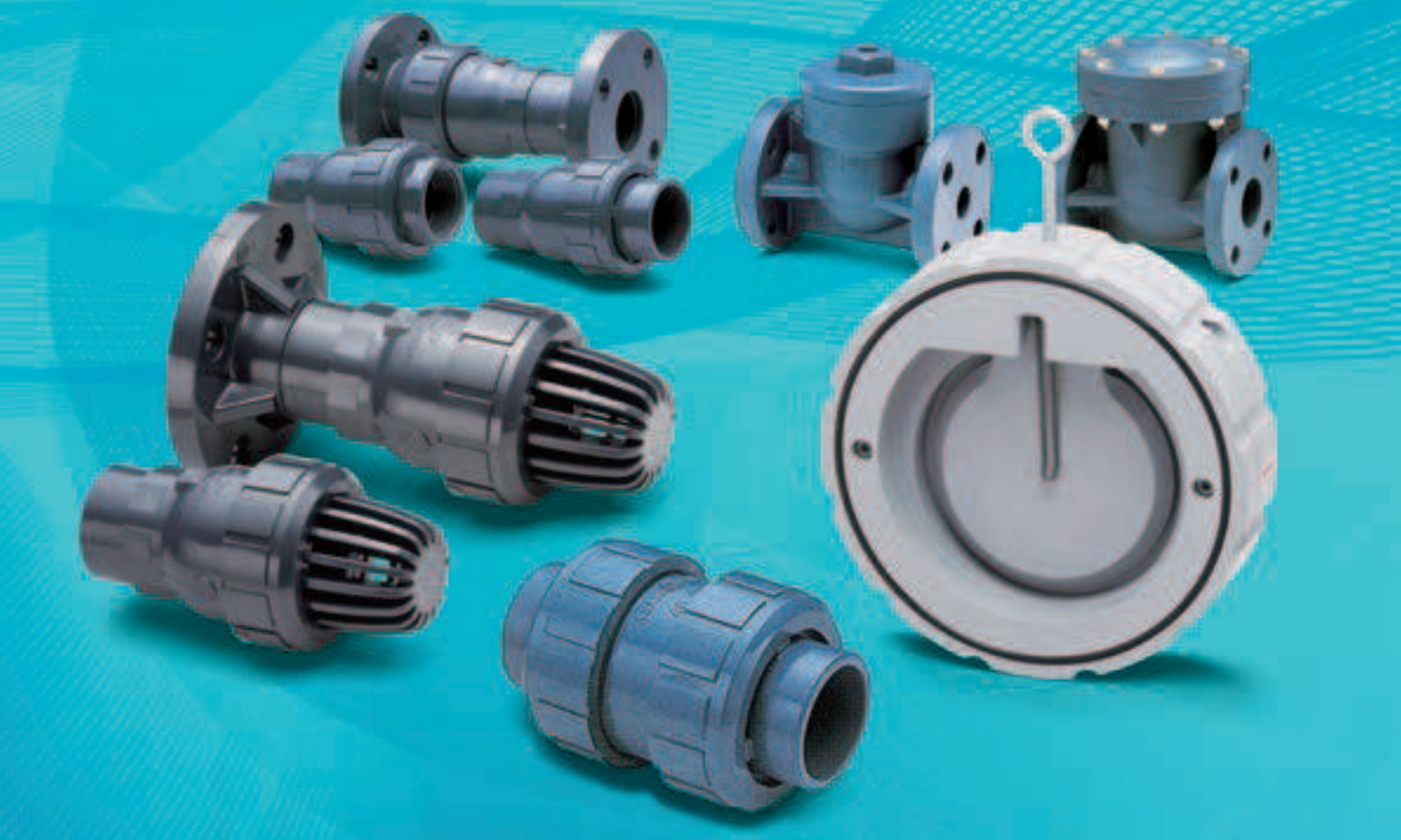
ASAHI AV
CHECK VALVE

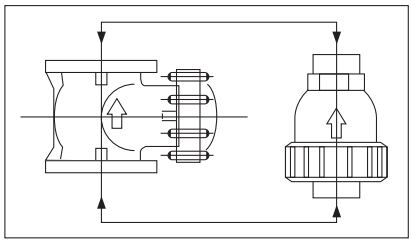


PERFORMANCE OF SWING CHECK VALVE, BALL CHECK VALVE, AND BALL FOOT VALVE

Min. pressure Unit: kpa {gf/m²}, normal temperature

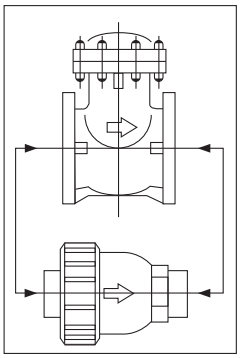
mm	inch		SWING CHECK VALVE				BALL CHECK VALVE, BALL FOOT VALVE			
			VERTICAL PIPING		HORIZONTAL PIPING		VERTICAL PIPING		HORIZONTAL PIPING	
			WHEN FULLY SEALED	WHEN AIR PASSES	WHEN FULLY SEALED	WHEN AIR PASSES	WHEN FULLY SEALED	WHEN AIR PASSES	WHEN FULLY SEALED	WHEN AIR PASSES
15	1/2	EPDM	20 {200}	10 {100}	20 {200}	10 {100}	20 {200}	5 {50}	20 {200}	1 {10}
		PTFE	30 {300}	10 {100}	30 {300}	10 {100}	-	-	-	-
20	3/4	EPDM	20 {200}	10 {100}	20 {200}	10 {100}	30 {300}	5 {50}	30 {300}	1 {10}
		PTFE	35 {350}	10 {100}	35 {350}	10 {100}	-	-	-	-
25	1	EPDM	30 {300}	10 {100}	35 {350}	10 {100}	30 {300}	5 {50}	30 {300}	1 {10}
		PTFE	50 {500}	10 {100}	60 {600}	10 {100}	-	-	-	-
40	1 1/2	EPDM	30 {300}	10 {100}	35 {350}	10 {100}	30 {300}	10 {100}	30 {300}	2 {20}
		PTFE	50 {500}	10 {100}	60 {600}	10 {100}	-	-	-	-
50	2	EPDM	30 {300}	10 {100}	35 {350}	10 {100}	30 {300}	10 {100}	30 {300}	2 {20}
		PTFE	50 {500}	10 {100}	60 {600}	10 {100}	-	-	-	-
65	2 1/2	EPDM	30 {300}	10 {100}	35 {350}	10 {100}	-	-	-	-
		PTFE	50 {500}	10 {100}	60 {600}	10 {100}	-	-	-	-
80	3	EPDM	35 {350}	10 {100}	40 {400}	10 {100}	20 {200}	10 {100}	20 {200}	2 {20}
		PTFE	55 {550}	10 {100}	60 {600}	10 {100}	-	-	-	-
100	4	EPDM	35 {350}	10 {100}	40 {400}	10 {100}	20 {200}	10 {100}	20 {200}	2 {20}
		PTFE	60 {600}	10 {100}	65 {650}	10 {100}	-	-	-	-
125	5	EPDM	35 {350}	10 {100}	40 {400}	10 {100}	-	-	-	-
		PTFE	60 {600}	10 {100}	65 {650}	10 {100}	-	-	-	-
150	6	EPDM	40 {400}	15 {150}	45 {450}	10 {100}	-	-	-	-
		PTFE	65 {650}	15 {150}	70 {700}	10 {100}	-	-	-	-
200	8	EPDM	40 {400}	20 {200}	45 {450}	15 {150}	-	-	-	-
		PTFE	70 {700}	20 {200}	70 {700}	15 {150}	-	-	-	-

TEST METHOD [Vertical piping]



Measure the minimum pressure required for air to pass through or to be sealed.

[Horizontal piping]

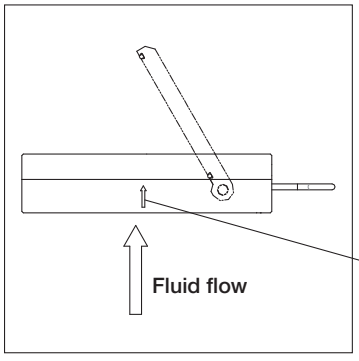


PERFORMANCE OF WAFER CHECK VALVE

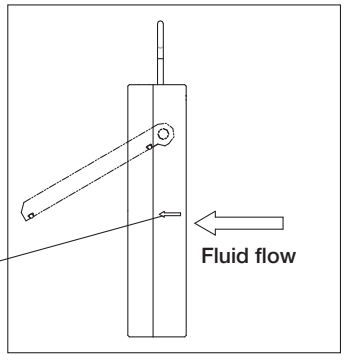
Min. sealing pressure / operating pressure (water pressure) Unit: kpa {gf/m²} {PSI}

mm	inch	STANDARD MODEL				SPRING MODEL			
		VERTICAL PIPING		HORIZONTAL PIPING		VERTICAL PIPING		HORIZONTAL PIPING	
		MIN. SEALING PRESSURE	OPERATING PRESSURE	MIN. SEALING PRESSURE	OPERATING PRESSURE	MIN. SEALING PRESSURE	OPERATING PRESSURE	MIN. SEALING PRESSURE	OPERATING PRESSURE
80	3	21.0 {210.0}{3.0}	0.7 {7.0}{0.1}	21.0 {210.0}{3.0}	0.07 {0.7}{0.01}	21.0 {210.0}{3.0}	1.4 {14.0}{0.2}	21.0 {210.0}{3.0}	0.07 {0.7}{0.01}
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}	7.0 {70.0}{1.0}	1.4 {14.0}{0.2}	7.0 {70.0}{1.0}	0.07 {0.7}{0.01}

TEST METHOD [Vertical piping]



[Horizontal piping]



SWING CHECK VALVE

- PREVENTS FLUID BACKFLOW AND PROTECTS PUMP FACILITIES
- ARM-TYPE CHECK VALVE PREVENTS FLUID RESISTANCE INCREASE.
- ALL-PLASTIC MATERIAL PROVIDES HIGH RESISTANCE TO CORROSIVE FLUID INCLUDING ACID AND ALKALI.
- INTERNAL MAINTENANCE ONLY REQUIRES REMOVAL OF BONNET.

BASIC SPECIFICATIONS

VALVE TYPE——————**SWING CHECK VALVE**

SIZE——————————**15 mm—200 mm (1/2 inch—8 inch)**

BODY MATERIAL————**HI-PVC** **PP** **PVDF**

SEAL MATERIAL / SEAT— **EPDM** **FKM** **PTFE** **Viflon-F** **Viflon-C**

CONNECTION / FLANGED—**JIS5K, JIS10K, DIN, ANSI**

	FLUID TEMPERATURE	MAXIMUM WORKING PRESSURE (NORMAL TEMPERATURE) MPa{kgf/cm²}		
		15mm—80mm	100mm—150mm	200mm
HI-PVC	0℃ ~ 50℃	1.0 {10.2}	0.7 {7.1}	0.5 {5.1}
PP	-20℃ ~ 80℃	1.0 {10.2}	0.7 {7.1}	0.5 {5.1}
PVDF	-20℃ ~100℃	1.0 {10.2}	0.7 {7.1}	0.5 {5.1}

NOTE The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.

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

MANUAL

NOTES FOR PIPING

- They can be used for both horizontal and vertical pipes, but make sure during installation that the arrow direction of the valve body is aligned with the flow direction of the fluid.

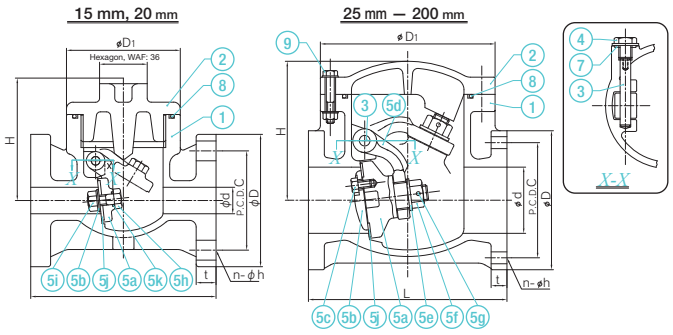
NOTES FOR USE

- If foreign matter such as dust is mixed in the fluid, the valve may not function properly.
- The plug (P/N ④) is not a drain plug for water removal. Do not remove the plug to discharge water since the valve may become unable to work properly.

NOTE For information on how to drain water, contact our sales office in your area.

PARTS LIST MANUAL

HI-PVC, PVDF

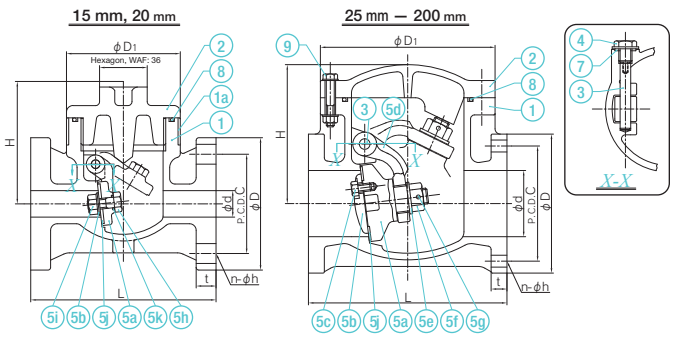


PART NO. / NAME	QTY	MATERIAL
① BODY	1	HI-PVC, PVDF
② BONNET	1	HI-PVC, PVDF
③ SHAFT	1	HI-PVC, PVDF
④ PLUG	1	HI-PVC, PVDF
⑤a DISC	1	HI-PVC, PVDF
⑤b SEAT HOLDER	1	HI-PVC, PVDF
⑤c BOLT (A)(4)	—	HI-PVC, PVDF
⑤d ARM(4)	1	HI-PVC, PVDF
⑤e WASHER(4)	1	HI-PVC, PVDF

PART NO. / NAME	QTY	MATERIAL
⑤f NUT (A)(4)	1	HI-PVC, PVDF
⑤g PIN(3)	1	HI-PVC, PVDF
⑤h BOLT (B)(1)	1	HI-PVC, PVDF
⑤i NUT (B)(1)	1	HI-PVC, PVDF
⑤j SEAT	1	GASKET SEAT O-RING (A) —O-RING (B)
⑤k O-RING (A)(1)	1	EPDM——EPDM FKM——FKM PTFE——PFA(2)
⑦ GASKET (B)	1	
⑧ O-RING (B)	1	
⑨ BOLT/NUT(4)	—	SUS304

NOTES (1) Used for 15 mm and 20 mm. (2) FKM + PFA coating.
(3) Used for the material of PVDF and sizes of 65 to 200 mm.
(4) Used for 25 to 200 mm.

PP



PART NO. / NAME	QTY	MATERIAL
① BODY	1	PP
② BONNET	1	PP
③ SHAFT	1	PP
④ PLUG	1	PP
⑤a DISC	1	PVDF
⑤b SEAT HOLDER	1	PP
⑤c BOLT (A)(3)	—	PP
⑤d ARM(3)	1	PP
⑤e WASHER(3)	1	PP
⑤f NUT (A)(3)	1	PVDF

PART NO. / NAME	QTY	MATERIAL
⑤g PIN(2)	1	PVDF
⑤h BOLT (B)(1)	1	PP
⑤i NUT (B)(1)	1	PP
⑤j SEAT	1	GASKET SEAT O-RING (A) —O-RING (B)
⑤k O-RING (A)(1)	1	EPDM——EPDM FKM——FKM
⑦ GASKET (B)	1	
⑧ O-RING (B)	1	
⑨ BOLT/NUT(3)	—	SUS304
⑩a BODY RING(1)	1	SUS304

NOTES (1) Used for 15 mm and 20 mm. (2) Used for 65 to 200 mm.
(3) Used for 25 to 200 mm.

PRODUCT MODEL CODE LIST

MANUAL

ACTUATION	TYPE	BONNET SEAL	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
V	SC	OR*	*	*	F	*	***
V MANUAL VALVE	SC SWING	OR O-RING	I HI-PVC P PP F PVDF	E EPDM V FKM P PTFE/PFA 3 PTFE/Viflon-F 4 PTFE/Viflon-C	F FLANGED	1 10K 5 5K D DIN A ANSI	015 15mm ~ 200 200mm

* When the seal material is EPDM or FKM, the material of O-ring is the same as that of the seal.
When the seal material is PTFE, the material of O-ring is PFA coating or Viflon.

NOTES • 15 mm type is processed from 20 mm. 32 mm type is processed from 40 mm.

• Contact us regarding the combination of body material PP and seal material PTFE/PFA.

MANUAL

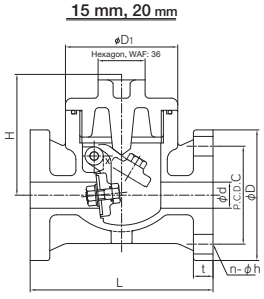
SWING CHECK VALVE

TYPE——VSCOR

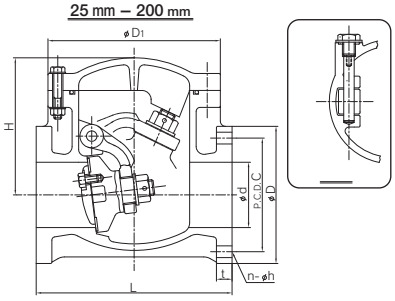
CONNECTION / FLANGED——JIS, DIN, ANSI

HI-PVC, PVDF

15 mm, 20 mm

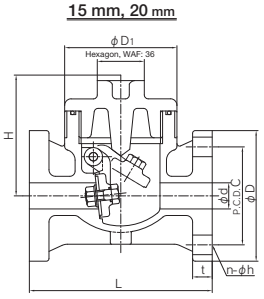


25 mm – 200 mm

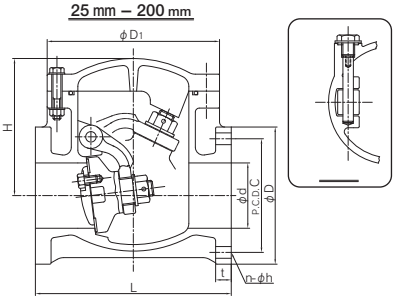


PP

15 mm, 20 mm



25 mm – 200 mm



■ JIS, DIN (Unit: mm)

mm	d	D1	H	L	t			JIS5K				JIS10K				DIN PN10			
					HI-PVC	PVDF	PP	D	C	n	h	D	C	n	h	D	C	n	h
15	20	86	87	140	15	15	15	80	60	4	12	95	70	4	15	95	65	4	14
20	20	86	87	140	15	15	15	85	65	4	12	100	75	4	15	105	75	4	14
25	25	130	117	160	16	16	16	95	75	4	12	125	90	4	19	115	85	4	14
32	40	145	135	180	18	18	17	-	-	-	-	135	100	4	19	140	100	4	18
40	40	145	135	180	18	18	17	120	95	4	15	140	105	4	19	150	110	4	18
50	50	180	161	200	20	20	20	130	105	4	15	155	120	4	19	165	125	4	18
65	65	200	165	240	22	23	22	155	130	4	15	175	140	4	19	185	145	4	18
80	80	205	168	260	22	23	22	180	145	4	19	185	150	8	19	200	160	8	18
100	100	265	210	300	24	26	24	200	165	8	19	210	175	8	19	220	180	8	18
125	125	330	245	350	24	26	25	235	200	8	19	250	210	8	23	250	210	8	18
150	150	370	280	400	25	27	26	265	230	8	19	280	240	8	23	285	240	8	22
200	200	425	333	500	30	33	31	320	280	8	23	330	290	12	23	340	295	8	22

■ ANSI (Unit: inch)

inch	mm	d	D1	H	L	t			ANSI Class150			
						HI-PVC	PVDF	PP	D	C	n	h
1/2	15	0.79	3.39	3.43	5.51	0.59	0.59	0.59	3.50	2.38	4	0.62
3/4	20	0.79	3.39	3.43	5.51	0.59	0.59	0.59	3.88	2.75	4	0.62
1	25	0.98	5.12	4.61	6.30	0.63	0.63	0.63	4.25	3.12	4	0.62
1 1/4	32	-	-	-	-	-	-	-	-	-	-	-
1 1/2	40	1.57	5.71	5.31	7.09	0.71	0.71	0.67	5.00	3.88	4	0.62
2	50	1.97	7.09	6.34	7.87	0.79	0.79	0.79	6.00	4.75	4	0.75
2 1/2	65	2.56	7.87	6.50	9.45	0.87	0.91	0.87	7.00	5.50	4	0.75
3	80	3.15	8.07	6.61	10.24	0.87	0.91	0.87	7.50	6.00	4	0.75
4	100	3.94	10.43	8.27	11.81	0.94	1.02	0.94	9.00	7.50	8	0.75
5	125	4.92	12.99	9.65	13.78	0.94	1.02	0.98	10.00	8.50	8	0.88
6	150	5.91	14.57	11.02	15.75	0.98	1.06	1.02	11.00	9.50	8	0.88
8	200	7.87	16.73	13.11	19.69	1.18	1.30	1.22	13.50	11.75	8	0.88

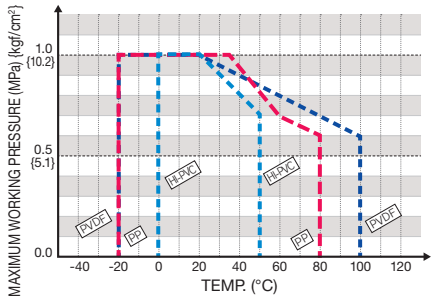
WORKING PRESSURE VS. TEMPERATURE

PVDF — U-PVC — HI-PVC — PDCPD
PP — C-PVC — FCD-S

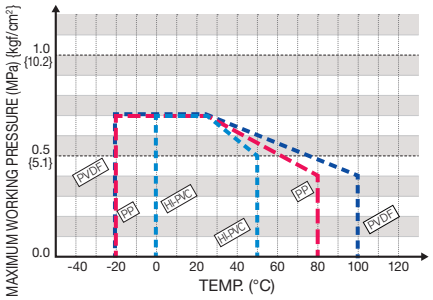
NOTE Make sure that the temperature and pressure are within the working range during operation. (If the tolerance range is exceeded during use, the valve may be damaged.)

SWING CHECK VALVE (O-RING TYPE)

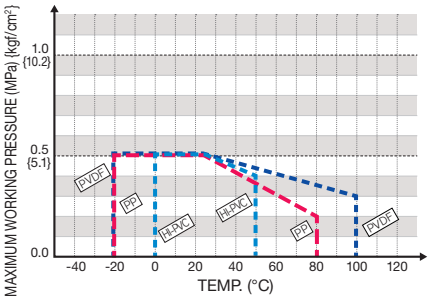
MANUAL 15 mm — 80 mm



MANUAL 100 mm — 150 mm

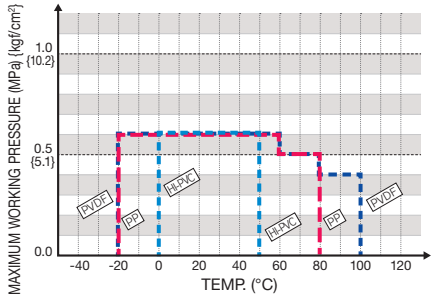


MANUAL 200 mm

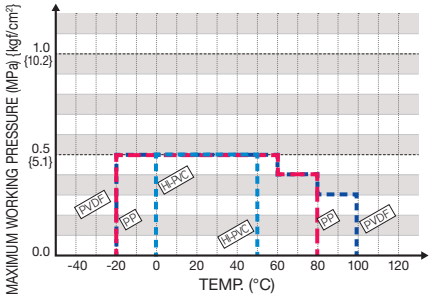


SWING CHECK VALVE (GASKET TYPE)

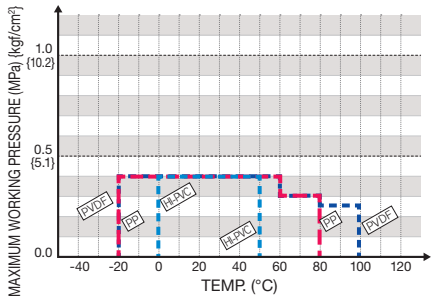
MANUAL 15 mm — 65 mm



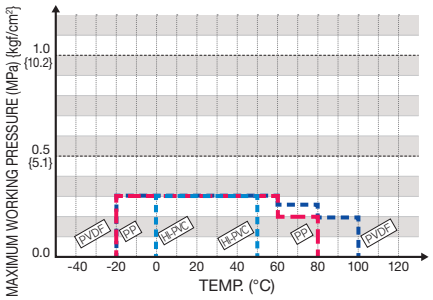
MANUAL 80 mm・100 mm



MANUAL 125 mm

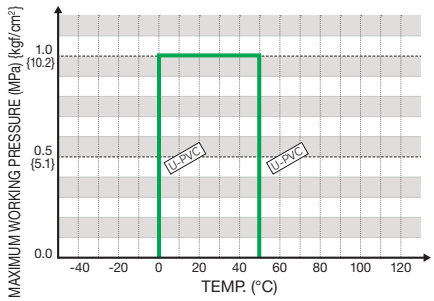


MANUAL 150 mm・200 mm

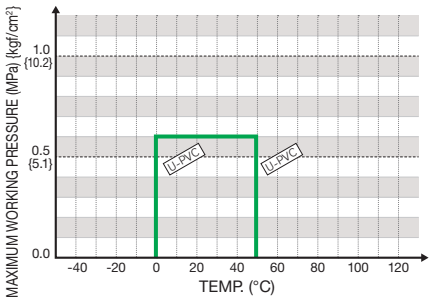


WAFER CHECK VALVE

MANUAL 80 mm — 200 mm



MANUAL 250 mm・300 mm



Cv VALUE FOR EACH OPENING DEGREE

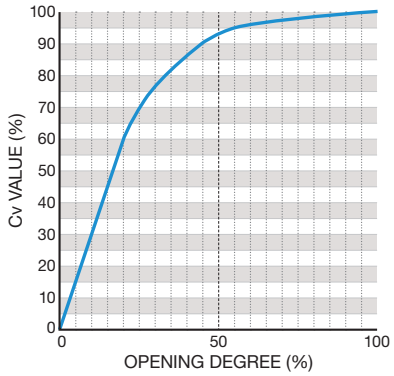
SWING CHECK VALVE, WAFER CHECK VALVE, BALL CHECK VALVE, BALL FOOT VALVE

FULL-OPEN Cv VALUE

	mm	15	20	25	30 (32)	40	50	65	80	100	125	150	200	250	300
	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12
Full open Cv VALUE	SWING CHECK VALVE	14	14	24	—	81	140	250	280	510	750	1,100	1,900	—	—
	WAFER CHECK VALVE	—	—	—	—	—	—	—	137	200	372	663	1,225	2,061	3,017
	BALL CHECK VALVE	6.5	17	25	—	86	130	—	280	500	—	—	—	—	—
	BALL FOOT VALVE	6.5	17	25	—	86	130	—	280	500	—	—	—	—	—

STOP VALVE (GLOBE VALVE), SEDIMENT STRAINER (TYPE Y)

STOP VALVE (GLOBE VALVE): 15 mm — 100 mm



FULL-OPEN Cv VALUE

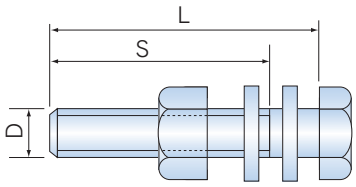
	mm	15	20	25	30 (32)	40	50	65	80	100
	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Full open Cv VALUE	STOP VALVE (GLOBE VALVE)	4.1	6.4	9.7	18	22	29	57	78	115
	SEDIMENT STRAINER (TYPE Y)	5.2	7.5	14	—	34	50	—	110	165

PIPE BOLT DIMENSIONS (REFERENCE: RECOMMENDED DATA)

DIAPHRAGM VALVE

(FOR JIS10K) UNIT: mm

mm	inch	PIPE BOLT DIMENSIONS			VALVE TYPE
		D	S	L	
15	1/2	M12	30	55	TYPE 14
20	3/4	M12	30	55	
25	1	M16	38	60	
32	1 1/4	M16	38	65	
40	1 1/2	M16	38	65	
50	2	M16	38	70	
65	2 1/2	M16	38	75	
80	3	M16	38	75	
100	4	M16	38	75	
125	5	M20	52	80	TYPE 15
150	6	M20	52	85	
200	8	M20	52	90	TYPE 72
250	10	M22	56	100	



NOTES The diaphragm may become loose due to temperature changes during long storage, operation stop or while in use. Check the conditions and then retighten the bolts and nuts between the bonnet and the body to the "bonnet tightening torque". (For bonnet tightening torque, see the table below.)

ASAHI AV DIAPHRAGM VALVE BONNET TIGHTENING TORQUE

UNIT: N-m {kgf-cm}

	TYPE 14									TYPE 15		TYPE 72	
mm ▶	15	20	25	32	40	50	65	80	100	125	150	200	250
inch ▶	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10
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}	45.0 {459}	45.0 {459}	30.0 {306}	30.0 {306}
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}	45.0 {459}	45.0 {459}	30.0 {306}	30.0 {306}

BALL VALVE | CHECK VALVE | OTHER VALVES

BALL VALVE **3 WAY BALL VALVE TYPE 23, TYPE 23H** **SWING CHECK VALVE** **WAFER CHECK VALVE**
BALL CHECK VALVE **BALL FOOT VALVE** **STOP VALVE (GLOBE VALVE), CONSTANT FLOW VALVE**
GAUGE VALVE **SEDIMENT STRAINER (TYPE Y)**

FLANGED (JIS10K) UNIT: mm

	SIZE	13	15	20	25	32	40	50	65	75	100	125	150	200	250	300	350
	SCREW SIZE	M12	M12	M12	M16	M16	M16	M16	M16	M16	M16	M20	M20	M20	M22	M22	M22
	NO. OF FLANGE HOLES	4	4	4	4	4	4	4	4	8	8	8	8	12	12	16	16
	FLANGE THICKNESS	14	14	15	15	16	16	20	22	22	22	24	26	28	30	30	34
NOMINAL LENGTH	TS FLANGE	55	55	60	60	65	65	70	75	75	75	85	90	100	100	100	110
	BALL VALVE TYPE 21, 21α	—	55	55	60	65	65	65	70	70	70	—	—	—	—	—	—
	3 WAY BALL VALVE TYPE 23, 23H	—	55	55	60	65	65	65	70	70	70	—	—	—	—	—	—
	SWING CHECK VALVE	—	55	55	60	65	65	70	75	75	75	85	85	100	—	—	—
	GAUGE VALVE	—	—	55	60	—	—	—	—	—	—	—	—	—	—	—	—
	BALL CHECK VALVE	—	60	60	65	—	65	75	—	80	80	—	—	—	—	—	—
	BALL FOOT VALVE	—	60	60	65	—	65	75	—	80	80	—	—	—	—	—	—
	STOP VALVE (GLOBE VALVE)	—	55	55	60	65	65	65	70	70	70	—	—	—	—	—	—
	CONSTANT FLOW VALVE	—	55	55	60	—	—	70	—	75	75	—	—	—	—	—	—
	SEDIMENT STRAINER (TYPE Y)	—	55	60	65	65	65	70	75	75	75	—	—	—	—	—	—
	WAFER CHECK VALVE	—	—	—	—	—	—	—	—	150	160	175	185	210	230	230	—

NOTES (1) The above values indicate the bolt dimensions when an AV TS flange and AV packing are used.
(2) The numbers in a circle indicate the number of bolts required to connect one side of flange. When there is no indication, refer to the number of flange holes.

PRODUCT WEIGHT LIST (REFERENCE)

CHECK VALVE

SWING CHECK VALVE MANUAL

UNIT: kg

mm	inch	FLANGED (JIS10K)		
		HI-PVC	PP	PVDF
15	1/2	0.8	0.6	1.0
20	3/4	0.9	0.6	1.0
25	1	1.7	1.2	2.0
30	1 1/4	2.6	1.7	3.0
40	1 1/2	2.6	1.7	3.0
50	2	4.0	2.7	4.6
65	2 1/2	5.5	3.5	6.5
80	3	6.0	4.0	7.5
100	4	10.5	7.0	12.0
125	5	16.0	12.0	20.0
150	6	22.0	16.0	27.0
200	8	34.5	24.5	42.0

WAFER CHECK VALVE MANUAL

UNIT: kg

mm	inch	FLANGED (JIS10K)
		U-PVC
80	3	1.0
100	4	1.8
125	5	2.1
150	6	2.9
200	8	4.6
250	10	7.6
300	12	12.0

BALL CHECK VALVE MANUAL

UNIT: kg

mm	inch	FLANGED (JIS10K)		SOCKET				THREADED			
		U-PVC	PP	U-PVC	C-PVC	PP	PVDF	U-PVC	C-PVC	PP	PVDF
15	1/2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
20	3/4	0.4	0.4	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2
25	1	0.6	0.7	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3
40	1 1/2	1.1	1.1	0.6	0.6	0.3	0.7	0.6	0.7	0.4	0.7
50	2	1.8	1.6	0.8	0.9	0.5	1.1	0.8	0.9	0.6	1.0
80	3	4.0	4.3	2.4	2.6	1.5	2.8	2.2	2.4	1.5	2.9
100	4	7.2	11.0	5.9	6.1	3.0	6.5	5.8	6.2	3.7	7.0

BALL FOOT VALVE MANUAL

UNIT: kg

mm	inch	FLANGED (JIS10K)		SOCKET			THREADED			
		U-PVC	C-PVC	U-PVC	C-PVC	PP	U-PVC	C-PVC	PP	PVDF
15	1/2	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1
20	3/4	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.1	0.2
25	1	0.4	0.7	0.3	0.4	0.3	0.3	0.4	0.2	0.4
40	1 1/2	1.5	1.5	0.5	0.9	0.5	0.8	0.9	0.5	1.0
50	2	1.5	1.9	0.9	1.0	0.7	0.9	1.0	0.7	1.5
80	3	4.3	5.0	3.5	3.5	2.2	3.5	3.5	2.0	4.0
100	4	9.0	10.0	7.0	7.5	4.8	6.7	7.5	4.0	8.5

ASAHI AV PRECAUTIONS IN HANDLING AND USE OF VALVES

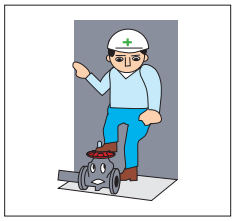
Below are general precautions for safely using ASAHI AV valves.
Precautions specific to each product are provided in a separate instruction manual. For details, please contact our nearest distribution agent or sales office.

1. Notes for pipe design

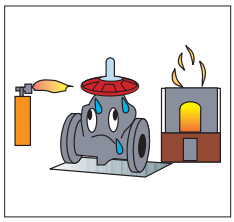
- Make sure that the working temperature and pressure are within the tolerance range during operation.
  (The maximum working pressure is the value including the water hammer pressure. If the tolerance range is exceeded during use, the valve may be damaged.)
- Select an appropriate material to use. (Some kinds of chemical may erode the surface of parts, causing breakage.) For details, consult our nearest sales office in advance.
- When using a fluid that contains crystalline fluid, use it in a condition where the fluid does not recrystallize. (The valve may become unable to work properly.)
- Consult us when using a fluid containing slurry.
- This product is not explosion-proof. Do not use it in explosive atmospheres. (Doing so may cause breakage or explosion.)
- Operating pressure of pneumatic type automatic valve: The standard operating pressure of pneumatic type is 0.4 MPa {4.1 kgf/cm^2}. When increasing the operating pressure, ensure that the pressure is within the specified range of operating pressure.

2. Notes for acceptance, transportation and storage

- Do not ride on the valve or place a heavy object on the valve. (Doing so may cause breakage.)



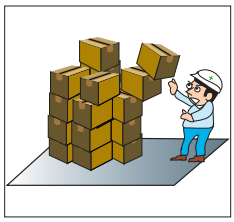
- Keep fire and hot object away from the valve. (Doing so may cause deformation, breakage or fire.)



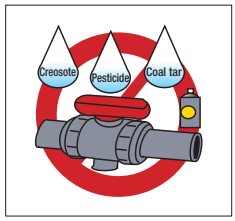
- Avoid direct sunlight and store it indoors. Also avoid storing the valve in a place that may be exposed to high temperatures. (Doing so may cause deformation.)

- Do not give an impact by throwing, dropping or hitting the valve. (Doing so may cause damage or breakage.)
- Do not scratch or stick a sharp object (such as a knife and hook) into the valve.

- Do not pile packed cardboard boxes on top of another too much, to prevent collapsing of the boxes.

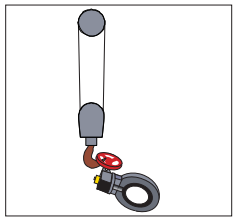


- Do not allow the valve to come in contact with coal tar, creosote (wood preservative agent), white ant exterminating agent, pesticide, or coating material. (Doing so may cause swelling and resulting breakage.)



- Be very careful when hanging or slinging the valve. Do not stand under the suspended object.
- Keep the valve in a cardboard box until just before piping installation. Avoid direct sunlight and store it indoors (at room temperatures). Also avoid storing the valve in a place that may be exposed to high temperatures. (Cardboard boxes become weak when get wet. (Take due care when handling and storing the boxes.)

- When transporting the valve, do not use the handle to secure the valve.



- After unpacking, check that the product has no abnormality and conforms to the specifications.

3. Notes for commissioning of pipe

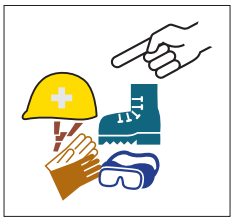
1) General precautions

- Secure an adequate space for maintenance and inspection.
- Test completed items with hydraulic pressure. (Airtight test using air (gas) is very dangerous.)
- When a positive pressure gas is used for our resin pipe, note that a dangerous situation may occur due to the reaction force peculiar to compressed fluids even when the pressure is the same as the hydraulic pressure. Always take appropriate measures to ensure the safety of surrounding area, such as coating the pipe with a protecting material. If you have any uncertainty, please contact us.

  After the completion of piping work, perform a leak test of the conduit with hydraulic pressure. If it is inevitable to perform a test with air, be sure to consult our nearest sales office in advance.

- Avoid using in places that are constantly exposed to water, dust or direct sunlight. Or, cover the whole product. (The valve may become unable to work properly.)

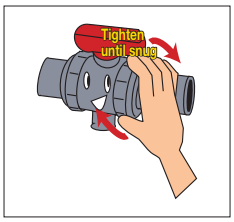
- When using the valve in unfavorable conditions, it is recommended to cover the whole valve with a protective plastic bag. The automatic driving parts, in particular, may have a malfunction due to corrosion.
- When supporting the pipe with a U-band, be careful not to over-tighten. (It may cause breakage.)
- Before starting the work, be sure to perform safety check of mechanical and electric tools to be used.
- During piping work, always use protective equipment appropriate for the work. (Failure to do so may cause injury.)



- During installation, be careful not to give a forcible stress, such as tension, compression, bending and impact, on the piping and valves.
- Before replacement of valve or parts, completely remove the fluid from the pipe. If the fluid cannot be removed, reduce the fluid pressure to zero.

2) Notes for connection of true union type

- During piping installation, assembly or disassembly, steady the end connector.
- Before a water flow test, be sure to check that the union nut is securely tightened.

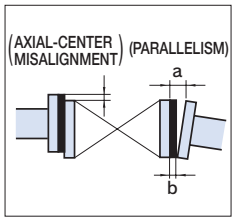


- When tightening the union nut, pay attention to axial-center misalignment and face-to-face dimensions.
- When connecting a resin valve to a metal pipe, be careful that piping stress is given to the resin valve.
- Do not over-tighten the union nut. (It may cause breakage.)

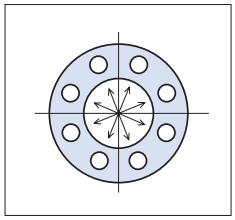
3) Notes for connection of flange

- Ensure that the parallelism and axial-center misalignment dimensions do not exceed the values below. (Failure to do so may cause breakage due to the stress given on the piping.)

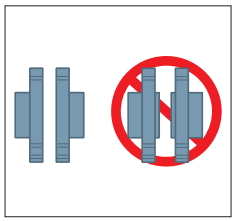
SIZE (mm)	AXIAL-CENTER MISALIGNMENT	PARALLELISM
40 — 80	1.0mm	0.8mm
100 — 150	1.0mm	1.0mm
200 — 600	1.5mm	1.0mm



- Tighten the bolts and nuts of the connection flange diagonally according to the specified torque.
  (Failure to do so may cause leak or breakage.)



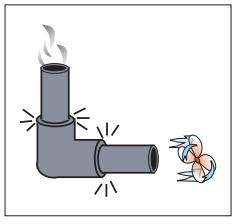
- The connection flanges recommended to be flat face type.



- Check that the flange standard of both sides are not different.
- Be sure to tighten the flanges using sealing gaskets (AV packings), bolts, nuts, and washers, according to the specified tightening torque (except for butterfly valves).

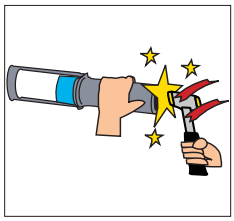
4) Notes for connection of socket (bonding) type

- During installation at low temperatures, be very careful because the solvent fume is difficult to evaporate and liable to remain. (It may cause a solvent crack and resulting breakage.) After piping work, open the both sides of the pipe and ventilate the inside using a blower (of low pressure type) to remove the solvent fume.
- Do not apply too much adhesive. (Doing so may cause a solvent crack and resulting breakage.)

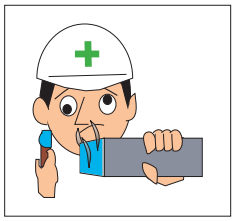


▶3. Notes for commissioning of pipe

● Never stroke the component to insert it. Doing so may cause the pipe to break.



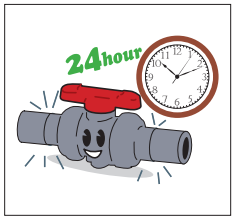
● When using adhesive, ventilate the area well and avoid using fire nearby. Do not inhale the fume directly.



● If the adhesive contacts the skin, remove it immediately. If you feel sick or sense that something is wrong with your body, immediately seek medical attention and receive appropriate treatment.

● For adhesive, use only AV adhesive. (For U-PVC products, use **ASAHIAV** adhesive No. 32, No. 52 or No. 62. For C-PVC products, use **ASAHIAV** adhesive No. 88.)

● Before performing a water flow test, wait until at least 24 hours have passed since the completion of bonding.



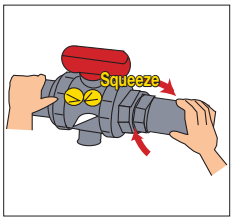
5) Notes for threaded connection

● Check that joint screws are made of resin. (If a metal screw is used for piping work, the end connector may be damaged.)

● For threaded joints of our resin pipe, use sealing tape. If fluid seal or liquid gasket is used, a stress crack (environmental stress crack) may occur.

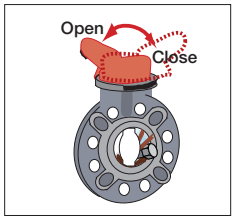
● Do not over-tighten joint screws. (Doing so may cause breakage.)

* For notes for socket (fusion) connection, refer to the instruction manual of each product. For details, please contact our nearest distribution agent or sales office.



4. Notes for operation and maintenance

● Do not open or close the valve when there is dust or foreign object in the fluid.



● Perform periodic maintenance. (Temperature changes or aging during long-term storage, operation stop or while in use may cause leakage. For inspection items, refer to the instruction manual of each product. For details, please contact our nearest distribution agent or sales office.)

● Before replacement of valve or parts, completely remove the fluid from the pipe. If the fluid cannot be removed, reduce the fluid pressure to zero.

● The valve body may be damaged due to freezing. In environments where freezing may occur, remove the water in the pipe or take anti-freezing measures using lagging materials.

● Move the valve handle and lever slowly to reduce water hammer.

● When disposing of the valve, always hand it over to a professional waste disposal company.

⚠ 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 the 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 inconveniences by:
  (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 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.

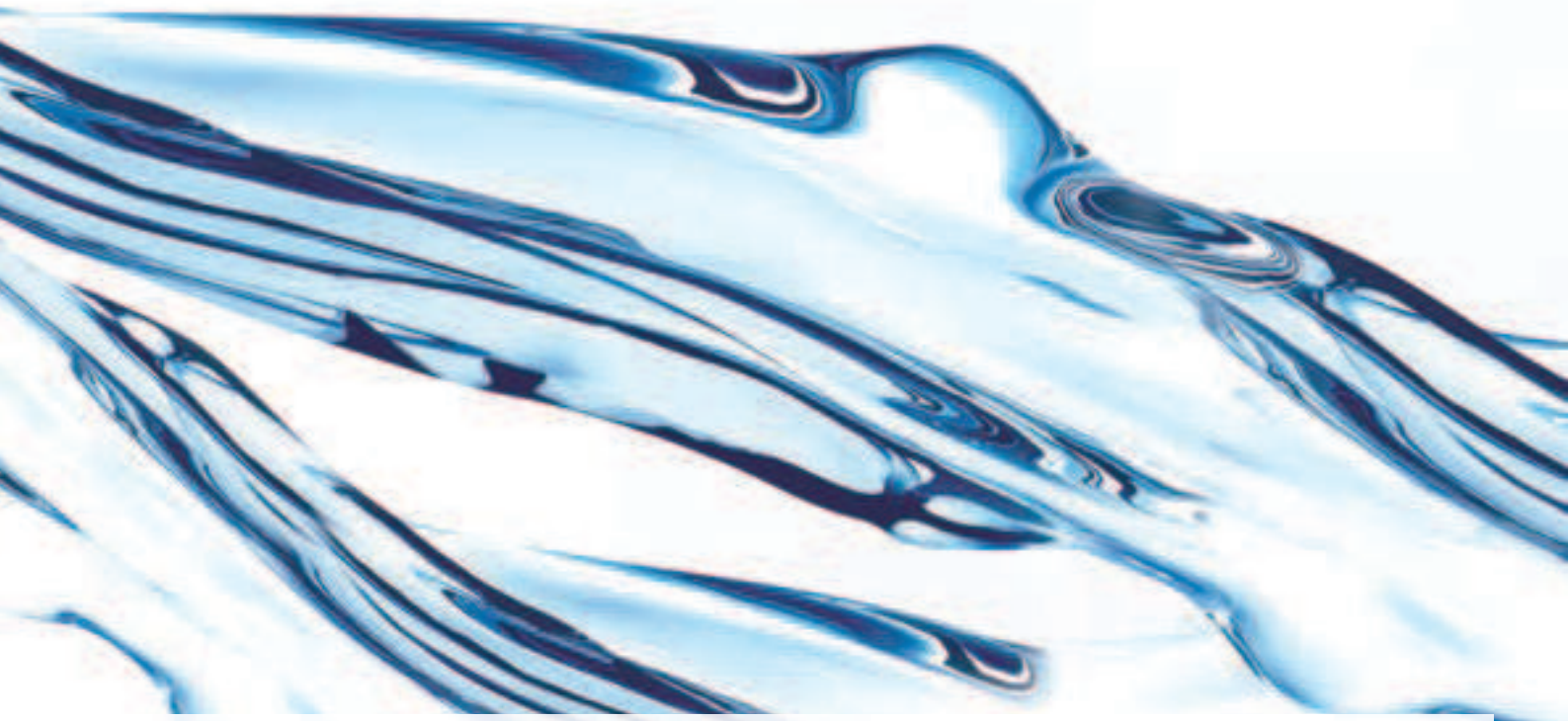
  In no event shall we be responsible or liable for any special, indirect, incidental or consequential damages arising in any way in connection with any products.

[Precautions]

* Our product warranty shall not apply in case of using a positive-pressure gas with our plastic piping. 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.
* 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.



Global Network

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