

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

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*LF : Lubricant Free

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 (welded)	Threaded	Socket	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	○	○	○	○	○	○	○	○	
Page		152 - 153									

Type		BALL VALVE TYPE 21													
Body Materials		PVC			C-PVC			PP			PVDF				
End Connectors		Flanged	Threaded	Socket	Flanged	Threaded	Socket (welded)	Flanged	Threaded	Socket	Flanged	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		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
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●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	1/2	○	○	○	—	—	—	—	○	○	○	—
	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			

※Except for JIS standard.

Nominal Size	mm	Reducing Socket(RS)	Reducing Tee(T)
	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	○	○
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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

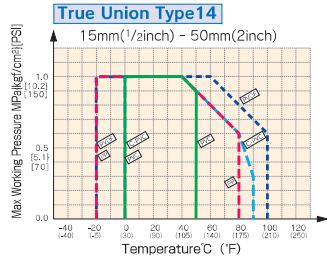
Having a new bottom stand with an insert hole, DIAPHRAGM VALVE TYPE 14 helps support the piping. The valve is also provided with a flange stand to increase installation safety.



MATERIAL AND WORKING TEMPERATURE

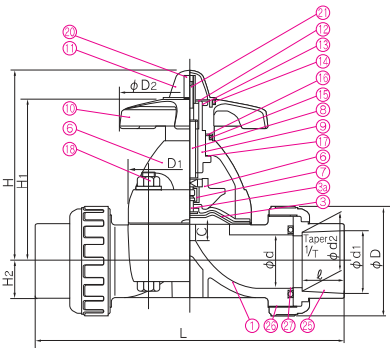
Body material	Nominal size mm(inch)	Working Temperature °C (°F)	Max. Working Pressure at 20°C(70°F) MPa[kgf/cm ²] [PSI]	End Connectors
Unplasticized Polyvinyl Chloride(PVC)	15 - 50(1/2 - 2)	0 - 50(30 - 120)	1.0[10.2] [150]	Socket End, Threaded End
Chlorinated Polyvinyl Chloride(C-PVC)	15 - 50(1/2 - 2)	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

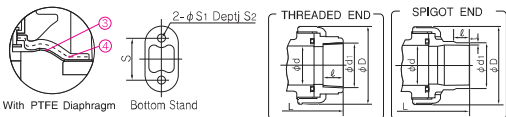
SOCKET END



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	1		⑫	NAME PLATE	1	PVC
③	DIAPHRAGM	1	EPDM NBR, CSM CPE, FKM VITON C (FKM-C) VITON F (FKM-F) PTFE	⑬	RETAINING RING(C) TYPE	1	STAINLESS STEEL304
④	CUSHION	1	EPDM*	⑭	O-RING(A)	1	EPDM
⑤	COMPRESSOR	1	PVDF	⑮	O-RING(B)	1	EPDM
⑥	JOINT	1	STAINLESS STEEL304	⑯	THRUST RING(A)	1	UHMWPE
⑦	STEM	1	COPPER ALLOY(C3604)	⑰	THRUST RING(B)	1	UHMWPE
⑧	SLEEVE	1	COPPER ALLOY(C3604)	⑱	BOLT-NUT	4	STAINLESS STEEL304
⑨	WHEEL	1	PP	⑳	STOPPER	1	COPPER ALLOY(C3604)
				㉑	SCREW	1	STAINLESS STEEL304
				㉒	ENDCONNECTOR	2	PVC C-PVC PP PVDF
				㉓	UNION NUT	2	
				㉔	O-RING(C)	2	EPDM FKM Others

* With PTFE Diaphragm



DIMENSIONS TABLE

JIS		Unit:mm																																	
Nominal Size	d	Socket End												Threaded End						Spigot End						D	D ₁	D ₂	C (LIFT)	H	H ₁	H ₂	S	S ₁	S ₂
		PVC, C-PVC				PP				PVDF				JIS B 0203			L			PVDF															
mm	inch	d ₁	ℓ	1/T	L	d ₁	d ₂	ℓ	L	d ₁	d ₂	ℓ	L	d ₁	ℓ	PVC, C-PVC	PP, PVDF	d ₁	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			

DIN		Unit:mm																													
Nominal Size	d	Socket End						Threaded End						Spigot End						D	D ₁	D ₂	C (LIFT)	H	H ₁	H ₂	S	S ₁	S ₂		
		PVC, C-PVC		PP, PVDF		L	DIN 2999		L	PVC		PP, PVDF		L																	
		DIN 8063		DIN 16962(PP)			d ₁	ℓ		d ₁	ℓ	DIN 3441			DIN 3442	PP	PVDF														
mm	inch	d ₁	ℓ	L	d ₁	d ₂	ℓ	L	d ₁	ℓ	PVC, C-PVC	PP, PVDF	PVDF	d ₁	ℓ	L	d ₁	ℓ	t	t	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	d	Socket End							Threaded End					D	D ₁	D ₂	C (LIFT)	H	H ₁	H ₂	S	S ₁	S ₂	
		PVC, C-PVC			PP, PVDF(IPS)				ANSI/ASME B1·20·1		L													
		ASTM SCH80			L	d ₁	ℓ	L																
inch	mm	d ₁	d ₂	ℓ						d ₁	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	1-11½NPT	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	
1¼	32	1.26	1.670	1.655	1.250	7.95	1.65	1.25	7.80	1½-11½NPT	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	
1½	40	1.57	1.912	1.894	1.375	10.47	1.89	1.37	10.28	1½-11½NPT	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	2-11½NPT	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	

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)



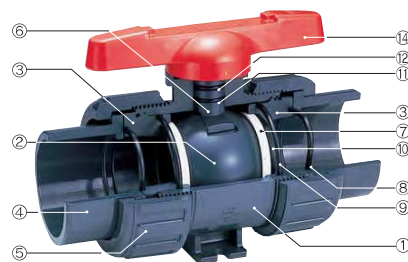
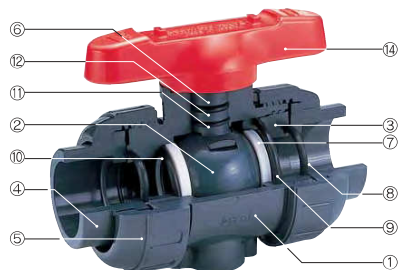
MATERIAL AND WORKING TEMPERATURE

Body material	Working Temperature °C (°F)	Max. Working Pressure (at R.T.) MPa[kgf/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 : There is a dead space in a ball valve. Volatile liquids, such as a hydrogen peroxide(H₂O₂)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

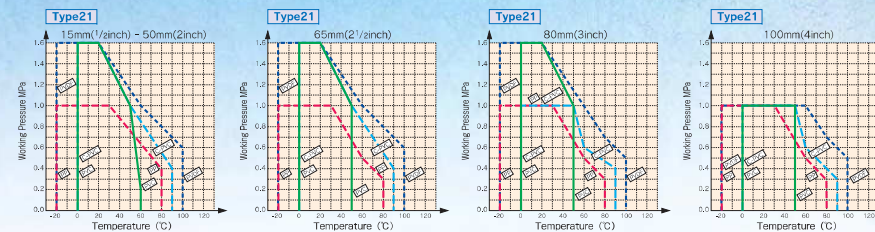
● 15mm(1/2inch) - 50mm(2inch)

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)

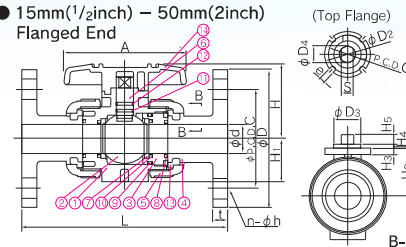
No.	DESCRIPTION	Pcs.	MATERIAL	No.	DESCRIPTION	Pcs.	MATERIAL
①	BODY	1	PVC, C-PVC, PP, PVDF	⑨	O-RING(B)	2	EPDM, FKM, etc
②	BALL	1	PVC, C-PVC, PP, PVDF	⑩	CUSHION	2	EPDM, FKM, etc
③	CARRIER	2	PVC, C-PVC, PP, PVDF	⑪	O-RING(D)	1	EPDM, FKM, etc
④	END CONNECTOR	2	PVC, C-PVC, PP, PVDF	⑫	O-RING(E)	1	EPDM, FKM, 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

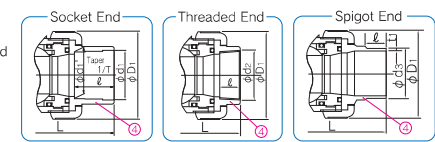
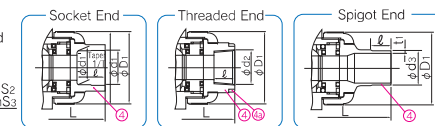
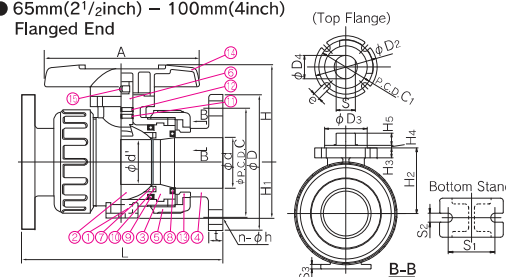


DIMENSION

● 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 ₁	D ₂	D ₃	D ₄	C ₁	H	H ₁	H ₂	H ₃	H ₄	H ₅	A	S	S ₁	S ₂	S ₃	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			PVC C-PVC					
mm inch	D	C	n	h	D	C	n	h	PVC C-PVC	PP	PVDF	t	d ₁	ℓ	1/T	L	d ₁	d ₁ '	ℓ	L	d ₁	d ₁ '	ℓ	L	d ₂	ℓ	PVC C-PVC	PP	PVDF
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 1/2	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

DIN		Unit:mm																		
Nominal Size		d	d'	D ₁	D ₂	D ₃	D ₄	C ₁	H	H ₁	H ₂	H ₃	H ₄	H ₅	A	S	S ₁	S ₂	S ₃	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 ₁	ℓ	L	d ₁	d ₁ '	ℓ	PP PVDF	d ₂	ℓ	PVC C-PVC	PP PVDF	d ₃	d ₃ '	ℓ	d ₃	I	PP PVDF	t	PP	PVDF				
mm	inch																														
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	108.05	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 ₁	D ₂	D ₃	D ₄	C ₁	H	H ₁	H ₂	H ₃	H ₄	H ₅	A	S	S ₁	S ₂	S ₃	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				t	PVC, C-PVC				PP, PVDF				d ₂	ℓ	L						
	D	C	n	h	PVC C-PVC	PP	PVDF	d ₁		d ₁ '	ℓ	L	d ₁	d ₁ '	ℓ	L	d ₁			ℓ	PP	PVDF	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	1-11/2 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	2-11/2 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	4-6 NPT	1.77	14.25	14.25	14.06

Note : Pay attention that the following chemicals such as Hydrogen Peroxide (H₂O₂) and Sodium hypochlorite (NaClO) are adapt to be occurred the abnormal pressure rising due to their vaporization nature.

Panel Mounting

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

Proceduce

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

Bottom Stand Dimension

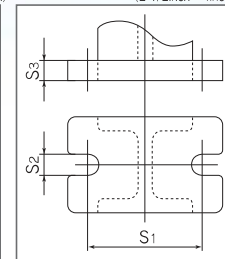
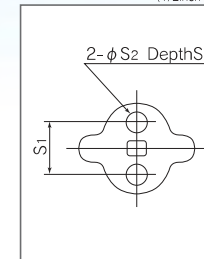
Diaphragm Valve Type14

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)



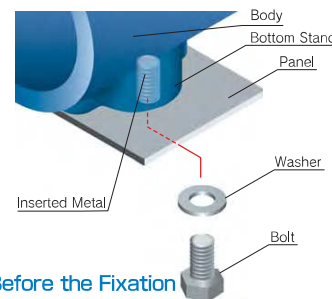
Ball Valve Type21

Unit:mm(inch)

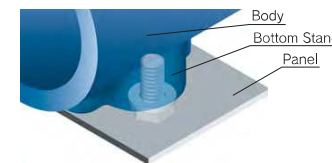
Nominal Size mm(inch)	S1	S2	S3
15mm - 25mm (1/2 - 1)	19 (0.75)	7.3 (0.29)	11 (0.43)
32mm - 50mm (1 1/4 - 2)	30 (1.18)	9 (0.35)	15 (0.59)
65mm (2 1/2)	48 (1.89)	9 (0.35)	6 (0.24)
80mm (3)	55 (2.17)	11 (0.43)	7 (0.28)
100mm (4)	65 (2.56)	11 (0.43)	8 (0.31)

Fixation of Bottom Stand with Panel

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

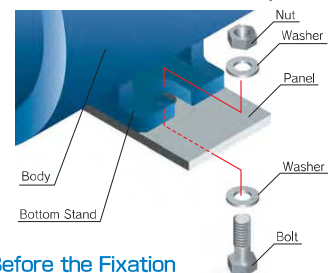


Before the Fixation

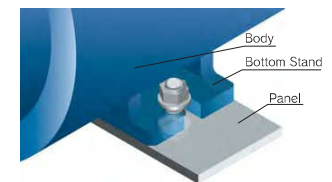


After the Fixation

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.

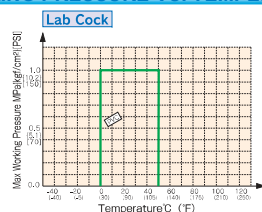
:LAB COCK(Material:PVC+EPDM)

*Certified products bear an NSF Certification Mark.

MATERIAL AND WORKING TEMPERATURE

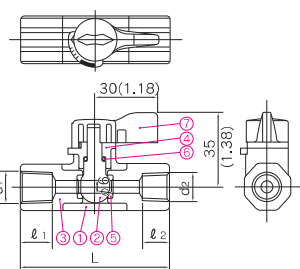
Body material	Unplasticized Polyvinyl Chloride(PVC)
Working Temperature	0°C - 50°C (30° F - 120° F)
Max.Working Pressure	1.0MPa[10.2kgf/cm ²][150PSI]
End Connectors	Hose, Male thread, Female thread
Nominal Size	●Hose: 12 to 15mm(standard hose inner diameter) ●Male thread: 1/4, 1/2 ●Female thread: 1/4,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

WORKING PRESSURE VS. TEMPERATURE

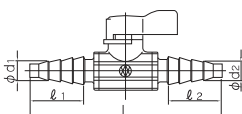


DIMENSION

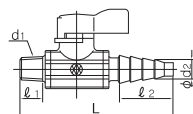
FEMALE THREAD × FEMALE THREAD



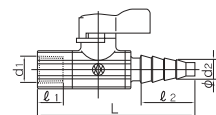
HOSE × HOSE



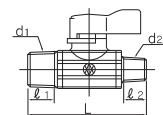
MALE THREAD × HOSE



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 ₁	d ₂	ℓ ₁	ℓ ₂	L		d ₁	d ₂	ℓ ₁	ℓ ₂	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 1/2	Rc 1/4	15	15	71
							R 1/2	Rc 3/8	15	15	71

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

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

■ LAB COCK 1/2inch MALE THREAD × ELBOW16mm

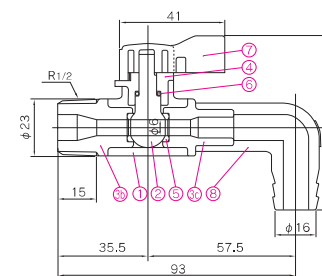


MATERIAL AND WORKING TEMPERATURE

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

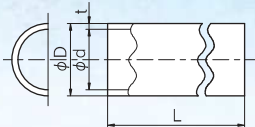
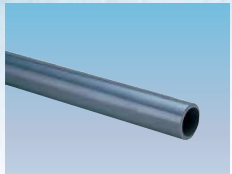
PARTS & MATERIALS

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	ELBOW	1	PVC



HP-PVC PIPE & FITTINGS

HP-PVC Pipe <CLASS VP:JIS K6741>



●HP-PVC Pipe <CLASS VP:JIS K6741> Unit:mm									
Nominal Size (mm)	D			t		d		L	
	Basic Dimension (mm)	Maximum and Minimum tolerances	Average tolerances	Minimum	Tolerance	Approximate I.D. (for reference)		Length	
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)

1.The tolerances of lengths are ± 10mm.

2.The maximum and minimum tolerances on outside diameters are the tolerances on O.D. measurements taken at randomly selected spots.

3.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.

Working Pressure with Temperature

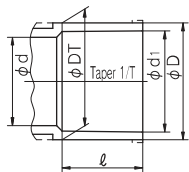
MPa (kgf/cm²)

Nom. Size	Temp.	20℃	30℃	40℃	50℃
13mm - 300mm		1.0{10.2}	0.9{9.2}	0.7{7.1}	0.3{3.1}

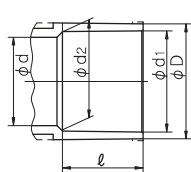
Note:This data is applicable for ultrapure water.

Dimensions Common All of AV TS Socket. JIS K6743

▼13mm - 150mm



▼200mm - 300mm



Working Pressure with Temperature

MPa (kgf/cm²)

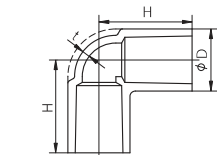
Nom. Size	Temp.	20℃	30℃	40℃	50℃
13mm - 150mm		1.0{10.2}	0.9{9.2}	0.7{7.1}	0.3{3.1}
200mm		0.75{7.7}	0.6{6.1}	0.5{5.1}	0.25{2.6}
250mm		0.6{6.1}	0.5{5.1}	0.4{4.1}	0.2{2.0}
300mm Elbow, Reducing Socket, Socket		0.6{6.1}	0.5{5.1}	0.4{4.1}	0.2{2.1}
300mm Other Fitting		0.4{4.1}	0.4{4.1}	0.3{3.1}	0.1{1.1}

Note:This data is applicable for ultrapure water.

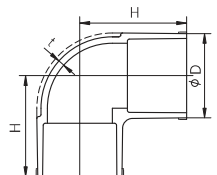
Elbow(L)



▼13mm - 50mm



▼65mm - 300mm



●Dimensions Common All of AV TS Socket. JIS K6743 Unit:mm													
Nominal Size (mm)	d ₁	Tolerance on d ₁	d ₂	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)

1.The tolerances on ℓ are +4/-0.5mm.

2.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/cm²} at 20℃250mm : 1.0MPa{10.2kgf/cm²} at 20℃

●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)

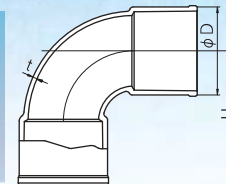
1.The tolerances on H are +5/-1mm.

2.The Nominal Size marked with ※ conform to the JPPFA standard.

3.The Nominal Size marked with □ conform to the AV standard.

HP-PVC PIPE & FITTINGS

90° AV Bend

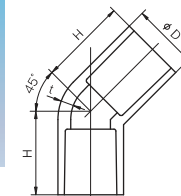


●90° AV Bend Unit:mm			
Nominal Size(mm)	D	t	H
□ 200	240	15	341
□ 250	293	16	402
300	337	10	395

(Note)

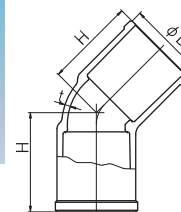
1.The Nominal Size marked with □ conform to the AV standard.

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



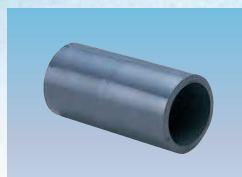
●45° AV Bend Unit:mm			
Nominal Size(mm)	D	t	H
40	57	4.5	69
50	70	5.0	80
65	87	6.0	81
□ 75	101	6.6	97
□ 100	129	7.3	122
□ 125	156	7.7	149
□ 150	185	10.0	184
□ 200	240	15.0	193
□ 250	293	16.0	213
300	337	10.0	225

(Note)

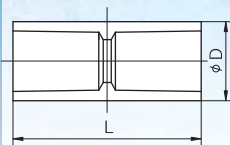
1.The Nominal Size marked with □ conform to the AV standard.

HP-PVC FITTINGS

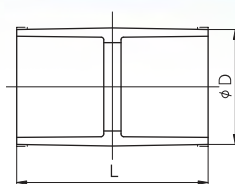
Socket(S)



▼13mm~50mm



▼65mm~300mm



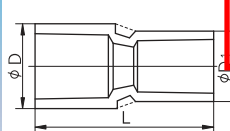
●Socket(S) Unit:mm		
Nominal Size (mm)	D	L
13	24	57
16	29	67
20	33	77
25	40	87
30	46	95
40	57	117
50	70	133
※ 65	87	145
75	102	155
100	130	200
※ 125	157	240
150	186	300
□ 200	238	305
□ 250	295	352
300	336	360

(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.

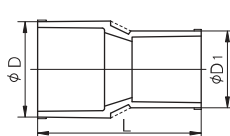
Reducing Socket(RS)



▼13mm - 50mm



▼65mm - 300mm



●Reducing Socket(RS) Unit:mm			
Nominal Size	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

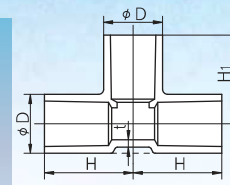
(Note)
1.The tolerances on L are ±4.0mm.
2.The Nominal Size marked with ※ conform to the JPPFA standard.
3.The Nominal Size marked with □ conform to the AV standard.
4.○ There sizes are not in accordance with JISK 6743 and therefore welding arrangement is not available.

HP-PVC FITTINGS

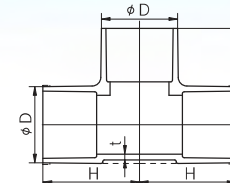
Tee(T)



▼13mm - 50mm



▼65mm - 300mm



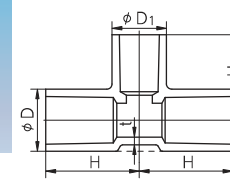
●Tee(T) Unit:mm				
Nominal Size (mm)	D	t	H	H ₁
13	24	3.0	36	36
16	29	3.5	43	43
20	33	3.5	50	50
25	40	4.0	58	58
30	46	4.0	65	65
40	57	4.5	82	82
50	70	5.0	96	96
※ 65	87	6.6	110	110
75	102	8.0	120	120
100	130	10.0	152	152
※ 125	157	11.0	187	187
150	186	13.0	230	230
□ 200	240	15	266	266
□ 250	295	16	331	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.

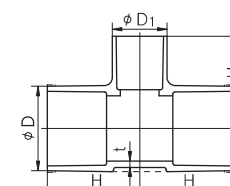
Reducing Tee(RT)



▼13mm - 50mm



▼65mm - 300mm

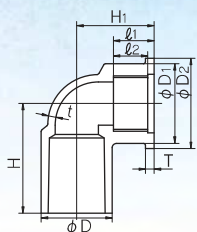


●Reducing Tee(RT) Unit:mm					
Nominal Size (mm)	D	t	H	D ₁	H ₁
16×13	29	3.5	41	24	38
20×13	33	3.5	46	24	40
20×16	33	3.5	48	29	45
25×13	40	4.0	51	24	43
25×16	40	4.0	53	29	48
25×20	40	4.0	55	33	53
○30×13	48.2	6.5	54.7	28.2	44
30×16	46	4.0	57	29	51
30×20	46	4.0	59	33	56
30×25	46	4.0	62	40	61
40×13	57	4.5	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 ₁	D ₂	ℓ ₁	ℓ ₂	T	H	H ₁	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

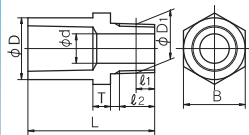
(Note)

- The threaded portions employ parallel female threads specified in JIS B 0203(Taper Pipe Threads).
- The tolerances on H are +5/-2mm.
- The tolerances on H₁ are +5/-2mm.
- The Nominal Size marked with □ conform to the AV standard.
- The tolerances on ℓ₂ 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 ₁	Number of threads per inch	Location of basic diameter ℓ ₁	ℓ ₂ (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

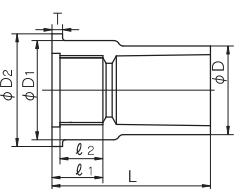
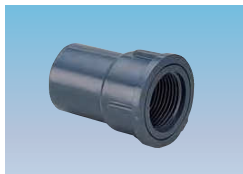
(Note)

- The threaded portions employ parallel female threads specified in JIS B 0203(Taper Pipe Threads).
- The tolerances on L are +5/-2mm.
- The Nominal Size marked with ※ conform to the JPPFA standard.
- 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 ₁	D ₂	ℓ ₁	ℓ ₂	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)

- The threaded portions employ parallel female threads specified in JIS B 0203(Taper Pipe Threads).
- The tolerances on L are +5/-1mm.
- The tolerances on ℓ₂ are ±1mm.
- The Nominal Size marked with □ conform to the AV standard.

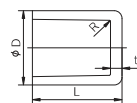
Precautions in use

- 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.

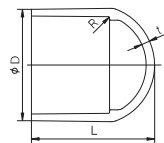
Cap(C)



▼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)

- The tolerances on L are +5/-20mm.
- The Nominal Size marked with ※ conform to the JPPFA standard.
- R is 1 to 5mm

AV PREFAB JOINT <UNION>

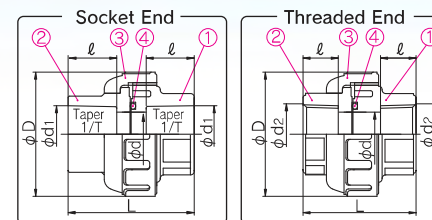


SPECIFICATIONS

Material	Working temperature	Working pressure MPa(kgf/cm ²)	Nominal Size (mm)	Connection
Unplasticized Polyvinyl Chloride (U-PVC)	0°C~50°C	1.0{10.2}	13~100	Socket End
Chlorinated Polyvinyl Chloride (C-PVC)	0°C~90°C	1.0{10.2}	13~50	Threaded End
			13~100	Socket End

(Note)

For pressure limits by working temperature ranges and materials, see "WORKING PRESSURE VS. TEMPERATURE" in this catalog.



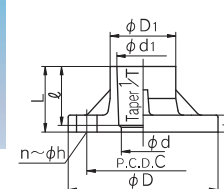
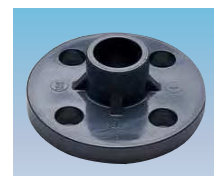
PARTS & MATERIALS

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

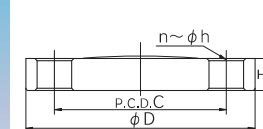
Unit:mm											
Nominal Size		d	Socket End				Threaded End				D
			U-PVC,C-PVC				U-PVC				
mm	inch		d ₁	ℓ	1/T	L	d ₁	ℓ	L		
13	3/8	13	18.13	18	1/34	46.0	RC3/8	15	43	48	
16	1/2	15	22.11	20	1/34	46.0	Rc1/2	15	43	48	
20	3/4	20	26.13	24	1/34	61.0	RC3/4	17	57	60	
25	1	25	32.16	27	1/34	70.0	Rc1	20	63	70	
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	

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.

Unit:mm													
Nominal Size		d	JIS 10K				d ₁	Taper 1/T	D ₁	t	T	ℓ ±0.5	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
	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)

- For details of AV Flanges, refer to the individual catalogs of appropriate AV Flanges.
- 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

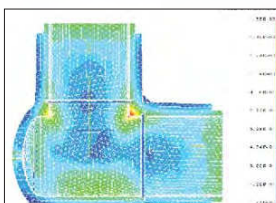
Types : Type "L", Type "T"

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	—	—

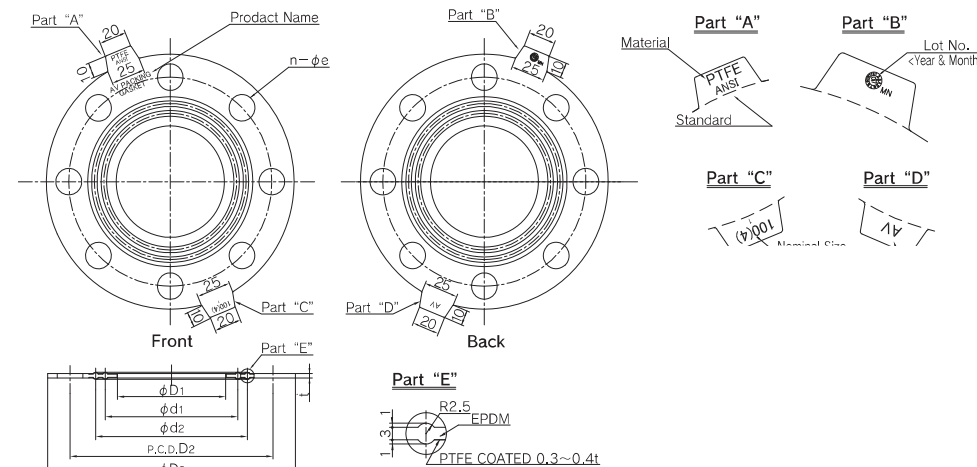
Working temperature is different depending on type of fluid.

* 1 Except for 1 1/4inch and 2 1/2inch

Viton-F has superior resistance to inorganic acids such as HNO₃, HF and HCl.

Viton-C has superior resistance to chlorine containing media such as Chlorine Water, NaCl and ClO₂.

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 ₁	D ₂	D ₃	n	e	d ₁	d ₂		
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