120	120	160	180	224	224	250	300	355	400	450

Product Code

M10KSS

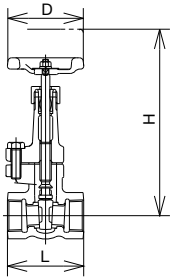
10K

Gate Valve

Screwed

BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	
Seat ring	SUS403	
Handwheel	SCMB340	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	65	75	80	90	100	110
H	165	165	190	224	258	290
D	80	80	80	100	120	120

Product Code

M10KFS

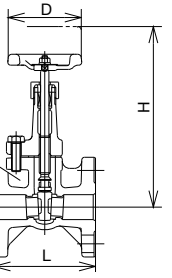
10K

Gate Valve

Flanged

BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	10	15	20	25	32	40	50
L	90	90	100	110	120	130	140
H	165	165	170	190	224	258	290
D	80	80	80	80	100	120	120

Product Code

M10KFSSO

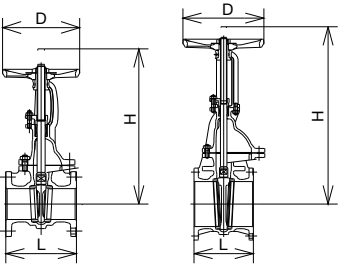
10K

Gate Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	Nominal diameter: 40-65A
	SUS403	Nominal diameter: 80-200A
	S28C	13Cr stainless deposit Nominal diameter: 250-300A
Seat ring	SUS403	
Handwheel	FCD450	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	40	50	65	80	100	125	150	200	250	300
L	165	178	190	203	229	254	267	292	330	356
H	315	360	425	480	580	675	780	985	1195	1410
D	160	180	180	224	250	300	300	315	450	560

Product Code

D10KFSSO

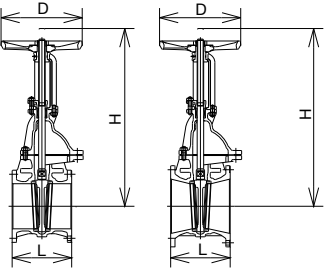
10K

Gate Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCPH2	13Cr stainless deposit
Seat ring	S28C	Hard facing
Handwheel	FCD450	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	350	400	450	500
L	381	406	432	457
H	1610	1855	1610	1855
D	630	710	630	710

Product Code

M10KSC

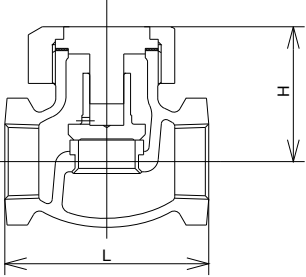
10K

Check Valve (Lift)

Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	
Seat ring	SUS403	
Gasket	H1215	

△Cover top: No marks
(Marked with "S" if a spring is contained)



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	70	80	90	110	120	140
H	51	54	61	69	77	89

Product Code

M10KFC

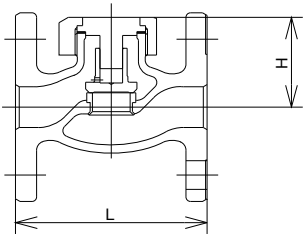
10K

Check Valve (Lift)

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	
Seat ring	SUS403	
Gasket	H1215	

△Cover top: No marks
(Marked with "S" if a spring is contained)



Nominal diameter (A)	10	15	20	25	32	40	50
L	108	108	117	127	140	165	203
H	51	51	54	61	69	77	89

Product Code

M10KSCD

10K

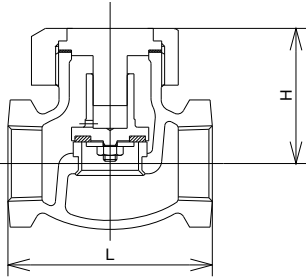
Check Valve (Lift)

Screwed

Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	Reinforced PTFE	
Gasket	H1215	

△Cover top: Marked with "D"
("DS" if a spring is contained)



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	70	80	90	110	120	140
H	51	54	61	69	77	89

Product Code

M10KFCD

10K

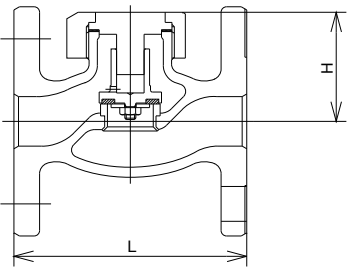
Check Valve (Lift)

Flanged

Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	Reinforced PTFE	
Gasket	H1215	

△Cover top: Marked with "D"
("DS" if a spring is contained)



Nominal diameter (A)	10	15	20	25	32	40	50
L	108	108	117	127	140	165	203
H	51	51	54	61	69	77	89

Product Code

M10KSCR

10K

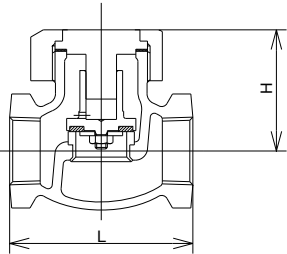
Check Valve (Lift)

Screwed

NBR disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	NBR	
Gasket	H1215	

△Cover top: Marked with "R"
("RS" if a spring is contained)
* NBR disc installed on request.



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	70	80	90	110	120	140
H	51	54	61	69	77	89

Product Code

M10KFCR

10K

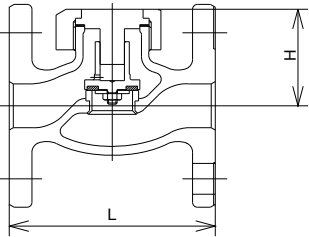
Check Valve (Lift)

Flanged

NBR disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	NBR	
Gasket	H1215	

△Cover top: Marked with "R"
("RS" if a spring is contained)
* NBR disc installed on request.



Nominal diameter (A)	10	15	20	25	32	40	50
L	108	108	117	127	140	165	203
H	51	51	54	61	69	77	89

Product Code

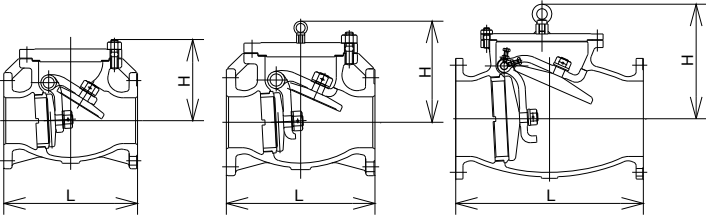
M10KFCS

10K

Check Valve (Swing)

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	SS400	
Disc	SUS403	Nominal diameter: 40-100A
	S25C	13Cr stainless deposit / Nominal diameter: 125-300A
Seat ring	SUS403	
Hinge pin	SUS403	
Gasket	H1215	
Plug	S25C	Nominal diameter: 40-200A
	SUS403	Nominal diameter: 250-300A



Nominal diameter (A)	40	50	65	80	100	125	150	200	250	300
L	165	203	216	241	292	330	356	495	622	698
H	118	126	146	161	176	250	270	330	390	450

Product Code

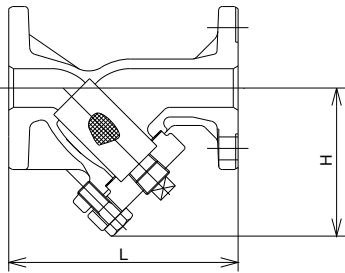
M10KFT

10K

Strainer

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Screen	SUS304	50 mesh / Nominal diameter: 15-50A
		40×mesh / Nominal diameter: 65-300A
Gasket	H1215	
Plug	FCD-S	Nominal diameter: 25-50A
	S25C	Nominal diameter: 15-20A
	S15C or SWCH	Nominal diameter: 65-300A



Nominal diameter (A)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
L	130	140	160	190	210	250	290	310	350	400	480	600	730	850
H	68	77	91	137	154	170	190	231	279	310	370	441	510	565

Product Code

BM10KS2B

10K

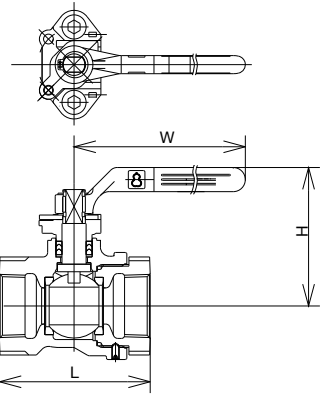
Ball Valve for General Use

Screwed

1-stage Reduced Bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	FT seat	
Handle	FCMB340	Color: Blue
Gasket	SUS304	
Gland Packing	PTFE	

△Indicator: Blue
External stopper/ Valve stem: widths across flats



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	66	75	87	100	115	130
H	69	73	76	92	96	104
W	120	120	120	150	150	220

Product Code

BM10KF2B

10K

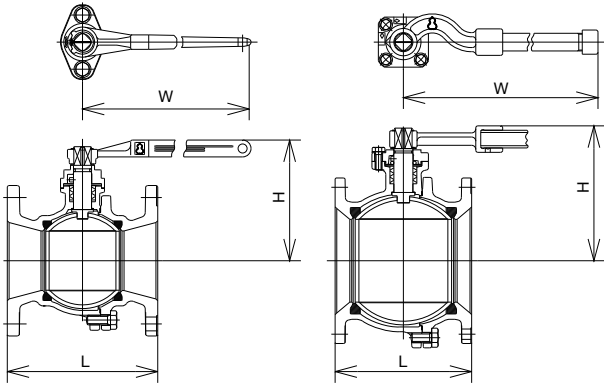
Ball Valve for General Use

Flanged

1-stage Reduced Bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	FT seat	
Handle	FCMB340	Color: Blue / Nominal diameter: 65-125A
Handle boss + pipe	FCMB340+ STPG	Color: Blue / Nominal diameter: 150-250A
Gasket	H1215	
Gland Packing	Reinforced PTFE	

△Indicator: Blue
Valve stem angle: widths across flats



Nominal diameter (A)	65	80	100	125	150	200	250
L	190	203	229	254	267	292	330
H	139	151	186	202	243	262	321
W	220	220	320	400	800	1000	1200

Product Code

BM10KF0B

10K

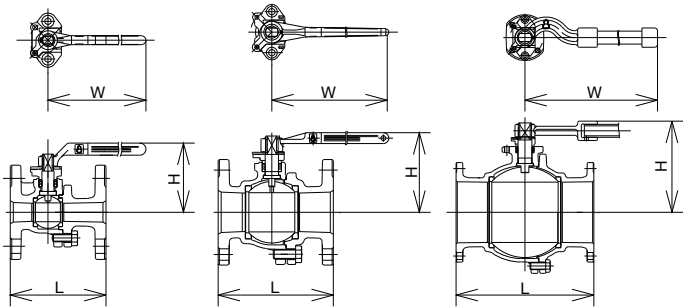
Ball Valve for General Use

Flanged

Full bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	FT seat	
Handle	FCMB340	Color: Blue / Nominal diameter: 15-100A
Handle boss + pipe	FCMB340+STPG	Color: Blue / Nominal diameter: 125-200A
Gasket	Reinforced PTFE	
Gland Packing	PTFE	

△Indicator: Blue
External stopper/
Valve stem: widths across flats



Nominal diameter (A)	15	20	25	32	40	50	65	80	100	125	150	200
L	108	117	127	140	165	178	190	203	229	292	394	457
H	73	76	92	98	110	117	132	170	186	225	245	301
W	120	120	150	150	220	220	220	320	400	800	1000	1200

Product Code

BM10KF1B

10K

Ball Valve for General Use

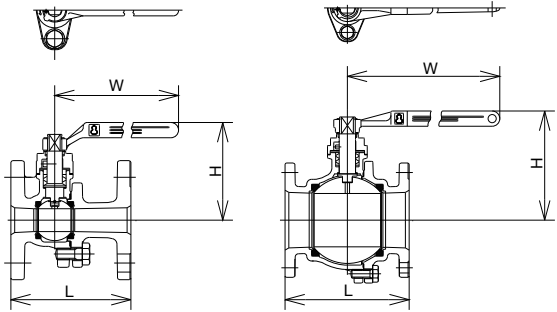
Flanged

Full bore

Fire-safe mechanism

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	FT seat	
Stainless steel sheet	SUS304	
Handle	FCMB340	Color: Blue
Gasket	H1215	
Gland Packing	Reinforced PTFE	

△Indicator: Black
Valve stem: widths across flats, marked "1"



Nominal diameter (A)	15	20	25	32	40	50	65	80	100
L	108	117	127	140	165	178	190	203	229
H	81	85	103	108	129	139	151	186	202
W	120	120	150	150	220	220	220	320	400

Product Code

BM10KS2L

10K

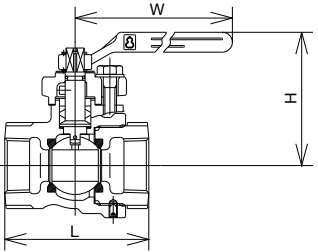
Ball Valve for Gas

Screwed

1-stage Reduced Bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	PTFE	
Handle	FCMB340	Color: Blue
Gasket	SUS304	Nominal diameter: ½-2B
Gland Packing	H1215	Nominal diameter: 3B

△Indicator: Green/Valve stem angle: square



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2	3
L	66	75	87	100	115	130	180
H	70	77	81	102	107	129	151
W	120	120	120	150	150	220	220

Product Code

BM10KF2L

10K

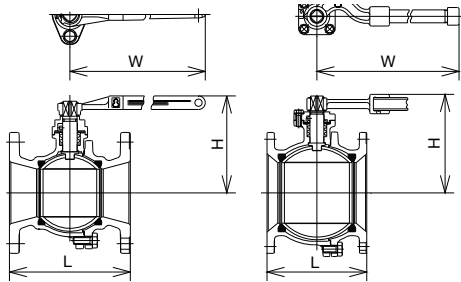
Ball Valve for Gas

Flanged

1-stage Reduced Bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	Nominal diameter: 65A
Stem	SUS403	Nominal diameter: 80-250A
Seat ring	PTFE	
Handle	FCMB340	Color: Blue / Nominal diameter: 60-125A
Handle boss + pipe	FCMB340+STPG	Color: Blue / Nominal diameter: 150-250A
Gasket	H1215	
Gland Packing	PTFE	

△Indicator: Green/Valve stem angle: square



Nominal diameter (A)	65	80	100	125	150	200	250
L	190	203	229	254	267	292	330
H	139	151	186	202	243	262	321
W	220	220	320	400	800	1000	1200

Product Code

BM10KF0L

10K

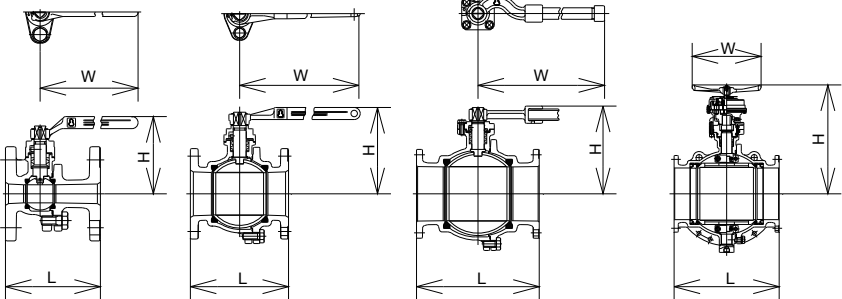
Ball Valve for Gas

Flanged

Full bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	Nominal diameter: 15-50A
	SUS304	Nominal diameter: 65-200A
	SCS13+SUS304	Nominal diameter: 250-300A
Stem	SUS403	
Seat ring	PTFE	
Seat retainer	SUS403	Nominal diameter: 250-300A
Handle	FCMB340	Color: Blue / Nominal diameter: 15-100A
Handle boss + pipe	FCMB340+STPG	Color: Blue / Nominal diameter: 125-200A
Handwheel	FCD450	Color: Blue / Nominal diameter: 250-300A
Gasket	H1215	Nominal diameter: 15-200A
O ring	NBR	Nominal diameter: 250-300A
Gland Packing	PTFE	

△Indicator: Green/Valve stem angle: square



Nominal diameter (A)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
L	108	117	127	140	165	178	190	203	229	292	394	457	533	610
H	81	85	103	108	129	139	151	186	202	243	262	321	565	619
W	120	120	150	150	220	220	220	320	400	800	1000	1200	400	400

*1: Usable for LPG to -5°C.
*2: Full bore 250A-300A (BM10KF0L 250-300A) maximum operating temperature for ball valves is 80°C.

Product Code

BM10KS2G

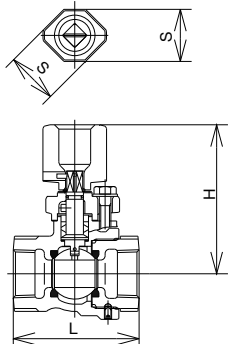
10K

Ball Valve for Gas (buried pipe)

Screwed

1-stage Reduced Bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	PTFE	
Handle boss	FCD450	
Gasket	SUS304	Nominal diameter: ½-2B
	H1215	Nominal diameter: 3B
Gland Packing	PTFE	



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2	3
L	66	75	87	100	115	130	180
H	90	97	101	114	119	142	164
S	36	36	36	36	36	36	50

Product Code

BM10KF2G

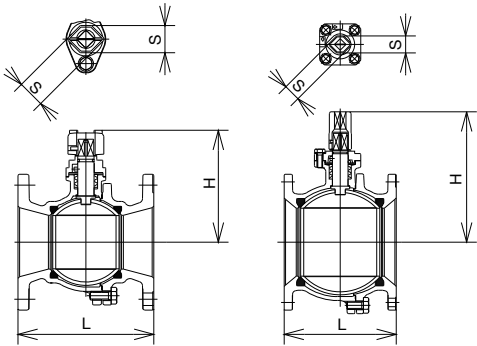
10K

Ball Valve for Gas (buried pipe)

Flanged

1-stage Reduced Bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	Nominal diameter: 65A
	SUS304	Nominal diameter: 80-250A
Stem	SUS403	
Seat ring	PTFE	
Handle boss	FCD450	Nominal diameter: 65-200A
	FCMB340	Nominal diameter: 250A
Gasket	H1215	
Gland Packing	PTFE	



Nominal diameter (A)	65	80	100	125	150	200	250
L	190	203	229	254	267	292	330
H	152	164	186	202	244	263	384
S	50	50	50	50	50	50	50

Product Code

BM10KF0G

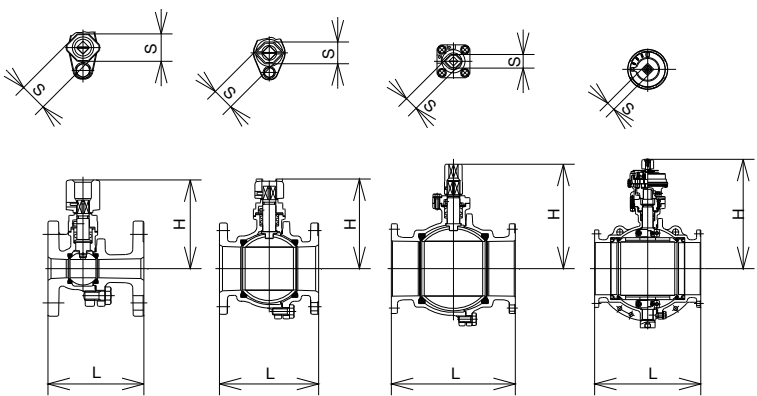
10K

Ball Valve for Gas (buried pipe)

Flanged

Full bore

Product Name	Material	Remarks
Body	FCD—S	
Ball	SCS13A	Nominal diameter: 15-50A
	SUS304	Nominal diameter: 65-200A
	SCS13+ SUS304	Nominal diameter: 250-300A
Stem	SUS403	
Seat ring	PTFE	
Seat retainer	SUS403	Nominal diameter: 250-300A
Handle boss	FCD450	Nominal diameter: 15-150A
	FCMB340	Nominal diameter: 200A
	SS400	Nominal diameter: 250-300A
Gasket	H1215	Nominal diameter: 15-200A
O ring	NBR	Nominal diameter: 250-300A
Gland Packing	PTFE	



Nominal diameter (A)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
L	108	117	127	140	165	178	190	203	229	292	394	457	533	610
H	99	103	114	119	142	152	164	186	202	244	263	384	576	630
S	36	36	36	36	36	36	50	50	50	50	50	50	50	50

*1: Usable for LPG to -5°C.
*2: Full bore 250A-300A (BM10KF0L 250-300A) maximum operating temperature for ball valves is 80°C.

Features

- 1. The main parts are mostly made with 13Cr stainless steel. Usable for hot fluids up to 350°C.
- 2. Support for special fluids by exchanging the packing, gasket and main parts. We also undertake maintenance using genuine parts at any time.

Product Types

Globe, Gate, Check, Needle, Y Globe, Bellows seal, Angle, Strainer, Ball, Strainer ball valves

Fluid•Temperature•Pressure

Unit: MPa

Service temperature limit by fluid (°C)		Steady water flow			Oil, air, steam, pulsating water							LPG	
		60	104	120	104	200	220	230	250	300	350	80	120
Globe	Standard, needle, Y, angle			2.75			2.45			2.26	1.96		
	PTFE disc											2.35	
	Bellows			2.50			2.45			2.26	1.96		
Gate	Standard, high temperature specification			2.75			2.45			2.26	1.96		
Check	Standard, screw-down stop check			2.75			2.45			2.26	1.96		
	PTFE disc												2.35
Strainer	Standard			2.75			2.45			2.26	1.96		
	For LPG												2.35
Ball	Strainer ball											2.35	
	For LPG												2.35
	For general use		2.75		2.75	0.98		0.40	0				

*1 Heat-resistant coating is recommended in case the service temperature exceeds 120°C.

Test Pressure

Unit: MPa

Test description	Body pressure resistance		Valve seat leakage		Back seat leakage
	Water pressure	Air pressure	Water pressure	Air pressure	Air pressure
Globe, gate, check, angle, Y Globe valves	4.20		3.08		
Bellows seal valve		2.50		2.50	
Globe valve for LPG	3.60	2.64		2.64	2.64
Check valve for LPG/Ball/Strainer ball valve	3.60	2.64		2.64	
Strainer	4.20				
Ball valve for general use	4.20		3.08		



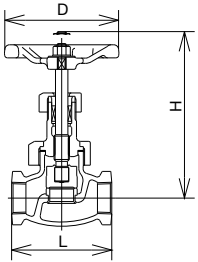
Product Code

M20KSG

20K

Globe Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: ¾-1½B
	FCD450	Color: Brown / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	70	75	90	105	120	135	160
H	125	135	145	170	180	195	225
D	80	80	100	120	120	140	180

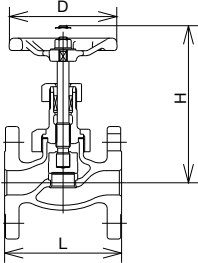
Product Code

M20KFG

20K

Globe Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: 10-40A
	FCD450	Color: Brown / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	10	15	20	25	32	40	50
L	100	110	120	130	160	180	230
H	125	135	145	170	180	195	225
D	80	80	100	120	120	140	180

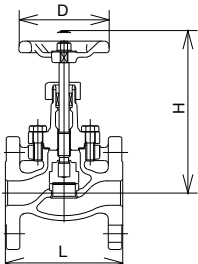
Product Code

M20KFGI

20K

Globe Flanged BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: 15-40A
	FCD450	Color: Brown / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	15	20	25	32	40	50
L	110	120	130	160	180	230
H	152	154	180	202	231	261
D	80	80	100	120	140	180

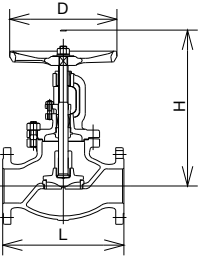
Product Code

M20KFGO

20K

Globe Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	S28C	Hard facing / Nominal diameter: 50-200A
	S25C	Hard facing / Nominal diameter: 250A
Seat ring	S28C	Hard facing
Handwheel	FCMB340	Nominal diameter: 50-65A
	FCD450	Nominal diameter: 80A or larger
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	50	65	80	100	125	150	200	250
L	267	292	318	356	400	444	559	622
H	329	355	390	445	515	595	685	820
D	224	250	300	315	355	400	450	560

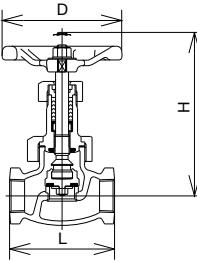
Product Code

M20KSDL

20K

Globe Screwed Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	Nominal diameter: ½B:FCD-S
Stem	SUS403	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Green / Nominal diameter: ¾-1½B
	FCD450	Color: Green / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H2661-V	



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	70	75	90	105	120	135	160
H	125	135	145	170	180	200	230
D	80	80	100	120	120	140	180

△Name plate: PTFE display

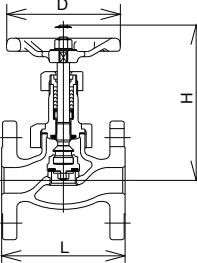
Product Code

M20KFDL

20K

Globe Flanged Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Green / Nominal diameter: 10-40A
	FCD450	Color: Green / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H2661-V	



Nominal diameter (A)	10	15	20	25	32	40	50
L	100	110	120	130	160	180	230
H	125	135	145	170	180	200	230
D	80	80	100	120	120	140	180

△Name plate: PTFE display

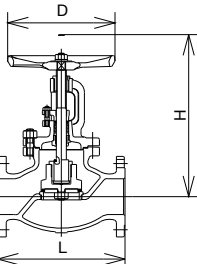
Product Code

M20KFDLO

20K

Globe Flanged Reinforced PTFE disc OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Nominal diameter: 50-65A
	FCD450	Nominal diameter: 80A or larger
Gasket	H1215	
Gland Packing	H2661-V	



Nominal diameter (A)	50	65	80	100	125	150	200	250
L	267	292	318	356	400	444	559	622
H	325	365	395	440	515	580	685	815
D	224	224	250	300	315	400	450	560

△Name plate: PTFE display

Product Code

M20KSS

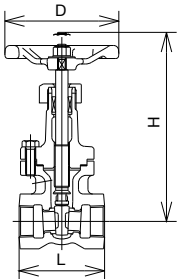
20K

Gate Valve

Screwed

BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Brown
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	70	80	90	100	110	120
H	172	184	213	232	264	298
D	80	100	120	120	140	140

Product Code

M20KFS

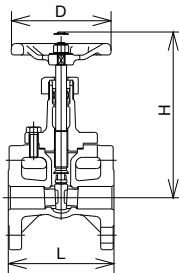
20K

Gate Valve

Flanged

BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Brown
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	15	20	25	32	40	50
L	108	117	127	140	165	178
H	172	184	213	232	264	298
D	80	100	120	120	140	140

Product Code

M20KFSSO

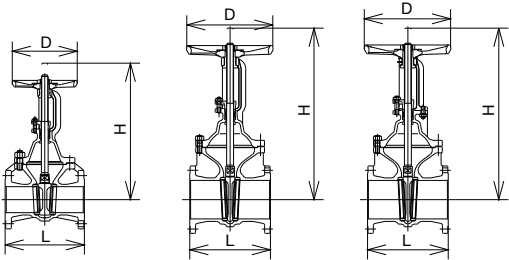
20K

Gate Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	Nominal diameter: 25·40-65·125-200A
	SUS403	Nominal diameter: 32·80·100A
	SCPH2	13Cr stainless deposit 13Cr stainless deposit 250·300A
Seat ring	SUS403	
Handwheel	FCD450	Color: Brown
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	25	32	40	50	65	80	100	125	150	200	250	300
L	160	170	190	216	241	283	305	381	403	419	457	502
H	281	300	328	383	442	502	591	698	819	1026	1238	1440
D	160	160	160	180	180	224	250	300	315	450	560	630

Product Code

M20KFSSHO

20K

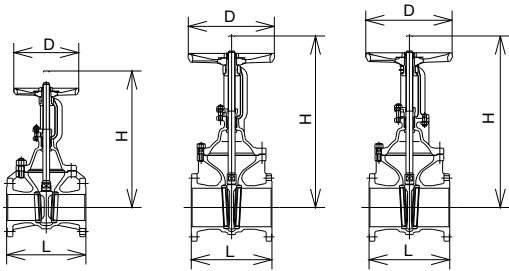
Gate Valve

Flanged

OS and BB type

Heating Medium type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	Hard facing / Nominal diameter: 25·40-65·125-200A
	SUS403	Hard facing / Nominal diameter: 32·80·100A
	SCPH2	Hard facing / Nominal diameter: 250·300A
Seat ring	SUS403	Hard facing / Nominal diameter: 25-100A
	S28C	Hard facing / Nominal diameter: 125-300A
Handwheel	FCD450	Color: Brown
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	25	32	40	50	65	80	100	125	150	200	250	300
L	160	170	190	216	241	283	305	381	403	419	457	502
H	281	300	328	383	442	502	591	698	819	1026	1238	1440
D	160	160	160	180	180	224	250	300	315	450	560	630

△Name plate: FSHO display

Product Code

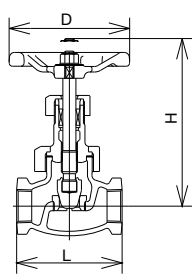
M20KSN

20K

Needle Valve

Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: ¾-1½B
	FCD450	Color: Brown / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	70	75	90	105	120	135	160
H	125	135	145	170	180	200	230
D	80	80	100	120	120	140	180

△Valve stem tips:
Marked "N"/Fitted with metal tag clearly marked
"Needle valve"

Product Code

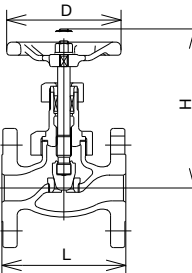
M20KFN

20K

Needle Valve

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: 10-40A
	FCD450	Color: Brown / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	10	15	20	25	32	40	50
L	100	110	120	130	160	180	230
H	125	135	145	170	180	200	230
D	80	80	100	120	120	140	180

△Valve stem tips:
Marked "N"/Fitted with metal tag clearly marked
"Needle valve"

Product Code

M20KFNI

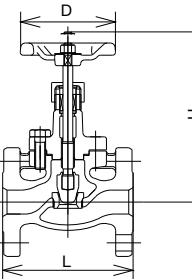
20K

Needle Valve

Flanged

BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: 10-40A
	FCD450	Color: Brown / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	15	20	25	32	40	50
L	110	120	130	160	180	230
H	154	159.5	183	208	236.5	264.5
D	80	80	100	120	140	180

△Valve stem tips:
Marked "N"/Fitted with metal tag clearly marked
"Needle valve"

Product Code

M20KFNO

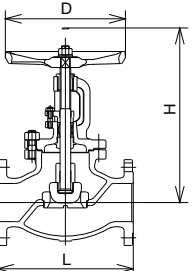
20K

Needle Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Nominal diameter: 50-65A
	FCD450	Nominal diameter: 80A or larger
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	50	65	80	100	125	150
L	267	292	318	356	400	444
H	335	365	405	445	515	595
D	224	224	250	300	315	355

△Valve stem tips:
Marked "N"/Fitted with metal tag clearly marked
"Needle valve"

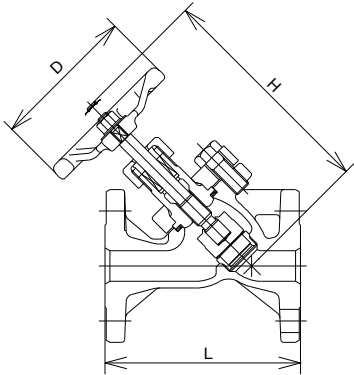
Product Code

M20KFGY

20K

Y Globe Valve Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: 25-40A
	FCD450	Color: Brown / Nominal diameter: 50A
Gasket	H1804GR	
Gland Packing	H350+H2200	



Nominal diameter (A)	25	40	50
L	160	210	250
H	208	246	293
D	120	140	180

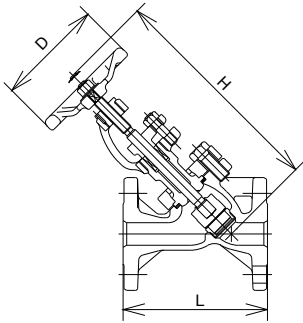
Product Code

M20KFGYO

20K

Y Globe Valve Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: 25-40A
	FCD450	Color: Brown / Nominal diameter: 50A
Gasket	H1804GR	
Gland Packing	H350+H2200	



Nominal diameter (A)	25	40	50
L	160	210	250
H	250	286	331
D	120	140	180

△When M20KFGY (O) is used as a blow-down valve (blow-off valve) on the bottom of the tin can boiler, the maximum allowable working pressure should be limited to 1.86 MPa (19 kgf/cm²) or less.

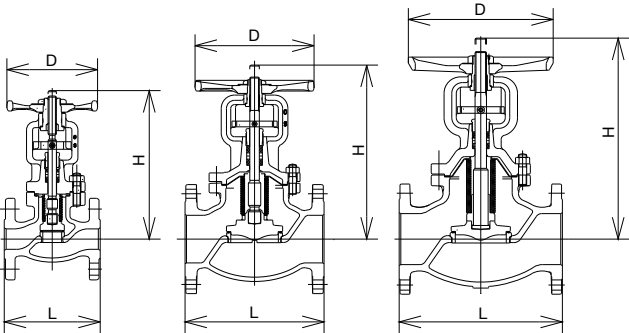
Product Code

M20KFGB

20K

Bellows Seal Valve Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS410	
Seat ring	SUS410	Hard facing
Disc	SUS304	Hard facing (Nominal diameter: 50A or less)
	A182-F304	Hard facing (Nominal diameter: 65-100A)
	SCS1	Hard facing (Nominal diameter: 125A or more)
Bellows	SUS316L	
Handwheel	FCMB340	Color: Black
Gasket	H1215	
Gland Packing	H350+H2200	



△The glands of the bellows seal valve are maintenance-free, but since the cover bolts may loosen due to vibrations and heat stress, they will need regular maintenance.

Nominal diameter (A)	15	20	25	32	40	50	65	80	100	125	150	200	250
L	110	120	130	160	180	230	292	318	356	400	444	559	622
H	181	191	196	208	243	253	309	377	402	491	562	713	869
D	100	100	120	120	160	180	224	250	300	355	400	450	560

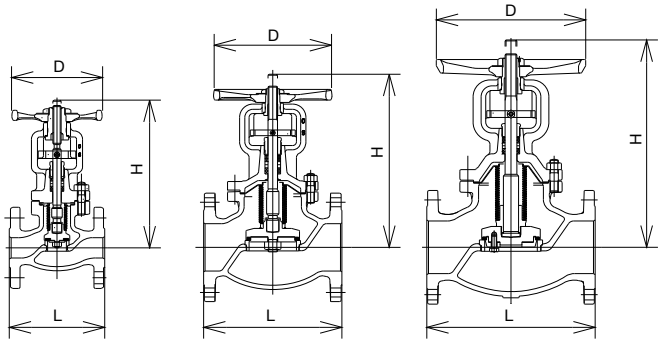
Product Code

M20KFDB

20K

Bellows Seal Valve Flanged Reinforced PTFE disc OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS410	
Seat ring	SUS410	
Disc seat	Reinforced PTFE	
Disc	SUS304	Nominal diameter: 50A or less・125A or more
	A182-F304	Nominal diameter: 65-100A
Bellows	SUS316L	
Handwheel	FCMB340	Color: Black
Gasket	H1215	
Gland Packing	H350+H2200	



△The glands of the bellows seal valve are maintenance-free, but since the cover bolts may loosen due to vibrations and heat stress, they will need regular maintenance.

Nominal diameter (A)	15	20	25	32	40	50	65	80	100	125	150	200	250
L	110	120	130	160	180	230	292	318	356	400	444	559	622
H	181	191	196	208	243	253	309	377	402	491	562	713	869
D	100	100	120	120	160	180	224	250	300	355	400	450	560

Product Code

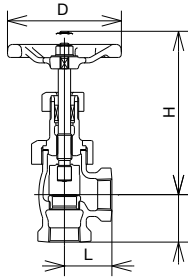
M20KSA

20K

Angle Valve

Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: ¾-1½B
	FCD450	Color: Brown / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	32	37	42	50	55	60	75
H	115	125	145	160	170	190	210
D	80	80	100	120	120	140	180

Product Code

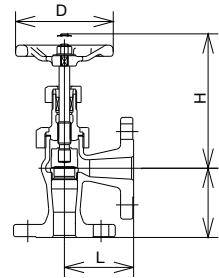
M20KFA

20K

Angle Valve

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: 10-40A
	FCD450	Color: Brown / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	10	15	20	25	32	40	50
L	70	70	75	85	95	100	120
H	115	125	140	160	165	185	205
D	80	80	100	120	120	140	180

Product Code

M20KFAO

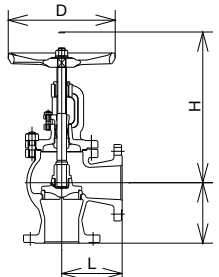
20K

Angle Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	S28C	Hard facing
Seat ring	S28C	Hard facing
Handwheel	FCMB340	Nominal diameter: 50-65A
	FCD450	Nominal diameter: 80A or larger
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (A)	65	80	100
L	146	159	178
H	325	360	405
D	250	300	315

Product Code

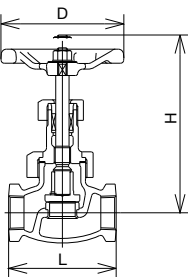
M20KSGC

20K

(Screw-down) Stop Check Valve

Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: ¾-1½B
	FCD450	Color: Brown / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	



△Valve stem tips:
Marked "C"/The cover is clearly marked
"Screw-down Stop Check Valve"

Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	70	75	90	105	120	135	160
H	125	135	145	170	180	195	225
D	80	80	100	120	120	140	180

Product Code

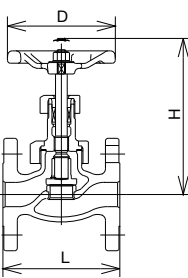
M20KFGC

20K

(Screw-down) Stop Check Valve

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: 10-40A
	FCD450	Color: Brown / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	



△Valve stem tips:
Marked "C"/The cover is clearly marked
"Screw-down Stop Check Valve"

Nominal diameter (A)	10	15	20	25	32	40	50
L	100	110	120	130	160	180	230
H	125	135	145	170	180	195	225
D	80	80	100	120	120	140	180

Product Code

M20KFGCO

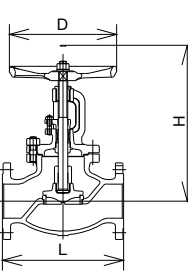
20K

(Screw-down) Stop Check Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	S28C	Hard facing
Seat ring	S28C	Hard facing
Handwheel	FCMB340	Nominal diameter: 50-65A
	FCD450	Nominal diameter: 80A or larger
Gasket	H1215	
Gland Packing	H350+H2200	



△Valve stem tips:
Marked "C"/The cover is clearly marked
"Screw-down Stop Check Valve"

Nominal diameter (A)	50	65	80	100	125
L	267	292	318	356	400
H	333	365	400	455	520
D	224	250	300	315	355

Product Code

M20KSAC

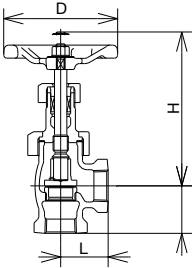
20K

Angle (Screw-down) Stop Check Valve

Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: ½-1½B
	FCD450	Color: Brown / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips:
Marked "C"/The cover is clearly marked
"Screw-down Stop Check Valve"



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	37	42	50	55	60	75
H	130	145	160	175	190	215
D	80	100	120	120	140	180

Product Code

M20KFAC

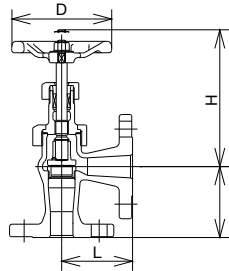
20K

Angle (Screw-down) Stop Check Valve

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: 15-40A
	FCD450	Color: Brown / Nominal diameter: 50A
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips:
Marked "C"/The cover is clearly marked
"Screw-down Stop Check Valve"



Nominal diameter (A)	15	20	25	32	40	50
L	70	75	85	95	100	120
H	125	140	160	165	185	205
D	80	100	120	120	140	180

Product Code

M20KFACO

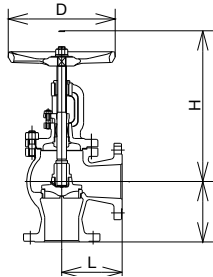
20K

Angle (Screw-down) Stop Check Valve

Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	S28C	Hard facing
Seat ring	S28C	Hard facing
Handwheel	FCMB340	Nominal diameter: 50-65A
	FCD450	Nominal diameter: 80A or lager
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips:
Marked "C"/The cover is clearly marked
"Screw-down Stop Check Valve"



Nominal diameter (A)	65	80	100
L	146	159	178
H	325	355	405
D	250	300	315

Product Code

M20KSC

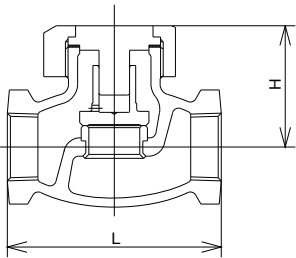
20K

Check Valve (Lift)

Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Gasket	H1215	
Spring	SUS304WPB	Nominal diameter: ⅔B

△Cover top: No marks
(Marked with "S" if a spring is contained)



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	70	75	90	105	120	135	160
H	44	49	51	58	66	75	86

Product Code

M20KFC

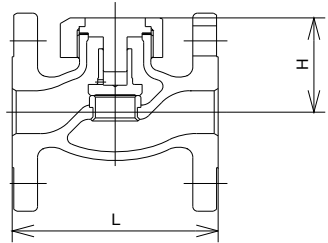
20K

Check Valve (Lift)

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Gasket	H1215	
Spring	SUS304WPB	Nominal diameter: 10A

△Cover top: No marks
(Marked with "S" if a spring is contained)



Nominal diameter (A)	10	15	20	25	32	40	50
L	100	110	120	130	160	180	230
H	44	49	51	58	66	75	86

Product Code

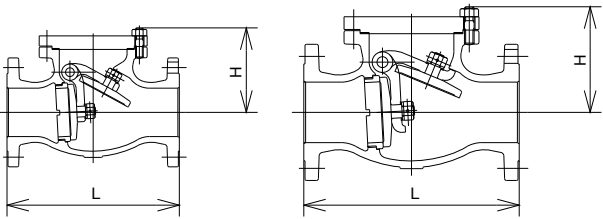
M20KFCS

20K

Check Valve (Swing)

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	SS400	
Disc	S28C	Hard facing
Seat ring	S28C	Hard facing
Hinge pin	SUS403	
Gasket	H1215	
Plug	S25C	



Nominal diameter (A)	40	50	65	80	100	125	150	200
L	241	267	292	318	356	400	444	533
H	120	140	150	160	175	215	235	275

Product Code

M20KSCD

20K

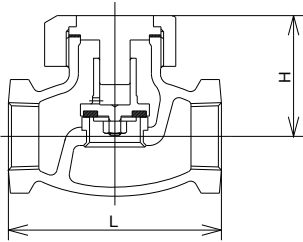
Check Valve (Lift)

Screwed

Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SUS403	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Gasket	H1215	
Spring	SUS304WPB	Nominal diameter: 3/8B

△Cover top: Marked with "D"
("DS" if a spring is contained)



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	70	75	90	105	120	135	160
H	44	49	51	58	66	75	86

Product Code

M20KFCD

20K

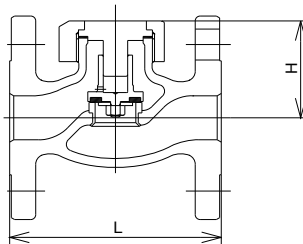
Check Valve (Lift)

Flanged

Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SUS403	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Gasket	H1215	
Spring	SUS304WPB	Nominal diameter: 10A

△Cover top: Marked with "D"
("DS" if a spring is contained)



Nominal diameter (A)	10	15	20	25	32	40	50
L	100	110	120	130	160	180	230
H	44	49	51	58	66	75	86

Product Code

M20KFCSD

20K

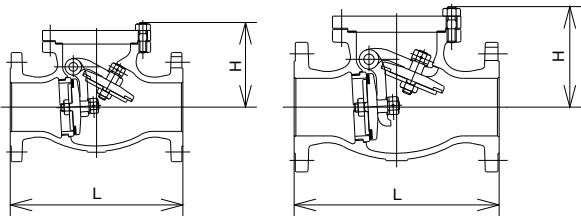
Check Valve (Swing)

Flanged

Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	S25C	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Hinge pin	SUS403	
Gasket	H1215	
Plug	S25C	

△Cover top: Marked with "D"



Nominal diameter (A)	40	50	65	80	100	125	150	200
L	241	267	292	318	356	400	444	533
H	120	140	150	160	175	215	235	275

Product Code

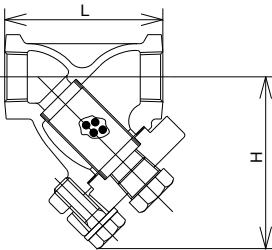
M20KST

20K

Strainer

Screwed

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Screen	SUS304	50 mesh
Gasket	H1215	
Plug	S20C	



Nominal diameter (B)	3/8	1/2	3/4	1	1¼	1½	2
L	70	75	90	105	120	135	160
H	60	70	85	100	145	160	175

Product Code

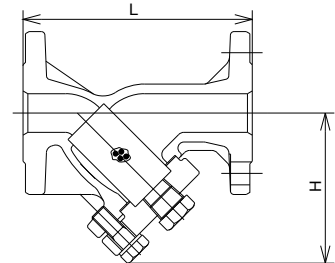
M20KFT

20K

Strainer

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Screen	SUS304	50 mesh
Gasket	H1215	
Plug	S25C	



Nominal diameter (A)	10	15	20	25	32	40	50
L	120	130	140	160	190	210	250
H	57	68	77	91	137	154	170

Product Code

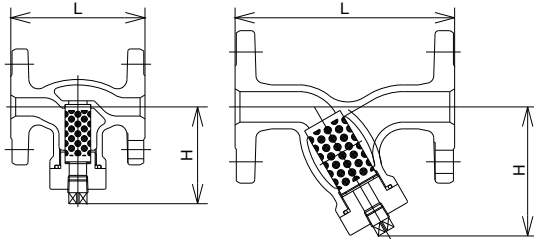
M20KFTLM

20K

Strainer for LPG

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	S45C	
Screen	SUS304	150 mesh
Plug	S25C	



Nominal diameter (A)	15	20	25
L	110	160	180
H	78	100	109

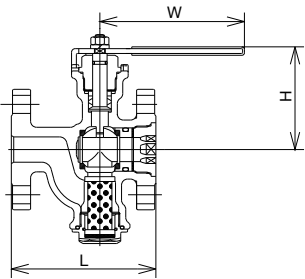
Product Code

BM20KFT

20K

Strainer Ball Valve for LPG Flanged

Product Name	Material	Remarks
Body	FCD-S	
Ball	SUS304	
Stem	SUS403	
Seat ring	PTFE	
Screen	SUS304	150 mesh
Handle	SUS430	PVC coating Color: Yellow
Gasket	Reinforced PTFE	
Gland Packing	PTFE	



Nominal diameter (A)	15	20	25
L	110	120	130
H	90	94.5	108
W	120	120	120

Product Code

BM20KFOLS

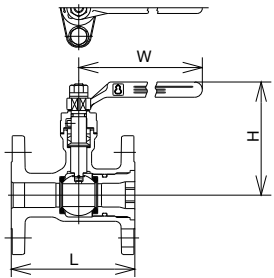
20K

Ball Valve for LPG Flanged

Short end-to-end dimension

Full bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	PTFE	
Seat retainer	SUS304	
Handle	FCMB340	Color: Green
O ring	NBR	
Gland Packing	PTFE	



Nominal diameter (A)	15	20	25
L	110	120	130
H	97	101	119
W	120	120	150

Product Code

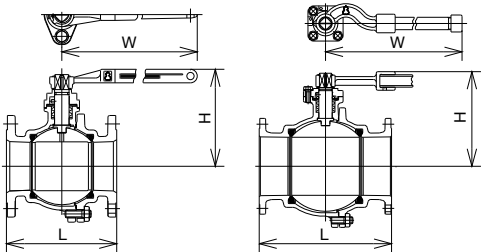
BM20KFOL

20K

Ball Valve for LPG Flanged

Full bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	PTFE	
Seat retainer	SUS304	
Handle	FCMB340	Color: Green / Nominal diameter: 15-80A
Handle boss + pipe	FCMB340+ STPG	Color: Green / Nominal diameter: 100A
Gasket	H1215	
Gland Packing	PTFE	



Nominal diameter (A)	15	20	25	32	40	50	65	80	100
L	140	152	165	178	190	216	241	283	305
H	76	80	103	108	125	133	145	185	226
W	120	120	150	150	220	220	220	400	800

Product Code

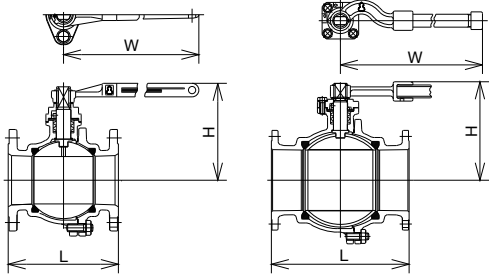
BM20KF0B

20K

Ball Valve Flanged

Full bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	FT Seat	
Handle	FCMB340	Color: Blue / Nominal diameter: 15-80A
Handle boss + pipe	FCMB340+ STPG	Color: Blue / Nominal diameter: 100A
Gasket	H1215	
Gland Packing	Reinforced PTFE	



Nominal diameter (A)	15	20	25	32	40	50	65	80	100
L	140	152	165	178	190	216	241	283	305
H	76	80	103	108	125	133	145	185	226
W	120	120	150	150	220	220	220	400	800

△ Indicator:
Blue/ Valve stem angle: widths across flats

Features

1. Can be used for a range of specifications since it is a general valve based on the 20K type.
2. Support for special fluids by exchanging the packing, gasket and main parts. Please consult with us separately. – We also undertake maintenance using genuine parts.
3. The main parts are made with 13cr stainless steel and can be used up to max. 650°F (343°C).
4. The 150lb type also supports threaded ends. Please refer to the ANSI B 1.20.1 (1983) American pipe thread specifications for dimensions of joints.

Product Types

Globe, Gate, Check, Bellows seal, Ball valves

Fluid•Temperature•Pressure

Unit: MPa

Service temperature limit by fluid Top row: °C Bottom row: °F		Oil, air, steam, pulsating water														LPG	City gas
		38 (100)	38 (100)	80 (176)	149 (300)	161 (321)	170 (338)	183 (361)	204 (400)	220 (428)	230 (446)	260 (500)	343 (650)	420 (796)	482 (900)		
Globe	Standard, needle	1.73 (250)			1.48 (215)				1.38 (200)				1.18 (170)	0.86 (125)			
	Reinforced PTFE disc	1.73 (250)			1.48 (215)			1.42 (206)									
	Bellows	1.37 (198)			1.37 (198)				1.37 (198)				1.18 (170)	0.86 (125)			
Check	Gate	1.73 (250)			1.48 (215)				1.38 (200)				1.18 (170)	0.86 (125)			
	Standard	1.73 (250)			1.48 (215)				1.38 (200)				1.18 (170)	0.86 (125)			
	Reinforced PTFE disc	1.73 (250)			1.48 (215)				1.38 (200)	1.32 (192)							
	NBR disc	1.73 (250)		1.38 (200)													
Ball	For general use	1.73 (250)	1.73 (250)			1.45 (210)	1.26 (183)	0.98 (142)			0.4 (58)					1.18 (171)	0.98 (142)
	For gas																

△Caution:

- A cobalt-base alloy (Co-Cr-W alloy) for the valve seat surface is recommended in case of use in the following conditions.
1. For steam piping with a nominal diameter of 150A (6B) or higher.
 2. For steam piping when the pressure is 0.98 MPa (10kgf/cm2) or higher, and the frequency of opening and closing is high.
 3. For use with fluids in a dry state.
 4. For piping for chemicals where corrosion resistance is required, and the main parts of the valve are 18Cr-8Ni stainless steel
- * Heat-resistant coating is recommended if the service temperature exceeds 180°C.
* Please consult with us separately for use below 14°F (-10°C).

Test Pressure

Unit: MPa

Test description	Body pressure resistance		Valve seat leakage		Back seat leakage
	Water pressure	Air pressure	Water pressure	Air pressure	Water pressure
Product Type					
Globe, needle, gate (inside thread) (14B or higher), check, ball valves	3.10 (450)		2.16 (314)		
Gate, globe valve (outside thread/ 12B or lower)	3.10 (450)		2.16 (314)		2.16 (314)
Bellows seal valve		0.98 (142)		0.98 (142)	
Ball valve for gas	3.10 (450)			2.16 (314)	



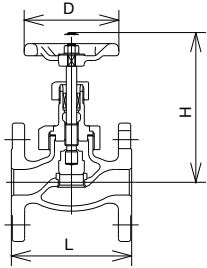
Product Code

M150FG

150lb

Globe Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	108	117	127	140	165	203
H	130	135	155	175	190	215
D	80	80	100	120	120	140

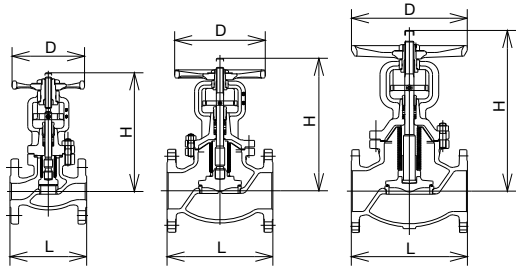
Product Code

M150FGO

150lb

Globe Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Nominal diameter: 2B-6B
	S28C	13Cr stainless deposit / Nominal diameter: 8B-10B
Seat ring	SUS403	Nominal diameter: 2B-6B
	S28C	Hard facing / Nominal diameter: 8-10B
Handwheel	FCD450	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	2	2½	3	4	5	6	8	10
L	203	216	241	292	356	406	495	622
H	295	325	355	390	435	505	595	690
D	224	224	250	300	315	355	400	450

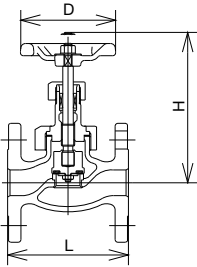
Product Code

M150FD

150lb

Globe Flanged Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	
Disc seat	Reinforced PTFE	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Orange
Gasket	H1215	
Gland Packing	H350+H2200	



△Name plate: PTFE display

Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	108	117	127	140	165	203
H	131	133	153	176	192	216
D	80	80	100	120	120	140

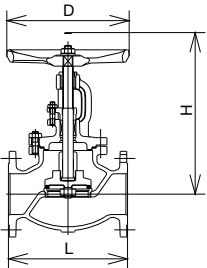
Product Code

M150FDO

150lb

Globe Flanged Reinforced PTFE disc OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	
Disc seat	Reinforced PTFE	
Seat ring	SUS403	
Handwheel	FCD340	Color: Orange
Gasket	H1215	
Gland Packing	H350+H2200	



△Name plate: PTFE display

Nominal diameter (B)	2	2½	3	4	5	6	8	10
L	203	216	241	292	356	406	495	622
H	295	335	365	405	455	530	630	732
D	224	224	250	300	315	355	400	450

Product Code

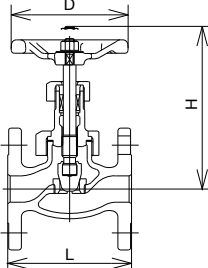
M150FN

150lb

Needle Valve Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB 340	Color: Blue / Nominal diameter: ½-1½B
	FCD450	Color: Blue / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips: Marked "N" /
The cover is clearly marked "Needle valve"



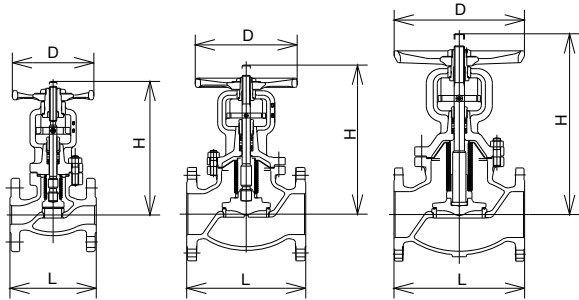
Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	108	117	127	140	165	203
H	135	145	170	180	200	230
D	80	100	120	120	140	180

M150FGB

150lb

Bellows Seal Valve Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS410	
Seat ring	SUS410	Hard facing
Disc	SUS304	Hard facing (Nominal diameter: 2B or less)
	A182-F304	Hard facing (Nominal diameter: 2½-4B)
	SCS1	Hard facing (Nominal diameter: 5B or more)
Bellows	SUS316L	
Handwheel	FCMB 340	Color: Black
Gasket	H1215	
Gland Packing	H350+H2200	



△The glands of the bellows seal valve are maintenance-free,
but since the cover bolts may loosen due to vibrations and heat stress,
they will need regular maintenance.

Nominal diameter (B)	1/2	3/4	1	1¼	1½	2	2½	3	4	5	6	8	10
L	108	117	127	140	165	203	216	241	292	356	406	495	622
H	181	191	196	208	243	253	278	328	365	421	487	609	754
D	100	100	120	120	160	180	224	224	250	300	355	400	450

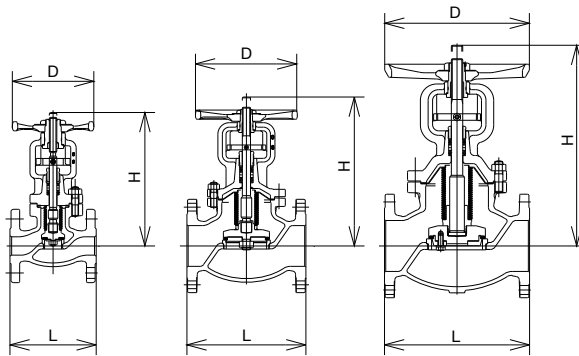
Product Code

M150FDB

150lb

Bellows Seal Valve Flanged Reinforced PTFE disc OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS410	
Seat ring	SUS410	
Disc seat	Reinforced PTFE	
Disc	SUS304	Nominal diameter: 2B or less-5B or more
	A182-F304	Nominal diameter: 2½-4B
Bellows	SUS316L	
Handwheel	FCMB340	Color: Black
Gasket	H1215	
Gland Packing	H350+H2200	



△The glands of the bellows seal valve are maintenance-free,
but since the cover bolts may loosen due to vibrations and heat stress,
they will need regular maintenance.

Nominal diameter (B)	1/2	3/4	1	1¼	1½	2	2½	3	4	5	6	8	10
L	108	117	127	140	165	203	216	241	292	356	406	495	622
H	181	191	196	208	243	253	278	328	365	421	487	609	754
D	100	100	120	120	160	180	224	224	250	300	355	400	450

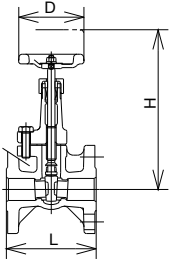
Product Code

M150FS

150lb

Gate Valve Flanged BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	1/2	3/4	1	1½
L	90	100	110	130
H	165	170	190	258
D	80	80	80	120

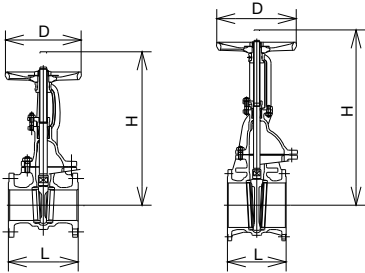
Product Code

M150FSO

150lb

Gate Valve Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	Nominal diameter: 1½-2½B
	SUS403	Nominal diameter: 3-8B
	S28C	13Cr stainless deposit / Nominal diameter: 10·12B
Seat ring	SUS403	
Handwheel	FCD450	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	1½	2	2½	3	4	5	6	8	10	12
L	165	178	190	203	229	254	267	292	330	356
H	315	360	425	480	580	675	780	985	1195	1410
D	160	180	180	224	250	300	300	315	450	560

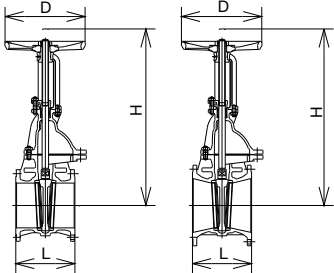
Product Code

D150FSO

150lb

Gate Valve Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCPH2	13Cr stainless deposit
Seat ring	S28C	Hard facing
Handwheel	FCD450	Color: Blue
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	14	16	18	20
L	381	406	432	457
H	1610	1855	1610	1855
D	630	710	630	710

Product Code

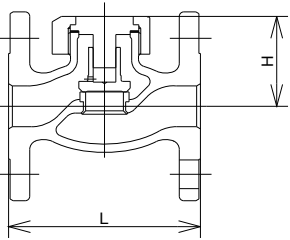
M150FC

150lb

Check Valve (Lift) Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	
Seat ring	SUS403	
Gasket	H1215	

△Cover top: No marks
(Marked with "S" if a spring is contained)



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	108	117	127	140	165	203
H	51	54	61	69	77	89

Product Code

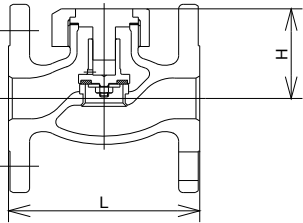
M150FCD

150lb

Check Valve (Lift) Flanged Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	Reinforced PTFE	
Gasket	H1215	

△Cover top: Marked with "D"
("DS" if a spring is contained)



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	108	117	127	140	165	203
H	51	54	61	69	77	89

Product Code

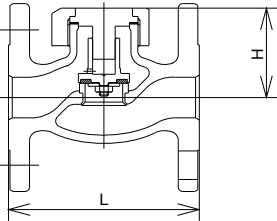
M150FCR

150lb

Check Valve (Lift) Flanged NBR disc seat

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	
Seat ring	SUS403	
Disc seat	NBR	
Gasket	H1215	

△Cover top: Marked with "R"
("RS" if a spring is contained)



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	108	117	127	140	165	203
H	51	54	61	69	77	89

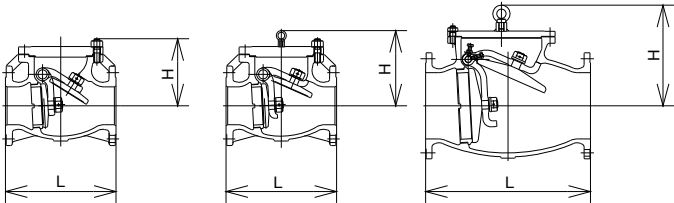
Product Code

M150FCS

150lb

Check Valve (Swing) Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	SS400	
Disc	SUS403	Nominal diameter: 1½-4B
	S25C	13Cr stainless deposit / Nominal diameter: 5-12B
Seat ring	SUS403	
Hinge pin	SUS403	
Gasket	H1215	
Plug	S20C	Nominal diameter: 1½-8B
	SUS403	Nominal diameter: 10·12B



口径 (B)	1½	2	2½	3	4	5	6	8	10	12
L	165	203	216	241	292	330	356	495	622	698
H	118	126	146	161	176	250	270	330	390	450

Product Code

BM150F0B

150lb

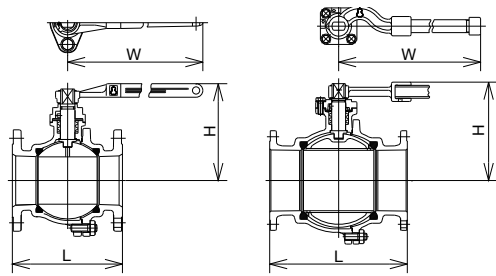
Ball Valve for General Use

Flanged

Full bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	FT seat	
Handle	FCMB340	Color: Blue / Nominal diameter: 2½-4B
Handle boss + pipe	FCMB340+STPG	Color: Blue / Nominal diameter: 5-8B
Gasket	H1215	
Gland Packing	Reinforced PTFE	

△Indicator:
Blue/ Valve stem: widths across flats



Nominal diameter (B)	2½	3	4	5	6	8
L	190	203	229	292	394	457
H	151	186	202	243	262	321
W	220	320	400	800	1000	1200

Product Code

BM150F1B

150lb

Ball Valve for General Use

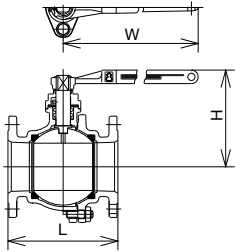
Flanged

Full bore

Fire-safe Mechanism

Product Name	Material	Remarks
Body	FCD-S	
Ball	SCS13A	
Stem	SUS403	
Seat ring	FT seat	
Stainless steel sheet	SUS304	
Handle	FCMB 340	Color: Blue
Gasket	H1215	
Gland Packing	Reinforced PTFE	

△Indicator:
Black/ Valve stem: widths across flats,
Marked with "1"



Nominal diameter (B)	2½	3	4
L	190	203	229
H	151	186	202
W	220	320	400

Product Code

BM150F0L

150lb

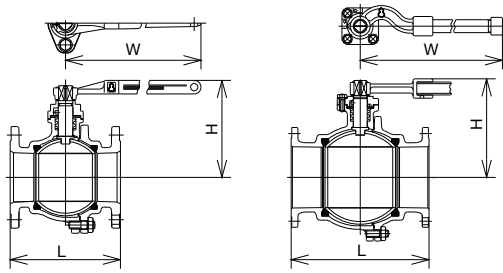
Ball Valve for Gas

Flanged

Full bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SUS304	
Stem	SUS403	
Seat ring	PTFE	
Handle	FCMB340	Color: Blue Nominal diameter: 2½-4B
Handle boss + pipe	FCMB340+STPG	Color: Blue / Nominal diameter: 5-8B
Gasket	H1215	
Gland Packing	PTFE	

△Indicator: Green/ Valve stem angle: square



Nominal diameter (B)	2½	3	4	5	6	8
L	190	203	229	292	394	457
H	151	186	202	243	262	321
W	220	320	400	800	1000	1200

* Usable for LPG to -5°C.

Product Code

BM150F0G

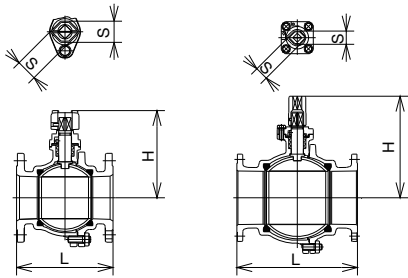
150lb

Ball Valve for Gas (buried pipe)

Flanged

Full bore

Product Name	Material	Remarks
Body	FCD-S	
Ball	SUS304	
Stem	SUS403	
Seat ring	PTFE	
Handle boss	FCD450	Nominal diameter: 2½-6B
	FCMB340	Nominal diameter: 8B
Gasket	H1215	
Gland Packing	PTFE	



口径 (B)	2½	3	4	5	6	8
L	190	203	229	292	394	457
H	164	186	202	244	263	384
S	50	50	50	50	50	50

* Usable for LPG to -5°C.

Features

1. The main parts are made with 13cr stainless steel and can be used for hot fluids up to max. 650°F (344°C).
2. Support for special fluids by exchanging the packing, gasket and main parts. We also undertake maintenance using genuine parts at any time.

Product Types

Globe, Gate, Check, Needle, Bellows seal valves

Fluid•Temperature•Pressure

Unit: MPa (psi)

Service temperature limit by fluid Top row: °C Bottom row: °F Maximum working pressure by product type		Steady water flow		Oil, air, steam, pulsating water					LPG	
		38 (100)	121 (250)	232 (450)	288 (550)	343 (650)	38 (100)	80 (176)		
		2.90 (420)	2.76 (400)	2.62 (380)	2.38 (345)	2.07 (300)			2.90 (420)	2.83 (410)
Globe	Standard, needle									
	PTFE disc									
Gate	Bellows	2.50 (363)		2.50 (363)	2.40 (345)	2.10 (300)				
	Standard, for high temperatures	2.90 (420)	2.76 (400)	2.62 (380)	2.38 (345)	207 (300)				
Check	Standard, Screw-down stop check	2.90 (420)	2.76 (400)	2.62 (380)	2.38 (345)	2.07 (300)				
	PTFE disc								2.90 (420)	2.83 (410)

*Please consult with us separately in case of use below 14°F (-10°C).

Test Pressure

Unit: MPa (psi)

Test description Product Type	Body pressure resistance		Valve seat leakage		Back seat leakage
	Water pressure	Air pressure	Water pressure	Air pressure	Air pressure
Globe, needle, gate, check valve	4.31 (626)		3.14 (456)		
Bellows sael valve		2.50 (363)		2.50 (363)	
Globe valve for LPG		2.75 (400)		2.75 (400)	2.75 (400)
Check valve for LPG		2.75 (400)		2.75 (400)	

Product Code

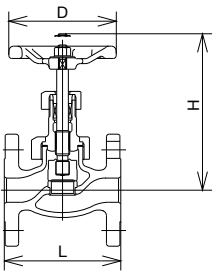
M300FG

300lb

Globe Valve

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: ½-1½B
	FCD450	Color: Brown / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	110	120	130	160	180	230
H	135	145	170	180	195	225
D	80	100	120	120	140	180

Product Code

M300FGO

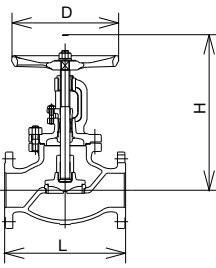
300lb

Globe Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	S28C	Hard facing / Nominal diameter: 2½-8B
	S25C	Hard facing / Nominal diameter: 10B
Seat ring	S28C	Hard facing
Handwheel	FCMB340	Nominal diameter: 2½B
	FCD450	Nominal diameter: 3B or larger
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	2½	3	4	5	6	8
L	292	318	356	400	444	559
H	355	390	445	515	595	685
D	250	300	315	355	400	450

Product Code

M300FDL

300lb

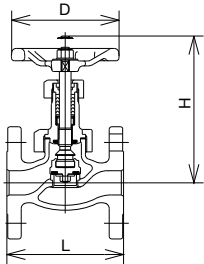
Globe Valve for LPG

Flanged

Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	
Disc seat	PTFE	
Seat ring	SUS403	
Handwheel	FCMB340	Color: Green / Nominal diameter: ½-1½B
	FCD450	Color: Green / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H2661-V	

△Name plate: PTFE display



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	110	120	130	160	180	230
H	135	145	170	180	200	230
D	80	100	120	120	140	180

Product Code

M300FDLO

300lb

Globe Valve for LPG

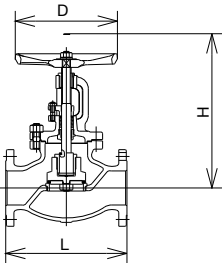
Flanged

Reinforced PTFE disc

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	
Disc seat	PTFE	
Seat ring	SUS403	
Handwheel	FCMB340	Nominal diameter: 2½B
	FCD450	Nominal diameter: 3B or larger
Gasket	H1215	
Gland Packing	H2661-V	

△Name plate: PTFE display



Nominal diameter (B)	2½	3	4	5	6	8
L	292	318	356	400	444	559
H	365	395	440	515	580	685
D	224	250	300	315	400	450

Product Code

M300FN

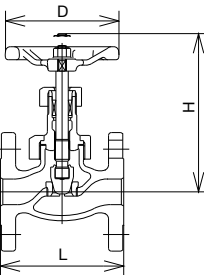
300lb

Needle Valve

Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: ½-1½B
	FCD450	Color: Brown / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips:
Marked "N" / Fitted with metal tag clearly marked
"Needle valve"



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	110	120	130	160	180	230
H	135	145	170	180	200	230
D	80	100	120	120	140	180

Product Code

M300FNO

300lb

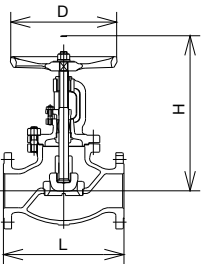
Needle Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Nominal diameter: 2½B
	FCD450	Nominal diameter: 3B or larger
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips: Marked "N" /
The cover is clearly marked "Needle valve"



Nominal diameter (B)	2½	3	4	5	6
L	292	318	356	400	444
H	365	405	445	515	595
D	224	250	300	315	355

Product Code

M300FGB

300lb

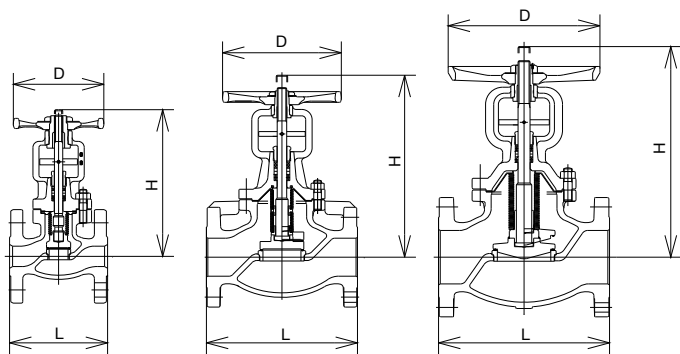
Bellows Seal Valve

Flanged

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS410	
Seat ring	SUS410	Hard facing
Disc	SUS304	Hard facing (Nominal diameter: 2B or less)
	A182-F304	Hard facing (Nominal diameter: 2½-4B)
	SCS1	Hard facing (Nominal diameter: 5B)
Bellows	SUS316L	
Handwheel	FCMB340	Color: Black
Gasket	H1215	
Gland Packing	H350+H2200	

△The glands of the bellows seal valve are maintenance-free,
but since the cover bolts may loosen due to vibrations and heat stress,
they will need regular maintenance.



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2	2½	3	4	5	6	8	10
L	110	120	130	160	180	230	292	318	356	400	444	559	622
H	181	191	196	208	243	253	309	377	402	491	562	713	869
D	100	100	120	120	160	180	224	250	300	355	400	450	560

Product Code

M300FDB

300lb

Bellows Seal Valve

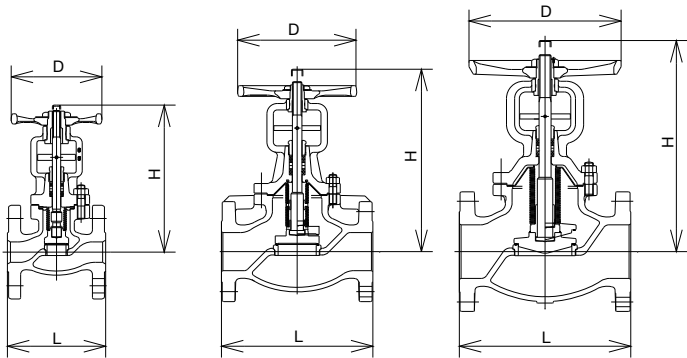
Flanged

Reinforced PTFE disc

OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS410	
Seat ring	SUS410	
Disc seat	Reinforced PTFE	
Disc	SUS304	Nominal diameter: 2B or less•5B or more
	A182-F304	Nominal diameter: 2½-4B
Bellows	SUS316L	
Handwheel	FCMB340	Color: Black
Gasket	H1215	
Gland Packing	H350+H2200	

△The glands of the bellows seal valve are maintenance-free,
but since the cover bolts may loosen due to vibrations and heat stress,
they will need regular maintenance.



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2	2½	3	4	5	6	8	10
L	110	120	130	160	180	230	292	318	356	400	444	559	622
H	181	191	196	208	243	253	309	377	402	491	562	713	869
D	100	100	120	120	160	180	224	250	300	355	400	450	560

Product Code

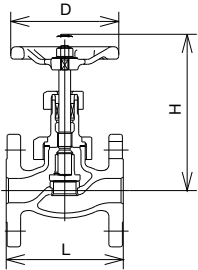
M300FGC

300lb

(Screw-down) Stop Check Valve Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Handwheel	FCMB340	Color: Brown / Nominal diameter: ½-1½B
	FCD450	Color: Brown / Nominal diameter: 2B
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips:
Marked "C"/Fitted with metal tag clearly
marked "Screw-down stop check valve"



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	110	120	130	160	180	230
H	135	145	170	180	195	225
D	80	100	120	120	140	180

Product Code

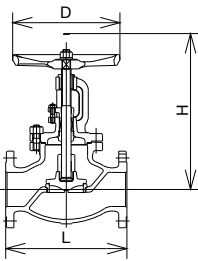
M300FGCO

300lb

(Screw-down) Stop Check Valve Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Disc	S28C	Hard facing
Seat ring	S28C	Hard facing
Handwheel	FCMB340	Nominal diameter: 2B-2½B
	FCD450	Nominal diameter: 3B or larger
Gasket	H1215	
Gland Packing	H350+H2200	

△Valve stem tips:
Marked "C"/Fitted with metal tag clearly
marked "Screw-down stop check valve"



Nominal diameter (B)	2½	3	4	5
L	292	318	356	400
H	365	400	455	520
D	250	300	315	355

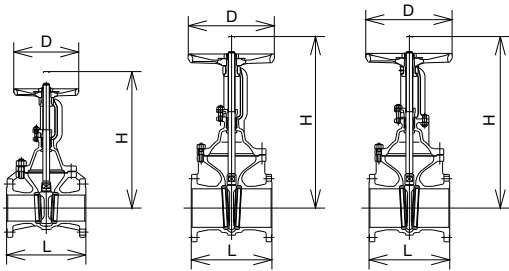
Product Code

M300FSO

300lb

Gate Valve Flanged OS and BB type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	Nominal diameter: 1·1½-2½·5-8B
	SUS403	Nominal diameter: 1¼·3·4B
	SCPH2	13Cr stainless deposit / Nominal diameter: 10·12B
Seat ring	SUS403	
Handwheel	FCD450	Color: Brown
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	1	1¼	1½	2	2½	3	4	5	6	8	10	12
L	165	178	190	216	241	283	305	381	403	419	457	502
H	281	300	328	383	442	502	591	698	819	1026	1238	1440
D	160	160	160	180	180	224	250	300	315	450	560	630

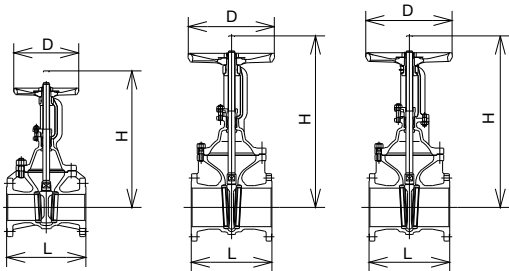
Product Code

M300FSHO

300lb

Gate Valve Flanged OS and BB type Heating Medium type

Product Name	Material	Remarks
Body	FCD-S	
Cover	FCD-S	
Stem	SUS403	
Wedge	SCS1	Hard facing / Nominal diameter: 1·1½-2½·5-8B
	SUS403	Hard facing / Nominal diameter: 1¼·3· 4B
	SCPH2	Hard facing / Nominal diameter: 10-12B
Seat ring	SUS403	Hard facing / Nominal diameter: 1-4B
	S28C	Hard facing / Nominal diameter: 5-12B
Handwheel	FCD450	Color: Brown
Gasket	H1215	
Gland Packing	H350+H2200	



Nominal diameter (B)	1	1¼	1½	2	2½	3	4	5	6	8	10	12
L	165	178	190	216	241	283	305	381	403	419	457	502
H	281	300	328	383	442	502	591	698	819	1026	1238	1440
D	160	160	160	180	180	224	250	300	315	450	560	630

△Instructions: FSHO display

Product Code

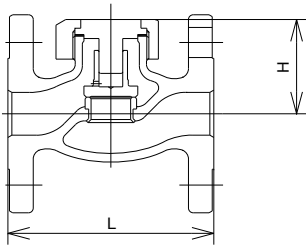
M300FC

300lb

Check Valve (Lift) Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc	SUS403	Hard facing
Seat ring	SUS403	Hard facing
Gasket	H1215	

△Cover top: No marks
(Marked with "S" if a spring is contained)



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	110	120	130	160	180	230
H	49	51	58	66	75	86

Product Code

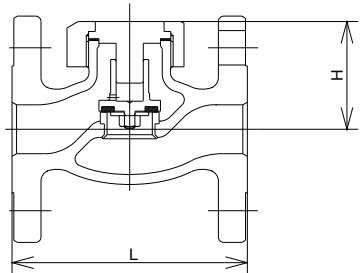
M300FCD

300lb

Check Valve (Lift) Flanged Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	SCS1	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Gasket	H1215	

△Cover top: Marked with "D"
("DS" if a spring is contained)



Nominal diameter (B)	1/2	3/4	1	1¼	1½	2
L	110	120	130	160	180	230
H	49	51	58	66	75	86

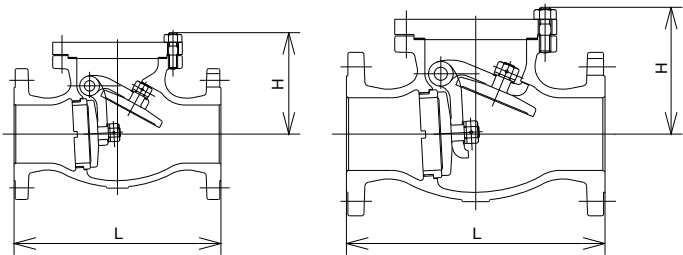
Product Code

M300FCS

300lb

Check Valve (Swing) Flanged

Product Name	Material	Remarks
Body	FCD-S	
Cover	SS400	
Disc	S28C	Hard facing
Seat ring	S28C	Hard facing
Hinge pin	SUS403	
Gasket	H1215	
Plug	S25C	Nominal diameter: 2-4B
	SUS403	Nominal diameter: 5-8B



Nominal diameter (B)	2	2½	3	4	5	6	8
L	267	292	318	356	400	444	533
H	145	155	175	200	235	265	295

Product Code

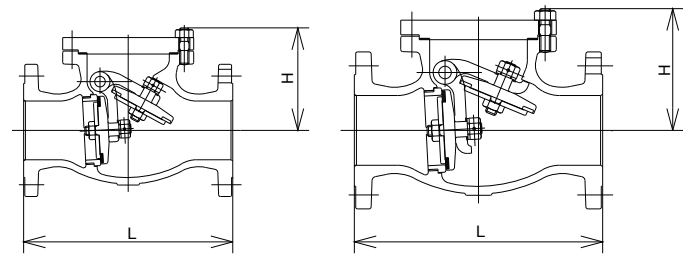
M300FCSD

300lb

Check Valve (Swing) Flanged Reinforced PTFE disc

Product Name	Material	Remarks
Body	FCD-S	
Cover	S25C	
Disc seat	PTFE	
Disc	SUS403	
Seat ring	SUS403	
Hinge pin	SUS403	
Gasket	H1215	
Plug	S25C	Nominal diameter: 2-4B
	SUS403	Nominal diameter: 6-8B

△Cover top: Marked with "D"

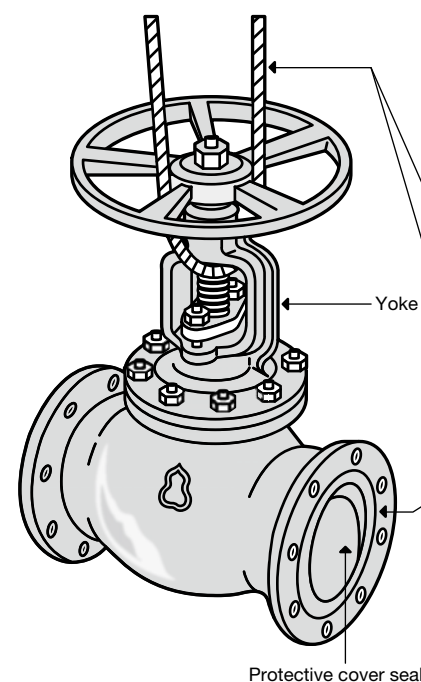


Nominal diameter (B)	2	2½	3	4	5	6	8
L	267	292	318	356	400	444	533
H	145	155	175	200	235	265	295

For correct usage

Classification	Definition of indication	Contents
Caution	Caution	Please follow the instructions, as failure to do so could result in physical injury or property damage.
Prohibition	Prohibition	Please follow the instructions.
Instruction	Compulsion	Please follow the instructions.

1 Before usage



To start with, confirm that the product is the correct one for the place of use. If there has been an exchange of specifications for delivery, confirm that the product complies with the specifications.

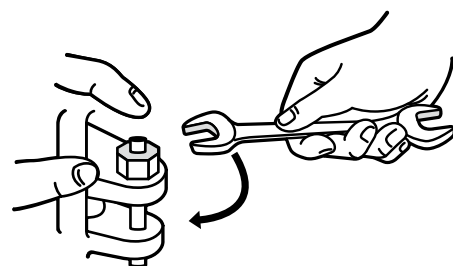
When moving a valve with a large diameter, loop a rope around the valve body or the yoke to lift it.

Do not attach the rope to the handwheel. Make sure the valve does not topple and bash the handwheel. The valve stem may bend making it impossible to open and close the valve.

Please keep the valve in its original packaging until use. To prevent foreign matter from entering the valve, the protective plugs or seals at either end of the valve must not be removed until immediately before installation. The valve must not be stored in the open air even for short periods of time, but indoors in a place with low humidity and little dust.

* The interior of the valve on swing check valves is filled with packing material to fix the valve disc in place. Please remove the packing before installation.

When unpacking the valve, only retighten the packing and gaskets before use. Do not take the valve apart or exchange any parts.

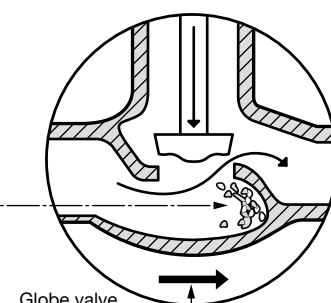
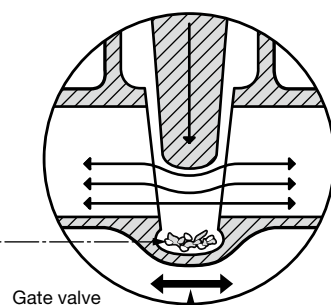
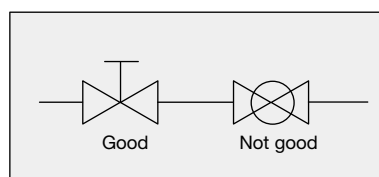


2 Installation

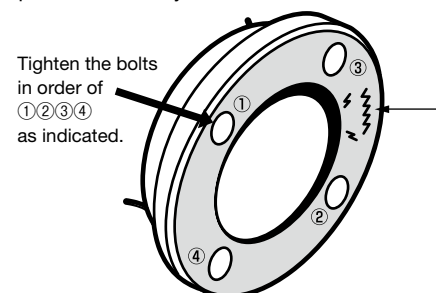
Please clean the piping thoroughly to remove welding spatter, pipe chips, scale, sand or other foreign matter since they may cause the valve seat to leak.

Globe valves, check valves or other valves with an arrow on the valve body indicating flow direction must comply with the flow direction of the fluid when installed.
As a rule, there are no restrictions on flow direction for gate valves and ball valves.

In case of horizontal piping, gate valves should be installed in a vertical position as indicated in the diagram below.



In case of screwed valves also, avoid applying excess sealant to the threads. Be sure to always screw the valve into place by applying a wrench to the hexagonal ends of the valve body. Do not apply the wrench to the body of the valve body, or hold the handwheel when screwing the valve into place as this may cause leaks or other faults.



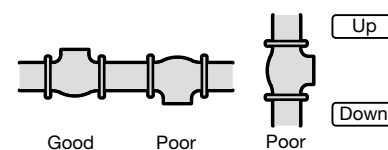
In case of flanged valves, confirm that there are no harmful defects on the gasket contact surface of the valve body pipe flange. In case of coating the gasket with sealant, please be aware that excess coating may cause the valve seat to leak. When installing the valve, tighten the flange evenly while making sure the gasket does not protrude into the aperture.

For correct usage

Since the installation position is normally specified for check valves, screw-down stop check valves, strainers etc., please install these valves as specified.

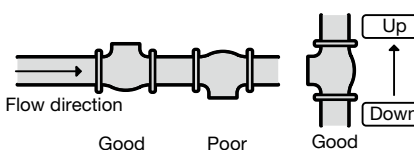
● Lift check valve, screw-down stop check valve

Install the valve in a vertical position on horizontal piping.

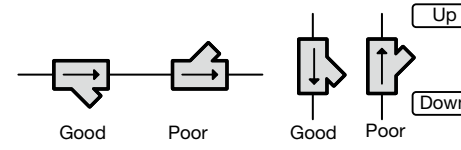


● Swing check valve

Can be used for both vertical and horizontal piping.

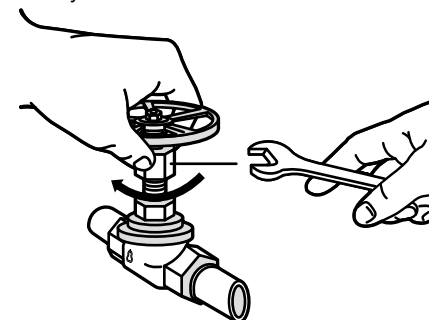


● Strainer



3 When starting use

With the exception of the 20K globe valve for LPG, please retighten the gland packing of all valves before allowing fluids to pass. The valves are inspected at the factory before shipping and appropriate compression is applied to the gland packing, but the compression decreases due to stress relaxation in the time before actual use. As a result, retightening is necessary as the valves are more susceptible to leakage compared to factory default.

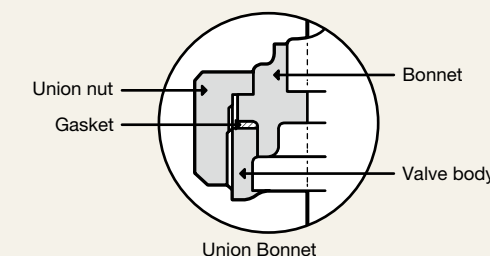


Simply tightening the packing gland nut makes the handwheel heavier to turn, but does not tighten the packing. For a good result, tighten the nuts several times and in stages, while rotating the handwheel and maintaining a snug fit with the valve stem.

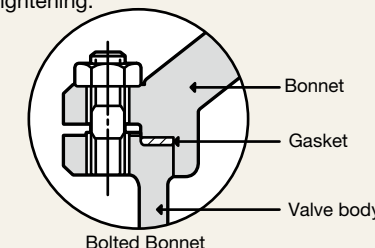
In case the fittings between the valve body and the bonnet (the gasket) leak when fluid passes through, be sure to retighten this part.

If neglected, leak paths will form and retightening will no longer stop the leaks.

In case of a union bonnet, there is risk of damage to the gasket if the union nut and the bonnet rotate together, so any tightening should be done as smoothly as possible and no more than 1/8 of a rotation at a time.



In case of a bolted bonnet, be sure to evenly tighten each nut to avoid uneven tightening.

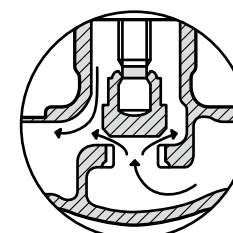


Tightening torque table for bonnet nuts in the M20K inside screw globe valve

Nominal diameter (A)	10	150N·m
15	200	
20	250	
25	300	
32	400	
40	600	
50	750	

Retighten with the valve in an intermediate position, or fully open. (Retightening when the valve is fully closed, may damage the valve seat or other parts.)

Do not tighten the handwheel abruptly and hard when fully closing the valve, but close the valve gently at first, then open it slightly to allow the moving fluid to flush away any foreign matter around the seat before tightening the handwheel. This will have the effect of preventing leaks caused by foreign matter.

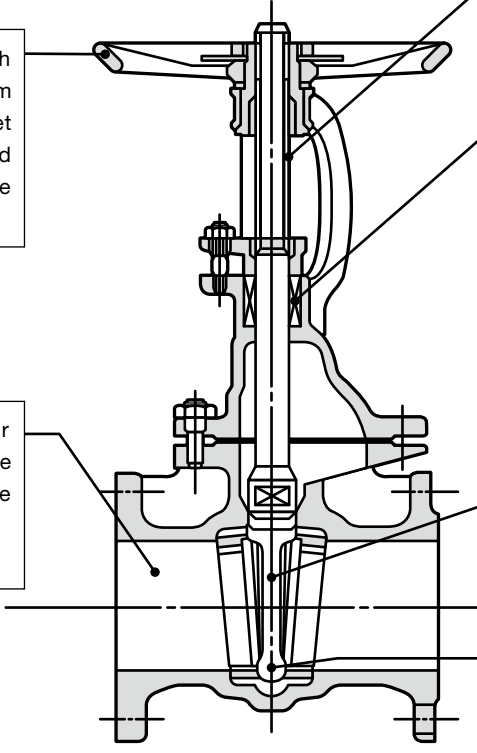


When shipping globe valves, gate valves or bellows Seal valves, the disc is fixed in place by gently closing the valve to keep the disc from rattling.

In case of pressure inspection after plumbing, or in case of actual use, be sure to turn the handwheel a little to open the valve before closing it again.

If pressure is applied to the valve as shipped, there may be seat leakage as the valve is not tightly closed. Using the valve as is will cause leak paths to form at the seat, and closing the valve tightly will no longer stop the leaks.

4 Caution when operating the valve



⚠ Do not apply excessive force with auxiliary handles etc. The valve stem may bend, or the valve disc may get stuck, making it difficult to open and close the valve. Please request the limit torque chart separately.

⚠ If the frequency of use is high, the trapezoidal screw threads may start to slip. Please lubricate regularly.

⚠ Since the packing may loosen during use, be sure to regularly retighten, refill, replace or otherwise maintain the valves. Please consult Hitachi Valve for maintenance methods.

⚠ In case of leaks in the fittings between the valve body and the bonnet (the gasket), be sure to retighten this part.

⚠ In case leaks do not stop after tightening at the specified torque, the likely cause is foreign matter in the valve, or galling. Please check the interior of the valve.

! Gate valves should be fully open or fully closed during use. If the valve is partially open during use, the valve disc may vibrate and the seat may be damaged.

⚠ If an inside screw gate valve of 50A or less is used with a steam line, the "valve disc sticking" illustrated in the figure below may occur. Please use globe valves in these cases.

⚠ If globe valves and angle valves are extremely throttled, the high velocity fluid will hit the seat or the valve body, and may cause mechanical corrosion (erosion). If throttling is required, we recommend using needle valves.

Close off the valve by pushing in the valve disc while in a hot state.

The valve does not open

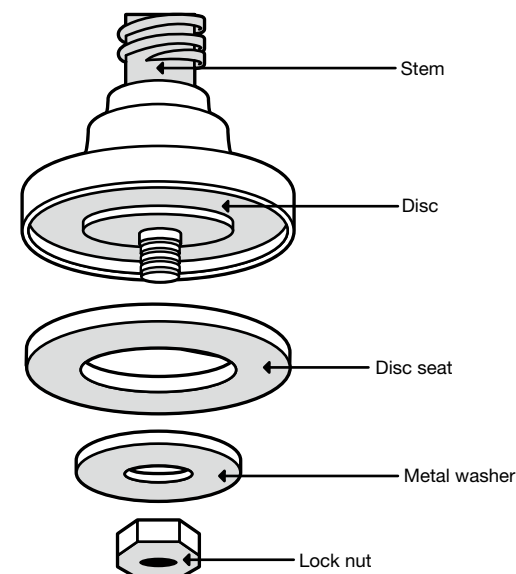
After the valve has cooled, it is difficult to open because the body retains a firm hold on the valve disc.

The valve is closed off The valve is open

5 How to replace discs

⚠ Replacement discs are available from Hitachi Valve. Please follow these guidelines when replacing discs.

- (1) Open the valve and completely release the internal fluid pressure before dismantling the valve by using a wrench to undo the hexagonal nuts on the bonnet.
- (2) The valve disc assembly is shown in the figure on the right, so replacing the disc is simple. It is important not to scratch the disc at this time.
- (3) Clean the valve seat in the body before assembling the valve.
- (4) When assembling the valve, be sure to apply liquid packing to the connecting thread on the bonnet.



6 Changing the packing on a 20K globe valve for LPG

Replacing the packing

- (1) Clean the stem where packing slides.
- (2) Release any residual pressure in the valve.
- (3) Dismantle the valve from the bonnet.
- (4) Clean the packing box and valve stem.
- (5) Install the packing in the packing box.
- (6) Assemble the valve.

Assembly guidelines

- (1) Install the packing in the packing box.
- (2) Insert the valve stem with the valve disc in the bonnet, and close fully. Take care not to scratch the V packing.
- (3) Install the bonnet with the valve stem in the body.
- (4) Tighten the bonnet gland nuts with the specified torque.
- (5) Attach the handwheel to finish.

⚡ Be absolutely sure not to scratch the valve stem or the inside of the valve disc packing box during disassembly.

- Coat the packing seat and the V packing with silicon oil or grease.
- Refer to the diagram in Fig. 7 and use your fingers to carefully and evenly assemble the packing box. (To avoid scratching the V packing at insertion.)
- Apply even more pressure with the packing gland ring and after everything has settled in place, evenly tighten the nut. Refer to the retightening guidelines for outside thread models. With inside thread models, the packing gland ring touches the bonnet and the nut is tightened as far as it goes.

⚡ Take care not to scratch the V packing when inserting the valve stem from below

1 Remove the handwheel

2

3 Remove the packing gland

4

5

6 From the bonnet

7 Outside screw model

Inside screw model