



**ASAHI AV**

# VALVE AND PIPING SYSTEMS

**2014**





# We Meet a Variety of Users' Needs, Using Novel Ideas and Advanced Technology

Our plastic piping materials, such as valve, pipe, socket, tee, and joint, are popular under the brand name of "ASAHI AV". We have developed these products which offer various advantages, through many years of experience and a wealth of know-how.

Users rely entirely on ASAHI AV products which feature competitive cost reliability and high quality such as resistance to corrosion, chemicals, abrasion resistance, temp, and UV resistance.

ASAHI AV products find use in the fields of chemicals; steel making; food; marine development; environmental preservation; construction; piping for hot springs, water supply and sewage and agricultural application; semiconductors; biochemistry; pharmaceuticals, mining, etc.

We have established a sales service system throughout the world.

Also, we service a number of orders from foreign users and provide a variety services for them. To meet the need of the industry, which becomes increasingly advanced and diversified, Asahi Organic Chemicals Industry offers a full line of highly safe products. We hope to serve you to your satisfaction.

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# Abbreviations for Major Materials Used For Asahi AV Products

Symbol	Description
<b>PVC</b>	"PVC" is an abbreviation for "polyvinyl chloride."
<b>C-PVC</b>	The first letter "C" stands for "chlorinated." "C-PVC" refers to "chlorinated polyvinyl chloride," or heat-resistant polyvinyl chloride.
<b>HI-PVC</b>	The first lettering "HI" means "high impact." "HI-PVC" refers to "high impact resist polyvinyl chloride."
<b>PP</b>	"PP" is an abbreviation for "polypropylene."
<b>PVDF</b>	"PVDF" is an abbreviation for "polyvinylidene fluoride."
<b>FRP</b>	"FRP" is an abbreviation for "fiber reinforced plastics."
<b>ABS</b>	"ABS" is an abbreviation for "acrylonitrile butadiene styrene."
<b>PPS</b>	"PPS" is an abbreviation for "polyphenylenesulfide."
<b>PEEK</b>	"PEEK" is an abbreviation for "polyether ether ketone."
<b>PTFE</b>	"PTFE" is an abbreviation for "poly tetra fluoro ethylene."
<b>PDCPD</b>	"PDCPD" is an abbreviation for "polydicyclo pentadiene."
<b>UHMWPE</b>	"UHMWPE" is an abbreviation for "ultra high molecular weight polyethylene."
<b>EPDM</b>	"EPDM" is an abbreviation for "ethylene propylene diene rubber."
<b>FKM</b>	"FKM" is an abbreviation for "fluorocarbon rubber."
<b>Viflon F,C (FKM-F, FKM-C)</b>	"Viflon" is Trade Mark of ASAHI ORGANIC CHEMICALS INDUSTRY CO., LTD. of the Terpolymerization Fluorocarbon Elastomers.
<b>SBR</b>	"SBR" is an abbreviation for "styrene butadiene rubber."
<b>NBR</b>	"NBR" is an abbreviation for "acrylonitrile butadiene rubber."
<b>IIR</b>	"IIR" is an abbreviation for "isobutylene isoprene rubber."
<b>CSM</b>	"CSM" is an abbreviation for "chlorosulphonated polyethylene."
<b>PPG</b>	"PPG" is an abbreviation for "Glass Fiber Reinforced Polypropylene."
<b>PC</b>	"PC" is an abbreviation for "Polycarbonate."
<b>HP-PVC</b>	The first letter "HP" means "High Purity" "HP-PVC" refers to "high purity polyvinyl chloride."

# ASAHI VALVE AND PIPING SYSTEMS

## ASAHI AV VALVES

The specifications in this brochure are subject to change without prior notice due to improvements and modifications.

### ASAHI AV VALVES

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# Asahi AV Products

## Make Your Systems More Sophisticated.



DIAPHRAGM VALVE  
TYPE14  
(Page 10 • 11)



TRUE UNION  
DIAPHRAGM VALVE TYPE14  
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DIAPHRAGM VALVE  
TYPE15  
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DIAPHRAGM VALVE  
TYPE72  
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COMPACT BALL VALVE  
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LAB COCK  
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BUTTERFLY VALVE  
TYPE57  
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BUTTERFLY VALVE  
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AUTOMATIC WATER  
FEEDING VALVE  
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ROTARY ANGLE VALVE  
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ALFALFA VALVE®  
TYPE82  
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To meet your specific requirements, Asahi AV Valves are made of wide variety of materials and are available in various types and sizes.

You are surely making the best choice for your systems when selecting Asahi AV products.



BALL VALVE TYPE21

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WATER BV

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3-WAY BALL VALVE  
TYPE23

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3-WAY BALL VALVE  
TYPE23H

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BUTTERFLY VALVE  
TYPE 56D,75D

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BUTTERFLY VALVE  
TYPE57L(LUG STYLE)

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BUTTERFLY VALVE  
TYPE57TL(LUG STYLE)

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BUTTERFLY VALVE  
TYPE57L - IS

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Wafer Check Valve

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BALL CHECK AND  
BALL FOOT VALVE

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STOP VALVE  
(GLOBE VALVE)

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GAUGE VALVE

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CONSTANT FLOW VALVE

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NEEDLE VALVE

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Y-SEDIMENT STRAINER

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AIR RELEASE VALVE

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# Range of Nominal Size and Materials

Type			DIAPHRAGM VALVE TYPE 14				TRUE UNION DIAPHRAGM VALVE TYPE 14								
Body Materials			PVC, C-PVC, PP, PVDF				PVC		C-PVC		PP		PVDF		
End Connectors			Flanged				Threaded	Socket	Threaded	Socket	Threaded	Socket (welded)	Threaded	Socket (welded)*	Spigot*
Nominal Size	mm	inch													
	15	1/2	○	○	○	○	○	○	○	○	○	○	○	○	○
	20	3/4	○	○	○	○	○	○	○	○	○	○	○	○	○
	25	1	○	○	○	○	○	○	○	○	○	○	○	○	○
	32	1 1/4	○	○	○	○	○	○	○	○	○	○	○	○	○
	40	1 1/2	○	○	○	○	○	○	○	○	○	○	○	○	○
	50	2	○	○	○	○	○	○	○	○	○	○	○	○	○
	65	2 1/2	○	-	-	-	-	-	-	-	-	-	-	-	-
	80	3	○	-	-	-	-	-	-	-	-	-	-	-	-
100	4	○	-	-	-	-	-	-	-	-	-	-	-	-	
Page			10 - 11				12 - 13								

Type			DIAPHRAGM VALVE TYPE 15			
Body Materials			PVC, PP, PVDF			
End Connectors			Flanged			
Nominal Size	mm	inch				
	125	5	○			
	150	6	○			
Page			14 - 15			

Type			DIAPHRAGM VALVE TYPE 72			
Body Materials			PVC, PP, PVDF			
End Connectors			Flanged			
Nominal Size	mm	inch				
	200	8	○			
	250	10	○			
Page			16 - 18			

Type			BALL VALVE TYPE 21												WATER BV		
Body Materials			PVC			C-PVC			PP			PVDF			PVC		
End Connectors			Flanged	Threaded	Socket	Flanged	Threaded	Socket	Flanged	Threaded	Socket (welded)	Flanged	Threaded	Socket (welded)*	Spigot*	Threaded	Socket
Nominal Size	mm	inch															
	15	1/2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	20	3/4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	25	1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	32	1 1/4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	40	1 1/2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	50	2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	65	2 1/2	○	○	○	○	○	○	○	○	○	○	○	○	○	-	-
	80	3	○	○	○	○	○	○	○	○	○	○	○	○	○	-	-
100	4	○	○	○	○	○	○	○	○	○	○	○	○	○	-	-	
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Type		LAB COCK	
Body Materials	PVC		
End Connectors	Male Thread, Female Thread, Hose		
Nominal Size	Male Thread 1/4 1/2 Female Thread 1/4 3/8		
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Type			3-WAY BALL VALVE TYPE 23											3-WAY BALL VALVE TYPE 23H				COMPACT BALL VALVE			
Body Materials			PVC			C-PVC			PP		PVDF			PP				PVC		C-PVC	
End Connectors			Flanged	Threaded	Socket	Flanged	Threaded	Socket	Threaded	Socket (welded)	Flanged	Threaded	Socket (welded)*	Flanged	Threaded	Socket (welded)	Spigot	Threaded	Socket	Threaded	Socket
Nominal Size	mm	inch																			
	13	3/8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	○	○
	15	1/2	○	○	○	○	○	○	○	○	○	○	○	-	-	-	-	○	○	○	○
	20	3/4	○	○	○	○	○	○	○	○	○	○	○	-	-	-	-	○	○	○	○
	25	1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	32	1 1/4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	40	1 1/2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	50	2	○	○	○	○	○	○	○	○	○	○	○	-	-	-	-	○	○	○	○
	65	2 1/2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	3	○	○	○	○	○	○	○	○	○	○	○	-	-	-	-	○	○	○	○	
100	4	○	○	○	○	○	○	○	○	○	○	○	-	-	-	-	-	-	-	-	
Page			23 - 24											25 - 26				27			

Type			BUTTERFLY VALVE TYPE 57			BUTTERFLY VALVE TYPE 56		BUTTERFLY VALVE TYPE 75		BUTTERFLY VALVE TYPE 56D, 75D	BUTTERFLY VALVE TYPE 57L, 57TL (Lug Style)		BUTTERFLY VALVE TYPE 57L-4S		ROTARY DAMPER			BUTTERFLY VALVE TYPE 55	
Body Materials			PVC	PP	PVDF	PP	PVDF	PP	PVDF	PDCPD	PDCPD	PVC	PVC	PVC (PP DISC)	PP	PVDF	FCD-S		
End Connectors			Wafer	Wafer	Wafer	Wafer	Wafer	Wafer	Wafer	Wafer	Wafer	Wafer	Wafer	Wafer	Wafer	Wafer	Wafer		
Nominal Size	mm	inch																	
	40	1 1/2	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	50	2	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	65	2 1/2	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	80	3	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	100	4	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	125	5	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	150	6	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	200	8	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	250	10	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	300	12	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	350	14	○	○	○	-	-	-	-	-	-	-	-	○	○	○	-		
	400	16	-	-	-	○	○	-	-	○	○	-	-	-	○	○	-		
	450	18	-	-	-	-	-	○	○	-	-	-	-	-	○	○	-		
500	20	-	-	-	-	-	○	○	-	-	-	-	-	○	○	-			
600	24	-	-	-	-	-	○	○	-	-	-	-	-	○	○	-			
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Type		PDCPD BUTTERFLY VALVE	
Body Materials	PDCPD		
Models	Wafer		
Nominal Size	mm	inch	
	700	28	○
	800	32	○
	850	34	○
	900	36	○
	1000	40	○
	1100	44	○
1200	48	○	
Page			45 - 46

Type			GATE VALVE (Internally Threaded)			RISING STEM
Body Materials			HI-PVC			HI-PVC
End Connectors			Flanged	Threaded	Wafer	Flanged
mm	inch					
Nominal Size	40	1 1/2	○	○	○	○
	50	2	○	○	○	○
	65	2 1/2	○	-	○	○
	80(75)	3	○	-	○	○
	100	4	○	-	○	○
	125	5	○	-	○	○
	150	6	○	-	○	○
	200	8	○	-	-	○
	250	10	○	-	-	-
	300	12	○	-	-	-
350	14	○	-	-	-	
Page			62 - 66			

1. We produce resilient seal type GATE VALVES with Threaded Connection which are up to 200 mm in nominal size.  
2. RISING STEM and JWWA GATE VALVES are available in resilient seal type only.

Type			SWING CHECK VALVE		
Body Materials			HI-PVC	PP	PVDF
End Connectors			Flanged	Flanged	Flanged
mm	inch				
Nominal Size	15	1/2	○	○	○
	20	3/4	○	○	○
	25	1	○	○	○
	32	1 1/4	○	○	○
	40	1 1/2	○	○	○
	50	2	○	○	○
	65	2 1/2	○	○	○
	80	3	○	○	○
	100	4	○	○	○
	125	5	○	○	○
150	6	○	○	○	
200	8	○	○	○	
Page			51 - 52		

Type			WAFER CHECK VALVE
Body Materials			PVC
End Connectors			Wafer
mm	inch		
Nominal Size	100	4	○
	150	6	○
	200	8	○
	250	10	○
	300	12	○
	Page		

Type			GAUGE VALVE	
Body Materials			PVC	PP
End Connectors			Flanged	Flanged
mm	inch			
Nominal Size	20	3/4	○	○
	25	1	○	○
Page			61	

1. Flanged elbows are available in a nominal size of 25 mm (1 inch) only.

Type			BALL CHECK VALVE AND BALL FOOT VALVE										STOP VALVE (GLOBE VALVE)						
Body Materials			PVC			C-PVC			PP			PVDF			PVC		PP		
End Connectors			Flanged	Threaded	Socket	Flanged	Threaded	Socket	Threaded	Socket (welded)	Spigot	Threaded	Socket* (welded)	Spigot	Flanged	Threaded	Socket	Flanged	Threaded
mm	inch																		
Nominal Size	15	1/2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	20	3/4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	25	1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	32	1 1/4	-	-	-	-	-	-	-	-	-	-	-	-	○	○	-	-	-
	40	1 1/2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	-	○	-
	50	2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	-	○	-
	65	2 1/2	-	-	-	-	-	-	-	-	-	-	-	-	○	-	-	○	-
	80	3	○	○	○	○	○	○	○	○	○	○	○	○	○	-	-	○	-
	100	4	○	○	○	○	○	○	○	○	○	○	○	○	○	-	-	○	-
Page			54 - 57										58 - 60						

Type			TRUE UNION BALL CHECK VALVE											
Body Materials			PVC			C-PVC			PP			PVDF		
End Connectors			Flanged	Threaded	Socket	Flanged	Threaded	Socket	Threaded	Socket (welded)	Threaded	Socket* (welded)		
mm	inch													
Nominal Size	15	1/2	○	○	○	○	○	○	○	○	○	○		
	20	3/4	○	○	○	○	○	○	○	○	○	○		
	25	1	○	○	○	○	○	○	○	○	○	○		
	32	1 1/4	-	-	-	-	-	-	-	-	-	-		
	40	1 1/2	○	○	○	○	○	○	○	○	○	○		
	50	2	○	○	○	○	○	○	○	○	○	○		
Page			56											

Type			AIR RELEASE VALVE	AUTOMATIC WATER FEEDING VALVE		ALFALFA VALVE	ROTARY ANGLE VALVE				
Body Materials			PDCPD	HI-PVC		PVC	PVC				
End Connectors			Flanged	Flanged	Threaded	Socket	Flanged	Socket	Flanged	Threaded	Socket
mm	inch										
Nominal Size	25	1	○	-	-	-	-	-	-	-	-
	50	2	-	○	○	○	○	○	○	○	○
	65	2 1/2	-	-	-	-	-	-	-	-	-
	80	3	○	○	○	○	○	○	○	○	○
	100	4	○	-	-	-	○	○	-	-	-
	150	6	○	-	-	-	-	-	-	-	-
Page			75 - 76	67		68	68				

Type			CONSTANT FLOW VALVE	NEEDLE VALVE	STRAINER(Y)		
Body Materials			PVC	PVC	PVC(Clear)		
End Connectors			Flanged	Flanged	Flanged	Threaded	Flanged
mm	inch						
Nominal Size	15	1/2	○	○	○	○	○
	20	3/4	○	○	○	○	○
	25	1	○	○	○	○	○
	32	1 1/4	-	-	○	○	○
	40	1 1/2	-	-	○	○	○
	50	2	○	-	○	○	○
	65	2 1/2	-	-	○	○	○
	80	3	○	-	○	○	○
100	4	○	-	○	○	○	
Page			69 - 71	72	73 - 74		

# ASAHI AV PRODUCTS MODEL CODE

## COMMON CODE FOR MANUAL AND ACTUATED VALVES

DIGIT	1		2,3		4,5	
DESCRIPTIONS	Valve	Abbr	VALVE NAME	Abbr	OPERATION	Abbr
	Manual	V	DIAPHRAGM VALVE TYPE14	14	LEVER	LV
	Actuated	A	TRUE UNION DIAPHRAGM VALVE	T1	MANUAL HANDLE	MH
			DIAPHRAGM VALVE TYPE15	15	T STYLE HANDLE	TH
			DIAPHRAGM VALVE TYPE72	72	SIDE GEAR	SG
			DIAPHRAGM VALVE TYPE16	16	SIDE GEAR WITH SQUARE CAP	SC
			BALL VALVE TYPE21	21	TOP GEAR	TG
			WATER BV	WB	TOP GEAR WITH SQUARE CAP	TC
			LABCOCK	LC	O-RING TYPE FOR SWING CHECK VALVE	OR
			COMPACT BALL VALVE	Cb	PLASTIC STEM FOR GATE VALVE	MJ
			3 WAY BALL VALVE TYPE23	23	SS STEM FOR CLOCKWISE OPENING	MR
			3 WAY BALL VALVE TYPE23H	3H	SS STEM FOR UNCLOCKWISE OPENING	ML
			BUTTERFLY VALVE TYPE57	57	TOP GEAR WITH CAP FOR GATE VALVE CLOCKWISE OPENING	CR
			BUTTERFLY VALVE TYPE56	56	TOP GEAR WITH CAP FOR GATE VALVE UNCLOCKWISE OPENING	CL
			BUTTERFLY VALVE TYPE75	75	A TYPE FOR CONSTANT FLOW / NEEDLE VALVE	AT
			BUTTERFLY VALVE TYP55	55	B TYPE FOR CONSTANTFLOW /NEEDLE VALVE	BT
			LUG BUTTERFLY VALVE	LG	C TYPE FOR CONSTANT FLOW VALVE	CT
			PDCPD BUTTERFLY VALVE	PD	D TYPE FOR CONSTANT FLOW VALVE	DT
			ROTARY DAMPER 57 STYLE	D7	20 MESH PVC SCREEN	2U
			ROTARY DAMPER 56 STYLE	D6	30 MESH PVC SCREEN	3U
			SWING CHECK VALVE	SC	40 MESH PVC SCREEN	4U
			BALL CHECK VALVE	BC	60 MESH PVC SCREEN	6U
			BALL FOOT VALVE	FT	20 MESH SS 304 SCREEN	2S
			TRUE UNION BALL CHECK VALVE	TC	30 MESH SS 304 SCREEN	3S
			STOP VALVE (GLOBE)	ST	40 MESH SS 304 SCREEN	4S
			GAUGE VALVE	GE	60 MESH SS 304 SCREEN	6S
			AUTOMATIC WATER FEEDING VALVE	AW	TYPE T (ELECTRIC)	AC100V T1
			ALFALFA VALVE TYPE82	AF	TYPE T (ELECTRIC)	AC200V T2
			ROTARY ANGLE VALVE	AG	TYPE T (ELECTRIC)	DC24V TD
			CONSTANT FLOW VALVE	CF	TYPE H (ELECTRIC)	AC100V H1
			NEEDLE VALVE	ND	TYPE H (ELECTRIC)	AC200V H2
			Y-SEDIMENT STRAINER	YS	TYPE S (ELECTRIC)	SINGLE AC100V S1
			AIR RELEASE VALVE	AR	TYPE S (ELECTRIC)	SINGLE AC200V S2
			ISOLATED VALVE FOR AIR RELEASE VALVE	IS	TYPE S (ELECTRIC)	THREE AC200V S3
			CONTROL VALVE	CV	TYPE S (ELECTRIC)	THREE AC400V S4
			GATE VALVE P TYPE W/PLUG	CG	TYPE M (ELECTRIC)	AC100V M1
			GATE VALVE TYPE66	S6	TYPE M (ELECTRIC)	AC200V M2
			GATE VALVE S TYPE	TG	TYPE M (ELECTRIC)	DC24V MD
			DIAPHRAGM VALVE TYPE AI	DA	TYPE K (ELECTRIC)	AC100V P1
			TRUE UNION DIAPHRAGM VALVE TYPE AI	TA	TYPE K (ELECTRIC)	AC200V P2
			WAFER CHECK VALVE	WC	TYPE K (PNEUMATIC)	DOUBLE ACTING KF
					TYPE K (PNEUMATIC)	Air to Open KG
					TYPE K (PNEUMATIC)	Air to Close KS
					PRISMA (PNEUMATIC)	DOUBLE ACTING AF
					PRISMA (PNEUMATIC)	Air to Open AG
					PRISMA (PNEUMATIC)	Air to Close AS
					TYPE AN (PNEUMATIC)	DOUBLE ACTING NF
					TYPE AN (PNEUMATIC)	Air to Open NG
					TYPE AN (PNEUMATIC)	Air to Close NS
					TYPE AV (PNEUMATIC)	DOUBLE ACTING VF
					TYPE AV (PNEUMATIC)	Air to Open VG
					TYPE AV (PNEUMATIC)	Air to Close VS
					TYPE AI (PNEUMATIC)	DOUBLE ACTING IF
					TYPE AI (PNEUMATIC)	Air to Open IG
					TYPE AI (PNEUMATIC)	Air to Close IS
					TYPE AD (PNEUMATIC)	DOUBLE ACTING DF
					TYPE AD (PNEUMATIC)	Air to Open DG
					OTHERS	ZZ

## COMMON CODE FOR MANUAL AND ACTUATED VALVES

DIGIT	6		7		8, 9		10,11 & 12	
DESCRIPTIONS	BODY MATERIAL	Abbr	SEAL MATERIAL	Abbr	END CONNECTOR	Abbr	NOMINAL SIZE	Abbr
	U-PVC	U	EPDM	E	FLANGED END JIS10K	F1	10mm	010
	C-PVC	C	FKM	V	FLANGED END JIS5K	F5	13mm	013
	PP	P	VIFLON-F	F	FLANGED END JWVA	FW	15mm	015
	PVDF	F	VIFLON-C	C	FLANGED END ANSI CLASS150	FA	20mm	020
	HI-PVC	I	SBR	S	FLANGED END ANSI CLASS150 (A-STANDARD)	FJ	25mm	025
	FCD-S	S	NBR	N	FLANGED END DIN	FD	32mm(30mm)	032(030)
	PDCPD	D	PTFE	T	WAFER JIS10K	W1	40mm	040
	FRP	R	PTFE W/PD-TI	D	WAFER JIS2K	W2	50mm	050
	PVDF+PPG	G	EL-PTFE	L	WAFER JIS5K	W5	65mm	065
	EL-PVDF	Y	PTFE+PVDF GAS BARRIER	0	WAFER JWVA	WW	80mm(75mm)	080(075)
	U-PVC (WHITE)	W	PTFE/EPDM	1	WAFER ANSI CLASS150	WA	100mm	100
	EL-PVDF+PPG	X	PTFE/FKM	2	WAFER DIN	WD	125mm	125
	OTHERS	Z	PTFE/VIFLON-F	3	SOCKET END JIS	SJ	150mm	150
			PTFE/VIFLON-C	4	SOCKET END ASTM SCH40	S4	200mm	200
			PTFE+PVDF GAS BARRIER W/EPDM	5	SOCKET END ASTM SCH80	S8	250mm	250
			PTFE+PVDF GAS BARRIER W/FKM	6	SOCKET END DIN	SD	300mm	300
			PTFE+PVDF GAS BARRIER W/VIFLON-F	7	SOCKET END BS (BS4346)	SB	350mm	350
			PTFE+PVDF GAS BARRIER W/VIFLON-C	8	SOCKET END IPS	SI	400mm	400
			NONE OR OTHER	Z	THREADED END RC	NJ	450mm	450
					THREADED END NPT	NA	500mm	500
					THREADED END RP	ND	600mm	600
					THREADED END R	NR	700mm	700
					SPIGOT END JIS	PJ	800mm	800
					SPIGOT END DIN	PD	900mm	900
					PE STYLE ISO	EI	1000mm	A00
					PE STYLE JIS	EJ	1100mm	A10
					NONE END AND STD	ZZ	1200mm	A20
					OTHERS	ZZ		

## LABCOCK CODE

DIGIT	8		9, 10, 11 & 12	
DESCRIPTIONS	END CONNECTOR	Abbr	DESCRIPTION	Abbr
	JIS	J	1/4 MALE X 1/4 MALE	O4O4
	ANSI	A	1/2 MALE X 1/4 MALE	O2O4
	DIN	D	1/2 MALE X 1/2 MALE	O2O2
	OTHERS	Z	1/4 FEMALE X 1/4 FEMALE	N4N4
			3/8 FEMALE X 1/4 FEMALE	N8N4
			3/8 FEMALE X 3/8 FEMALE	N8N8
			HOSE X HOSE	H0H0
			1/4 MALE X 1/4 FEMALE	O4N4
			1/4 MALE X 3/8 FEMALE	O4N8
			1/2 MALE X 1/4 FEMALE	O2N4
			1/2 MALE X 3/8 FEMALE	O2N8
			1/4 MALE X HOSE	O4H0
			1/2 MALE X HOSE	O2H0
			1/4 FEMALE X HOSE	N4H0
			3/8 FEMALE X HOSE	N8H0
			1/2 MALE X ELBOW	O2L0

# DIAPHRAGM VALVE TYPE 14 15mm - 100mm (1/2inch - 4inch)

## FEATURES

- 15mm(1/2inch) – 50mm(2inch)
- 65mm(2 1/2inch) – 100mm(4inch)



### Excellent Sealing Property

The DIAPHRAGM VALVE TYPE 14 uses a high quality rubber material, exhibiting lower compressive strain, for its diaphragm and cushion, resulting in optimum sealing performance.

### Tight Seal at Low Torque

Using dynamic analysis by CAE, DIAPHRAGM VALVE TYPE 14 is designed so that pressure is distributed evenly. This design allows the hand wheel torque be reduced and maintain shut off at low torque.

### Easier Maintenance

A bayonet mechanism, provided between the diaphragm and compressor, allows the diaphragm to be replaced easily.

### Bottom Stand for Easy Support

Having a new bottom stand with an insert hole, DIAPHRAGM VALVE TYPE 14 helps support the piping. The valve is also provided with a flange stand to increase installation safety.

### Built-in Travel Stop

DIAPHRAGM VALVE TYPE 14 contains a revolutionary travel stop mechanism protecting the diaphragm.

### Visual Indicator

A color indicator clearly shows whether the valve is fully-opened, half-opened, or fully-closed. Because the indicator enters the handle, going out of view when the valve is fully-closed, the operator would know at glance of valve position valve is fully-opened, half-opened.

## MATERIAL AND WORKING TEMPERATURE

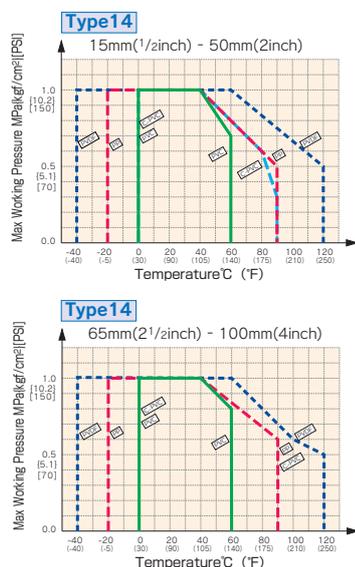
Body Material	Nominal Size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure at 20°C(70°F) MPa{kgf/cm²}[PSI]	End Connectors
			15mm - 100mm (1/2inch - 4inch)	
PVC	15 - 100 (1/2 - 4)	0 - 60 (30 - 140)	1.0{10.2}[150]	Flanged End
C-PVC	15 - 100 (1/2 - 4)	0 - 90 (30 - 195)	1.0{10.2}[150]	Flanged End
PP	15 - 100 (1/2 - 4)	-20 - 90 (-5 - 195)	1.0{10.2}[150]	Flanged End
PVDF	15 - 100 (1/2 - 4)	-40 - 120 (-40 - 250)	1.0{10.2}[150]	Flanged End

## Material Examples



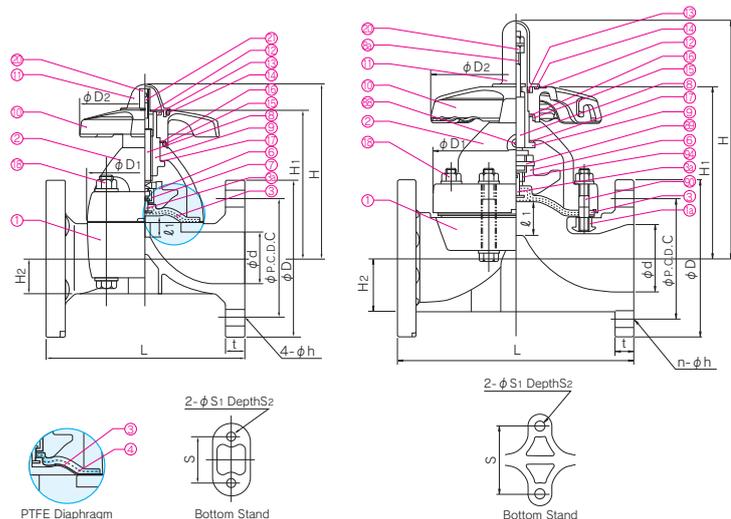
※ PPG Bonnet is also available.

## WORKING PRESSURE VS. TEMPERATURE



## DIMENSION

- 15mm(1/2inch) - 50mm(2inch)
- 65mm(2 1/2inch) - 100mm(4inch)



PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	BODY/BONNET,	⑬	RETAINING RING-C TYPE	1	STAINLESS STEEL304
②	BONNET	1	PVC/PVC,C-PVC/PP,PP,PVDF/PPG,PVDF/PVDF	⑭	O-RING(A)	1	EPDM
③	DIAPHRAGM	1	EPDM,IIR,NBR,CSM,CPE,FKM	⑮	O-RING(B)	1	EPDM
			VIFLON C (FKM-C), VIFLON F (FKM-F), PTFE	⑯	THRUST RING(A)	1	UHMWPE
③a	INSERTED METAL OF DIAPHRAGM	1	STAINLESS STEEL304	⑰	THRUST RING(B)	1	UHMWPE
④	CUSHION	1	EPDM <sup>1)</sup>	⑱	BOLT·NUT	4	STAINLESS STEEL304
⑤	PVDF GAS BARRIER(OPTION)	1	PVDF	⑳	STOPPER	1	COPPER ALLOY <sup>2)</sup> , STAINLESS STEEL <sup>3)</sup> 304
⑥	COMPRESSOR	1	PVDF	㉑	SCREW <sup>2)</sup>	1	SCM435
⑦	JOINT <sup>2)</sup>	1	STAINLESS STEEL304	㉒	GREASE NIPPLE <sup>3)</sup>	1	COPPER ALLOY(C3604)
⑧	STEM	1	COPPER ALLOY	㉓	COMPRESSOR PIN <sup>3)</sup>	1	STAINLESS STEEL304
⑧a	INDICATOR ROD2)	1	STAINLESS STEEL304	㉔	STUD BOLT·NUT <sup>3)</sup>	4	STAINLESS STEEL304
⑨	SLEEVE	1	COPPER ALLOY(C3604)	㉕	METAL OF COMPRESSOR	1	STAINLESS STEEL304
⑩	HAND WHEEL	1	PP	⑰a	INSERTED NUT <sup>3)</sup>	4	COPPER ALLOY(C3604) STAINLESS STEEL304
⑪	GAUGE COVER	1	POLYCARBONATE				
⑫	NAME PLATE	1	PVC				

Note. 1) Used for PTFE diaphragm  
 2) Used for 15mm(1/2inch)-50mm(2inch)  
 3) Used for size 65mm(2 1/2inch)-100mm(4inch)

DIMENSIONS TABLE

Nominal Size		d	JIS 10K				D <sub>1</sub>	D <sub>2</sub>	ℓ <sub>1</sub> (LIFT)	L	t		H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>
mm	inch		D	C	n	h					PVC C-PVC	PP PVDF						
15	1/2	16	95	70	4	15	54×66	100	10	110	12	12	104	86	19.5	25	7	13
20	3/4	20	100	75	4	15	54×66	100	10	120	13	13	106	88	17.5	25	7	13
25	1	25	125	90	4	19	67×80	100	12	130	13	13	111	93	18.5	25	7	13
32	1 1/4	32	135	100	4	19	67×80	100	12	142	16	16	116	97	22.5	25	7	13
40	1 1/2	40	140	105	4	19	108×108	156	21	180	16	16	177	144	27.5	45	9	15
50	2	52	155	120	4	19	123×123	156	25	210	20	20	191	158	36	45	9	15
65	2 1/2	67	175	140	4	19	175	220	34	250	22	23	266	188	61	85	11	20
80	3	78	185	150	8	19	201	220	42	280	22	23	280	202	63	100	15	28
100	4	100	210	175	8	19	241	257	50	340	22	24	329	241	78	120	15	28

Nominal Size		d	DIN 2501 PN10				D <sub>1</sub>	D <sub>2</sub>	ℓ <sub>1</sub> (LIFT)	L	t		H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>
mm	inch		D	C	n	h					PVC C-PVC	PP PVDF						
15	1/2	16	95	65	4	14	54×66	100	10	130	12	12	104	86	19.5	25	7	13
20	3/4	20	105	75	4	14	54×66	100	10	150	13	13	106	88	17.5	25	7	13
25	1	25	115	85	4	14	67×80	100	12	160	13	13	111	93	18.5	25	7	13
32	1 1/4	32	140	100	4	18	67×80	100	12	180	16	16	116	97	22.5	25	7	13
40	1 1/2	40	150	110	4	18	108×108	156	21	200	20	20	177	144	27.5	45	9	15
50	2	52	165	125	4	18	123×123	156	25	230	22	22	191	158	36	45	9	15
65	2 1/2	67	185	145	4	18	175	220	34	290	22	22	266	188	61	85	11	20
80	3	78	200	160	8	18	201	220	42	310	24	24	280	202	63	100	15	28
100	4	100	220	180	8	18	241	257	50	350	24	26	329	241	78	120	15	28

Nominal Size		d	ANSI CLASS 150				D <sub>1</sub>	D <sub>2</sub>	ℓ <sub>1</sub> (LIFT)	L		t		H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>
inch	mm		D	C	n	h				G-STANDARD	A-STANDARD	PVC C-PVC	PP PVDF						
1/2	15	0.63	3.50	2.38	4	0.62	2.13×2.60	3.94	0.39	4.25	4.33	0.43	0.43	4.09	3.39	0.77	0.98	0.28	0.51
3/4	20	0.79	3.88	2.75	4	0.62	2.13×2.60	3.94	0.39	5.88	4.72	0.51	0.51	4.17	3.46	0.69	0.98	0.28	0.51
1	25	0.98	4.25	3.12	4	0.62	2.64×3.15	3.94	0.47	5.88	5.12	0.59	0.59	4.37	3.66	0.73	0.98	0.28	0.51
1 1/4	32	1.26	4.62	3.50	4	0.62	2.64×3.15	3.94	0.47	6.38	—	0.63	0.63	4.57	3.82	0.89	0.98	0.28	0.51
1 1/2	40	1.57	5.00	3.88	4	0.62	4.25×4.25	6.14	0.83	6.94	7.09	0.63	0.63	6.97	5.67	1.08	1.77	0.35	0.59
2	50	2.05	6.00	4.75	4	0.75	4.84×4.84	6.14	0.98	7.94	8.27	0.79	0.79	7.52	6.22	1.42	1.77	0.35	0.59
2 1/2	65	2.64	7.00	5.50	4	0.75	6.89	8.66	1.34	—	9.84	0.87	0.91	10.47	7.40	2.40	3.35	0.43	0.79
3	80	3.07	7.50	6.00	4	0.75	7.91	8.66	1.65	10.37	11.02	0.87	0.91	11.02	7.95	2.48	3.94	0.59	1.10
4	100	3.94	9.00	7.50	8	0.75	9.49	10.12	1.97	12.93	13.39	0.87	0.94	12.95	9.49	3.07	4.72	0.59	1.10

# TRUE UNION DIAPHRAGM VALVE TYPE 14 15mm - 50mm(1/2inch - 2inch)



## FEATURES

### Easy Maintenance

The valve body can be removed from the pipe line by loosening the union nuts at both ends.

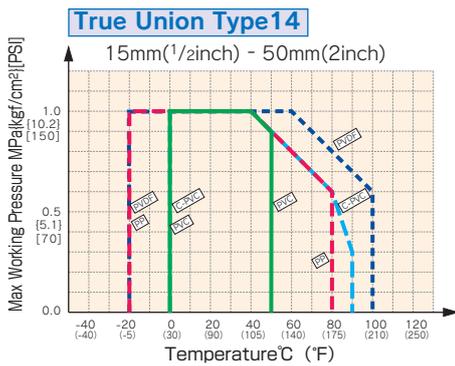
### Bottom Stand for Easy Support

Having a new bottom stand with an insert hole, DIAPHRAGM VALVE TYPE 14 helps support the piping. The valve is also provided with a flange stand to increase installation safety.

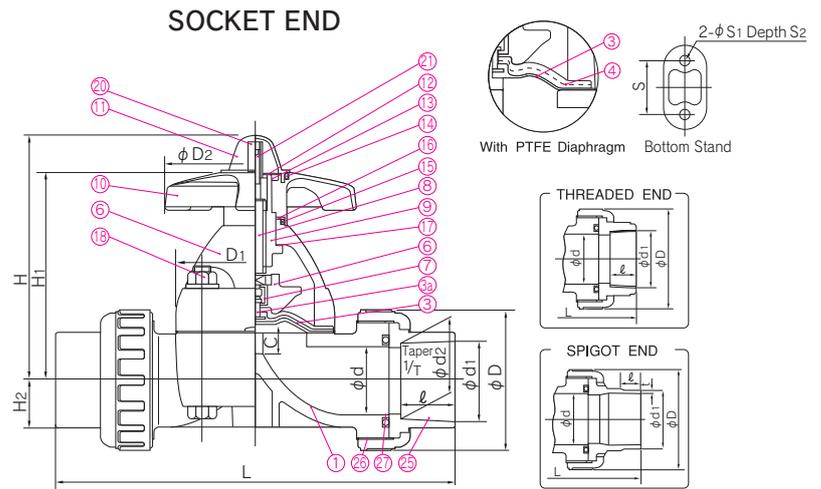
## MATERIAL AND WORKING TEMPERATURE

Body Material	Nominal Size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure at 20°C(70°F) MPa[kgf/cm²] [PSI]	End Connectors
Unplasticized Polyvinyl Chloride(PVC)	15 - 50(1/2 - 2)	0 - 50(30 - 120)	1.0{10.2}[150]	Socket End. Threaded End
Chlorinated Polyvinyl Chloride(C-PVC)	15 - 50(1/2 - 2)	0 - 90(30 - 195)	1.0{10.2}[150]	Socket End. Threaded End
Polypropylene(PP)	15 - 50(1/2 - 2)	-20 - 80(-5 - 175)	1.0{10.2}[150]	Socket End. Threaded End
Polyvinylidene Fluoride(PVDF)	15 - 50(1/2 - 2)	-20 - 100(-5 - 210)	1.0{10.2}[150]	Socket End. Threaded End. Spigot End

## WORKING PRESSURE VS. TEMPERATURE



## DIMENSION



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	BODY/BONNET PVC/PVC C-PVC/PP PP/PP PVDF/PPG PVDF/PVDF	⑪	GAUGE COVER	1	PC
②	BONNET			⑫	NAME PLATE	1	PVC
③	DIAPHRAGM	1	EPDM IIR NBR,CSM CPE,FKM VIFLON C (FKM-C) VIFLON F (FKM-F) PTFE	⑬	RETAINING RING-C TYPE	1	STAINLESS STEEL304
③a	INSERTED METAL OF DIAPHRAGM			⑭	O-RING(A)	1	EPDM
④	CUSHION	1	EPDM *	⑮	O-RING(B)	1	EPDM
⑥	COMPRESSOR	1	PVDF	⑯	THRUST RING(A)	1	UHMWPE
⑦	JOINT	1	STAINLESS STEEL304	⑰	THRUST RING(B)	1	UHMWPE
⑧	STEM	1	COPPER ALLOY(C3604)	⑱	BOLT·NUT	4	STAINLESS STEEL304
⑨	SLEEVE	1	COPPER ALLOY(C3604)	⑳	STOPPER	1	COPPER ALLOY(C3604)
⑩	HAND WHEEL	1	PP	㉑	SCREW	1	STAINLESS STEEL304
				㉒	ENDCONNECTOR	2	PVC C-PVC PP PVDF
				㉓	UNION NUT	2	PVDF
				㉔	O-RING(C)	2	EPDM FKM Others

DIMENSIONS TABLE

JIS		Unit:mm																					
Nominal Size mm inch	d	Socket End								Threaded End				D	D <sub>1</sub>	D <sub>2</sub>	C (LIFT)	H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>
		PVC, C-PVC				PP				JIS B 0203		L											
		d <sub>1</sub>	ℓ	1/T	L	d <sub>1</sub>	d <sub>2</sub>	ℓ	L	d <sub>1</sub>	ℓ	PVC, C-PVC	PP, PVDF										
15 1/2	16	22.11	20	1/34	134	21.2	20.2	20	134	Rc 1/2	15	128	128	48	54×66	100	10	104	86	19.5	25	7	13
20 3/4	20	26.13	24	1/34	156	26.2	25.2	23	154	Rc 3/4	17	148	148	60	54×66	100	10	106	88	17.5	25	7	13
25 1	25	32.16	27	1/34	186	33.0	32.0	25	182	Rc 1	20	172	172	70	67×80	100	12	111	93	18.5	25	7	13
32 1 1/4	32	38.19	30	1/34	200	-	-	-	-	Rc 1 1/4	22	188	188	82	67×80	100	12	116	97	22.5	25	7	13
40 1 1/2	40	48.21	37	1/37	271	47.0	46.0	28	253	Rc 1 1/2	25	245	245	100	108×108	156	21	177	144	27.5	45	9	15
50 2	52	60.25	42	1/37	303	59.0	58.0	28	275	Rc 2	28	281	278	106	123×123	156	25	191	158	36	45	9	15

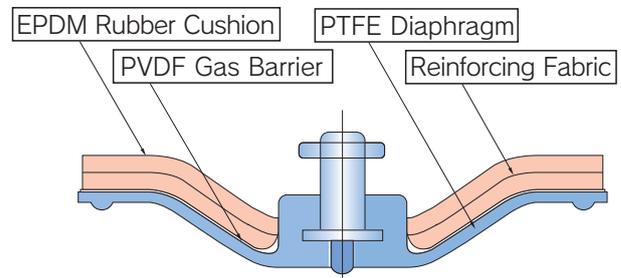
DIN		Unit:mm																												
Nominal Size mm inch	d	Socket End				Threaded End				Spigot End								D	D <sub>1</sub>	D <sub>2</sub>	C (LIFT)	H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>			
		PVC, C-PVC		PP, PVDF		DIN 2999		L		PVC		PP, PVDF																		
		DIN 8063	L	DIN 16962(PP)	L	d <sub>1</sub>	ℓ	PVC, C-PVC	PP, PVDF	DIN 3441	L	DIN 3442	PP	PVDF	L															
15 1/2	16	20	16	128	19.5	19.3	14.5	125	Rp 1/2	15	128	128	20	18.5	150	20	18.5	2.5	1.9	150	48	54×66	100	10	104	86	19.5	25	7	13
20 3/4	20	25	19	147	24.5	24.3	16	141	Rp 3/4	17	148	148	25	24	172	25	22	2.7	1.9	172	60	54×66	100	10	106	88	17.5	25	7	13
25 1	25	32	22	172	31.5	31.3	18	164	Rp 1	20	172	172	32	24.5	195	32	22.5	3.0	2.4	195	70	67×80	100	12	111	93	18.5	25	7	13
32 1 1/4	32	40	26	188	39.45	39.2	20.5	177	Rp 1 1/4	22	188	188	40	28	212	40	26	3.7	2.4	212	82	67×80	100	12	116	97	22.5	25	7	13
40 1 1/2	40	50	31	246	49.45	49.2	23.5	231	Rp 1 1/2	25	245	245	50	34	276	50	32	4.6	3.0	276	100	108×108	156	21	177	144	27.5	45	9	15
50 2	52	63	38	294	62.5	62.1	27.5	274	Rp 2	28	281	278	63	38.5	308	63	36	5.8	3.0	307	106	123×123	156	25	191	158	36	45	9	15

ANSI		Unit:inch																					
Nominal Size inch mm	d	Socket End				Threaded End				D	D <sub>1</sub>	D <sub>2</sub>	C (LIFT)	H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>				
		PVC, C-PVC		PP, PVDF(IPS)		ANSI/ASME B1·20·1		L															
		ASTM SCH80	L	d <sub>1</sub>	ℓ	L	d <sub>1</sub>	ℓ	PVC, C-PVC											PP, PVDF			
1/2	15	0.63	0.848	0.836	0.875	5.47	0.83	0.87	5.43	1/2-14NPT	0.59	5.04	5.04	1.89	2.13×2.60	3.94	0.39	4.09	3.39	0.77	0.98	0.28	0.51
3/4	20	0.79	1.058	1.046	1.000	6.18	1.03	1.00	6.09	3/4-14NPT	0.67	5.83	5.83	2.36	2.13×2.60	3.94	0.39	4.17	3.46	0.69	0.98	0.28	0.51
1	25	0.98	1.325	1.310	1.125	7.32	1.30	1.13	7.24	1-11 1/2NPT	0.79	6.77	6.77	2.76	2.64×3.15	3.94	0.47	4.37	3.66	0.73	0.98	0.28	0.51
1 1/4	32	1.26	1.670	1.655	1.250	7.95	1.65	1.25	7.80	1 1/4-11 1/2NPT	0.87	7.40	7.40	3.23	2.64×3.15	3.94	0.47	4.57	3.82	0.89	0.98	0.28	0.51
1 1/2	40	1.57	1.912	1.894	1.375	10.47	1.89	1.37	10.28	1 1/2-11 1/2NPT	0.98	9.65	9.65	3.94	4.25×4.25	6.14	0.83	6.97	5.67	1.08	1.77	0.35	0.59
2	50	2.05	2.387	2.369	1.500	11.54	2.36	1.50	11.54	2-11 1/2NPT	1.10	11.06	10.95	4.17	4.84×4.84	6.14	0.98	7.52	6.22	1.42	1.77	0.35	0.59

BS		Unit:mm													
Nominal Size mm inch	d	Socket End			D	D <sub>1</sub>	D <sub>2</sub>	C (LIFT)	H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>	
		PVC													
15 1/2	16	21.4	17	128	48	54×66	100	10	104	86	19.5	25	7	13	
20 3/4	20	26.8	20	147	60	54×66	100	10	106	88	17.5	25	7	13	
25 1	25	33.6	23	172	70	67×80	100	12	111	93	18.5	25	7	13	
32 1 1/4	32	42.3	27.5	188	82	67×80	100	12	116	97	22.5	25	7	13	
40 1 1/2	40	48.3	30.5	246	100	108×108	156	21	177	144	27.5	45	9	15	
50 2	52	60.4	36.5	299	106	123×123	156	25	191	158	36	45	9	15	

DIAPHRAGM VALVE TYPE 14

- We recommend that a PVDF Gas Barrier should be installed with PTFE DIAPHRAGM VALVE if it is used in an application that has corrosive gas.
- Temperature variations during operation or long periods of storage may cause the diaphragm to settle. In this case, it is recommended to check bonnet bolt torque, prior to installation(See the table below).



Diaphragm with PVDF Gas Barrier

▼ Tightening Torque for Diaphragm Valve Bonnet for TYPE 14

Unit:N·m[kgf·cm]

Nominal Size mm(inch)	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	65 (2 1/2)	80 (3)	100 (4)
Rubber Diaphragm	3.0 {31}	3.0 {31}	5.0 {51}	5.0 {51}	12.0 {122}	15.0 {153}	13.0 {133}	18.0 {184}	35.0 {357}
PTFE Diaphragm	5.0 {51}	5.0 {51}	8.0 {82}	8.0 {82}	15.0 {153}	20.0 {204}	15.0 {153}	20.0 {204}	40.0 {408}

# DIAPHRAGM VALVE TYPE 15 125mm, 150mm(5inch, 6inch)

## Flanged End type

- 125mm(5inch) · 150mm(6inch)



## FEATURES

### Improved outside sealing ability

By means of 3D CAD/CAE analysis, Type 15 diaphragm valve has increased body thickness. In addition, using the elastomer that has high impact resilience, the sealing ability of valve is improved against high temperature changes.

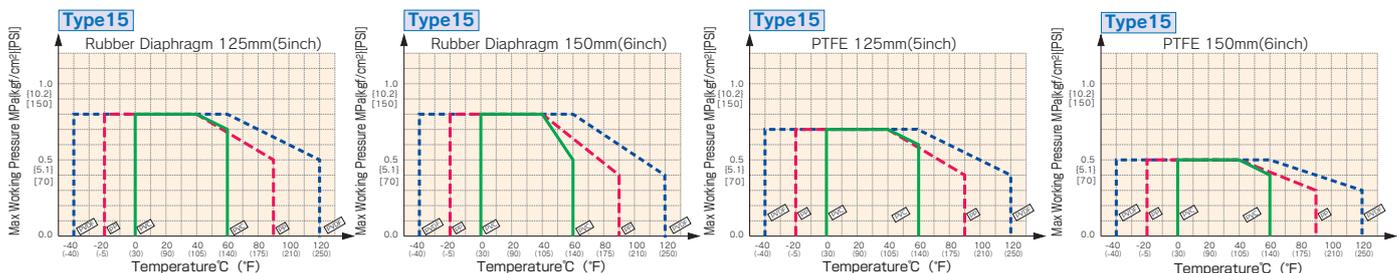
### Easier to operate

In order to reduce frictional force, material and shape of sliding parts are redesigned. Also improved hand wheel design which allows for easy operation.

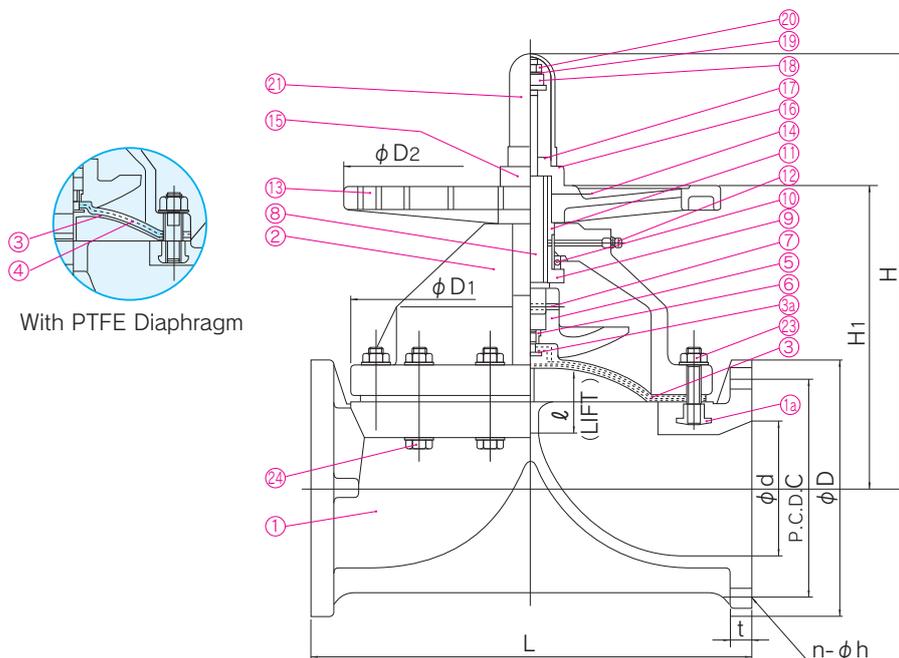
## MATERIAL AND WORKING TEMPERATURE

Body material	Nominal size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure at 20°C(70°F) MPa[kgf/cm²][PSI]			
			Rubber Diaphragm		PTFE Diaphragm	
			125mm(5inch)	150mm(6inch)	125mm(5inch)	150mm(6inch)
PVC	125(5) · 150(6)	0 - 60(30 - 140)	0.8{8.2}[115]	0.8{8.2}[115]	0.7{7.1}[100]	0.5{5.1}[70]
PP	125(5) · 150(6)	-20 - 90(-5 - 195)	0.8{8.2}[115]	0.8{8.2}[115]	0.7{7.1}[100]	0.5{5.1}[70]
PVDF	125(5) · 150(6)	-40 - 120(-40 - 250)	0.8{8.2}[115]	0.8{8.2}[115]	0.7{7.1}[100]	0.5{5.1}[70]

## WORKING PRESSURE VS. TEMPERATURE



## DIMENSION



PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	BODY/BONNET PVC/PVC PP/PP	⑪	O-RING(A)	1	NBR
②	BONNET	1	PVDF/PPG PVDF/PVDF	⑫	GREASE NIPPLE	1	COPPER ALLOY(C3604)
③	DIAPHRAGM	1	EPDM,PTFE,FKM,NBR VIFLON F (FKM-F) VIFLON C (FKM-C)	⑬	HAND WHEEL	1	PP
③a	INSERTED METAL OF DIAPHRAGM	1	STAINLESS STEEL304 Others	⑭	NAME PLATE	1	PVC
④	CUSION <sup>1)</sup>	1	EPDM	⑮	CAP	1	PP
⑤	COMPRESSOR	1	PVDF	⑯	SHEET GASKET(A)	1	EPDM
⑥	COMPRESSOR NUT	1	COPPER ALLOY(C3604)	⑰	SHEET RING	1	STAINLESS STEEL304
⑦	COMPRESSOR PIN	1	STAINLESS STEEL304	⑱	STOPPER	1	Chromized STEEL (SS400)
⑧	STEM	1	COPPER ALLOY	⑲	SPRING WASHER	1	STAINLESS STEEL304
⑨	SLEEVE(A)	1	COPPER ALLOY	⑳	SET NUT	1	STAINLESS STEEL304
⑩	THRUST BEARING(A)	1	HIGH CARBON CHROMIUM BEARING(SUJ2)	㉑	GAUGE COVER	1	POLYCARBONATE
				㉒	STUD BOLT·NUT	4	STAINLESS STEEL304
				㉓	BOLT·NUT	-	STAINLESS STEEL304
				㉔	INSERTED NUT	4	COPPER ALLOY <sup>2)</sup> STAINLESS STEEL304 <sup>3)</sup>

Note : 1) Used for PTFE diaphragm  
2) Used for PVC,PP Body  
3) Used for PVDF Body

DIMENSIONS TABLE

Nominal Size		d	JIS 10K				L	t		D <sub>1</sub>	D <sub>2</sub>	ℓ	H	H <sub>1</sub>
mm	inch		D	C	n	h		PVC	PP,PVDF					
125	5	125	250	210	8	23	410	22	24	320	300	60	420	308
150	6	148	280	240	8	23	480	24	27	385	410	70	476	334

Nominal Size		d	DIN 2501 PN10				L	t		D <sub>1</sub>	D <sub>2</sub>	ℓ	H	H <sub>1</sub>
mm	inch		D	C	n	h		PVC	PP,PVDF					
125	5	125	250	210	8	18	400	22	23	320	300	60	420	308
150	6	148	285	240	8	22	480	24	27	385	410	70	476	334

Nominal Size		d	ANSI CLASS 150				L	t		D <sub>1</sub>	D <sub>2</sub>	ℓ	H	H <sub>1</sub>
inch	mm		D	C	n	h		PVC	PP,PVDF					
5	125	4.92	10.00	8.50	8	0.88	16.14	0.87	0.94	12.60	11.81	2.36	16.54	12.13
6	150	5.83	11.00	9.50	8	0.88	18.90	0.94	1.06	15.16	16.14	2.76	18.74	13.15

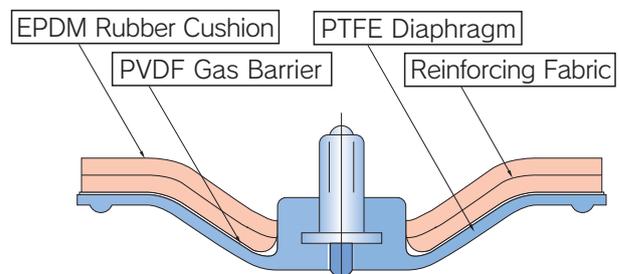
DIAPHRAGM VALVE TYPE 15

- We recommend that a PVDF gas barrier should be installed with PTFE DIAPHRAGM VALVE if it is used in an application that has corrosive gas.
- Temperature variations during operation or long periods of storage may cause the diaphragm to settle. In this case, it is recommended to check bonnet bolt torque, prior to installation(See the table below).

▼ Tightening Torque for Diaphragm Valve Bonnet for TYPE 15

Unit: N·m{kgf·cm}

Material	Nominal Size	125	150
	mm(inch)	(5)	(6)
Rubber Diaphragm		45.0 {459}	45.0 {459}
PTFE Diaphragm		45.0 {459}	45.0 {459}



Diaphragm with PVDF Gas Barrier

# DIAPHRAGM VALVE TYPE 72 200mm, 250mm(8inch, 10inch)

● 200mm(8inch) · 250mm(10inch)



## FEATURES

### Sealed Bonnet

Having a sealed bonnet with an O-ring, prevents rain water or external atmosphere from entering the bonnet, DIAPHRAGM VALVE TYPE 72 can be safely used outdoors.

### Sealed Indicator

Because a clear indicator gauge protects the exposed metallic part on top of the stem against atmosphere, corrosive gas or fluid does not of the valve.

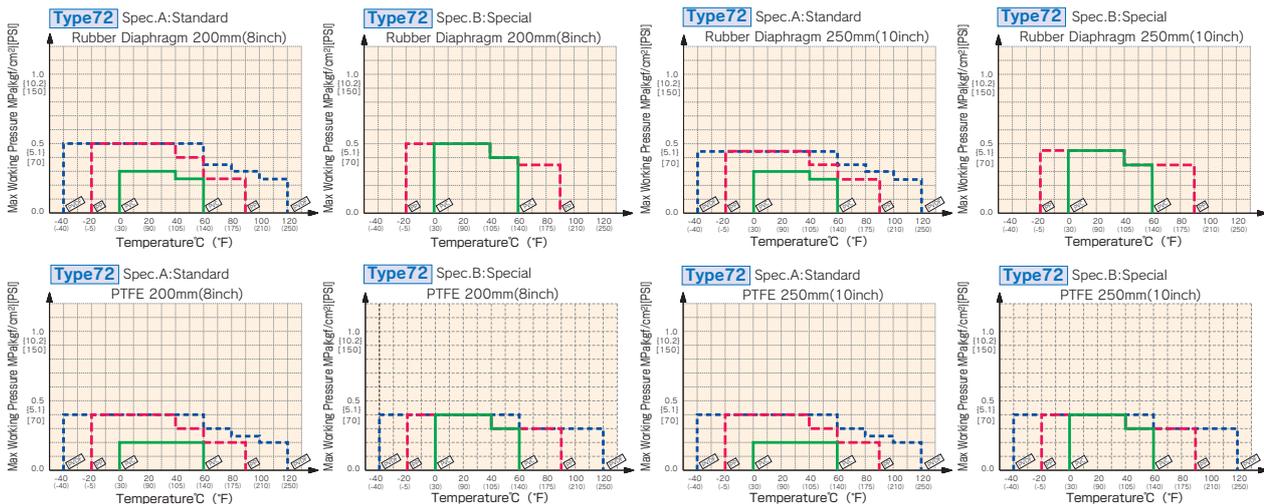
### Position Indication

The position indicator also shows the degree of the valve position.

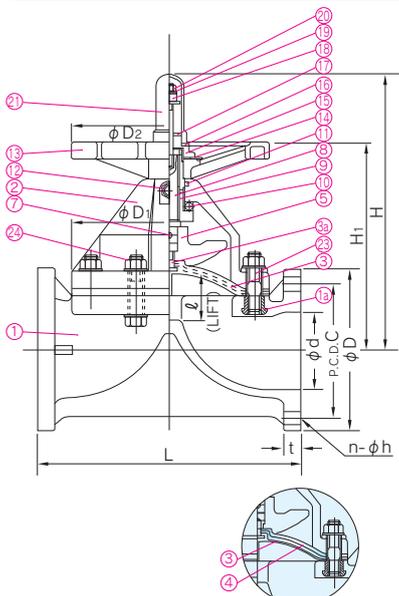
## MATERIAL AND WORKING TEMPERATURE

Body material	Nominal size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure at 20°C(70°F) MPa[kgf/cm²][PSI]			
			Rubber Diaphragm		PTFE Diaphragm	
			200mm(8inch)	250mm(10inch)	200mm(8inch)	250mm(10inch)
PVC	200(8)·250(10)	0 - 60(30 - 140)	0.3{3.1}[40]	0.3{3.1}[40]	0.2{2.0}[30]	0.2{2.0}[30]
PP	200(8)·250(10)	-20 - 90(-5 - 195)	0.5{5.1}[70]	0.45{4.6}[65]	0.4{4.1}[55]	0.4{4.1}[55]
PVDF	200(8)·250(10)	-40 - 120(-40 - 250)	0.5{5.1}[70]	0.45{4.6}[65]	0.4{4.1}[55]	0.4{4.1}[55]

## WORKING PRESSURE VS. TEMPERATURE



## DIMENSION



With PTFE Diaphragm

## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	BODY/BONNET PVC/PVC PP/PP PVDF/PPG PVDF/PVDF	⑪	O-RING(A)	1	NBR
②	BONNET	1		⑫	GREASE NIPPLE	1	COPPER ALLOY(C3604)
③	DIAPHRAGM	1	EPDM,PTFE,FKM,NBR VIFLON F(FKM-F) VIFLON C(FKM-C)	⑬	HAND WHEEL	1	PP
④	CUSION <sup>1)</sup>	1	EPDM	⑭	NAME PLATE	1	PVC
⑤	COMPRESSOR	1	GRAY IRON CASTING	⑮	CAP	1	PP
⑥	COMPRESSOR NUT	1	COPPER ALLOY(C3604)	⑯	SEAT GASKET(A)	1	EPDM
⑦	COMPRESSOR PIN	1	STAINLESS STEEL304	⑰	SEAT RING	1	STAINLESS STEEL304
⑧	STEM	1	SUM23	⑱	STOPPER	1	CHROMIZED STEEL(SS400)
⑨	SLEEVE(A)	1	GRAY IRON CASTING	⑲	SPRING WASHER	1	STAINLESS STEEL304
⑩	THRUST BEARING(A)	1	HIGH CARBON CHROMIUM BEARING(SUJ2)	⑳	SET NUT	1	STAINLESS STEEL304
				㉑	GAUGE COVER	1	POLYCARBONATE
				㉒	STUD BOLT·NUT	—	STAINLESS STEEL304
				㉓	BOLT·NUT	—	STAINLESS STEEL304
				㉔	INSERTED NUT	—	COPPER ALLOY(C3604) <sup>2)</sup> STAINLESS STEEL304 <sup>3)</sup>
				㉕	INSERTED METAL OF DIAPHRAGM	1	STAINLESS STEEL304 Others

Note : 1) Used for PTFE Diaphragm  
2) Used for PVC,PP Body  
3) Used for PVDF Body

DIMENSIONS TABLE

Nominal Size		* d	JIS 10K				* D <sub>1</sub>	D <sub>2</sub>	ℓ	L	t		* H <sub>1</sub>	H
mm	inch		C	* D	h	n					PVC	PP,PVDF		
200	8	196	290	330	23	12	430	410	95	570	28	32	419	627
250	10	247	355	400	25	12	540	560	128	680	30	37	510	778

\*.....Standard dimensions based on PVC material

Nominal Size		* d	DIN 2501 PN10				* D <sub>1</sub>	D <sub>2</sub>	ℓ	L	t		* H <sub>1</sub>	H
mm	inch		C	* D	h	n					PVC	PP,PVDF		
200	8	196	295	340	22	8	430	410	95	600	30	34	419	627
250	10	247	350	395	22	12	540	560	128	730	34	36	510	778

\*.....Standard dimensions based on PVC material

Nominal Size		* d	ANSI CLASS 150				* D <sub>1</sub>	D <sub>2</sub>	ℓ	L	t		* H <sub>1</sub>	H
inch	mm		C	* D	h	n					PVC,PP,PVDF			
8	200	7.72	11.75	13.50	0.88	8	16.93	16.14	3.74	22.44	1.26	16.50	24.69	
10	250	9.72	14.25	16.00	1.00	12	21.26	22.05	5.04	26.77	1.46	20.08	30.63	

\*.....Standard dimensions based on PVC material

SPEC. A (Standard)	Body Material:PVC Diaphragm Material : Rubbers or PTFE		Body Material:PP Diaphragm Material : Rubbers or PTFE		Body Material:PVDF Diaphragm Material : Rubbers or PTFE	
	SPEC. B (Special)	Body Material:PVC Diaphragm Material : Rubbers or PTFE		Body Material:PP Diaphragm Material : Rubbers or PTFE		Body Material:PVDF Diaphragm Material : PTFE

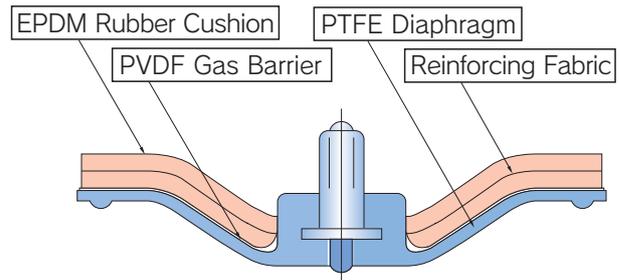
DIAPHRAGM VALVE TYPE 72

- We recommend that a PVDF Gas Barrier should be installed with PTFE DIAPHRAGM VALVE if it is used in an application that has corrosive gas.
- Temperature variations during operation or long periods of storage may cause the diaphragm to settle. In this case, it is recommended to check bonnet bolt torque, prior to installation(See the table below).

▼ Tightening Torque for Diaphragm Valve Bonnet for TYPE 72

Unit:N·m{kgf·cm}

Material	Nominal Size mm(inch)	200 (8)	250 (10)
	Rubber Diaphragm		25.0 {255}
PTFE Diaphragm		25.0 {255}	25.0 {255}



Diaphragm with PVDF Gas Barrier

MATERIAL AND WORKING TEMPERATURE (SPEC. B-Special)

Body material	Nominal size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure at 20°C(70°F) MPa{kgf/cm <sup>2</sup> } [PSI]			
			Rubber Diaphragm		PTFE Diaphragm	
			200mm(8inch)	250mm(10inch)	200mm(8inch)	250mm(10inch)
PVC	200(8)·250(10)	0 - 60(30 - 140)	0.5{5.1}[70]	0.45{4.6}[65]	0.4{4.1}[55]	0.4{4.1}[55]
PP	200(8)·250(10)	-20 - 90(-5 - 195)	0.5{5.1}[70]	0.45{4.6}[65]	0.4{4.1}[55]	0.4{4.1}[55]
PVDF	200(8)·250(10)	-40 - 120(-40 - 250)	-	-	0.4{4.1}[55]	0.4{4.1}[55]

# DIAPHRAGM VALVE/Chlor-Alkali Specification & EL Specification

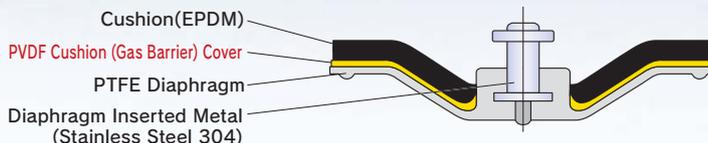
## FEATURES

As a solution for blister or crack problem on the surface of the valve body or the diaphragm in the severe working conditions especially for Chlor/Brine application, we prepared a special specification "EL-Specification".

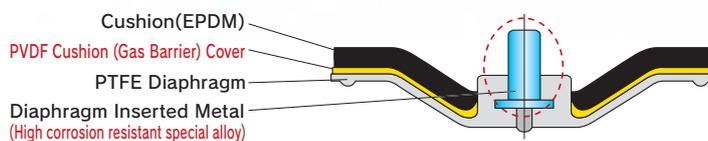
The "EL-Specification", which has EL-PVDF body and EL-PTFE diaphragm, provides excellent chemical resistance and longer product life. According to the result of our field tests, it is confirmed that the "EL-Specification" has 2 to 5 times longer product life than standard "C/A Specification" in the same working condition.



### ① PVDF Cushion Cover (Gas Barrier) Specification for corrosive gas



### ② Chlor-Alkali Specification for Cl<sub>2</sub> gas



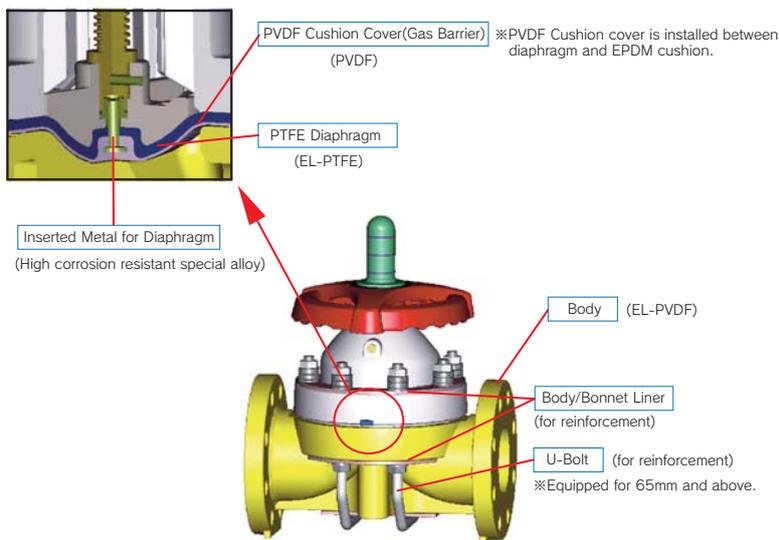
### ③ EL-Specification

- Feature:** To prevent the generation of blister and crack by applying special material.
- Medium:** High temperature brine, Sodium hypochlorite, Hydrofluoric acid and so on.
- Countermeasure:** for blister, crack, peeling-off and so on.
- Parts:** EL-PVDF (Body) and EL-PTFE (Diaphragm)
- Target:** Chlor/Alkali industry, pulp & paper industry, steel industry and so on.
- Reference:** Many factories especially in Electrolysis plants in world wide.

### Size

15mm (1/2inch) - 100mm (4inch)

## Contents of EL-Specification



## Field Test Result



EL-PVDF/No blister is observed



PVDF/Blister is observed

〔Electrolysis Plant/ Return Brine 88°C, 0.3MPa, after 5years service〕

## Comparison table between EL-Specification and Chlor/Alkali specification

Parts Specification	Body	PTFE Diaphragm	Inseted Metal for PTFE Diaphragm	PVDF Cushion Cover	Remark
EL Spec.	EL-PVDF	EL-PTFE	Special Alloy	Equipped	c/w Body/Bonnet Liner and Conical Spring Washer
C/A Spec.	PVDF	PTFE	Special Alloy	Equipped	c/w Body/Bonnet Liner and Conical Spring Washer

Note : Please contact us for further information.

# BALL VALVE TYPE 21 · 21α 15mm - 100mm (1/2inch - 4inch)

DIAPHRAGM VALVE  
BALL VALVE  
BUTTERFLY VALVE  
SWING CHECK VALVE  
WAFFER CHECK VALVE  
BALL CHECK BALL FOOT VALVE  
STOP VALVE  
GAUGE VALVE  
GATE VALVE  
AUTOMATIC WATER FEEDING VALVE  
ROTARY ANGLE VALVE  
ALFA LFA VALVE  
CONSTANT FLOW VALVE  
NEEDLE VALVE  
Y-SEDIMENT STRAINER  
AIR RELEASE VALVE

## FEATURES



### Easy to Be Automated (No Modification Required)

Featuring a new integral molded top flange. The BALL VALVE TYPE 21 can easily be converted from the manual to automatic without replacing the body.

### Simple Installation on Panel Piping

New bottom stand with an insert hole allows the valve to be secured on bench or panel only by inserting a metallic insert.

### Double-O-ring

The stem uses a double-O-ring, sealing arrangement improving durability sealing performance. The upper O-ring groove is deeper than the lower O-ring groove. Because of this design, the stem would break first at the upper O-ring groove, acting as a back up seal.

### 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)



### Locking Device (Option)

The handle lock can be done by full-open (close)



### NSF Product

NSF("NSF/ANSI STANDARD 61" Drinking Water System Components-Health Effects)Product.

:BALL VALVE TYPE 21 · 21 α (Material: PVC+EPDM,FKM)

\*Certified products bear an NSF Certification Mark.

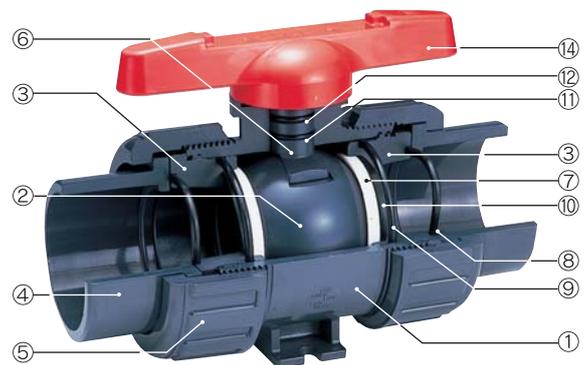
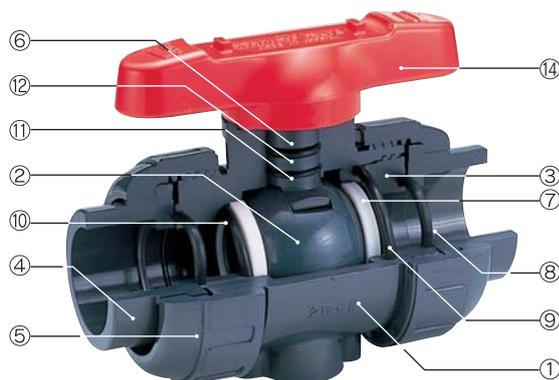
## MATERIAL AND WORKING TEMPERATURE

Body Material	Working Temperature °C (°F)	Max.Working Pressure(at R.T.) MPa{kgf/cm²}[PSI]	End Connectors			
			Socket End	Threaded End	Flanged End	Spigot End
Unplasticized Polyvinyl Chloride(PVC)	0 - 50( 30 - 120)	1.6{16.3}[230]	○	○	○	—
Chlorinated Polyvinyl Chloride(C-PVC)	0 - 90( 30 - 195)	1.6{16.3}[230]	○	○	○	—
Polypropylene(PP)	-20 - 80(-5 - 175)	1.0{10.2}[150]	○	○	○	○
Polyvinylidene Fluoride(PVDF)	-20 - 100(-5 - 210)	1.6{16.3}[230]	○	○	○	○

※ PP and PVDF ball valves of the Socket End type and PVDF ball valves of the Spigot End type are welded valves.

Notes : 1. There is a dead space in a ball valve. Volatile liquids, such as a hydrogen peroxide(H<sub>2</sub>O<sub>2</sub>)and Sodium hypochlorite (NaClO) may vaporize in the dead space, thus causing an abnormal pressure increase in the valve.

(Important: Gas is compressible. Thus if pressure rises abnormally, the valve can burst ejecting dangerous fragments.)



## PARTS & MATERIALS

### ● 15mm(1/2inch) – 50mm(2inch)

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC, C-PVC, PP, PVDF	⑨	O-RING(B)	1	EPDM, FKM, etc
②	BALL	1	PVC, C-PVC, PP, PVDF	⑩	O-RING(C)	2	EPDM, FKM, etc
③	CARRIER	1	PVC, C-PVC, PP, PVDF	⑪	O-RING(D)	1	EPDM, FKM, etc
④	END CONNECTOR	2	PVC, C-PVC, PP, PVDF	⑫	O-RING(E)	1	EPDM, FKM, etc
⑤	UNION NUT	2	PVC, C-PVC, PP, PVDF	⑬	STOP RING	2	PVDF(used for flanged End)
⑥	STEM	1	PVC, C-PVC, PP, PVDF	⑭	HANDLE	1	ABS
⑦	SEAT	2	PTFE				
⑧	O-RING(A)	2	EPDM, FKM, etc				

### ● 65mm(2 1/2inch) – 100mm(4inch)

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC, C-PVC, PP, PVDF	⑨	O-RING(B)	2	EPDM, FKM, etc
②	BALL	1	PVC, C-PVC, PP, PVDF	⑩	CUSHION	2	EPDM, FKM, etc
③	CARRIER	2	PVC, C-PVC, PP, PVDF	⑪	O-RING(D)	1	EPDM, FKM, etc
④	END CONNECTOR	2	PVC, C-PVC, PP, PVDF	⑫	O-RING(E)	1	EPDM, FKM, etc
⑤	UNION NUT	2	PVC, C-PVC, PP, PVDF	⑬	STOP RING	2	PVDF(used for flanged End)
⑥	STEM	1	PVC, C-PVC, PP, PVDF	⑭	HANDLE	1	ABS
⑦	SEAT	2	PTFE	⑮	SCREW	1	STAINLESS STEEL(304)
⑧	O-RING(A)	2	EPDM, FKM, etc				



DIN																				Unit:mm	
Nominal Size	d	d'	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	C <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	e		
	mm	inch																			
10	3/8	13	—	46	—	—	—	43.5	—	—	—	—	—	80	—	—	—	—	—		
15	1/2	15	—	48	42	25	13.5	36	51.5	29	30	6	3	8	92	10.5	19	7.3	11	5.5	
20	3/4	20	—	60	42	25	15	36	59.5	35	36.5	6	3	10	100	11	19	7.3	11	5.5	
25	1	25	—	70	42	25	15	36	68	39	43.5	6	3	10	110	11	19	7.3	11	5.5	
32	1 1/4	32	—	82	48	30	19	42	80.5	47	52.5	8	3	10	121	15	30	9	15	5.5	
40	1 1/2	40	—	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5	
50	2	51	—	126	57	35	23	50	102.5	66	72.5	10	3	12	159	18	30	9	15	6.5	
65	2 1/2	65	58	133	81	55	30	70	126	72	85	13	3	16	200	24	48	9	6	9	
80	3	78	68.5	152	81	55	30	70	140	85	94	13	3	19	240	24	55	11	7	9	
100	4	100	90	210	116	70	40	102	178	110	126	16	3	23	300	34	65	11	8	11	

Nominal Size	Flanged End								Socket End						Threaded End				Spigot End												
	DIN PN10/16								PVC,C-PVC			PP,PVDF			L			PVC			PP,PVDF			L							
	mm	inch	D	C	n	h	PVC C-PVC	PP	PVDF	t	d <sub>1</sub>	ℓ	L	d <sub>1</sub>	d <sub>1</sub> '	ℓ	PP	PVDF	d <sub>2</sub>	ℓ	PVC C-PVC	PP	PVDF	d <sub>3</sub>	d <sub>3</sub> '	ℓ	d <sub>3</sub>	ℓ	PP	PVDF	PP
10	3/8	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	1/2	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	3/4	105	75	4	14	150	150	150	14	25	19	120	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	1	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	1 1/4	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	1 1/2	150	110	4	18	200	200	200	16	50	31	163	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	2	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	2 1/2	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	3	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	4	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	
Nominal Size	d	d'	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	C <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	e		
	inch	mm																			
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	

Nominal Size	Flanged End								Socket End (IPS)						Threaded End										
	ANSI CLASS 150								PVC, C-PVC			PP, PVDF			L			PVC, C-PVC			PP, PVDF				
	inch	mm	D	C	n	h	PVC, C-PVC	PP	PVDF	t	ASTM SCH40	ASTM SCH80	L	d <sub>2</sub>	ℓ	PVC, C-PVC	PP	PVDF							
1/2	15	3.50	2.38	4	0.62	5.63	5.63	5.63	0.47	—	—	—	0.848	0.836	0.875	4.45	0.83	0.87	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	—	—	—	1.058	1.046	1.000	5.08	1.03	1.00	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	—	—	—	1.325	1.310	1.125	5.75	1.30	1.13	5.75	5.75	1-11 1/2 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	—	—	—	1.670	1.655	1.250	6.46	1.65	1.25	6.46	6.46	1 1/4-11 1/2 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	—	—	—	1.912	1.894	1.375	7.24	1.89	1.37	7.24	7.24	1 1/2-11 1/2 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	—	—	—	2.387	2.369	1.500	8.23	2.36	1.50	8.23	8.23	2-11 1/2 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	—	—	—	2.889	2.868	1.750	9.45	2.880	1.752	9.37	9.33	1/2-8 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	—	—	—	3.516	3.492	1.875	11.14	3.480	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	4.518	4.491	2.000	13.86	—	—	—	4.480	2.252	14.37	14.13	4-8 NPT	1.77	14.25	14.25	14.06

BS																				Unit:mm		
Nominal Size	Socket End																					
	mm	inch	d	d <sub>1</sub>	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	C <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	e	ℓ
15	1/2	15	21.4	48	42	25	13.5	36	51.5	29	30	6	3	8	92	10.5	19	7.3	11	5.5	17	102
20	3/4	20	26.8	60	42	25	15	36	59.5	35	36.5	6	3	10	100	11	19	7.3	11	5.5	20	119
25	1	25	33.6	70	42	25	15	36	68	39	43.5	6	3	10	110	11	19	7.3	11	5.5	23	131
32	1 1/4	32	42.3	82	48	30	19	42	80.5	47	52.5	8	3	10	121	15	30	9	15	5.5	27.5	150
40	1 1/2	40	48.3	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5	30.5	164
50	2	51	60.4	126	57	35	23	50	102.5	66	72.5	10	3	12	159	18	30	9	15	6.5	36.5	197

Note : BS socket is available PVC material only.  
Please contact us in case of using other materials.

# WATER BV 15mm - 50mm(1/2inch - 2inch)

## FEATURES

### Most suitable valve for water

Water BV can be used for water, seawater and therefore have reasonable price.  
(This valve is not recommended for chemical fluid.)

### Easy to Be Automated (No Modification Required)

Featuring a new integral molded top flange. The WATER BV can easily be converted from the manual to automatic without replacing the body.

### Double-O-ring

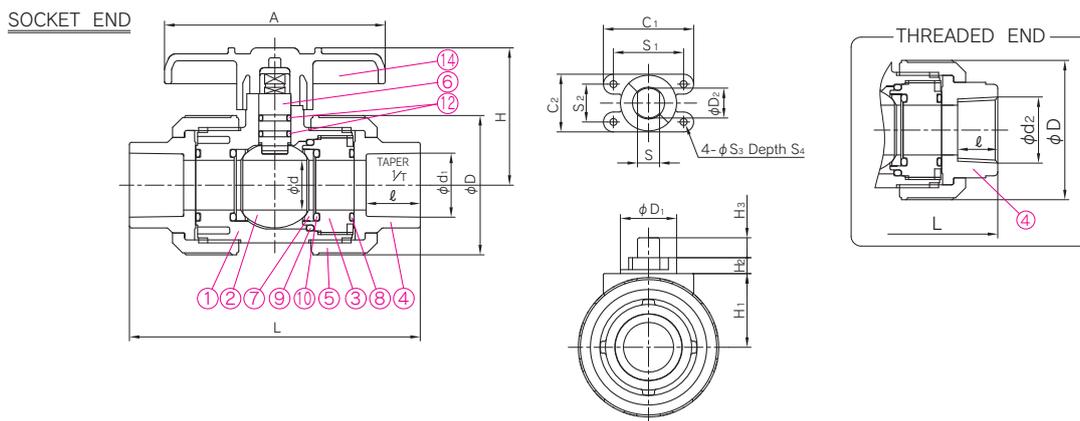
The stem uses a double-O-ring, sealing arrangement improving durability sealing performance. The upper O-ring groove is deeper than the lower O-ring groove. Because of this design, the stem would break first at the upper O-ring groove, acting as a back up seal.

### Multi Functional Handle

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



## DIMENSION



## MATERIAL AND WORKING TEMPERATURE

Body Material	Working Temperature °C (°F)	Max. Working Pressure(at R.T.) MPa[kgf/cm²][PSI]	End Connectors	
			Socket End	Threaded End
Unplasticized Polyvinyl Chloride(PVC)	0 - 50( 30 - 120)	1.0{10.2}[150]	○	○

## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC	⑦	SEAT	2	PTFE
②	BALL	1	PVC	⑧	O-RING(A)	2	EPDM
③	CARRIER	1	PVC	⑨	O-RING(B)	1	EPDM
④	END CONNECTOR	2	PVC	⑩	O-RING(C)	2	EPDM
⑤	UNION NUT	2	PVC	⑫	O-RING(E)	2	EPDM
⑥	STEM	1	PVC	⑬	HANDLE	1	ABS

## DIMENSIONS TABLE

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

# 3-WAY BALL VALVE TYPE 23 15mm - 100mm (1/2inch - 4inch)

## FEATURES



### Compact and Economic

The 3-WAY BALL VALVES allows two flow patterns, using one valve. The valve is suitable for a pipeline which requires two ball valves and a tee. That is, the 3-WAY BALL VALVES is economic because it makes piping compact and saves space.

### Reversible Flow Direction

The 3-WAY BALL VALVE is based on the Asahi true union ball valve design which can be installed or removed just by tightening or loosening its union nut. The 3-WAY BALL VALVES has a L-shaped fluid channel and a handle which can be rotated 360°. The arrow on top of the handle indicates the flow direction.

### Equipped ISO Mounting Flange

The feature provides for easier mounting of actuators on valves.

### Interchangeable with Ball Valve Type21

The face to face dimensions, as well as the connecting parts, end connectors and union nuts, are the same as the ball valve Type21.

### Other Special Features

- Double O-ring seal on stem for an added protection.
- W-L port ball and \*Cross port ball are available upon request.

\*Note: Cross port ball is available at the size of 15mm (1/2inch) up to 50mm (2inch).  
- Built-in spanner wrench on the handle for valve disassembly and assembly.

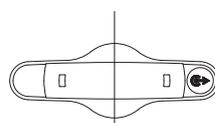
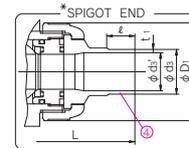
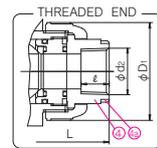
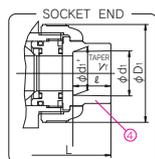
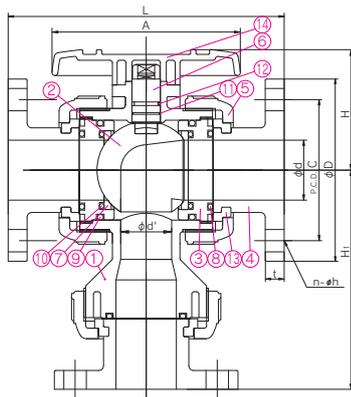
### NSF Product

NSF("NSF/ANSI STANDARD 61" Drinking Water System Components-Health Effects)Product.

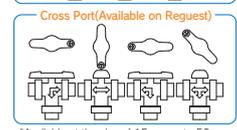
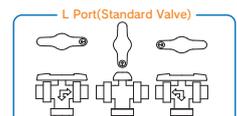
:3-WAY BALL VALVE TYPE 23(Material:PVC+EPDM,FKM)

\*Certified products bear an NSF Certification Mark.

## DIMENSION



(Top view of the handle.)  
NOTE: The shape and appearance of assembly differ a little with nominal size compared to this drawing.

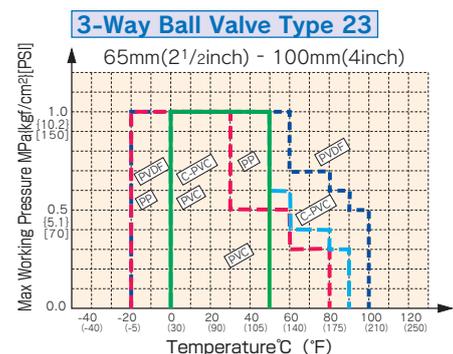
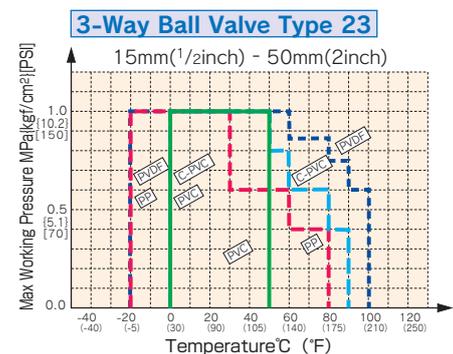


## MATERIAL AND WORKING TEMPERATURE

Body Material	Working Temperature °C (°F)	Max. Working Pressure(at R.T.) MPa{kgf/cm²}[PSI]	End Connectors			
			Socket End	Threaded End	Flanged End	Spigot End
Unplasticized Polyvinyl Chloride(PVC)	0 - 50( 30 - 120)	1.0{10.2} [150]	○	○	○	○
Chlorinated Polyvinyl Chloride(C-PVC)	0 - 90( 30 - 195)	1.0{10.2} [150]	○	○	○	○
Polypropylene(PP)	-20 - 80(-5 - 175)	1.0{10.2} [150]	○*	○	○	○
Polyvinylidene Fluoride(PVDF)	-20 - 100(-5 - 210)	1.0{10.2} [150]	○*	○	○	○

\* PP and PVDF 3-WAY BALL VALVES of the Socket End are welded valves.  
Note : 1. There is a dead space in a ball valve. Volatile liquids, such as a hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) and Sodium hypochlorite (NaClO) may vaporize in the dead space, thus causing an abnormal pressure increase in the valve. (Important: Gas is compressible. Thus if its pressure rises abnormally, the valve can burst ejecting dangerous fragments.

## WORKING PRESSURE VS. TEMPERATURE



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC,PP,C-PVC,PVDF	⑨	O-RING(B)	2	EPDM,FKM,others
②	BALL	1	PVC,PP,C-PVC,PVDF	⑩	O-RING(C), CUSHION	2	EPDM,FKM,others
③	CARRIER	2	PVC,PP,C-PVC,PVDF	⑪	O-RING(D)	1	EPDM,FKM,others
④	END CONNECTOR	3	PVC,PP,C-PVC,PVDF	⑫	O-RING(E)	1	EPDM,FKM,others
⑤	UNION NUT	3	PVC,PP,C-PVC,PVDF	⑬	STOP RING	3	PVDF(Used for Flanged End)
⑥	STEM	1	PVC,PP,C-PVC,PVDF	⑭	HANDLE	1	ABS
⑦	SEAT	2	PTFE	⑮	TAPPING SCREW(A)	1	STAINLESS STEEL304
⑧	O-RING(A)	3	EPDM,FKM,others	⑯	RING	3	STAINLESS STEEL304

Note : The stop ring (⑬) is used for Flanged End valves only.  
The ring (⑯) is used for 15,20,and 25mm C-PVC valves.



# 3-WAY BALL VALVE TYPE 23H 25mm - 40mm(1inch - 1 1/2inch)

## FEATURES

### Horizontal Model

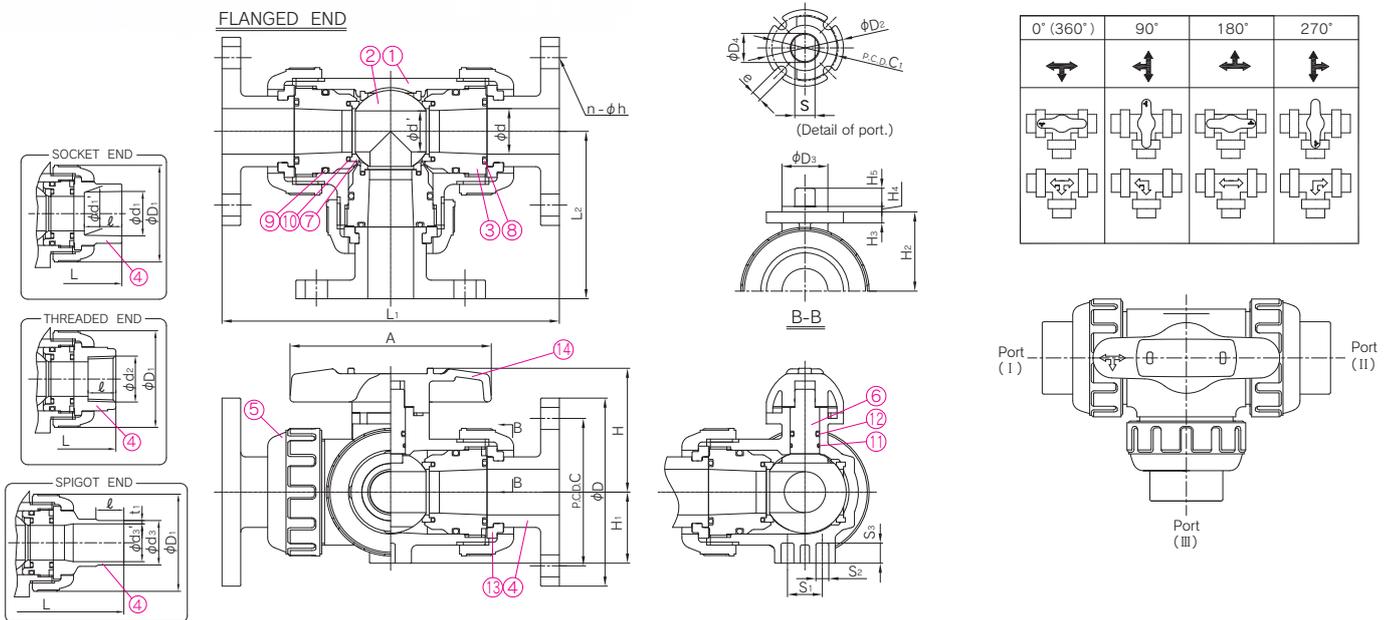
The 3-WAY BALL VALVE TYPE 23H is horizontal model(T port).

### Same Features as TYPE23

- a) Compact and Economic
- b) Reversible Flow Direction
- c) Equipped ISO Mounting Flange
- d) Interchangeable with Ball Valve Type21



## DIMENSION



## MATERIAL AND WORKING TEMPERATURE

Body Material	Working Temperature °C (°F)	Max. Working Pressure(at R.T.) MPa[kgf/cm²][PSI]	End Connectors			
			Socket End	Threaded End	Flanged End	Spigot End
Polypropylene(PP)	-20 - 80(-5 - 175)	1.0{10.2} [150]	○※	○	○	○

\* PP 3-WAY BALL VALVES of the Socket End are welded valves.

Note : 1. There is a dead space in a ball valve. Volatile liquids, such as a hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) and Sodium hypochlorite (NaClO) may vaporize in the dead space, thus causing an abnormal pressure increase in the valve. (Important: Gas is compressible. Thus if its pressure rises abnormally, the valve can burst ejecting dangerous fragments.

## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PP	⑧	O-RING(A)	3	EPDM,FKM,others
②	BALL	1	PP (T Port)	⑨	O-RING(B)	3	EPDM,FKM,others
③	CARRIER	3	PP	⑩	O-RING(C)	3	EPDM,FKM,others
④	END CONNECTOR	3	PP	⑪	O-RING(D)	1	EPDM,FKM,others
⑤	UNION NUT	3	PPG	⑫	O-RING(E)	1	EPDM,FKM,others
⑥	STEM	1	PP	⑬	STOP RING	3	PVDF(Used for Flanged End)
⑦	SEAT	4	PTFE	⑭	HANDLE	1	ABS

DIMENSIONS TABLE

JIS																	Unit:mm	
Nominal Size	Flanged End								Socket End					Threaded End				
	JIS PN10					t	L <sub>1</sub>	L <sub>2</sub>	d <sub>1</sub>	d <sub>1</sub> '	ℓ	L <sub>1</sub>	L <sub>2</sub>	d <sub>2</sub>	ℓ	L <sub>1</sub>	L <sub>2</sub>	
	D	C	n	h														
25 1	125	90	4	19	14	216	108	33.0	32.0	25	170	85	Rc 1	20	159	79.5		
32 1 <sup>1</sup> / <sub>4</sub>	135	100	4	19	16	260	130	—	—	—	—	—	Rc 1 <sup>1</sup> / <sub>4</sub>	22	208	104		
40 1 <sup>1</sup> / <sub>2</sub>	140	105	4	19	16	260	130	47.0	46.0	28	219	109.5	Rc 1 <sup>1</sup> / <sub>2</sub>	25	208	104		

Nominal Size	d	d'	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	C <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	e
25 1	25	22	70	42	25	15	36	68	39	43.5	6	3	10	110	11	19	7.3	11	5.5
32 1 <sup>1</sup> / <sub>4</sub>	40	34	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5
40 1 <sup>1</sup> / <sub>2</sub>	40	34	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5

DIN																					Unit:mm	
Nominal Size	Flanged End								Socket End					Threaded End				Spigot End				
	DIN PN10					t	L <sub>1</sub>	L <sub>2</sub>	d <sub>1</sub>	d <sub>1</sub> '	ℓ	L <sub>1</sub>	L <sub>2</sub>	d <sub>2</sub>	ℓ	L <sub>1</sub>	L <sub>2</sub>	d <sub>3</sub>	ℓ	t	L <sub>1</sub>	L <sub>2</sub>
	D	C	n	h																		
25 1	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 1 <sup>1</sup> / <sub>4</sub>	140	100	4	16	16	260	130	39.45	39.2	20.5	197	98.5	Rp 1 <sup>1</sup> / <sub>4</sub>	22	208	104	—	—	—	—	—	
40 1 <sup>1</sup> / <sub>2</sub>	150	110	4	16	16	248	124	49.45	49.2	23.5	197	98.5	Rp 1 <sup>1</sup> / <sub>2</sub>	25	208	104	50	32	4.6	242	121	

Nominal Size	d	d'	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	C <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	e
25 1	25	22	70	42	25	15	36	68	39	43.5	6	3	10	110	11	19	7.3	11	5.5
32 1 <sup>1</sup> / <sub>4</sub>	40	34	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5
40 1 <sup>1</sup> / <sub>2</sub>	40	34	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5

ANSI																	Unit:mm	
Nominal Size	Flanged End								Socket End				Threaded End					
	ANSI Class150					t	L <sub>1</sub>	L <sub>2</sub>	d <sub>1</sub>	ℓ	L <sub>1</sub>	L <sub>2</sub>	d <sub>2</sub>	ℓ	L <sub>1</sub>	L <sub>2</sub>		
	D	C	n	h														
25 1	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			
32 1 <sup>1</sup> / <sub>4</sub>	4.62	3.50	4	0.62	0.63	10.24	5.12	1.65	1.25	8.74	4.37	1 <sup>1</sup> / <sub>4</sub> -11 1/2NPT	0.87	8.19	4.09			
40 1 <sup>1</sup> / <sub>2</sub>	5.00	3.88	4	0.62	0.63	10.24	5.12	1.89	1.37	8.94	4.47	1 <sup>1</sup> / <sub>2</sub> -11 1/2NPT	0.98	8.19	4.09			

Nominal Size	d	d'	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	C <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	e
25 1	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
32 1 <sup>1</sup> / <sub>4</sub>	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
40 1 <sup>1</sup> / <sub>2</sub>	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

# COMPACT BALL VALVE 13mm - 80mm(3/8inch - 3inch)



## FEATURES

• Features such as compact, light weight and assembly of a reduced number of parts, the COMPACT BALL VALVES can easily be installed in a small space.

### NSF Product

NSF("NSF/ANSI STANDARD 61" Drinking Water System Components-Health Effects)Product.

:Compact BALL VALVE (Material:PVC+EPDM)

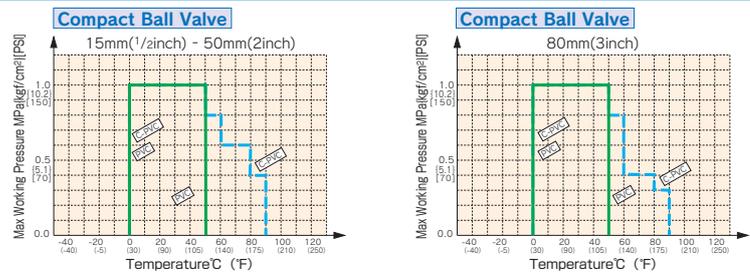
\*Certified products bear an NSF Certification Mark.

## MATERIAL AND WORKING TEMPERATURE

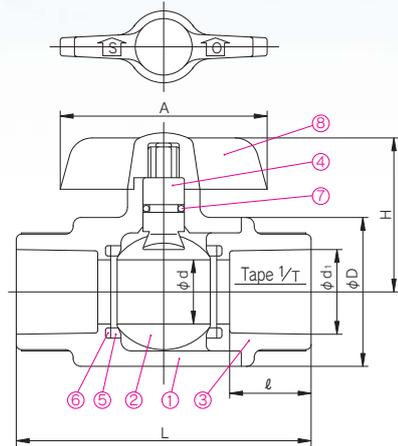
Body material	Working Temperature °C (°F)	Max.Working Pressure(at R.T.) MPa[kgf/cm <sup>2</sup> ][PSI]	End Connectors	Color
Unplasticized Polyvinyl Chloride(PVC)	0-50(30-120)	1.0{10.2}[150]	Socket End Threaded End	Dark gray
Chlorinated Polyvinyl Chloride(C-PVC)	0-90(30-195)	1.0{10.2}[150]	Socket End Threaded End	Brown or Light gray

Notes : 1. There is a dead space in a ball valve. Volatile liquids, such as a hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) and sodium hypochlorite (NaClO) may vaporize in the dead space, thus causing an abnormal pressure increase in the valve. (Important: Gas is compressible. Thus if its pressure rises abnormally, the valve can burst ejecting dangerous fragments.)

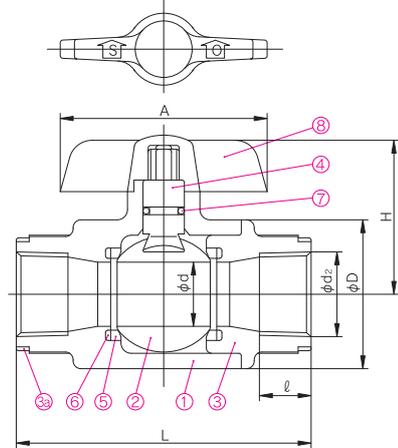
## WORKING PRESSURE VS. TEMPERATURE



### ▼ SOCKET END



### ▼ THREADED END



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC, C-PVC
②	BALL	1	PVC, C-PVC
③	END CONNECTOR	1	PVC, C-PVC
④	STEM	1	PVC, C-PVC
⑤	SEAT	2	PTFE
⑥	CUSHION	2	EPDM, FKM
⑦	O-RING	1	EPDM, FKM
⑧	HANDLE	1	ABS
⑨	RING※	2	STAINLESS STEEL304

Note : The ring (⑨) is used for C-PVC valves 13mm ~ 25mm in nominal size.

## DIMENSIONS TABLE

Nominal Size		Socket End					Threaded End			Unit:mm		
mm	inch	d	d <sub>1</sub>	ℓ	1/T	L	JIS B 0203		D	H	A	
13	3/8	13	18.20	17	1/30	67	Rc 1/2	15	67	35	42	60
15	1/2	15	22.20	21	1/34	79	—	—	—	39	44	70
20	3/4	20	26.25	28	1/34	102	Rc 3/4	17	102	48	55	80
25	1	25	32.30	31.5	1/34	114	Rc 1	20	114	58	60	80
32	1 1/4	31	38.28	33	1/34	127	Rc 1 1/4	22	127	66	70	95
40	1 1/2	35	48.43	42	1/37	152	Rc 1 1/2	25	152	72.5	76	110
50	2	45	60.50	49	1/37	176	Rc 2	28	176	88.5	85	110
80	3	68.5	89.60	64	1/49	236	Rc 3	35	236	130	124	200

Nominal Size		Socket End					Threaded End			Unit:mm		
mm	inch	d	d <sub>1</sub>	ℓ	L	DIN 2999		D	H	A		
13	3/8	13	16	14	85	Rp 3/8	15	85	35	42	60	
15	1/2	15	20	16	97	Rp 1/2	15	97	39	44	70	
20	3/4	20	25	19	102	Rp 3/4	17	102	48	55	80	
25	1	25	32	22	114	Rp 1	20	114	58	60	80	
32	1 1/4	31	40	26	127	Rp 1 1/4	22	127	66	70	95	
40	1 1/2	35	50	31	152	Rp 1 1/2	25	152	72.5	76	110	
50	2	45	63	38	176	Rp 2	28	176	88.5	85	110	
80	3	68.5	90	51	236	Rp 3	35	236	130	124	200	

Nominal Size		Socket End					Threaded End			Unit:inch		
inch	mm	d	ASTM SCH40		L	ANSI/ASME B1.20.1		D	H	A		
1/2	13	0.51	d <sub>1</sub>	d <sub>2</sub>	ℓ	3.35	1/2-14NPT	0.59	3.35	1.38	1.65	2.36
3/4	20	0.79	1.058	1.046	0.72	4.02	3/4-14NPT	0.67	4.02	1.89	2.17	3.15
1	25	0.98	1.325	1.310	0.87	4.49	1-11 1/2NPT	0.79	4.49	2.28	2.36	3.15
1 1/4	32	1.22	1.670	1.655	0.94	5.00	1 1/4-11 1/2NPT	0.87	5.00	2.60	2.76	3.74
1 1/2	40	1.38	1.912	1.894	1.09	5.98	1 1/2-11 1/2NPT	0.98	5.98	2.85	2.99	4.33
2	50	1.77	2.387	2.369	1.16	6.93	2-11 1/2NPT	1.10	6.93	3.48	3.31	4.33
3	80	2.70	3.516	3.492	1.87	9.29	3-8NPT	1.17	9.29	5.12	4.88	7.87

# LAB COCK

## FEATURES

The LAB COCK is a compact, light weight plastic valve which is highly corrosion-resistant, in durable.

### NSF Product

NSF("NSF/ANSI STANDARD 61" Drinking Water System Components-Health Effects)Product.

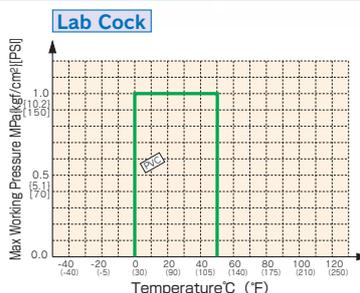
:LAB COCK(Material:PVC+EPDM)

\*Certified products bear an NSF Certification Mark.

## MATERIAL AND WORKING TEMPERATURE

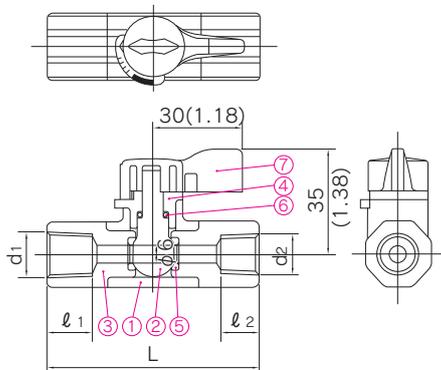
Body material	Unplasticized Polyvinyl Chloride(PVC)
Working Temperature	0°C - 50°C (30° F - 120° F)
Max.Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI]
End Connectors	Hose, Male thread, Female thread
Nominal Size	●Hose: 12 to 15mm(standard hose inner diameter) ●Male thread: 1/4, 1/2 ●Female thread: 1/4, 3/8

## WORKING PRESSURE VS. TEMPERATURE

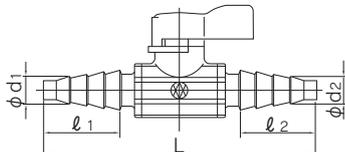


## DIMENSION

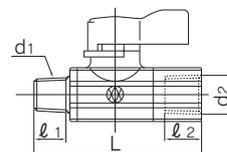
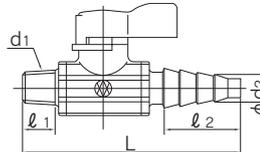
### FEMALE THREAD × FEMALE THREAD



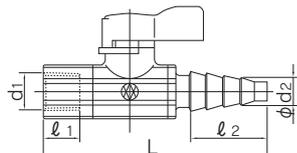
### HOSE × HOSE



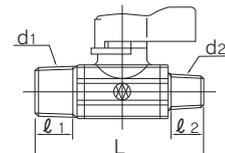
### MALE THREAD × HOSE



### FEMALE THREAD × HOSE



### MALE THREAD × MALE THREAD



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC
②	BALL & STEM	1	PVC
③	END CONNECTOR	2	PVC
④	GLAND	1	PVC
⑤	SEAT	2	EPDM, PTFE, others
⑥	O-RING	1	EPDM, others
⑦	HANDLE	1	ABS

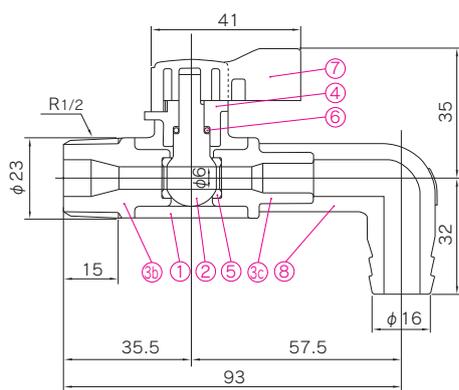
## DIMENSIONS TABLE

JIS						Unit:mm					
	d <sub>1</sub>	d <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	L	d <sub>1</sub>	d <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	L	
FEMALE THREAD × FEMALE THREAD	Rc 1/4	Rc 1/4	15	15	71	MALE THREAD × HOSE	R 1/4	10	13	30.5	88.5
	Rc 3/8	Rc 1/4	15	15	71		R 1/2	10	15	30.5	91
	Rc 3/8	Rc 3/8	15	15	71		R 1/4	R 1/4	13	13	66
HOSE × HOSE	10	10	30.5	30.5	111	MALE THREAD × MALE THREAD	R 1/2	R 1/4	15	13	68.5
FEMALE THREAD × HOSE	Rc 1/4	10	15	30.5	91		R 1/2	R 1/2	15	15	71
	Rc 3/8	10	15	30.5	91		R 1/4	Rc 1/4	13	15	68.5
MALE THREAD × FEMALE THREAD							R 1/4	Rc 3/8	13	15	68.5
							R 1/2	Rc 1/4	15	15	71
							R 1/2	Rc 3/8	15	15	71

DIN							Unit:mm						
		d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	ℓ <sub>2</sub>	L			d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	ℓ <sub>2</sub>	L
①	FEMALE THREAD × FEMALE THREAD	Rp 1/4	Rp 1/4	15	15	71	④	MALE THREAD × HOSE	R 1/4	10	13	30.5	88.5
		Rp 3/8	Rp 1/4	15	15	71			R 1/2	10	15	30.5	91
		Rp 3/8	Rp 3/8	15	15	71			R 1/4	R 1/4	13	13	66
②	HOSE × HOSE	10	10	30.5	30.5	111	⑤	MALE THREAD × MALE THREAD	R 1/2	R 1/4	15	13	68.5
③	FEMALE THREAD × HOSE	Rp 1/4	10	15	30.5	91			R 1/2	R 1/2	15	15	71
		Rp 3/8	10	15	30.5	91	R 1/4	Rp 1/4	13	15	68.5		
							⑥	MALE THREAD × FEMALE THREAD	R 1/4	Rp 3/8	13	15	68.5
									R 1/2	Rp 1/4	15	15	71
									R 1/2	Rp 3/8	15	15	71
									R 1/2	Rp 3/8	15	15	71

ANSI							Unit:inch						
		d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	ℓ <sub>2</sub>	L			d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	ℓ <sub>2</sub>	L
①	FEMALE THREAD × FEMALE THREAD	1/4-18NPT	1/4-18NPT	0.51	0.51	2.80	④	MALE THREAD × HOSE	1/4-18NPT	0.39	0.51	1.20	3.48
		3/8-18NPT	1/4-18NPT	0.59	0.51	2.80			1/2-14NPT	0.39	0.59	1.20	3.58
		3/8-18NPT	3/8-18NPT	0.59	0.59	2.80			1/4-18NPT	1/4-18NPT	0.51	0.51	2.60
②	HOSE × HOSE	0.39	0.39	1.20	1.20	4.37	⑤	MALE THREAD × MALE THREAD	1/2-14NPT	1/4-18NPT	0.59	0.51	2.70
③	FEMALE THREAD × HOSE	1/4-18NPT	0.39	0.51	1.20	3.58			1/2-14NPT	1/2-14NPT	0.59	0.59	2.80
		3/8-18NPT	0.39	0.59	1.20	3.58	1/4-18NPT	1/4-18NPT	0.51	0.51	2.70		
							⑥	MALE THREAD × FEMALE THREAD	1/4-18NPT	3/8-18NPT	0.51	0.59	2.70
									1/2-14NPT	1/4-18NPT	0.59	0.51	2.80
									1/2-14NPT	3/8-18NPT	0.59	0.59	2.80
							⑦	MALE THREAD × ELBOW	1/2-14NPT	0.63	0.59	1.26	3.66

■ LAB COCK 1/2inch MALE THREAD × ELBOW16mm



MATERIAL AND WORKING TEMPERATURE

Body material	Unplasticized Polyvinyl Chloride(PVC)
Working Temperature	0°C - 50°C (30° F - 120° F)
Max.Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI]
End Connectors	R1/2inch Male thread × Elbow16mm

PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC
②	BALL & STEM	1	PVC
③a	END CONNECTOR	1	PVC
③b	END CONNECTOR	1	PVC
④	GLAND	1	PVC
⑤	SEAT	2	PTFE
⑥	O-RING	1	EPDM, Others
⑦	HANDLE	1	ABS
⑧	ELBOW	1	PVC

# Panel Mounting

- Diaphragm Valve Type14      15mm - 100mm(1/2inch - 4inch)
- Ball Valve Type21            15mm - 100mm(1/2inch - 4inch)

## Procedure

Refer to the User's Manual for Metal Insert (Ensat) by the Maker.

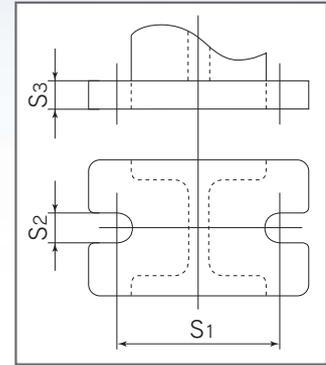
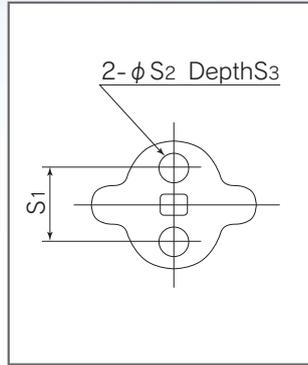
## Bottom Stand Dimension

Diaphragm Valve Type14      Unit:mm(inch)

Nominal Size mm (inch)	S1	S2	S3
15mm - 32mm (1/2 - 1 1/4)	25 (0.98)	7 (0.28)	13 (0.51)
40mm, 50mm (1 1/2, 2)	45 (1.8)	9 (0.35)	15 (0.59)
65mm (2 1/2)	85 (3.35)	11 (0.43)	20 (0.79)
80mm (3)	100 (3.94)	15 (0.59)	28 (1.10)
100mm (4)	120 (4.72)	15 (0.59)	28 (1.10)

Diaphragm Valve Type14: 15mm - 100mm  
(1/2inch - 4inch)  
Ball Valve Type21: 15mm - 50mm  
(1/2inch - 2inch)

Ball Valve Type21: 65mm - 100mm  
(2 1/2inch - 4inch)

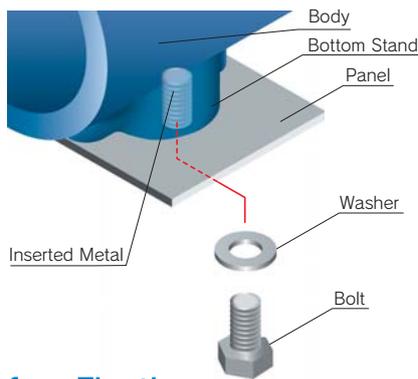


Ball Valve Type21      Unit:mm(inch)

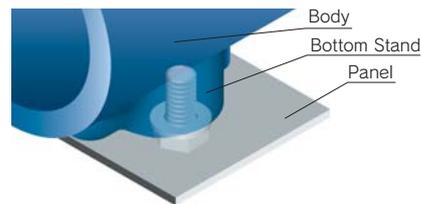
Nominal Size mm (inch)	S1	S2	S3
15mm - 25mm (1/2 - 1)	19 (0.75)	7.3 (0.29)	11 (0.43)
32mm - 50mm (1 1/4 - 2)	30 (1.18)	9 (0.35)	15 (0.59)
65mm (2 1/2)	48 (1.89)	9 (0.35)	6 (0.24)
80mm (3)	55 (2.17)	11 (0.43)	7 (0.28)
100mm (4)	65 (2.56)	11 (0.43)	8 (0.31)

## Fixation of Bottom Stand with Panel

Nominal size 15 - 50mm(1/2inch - 2inch)

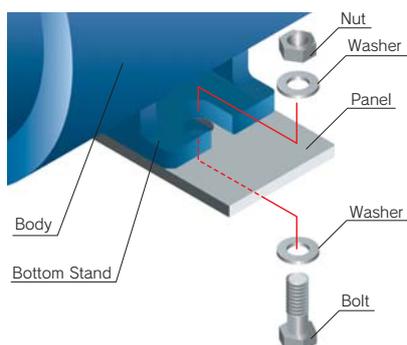


Before Fixation

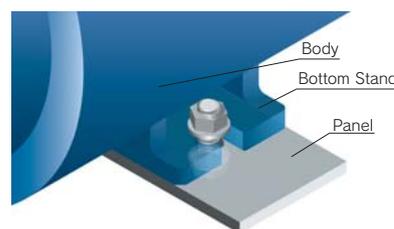


After Fixation

Nominal size 65 - 100mm(2 1/2inch - 4inch)



Before Fixation



After Fixation

# BUTTERFLY VALVE TYPE 57 40mm - 350mm(1½inch - 14inch)

## FEATURES



### Excellent Sealing Performance

Sealing performance has been improved due to its specially designed seat "PAT pending".

### Lowered Operating Torque

Required operating torque has been reduced by applying specially designed seat.

### Protection for Over Tightening of Mating Flange

The valve body acts as a protector against over tightening to avoid breakage or deformation of the seat. (Please refer to sketch of below)

### Spherical Design Disc

Spherical design disc provides superior durability and improved Cv value.

### Stem Retainer

Stem retainer allows field automation or accessories preventing the stem from being removed.

### Plastic Gear Box

Corrosion resistant plastic gear box provides a broader range of applications.

### Wetted Part Lubricants Free (SPECIAL)

Note: Long stem type and chain drive type are available on special request.

### Locking Operation

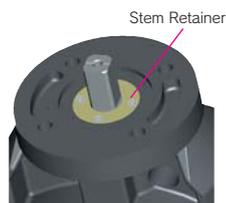
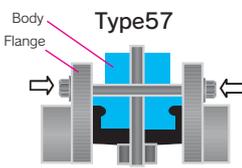
Locking device of Gear type is available on special request.



Lever type



Gear type



#### Plastic Gear Box Housing

Superior corrosion resistance allows applications such as severe chemicals and sea waters.

#### NAMUR Mounting Dimension

NAMUR standard is applied on the gear box housing.

#### Highly Visible Position Indicator

Highly visible from a distance.

#### Stainless Steel Trim and Hardware

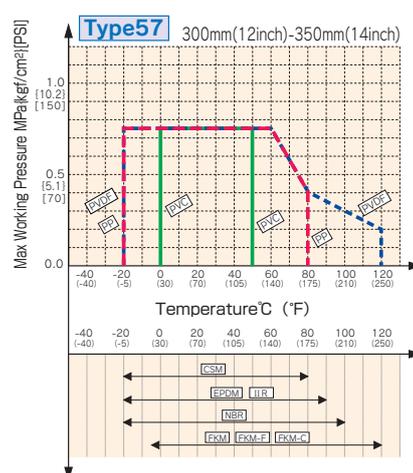
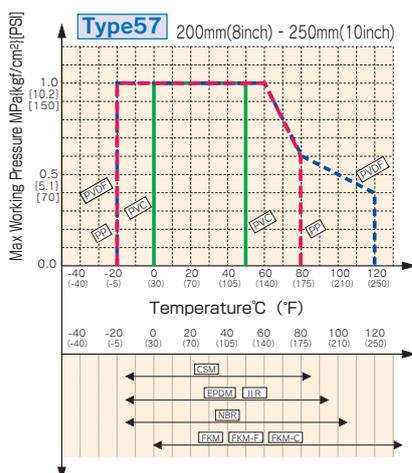
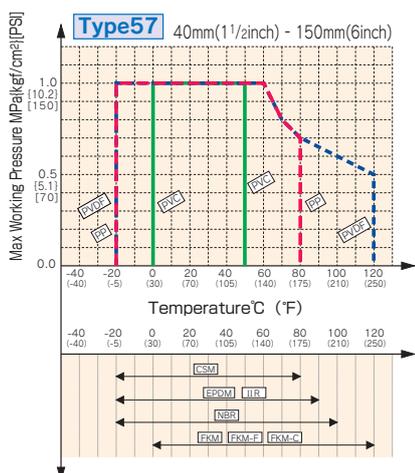
#### Plastic Hand Wheel

Corrosion resistance gripping design allows easy operation.

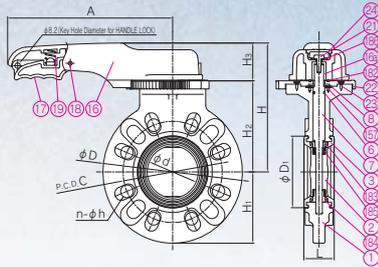
## SPECIFICATIONS

Body material	Working Temperature °C (°F)	Max. Working Pressure MPa[kgf/cm²][PSI]	
		40mm-250mm (1½inch~10inch)	300mm-350mm (12inch·14inch)
Polyvinyl Chloride(PVC)	0 - 50 (30 - 120)	1.0{10.2}[150]	0.75{7.7}[110]
Polypropylene(PP)	-20 - 80 (20 - 175)	1.0{10.2}[150]	0.75{7.7}[110]
Polyvinylidene Fluoride(PVDF)	-20 - 120(20 - 250)	1.0{10.2}[150]	0.75{7.7}[110]

## WORKING PRESSURE VS. TEMPERATURE



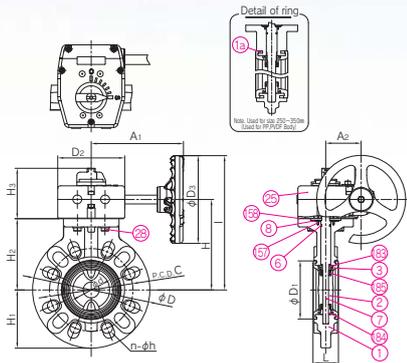
**Lever Type** ● 40mm(1½inch) – 200mm(8inch)



**PARTS & MATERIALS**

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	BODY/DISC- SEAT BUSH	⑰	HANDLE LEVER	1	PPG
②	DISC	1	PVC/PP	⑱	PIN	1	PPG
⑬	SEAT BUSH(A)	1	PP/PP	⑲	SPRING	1	STAINLESS STEEL(SUS 304)
⑭	SEAT BUSH(B)	1	PVDF/PVDF	⑳	BOLT (B)	1	STAINLESS STEEL(SUS 304)
③	SEAT	1	EPDM FKM Others	㉑	LOCKING PLATE	1	PPG
⑥	O-RING(C)	1		㉒	SCREW (B)	4	STAINLESS STEEL(SUS 304)
⑯	O-RING(I)	4		㉓	CAP(A)	1	PP
⑦	STEM	1	STAINLESS STEEL(SUS 403) STAINLESS STEEL(SUS 316)	㉔	SCREW (F)	4	STAINLESS STEEL(SUS 304)
⑧	STEM HOLER(A)	1	PP	㉕	O-RING(H)	1	EPDM
⑫	HANDLE(A)	1	PP	㉖	RUBBER+WASHER	1	STAINLESS STEEL304 + EPDM
⑮	HANDLE INSERTED METAL	1	STAINLESS STEEL(SUS 316L)				

**Gear Type** ● 40mm(1½inch) – 350mm(14inch)



**PARTS & MATERIALS**

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	BODY/DISC- SEAT BUSH	⑧	STEM RETAINER(A)	1	PP
②	DISC	1	PVC/PP	㉑	GEAR BOX	1	PLASTIC etc.
⑬	SEAT BUSH(A)	1	PP/PP	㉒	BOLT (C)	4	STAINLESS STEEL(SUS 304)
⑭	SEAT BUSH(B)	1	PVDF/PVDF	㉓	SCREW (F)	4	STAINLESS STEEL(SUS 304)
③	SEAT	1	EPDM FKM Others	㉔	GASKET (L)	1	EPDM
⑥	O-RING(C)	1		㉕	RING	2	STEEL400 (Unichrome coated) PP,PVDF Body used for size 250mm-350mm
⑯	O-RING(I)	4					
⑦	STEM	1	STAINLESS STEEL(SUS 403) STAINLESS STEEL(SUS 316)				

**DIMENSIONS TABLE**

NOMINAL SIZE		JIS 5K		JIS 10K			D		D <sub>1</sub>		D <sub>2</sub>		D <sub>3</sub>		L		H		H <sub>1</sub>		H <sub>2</sub>		H <sub>3</sub>		I		A		A <sub>1</sub>		A <sub>2</sub>		Number of handle wheel rotation
mm	inch	d	C	n	h	C	n	h	D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	LEVER	GEAR	H <sub>1</sub>	LEVER	GEAR	LEVER	GEAR	I	A	A <sub>1</sub>	A <sub>2</sub>									
40	1½	45	95	4	15	105	4	19	150	71	122	160	39	156	130	75	100	95	56	92	210	220	167	64					9.5				
50	2	56	105	4	15	120	4	19	165	81	122	160	42	166	140	83	110	105	56	92	220	220	167	64									
65	2½	69	130	4	15	140	4	19	185	95	122	160	46	176	150	93	120	115	56	92	230	220	167	64									
80	3	77	145	4	19	150	8	19	211	105	122	160	46	191	165	106	135	130	56	92	245	250	167	64									
100	4	102	165	8	19	175	8	19	238	134	122	160	56	206	180	119	150	145	56	92	260	250	167	64									
125	5	129	200	8	19	210	8	23	263	169	122	160	66	237	195	132	168	160	69	92	275	320	167	64									
150	6	150	230	8	19	240	8	23	285	190	122	160	71	252	210	143	183	175	69	92	290	320	167	64									
200	8	195	280	8	23	290	12	23	340	242	122	160	87	283	241	170	214	206	69	92	321	400	167	64									
250	10	250	345	12	23	355	12	25	421	302	122	160	112	—	276	211	—	241	—	92	356	—	167	64									
300	12	303	390	12	23	400	16	25	488	360	188	300	129	—	340	244	—	298	—	108	490	—	272	99									
350	14	351	435	12	23	445	16	25	539	393	188	300	129	—	367	270	—	325	—	108	517	—	272	99									

NOMINAL SIZE		DIN PN 10			D		D <sub>1</sub>		D <sub>2</sub>		D <sub>3</sub>		L		H		H <sub>1</sub>		H <sub>2</sub>		H <sub>3</sub>		I		A		A <sub>1</sub>		A <sub>2</sub>		Number of handle wheel rotation
mm	inch	d	C	n	h	D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	LEVER	GEAR	H <sub>1</sub>	LEVER	GEAR	LEVER	GEAR	I	A	A <sub>1</sub>	A <sub>2</sub>										
40	1½	45	110	4	18	150	71	122	160	39	156	130	75	100	95	56	92	210	220	167	64					9.5					
50	2	56	125	4	18	165	81	122	160	42	166	140	83	110	105	56	92	220	220	167	64										
65	2½	69	145	4	18	185	95	122	160	46	176	150	93	120	115	56	92	230	220	167	64										
80	3	77	160	8	18	211	105	122	160	46	191	165	106	135	130	56	92	245	250	167	64										
100	4	102	180	8	18	238	134	122	160	56	206	180	119	150	145	56	92	260	250	167	64										
125	5	129	210	8	18	263	169	122	160	66	237	195	132	168	160	69	92	275	320	167	64										
150	6	150	240	8	22	285	190	122	160	71	252	210	143	183	175	69	92	290	320	167	64										
200	8	195	295	8	22	340	242	122	160	87	283	241	170	214	206	69	92	321	400	167	64										
250	10	250	350	12	22	421	302	122	160	112	—	276	211	—	241	—	92	356	—	167	64										
300	12	303	400	12	22	488	360	188	300	129	—	340	244	—	298	—	108	490	—	272	99										
350	14	351	460	16	22	539	393	188	300	129	—	367	270	—	325	—	108	517	—	272	99										

NOMINAL SIZE		ANSI CLASS 150			D		D <sub>1</sub>		D <sub>2</sub>		D <sub>3</sub>		L		H		H <sub>1</sub>		H <sub>2</sub>		H <sub>3</sub>		I		A		A <sub>1</sub>		A <sub>2</sub>		Number of handle wheel rotation
inch	mm	d	C	n	h	D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	LEVER	GEAR	H <sub>1</sub>	LEVER	GEAR	LEVER	GEAR	I	A	A <sub>1</sub>	A <sub>2</sub>										
1½	40	1.77	3.88	4	0.62	5.91	2.80	4.80	6.30	1.54	6.14	5.12	2.95	3.94	3.74	2.20	3.62	8.27	8.66	6.57	2.52					9.5					
2	50	2.20	4.75	4	0.75	6.50	3.19	4.80	6.30	1.65	6.54	5.51	3.25	4.33	4.13	2.20	3.62	8.66	8.66	6.57	2.52										
2½	65	2.72	5.50	4	0.75	7.28	3.74	4.80	6.30	1.81	6.93	5.91	3.64	4.72	4.53	2.20	3.62	9.06	8.66	6.57	2.52										
3	80	3.03	6.00	4	0.75	8.31	4.13	4.80	6.30	1.81	7.52	6.50	4.15	5.31	5.12	2.20	3.62	9.65	9.84	6.57	2.52										
4	100	4.02	7.50	8	0.75	9.37	5.28	4.80	6.30	2.20	8.11	7.09	4.69	5.91	5.71	2.20	3.62	10.24	9.84	6.57	2.52										
5	125	5.08	8.50	8	0.88	10.35	6.65	4.80	6.30	2.60	9.33	7.68	5.20	6.61	6.30	2.72	3.62	10.83	12.60	6.57	2.52										
6	150	5.91	9.50	8	0.88	11.22	7.48	4.80	6.30	2.80	9.92	8.27	5.61	7.20	6.89	2.72	3.62	11.42	12.60	6.57	2.52										
8	200	7.68	11.75	8	0.88	13.39	9.53	4.80	6.30	3.43	11.14	9.49	6.69	8.43	8.11	2.72	3.62	12.64	15.75	6.57	2.52										
10	250	9.84	14.25	12	1.00	16.57	11.89	4.80	6.30	4.41	—	10.87	8.31	—	9.49	—	3.62	14.02	—	6.57	2.52										
12	300	11.93	17.00	12	1.00	19.21	14.17	7.40	11.81	5.08	—	13.39	9.61	—	11.73	—	4.25	19.29	—	10.71	3.90										
14	350	13.82	18.75	12	1.12	21.22	15.47	7.40	11.81	5.08	—	14.45	10.63	—	12.80	—	4.25	20.35	—	10.71	3.90										

Note. The shape and appearance of the actual assembly may differ slightly in nominal size as compared with this drawing.

# BUTTERFLY VALVE TYPE 56 400mm(16inch)



## FEATURES

### Easy Transformation of Operation Devices

Application of modular design on top flange provides the valve with flexible and easy change of operation types, and from manual to automatic and so on.

### Option

Long stem type and chain drive type are available on special request.

## SPECIFICATIONS

Body material	Nominal size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure (at R.T.) MPa{kgf/cm²}{PSI}	
			400mm(16inch)	
PP	400(16)	-20 - 80(-5 - 175)	0.6{6.1}[87]	
PVDF	400(16)	-20 - 120(-5 - 250)	0.6{6.1}[87]	

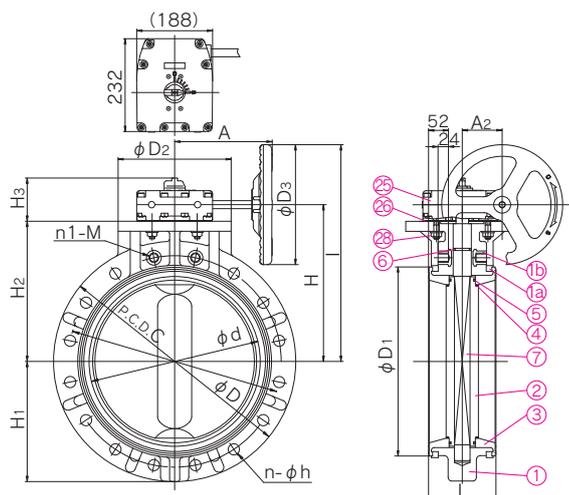
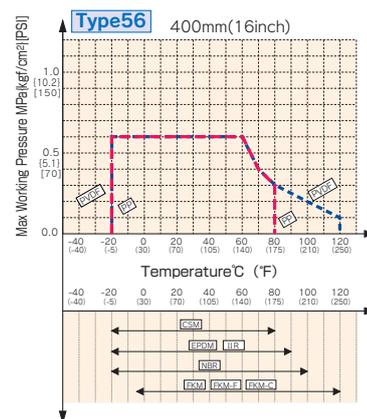
※R.T. ... Room Temperature

## PARTS & MATERIALS

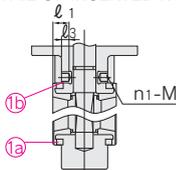
No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	BODY/DISC PP/PP PVDF/PVDF
②	DISC	1	
③	STEM SEAT	1	EPDM,FKM,OTHERS
④	O-RING(A)	2	EPDM,FKM,OTHERS
⑤	O-RING(B)	2	EPDM,FKM,OTHERS
⑥	O-RING(C)	1	EPDM,FKM,OTHERS
⑦	STEM	1	STAINLESS STEEL(SUS403)
⑳	GEAR BOX	1	PLASTIC etc.
㉑	BOLT (C)	1	STAINLESS STEEL304
㉒	RING <sup>1)</sup>	2	STEEL(SS400)
㉓	INSERTED METAL OF BODY <sup>2)</sup>	4	COPPER ALLOY(C3604)

Note: 1 ) Used for PP body: with epoxy powder coat  
2 ) Used for JIS 10K400mm(16inch)

## WORKING PRESSURE VS. TEMPERATURE



### DETAIL OF INSERTED NUTS



NOM. SIZE	BOLT HOLES	Q'TY OF INSERTED NUT	TOTAL				
			UPPER	(2×n1)			
mm	inch	n	l <sub>1</sub>	l <sub>3</sub>			
400	16	M24	14	2×2	4	52	24

※JIS 10K 400mm(16inch)only

## DIMENSIONS TABLE

Nominal Size		JIS 10K																	Unit:mm	
mm	inch	d	C				D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	A	A <sub>2</sub>	Number of handle rotation	
400	16	406	510	14	27	2	24	600	470	235	300	169	390	300	350	108	540	272	99.2	9.5

Nominal Size		DIN PN 10																	Unit:mm	
mm	inch	d	C				D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	A	A <sub>2</sub>	Number of handle rotation	
400	16	406	515	16	26			600	470	235	300	169	390	300	350	108	540	272	99.2	9.5

Nominal Size		ANSI Class 150																	Unit:inch	
inch	mm	d	C				D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	A	A <sub>2</sub>	Number of handle rotation	
16	400	15.98	21.25	16	1.12			23.62	18.50	9.25	11.81	6.65	15.35	11.81	13.78	4.25	21.26	10.71	3.91	9.5

# BUTTERFLY VALVE TYPE 75 450mm - 600mm(18inch - 24inch)

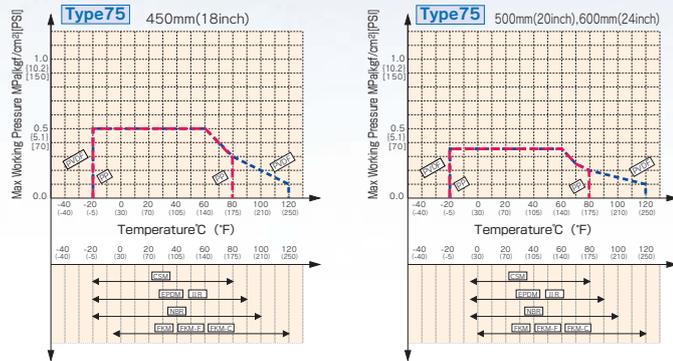
● 450mm(18inch) - 600mm(24inch)

## SPECIFICATIONS

Body material	Nominal size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure (at R.T.) MPa{kgf/cm <sup>2</sup> }[PSI]		
			450mm(18inch)	500mm(20inch)	600mm(24inch)
PP	450 - 600(18 - 24)	-20 - 80(-5 - 175)	0.5 {5.1}[73]	0.35{3.6}[51]	0.35{3.6}[51]
PVDF	450 - 600(18 - 24)	-20 - 120(-5 - 250)	0.5 {5.1}[73]	0.35{3.6}[51]	0.35{3.6}[51]

※R.T...Room Temperature

## WORKING PRESSURE VS. TEMPERATURE



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	BODY / DISC	⑩	SNAP RING	1	STAINLESS STEEL(SUS304)
②	DISC	1	PP / PP	⑪	GEAR BOX	1	CAST IRON(FC250)etc.
③	SEAT	1		⑫	BOLT(C)	4	STAINLESS STEEL(SUS304)
④	O-RING(A)	2	EPDM	⑬	HANDLE(C)	1	CAST IRON(FC250)
⑤	O-RING(B)	2	FKM	⑭	HANDLE GRIP	1	NYLON etc.
⑥	O-RING(C)	1	others	⑮	SPRING PIN	1	STAINLESS STEEL(SUS304)
⑦	STEM	1	STAINLESS STEEL(SUS403)	⑯	SCALE PLATE	1	STAINLESS STEEL(SUS304)
⑧	KEY(A)	1	CARBON STEEL(S45C)	⑰	RING	2	CHROMIZED STEEL(SS400) with Epoxy Powder Coat.

1) Used only for JIS 10K.

### Option

Long stem type and chain drive type are available on special request.

## DIMENSIONS TABLE

Nominal Size	mm	inch	M	BOLT HOLES n	Q'TY OF INSERTED NUT			l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>
					UPPER	LOWER	TOTAL(2×n1)			
450	18	M24	16	2×2	2×2	8	49	54	24	
500	20	M24	16	2×2	2×2	8	49	59	24	
600	24	M30	20	2×2	2×2	8	64	64	30	

JIS		Unit:mm																		Number of handle rotation	GEAR BOX TYPE		
Nominal Size	d	JIS 10K				D		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>4</sub>	H <sub>5</sub>	A	A <sub>1</sub>	A <sub>2</sub>				
mm	inch	C	n	h	n <sub>1</sub>	M	PP	PVDF															
450	18	452	565	16	27	4	M24	633	630	525	340	400	179	497	315	370	127	443	326	75.5	104.5	13.75	AB1250N
500	20	502	620	16	27	4	M24	683	680	575	340	400	190	527	350	400	127	473	326	75.5	104.5	13.75	
600	24	603	730	20	33	4	M30	793	790	686	340	400	209	592	424	465	127	538	326	75.5	104.5	13.75	

DIN		Unit:mm																		Number of handle rotation	GEAR BOX TYPE
Nominal Size	d	DIN 2501 PN10				D		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>4</sub>	H <sub>5</sub>	A	A <sub>1</sub>	A <sub>2</sub>		
mm	inch	C	n	h	PP	PVDF															
450	18	452	565	20	26	633	630	525	340	400	179	497	315	370	127	443	326	75.5	104.5	13.75	AB1250N
500	20	502	620	20	26	683	680	575	340	400	190	527	350	400	127	473	326	75.5	104.5	13.75	
600	24	603	725	20	30	793	790	686	340	400	209	592	424	465	127	538	326	75.5	104.5	13.75	

ANSI		Unit:mm																		Number of handle rotation	GEAR BOX TYPE
Nominal Size	d	ANSI Class150				D		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>4</sub>	H <sub>5</sub>	A	A <sub>1</sub>	A <sub>2</sub>		
inch	mm	C	n	h	PP	PVDF															
18	450	17.80	22.75	16	1.25	24.92	24.80	20.67	13.39	15.75	7.05	19.57	12.40	14.57	5.00	17.44	12.83	2.97	4.11	13.75	AB1250N
20	500	19.76	25.00	20	1.25	26.89	26.77	22.64	13.39	15.75	7.48	20.75	13.78	15.75	5.00	18.62	12.83	2.97	4.11	13.75	
24	600	23.74	29.50	20	1.38	31.22	31.10	27.01	13.39	15.75	8.23	23.31	16.69	18.31	5.00	21.18	12.83	2.97	4.11	13.75	

**BUTTERFLY VALVE TYPE 56D,75D** Type56D:400mm(16inch) Type75D:450mm·600mm(18inch·24inch)



**FEATURES**

**Easy Transformation of Operation Devices**

Application of modular design on top flange provides the valve with flexible and easy change of operation types, and from manual to automatic and so on.

**Option**

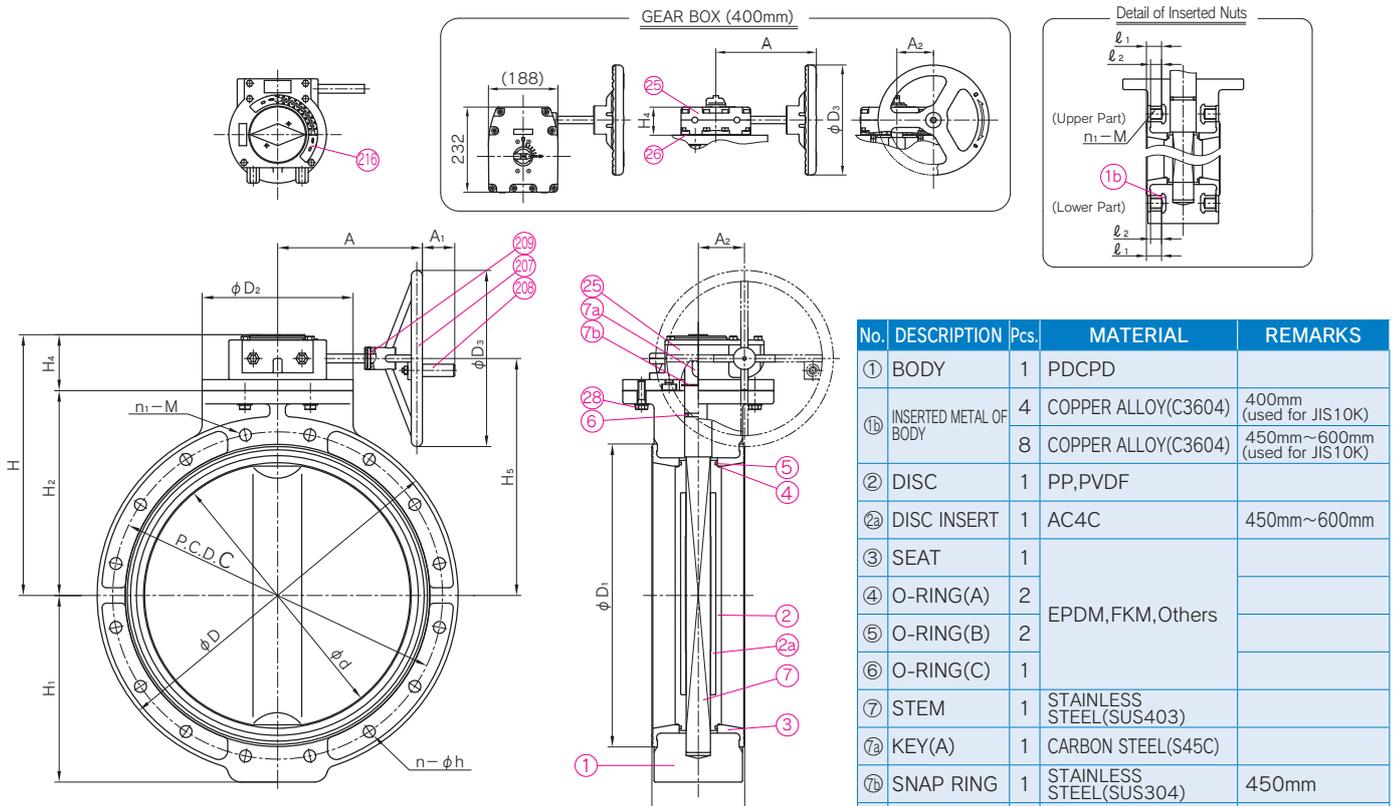
Long stem type and chain drive type are available on special request.

**SPECIFICATIONS**

Body material	Disc material	Nominal size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure (at R.T.) MPa[kgf/cm <sup>2</sup> ][PSI]
PDCPD	PP	400(16)~600(24)	0 - 90(30 - 195)	0.75{7.7}[110]
	PVDF	400(16)~600(24)	0 - 100(30 - 210)	0.75{7.7}[110]

※R.T...Room Temperature

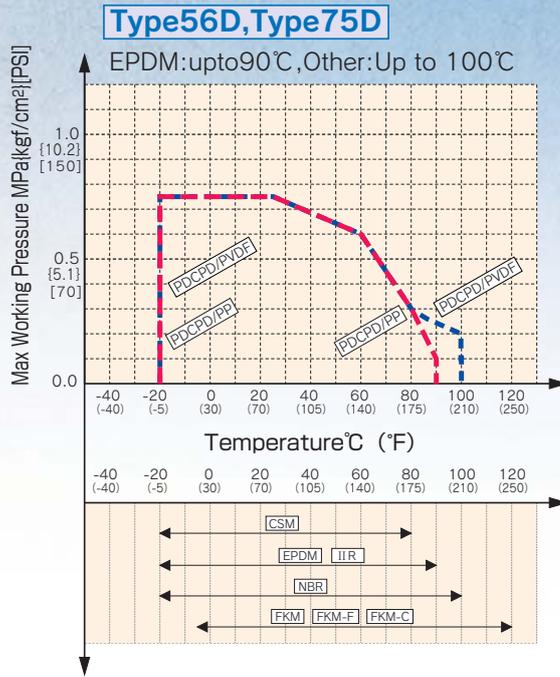
**PARTS & MATERIALS**



No.	DESCRIPTION	Pcs.	MATERIAL	REMARKS
①	BODY	1	PDCPD	
①b	INSERTED METAL OF BODY	4	COPPER ALLOY(C3604)	400mm (used for JIS10K)
		8	COPPER ALLOY(C3604)	450mm~600mm (used for JIS10K)
②	DISC	1	PP,PVDF	
②a	DISC INSERT	1	AC4C	450mm~600mm
③	SEAT	1	EPDM,FKM,Others	
④	O-RING(A)	2		
⑤	O-RING(B)	2		
⑥	O-RING(C)	1		
⑦	STEM	1	STAINLESS STEEL(SUS403)	
⑦a	KEY(A)	1	CARBON STEEL(S45C)	
⑦b	SNAP RING	1	STAINLESS STEEL(SUS304)	450mm
②b	GEAR BOX	1	PLASTIC etc.	400mm
			CAST IRON (FC250)etc. (Polyurethane Coat.)	(ROTORK) 450mm~600mm
②c	GASKET(A)	1	EPDM	400mm
②d	BOLT (C)	4	STAINLESS STEEL(SUS304)	
②e	HANDLE (C)	1	CAST IRON (FC250)	Polyurethane Coat.
②f	HANDLE GRIP	1	NYLON etc.	
②g	SPRING PIN	1	STAINLESS STEEL(SUS304)	
②h	SCALE PLATE	1	STAINLESS STEEL(SUS304)	

NOM. SIZE	BOLT HOLES	Q'TY OF INSERTED NUT	Q'TY OF INSERTED NUT		TOTAL (2×n1)	ℓ <sub>1</sub>	ℓ <sub>2</sub>	
			UPPER	LOWER				
mm	inch	n						
400	16	M24	14	2×2	—	4	36	24
450	18	M24	16	2×2	2×2	8	36	24
500	20	M24	16	2×2	2×2	8	36	24
600	24	M30	20	2×2	2×2	8	43	30

WORKING PRESSURE VS. TEMPERATURE



DIMENSIONS TABLE

JIS		Unit:mm																				
Nominal Size	d	JIS 10K						D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>4</sub>	H <sub>5</sub>	A	A <sub>1</sub>	A <sub>2</sub>	Number of handle rotation	GEAR BOX TYPE
		C	n	h	n <sub>1</sub>	M																
400	16	406	510	14	27	2	M24	620	470	235	300	169	458	315	350	108	390	272	—	99.2	9.5	TYPE3
450	18	452	565	16	27	4	M24	665	525	340	400	179	497	335	370	127	443	326	75.5	104.5	13.75	AB1250N
500	20	502	620	16	27	4	M24	720	575	340	400	190	527	365	400	127	473	326	75.5	104.5	13.75	
600	24	603	730	20	33	4	M30	813	686	340	400	209	592	424	465	127	538	326	75.5	104.5	13.75	

DIN		Unit:mm																			
Nominal Size	d	DIN PN 10				D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>4</sub>	H <sub>5</sub>	I	A	A <sub>1</sub>	A <sub>2</sub>	Number of handle rotation	GEAR BOX TYPE
		C	n	h																	
400	16	406	515	16	26	620	470	235	300	169	458	315	350	108	390	540	272	—	99.2	9.5	TYPE3
450	18	452	565	20	26	665	525	340	400	179	497	335	370	127	443	650	326	75.5	104.5	13.75	AB1250N
500	20	502	620	20	26	720	575	340	400	190	527	365	400	127	473	680	326	75.5	104.5	13.75	
600	24	603	725	20	30	813	686	340	400	209	592	424	465	127	538	745	326	75.5	104.5	13.75	

ANSI		Unit:inch																		
Nominal Size	d	ANSI Class 150				D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>4</sub>	H <sub>5</sub>	A	A <sub>1</sub>	A <sub>2</sub>	Number of handle rotation	GEAR BOX TYPE
		C	n	h																
16	400	15.98	21.26	16	1.12	24.41	18.50	9.25	11.81	6.65	18.03	12.40	13.78	4.25	15.35	10.71	—	3.91	9.5	TYPE3
18	450	17.80	22.76	20	1.26	26.18	20.67	13.39	15.75	7.05	19.57	13.19	14.57	5.00	17.44	12.83	2.97	4.11	13.75	AB1250N
20	500	19.76	25.00	20	1.26	28.35	22.64	13.39	15.75	7.48	20.75	14.37	15.75	5.00	18.62	12.83	2.97	4.11	13.75	
24	600	23.74	29.53	20	1.38	32.01	27.01	13.39	15.75	8.23	23.31	16.69	18.31	5.00	21.18	12.83	2.97	4.11	13.75	

# BUTTERFLY VALVE TYPE 57L (Lug Style)

## FEATURES

●PDCPD



### Easy Piping Maintenance

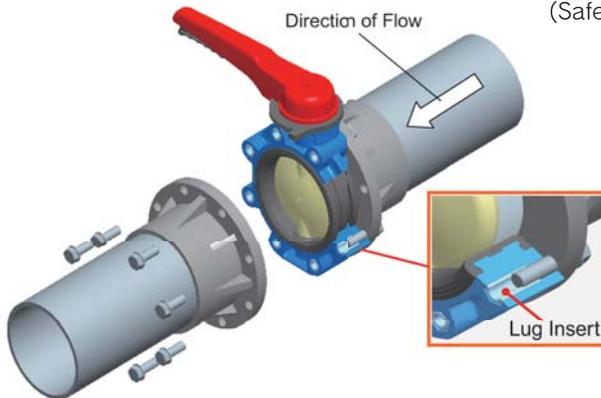
It is not necessary to remove fluid from the pipe line.

### Strong In Pulsating Pressure

3 Times Stronger than a Major Competitor.

### Same Features as Type57

- a) Protection for Over-Tightening Constant Stem Torque.
- b) New Designed Disc and Seat (Liner).
  - Longer Life
  - Lower Sealing Torque
  - Higher Cv Value
- c) Plastic Gear Box.
  - Extremely Corrosion Resistant
  - Easy Operation
- d) Stem Retainer (Safety device).
  - Prevention of Removal of Stem under Pressure (Safe Installation of Accessories)



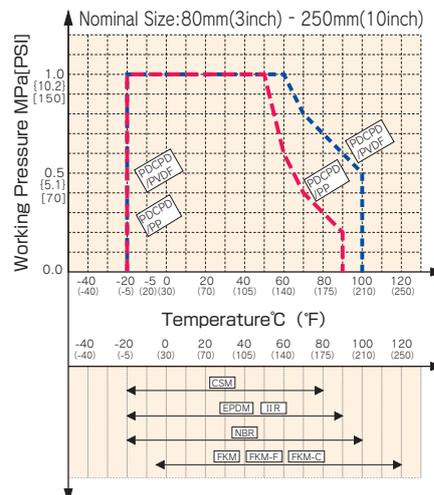
## SPECIFICATIONS

- JIS and DIN Standard

Body material	Standard	Working Temperature °C (°F)	Max. Working Pressure MPa{kgf/cm <sup>2</sup> }[PSI]
			80mm - 250mm (3inch - 10inch)
Poly diicyclo penta diene (PDCPD)	JIS, DIN	- 5 - 100 (20 - 210)	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI]

## WORKING PRESSURE VS. TEMPERATURE

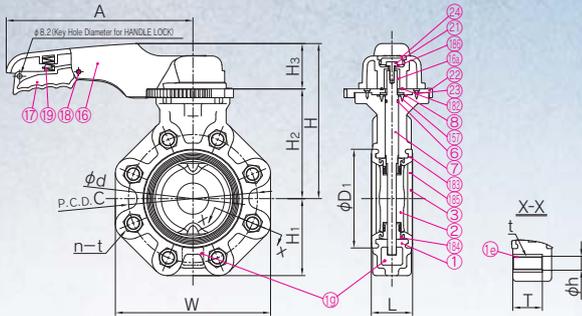
LUG-BUTTERFLY VALVE TYPE57L(WAFER)



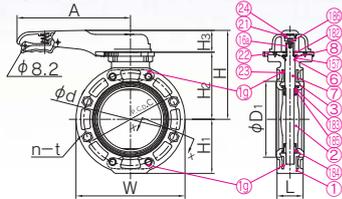
Lever Type

DIMENSION

●80mm(3inch) - 150mm(6inch)



●200mm(8inch)



DIMENSIONS TABLE

Unit:mm

Nominal Size	d	JIS 10K	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A	W	T	t
mm	inch	C n h										
80	3	77 150 8 19	105	46	191	94	135	56	250	193	40	M16×40 width across fat 24
100	4	102 175 8 19	134	56	206	105	150	56	250	217	40	M16×40 width across fat 24
125	5	129 210 8 23	169	66	237	124	168	69	320	247	50	M20×50 width across fat 30
150	6	150 240 8 23	190	71	252	138	183	69	320	285	50	M20×50 width across fat 30
200	8	195 290 12 23	242	87	283	173	214	69	400	345	60	M20×60 width across fat 30

Unit:mm

Nominal Size	d	DIN PN10	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A	W	T	t
mm	inch	C n h										
80	3	77 160 8 18	105	46	191	94	135	56	250	193	40	M16×40 width across fat 24
100	4	102 180 8 18	134	56	206	105	150	56	250	217	40	M16×40 width across fat 24
125	5	129 210 8 18	169	66	237	124	168	69	320	247	50	M20×50 width across fat 30
150	6	150 240 8 23	190	71	252	138	183	69	320	285	50	M20×50 width across fat 30
200	8	195 295 8 23	242	87	283	173	214	69	400	345	60	M20×50 width across fat 30

PARTS & MATERIALS

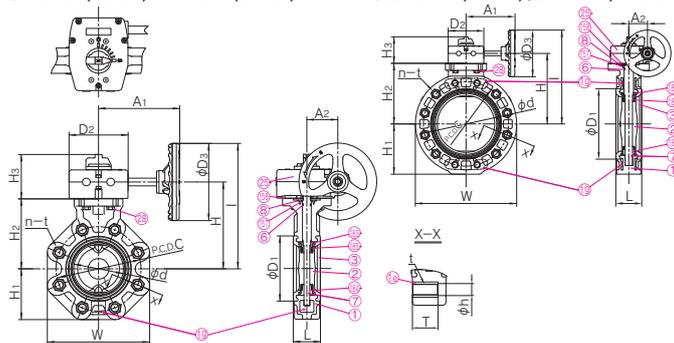
No.	DESCRIPTION	Pcs.	MATERIAL	REMARKS	No.	DESCRIPTION	Pcs.	MATERIAL	REMARKS
①	BODY	1	PDCPD		⑰	HANDLE LEVER	1	PPG	
⑱	LUG-INSERT	8	STAINLESS STEEL(SUS304)	used for 80-150mm	⑱	PIN	1	PPG	
		4	(Antiscoring coat)	used for 200mm	⑲	SPRING	1	STAINLESS STEEL(SUS304)	
⑳	BODY-INSERT	1	STAINLESS STEEL(SUS304)	used for 125,150mm	㉑	BOLT(B)	1	STAINLESS STEEL(SUS304)	
		2	STAINLESS STEEL(SCS13)	used for 200mm	㉒	LOCKING PLATE	1	PPG	
②	DISC	1	PP,PVDF		㉓	SCREW(B)	4	STAINLESS STEEL(SUS304)	
③	SEAT	1			㉔	CAP(A)	1	PP	
④	O-RING(C)	1	EPDM,FKM,FKM-F,FKM-C		㉕	SCREW(F)	4	STAINLESS STEEL(SUS304)	
⑤	O-RING(I)	1			㉖	O-RING(H)	1	EPDM	
⑦	STEM	1	STAINLESS STEEL(SUS403)		㉗	SEAT BUSH(A)	1		
⑧	STEM HOLDER(A)	1	PP		㉘	SEAT BUSH(B)	1	PP,PVDF	
⑯	HANDLE(A)	1	PP		㉙	RUBBER+WASHER	1	STAINLESS STEEL(SUS304)+EPDM	
㉚	HANDLE INSERTED METAL	1	STAINLESS STEEL(SUS316L)						

Gear Type

DIMENSION

●80mm(3inch) - 150mm(6inch)

●200mm(8inch), 250mm(10inch)



DIMENSIONS TABLE

Nominal Size	d	JIS 10K	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	A <sub>1</sub>	A <sub>2</sub>	W	T	t	Number of handle wheel rotation	GEAR BOX TYPE
mm	inch	C n h																
80	3	77 150 8 19	105	122	160	46	165	94	130	92	245	167	64	193	40	M16×40 width across fat 24	9.5	TYPE1
100	4	102 175 8 19	134	122	160	56	180	105	145	92	260	167	64	217	40	M16×40 width across fat 24		
125	5	129 210 8 23	169	122	160	66	195	124	160	92	275	167	64	247	50	M20×50 width across fat 30		
150	6	150 240 8 23	190	122	160	71	210	138	175	92	290	167	64	285	50	M20×50 width across fat 30		
200	8	195 295 12 23	242	122	160	87	241	173	206	92	321	167	64	345	60	M20×60 width across fat 30		
250	10	250 350 12 25	302	122	160	112	276	208	241	92	356	167	64	415	70	M20×70 width across fat 32		

PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	REMARKS
①	BODY	1	PDCPD	
⑱	LUG-INSERT	8	STAINLESS STEEL(SUS304)	used for 80-150,250mm
		4	(Antiscoring coat)	used for 200mm
⑳	BODY-INSERT	1	STAINLESS STEEL(SUS304)	used for 125,150mm
		2	STAINLESS STEEL(SCS13)	used for 200,250mm
②	DISC	1	PP,PVDF	
③	SEAT	1		
④	O-RING(C)	1	EPDM,FKM,FKM-F,FKM-C	
⑤	O-RING(I)	1		
⑦	STEM	1	STAINLESS STEEL(SUS403)	
⑧	STEM HOLDER(A)	1	PP	
㉑	GEAR BOX	1	PLASTIC etc.	
㉒	BOLT(C)	4	STAINLESS STEEL(SUS403)	
㉓	SCREW(F)	4	STAINLESS STEEL(SUS403)	
㉔	GASKET(L)	1	EPDM	
㉕	SEAT BUSH(A)	1		
㉖	SEAT BUSH(B)	1	PP,PVDF	

Nominal Size	d	DIN PN10	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	A <sub>1</sub>	A <sub>2</sub>	W	T	t	Number of handle wheel rotation	GEAR BOX TYPE
mm	inch	C n h																
80	3	77 160 8 18	105	122	160	46	165	94	130	92	245	167	64	193	40	M16×40 width across fat 24	9.5	TYPE1
100	4	102 180 8 18	134	122	160	56	180	105	145	92	260	167	64	217	40	M16×40 width across fat 24		
125	5	129 210 8 18	169	122	160	66	195	124	160	92	275	167	64	247	50	M16×50 width across fat 24		
150	6	150 240 8 23	190	122	160	71	210	138	175	92	290	167	64	285	50	M20×50 width across fat 30		
200	8	195 295 8 23	242	122	160	87	241	173	206	92	321	167	64	345	60	M20×60 width across fat 30		
250	10	250 350 12 23	302	122	160	112	276	208	241	92	356	167	64	415	70	M20×70 width across fat 30		

NOTE. The shape and appearance of assembly differ little with nominal size compared to this drawing.

# BUTTERFLY VALVE TYPE 57TL (Lug Style)

●PVC



## FEATURES

- ANSI Standard type
- Same Features as Type57L
- Both Directional Installation allowed

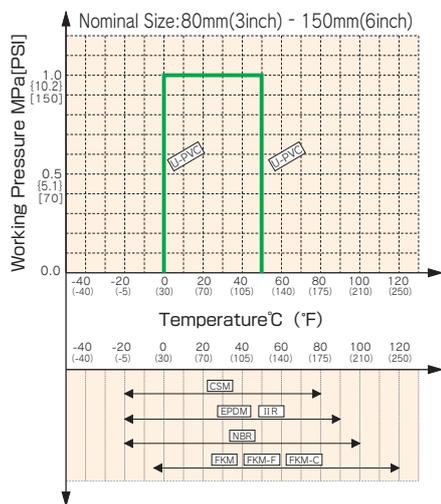
## SPECIFICATIONS

- ANSI Standard

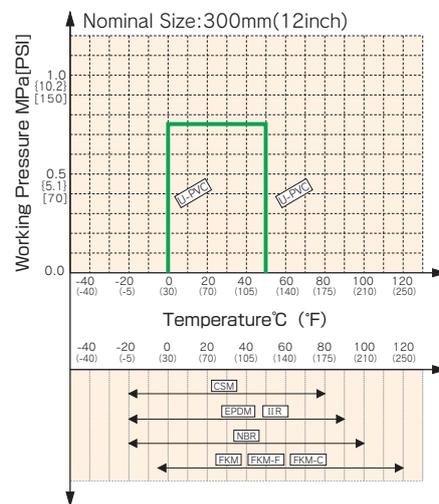
Body material	Standard	Working Temperature °C (°F)	Max. Working Pressure MPa[kgf/cm <sup>2</sup> ][PSI]	
			80mm - 250mm (3inch - 10inch)	300mm (12inch)
Polyvinyl Chloride (PVC)	ANSI	0 - 50 (30 - 120)	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI]	0.75MPa{7.7kgf/cm <sup>2</sup> }[110PSI]

## WORKING PRESSURE VS. TEMPERATURE

LUG-BUTTERFLY VALVE TYPE57TL(WAFER)

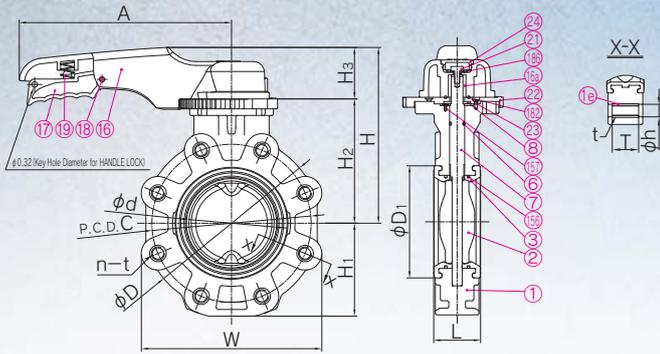


LUG-BUTTERFLY VALVE TYPE57TL(WAFER)



Lever Type

DIMENSION



DIMENSIONS TABLE

Unit:inch

Nominal Size	d	ANSI 150lb	D	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A	W	T	t			
mm	inch	C	n	h												
80	3	3.03	6.00	4	0.75	7.28	4.13	1.81	7.52	3.82	5.31	2.20	9.84	7.09	1.37	5/8-11 UNC
100	4	4.02	7.50	8	0.75	8.27	5.28	2.20	8.11	4.41	5.91	2.20	9.84	8.50	1.37	5/8-11 UNC
150	6	5.91	9.50	8	0.87	10.63	7.48	2.80	9.92	5.55	7.20	2.72	12.60	10.67	2.15	3/4-10 UNC
200	8	7.68	11.75	8	0.87	12.60	9.53	3.43	11.14	6.61	8.43	2.72	15.75	12.76	2.15	3/4-10 UNC

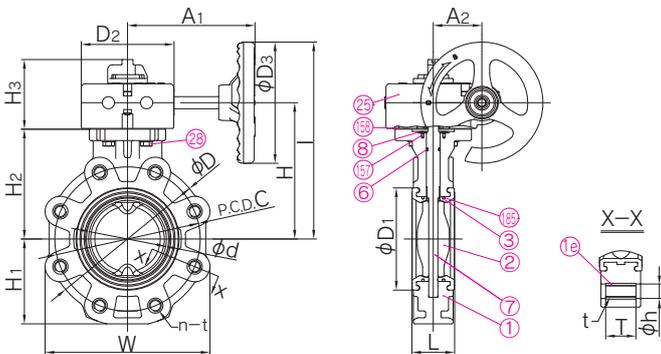
Note : The shape and appearance of assembly differ alittle with nominal size compared to this drawing.

PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC	⑲	SPRING	1	STAINLESS STEEL(SUS304)
⑫	LUG-INSERT	-	STAINLESS STEEL(SUS316)	⑳	BOLT(B)	1	STAINLESS STEEL(SUS304)
②	DISC	1	PP	㉑	LOCKING PLATE	1	PPG
③	SEAT	1	EPDM,FKM,NBR	㉒	SCREW(B)	4	STAINLESS STEEL(SUS304)
⑥	O-RING(C)	1		㉓	CAP(A)	1	PP
⑦	STEM	1	STAINLESS STEEL(SUS403)	㉔	RETAINING RING	2	STAINLESS STEEL(SCS13)
⑧	STEM HOLDER(A)	1	PP	㉕	SCREW(F)	4	STAINLESS STEEL(SUS304)
⑬	HANDLE(A)	1	PP	㉖	O-RING(H)	1	EPDM
⑭	HANDLE INSERTED METAL	1	STAINLESS STEEL(SUS316L)	㉗	RUBBER+WASHER	1	STAINLESS STEEL(SUS304)+EPDM
⑰	HANDLE LEVER	1	PPG				
⑱	PIN	1	PPG				

Gear Type

DIMENSION



DIMENSIONS TABLE

Unit:inch

Nominal Size	d	ANSI 150lb	D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	A <sub>1</sub>	A <sub>2</sub>	W	T	t	Number of handle wheel rotation	GEAR BOX TYPE	
mm	inch	C	n	h																
80	3	3.03	6.00	4	0.75	7.28	4.13	4.80	6.30	1.81	6.50	3.82	5.12	3.62	9.65	6.57	2.52	7.09	1.37	5/8-11 UNC
100	4	4.02	7.50	8	0.75	8.27	5.28	4.80	6.30	2.20	7.09	4.41	5.71	3.62	10.24	6.57	2.52	8.50	1.37	5/8-11 UNC
150	6	5.91	9.50	8	0.87	10.63	7.48	4.80	6.30	2.80	8.27	5.55	6.89	3.62	11.42	6.57	2.52	10.67	2.15	3/4-10 UNC
200	8	7.68	11.75	8	0.87	12.60	9.53	4.80	6.30	3.43	9.49	6.61	8.11	3.62	12.64	6.57	2.52	12.76	2.15	3/4-10 UNC
250	10	9.84	14.25	12	0.98	15.75	11.89	4.80	6.30	4.41	10.87	7.95	9.49	3.62	14.02	6.57	2.52	15.91	3.14	7/8-9 UNC
300	12	11.93	17.01	12	0.98	18.31	14.17	7.40	11.81	5.08	13.39	9.29	11.73	4.25	19.29	9.53	3.90	18.54	3.14	7/8-9 UNC

NOTE. The shape and appearance of assembly differ little with nominal size compared to this drawing.

PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC
⑫	LUG-INSERT	-	STAINLESS STEEL(SUS316)
②	DISC	1	PP
③	SEAT	1	EPDM,FKM,NBR
⑥	O-RING(C)	1	
⑦	STEM	1	STAINLESS STEEL(SUS403)
⑧	STEM HOLDER(A)	1	PP
㉔	GEAR BOX	1	PLASTIC etc.
㉕	BOLT(C)	4	STAINLESS STEEL(SUS304)
㉖	RETAINING RING	2	STAINLESS STEEL(SCS13)
㉕	SCREW(F)	4	STAINLESS STEEL(SUS304)
㉗	GASKET(L)	1	EPDM

# BUTTERFLY VALVE TYPE 57L-IS



## FEATURES

### Short Face-to-Face Dimension

The Valves are Designed to Comply ISO5752 Short Face-to-Face dimension and allowed Replacement of Common Metal Valves.

### Easy Piping Maintenance

It is not necessary to remove fluid from the pipe line.

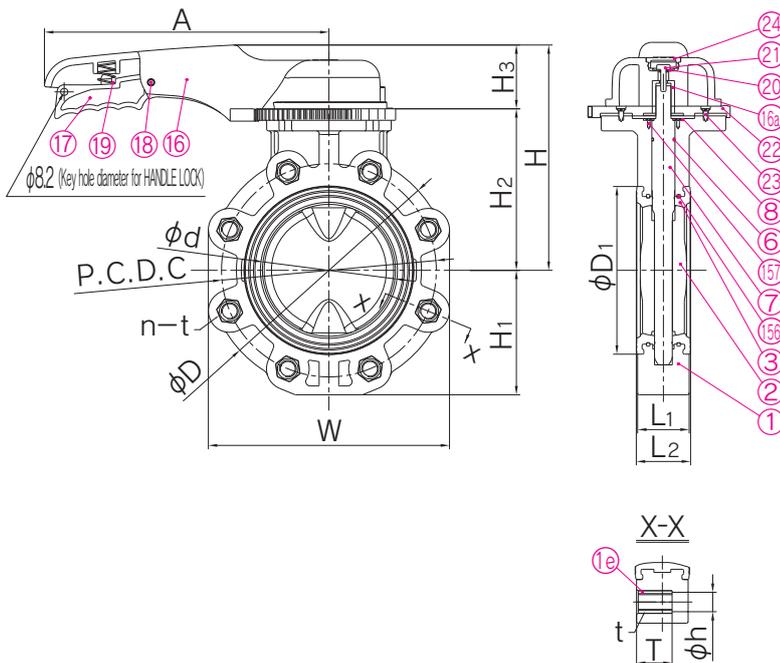
### Same Features as Type57L

## SPECIFICATIONS

Body material	Standard	Working Temperature °C (°F)	Max. Working Pressure MPa[kgf/cm²][PSI]
Polyvinyl Chloride(PVC)	ANSI	0~50 (30~120)	1.0MPa{10.2kgf/cm²}[150PSI]

### Lever Type

## DIMENSION



## PARTS & MATERIALS

No.	DESCRIPTION	QTY.	MATERIAL
①	BODY	1	PVC
1e	LUG-INSERT		STAINLESS STEEL(SUS304) (STANDARD) STAINLESS STEEL(SUS316)
②	DISC	1	PP
③	SEAT	1	EPDM,FKM,NBR,Others
⑥	O-RING(C)	1	EPDM,FKM,NBR,Others
⑦	STEM	1	STAINLESS STEEL(SUS403)
⑧	STEM RETAINER(A)	1	PP
16	HANDLE(A)	1	PP
16a	HANDLE INSERTED METAL	1	STAINLESS STEEL(SUS316L)
17	HANDLE LEVER	1	PPG
18	PIN	1	PPG
19	SPRING	1	STAINLESS STEEL(SUS304)
20	WASHER(A)	1	STAINLESS STEEL(SUS304)
21	BOLT(B)	1	STAINLESS STEEL(SUS304)
22	LOCKING PLATE	1	PPG
23	SCREW(B)	4	STAINLESS STEEL(SUS304)
24	CAP(A)	1	PP
15b	RETAINING RING	2	STAINLESS STEEL(SCS13)
15f	SCREW(F)	4	STAINLESS STEEL(SUS304)

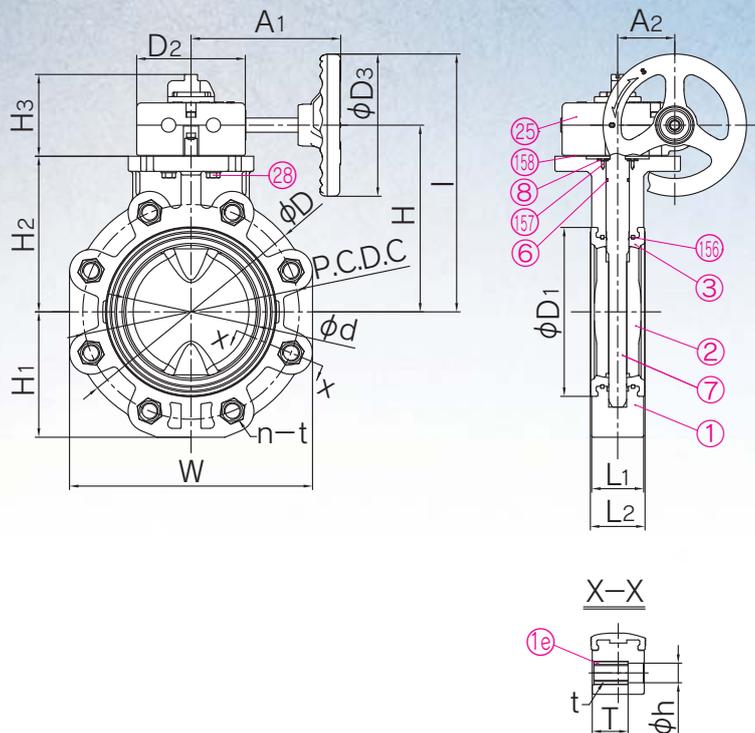
## DIMENSIONS TABLE

ANSI		UNIT: inch															
Nominal Size	d	ANSI150lb			D	D <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A	W	T	t	
		C	n	h													
3	80	3.03	6.00	4	0.75	7.28	4.13	1.73	1.81	7.52	3.82	5.31	2.20	9.84	7.09	1.26	5/8-11 UNC
4	100	4.02	7.50	8	0.75	8.27	5.28	2.05	2.20	8.11	4.41	5.91	2.20	9.84	8.50	1.52	5/8-11 UNC
6	150	5.91	9.50	8	0.87	10.63	7.48	2.20	2.40	9.92	5.55	7.20	2.72	12.60	10.67	1.57	3/4-10 UNC
8	200	7.68	11.75	8	0.87	12.60	9.53	2.36	2.66	11.14	6.61	8.43	2.72	15.75	12.76	1.57	3/4-10 UNC

Gear Type

DIMENSION

PARTS & MATERIALS



No.	DESCRIPTION	QTY.	MATERIAL
①	BODY	1	PVC
①e	LUG-INSERT		STAINLESS STEEL(SUS304) (STANDARD) STAINLESS STEEL(SUS316)
②	DISC	1	PP
③	SEAT	1	
⑥	O-RING(C)	1	EPDM,FKM,NBR,Others
⑦	STEM	1	STAINLESS STEEL(SUS316)
⑧	STEM RETAINER(A)	1	PP
25	GEAR BOX	1	PLASTIC etc.
28	BOLT(C)	4	STAINLESS STEEL(SUS304)
156	RETAINING RING	2	STAINLESS STEEL(SCS13)
157	SCREW(F)	4	STAINLESS STEEL(SUS304)
158	GASKET(L)	1	EPDM

DIMENSIONS TABLE

ANSI		UNIT: inch																				Number of handle wheel rotation	GEAR BOX TYPE
Nominal Size	d	ANSI 150lb			D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L <sub>1</sub>	L <sub>2</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	A <sub>1</sub>	A <sub>2</sub>	W	T	t			
inch	mm	C	n	h																			
3	80	3.03	6.00	4	0.75	7.28	4.13	4.80	6.30	1.73	1.81	6.50	3.82	5.12	3.62	9.65	6.57	2.52	7.09	1.26	5/8-11 UNC	9.5	TYPE1
4	100	4.02	7.50	8	0.75	8.27	5.28	4.80	6.30	2.05	2.20	7.09	4.41	5.71	3.62	10.24	6.57	2.52	8.50	1.52	5/8-11 UNC		
6	150	5.91	9.50	8	0.87	10.63	7.48	4.80	6.30	2.20	2.40	8.27	5.55	6.89	3.62	11.42	6.57	2.52	10.67	1.57	3/4-10 UNC		
8	200	7.68	11.75	8	0.87	12.60	6.53	4.80	6.30	2.36	2.66	9.49	6.61	8.11	3.62	12.64	6.57	2.52	12.76	1.57	3/4-10 UNC		

# BUTTERFLY VALVE TYPE 55 50mm - 250mm(2inch - 10inch)



## FEATURES

### Extreme Corrosion Resistance

All of the wetted parts are completely covered with PTFE, which can result in excellent performance against a highly corrosive media. Therefore BUTTERFLY VALVE TYPE 55 is the most suitable valve for lines of highly corrosive media in factories of Soda electrolysis, Chemicals and Agricultural chemicals.

### Improved Cv Value

Thinner disc makes the area of flow passage wider and the Cv value is improved as a result.

### Excellent resistibility to high and low temperature.

BUTTERFLY VALVE TYPE 55 can be used continuously at the range from -20°C to 100°C (-5°F to 210°F)

### Simple Structure for Stem Sealing

Simple structure for stem sealing offers high reliability and also allows for easy maintenance.

## APPLICATIONS

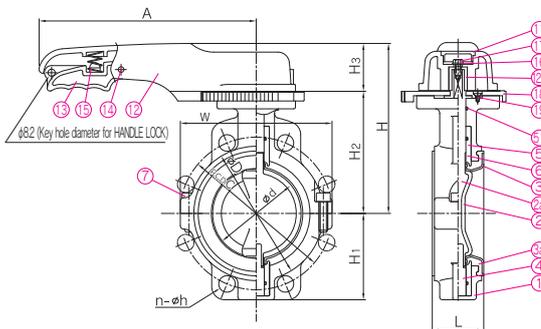
Electrolytic soda, agricultural chemicals, chemicals, steel, aluminum refining exhaust fumes dischargers, desulfurizers, erosive and corrosive solution lines

## SPECIFICATIONS

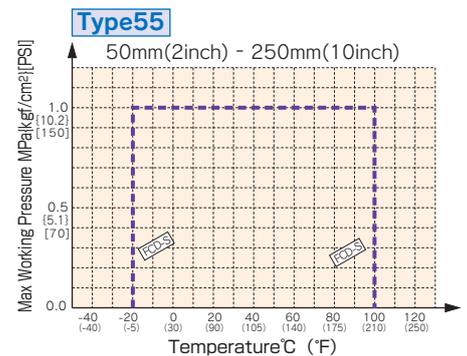
Body material	DUCTILE CAST IRON (FCD-S)[with epoxy powder coat]	Nominal size mm(inch)	50(2), 80(3), 100(4), 125(5) 150(6), 200(8), 250(10)
Disc·Seat material	PTFE	Max. Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI]
		Working Temperature	-20°C - 100°C(-5° F - 210° F)

## DIMENSION

### Lever



## WORKING PRESSURE VS. TEMPERATURE



## PARTS & MATERIALS

No.	DESCRIPTION	QTY.	MATERIAL	REMARKS
①	BODY	1	DUCTILE CAST IRON (FCD-S)	epoxy powder coat
②	DISC	1	PTFE	
②a	INSERTED METAL OF DISC	1	STAINLESS STEEL (SUS304)	
③	SEAT	1	PTFE	
④a	SEAT CUSHION	1	CR	
④	STEM	1	STAINLESS STEEL (SUS304)	
⑤	BUSH	2	STAINLESS STEEL (SUS304)	
⑥	O-RING(A)	2	EPDM	
⑦	BOLT(A)	2	STAINLESS STEEL (SUS304)	
⑪	CAP	1	PP	
⑫	HANDLE	1	PP	
⑫a	HANDLE INSERTED METAL	1	STAINLESS STEEL (SUS304)	
⑬	HANDLE LEVER	1	PPG	
⑭	PIN	1	PPG	
⑮	SPRING	1	STAINLESS STEEL (SUS304)	
⑯	WASHER	1	STAINLESS STEEL (SUS304)	
⑰	BOLT(C)	1	STAINLESS STEEL (SUS304)	
⑱	LOCKING PLATE	1	PPG	
⑲	SCREW	4	STAINLESS STEEL (SUS304)	
⑳	O-RING(B)	1	NBR	

## DIMENSIONS TABLE

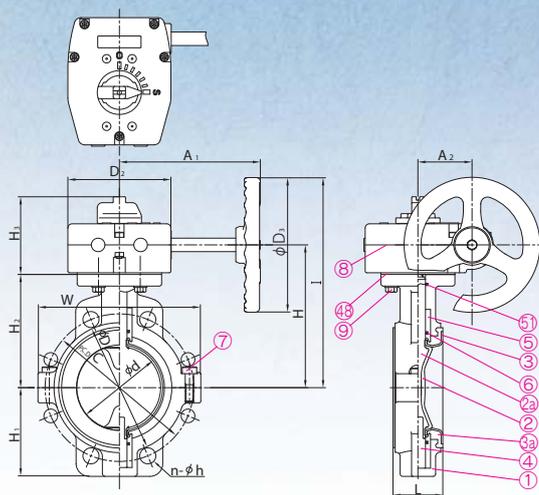
Nominal Size		JIS 10K										Unit:mm	
mm	inch	d	C	n	h	D	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	W	A
50	2	55	120	2(4)	19	90	44	161	61	105	56	116	220
80	3	80	150	4(8)	19	125	54	180	95	124	56	152	250
100	4	100	175	4(8)	19	154	59	196	99	140	56	174	250
125	5	125	210	4(8)	23	181	64	235	120	166	69	206	320

Nominal Size		DIN PN 10										Unit:mm	
mm	inch	d	C	n	h	D	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	W	A
50	2	55	125	2(4)	18	90	44	161	61	105	56	116	220
80	3	80	160	4(8)	18	125	54	180	95	124	56	152	250
100	4	100	180	4(8)	18	154	59	196	99	140	56	174	250
125	5	125	210	4(8)	18	181	64	235	120	166	69	206	320

Nominal Size		ANSI Class 150, ANSI Class 125										Unit:inch	
inch	mm	d	C	n	h	D	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	W	A
2	50	2.17	4.75	2 (4)	0.75	3.54	1.73	6.43	2.40	4.13	2.20	4.57	8.66
3	80	3.15	6.00	-(4)	0.75	4.92	2.13	7.09	3.74	4.88	2.20	5.98	9.84
4	100	3.94	7.50	4 (8)	0.75	6.06	2.32	7.72	3.90	5.51	2.20	6.85	9.84
5	125	4.92	8.50	4 (8)	0.88	7.13	2.52	9.25	4.72	6.54	2.72	8.11	12.60

DIMENSION

Gear



PARTS & MATERIALS

No.	DESCRIPTION	QTY.	MATERIAL	REMARKS	No.	DESCRIPTION	QTY.	MATERIAL	REMARKS
①	BODY	1	DUCTILE CAST IRON (FCD-S)	epoxy powder coat	⑥	O-RING(A)	2	EPDM	
②	DISC	1	PTFE		⑦	BOLT(A)	-	STAINLESS STEEL (SUS304)	Used for size 50~125mm:2 150 over :4
②	INSERTED METAL OF DISC	1	STAINLESS STEEL (SUS304)		⑧	GEAR BOX	1	Plastic.etc	
③	SEAT	1	PTFE		⑨	BOLT(B)	4	PPG	
④	SEAT CUSHION	1	CR		④	GASKET(C)	1	STAINLESS STEEL (SUS304)	
④	STEM	1	STAINLESS STEEL (SUS304)		⑤	O-RING(B)	1	NBR	
⑤	BUSH	2	STAINLESS STEEL (SUS304)						

DIMENSIONS TABLE

JIS																		Unit:mm				
Nominal Size	d	JIS 5K			JIS 10K			D	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	W	A <sub>1</sub>	A <sub>2</sub>	Number of handle rotation	GEAR BOX MODEL No.	
		C	n	h	C	n	h															
50	2"	55	105	2(4)	15	120	2(4)	19	90	122	160	44	135	61	100	92	215	116	167	64	9.5	TYPE1
80	3	80	145	-(4)	19	150	4(8)	19	125	122	160	54	154	95	119	92	234	152	167	64		
100	4	100	165	4(8)	19	175	4(8)	19	154	122	160	59	170	99	135	92	250	174	167	64		
125	5	125	200	4(8)	19	210	4(8)	23	181	122	160	64	193	120	158	92	273	206	167	64		
150	6	150	230	4(8)	19	240	4(8)	23	211	122	160	75	210	137	175	92	290	236	167	64		
200	8	191	280	4(8)	23	290	4(12)	23	265	122	160	85	240	163	205	92	320	282	167	64		
250	10	245	345	4(12)	23	355	4(12)	25	325	122	160	96	275	200	240	92	355	341	167	64		

NOTE. The shape and appearance of assembly differ little with nominal size compared to this drawing.

DIN																		Unit:mm	
Nominal Size	d	DIN 2501 PN10			D	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	W	A <sub>1</sub>	A <sub>2</sub>	Number of handle rotation	GEAR BOX MODEL No.	
		C	n	h															
50	2"	55	125	2(4)	18	90	122	160	44	135	61	100	92	215	116	167	64	9.5	TYPE1
80	3	80	160	-(4)	18	125	122	160	54	154	95	119	92	234	152	167	64		
100	4	100	180	4(8)	18	154	122	160	59	170	99	135	92	250	174	167	64		
125	5	125	210	4(8)	18	181	122	160	64	193	120	158	92	273	206	167	64		
150	6	150	240	4(8)	22	211	122	160	75	210	137	175	92	290	236	167	64		
200	8	191	295	4(8)	22	265	122	160	85	240	163	205	92	320	282	167	64		
250	10	245	350	4(12)	22	325	122	160	96	275	200	240	92	355	341	167	64		

NOTE. The shape and appearance of assembly differ little with nominal size compared to this drawing.

ANSI																		Unit:mm	
Nominal Size	d	ANSI Class 150, ANSI Class 125			D	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	I	W	A <sub>1</sub>	A <sub>2</sub>	Number of handle rotation	GEAR BOX MODEL No.	
		C	n	h															
50	2"	2.17	4.75	2(4)	0.75	3.54	4.80	6.30	1.73	5.31	2.40	3.94	3.62	8.46	4.57	6.57	2.52	9.5	TYPE1
80	3	3.15	6.00	-(4)	0.75	4.92	4.80	6.30	2.13	6.06	3.74	4.69	3.62	9.21	5.98	6.57	2.52		
100	4	3.94	7.50	4(8)	0.75	6.06	4.80	6.30	2.32	6.69	3.90	5.31	3.62	9.84	6.85	6.57	2.52		
125	5	4.92	8.50	4(8)	0.88	7.13	4.80	6.30	2.52	7.60	4.72	6.22	3.62	10.75	8.11	6.57	2.52		
150	6	5.91	9.50	4(8)	0.88	8.31	4.80	6.30	2.95	8.27	5.39	6.89	3.62	11.42	9.29	6.57	2.52		
200	8	7.52	11.75	4(8)	0.88	10.43	4.80	6.30	3.35	9.45	6.42	8.07	3.62	12.60	11.10	6.57	2.52		
250	10	9.65	14.25	4(12)	1.00	12.80	4.80	6.30	3.78	10.83	7.87	9.45	3.62	13.98	13.43	6.57	2.52		

NOTE. The shape and appearance of assembly differ little with nominal size compared to this drawing.

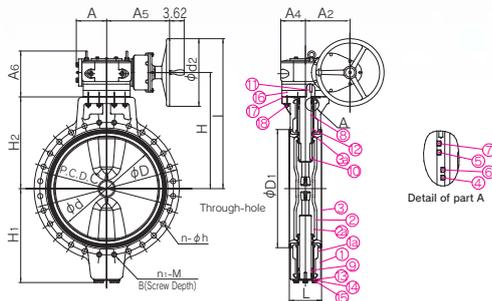
# PDCPD BUTTERFLY VALVE 700mm - 1200mm(28inch - 48inch)



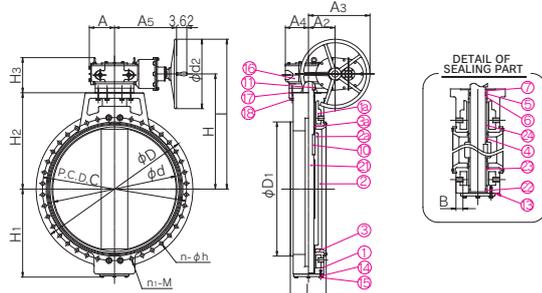
Nominal Size  
700mm - 1200mm  
(28inch - 48inch)

## DIMENSION

● 700mm - 1000mm(28inch - 40inch)



● 1100mm, 1200mm(44inch, 48inch)



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PDCPD
②	DISC	1	PDCPD
③	SEAT	1	
④	O-RING (A)	11	EPDM
⑤	O-RING (B)	3	
⑥	O-RING (C)	1	NBR
⑦	O-RING (D)	1	NBR
⑧	STEM (A)	1	STAINLESS STEEL (SUS403)
⑨	STEM (B)	1	STAINLESS STEEL (SUS403)
⑩	KEY (A)	1	CARBON STEEL (S45C)
⑪	KEY (B)	1	CARBON STEEL (S45C)
⑫	BUSH	2	BRONZE CAST (BC6)
⑬	GASKET (A)	1	NONAS SHEET
⑭	STEM HOLDER	1	STAINLESS STEEL (SUS304)
⑮	BOLT (A)	6	STAINLESS STEEL (SUS304)
⑯	GEAR BOX	1	CASTIRON (FC200) etc.
⑰	GASKET (B)	1	NONAS SHEET
⑱	BOLT (B)	8	STAINLESS STEEL (SUS304)
⑲	STEM	1	STAINLESS STEEL (SUS304)
⑳	THRUST	1	BRONZE CAST (BC6)
㉑	BUSH (A)	1	BRONZE CAST (BC6)
㉒	BUSH (B)	1	BRONZE CAST (BC6)
㉓	INSERT METAL OF BODY	1	CAST IRON (FCD450)
㉔	INSERT METAL OF DISC	1	CAST IRON (FCD450)
㉕	INSERT METAL OF RING	2	STAINLESS STEEL (SUS304)

## FEATURES

### High Corrosion Resistance

The body and disc are made of PDCPD. And the corrosion-resistant resin, covering the whole contact surface, makes the valve highly resistant against chemical and sea water.

### Light Weight

PDCPD having 1/4 or less the specific gravity of iron, the PDCPD BUTTERFLY VALVE is significantly lighter than a metallic butterfly valve.

### Tight Seal

A seat made of a synthetic rubber, makes the valve highly water-tight.

### Excellent Flow Characteristics

Being concentric and streamlined, the disc gives small resistance to a flow, thus allowing it to be laminar. The seat is kept clean, since it is integrated with the entire internal wall of the body.

### Easy to Install

The seat is flanged, so that it needs no gasket. The PDCPD BUTTERFLY VALVE is so light that it is easy install.

### Economics

Because of its high corrosion resistance, the PDCPD BUTTERFLY VALVE remains easy to operate after prolonged periods of use and needs little maintenance. Its light weight reduces piping costs.

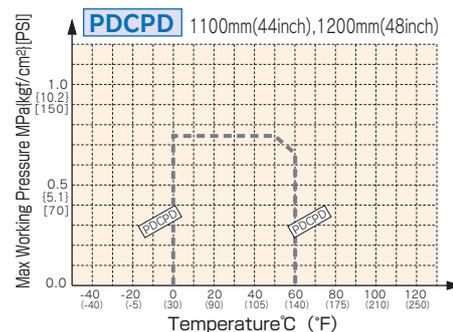
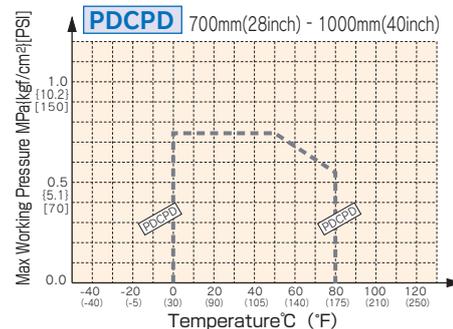
## APPLICATIONS

Irrigation facilities, water supply and sewerage systems, heat accumulators, seawater, air pipelines, etc.

## SPECIFICATIONS

Body material	Body & Disc=PDCPD. Seat=EPDMetc.
Nominal Size	700mm(28inch) - 1200mm(48inch)
Max. Working Pressure	0.75Mpa{7.7kgf/cm <sup>2</sup> } [110PSI]
Working Temperature	70 - 1000mm(28inch - 40inch) 0 - 80°C (30° F - 176° F) 1100, 1200mm(44inch - 48inch) 0 - 60°C (30° F - 140° F)

## WORKING PRESSURE VS. TEMPERATURE



LIST OF FLANGE STANDARDS

Nominal Size mm(inch)	FLANGE STANDARDS			Max. Working Pressure
	JIS 10K	ANSI Class 150	DIN PN10	MPa {kgf/cm <sup>2</sup> } [PSI]
700(28)	○	○	○	0.75 {7.7} [110]
800(32)	○	○	○	0.75 {7.7} [110]
900(36)	○	—	○	0.75 {7.7} [110]
1000(40)	○	○	○	0.75 {7.7} [110]
1100(44)	○	○	—	0.75 {7.7} [110]
1200(48)	○	○	○	0.75 {7.7} [110]

DIMENSIONS TABLE

JIS		Unit:mm																														
Nominal Size	d	JIS 10K								JWWA								D	D <sub>1</sub>	D <sub>2</sub>	L	H	I	H <sub>1</sub>	H <sub>2</sub>	A	A <sub>2</sub>	A <sub>4</sub>	A <sub>5</sub>	A <sub>6</sub>	Gear box Model No.	
		C	h	N	n	n <sub>1</sub>	M	B	C	h	N	n	n <sub>1</sub>	M	B	/side	/total															/side
mm	inch																															
700	28	670	840	33	24	20	4	8	M30	35	854	33	16	16	—	—	—	—	928	760	350	206	685	897	589	590	194	286	158	403	296	BRL-10
800	32	770	950	33	28	24	4	8	M30	35	960	33	20	16	4	8	M30	35	1034	870	350	240	715	927	619	620	194	286	158	403	296	BRL-10
900	36	870	1050	33	28	24	4	8	M30	35	1073	33	20	16	4	8	M30	35	1168	978	350	240	800	1112	704	705	194	286	158	403	296	BRL-10
1000	40	970	1160	39	28	24	4	8	M36	35	1179	33	24	20	4	8	M30	35	1262	1080	460	300	845	1157	749	750	229	242	210	565	323	BRL-20
1100	44	1080	1270	39	28	24	4	8	M36	42	1283	33	24	20	4	8	M30	35	1380	1195	460	300	942	1260	780	840	229	242	210	565	323	BRL-20
1200	48	1170	1380	39	32	28	4	8	M36	42	1387	33	28	24	4	8	M30	35	1488	1300	460	350	992	1310	850	890	229	242	210	565	323	BRL-20

DIN		Unit:mm																														
Nominal Size	d	DIN PN 10								D	D <sub>1</sub>	D <sub>2</sub>	L	H	I	H <sub>1</sub>	H <sub>2</sub>	A	A <sub>2</sub>	A <sub>4</sub>	A <sub>5</sub>	A <sub>6</sub>	Gear box Model No.									
		C	h	N	n	n <sub>1</sub>	M	B	/side															/total								
mm	inch																															
700	28	670	840	33	24	20	4	8	M27	35	928	760	350	206	685	897	589	590	194	286	158	403	296	BRL-10								
800	32	770	950	33	28	20	4	8	M30	35	1034	870	350	240	715	927	619	620	194	286	158	403	296	BRL-10								
900	36	870	1050	33	28	24	4	8	M30	35	1168	978	350	240	800	1112	704	705	194	286	158	403	296	BRL-10								
1000	40	970	1160	39	28	24	4	8	M33	42	1262	1080	460	300	845	1157	749	750	229	242	210	565	323	BRL-20								
1200	48	1170	1380	39	32	28	4	8	M36	42	1488	1300	460	350	992	1310	850	890	229	242	210	565	323	BRL-20								

ANSI		Unit:mm																														
Nominal Size	d	ANSI Class 125								ANSI Class 150								D	D <sub>1</sub>	D <sub>2</sub>	L	H	I	H <sub>1</sub>	H <sub>2</sub>	A	A <sub>2</sub>	A <sub>4</sub>	A <sub>5</sub>	A <sub>6</sub>	Gear box Model No.	
		C	h	N	n	n <sub>1</sub>	M	B	C	h	N	n	n <sub>1</sub>	M	B	/side	/total															/side
mm	inch																															
700	28	26.38	—	—	—	—	—	—	—	—	34.00	1.38	28	24	4	8	1 1/4	1.38	36.54	29.92	17.13	8.11	29.41	37.99	23.19	23.23	7.64	11.26	6.22	15.87	11.65	BRL-10
800	32	30.31	—	—	—	—	—	—	—	—	38.50	1.62	28	24	4	8	1 1/2	1.38	41.34	34.25	17.13	9.45	30.59	39.17	24.37	24.41	7.64	11.26	6.22	15.87	11.65	BRL-10
900	36	34.25	47.25	1.62	36	32	4	8	1 1/2	1.38	—	—	—	—	—	—	—	—	45.98	38.50	25.00	9.45	33.94	46.46	27.72	27.76	7.64	11.26	6.22	15.87	11.65	BRL-10
1000	40	38.19	—	—	—	—	—	—	—	—	47.25	1.62	36	32	4	8	1 1/2	1.38	50.00	42.52	25.00	11.81	36.30	48.82	29.49	29.53	9.02	9.53	8.27	22.24	12.72	BRL-20
1100	44	42.52	—	—	—	—	—	—	—	—	51.75	1.62	40	36	4	8	1 1/2	1.77	54.33	47.05	25.00	11.81	39.84	52.36	30.71	33.07	9.02	9.53	8.27	22.24	12.72	BRL-20
1200	48	46.06	56.00	1.62	44	40	4	8	1 1/2	1.77	56.00	1.62	44	40	4	8	1 1/2	1.77	58.58	51.18	25.00	13.78	41.81	54.33	33.46	35.04	9.02	9.53	8.27	22.24	12.72	BRL-20

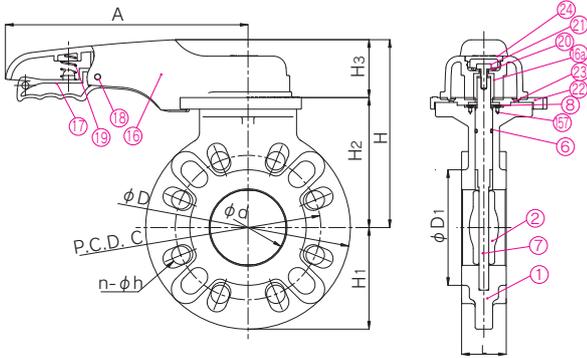
Nominal Size mm(inch)	700(28)	800(32)	900(36)	1000(40)	1100(44)	1200(48)
Stem Torque N·m {kgf·cm}	4,500 {45,900}	5,900 {60,200}	7,500 {76,500}	10,200 {104,000}	13,000 {132,600}	15,000 {153,000}
Hand Wheel operating force N{kgf}	339 {35}	444 {45}	565 {58}	326 {33}	415 {42}	479 {49}
Number of Handle Rotation	60	60	60	137	137	137
Gear Box Model	BRL-10	BRL-10	BRL-10	BRL-20	BRL-20	BRL-20

# ROTARY DAMPER (PVC,PP) 40mm - 600mm(1 1/2inch - 24inch)

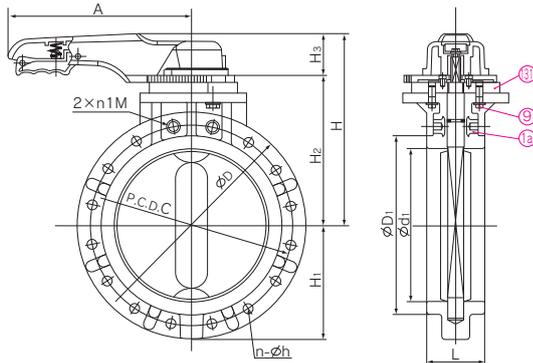


● PVC

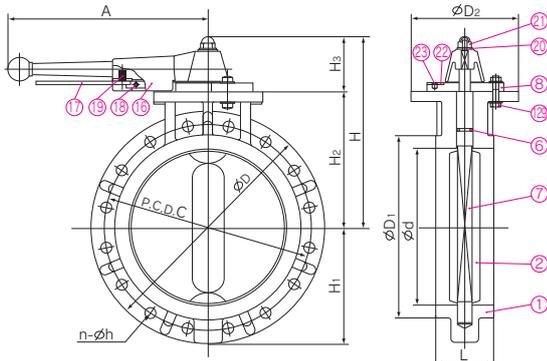
● PVC, PP  
40mm - 200mm (1 1/2inch - 8inch)



250mm - 400mm (10inch - 16inch)



450mm - 600mm (16inch - 24inch)



## FEATURES

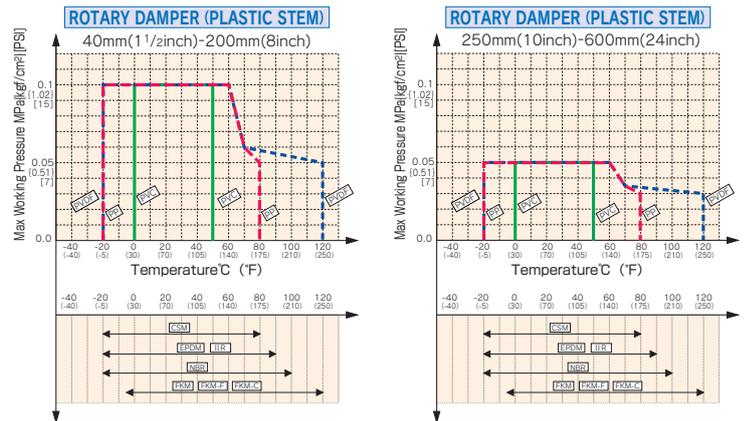
**DAMPER STYLE is Designed for Flow Control.**

Note : DAMPER STYLE is not a tight shut off valve.  
Consult factory for Leakage rates.

## SPECIFICATIONS

Body material	Nominal size mm(inch)	Working Temperature °C (B °F)	Max. Working Pressure (at R.T.) MPa{kgf/cm²}[PSI]		
			40(1 1/2inch)~200(8inch)	250(10inch)~350(14inch)	400(16inch)~600(24inch)
PVC	40 - 350 (1 1/2 - 14)	0 - 50 (30 - 120)	0.1 {1.0} [15]	0.05 {0.5} [7]	-
PP	40 - 600 (1 1/2 - 24)	-20 - 80 (-5 - 175)	0.1 {1.0} [15]	0.05 {0.5} [7]	0.05 {0.5} [7]
PVDF	40 - 600 (1 1/2 - 24)	-20 - 120 (-5 - 250)	0.1 {1.0} [15]	0.05 {0.5} [7]	0.05 {0.5} [7]

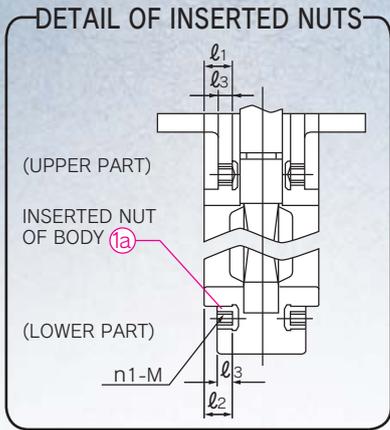
## WORKING PRESSURE VS. TEMPERATURE



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	REMARKS
①	BODY	1	BODY/DISC/STEM	
②	DISC	1	PVC/PP/PVC	
⑦	STEM	1	PP/PP/PP	
⑥	O-RING(C)	1	EPDM, FKM, OTHERS	
⑧	STEM HOLDER(A)	1	STAINLESS STEEL304	40mm - 200mm
			PP	450mm - 600mm
⑨	BOLT(A)	3	STAINLESS STEEL304	250mm - 400mm
⑯	HANDLE(A)	1	PP	
⑰	INSERTED METAL OF HANDLE	1	STAINLESS STEEL316	40mm - 400mm
⑱	HANDLE LEVER	1	PPG	40mm - 400mm
			STAINLESS STEEL304	450mm - 600mm
⑲	PIN	1	PPG	40mm - 400mm
			STAINLESS STEEL304	450mm - 600mm
⑳	SPRING	1	STAINLESS STEEL304	
㉑	WASHER(A)	1	STAINLESS STEEL304	
㉒	BOLT(B)	1	STAINLESS STEEL304	40mm - 400mm
㉓	NUT(B)	1	STAINLESS STEEL304	450mm - 600mm
㉔	LOCKING PLATE	1	PPG	40mm - 400mm
			STAINLESS STEEL304	450mm - 600mm
㉕	SCREW(B)	4	STAINLESS STEEL304	40mm - 400mm
		3	STAINLESS STEEL304	450mm - 600mm
㉖	CAP(A)	1	PP	40mm - 400mm
㉗	BOLT-NUT(N)	3	STAINLESS STEEL304	450mm - 600mm
㉘	STEM HOLDER(C)	1	PPG	250mm - 400mm
㉙	INSERTED METAL OF BODY	4	COPPER ALLOY(C3604)	10k400mm - 600mm

DIMENSIONS TABLE



Nominal Size		M	BOLT HOLES n	Q'TY OF INSERTED NUT			l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>
mm	inch			UPPER	LOWER	TOTAL (2×n <sub>1</sub> )			
400	16	M24	14	2×2	—	4	46	—	24
450	18	M24	16	2×2	2×2	8	43	48	24
500	20	M24	16	2×2	2×2	8	43	53	24
600	24	M30	20	2×2	2×2	8	58	58	30

1) PP, body : used for 400(16inch)~600mm(24inch)(JIS 10K) only

Nominal Size		d	JIS 10K					D <sub>1</sub>	D	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
mm	inch		C	n	h	n <sub>1</sub>	M	PVC,PP							
40	1 1/2	47	105	4	19	—	—	86	150	32	156	75	100	56	220
50	2	58	120	4	19	—	—	96	165	35	166	83	110	56	220
65	2 1/2	71	140	4	19	—	—	116	185	37	176	93	120	56	220
80	3	79	150	8	19	—	—	120	211	37	191	106	135	56	250
100	4	104	175	8	19	—	—	152	238	47	206	119	150	56	250
125	5	131	210	8	23	—	—	190	264	57	237	132	168	69	320
150	6	152	240	8	23	—	—	208	285	62	252	143	183	69	320
200	8	197	290	12	23	—	—	264	340	76	283	170	214	69	400
250	10	247	355	12	25	—	—	321	406	96	342	203	273	69	400
300	12	298	400	16	25	—	—	370	483	116	399	242	330	69	400
350	14	347	445	16	25	—	—	420	520	116	426	260	338	69	400
400	16	394	510	14	27	2	M24	470	600	157	451	300	382	69	400
450	18	441	565	16	27	4	M24	525	630	167	496	315	370	126	323
500	20	488	620	16	27	4	M24	575	699	177	526	350	400	126	323
600	24	600	730	20	33	4	M30	686	813	197	591	424	465	126	323

Nominal Size		d	DIN PN 10				D <sub>1</sub>	D	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
mm	inch		C	n	h	PVC,PP								
40	1 1/2	47	110	4	18	86	150	32	156	75	100	56	220	
50	2	58	125	4	18	96	165	35	166	83	110	56	220	
65	2 1/2	71	145	4	18	116	185	37	176	93	120	56	220	
80	3	79	160	8	18	120	211	37	191	106	135	56	250	
100	4	104	180	8	18	152	238	47	206	119	150	56	250	
125	5	131	210	8	18	190	264	57	237	132	168	69	320	
150	6	152	240	8	22	208	285	62	252	143	183	69	320	
200	8	197	295	8	22	264	340	76	283	170	214	69	400	
250	10	247	350	12	23	321	406	96	342	203	273	69	400	
300	12	298	400	12	23	370	483	116	399	242	330	69	400	
350	14	347	460	16	23	420	520	116	426	260	338	69	400	
400	16	394	515	16	27	470	600	157	451	300	382	69	400	
450	18	441	565	20	27	525	630	167	496	315	370	126	323	
500	20	488	620	20	27	575	699	177	526	350	400	126	323	
600	24	600	725	20	30	686	813	197	591	424	465	126	323	

Nominal Size		d	ANSI Class 150				D <sub>1</sub>	D	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
inch	mm		C	n	h	PVC,PP								
1 1/2	40	1.83	3.68	4	0.63	3.39	5.91	1.26	6.14	2.95	3.94	2.20	8.66	
2	50	2.26	4.74	4	0.75	3.78	6.50	1.38	6.54	3.25	4.33	2.20	8.66	
2 1/2	65	2.78	5.49	4	0.75	4.57	7.28	1.46	6.93	3.64	4.72	2.20	8.66	
3	80	3.09	6.00	4	0.75	4.72	8.31	1.46	7.52	4.15	5.31	2.20	9.84	
4	100	4.07	7.50	8	0.75	5.98	9.37	1.85	8.11	4.69	5.91	2.20	9.84	
5	125	5.14	8.50	8	0.87	7.48	10.39	2.24	9.33	5.20	6.61	2.72	12.60	
6	150	5.96	9.51	8	0.87	8.19	11.22	2.44	9.92	5.61	7.20	2.72	12.60	
8	200	7.76	11.75	8	0.87	10.39	13.39	2.99	11.14	6.69	8.43	2.72	15.75	
10	250	9.72	14.25	12	0.98	12.64	15.98	3.78	13.46	7.99	10.75	2.72	15.75	
12	300	11.73	17.01	12	0.98	14.57	19.02	4.57	15.71	9.53	12.99	2.72	15.75	
14	350	13.66	18.74	12	1.14	16.54	20.47	4.57	16.77	10.24	13.31	2.72	15.75	
16	400	15.51	21.24	16	1.14	18.50	23.62	6.18	17.76	11.81	15.04	2.72	15.75	
18	450	17.36	22.76	16	1.26	20.67	24.80	6.57	19.53	12.40	14.57	4.69	12.72	
20	500	19.21	25.00	20	1.26	22.64	27.52	6.97	20.71	13.78	15.75	4.96	12.72	
24	600	23.62	29.51	20	1.38	27.01	32.01	7.76	23.27	16.69	18.31	4.96	12.72	

Note : The shape and appearance of the valve differ a little with nominal size compared to the drawing.

# ROTARY DAMPER (PVDF) 40mm - 600mm(1½inch - 24inch)



● PVDF

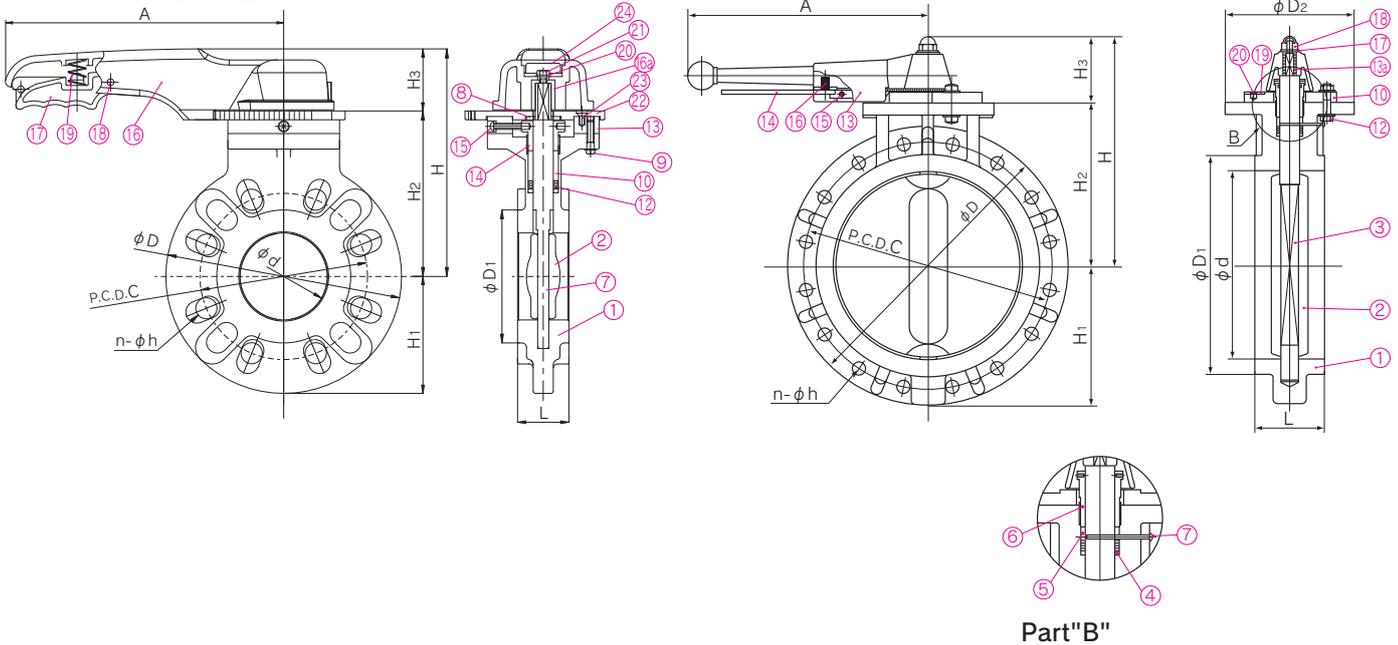
## FEATURES

### ■ DAMPER STYLE is Designed for Flow Control.

- DAMPER STYLE is not a tight shut off valve. Consult us for Leakage rates.
- Low Leakage Model ; PVDF Body / PVDF Disc / Ti-Stem also available as a special for 40mm(1½") through 350mm(14").

● PVDF  
40mm – 200mm (1½inch – 8inch)

250mm – 600mm (10inch – 24inch)  
Consult us more details

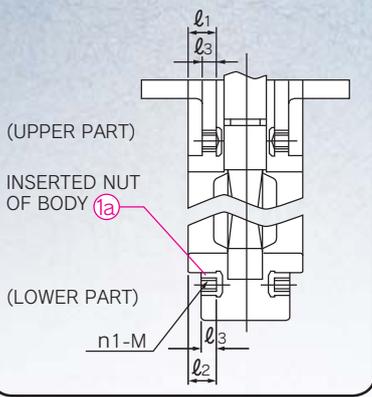


## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	REMARKS
①	BODY	1	PVDF	
②	DISC	1	PVDF	
⑦	STEM	1	PVDF	
⑧	STEM HOLDER(A)	1	STAINLESS STEEL304	40mm - 300mm(1½"-14")
⑨	BOLT(A)	4	STAINLESS STEEL304	
⑩	BUSH(A)	1	PTFE	40mm - 350mm(1½"-14")
		1	PVDF	400mm - 600mm(16"-24")
⑫	V-PACKING	1	PTFE	
⑬	SPECER(A)	1set	C-PVC	
⑭	GLAND	1set	PVDF	
⑮	SCREW(A)	1	STAINLESS STEEL304	
⑯	HANDLE(A)	1	PP	
⑰	HANDLE INSERTED METAL	1	STAINLESS STEEL304	
⑱	HANDLE LEVER	1	PPG	
⑲	PIN	1	PPG	
⑳	SPRING	1	STAINLESS STEEL304	
㉑	WASHER(A)	1	STAINLESS STEEL304	
㉒	BOLT(B)	1	STAINLESS STEEL304	
㉓	LOCKING PLATE	1	PPG	
㉔	SCREW(B)	2	STAINLESS STEEL304	
㉕	CAP(A)	1	PP	
㉖	STEM HOLDER(C)	1	PP	300mm - 400mm(12"-16")
㉗	BODY INSERTED METAL	4	COPPER ALLOY	

DIMENSIONS TABLE

DETAIL OF INSERTED NUTS



Nominal Size		M	BOLT HOLES n	Q'TY OF INSERTED NUT			l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>
mm	inch			UPPER	LOWER	TOTAL (2×n <sub>1</sub> )			
400	16	M24	14	2×2	—	4	46	—	24
450	18	M24	16	2×2	2×2	8	43	48	24
500	20	M24	16	2×2	2×2	8	43	53	24
600	24	M30	20	2×2	2×2	8	58	58	30

1) PP, body : used for 400(16inch)~600mm(24inch)(JIS 10K) only

Nominal Size		d	JIS 10K					D <sub>1</sub>	D	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
mm	inch		C	n	h	n <sub>1</sub>	M	PVDF							
40	1 1/2	46	105	4	19	—	—	86	150	32	179	75	123	56	220
50	2	57	120	4	19	—	—	96	165	35	189	83	133	56	220
65	2 1/2	70	140	4	19	—	—	116	185	37	199	93	143	56	220
80	3	78	150	8	19	—	—	120	211	37	214	106	157	56	250
100	4	103	175	8	19	—	—	152	238	47	229	119	173	56	250
125	5	130	210	8	23	—	—	190	264	57	257	132	188	69	320
150	6	150	240	8	23	—	—	208	285	62	272	143	203	69	320
200	8	197	290	12	23	—	—	264	340	76	303	170	234	69	400
250	10	247	355	12	25	—	—	321	406	96	358	203	240	118	323
300	12	298	400	16	25	—	—	370	483	116	419	242	297	122	323
350	14	347	445	16	25	—	—	420	520	116	422	260	300	122	323
400	16	394	510	14	27	2	M24	470	600	157	472	300	350	122	323
450	18	441	565	16	27	4	M24	525	630	167	516	315	370	126	323
500	20	488	620	16	27	4	M24	575	699	177	546	350	400	126	323
600	24	600	730	20	33	4	M30	686	813	197	611	424	465	126	323

Nominal Size		d	DIN PN 10				D <sub>1</sub>	D	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
mm	inch		C	n	h	PVDF								
40	1 1/2	46	110	4	18	86	150	32	179	75	123	56	220	
50	2	57	125	4	18	96	165	35	189	83	133	56	220	
65	2 1/2	70	145	4	18	116	185	37	199	93	143	56	220	
80	3	78	160	8	18	120	211	37	214	106	157	56	250	
100	4	103	180	8	18	152	238	47	229	119	173	56	250	
125	5	130	210	8	18	190	264	57	257	132	188	69	320	
150	6	150	240	8	22	208	285	62	272	143	203	69	320	
200	8	197	295	8	22	264	340	76	303	170	234	69	400	
250	10	247	350	12	23	321	406	96	358	203	240	118	323	
300	12	298	400	12	23	370	483	116	419	242	297	122	323	
350	14	347	460	16	23	420	520	116	422	260	300	122	323	
400	16	394	515	16	27	470	600	157	472	300	350	122	323	
450	18	441	565	20	27	525	630	167	516	315	370	126	323	
500	20	488	620	20	27	575	699	177	546	350	400	126	323	
600	24	600	725	20	30	686	813	197	611	424	465	126	323	

Nominal Size		d	ANSI Class 150				D <sub>1</sub>	D	L	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
inch	mm		C	n	h	PVDF								
1 1/2	40	1.81	3.88	4	0.62	3.39	5.91	1.26	7.05	2.95	4.84	2.20	8.66	
2	50	2.24	4.75	4	0.75	3.78	6.50	1.38	7.44	3.27	5.24	2.20	8.66	
2 1/2	65	2.76	5.50	4	0.75	4.57	7.28	1.46	7.83	3.66	5.63	2.20	8.66	
3	80	3.07	6.00	4	0.75	4.72	8.31	1.46	8.43	4.17	6.22	2.20	9.84	
4	100	4.06	7.50	8	0.75	5.98	9.37	1.85	9.02	4.69	6.81	2.20	9.84	
5	125	5.12	8.50	8	0.88	7.48	10.39	2.24	10.12	5.20	7.40	2.72	12.60	
6	150	5.91	9.50	8	0.88	8.19	11.22	2.44	10.71	5.63	7.99	2.72	12.60	
8	200	7.76	11.75	8	0.88	10.39	13.39	3.23	11.93	6.69	9.21	2.72	15.75	
10	250	9.72	14.25	12	0.98	12.20	15.98	3.78	14.09	7.99	9.45	4.65	12.72	
12	300	11.73	17.01	12	0.98	14.57	19.02	4.57	16.50	9.53	11.69	4.80	12.72	
14	350	13.66	18.74	12	1.14	16.54	20.47	4.57	16.61	10.24	11.81	4.80	12.72	
16	400	15.51	21.24	16	1.14	18.50	23.62	6.18	18.58	11.81	13.78	4.80	12.72	
18	450	17.36	22.76	16	1.26	20.67	24.80	6.57	20.31	12.40	14.57	4.96	12.72	
20	500	19.21	25.00	20	1.26	22.64	27.52	6.97	21.50	13.78	15.75	4.96	12.72	
24	600	23.62	29.51	20	1.38	27.01	32.01	7.76	24.06	16.69	18.31	4.96	12.72	

# SWING CHECK VALVE 15mm - 200mm(1/2inch - 8inch)



15mm(1/2inch), 20mm(3/4inch)



25mm(1inch) - 200mm(8inch)

## FEATURES

- The SWING CHECK VALVE prevents backflow, thus protecting equipment, such as a pump.
- Being of a swing arm type, the valve gives little resistance to flow.
- The SWING CHECK VALVE is highly resistant to corrosive chemicals, acid and alkaline, because of its plastic construction.
- To maintain the SWING CHECK VALVE, only the bonnet lid has to be removed, without taking the body out of pipeline.

## MATERIAL AND WORKING TEMPERATURE RANGES

Body material	Working Temperature °C (°F)	Max. Working Pressure (at R.T.) MPa[kgf/cm <sup>2</sup> ] [PSI]		
		15(1/2inch) - 80(3inch)	100(4inch) - 150(6inch)	200(8inch)
HI-PVC	0 - 50 (30 - 120)	1.0 {10.2} [150]	0.7 {7.1} [100]	0.5 {5.1} [70]
PP	-20 - 80 (-5 - 175)	1.0 {10.2} [150]	0.7 {7.1} [100]	0.5 {5.1} [70]
PVDF	-20 - 100 (-5 - 210)	1.0 {10.2} [150]	0.7 {7.1} [100]	0.5 {5.1} [70]

## PARTS & MATERIALS O-ring Type

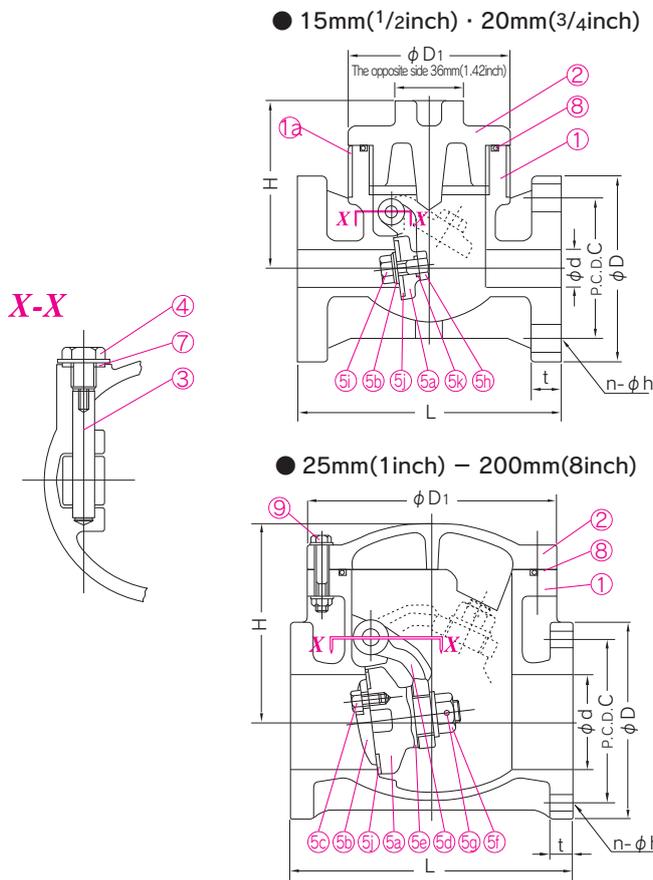
### ● PP

No.	DESCRIPTION	Pcs.	MATERIAL	REMARKS
①	BODY	1	PP	
②	BONNET	1	PP	
③	SHAFT	1	PP	
④	PLUG	1	PP	
⑤	⑤a DISC	1	PVDF	
	⑤b SEAT HOLDER	1	PP	
	⑤c BOLT(A)	-	PP	Used for Size 25~200mm
	⑤d ARM	1	PP	Used for Size 25~200mm
	⑤e WASHER	1	PP	Used for Size 25~200mm
	⑤f NUT(A)	1	PVDF	Used for Size 25~200mm
	⑤g PIN	1	PVDF	In Case Material is PVDF, Used for Size 65~200mm
	⑤h BOLT(B)	1	PP	Used for Size 15,20mm
	⑤i NUT(B)	1	PP	Used for Size 15,20mm
	⑤j SEAT	1	GASKET, SEAT, O-RING(A)/O-RING(B)	Used for Size 15,20mm
⑦	GASKET(B)	1	EPDM/EPDM FKM/FKM	
⑧	O-RING(B)	1	PTFE/FKM-F* <sup>※2</sup> PTFE/PFA* <sup>※1</sup> ※2	※1 FKM Covered at PFA ※2 Special request
⑨	BOLT · NUT	-	STAINLESS STEEL(SUS304)	Used for Size 25~200mm
⑫	BODY RING	-	STAINLESS STEEL(SUS304)	Used for Size 15,20mm

Note : 1) ⑫ Body-ring is available for PP Body 15mm(1/2inch) · 20mm(3/4inch).

### ● HI-PVC, PVDF

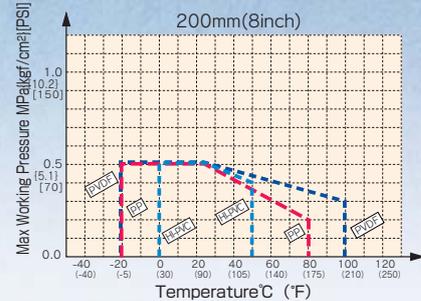
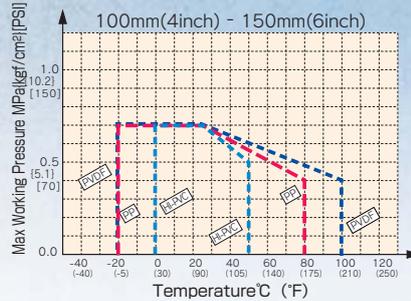
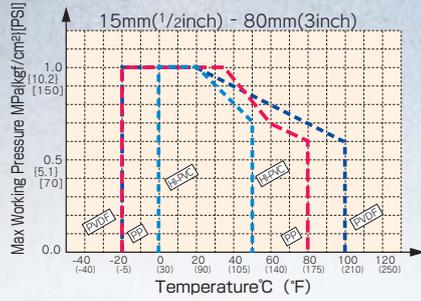
No.	DESCRIPTION	Pcs.	MATERIAL	REMARKS
①	BODY	1	HI-PVC, PVDF	
②	BONNET	1	HI-PVC, PVDF	
③	SHAFT	1	HI-PVC, PVDF	
④	PLUG	1	HI-PVC, PVDF	
⑤	⑤a DISC	1	HI-PVC, PVDF	
	⑤b SEAT HOLDER	1	HI-PVC, PVDF	
	⑤c BOLT(A)	-	HI-PVC, PVDF	Used for Size 25~200mm
	⑤d ARM	1	HI-PVC, PVDF	Used for Size 25~200mm
	⑤e WASHER	1	HI-PVC, PVDF	Used for Size 25~200mm
	⑤f NUT(A)	1	HI-PVC, PVDF	Used for Size 25~200mm
	⑤g PIN	1	HI-PVC, PVDF	In Case Material is PVDF, Used for Size 65~200mm
	⑤h BOLT(B)	1	HI-PVC, PVDF	Used for Size 15,20mm
	⑤i NUT(B)	1	HI-PVC, PVDF	Used for Size 15,20mm
	⑤j SEAT	1	GASKET, SEAT, O-RING(A)/O-RING(B)	Used for Size 15,20mm
⑦	GASKET(B)	1	FKM/FKM PTFE/PFA* <sup>※1</sup>	※1 FKM Covered at PFA ※2 Special request
⑧	O-RING(B)	1	PTFE/FKM-F* <sup>※2</sup> PTFE/FKM-C* <sup>※2</sup>	
⑨	BOLT · NUT	-	STAINLESS STEEL(SUS304)	Used for Size 25~200mm



DIAPHRAGM VALVE  
 BALL VALVE  
 BUTTERFLY VALVE  
 SWING CHECK VALVE  
 WAFFER CHECK VALVE  
 BALL CHECK BALL ROOT VALVE  
 STOP VALVE  
 GAUGE VALVE  
 GATE VALVE  
 AUTOMATIC WATER FEEDING VALVE  
 ROTARY ANGLE VALVE  
 ALFALFA VALVE  
 CONSTANT FLOW VALVE  
 NEEDLE VALVE  
 Y-SEDIMENT STRAINER  
 AIR RELEASE VALVE

WORKING PRESSURE VS. TEMPERATURE

SWING CHECK VALVE O-ring Type



DIMENSIONS TABLE

JIS													Unit:mm			
Nominal Size		d	JIS 5K				JIS 10K				D <sub>1</sub>	L	t			H
mm	inch		D	C	n	h	D	C	n	h			HI-PVC	PP	PVDF	
15	1/2	20	80	60	4	12	95	70	4	15	86	140	15	15	15	87
20	3/4	20	85	65	4	12	100	75	4	15	86	140	15	15	15	87
25	1	25	95	75	4	12	125	90	4	19	130	160	16	16	16	117
32	1 1/4	40	-	-	-	-	135	100	4	19	145	180	18	17	18	135
40	1 1/2	40	120	95	4	15	140	105	4	19	145	180	18	17	18	135
50	2	50	130	105	4	15	155	120	4	19	180	200	20	20	21	161
65	2 1/2	65	155	130	4	15	175	140	4	19	200	240	22	22	23	165
80	3	80	180	145	4	19	185	150	8	19	205	260	22	22	23	168
100	4	100	200	165	8	19	210	175	8	19	265	300	24	24	26	210
125	5	125	235	200	8	19	250	210	8	23	330	350	24	25	26	245
150	6	150	265	230	8	19	280	240	8	23	370	400	25	26	27	280
200	8	200	320	280	8	23	330	290	12	23	425	500	30	31	33	333

DIN													Unit:mm			
Nominal Size		d	DIN PN10				D <sub>1</sub>	L	t			H				
mm	inch		D	C	n	h			HI-PVC	PP	PVDF					
15	1/2	20	95	65	4	14	86	140	15	15	15	87				
20	3/4	20	105	75	4	14	86	140	15	15	15	87				
25	1	25	115	85	4	14	130	160	16	16	16	117				
32	1 1/4	40	140	100	4	18	145	180	18	17	18	135				
40	1 1/2	40	150	110	4	18	145	180	18	17	18	135				
50	2	50	165	125	4	18	180	200	20	20	21	161				
65	2 1/2	65	185	145	4	18	200	240	22	22	23	165				
80	3	80	200	160	8	18	205	260	22	22	23	168				
100	4	100	220	180	8	18	265	300	24	24	26	210				
125	5	125	250	210	8	18	330	350	24	25	26	245				
150	6	150	285	240	8	22	370	400	25	26	27	280				
200	8	200	340	295	8	22	425	500	30	31	33	333				

ANSI													Unit:inch			
Nominal Size		d	ANSI CLASS 150				D <sub>1</sub>	L	t			H				
inch	mm		D	C	n	h			HI-PVC	PP	PVDF					
1/2	15	0.79	3.50	2.38	4	0.62	3.39	5.51	0.59	0.59	0.59	3.43				
3/4	20	0.79	3.88	2.75	4	0.62	3.39	5.51	0.59	0.59	0.59	3.43				
1	25	0.98	4.25	3.12	4	0.62	5.12	6.30	0.63	0.63	0.63	4.61				
1 1/4	32	-	-	-	-	-	-	-	-	-	-	-				
1 1/2	40	1.57	5.00	3.88	4	0.62	5.71	7.09	0.71	0.67	0.71	5.32				
2	50	1.97	6.00	4.75	4	0.75	7.09	7.87	0.79	0.79	0.83	6.34				
2 1/2	65	2.56	7.00	5.50	4	0.75	7.87	9.45	0.87	0.87	0.91	6.50				
3	80	3.15	7.50	6.00	4	0.75	8.07	10.24	0.87	0.87	0.91	6.62				
4	100	3.94	9.00	7.50	8	0.75	10.43	11.81	0.94	0.94	1.02	8.27				
5	125	4.92	10.00	8.50	8	0.88	12.99	13.78	0.94	0.98	1.02	9.65				
6	150	5.91	11.00	9.50	8	0.88	14.57	15.75	0.98	1.02	1.06	11.03				
8	200	7.87	13.50	11.75	8	0.88	16.73	19.69	1.18	1.22	1.30	13.11				

\* Important: The swing check valve can be used in both vertical and horizontal pipelines. However, when installing the valve, be sure to make the direction of the arrow embossed on the valve agree with that of flow.  
 \* Swing check valves 15mm(1/2inch) and 30mm(1 1/4inch) mm in nominal size are made out of those in 20mm(3/4inch) and 40mm(1 1/2inch) in nominal size, respectively.  
 Note : For pressure limits by fluid temperature ranges and materials, see "WORKING PRESSURE VS. TEMPERATURE" in this catalog.

# WAFER CHECK VALVE 100mm - 300mm(4inch - 12inch)



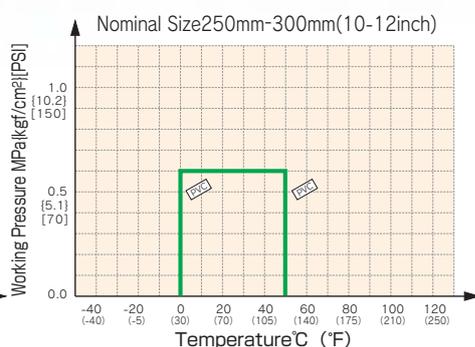
## FEATURES

To Solve various problems by existing stainless steel or plastic check valves.  
 Slim profile permits easy installation. (Wafer style fits between 2-mating flanges.)  
 Horizontal or vertical valve installation. (The space ring not required.)  
 No bolt pattern permits installation using DIN, ANSI and JIS mating flanges.  
 No pipe interference with disc and no external shaft.

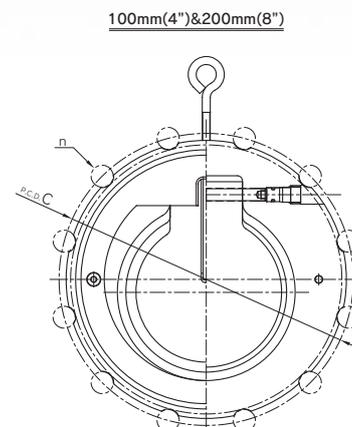
## SPECIFICATIONS

Body material	Unplasticized Polyvinyl Chloride (PVC)
Nominal Size	100mm(4 inch) - 300mm(12 inch)
Working Temperature	PVC:0°C - 50°C (30°F - 120°F)
Max. Working Pressure	100mm(4 inch) - 300mm(12 inch)

## WORKING PRESSURE VS. TEMPERATURE



## DIMENSIONS

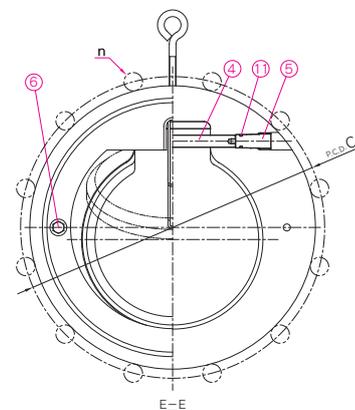
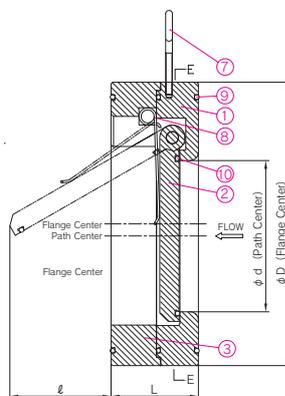


150mm(6'') & 250mm(10'') & 300mm(12'')

## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	REMARKS
①	BODY	1	PVC	
②	DISC	1		
③	STOPPER	1		
④	SHAFT	1		
⑤	SHAFT PLUG	1		
⑥	BOLT	2		
⑦	I BOLT	1	CHROMZED STEEL (SS400)	Unichrome
⑧	SPRING	1	SWP-B	ETFE Coating
⑨	O-RING (A)	3	EPDM	
⑩	O-RING (B)	1	FKM	
⑪	O-RING (C)	1		

Note : \*No8 Spring is an option, not standard.



## DIMENSIONS TABLE

JIS		JIS 10K		Unit:mm			
Nominal Size		C	n	d	D	L	ℓ
mm	inch						
100	4	175	8	52	175	70	31.6
150	6	240	8	92	220	82	59.7
200	8	290	12	132	279	101	86.7
250	10	355	12	177	333	114	120.5
300	12	400	16	217	378	115	155.5

DIN		DIN PN10		Unit:mm			
Nominal Size		C	n	d	D	L	ℓ
mm	inch						
100	4	180	8	52	175	70	31.6
150	6	240	8	92	220	82	59.7
200	8	295	8	132	279	101	86.7
250	10	350	12	177	330	114	120.5
300	12	400	12	217	380	115	155.5

ANSI		ANSI Class 150		Unit:mm			
Nominal Size		C	n	d	D	L	ℓ
mm	inch						
100	4	7.50	8	2.05	6.89	2.76	1.24
150	6	9.51	8	3.62	8.74	3.23	2.35
200	8	11.75	8	5.20	10.98	3.98	3.41
250	10	14.25	12	6.97	13.39	4.49	4.74
300	12	17.01	16	8.54	12.99	4.53	6.12

## MINIMUM SEAL PERFORMANCE

	Nominal Size	Vertical Piping	Unit: kPa [gf/cm <sup>2</sup> ] [PSI]			
			Horizontal Piping		Horizontal Piping	
			Shut the Disc	Open the Disc	Shut the Disc	Open the Disc
Standard	100-300	4-12	7.0 {70.0} [1.0]	0.7 {7.0} [0.1]	7.0 {70.0} [1.0]	0.07 {0.7} [0.01]
Spring Type	100-300	4-12	7.0 {70.0} [1.0]	1.4 {14.0} [0.2]	7.0 {70.0} [1.0]	0.07 {0.7} [0.01]

Note: Data mentioned in the table above is reference only.

# BALL CHECK AND BALL FOOT VALVE 15mm - 100mm(1/2inch - 4inch)

## ● SINGLE UNION BALL CHECK VALVE



## FEATURES

### ● Backflow Prevention

The valves prevent backflow in horizontal or vertical lines. They require minimal back pressure to seat completely.

### ● Compact and Light

The BALL CHECK and BALL FOOT VALVES are so compact and light that they can be installed in a limited space. They are also easy to maintain, because of minimal internal parts.

### ● NSF Product

NSF("NSF/ANSI STANDARD 61" Drinking Water System Components-Health Effects)Product.

:Ball CHECK VALVE (Material:PVC+EPDM,FKM)

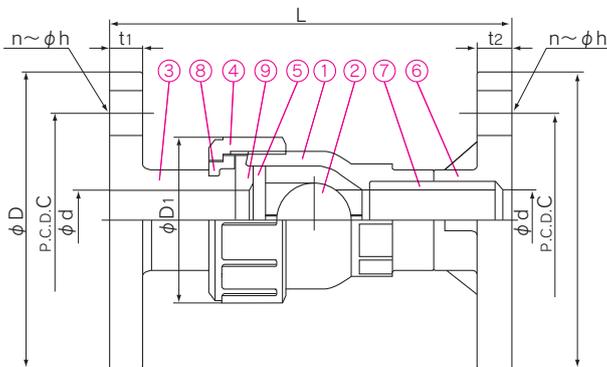
\*Certified products bear an NSF Certification Mark.

## SPECIFICATIONS

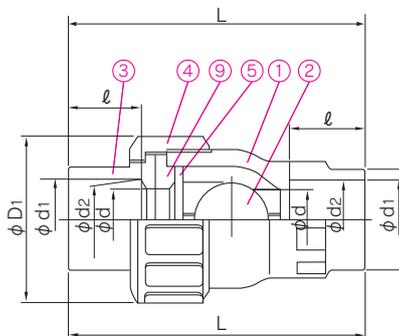
Body material	Unplasticized Polyvinyl Chloride(PVC), Chlorinated Polyvinyl Chloride(C-PVC) Polyvinylidene Fluoride(PVDF), Polypropylene(PP)
End Connectors	Socket End, Threaded End, Flanged End, Spigot End ※PVDF Flanged End and PP Flanged End are not available.
Nominal Size	15mm(1/2inch) - 100mm(4inch)
Working Temperature	PVC:0°C - 50°C(30°F - 120°F) C-PVC:0°C - 90°C(30°F - 195°F) PVDF : -20°C - 100°C(-5°F - 210°F) PP: -20°C - 80°C(-5°F - 175°F)
Max. Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI](at R.T).....15mm(1/2inch) - 50mm(2inch) 0.7MPa{7.1kgf/cm <sup>2</sup> }[100PSI](at R.T).....80mm(3inch) - 100mm(4inch)

## DIMENSIONS

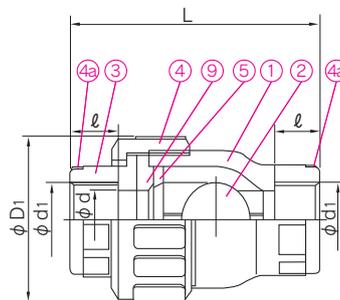
### ● FLANGED END



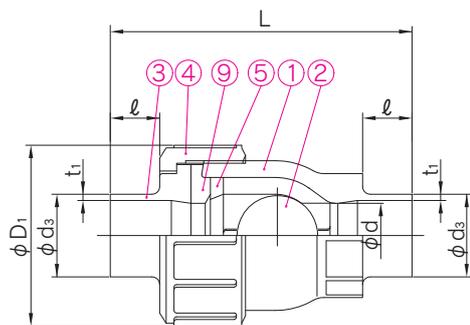
### ● SOCKET END



### ● THREADED END



### ● SPIGOT END



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC, C-PVC, PP, PVDF
②	BALL	1	PVC, C-PVC, PP, PVDF
③	END CONNECTOR	1	PVC, C-PVC, PP, PVDF
④	UNION NUT	1	PVC, C-PVC, PP, PVDF
⑤	STOP RING(A)	1	PVC, C-PVC, PP, PVDF
⑥	TS FLANGE <sup>2)</sup>	1	PVC, C-PVC
⑦	PIPE <sup>2)</sup>	1	PVC, C-PVC
⑧	STOP RING(B) <sup>2)</sup>	1	PVDF
⑨	SEAT	1	EPDM,FKM,Others
④a	RING <sup>1)</sup>	1	STAINLESS STEEL304

Note :

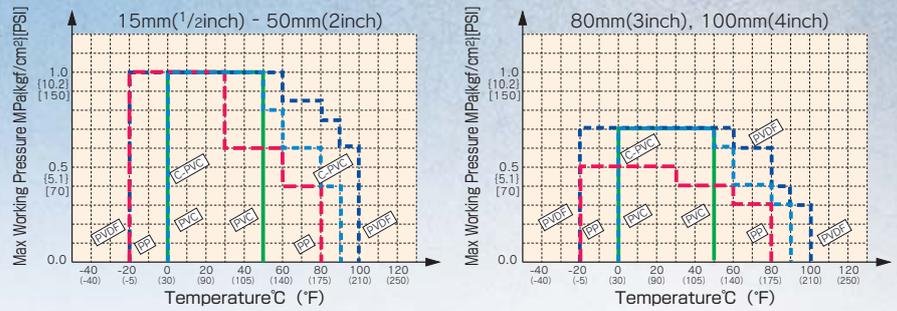
1):used for C-PVC Body, threaded end 15mm(1/2inch) - 25mm(1inch)

2):used for Flanged End

3):DIN Flanged End is not available.

WORKING PRESSURE VS. TEMPERATURE

BALL CHECK VALVE



\* By replacing some of its parts, the ball check valve can be switched to the ball foot valve, with a slight change in dimensions.

DIMENSIONS TABLE

Nominal Size		d	D <sub>1</sub>	Flanged End										Unit:mm	
mm	inch			JIS 5K				JIS 10K				L	t <sub>1</sub>	t <sub>2</sub>	
				D	C	n	h	D	C	n	h	PVC,C-PVC			
15	1/2	15	48	80	60	4	12	95	70	4	15	131	12	14	
20	3/4	20	60	85	65	4	12	100	75	4	15	156	14	15	
25	1	25	70	95	75	4	12	125	90	4	19	169	14	15	
40	1 1/2	40	96	120	95	4	15	140	105	4	19	214	16	16	
50	2	51	106	130	105	4	15	155	120	4	19	244	16	20	
80	3	78	152	180	145	4	19	185	150	8	19	310	18	22	
100	4	100	210	200	165	8	19	210	175	8	19	397	18	22	

Nominal Size		Socket End								Threaded End			
mm	inch	PVC,C-PVC				PP				JIS B 0203		L	
		d <sub>1</sub>	ℓ	1/T	L	d <sub>1</sub>	d <sub>2</sub>	ℓ	L	d <sub>1</sub>	ℓ	U-PVC,C-PVC	PP,PVDF
15	1/2	22.11	20	1/34	89	21.2	20.2	22	93	Rc 1/2	15	80	78
20	3/4	26.13	24	1/34	106	26.2	25.2	23	104	Rc 3/4	17	95	92
25	1	32.16	27	1/34	117	33.0	32.0	25	113	Rc 1	20	105	102
40	1 1/2	48.21	37	1/37	162	47.0	46.0	28	144	Rc 1 1/2	25	141	137
50	2	60.25	42	1/37	189	59.0	58.0	28	162	Rc 2	28	164	160
80	3	89.60	64	1/49	277	88.0	86.0	35	219	Rc 3	35	222	216
100	4	114.70	84	1/56	376	113.0	111.0	45	298	Rc 4	45	308	301

Nominal Size		d	D <sub>1</sub>	Socket End						Threaded End				Spigot End						
mm	inch			PVC, C-PVC			PP,PVDF			DIN 2999				DIN 3442						
				DIN 8063			DIN 16962			d <sub>1</sub>		ℓ		L		d <sub>3</sub>	t <sub>1</sub>		L	
				d <sub>1</sub>	ℓ	L	d <sub>1</sub>	d <sub>2</sub>	ℓ	L	U-PVC,C-PVC	PP,PVDF					PP	PVDF	ℓ	L
15	1/2	15	48	20	16	81	19.50	19.30	14	78	Rp 1/2	15	80	78	20	2.5	1.9	19.0	100	
20	3/4	20	60	25	19	96	24.50	24.30	16	90	Rp 3/4	17	95	92	25	2.7	1.9	19.0	110	
25	1	25	70	32	22	107	31.50	31.30	18	99	Rp 1	20	105	102	32	3.0	2.4	19.0	116	
40	1 1/2	40	96	50	31	150	49.45	49.20	23	135	Rp 1 1/2	25	141	137	50	4.6	2.9	19.0	142	
50	2	51	106	63	38	181	62.50	62.10	27	160	Rp 2	28	164	160	63	5.8	3.0	19.0	157	
80	3	78	152	90	51	248	89.20	88.85	35	217	Rp 3	35	222	216	90	8.2	4.3	38.0	256	
100	4	100	210	110	61	330	109.05	108.65	41	291	Rp 4	45	308	301	110	10.0	5.3	44.5	333	

Nominal Size		d	D <sub>1</sub>	Flanged End						Socket End						Threaded End						
inch	mm			ANSI Class 150				L	t <sub>1</sub>	t <sub>2</sub>	PVC, C-PVC			PVDF, PP			ANSI/ASME B 1.20.1			L		
				D	C	n	h	PVC			d <sub>1</sub>	d <sub>2</sub>	ℓ	L	d <sub>1</sub>	d <sub>2</sub>	ℓ	L	d <sub>1</sub>	ℓ	PVC	PP,PVDF
1/2	15	0.59	1.89	3.50	2.38	4	0.63	5.16	0.47	0.55	0.848	0.836	0.688	3.35	0.825	-	0.874	3.82	1/2-14 NPT	0.59	3.15	3.07
3/4	20	0.79	2.36	3.86	2.75	4	0.63	6.14	0.55	0.59	1.058	1.046	0.719	3.74	1.030	-	1.000	4.41	3/4-14 NPT	0.67	3.74	3.62
1	25	0.98	2.76	4.25	3.12	4	0.63	6.65	0.55	0.59	1.325	1.310	0.875	4.33	1.300	-	1.126	4.88	1-11 1/2 NPT	0.79	4.13	4.02
1 1/2	40	1.57	3.78	5.00	3.88	4	0.63	8.43	0.63	0.63	1.912	1.894	1.094	5.71	1.890	-	1.374	5.79	1 1/2-11 1/2 NPT	0.98	5.55	5.39
2	50	2.01	4.17	5.98	4.75	4	0.75	9.61	0.63	0.79	2.387	2.369	1.156	6.50	2.360	-	1.500	6.89	2-11 1/2 NPT	1.10	6.46	6.30
3	80	3.07	5.98	7.52	6.00	4	0.75	12.20	0.71	0.87	3.516	3.492	1.875	9.57	3.480	-	1.874	9.57	3-8 NPT	1.38	8.74	8.50
4	100	3.94	8.27	9.02	7.50	8	0.75	15.63	0.71	0.87	4.518	4.491	2.000	12.20	4.480	-	2.252	12.68	4-8 NPT	1.77	12.13	11.85

Note : The shape and appearance of the valve differ a little with nominal size compared to the drawing.

The measurement of the minimum pressure for opening & closing the valve with air or gas on Asahi Ball Check Valve.

Test Items		Vertical Piping				Horizontal Piping			
Nominal Size		Min. Air Pressure to open the valve		Min. Air Pressure to shut the Disc perfectly		Min. Air Pressure to open the valve		Min. Air Pressure to shut the Disc perfectly	
mm	inch								
15	1/2	0.005{0.05}		0.02 {0.2}		0.001{0.01}		0.02 {0.2}	
20	3/4	0.005{0.05}		0.03 {0.3}		0.001{0.01}		0.03 {0.3}	
25	1	0.005{0.05}		0.03 {0.3}		0.001{0.01}		0.03 {0.3}	
40	1 1/2	0.01 {0.1}		0.03 {0.3}		0.002{0.02}		0.03 {0.3}	
50	2	0.01 {0.1}		0.03 {0.3}		0.002{0.02}		0.03 {0.3}	
80	3	0.01 {0.1}		0.02 {0.2}		0.002{0.02}		0.02 {0.2}	
100	4	0.01 {0.1}		0.02 {0.2}		0.002{0.02}		0.02 {0.2}	

UNIT:MPa{kgf/cm<sup>2</sup>}

● TRUE UNION BALL CHECK VALVE

15mm(1/2inch) – 50mm(2inch)



FEATURES

The valve body can be removed from the pipe line by loosening the union nuts at its both ends.

NSF Product

NSF("NSF/ANSI STANDARD 61" Drinking Water System Components-Health Effects)Product.

:TRUE UNION BALL CHECK VALVE (Material:PVC+EPDM,FKM)

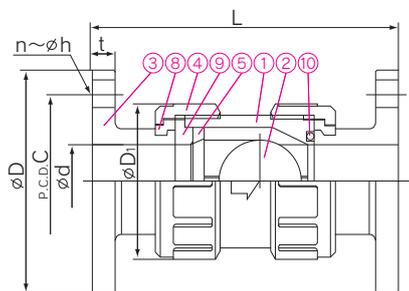
\*Certified products bear an NSF Certification Mark.

SPECIFICATIONS

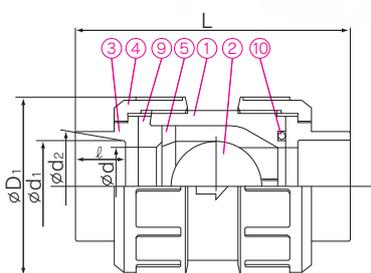
Body material	Unplasticized Polyvinyl Chloride(PVC), Chlorinated Polyvinyl Chloride(C-PVC) Polyvinylidene Fluoride(PVDF)
End Connectors	Socket End, Threaded End, Flanged End, Spigot End
Nominal Size	15mm(1/2inch) - 50mm(2inch)

DIMENSIONS

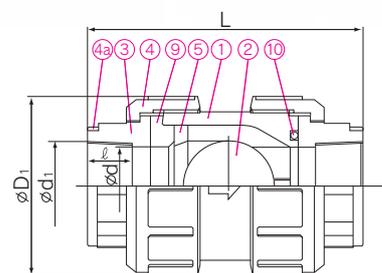
● FLANGED END



● SOCKET END



● THREADED END



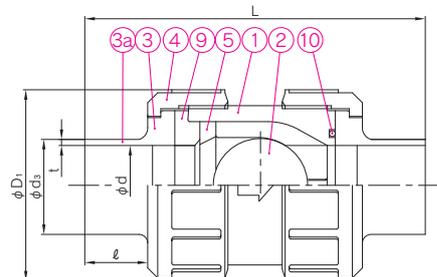
PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC,C-PVC,PP,PVDF
②	BALL	1	PVC,C-PVC,PP,PVDF
③	END CONNECTOR	2	PVC,C-PVC,PP,PVDF
④	UNION NUT	2	PVC,C-PVC,PP,PVDF
⑤	STOP RING(A)	1	PVC,C-PVC,PP,PVDF
⑧	STOP RING(B) 2)	2	PVDF
⑨	SEAT	1	EPDM,FKM,Others
⑩	O-RING	1	EPDM,FKM,Others
④	RING 1)	2	STAINLESS STEEL304

Note : 1):used for C-PVC body. threaded end 15mm(1/2inch) - 25mm(1inch)

2):used for flanged end

● SPIGOT END



DIMENSIONS TABLE

DIN		Flanged End										Socket End							Spigot End						Threaded End						
Nominal Size	d	D <sub>1</sub>	DIN PN10				L		t	PVC, C-PVC			PVDF,PP				PVC			PP			PVDF			DIN 2999		L			
			D	C	n	h	PVC C-PVC	PP		DIN 8063	L	DIN 16962	d <sub>1</sub>	d <sub>2</sub>	ℓ	L	t	ℓ	L	t	ℓ	L	t	ℓ	L	d <sub>1</sub>	ℓ	PVC C-PVC	PP PVDF		
15	1/2	15	48	95	65	4	14	130	128	12	20	16	84	19.50	19.30	14	79	20	2.5	16	113	2.5	19	102	1.9	19	102	Rp 1/2	15	86	83
20	3/4	20	60	105	75	4	14	155	154	14	25	19	100	24.50	24.30	16	93	25	2.5	18.5	127	2.7	19	110	1.9	19	110	Rp 3/4	17	103	98
25	1	25	70	115	85	4	14	165	163	14	32	22	113	31.50	31.30	18	103	32	3.5	22	132	3	19	118	2.4	19	118	Rp 1	20	113	109
40	1 1/2	40	96	150	110	4	18	192	190	16	50	31	158	49.45	49.20	23	141	50	5	31	174	4.6	19	145	2.9	19	145	Rp 1/2	25	151	147
50	2	51	106	165	125	4	18	214	211	16	63	38	190	62.50	62.10	27	167	63	6.5	37.5	204	5.8	19	164	3	19	164	Rp 2	28	177	171

ANSI		Flanged End										Socket End(IPS)							Spigot End						Threaded End		
Nominal Size	d	D <sub>1</sub>	ANSI Class 150				L		t <sub>1</sub>	PVC, C-PVC			PVDF, PP				ANSI/ASME B1.20.1			L							
			D	C	n	h	PVC C-PVC	PP		ASTM SCH40	L	d <sub>1</sub>	d <sub>1</sub> '	ℓ	L	t	ℓ	L	d <sub>1</sub>	ℓ	PVC C-PVC	PP PVDF					
1/2	15	0.59	1.89	3.50	2.38	4	0.62	5.12	5.04	0.47	0.848	0.836	0.688	3.43	0.831	—	0.630	3.23	1/2- 14 NPT	0.59	3.39	3.27					
3/4	20	0.79	2.36	3.88	2.75	4	0.62	6.10	6.06	0.55	1.058	1.046	0.719	3.86	1.041	—	1.000	4.37	3/4- 14 NPT	0.67	4.06	3.86					
1	25	0.98	2.76	4.25	3.12	4	0.62	6.50	6.42	0.55	1.325	1.310	0.875	4.37	1.305	—	0.827	4.29	1- 11 1/2 NPT	0.79	4.45	4.29					
1 1/2	40	1.57	3.78	5.00	3.88	4	0.62	7.56	7.48	0.63	1.912	1.894	1.094	5.94	1.889	—	1.260	6.22	1 1/2- 11 1/2 NPT	0.98	5.94	5.79					
2	50	2.01	4.17	6.00	4.75	4	0.75	8.43	8.31	0.63	2.387	2.369	1.156	6.77	2.364	—	1.260	6.93	2- 11 1/2 NPT	1.10	6.97	6.73					

● BALL FOOT VALVE



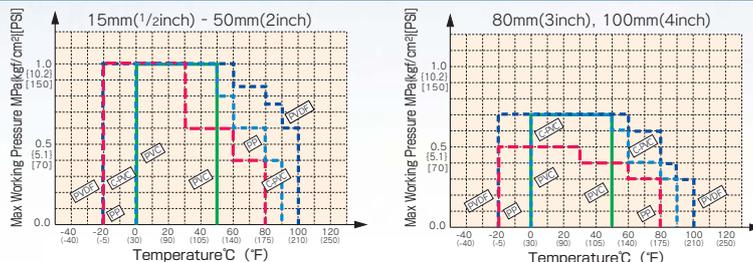
SPECIFICATIONS

Body material	Unplasticized Polyvinyl Chloride(PVC), Chlorinated Polyvinyl Chloride(C-PVC), Polyvinylidene Fluoride(PVDF), Polypropylene(PP)
End Connectors	Socket End, Threaded End, Flanged End
Nominal Size	15 mm(1/2inch) - 100 mm(4inch)
Working Temperature	PVC:0°C - 50°C(30°F - 120°F) C-PVC:0°C - 90°C(30°F - 195°F) PVDF: -20°C - 100°C(-5°F - 210°F) PP: -20°C - 80°C(-5°F - 175°F)
Max. Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI](at R.T.).....15mm(1/2inch) - 50mm(2inch) 0.7MPa{7.1kgf/cm <sup>2</sup> }[100PSI](at R.T.).....80mm(3inch) - 100mm(4inch)

R.T.:Room Temperature

WORKING PRESSURE VS. TEMPERATURE

BALL FOOT VALVE

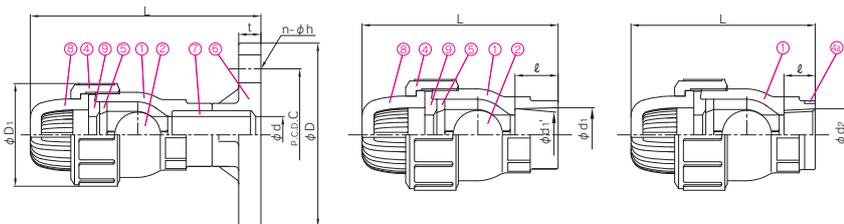


DIMENSIONS

FLANGED END

SOCKET END

THREADED END



PARTS & MATERIALS

No.	DESCRIPTION	QTY.	MATERIAL
①	BODY	1	PVC,C-PVC,PP,PVDF
②	BALL	1	PVC,C-PVC,PP,PVDF
④	UNION NUT	1	PVC,C-PVC,PP,PVDF
⑤	STOP RING(A)	1	PVC,C-PVC,PP,PVDF
⑥	FLANGE ②)	1	PVC,C-PVC
⑦	PIPE ②)	1	PVC,C-PVC
⑧	SCREEN	1	PVC,C-PVC,PP,PVDF
⑨	SEAT	1	EPDM,FKM,Others
④④	RING ①)	1	STAINLESS STEEL (SUS304)

Note :

- 1):Used for C-PVC body, threaded end 15mm(1/2inch) - 25mm(1inch)
- 2):Used for Flanged End

DIMENSIONS TABLE

Nominal Size		D <sub>1</sub>	Flanged End											Socket End								Threaded End			
mm	inch		JIS 5K				JIS 10K				L PVC C-PVC	d	t	PVC,C-PVC				PP				d <sub>1</sub>	ℓ	PVC C-PVC	PVDF PP
			D	C	n	h	D	C	n	h				d <sub>1</sub>	ℓ	1/T	L	d <sub>1</sub>	d <sub>2</sub>	ℓ	L				
15	1/2	48	80	60	4	12	95	70	4	15	130	18	14	22.11	20	1/34	95	21.2	20.2	22	97	Rc 1/2	15	90	88
20	3/4	60	85	65	4	12	100	75	4	15	150	22	15	26.13	24	1/34	110	26.2	25.2	23	108	Rc 3/4	17	103	101
25	1	70	95	75	4	12	125	90	4	19	167	25	15	32.16	27	1/34	121	33.0	32.0	25	118	Rc 1	20	114	111
40	1 1/2	96	120	95	4	15	140	105	4	19	246	41	16	48.21	37	1/37	184	47.0	46.0	28	174	Rc1 1/2	25	172	169
50	2	106	130	105	4	15	155	120	4	19	274	52	20	60.25	42	1/37	203	59.0	58.0	28	188	Rc 2	28	189	185
80	3	152	180	145	4	19	185	150	8	19	396	78	22	89.60	64	1/49	324	88.0	86.0	35	293	Rc 3	35	294	289
100	4	210	200	165	8	19	210	175	8	19	506	100	22	114.70	84	1/56	413	113.0	111.0	45	372	Rc 4	45	374	367

Nominal Size		D <sub>1</sub>	Socket End								Threaded End					
mm	inch		PVC, C-PVC				PP, PVDF				d <sub>2</sub>	ℓ	L			
			d <sub>1</sub>	ℓ	L	d <sub>1</sub>	d <sub>1</sub> '	ℓ	L	PVC C-PVC			PVDF PP			
15	1/2	48	20	16	91	19.50	19.30	14.5	89	Rp 1/2	15	90	88			
20	3/4	60	25	19	105	24.50	24.30	16	101	Rp 3/4	17	103	101			
25	1	70	32	22	116	31.50	31.30	18	111	Rp 1	20	114	111			
40	1 1/2	96	50	31	178	49.45	49.20	23.5	169	Rp 1 1/2	25	172	169			
50	2	106	63	38	199	62.50	62.10	27.5	187	Rp 2	28	189	184			
80	3	152	90	51	310	89.20	88.85	35.5	293	Rp 3	35	294	288			
100	4	210	110	61	390	109.05	108.65	41.5	368	Rp 4	45	374	366			

Nominal Size		d	D <sub>1</sub>	Flanged End						Socket End				Threaded End			
inch	mm			D	C	n	h	L PVC C-PVC	t	d <sub>1</sub>	d <sub>1</sub> '	ℓ	L	d <sub>2</sub>	ℓ	L	
																PVC C-PVC	PVDF PP
1/2	15	0.71	1.89	3.50	2.38	4	0.62	5.55	0.47	0.848	0.836	0.69	3.74	1/2- 14 NPT	0.59	3.54	3.46
3/4	20	0.87	2.36	3.86	2.76	4	0.62	6.42	0.51	1.058	1.046	0.72	4.17	3/4- 14 NPT	0.67	4.06	3.98
1	25	0.98	2.76	4.25	3.13	4	0.62	6.73	0.59	1.325	1.310	0.87	4.76	1- 11 1/2 NPT	0.79	4.49	4.37
1 1/2	40	1.61	3.78	5.00	3.88	4	0.62	9.80	0.63	1.912	1.894	1.09	6.97	1 1/2- 11 1/2 NPT	0.98	6.77	6.65
2	50	2.05	4.17	5.98	4.74	4	0.75	10.91	0.79	2.387	2.369	1.16	7.60	2- 11 1/2 NPT	1.10	7.44	7.24
3	80	3.07	5.98	7.52	6.00	4	0.75	16.10	0.87	3.516	3.492	1.87	12.09	3- 8 NPT	1.38	11.57	11.34
4	100	3.94	8.27	9.02	7.50	8	0.75	20.41	0.87	4.518	4.491	2.00	14.96	4- 8 NPT	1.77	14.72	14.41

# STOP VALVE (GLOBE VALVE) 15mm - 100mm(1/2inch - 4inch)



## FEATURES

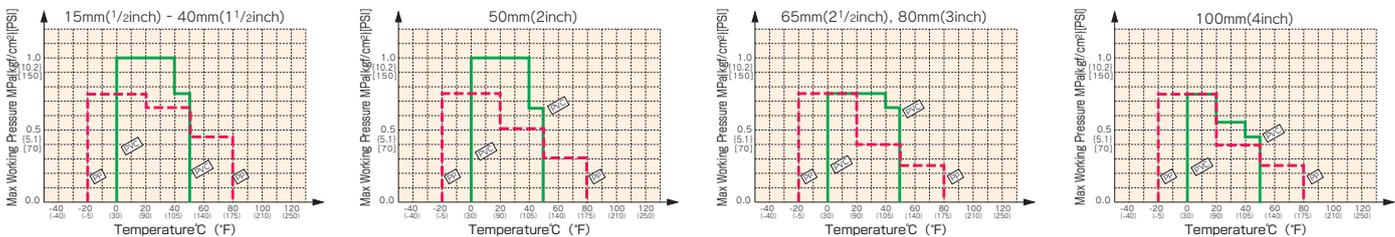
- The STOP VALVE is compact and economical.
- Used for efficient throttling of flow.
- Positive shut-off.
- Displas excellent flow regulating character-istics throughout the entire lift of the disc.

## SPECIFICATIONS

<b>Body material</b>	Unplasticized Polyvinyl Chloride(PVC) Polypropylene(PP)
<b>End Connectors</b>	Socket End : 15mm(1/2inch) - 25mm(1inch) Threaded End : 15mm(1/2inch) - 50mm(2inch) Flanged End : 15mm(1/2inch) - 100mm(4inch)
<b>Working Temperature</b>	PVC: 0°C - 50°C (30°F - 120°F) PP: -20°C - 80°C (-5°F - 175°F)
<b>Max. Working Pressure</b>	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI](at R.T).....15mm(1/2inch) - 50mm(2inch) 0.7MPa{7.1kgf/cm <sup>2</sup> }[100PSI](at R.T).....65mm(2 1/2inch) - 100mm(4inch)

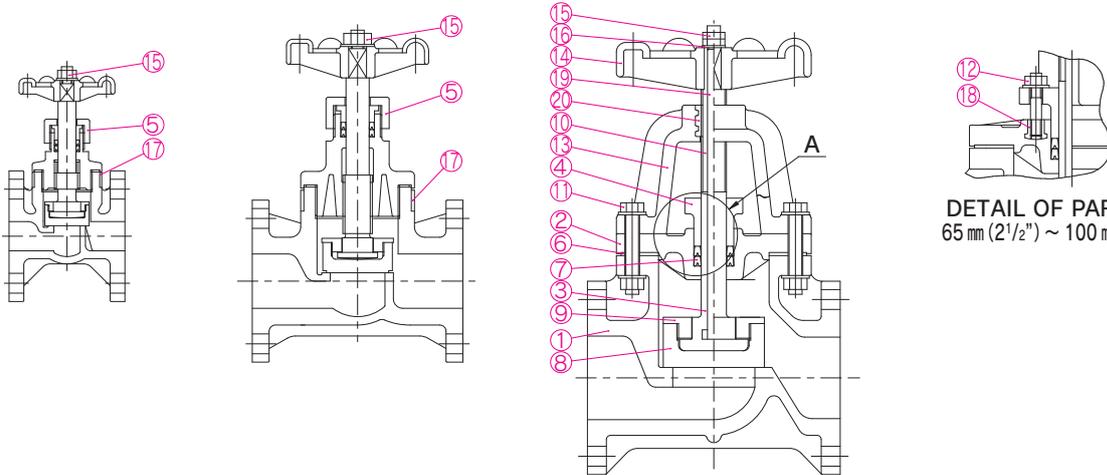
## WORKING PRESSURE VS. TEMPERATURE

### STOP VALVE



## DIMENSIONS

- 15mm (1/2inch) - 30mm (1 1/4inch)
- 40mm (1 1/2inch) - 50mm (2inch)
- 65mm (2 1/2inch) - 100mm (4inch)



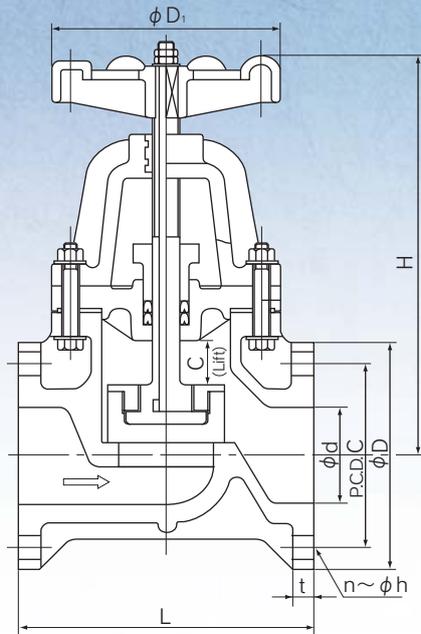
DETAIL OF PART A  
65 mm (2 1/2") ~ 100 mm (4")

## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC, PP	⑪	BOLT · NUT	4	STAINLESS STEEL 304 65mm(2 1/2inch) and over
②	BONNET	1	PVC, PP	⑫	STUD BOLT · NUT	2	STAINLESS STEEL 304 65mm(2 1/2inch) and over
③	STEM	1	PVC, PP	⑬	SUPPORT OF STEM	1	PP 65mm(2 1/2inch) and over
④	GLAND	1	PVC, PP	⑭	HAND WHEEL	1	PP
⑤	GLAND NUT	1	PVC, PP Up to 50mm(2inch)	⑮	NUT(A)	1 2	PVC Up to 50mm(2inch) STAINLESS STEEL 304 65mm(2 1/2inch) and over
⑥	SHEET GASKET	1	EPDM, Others	⑯	WASHER	1	PVC Up to 50mm(2inch) STAINLESS STEEL 304 65mm(2 1/2inch) and over
⑦	GLAND PACKIKG	2	EPDM, Others	⑰	RING FOR REINFORCING*	1	STAINLESS STEEL PP Body 15mm(1/2inch)~50mm(2inch)
⑧	DISC	1	PP	⑱	INSERTED NUT	1	COPPER ALLOY(C3604) 65mm(2 1/2inch) and over
⑨	STEM HOLDER	1	PP	⑲	INSERTED METAL OF STEM	1	STEEL(SS400) 65mm(2 1/2inch) and over
⑩	STEM WTH TRAPEZOID SCREW	1	COPPER ALLOY(C3604) 65mm(2 1/2inch) and over	⑳	INSERTED METAL	1	BRONZE (BC6) 65mm(2 1/2inch) and over

\*When the body is made of PP, it uses an Stainless Steel 304 reinforcing ring.

● FLANGED END



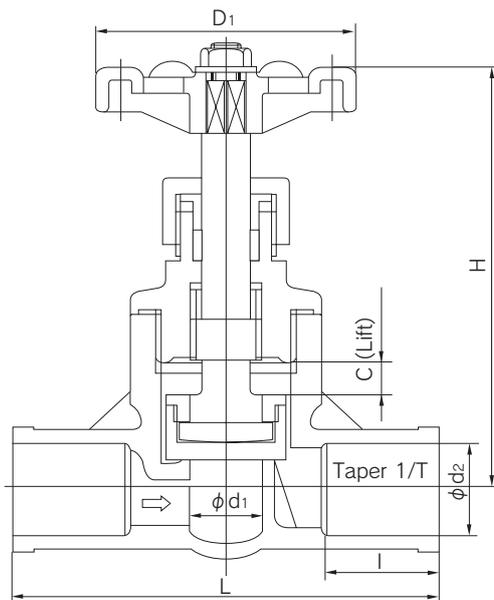
DIMENSIONS TABLE

JIS													Unit:mm	
Nominal Size	d	JIS 10K				L	t	Lift C	H		D <sub>1</sub>	Working Press. at R.T. MPa[kgf/cm <sup>2</sup> ][PSI]		
		D	C	n	h				Shut	Open		PVC	PP	
15	1/2	18	95	70	4	15	85	12	8	124	132	66	1.0{10.2}[150]	0.75{7.7}[110]
20	3/4	24	100	75	4	15	95	14	8	132	140	66	1.0{10.2}[150]	0.75{7.7}[110]
25	1	28	125	90	4	19	110	14	11	150	161	91	1.0{10.2}[150]	0.75{7.7}[110]
32	1 1/4	37	135	100	4	19	135	16	13	154	167	91	1.0{10.2}[150]	0.75{7.7}[110]
40	1 1/2	41	140	105	4	19	190	16	20	210	230	135	1.0{10.2}[150]	0.75{7.7}[110]
50	2	52	155	120	4	19	200	16	24	228	252	135	1.0{10.2}[150]	0.75{7.7}[110]
65	2 1/2	67	175	140	4	19	220	18	35	310	345	185	0.75{7.7}[110]	0.75{7.7}[110]
80	3	78	185	150	8	19	240	18	35	324	359	185	0.75{7.7}[110]	0.75{7.7}[110]
100	4	100	210	175	8	19	290	18	40	379	419	185	0.75{7.7}[110]	0.75{7.7}[110]

DIN													Unit:mm	
Nominal Size	d	DIN PN10				L	t	Lift C	H		D <sub>1</sub>	Working Press. at R.T. MPa[kgf/cm <sup>2</sup> ][PSI]		
		D	C	n	h				Shut	Open		PVC	PP	
15	1/2	18	95	65	4	14	85	12	8	124	132	66	1.0{10.2}[150]	0.75{7.7}[110]
20	3/4	24	105	75	4	14	95	14	8	132	140	66	1.0{10.2}[150]	0.75{7.7}[110]
25	1	28	115	85	4	14	110	14	11	150	161	91	1.0{10.2}[150]	0.75{7.7}[110]
32	1 1/4	37	140	100	4	18	135	16	13	154	167	91	1.0{10.2}[150]	—
40	1 1/2	41	150	110	4	18	190	16	20	210	230	135	1.0{10.2}[150]	0.75{7.7}[110]
50	2	52	165	125	4	18	200	16	24	228	252	135	1.0{10.2}[150]	0.75{7.7}[110]
65	2 1/2	67	185	145	4	18	220	18	35	310	345	185	0.75{7.7}[110]	0.75{7.7}[110]
80	3	78	200	160	8	18	240	18	35	324	359	185	0.75{7.7}[110]	0.75{7.7}[110]
100	4	100	220	180	8	18	290	18	40	379	419	185	0.75{7.7}[110]	0.75{7.7}[110]

ANSI													Unit:inch	
Nominal Size	d	ANSI CLASS 150				L	t	Lift C	H		D <sub>1</sub>	Working Press. at R.T. MPa[kgf/cm <sup>2</sup> ][PSI]		
		D	C	n	h				Shut	Open		PVC	PP	
1/2	15	0.71	3.50	2.38	4	0.63	3.35	0.47	0.32	4.88	5.20	2.60	1.0{10.2}[150]	0.75{7.7}[110]
3/4	20	0.94	3.86	2.76	4	0.63	3.74	0.55	0.32	5.20	5.51	2.60	1.0{10.2}[150]	0.75{7.7}[110]
1	25	1.10	4.25	3.13	4	0.63	4.33	0.55	0.43	5.91	6.34	3.58	1.0{10.2}[150]	0.75{7.7}[110]
1 1/4	32	1.46	4.61	3.50	4	0.63	5.31	0.63	0.51	6.06	6.57	3.58	1.0{10.2}[150]	—
1 1/2	40	1.61	5.00	3.88	4	0.63	7.48	0.63	0.79	8.27	9.06	5.31	1.0{10.2}[150]	0.75{7.7}[110]
2	50	2.05	5.98	4.74	4	0.75	7.87	0.63	0.95	8.98	9.92	5.31	1.0{10.2}[150]	0.75{7.7}[110]
2 1/2	65	2.64	7.01	5.49	4	0.75	8.66	0.71	1.38	12.20	13.58	7.28	0.75{7.7}[110]	0.75{7.7}[110]
3	80	3.07	7.52	6.00	4	0.75	9.45	0.71	1.38	12.75	14.13	7.28	0.75{7.7}[110]	0.75{7.7}[110]
4	100	3.94	9.02	7.50	8	0.75	11.42	0.71	1.57	14.92	16.50	7.28	0.75{7.7}[110]	0.75{7.7}[110]

● SOCKET END



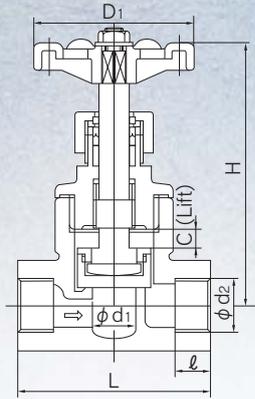
DIMENSIONS TABLE

JIS											Unit:mm	
Nominal Size	d <sub>2</sub>	d <sub>1</sub>	l	L	Taper 1/T	Lift C	H		Working Press. at R.T. MPa[kgf/cm <sup>2</sup> ][PSI]			
							Shut	Open	PVC	PP		
15	1/2	22.4 ± 0.2	15	30	110	1/34	8	124	132	1.0{10.2}[150]	0.75{7.7}[110]	
20	3/4	26.45 ± 0.2	18	35	130	1/34	8	132	140	1.0{10.2}[150]	0.75{7.7}[110]	
25	1	32.55 ± 0.25	25	40	150	1/34	11	150	161	1.0{10.2}[150]	0.75{7.7}[110]	

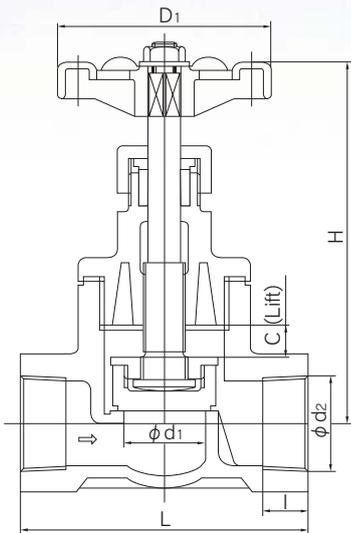
DIN											Unit:mm	
Nominal Size	d <sub>2</sub>	d <sub>1</sub>	l	L	Lift C	H		Working Press. at R.T. MPa[kgf/cm <sup>2</sup> ][PSI]				
						Shut	Open	PVC	PP			
15	1/2	20	15	16	82	8	124	132	1.0{10.2}[150]	0.75{7.7}[110]		
20	3/4	25	18	19	98	8	132	140	1.0{10.2}[150]	0.75{7.7}[110]		
25	1	32	25	22	114	11	150	161	1.0{10.2}[150]	0.75{7.7}[110]		

ANSI											Unit:inch	
Nominal Size	d <sub>2</sub>	d <sub>1</sub>	l	L	Taper 1/T	Lift C	H		Working Press. at R.T. MPa[kgf/cm <sup>2</sup> ][PSI]			
							Shut	Open	PVC	PP		
15	1/2	0.848	0.59	1.18	4.33	1/34	0.32	4.88	5.20	1.0{10.2}[150]	0.75{7.7}[110]	
20	3/4	1.058	0.71	1.38	5.12	1/34	0.32	5.20	5.51	1.0{10.2}[150]	0.75{7.7}[110]	
25	1	1.325	0.98	1.58	5.91	1/34	0.43	5.91	6.34	1.0{10.2}[150]	0.75{7.7}[110]	

● 15mm (1/2inch) – 30mm (1 1/4inch)



● 40mm (1 1/2inch) – 50mm (2inch)



**DIMENSIONS TABLE (Threaded End)**

JIS										Unit:mm	
Nominal Size		d <sub>2</sub>	d <sub>1</sub>	ℓ	L	Lift C	H		D <sub>1</sub>	Working Press. at R.T. MPa[kgf/cm <sup>2</sup> ][PSI]	
mm	inch						Shut	Open		PVC	PP
15	1/2	Rc 1/2	15	15	85	8	124	132	66	1.0{10.2}[150]	0.75{7.7}[110]
20	3/4	Rc 3/4	18	18	95	8	132	140	66	1.0{10.2}[150]	0.75{7.7}[110]
25	1	Rc 1	25	20	110	11	150	161	91	1.0{10.2}[150]	0.75{7.7}[110]
32	1 1/4	Rc 1 1/4	35	25	135	13	154	167	91	1.0{10.2}[150]	—
40	1 1/2	Rc 1 1/2	41	25	140	17	218	235	135	1.0{10.2}[150]	—
50	2	Rc 2	52	27	180	22	237	259	135	1.0{10.2}[150]	—

DIN										Unit:mm	
Nominal Size		d <sub>2</sub>	d <sub>1</sub>	ℓ	L	Lift C	H		D <sub>1</sub>	Working Press. at R.T. MPa[kgf/cm <sup>2</sup> ][PSI]	
mm	inch						Shut	Open		PVC	PP
15	1/2	Rp 1/2	15	15	85	8	124	132	66	1.0{10.2}[150]	0.75{7.7}[110]
20	3/4	Rp 3/4	18	18	95	8	132	140	66	1.0{10.2}[150]	0.75{7.7}[110]
25	1	Rp 1	25	20	110	11	150	161	91	1.0{10.2}[150]	0.75{7.7}[110]
32	1 1/4	Rp 1 1/4	35	25	135	13	154	167	91	1.0{10.2}[150]	—
40	1 1/2	Rp 1 1/2	41	25	140	17	218	235	135	1.0{10.2}[150]	—
50	2	Rp 2	52	27	180	22	237	259	135	1.0{10.2}[150]	—

ANSI										Unit:inch	
Nominal Size		d <sub>2</sub>	d <sub>1</sub>	ℓ	L	Lift C	H		D <sub>1</sub>	Working Press. at R.T. MPa[kgf/cm <sup>2</sup> ][PSI]	
inch	mm						Shut	Open		PVC	PP
1/2	15	NPT. 1/2	0.59	0.59	3.35	0.32	4.88	5.20	2.60	1.0{10.2}[150]	0.75{7.7}[110]
3/4	20	NPT. 3/4	0.71	0.71	3.74	0.43	5.20	5.51	2.60	1.0{10.2}[150]	0.75{7.7}[110]
1	25	NPT. 1	0.98	0.79	4.33	0.43	5.91	6.31	3.58	1.0{10.2}[150]	0.75{7.7}[110]
1 1/4	32	NPT. 1 1/4	1.38	0.98	5.32	0.51	6.06	6.58	3.58	1.0{10.2}[150]	—
1 1/2	40	NPT. 1 1/2	1.61	0.98	5.51	0.67	8.58	9.25	5.32	1.0{10.2}[150]	—
2	50	NPT. 2	2.05	1.06	7.09	0.87	9.33	10.20	5.32	1.0{10.2}[150]	—

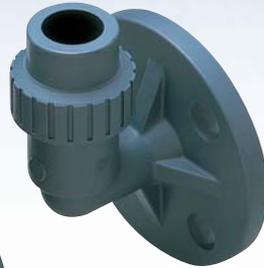
# GAUGE VALVE 20mm, 25mm (3/4inch, 1inch)

●20mm (3/4inch)



## Flanged Elbow

●25mm (1inch)



●25mm (1inch)



## FEATURES

### Backflow Prevention

- The contact surface is sealed with an anti-corrosive diaphragm.
- The gauge pipe can easily be installed by inserting the pipe and tightening the union nut.
- The GAUGE VALVE has a drain plug G<sup>1</sup>/<sub>4</sub> in diameter which helps to maintain the valve (Sampling is possible by removing the plug).

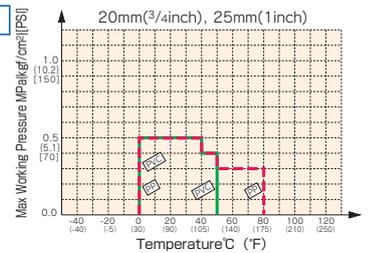
## SPECIFICATIONS

Unit:mm

Nominal Size	20mm (3/4inch)	25mm (1inch)
Gauge Pipe Outer Size	18	26
Body material	Unplasticized Polyvinyl Chloride(PVC), Polypropylene (PP)	
Nominal Size	20mm(3/4inch) - 25mm(1inch)	
Working Temperature	PVC:0°C - 50°C(30°F - 120°F), PP : -20°C - 80°C(-5°F - 175°F)	
Max. Working Pressure	0.5MPa{5.1kgf/cm <sup>2</sup> }[70PSI]	

## WORKING PRESSURE VS. TEMPERATURE

### GAUGE VALVE



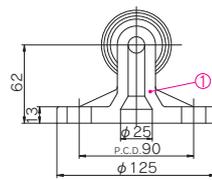
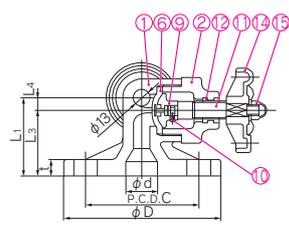
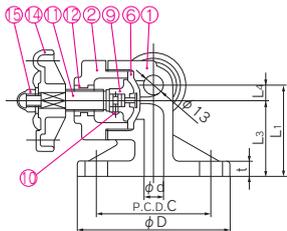
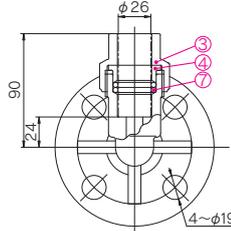
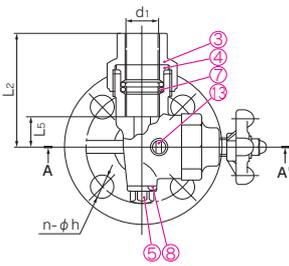
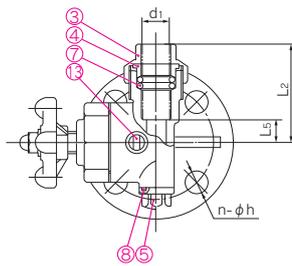
## DIMENSIONS

●20mm (3/4inch)

●25mm (1inch)

### Flanged Elbow

●25mm (1inch)



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC, PP
②	BONNET	1	PVC, PP
③	GLAND NUT	1	PVC, PP
④	GLAND	1	PVC, PP
⑤	DRAIN PLUG	1	PVC, PP
⑥	DIAPHRAGM	1	EPDM, PTFE, Others
⑦	O-RING (A)	2	EPDM, PTFE, Others
⑧	O-RING (B)	1	EPDM, PTFE, Others
⑨	COMPRESSOR	1	PVDF
⑩	COMPRESSOR PIN	2	STAINLESS STEEL304
⑪	STEM	1	COPPER ALLOY(C3604)
⑫	INSERTED METAL OF BONNET	1	COPPER ALLOY(C3604)
⑬	INDICATION OF MATERIAL	1	PAPER
⑭	HAND WHEEL	1	PP
⑮	NUT	1	STAINLESS STEEL304

## DIMENSIONS TABLE

JIS														Unit:mm
Nominal Size		d	JIS 10K				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	t	d <sub>1</sub>	
mm	inch		D	C	n	h								
20	3/4	13	100	75	4	15	60	64	50	10	15	10	18	
25	1	25	125	90	4	19	62	90	52	10	24	13	26	

DIN														Unit:mm
Nominal Size		d	DIN PN 10				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	t	d <sub>1</sub>	
mm	inch		D	C	n	h								
20	3/4	13	105	75	4	14	60	64	50	10	15	10	18	
25	1	25	115	85	4	14	62	90	52	10	24	13	26	

ANSI														Unit:inch
Nominal Size		d	ANSI CLASS 150				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	t	d <sub>1</sub>	
inch	mm		D	C	n	h								
3/4	20	0.51	3.88	2.75	4	0.62	2.36	2.52	1.97	0.39	0.59	0.39	0.71	
1	25	0.98	4.25	3.12	4	0.62	2.44	3.54	2.05	0.39	0.94	0.51	1.02	

# GATE VALVE

**Hand wheel Model**



**Cap(Square Nut)**



**Rising Stem**



**Threaded Body**



**Stem Extension**



## FEATURES

### High Corrosion and Impact-resistance

All wet sections are made of corrosion-resistant material, thus preventing corrosion and turbid water due to rust, The GATE VALVE, made of high impact polyvinyl chloride, can be used for water supply and drainage.

### Light and Rugged Structure

Being made of synthetic resin, the ASAHI AV GATE VALVE is about 1/5 the weight of a cast iron gate valve. However, the ASAHI AV GATE VALVE gives the same torque strength as a cast iron gate valve, so it endures high torque.

### Flexibility Covering Flow Variations

The gate valve is so flexible in covering many flow variations with tight shut-off.

### Easy Maintenance

The stem sealed with an O-ring, prevents external leaks and is easy to replace.

### NSF Product

NSF("NSF/ANSI STANDARD 61" Drinking Water System Components-Health Effects)Product.

:GATE VALVE TYPE P(Plug) (Material:PVC+EPDM,FKM)

\*Certified products bear an NSF Certification Mark.

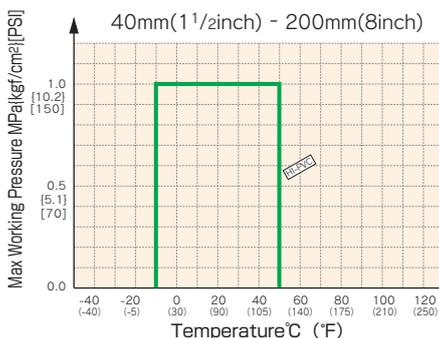
## SPECIFICATIONS

Body material	Valve:High Impact Polyvinyl Chloride(HI-PVC)
Gate material	TYPE-P :32mm(1 1/4inch) to 350mm(14inch) ...PP Soft seals:32mm(1 1/4inch) to 150mm(6inch) .....HI-PVC+SBR 65mm(2 1/2inch), 125mm(5inch) .....C-PVC+SBR
Nominal size	Popular series (Type P):40 to 350mm(1 1/2inch to 14inch) Resilient series(Type S):40 to 200mm(1 1/2inch to 8inch)
Working Temperature	- 10°C - 50°C (15° F - 120° F)
Max. Working Pressure	40mm(1 1/2inch) - 200mm(8inch) 1.0Mpa{10.2kgf/cm <sup>2</sup> } [150PSI] 250mm(10inch) 0.75Mpa{7.7kgf/cm <sup>2</sup> } [110PSI] 300mm(12inch), 350mm(14inch) 0.5Mpa{5.1kgf/cm <sup>2</sup> } [70PSI]
End Connectors	Flanged End Threaded Type(40mm,50mm)are available.
Mechanism	Round Handle, Cap (Square Nut), Stem Extension

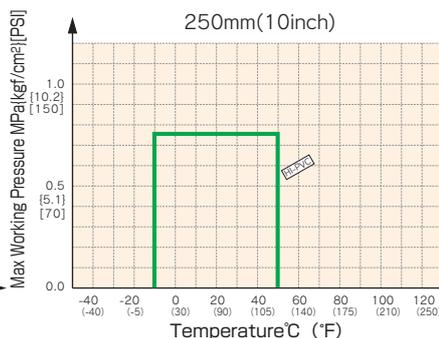
## WORKING PRESSURE VS. TEMPERATURE

### GATE VALVE

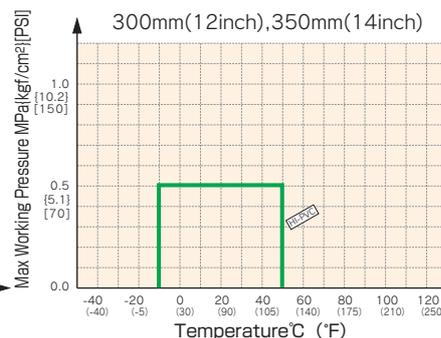
**Gate Valve TypeP, Type S**



**Gate Valve TypeP, Type S**



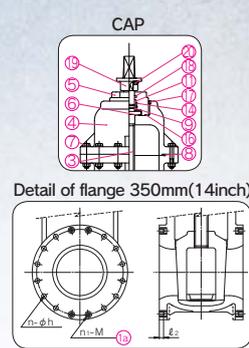
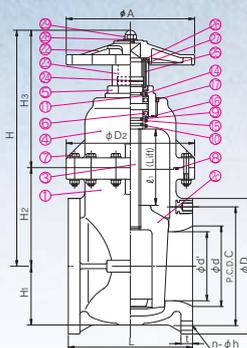
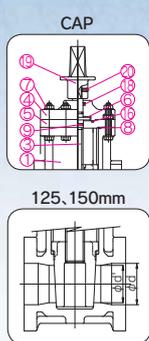
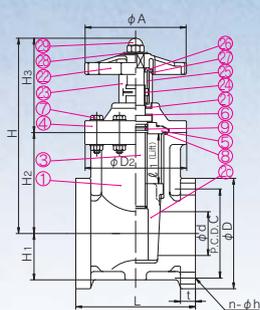
**Gate Valve TypeP, Type S**



# GATE VALVE TYPE-P(Plug) 40mm - 350mm(1 1/2 inch - 14 inch)

● 40mm (1 1/2 inch) – 150mm (6 inch)

● 200mm (8 inch) – 350mm (14 inch)



Gate valves 125mm or more in nominal size have a reduced flow channel.

## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	HI-PVC	⑨	O-RING(C)	2	EPDM, Others	⑳	INDICATING COVER	1	PC
①a	INSERTED METAL OF STEM	—	COPPER ALLOY(C3604)	⑩	BUSHING(A)	1	PP	㉑	INDICATING RING	1	PVC
②	GATE(A)	1	PP	⑪	BUSHING(B)	1	PP	㉒	GUIDE PIN	1	STAINLESS STEEL304
③	STEM	1	PVC	⑬	O-RING(E)	1	EPDM, Others	㉓	GUIDE PIN HOLDER	1	PVC
④	BONNET(A)	1	HI-PVC	⑮	O-RING(F)	1	EPDM, Others	㉔	O-RING(G)	1	EPDM
⑤	BONNET(B)	1	HI-PVC	⑯	O-RING(D)	1	EPDM, Others	㉕	WASHER	1	PVC
⑥	THRUST RING	1set	PP, SUJ2	⑰	SET SCREW(A)	1	STAINLESS STEEL304	㉖	BOX NUT	1	STAINLESS STEEL304
⑦	BOLT·NUT	—	STAINLESS STEEL304	⑱	PACKING	1	EPDM				
⑧	O-RING(B)	1	EPDM, Others	㉚	HAND WHEEL	1	PP				

## DIMENSIONS TABLE

Nominal Size		d	d'	FLANGE END JIS 10K								THREAD END								Unit:mm	
mm	inch			D	C	n	h	n <sub>1</sub>	M	L	t	d <sub>2</sub>	ℓ	L	D <sub>2</sub>	ℓ <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
32	1 1/4	40	30	135	100	4	19	—	—	165	22	Rc1 1/4	22	115	120	49	239	50	107	132	120
40	1 1/2	40	40	140	105	4	19	—	—	165	22	Rc1 1/2	25	115	120	49	239	50	107	132	120
50	2	50	50	155	120	4	19	—	—	180	23	Rc2	28	130	130	60	270	58	134	136	130
65	2 1/2	65	—	175	140	4	19	—	—	190	24	—	—	—	155	75	302	68	152	150	155
80	3	75	—	185	150	8	19	—	—	200	25	—	—	—	170	85	325	77	170	155	170
100	4	100	—	210	175	8	19	—	—	230	27	—	—	—	195	110	370	89	207	163	195
125	5	125	110	250	210	8	23	—	—	260	27	—	—	—	235	117	407	89	227	180	235
150	6	150	130	280	240	8	23	—	—	270	28	—	—	—	270	138	445	102	263	182	270
200	8	196	168	330	290	10	23	2	M20	290	28	—	—	—	310	180	577	143	240	337	310
250	10	247	210	400	355	12	25	—	—	380	30	—	—	—	360	226	690	175	270	420	360
300	12	298	255	445	400	14	25	2	M22	400	31	—	—	—	410	273	800	195	320	480	410
350	14	348	297	490	445	12	25	4	M22	430	32	—	—	—	440	319	910	230	310	600	455

Nominal Size		d	d'	d' <sub>2</sub>	FLANGE END DIN PN 10								THREAD END								Unit:mm	
mm	inch				D	C	n	h	n <sub>1</sub>	M	L	t	d <sub>2</sub>	ℓ	L	D <sub>2</sub>	ℓ <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
40	1 1/2	40	—	40	150	110	4	18	—	—	165	22	Rp1 1/2	25	115	120	49	239	50	107	132	120
50	2	50	—	50	165	125	4	18	—	—	180	23	Rp2	28	130	130	60	270	58	134	136	130
65	2 1/2	65	—	—	185	145	4	18	—	—	210	24	—	—	—	155	75	302	68	152	150	155
80	3	75	—	—	200	160	8	18	—	—	240	25	—	—	—	170	85	325	77	170	155	170
100	4	100	—	—	220	180	8	18	—	—	250	27	—	—	—	195	110	370	89	207	163	195
125	5	125	110	—	250	210	8	18	—	—	260	27	—	—	—	235	117	407	89	227	180	235
150	6	150	130	—	285	240	8	22	—	—	280	27	—	—	—	270	138	445	102	263	182	270
200	8	196	168	—	340	295	6	22	2	M20	300	28	—	—	—	310	180	577	143	240	337	310
250	10	247	210	—	395	350	12	22	—	—	380	30	—	—	—	360	226	690	175	270	420	360
300	12	298	255	—	445	400	10	22	2	—	400	31	—	—	—	410	273	800	195	320	480	410
350	14	348	297	—	505	460	12	22	4	—	430	32	—	—	—	440	319	910	230	310	600	455

Nominal Size		d	d'	FLANGE END ANSI Class 150								THREAD END								Unit:inch	
inch	mm			D	C	n	h	n <sub>1</sub>	M	L	t	d <sub>2</sub>	ℓ	L	D <sub>2</sub>	ℓ <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A
1 1/2	40	1.57	1.57	5.00	3.88	4	0.62	—	—	6.50	0.87	1 1/2-1 1/2NPT	0.98	4.53	4.72	1.93	9.41	2.48	4.21	5.20	4.72
2	50	1.97	1.97	6.00	4.75	4	0.75	—	—	7.00	0.91	2-1 1/2NPT	1.10	5.12	5.12	2.36	10.63	2.80	5.28	5.35	5.12
2 1/2	65	2.56	—	7.00	5.50	4	0.75	—	—	7.50	0.94	—	—	—	6.10	2.95	11.89	3.19	5.98	5.91	6.10
3	80	2.95	—	7.00	6.00	4	0.75	—	—	8.00	0.98	—	—	—	6.69	3.35	12.80	3.54	6.69	6.10	6.69
4	100	3.94	—	9.00	7.50	8	0.75	—	—	9.00	1.06	—	—	—	7.68	4.33	14.57	4.02	8.15	6.42	7.68
5	125	4.92	4.33	10.00	8.50	8	0.88	—	—	10.24	1.06	—	—	—	9.25	4.61	16.02	4.17	8.94	7.09	9.25
6	150	5.91	5.12	11.00	9.50	8	0.88	—	—	10.50	1.06	—	—	—	10.63	5.43	17.52	4.69	10.35	7.17	10.63
8	200	7.72	6.61	13.50	11.75	6	0.88	2	W 3/4	11.50	1.30	—	—	—	12.2	7.09	22.72	6.3	9.45	13.27	12.2
10	250	9.72	8.27	16.00	14.25	12	1.00	—	—	14.96	1.18	—	—	—	14.17	8.9	27.17	7.56	10.63	16.54	14.17
12	300	11.73	10.04	19.00	17.00	10	1.00	2	W 7/8	15.75	1.22	—	—	—	16.14	10.75	31.5	8.35	12.6	18.9	16.14
14	350	13.70	11.69	21.00	18.75	8	1.12	4	W1	16.93	1.26	—	—	—	17.32	12.56	35.83	9.72	12.21	23.62	17.91

# GATE VALVE TYPE-S (Soft Seal) 50mm - 200mm(2inch - 8inch)

## Hand Wheel

## FEATURES

### Reliable Watertightness

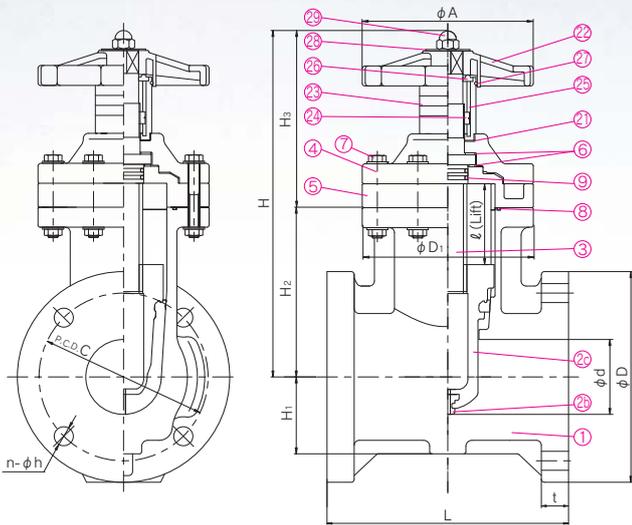
The rubber valve seat, a soft seal type, offers reliable shut-off.

### Provides Smooth Flow

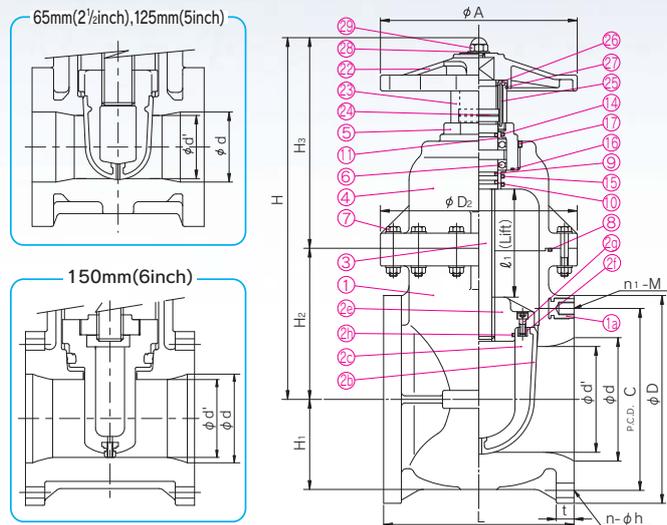
Being free of cavities, the valve body has no sand or foreign matter build up in it, thus providing a smooth flow.

※ Threaded End Type (40mm, 50mm) are available.

### ●50mm(2inch)~150mm(6inch) (STEM:PVC)



### ●200mm(8inch) (STEM:PVC)



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	HI-PVC	⑥	THRUST RING	2	PP,SUJ2	⑰	SET SCREW(A)	1	STAINLESS STEEL304
⑱	INSERTED METAL OF BODY	4	COPPER ALLOY(C3604)	⑦	BOLT·NUT	—	STAINLESS STEEL304	⑳	PACKING	1	EPDM
㉒	SEAT	1	SBR,NBR	㉑	O-RING(A)	1	EPDM, Others	㉒	HAND WHEEL	1	PP
㉓	GATE(A)	1	HI-PVC,C-PVC	⑧	O-RING(B)	1	EPDM, Others	㉓	INDICATING COVER	1	PC
㉔	GATE(B)	1	PP	⑨	O-RING(C)	2-3	EPDM, Others	㉔	INDICATING RING	1	PVC
㉕	INSERTED METAL OF GATE(A)	4	COPPER ALLOY(C3604)	⑭	O-RING(E)	1	EPDM, Others	㉕	GUIDE PIN	1	STAINLESS STEEL304
㉖	BOLT(A)	4	STAINLESS STEEL304	⑮	O-RING(F)	1	EPDM, Others	㉖	GUIDE PIN HOLDER	1	PVC
③	STEM	1	PVC	⑯	O-RING(D)	1	EPDM, Others	㉗	O-RING(G)	1	EPDM
④	BONNET(A)	1	HI-PVC	⑩	BUSH(A)	1	PP	㉘	WASHER	1	PVC
⑤	BONNET(B)	1	HI-PVC	⑪	BUSH(B)	1	PP	㉙	BOX NUT	1	STAINLESS STEEL304

## DIMENSIONS TABLE

JIS																	Unit:mm
Nominal Size		d	d <sub>1</sub>	JIS 10K					L	t	D <sub>1</sub>	A	ℓ	H	H <sub>1</sub>	H <sub>2</sub>	
mm	inch			D	C	n	h	n <sub>1</sub> -M									
50	2	50	—	155	120	4	19	—	180	23	130	130	52	293	58	134	
65	2½	65	—	175	140	4	19	—	210	24	155	155	67	302	68	152	
80	3	75	—	185	150	8	19	—	240	25	170	170	77	350	77	170	
100	4	100	—	210	175	8	19	—	250	27	195	195	102	410	89	207	
125	5	125	110	250	210	8	23	—	260	27	235	235	112	407	89	227	
150	6	150	130	280	240	8	23	—	280	28	270	270	132	487	117	263	
200	8	196	168	330	290	10	23	2-M20	290	28	310	310	175	577	143	240	

DIN																	Unit:mm
Nominal Size		d	d <sub>1</sub>	DIN PN10					L	t	D <sub>1</sub>	A	ℓ	H	H <sub>1</sub>	H <sub>2</sub>	
mm	inch			D	C	n	h	n <sub>1</sub> -M									
50	2	50	—	165	125	4	18	—	180	23	130	130	52	293	58	134	
65	2½	65	—	185	145	4	18	—	210	24	155	155	67	302	68	152	
80	3	75	—	200	160	8	18	—	240	25	170	170	77	350	77	170	
100	4	100	—	220	180	8	18	—	250	27	195	195	102	410	89	207	
125	5	125	110	250	210	8	18	—	260	27	235	235	112	407	89	227	
150	6	150	130	285	240	8	23	—	280	28	270	270	132	487	117	263	
200	8	196	168	340	295	6	23	2-M20	290	28	310	310	175	577	143	240	

ANSI																	Unit:inch
Nominal Size		d	d <sub>1</sub>	ANSI CLASS 150					L	t	D <sub>1</sub>	A	ℓ	H	H <sub>1</sub>	H <sub>2</sub>	
inch	mm			D	C	n	h	n <sub>1</sub> -M									
2	50	1.97	—	5.98	4.74	4	0.75	—	7.01	0.91	5.12	5.12	2.05	10.63	5.28	5.35	
2½	65	2.56	—	7.01	5.49	4	0.75	—	7.48	0.94	6.10	6.10	2.64	11.89	5.98	5.91	
3	80	2.95	—	7.52	6.00	4	0.75	—	7.99	0.98	6.69	6.69	3.03	12.79	6.69	6.10	
4	100	3.94	—	9.02	7.50	8	0.75	—	9.02	1.06	7.68	7.68	4.02	14.57	8.15	6.42	
5	125	4.92	4.33	10.00	8.50	8	0.87	—	10.24	1.06	9.25	9.25	4.41	16.03	8.94	7.09	
6	150	5.91	5.12	10.98	9.51	8	0.87	—	10.51	1.06	10.63	10.63	5.20	17.52	10.35	7.17	
8	200	7.72	6.61	13.50	11.75	6	0.87	2-W¾	11.50	1.10	12.20	12.20	6.89	22.72	9.45	13.27	

# GATE VALVE TYPE-S (Soft Seal) 50mm - 200mm(2inch - 8inch)

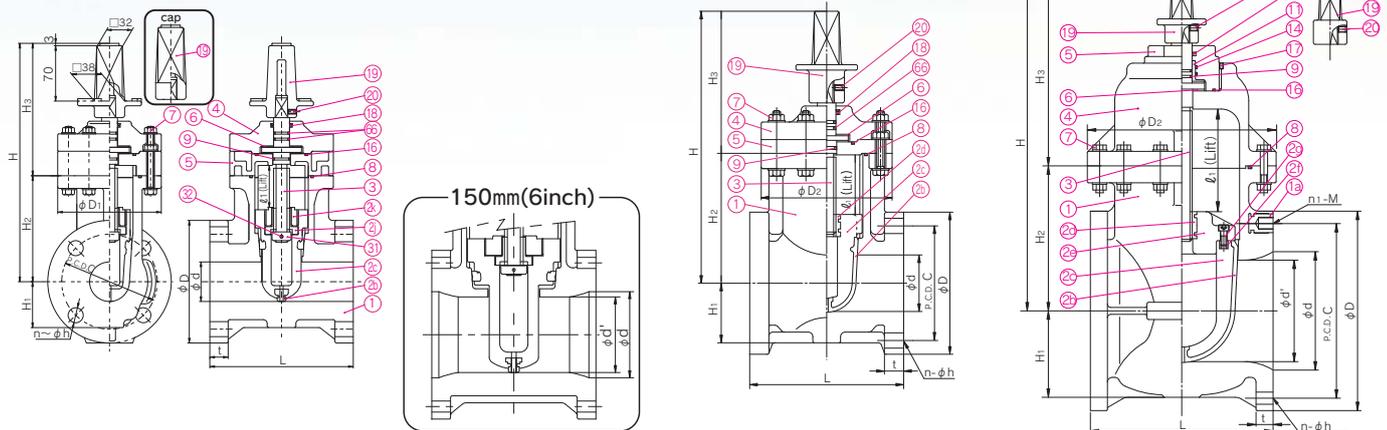
## Cap(square Nut) Model

## FEATURES

- Built-in Stopper**  
Feeling in the shut, position.
- Reliable Watertightness**  
The rubber valve seat, a soft seal type, offers reliable shut-off.
- Provides Smooth Flow**  
Being free of cavities, the valve body has no sand or foreign matter build up in it, thus providing a smooth flow.  
※ Threaded End Type (40mm, 50mm)are available.

● 32mm(1<sup>1</sup>/<sub>4</sub>inch) – 150mm(6inch)  
(basides 65mm(2<sup>1</sup>/<sub>2</sub>inch), 125mm(5inch))

● 65mm(2<sup>1</sup>/<sub>2</sub>inch), 125mm(5inch) ● 200mm(8inch)



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	HI-PVC	⑭	FEMALE SCREW HOLDER	1	HI-PVC	⑩	O-RING(D)	1	EPDM, Others
①a	INSERTED METAL OF BODY	4	COPPER ALLOY(C3604)	⑮	STEM	1	SUS304, Others	⑪	BUSH(A)	1	PP
②b	SEAT	1	SBR, NBR	⑯	BONNET(A)	1	HI-PVC	⑫	BUSH(B)	1	PP
②c	GATE(A)	1	C-PVC	⑰	BONNET(B)	1	HI-PVC	⑬	SET SCREW(A)	1	STAINLESS STEEL304
②d	INSERTED METAL OF GATE(A)	1	BC6	⑱	THRUST RING	2	PP	⑭	DUST SEAL	1	EPDM
②e	GATE(B)	1	PP	⑲	BOLT · NUT	—	STAINLESS STEEL304	⑮	CAP(A)	1	FCD450, FC200(65,125,200mm)
②f	INSERTED METAL OF GATE(B)	4	COPPER ALLOY(C3604)	⑳	O-RING(B)	1	EPDM, Others	⑯	SET SCREW(B)	1	STAINLESS STEEL304
②g	BOLT(A)	4	STAINLESS STEEL304	㉑	O-RING(C)	1·2	EPDM, Others	⑰	O-RING(H)	2	EPDM
②h	FEMALE SCREW METAL	1	COPPER ALLOY(C3604)	㉒	O-RING(E)	2	EPDM, Others				

## DIMENSIONS TABLE

Nominal Size		d	d <sub>1</sub>	JIS 10K					L	t	D <sub>1</sub>	A	ℓ	H	H <sub>1</sub>	H <sub>2</sub>
mm	inch			D	C	n	h	n <sub>1</sub> -M								
50	2	50	—	155	120	4	19	—	180	23	130	130	52	293	58	134
65	2 <sup>1</sup> / <sub>2</sub>	65	—	175	140	4	19	—	210	24	155	155	67	302	68	152
80	3	75	—	185	150	8	19	—	240	25	170	170	77	350	77	170
100	4	100	—	210	175	8	19	—	250	27	195	195	102	410	89	207
125	5	125	110	250	210	8	23	—	260	27	235	235	112	407	89	227
150	6	150	130	280	240	8	23	—	280	28	270	270	132	487	117	263
200	8	196	168	330	290	10	23	2-M20	290	28	310	310	175	577	143	240

Nominal Size		d	d <sub>1</sub>	DIN PN10					L	t	D <sub>1</sub>	A	ℓ	H	H <sub>1</sub>	H <sub>2</sub>
mm	inch			D	C	n	h	n <sub>1</sub> -M								
50	2	50	—	165	125	4	18	—	180	23	130	130	52	293	58	134
65	2 <sup>1</sup> / <sub>2</sub>	65	—	185	145	4	18	—	210	24	155	155	67	302	68	152
80	3	75	—	200	160	8	18	—	240	25	170	170	77	350	77	170
100	4	100	—	220	180	8	18	—	250	27	195	195	102	410	89	207
125	5	125	110	250	210	8	18	—	260	27	235	235	112	407	89	227
150	6	150	130	285	240	8	23	—	280	28	270	270	132	487	117	263
200	8	196	168	340	295	6	23	2-M20	290	28	310	310	175	577	143	240

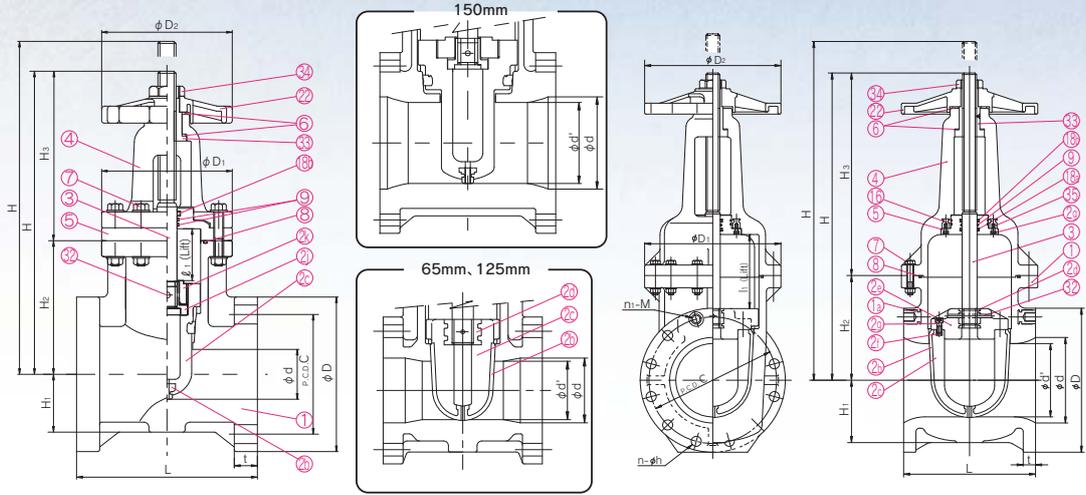
Nominal Size		d	d <sub>1</sub>	ANSI CLASS 150					L	t	D <sub>1</sub>	A	ℓ	H	H <sub>1</sub>	H <sub>2</sub>
inch	mm			D	C	n	h	n <sub>1</sub> -M								
2	50	1.97	—	5.98	4.74	4	0.75	—	7.01	0.91	5.12	5.12	2.05	10.63	5.28	5.35
2 <sup>1</sup> / <sub>2</sub>	65	2.56	—	7.01	5.49	4	0.75	—	7.48	0.94	6.10	6.10	2.64	11.89	5.98	5.91
3	80	2.95	—	7.52	6.00	4	0.75	—	7.99	0.98	6.69	6.69	3.03	12.79	6.69	6.10
4	100	3.94	—	9.02	7.50	8	0.75	—	9.02	1.06	7.68	7.68	4.02	14.57	8.15	6.42
5	125	4.92	4.33	10.00	8.50	8	0.87	—	10.24	1.06	9.25	9.25	4.41	16.03	8.94	7.09
6	150	5.91	5.12	10.98	9.51	8	0.87	—	10.51	1.06	10.63	10.63	5.20	17.52	10.35	7.17
8	200	7.72	6.61	13.50	11.75	6	0.87	2-W <sup>3</sup> / <sub>4</sub>	11.50	1.10	12.20	12.20	6.89	22.72	9.45	13.27

# GATE VALVE (Rising Stem) 40mm - 200mm(1½ inch - 8inch)

## FEATURES

·Externally threaded stem and straight flow channel prevent foreign matter deposits and restrictions through.

- 40mm(1½inch) – 150mm(6inch)
- 65mm(2½inch), 125mm(5inch)
- 200mm(8inch)



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	HI-PVC	⑭	FEMALE SCREW HOLDER	1	HI-PVC, PVC	⑳	DUST SEAL(A)	1	EPDM, Others
⑫	INSERTED METAL OF BODY	4	COPPER ALLOY(C3604)	⑮	STEM	1	STAINLESS STEEL304	㉑	DUST SEAL(B)	1	NBR
⑬	SEAT	1	SBR, NBR	⑯	BONNET(A)	1	HI-PVC	㉒	HAND WHEEL	1	PP
⑰	GATE(A)	1	HI-PVC, C-PVC	⑳	BONNET(B)	1	HI-PVC, PP	㉓	PIN(A)	1	STAINLESS STEEL304
⑱	INSERTED METAL OF GATE(A)	1	BC6	㉁	THRUST RING	2	PP	㉔	SLEEVE	1	COPPER ALLOY(C3604), BC6
㉂	GATE(B)	1	HI-PVC	㉂	BOLT·NUT	—	STAINLESS STEEL304	㉕	NUT	1	COPPER ALLOY(C3604), BC6
㉃	INSERTED METAL OF GATE(B)	4	COPPER ALLOY(C3604)	㉃	O-RING(B)	1	EPDM, Others	㉖	INSERTED METAL OF BONNET	4	COPPER ALLOY(C3604)
㉄	BOLT(A)	4	STAINLESS STEEL304	㉄	O-RING(C)	2·1	EPDM, Others				
㉅	FEMALE SCREW METAL	1	COPPER ALLOY(C3604)	㉅	O-RING(D)	2	EPDM, Others				

## DIMENSIONS TABLE

Nominal Size		d	d <sub>1</sub>	JIS 10K					L	t	D <sub>1</sub>	D <sub>2</sub>	ℓ	H	H <sub>1</sub>	H <sub>2</sub>
mm	inch			D	C	n	h	n <sub>1</sub> -M								
40	1½	40	—	140	105	4	19	—	165	22	120	120	42	295	107	253
50	2	50	—	155	120	4	19	—	180	23	130	130	52	343	134	291
65	2½	65	—	175	140	4	19	—	190	24	155	155	67	407	152	340
80	3	75	—	185	150	8	19	—	200	25	170	170	77	450	170	373
100	4	100	—	210	175	8	19	—	230	27	195	195	102	564	207	462
125	5	125	110	250	210	8	23	—	260	27	235	235	112	593	227	481
150	6	150	130	280	240	8	23	—	270	28	270	270	132	690	263	558
200	8	196	168	330	290	10	23	2-M20	290	28	310	310	175	877	240	702

Nominal Size		d	d <sub>1</sub>	DIN PN10					L	t	D <sub>1</sub>	D <sub>2</sub>	ℓ	H	H <sub>1</sub>	H <sub>2</sub>
mm	inch			D	C	n	h	n <sub>1</sub> -M								
40	1½	40	—	150	110	4	18	—	165	22	120	120	42	295	107	253
50	2	50	—	165	125	4	18	—	180	23	130	130	52	343	134	291
65	2½	65	—	185	145	4	18	—	190	24	155	155	67	407	152	340
80	3	75	—	200	160	8	18	—	200	25	170	170	77	450	170	373
100	4	100	—	200	180	8	18	—	230	27	195	195	102	564	207	462
125	5	125	110	250	210	8	18	—	260	27	235	235	112	593	227	481
150	6	150	130	285	240	8	23	—	270	28	270	270	132	690	263	558
200	8	196	168	340	295	6	23	2-M20	290	28	310	310	175	877	240	702

Nominal Size		d	d <sub>1</sub>	ANSI Class 150					L	t	D <sub>1</sub>	D <sub>2</sub>	ℓ	H	H <sub>1</sub>	H <sub>2</sub>
inch	mm			D	C	n	h	n <sub>1</sub> -M								
1½	40	1.57	—	5.00	3.88	4	0.63	—	6.50	0.87	4.72	4.72	1.65	11.61	4.21	9.96
2	50	1.97	—	5.98	4.47	4	0.75	—	7.01	0.91	5.12	5.12	2.05	13.50	5.28	11.46
2½	65	2.56	—	7.01	5.49	4	0.75	—	7.48	0.94	6.10	6.10	2.64	16.02	5.98	13.39
3	80	2.95	—	7.52	6.00	4	0.75	—	7.99	0.98	6.69	6.69	3.03	17.72	6.69	14.69
4	100	3.94	—	9.02	7.50	8	0.75	—	9.02	1.06	7.68	7.68	4.02	22.20	8.15	18.19
5	125	4.92	4.33	10.00	8.50	8	0.87	—	10.24	1.06	9.25	9.25	4.41	23.35	8.94	18.94
6	150	5.91	5.12	10.98	9.51	8	0.87	—	10.51	1.06	10.63	10.63	5.20	27.17	10.35	21.97
8	200	7.72	6.61	13.50	11.75	6	0.87	2-W <sup>3</sup> / <sub>4</sub>	11.50	1.10	12.20	12.20	6.89	34.53	9.45	27.64

# AUTOMATIC WATER FEEDING VALVE 50mm, 80mm(2inch, 3inch)

## Eliminating human intervention

The AV AUTOMATIC WATER FEEDING VALVE is designed as follows. Its sensor compares the water level with upper and lower water level limits for rice plant growth which are set on the sensor. Based on the results of the comparison, the sensor controls the AUTOMATIC WATER FEEDING VALVE as required through a tube connected with the body to automatically feed or stop water.



## FEATURES

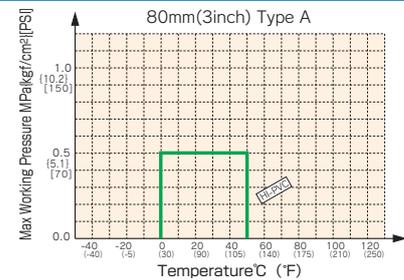
- The AUTOMATIC WATER FEEDING VALVE saves irrigation water, thus relieving water shortage.
- The valve properly controls water supply and reduces labor. This in turn means that working hours are shortened.
- The valve can manually be operated to water fields, orchards, etc.
- The valve can be used in various of applications, such as intermittent irrigation, cold-weather damage prevention, and so on.
- The valve operates on water pressure from a pipeline without electric power.
- The valve prevents a fertilizer and agricultural chemical agent from flowing out of fields, thus inhibiting pollution of lakes and ponds.

## SPECIFICATIONS

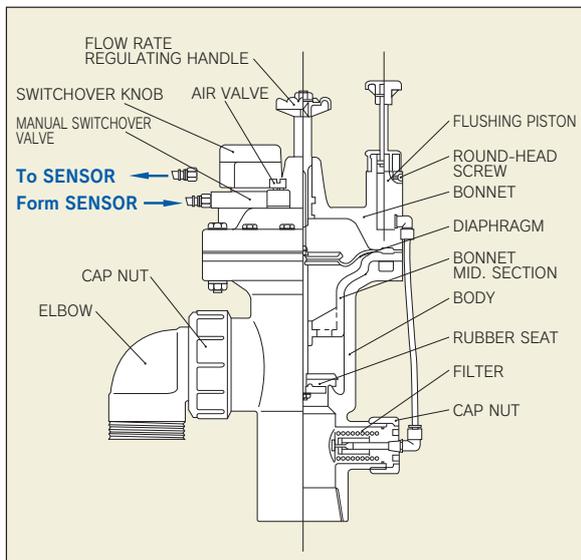
Body material	Valve body: High impact Polyvinyl Chloride(HI-PVC)		
Nominal Size	50mm(2inch)	80mm(3inch)	
Operating Pressure	0.02 - 0.75MPa {0.2 - 7.7kgf/cm <sup>2</sup> }	Type A	0.015 - 0.5MPa{0.15 - 5.1kgf/cm <sup>2</sup> }
		Type B	0.03 - 0.75MPa{0.3 - 7.7kgf/cm <sup>2</sup> }
Max. Working Pressure	1.0MPa {10.2kgf/cm <sup>2</sup> }	Type A	0.5MPa{5.1kgf/cm <sup>2</sup> }
		Type B	1.0MPa{10.2kgf/cm <sup>2</sup> }
Water Level Adjustment	-6cm - 12cm		
End Connectors	Threaded End, Socket End Flanged End(conforming to City Water Standards and JIS)		

## WORKING PRESSURE VS. TEMPERATURE

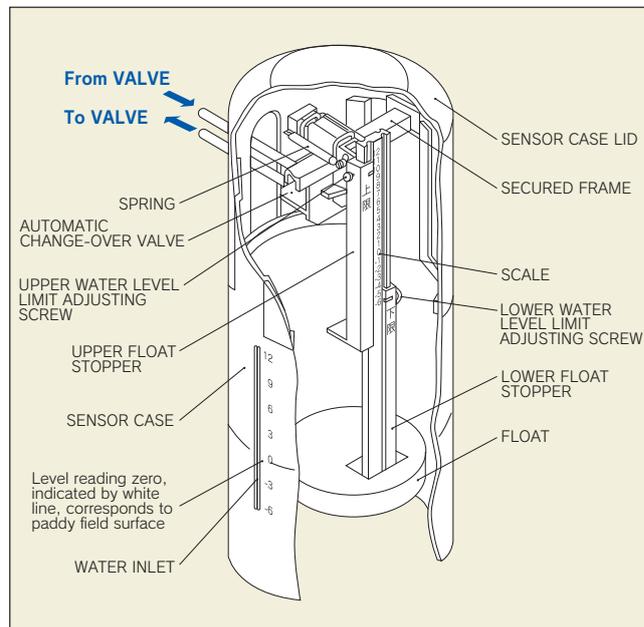
### AUTOMATIC WATER FEEDING VALVE



### Valve body



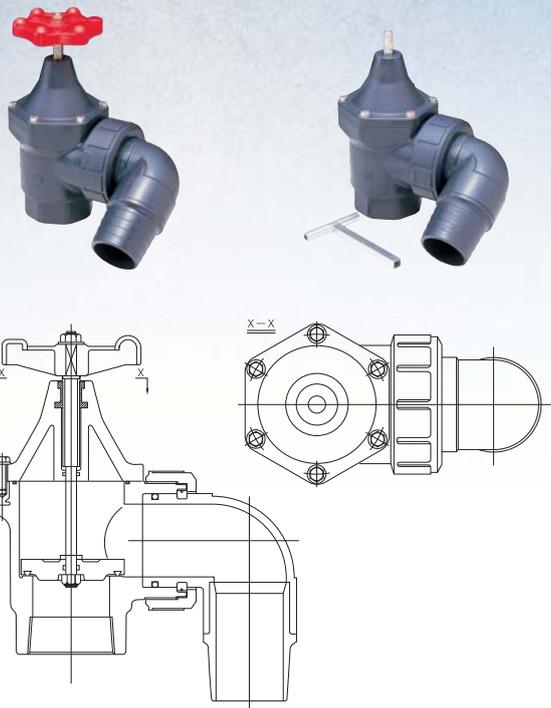
### Sensor



Note : The connection of the AUTOMATIC WATER FEEDING VALVE comes in three types: Threaded End, Socket End, Flanged End (City Water and JIS standards).

# ROTARY ANGLE VALVE 50mm, 80mm(2inch, 3inch)

Secured handle type T-shaped handle type



●80mm(3inch)ROTARY ANGLE VALVE (Threaded End)

## FEATURES

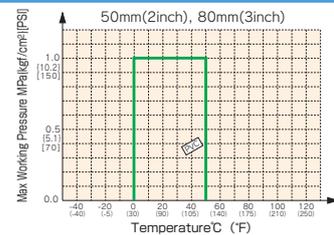
- The ASAHI ROTARY ANGLE VALVE is more compact than conventional angle valves.
- Because the ROTARY ANGLE VALVE uses a Machino, elbow, or hose socket type receptacle, it can be installed in a small valve box. Only by replacing its attachment, the valve can easily be switched between paddy field and field types.

## SPECIFICATIONS

Body material	PVC
Nominal size	50mm(2inch)、80mm(3inch)
Max. Working Pressure	0.75MPa{7.7kgf/cm <sup>2</sup> }
Attachment Angle	90° (45° ·straight)
Type of Attachment	Machino:40,50,65,80mm(standard) Paddy fields:50,80mm(special elbow) Fields:50,80mm(hose joint)
End Connectors	Socket End, Flanged End, Threaded End
Operation	T-shaped handle, Secured handle

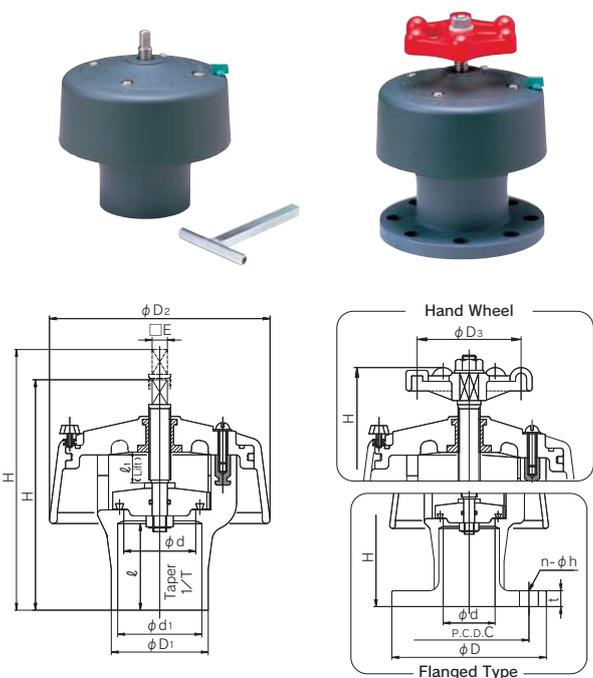
## WORKING PRESSURE VS. TEMPERATURE

ROTARY ANGLE VALVE



# ALFALFA VALVE TYPE 82 50mm - 100mm(2inch - 4inch)

T-shaped handle type Secured handle type



## FEATURES

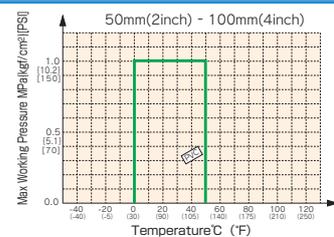
- Taking every effort to obtain satisfactory appearance, watertightness and strength, we have innovatively designed ALFALFA VALVE TYPE 82 to prevent water scattering and damage to surrounding rice plants.
- TYPE 82 can easily be disassembled at a site because it consists of a reduced number of parts. If foreign material clogs the valve, it can easily be eliminated only by closing the valve, loosening the thumbscrew and removing the cover (the pump does not need to be stopped).

## SPECIFICATIONS

Body material	PVC
Nominal size	50mm(2inch)、80mm(3inch)、100mm(4inch)
Max. Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> }
End Connectors	Socket End, Flanged End
Operation	T-shaped handle, Secured handle

## WORKING PRESSURE VS. TEMPERATURE

ALFALFA VALVE



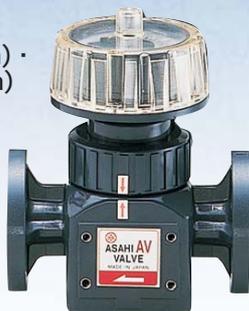
## DIMENSIONS TABLE

Nominal Size	d		Flanged Type				Socket Type				H				H(full opened)								
			JIS 10K				t	d <sub>1</sub>	1/T	ℓ	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	E	ℓ <sub>1</sub>	Socket End		Flanged End					
			D	C	n	h										T-shaped handle	Secured handle	T-shaped handle	Secured handle				
			mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
50	2	52	155	120	4	19	16	60.80	1/37	63	70	160	75	11	25	162	163	178	179	187	188	203	204
80	3	78	185	150	8	19	18	89.80	1/43	72	101	190	110	11	35	196	209	214	227	231	244	249	262
100	4	100	210	175	8	19	18	115.00	1/44	92	129	220	110	11	45	246	261	264	279	291	306	309	324

# CONSTANT FLOW VALVE 15mm - 100mm(1/2inch - 4inch)

AV CONSTANT FLOW VALVE keeps the flow rate constant.

- 15mm(1/2inch) · 20mm(3/4inch)



- 25mm(1inch) – 100mm(4inch)

## FEATURES

### High Accuracy

The CONSTANT FLOW VALVE accurately controls the flow rate to within ±6% of the full scale value and offers high rangeability (set value for maximum flow rate/set value for minimum flow rate).

### Flexible Flow Rate

Using the handle, the flow rate setting on the valve can be changed at will. The CONSTANT FLOW VALVE can also be used as shut off valve because it completely shuts off the flow.

### Opening Degree Indicator

The CONSTANT FLOW VALVE has indicator showing opening degree which reads the flow rate (m<sup>3</sup>/hour).

### High Durability and Resistance to Chemicals

The CONSTANT FLOW VALVE uses a spring made of Stainless Steel coated with PCTFE (Polychloro-frifluoro-ethylene). The spring is highly durable and chemical-resistant, it has high cycle life.

## APPLICATION

- Ultra-pure water lines at semiconductor factories
- Chemical injection lines at chemical plants
- Lines supplying water to swimming pools
- Seawater supply lines for fish cultivation
- Cooling tower and scrubber blow water supply lines
- Anti-foaming equipment

## SPECIFICATIONS

Body material	Unplasticized Polyvinyl Chloride (PVC) ※We also produce C-PVC CONSTANT FLOW VALVE 25(1inch) and 50(2inch)mm in nominal size on request.
Nominal Size	15mm(1/2inch), 20mm(3/4inch), 25mm(1inch), 50mm(2inch), 80mm(3inch), 100mm(4inch)
End Connectors	Flanged End
Working Temperature	0°C - 50°C (30°F - 120°F)
Upstream Working Pressure range	0.25MPa or less {2.6kgf/cm <sup>2</sup> } · 0.25 to 0.5 MPa {2.6 - 5.1kgf/cm <sup>2</sup> } 0.5 to 0.75MPa {5.1 - 7.7kgf/cm <sup>2</sup> } · 0.75 to 1.0 MPa {7.7 - 10.2kgf/cm <sup>2</sup> }
Accuracy	Full scale value ±6%(reference: water at ambient temperature)

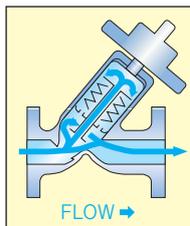
## WORKING PRESSURE VS. TEMPERATURE

Unit: MPa{kgf/cm<sup>2</sup>}

Nominal Size	Temp. °C (°F)		0~50 (30~120)			
	Type	Type	A	B	C	D
15	mm	inch	—	0.25{2.7} - 0.5{5.1}	0.5{5.1} - 0.75{7.7}	—
20	mm	inch	—	0.25{2.7} - 0.5{5.1}	0.5{5.1} - 0.75{7.7}	—
25	mm	inch	0.25{2.7} Under	0.25{2.7} - 0.5{5.1}	0.5{5.1} - 0.75{7.7}	—
50	mm	inch	0.25{2.7} Under	0.25{2.7} - 0.5{5.1}	0.5{5.1} - 0.75{7.7}	—
80	mm	inch	0.25{2.7} Under	0.25{2.7} - 0.5{5.1}	0.5{5.1} - 0.75{7.7}	0.75{7.7} - 1.0{10.2}
100	mm	inch	—	—	0.5{5.1} - 0.75{7.7}	0.75{7.7} - 1.0{10.2}

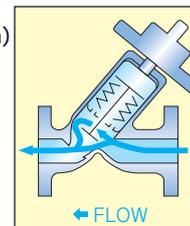
### Type-A 25mm(1inch) - 80mm(3inch)

- The fluid flow path is suitable for semi-conductor industry. (Ultra pure water line)



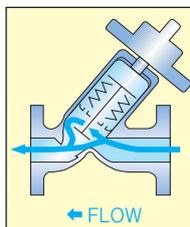
### Type-C 15mm(1/2inch) - 100mm(4inch)

- The range of working differential pressure is large (For lines with large pressure differential between upstream & downstream)



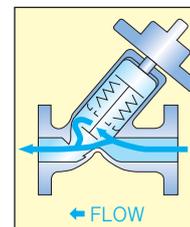
### Type-B 15mm(1/2inch) - 80mm(3inch)

- The flow rate setting range is large (Covers small and large flow rates)



### Type-D 80mm(3inch) - 100mm(4inch)

- A large flow rate can be set



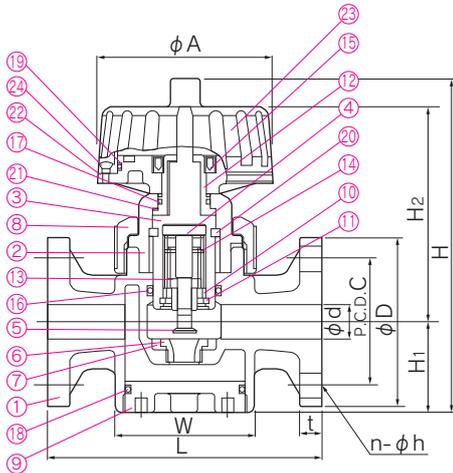
Range for preset flow rate and working differential pressure

Nominal Size	TYPE	Flow rate		Rangeability	Working differential pressure	
		GAL/min	m <sup>3</sup> /hr		PSI	MPa[kgf/cm <sup>2</sup> ]
15mm (1/2inch)	TYPE B	0.176 - 3.52	0.04 - 0.8	20 : 1	2.85 - 14.22	0.02-0.1 {0.2-1.0}
	TYPE C	0.35 - 3.52	0.08 - 0.8	10 : 1	4.27 - 28.45	0.03-0.2 {0.3-2.0}
20mm (3/4inch)	TYPE B	0.26 - 5.28	0.06 - 1.2	20 : 1	2.85 - 14.22	0.02-0.1 {0.2-1.0}
	TYPE C	0.53 - 5.28	0.12 - 1.2	10 : 1	4.27 - 28.45	0.03-0.2 {0.3-2.0}
25mm (1inch)	TYPE A	2.20 - 8.81	0.5 - 2.0	4 : 1	2.85 - 14.22	0.02-0.1 {0.2-1.0}
	TYPE B	0.441 - 8.81	0.1 - 2.0	20 : 1	2.85 - 14.22	0.02-0.1 {0.2-1.0}
	TYPE C	0.881 - 8.81	0.2 - 2.0	10 : 1	4.27 - 28.45	0.03-0.2 {0.3-2.0}
50mm (2inch)	TYPE A	8.81 - 35.22	2.0 - 8.0	4 : 1	2.85 - 14.22	0.02-0.1 {0.2-1.0}
	TYPE B	1.76 - 35.22	0.4 - 8.0	20 : 1	2.85 - 14.22	0.02-0.1 {0.2-1.0}
	TYPE C	3.52 - 35.22	0.8 - 8.0	10 : 1	4.27 - 28.45	0.03-0.2 {0.3-2.0}
80mm (3inch)	TYPE A	22.02 - 88.07	5.0 - 20.0	4 : 1	4.85 - 14.22	0.02-0.1 {0.2-1.0}
	TYPE B	4.403 - 88.07	1.0 - 20.0	20 : 1	2.85 - 14.22	0.02-0.1 {0.2-1.0}
	TYPE C	8.81 - 88.07	2.0 - 20.0	10 : 1	4.27 - 28.45	0.03-0.2 {0.3-2.0}
	TYPE D	66.04 - 132.1	15.0 - 30.0	2 : 1	4.27 - 21.33	0.03-0.15{0.3-1.5}
100mm (4inch)	TYPE C	44.03 - 264.2	10.0 - 60.0	6 : 1	4.27 - 28.45	0.03-0.2 {0.3-2.0}
	TYPE D	132.1 - 264.2	30.0 - 60.0	2 : 1	2.85 - 21.33	0.02-0.15{0.2-1.5}

[Notes to users as to selection of the type.]

The Possible preset range of the flow rate and the range of the working differential pressure differs from type to type among A, B, C and D. The right type, therefore, should be selected from the above table in accordance with the working conditions.

● 15mm(1/2inch) · 20mm(3/4inch)



PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC	⑬	SPRING(A)	1	STAINLESS STEEL304 (With PCTFE Coated)
②	BONNET	1	PVC	⑭	SPRING(B)	1	STAINLESS STEEL304 (With PCTFE Coated)
③	CYLINDER	1	PVC	⑮	NUT	1	PVC
④	PISTON	1	PVC	⑯	O-RING(A)	1	EPDM, Others
⑤	PLUG	1	PVC	⑰	O-RING(B)	1	EPDM, Others
⑥	ORIFICE	1	PVC	⑱	O-RING(C)	1	EPDM
⑦	SEAT	1	EPDM	⑲	O-RING(D)	1	EPDM
⑧	CAP NUT	1	PVC	⑳	KEY	2	PP
⑨	CAP	1	PVC	㉑	THRUST RING	1	PP
⑩	SPRING BASE	1	PVC	㉒	HANDLE BASE	1	PVC
⑪	STOP RING	1	PVDF	㉓	HANDLE COVER	1	PC
⑫	SLEEVE	1	COPPER ALLOY(C3604)	㉔	SCREW	4	STAINLESS STEEL304

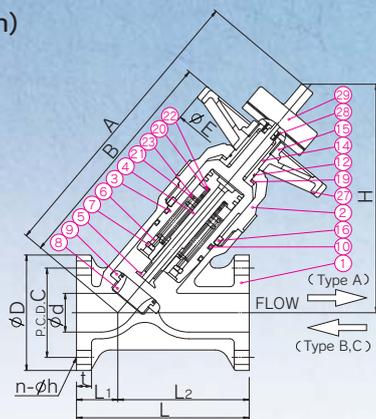
DIMENSIONS TABLE

JIS														Unit:mm
Nominal Size		d	JIS 10K				t	L	W	A	H <sub>1</sub>	H <sub>2</sub>	H	
mm	inch		D	C	n	h								
15	1/2	16	95	70	4	15	12	160	82×82	103	51	129	197	
20	3/4	20	100	75	4	15	13	160	82×82	103	53	127	197	

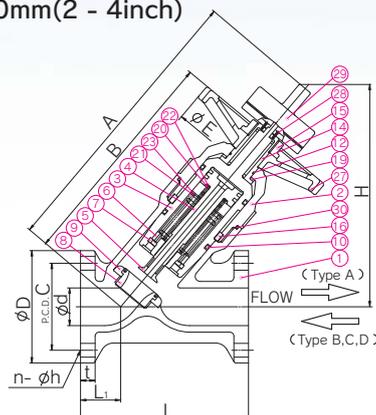
DIN														Unit:mm
Nominal Size		d	DIN PN10				t	L	W	A	H <sub>1</sub>	H <sub>2</sub>	H	
mm	inch		D	C	n	h								
15	1/2	16	95	65	4	14	12	160	82×82	103	51	129	197	
20	3/4	20	100	75	4	14	13	160	82×82	103	53	127	197	

ANSI														Unit:inch
Nominal Size		d	ANSI CLASS 150				t	L	W	A	H <sub>1</sub>	H <sub>2</sub>	H	
inch	mm		D	C	n	h								
1/2	15	0.63	3.50	2.38	4	0.63	0.47	6.30	3.23×3.23	4.06	2.01	5.08	7.76	
3/4	20	0.79	3.86	2.76	4	0.63	0.51	6.30	3.23×3.23	4.06	2.09	5.08	7.76	

● 25mm(1inch)



● 50mm - 100mm(2 - 4inch)



PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC	⑭	SLEEVE	1	COPPER ALLOY(C3604)
②	BONNET	1	PVC	⑮	CAP	1	PVC
③	CYLINDER	1	PVC	⑯	KEY	2	PVC
④	PISTON	1	PVC	⑰	THRUST RING	1	PP
⑤	PLUG	1	PVC	⑱	SPRING(A)	1	STAINLESS STEEL304 (With PCTFE Coated)
⑥	SPRING BASE	1	PVC	⑲	SPRING(B)	1	STAINLESS STEEL304 (With PCTFE Coated)
⑦	STOP RING	1	PVDF	⑳	WASHER(A)	1	PVC
⑧	ORIFICE	1	EPDM	㉑	WASHER(B)	1	PVC
⑨	SEAT	1	EPDM, Others	㉒	HAND WHEEL	1	PP
⑩	O-RING(A)	2	EPDM, Others	㉓	MACHINE SCREW	4	COPPER ALLOY(C3604)
⑪	O-RING(B)	1	EPDM	㉔	LIFT INDICATOR	1set	PVC
⑫	O-RING(C)	1	EPDM				

Note :  
The shape and appearance of assembly differ a little with nominal size compared to this drawing.  
25mm-100mm(FKM) can't shut totally.

DIMENSIONS TABLE

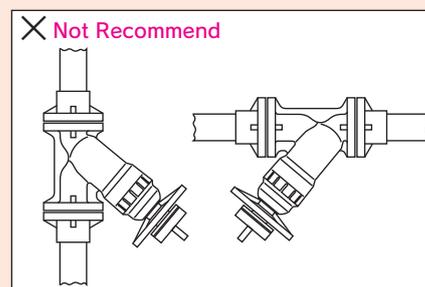
Nominal Size		d	JIS 10K				L	L <sub>1</sub>	E	t	A	B	H	Unit:mm
mm	inch		D	C	n	h								
25	1	25	125	90	4	19	160	40	150	14	272	201	218	
50	2	52	155	120	4	19	230	55	210	20	390	309	307	
80	3	78	185	150	8	19	280	70	210	22	484	387	377	
100	4	100	210	175	8	19	410	85	250	22	623	483	446	

Nominal Size		d	DIN PN10				L	L <sub>1</sub>	E	t	A	B	H	Unit:mm
mm	inch		D	C	n	h								
25	1	25	115	85	4	14	160	40	150	14	272	201	218	
50	2	52	165	125	4	18	230	55	210	20	390	309	307	
80	3	78	200	160	8	18	280	70	210	22	484	387	377	
100	4	100	220	180	8	18	400	85	250	22	623	483	446	

Nominal Size		d	ANSI CLASS 150				L	L <sub>1</sub>	E	t	A	B	H	Unit:inch
inch	mm		D	C	n	h								
1	25	0.98	4.25	3.13	4	0.63	6.30	1.58	5.91	0.55	10.71	7.91	8.58	
2	50	2.05	5.98	4.74	4	0.75	9.06	2.17	8.27	0.79	15.35	12.17	12.09	
3	80	3.07	7.25	6.00	4	0.75	11.02	2.75	8.27	0.89	19.06	15.24	14.84	
4	100	3.94	8.66	7.50	8	0.75	15.74	3.35	9.84	0.87	24.50	19.00	17.56	

Note :

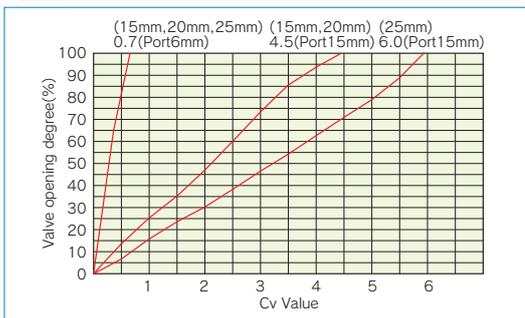
- Regardless of horizontal installation or vertical installation, the strainer with the 60-mesh screen should be installed in the up stream side of the valve in order to avoid the malfunction possibly caused by clogging of foreign particles.  
Install the valve as shown in the drawing, because malfunctioned.
- Every type of valve has its own flow direction across the valve.  
Make sure that the flow direction is consistent with the arrow-mark indicated on the valve body when installing.



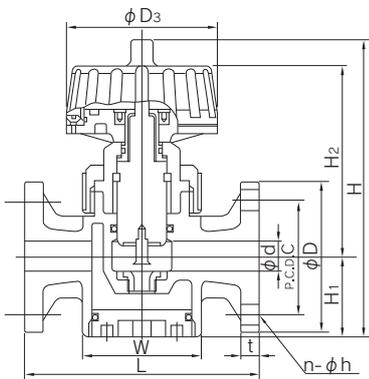
# NEEDLE VALVE 15mm - 25mm(1/2inch - 1inch)



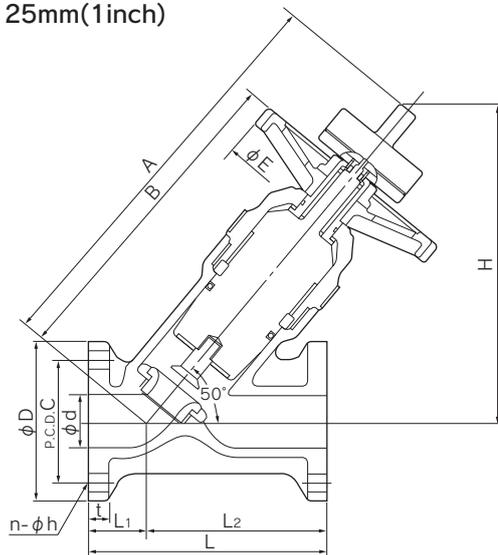
## SPECIFICATIONS



### ● 15mm(1/2inch) ~ 20mm(3/4inch)



### ● 25mm(1inch)



## FEATURES

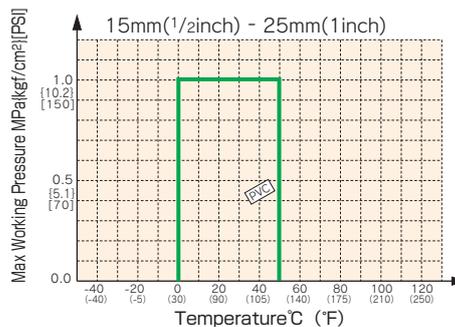
- A shut-off valve and the rubber seat completely seals the fluid.
- Being independent of a shut-off valve, the NEEDLE VALVE exercises highly accurate control for a long time.
- The NEEDLE VALVE uses an unique plug in a special shape, thus offering accurate flow control.
- With its piping intact, the NEEDLE VALVE can be inspected or cleaned inside only by removing its bonnet (valves in 15 and 20mm in nominal size)

## SPECIFICATIONS

Nominal Size	15mm(1/2inch), 20mm(3/4inch)		25mm(1inch)	
Port Size(mm)	6	15	6	15
Maximum CV Value	0.7	4.5	0.7	6.0
End Connectors	Flanged End			
Type of Rubber	EPDM, Others			
Body material	PVC			
Max. Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI]			
Working Temperature	0 - 50°C(30° F - 120° F)			

## WORKING PRESSURE VS. TEMPERATURE

### NEEDLE VALVE



## DIMENSIONS TABLE

JIS		Unit:mm											
Nominal Size		d	JIS 10K				L	t	W	D <sub>3</sub>	H <sub>1</sub>	H <sub>2</sub>	H
mm	inch		D	C	n	h							
15	1/2	16	95	70	4	15	160	12	82×82	103	51	129	197
20	3/4	20	100	75	4	15	160	13	82×82	103	53	127	197

DIN		Unit:mm											
Nominal Size		d	DIN				L	t	W	D <sub>3</sub>	H <sub>1</sub>	H <sub>2</sub>	H
mm	inch		D	C	n	h							
15	1/2	16	95	65	4	14	160	12	82×82	103	51	129	197
20	3/4	20	105	75	4	14	160	13	82×82	103	53	127	197

ANSI		Unit:inch											
Nominal Size		d	ANSI 150 lbs				L	t	W	D <sub>3</sub>	H <sub>1</sub>	H <sub>2</sub>	H
inch	mm		D	C	n	h							
1/2	15	0.63	3.50	2.38	4	0.63	6.30	0.47	3.23×3.23	4.06	2.01	5.08	7.76
3/4	20	0.79	3.86	2.76	4	0.63	6.30	0.51	3.23×3.23	4.06	2.09	5.00	7.76

## DIMENSIONS TABLE

JIS		Unit:mm												
Nominal Size		d	JIS 10K				L <sub>1</sub>	L <sub>2</sub>	L	t	A	B	H	E
mm	inch		D	C	n	h								
25	1	25	125	90	4	19	40	120	160	14	272	201	218	150

DIN		Unit:mm												
Nominal Size		d	DIN				L <sub>1</sub>	L <sub>2</sub>	L	t	A	B	H	E
mm	inch		D	C	n	h								
25	1	25	115	85	4	14	40	120	160	14	272	201	218	150

ANSI		Unit:inch												
Nominal Size		d	ANSI 150 lbs				L <sub>1</sub>	L <sub>2</sub>	L	t	A	B	H	E
inch	mm		D	C	n	h								
1	25	0.98	4.25	3.13	4	0.63	1.57	4.72	6.30	0.55	10.71	7.91	8.58	5.91

# Y-SEDIMENT STRAINER 15mm - 100mm(1/2inch - 4inch)



Note : Volatile liquids such as a hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) and sodium hypochlorite (NaClO) medium, may vaporize, thus causing an abnormal pressure increase in the valve. (Important: Gas is compressible. Thus if its pressure rises abnormally, gas may break a valve into pieces, which in turn violently scatter in all directions.)

- Store the Sediment Strainer in an indoor place free of direct sunlight.
- Do not store the Sediment Strainer in a hot place.
- Install the Sediment Strainer in a place free of direct sunlight.

## FEATURES

- Because of its plastic body, the sediment STRAINER (Y) is highly corrosion chemical and wear resistant.
- The body is transparent, so that flow through the STRAINER can easily be checked.
- The sediment STRAINER is easy to disassemble and reassemble to clean or replace its screen.

## NSF Product

NSF(“NSF/ANSI STANDARD 61” Drinking Water System Components-Health Effects)Product.  
:Y-SEDIMENT STRAINER TYPE-Y (Material:PVC+EPDM,FKM)

\*Certified products bear an NSF Certification Mark.

## SPECIFICATIONS

Body material	Unplasticized Polyvinyl Chloride (PVC) (The body is only made of transparent PVC.)
Nominal Size	15mm(1/2inch),20mm(3/4inch),25mm(1inch),40mm(1 1/4inch), 50mm(2inch),80mm(3inch),100mm(4inch)
End Connectors	Socket End, Threaded End, Flanged End
Working Temperature	0 - 50°C (30°F - 120°F)
Mesh	20 mesh (30,40 & 60 Mesh Available)
Max. Working Pressure	1.0MPa[10.2kgf/cm <sup>2</sup> ][150PSI]…15 - 50mm(1/2inch - 2inch) 0.6MPa[6.1kgf/cm <sup>2</sup> ][85PSI] …80,100mm(3inch - 4inch)

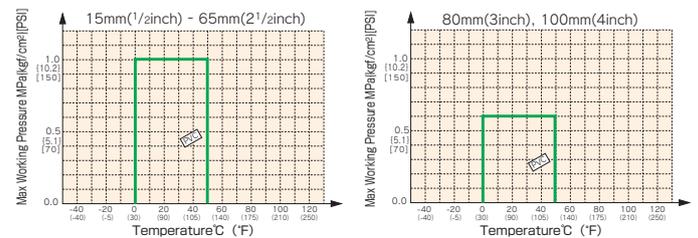
## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC
②	FILTER SCREEN	1	PVC
③	SCREEN SUPPORT	1	PVC
④	END CONNECTOR	2	PVC
⑤	UNION NUT	3	PVC
⑥	RETAINING RING	1	PVC
⑦	SPLIT RING	1	PVC
⑧	O-RING(A)	2	EPDM,FKM,Others
⑨	O-RING(B)	1	EPDM,FKM,Others
⑩	STOP RING <sup>1)</sup>	2	PVDF

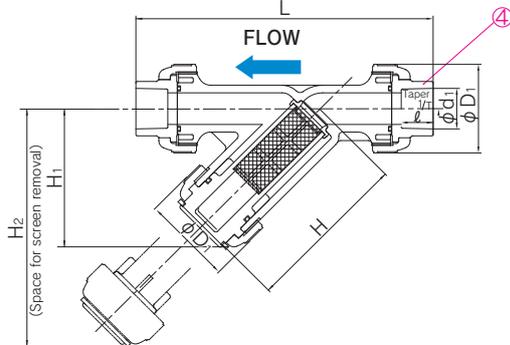
1)Used for Flanged End

## WORKING PRESSURE VS. TEMPERATURE

### STRAINER(Y)



## DIMENSIONS (Socket End)



## DIMENSIONS TABLE (Socket End)

Nominal Size		d	d <sub>1</sub>	ℓ	1/T	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>
15	1/2	15	22.11	20	1/34	48	172	97	78	134
20	3/4	20	26.13	24	1/34	60	210	120	98	168
25	1	25	32.16	27	1/34	70	238	133	111	189
32	1 1/4	40	38.19	30	1/34	100	298	177	149	256
40	1 1/2	40	48.21	37	1/37	100	313	177	149	256
50	2	51	60.25	42	1/37	106	346	190	160	277
65	2 1/2	78	76.60	61	1/48	140	487	271	234	399
80	3	78	89.60	64	1/49	152	487	271	234	399
100	4	100	114.70	84	1/56	210	653	361	316	537

Nominal Size		d	d <sub>1</sub>	ℓ	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>
15	1/2	15	21.4	17	48	165	97	78	134
20	3/4	20	26.8	20	60	201	120	98	168
25	1	25	33.6	23	70	224	133	111	189
32	1 1/4	40	42.3	27.5	96	298	177	149	256
40	1 1/2	40	48.3	30.5	96	288	177	149	256
50	2	51	60.4	36.5	106	337	190	160	277
65	2 1/2	78	75.1	43.5	152	455	271	234	399
80	3	78	88.8	50.5	152	455	271	234	399
100	4	100	114.2	63	210	607	361	316	537

## DIN 8063

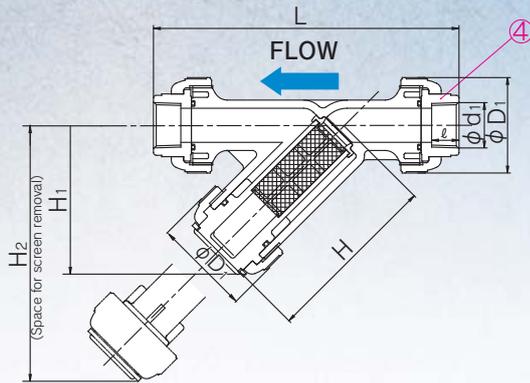
Nominal Size	d	d <sub>1</sub>	ℓ	D <sub>1</sub>	L	H	H <sub>1</sub>	
15	1/2	15	20	16	48	165	97	78
20	3/4	20	25	19	60	201	120	98
25	1	25	32	22	70	224	133	111
32	1 1/4	40	40	26	96	298	177	149
40	1 1/2	40	50	31	96	288	177	149
50	2	51	63	38	106	337	190	160
65	2 1/2	78	75	44	152	455	271	234
80	3	78	90	51	152	457	271	234
100	4	100	110	61	210	607	361	316

## ANSI ASTM SCH80

Nominal Size	d	d <sub>1</sub>	d <sub>1</sub> '	ℓ	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>	
1/2	15	0.59	0.848	0.836	0.875	1.89	6.93	3.82	3.07	5.28
3/4	20	0.79	1.058	1.046	1.000	2.36	8.31	4.72	3.86	6.61
1	25	0.98	1.325	1.310	1.125	2.76	9.37	5.24	4.37	7.44
1 1/4	32	1.57	1.670	1.655	1.250	3.94	11.73	6.97	5.87	10.08
1 1/2	40	1.57	1.912	1.894	1.375	3.94	12.13	6.97	5.87	10.08
2	50	2.01	2.387	2.369	1.500	4.17	13.31	7.48	6.30	10.91
2 1/2	65	3.07	2.889	2.868	1.752	5.98	17.95	10.67	9.21	15.71
3	80	3.07	3.516	3.492	1.875	5.98	17.83	10.67	9.21	15.71
4*	100	3.94	4.518	4.491	2.000	8.27	23.07	14.21	12.44	21.14

\* only ASTM SCH40

DIMENSIONS (Threaded End)



DIN 2999

Nominal Size		d	d <sub>1</sub>	ℓ	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>
mm	inch								
15	1/2	15	Rp 1/2	15	48	165	97	78	134
20	3/4	20	Rp 3/4	17	60	202	120	98	168
25	1	25	Rp 1	20	70	224	133	111	189
32	1 1/4	40	Rp 1 1/4	22	96	287	177	149	256
40	1 1/2	40	Rp 1 1/2	25	96	287	177	149	256
50	2	51	Rp 2	28	106	324	190	160	277
65	2 1/2	78	Rp 2 1/2	32	152	436	271	234	399
80	3	78	Rp 3	35	152	436	271	234	399
100	4	100	Rp 4	45	210	596	361	316	537

DIMENSIONS TABLE (Threaded End)

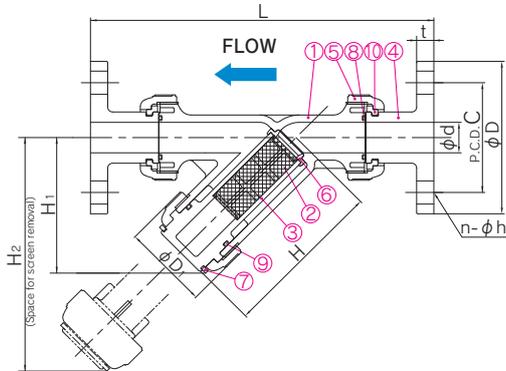
JIS B0203

Nominal Size		d	d <sub>2</sub>	ℓ	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>
mm	inch								
15	1/2	15	Rc 1/2	15	48	165	97	78	134
20	3/4	20	Rc 3/4	17	60	202	120	98	168
25	1	25	Rc 1	20	70	224	133	111	189
32	1 1/4	40	Rc 1 1/4	22	100	287	177	149	256
40	1 1/2	40	Rc 1 1/2	25	100	287	177	149	256
50	2	51	Rc 2	28	106	324	190	160	277
65	2 1/2	78	Rc 2 1/2	32	152	436	271	234	399
80	3	78	Rc 3	35	152	436	271	234	399
100	4	100	Rc 4	45	210	596	361	316	537

ANSI/ASME B1.20.1

Nominal Size		d	d <sub>2</sub>	ℓ	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>
inch	mm								
1/2	15	0.59	1/2-14 NPT	0.59	1.89	6.50	3.82	3.07	5.28
3/4	20	0.79	3/4-14 NPT	0.67	2.36	7.95	4.72	3.86	6.61
1	25	0.98	1-11 1/2 NPT	0.79	2.76	8.82	5.24	4.37	7.44
1 1/4	32	1.57	1 1/4-11 1/2 NPT	0.87	3.94	11.30	6.97	5.87	10.08
1 1/2	40	1.57	1 1/2-11 1/2 NPT	0.98	3.94	11.30	6.97	5.87	10.08
2	50	2.01	2-11 1/2 NPT	1.10	4.17	12.76	7.48	6.30	10.91
2 1/2	65	3.07	2 1/2-8 NPT	1.26	5.98	17.17	10.67	9.21	15.71
3	80	3.07	3-8 NPT	1.38	5.98	17.17	10.67	9.21	15.71
4	100	3.94	4-8 NPT	1.77	8.27	23.46	14.21	12.44	21.14

DIMENSIONS (Flanged End)



DIN 2501

Nominal Size		d	C	D	n	h	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>
mm	inch										
15	1/2	15	65	95	4	14	48	193	97	78	134
20	3/4	20	75	105	4	14	60	232	120	98	168
25	1	25	85	115	4	14	70	253	133	111	189
32	1 1/4	40	100	140	4	16	96	336	177	149	256
40	1 1/2	40	110	150	4	18	96	324	177	149	256
50	2	51	125	165	4	18	106	361	190	160	277
65	2 1/2	78	145	185	4	18	152	477	271	234	399
80	3	78	160	200	8	18	152	483	271	234	399
100	4	100	180	220	8	18	210	608	361	316	537

DIMENSIONS TABLE (Flanged End)

JIS 10K

Nominal Size		d	C	D	n	h	D <sub>1</sub>	L	H	H <sub>1</sub>	H <sub>2</sub>
mm	inch										
15	1/2	15	70	95	4	15	48	206	97	78	134
20	3/4	20	75	100	4	15	60	254	120	98	168
25	1	25	90	125	4	19	70	280	133	111	189
32	1 1/4	40	100	135	4	19	100	336	177	149	256
40	1 1/2	40	105	140	4	19	100	336	177	149	256
50	2	51	120	155	4	19	106	361	190	160	277
65	2 1/2	78	140	175	4	19	152	477	271	234	399
80	3	78	150	185	8	19	152	477	271	234	399
100	4	100	175	210	8	19	210	608	361	316	537

ANSI 150 lbs.

Nominal Size		d	C	D	n	h	D <sub>1</sub>	L	t	H	H <sub>1</sub>	H <sub>2</sub>
inch	mm											
1/2	15	0.59	2.38	3.50	4	0.62	1.89	8.11	0.47	3.82	3.07	5.28
3/4	20	0.79	2.75	3.88	4	0.62	2.36	10.00	0.55	4.72	3.86	6.61
1	25	0.98	3.12	4.25	4	0.62	2.76	11.02	0.55	5.24	4.37	7.44
1 1/4	32	1.57	3.50	4.61	4	0.63	3.94	13.23	0.63	6.97	5.87	10.08
1 1/2	40	1.57	3.88	5.00	4	0.62	3.94	13.23	0.63	6.97	5.87	10.08
2	50	2.01	4.75	6.00	4	0.75	4.17	14.21	0.63	7.48	6.30	10.91
2 1/2	65	3.07	5.49	7.01	4	0.75	5.98	18.78	0.71	10.67	9.21	15.71
3	80	3.07	6.00	7.50	4	0.75	5.98	18.78	0.71	10.67	9.21	15.71
4	100	3.94	7.50	9.00	8	0.75	8.27	23.94	0.71	14.21	12.44	21.14

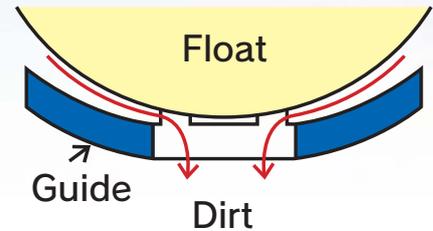
Recommendations for use

- Observe flow direction before installation. (Direction arrow mark is embossed on body.)
- Screen should be cleaned periodically.
- Avoid direct sunlight.
- Caution : the following, chemicals such as Hydrogen Peroxide (H<sub>2</sub>O<sub>2</sub>), Sodium Hypochlorite(NaClO) are capable of generating will cause the abnormal pressure due to their vaporization nature.

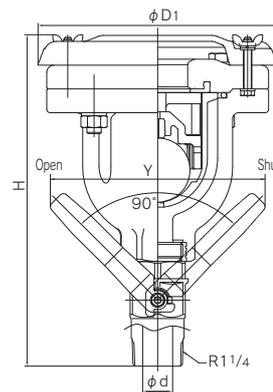
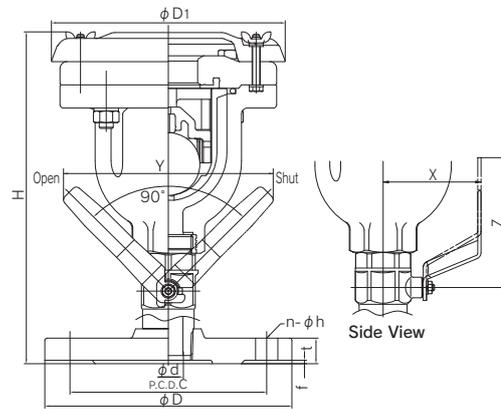
# AIR RELEASE VALVE 25mm,80mm,100mm,150mm,200mm (1inch,3inch,4inch,6inch,8inch)

## FEATURES

- Light Weight**  
 75% Lighter than Cast Iron Type
- Compact**  
 10 to 40% Smaller than Cast Iron Type by Volume Ratio
- Superior Exhaust Performance**  
 1.5 Times Larger than Cast Iron Type
- Works at Low Pressure**  
 Half of Minimum Pressure of Cast Iron Type
- Superior Cold and Heat Resistance**  
 Wide Temperature Range -40°C (-40°F) to 50°C (122°F).
- Excellent Corrosion and Impact Resistance**  
 PDCPD Material
- Top Bonnet Entry**  
 Easy Inline Access to Internal Parts



### 25mm (1inch)



## DIMENSION TABLE

### Nominal Size 25mm (1inch)

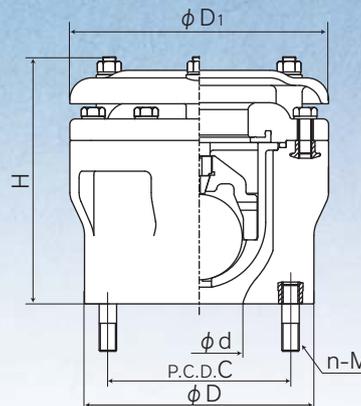
Unit:mm(inch)

Nominal Size mm	inch	End Connectors	D <sub>1</sub>	H	d	D	n-φh	P.C.D.C	f	t	X	Y	Z	Weight	
														kg	Lb
25	1	Flanged (JIS 10K)	200 (7.87)	298 (11.73)	25 (0.98)	211 (8.31)	4-φ19 (4-φ0.75inch)	168 (6.61)	3 (0.12)	22 (0.87)	112 (4.41)	178 (7.01)	150 (5.91)	8.8	19.4
		Male Threaded	200 (7.87)	281 (11.06)	25 (0.98)	R1 1/4			3 (0.12)	22 (0.87)	112 (4.41)	178 (7.01)	150 (5.91)	3.8	8.4

## SPECIFICATIONS

Nominal size mm	inch	End Connectors	Working Pressure(at R.T.) MPa{kgf/cm <sup>2</sup> }[PSI]	Max. Working Pressure MPa{kgf/cm <sup>2</sup> }[PSI]	Body material	Isalating Valve Material

80mm(3inch)~200mm(8inch)



DIMENSIONS TABLE

Nominal Size 80mm - 200mm (3inch - 8inch)											Unit:mm(inch)	
Nominal Size		D <sub>1</sub>	H	d	D	JWWA		JIS 10K		Weight		
mm	inch					P.C.D.C	n-φh	P.C.D.C	n-φh	kg	Lb	
80	3	238 (9.37)	230 (9.06)	80 (3.15)	211 (8.31)	168 (6.62)	4-M16	150	8-M16	6.9	15.2	
100	4	260 (10.24)	288 (11.34)	100 (3.94)	238 (9.37)	195 (7.68)	4-M16	175	8-M16	10.3	22.7	
150	6	341 (13.43)	393 (15.48)	150 (5.91)	290 (11.42)	247 (9.73)	6-M16	240	8-M20	20.7	45.6	
200	8	440 (17.33)	526 (20.71)	200 (7.88)	342 (13.47)	299 (11.77)	8-M16	290	12-M20	41.0	90.2	

SPECIFICATIONS

Nominal size		End Connectors	Working Pressure(at R.T.) MPa{kgf/cm <sup>2</sup> }[PSI]	Max. Working Pressure MPa{kgf/cm <sup>2</sup> }[PSI]	Body material
mm	inch				
80	3	Flanged (JIS 10K)	1.0 {10.2}[150]	1.4 {14.3}[203]	PDCPD
100	4	Flanged (JIS 10K)	1.0 {10.2}[150]	1.4 {14.3}[203]	PDCPD
150	6	Flanged (JIS 10K)	1.0 {10.2}[150]	1.4 {14.3}[203]	PDCPD
200	8	Flanged (JIS 10K)	1.0 {10.2}[150]	1.4 {14.3}[203]	PDCPD

# ASAHI VALVE AND PIPING SYSTEMS

## ASAHI AV

### AUTOMATIC VALVES &

### SENSOR AND FLOW METERS

The specifications in this brochure are subject to change without prior notice due to improvements and modifications.

#### Asahi AV Automatic Valves

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# ASAHI AV AV AUTOMATIC VALVES

ASAHI AV AUTOMATIC VALVES are ideal monobloc valves that combine light-weight, compact and rigid actuators with valve body made of thermo plastic with superior corrosion and chemical resistance. Opening adjustment and proportional control are possible by use of positioners. Various optional equipments are available and can be combined to suit your piping applications.

## Features

### Actuators

#### ◆ Light-Weight and Compact ◆

Reduced piping space and less labor for installation.

#### ◆ Simple Construction ◆

High structural reliability, less maintenance and inspection.

#### ◆ Appropriate Output Torque ◆

Energy saving by providing output that meets torque requirements for valve operation the best.

### Valve Body

#### ◆ Superior Corrosion and Chemical Resistance ◆

Usable even with strong acids or alkalis due to monobloc structure of synthetic resin.

#### ◆ Light Weight ◆

1/5 weight of metallic valves, easy to handle.

#### ◆ Less Flow Resistance, Higher Wear Resistance ◆

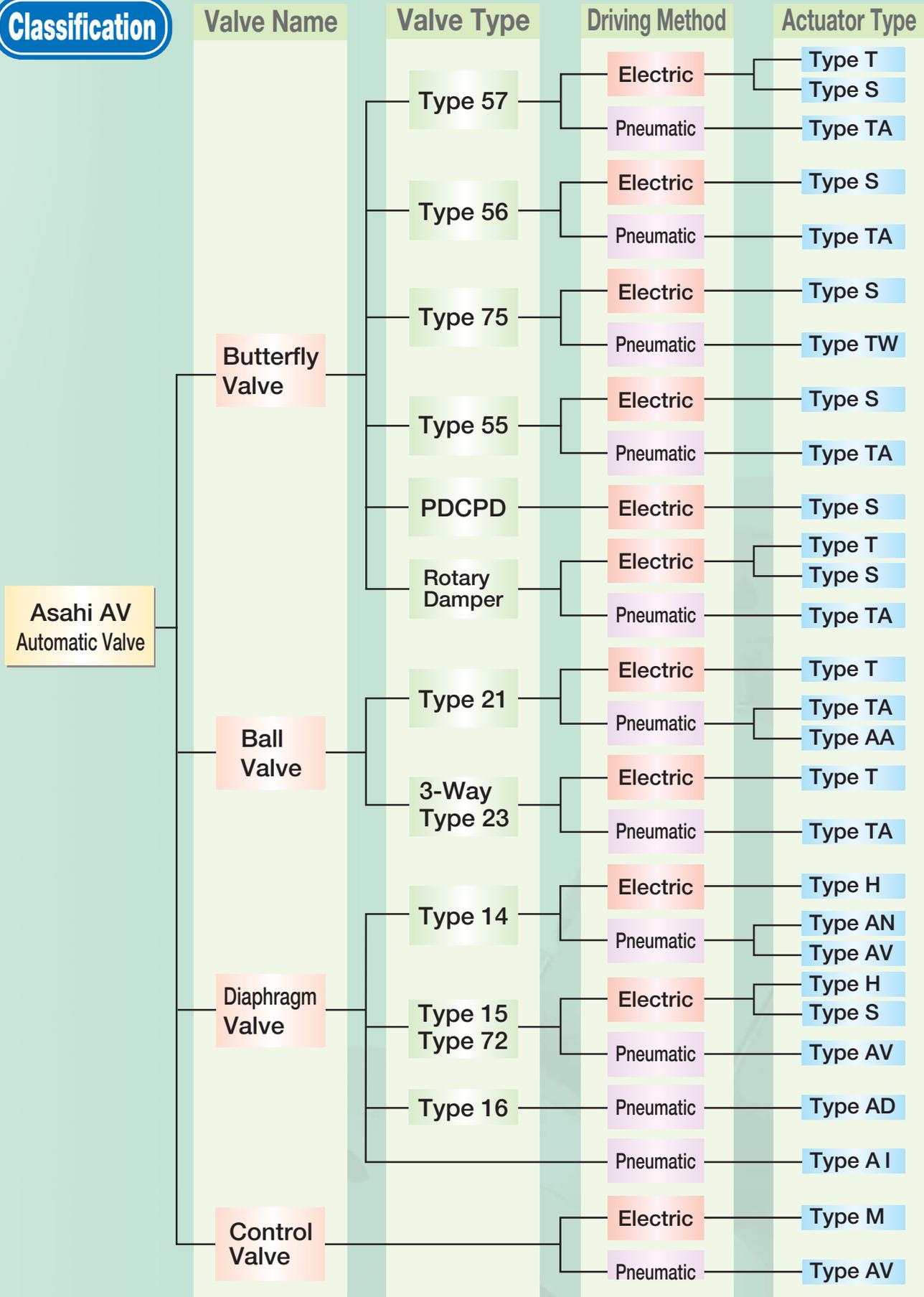
Less flow resistance and good anti-abrasion property due to use of synthetic resin materials.

## Application

Recommended for factory automation of piping lines for various types of plants such as Chemical, Steel, Food, Fishery, Marine, Hot spring, Water, Sewage, Irrigation, Semi-Conductor, Bio-chemical, Pharmaceutical and so on.

# AV AUTOMATIC VALVES

## Classification



\*Note) Type H is available only with single-phase source.  
 Ball Valve Electric Actuated Type T is available only with single-phase source.  
 Type TW are available only as double acting model.  
 Butterfly Valve and Diaphragm Valve of the electric actuated type S are available only with three-phase source.



Diaphragm Valve Type 14,  
Electric Actuated Model  
Type H (Page 86)



True Union Diaphragm Valve  
Type 14, Electric Actuated Model  
Type H (Page 87)



Diaphragm Valve Type 15,  
Electric Actuated Model Type  
H(125-150mm) (Page 88)



Diaphragm Valve Type 15,  
72, Electric Actuated Model  
Type S (Page 89)



Diaphragm Valve Type AI,  
Pneumatic Actuated Model  
Type AI (Page 94)



True Union Diaphragm Valve  
Type AI, Pneumatic Actuated  
Model Type AI (Page 95)



Diaphragm Valve Type 16,  
Pneumatic Actuated Model  
Type AD (Page 96)



Ball Valve Type 21, Electric  
Actuated Model Type T  
(15-50mm) (Page 98)



3-Way Ball True Union Ball Valve  
Type 23, Pneumatic Actuated  
Model Type TA (Page 106)



Butterfly Valve Type 57,  
Electric Actuated Model  
Type T (Page 108)



Butterfly Valve Type 57,  
Electric Actuated Model  
Type S (Page 109)



Butterfly Valve Type 56,  
Electric Actuated Model  
Type S (400mm)(Page 110)



Butterfly Valve Type 57,  
Pneumatic Actuated Model  
Type TA (Page 115)



Butterfly Valve Type 75,  
Pneumatic Actuated Model  
Type TW (Page 116)



Butterfly Valve Type 55,  
Pneumatic Actuated Model  
Type TA (Page 117)



Rotary Damper Type 57,  
Electric Actuated Model  
Type T (Page 118)



Control Valve, Pneumatic  
Actuated Model Type AV  
(Page 123)



Ultra Sonic Voltex  
Flowmeter (Page 126)



Inpella Flowmeter  
(Page 128)



Diaphragm Valve Type 14,  
Pneumatic Actuated Model  
Type AN (Page 90)



Diaphragm Valve Type 14,  
Pneumatic Actuated Model  
Type AV (Page 91)



True Union Diaphragm Valve Type  
14, Pneumatic Actuated Model Type  
AN (Page 92)



Diaphragm Valve Type 15,  
72, Pneumatic Actuated  
Model Type AV (Page 93)



Ball Valve Type 21, Electric  
Actuated Model Type T (65-  
100mm) (Page 99)



3-Way Ball True Union Ball Valve  
Type 23, Electric Actuated Model  
Type T (Page 100)



Ball Valve Type 21,  
Pneumatic Actuated Model  
Type TA (Page 102)



Ball Valve Type 21,  
Pneumatic Actuated Model  
Type AA (Page 104)



Butterfly Valve Type 75,  
Electric Actuated Model Type S  
(450-600mm) (Page 110)



PDCPD Butterfly Valve, Electric  
Actuated Model Type S  
(700-1200mm) (Page 112)



Butterfly Valve Type 55,  
Electric Actuated Model  
Type T (Page 113)



Butterfly Valve Type 55,  
Electric Actuated Model  
Type S (Page 114)



Rotary Damper Type 57,  
Electric Actuated Model  
Type S (Page 119)



Rotary Damper Type 57,  
Pneumatic Actuated Model  
Type TA (Page 120)



Control Valve, Electric Actuated  
Model Type M (Page 121)



Control Valve, Electric  
Actuated Model Type M  
(Page 122)

# Product Table

Butterfly Valves														
Valve Type	Type 57									Type 56				
Driving Method	Electric Actuator						Pneumatic Actuator			Electric Actuator		Pneumatic Actuator		
	1 $\phi$ AC100V/AC200V			3 $\phi$ AC200V/AC400V			Double Acting Air to Open Air to Close			3 $\phi$ AC200V/AC400V		Double Acting Air to Open Air to Close		
Actuator Type	Type T			Type S			Type TA			Type S		Type TA		
Body Material	PVC	PP	PVDF	PVC	PP	PVDF	PVC	PP	PVDF	PP	PVDF	PP	PVDF	
Disc Material	PP	PP	PVDF	PP	PP	PVDF	PP	PP	PVDF	PP	PVDF	PP	PVDF	
Nominal Size mm (inch)	40 (1 1/2)	○	○	○	○	○	○	○	○	○	○	○	○	
	50 (2)	○	○	○	○	○	○	○	○	○	○	○	○	
	65 (2 1/2)	○	○	○	○	○	○	○	○	○	○	○	○	
	80 (3)	○	○	○	○	○	○	○	○	○	○	○	○	
	100 (4)	○	○	○	○	○	○	○	○	○	○	○	○	
	125 (5)	○	○	○	○	○	○	○	○	○	○	○	○	
	150 (6)	○	○	○	○	○	○	○	○	○	○	○	○	
	200 (8)	○	○	○	○	○	○	○	○	○	○	○	○	
	250 (10)	○	○	○	○	○	○	○	○	○	○	○	○	
	300 (12)	○	○	○	○	○	○	○	○	○	○	○	○	
	350 (14)	○	○	○	○	○	○	○	○	○	○	○	○	
	400 (16)	-	-	-	-	-	-	-	-	-	○	○	○	○
	450 (18)	-	-	-	-	-	-	-	-	-	-	-	-	-
	500 (20)	-	-	-	-	-	-	-	-	-	-	-	-	-
600 (24)	-	-	-	-	-	-	-	-	-	-	-	-	-	
Page	108			109			115			110		115		

Valve Type	Type 75				Type 55		
Driving Method	Electric Actuator		Pneumatic Actuator		Electric Actuator		Pneumatic Actuator
	3 $\phi$ AC200V/ AC400V		Double Acting		1 $\phi$ AC100V/ AC200V	3 $\phi$ AC200V/ AC400V	Double Acting Air to Open Air to Close
Actuator Type	Type S		Type TW		Type T	Type S	Type TA
Body Material	PP	PVDF	PP	PVDF	FCD-S		
Disc Material	PP	PVDF	PP	PVDF	PTFE		
Nominal Size mm (inch)	40 (1 1/2)	-	-	-	-	-	-
	50 (2)	-	-	-	-	○	○
	65 (2 1/2)	-	-	-	-	-	-
	80 (3)	-	-	-	-	○	○
	100 (4)	-	-	-	-	○	○
	125 (5)	-	-	-	-	○	○
	150 (6)	-	-	-	-	○	○
	200 (8)	-	-	-	-	○	○
	250 (10)	-	-	-	-	○	○
	300 (12)	-	-	-	-	-	-
	350 (14)	-	-	-	-	-	-
	400 (16)	-	-	-	-	-	-
	450 (18)	○	○	○	○	-	-
	500 (20)	○	○	○	○	-	-
600 (24)	○	○	○	○	-	-	
Page	110		116		113	114	117

Valve Type	Rotary Damper								
Driving Method	Electric Actuator						Pneumatic Actuator		
	1 $\phi$ AC100V/AC200V			3 $\phi$ AC200V/AC400V			Double Acting Air to Open Air to Close		
Actuator Type	Type T			Type S			Type TA		
Body Material	PVC	PP	PVDF	PVC	PP	PVDF	PVC	PP	PVDF
Disc Material	PP	PP	PVDF	PP	PP	PVDF	PP	PP	PVDF
Nominal Size mm (inch)	40 (1 1/2)	○	○	○	○	○	○	○	○
	50 (2)	○	○	○	○	○	○	○	○
	65 (2 1/2)	○	○	○	○	○	○	○	○
	80 (3)	○	○	○	○	○	○	○	○
	100 (4)	○	○	○	○	○	○	○	○
	125 (5)	○	○	○	○	○	○	○	○
	150 (6)	○	○	○	○	○	○	○	○
	200 (8)	○	○	○	○	○	○	○	○
	250 (10)	○	○	○	○	○	○	○	○
	300 (12)	○	○	○	○	○	○	○	○
	350 (14)	○	○	○	○	○	○	○	○
	400 (16)	-	-	-	-	○	○	-	○
	450 (18)	-	-	-	-	○	○	-	○
	500 (20)	-	-	-	-	○	○	-	○
600 (24)	-	-	-	-	○	○	-	○	
Page	118			119			120		

Valve Type	PDCPD Butterfly Valve	
Driving Method	Electric Actuator	
Actuator Type	3 $\phi$ AC200V/AC400V	
Body Material	Type S	
Disc Material	PDCPD	
Nominal Size mm (inch)	700 (28)	○
	800 (32)	○
	900 (36)	○
	1000 (40)	○
	1100 (44)	○
	1200 (48)	○
Page	112	

Note : Single Phase = 1  $\phi$  / Three Phase = 3  $\phi$

# Product Table

Diaphragm Valves																							
Valve Type		Type 14						True Union Type 14						Type 15, Type 72									
Driving Method	Electric Actuator		Pneumatic Actuator				Electric Actuator		Electric Actuator		Pneumatic Actuator		Electric Actuator			Pneumatic Actuator							
	1 φ AC100V/AC200V		Double Acting Air to Open Air to Close				1 φ AC100V/AC200V		3 φ AC200V/AC400V		Double Acting Air to Open Air to Close		1 φ AC100V/AC200V			3 φ AC200V/AC400V			Double Acting		Air to Open Air to Close		
Actuator Type		Type H		Type AN		Type AV		Type H		Type H		Type AN		Type H			Type S			Type AV		Type AV	
Body Material		PVC, C-PVC, PP, PVDF		PVC, C-PVC, PP, PVDF		PVC, C-PVC, PP, PVDF		PVC, C-PVC, PP, PVDF		PVC, C-PVC, PP, PVDF		PVC, C-PVC, PP, PVDF		PVC, PP, PVDF			PVC, PP, PVDF			PVC, PP, PVDF		PVC, PP, PVDF	
Disc Material		Rubber	PTFE	Rubber	PTFE	Rubber	PTFE	Rubber	PTFE	Rubber	PTFE	Rubber	PTFE	Rubber	PTFE	Rubber	PTFE	Rubber	PTFE	Rubber	PTFE	Rubber	PTFE
Nominal Size mm (inch)	15 (1/2)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	20 (3/4)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	25 (1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	32 (1 1/4)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	40 (1 1/2)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	50 (2)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	65 (2 1/2)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	80 (3)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	100 (4)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	125 (5) <sup>※1</sup>	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	150 (6) <sup>※1</sup>	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
200 (8) <sup>※2</sup>	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
250 (10) <sup>※2</sup>	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Page		86		90		91		87		87		92		88			89			93		93	

Note : ※1 is Diaphragm valve Type 15.  
 ※2 is Diaphragm valve Type 72.

Diaphragm Valves									
Valve Type		Type AI			True Union Type AI			Type 16	
Driving Method	Pneumatic Actuator		Pneumatic Actuator			Pneumatic Actuator		Pneumatic Actuator	
	Double Acting Air to Open Air to Close		Double Acting Air to Open Air to Close			Double Acting Air to Open		Double Acting Air to Open	
Actuator Type		Type AI			Type AI		Type AD		
Type of Connection		Flanged End			Threaded End Socket End			Flanged End Threaded End Socket End	
Body Material		PVC, C-PVC, PP, PVDF			PVC, C-PVC, PP, PVDF			PVC	
Nominal Size mm (inch)	15 (1/2)	○	○	○	○	○	○	○	○
	20 (3/4)	○	○	○	○	○	○	○	○
	25 (1)	○	○	○	○	○	○	○	○
	40 (1 1/2)	○	○	○	○	○	○	○	○
	50 (2)	○	○	○	○	○	○	○	○
	Page	94			95			96 · 97	

Ball Valves Type 21																
Driving Method		Electric Actuator				Pneumatic Actuator						Pneumatic Actuator				
Actuator Type		1 φ AC100V/AC200V				Double Acting			Air to Open · Air to Close			Double Acting		Air to Open · Air to Close		
Type of Connection		Type T		Type TA		Type TA		Type AA		Type AA		Type AA				
Body material		Flanged End Threaded End	Socket End	Flanged End Threaded End	Socket End	Flanged End Threaded End	Socket End	Flanged End Threaded End	Socket End	Flanged End Threaded End	Socket End	Flanged End Threaded End	Socket End			
Body material		PVC, C-PVC, PP, PVDF	PVC, C-PVC, PVDF	PP	PVC, C-PVC, PP, PVDF	PVC, C-PVC, PVDF	PP	PVC, C-PVC, PP, PVDF	PVC, C-PVC, PVDF	PP	PVC, C-PVC, PP, PVDF	PVC, C-PVC, PVDF	PP	PVC, C-PVC, PP, PVDF	PVC, C-PVC, PVDF	PP
Nominal Size mm (inch)	15 (1/2)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	20 (3/4)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	25 (1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	32 (1 1/4)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	40 (1 1/2)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	50 (2)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	65 (2 1/2)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	80 (3)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	100 (4)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Page		98 · 99				102 · 103				104 · 105					

3-Way Ball Valves Type 23					
Driving Method		Electric Actuator		Pneumatic Actuator	
Actuator Type		Type T		Type TA	
Type of Connection		Flanged End Threaded End Socket End		Flanged End Threaded End Socket End	
Body Material		PVC, C-PVC, PP, PVDF		PVC, C-PVC, PP, PVDF	
Nominal Size mm (inch)	15 (1/2)	○	○	○	○
	20 (3/4)	○	○	○	○
	25 (1)	○	○	○	○
	32 (1 1/4)	○	○	○	○
	40 (1 1/2)	○	○	○	○
	50 (2)	○	○	○	○
	65 (2 1/2)	○	○	○	○
	80 (3)	○	○	○	○
	100 (4)	○	○	○	○
	Page		100 · 101		106 · 107

Control Valves					
Driving Method		Electric Actuator		Pneumatic Actuator	
Actuator Type		Type M		Type AV	
Type of Connection		Flanged End		Flanged End	
Body Material		PVC		PVDF	
Nominal Size mm (inch)	15 (1/2)	○	○	○	○
	25 (1)	○	○	○	○
	50 (2)	○	○	○	○
	80 (3)	○	○	○	○
	100 (4)	○	○	○	○
Page		121 · 122		123 · 124	

Note : Single Phase = 1 φ, Three Phase = 3 φ

# Outline of Asahi AV Valve

## ⚠ PRECAUTIONS FOR PIPING WORKS

- ① Install AV Automatic valve with valve supports.  
Otherwise, valves may be damaged due to application of excess force.
- ② Use AV gasket to prevent leakage from flange surfaces
- ③ Do not use electrical connections that enable simultaneous operation of multiple electric actuated valves arranged in parallel using one on/off switch (or contact relay) (See Figure-2). Provide on/off switches (or contact relays) for each valve (See Figure-1).
- ④ Asahi AV automatic valves are not of the immersion type. They cannot be used in locations where they may be immersed in water.
- ⑤ Keep sufficient space for maintenance and manual operation.
- ⑥ If piping is installed out-door, prepare the roof to prevent rain from penetrating the valves
- ⑦ For other details of valve installation, please refer to "Mounting Procedure for Asahi AV Products" and "Technical information on Asahi AV Valves"

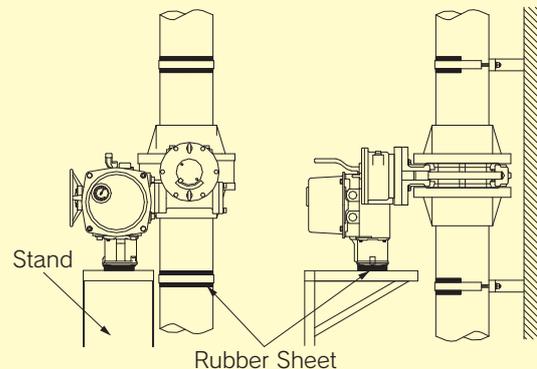
## ⚠ MAINTENANCE

- ① Asahi AV automatic valves need regular inspection at least once a year to ensure accurate operation and long life.  
Please refer to the provided Operation Manual.
- ② Do not disassemble the actuator. We are unable to assume any responsibility in the case that human injury or property damage is caused due to disassemble or repair of an actuator conducted without our consent. Therefore, if any abnormality is found, please consult us.

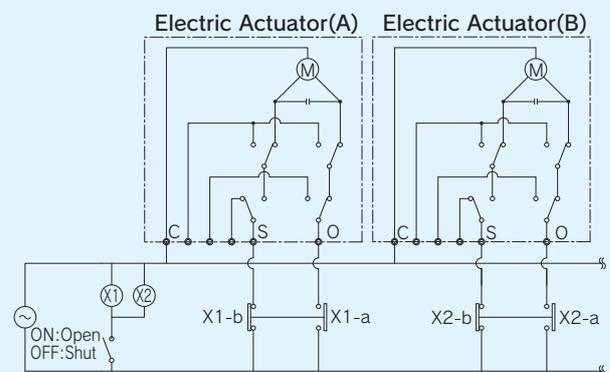
## ⚠ SPECIAL SPECIFICATIONS

- ① We select the correct materials for valve body, diaphragm, seat, O-ring etc. depending on the operating conditions.  
Please indicate the operating conditions including type of fluid, temperature, pressure and slurry.
- ② Asahi AV automatic valves can be provided to meet other special specifications than those specified in this catalog.

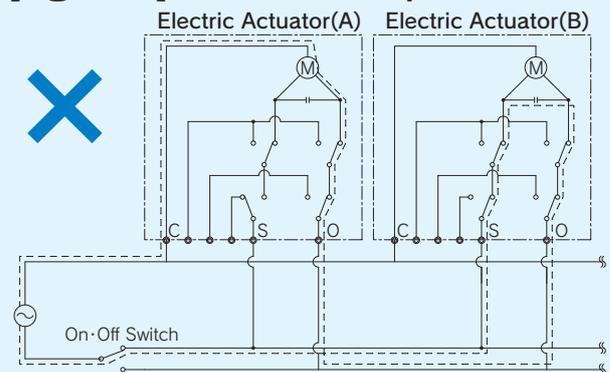
## ■ Sample Installation with Support



## [Figure-1] Correct Example



## [Figure-2] Incorrect Example



※.....Indicates the current flow when electric actuated valve B is not fully opened due to failure.

Applicable electric actuated valves···Type T, Type S, Type H,  
Type M

Reason·····Unless all electric actuated valves are fully opened or closed simultaneously, current will flow through the condensers, which will generate hunting or keep the current flowing without actuating the limit switch and thus heat up the motors.

# Outline of **Asahi AV Valve**

## For Pneumatic Actuated Valves



\*Photo shows Type TA



**▲Solenoid Valve**  
Changes supply direction of the air by use of electric signals and controls open & close action of the actuator.



**▲Filter Regulator**  
Removes dust and moisture in compressed air and reduces the pressure to the operating pressure level.



**▲Speed Controller**  
Adjusts the open/close speed of the valve.



**▲Limit Switch Box**  
Detects the open & close position of the valve, turns on display lamps for the control system and actuates other actions by relay.



**▲Positioner**  
Controls the opening degree of the valve in response to the air signal or electric signal.



**▲Manual Override**  
Provided on regular/reverse operation actuators. If the compressed air supply is suspended, enables open & close valve operation to be performed manually.



**▲Adjustment Mechanism for Opening Position**  
Adjusts the opening position.



**▲Special Painting**  
Protects the actuator from causticity atmosphere.

## For Electric Actuated Valves

(Reference)



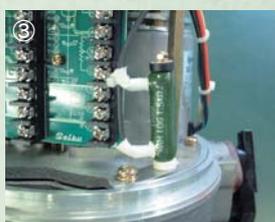
\*Photo Shows Type S



**▲Potentiometer**  
Converts the degree of valve opening into a resistance value, which is fed back to an electrically operated positioner etc.



**▲E-E Positioner**  
Provided on valves used as control valves for temperature, flow rate, PH etc. Receives resistance value from the potentiometer.



**▲Space Heater**  
Used to prevent the actuator from freezing.



**▲Output Contact Limit Switches**  
Fitted in addition to the ordinary limit switch. Picks up the signal and actuates other operations.

# Diaphragm Valve Type 14 (Electric Actuated Type H) 15mm-100mm (1/2inch-4inch)

### Body Material

PVC  
C-PVC  
PP  
PVDF

### Diaphragm Material

PTFE  
EPDM  
FKM  
Viflon C (FKM-C)  
Viflon F (FKM-F)

### Connection Standard

JIS 10K  
ANSI CLASS150  
DIN PN10

### Power Source

Single-Phase  
AC100V/200V

### Equipment

Manual Operation Mechanism  
(Handle is sold separately.)  
Space Heater  
Output Contact Limit Switches  
Indicator



## FEATURES

- In addition to the ordinary Open/Close Limit Switches, additional limit Switch is built in for double safety.
- Large Opening Indicator is easy to read.

## OPTIONAL EQUIPMENT

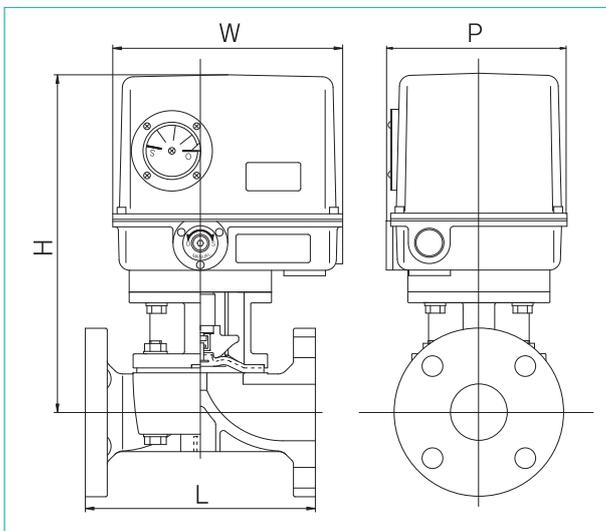
Combination No.	1
Space Heater	●
Output Contact Limit Switches	●

## ACTUATOR SPECIFICATION

Nominal Size mm(inch)	15 (1/2inch)	20 (3/4inch)	25 (1inch)	32 (1 1/4inch)	40 (1 1/2inch)	50 (2inch)	65 (2 1/2inch)	80 (3inch)	100 (4inch)
Actuator Type	ED-11H					ED-21H			
Cycle Time 50/60Hz(seconds)	20/16	24/20	43/36	51/43	38/32	47/39	56/47		
Motor Output(W)	20					60			
Motor Starting Current(A) 50/60Hz	100V		0.69/0.7		200V		2.3/2.2		
Motor Rated Current(A) 50/60Hz	100V		0.3/0.3		200V		1.15/1.1		
Motor Rated	100V		0.5/0.5		200V		1.5/1.8		
Number of revolutions of manual operating handle	21	25	44	50	76	94	112		
Limit Switch Capacity	AC 250V 10A								
Protective Structure	JIS C 0920 Waterjet-proof Type								
Cable Connector Nominal Size	2-G 3/4								
Motor Pole(P)	4								
Motor Insulation	E Class								
Motor Time Rating(minute)	30								

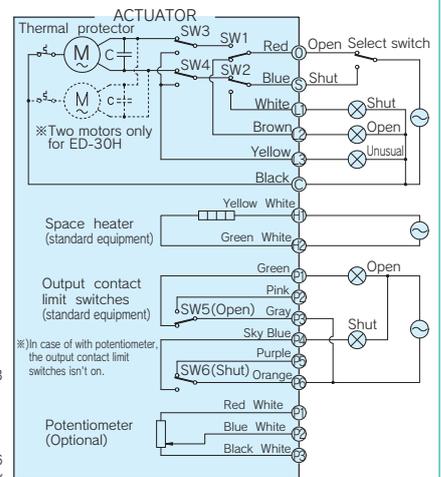
\* for the actuator with lubricant free valves with a positioner or a potentiometer consult near Asahi dealer.

## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

### WIRING DIAGRAM

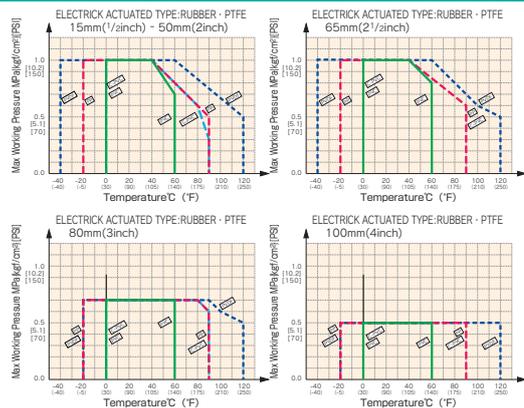


### Switching Chart

SW	Function	Setting
SW1	Shut	Open
SW2	Open limit	OFF by full open
SW3	Open Double Safety	Overrun OFF
SW5	Open contact	ON by full open between P1 and P3
SW2	Shut limit	OFF by full shut
SW4	Shut Double Safety	Overrun OFF
SW6	Shut contact	ON by full shut between P4 and P6

NOTE. This circuit diagram shows that the position of the opening action has come to an end.

## WORKING PRESSURE VS. TEMPERATURE



## DIMENSIONS TABLE

### JIS, ANSI, DIN

Unit:mm(inch)

Nominal Size	15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	65 (2 1/2)	80 (3)	100 (4)	
L	JIS	110 (4.33)	120 (4.72)	130 (5.12)	142 (5.59)	180 (7.09)	250 (9.84)	280 (11.02)	340 (13.39)	
	DIN	130 (5.12)	150 (5.91)	160 (6.3)	180 (7.09)	200 (7.87)	230 (9.06)	290 (11.42)	350 (13.78)	
	ANSI	A Standard	110 (4.33)	120 (4.72)	130 (5.12)	-	180 (7.09)	210 (8.27)	250 (9.84)	280 (11.02)
		G Standard	108 (4.25)	149 (5.88)	149 (5.88)	213 (8.38)	176 (6.94)	202 (7.94)	-	263 (10.37)
H	284 (11.18)	286 (11.26)	291 (11.46)	294.5 (11.59)	302.2 (11.90)	311.2 (12.25)	371 (14.61)	388 (15.28)	418 (16.46)	
W	210 (8.27)	210 (8.27)	210 (8.27)	210 (8.27)	210 (8.27)	210 (8.27)	240 (9.45)	240 (9.45)	240 (9.45)	
P	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	184 (7.24)	184 (7.24)	184 (7.24)	

# True Union Diaphragm Valve Type14 (Electric Actuated Type H) 15mm-50mm(1/2inch-2inch)

### Body Material

PVC  
C-PVC  
PP  
PVDF

### Diaphragm Material

PTFE  
EPDM  
FKM  
Viflon C (FKM-C)  
Viflon F (FKM-F)

### Connection Standard

Socket End JIS  
Socket End ASTM SCH80  
Socket End DIN  
Threaded End Rc  
Threaded End NPT  
Threaded End Rp

### Power Source

Single-Phase  
AC100V/200V

### Equipment

Manual Operation Mechanism  
(Handle is sold separately.)  
Space Heater  
Output Contact Limit Switches  
Indicator



### FEATURES

- In addition to the ordinary On-Off Limit Switch, additional Limit Switch is built in for safety.
- Manual Operating Handle is provided as a Standard Equipment. The Handle cannot be turned during electric operation due to the planetary Gear Mechanism.

### OPTIONAL EQUIPMENT

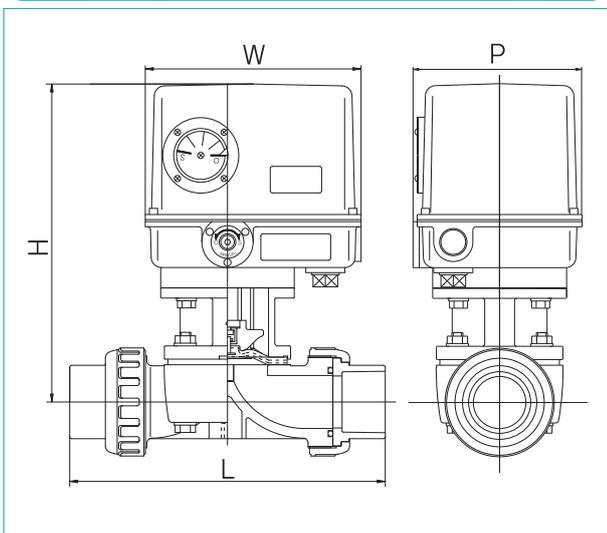
Combination No.	1
Space Heater	●
Output Contact Limit Switches	●

### ACTUATOR SPECIFICATION

Nominal Size mm(inch)	15 (1/2inch)	20 (3/4inch)	25 (1inch)	32 (1 1/4inch)	40 (1 1/2inch)	50 (2inch)
Actuator Type	ED-11H					
Cycle Time 50/60Hz(seconds)	20/16		24/20		43/36 51/43	
Motor Output(W)	20					
Motor Starting	100V		0.69/0.7			
Current(A) 50/60Hz	200V		0.3/0.3			
Motor Rated	100V		0.5/0.5			
Current(A) 50/60Hz	200V		0.25/0.25			
Number of revolutions of manual operating handle	21		25		44 50	
Limit Switch Capacity	AC 250V 10A					
Protective Structure	JIS C 0920 Waterjet-proof Type					
Cable Connector Nominal Size	2-G 3/4					
Motor Pole(P)	4					
Motor Insulation	E Class					
Motor Time Rating(minute)	30					

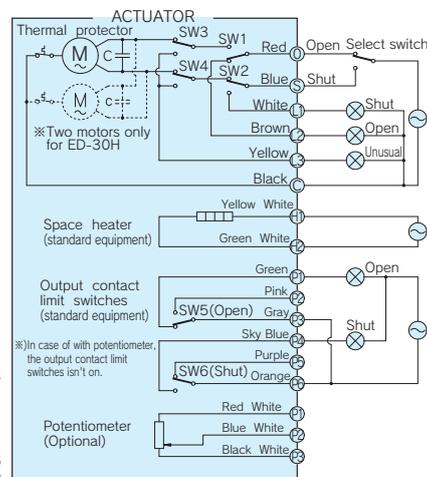
\* for the actuator with lubricant free valves with a positioner or a potentiometer consult near Asahi dealer.

### DIMENSIONS FIGURE



### SCHEMATIC DIAGRAM

#### WIRING DIAGRAM

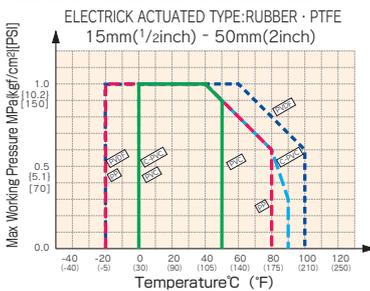


#### Switching Chart

SW	Shut	Open	Function
SW1	Open limit	Shut	OFF by full open
SW3	Open Double Safety	Shut	Overrun OFF
SW5	Open contact	Shut	ON by full open between P1 and P3
SW2	Shut limit	Open	OFF by full shut
SW4	Shut Double Safety	Open	Overrun OFF
SW6	Shut contact	Open	ON by full shut between P4 and P6

NOTE: This circuit diagram shows that the position of the opening action has come to an end.

### WORKING PRESSURE VS. TEMPERATURE



### DIMENSIONS TABLE

#### JIS, ANSI, DIN

Nominal Size	Unit:mm (inch)								
	15(1/2)	20(3/4)	25(1)	32(1 1/4)	40(1 1/2)	50(2)			
Threaded End	L	PVC, C-PVC	JIS	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	281 (11.06)
			DIN	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	281 (11.06)
			ANSI	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	281 (11.06)
		PP, PVDF	JIS	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	278 (10.95)
			DIN	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	278 (10.95)
			ANSI	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	278 (10.95)
	Common	H	JIS	134 (5.28)	156 (6.14)	186 (7.32)	200 (7.87)	271 (10.67)	303 (11.93)
			DIN	128 (5.04)	147 (5.79)	172 (6.77)	188 (7.4)	246 (9.69)	294 (11.57)
			ANSI	139 (5.47)	157 (6.18)	186 (7.32)	202 (7.95)	266 (10.47)	293 (11.54)
		W	JIS	134 (5.28)	156 (6.14)	186 (7.32)	200 (7.87)	271 (10.67)	303 (11.93)
			DIN	128 (5.04)	147 (5.79)	172 (6.77)	188 (7.4)	246 (9.69)	294 (11.57)
			ANSI	139 (5.47)	157 (6.18)	186 (7.32)	202 (7.95)	266 (10.47)	293 (11.54)
Socket End	L	PP	JIS	134 (5.28)	154 (6.06)	182 (7.17)	-	253 (9.96)	275 (10.83)
			DIN	125 (4.92)	141 (5.55)	164 (6.46)	177 (6.97)	231 (9.09)	274 (10.79)
			ANSI	138 (5.43)	155 (6.09)	184 (7.24)	198 (7.80)	261 (10.28)	293 (11.54)
	P	JIS	125 (4.92)	141 (5.55)	164 (6.46)	177 (6.97)	231 (9.09)	274 (10.79)	
		DIN	125 (4.92)	141 (5.55)	164 (6.46)	177 (6.97)	231 (9.09)	274 (10.79)	
		ANSI	138 (5.43)	155 (6.09)	184 (7.24)	198 (7.80)	261 (10.28)	293 (11.54)	
Common	H	JIS	284 (11.18)	286 (11.26)	291 (11.46)	295 (11.59)	302.2 (11.90)	311.2 (12.25)	
		DIN	210 (8.27)	210 (8.27)	210 (8.27)	210 (8.27)	210 (8.27)	210 (8.27)	
		ANSI	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	

# Diaphragm Valve Type 15 (Electric Actuated Type H) 125mm, 150mm (5inch, 6inch)

## Body Material

PVC  
PP  
PVDF

## Diaphragm Material

PTFE  
EPDM  
FKM

## Connection Standard

JIS 10K · JIS 5K  
ANSI CLASS150  
DIN PN10

## Power Source

Single-Phase  
AC100V/110V/200V/220V

## Equipment

Manual Operation Mechanism  
Space Heater  
Output Contact Limit Switches  
Indicator



## FEATURES

- In addition to the ordinary On-Off Limit Switch, additional Limit Switch is built in for safety.
- Manual Operating Handle is provided as a Standard Equipment. The Handle cannot be turned during electric operation due to the planetary Gear Mechanism.

## OPTIONAL EQUIPMENT

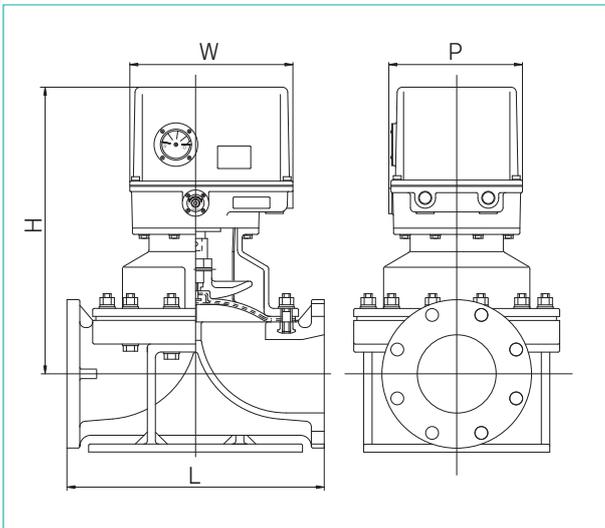
Combination No.	1
Space Heater	●
Output Contact Limit Switches	●

● Standard Equipment

## ACTUATOR SPECIFICATION

Nominal Size mm(inch)	125(5inch)	150(6inch)
Actuator Type	ED-30H	
Cycle Time 50/60Hz(seconds)	48/40	
Motor Output(W)	140	
Motor Starting	100V	5.00/4.80
	110V	1.40/1.46
	200V	2.50/2.40
	220V	0.70/0.70
Motor Rated	100V	3.00/3.00
	110V	2.63/2.40
	200V	1.50/1.50
	220V	1.10/1.10
Number of revolutions of manual operating handle	128	
Limit Switch Capacity	AC 250V 3A	
Protective Structure	JIS C 0920 drip-proof type	
Cable Connector Nominal Size	4-G 3/4	
Motor Pole(P)	4	
Motor Insulation	E Class	
Motor Time Rating(minute)	30	

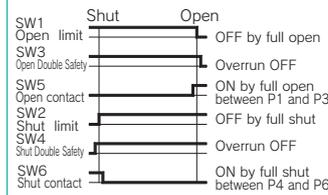
## DIMENSIONS FIGURE



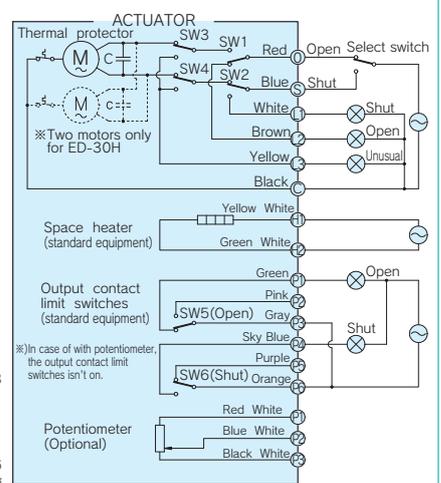
## SCHEMATIC DIAGRAM

### WIRING DIAGRAM

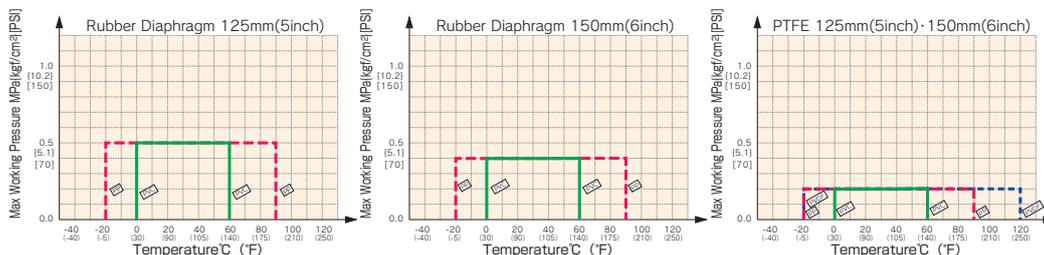
### Switching Chart



NOTE. This circuit diagram shows that the position of the opening action has come to an end.



## WORKING PRESSURE VS. TEMPERATURE



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)	
Nominal Size	125 (5)	150 (6)	
L	JIS	410 (16.14)	480 (18.90)
	DIN	400 (15.75)	480 (18.90)
	ANSI	410 (16.14)	480 (18.90)
H		510 (20.08)	550 (21.65)
W		310 (12.20)	310 (12.20)
P		254 (10.00)	254 (10.00)

# Diaphragm Valve Type 15,72 (Electric Actuated Type S) Type 15:125mm,150mm(5inch,6inch) Type 72:200mm,250mm(8inch,10inch)

- Body Material**  
PVC  
PP  
PVDF
- Diaphragm Material**  
PTFE  
EPDM  
FKM
- Connection Standard**  
JIS 10K · JIS 5K  
ANSI CLASS150  
DIN PN10
- Power Source**  
Three-Phase  
AC200V/400V
- Equipment**  
Manual Operation Mechanism  
(Handle is sold separately.)  
Torque Switches  
Space Heater  
Indicator
- Option**  
Output Contact Limit Switches  
Potentiometer  
E-E Positioner  
R/I Transmitter



## FEATURES

- Standard Torque Switch protects valves from Overload.
- Automatic return does not require Clutch Operation after Manual Operation.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4
Space Heater	●	●	●	●
Output Contact Limit Switches	○	—	—	—
Potentiometer	—	○	○	○
R-I Transmitter	—	—	○	○
E-E Positioner	—	—	—	○

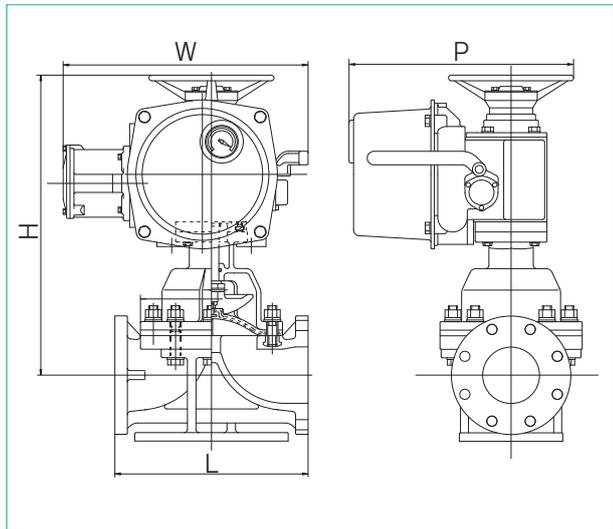
● Standard Equipment  
※ Actuator Type is to be changed.

## ACTUATOR SPECIFICATION

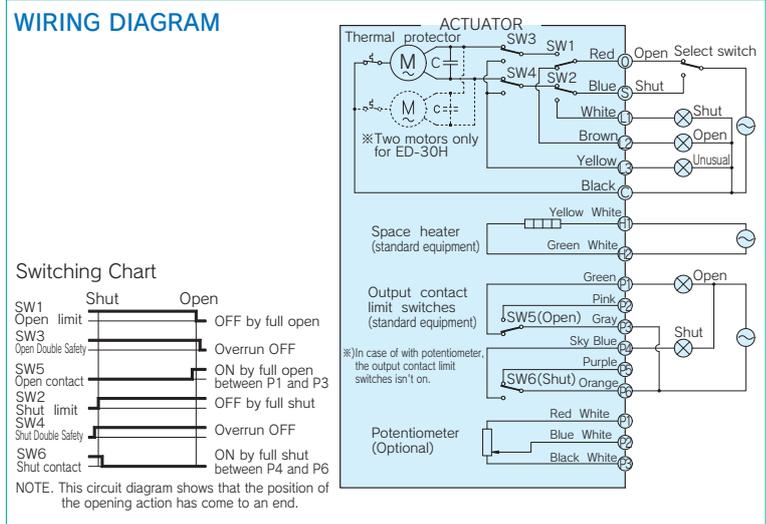
Nominal Size mm(inch)	125 (5inch)	150 (6inch)	200 (8inch)	250 (10inch)
Actuator Type	LTRM-01		LTMD-01	LTMD-02
Cycle Time 50/60Hz(seconds)	29/24	54/46.5	75.5/63	90/75
Motor Output(W)	400		400	750
Motor Starting	200V 8.8/8.3		8.0/7.4	15.6/15.2
Current(A) 50/60Hz	400V 4.4/4.1		4.0/3.7	7.8/7.6
Motor Rated	200V 3.0/2.4		2.5/2.2	4.4/4.0
Current(A) 50/60Hz	400V 1.5/1.2		1.3/1.1	2.2/2.0
Number of revolutions of manual operating handle	10	10	16	18
Limit Switch Capacity	AC 250V 5A			
Protective Structure	IP55			
Cable Connector Nominal Size	2-G1	Operating circuit:2G1 Motor circuit:G3/4		
Motor Pole(P)	4			
Motor Insulation	E Class			
Motor Time Rating(minute)	15			

※ In the case of Actuator with Electric Positioner, the model number is followed by "Z".

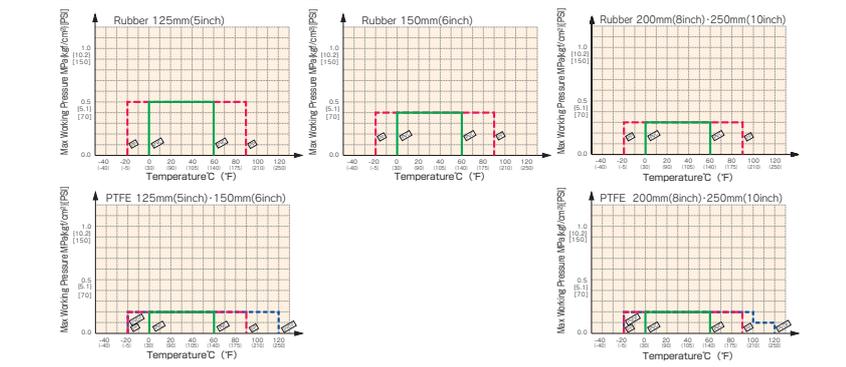
## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM



## WORKING PRESSURE VS. TEMPERATURE



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)			
Nominal Size		125 (5)	150 (6)	200 (8)	250 (10)
L	JIS	410 (16.14)	480 (18.90)	570 (22.44)	680 (26.77)
	DIN	400 (15.75)	480 (18.90)	600 (23.62)	730 (28.74)
	ANSI	410 (16.14)	480 (18.90)	570 (22.44)	680 (26.77)
H		590 (23.23)	714 (28.11)	802 (31.57)	969 (38.15)
W		430 (16.93)	635 (25.00)	635 (25.00)	675 (26.57)
P		395 (15.55)	522 (20.55)	522 (20.55)	557 (21.93)

# Diaphragm Valve Type 14 (Pneumatic Actuated Type AN) 15mm-50mm (1/2inch-2inch)

## Body Material

- PVC
- C-PVC
- PP
- PVDF

## Diaphragm Material

- PTFE
- EPDM
- FKM
- Viflon C (FKM-C)
- Viflon F (FKM-F)

## Connection Standard

- JIS 10K
- ANSI CLASS150
- DIN PN10

## Action

- Double Acting
- Air to Open
- Air to Close

## Equipment

Indicator

## Option

- Filter Regulator
  - Solenoid Valve
  - Limit Switch \*1
  - Speed Controller
  - Manual Override (for only air to open)
  - Positioner
- \*1: Working Pressure with Limit Switch is 0.6MPa at maximum.



## FEATURES

- The Actuator made of resin is Light and Compact.
- NAMUR Standard is applied for Air Piping.
- All optional Equipment (except positioner) can easily be added or removed in the field.
- A Closing Travel Stop Mechanism is Standard.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	—	—	○	—	—	○	—	—
Filter Regulator	—	—	—	○	—	—	○	—	○
Speed Controller	◎	○	—	◎	◎	○	◎	—	—
Limit Switch	—	—	○	—	○	○	○	—	—
Positioner (electric-air, air-air)	—	—	—	—	—	—	—	○	○

◎Indicates specialized for Solenoid Valve.

※With built-in speed controller and bypass valve.

## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Actuator Type	AN-1DA		AN-2DA		AN-3DA	AN-4DA
Operating Pressure MPa(kgf/cm <sup>2</sup> )	0.4{4.1} - 0.6{6.1}					
Air Consumption NI /open & close (at operating pressure 0.4MPa)	2.6	2.6	2.7	2.7	9.6	9.8
Air Supply Bore	Rc 1/4					

## ACTUATOR SPECIFICATION [Air to Open]

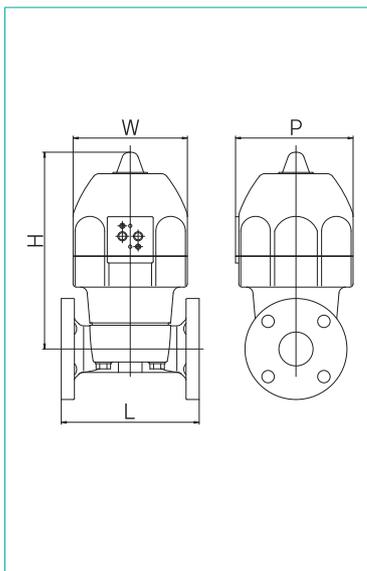
Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Actuator Type	AN-1AO		AN-2AO		AN-3AO	AN-4AO
Operating Pressure MPa(kgf/cm <sup>2</sup> )	0.4{4.1} - 0.6{6.1}					
Air Consumption NI /open & close (at operating pressure 0.4MPa)	0.8	0.8	0.8	0.8	3.4	3.4
Air Supply Bore	Rc 1/4					

## ACTUATOR SPECIFICATION [Air to Close]

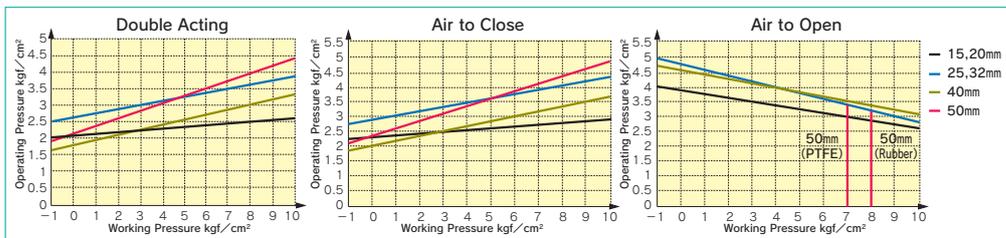
Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Actuator Type	AN-1AS		AN-2AS		AN-3AS	AN-4AS
Operating Pressure MPa(kgf/cm <sup>2</sup> )	0.4{4.1} - 0.6{6.1}					
Air Consumption NI /open & close (at operating pressure 0.4MPa)	1.8	1.8	1.9	1.9	6.1	6.3
Air Supply Bore	Rc 1/4					

\* for the actuator with lubricant free valves consult near Asahi dealer.

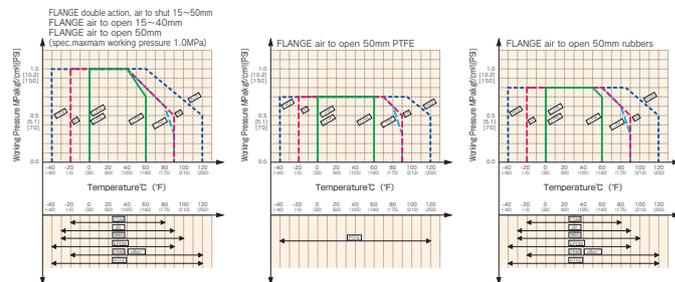
## DIMENSIONS FIGURE



## OPERATION PRESSURE vs WORKING PRESSURE



## WORKING PRESSURE VS. TEMPERATURE



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)					
Nominal Size		15(1/2)	20(3/4)	25(1)	32(1 1/4)	40(1 1/2)	50(2)
L	JIS	110(4.33)	120(4.72)	130(5.12)	142(5.59)	180(7.09)	210(8.27)
	DIN	130(5.12)	150(5.91)	160(6.30)	180(7.09)	200(7.87)	230(9.06)
ANSI	A Standard	110(4.33)	120(4.72)	130(5.12)	—	180(7.09)	210(8.27)
	G Standard	108(4.25)	149(5.88)	149(5.88)	213(6.38)	176(6.94)	202(7.94)
H		186(7.32)	188(7.4)	193(7.6)	197(7.76)	293(11.54)	302(11.89)
W		130(5.12)	130(5.12)	130(5.12)	130(5.12)	174(6.85)	174(6.85)
P		133(5.24)	133(5.24)	133(5.24)	133(5.24)	179(7.05)	179(7.05)

# Diaphragm Valve Type 14 (Pneumatic Actuated Type AV) 65mm-100mm (2 1/2 inch-4 inch)

### Body Material

- PVC
- C-PVC
- PP
- PVDF

### Diaphragm Material

- PTFE
- EPDM
- FKM
- Viflon C (FKM-C)
- Viflon F (FKM-F)

### Connection Standard

- JIS 10K
- ANSI CLASS150
- DIN PN10

### Action

- Double Acting
- Air to Open
- Air to Close

### Equipment

- Indicator

### Option

- Filter Regulator
- Solenoid Valve
- Limit Switch
- Speed Controller
- Manual Override
- ※ for air to open
- Positioner



### FEATURES

- A Closing Travel Stop mechanism is standard.
- NAMUR Standard is applied for air piping.

### OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	—	—	○	○	—	○	—	—
Filter Regulator	—	—	—	—	—	—	—	—	○
Speed Controller	○	○	—	○	○	○	○	—	—
Limit Switch	—	—	○	—	○	○	○	—	—
Positioner (Electric-Air, Air-Air)	—	—	—	—	—	—	—	○	○

### ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	65(2 1/2inch)	80(3inch)	100(4inch)
Actuator Type	—	—	—
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}		
Air Consumption NI /open & close (at operating pressure 0.4MPa)	10.3	11.9	20.7
Air Supply Bore	Rc 1/4		

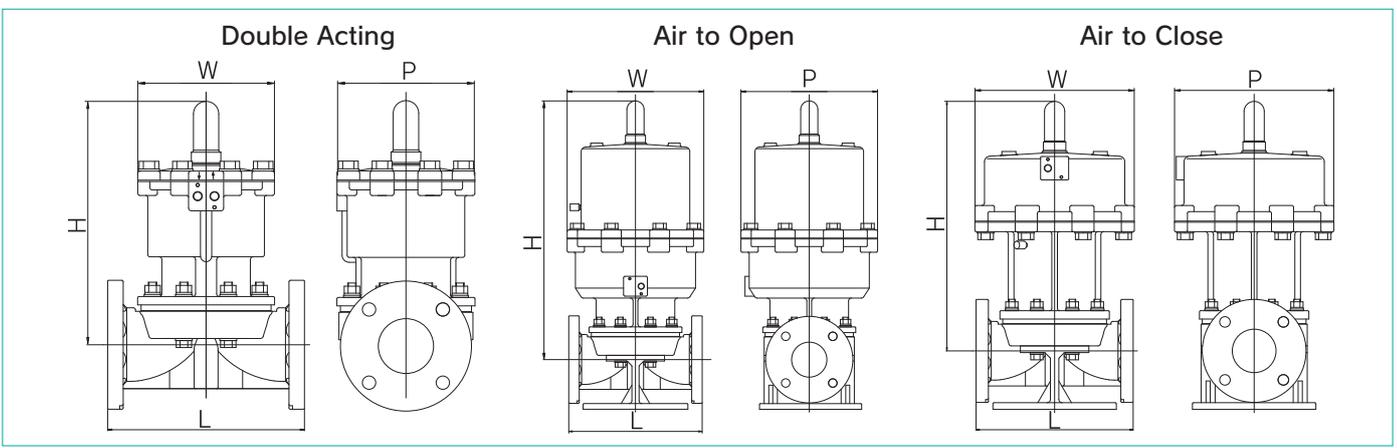
### ACTUATOR SPECIFICATION [Air to Open]

Nominal Size mm(inch)	65(2 1/2inch)	80(3inch)	100(4inch)
Actuator Type	—	—	—
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}		
Air Consumption NI /open & close (at operating pressure 0.4MPa)	10.6	15.9	34.3
Air Supply Bore	Rc 1/4		

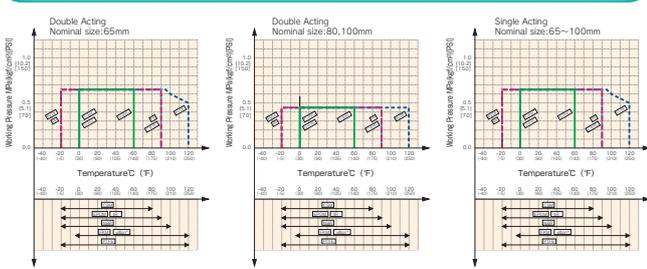
### ACTUATOR SPECIFICATION [Air to Close]

Nominal Size mm(inch)	65(2 1/2inch)	80(3inch)	100(4inch)
Actuator Type	—	—	—
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}		
Air Consumption NI /open & close (at operating pressure 0.4MPa)	9.4	11.7	26.5
Air Supply Bore	Rc 1/4		

### DIMENSIONS FIGURE



### WORKING PRESSURE VS. TEMPERATURE



### DIMENSIONS TABLE

JIS, ANSI, DIN				Unit:mm(inch)						
Common	L	Nominal Size	Nominal Size	Nominal Size						
				65 (2 1/2)	80 (3)	100 (4)				
Double Acting	Air to Open	JIS	250 (9.84)	280 (11.02)	340 (13.39)	H	473 (18.62)	550 (21.65)	601 (23.66)	
		DIN	290 (11.42)	310 (12.2)	350 (13.78)	W	280 (11.02)	305 (12.01)	385 (15.16)	
		ANSI	250 (9.84)	280 (11.02)	340 (13.39)	P	280 (11.02)	305 (12.01)	385 (15.16)	
	Air to Close	ANSI	A Standard	250 (9.84)	280 (11.02)	340 (13.39)	H	423 (16.65)	455 (17.91)	509 (20.04)
		ANSI	G Standard	—	263 (10.37)	328 (12.93)	W	280 (11.02)	305 (12.01)	385 (15.16)
		H	323 (12.72)	354 (13.94)	417 (16.42)	P	280 (11.02)	305 (12.01)	385 (15.16)	

# True Union Diaphragm Valve Type 14 (Pneumatic Actuated Type AN) 15mm-50mm (1/2 inch-2 inch)

## Body Material

- PVC
- C-PVC
- PP
- PVDF

## Diaphragm Material

- PTFE
- EPDM
- FKM
- Viflon C (FKM-C)
- Viflon F (FKM-F)

## Connection Standard

- Socket End JIS
- Socket End ASTM SCH80
- Socket End DIN
- Threaded End Rc
- Threaded End NPT
- Threaded End Rp



## FEATURES

- The Actuator made of Resin is Light and Compact.
- NAMUR Standard is applied for air piping.
- All Optional Equipment(except positioner) can easily be added or removed in the Field.
- A Closing Travel Stop mechanism is standard.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	-	-	○	○	-	○	-	-
Filter Regulator	-	-	-	○	○	-	○	-	○
Speed Controller	◎	○	-	◎	◎	○	◎	-	-
Limit Switch	-	-	○	-	○	○	○	-	-
Positioner (Electric-Air, Air-Air)	-	-	-	-	-	-	-	○	○

◎Indicates specialized for Solenoid Valve.

※With built-in speed controller and bypass valve.

## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Actuator Type	AN-1DA		AN-2DA		AN-3DA	AN-4DA
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}					
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	2.6	2.6	2.7	2.7	9.6	9.8
Air Supply Bore	Rc 1/4					

## ACTUATOR SPECIFICATION [Air to Open]

Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Actuator Type	AN-1AO		AN-2AO		AN-3AO	AN-4AO
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}					
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.8	0.8	0.8	0.8	3.4	3.4
Air Supply Bore	Rc 1/4					

## ACTUATOR SPECIFICATION [Air to Close]

Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Actuator Type	AN-1AS		AN-2AS		AN-3AS	AN-4AS
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}					
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	1.8	1.8	1.9	1.9	6.1	6.3
Air Supply Bore	Rc 1/4					

\* for the actuator with lubricant free valves consult near Asahi dealer.

## Action

- Double Acting
- Air to Open
- Air to Close

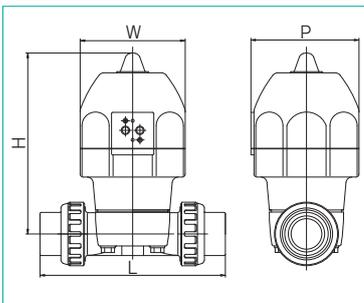
## Equipment

- Indicator

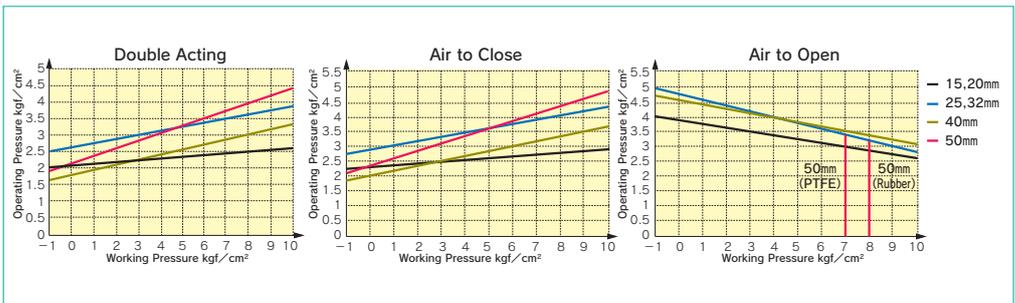
## Option

- Filter Regulator
- Solenoid Valve
- Limit Switch
- Speed Controller
- Manual Override
- ※ for air to open
- Positioner

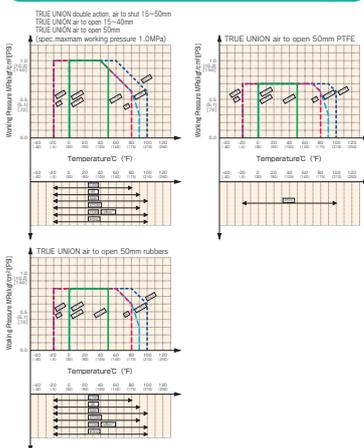
## DIMENSIONS FIGURE



## OPERATION PRESSURE vs WORKING PRESSURE



## WORKING PRESSURE VS. TEMPERATURE



## DIMENSIONS TABLE

JIS, ANSI, DIN										Unit:mm (inch)								
Nominal Size		15(1/2)	20(3/4)	25(1)	32(1 1/4)	40(1 1/2)	50(2)	Nominal Size		15(1/2)	20(3/4)	25(1)	32(1 1/4)	40(1 1/2)	50(2)			
Threaded End	L	PVC, C-PVC	JIS	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	281 (11.06)	Socket End	L	JIS	134 (5.28)	154 (6.06)	182 (7.17)	-	253 (9.96)	275 (10.83)
			DIN	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	281 (11.06)			DIN	125 (4.92)	141 (5.55)	164 (6.46)	177 (6.97)	231 (9.09)	274 (10.79)
			ANSI	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	281 (11.06)			ANSI	138 (5.43)	155 (6.09)	184 (7.24)	198 (7.80)	261 (10.28)	293 (11.54)
	L	PP, PVDF	JIS	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	278 (10.95)	Socket End	L	DIN	125 (4.92)	141 (5.55)	164 (6.46)	177 (6.97)	231 (9.09)	274 (10.79)
			DIN	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	278 (10.95)			ANSI	138 (5.43)	155 (6.09)	184 (7.24)	198 (7.80)	261 (10.28)	293 (11.54)
			ANSI	128 (5.04)	148 (5.83)	172 (6.77)	188 (7.4)	245 (9.65)	278 (10.95)			H	186 (7.32)	188 (7.4)	193 (7.6)	197 (7.76)	293 (11.54)	302 (11.89)
Socket End	PVC, C-PVC	JIS	134 (5.28)	156 (6.14)	186 (7.32)	200 (7.87)	271 (10.67)	303 (11.93)	Common	W	130 (5.12)	130 (5.12)	130 (5.12)	130 (5.12)	174 (6.85)	174 (6.85)		
		DIN	128 (5.04)	147 (5.79)	172 (6.77)	188 (7.4)	246 (9.69)	294 (11.57)			P	133 (5.24)	133 (5.24)	133 (5.24)	133 (5.24)	179 (7.05)	179 (7.05)	
		ANSI	139 (5.47)	157 (6.18)	186 (7.32)	202 (7.95)	266 (10.47)	293 (11.54)										

# Diaphragm Valve Type 15,72(Pneumatic Actuated Type AV) Type15:125mm,150mm(5inch,6inch) Type72:200mm,250mm(8inch,10inch)

- Body Material**
  - PVC
  - PP
  - PVDF
- Diaphragm Material**
  - PTFE
  - EPDM
  - FKM
- Connection Standard**
  - JIS 10K · JIS 5K
  - ANSI CLASS150
  - DIN PN10
- Action**
  - Double Acting
  - Air to Open
  - Air to Close
- Equipment**
  - Opening Indicator (Gauge Cover)
- Option**
  - Filter Regulator
  - Solenoid Valve
  - Speed Controller
  - Positioner



## FEATURES

- Stopper provided to adjust to Fully-Closed position.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Solenoid Valve ※	○	—	—	○	○	○	—	○	○	○	○	—	—
Filter Regulator	—	—	—	○	—	—	—	○	○	—	○	—	○
Speed Controller	—	○	—	—	○	—	○	○	—	○	○	—	—
Limit Switch	—	—	○	—	—	○	—	○	○	—	○	—	—
Positioner (Electric-Air, Air-Air)	—	—	—	—	—	—	—	—	—	—	—	○	○

## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	125(5inch)	150(6inch)	200(8inch)	250(10inch)
Actuator Type	—	—	—	—
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}			
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	36.6	67.3	87.3	214
Air Supply Bore	Rc 3/8			

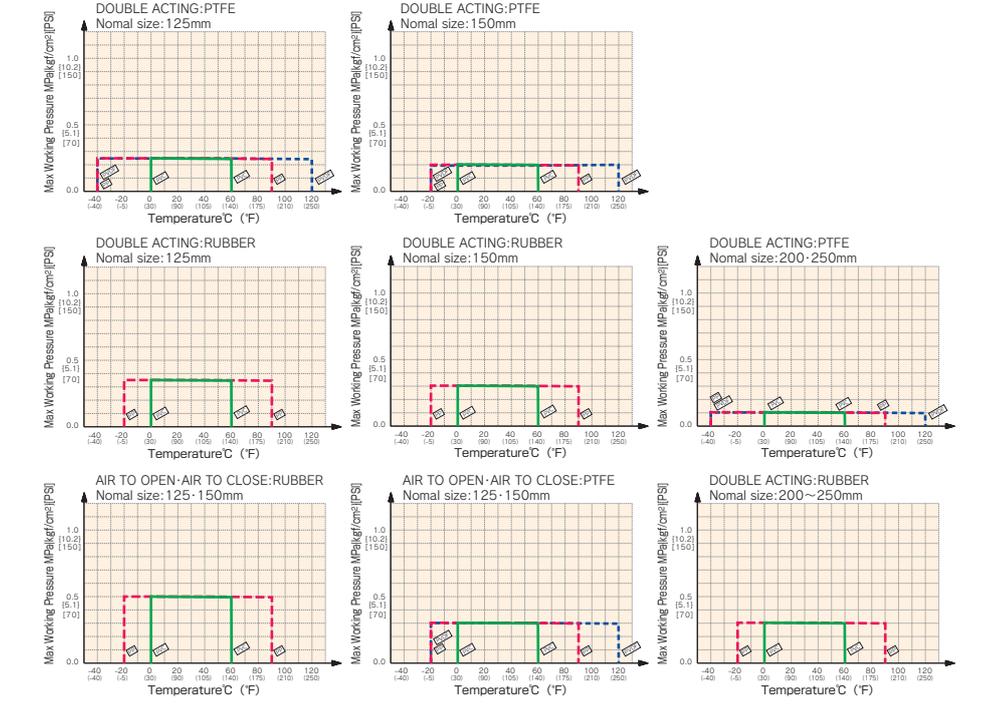
## ACTUATOR SPECIFICATION [Air to Open]

Nominal Size mm(inch)	125(5inch)	150(6inch)
Actuator Type	—	—
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}	
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	55.6	84.2
Air Supply Bore	Rc 3/8	

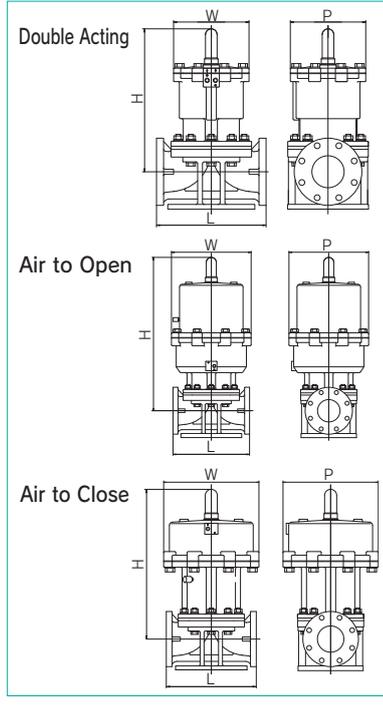
## ACTUATOR SPECIFICATION [Air to Close]

Nominal Size mm(inch)	125(5inch)	150(6inch)
Actuator Type	—	—
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}	
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	38.4	60.5
Air Supply Bore	Rc 3/8	

## WORKING PRESSURE VS. TEMPERATURE



## DIMENSIONS FIGURE



## DIMENSIONS TABLE

JIS, ANSI, DIN			Unit:mm(inch)			
Nominal Size			125 (5)	150 (6)	200 (8)	250 (10)
Common	L	JIS	410 (16.14)	480 (18.90)	570 (22.44)	680 (26.77)
		DIN	400 (15.75)	480 (18.90)	600 (23.62)	730 (28.74)
		ANSI	410 (16.14)	480 (18.90)	570 (22.44)	680 (26.77)
Double Acting	H		508 (20.00)	566 (22.28)	742 (29.21)	890 (35.04)
	W		305 (12.01)	385 (15.16)	387.5 (15.26)	520 (20.47)
	P		302.5 (11.91)	387.5 (15.26)	385 (15.16)	520 (20.47)
Air to Open	H		690 (27.17)	790 (31.10)	—	—
	W		455 (17.91)	520 (20.47)	—	—
	P		455 (17.91)	520 (20.47)	—	—
Air to Close	H		653 (25.71)	722 (28.43)	—	—
	W		455 (17.91)	520 (20.47)	—	—
	P		455 (17.91)	520 (20.47)	—	—

# Diaphragm Valve Type AI (Pneumatic Actuated Type AI) 15mm-50mm(1/2inch-2inch)

## Body Material

PVC  
C-PVC  
PP  
PVDF

## Diaphragm Material

PTFE  
EPDM  
FKM  
Viflon C (FKM-C)  
Viflon F (FKM-F)

## Connection Standard

JIS 10K  
ANSI CLASS150  
DIN PN10

## Action

Double Acting  
Air to Open  
Air to Close

## Equipment

Indicator

## Option

- Filter Regulator
- Solenoid Valve
- Limit Switch
- Speed Controller
- Positioner



## FEATURES

- **Excellent Durability**  
More than 500,000 times Open and Close.
- **Compact Design**  
Light Weight and Minimal Overall Height.
- **Excellent Corrosion Resistance**  
All Wetted Parts are made of Corrosion Resistant Thermoplastics.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	-	-	○	○	-	○	-	-
Filter Regulator	-	-	-	○	-	-	○	-	○
Speed Controller	◎	○	-	◎	◎	○	◎	-	-
Limit Switch	-	-	○	-	○	○	○	-	-
Positioner (electric-air, ait-air)	-	-	-	-	-	-	-	○	○

◎Indicates specialized for Solenoid Valve.

※With built-in speed controller and bypass valve.

## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}					
Air Consumption NI /open & close (at operating pressure 0.4MPa)	0.89	0.89	1.29	1.29	4.35	4.80
Air Supply Bore	Rc 1/4					

## ACTUATOR SPECIFICATION [Air to Open]

Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}					
Air Consumption NI /open & close (at operating pressure 0.4MPa)	0.35	0.35	0.49	0.49	1.73	1.98
Air Supply Bore	Rc 1/4					

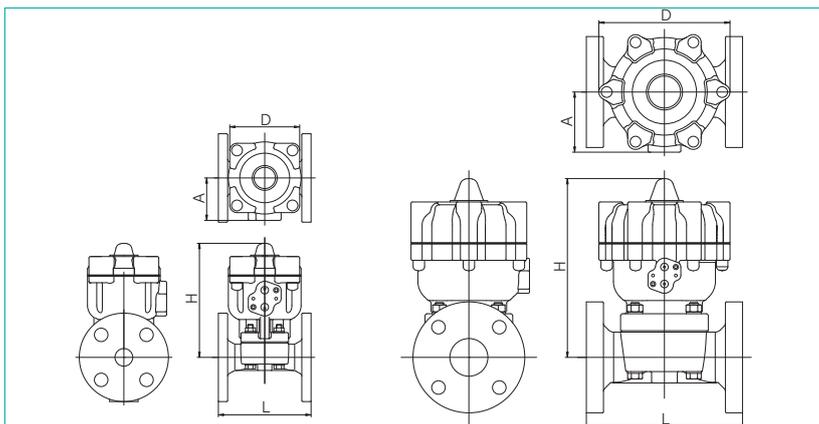
## ACTUATOR SPECIFICATION [Air to Close]

Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}					
Air Consumption NI /open & close (at operating pressure 0.4MPa)	0.54	0.54	0.79	0.79	2.63	2.82
Air Supply Bore	Rc 1/4					

\* for the actuator with lubricant free valves consult near Asahi dealer.



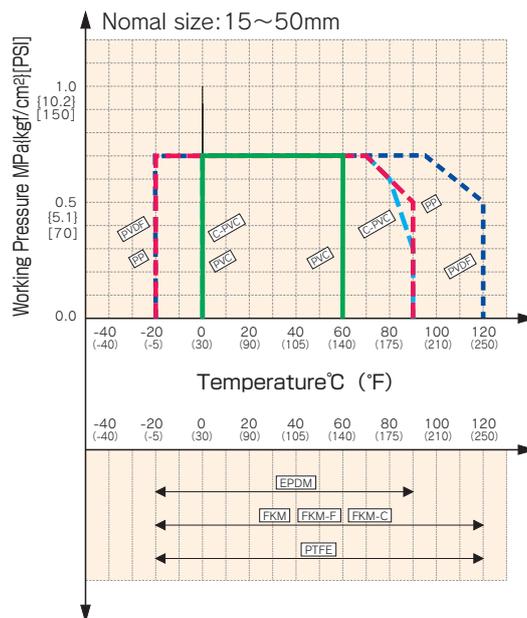
## DIMENSIONS FIGURE



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(JIS,DIN) inch(ANSI)						
Nominal Size		15(1/2)	20(3/4)	25(1)	32(1 1/4)	40(1 1/2)	50(2)	
D	JIS,DIN	91	91	100	100	184	184	
	ANSI	3.58	3.58	3.94	3.94	7.24	7.24	
A	JIS,DIN	55	55	60	60	85	85	
	ANSI	2.17	2.17	2.36	2.36	3.35	3.35	
H	JIS,DIN	145	153	161	165	238	254	
	ANSI	5.71	6.02	6.34	6.50	9.37	10.00	
L	JIS		110	120	130	142	180	210
	DIN		130	150	160	180	200	230
	ANSI	A Standard	4.33	4.72	5.12	-	7.09	8.27
		G Standard	4.25	5.88	5.88	6.38	6.94	7.94

## WORKING PRESSURE VS. TEMPERATURE



# True Union Diaphragm Valve Type AI (Pneumatic Actuated Type AI) 15mm-50mm(1/2inch-2inch)

## Body Material

PVC  
C-PVC  
PP  
PVDF

## Diaphragm Material

PTFE  
EPDM  
FKM  
Viflon C (FKM-C)  
Viflon F (FKM-F)

## Connection Standard

Socket End JIS  
Socket End ASTM SCH80  
Socket End DIN  
Threaded End Rc  
Threaded End NPT  
Threaded End Rp

## Action

Double Acting  
Air to Open  
Air to Close

## Equipment

Indicator

## Option

- Filter Regulator
- Solenoid Valve
- Limit Switch
- Speed Controller
- Positioner



## FEATURES

- Excellent Durability**  
More than 500,000 times Open and Close.
- Compact Design**  
Light Weight and Minimal Overall Height.
- Excellent Corrosion Resistance**  
All Wetted Parts are made of Corrosion Resistant Thermoplastics.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	—	—	○	○	—	○	—	—
Filter Regulator	—	—	—	○	—	—	○	—	○
Speed Controller	◎	○	—	◎	◎	○	◎	—	—
Limit Switch	—	—	○	—	○	○	○	—	—
Positioner (Electric-Air, Air-Air)	—	—	—	—	—	—	—	○	○

◎Indicates specialized for Solenoid Valve.

※With built-in speed controller and bypass valve.

## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4[4.1] - 0.6[6.1]					
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.89	0.89	1.29	1.29	4.35	4.80
Air Supply Bore	Rc 1/4					

## ACTUATOR SPECIFICATION [Air to Open]

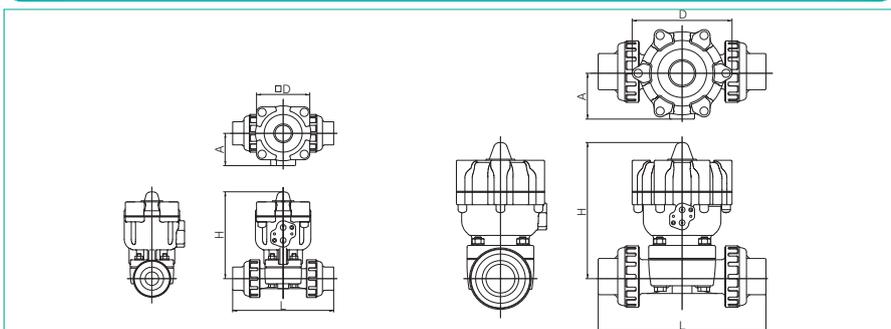
Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4[4.1] - 0.6[6.1]					
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.35	0.35	0.49	0.49	1.73	1.98
Air Supply Bore	Rc 1/4					

## ACTUATOR SPECIFICATION [Air to Close]

Nominal Size mm(inch)	15(1/2inch)	20(3/4inch)	25(1inch)	32(1 1/4inch)	40(1 1/2inch)	50(2inch)
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4[4.1] - 0.6[6.1]					
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.54	0.54	0.79	0.79	2.63	2.82
Air Supply Bore	Rc 1/4					

\* for the actuator with lubricant free valves consult near Asahi dealer.

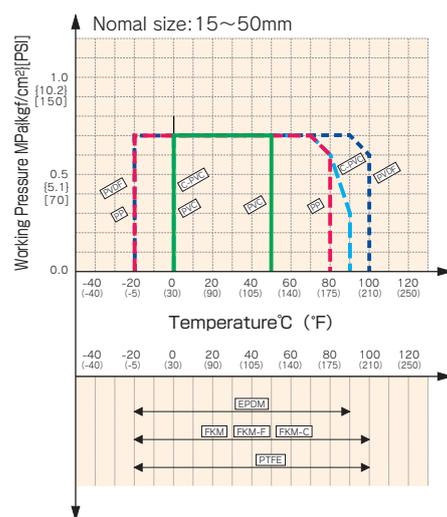
## DIMENSIONS FIGURE



## DIMENSIONS TABLE

JIS, ANSI, DIN			Unit:mm(JIS,DIN) inch(ANSI)						
Nominal Size			15(1/2)	20(3/4)	25(1)	32(1 1/4)	40(1 1/2)	50(2)	
D	Common	JIS, DIN	91	91	100	100	184	184	
		ANSI	3.58	3.58	3.94	3.94	7.24	7.24	
A	Common	JIS, DIN	55	55	60	60	85	85	
		ANSI	2.17	2.17	2.36	2.36	3.35	3.35	
H	Common	JIS, DIN	145	153	161	165	238	254	
		ANSI	5.71	6.02	6.34	6.50	9.37	10.00	
L	Threaded End	PVC, C-PVC	JIS	128	148	172	188	245	281
			DIN	128	148	172	188	245	281
		ANSI	JIS	5.04	5.83	6.77	7.40	9.65	11.06
			DIN	5.04	5.83	6.77	7.40	9.65	11.06
	Socket End	PP, PVDF	JIS	134	154	182	—	253	275
			DIN	125	141	164	177	231	274
		ANSI	JIS	5.43	6.09	7.24	7.80	10.28	11.54
			DIN	150	172	195	212	276	308
Spigot End	PP, PVDF	JIS	150	172	195	212	276	307	
		DIN	150	172	195	212	276	307	

## WORKING PRESSURE VS. TEMPERATURE



# Diaphragm Valve Type 16 (Pneumatic Actuated Type AD) 15mm-50mm (1/2inch-2inch)

**Body Material**  
PVC

**Diaphragm Material**  
PTFE  
EPDM

**Connection Standard**  
Socket End JIS  
Socket End ASTM SCH80  
Socket End DIN  
Threaded End Rc  
Threaded End NPT  
Threaded End Rp  
Flanged End JIS 10K  
Flanged End ANSI CLASS150  
Flanged End DIN PN10

**Action**  
Double Acting  
Air to Open

**Option**  
Speed Controller  
Full Opening Adjustment Mechanism  
Indicator



## FEATURES

- Compact & Light Weight**  
The most suitable for limited piping space or parallel piping lines.
- Excellent corrosion resistance**  
All parts are made of thermoplastics and rubber.
- Excellent Durability.**  
More than 1 million times open and close.  
※ Type16 Diaphragm Valve is only available with lubricant free.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5*	6*
Speed Controller	—	○	—	○	—	○
Full Opening Adjustment Mechanism	—	—	○	○	○	○
Indicator	●	●	—	—	◎	◎

● Standard Equipment  
◎ Special Indicator  
※ Nominal Size 15mm(1/2"), 25mm(1") Only



▲Speed Controller



▲Full Opening Adjustment Mechanism



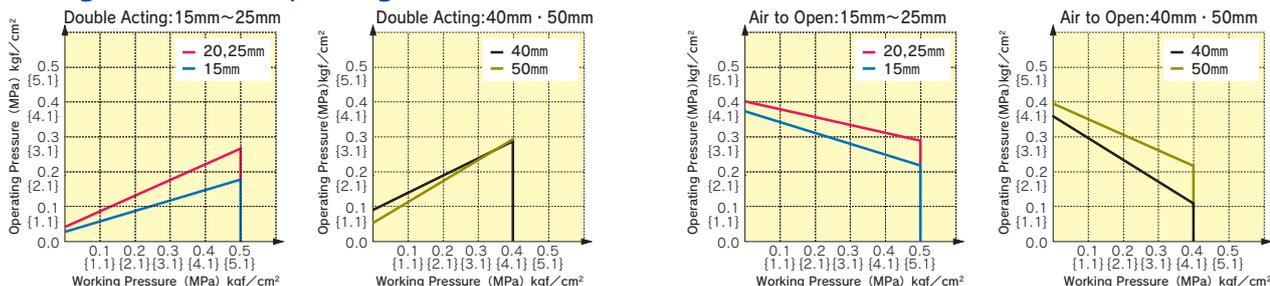
▲Full Opening Adjustment Mechanism Indicator

## ACTUATOR SPECIFICATION

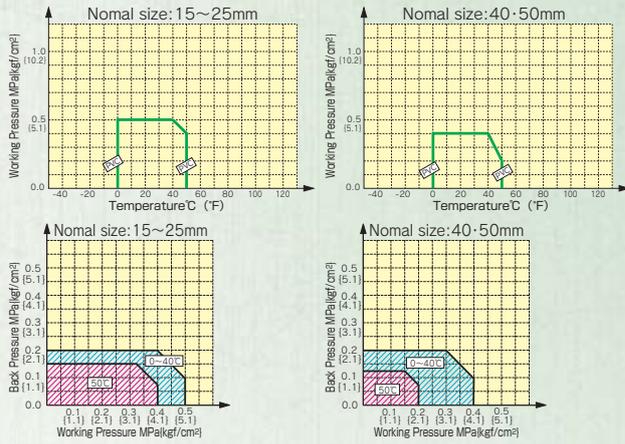
Nominal Size mm(inch)	15 (1/2inch)	20 (3/4inch)	25 (1inch)	40 (1 1/2inch)	50 (2inch)
Action	Air to Open, Double Acting				
Fluid	Pure water, Chemical				
Fluid Temperature	0-50°C(30-122° F)				
Working Pressure Range	0-0.5MPa [72.5PSI]			0-0.4MPa [58PSI]	
Back Pressure Range	0-0.2MPa [29PSI]				
Ambient Temperature	0-50°C(30-122° F)				
Frequency of Opening and Closing	With in 20 times/min			With in 15 times/min	
Connection	Socket End, Threaded End, Flange End				
Standard	JIS, DIN, ANSI				
Orifice Diameter	16mm(0.63inch)	22mm(0.87inch)	22mm(0.87inch)	40mm(1.57inch)	50mm(1.97inch)
Cv Value	4.8	8	9.5	26	44
Operating Pressure	Air to Open	0.4-0.5MPa [58-72.5PSI]			
	Double Acting	0.3-0.4MPa [43.5-58PSI]			
Air Supply Port Size	Rc1/8				
Installation Direction	Any direction				

note: Pay attention to Fluid temperature & Working pressure range.

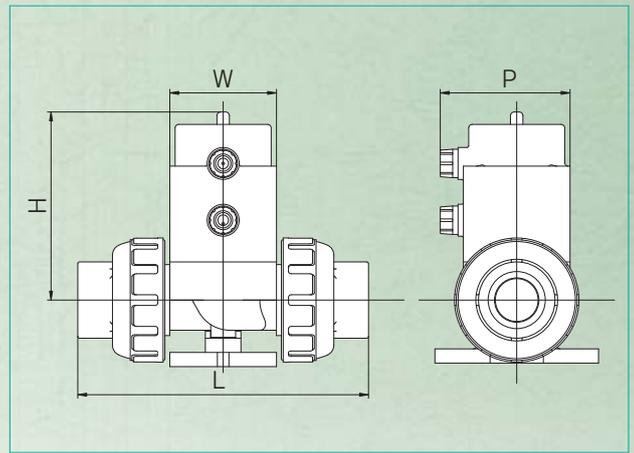
### Working Pressure vs. Operating Pressure



WORKING PRESSURE VS. TEMPERATURE



DIMENSIONS FIGURE



DIMENSIONS TABLE

Unit:mm(inch)

Nominal Size			15(1/2)	20(3/4)	25(1)	40(1 1/2)	50(2)
Flanged End		JIS	158.0(6.22)	191.0(7.52)	205.5(8.09)	264.0(10.39)	297.0(11.69)
		ANSI	158.0(6.22)	191.0(7.52)	205.5(8.09)	263.9(10.39)	296.9(11.69)
		DIN	145.0(5.71)	169.0(6.65)	178.5(7.03)	252.0(9.92)	293.0(11.54)
Threaded End	L	JIS	117.0(4.61)	139.0(5.47)	149.0(5.87)	215.0(8.46)	260.0(10.24)
		ANSI	117.0(4.61)	139.0(5.47)	149.0(5.87)	215.0(8.46)	260.0(10.24)
		DIN	117.0(4.61)	139.0(5.47)	149.0(5.87)	215.0(8.46)	260.0(10.24)
Socket End		JIS	118.0(4.65)	138.0(5.43)	149.5(5.89)	216.0(8.50)	260.0(10.24)
		ANSI	118.0(4.65)	138.0(5.43)	149.5(5.89)	216.0(8.50)	260.0(10.24)
		DIN	118.0(4.65)	138.0(5.43)	149.5(5.89)	216.0(8.50)	260.0(10.24)
Common	H	-	79.0(3.11)	108.0(4.25)	109.0(4.29)	161.5(6.36)	188.5(7.42)
	W	-	50.0(1.97)	60.0(2.36)	60.0(2.36)	95.0(3.74)	115.0(4.53)
	P	-	63.0(2.48)	73.0(2.87)	73.0(2.87)	107.5(4.23)	128.0(5.04)

MODEL SELECTION TABLE

A16

U

Acting	
DG	Air to Open
DF	Double Acting

Body Material	
U	PVC

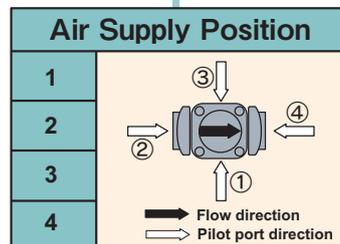
Nominal Size	
015	15mm(1/2")
020	20mm(3/4")
025	25mm(1")
040	40mm(1 1/2")
050	50mm(2")

Option	
1	No Option
2	Speed Controller
3	Travel Stop
4	Travel Stop Speed Controller
5*	Travel Stop Indicator
6*	Travel Stop Speed Controller Indicator

Sheet / O-ring Material	
1	PTFE/EPDM
2	PTFE/FKM
3	PTFE/Vifron®F
E	EPDM/EPDM

Connection Standard	
SJ	Socket End JIS
S8	Socket End ASTM SCH80
SD	Socket End DIN
NJ	Threaded End Rc
NA	Threaded End NPT
ND	Threaded End Rp
F1	Flanged End JIS10K
FA	Flanged End ANSI CLASS150
FD	Flanged End DIN PN10

\*: Nominal Size 40mm and 50mm are not available.



# Ball Valve Type 21 (Electric actuated Type T) 15mm - 50mm (1/2 inch - 2 inch)

## Body Material

PVC  
C-PVC  
PP  
PVDF

## O-ring Material

EPDM  
FKM

## Connection Standard

Socket End JIS  
Socket End ASTM SCH80  
Socket End DIN  
Threaded End Rc  
Threaded End NPT  
Threaded End Rp  
Flanged End JIS10K  
Flanged End ANSI CLASS150  
Flanged End DIN PN10

## Power Source

Single-Phase  
AC100V  
AC200V

## Equipment

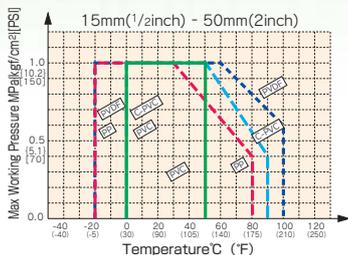
Manual Operation Mechanism  
Output Contact Limit Switches  
Indicator

## Option

Space heater



## WORKING PRESSURE VS. TEMPERATURE



## FEATURES

- Motor is built into the body. Light-weight and Compact with high torque.
- Stopper enables adjustment of an angle of  $\pm 5$  degree at fully-Opened or Fully-Closed position.
- Opening Indicator is easy to read.

## OPTIONAL EQUIPMENT

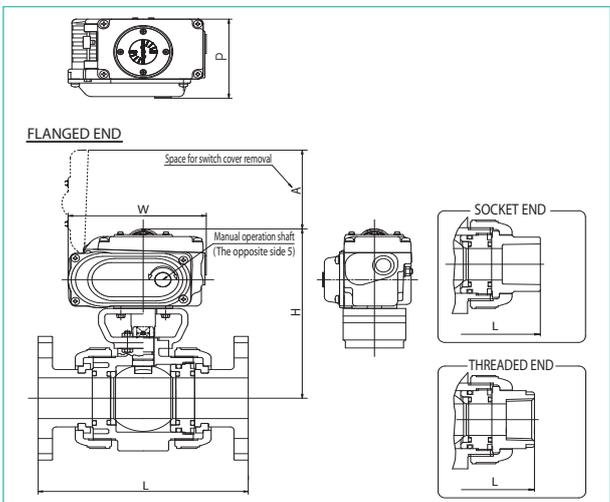
Combination No.	1	2	3
Space Heater	○	—	○
Manual Operation Mechanism	—	○	○

## ACTUATOR SPECIFICATION

Nominal Size mm(inch)	15 - 50 (1/2inch - 2inch)	
Actuator Type	AOC-00	
Cycle Time 50/60Hz(seconds)	10/8	
Motor Output(W)	8	
Motor Starting Current(A) 50/60Hz	100V	0.80/0.80
	110V	1.0/1.0
	200V	0.5/0.5
	220V	0.7/0.7
Motor Rated Current(A) 50/60Hz	100V	0.4/0.4
	110V	0.5/0.5
	200V	0.25/0.25
	220V	0.3/0.3
Number of Revolutions of Manual Operating Handle	7.5	
Limit Switch Capacity	AC 250V 5A (Min.0.1A)	
Protective Structure	JIS C 0920 Waterjet-proof type	
Cable Connector Nominal Size	G1/2	
Motor Pole(P)	4	
Motor Insulation	E Class	
Motor Time Rating(minute)	30	

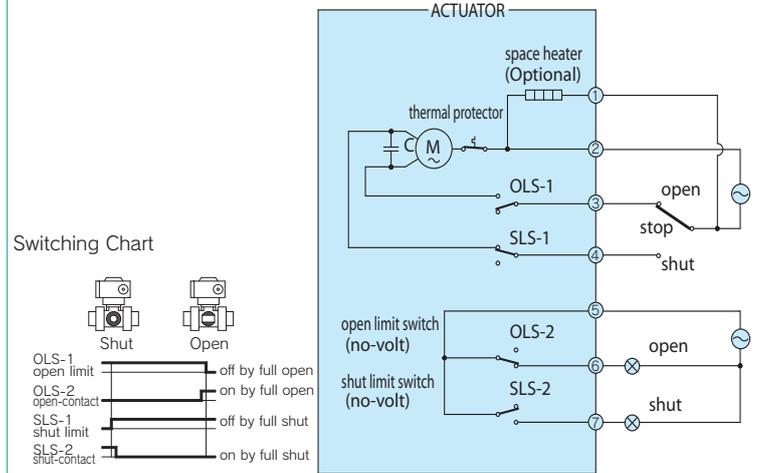
\* for the actuator with lubricant free valves consult near Asahi dealer.

## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

### WIRING DIAGRAM



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)						
Nominal Size		15(1/2)	20(3/4)	25(1)	32(1 1/4)	40(1 1/2)	50(2)	
Flanged End	Common	JIS	143(5.63)	172(6.77)	187(7.36)	190(7.48)	212(8.35)	234(9.21)
		DIN	130(5.12)	150(5.91)	160(6.30)	180(7.09)	200(7.87)	230(9.06)
		ANSI	143(5.63)	172(6.77)	187(7.36)	190(7.48)	212(8.35)	234(9.21)
Threaded End	Common	JIS	102(4.02)	120(4.72)	131(5.16)	150(5.91)	163(6.42)	197(7.76)
		DIN	102(4.02)	120(4.72)	131(5.16)	150(5.91)	163(6.42)	197(7.76)
		ANSI	113(4.45)	129(5.08)	146(5.75)	164(6.46)	184(7.24)	209(8.23)
Socket End	PVC C-PVC	JIS	108(4.25)	128(5.04)	145(5.71)	162(6.38)	189(7.44)	220(8.66)
		DIN	102(4.02)	120(4.72)	131(5.16)	150(5.91)	163(6.42)	197(7.76)
		ANSI	113(4.45)	129(5.08)	146(5.75)	164(6.46)	184(7.24)	209(8.23)
	PP	JIS	108(4.25)	126(4.96)	141(5.55)	—	171(6.73)	192(7.56)
		DIN	99(3.90)	114(4.49)	123(4.84)	139(5.47)	148(5.83)	176(6.93)
		ANSI	113(4.45)	129(5.08)	146(5.75)	164(6.46)	184(7.24)	209(8.23)
	PVDF	DIN	99(3.90)	114(4.49)	123(4.84)	139(5.47)	148(5.83)	176(6.93)
		ANSI	113(4.45)	129(5.08)	146(5.75)	164(6.46)	184(7.24)	209(8.23)
		H	169.5(6.67)	176(6.93)	183(7.21)	192(7.56)	200.5(7.89)	212(8.35)
Common	W	154.5(6.08)	154.5(6.08)	154.5(6.08)	154.5(6.08)	154.5(6.08)	154.5(6.08)	
	P	99(3.90)	99(3.90)	99(3.90)	99(3.90)	99(3.90)	99(3.90)	
	A	100(3.94)	100(3.94)	100(3.94)	100(3.94)	100(3.94)	100(3.94)	

# Ball Valve Type 21 (Electric actuated Type T) 65mm - 100mm (2 1/2 inch - 4 inch)

## Body Material

- PVC
- C-PVC
- PP
- PVDF

## O-ring Material

- EPDM
- FKM

## Connection Standard

- Socket End JIS
- Socket End ASTM SCH80
- Socket End DIN
- Threaded End Rc
- Threaded End NPT
- Threaded End Rp
- Flanged End JIS10K
- Flanged End ANSI CLASS150
- Flanged End DIN PN10

## Power Source

- Single-Phase
- AC100V
- AC200V

## Equipment

- Manual Operation Mechanism
- Space Heater
- Output Contact Limit Switches
- Indicator

## Option

- Intermediate Limit Switch (no-volt)
- Speed Controller
- Potentiometer
- E-E Positioner



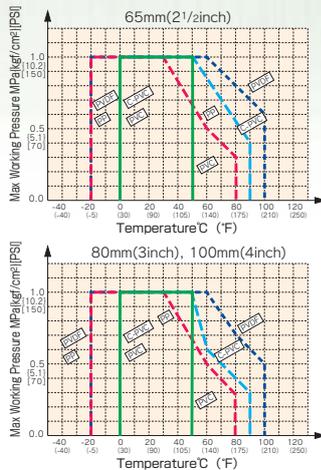
## FEATURES

- Motor is built into the body. Light-Weight and Compact with High Torque.
- Stopper enables adjustment of an angle of ±5 degree at fully-Opened or Fully-Closed position.
- Opening Indicator is easy to read.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7
Space Heater	●	●	○	●	○	●	○
Output Contact Limit Switches	●	●	●	-	●	-	●
Potentiometer	-	○	-	-	-	○	○
E-E positioner	-	-	○	-	-	○	-
Intermediate Limit Switch (no-Volt)	-	-	-	○	-	○	-
Speed Controller	-	○	-	-	○	-	○

## WORKING PRESSURE VS. TEMPERATURE

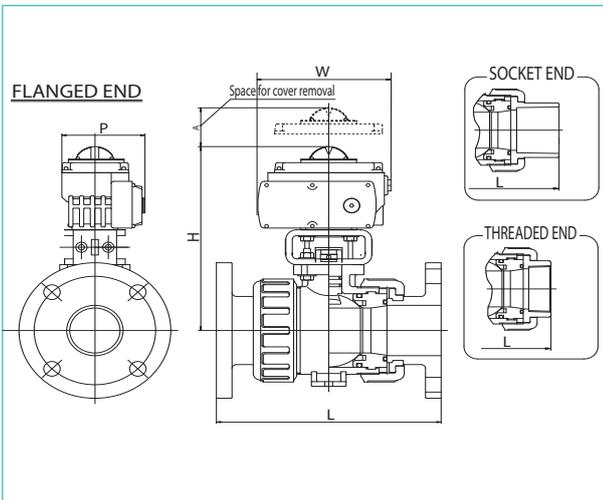


## ACTUATOR SPECIFICATION

Nominal Size mm (inch)	65 - 100 (2 1/2 inch - 4 inch)	
Actuator Type	AOC-0	
Cycle Time 50/60Hz (seconds)	25/20	
Motor Output (W)	8	
Motor Starting Current (A) 50/60Hz	100V	1.2/1.2
	110V	1.4/1.4
	200V	0.5/0.5
Motor Rated Current (A) 50/60Hz	220V	0.7/0.7
	100V	0.5/0.5
	110V	0.6/0.6
Motor Rated Current (A) 50/60Hz	200V	0.25/0.25
	220V	0.3/0.3
	Number of Revolutions of Manual Operating Handle	6.7
Limit Switch Capacity	AC 250V 10A (Min 0.1A)	
Protective Structure	JIS C 0920 Waterjet-proof type IP65	
Cable Connector Nominal Size	G1/2	
Motor Pole (P)	4	
Motor Insulation	E Class	
Motor Time Rating (minute)	30	

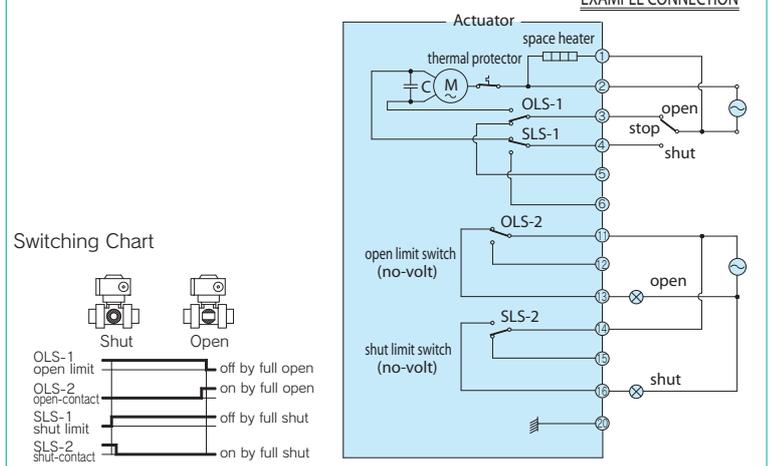
\* for the actuator with lubricant free valves consult near Asahi dealer.

## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

### WIRING DIAGRAM



## DIMENSIONS TABLE

JIS, ANSI, DIN				Unit:mm (inch)									
Nominal Size		65 (2 1/2)	80 (3)	100 (4)	Nominal Size		65 (2 1/2)	80 (3)	100 (4)				
Flanged End	L	PVC, C-PVC	JIS	261 (10.28)	306 (12.05)	374 (14.72)	Threaded End	PVC, C-PVC	DIN	204 (8.03)	249 (9.80)	309 (12.09)	
			DIN	290 (11.42)	312 (12.28)	352 (13.86)			ANSI	237 (9.33)	279 (10.98)	357 (14.13)	
			ANSI	259 (10.20)	306 (12.05)	374 (14.72)			JIS	215 (8.46)	265 (10.43)	362 (14.25)	
		PP	JIS	257 (10.12)	305 (12.01)	374 (14.72)		DIN	215 (8.46)	265 (10.43)	340 (13.39)		
			DIN	288 (11.34)	311 (12.24)	352 (13.86)		ANSI	215 (8.46)	265 (10.43)	362 (14.25)		
			ANSI	257 (10.12)	306 (12.05)	374 (14.72)		JIS	213 (8.39)	264 (10.39)	362 (14.25)		
	PVDF	JIS	256 (10.08)	302 (11.89)	369 (14.53)	DIN	213 (8.39)	264 (10.39)	340 (13.39)				
		DIN	287 (11.30)	308 (12.13)	347 (13.60)	ANSI	213 (8.39)	264 (10.39)	362 (14.25)				
		ANSI	256 (10.08)	302 (11.89)	369 (14.53)	JIS	212 (8.35)	261 (10.28)	357 (14.06)				
	Socket End	L	PVC, C-PVC	JIS	273 (10.75)	316 (12.44)	419 (16.50)	Common	PVDF	DIN	212 (8.35)	261 (10.28)	335 (13.19)
				DIN	233 (9.17)	284 (11.18)	351 (13.82)			ANSI	212 (8.35)	261 (10.28)	357 (14.06)
				ANSI	240 (9.45)	283 (11.14)	352 (13.86)			H	280 (11.03)	289 (11.38)	327 (12.88)
PP		JIS	219 (8.62)	257 (10.12)	341 (13.43)	W	202 (7.95)		202 (7.95)	202 (7.95)			
		DIN	205 (8.07)	252 (9.92)	312 (12.28)	P	138.8 (5.47)		138.8 (5.47)	138.8 (5.47)			
		ANSI	238 (9.37)	282 (11.10)	365 (14.37)	A	100 (3.94)		100 (3.94)	100 (3.94)			

# 3-Way Ball Valve Type 23 (Electric actuated Type T) 15mm-100mm (1/2 inch-4 inch)

## Body Material

PVC  
C-PVC  
PP  
PVDF

## O-ring Material

EPDM  
FKM

## Connection Standard

Socket End JIS  
Socket End ASTM SCH80  
Socket End DIN  
Threaded End Rc  
Threaded End NPT  
Threaded End Rp  
Flanged End JIS10K  
Flanged End ANSI CLASS150  
Flanged End DIN PN10

## Power Source

Single-Phase  
AC100V/110V  
AC200V/220V

## Equipment

<AOC-00>  
Manual Operation Mechanism  
Output Contact Limit Switches  
Indicator  
<AOC-0>  
Manual Operation Mechanism  
Space Heater  
Output Contact Limit Switches  
Indicator

## Option

<AOC-00>  
Space Heater  
<AOC-0>  
Intermediate Limit Switch(no-volt)  
Space Heater  
Potentiometer  
E-E Positioner



Left Side Open



Middle Position



Right Side Open

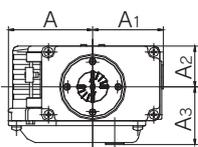
## FEATURES

- Motor is built into the body. Light-Weight and Compact with high Torque.
- Stopper enables adjustment of an angle of  $\pm 5$  degree at Full-Right Open or Full Left Open position on right/left side.
- Opening Indicator is easy to read.

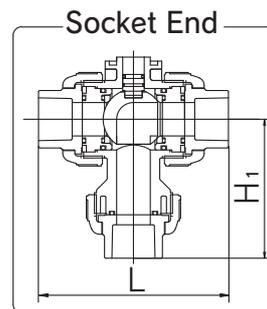
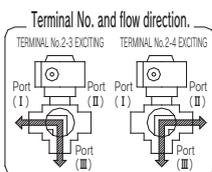
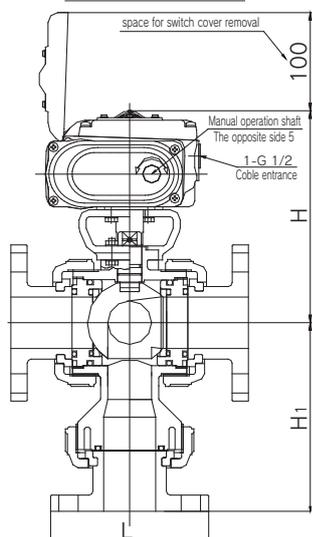
## ACTUATOR SPECIFICATION

Nominal Size mm(inch)	15-50 (1/2inch - 2inch)	65-100 (2 1/2inch - 4inch)	
Actuator Type	AOC-00	AOC-0	
Cycle Time 50/60Hz(seconds)	10/8	25/20	
Motor Output(W)	8	8	
Motor Starting Current(A) 50/60Hz	100V	0.8/0.8	1.2/1.2
	110V	1.0/1.0	1.4/1.4
	200V	0.5/0.5	0.5/0.5
	220V	0.7/0.7	0.7/0.7
Motor Rated Current(A) 50/60Hz	100V	0.4/0.4	0.5/0.5
	110V	0.5/0.5	0.6/0.6
	200V	0.25/0.25	0.25/0.25
	220V	0.30/0.30	0.3/0.3
Number of Revolutions of Manual Operating Handle	7.5	6.7	
Limit Switch Capacity	AC 250V 5A	AC 250V 10A	
Protective Structure	JIS C 0920 Waterjet proof type (IP65)		
Cable Connector Nominal Size	G1/2		
Motor Pole(P)	4		
Motor Insulation	E Class		
Motor Time Rating(minute)	30		

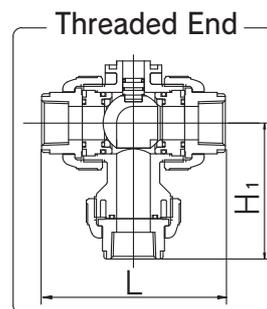
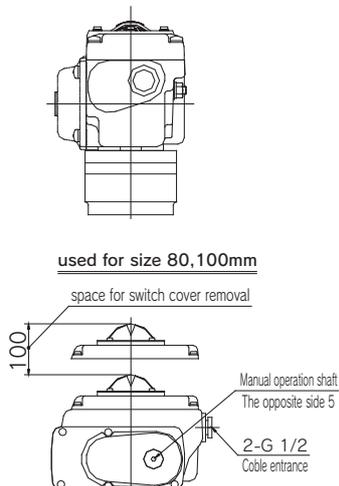
## DIMENSIONS FIGURE



FLANGED END



Socket End



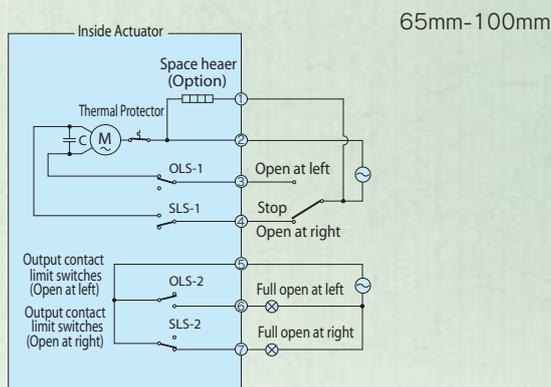
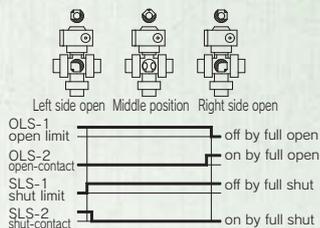
Threaded End

SCHEMATIC DIAGRAM

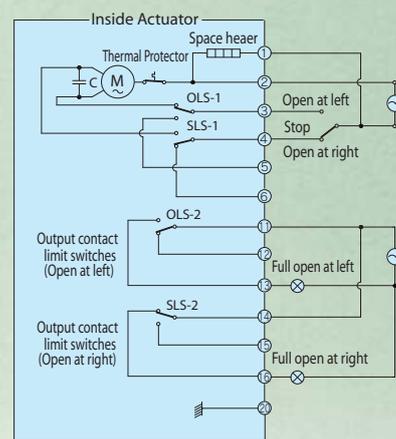
WIRING DIAGRAM

15mm-50mm

Switching Chart



65mm-100mm



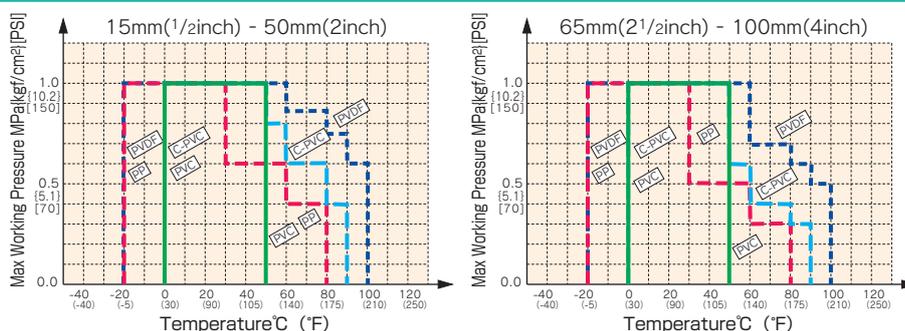
DIMENSIONS TABLE

JIS, ANSI, DIN

Unit:mm(inch)

Nominal Size			15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	65 (2 1/2)	80 (3)	100 (4)	
Flanged End	L	Common	JIS	143 (5.63)	172 (6.77)	187 (7.36)	212 (8.35)	212 (8.35)	234 (9.21)	304 (11.97)	304 (11.97)	372 (14.65)
			DIN	130 (5.12)	150 (5.91)	160 (6.3)	212 (8.35)	200 (7.87)	230 (9.06)	304 (11.97)	310 (12.2)	350 (13.78)
			ANSI	143 (5.63)	172 (6.77)	187 (7.36)	212 (8.35)	212 (8.35)	234 (9.21)	304 (11.97)	304 (11.97)	372 (14.65)
	H <sub>1</sub>	Common	JIS	94 (3.7)	115 (4.53)	133 (5.24)	165 (6.5)	165 (6.5)	187 (7.36)	256 (10.08)	256 (10.08)	305 (12.01)
			DIN	88 (3.46)	104 (4.09)	120 (4.72)	165 (6.5)	159 (6.26)	185 (7.28)	256 (10.08)	259 (10.2)	305 (12.01)
			ANSI	94 (3.7)	114 (4.5)	133 (5.24)	165 (6.5)	165 (6.5)	186 (7.34)	256 (10.06)	256 (10.06)	305 (12.01)
Threaded End	L	Common	JIS	102 (4.02)	120 (4.72)	131 (5.16)	163 (6.42)	163 (6.42)	197 (7.76)	264 (10.39)	264 (10.39)	360 (14.17)
			DIN	102 (4.02)	120 (4.72)	131 (5.16)	163 (6.42)	163 (6.42)	197 (7.76)	264 (10.39)	264 (10.39)	338 (13.31)
			ANSI	102 (4.02)	120 (4.72)	131 (5.16)	163 (6.42)	163 (6.42)	197 (7.76)	264 (10.39)	264 (10.39)	360 (14.17)
	H <sub>1</sub>	Common	JIS	74 (2.91)	89 (3.5)	105 (4.13)	141 (5.55)	141 (5.55)	168 (6.61)	235 (9.25)	235 (9.25)	299 (11.77)
			DIN	74 (2.91)	89 (3.5)	105 (4.13)	141 (5.55)	141 (5.55)	168 (6.61)	235 (9.25)	235 (9.25)	299 (11.77)
			ANSI	73 (2.89)	88 (3.48)	105 (4.13)	140 (5.53)	140 (5.53)	168 (6.61)	235 (9.25)	235 (9.25)	299 (11.77)
Socket End	L	PVC, C-PVC	JIS	108 (4.25)	128 (5.04)	145 (5.71)	174 (6.85)	189 (7.44)	220 (8.66)	316 (12.44)	316 (12.44)	418 (16.46)
			DIN	102 (4.02)	120 (4.72)	131 (5.16)	173 (6.81)	163 (6.42)	197 (7.76)	282 (11.1)	282 (11.1)	349 (13.74)
			ANSI	113 (4.45)	129 (5.08)	146 (5.75)	174 (6.85)	184 (7.24)	209 (8.23)	285 (11.21)	282 (11.1)	- ( - )
		PP	JIS	108 (4.25)	124 (4.88)	139 (5.47)	- ( - )	171 (6.73)	196 (7.72)	264 (10.40)	260 (10.24)	332 (13.07)
			DIN	99 (3.9)	114 (4.49)	123 (4.84)	148 (5.83)	148 (5.83)	176 (6.93)	256 (10.08)	251 (9.88)	310 (12.2)
			ANSI	113 (4.45)	129 (5.08)	146 (5.75)	179 (7.04)	184 (7.24)	209 (8.23)	285 (11.21)	282 (11.1)	365 (14.37)
	PVDF	DIN	99 (3.9)	114 (4.49)	123 (4.84)	148 (5.83)	148 (5.83)	176 (6.93)	256 (10.08)	251 (9.88)	310 (12.2)	
		ANSI	113 (4.45)	129 (5.08)	146 (5.75)	179 (7.04)	184 (7.24)	209 (8.23)	285 (11.21)	282 (11.1)	365 (14.37)	
		H <sub>1</sub>	PVC, C-PVC	JIS	77 (3.03)	90 (3.54)	110 (4.33)	146.5 (5.77)	145 (5.71)	169 (6.65)	261 (10.28)	244 (9.61)
	DIN			72 (2.83)	85 (3.35)	104 (4.09)	147 (5.80)	142 (5.59)	170 (6.69)	245 (9.65)	245 (9.65)	305 (12.01)
	ANSI			78 (3.07)	129 (5.08)	146 (5.75)	140 (5.51)	184 (7.24)	209 (8.23)	245 (9.65)	282 (11.1)	- ( - )
	PP		JIS	77 (3.03)	92 (3.62)	110 (4.33)	- ( - )	145 (5.71)	166 (6.54)	235 (9.25)	232 (9.13)	289 (11.38)
DIN			71 (2.80)	83 (3.27)	100 (3.94)	131 (5.16)	131 (5.16)	154 (6.06)	227 (8.94)	224 (8.82)	279 (10.98)	
ANSI			78 (3.07)	92 (3.62)	111 (4.37)	146 (5.75)	149 (5.87)	172 (6.77)	245 (9.65)	282 (11.10)	365 (14.37)	
PVDF	DIN	71 (2.80)	83 (3.27)	100 (3.94)	131 (5.16)	131 (5.16)	154 (6.06)	227 (8.94)	224 (8.82)	279 (10.98)		
	ANSI	78 (3.07)	92 (3.62)	111 (4.37)	146 (5.75)	149 (5.87)	172 (6.77)	245 (9.65)	282 (11.10)	365 (14.37)		
	Common	H	169.5 (6.67)	176 (6.93)	183 (7.21)	200.5 (7.89)	200.5 (7.89)	212 (8.35)	289 (11.38)	289 (11.38)	327 (12.88)	
A		84 (3.31)	84 (3.31)	84 (3.31)	84 (3.31)	84 (3.31)	84 (3.31)	100 (3.94)	100 (3.94)	100 (3.94)		
A <sub>1</sub>		70.5 (2.78)	70.5 (2.78)	70.5 (2.78)	70.5 (2.78)	70.5 (2.78)	70.5 (2.78)	102 (4.02)	102 (4.02)	102 (4.02)		
A <sub>2</sub>		41 (1.61)	41 (1.61)	41 (1.61)	41 (1.61)	41 (1.61)	41 (1.61)	53.8 (2.12)	53.8 (2.12)	53.8 (2.12)		
A <sub>3</sub>		58 (2.28)	58 (2.28)	58 (2.28)	58 (2.28)	58 (2.28)	58 (2.28)	85 (3.35)	85 (3.35)	85 (3.35)		

WORKING PRESSURE VS. TEMPERATURE



DIAPHRAGM VALVE  
 BALL VALVE  
 BUTTERFLY VALVE  
 ROTARY DAMPER  
 CONTROL VALVE  
 ULTRA SONIC FLOWMETER  
 IMPERA FLOWMETER  
 ULTRA SONIC FLOWMETER

# Ball Valve Type 21 (Pneumatic actuated Type TA) 15mm - 100mm (1/2inch - 2inch)

## Body Material

- PVC
- C-PVC
- PP
- PVDF

## O-ring Material

- EPDM
- FKM

## Connection Standard

- Socket End JIS
- Socket End ASTM SCH80
- Socket End DIN
- Threaded End Rc
- Threaded End NPT
- Threaded End Rp
- Flanged End JIS10K
- Flanged End ANSI CLASS150
- Flanged End DIN PN10

## Action

- Double Acting
- Air to Open
- Air to Close

## Equipment

- Opening Adjustment Stopper (± 5 degree)
- Indicator

## Option

- Filter Regulator
- Solenoid Valve
- Limit Switch
- Speed Controller
- Manual Operation Mechanism
- ※only for Air to Open & Close
- Full Opening Adjustment Mechanism
- Positioner



(15mm - 32mm)



(40mm - 50mm)



(65mm - 100mm)

## FEATURES

- Horizontal Type Actuator saves piping space.
- Spring unit for Air to Open & Close is detachable so that changeover between Double-Acting and Air to Open & Close can be done easily.
- Various options can be easily installed or removed and can be mounted later(except positioners).
- Stopper enables adjustment of an angle of ±5 degree at fully-Opened or Fully-Closed position. (for valve sizes larger than 40mm)

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	-	-	○	○	-	○	-	-
Filter Regulator	-	-	-	○	-	-	○	-	○
Speed Controller	◎	○	-	◎	◎	○	◎	-	-
Limit Switch	-	-	○	-	○	○	○	-	-
Positioner (Electric-Air, Air-Air)	-	-	-	-	-	-	-	○	○

◎Indicates specialized for Solenoid Valve.

※With built-in speed controller and bypass valve.

\* for the actuator with lubricant free valves consult near Asahi dealer.

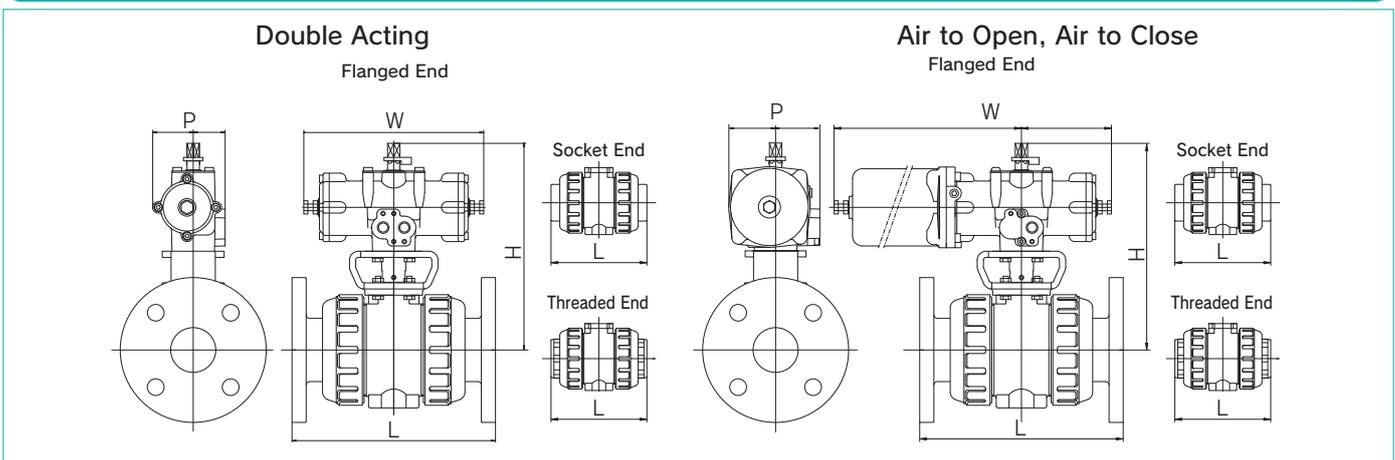
## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	15 - 32 (1/2inch - 1 1/4inch)	40-50 (1 1/2inch-2inch)	65-80 (2 1/2inch-3inch)	100(4inch)
Actuator Type	TA2A-0402D	TA2A-050D	TA2A-063D	TA2A-080D
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}			
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.5	0.9	1.7	3.2
Air Supply Bore	Rc 1/8	Rc 1/4		

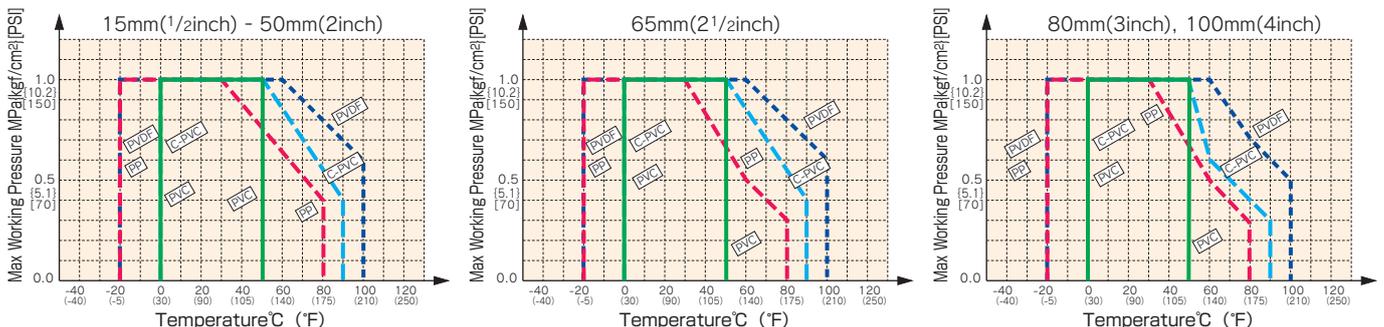
## ACTUATOR SPECIFICATION [Air to Open, Air to Close]

Nominal Size mm(inch)	15 - 32 (1/2inch - 1 1/4inch)	40-50 (1 1/2inch-2inch)	65-80 (2 1/2inch-3inch)	100(4inch)
Actuator Type	TA2A-0402R	TA2A-050R	TA2A-063R	TA2A-080R
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}			
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.8	1.7	3.3	6.1
Air Supply Bore	Rc 1/4			

## DIMENSIONS FIGURE



## WORKING PRESSURE VS. TEMPERATURE



DIMENSIONS TABLE

JIS, ANSI, DIN				Unit:mm(inch)								
Nominal Size		15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	65 (2 1/2)	80 (3)	100 (4)		
Flanged End	PVC, C-PVC	JIS	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	261 (10.28)	306 (12.05)	374 (14.72)	
		DIN	130 (5.12)	150 (5.91)	160 (6.3)	180 (7.09)	200 (7.87)	230 (9.06)	290 (11.42)	312 (12.28)	352 (13.86)	
		ANSI	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	259 (10.20)	306 (12.05)	374 (14.72)	
		PP	JIS	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	257 (10.12)	305 (12.01)	374 (14.72)
			DIN	130 (5.12)	150 (5.91)	160 (6.30)	180 (7.09)	200 (7.87)	230 (9.06)	288 (11.34)	311 (12.24)	352 (13.86)
			ANSI	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	257 (10.12)	306 (12.05)	374 (14.72)
	PVDF	JIS	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	256 (10.08)	302 (11.89)	369 (14.53)	
		DIN	130 (5.12)	150 (5.91)	160 (6.30)	180 (7.09)	200 (7.87)	230 (9.06)	287 (11.30)	308 (12.13)	347 (13.66)	
		ANSI	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	256 (10.08)	302 (11.89)	369 (14.53)	
	Socket End	PVC, C-PVC	JIS	108 (4.25)	128 (5.04)	145 (5.71)	162 (6.38)	189 (7.44)	220 (8.66)	273 (10.75)	316 (12.44)	419 (16.50)
			DIN	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	233 (9.17)	284 (11.18)	351 (13.82)
			ANSI	113.0 (4.45)	129.0 (5.08)	146.1 (5.75)	164.1 (6.46)	184 (7.24)	209 (8.23)	240 (9.45)	283 (11.14)	352 (13.86)
PP		JIS	108 (4.25)	126 (4.96)	141 (5.55)	—	171 (6.73)	192 (7.56)	219 (8.62)	257 (10.12)	341 (13.43)	
		DIN	99 (3.90)	114 (4.49)	123 (4.84)	139 (5.47)	148 (5.83)	176 (6.93)	205 (8.07)	252 (9.92)	312 (12.28)	
		ANSI	113 (4.45)	129 (5.08)	146 (5.75)	164 (6.46)	184 (7.24)	209 (8.23)	238 (9.37)	282 (11.10)	365 (14.37)	
PVDF		DIN	99 (3.90)	114 (4.49)	123 (4.84)	139 (5.47)	148 (5.83)	176 (6.93)	204 (8.03)	249 (9.80)	307 (12.09)	
		ANSI	113 (4.45)	129 (5.08)	146 (5.75)	164 (6.46)	184 (7.24)	209 (8.23)	237 (9.33)	279 (10.98)	359 (14.13)	
Threaded End		PVC, C-PVC	JIS	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	215 (8.46)	265 (10.43)	362 (14.25)
			DIN	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	215 (8.46)	265 (10.43)	340 (13.39)
			ANSI	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	215 (8.46)	265 (10.43)	362 (14.25)
		PP	JIS	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	213 (8.39)	264 (10.39)	362 (14.25)
	DIN		102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	213 (8.39)	264 (10.39)	340 (13.39)	
	ANSI		102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	213 (8.39)	264 (10.39)	362 (14.25)	
	PVDF	JIS	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	212 (8.35)	261 (10.28)	357 (14.06)	
		DIN	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	212 (8.35)	261 (10.28)	335 (13.19)	
		ANSI	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	212 (8.35)	261 (10.28)	357 (14.06)	
	Spigot End	PP	124 (4.84)	144 (5.62)	154 (6.01)	174 (6.79)	194 (7.57)	224 (8.74)	245 (9.56)	296 (11.54)	355 (13.85)	
		PVDF	124 (4.84)	144 (5.62)	154 (6.01)	174 (6.79)	194 (7.57)	224 (8.74)	245 (9.56)	293 (11.43)	350 (13.65)	
	Common	H	159.5 (6.28)	166 (6.54)	173 (6.81)	182 (7.17)	224 (8.82)	235.5 (9.27)	268 (10.55)	277 (10.91)	348 (13.70)	
Double Acting	W	110 (4.33)	110 (4.33)	110 (4.33)	110 (4.33)	210 (8.27)	210 (8.27)	250 (9.84)	250 (9.84)	292 (11.50)		
	P	57 (2.24)	57 (2.24)	57 (2.24)	57 (2.24)	82 (3.23)	82 (3.23)	95 (3.74)	95 (3.74)	116 (4.57)		
Air to Open, Air to Close	W	249 (9.81)	249 (9.81)	249 (9.81)	249 (9.81)	345 (13.58)	345 (13.58)	413 (16.26)	413 (16.26)	487 (19.17)		
	P	92 (3.62)	92 (3.62)	92 (3.62)	92 (3.62)	103 (4.06)	103 (4.06)	119 (4.69)	119 (4.69)	141.5 (5.57)		

BALL VALVE

BUTTERFLY VALVE

ROTARY DAMPER

CONTROL VALVE

ULTRA SONIC FLOWMETER

ULTRA SONIC FLOWMETER

IMPERA FLOWMETER

ULTRA SONIC FLOWMETER

# Ball Valve Type 21 (Pneumatic actuated Type AA) 15mm - 50mm(1/2inch - 2inch)

## Body Material

- PVC
- C-PVC
- PP
- PVDF

## O-ring Material

- EPDM
- FKM

## Connection Standard

- Socket End JIS
- Socket End ASTM SCH80
- Socket End DIN
- Threaded End Rc
- Threaded End NPT
- Threaded End Rp
- Flanged End JIS10K
- Flanged End ANSI CLASS150
- Flanged End DIN PN10

## Action

- Double Acting
- Air to Open
- Air to Close

## Equipment

Indicator

## Option

- Filter Regulator
- Solenoid Valve
- Limit Switch
- Speed Controller
- Manual Operation Mechanism
- ※only for Air to Open & Close
- Full Opening Adjustment Mechanism
- Positioner



Air to Open



Double Acting

## FEATURES

- Actuator made of resin is Light and Compact.
- NAMUR Standard is applied for air piping.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	-	-	○	○	-	○	-	-
Filter Regulator	-	-	-	○	-	-	○	-	○
Speed Controller	◎	○	-	◎	◎	○	◎	-	-
Limit Switch	-	-	○	-	○	○	○	-	-
Positioner (Electric-Air, Air-Air)	-	-	-	-	-	-	-	○	○

◎Indicates specialized for Solenoid Valve.

※With built-in speed controller and bypass valve.

\* for the actuator with lubricant free valves consult near Asahi dealer.

## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	15 - 32 (1/2inch - 1 1/4inch)	40-50 (1 1/2inch-2inch)
Actuator Type	PPW	PP00
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}	
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.6	1.3
Air Supply Bore	Rc 1/4	

## ACTUATOR SPECIFICATION [Air to Open, Air to Close]

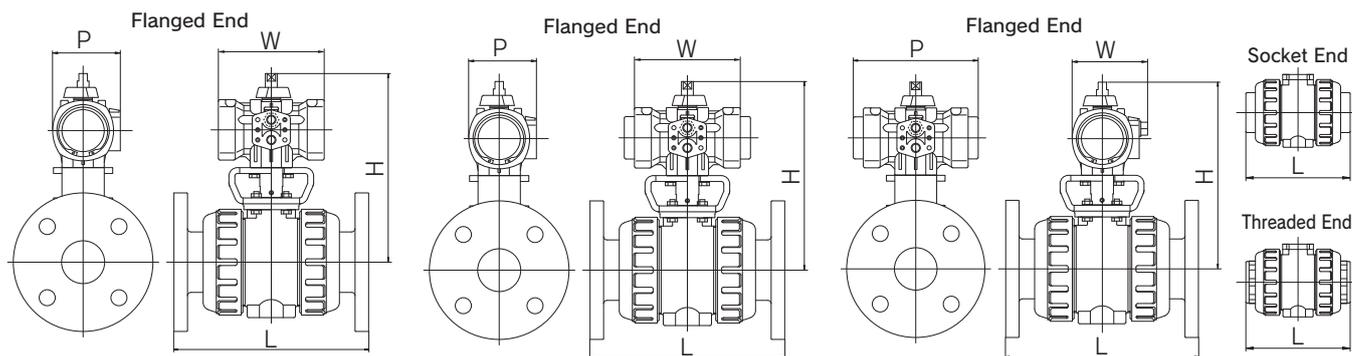
Nominal Size mm(inch)	15 - 32 (1/2inch - 1 1/4inch)	40-50 (1 1/2inch-2inch)
Actuator Type	PP00S	PP10S
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}	
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.7	1.7
Air Supply Bore	Rc 1/4	

## DIMENSIONS FIGURE

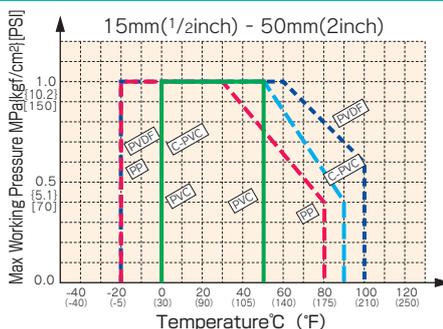
### Double Acting

### Air to Open

### Air to Close



## WORKING PRESSURE VS. TEMPERATURE



DIMENSIONS TABLE

JIS, ANSI, DIN				Unit:mm(inch)					
Nominal Size		15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)		
Flanged End	PVC, C-PVC	JIS	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	
		DIN	130 (5.12)	150 (5.91)	160 (6.30)	180 (7.09)	200 (7.87)	230 (9.06)	
		ANSI	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	
		PP	JIS	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)
			DIN	130 (5.12)	150 (5.91)	160 (6.30)	180 (7.09)	200 (7.87)	230 (9.06)
			ANSI	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)
	PVDF	JIS	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	
		DIN	130 (5.12)	150 (5.91)	160 (6.30)	180 (7.09)	200 (7.87)	230 (9.06)	
		ANSI	143 (5.63)	172 (6.77)	187 (7.36)	190 (7.48)	212 (8.35)	234 (9.21)	
	Socket End	PVC, C-PVC	JIS	108 (4.25)	128 (5.04)	145 (5.71)	162 (6.38)	189 (7.44)	220 (8.66)
			DIN	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)
			ANSI	113.0 (4.45)	129.0 (5.08)	146.1 (5.75)	164.1 (6.46)	184 (7.24)	209 (8.23)
PP		JIS	108 (4.25)	126 (4.96)	141 (5.55)	-	171 (6.73)	192 (7.56)	
		DIN	99 (3.90)	114 (4.49)	123 (4.84)	139 (5.47)	148 (5.83)	176 (6.93)	
		ANSI	113 (4.45)	129 (5.08)	146 (5.75)	164 (6.46)	184 (7.24)	209 (8.23)	
PVDF		DIN	99 (3.90)	114 (4.49)	123 (4.84)	139 (5.47)	148 (5.83)	176 (6.93)	
		ANSI	113 (4.45)	129 (5.08)	146 (5.75)	164 (6.46)	184 (7.24)	209 (8.23)	
Threaded End		PVC, C-PVC	JIS	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)
			DIN	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)
			ANSI	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)
		PP	JIS	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)
	DIN		102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	
	ANSI		102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	
	PVDF	JIS	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	
		DIN	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	
		ANSI	102 (4.02)	120 (4.72)	131 (5.16)	150 (5.91)	163 (6.42)	197 (7.76)	
	Double Acting	H	155 (6.1)	162 (6.38)	169 (6.65)	178 (7.01)	211 (8.31)	223 (8.78)	
		W	107 (4.21)	107 (4.21)	107 (4.21)	107 (4.21)	125 (4.92)	125 (4.92)	
		P	69 (2.72)	69 (2.72)	69 (2.72)	69 (2.72)	80 (3.15)	80 (3.15)	
Air to Open	H	180 (7.09)	187 (7.36)	194 (7.64)	203 (7.99)	228 (8.98)	240 (9.45)		
	W	149 (5.87)	149 (5.87)	149 (5.87)	149 (5.87)	222 (8.74)	222 (8.74)		
	P	89 (3.50)	89 (3.50)	89 (3.50)	89 (3.50)	106 (4.17)	106 (4.17)		
Air to Close	H	180 (7.09)	187 (7.36)	194 (7.64)	203 (7.99)	228 (8.98)	240 (9.45)		
	W	89 (3.50)	89 (3.50)	89 (3.50)	89 (3.50)	106 (4.17)	106 (4.17)		
	P	149 (5.87)	149 (5.87)	149 (5.87)	149 (5.87)	222 (8.74)	222 (8.74)		

BALL VALVE

BUTTERFLY VALVE

ROTARY DAMPER

CONTROL VALVE

ULTRA SONIC FLOWMETER

IMPERA FLOWMETER

ULTRA SONIC FLOWMETER

# 3-Way Ball Valve Type 23 (Pneumatic actuated Type TA) 15mm-100mm (1/2 inch-4 inch)

## Body Material

PVC  
C-PVC  
PP  
PVDF

## O-ring Material

EPDM  
FKM

## Connection Standard

Flanged End (JIS, ANSI, DIN)  
Threaded End  
Socket End

## Action

Double Acting  
Air to Open  
Air to Close

## Equipment

Opening Adjustment Stopper (± 5 degree)  
Indicator

## Option

- Filter Regulator
- Solenoid Valve
- Limit Switch
- Speed Controller
- Full Opening Adjustment Mechanism
- Positioner



Air to Open, Air to Close



Double Acting



Left Side Open



Middle Position



Right Side Open

## FEATURES

- Horizontal Type Actuator saves piping space.
- Spring unit for Air to Open & Close is detachable so that change-over between Double-Acting and Air to Open & Close can be done easily.
- Various options can be easily installed or removed and can be mounted later (except positioners).
- Stopper enables adjustment of angle of ±5 degree at fully-Opened or Fully-Closed position.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	—	—	○	○	—	○	—	—
Filter Regulator	—	—	—	○	—	—	○	—	○
Speed Controller	◎	○	—	◎	◎	○	◎	—	—
Limit Switch	—	—	○	—	○	○	○	—	—
Positioner (Electric-Air, Air-Air)	—	—	—	—	—	—	—	○	○

◎ Indicates specialized for Solenoid Valve.

※ With built-in speed controller and bypass valve.

\* for the actuator with lubricant free valves consult near Asahi dealer.

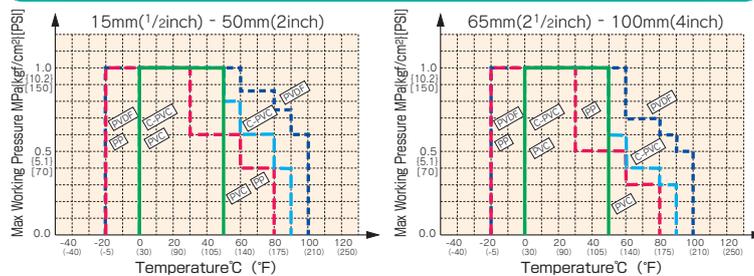
## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	15 - 25 (1/2 inch - 1 inch)	32 - 50 (1 1/4 inch - 2 inch)	65, 80 (2 1/2 inch, 3 inch)	100(4 inch)
Actuator Type	TA2A-0402D	TA2A-050D	TA2A-063D	TA2A-080D
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}			
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.5	0.9	1.7	3.2
Air Supply Bore	Rc 1/8		Rc 1/4	

## ACTUATOR SPECIFICATION [Air to Open, Air to Close]

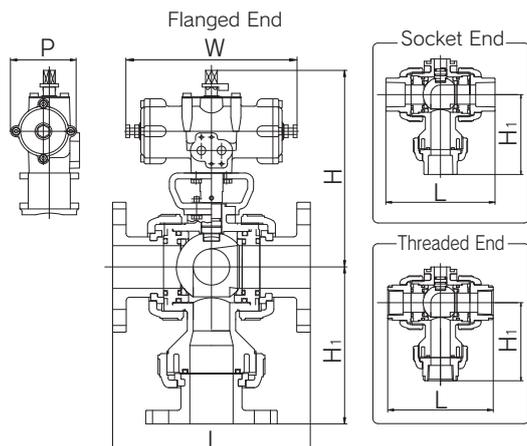
Nominal Size mm(inch)	15 - 25 (1/2 inch - 1 inch)	32 - 50 (1 1/4 inch - 2 inch)	65, 80 (2 1/2 inch, 3 inch)	100(4 inch)
Actuator Type	TA2A-0402R	TA2A-050R	TA2A-063R	TA2A-080R
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}			
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	0.8	1.7	3.3	6.1
Air Supply Bore		Rc 1/4		

## WORKING PRESSURE VS. TEMPERATURE

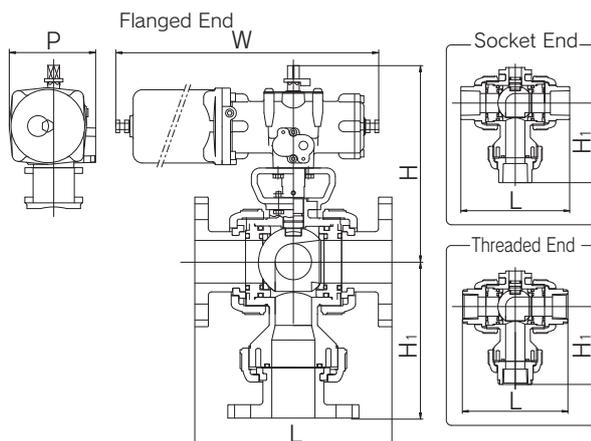


## DIMENSIONS FIGURE

### Double Acting



### Air to Open, Air to Close



DIMENSIONS TABLE

JIS, ANSI, DIN										Unit:mm(inch)		
Nominal Size			15 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)	65 (2 1/2)	80 (3)	100 (4)	
Flanged End	L	Common	JIS	143 (5.63)	172 (6.77)	187 (7.36)	212 (8.35)	212 (8.35)	234 (9.21)	304 (11.97)	304 (11.97)	372 (14.65)
			DIN	130 (5.12)	150 (5.91)	160 (6.3)	212 (8.35)	200 (7.87)	230 (9.06)	304 (11.97)	310 (12.2)	350 (13.78)
			ANSI	143 (5.63)	172 (6.77)	187 (7.36)	212 (8.35)	212 (8.35)	234 (9.21)	304 (11.97)	304 (11.97)	372 (14.65)
	H <sub>1</sub>		JIS	94 (3.7)	115 (4.53)	133 (5.24)	165 (6.5)	165 (6.5)	187 (7.36)	256 (10.08)	256 (10.08)	305 (12.01)
			DIN	88 (3.46)	104 (4.09)	120 (4.72)	165 (6.5)	159 (6.26)	185 (7.28)	256 (10.08)	259 (10.2)	305 (12.01)
			ANSI	94 (3.7)	114 (4.5)	133 (5.24)	165 (6.5)	165 (6.5)	186 (7.34)	256 (10.06)	256 (10.06)	305 (12.01)
Threaded End	L	Common	JIS	102 (4.02)	120 (4.72)	131 (5.16)	163 (6.42)	163 (6.42)	197 (7.76)	264 (10.39)	264 (10.39)	360 (14.17)
			DIN	102 (4.02)	120 (4.72)	131 (5.16)	163 (6.42)	163 (6.42)	197 (7.76)	264 (10.39)	264 (10.39)	338 (13.31)
			ANSI	102 (4.02)	120 (4.72)	131 (5.16)	163 (6.42)	163 (6.42)	197 (7.76)	264 (10.39)	264 (10.39)	360 (14.17)
	H <sub>1</sub>		JIS	74 (2.91)	89 (3.5)	105 (4.13)	141 (5.55)	141 (5.55)	168 (6.61)	235 (9.25)	235 (9.25)	299 (11.77)
			DIN	74 (2.91)	89 (3.5)	105 (4.13)	141 (5.55)	141 (5.55)	168 (6.61)	235 (9.25)	235 (9.25)	299 (11.77)
			ANSI	73 (2.89)	88 (3.48)	105 (4.13)	141 (5.55)	140 (5.53)	168 (6.61)	235 (9.25)	235 (9.25)	299 (11.77)
Socket End	L	PVC, C-PVC	JIS	108 (4.25)	128 (5.04)	145 (5.71)	174 (6.85)	189 (7.44)	220 (8.66)	316 (12.44)	316 (12.44)	418 (16.46)
			DIN	102 (4.02)	120 (4.72)	131 (5.16)	173 (6.81)	163 (6.42)	197 (7.76)	282 (11.1)	282 (11.1)	349 (13.74)
			ANSI	113 (4.45)	129 (5.08)	146 (5.75)	174 (6.85)	184 (7.24)	209 (8.23)	285 (11.23)	282 (11.1)	-
		PP	JIS	108 (4.25)	126 (4.96)	141 (5.55)	-	171 (6.73)	192 (7.56)	264 (10.40)	258 (10.16)	340 (13.39)
			DIN	99 (3.9)	114 (4.49)	123 (4.84)	148 (5.83)	148 (5.83)	176 (6.93)	256 (10.08)	251 (9.88)	310 (12.2)
			ANSI	113 (4.45)	129 (5.08)	146 (5.75)	179 (7.05)	184 (7.24)	209 (8.23)	285 (11.23)	282 (11.1)	365 (14.37)
		PVDF	DIN	99 (3.9)	114 (4.49)	123 (4.84)	148 (5.83)	148 (5.83)	176 (6.93)	256 (10.08)	251 (9.88)	310 (12.2)
			ANSI	113 (4.45)	129 (5.08)	146 (5.75)	179 (7.05)	184 (7.24)	209 (8.23)	285 (11.23)	282 (11.1)	365 (14.37)
			-	-	-	-	-	-	-	-	-	-
	H <sub>1</sub>	PVC, C-PVC	JIS	77 (3.03)	90 (3.54)	110 (4.33)	146.5 (5.77)	145 (5.71)	169 (6.65)	261 (10.28)	244 (9.61)	294 (11.57)
			DIN	72 (2.83)	85 (3.35)	104 (4.09)	147 (5.80)	142 (5.59)	170 (6.69)	245 (9.65)	245 (9.65)	305 (12.01)
			ANSI	78 (3.07)	129 (5.08)	146 (5.75)	140 (5.51)	184 (7.24)	209 (8.23)	246 (9.69)	282 (11.1)	-
		PP	JIS	77 (3.03)	92 (3.62)	110 (4.33)	-	145 (5.71)	166 (6.54)	235 (9.26)	232 (9.13)	289 (11.38)
			DIN	71 (2.80)	83 (3.27)	100 (3.94)	-	131 (5.16)	154 (6.06)	227 (8.94)	224 (8.82)	279 (10.98)
			ANSI	78 (3.07)	92 (3.62)	111 (4.37)	147 (5.80)	149 (5.87)	172 (6.77)	246 (9.69)	282 (11.10)	365 (14.37)
		PVDF	JIS	78 (3.07)	90 (3.54)	108 (4.25)	-	142 (5.59)	166 (6.54)	-	233 (9.17)	285 (11.22)
			DIN	71 (2.80)	83 (3.27)	100 (3.94)	131 (5.16)	131 (5.16)	154 (6.06)	227 (8.94)	224 (8.82)	279 (10.98)
			ANSI	78 (3.07)	92 (3.62)	111 (4.37)	147 (5.80)	149 (5.87)	172 (6.77)	246 (9.69)	282 (11.10)	365 (14.37)
Common	H	159.5 (6.28)	166 (6.54)	173 (6.81)	224 (8.82)	224 (8.82)	235.5 (9.27)	277 (10.91)	277 (10.91)	348 (13.7)		
Double Acting	W	110 (4.33)	110 (4.33)	110 (4.33)	210 (8.27)	210 (8.27)	210 (8.27)	250 (9.84)	250 (9.84)	292 (11.5)		
	P	57 (2.24)	57 (2.24)	57 (2.24)	82 (3.23)	82 (3.23)	82 (3.23)	95 (3.74)	95 (3.74)	116 (4.57)		
Air to Open, Air to Close	W	249 (9.8)	249 (9.8)	249 (9.8)	345 (13.58)	345 (13.58)	345 (13.58)	413 (16.26)	413 (16.26)	487 (19.17)		
	P	92 (3.62)	92 (3.62)	92 (3.62)	103 (4.06)	103 (4.06)	103 (4.06)	119 (4.69)	119 (4.69)	141.5 (5.57)		

BALL VALVE

BUTTERFLY VALVE

ROTARY DAMPER

CONTROL VALVE

ULTRA SONIC FLOWMETER

IMPERA FLOWMETER

ULTRA SONIC FLOWMETER

# Butterfly Valve Type 57 (Electric Actuated Type T) 40mm-350mm (1 1/2 inch-14 inch)

## Body Material

PVC  
PP  
PVDF

## Seat & O-ring Material

EPDM  
FKM

## Connection Standard

JIS 10K · JIS 5K  
ANSI CLASS150  
DIN PN10

## Power Source

Single-phase  
AC100V/110V/200V/220V

## Equipment

Space Heater  
Output Contact Limit Switches  
Indicator  
Manual Operation Mechanism

## Option

E-E Positioner  
Intermediate Limit Switch (no-volt)  
Speedcontrol Unit



## FEATURES

- Lightweight and Compact with High-Torque
- Manual Operation Handle is equipped normally and operativeness has improved.
- Indicator can be seen easily.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7
Space Heater	●	●	○	●	○	●	○
Output Contact Limit Switches	●	●	●	-	●	-	●
Potentiometer	-	○	-	-	-	○	○
E-E Positioner	-	-	○	-	-	-	-
Intermediate Limit Switch (no-volt)	-	-	-	○	-	○	-
Speedcontrol Unit	-	-	-	-	○	-	○

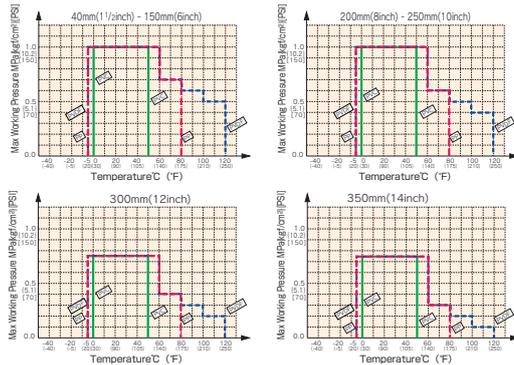
● Standard Equipment

## ACTUATOR SPECIFICATION

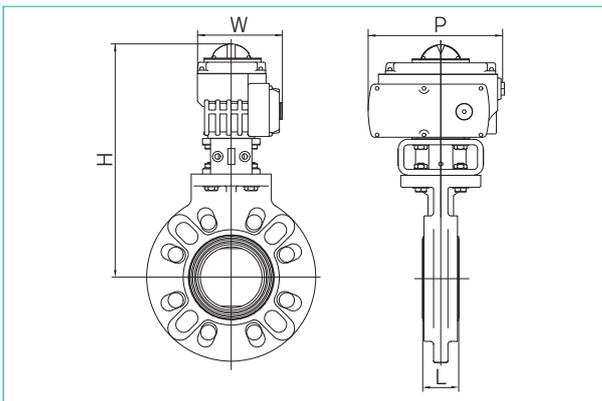
Nominal Size mm (inch)	40-100 (1 1/2-4inch)	125 (5inch)	150 (6inch)	200 (8inch)	250-350 (10inch-14inch)
Actuator Type	AOC-0	AOC-1	AOC-2	AOC-2.5	AOC-3
Cycle Time 50/60Hz (seconds)	25/20		37/30		55/50
Motor Output (W)	8	20	30		90
Motor Starting Current (A) 50/60Hz	100V	1.20/1.20	1.60/1.40	2.40/2.40	
	110V	1.40/1.40	1.70/1.70	2.50/2.50	
	200V	0.50/0.50	0.70/0.70	1.10/1.10	
	220V	0.70/0.70	0.80/0.90	1.20/1.20	
Motor Rated Current (A) 50/60Hz	100V	0.50/0.50	0.70/0.60	0.90/1.20	
	110V	0.60/0.60	0.90/0.70	1.00/1.20	
	200V	0.25/0.25	0.40/0.30	0.50/0.80	
	220V	0.30/0.30	0.50/0.40	0.60/0.80	
Number of revolutions of Manual Operating Handle	6.7		16.5		
Limit Switch Capacity	AC 250V 10A				
Protective Structure	JIS C 0920 Waterjet-proof type (IEC IP65)				
Cable Connector Nominal Size	2-G1/2				
Motor Pole (P)	4				
Motor Insulation	E Class				
Motor Time Rating (minute)	30				
Space Heater Output (W)	5				

\* for the actuator with lubricant free valves consult near Asahi dealer.

## WORKING PRESSURE VS. TEMPERATURE

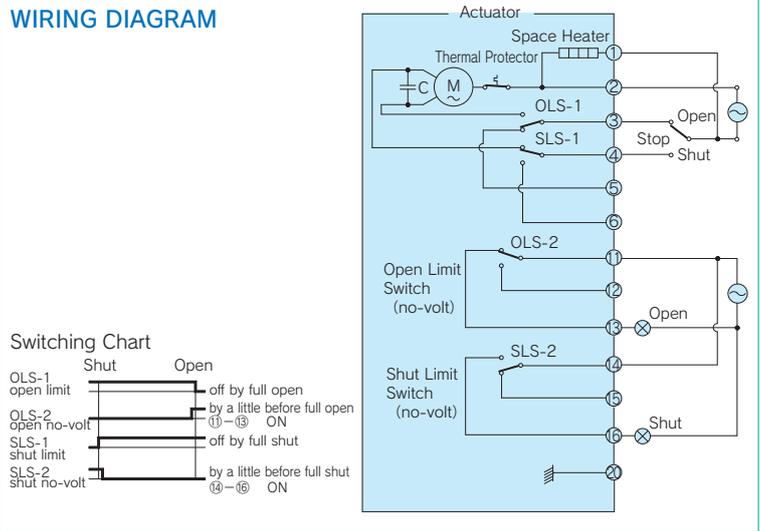


## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

### WIRING DIAGRAM



### Switching Chart

Switch	Shut	Open
OLS-1 open limit	off by full open	by a little before full open
OLS-2 open no-volt	⑪-⑬ ON	⑭-⑯ ON
SLS-1 shut limit	off by full shut	by a little before full shut
SLS-2 shut no-volt	⑱-⑲ ON	⑳ ON

## DIMENSIONS TABLE

JIS, ANSI, DIN	Unit: mm (inch)										
Nominal Size	40 (1 1/2)	50 (2)	65 (2 1/2)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)
L	39 (1.54)	42 (1.65)	46 (1.81)	46 (1.81)	56 (2.20)	66 (2.60)	71 (2.80)	87 (3.43)	112 (4.40)	129 (5.08)	129 (5.08)
H	290 (11.42)	300 (11.81)	310 (12.20)	325 (12.80)	340 (13.39)	376 (14.80)	424 (16.69)	455 (17.91)	541 (21.28)	598 (23.54)	625 (24.61)
W	138.8 (5.47)	138.8 (5.47)	138.8 (5.47)	138.8 (5.47)	138.8 (5.47)	191 (7.52)	239 (9.41)	239 (9.41)	381.5 (15.02)	381.5 (15.02)	381.5 (15.02)
P	202 (7.95)	202 (7.95)	202 (7.95)	202 (7.95)	202 (7.95)	252 (9.92)	310 (12.20)	310 (12.20)	388 (15.28)	388 (15.28)	388 (15.28)

# Butterfly Valve Type 57 (Electric Actuated Type S) 40mm-350mm (1 1/2inch-14inch)

DIAPHRAGM VALVE  
BALL VALVE  
BUTTERFLY VALVE  
ROTARY DAMPER  
CONTROL VALVE  
ULTRA SONIC FLOWMETER  
IMPERA FLOWMETER  
ULTRA SONIC FLOWMETER

### Body Material

PVC  
PP  
PVDF

### Seat & O-ring Material

EPDM  
FKM

### Connection Standard

JIS 10K · JIS 5K  
ANSI CLASS150  
DIN PN10

### Power Source

Three-phase  
AC200V/220V/400V/440V

### Equipment

Manual Operation Mechanism  
Torque Switches  
Output Contact-Limit Switches  
Space Heater  
Indicator

### Option

Potentiometer  
R/I Transmitter  
E-E Positioner



## FEATURES

- Speedy, exact operation by motor with direct current brake.
- Standard torque switch protects valves from overload.
- Stopper enables adjustment of an angle of ±5degree when fully-opened or fully-closed.

## OPTIONAL EQUIPMENT

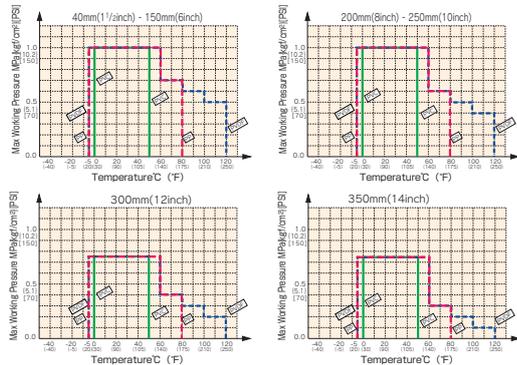
Combination No.	1	2	3
Space Heater	●	●	●
Output Contact Limit Switches	●	●	●
Potentiometer	○	○	○
R-I Transmitter	—	○	○
E-E Positioner	—	—	○

● Standard Equipment

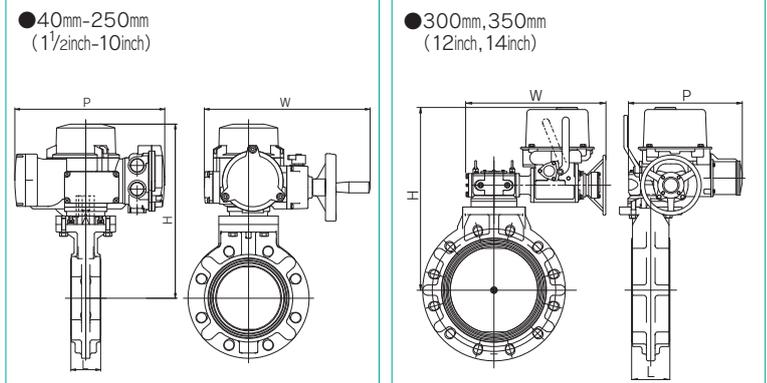
## ACTUATOR SPECIFICATION

Nominal Size mm(inch)	40-100(1 1/2inch-4inch)	125 · 150(5inch,6inch)	200 · 250(8inch,10inch)	300 · 350(12inch,14inch)	
Actuator Type	SRJ-010	SRJ-020	SRJ-060	LTRM-01/BRL-1	
Cycle Time 50/60Hz(seconds)	18/15	36/30	36/30	42/36	
Motor Output(W)	40	40	100	200	
Motor Starting	200V 0.58/0.57 220V 0.64/0.61 400V 0.30/0.26 50/60Hz 440V 0.33/0.29	0.58/0.57 0.64/0.61 0.30/0.26 0.33/0.29	0.58/0.57 0.64/0.61 0.47/0.44 0.51/0.48	1.20/1.10 1.20/1.10 0.90/0.63 2.70/3.05	6.08/5.56 5.30/6.10 3.04/2.78 2.70/3.05
Motor Rated	200V 0.42/0.35 220V 0.50/0.39 400V 0.19/0.15 50/60Hz 440V 0.23/0.18	0.42/0.35 0.50/0.39 0.19/0.15 0.23/0.18	0.42/0.35 0.50/0.39 0.35/0.27 0.45/0.32	0.70/0.55 0.90/0.63 0.90/0.70 1.00/0.77	1.80/1.40 1.96/1.50 0.90/0.70 1.00/0.77
Number of revolutions of manual operating handle	21	21	26	15	
Limit Switch Capacity	AC 250V 2A			AC 250V 5A	
Protective Structure	IP68			IP55	
Cable Connector Nominal Size	3-G1			2-G1	
Motor Pole(P)	4			4	
Motor Insulation	B Class			E Class	
Motor Time Rating(minute)	15			15	

## WORKING PRESSURE VS. TEMPERATURE



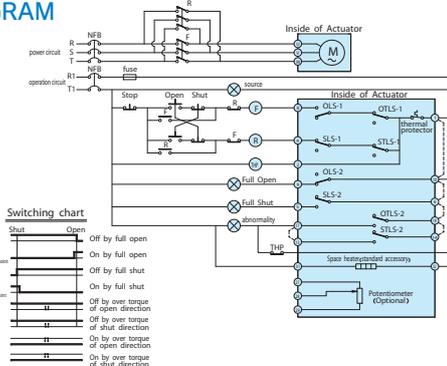
## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

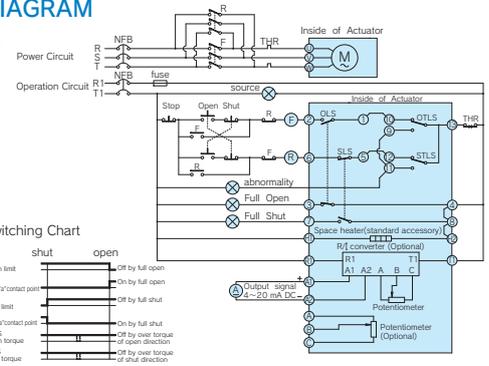
### WIRING DIAGRAM

● SRJ



### WIRING DIAGRAM

● LTRM-01



## DIMENSIONS TABLE

JIS, ANSI, DIN	Unit:mm(inch)											
Nominal Size	40(1 1/2)	50(2)	65(2 1/2)	80(3)	100(4)	125(5)	150(6)	200(8)	250(10)	300(12)	350(14)	
L	39(1.54)	42(1.65)	46(1.81)	46(1.81)	56(2.21)	66(2.60)	71(2.80)	87(3.43)	112(4.41)	129(5.08)	129(5.08)	
H	313(12.32)	323(12.72)	333(13.11)	348(13.70)	363(14.29)	398(15.67)	413(16.26)	441(17.36)	476(18.74)	666(26.22)	693(27.29)	
W	99(3.90)	390(15.36)	390(15.36)	390(15.36)	390(15.36)	390(15.36)	390(15.36)	460(18.11)	460(18.11)	516(20.32)	516(20.32)	
P	100(3.94)	353(13.90)	353(13.90)	353(13.90)	353(13.90)	353(13.90)	353(13.90)	393(15.47)	393(15.47)	430(16.93)	430(16.93)	

# Butterfly Valve Type 56 (Electric Actuated Type S) 400mm(16inch)

### Body Material

PP  
PVDF

### Seat & O-ring Material

EPDM  
FKM

### Connection Standard

JIS 10K · JIS 5K  
ANSI CLASS150  
DIN PN10

### Power Source

Three-Phase  
AC200V/220V/400V/440V

### Equipment

Manual Operation Mechanism  
(with handle)  
Torque Switches  
Space Heater  
Indicator

### Option

Output Contact Limit Switches  
Potentiometer  
R/I Transmitter  
E-E Positioner  
※ Actuator type is to be changed



## FEATURES

- Standard Torque Switch protects Valves from Overload.
- Automatic Return does not require Clutch Operation after Manual Operation.
- Stopper enables Adjustment of an Angle of  $\pm 5$  degree at fully-Opened or Fully-Closed position.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4
Space Heater	●	●	●	●
Output Contact Limit Switches	○	—	—	—
Potentiometer	—	○	○	○
R-I Transmitter	—	—	○	○
E-E Positioner	—	—	—	○

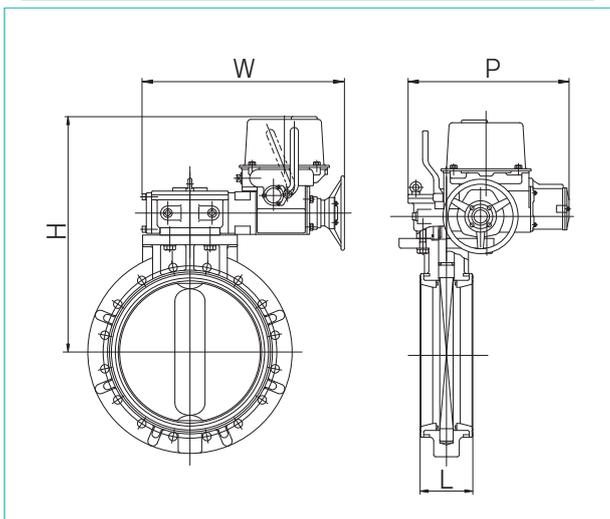
● Standard Equipment  
※ Actuator type is to be changed.

## ACTUATOR SPECIFICATION [Double acting]

Nominal Size mm(inch)	400(16)	
Actuator Type	LTRM-01/BRL-3	
Cycle Time 50/60Hz(seconds)	43/36	
Motor Output(W)	400	
Motor Starting Current(A)	200V	8.8/8.3
	400V	4.4/4.1
Motor Rated Current(A)	200V	3.0/2.4
	400V	1.5/1.2
Number of revolutions of manual operating handle	15	
Limit Switch Capacity	AC 250V 5A	
Protective Structure	IP55	
Cable Connector Nominal Size	2-G1	
Motor Pole(P)	4	
Motor Insulation	E Class	
Motor Time Rating(minute)	15min.	

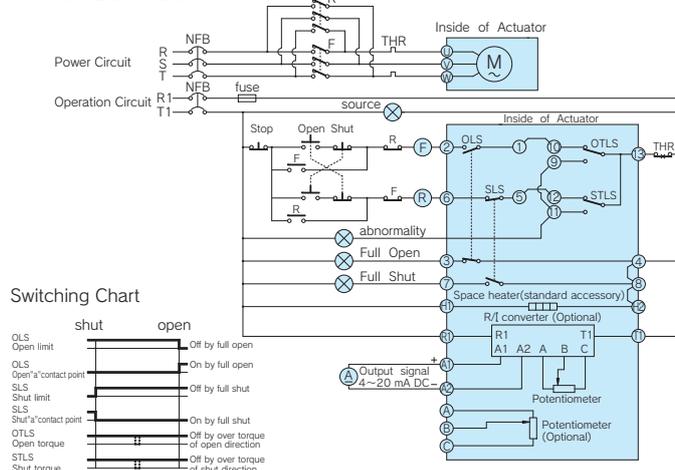
※ In the case of actuator with electric positioner, the model number is changed to LTMD-01Z/BRL-1, LTMD-01Z/BRL-3

## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

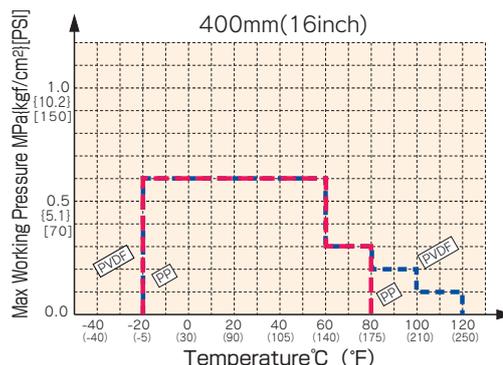
### WIRING DIAGRAM



## DIMENSIONS TABLE

JIS, ANSI, DIN	Unit:mm(inch)
Nominal Size	400 (16)
L	169 (6.65)
H	689 (27.13)
W	592 (23.31)
P	430 (16.93)

## WORKING PRESSURE VS. TEMPERATURE



# Butterfly Valve Type 75 (Electric Actuated Type S) 450mm - 600mm(18inch - 24inch)

- Body Material**  
PP  
PVDF
- Seat & O-ring Material**  
EPDM  
FKM
- Connection Standard**  
JIS 10K  
ANSI CLASS150  
DIN PN10
- Power Source**  
Three-Phase  
AC200V/220V/400V/440V
- Equipment**  
Manual Operation Mechanism (with handle)  
Torque Switches  
Space Heater  
Indicator
- Option**  
Output Contact Limit Switches  
Potentiometer  
R/I Transmitter  
E-E Positioner  
※ Actuator type is to be changed



## FEATURES

- Standard Torque Switch protects Valves from Overload.
- Automatic return does not require Clutch Operation after Manual Operation.
- Stopper enables Adjustment of Angle of  $\pm 5$  degree at fully-Opened or Fully-Closed position.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4
Space Heater	●	●	●	●
Output Contact Limit Switches	○	-	-	-
Potentiometer	-	○	○	○
R-I Transmitter	-	-	○	○
E-E Positioner	-	-	-	○

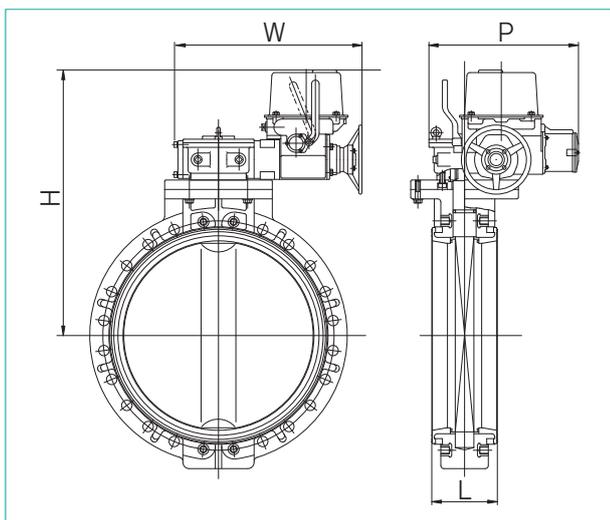
● Standard Equipment  
※ Actuator Type is to be changed.

## ACTUATOR SPECIFICATION [Double acting]

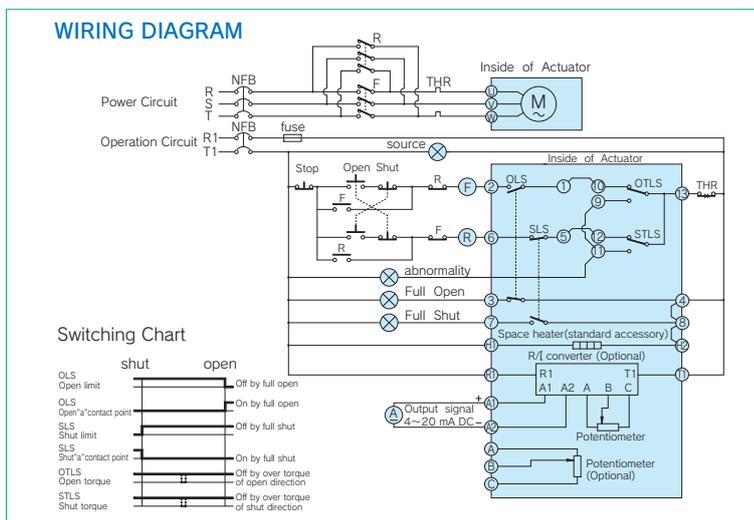
Nominal Size mm(inch)	450 - 600 (18inch - 24inch)	
Actuator Type	LTRM-01/BRL-3	
Cycle Time 50/60Hz(seconds)	43/36	
Motor Output(W)	400	
Motor Starting Current(A) 50/60Hz	200V	8.8/8.3
	220V	8.0/9.1
	400V	4.4/4.1
	440V	4.0/4.5
Motor Rated Current(A) 50/60Hz	200V	3.0/2.4
	220V	2.7/2.5
	400V	1.5/1.2
	440V	1.4/1.3
Number of revolutions of manual operating handle	15	
Limit Switch Capacity	AC 250V 5A	
Protective Structure	IP55	
Cable Connector Nominal Size	2-G1	
Motor Pole(P)	4	
Motor Insulation	E Class	
Motor Time Rating(minute)	15min.	

※ In the case of actuator with electric positioner, the model number is changed to LTMD-01Z/BRL-3

## DIMENSIONS FIGURE



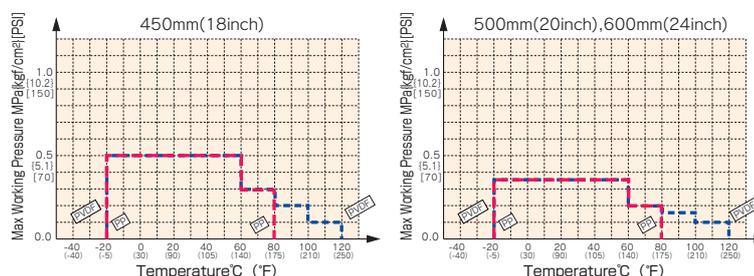
## SCHEMATIC DIAGRAM



## DIMENSIONS TABLE

JIS, ANSI, DIN	Unit:mm(inch)		
Nominal Size	450 (18)	500 (20)	600 (24)
L	179 (7.05)	190 (7.48)	209 (8.23)
H	750 (29.53)	780 (30.71)	845 (33.27)
W	592 (23.31)	592 (23.31)	592 (23.31)
P	464 (18.27)	464 (18.27)	464 (18.27)

## WORKING PRESSURE VS. TEMPERATURE



# PDCPD Butterfly Valve (Electric Actuated Type S) 700mm - 1200mm(28inch - 48inch)

- Body Material**  
PDCPD
- Seat & O-ring Material**  
EPDM
- Connection Standard**  
JIS 10K  
ANSI CLASS150  
DIN PN10
- Power Source**  
Three-Phase  
AC200V/400V
- Equipment**  
Manual Operation Mechanism (with handle)  
Torque Switches  
Space Heater  
Indicator



## FEATURES

- As the Specific Gravity of PDCPD is less than 1/4 that of Iron the Valve Weighs Significantly lighter than Metal Butterfly Valves.
- Superior Watertightness using Seat Packing made of Synthetic Rubber.
- Standard Torque Switch protects Valves from Overload.
- Automatic Return does not require Clutch Operation after Manual Operation.
- Stopper enables Adjustment of an angle of  $\pm 5$  degree at fully-Opened or Fully-Closed position.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4
Space Heater	●	●	●	●
Output Contact Limit Switches	○	—	—	—
Potentiometer	—	○	○	○
R-I Transmitter	—	—	○	○
E-E Positioner	—	—	—	○

●Standard Equipment    ※Actuator Type is to be changed.

## Option

- Output Contact Limit Switches
- Potentiometer
- R/I Transmitter
- E-E Positioner
- ※ Actuator type is to be changed

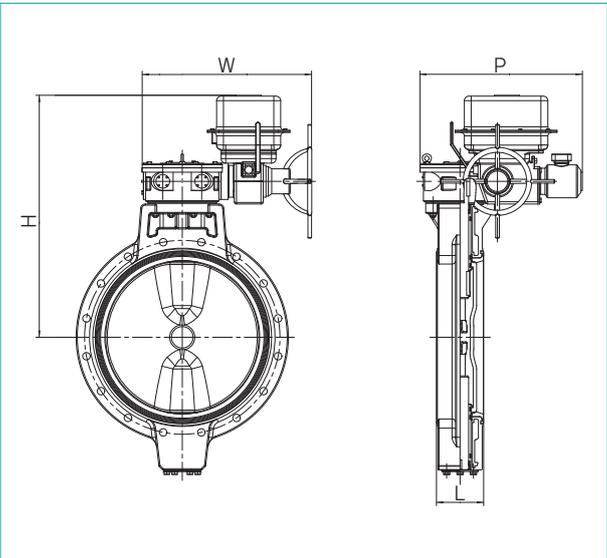
**Applications**  
Irrigation water, city water and sewage, thermal accumulators in buildings, various pipings such as for sea water, chemicals and air, and so on.

## ACTUATOR SPECIFICATION

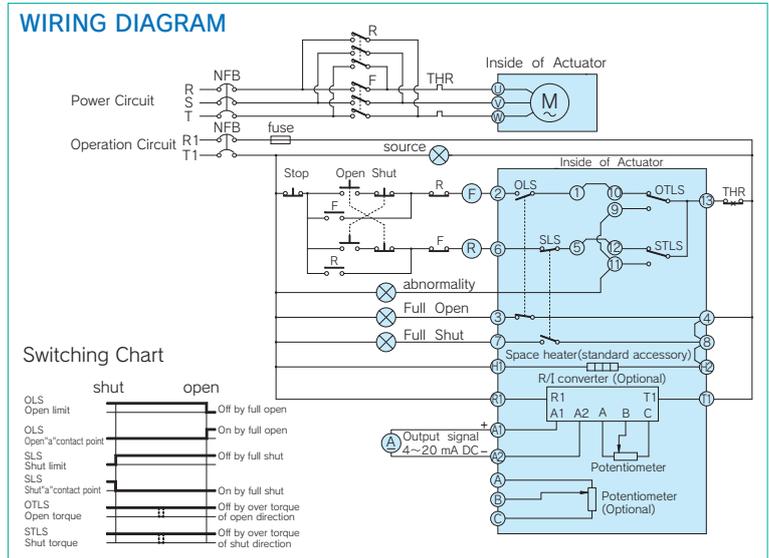
Nominal Size mm	700 (28inch)	800·900(32inch·36inch)	1000 (40inch)	1100 - 1200(44inch - 48inch)
Actuator Type	LTMD-02/BRL-10	LTMD-05/BRL-10	LTMD-1/BRL-20	LTMD-1/BRL-20
Cycle Time 50/60Hz(seconds)	74/61	71/75	46/51	59/59
Motor Output(W)	750	750	2200	2200
Motor Starting Current(A)	200V	15.6/15.2	15.6/15.2	49.0/45.0
	400V	7.8/7.6	7.8/7.6	24.5/22.5
Motor Rated Current(A)	200V	4.4/4.0	4.4/4.0	11.4/10.4
	400V	2.2/2.0	2.2/2.0	5.7/5.2
Number of revolutions of manual operating handle	15	333	333	618
Limit Switch Capacity	AC 250V 5A			
Protective Structure	IP55			
Cable Connector Nominal Size	Operation Circuit: 2-G1 Motor Circuit: G3/4			
Motor Pole(P)	4			
Motor Insulation	E Class			
Motor Time Rating(minute)	15min.			

※In the case of actuator with electric positioner, the model number is followed by "Z". Example:LTMD-02Z/BRL-10

## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

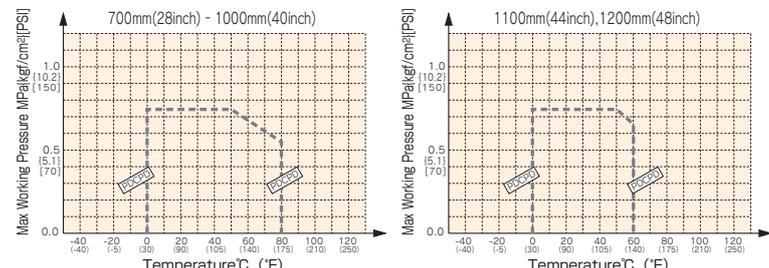


## DIMENSIONS TABLE

JIS, ANSI, DIN	Unit:mm(inch)					
Nominal Size	700 (28)	800 (32)	900 (36)	1000 (40)	1100 (44)	1200 (48)
L	206 (8.11)	240 (9.45)	240 (9.45)	300 (11.81)	300 (11.81)	350 (13.78)
H	1075 (42.32)	1155 (45.47)	1240 (48.82)	1300 (51.18)	1429 (56.26)	1479 (58.23)
W	852 (33.54)	952 (37.48)	952 (37.48)	989 (38.94)	1079 (42.48)	1079 (42.48)
P	722 (28.43)	897 (35.31)	897 (35.31)	1007 (39.65)	1072 (42.20)	1072 (42.20)

※1100mm(44inch) DIN not Available.

## WORKING PRESSURE VS. TEMPERATURE



# Butterfly Valve Type 55 (Electric Actuated Type T) 50mm - 250mm(2inch - 10inch)

- Body Material**  
FCD-S
- Seat & O-ring Material**  
PTFE  
(Cushion:CR)
- Connection Standard**  
JIS 10K  
ANSI CLASS150  
DIN PN10
- Power Source**  
Single-Phase  
AC100V/110V/200V/220V
- Equipment**  
Space Heater  
Output Contact Limit Switches  
Manual Operation Mechanism  
Indicator
- Option**  
E-E Positioner  
Intermediate Limit Switch(no-volt)  
Speedcontrol Unit



## FEATURES

- Lightweight and Compact with High-Torque
- Manual Operation Handle is equipped normally and operativeness has improved.
- Indicator that can be seen easily.

## OPTIONAL EQUIPMENT

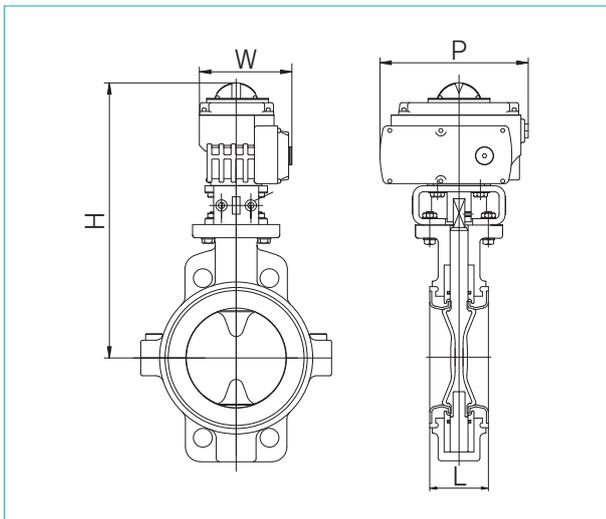
Combination No.	1	2	3	4	5	6	7
Space Heater	●	●	○	●	○	●	○
Output Contact Limit Switches	●	●	●	-	●	-	●
Potentiometer	-	○	-	-	-	○	-
E-E Positioner	-	-	○	-	-	-	-
Intermediate Limit Switch (no-volt)	-	-	-	○	-	○	-
Speedcontrol Unit	-	-	-	-	○	-	○

●Standard Equipment

## ACTUATOR SPECIFICATION

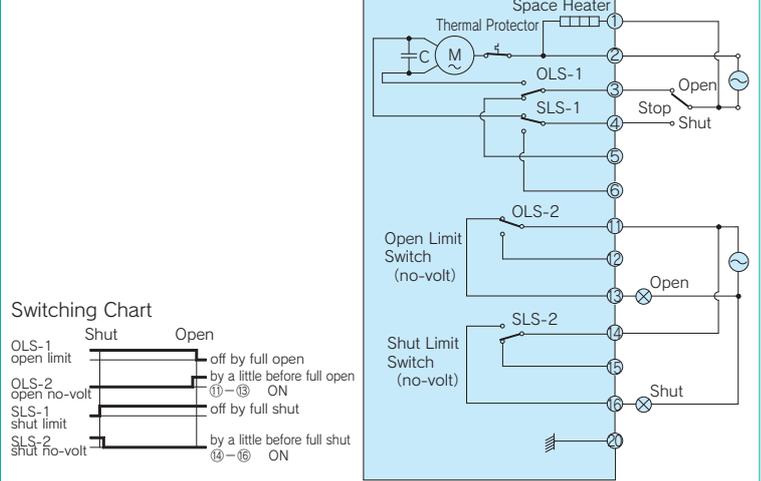
Nominal Size mm(inch)	50-100(2inch-4inch)	125(5inch)	150(6inch)	200(8inch)	250(10inch)
Actuator Type	AOC-0	AOC-1	AOC-2	AOC-2.5	AOC-3
Cycle Time 50/60Hz(seconds)	25/20		37/30		55/50
Motor Output(W)	8	20	30	90	
Motor Starting Current(A) 50/60Hz	100V	1.20/1.20	1.60/1.40	2.40/2.40	5.1/4.8
	110V	1.40/1.40	1.70/1.70	2.50/2.50	6.1/6.6
	200V	0.50/0.50	0.70/0.70	1.10/1.10	2.6/2.4
	220V	0.70/0.70	0.80/0.90	1.20/1.20	3.1/3.0
Motor Rated Current(A) 50/60Hz	100V	0.50/0.50	0.70/0.60	0.90/1.20	1.60/1.70
	110V	0.60/0.60	0.90/0.70	1.00/1.20	1.70/1.80
	200V	0.25/0.25	0.40/0.30	0.50/0.80	0.80/1.00
	220V	0.30/0.30	0.50/0.40	0.60/0.80	0.90/1.00
Number of revolutions of Manual Operating Handle	6.7	16.5			
Limit Switch Capacity	AC 250V 10A				
Protective Structure	JIS C 0920 Waterjet-proof type (IEC IP65)				
Cable Connector Nominal Size	G1/2				
Motor Pole(P)	4				
Motor Insulation	E Class				
Motor Time Rating(minute)	30				
Space Heater Output(W)	5				

## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

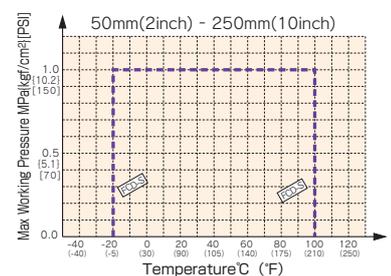
### WIRING DIAGRAM



## DIMENSIONS TABLE

JIS, ANSI, DIN	Unit:mm(inch)						
Nominal Size	50 (2)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)
L	44 (1.74)	54 (2.13)	59 (2.33)	64 (2.52)	75 (2.96)	85 (3.35)	96 (3.78)
H	295 (11.7)	314 (12.4)	330 (13.0)	374 (14.8)	424 (16.7)	445 (17.5)	540 (21.3)
W	138.8 (5.47)	138.8 (5.47)	138.8 (5.47)	191 (7.52)	239 (9.41)	239 (9.41)	381.5 (15.02)
P	202 (7.95)	202 (7.95)	202 (7.95)	252 (9.92)	310 (12.20)	310 (12.20)	388 (15.28)

## WORKING PRESSURE VS. TEMPERATURE



# Butterfly Valve Type 55 (Electric Actuated Type S) 50mm·80mm - 250mm(2·3inch - 10inch)

**Body Material**  
FCD-S

**Seat & O-ring Material**  
PTFE  
(Cushion:CR)

**Connection Standard**  
JIS 10K  
ANSI CLASS150  
DIN PN10

**Power Source**  
Three-Phase  
AC200V/400V

**Equipment**  
Manual Operation Mechanism  
Torque Switches  
Output Contact-Limit Switches  
Space Heater  
Indicator

**Option**  
Potentiometer  
R/I Transmitter  
E-E Positioner



## FEATURES

- Speedy, exact operation due to a Motor with Direct Current Brake.
- Standard Torque Switch protects Valves from Overload.
- Stopper enables Adjustment of an angle of  $\pm 5$  degree at fully-Opened or Fully-Closed position.

## OPTIONAL EQUIPMENT

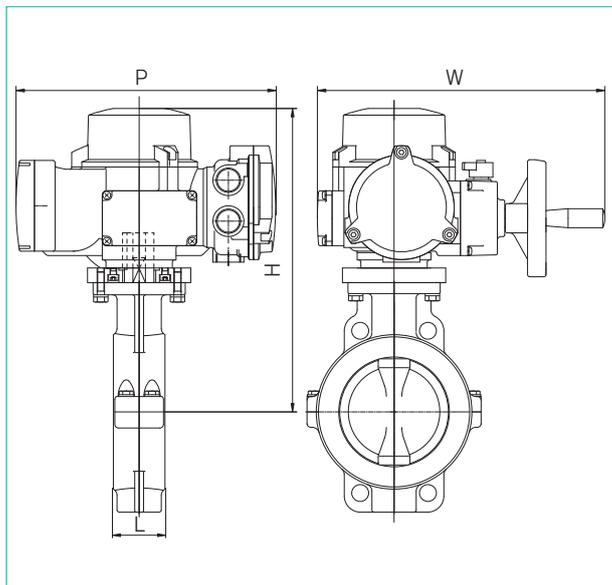
Combination No.	1	2	3
Space Heater	●	●	●
Output Contact Limit Switches	●	●	●
Potentiometer	○	○	○
R-I Transmitter	—	○	○
E-E Positioner	—	—	○

●Standard Equipments

## ACTUATOR SPECIFICATION

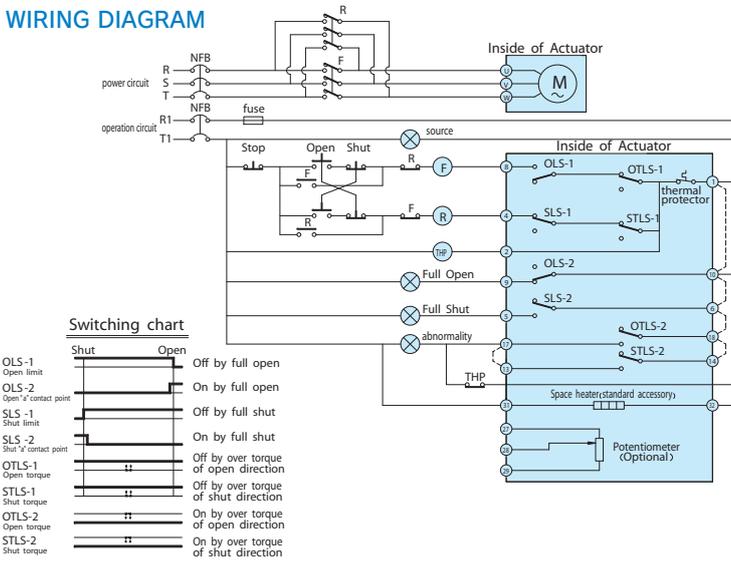
Nominal Size mm(inch)	50-100(2inch-4inch)	125·150(5inch·6inch)	200·250(8inch·10inch)
Actuator Type	SRJ-010	SRJ-020	SRJ-060
Cycle Time 50/60Hz(seconds)	18/15	36/30	36/30
Motor Output(W)	40	40	100
Motor Starting	200V 1.27/1.19	1.27/1.19	1.89/1.77
Current(A) 50/60Hz	400V 0.63/0.58	0.63/0.58	0.94/0.90
Motor Rated	200V 0.53/0.45	0.53/0.45	0.74/0.67
Current(A) 50/60Hz	400V 0.26/0.22	0.26/0.22	0.37/0.34
Number of revolutions of manual operating handle	21	21	26
Limit Switch Capacity	AC 250V 2A		
Protective Structure	IP68		
Cable Connector Nominal Size	3-G1		
Motor Pole(P)	4		
Motor Insulation	B Class		
Motor Time Rating(minute)	15		

## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

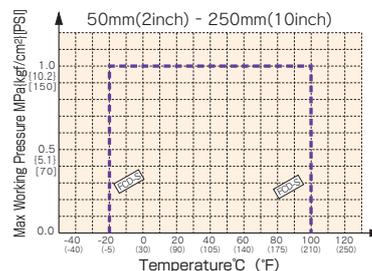
### WIRING DIAGRAM



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)					
Nominal Size	50 (2)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)
L	44 (1.73)	54 (2.13)	59 (2.32)	64 (2.52)	75 (2.95)	85 (3.35)	96 (3.78)
H	318 (12.52)	337 (13.27)	353 (13.90)	396 (15.59)	413 (16.26)	440 (17.33)	475 (18.70)
W	390 (15.36)	390 (15.36)	390 (15.36)	390 (15.36)	390 (15.36)	460 (18.11)	460 (18.11)
P	353 (13.90)	353 (13.90)	353 (13.90)	353 (13.90)	353 (13.90)	393 (15.47)	393 (15.47)

## WORKING PRESSURE VS. TEMPERATURE



# Butterfly Valve Type 57,56 (Pneumatic Actuated Type TA)40mm-400mm(1½inch-16inch) Type 57:40mm-350mm(1½inch-16inch),Type 56:400mm(16inch)

DIAPHRAGM VALVE  
BALL VALVE  
BUTTERFLY VALVE  
ROTARY DAMPER  
CONTROL VALVE  
ULTRA SONIC FLOWMETER  
IMPERA FLOWMETER  
ULTRA SONIC FLOWMETER

- Body Material**  
PVC  
PP  
PVDF
- Seat & O-ring Material**  
EPDM  
FKM  
Others
- Connection Standard**  
JIS 10K · JIS 5K  
ANSI CLASS150  
DIN PN10
- Action**  
Double Acting  
Air to Open  
Air to Close
- Equipment**  
· Opening Adjustment  
Stopper ( ± 5 degree)  
· Indicator
- Option**  
· Filter Regulator  
· Solenoid Valve  
※ with built-in specialized speed controller and bypass valve.  
· Limit Switch  
· Speed Controller  
· Manual Operation Mechanism  
※ Only for air to open & close.  
· Full Opening Adjustment Mechanism  
· Positioner



## FEATURES

- Horizontal Type Actuator saves Piping Space.
- Spring unit for Air to Open & Close is detachable so Change-Over between Double-acting and Air to Open & Close can be done Easily.
- Various Options can be Easily installed or removed, and can be mounted later (except Positioners).
- Stopper enables Adjustment of ±5 Degree at fully-Opened or Fully-Closed position.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	—	—	○	○	—	○	—	—
Filter Regulator	—	—	—	○	—	—	○	—	—
Speed Controller	◎	○	—	◎	◎	○	◎	—	—
Limit Switch	—	—	○	—	○	○	○	—	—
Positioner (Electric-Air, Air-Air)	—	—	—	—	—	—	—	○	○

◎Indicates specialized for Solenoid Valve.  
※With built-in speed controller and bypass valve.

## ACTUATOR SPECIFICATION [Double Acting]

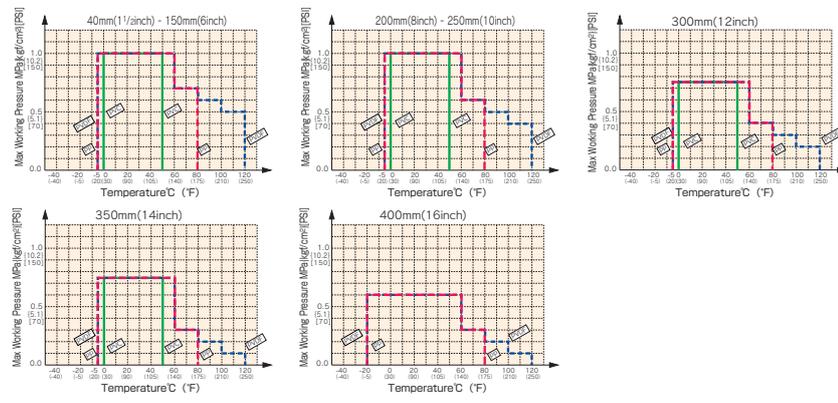
Nominal Size mm(inch)	40-50(1½inch-2inch)	65-80(2½inch-3inch)	100(4inch)	125-150(5inch-6inch)	200(8inch)	200-300(8inch-12inch)	350(14inch)	400(16inch)
Actuator Type	TA2A-050D	TA2A-063D	TA2A-080D	TA2A-100D	TA2A-125D	TA2A-160D	TA-200D	TA-200D
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}							
Air Consumption NI /Open & Close (at Operating Pressure 0.4MPa)	0.9	1.7	3.2	6.6	13.3	27.1	56.8	56.8
Air Supply Bore	Rc 1/4						Rc 3/8	Rc 3/8

## ACTUATOR SPECIFICATION [Air to Open, Air to Close]

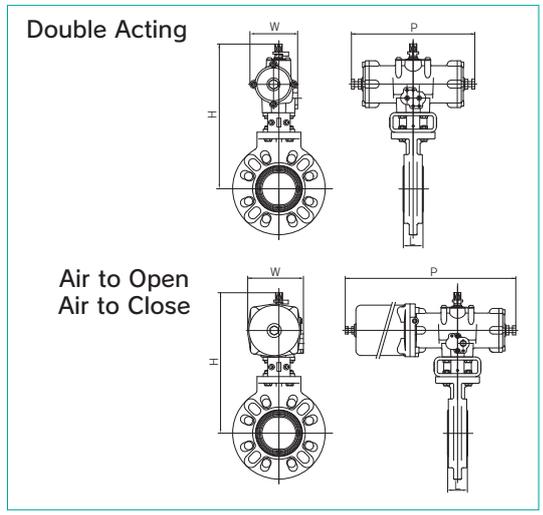
Nominal Size mm(inch)	40-50(1½inch-2inch)	65-80(2½inch-3inch)	100(4inch)	125-150(5inch-6inch)	200(8inch)	200-300(8inch-12inch)	350(14inch)	400(16inch)
Actuator Type	TA2A-050R	TA2A-063R	TA2A-080R	TA2A-100R2	TA2A-125R2	TA2A-160R2	TA-200R	TA-200R
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}							
Air Consumption NI /Open & Close (at Operating Pressure 0.4MPa)	1.7	3.3	6.1	12.8	21.6	42.7	68.4	56.8
Air Supply Bore	Rc 1/4						Rc 3/8	Rc 3/8

\* for the actuator with lubricant free valves consult near Asahi dealer.

## WORKING PRESSURE VS. TEMPERATURE



## DIMENSIONS FIGURE



## DIMENSIONS TABLE

JIS, ANSI, DIN												Unit:mm(inch)			
Nominal Size	40 (1 ½)	50 (2)	65 (2 ½)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)	400 (16)			
Common	L	39 (1.54)	42 (1.65)	46 (1.81)	46 (1.81)	56 (2.20)	66 (2.60)	71 (2.80)	87 (3.43)	112 (4.40)	129 (5.08)	129 (5.08)	169 (6.65)		
	H	263 (10.35)	273 (10.75)	298 (11.73)	313 (12.32)	361 (14.21)	382 (15.04)	428 (16.85)	493 (19.41)	541 (21.3)	598 (23.54)	625 (24.61)	751 (29.57)		
Double Acting	W	82 (3.23)	82 (3.23)	95 (3.74)	95 (3.74)	116 (4.57)	116 (4.57)	143 (5.63)	150 (5.90)	181 (7.13)	181 (7.13)	224 (8.82)	214 (8.43)		
	P	210 (8.27)	210 (8.27)	250 (9.84)	250 (9.84)	292 (11.50)	292 (11.50)	362 (14.25)	440 (17.32)	532 (20.94)	532 (20.94)	664 (26.14)	664 (26.14)		
Air to Open, Air to Close	W	103 (4.06)	103 (4.06)	119 (4.69)	119 (4.69)	142 (5.59)	142 (5.59)	174 (6.86)	193 (7.60)	231 (9.09)	231 (9.09)	292 (11.50)	292 (11.50)		
	P	345 (13.58)	345 (13.58)	413 (16.26)	413 (16.26)	487 (19.18)	487 (19.18)	598 (23.55)	762 (30.00)	924 (36.38)	924 (36.38)	1275 (50.20)	1275 (50.20)		

# Butterfly Valve Type 75 (Pneumatic Actuated Type TW) 450mm - 600mm(18inch - 24inch)

**Body Material**  
PP  
PVDF

**Seat & O-ring Material**  
EPDM  
FKM  
Others

**Connection Standard**  
JIS 10K  
ANSI CLASS150  
DIN PN10

**Action**  
Double Acting

**Equipment**  
· Opening Adjustment  
Stopper (± 5 degree)  
· Indicator

**Option**  
· Filter Regulator  
· Solenoid Valve  
※ with built-in specialized speed controller and bypass valve.  
· Limit Switch  
· Speed Controller  
· Manual Operation Mechanism  
※ for air to open & close only.  
· Full Opening Adjustment Mechanism  
· Positioner



## FEATURES

- Horizontal Type Actuator saves Piping Space.
- Stopper enables Adjustment of an Angle of ±5 degree at fully-Opened or Fully-Closed position.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	-	-	○	○	-	○	-	-
Filter Regulator	-	-	-	○	-	-	○	-	○
Speed Controller	◎	○	-	◎	○	○	◎	-	-
Limit Switch	-	-	○	-	○	○	○	-	-
Positioner (electric-air, ait-air)	-	-	-	-	-	-	-	○	○

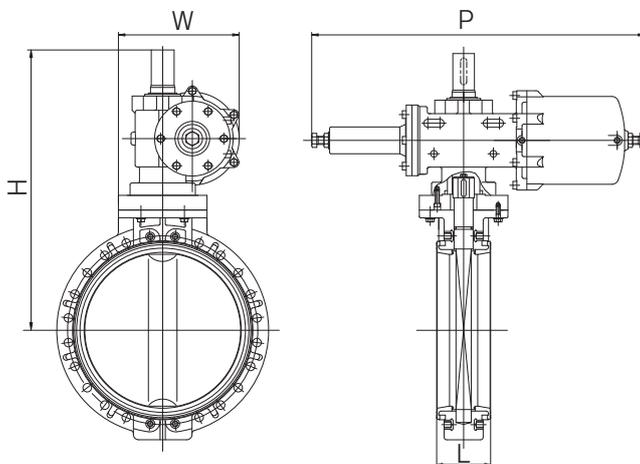
◎Indicates specialized for Solenoid Valve.

※With built-in speed controller and bypass valve.

## ACTUATOR SPECIFICATION [Double acting]

Nominal Size mm(inch)	450 - 600(18inch - 24inch)
Actuator Type	TW-250D
Operating Pressure Mpa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}
Air Consumption NI / open & close (at operating pressure 0.4MPa)	99
Air Supply Bore	Rc 3/8

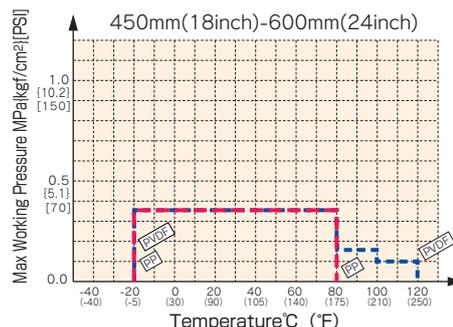
## DIMENSIONS FIGURE



## DIMENSIONS TABLE

JIS, ANSI, DIN	Unit:mm(inch)		
Nominal Size	450 (18)	500 (20)	600 (24)
L	179 (7.05)	190 (7.48)	209 (8.23)
H	825 (32.48)	855 (33.66)	920 (36.22)
W	384 (15.12)	384 (15.12)	384 (15.12)
P	987 (38.86)	987 (38.86)	987 (38.86)

## WORKING PRESSURE VS. TEMPERATURE



# Butterfly Valve Type 55 (Pneumatic Actuated Type TA) 50mm·80mm - 250mm(2·3inch - 10inch)

**Body Material**  
FCD-S

**Seat & O-ring Material**  
PTFE  
(Cushion:CR)

**Connection Standard**  
JIS 10K  
ANSI CLASS150  
DIN PN10

**Action**  
Double Acting  
Air to Open  
Air to Close

**Equipment**  
· Opening Adjustment Stopper (± 5 degree)  
· Indicator

**Option**  
· Filter Regulator  
· Solenoid Valve  
※ with built-in specialized speed controller and bypass valve.  
· Limit Switch  
· Speed Controller  
· Manual Operation Mechanism  
※ Only for air to open & close.  
· Full Opening Adjustment Mechanism  
· Positioner



## FEATURES

- Horizontal Type Actuator saves Piping Space.
- Spring unit for Air to Open & Shut is detachable so that Change-over between Double-Acting and Air to Open & Shut can be done easily.
- Various Options can be easily installed or removed and can be mounted later(except Positioners).
- Stopper enables Adjustment of angle of ±5 degree at fully-Opened or Fully-Closed position.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	—	—	○	○	—	○	—	—
Filter Regulator	—	—	—	○	—	—	○	—	—
Speed Controller	◎	○	—	◎	◎	○	◎	—	—
Limit Switch	—	—	○	—	○	○	○	—	—
Positioner (Electric-Air, Air-Air)	—	—	—	—	—	—	—	○	○

◎ Indicates specialized for Solenoid Valve.  
※ With built-in speed controller and bypass valve.

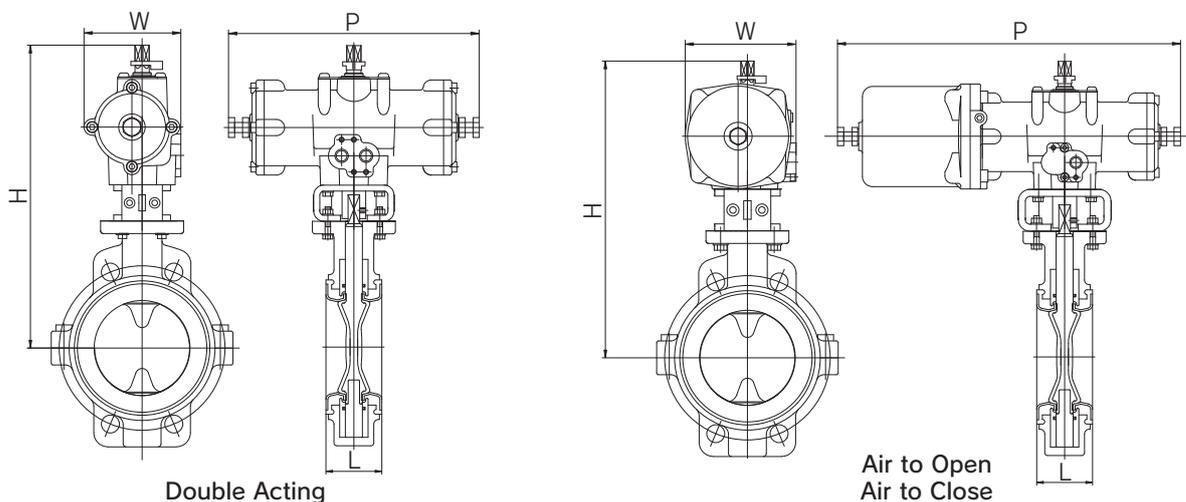
## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	50(2inch)	80(3inch)	100-125(4inch-5inch)	150(6inch)	200(8inch)	250(10inch)
Actuator Type	TA2A-050D	TA2A-063D	TA2A-080D	TA2A-100D	TA2A-125D	TA2A-160D
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}					
Air Consumption NI /open & close (at operating pressure 0.4MPa)	0.9	1.7	3.2	6.6	13.3	27.1
Air Supply Bore	Rc 1/4					

## ACTUATOR SPECIFICATION [Air to Open, Air to Close]

Nominal Size mm(inch)	50(2inch)	80(3inch)	100-125(4inch-5inch)	150(6inch)	200(8inch)	250(10inch)
Actuator Type	TA2A-050R	TA2A-063R	TA2A-080R	TA2A-100R	TA2A-125R	TA2A-160R
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}					
Air Consumption NI /open & close (at operating pressure 0.4MPa)	1.7	3.3	6.1	12.8	21.6	42.7
Air Supply Bore	Rc 1/4					

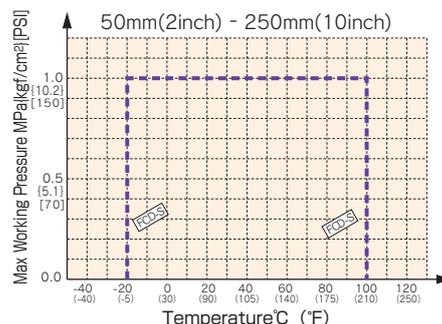
## DIMENSIONS FIGURE



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)						
Nominal Size		50	80	100	125	150	200	250
Common	L	44 (1.73)	54 (2.13)	59 (2.32)	64 (2.52)	75 (2.95)	85 (3.35)	96 (3.78)
	H	268 (10.55)	302 (11.89)	346 (13.62)	375 (14.76)	428 (16.85)	502 (19.76)	583 (22.95)
Double acting	W	82 (3.23)	95 (3.74)	116 (4.57)	116 (4.57)	142.5 (5.61)	150 (5.90)	181 (7.13)
	P	210 (8.27)	250 (9.84)	292 (11.50)	292 (11.50)	362 (14.25)	440 (17.32)	532 (20.94)
Air to open, Air to close	W	103 (4.06)	118.5 (4.67)	141.5 (5.57)	141.5 (5.57)	174 (6.86)	192.5 (7.58)	231 (9.10)
	P	345 (13.58)	413 (16.26)	487 (19.17)	487 (19.17)	598 (23.54)	762 (30.00)	924 (36.38)

## WORKING PRESSURE VS. TEMPERATURE



# Rotary Damper Type 57,56 (Electric Actuated Type T) 40mm - 400mm(1 1/2inch - 16inch) Type57:40-350mm(1 1/2inch-14inch),Type56:400mm(16inch)

### Body Material

PVC  
PP  
PVDF

### O-ring Material

EPDM  
FKM

### Connection Standard

JIS 10K · JIS 5K  
ANSI CLASS150  
DIN PN10

### Power Source

Single-Phase  
AC100V/110V/200V/220V

### Equipment

Space Heater  
Output Contact Limit Switches  
Indicator  
Manual Operation-Mechanism

### Option

E-E Positioner  
Intermediate Limit Switch (no-volt)  
Speedcontrol Unit



## FEATURES

- Damper Style is Designed for Flow Control.(Damper Style is not a tight off Valve.)
- Lightweight and Compact with High-Torque.
- Manual Operation Handle is equipped normally and operativeness has improved.
- Indicator that can be seen easily.

## OPTIONAL EQUIPMENT

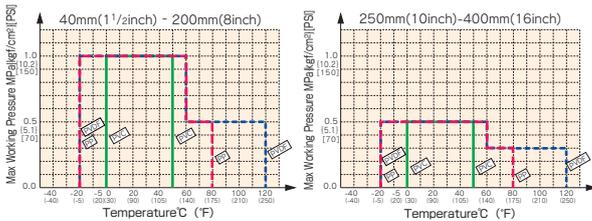
Combination No.	1	2	3	4	5	6	7
Space Heater	●	●	○	●	○	●	○
Output Contact Limit Switches	●	●	●	—	●	—	●
Potentiometer	—	○	—	—	—	○	○
E-E Positioner	—	—	○	—	—	—	—
Intermediate Limit Swirch (no-volt)	—	—	—	○	—	○	—
Speedcontrol Unit	—	—	—	—	○	—	○

● Standard Equipment

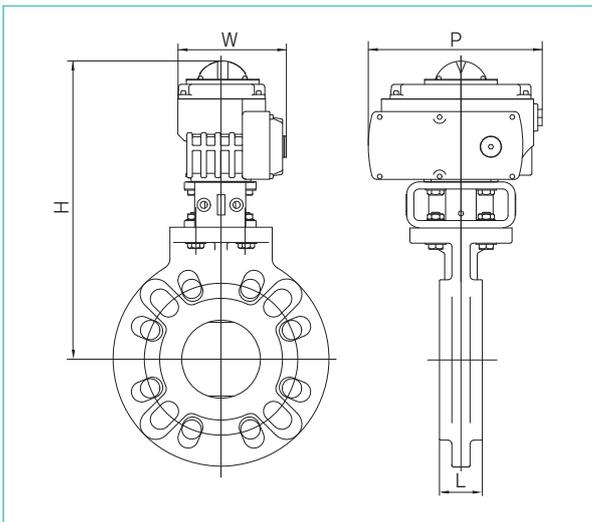
## ACTUATOR SPECIFICATION

Nominal Size mm(inch)	40-150(1 1/2inch-6inch)	200-350(8inch-14inch)	400(16inch)
Actuator Type	AOC-0	AOC-2	AOC-3
Cycle Time 50/60Hz(seconds)	25/20		55/50
Motor Output(W)	8	30	90
Motor Starting Current(A) 50/60Hz	100V	1.20/1.20	2.40/2.40
	110V	1.40/1.40	2.50/2.50
	200V	0.50/0.50	1.10/1.10
	220V	0.70/0.70	1.20/1.20
Motor Rated Current(A) 50/60Hz	100V	0.50/0.50	0.90/1.20
	110V	0.60/0.60	1.00/1.20
	200V	0.25/0.25	0.50/0.80
	220V	0.30/0.30	0.60/0.80
Number of revolutions of manual operating handle	6.7	16.5	16.5
Limit Switch Capacity	AC 250V 10A		
Protective Structure	JIS C 0920 Waterjet-proof type (IEC IP65)		
Cable Connector Nominal Size	G1/2		
Motor Pole(P)	4		
Motor Insulation	E Class		
Motor Time Rating(minute)	30		
Space Heater Output(W)	5		

## WORKING PRESSURE VS. TEMPERATURE

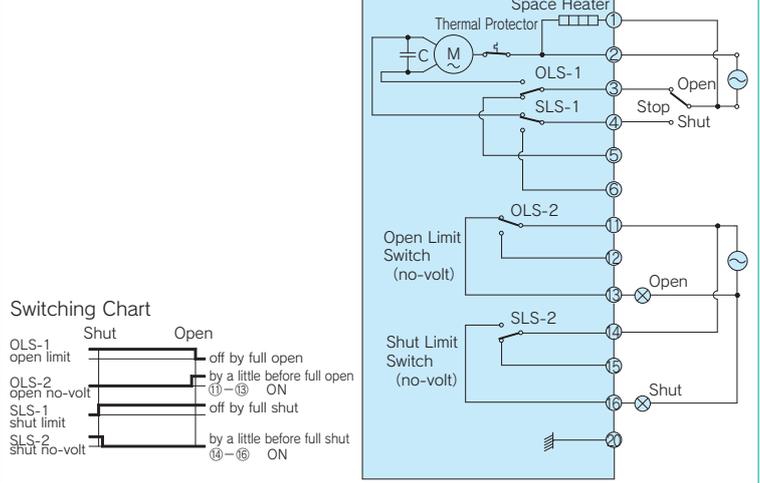


## DIMENSIONS FIGURE

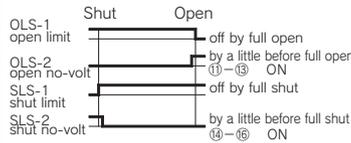


## SCHEMATIC DIAGRAM

### WIRING DIAGRAM



### Switching Chart



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)											
Nominal Size		40 (1 1/2)	50 (2)	65 (2 1/2)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)	400 (16)
L		32 (1.26)	35 (1.38)	37 (1.46)	37 (1.46)	47 (1.85)	57 (2.24)	62 (2.44)	76 (2.99)	96 (3.78)	116 (4.57)	116 (4.57)	157 (6.12)
	H	290 (11.42)	300 (11.81)	310 (12.20)	325 (12.80)	340 (13.39)	361 (14.21)	376 (14.80)	455 (17.91)	490 (19.29)	566 (22.28)	593 (23.37)	650 (25.35)
H	PVC, PP	310 (12.20)	320 (12.60)	330 (12.99)	345 (13.58)	360 (14.17)	381 (15.00)	396 (15.59)	475 (18.70)	510 (20.08)	586 (23.07)	613 (24.13)	670 (26.13)
	PVDF	138.8 (5.47)	239 (9.42)	239 (9.42)	239 (9.42)	239 (9.42)	381.5 (14.88)						
W		202 (7.96)	202 (7.96)	202 (7.96)	202 (7.96)	202 (7.95)	202 (7.96)	202 (7.96)	310 (12.20)	310 (12.20)	310 (12.20)	310 (12.20)	388 (15.13)
P		202 (7.96)	202 (7.96)	202 (7.96)	202 (7.96)	202 (7.95)	202 (7.96)	202 (7.96)	310 (12.20)	310 (12.20)	310 (12.20)	310 (12.20)	388 (15.13)

# Rotary Damper (Electric Actuated Type S) 40mm - 600mm(1 1/2inch - 24inch)

## Body Material

PVC  
PP  
PVDF

## Seat & O-ring Material

EPDM  
FKM

## Connection Standard

JIS 10K · JIS 5K  
ANSI CLASS150  
DIN PN10

## Power Source

Three-Phase  
AC200V/220V/400V/440V

## Equipment

Manual Operation Mechanism  
Torque Switches  
Output Contact  
Limit Switches  
Space Heater  
Indicator

## Option

Potentiometer  
R/I Transmitter  
E-E Positioner



## FEATURES

- Speedy, exact operation by Motor with Direct Current Brake.
- Standard Torque Switch protects Valves from overload.
- Stopper enables Adjustment of an angle of ±5degree when fully-opened or fully-closed.

## OPTIONAL EQUIPMENT

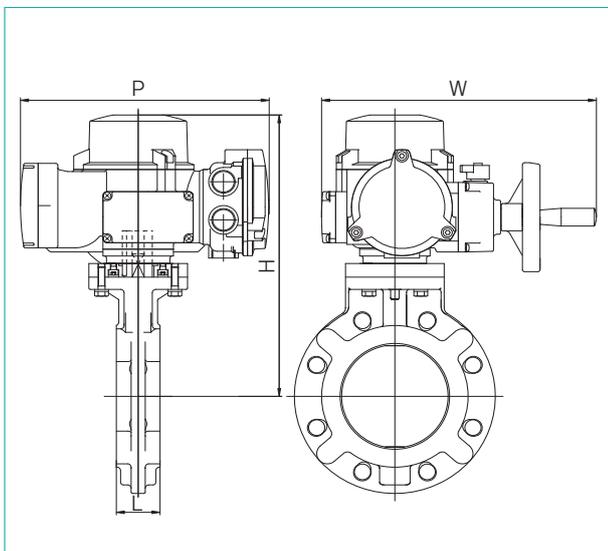
Combination No.	1	2	3
Space Heater	●	●	●
Output Contact Limit Switches	●	●	●
Potentiometer	○	○	○
R-I Transmitter	—	—	○
E-E Positioner	—	—	○

●Standard Equipment

## ACTUATOR SPECIFICATION

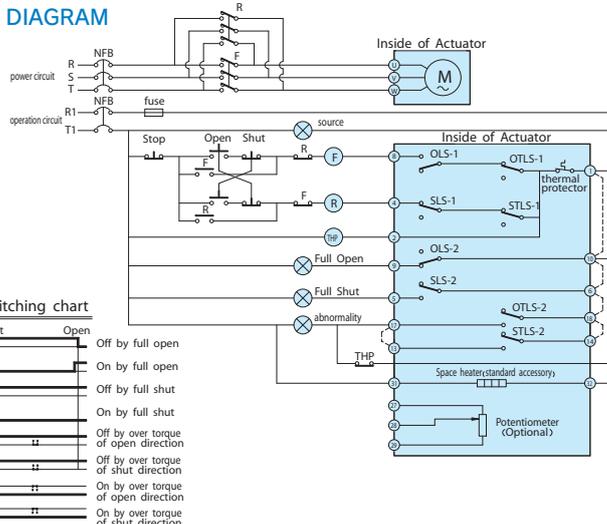
Nominal Size mm(inch)	40-150(1 1/2inch-6inch)	200-350(8inch-14inch)	400(16inch)	450-600(18inch-24inch)
Valve Type	Type 57		Type 56	Type 75
Actuator Type	SRJ-010	SRJ-020	SRJ-060	
Cycle Time 50/60Hz(seconds)	18/15	36/30	36/30	
Motor Output(W)	40		100	
Motor Starting	200V	1.27/1.19	1.89/1.77	
Current(A) 50/60Hz	400V	0.63/0.58	0.94/0.90	
Motor Rated	200V	0.53/0.45	0.74/0.67	
Current(A) 50/60Hz	400V	0.26/0.22	0.37/0.34	
Number of revolutions of manual operating handle	21		26	
Limit Switch Capacity	AC 250V 2A			
Protective Structure	IP68			
Cable Connector Nominal Size	3-G1			
Motor Pole(P)	4			
Motor Insulation	B Class			
Motor Time Rating(minute)	15			

## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

### WIRING DIAGRAM



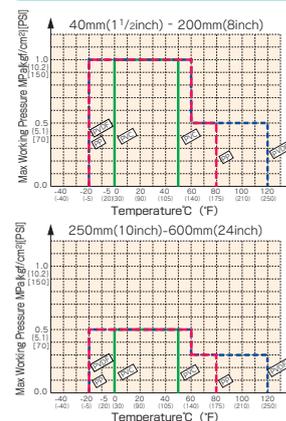
### Switching chart

Symbol	Shut	Open	Action
OLS-1	—	—	Off by full open
OLS-2	—	—	On by full open
SLS-1	—	—	Off by full shut
SLS-2	—	—	On by full shut
OTLS-1	—	—	Off by over torque of open direction
STLS-1	—	—	Off by over torque of shut direction
OTLS-2	—	—	On by over torque of open direction
STLS-2	—	—	On by over torque of shut direction

## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)														
Nominal Size		40 (1 1/2)	50 (2)	65 (2 1/2)	80(75) (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)	400 (16)	450 (18)	500 (20)	600 (24)
L		32 (1.26)	35 (1.38)	37 (1.46)	37 (1.46)	47 (1.85)	57 (2.24)	62 (2.44)	76 (2.99)	96 (3.78)	116 (4.57)	116 (4.57)	157 (6.18)	167 (6.58)	177 (6.97)	197 (7.76)
H	U-PVC, PP	313 (12.32)	323 (12.72)	333 (13.11)	348 (13.70)	363 (14.29)	398 (15.67)	413 (16.26)	444 (17.48)	486 (19.14)	543 (21.38)	570 (22.44)	612 (24.10)	623 (24.53)	653 (25.71)	717 (28.23)
	PVDF	333 (13.11)	343 (13.51)	353 (13.90)	368 (14.49)	383 (15.08)	418 (16.46)	433 (17.05)	464 (18.27)	506 (19.92)	563 (22.17)	590 (23.23)	632 (24.89)	648 (25.52)	678 (26.70)	742 (29.22)
W		390 (15.36)	460 (18.11)	460 (18.11)	460 (18.11)	460 (18.11)										
P		353 (13.90)	393 (15.47)	393 (15.47)	393 (15.47)	393 (15.47)										

## WORKING PRESSURE VS. TEMPERATURE



# Rotary Damper (Pneumatic Actuated Type TA)40mm - 600mm(1 1/2inch - 24inch) Type57:40mm-350mm(1 1/2inch-14inch), Type56:400mm(16inch), Type75:450-600mm(18inch-24inch)

### Body Material

PVC  
PP  
PVDF

### Seat & O-ring Material

EPDM  
FKM

### Connection Standard

JIS 10K · JIS 5K  
ANSI CLASS150  
DIN PN10

### Action

Double Acting  
Air to Open  
Air to Close

### Equipment

- Opening Adjustment Stopper (± 5 degree)
- Indicator
- Speed Controller

### Option

- Filter Regulator
- Solenoid Valve
- ※ with built-in specialized speed controller and bypass valve.
- Limit Switch
- Manual Operation Mechanism
- ※ Only for air to open & close.
- Full Opening Adjustment Mechanism
- Positioner



## FEATURES

- Horizontal Type Actuator saves Piping Space.
- Spring unit for Air to Open & Close is detachable so Change-Over between Double-Acting and Air to Open & Close can be done easily.
- Various Options can be easily installed or removed, and can be mounted later (except positioners).
- Stopper enables Adjustment of ±5 degree at fully-Opened or Fully-Closed position.

## OPTIONAL EQUIPMENT

Combination No.	1	2	3	4	5	6	7	8	9
Solenoid Valve ※	○	-	-	○	○	-	○	-	-
Filter Regulator	-	-	-	○	-	-	○	-	○
Speed Controller	◎	○	-	◎	◎	○	◎	-	-
Limit Switch	-	-	○	-	○	○	○	-	-
Positioner (Electric-Air, Air-Air)	-	-	-	-	-	-	-	○	○

◎Indicates specialized for Solenoid Valve.

※With built-in speed controller and bypass valve.

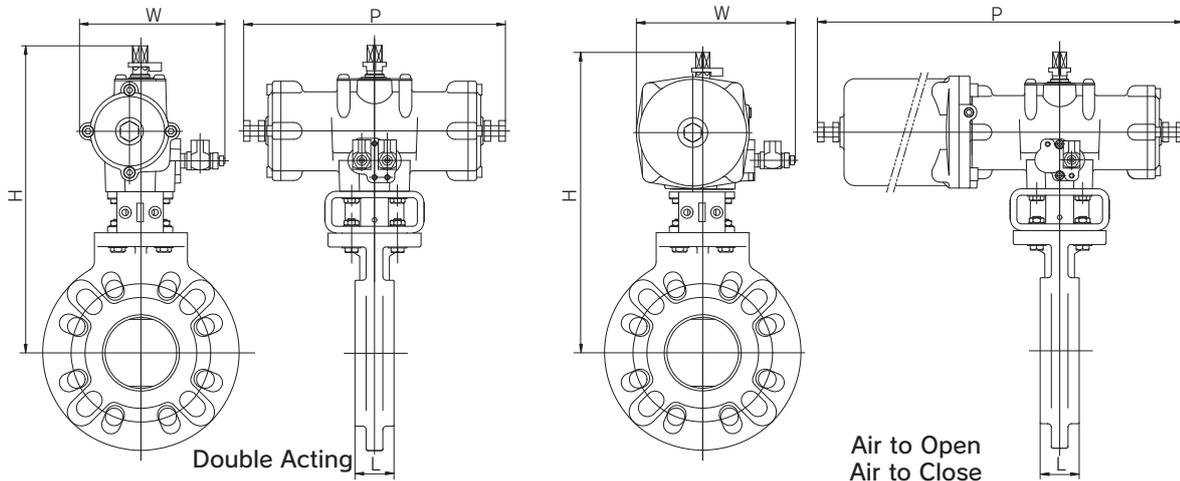
## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	40-100(1 1/2inch-4inch)	125-150(5inch-6inch)	200-300(8inch-12inch)	350(14inch)	400-600(16inch-24inch)
Actuator Type	TA2A-050D	TA2A-080D	TA2A-100D	TA2A-125D	TA2A-160D
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}				
Air Consumption NI /open & close (at operating pressure 0.4MPa)	0.9	3.2	6.6	13.3	27.1
Air Supply Bore	Rc 1/4				

## ACTUATOR SPECIFICATION [Air to Open, Air to Close]

Nominal Size mm(inch)	40-100(1 1/2inch-4inch)	125-150(5inch-6inch)	200-300(8inch-12inch)	350(14inch)	400-600(16inch-24inch)
Actuator Type	TA2A-050R	TA2A-080R	TA2A-100R2	TA2A-125R2	TA2A-160R2
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.7{7.1}				
Air Consumption NI /open & close (at operating pressure 0.4MPa)	1.7	6.1	12.8	21.6	42.7
Air Supply Bore	Rc 1/4				

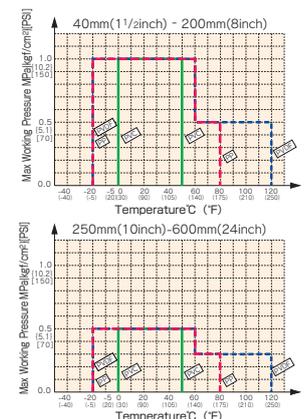
## DIMENSIONS FIGURE



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)														
Nominal Size		40 (1 1/2)	50 (2)	65 (2 1/2)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)	400 (16)	450 (18)	500 (20)	600 (24)
L	PVC,PP	32(1.26)	35(1.38)	37(1.46)	37(1.46)	47(1.85)	57(2.24)	62(2.44)	76(2.99)	96(3.78)	116(4.57)	116(4.57)	157(6.18)	167(6.57)	177(6.97)	197(7.76)
	PVDF	32(1.26)	35(1.38)	37(1.46)	37(1.46)	47(1.85)	57(2.24)	62(2.44)	82(3.23)	96(3.78)	116(4.57)	116(4.57)	153(6.02)	167(6.57)	177(6.97)	197(7.76)
H	PVC,PP	270(10.63)	280(11.02)	290(11.42)	306(12.05)	321(12.64)	395(15.55)	410(16.14)	470(18.50)	503(19.83)	570(22.47)	603(23.77)	693(27.28)	671(26.42)	701(27.60)	766(30.16)
	PVDF	283(11.14)	293(11.54)	303(11.93)	318(12.52)	333(13.11)	402(15.83)	417(16.42)	448(17.64)	508(20.02)	580(22.86)	614(24.20)	709(27.91)	680(26.77)	709(27.91)	772(30.39)
Double acting	W	130(5.12)	130(5.12)	130(5.12)	130(5.12)	130(5.12)	164(6.46)	164(6.46)	191(7.52)	191(7.53)	191(7.53)	198(7.80)	229(9.02)	229(9.02)	229(9.02)	229(9.02)
	P	210(8.27)	210(8.27)	210(8.27)	210(8.27)	210(8.27)	292(11.50)	292(11.50)	362(14.25)	362(14.27)	362(14.27)	440(17.34)	532(20.94)	532(20.94)	532(20.94)	532(20.94)
Air to Open, Air to Close	W	151(5.94)	151(5.94)	151(5.94)	151(5.94)	151(5.94)	192(7.56)	192(7.56)	222(8.74)	222(8.75)	222(8.75)	241(9.50)	279(10.98)	279(10.98)	279(10.98)	279(10.98)
	P	345(13.58)	345(13.58)	345(13.58)	345(13.58)	345(13.58)	487(19.17)	487(19.17)	598(23.54)	598(23.57)	598(23.57)	752(29.64)	924(36.38)	924(36.38)	924(36.38)	924(36.38)

## WORKING PRESSURE VS. TEMPERATURE



# Control Valve (Electric actuated Type M) 15mm, 25mm(1/2inch, 3/4inch)

## Body Material

PVC  
PVDF

## Seat & O-ring Material

EPDM  
FKM  
Viflon C(FKM-C)  
Viflon F(FKM-F)

## Connection Standard

JIS10K, DIN, ANSI

## Action

Single-Phase  
AC100V  
AC200V  
DC24V

## Equipment

Indicator  
Opening Output Signal  
E-E Positioner



(PVC)

(PVDF)

※PVDF body has only JIS10k TYPE.

## FEATURES

- This Valve provides High-Precision Flow Control by applying original unique shaped plug less affected by Fluid Viscosity.
- Application of Electronic Servo-Actuator with High Performance.
- Electronic limiter and Overload Protection Circuit at fully-Opened or Fully-Closed position are built into the valve.

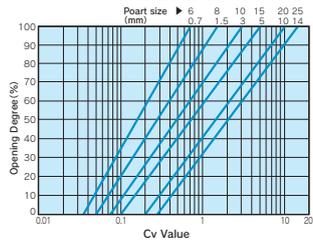
## ACTUATOR SPECIFICATION

Nominal Size mm(inch)	15(1/2inch)	25(2inch)
Actuator Type	MSP-6	
Cycle Time 50/60Hz(seconds)	8	15
Motor Output(W)	3.8	
Motor Rated Current(A)	AC100V	0.24
	AC200V	0.15
	DC24V	0.36
Protective Structure	Outdoor drop-proof Type	
Cable Connector Nominal Size	G1/2 (Cable accessory)	
Motor Pole(P)	5	
Motor Insulation	E Class	
Motor Time Rating	Continuous	

## General flow control

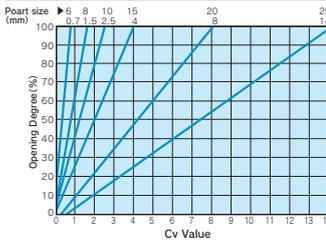
### Equal Percentage

Nominal Size (mm)	25					
	6	8	10	15	20	25
Poat Size (mm)	0.7	1.5	3	5	10	14
Cv	0.7	1.5	3	5	10	14
Range Ability	20:1	30:1	40:1	50:1	50:1	50:1
Stroke (mm)	15mm	17	16	17	18	—
	25mm	16.5	16	16	22	24



### Linear

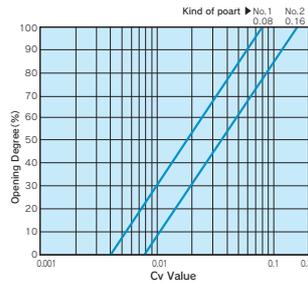
Nominal Size (mm)	25					
	6	8	10	15	20	25
Poat Size (mm)	0.7	1.5	2.5	4	8	14
Cv	0.7	1.5	2.5	4	8	14
Range Ability	20:1	25:1	30:1	40:1	40:1	50:1
Stroke (mm)	15mm	16	16	15	16	—
	25mm	16	16	14	15	19.5



## Precise flow control

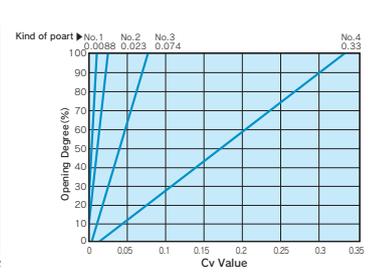
### Equal Percentage

Nominal Size (mm)	15	
	No.1	No.2
Kind of Poat	0.08	0.16
Cv	0.08	0.16
Range Ability	20:1	20:1
Stroke(mm)	16	16

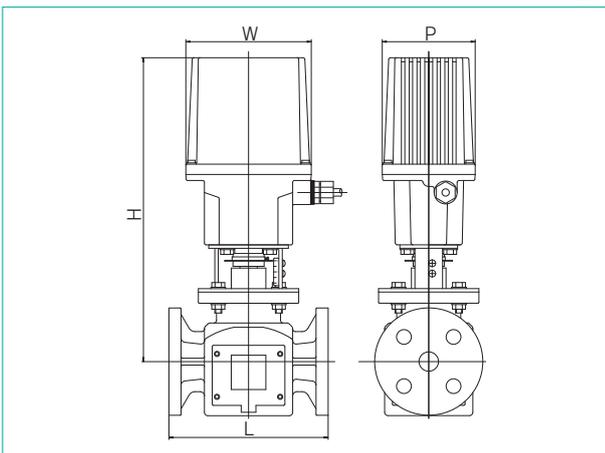


### Linear

Nominal Size (mm)	15			
	No.1	No.2	No.3	No.4
Kind of Poat	0.0088	0.023	0.074	0.33
Cv	0.0088	0.023	0.074	0.33
Range Ability	15:1	15:1	15:1	20:1
Stroke(mm)	16	16	16	16

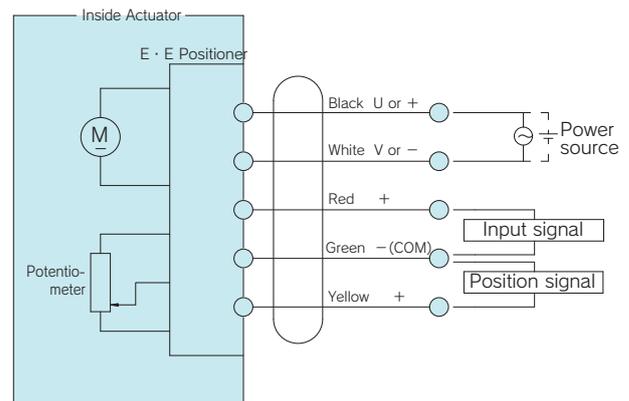


## DIMENSIONS FIGURE



## SCHEMATIC DIAGRAM

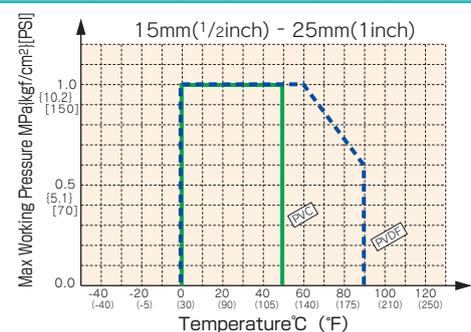
### WIRING DIAGRAM



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)	
Nominal Size		15 (1/2)	25 (1)
L		160 (6.30)	184 (7.24)
H	PVC	335 (13.19)	354 (13.94)
	PVDF	372.5 (14.67)	366 (14.41)
W		145 (5.71)	145 (5.71)
P		110 (4.33)	110 (4.33)

## WORKING PRESSURE VS. TEMPERATURE



# Control Valve (Electric actuated Type M) 50mm - 100mm(2inch - 4inch)

- Body Material**  
PVC
- Seat & O-ring Material**  
EPDM  
FKM  
Viflon C(FKM-C)  
Viflon F(FKM-F)
- Connection Standard**  
JIS10K, ANSI
- Action**  
Single-Phase  
AC100V  
AC200V  
DC24V
- Equipment**  
Indicator  
Opening Output Signal  
E-E Positioner

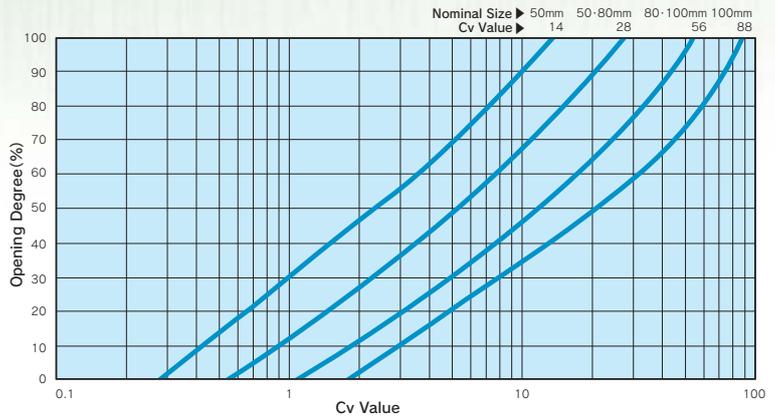


## FEATURES

- This valve provides High-Precision flow control by applying original unique shaped plug less affected by fluid viscosity.
- Application of electronic Servo-Actuator with high performance.
- Electronic limiter and Overload Protection circuit at fully-Opened or Fully-Closed position are built into the valve.

## ACTUATOR SPECIFICATION

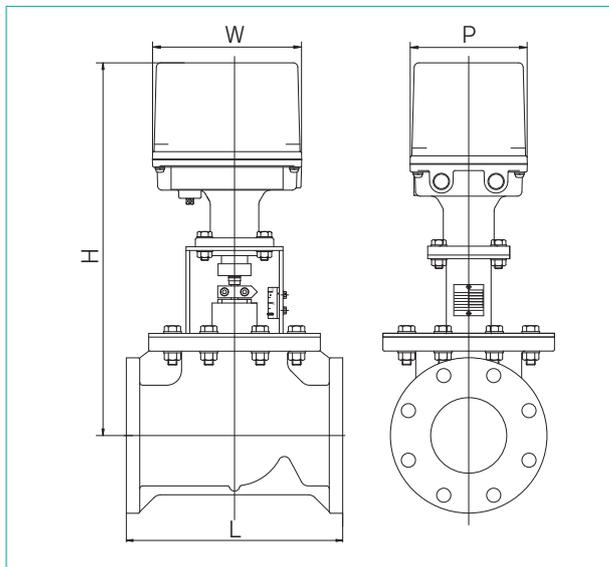
Nominal Size mm(inch)	50 (2inch)	80 (3inch)	100 (4inch)
Actuator Type	PSN1		PSN3
Cycle Time 50/60Hz(seconds)	5	15	28 - 32
Protective Structure	IP55		
Cable Connector Nominal Size	3.0		
Motor Pole(P)	67	72	77
Motor Insulation	G1/2×2		
Motor Time Rating	E Class		



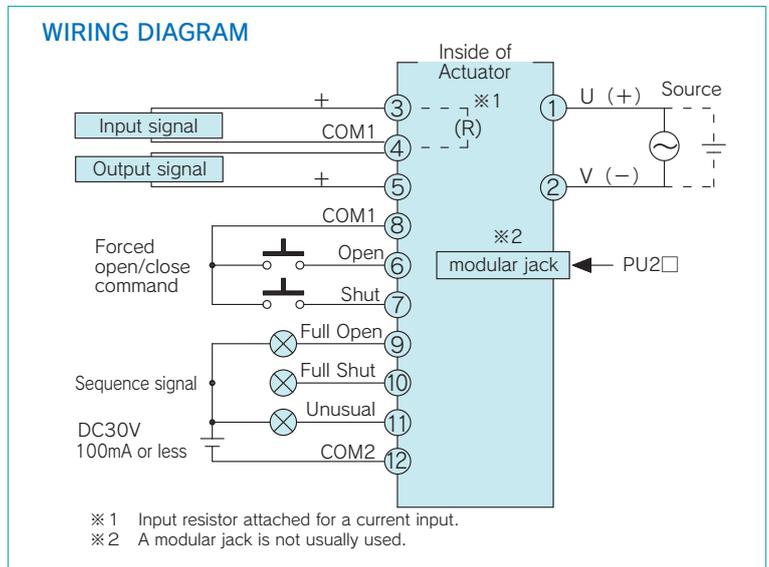
## Cv Value

Equal Percentage						
Nominal Size mm(inch)	50 (2")		80 (3")		100 (4")	
Kind of Poat	S	L	S	L	S	L
Cv	14	28	28	56	56	88
Range Ability	50:1	50:1	50:1	50:1	50:1	50:1
Stroke (mm)	26	28	30	28	32	28

## DIMENSIONS FIGURE



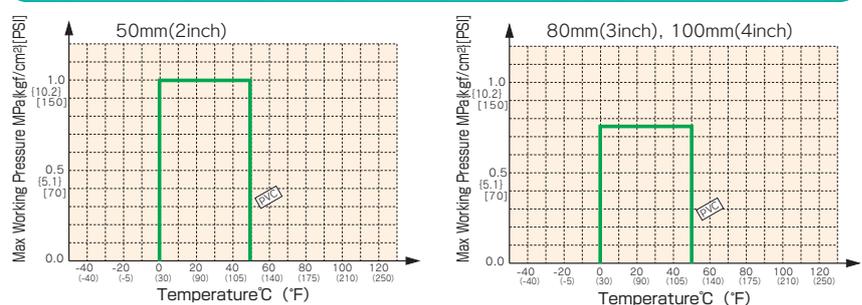
## SCHEMATIC DIAGRAM



## DIMENSIONS TABLE

JIS, ANSI	Unit: mm(inch)		
Nominal Size	50 (2)	80 (3)	100 (4)
L	200 (7.87)	240 (9.45)	290 (11.42)
H	433.5 (17.07)	450.5 (17.74)	503.5 (19.82)
W	182 (7.17)	182 (7.17)	200 (7.87)
P	140 (5.51)	140 (5.51)	150 (5.91)

## WORKING PRESSURE VS. TEMPERATURE



# Control Valve (Pneumatic actuated Type AV) 15mm, 25mm(1/2inch, 3/4inch)

- Body Material**  
PVC  
PVDF
- Seat & O-ring Material**  
EPDM  
FKM  
Viflon C(FKM-C)  
Viflon F(FKM-F)
- Connection Standard**  
JIS10K, DIN, ANSI
- Action**  
Double Acting  
Air to Open
- Equipment**  
E-A positioner  
A-A positioner
- Option**  
Filter Regulator



※PVDF body has only JIS10K TYPE.

## FEATURES

This Valve provides High-Precision Flow Control by applying original unique scraped plug less affected by Fluid Viscosity.

## OPTIONAL EQUIPMENT

Combination No.	1	2
Positioner (Electric-Air)	●	—
Positioner (Air-Air)	—	●
Filter Regulator	○	○

● Standard Equipment

## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	15 (1/2inch)	25 (1inch)
Actuator Type	—	—
Operating Pressure MPa(kgf/cm <sup>2</sup> )	0.4{4.1} - 0.6{6.1}	
Air Consumption NI / Open & Close (at operating pressure 0.4MPa)	0.6	0.7
Air Supply Bore	Rc 1/4	

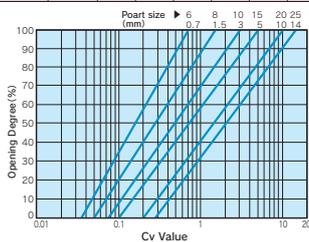
## ACTUATOR SPECIFICATION [Air to Open]

Nominal Size mm(inch)	15 (1/2inch)	25 (1inch)
Actuator Type	—	—
Operating Pressure MPa(kgf/cm <sup>2</sup> )	0.4{4.1} - 0.6{6.1}	
Air Consumption NI / Open & Close (at operating pressure 0.4MPa)	1.3	1.5
Air Supply Bore	Rc 1/4	

## General flow control

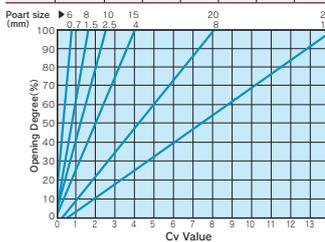
### Equal Percentage

Nominal Size (mm)	25					
	6	8	10	15	20	25
Poat Size (mm)	0.7	1.5	3	5	10	14
Cv	0.7	1.5	3	5	10	14
Range Ability	20:1	30:1	40:1	50:1	50:1	50:1
Stroke (mm)	15mm	17	16	17	18	—
Stroke (mm)	25mm	16.5	16	16	16	22
Stroke (mm)	25mm	16.5	16	16	16	22



### Linear

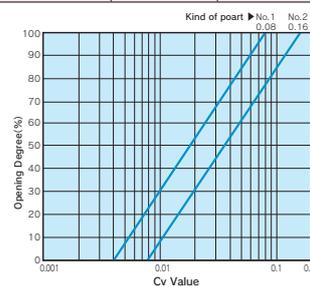
Nominal Size (mm)	25					
	6	8	10	15	20	25
Poat Size (mm)	0.7	1.5	2.5	4	8	14
Cv	0.7	1.5	2.5	4	8	14
Range Ability	20:1	25:1	30:1	40:1	40:1	50:1
Stroke (mm)	15mm	16	16	15	16	—
Stroke (mm)	25mm	16	16	14	15	19.5
Stroke (mm)	25mm	16	16	14	15	19.5



## Precise flow control

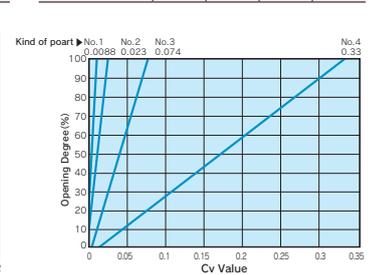
### Equal Percentage

Nominal Size (mm)	15	
	No.1	No.2
Kind of Poat	No.1	No.2
Cv	0.08	0.16
Range Ability	20:1	20:1
Stroke(mm)	16	16

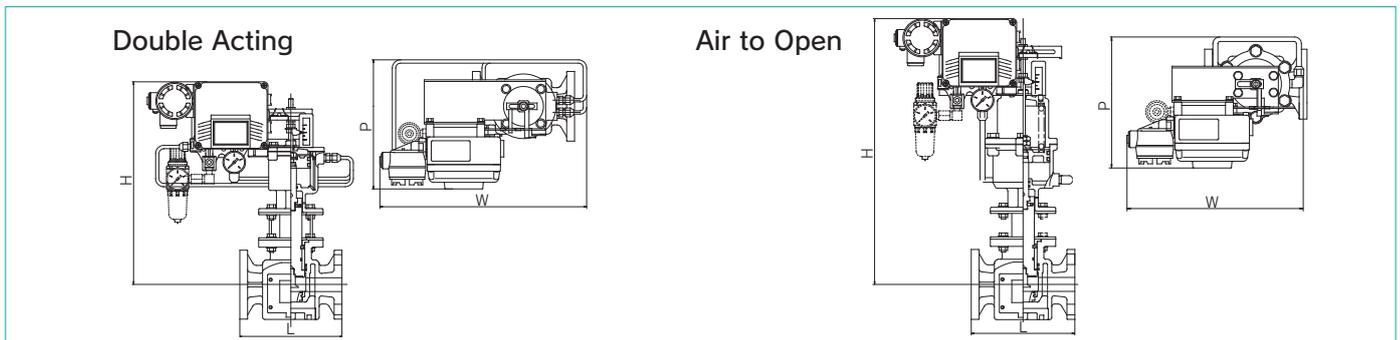


### Linear

Nominal Size (mm)	15			
	No.1	No.2	No.3	No.4
Kind of Poat	No.1	No.2	No.3	No.4
Cv	0.0088	0.023	0.074	0.33
Range Ability	15:1	15:1	15:1	20:1
Stroke(mm)	16	16	16	16



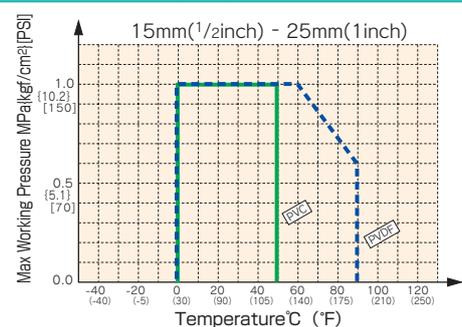
## DIMENSIONS FIGURE



## DIMENSIONS TABLE

JIS, ANSI, DIN		Unit:mm(inch)		
Nominal Size		15(1/2)	25(1)	
Double Acting	L	160 (6.30)	184 (7.24)	
	H	PVC	337 (13.27)	368 (14.49)
		PVDF	325 (12.80)	354 (13.94)
	W	389 (15.32)	389 (15.32)	
	P	220 (8.66)	220 (8.66)	
Air to Open	H	PVC	438 (17.25)	475 (18.70)
		PVDF	426 (16.77)	461 (18.15)
	W	323 (12.72)	323 (12.72)	
P	240 (9.45)	240 (9.45)		

## WORKING PRESSURE VS. TEMPERATURE



# Control Valve (Pneumatic actuated Type AV) 50mm - 100mm(2inch - 4inch)

- Body Material**  
PVC
- Seat & O-ring Material**  
EPDM  
FKM  
Viflon C(FKM-C)  
Viflon F(FKM-F)
- Connection Standard**  
JIS10K, ANSI
- Action**  
Double Acting  
Air to Open
- Equipment**  
E-A Positioner  
A-A Positioner
- Option**  
·Filter Regulator



## FEATURES

This Valve provides High-Precision Flow Control by applying Original unique shaped plug less affected by Fluid Viscosity.

## OPTIONAL EQUIPMENT

Combination No.	1	2
Positioner (Electric-Air)	●	—
Positioner (Air-Air)	—	●
Filter Regulator	○	○

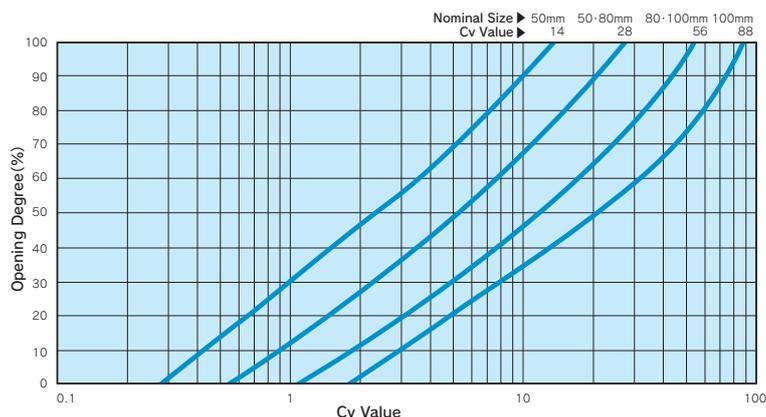
● Standard Equipment

## ACTUATOR SPECIFICATION [Double Acting]

Nominal Size mm(inch)	50(2inch)	80(3inch)	100(4inch)
Actuator Type	—	—	—
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}		
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	2.1	2.1	6.3
Air Supply Bore	Rc 1/4		

## ACTUATOR SPECIFICATION [Air to Open]

Nominal Size mm(inch)	50(2inch)	80(3inch)	100(4inch)
Actuator Type	—	—	—
Operating Pressure MPa[kgf/cm <sup>2</sup> ]	0.4{4.1} - 0.6{6.1}		
Air Consumption NI /Open & Close (at operating pressure 0.4MPa)	2.7	5.5	7.9
Air Supply Bore	Rc 1/4		

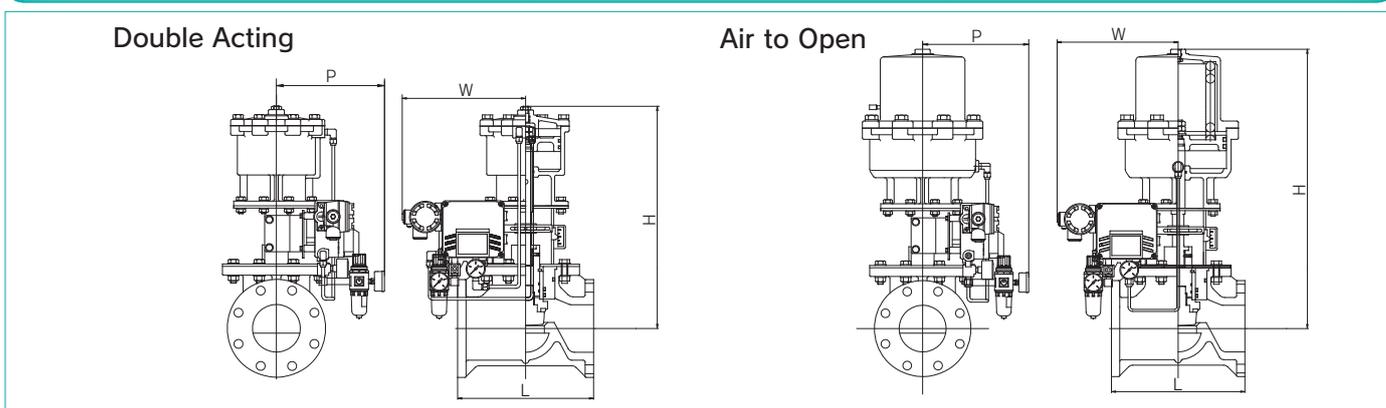


## Cv Value

### Equal Percentage

Nominal Size mm(inch)	50(2")		80(3")		100(4")	
Kind of Poat	S	L	S	L	S	L
Cv	14	28	28	56	56	88
Range Ability	50:1	50:1	50:1	50:1	50:1	50:1
Stroke (mm)	26	28	30	28	32	28

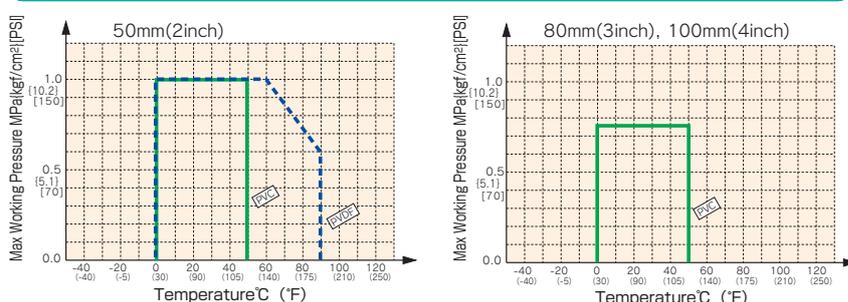
## DIMENSIONS FIGURE



## DIMENSIONS TABLE

JIS, ANSI		Unit:mm(inch)		
Nominal Size		50(2)	80(3)	100(4)
L	H	200 (7.87)	240 (9.45)	290 (11.42)
	W	256 (10.08)	261 (10.28)	266 (10.48)
	P	229 (9.02)	230 (9.06)	230 (9.06)
Double Acting	H	381 (15)	420 (16.54)	477 (18.78)
	W	256 (10.08)	261 (10.28)	266 (10.48)
	P	229 (9.02)	230 (9.06)	230 (9.06)
Air to Open	H	469 (18.47)	562 (22.13)	611 (24.06)
	W	256 (10.08)	261 (10.28)	266 (10.48)
	P	229 (9.02)	230 (9.06)	230 (9.06)

## WORKING PRESSURE VS. TEMPERATURE



# Asahi AV Sensor and Flow Meter



## Ultrasonic-Vortex Flow Meter

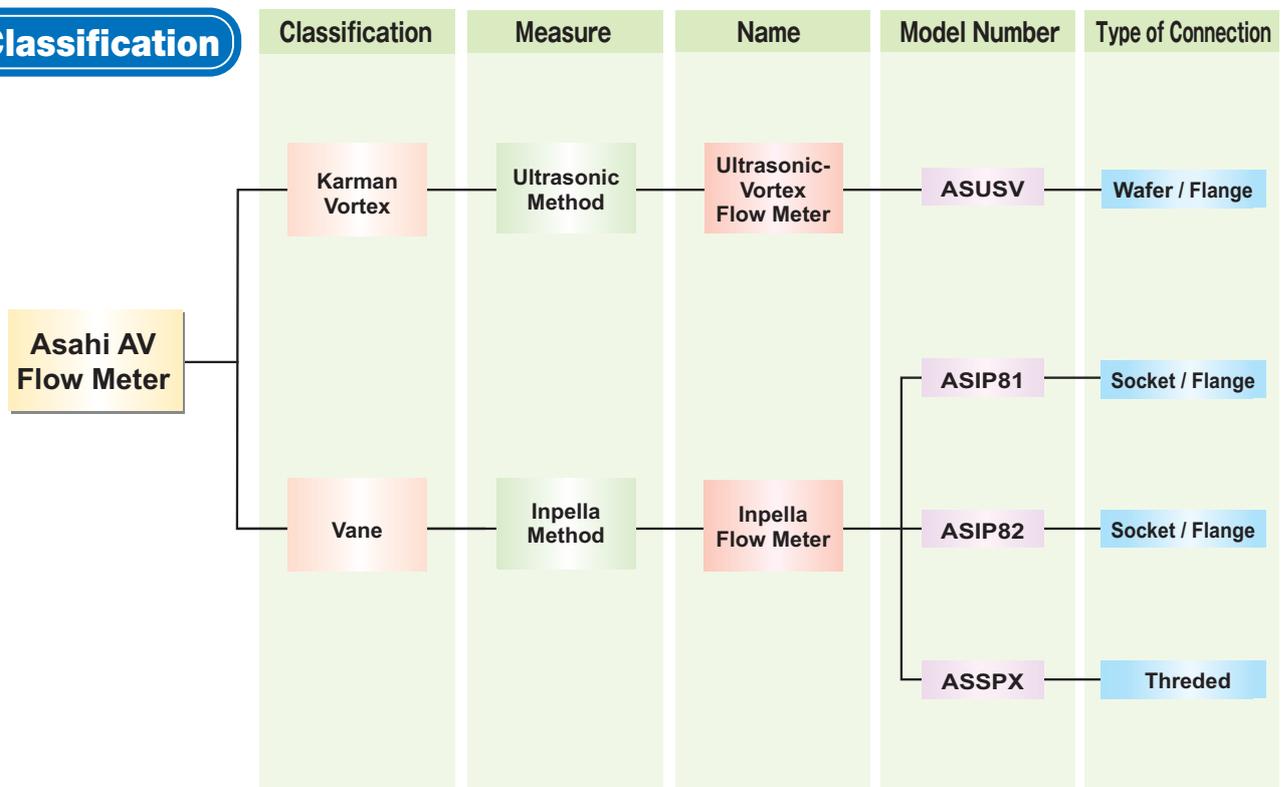
- ASUSV Series



## Inpella Flow Meter

- ASIP80 Series
- ASSPX Series
- Flow Indicator

### Classification



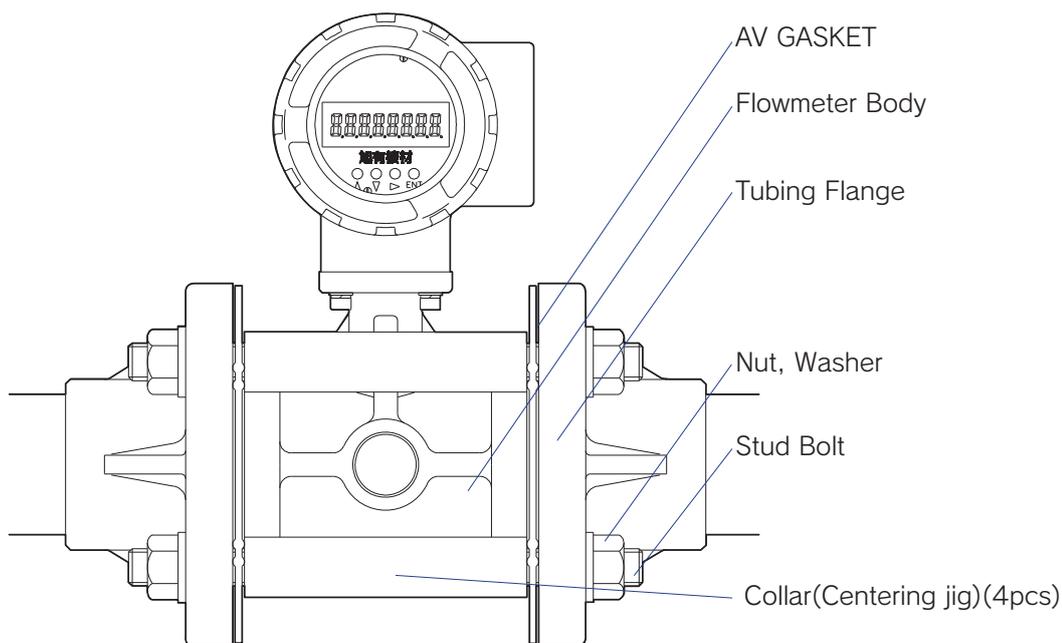
# Ultrasonic-Vortex Flow Meter ASUSV Series

## FEATURES

- No Corrosion (All Plastic)
- Suitable for Diw & Mixed Acids Compared to Magnetic Flowmeters Prone to Corrosion or Leachables
- Light Weight  
1/2 - 1/4 The Weight of Metallics
- High Accuracy ( $\pm 1.0\%RD$ )  
Compare to other Vortex Designs ( $\pm 1.0-3.0\%$ )



## INSTALLATION METHOD



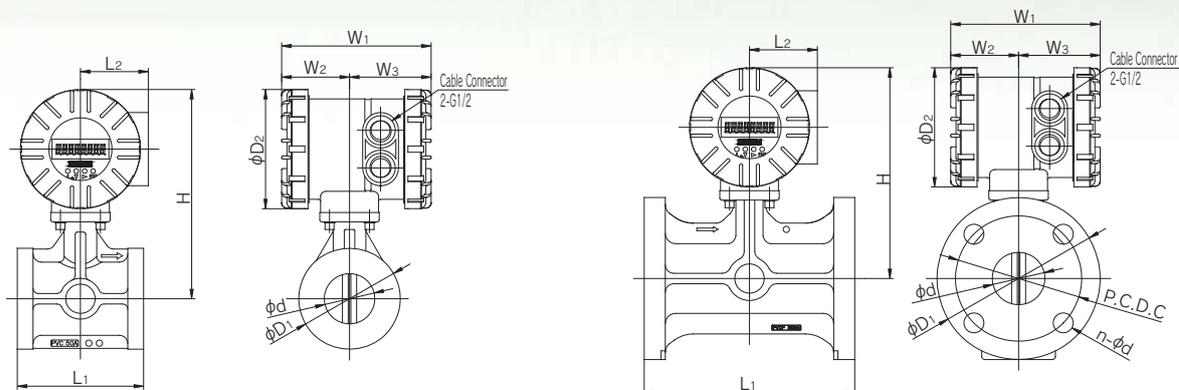
## RECOMMENDED TIGHTENING TORQUE

Nominal Size mm(inch)	20(3/4)	25(1)	40(1 1/2)	50(2)	80(3)	N·m{kgf-cm}
						100(4)
P V C	15	15	20	25	30	30
P V D F	15	15	20	25	30	30

## SPECIFICATIONS

Diameter & Tubing connection	Wafer : 20-100mm(3/4"-4") Flange : 20-50mm (3/4"-2")					
Measuring range	About 0.5 to 5m/sec(For more details, see [Range of Flowrate Measurement] on page 4.)					
Measurement accuracy	± 1%R.D. (±0.5% R.D. also accommodated)					
Wetted material	Wafer : PVC, PVDF Flange : PVDF					
Fluid temperature	0 to 55°C (PVC), - 10 to 100°C (PVDF)					
Ambient temperature	0 to 55°C (PVC), - 10 to 60°C (PVDF)					
Maximum working fluid pressure	1.0MPa					
Display	Total integrating/Instantaneous flowrate/% flowrate/reset integrating flowrate (The display mode is externally selectable using the accessory magnet.) Unit, Equipment alarm					
Analog output	4-20 mA two-wire load resistance up to 300 Ω Open collector output: One-shot width					
Pulse output	20A 1.3ms	25A 1.82ms	40A 2.86ms	50A 3.90ms	80A 5.98ms	100A 9.62ms
Alarm output	Open collector output: Upper and lower limit output/alarm output Open collector output concurrently with pulse output is not available, though.					
Case material	PC					
Supply voltage	24VDC ± 10%					
Protective structure	IP66 equivalent (avoid exposure to direct sunlight)					

## DIMENSIONS TABLE



## DIMENSIONS TABLE

Nominal Size mm inch	L <sub>2</sub>	W <sub>1</sub>	W <sub>2</sub>	W <sub>3</sub>	φD <sub>2</sub>	Wafer				Flange (JIS 10K)						
						L <sub>1</sub>	H	φD <sub>1</sub>	φd	L <sub>1</sub>	H	φD <sub>1</sub>	φd	C	n	e
20 3/4	64.5 (2.54)	138 (5.43)	62.5 (2.46)	75.5 (2.97)	144 (5.67)	85 (3.35)	187.5 (7.38)	53 (2.09)	19 (0.75)	200 (7.87)	180 (7.08)	100 (3.94)	19 (0.75)	75 (2.95)	4	15 (0.59)
25 1	64.5 (2.54)	138 (5.43)	62.5 (2.46)	75.5 (2.97)	144 (5.67)	93 (3.66)	190 (7.48)	62 (2.44)	24 (0.94)	200 (7.87)	190 (7.48)	125 (4.92)	24 (0.94)	90 (3.54)		19 (0.75)
40 1 1/2	64.5 (2.54)	138 (5.43)	62.5 (2.46)	75.5 (2.97)	144 (5.67)	106 (4.17)	197.5 (7.77)	77 (3.03)	38.5 (1.52)	200 (7.87)	197 (7.75)	140 (5.51)	38.5 (1.52)	105 (4.13)		19 (0.75)
50 2	64.5 (2.54)	138 (5.43)	62.5 (2.46)	75.5 (2.97)	144 (5.67)	120 (4.72)	202.5 (7.97)	96.5 (3.80)	48.5 (1.91)	200 (7.87)	204 (8.03)	155 (6.10)	48.5 (1.91)	120 (4.72)		19 (0.75)
80 3	64.5 (2.54)	138 (5.43)	62.5 (2.46)	75.5 (2.97)	144 (5.67)	160 (6.30)	225 (8.86)	127 (5.00)	72.5 (2.85)	—	—	—	—	—	—	—
100 4	64.5 (2.54)	138 (5.43)	62.5 (2.46)	75.5 (2.97)	144 (5.67)	180 (7.08)	239.5 (9.43)	155.5 (6.12)	94 (3.70)	—	—	—	—	—	—	—

## FLOW RATE

Nominal Size (mm)	Min. Flowrate (m <sup>3</sup> /h)					Max. Flowrate (m <sup>3</sup> /h)
	Kinematic Viscosity × 10 <sup>-6</sup> m <sup>2</sup> /s (cst)					
	1	2	3	4	5	
20	0.9	1.8	2.7	3.6	4.5	5.4
25	1.4	2.8	4.2	5.6	7.0	8.5
40	3.6	7.2	10.8	14.4	18.0	22.0
50	5.9	11.8	17.7	23.6	29.5	34.0
80	13.4	26.8	40.2	53.6	67.0	88.0
100	22.6	45.2	67.8	90.4	113.0	137.0
Flowrate	0.8m/sec	1.6m/sec	2.4m/sec	3.2m/sec	4.0m/sec	5.0m/sec

# Inpella Flow Meter ASIP80 Series

## FEATURES

- The ASIP80 Series is a Flow Meter of the Insertion Type that uses a Special Fitting.
- No Corrosion (All Plastic)



## SPECIFICATIONS

Model		ASIP81(P/Y/K)	ASIP82(P/Y/K)
Nominal Size		15mm(1/2")-80mm(3")	100mm(4")-150mm(6")
Type of Connection		Socket, Flange	
Material	Body	HI-PVC: 50°C (120°F) PP : 60°C (140°F) PVDF : 90°C (194°F)	
	Max. Working Pressure(at r.t.) MPa[kgf/cm <sup>2</sup> ][PSI]	1.0MPa (10.2kgf/cm <sup>2</sup> ) [150]	
Material	Inpella	PVDF	
	Shaft	Zirconium, Silicon-Carbide	
	Bearing	Ruby	
	O-ring	FKM (EPDM)	
	Special Fitting	PVC, HI-PVC, C-PVC	
Measurement fluid		Fluid (High viscosity fluid and slurry is excluded.)	
Max. Working Temperature		0-90°C (32-194°F)	
Flowrate		0.2-9 m/s	
Range Ability		1 : 45	
Measurement accuracy		± 1.5% (FS)	
Power Source		DC6V-24V (Current Consumption: 8mA)	
Output Signal		Current Sinking Pulse (NPN) 20mA maximum	
Cable		3-con (3.6m)	
Fitting Installation		Straight pipe of at least ten times the diameter upstream of the meter, and five diameters down stream are strongly recommended.	

Figure. 1 Max. Working Pressure and Working Temperature of Special Fitting.

Temperature (°C)	Pressure MPa(kgf/cm <sup>2</sup> )[PSI]		
	PVC, HI-PVC		C-PVC
	15mm-150mm (1/2"-6")	15mm-50mm (1/2"-2")	65mm-150mm (2 1/2"-6")
20	1.0(10.2)[150]	1.0(10.2)[150]	1.0(10.2)[150]
30	0.9(9.8)[130]	1.0(10.2)[150]	0.8(8.2)[115]
40	0.7(7.1)[100]	1.0(10.2)[150]	0.8(8.2)[115]
50	0.3(3.1)[45]	0.6(6.1)[90]	0.6(6.1)[90]
60	-	0.6(6.1)[90]	0.6(6.1)[90]
70	-	0.4(4.1)[60]	0.4(4.1)[60]
80	-	0.2(2.0)[30]	0.2(2.0)[30]
90	-	0.2(2.9)[30]	0.2(2.9)[30]

Figure. 2 Flow Rate and K-Factor

Nominal Size		Flow Rate(m <sup>3</sup> /h)	K-Factor
mm	inch	Min - Max	(cc/Pulse)
15	1/2	0.14 - 6.51	7.1
20	3/4	0.23 - 10.18	10.9
25	1	0.35 - 15.89	16.1
32	1 1/4	0.54 - 24.44	26.8
40	1 1/2	0.90 - 40.69	47.2
50	2	1.47 - 66.16	66.2
65	2 1/2	2.54 - 114.17	102.2
80	3	3.35 - 150.80	139.7
100	4	5.65 - 254.34	213.0
125	5	8.83 - 397.40	355.4
150	6	12.05 - 542.15	465.0

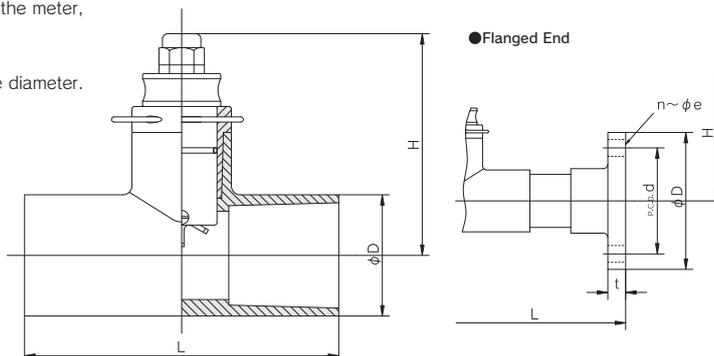
\*1. Calculate the Maximum Frequency of Each Size by the Following Calculation method.  
 Maximum Frequency(Hz) = Maximum Flow Rate(cc/s) / K-Factor(cc/Pulse)

## DIMENSIONS TABLE

Nominal Size		Socket End						Flanged End											
		PVC/Hi-PVC			C-PVC			L	H	JIS10K						JIS5K			
mm	inch	L	H	D	L	H	D			D	d	t	n	e	D	d	t	n	e
15	1/2	164	119	57	150	119	56	500	119	95	70	14	4	15	80	60	9	4	12
20	3/4	164	121	57	150	121	56	500	121	100	75	15	4	15	85	65	10	4	12
25	1	164	121	57	150	121	56	500	121	125	90	15	4	19	95	75	10	4	12
32	1 1/4	164	122	57	150	122	56	500	122	135	100	16	4	19	115	90	12	4	15
40	1 1/2	164	125	57	150	125	56	500	125	140	105	16	4	19	120	95	12	4	15
50	2	180	128	70	164	128	69	500	128	155	120	20	4	19	130	105	14	4	15
65	2 1/2	190	133	87	190	133	87	500	133	175	140	22	4	19	155	130	14	4	15
80	3	200	136	102	200	136	102	500	136	185	150	22	8	19	180	145	14	4	19
100	4	250	168	130	250	168	130	700	168	210	175	22	8	19	200	165	16	8	19
125	5	322	176	157	-	-	-	700	176	250	210	24	8	23	235	200	16	8	19
150	6	390	182	186	-	-	-	700	182	280	240	26	8	23	265	230	18	8	19

Unit:mm

- \*1. Piping Condition: Straight pipe of at least ten times the diameter upstream of the meter, and five diameters down stream are strongly recommended.  
 Wiring Condition: Use the Shield line when you extend wiring.
- \*2. When flowing quantity is displayed, the Special Indicator is needed.
- \*3. Some externals and the shape of the Flow meter are different according to the diameter.



# Inpella Flow Meter ASSPX Series



## FEATURES

- The ASSPX Series excelled in corrosion resistance, and the flow meter for low flowing quantity.
- The best for piping in the device because of its compact design.

## SPECIFICATIONS

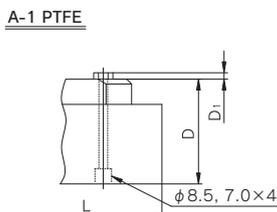
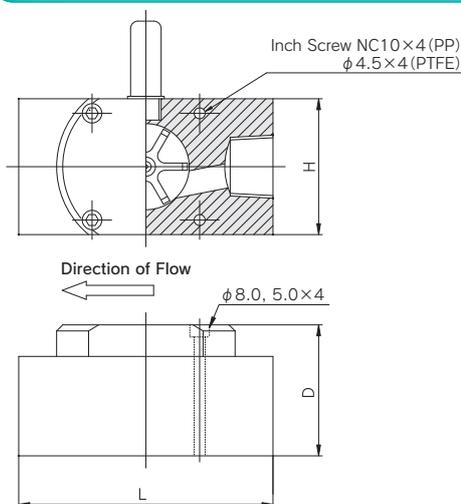
Model	ASSPX-3/8inch	ASSPX-1/2inch	ASSPX-3/4inch	ASSPX-1inch
Type of Connection	Rc 3/8	Rc 1/2	Rc 3/4	Rc 1
Material	Body	PP, PTFE		
	Cover	PP, PTFE		
	Rotor	PVDF		
	Shaft	Zirconium, Silicon-Carbide		
	Bearing	Ruby		
	O-ring	FKM (EPDM)		
Measurement fluid	Fluid (High viscosity fluid and slurry is excluded.)			
Max. Working Temperature	-10-70°C (14-158°F)			
Max. Working Pressure MPa[kgf/cm <sup>2</sup> ][PSI]	1.0(10.2)[150]			
Flowrate	See Fig. 1			
Measurement Accuracy	± 1.5% (FS)			
Power Source	DC6V-24V (Current Consumption: 8mA)			
Output Signal	Current Sinking Pulse (NPN) 20mA maximum			
Cable	3-con (3.6m)			

Figure. 1 Flow Rate and K-Factor

Type of connection and Nominal Size	Installation Posture	Flow Rate(m <sup>3</sup> /h)	Range Ability	K-Factor (cc/Pulse)
		Min - Max		
3/8 inch	Piping is horizontal and Shaft is vertical	0.2 - 20	1 : 100	1.122
	The Others	0.4 - 20	1 : 50	
1/2 inch	Piping is horizontal and Shaft is vertical	0.4 - 40	1 : 100	2.133
	The Others	0.6 - 40	1 : 65	
3/4 inch	Piping is horizontal and Shaft is vertical	0.8 - 80	1 : 100	2.871
	The Others	1.2 - 80	1 : 65	
1 inch	Piping is horizontal and Shaft is vertical	2.0 - 200	1 : 100	5.287
	The Others	3.0 - 300	1 : 65	

\*1. Calculate the Maximum Frequency of Each Size by the Following Calculation method.  
 Maximum Frequency(Hz) = Maximum Flow Rate(cc/s) / K-Factor(cc/Pulse)

## DIMENSIONS TABLE



\*1. Use the Shield line when you extend wiring.  
 \*2. When flowing quantity is displayed, the Special Indicator is needed.

Unit:mm

Nominal Size	Common			PTFE
	L	H	D	D <sub>1</sub>
RC3/8	104	56	54	3.0
RC1/2	104	56	54	3.0
RC3/4	104	56	54	3.0
RC1	104	56	54	3.0

# Inpella Flow Meter Flow Indicator

## SPECIFICATIONS

FT415 Specifications

Model	ASFT415-W (with Wall Mount Brackets Type)	ASFT415-M (Sensor-Mount Type)
Display	Rate Total	6-digit autorange, 1/2inch charater height 8-digit, 5/16inch charater height
Temperature	0-70°C (32-158°F)	
Pulse Output	·0.1 second solid state relay (scaled) ·sensor pulse (unscaled)	
Battery Type	Lithium "C", 3V, replaceable	
Nominal Battery Life	3-5 years	
Environmental	NEMA 4X (Correspondance of IP66)	



\*1. The Mount Type can install only IP80 Series.



# ASAHI VALVE AND PIPING SYSTEMS

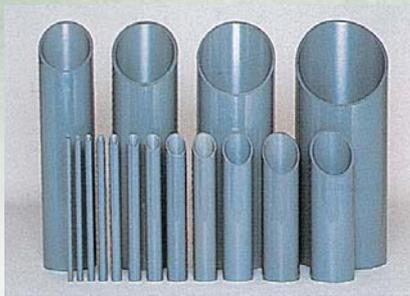
## ASAHI AV PIPE FITTING AND OTHERS

The specifications in this brochure are subject to change without prior notice due to improvements and modifications.

### ASAHI AV PIPES AND FITTINGS

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## PVC PIPE



## ● Unplasticized Polyvinyl Chloride Pipes

VP JIS K6741

VU JIS K6741

## ●VP (JIS K6741) Pipe

Unit:mm

Nominal Size (mm)	Identification	Outer diameter			Thickness		Approximate Inner diameter	Length	Calculated Weight (kg/m)	HI-VP PIPE
		Basic Dimension (mm)	Max. Min. Tolerance	Average Tolerance	Min. Dimension	Tolerance				
13	VP 13	18	±0.2	±0.2	2.2	±0.6	13	4,000	0.174	●
16	VP 16	22	±0.2	±0.2	2.7	±0.6	16	4,000	0.256	●
20	VP 20	26	±0.2	±0.2	2.7	±0.6	20	4,000	0.310	●
25	VP 25	32	±0.2	±0.2	3.1	±0.8	25	4,000	0.448	●
30	VP 30	38	±0.3	±0.2	3.1	±0.8	31	4,000	0.542	●
40	VP 40	48	±0.3	±0.2	3.6	±0.8	40	4,000	0.791	●
50	VP 50	60	±0.4	±0.2	4.1	±0.8	51	4,000	1.122	●
65	VP 65	76	±0.5	±0.3	4.1	±0.8	67	4,000	1.445	●
75	VP 75	89	±0.5	±0.3	5.5	±0.8	77	4,000	2.202	●
100	VP100	114	±0.6	±0.4	6.6	±1.0	100	4,000	3.409	●
125	VP125	140	±0.8	±0.5	7.0	±1.0	125	4,000	4.464	●
150	VP150	165	±1.0	±0.5	8.9	±1.4	146	4,000	6.701	●
200	VP200	216	±1.3	±0.7	10.3	±1.4	194	4,000	10.129	●
250	VP250	267	±1.6	±0.9	12.7	±1.8	240	4,000	15.481	●
300	VP300	318	±1.9	±1.0	15.1	±2.2	286	4,000	21.962	●
350	VM350	370		±1.2	14.3	±2.0	339	4,000	24.378	—
400	VM400	420		±1.3	16.2	±2.2	385	4,000	31.294	—



VP-Straight Pipe



HI-VP-Straight Pipe

## ●VU (JIS K6741) Pipe

Unit:mm

Nominal Size (mm)	Identification	Outer diameter		Thickness		Approximate Inner diameter	Length	Calculated Weight (kg/m)
		Basic Dimension (mm)	Average Tolerance	Min. Dimension	Tolerance			
40	VU 40	48	±0.2	1.8	±0.4	44	4,000	0.413
50	VU 50	60	±0.2	1.8	±0.4	56	4,000	0.521
65	VU 65	76	±0.3	2.2	±0.6	71	4,000	0.825
75	VU 75	89	±0.3	2.7	±0.6	83	4,000	1.159
100	VU100	114	±0.4	3.1	±0.8	107	4,000	1.737
125	VU125	140	±0.5	4.1	±0.8	131	4,000	2.739
150	VU150	165	±0.5	5.1	±0.8	154	4,000	3.941
200	VU200	216	±0.7	6.5	±1.0	202	4,000	6.572
250	VU250	267	±0.9	7.8	±1.2	250	4,000	9.758
300	VU300	318	±1.0	9.2	±1.4	298	4,000	13.701
350	VU350	370	±1.2	10.5	±1.4	348	4,000	18.051
400	VU400	420	±1.3	11.8	±1.6	395	4,000	23.059
450	VU450	470	±1.5	13.2	±1.8	442	4,000	28.875
500	VU500	520	±1.6	14.6	±2.0	489	4,000	35.346

## Notes:

- 1.The maximum outer diameter (minimum outer diameter) is the largest(smallest) of outer diameter measurement at a location.
- 2.The average outer diameter is the average for outer diameter measurements made in a direction other than two parallel directions or a circumference measurement divided by 3.142.
- 3.The mass per unit length (m) in the table, which was calculated using a specific gravity of 1.43, is only for information, not part of the standards.
- 4.The length tolerance is  $\pm 10$ mm.
- 5.Pipe VM350 400mm long conforms to the AS24 standard.
- 6.Pipe HI-VP conform to the JIS K6742 standard.

※ Water Pipes (JIS K6742) are available.



Single-adhesion receptacle straight Pipe



Single-rubber ring receptacle straight Pipe

# TS FITTINGS

## ● TS FITTING(JIS K6743) (PVC: 13 to 150mm, HI-PVC: 13 to 150mm)



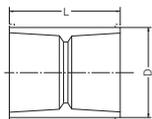
### SPECIFICATIONS

Elbow	(L)	13 - 150mm
Tee	(T)	13 - 150×125mm
Water Feeding Elbow	(FL)	13 - 25mm
Metal-containing Water Feeding Elbow		13 - 25mm
Water Feeding Socket	(FS)	13 - 25mm
Metal-containing Water Feeding Socket		13 - 25mm
Water Feeding Tee	(FT)	13 - 25×20mm
Metal-containing Water Feeding Tee		13 - 25×20mm
Valve Socket	(VS)	13 - 150mm
Union Socket	(US)	13 - 50mm
Socket	(S)	13 - 150×125mm
Cap	(C)	13 - 150mm

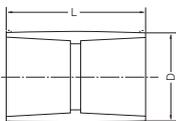
## ● Socket



Nominal Size 13mm~50mm



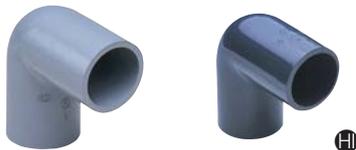
Nominal Size 65mm~150mm



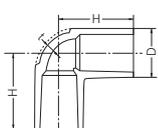
Nominal Size	D	L ±4.0	HI
13	24.0	57	●
16	29.0	67	●
20	33.0	77	●
25	40.0	87	●
30	46.0	95	●
40	57.0	117	●
50	70.0	133	●
※65	87.0	145	●
75	102.0	155	●
100	130.0	200	●
※125	157.0	240	●
150	186.0	300	●

※AS-Standard

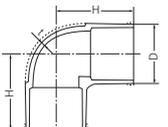
## ● Elbow



Nominal Size 13mm~50mm



Nominal Size 65mm~150mm

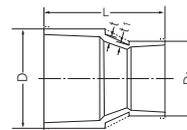


Nominal Size	D	t	H <sup>+5.0</sup> <sub>-1.0</sub>	HI
13	24.0	3.0	36	●
16	29.0	3.5	43	●
20	33.0	3.5	50	●
25	40.0	4.0	58	●
30	46.0	4.0	65	●
40	57.0	4.5	82	●
50	70.0	5.0	96	●
※65	87.0	6.6	110	●
※75	102.0	8.0	120	●
※100	130.0	10.0	153	●
※125	157.0	11.0	188	●
※150	186.0	13.0	230	●

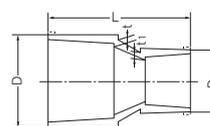
## ● Reducing Socket



Nominal Size 13mm~50mm



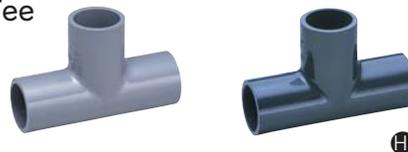
Nominal Size 65mm~150mm



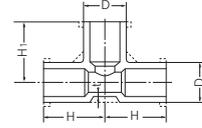
Nominal Size	D	t	D <sub>1</sub>	t <sub>1</sub>	L ±4.0	HI
16×13	29.0	3.5	24.0	3.0	61	●
20×13	33.0	3.5	24.0	3.0	68	●
20×16	33.0	3.5	29.0	3.5	71	●
25×13	40.0	4.0	24.0	3.0	86	●
25×16	40.0	4.0	29.0	3.5	85	●
25×20	40.0	4.0	33.0	3.5	84	●
30×20	46.0	4.0	33.0	3.5	93	●
30×25	46.0	4.0	40.0	4.0	93	●
※40×20	57.0	4.5	33.0	3.5	113	●
40×25	57.0	4.5	40.0	4.0	114	●
40×30	57.0	4.5	46.0	4.0	114	●
※50×20	70.0	5.0	33.0	3.5	116	●
※50×25	70.0	5.0	40.0	4.0	140	●
50×30	70.0	5.0	46.0	4.0	136	●
50×40	70.0	5.0	57.0	4.5	136	●
※65×40	87.0	6.6	57.0	4.5	145	●
※65×50	87.0	6.6	70.0	5.0	149	●
※75×40	102.0	8.0	57.0	5.0	153	●
75×50	102.0	8.0	70.0	5.0	165	●
※75×65	102.0	8.0	87.0	6.6	159	●
100×75	130.0	10.0	102.0	8.0	190	●
※125×100	157.0	11.0	130.0	10.0	229	●
150×100	186.0	13.0	130.0	10.0	295	●
※150×125	186.0	13.0	157.0	11.0	272	●

※AS-Standard

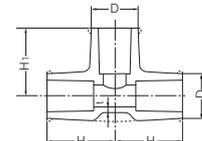
## ● Tee



Nominal Size 13mm~50mm



Nominal Size 65mm~150mm



Nominal Size	D	t	H <sup>+5.0</sup> <sub>-1.0</sub>	H <sub>1</sub>	HI
13	24.0	3.0	36	36	●
16	29.0	3.5	43	43	●
20	33.0	3.5	50	50	●
25	40.0	4.0	58	58	●
30	46.0	4.0	65	65	●
40	57.0	4.5	82	82	●
50	70.0	5.0	96	96	●
※65	87.0	6.6	110	110	●
75	102.0	8.0	120	120	●
100	130.0	10.0	152	152	●
※125	157.0	11.0	187	187	●
150	186.0	13.0	230	230	●

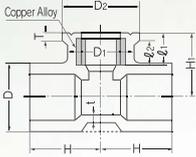
# TS FITTINGS

## ● Faucet Tee (with Metal Insert)



(Unit:mm)

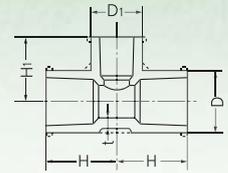
Nominal Size	D	t	D <sub>1</sub>	D <sub>2</sub>	ℓ <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	ℓ <sub>2</sub> <sup>+5.0</sup> <sub>-1.0</sub>	T	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	Female THD Size	HI
13	24.0	3.0	30	34	17	14	4	38	29	Rp1/2	●
20	33.0	3.5	37	42	19	16	4	51	36	Rp3/4	●
25	40.0	4.0	46	52	21	18	5	59	42	Rp1	●
16×13	29.0	3.5	30	34	17	14	4	43	32	Rp1/2	●
20×13	33.0	3.5	30	34	17	14	4	47	34	Rp1/2	●
25×13	40.0	4.0	30	34	17	14	4	52	38	Rp1/2	●
25×20	40.0	4.0	37	42	19	16	4	56	40	Rp3/4	●



## ● Reducing Tee



Nomal Size 13mm~50mm



(Unit:mm)

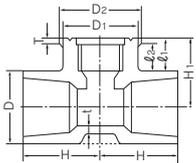
Nominal Size	D	t	H	D <sub>1</sub>	H <sub>1</sub>	HI
16×13	29.0	3.5	41	24.0	38	●
20×13	33.0	3.5	46	24.0	40	●
20×16	33.0	3.5	48	29.0	45	●
25×13	40.0	4.0	51	24.0	43	●
25×16	40.0	4.0	53	29.0	48	●
25×20	40.0	4.0	55	33.0	53	●
30×13	46.0	4.0	55	24.0	46	●
30×16	46.0	4.0	57	29.0	51	●
30×20	46.0	4.0	59	33.0	56	●
30×25	46.0	4.0	62	40.0	61	●
40×13	57.0	4.5	66	24.0	52	●
40×16	57.0	4.5	68	29.0	57	●
40×20	57.0	4.5	70	33.0	62	●
40×25	57.0	4.5	73	40.0	67	●
40×30	57.0	4.5	76	46.0	71	●
50×13	70.0	5.0	74	24.0	58	●
50×16	70.0	5.0	76	29.0	63	●
50×20	70.0	5.0	78	33.0	68	●
50×25	70.0	5.0	81	40.0	73	●
50×30	70.0	5.0	84	46.0	77	●
50×40	70.0	5.0	90	57.0	88	●

## ● Faucet Tee



(Unit:mm)

Nominal Size	D	t	D <sub>1</sub>	D <sub>2</sub>	ℓ <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	ℓ <sub>2</sub> <sup>+5.0</sup> <sub>-1.0</sub>	T	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	Female THD Size	HI
□13	24.0	3.0	30	34	17	14	4	38	29	Rp1/2	●
□20	33.0	3.5	37	42	19	16	4	51	36	Rp3/4	●
□25	40.0	4.0	46	52	21	18	5	59	42	Rp1	●
□16×13	29.0	3.5	30	34	17	14	4	43	32	Rp1/2	●
□20×13	33.0	3.5	30	34	17	14	4	47	34	Rp1/2	●
□25×13	40.0	4.0	30	34	17	14	4	52	38	Rp1/2	●
□25×20	40.0	4.0	37	42	19	16	4	56	40	Rp3/4	●

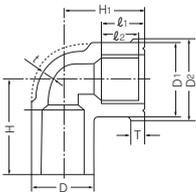


## ● Faucet Elbow



(Unit:mm)

Nominal Size	D	t	D <sub>1</sub>	D <sub>2</sub>	ℓ <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	ℓ <sub>2</sub> <sup>+5.0</sup> <sub>-1.0</sub>	T	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	Female THD Size	HI
□13	24.0	3.0	30	34	17	14	4	38	29	Rp1/2	●
□16	29.0	3.5	30	34	17	14	4	43	32	Rp1/2	●
□20	33.0	3.5	37	42	19	16	4	51	36	Rp3/4	●
□25	40.0	4.0	46	52	21	18	5	59	40	Rp1	●

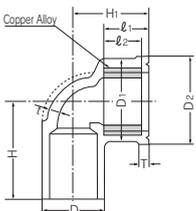


## ● Faucet Elbow (with Metal Insert)



(Unit:mm)

Nominal Size	D	t	D <sub>1</sub>	D <sub>2</sub>	ℓ <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	ℓ <sub>2</sub> <sup>+5.0</sup> <sub>-1.0</sub>	T	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	Female THD Size	HI
13	24.0	3.0	30	34	17	14	4	38	29	Rp1/2	●
16×13	29.0	3.0	30	34	17	14	4	43	32	Rp1/2	●
20	33.0	3.5	37	42	19	16	4	51	36	Rp3/4	●
25	40.0	4.0	46	52	21	18	5	59	40	Rp1	●
20×13	33.0	3.5	30	34	17	14	4	47	33	Rp1/2	●

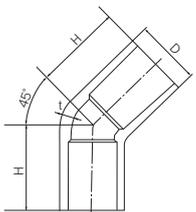


## ● 45 Elbow

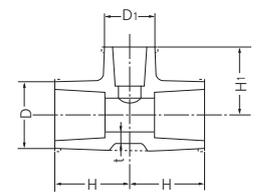


(Unit:mm)

Nominal Size	D	t	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	HI
20	33.0	3.5	44	●
25	40.0	4.0	51	●



Nomal Size 65mm~150mm



(Unit:mm)

Nominal Size	D	t	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	D <sub>1</sub>	H <sub>1</sub> <sup>+5.0</sup> <sub>-1.0</sub>	HI
※65×40	87.0	6.6	100	57.0	95	●
※65×50	87.0	6.6	101	70.0	104	●
75×25	102.0	8.0	93	40.0	88	●
75×40	102.0	8.0	100	57.0	102	●
75×50	102.0	8.0	105	70.0	110	●
※75×65	102.0	8.0	113	87.0	117	●
100×50	130.0	10.0	125	75.0	122	●
100×75	130.0	10.0	140	102.0	132	●
※125×75	157.0	11.0	160	102.0	147	●
※125×100	157.0	11.0	173	130.0	167	●
150×75	186.0	13.0	195	102.0	158	●
150×100	186.0	13.0	208	130.0	182	●
※150×125	186.0	13.0	217	157.0	201	●

※AS-Standard

● Faucet Socket



(Unit: mm)

Nominal Size	D	D <sub>1</sub>	D <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub> <sup>±1.0</sup>	T	L <sup>+5.0 -1.0</sup>	Female THD Size	HI
□13	24.0	30	34	17	14	4	47	Rp1/2	●
□16	29.0	30	34	17	14	4	52	Rp1/2	●
□20	33.0	37	42	19	16	4	59	Rp3/4	●
□25	40.0	46	52	21	18	5	68	Rp1	●

□ASAHI AV Standard

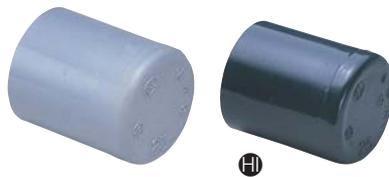
● Faucet Socket (with Metal Insert)



(Unit: mm)

Nominal Size	D	D <sub>1</sub>	D <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub> <sup>±1.0</sup>	T	L <sup>+5.0 -1.0</sup>	Female THD Size	HI
13	24.0	30	34	17	14	4	47	Rp1/2	●
16×13	29.0	30	34	17	14	4	52	Rp1/2	●
20	33.0	37	42	19	16	4	59	RD3/4	●
25	40.0	46	52	21	18	5	68	Rp1	●
20×13	33.0	30	36	17	14	4	57	Rp1/2	●

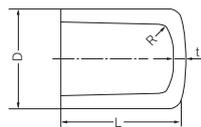
● Cap



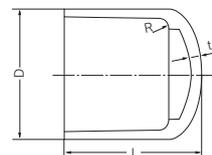
(Unit: mm)

Nominal Size	D	t	L <sup>+5.0 -1.0</sup>	HI
13	24.0	3.0	29.0	●
16	29.0	3.5	33.5	●
20	33.0	3.5	38.5	●
25	40.0	4.0	44.0	●
30	46.0	4.0	48.0	●
40	57.0	4.5	59.5	●
50	70.0	5.0	68.0	●
※65	87.0	6.6	96.0	●
75	102.0	8.0	105.0	●
100	130.0	10.0	138.0	●
150	186.0	13.0	205.0	●

Nominal Size 13~50mm



Nominal Size 65~150mm



● 90° AV Bend



(単位: mm)

Nominal Size	d <sub>1</sub>	d <sub>2</sub>	l	D <sub>1</sub>	D <sub>2</sub>	d	t	L	R	HI
75	89.80	88.13	72	101	104	78	6	137	65	—
100	115.00	112.89	92	129	132	100	7.3	172	80	—
125	141.20	138.72	112	156	160	125	7.7	237	125	—
150	166.50	163.39	140	185	189	148	9.8	260	120	—

● Valve Socket



(Unit: mm)

Nominal Size	D	d	Male THD Size	Gauge Dimension D <sub>1</sub>	Number of threads (Per 25.4mm)	Position of gauge diameter l <sub>1</sub>	l <sub>2</sub> (Min)	T	L <sup>+5.0 -1.0</sup>	B	HI
※ 10	21.0	10	3/8	16.662	19	6.35	12	6	43	21	—
13	24.0	13	1/2	20.955	14	8.16	13.16	6	50	24	●
16	29.0	13	1/2	20.955	14	8.20	15	6	54	29	●
20	33.0	18	3/4	26.441	14	9.53	14.53	8	64	33	●
25	40.0	23	1	33.249	11	10.39	16.79	8	71	40	●
30	46.0	31	1 1/4	41.910	11	12.70	19.10	10	80	46	●
40	57.0	37	1 1/2	47.803	11	12.70	19.10	10	92	57	●
50	70.0	48	2	59.614	11	15.88	23.38	12	106	70	●
□ 65	87.0	62	2 1/2	75.184	11	17.46	30	15	118	87	●
□ 75	102.0	72	3	87.884	11	20.64	34	16	127	102	●
□ 100	130.0	96	4	113.030	11	25.40	40	18	157	130	●
□ 125	157.0	119	5	138.430	11	28.58	44	20	186	157	—
□ 150	186.0	140	6	163.830	11	28.58	44	25	220	186	—

□ASAHI AV Standard

● Union Socket



(Unit: mm)

Nominal Size	D	t	D <sub>1</sub>	W	L <sup>+5.0 -1.0</sup>	HI
13	18.0	2.5	23.0	5	80	●
16	22.0	3.0	27.5	5	85	●
20	26.0	3.0	29.5	6	90	●
25	32.0	3.5	36.5	7	100	●
30	38.0	3.5	42.0	8	110	●
40	48.0	4.0	53.0	8	120	●
50	60.0	4.5	71.0	9	130	●

● 45° AV Bend



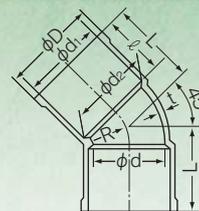
(単位: mm)

Nominal Size	d <sub>1</sub>	d <sub>2</sub>	l	D	D <sub>1</sub>	d	t	Z	L	R	HI
40	48.70	47.21	55	57	60	40	4.5	14	69	20	●
50	60.80	59.10	63	70	73	51	5	17	80	25.5	●
65	76.60	75.33	61	87	90	67	6.6	20	81	34	●
75	89.80	88.13	72	101	104	78	6	25	97	39	●
100	115.00	112.89	92	129	132	100	7.3	30	122	50	●
125	141.20	138.71	112	156	160	125	7.7	37	149	62.5	●
150	166.50	163.39	140	185	189	148	10	44	184	74	●

# PVC LARGE-SIZE FITTINGS



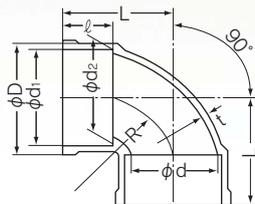
## 45° AV Bend



Unit:mm

Nominal Size(mm)	d <sub>1</sub>	d <sub>2</sub>	ℓ	D	d	t	L	R	PVC	HI-PVC
200	217.00	214.10	145	240	196	15	193	98	●	●
250	268.20	265.00	155	293	247	16	213	123.5	●	●
300	318.70	315.88	155	337	298	10	225	149	●	●

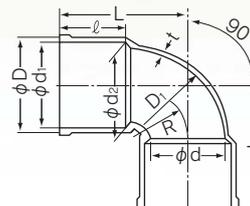
## AV Short Elbow



Unit:mm

Nominal Size(mm)	d <sub>1</sub>	d <sub>2</sub>	ℓ	D	d	t	L	R	PVC	HI-PVC
200	217.0	214.1	145	240	196	15	265	190	●	●
250	268.2	265.0	155	295	247	16	310	235	●	●
300	319.6	315.5	175	347	298	18	350	170	●	●

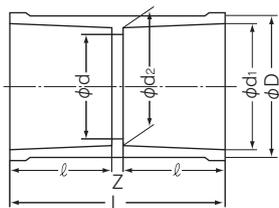
## 90° AV Bend



Unit:mm

Nominal Size(mm)	d <sub>1</sub>	d <sub>2</sub>	ℓ	D	D <sub>1</sub>	d	t	L	R	PVC	HI-PVC
200	217.00	214.10	145	240	216	196	15	341	196	●	●
250	268.20	265.00	155	293	267	247	16	402	247	●	●
300	318.70	315.88	155	337	318	298	10	395	240	●	●

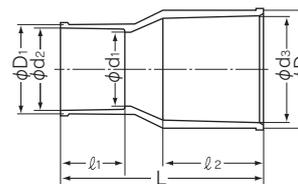
## AV Socket



Unit:mm

Nominal Size(mm)	d <sub>1</sub>	d <sub>2</sub>	ℓ	D	d	Z	L	PVC	HI-PVC
200	217.0	214.10	145	238	202	10	300	●	●
250	268.2	265.00	155	295	247	43	353	●	●
300	319.6	315.52	175	336	298	10	360	●	●

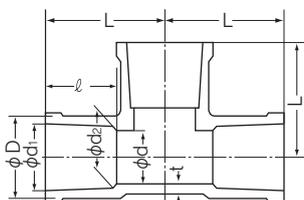
## AV Reduced Socket



Unit:mm

Nominal Size(mm)	d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	D <sub>1</sub>	d <sub>3</sub>	ℓ <sub>2</sub>	D <sub>2</sub>	L	PVC	HI-PVC
200×150	146	166.0	132	188	217.0	145	240	356	●	●
250×200	194	217.0	145	240	268.2	155	293	380	●	●
300×250	247	268.2	155	295	319.6	175	347	405	●	●

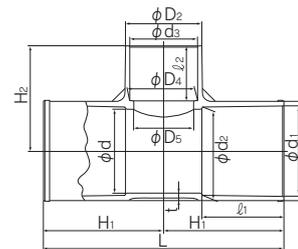
## AV Tee



Unit:mm

Nominal Size(mm)	d <sub>1</sub>	d <sub>2</sub>	ℓ	D	d	t	L	PVC	HI-PVC
200	217.0	214.10	145	240	196	15	266	●	●
250	268.2	265.00	155	295	247	16	331	●	●
300	319.6	315.52	175	337	298	10	340	●	●

## AV Reduced Tee



Unit:mm

Nominal Size(mm)	d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	d <sub>3</sub>	d <sub>4</sub>	ℓ <sub>2</sub>	D <sub>1</sub>	D <sub>2</sub>	d	d <sub>5</sub>	t	L	H <sub>1</sub>	H <sub>2</sub>	PVC	HI-PVC
200×75	217.0	214.1	145	89.60	88.29	64	240	102	194	77	15	402	201	180	●	●
200×100	217.0	214.1	145	114.70	113.20	84	240	130	194	100	15	430	215	200	●	●
200×150	217.0	214.1	145	166.00	163.91	132	240	188	194	146	15	476	238	253	●	●
250×75	268.20	265.00	155	89.60	88.29	64	295	108	247	77	16	452	226	210	●	●
250×100	268.20	265.00	155	114.70	113.20	84	295	136	247	100	16	492	246	225	●	●
250×200	268.20	265.00	155	217.00	214.10	200	295	245	247	194	16	608	304	310	●	●
300×75	320.70	314.70	300	89.60	88.29	64	343	102	298	77	17	722	361	236	●	●

We also produce LARGE-SIZE VU FITTINGS.

## Max. Working Pressure

Unit:MPa{Kgf/cm<sup>2</sup>}

Items	AV90° Bends	AV45° Bends	AV Short Elbows	AV Sockets	AV Reduced Sockets	AV Tees	AV Reduced Tees
200mm	0.75{7.7}	0.75{7.7}	0.75{7.7}	0.75{7.7}	0.75{7.7}	0.75{7.7}	0.75{7.7}
250mm	0.5{5.1}	0.5{5.1}	0.5{5.1}	0.5{5.1}	0.5{5.1}	0.5{5.1}	0.5{5.1}
300mm	0.4{4.1}	0.4{4.1}	0.6{6.1}	0.6{6.1}	0.6{6.1}	0.4{4.1}	0.4{4.1}

\*The pressure limit includes water hammer pressure. Do not exceed the limit.

# C-PVC PIPE & FITTINGS

● JIS K 6776 (pipe), JIS K 6777 (fittings) and AV standard.



## FEATURES

### High Heat Resistance

Being made of C-PVC, the super pipe and fitting withstand high temperatures up to 90°C (195°F)

### High Chemical Resistance

Being made of C-PVC, the super pipe and fitting are highly resistant to chemicals.

### Easy to Install

The super pipe and fitting are easy to install because the Socket method can be used for connecting.

### Available in Various Types of Fittings

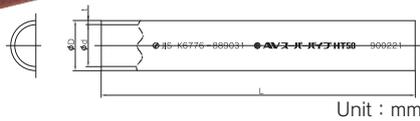
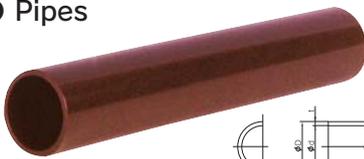
## WORKING PRESSURE VS. TEMPERATURE

Nominal Size (mm (inch))	MPa {kgf/cm <sup>2</sup> }					
	5 - 30°C	31 - 40°C	41 - 60°C	61 - 70°C	71 - 80°C	81 - 90°C
13 - 50 (3/8 - 2)	1.0 {10.2}	0.6 {6.1}	0.4 {4.1}	0.2 {2.0}	0.2 {2.0}	0.2 {2.0}
65 - 150 (2 1/2 - 3)	1.0 {10.2}	0.8 {8.2}	0.6 {6.1}	0.4 {4.1}	0.2 {2.1}	0.2 {2.0}
200 (8)	0.7 {7.1}	0.4 {4.1}	0.2 {2.0}	0.1 {1.0}	0.05 {0.5}	

## APPLICATIONS

Being highly heat and chemical resistant and offering high heat insulation performance, c-pvc pipe and fitting are suitable for piping for water supply, air-conditioning, hot springs and chemical media.

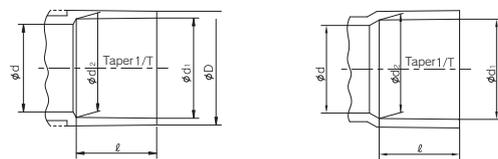
### ● Pipes



Unit : mm

Nominal Size	D		t		L		d	Weight (kg / m)
	OD	Max Min	Basic Dimension	Tolerance	Basic Dimension	Tolerance		
☆ 13	18	± 0.20	2.5	± 0.2	4000	± 30	13	0.180
☆ 16	22	± 0.20	3.0	± 0.3			16	0.265
☆ 20	26	± 0.20	3.0	± 0.3			20	0.321
☆ 25	32	± 0.20	3.5	± 0.3			25	0.464
☆ 30	38	± 0.30	3.5	± 0.3			31	0.561
☆ 40	48	± 0.30	4.0	± 0.3		40	0.818	
☆ 50	60	± 0.40	4.5	± 0.4		51	1.161	
65	76	± 0.50	4.5	± 0.4		67	1.506	
75	89	± 0.50	5.9	± 0.4		77	2.294	
100	114	± 0.60	7.1	± 0.5		100	3.552	
125	140	± 0.80	7.5	± 0.5	125	4.651		
150	165	± 1.00	9.6	± 0.7	146	6.982		
● 200	216	± 1.30	11.0	± 0.7	194	10.554		

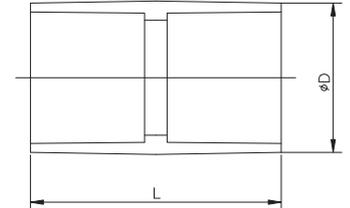
☆ JIS K 6776 ● Special Fitting Dimension



Unit : mm

Nominal Size	d1		1/ T	ℓ		d2		d Min	D	
	Basic Dimension	Tolerance		Basic Dimension	Tolerance	Basic Dimension	Tolerance		Basic Dimension	Tolerance
13	18.30	± 0.20	—	22	± 4	17.55	± 0.25	14	26	- 0
16	22.35	± 0.20	—	27	± 4	21.55	± 0.25	17	29	- 0
20	26.35	± 0.20	—	33	± 4	25.50	± 0.25	21	34	- 0
25	32.50	± 0.30	—	38	± 4	31.40	± 0.35	26	41	- 0
30	38.50	± 0.30	—	42	± 4	37.45	± 0.35	34	46	- 0
40	48.50	± 0.30	—	47	± 4	47.45	± 0.35	40	56	- 0
50	60.50	± 0.30	—	52	± 4	59.45	± 0.35	50	69	- 0
65	76.60	± 0.30	1/48	61	+4 -0.5	—	—	67	87	- 1.5
75	89.60	± 0.30	1/49	64	+4 -0.5	—	—	77	102	- 1.5
100	114.70	± 0.30	1/56	84	+4 -0.5	—	—	100	130	- 1.8
125	140.80	± 0.30	1/58	104	+4 -0.5	—	—	125	157	- 1.8
150	166.00	± 0.40	1/63	132	+4 -0.5	—	—	146	186	- 2

### ● Socket

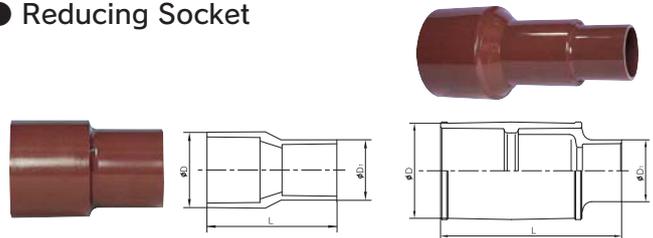


Unit : mm

Nominal Size	D	L
☆ 13	26	49
☆ 16	29	59
☆ 20	34	71
☆ 25	41	82
☆ 30	46	89
☆ 40	56	99
☆ 50	69	109
65	87	145
75	102	155
100	130	200
125	157	231
150	186	300
● 200	236	300

☆ JIS K 6777 ● Special Fitting Dimension

### ● Reducing Socket

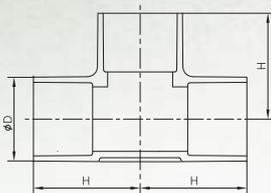


Unit : mm

Nominal Size	D	D1	L	Nominal Size	D	D1	L
☆ 16 × 13	29	26	53.0	• 65 × 30	87	46	194.0
☆ 20 × 13	34	26	61.5	• 65 × 40	87	57	205.0
☆ 20 × 16	34	29	66.0	• 65 × 50	87	70	149.0
☆ 25 × 13	41	26	73.0	• 75 × 40	102	57	221.0
☆ 25 × 16	41	29	76.0	• 75 × 50	102	70	165.0
☆ 25 × 20	41	34	80.5	• 75 × 65	102	87	163.0
☆ 30 × 13	46	26	75.0	• 100 × 40	130	57	246.0
☆ 30 × 20	46	34	85.0	• 100 × 50	130	70	252.0
☆ 30 × 25	46	41	90.0	• 100 × 65	134	87	250.0
☆ 40 × 20	56	34	98.0	• 100 × 75	134	102	190.0
☆ 40 × 25	56	41	100.0	• 125 × 75	157	102	296.0
☆ 40 × 30	56	46	97.0	• 125 × 100	157	130	316.0
☆ 50 × 25	69	41	110.0	• 150 × 75	186	102	365.0
☆ 50 × 30	69	46	110.0	• 150 × 100	186	130	385.0
☆ 50 × 40	69	56	110.0	• 150 × 125	186	157	404.0

☆ JIS K 6777 • Combination Type

## ● Tee

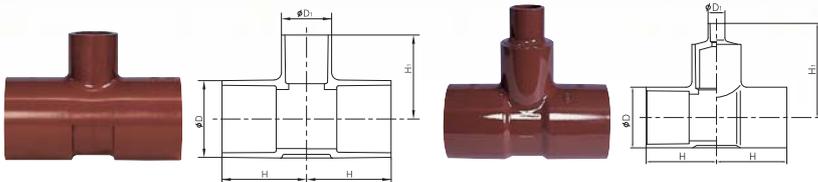


Unit : mm

NominalSize	D	H
☆ 13	26	34
☆ 16	29	41
☆ 20	34	53
☆ 25	41	58
☆ 30	46	64
☆ 40	56	75
☆ 50	69	87
65	87	110
75	102	120
100	130	152
125	157	187
150	186	230

☆ JIS K 6777

## ● Reducing Tee



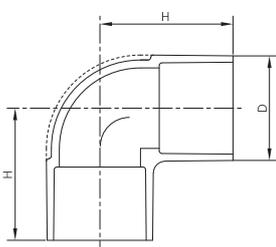
Unit : mm

NominalSize	D	D <sub>1</sub>	H	H <sub>1</sub>	NominalSize	D	D <sub>1</sub>	H	H <sub>1</sub>
☆ 16 × 13	29	26	39	36	☆ 65 × 16	87	29	100	137
☆ 20 × 13	34	26	45	38	☆ 65 × 20	87	33	100	142
☆ 20 × 16	34	29	47	43	☆ 65 × 25	87	40	100	147
☆ 25 × 13	41	26	49	41	☆ 65 × 30	87	46	100	150
☆ 25 × 16	41	29	52	46	☆ 65 × 40	87	57	95	95
☆ 25 × 20	41	34	54	52	☆ 65 × 50	87	70	100	105
☆ 30 × 13	46	26	54	44	☆ 75 × 20	102	33	105	147
☆ 30 × 16	46	29	56	49	☆ 75 × 25	102	40	93	88
☆ 30 × 20	46	34	58	55	☆ 75 × 30	102	46	105	155
☆ 35 × 25	46	41	60	60	☆ 75 × 40	102	56	100	102
☆ 40 × 13	56	26	62	49	☆ 75 × 50	102	70	105	110
☆ 40 × 16	56	29	63	54	☆ 100 × 20	130	33	125	159
☆ 40 × 20	56	34	65	60	☆ 100 × 25	130	40	125	164
☆ 40 × 25	56	41	68	65	☆ 100 × 30	130	46	125	167
☆ 40 × 30	56	46	72	69	☆ 100 × 40	130	57	125	178
☆ 50 × 13	69	26	69	55	☆ 100 × 50	130	75	125	122
☆ 50 × 16	69	29	70	60	☆ 100 × 75	130	102	140	132
☆ 50 × 20	69	34	72	70	☆ 125 × 75	157	102	161	147
☆ 50 × 25	69	41	75	75	☆ 125 × 100	157	130	175	167
☆ 50 × 30	69	46	79	75	☆ 150 × 75	186	102	195	158
☆ 50 × 40	69	56	82	80	☆ 150 × 100	186	130	208	182
65 × 13	87	24	100	135	☆ 150 × 125	186	157	218	202

☆ JIS K 6777

● Combination Type

## ● Elbow



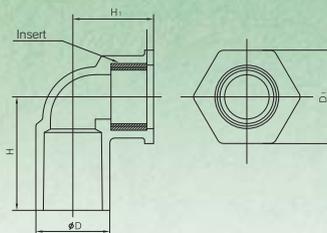
Unit : mm

NominalSize	D	H
☆ 13	26	34
☆ 16	29	41
☆ 20	34	53
☆ 25	41	58
☆ 30	46	64
☆ 40	56	74
☆ 50	69	85
65	87	110
75	102	120
100	130	155
125	157	188
150	186	228
● 200	236	265

☆ JIS K 6777

● Special Fitting Dimension

## ● Faucet Elbow

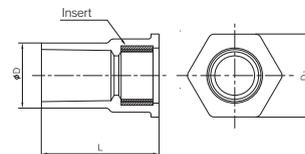


Unit : mm

NominalSize	D Min	H	Thd	D <sub>1</sub>	H <sub>1</sub>
☆ 13	26	35	Rp1/2	35	29
☆ 16	29	42	Rp1/2	35	33
☆ 20	34	51	Rp3/4	44	36
☆ 25	41	60	Rp1	54	40
20 × 13	33	47	Rp1/2	34	33

☆ JIS K 6777

## ● Faucet Socket

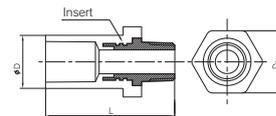


Unit : mm

NominalSize	D Min	Thd	D <sub>1</sub>	L
☆ 13	26	Rp1/2	35	47
☆ 16	29	Rp1/2	35	52
☆ 20	34	Rp3/4	44	61
☆ 25	41	Rp1	54	69
20 × 13	33	Rp1/2	34	57

☆ JIS K 6777

## ● Valve Socket

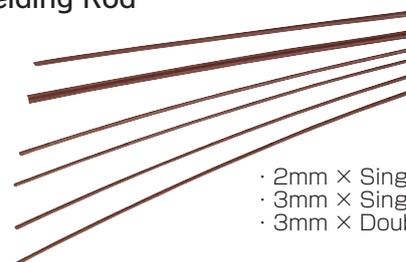


Unit : mm

NominalSize	D Min	Thd	L	D <sub>1</sub> Min
☆ 13 × 1/2	26	R 1/2	64	34
☆ 16 × 1/2	29	R 1/2	70	34
☆ 20 × 3/4	34	R 3/4	85	40
☆ 25 × 1	41	R 1	99	45
☆ 30 × 1 1/4	46	R 1 1/4	109	62
☆ 40 × 1 1/2	56	R 1 1/2	114	68
☆ 50 × 2	69	R 2	132	84

☆ JIS K 6777

## ● Welding Rod



- 2mm × Single
- 3mm × Single
- 3mm × Double

## COLOR PIPE & FITTINGS



### FEATURES

- Being made of PVC, the colored pipe and fitting are light and easy to install.
- The colored pipe and fitting, using high quality pigment, are colorful and harmonious with buildings. The pipe and fitting are available in three colors: silver gray, light ivory and white.
- VP and VU pipes and DV sockets ranging in nominal diameter from 40mm(1½inch) to 150mm(6inch) and pipe holddown bands are also available.

No	Color	Munsell value
1	White	N9.5
1	Light ivory	2.5Y8/2
1	Silver gray	2.5Y7.5/1

### APPLICATIONS

- Piping for the chemical industry, water supply, building. (rainwater drainage, water supply and sewage), interior, ventilation, etc.

※ Silver gray: Designated as a standard color by the Japanese Housing Corporation.

## AIR-CONDITIONING DRAIN PIPE & FITTINGS



### FEATURES

- Being made of PVC, the colored pipe and fitting are light and easy to install.
- The colored pipe and fitting, using high quality pigment are colorful and harmonious with buildings.
- We have VP pipes ranging in nominal size from 16 to 40mm, VU pipes 20 and 25mm in nominal size and various fittings.

PIPE	VP	16 - 40mm	VU	20 - 25mm
FITTING	90° Elbows	16 - 40mm	45° Elbows	20 - 40mm
	Tees	16 - 40mm	Reducing tees	25 × 20 - 40 × 30mm
	Sockets	16 - 40mm	Reducing sockets	20 × 16 - 40 × 30mm

Color	Munsell value
Ivory white	5Y9/07

# PREFAB JOINT (UNION)

## ● Type B (one-side union)

13mm(<sup>3</sup>/<sub>8</sub>inch) – 100mm(4inch)



## FEATURES

- The PREFAB JOINT can be installed easily, fast and securely.
- The PREFAB JOINT, when placed in a pipeline, facilitates the cleaning of the pipeline.
- The body of the PREFAB JOINT can be removed from a pipeline only by loosening its union nut. Thus it is suitable for pipelines which are frequently disconnected, such as temporary pipelines and slurry pipelines.

## SPECIFICATIONS

Type	Type B (Single union)
Material	Unplasticized Polyvinyl Chloride(PVC) Chlorinated Polyvinyl Chloride(C-PVC)
Nominal Size	Socket End 13mm( <sup>3</sup> / <sub>8</sub> inch) - 100mm(4inch) Spigot End 13mm( <sup>3</sup> / <sub>8</sub> inch) - 50mm(2inch) Threaded End 13mm( <sup>3</sup> / <sub>8</sub> inch) - 50mm(2inch)
Temperature Range	PVC=0°C - 50°C(30°F - 120°F) C-PVC=0°C - 90°C(30°F - 195°F)
Max. Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> } [150PSI]

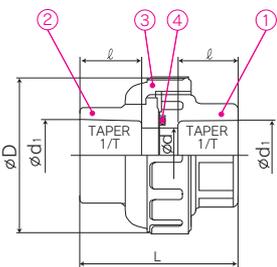
## PREFAB JOINT

Unit:MPa{kgf/cm<sup>2</sup>}

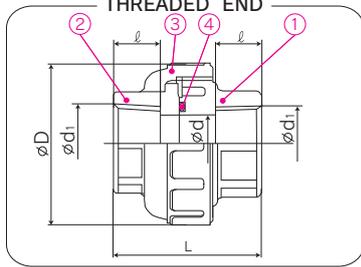
Nominal Size		Material Temp. °C (°F)	PVC					C-PVC					
			0 - 50 (30 - 120)		0 - 50 (30 - 120)		51 - 60 (121 - 140)		61 - 80 (141 - 175)		81 - 90 (176 - 195)		
mm	inch												
13	<sup>3</sup> / <sub>8</sub>		1.0{10.2}	1.0{10.2}	0.8{8.2}	0.6{6.1}	0.4{4.1}						
16	<sup>1</sup> / <sub>2</sub>		1.0{10.2}	1.0{10.2}	0.8{8.2}	0.6{6.1}	0.4{4.1}						
20	<sup>3</sup> / <sub>4</sub>		1.0{10.2}	1.0{10.2}	0.8{8.2}	0.6{6.1}	0.4{4.1}						
25	1		1.0{10.2}	1.0{10.2}	0.8{8.2}	0.6{6.1}	0.4{4.1}						
30	1 <sup>1</sup> / <sub>4</sub>		1.0{10.2}	1.0{10.2}	0.8{8.2}	0.6{6.1}	0.4{4.1}						
40	1 <sup>1</sup> / <sub>2</sub>		1.0{10.2}	1.0{10.2}	0.8{8.2}	0.6{6.1}	0.4{4.1}						
50	2		1.0{10.2}	1.0{10.2}	0.8{8.2}	0.6{6.1}	0.4{4.1}						
65	2 <sup>1</sup> / <sub>2</sub>		1.0{10.2}	1.0{10.2}	0.8{8.2}	0.6{6.1}	0.4{4.1}						
75	3		1.0{10.2}	1.0{10.2}	0.6{6.1}	0.4{4.1}	0.3{3.1}						
100	4		1.0{10.2}	1.0{10.2}	0.6{6.1}	0.4{4.1}	0.3{3.1}						

## DIMENSIONS

Socket End



THREADED END



## DIMENSIONS TABLE

JIS

Nominal Size	d	Socket End				Threaded End			D	
		PVC, C-PVC				PVC				
		JIS B 0203								
mm	inch	d <sub>1</sub>	ℓ	1/T	L	d <sub>1</sub>	ℓ	L		
13	<sup>3</sup> / <sub>8</sub>	13	18.13	18	1/30	46	Rc <sup>3</sup> / <sub>8</sub>	15	43	48
16	<sup>1</sup> / <sub>2</sub>	15	22.11	20	1/34	46	Rc <sup>1</sup> / <sub>2</sub>	15	43	48
20	<sup>3</sup> / <sub>4</sub>	20	26.13	24	1/34	61	Rc <sup>3</sup> / <sub>4</sub>	17	57	60
25	1	25	32.16	27	1/34	70	Rc 1	20	63	70
30	1 <sup>1</sup> / <sub>4</sub>	31	38.19	30	1/34	77	Rc1 <sup>1</sup> / <sub>4</sub>	22	71	82
40	1 <sup>1</sup> / <sub>2</sub>	40	48.21	37	1/37	95	Rc1 <sup>1</sup> / <sub>2</sub>	25	82	100
50	2	51	60.25	42	1/37	107	Rc 2	28	96	106
65	2 <sup>1</sup> / <sub>2</sub>	65	76.60	61	1/48	164	—	—	—	133
75	3	77	89.60	64	1/49	189.5	—	—	—	152
100	4	100	114.70	84	1/56	245	—	—	—	210

Note : The shape and appearance of the valve differ a little with nominal size compared to the drawing.

## PARTS & MATERIALS

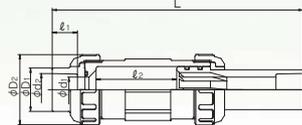
No.	DISCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC,C-PVC
②	END CONNECTOR	1	PVC,C-PVC
③	UNION NUT	1	PVC,C-PVC
④	O-RING	1	EPDM,FKM,Others

# EXPANSION JOINT 20mm - 100mm (3/4 inch - 4 inch)

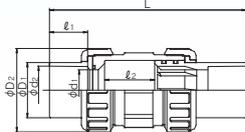
● PVC, C-PVC 20 - 100mm (3/4 inch - 4 inch)



20mm(3/4inch) ~ 50mm(2inch)



65mm(2 1/2 inch) ~ 100mm(4 inch)



## FEATURES

- Thermal stress of pipe line is to be absorbed due to its sufficient allowable axial movement on elongation and contraction.
- With union type end connection, it allows fast disassembly, loosening the union nut only.
- With simplified design, it requires minimum systems space in the piping systems, and there is no need of expansion U-bend.
- Earthquake resistant design; Allowable axial movement-Elongation contraction.
- Internal stop design prevents the expansion portion from being removed.

## SPECIFICATIONS

Material	Working Temperature	Max. Working Pressure MPa[kgf/cm <sup>2</sup> ][PSI]	End Connectors
Unplasticized Polyvinyl Chloride (PVC)	0°C - 50°C (30°F - 120°F)	1.0{10.2}[150]	Socket End
Chlorinated Polyvinyl Chloride (C-PVC)	0°C - 90°C (30°F - 195°F)	1.0{10.2}[150]	Socket End

## EXPANSION JOINT

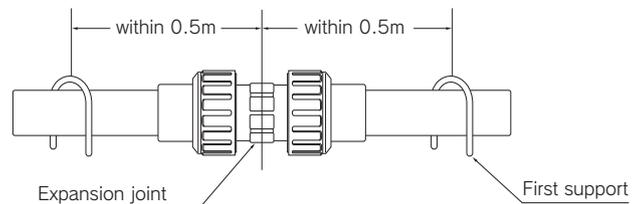
Unit: MPa[kgf/cm<sup>2</sup>]

Material		PVC		C-PVC			
Temp. °C(°F)							
Nominal Size		0 - 40 (30 - 105)	41 - 50 (106 - 120)	5 - 40 (40 - 105)	41 - 60 (106 - 140)	61 - 70 (141 - 160)	71 - 90 (161 - 195)
mm	inch						
20 - 100	3/4 - 4	1.0{10.2}	0.6{6.1}	1.0{10.2}	0.6{6.1}	0.4{4.1}	0.2{2.0}

## DIMENSIONS TABLE

JIS Unit: mm

Nominal Size	d <sub>1</sub>	d <sub>2</sub>	l <sub>1</sub>	1/T	D <sub>1</sub>	D <sub>2</sub>	L		l <sub>2</sub>
							Max	Min	
20 3/4	20	26.13	24	1/34	35	60	243	163	80
25 1	25	32.16	27	1/34	43	70	250	170	80
30 1 1/4	31	38.19	30	1/34	50	82	258	178	80
40 1 1/2	40	48.21	37	1/37	59	100	272	192	80
50 2	51	60.25	42	1/37	72	106	285	205	80
65 2 1/2	65	76.60	61	1/48	88	133	314	234	80
75 3	78	89.60	64	1/49	105	152	330	250	80
100 4	100	114.70	84	1/56	132	210	422	322	100



### ☆ Volume of thermal expansion on C-PVC pipe and PVC pipe

A: Dimension of pipe line

B: Temperature

Unit: mm

A \ B	5 m	10 m	20 m	30 m	40 m	50 m	60 m	70 m	80 m
10°C	4	7	14	21	28	35	42	49	56
20°C	7	14	28	42	56	70	84	98	112
30°C	11	21	42	63	84	105	126	147	168
40°C	14	28	56	84	112	140	168	196	224
50°C	18	35	70	105	140	175	210	245	280
60°C	21	42	84	126	168	210	252	294	336
70°C	25	49	98	147	196	245	294	343	392
80°C	28	56	112	168	224	280	336	392	448

### Caution

First supports on both side of AV Expansion joint should be located within 0.5m from the middle of this joint.

(Setting of first supports at the location beyond 0.5m could cause pipeline to bend by internal pressure and AV Expansion joints do not work properly.)

# BOLT & NUT and WASHER

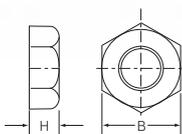
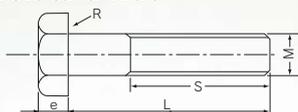
● PVC  
Nominal Size : M8 to M20

Unit:mm

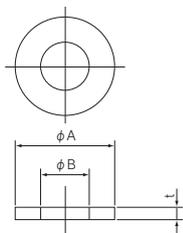


Nominal Size M8		Nominal Size M10		Nominal Size M12		Nominal Size M16		Nominal Size M20	
Lmm	Smm	Lmm	Smm	Lmm	Smm	Lmm	Smm	Lmm	Smm
20	16	14	10	25	21	40	36	55	46
25	22	20	16	30	26	45	38	65	46
32	22	25	21	36	30	50	38	75	46
38	22	28	24	40	30	55	38	80	46
50	22	30	26	45	30	60	38	85	46
55	22	32	26	50	30	65	38	90	46
		36	26	56	30	70	38		
		40	26	60	30	75	38		
		45	26	65	30	80	38		
		50	26	70	30	85	38		
		55	26			95	38		
		60	26						
		65	26						
Pitch	1.25	Pitch	1.50	Pitch	1.75	Pitch	2.00	Pitch	2.50
H	6.5mm	H	8mm	H	10mm	H	13mm	H	16mm
B	13	B	17	B	19	B	24	B	30
M	8	M	10	M	12	M	16	M	20
e	5.5	e	7	e	8	e	10	e	13
R	0.2r	R	0.2r	R	0.3r	R	0.4r	R	0.4r

● Bolt and Nut



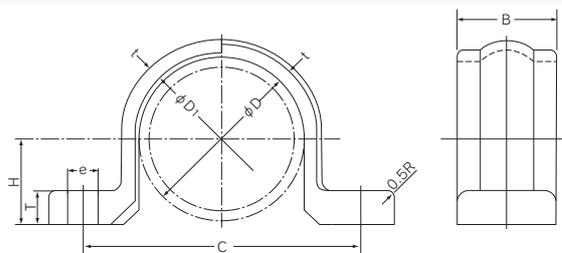
● Washer



Unit:mm

Nominal Size	A	B	t
M 8	18.2 <sup>0</sup> <sub>0.8</sub>	8.4 <sup>+0.4</sup> <sub>0</sub>	2
M10	22.0 <sup>0</sup> <sub>0.8</sub>	10.5 <sup>+0.4</sup> <sub>0</sub>	2
M12	26.0 <sup>0</sup> <sub>1.0</sub>	13.5 <sup>+0.5</sup> <sub>0</sub>	3
M16	32.0 <sup>0</sup> <sub>1.0</sub>	17.0 <sup>+0.5</sup> <sub>0</sub>	3
M20	40.0 <sup>0</sup> <sub>1.0</sub>	21.0 <sup>+0.6</sup> <sub>0</sub>	3

# SADDLE



● PVC  
Nominal Size: 16mm(1/2inch) – 200mm(8inch)

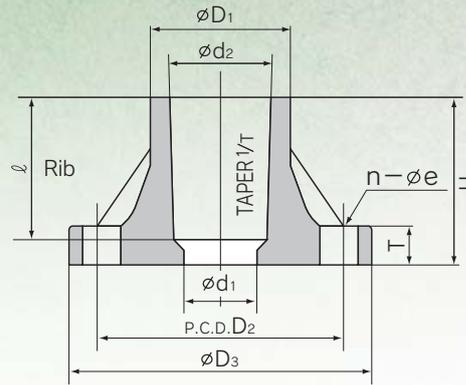
## DIMENSIONS TABLE

Unit:mm

Nominal Size		D	D <sub>1</sub>	C	H	T	t	B	e
mm	inch								
16	1/2	22	24	42	11	5	3	15	5.8
20	3/4	26	29	48	13	5	3	18	5.8
25	1	32	35	54	16	6	3	18	5.8
30	1 1/4	38	41	66	19	7	3.5	20	7
35	1 1/4	42	46	70	21	8	3.5	22	7
40	1 1/2	48	52	90	24	9	4	24	10
50	2	60	64	97	30	9	4	28	10
65	2 1/2	76	81	114	38	10	4	30	10
75	3	89	94	134	44.5	11	4	38	12
100	4	114	120	160	57	12	4.5	42	12
125	5	140	150	192	70	12	5	46	12
150	6	165	177	238	82.5	14	8	50	17
200	8	216	236	316	108	20	10	70	19

# AV FLANGE

## ● TS FLANGES(PVC,HI-PVC,C-PVC)



### DIMENSIONS TABLE

Nominal Size		$d_1$	$d_2$		Taper 1/T		$\ell$		$D_1$		$D_2$		$D_3$		$n$		$e$		$T$		$H$	
mm	inch		10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K
13	3/8	15	18.40		1/30	26		25.5	24	65	55	90	75	4	4	15	12	14	9	30	30	
15	1/2	18	22.40		1/34	30		31	29	70	60	95	80	4	4	15	12	14	9	35	35	
20	3/4	22	26.45		1/34	35		35	33	75	65	100	85	4	4	15	12	15	10	40	40	
25	1	25	32.55		1/34	40		42.5	40	90	75	125	95	4	4	19	12	15	10	46	45	
32	1 1/4	30	38.60		1/34	44		48.5	46	100	90	135	115	4	4	19	15	16	12	50.5	50	
40	1 1/2	41	48.70		1/37	55		60.5	59	105	95	140	120	4	4	19	15	16	12	61.5	61	
50	2	52	60.80		1/37	63		73	70	120	105	155	130	4	4	19	15	20	14	71	72	
65	2 1/2	67	76.60	76.80	1/48	1/41	61	69	90	86	140	130	175	155	4	4	19	15	22	14	70	76
80	3	78	89.60	89.80	1/49	1/43	64	72	105	101	150	145	185	180	8	4	19	19	22	14	73	80
100	4	100	114.70	115.00	1/56	1/44	84	92	131	129	175	165	210	200	8	8	19	19	22	16	93	105
125	5	125	140.85	141.20	1/58	1/45	104	112	158	156	210	200	250	235	8	8	23	19	24	16	114	126
150	6	146	166.00	166.50	1/63	1/45	132	140	185	185	240	230	280	265	8	8	23	19	26	18	142	150
200	8	196	217.00		1/50	145		238	238	290	280	330	320	12	8	23	23	28	28	156	156	
250	10	247	268.00		1/55	155		289	289	355	345	400	385	12	12	25	23	30	30	167	167	
300	12	298	318.70		1/55	155		341	341	400	390	445	430	16	12	25	23	30	30	167	167	
350	14	348	371.00		1/60	230		398	398	445	435	490	480	16	12	25	23	34	34	300	300	

Note : Dimensions shown as  $D_2, D_3, n, e$  are accordance with JIS 10K and JIS 5K.  
 Dimeter sizes of bolt holes for 5K 300mm(12inch)are different from JIS 5K.

Nominal Size		$d_1$	$d_2$	Taper 1/T	$\ell$	$D_1$		$D_2$		$D_3$		$n$		$e$		$T$		$H$	
mm	inch					10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K
13	3/8	15	18.40	1/30	26	28	24	65	55	90	75	4	4	15	12	14	9	30	30
15	1/2	18	22.40	1/34	30	33	31	70	60	95	80	4	4	15	12	14	9	35	35
20	3/4	22	26.45	1/34	35	36	33	75	65	100	85	4	4	15	12	14	10	40	40
25	1	25	32.55	1/34	40	43	43	90	75	125	95	4	4	19	12	16	10	50	45
32	1 1/4	30	38.60	1/34	44	51	51	100	90	135	115	4	4	19	15	16	12	50.5	50
40	1 1/2	41	48.70	1/37	55	65	65	105	95	140	120	4	4	19	15	16	12	65	61
50	2	52	60.80	1/37	63	76	76	120	105	155	130	4	4	19	15	20	14	74	72
65	2 1/2	67	76.80	1/41	69	92	86	140	130	175	155	4	4	19	15	22	14	82	76
80	3	78	89.80	1/43	72	108	—	150	—	185	—	8	—	19	—	22	—	86	—
100	4	100	115.00	1/44	92	138	—	175	—	210	—	8	—	19	—	22	—	105	—
125	5	125	141.20	1/45	112	165	—	210	—	250	—	8	—	23	—	22	—	126	—
150	6	146	166.00	1/63	132	185	—	240	—	280	—	8	—	23	—	26	—	142	—

Note : Dimension shown as  $D_2, D_3, n, e$  are accordance with JIS 10K and JIS 5K.

AV TS FLANGES PVC ANSI 1/2 inch - 12inch(15mm - 300mm)

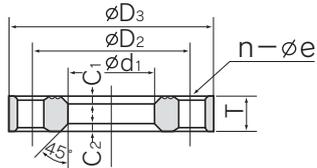
ANSI		Unit:inch										
Nominal Size	mm inch	d <sub>1</sub>	d <sub>2</sub>	Taper 1/T	ℓ	D <sub>1</sub>	ANSI CLASS 150				T	H
							D <sub>2</sub>	D <sub>3</sub>	n	e		
15	1/2	0.71	0.88	1/34	1.61	1.22	2.38	3.50	4	0.62	0.47	1.18
20	3/4	0.87	1.04	1/34	1.89	1.38	2.75	3.88	4	0.62	0.51	2.09
25	1	0.98	1.28	1/34	1.57	1.67	3.12	4.25	4	0.62	0.59	1.97
32	1 1/4	1.18	1.52	1/34	1.73	1.91	3.50	4.62	4	0.62	0.63	2.13
40	1 1/2	1.61	1.92	1/37	2.17	2.38	3.88	5.00	4	0.62	0.71	2.56
50	2	2.05	2.39	1/37	2.48	2.87	4.75	6.00	4	0.75	0.79	2.91
65	2 1/2	2.64	3.02	1/41	2.72	3.54	5.50	7.00	4	0.75	0.91	3.23
80	3	3.07	3.54	1/43	2.83	4.13	6.00	7.50	4	0.75	0.94	3.39
100	4	3.94	4.53	1/44	3.62	5.16	7.50	9.00	8	0.75	0.94	4.21
125	5	4.92	5.56	1/45	4.41	6.22	8.50	10.00	8	0.88	0.94	5.12
150	6	5.75	6.54	1/63	5.20	7.28	9.50	11.00	8	0.88	1.02	5.59
200	8	7.72	8.54	1/50	5.71	9.37	11.75	13.50	8	0.88	1.10	6.14
250	10	9.72	10.56	1/55	6.10	11.81	14.25	16.00	12	1.00	1.18	6.57
300	12	11.73	12.55	1/55	6.10	13.43	17.00	19.00	12	1.00	1.18	6.57

Note : Dimension shown as D<sub>2</sub>,D<sub>3</sub>,n,e are accordance with ANSI/ASME B 16.5 CLASS 150.  
Dimension shown as d<sub>1</sub>, R, taper 1/T are accordance with JIS K 6743.

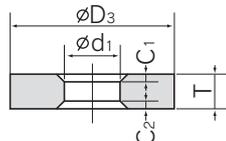
● AV FLANGES(PVC,PP)



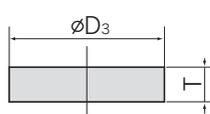
① FLANGES



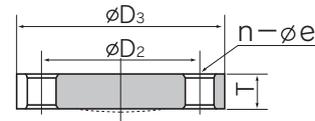
② FLANGES



③ FLANGES



④ FLANGES



Nominal Size 13mm(3/8inch) - 300mm(12inch)

※ The figure described by broken(dashed) line shows shape of Q-flanges applied for dead end service of piping. 15(1/2inch) - 150mm(6inch)

DIMENSIONS TABLE

AV ①, ②, ③, ④, FLANGES		PVC	JIS 10K 13mm - 300mm(3/8inch - 12inch)	JIS 5K 13mm - 300mm(3/8inch - 12inch)	Unit:mm									
Nominal Size	mm inch	d <sub>1</sub>	D <sub>2</sub>		D <sub>3</sub>		n		e		T		C <sub>1</sub>	C <sub>2</sub>
			10K	5K	10K	5K	10K	5K	10K	5K	10K	5K		
13	3/8	18	65	55	90	75	4	4	15	12	12	9	3	3
15	1/2	22	70	60	95	80	4	4	15	12	12	9	3	3
20	3/4	26	75	65	100	85	4	4	15	12	14	10	3	3
25	1	32	90	75	125	95	4	4	19	12	14	10	3	3
32	1 1/4	38	100	90	135	115	4	4	19	15	16	12	3	3
40	1 1/2	48	105	95	140	120	4	4	19	15	16	12	3	3
50	2	60	120	105	155	130	4	4	19	15	16	14	3	4
65	2 1/2	76	140	130	175	155	4	4	19	15	18	14	3	4
80	3	89	150	145	185	180	8	4	19	19	18	14	3	4
100	4	114	175	165	210	200	8	8	19	19	18	16	3	4
125	5	140	210	200	250	235	8	8	23	19	20	16	4	4
150	6	165	240	230	280	265	8	8	23	19	22	18	4	4
200	8	216	290	280	330	320	12	8	23	23	22	20	4	4
250	10	267	355	345	400	385	12	12	25	23	24	22	4	4
300	12	318	400	390	445	430	16	12	25	23	24	22	4	4

Note : Dimension shown as D<sub>2</sub>,D<sub>3</sub>,n,e are accordance with JIS 10K and JIS 5K.

① and ② are welded flanges.

③ and ④ are blind flanges.

# AV GASKET



Full face Type Rubber Gasket



Ring Type Gasket (JIS only)



PTFE coated



PVDF coated

● MATERIAL : EPDM, PTFE, PVDF, CSM, FKM, IIR, Viton F, C

## FEATURES

- AV GASKETS offer Similar sealing performance with 1/3 bolt tightening torque, compared to flat or envelope style gaskets.
- Uniform dimension, fine surface, suitable hardness.
- Long service life.
- Unique Convex Design.

## SPECIFICATIONS

Material	Working Temperature	SIZE AVAILABILITY BY STANDARD		
		JIS	ANSI	DIN
EPDM	-40°C - 90°C (-40°F - 195°F)	15mm - 350mm	1/2inch - 16inch *1	15mm - 350mm
PTFE	-40°C - 120°C (-40°F - 250°F)	15mm - 300mm	1/2inch - 12inch	15mm - 400mm
PVDF	-40°C - 120°C (-40°F - 250°F)	15mm - 300mm	1/2inch - 10inch *2	15mm - 300mm
VIFLON	-5°C - 150°C (-5°F - 280°F)	15mm - 200mm	-	-

Working temperature is different depending on type of fluid.

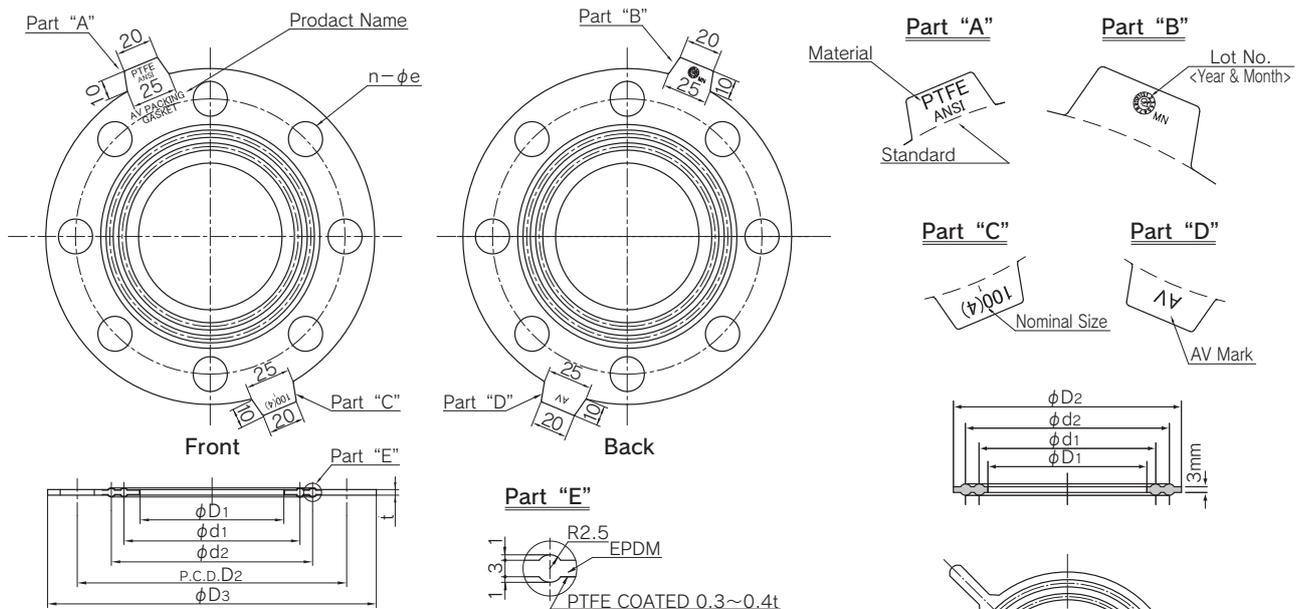
Voflon-F has superior resistance to inorganic acids such as HNO<sub>3</sub>, HF and HCl.

Voflon-C has superior resistance to chlorine containing media such as Chlorine Water, NaCl and ClO<sub>2</sub>.

\* 1 14inch, 16inch:FLAT FULL FACE

\* 2 Except for 1 1/4inch and 2 1/2inch

## DIMENSIONS



Type	Nominal Size	Thickness
PTFE	15mm(1/2inch) to 400mm(16inch)	0.3-0.4mm(0.012-0.016inch)
PVDF	15mm(1/2inch) to 65mm(2 1/2inch) 80mm(3inch) to 300mm(12inch)	0.4-0.5mm(0.016-0.020inch)

DIMENSIONS TABLE

Full-Face Type (JIS 10K)								Unit:mm
Nominal Size		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	n	e	d <sub>1</sub>	d <sub>2</sub>
mm	inch							
13	3/8	15	65	88	4	15	22	37
15	1/2	18	70	93	4	15	26	41
20	3/4	22	75	98	4	15	32	47
25	1	30	90	123	4	19	38	53
32	1 1/4	37	100	133	4	19	50	65
40	1 1/2	43	105	138	4	19	54	69
50	2	54	120	153	4	19	68	83
65	2 1/2	69	140	173	4	19	86	101
80(75)	3	80	150	183	8	19	98	112
100	4	102	175	208	8	19	120	138
125	5	127	210	248	8	23	145	166
150	6	150	240	278	8	23	168	190
200	8	198	290	328	12	23	216	247
250	10	249	355	398	12	25	270	306
300	12	300	400	443	16	25	324	352
350	14	350	445	488	16	25	370	390

Ring Type (JIS 10K)						Unit:mm
Nominal Size		D <sub>1</sub>	D <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	
mm	inch					
15	1/2	18	54	26	41	
20	3/4	22	59	32	47	
25	1	30	70	38	53	
32	1 1/4	37	80	50	65	
40	1 1/2	43	85	54	69	
50	2	54	100	68	83	
65	2 1/2	69	120	86	101	
80(75)	3	80	130	98	112	
100	4	102	155	120	138	
125	5	127	187	145	166	
150	6	150	217	168	190	
200	8	198	267	216	247	
250	10	249	329	270	306	
300	12	300	374	324	352	

Full-Face Type (DIN 2501)								Unit:mm
Nominal Size		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	n	e	d <sub>1</sub>	d <sub>2</sub>
mm	inch							
15	1/2	18	65	93	4	14	26	41
20	3/4	22	75	103	4	14	32	47
25	1	30	85	113	4	14	38	53
32	1 1/4	37	100	138	8	18	50	65
40	1 1/2	43	110	148	4	18	54	69
50	2	54	125	163	4	18	68	83
65	2 1/2	69	145	183	4	18	86	101
80(75)	3	80	160	198	8	18	98	112
100	4	102	180	218	8	18	120	138
125	5	127	210	248	8	18	145	166
150	6	150	240	283	8	23	168	190
200	8	198	295	338	8	23	216	247
250	10	249	350	393	12	23	270	306
300	12	300	400	443	12	23	324	352
350	14	350	460	503	16	25	370	390
400	16	407	515	563	16	26	442	472

Full-Face Type (ANSI CLASS150)								Unit:inch
Nominal Size		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	n	e	d <sub>1</sub>	d <sub>2</sub>
inch	mm							
1/2	15	0.7	2.4	3.4	4	0.6	1.0	1.6
3/4	20	0.9	2.8	3.8	4	0.6	1.3	1.9
1	25	1.2	3.1	4.2	4	0.6	1.5	2.1
1 1/4	32	1.5	3.5	4.5	4	0.6	2.0	2.6
1 1/2	40	1.7	3.9	4.9	4	0.6	2.1	2.7
2	50	2.1	4.7	5.9	4	0.8	2.7	3.3
2 1/2	65	2.7	5.5	6.9	4	0.8	3.4	4.0
3	80(75)	3.2	6.0	7.4	4	0.8	3.9	4.4
4	100	4.0	7.5	8.9	8	0.8	4.7	5.4
5	125	5.0	8.5	9.9	8	0.9	5.7	6.5
6	150	5.9	9.5	10.9	8	0.9	6.6	7.5
8	200	7.8	11.8	13.4	8	0.9	8.5	9.7
10	250	9.8	14.3	15.9	12	1.0	10.6	12.1
12	300	11.8	17.0	18.9	12	1.0	12.8	13.9
14	350	13.9	18.7	20.9	12	1.14	14.6	15.4
16	400	15.6	21.2	23.4	16	1.14	17.3	18.5

\* 1 1/2inch, 16inch:FLAT FULL FACE

RECOMMENDED TIGHTENING TORQUE <ALL MATERIALS / FULL FACE TYPE>

mm(inch)	N·m	FT-LB	mm(inch)	N·m	FT-LB	mm(inch)	N·m	FT-LB
15 (1/2)	17.5	13	65 (2 1/2)	22.5	16	200 (8)	55	40
20 (3/4)	17.5	13	80 (3)	30	22	250(10)	55	40
25 (1)	20	14	100(4)	30	22	300(12)	60	43
40 (1 1/2)	20	14	125(5)	40	29	350(14)	60	43
50 (2)	22.5	16	150(6)	45	32	400(16)	80	58

## DV FITTINGS

### ● DV FITTING(JIS K6739) (Nominal Size:40 to 150mm)



### SPECIFICATIONS

90° Elbow	(DL)	30 - 150mm
90° Large-curvature Elbow	(LL)	40 - 150mm
45° Elbow	(45L)	30 - 150mm
90° Y	(DT)	30 - 150×100mm
90° Large-curvature Y		40 - 150×125mm
90° Large-curvature Both-sided Y	(WLT)	65 - 125×100mm
45° Y	(Y)	40 - 150×100mm
Socket	(DS)	40 - 150mm
Increase	(IN)	40×30 - 150×125mm

※We also produce VU FITTINGS

## CEMENT



AV Cement No.32  
(Blue Can)  
100g·500g·1kg



AV Cement No.52  
(Red Can)  
500g



AV Cement No.62  
(Yellow Can)  
1kg



AV Cement No.88  
(Brown Can)  
250g·500g



AV HI Cement No.90  
(Dark blue Can)  
500g·1kg



AV HI Cement No.100  
White Cement  
(Light Blue Can) 1kg



AV HI Cement No.102  
White Cement  
(Dark Green Can) 1kg  
(no brush)

※ These adhesives are classified under Dangerous Substance Class 4, the First Oil-Based Material specified in Article 2 of the Japanese Fire Prevention Act. Use utmost care when storing the adhesives.

### FEATURES

- AV Cement No.32 and No.52 are suitable for small AV TS flanges and FITTINGS.
- AV Cement No.62 is suitable for large AV FITTINGS and AV DV FITTINGS.
- AV Cement No.100 and No.102 are suitable for AV HI-PVC and HP-PVC FITTINGS.

### SPECIFICATIONS

Items	Feature	Color of Can	Viscosity (cp)	Reduction by drying(%)	Cementing Strength(kgf/cm <sup>2</sup> )	
					After 15min.	After 2 hours
AV No.32	Low viscosity, quick drying	Blue	100 - 250	30 - 50	over 12.5	over 25
AV No.52	High viscosity, quick drying	Red	800 - 1,500	30 - 50	over 12.5	over 25
AV No.62	High viscosity, slow drying	Yellow	500 - 1,500	10 - 30	—	over 15
AV No.88	Low viscosity, quick drying	Brown	200 - 700	—	—	—
AV No.90	Low viscosity, quick drying	Dark blue	500 - 800	30 - 50	over 12.5	over 25
AV No.100	Low viscosity, quick drying	Light blue	500 - 800	30 - 50	over 12.5	over 25
AV No.102	High viscosity, slow drying	Dark green	400 - 1,000	10 - 30	—	over 15

Standard Quantity of "AV CEMENT" required for connecting "PVC PIPE" with "PVC FITTINGS."

Unit:g

Nominal Size(mm)	13	16	20	25	30	40	50	65	75	100	125	150	200	250	300
Applying Quantity at one point	0.9	1.2	1.7	2.0	3.1	5.0	7.1	9.9	12.0	20	30	44	59	78	104
Application	● No. 32 or No. 52 or No. 90 or No. 100												● No. 62 or No. 102		

ADHESIVE STRENGTH BASED ON PASSING TIME 13mm 20°C MAX stretching loading.

Items	1min	3min	5min	10min	15min	30min	1hr	2hr	3hr	6hr	12hr	24hr
● AV No.32	55kg (4kgf/cm <sup>2</sup> )	135kg (10kgf/cm <sup>2</sup> )	160kg (12kgf/cm <sup>2</sup> )	205kg (15kgf/cm <sup>2</sup> )	230kg (17kgf/cm <sup>2</sup> )	290kg (21kgf/cm <sup>2</sup> )	340kg (25kgf/cm <sup>2</sup> )	380kg (28kgf/cm <sup>2</sup> )	410kg (30kgf/cm <sup>2</sup> )	465kg (34kgf/cm <sup>2</sup> )	Cracked	—
● AV No.52	128kg (9kgf/cm <sup>2</sup> )	180kg (13kgf/cm <sup>2</sup> )	220kg (16kgf/cm <sup>2</sup> )	256kg (19kgf/cm <sup>2</sup> )	285kg (21kgf/cm <sup>2</sup> )	340kg (25kgf/cm <sup>2</sup> )	380kg (28kgf/cm <sup>2</sup> )	420kg (31kgf/cm <sup>2</sup> )	445kg (33kgf/cm <sup>2</sup> )	490kg (36kgf/cm <sup>2</sup> )	Cracked	—
● AV No.62	—	—	—	42kg (3kgf/cm <sup>2</sup> )	82kg (6kgf/cm <sup>2</sup> )	135kg (10kgf/cm <sup>2</sup> )	219kg (16kgf/cm <sup>2</sup> )	280kg (21kgf/cm <sup>2</sup> )	310kg (23kgf/cm <sup>2</sup> )	396kg (29kgf/cm <sup>2</sup> )	455kg (34kgf/cm <sup>2</sup> )	Cracked

# RR-MF JOINTS

## ● RR-MF JOINT



### SPECIFICATIONS

Nominal Size	40mm(1 1/2inch) - 150mm(2inch)
Material	Body:HI-PVC,PVC Rubber ring:SBR

## ● RR-MF JOINT(FRP)



### SPECIFICATIONS

Nominal Size	350mm(14inch) - 500mm(20inch)
Material	Body:FRP Rubber ring:SBR Ring:STAINLESS STEEL 403

※Only joints conforming to the JWWA standards are available.

## ● RR-N-MF JOINT(Fabricated)



### SPECIFICATIONS

Nominal Size	40mm(1 1/2inch) - 150mm(6inch)
Material	Body:HI-PVC,PVC Rubber ring:SBR

Nominal Size	200mm(8inch) - 350mm(14inch)
Material	Body:PVC Rubber ring:SBR

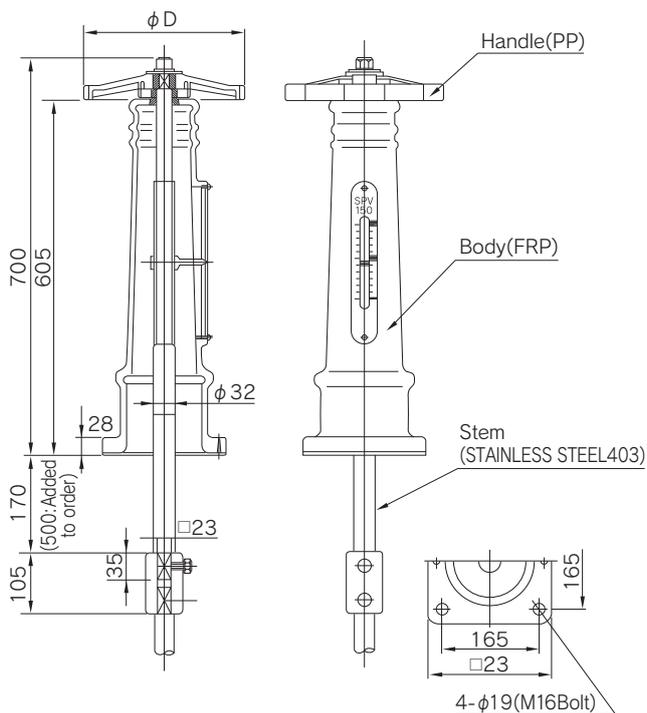
※ joints conforming to the JWWA (JAPAN WATER WORKS ASSOCIATION) standards range in nominal size from 200 to 300mm(8inch to 12inch)

# FRP FLOOR STAND



### SPECIFICATIONS

Nominal Size	50mm - 350mm(2inch - 14inch)
Material	Body:FRP Spindle:Stem STAINLESS STEEL403 Handle:PP



# ASAHI VALVE AND PIPING SYSTEMS

## ASAHI AV HIGH PURITY SERIES(HP-PVC)

The specifications in this brochure are subject to change without prior notice due to improvements and modifications.

### Asahi AV HIGH PURITY SERIES

TRUE UNION DIAPHRAGM VALVE TYPE14 (LF)	152
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AV FLANGE<HP-PVC>	165
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AV GASKET	167

\*LF : Lubricant Free



# ASAHI AV *High Purity Series*

## Ultrapure Water

Recently along with the increasingly high integration of semiconductors, stricter cleanliness is required of wafer surfaces from the viewpoint of product yield. Consequently, the role of cleaning processes is becoming more and more important.

Since the final washing of wafers of waters uses ultrapure water the cleanliness of wafers depends heavily on the quality of the ultrapure water. There fore, it is essential to improve the process lines used for the production of ultrapure water. We have an assortment of plastic piping materials that elute fewer metal ions and TOC and have finer inner surfaces. They fully accommodate the requirements of semiconductor manufacture, such as for 1MD-RAM, 4MD-RAM, and 16MD-RAM.

## FEATURES

- Minimized Leachable.
- Mirror-smooth inner surfaces.
- Dead space minimized to prevent residence of liquid.
- Purified articles controlled under strict rules: degreasing and washing, forced drying with nitrogen, assembly, and packaging are carried out in a clean room.
- Easy, dependable installation and removal. Easy to maintain and clean.
- Unrivaled mechanical strength and reliability.

# Range of Nominal Size and Materials

## ●AV Valves

Type			TRUE UNION DIAPHRAGM VALVE TYPE 14								
Body Materials			PVC		C-PVC		PP		PVDF		
End Connectors			Threaded	Socket	Threaded	Socket <sup>※</sup> (welded)	Threaded	Socket	Threaded	Socket <sup>※</sup> (welded)	Spigot
Nominal Size	mm	inch									
	15	1/2	○	○	○	○	○	○	○	○	○
	20	3/4	○	○	○	○	○	○	○	○	○
	25	1	○	○	○	○	○	○	○	○	○
	32	1 1/4	○	○	○	○	○	○	○	○	○
	40	1 1/2	○	○	○	○	○	○	○	○	○
50	2	○	○	○	○	○	○	○	○	○	
Page			152 - 153								

Type			BALL VALVE TYPE 21												
Body Materials			PVC			C-PVC			PP			PVDF			
End Connectors			Flanged	Threaded	Socket	Flanged	Threaded	Socket <sup>※</sup> (welded)	Flanged	Threaded	Socket	Flanged	Threaded	Socket <sup>※</sup> (welded)	Spigot <sup>※</sup>
Nominal Size	mm	inch													
	15	1/2	○	○	○	○	○	○	○	○	○	○	○	○	
	20	3/4	○	○	○	○	○	○	○	○	○	○	○	○	
	25	1	○	○	○	○	○	○	○	○	○	○	○	○	
	32	1 1/4	○	○	○	○	○	○	○	○	○	○	○	○	
	40	1 1/2	○	○	○	○	○	○	○	○	○	○	○	○	
	50	2	○	○	○	○	○	○	○	○	○	○	○	○	
	65	2 1/2	○	○	○	○	○	○	○	○	○	○	○	○	
	80	3	○	○	○	○	○	○	○	○	○	○	○	○	
100	4	○	○	○	○	○	○	○	○	○	○	○	○		
Page			154 - 157												

Type	LAB COCK
Body Materials	PVC
End Connectors	Male Thread, Female Thread, Hose
Nominal Size	Male Thread 1/4 1/2 Female Thread 1/4 3/8
Page	158 - 159

## ●Pipe & Fittings

Nominal Size	mm	inch	Pipe	Elbow (L)	90° AV Bend	45° Elbow (45L)	45° AV Bend	Socket (S)	Tee(T)	Faucet Elbow(FL)	Valve Socket(VS)	Faucet Socket(FS)	Cap (C)
	13	1 1/2	○	○	○	○	○	○	○	○	○	○	○
16	2	○	○	○	○	○	○	○	○	○	○	○	○
20	2 1/2	○	○	○	○	○	○	○	○	○	○	○	○
25	3	○	○	○	○	○	○	○	○	○	○	○	○
30	4	○	○	○	○	○	○	○	○	○	○	○	○
40	5	○	○	○	○	○	○	○	○	○	○	○	○
50	6	○	○	○	○	○	○	○	○	○	○	○	○
65	8	○	○	○	○	○	○	○	○	○	○	○	○
75	10	○	○	○	○	○	○	○	○	○	○	○	○
100	12	○	○	○	○	○	○	○	○	○	○	○	○
125	14	○	○	○	○	○	○	○	○	○	○	○	○
150	16	○	○	○	○	○	○	○	○	○	○	○	○
200	18	○	○	○	○	○	○	○	○	○	○	○	○
250	20	○	○	○	○	○	○	○	○	○	○	○	○
Page			160		161			162-163			164		

Nominal Size	mm	Reducing Socket(RS)	Reducing Tee(RT)
	16×13		○
20×13	○	○	
20×16	○	○	
25×13	○	○	
25×16	○	○	
25×20	○	○	
30×16		○	
30×25	○	○	
40×13		○	
40×20	○	○	
40×25	○	○	
40×30	○	○	
50×13		○	
50×20	○	○	
50×25	○	○	
50×40	○	○	
65×40		○	
65×50	○	○	
75×25		○	
75×40		○	
75×50	○	○	
75×65	○		
100×75	○	○	
125×75		○	
125×100	○	○	
150×75		○	
150×100		○	
150×125	○	○	
200×75		○	
200×100		○	
200×150	○	○	
250×75		○	
250×100		○	
250×150	○	○	
Page		162	163

※Except for JIS standard.

# TRUE UNION DIAPHRAGM VALVE TYPE 14 15mm - 50mm(1/2inch - 2inch)

## FEATURES

### Easy Maintenance

The valve body can be removed from the pipe line by loosening the union nuts at both its ends.

### Bottom Stand for Easy Support

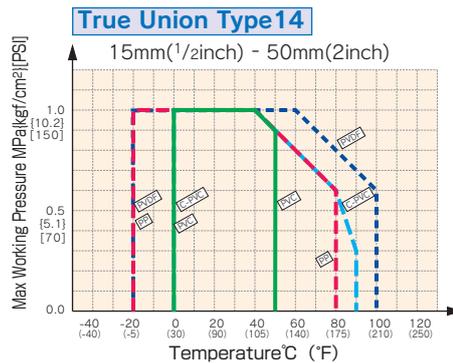
Having a new bottom stand with an insert hole, DIAPHRAGM VALVE TYPE 14 helps support the piping. The valve is also provided with a flange stand to increase installation safety.



## MATERIAL AND WORKING TEMPERATURE

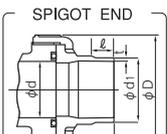
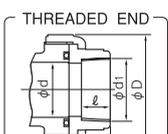
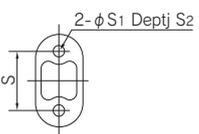
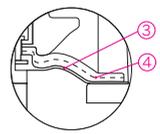
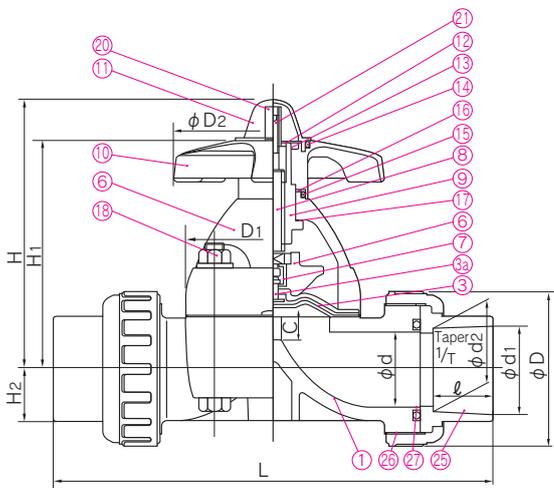
Body material	Nominal size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure at 20°C(70°F) MPa[kgf/cm²] [PSI]	End Connectors
Unplasticized Polyvinyl Chloride(PVC)	15 - 50(1/2 - 2)	0 - 50(30 - 120)	1.0{10.2} [150]	Socket End. Threaded End
Chlorinated Polyvinyl Chloride(C-PVC)	15 - 50(1/2 - 2)	0 - 90(30 - 195)	1.0{10.2} [150]	Socket End. Threaded End
Polypropylene(PP)	15 - 50(1/2 - 2)	-20 - 80(-5 - 175)	1.0{10.2} [150]	Socket End. Threaded End
Polyvinylidene Fluoride(PVDF)	15 - 50(1/2 - 2)	-20 - 100(-5 - 210)	1.0{10.2} [150]	Socket End. Threaded End. Spigot End

## WORKING PRESSURE VS. TEMPERATURE



## DIMENSION

### SOCKET END



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	BODY/BONNET PVC/PVC C-PVC/PP PP/PP PVDF/PPG PVDF/PVDF	⑪	GAUGE COVER	1	PC
②	BONNET			⑫	NAME PLATE	1	PVC
③	DIAPHRAGM	1	EPDM IIR NBR, CSM CPE, FKM VIFLON C (FKM-C) VIFLON F (FKM-F) PTFE	⑬	RETAINING RING-C TYPE	1	STAINLESS STEEL304
				⑭	O-RING(A)	1	EPDM
				⑮	O-RING(B)	1	EPDM
				⑯	THRUST RING(A)	1	UHMWPE
④	CUSHION	1	EPDM*	⑰	THRUST RING(B)	1	UHMWPE
				⑱	BOLT·NUT	4	STAINLESS STEEL304
⑤	COMPRESSOR	1	PVDF	⑲	STOPPER	1	COPPER ALLOY(C3604)
⑥	JOINT	1	STAINLESS STEEL304	⑳	SCREW	1	STAINLESS STEEL304
⑦	STEM	1	COPPER ALLOY(C3604)	㉑	ENDCONNECTOR	2	PVC C-PVC PP PVDF
⑧	SLEEVE	1	COPPER ALLOY(C3604)	㉒	UNION NUT	2	PP PVDF
⑨	HAND WHEEL	1	PP	㉓	O-RING(C)	2	EPDM FKM Others

\* With PTFE Diaphragm

DIMENSIONS TABLE

Nominal Size		d	Socket End												Threaded End				Spigot End				D	D <sub>1</sub>	D <sub>2</sub>	C (LIFT)	H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>
mm inch			PVC, C-PVC				PP				PVDF				JIS B 0203		L		PVDF													
d <sub>1</sub>	ℓ		1/T	L	d <sub>1</sub>	d <sub>2</sub>	ℓ	L	d <sub>1</sub>	d <sub>2</sub>	ℓ	L	d <sub>1</sub>	ℓ	PVC, C-PVC	PP, PVDF	d <sub>1</sub>	t	ℓ	L												
15	1/2	16	22.11	20	1/34	134	21.2	20.2	20	134	21.50	21.30	20	134	Rc 1/2	15	128	128	22	1.9	20	173	48	54×66	100	10	104	86	19.5	25	7	13
20	3/4	20	26.13	24	1/34	156	26.2	25.2	23	154	25.50	25.30	22	152	Rc 3/4	17	148	148	26	1.9	20	193	60	54×66	100	10	106	88	17.5	25	7	13
25	1	25	32.16	27	1/34	186	33.0	32.0	25	182	31.50	31.30	24	180	Rc 1	20	172	172	32	2.4	20	218	70	67×80	100	12	111	93	18.5	25	7	13
32	1 1/4	32	38.19	30	1/34	200	—	—	—	—	37.45	37.20	25	190	Rc 1 1/4	22	188	188	38	2.4	20	229	82	67×80	100	12	116	97	22.5	25	7	13
40	1 1/2	40	48.21	37	1/37	271	47.0	46.0	28	253	47.45	47.20	28	253	Rc 1 1/2	25	245	245	48	3	20	286	100	108×108	156	21	177	144	27.5	45	9	15
50	2	52	60.25	42	1/37	303	59.0	58.0	28	275	59.45	59.10	30	279	Rc 2	28	281	278	60	3	20	311	106	123×123	156	25	191	158	36	45	9	15

Nominal Size		d	Socket End								Threaded End				Spigot End								D	D <sub>1</sub>	D <sub>2</sub>	C (LIFT)	H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>
mm inch			PVC, C-PVC				PP, PVDF				DIN 2999		L		PVC		PP, PVDF															
d <sub>1</sub>	ℓ		L	DIN 8063	DIN 16962(PP)	L	d <sub>1</sub>	ℓ	PVC, C-PVC	PP, PVDF	d <sub>1</sub>	ℓ	DIN 3441	L	DIN 3442	PP	PVDF	L														
15	1/2	16	20	16	128	19.5	19.3	14.5	125	Rp 1/2	15	128	128	20	18.5	150	20	18.5	2.5	1.9	150	48	54×66	100	10	104	86	19.5	25	7	13	
20	3/4	20	25	19	147	24.5	24.3	16	141	Rp 3/4	17	148	148	25	24	172	25	22	2.7	1.9	172	60	54×66	100	10	106	88	17.5	25	7	13	
25	1	25	32	22	172	31.5	31.3	18	164	Rp 1	20	172	172	32	24.5	195	32	22.5	3.0	2.4	195	70	67×80	100	12	111	93	18.5	25	7	13	
32	1 1/4	32	40	26	188	39.45	39.2	20.5	177	Rp 1 1/4	22	188	188	40	28	212	40	26	3.7	2.4	212	82	67×80	100	12	116	97	22.5	25	7	13	
40	1 1/2	40	50	31	246	49.45	49.2	23.5	231	Rp 1 1/2	25	245	245	50	34	276	50	32	4.6	3.0	276	100	108×108	156	21	177	144	27.5	45	9	15	
50	2	52	63	38	294	62.5	62.1	27.5	274	Rp 2	28	281	278	63	38.5	308	63	36	5.8	3.0	307	106	123×123	156	25	191	158	36	45	9	15	

Nominal Size		d	Socket End						Threaded End				D	D <sub>1</sub>	D <sub>2</sub>	C (LIFT)	H	H <sub>1</sub>	H <sub>2</sub>	S	S <sub>1</sub>	S <sub>2</sub>	
inch mm			PVC, C-PVC			PP, PVDF(IPS)			ANSI/ASME B1·20·1		L												
d <sub>1</sub>	d <sub>2</sub>		ℓ	L	d <sub>1</sub>	ℓ	L	d <sub>1</sub>	ℓ	PVC, C-PVC	PP, PVDF												
1/2	15	0.63	0.848	0.836	0.875	5.47	0.83	0.87	5.43	1/2-14NPT	0.59	5.04	5.04	1.89	2.13×2.60	3.94	0.39	4.09	3.39	0.77	0.98	0.28	0.51
3/4	20	0.79	1.058	1.046	1.000	6.18	1.03	1.00	6.09	3/4-14NPT	0.67	5.83	5.83	2.36	2.13×2.60	3.94	0.39	4.17	3.46	0.69	0.98	0.28	0.51
1	25	0.98	1.325	1.310	1.125	7.32	1.30	1.13	7.24	1-11 1/2NPT	0.79	6.77	6.77	2.76	2.64×3.15	3.94	0.47	4.37	3.66	0.73	0.98	0.28	0.51
1 1/4	32	1.26	1.670	1.655	1.250	7.95	1.65	1.25	7.80	1 1/4-11 1/2NPT	0.87	7.40	7.40	3.23	2.64×3.15	3.94	0.47	4.57	3.82	0.89	0.98	0.28	0.51
1 1/2	40	1.57	1.912	1.894	1.375	10.47	1.89	1.37	10.28	1 1/2-11 1/2NPT	0.98	9.65	9.65	3.94	4.25×4.25	6.14	0.83	6.97	5.67	1.08	1.77	0.35	0.59
2	50	2.05	2.387	2.369	1.500	11.54	2.36	1.50	11.54	2-11 1/2NPT	1.10	11.06	10.95	4.17	4.84×4.84	6.14	0.98	7.52	6.22	1.42	1.77	0.35	0.59

TRUE UNION DIAPHRAGM VALVE TYPE14  
BALL VALVE TYPE21  
PANEL MOUNTING  
LAB COCK  
HP-PVC PIPES & FITTINGS  
HP-PVC FITTINGS  
AV PREFAB JOINT  
AV FLANGE  
MULTI-JOINT  
AV GASKET

# BALL VALVE TYPE 21 · 21α 15mm - 100mm(1/2inch - 4inch)

## FEATURES

### Easy to Be Automated (No Modification Required)

Featuring a new integral molded top flange. The BALL VALVE TYPE 21 can easily be converted from the manual to automatic without replacing the body.

### Simple Installation on Panel Piping

New bottom stand with an insert hole allows the valve to be secured on bench or panel only by inserting a metallic insert.

### Double-O-ring

The stem uses a double-O-ring, sealing arrangement improving durability sealing performance. The upper O-ring groove is deeper than the lower O-ring groove. Because of this design, the stem would break first at the upper O-ring groove, acting as a back up seal.

### 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)



### Locking Device (Option)

The handle lock can be done by full-open (close)



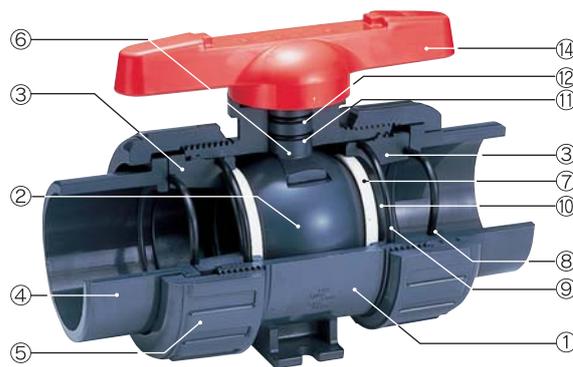
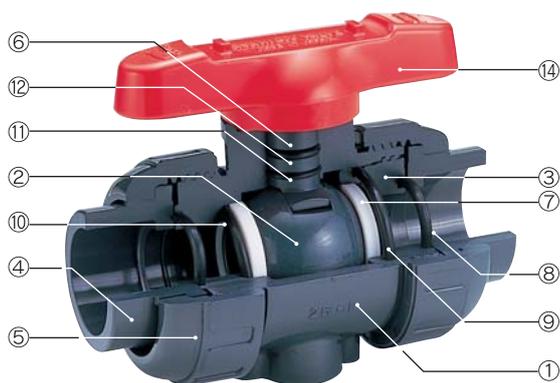
## MATERIAL AND WORKING TEMPERATURE

Body material	Working Temperature °C (°F)	Max. Working Pressure(at R. T.) MPa{kgf/cm <sup>2</sup> }[PSI]	End Connectors			
			Socket End	Threaded End	Flanged End	Spigot End
Unplasticized Polyvinyl Chloride(PVC)	0 - 50( 30 - 120)	1.6{16.3}[230]	○	○	○	—
Chlorinated Polyvinyl Chloride(C-PVC)	0 - 90( 30 - 195)	1.6{16.3}[230]	○	○	○	—
Polypropylene(PP)	-20 - 80(-5 - 175)	1.0{10.2}[150]	○	○	○	○
Polyvinylidene Fluoride(PVDF)	-20 - 100(-5 - 210)	1.6{16.3}[230]	○	○	○	○

※ PP and PVDF ball valves of the Socket End type and PVDF ball valves of the Spigot End type are welded valves.

Notes : There is a dead space in a ball valve. Volatile liquids, such as a hydrogen peroxide(H<sub>2</sub>O<sub>2</sub>)and Sodium hypochlorite (NaClO) may vaporize in the dead space, thus causing an abnormal pressure increase in the valve.

(Important: Gas is compressible. Thus if pressure rises abnormally, the valve can burst ejecting dangerous fragments.)



## PARTS & MATERIALS

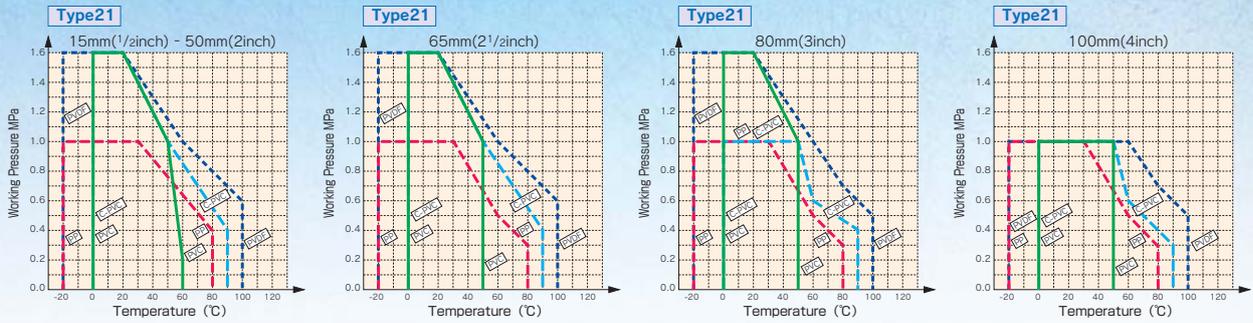
### ● 15mm(1/2inch) – 50mm(2inch)

No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC, C-PVC, PP, PVDF	⑨	O-RING(B)	1	EPDM, FKM, etc
②	BALL	1	PVC, C-PVC, PP, PVDF	⑩	O-RING(C)	2	EPDM, FKM, etc
③	CARRIER	1	PVC, C-PVC, PP, PVDF	⑪	O-RING(D)	1	EPDM, FKM, etc
④	END CONNECTOR	2	PVC, C-PVC, PP, PVDF	⑫	O-RING(E)	1	EPDM, FKM, etc
⑤	UNION NUT	2	PVC, C-PVC, PP, PVDF	⑬*	STOP RING	2	PVDF(used for flanged End)
⑥	STEM	1	PVC, C-PVC, PP, PVDF	⑭	HANDLE	1	ABS
⑦	SEAT	2	PTFE				
⑧	O-RING(A)	2	EPDM, FKM, etc				

### ● 65mm(2 1/2inch) – 100mm(4inch)

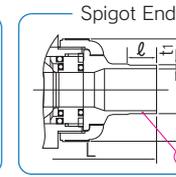
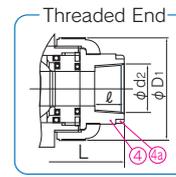
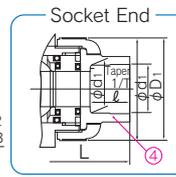
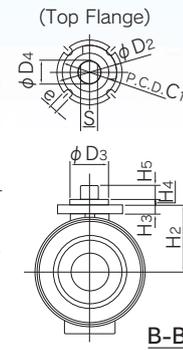
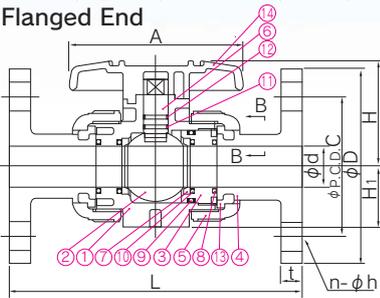
No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC, C-PVC, PP, PVDF	⑨	O-RING(B)	2	EPDM, FKM, etc
②	BALL	1	PVC, C-PVC, PP, PVDF	⑩	CUSHION	2	EPDM, FKM, etc
③	CARRIER	2	PVC, C-PVC, PP, PVDF	⑪	O-RING(D)	1	EPDM, FKM, etc
④	END CONNECTOR	2	PVC, C-PVC, PP, PVDF	⑫	O-RING(E)	1	EPDM, FKM, etc
⑤	UNION NUT	2	PVC, C-PVC, PP, PVDF	⑬*	STOP RING	2	PVDF(used for flanged End)
⑥	STEM	1	PVC, C-PVC, PP, PVDF	⑭	HANDLE	1	ABS
⑦	SEAT	2	PTFE	⑮	SCREW	1	STAINLESS STEEL(304)
⑧	O-RING(A)	2	EPDM, FKM, etc				

WORKING PRESSURE VS. TEMPERATURE

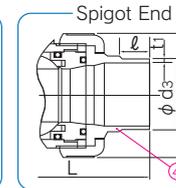
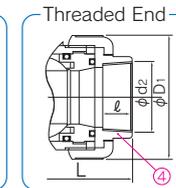
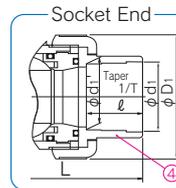
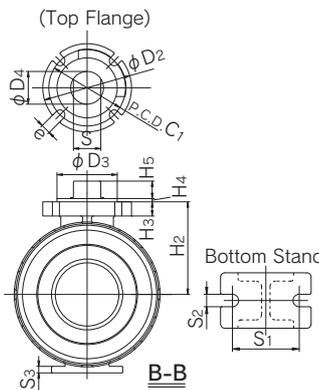
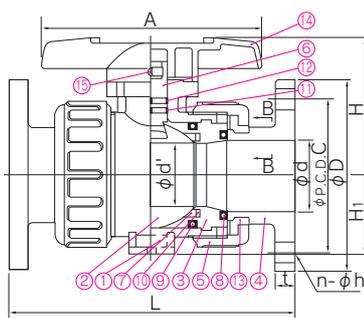


DIMENSION

● 15mm(1/2inch) – 50mm(2inch) Flanged End



● 65mm(2 1/2inch) – 100mm(4inch) Flanged End



DIMENSIONS TABLE

JIS		Unit: mm																		
Nominal Size	d	d'	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	C <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	e	
mm	inch																			
15	1/2	15	—	48	42	25	13.5	36	51.5	29	30	6	3	8	92	10.5	19	7.3	11	5.5
20	3/4	20	—	60	42	25	15	36	59.5	35	36.5	6	3	10	100	11	19	7.3	11	5.5
25	1	25	—	70	42	25	15	36	68	39	43.5	6	3	10	110	11	19	7.3	11	5.5
32	1 1/4	32	—	82	48	30	19	42	80.5	47	52.5	8	3	10	121	15	30	9	15	5.5
40	1 1/2	40	—	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5
50	2	51	—	126	57	35	23	50	102.5	66	72.5	10	3	12	159	18	30	9	15	6.5
65	2 1/2	65	58	133	81	55	30	70	126	72	85	13	3	16	200	24	48	9	6	9
80	3	78	68.5	152	81	55	30	70	140	85	94	13	3	19	240	24	55	11	7	9
100	4	100	90	210	116	70	40	102	178	110	126	16	3	23	300	34	65	11	8	11

Nominal Size	Flanged End											Socket End								Threaded End										
	JIS 5K				JIS 10K				L			PVC, C-PVC				PP				PVDF				L						
	D	C	n	h	D	C	n	h	PVC C-PVC	PP	PVDF	t	d <sub>1</sub>	ℓ	1/T	L	d <sub>1</sub>	d <sub>1</sub> '	ℓ	L	d <sub>1</sub>	d <sub>1</sub> '	ℓ	L	d <sub>2</sub>	ℓ	PVC C-PVC	PP	PVDF	
mm	inch																													
15	1/2	80	60	4	12	95	70	4	15	143	143	143	12	22.11	20	1/34	108	21.2	20.2	20	108	21.50	21.30	20	108	Rc1/2	15	102	100	100
20	3/4	85	65	4	12	100	75	4	15	172	172	172	14	26.13	24	1/34	128	26.2	25.2	23	126	25.50	25.30	22	124	Rc3/4	17	120	119	119
25	1	95	75	4	12	125	90	4	19	187	187	187	14	32.16	27	1/34	145	33.0	32.0	25	141	31.50	31.30	24	139	Rc1	20	131	130	130
32	1 1/4	115	90	4	15	135	100	4	19	190	190	190	16	38.19	30	1/34	162	—	—	—	—	37.45	37.20	25	152	Rc1 1/4	22	150	146	146
40	1 1/2	120	95	4	15	140	105	4	19	212	212	212	16	48.21	37	1/37	189	47.0	46.0	28	171	47.45	47.20	28	171	Rc1 1/2	25	163	160	160
50	2	130	105	4	15	155	120	4	19	234	234	234	16	60.25	42	1/37	220	59.0	58.0	28	192	59.45	59.10	30	196	Rc2	28	197	194	194
65	2 1/2	155	130	4	15	175	140	4	19	261	257	256	18	76.60	61	1/48	273	75.0	73.0	35	219	75.25	74.95	33	214	Rc2 1/2	32	215	213	212
80	3	180	145	4	19	185	150	8	19	306	305	302	18	89.60	64	1/49	316	88.0	86.0	35	257	88.00	87.65	36	256	Rc3	35	265	264	261
100	4	200	165	8	19	210	175	8	19	374	374	369	18	114.70	84	1/56	419	113.0	111.0	45	341	113.05	112.65	41	328	Rc4	45	362	362	357

TRUE UNION DIAPHRAGM VALVE TYPE 14  
BALL VALVE TYPE 21  
PANEL MOUNTING  
LAB COCK  
HP-PVC PIPES & FITTINGS  
HP-PVC FITTINGS  
AV PREFAB JOINT  
AV FLANGE  
MULTI-JOINT  
AV GASKET

DIN																				Unit:mm
Nominal Size	d	d'	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	C <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	e	
	mm	inch																		
10	3/8	13	—	46	—	—	—	43.5	—	—	—	—	—	80	—	—	—	—	—	—
15	1/2	15	—	48	42	25	13.5	36	51.5	29	30	6	3	8	92	10.5	19	7.3	11	5.5
20	3/4	20	—	60	42	25	15	36	59.5	35	36.5	6	3	10	100	11	19	7.3	11	5.5
25	1	25	—	70	42	25	15	36	68	39	43.5	6	3	10	110	11	19	7.3	11	5.5
32	1 1/4	32	—	82	48	30	19	42	80.5	47	52.5	8	3	10	121	15	30	9	15	5.5
40	1 1/2	40	—	100	57	35	23	50	89	55	61	10	3	12	131	18	30	9	15	6.5
50	2	51	—	126	57	35	23	50	102.5	66	72.5	10	3	12	159	18	30	9	15	6.5
65	2 1/2	65	58	133	81	55	30	70	126	72	85	13	3	16	200	24	48	9	6	9
80	3	78	68.5	152	81	55	30	70	140	85	94	13	3	19	240	24	55	11	7	9
100	4	100	90	210	116	70	40	102	178	110	126	16	3	23	300	34	65	11	8	11

Nominal Size	Flanged End								Socket End						Threaded End				Spigot End												
	DIN PN10								PVC, C-PVC			PP, PVDF			L		PVC		PP, PVDF		L										
	D	C	n	h	PVC, C-PVC	PP	PVDF	t	d <sub>1</sub>	ℓ	L	d <sub>1</sub>	d <sub>1</sub> '	ℓ	L	d <sub>2</sub>	ℓ	PVC, C-PVC	PP	PVDF	d <sub>3</sub>	d <sub>3</sub> '	ℓ	d <sub>3</sub>	ℓ	t	PP	PVDF	PP	PVDF	
10	3/8	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	1/2	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	3/4	105	75	4	14	150	150	150	14	25	19	120	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	1	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	1 1/4	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	1 1/2	150	110	4	18	200	200	200	16	50	31	163	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	2	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	2 1/2	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	3	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	4	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
Nominal Size	d	d'	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	C <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	e	
	inch	mm																		
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

Nominal Size	Flanged End								Socket End (IPS)						Threaded End											
	ANSI CLASS 150				L				PVC, C-PVC			PP, PVDF			L		PVC		PP, PVDF		L					
	D	C	n	h	PVC, C-PVC	PP	PVDF	t	ASTM SCH40	ASTM SCH80	L	d <sub>1</sub>	d <sub>1</sub> '	ℓ	L	d <sub>1</sub>	ℓ	PP	PVDF	d <sub>2</sub>	ℓ	PVC, C-PVC	PP	PVDF		
1/2	15	3.50	2.38	4	0.62	5.63	5.63	5.63	0.47	—	—	—	—	0.848	0.836	0.875	4.45	0.83	0.87	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	—	—	—	—	1.058	1.046	1.000	5.08	1.03	1.00	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	—	—	—	—	1.325	1.310	1.125	5.75	1.30	1.13	5.75	5.75	1-11 1/2 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	—	—	—	—	1.670	1.655	1.250	6.46	1.65	1.25	6.46	6.46	1 1/4-11 1/2 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	—	—	—	—	1.912	1.894	1.375	7.24	1.89	1.37	7.24	7.24	1 1/2-11 1/2 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	—	—	—	—	2.387	2.369	1.500	8.23	2.36	1.50	8.23	8.23	2-11 1/2 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	—	—	—	—	2.889	2.868	1.750	9.45	2.880	1.752	9.37	9.33	1/2-8 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	—	—	—	—	3.516	3.492	1.875	11.14	3.480	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	4.518	4.491	2.000	13.86	—	—	—	—	4.480	2.252	14.37	14.13	4-8 NPT	1.77	14.25	14.25	14.06

Note : Pay attention that the following chemicals such as Hydrgen Peroxide (H<sub>2</sub>O<sub>2</sub>) and Sodium hypochlorite (NaClO) are adapt to be occurred the abnormal pressure rising due to their vaporization nature.

# Panel Mounting

<b>● Diaphragm Valve Type14</b>	15mm - 50mm(1/2inch - 2inch)
<b>● Ball Valve Type21</b>	15mm - 100mm(1/2inch - 4inch)

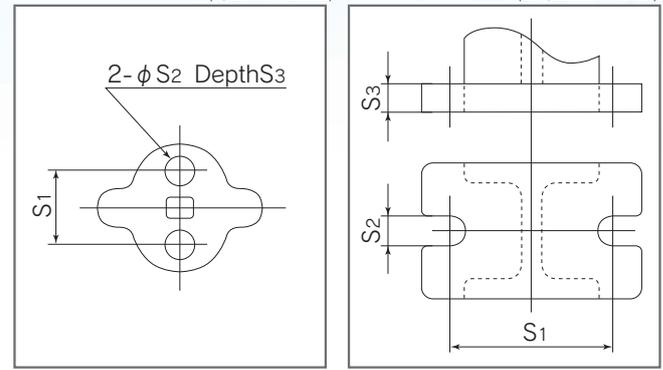
## Proceduce

Refer to the User's Manual for Metal Insert (Ensat) by the Maker.

## Bottom Stand Dimension

Diaphragm Valve Type14		Unit:mm(inch)		
Nominal Size mm (inch)	S1	S2	S3	
15mm - 32mm (1/2 - 1 1/4)	25 (0.98)	7 (0.28)	13 (0.51)	
40mm, 50mm (1 1/2, 2)	45 (1.8)	9 (0.35)	15 (0.59)	

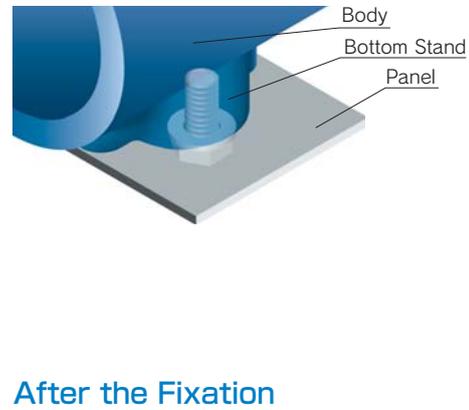
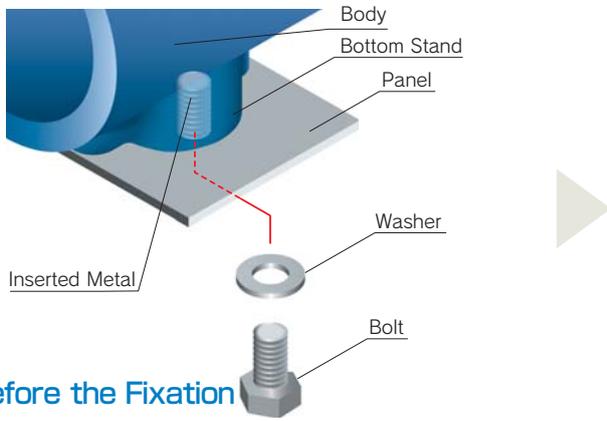
Diaphragm Valve Type14: 15mm - 50mm (1/2inch - 2inch)  
 Ball Valve Type21: 15mm - 50mm (1/2inch - 2inch)  
 Ball Valve Type21: 65mm - 100mm (2 1/2inch - 4inch)



Ball Valve Type21		Unit:mm(inch)		
Nominal Size mm (inch)	S1	S2	S3	
15mm - 25mm (1/2 - 1)	19 (0.75)	7.3 (0.29)	11 (0.43)	
32mm - 50mm (1 1/4 - 2)	30 (1.18)	9 (0.35)	15 (0.59)	
65mm (2 1/2)	48 (1.89)	9 (0.35)	6 (0.24)	
80mm (3)	55 (2.17)	11 (0.43)	7 (0.28)	
100mm (4)	65 (2.56)	11 (0.43)	8 (0.31)	

## Fixation of Bottom Stand with Panel

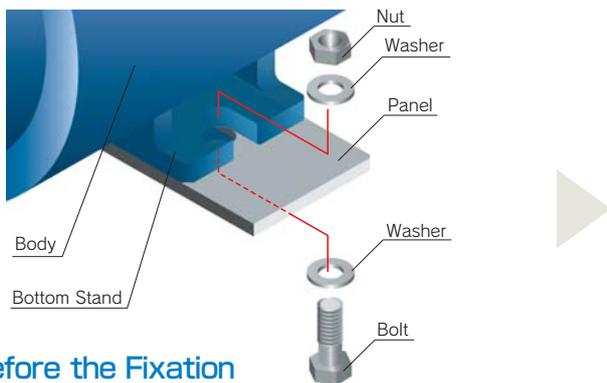
Nominal size 15 - 50mm(1/2inch - 2inch)



Before the Fixation

After the Fixation

Nominal size 65 - 100mm(2 1/2inch - 4inch)



Before the Fixation

After the Fixation

# LAB COCK



## FEATURES

The LAB COCK is a compact, light weight plastic valve which is highly corrosion-resistant, in durable.

### NSF Product

NSF("NSF/ANSI STANDARD 61" Drinking Water System Components-Health Effects)Product.

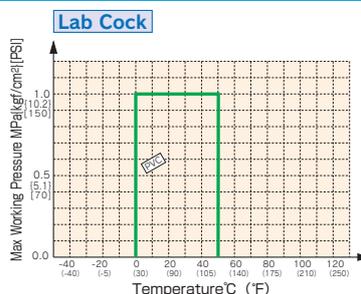
:LAB COCK(Material:PVC+EPDM)

\*Certified products bear an NSF Certification Mark.

## MATERIAL AND WORKING TEMPERATURE

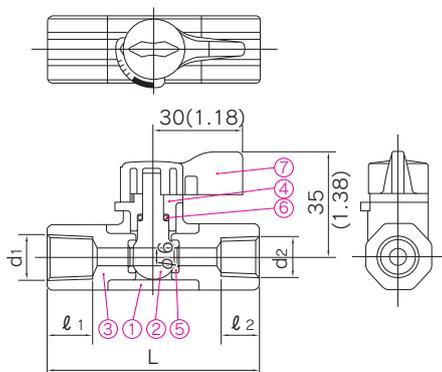
Body material	Unplasticized Polyvinyl Chloride(PVC)
Working Temperature	0°C - 50°C (30° F - 120° F)
Max.Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI]
End Connectors	Hose, Male thread, Female thread
Nominal Size	●Hose:12 to 15mm(standard hose inner diameter) ●Male thread:1/4,1/2 ●Female thread:1/4,3/8

## WORKING PRESSURE VS. TEMPERATURE

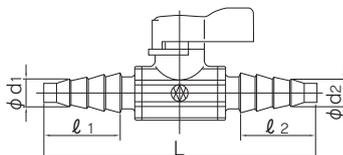


## DIMENSION

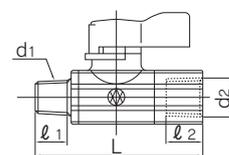
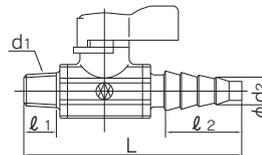
### FEMALE THREAD × FEMALE THREAD



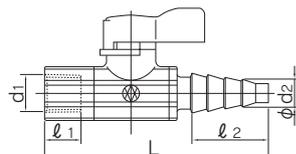
### HOSE × HOSE



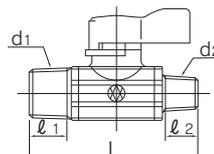
### MALE THREAD × HOSE



### FEMALE THREAD × HOSE



### MALE THREAD × MALE THREAD



## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC
②	BALL & STEM	1	PVC
③	END CONNECTOR	2	PVC
④	GLAND	1	PVC
⑤	SEAT	2	EPDM, PTFE, others
⑥	O-RING	1	EPDM, others
⑦	HANDLE	1	ABS

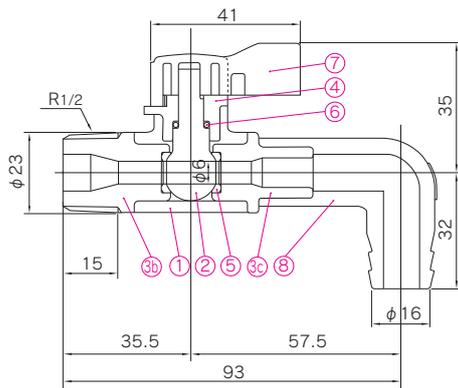
## DIMENSIONS TABLE

JIS						Unit:mm					
	d <sub>1</sub>	d <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	L	d <sub>1</sub>	d <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	L	
FEMALE THREAD × FEMALE THREAD	Rc 1/4	Rc 1/4	15	15	71	MALE THREAD × HOSE	R 1/4	10	13	30.5	88.5
	Rc 3/8	Rc 1/4	15	15	71		R 1/2	10	15	30.5	91
	Rc 3/8	Rc 3/8	15	15	71		R 1/4	R 1/4	13	13	66
HOSE × HOSE	10	10	30.5	30.5	111	MALE THREAD × MALE THREAD	R 1/2	R 1/4	15	13	68.5
FEMALE THREAD × HOSE	Rc 1/4	10	15	30.5	91		R 1/2	R 1/2	15	15	71
	Rc 3/8	10	15	30.5	91	R 1/4	Rc 1/4	13	15	68.5	
						R 1/4	Rc 3/8	13	15	68.5	
MALE THREAD × FEMALE THREAD	R 1/2	Rc 1/4	15	15	71	MALE THREAD × FEMALE THREAD	R 1/2	Rc 1/4	15	15	71
	R 1/2	Rc 3/8	15	15	71		R 1/2	Rc 3/8	15	15	71

DIN							Unit:mm						
		d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	ℓ <sub>2</sub>	L			d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	ℓ <sub>2</sub>	L
①	FEMALE THREAD × FEMALE THREAD	Rp 1/4	Rp 1/4	15	15	71	④	MALE THREAD × HOSE	R 1/4	10	13	30.5	88.5
		Rp 3/8	Rp 1/4	15	15	71			R 1/2	10	15	30.5	91
		Rp 3/8	Rp 3/8	15	15	71			R 1/4	R 1/4	13	13	66
②	HOSE × HOSE	10	10	30.5	30.5	111	⑤	MALE THREAD × MALE THREAD	R 1/2	R 1/4	15	13	68.5
③	FEMALE THREAD × HOSE	Rp 1/4	10	15	30.5	91			R 1/2	R 1/2	15	15	71
		Rp 3/8	10	15	30.5	91	R 1/4	Rp 1/4	13	15	68.5		
							⑥	MALE THREAD × FEMALE THREAD	R 1/4	Rp 3/8	13	15	68.5
									R 1/2	Rp 1/4	15	15	71
									R 1/2	Rp 3/8	15	15	71
									R 1/4	Rp 3/8	15	15	71

ANSI							Unit:inch						
		d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	ℓ <sub>2</sub>	L			d <sub>1</sub>	d <sub>2</sub>	ℓ <sub>1</sub>	ℓ <sub>2</sub>	L
①	FEMALE THREAD × FEMALE THREAD	1/4-18NPT	1/4-18NPT	0.51	0.51	2.80	④	MALE THREAD × HOSE	1/4-18NPT	0.39	0.51	1.20	3.48
		3/8-18NPT	1/4-18NPT	0.59	0.51	2.80			1/2-14NPT	0.39	0.59	1.20	3.58
		3/8-18NPT	3/8-18NPT	0.59	0.59	2.80			1/4-18NPT	1/4-18NPT	0.51	0.51	2.60
②	HOSE × HOSE	0.39	0.39	1.20	1.20	4.37	⑤	MALE THREAD × MALE THREAD	1/2-14NPT	1/4-18NPT	0.59	0.51	2.70
③	FEMALE THREAD × HOSE	1/4-18NPT	0.39	0.51	1.20	3.58			1/2-14NPT	1/2-14NPT	0.59	0.59	2.80
		3/8-18NPT	0.39	0.59	1.20	3.58	1/4-18NPT	1/4-18NPT	0.51	0.51	2.70		
							⑥	MALE THREAD × FEMALE THREAD	1/4-18NPT	3/8-18NPT	0.51	0.59	2.70
									1/2-14NPT	1/4-18NPT	0.59	0.51	2.80
									1/2-14NPT	3/8-18NPT	0.59	0.59	2.80
							⑦	MALE THREAD × ELBOW	1/2-14NPT	0.63	0.59	1.26	3.66

■ LAB COCK 1/2inch MALE THREAD × ELBOW16mm



**MATERIAL AND WORKING TEMPERATURE**

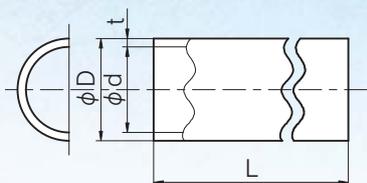
Body material	Unplasticized Polyvinyl Chloride(PVC)
Working Temperature	0°C - 50°C (30° F - 120° F)
Max.Working Pressure	1.0MPa{10.2kgf/cm <sup>2</sup> }[150PSI]
End Connectors	R1/2inch Male thread × Elbow16mm

**PARTS & MATERIALS**

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC
②	BALL & STEM	1	PVC
③	END CONNECTOR	1	PVC
④	END CONNECTOR	1	PVC
⑤	GLAND	1	PVC
⑥	SEAT	2	PTFE
⑦	O-RING	1	EPDM, Others
⑧	HANDLE	1	ABS
⑨	ELBOW	1	PVC

# HP-PVC PIPE & FITTINGS

## HP-PVC Pipe <CLASS VP:JIS K6741>



### Working Pressure with Temperature

MPa {kgf/cm<sup>2</sup>}

Nom. Size	Temp.	20°C	30°C	40°C	50°C
13mm - 300mm		1.0{10.2}	0.9{9.2}	0.7{7.1}	0.3{3.1}

Note: This data is applicable for ultrapure water.

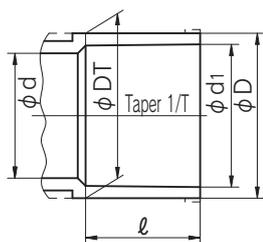
## ●HP-PVC Pipe <CLASS VP:JIS K6741> Unit:mm

Nominal Size (mm)	D			t		d	L
	Outer diameter			Wall Thickness			
	Basic Dimension (mm)	Maximum and Minimum tolerances	Average tolerances	Minimum	Tolerance		
13	18	±0.2	±0.2	2.2	+0.6	13	4,000±10
16	22	±0.2	±0.2	2.7	+0.6	16	4,000±10
20	26	±0.2	±0.2	2.7	+0.6	20	4,000±10
25	32	±0.2	±0.2	3.1	+0.8	25	4,000±10
30	38	±0.3	±0.2	3.1	+0.8	31	4,000±10
40	48	±0.3	±0.2	3.0	+0.8	40	4,000±10
50	60	±0.4	±0.2	4.1	+0.8	51	4,000±10
65	76	±0.5	±0.3	4.1	+0.8	67	4,000±10
75	89	±0.5	±0.3	5.5	+0.8	77	4,000±10
100	114	±0.6	±0.4	6.6	+1.0	100	4,000±10
125	140	±0.8	±0.5	7.0	+1.0	125	4,000±10
150	165	±1.0	±0.5	8.9	+1.4	146	4,000±10
200	216	±1.3	±0.7	10.3	+1.4	194	4,000±10
250	267	±1.6	±0.9	12.7	+1.8	240	4,000±10
300	318	±1.9	±1.0	15.1	±2.2	286	4,000±10

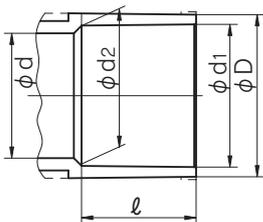
- (Note)
- The tolerances of lengths are ± 10mm.
  - The maximum and minimum tolerances on outside diameters are the tolerances on O.D. measurements taken at randomly selected spots.
  - The average tolerances on outside diameters are the tolerances on the arithmetical mean of O.D. measurements taken at randomly selected spots in two directions at a right angle to each other.

## Dimensions Common All of AV TS Socket. JIS K6743

### ▼13mm - 150mm



### ▼200mm - 300mm



### Working Pressure with Temperature

MPa {kgf/cm<sup>2</sup>}

Nom. Size	Temp.	20°C	30°C	40°C	50°C
13mm - 150mm		1.0{10.2}	0.9{9.2}	0.7{7.1}	0.3{3.1}
200mm		0.75{7.7}	0.6{6.1}	0.5{5.1}	0.25{2.6}
250mm		0.6{6.1}	0.5{5.1}	0.4{4.1}	0.2{2.0}
300mm Elbow, Reducing Socket, Socket		0.6{6.1}	0.5{5.1}	0.4{4.1}	0.2{2.1}
300mm Other Fitting		0.4{4.1}	0.4{4.1}	0.3{3.1}	0.1{1.1}

Note: This data is applicable for ultrapure water.

## ●Dimensions Common All of AV TS Socket. JIS K6743 Unit:mm

Nominal Size (mm)	d <sub>1</sub>	Tolerance on d <sub>1</sub>	d <sub>2</sub>	ℓ	1/T	D	DT	Tolerance on D&DT	d (minimum value)	Pipe O.D.
13	18.40	±0.20	-	26	1/30	24	24.0	-0.6	13	18
16	22.40	±0.20	-	30	1/34	29	29.0	-0.7	16	22
20	26.45	±0.20	-	35	1/34	33	33.0	-0.8	20	26
25	32.55	±0.25	-	40	1/34	40	40.0	-1.0	25	32
30	38.60	±0.25	-	44	1/34	46	46.0	-1.0	31	38
40	48.70	±0.30	-	55	1/37	57	57.0	-1.2	40	48
50	60.80	±0.30	-	63	1/37	70	70.0	-1.5	51	60
※ 65	76.60	±0.30	-	61	1/48	87	88.5	-1.5	67	76
75	89.60	±0.30	-	64	1/49	102	104.5	-1.5	77	89
100	114.70	±0.30	-	84	1/56	130	133.5	-1.8	100	114
※125	140.85	±0.35	-	104	1/58	157	161.0	-1.8	125	140
150	166.00	±0.40	-	132	1/63	186	190.0	-2.0	146	165
※200	217.00	-	214.10	145	-	240	-	-	194	216
※250	268.20	-	265.00	155	-	295	-	-	247	267
※300	319.6	-	315.50	175	-	347	-	-	298	318

- (Note)
- The tolerances on ℓ are +4/-0.5mm.
  - The Nominal Size marked with ※ conform to the AV standard and the JPPFA standard.

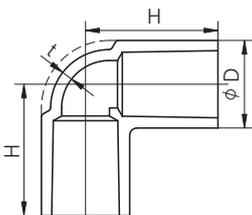
Fittings in size 200, 250mm are available on request by FRP reinforcement.

Max working pressure  
 200mm : 1.0MPa{10.2kgf/cm<sup>2</sup>} at 20°C  
 250mm : 1.0MPa{10.2kgf/cm<sup>2</sup>} at 20°C

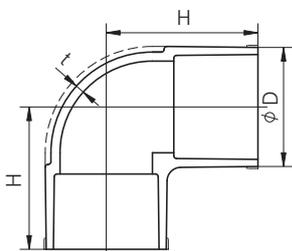
## Elbow(L)



### ▼13mm - 50mm



### ▼65mm - 300mm



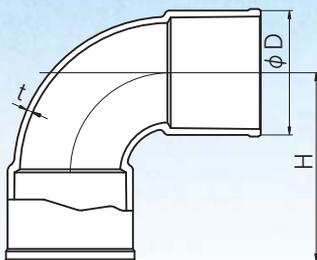
## ●Elbow(L) Unit:mm

Nominal Size (mm)	D	t	H
13	24	3.0	36
16	29	3.5	43
20	33	3.5	50
25	40	4.0	58
30	46	4.0	65
40	57	4.5	82
50	70	5.0	96
※ 65	87	6.6	110
※ 75	102	8.0	120
※ 100	130	10.0	153
※ 125	157	11.0	188
※ 150	186	13.0	230
□ 200	240	15	265
□ 250	295	16	310
300	347	18	350

- (Note)
- The tolerances on H are +5/-1mm.
  - The Nominal Size marked with ※ conform to the JPPFA standard.
  - The Nominal Size marked with □ conform to the AV standard.

# HP-PVC PIPE & FITTINGS

## 90° AV Bend

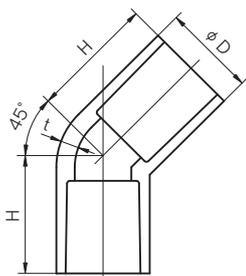


### ●90° AV Bend Unit:mm

Nominal Size(mm)	D	t	H
□ 200	240	15	341
□ 250	293	16	402
300	337	10	395

(Note)  
1.The Nominal Size marked with □ conform to the AV standard.

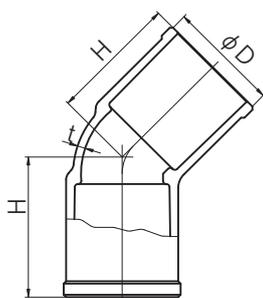
## 45° Elbow(45L)



### ●45° Elbow(45L) Unit:mm

Nominal Size(mm)	D	t	H
20	33	3.5	44
25	40	4.0	51

## 45° AV Bend



### ●45° AV Bend Unit:mm

Nominal Size(mm)	D	t	H
40	57	4.5	69
50	70	5.0	80
65	87	6.0	81
□ 75	101	6.6	97
□ 100	129	7.3	122
□ 125	156	7.7	149
□ 150	185	10.0	184
□ 200	240	15.0	193
□ 250	293	16.0	213
300	337	10.0	225

(Note)  
1.The Nominal Size marked with □ conform to the AV standard.

BALL VALVE TYPE 21

PANEL MOUNTING

LAB COCK

HP-PVC PIPES & FITTINGS

HP-PVC FITTINGS

AV PREFAB JOINT

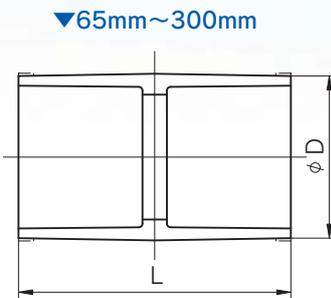
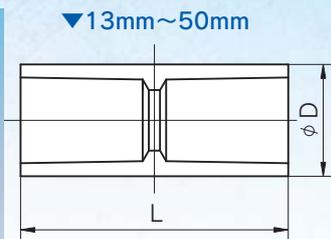
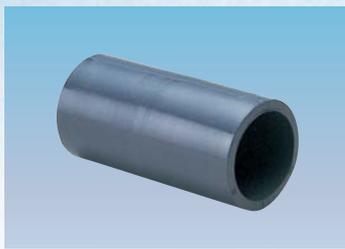
AV FLANGE

MULTI-JOINT

AV GASKET

# HP-PVC FITTINGS

## Socket(S)



### ●Socket(S)

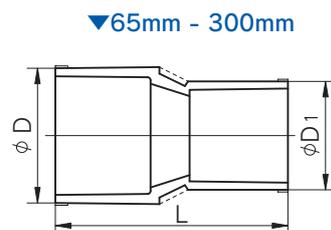
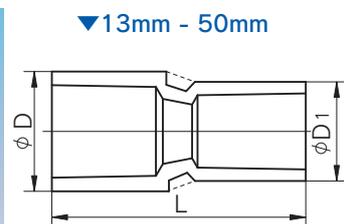
Unit:mm

Nominal Size (mm)	D	L
13	24	57
16	29	67
20	33	77
25	40	87
30	46	95
40	57	117
50	70	133
※ 65	87	145
75	102	155
100	130	200
※ 125	157	240
150	186	300
□ 200	238	305
□ 250	295	352
300	336	360

(Note)

1. The tolerances on L are ±4mm.
2. The Nominal Size marked with ※ conform to the JPPFA standard.
3. The Nominal Size marked with □ conform to the AV standard.

## Reducing Socket(RS)



### ●Reducing Socket(RS)

Unit:mm

Nominal Size (mm)	D	D1	L
20×13	33	24	68
20×16	33	29	71
25×13	40	24	86
25×16	40	29	85
25×20	40	33	84
○ 30×13	48.2	28.2	73.2
○ 30×20	48.2	36.2	83
30×25	46	40	93
※ 40×20	57	33	113
40×25	57	40	114
40×30	57	46	114
※ 50×20	70	33	116
※ 50×25	70	40	140
50×40	70	57	136
※ 65×50	87	70	149
75×50	102	70	165
※ 75×65	102	87	159
100×75	130	102	190
※ 125×100	157	130	229
※ 150×125	186	157	272
□ 200×150	240	188	356
□ 250×200	293	240	380
300×250	347	295	405

(Note)

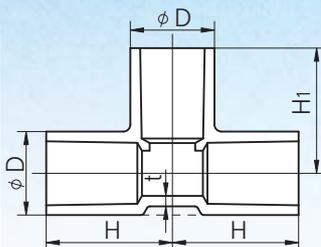
1. The tolerances on L are ±4.0mm.
2. The Nominal Size marked with ※ conform to the JPPFA standard.
3. The Nominal Size marked with □ conform to the AV standard.
4. ○ There sizes are not in accordance with JISK 6743 and therefore welding arrangement is not available.

# HP-PVC FITTINGS

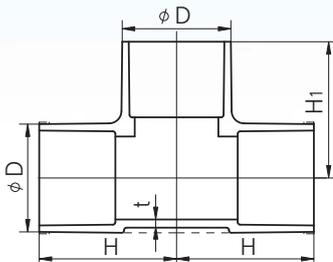
## Tee(T)



▼13mm - 50mm



▼65mm - 300mm



●Tee(T) Unit:mm

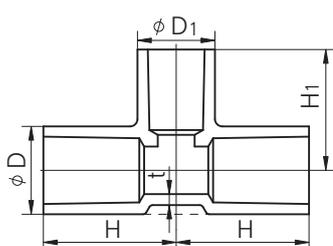
Nominal Size (mm)	D	t	H	H <sub>1</sub>
13	24	3.0	36	36
16	29	3.5	43	43
20	33	3.5	50	50
25	40	4.0	58	58
30	46	4.0	65	65
40	57	4.5	82	82
50	70	5.0	96	96
※ 65	87	6.6	110	110
75	102	8.0	120	120
100	130	10.0	152	152
※ 125	157	11.0	187	187
150	186	13.0	230	230
□ 200	240	15	266	266
□ 250	295	16	331	331
300	337	10	340	340

(Note)  
 1.The tolerances on H are +5/-1mm.  
 2.The Nominal Size marked with ※ conform to the JPPFA standard.  
 3.The Nominal Size marked with □ conform to the AV standard.

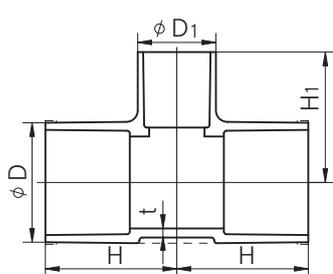
## Reducing Tee(RT)



▼13mm - 50mm



▼65mm - 300mm



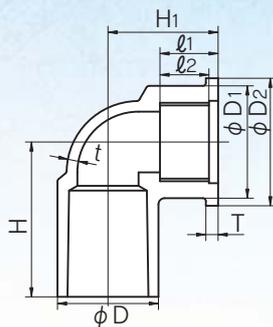
●Reducing Tee(RT) Unit:mm

Nominal Size (mm)	D	t	H	D <sub>1</sub>	H <sub>1</sub>
16× 13	29	3.5	41	24	38
20× 13	33	3.5	46	24	40
20× 16	33	3.5	48	29	45
25× 13	40	4.0	51	24	43
25× 16	40	4.0	53	29	48
25× 20	40	4.0	55	33	53
○30× 13	48.2	6.5	54.7	28.2	44
30× 16	46	4.0	57	29	51
30× 20	46	4.0	59	33	56
30× 25	46	4.0	62	40	61
40× 13	57	4.5	66	24	52
○40× 16	58.4	5.2	62.4	30.9	52.5
40× 20	57	4.5	70	33	62
40× 25	57	4.5	73	40	67
40× 30	57	4.5	76	46	71
50× 13	70	5.0	74	24	58
50× 16	70	5.0	76	29	63
50× 20	70	5.0	78	33	68
50× 25	70	5.0	81	40	73
50× 30	70	5.0	84	46	77
50× 40	70	5.0	90	57	88
※ 65× 40	87	6.6	100	57	95
※ 65× 50	87	6.6	101	70	104
75× 25	102	8.0	93	40	88
75× 40	102	8.0	100	57	102
75× 50	102	8.0	105	70	110
100× 50	130	10.0	125	75	122
100× 75	130	10.0	140	102	132
※ 125× 75	157	11.0	160	102	147
※ 125× 100	157	11.0	173	130	167
150× 75	186	13.0	195	102	158
150× 100	186	13.0	208	130	182
※ 150× 125	186	13.0	217	157	201
□ 200× 75	240	15	201	102	180
□ 200× 100	240	15	215	130	200
□ 200× 150	240	15	238	188	253
□ 250× 75	295	16	226	108	210
□ 250× 100	295	16	246	136	225
□ 250× 200	295	16	304	245	310
□ 300× 75	343	17	361	102	236

(Note)  
 1.The tolerances on H are +5/-1mm.  
 2.The Nominal Size marked with ※ conform to the JPPFA standard.  
 3.The Nominal Size marked with □ conform to the AV standard.  
 4.○ There sizes are not in accordance with JISK 6743 and therefore welding arrangement is not available.

# HP-PVC FITTINGS

## Faucet Elbow (FL)



### Faucet Elbow (FL)

Unit:mm

Nominal Size (mm)	D	t	D <sub>1</sub>	D <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	T	H	H <sub>1</sub> S形	Nominal size of female threads
□ 13	24	3.0	30	34	17	14	4	38	29	Rp1/2
□ 16	29	3.5	30	34	17	14	4	43	32	Rp1/2
□ 20	33	3.5	37	42	19	16	4	51	36	Rp3/4
□ 25	40	4.0	46	52	21	18	5	59	40	Rp1

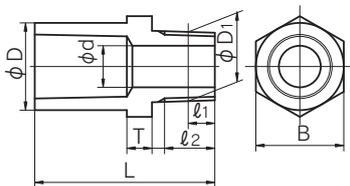
(Note)

1. The threaded portions employ parallel female threads specified in JIS B 0203 (Taper Pipe Threads).
2. The tolerances on H are +5/-2mm.
3. The tolerances on H<sub>1</sub> are +5/-2mm.
4. The Nominal Size marked with □ conform to the AV standard.
5. The tolerances on l<sub>2</sub> are ± 1mm.

#### Precautions in use

- when connecting threaded portions, use both sealing tape and gaskets jointly.
- Do not use HP-PVC Faucet Elbows to connect steel pipes and PVC pipes.
- Secure the elbows with fixtures.

## Valve Socket (VS)



### Valve Socket (VS)

Unit:mm

Nominal Size (mm)	D	d	O.D. of basic form D <sub>1</sub>	Number of threads per inch	Location of basic diameter l <sub>1</sub>	l <sub>2</sub> (Minimum)	T	L	B
13×1/2	24	13	20.955	14	8.16	13.16	6	50	24
16×1/2	29	13	20.955	14	8.20	15	6	54	29
20×3/4	33	18	26.441	14	9.53	14.53	8	64	33
25×1	40	23	33.249	11	10.39	16.79	8	71	40
30×1 1/4	46	31	41.910	11	12.70	19.10	10	80	46
40×1 1/2	57	37	47.803	11	12.70	19.10	10	92	57
50×2	70	48	59.614	11	15.88	23.38	12	106	70
□ 65×2 1/2	87	62	75.184	11	17.46	26	14	118	87
□ 75×3	102	72	87.884	11	20.64	30	16	128	102
□ 100×4	130	96	113.030	11	25.40	36	18	157	130

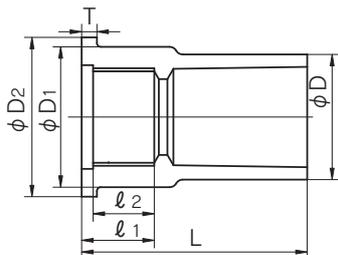
(Note)

1. The threaded portions employ parallel female threads specified in JIS B 0203 (Taper Pipe Threads).
2. The tolerances on L are +5/-2mm.
3. The Nominal Size marked with ※ conform to the JPPFA standard.
4. The Nominal Size marked with □ conform to the AV standard.

#### Precautions in use

- Do not repeat screw-in and removal.
- when connecting threaded portions, use sealing tape.

## Faucet Socket (FS)



### Faucet Socket (FS)

Unit:mm

Nominal Size (mm)	D	D <sub>1</sub>	D <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	T	L	Nominal size of female threads
□ 13	24	30	34	17	14	4	47	Rp1/2
□ 16	29	30	34	17	14	4	52	Rp1/2
□ 20	33	37	42	19	16	4	59	Rp3/4
□ 25	40	46	52	21	18	5	68	Rp1

(Note)

1. The threaded portions employ parallel female threads specified in JIS B 0203 (Taper Pipe Threads).
2. The tolerances on L are +5/-1mm.
3. The tolerances on l<sub>2</sub> are ± 1mm.
4. The Nominal Size marked with □ conform to the AV standard.

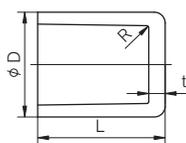
#### Precautions in use

- when connecting threaded portions, use both sealing tape and gaskets jointly.
- Do not use HP-PVC Faucet Elbows to connect steel pipes and PVC pipes.
- Secure the elbows with fixtures.

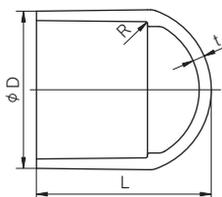
## Cap (C)



### ▼ 13mm - 50mm



### ▼ 65mm - 100mm



### Cap (C)

Unit:mm

Nominal Size (mm)	D	t	L
13	24	3.0	29.0
16	29	3.5	33.5
20	33	3.5	38.5
25	40	4.0	44.0
40	57	4.5	59.5
50	70	5.0	68.0
※ 65	87	6.6	96.0
75	102	8.0	105.0
100	130	10.0	138.0

(Note)

1. The tolerances on L are +5/-20mm.
2. The Nominal Size marked with ※ conform to the JPPFA standard.
3. R is 1 to 5mm

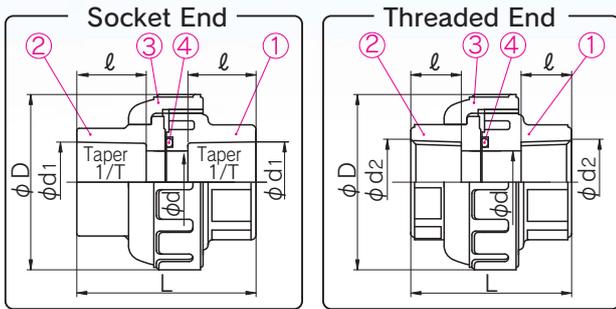
# AV PREFAB JOINT <UNION>



## SPECIFICATIONS

Material	Working temperature	Working pressure MPa{kgf/cm <sup>2</sup> }	Nominal Size (mm)	Connection
Unplasticized Polyvinyl Chloride (U-PVC)	0°C~50°C	1.0{10.2}	13~100	Socket End
			13~50	Threaded End
Chlorinated Polyvinyl Chloride (C-PVC)	0°C~90°C	1.0{10.2}	13~100	Socket End

(Note)  
For pressure limits by working temperature ranges and materials, see "WORKING PRESSURE VS. TEMPERATURE" in this catalog.



Nominal Size		d	Socket End				Threaded End			D
mm	inch		U-PVC, C-PVC				U-PVC			
			d <sub>1</sub>	ℓ	1/T	L	d <sub>1</sub>	ℓ	L	
13	3/8	13	18.13	18	1/34	46.0	RC3/8	15	43	48
16	1/2	15	22.11	20	1/34	46.0	Rc1/2	15	43	48
20	3/4	20	26.13	24	1/34	61.0	RC3/4	17	57	60
25	1	25	32.16	27	1/34	70.0	Rc1	20	63	70
30	1 1/4	31	38.19	30	1/34	77.0	Rc1 1/4	22	71	82
40	1 1/2	40	48.21	37	1/37	95.0	Rc1 1/2	25	82	100
50	2	51	60.25	42	1/37	107.0	Rc2	28	96	106
65	2 1/2	65	76.60	61	1/48	164.0	—	—	—	133
75	3	77	89.60	64	1/49	189.5	—	—	—	152
100	4	100	114.70	84	1/56	245.0	—	—	—	210

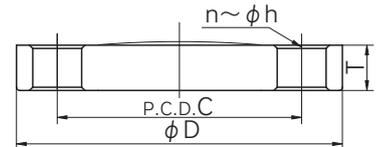
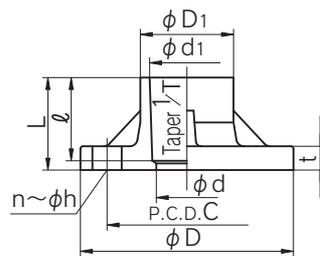
## PARTS & MATERIALS

No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	U-PVC, C-PVC
②	END CONNECTOR	1	U-PVC, C-PVC
③	UNION NUT	1	U-PVC, C-PVC
④	O-RING	1	EPDM, FKM, others

# AV FLANGE <HP-PVC>

AV TS FLANGE (JIS 10K 13mm - 300mm)

AV Q FLANGE (JIS 10K 15mm - 150mm)



※The figure described by broken (dashed) line shows shape of Q-flange applied for dead end service of piping.

Nominal Size		d	JIS 10K				d <sub>1</sub>	Taper 1/T	D <sub>1</sub>	t	T	ℓ <sup>+0.0</sup> <sub>-0.5</sub>	L
mm	inch		D	C	n	h							
13	3/8	15	90	65	4	15	18.40±0.20	1/30	25.5	14	—	26	30.0
15	1/2	18	95	70	4	15	22.40±0.20	1/34	31.0	14	12	30	35.0
20	3/4	22	100	75	4	15	26.45±0.20	1/34	35.0	15	14	35	40.0
25	1	25	125	90	4	19	32.55±0.25	1/34	42.5	15	14	40	46.0
32	1 1/4	30	135	100	4	19	38.60±0.25	1/34	48.5	16	16	44	50.5
40	1 1/2	41	140	105	4	19	48.70±0.30	1/37	60.5	16	16	55	61.5
50	2	52	155	120	4	19	60.80±0.30	1/37	73.0	20	16	63	71.0
65	2 1/2	67	175	140	4	19	76.60±0.30	1/48	90.0	22	18	61	70.0
80(75)	3	78	185	150	8	19	89.60±0.30	1/49	105.0	22	18	64	73.0
100	4	100	210	175	8	19	114.70±0.30	1/56	131.0	22	18	84	93.0
125	5	125	250	210	8	23	140.85±0.35	1/58	158.0	24	20	104	114.0
150	6	146	280	240	8	23	166.00±0.40	1/63	185.0	26	22	132	142.0
200	8	196	330	290	12	23	217.00±1.00	1/50	238.0	28	—	145	156.0
250	10	247	400	355	12	25	268.00±1.50	1/55	300.0	30	—	155	167.0
300	12	298	445	400	16	25	318.70±1.80	1/55	341.0	30	—	155	167.0

(Note)  
1. For details of AV Flanges, refer to the individual catalogs of appropriate AV Flanges.  
2. Products compliant with the clean water standard or ANSI standard are also available.

# MULTI-JOINT



## FEATURES

### High Safety Factor By A Molding

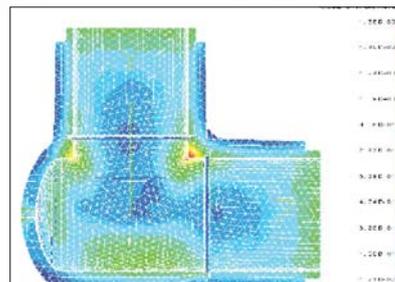
(Multi-Joint Type "L" with Female connection 40mm - 150mm) They are produced by "Injection molding" which provides customers with complete reliability and durability.

### Specifications

Types : Type "L", Type "T"  
 Sizes : 20mm - 200mm (JIS standard)  
 Connection: Both types are classified by female and socket connection respectively, which enable users to have multiple selections in connection with sensors, sampling valves, etc.

### Designed By CAE Analysis

Multi-Joint is designed in a way to optimize many factors relating to piping stress by "CAE Hydromechanical Analysis".



### High Performance

Such unique design as above gives customers not only high pressure resistance in short term but also resistance against periodic pressure change in long term. And the Multi-Joint made by machining are all passed through tough tests in our factory and then delivered to our customers.

### Chemical Resistance & High Purity

Since the material is "High Purity PVC", the "Joint" has excellent chemical resistance and extremely low leaching performance. And almost all the processes are controlled in our clean room to keep their performance as perfect as possible.



THREADED TYPE L



THREADED TYPE T



SOCKET TYPE L



SOCKET TYPE T

### THREADED Type L

Nominal Size (mm)	Rc				NPT			
	1/4	3/8	1/2	3/4	1/4	3/8	1/2	3/4
20 × 20	○	○	—	—	○	○	—	—
25 × 25	○	○	—	—	○	○	—	—
30 × 30	○	○	—	—	○	○	—	—
40 × 40	○	○	○	○	○	○	○	○
50 × 50	○	○	○	○	○	○	○	○
65 × 65	○	○	○	○	○	○	○	○
75 × 75	○	○	○	○	○	○	○	○
100 × 100	○	○	○	○	○	○	○	○
125 × 125	○	○	○	○	○	○	○	○
150 × 150	○	○	○	○	○	○	○	○
200 × 200	○	○	○	○	○	○	○	○

### THREADED Type T

Nominal Size (mm)	Rc				NPT			
	1/4	3/8	1/2	3/4	1/4	3/8	1/2	3/4
20 × 20	○	○	—	—	○	○	—	—
25 × 25	○	○	—	—	○	○	—	—
30 × 30	○	○	—	—	○	○	—	—
40 × 40	○	○	○	○	○	○	○	○
50 × 40	○	○	○	○	○	○	○	○
65 × 40	○	○	○	○	○	○	○	○
75 × 40	○	○	○	○	○	○	○	○
100 × 75	○	○	○	○	○	○	○	○
125 × 75	○	○	○	○	○	○	○	○
150 × 75	○	○	○	○	○	○	○	○
200 × 75	○	○	○	○	○	○	○	○

## SPECIFICATIONS

Body material	High purity polyvinyl chloride
End Connectors	Threaded, Socket
Nominal Size	20mm - 200mm
Working Temperature	50°C
Max. Working Pressure	1.0MPa

### SOCKET Type L · T

Nominal Size (mm)	Type	16	20	25	40	50	65	75	100	125
		40	L	○	○	○				
	T	○	●	●						
50	L	○	○	○						
	T	●	●	●						
65	L	○	○	○	○					
	T	○	○	○	●					
75	L	○	○	○	○	○				
	T	○	○	●	●	●				
100	L	○	○	○	○	○	○			
	T	○	○	○	○	●	○			
125	L	○	○	○	○	○	○	○		
	T	○	○	○	○	○	○	●		
150	L	○	○	○	○	○	○	○	○	
	T	○	○	○	○	○	○	●	●	
200	L	○	○	○	○	○	○	○	○	○
	T	○	○	○	○	○	○	●	●	○

※ ● This product can correspond with ASAHI AV TS FITTINGS.

# AV GASKET



Full face Type Rubber Gasket



PTFE coated



PVDF coated

● MATERIAL : EPDM, PTFE, PVDF, CSM, FKM, IIR, Viton F, C

## FEATURES

- AV GASKETS offer Similar sealing performance with 1/3 bolt tightening torque, compared to flat or envelope style gaskets.
- Uniform dimension, fine surface, suitable hardness.
- Long service life.
- Unique Convex Design.

## SPECIFICATIONS

Material	Working Temperature	SIZE AVAILABILITY BY STANDARD		
		JIS	ANSI	DIN
EPDM	-40°C - 90°C (-40°F - 195°F)	15mm - 350mm	1/2inch - 14inch	15mm - 350mm
PTFE	-40°C - 120°C (-40°F - 250°F)	15mm - 300mm	1/2inch - 12inch	15mm - 400mm
PVDF	-40°C - 120°C (-40°F - 250°F)	15mm - 300mm	1/2inch - 10inch *1	15mm - 300mm
VIFLON	-5°C - 150°C (-5°F - 280°F)	15mm - 200mm	-	-

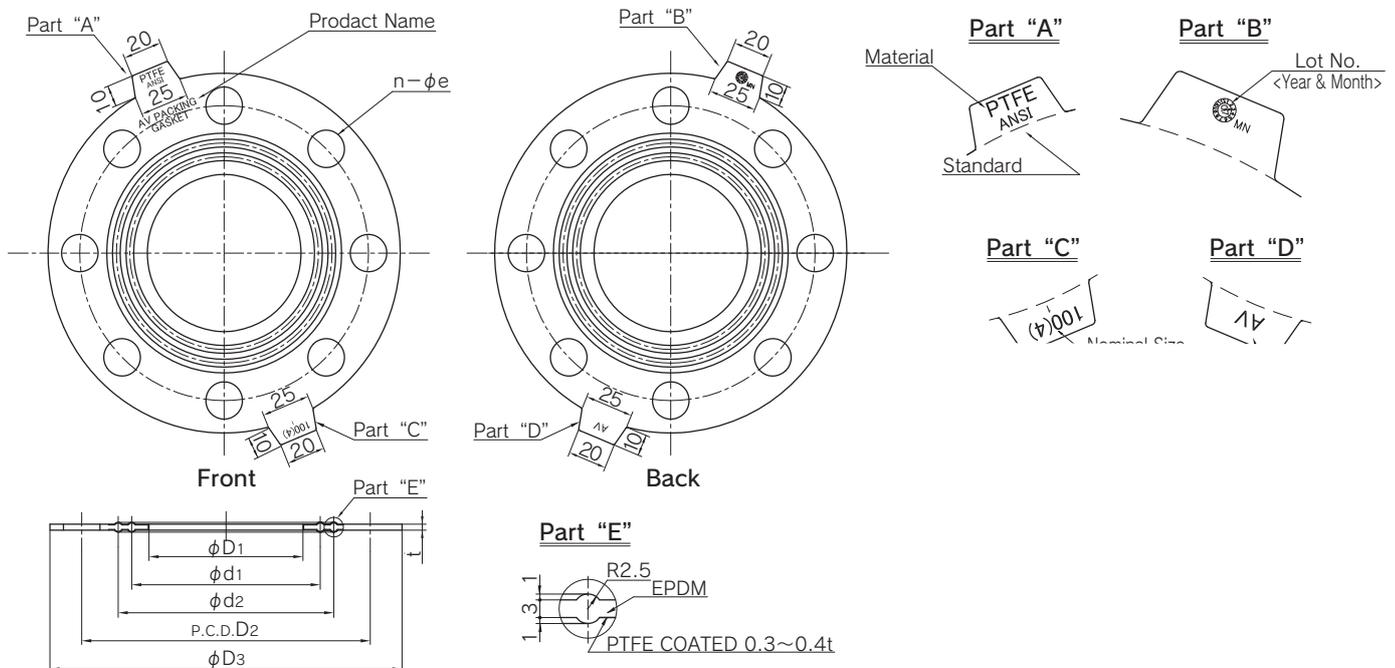
Working temperature is different depending on type of fluid.

\* 1 Except for 1 1/4inch and 2 1/2inch

Voflon-F has superior resistance to inorganic acids such as HNO<sub>3</sub>, HF and HCl.

Voflon-C has superior resistance to chlorine containing media such as Chlorine Water, NaCl and ClO<sub>2</sub>.

## DIMENSIONS



Type	Nominal Size	Thickness
PTFE	15mm(1/2inch) to 400mm(16inch)	0.3-0.4mm(0.012-0.016inch)
PVDF	15mm(1/2inch) to 65mm(2 1/2inch) 80mm(3inch) to 300mm(12inch)	0.4-0.5mm(0.016-0.020inch)

**DIMENSIONS TABLE**

Full-Face Type (JIS 10K)									
									Unit:mm
Nominal Size		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	n	e	d <sub>1</sub>	d <sub>2</sub>	
mm	inch								
13	3/8	15	65	88	4	15	22	37	
15	1/2	18	70	93	4	15	26	41	
20	3/4	22	75	98	4	15	32	47	
25	1	30	90	123	4	19	38	53	
32	1 1/4	37	100	133	4	19	50	65	
40	1 1/2	43	105	138	4	19	54	69	
50	2	54	120	153	4	19	68	83	
65	2 1/2	69	140	173	4	19	86	101	
80(75)	3	80	150	183	8	19	98	112	
100	4	102	175	208	8	19	120	138	
125	5	127	210	248	8	23	145	166	
150	6	150	240	278	8	23	168	190	
200	8	198	290	328	12	23	216	247	
250	10	249	355	398	12	25	270	306	
300	12	300	400	443	16	25	324	352	
350	14	350	445	488	16	25	370	390	

**RECOMMENDED TIGHTENING TORQUE with Flat Face Flange and regular sus Bolt <ALL MATERIALS / FULL FACE TYPE>**

mm(inch)	N·m	FT-LB	mm(inch)	N·m	FT-LB	mm(inch)	N·m	FT-LB
15 (1/2)	17.5	13	65 (2 1/2)	22.5	16	200 (8)	55	40
20 (3/4)	17.5	13	80 (3)	30	22	250(10)	55	40
25 (1)	20	14	100(4)	30	22	300(12)	60	43
40 (1 1/2)	20	14	125(5)	40	29	350(14)	60	43
50 (2)	22.5	16	150(6)	45	32	400(16)	80	58

# **ASAHI VALVE AND PIPING SYSTEMS**

## **ASAHI AV**

### **AV PIPE & FITTINGS**

#### **FRP-REINFORCED COMPOSITE PVC**

The specifications in this brochure are subject to change without prior notice due to improvements and modifications.

#### **Asahi AV AV Pipe & Fittings**

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# AV PIPE & FITTINGS

FRP-REINFORCED COMPOSITE PVC

## INFORMATION

As an all-around maker of plastic piping materials, Asahi Organic Chemicals Industry has been developing and marketing AV Pipes since 1963. As PVC pipes whose external surfaces are reinforced with FRP, AV Pipes have been enjoying great popularity.

With the rapid advance of chemical technologies, piping conditions at various types of plants are becoming increasingly sophisticated. Pipes are required to withstand higher temperature and highly corrosive chemicals are used more frequently. To meet these needs, we have made improvements to our products for many years. And we now produce AV pipes that are capable of service at temperature up to 95°C with higher durability, safety, and reliability to satisfy diverse needs of the customers.

We hope you will favor our AV Pipes, AV valves and Vinyl Pipes with your continued patronage for your piping needs in various fields.

## Features

### 1. Excellent chemical resistance

Since the inner anticorrosion layer is made of rigid PVC, AV Pipes excel in corrosion resistance and are ideally suited for plants that handle acids, alkalis, and halogens.

### 2. Great mechanical strength

Since the external surfaces are reinforced with FRP, AV Pipes have great pressure resistance and excellent impact resistance.

### 3. Good heat resistance

Since the external surfaces are reinforced with FRP, AV Pipes are capable of long service at high temperature.

### 4. Low coefficient of expansion

Since the PVC and FRP are integrated by special technology, the adhesive strength between the PVC and FRP is high, making the coefficient of linear expansion 1/2 that of PVC.

### 5. No worry about external or electrolytic corrosion

Since the external layer employs FRP, AV Pipe can be used without anxiety even under corrosive environments. Besides, it is a perfect insulator, eliminating any worry about electrolytic corrosion.

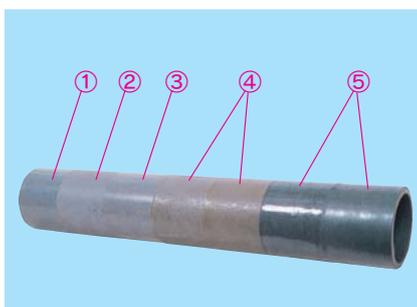
### 6. Lightweight

Made of plastic, AV Pipe is far lighter than metal pipes, which makes piping work at high elevations easier.

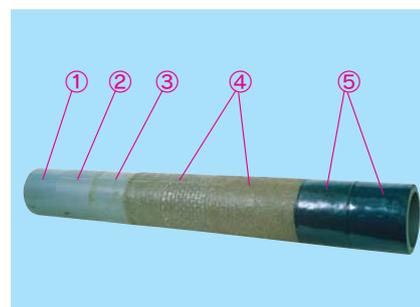
### 7. Ease of installation

TS joining of PVC can be used for on-site installation. FRP lamination can be formed easily at the junctions.

## Structure



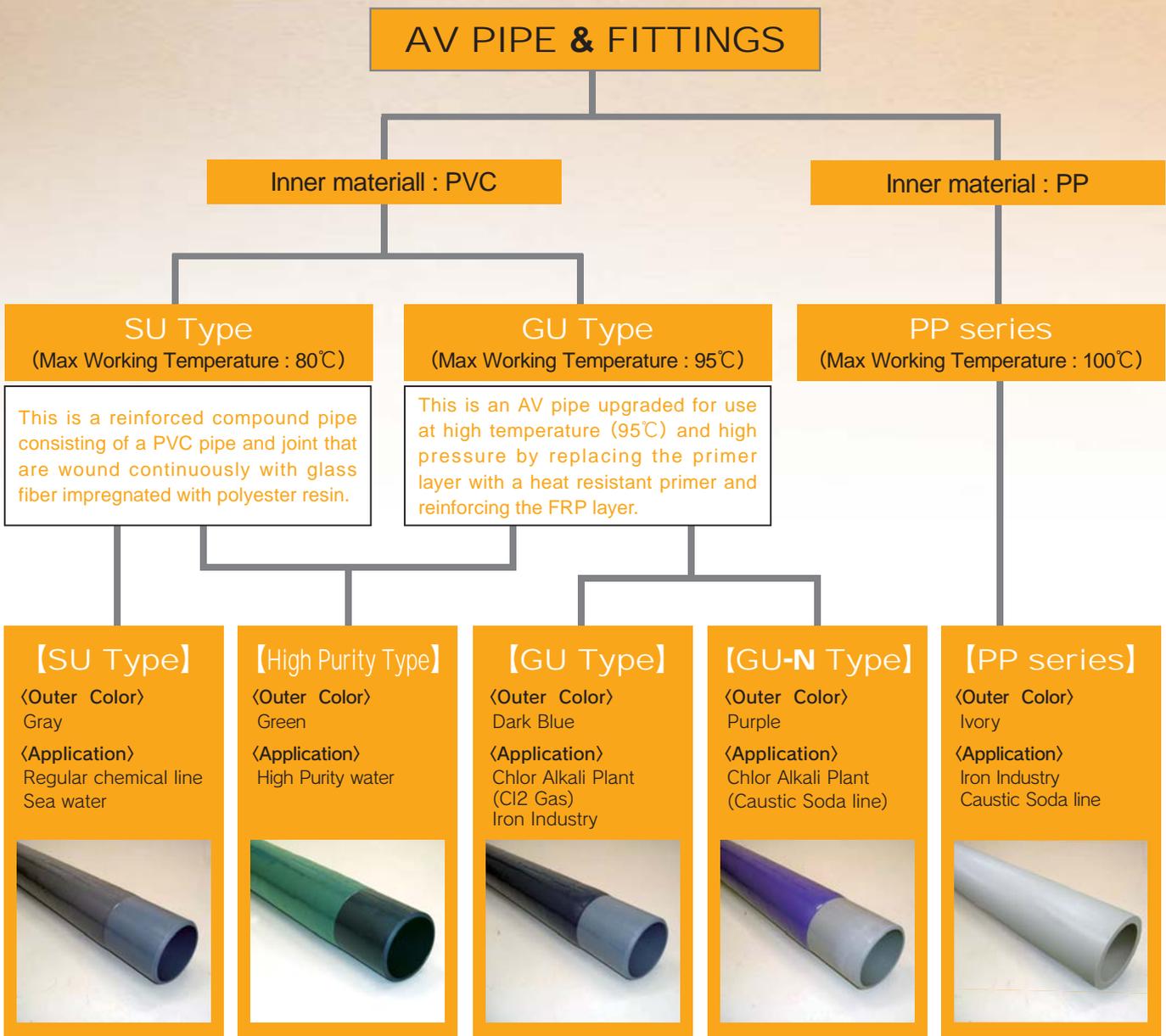
AV Pipe (SU type)



AV Pipe (GU type)

- (1) **Rigid PVC pipe**  
The residual stress in the pipe has been removed by a special method unique to AV Pipes.
- (2) **Surface-treated portion**  
The surfaces of the pipe have been treated specially to enhance the adhesive effect of the primer.
- (3) **Special primer**  
A special primer is used to bond the rigid PVC pipe and FRP layer.
- (4) **FRP layer**  
A reinforced layer consisting of a lamination of glass fiber impregnated with polyester resin.
- (5) **Finished surface layer**  
A layer finished with anticorrosion polyester resin.

## Types



※Color is changable on customer's requests.

※Applicable sizes are different in types.

## Special Fabrication on Customer's Request

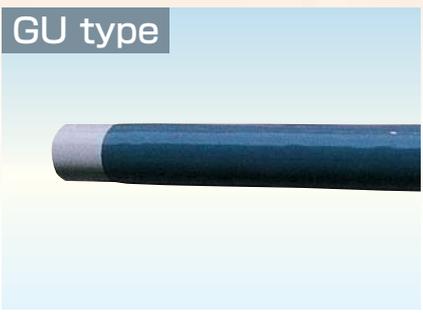
※PP+FRP piping system can be provided by only fabrication.



# Standard

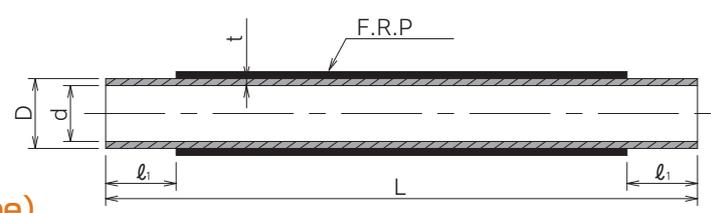
## ■ Pipe (Plane end type)

(Unit : mm)



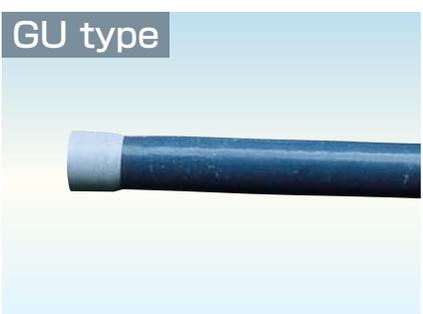
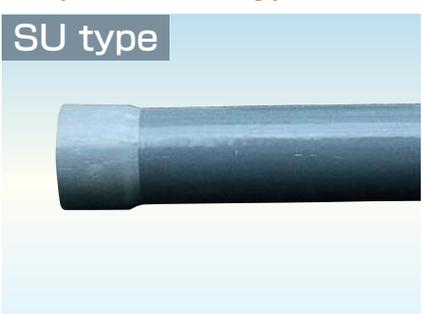
Size		L	ℓ <sub>1</sub>	D	d	t
mm	inch					
13	3/8	4000	45	18	13	2.5
15	1/2	4000	50	22	16	3.0
20	3/4	4000	55	26	20	3.0
25	1	4000	60	32	25	3.5
30	1 1/4	4000	65	38	31	3.5
40	1 1/2	4000	80	48	40	4.0
50	2	4000	90	60	51	4.5
65	2 1/2	4000	95	76	67	4.5
75	3	4000	100	89	77	6.0
100	4	4000	120	114	100	7.0
125	5	4000	150	140	125	7.5
150	6	4000	180	165	146	9.5
200	8	4000	190	216	196	10.0
250	10	4000	200	267	247	10.0
* 300(SU)	12	4000	200	318	298	10.0
* 300(GU)	12	4000	200	318	286	16.0
350	14	4000	330	370	347	11.5
400	16	4000	370	420	394	13.0
450	18	4000	400	470	441	14.5
500	20	4000	410	520	488	16.0
600	24	4000	480	630	592	19.0

Note: The dimensions of "d" and "t" are different between "SU Type" and "GU Type" at nominal size 300mm.



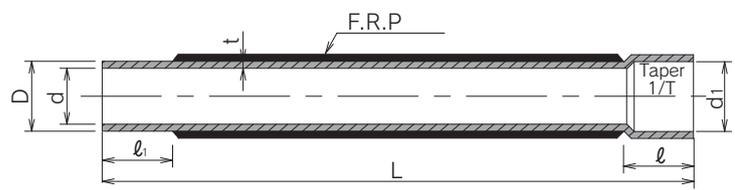
## ■ Pipe (Sleeve type)

(Unit : mm)



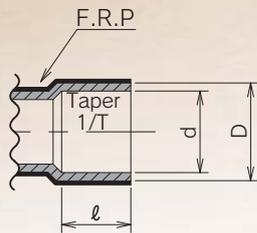
Size		L	ℓ <sub>1</sub>	ℓ	d <sub>1</sub>	1/T	D	d	t
mm	inch								
13	3/8	4000	45	26	18.40	1/30	18	13	2.5
15	1/2	4000	50	30	22.40	1/34	22	16	3.0
20	3/4	4000	55	35	26.45	1/34	26	20	3.0
25	1	4000	60	40	32.55	1/34	32	25	3.5
30	1 1/4	4000	65	44	38.60	1/34	38	31	3.5
40	1 1/2	4000	80	55	48.70	1/37	48	40	4.0
50	2	4000	90	63	60.80	1/37	60	51	4.5
65	2 1/2	4000	95	61	76.60	1/48	76	67	4.5
75	3	4000	100	64	89.60	1/49	89	77	6.0
100	4	4000	120	84	114.70	1/56	114	100	7.0
125	5	4000	150	104	140.80	1/58	140	125	7.5
150	6	4000	180	132	166.00	1/63	165	146	9.5
200	8	4000	190	145	217.00	1/50	216	196	10.0
250	10	4000	200	155	267.70	1/55	267	247	10.0
* 300(SU)	12	4000	200	155	318.70	1/55	318	298	10.0
* 300(GU)	12	4000	200	155	318.70	1/55	318	286	16.0
350	14	4000	330	280	373.00	1/43	370	347	11.5
400	16	4000	370	320	423.00	1/48	420	394	13.0
450	18	4000	400	350	474.00	1/45	470	441	14.5
500	20	4000	410	350	524.50	1/50	520	488	16.0
600	24	4000	480	410	630.00	—	630	592	19.0

Note: The dimensions of "d" and "t" are different between "SU Type" and "GU Type" at nominal size 300mm.



## Common Dimensions for AV-TS Fittings

(Unit : mm)



Size		D	d	l	1/T
mm	inch				
13	3/8	24	18.40	26	1/30
15	1/2	29	22.40	30	1/34
20	3/4	33	26.45	35	1/34
25	1	40	32.55	40	1/34
30	1 1/4	46	38.60	44	1/34
40	1 1/2	57	48.70	55	1/37
50	2	70	60.80	63	1/37
65	2 1/2	87	76.60	61	1/48
75	3	102	89.60	64	1/49
100	4	130	114.70	84	1/56
125	5	157	140.80	104	1/58
150	6	186	166.00	132	1/63
200	8	236	217.00	145	1/50
250	10	287	267.70	155	1/55
300	12	337	318.70	155	1/55

Note: The  $l$  dimensions of some fittings differ. Please refer to individual dimension table for each fittings.

## Elbow(90°), Bend(90°)

## SU type



Elbow

## GU type



Elbow

## SU type



Bend

## GU type

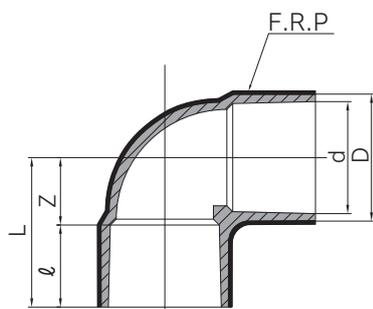


Bend

## Elbow

(Unit : mm)

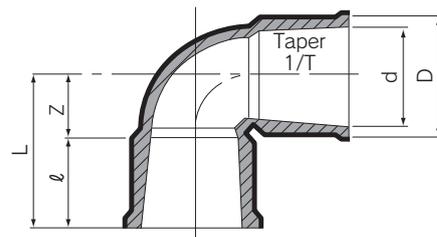
Size		L	l	Z	D	d
mm	inch					
13	3/8	36	26	10	24	18.40
15	1/2	43	30	13	29	22.40
20	3/4	50	35	15	33	26.45
25	1	58	40	18	40	32.55
30	1 1/4	65	44	21	46	38.60
40	1 1/2	82	55	27	57	48.70
50	2	96	63	33	70	60.80
65	2 1/2	110	61	49	87	76.60
75	3	120	64	56	102	89.60
100	4	153	84	69	130	114.70
125	5	187	104	83	157	140.80
150	6	230	132	98	186	166.00
200	8	265	145	120	240	217.00
250	10	280	140	140	287	267.00



## Bend

(Unit : mm)

Size		L	l	Z	D	d
mm	inch					
75	3	137	72	65	101	89.80
100	4	172	92	80	129	115.00
125	5	237	112	125	156	141.20
150	6	260	140	120	185	166.50
200	8	341	145	196	236	217.00
250	10	402	155	247	287	267.00
300	12	385	155	230	337	318.00



Elbow, Bend (45°)

SU type



GU type



Elbow 20~25mm

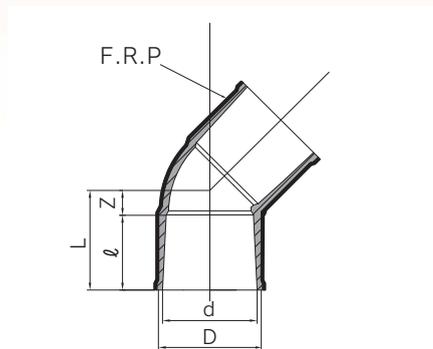
(Unit : mm)

Size		L	ℓ	Z	D	d
mm	inch					
20	3/4	44	35	9	33	26.45
25	1	51	40	11	40	32.55

Bend 40~300mm

(Unit : mm)

Size		L	ℓ	Z	D	d
mm	inch					
40	1 1/2	69	55	14	57	48.70
50	2	80	63	17	70	60.80
65	2 1/2	81	61	20	87	76.60
75	3	97	72	25	101	89.80
100	4	122	92	30	129	115.00
125	5	149	112	37	156	141.20
150	6	184	140	44	185	166.50
200	8	196	145	51	240	217.00
250	10	213	155	58	287	267.00
300	12	225	155	70	337	318.00



Tee

SU type

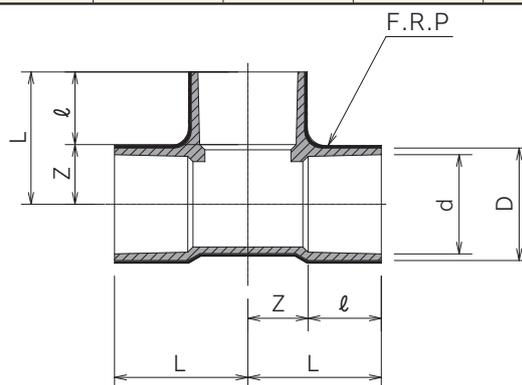


GU type



(Unit : mm)

Size		L	ℓ	Z	D	d
mm	inch					
13	3/8	36	26	10	24	18.40
15	1/2	43	30	13	29	22.40
20	3/4	50	35	15	33	26.45
25	1	58	40	18	40	32.55
30	1 1/4	65	44	21	46	38.60
40	1 1/2	82	55	27	57	48.70
50	2	96	63	33	70	60.80
65	2 1/2	110	61	49	87	76.60
75	3	120	64	56	102	89.60
100	4	152	84	68	130	114.70
125	5	187	104	83	157	140.80
150	6	230	132	98	166	166.00
200	8	266	145	121	240	217.00
250	10	295	155	140	287	267.70
300	12	340	175	165	337	318.70



## Reducing Tee

(Unit : mm)

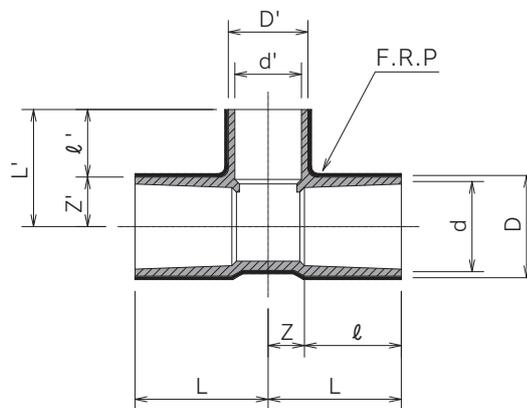
### SU type



### GU type



Size			L	ℓ	Z	D	d	L'	ℓ'	Z'	D'	d'
mm	inch											
15x 13	1/2x3/8		41	30	11	29	22.40	38	26	12	24	18.40
20x 13	3/4x3/8		46	35	11	33	26.45	40	26	14	24	18.40
20x 15	3/4x1/2		48	35	13	33	26.45	45	30	15	29	22.40
25x 13	1x3/8		51	40	11	40	32.55	43	26	17	24	18.40
25x 15	1x1/2		53	40	13	40	32.55	48	30	18	29	22.40
25x 20	1x3/4		55	40	15	40	32.55	53	35	18	33	26.45
30x 13	1 1/4x3/8		55	44	11	46	38.60	46	26	20	24	18.40
30x 15	1 1/4x1/2		57	44	13	46	38.60	51	30	21	29	22.40
30x 20	1 1/4x3/4		59	44	15	46	38.60	56	35	21	33	26.45
30x 25	1 1/4x1		62	44	18	46	38.60	61	40	21	40	32.55
40x 13	1 1/2x3/8		66	55	11	57	48.70	52	26	26	24	18.40
40x 15	1 1/2x1/2		68	55	13	57	48.70	57	30	27	29	22.40
40x 20	1 1/2x3/4		70	55	15	57	48.70	62	35	27	33	26.45
40x 25	1 1/2x1		73	55	18	57	48.70	67	40	27	40	32.55
40x 30	1 1/2x1 1/4		76	55	21	57	48.70	71	44	27	46	38.60
50x 13	2x3/8		74	63	11	70	60.80	58	26	32	24	18.40
50x 15	2x1/2		76	63	13	70	60.80	63	30	33	29	22.40
50x 20	2x3/4		78	63	15	70	60.80	68	35	33	33	26.45
50x 25	2x1		81	63	18	70	60.80	73	40	33	40	32.55
50x 30	2x1 1/4		84	63	21	70	60.80	77	44	33	46	38.60
50x 40	2x1 1/2		90	63	27	70	60.80	88	55	33	57	48.70
65x 40	2 1/2x1 1/2		100	61	39	87	76.60	95	55	40	57	48.70
65x 50	2 1/2x2		101	61	40	87	76.60	104	63	41	70	60.80
75x 25	3x1		93	64	29	102	89.6	88	40	48	40	32.55
75x 40	3x1 1/2		100	64	36	102	89.6	102	55	47	57	48.70
75x 50	3x2		105	64	41	102	89.6	110	63	47	70	60.80
75x 65	3x2 1/2		113	64	49	102	89.6	117	61	56	87	76.60
100x 50	4x2		125	84	41	130	114.7	122	63	59	70	60.80
100x 75	4x3		140	84	56	130	114.7	132	64	68	102	89.60
125x100	5x4		173	104	69	157	140.8	167	84	83	130	114.70
150x 75	6x3		195	132	63	186	166.0	158	64	94	102	89.60
150x100	6x4		208	132	76	186	166.0	182	84	98	130	114.70
150x125	6x5		217	132	85	186	166.0	201	104	97	157	140.80
200x 75	8x3		201	145	56	240	217.0	180	64	116	102	89.60
200x100	8x4		215	145	70	240	217.0	200	84	116	130	114.70
200x150	8x6		238	145	93	240	217.0	253	132	121	186	166.00
250x 75	10x3		227	155	72	295	269.3	213	65	148	108	89.60
250x100	10x4		246.5	155	91.5	295	269.3	226	84	142	136	114.70
250x200	10x8		305	155	150	295	269.3	310	146.5	163.5	246	217.90
300x 75	12x3		361	300	60	343	320.7	236	64	172	102	89.60



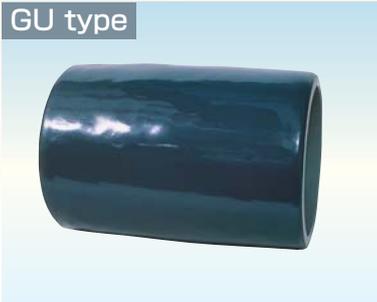
Socket

(Unit : mm)

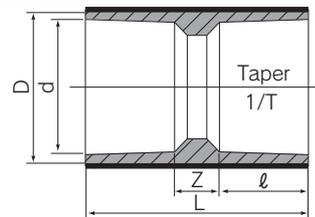
SU type



GU type



Size		L	ℓ	Z	D	d
mm	inch					
13	3/8	57	26	5	24	18.40
15	1/2	67	30	7	29	22.40
20	3/4	77	35	7	33	26.45
25	1	87	40	7	40	32.55
30	1 1/4	95	44	7	46	38.60
40	1 1/2	117	55	7	57	48.70
50	2	133	63	7	70	60.80
65	2 1/2	145	61	23	87	76.60
75	3	155	64	27	102	89.60
100	4	200	84	32	130	114.70
125	5	231	104	23	157	140.80
150	6	300	132	36	186	166.00
200	8	300	145	10	236	217.00
250	10	353	155	43	295	267.00
300	12	360	175	10	337	318.00



Reducing Socket

(Unit : mm)

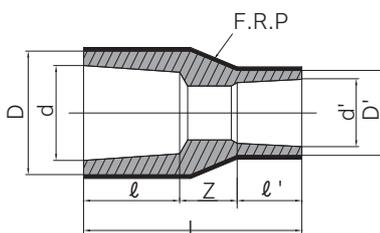
SU type



GU type



Size		L	ℓ	D	d	ℓ'	D'	d'	Z
mm	inch								
15×13	1/2×3/8	61	30	29	22.40	26	24	18.40	5
20×13	3/4×3/8	68	35	33	26.45	26	24	18.40	7
20×15	3/4×1/2	71	35	33	26.45	30	29	22.40	6
25×13	1×3/8	86	40	40	32.55	26	24	18.40	20
25×15	1×1/2	85	40	40	32.55	30	29	22.40	15
25×20	1×3/4	84	40	40	32.55	35	33	26.45	9
30×20	1 1/4×3/4	93	44	46	38.60	35	33	26.45	14
30×25	1 1/4×1	93	44	46	38.60	40	40	32.55	9
40×20	1 1/2×3/4	113	55	57	48.70	35	33	26.45	23
40×25	1 1/2×1	114	55	57	48.70	40	40	32.55	19
40×30	1 1/2×1 1/4	114	55	57	48.70	44	46	38.60	15
50×20	2×3/4	116	63	70	60.80	35	33	26.45	18
50×25	2×1	140	63	70	60.80	40	40	32.55	37
50×30	2×1 1/4	136	63	70	60.80	44	46	38.60	29
50×40	2×1 1/2	136	63	70	60.80	55	57	48.70	18
65×40	2 1/2×1 1/2	145	61	87	76.60	55	57	48.70	29
65×50	2 1/2×2	149	61	87	76.60	63	70	60.80	25
75×40	3×1 1/2	153	64	102	89.60	55	57	48.70	34
75×50	3×2	165	64	102	89.60	63	70	60.80	38
75×65	3×2 1/2	159	64	102	89.60	61	87	76.60	34
100×75	4×3	190	84	130	114.70	64	102	89.60	42
125×100	5×4	229	104	157	140.80	84	130	114.70	41
150×100	6×4	295	132	186	166.00	84	130	114.70	79
150×125	6×5	272	132	186	166.00	104	157	140.80	36
200×150	8×6	356	145	240	217.00	132	186	166.00	79
250×200	10×8	383	155	295	269.30	146	240	217.00	82



### TS Flanges (JIS 10kgf/cm<sup>2</sup> Type)

#### SU type 13A~125A



#### GU type 13A~125A



#### SU type 150A~300A



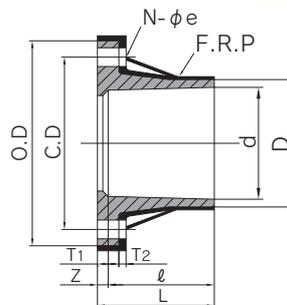
#### GU type 150A~300A



(Unit : mm)

Size		L	ℓ	Z	O.D	C.D	D	d	T <sub>1</sub>	T <sub>2</sub>		N-φ <sub>e</sub>
mm	inch									SU	GU	
13	3/8	30.0	26	4.0	90	65	25.5	18.40	14	2	2.0	4-15
15	1/2	35.0	30	5.0	95	70	31.0	22.40	14	5	5.0	4-15
20	3/4	40.0	35	5.0	100	75	35.0	26.45	15	5	5.0	4-15
25	1	46.0	40	6.0	125	90	42.5	32.55	15	5	5.0	4-19
30	1 1/4	50.5	44	6.5	135	100	48.5	38.60	16	5	5.0	4-19
40	1 1/2	61.5	55	6.5	140	105	60.5	48.70	16	6	6.0	4-19
50	2	71.0	63	8.0	155	120	73.0	60.80	20	8	8.0	4-19
65	2 1/2	70.0	61	9.0	175	140	90.0	76.60	22	8	8.0	4-19
75	3	73.0	64	9.0	185	150	105.0	89.60	22	8	8.0	8-19
100	4	93.0	84	9.0	210	175	131.0	114.7	22	10	10.0	8-19
125	5	114.0	104	10.0	250	210	158.0	140.8	24	12	12.0	8-23
150	6	142.0	132	10.0	280	240	185.0	166.0	26	2	3.5	8-23
200	8	156.0	145	11.0	330	290	238.0	217.0	28	2	3.5	12-23
250	10	167.0	155	12.0	400	355	289.0	268.0	30	2	3.5	12-25
300	12	167.0	155	12.0	445	400	341.0	318.7	30	2	4.3	16-25

Note: Products conforming to the JIS 5K and ANSI 150 LBS are also available.



### Flanges (JIS 10kgf/cm<sup>2</sup> Type)

#### SU type



#### GU type



(Unit : mm)

Size		O.D	C.D	T <sub>1</sub>		T <sub>2</sub>		N-φ <sub>e</sub>
mm	inch			SU	GU	SU	GU	
13	3/8	90	65	12	12	2.5	3	4-15
15	1/2	95	70	12	12	2.5	3	4-15
20	3/4	100	75	14	14	2.5	3	4-15
25	1	125	90	14	14	2.5	3	4-19
30	1 1/4	135	100	16	16	2.5	3	4-19
40	1 1/2	140	105	16	16	2.5	3	4-19
50	2	155	120	16	16	2.5	3	4-19
65	2 1/2	175	140	18	18	2.5	3	4-19
75	3	185	150	18	18	2.5	3	8-19
100	4	210	175	18	18	2.5	5	8-19
125	5	250	210	20	20	3.0	6	8-23
150	6	280	240	22	22	4.0	8	8-23
200	8	330	290	22	22	5.0	10	12-23
250	10	400	355	24	24	7.0	13	12-25
300	12	445	400	24	24	9.0	15	16-25
350	14	490	445	25	20	13.0	25	16-25
400	16	560	510	25	20	13.0	25	16-27
450	18	620	565	25	20	13.0	25	20-27
500	20	675	620	25	20	15.0	25	20-27
600	24	795	730	30	20	15.0	30	24-33

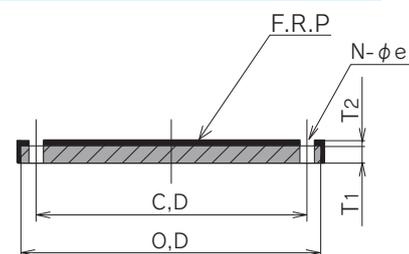
Note: Products conforming to the JIS 5K and ANSI 150 LBS are also available.

#### Additional notes

We can also deliver products prefabricated at our factory.

Consider this method for piping with complex shapes.

Detailed technical data and installation instructions are available.



# ASAHI VALVE AND PIPING SYSTEMS

## ASAHI AV PP PIPE & FITTINGS

The specifications in this brochure are subject to change without prior notice due to improvements and modifications.

### FEATURES

- Low leaching into medium.
- High corrosion resistance to acid/alkali application.
- High temperature resistance up to 90°C .
- Due to superior impact resistance at low temperature, PP piping material is suitable piping material to low temperature application.
- Since PP piping material has small specific gravity (0.91) and simple welding procedure, it provides easier field work at site.
- No dioxin is generated at waste procedure even it would be burnt.

			
PP PIPE PN10	PP PIPE PN4	SOCKET	90° ELBOW
			
45° ELBOW	TEE	REDUCER BUSHING	END CAP
			
SOCKET FLANGE	FLANGE ADAPTER	FLANGE ADAPTER	LOOSE FLANGE
			
WELDED FLANGE	BLIND FLANGE(P)	BLIND FLANGE(Q)	PREFAB JOINT
			
MALE ADAPTER	FEMALE ADAPTER	EF-SOCKET	WELDING ROD

## Range of Nominal Size

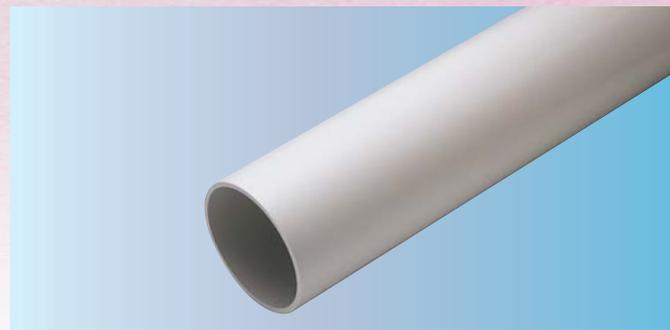
Nominal Size (mm)	Indication	Pipe		Socket	90° Elbow	45° Elbow	Tee	Reducer Bushing	End Cap	Socket Flange	Flange Adapter	Loose Flange
		PN10	PN4									
15	d20	⊙	—	⊙	⊙	⊙	⊙	—	⊙	⊙	⊙	⊙
20	d25	⊙	—	⊙	⊙	⊙	⊙	15	⊙	⊙	⊙	⊙
25	d32	⊙	—	⊙	⊙	⊙	⊙	15 20	⊙	⊙	⊙	⊙
32	d40	⊙	—	⊙	⊙	⊙	⊙	15 20 25	⊙	⊙	⊙	⊙
40	d50	⊙	—	⊙	⊙	⊙	⊙	15 20 25 32	⊙	⊙	⊙	⊙
50	d63	⊙	—	⊙	⊙	⊙	⊙	20 25 32 40	⊙	⊙	⊙	⊙
65	d75	⊙	—	⊙	⊙	⊙	⊙	50	⊙	⊙	⊙	⊙
80	d90	⊙	—	⊙	⊙	⊙	⊙	50 65	⊙	⊙	⊙	⊙
100	d110	⊙	—	⊙	⊙	⊙	⊙	80	⊙	⊙	⊙	⊙
125	d140	⊙	⊙	⊙	⊙	⊙	⊙	100	—	—	⊙	⊙
150	d180	⊙	⊙	⊙	⊙	⊙	⊙	125	—	—	⊙	⊙
200	d225	⊙	⊙	⊙	⊙	⊙	⊙	150	—	—	⊙	⊙

Nominal Size (mm)	Indication	Welded Flange	Blind Flange		Prefab Joint			Male Adapter	Female Adapter	EF-Socket
		Ⓧ	ⓐ	ⓑ	PP-PP	PP×PVC	PP×C-PVC			
15	d20	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
20	d25	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
25	d32	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
32	d40	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
40	d50	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
50	d63	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
65	d75	⊙	⊙	⊙	—	—	—	—	—	⊙
80	d90	⊙	⊙	⊙	—	—	—	—	—	⊙
100	d110	⊙	⊙	⊙	—	—	—	—	—	⊙
125	d140	⊙	⊙	⊙	—	—	—	—	—	⊙
150	d180	⊙	⊙	⊙	—	—	—	—	—	⊙
200	d225	⊙	⊙	⊙	—	—	—	—	—	⊙

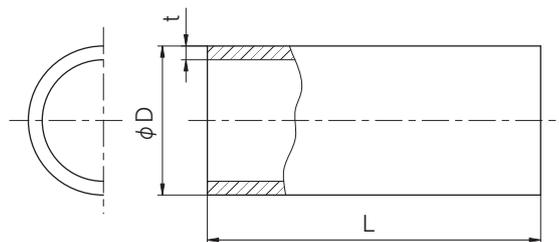
Welding Rod	Shape	Diameter	Unit	
	Single	3		2kg (Stick type1m)
				4kg (Scroll type)
		4		2kg (Stick type1m)
				4kg (Scroll type)
	5		2kg (Stick type1m)	
4kg (Scroll type)				
Double	3		2kg (Stick type1m)	

■ PP pipe (PN10/SDR11)

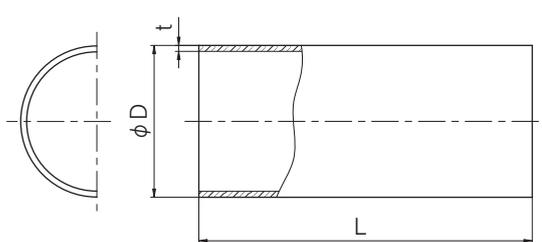
■ PP pipe (PN4/SDR26)



PP pipe (PN10/SDR11)



PP pipe (PN4/SDR26)



(Unit : mm)

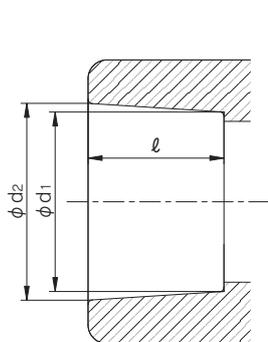
PN10/SDR11									
Nominal Size (mm)	Product Indication	D		t		Approximate I.D. (for reference)	L		Weight (kg/m)
		Basic Dimension	Average O.D. Tolerances	Basic Dimension	Tolerance		Basic Dimension	Tolerance	
15	d20	20	+0.3/0	1.9	+0.4/0	16.2	4000	±10	0.110
20	d25	25	+0.3/0	2.3	+0.5/0	20.4			0.166
25	d32	32	+0.3/0	3.0	+0.5/0	26.2			0.271
32	d40	40	+0.4/0	3.7	+0.6/0	32.6			0.421
40	d50	50	+0.5/0	4.6	+0.7/0	40.8			0.649
50	d63	63	+0.6/0	5.8	+0.8/0	51.4			1.028
65	d75	75	+0.7/0	6.9	+0.9/0	61.4			1.447
80	d90	90	+0.9/0	8.2	+1.1/0	73.6			2.083
100	d110	110	+1.0/0	10.0	+1.2/0	90.0			3.099
125	d140	140	+1.3/0	12.8	+1.5/0	114.6			5.008
150	d180	180	+1.7/0	16.4	+1.9/0	147.2			8.250
200	d225	225	+2.1/0	20.5	+2.3/0	184.0			12.864

PN4/SDR26									
Nominal Size (mm)	Product Indication	D		t		Approximate I.D. (for reference)	L		Weight (kg/m)
		Basic Dimension	Average O.D. Tolerances	Basic Dimension	Tolerance		Basic Dimension	Tolerance	
125	d140	140	+1.3/0	5.4	+0.8/0	129.2	4000	±10	2.224
150	d180	180	+1.7/0	7.0	+1.0/0	166.0			3.697
200	d225	225	+2.1/0	8.7	+1.1/0	207.6			5.702

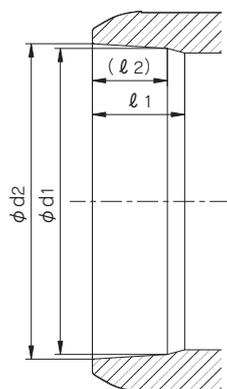
- (Note) 1. 15mm~200mm : DIN8077  
 2. SDR (Standard Dimension Ratio) : (D/t)  
 3. PN10 : Working Pressure 1.0MPa(20°C)  
 4. PN4 : Working Pressure 0.4MPa(20°C)

## ■ PP Fitting Dimension Common

(Unit : mm)



15mm~100mm  
(d20~d110)

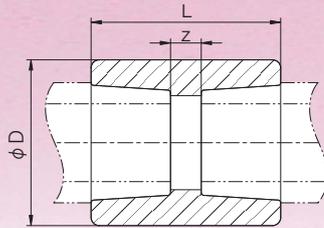


125mm~200mm  
(d140~d225)

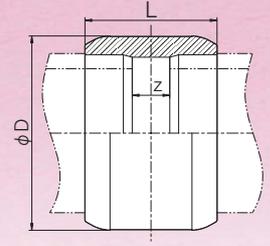
Nominal Size (mm)	Product Indication	d1			d2			ℓ (minimum)	ℓ 1	ℓ 2 (for reference)
		Basic Dimension	Average I.D. Tolerances	Circularity (Max)	Basic Dimension	Average I.D. Tolerances	Circularity (Max)			
15	d20	19.3	-0.3/0	0.4	19.5	-0.3/0	0.4	14.5	—	—
20	d25	24.3	-0.4/0	0.4	24.5	-0.3/0	0.4	16	—	—
25	d32	31.3	-0.4/0	0.5	31.5	-0.4/0	0.5	18	—	—
32	d40	39.2	-0.4/0	0.5	39.45	-0.4/0	0.5	20.5	—	—
40	d50	49.2	-0.5/0	0.6	49.45	-0.5/0	0.6	23.5	—	—
50	d63	62.1	-0.5/0	0.6	62.5	-0.6/0	0.6	27.5	—	—
65	d75	73.95	-0.5/0	1	74.25	-0.5/0	1	31	—	—
80	d90	88.85	-0.6/0	1	89.2	-0.6/0	1	35.5	—	—
100	d110	108.65	-0.6/0	1	109.05	-0.6/0	1	41.5	—	—
125	d140	139.1	-2.0/0	2.0	139.4	-2.0/0	2.0	—	41.5	32.7
150	d180	178.7	-2.0/0	2.0	179.1	-2.0/0	2.0	—	50.5	41.7
200	d225	223.2	-2.0/0	2.0	223.7	-2.0/0	2.0	—	61.0	52.3

- (Note) 1. 15mm~100mm : DIN16962 typeB  
 2. 125mm~200mm : AV Standard  
 3. Circularity : The dimension of Max I.D.-Min I.D.

Socket



15mm~100mm (d20~d110)



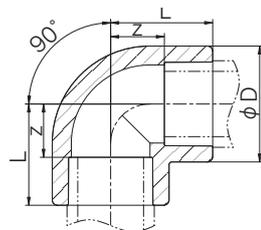
125mm~200mm (d140~d225)

(Unit : mm)

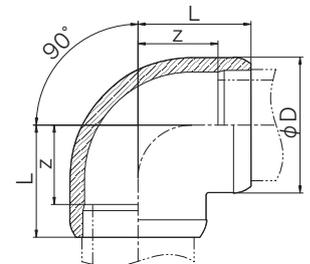
Nominal Size (mm)	Product Indication	D	L	z	Weight (kg)
15	d20	30.5	35	6	0.015
20	d25	35.5	39	7	0.019
25	d32	43.5	43	7	0.030
32	d40	53.5	48	7	0.047
40	d50	66	55	8	0.079
50	d63	82	62	7	0.131
65	d75	92.5	70	8	0.161
80	d90	110	81	10	0.253
100	d110	134	96	13	0.431
125	d140	172	116	33	0.821
150	d180	221	140	39	1.562
200	d225	276	167	45	2.820

(Note) 1. 15mm~100mm : DIN16962-8  
2. 125mm~200mm : AV Standard

90° Elbow



15mm~100mm (d20~d110)



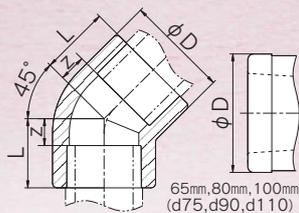
125mm~200mm (d140~d225)

(Unit : mm)

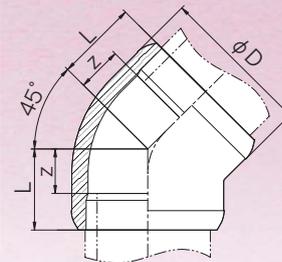
Nominal Size (mm)	Product Indication	D	L	z	Weight (kg)
15	d20	30.5	28	13.5	0.023
20	d25	35.5	32	16	0.032
25	d32	43.5	38	20	0.052
32	d40	53.5	44	23.5	0.084
40	d50	66	51	27.5	0.136
50	d63	82	62	34.5	0.250
65	d75	92.5	75.5	44.5	0.340
80	d90	110	88	52.5	0.526
100	d110	134	106	64.5	0.953
125	d140	172	142	100.5	1.922
150	d180	221	179	128.5	4.058
200	d225	276	220	159.0	7.618

(Note) 1. 15mm~100mm : DIN16962-6  
2. 125mm~200mm : AV Standard

**45° Elbow**



15mm~100mm (d20~d110)



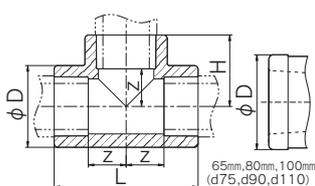
125mm~200mm (d140~d225)

(Unit : mm)

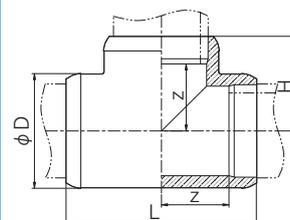
Nominal Size (mm)	Product Indication	D	L	z	Weight (kg)
15	d20	31	21.5	7	0.018
20	d25	36	24.5	8.5	0.025
25	d32	44	28	10	0.037
32	d40	55	34	13.5	0.070
40	d50	66	37	13.5	0.102
50	d63	82	48	20.5	0.180
65	d75	92	51.5	20.5	0.203
80	d90	111	59	23.5	0.340
100	d110	135.5	69	27.5	0.605
125	d140	172	92	50.5	1.299
150	d180	221	114	63.5	2.662
200	d225	276	140	79.0	4.939

(Note) 1. 15mm~100mm : DIN16962-6  
 2. 125mm~200mm : AV Standard

**Tee**



15mm~100mm (d20~d110)



125mm~200mm (d140~d225)

(Unit : mm)

Nominal Size (mm)	Product Indication	D	L	H	z	Weight (kg)
15	d20	30.5	57	28.5	14	0.029
20	d25	35.5	65	32.5	16.5	0.041
25	d32	43.5	76	38	20	0.060
32	d40	55	88	44	23.5	0.108
40	d50	66	103	51.5	28	0.163
50	d63	82	126	63	35.5	0.292
65	d75	92.5	152	76	45	0.358
80	d90	111	176	88	52.5	0.625
100	d110	135	213	106.5	65	1.030
125	d140	172	284	142	100.5	1.317
150	d180	221	358	179	128.5	4.902
200	d225	276	440	220	159.0	9.300

(Note) 1. 15mm~100mm : DIN16962-7  
 2. 125mm~200mm : AV Standard

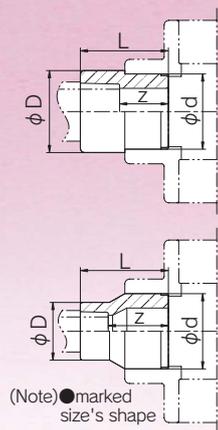
Reducer Bushing



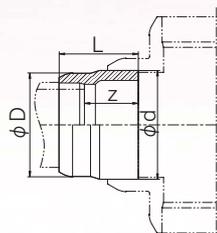
20mm×15mm~100mm×80mm  
(d25×d20~d110×d90)



125mm×100mm~200mm×150mm  
(d140×d110~d225×d180)



(Note) ● marked size's shape



(Unit : mm)

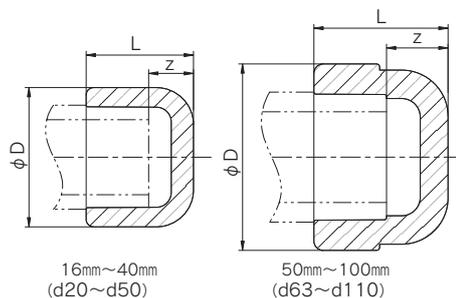
Nominal Size (mm)	Product Indication	D	d	L	Z	Weight (kg)
● 20×15	d25×d20	30	25	35	20.5	0.011
25×15	d32×d20	30	32	43	28.5	0.016
● 25×20	d32×d25	35	32	38	22	0.016
32×15	d40×d20	30	40	50	35.5	0.022
32×20	d40×d25	35	40	50	34	0.024
● 32×25	d40×d32	43	40	48	30	0.029
40×15	d50×d20	31	50	54	39.5	0.034
40×20	d50×d25	36	50	54	38	0.035
40×25	d50×d32	43	50	54	36	0.035
● 40×32	d50×d40	54	50	54	33.5	0.050
50×20	d63×d25	37	63	65	49	0.058
50×25	d63×d32	43	63	65	47	0.056
50×32	d63×d40	54	63	64	43.5	0.068
● 50×40	d63×d50	66	63	64	40.5	0.085
● 65×50	d75×d63	81	75	61	33.5	0.105
80×50	d90×d63	81	90	89	61.5	0.171
● 80×65	d90×d75	92.5	90	70	39	0.148
● 100×80	d110×d90	112	110	81	45.5	0.267
125×100	d140×d110	135.5	140	110	68.5	0.502
150×125	d180×d140	172	180	130	88.5	0.971
200×150	d225×d180	221	225	160	109.5	1.868

(Note) 1. 20mm×15mm~100mm×80mm : DIN 16962-9  
2. 125mm×100mm~200mm×150mm : AV Standard

End Cap



15mm~100mm (d20~d110)



16mm~40mm  
(d20~d50)

50mm~100mm  
(d63~d110)

(Unit : mm)

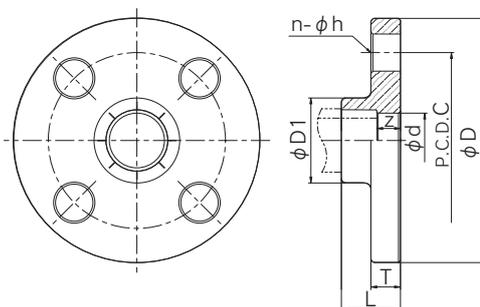
Nominal Size (mm)	Product Indication	D	L	z	Weight (kg)
15	d20	30	27	12.5	0.013
20	d25	36	30	14	0.019
25	d32	44	32	14	0.028
32	d40	55	36	15.5	0.039
40	d50	66	43	19.5	0.076
50	d63	85	47	19.5	0.129
65	d75	92	63	32	0.165
80	d90	111	74	38.5	0.296
100	d110	133.5	91	49.5	0.430

(Note) DIN16962-8

Socket Flange



15mm~50mm (d20~d63)



(Unit : mm)

Nominal Size (mm)	Product Indication	D1	d	Z	T	L	JIS 10K				Weight (kg)
							D	C	n	h	
15	d20	30.5	16	15.5	14	30	95	70	4	15	0.090
20	d25	35.5	21	15.0	15	31	100	75	4	15	0.105
25	d32	43.5	28	13.0	15	31	125	90	4	19	0.161
32	d40	53.5	36	12.5	16	33	135	100	4	19	0.198
40	d50	66.0	45	10.5	16	34	140	105	4	19	0.215
50	d63	82.0	57	9.5	20	37	155	120	4	19	0.317
65	d75	92.5	69	23.0	22	54	175	140	4	19	0.452
80	d90	110.0	84	18.5	22	54	185	150	8	19	0.473
100	d110	134.5	102	12.5	22	54	210	175	8	19	0.613

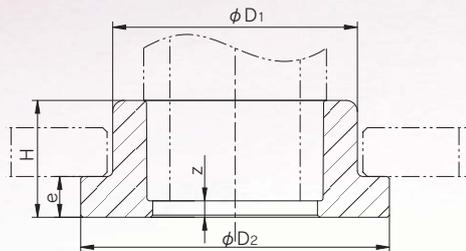
(Note) Flange Standard is available only JIS 10K.

**Flange Adapter**

(unit : mm)



15mm~100mm (d20~d110)



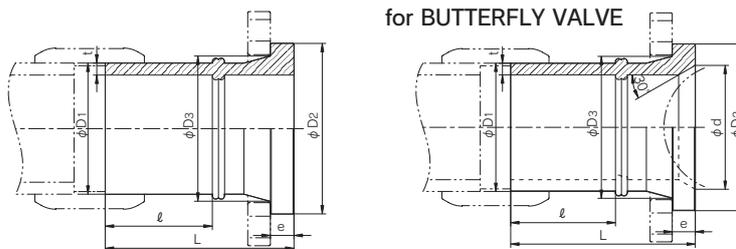
Nominal Size (mm)	Product Indication	D1	D2	e	H	z	Weight (kg)
15	d20	27.5	45	10	21.5	7	0.015
20	d25	33.5	56	10	22	6	0.023
25	d32	41.5	62	10	24.5	6.5	0.029
32	d40	50	74	11	28.5	8	0.044
40	d50	61	78	12	32	8.5	0.052
50	d63	76	93	14	36	8.5	0.081
65	d75	90	106	10.5	35	4	0.091
80	d90	109	125	11	43	7.5	0.156
100	d110	131	150	12.5	51	9.5	0.254

(Note) DIN16962-12

**Flange Adapter**



125mm~200mm (d140~d225)



for BUTTERFLY VALVE

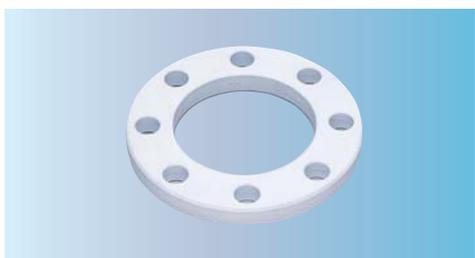
(unit : mm)

Nominal Size (mm)	Product Indication	D1	t	D2	D3 (for reference)	e	l	L±2	d	Weight (kg)
125	d140	140	12.8	182	155	25	105 (Minimum)	195	125	5.7
150	d180	180	16.4	211	180	30	265 (for reference)	350	—	6.9
200	d225	225	20.5	262	235	32	250 (for reference)	370	200	11.3

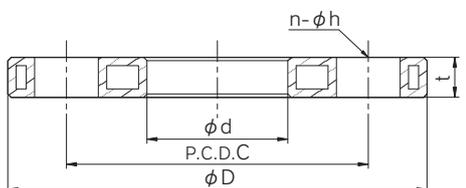
(Note) The dimension of "D1""t"are based on DIN8077(PIN10/SDR11)

**Loose Flange**

(unit : mm)



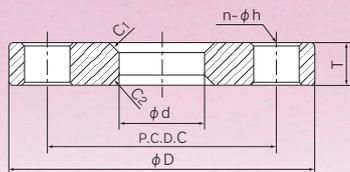
15mm~200mm (d20~d225)



Nominal Size (mm)	Product Indication	d	JIS 10K				t	Weight (kg)
			D	C	n	h		
15	d20	28	95	70	4	15	12	0.243
20	d25	34	100	75	4	15	12	0.305
25	d32	42	125	90	4	19	16	0.470
32	d40	51	135	100	4	19	18	0.708
40	d50	62	140	105	4	19	18	0.785
50	d63	78	155	120	4	19	18	0.895
65	d75	92	175	140	4	19	18	1.165
80	d90	110	185	150	8	19	20	1.360
100	d110	133	210	175	8	19	20	1.695
125	d140	158	250	210	8	23	24	2.335
150	d180	183	280	240	8	23	24	3.220
200	d225	240	330	290	12	23	24	4.230

(Note) 1. material : STEEL+PPG lining.  
2. Products conforming to the DIN and ANSI are also available.

**Welded Flange**



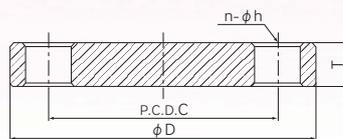
**Blind Flange**



(unit : mm)

Nominal Size (mm)	Product Indication	d	JIS 10 K				C1	C2	T
			C	D	n	h			
15	d20	20	70	95	4	15	3	3	12
20	d25	25	75	100	4	15	3	3	14
25	d32	32	90	125	4	19	3	3	14
32	d40	40	100	135	4	19	3	3	16
40	d50	50	105	140	4	19	3	3	16
50	d63	63	120	155	4	19	3	4	16
65	d75	75	140	175	4	19	3	4	18
80	d90	90	150	185	8	19	3	4	18
100	d110	110	175	210	8	19	3	4	18
125	d140	140	210	250	8	23	4	4	20
150	d180	180	240	280	8	23	4	4	22
200	d225	225	290	330	12	23	4	4	22
250	d250	250	355	400	12	25	4	4	24
300	d315	315	400	445	16	25	4	4	24

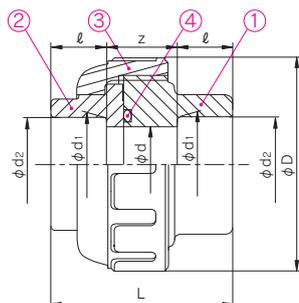
(Note) The dimension of "d" is based on DIN8077 PP pipe O.D.



**Prefab Joint (21type) DIN Socket**



16mm~50mm (d20~d63)



(unit : mm)

Nominal Size (mm)	Product Indication	d	d1	d2	l	D	L	z	Weight (kg)
16(15)	d20	15	19.3	19.5	14.5	46	40	11	0.030
20	d25	20	24.3	24.5	16	57	52	20	0.056
25	d32	25	31.3	31.5	18	67	58	22	0.089
30(32)	d40	31	39.2	39.45	20.5	79	65	24	0.133
40	d50	40	49.2	49.45	23.5	95	74	27	0.216
50	d63	51	62.1	62.5	27.5	104	90.5	35.5	0.262

(Note) The dimension of "d1" "d2" "l" are based on DIN16962.

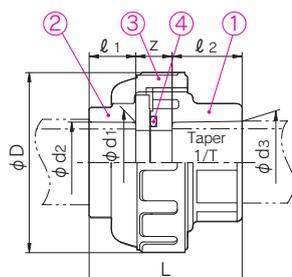
**Parts & Materials**

No.	Discription	Pcs.	Materials
①	BODY	1	PP
②	END CONNECTOR	1	PP
③	UNION NUT	1	PP
④	O-RING	1	EPDM, FKM

**Prefab Joint (21type) DIN-JIS Socket**



15mm~50mm



(unit : mm)

Nominal Size (mm)	DIN Socket(PP)					JIS Socket(U-PVC, C-PVC)		
	d1	d2	l1	L±1.5	Z	d3	l2	1/T
16(15)	19.3	19.50	14.5	41.5	7	22.11	20	1/34
20	24.3	24.50	16.0	53.0	13	26.13	24	1/34
25	31.3	31.50	18.0	59.0	14	32.16	27	1/34
30(32)	39.2	39.45	20.5	65.5	15	38.19	30	1/34
40	49.2	49.45	23.5	74.5	14	48.21	37	1/37
50	62.1	62.50	27.5	92.0	22.5	60.25	42	1/37

(Note) The dimension of "d1" "d2" "l1" are based on DIN16962.

**Parts & Materials**

No.	Discription	Pcs.	Materials
①	BODY	1	U-PVC, C-PVC
②	END CONNECTOR	1	PP
③	UNION NUT	1	U-PVC, C-PVC
④	O-RING	1	EPDM, FKM

**Male Adapter**

(unit : mm)



15mm~50mm (d20~d63)

Nominal Size (mm)	Product Indication	D	t	d	R	L	ℓ <sub>1</sub>	ℓ <sub>2</sub>	Z	Weight (kg)
15	d20	20	1.9	13	R1/2	60	37	15	24	0.009
20	d25	25	2.3	18	R3/4	62	40	15	27	0.012
25	d32	32	3.0	23	R1	70	44	19	36	0.021
32	d40	40	3.7	29	R1 1/4	76	49	20	46	0.037
40	d50	50	4.6	34	R1 1/2	84	55	21	55	0.057
50	d63	63	5.8	45	R2	93	63	22	65	0.095

(Note) 1. R : tapere pipe male threads.  
 2. Used for only PP pipe not steel pipe.

**Female Adapter**

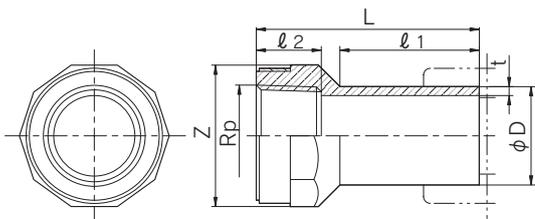
(unit : mm)



15mm~50mm (d20~d63)

Nominal Size (mm)	Product Indication	D	t	Rp	L	ℓ <sub>1</sub>	ℓ <sub>2</sub>	Z	Weight (kg)
15	d20	20	1.9	Rp1/2	58	37	16	30	0.016
20	d25	25	2.3	Rp3/4	63	40	18	36	0.022
25	d32	32	3.0	Rp1	71	44	21	46	0.039
32	d40	40	3.7	Rp1 1/4	79	49	23	55	0.056
40	d50	50	4.6	Rp1 1/2	84	55	24	60	0.078
50	d63	63	5.8	Rp2	97	63	29	75	0.138

(Note) 1. Rp : Paralle pipe female threads.  
 2. Used for only PP pipe not steel pipe.



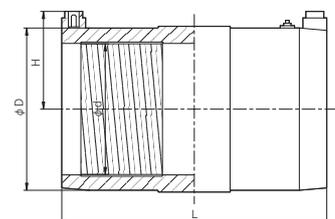
**EF-Socket**

(unit : mm)



15mm~200mm (d20~d225)

Nominal Size (mm)	Product Indication	d	D	H	L	Weight (kg)
15	d20	20	30	36	70	0.042
20	d25	25	36	39	78	0.051
25	d32	32	44	41	80	0.071
32	d40	40	53	46	92	0.098
40	d50	50	64	51	104	0.137
50	d63	63	80	58	118	0.224
65	d75	75	96	64	132	0.342
80	d90	90	120	75	146	0.491
100	d110	110	137	82	162	0.801
125	d140	140	171	100	184	1.344
150	d180	180	220	123	212	2.481
200	d225	225	273	149	212	3.870



**Welding Rod**



Variety	diameter	package unit
Single	3	2kg (1m rod)
		4kg (roll type)
	4	2kg (1m rod)
		4kg (roll type)
5	2kg (1m rod)	
	4kg (roll type)	
Double	3	2kg (1m rod)



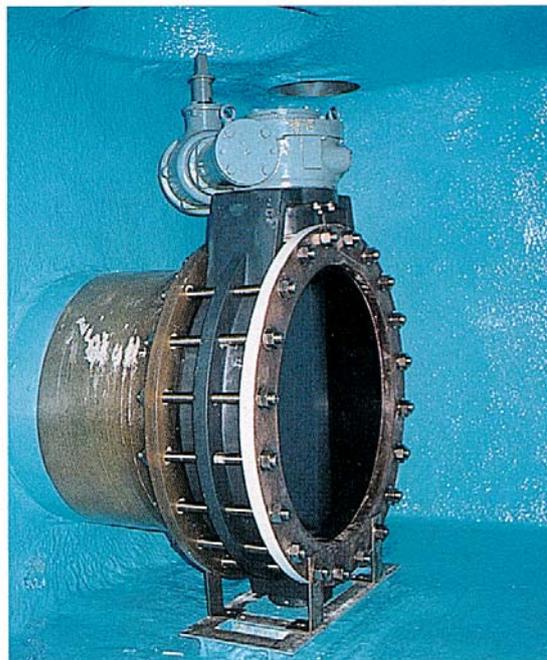
## ENGINEERING

Our engineering department designs, produces and installs pipelines which consist of valves, regular pipes and composite pipes and equipment such as towers and ducts made of plastics.

The department has been engaged in piping of many projects for chemical Factories, Steel mills, Aquariums, Cultivation Sites, Semiconductor Factories, Soda Electrolysis, Swimming Pools, Sewerage, etc. throughout the world.

Many users are satisfied with our experienced know-how in piping and reliable, advanced technology.

It is our pleasure to respond to your inquiries including prefabricated products at any time.



# ASAHI VALVE AND PIPING SYSTEMS

## ASAHI AV TECHNICAL DATA

The specifications in this brochure are subject to change without prior notice due to improvements and modifications.

### **TECHNICAL DATA FOR ASAHI AV VALVES**

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### **TECHNICAL DATA FOR AV PIPES**

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Intervals between Supports for AV PIPE Type SU and Type GU	212
Conversion Table for Pressure Units	213

# TECHNICAL DATA FLOW CHARACTERISTICS

## 1. CAPACITY COEFFICIENT

### 1.1 Cv VALUE

The Cv value is a coefficient that expresses quantitatively (in a numerical value) how much fluid flows through a specific valve. The concept of the Cv value was first developed by the Fluid Control Institution, USA, in 1958. There are other coefficients (absolute numbers) based on a concept similar to that of the Cv value. They are the Av value and the Kv value. On the mainstream in Japan is the Cv value. Since the Kv value was announced in Germany in 1960, there have been trends toward the international unification of these values into a single one. The Cv value is becoming part of the mainstream not only in Japan but internationally as well, at ISO international conferences.

The concept of the capacity coefficient can be expressed by the following equation :

[General Equation] 
$$C = Q \sqrt{\rho / \Delta P} \dots\dots\dots(1)$$

C; Capacity coefficient  
 Q; Flow rate  
 $\Delta P$ ; Differential pressure  
 $\rho$ , G; Specific gravity

Cv value = 1 means that:

The differential pressure (pressure loss) across the valve is 1PSI{1lb/in<sup>2</sup>} (about 0.07kgf/cm<sup>2</sup>) and clean water (concentration  $\rho = 1$ ) at 60° F (about 15.5°C) flows at a flowrate of 1USgal/min (about 0.2271m<sup>3</sup>/hr). That is, the relationship between flow rate and differential pressure (pressure loss) is determined by the Cv value.

In Japan, differential pressure (pressure loss) is expressed in kgf/cm<sup>2</sup> instead of PSI. When the flowrate is expressed in m<sup>3</sup>/hr, Equation (1) for the capacity coefficient becomes something like the following :

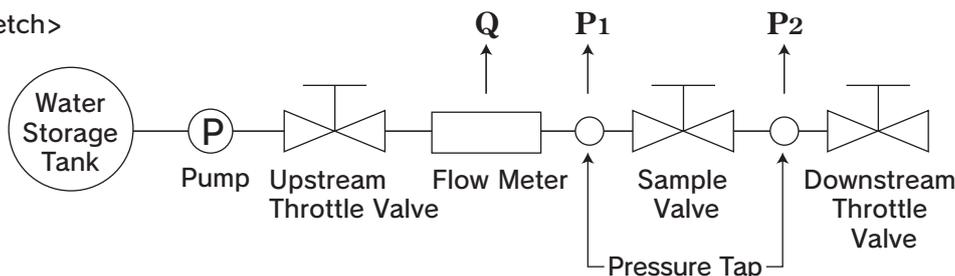
$$Cv = 1.17Q \sqrt{G / \Delta P} \dots\dots\dots(2)$$

Cv ; Capacity coefficient  
 Q ; Flowrate (m<sup>3</sup>/hr)  
 $\Delta P$  ; Differential pressure (kgf/cm<sup>2</sup>)  
 G ; Specific gravity

### 1.2 HOW TO MEASURE Cv VALUE

A method of measurement is now available as the standard applicable in JIS B 2005 and IEC 534. An example is outlined below.

<Descriptive sketch>



Set the differential pressure across the sample valve to 0.75kgf/cm<sup>2</sup> and measure the rate of flow at that time. Then, adjust the differential pressure in step from 0.75kgf/cm<sup>2</sup> to 0.07kgf/cm<sup>2</sup> (= 1PSI = 1lbf/in<sup>2</sup>), and measure the flow rate(in m<sup>3</sup>/hr). For large – diameter valves, it is very difficult (impossible) to set their differential pressure to 0.75kgf/cm<sup>2</sup> \* 2, begin at the point where the pressure is adjusted progressively, and take measurements up to 0.07kgf/cm<sup>2</sup>. Substitute the value at that time in equation (2) shown on the last page, then determine the Cv value.

This is a "table of Cv values when Asahi AV valves are fully open" Also shown is a "table of Cv values by flow qty% us valve opening to" (and subsequent pages), which presents data necessary for valves used for control. The Cv value represent the flow characteristics of each valve.

1. 3 TABLE Cv VALUE OF "ASAHI AV VALVE" FULLY OPEN

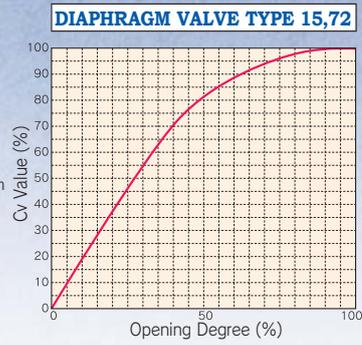
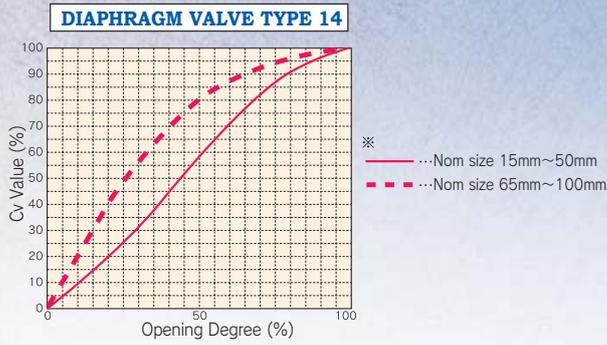
Valve	Nominal Size mm (inch)																				
	13[10] ( <sup>3</sup> / <sub>8</sub> )	15 ( <sup>1</sup> / <sub>2</sub> )	20 ( <sup>3</sup> / <sub>4</sub> )	25 (1)	30[32] (1 <sup>1</sup> / <sub>4</sub> )	40 (1 <sup>1</sup> / <sub>2</sub> )	50 (2)	65 (2 <sup>1</sup> / <sub>2</sub> )	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)	400 (16)	450 (18)	500 (20)	600 (24)	
DIAPHRAGM VALVE TYPE 72 and 15											300	400	700	1000							
DIAPHRAGM VALVE TYPE 14		4.8	5.3	8.5	11	26	43	85	115	185											
BALL VALVE TYPE 21	7.7	14	29	47	72	155	190	365	410	680											
3-WAY BALL VALVE (L-port)		7.4	10	23		43	59		130	260											
3-WAY BALL VALVE (Double-L-port)		6.3	8.5	20		36	45		99	200											
3-WAY BALL VALVE (Cross-port)		7.8	13	23		65	98														
COMPACT BALL VALVE	7.7	14	29	47	72	140	185		410												
BUTTERFLY VALVE TYPE 57, 56 and 75						71	120	250	300	470	830	1100	2500	3860	5700	6440	8340	10890	14060	18500	
BUTTERFLY VALVE TYPE 57L (Lug Style)										300	470	1100									
BUTTERFLY VALVE TYPE 55							100			285	600	940	1500	2500	4200						
STOP VALVE "GLOVE VALVE"		4.1	6.4	9.7	18	22	29	57	78	115											
STOP VALVE "GLOVE VALVE" (needle type)		3.3	5.2	7.5		19	28	58	85	109											
GATE VALVE (P-type)						130	180	415	470	690	1000	1400	2900	3700	5200	7000					
GATE VALVE (S-type)						130	180	415	470	690	1000	1400	2900	3700							
BALL CHECK VALVE		6.5	17	25		86	130		280	500											
SWING CHECK VALVE			14	24		81	140	250	280	510	750	1100	1900								
STRAINER (Y)		5.2	7.5	14		34	50		110	165											
BALL FOOT VALVE		6.5	17	25		86	130		280	500											

Valve	Nominal Size (mm)					
	1 <sup>1</sup> / <sub>4</sub> , 1 <sup>1</sup> / <sub>2</sub> , 3 <sup>3</sup> / <sub>8</sub>	15 (6mm)	20 (6mm)	25 (15mm)	30 (15mm)	40 (15mm)
LAB COCK	1.6	—	—	—	—	—
NEEDLE VALVE	—	0.7	0.7	4.5	4.5	6

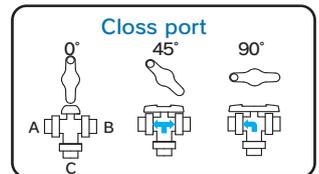
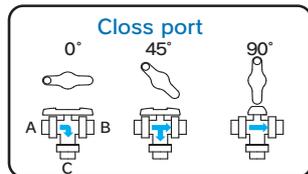
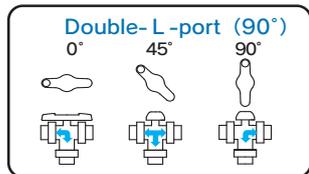
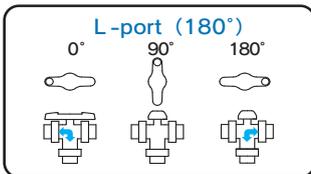
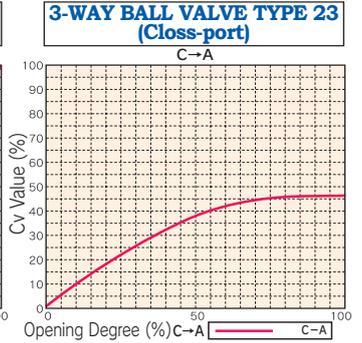
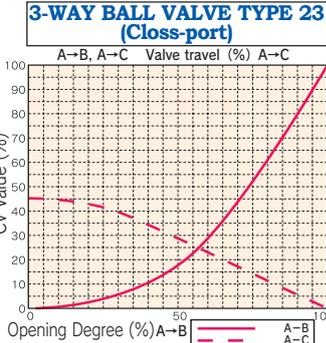
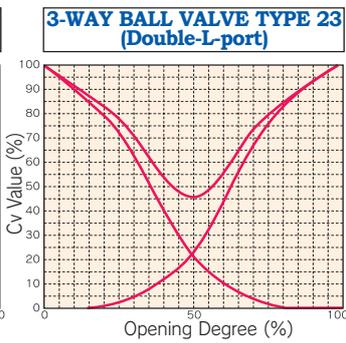
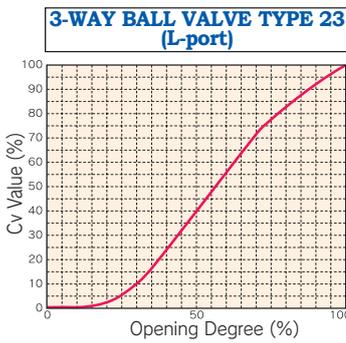
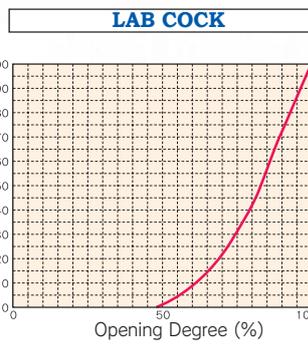
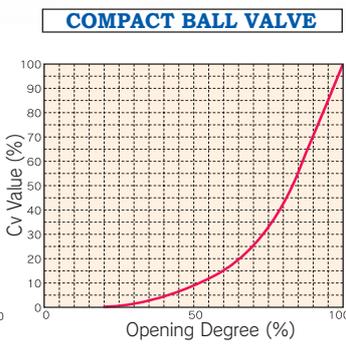
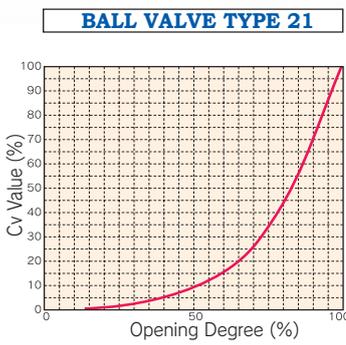
PDCPD BUTTERFLY VALVE

Valve (inch)	700(28)	800(32)	900(36)	1,000(40)	1,100(44)	1,200(48)
Cv Value	32,000	43,000	55,000	70,000	86,000	100,000

# Diaphragm Valve

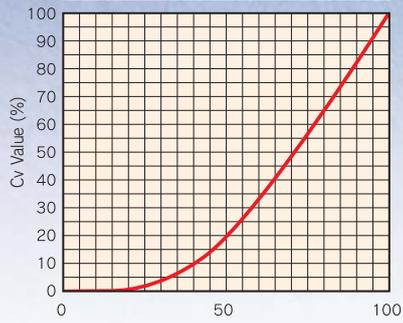


# Ball Valve

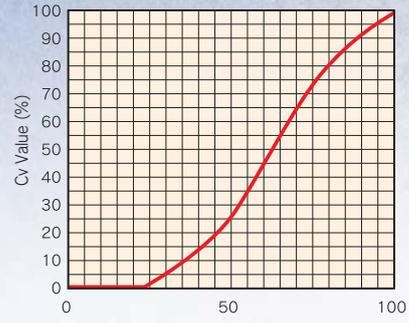


## Butterfly Valve

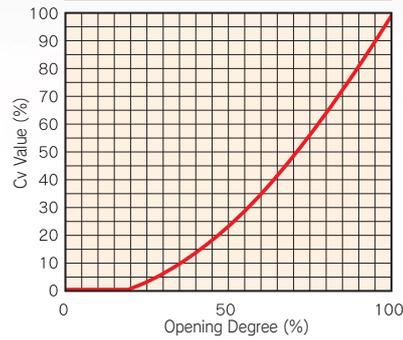
**BUTTERFLY VALVE TYPE 57, TYPE 57L (Lug Style)**



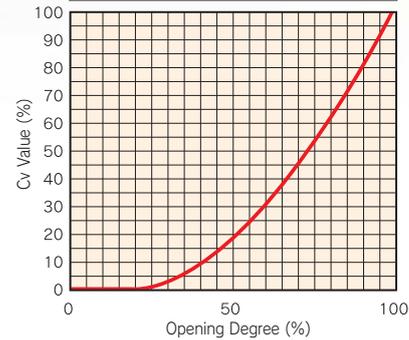
**BUTTERFLY VALVE TYPE 56, 75**



**PDCPD BUTTERFLY VALVE**

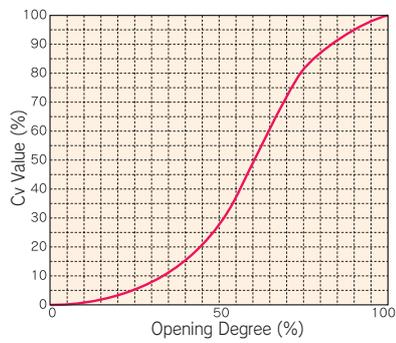


**BUTTERFLY VALVE TYPE 55**

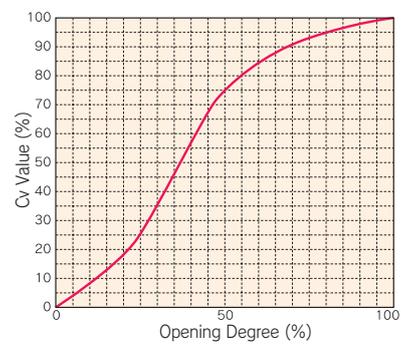


## Gate Valve

**GATE VALVE (P-Type)**



**GATE VALVE (S-Type)**



# TECHNICAL DATA WEIGHT LIST

## DIAPHRAGM VALVE

### Flanged

Unit:kg, Lb

Body		PVC		C-PVC		PP		PVDF		PVDF		Type	
Bonnet		PVC		PP		PP		PPG		PVDF			
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb		
Nominal Size	15 mm	1/2 inch	0.7	1.5	0.7	1.5	0.6	1.3	0.8	1.8	0.8	1.8	14
	20	3/4	0.8	1.8	0.8	1.8	0.6	1.3	0.9	2.0	0.9	2.0	
	25	1	1.1	2.4	1.1	2.4	0.8	1.8	1.2	2.6	1.3	2.9	
	32	1 1/4	1.4	3.1	1.4	3.1	1.0	2.2	1.5	3.3	1.6	3.5	
	40	1 1/2	2.8	6.2	2.7	6.0	2.2	4.9	2.9	6.4	3.1	6.8	
	50	2	3.6	7.9	3.5	7.7	2.8	6.2	3.9	8.6	4.1	9.0	
	65	2 1/2	5.6	12.3	5.3	11.7	4.2	9.3	6.0	13.2	6.5	14.3	
	80	3	7.4	16.3	7.2	15.9	5.4	11.9	7.4	16.3	8.4	18.5	
	100	4	11.5	25.4	12.6	27.8	8.3	18.3	12.5	27.5	13.1	28.9	
	125	5	22.0	48.5	—	—	19.5	43.0	23.5	51.8	26.3	58.0	15
	150	6	34.5	76.1	—	—	30.5	67.3	35.5	78.3	40.7	89.7	
	200	8	52.6	116.0	—	—	45.0	99.2	57.3	126.3	62.3	137.4	
250	12	93.3	205.7	—	—	77.3	170.4	97.6	215.2	110.2	243.0	72	

### True Union (Socket)

Unit:kg, Lb

Body		PVC		C-PVC		PP		PVDF		PVDF		Type	
Bonnet		PVC		PP		PP		PPG		PVDF			
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb		
Nominal Size	15 mm	1/2 inch	0.5	1.1	0.5	1.1	0.4	0.9	0.6	1.3	0.6	1.3	True Union 14
	20	3/4	0.6	1.3	0.6	1.3	0.5	1.1	0.7	1.5	0.7	1.5	
	25	1	0.9	2.0	0.9	2.0	0.7	1.5	1.0	2.2	1.1	2.4	
	32	1 1/4	1.1	2.4	1.1	2.4	0.8	1.8	1.2	2.6	1.3	2.9	
	40	1 1/2	2.6	5.7	2.5	5.5	2.0	4.4	2.7	6.0	2.9	6.4	
	50	2	2.9	6.4	2.8	6.2	2.3	5.1	3.1	6.8	3.3	7.3	

**BALL VALVE**

**Type 21**

Unit:kg, Lb

Type		Flanged								Threaded								Socket·Spigot							
Nominal Size	Material Unit	PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF	
		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
15mm	1/2 inch	0.4	0.9	0.4	0.9	0.3	0.7	0.5	1.1	0.2	0.4	0.2	0.4	0.2	0.4	0.2	0.4	0.2	0.4	0.2	0.4	0.2	0.4	0.2	0.4
20	3/4	0.6	1.3	0.7	1.5	0.5	1.1	0.7	1.5	0.3	0.7	0.3	0.7	0.3	0.7	0.4	0.9	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7
25	1	0.8	1.8	0.9	2.0	0.7	1.5	1.0	2.2	0.4	0.9	0.5	1.1	0.4	0.9	0.5	1.1	0.5	1.1	0.5	1.1	0.4	0.9	0.5	1.1
32	1 1/4	1.2	2.6	1.3	2.9	0.9	2.0	1.5	3.3	0.7	1.5	0.7	1.5	0.6	1.3	0.8	1.8	0.7	1.5	0.7	1.5	0.5	1.1	0.7	1.5
40	1 1/2	1.7	3.7	1.8	4.0	1.2	2.6	2.0	4.4	1.1	2.4	1.2	2.6	0.7	1.5	1.3	2.9	1.0	2.2	1.0	2.2	0.8	1.8	1.2	2.6
50	2	2.5	5.5	2.7	6.0	1.8	4.0	3.7	8.2	1.8	4.0	2.0	4.4	1.2	2.6	2.2	4.9	1.8	3.9	1.8	4.0	1.2	2.6	2.0	4.4
65	2 1/2	3.3	7.3	3.5	7.7	2.4	5.3	4.0	8.8	2.3	5.1	2.5	5.5	1.7	3.7	2.8	6.2	2.4	5.3	2.6	5.7	1.7	3.7	2.8	6.2
80	3	4.9	10.8	5.5	12.1	3.4	7.5	5.7	12.6	3.7	8.2	4.0	8.8	2.5	5.5	4.5	9.9	3.8	8.4	4.1	9.0	2.4	5.3	4.4	9.7
100	4	10.5	23.2	10.6	23.4	7.0	15.4	12.1	26.7	8.8	19.4	9.9	21.8	6.0	13.2	11.3	24.9	9.2	20.3	9.9	21.8	6.0	13.2	10.8	23.8

**3-Way Ball Valve Type 23**

Unit:kg, Lb

Type		Flanged								Socket								Threaded							
Nominal Size	Material Unit	PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF	
		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
15mm	1/2 inch	0.5	1.1	0.5	1.1	0.3	0.7	0.6	1.3	0.2	0.4	0.2	0.4	0.1	0.2	0.2	0.4	0.2	0.4	0.3	0.7	0.2	0.4	0.4	0.9
20	3/4	0.8	1.8	0.9	2.0	0.5	1.1	0.9	2.0	0.4	0.9	0.4	0.9	0.2	0.4	0.4	0.9	0.4	0.9	0.4	0.9	0.2	0.4	0.4	0.9
25	1	1.3	2.9	1.4	3.1	0.8	1.8	1.5	3.3	0.6	1.3	0.6	1.3	0.4	0.9	0.7	1.5	0.6	1.3	0.6	1.3	0.4	0.9	0.7	1.5
32	1 1/4	2.2	4.9	2.4	5.3	1.4	3.1	2.6	5.7	1.3	2.9	1.4	3.1	0.8	1.8	1.5	3.3	1.4	3.1	1.5	3.3	0.9	2.0	1.7	3.7
40	1 1/2	2.2	4.9	2.4	5.3	1.4	3.1	2.6	5.7	1.3	2.9	1.4	3.1	0.8	1.8	1.5	3.3	1.4	3.1	1.5	3.3	0.9	2.0	1.7	3.7
50	2	3.5	7.7	3.7	8.2	2.2	4.9	4.0	8.8	2.5	5.5	2.7	6.0	1.6	3.5	2.9	6.4	2.6	5.7	2.8	6.2	1.7	3.7	3.1	6.8
65	2 1/2	7.0	15.4	7.5	16.5	4.4	9.7	8.5	18.7	5.8	12.9	5.8	12.9	3.5	7.7	6.8	15.0	5.5	12.1	6.0	13.2	3.5	7.7	6.5	14.3
80	3	7.0	15.4	7.5	16.5	4.4	9.7	8.5	18.7	6.0	13.2	6.0	13.2	3.6	7.9	7.0	15.4	5.5	12.1	6.0	13.2	3.5	7.7	6.5	14.3
100	4	14.0	30.9	15.0	33.1	9.0	19.8	16.5	36.4	13.5	29.8	14.0	30.9	8.5	18.7	15.5	34.2	13.0	28.7	14.0	30.9	8.5	18.7	15.5	34.2

**Compact Ball Valve**

Unit:kg, Lb

Type		Socket·Threaded			
Nominal Size	Material Unit	PVC		C-PVC	
		kg	Lb	kg	Lb
13mm	1/2 inch	0.10	0.2	0.10	0.2
15	1/2	0.12	0.3	0.15	0.3
20	3/4	0.21	0.5	0.25	0.6
25	1	0.32	0.7	0.40	0.9
32	1 1/4	0.50	1.1	0.55	1.2
40	1 1/2	0.57	1.3	0.60	1.3
50	2	0.86	1.9	1.00	2.2
80	3	2.50	5.5	3.00	6.6

**Lab Cock**

Unit:g, Lb

Connection Standard	Material	
	PVC	
Unit	g	Lb
1/4inch Male Thread×1/4inch Male Thread	25	0.06
1/2inch Male Thread×1/2inch Male Thread	30	0.07
1/4inch Female Thread×1/4inch Female Thread	30	0.07
3/8inch Female Thread×3/8inch Female Thread	30	0.07
1/4inch Hose×1/4inch Hose	25	0.06
1/2inch Male Thread×Elbow 16mm	55	0.12

**BUTTERFLY VALVE**

**LEVER TYPE/GEAR TYPE**

Unit:kg, Lb

Name Material Nominal Size mm (inch) Unit	Type 57, 56, 75												Type 56D, 75D		Type 57L(Lug Style)				Type 55				Damper Style													
	PVC/PP				PP/PP				PVDF/PVDF				PDCPD		PDCPD				FCD-S				PVC/PP		PP/PP		PVDF/PVDF									
	LEVER		GEAR		LEVER		GEAR		LEVER		GEAR		GEAR		LEVER		GEAR		LEVER		GEAR		LEVER		GEAR		LEVER		GEAR							
	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb						
40	1 1/2	1.3	2.9	3.4	7.5	1.1	2.4	3.1	6.8	1.4	3.1	3.5	7.7	-	-	-	-	-	-	-	-	1.1	2.4	3.1	6.9	0.9	2.0	3.0	6.6	1.4	3.1	3.3	7.3			
50	2	1.5	3.3	3.5	7.7	1.2	2.6	3.3	7.3	1.7	3.7	3.8	8.4	-	-	-	-	-	-	-	3.0	6.6	5.0	11.0	1.3	2.9	3.3	7.3	1.0	2.2	3.1	6.9	1.7	3.7	3.6	8.0
65	2 1/2	1.7	3.7	3.8	8.4	1.4	3.1	3.4	7.5	1.9	4.2	4.0	8.8	-	-	-	-	-	-	-	-	1.5	3.3	3.5	7.8	1.2	2.6	3.3	7.3	2.0	4.4	3.7	8.1			
80	3	1.9	4.2	3.9	8.6	1.6	3.5	3.6	7.9	2.2	4.9	4.2	9.3	-	-	2.8	6.2	4.9	10.8	4.5	9.9	6.5	14.3	1.7	3.7	3.7	8.2	1.3	2.9	3.4	7.5	2.3	5.1	4.0	8.8	
100	4	2.5	5.5	4.5	9.9	2.0	4.4	4.0	8.8	2.9	6.4	4.9	10.8	-	-	3.5	7.7	5.6	12.4	6.0	13.2	8.0	17.6	2.2	4.9	4.2	9.3	1.7	3.7	3.8	8.4	3.1	6.9	4.8	10.6	
125	5	4.9	10.8	6.5	14.3	4.0	8.8	5.6	12.3	5.7	12.6	7.3	16.1	-	-	6.9	15.2	9.0	19.9	10.5	23.2	11.5	25.4	4.4	9.7	6.0	13.2	3.5	7.7	5.1	11.3	5.3	11.7	6.9	15.3	
150	6	5.8	12.8	7.4	16.3	4.6	10.1	6.2	13.7	6.9	15.2	8.5	18.7	-	-	8.1	17.9	9.6	21.2	-	-	14.5	32.0	5.3	11.7	6.9	15.2	4.2	9.3	5.8	12.8	6.6	14.6	8.1	17.9	
200	8	9.3	20.5	10.7	23.6	7.4	16.3	8.9	19.6	11.0	24.3	12.5	27.6	-	-	15.0	33.2	16.5	36.5	-	-	23.0	50.7	8.4	18.5	9.9	21.8	6.6	14.5	8.1	17.9	10.1	22.3	12.0	26.5	
250	10	-	-	14.7	32.4	-	-	12.2	26.9	-	-	18.6	41.0	-	-	-	-	22.7	50.2	-	-	32.9	72.6	11.2	24.7	13.7	30.2	8.0	17.6	10.5	23.2	22.5	49.6	25.0	55.1	
300	12	-	-	28.0	61.7	-	-	24.0	52.9	-	-	34.5	76.1	-	-	-	-	-	-	-	-	-	-	17.0	37.5	22.5	49.6	15.0	33.1	20.5	45.2	32.7	72.1	38.2	84.2	
350	14	-	-	30.2	66.6	-	-	26.3	58.0	-	-	36.8	81.1	-	-	-	-	-	-	-	-	-	-	19.0	41.9	24.5	54.0	16.0	35.3	21.5	47.4	35.2	77.6	40.7	89.7	
400	16	-	-	-	-	36.0	79.4	-	-	46.0	101.4	47	103	-	-	-	-	-	-	-	-	-	-	-	-	22.0	48.5	27.5	60.6	48.5	106.9	54.0	119.1			
450	18	-	-	-	-	63.5	140.0	-	-	103.0	227.1	100	221	-	-	-	-	-	-	-	-	-	-	-	-	28.0	61.7	33.5	73.9	50.0	110.3	55.5	122.4			
500	20	-	-	-	-	77.0	169.8	-	-	124.0	273.1	114	252	-	-	-	-	-	-	-	-	-	-	-	-	36.0	79.4	41.5	91.5	57.5	126.8	63.0	138.9			
600	24	-	-	-	-	114.0	251.4	-	-	157.0	346.2	140	309	-	-	-	-	-	-	-	-	-	-	-	-	66.0	145.5	71.5	157.7	79.0	174.2	84.5	186.3			

Unit:kg, Lb

Name	Nominal Size mm (inch) Unit	700(28)		800(32)		900(36)		1000(40)		1100(44)		1200(48)	
		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
PDCPD (Manual)		380	839	460	1013	550	1213	830	1830	1000	2205	1100	2425

**GATE VALVE**

**Flanged**

Unit:kg, Lb

Type			40mm (1 1/2inch)		50mm (2inch)		65mm (2 1/2inch)		80mm (3inch)		100mm (4inch)		125mm (5inch)		150mm (6inch)		200mm (8inch)		250mm (10inch)		300mm (12inch)		350mm (14inch)	
Unit			kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
TYPE-P	Non-Rising	Hand Wheel	2.5	5.5	3.5	7.7	5.5	12.1	7.0	15.4	8.5	18.7	13.5	29.8	19.5	43.0	29.5	65.0	42.0	92.6	68.0	149.9	81.5	179.7
		Cap	3.5	7.7	4.5	9.9	6.0	13.2	8.0	17.6	9.5	20.9	14.5	32.0	20.0	44.1	30.0	66.2	43.0	94.8	68.5	151.0	82.0	180.8
TYPE-S	Non-Rising	Hand Wheel	3.0	6.6	4.0	8.8	5.5	12.1	8.0	17.6	12.5	27.6	15.0	33.1	22.5	49.6	31.5	69.5	-	-	-	-	-	-
		Cap	4.0	8.8	5.0	11.0	6.0	13.2	9.0	19.8	13.0	28.7	15.5	34.2	23.0	50.7	32.0	70.6	-	-	-	-	-	-
	Rising	Hand Wheel	3.2	7.1	4.5	9.9	7.5	16.5	8.3	18.3	12.6	27.8	24.0	52.9	24.8	54.7	44.5	98.1	71.0	156.6	-	-	-	-
		Cap	-	-	-	-	-	-	-	-	13.0	28.7	-	-	25.7	56.7	35.0	77.2	60.0	132.3	-	-	-	-

**SWINGCHECK VALVE**

Flanged

Unit:kg, Lb

Nominal Size	Material	HI-PVC		PP		PVDF	
		kg	Lb	kg	Lb	kg	Lb
15mm	1/2 inch	0.8	1.8	0.6	1.3	1	2.2
20	3/4	0.9	2.0	0.6	1.3	1	2.2
25	1	1.7	3.7	1.2	2.6	2	4.4
32	1 1/4	2.6	5.7	1.7	3.7	3	6.6
40	1 1/2	2.6	5.7	1.7	3.7	3	6.6
50	2	4	8.8	2.7	6.0	4.6	10.1
65	2 1/2	5.5	12.1	3.5	7.7	6.5	14.3
80	3	6	13.2	4	8.8	7.5	16.5
100	4	10.5	23.2	7	15.4	12	26.5
125	5	16	35.3	12	26.5	20	44.1
150	6	22	48.5	16	35.3	27	59.5
200	8	34.5	76.1	24.5	54.0	42	92.6

**BALLCHECK VALVE**

Unit:kg, Lb

Nominal Size	Type Material	Flanged						Threaded						Socket, Spigot									
		U-PVC		C-PVC		PVDF		U-PVC		C-PVC		PP		PVDF		U-PVC		C-PVC		PP		PVDF	
		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
15mm	1/2 inch	0.3	0.6	0.3	0.7	0.3	0.7	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2
20	3/4	0.4	0.8	0.4	0.9	0.5	1.0	0.2	0.3	0.2	0.4	0.1	0.2	1.2	2.6	0.2	0.4	0.2	0.4	0.1	0.2	0.2	0.4
25	1	0.6	1.3	0.7	1.4	0.7	1.5	0.3	0.6	0.3	0.6	0.2	0.4	0.3	0.7	0.3	0.6	0.3	0.6	0.2	0.3	0.3	0.7
40	1 1/2	1.1	2.4	1.1	2.4	1.3	2.9	0.6	1.3	0.7	1.4	0.4	0.9	0.7	1.5	0.6	1.3	0.6	1.4	0.3	0.7	0.7	1.5
50	2	1.8	3.9	1.6	3.5	1.8	4.0	0.8	1.9	0.9	1.9	0.6	1.3	1	2.2	0.8	1.8	0.9	1.9	0.5	1.1	1.1	2.4
80	3	4	8.8	4.3	9.5	4.9	10.8	2.2	4.9	2.4	5.3	1.5	3.3	2.9	6.4	2.4	5.3	2.6	5.7	1.5	3.3	2.8	6.2
100	4	7.2	15.9	11.0	24.3	12	26.5	5.8	12.8	6.2	13.7	3.7	8.2	7	15.4	5.9	13.0	6.1	13.4	3	6.6	6.5	14.3

**Y-SEDIMENT STRAINER**

Unit:kg, Lb

Nominal Size	Type Material	Flanged		Threaded		Socket	
		U-PVC		U-PVC		U-PVC	
		kg	Lb	kg	Lb	kg	Lb
15mm	1/2 inch	0.5	1.1	0.3	0.6	0.3	0.6
20	3/4	0.8	1.8	0.5	1.1	0.5	1.0
25	1	1.2	2.6	0.8	1.7	0.7	1.5
32	1 1/4	2.5	5.5	2.0	4.4	2.0	4.4
40	1 1/2	2.2	4.9	1.6	3.5	1.5	3.3
50	2	2.8	6.2	1.9	4.2	1.8	4.0
65	2 1/2	6.3	13.9	5.3	11.7	5.4	11.9
80	3	6.5	14.3	6.0	13.2	5.4	11.9
100	4	20.5	45.2	19.5	43.0	18.0	39.7

**CONSTANT FLOW VALVE**

Unit:kg, Lb

Nominal Size	Type Material	Flanged	
		U-PVC	
		kg	Lb
15mm	1/2 inch	1.4	30.9
20	3/4	1.5	33
25	1	1.5	33
50	2	5	110.3
80	3	8.5	187.4
100	4	16.5	363.8

# TECHNICAL DATA AUTOMATIC VALVES WEIGHT LIST

## BALL VALVE

### Type 21

Unit:kg, Lb

Driving Method		Electric Actuator																									
Actuator Type		Type T																									
Type of Connection		Flanged End								Threaded End								Socket End									
Body Material		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF			
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	15	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5
	20	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5
	25	3.0	6.6	3.0	6.6	3.0	6.6	3.0	6.6	2.5	5.5	2.5	5.5	2.5	5.5	3.0	6.6	2.5	5.5	2.5	5.5	2.5	5.5	2.5	5.5	3.0	6.6
	32	3.0	6.6	3.5	7.7	3.0	6.6	3.5	7.7	3.0	6.6	3.0	6.6	—	—	3.0	6.6	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	3.0	6.6
	40	3.5	7.7	3.5	7.7	3.0	6.6	4.0	8.8	3.0	6.6	3.5	7.7	3.0	6.6	3.5	7.7	3.0	6.6	3.5	7.7	3.0	6.6	3.5	7.7	3.0	6.6
	50	4.0	8.8	4.5	9.9	3.5	7.7	4.5	9.9	4.0	8.8	4.0	8.8	3.5	7.7	4.0	8.8	4.0	8.8	4.0	8.8	4.0	8.8	3.5	7.7	4.0	8.8
	65	7.0	15.4	7.0	15.4	6.0	13.2	7.5	16.5	6.0	13.2	6.5	14.3	6.0	13.2	6.5	14.3	6.0	13.2	6.5	14.3	6.0	13.2	6.5	14.3	6.0	13.2
	80	8.0	17.6	8.0	17.6	6.5	14.3	8.5	18.7	7.0	15.4	7.5	16.5	6.0	13.2	7.5	16.5	7.0	15.4	7.5	16.5	6.5	14.3	7.5	16.5	7.5	16.5
100	11.5	25.4	12.0	26.5	9.0	19.8	12.5	27.6	11.0	24.3	11.0	24.3	8.5	18.7	12.0	26.5	11.0	24.3	11.0	24.3	8.5	18.7	12.0	26.5	12.0	26.5	

### Type 21

Unit:kg, Lb

Driving Method		Pneumatic Actuator																									
Actuator Type		Type TA																									
Type of Connection		Flanged End								Threaded End								Socket End									
Body Material		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF			
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	15	2.0	4.4	2.0	4.4	1.5	3.3	2.0	4.4	1.5	3.3	1.5	3.3	1.5	3.3	1.5	3.3	1.5	3.3	1.5	3.3	1.5	3.3	1.5	3.3	1.5	3.3
	20	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	1.5	3.3	1.5	3.3	1.5	3.3	2.0	4.4	2.0	4.4	1.5	3.3	1.5	3.3	1.5	3.3	1.5	3.3
	25	2.5	5.5	2.5	5.5	2.0	4.4	2.5	5.5	2.0	4.4	2.0	4.4	1.5	3.3	2.0	4.4	2.0	4.4	2.0	4.4	1.5	3.3	2.0	4.4	2.0	4.4
	32	2.5	5.5	3.0	6.6	2.0	4.4	3.0	6.6	2.0	4.4	2.0	4.4	2.0	4.4	2.5	5.5	2.0	4.4	2.0	4.4	—	—	2.0	4.4	2.0	4.4
	40	3.5	7.7	3.5	7.7	3.0	6.6	3.5	7.7	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	3.0	6.6
	50	4.5	9.9	4.5	9.9	3.5	7.7	4.5	9.9	3.5	7.7	3.5	7.7	3.0	6.6	4.0	8.8	3.5	7.7	3.5	7.7	3.0	6.6	3.5	7.7	3.0	6.6
	65	6.5	14.3	6.5	14.3	5.5	12.1	7.0	15.4	5.5	12.1	5.5	12.1	5.0	11.0	6.0	13.2	5.5	12.1	5.5	12.1	5.0	11.0	6.0	13.2	5.0	11.0
	80	9.5	20.9	10.0	22.1	8.0	17.6	10.5	23.2	8.5	18.7	9.0	19.8	7.0	15.4	9.5	20.9	8.5	18.7	9.0	19.8	7.5	16.5	9.5	20.9	9.5	20.9
100	15.0	33.1	16.0	35.3	12.0	26.5	17.0	37.5	14.5	32.0	15.0	33.1	12.0	26.5	16.0	35.3	14.5	32.0	15.0	33.1	12.0	26.5	16.0	35.3	16.0	35.3	

### Type 21

Unit:kg, Lb

Driving Method		Pneumatic Actuator																									
Actuator Type		Type TA																									
Type of Connection		Flanged End								Threaded End								Socket End									
Body Material		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF			
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	15	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7
	20	4.0	8.8	4.0	8.8	3.5	7.7	4.0	8.8	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7
	25	4.0	8.8	4.0	8.8	4.0	8.8	4.0	8.8	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	4.0	8.8	3.5	7.7	3.5	7.7	3.5	7.7
	32	4.5	9.9	4.5	9.9	4.0	8.8	4.5	9.9	4.0	8.8	4.0	8.8	3.5	7.7	4.0	8.8	4.0	8.8	4.0	8.8	—	—	4.0	8.8	4.0	8.8
	40	5.0	11.0	5.5	12.1	4.5	9.9	5.5	12.1	4.5	9.9	4.5	9.9	4.0	8.8	5.0	11.0	4.5	9.9	4.5	9.9	4.5	9.9	4.5	9.9	4.5	9.9
	50	6.0	13.2	6.0	13.2	5.0	11.0	6.0	13.2	5.5	12.1	5.5	12.1	4.5	9.9	5.5	12.1	5.0	11.0	5.0	11.0	4.5	9.9	5.5	12.1	5.0	11.0
	65	9.5	20.9	9.5	20.9	8.5	18.7	10.0	22.1	8.5	18.7	8.5	18.7	8.0	17.6	9.0	19.8	8.5	18.7	8.5	18.7	8.0	17.6	9.0	19.8	9.0	19.8
	80	14.5	32.0	15.0	33.1	13.0	28.7	15.5	34.2	13.5	29.8	14.0	30.9	12.0	26.5	14.5	32.0	14.0	30.9	14.0	30.9	12.5	27.6	14.5	32.0	14.5	32.0
100	20.0	44.1	21.0	46.3	17.0	37.5	22.0	48.5	19.5	43.0	20.0	44.1	16.5	36.4	21.0	46.3	20.0	44.1	20.0	44.1	16.5	36.4	21.0	46.3	21.0	46.3	

### Type 21

Unit:kg, Lb

Driving Method		Pneumatic Actuator																									
Actuator Type		Type AA																									
Type of Connection		Flanged End								Threaded End								Socket End									
Body Material		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF			
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	15	1.0	2.2	1.0	2.2	0.9	2.0	1.1	2.4	0.8	1.8	0.8	1.8	0.7	1.5	0.8	1.8	0.8	1.8	0.8	1.8	0.7	1.5	0.7	1.5	0.7	1.5
	20	1.2	2.6	1.2	2.6	1.0	2.2	1.2	2.6	0.9	2.0	0.9	2.0	0.9	2.0	1.0	2.2	1.1	2.4	0.9	2.0	0.7	1.5	0.9	2.0	0.9	2.0
	25	1.5	3.3	1.6	3.5	1.2	2.6	1.5	3.3	1.0	2.2	1.1	2.4	0.9	2.0	1.1	2.4	1.3	2.9	1.2	2.6	0.8	1.8	1.0	2.2	1.0	2.2
	32	1.9	4.2	2.0	4.4	1.4	3.1	2.0	4.4	1.3	2.9	1.3	2.9	1.0	2.2	1.5	3.3	2.0	4.4	1.3	2.9	—	—	1.2	2.6	1.2	2.6
	40	2.6	5.7	2.7	6.0	2.0	4.4	2.7	6.0	1.9	4.2	2.0	4.4	1.6	3.5	2.2	4.9	2.5	5.5	1.9	4.2	1.5	3.3	2.0	4.4	2.0	4.4
50	3.4	7.5	3.6	7.9	2.5	5.5	3.6	7.9	2.7	6.0	2.8	6.2	2.0	4.4	3.1	6.8	2.8	6.2	2.6	5.7	1.9	4.2	2.8	6.2	2.8	6.2	

**BALL VALVE**

**Type 21**

Unit:kg, Lb

Driving Method	Pneumatic Actuator																									
Actuator Type	Type AA																									
	Air to Open, Air to Close																									
Type of Connection	Flanged End								Threaded End								Socket End									
Body Material	PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF			
Unit	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb		
Nominal Size (mm)	15	1.6	3.5	1.6	3.5	1.5	3.3	1.7	3.7	1.4	3.1	1.4	3.1	1.3	2.9	1.4	3.1	1.4	3.1	1.4	3.1	1.3	2.9	1.4	3.1	
	20	1.8	4.0	1.8	4.0	1.6	3.5	1.8	4.0	1.5	3.3	1.5	3.3	1.5	3.3	1.6	3.5	1.7	3.7	1.5	3.3	1.4	3.1	1.5	3.3	
	25	2.1	4.6	2.2	4.9	1.8	4.0	2.1	4.6	1.6	3.5	1.7	3.7	1.5	3.3	1.7	3.7	1.7	3.7	1.8	4.0	1.5	3.3	1.7	3.7	
	32	2.5	5.5	2.6	5.7	2.0	4.4	2.6	5.7	1.9	4.2	1.9	4.2	1.6	3.5	2.1	4.6	1.9	4.2	1.9	4.2	—	—	—	1.9	4.2
	40	4.0	8.8	4.1	9.0	3.4	7.5	4.1	9.0	3.3	7.3	3.4	7.5	3.0	6.6	3.6	7.9	3.3	7.3	3.3	7.3	2.9	6.4	3.4	7.5	
50	4.8	10.6	5.0	11.0	3.9	8.6	5.0	11.0	4.1	9.0	4.2	9.3	3.4	7.5	4.5	9.9	3.9	8.6	4.0	8.8	3.3	7.3	4.2	9.3		

**3-Way Ball Valve**

Unit:kg, Lb

Driving Method	Electric Actuator																								
Actuator Type	Type T																								
Type of Connection	Flanged End								Threaded End								Socket End								
Body Material	PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		
Unit	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	
Nominal Size (mm)	15	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	2.5	5.5	2.5	5.5	2.5	5.5	3.0	6.6	2.5	5.5	2.0	4.4	2.5	5.5	2.5	5.5
	20	3.0	6.6	3.5	7.7	3.0	6.6	3.5	7.7	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6
	25	3.5	7.7	4.0	8.8	3.0	6.6	4.0	8.8	3.0	6.6	3.0	6.6	3.0	6.6	3.0	6.6	3.0	6.6	3.0	6.6	3.0	6.6	3.0	6.6
	32	4.5	9.9	5.0	11.0	4.0	8.8	5.0	11.0	3.5	7.7	4.0	8.8	3.0	6.6	4.0	8.8	4.0	8.8	4.0	8.8	3.5	7.7	4.0	8.8
	40	4.5	9.9	5.0	11.0	4.0	8.8	5.0	11.0	4.0	8.8	4.0	8.8	3.5	7.7	4.0	8.8	3.5	7.7	4.0	8.8	3.0	6.6	4.0	8.8
	50	6.0	13.2	6.0	13.2	4.5	9.9	6.5	14.3	5.0	11.0	5.0	11.0	4.0	8.8	5.5	12.1	5.0	11.0	5.0	11.0	4.0	8.8	5.5	12.1
	65	11.5	25.3	12.0	26.4	9.0	19.8	13.0	28.6	10.3	22.7	10.3	22.7	7.9	17.4	11.3	24.9	10.0	22.0	10.5	23.1	8.0	17.6	11.0	24.2
	80	11.5	25.4	12.0	26.5	9.0	19.8	13.0	28.7	10.0	22.1	10.5	23.2	8.0	17.6	11.0	24.3	10.5	23.2	10.5	23.2	8.0	17.6	11.5	25.4
	100	18.5	40.8	19.5	43.0	13.5	29.8	21.0	46.3	17.5	38.6	18.5	40.8	13.0	28.7	20.0	44.1	18.0	39.7	18.5	40.8	13.0	28.7	20.0	44.1

**3-Way Ball Valve**

Unit:kg, Lb

Driving Method	Pneumatic Actuator																								
Actuator Type	Type TA																								
	Double Acting																								
Type of Connection	Flanged End								Threaded End								Socket End								
Body Material	PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		
Unit	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	
Nominal Size (mm)	15	2.0	4.4	2.0	4.4	1.8	4.0	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4
	20	2.5	5.5	2.5	5.5	2.3	5.1	2.5	5.5	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4	2.0	4.4
	25	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	2.0	4.4	2.0	4.4	2.0	4.4	2.5	5.5	2.0	4.4	2.0	4.4	2.0	4.4	2.5	5.5
	32	4.0	8.8	4.5	9.9	3.2	7.0	5.0	11.0	3.5	7.7	3.5	7.7	3.0	6.6	3.5	7.7	3.5	7.7	3.5	7.7	3.0	6.6	3.5	7.7
	40	4.0	8.8	4.5	9.9	3.2	7.0	5.0	11.0	3.5	7.7	3.5	7.7	3.0	6.6	3.5	7.7	3.5	7.7	3.5	7.7	3.0	6.6	3.5	7.7
	50	5.0	11.0	5.5	12.1	3.7	8.1	5.5	12.1	4.0	8.8	4.0	8.8	3.1	6.8	4.5	9.9	4.0	8.8	4.5	9.9	3.1	6.8	4.5	9.9
	65	12.0	26.4	12.5	27.5	9.4	20.7	13.5	29.7	10.8	23.8	11.0	24.2	8.5	18.7	12.0	26.4	10.8	23.8	10.8	23.8	8.4	18.5	11.3	24.9
	80	12.0	26.5	12.5	27.6	9.4	20.7	13.5	29.8	10.5	23.2	11.0	24.3	8.5	18.7	12.0	26.5	11.0	24.3	11.0	24.3	8.5	18.7	11.5	25.4
	100	20.0	44.1	21.0	46.3	15.0	33.1	23.0	50.7	19.0	41.9	19.5	43.0	14.0	30.8	21.5	47.4	19.0	41.9	19.5	43.0	14.0	30.8	21.0	46.3

Unit:kg, Lb

Driving Method	Pneumatic Actuator																								
Actuator Type	Type TA																								
	Air to Open, Air to Close																								
Type of Connection	Flanged End								Threaded End								Socket End								
Body Material	PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		
Unit	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	
Nominal Size (mm)	15	4.0	8.8	4.0	8.8	3.8	8.4	4.0	8.8	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.5	7.7	3.4	7.5	3.5	7.7
	20	4.0	8.8	4.5	9.9	3.8	8.4	4.5	9.9	4.0	8.8	4.0	8.8	3.8	8.4	4.0	8.8	4.0	8.8	4.0	8.8	3.8	8.4	4.0	8.8
	25	4.5	9.9	5.0	11.0	4.0	8.8	5.0	11.0	4.0	8.8	4.0	8.8	3.8	8.4	4.0	8.8	4.0	8.8	4.0	8.8	3.8	8.4	4.0	8.8
	32	6.0	13.2	6.0	13.2	5.2	11.4	6.5	14.3	5.0	11.0	5.0	11.0	4.5	9.9	5.5	12.1	5.0	11.0	5.0	11.0	4.5	9.9	5.5	12.1
	40	6.0	13.2	6.0	13.2	5.2	11.4	6.5	14.3	5.0	11.0	5.0	11.0	4.5	8.8	9.9	12.1	5.0	11.0	5.0	11.0	4.5	9.9	5.5	12.1
	50	6.5	14.3	7.0	15.4	5.7	12.5	7.5	16.5	5.5	12.1	6.0	13.2	4.6	8.8	10.1	13.2	5.5	12.1	6.0	13.2	4.6	10.1	6.0	13.2
	65	17.0	37.4	17.0	37.4	14.4	31.7	18.5	40.7	15.3	33.7	16.0	35.2	13.5	29.7	17.0	37.4	15.8	34.8	15.8	34.8	13.5	29.7	16.3	35.9
	80	17.0	37.5	17.5	38.6	14.4	31.8	18.5	40.8	15.5	34.2	16.0	35.3	13.5	32.0	29.8	37.5	16.0	35.3	16.0	35.3	13.5	29.8	16.5	36.4
	100	25.0	55.1	26.0	57.3	20.0	44.1	28.0	61.7	24.0	52.9	24.5	54.0	19.5	45.2	43.0	58.4	24.0	52.9	24.5	54.0	19.0	41.9	26.0	57.3

**DIAPHRAGM VALVE**

**Diaphragm Valve Type 14**

Unit:kg, Lb

Driving Method		Electric Actuator								Pneumatic Actuator																							
Actuator Type		Type H								Type AN, Type AV																							
Body Material		PVC				C-PVC				PP				PVDF				PVC				C-PVC				PP				PVDF			
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	15	8.0	17.6	8.0	17.6	7.5	16.5	8.0	17.6	2.5	5.5	2.5	5.5	2.0	4.4	2.5	5.5	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	2.5	5.5	3.0	6.6	2.5	5.5	3.0	6.6
	20	8.0	17.6	8.0	17.6	7.5	16.5	8.0	17.6	2.5	5.5	2.5	5.5	2.0	4.4	2.5	5.5	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	2.5	5.5	3.0	6.6	2.5	5.5	3.0	6.6
	25	8.0	17.6	8.0	17.6	8.0	17.6	8.5	18.7	2.5	5.5	2.5	5.5	2.5	5.5	3.0	6.6	3.0	6.6	3.0	6.6	3.0	6.6	3.0	6.6	3.0	6.6	3.5	7.7	3.5	7.7	3.0	6.6
	32	8.5	18.7	8.5	18.7	8.0	17.6	8.5	18.7	3.0	6.6	3.0	6.6	2.5	5.5	3.0	6.6	3.5	7.7	3.5	7.7	3.5	7.7	3.0	6.6	3.5	7.7	3.5	7.7	3.0	6.6	3.5	7.7
	40	9.5	20.9	9.5	20.9	9.0	19.8	9.5	20.9	5.5	12.1	5.5	12.1	5.0	11.0	5.5	12.1	7.0	15.4	7.0	15.4	7.0	15.4	6.5	14.3	7.0	15.4	7.0	15.4	6.5	14.3	7.0	15.4
	50	10.5	23.2	10.5	23.2	9.5	20.9	10.5	23.2	6.5	14.3	6.5	14.3	5.5	12.1	6.5	14.3	8.0	17.6	8.0	17.6	8.0	17.6	7.0	15.4	8.0	17.6	7.0	15.4	8.0	17.6	7.0	15.4
	65	15.0	33.1	15.0	33.1	14.0	30.9	15.5	34.2	10.0	22.1	10.0	22.1	9.0	19.8	10.5	23.2	22.5	49.6	22.5	49.6	22.5	49.6	21.5	47.4	23.0	50.7	23.0	50.7	23.0	50.7	23.0	50.7
	80	16.5	36.4	16.5	36.4	15.0	33.1	17.0	37.5	12.0	26.5	12.0	26.5	10.5	23.2	12.5	27.6	34.5	76.1	34.5	76.1	34.5	76.1	33.0	72.8	35.0	77.2	35.0	77.2	35.0	77.2	35.0	77.2
100	19.5	43.0	19.5	43.0	17.0	37.5	20.0	44.1	19.0	41.9	19.0	41.9	16.5	36.4	19.5	43.0	61.0	134.5	61.0	134.5	61.0	134.5	58.5	129.0	61.5	135.6	61.5	135.6	61.5	135.6	61.5	135.6	

Unit:kg, Lb

Driving Method		Pneumatic Actuator																							
Actuator Type		Type AN, Type AV																							
Body Material		PVC				C-PVC				PP				PVDF											
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb		
Nominal Size (mm)	15	2.6	5.7	2.6	5.7	2.1	4.6	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7
	20	2.6	5.7	2.6	5.7	2.1	4.6	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7
	25	2.6	5.7	2.6	5.7	2.6	5.7	3.1	6.8	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7
	32	3.1	6.8	3.1	6.8	2.6	5.7	3.1	6.8	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7	2.6	5.7
	40	5.7	12.6	5.7	12.6	5.2	11.5	5.7	12.6	5.7	12.6	5.7	12.6	5.7	12.6	5.7	12.6	5.7	12.6	5.7	12.6	5.7	12.6	5.7	12.6
	50	6.7	14.8	6.7	14.8	5.7	12.6	6.7	14.8	6.7	14.8	6.7	14.8	6.7	14.8	6.7	14.8	6.7	14.8	6.7	14.8	6.7	14.8	6.7	14.8
	65	17.0	37.5	17.0	37.5	16.0	35.3	17.5	38.6	17.5	38.6	17.5	38.6	17.5	38.6	17.5	38.6	17.5	38.6	17.5	38.6	17.5	38.6	17.5	38.6
	80	24.5	54.0	24.5	54.0	23.0	50.7	25.0	55.1	25.0	55.1	25.0	55.1	25.0	55.1	25.0	55.1	25.0	55.1	25.0	55.1	25.0	55.1	25.0	55.1
100	45.5	100.3	45.5	100.3	43.0	94.8	46.0	101.4	46.0	101.4	46.0	101.4	46.0	101.4	46.0	101.4	46.0	101.4	46.0	101.4	46.0	101.4	46.0	101.4	

\* 15mm - 50mm(1/2inch - 2inch) for Type-AN, 65mm - 100mm for Type-AV

**True Union Diaphragm Valve Type 14**

Unit:kg, Lb

Driving Method		Electric Actuator								Pneumatic Actuator																							
Actuator Type		Type H								Type AN																							
Body Material		PVC				C-PVC				PP				PVDF				PVC				C-PVC				PP				PVDF			
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	15	8.0	17.6	8.0	17.6	7.5	17.6	8.0	18.0	2.3	5.1	2.3	5.1	1.8	4.0	2.3	5.1	2.3	5.1	2.8	6.2	2.3	5.1	2.8	6.2	2.3	5.1	2.8	6.2	2.3	5.1	2.8	6.2
	20	8.0	17.6	8.0	17.6	7.5	17.6	8.0	18.0	2.3	5.1	2.3	5.1	1.9	4.2	2.3	5.1	2.8	6.2	2.8	6.2	2.8	6.2	2.4	5.3	2.8	6.2	2.8	6.2	2.4	5.3	2.8	6.2
	25	8.0	17.6	8.0	17.6	8.0	17.6	8.5	19.0	2.3	5.1	2.3	5.1	2.4	5.3	2.8	6.2	2.8	6.2	2.8	6.2	2.8	6.2	2.9	6.4	2.8	6.2	2.9	6.4	2.8	6.2	2.9	6.4
	32	8.5	18.7	8.5	18.7	8.0	18.7	8.5	19.0	2.7	6.0	2.7	6.0	2.4	5.3	2.8	6.2	3.2	7.1	3.2	7.1	3.2	7.1	2.9	6.4	3.2	7.1	2.9	6.4	3.2	7.1	2.9	6.4
	40	9.5	20.9	9.5	20.9	9.0	20.0	9.5	20.0	5.3	11.7	5.3	11.7	4.8	10.6	5.3	11.7	6.3	13.9	6.8	15.0	6.3	13.9	6.8	15.0	6.3	13.9	6.8	15.0	6.3	13.9	6.8	15.0
	50	10.5	23.2	10.5	23.2	9.5	21.0	10.5	21.0	5.8	12.8	5.8	12.8	5.0	11.0	5.7	12.6	6.8	15.0	6.8	15.0	6.8	15.0	6.5	14.3	7.2	15.9	6.8	15.0	7.2	15.9	6.8	15.0

Unit:kg, Lb

Driving Method		Pneumatic Actuator																							
Actuator Type		Type AN																							
Body Material		PVC				C-PVC				PP				PVDF											
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb		
Nominal Size (mm)	15	2.3	5.1	2.4	5.3	1.9	4.2	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3
	20	2.3	5.1	2.4	5.3	2.0	4.4	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3
	25	2.3	5.1	2.4	5.3	2.5	5.5	2.9	6.4	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3
	32	2.7	6.0	2.7	6.0	2.5	5.5	2.9	6.4	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3	2.4	5.3
	40	5.5	12.1	5.5	12.1	5.0	11.0	5.5	12.1	5.5	12.1	5.5	12.1	5.5	12.1	5.5	12.1	5.5	12.1	5.5	12.1	5.5	12.1	5.5	12.1
50	6.0	13.2	6.0	13.2	5.2	11.5	5.9	13.0	5.9	13.0	5.9	13.0	5.9	13.0	5.9	13.0	5.9	13.0	5.9	13.0	5.9	13.0	5.9	13.0	

**DIAPHRAGM VALVE**

**Diaphragm Valve Type 15, Type 72**

Unit:kg, Lb

Driving Method	Electric Actuator												Pneumatic Actuator												
	Type H						Type S						Type AV												
													Double Acting						Air to Open						
Body Material	PVC		PP		PVDF		PVC		PP		PVDF		PVC		PP		PVDF		PVC		PP		PVDF		
Unit	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	
Nominal Size (mm)	125	45.0	99.2	42.5	93.7	47.0	103.6	62.5	137.8	60.0	132.3	64.5	142.2	31.0	68.4	28.5	62.8	33.0	72.8	138.0	304.3	136.0	299.9	141.0	310.9
	150	54.5	120.2	50.5	111.4	57.0	125.7	94.5	208.4	90.5	199.6	97.5	215.0	82.5	181.9	78.5	173.1	85.0	187.4	158.0	348.4	154.0	339.6	160.0	352.8
	200	—	—	—	—	—	—	118.0	—	113.0	—	123.0	—	113.0	249.2	107.0	235.9	118.0	260.2	—	—	—	—	—	—
	250	—	—	—	—	—	—	177.0	—	167.0	—	185.0	—	183.0	403.5	173.0	381.5	190.0	419.0	—	—	—	—	—	—

Unit:kg, Lb

Driving Method	Pneumatic Actuator						
Actuator Type	Type AV						
Body Material	PVC		PP		PVDF		
Unit	kg	Lb	kg	Lb	kg	Lb	
Nominal Size (mm)	*1 125	73.0	161.0	70.5	155.5	75.0	165.4
	*1 150	87.5	192.9	83.5	184.1	90.0	198.5
	*2 200	—	—	—	—	—	—
	*2 250	—	—	—	—	—	—

\*1 Type 15  
\*2 Type 72

**Diaphragm Valve Type AI**

Unit:kg, Lb

Driving Method	Pneumatic Actuator																								
	Type AI																								
	Double Acting								Air to Open								Air to Close								
Body Material	PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		
Unit	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	
Nominal Size (mm)	15	1.0	2.2	1.1	2.4	0.9	2.0	1.1	2.4	1.2	2.7	1.3	2.9	1.0	2.2	1.3	2.9	1.1	2.4	1.2	2.7	1.0	2.2	1.2	2.7
	20	1.3	2.9	1.3	2.9	1.1	2.4	1.4	3.1	1.4	3.1	1.5	3.3	1.3	2.9	1.6	3.5	1.3	2.9	1.4	3.1	1.2	2.7	1.5	3.3
	25	1.5	3.3	1.7	3.8	1.3	2.9	1.7	3.8	1.8	4.0	1.9	4.2	1.6	3.5	1.9	4.2	1.6	3.5	1.7	3.8	1.4	3.1	1.8	4.0
	32	1.8	4.0	1.9	4.2	1.5	3.3	2.0	4.4	2.0	4.4	2.2	4.9	1.7	3.8	2.2	4.9	1.9	4.2	2.0	4.4	1.6	3.5	2.1	4.6
	40	4.0	8.8	4.2	9.3	3.6	8.0	4.3	9.5	4.9	10.8	5.1	11.3	4.5	9.9	5.2	11.5	4.4	9.7	4.6	10.2	4.0	8.8	4.7	10.4
	50	4.8	10.6	5.1	11.3	4.1	9.1	5.2	11.5	5.7	12.6	6.0	13.3	5.1	11.3	6.2	13.7	5.2	11.5	5.5	12.2	4.6	10.2	5.7	12.6

**True Union Diaphragm Valve Type AI**

Unit:kg, Lb

Driving Method	Pneumatic Actuator																								
	Type AI																								
	Double Acting								Air to Open								Air to Close								
Body Material	PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		PVC		C-PVC		PP		PVDF		
Unit	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	
Nominal Size (mm)	15	0.9	2.0	0.9	2.0	0.8	1.8	0.9	2.0	1.1	2.4	1.1	2.4	0.9	2.0	1.1	2.4	1.0	2.2	1.0	2.2	0.9	2.0	1.0	2.2
	20	1.1	2.4	1.2	2.7	1.0	2.2	1.2	2.7	1.3	2.9	1.4	3.1	1.2	2.7	1.4	3.1	1.2	2.7	1.3	2.9	1.1	2.4	1.3	2.9
	25	1.4	3.1	1.4	3.1	1.2	2.7	1.5	3.3	1.6	3.5	1.7	3.8	1.5	3.3	1.7	3.8	1.4	3.1	1.5	3.3	1.3	2.9	1.6	3.5
	32	1.6	3.5	1.7	3.8	1.4	3.1	1.8	4.0	1.8	4.0	1.9	4.2	1.6	3.5	2.0	4.4	1.7	3.8	1.8	4.0	1.5	3.3	1.8	4.0
	40	3.7	8.2	3.8	8.4	3.4	7.5	3.9	8.6	4.6	10.2	4.8	10.6	4.3	9.5	4.9	10.8	4.1	9.1	4.3	9.5	3.8	8.4	4.4	9.7
	50	4.5	9.9	4.6	10.2	3.9	8.6	4.7	10.4	5.4	11.9	5.5	12.2	4.8	10.6	5.6	12.4	5.0	11.1	5.0	11.1	4.3	9.5	5.1	11.3

**CONTROL VALVE**

**Control Valve**

Unit:kg, Lb

Driving Method	Electric Actuator				Pneumatic Actuator								
					Double Acting				Air to Open				
Body Material	PVC		PVDF		PVC		PVDF		PVC		PVDF		
Unit	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	
Nominal Size (mm)	15	4.5	9.9	6.3	13.9	6.1	13.5	6.4	14.1	7.9	17.4	8.2	18.1
	25	5.5	12.1	7.4	16.3	7.3	16.1	7.1	15.7	9.8	21.6	10.0	22.1
	50	16.0	35.3	—	—	10.0	22.1	—	—	15.0	33.1	—	—
	80	19.0	41.9	—	—	14.0	30.9	—	—	24.0	52.9	—	—
	100	22.0	48.5	—	—	19.0	41.9	—	—	34.0	75.0	—	—

**BUTTERFLY VALVE**

**Butterfly Valve**

Unit:kg, Lb

Valve Type		Type 57																							
Driving Method		Electric Actuator										Pneumatic Actuator													
Actuator Type		Type T					Type S					Type TA													
Body Material		PVC		PP		PVDF		PVC		P P		PVDF		Double Acting					Air to Open, Air to Close						
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	40	5.7	12.6	5.5	12.1	5.9	13.0	15.5	34.2	15.3	33.7	15.7	34.6	2.8	6.2	2.6	5.7	3.0	6.6	4.5	9.9	4.3	9.5	4.7	10.4
	50	5.9	13.0	5.6	12.3	6.1	13.5	15.7	34.6	15.4	33.9	15.9	35.0	3.0	6.6	2.7	6.0	3.2	7.1	4.7	10.4	4.4	9.7	4.9	10.8
	65	6.1	13.5	5.8	12.8	6.4	14.1	15.9	35.0	15.6	34.4	16.2	35.7	4.0	8.8	3.7	8.2	4.3	9.5	6.8	15.0	6.5	14.3	7.1	15.7
	80	6.3	13.9	6.0	13.2	6.6	14.6	16.1	35.5	15.8	34.8	16.4	36.1	4.2	9.3	3.9	8.6	4.5	9.9	7.0	15.4	6.7	14.8	7.3	16.1
	100	6.9	15.2	6.4	14.1	7.4	16.3	16.7	36.8	16.2	35.7	17.2	37.9	6.1	13.5	5.6	12.3	6.6	14.6	11.2	24.7	10.7	23.6	11.7	25.8
	125	11.0	24.3	10.2	22.5	12.1	26.7	18.6	41.0	17.8	39.2	19.7	43.4	11.1	24.4	10.3	22.8	12.2	26.8	21.0	46.3	20.2	44.5	22.1	48.7
	150	16.6	36.6	15.7	34.6	18.0	39.7	19.4	42.8	18.5	40.8	20.8	45.8	11.9	26.2	11.0	24.3	13.3	29.3	21.8	81.7	20.9	46.1	23.2	51.1
	200	20.0	44.1	18.4	40.6	22.5	49.6	27.8	61.3	26.2	57.8	30.3	66.8	18.6	41.0	17.0	37.5	21.1	46.5	36.8	81.1	35.2	77.7	39.3	86.6
	250	38.5	84.9	35.9	79.2	42.1	92.8	32.5	71.7	29.9	65.9	36.1	79.6	32.5	71.7	29.9	65.9	36.1	79.6	64.5	142.2	62.9	138.7	69.1	152.4
	300	47.2	104.1	43.0	94.8	53.0	116.9	94.3	207.9	90.1	198.7	100.1	220.7	41.7	91.9	37.5	82.7	47.5	104.7	74.7	164.7	70.5	155.5	80.5	177.5
	350	49.9	110.0	45.4	100.1	57.0	125.7	97.0	213.9	92.5	204.0	104.1	229.5	96.1	211.9	91.6	202.0	103.2	227.6	196.1	432.4	191.6	422.5	203.2	448.1
	400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
450	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

Unit:kg, Lb

Valve Type		Type 56																							
Driving Method		Electric Actuator										Pneumatic Actuator													
Actuator Type		Type H					Type S					Type TA													
Body Material		PVC		PP		PVDF		PVC		P P		PVDF		Double Acting					Air to Open, Air to Close						
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	125	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	150	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	400	—	—	—	—	—	—	—	122.0	269.0	154.0	339.6	—	—	106.0	233.7	138.0	304.3	—	—	206.0	454.2	238.0	524.8	—
	450	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unit:kg, Lb

Valve Type		Type 75										Type 55									
Driving Method		Electric Actuator					Pneumatic Actuator					Electric Actuator					Pneumatic Actuator				
Actuator Type		Type S					Type TW					Type H		Type S			Type TA				
Body Material		PP		PVDF		PP		PVDF		FCD-S		FCD-S		FCD-S		FCD-S		FCD-S		FCD-S	
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	—	—	—	—	—	—	—	—	7.5	16.5	16.0	35.3	4.5	9.9	6.0	13.2	—	—	—	—
	65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	80	—	—	—	—	—	—	—	—	9.0	19.8	17.5	38.6	7.0	15.4	9.5	20.9	—	—	—	—
	100	—	—	—	—	—	—	—	—	10.7	23.6	19.0	41.9	10.0	22.1	15.0	33.1	—	—	—	—
	125	—	—	—	—	—	—	—	—	17.0	37.5	23.5	51.8	14.0	30.9	19.0	41.9	—	—	—	—
	150	—	—	—	—	—	—	—	—	26.2	57.8	27.0	59.5	20.5	45.2	30.1	66.4	—	—	—	—
	200	—	—	—	—	—	—	—	—	34.1	75.2	41.5	91.5	33.5	73.9	50.6	111.6	—	—	—	—
	250	—	—	—	—	—	—	—	—	55.7	122.8	49.5	109.1	52.0	114.7	84.7	186.8	—	—	—	—
	300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	350	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
450	137.0	302.1	177.0	390.3	146.0	321.9	185.0	407.9	—	—	—	—	—	—	—	—	—	—	—	—	
500	150.0	330.8	201.0	443.2	158.0	348.4	209.0	460.8	—	—	—	—	—	—	—	—	—	—	—	—	
600	178.0	392.5	254.0	560.1	186.0	410.1	263.0	579.9	—	—	—	—	—	—	—	—	—	—	—	—	

**BUTTERFLY VALVE**

**Rotary Damper**

Unit:kg, Lb

Valve Type		Rotary Damper																							
Driving Method		Electric Actuator												Pneumatic Actuator											
Actuator Type		Type T						Type S						Type TA											
Body Material		PVC		PP		PVDF		PVC		PP		PVDF		PVC		PP		PVDF		PVC		PP		PVDF	
Unit		kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb	kg	Lb
Nominal Size (mm)	40	5.6	12.3	5.1	11.2	5.5	12.1	15.4	34.0	15.2	33.5	15.6	34.4	2.4	5.3	2.1	4.6	2.5	5.5	4.1	9.0	3.8	8.4	4.2	9.3
	50	5.7	12.6	5.2	11.5	5.6	12.3	15.6	34.4	15.3	33.7	15.8	34.8	2.5	5.5	2.2	4.9	2.7	6.0	4.2	9.3	3.9	8.6	4.4	9.7
	65	6.0	13.2	5.3	11.7	5.9	13.0	15.8	34.8	15.5	34.2	16.1	35.5	2.8	6.2	2.4	5.3	3.0	6.6	4.5	9.9	4.1	9.0	4.7	10.4
	80	6.1	13.5	5.4	11.9	6.0	13.2	15.9	35.1	15.6	34.4	16.2	35.7	2.9	6.4	2.6	5.7	3.2	7.1	4.6	10.1	4.3	9.5	4.9	10.8
	100	6.7	14.8	5.8	12.8	6.8	15.0	16.4	36.2	15.9	35.1	16.9	37.3	3.5	7.7	3.0	6.6	4.0	8.8	5.2	11.5	4.7	10.4	5.7	12.6
	125	9.0	19.8	7.1	15.7	9.0	19.8	18.2	40.1	17.4	38.4	19.3	42.6	7.2	15.9	6.3	13.9	8.2	18.2	12.3	27.1	11.4	25.1	13.3	29.3
	150	10.5	23.2	8.3	18.3	10.7	23.6	18.8	41.5	17.9	39.5	20.2	44.5	8.2	18.1	6.9	15.2	9.3	20.5	13.3	29.3	12.0	26.5	14.4	31.8
	200	21.1	46.5	17.3	38.1	21.4	47.2	28.0	61.7	26.4	58.2	30.5	67.3	13.8	30.4	11.9	26.2	16.0	35.3	24.1	53.1	22.2	49.0	26.3	58.0
	250	26.9	59.3	21.9	48.3	29.7	65.5	29.8	65.7	27.2	60.0	33.4	73.6	21.4	47.2	18.1	39.9	26.0	57.3	31.7	69.9	28.4	62.6	36.3	80.0
	300	35.6	78.5	25.9	57.1	37.8	83.3	39.2	86.4	35.5	78.5	39.5	87.1	26.1	57.6	21.7	47.8	33.6	74.1	36.4	80.3	32.0	70.6	43.9	96.8
	350	38.3	84.5	27.9	61.5	41.9	92.4	44.6	98.3	42.6	93.9	42.2	93.1	32.7	72.1	27.8	61.3	41.8	92.2	50.5	111.4	45.6	100.5	59.6	131.4
	400	—	—	46.5	102.5	64.7	142.7	—	—	49.0	108.0	59.0	—	—	—	51.8	114.2	83.8	184.8	—	—	84.8	187.0	116.8	257.5
	450	—	—	—	—	—	—	—	—	61.1	134.7	100.1	—	—	—	59.3	130.8	98.3	216.8	—	—	97.2	214.3	136.2	300.3
	500	—	—	—	—	—	—	—	—	72.1	159.0	123.1	—	—	—	70.3	155.0	121.3	267.5	—	—	109.2	240.8	160.2	353.2
	600	—	—	—	—	—	—	—	—	99.2	218.7	176.2	—	—	—	97.4	214.8	174.4	384.6	—	—	137.2	302.5	214.2	472.3

**PDCPD Butterfly Valve**

Unit:kg, Lb

Driving Method		Electric Actuator	
Actuator Type		Type S	
Body Material		PDCPD	
Unit		kg	Lb
Nominal Size (mm)	700	330	727.9
	800	460	1014.4
	900	530	1168.3
	1000	730	1610.4
	1100	1045	2305.3
	1200	1290	2843.5

● **The Number of Turns open/close Diaphragm Valve**

Valve Type		Diaphragm Valve		
		Type14	Type15	Type72
Nominal Size (mm)	15mm 1/2inch	5	—	—
	20 3/4	5	—	—
	25 1	6	—	—
	32 1 1/4	6	—	—
	40 1 1/2	5	—	—
	50 2	6	—	—
	65 2 1/2	8	—	—
	80 3	10	—	—
	100 4	10	—	—
	125 5	—	10	—
	150 6	—	11	—
	200 8	—	—	19
	250 12	—	—	25

**Gate Valve**

Valve Type		Gate Valve						
		Type P			Type S			Rising Stem (Type S)
		CAP		Hand Wheel	CAP		Hand Wheel	Hand Wheel
		SUS stem	PVC stem	SUS stem	SUS stem	PVC stem	SUS stem	SUS stem
Nominal Size (mm)	32	16 1/4	5	16 1/4	12 1/4	—	12 1/4	12 1/4
	40	16 1/4	5	16 1/4	14	—	14	14
	50	15	6	15	13 1/4	5 1/4	13 1/4	13
	65	15	6 1/4	15	13 1/2	5 1/2	13 1/2	13 1/2
	80	17	6	17	15 1/2	5 1/2	15 1/2	15 1/2
	100	18 1/4	7 3/4	18 1/4	17	7 1/4	17	17
	125	23 1/2	7 1/4	23 1/2	22 1/2	7	22 1/2	22 1/2
	150	19 3/4	8 3/4	19 3/4	18 3/4	8 1/4	18 3/4	18 3/4
	200	25 3/4	18	25 3/4	25	17 1/2	25	25
	250	25	18 3/4	25	—	—	—	24 1/4
	300	30 1/4	22 3/4	30 1/4	—	—	—	—
	350	35 1/2	26 1/2	35 1/2	—	—	—	—

**Stop Valve**

Valve Type		Stop Valve	
Nominal Size (mm)	15	1/2	3.25
	20	3/4	3.75
	25	1	3.5
	32	1 1/4	3.25
	40	1 1/2	3.25
	50	2	3.75
	65	2 1/2	7
	80	3	7.25
	100	4	8.25

# TECHNICAL DATA TS Method of “Asahi AV” PVC Pipes

## Solvent Welding for PVC, HI-PVC and C-PVC

### I. Principle

TS method has been widely used in Japan for joining PVC pipes with TS fittings, which utilizes the elasticity of PVC wall and the swelling of PVC surface by solvent cement.

Refer to **Appendix (A)** for details of principle.

### II. Attention Required During Installation

- (1) The worker should use clean tools and wear clean gloves when handling PVC pipe and fittings so as to prevent from sticking foreign materials, such as dust and oils, on both internal and external surfaces.
- (2) “Asahi AV” Solvent Cement should be used for joining Asahi AV PVC pipes with TS fittings. Also, its type should be properly selected depend on surrounding condition (Temperature etc.), material (PVC, HI-PVC or C-PVC) and Nominal Size (refer to **III. Preparation of Tools**).
- (3) To prevent the solvent cement from coming out onto both external and internal surfaces of pipes and fittings, the worker should strictly follow the procedures described below.
- (4) If the solvent cement is not applied directly on PVC surfaces of the joining part, the adhesion of pipes and fittings shall not be attained properly. Therefore, the joining portion should be cleaned with acetone-impregnated gauze, and chips/dust of cutting and chamfering (beveling) should be removed completely prior to applying the solvent cement.

### III. Preparation of Tools

Tools	Uses
Pipe-Cutter	Cutting of pipe
Chamfering Tool or Knife	Chamfering of pipe edge
Felt-Tipped Pen (Tapered)	Marking of guideline, cutting line etc.
Tape	Scribing of cutting line
Ruler	Measuring of dimensions
Gauze	Cleaning
Acetone	Cleaning
Solvent cement - AV #32 - AV #52 - AV #62 - AV #90 - AV #88	Cementing - Low Viscosity, Quick Dry, for PVC, in Blue Can - High Viscosity, Quick Dry, for PVC, in Red Can - High Viscosity, Slow Dry, for PVC, in Yellow Can - for HI-PVC, in Dark Blue Can - for C-PVC, in Brown Can
Brush	Applying solvent cement
Gloves	Protection of hands, prevention sticking of oil on pipe and fitting
Waste Cloth	Wiping off of solvent cement
Insertion Tool	Insertion of pipe (For Size of 65mm and above, Puller or Lever-Block is required)

IV. Solvent Welding Procedures

Name of Operation	Description of Operation	Notes																																										
<p>1) Cutting of Pipe</p>	<p>Winding the tape around the pipe at right angle to the central axis of the pipe, and draw a cutting line along the tape with the felt-tipped pen.</p>  <p>Cut the pipe along the cutting line.</p>	<p>It is necessary for cutting the pipe at right angle to the central axis of the pipe and also without irregularity.</p>																																										
<p>2) Chamfering (Beveling)</p>	<p>Chamfer the edge of outer surface (at the end of the pipe to be inserted) appropriately in a small R.</p> 	<p>Be sure to keep chips out both inside and outside the pipe.</p>																																										
<p>3) Confirming Insertion Length (a)</p>	<p>Insert the pipe lightly into the socket of the fitting and mark a zero point (Lo : from the end of pipe). Confirm that Lo is within a range of 1/3 - 2/3 of total socket-length (socket-depth) (Ls).</p>	<p>For the size of 40A and below: go next step.</p>																																										
<p>4) Confirming of Insertion Length (b)</p>	<p>Measure the socket-length and draw the guide line (L) on the pipe with the felt-tipped pen.</p>  <p><b>Socket-Length of TS Fittings</b> <span style="float: right;">Unit: mm</span></p> <table border="1"> <tr> <td>Size</td> <td>13</td> <td>16</td> <td>20</td> <td>25</td> <td>30</td> <td>40</td> </tr> <tr> <td>Ls</td> <td>26</td> <td>30</td> <td>35</td> <td>40</td> <td>44</td> <td>55</td> </tr> <tr> <td>Size</td> <td>50</td> <td>65</td> <td>75</td> <td>100</td> <td>125</td> <td>150</td> </tr> <tr> <td>Ls</td> <td>63</td> <td>61</td> <td>64</td> <td>84</td> <td>104</td> <td>132</td> </tr> </table>	Size	13	16	20	25	30	40	Ls	26	30	35	40	44	55	Size	50	65	75	100	125	150	Ls	63	61	64	84	104	132	<p>For the size of 13A to 40A, L is same as Ls. L = Ls For the size of 50A and above, please add following figures (Li) on the Lo. L = Lo + Li Length to be added on Lo.</p> <p style="text-align: right;">Unit: mm</p> <table border="1"> <tr> <td>Size</td> <td>50</td> <td>65</td> <td>75</td> <td>100</td> <td>125</td> <td>150</td> </tr> <tr> <td>Li</td> <td>20</td> <td>20</td> <td>25</td> <td>30</td> <td>35</td> <td>45</td> </tr> </table>	Size	50	65	75	100	125	150	Li	20	20	25	30	35	45
Size	13	16	20	25	30	40																																						
Ls	26	30	35	40	44	55																																						
Size	50	65	75	100	125	150																																						
Ls	63	61	64	84	104	132																																						
Size	50	65	75	100	125	150																																						
Li	20	20	25	30	35	45																																						

Name of Operation	Description of Operation	Notes
<p>5) Cleaning</p>	<p>In case any foreign materials are stuck on both internal and external surface of the pipe, remove them with acetone-impregnated gauze.</p>  <p>Clean the cementing surfaces. (The external surface of the pipe and internal surface of the socket of the fitting). [Wipe off dust, foreign materials etc. with acetone-impregnated gauze.]</p>	<p>Be sure not to cause any secondary contamination.</p> <p>Clean surfaces thoroughly and remove any water, foreign materials etc. if on the surfaces, where solvent is applied, prior to proceeding to the next step.</p>
<p>6) Applying Solvent Cement (Socket of Fitting)</p>	<p>Applying the solvent cement on the internal surface of the socket of the fitting.</p>	<p>Apply the solvent cement on the surface a little thin and uniformly so that no excess solvent cement flows onto the portion where media contact.</p>
<p>7) Applying Solvent Cement (Pipe)</p>	<p>Then, applying the solvent cement on external surface of the pipe from the end to the uideline direction.</p>  <p>Select type of solvent cement (#32, #52, 62, #90 &amp; #88) properly depending on Temperature, Nom. Size and Material.</p>	<p>Quantity of solvent cement applied on the pipe and on the fitting: Standard Ratio = 7 : 3</p> <p>Refer to "Cement" Page for the standard quantity of the solvent cement per each joint and by each Nom. Size.</p>

Name of Operation	Description of Operation	Notes
<p>8) Insertion / Holding</p>	<p>Immediately after applying the solvent cement, insert the pipe into the socket in a stroke.</p>  <p>After complete insertion, hold the pipe and fitting to prevent from coming out.</p> <p>* In case of the Nom. Size of 65A and above, use the insertion tool such as Puller, Lever-Block etc.</p>	<p>Insert watching the guideline as a guide. Don't strike the pipe into the socket with a hammer, or the like. Don't twist but insert the pipe straight. Hold the pipe for 1 minute and more in summer, or for 2 minutes and more in winter, because the taper of socket may cause the pipe coming out from the socket.</p>
<p>9) Wiping Off</p>	<p>Wipe off the excess solvent cement pressed out from the joined portion.</p> 	<p>Use waste cloth.</p>
<p>10) Curing</p>	<p>Cure the piping for 24 hours and more in the summer or 72 hours and more in the winter without loading on the joined portion.</p>	<p>Good ventilation on the welded portion is desirable for complete evaporation of the solvent in the solvent cement [to avoid possible solvent cracking].</p>



## **Cautions**

### **【Precaution for use】**

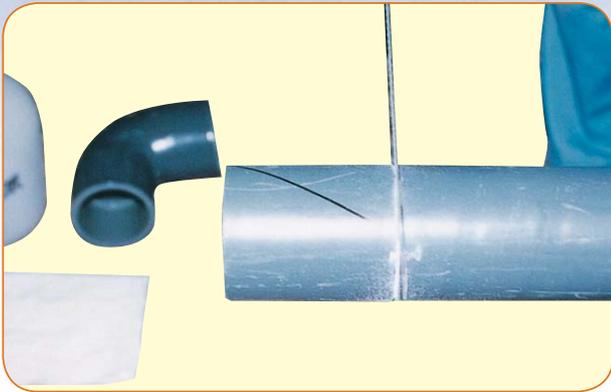
- Solvent cements for pipes and fittings are flammable. Extinguish all flames or other ignition sources in working or storage areas.
- Be sure to work only in a well-ventilated space.
- Avoid any contact with all types of solvent cements on eye and skin. Ingestion or intentional inhalation of solvent vapors can be harmful or fatal to your health.
- For best results, installation should not be done at the temperature 5oC or lower.
- Be sure to use only Asahi AV adhesive.
- Apply adhesive equally with proper amount otherwise evaporation of solvent vapors cause attack internal components.
- After insertion, surfaces of the pipe and fitting should be cleaned by rag.
- After finishing installation of piping, inlet and outlet of piping should be free and open to release evaporation of solvent vapors.
- Don' t move the pipe and fitting just after jointing. Please leave them free from any stress or impact at least 15 minutes after the installation.
- Any extraordinary stress must be removed from the pipe and fitting when they are installed.
- The piping must be cured more than 24 hours prior to actual operation.

### **【Precaution for use (only C-PVC products)】**

- Be sure that the laying depth under concrete is less than 1m.
- The surface of the pipe will be whitened slightly after long time service under the working temperature range of 80°C to 90°C . This phenomenon does not cause any fail of the performance in mechanically.

## TECHNICAL DATA FOR AV PIPES

### Installation Method



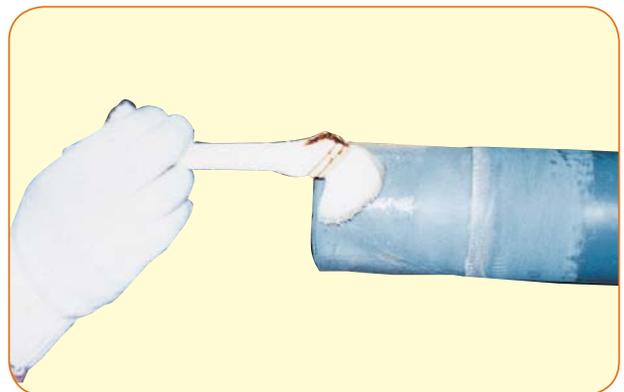
- 1** Cut the pipe to the required length, mark the external surface of the pipe with reference lines, and cut circumferential and helical notches with a saw or the like.



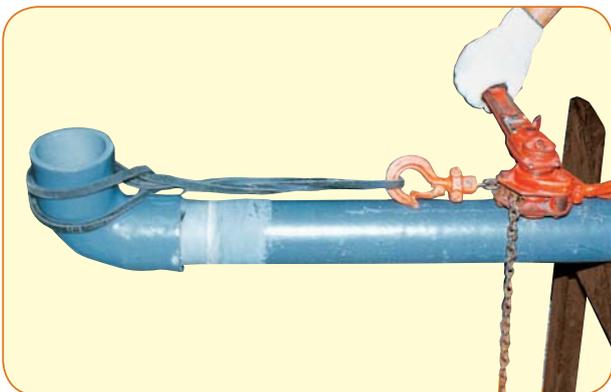
- 2** Heat the pipe uniformly with a propane gas burner until the FRP layer softens a little.



- 3** Peel off the FRP layer by pinching it with pliers or the like.



- 4** Finish the stripped surface with sand paper or the like, chamfer the end to 45°, and apply adhesive uniformly to the mating surfaces of the pipe and fitting.



- 5** Insert the pipe into the fitting with a lever block or the like.



- 6** Wipe off any adhesive sticking out, and weld the parts.



**7** After applying the primer, fill in Q-coat putty which preliminarily well pug with 1-2% volume ratio of hardener, and apply it to the junction to a smooth finish with spatula.



**8** Add a curing agent to polyester resin, apply them to the junction with a spatula or roller, and build a lamination of glass fiber impregnated with polyester resin.

### Mixing Ratios and Setting Times

(Volume ratios to 100 of polyester resin)

Outside air temperature	Curing agent		
	0.5%	1%	2%
10°C	—	42min	14min
20°C	45min	20min	7min
30°C	20min	7min	—
40°C	5min	—	—

### Intervals between Supports for AV PIPE Type SU and Type GU

It is recommended that piping supports are installed in the straight runs. Refer to the table below to determine the proper spacing distance.

#### AV Pipe - Type SU

Unit:m

Size Temperature	13mm~ 25mm	30mm~ 50mm	65mm~ 100mm	125mm~ 150mm	200mm~ 300mm	350mm~ 400mm	450mm~ 500mm	600mm~ 700mm
20°C	1.0	1.5	2.0	2.25	2.5	2.75	3.0	3.5
50°C	1.0	1.5	1.75	2.0	2.25	2.5	2.75	3.0
80°C	1.0	1.25	1.5	1.75	2.0	2.25	2.5	2.75

#### AV Pipe - Type GU

Unit:m

Size Temperature	13mm~ 25mm	30mm~ 40mm	50mm~ 65mm	80mm~ 125mm	150mm~ 250mm	300mm~ 350mm	400mm~ 500mm	600mm~ 700mm
20°C	1.0	1.5	2.0	2.25	2.75	2.75	3.0	3.5
60°C	1.0	1.25	1.75	2.0	2.5	2.5	2.75	3.25
95°C	1.0	1.25	1.5	1.75	2.0	2.0	2.75	3.0

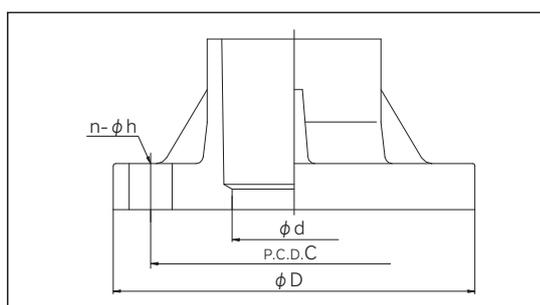
### Conversion Table for Pressure Units

Units	MPa	KPa	Kgf/cm <sup>2</sup>	bar	psi (Lbf/in <sup>2</sup> )	mmH <sub>2</sub> O	mmHg (Torr)	atm
1MPa		1000 KPa	1.0197×10 <sup>3</sup> kgf/cm <sup>2</sup>	10 bar	145.04 psi	1.0197×10 <sup>5</sup> mmH <sub>2</sub> O	7.5006×10 <sup>3</sup> mmHg	9.8692 atm
1KPa	1.0×10 <sup>-3</sup> MPa		1.0197×10 <sup>-3</sup> kgf/cm <sup>2</sup>	1.0×10 <sup>-2</sup> bar	0.14504 psi	1.0197×10 <sup>2</sup> mmH <sub>2</sub> O	7.5006 mmHg	9.8692×10 <sup>-3</sup> atm
1Kgf/cm <sup>2</sup>	9.8067×10 <sup>-2</sup> MPa	98.067 KPa		0.98067 bar	14.223 psi	1×10 <sup>4</sup> mmH <sub>2</sub> O	7.3556×10 <sup>2</sup> mmHg	9.6784×10 <sup>-1</sup> atm
1bar	0.1 MPa	100 KPa	1.0197 kgf/cm <sup>2</sup>		14.504 psi	1.0197×10 <sup>4</sup> mmH <sub>2</sub> O	7.5006×10 <sup>2</sup> mmHg	0.98692 atm
1psi (Lbf/in <sup>2</sup> )	6.8948×10 <sup>-3</sup> MPa	6.8948 KPa	7.0307×10 <sup>-2</sup> kgf/cm <sup>2</sup>	6.8948×10 <sup>-2</sup> bar		7.0306×10 <sup>2</sup> mmH <sub>2</sub> O	51.715 mmHg	6.8046×10 <sup>-2</sup> atm
1mmH <sub>2</sub> O	9.8067×10 <sup>-6</sup> MPa	9.8067×10 <sup>-3</sup> KPa	1×10 <sup>-5</sup> kgf/cm <sup>2</sup>	9.8067×10 <sup>-5</sup> bar	1.4224 psi		7.3556×10 <sup>-2</sup> mmHg	9.6784×10 <sup>-5</sup> atm
1mmHg (Torr)	1.3332×10 <sup>-4</sup> MPa	1.3332×10 <sup>-1</sup> KPa	1.3595×10 <sup>-3</sup> kgf/cm <sup>2</sup>	1.3332×10 <sup>-3</sup> bar	1.9337×10 <sup>-2</sup> psi	13.595 mmH <sub>2</sub> O		1.3158×10 <sup>-3</sup> atm
1atm	1.0133×10 <sup>-1</sup> MPa	1.0133×10 <sup>-2</sup> KPa	1.0333 kgf/cm <sup>2</sup>	1.0133 bar	14.697 psi	1.0333×10 <sup>4</sup> mmH <sub>2</sub> O	7.6004×10 <sup>2</sup> mmHg	

The parameters shown in the table are approximate values for only reference.

### Comparison of Flanged End (JIS, ANSI, DIN and BS)

Size		JIS 10K					ANSI CLASS 125/150					DIN PN10					TABLE-D										
		JIS B 2238					ASME B16.5					DIN 2501					BS10										
d	d	D	P.C.D.C	h	n	Bolt	D	P.C.D.C	h	n	Bolt	D	P.C.D.C	h	n	Bolt	D	P.C.D.C	h	n	Bolt						
mm	Inch	mm	mm	mm	-	-	Inch	mm	Inch	mm	Inch	mm	mm	mm	-	-	Inch	mm	Inch	mm	Inch	mm	-	-			
10mm	3/8"	90	65	15	4	M12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
15mm	1/2"	95	70	15	4	M12	3.5	89	2.4	60	0.6	16	4	UNC1/2	95	65	14	4	M12	3.8	95	2.6	67	0.5	13	4	-
20mm	3/4"	100	75	15	4	M12	3.9	98	2.8	70	0.6	16	4	UNC1/2	105	75	14	4	M12	4	102	2.9	73	0.5	13	4	-
25mm	1"	125	90	19	4	M16	4.3	108	3.1	79	0.6	16	4	UNC1/2	115	85	14	4	M12	4.5	114	3.3	83	0.5	13	4	-
32mm	1-1/4"	135	100	19	4	M16	4.6	117	3.5	89	0.6	16	4	UNC1/2	140	100	18	4	M16	4.8	121	3.4	87	0.5	13	4	-
40mm	1-1/2"	140	105	19	4	M16	5	127	3.9	98	0.6	16	4	UNC1/2	150	110	18	4	M16	5.3	133	3.9	98	0.5	13	4	-
50mm	2"	155	120	19	4	M16	6	152	4.8	121	0.8	19	4	UNC5/8	165	125	18	4	M16	6	152	4.5	114	0.6	16	4	-
65mm	2-1/2"	175	140	19	4	M16	7	178	5.5	140	0.8	19	4	UNC5/8	185	145	18	4	M16	6.5	165	5	127	0.6	16	4	-
80mm	3"	185	150	19	8	M16	7.5	191	6	152	0.8	19	4	UNC5/8	200	160	18	8	M16	7.3	184	5.8	146	0.6	16	4	-
100mm	4"	210	175	19	8	M16	9	229	7.5	191	0.8	19	8	UNC5/8	220	180	18	8	M16	8.5	216	7	178	0.6	16	4	-
125mm	5"	250	210	23	8	M20	10	254	8.5	216	0.9	22	8	UNC3/4	250	210	18	8	M16	10	254	8.3	210	0.6	16	8	-
150mm	6"	280	240	23	8	M20	11	279	9.5	241	0.9	22	8	UNC3/4	285	240	22	8	M20	11	279	9.3	235	0.6	16	8	-
200mm	8"	330	290	23	12	M20	13.5	343	11.8	298	0.9	22	8	UNC3/4	340	295	22	8	M20	13.3	337	11.5	292	0.6	16	8	-
250mm	10"	400	355	25	12	M22	16	406	14.3	362	1	25	12	UNC7/8	395	350	22	12	M20	16	406	14	356	0.8	19	8	-
300mm	12"	445	400	25	16	M22	19	483	17	432	1	25	12	UNC7/8	445	400	22	12	M20	18	457	16	406	0.8	19	12	-
350mm	14"	490	445	25	16	M22	21	533	18.8	476	1.1	29	12	UNC1	505	460	22	16	M20	20.8	527	18.5	470	0.9	22	12	-
400mm	16"	560	510	27	16	M24	23.5	597	21.3	540	1.1	29	16	UNC1	565	515	26	16	M24	22.8	578	20.5	521	0.9	22	12	-
450mm	18"	620	565	27	20	M24	25	635	22.8	578	1.3	32	16	UNC1-1/8	615	565	26	20	M24	25.3	641	23	584	0.9	22	12	-
500mm	20"	675	620	27	20	M24	27.5	699	25	635	1.3	32	20	UNC1-1/8	670	620	26	20	M24	27.8	705	25.3	641	0.9	22	16	-
600mm	24"	795	730	33	24	M30	32	813	29.5	749	1.4	35	20	UNC1-1/4	780	725	30	20	M27	32.5	826	29.8	756	1	25	16	-
700mm	28"	905	840	33	24	M30	36.5	927	34	864	1.4	35	28	-	895	840	30	24	M27	-	-	-	-	-	-	-	-
800mm	32"	1020	950	33	28	M30	41.8	1060	38.5	978	1.6	41	28	-	1015	950	33	24	M30	-	-	-	-	-	-	-	-
900mm	36"	1120	1050	33	28	M30	46	1168	42.8	1086	1.6	41	32	-	1115	1050	33	28	M30	46.3	1175	43	1092	1.3	32	24	-
1,000mm	40"	1235	1160	39	28	M36	50.8	1289	47.3	1200	1.6	41	36	-	1230	1160	36	28	M33	-	-	-	-	-	-	-	-
1,100mm	44"	-	-	-	-	-	55.3	1403	51.8	1314	1.6	41	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,200mm	48"	-	-	-	-	-	59.5	1511	56	1422	1.6	41	44	-	1455	1380	39	32	M36	58.8	1492	55.5	1410	1.3	32	32	-



**Comparison of JIS Threads and BS Threads**

BS21 Thread																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Size		Number of Threads in 25.4 mm	Pitch	Depth of Thread	Basic Diameters at Gauge Plane			Gauge Length (See Note1)				Minimum Length of Useful Thread on Pipe End (See Note1)			Fitting Allowance (See Note1)	Wrenching Allowance (See Note1)	Tolerance on Position of Gauge Plane Relative to Face of Internally Threaded Parts (See Note1)	Diametral Tolerance on Parallel Internal Threads
R/Rc					Major (Gauge Diameter)	Pitch	Minor	Basic	Tolerance	Maximum	Minimum	Basic Gauge Length	Max Gauge Length	Minimum Gauge Length				
inch	mm		P	h	d	d <sub>2</sub>	d <sub>1</sub>		T <sub>1</sub> /2(+/-)							T <sub>1</sub> /2(+/-)	(+/-)	
1/4	19	1.337	0.856	13.157	12.301	11.445	6.0	1.3	7.3	4.7	9.7	11.0	8.4	3.7	2.0	1.7	0.104	
3/8	19	1.337	0.856	16.662	15.806	14.950	6.4	1.3	7.7	5.1	10.1	11.4	8.8	3.7	2.0	1.7	0.104	
1/2	14	1.814	1.162	20.955	19.793	18.631	8.2	1.8	10.0	6.4	13.2	15.0	11.4	5.0	2.7	2.3	0.142	
3/4	20	1.814	1.162	26.441	25.279	24.117	9.5	1.8	11.3	7.7	14.5	16.3	12.7	5.0	2.7	2.3	0.142	
1	25	2.309	1.479	33.249	31.770	30.291	10.4	2.3	12.7	8.1	16.8	19.1	14.5	6.4	3.5	2.9	0.180	
1-1/4	32	2.309	1.479	41.910	40.431	38.952	12.7	2.3	15.0	10.4	19.1	21.4	16.8	6.4	3.5	2.9	0.180	
1-1/2	40	2.309	1.479	47.803	46.324	44.845	12.7	2.3	15.0	10.4	19.1	21.4	16.8	6.4	3.5	2.9	0.180	
2	50	2.309	1.479	59.614	58.135	56.656	15.9	2.3	18.2	13.6	23.4	25.7	21.1	7.5	4.6	2.9	0.180	
2-1/2	65	2.309	1.479	75.184	73.705	72.226	17.5	3.5	21.0	14.0	26.7	30.2	23.2	9.2	5.8	3.5	0.216	
3	80	2.309	1.479	87.884	86.405	84.926	20.6	3.5	24.1	17.1	29.8	33.3	26.3	9.2	5.8	3.5	0.216	
4	100	2.309	1.479	113.030	111.551	110.072	25.4	3.5	28.9	21.9	35.8	39.3	32.3	10.4	6.9	3.5	0.216	

Note.1; Basic gauge length and limits of size are expressed in turns of threads. Liner equivalents are given in parentheses and are rounded to 0.1mm. Unit: mm  
Tolerance and fitting allowance are expressed in number of turns of thread and in millimeters.

JIS B 0203 Thread																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Size		Number of Threads in 25.4 mm	Pitch	Height of Thread	Radius of Rounded Crests and Roots	Gauge Diameter			Gauge Plane			Tolerance of Parallel Internal Threads	Minimum Length of Useful Thread			
R/Rc						Basic Major Diameter	Basic Pitch Diameter	Basic Minor Diameter	Gauge Length (Male Thread)	Tolerance (Male Thread)	Tolerance (Female Thread)		Fitting Allowance (Male Thread)	Incomplete Taper Thread Length (Female Thread)	Incomplete Parallel Thread Length (Female Thread)	Complete Parallel and Taper Thread Length (Female Thread)
inch	mm	n	P	h	r or r'	d or D	d <sub>2</sub> or D <sub>2</sub>	d <sub>1</sub> or D <sub>1</sub>	a	b (+/-)	c (+/-)	(+/-)	f	l	l'	t
1/4	19	1.337	0.856	0.18	13.157	12.301	11.445	6.01	1.34	1.67	0.104	3.7	9.4	11.0	6.7	
3/8	13	1.814	1.162	0.18	16.662	15.806	14.950	6.35	1.34	1.67	0.104	3.7	9.7	11.4	7.0	
1/2	14	1.814	1.162	0.25	20.955	19.793	18.631	8.16	1.81	2.27	0.142	5.0	12.7	15.0	9.1	
3/4	20	1.814	1.162	0.32	26.441	25.279	24.117	9.53	1.81	2.27	0.142	5.0	14.1	16.3	10.2	
1	25	2.309	1.479	0.32	33.249	31.770	30.291	10.39	2.31	2.89	0.181	6.4	16.2	19.1	11.6	
1-1/4	32	2.309	1.479	0.32	41.910	40.431	38.952	12.70	2.31	2.89	0.181	6.4	18.5	21.4	13.4	
1-1/2	40	2.309	1.479	0.32	47.803	46.324	44.845	12.70	2.31	2.89	0.181	6.4	18.5	21.4	13.4	
2	50	2.309	1.479	0.32	59.614	58.135	56.656	15.88	2.31	2.89	0.181	7.5	22.8	25.7	16.9	
2-1/2	65	2.309	1.479	0.32	75.184	73.705	72.226	17.46	3.46	3.46	0.216	9.2	26.7	30.1	18.6	
3	80	2.309	1.479	0.32	87.884	86.405	84.926	20.64	3.46	3.46	0.216	9.2	29.8	33.3	21.1	
4	100	2.309	1.479	0.32	113.030	111.551	110.072	25.40	3.46	3.46	0.216	10.4	35.8	39.3	25.9	

Note; Pursuant to ISO 7-1: 1994, Pipe threads where pressure tight joints are made on the threads - Part1: Dimensions, Tolerance and Designation. Unit: mm

Comparison of JIS PVC, ASTM PVC, BS PVC, DIN PVC Pipe & Fittings

Size		IPS PVC PIPE AND FITTING																	
		PVC Pipe (Sch80) ASTM D 1785								Fitting (Sch80) : ASTM D 2467									
		Outside Diameter				Wall Thickness				Socket ID								Length	
		Base OD	Ave OD Tolerance (+/-)	Max Out-Of-Roundness	Min OD	Max OD	Min Thk	Tolerance (+)	Socket Entrance Diameter				Socket Bottom Diameter						
									A			Min Enter ID	Max Enter ID	B			Min Bottom ID	Max Bottom ID	C
inch	mm	Base ID	Tolerance	Max Out-Of-Roundness	Min Enter ID	Max Enter ID	Base ID	Tolerance	Max Out-Of-Roundness	Min Bottom ID	Max Bottom ID			Min					
1/8	-	10.29	0.10	0.41	10.19	10.39	2.41	0.51	10.59	0.10	0.41	10.49	10.69	10.18	0.10	0.41	10.08	10.28	12.70
1/4	-	13.72	0.10	0.41	13.62	13.82	3.20	0.51	14.02	0.10	0.41	13.92	14.12	13.61	0.10	0.41	13.51	13.71	15.88
3/8	13	17.14	0.10	0.41	17.04	17.24	3.20	0.51	17.45	0.10	0.41	17.35	17.55	17.04	0.10	0.41	16.94	17.14	19.05
1/2	15	21.34	0.10	0.41	21.24	21.44	3.73	0.51	21.54	0.10	0.41	21.44	21.64	21.23	0.10	0.41	21.13	21.33	22.22
3/4	20	26.67	0.10	0.51	26.57	26.77	3.91	0.51	26.87	0.10	0.51	26.77	26.97	26.57	0.10	0.51	26.47	26.67	25.40
1	25	33.40	0.13	0.51	33.27	33.53	4.55	0.53	33.65	0.13	0.51	33.52	33.78	33.27	0.13	0.51	33.14	33.40	28.58
1 1/4	32	42.16	0.13	0.61	42.03	42.29	4.85	0.58	42.42	0.13	0.61	42.29	42.55	42.04	0.13	0.61	41.91	42.17	31.75
1 1/2	40	48.26	0.15	0.61	48.11	48.41	5.08	0.61	48.56	0.15	0.61	48.41	48.71	48.11	0.15	0.61	47.96	48.26	34.93
2	50	60.32	0.15	0.61	60.17	60.47	5.54	0.66	60.63	0.15	0.61	60.48	60.78	60.17	0.15	0.61	60.02	60.32	38.10
2 1/2	65	73.02	0.18	0.76	72.84	73.20	7.01	0.84	73.38	0.18	0.76	73.20	73.56	72.85	0.18	0.76	72.67	73.03	44.45
3	80	88.90	0.20	0.76	88.70	89.10	7.62	0.91	89.31	0.20	0.76	89.11	89.51	88.70	0.20	0.76	88.50	88.90	47.63
3 1/2	-	101.60	0.20	0.76	101.40	101.80	8.08	1.96	102.10	0.20	0.76	101.90	102.30	101.40	0.20	0.76	101.20	101.60	53.98
4	100	114.30	0.23	0.76	114.07	114.53	8.56	1.02	114.76	0.23	0.76	114.56	114.99	114.10	0.23	0.76	113.87	114.33	57.15
5	125	141.30	0.25	1.52	141.05	141.55	9.52	1.14	141.81	0.25	1.52	141.56	142.06	141.00	0.25	1.52	140.75	141.25	66.68
6	150	168.28	0.28	1.78	168.00	168.56	10.97	1.32	168.83	0.28	1.52	168.55	169.11	168.00	0.28	1.52	167.72	168.28	76.20
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	200	219.08	0.38	3.81	218.70	219.46	12.70	1.52	219.84	0.38	2.29	219.46	220.22	218.70	0.38	2.29	218.32	219.08	101.60
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	250	273.05	0.38	3.81	272.67	273.43	15.06	1.80	273.81	0.38	2.54	273.43	274.19	272.67	0.38	2.54	272.29	273.05	127.00
12	300	323.85	0.38	3.81	323.47	324.23	17.45	2.08	324.61	0.38	3.05	324.23	324.99	323.47	0.38	3.05	323.09	323.85	152.40

Note: 65, 125mm Pipe & Fittings are not standardized on JIS, adhere AS-21 by Japan-PVC-Piping Association. 200mm is based on AOC Standard

Size		JIS PVC PIPE AND FITTING																						
		Pipe (VP) JIS K 6741											Fitting JIS K 6743											
		Outside Diameter							Wall Thickness				Socket ID											
		Base OD	Max/Min OD Tolerance (+/-)	Ave OD Tolerance (+/-)	Min OD	Ave Min OD	Max OD	Ave Max OD	Min	Tolerance (+)	Approx ID	Socket Entrance Diameter		Max Enter ID	Taper (1/T)	Socket Bottom Diameter		Min Bottom ID	Length L (+4, -0.5)	Min Bottom ID	Length S.B.D.	Length S.B.D.		
												d1	Tolerance (+/-)			d2	Tolerance (+/-)							
inch	mm									Base ID			Base ID											
1/8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1/4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3/8	13	18.0	0.2	0.2	17.8	17.8	18.2	18.2	2.2	0.6	13	18.4	0.2	18.6	30	-	-	-	26.0	17.5	25.5	17.5	30.0	17.4
1/2	15	22.0	0.2	0.2	21.8	21.8	22.2	22.2	2.7	0.6	16	22.4	0.2	22.6	34	-	-	-	30.0	21.5	29.5	21.5	34.0	21.4
3/4	20	26.0	0.2	0.2	25.8	25.8	26.2	26.2	2.7	0.6	20	26.4	0.2	26.6	34	-	-	-	35.0	25.4	34.5	25.4	39.0	25.3
1	25	32.0	0.2	0.2	31.8	31.8	32.2	32.2	3.1	0.8	25	32.5	0.3	32.8	34	-	-	-	40.0	31.4	39.5	31.4	44.0	31
1 1/4	32	38.0	0.3	0.2	37.7	37.8	38.3	38.2	3.1	0.8	31	38.6	0.3	38.9	34	-	-	-	44.0	37.3	43.5	37.3	48.0	37.2
1 1/2	40	48.0	0.3	0.2	47.7	47.8	48.3	48.2	3.6	0.8	40	48.7	0.3	49.0	37	-	-	-	55.0	47.2	54.5	47.2	59.0	47.1
2	50	60.0	0.4	0.2	59.6	59.8	60.4	60.2	4.1	0.8	51	60.8	0.3	61.1	37	-	-	-	63.0	59.1	62.5	59.1	67.0	59.0
2 1/2	65	76.0	0.5	0.3	75.5	75.7	76.5	76.3	4.1	0.8	67	76.6	0.3	76.9	48	-	-	-	61.0	75.3	60.5	75.3	65.0	75.2
3	80	89.0	0.5	0.3	88.5	88.7	89.5	89.3	5.5	0.8	77	89.6	0.3	89.9	49	-	-	-	64.0	88.3	63.5	88.3	68.0	88.2
3 1/2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	100	114.0	0.6	0.4	113.4	113.6	114.6	114.4	6.6	1.0	100	114.7	0.3	115.0	56	-	-	-	84.0	113.2	83.5	113.2	88.0	113.1
5	125	140.0	0.8	0.5	139.2	139.5	140.8	140.5	7.0	1.0	125	140.8	0.3	141.1	58	-	-	-	104.0	139.0	103.5	139.0	108.0	138.9
6	150	165.0	1.0	0.5	164.0	164.5	166.0	165.5	8.9	1.4	146	166.0	0.4	166.4	63	-	-	-	132.0	163.9	131.5	163.9	136.0	163.8
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	200	216.0	1.3	0.7	214.7	215.3	217.3	216.7	10.3	1.4	194	217.0	1.0	218.0	-	214.1	1.0	215.1	145.0	-	144.5	-	149.0	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	250	267.0	1.6	0.9	265.4	266.1	268.6	267.9	12.7	1.8	240	267.7	1.0	268.7	-	264.9	1.0	265.9	155.0	-	154.5	-	159.0	-
12	300	318.0	1.9	1.0	316.1	317.0	319.9	319.0	15.1	2.2	286	318.7	1.0	319.7	-	315.5	1.0	316.5	175.0	-	174.5	-	179.0	-

Size		DIN PVC PIPE AND FITTING																	
		PVC Pipe (DIN) DIN 8062 -Metric- PN10							Fitting (DIN) :DIN 8063										
		Outside Diameter					Wall Thickness		Socket ID										Length
		inch	DN mm	Base OD d	Max OD Tolerance (+)	Min OD Tolerance (+)	Min OD	Max OD	Min Thk	Tolerance (+)	Socket Entrance Diameter					Socket Bottom Diameter			
A											Min Enter ID	Max Enter ID	B			Min Bottom ID	Max Bottom ID	C	
Base ID	Max Tolerance (+)	Min Tolerance (-)	Base ID	Tolerance	Max Out-Of-Roundness	Min 12mm													
1/8	-	10	0.2	0.0	10.0	10.2	-	-	10	0.3	0.1	10.1	10.3	10	0.3	0.1	10.1	10.3	12
1/4	-	12	0.2	0.0	12.0	12.2	-	-	12	0.3	0.1	12.1	12.3	12	0.3	0.1	12.1	12.3	12
3/8	13	16	0.2	0.0	16.0	16.2	-	-	16	0.3	0.1	16.1	16.3	16	0.3	0.1	16.1	16.3	14
1/2	15	20	0.2	0.0	20.0	20.2	-	-	20	0.3	0.1	20.1	20.3	20	0.3	0.1	20.1	20.3	16
3/4	20	25	0.2	0.0	25.0	25.2	1.5	0.4	25	0.3	0.1	25.1	25.3	25	0.3	0.1	25.1	25.3	19
1	25	32	0.2	0.0	32.0	32.2	1.8	0.4	32	0.3	0.1	32.1	32.3	32	0.3	0.1	32.1	32.3	22
1 1/4	32	40	0.2	0.0	40.0	40.2	1.9	0.4	40	0.3	0.1	40.1	40.3	40	0.3	0.1	40.1	40.3	26
1 1/2	40	50	0.2	0.0	50.0	50.2	2.4	0.5	50	0.3	0.1	50.1	50.3	50	0.3	0.1	50.1	50.3	31
2	50	63	0.2	0.0	63.0	63.2	3	0.5	63	0.3	0.1	63.1	63.3	63	0.3	0.1	63.1	63.3	38
2 1/2	65	75	0.3	0.0	75.0	75.3	3.6	0.6	75	0.3	0.1	75.1	75.3	75	0.3	0.1	75.1	75.3	44
3	80	90	0.3	0.0	90.0	90.3	4.3	0.6	90	0.3	0.1	90.1	90.3	90	0.3	0.1	90.1	90.3	51
3 1/2	-	110	0.3	0.0	110.0	110.3	5.3	0.8	110	0.4	0.1	110.1	110.4	110	0.4	0.1	110.1	110.4	61
4	100	125	0.3	0.0	125.0	125.3	6.0	0.8	-	-	-	-	-	-	-	-	-	-	-
5	125	140	0.3	0.0	140.0	140.3	6.7	0.9	140	0.5	0.2	140.2	140.5	140	0.5	0.2	140.2	140.5	76
6	150	160	0.3	0.0	160.0	160.3	7.7	1.0	160	0.5	0.2	160.2	160.5	160	0.5	0.2	160.2	160.5	86
7	-	180	0.3	0.0	180.0	180.3	8.6	1.1	-	-	-	-	-	-	-	-	-	-	-
8	200	225	0.5	0.0	225.0	225.5	10.8	1.3	225	0.6	0.3	225.3	225.6	225	0.6	0.3	225.3	225.6	119
9	-	250	0.5	0.0	250.0	250.5	11.9	1.4	-	-	-	-	-	-	-	-	-	-	-
10	250	280	0.6	0.0	280.0	280.6	13.4	1.6	-	-	-	-	-	-	-	-	-	-	-
12	300	315	0.6	0.0	315.0	315.6	15	1.7	-	-	-	-	-	-	-	-	-	-	-

Size		BS PIPE AND FITTING																				
		Pipe BS 3506							Fitting BS 4346													
		Outside Diameter			Wall Thickness				Socket ID										Min Socket Depth		Taper	
		inch	mm	Min OD	Max OD	Variance	Averaged Value (Max)	Individual Value (Min)	Individual Value (Max)	Socket Mouth Diameter					Socket Root Diameter					L	Min	Max
d1										Mid ID	Roundness Tolerance	d2			Mid ID	Roundness Tolerance	Length					
Min ID	Max ID	Variance	Min ID	Max ID	Variance	Min ID	Max ID	Variance														
1/8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1/4	-	13.6	13.9	0.3	1.7	1.3	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-		
3/8	13	17.0	17.3	0.3	1.9	1.5	1.9	17.1	17.3	0.2	17.2	0.3	16.8	17.3	0.5	17.1	0.3	14.5	0.0	0.0		
1/2	15	21.2	21.5	0.3	2.1	1.7	2.1	21.3	21.5	0.2	21.4	0.4	21.0	21.5	0.5	21.3	0.4	16.5	0.0	0.0		
3/4	20	26.6	26.9	0.3	2.5	1.9	2.5	26.7	26.9	0.2	26.8	0.5	26.4	26.9	0.5	26.7	0.5	19.5	0.0	0.0		
1	25	33.4	33.7	0.3	2.7	2.2	2.7	33.5	33.7	0.2	33.6	0.7	33.2	33.7	0.5	33.5	0.7	22.5	0.0	0.0		
1 1/4	32	42.1	42.4	0.3	3.2	2.7	3.2	42.2	42.5	0.3	42.4	0.8	41.9	42.4	0.5	42.2	0.8	27.0	0.0	0.0		
1 1/2	40	48.1	48.4	0.3	3.7	3.1	3.7	48.3	48.5	0.2	48.4	1.0	47.9	48.4	0.5	48.2	1.0	30.0	0.0	0.0		
2	50	60.2	60.5	0.3	4.5	3.9	4.5	60.4	60.7	0.3	60.5	1.2	60.0	60.6	0.6	60.3	1.2	36.0	0.0	0.0		
2 1/2	65	75.0	75.3	0.3	5.5	4.8	5.5	75.3	75.6	0.3	75.4	1.5	75.0	75.5	0.5	75.3	1.5	43.5	0.0	0.0		
3	80	88.7	89.1	0.4	6.5	5.7	6.6	89.0	89.3	0.3	89.2	1.8	88.6	88.9	0.3	88.8	1.8	50.5	0.0	0.0		
3 1/2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
4	100	114.1	114.5	0.4	8.3	7.3	8.4	114.4	114.8	0.4	114.6	2.3	113.9	114.3	0.4	114.1	2.3	63.0	0.0	0.0		
5	125	140.0	140.4	0.4	10.1	9.0	10.4	140.3	140.7	0.4	140.5	2.8	139.9	140.2	0.3	140.1	2.8	76.0	0.0	0.0		
6	150	168.0	168.5	0.5	12.1	10.8	12.5	168.4	168.8	0.4	168.6	3.4	167.8	168.3	0.5	168.1	3.4	90.0	0.0	0.0		
7	-	193.5	194.0	0.5	13.9	12.4	14.3	193.9	194.3	0.4	194.1	3.9	193.3	193.8	0.5	193.6	3.9	103.0	0.0	0.0		
8	200	218.8	219.4	0.6	14.1	12.6	14.5	219.3	219.9	0.6	219.6	4.4	218.7	219.1	0.4	218.9	4.4	115.5	0.0	0.0		
9	-	244.1	244.8	0.7	15.8	14.1	16.3	244.7	245.3	0.6	245.0	4.9	244.0	244.5	0.5	244.3	4.9	128.0	0.0	0.0		
10	250	272.6	273.4	0.8	17.5	15.7	18.1	273.3	273.8	0.5	273.6	5.5	272.6	273.0	0.4	272.8	5.5	142.5	0.0	0.0		
12	300	323.4	324.3	0.9	20.8	18.7	21.6	324.2	324.7	0.5	324.4	6.5	323.4	323.9	0.5	323.7	6.5	168.0	0.0	0.0		

## General operating instructions

- Using a positive-pressure gas with our plastic piping may pose a dangerous condition due to the repellent force particular to compressible fluids even when the gas is under similar pressures used for liquids. Therefore, be sure to take the necessary safety precautions such as covering the piping with protective material. For inquiries, please contact us. For conducting a leak test on newly installed piping, be sure to check for leaks under water pressure. If absolutely necessary to use a gas in testing, please consult your nearest service station beforehand.
  - Do not step on or apply excessive weight on valve. (It can be damaged.)
  - Do not use the valve in conditions where the fluid may have crystallized.  
(The valve will not operate properly.)
  - Keep the valve away from excessive heat or fire. (It can be damaged, or destroyed.)
  - Always operate the valve within the pressure vs. temperature range.  
(The valve can be damaged or deformed by operating beyond the allowable range.)
  - Allow sufficient space for maintenance and inspection.
  - Select a valve material that is compatible with the media.
  - Keep the valve out of direct sunlight, water and dust. Use cover to shield the valve.  
(The valve will not operate properly.)
  - Perform periodic maintenance. (Leakage may develop due to temperature changes or periods of prolonged storage, rest, or operation.)
  - The travel stop may have to be adjusted if media leakage is detected between the upstream & downstream sides of the valve.
  - Bonnet bolt torque should be checked before installation, as they may become loose after long-term storage.
  - A periodic check of the valve condition as well as bonnet & flange bolt torque should be made part of preventative maintenance program properly re-tightening the bolts as necessary.
- It is especially important to re-tighten all bolts during the first shutdown.

## General instructions for transportation, unpacking and storage

- When suspending and supporting a valve, take care and do not stand under a suspended valve.
- This valve is not designed to handle impacts of any kind. Avoid throwing or dropping the valve.
- Avoid scratching the valve with any sharp object.
- Do not over-stack cardboard shipping boxes. Excessively stacked packages may collapse.
- Avoid contact with any coal tar creosote, insecticides, vermicides or paint.  
(These chemicals may cause damage to the valve.)
- Store products in their corrugated cardboard boxes. Avoid exposing products to direct unlight, and store them indoors (at room temperature). Also avoid storing products in areas with excessive temperatures. (Corrugated cardboard packages become weaker as they become wet with water or other liquid. Take care in storage and handling.)
- After unpacking the products, check that they are defect-free and meet the specifications.

## PRODUCT WARRANTY



### Be sure to read the following description of our product warranty

- Always observe the specifications of and the precautions and instructions on using our product.
- We always strive to improve product quality and reliability, but cannot guarantee perfection. Therefore, should you intend to use this product with any equipment or machinery that may pose the risk of serious or even fatal injury, or property damage, ensure an appropriate safety design or take other measures with sufficient consideration given to possible problems. We shall assume no responsibility for any inconvenience stemming from any action on your part without our written consent in the form of specifications or other documented approval.
- The related technical documents, operation manuals, and/or other documentation prescribe precautions on selecting, constructing, installing, operating, maintaining, and servicing our products. For details, consult with our nearest distributor or agent.
- Our product warranty extends for one and a half years after the product is shipped from our factory or one year after the product is installed, whichever comes first. Any product abnormality that occurs during the warranty period or which is reported to us will be investigated immediately to identify its cause. Should our product be deemed defective, we shall assume the responsibility to repair or replace it free of charge.
- Any repair or replacement needed after the warranty period ends shall be charged to the customer.
- The warranty does not cover the following cases :
  - (1) Using our product under any condition not covered by our defined scope of warranty.
  - (2) Failure to observe our defined precautions or instructions regarding the construction, installation, handling, maintenance, or servicing of our product.
  - (3) Any inconvenience caused by any product other than ours.
  - (4) Remodeling or otherwise modifying our product by anyone other than us.
  - (5) Using any part of our product for anything other than the intended use of the product.
  - (6) Any abnormality that occurs due to a natural disaster, accident, or other incident not stemming from something inside our product.

#### **【Precautions】**

\*Using a positive-pressure gas with our plastic piping may pose a dangerous condition due to the repellent force peculiar to compressed fluids, even when the gas is under the same pressure as water. Therefore, be sure to take the necessary safety precautions such as covering the piping with protective material. For inquiries, please contact us.

For conducting a leak test on newly installed piping, be sure to check for leaks under water pressure.

If absolutely necessary to use gas in testing, please consult your nearest service station beforehand.

\*Wrap the threaded joints on our plastic piping with sealing tape.

\*Using a liquid sealing agent or liquid gasket may cause stress cracks (environmental stress cracking) . Our product warranty shall not apply in case of said use, even when said use is unavoidable.

#### **【Export Control】**

In an effort to remain compliant with international agreements on security, many countries have instituted export controls for advanced goods and technologies which may be used for the proliferation of weapons of mass destruction. Even in Japan we are sanctioned by the International Export Control Regime and the Chemical Weapons Convention to meet current regulations at home and in countries where we sell our goods and technologies.

In meeting this social and legal obligation, we are asking for your cooperation in providing us information relating to the intended use of our products. Information such as copies of agreements, company organization chart and affidavits of end-use may be required for export permission.

Your cooperation in this endeavor is greatly appreciated and our sales or Asahi distributor people are committed to working with you to continue to provide the best products and services Asahi has to offer.



## PRECAUTIONS FOR USE

- For installation and maintenance procedure refer to the appropriate manual for the product being used.
- Do not drop or toss pipe and fitting material.
- Do not step on a valve.
- Do not put anything heavy on a valve.
- Do not put anything burning or hot near a valve.
- Do not scratch or thrust a valve with anything sharp (such as a knife and a hanger).
- Avoid contacting with any coal tar creosote (antiseptic for wood), termite insecticide, vermicides, or paint.
- Secure sufficient space for maintenance and inspection.
- Select pipe and fitting material suitable for your specific needs, using "Chemical Resistance On Asahi AV Valve," as a guide. If you have any questions, please feel free to contact your nearest Asahi dealer.
- Be sure to use water pressure when testing a pipeline including AV pipe and fitting material.  
It is extremely dangerous to use air pressure for testing the pipeline.
- The pressure limit includes water hammer pressure. Do not exceed the limit.
- In discarding a valve, be sure to ask a waste service company.
- Valve should not be used with compressed air or gas.

## CONTACT US...

Nobeoka Head Office : 2-5955,Nakanose-cho,Nobeoka-City,Miyazaki-Pref.,Japan 882-8688

Tokyo Head Office : World Trade Center Bldg., 20F, 4-1 Hamamatsu-cho 2-chome, Minato-ku, Tokyo, Japan 105-6120

Bangkok Representative Office : 323 United Center Building, Unit 2101, 21st Floor, Silom Road, Silom, Bangrak, Bangkok 10500 THAILAND

Europe Representative Office : Kaiser-Friedrich-Promenade 61,61348 Bad Homburg,Germany

Asahi Organic Chemicals Trading (Shanghai) CO.,LTD : RM.405. East Tower, Sun Plaza No.88 Xianxia Road, Changning District, Shanghai, China 200336

Asahi/America, Inc. : 35 Green Street P.O. Box 653, Malden Massachusetts, 02148 U.S.A



### ISO9001:2000

VALVE & PIPING SYSTEMS ADMINISTRATION is complying with the requirements of the above Quality Management system standard.



### ISO14001:2004

Nobeoka Head Office, Nobeoka Works, Engineering Development, Kitakata Factory, Physical Distribution Control Department (Nobeoka Physical Distribution Center), Aichi Plant, Tochigi Plant and Hiroshima Plant are complying with the requirements of the above Environmental Management System Standard.



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