BALL VALVE LINEUP

APPLICATION	TYPE	SIZE	MATERIAL			
			U-PVC	C-PVC	PP	PVDF
FOR CHEMICALS	21α	15 — 50mm	●	●		
	21	15 — 50mm			●	●
		65 — 100mm	●	●	●	●
FOR WATER	WATER BALL VALVE	15 — 50mm	●			
3 WAY BALL	23	15 — 100mm	●	●	●	●
	23H	25 — 40mm			●	
LAB COCK	—	1/4 — 3/8inch	●			
COMPACT SIZE	—	13 — 80mm	●	●		

AVAILABLE OPTIONS AUTOMATIC

* Options other than those listed below are also available. Contact us for inquiry.

	PNEUMATIC			ELECTRIC	
	TYPE TA	TYPE AA	TYPE VC	TYPE T	TYPE V
SOLENOID VALVE (NAMUR)	●	●			
SOLENOID VALVE (WITH EXHAUST THROTTLE VALVE WITH SILENCER)			●*1		
FILTER REGULATOR	●	●			
SPEED CONTROLLER	●	●	●	●*3	
BYPASS VALVE (WITH SPEED CONTROLLER)	●	●			
LIMIT SWITCH BOX	●	●	●		
LIMIT SWITCH	●	●			
OUTPUT CONTACT LIMIT SWITCH				STANDARD	
INTERMEDIATE OUTPUT CONTACT LIMIT SWITCH				●*3	
PROXIMITY SWITCH	●				
E/P POSITIONER	●				
P/P POSITIONER	●				
E/E POSITIONER				●*3	
MANUAL OPERATION LEVER	●				
MANUAL OVERRIDE	●			●	
FULL OPENING ADJUSTMENT	●				
SPECIAL PAINTING (ACTUATOR ONLY)	●			●	
SPECIAL FITTING (STAINLESS STEEL)	●	●		●	
METAL INSERT PROVIDED (WITH ENSAT)	●	●		●	
SPACE HEATER				●*2	STANDARD
POTENTIOMETER				●*3	

*1 Not compatible with the NAMUR standard. *2 Provided as standard for 65 mm or more.
*3 When it is mounted on a valve with a size of 50 mm or less, the actuator specifications will change.

SOLENOID VALVE

SPEED CONTROLLER

LIMIT SWITCH BOX

LIMIT SWITCH

POSITIONER

PRODUCT MODEL CODE LIST — MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
V	**	LV	*	*	*	*	***
V MANUAL VALVE	21 TYPE 21 2A TYPE 21α	LV LEVER TYPE	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 A ANSI 1 JIS10K 5 5K	015 15mm ⌇ 100 100mm

PRODUCT MODEL CODE LIST — AUTOMATIC

ACTUATION	TYPE	ACTUATOR TYPE	ACTION / POWER SOURCE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	SPACE HEATER
A	**	*	*	*	*	*	*	***	OC※
A AUTOMATIC VALVE	21 TYPE 21 2A TYPE 21α	PNEUMATIC K TYPE TA A TYPE AA 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 A ANSI 1 JIS10K 5 JIS5K	015 15mm ⌇ 100 100mm	OC 0C * Indicate only for electric type only.

NOTE (1) PP and PVDF socket types are weld type. Note, however, that JIS PP 32-mm socket type is not produced.
(2) PVDF socket type compatible with the JIS standard is not available.
(3) A handle set with a lock mechanism (for malfunction prevention) is available as an option.

Compatibility of face-to-face dimensions

Both valve face-to-face dimensions and body face-to-face dimensions are compatible between type 21α and conventional type 21. Also, a change to type 21α is available using the end connector and union nut for the existing piping (type 21).

Compatibility of parts

Some of the body component parts are not compatible between type 21α and type 21. Be careful when parts are changed on site. For details of parts compatibility, contact our sales office in your area.

Identification of product

[Difference between products] (See Fig. 1.) The body appearance of type 21α is different from that of type 21 to discriminate between them.

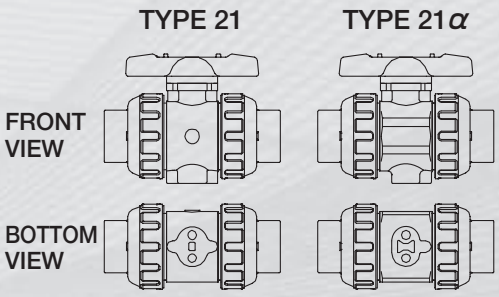
Related materials

Due to the modification and release of type 21α, some parts of related materials, such as outline drawing, instruction manual, and set parts list, have been revised.
Please obtain the latest version at our sales office in your area.

Performance and options

There is no change in the performance (relationship between the working pressure and temperature, Cv value, chemical resistance, etc.) and options between type 21 and 21α.

Fig. 1: Difference between products

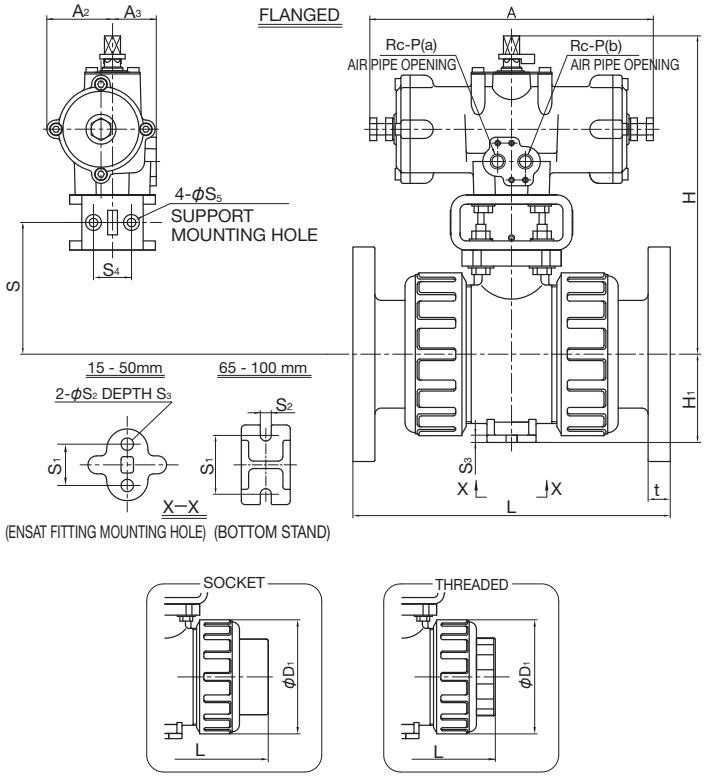


AUTOMATIC | PNEUMATIC | TYPE TA | DOUBLE ACTING | AIR TO OPEN | AIR TO CLOSE

BALL VALVE TYPE 21, 21α

TYPE——A21K, A2AK

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



ACTUATOR SELECTION CHART

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

For detailed specifications, see P.123

■ JIS, DIN (Unit: mm)

mm	D1	H	H1	A	A2	A3	S	S1	S2	S3	S4	S5	P
15	48	159.5	29	110	25	32	-	19	7.3	11	-	-	1/8
20	60	166	35	110	25	32	-	19	7.3	11	-	-	1/8
25	70	173	39	110	25	32	-	19	7.3	11	-	-	1/8
32	82	182	47	110	25	32	-	30	9	15	-	-	1/8
40	100	224	55	210	46	46	-	30	9	15	-	-	1/4
50	126	235.5	66	210	46	46	-	30	9	15	-	-	1/4
65	133	268	72	250	57	38	107.5	48	9	6	32	7	1/4
80	152	277	85	250	57	38	116.5	55	11	7	32	7	1/4
100	210	348	110	292	71	45	151.5	65	11	8	42	9	1/4

mm	JIS									DIN									
	FLANGED JIS5K, JIS10K				SOCKET		THREADED			FLANGED DIN PN10/PN16				SOCKET			THREADED			SPIGOT		
	L			t	L		L			L			t	L			L			L		
	U-PVC C-PVC	PP	PVDF		U-PVC C-PVC	PP	U-PVC C-PVC	PP	PVDF	U-PVC C-PVC	PP	PVDF		U-PVC C-PVC	PP	PVDF	U-PVC C-PVC	PP	PVDF	U-PVC	PP	PVDF
15	143	143	143	12	109	108	102	100	100	130	130	130	12	109	99	99	102	100	100	124	124	124
20	172	172	172	14	128	126	120	119	119	150	150	150	14	128	113	113	120	119	119	144	144	144
25	187	187	187	14	145	141	131	130	130	160	160	160	14	145	123	123	131	130	130	154	154	154
32	190	190	190	16	162	-	150	146	146	180	180	180	16	162	139	139	150	146	146	174	174	174
40	212	212	212	16	189	171	163	160	160	200	200	200	16	189	149	149	163	160	160	194	194	194
50	234	234	234	16	220	192	197	194	194	230	230	230	16	220	176	176	197	194	194	224	224	224
65	261	257	256	18	273	219	215	213	212	290	288	287	18	273	205	204	215	213	212	285	245	244
80	306	305	302	18	316	257	265	264	261	312	311	308	21	316	252	249	265	264	261	299	296	293
100	374	374	369	18	419	341	362	362	357	352	352	347	18	419	312	307	340	340	335	358	355	350

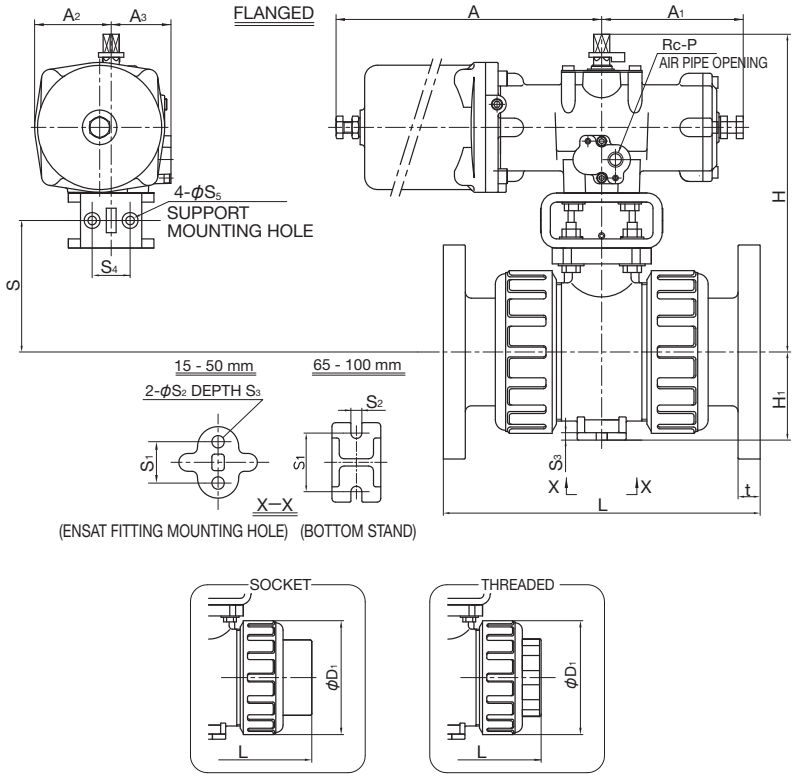
■ ANSI (Unit: inch)

inch	mm	D1	H	H1	A	A2	A3	S	S1	S2	S3	S4	S5	P	ANSI								
															FLANGED ANSI CLASS150				SOCKET			THREADED		
															L			t	L			L		
															U-PVC C-PVC	PP	PVDF		U-PVC C-PVC	PP	PVDF	U-PVC C-PVC	PP	PVDF
1/2	15	1.89	6.28	1.14	4.33	0.98	1.26	-	0.75	0.29	0.43	-	-	1/8	5.63	5.63	5.63	0.47	4.45	4.45	4.45	4.02	4.02	4.02
3/4	20	2.36	6.54	1.38	4.33	0.98	1.26	-	0.75	0.29	0.43	-	-	1/8	6.77	6.77	6.77	0.55	5.08	5.08	5.08	4.72	4.72	4.72
1	25	2.76	6.81	1.54	4.33	0.98	1.26	-	0.75	0.29	0.43	-	-	1/8	7.36	7.36	7.36	0.55	5.75	5.75	5.75	5.16	5.16	5.16
1 1/4	32	3.23	7.17	1.85	4.33	0.98	1.26	-	1.18	0.35	0.59	-	-	1/8	7.48	7.48	7.48	0.63	6.46	6.46	6.46	5.91	5.91	5.91
1 1/2	40	3.94	8.82	2.17	8.27	1.81	1.81	-	1.18	0.35	0.59	-	-	1/4	8.35	8.35	8.35	0.63	7.24	7.24	7.24	6.42	6.42	6.42
2	50	4.96	9.27	2.60	8.27	1.81	1.81	-	1.18	0.35	0.59	-	-	1/4	9.21	9.21	9.21	0.63	8.23	8.23	8.23	7.76	7.76	7.76
2 1/2	65	5.24	10.55	2.83	9.84	2.24	1.50	4.23	1.89	0.35	0.24	1.26	0.28	1/4	10.20	10.12	10.08	0.71	9.45	9.37	9.33	8.46	8.39	8.35
3	80	5.98	10.91	3.35	9.84	2.24	1.50	4.59	2.17	0.43	0.28	1.26	0.28	1/4	12.05	12.01	11.89	0.71	11.14	11.10	10.98	10.43	10.39	10.28
4	100	8.27	13.70	4.33	11.50	2.83	1.77	5.96	2.56	0.43	0.31	1.65	0.35	1/4	14.72	14.72	14.53	0.71	13.86	14.37	14.13	14.25	14.25	14.06

AUTOMATIC | PNEUMATIC | TYPE TA | DOUBLE ACTING | AIR TO OPEN | AIR TO CLOSE

BALL VALVE TYPE 21, 21α

TYPE——A21K, A2AK
CONNECTION / FLANGED, SOCKET, THREADED——JIS, DIN, ANSI SPIGOT——DIN



ACTUATOR SELECTION CHART

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

For detailed specifications, see P.123

■ JIS, DIN (Unit: mm)

mm	D1	H	H1	A	A1	A2	A3	S	S1	S2	S3	S4	S5	P
15	48	159.5	29	194	55	46	46	-	19	7.3	11	-	-	1/4
20	60	166	35	194	55	46	46	-	19	7.3	11	-	-	1/4
25	70	173	39	194	55	46	46	-	19	7.3	11	-	-	1/4
32	82	182	47	194	55	46	46	-	30	9	15	-	-	1/4
40	100	224	55	240	105	53	50	-	30	9	15	-	-	1/4
50	126	235.5	66	240	105	53	50	-	30	9	15	-	-	1/4
65	133	268	72	288	125	67	52	107.5	48	9	6	32	7	1/4
80	152	277	85	288	125	67	52	116.5	55	11	7	32	7	1/4
100	210	348	110	341	146	82.5	59	151.5	65	11	8	42	9	1/4

mm	JIS									DIN												
	FLANGED JIS5K, JIS10K				SOCKET		THREADED			FLANGED DIN PN10/PN16				SOCKET			THREADED			SPIGOT		
	L			t	L		L			L			t	L			L			L		
	U-PVC C-PVC	PP	PVDF		U-PVC C-PVC	PP	U-PVC C-PVC	PP	PVDF	U-PVC C-PVC	PP	PVDF		U-PVC C-PVC	PP	PVDF	U-PVC C-PVC	PP	PVDF	U-PVC	PP	PVDF
10	-	-	-	-	-	-	-	-	-	120	119	119	12	99	96	96	99	98	98	114	114	114
15	143	143	143	12	109	108	102	100	100	130	130	130	12	102	99	99	102	100	100	124	124	124
20	172	172	172	14	128	126	120	119	119	150	150	150	14	119	113	113	120	119	119	144	144	144
25	187	187	187	14	145	141	131	130	130	160	160	160	14	131	123	123	131	130	130	154	154	154
32	190	190	190	16	162	-	150	146	146	180	180	180	16	150	139	139	150	146	146	174	174	174
40	212	212	212	16	189	171	163	160	160	200	200	200	16	164	149	149	163	160	160	194	194	194
50	234	234	234	16	220	192	197	194	194	230	230	230	16	197	176	176	197	194	194	224	224	224
65	261	257	256	18	273	219	215	213	212	290	288	287	18	233	205	204	215	213	212	285	245	244
80	306	305	302	18	316	257	265	264	261	312	311	308	21	284	252	249	265	264	261	299	296	293
100	374	374	369	18	419	341	362	362	357	352	352	347	18	351	312	307	340	340	335	358	355	350

■ ANSI (Unit: inch)

inch	mm	D1	H	H1	A	A1	A2	A3	S	S1	S2	S3	S4	S5	P	ANSI									
																FLANGED ANSI CLASS150				SOCKET			THREADED		
																L				L			L		
																U-PVC C-PVC	PP	PVDF	t	U-PVC C-PVC	PP	PVDF	U-PVC C-PVC	PP	PVDF
1/2	15	1.89	6.28	1.14	7.64	2.17	1.81	1.81	-	0.75	0.29	0.43	-	-	1/4	5.63	5.63	5.63	0.47	4.45	4.45	4.45	4.02	4.02	4.02
3/4	20	2.36	6.54	1.38	7.64	2.17	1.81	1.81	-	0.75	0.29	0.43	-	-	1/4	6.77	6.77	6.77	0.55	5.08	5.08	5.08	4.72	4.72	4.72
1	25	2.76	6.81	1.54	7.64	2.17	1.81	1.81	-	0.75	0.29	0.43	-	-	1/4	7.36	7.36	7.36	0.55	5.75	5.75	5.75	5.16	5.16	5.16
1 1/4	32	3.23	7.17	1.85	7.64	2.17	1.81	1.81	-	1.18	0.35	0.59	-	-	1/4	7.48	7.48	7.48	0.63	6.46	6.46	6.46	5.91	5.91	5.91
1 1/2	40	3.94	8.82	2.17	9.45	4.13	2.09	1.97	-	1.18	0.35	0.59	-	-	1/4	8.35	8.35	8.35	0.63	7.24	7.24	7.24	6.42	6.42	6.42
2	50	4.96	9.27	2.60	9.45	4.13	2.09	1.97	-	1.18	0.35	0.59	-	-	1/4	9.21	9.21	9.21	0.63	8.23	8.23	8.23	7.76	7.76	7.76
2 1/2	65	5.24	10.55	2.83	11.34	4.92	2.64	2.05	4.23	1.89	0.35	0.24	1.26	0.28	1/4	10.20	10.12	10.08	0.71	9.45	9.37	9.33	8.46	8.39	8.35
3	80	5.98	10.91	3.35	11.34	4.92	2.64	2.05	4.59	2.17	0.43	0.28	1.26	0.28	1/4	12.05	12.01	11.89	0.71	11.14	11.10	10.98	10.43	10.39	10.28
4	100	8.27	13.70	4.33	13.43	5.75	3.25	2.32	5.96	2.56	0.43	0.31	1.65	0.35	1/4	14.72	14.72	14.53	0.71	13.86	14.37	14.13	14.25	14.25	14.06

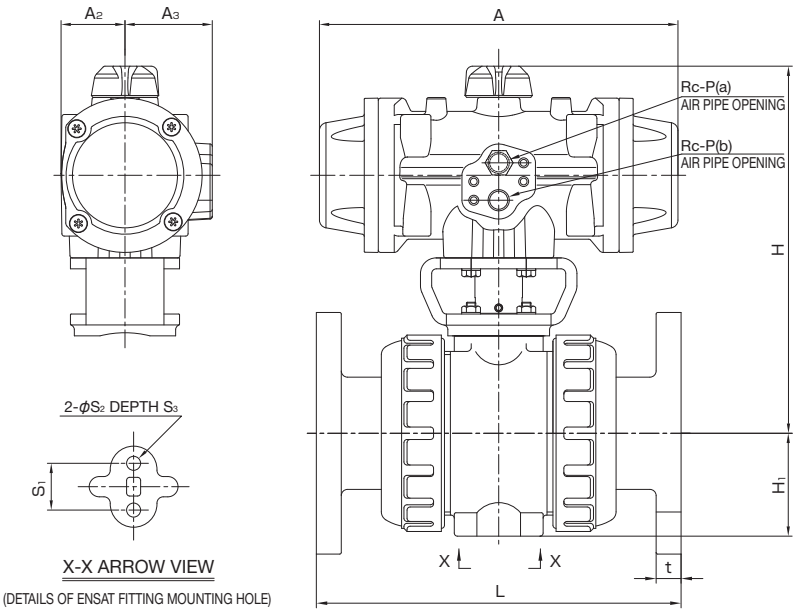
AUTOMATIC | PNEUMATIC | TYPE AA | DOUBLE ACTING | AIR TO OPEN | AIR TO CLOSE

BALL VALVE TYPE 21, 21α

TYPE——A21A, A2AA

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

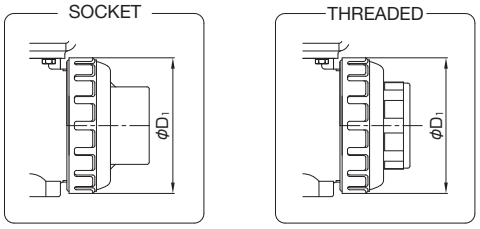
FLANGED



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
15mm (1/2inch)	PPW
20mm (3/4inch)	
25mm (1inch)	
32mm (1 1/4inch)	
40mm (1 1/2inch)	PP00
50mm (2inch)	

For detailed specifications, see P.122



■ JIS, DIN (Unit: mm)

mm	D1	H	A	A2	A3	H1	S1	S2	S3	P	JIS FLANGED JIS5K, JIS10K L U-PVC, C-PVC PP, PVDF	JIS FLANGED JIS5K, JIS10K t	JIS SOCKET L U-PVC C-PVC	JIS SOCKET L PP	JIS THREADED L U-PVC C-PVC	JIS THREADED L PP PVDF	DIN FLANGED DIN PN10/PN16 L U-PVC, C-PVC PP, PVDF	DIN FLANGED DIN PN10/PN16 t	DIN SOCKET L U-PVC C-PVC	DIN SOCKET L PP PVDF	DIN THREADED L U-PVC C-PVC	DIN THREADED L PP PVDF	DIN SPIGOT L U-PVC PP, PVDF
15	48	159	144	28	42	29	19	7.3	11	1/4	143	12	109	108	102	100	130	12	102	99	102	100	124
20	60	165.5	144	28	42	35	19	7.3	11	1/4	172	14	128	126	120	119	150	14	119	113	120	119	144
25	70	172.5	144	28	42	39	19	7.3	11	1/4	187	14	145	141	131	130	160	14	131	123	131	130	154
32	82	181.5	144	28	42	47	30	9	15	1/4	190	16	162	-	150	146	180	16	150	139	150	146	174
40	100	203	157	31	48	55	30	9	15	1/4	212	16	189	171	163	160	200	16	164	149	163	160	194
50	126	214.5	157	31	48	66	30	9	15	1/4	234	16	220	192	197	194	230	16	197	176	197	194	224

■ ANSI (Unit: inch)

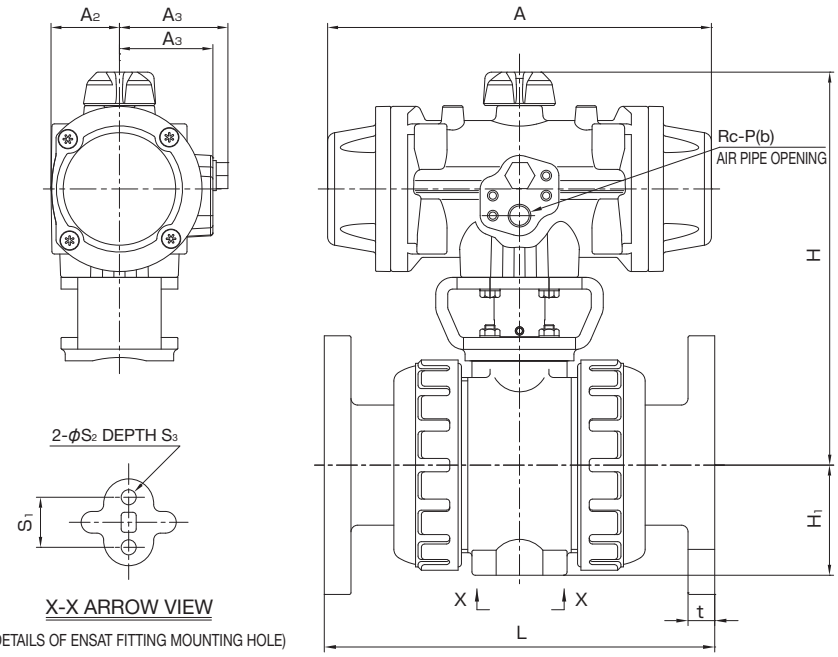
inch	mm	D1	H	A	A2	A3	S	S1	S2	S3	P	ANSI FLANGED ANSI CLASS150 L U-PVC, C-PVC PP, PVDF	ANSI FLANGED ANSI CLASS150 t	ANSI SOCKET L U-PVC, C-PVC PP, PVDF	ANSI THREADED L U-PVC, C-PVC PP, PVDF
1/2	15	1.89	6.26	5.67	1.10	1.65	1.14	0.75	0.29	0.43	1/4	5.63	0.47	4.45	4.02
3/4	20	2.36	6.52	5.67	1.10	1.65	1.38	0.75	0.29	0.43	1/4	6.77	0.55	5.08	4.72
1	25	2.76	6.79	5.67	1.10	1.65	1.54	0.75	0.29	0.43	1/4	7.36	0.55	5.75	5.16
1 1/4	32	3.23	7.15	5.67	1.10	1.65	1.85	1.18	0.35	0.59	1/4	7.48	0.63	6.46	5.91
1 1/2	40	3.94	7.99	6.18	1.22	1.89	2.17	1.18	0.35	0.59	1/4	8.35	0.63	7.24	6.42
2	50	4.96	8.44	6.18	1.22	1.89	2.60	1.18	0.35	0.59	1/4	9.21	0.63	8.23	7.76

AUTOMATIC | PNEUMATIC | TYPE AA | DOUBLE ACTING | AIR TO OPEN | AIR TO CLOSE

BALL VALVE TYPE 21, 21α

TYPE——A21A, A2AA
CONNECTION / FLANGED, SOCKET, THREADED——JIS, DIN, ANSI SPIGOT——DIN

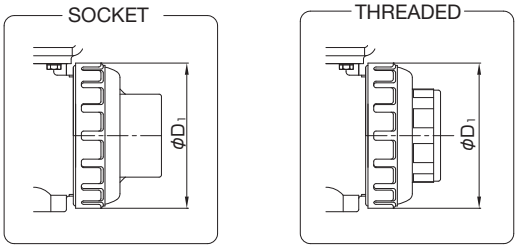
FLANGED



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
15mm (1/2inch)	PP00S
20mm (3/4inch)	
25mm (1inch)	
32mm (1 1/4inch)	
40mm (1 1/2inch)	PP10S
50mm (2inch)	

For detailed specifications, see P.122



■ JIS, DIN (Unit: mm)

												JIS						DIN						
												FLANGED JIS5K, JIS10K		SOCKET		THREADED		FLANGED DIN PN10/PN16		SOCKET		THREADED		SPIGOT
												L		L		L		L		L		L		L
mm	D1	H	A	A2	A3	A3'	H1	S1	S2	S3	P	U-PVC, C-PVC PP, PVDF	t	U-PVC C-PVC	PP	U-PVC C-PVC	PP PVDF	U-PVC, C-PVC PP, PVDF	t	U-PVC C-PVC	PP PVDF	U-PVC C-PVC	PP PVDF	U-PVC PP, PVDF
15	48	172	157	31	48	57	29	19	7.3	11	1/4	143	12	109	108	102	100	130	12	102	99	102	100	124
20	60	178.5	157	31	48	57	35	19	7.3	11	1/4	172	14	128	126	120	119	150	14	119	113	120	119	144
25	70	185.5	157	31	48	57	39	19	7.3	11	1/4	187	14	145	141	131	130	160	14	131	123	131	130	154
32	82	194.5	157	31	48	57	47	30	9	15	1/4	190	16	162	-	150	146	180	16	150	139	150	146	174
40	100	224	230	41	56	65	55	30	9	15	1/4	212	16	189	171	163	160	200	16	164	149	163	160	194
50	126	235.5	230	41	56	65	66	30	9	15	1/4	234	16	220	192	197	194	230	16	197	176	197	194	224

■ ANSI (Unit: inch)

												ANSI			
												FLANGED ANSI CLASS150		SOCKET	THREADED
												L		L	L
inch	mm	D1	H	A	A2	A3	A3'	H1	S1	S2	S3	P	U-PVC, C-PVC PP, PVDF	t	U-PVC, C-PVC PP, PVDF	U-PVC, C-PVC PP, PVDF
1/2	15	1.89	6.77	6.18	1.22	1.89	2.24	1.14	0.75	0.29	0.43	1/4	5.63	0.47	4.45	4.02
3/4	20	2.36	7.03	6.18	1.22	1.89	2.24	1.38	0.75	0.29	0.43	1/4	6.77	0.55	5.08	4.72
1	25	2.76	7.30	6.18	1.22	1.89	2.24	1.54	0.75	0.29	0.43	1/4	7.36	0.55	5.75	5.16
1 1/4	32	3.23	7.66	6.18	1.22	1.89	2.24	1.85	1.18	0.35	0.59	1/4	7.48	0.63	6.46	5.91
1 1/2	40	3.94	8.82	9.06	1.61	2.20	2.56	2.17	1.18	0.35	0.59	1/4	8.35	0.63	7.24	6.42
2	50	4.96	9.27	9.06	1.61	2.20	2.56	2.60	1.18	0.35	0.59	1/4	9.21	0.63	8.23	7.76

ASAHI AV
BALL VALVE

P.043 BALL VALVE TYPE 21, 21α

P.053 WATER BALL VALVE

P.057 3 WAY BALL VALVE TYPE 23

P.063 3 WAY BALL VALVE TYPE 23 H

P.065 LAB COCK

P.067 COMPACT BALL VALVE

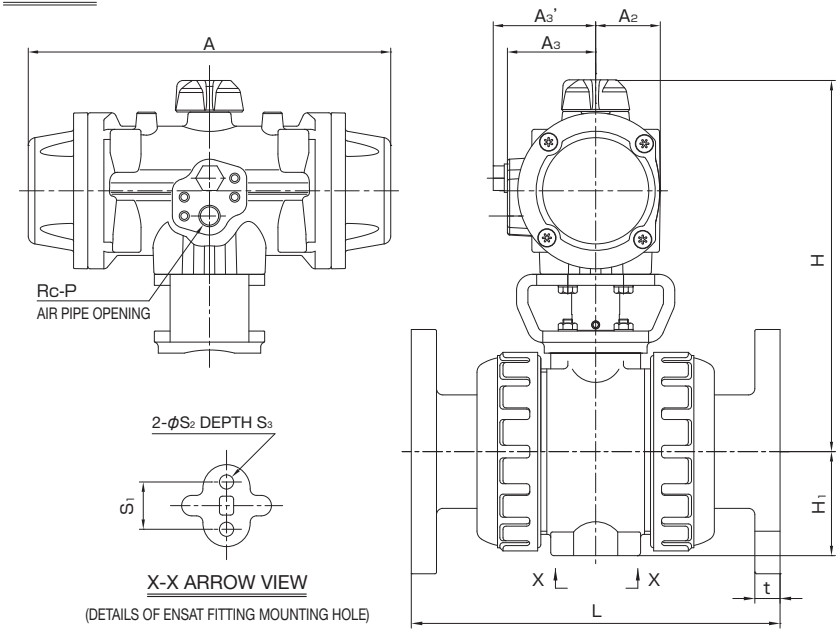
AUTOMATIC | PNEUMATIC | TYPE AA | DOUBLE ACTING | AIR TO OPEN | AIR TO CLOSE

BALL VALVE TYPE 21, 21α

TYPE——A21A, A2AA

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

FLANGED

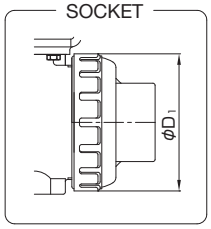


ACTUATOR SELECTION CHART

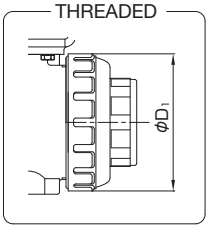
SIZE	ACTUATOR TYPE
15mm (1/2inch)	PP00S
20mm (3/4inch)	
25mm (1inch)	
32mm (1 1/4inch)	
40mm (1 1/2inch)	PP10S
50mm (2inch)	

For detailed specifications, see P.122

SOCKET



THREADED



■ JIS, DIN (Unit: mm)

												JIS						DIN						
												FLANGED JIS5K, JIS10K		SOCKET		THREADED		FLANGED DIN PN10/PN16		SOCKET		THREADED		SPIGOT
												L		L		L		L		L		L		L
mm	D1	H	A	A2	A3	A3'	H1	S1	S2	S3	P	U-PVC, C-PVC PP, PVDF	t	U-PVC C-PVC	PP	U-PVC C-PVC	PP PVDF	U-PVC, C-PVC PP, PVDF	t	U-PVC C-PVC	PP PVDF	U-PVC C-PVC	PP PVDF	U-PVC PP, PVDF
15	48	172	157	31	48	57	29	19	7.3	11	1/4	143	12	109	108	102	100	130	12	102	99	102	100	124
20	60	178.5	157	31	48	57	35	19	7.3	11	1/4	172	14	128	126	120	119	150	14	119	113	120	119	144
25	70	185.5	157	31	48	57	39	19	7.3	11	1/4	187	14	145	141	131	130	160	14	131	123	131	130	154
32	82	194.5	157	31	48	57	47	30	9	15	1/4	190	16	162	-	150	146	180	16	150	139	150	146	174
40	100	224	230	41	56	65	55	30	9	15	1/4	212	16	189	171	163	160	200	16	164	149	163	160	194
50	126	235.5	230	41	56	65	66	30	9	15	1/4	234	16	220	192	197	194	230	16	197	176	197	194	224

■ ANSI (Unit: inch)

													ANSI			
													FLANGED ANSI CLASS150		SOCKET	THREADED
													L		L	L
inch	mm	D1	H	A	A2	A3	A3'	H1	S1	S2	S3	P	U-PVC, C-PVC PP, PVDF	t	U-PVC, C-PVC PP, PVDF	U-PVC, C-PVC PP, PVDF
1/2	15	1.89	6.77	6.18	1.22	1.89	2.24	1.14	0.75	0.29	0.43	1/4	5.63	0.47	4.45	4.02
3/4	20	2.36	7.03	6.18	1.22	1.89	2.24	1.38	0.75	0.29	0.43	1/4	6.77	0.55	5.08	4.72
1	25	2.76	7.30	6.18	1.22	1.89	2.24	1.54	0.75	0.29	0.43	1/4	7.36	0.55	5.75	5.16
1 1/4	32	3.23	7.66	6.18	1.22	1.89	2.24	1.85	1.18	0.35	0.59	1/4	7.48	0.63	6.46	5.91
1 1/2	40	3.94	8.82	9.06	1.61	2.20	2.56	2.17	1.18	0.35	0.59	1/4	8.35	0.63	7.24	6.42
2	50	4.96	9.27	9.06	1.61	2.20	2.56	2.60	1.18	0.35	0.59	1/4	9.21	0.63	8.23	7.76

BALL VALVE TYPE 21, 21α

- EQUIPPED WITH TOP FLANGE, ALLOWING FOR EASY CHANGE TO AUTOMATIC VALVE.
- COMES WITH BOTTOM STAND TO FACILITATE MOUNTING ON RACKS AND PANELS (See the Ensat mounting procedure on page 69).
- DOUBLE O-RING ON THE STEM IMPROVES DURABILITY AND SEALING PROPERTY.

MANUAL

AUTOMATIC

BASIC SPECIFICATIONS

VALVE TYPE——**BALL VALVE TYPE 21, 21α**

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**

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa{kgf/cm²}	CONNECTION METHOD		
			FLANGED	SOCKET	THREADED
U-PVC	0℃～ 50℃	1.0 {10.2}	○	○	○
C-PVC	0℃～ 90℃	1.0 {10.2}	○	○	○
PP	-20℃～ 80℃	1.0 {10.2}	○	○	○
PVDF	-20℃～100℃	1.0 {10.2}	○	○	○

NOTE (1) The ball-type valves have dead spaces for structural reasons. Note that volatile liquids, such as hydrogen peroxide (H_2O_2) 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.

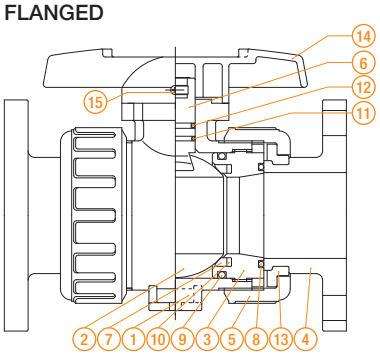
■**Multi Functional Handle**

Removing the handle and placing the raised lugs into the carrier allow for easy disassembly of the valve.

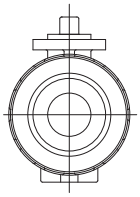
* The handle has other colors. (blue, white, yellow)(Option)

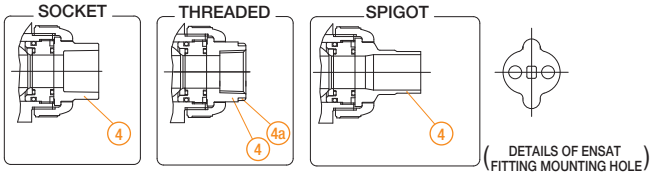
PARTS LIST MANUAL

FLANGED



(DETAILS OF STEM)





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

PART NO. / NAME	QTY	MATERIAL
⑥STEM	1	U-PVC, C-PVC, PP, PVDF
⑦SEAT	2	PTFE
⑧O-RING (A)	2	EPDM, FKM, etc.
⑨O-RING (B)	1	EPDM, FKM, etc.
⑩O-RING (C)	2	EPDM, FKM, etc.
⑪O-RING (D)	1	EPDM, FKM, etc.

PART NO. / NAME	QTY	MATERIAL
⑫O-RING (E)	1	EPDM, FKM, etc.
⑬STOP RING	2	PVDF (Used for flanged type.)
⑭HANDLE	1	ABS
⑮TAPPING SCREW (A)	1	SUS304

COMPATIBLE ACTUATOR AUTOMATIC

PNEUMATIC TYPE TA — For detailed specifications, see P.123

PNEUMATIC TYPE AA — For detailed specifications, see P.122

ELECTRIC TYPE T — For detailed specifications, see P.139

TYPE CATEGORY MANUAL AUTOMATIC

The types are classified according to the size and material.

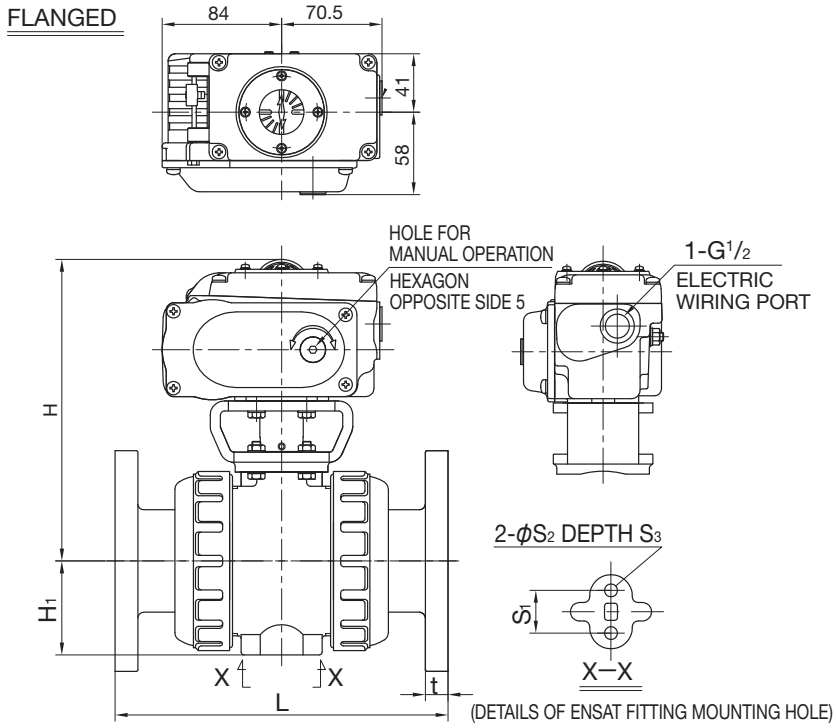
SIZE \ BODY MATERIAL	U-PVC	C-PVC	PP	PVDF
15mm – 50mm	TYPE 21α		TYPE 21	
65mm – 100mm	TYPE 21			

AUTOMATIC ELECTRIC TYPE T Single-Phase 100V • Single-Phase 200V

BALL VALVE TYPE 21, 21α

TYPE——A21T, A2AT
CONNECTION / FLANGED, SOCKET, THREADED——JIS, DIN, ANSI SPIGOT——DIN

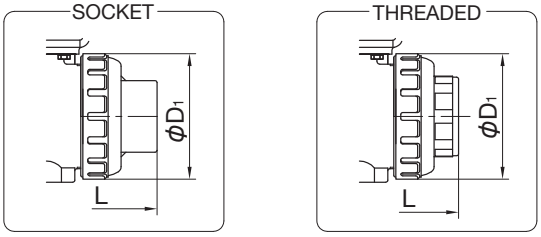
FLANGED



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
15mm (1/2inch)	T-00
20mm (3/4inch)	
25mm (1inch)	
32mm (1 1/4inch)	
40mm (1 1/2inch)	
50mm (2inch)	

For detailed specifications, see P.139



■ JIS, DIN (Unit: mm)

							JIS						DIN						
							FLANGED JIS5K, JIS10K		SOCKET		THREADED		FLANGED DIN PN10/PN16		SOCKET		THREADED		SPIGOT
							L		L		L		L		L		L		L
mm	D1	H	H1	S1	S2	S3	U-PVC, C-PVC PP, PVDF	t	U-PVC C-PVC	PP	U-PVC C-PVC	PP PVDF	U-PVC, C-PVC PP, PVDF	t	U-PVC C-PVC	PP PVDF	U-PVC C-PVC	PP PVDF	U-PVC PP, PVDF
15	48	169.5	29	19	7.3	11	143	12	109	108	102	100	130	12	102	99	102	100	124
20	60	176	35	19	7.3	11	172	14	128	126	120	119	150	14	119	113	120	119	144
25	70	183	39	19	7.3	11	187	14	145	141	131	130	160	14	131	123	131	130	154
32	82	192	47	30	9	15	190	16	162	-	150	146	180	16	150	139	150	146	174
40	100	200.5	55	30	9	15	212	16	189	171	163	160	200	16	164	149	163	160	194
50	126	212	66	30	9	15	234	16	220	192	197	194	230	16	197	176	197	194	224

■ ANSI (Unit: inch)

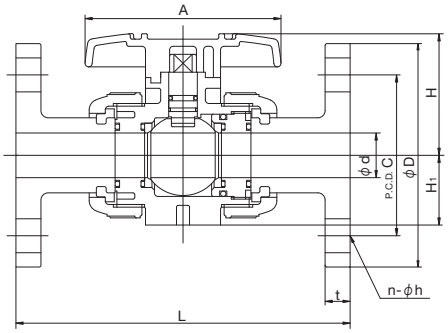
							ANSI			
							FLANGED ANSI CLASS150		SOCKET	THREADED
							L		L	L
inch	mm	D1	H	H1	S1	S2	S3	U-PVC, C-PVC PP, PVDF	t	U-PVC, C-PVC PP, PVDF	U-PVC, C-PVC PP, PVDF
1/2	15	1.96	6.67	1.14	0.75	0.29	0.43	5.63	0.47	4.45	4.02
3/4	20	2.45	6.93	1.38	0.75	0.29	0.43	6.77	0.55	5.08	4.72
1	25	2.86	7.20	1.54	0.75	0.29	0.43	7.36	0.55	5.75	5.16
1 1/4	32	4.08	7.56	1.85	1.18	0.35	0.59	7.48	0.63	6.46	5.91
1 1/2	40	4.08	7.89	2.17	1.18	0.35	0.59	8.35	0.63	7.24	6.42
2	50	5.14	8.35	2.60	1.18	0.35	0.59	9.21	0.63	8.23	7.76

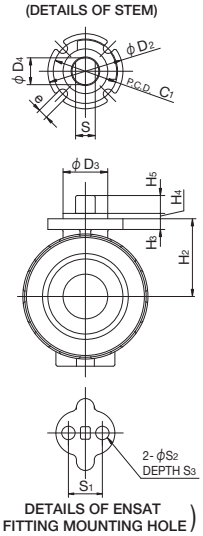
MANUAL

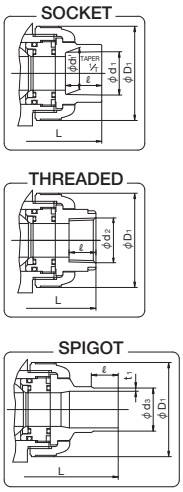
BALL VALVE TYPE 21, 21α

TYPE——V21LV, V2ALV
CONNECTION / FLANGED, SOCKET, THREADED——JIS, DIN, ANSI SPIGOT——DIN

FLANGED







■ JIS, DIN (Unit: mm)

mm	d	d'	D1	D2	D3	D4	C1	H	H1	H2	H3	H4	H5	A	S	S1	S2	S3	e
10	13	-	46	-	-	-	-	43.5	-	-	-	-	-	80	-	-	-	-	-
15	15	-	48	42	25	13.5	36	51.5	29	30	6	3	8	92	10.5	19	7.3	11	5.5
20	20	-	60	42	25	15	36	59.5	35	36.5	6	3	10	100	11	19	7.3	11	5.5
25	25	-	70	42	25	15	36	68	39	43.5	6	3	10	110	11	19	7.3	11	5.5
32	32	-	82	48	30	19	42	80.5	47	52.5	8	3	10	121	15	30	9	15	5.5
40	40	-	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5
50	51	-	126	57	35	23	50	102.5	66	72.5	10	3	12	159	18	30	9	15	6.5
65	65	58	133	81	55	30	70	126	72	85	13	3	16	200	24	48	9	6	9
80	78	68.5	152	81	55	30	70	140	85	94	13	3	19	240	24	55	11	7	9
100	100	90	210	116	70	40	102	178	110	126	16	3	23	300	34	65	11	8	11

JIS

mm	FLANGED JIS5K D	C	n	h	JIS10K D	C	n	h	L U-PVC C-PVC	L PP	L PVDF	t	SOCKET U-PVC, C-PVC d1	ℓ	1/T	L	PP d1	d1'	ℓ	L	THREADED d2	ℓ	L U-PVC C-PVC	L PP	L PVDF
15	80	60	4	12	95	70	4	15	143	143	143	12	22.11	20	1/34	109	21.2	20.2	20	108	Rc1/2	15	102	100	100
20	85	65	4	12	100	75	4	15	172	172	172	14	26.13	24	1/34	128	26.2	25.2	23	126	Rc3/4	17	120	119	119
25	95	75	4	12	125	90	4	19	187	187	187	14	32.16	27	1/34	145	33.0	32.0	25	141	Rc1	20	131	130	130
32	115	90	4	15	135	100	4	19	190	190	190	16	38.19	30	1/34	162	-	-	-	-	Rc11/4	22	150	146	146
40	120	95	4	15	140	105	4	19	212	212	212	16	48.21	37	1/37	189	47.0	46.0	28	171	Rc11/2	25	163	160	160
50	130	105	4	15	155	120	4	19	234	234	234	16	60.25	42	1/37	220	59.0	58.0	28	192	Rc2	28	197	194	194
65	155	130	4	15	175	140	4	19	261	257	256	18	76.60	61	1/48	273	74.25	73.96	31	219	Rc21/2	32	215	213	212
80	180	145	4	19	185	150	8	19	306	305	302	18	89.60	64	1/49	316	89.2	88.85	35.5	257	Rc3	35	265	264	261
100	200	165	8	19	210	175	8	19	374	374	369	18	114.70	84	1/56	419	109.05	108.65	41.5	341	Rc4	45	362	362	357

DIN

mm	FLANGED DIN PN10/PN16 D	C	n	h	L U-PVC C-PVC	L PP	L PVDF	t	SOCKET U-PVC, C-PVC d1	ℓ	L	PP, PVDF d1	d1'	ℓ	L PP	L PVDF	THREADED d2	ℓ	L U-PVC C-PVC	L PP	L PVDF	SPIGOT U-PVC d3	d3'	ℓ	PP, PVDF d3	ℓ	t PP	t PVDF	L PP	L PVDF
10	90	60	4	14	120	119	119	12	16	14	99	15.5	15.4	13	96	96	Rp3/8	15	99	98	98	16	13	16	-	-	-	-	114	114
15	95	65	4	14	130	130	130	12	20	16	102	19.5	19.3	14.5	99	99	Rp1/2	15	102	100	100	20	15	18.5	20	18.5	2.5	1.9	124	124
20	105	75	4	14	150	150	150	14	25	19	119	24.5	24.3	16	113	113	Rp3/4	17	120	119	119	25	20	24	25	22	2.7	1.9	144	144
25	115	85	4	14	160	160	160	14	32	22	131	31.5	31.3	18	123	123	Rp1	20	131	130	130	32	25	24.5	32	22.5	3.0	2.4	154	154
32	140	100	4	18	180	180	180	16	40	26	150	39.45	39.2	20.5	139	139	Rp1 1/4	22	150	146	146	40	31	28	40	26	3.7	2.4	174	174
40	150	110	4	18	200	200	200	16	50	31	164	49.45	49.2	23.5	149	149	Rp1 1/2	25	163	160	160	50	40	34	50	32	4.6	3.0	194	194
50	165	125	4	18	230	230	230	16	63	38	197	62.5	62.1	27.5	176	176	Rp2	28	197	194	194	63	51	38	63	36	5.8	3.0	224	224
65	185	145	4	18	290	288	287	18	75	44	233	74.25	73.95	31	205	204	Rp2 1/2	32	215	213	212	75	65	44	75	38	6.9	3.6	245	244
80	200	160	8	18	312	311	308	21	90	51	284	89.2	88.85	35.5	252	249	Rp3	35	265	264	261	90	80	51	90	38	8.2	4.3	296	293
100	220	180	8	18	352	352	347	18	110	61	351	109.05	108.65	41.5	312	307	Rp4	45	340	340	335	110	93.6	46	110	44.5	10.0	5.3	355	350

■ ANSI (Unit: inch)

inch	mm	d	d'	D1	D2	D3	D4	C1	H	H1	H2	H3	H4	H5	A	S	S1	S2	S3	e
1/2	15	0.59	-	1.89	1.65	0.98	0.53	1.42	2.03	1.14	1.18	0.24	0.12	0.31	3.62	0.41	0.75	0.29	0.43	0.22
3/4	20	0.79	-	2.36	1.65	0.98	0.59	1.42	2.34	1.38	1.44	0.24	0.12	0.39	3.94	0.43	0.75	0.29	0.43	0.22
1	25	0.98	-	2.76	1.65	0.98	0.59	1.42	2.68	1.54	1.71	0.24	0.12	0.39	4.33	0.43	0.75	0.29	0.43	0.22
1 1/4	32	1.26	-	3.23	1.89	1.18	0.75	1.65	3.17	1.85	2.07	0.31	0.12	0.39	4.76	0.59	1.18	0.35	0.59	0.22
1 1/2	40	1.57	-	3.94	2.24	1.38	0.91	1.97	3.50	2.17	2.40	0.39	0.12	0.47	5.16	0.71	1.18	0.35	0.59	0.26
2	50	2.01	-	4.96	2.24	1.38	0.91	1.97	4.04	2.60	2.85	0.39	0.12	0.47	6.26	0.71	1.18	0.35	0.59	0.26
2 1/2	65	2.56	2.28	5.24	3.19	2.17	1.18	2.76	4.96	2.83	3.35	0.51	0.12	0.63	7.87	0.94	1.89	0.35	0.24	0.35
3	80	3.07	2.70	5.98	3.19	2.17	1.18	2.76	5.51	3.35	3.70	0.51	0.12	0.75	9.45	0.94	2.17	0.43	0.28	0.35
4	100	3.94	3.54	8.27	4.57	2.76	1.57	4.02	7.01	4.33	4.96	0.63	0.12	0.91	11.81	1.34	2.56	0.43	0.31	0.43

ANSI

inch	mm	FLANGED ANSI CLASS 150 D	C	n	h	L U-PVC C-PVC	L PP	L PVDF	t	H1	SOCKET U-PVC, C-PVC ASTM SCH40 d1	d1'	ℓ	L	ASTM SCH80 d1	d1'	ℓ	L	PP, PVDF d1	ℓ	L PP	L PVDF	THREADED d2	ℓ	L U-PVC C-PVC	L PP	L PVDF
1/2	15	3.50	2.38	4	0.62	5.63	5.63	5.63	0.47	3.70	-	-	-	-	0.848	0.836	0.875	4.45	0.83	0.870	4.45	4.45	1/2-14 NPT	0.59	4.02	4.02	4.02
3/4	20	3.88	2.75	4	0.62	6.77	6.77	6.77	0.55	4.50	-	-	-	-	1.058	1.046	1.000	5.08	1.03	1.000	5.08	5.08	3/4-14 NPT	0.67	4.72	4.72	4.72
1	25	4.25	3.12	4	0.62	7.36	7.36	7.36	0.55	5.24	-	-	-	-	1.325	1.310	1.125	5.75	1.30	1.130	5.75	5.75	1-111/2 NPT	0.79	5.16	5.16	5.16
1 1/4	32	4.62	3.50	4	0.62	7.48	7.48	7.48	0.63	6.50	-	-	-	-	1.670	1.655	1.250	6.46	1.65	1.250	6.46	6.46	11/4-111/2 NPT	0.87	5.91	5.91	5.91
1 1/2	40	5.00	3.88	4	0.62	8.35	8.35	8.35	0.63	6.50	-	-	-	-	1.912	1.894	1.375	7.24	1.89	1.370	7.24	7.24	11/2-111/2 NPT	0.98	6.42	6.42	6.42
2	50	6.00	4.75	4	0.75	9.21	9.21	9.21	0.63	7.34	-	-	-	-	2.387	2.369	1.500	8.23	2.36	1.500	8.23	8.23	2-111/2 NPT	1.10	7.76	7.76	7.76
2 1/2	65	7.00	5.50	4	0.75	10.20	10.12	10.08	0.71	10.06	-	-	-	-	2.889	2.868	1.750	9.45	2.88	1.752	9.37	9.33	21/2-8 NPT	1.26	8.46	8.39	8.35
3	80	7.50	6.00	4	0.75	12.05	12.01	11.89	0.71	10.06	-	-	-	-	3.516	3.492	1.875	11.14	3.48	1.874	11.10	10.98	3-8 NPT	1.38	10.43	10.39	10.28
4	100	9.00	7.50	8	0.75	14.72	14.72	14.53	0.71	12.01	4.518	4.491	2.000	13.86	-	-	-	-	4.48	2.252	14.37	14.13	4-8 NPT	1.77	14.25	14.25	14.06

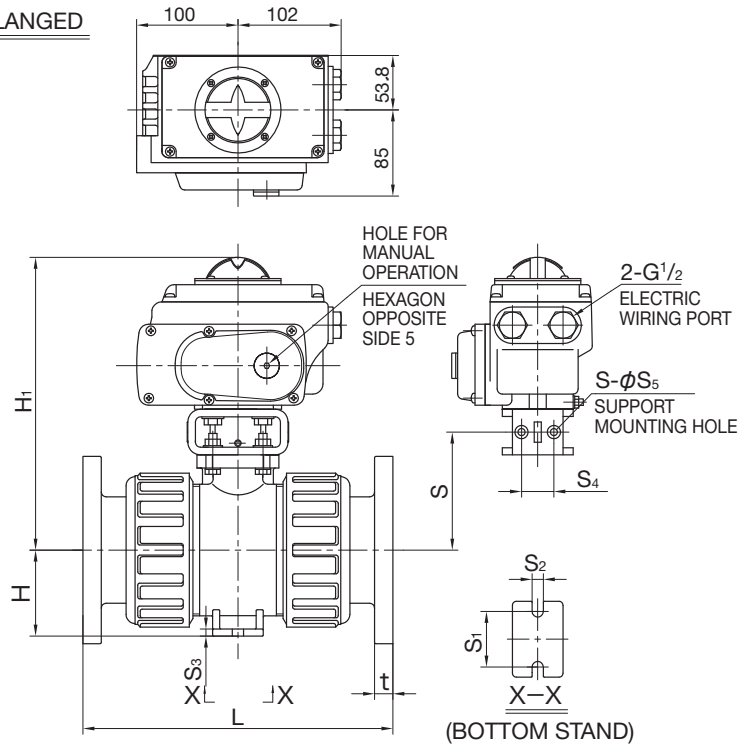
AUTOMATIC ELECTRIC TYPE T Single-Phase 100V • Single-Phase 200V

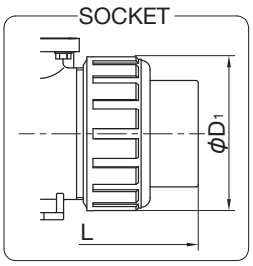
BALL VALVE TYPE 21, 21α

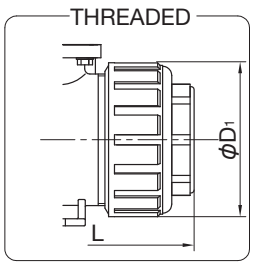
TYPE——A21T

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

FLANGED







ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
65mm (2 1/2inch)	T-0
80mm (3inch)	
100mm (4inch)	

For detailed specifications, see P.139

■ JIS, DIN (Unit: mm)

mm	D1	H	H1	S	S1	S2	S3	JIS FLANGED JIS5K, JIS10K L U-PVC C-PVC	JIS FLANGED JIS5K, JIS10K L PP	JIS FLANGED JIS5K, JIS10K L PVDF	JIS t	JIS SOCKET L U-PVC C-PVC	JIS SOCKET L PP	JIS THREADED L U-PVC C-PVC	JIS THREADED L PP	JIS THREADED L PVDF	DIN FLANGED DIN PN10/PN16 L U-PVC C-PVC	DIN FLANGED DIN PN10/PN16 L PP	DIN FLANGED DIN PN10/PN16 L PVDF	DIN t	DIN SOCKET L U-PVC C-PVC	DIN SOCKET L PP	DIN SOCKET L PVDF	DIN THREADED L U-PVC C-PVC	DIN THREADED L PP	DIN THREADED L PVDF	DIN SPIGOT L U-PVC	DIN SPIGOT L PP	DIN SPIGOT L PVDF
65	133	280	72	107.5	48	9	6	261	257	256	18	273	219	215	213	212	290	288	287	18	233	205	204	215	213	212	285	245	244
80	152	289	85	116.5	55	11	7	306	305	302	18	316	257	265	264	261	312	311	308	21	284	252	249	265	264	261	299	296	293
100	210	327	110	151.5	65	11	8	374	374	369	18	419	341	362	362	357	352	352	347	18	351	312	307	340	340	335	358	355	350

■ ANSI (Unit: inch)

inch	mm	D1	H	H1	S	S1	S2	S3	ANSI FLANGED ANSI CLASS150 L U-PVC C-PVC	ANSI FLANGED ANSI CLASS150 L PP	ANSI FLANGED ANSI CLASS150 L PVDF	ANSI t	ANSI SOCKET L U-PVC C-PVC	ANSI SOCKET L PP	ANSI SOCKET L PVDF	ANSI THREADED L U-PVC C-PVC	ANSI THREADED L PP	ANSI THREADED L PVDF
2 1/2	65	5.43	11.02	2.83	4.23	1.89	0.35	0.24	10.20	10.12	10.08	0.71	9.45	9.37	9.33	8.46	8.39	8.35
3	80	6.20	11.38	3.35	4.59	2.17	0.43	0.28	12.05	12.01	11.89	0.71	11.14	11.10	10.98	10.43	10.39	10.28
4	100	8.57	12.87	4.33	5.96	2.56	0.43	0.31	14.72	14.72	14.53	0.71	13.86	14.37	14.13	14.25	14.25	14.06

WATER BALL VALVE (WATER ONLY)

- EQUIPPED WITH TOP FLANGE, ENABLING EASY CHANGE TO AUTOMATIC VALVE.
  (Change to an automatic valve requires an actuator set.)
- TYPE 21 FOR CHEMICAL SOLUTION LINES AND WATER BALL VALVE FOR WATER/SEA WATER LINES CAN BE SELECTIVELY USED, WHICH CONTRIBUTES TO TOTAL COST REDUCTION.

MANUAL

AUTOMATIC

BASIC SPECIFICATIONS

VALVE TYPE——**WATER BALL VALVE**

SIZE——**15 mm—50 mm (1/2 inch—2 inch)**

BODY MATERIAL——**U-PVC**

SEAL MATERIAL / O-RING——**EPDM**

CONNECTION / SOCKET——**JIS**

THREADED——**Rc**

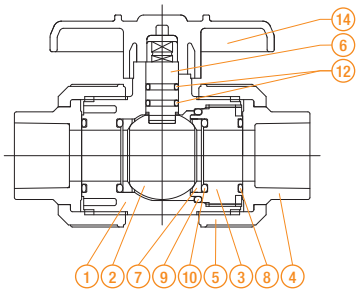
	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa{kgf/cm²}	CONNECTION METHOD	
			SOCKET	THREADED
U-PVC	0℃～ 50℃	1.0 {10.2}	○	○

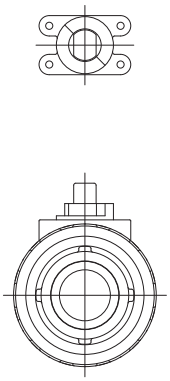
NOTE (1) The water ball valves are dedicated for water/sea water lines. They cannot be used for chemical solution lines. (2) For chemical solution lines, use the ball valve type 21 or compact ball valve. (3) The face-to-face dimensions and parts are not compatible between the water ball valve and the ball valve type 21α. (4) Parts for the water ball valve are not sold separately. (5) For switching from a manual valve to an automatic valve, order an actuator set.

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

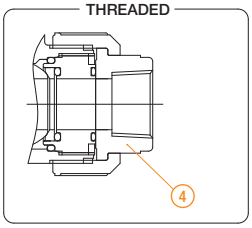
PARTS LIST MANUAL

SOCKET





THREADED



PART NO. / NAME	QTY	MATERIAL
① BODY	1	U-PVC
② BALL	1	U-PVC
③ UNION	1	U-PVC
④ END CONNECTOR	2	U-PVC
⑤ UNION NUT	2	U-PVC
⑥ STEM	1	U-PVC

PART NO. / NAME	QTY	MATERIAL
⑦ SEAT	2	PTFE
⑧ O-RING (A)	2	EPDM
⑨ O-RING (B)	1	EPDM
⑩ O-RING (C)	2	EPDM
⑫ O-RING (E)	2	EPDM
⑭ HANDLE	1	ABS

COMPATIBLE ACTUATOR AUTOMATIC

PNEUMATIC TYPE VC — For detailed specifications, see P.124

ELECTRIC TYPE V — For detailed specifications, see P.143

PRODUCT MODEL CODE LIST

MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
V	WB	LV	U	E	*	J	***
V MANUAL VALVE	WB WATER BALL VALVE	LV LEVER TYPE	U U-PVC	E EPDM	S SOCKET N THREADED	J JIS	015 15mm ~ 050 50mm

PRODUCT MODEL CODE LIST

AUTOMATIC

ACTUATION	TYPE	ACTUATOR TYPE	ACTION / POWER SOURCE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
A	WB	*	*	U	E	*	*	***
A AUTOMATIC VALVE	WB WATER BALL VALVE	PNEUMATIC C TYPE VC ELECTRIC V TYPE V	PNEUMATIC F DOUBLE ACTING G AIR TO OPEN S AIR TO CLOSE ELECTRIC 1 Single-Phase 100V 2 Single-Phase 200V D DC24V	U U-PVC	E EPDM	S SOCKET N THREADED	J JIS	015 15mm ~ 050 50mm

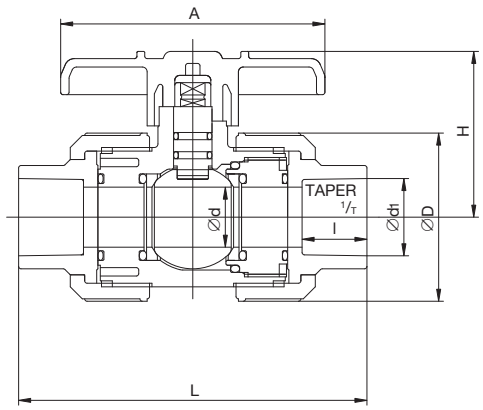
MANUAL

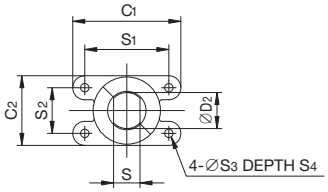
WATER BALL VALVE (WATER ONLY)

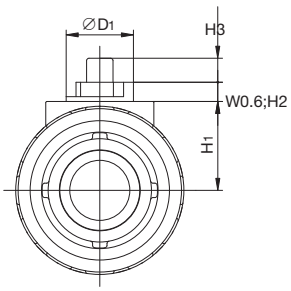
TYPE——VWBLV

CONNECTION / SOCKET, THREADED——JIS

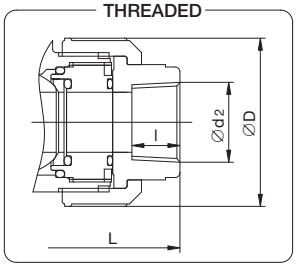
SOCKET







THREADED



■ JIS (Unit: mm)

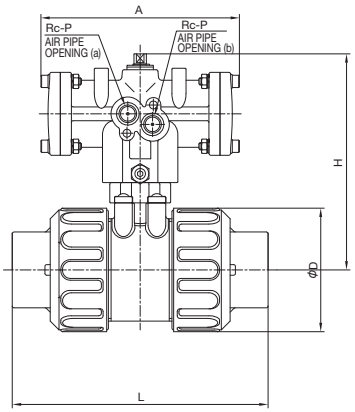
mm	d	D	D1	D2	H	H1	H2	H3	A	S	C1	C2	S1	S2	S3	S4	JIS SOCKET d1	JIS SOCKET ℓ	JIS SOCKET 1/T	JIS SOCKET L	JIS Threaded End d1	JIS Threaded End ℓ	JIS Threaded End L
15	15	48	24	13.5	54	25	6	7.5	92	10.5	40	25	31.5	15	3.5	12	22.11	20	1/34	104	Rc 1/2	15	98
20	20	60	27	15	62	31	8	10	100	11	45	29	35	19	3.5	12	26.13	24	1/34	128	Rc 3/4	17	119
25	25	70	28	15	69	38	8	10	100	11	45	29	35	19	3.5	12	32.16	27	1/34	145	Rc 1	20	135
32	30	80	34	19	79	43	10	10	121	15	58.5	38	45.5	25	4.5	15	38.19	30	1/34	162	Rc 1 1/4	22	150
40	40	96	38	23	88	50	10	12	131	18	58.5	38	45.5	25	4.5	15	48.21	37	1/37	189	Rc 1 1/2	25	170
50	51	120	40	23	102	56	12	12	159	18	60	40	47	27	4.5	15	60.25	42	1/37	220	Rc 2	28	198

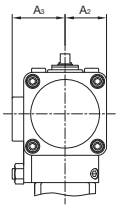
AUTOMATIC PNEUMATIC TYPE VC DOUBLE ACTING AIR TO OPEN AIR TO CLOSE

WATER BALL VALVE

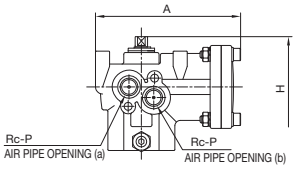
TYPE——AWBC
CONNECTION / SOCKET, THREADED——JIS

SOCKET





ACTUATOR SHAPE FOR PND-03S



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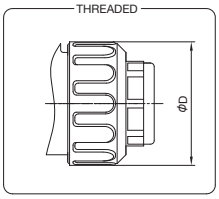


ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
15mm (1/2inch)	PND-03S
20mm (3/4inch)	
25mm (1inch)	PND-03D
32mm (1 1/4inch)	
40mm (1 1/2inch)	PND-04D
50mm (2inch)	

For detailed specifications, see P.124

■ JIS (Unit: mm)

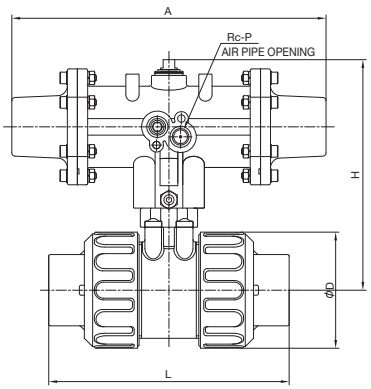
mm	D	H	A	A2	A3	P	JIS SOCKET L	JIS THREADED L
15	48	96.5	83	24	30	1/8	104	98
20	60	107	83	24	30	1/8	128	119
25	70	122.5	113	24	30	1/8	145	135
32	80	145.5	113	24	30	1/8	162	150
40	96	169	132	31	36	1/8	189	170
50	120	177	132	31	36	1/8	220	198

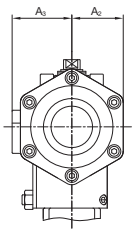
AUTOMATIC PNEUMATIC TYPE VC DOUBLE ACTING AIR TO OPEN AIR TO CLOSE

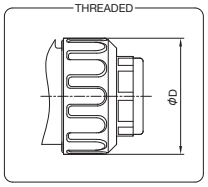
WATER BALL VALVE

TYPE——AWBC
CONNECTION / SOCKET, THREADED——JIS

SOCKET







ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE	
	AIR TO OPEN	AIR TO CLOSE
15mm (1/2inch)	PSO-03D	PSC-03D
20mm (3/4inch)		
25mm (1inch)	PSO-04D	PSC-04D
32mm (1 1/4inch)	PSO-04W	PSC-04W
40mm (1 1/2inch)		
50mm (2inch)		

For detailed specifications, see P.124

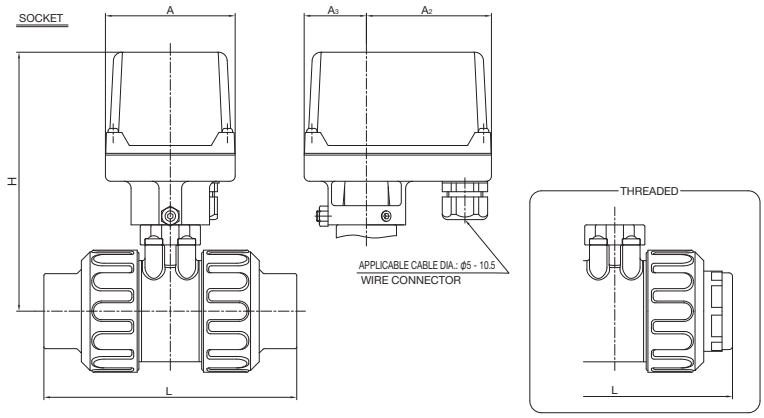
■ JIS (Unit: mm)

mm	D	H	A	A2	A3	P	JIS SOCKET L	JIS THREADED L
15	48	105	165	24	30	1/8	104	98
20	60	115.5	165	24	30	1/8	128	119
25	70	139	190	31	36	1/8	145	135
32	80	162	279	31	36	1/8	162	150
40	96	169	279	31	36	1/8	189	170
50	120	177	279	31	36	1/8	220	198

AUTOMATIC ELECTRIC TYPE V Single-Phase 100V • Single-Phase 200V • DC24V

WATER BALL VALVE

TYPE——AWBV
CONNECTION / SOCKET, THREADED——JIS



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE	
	AC100V AC200V	DC24V
15mm (1/2inch)	AM1-030	DM2-030
20mm (3/4inch)		
25mm (1inch)	AM1-070	DM2-070
32mm (1 1/4inch)	AM1-180	DM2-180
40mm (1 1/2inch)		
50mm (2inch)		

For detailed specifications, see P.143

■ JIS (Unit: mm)

mm	H	A	A_2	A_3	JIS SOCKET L	JIS THREADED L
15	131	74	71	36	104	98
20	141.5	74	71	36	128	119
25	148.5	74	71	36	145	135
32	213.5	74	54	53	162	150
40	220.5	74	54	53	189	170
50	228.5	74	54	53	220	198

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

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa{kgf/cm²}	CONNECTION METHOD		
			FLANGED	SOCKET	THREADED
U-PVC	0℃～50℃	1.0 {10.2}	○	○	○
C-PVC	0℃～90℃	1.0 {10.2}	○	○	○
PP	-20℃～80℃	1.0 {10.2}	○	○	○
PVDF	-20℃～100℃	1.0 {10.2}	○	○	○

NOTE (1) The ball-type valves have dead spaces for structural reasons. Note that volatile liquids, such as hydrogen peroxide (H_2O_2) 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.

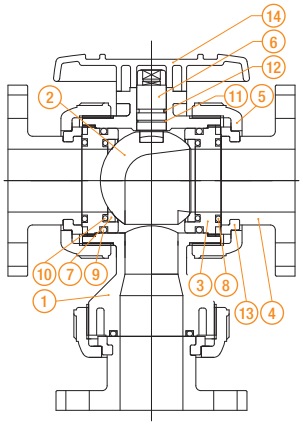
* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

MANUAL

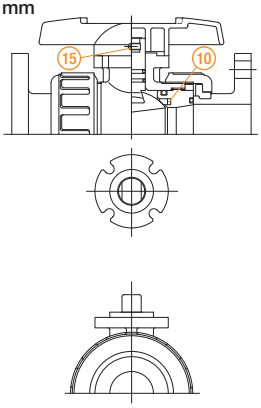
AUTOMATIC

PARTS LIST MANUAL

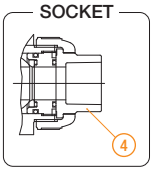
FLANGED



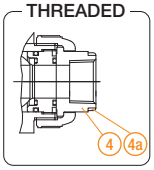
65 mm - 100 mm



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.123

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 P.058.

PRODUCT MODEL CODE LIST MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
V	23	LV	*	*	*	*	***
V MANUAL VALVE	23 TYPE 23	LV LEVER TYPE	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

PRODUCT MODEL CODE LIST AUTOMATIC

ACTUATION	TYPE	ACTUATOR TYPE	ACTION / POWER SOURCE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	SPACE HEATER
A	23	*	*	*	*	*	*	***	OC※
A AUTOMATIC VALVE	23 TYPE 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.

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 0°	45°	90°	135°	180°	BALL SHAPE
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 Ⓞ side. Left opens during air supply on Ⓢ side.

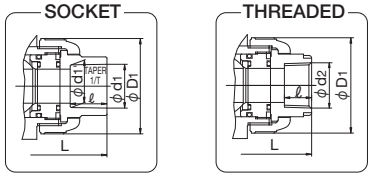
* Also for the solenoid valve, the right side opens when energized and the left side opens when de-energized.

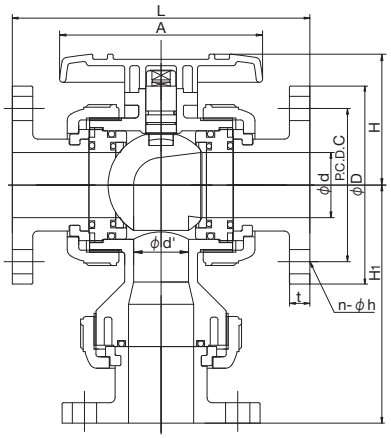
MANUAL

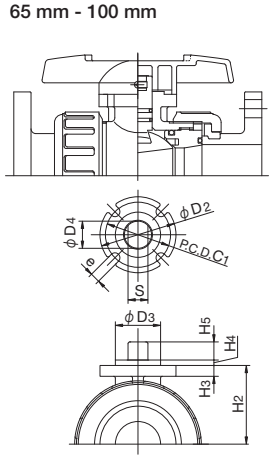
3 WAY BALL VALVE TYPE 23

TYPE——V23LV

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







■ JIS, DIN (Unit: mm)

mm	d	d'	D1	D2	D3	D4	C1	H	H2	H3	H4	H5	A	S	e
15	15	15	48	42	25	13.5	36	51.5	30.0	6	3	8	92	10.5	5.5
20	20	20	60	42	25	15	36	59.5	36.5	6	3	10	100	11	5.5
25	25	25	70	42	25	15	36	68.0	43.5	6	3	10	110	11	5.5
32	40	32	100	57	35	23	50	89.0	61.0	10	3	12	131	18	6.5
40	40	32	100	57	35	23	50	89.0	61.0	10	3	12	131	18	6.5
50	51	43	126	57	35	23	50	102.5	72.5	10	3	12	159	18	6.5
65	78	58	152	81	55	30	70	140.0	94.0	13	3	19	240	24	9.0
80	78	58	152	81	55	30	70	140.0	94.0	13	3	19	240	24	9.0
100	100	78	210	116	70	40	102	178.0	126.0	16	3	23	300	34	11.0

JIS

mm	FLANGED										SOCKET										THREADED			
	JIS5K				JIS10K				L	t	H1	U-PVC, C-PVC					PP				d2	ℓ	L	H1
	D	C	n	h	D	C	n	h				d1	ℓ	1/T	L	H1	d1	d1'	ℓ	L	H1				
15	80	60	4	12	95	70	4	15	143	12	94	22.11	20	1/34	108	77	21.2	20.2	20	108	77	Rc 1/2	15	102	74
20	85	65	4	12	100	75	4	15	172	14	115	26.13	24	1/34	128	93	26.2	25.2	23	126	92	Rc 3/4	17	120	89
25	95	75	4	12	125	90	4	19	187	14	133	32.16	27	1/34	145	112	33.0	32.0	25	141	110	Rc 1	20	131	105
32	115	90	4	15	135	100	4	19	212	16	165	38.19	30	1/34	174	146.5	-	-	-	-	-	Rc 1 1/4	22	163	141
40	120	95	4	15	140	105	4	19	212	16	165	48.21	37	1/37	189	154	47.0	46.0	28	171	145	Rc 1 1/2	25	163	141
50	130	105	4	15	155	120	4	19	234	16	187	60.25	42	1/37	220	180	59.0	58.0	28	192	166	Rc 2	28	197	168
65	155	130	4	15	175	140	4	19	304	18	256	76.60	61	1/48	316	261	74.25	73.96	31	264	235	Rc 2 1/2	32	264	235
80	180	145	4	19	185	150	8	19	304	18	256	89.60	64	1/49	316	261	89.2	88.85	35.5	258	232	Rc 3	35	264	235
100	200	165	8	19	210	175	8	19	372	18	305	114.70	84	1/56	418	328	109.05	108.65	41.5	340	289	Rc 4	45	360	299

DIN

mm	FLANGED							SOCKET									THREADED				SPIGOT							
	DIN PN10				L	t	H1	U-PVC, C-PVC				PP, PVDF(DIN)					d2	ℓ	L	H1	U-PVC				PP, PVDF				
	D	C	n	h				d1	ℓ	L	H1	d1	d1'	ℓ	L	H1					d3	d3'	ℓ	H1	d3	ℓ	t PP	t PVDF	L	H1
15	95	65	4	14	130	12	88	20	16	102	72	19.50	19.30	14.5	99	71	Rp1/2	15	102	74	20	15	18.5	83	20	18.5	2.5	1.9	124	83
20	105	75	4	14	150	14	104	25	19	120	85	24.50	24.30	16	114	83	Rp3/4	17	120	89	25	20	24	99	25	22	2.7	1.9	144	99
25	115	85	4	14	160	14	120	32	22	131	104	31.50	31.30	18	123	100	Rp1	20	131	105	32	25	24.5	115	32	22.5	3.0	2.4	154	115
32	140	100	4	18	212	16	165	40	26	173	147	39.45	39.2	20.5	148	131	Rp1 1/4	22	163	141	-	-	-	-	-	-	-	-	-	-
40	150	110	4	18	200	16	159	50	31	163	142	49.45	49.20	23.5	148	131	Rp1 1/2	25	163	141	50	40	34	153	50	32	4.6	3.0	194	153
50	165	125	4	18	230	16	185	63	38	197	170	62.50	62.10	27.5	176	154	Rp2	28	197	168	63	51	38	178	63	36	5.8	3.0	224	178
65	185	145	4	18	304	18	256	75	44	282	245	74.25	73.95	31	256	227	Rp2 1/2	32	264	235	-	-	-	-	-	-	-	-	-	-
80	200	160	8	18	310	21	259	90	51	282	245	89.20	88.85	35.5	251	224	Rp3	35	264	235	90	80	51	252	90	38	8.2	4.3	295	246
100	220	180	8	18	350	18	305	110	61	349	305	109.05	108.65	41.5	310	279	Rp4	45	338	299	110	93.6	61	308	110	44.5	10.0	5.3	353	301

■ ANSI (Unit: inch)

mm	inch	d	d'	D1	D2	D3	D4	C1	H	H2	H3	H4	H5	A	S	e
1/2	15	0.59	0.59	1.89	1.65	0.98	0.53	1.42	2.03	1.18	0.24	0.12	0.31	3.62	0.41	0.22
3/4	20	0.79	0.79	2.36	1.65	0.98	0.59	1.42	2.34	1.44	0.24	0.12	0.39	3.94	0.43	0.22
1	25	0.98	0.98	2.76	1.65	0.98	0.59	1.42	2.68	1.71	0.24	0.12	0.39	4.33	0.43	0.22
1 1/4	32	1.57	1.26	3.94	2.24	1.38	0.91	1.97	3.50	2.40	0.39	0.12	0.47	5.16	0.71	0.26
1 1/2	40	1.57	1.26	3.94	2.24	1.38	0.91	1.97	3.50	2.40	0.39	0.12	0.47	5.16	0.71	0.26
2	50	2.01	1.69	4.96	2.24	1.38	0.91	1.97	4.04	2.85	0.39	0.12	0.47	6.26	0.71	0.26
2 1/2	65	3.07	2.28	5.98	3.19	2.17	1.18	2.76	5.51	3.70	0.51	0.12	0.75	9.45	0.94	0.35
3	80	3.07	2.28	5.98	3.19	2.17	1.18	2.76	5.51	3.70	0.51	0.12	0.75	9.45	0.94	0.35
4	100	3.94	3.07	8.27	4.57	2.76	1.57	4.02	7.01	4.96	0.63	0.12	0.91	11.81	1.34	0.43

ANSI

mm	inch	FLANGED							SOCKET													THREADED			
		ANSI CLASS 150				L	t	H1	U-PVC, C-PVC									PP, PVDF				d2	ℓ	L	H1
									ASTM SCH40				ASTM SCH80												
		D	C	n	h				d1	d1'	ℓ	L	d1	d1'	ℓ	L	H1	d1	ℓ	L	H1				
1/2	15	3.50	2.38	4	0.62	5.63	0.47	3.70	-	-	-	-	0.848	0.836	0.875	4.45	3.08	0.83	0.870	4.45	3.09	1/2-14 NPT	0.59	4.02	2.89
3/4	20	3.88	2.75	4	0.62	6.77	0.55	4.50	-	-	-	-	1.058	1.046	1.000	5.08	3.56	1.03	1.000	5.08	3.61	3/4-14 NPT	0.67	4.72	3.48
1	25	4.25	3.12	4	0.62	7.36	0.55	5.24	-	-	-	-	1.325	1.310	1.125	5.75	4.32	1.30	1.130	5.75	4.37	1-11 1/2 NPT	0.79	5.16	4.13
1 1/4	32	4.62	3.50	4	0.62	8.35	0.63	6.50	-	-	-	-	1.670	1.655	1.250	6.85	5.51	1.65	1.250	7.04	5.75	1 1/4-11 1/2 NPT	0.87	6.42	5.53
1 1/2	40	5.00	3.88	4	0.62	8.35	0.63	6.50	-	-	-	-	1.912	1.894	1.375	7.24	5.71	1.89	1.370	7.24	5.85	1 1/2-11 1/2 NPT	0.98	6.42	5.53
2	50	6.00	4.75	4	0.75	9.21	0.63	7.34	-	-	-	-	2.387	2.369	1.500	8.23	6.66	2.36	1.500	8.23	6.76	2-11 1/2 NPT	1.10	7.76	6.61
2 1/2	65	7.00	5.50	4	0.75	11.97	0.71	10.06	-	-	-	-	2.889	2.868	1.750	11.21	9.65	2.88	1.752	11.21	9.65	2 1/2-8 NPT	1.26	10.39	9.25
3	80	7.50	6.00	4	0.75	11.97	0.71	10.06	-	-	-	-	3.516	3.492	1.875	11.10	9.59	3.48	1.874	11.10	11.10	3-8 NPT	1.38	10.39	9.25
4	100	9.00	7.50	8	0.75	14.66	0.71	12.01	4.518	4.491	2.000	13.90	-	-	-	-	11.58	4.48	2.252	14.37	14.37	4-8 NPT	1.77	14.17	11.77

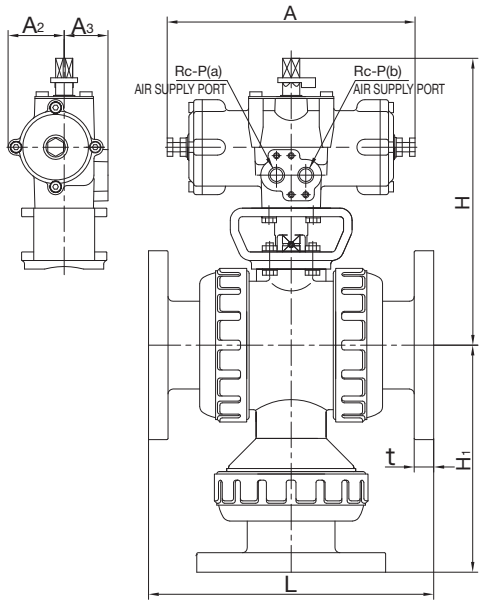
AUTOMATIC | PNEUMATIC | TYPE TA | DOUBLE ACTING | AIR TO OPEN | AIR TO CLOSE

3 WAY BALL VALVE TYPE 23

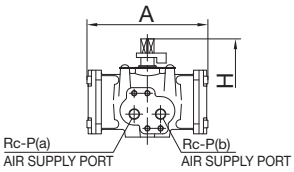
TYPE——A23K

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

FLANGED



ACTUATOR SHAPE FOR TA2A-0402D

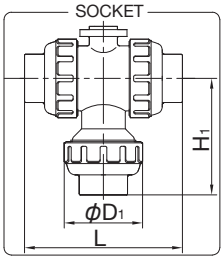


ACTUATOR SELECTION CHART

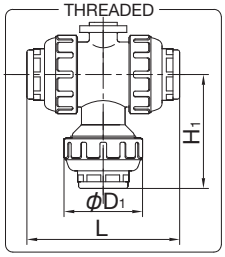
SIZE	ACTUATOR TYPE
15mm (1/2inch)	TA2A-0402D
20mm (3/4inch)	
25mm (1inch)	
32mm (1 1/4inch)	TA2A-050D
40mm (1 1/2inch)	
50mm (2inch)	
65mm (2 1/2inch)	TA2A-063D
80mm (3inch)	
100mm (4inch)	TA2A-080D

For detailed specifications, see P.123

SOCKET



THREADED



■ JIS, DIN (Unit: mm)

								JIS								DIN								
								FLANGED JIS10K			SOCKET				THREADED	FLANGED DIN PN10			SOCKET				THREADED	
											U-PVC, C-PVC		PP						U-PVC, C-PVC		PP			
mm	D1	H	H1	A	A2	A3	P	L	t	H1	L	H1	L	H1	L	H1	L	t	H1	L	H1	L	H1	L	H1
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)

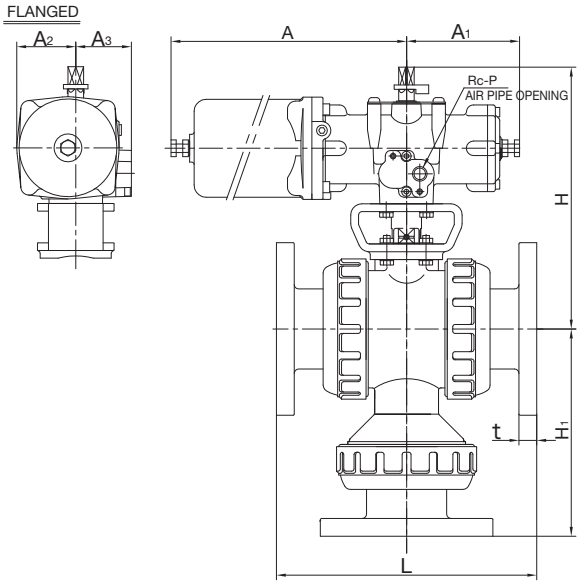
									ANSI								
									FLANGED ANSI CLASS150			SOCKET				THREADED	
												U-PVC, C-PVC		PP, PVDF			
mm	inch	D1	H	H1	A	A2	A3	P	L	t	H1	L	H1	L	H1	L	H1
1/2	15	1.89	6.28	1.14	4.33	0.98	1.26	1/8	5.63	0.47	3.70	4.45	3.08	4.45	3.09	4.02	2.89
3/4	20	2.36	6.54	1.38	4.33	0.98	1.26	1/8	6.77	0.55	4.50	5.08	3.56	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

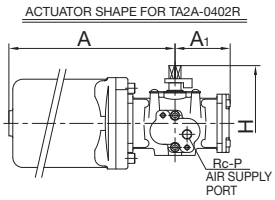
AUTOMATIC | PNEUMATIC | TYPE TA | DOUBLE ACTING | AIR TO OPEN | AIR TO CLOSE

3 WAY BALL VALVE TYPE 23

TYPE——A23K

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

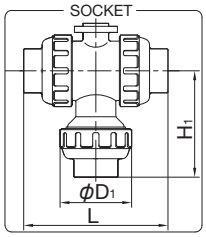


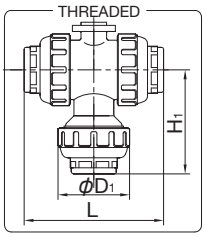


ACTUATOR SELECTION CHART

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

For detailed specifications, see P.123





■ JIS, DIN (Unit: mm)

									JIS									DIN								
									FLANGED JIS10K			SOCKET				THREADED		FLANGED DIN PN10			SOCKET				THREADED	
												U-PVC, C-PVC		PP							U-PVC, C-PVC		PP			
mm	D1	H	H1	A	A1	A2	A3	P	L	t	H1	L	H1	L	H1	L	H1	L	t	H1	L	H1	L	H1	L	H1
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)

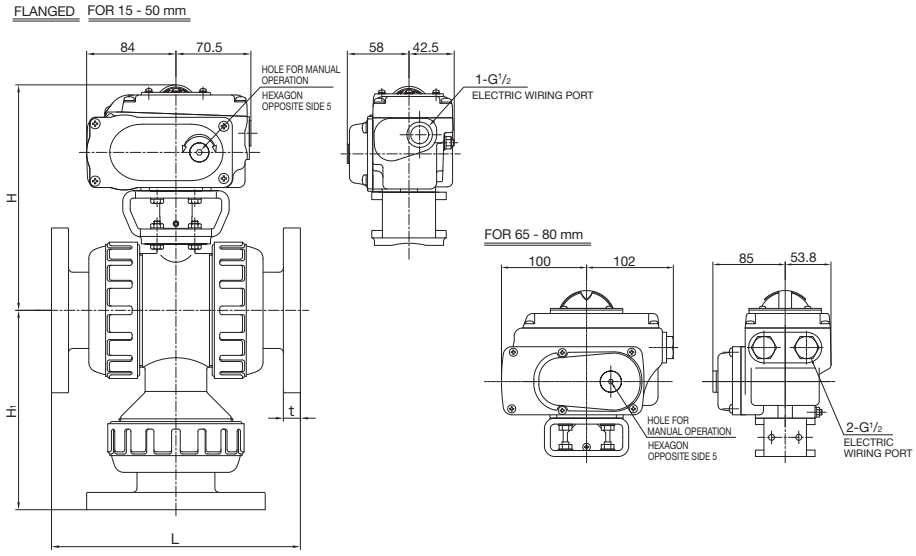
										ANSI								
										FLANGED ANSI CLASS150			SOCKET				THREADED	
													U-PVC, C-PVC		PP, PVDF			
mm	inch	D1	H	H1	A	A1	A2	A3	P	L	t	H1	L	H1	L	H1	L	H1
1/2	15	1.89	6.28	1.14	7.48	2.17	1.65	1.93	1/8	5.63	0.47	3.70	4.45	3.08	4.45	3.09	4.02	2.89
3/4	20	2.36	6.36	1.38	7.48	2.17	1.65	1.93	1/8	6.77	0.55	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

AUTOMATIC ELECTRIC TYPE T Single-Phase 100V • Single-Phase 200V

3 WAY BALL VALVE TYPE 23

TYPE——A23T

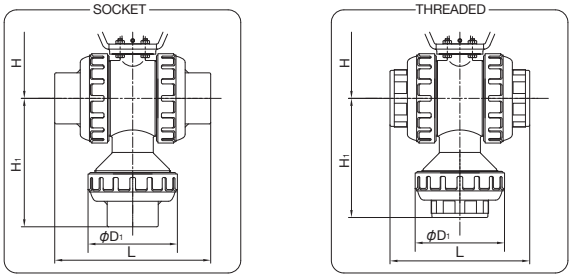
CONNECTION / FLANGED, SOCKET, THREADED——JIS, DIN, ANSI



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
15mm (1/2inch)	T-00
20mm (3/4inch)	
25mm (1inch)	
32mm (1 1/4inch)	
40mm (1 1/2inch)	
50mm (2inch)	
65mm (2 1/2inch)	T-0
80mm (3inch)	
100mm (4inch)	

For detailed specifications, see P.139



■ JIS, DIN (Unit: mm)

mm	D1	H	JIS										DIN								
			FLANGED JIS10K			SOCKET				THREADED			FLANGED DIN PN10			SOCKET				THREADED	
						U-PVC, C-PVC		PP								U-PVC, C-PVC		PP			
			L	t	H1	L	H1	L	H1	L	H1		L	t	H1	L	H1	L	H1	L	H1
15	48	169.5	143	12	94	108	77	108	77	102	74		130	12	88	102	72	99	71	102	74
20	60	176	172	14	115	128	93	126	92	120	89		150	14	104	120	85	114	83	120	89
25	70	183	187	14	133	145	112	141	110	131	105		160	14	120	131	104	123	100	131	105
32	100	200.5	212	16	165	174	154	-	-	163	141		212	16	165	173	147	148	131	163	141
40	100	200.5	212	16	165	189	154	171	145	163	141		200	16	159	163	142	148	131	163	141
50	126	212	234	16	187	220	180	192	166	197	168		230	16	185	197	170	176	154	197	168
65	152	289	304	18	256	316	261	264	235	264	235		304	18	256	282	245	256	227	264	235
80	152	289	304	18	256	316	261	258	232	264	235		310	21	259	282	245	251	224	264	235
100	210	327	372	18	305	418	328	340	289	360	299		350	18	305	349	305	310	279	338	299

■ ANSI (Unit: inch)

inch	mm	D1	H	ANSI								
				FLANGED ANSI CLASS150			SOCKET				THREADED	
							U-PVC, C-PVC		PP, PVDF			
				L	t	H1	L	H1	L	H1	L	H1
1/2	15	1.89	6.67	5.63	0.47	3.70	4.45	3.08	4.45	3.09	4.02	2.89
3/4	20	2.36	6.93	6.77	0.55	4.50	5.08	3.56	5.08	3.61	4.72	3.48
1	25	2.76	7.20	7.36	0.55	5.24	5.75	4.32	5.75	4.37	5.16	4.13
1 1/4	32	3.94	7.89	8.35	0.63	6.50	6.85	5.51	7.04	5.75	6.42	5.53
1 1/2	40	3.94	7.89	8.35	0.63	6.50	7.24	5.71	7.24	5.85	6.42	5.53
2	50	4.96	8.35	9.21	0.63	7.34	8.23	6.66	8.23	6.76	7.76	6.61
2 1/2	65	5.98	11.38	11.97	0.71	10.06	11.21	9.65	11.21	9.65	10.39	9.25
3	80	5.98	11.38	11.97	0.71	10.06	11.10	9.59	11.10	11.10	10.39	9.25
4	100	8.27	12.87	14.66	0.71	12.01	13.90	11.58	14.37	14.37	14.17	11.77

3 WAY BALL VALVE TYPE 23 H

- HORIZONTAL 3 WAY BALL VALVE
- T-SHAPED FLOW PATH ALLOWS FOR EASY SWITCHING OF FLOW CHANNEL.
- END CONNECTOR AND UNION NUT ARE COMPATIBLE WITH 3 WAY BALL VALVE TYPE 23.

BASIC SPECIFICATIONS

VALVE TYPE——**3 WAY BALL VALVE TYPE 23H**

SIZE——**25 mm–40 mm (1 inch–1 1/2 inch)**

BODY MATERIAL——**PP**

SEAL MATERIAL / SEAT——**PTFE**

O-RING——**EPDM** **FKM** **etc.**

CONNECTION / FLANGED—**JIS10K, DIN PN10, ANSI CLASS150**

SOCKET——**JIS, DIN, ANSI**

THREADED—**Rc, Rp, NPT**

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa{kgf/cm²}	CONNECTION METHOD		
			FLANGED	SOCKET	THREADED
PP	-20℃ ~ 80℃	1.0 {10.2}	○	○	○

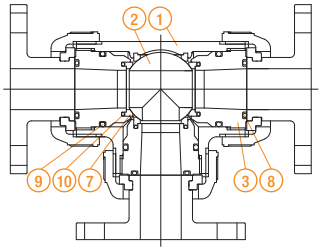
NOTE The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use. Cannot completely stop the flow in three directions.

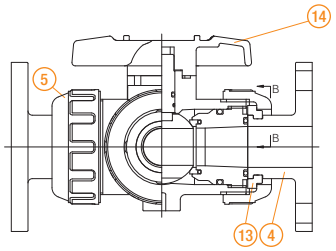
* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

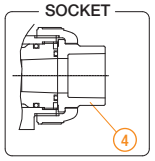
MANUAL

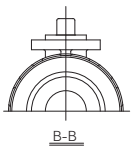
PARTS LIST MANUAL

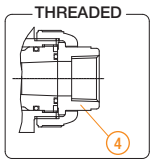
FLANGED

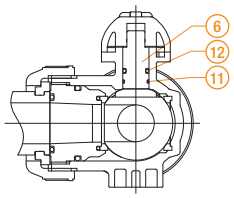










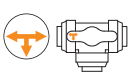
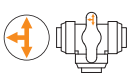
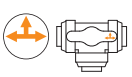
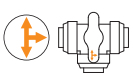


PART NO. / NAME	QTY	MATERIAL
①BODY	1	PP
②BALL	1	PP
③UNION	3	PP
④END CONNECTOR	3	PP
⑤UNION NUT	3	PPG
⑥STEM	1	PP

PART NO. / NAME	QTY	MATERIAL
⑦SEAT	4	PTFE
⑧O-RING (A)	3	EPDM, FKM, etc.
⑨O-RING (B)	3	EPDM, FKM, etc.
⑩O-RING (C)	3	EPDM, FKM, etc.
⑪O-RING (D)	1	EPDM, FKM, etc.
⑫O-RING (E)	1	EPDM, FKM, etc.

PART NO. / NAME	QTY	MATERIAL
⑬STOP RING	3	PVDF (Used for flanged type.)
⑭HANDLE	1	ABS

FLOW DIRECTION DIAGRAM MANUAL

0°(360°)	90°	180°	270°
			

PRODUCT MODEL CODE LIST

MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
V	3H	LV	P	*	*	*	***

V	MANUAL VALVE	3H	23H	LV	LEVER TYPE	PP	PP	E	EPDM	S	SOCKET	J	JIS
								V	FKM	N	THREADED	D	DIN
										P	SPIGOT	A	ANSI
										F	FLANGED	1	JIS10K

025	25mm	032	32mm	040	40mm								

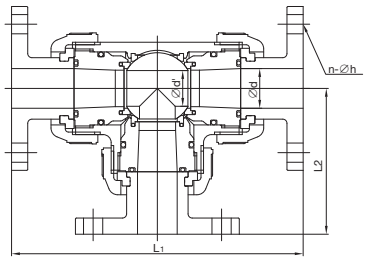
NOTE (1) The available ball shape is T port only. (2) The socket and spigot types are weld type.
(3) Not compatible with 32-mm spigot type and JIS socket type. (4) Parts compliant with connection standards other than JIS (such as ANSI and DIN) are also available.

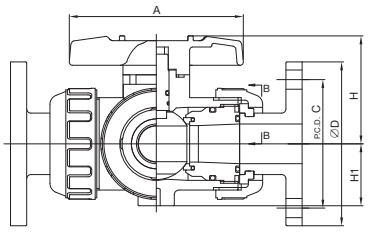
MANUAL

3 WAY BALL VALVE TYPE 23 H

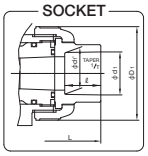
TYPE——V3HLV
CONNECTION / FLANGED, SOCKET, THREADED——JIS, DIN, ANSI SPIGOT——DIN

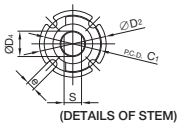
FLANGED



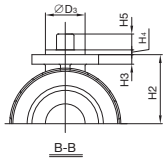


SOCKET



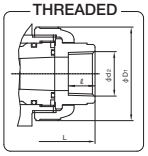


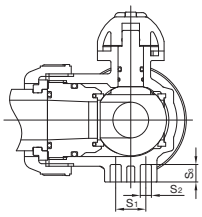
(DETAILS OF STEM)



B-B

THREADED





■ JIS, DIN (Unit: mm)

mm	d	d'	D1	D2	D3	D4	C1	H	H1	H2	H3	H4	H5	A	S	S1	S2	S3	e
25	25	22	70	42	25	15	36	68	39	44	6	3	10	110	11	19	7.3	11	5.5
32	40	34	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5
40	40	34	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5

JIS

mm	FLANGED							SOCKET					THREADED			
	JIS10K				t	L1	L2	d1	d1'	ℓ	L1	L2	d2	ℓ	L1	L2
	D	C	n	h												
25	125	90	4	19	14	216	108	33	32	25	170	85	Rc1	20	159	80
32	135	100	4	19	16	260	130	-	-	-	-	-	Rc1 1/4	22	208	104
40	140	100	4	19	16	260	130	47	46	28	219	109.5	Rc1 1/2	25	208	104

DIN

mm	FLANGED							SOCKET					THREADED				SPIGOT				
	DIN PN10				t	L1	L2	d1	d1'	ℓ	L1	L2	d2	ℓ	L1	L2	d3	ℓ	t	L1	L2
	D	C	n	h																	
25	115	85	4	14	14	189	94.5	31.5	31.3	18	152	76	Rp 1	20	159	79.5	32	22.5	3.0	183	91.5
32	140	100	4	16	16	260	130	39.45	39.2	20.5	197	98.5	Rp 1 1/4	22	208	104	-	-	-	-	-
40	150	110	4	16	16	248	124	49.45	49.2	23.5	197	98.5	Rp 1 1/2	25	208	104	50	32	4.6	242	121

■ ANSI (Unit: inch)

mm	inch	d	d'	D1	D2	D3	D4	C1	H	H1	H2	H3	H4	H5	A	S	S1	S2	S3	e
1	25	0.98	0.87	2.76	1.65	0.98	0.59	1.42	2.68	1.54	1.71	0.24	0.12	0.39	4.33	0.43	0.75	0.29	0.43	0.22
1 1/4	32	1.57	1.34	3.94	2.24	1.38	0.91	1.97	3.50	2.17	2.40	0.39	0.12	0.47	5.16	0.71	1.18	0.35	0.59	0.26
1 1/2	40	1.57	1.34	3.94	2.24	1.38	0.91	1.97	3.50	2.17	2.40	0.39	0.12	0.47	5.16	0.71	1.18	0.35	0.59	0.26

ANSI

mm	inch	FLANGED							SOCKET				THREADED			
		ANSI CLASS150				t	L1	L2	d1	ℓ	L1	L2	d2	ℓ	L1	L2
		D	C	n	h											
1	25	4.25	3.13	4	0.62	0.55	8.50	4.25	1.30	1.13	6.77	3.39	1-11 1/2NPT	0.79	6.26	3.13
1 1/4	32	4.62	3.50	4	0.62	0.63	10.24	5.12	1.65	1.25	8.74	4.37	1 1/4-11 1/2NPT	0.87	8.19	4.09
1 1/2	40	5.00	3.88	4	0.62	0.63	10.24	5.12	1.89	1.37	8.94	4.47	1 1/2-11 1/2NPT	0.98	8.19	4.09

LAB COCK

- LIGHT-WEIGHT AND COMPACT PLASTIC VALVE WITH EXCELLENT CORROSION RESISTANCE, FLOW CHARACTERISTICS, DURABILITY AND FUNCTIONALITY
- WIDE SELECTION FROM A PRODUCT LINE OF 16 TYPES
- OCTAGON BODY ALLOWING FOR EASY PIPING WITH SPANNER
- FLOW CONTROL IS AVAILABLE.

BASIC SPECIFICATIONS

VALVE TYPE — **LAB COCK**

BODY MATERIAL — U-PVC

SEAL MATERIAL / SEAT — PTFE EPDM **etc.**

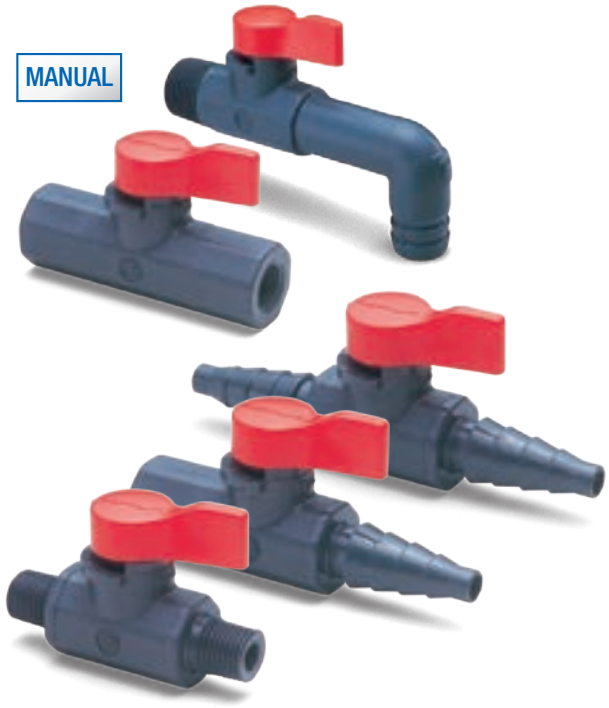
O-RING — EPDM FKM **etc.**

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa{kgf/cm²}	CONNECTION METHOD
U-PVC	0℃ ~ 50℃	1.0 {10.2}	Hose type, Male thread type, Female thread type (Any combination is available.)

NOTE (1) Degreased type is also available by made-to-order. (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.

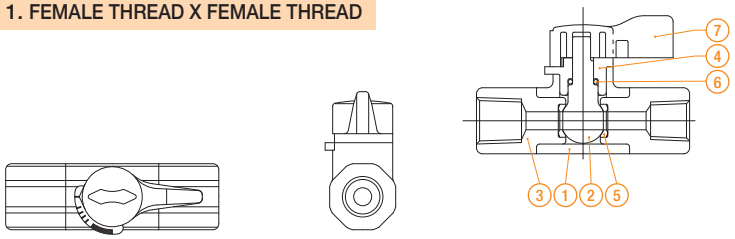
* Concerning the allowable pressure for each temperature and material, see the technical documents at the end of this catalog.

MANUAL



PARTS LIST MANUAL

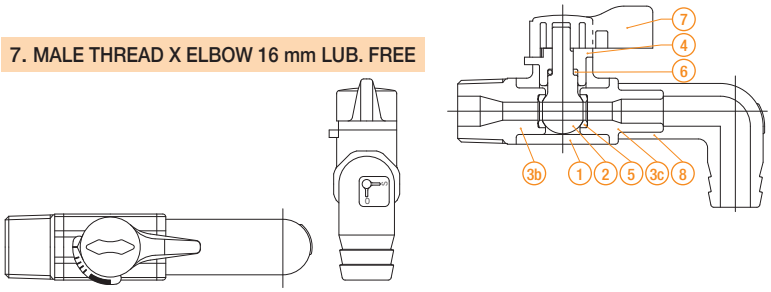
1. FEMALE THREAD X FEMALE THREAD



PART NO. / NAME	QTY	MATERIAL
1 BODY	1	U-PVC
2 BALL STEM	1	U-PVC
3 END CONNECTOR	2	U-PVC
4 STEM HOLDER	1	U-PVC
5 SEAT*	2	EPDM, PTFE, etc.
6 O-RING	1	EPDM, etc.
7 HANDLE	1	ABS

* For degreased type, PTFE only.

7. MALE THREAD X ELBOW 16 mm LUB. FREE



PART NO. / NAME	QTY	MATERIAL
1 BODY	1	U-PVC
2 BALL STEM	1	U-PVC
3b END CONNECTOR	1	U-PVC
3c END CONNECTOR	1	U-PVC
4 STEM HOLDER	1	U-PVC
5 SEAT	2	PTFE
6 O-RING	1	EPDM, etc.
7 HANDLE	1	ABS
8 ELBOW	1	U-PVC

* Standard products are degreased.

PRODUCT MODEL CODE LIST MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	STANDARD	CONNECTION
V	LC	LV	U	*	*	****
V MANUAL VALVE	LC LAB COCK	LV LEVER TYPE	U U-PVC	E EPDM V FKM 1 PTFE/EPDM	J JIS D DIN A ANSI	SEE CONNECTION P.66.

MANUAL

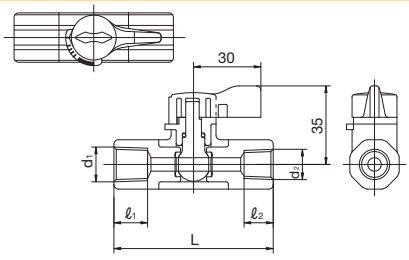
LAB COCK

TYPE——VLCLV

CONNECTION / MALE THREAD, FEMALE THREAD, HOSE——JIS, DIN, ANSI

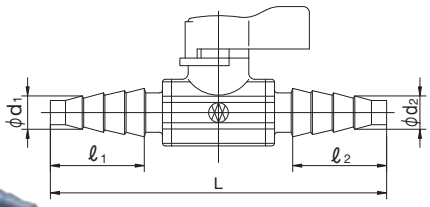
1. Female thread x Female thread

- 1/4 female thread x 1/4 female thread
- 3/8 female thread x 1/4 female thread
- 3/8 female thread x 3/8 female thread



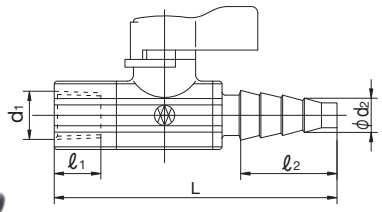
2. Hose x Hose

- Hose x Hose



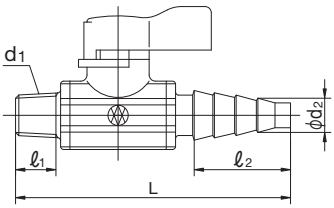
3. Female thread x Hose

- 1/4 female thread x Hose
- 3/8 female thread x Hose



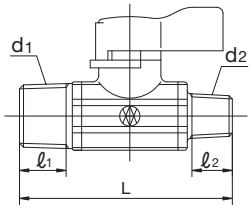
4. Male thread x Hose

- 1/4 male thread x Hose
- 1/2 male thread x Hose



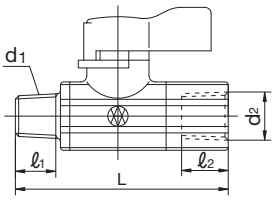
5. Male thread x Male thread

- 1/4 male thread x 1/4 male thread
- 1/2 male thread x 1/4 male thread
- 1/2 male thread x 1/2 male thread



6. Male thread x Female thread

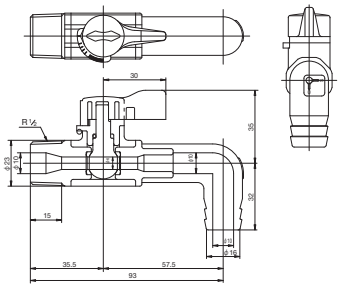
- 1/4 male thread x 1/4 female thread
- 1/4 male thread x 3/8 female thread
- 1/2 male thread x 1/4 female thread
- 1/2 male thread x 3/8 female thread



7. Male thread x Elbow 16 mm degreased

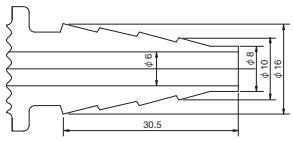
- 1/2 male thread x Elbow 16 mm

* Standard products are LUB. FREE.

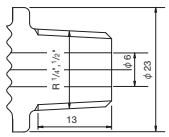


CONNECTION CONNECTOR

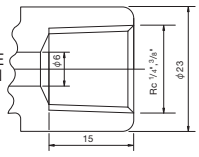
HOSE TYPE CONNECTION CONNECTOR



THREAD TYPE CONNECTION CONNECTOR



FEMALE THREAD TYPE CONNECTION CONNECTOR



		JIS					DIN					ANSI					CONNECTION
		d1	d2	ℓ1	ℓ2	L	d1	d2	ℓ1	ℓ2	L	d1	d2	ℓ1	ℓ2	L	
1.	Female thread x Female thread	Rc 1/4	Rc 1/4	15	15	71	Rp 1/4	Rp 1/4	15	15	71	1/4-18NPT	1/4-18NPT	0.51	0.51	2.80	N4N4
		Rc 3/8	Rc 1/4	15	15	71	Rp 3/8	Rp 1/4	15	15	71	3/8-18NPT	1/4-18NPT	0.59	0.51	2.80	N8N4
		Rc 3/8	Rc 3/8	15	15	71	Rp 3/8	Rp 3/8	15	15	71	3/8-18NPT	3/8-18NPT	0.59	0.59	2.80	N8N8
2.	Hose x Hose	10	10	30.5	30.5	111	10	10	30.5	30.5	111	0.39	0.39	1.20	1.20	4.37	H0H0
3.	Female thread x Hose	Rc 1/4	10	15	30.5	91	Rp 1/4	10	15	30.5	91	1/4-18NPT	0.39	0.51	1.20	3.58	N4H0
		Rc 3/8	10	15	30.5	91	Rp 3/8	10	15	30.5	91	3/8-18NPT	0.39	0.59	1.20	3.58	N8H0
4.	Male thread x Hose	R 1/4	10	13	30.5	88.5	R 1/4	10	13	30.5	88.5	1/4-18NPT	0.39	0.51	1.20	3.48	04H0
		R 1/2	10	15	30.5	91	R 1/2	10	15	30.5	91	1/2-14NPT	0.39	0.59	1.20	3.58	02H0
5.	Male thread x Male thread	R 1/4	R 1/4	13	13	66	R 1/4	R 1/4	13	13	66	1/4-18NPT	1/4-18NPT	0.51	0.51	2.60	0404
		R 1/2	R 1/4	15	13	68.5	R 1/2	R 1/4	15	13	68.5	1/2-14NPT	1/4-18NPT	0.59	0.51	2.70	0204
		R 1/2	R 1/2	15	15	71	R 1/2	R 1/2	15	15	71	1/2-14NPT	1/2-14NPT	0.59	0.59	2.80	0202
6.	Male thread x Female thread	R 1/4	Rc 1/4	13	15	68.5	R 1/4	Rp 1/4	13	15	68.5	1/4-18NPT	1/4-18NPT	0.51	0.51	2.70	04N4
		R 1/4	Rc 3/8	13	15	68.5	R 1/4	Rp 3/8	13	15	68.5	1/4-18NPT	3/8-18NPT	0.51	0.59	2.70	04N8
		R 1/2	Rc 1/4	15	15	71	R 1/2	Rp 1/4	15	15	71	1/2-14NPT	1/4-18NPT	0.59	0.51	2.80	02N4
		R 1/2	Rc 3/8	15	15	71	R 1/2	Rp 3/8	15	15	71	1/2-14NPT	3/8-18NPT	0.59	0.59	2.80	02N8
7.	Male thread x Elbow	R 1/2	16	15	32	93	-	-	-	-	-	1/2-14NPT	0.63	0.59	1.26	3.66	02L01

COMPACT BALL VALVE

- WITH A SMALL NUMBER OF COMPONENTS AND LIGHT WEIGHT, COMPACT DESIGN, SUITABLE FOR INSTALLATION IN A NARROW SPACE AND IDEAL FOR FACILITY PIPING IN PLANTS.
- THE SPHERICAL VALVE ELEMENT ALLOWS FOR A STRAIGHT FLOW PATH AND EXTREMELY SMALL FLUID RESISTANCE. (EXCELLENT WATER CHARACTERISTICS)
- NO RISK OF DIFFICULT HANDLE OPERATION DUE TO THERMAL EXPANSION OR CONTRACTION.
- USING PTFE, THE SEAT IS HIGHLY RESISTANT TO CORROSION, CHEMICALS AND ABRASION.

BASIC SPECIFICATIONS

VALVE TYPE——**COMPACT BALL VALVE**
SIZE——**13 mm—80 mm (3/8 inch—3 inch)**
BODY MATERIAL——**U-PVC** **C-PVC**
SEAL MATERIAL / SEAT——**PTFE**
O-RING——**EPDM** **etc.**
CONNECTION / SOCKET——**JIS, DIN, ANSI**
THREADED——**Rc, Rp, NPT**

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa{kgf/cm²}	CONNECTION METHOD	
			SOCKET	THREADED
U-PVC	0℃ ~ 50℃	1.0 {10.2}	○	○
C-PVC	0℃ ~ 90℃	1.0 {10.2}	○	○

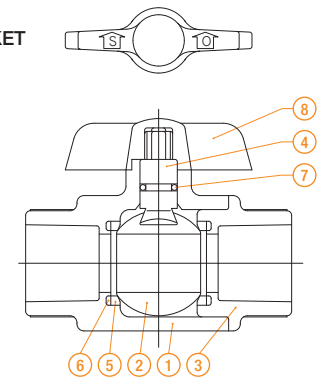
NOTE (1) The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use. (2) The ball-type valves have dead spaces for structural reasons. Note that volatile liquids, such as hydrogen peroxide (H_2O_2) and sodium 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.)

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

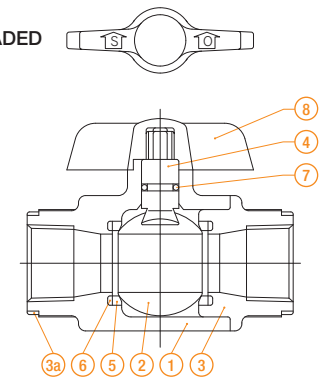
MANUAL

PARTS LIST MANUAL

SOCKET



THREADED



PART NO. / NAME	QTY	MATERIAL
① BODY	1	U-PVC, C-PVC
② BALL	1	U-PVC, C-PVC
③ END CONNECTOR	1	U-PVC, C-PVC
③a RING	2	SUS304 (Used for C-PVC 13 - 25 mm threaded type.)
④ STEM	1	U-PVC, C-PVC

PART NO. / NAME	QTY	MATERIAL
⑤ SEAT	2	PTFE
⑥ CUSHION	2	EPDM, etc.
⑦ O-RING	1	EPDM, etc.
⑧ HANDLE	1	ABS

PRODUCT MODEL CODE LIST

MANUAL

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
V	CB	LV	*	*	*	*	***
V MANUAL VALVE	CB COMPACT SIZE	LV LEVER TYPE	U U-PVC C C-PVC	E EPDM V FKM	S SOCKET N THREADED	J JIS D DIN A ANSI	013 13mm ~ 080 80mm

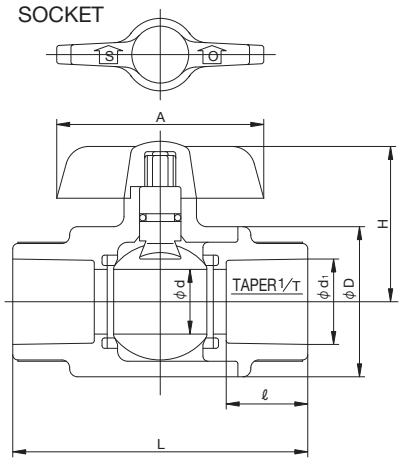
MANUAL

COMPACT BALL VALVE

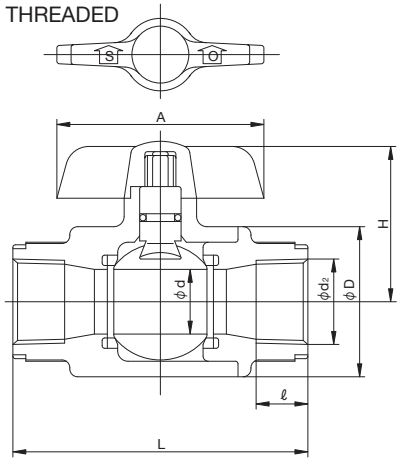
TYPE——VCBLV

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

SOCKET



THREADED



■ JIS, DIN (Unit: mm)

						JIS							DIN					
						SOCKET				THREADED			SOCKET			THREADED		
mm	inch	d	A	D	H	d1	ℓ	1/T	L	d2	ℓ	L	d1	ℓ	L	DIN 2999 d1	DIN 2999 ℓ	L
13	3/8	13	60	35	42	18.20	17	1/30	67	-	-	-	16	14	85	Rp 3/8	15	85
	1/2	13	60	35	42	-	-	-	-	Rc 1/2	15	67	-	-	-	-	-	-
15	1/2	15	70	39	44	22.20	21	1/34	79	-	-	-	20	16	97	Rp 1/2	15	97
20	3/4	20	80	48	55	26.25	28	1/34	102	Rc 3/4	17	102	25	19	102	Rp 3/4	17	102
25	1	25	80	58	60	32.30	31.5	1/34	114	Rc 1	20	114	32	22	114	Rp 1	20	114
32	1 1/4	31	95	66	70	38.28	33	1/34	127	Rc 1 1/4	22	127	40	26	127	Rp 1 1/4	22	127
40	1 1/2	35	110	72.5	76	48.43	42	1/37	152	Rc 1 1/2	25	152	50	31	152	Rp 1 1/2	25	152
50	2	45	110	88.5	85	60.50	49	1/37	176	Rc 2	28	176	63	38	176	Rp 2	28	176
80	3	68.5	200	130	124	89.60	64	1/49	236	Rc 3	35	236	90	51	236	Rp 3	35	236

■ ANSI (Unit: inch)

						ANSI						
						SOCKET				THREADED		
						ASTM SCH40				ANSI		
inch	mm	d	A	D	H	d1	d2	ℓ	L	d1	ℓ	L
1/2	13	0.51	2.36	1.38	1.65	0.848	0.836	0.69	3.35	1/2-14NPT	0.59	3.35
3/4	20	0.79	3.15	1.89	2.17	1.058	1.046	0.72	4.02	3/4-14NPT	0.67	4.02
1	25	0.98	3.15	2.28	2.36	1.325	1.310	0.87	4.49	1-11 1/4NPT	0.79	4.49
1 1/4	32	1.22	3.74	2.60	2.76	1.670	1.655	0.94	5.00	1 1/4-11 1/2NPT	0.87	5.00
1 1/2	40	1.38	4.33	2.85	2.99	1.912	1.894	1.09	5.98	1 1/2 11 1/2NPT	0.98	5.98
2	50	1.77	4.33	3.48	3.35	2.387	2.369	1.16	6.93	2-11 1/2NPT	1.10	6.93
3	80	2.70	7.87	5.12	4.88	3.516	3.492	1.87	9.29	3-8NPT	1.17	9.29

ENSAT (METAL INSERT) MOUNTING PROCEDURE

TRUE UNION DIAPHRAGM VALVE TYPE 14 15 mm - 50 mm

BALL VALVE TYPE 21, 21α 15 mm - 50 mm

At the bottom of the valve body, a "holed bottom stand" is provided which can be easily secured to a rack or panel only by inserting an Ensat.
★ Install the metal insert (Ensat) in the procedure below.

<When using the special tool>

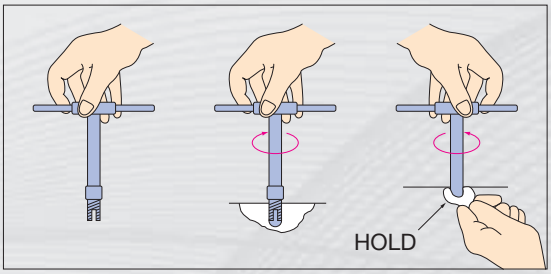
Attach the Ensat at the end of special tool with the splitting groove facing downward.

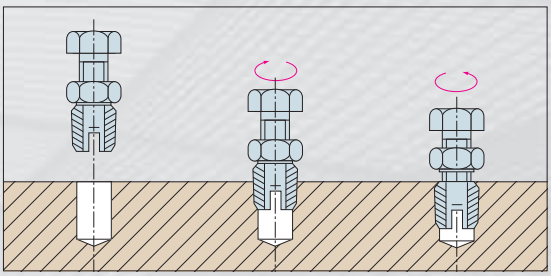
While ensuring that the center is aligned with the prepared hole from the front, back, right and left, screw the Ensat in to the predetermined depth.

After the Ensat is screwed in completely, hold the nut with a spanner while turning the upper portion of the tool in the reverse direction. The tool will be freely movable and come out.

<When using a bolt and nut>

Screw the Ensat in in a double nut fashion. After the Ensat is screwed in, hold the bolt and loosen the nut. The bolt will be freely movable and can be removed.





When the Ensat is manually screwed in, the center alignment between the Ensat and the prepared hole is particularly important. Check that the Ensat is inserted perpendicular to the prepared hole while screwing it in. If it is tilted, do not turn the tool backward, but just put the Ensat in its correct position. Note that, when nearly half of the Ensat is once inserted, its position can no longer be corrected.

NOTE For details of how to handle the Ensat mounting special tool, see the instruction manual provided by the Ensat manufacturer. (K.K.V.CORPORATION)

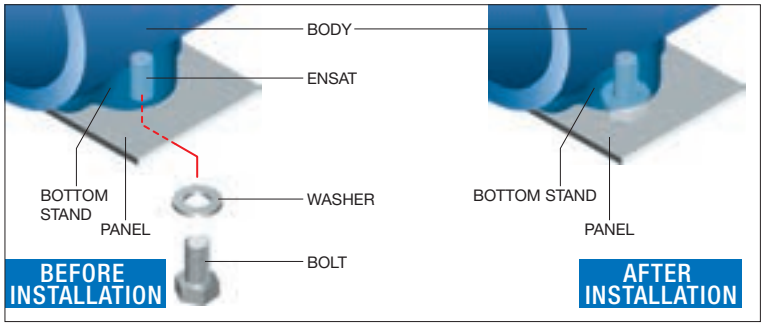
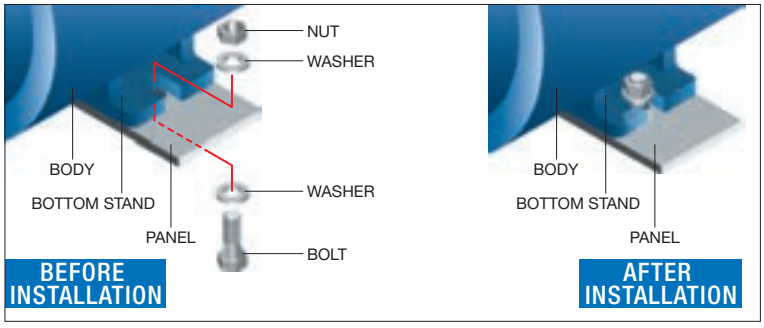
APPLICABLE ENSAT (REFERENCE)

SPEC.	SCREW SIZE	LENGTH (mm)
①	M5	10
②	M6	14
③	M8	15
④	M12	22

SIZE (mm)	15	20	25
14DV	①	①	①
21BV	①	①	①

SIZE (mm)	32	40	50
14DV	①	②	②
21BV	②	②	②

SIZE (mm)	65	80	100
14DV	③	④	④

BOTTOM STAND MOUNTING PROCEDURE

TRUE UNION DIAPHRAGM VALVE TYPE 14 15 mm - 50 mm
BALL VALVE TYPE 21, 21α 15 mm - 50 mm
BALL VALVE TYPE 21 65 mm - 100 mm