True Union Diaphragm Valve Type 14 (Manual Type)

Features

- Near-linear flow characteristics.
- Newly equipped with bottom stand with insert hole to ensure easy and secure installation.
- The valve body can be removed from the line.

Basic specifications

- Valve Type : True Union Diaphragm Valve Type 14
- Size : 15 mm - 50 mm (1/2 inch – 2 inch)
- 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
  O-RING : EPDM, FKM
- Connection / Socket : JIS , DIN, ANSI , BS
  * For BS, contact us.
  Threaded : Rc, Rp, NPT

Body Material	Fluid Temperature ℃ { ℉ }	Max. working pressure (Normal temperature) MPa { psi }	Connection method	
			SOCKET	THREADED
U-PVC	0 ~ 50 { 30~120 }	1.0 { 150 }	○	○
C-PVC	0 ~ 90 { 30~195 }	1.0 { 150 }	○	○
PP	-20 ~ 80 { -5~175 }	1.0 { 150 }	○	○
PVDF	-20 ~ 100 { -5~210 }	1.0 { 150 }	○	○

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.

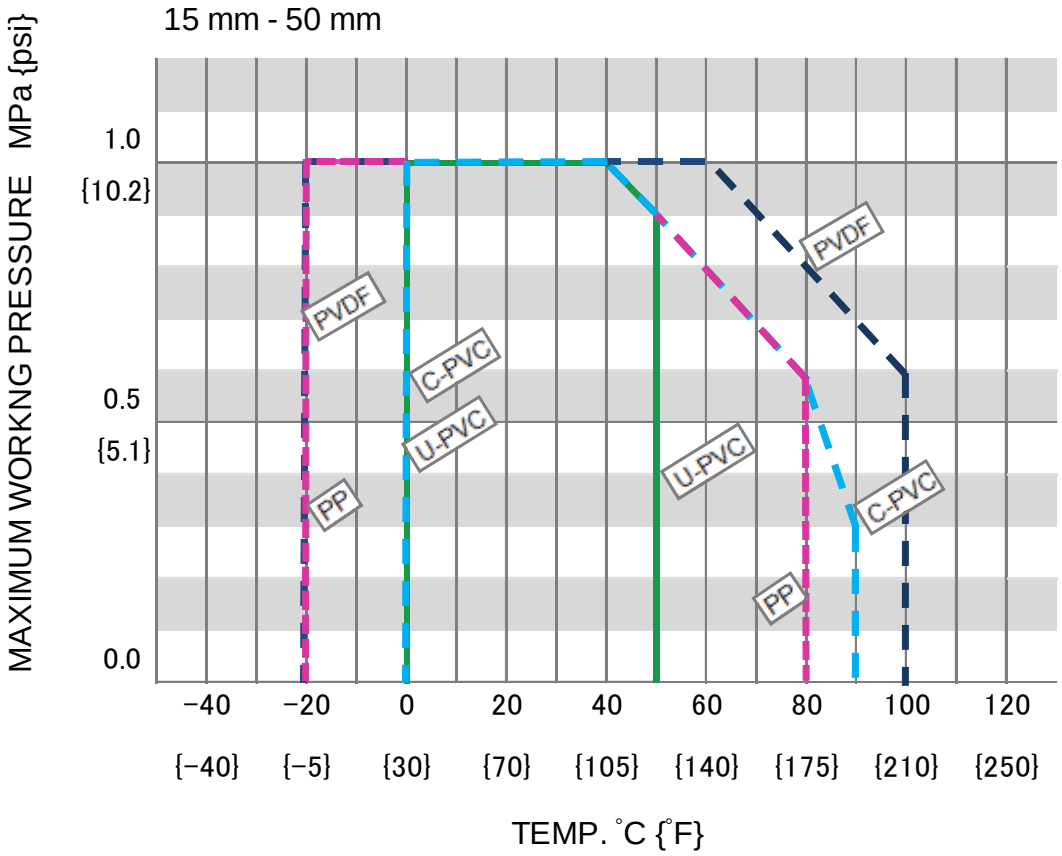
* Concerning the allowable pressure for each temperature, material and actuator type, see the technical documents at the next page of this sheet.

* 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 nut 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

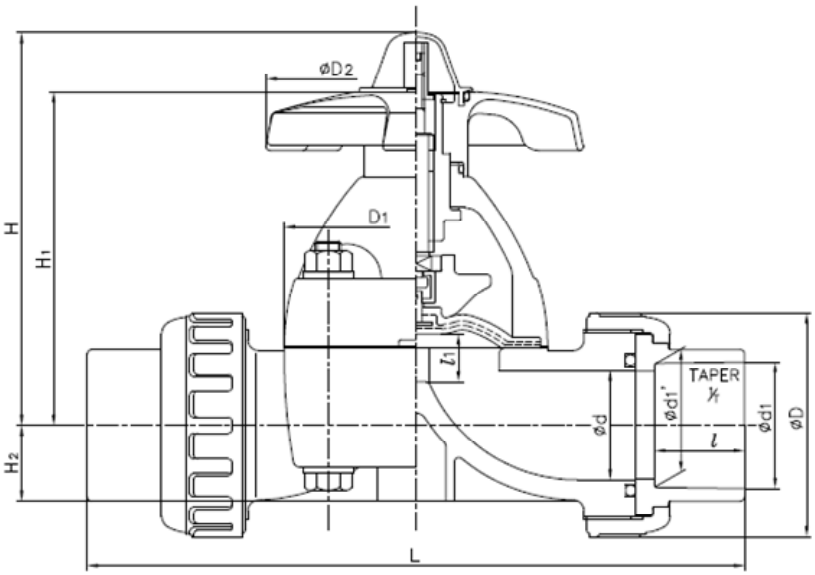


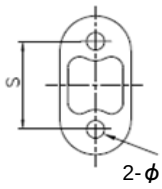
Note : Make sure that the temperature and pressure are within the working range during operation.
(If the tolerance range is exceeded during use, the valve may be damaged.)

Product dimension

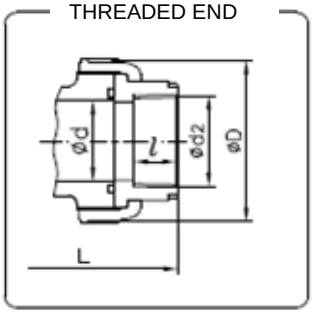
SOCKET END

(Detail of Holes for Metallic Insert.)

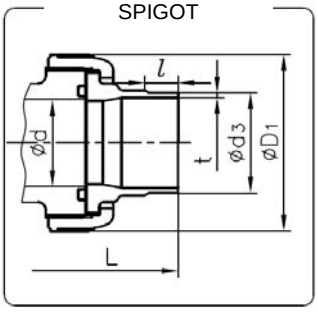




THREADED END



SPIGOT



■ JIS, DIN (Unit: mm)

												JIS											
												SOCKET								THREADED			
mm	d	D	D_1	D_2	ℓ_1	H	H_1	H_2	S	S_1	S_2	d_1	ℓ	1/T	L	d_1	d_1'	ℓ	L	d_2	ℓ	L	
												U-PVC C-PVC				PP						U-PVC C-PVC	PP PVDF
15	16	48	54×66	100	10	104	86	19.5	25	7	13	22.11	20	1/34	134	21.2	20.2	20	134	Rc 1/2	15	128	128
20	20	60	54×66	100	10	106	88	17.5	25	7	13	26.13	24	1/34	156	26.2	25.2	23	154	Rc 3/4	17	148	148
25	25	70	67×80	100	12	111	93	18.5	25	7	13	32.16	27	1/34	186	33.0	32.0	25	182	Rc 1	20	172	172
32	32	82	67×80	100	12	116	97	22.5	25	7	13	38.19	30	1/34	200	-	-	-	-	Rc1 1/4	22	188	188
40	40	100	108×108	156	21	177	144	27.5	45	9	15	48.21	37	1/37	271	47.0	46.0	28	253	Rc1 1/2	25	245	245
50	52	106	123×123	156	25	191	158	36	45	9	15	60.25	42	1/37	303	59.0	58.0	28	275	Rc2	28	281	278

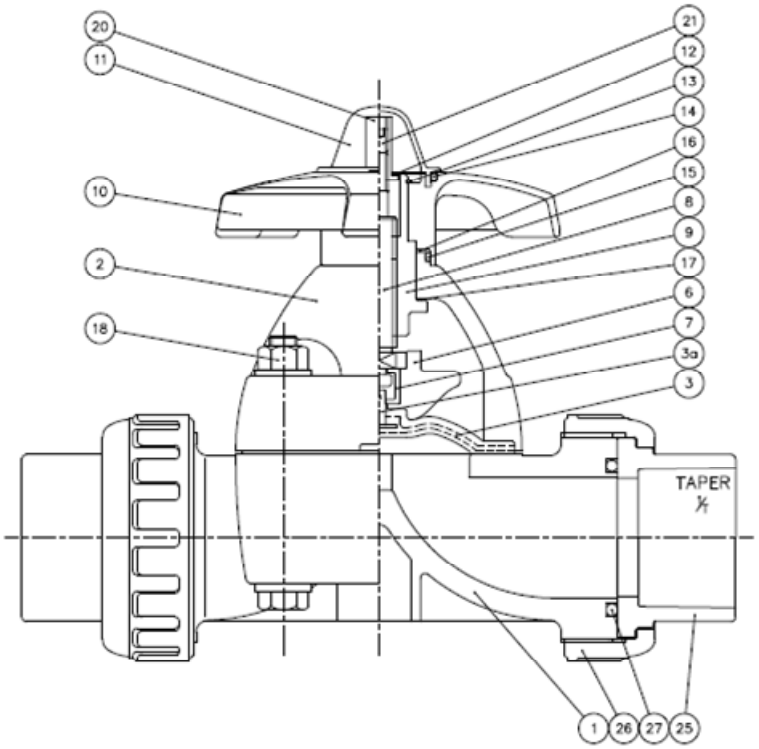
	DIN																			
	SOCKET							THREADED				SPIGOT								
mm	d_1	ℓ	L	d_1	d_1'	ℓ	L	d_2	ℓ	L		d_3	ℓ	L	d_3	ℓ	L	t	
	U-PVC C-PVC			PP PVDF						U-PVC C-PVC	PP PVDF	U-PVC, C-PVC			PP, PVDF			PP	PVDF
15	20	16	128	19.5	19.3	14.5	125	Rp 1/2	15	128	128	20	18.5	150	20	18.5	150	2.5	1.9
20	25	19	147	24.5	24.3	16	141	Rp 3/4	17	148	148	25	24	172	25	22	172	2.7	1.9
25	32	22	172	31.5	31.3	18	164	Rp1	20	172	172	32	24.5	195	32	22.5	195	3.0	2.4
32	40	26	188	39.45	39.2	20.5	177	Rp1 1/4	22	188	188	40	28	212	40	26	212	3.7	2.4
40	50	31	246	49.45	49.2	23.5	231	Rp1 1/2	25	245	245	50	34	276	50	32	276	4.6	3.0
50	63	38	294	62.5	62.1	27.5	274	Rp2	28	281	278	63	38.5	308	63	36.0	307	5.8	3.0

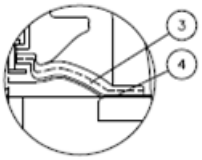
■ ANSI (Unit: inch)

													ANSI										
													SOCKET							THREADE			
inch	mm	d	D	D_1	D_2	ℓ_1	H	H_1	H_2	S	S_1	S_2	ASTM SCH80			L	d_1	ℓ	L	d_2	ℓ	L	
													d_1	d_1'	ℓ							U-PVC C-PVC	PP PVDF
													U-PVC C-PVC				PP PVDF						
1/2	15	0.63	1.89	2.13×2.60	3.94	0.39	4.09	3.39	0.77	0.98	0.28	0.51	0.848	0.836	0.875	5.47	0.83	0.87	5.43	1/2-14NPT	0.59	5.04	5.04
3/4	20	0.79	2.36	2.13×2.60	3.94	0.39	4.17	3.46	0.69	0.98	0.28	0.51	1.058	1.046	1.000	6.18	1.03	1.00	6.09	3/4-14NPT	0.67	5.83	5.83
1	25	0.98	2.76	2.64×3.15	3.94	0.47	4.37	3.66	0.73	0.98	0.28	0.51	1.325	1.310	1.125	7.32	1.30	1.13	7.24	1-11 1/2NPT	0.79	6.77	6.77
1 1/4	32	1.26	3.23	2.64×3.15	3.94	0.47	4.57	3.82	0.89	0.98	0.28	0.51	1.670	1.655	1.250	7.95	1.65	1.25	7.80	1 1/4-11 1/2NPT	0.87	7.40	7.40
1 1/2	40	1.57	3.94	4.25×4.25	6.14	0.83	6.97	5.67	1.08	1.77	0.35	0.59	1.912	1.894	1.375	10.47	1.89	1.37	10.28	1 1/2-11 1/2NPT	0.98	9.65	9.65
2	50	2.05	4.17	4.84×4.84	6.14	0.98	7.52	6.22	1.42	1.77	0.35	0.59	2.387	2.369	1.500	11.54	2.36	1.50	11.54	2-11 1/2NPT	1.10	11.06	10.95

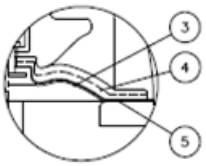
Parts list

SOCKET END



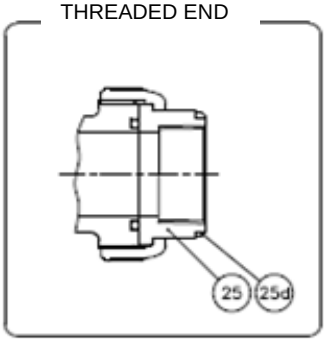


In case material of Diaphragm is PTFE.



In case material of Diaphragm is PTFE with cushion cover..

THREADED END



PART NO./NAME		QTY	MATERIAL
1	BODY	1	BODY, UNION NUT, END CONNECTOR / BONNET U-PVC / U-PVC C-PVC / PP PP / PP PVDF / PPG PVDF / PVDF
2	BONNET	1	
25	END CONNECTOR	2	
26	UNION NUT	2	
3	DIAPHRAGM	1	EPDM, PTFE, Others ( )
3a	INSERTED METAL OF DIAPHRAGM	1	STAINLESS STEEL
4	CUSHION	1	EPDM Used for PTFE Diaphragm.
5	CUSHION COVER	1	Nothing, PVDF Used for PTFE Diaphragm.

PART NO./NAME		QTY	MATERIAL
6	COMPRESSOR	1	PVDF
7	JOINT	1	STAINLESS STEEL
8	STEM	1	COPPER ALLOY
9	SLEEVE	1	COPPER ALLOY
10	HAND WHEEL	1	PP
11	GAUGE COVER	1	PC
12	NAME PLATE	1	PVC
13	RETAINING RING-C TYPE	1	STAINLESS STEEL
14	O-RING (A)	1	EPDM
15	O-RING (B)	1	EPDM

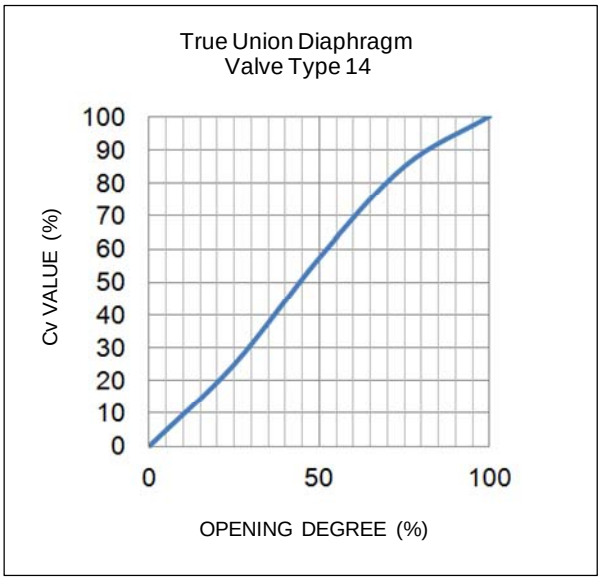
PART NO./NAME		QTY	MATERIAL
16	THRUSU RING (A)	1	UHMWPE
17	THRUSU RING (B)	1	UHMWPE
18	BOLT・NUT (A)	4	STAINLESS STEEL
20	STOPPER (A)	1	COPPER ALLOY
21	SCREW	1	Cr.Mo.STELL
25d	RING	2	STAINLESS STEEL Used for C-PVC Body. Threaded End : 15-25mm
27	O-RING (C)	2	EPDM, Others ( )

Note:

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

Diaphragms except EPDM and PTFE are available in FKM, VIFLON®C (FKM-C), VIFLON®F (FKM-F), CPE, CSM, NBR and IIR when reqired.

Cv value for each opening degree



FULL-OPEN Cv VALUE

mm	15	20	25	32	40	50
inch	1/2	3/4	1	1 1/4	1 1/2	2
FULL-OPEN Cv VALUE	4.8	5.3	8.5	11	26	43

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

SIZE		ROTATION
mm	inch	
15	1/2	3.3
20	3/4	3.3
25	1	4.0
32	1 1/4	4.0
40	1 1/2	5.0
50	2	6.0

Operating torque at maximum working pressure

Unit:N-m { ib-inch }

mm	15	20	25	32	40	50
inch	1/2	3/4	1	1 1/4	1 1/2	2
Operating torque(O→S)	3.0 { 26.5 }	3.0 { 26.5 }	4.0 { 35.5 }	4.0 { 35.5 }	10 { 88.5 }	10 { 88.5 }

Bonnet tightening torque

Unit:N-m { ib-inch }

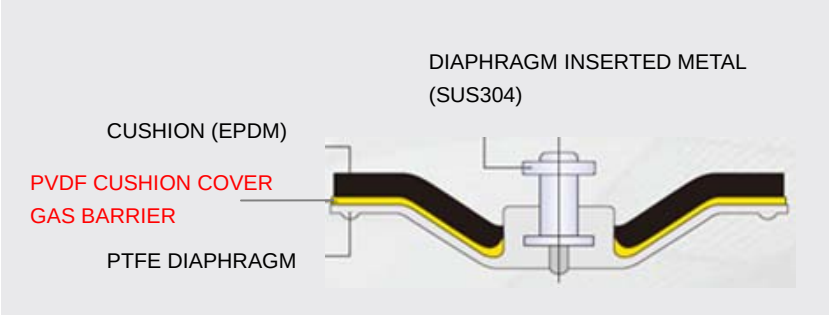
mm	15	20	25	32	40	50
inch	1/2	3/4	1	1 1/4	1 1/2	2
RUBBER DIAPHRAGM	3.0 { 26.5 }	3.0 { 26.5 }	5.0 { 44.5 }	5.0 { 44.5 }	12.0 { 106 }	15.0 { 133 }
PTFE DIAPHRAGM	5.0 { 44.5 }	5.0 { 44.5 }	8.0 { 71 }	8.0 { 71 }	15.0 { 133 }	20.0 { 177 }

Options

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

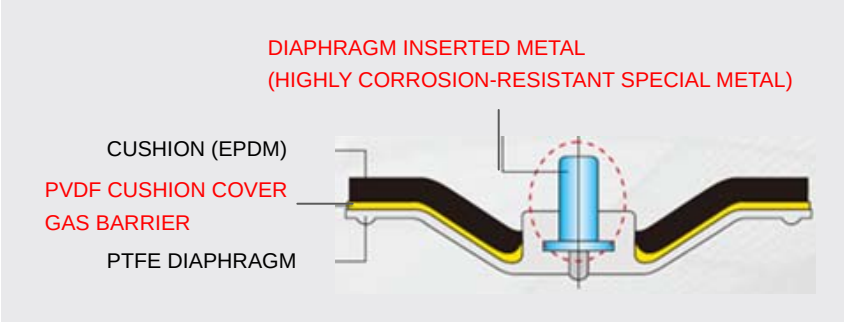
① PVDF Cushion Cover Model

For corrosive fluid transport lines, we offer PVDF cushion cover accessories having excellent gas barrier performance to prevent deterioration due to permeation of gas from the diaphragm.



② Electrolytic Model

For chlorine gas lines in electrolysis plants, we offer electrolytic options using highly corrosion resistant special metal to prevent corrosion of inserted diaphragm fittings.



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	0.5	0.5	0.4	0.6	0.6
20	3/4	0.6	0.6	0.5	0.7	0.7
25	1	0.9	0.9	0.7	1.0	1.1
32	1 1/4	1.1	1.1	0.8	1.2	1.3
40	1 1/2	2.6	2.5	2.0	2.7	2.9
50	2	2.9	2.8	2.3	3.1	3.3

Product model code list

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
V	T1	MH	*	*	*	*	***
V : MANUAL VALVE	T1 : TRUE UNION	MH : ROUND HANDLE	U : U-PVC C : C-PVC P : PP F : PVDF G : PVDF+PPG	E : EPDM 1 : PTFE+EPDM 2 : PTFE+FKM	S : SOCKET N : THREADED P : SPIGOT	J : JIS D : DIN A : ANSI	015 15mm ~ 050 50mm

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