

# Diaphragm Valve Type AV (Type 15, 72)

[Pneumatic type]

## Features

- Stopper provided to adjust Fully-Close position.



## Basic specifications

- Valve Type	:	Diaphragm Valve Type AV (Type 15,72)
- Size	:	125 mm - 250 mm ( 5 inch – 10 inch)
- Body Material	:	U-PVC (Conforming to ASTM D1784 Cell Classification 12454A) 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 / Flanged	:	JIS B2220 10K, DIN/EN1092-1 PN10, ANSI B16.5 CLASS150

### - Diaphragm Valve Type AV (Type 15)

#### DOUBLE ACTING

Body Material	FLUID TEMPERATURE °C {°F}	Maximum working pressure (Normal Temperature) MPa {psi}				Connection Method
		Diaphragm : Rubber		Diaphragm : PTFE		
		125mm	150mm	125mm	150mm	Flanged
U-PVC	0 ~ 60 { 30~140 }	0.35 {50}	0.3 {40}	0.25 {35}	0.2 {30}	○
PP	-20 ~ 90 { -5~195 }	0.35 {50}	0.3 {40}	0.25 {35}	0.2 {30}	○
PVDF	-20 ~ 120 { -5~250 }	—	—	0.25 {35}	0.2 {30}	○

#### AIR TO OPEN / AIR TO CLOSE

Body Material	FLUID TEMPERATURE °C {°F}	Maximum working pressure (Normal Temperature) MPa {psi}				Connection Method
		Diaphragm : Rubber		Diaphragm : PTFE		
		125mm	150mm	125mm	150mm	Flanged
U-PVC	0 ~ 60 { 30~140 }	0.5 {70}		0.3 {40}		○
PP	-20 ~ 90 { -5~195 }	0.5 {70}		0.3 {40}		○
PVDF	-20 ~ 120 { -5~250 }	—		0.3 {40}		○

### - Diaphragm Valve Type AV (Type 72)

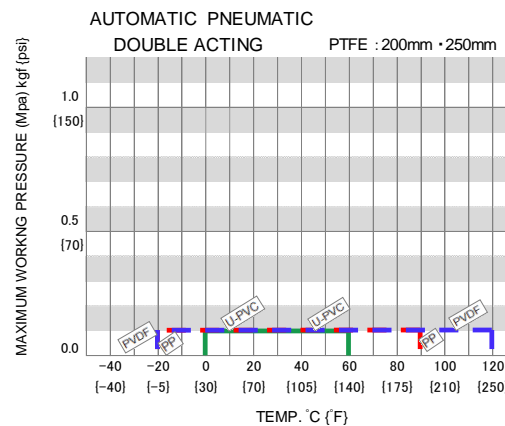
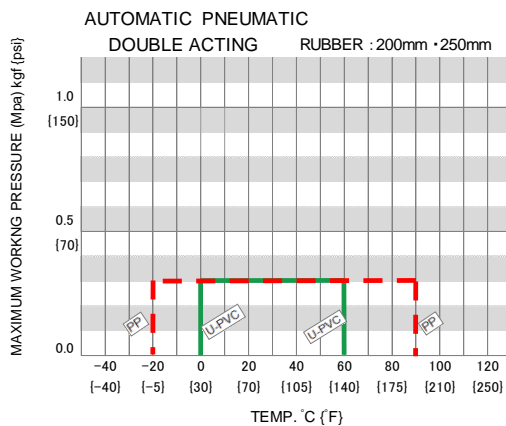
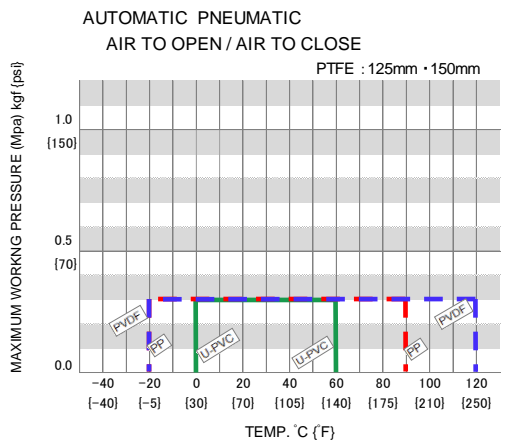
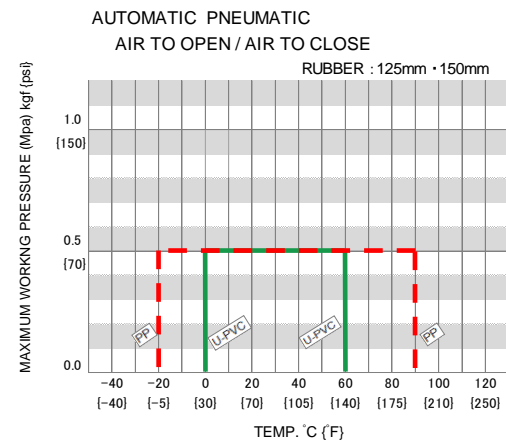
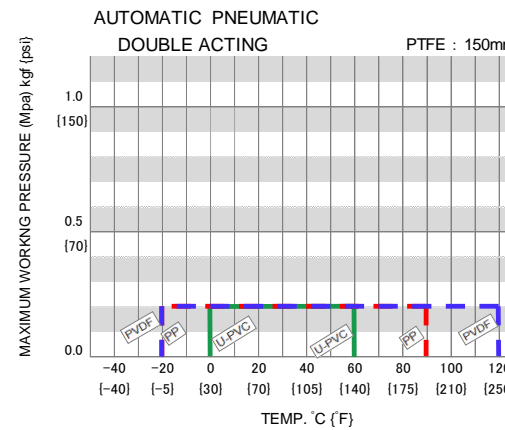
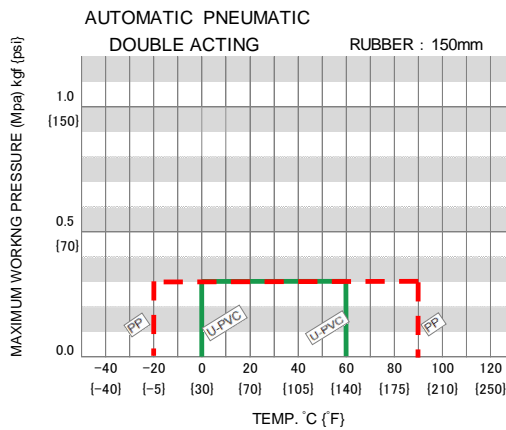
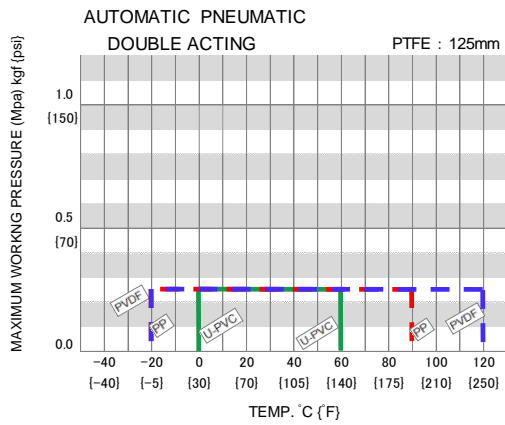
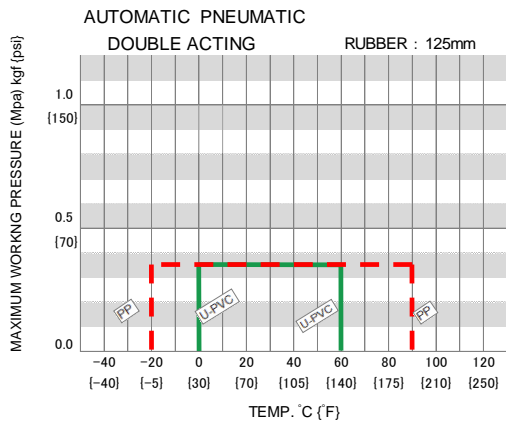
#### DOUBLE ACTING

Body Material	FLUID TEMPERATURE °C {°F}	Maximum working pressure (Normal Temperature) MPa {psi}				Connection Method
		Diaphragm : Rubber		Diaphragm : PTFE		
		200mm	250mm	200mm	250mm	Flanged
U-PVC	0 ~ 60 { 30~140 }	0.3 {40}		0.1 {15}		○
PP	-20 ~ 90 { -5~195 }	0.3 {40}		0.1 {15}		○
PVDF	-20 ~ 120 { -5~250 }	—		0.1 {15}		○

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.

## Working pressure vs. Temperature

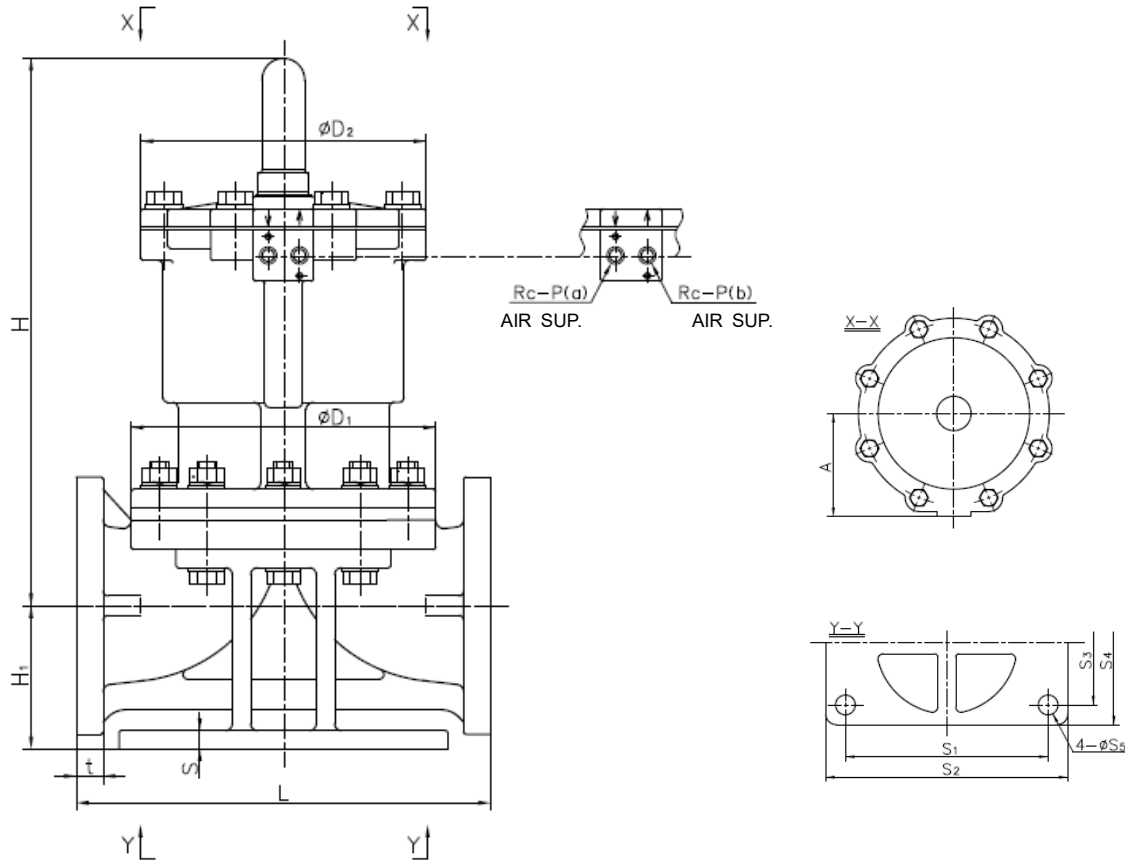


Note : Make sure that the temperature and pressure are within the working range during operation.  
(If the tolerance range is exceeded during use, the valve may be damaged.)

**Product dimension**

[AUTOMATIC PNEUMATIC TYPE AV DOUBLE ACTING]

TYPE 15



**ACTUATOR SELECTION CHART**

SIZE	ACTUATOR TYPE
125mm( 5inch)	AV-4DA
150mm( 6inch)	AV-5DA

■ JIS, DIN (Unit: mm)

mm	inch	D <sub>1</sub>	D <sub>2</sub>	A	H	H <sub>1</sub>	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	P	JIS10K			DIN PN10		
														L	t	PP PVDF	L	t	PP PVDF
125	5	320	305	150	508	143	15	310	350	280	320	23	1/4	410	22	24	400	22	23
150	6	385	385	195	566	148	16	360	400	310	350	23	1/4	480	24	27	480	24	27

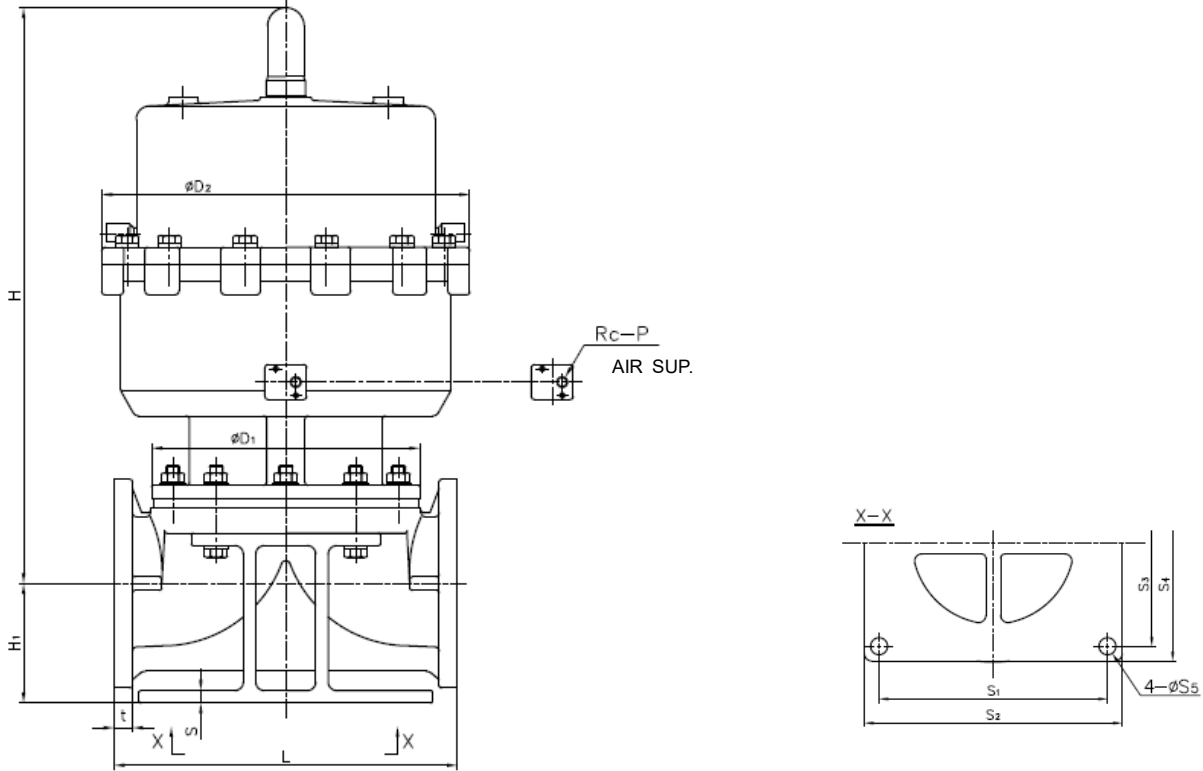
■ ANSI (Unit: inch)

inch	mm	D <sub>1</sub>	D <sub>2</sub>	A	H	H <sub>1</sub>	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	P	ANSI Class 150		
														L	t	PP PVDF
5	125	12.60	12.01	5.91	20.00	5.63	0.59	12.20	13.78	11.02	12.60	0.91	1/4	16.14	0.87	0.94
6	150	15.16	15.16	7.68	22.28	5.83	0.63	14.17	15.75	12.20	13.78	0.91	1/4	18.90	0.94	1.06

**Product dimension**

[AUTOMATIC PNEUMATIC TYPE AV AIR TO OPEN]

TYPE 15



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
125mm( 5inch)	AV-4AO
150mm( 6inch)	AV-5AO

■ JIS, DIN (Unit: mm)

mm	inch	D <sub>1</sub>	D <sub>2</sub>	H	H <sub>1</sub>	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	P	JIS10K			DIN PN10		
													L	t		L	t	
														U-PVC	PP PVDF		U-PVC	PP PVDF
125	5	320	455	690	143	15	310	350	280	320	23	1/4	410	22	24	400	22	23
150	6	385	520	790	148	16	360	400	310	350	23	1/4	480	24	27	480	24	27

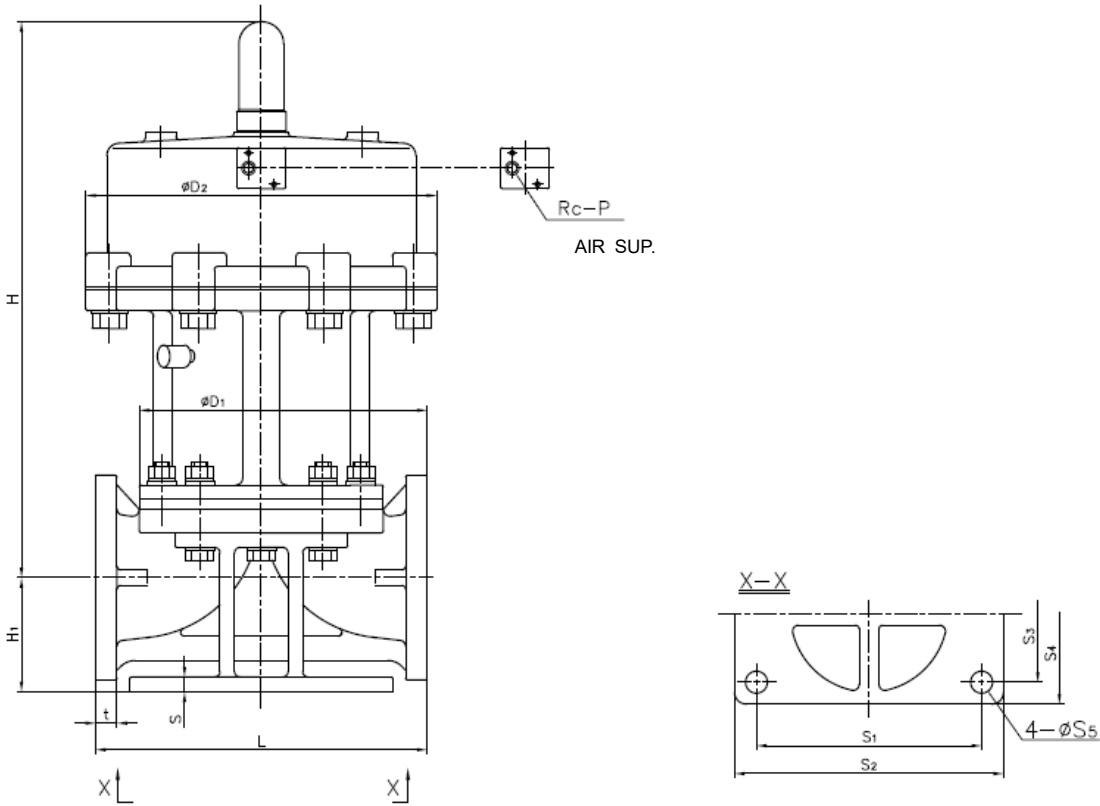
■ ANSI (Unit: inch)

inch	mm	D <sub>1</sub>	D <sub>2</sub>	H	H <sub>1</sub>	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	P	ANSI Class 150		
													L	t	
													U-PVC	PP PVDF	
5	125	12.60	17.91	27.17	5.63	0.59	12.20	13.78	11.02	12.60	0.91	1/4	16.14	0.87	0.94
6	150	15.16	20.47	31.10	5.83	0.63	14.17	15.75	12.20	13.78	0.91	1/4	18.90	0.94	1.06

**Product dimension**

[AUTOMATIC PNEUMATIC TYPE AV AIR TO CLOSE]

TYPE 15



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
125mm( 5inch)	AV-4AS
150mm( 6inch)	AV-5AS

■ JIS, DIN (Unit: mm)

mm	inch	D <sub>1</sub>	D <sub>2</sub>	H	H <sub>1</sub>	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	P	JIS10K		DIN PN10			
													L	t	L	t		
125	5	320	455	653	143	15	310	350	280	320	23	1/4	410	22	24	400	22	23
150	6	385	520	722	148	16	360	400	310	350	23	1/4	480	24	27	480	24	27

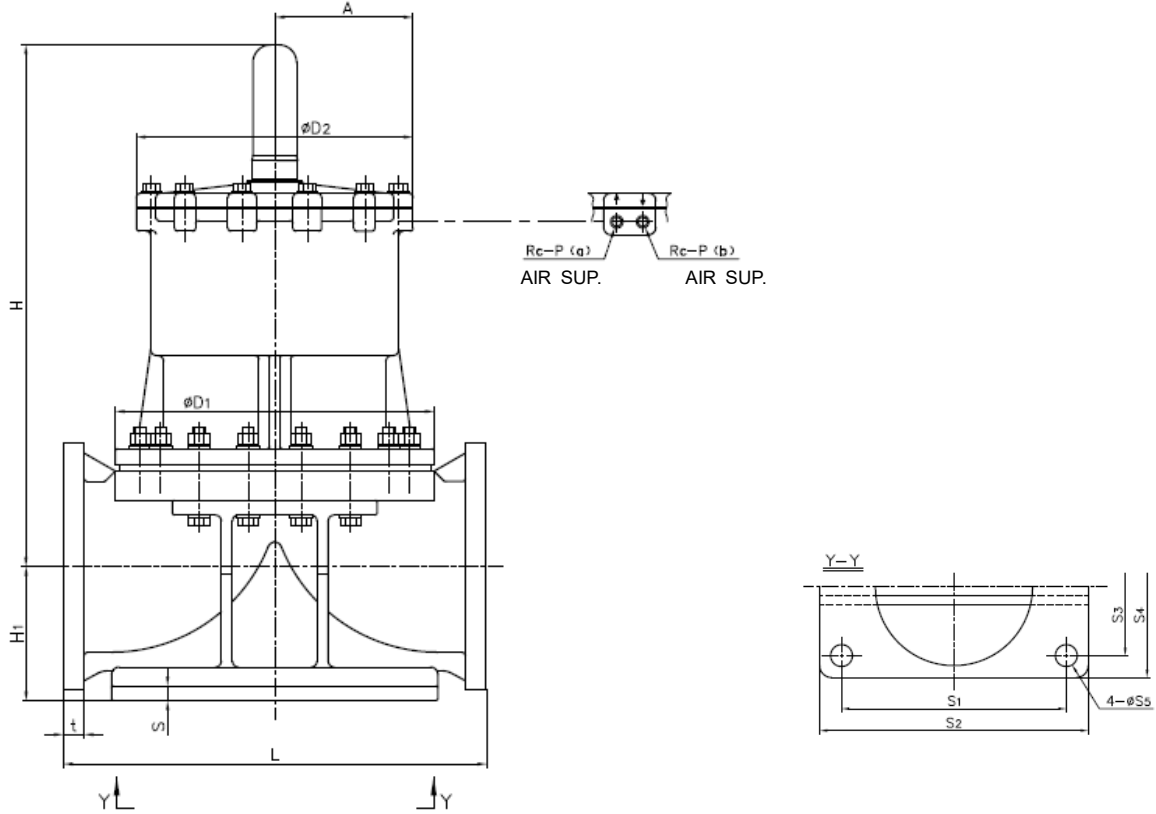
■ ANSI (Unit: inch)

inch	mm	D <sub>1</sub>	D <sub>2</sub>	H	H <sub>1</sub>	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	P	ANSI Class 150		
													L	t	
5	125	12.60	17.91	25.71	5.63	0.59	12.20	13.78	11.02	12.60	0.91	1/4	16.14	0.87	0.94
6	150	15.16	20.47	28.43	5.83	0.63	14.17	15.75	12.20	13.78	0.91	1/4	18.90	0.94	1.06

**Product dimension**

[AUTOMATIC PNEUMATIC TYPE AV DOUBLE ACTING]

TYPE 72



**ACTUATOR SELECTION CHART**

SIZE	ACTUATOR TYPE
200mm( 8inch)	AV-6DA
250mm( 10inch)	AV-7DA

■ JIS, DIN (Unit: mm)

mm	inch	D <sub>1</sub>	D <sub>2</sub>	A	H	H <sub>1</sub>	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	P	JIS10K		DIN PN10			
														L	t	L	t		
200	8	430	385	195	742	179	20	390	440	330	380	23	3/8	570	28	32	600	30	34
250	10	540	520	260	890	215	23	470	540	390	460	25	1/4	680	30	37	730	34	36

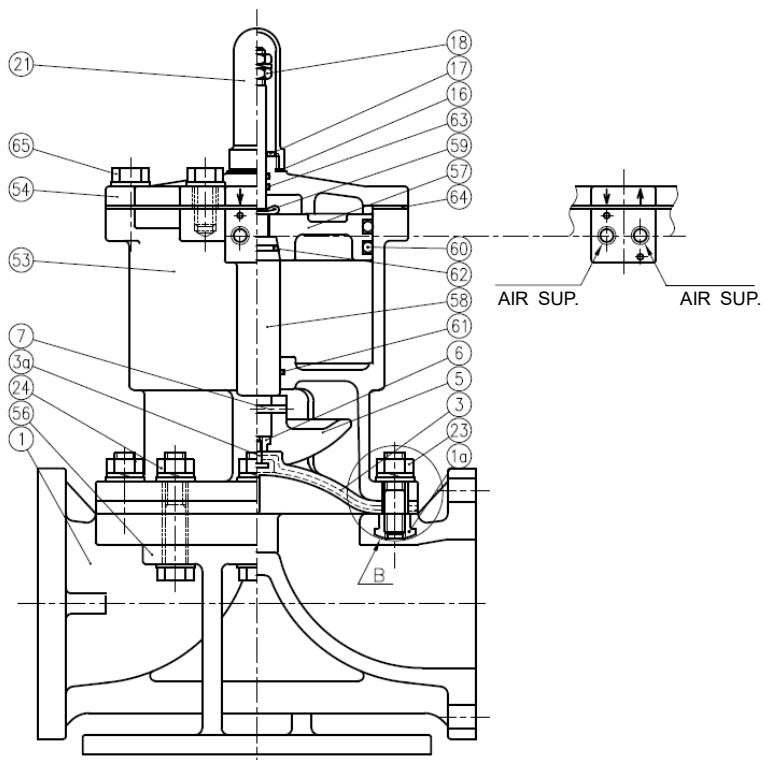
■ ANSI (Unit: inch)

inch	mm	D <sub>1</sub>	D <sub>2</sub>	A	H	H <sub>1</sub>	S	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	P	ANSI Class 150		
														L	t	
8	200	16.93	15.16	7.68	29.21	7.05	0.79	15.35	17.32	12.99	14.96	0.91	3/8	22.44	1.10	1.26
10	250	21.26	20.47	10.24	35.04	8.46	0.91	18.50	21.26	15.35	18.11	0.98	1/4	26.77	1.18	1.46

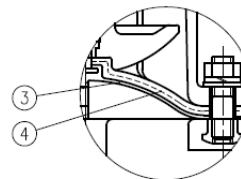
### Parts list

[AUTOMATIC PNEUMATIC TYPE AV DOUBLE ACTING]

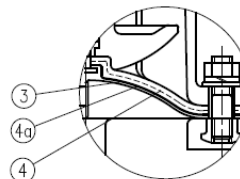
TYPE 15



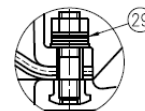
PTFE diaphragm



PTFE with cushion cover



In Case of PVDF Body.



"B" Part

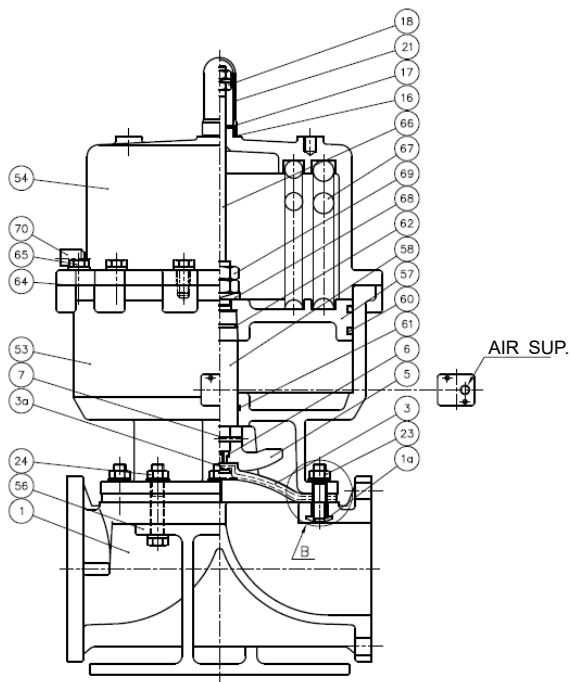
PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL
1	1	PVC, PP, PVDF	5	1	PVDF	53	1	CAST ALUMINIUM ALLOY Epoxy Coat
1a	4	COPPER ALLOY Used for PVC&PP Body. STAINLESS STEEL Used for PVDF Body.	6	1	COPPER ALLOY	54	1	CAST ALUMINIUM ALLOY Epoxy Coat
3	1	EPDM, PTFE, Others ( )	7	1	STAINLESS STEEL	56	1	CAST ALUMINIUM ALLOY
3a	1	STAINLESS STEEL	16	1	EPDM	57	1	CAST ALUMINIUM ALLOY
4	1	EPDM, Others ( ) Used for PTFE Diaphragm	17	1	STAINLESS STEEL	58	1	STAINLESS STEEL
4a	1	Nothing, PVDF Used for PTFE Diaphragm	18	1	STAINLESS STEEL	59	1	SPRING STEEL
			21	1	PC	60	2	NBR
			23	4 Sets	STAINLESS STEEL	61	1	NBR
			24	-	STAINLESS STEEL	62	1	NBR
			29	-	STAINLESS STEEL Used for PVDF Body.	63	2	NBR
			65	-	STAINLESS STEEL	64	1	NBR

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

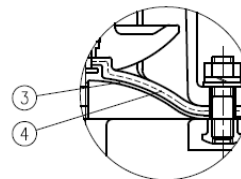
### Parts list

[AUTOMATIC PNEUMATIC TYPE AV AIR TO OPEN]

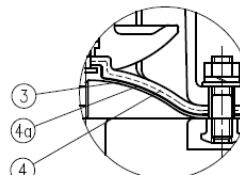
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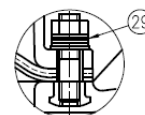
PTFE diaphragm



PTFE with cushion cover



In Case of PVDF Body.



"B" Part

PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL
1	1	PVC, PP, PVDF	16	1	EPDM	57	1	CAST ALUMINIUM ALLOY
1a	4	COPPER ALLOY	17	1	STAINLESS STEEL	58	1	STAINLESS STEEL
		Used for PVC&PP Body.	18	1	STAINLESS STEEL	60	2	NBR
3a	1	STAINLESS STEEL	21	1	PC	61	1	NBR
		Used for PVDF Body.	23	4	STAINLESS STEEL	62	1	NBR
3	1	EPDM, PTFE, Others ( )	24	-	STAINLESS STEEL	64	1	NBR
4	1	EPDM, Others ( )	29	-	STAINLESS STEEL	65	-	STAINLESS STEEL
4a	1	Used for PTFE Diaphragm	53	1	CAST ALUMINIUM ALLOY	66	1	STAINLESS STEEL
		Nothing, PVDF	54	1	CAST ALUMINIUM ALLOY	67	1	STAINLESS STEEL
5	1	Used for PTFE Diaphragm	56	1	CAST ALUMINIUM ALLOY	68	1	STAINLESS STEEL
		Nothing, PVDF	58	1	STAINLESS STEEL	69	2	STAINLESS STEEL
6	1	COPPER ALLOY	68	1	STAINLESS STEEL	70	1	COPPER ALLOY
7	1	STAINLESS STEEL	69	2	STAINLESS STEEL			
			70	1	COPPER ALLOY			

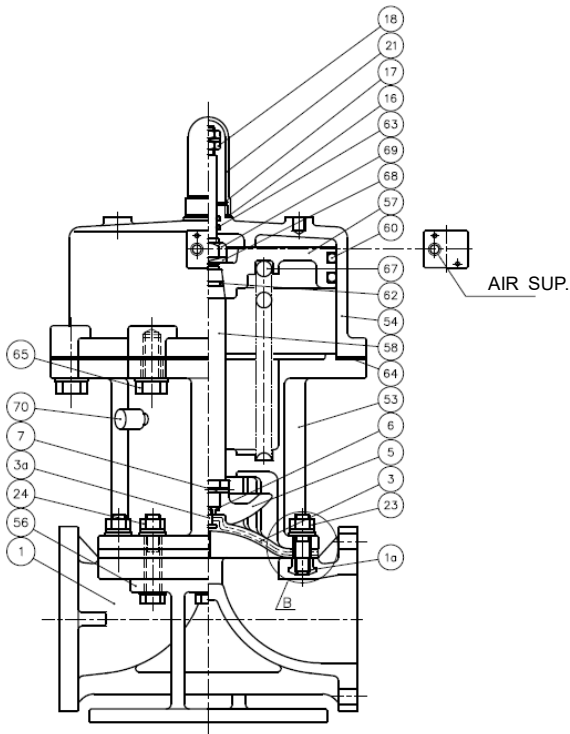
Diaphragms except EPDM and PTFE are available in FKM, VIFLON®C (FKM-C), VIFLON®F (FKM-F), CSM and NBR when required.  
 The shape and appearance of assembly differ a little with nominal size compared to this drawing.



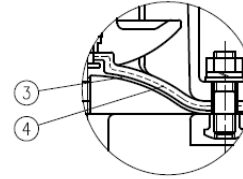
### Parts list

[AUTOMATIC PNEUMATIC TYPE AV AIR TO CLOSE]

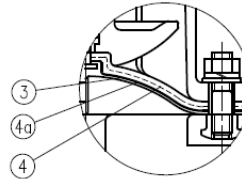
TYPE 15



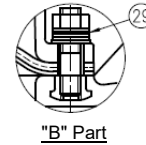
PTFE diaphragm



PTFE with cushion cover



In Case of PVDF Body.



"B" Part

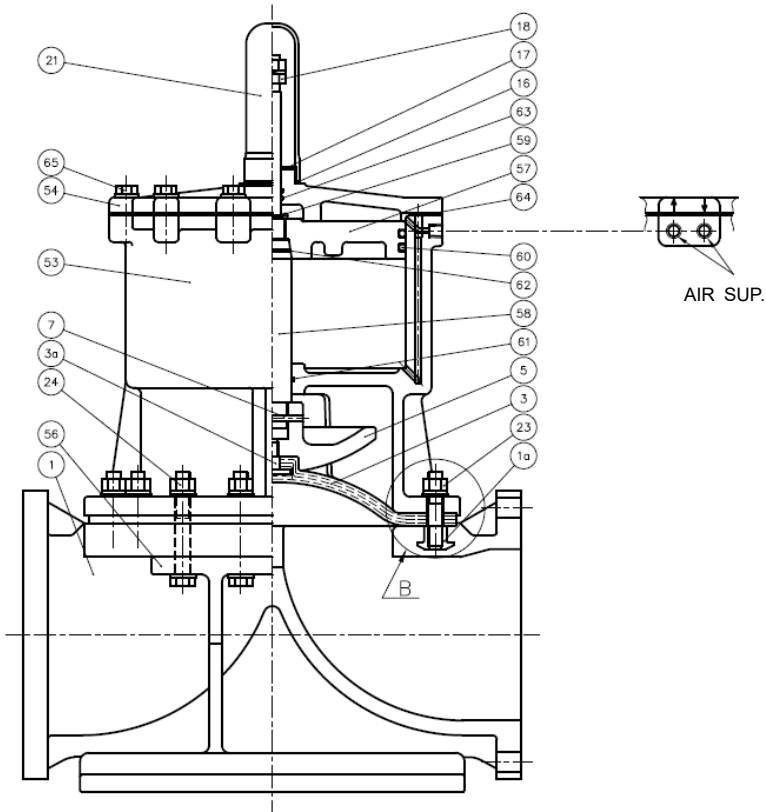
PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL
1	1	PVC, PP, PVDF	16	1	EPDM	57	1	CAST ALUMINIUM ALLOY
1a	4	COPPER ALLOY	17	1	STAINLESS STEEL	58	1	STAINLESS STEEL
		Used for PVC&PP Body.	18	1	STAINLESS STEEL	60	2	NBR
3	1	STAINLESS STEEL	21	1	PC	62	1	NBR
		Used for PVDF Body.	23	4	STAINLESS STEEL	63	1	NBR
3a	1	STAINLESS STEEL	24	-	STAINLESS STEEL	64	1	NBR
4	1	EPDM, Others ( )	29	-	STAINLESS STEEL	65	-	STAINLESS STEEL
		Used for PTFE Diaphragm	53	1	CAST ALUMINIUM ALLOY	66	1	STAINLESS STEEL
4a	1	Nothing, PVDF	54	1	CAST ALUMINIUM ALLOY Epoxy Coat	67	1	STAINLESS STEEL
5	1	PVDF				56	1	CAST ALUMINIUM ALLOY Epoxy Coat
			6	1	COPPER ALLOY			
7	1	STAINLESS STEEL				70	1	COPPER ALLOY

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

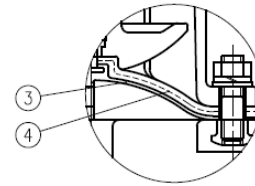
**Parts list**

[AUTOMATIC PNEUMATIC TYPE AV DOUBLE ACTING]

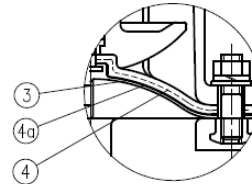
TYPE 72



In case material of diaphragm is PTFE.



In case material of diaphragm is PTFE with cushion cover.



In Case of PVDF Body.



"B" Part

PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL	PART NO./NAME	QTY	MATERIAL
1	1	PVC, PP, PVDF	5	1	Chromized CAST IRON	53	1	CAST ALUMINIUM ALLOY
		COPPER ALLOY	7	1	STAINLESS STEEL			Epoxy Coat
1a	4	Used for PVC&PP Body. STAINLESS STEEL	16	1	EPDM	54	1	CAST ALUMINIUM ALLOY
		Used for PVDF Body.	17	1	STAINLESS STEEL			Epoxy Coat
3	1	EPDM, PTFE, Others ( )	18	1	STAINLESS STEEL	56	1	CAST ALUMINIUM ALLOY
3a	1	STAINLESS STEEL	21	1	PC	57	1	CAST ALUMINIUM ALLOY
			23	4Sets	STAINLESS STEEL	58	1	STAINLESS STEEL
4	1	EPDM, Others ( )	24	-	STAINLESS STEEL	59	1	SPRING STEEL
		Used for PTFE Diaphragm			STAINLESS STEEL	60	2	NBR
4a	1	Nothing, PVDF	29	-	Used for PVDF Body.	61	1	NBR
		Used for PTFE Diaphragm	64	1	NBR	62	1	NBR
			65	-	STAINLESS STEEL	63	2	NBR

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

## Technical Data of Actuator

Equipped with stopper that can be adjusted at full closed position.  
Air piping is compatible with NAMUR standard.



### BASIC SPECIFICATIONS

DOUBLE ACTING	ACTUATOR TYPE		ACTUATOR TYPE		UNIT
	AV-4DA	AV-5DA	AV-6DA	AV-7DA	
OPERATING PRESSURE	0.4-0.6		0.4-0.6		MPa
AIR CONSUMPTION	36.6	67.3	87.3	214	NI/OPEN & CLOSE (0.4MPa)
AIR SUPPLY BORE	Rc1/4		Rc3/8		

AIR TO OPEN	ACTUATOR TYPE		UNIT
	AV-4AO	AV-5AO	
OPERATING PRESSURE	0.4-0.6		MPa
AIR CONSUMPTION	55.6	84.2	NI/OPEN & CLOSE (0.4MPa)
AIR SUPPLY BORE	Rc1/4		

AIR TO CLOSE	ACTUATOR TYPE		UNIT
	AV-4AS	AV-5AS	
OPERATING PRESSURE	0.4-0.6		MPa
AIR CONSUMPTION	38.4	60.5	NI/OPEN & CLOSE (0.4MPa)
AIR SUPPLY BORE	Rc1/4		

### OPTION COMBINATION

COMBINATION NO.	1	2	3	4	5	6	7	8	9	10	11	12	13
SOLENOID VALVE	○	—	—	○	○	○	—	○	○	○	○	—	—
FILTER REGULATOR	—	—	—	○	—	—	—	○	○	—	○	—	○
SPEED CONTROLLER	—	○	—	—	○	—	○	○	—	○	○	—	—
LIMIT SWITCH	—	—	○	—	—	○	○	—	○	○	○	—	—
POSITIONER (E/P, P/P)	—	—	—	—	—	—	—	—	—	—	—	○	○

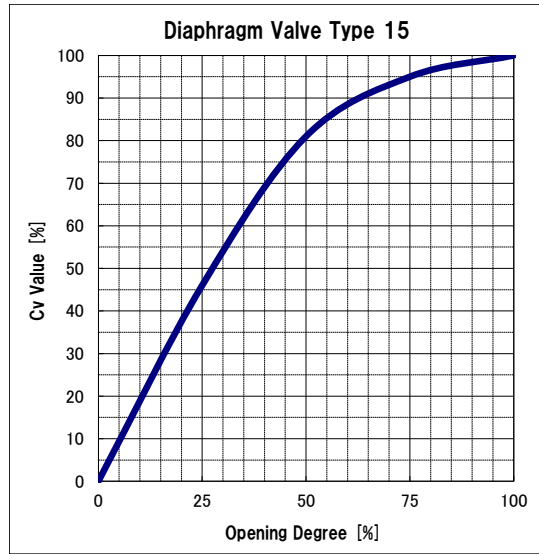
### OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE NAMUR	KONAN	<ul style="list-style-type: none"> <li>• WATER PROOF, EXPLOSION PROOF</li> <li>• POWER SOURCE AC100V, AC110V, AC200V, AC220V, DC24V</li> </ul>
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"> <li>• WATER PROOF, EXPLOSION PROOF</li> <li>• OPEN: 1pc, CLOSE: 1pc, OPEN/CLOSE: 2pcs</li> </ul>
POSITIONER	YTC	<ul style="list-style-type: none"> <li>• E/P: INPUT SIGNAL CURRENT DC 4-20 mA</li> <li>• P/P: INPUT SIGNAL AIR PRESSURE 0.02 - 0.1 MPa</li> </ul>
MANUAL OVERRIDE	ASAHI YUKIZAI	
FULL OPENING ADJUSTMENT	ASAHI YUKIZAI	
SPECIAL PAINTING (ACTUATOR ONLY)	ASAHI YUKIZAI	

### Cv value for each opening degree

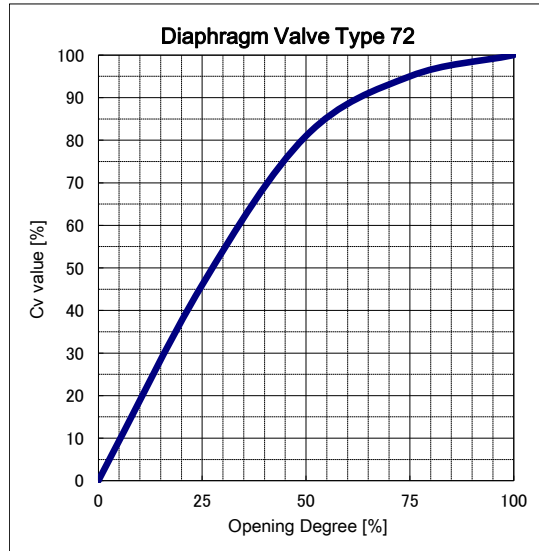
Diaphragm Valve Type 15  
FULL-OPEN Cv VALUE

mm	125	150
inch	5	6
FULL-OPEN Cv VALUE	300	400



Diaphragm Valve Type 72  
FULL-OPEN Cv VALUE

mm	200	250
inch	8	10
FULL-OPEN Cv VALUE	700	1000



### Product weight

AUTOMATIC PNEUMATIC TYPE AV

TYPE 15

Unit : kg

mm	inch	DOUBLE ACTING			AIR TO OPEN			AIR TO CLOSE		
		U-PVC	PP	PVDF	U-PVC	PP	PVDF	U-PVC	PP	PVDF
125	5	31.0	28.5	33.0	138	136	141	73.0	70.5	75.0
150	6	82.5	78.5	85.0	158	154	160	87.5	83.5	90.0

TYPE 72

Unit : kg

mm	inch	DOUBLE ACTING		
		U-PVC	PP	PVDF
200	8	113	107	118
250	10	183	173	190

## Product model code list

AUTOMATIC PNEUMATIC TYPE AV  
TYPE 15

ACTUATION	TYPE	ACTUATOR TYPE	ACTION /POWER SOURCE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
<b>A</b>	<b>15</b>	<b>V</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>F</b>	<b>*</b>	<b>***</b>
A AUTOMATIC VALVE	15 TYPE 15	PNEUMATIC V TYPE AV	PNEUMATIC	U U-PVC	E EPDM	F FLANGED	1 JIS10K	125 125mm
			F DOUBLE ACTING	P PP	T PTFE		D DIN	150 150mm
			G AIR TO OPEN	F PVDF	A ANSI			
			S AIR TO CLOSE					

AUTOMATIC PNEUMATIC TYPE AV  
TYPE 72

ACTUATION	TYPE	ACTUATOR TYPE	ACTION /POWER SOURCE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
<b>A</b>	<b>72</b>	<b>V</b>	<b>F</b>	<b>*</b>	<b>*</b>	<b>F</b>	<b>*</b>	<b>***</b>
A AUTOMATIC VALVE	72 TYPE 72	PNEUMATIC V TYPE AV	PNEUMATIC	U U-PVC	E EPDM	F FLANGED	1 JIS10K	200 200mm
			F DOUBLE ACTING	P PP	T PTFE		D DIN	250 250mm
				F PVDF	A ANSI			

## Installation, Operation and Maintenance Manual

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