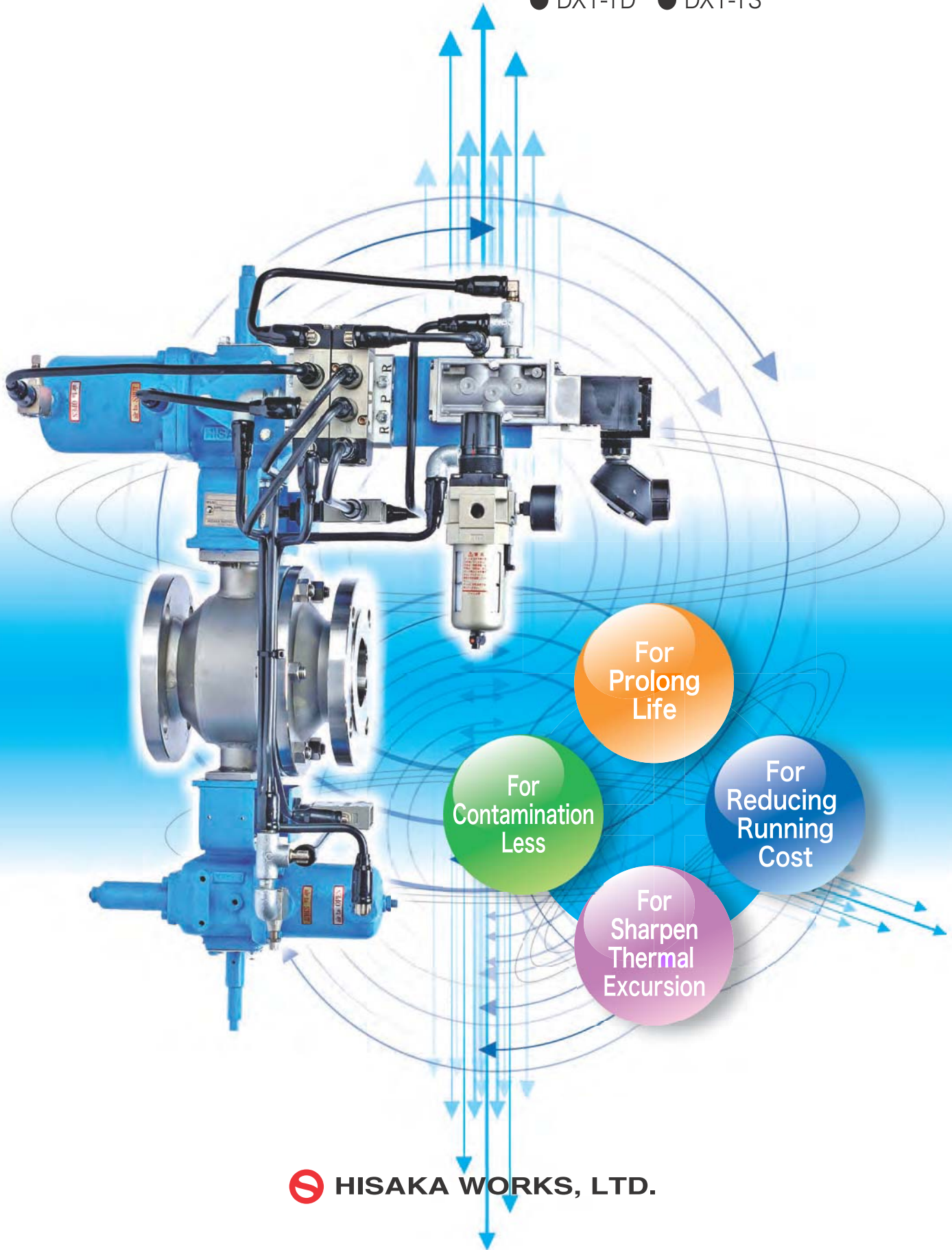




Friction-free Ball Valve

Duax BALL VALVE

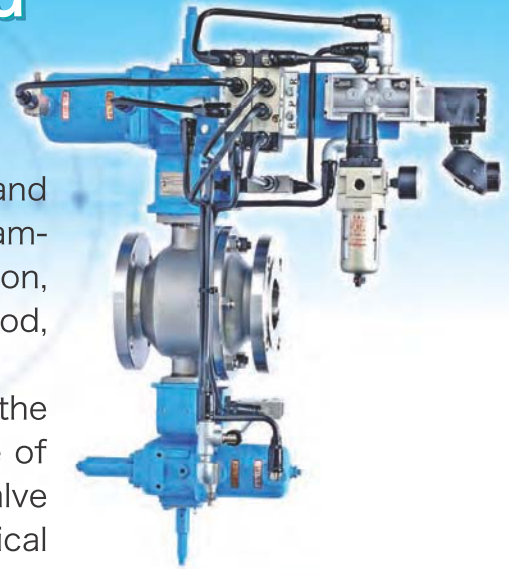
● DX1-TD ● DX1-TS



Duax is an epoch-making ball valve that ball and ball seat are not touched at operation timing.

In case of using general ball valve for powder line and high frequency operation line, ball and ball seat are damaged and happened leakage, easily. Under this condition, customer will be done maintenance for a short period, and it's costing.

Duax was developed "friction-free ball & ball seat at the time of operation" due to reduce these cost with one of the conception. This model is an epoch making valve (patent granted). Duax has high safety and economical performance, and it's possibility to get high efficiency



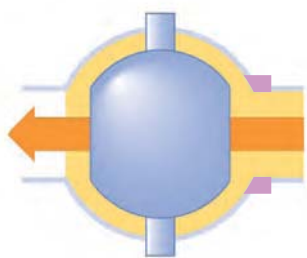
Characteristic



Duax is suitable for high frequency line of pneumatic conveying system and slurry fluid, because ball is not touched with ball seat at operation timing. There are not fear of biting any fluid material between ball & ball seat. With this design, durability is enhanced and can be reduced maintenance cost.

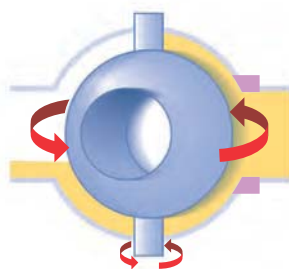


With friction-free design for ball & ball seat at operation timing, there are not a fear to happen infection worn powder of ball seat (PTFE, Rubber, Metal seat and so on). Therefore it is suitable for application that is required high safety, the food additive line, fine chemical for example.



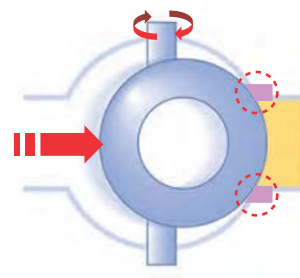
① Ball & Ball seat are not touched.

Full Open



② Ball rotate with non-touch condition.

Rotating



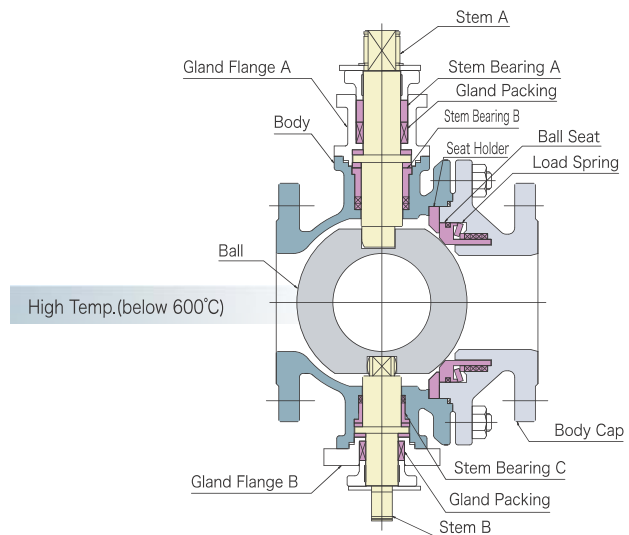
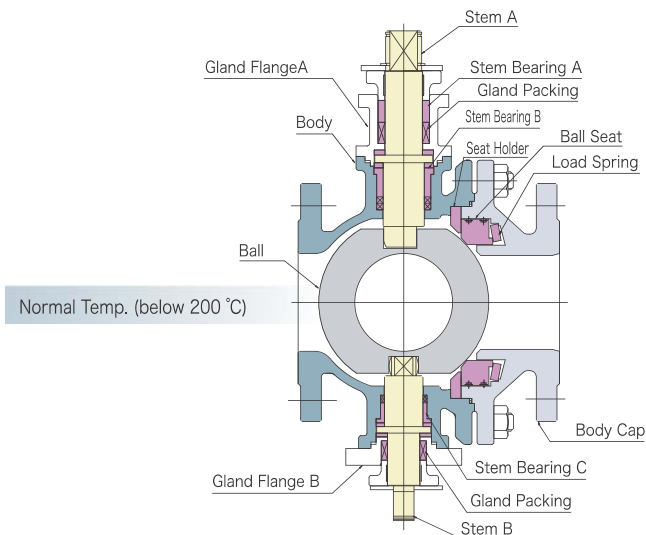
③ Ball pushed to ball seat with cam action after rotating ball.

Full Close - Pushing & Sealing

Please scan this code with bar code reader of mobile phone, then it will be able to see the animation for the action of Duax. It can be used smart phone or mobile phone that have "Flash" feature only. Please refer the instruction manual of your mobile ph..

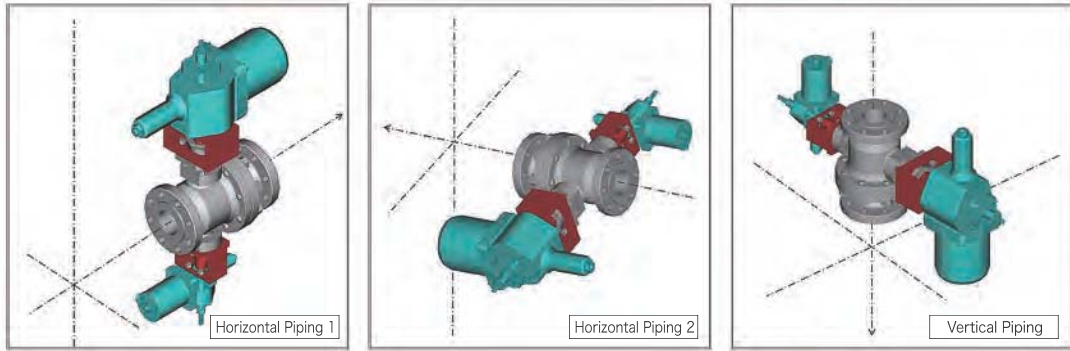


Construction Drawing



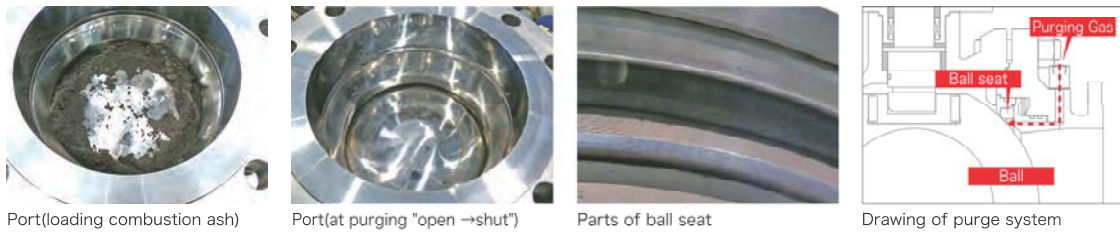
Piping Position

* It can be selectable best position depend on piping condition in plant.

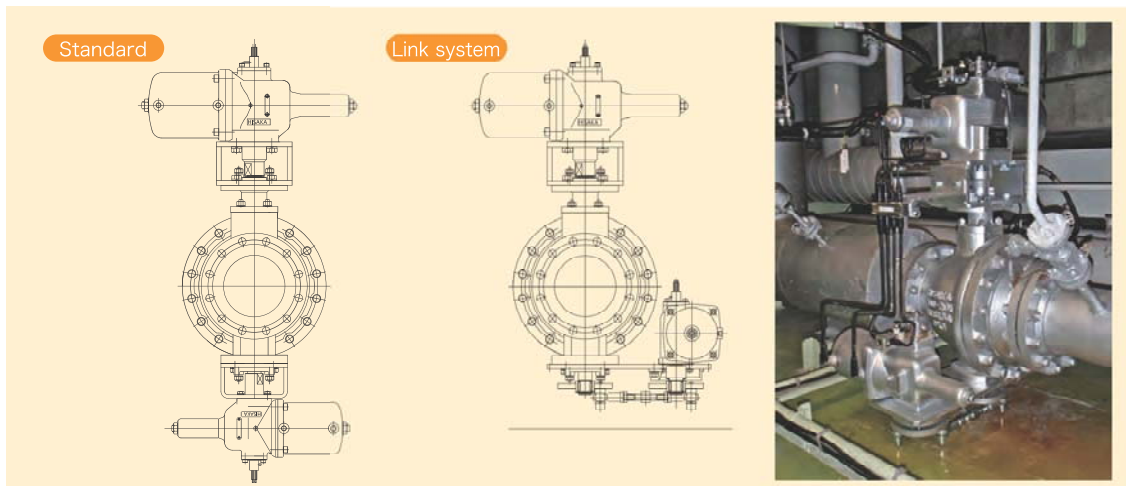


Optional Device

Purge system In case of the fluid have strong adhesiveness or required tight sealing, this purge system can be removed powder & debris adhered to the ball & ball seat. And this system can be improved sealing and prolong life time. Please apply to us for the time of purging and the detail of valve operation, collectively.



Link system With adopting link system for actuator of rotating side, it can be made piping in narrow space.



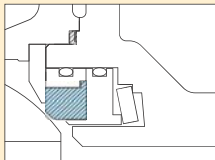
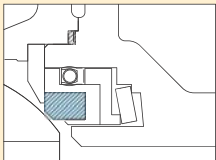
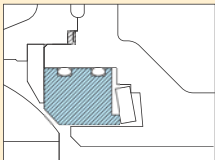
Certification of High Temp. & Heat Cycle Test

With continual operation test under "high temperature 320°C and ambient condition", Duax got a good result, (inspection certificate by institute)

*Ball moved to ball seat and getting a pressure of contacted surface, so it can be gotten stable and perfect seal under sharpen thermal hunting condition also.



Variety of Ball Seat "Rubber Seat"

Material of Seat	Rubber Seat	PTFE Seat	Metal Seat
Construction			
Characteristic	<ul style="list-style-type: none"> For Powder fluid, Tight sealing & High durability Protect seat with retainer Selectable some kinds of rubber materials 	<ul style="list-style-type: none"> Suitable for corrosive line Suitable for many kinds fluid 	<ul style="list-style-type: none"> Available for corrosive line Usage for high temp. over 200°C Sharpen thermal excursion Leakage class : ANSI/FCI 70-2 CLASS V.
Application	Powder pneumatic conveying system, slurry, Pellet and so on.	Monomer, solvent fluid that is required tight seal and high durability.	High erosive fluid, High temperature fluid

Application

1. Prolong Life

3. Keeping Pressure for Reactor

5. High Frequency Operation

2. Contamination Less

4. Erosive Fluid

6. High Temperature & Pressure



Supply Record 1

Market : Chemical
Application : Pneumatic Conveying System for Solid Powder
Purpose : Keeping Pressure inside Tank & Reactor

Protect erosion for metal seat at rotating ball under super hard solid powder application, and keep tight sealing.



Supply Record 2

Market : Environment
Application : Combustion Ash
Purpose : Long time continuous operation

Protect to degrade seal performance by biting combustion ash mixed silica, and secure the system & machine due to continuously operation.

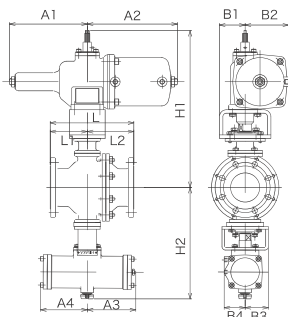


Supply Record 3

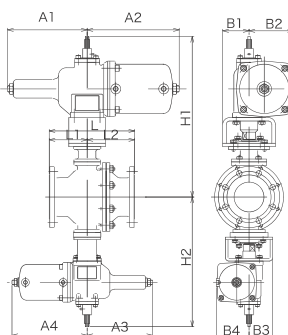
Market : Food
Application : Pneumatic conveying for powdery starch syrup
Purpose : Contamination Less, Dissolution of Operation Trouble

Dissolution of operation trouble with adherent powdery starch syrup adhered to the surface of ball, and can be protected to mix abrasion PTFE powder of ball seat with friction of ball and ball seat.

Double Acting Actuator



Size: 50A(2")~150A(6")



Size: 200A(8")

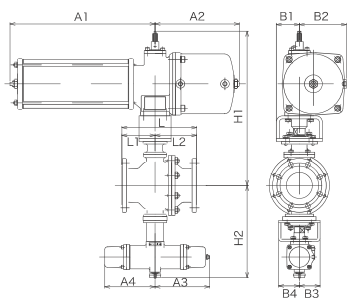
Size	Actuator model	JIS10K ASME150#												
		H1	H2	A1	A2	A3	A4	B1	B2	B3	B4	L1	L2	L
50A (2")	TD3 (Upper) AD07N (Lower)	380	260	171	200	84	84	70	87	52	52	72	106	178
65A (2-1/2")	TD3 (Upper) AD07N (Lower)	405	275	171	200	84	84	76	87	52	52	75	115	190
80A (3")	TD4 (Upper) AD08 (Lower)	470	345	224	257	138	124	81	112	78	78	82	121	203
100A (4")	TD4 (Upper) AD08 (Lower)	490	365	224	257	138	124	83	112	78	78	90	139	229
125A (5")	TD5 (Upper) AD10 (Lower)	620	440	272	315	170	164	110	152	83	83	130	190	320
150A (6")	TD5 (Upper) AD10 (Lower)	615	325	272	315	170	164	110	152	83	83	172	222	394
200A (8")	TD6 (Upper) TD5 (Lower)	740	650	338	372	272	315	150	188	110	152	198	259	457

* Upper : For removing ball, Lower : For rotating ball

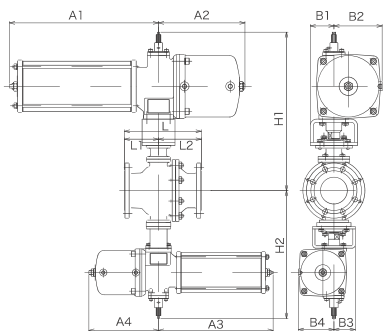
Size	Actuator model	JIS20K,30K ASME300#												
		H1	H2	A1	A2	A3	A4	B1	B2	B3	B4	L1	L2	L
50A (2")	TD4 (Upper) AD07N (Lower)	435	270	224	257	84	84	75	112	52	52	78	138	216
65A (2-1/2")	TD4 (Upper) AD07N (Lower)	-	-	224	257	84	84	75	112	52	52	-	-	-
80A (3")	TD5 (Upper) AD08 (Lower)	555	360	272	315	138	124	90	152	78	78	111.5	171.5	283
100A (4")	TD5 (Upper) AD08 (Lower)	600	395	272	315	138	124	90	152	78	78	105	200	305
125A (5")	TD6 (Upper) AD10 (Lower)	-	-	338	372	170	164	125	188	83	83	-	-	-
150A (6")	TD6 (Upper) AD10 (Lower)	685	480	338	372	170	164	125	188	83	83	172	231	403
200A (8")	TD7 (Upper) TD5 (Lower)	810	650	426	478	272	315	120	225	152	152	223	279	502

* Upper : For removing ball, Lower : For rotating ball

Single Acting Actuator



Size: 50A(2"), 65A(2-1/2")



Size: 80A(3")~200A(8")

Size	Actuator model	JIS10K ASME150#												
		H1	H2	A1	A2	A3	A4	B1	B2	B3	B4	L1	L2	L
50A (2")	TS3 (Upper) AS08 (Lower)	410	305	320	197	213	197	70	102	70	70	72	106	178
65A (2-1/2")	TS3 (Upper) AS08 (Lower)	430	330	320	197	213	197	76	102	78	78	75	115	190
80A (3")	TS4 (Upper) TS3 (Lower)	515	420	436	265	320	197	81	135	78	102	82	121	203
100A (4")	TS4 (Upper) TS3 (Lower)	535	435	436	265	320	197	83	135	78	102	90	139	229
125A (5")	TS5 (Upper) TS4 (Lower)	675	535	567	329	436	265	110	184	83	135	130	190	320
150A (6")	TS5 (Upper) TS4 (Lower)	670	575	567	329	436	265	110	184	83	135	172	222	394
200A (8")	TS6 (Upper) TS5 (Lower)	825	705	657	393	567	329	150	233	110	184	198	259	457

* Upper : For removing ball, Lower : For rotating ball

Size	Actuator model	JIS20K,30K ASME300#												
		H1	H2	A1	A2	A3	A4	B1	B2	B3	B4	L1	L2	L
50A (2")	TS3 (Upper) AS08 (Lower)	480	320	436	265	213	197	75	135	70	70	78	138	216
65A (2-1/2")	TS3 (Upper) AS08 (Lower)	-	-	436	265	213	197	78	135	78	78	-	-	-
80A (3")	TS4 (Upper) TS3 (Lower)	610	430	567	329	320	197	90	184	78	102	111.5	171.5	283
100A (4")	TS4 (Upper) TS3 (Lower)	655	465	567	329	320	197	90	184	78	102	105	200	305
125A (5")	TS5 (Upper) TS4 (Lower)	-	-	657	393	436	265	125	233	83	135	-	-	-
150A (6")	TS5 (Upper) TS4 (Lower)	770	575	657	393	436	265	125	233	83	135	172	231	403
200A (8")	TS6 (Upper) TS5 (Lower)	800	705	862	515	567	329	120	304	110	184	223	279	502

* Upper : For removing ball, Lower : For rotating ball

Manufacturing Range

Material of Body

- Stainless SCS13A,14A,16A, A351 CF8, CF8M, CF3M
- Carbon Steel WCB(over 125A)

Manufacturing Range

接続	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A	350A	400A	450A	500A	600A
JIS10K/150Lb	x	○	○	○	○	○	○	○	○	○	○	○	○	○	○
JIS20K/300Lb	○	○	☆	○	○	☆	○	○	○	○	○	○	○	○	○
JIS63K/600Lb	○	○	☆	○	○	☆	○	○	○	○	○	○	○	○	○

○ : can be manufactured x : can not be manufactured ☆ : Please apply.

Selection for Material of Ball Seat & Gland Packing depend on max. temperature

BALL SEAT			GLAND PACKING		
Material	Max. Temp.		Material	Max. Temp.	
Metal	600°C		Expanded Graphite	600°C	
PTFE	200°C		PTFE	200°C	
Rubber	NBR	80°C	O-ring	NBR	80°C
	FKM	160°C		FKM	160°C

Selection for hard facing of Ball & Ball Seat

	Name of treatment	Detail of treatment
BALL	Hard Chrome Plating	Electrical Plating
	Isonite	Salt Bath Nitriding
	New Kanuc	Vacuum Evaporation Gas Nitriding
	Stellite No.1	Cladding by Welding(Co basis)
	Metco 16C	Self-Fluxing Alloy Spraying(Ni basis)
	Tungsten Carbide	Self-Fluxing Alloy Spraying(W basis)
BALL SEAT	Stellite No.6	Cladding by Welding(Co basis)
	Stellite No.1	Cladding by Welding(Co basis)
	Tungsten Carbide	Self-Fluxing Alloy Spraying(W basis)

How to making model code of DUAX

Model code : DX(①)-F③-B④-S⑤-X⑥													
①Ball Seat			②Gland Seal			③Purge			④Hard Facing of Ball		⑤Hard Facing of Ball Seat		⑥Special Specification
M	Metal	600°	GM	Exp. Graph.	350°	No code	None	No code	HCr. Plating	No code	Stellite No.6	No code	No option
P	PTFE	200°	GH	Exp. Graph.	600°	F*	Flange Conn.	1	Isonite	1	Stellite No.1	A	Cut Sphere of ball
N	NBR	80°	P	PTFE	200°	S*	Thread Conn.	2	New Kanuc	2	Tungsten C.	B**	Special Ball DIA.
V	FKM	160°	N	NBR	80°	X*	Special Conn.	3	Stellite No.1			C	HF(Ball contact part)
E	EPDM	80°	V	FKM	160°	*Q'ty of Purge Nozzle		4	Metco-16C			D	Rubber(back of seat)
S	Silicon	160°	S	Silicon	160°			5	Tungsten C.			E	Serrated Seat
X	PEEK	200°	K	PTFE(LC)	200°							**	Diameter of Ball
U	Urethane	160°											

SPECIFIC EXAMPLE

Model code : DX(MGM)-FF4-B4-XAD	
① M	: Metal touch
② GM	: Expanded Graphite 350°C
③ FF4	: with Purge system, Flange conn. 4pcs Nozzles
④ B4	: Hard facing of Ball : Metco-16C
⑤ No code	: Hard facing of Ball Seat: Stellite No.6
⑥ XAD	: Cut sphere of ball, with rubber(back of seat)

CAUTION

- Please be sure to refer the instruction manual before operation.



- ISO14001 CERTIFIED PLANT
- API CERTIFIED PLANT
- ISO9001 CERTIFIED PLANT

VALVE DIVISION

- SELES DEPT 2-1-48 HIGASHI-KONOIKECHO, HIGASHI-OSAKA CITY
OSAKA 578-0973 JAPAN
TEL : +81-72-966-9651 FAX : +81-72-966-9652

www.hisaka.co.jp

✉ valve_info@hisaka.co.jp

● There is possibility to change spec for improvement without advance notice.