

ROUND TYPE VACUUM VALVES INDEX



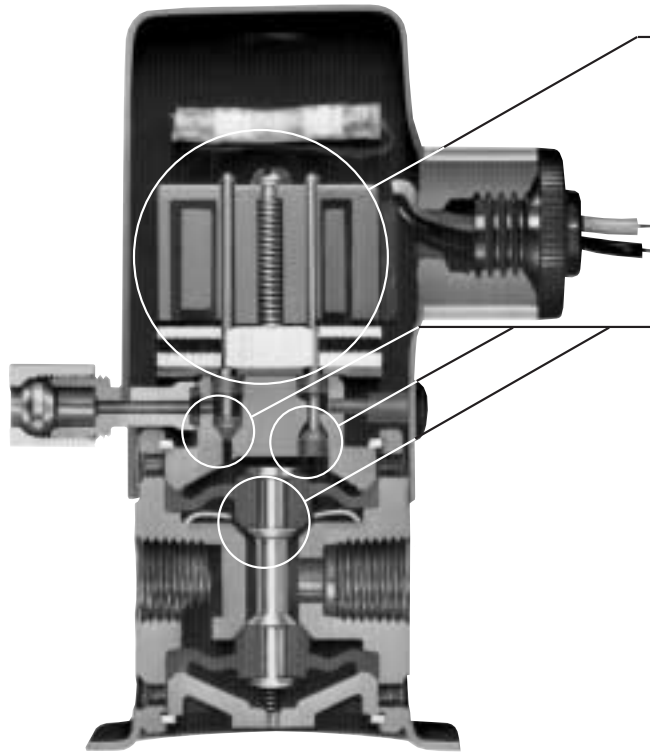
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Caution

Before use, be sure to read the "Safety Precautions" on p. 31.

Seven Features of the Koganei Vacuum Valve



Koganei Original Solenoid Construction

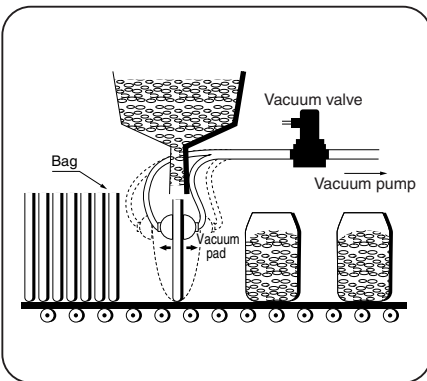
- ① **No burning damage to solenoid**
No need to stock solenoids as spare parts.
- ② **Starting and energizing current values are extremely small.**
Allows for more compact size peripheral electrical equipment.

Poppet and Diaphragm Construction

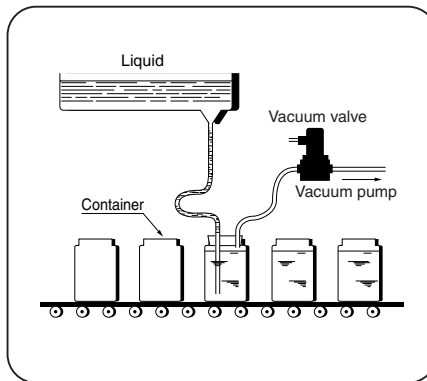
- ③ **No sliding parts**
No valve sticking, for reliable operations.
- ④ **Extremely few cases of vacuum leakage**
Good vacuum response enables excellent pick-up by a vacuum pad and compact vacuum pump to install.
- ⑤ **Dust-resistant**
Can be used by installing just an ordinary air filter, even in dusty locations.
- ⑥ **Can be used without lubrication.**
Optimum valve for equipment incapable of using oil.
- ⑦ **Compact and lightweight, with any mounting direction acceptable**
Can be easily mounted to control panel, and allows for more compact equipment.

Application Examples

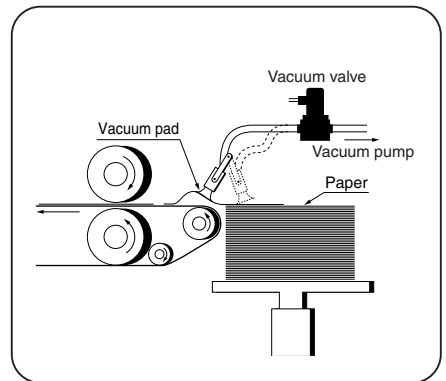
Opening bags



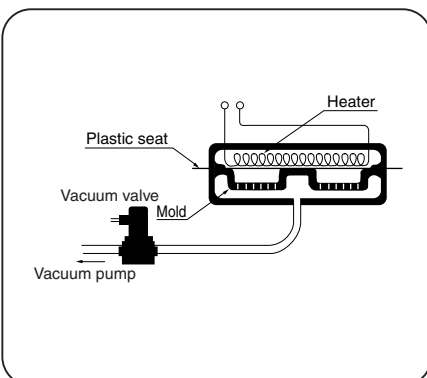
Quick charging of liquids



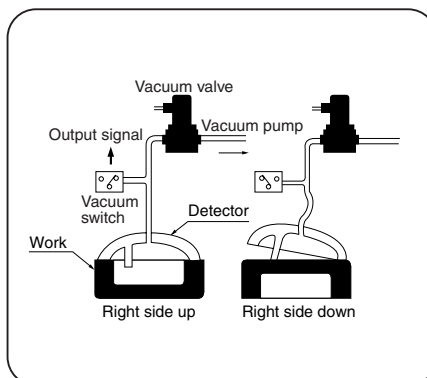
Paper feeding for printers



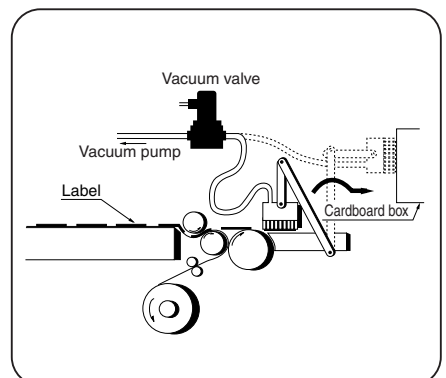
Vacuum forming machines

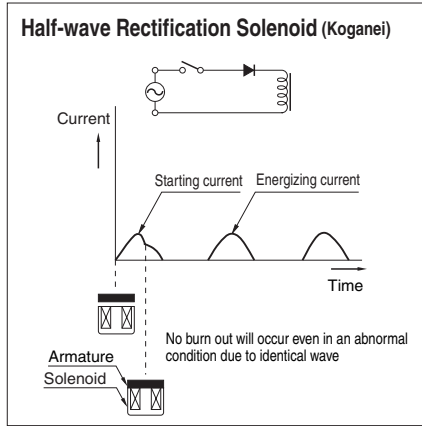
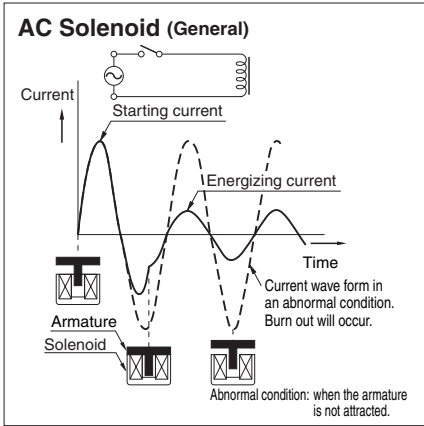


Discriminating product facing



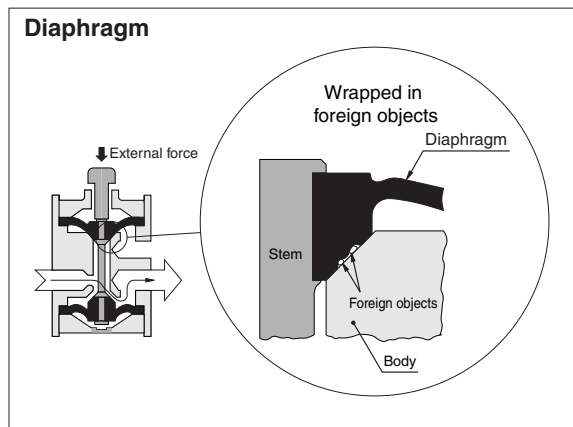
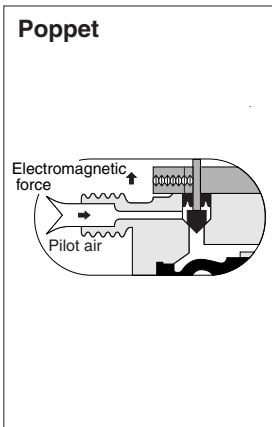
Labeling on cardboard boxes





Koganei's ingenious self-developed solenoid

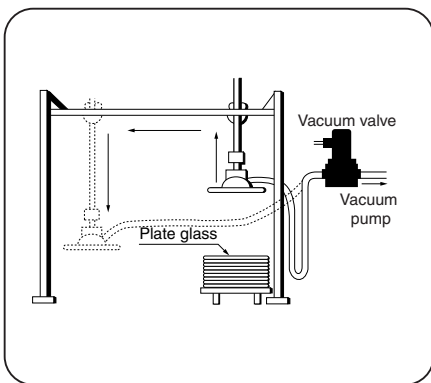
A silicon diode is installed on the end of the solenoid for half-wave rectification of the alternating current. The solenoid, therefore, possesses midway characteristics between the AC solenoid and DC solenoid. In addition, since the armature is designed to move as short a distance as possible, the starting current (inrush current) and energizing current are virtually identical and low current. As a result, the solenoid is not damaged even in abnormal conditions in which the armature fails to move, and the capacity of related electrical equipment can remain low.



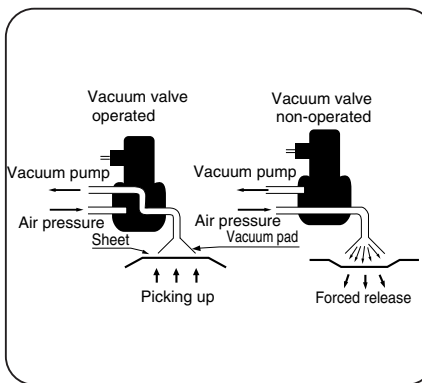
Poppet and diaphragm construction

The synthetic rubber poppet and diaphragm are built into the stem and move as one-piece. The poppet and diaphragm do not have any sliding surfaces, therefore no sticking occurs even without lubrication. In addition, the units have the elasticity of synthetic rubber to wrap in small foreign objects and keep vacuum leaks to an extremely low level.

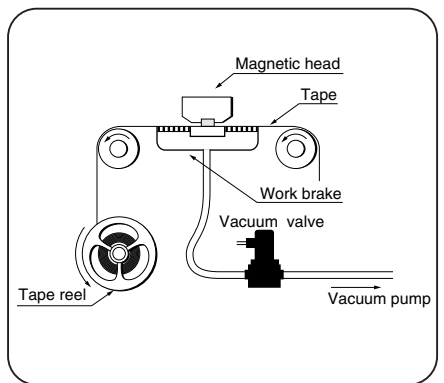
Vacuum lifting



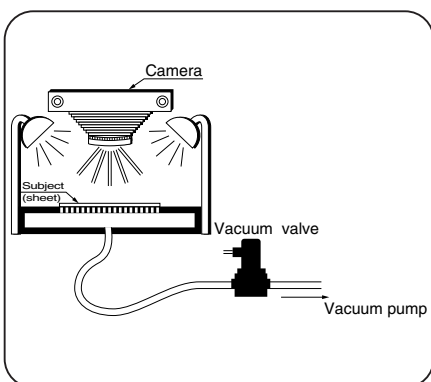
Reducing sheet transfer time (both vacuum and positive pressure)



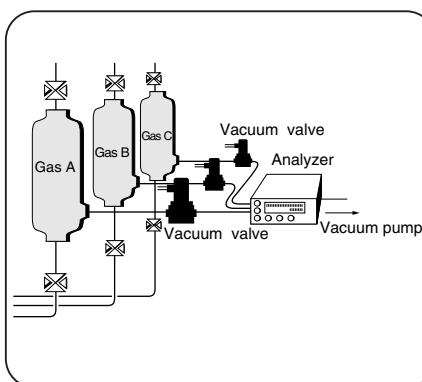
Tape speed controlling



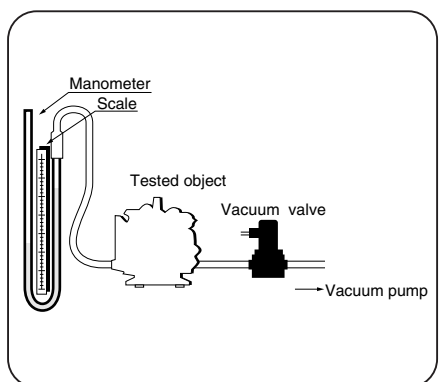
Holding subject (sheets)



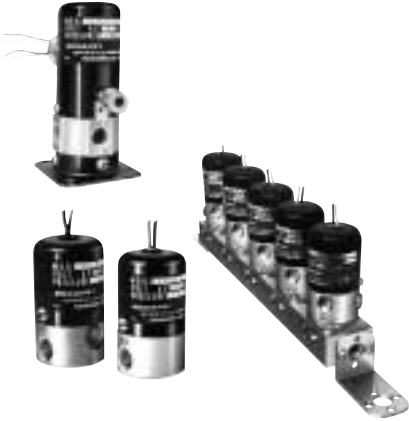
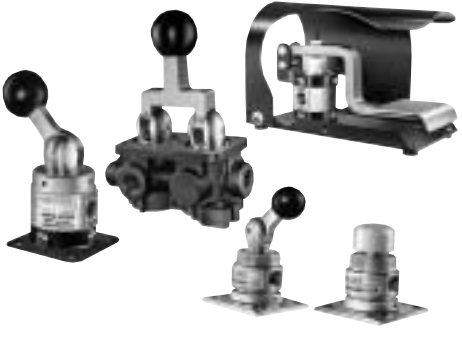


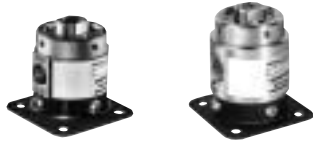
Inducing gas into analyzers



Airtightness inspecting



<Product Range>

Products	Shape	Operation type		Port size Rc	Port	Function	Effective area (Cv) mm ²	Model	Page			
Solenoid vacuum valve		Single solenoid	Direct acting	1/4	2, 3	●NC ●NO	2.5 (0.12)	V062E1	961			
							5.5 (0.27)	SV062E1 (Both vacuum and pressure type)				
							15 (0.76)	V126E1				
			Indirect acting { External air pilot }	3/8	3		55 (2.7)	VA250AE1				
							55 (2.7)	VA2503AE1				
							55 (2.7)	VA500AE1				
		Indirect acting { External vacuum pilot }	1/4	3	15 (0.76)	VV250AE1						
					55 (2.7)	VV2503AE1						
		Double solenoid (Continuously energizing type)	Indirect acting { External air pilot }	1/4	3	●NC/ NO	15 (0.76)	VA250AE2	964			
							55 (2.7)	VA2503AE2				
Manual vacuum valve and foot vacuum valve		Push button	Spring return	1/8	3	●NC	5.5 (0.27)	V125P	970			
							With holding mechanism	1/4		2, 3	15 (0.76)	V250P
											3/8	V2503P
		Lever	Holding type	1/8	3	●NC/ NO	5.5 (0.27)	V125HO				
							1/4	V125V				
							3/8	V250V				
							1/4	V2503V				
							3/8	V250-4H				
		Foot	Pedal type	1/4	5	—	15 (0.76)	V2503-4H				
							2, 3	●NC	V250F			
Mechanical operated vacuum valve		Ball-cam		1/8	3	●NC	5.5 (0.27)	V125B	973			
							1/4	3		15 (0.76)	V250B	
										3/8	V2503B	
		Roller-cam	Nylon roller	1/4	2, 3	●NC	15 (0.76)	V250C				
							3/8	V2503C				
			Steel roller One way steel roller	1/8	3		5.5 (0.27)	V125MC				
Piloted vacuum valve		Air pilot (single)		1/8	3	●NC	5.5 (0.27)	VA125A	976			
							1/4	3		15 (0.76)	VA250A	
										3/8	VA2503A	
		Vacuum pilot (single)	1/2	3	55 (2.7)		VA500A					
					1/4		15 (0.76)	VV250A				
					3/8		55 (2.7)	VV2503A				
		Double air pilot		1/4	2, 3	●NC/ NO	15 (0.76)	250A2	979			
							3/8	2503A2				
							1/2	55 (2.7)		500A2		
							3/4	140 (7)		750A2		
			1			280 (14)	1000A2					

Safety Precautions (Solenoid Vacuum Valve Series)



Warnings

1. When mounting a valve inside a control panel or when an operation requires long energizing periods, provide heat radiation measures to ensure that the ambient temperature always remains within the temperature range specifications. For long term continuous energizing, consult us.
2. Always check the Catalog, etc., when carrying out wiring and piping of products to ensure that the connections are correctly done. Wrong wiring or piping could result in abnormal operation to the actuator, etc.
3. The solenoid valve's silicon diode could be damaged by surge voltage when a large induction load is used on the same power supply. Either change to a separate power supply, or mount a surge absorber to protect the unit. Solenoids with surge suppression are also available. Consult us.



Caution

For locations subject to water or to large amounts of dust, use a cover, etc., to protect the valves. Also, install a muffler, etc., to the R port to prevent dust from entering. Intrusion of water or dust could result in short-term functional shutdowns, sudden drops in performance, or a reduced operating life.



Attention

1. Use clean air that does not contain degraded compressor oil, etc., and install a filter, etc., close to solenoid valves to remove dust or collected liquid.
2. Ensure that the piping port on the supply side is at the same area or larger than the solenoid valve's effective area.
3. When using an indirect acting valve, use a stop valve between it and the pressure source. When the stop valve is opened before the pressure reaches the minimum operating pressure, the indirect acting valve could fall into a neutral position. (All solenoid valves in the 250 series and up are indirect acting valves.)
4. When connecting 2 or more AC type solenoid valves to the same power supply, connect leads with the same lead wire color.
5. Since a diode is connected to the AC type solenoid valve, the solenoid may sometimes not turn on with the solid state-type relay (SSR) with zero-cross function. For this reason, pay attention before use to the ratings and precautions for use of the solid state-type relay.

Voltage Types and Current

Rated voltage V	Current A ^{Note}		
	50Hz	60Hz	
AC	230 [※]	0.063	0.055
	220 [※]	0.058	0.072
	200	0.070	0.065
	115 [※]	0.13	0.11
	110 [※]	0.12	0.16
	100	0.14	0.13
	48 [※]	0.41	0.37
	24 [※]	0.93	0.83

Note: The starting current and energizing current values are virtually identical, and fall within these values.

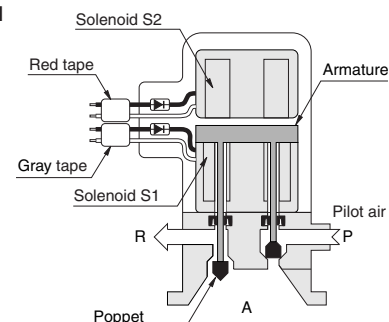
Rated voltage V	Current A	
DC	200 [※]	0.04
	110 [※]	0.08
	100 [※]	0.09
	48 [※]	0.19
	24	0.40
	12 [※]	0.75
	6 [※]	1.50

For ※ items, consult us for the delivery.

Wiring Instructions of Double Solenoid (E2) Type

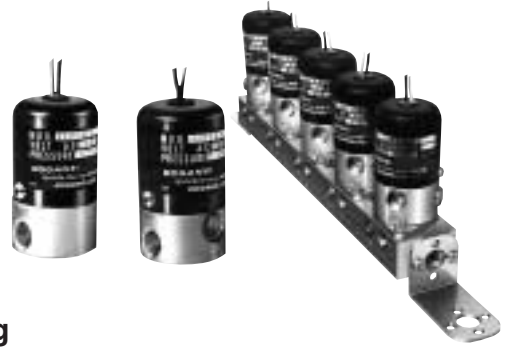
This valve has 2 solenoids built into the top and mid section, and the lead wires are color-coded with vinyl tape. Energizing the red tape side (the upper side, solenoid S2) opens the valve, and energizing the gray tape side (the lower side, solenoid S1) closes the valve. This solenoid is a continuous energizing holding type.

Solenoid S1 energized



Solenoid Vacuum Valves Direct Acting Type

2-,3-port, Single Solenoid



Specifications

Item	Basic model	V062E1	SV062E1	V126E1
Media		Vacuum	Vacuum, air	Vacuum
Operation type		Direct acting		
Number of ports		2, 3 ports	3 ports (Both vacuum and pressure type)	2 ports
Valve function		Normally closed (NC, standard), Normally open (NO, optional)		
Effective area [Cv]	mm ²	2.5 [0.12]		5.5 [0.27]
Port size	Rc	1/4		
Lubrication		Not required		
Operating pressure range	kPa (mmHg) [in.Hg]	0~100 {0~750} [0~29.53]		
Operating temperature range	°C [°F]	5~60 [41~140]		
Voltage type	V	Standard AC100 (50/60Hz), AC200 (50/60Hz) For other voltage, see p.960.		
Voltage fluctuations	%	±10		
Current ^{Note}	A	100V	50Hz→0.14, 60Hz→0.13	
	200V	50Hz→0.070, 60Hz→0.067		
Insulation type		B type		
Lead wire length	mm [in.]	Approximately 300 [11.8]		
Mounting direction		Any		
Mass	kg [lb.]	0.3 [0.66]		

Note: The starting current and energizing current values are virtually identical, and fall within these values.

Handling

1. When using in dusty ambient atmospheres, install a filter between the vacuum pad and the solenoid valve, and at the R port.
2. See p.983 for how to use SV062E1.

Solenoid Vacuum Valve Order Codes

	Basic model	Option			Solenoid option	Voltage	
		Valve function	Mounting base	Conduit type			
		2-port	Normally open (NO)				
Direct piping	2-, 3-port	V062E1	-2			AC100V AC200V	
	3-port	SV062E1		-11	-21		-37
	2-port	V126E1					

- Blank: 3-port
(SV062E1: 3-port only
V126E1: Blank and 2-port only)

Manifold Order Codes

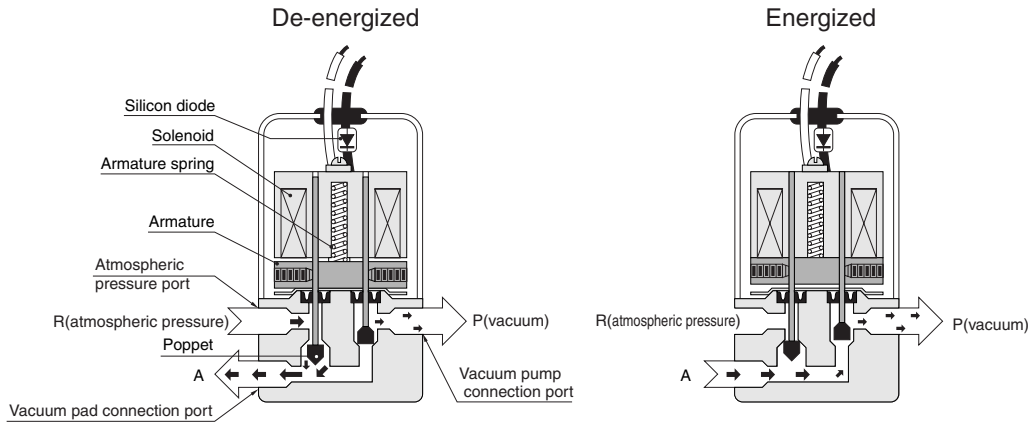
Manifold model	Station	Valve model	Option			Solenoid option	Voltage
			Basic model	2-port	Conduit type		
MM	1 ⋮ 10	A	stn. <input type="checkbox"/> ⋮ stn. <input type="checkbox"/>	MV062E1	-2	-37	AC100V AC200V

- Blank: Side port only
A: With bottom piping port

- Enter -BP when closing a station with a block-off plate without mounting a valve.
- Valve mounting location from the left-hand side

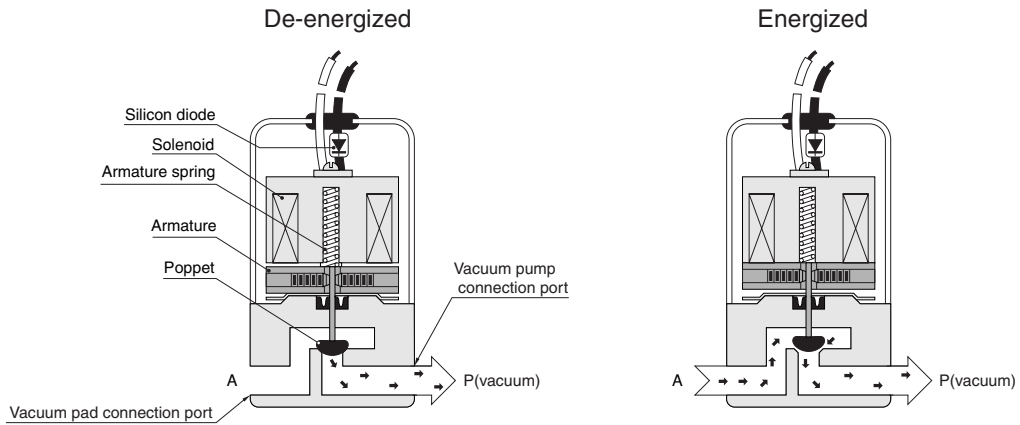
Operating Principles and Symbols

V062E1



2-port NC	2-port NO	3-port NC	3-port NC	3-port NO
V062E1-2	V062E1-2-11	V062E1	SV062E1	V062E1-11

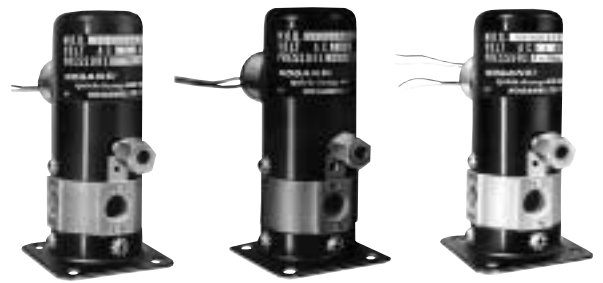
V126E1



2-port NC	2-port NO
V126E1	V126E1-11

Solenoid Vacuum Valves 250 Series

3-port, External Pilot Type



Specifications

Item	Basic model	VA250AE1	VA2503AE1	VV250AE1	VV2503AE1	VA250AE2	VA2503AE2
Media		Vacuum, air					
Operation type		Indirect acting					
Number of ports		3 ports (Cannot be used as a 2-port valve in terms of construction)					
Valve function		Single solenoid Normally closed (NC, standard), Normally open (NO, optional)				Double solenoid Normally closed (NC), Normally open (NO)	
Effective area [Cv] mm ²		15 [0.76]					
Port size Rc		1/4	3/8	1/4	3/8	1/4	3/8
Lubrication		Not required					
Operating pressure range kPa(mmHg) [in.Hg]		0~-100 {0~-750} [0~-29.53]		-51~-100 {-380~-750} [-14.96~-29.53]		0~-100 {0~-750} [0~-29.53]	
External pilot pressure		Recommended pilot air pressure 0.2~0.3MPa [29~44psi.] MAX.0.7MPa [102psi.]		Pilot vacuum -51~-100kPa [-14.96~-29.53in.Hg]		Recommended pilot air pressure 0.2~0.3MPa [29~44psi.] MAX.0.7MPa [102psi.]	
External pilot port size		φ 6 [0.236in.] flareless fitting (For nylon tube)					
Operating temperature range °C [°F]		5~60 [41~140]					
Voltage type V		Standard AC100 (50/60Hz), AC200 (50/60Hz) For other voltages, see p.960.					
Voltage fluctuations %		±10					
Current ^{Note} A	AC100V	50Hz→0.14, 60Hz→0.13					
	AC200V	50Hz→0.070, 60Hz→0.065					
Energizing type		Continuous energizing					
Insulation type		B type					
Wiring connection type		Conduit					
Lead wire length mm [in.]		Approximately 300 [11.8]					
Mounting direction		Any					
Mass kg [lb.]		0.5 [1.1]				0.6 [1.3]	

Note: The starting current and energizing current values are virtually identical, and fall within these values.

Handling Instructions and Precautions

1. When using in dusty atmospheres, install a filter between the vacuum pad and the solenoid valve, and at the R port.
2. For the wiring instructions of VA250AE2, see p.960.
3. Maintain the pilot vacuum at -51kPa {-380mmHg} [-14.96in.Hg] or more for VV250AE1.

Solenoid Vacuum Valve Order Codes

		Basic model	Option	Voltage
Single solenoid	Air pilot	VA250AE1	-11 Valve function Normally open (NO) With barbed fitting for pilot	AC100V AC200V
	Air pilot	VA2503AE1		
	Vacuum pilot	VV250AE1		
	Vacuum pilot	VV2503AE1		
Double solenoid	Air pilot	VA250AE2	-62	AC100V AC200V
	Air pilot	VA2503AE2		

● For inner diameter φ 6 [0.236in.] rubber tube

● Single solenoid only

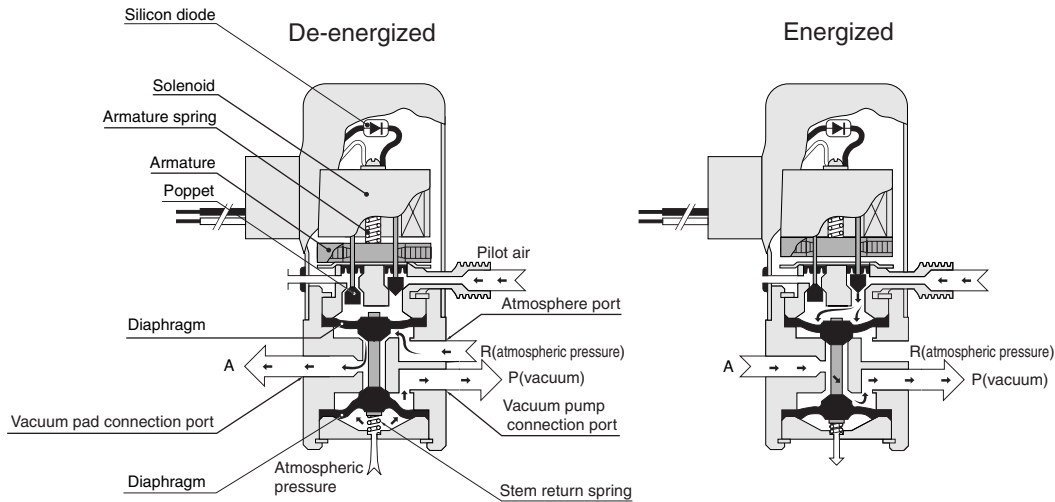
● Blank: Normally closed (NC)

E2: Both normally closed (NC) and normally open (NO)

ROUND TYPE VACUUM VALVES

Operating Principles and Symbols

External air pilot type (VA250AE1)

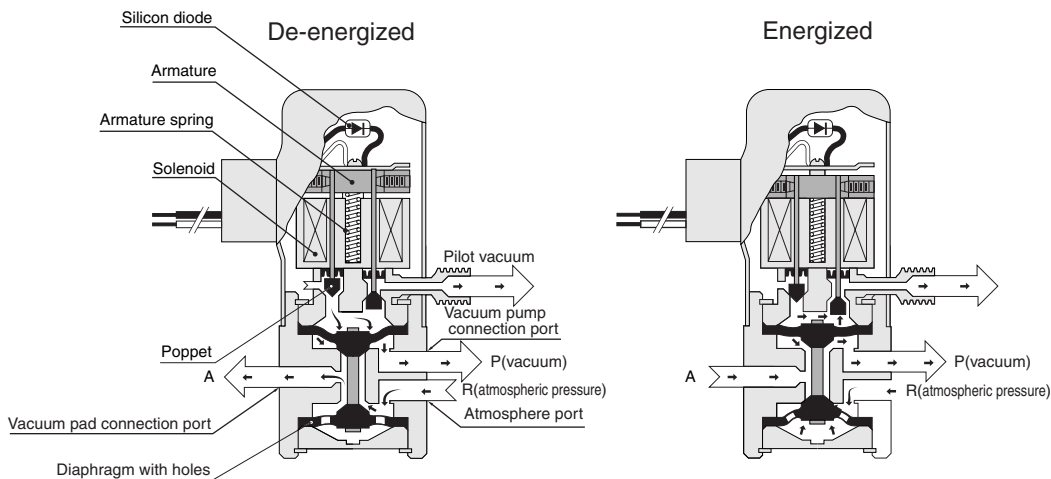


Explanation of operation

- When de-energized, the armature is separated from the solenoid by the armature spring. The right-side poppet directly connected to the armature closes, while the left-side poppet opens, making the pressure on the upper surface of the upper diaphragm atmospheric pressure. Therefore, the lower diaphragm is pulled up by the stem return spring and the vacuum (main) applied to the upper surface of the lower diaphragm, closing the P port, and connecting the A port and R port.
- When energized, the armature is attracted to the solenoid, opening the right-side poppet and closing the left-side poppet, bringing pilot air to the upper surface of the upper diaphragm. The diaphragm is therefore pushed downward, closing the R port, and connecting the P port and A port.

NC	NO	NC/NO
VA250AE1 VA2503AE1	VA250AE1-11 VA2503AE1-11	VA250AE2 VA2503AE2

External vacuum pilot type (VV250AE1)



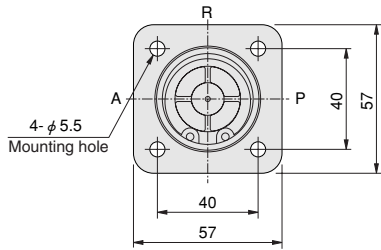
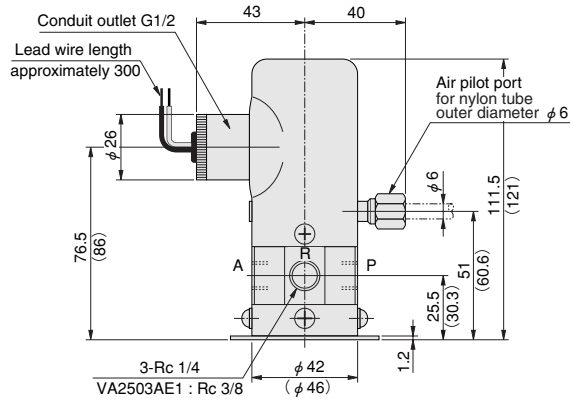
Explanation of operation

- When de-energized, the armature is separated from the solenoid by the armature spring. The right-side poppet directly connected to the armature closes, and the left-side poppet opens, and the upper diaphragm is pulled downward by the vacuum (main) applied to the bottom surface of the upper diaphragm, closing the P port, and connecting the A port and R port.
- When energized, the armature is attracted to the solenoid, opening the right-side poppet and closing the left-side poppet, applying pilot vacuum to the upper surface of the upper diaphragm. The diaphragm is therefore pulled up, closing the R port, and connecting the P port and A port.

NC	NO
VV250AE1 VV2503AE1	VV250AE1-11 VV2503AE1-11

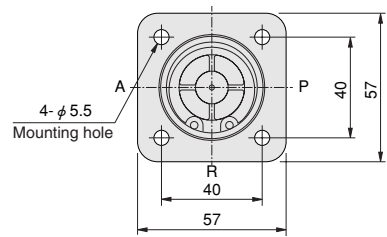
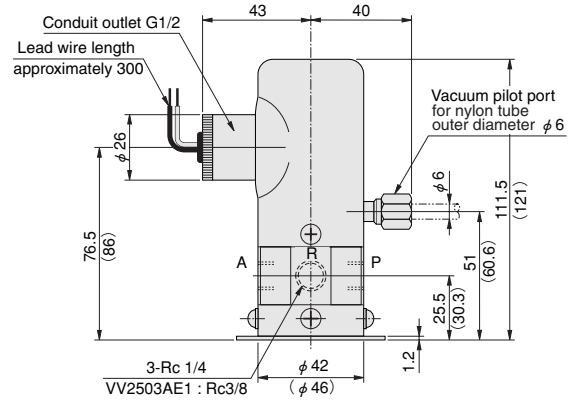
Dimensions (mm)

**VA250AE1
VA2503AE1**



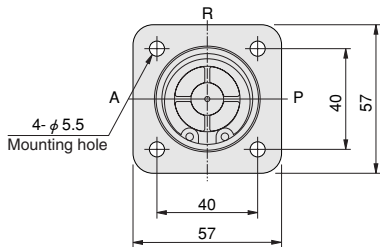
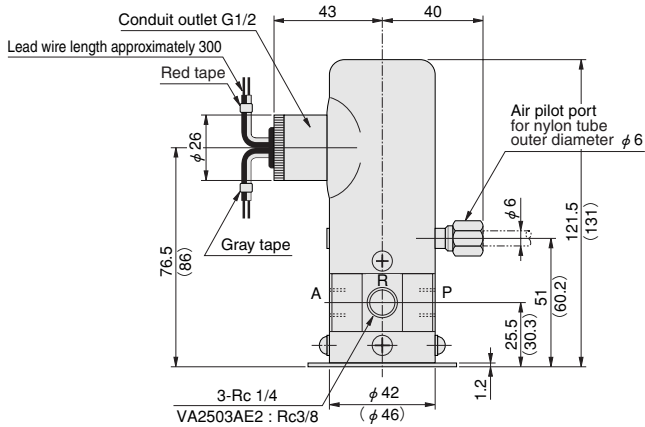
Dimensions in parentheses () are for the VA2503AE1.

**VV250AE1
VV2503AE1**



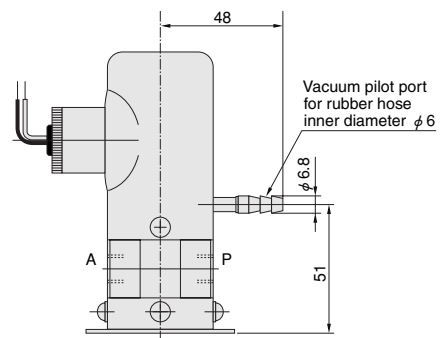
Dimensions in parentheses () are for the VV2503AE1.

**VA250AE2
VA2503AE2**



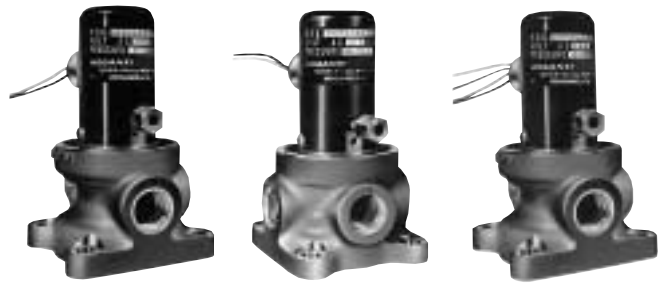
Dimensions in parentheses () are for the VA2503AE2.

**Option
-62**



Solenoid Vacuum Valves 500 Series

3-port, External Pilot Type



Specifications

Item	Basic model	VA500AE1	VV500AE1	VA500AE2
Media		Vacuum, air		
Operation type		Indirect acting		
Number of ports		3 ports		
Valve function		Single solenoid Normally closed (NC, standard), Normally open (NO, optional)		Double solenoid Normally closed (NC), Normally open (NO)
Effective area [Cv] mm ²		55 [2.7]		
Port size Rc		1/2		
Lubrication		Not required		
Operating pressure range kPa[mmHg] [in.Hg]		0~-100 {0~-750} [0~-29.53]	-51~-100 {-380~-750} [-14.96~-29.53]	0~-100 {0~-750} [0~-29.53]
External pilot pressure		Recommended pilot air pressure 0.2~0.3MPa [29~44psi.] MAX.0.5MPa [73psi.]	Pilot vacuum -51~-100kPa [-14.96~-29.53in.Hg]	Recommended pilot air pressure 0.2~0.3MPa [29~44psi.] MAX.0.7MPa [102psi.]
External pilot port size		φ 6 [0.236in.] flareless fitting (For nylon tube)		
Operating temperature range °C [°F]		5~60 [41~140]		
Voltage type V		Standard AC100 (50/60Hz), AC200 (50/60Hz), For other voltages, see p.960.		
Voltage fluctuations %		±10		
Current ^{Note} A	AC100V	50Hz → 0.14, 60Hz → 0.13		
	AC200V	50Hz → 0.070, 60Hz → 0.065		
Energizing type		Continuous energizing		
Insulation type		B type		
Wiring connection type		Conduit		
Lead wire length mm [in.]		Approximately 300 [11.8]		
Mounting direction		Any		
Mass kg [lb.]		0.85 [1.87]		0.95 [2.09]

Note: The starting current and energizing current values are virtually identical, and fall within these values.

Solenoid Vacuum Valve Order Codes

		Basic model	Option	Voltage
Single solenoid	Air pilot	VA500AE1	-11 Valve function Normally open (NO) With barbed fitting for pilot	AC100V AC200V
	Vacuum pilot	VV500AE1		
Double solenoid	Air pilot	VA500AE2		

Handling Instructions and Precautions

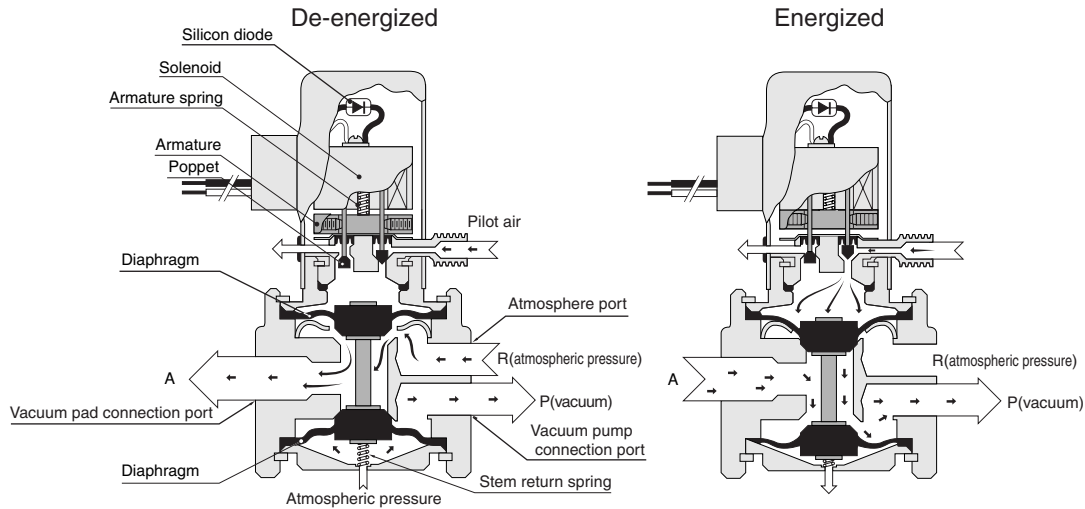
- When using in dusty atmospheres, install a filter between the vacuum pad and the solenoid valve, and at the R port.
- For the wiring instructions of VA500AE2, see p.960.
- Maintain pilot vacuum at -51kPa {-380mmHg} [-14.96in.Hg] or more for the VV500AE1.

- Single solenoid only
- Blank: Normally closed (NC)
- E2: Both normally closed (NC) and normally open (NO)

● For inner diameter φ 6 [0.236in.] rubber tube

Operating Principles and Symbols

External air pilot type (VA500AE1)

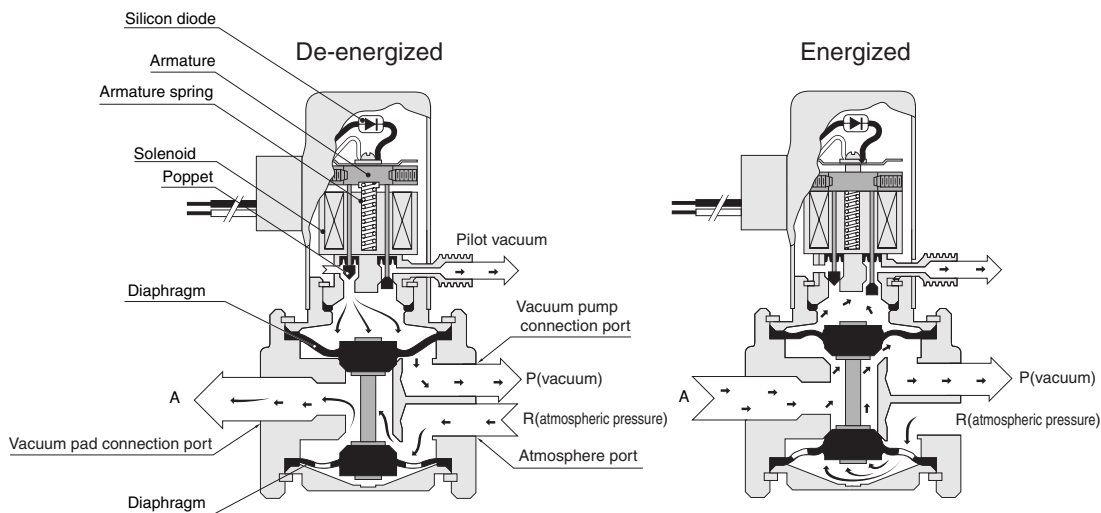


Explanation of operation

- When de-energized, the armature is separated from the solenoid by the armature spring. The right-side poppet directly connected to the armature closes, while the left-side poppet opens, making the pressure on the upper surface of the upper diaphragm atmospheric pressure. Therefore, the lower diaphragm is pulled up by the stem return spring and the vacuum (main) applied to the upper surface of the lower diaphragm, closing the P port, and connecting the A port and R port.
- When energized, the armature is attracted to the solenoid, opening the right-side poppet and closing the left-side poppet, bringing pilot air to the upper surface of the upper diaphragm. The diaphragm is therefore pushed downward, closing the R port, and connecting the P port and A port.

NC	NO	NC/NO
VA500AE	VA500AE-11	VA500AE2

External vacuum pilot type (VV500AE1)



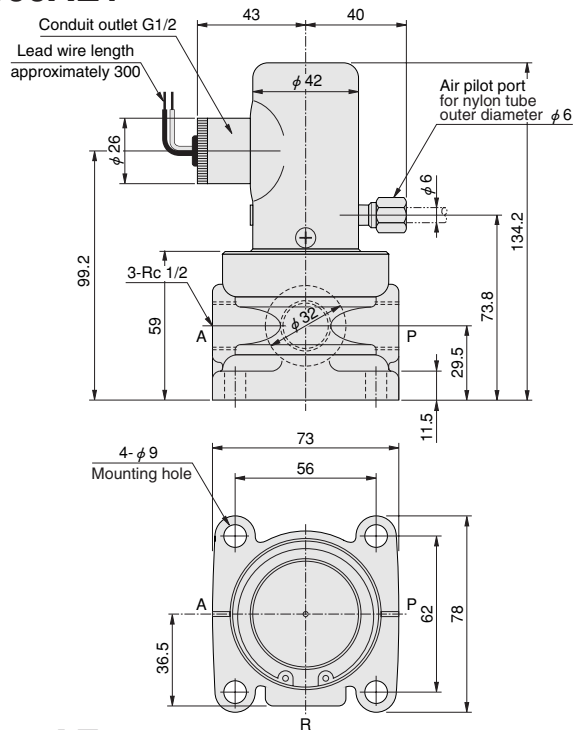
Explanation of operation

- When de-energized, the armature is separated from the solenoid by the armature spring. The right-side poppet directly connected to the armature closes, and the left-side poppet opens, and the upper diaphragm is pulled downward by the vacuum (main) applied to the bottom surface of the upper diaphragm, closing the P port, and connecting the A port and R port.
- When energized, the armature is attracted to the solenoid, opening the right-side poppet and closing the left-side poppet, applying pilot vacuum to the upper surface of the upper diaphragm. The diaphragm is therefore pulled up, closing the R port, and connecting the P port and A port.

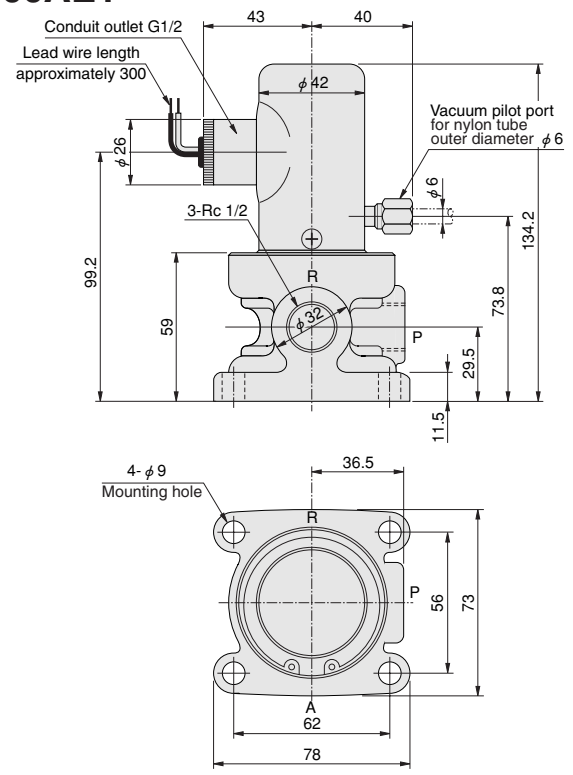
NC	NO
VV500AE1	VV500AE1-11

Dimensions (mm)

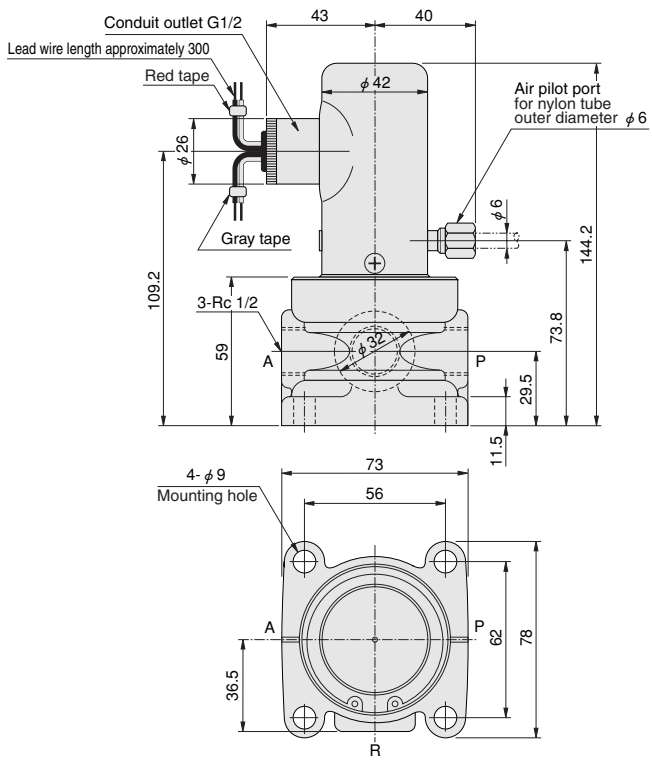
VA500AE1



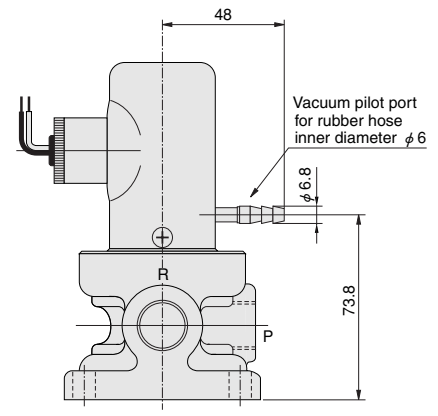
VV500AE1



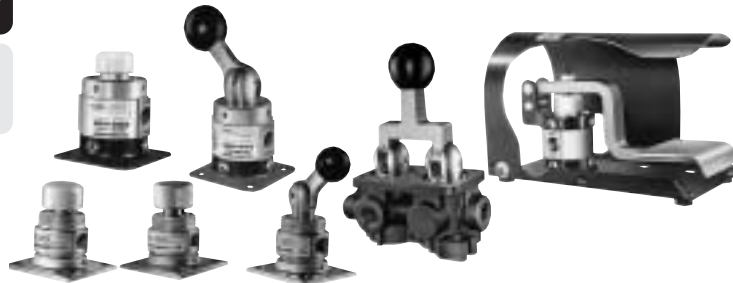
VA500AE2



**Option
-62**



Manual Vacuum Valves and Foot Vacuum Valve



Specifications

Item	Basic model	V125P	V250P	V2503P	V125HO	V125V	V250V	V2503V	V250-4H	V2503-4H	V250F
Media		Vacuum									
Operation type		Push button				Lever					Foot
		Spring return			Spring return (with holding mechanism)	Holding type			Holding type 3-position	Spring return	
Number of ports		3 ports	2, 3 ports		3 ports	3 ports			5-port exhaust center type	2, 3 ports	
Valve function		Normally closed (NC)				Normally closed (NC), Normally open (NO)			—	Normally closed (NC)	
Effective area [Cv] mm ²		5.5 [0.27]	15 [0.76]		5.5 [0.27]			15 [0.76]			
Port size Rc		1/8	1/4	3/8	1/8		1/4	3/8	1/4	3/8	1/4
Lubrication		Not required									
Operating pressure range kPa(mmHg) [in.Hg]		0~ -100 {0~ -750} [0~ -29.53]									
Operating temperature range °C [°F]		5~60 [41~140]									
Mounting direction		Any									
Mass kg [lb.]		0.1 [0.22]	0.2 [0.44]	0.25 [0.55]	0.1 [0.22]	0.1 [0.22]	0.25 [0.55]	0.3 [0.66]	0.6 [1.3]	0.6 [1.3]	1.0 [2.2]

Order Codes

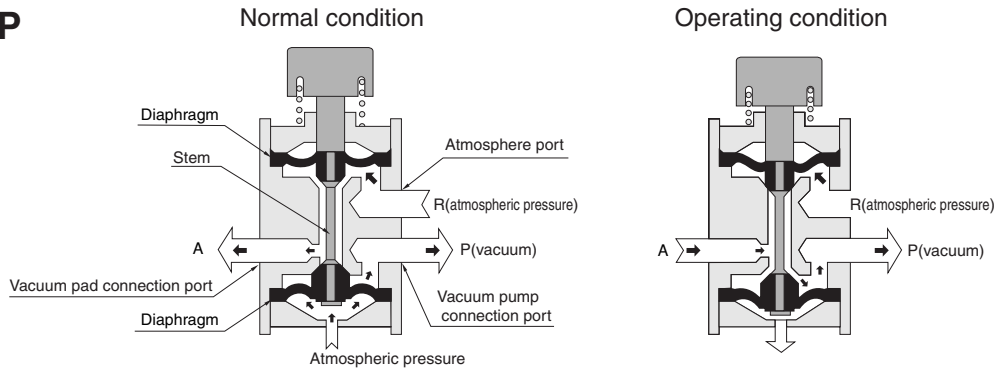
		Basic model		Option	
				Valve function	Mounting method
Push button	3-port	V125P			-22
	2-, 3-port	V250P		-2	
	2-, 3-port	V2503P			
	3-port	V125HO			-22
Lever	3-port	V125V			
	3-port	V250V			
	3-port	V2503V			
	5-port	V250-4H			
	5-port	V2503-4H			
Foot	2-, 3-port	V250F		-2	

●Blank: Base mounting type

●Blank: 3-port
V250-4H and V2503-4H are 5-port.

Operating Principles and Symbols

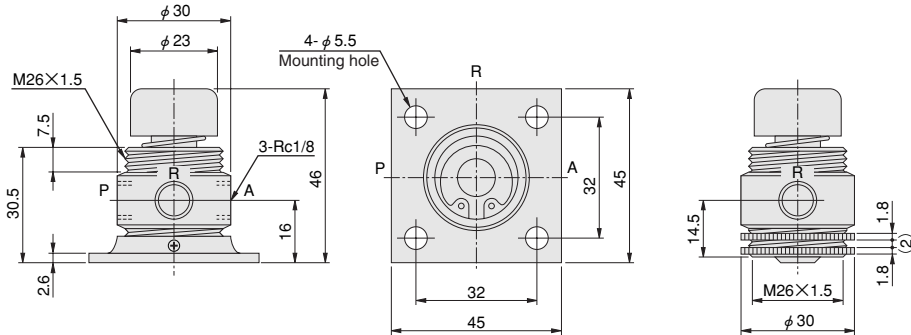
V125P



2-port NC	3-port NC	3-port NC	3-port NC/NO	5-port 3-position, exhaust center	2-port NC	3-port NC
V250P-2 V2503-2	V125P V250P V2503P	V125HO	V125V V250V V2503V	V250-4H V2503-4H	V250F-2	V250F

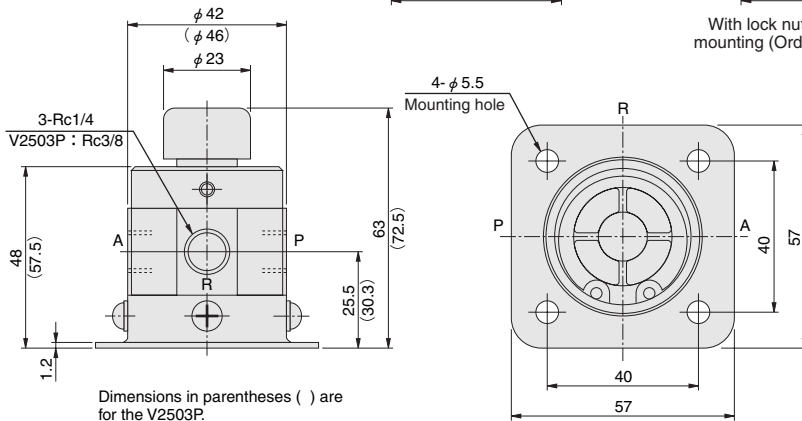
Dimensions (mm)

V125P



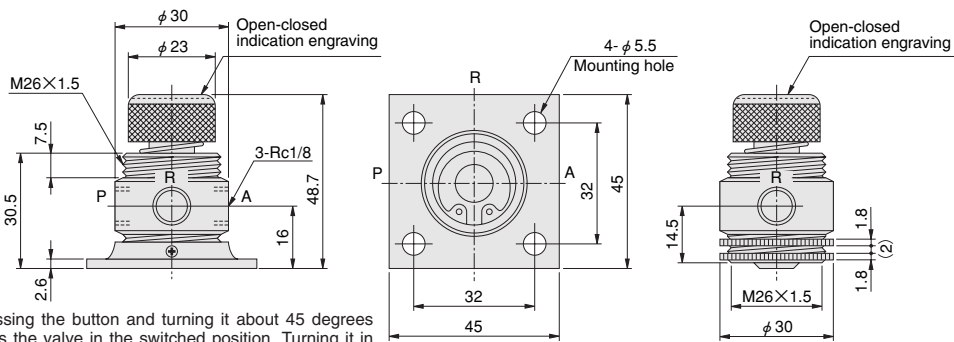
With lock nuts for panel mounting (Order code: -22)

V250P V2503P



Dimensions in parentheses () are for the V2503P.

V125HO

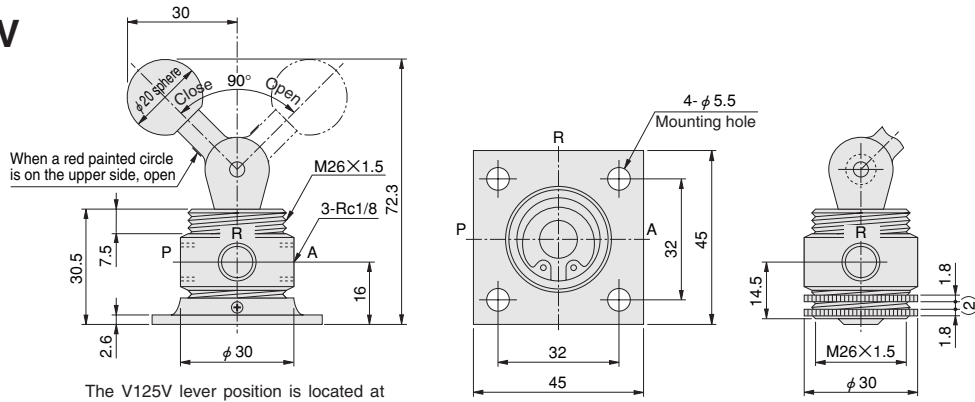


Pressing the button and turning it about 45 degrees locks the valve in the switched position. Turning it in the reverse direction releases the lock, and a spring restores the button to its normal position.

With lock nuts for panel mounting (Order code: -22)

Dimensions (mm)

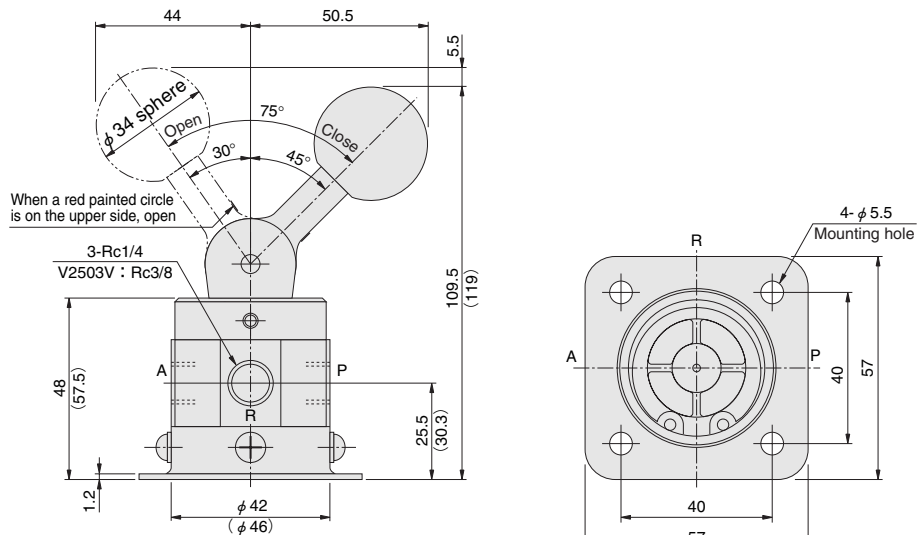
V125V



The V125V lever position is located at P side in the normal condition.

With lock nut for panel mounting (Order code: -22)

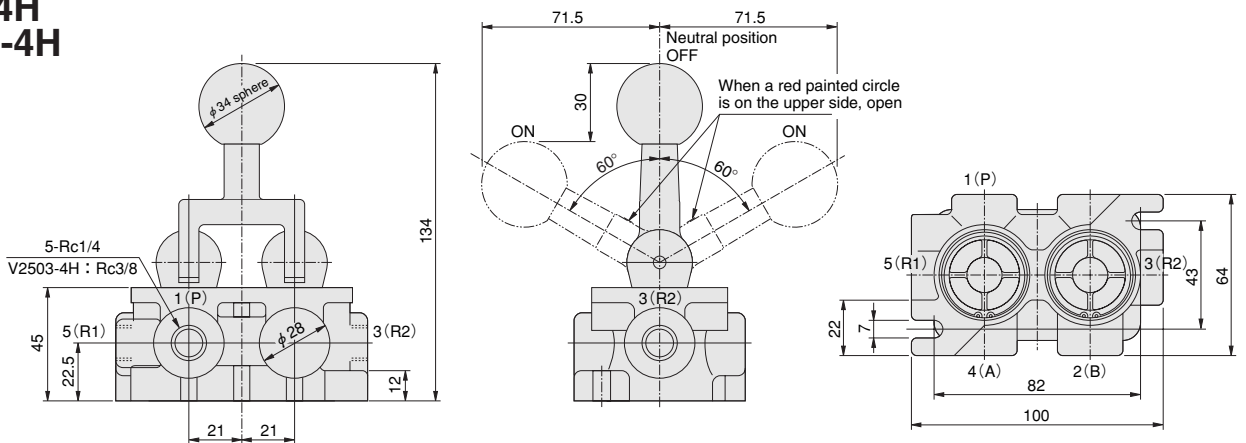
**V250V
V2503V**



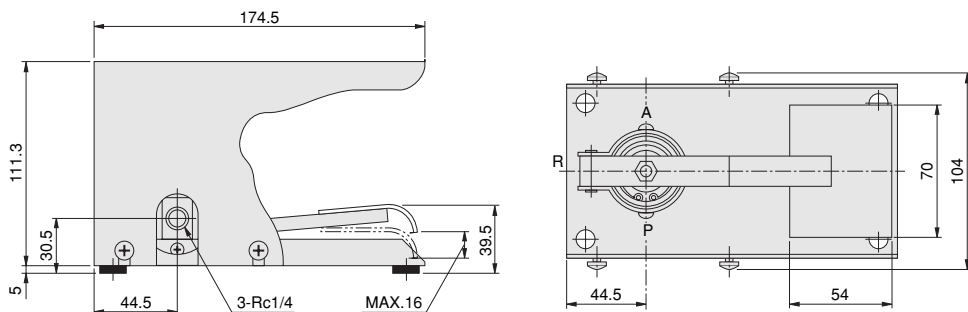
Dimensions in parentheses () are for the V2503V.

The V250V lever position is located at P side in the normal condition.

**V250-4H
V2503-4H**



V250F



Mechanical Operated Vacuum Valves



Specifications

Item	Basic model	V125B	V250B	V2503B	V125MC	V125MOC	V250C	V2503C
Media		Vacuum						
Operation type		Ball-cam			Roller-cam			
					Steel roller	One way steel roller	Nylon roller	
Number of ports		3 ports (Cannot be used as 2-port and normally open (NO) in terms of construction)					2, 3 ports	
Valve function		Normally closed (NC)						
Effective area [Cv] mm ²		5.5 [0.27]	15 [0.76]		5.5 [0.27]		15 [0.76]	
Port size Rc		1/8	1/4	3/8	1/8		1/4	3/8
Lubrication		Not required						
Operating pressure range kPa(mmHg) [in.Hg]		0~100 {0~-750} [0~-29.53]						
Minimum operating force kgf [lbf.]		2 [4.4]	3 [6.6]		1.5 [3.3]			
Operating temperature range °C [°F]		5~60 [41~140]						
Mounting direction		Any						
Mass kg [lb.]		0.1 [0.22]	0.2 [0.44]	0.25 [0.55]	0.15 [0.33]		0.3 [0.66]	0.35 [0.77]

Order Codes

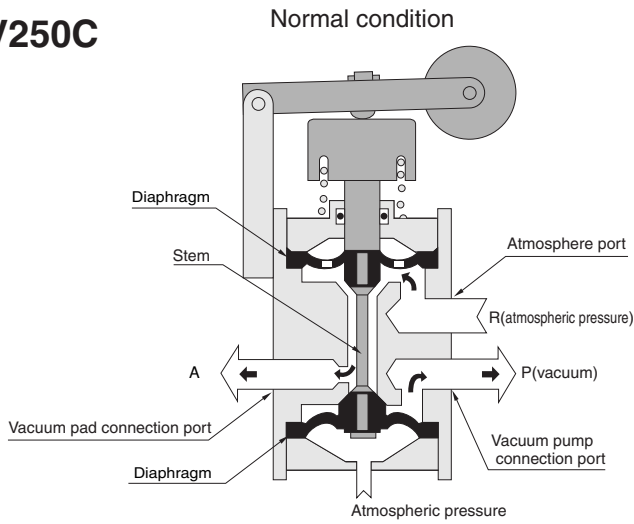
		Basic model		Option	
				Valve function	Mounting method
Ball-cam	3-port	V125B		2-port	With lock nuts for panel mounting
	3-port	V250B			
	3-port	V2503B			
Roller-cam	3-port	V125MC			-22
	3-port	V125MOC			-22
	2-, 3-port	V250C		-2	
	2-, 3-port	V2503C		-2	

●Blank: 3-port

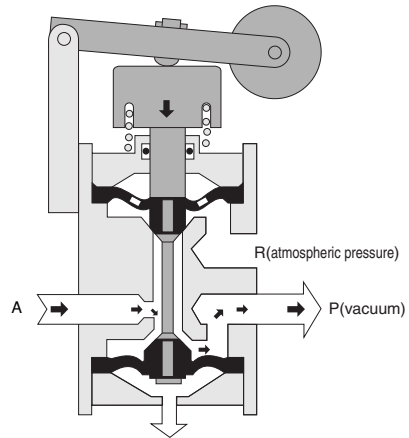
●Blank: Base mounting type

Operating Principles and Symbols

V250C



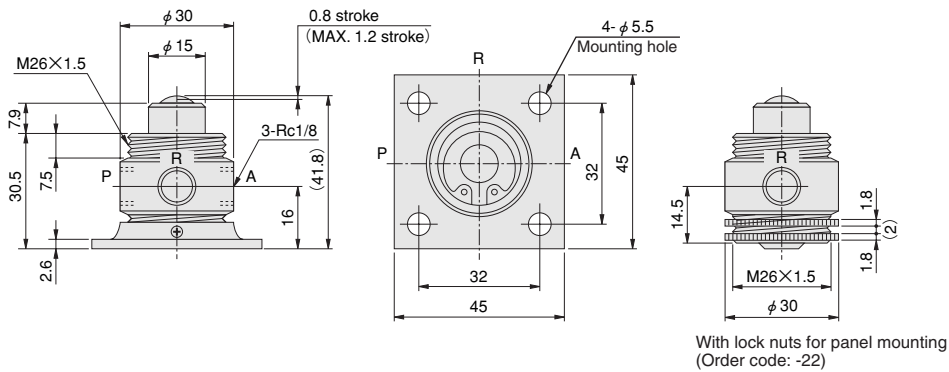
Operating condition



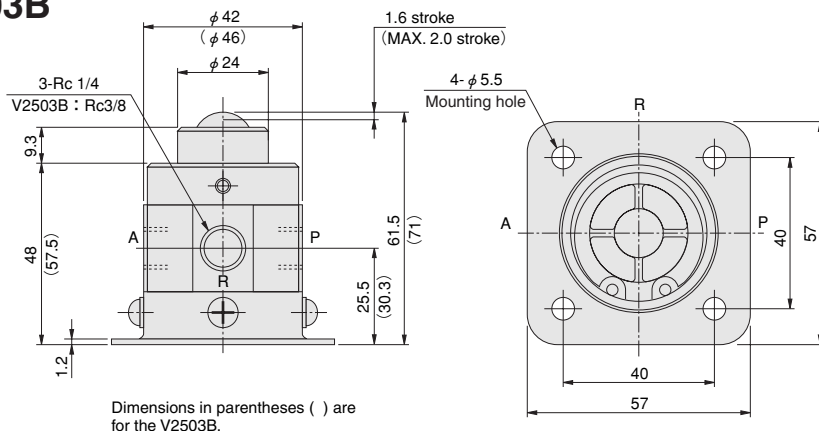
3-port NC	2-port NC	3-port NC	3-port NC
V125B V250B V2503B	V250C-2 V2503C-2	V125MC V250C V2503C	V125MOC

Dimensions (mm)

V125B

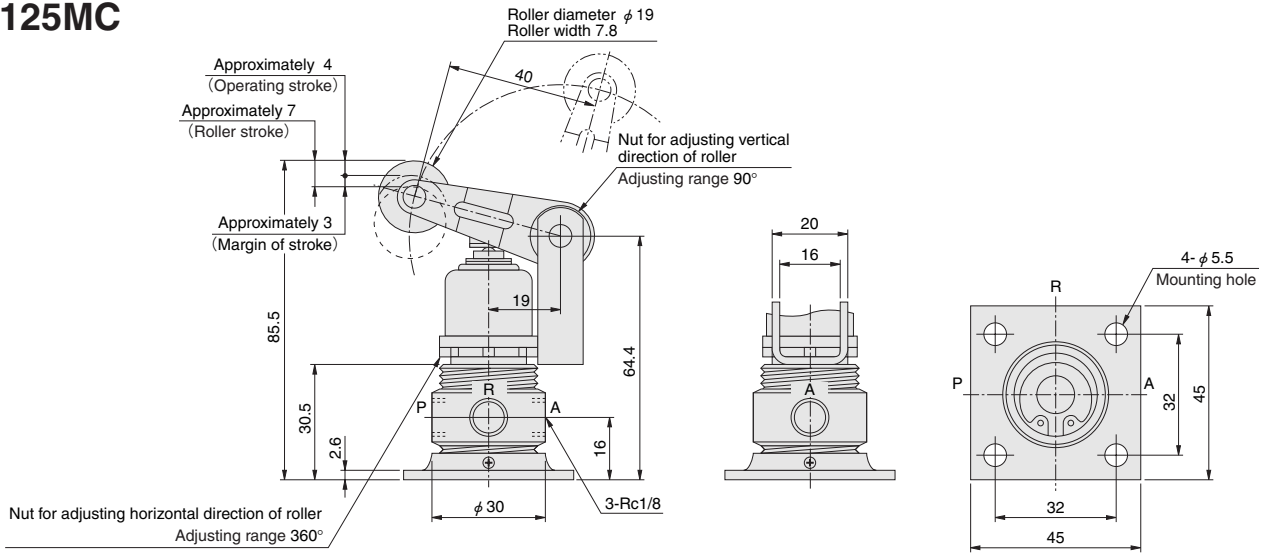


V250B V2503B

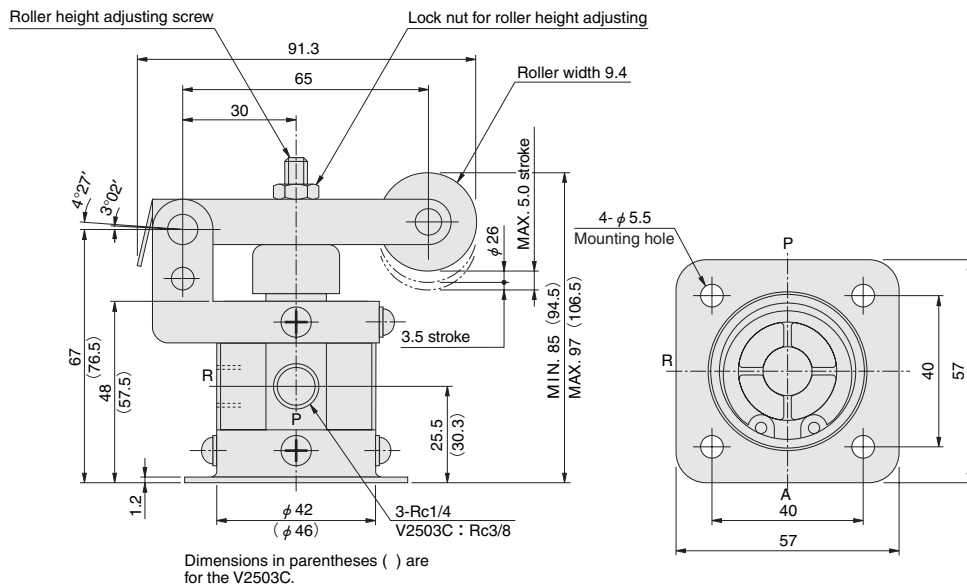


Dimensions (mm)

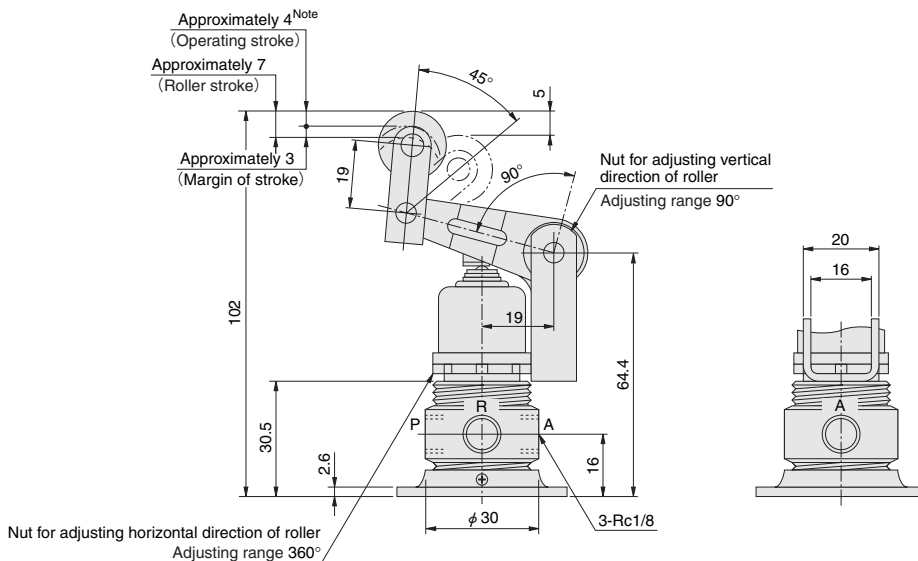
V125MC



V250C V2503C



V125MOC



Note: Pushing the button more than necessary can shorten the operating life.

Piloted Vacuum Valves

Single Pilot Type



Specifications

Item	Basic model	VA125A	VA250A	VA2503A	VA500A	VV250A	VV2503A	VV500A
Media		Vacuum						
Operation type		Air pilot				Vacuum pilot		
Number of ports		3 ports (Cannot be used as 2-port and normally open (NO) in terms of construction)						
Valve function		Normally closed (NC)						
Effective area [Cv] mm ²		5.5 [0.27]	15 [0.76]		55 [2.7]	15 [0.76]		55 [2.7]
Port size Rc		1/8	1/4	3/8	1/2	1/4	3/8	1/2
Lubrication		Not required						
Operating pressure range kPa (mmHg) [in.Hg]		0~-100 {0~-750} [0~-29.53]				-51~-100 {-380~-750} [-14.96~-29.53]		
External pilot pressure		Recommended air pressure 0.2~0.3MPa [29~44psi.] MAX. 0.7MPa [102psi.]			Recommended air pressure 0.2~0.3MPa [29~44psi.] MAX. 0.5MPa [73psi.]	Vacuum -51~-100MPa {-380~-750 (mmHg)} [-14.96~-29.53in.Hg]		
Operating temperature range °C [°F]		5~60 [41~140]						
Mounting direction		Any						
Mass kg [lb.]		0.08 [0.18]	0.17 [0.37]	0.22 [0.49]	0.45 [0.99]	0.17 [0.37]	0.2 [0.44]	0.45 [0.99]

Order Codes

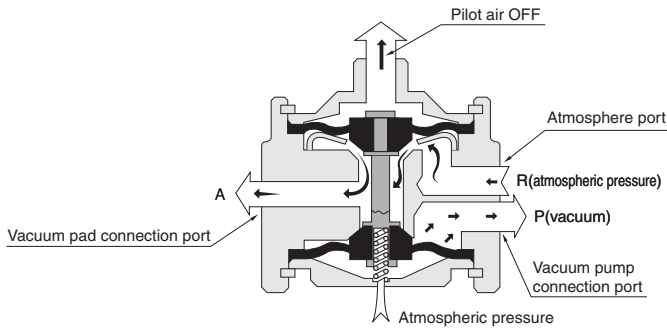
		Basic model	Option
			Mounting type With lock nuts for panel mounting
Air pilot	3-port	VA125A	-22
	3-port	VA250A	
	3-port	VA2503A	
	3-port	VA500A	
Vacuum pilot	3-port	VV250A	
	3-port	VV2503A	
	3-port	VV500A	

●Blank: Base mounting type

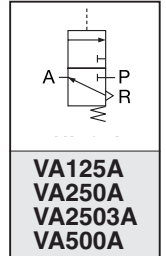
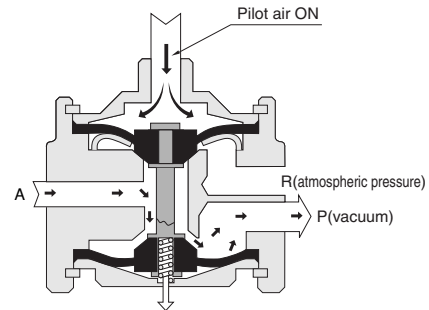
Operating Principles and Symbols

VA500A

Normal condition

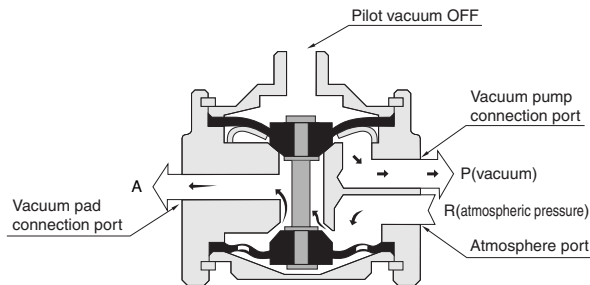


Operating condition

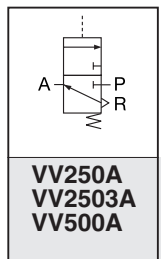
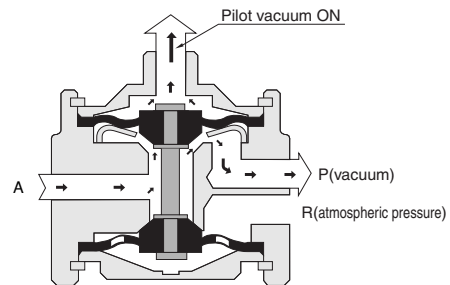


VV500A

Normal condition

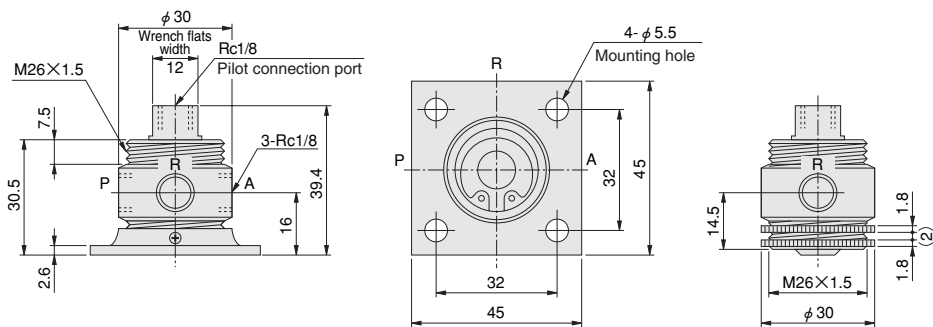


Operating condition



Dimensions (mm)

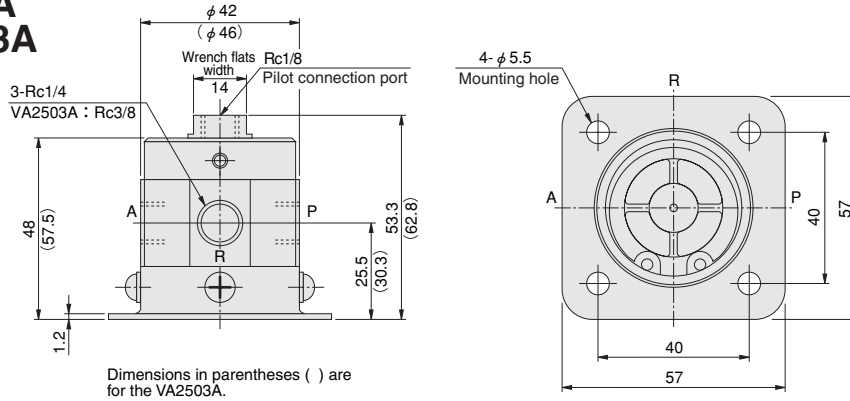
VA125A



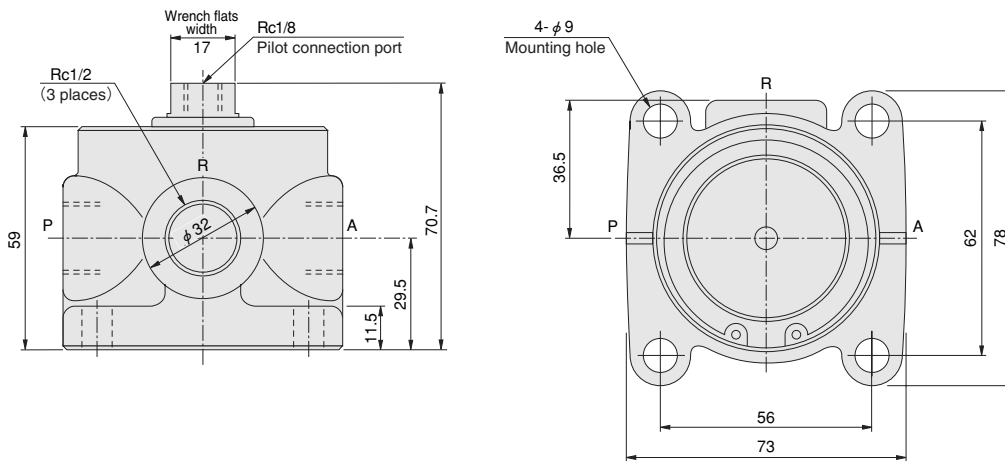
With lock nuts for panel mounting
(Order code: -22)

Dimensions (mm)

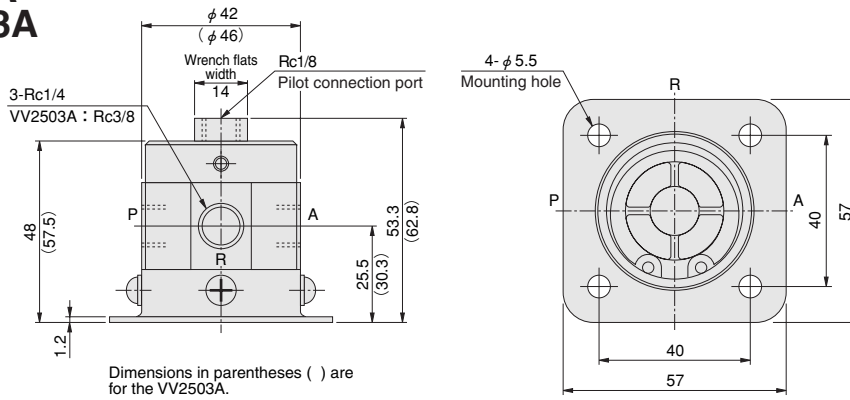
**VA250A
VA2503A**



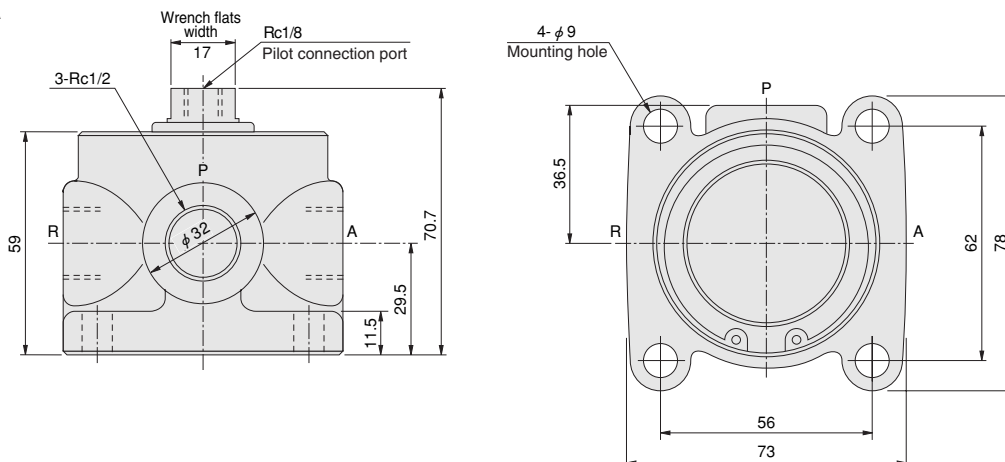
VA500A



**VV250A
VV2503A**



VV500A



Piloted Vacuum Valves

Double Air Pilot Type



Specifications

Item	Basic model	250A2	2503A2	500A2	750A2	1000A2
Media		Vacuum				
Operation type		Air pilot				
Number of ports		2, 3 ports				
Valve function		NC/NO				
Effective area [Cv] mm ²		15 [0.76]		55 [2.7]	140 [7]	280 [14]
Port size Rc		1/4	3/8	1/2	3/4	1
Lubrication		Not required				
Operating pressure range kPa (mmHg) [in.Hg]		0~100 {0~-750} [0~-29.53]				
External pilot pressure		Recommended air pressure 0.2~0.3MPa [29~44psi.] MAX. 0.7MPa [102psi.]		Recommended air pressure 0.2~0.3MPa [29~44psi.] MAX. 0.5MPa [73psi.]	Recommended air pressure 0.2~0.3MPa [29~44psi.] MAX. 0.7MPa [102psi.]	
Operating temperature range °C [°F]		5~60 [41~140]				
Mounting direction		Any				
Mass kg [lb.]		0.2 [0.44]	0.25 [0.55]	0.45 [0.99]	1.8 [4.0]	2.7 [6.0]

Remark: In addition to the above, the Rc 1/8 type of 125 A2 is available.

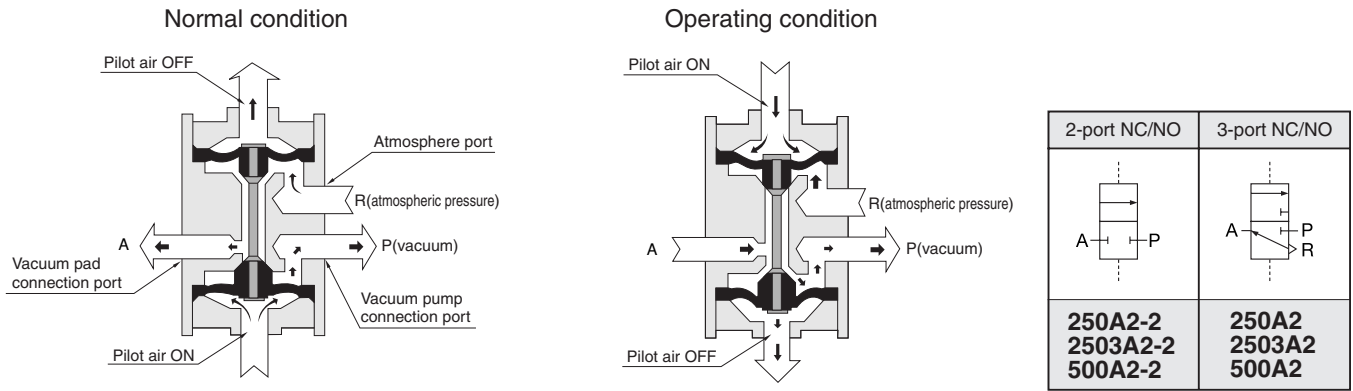
Order Codes

		Basic model		Option	
				Valve function	
Double air pilot	2-, 3-port	250A2		-2	
	2-, 3-port	2503A2			
	2-, 3-port	500A2			
	2-, 3-port	750A2			
	2-, 3-port	1000A2			

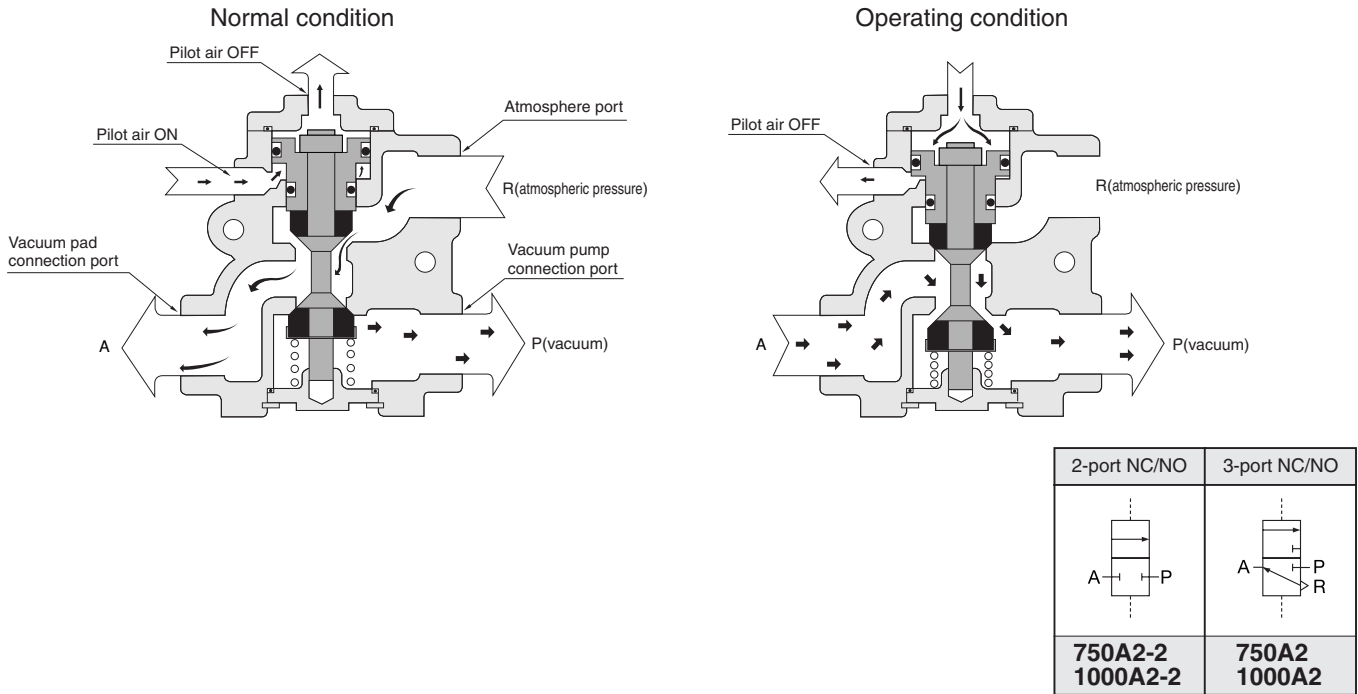
●Blank: 3-port (NC/NO)

Operating Principles and Symbols

Diaphragm type (250A2, 500A2)

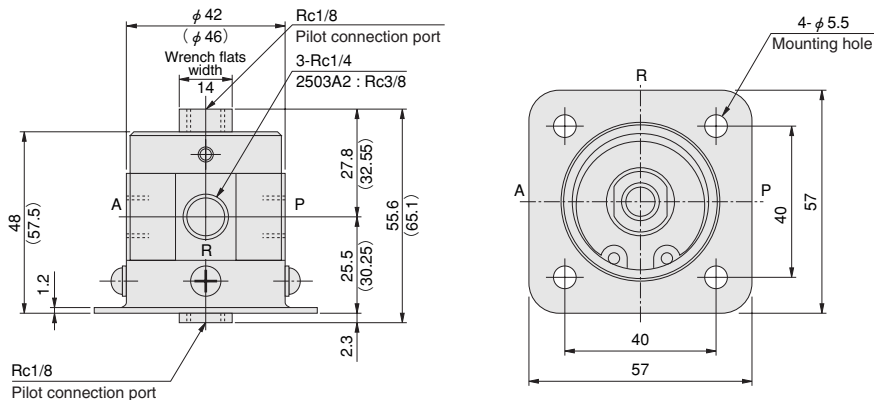


Piston poppet type (750A2, 1000A2)



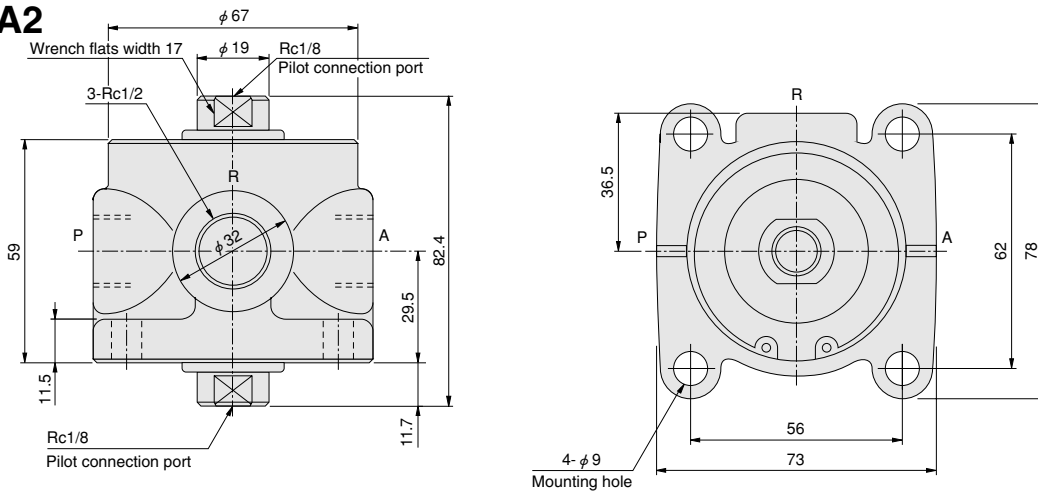
Dimensions (mm)

250A2 2503A2

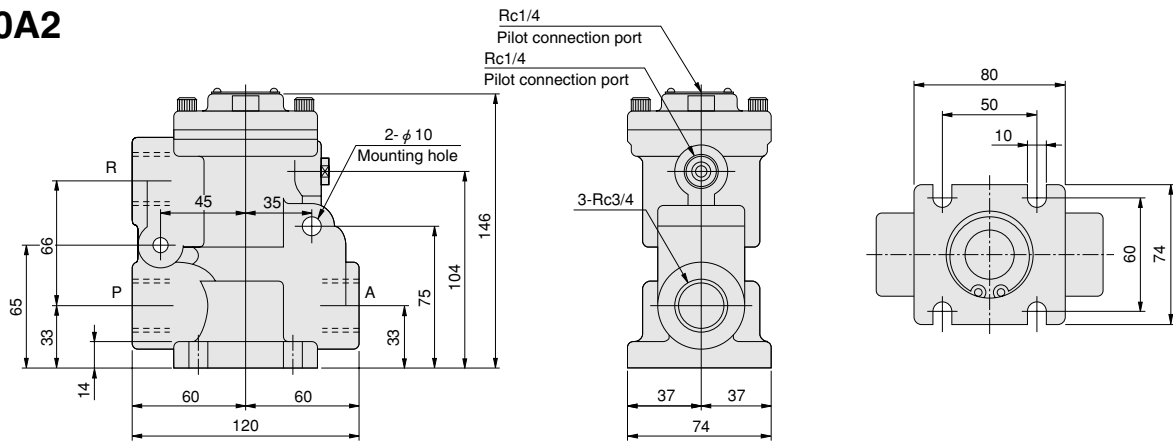


Dimensions (mm)

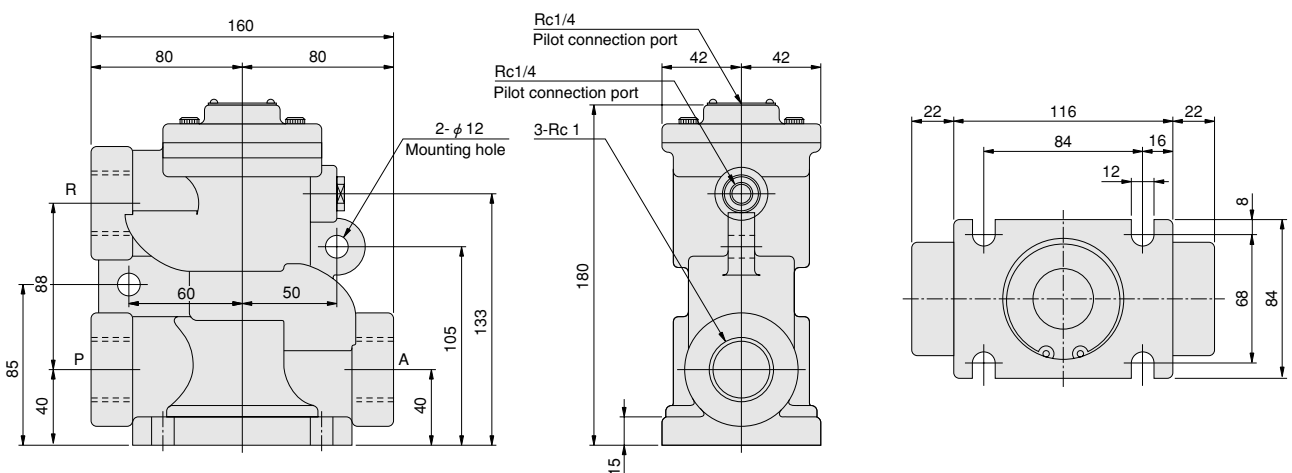
500A2



750A2



1000A2



Reference

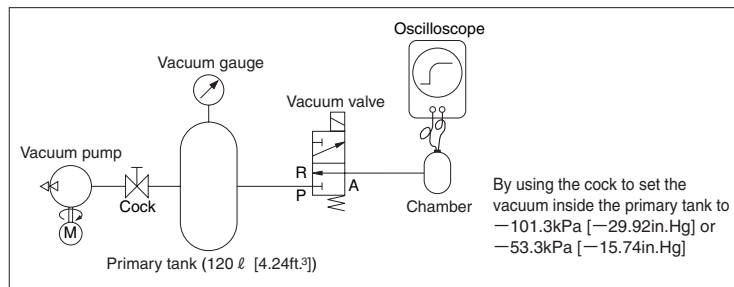
Vacuum Valve Selection Table (Exhaust and Air Supply Response Times)

s

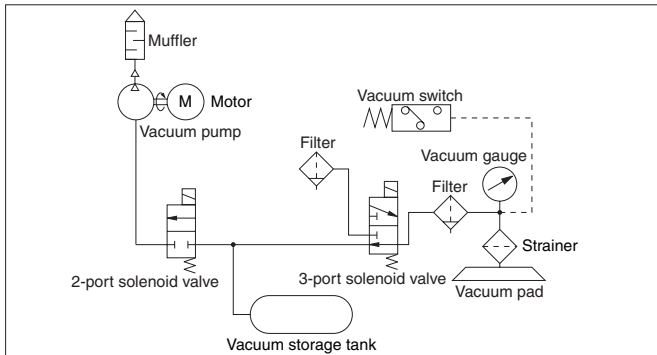
Vacuum kPa [in.Hg]	50cc [3.05in ³] chamber				200cc [12.2in ³] chamber				1 l [61in ³] chamber				3 l [183in ³] chamber				5.5 l [336in ³] chamber				10.5 l [641in ³] chamber			
	Exhaust ^{Note}		Air supply		Exhaust		Air supply		Exhaust		Air supply		Exhaust		Air supply		Exhaust		Air supply		Exhaust		Air supply	
	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]
Model	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0	-81.3 [-24.01]	-42.6 [-12.58]	0	0
V062E1	0.2	0.08	0.18	0.1	0.7	0.35	0.5	0.38	3.0	1.5	2.5	1.8	9.0	3.2	6.0	4.0	20.0	8.0	14.0	10.0				
V126E1	0.12	0.05	—	—	0.4	0.2	—	—	1.8	0.9	—	—	5.0	1.7	—	—	11.0	3.5	—	—				
VA125A	0.1	0.06	0.13	0.12	0.35	0.15	0.3	0.2	1.6	0.7	1.3	0.8	3.8	1.4	2.6	1.8	9.0	3.4	6.0	4.0				
VA250AE1	0.05	0.03	0.09	0.04	0.1	0.05	0.08	0.07	0.5	0.23	0.16	0.18	1.1	0.4	0.7	1.0	2.4	1.0	1.7	1.0				
VA500AE1	0.04	0.03	0.14	0.14	0.07	0.05	0.14	0.14	0.25	0.1	0.15	0.18	0.5	0.2	0.4	0.3	1.1	0.4	0.6	0.5	2.0	0.8	1.0	0.8
1000A2	—																0.26	0.14	0.26	0.2	0.4	0.2	0.4	0.3

Note: The exhaust vacuum in the chamber is a 80% rating value of the vacuum inside of the primary tank.

The above table shows the time it takes from the point in time where the vacuum valve is switched ON to reach the specified vacuum inside of the chamber, and the time from switching the vacuum valve OFF to supply air into the chamber.



Standard Vacuum Circuit



Inspection Standard for Vacuum Leaks (Koganei standards)

Inspection procedure

Open valve A, and set the vacuum in the tank to -100kPa [-750mmHg] [-29.53in.Hg]. Afterward, close valve A, let set for 10 minutes, and then check the vacuum inside of the tank both during OFF and ON.

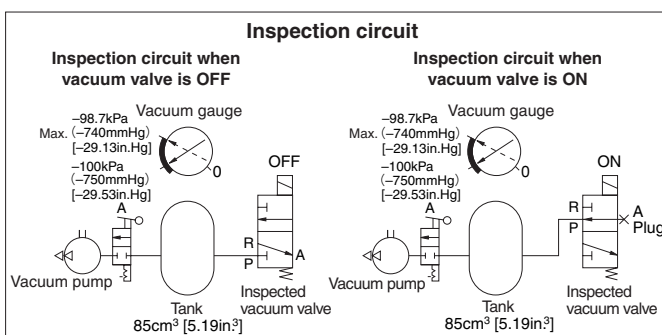
Inspection standard

Let set for 10 minutes, then check to see that the vacuum leaks inside the tank meets the standard of 1.3kPa (10mmHg) [0.38in.Hg] or less.

For details, consult us.

Remark

In fact, most Koganei vacuum valves can hold initial vacuum even after being left set for 10 minutes.



Calculation of Picking-up Force, and Graph (Theoretical values)

When using a vacuum pad to hold picking-up an object, the picking-up force is shown by the following formula.

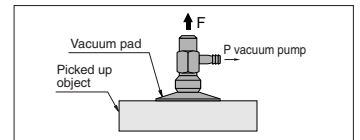
$$W = P \times A \times 0.1$$

W: Picking-up force (N)
P: Vacuum (kPa)
A: Pad area (cm²)

<Conventional units>

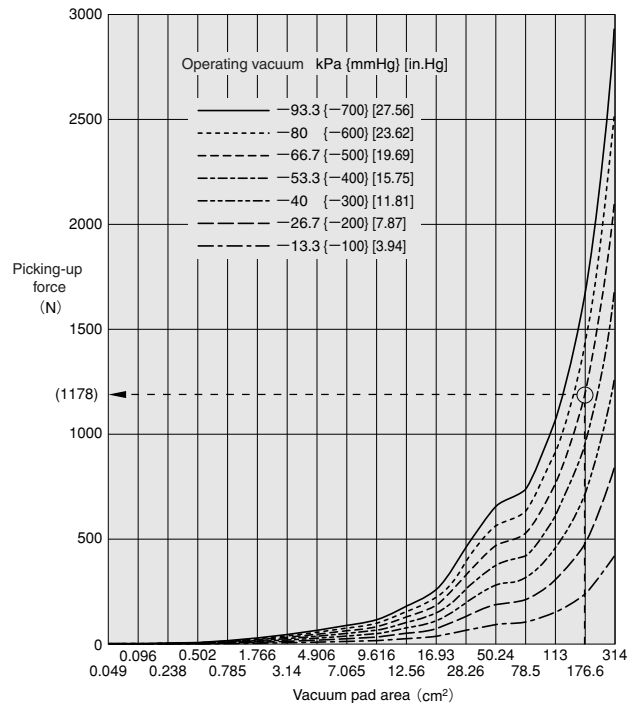
$$W' = \frac{P'}{760} \times 1.033 \times A'$$

W': Picking-up force (kgf)
P': Vacuum (mmHg)
A': Pad area (cm²)



$$W'' = \frac{P''}{29.92} \times 14.7 \times A''$$

W'': Picking-up force [lbf.]
P'': Vacuum [in.Hg]
A'': Pad area [in.²]

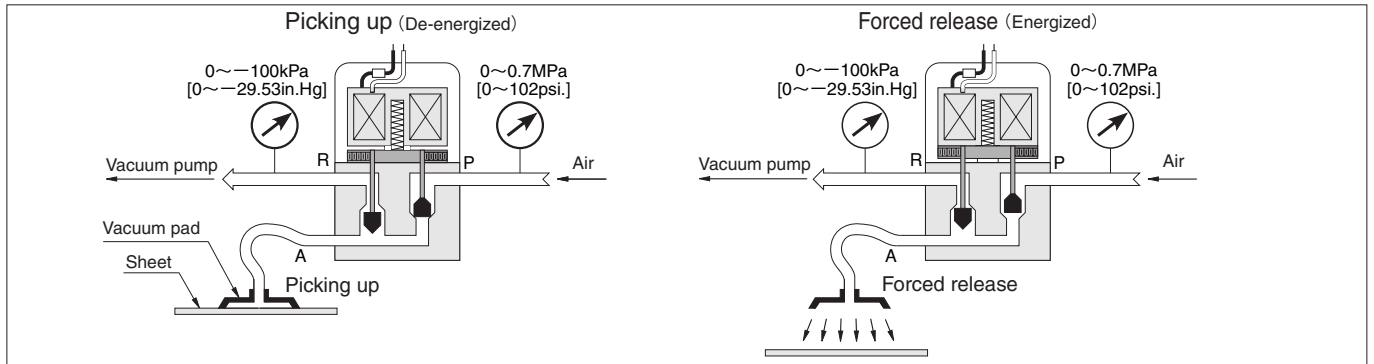


How to read the graph

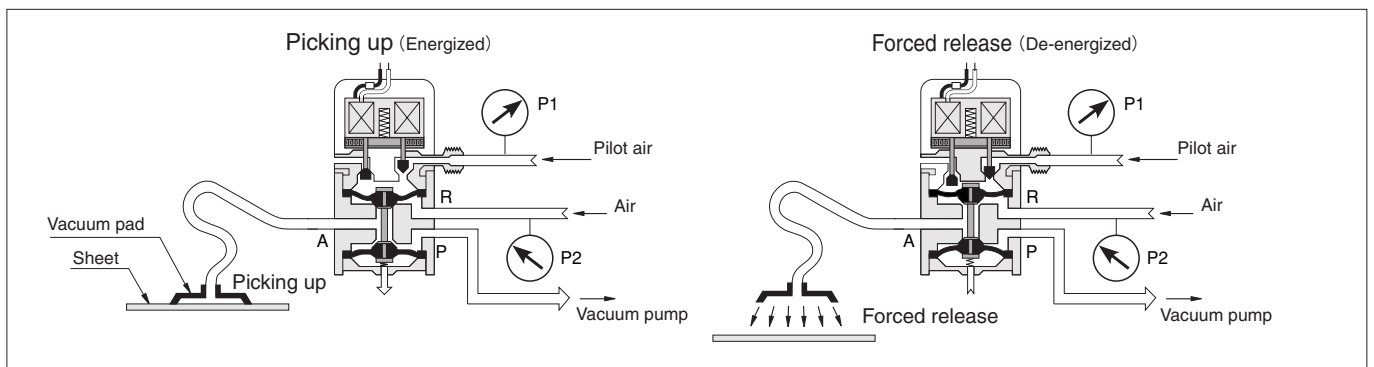
When the vacuum is -66.7kPa [-19.7in.Hg], and the vacuum pad area is 176.6cm² [27.37in.²], the picking-up force is 1178N [265lbf.].

Reference

How to Use Both Vacuum and Pressure Type (SV062E1)

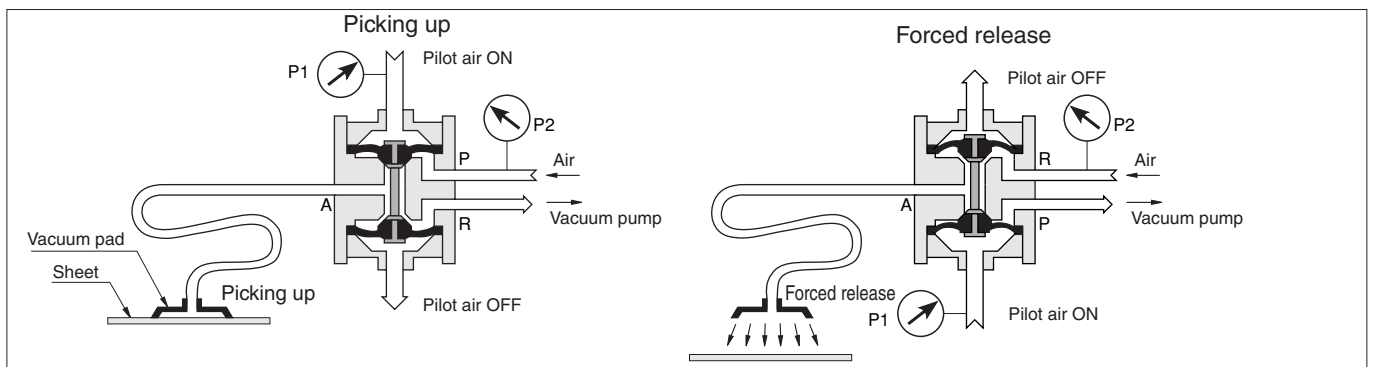


Application of External Air Pilot Type (VA250AE1/ VA2503AE1/ VA500AE1)



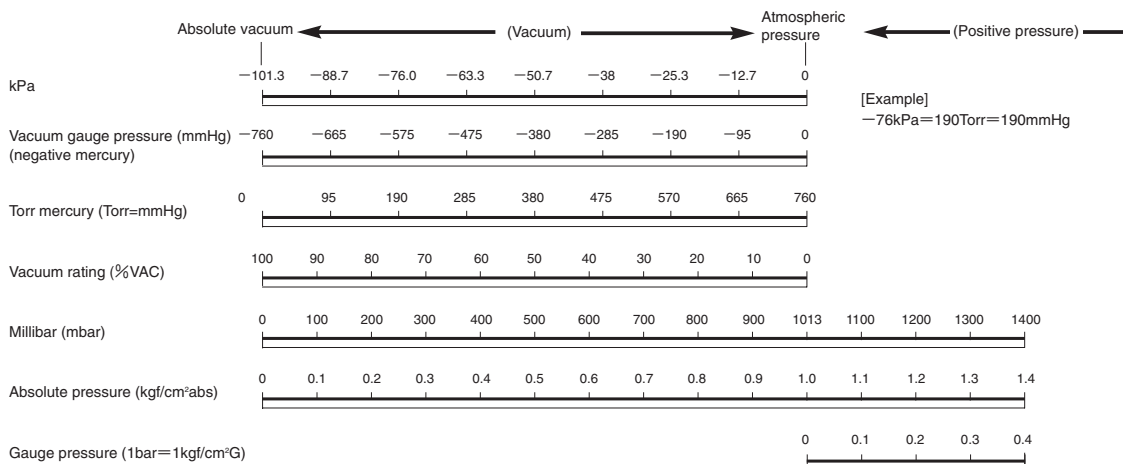
Note: Use as $P_1 > 2P_2$.

Application of External Double Air Pilot Type (250A2 / 500A2, etc.)



Note: Use as $P_1 > 2P_2$.





Pressure Unit Comparison Table



Before selecting and using products, please read all the Safety Precautions carefully to ensure proper product use. The Safety Precautions shown below are to help you use the product safely and correctly, and to prevent injury or damage to assets beforehand.

Follow the Safety Precautions for: ISO4414 (Pneumatic fluid power—Recommendations for the application of equipment to transmission and control systems), JIS B 8370 (Pneumatic system regulations)

The directions are ranked according to degree of potential danger or damage: “DANGER!” “WARNING!” “CAUTION!” and “ATTENTION!”

 DANGER	Expresses situations that can be clearly predicted as dangerous. If the noted danger is not avoided, it could result in death or serious injury. It could also result in damage or destruction of assets.
 WARNING	Expresses situations that, while not immediately dangerous, could become dangerous. If the noted danger is not avoided, it could result in death or serious injury. It could also result in damage or destruction of assets.
 CAUTION	Expresses situations that, while not immediately dangerous, could become dangerous. If the noted danger is not avoided, it could result in light or semi-serious injury. It could also result in damage or destruction of assets.
 ATTENTION	While there is little chance of injury, this content refers to points that should be observed for appropriate use of the product.

■ This product was designed and manufactured as parts for use in General Industrial Machinery.

- In the selection and handling of equipment, the system designer or other person with fully adequate knowledge and experience should always read the Safety Precautions, Catalog, User’s Manual and other literature before commencing operation. Making mistakes in handling is dangerous.
- After reading the Instruction Manual, Catalog, etc., always place it where it can be easily available for reference to users of this product.
- If transferring or lending the product to another person, always attach the Instruction Manual, Catalog, etc., to the product where it is easily visible, to ensure that the new user can use the product safely and properly.
- The danger, warning, and caution items listed under these “Safety Precautions” do not cover all possible cases. Read the catalog and user’s manual carefully, and always keep safety first.

 **DANGER**

- Do not use for the purposes listed below:
 1. Medical equipment related to maintenance or management of human lives or bodies.
 2. Mechanical devices or equipment designed for the purpose of moving or transporting people.
 3. Critical safety components in mechanical devices.
 This product has not been planned or designed for purposes that require advanced stages of safety. It could cause injury to human life.
- Do not use in locations with or near dangerous substances such as flammable or ignitable substances. This product is not explosion-proof. It could ignite or burst into flames.
- When attaching the product and workpiece, always ensure that it is securely mounted in place. Dropping or falling the product or improper operation could result in injury.
- Persons who use a pacemaker, etc., should keep a distance of at least one meter [3.28ft.] away from the product. There is a possibility that the pacemaker will malfunction due to the strong magnet built into the product.
- Never attempt to remodel the product. It could result in abnormal operation leading to injury, electric shock, fire, etc.
- Never attempt inappropriate disassembly, assembly or repair of the product’s basic construction, or of its performance or functions. It could result in injury, electric shock, fire, etc.
- Do not splash water on the product. Spraying it with water, washing it, or using it underwater could result in malfunction of the product leading to injury, electric shock, fire, etc.
- While the product is in operation, avoid touching it with your hands or otherwise approaching too close. In addition, do not make any adjustments to the interior or to the attached mechanisms (manual override, connecting and disconnecting of wiring connectors, adjustment of pressure switches, or release or connection of piping tubes or plugs) while in operation. The actuator can move suddenly, possibly resulting in injury.

 **WARNING**

- Do not use the product in excess of its specification range. Such use could result in product breakdowns, function stop or damage or drastically reduce the operating life.
- Before supplying air or electricity to the device and before starting operation, always conduct a safety check of the area of machine operation. Unintentional supply of air or electricity could possibly result in electric shocks, or in injury caused by contact with moving portion.
- Do not touch the terminal and the miscellaneous switches, etc., while the device is power on. There is a possibility of electric shock and abnormal operation.
- Do not allow the product to be thrown into fire. The product could explode and/or release toxic gases.
- Do not sit on the product, place your foot on it, or place other objects on it. Accidents such as falling and tripping over could result in injury. Dropping the product may result in injury, or also damage or break the product resulting in abnormal or erratic operation, or runaway etc.
- When conducting any kind of operation for the product, such as maintenance, inspection, repair, or connect/disconnect or replacement of piping, always turn off the air supply completely and confirm that residual pressure inside the product or in piping connected to the product is zero before proceeding. In particular, be aware that residual air will still be in the air compressor or air storage tank. The actuator could abruptly move if residual air pressure remains inside the piping, causing injury.
- Before commencing normal operation, always release the lock on the locking type manual override, and confirm that the manual override is in the normal position and that the main valve is in the proper switching position, and only then commence the operation. Failure to do so could lead to erroneous operation.
- Always shut off power when performing wiring operations. Leaving the power on could result in electric shocks.
- Apply the specified voltage for the solenoid. Using the wrong voltage level will prevent the solenoid from performing its function, and could lead to breakage or burn damage of the product itself.
- Avoid scratching the cords for the sensor switch lead wires, etc. Letting the cords be subject to scratching, excessive

bending, pulling, rolling up, or being placed under heavy objects or squeezed between two objects, may result in current leaks or defective transmission that lead to fires, electric shocks, or abnormal operation.

- Do not pull out the connectors while the power is ON. Also, do not put unnecessary stress on the connector. It could result in erroneous equipment operation that could lead to personal injury, equipment breakdown, or electrical shocks, etc.
- Always check the Catalog to ensure that the product wiring and piping is done correctly. Errors in wiring and piping could lead to abnormal operation of the actuators, etc.
- In the first operation after the equipment has been idle for 48 hours or more, or has been in storage, there is a possibility that contacting parts have been stuck, resulting in equipment operation delays or sudden movements. For these first operations, always run a test operation before use to check that operating performance is normal.
- In low frequency use (more than 30 days between uses), there is a possibility that contact parts will stick, resulting in equipment operation delays or sudden movements that could lead to personal injury. Run a test operation at least once every 30 days to confirm that movement is normal.
- For double solenoid type (excluding the Tandem 3-port valve), do not apply current through both solenoids simultaneously. It is impossible in such a situation to maintain the correct valve position, and the equipment may operate in an unintended direction, leading to the possibility of equipment breakdown or personal injury.
- Do not use the solenoid valves or the wiring that controls them, near power lines where large electrical currents are flowing, or in locations subject to powerful magnetic fields or power surges. Such application could lead to unintended operation.
- The solenoid valve can generate surge voltage and electromagnetic waves when the switch is turned off, affecting the operations of surrounding equipment. Use solenoids with surge suppression, or take countermeasures in the electrical circuits for surges or electromagnetic waves.
- Do not use where ozone may be generated, such as near ocean beaches or other places subject to direct sunlight or mercury lamps. Ozone can cause rubber parts to deteriorate, which can lead to degraded performance and functions, or to equipment stoppages and functional shutdown. (Excludes items where measures against ozone have been taken.)
- Do not use any media other than shown on the specifications. Use of non-specified media could lead to functional shutdown after a short period, to sudden performance drops, or to shorter operating life.
- If mounting the solenoid valve inside a control panel, or if energizing it for long periods, provide heat radiation measures to ensure that temperatures surrounding the solenoid valve always remain within the specified temperature range. If energizing the unit for long periods, consult us.
- After finishing wiring operations, always check to ensure that no wiring connection errors exist before turning on the power.
- Do not collect the exhaust lines for air cylinders, etc. with pilot exhaust lines for solenoid valves into the same piping, etc. Interference in the exhaust could result in erratic operation.

CAUTION

- When mounting the product, leave room for adequate working space around it. Failure to ensure adequate working space will make it more difficult to conduct daily inspections or maintenance, which could eventually lead to system shutdown or damage to the product.
- For mounting or transport of heavy products, use a lift, supporting tool, or several people, to provide firm support, and proceed with due caution to ensure personal safety.
- Do not bring floppy disks or magnetic media, etc., within one meter [3.28ft.] of the product. There is the possibility that the data on the floppy disks will be destroyed due to the magnetism of the magnet.
- If leakage current is occurring in the control circuit, there is a possibility of the product performing an unintended operation. Take measures against current leaking in the control circuit, to ensure that the leakage current value does not exceed the allowed range in the product specifications.

- Do not block the product's breathing holes. Pressure changes occur due to changes in volume during operation. Blocking the breathing holes destroys the pressure balance, and could cause failure of the intended operation, equipment damage, or personal injury.
- Do not use the solenoid valve in locations subject to large electrical currents or magnetic fields. It could result in erratic operation.
- Oily materials from the compressor (excluding the oil-free compressor) can cause drastic deterioration in product performance, and even a functional shutdown. Always install a mist filter before pneumatic equipment to remove the oily component.
- The properties of the lubrication oil can change when used in dry air where dew point temperatures is lower than -20 degrees Celsius [-4°F]. It could result in degraded performance or in functional shutdown.
- Do not use the product in locations of direct sunlight (ultraviolet), in locations subject to dust, salt, or iron powder, in locations with humidity and high temperature, or in the media and/or the ambient atmospheres that include organic solvents, phosphoric ester type hydraulic oil, sulfur dioxide, chlorine gas, or acids, etc. These conditions could lead to functional shutdowns, sudden degraded performance, or shortened operating life in a brief period of time. For materials used, see Major Parts and Materials.

ATTENTION

- When considering the possibility of using this product in situations or environments not specifically noted in the Catalog or User's Manual, or in applications where safety is an important requirement, such as in an airplane facility, combustion equipment, leisure equipment, safety equipment and other places where human life or assets may be greatly affected, take adequate safety precautions such as application with enough margins for ratings and performance or fail-safe measures. Be sure to consult us with such applications.
- Always check the catalog and other reference materials for product wiring and piping.
- Install a muffler, etc. on the exhaust port. It is effective in reducing exhaust noise.
- When handling the product, wear protective gloves, safety glasses, safety boots, etc. to keep safety.
- When the product can no longer be used, or is no longer necessary, dispose of it appropriately as industrial waste.
- Pneumatic equipment can exhibit degraded performance and function over its operating life. Always conduct daily inspections of the pneumatic equipment, and confirm that all requisite system functions are satisfied, to prevent accidents from happening.
- Air leaks from the valve are not zero. For application of requiring holding pressure (including vacuum) inside the pressure vessel, consider adequate margin of capacity and holding time in design of the system.
- For inquiries about the product, consult your nearest Koganei sales office or Koganei overseas department. The address and telephone number is shown on the back cover of this catalog.

OTHERS

- Always observe the following items.
 1. When using this product in pneumatic systems, always use genuine KOGANEI parts or compatible parts (recommended parts). When conducting maintenance and repairs, always use genuine KOGANEI parts or compatible parts (recommended parts). Always observe the required methods and procedure.
 2. Do not attempt inappropriate disassembly or assembly of the product relating to basic construction, or its performance or functions.

Koganei cannot be responsible if these items are not properly observed.

General Precautions

Mounting

1. While any mounting direction is allowed, be sure to avoid strong shocks or vibrations applied directly to the body. Also, avoid strong shocks in the lateral direction when using a mounting base for installation. For the order code, see the Additional Parts item under each series.
2. Avoid using in the locations and environment listed below, as it could result in malfunction of the valve. If use in such conditions is unavoidable, always provide a cover or other adequate protective measures.
 - Location directly exposed to water drops or oil drops
 - Environment where a valve body is subject to dew condensation
 - Location directly exposed to machining chips, dust, etc
3. Install a muffler, etc. in the exhaust port to prevent dust from entering into the piping.
4. In piping connection with valves, flush the tube completely (by blowing compressed air) before piping. Intrusion of machining chips or sealing tape, rust, etc., generated during plumbing could result in air leaks and other defective operations.
5. When mounting a valve unit inside the control panels or when the operation requires long energizing periods, consider providing heat radiation measure such as ventilation.
6. Never use the valve with the 4(A) and 2(B) ports vent to atmosphere.

Media

1. Use air for the media. For the use of any other media, consult us.
2. Air used for the cylinder should be clean air that contains no deteriorated compressor oil, etc. Install an air filter (filtration of 40 μm or less) near the valve to remove collected liquid or dust. In addition, drain the air filter periodically.
3. When supply pressure is low, use piping for the 1(P) port with sufficient tube size.

Lubrication

Can be used without lubrication. When the actuator requires lubrication, use Turbine Oil Class 1 (ISO VG32) or the equivalent. Avoid using spindle oil or machine oil.

Atmosphere

The product cannot be used when the media or ambient atmosphere contains any of the substances listed below. Organic solvents, phosphate ester type hydraulic oil, sulphur dioxide, chlorine gas, or acids, etc.

How to find the flow rate

Subsonic speed flow when $P_1 + 0.1013 < 1.89 (P_2 + 0.1013)$

$$Q = 226S \sqrt{\Delta P (P_2 + 0.1013)}$$

Sonic speed flow when $P_1 + 0.1013 \geq 1.89 (P_2 + 0.1013)$

$$Q = 113S (P_1 + 0.1013)$$

Q: Air flow rate [ℓ/min (ANR)]

S: Effective area [mm²]

ΔP: Pressure drop $P_1 - P_2$ [MPa]

P₁: Upstream pressure [MPa]

P₂: Downstream pressure [MPa]

※ Corrections for variances in air temperature
Multiply the flow rate calculated in the formula above by the coefficients in the table below.

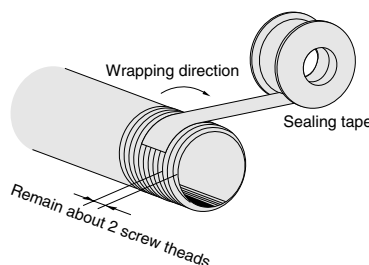
Air temperature °C [°F]	-20 [-4]	-10 [14]	0 [32]	10 [50]	30 [86]	40 [104]	50 [122]	60 [140]
Correction coefficient	1.08	1.06	1.04	1.02	0.98	0.97	0.95	0.94

Piping

Since the 1(P) and exhaust ports are on both ends of the manifold, piping direction can be selected depending on the application (excluding some models). At shipping, plugs are temporarily screwed in ports at one end, but are not firmly tightened. Regardless of which end piping is connected, always remove the plugs, use sealing tape or apply other sealing agent, and securely tighten the plugs into the unused ports.

1. Sealing tape wrapping method

- ① Before piping, use air blowing (flushing) or cleaning to eliminate any machining chips, cutting oil, or dust, etc., remaining inside the pipes.
- ② When screwing in piping or fittings, caution should be taken to avoid letting machining chips or sealing materials from entering into the valves. When using sealing tape, wrap it so that 1.5~2 screw threads remain.



2. Tightening torque for piping

Connection thread	Suitable tightening torque N·cm (kgf·cm) [in·lbf]
M3	59 (6) [5.2]
M5×0.8	157 (16) [13.9]
Rc (PT) 1/8	686~883 (70~90) [60.8~78.1]
Rc (PT) 1/4	1177~1373 (120~140) [104~122]
Rc (PT) 3/8	2157~2354 (220~240) [191~208]
Rc (PT) 1/2	2746~2942 (280~300) [243~260]
Rc (PT) 3/4	2746~2942 (280~300) [243~260]
Rc (PT) 1	3530~3727 (360~380) [313~330]
Rc (PT) 1 1/4	3923~4119 (400~420) [347~365]
Rc (PT) 1 1/2	4707~4903 (480~500) [417~434]

Block-off plate

To close the unused stations, use a block-off plate.

For the order code, see the Additional Parts item under each series.

- Cautions:**
1. For the 1(P) port piping, use a size that matches the manifold's piping connection port.
 2. When installing piping or mufflers to the exhaust port, ensure there will be minimum exhaust resistance.
 3. On rare occasions, exhaust can interfere with other valves and actuators. In this case, let exhaust from the R ports on both ends.
 4. When a multiple number of valves are operating simultaneously on a multi-unit manifold, or during high frequency applications, supply air from the 1(P) ports on both ends, and let exhaust from the R ports on both ends.
 5. Since the twin solenoid valve uses 2 stations, it cannot be mounted on the final station.
 6. In the 025 series, the seal between the valve and manifold is used reversed top-to-bottom, in accordance with the valve function (NC or NO). Install the seal as the mark (NC or NO) is located on the valve side and matches the valve function.

Tube installation and removal

Insert the tube to connect as far as the tube stopper contacts the tubes. Pull the tube to confirm the connection.

For tube removal, push the release ring forward parallel to the ring, and pull the tube out.

Tubes

Either nylon or urethane tubes can be used. Use tubes that are not scratched on their outer surface.

The tube's outer diameter tolerance should be within ±0.1mm [±0.004in.] of the nominal dimension, and within 0.2mm [0.008in.] for the ellipticity (difference between long and short diameter).

Caution: Do not excessively bend the tube near fittings.