

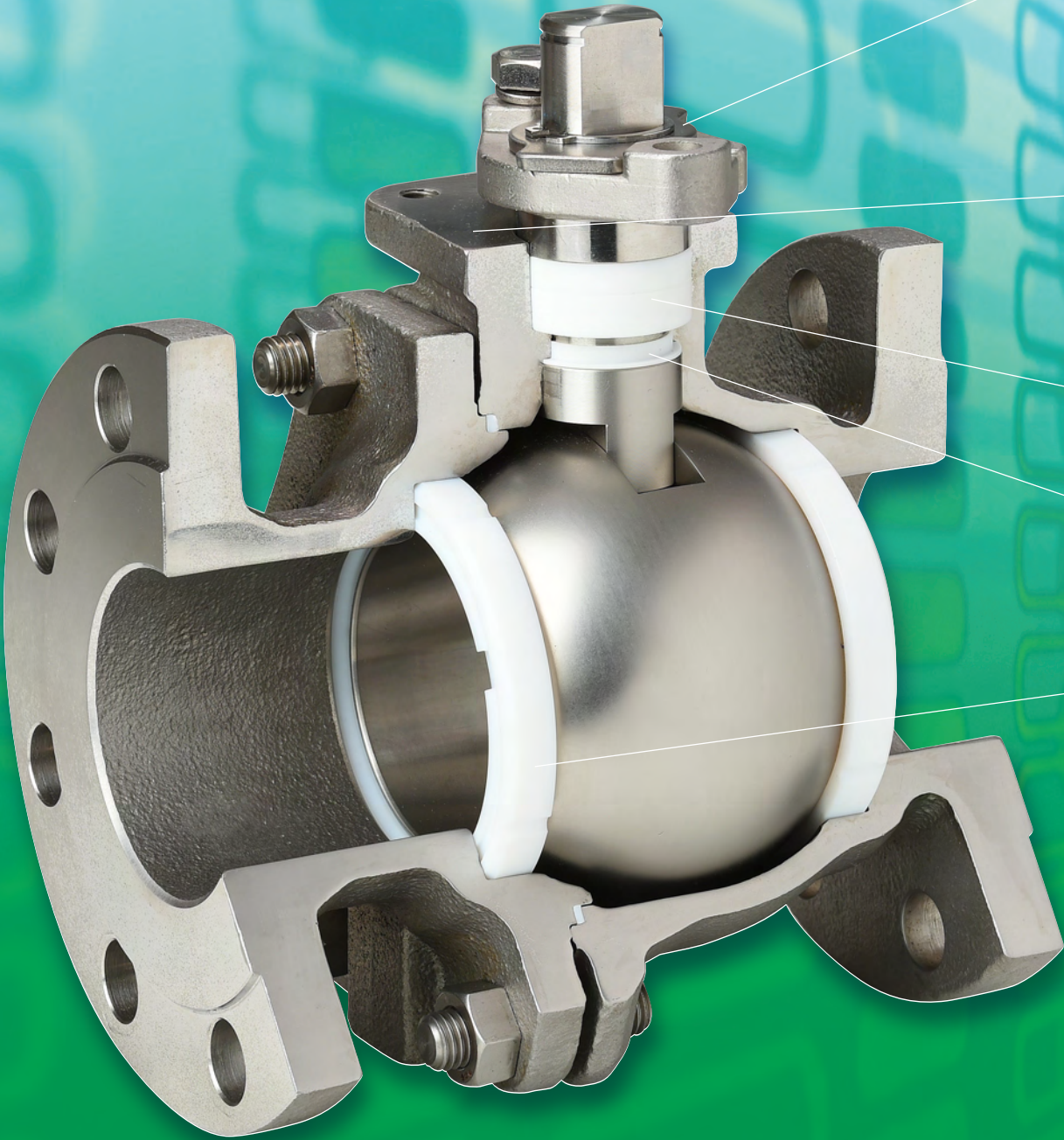
HF5

FLANGED ENDS FLOATING BALL VALVE



HISAKA WORKS, LTD.

HISAKA Floating Ball Valve can be availed for utility to process application in various industrial fields.



Locking Device(option)
This device can lock operation by key at 2 positions full open & full close to prevent mis-operation.



Flange for Mounting Actuator
For the automation, it is un-necessary to remove the bolt on pressurized gland part. It means that can be installed and uninstalled actuator without stopping fluid. For some makers, gland tightening bolts (pressurized part) combined with installation bolt of actuator. And it is easy for re-tightening bolts as another merit point.

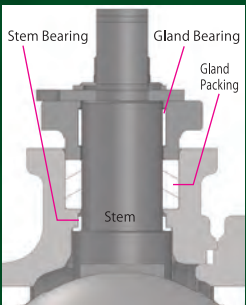
Gland Packing
Original designed trichotomy PTFE gland packing can restrain heat efficiency, and get stable seal performance.

Stem Bearing
HAT type bearing absorbs radial and thrust load and it makes smooth operation.

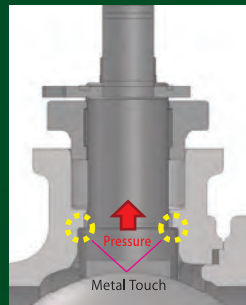
Ball Seat
This model adopted "MAXTITE PTFE" is that has high chemical resistance and creep resistance for high temp. And it is possible to install other various special ball seat, such as PEEK, LP(Low Penetration), BR(with back seat), R4(Carbon Filled R.PTFE) and so on.

Fire Safe Structure
HF5 has a structure that prevents excessive leakage even if the ball seat, gasket, gland packing is burned out by trouble.

Anti-Blow-Out Stem

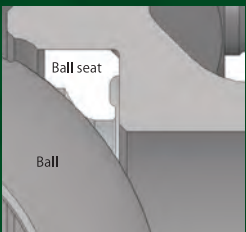


Normal condition

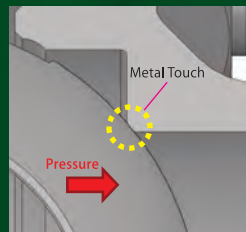


After burnt out gland packing

Secondary Metal Seat

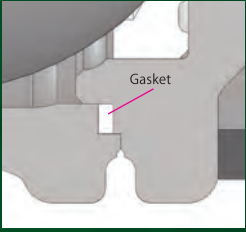


Normal condition

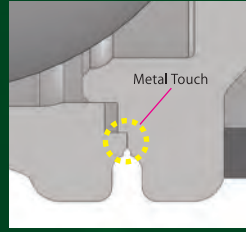


After burnt out ball seat

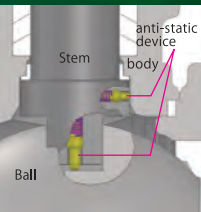
Metal Touch Body Seals



Normal condition

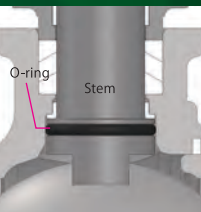


After burnt out gasket



Anti-Static Device(option)

If it is generated static electricity by friction of ball and seat, can be installed anti-static device for protection to keep static electricity in valve.



Double Sealing for Gland (Option)

With install O-ring at gland part, it can get double sealing PTFE packing and rubber O-ring. There are several kinds of O-ring materials can be selected depend on operation conditions.

Optional devices

- Oil Free
- Water Free
- Buffing
- Electrolytic Polishing
- Beveling Port
- Ceramic Lining
- PTFE Coating($t=40\mu m$)
- Passivation Treatment
- Isonite Treatment
- Long Bonnet
- Extension Bonnet(connector)
- Flushing Nozzle
- Special Painting

PRODUCTION RANGE

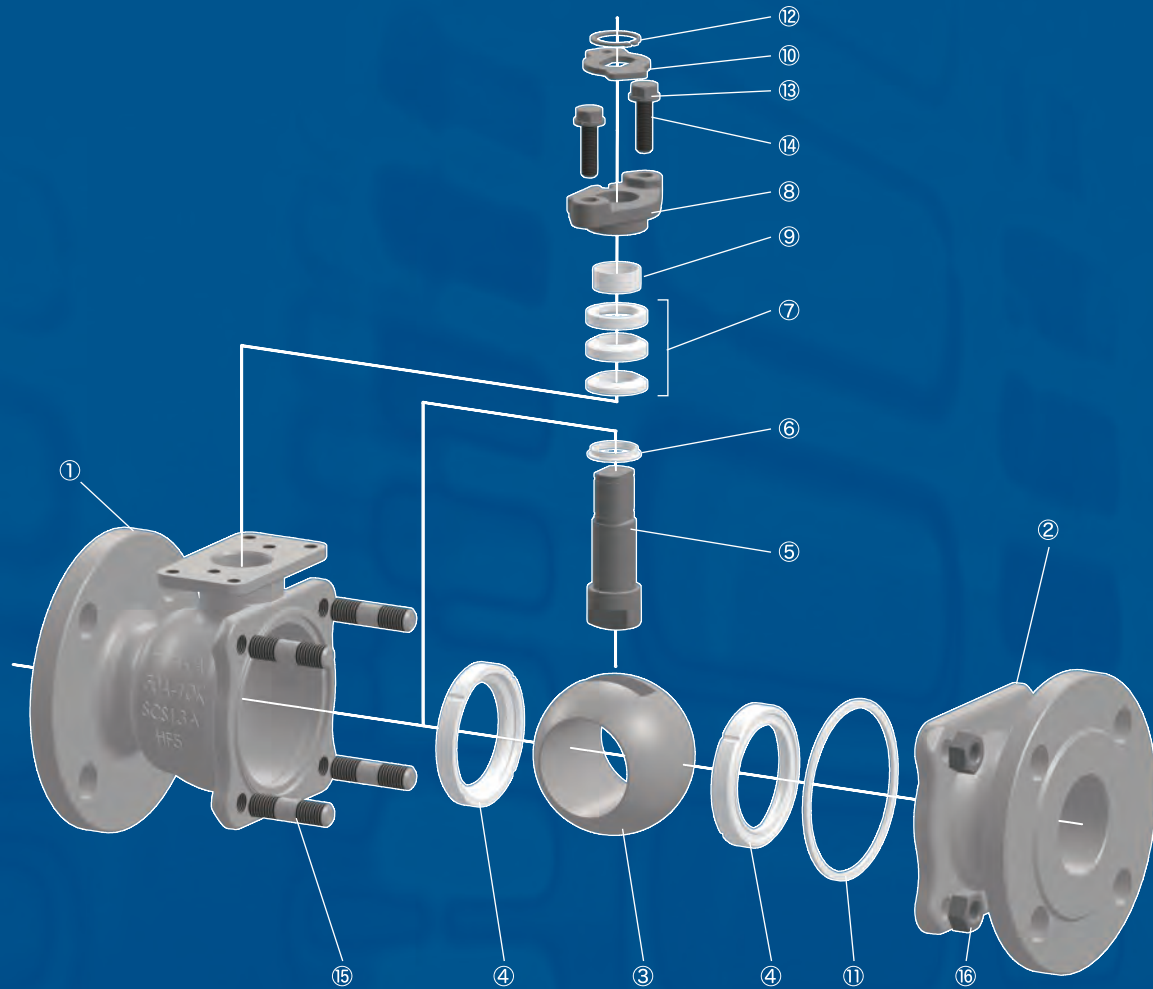
SIZE: 15A(1/2") ~ 300A(12")
RATING: JIS10K, JIS20K, JIS30K, ASME CLASS150, CLASS300
MATERIAL: STAINLESS (JIS SCS13A, SCS14A, SCS16A),
(ASTM A351 CF8, CF8M, CF3M)
CARBON STEEL (ASTM A216 WCB)
CAST IRON (FC200), DUCTILE IRON (FCD450)

*MAXIMUM SIZE DEPENDED ON BODY RATING OR MATERIAL.

APPLICABLE STANDARD

BASIC DESIGN: ASME B16.34/API Spec.6D
F-F DIMENTION: ASME B16.10/JIS B2002
*CLASS150-125A(5") Hisaka's standard
FLANGE: ASME B16.5/JIS B2220/JIS B2239
FIRE SAFE: API607-4th
INSPECTION: ASME B 16.34/JIS B2003

STRUCTURE AND MATERIAL



■STANDARD BALL SHAPE

TYPE	SOLID	CORE CAVITY	HOLLOW
SPEC.	SCS/WCB 15A~100A FC200/FCD450 15A~40A	SCS/WCB 125A~300A FC200/FCD450 250A	SCS/WCB — FC200/FCD450 50A~200A
APPEARANCE			

※Combinations other than the above will also correspond.

No.	PARTS NAME	CLASS	JIS10K	JIS20K	CLASS150		CLASS300		JIS10K	
			CLASS150	CLASS300						
1	BODY	SCS13A/CF8	SCS14A/CF8M	SCS16A/CF3M	WCB	FC200	FCD450			
2	BODY CAP	SCS13A/CF8	SCS14A/CF8M	SCS16A/CF3M	WCB	FC200	FCD450			
3	BALL	SUS304	SUS316	SUS316L	SUS304	SUS304	SUS304			
4	BALL SEAT	MAXTITE PTFE	MAXTITE PTFE	MAXTITE PTFE	MAXTITE PTFE	PTFE	PTFE			
5	STEM	SUS304	SUS316	SUS316L	SUS403	SUS403	SUS403			
6	STEM BEARING	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE			
7	GLAND PACKING	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE			
8	GLAND CAP	SCS13A/CF8	SCS16A/CF3M	SCS16A/CF3M	SCS13A/CF8	FCD450	FCD450			
9	GLAND BEARING	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE			
10	STOPPER	SUS304	SUS304	SUS304	SUS304	SUS304	SUS304			
11	GASKET	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE			
12	SNAP RING	SUS304	SUS304	SUS304	SK5	SK5	SK5			
13	BOLT	SUS304	SUS304	SUS304	S45C	SS400	S45C			
14	SPRING WASHER	SUS304	SUS304	SUS304	SWRH 62A	SWRH 62A	SWRH 62A			
15	STUD BOLT	SUS304	SUS304	SUS304	S45C	SS400	S45C			
16	NUT	SUS304	SUS304	SUS304	S45C	SS400	S45C			

※The above materials are representative materials.

BALL SEAT SPECIFICATIONS AND FEATURES

STANDARD



PTFE(W)
Excellent sealing property and Chemical resistance
Application HF5(Cast Iron, Ductile Iron)
HS5(Ductile Iron)
H45



MAXTITE PTFE(MT)
Excellent in high temperature creep resistance,
sealing property and Chemical resistance
Max. Temp. 260°C
Application HF5(Stainless Steel, Carbon Steel), HS5(Stainless Steel)
HF5ST(for 1 MPa), HS5ST

SPECIAL



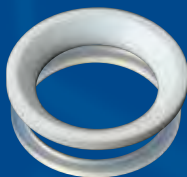
CARBON FIBER REINFORCED PTFE(R4)
Improved mechanical strength and abrasion resistance



PEEK(Poly Ether Ether Ketone)
High mechanical strength thermostability and chemical resistance
with the exception of concentrated sulfuric acid

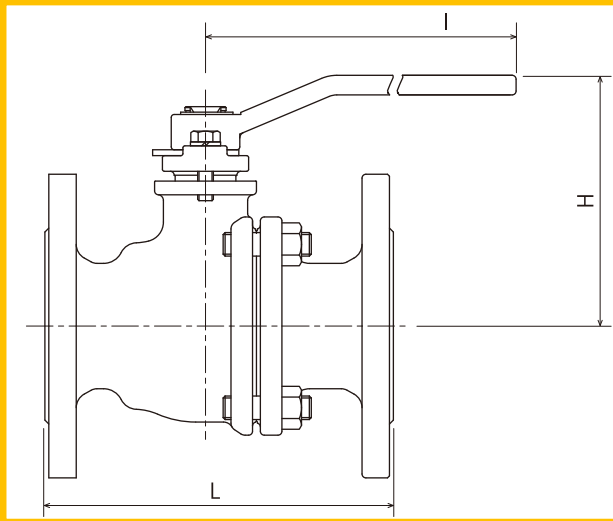


LP SEAT (Low Penetration White Seat)
Almost free from voids, extremely low permeability,
polymerization preventing, long product age.
Excellent in sealing property , low torque property
and Chemical resistance



BR SEAT
Most suitable for powder and pellet.
Sillicon rubber back seat optimizes operating torque.

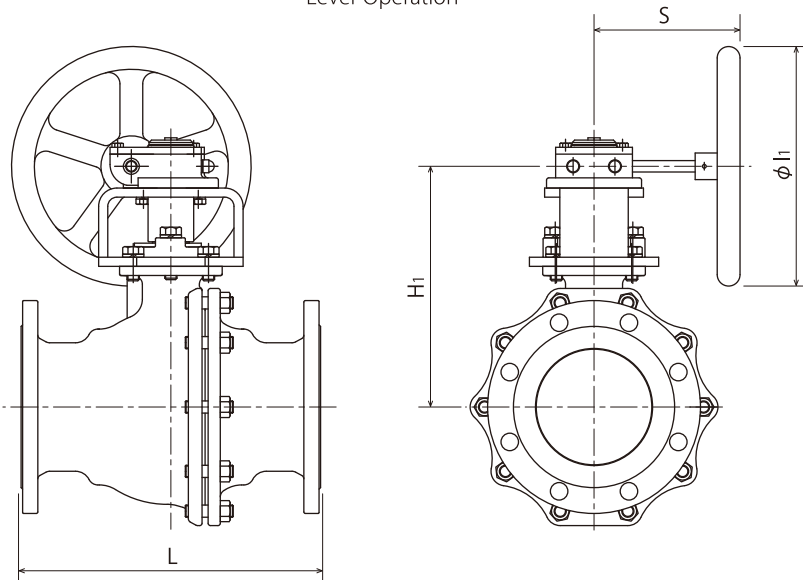
EXTERNAL DIMENSION



Lever Operation

JIS10K-CLASS150

SIZE			LEVER OPERATION			GEAR OPERATION			
A	B	PORT	L	H	I	H ₁	I ₁	E	S
15	1/2	13	108	85	120	—	—	—	—
20	3/4	19	117	88	120	—	—	—	—
25	1	25	127	121	150	—	—	—	—
32	1-1/4	32	140	126	150	—	—	—	—
40	1-1/2	38	165	126	200	—	—	—	—
50	2	51	178	128	250	—	—	—	—
65	2-1/2	64	190	135	300	—	—	—	—
80	3	76	203	154	350	—	—	—	—
100	4	102	229	175	400	—	—	—	—
125	5	127	320	290	700	297	300	52	252
150	6	152	394	310	1,000	317	300	52	252
200	8	203	457	375	1,500	379	600	71	317
250	10	254	533	—	—	441	800	86	355
300	12	305	610	—	—	512	800	130	387



Gear Operation

JIS20K-CLASS300

SIZE			LEVER OPERATION			GEAR OPERATION			
A	B	PORT	L	H	I	H ₁	I ₁	E	S
15	1/2	13	140	85	120	—	—	—	—
20	3/4	19	152	88	120	—	—	—	—
25	1	25	165	121	150	—	—	—	—
32	1-1/4	—	—	—	—	—	—	—	—
40	1-1/2	38	190	126	200	—	—	—	—
50	2	51	216	128	250	—	—	—	—
65	2-1/2	64	241	135	300	—	—	—	—
80	3	76	283	154	350	—	—	—	—
100	4	102	305	233	550	—	—	—	—
125	5	127	381	290	1,000	284	300	52	252
150	6	152	403	310	1,500	318	600	71	317
200	8	203	502	375	2,000	374	800	86	305
250	10	254	533	—	—	452	800	130	387

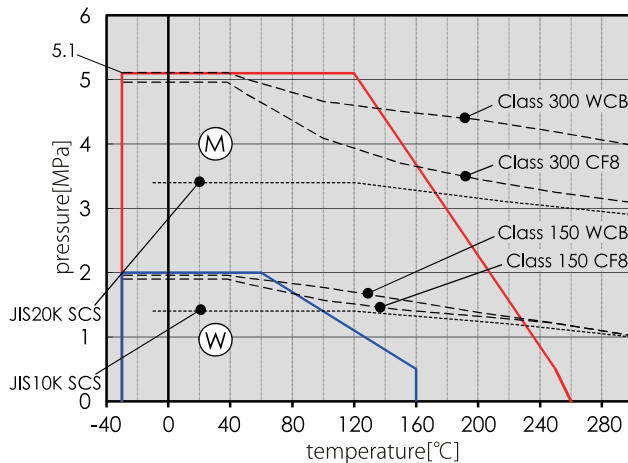
APPROX. WEIGHT

SIZE			JIS10K-CLASS150					JIS20K-CLASS300	
A	B	SCS13A CF8 WCB	Lever Operation		SCS13A CF8 WCB	Gear Operation		Lever Operation	Gear Operation
			FC200	FCD450		FC200	FCD450	SCS13A CF8 WCB	
15	1/2	2.2	2.6	2.2	—	—	—	2.7	—
20	3/4	2.8	3.2	2.8	—	—	—	3.9	—
25	1	4.3	5.0	4.3	—	—	—	5.3	—
32	1-1/4	5.6	6.3	—	—	—	—	—	—
40	1-1/2	7.2	8.0	7.3	—	—	—	9.5	—
50	2	9.5	9.7	9.6	—	—	—	12.8	—
65	2-1/2	14.8	14.6	15.0	—	—	—	20.4	—
80	3	19.1	17.6	18.8	—	—	—	27.8	—
100	4	29.6	25.4	27.9	—	—	—	45.6	—
125	5	49.8	51.4	49.4	56.4	58.0	56.0	89.0	99.0
150	6	64.4	67.4	65.4	71.0	74.0	72.0	119	139
200	8	108	111	107	124	127	123	202	232
250	10	—	—	—	235	280	—	—	355
300	12	—	—	—	370	415	—	—	—

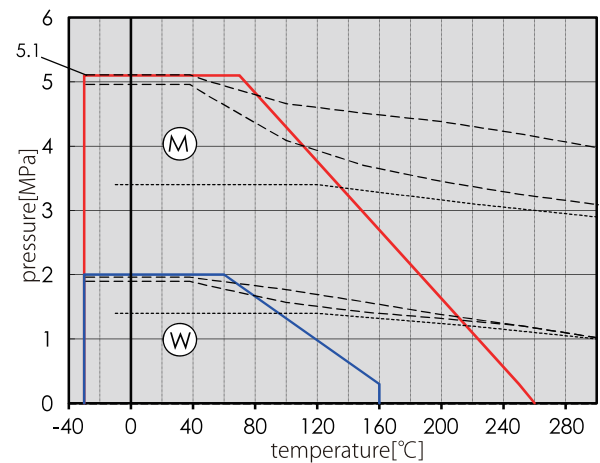
PRESSURE/TEMPERATURE RATING

The allowable range of pressure and temperature of ball valves shall satisfy both body rating specified by nominal pressure (class) and seat rating of ball seat material.

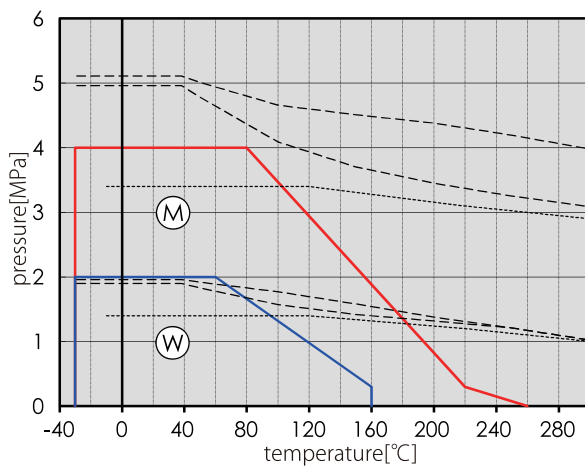
Valve Size 15A(1/2B) ~ 65A(2-1/2B)



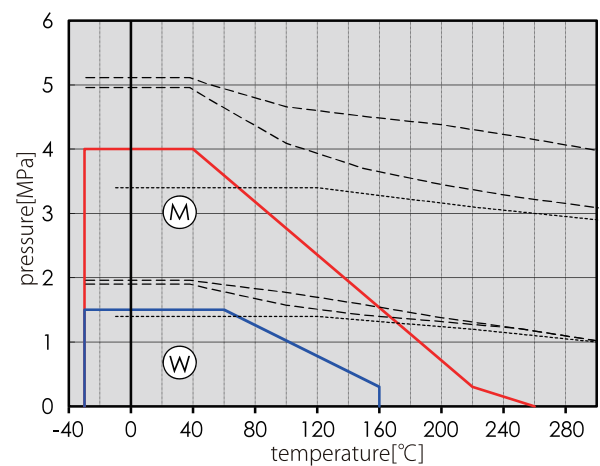
Valve Size 80A(3B) ~ 100(4B)



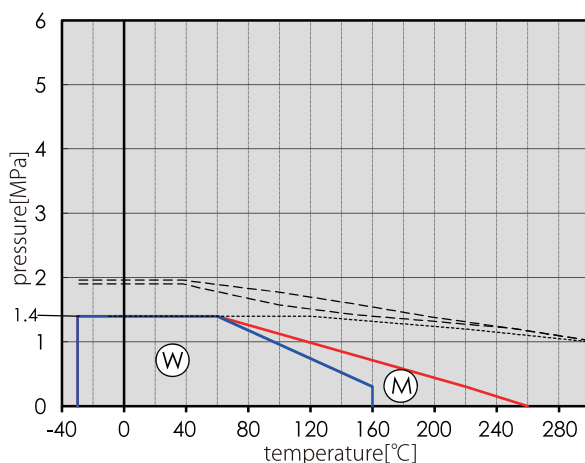
Valve Size 125A(5B) ~ 150A(6B)



Valve Size 200A(8B) ~ 250A(10B)



Valve Size 300A(12B)



• MARK

- (W) — PURE PTFE(W)
- (M) — MAXTITE PTFE(MT)
CARBON FILLED PTFE(R4)
- JIS 10K/20K BODY RATING
- ASME Class150/300 BODY RATING

Precautions concerning handling of Hisaka ball valve

■Precautions for use

[For the usage]

- Please never modify and remodel the product. ⚠
- The durability of products is changable as the operation condition.
- Please check tightness of nut and a grand bolts for the flange before operation. Because the tightness of them are came loose by the characteristic of packing material during storage and transportation.
- Please never use in corrosive gases atmosphere. If it is used in like this condition, there is possibility to happen corrosion.
- In case of product storage for long term, you should keep in the place having low humidity.
- Please never put the load on the product, and don't used for scaffolding.
- The products has been protected by cover and dust-proof seal to let the foreign matter such as dirt into the valve and actuator. Please don't remove the dust seal and cover after opening package till before piping. Especially oil free products and special cleaned products pay attention rust and dust means atmosphere. And be careful and never forget removing the dustseal! ⚠
- Secure a space for installation with safely and easily to operate and do the maintainance..
- Avoid to install in place where the function of valve might be inhibited by vibration and external force.
- If install product in place where have riskiness of inundation by rain water, buring by snow and freezing, please make the appropriate measures !
- Please use the piping gasket that conformable connection standard of valve. Please pay attention that some valves have different diameter of valve size and flange size such as Jacket valve.
- In case of using for the application of Oxygen, Hydrogen Peroxide and Solvents, it is neccessary special treatment and specification. Please contact us for details !

[For the piping support]

- Please make supports for the valve body or besides of valve on piping due to protect heavy loading weight with valve operation and own weight.
- Please make sure that the strength of piping support around the valve. It will be caused leakage from flange connection with valve's weight.
- If be exposed to radiant heat, please take measures such as providing a shield plate.
- In case of caused expand and contract of piping with up & down of temperature, take measure to absorb expansion and contraction!

[Consumable parts]

- Please use the genuine parts for the consumable parts such as ball seat.

[Before operation]

- Please use the soft seat valve always at full open or full close. The ball seat will be transformed and it will be caused of leakage or operation problem, if use for half open..
- The maximum operating torque of the worm gear's handle will be less than 294N (30kg). If it is operated by the excessive load, worm gear might be broken.

[Re-tightening bolts]

- If be found the leakage from the seal part with daily inspection, relief the pressure of valve and re-tighten these bolts. If the leakage does not stop even after re-tightening, then it is necessary to replace the seal material.
- In case of using valve at high temperature condition, re-tighten the nut and bolts after the temperature rise to operation temperature.
- For re-tighten the gland bolts, pressure will be decreased to atmospheric pressure firstly and make the gland to be level with tighten the gland bolts by equal force.
- Please use offset wrench for re-tightening nut of the middle flange for safety work.

[For freezing] ⚠

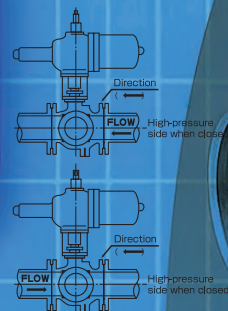
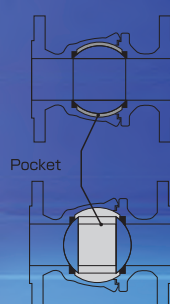
In case of cast iron (FC200, FCD450) material valve, fluid inside valve is freezed and might be broken the valve body in the coldest season. If there is possibility to freeze as the above, removing the residual fluid or improvement for influence of freezing.

[Phenomenon of increasing pressure abnormally] ⚠

If the liquid fluid has the temperature hunting, the fluid in the pocket (the part between ball & body) will be expanded and increased pressure to abnormal range by the thermal expansion, and it will cause to deform of ball seat and operation trouble. Please never use cast iron material(FC200, FCD450) body on like this line, because it is dangerous to explode valve body. Please refer the following measures. Please contact to our company for more details.

- ①Please make grooves on the ball seat of higher-pressure side, when the valve is closed. (But this seat can be used for 1-way flow direction.)
- ②Please use the trunnion type ball valve.

If the piping is enclosed condition(Piping enclosed by shut off valve) and liquid is fluid, the enclosed fluid rised pressure to abnormal range by rising the fluid or ambient temperature. About this increasing pressure, can not measure in valve side. Please perform appropriate measures such as an installation of pressure relief valve for the piping design, or improve operating sequence and procedure not to generate enclosed piping line.



For direction and high pressure side

●ISO 14001 CERTIFIED FACTORY
●ISO 9001 CERTIFIED FACTORY

●HIGH PRESSURE GAS AUTHORISED FACTORY
●API CERTIFIED FACTORY

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