

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 PP0110B67272)
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)

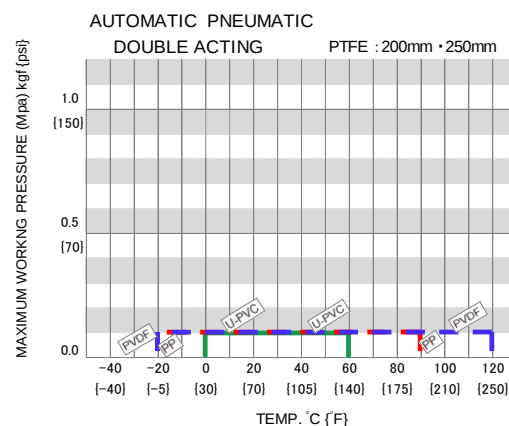
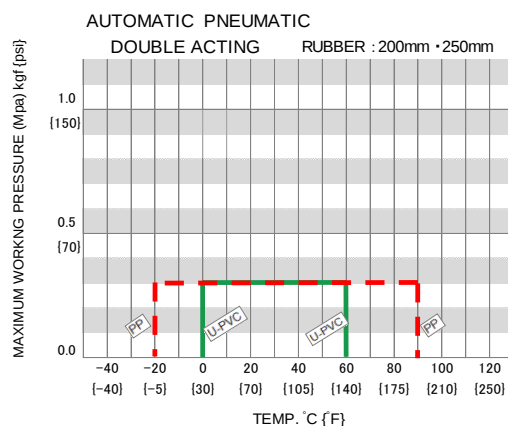
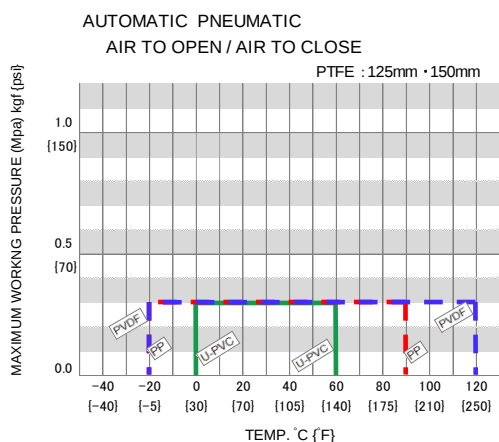
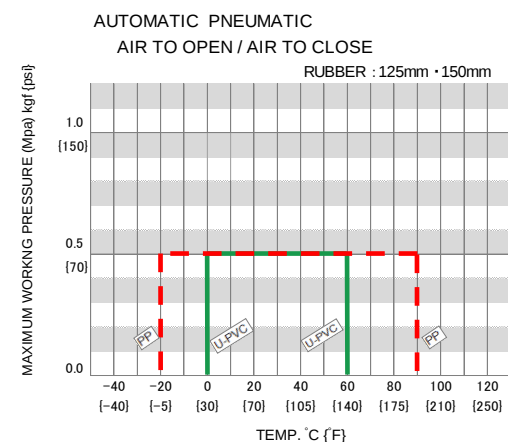
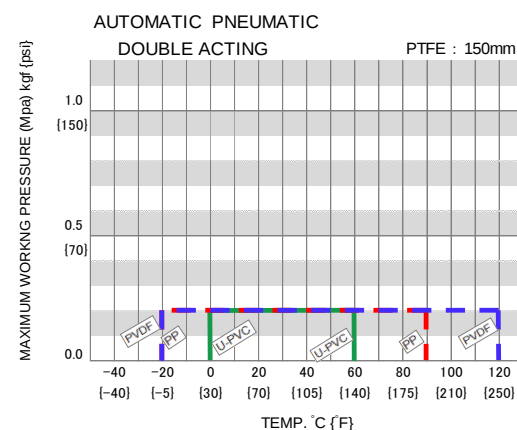
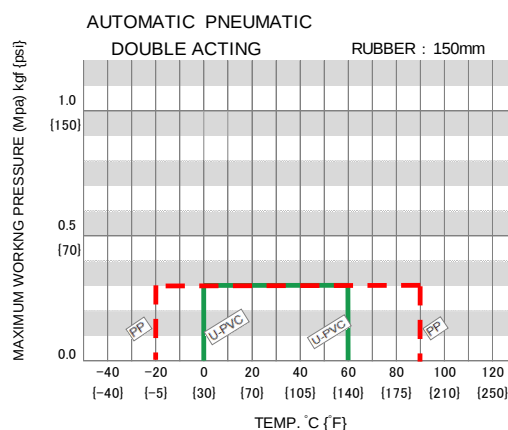
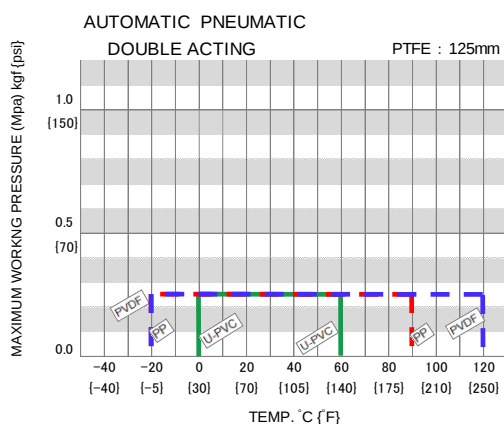
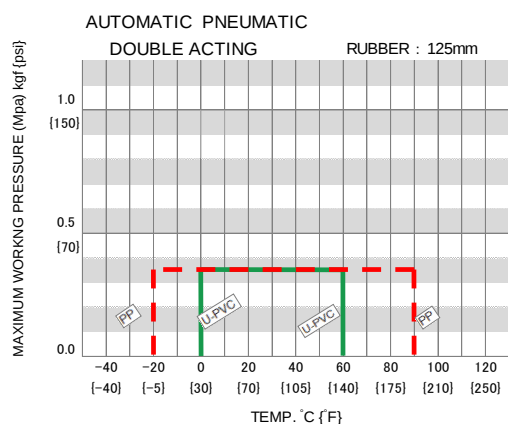
DOUBLE ACTING

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

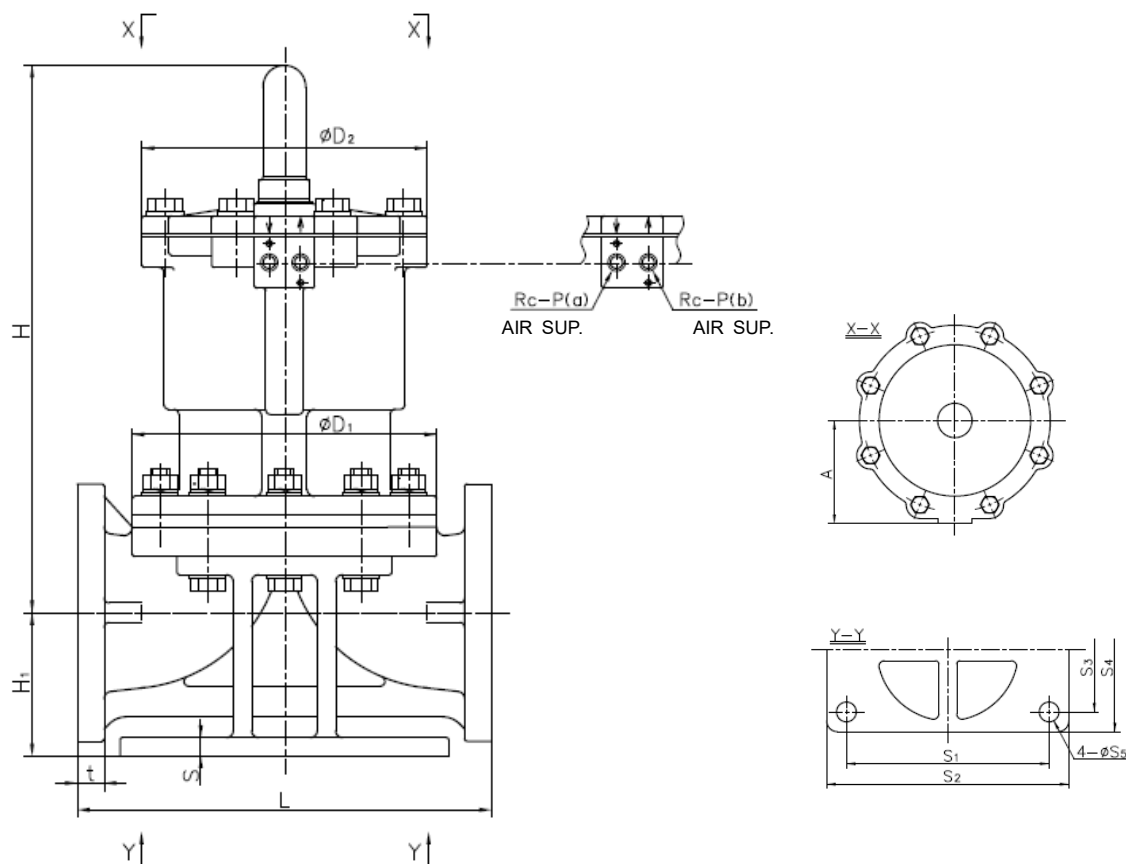


Note : Make sure that the temperature and pressure are within the working range during operation.
(If the tolerance range is exceeded during use, the valve may be damaged.)

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 ₁	D ₂	A	H	H ₁	S	S ₁	S ₂	S ₃	S ₄	S ₅	P	JIS10K			DIN PN10		
														L	t		L	t	
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

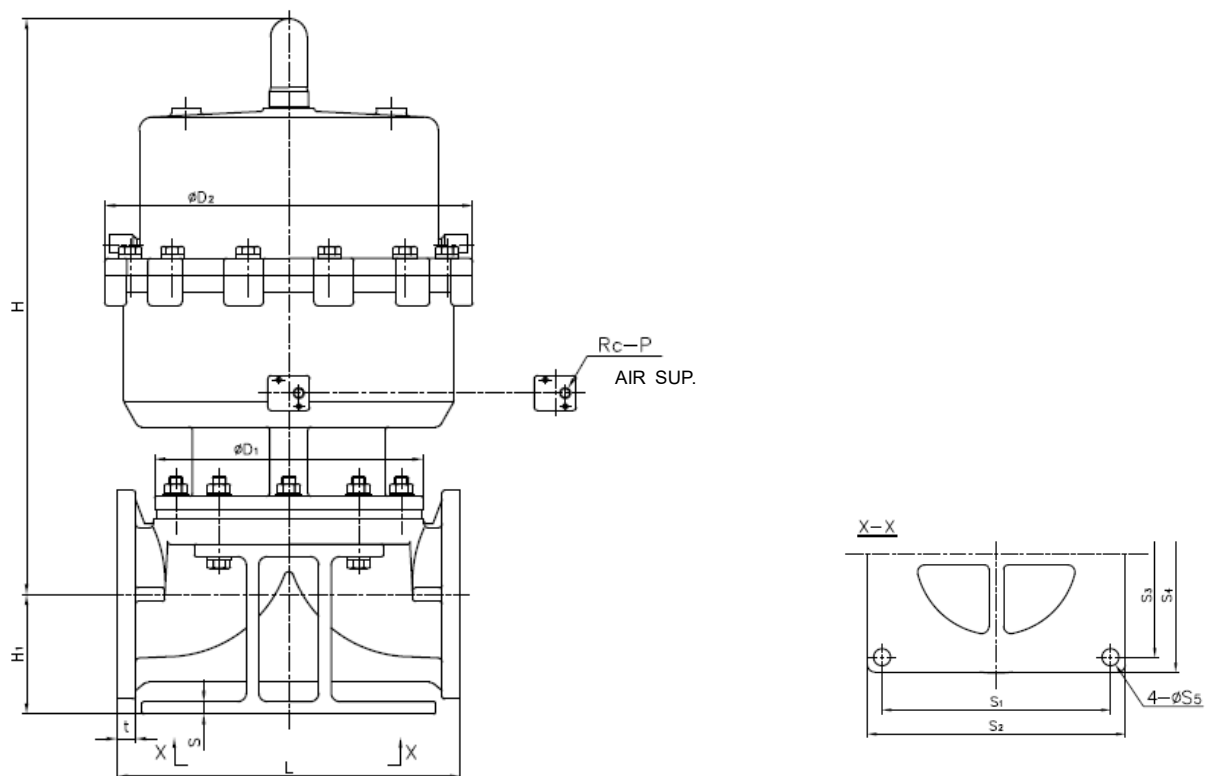
■ ANSI (Unit: inch)

inch	mm	D ₁	D ₂	A	H	H ₁	S	S ₁	S ₂	S ₃	S ₄	S ₅	P	ANSI Class 150		
														L	t	
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 ₁	D ₂	H	H ₁	S	S ₁	S ₂	S ₃	S ₄	S ₅	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

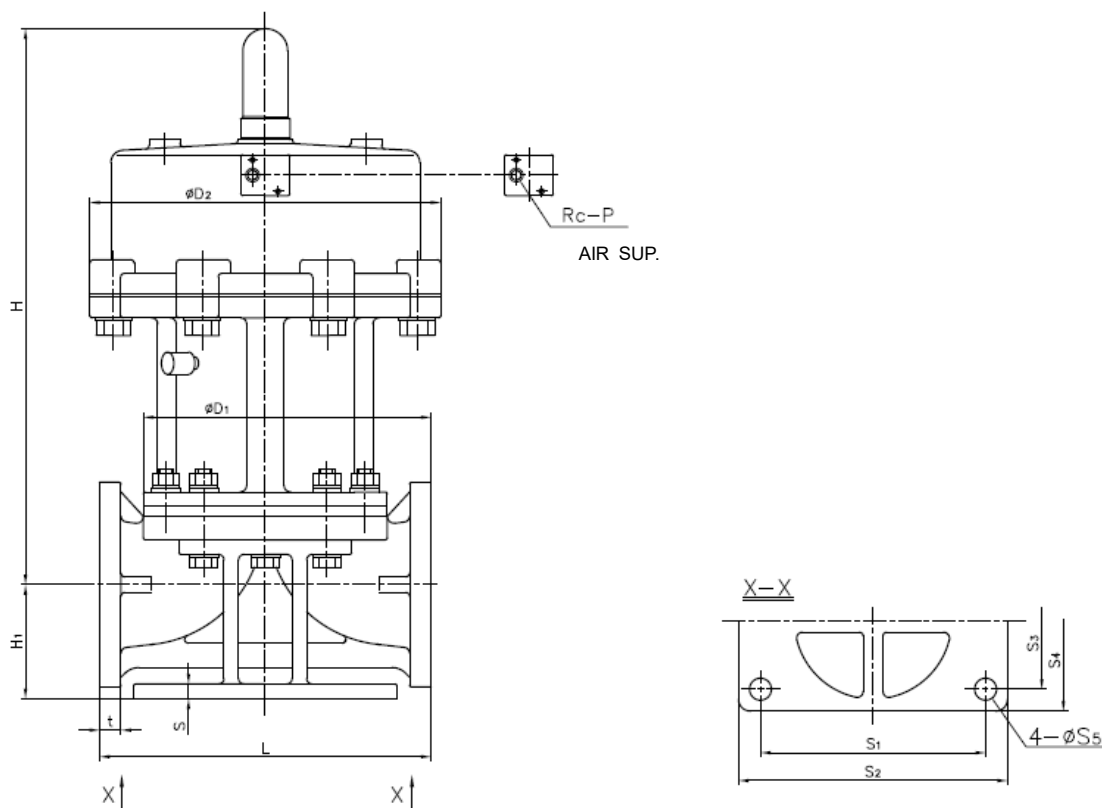
■ ANSI (Unit: inch)

inch	mm	D ₁	D ₂	H	H ₁	S	S ₁	S ₂	S ₃	S ₄	S ₅	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 ₁	D ₂	H	H ₁	S	S ₁	S ₂	S ₃	S ₄	S ₅	P	JIS10K			DIN PN10		
													L	t		L	t	
														U-PVC	PP PVDF		U-PVC	PP PVDF
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

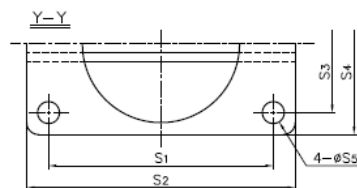
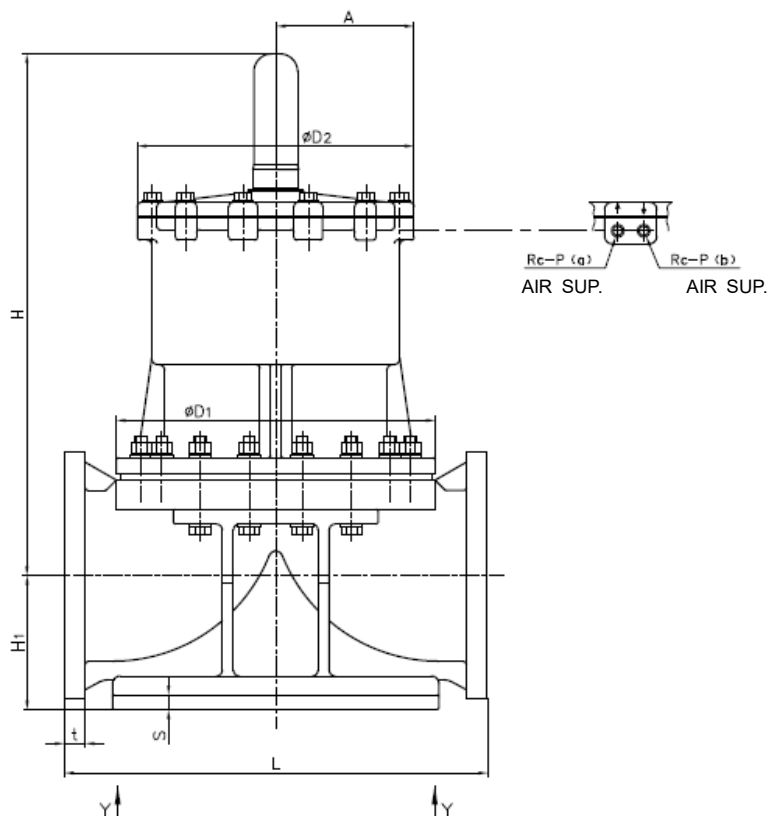
■ ANSI (Unit: inch)

inch	mm	D ₁	D ₂	H	H ₁	S	S ₁	S ₂	S ₃	S ₄	S ₅	P	ANSI Class 150		
													L	t	
														U-PVC	PP PVDF
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 ₁	D ₂	A	H	H ₁	S	S ₁	S ₂	S ₃	S ₄	S ₅	P	L	JIS10K		DIN PN10		
															t		L	t	
															U-PVC	PP PVDF		U-PVC	PP PVDF
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

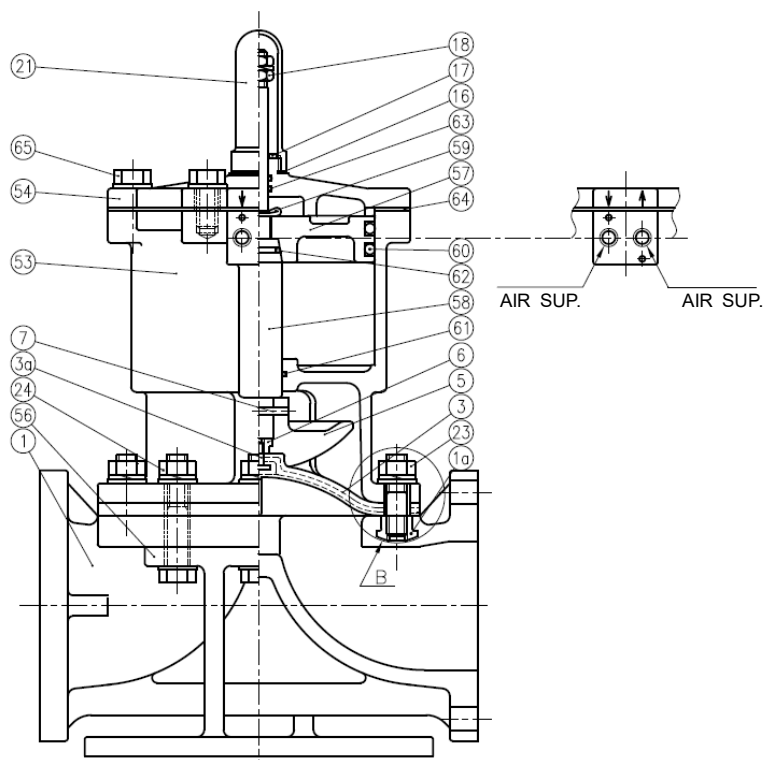
■ ANSI (Unit: inch)

ANSI (Unit: inch)														ANSI Class 150		
inch	mm	D ₁	D ₂	A	H	H ₁	S	S ₁	S ₂	S ₃	S ₄	S ₅	P	L	t	
															U-PVC	PP PVDF
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

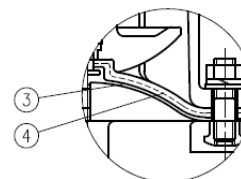
Parts list

[AUTOMATIC PNEUMATIC TYPE AV DOUBLE ACTING]

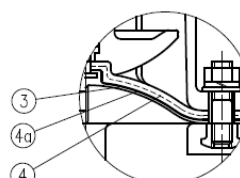
TYPE 15



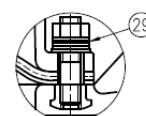
PTFE diaphragm



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 BODY	1	PVC, PP, PVDF	5 COMPRESSOR	1	PVDF	53 CYLINDER BODY	1	CAST ALUMINIUM ALLOY Epoxy Coat
1a INSERTED NUT	4	COPPER ALLOY Used for PVC&PP Body. STAINLESS STEEL Used for PVDF Body.	6 COMPRESSOR NUT	1	COPPER ALLOY	54 CYLINDER BONNET	1	CAST ALUMINIUM ALLOY Epoxy Coat
3 DIAPHRAGM	1	EPDM, PTFE, Others ()	7 COMPRESSOR PIN	1	STAINLESS STEEL	56 STAND (A)	1	CAST ALUMINIUM ALLOY
3a INSERTED METAL OF DIAPHRAGM (A)	1	STAINLESS STEEL	16 SHEET GASKET (A)	1	EPDM	57 PISTON	1	CAST ALUMINIUM ALLOY
4 CUSHION	1	EPDM, Others () Used for PTFE Diaphragm	17 SHEET RING	1	STAINLESS STEEL	58 STEM (A)	1	STAINLESS STEEL
4a CUSHION COVER	1	Nothing, PVDF Used for PTFE Diaphragm	18 STOPPER	1	STAINLESS STEEL	59 STEM PIN	1	SPRING STEEL
			21 GAUGE COVER	1	PC	60 O-RING (D)	2	NBR
			23 STUD BOLT · NUT	4 Sets	STAINLESS STEEL	61 O-RING (E)	1	NBR
			24 BOLT · NUT (A)	-	STAINLESS STEEL	62 O-RING (F)	1	NBR
			29 CONICAL SPRING WASHER	-	STAINLESS STEEL Used for PVDF Body.	63 O-RING (G)	2	NBR
			65 BOLT (A)	-	STAINLESS STEEL	64 SHEET GASKET (C)	1	NBR

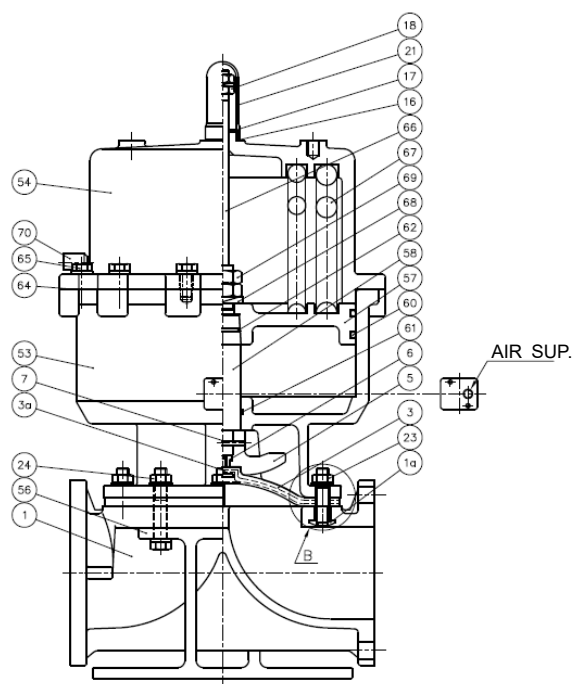
Diaphragms except EPDM and PTFE are available in FKM, VIFLON®C (FKM-C), VIFLON®F (FKM-F), CSM and NBR when required.

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

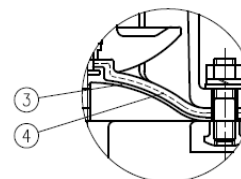
Parts list

[AUTOMATIC PNEUMATIC TYPE AV AIR TO OPEN]

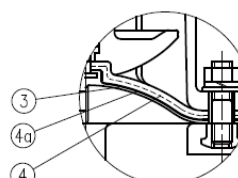
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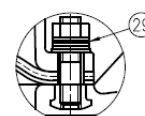
PTFE diaphragm



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 BODY	1	PVC, PP, PVDF	16 SHEET GASKET (A)	1	EPDM	57 PISTON	1	CAST ALUMINIUM ALLOY
1a INSERTED NUT	4	COPPER ALLOY	17 SHEET RING	1	STAINLESS STEEL	58 STEM (A)	1	STAINLESS STEEL
		Used for PVC&PP Body.	18 STOPPER	1	STAINLESS STEEL	60 O-RING (D)	2	NBR
3 DIAPHRAGM	1	EPDM, PTFE, Others ()	21 GAUGE COVER	1	PC	61 O-RING (E)	1	NBR
3a INSERTED METAL OF DIAPHRAGM (A)	1	STAINLESS STEEL	23 STUD BOLT · NUT	4 Sets	STAINLESS STEEL	62 O-RING (F)	1	NBR
4 CUSHION	1	EPDM, Others ()	24 BOLT · NUT (A)	-	STAINLESS STEEL	64 SHEET GASKET (C)	1	NBR
4a CUSHION COVER	1	Nothing, PVDF	29 CONICAL SPRING WASHER	-	STAINLESS STEEL	65 BOLT (A)	-	STAINLESS STEEL
5 COMPRESSOR	1	PVDF	Used for PVDF Body.			66 INDICATOR ROD	1	STAINLESS STEEL
6 COMPRESSOR NUT	1	COPPER ALLOY	53 CYLINDER BODY	1	CAST ALUMINIUM ALLOY	67 SPRING	1	STAINLESS STEEL
7 COMPRESSOR PIN	1	STAINLESS STEEL	Epoxy Coat			68 SPRING WASHER	1	STAINLESS STEEL
			54 CYLINDER BONNET	1	CAST ALUMINIUM ALLOY	69 LOCK NUT (B)	2	STAINLESS STEEL
			Epoxy Coat			70 CHECK VALVE FOR EXHAUST	1	COPPER ALLOY
			56 STAND (A)	1	CAST ALUMINIUM ALLOY			
			Epoxy Coat					

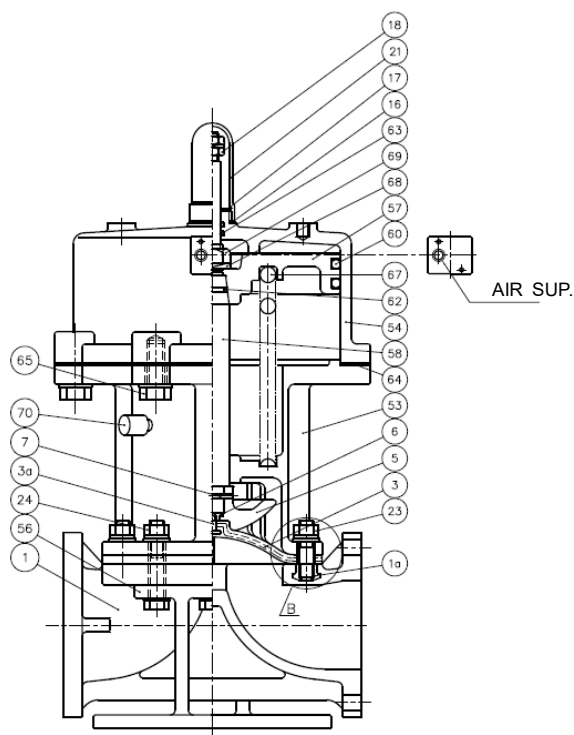
Diaphragms except EPDM and PTFE are available in FKM, VIFLON®C (FKM-C), VIFLON®F (FKM-F), CSM and NBR when required.

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

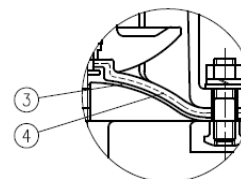
Parts list

[AUTOMATIC PNEUMATIC TYPE AV AIR TO CLOSE]

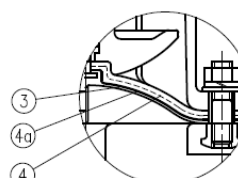
TYPE 15



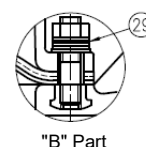
PTFE diaphragm



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 BODY	1	PVC, PP, PVDF	16 SHEET GASKET (A)	1	EPDM	57 PISTON	1	CAST ALUMINIUM ALLOY
1a INSERTED NUT	4	COPPER ALLOY	17 SHEET RING	1	STAINLESS STEEL	58 STEM (A)	1	STAINLESS STEEL
		Used for PVC&PP Body.	18 STOPPER	1	STAINLESS STEEL	60 O-RING (D)	2	NBR
3 DIAPHRAGM	1	EPDM, PTFE, Others ()	21 GAUGE COVER	1	PC	62 O-RING (F)	1	NBR
3a INSERTED METAL OF DIAPHRAGM (A)	1	STAINLESS STEEL	23 STUD BOLT · NUT	4 Sets	STAINLESS STEEL	63 O-RING (G)	1	NBR
4 CUSHION	1	EPDM, Others ()	24 BOLT · NUT (A)	-	STAINLESS STEEL	64 SHEET GASKET (C)	1	NBR
4a CUSHION COVER	1	Nothing, PVDF	29 CONICAL SPRING WASHER	-	STAINLESS STEEL	65 BOLT (A)	-	STAINLESS STEEL
5 COMPRESSOR	1	PVDF	53 CYLINDER BODY	1	CAST ALUMINIUM ALLOY Epoxy Coat	66 INDICATOR ROD	1	STAINLESS STEEL
6 COMPRESSOR NUT	1	COPPER ALLOY	54 CYLINDER BONNET	1	CAST ALUMINIUM ALLOY Epoxy Coat	67 SPRING	1	STAINLESS STEEL
7 COMPRESSOR PIN	1	STAINLESS STEEL	56 STAND (A)	1	CAST ALUMINIUM ALLOY Epoxy Coat	68 SPRING WASHER	1	STAINLESS STEEL
						69 LOCK NUT (B)	2	STAINLESS STEEL
						70 CHECK VALVE FOR EXHAUST	1	COPPER ALLOY

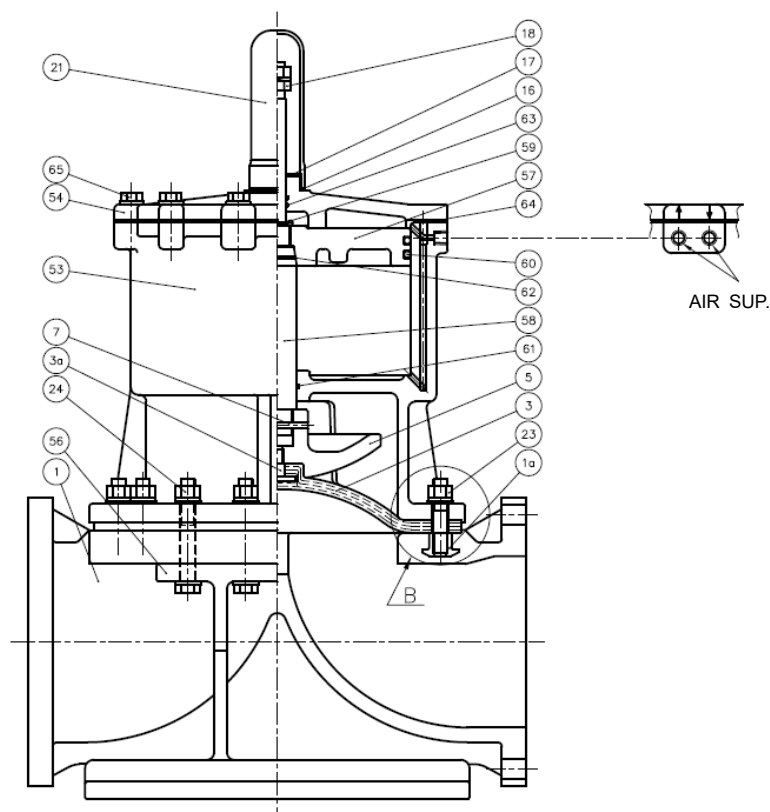
Diaphragms except EPDM and PTFE are available in FKM, VIFLON®C (FKM-C), VIFLON®F (FKM-F), CSM and NBR when required.

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

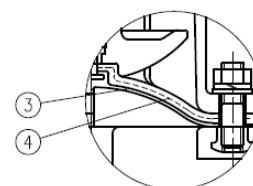
Parts list

[AUTOMATIC PNEUMATIC TYPE AV DOUBLE ACTING]

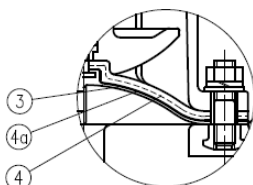
TYPE 72



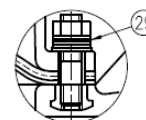
In case material of
diaphragm is PTFE.



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 BODY	1	PVC, PP, PVDF	5 COMPRESSOR	1	Chromized CAST IRON	53 CYLINDER BODY	1	CAST ALUMINIUM ALLOY
1a INSERTED NUT	4	COPPER ALLOY Used for PVC&PP Body. STAINLESS STEEL Used for PVDF Body.	7 COMPRESSOR PIN	1	STAINLESS STEEL	54 CYLINDER BONNET	1	CAST ALUMINIUM ALLOY Epoxy Coat
3 DIAPHRAGM	1	EPDM, PTFE, Others ()	16 SHEET GASKET (A)	1	EPDM	56 STAND (A)	1	CAST ALUMINIUM ALLOY
3a INSERTED METAL OF DIAPHRAGM (A)	1	STAINLESS STEEL	17 SHEET RING	1	STAINLESS STEEL	57 PISTON	1	CAST ALUMINIUM ALLOY
4 CUSHION	1	EPDM, Others () Used for PTFE Diaphragm	18 STOPPER	1	STAINLESS STEEL	58 STEM (A)	1	STAINLESS STEEL
4a CUSHION COVER	1	Nothing, PVDF Used for PTFE Diaphragm	21 GAUGE COVER	1	PC	59 STEM PIN	1	SPRING STEEL
			23 STUD BOLT · NUT	4Sets	STAINLESS STEEL	60 O-RING (D)	2	NBR
			24 BOLT · NUT (A)	-	STAINLESS STEEL	61 O-RING (E)	1	NBR
			29 CONICAL SPRING WASHER	-	STAINLESS STEEL Used for PVDF Body.	62 O-RING (F)	1	NBR
			64 SHEET GASKET (C)	1	NBR	63 O-RING (G)	2	NBR
			65 BOLT (A)	-	STAINLESS STEEL			

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	NL ^{*1} /OPEN & CLOSE (at 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	NL ^{*1} /OPEN & CLOSE (at 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	NL ^{*1} /OPEN & CLOSE (at 0.4MPa)
AIR SUPPLY BORE	Rc1/4		

*1) NL = Normal Liters

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)	—	—	—	—	—	—	—	—	—	—	—	○	○

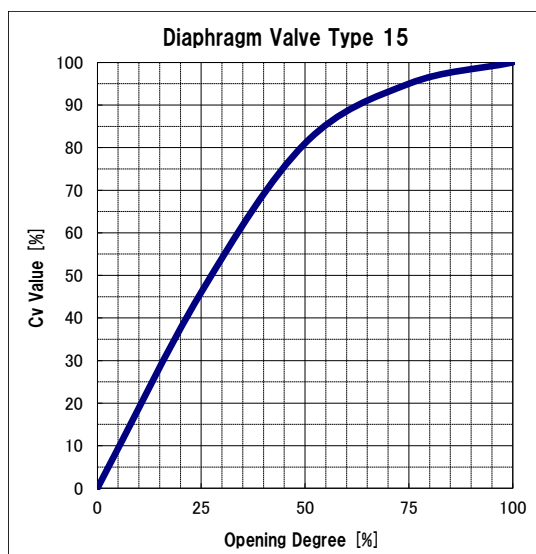
OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE NAMUR	KONAN	• 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)	• WATER PROOF, EXPLOSION PROOF • OPEN: 1pc, CLOSE: 1pc, OPEN/CLOSE: 2pcs
POSITIONER	YTC	• 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	
SPECIAL PAINTING (ACTUATOR ONLY)	ASAHI YUKIZAI	

Cv value for each opening degree

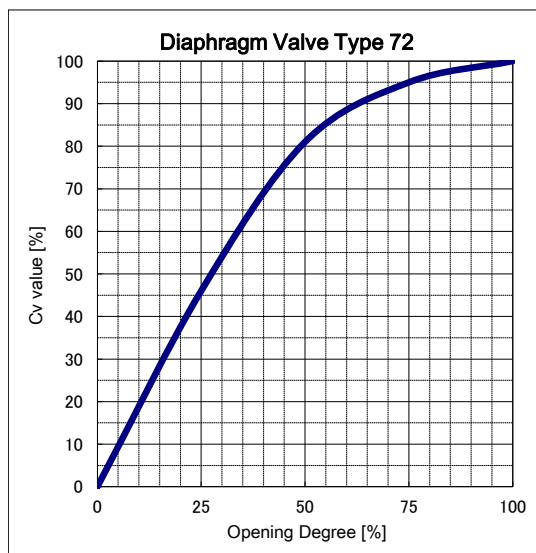
Diaphragm Valve Type 15
FULL-OPEN Cv VALUE

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
A	15	V	*	*	*	F	*	***
A AUTOMATIC VALVE	15 TYPE 15	PNEUMATIC V TYPE AV	PNEUMATIC F DOUBLE ACTING G AIR TO OPEN S AIR TO CLOSE	U U-PVC P PP F PVDF	E EPDM T PTFE	F FLANGED	1 JIS10K D DIN A ANSI	125 125mm 150 150mm

AUTOMATIC PNEUMATIC TYPE AV

TYPE 72

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

Installation, Operation and Maintenance Manual

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