

3 WAY BALL VALVE TYPE 23

- ENABLES SWITCHING BETWEEN TWO FLOW PATHS AND COMPLETE CLOSING. (ONLY ONE VALVE IS NECESSARY IN A LINE CONVENTIONALLY REQUIRING TWO BALL VALVES.)
- THE SHAPE OF VALVE ELEMENT (BALL) IS SELECTABLE FROM THREE KINDS, ALLOWING FOR SWITCHING OF FLOW DIRECTION ACCORDING TO THE APPLICATION.

BASIC SPECIFICATIONS

VALVE TYPE	3 WAY BALL VALVE TYPE 23			
SIZE	15 mm—100 mm (1/2 inch—4 inch)			
BODY MATERIAL	U-PVC	C-PVC	PP	PVDF
SEAL MATERIAL / O-RING	EPDM	FKM	etc.	
CONNECTION / FLANGED	JIS5K, JIS10K, DIN PN10, ANSI CLASS150			
SOCKET	JIS, DIN, ANSI			
THREADED	Rc, Rp, NPT			
PORT	DOUBLE L PORT, CROSS PORT, L PORT			
HIGH PURITY SERIES	LUBRICANT FREE			

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) (MPa)(kgf/cm ²)	CONNECTION METHOD		
			FLANGED	SOCKET	THREADED
U-PVC	0°C ~ 50°C	1.0 {10.2}	○	○	○
C-PVC	0°C ~ 90°C	1.0 {10.2}	○	○	○
PP	-20°C ~ 80°C	1.0 {10.2}	○	○	○
PVDF	-20°C ~ 100°C	1.0 {10.2}	○	○	○

NOTE (1) The ball-type valves have dead spaces for structural reasons. Note that volatile liquids, such as hydrogen peroxide (H₂O₂) and sodium hypochlorite (NaClO), vaporize in those dead spaces, which may cause abnormal pressure increase in the valve. (When the internal pressure abnormally increases due to vaporization, the gas will be compressive fluid. If the valve breaks in this state, it will be very dangerous, causing explosion and scattering of fragments.) (2) The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.

* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

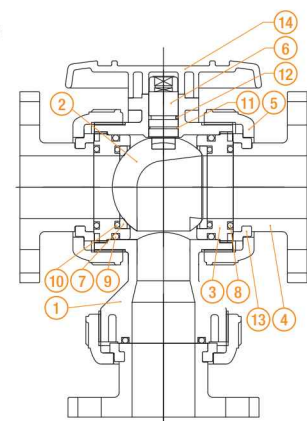
MANUAL



AUTOMATIC

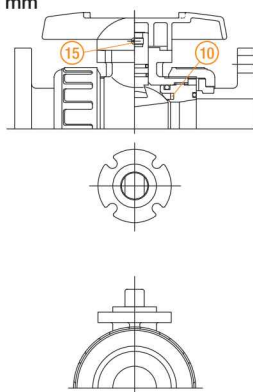


PARTS LIST

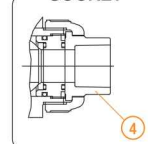


FLANGED

65 mm - 100 mm



SOCKET



THREADED

PART NO. / NAME	QTY	MATERIAL
① BODY	1	U-PVC, C-PVC, PP, PVDF
② BALL	1	U-PVC, C-PVC, PP, PVDF
③ UNION	2	U-PVC, C-PVC, PP, PVDF
④ END CONNECTOR	3	U-PVC, C-PVC, PP, PVDF
4a RING	3	SUS304 (Used for C-PVC 15-, 20-, or 25-mm threaded type)
⑤ UNION NUT	3	U-PVC, C-PVC, PP, PVDF

PART NO. / NAME	QTY	MATERIAL
⑥ STEM	1	U-PVC, C-PVC, PP, PVDF
⑦ SEAT	2	PTFE
⑧ O-RING (A)	3	EPDM, FKM, etc.
⑨ O-RING (B)	2	EPDM, FKM, etc.
10 O-RING (C)	2	EPDM, FKM, etc. (Used for 15 to 50 mm)
10 CUSHION	2	EPDM, FKM, etc. (Used for 65 - 100 mm)

PART NO. / NAME	QTY	MATERIAL
11 O-RING (D)	1	EPDM, FKM, etc.
12 O-RING (E)	1	EPDM, FKM, etc.
13 STOP RING	3	PVDF (Used for flanged type)
14 HANDLE	1	ABS
15 TAPPING SCREW (A)	1	SUS304 (Used for 65 to 100 mm)

COMPATIBLE ACTUATOR

AUTOMATIC

PNEUMATIC TYPE TA

For detailed specifications, see P.124

ELECTRIC TYPE T

For detailed specifications, see P.139

FLOW DIRECTION DIAGRAM FOR EACH HANDLE ROTATION ANGLE

MANUAL AUTOMATIC

For details of flow direction diagram, see **OP.058**.

PRODUCT MODEL
CODE LIST

MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	HIGH PURITY SERIES
V	23	LV	*	*	*	*	***	1
V	23	LV	U U-PVC C C-PVC P PP F PVDF	E EPDM V FKM	S SOCKET N THREADED P SPIGOT F FLANGED	J JIS D DIN 1 JIS10K 5 JIS5K A ANSI	015 15mm 100 100mm	1 LUBRICANT FREE

PRODUCT MODEL
CODE LIST

AUTOMATIC

ACTUATION	TYPE	ACTUATOR TYPE	ACTION / POWER SOURCE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	SPACE HEATER	HIGH PURITY SERIES
A	23	*	*	*	*	*	*	***	OC*	1
A	23	PNEUMATIC K TYPE TA ELECTRIC T TYPE T	PNEUMATIC F DOUBLE ACTING G AIR TO OPEN S AIR TO CLOSE ELECTRIC 1 Single-Phase 100V 2 Single-Phase 200V	U U-PVC C C-PVC P PP F PVDF	E EPDM V FKM	S SOCKET N THREADED P SPIGOT F FLANGED	J JIS D DIN 1 JIS10K 5 JIS5K A ANSI	015 15mm 100 100mm	OC OC * Indicate only for electric type only.	1 LUBRICANT FREE

FLOW DIRECTION DIAGRAM MANUAL AUTOMATIC

THE DIRECTION OF FLOW IS SELECTABLE ACCORDING TO THE APPLICATION.

THREE TYPES OF VALVE ELEMENT (BALL) ARE AVAILABLE: "L PORT", "DOUBLE L PORT" AND "CROSS PORT".
THE DIRECTION OF FLOW CAN BE SWITCHED ACCORDING TO THE APPLICATION.

	COMPATIBLE ACTUATION METHOD	ROTATION ANGLE					BALL SHAPE
		0°	45°	90°	135°	180°	
L PORT (90° or 180°)	MANUAL ○						
	ELECTRIC △						
DOUBLE L PORT (90°)	MANUAL △						
	PNEUMATIC ○						
	ELECTRIC ○						
CROSS PORT (90° or 180°) * For 15 - 50 mm only.	MANUAL △						
	PNEUMATIC △						
	ELECTRIC △						

○ indicates standard products. △ indicates optional products.

* Our products are vertical type. The double L port and cross port cannot completely stop the flow in three directions. * For automatic valves, the direction of flow is determined as follows according to the operation system:

Air to open: Right opens during air supply. Air to close: Left opens during air supply. Double acting: Right opens during air supply on ① side. Left opens during air supply on ② side.

* Also for the solenoid valve, the right side opens when energized and the left side opens when de-energized.

AUTOMATIC

PNEUMATIC

TYPE TA

DOUBLE ACTING

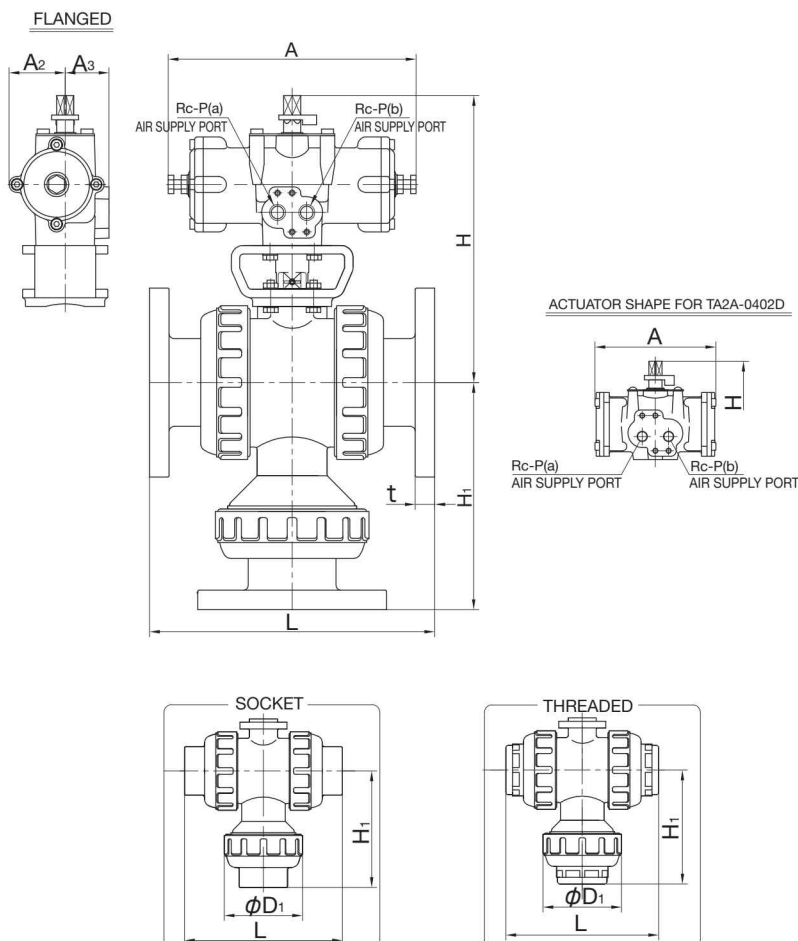
AIR TO OPEN

AIR TO CLOSE

3 WAY BALL VALVE TYPE 23

TYPE—A23K

CONNECTION / FLANGED, SOCKET, THREADED—JIS, DIN, ANSI



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
15mm (1/2inch)	TA2A-0402D
20mm (3/4inch)	
25mm (1inch)	
32mm (1 1/4inch)	TA2A-050D
40mm (1 1/2inch)	
50mm (2inch)	
65mm (2 1/2inch)	TA2A-063D
80mm (3inch)	
100mm (4inch)	TA2A-080D

For detailed specifications, see P.124

■ JIS, DIN (Unit: mm)

JIS, DIN (Unit: mm)								JIS								DIN									
mm	D ₁	H	H ₁	A	A ₂	A ₃	P	FLANGED JIS10K			SOCKET				THREADED		FLANGED DIN PN10			SOCKET				THREADED	
								L	t	H ₁	U-PVC, C-PVC	L	H ₁	PP	L	H ₁	L	H ₁	L	t	H ₁	U-PVC, C-PVC	L	H ₁	PP
15	48	159.5	29	110	25	32	1/8	143	12	94	108	77	108	77	102	74	130	12	88	102	72	99	71	102	74
20	60	166	35	110	25	32	1/8	172	14	115	128	93	126	92	120	89	150	14	104	120	85	114	83	120	89
25	70	173	39	110	25	32	1/8	187	14	133	145	112	141	110	131	105	160	14	120	131	104	123	100	131	105
32	100	224	55	210	46	36	1/4	212	16	165	174	154	-	-	163	141	212	16	165	173	147	148	131	163	141
40	100	224	55	210	46	36	1/4	212	16	165	189	154	171	145	163	141	200	16	159	163	142	148	131	163	141
50	126	235.5	66	210	46	36	1/4	234	16	187	220	180	192	166	197	168	230	16	185	197	170	176	154	197	168
65	152	277	85	250	57	38	1/4	304	18	256	316	261	264	235	264	235	304	18	256	282	245	256	227	264	235
80	152	277	85	250	57	38	1/4	304	18	256	316	261	258	232	264	235	310	21	259	282	245	251	224	264	235
100	210	348	110	292	71	45	1/4	372	18	305	418	328	340	289	360	299	350	18	305	349	305	310	279	338	299

■ ANSI (Unit: inch)

ANSI (Unit: inch)									ANSI								
inch	mm	D ₁	H	H ₁	A	A ₂	A ₃	P	FLANGED ANSI CLASS150			SOCKET				THREADED	
									L	t	H ₁	U-PVC, C-PVC		PP, PVDF		L	H ₁
1/2	15	1.89	6.28	1.14	4.33	0.98	1.26	1/8	5.63	0.47	3.70	4.45	3.08	4.45	3.09	4.02	2.89
3/4	20	2.36	6.54	1.38	4.33	0.98	1.26	1/8	6.77	0.55	4.50	5.08	3.56	5.08	3.61	4.72	3.48
1	25	2.76	6.81	1.54	4.33	0.98	1.26	1/8	7.36	0.55	5.24	5.75	4.32	5.75	4.37	5.16	4.13
1 1/4	32	3.94	8.82	2.17	8.27	1.81	1.42	1/4	8.35	0.63	6.50	6.85	5.51	7.04	5.75	6.42	5.53
1 1/2	40	3.94	8.82	2.17	8.27	1.81	1.42	1/4	8.35	0.63	6.50	7.24	5.71	7.24	5.85	6.42	5.53
2	50	4.96	9.27	2.60	8.27	1.81	1.42	1/4	9.21	0.63	7.34	8.23	6.66	8.23	6.76	7.76	6.61
2 1/2	65	5.98	10.91	3.35	9.84	2.24	1.50	1/4	11.97	0.71	10.06	11.21	9.65	11.21	9.65	10.39	9.25
3	80	5.98	10.91	3.35	9.84	2.24	1.50	1/4	11.97	0.71	10.06	11.10	9.59	11.10	11.10	10.39	9.25
4	100	8.27	13.70	4.33	11.50	2.80	1.77	1/4	14.66	0.71	12.01	13.90	11.58	14.37	14.37	14.17	11.77

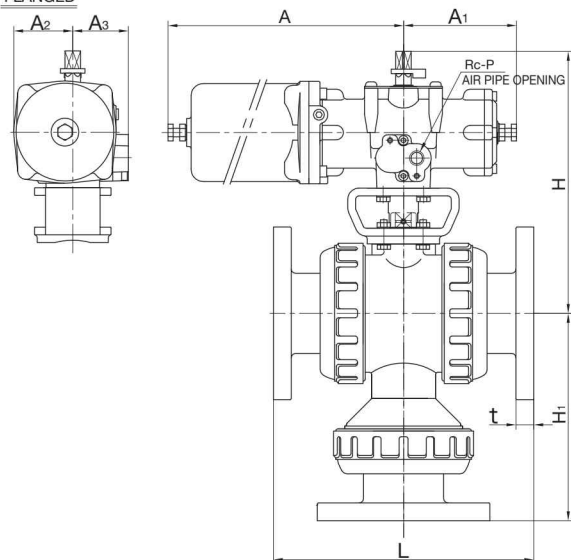


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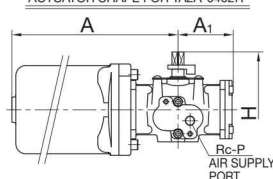
TYPE—A23K

CONNECTION / FLANGED, SOCKET, THREADED—JIS, DIN, ANSI

FLANGED



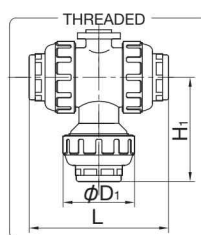
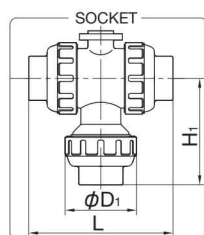
ACTUATOR SHAPE FOR TA2A-0402R



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
15mm (1/2inch)	TA2A-0402R
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25mm (1inch)	
32mm (1 1/4inch)	TA2A-050R
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80mm (3inch)	TA2A-080R
100mm (4inch)	

For detailed specifications, see P.124



■ JIS, DIN (Unit: mm)

JIS, DIN (Unit: mm)										JIS								DIN									
										FLANGED JIS10K			SOCKET				THREADED		FLANGED DIN PN10			SOCKET				THREADED	
										mm	D ₁	H	H ₁	A	A ₁	A ₂	A ₃	P	L	t	H ₁	U-PVC, C-PVC		PP	H ₁	L	H ₁
L	t	H ₁	L	H ₁	L	H ₁	L	t	H ₁										L	H ₁	L	t	H ₁	L		H ₁	
15	48	159.5	29	190	55	42	49	1/8	143	12	94	108	77	108	77	102	74	130	12	88	102	72	99	71	102	74	
20	60	161.5	35	190	55	42	49	1/8	172	14	115	128	93	126	92	120	89	150	14	104	120	85	114	83	120	89	
25	70	168.5	39	190	55	42	49	1/8	187	14	133	145	112	141	110	131	105	160	14	120	131	104	123	100	131	105	
32	100	224	55	240	105	53	50	1/4	212	16	165	174	154	-	-	163	141	212	16	165	173	147	148	131	163	141	
40	100	224	55	240	105	53	50	1/4	212	16	165	189	154	171	145	163	141	200	16	159	163	142	148	131	163	141	
50	126	235.5	66	240	105	53	50	1/4	234	16	187	220	180	192	166	197	168	230	16	185	197	170	176	154	197	168	
65	152	277	85	288	125	67	52	1/4	304	18	256	316	261	264	235	264	235	304	18	256	282	245	256	227	264	235	
80	152	277	85	288	125	67	52	1/4	304	18	256	316	261	258	232	264	235	310	21	259	282	245	251	224	264	235	
100	210	348	110	341	146	82.5	59	1/4	372	18	305	418	328	340	289	360	299	350	18	305	349	305	310	279	338	299	

■ ANSI (Unit: inch)

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1/2	15	1.89	6.28	1.14	7.48	2.17	1.65	1.93	1/8	5.63	0.47	3.70	4.45	3.08	4.45	3.09	4.02	2.89
3/4	20	2.36	6.36	1.38	7.48	2.17	1.65	1.93	1/8	6.77	0.55	4.50	5.08	3.56	5.08	3.61	4.72	3.48
1	25	2.76	6.63	1.54	7.48	2.17	1.65	1.93	1/8	7.36	0.55	5.24	5.75	4.32	5.75	4.37	5.16	4.13
1 1/4	32	3.94	8.82	2.17	9.45	4.13	2.09	1.97	1/4	8.35	0.63	6.50	6.85	5.51	7.04	5.75	6.42	5.53
1 1/2	40	3.94	8.82	2.17	9.45	4.13	2.09	1.97	1/4	8.35	0.63	6.50	7.24	5.71	7.24	5.85	6.42	5.53
2	50	4.96	9.27	2.60	9.45	4.13	2.09	1.97	1/4	9.21	0.63	7.34	8.23	6.66	8.23	6.76	7.76	6.61
2 1/2	65	5.98	10.91	3.35	11.34	4.92	2.64	2.05	1/4	11.97	0.71	10.06	11.21	9.65	11.21	9.65	10.39	9.25
3	80	5.98	10.91	3.35	11.34	4.92	2.64	2.05	1/4	11.97	0.71	10.06	11.10	9.59	11.10	11.10	10.39	9.25
4	100	8.27	13.70	4.33	13.43	5.75	3.25	2.32	1/4	14.66	0.71	12.01	13.90	11.58	14.37	14.37	14.17	11.77