

True Union Diaphragm Valve Type AN (Pneumatic 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 AN
- 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, FKM etc.
- Connection / Socket : JIS, DIN 8063/16962, ASTM D2467
Threaded : Rc, Rp, NPT
Spigot : DIN 3441/3442

Body Material	Fluid Temperature °C { °F }	Working Pressure (Normal temperature) MPa { psi }	Design Pressure (Normal temperature) MPa { psi }	Connection method	
				SOCKET	THREADED
U-PVC	0 ~ 50 { 30~120 }	0.75 { 110 }	1.0 { 150 }	○	○
C-PVC	0 ~ 90 { 30~195 }	0.75 { 110 }	1.0 { 150 }	○	○
PP	-20 ~ 80 { -5~175 }	0.75 { 110 }	1.0 { 150 }	○	○
PVDF	-20 ~ 100 { -5~210 }	0.75 { 110 }	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

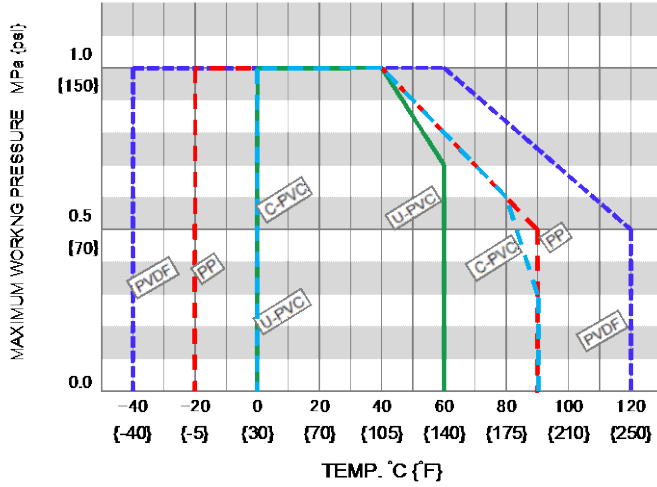
PED "For details of applicable products, please consult us."

Working pressure vs. Temperature

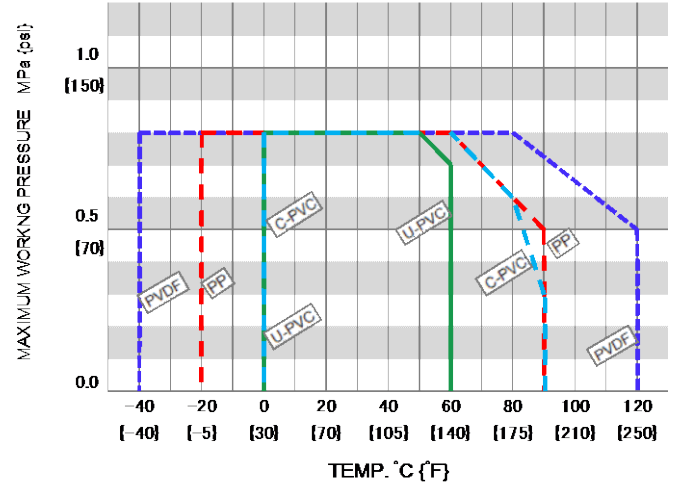
AUTOMATIC PNEUMATIC

DOUBLE ACTING / AIR TO CLOSE : 15mm - 50mm

AIR TO OPEN : 15mm - 40mm

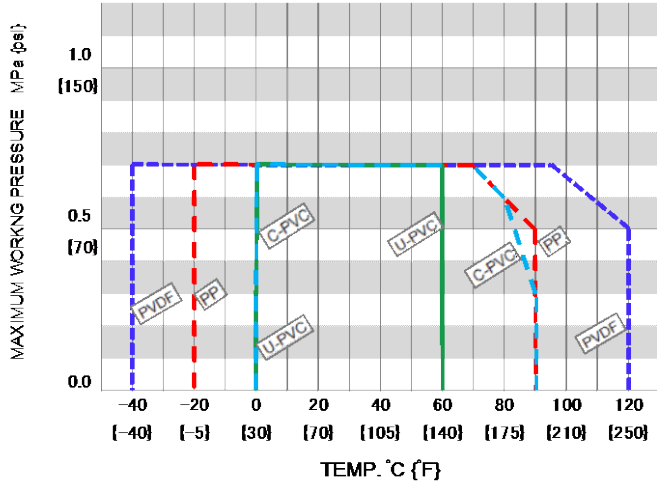


AIR TO OPEN RUBBER : 50mm



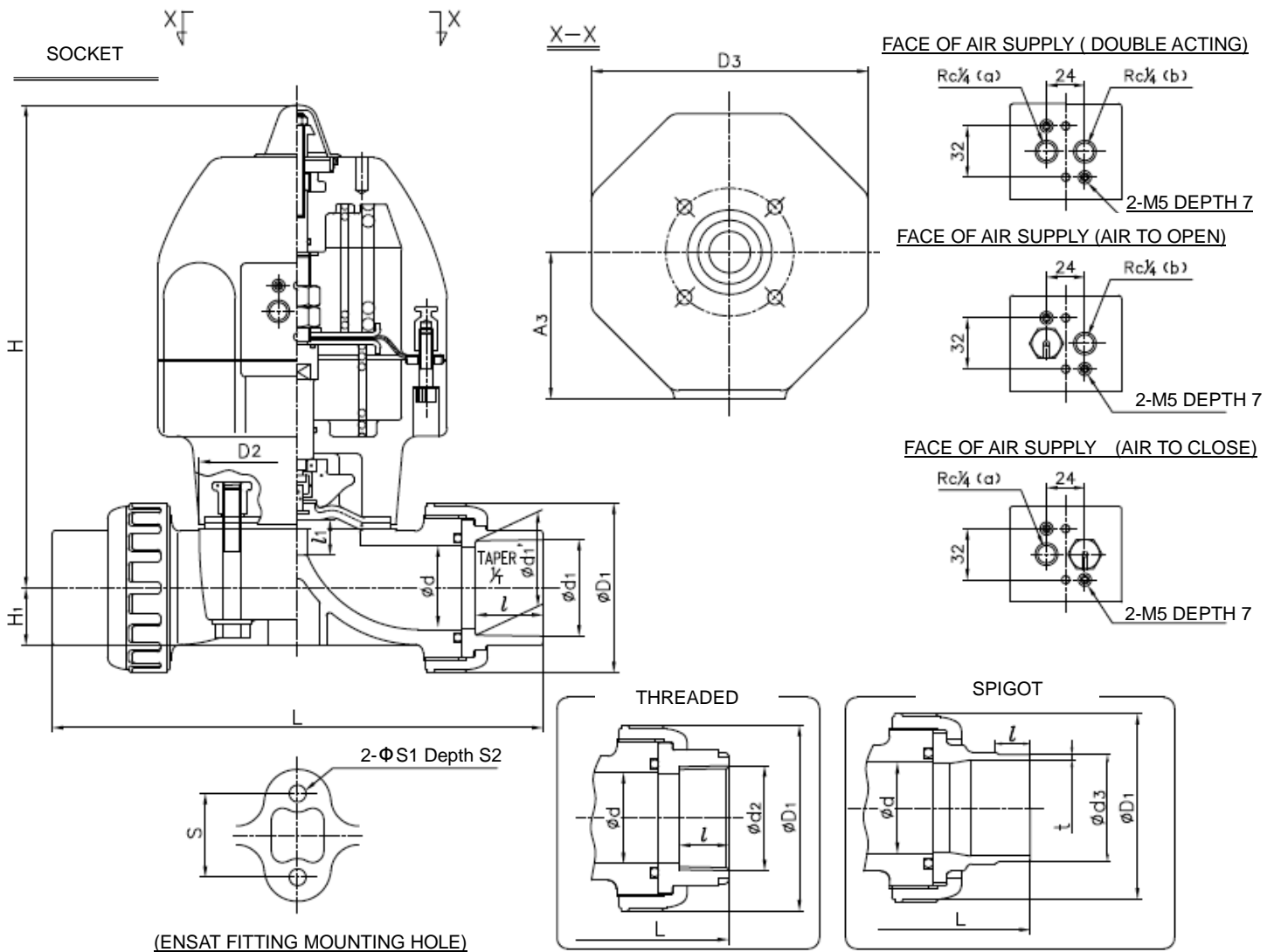
AUTOMATIC PNEUMATIC

AIR TO OPEN : 50mm



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



■ JIS, DIN (Unit: mm)

mm	d	D ₁	D ₂	D ₃	H	H ₁	A ₃	S	S ₁	S ₂	P	JIS											
												SOCKET								THREADED			
												PVC,C-PVC				PP				d ₂	ℓ	U-PVC C-PVC	PP
												d ₁	ℓ	1/T	L	d ₁	d ₁ '	ℓ	L				
15	16	48	54X66	130	186	19.5	68	25	7	13	1/4	22.11	20	1/34	134	21.2	20.2	20	134	Rc 1/2	15	128	128
20	20	60	54X66	130	188	17.5	68	25	7	13	1/4	26.13	24	1/34	156	26.2	25.2	23	154	Rc 3/4	17	148	148
25	25	70	67X80	130	193	18.5	68	25	7	13	1/4	32.16	27	1/34	186	33.0	32.0	25	182	Rc 1/2	20	172	172
32	32	82	67X80	130	197	22.5	68	25	7	13	1/4	38.19	30	1/34	200	-	-	-	-	Rc 1 1/4	22	188	188
40	40	100	108X108	174	293	27.5	92	45	9	15	1/4	48.21	37	1/37	271	47.0	46.0	28	253	Rc 1 1/2	25	245	245
50	52	106	123X123	174	302	36	92	45	9	15	1/4	60.25	42	1/37	303	59.0	58.0	28	275	Rc 2	28	281	278

mm	DIN																	
	SOCKET				THREADED				SPIGOT									
	PVC,C-PVC			PP,PVDF				d ₂	ℓ	L		PVC,C-PVC			PP,PVDF			
	d ₁	ℓ	L	d ₁	d ₁ '	ℓ	L			U-PVC C-PVC	PP PVDF	d ₃	ℓ	L	d ₃	ℓ	L	
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	
20	25	19	147	24.5	24.3	16	141	Rp 3/4	17	148	148	25	24	172	25	22	172	
25	32	22	172	31.5	31.3	18	164	Rp 1	20	172	172	32	24.5	195	32	22.5	195	
32	40	26	188	39.45	39.2	20.5	177	Rp 1 1/4	22	188	188	40	28	212	40	26	212	
40	50	31	246	49.45	49.2	23.5	231	Rp 1 1/2	25	245	245	50	34	276	50	32	276	
50	63	38	294	62.5	62.1	27.5	274	Rp 2	28	281	278	63	38.5	308	63	36	307	

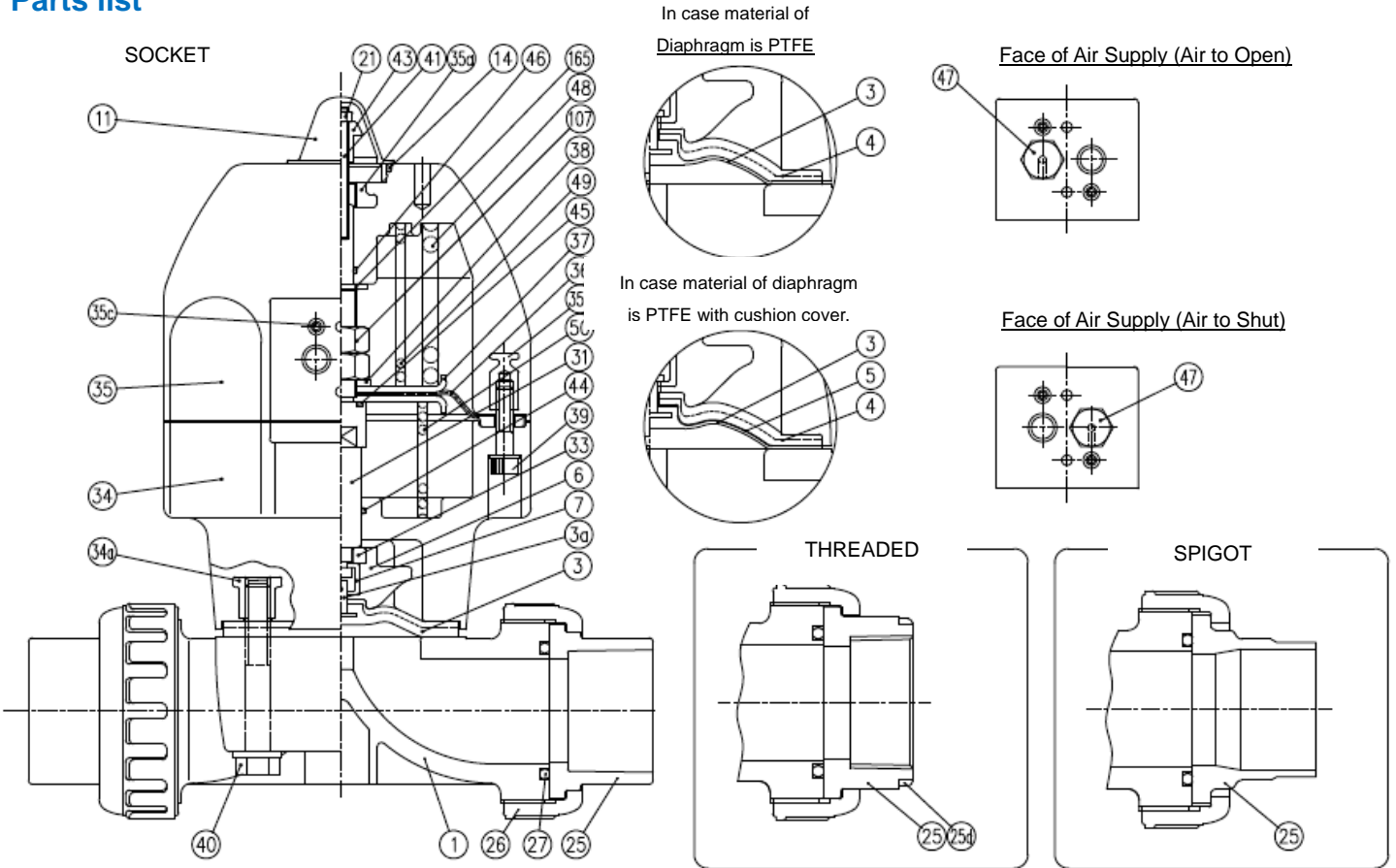
■ ANSI (Unit: inch)

inch	mm	d	D ₁	D ₂	D ₃	H	H ₁	A ₃	S	S ₁	S ₂	P	ANSI										
													SOCKET						THREADED				
													PVC,C-PVC				PP,PVDF				L		
													d1	d1'	ℓ	L	d1	ℓ	L	d2	ℓ	U-PVC C-PVC	PP PVDF
1/2	15	0.63	1.89	2.13X2.60	5.12	7.32	0.77	2.68	0.98	0.28	0.51	1/4	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	2.13X2.60	5.12	7.40	0.69	2.68	0.98	0.28	0.51	1/4	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	2.64X3.15	5.12	7.60	0.73	2.68	0.98	0.28	0.51	1/4	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	2.64X3.15	5.12	7.76	0.89	2.68	0.98	0.28	0.51	1/4	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	4.25X4.25	6.85	11.54	1.08	3.62	1.77	0.35	0.59	1/4	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	4.84X4.84	6.85	11.89	1.42	3.62	1.77	0.35	0.59	1/4	2.387	2.369	1.500	11.54	2.36	1.50	11.54	2-11 1/2NPT	1.10	11.06	10.95

ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE		
	DOUBLE ACTING	AIR TO OPEN	AIR TO CLOSE
15mm(1/2inch)	AN-1DA	AN-1AO	AN-1AS
20mm(3/4inch)			
25mm(1inch)	AN-2DA	AN-2AO	AN-2AS
32mm(1 1/4inch)			
40mm(1 1/2inch)	AN-3DA	AN-3AO	AN-3AS
50mm(2inch)	AN-4DA	AN-4AO	AN-4AS

Parts list

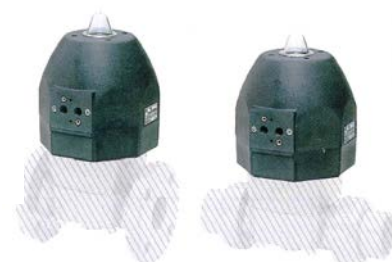


PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL
1	1	BODY	31	1	STEM	44	1	O-RING (D)
25	2	END CONNECTOR	33	1	COMPRESSOR PUSHING PLATE	45	1	O-RING (E)
26	2	UNION NUT	34	1	CYLINDER BODY	46	1	O-RING (F)
3	1	DIAPHRAGM	34a	4	INSERTED METAL OF CYLINDER BODY	47	1	NIPPLE
3a	1	INSERTED METAL OF DIAPHRAGM	35	1	CYLINDER BONNET	User for Air to Shut and Air to open		
4	1	CUSHION	35a	1	INSERTED METAL OF CYLINDER BONNET (A)	48	1	SPRING (A)
		EPDM, PTFE, Others	35b	8	INSERTED METAL OF CYLINDER BONNET (B)	STAINLESS STEEL(SWOSM-B) User for Air to open		
5	1	CUSHION COVER	35c	2	SCREWED METAL OF CYLINDER BONNET	49	1	SPRING (B)
		Nothing, PVDF	36	1	CYLINDER DIAPHRAGM	STAINLESS STEEL(SWOSM-B) User for Air to open		
		User for PTFE Diaphragm	37	2	CYLINDER DIAPHRAGM PLATE	50	1	SPRING (C)
6	1	COMPRESSOR	38	1	CONICAL SPRING WASHER (B)	STAINLESS STEEL(SWOSM-B) User for Air to Shut		
7	1	JOINT	39	8	BOLT (A)	107	2	LOCK NUT
11	1	GAUGE COVER	40	4	BOLT (B)	STAINLESS STEEL		
14	1	O-RING (A)	41	1	INDICATING ROD	165	1	WASHER
21	1	NUT	43	1	STOPPER	STAINLESS STEEL		
27	2	O-RING (C)				25d	2	RING
		EPDM, Others				STAINLESS STEEL User for C-PVC Body. Threaded End : 15-25mm		

Diaphragms except EPDM and PTFE are available in FKM, VIFLON®C (FKM-C), VIFLON®F (FKM-F), CPE, CSM, NBR and IIR when required. The shape and appearance of assembly differ a little with nominal size compared to this drawing.

Compatible Actuator

- Lightweight and compact size due to plastic actuator.
- Air piping is compatible with NAMUR standard.
- Options are easily removable/ replaceable and can be mounted later (except positioned) .
- Equipped with stopper that can be adjusted at full closed position..



BASIC SPECIFICATIONS

DOUBLE ACTING	ACTUATOR TYPE				UNIT
	AN-1DA	AN-2DA	AN-3DA	AN-4DA	
OPERATING PRESSURE	0.4-0.6				MPa
AIR CONSUMPTION	2.6	2.7	9.6	9.8	NI/OPEN & CLOSE (0.4MPa)
AIR SUPPLY BORE	Rc1/4				

AIR TO OPEN	ACTUATOR TYPE				UNIT
	AN-1AO	AN-2AO	AN-3AO	AN-4AO	
OPERATING PRESSURE	0.4-0.6				MPa
AIR CONSUMPTION	0.8		3.4		NI/OPEN & CLOSE (0.4MPa)
AIR SUPPLY BORE	Rc1/4				

AIR TO CLOSE	ACTUATOR TYPE				UNIT
	AN-1AS	AN-2AS	AN-3AS	AN-4AS	
OPERATING PRESSURE	0.4-0.6				MPa
AIR CONSUMPTION	1.8	1.9	6.1	6.3	NI/OPEN & CLOSE (0.4MPa)
AIR SUPPLY BORE	Rc1/4				

OPTION COMBINATION

COMBINATION NO.	1 ^{*4}	2 ^{*4}	3	4 ^{*4}	5	6	7	8	9
SOLENOID VALVE ^{*1}	○	—	—	○	○	—	○	—	—
FILTER REGULATOR	—	—	—	○	—	—	○	—	○
SPEED CONTROLLER ^{*2}	◎	○	—	◎	◎	○	◎	—	—
LIMIT SWITCH ^{*3}	—	—	○	—	○	○	○	—	—
POSITIONER (E/P,P/P)	—	—	—	—	—	—	—	○	○

*1 Equipped with a built-in speed controller and bypass valve.

*2 ◎ indicates solenoid valve-dedicated type.

*3 When using the limit switch at 1 to 100mA or 5 to 30V, contact our sales office in your area.

*4 The "full opening adjustment" and "manual override (air to open only)" are available only for the combination No. 1, 2 and 4.

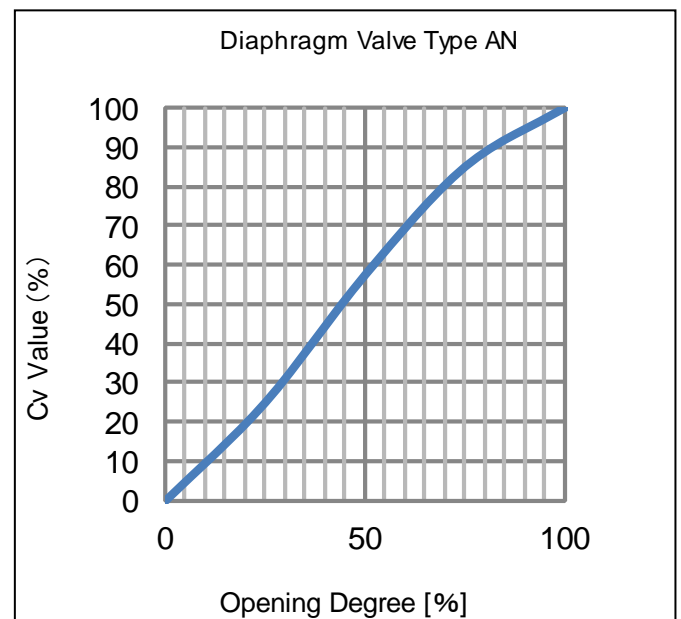
DATASHEET

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE NAMUR	KONAN	<ul style="list-style-type: none"> WATER PROOF, EXPLOSION PROOF POWER SOURCE AC100V, AC110V, AC200V, AC220V, DC24V
FILTER REGULATOR	KONAN	
SPEED CONTROLLER	KONAN	* Since a solenoid valve has a built-in exhaust valve, when a solenoid valve is mounted, no speed controller is necessary.
BYPASS VALVE (SPEED CONTROLLER)	KONAN	
LIMIT SWITCH	AZBIL (formerly YAMATAKE)	<ul style="list-style-type: none"> WATER PROOF, EXPLOSION PROOF OPEN: 1pc, CLOSE: 1pc, OPEN/CLOSE: 2pcs
POSITIONER	YTC	<ul style="list-style-type: none"> E/P: INPUT SIGNAL CURRENT DC 4-20 mA P/P: INPUT SIGNAL AIR PRESSURE 0.02 - 0.1 MPa
MANUAL OVERRIDE	ASAHI YUKIZAI	
FULL OPENING ADJUSTMENT	ASAHI YUKIZAI	

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



Product weight

TRUE UNION TYPE AN [AUTOMATIC PNEUMATIC TRUE UNION TYPE AN]

Unit : kg

mm	inch	DOUBLE ACTING				AIR TO OPEN				AIR TO CLOSE			
		U-PVC	C-PVC	PP	PVDF	U-PVC	C-PVC	PP	PVDF	U-PVC	C-PVC	PP	PVDF
15	1/2	2.3	2.3	1.8	2.3	2.3	2.8	2.3	2.8	2.3	2.4	1.9	2.4
20	3/4	2.3	2.3	1.9	2.3	2.8	2.8	2.4	2.8	2.3	2.4	2.0	2.4
25	1	2.3	2.3	2.4	2.8	2.8	2.8	2.9	2.8	2.3	2.4	2.5	2.9
32	1 1/4	2.7	2.7	2.4	2.8	3.2	3.2	2.9	3.12	2.7	2.7	2.5	2.9
40	1 1/2	5.3	5.3	4.8	5.3	6.3	6.8	6.3	6.8	5.5	5.5	5.0	5.5
50	2	5.8	5.8	5.0	5.7	6.8	6.8	6.5	7.2	6.0	6.0	5.2	5.9

Product model code list

ACTUATION	TYPE	ACTUATOR TYPE	ACTION /POWER SOURCE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
A	TI	*	*	*	*	*	*	***
A AUTOMATIC VALVE	TI TRUE UNION	PNEUMATIC N TYPE AN	PNEUMATIC F DOUBLE ACTING G AIR TO OPEN S AIR TO CLOSE	U U-PVC C C-PVC P PP F PVDF	E EPDM 1 PTFE+EPDM 2 PTFE+FKM	S SOCKET N THREADED P SPIGOT	1 JIS D DIN A ANSI	015 15mm ? 050 50mm

Installation, Operation and Maintenance Manual

For details of Installation, Operation and Maintenance, please contact our nearest distribution agent or sales office.