

Diaphragm Valve Type 14 (Manual Type)

Features

- Near-linear flow characteristics.
- A new type rubber having a high reliability in leakage prevention is used for the diaphragm and cushion.
- The original design achieves high sealing performance with low torque.
- Bayonet structure allowing quick diaphragm replacement.
- Equipped with a bottom stand allowing easy and secure replacement.



Basic specifications

- Valve Type : Diaphragm Valve Type 14
- Size : DN15, 20, 25, 32, 40, 50, 65, 80, 100
- Body Material : U-PVC (Conforming to ASTM D1784 Cell Classification 12454A)
C-PVC (Conforming to ASTM D1784 Cell Classification 23567-A)
PP (Conforming to ASTM D4101 Cell Classification PP0210B67272)
PVDF (Conforming to ASTM D3222 Cell Classification Type II)
- Seal Material / Diaphragm : EPDM, PTFE, FKM, Viflon[®] etc.
- Connection / Flanged end : JIS B2220 10K, DIN/EN1092-1 PN10, ANSI B16.5 CLASS150

Body Material	Ambient Temperature °C { °F }	Fluid Temperature °C { °F }	Max. working pressure (Normal temperature)	Connection method
			MPa { psi }	
U-PVC	-10 ~ 50 { 14 ~ 122 }	0 ~ 60 { 30~140 }	1.0 { 150 }	○
C-PVC	-10 ~ 50 { 14 ~ 122 }	0 ~ 90 { 30~195 }	1.0 { 150 }	○
PP	-10 ~ 50 { 14 ~ 122 }	-20 ~ 90 { -5~195 }	1.0 { 150 }	○
PVDF	-10 ~ 50 { 14 ~ 122 }	-40 ~ 120 { -40~250 }	1.0 { 150 }	○

Note : - The maximum working pressure is the value including the water hammer pressure.

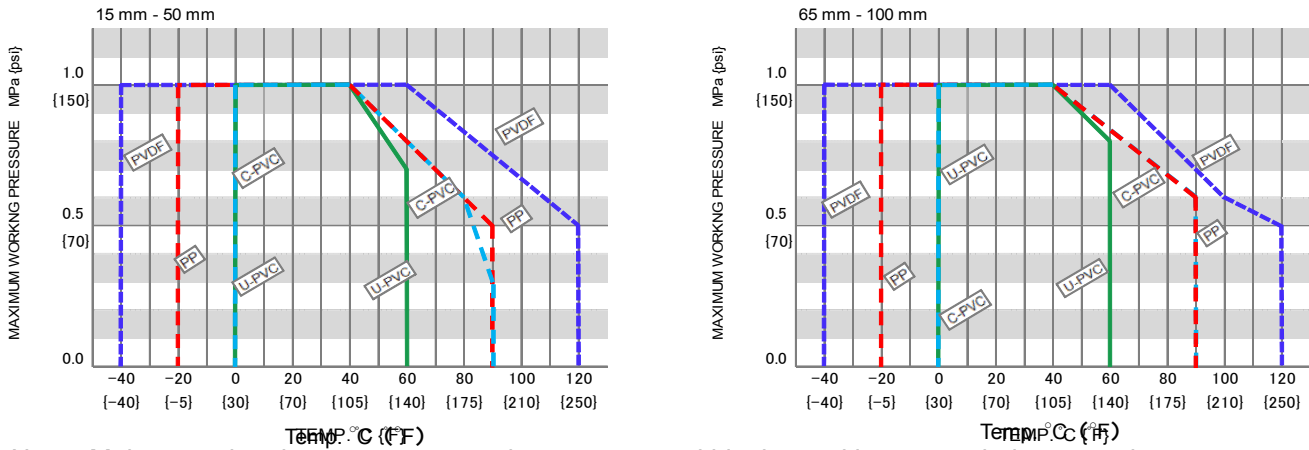
Be careful that maximum working pressure is not exceeded during use.

- 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". (Failure to do so may cause fluid leakage.)

Certificate / Approval

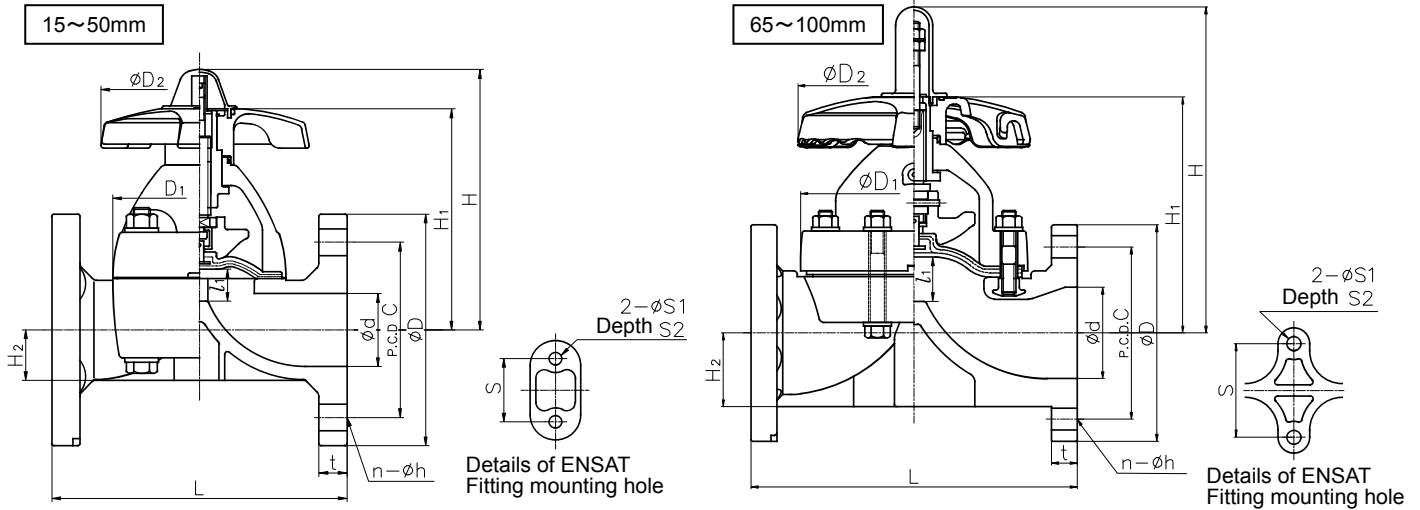
PED "For details of applicable products, please consult us."

Working pressure vs. Temperature



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.)

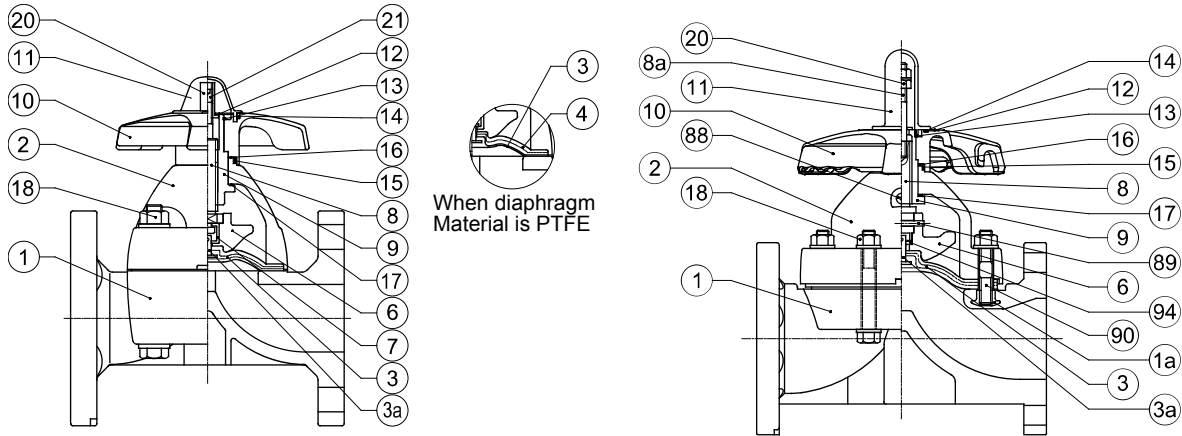
Product dimension



■ JIS10K, DIN PN10 (Unit :mm)											JIS10K					DIN PN10								
mm	d	D ₁	D ₂	ℓ ₁	H	H ₁	H ₂	S	S ₁	S ₂	D	C	n	h	L	t		D	C	n	h	L	t	
																U-PVC C-PVC	PP PVDF						U-PVC C-PVC	PP PVDF
15	16	54×66	100	10	104	86	19.5	25	7	13	95	70	4	15	110	12	12	95	65	4	14	130	12	12
20	20	54×66	100	10	106	88	17.5	25	7	13	100	75	4	15	120	13	13	105	75	4	14	150	13	13
25	25	67×80	100	12	111	93	18.5	25	7	13	125	90	4	19	130	13	13	115	85	4	14	160	13	13
32	32	67×80	100	12	116	97	22.5	25	7	13	135	100	4	19	142	16	16	140	100	4	18	180	16	16
40	40	108×108	156	21	177	144	27.5	45	9	15	140	105	4	19	180	16	16	150	110	4	18	200	20	20
50	52	123×123	156	25	191	158	36	45	9	15	155	120	4	19	210	20	20	165	125	4	18	230	22	22
65	67	175	220	34	266	188	61	85	11	20	175	140	4	19	250	22	23	185	145	4	18	290	22	22
80	78	201	220	42	280	202	63	100	15	28	185	150	8	19	280	22	23	200	160	8	18	310	24	24
100	100	241	257	50	329	241	78	120	15	28	210	175	8	19	340	22	24	220	180	8	18	350	24	26

■ ANSI CLASS150 (Unit :inch)											ANSI CLASS150							
inch	d	D ₁	D ₂	ℓ ₁	H	H ₁	H ₂	S	S ₁	S ₂	D	C	n	h	L		t	
															Grinnell standard	AV standard	PVC C-PVC	PP PVDF
1/2	0.63	2.13×2.60	3.94	0.39	4.09	3.39	0.77	0.98	0.28	0.51	3.50	2.38	4	0.62	4.25	4.33	0.43	0.43
3/4	0.79	2.13×2.60	3.94	0.39	4.17	3.46	0.69	0.98	0.28	0.51	3.88	2.75	4	0.62	5.88	4.72	0.51	0.51
1	0.98	2.64×3.15	3.94	0.47	4.37	3.66	0.73	0.98	0.28	0.51	4.25	3.12	4	0.62	5.88	5.12	0.59	0.59
1 1/4	1.26	2.64×3.15	3.94	0.47	4.57	3.82	0.89	0.98	0.28	0.51	4.62	3.50	4	0.62	6.38	-	0.63	0.63
1 1/2	1.57	4.25×4.25	6.14	0.83	6.97	5.67	1.08	1.77	0.35	0.59	5.00	3.88	4	0.62	6.94	7.09	0.63	0.63
2	2.05	4.84×4.84	6.14	0.98	7.52	6.22	1.42	1.77	0.35	0.59	6.00	4.75	4	0.75	7.94	8.27	0.79	0.79
2 1/2	2.64	6.89	8.66	1.34	10.47	7.40	2.40	3.35	0.43	0.79	7.00	5.50	4	0.75	-	9.84	0.87	0.91
3	3.07	7.91	8.66	1.65	11.02	7.95	2.48	3.94	0.59	1.10	7.50	6.00	4	0.75	10.37	11.02	0.87	0.91
4	3.94	9.49	10.12	1.97	12.95	9.49	3.07	4.72	0.59	1.10	9.00	7.50	8	0.75	12.93	13.39	0.87	0.94

Parts list



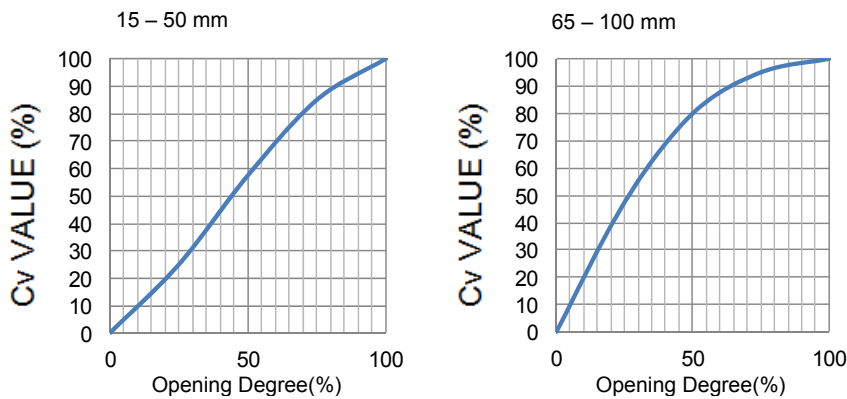
PART NO./NAME	QTY	MATERIAL
1 BODY	1	BODY / BONNET U-PVC / U-PVC C-PVC / PP PP / PP
2 BONNET	1	PVDF / PPG ⁽¹⁾ PVDF / PVDF
3 DIAPHRAGM	1	EPDM, PTFE, FKM, VIFLON® etc.
3a INSERTED METAL OF DIAPHRAGM	1	STAINLESS STEEL
4 CUSHION ⁽²⁾	1	EPDM
6 COMPRESSOR	1	PVDF

PART NO./NAME	QTY	MATERIAL
7 JOINT FITTING ⁽³⁾	1	STAINLESS STEEL
8 STEM	1	COPPER ALLOY
8a DISPLAY LOT ⁽⁴⁾	1	STAINLESS STEEL
9 SLEEVE	1	COPPER ALLOY
10 HANDLE	1	PP
11 GAUGE COVER	1	PC
12 NAME PLATE	1	U-PVC
13 C-SHAPED STOP RING	1	STAINLESS STEEL
14 O-RING (A)	1	EPDM
15 O-RING (B)	1	EPDM
16 THRUST RING(A)	1	UHMWPE

PART NO./NAME	QTY	MATERIAL
17 THRUST RING(B)	1	UHMWPE
18 BOLT / NUT (A)	4	STAINLESS STEEL
20 STOPPER	1	COPPER ALLOY ⁽³⁾ STAINLESS STEEL ⁽⁴⁾
21 SCREW ⁽³⁾	1	STAINLESS STEEL
88 GREASE NIPPLE ⁽⁴⁾	1	COPPER ALLOY
89 COMPRESSOR PIN ⁽⁴⁾	1	STAINLESS STEEL
90 STUD BOLT / NUT ⁽⁴⁾	4	STAINLESS STEEL
94 COMPRESSOR	1	STAINLESS STEEL
1a STUD NUT ⁽⁴⁾	4	COPPER ALLOY ⁽⁵⁾ STAINLESS STEEL ⁽⁶⁾

Note : - (1) Bonnet PPG 15-100mm ; black. 125-250mm ; ivory. (2) is used when the diaphragm material is PTFE.
 (3) is used for sizes of 50mm or less. (4) is used for sizes of 65mm or more.
 (5) is used when the body material is U-PVC, C-PVC or PP. (6) is used when the body material is PVDF.

Cv value for each opening degree



mm	15	20	25	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	4.8	5.3	8.5	11	26	43	85	115	185

Handle rotation [Full open (rotation/lift) Full close]

SIZE		ROTATION	SIZE		ROTATION
mm	inch		mm	inch	
15	1/2	3.3	50	2	6.0
20	3/4	3.3	65	2 1/2	9.0
25	1	4.0	80	3	10.0
32	1 1/4	4.0	100	4	10.0
40	1 1/2	5.0			

Operating torque at maximum working pressure

Unit:Nm { ib-inch }

mm	15	20	25	32	40	50	65	80	100
inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Operating torque(O→S)	3.0	3.0	4.0	4.0	10	10	19	26	32
	{ 26.5 }	{ 26.5 }	{ 35.5 }	{ 35.5 }	{ 88.5 }	{ 88.5 }	{ 168 }	{ 230 }	{ 283 }

Bonnet tightening torque

Unit:Nm { ib-inch }

mm	15	20	25	32	40	50	65	80	100
inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
RUBBER	3.0	3.0	5.0	5.0	12.0	15.0	13.0	18.0	35.0
DIAPHRAGM	{ 26.5 }	{ 26.5 }	{ 44.5 }	{ 44.5 }	{ 106 }	{ 133 }	{ 115 }	{ 159 }	{ 310 }
PTFE	5.0	5.0	8.0	8.0	15.0	20.0	15.0	20.0	40.0
DIAPHRAGM	{ 44.5 }	{ 44.5 }	{ 71 }	{ 71 }	{ 133 }	{ 177 }	{ 133 }	{ 177 }	{ 354 }

Options

In addition to the standard product, the following options are also available according to your requirements.

Option name	Parts name	15	20	25	30	40	50	65	80	100
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
① With cushion cover	PVDF cushion cover	○	○	○	○	○	○	○	○	○
② Spec "B" model	Upper & lower liner	○	○	○	○	○	○	○	○	○
	Conical spring washer									
③ Electrolytic model (PVDF body type only)	Upper & lower liner	○	○	○	○	○	○			
	Conical spring washer	○	○	○	○	○	○			
	Ti-Pd diaphragm insert							○	○	○
	U-bolt	-	-	-	-	-	-			
④ EL Model	EL-PVDF body									
	EL-PTFE diaphragm									
	Upper & lower liner	○	○	○	○	○	○			
	Conical spring washer							○	○	○
	Ti-Pd diaphragm insert									
	U-bolt	-	-	-	-	-	-			
⑤ With corrosion-resistant bolt	Titanium bolt & nut	○	○	○	○	○	○	○	○	○

Product weight

Unit : kg

mm	inch	Body material				
		U-PVC	C-PVC	PP	PVDF	PVDF
		Bonnet material				
		U-PVC	PP	PP	PPG	PVDF
15	1/2	0.7	0.7	0.6	0.8	0.8
20	3/4	0.8	0.8	0.6	0.9	0.9
25	1	1.1	1.1	0.8	1.2	1.3
32	1 1/4	1.4	1.4	1.0	1.5	1.6
40	1 1/2	2.8	2.7	2.2	2.9	3.1
50	2	3.6	3.5	2.8	3.9	4.1
65	2 1/2	5.6	5.3	4.2	6.0	6.5
80	3	7.4	7.2	5.4	7.4	8.4
100	4	11.5	12.6	8.3	12.5	13.1

Product model code list

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
V	14	MH	*	*	F	*	***
V : MANUAL VALVE	14 : TYPE 14	MH : ROUND HANDLE	U : U-PVC C : C-PVC P : PP F : PVDF G : PVDF+PPG	E : EPDM T : PTFE	F : FLANGED	1 : 10K D : DIN A : ANSI	015 : 15mm S 100 : 100mm

Installation, Operation and Maintenance Manual

For details of Installation, Operation and Maintenance , please refer IOM at below link.

http://www.asahi-yukizai.co.jp/en/product/mt_pdf/a_manual_valve_1_01.pdf