



4 SEATS

# 3-WAY BALL VALVE

■ H45	■ H45-AD	■ H45-AS
■ H45-TD	■ H45-TS	

HISAKA WORKS, LTD.



# 4 SEATS, 3-WAY BALL VALVE HAS OPERATED FOR CHANGING FLOW

## CHARACTERISTICS

1

### CAN BE USED FOR CHANGING FLOW DIRECTION

- 1.Un-necessary to use plural valves, so piping will be simplified and can be protected mis-operation.
- 2.No remaining fluid compar with 2pcs, 2-way valves.
- 3.Can be reduced cost for piping and miniaturization.

2

### USING 4PCS OF BALL SEAT

- 1.Fluid is sealed by 4 seats and it is effective to change flow direction without any leakage fluid.
- 2.Fluid pressure to the ball seat is scattered to 4 seats, and achieved using for long time.

3

### SPECIAL GLAND DESIGN

- 1.Bolt type stopper can be tightened easily.
- 2.Anti-blow out design
- 3.Anti-static device (Option)

4

### STOPPER FOR POSITIONING OF FLOW DIRECTION(90 DEGREE OPERATION)

- 1.Can be fixed the position easily and no occur a gap between pipe & port.
- 2.Can be locked valve operation to protect mis-operation by key lock. (Option)  
※Please select flow direction according to 6th page.

5

### PROTECTED MIS-OPERATION BY RECTANGULAR TOP STEM

- 1.Indicated flow direction on the top of stem for easy checking flow direction.

6

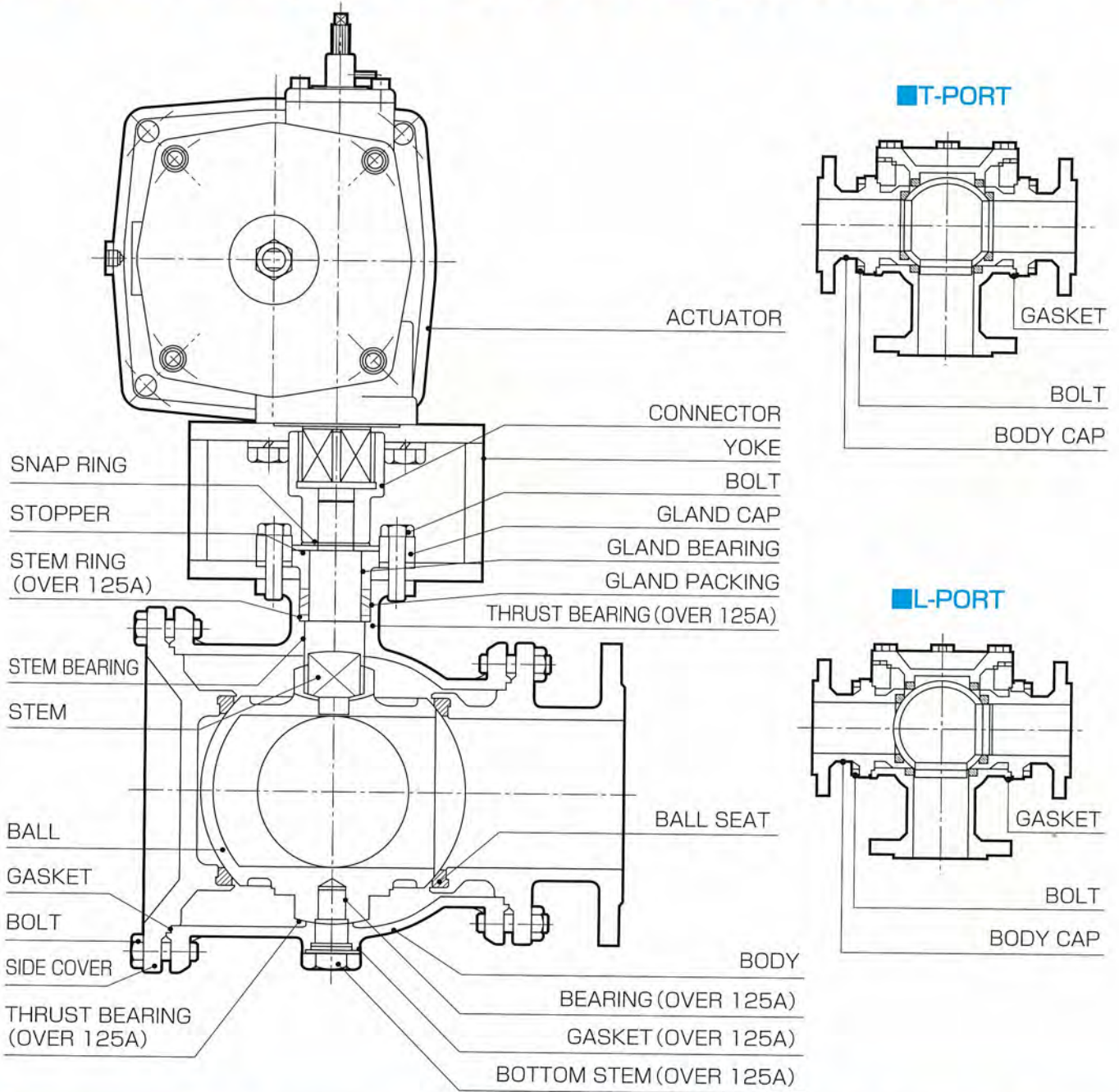
### SIMPLY AUTOMATIZATION AND MAINTENANCE WORK

- 1.Yoke is fixed to the valve by 4pcs of bolts, and these bolts are not same with gland fixing bolt. It is protected slacking of bolt by many times valve operation.
- 2.Gland bolt and bolt for fixing cylinder are separated. So it is un-necessary to change any sealing parts and no leakage trouble after automatization work.
- 3.Can be automatized without removing valve from piping. So there are not possibility for leakage from gland part.
- 4.Each body caps can be disassembled. So the maintenance work can do by standard tool, un-necessary to prepare special tool.
- 5.Can be flushed inside body by removing side cover. (can be flushing work on the piping).

There are other model of 3-way valve for high pressure service : D33, for powder service : HY1&2 besides this H45 model. Please contact us, if you have any requirement or unidentified point.



# MANY FUNCTION AND CAN BE DIRECTION, DIVERTING, MIXING.



## MATERIAL OF MAIN PARTS

NAME OF PARTS	MATERIAL		
BODY BODY CAP SIDE COVER	SCS13A	SCS14A	FC200
BALL	SCS13A(304)	SCS14A(316)	SCS13A(304)
STEM	SUS304	SUS316	SUS403
BOLT	SUS304	SUS304	SS400 (Cr. Plating)
BALL SEAT	PTFE		
GLAND PACKING	PTFE		
GASKET	PTFE		

## SPECIFICATION OF CYLINDER

MAX OPERATION PRESS	MAX OPERATION TEMP	GUARANTEE TIMES
0.7MPa	-15°C~+80°C	100,000

(STANDARD OPERATION PRESS 0.4 MPa)

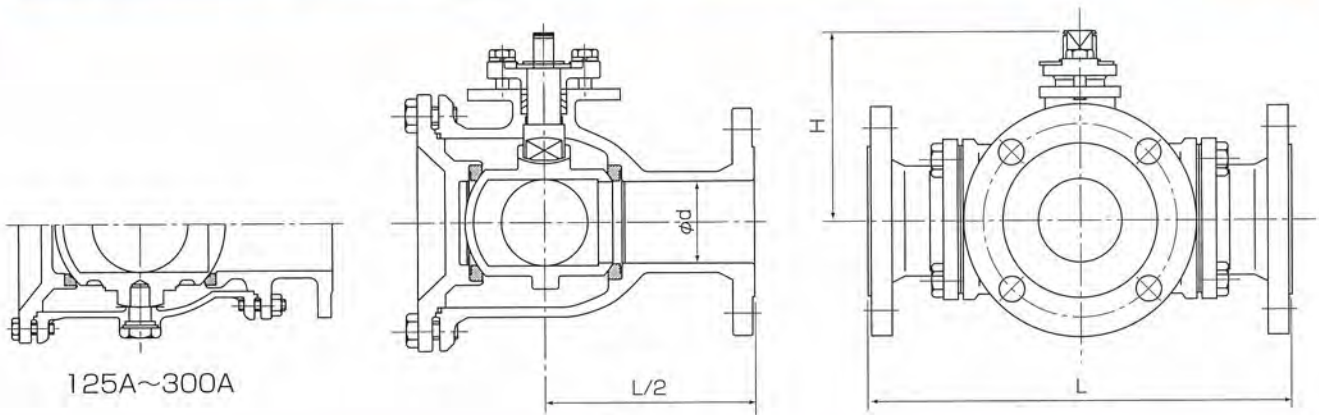
## INSPECTION PRESSURE

	JIS 10K	ASME·JPI 150Lb
SHELL	2.06 MPa (A.T.P)	2.93 MPa (W.T.P)
SEAT	0.59 MPa (A.T.P)	0.59 MPa (A.T.P)



# MANUAL OPERATION (HAND LEVER)

MODEL:H45



125A~300A

SIZE	d	L	H	☆	WEIGHT
15A	1/2B	13	180	63	120
20A	3/4B	19	190	78	150
25A	1B	25	200	82	150
40A	1·1/2B	38	240	107	200
50A	2B	51	260	121	250

kg

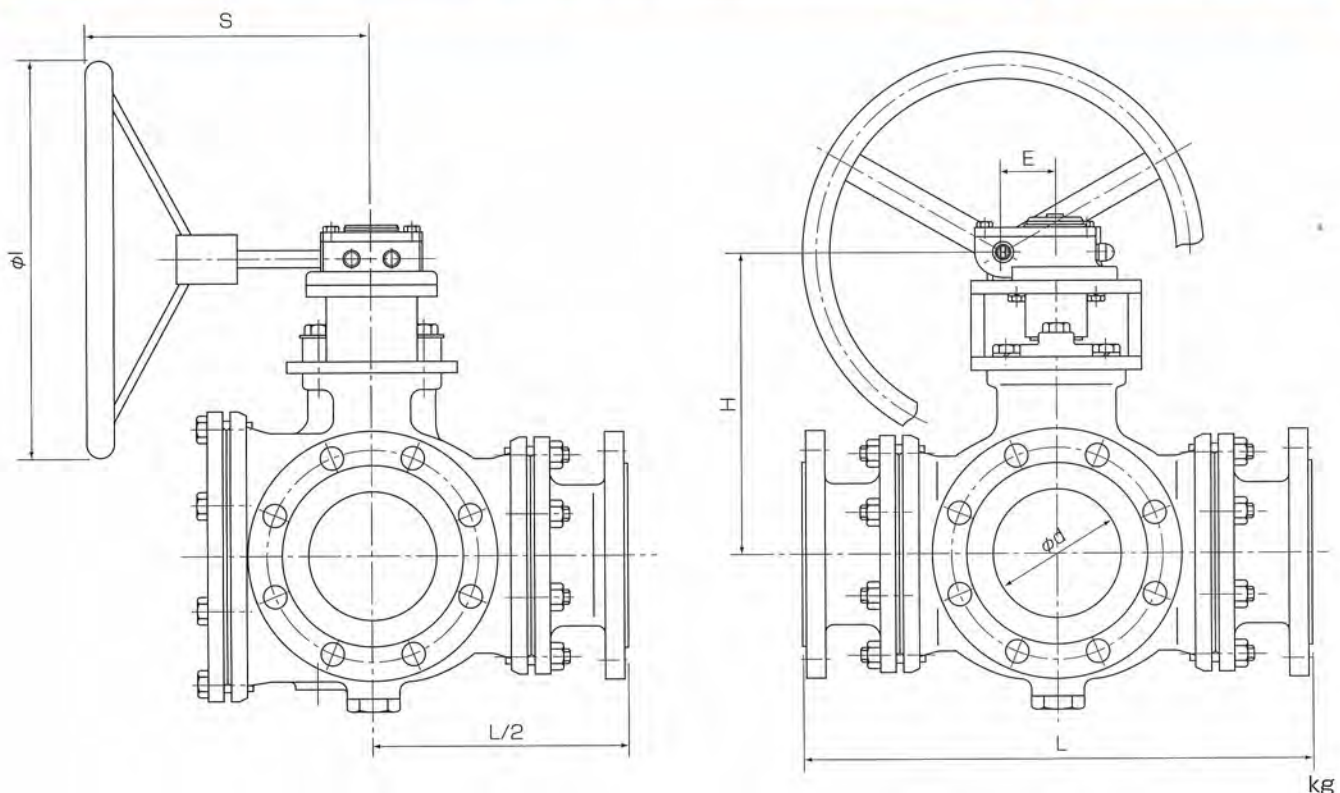
SIZE	d	L	H	☆	WEIGHT
65A	2·1/2B	64	320	144	300
80A	3B	76	360	163	350
100A	4B	102	430	225	700
125A	5B	127	500	318	1000
150A	6B	152	560	331	1500

kg

☆LENGTH OF HAND LEVER ※WEIGHT IS BASED ON JIS 10K STAINLESS STEEL.

# MANUAL OPERATION (WORM GEAR)

MODEL:H45-W



SIZE	d	L	H	I	E	S	WEIGHT
125A	5B	127	500	299	400	280	114
150A	6B	152	560	326	600	367	168
200A	8B	203	660	396	800	405	320

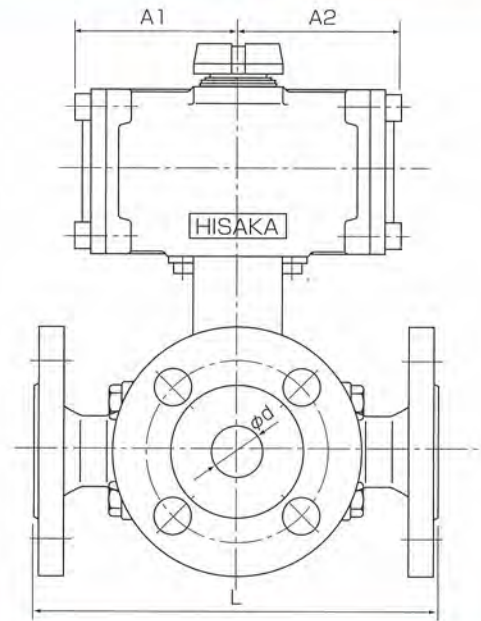
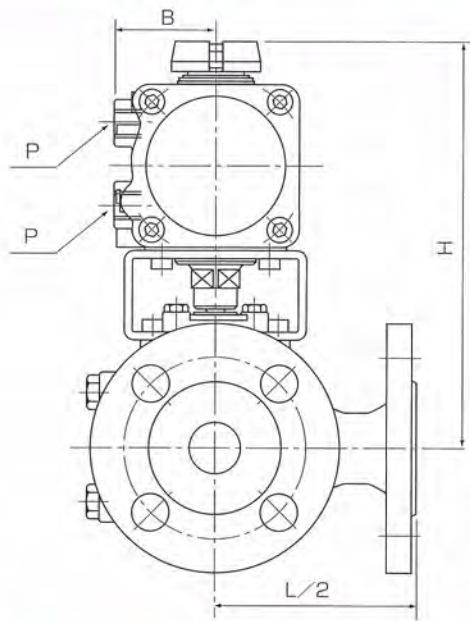
kg

※WEIGHT IS BASED ON JIS 10K STAINLESS STEEL.



## DOUBLE ACTING ON-OFF OPERATION (with AD TYPE ACTUATOR)

MODEL:H45-AD



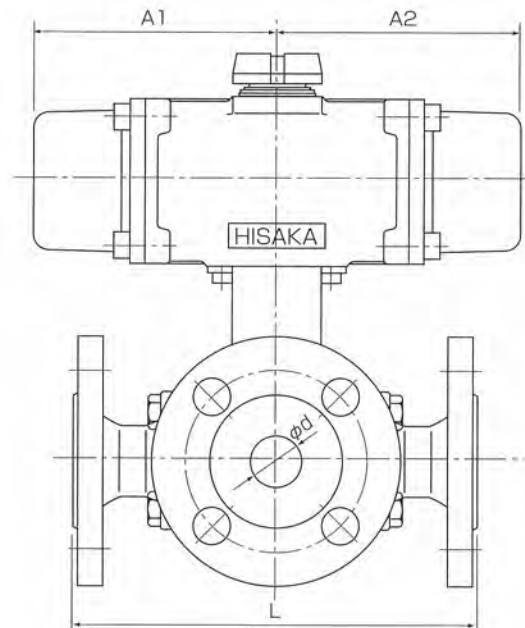
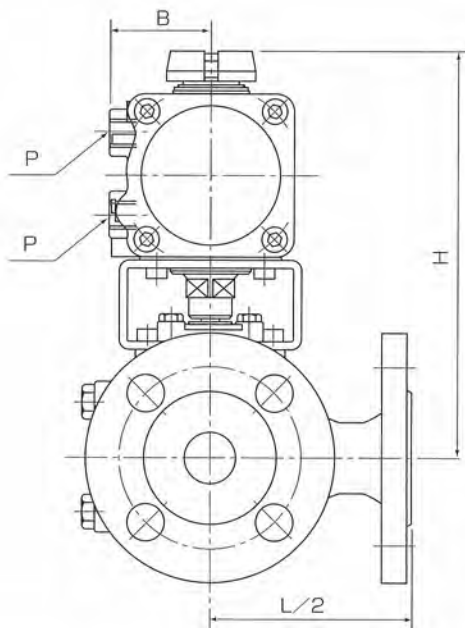
SIZE	d	L	H	A1	A2	B	P	WEIGHT	
15A	1/2B	13	180	165	60.5	60.5	39	1/8	6
20A	3/4B	19	190	201	81	81	50	1/4	9
25A	1B	25	200	205	81	81	50	1/4	12
40A	1-1/2B	38	240	278	138	132	60	1/4	24
50A	2B	51	260	291	138	132	60	1/4	29

SIZE	d	L	H	A1	A2	B	P	WEIGHT	
65A	1-1/2B	64	320	349	170	164	73	1/4	45
80A	3B	76	360	366	170	164	73	1/4	50
100A	4B	102	430	530	224	216	89	3/8	84
125A	5B	127	500	554	224	216	110	3/8	131

※WEIGHT IS BASED ON JIS 10K STAINLESS STEEL.

## SINGLE ACTING ON-OFF OPERATION (with AS TYPE ACTUATOR)

MODEL:H45-AS



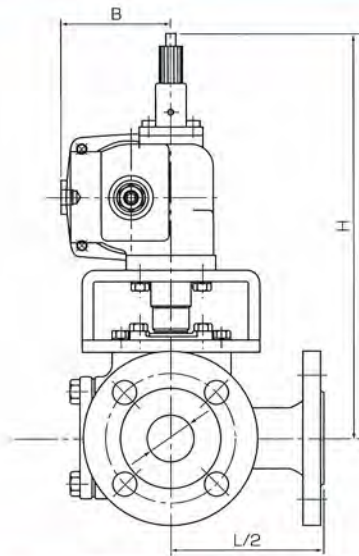
SIZE	d	L	H	A1	A2	B	P	WEIGHT	
15A	1/2B	13	180	192	121	121	50	1/4	8
20A	3/4B	19	190	256	213	197	60	1/4	12
25A	1B	25	200	259	213	197	60	1/4	15

※WEIGHT IS BASED ON JIS 10K STAINLESS STEEL.

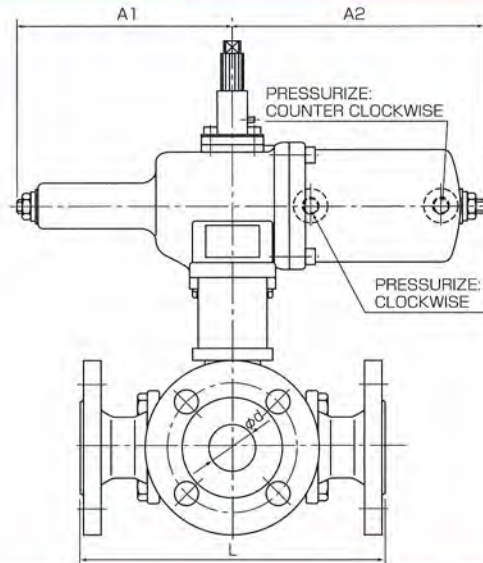


# DOUBLE ACTING ON-OFF OPERATION (with TD TYPE ACTUATOR)

MODEL:H45-TD



kg



kg

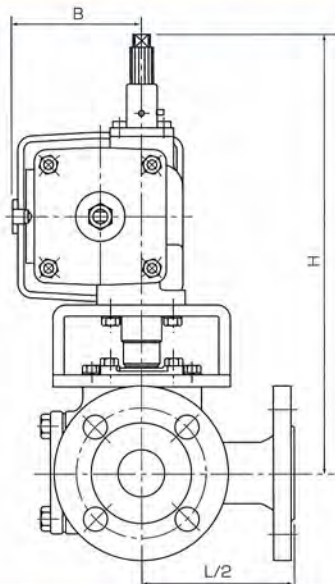
SIZE	d	L	H	A1	A2	B	P	WEIGHT	
15A	1/2B	13	180	253	99	120	55	1/4	10
20A	3/4B	19	190	271	134	151	70	1/4	13
25A	1B	25	200	274	134	151	70	1/4	16
40A	1-1/2B	38	240	326	171	200	87	1/4	27
50A	2B	51	260	339	171	200	87	1/4	32
65A	2-1/2B	64	320	402	224	257	112	1/4	53

SIZE	d	L	H	A1	A2	B	P	WEIGHT	
80A	3B	76	360	419	224	257	112	1/4	58
100A	4B	102	430	548	272	315	149	3/8	102
125A	5B	127	500	638	338	372	188	3/8	190
150A	6B	152	560	651	338	372	188	3/8	238
200A	8B	203	660	788	426	478	225	3/4	470
250A	10B	254	790	925	571	633	306	3/4	808

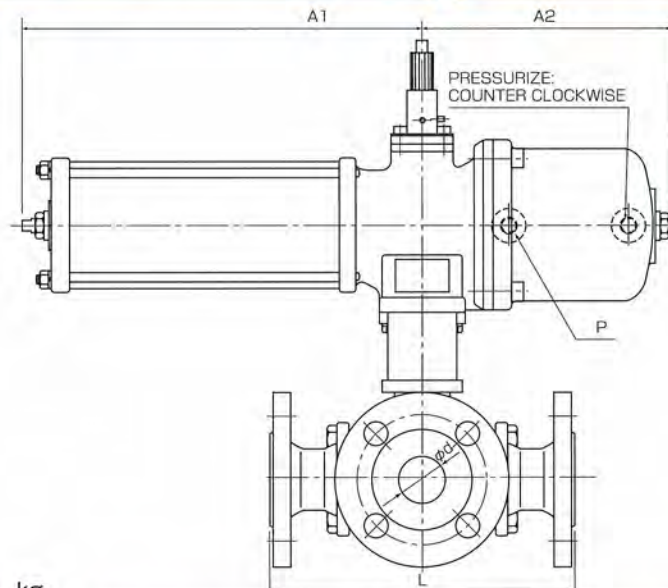
※WEIGHT IS BASED ON JIS 10K STAINLESS STEEL.

# SINGLE ACTING ON-OFF OPERATION (with TS TYPE ACTUATOR)

MODEL:H45-TS



kg



kg

SIZE	d	L	H	A1	A2	B	P	WEIGHT	
15A	1/2B	13	180	266	204	122	71	1/4	12
20A	3/4B	19	190	288	231	154	82	1/4	17
25A	1B	25	200	291	231	154	82	1/4	20
40A	1-1/2B	38	240	352	320	197	102	1/4	36
50A	2B	51	260	365	320	197	102	1/4	41
65A	2-1/2B	64	320	445	436	265	135	1/4	75

SIZE	d	L	H	A1	A2	B	P	WEIGHT	
80A	3B	76	360	462	436	265	135	1/4	80
100A	4B	102	430	602	567	329	184	3/8	153
125A	5B	127	500	726	657	393	233	3/8	303
150A	6B	152	560	739	657	393	233	3/8	351
200A	8B	203	660	780	862	515	304	3/4	695
250A	10B	254	790	879	1203	704	390	3/4	1243

※WEIGHT IS BASED ON JIS 10K STAINLESS STEEL.



# OPERATION FORM

Please clarify the operation form as following points.

- ①Assembling Type    ②Energized Action    ③Air fail Action

1	Counterclockwise	P53	Double Acting		—
2	Clockwise	P54	Single Acting	Counterclockwise	P51
5				Clockwise (Special type)	P52

## ①Assembling Type

- Please select assembling type from among 1, 2, 5
- In case of manual operation, type 1 is standard.

## ②Energized Action

- In case of ON-OFF valve and with single solenoid valve, please clarify the flow direction at energized.
- Please clarify as following. In case of clockwise at energized:P54 In case of counterclockwise at energized:P53

## ③Air fail Action

- In case of single acting, please clarify the flow direction at air fail.
- Standard action is counterclockwise at air fail. (following A)
- In case of clockwise at air fail, it is a special specification. (following B: Opposite Spring)

## MANUAL · DOUBLE ACTUNG

ENERGIZED	P54		P53
TYPE 1 (T-PORT)		COUNTER CLOCKWISE → ← CLOCKWISE	
TYPE 2 (T-PORT)		COUNTER CLOCKWISE → ← CLOCKWISE	
TYPE 5 (L-PORT)		COUNTER CLOCKWISE → ← CLOCKWISE	

## SINGLE ACTING

### A. STANDARD (COUNTER CLOCKWISE AT AIR FAIL) P51

	Air to		Air less
ENERGIZED	P54		P53
TYPE 1 (T-PORT)		COUNTER CLOCKWISE → ← CLOCKWISE	
TYPE 2 (T-PORT)		COUNTER CLOCKWISE → ← CLOCKWISE	
TYPE 5 (L-PORT)		COUNTER CLOCKWISE → ← CLOCKWISE	

## SINGLE ACTING

### B. OPPOSITE SPRING SPEC (CLOCKWISE AT AIR FAIL) P52

	Air to		Air less
ENERGIZED	P53		P54
TYPE 1 (T-PORT)		CLOCKWISE → ← COUNTER CLOCKWISE	
TYPE 2 (T-PORT)		CLOCKWISE → ← COUNTER CLOCKWISE	
TYPE 5 (L-PORT)		CLOCKWISE → ← COUNTER CLOCKWISE	

NOTE) In case of closed side pressure is higher than flow direction side, there is a possibility to leak.

## OPTION

1. "Machining" & "Buffing" internal surface of body.
2. It can be attached flush valve for flushing inside body It can be exhausted remaining fluid.
3. In case of vertical piping and not available remaining fluid in side ball, it can be selected solid ball.
4. Water Free treatment, Oil Free treatment.
5. In case of ambient temperature is high, o-ring of actuator can be changed for high temperature.
6. without stopper. (free operation)
7. Accessories for ON-OFF operation can be selected by customer, attachable any maker.
8. Hard Facing treatment for anti-erosion (Ceramic Lining, Stellite and etc).
9. Coating for anti-corrosion (PTFE, NYLON).
10. Chamfering flange port (for aligning with piping).
11. Key Lock device.
12. Anti-static device.
13. Special treatment for protection about cavity expansion.
14. Special painting

★Please acknowledge that there are possibility to change dimensions for the modification and model change without any notice it beforehand.



## FOR PROPER USE OF HISAKA BALL VALVE

Following points must be considered in order to use HISAKA ball valves in a proper way.

1. Do not allow the slurry (dirts in the pipe, welding slag, rust, etc.) to enter into the standard valve. If the slurry thrust into the ball seat or causes damage on it, the leakage or defective function may result.  
Install the valve only after the through cleaning is made inside the pipe.  
If the liquid containing the slurry is to be supplied, exchange the standard valve with the valve for slurry use.
2. Do not use the standard valve to the liquid which shows a large temperature fluctuation. If the high temperature liquid is supplied to the low temperature condition, the liquid inside the valve body shows the heat expansion, forming the high pressure. In such a case, the leakage or defective function may be caused.  
Either reduce the temperature fluctuation or exchange with the valve having the relief port in the above case.
3. Do not apply undue force (as caused by one-side tightening of bolts, the tightening against a large gap, etc.) or vibration to the valve. Otherwise, the leakage or faulty function may happen. Observe the piping dimensions as instructed and arrange the support for a heavy valve.
4. Bolts and nuts are loosened in some cases due to the vibration during the transport. Therefore, check the tightening condition before use. If found Loose, retighten the bolts.
5. Special treatment is necessary, if the valve is used for oxygen or hydrogen service. Please clarify the detail of operation condition and fluid.
6. The flow direction of fluid is designated in certain valves. The reverse flow may cause the leakage. Install the valves as instruction, if the flow direction is designated.
7. At the time of disassembling the automatic valve, do not disassemble the pneumatic cylinder if the pressure still remains inside. Otherwise, the parts pop out. disassemble it only after the air is purged.
8. Do not disassemble the pneumatic cylinder of spring back type.  
If it is to be disassembled under unavoidable circumstances, exchange the end cap set bolt with the long bolt before disassembling. Otherwise, the spring may jump out what is dangerous.
9. Make the working test once a month or so, automatic valve is kept out of operation over a long period.
10. In case of using the teflon seat valve only for ON-OFF operation, the interim opening position deforms the seat and the leakage is caused.
11. If you have any question or requirement about our product, please contact us or our local sales agent.



- ISO 14001 CERTIFIED FACTORY
- ISO 9001 CERTIFIED FACTORY
- HIGH PRESSURE GAS AUTHORISED FACTORY
- API CERTIFIED FACTORY

 **HISAKA WORKS, LTD.**  
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