P/M/B

Miniature pneumatic valve

2, 3, 5 port pilot operated valve

Overview

2, 3, and 5 port miniature pneumatic valve is a 15 mm wide compact solenoid valve available in a variety of series and options for 1.0 MPa working pressure to low vacuum uses. These valves are suitable for driving cylinders up to ø16.

Features

Wide variation of electric connection

The lead type, terminal box type, C-type connector, and D-type connectors are available in this series. Combinations with lights and surge suppressors are also available.

Eliminate incorrect wiring

The DC connector does not have polarity, thus eliminating incorrect wiring.

Multifunction integration

DIN rail mounting is implemented enabling various functions such as 4-way valve mixed, various pressures, and mixed systems, to be integrated.

Freely increase and decrease stations

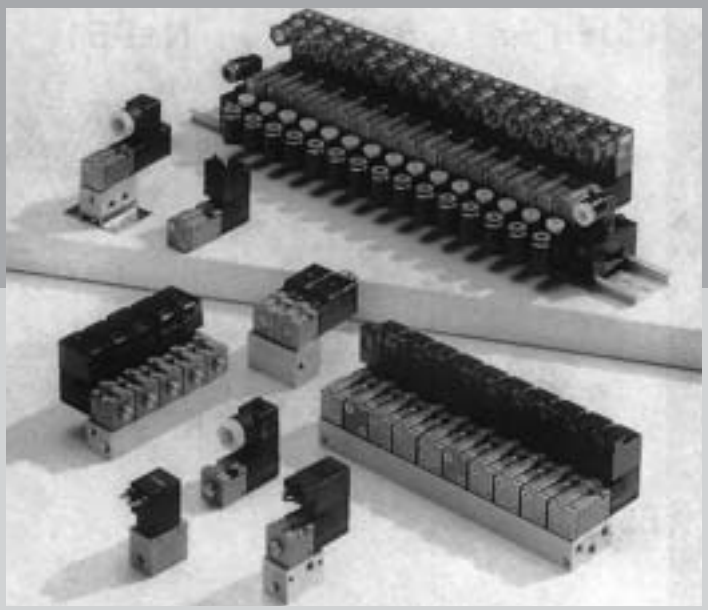
The block manifold method allows stations to be increased and decreased randomly to match the target system.

Easy installation work

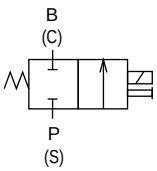
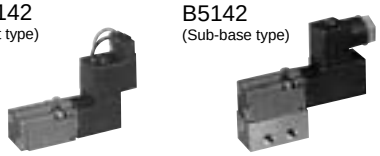
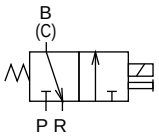
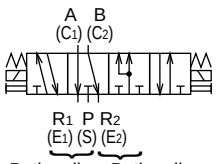
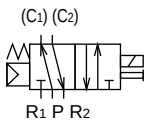
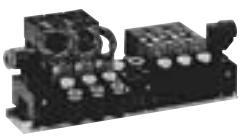
With the block manifold, all steps from block attachment/removal to tube piping are completed with a single touch. Maintenance is also easy.

Direct connection to electronic control

12 VDC and 24 VDC are prepared as the working voltages, and a low-wattage design (75 mA at 24 VDC) is realized, enabling direct connection to various electronic control circuits.



CONTENTS

Appearance			Model no.	Position No. of solenoid JIS symbol	Valve performance: Flow characteristics C (dm^3/(s·bar)) Note 1	Valve performance: Applicable cylinder diameter	Voltage (V)	
Discrete	2, 3 port valve	P51$^{2}_{3}$* (Pilot type) M51$^{2}_{3}$* (Direct mounting) B51$^{2}_{3}$* (Sub-base type) 	P51$^{2}_{3}$*	2 port valve ● 2-position single solenoid N.C. type 	0.10 to 0.15	ø6 to ø16	100 AC 200 AC 12 DC 24 DC Option 110 AC 220 AC	
			M51$^{2}_{3}$*					
			B51$^{2}_{3}$*					
	Double type 5 port valve	W2P513* 	W2P513*					
	5 port valve	P5142 (Pilot type) B5142 (Sub-base type) 	P5142	3 port valve ● 2-position single solenoid N.C. type 	0.09			
			B5142					
Manifold Metal base	2, 3 port valve	B*P51$^{2}_{3}$ 	B*P51$^{2}_{3}$	Double type 5 port valve ● 4-position double solenoid 	0.11 to 0.15	ø6 to ø16	100 AC 200 AC 12 DC 24 DC Option 110 AC 220 AC	
	5 port valve	B*P514 	B*P514		0.09			
Manifold Block type	2, 3 port valve	N*P51$^{2}_{3}$ 	N*P51$^{2}_{3}$	5 port valve ● 2-position single solenoid 	0.11 to 0.15			
	5 port valve	N*P514 	N*P514		0.09			

Note 1: Effective sectional area S and sonic conductance C are converted as S≒5.0×C.

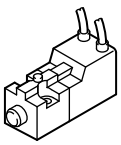
	Solenoid position			A port size			Electric connection					Page
				Female thread							Option	
	2-position single solenoid N.C. type	4-position double solenoid	2-position single solenoid	M5	Rc1/8	ø4 push-in joint	Grommet lead wire	Small terminal box	C-connector	D-connector	With surge suppressor	
	●						●	●	●	●	●	1096
	●			●			●	●	●	●	●	
	●			●	●		●	●	●	●	●	
		●		●			●	●	●	●	●	1096
			●				●	●	●	●	●	1096
			●	●	●		●	●	●	●	●	
	●			●	●		●	●	●	●	●	1112
			●	●	●		●	●	●	●	●	1112
	●					●	●	●	●	●	●	1118
			●			●	●	●	●	●	●	1118

Note: Refer to the following page for details on electric connection and other options.

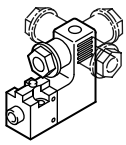
Electric connection

E Grommet lead wire

●Lead wire length
300 mm

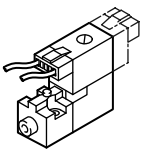


B Small terminal box

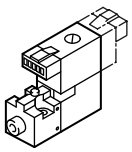


C C-connector with lead wire

●Lead wire length
C : 300 mm
C00 : 500 mm
C01 : 1000 mm
C02 : 2000 mm
C03 : 3000 mm

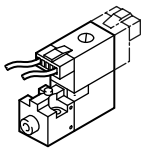


C1 C-connector without lead wire

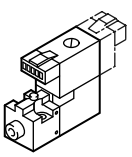


C2 C-connector, with lead wire with surge suppressor and light

●Lead wire length
C2 : 300 mm
C20 : 500 mm
C21 : 1000 mm
C22 : 2000 mm
C23 : 3000 mm

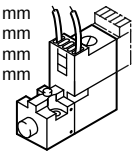


C3 C-connector without lead wire with surge suppressor and light

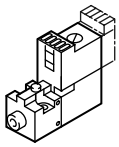


D D-connector with lead wire

●Lead wire length
D : 300 mm
D00 : 500 mm
D01 : 1000 mm
D02 : 2000 mm
D03 : 3000 mm

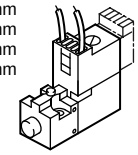


D1 D-connector without lead wire

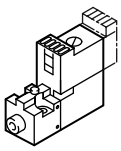


D2 D-connector with lead wire with surge suppressor and light

●Lead wire length
D2 : 300 mm
D20 : 500 mm
D21 : 1000 mm
D22 : 2000 mm
D23 : 3000 mm

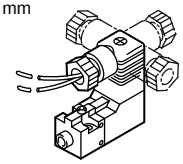


D3 D-connector without lead wire with surge suppressor and light

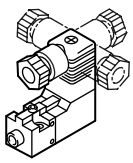


L L2 Small terminal box with light / Small terminal box with light, lead wire

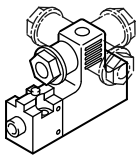
●Lead wire length (only L2)
300 mm



LS Small terminal box light, with surge suppressor

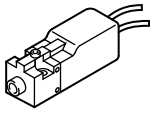


P Small terminal box with surge suppressor



Q Grommet lead wire with surge suppressor

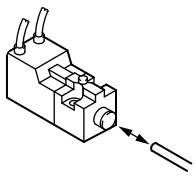
●Lead wire length
300 mm



Manual override

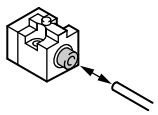
M0 M4 Lateral non-locking type

M0

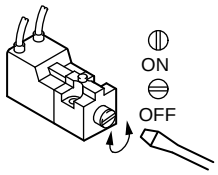


Press by a rod ø3 or less.

M4 (with dust cover)

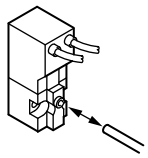


M1 Lateral non-locking type



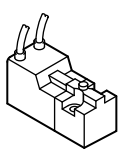
90° rotation by flat-tip screwdriver

M6 Upward non-locking type



Press by a rod ø2 or less.

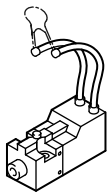
N No manual override



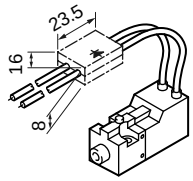
Other options

S Surge suppressor attached

AC

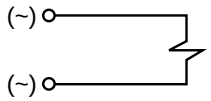
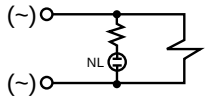
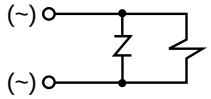
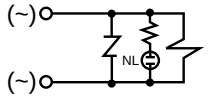
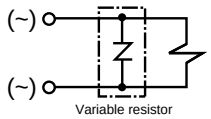
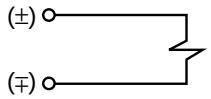
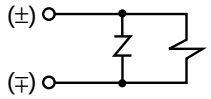
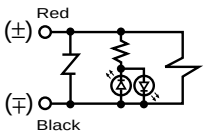
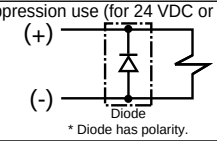
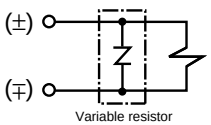


DC



Suppression connector type

Electric connection circuit diagram

Voltage type	Circuit	Electric wire circuit diagram	Wiring method
AC	-		Grommet lead wire Terminal box (B) C-connector (C, C0*, C1) D-connector (D, D0*, D1)
	With indicator light		Terminal box (L, L2)
	With surge suppressor		Terminal box (P) Grommet lead wire (Q)
	With surge suppressor and light		Terminal box (LS) C-connector (C2, C2*, C3) D-connector (D2, D2*, D3)
	Surge suppressor attached		Surge suppressor attached (S)
DC	-		Grommet lead wire Terminal box (B) C-connector (C, C0*, C1) D-connector (D, D0*, D1)
	With surge suppressor		Terminal box (P) Grommet lead wire (Q)
	With surge suppressor and light		Terminal box (L, L2) C-connector (C2, C2*, C3) D-connector (D2, D2*, D3)
	Surge suppressor attached	For suppression use (for 24 VDC or less)  * Diode has polarity.	Surge suppressor attached (S)
			Surge suppressor attached (S)

Safety precautions

Always read this section before starting use.
Refer to Intro 63 for valve general precautions.

2, 3, 5 port pilot operated valve miniature pneumatic valve P/M/B Series

Design & Selection

⚠ CAUTION

■ The continuous energizing type 5 port valve P5142 is available as a custom order part (symbol "X"). Contact CKD for details on the specifications.

During Use & Maintenance

⚠ CAUTION

■ Energizing for a long time could impair solenoid valve performance. Similar caution is required in the following use.

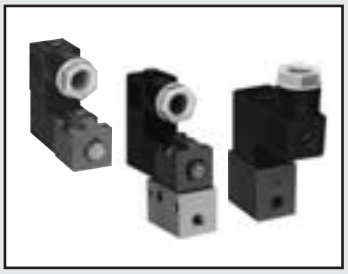
· During intermittent energizing, it takes longer than non-energizing.

· During intermittent energizing, one energizing session exceeds 30 min.

Consider heat dissipating measures when installing.

Consult with CKD when using this device in a continuous energizing state.

MEMO



Discrete

2, 3, 5 port pilot operated valve miniature pneumatic valve

P/M/B Series

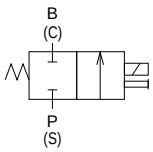
● Applicable cylinder bore size: ø6 to ø16

CE Refer to Intro 17 for details.

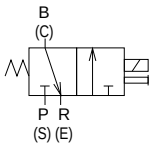
RoHS CAD

JIS symbol

● 2 port valve

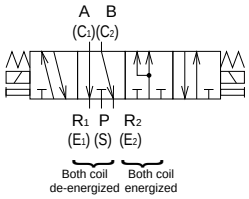


● 3 port valve

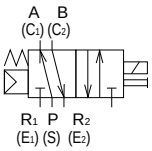


● 5 port valve

4-position double solenoid



2-position single solenoid



Common specifications

Descriptions	
Valve and operation type	Pilot operated poppet valve
Working fluid	Compressed air (low vacuum)
Max. working pressure MPa	Refer to the following individual specifications.
Min. working pressure MPa	Refer to the following individual specifications.
Withstanding pressure MPa	Refer to the following individual specifications.
Ambient temperature °C	-10 to 50 (no freezing)
Fluid temperature °C	5 to 50
Lubrication	Not required
Protective structure	Dust proof
Vibration/impact m/s²	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

Electric specifications

Descriptions			
Rated voltage V	AC		100, 200 (50/60 Hz)
	DC		12, 24
Rated voltage fluctuation range			±10%
Starting current A	AC	100 V	0.056 / 0.044
		200 V	0.034 / 0.026
	DC	12 V	0.150
		24 V	0.075
Holding current A	AC	100 V	0.028 / 0.022
		200 V	0.017 / 0.013
	DC	12 V	0.150
		24 V	0.075
Power consumption W	AC	100 V	1.8 / 1.4
		200 V	2.1 / 1.6
	DC	12 V	1.8
		24 V	1.8
Heat proof class			B (molded coil)
Temperature rise °C			45

Reference: The rated voltage 100 VAC 50/60 Hz can be used at 110 VAC 60 Hz, and 200 VAC 50/60 Hz can be used at 220 VAC 60 Hz.

Individual specifications (2 port valve)

Descriptions	2 port valve					
	P5122	M5122	B5122	P5126	M5126	B5126
Max. working pressure MPa	1.0			0.6 Note 2		
Min. working pressure MPa	0.1			0.1 Note 2		
Withstanding pressure MPa	1.5			1.5		
Port size	-	M5		-	M5	
Response time Note 1 ms	30 or less			30 or less		
Weight g	47		93	47		93

Individual specifications (3, 5 port valve)

Descriptions	3 port valve						5 port valve			
	P5132	M5132	B5132	P5136	M5136	B5136	W2P5132	W2P5136	P5142	B5142
Max. working pressure MPa	1.0			0.6			1.0	0.6	0.70	
Min. working pressure MPa	0.1			0.1 Note 2			0.1		0.15	
Withstanding pressure MPa	1.5			1.5			1.5		1.05	
Port size	-	M5		-	M5		M5		-	M5
Response time Note 1 ms	30 or less						60 or less			
Weight g	47		93	47		93	186		68	118

Note 1: Response time is the value when supply pressure 0.5 MPa, not lubricated and ON. The value varies depending on pressure and quality of lubricant.
Note 2: When the pressure class V (for low-pressure, low vacuum pressure) is designated, use is possible at a low pressure (0 to 0.29 MPa) and low vacuum (3.3 to 101.00 kPa (abs) {25 to 760 Torr}).

Copper and PTFE free

● Free of copper-based and PTFE based materials in flow path

**-Voltage- P6

Flow characteristics

Model no.	Solenoid position	Port size	C (dm³/ (s·bar))	b
P5122	2 port	-	0.10	0.13
M5122		M5		
B5122				
P5126		-	0.15	0.14
M5126		M5		
B5126				

Model no.	Solenoid position	Port size	P ⟶ B		B ⟶ R	
			C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5132	3 port	-	0.10	0.13	0.15	0.17
M5132		M5				
B5132						
P5136		-	0.15	0.14	0.15	0.20
M5136		M5				
B5136						

Model no.	Solenoid position	Port size	P ⟶ A/B		A/B ⟶ R1/R2	
			C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
W2P5132	5 port	M5	0.12	0.13	0.15	0.20
W2P5136			0.15	0.07	0.15	0.24
P5142		-	0.09	0.21	0.11	0.24
B5142		M5				

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0×C.

How to order

● 2, 3 port valve

B 513 2 – M6 B R – M5 U – DC24V

● Double type 5 port valve

W2P513 2 – M6 B – M5 – DC24V

● 5 port valve

B 514 2 – M6 B – M5 U – DC24V

Ⓐ Model no.
Ⓑ Orifice
Ⓒ Manual override
Ⓓ Electric connection
Ⓔ Pressure class
Ⓕ Coil direction
Ⓖ Port size
Ⓗ Other options
Ⓘ Bracket
Ⓙ Voltage

Symbol	Descriptions	Ⓐ Model no.								
		Pilot type			Direct mounting		Note 1 Sub-base type			Double type 5 port valve
		No. of port 2	3	5	2	3	2	3	5	5
		P512	P513	P514	M512	M513	B512	B513	B514	W2P513
Ⓑ Orifice										
2	ø1.2	●	●	●	●	●	●	●	●	●
6	ø1.6	●	●		●	●	●	●		●
Ⓒ Manual override										
M0	Lateral non-locking type (standard) Note 2	●	●				●	●		●
M1	Lateral locking type (option) Note 2	●	●				●	●		●
M4	Non-locking with dust cover (standard)	●	●				●	●		●
M6	Upward direction non-locking type (standard)	●	●	●	●	●	●	●	●	●
N	No manual override (option)	●	●	●	●	●	●	●	●	●
Ⓓ Electric connection										
	Refer to the next page for wire connections.									
Ⓔ Pressure class										
Blank	Standard	●	●	●	●	●	●	●	●	●
V	Low pressure, low vacuum Note 4	●	●		●	●	●	●		
Ⓕ Coil direction										
Blank	Standard direction	●	●		●	●	●	●		
R	180° rotational direction	●	●	●	●	●				
Ⓖ Port size										
Blank	Without piping	●	●	●						
M5	M5 (standard)				●	●	●	●	●	●
06	Rc1/8 (option)						●	●	●	
Ⓗ Other options										
Blank	None	●	●	●	●	●	●	●	●	●
S	Surge suppressor attached Note 5	●	●	●	●	●	●	●	●	●
X	Continuous energizing (custom order) Note 6			●					●	
Ⓘ Bracket										
U	U bracket attached						●	●	●	
L	L bracket attached				●	●				
Ⓙ Voltage										
AC100V	Standard 100 VAC 50/60 Hz	●	●	●	●	●	●	●	●	●
AC200V	Standard 200 VAC 50/60 Hz	●	●	●	●	●	●	●	●	●
DC24V	Standard 24 VDC	●	●	●	●	●	●	●	●	●
DC12V	Standard 12 VDC	●	●	●	●	●	●	●	●	●
AC110V	Option 110 VAC 50/60 Hz	●	●	●	●	●	●	●	●	●
AC220V	Option 220 VAC 50/60 Hz	●	●	●	●	●	●	●	●	●

Note on model no. selection

Note 1 : The discrete sub-base (B) type is a pilot (P) type.
Note 2 : M (direct type) and low vacuum pressure (V) are not available for M0 or M1.
Note 4 : When the pressure class V (for low pressure, low vacuum pressure) is designated, the orifice is "6". Draw the vacuum from the P(S) or R(E) port.
Note 5 : The suppression connector type is provided for 24 VDC or less.
Note 6 : The other option symbol X applies to the 514* type.

<Example of model number>

B5142-M6B-M5-U-AC100V

Ⓐ Model no. : Sub-base type 5 port valve B514
Ⓑ Orifice : ø1.2
Ⓒ Manual override : Uppward non-locking type
Ⓓ Electric connection : Small terminal box
Ⓔ Pressure : Standard
Ⓕ Coil direction : Standard direction
Ⓖ Port size : M5
Ⓗ Other options : None
Ⓘ Bracket : U bracket attached
Ⓙ Voltage : 100 VAC

(Electric connection list)

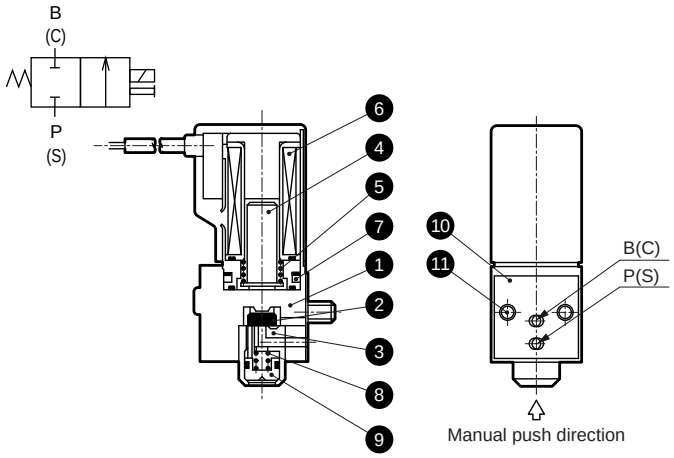
Symbol		Descriptions	Ⓐ Model no.								
			Pilot type			Direct mounting		Sub-base type Note 1			Double type 5 port valve
		No. of ports	2	3	5	2	3	2	3	5	5
			P512	P513	P514	M512	M513	B512	B513	B514	W2P513
Ⓓ Electric connection											
E	Standard	Grommet lead wire (300 mm)	●	●	●	●	●	●	●	●	●
B	Standard	Small terminal box	●	●	●	●	●	●	●	●	●
Q	Option	Grommet lead wire (300 mm) With surge suppressor	●	●	●	●	●	●	●	●	●
C-connector (lead wire lateral)											
C	Standard	Lead wire length (300 mm)	●	●	●	●	●	●	●	●	●
C00	Option	Lead wire length (500 mm)	●	●	●	●	●	●	●	●	●
C01	Option	Lead wire length (1000 mm)	●	●	●	●	●	●	●	●	●
C02	Option	Lead wire length (2000 mm)	●	●	●	●	●	●	●	●	●
C03	Option	Lead wire length (3000 mm)	●	●	●	●	●	●	●	●	●
C1	Option	No lead wire	●	●	●	●	●	●	●	●	●
C2	Option	Lead wire length (300 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
C20	Option	Lead wire length (500 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
C21	Option	Lead wire length (1000 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
C22	Option	Lead wire length (2000 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
C23	Option	Lead wire length (3000 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
C3	Option	No lead wire with surge suppressor, light	●	●	●	●	●	●	●	●	●
D-connector (lead wire upward)											
D	Option	Lead wire length (300 mm)	●	●	●	●	●	●	●	●	●
D00	Option	Lead wire length (500 mm)	●	●	●	●	●	●	●	●	●
D01	Option	Lead wire length (1000 mm)	●	●	●	●	●	●	●	●	●
D02	Option	Lead wire length (2000 mm)	●	●	●	●	●	●	●	●	●
D03	Option	Lead wire length (3000 mm)	●	●	●	●	●	●	●	●	●
D1	Option	No lead wire	●	●	●	●	●	●	●	●	●
D2	Option	Lead wire length (300 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
D20	Option	Lead wire length (500 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
D21	Option	Lead wire length (1000 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
D22	Option	Lead wire length (2000 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
D23	Option	Lead wire length (3000 mm) with surge suppressor, light	●	●	●	●	●	●	●	●	●
D3	Option	No lead wire with surge suppressor, light	●	●	●	●	●	●	●	●	●
Small terminal box											
L	Option	No lead wire With light	●	●	●	●	●	●	●	●	●
L2	Option	Lead wire length (300 mm) With light	●	●	●	●	●	●	●	●	●
LS	Option	No lead wire with surge suppressor, light	●	●	●	●	●	●	●	●	●
P	Option	No lead wire With surge suppressor	●	●	●	●	●	●	●	●	●

Note 3: If DC voltage is selected for L and L2, the surge suppressor is built in.

Internal structure and parts list

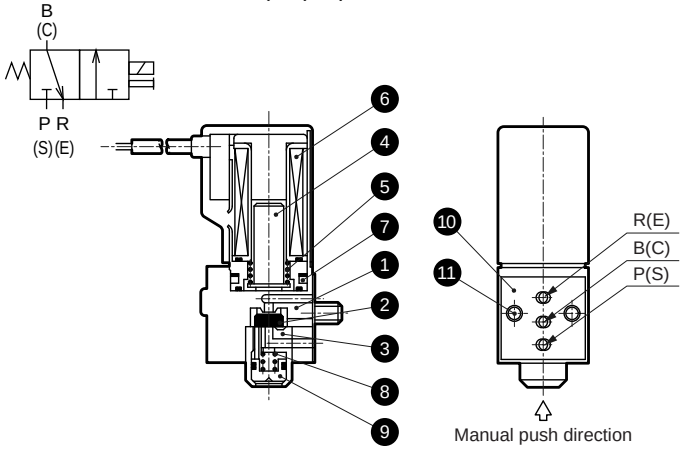
P/B512

● Manual override lateral (M0) 2 port valve



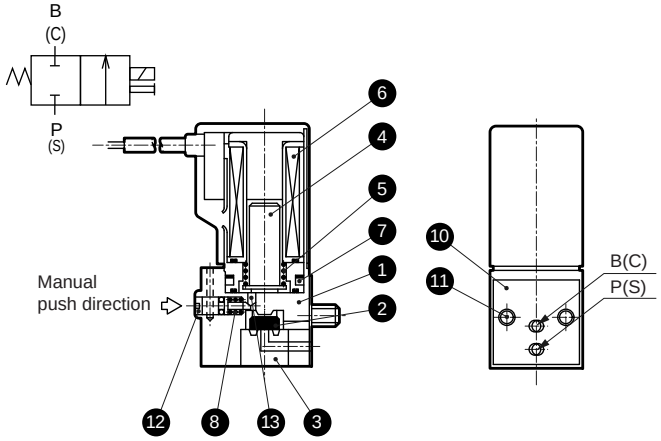
P/B513

● Manual override lateral (M0) 3 port valve



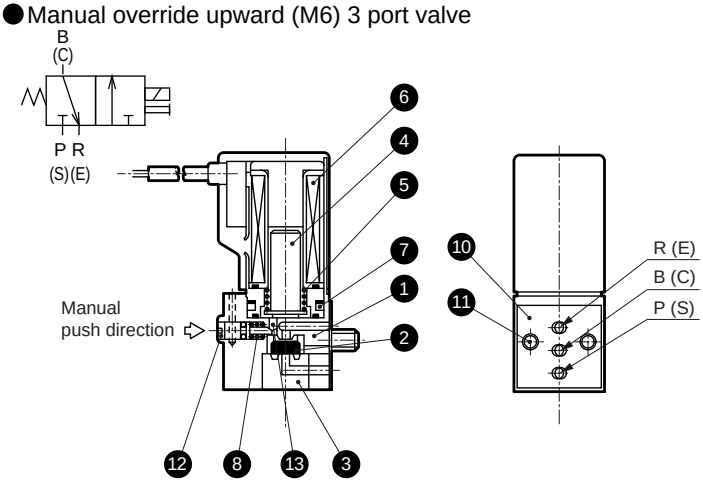
P/M/B512

● Manual override upward (M6) 2 port valve



P/M/B513

● Manual override upward (M6) 3 port valve



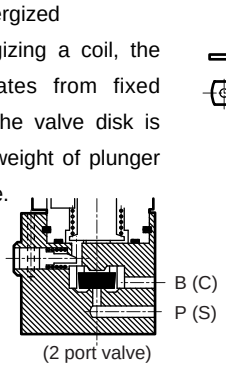
Main parts list

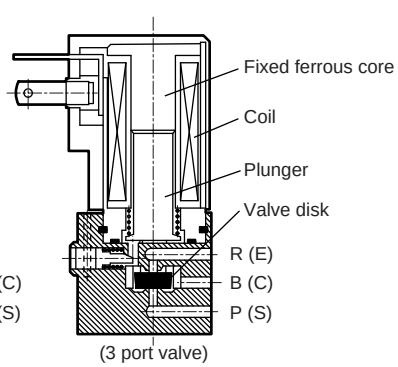
No.	Parts name	Material	No.	Parts name	Material
1	Body	Zinc alloy die-casting	10	Body gasket	Cork
2	Valve disk	Nitrile rubber	11	Cross headed pan with spring washer	Steel
3	Bottom sheet	Brass	12	Manual override	Resin
4	Plunger	Stainless steel	13	Manual pin	Resin
5	Plunger spring	Stainless steel			
6	Coil assembly	-			
7	Wave pin	Piano wire			
8	Manual spring	Stainless steel			
9	Push button	Brass			

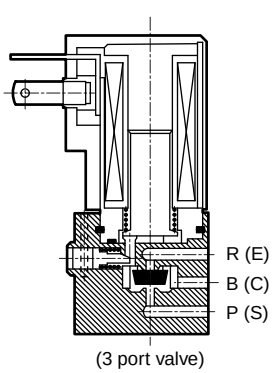
Operational principle

● When de-energized

When de-energizing a coil, the plunger separates from fixed ferrous core. The valve disk is closed by self-weight of plunger and spring force.

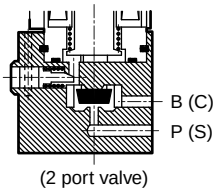






● When energized

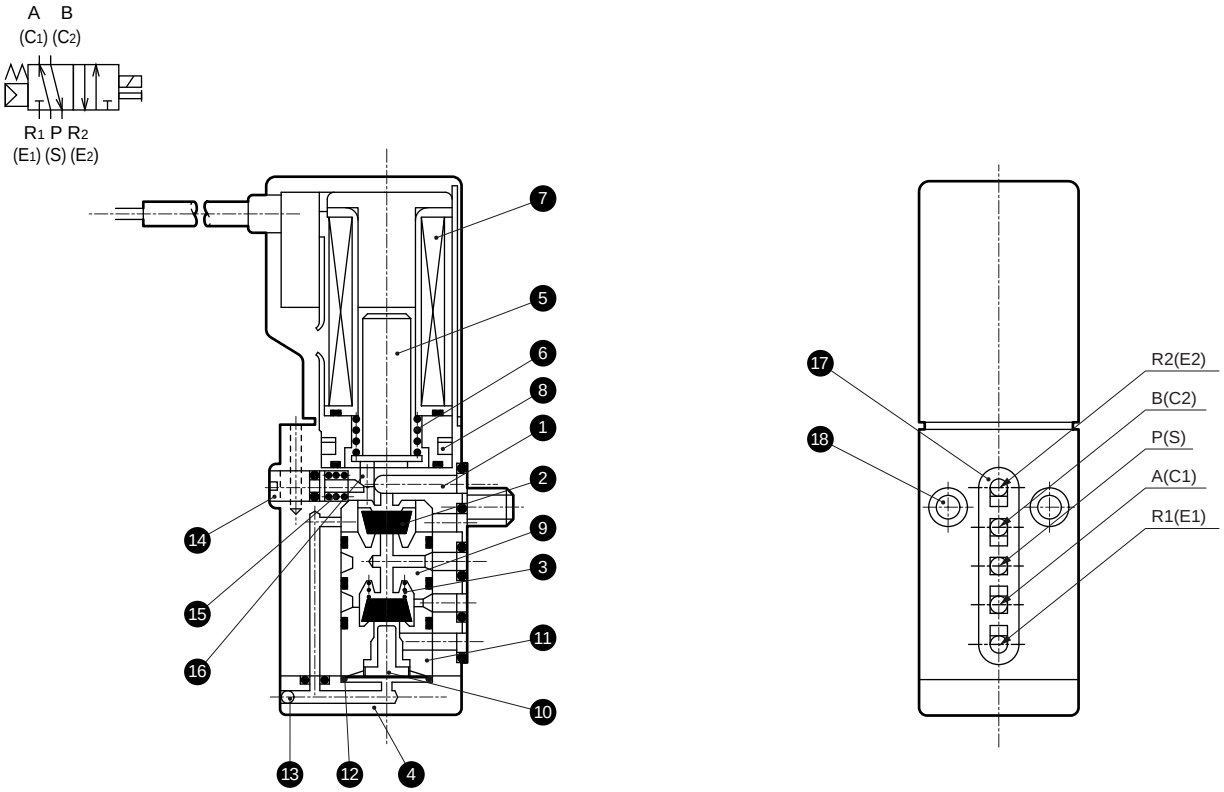
When energizing a coil, the plunger is attracted to the fixed ferrous core, and the valve disk is lifted up and opened by pressure from P (S).



Internal structure and parts list

P/B5142

● Manual override upward (M6) 5 port valve
2-position single solenoid



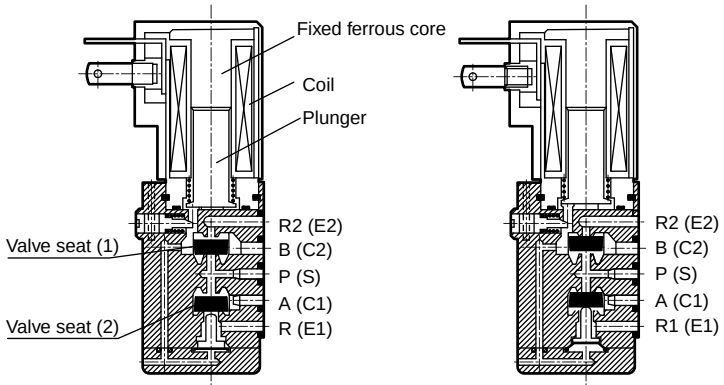
Main parts list

No.	Parts name	Material	No.	Parts name	Material
1	Body	Zinc alloy die-casting	10	Piston	Brass
2	Valve disk	Nitrile rubber	11	Bottom sheet B	Brass
3	Spring	Stainless steel	12	Diaphragm	Nitrile rubber
4	Cap	Zinc alloy die-casting	13	Steel ball	Steel
5	Plunger	Stainless steel	14	Manual override	Resin
6	Plunger spring	Stainless steel	15	Manual spring	Stainless steel
7	Coil assembly	-	16	Manual pin	Resin
8	Wave pin	Piano wire	17	Body gasket	Nitrile rubber
9	Bottom sheet A	Brass	18	Cross headed pan with spring washer	Steel

Operational principle

● When de-energized

When de-energizing a coil, the plunger goes down, and pressure on the side of B (C2) is exhausted to R2 (E2) side. At the same time, valve seat (2) goes down by spring force, and pressure from the side of P (S) leads to A (C1) side.



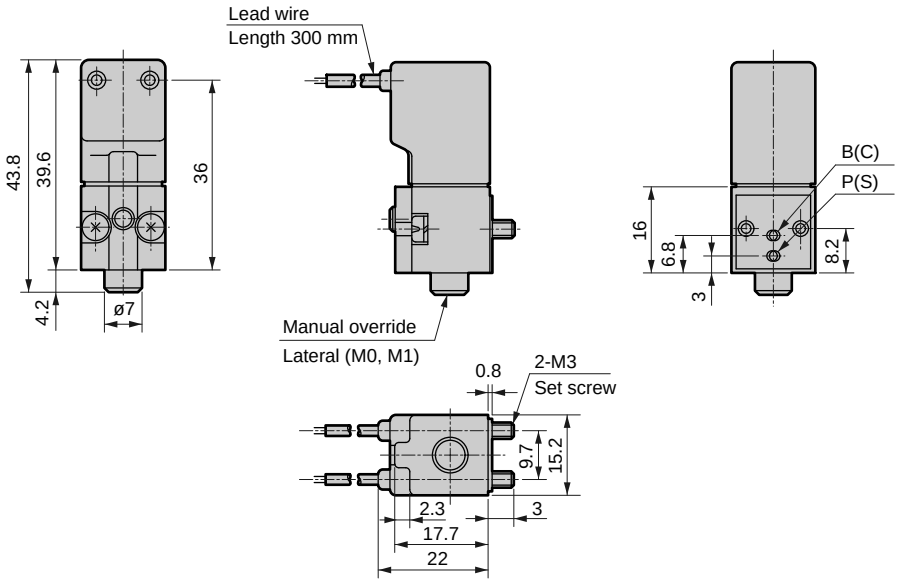
● When energized

The energized coil lifts up the plunger, and pressure of P (S) side leads to B (C2) side. At the same time, this pressure lifts up valve seat (2), and pressure of A (C1) side is exhausted to R1 (E1) side.

Dimensions CAD

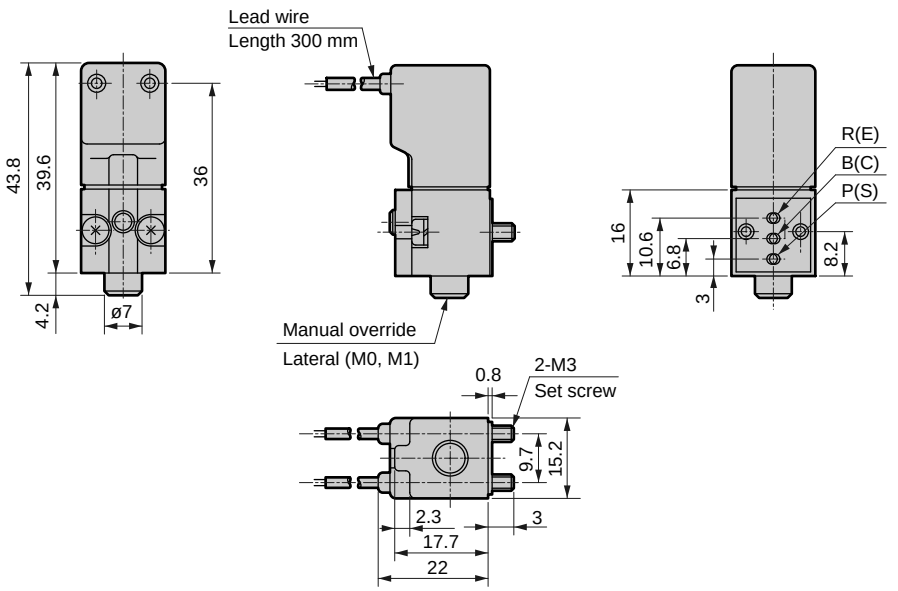
P512 $\frac{2}{6}$

● 2 port valve: Grommet lead wire



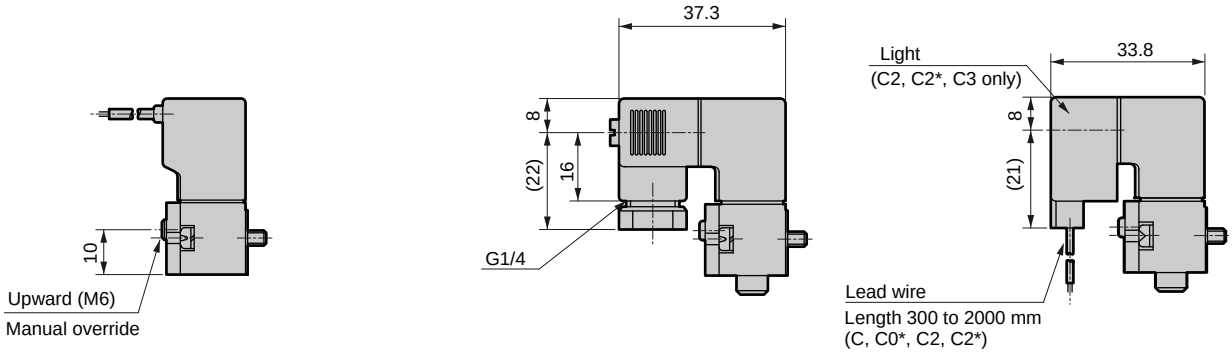
P513 $\frac{2}{6}$

● 3 port valve: Grommet lead wire

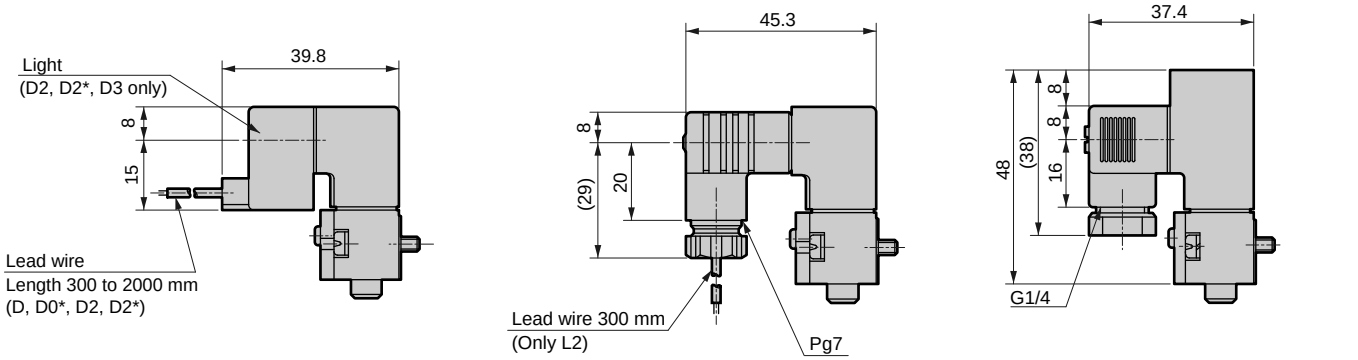


Dimensions

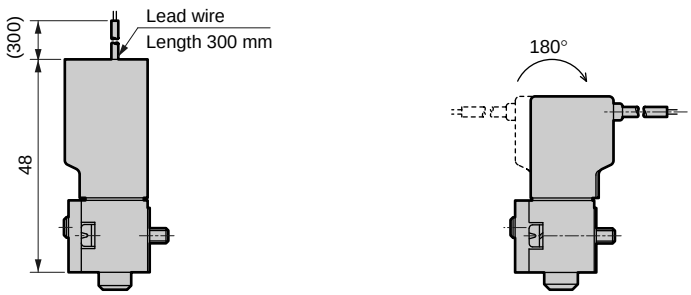
● Non-locking manual override upward: (M6) ● Small terminal box: (B) ● C-connector: (C, C0*, C1, C2, C2*, C3)



● D-connector: (D, D0*, D1, D2, D2*, D3) ● Small terminal box with light: (L, L2) with light and surge suppressor: (LS) ● Small terminal box with surge suppressor: (P)



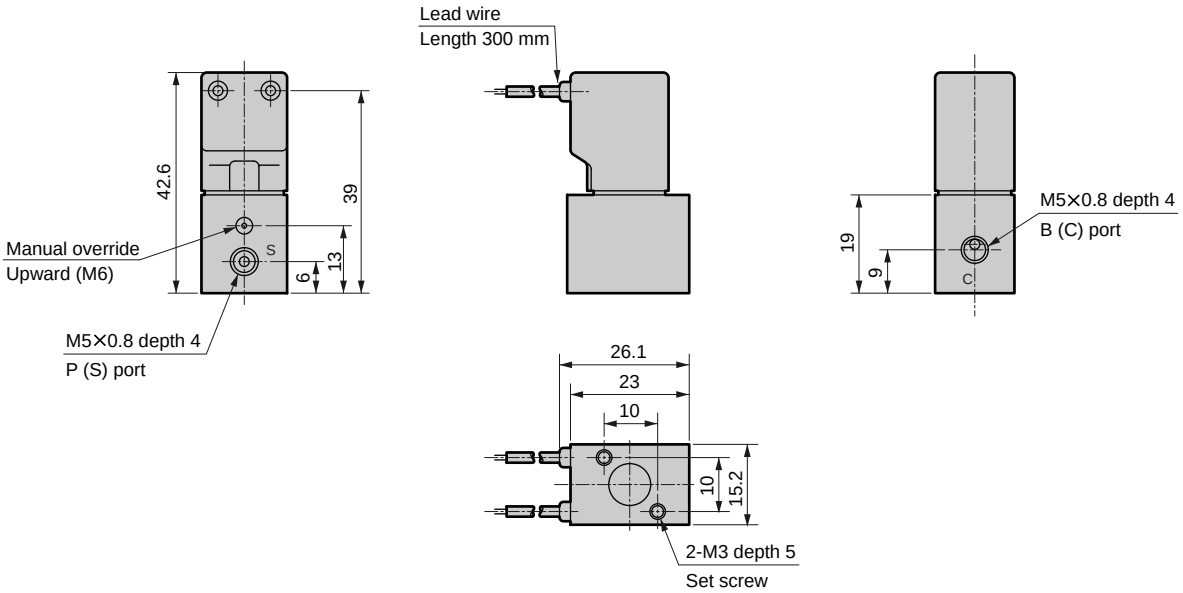
● Grommet lead wire with surge suppressor: (Q) ● Coil direction 180° rotation: (R)



Dimensions CAD

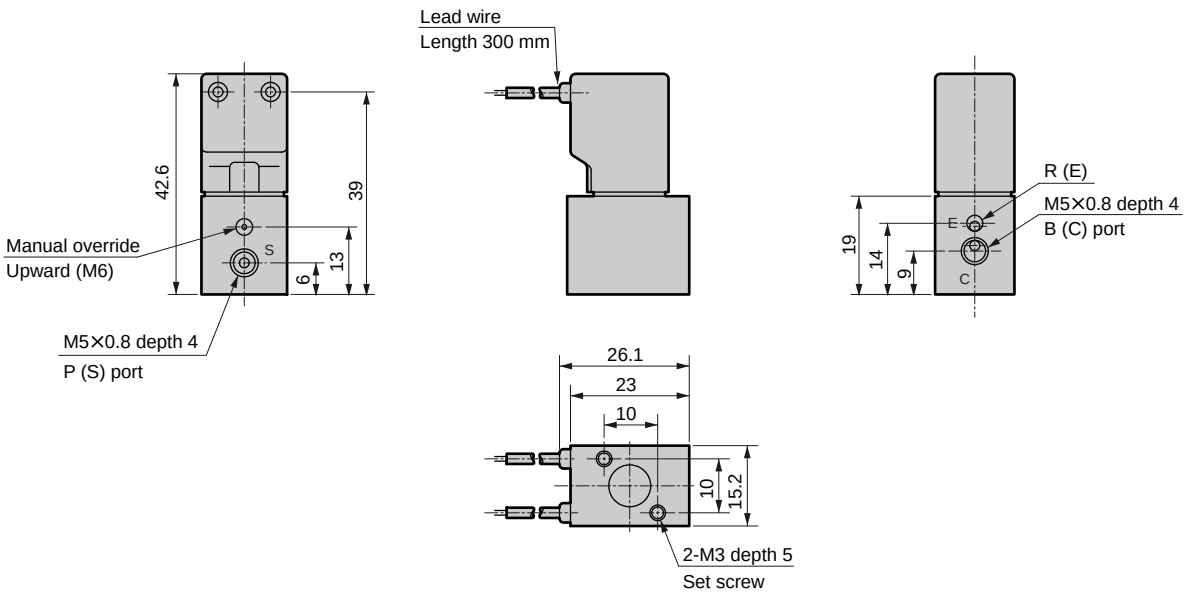
M512 $\frac{2}{6}$

● 2 port valve: Grommet lead wire



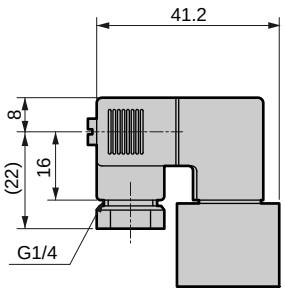
M513 $\frac{2}{6}$

● 3 port valve: Grommet lead wire

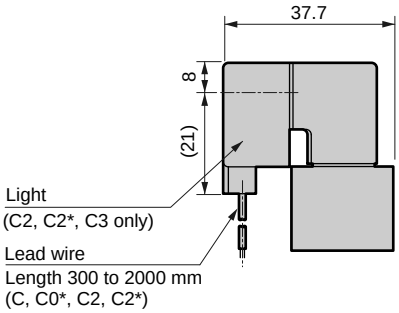


Dimensions

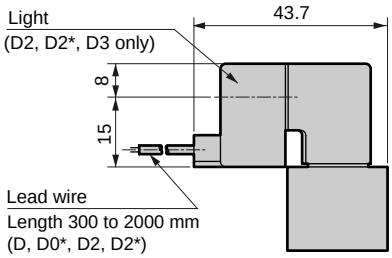
● Small terminal box: (B)



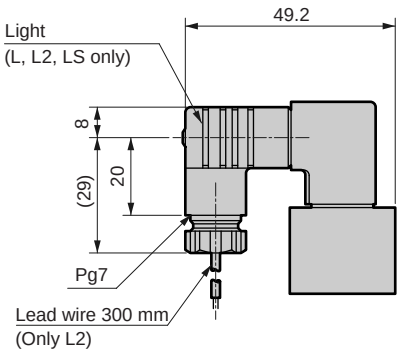
● C-connector: (C, C0*, C1, C2, C2*, C3)



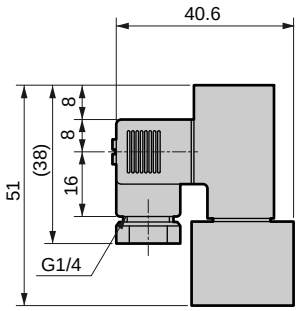
● D-connector: (D, D0*, D1, D2, D2*, D3)



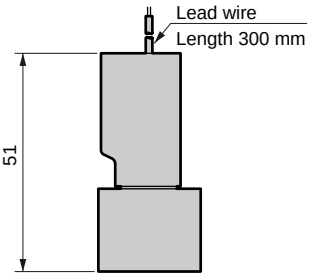
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



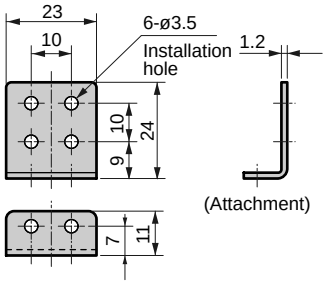
● Small terminal box
with surge suppressor: (P)



● Grommet lead wire
with surge suppressor: (Q)



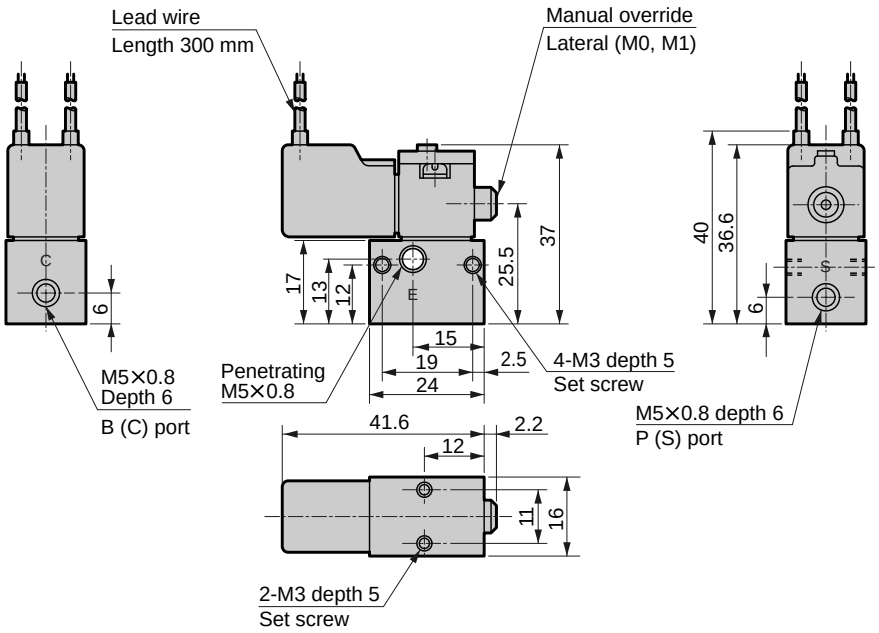
● L shaped bracket: (L)



Dimensions

B512 $^{2}_{6}$

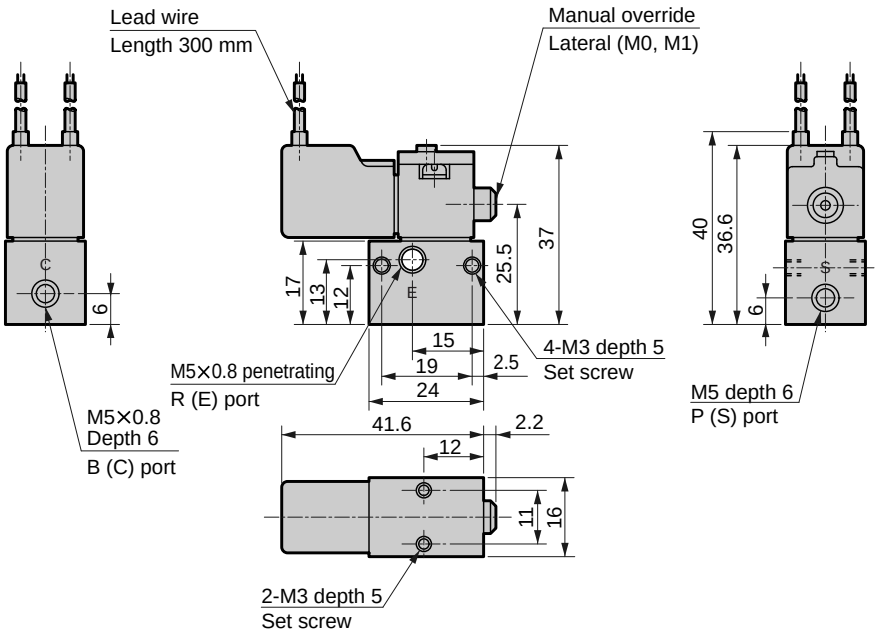
● 2 port valve: Grommet lead wire



* For the 2 port valve, "E" is only M5 thread, and is not an exhaust port.

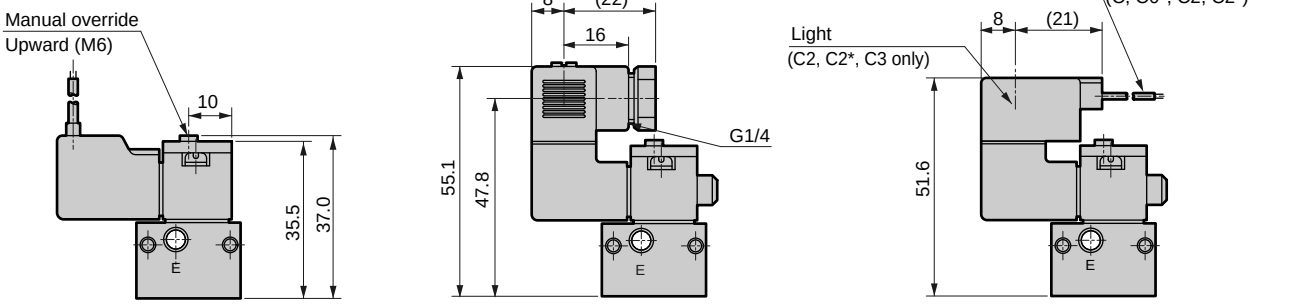
B513 $^{2}_{6}$

● 3 port valve: Grommet lead wire

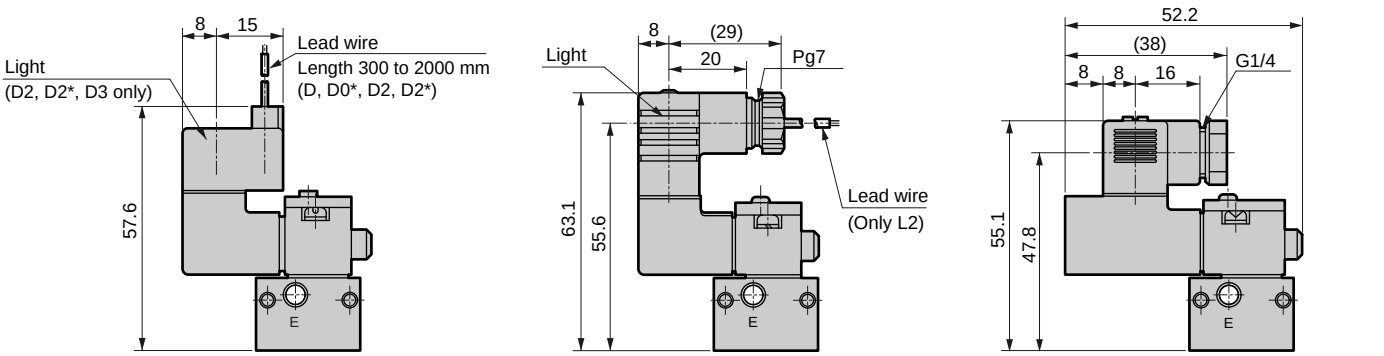


Dimensions CAD

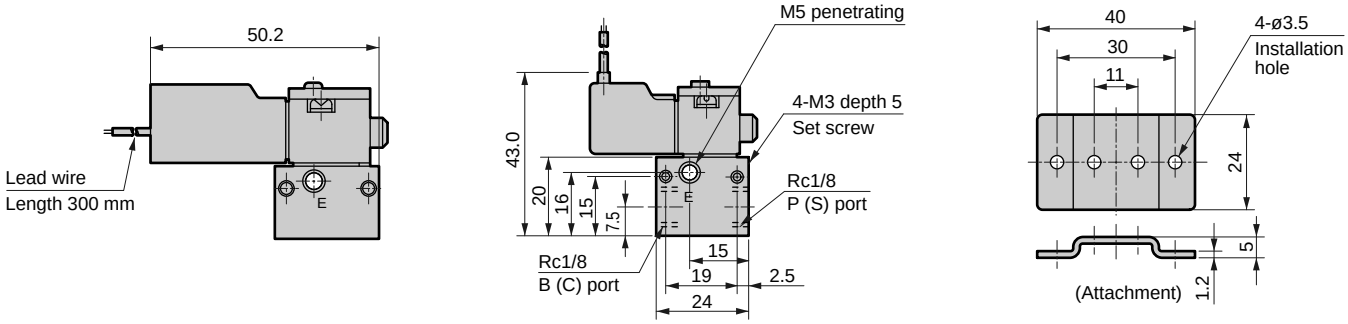
● Non-locking manual override upward: (M6) ● Small terminal box: (B) ● C-connector: (C, C0*, C1, C2, C2*, C3)



● D-connector: (D, D0*, D1, D2, D2*, D3) ● Small terminal box with light: (L, L2) with light and surge suppressor: (LS) ● Small terminal box with surge suppressor: (P)



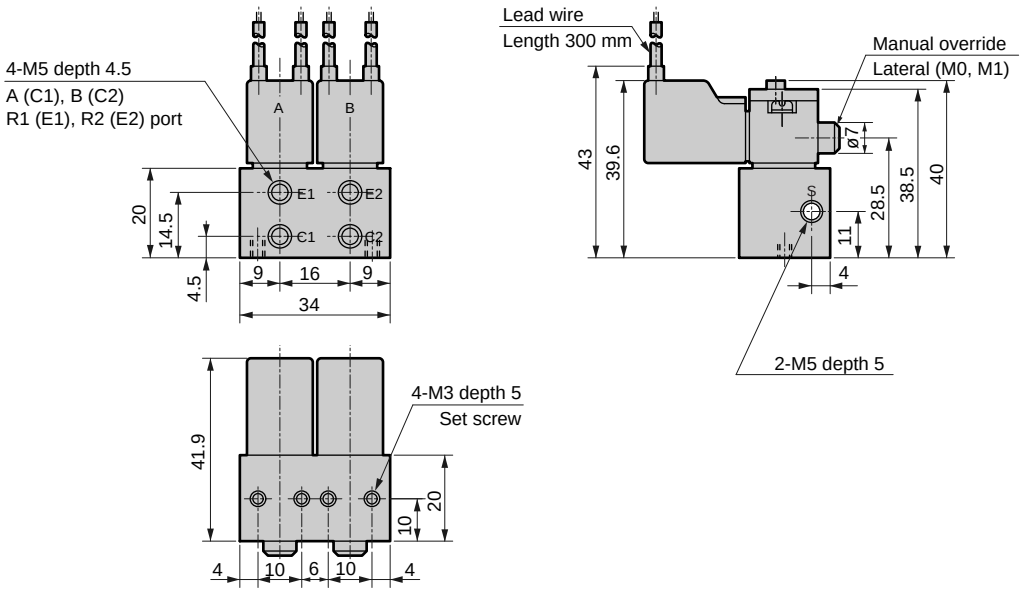
● Grommet lead wire with surge suppressor: (Q) ● Port size Rc1/8: (06) ● U shaped bracket: (U)



Dimensions CAD

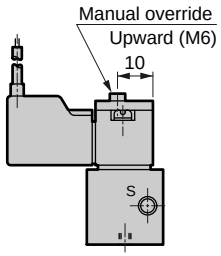
W2P513

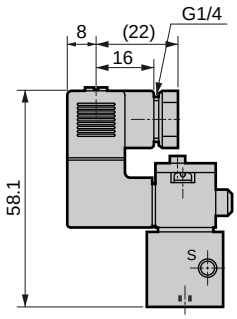
● Grommet lead wire

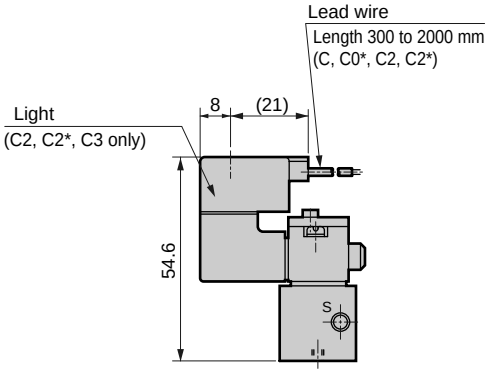


Dimensions

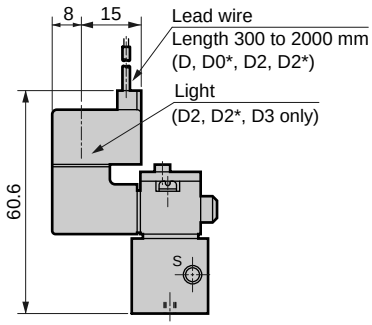
● Non-locking manual override upward: (M6) ● Small terminal box: (B) ● C-connector: (C, C0*, C1, C2, C2*, C3)

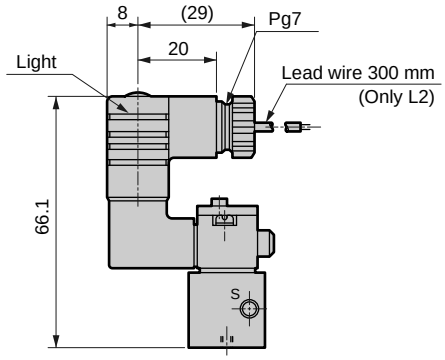


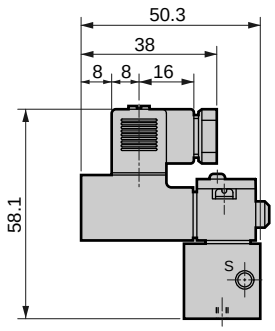




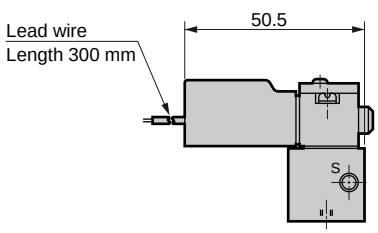
● D-connector: (D, D0*, D1, D2, D2*, D3) ● Small terminal box with light: (L, L2) with light and surge suppressor: (LS) ● Small terminal box with surge suppressor: (P)







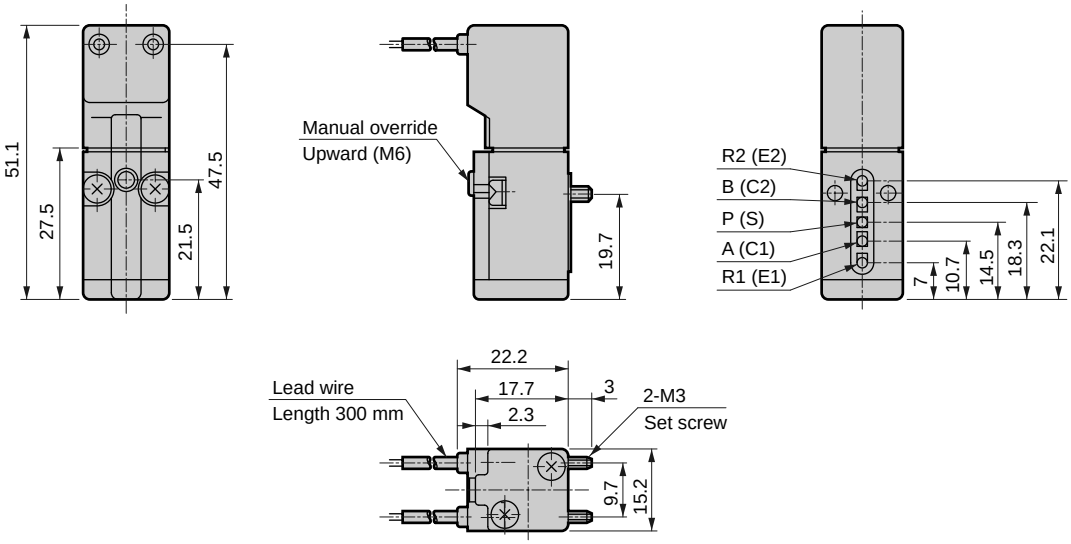
● Grommet lead wire with surge suppressor: (Q)



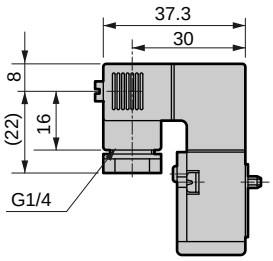
Dimensions CAD

P5142

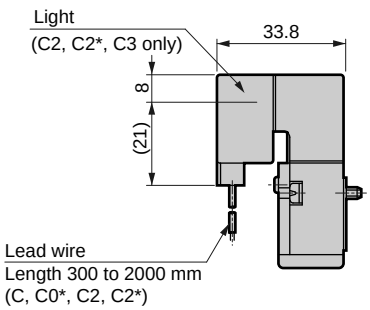
● Pilot type: Grommet lead wire



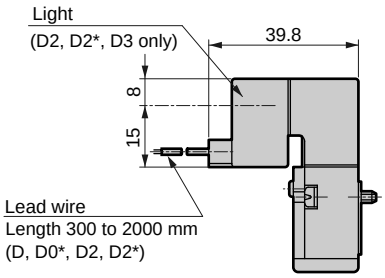
● Small terminal box: (B)



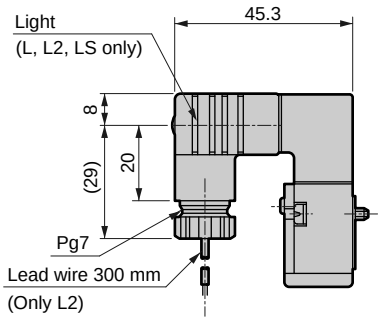
● C-connector: (C, C0*, C1, C2, C2*, C3)



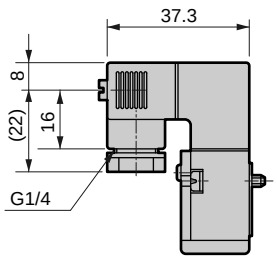
● D-connector: (D, D0*, D1, D2, D2*, D3)



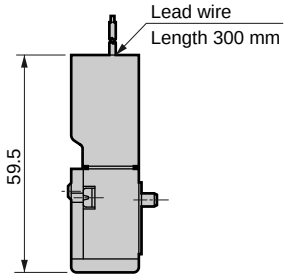
● Small terminal box with light: (L, L2) with light and surge suppressor: (LS)



● Small terminal box with surge suppressor: (P)



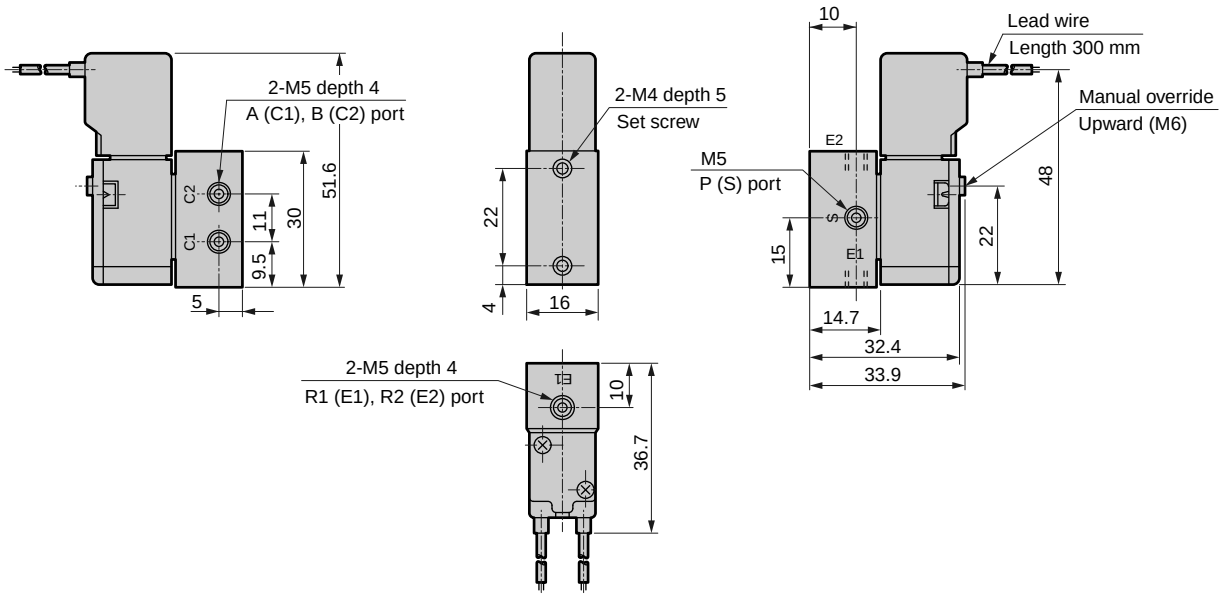
● Grommet lead wire with surge suppressor: (Q)



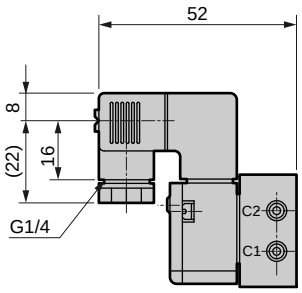
Dimensions

B5142

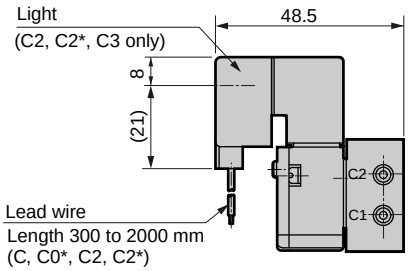
● Sub-base type: Grommet lead wire



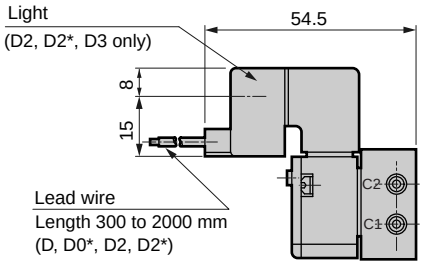
● Small terminal box: (B)



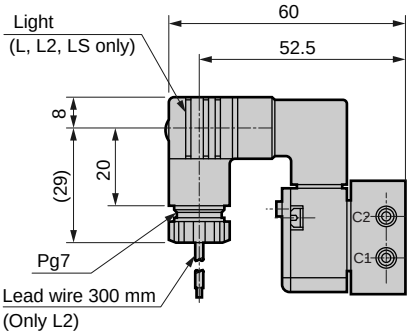
● C-connector: (C, C0*, C1, C2, C2*, C3)



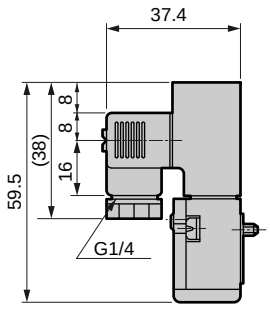
● D-connector: (D, D0*, D1, D2, D2*, D3)



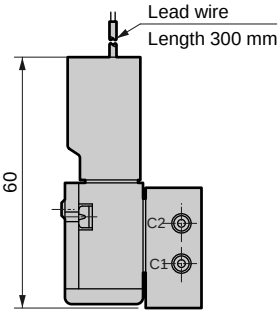
● Small terminal box with light: (L, L2) with light and surge suppressor: (LS)



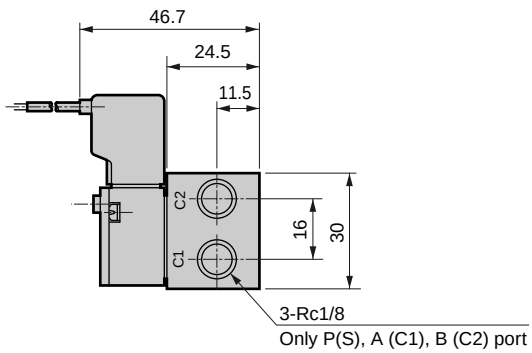
● Small terminal box with surge suppressor: (P)



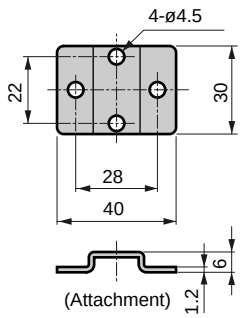
● Grommet lead wire with surge suppressor: (Q)



● Port size Rc1/8: (06)



● U shaped bracket: (U)



* Width of sub-plate is 19.

Individual wiring manifold

2, 3, 5 port pilot operated valve miniature pneumatic valve

B*P51* Series

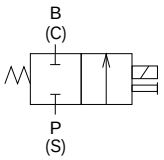
● Applicable cylinder bore size: ø6 to ø16

CE Refer to Intro 17 for details.

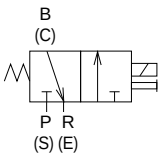
RoHS CAD

JIS symbol

● 2 port valve

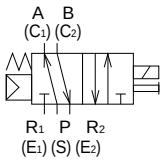


● 3 port valve



● 5 port valve

2-position single solenoid



Common specifications

Descriptions	
Manifold method	Manifold integrated
Manifold type	Common supply, common exhaust
Station number	2 to10 stations
Valve and operation type	Pilot operated poppet valve
Working fluid	Compressed air / low vacuum
Max. working pressure MPa	Refer to the following individual specifications.
Min. working pressure MPa	Refer to the following individual specifications.
Withstanding pressure MPa	Refer to the following individual specifications.
Ambient temperature °C	-10 to 50 (no freezing)
Fluid temperature °C	5 to 50
Lubrication	Not required
Protective structure	Dust proof
Vibration/impact m/s²	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

Electric specifications

Descriptions			
Rated voltage V	AC		100, 200 (50/60 Hz)
	DC		12, 24
Rated voltage fluctuation range			±10%
Starting current A	AC	100 V	0.056 / 0.044
		200 V	0.034 / 0.026
	DC	12 V	0.150
		24 V	0.075
Holding current A	AC	100 V	0.028 / 0.022
		200 V	0.017 / 0.013
	DC	12 V	0.150
		24 V	0.075
Power consumption W	AC	100 V	1.8 / 1.4
		200 V	2.1 / 1.6
	DC	12 V	1.8
		24 V	1.8
Heat proof class			B (molded coil)
Temperature rise °C			45

Reference: The rated voltage 100 VAC 50/60 Hz can be used at 110 VAC 60 Hz, and 200 VAC 50/60 Hz can be used at 220 VAC 60 Hz.

Individual specifications

Descriptions	2 port valve		3 port valve		5 port valve
	P5122	P5126	P5132	P5136	P5142
Max. working pressure MPa	1.0	0.6	1.0	0.6	0.7
Min. working pressure MPa	0.1	0.1 Note 2	0.1	0.1 Note 2	0.15
Withstanding pressure MPa	1.5	1.5	1.5	1.5	1.05
Orifice mm	ø1.2	ø1.6	ø1.2	ø1.6	ø1.2
Response time Note 1 ms	30 or less		30 or less		60 or less

Note 1: Response time is the value when supply pressure 0.5 MPa, not lubricated and ON. The value varies depending on pressure and quality of lubricant.

Note 2: When the pressure class V (for low-pressure, low vacuum pressure) is designated, use is possible at a low pressure (0 to 0.29 MPa) and low vacuum (3.3 to 101.00 kPa (abs) {25 to 760 Torr}).

(Mix manifold)

● How to Indicate combinations

When selecting a combination manifold (8 selected for "C"), indicate the required functions with symbols (refer to right table) and layout number (start with 1 at the left and assign numbers to the designated number of stations) in the Remarks field at the bottom of the normal model indication. Refer to the example for details.

Symbol	Function
M2	2 port valve
M3	3 port valve
M4	5 port valve
MP	Masking plate

1	2	3	4	5
3 port valve (M3)	3 port valve (M3)	3 port valve (M3)	5 port valve (M4)	5 port valve (M4)

Example

The model number for a manifold with 5 stations, orifice: ø1.2, and 200 VAC with the layout shown in the left is as follows:

B5P5182-M6E-M5-AC200V

	M2	M3	M4	MP
-	0	3	2	0

(M3 = 1 to 3, M4 = 4, 5)

Indicate the required quantity. Indicate 0 even when not required.

Flow characteristics

Model no.	Solenoid position	C (dm³/ (s·bar))	b
P5122	2 port	0.11	0.15
P5126		0.15	0.18

Model no.	Solenoid position	P ⟶ B		B ⟶ R	
		C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5132	3 port	0.11	0.15	0.15	0.34
P5136		0.15	0.18	0.15	0.29

Model no.	Solenoid position	P ⟶ A/B		A/B ⟶ R1/R2	
		C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5142	5 port	0.09	0.23	0.13	0.18

Note 1: Effective sectional area S and sonic conductance C are converted as S≒5.0×C.

Copper and PTFE free

● Free of copper-based and PTFE based materials in flow path

**-Voltage- P6

How to order manifold

B	7	P51	8	2	–	M6	B		–	M5	–			–	DC24V	–	0	5	1	1
	Ⓐ		Ⓑ			Ⓒ	Ⓓ			Ⓔ		Ⓕ	Ⓖ		Ⓗ		Ⓘ				Ⓚ

Indicate the quantity and display position of each valve function for the mixed manifold. Refer to page 1112.

Ⓐ Model no.

Ⓑ Station number

Ⓒ Solenoid valve
Note 1

Ⓓ Orifice
Note 2

Ⓔ Manual override

Ⓕ Electric connection
Note: Refer to page1093 for a circuit diagram with surge suppressor and light.

Ⓖ Pressure class

Ⓗ Port size

Ⓘ Other options

Ⓙ Bracket

Ⓚ Voltage

Symbol	Descriptions	Ⓐ Model no. B*P 512	B*P 513	B*P 514
Ⓑ Station number				
2	2 stations	●	●	●
to	to			
10	10 stations			
Ⓒ Solenoid valve				
2	2 port valve	●		
3	3 port valve		●	
4	5 port valve			●
8	Mix manifold	●	●	●
Ⓓ Orifice				
2	ø1.2	●	●	●
6	ø1.6	●	●	
Ⓔ Manual override				
M0	Lateral non-locking type (standard) Note 3	●	●	
M1	Lateral locking type (option) Note 3	●	●	
M4	Non-locking, dust proof cover	●	●	
M6	Upward direction non-locking type (standard)	●	●	●
N	No manual override (option)	●	●	●
Ⓕ Electric connection				
Refer to the next page for electric connections.				
Ⓖ Pressure class				
Blank	Standard	●	●	●
V	Low pressure, low vacuum Note 5	●	●	
Ⓗ Port size				
M5	M5 (standard)	●	●	●
06	Rc1/8 (option)	●	●	●
Ⓘ Other options				
Blank	None	●	●	●
S	Surge suppressor attached Note 6	●	●	●
X	Continuous energizing (custom order)			●
Ⓙ Bracket				
Blank	None	●	●	●
L	L bracket attached	●	●	●
Ⓚ Voltage				
AC100V	Standard 100 VAC 50/60 Hz	●	●	●
AC200V	Standard 200 VAC 50/60 Hz	●	●	●
DC24V	Standard 24 VDC	●	●	●
DC12V	Standard 12 VDC	●	●	●
AC110V	Option 110 VAC 50/60 Hz	●	●	●
AC220V	Option 220 VAC 50/60 Hz	●	●	●

Note on model no. selection

Note 1: Consult with CKD when using with common supply and individual exhaust. The orifice combination is available as custom order.

Note 2: When using only the 5 port valve, the orifice selected with the 2 port valve is used. When using mixed with the 2, 3 port valve, the orifice selected with the 3 port valve is used.

Note 3: M0 (lateral nonlocking type) and M1 (lateral locking type) cannot be used with the pressure class V (for low pressure, low vacuum pressure).

Note 5: When the pressure class V (for low-pressure, low vacuum pressure) is designated, the orifice is "6". Draw the vacuum from the P(S) port.

Note 6: The suppression connector type is provided for 24 VDC or less.

<Example of model number>

B5P5142-M6E-M5-AC200V

5 port valve manifold
Common supply / common exhaust

Ⓑ Station number	: 5 stations
Ⓒ Solenoid valve	: 5 port valve
Ⓓ Orifice	: ø1.2
Ⓔ Manual override	: Uppward non-locking type
Ⓕ Electric connection	: Grommet lead wire
Ⓗ Port size	: M5
Ⓘ Other options	: None
Ⓙ Bracket	: None
Ⓚ Voltage	: 200 VAC

(Electric connection list)

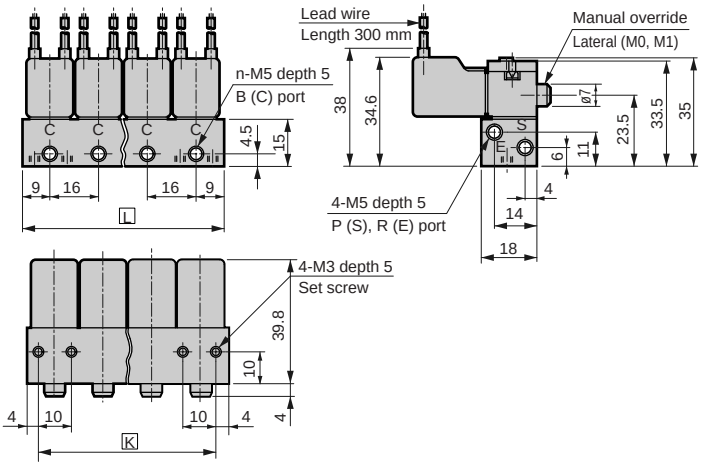
Symbol		Descriptions		A Model no. B*P 512	B*P 513	B*P 514
F Electric connection						
E	Standard	Grommet lead wire (300 mm)		●	●	●
B	Standard	Small terminal box		●	●	●
Q	Option	Grommet lead wire (300 mm)	With surge suppressor	●	●	
C-connector (lead wire lateral)						
C	Standard	Lead wire length (300 mm)		●	●	●
C00	Option	Lead wire length (500 mm)		●	●	●
C01	Option	Lead wire length (1000 mm)		●	●	●
C02	Option	Lead wire length (2000 mm)		●	●	●
C03	Option	Lead wire length (3000 mm)		●	●	●
C1	Option	No lead wire		●	●	●
C2	Option	Lead wire length (300 mm)	with surge suppressor, light	●	●	●
C20	Option	Lead wire length (500 mm)	with surge suppressor, light	●	●	●
C21	Option	Lead wire length (1000 mm)	with surge suppressor, light	●	●	●
C22	Option	Lead wire length (2000 mm)	with surge suppressor, light	●	●	●
C23	Option	Lead wire length (3000 mm)	with surge suppressor, light	●	●	●
C3	Option	No lead wire	with surge suppressor, light	●	●	●
D-connector (lead wire upward)						
D	Option	Lead wire length (300 mm)		●	●	●
D00	Option	Lead wire length (500 mm)		●	●	●
D01	Option	Lead wire length (1000 mm)		●	●	●
D02	Option	Lead wire length (2000 mm)		●	●	●
D03	Option	Lead wire length (3000 mm)		●	●	●
D1	Option	No lead wire		●	●	●
D2	Option	Lead wire length (300 mm)	with surge suppressor, light	●	●	●
D20	Option	Lead wire length (500 mm)	with surge suppressor, light	●	●	●
D21	Option	Lead wire length (1000 mm)	with surge suppressor, light	●	●	●
D22	Option	Lead wire length (2000 mm)	with surge suppressor, light	●	●	●
D23	Option	Lead wire length (3000 mm)	with surge suppressor, light	●	●	●
D3	Option	No lead wire	with surge suppressor, light	●	●	●
Small terminal box						
L	Option	No lead wire	With light	●	●	●
L2	Option	Lead wire length (300 mm)	With light	●	●	●
LS	Option	No lead wire	with surge suppressor, light	●	●	●
P	Option	No lead wire	With surge suppressor	●	●	●

Note 4: If DC voltage is selected for L and L2, the surge suppressor is built in.

Dimensions CAD

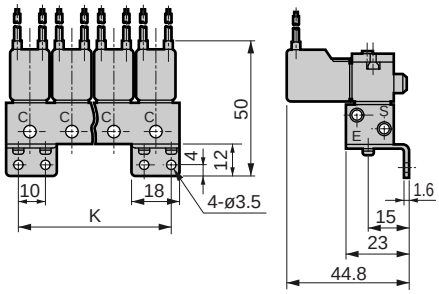
B*P51$^{2}_{3}$

● Grommet lead wire



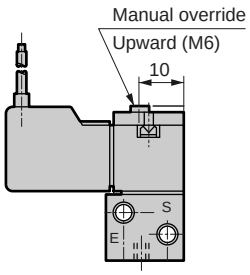
Station number	2	3	4	5	6	7	8	9	10
K	26	42	58	74	90	106	122	138	154
L	34	50	66	82	98	114	130	146	162

● L shaped bracket: (L)

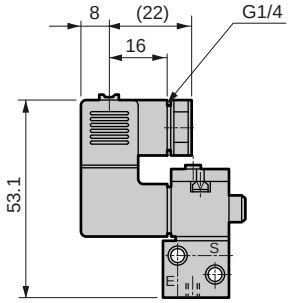


* The L bracket is enclosed.
When using two stations, the bracket is mounted only on the left or right.

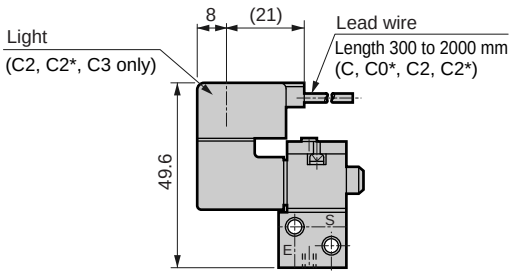
● Non-locking manual override upward



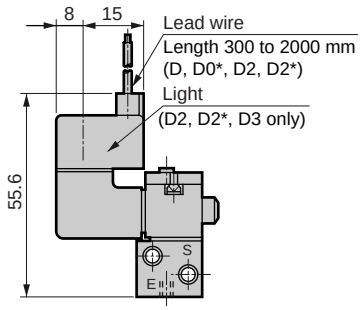
● Small terminal box: (B)



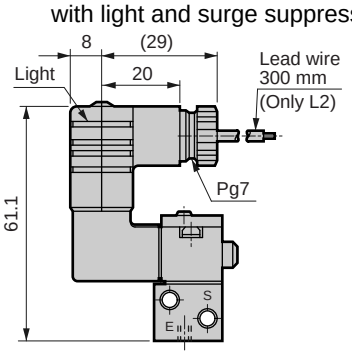
● C-connector: (C, C0*, C1, C2, C2*, C3)



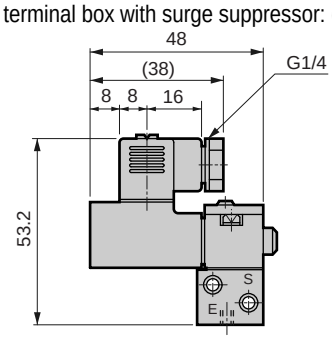
● D-connector: (D, D0*, D1, D2, D2*, D3)



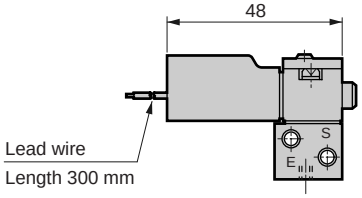
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



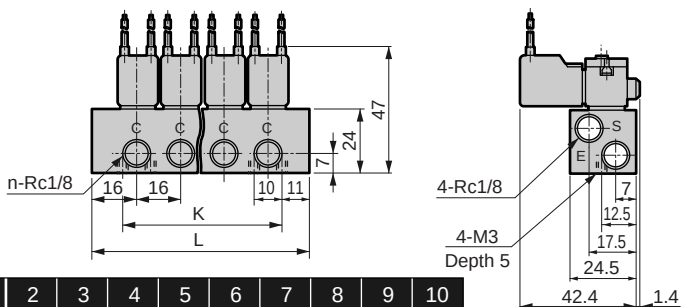
● Small terminal box with surge suppressor: (P)



● Grommet lead wire with surge suppressor: (Q)



● Port size Rc1/8: (06)



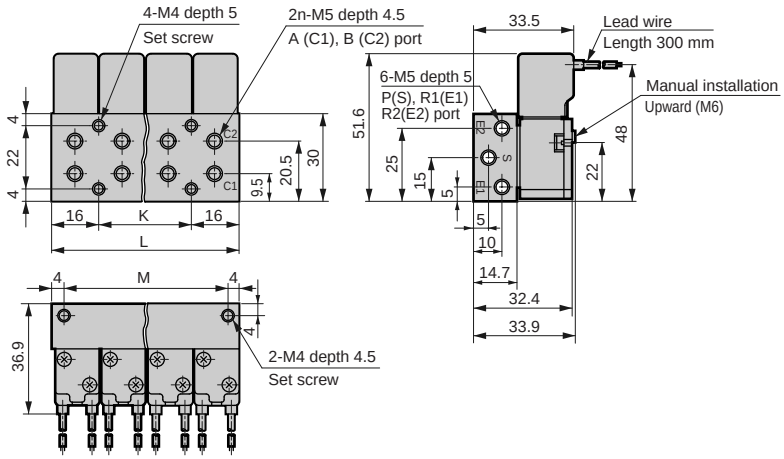
Station number	2	3	4	5	6	7	8	9	10
K	26	42	58	74	90	106	122	138	154
L	48	64	80	96	112	128	144	160	176

Dimensions CAD

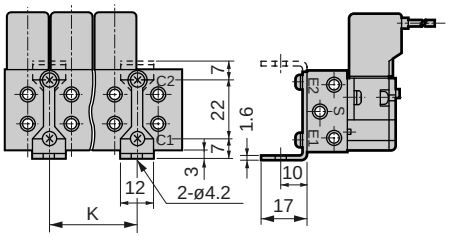
B*P514

● Grommet lead wire

* B*P518 (mixed manifold) has 2 port valve and 3 port valve mounted on the B*P514 manifold base.



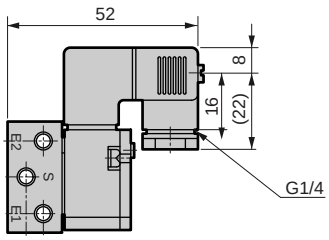
● L shaped bracket: (L)



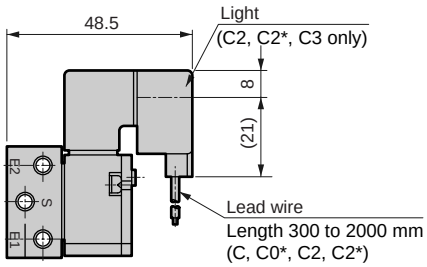
* The L bracket is enclosed.

Station number	2	3	4	5	6	7	8	9	10
K	0	16	32	48	64	80	96	112	128
L	32	48	64	80	96	112	128	144	160
M	24	40	56	72	88	104	120	136	152

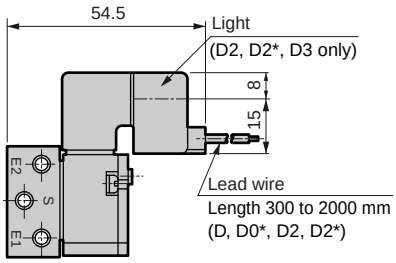
● Small terminal box: (B)



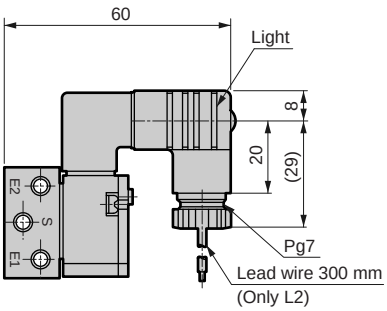
● C-connector: (C, C0*, C1, C2, C2*, C3)



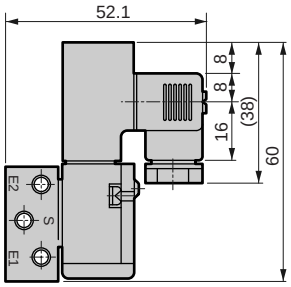
● D-connector: (D, D0*, D1, D2, D2*, D3)



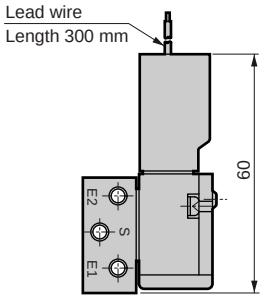
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



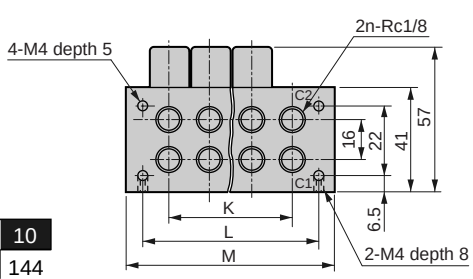
● Small terminal box with surge suppressor: (P)

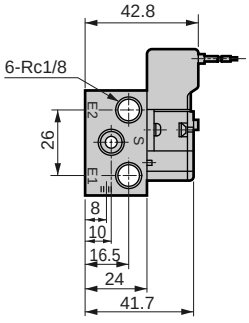


● Grommet lead wire with surge suppressor: (Q)



● Port size Rc1/8: (06)





Station number	2	3	4	5	6	7	8	9	10
K	16	32	48	68	80	96	112	128	144
L	36	52	68	84	100	116	132	148	164
M	48	64	80	96	112	128	144	160	176

Block manifold

2, 3, 5 port pilot operated valve miniature pneumatic valve

N*P51* Series

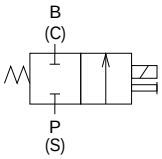
● Applicable cylinder bore size: ø6 to ø16

CE Refer to Intro 17 for details.

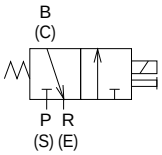
RoHS CAD

JIS symbol

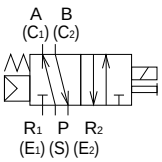
● 2 port valve



● 3 port valve



● 5 port valve
2-position single solenoid



Common specifications

Descriptions	
Manifold method	Manifold block type (DIN rail mount)
Manifold type	Common supply / common exhaust
Station number	2 to 25 stations
Valve and operation type	Pilot operated poppet valve
Working fluid	Compressed air / low vacuum
Max. working pressure MPa	Refer to the following individual specifications.
Min. working pressure MPa	Refer to the following individual specifications.
Withstanding pressure MPa	1.5
Ambient temperature °C	-10 to 40 (no freezing)
Fluid temperature °C	5 to 40
Lubrication	Not required
Protective structure	Dust proof
Vibration/impact m/s^2	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

Electric specifications

Descriptions			
Rated voltage V	AC		100, 200 (50/60 Hz)
	DC		12, 24
Rated voltage fluctuation range			±10%
Starting current A	AC	100 V	0.056 / 0.044
		200 V	0.034 / 0.026
	DC	12 V	0.150
		24 V	0.075
Holding current A	AC	100 V	0.028 / 0.022
		200 V	0.017 / 0.013
	DC	12 V	0.150
		24 V	0.075
Power consumption W	AC	100 V	1.8 / 1.4
		200 V	2.1 / 1.6
	DC	12 V	1.8
		24 V	1.8
Heat proof class			B (molded coil)
Temperature rise °C			45

Reference: The rated voltage 100 VAC 50/60 Hz can be used at 110 VAC 60 Hz, and 200 VAC 50/60 Hz can be used at 220 VAC 60 Hz.

Individual specifications

Descriptions	2 port valve		3 port valve		5 port valve
	P5122	P5126	P5132	P5136	P5142
Max. working pressure MPa	1.0	0.6	1.0	0.6	0.7
Min. working pressure MPa	0.1	0.1 Note 2	0.1	0.1 Note 2	0.15
Orifice mm	ø1.2	ø1.6	ø1.2	ø1.6	ø1.2
Response time Note 1 ms	30 or less		30 or less		60 or less

Note 1: Response time is the value when supply pressure 0.5 MPa, not lubricated and ON. The value varies depending on pressure and quality of lubricant.
Note 2: When the pressure class V (for low-pressure, low vacuum pressure) is designated, use is possible at a low pressure (0 to 0.29 MPa) and low vacuum (3.3 to 101.00 kPa (abs) {25 to 760 Torr}).

Flow characteristics

Model no.	Solenoid position	C (dm³/ (s·bar))	b
P5122	2 port	0.11	0.15
P5126		0.15	0.18

Model no.	Solenoid position	P ⟶ B		B ⟶ R	
		C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5132	3 port	0.11	0.15	0.15	0.34
P5136		0.15	0.18	0.15	0.29

Model no.	Solenoid position	P ⟶ A/B		A/B ⟶ R1/R2	
		C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5142	5 port	0.09	0.23	0.13	0.18

Note 1: Effective sectional area S and sonic conductance C are converted as S≒5.0×C.

Copper and PTFE free

● Free of copper-based and PTFE based materials in flow path

**-Voltage- P6

How to order block manifold

Note: Complete manifold specification sheet (Page 1128).

Ⓐ Model no.

Ⓑ Station number

Ⓒ Solenoid valve
Note 2

Ⓓ Orifice
Note 3

Ⓔ Manual override

Ⓕ Electric connection
Note Refer to page 1093 for the circuit diagram with a surge suppressor and light.

Ⓖ Pressure class

Ⓗ Coil direction

Ⓘ Other options

Ⓙ Voltage

Symbol	Descriptions		Ⓐ Model no. 2 port N*P 512	3 port N*P 513	5 port N*P 514
Ⓑ Station number					
2	2 stations		●	●	●
to	to				
25	25 stations	Note 1			
Ⓒ Solenoid valve					
2	2 port valve		●		
3	3 port valve			●	
4	5 port valve				●
8	Mix manifold		●	●	●
Ⓓ Orifice					
2	ø1.2		●	●	●
6	ø1.6		●	●	
Ⓔ Manual override					
M0	Lateral non-locking type (standard)	Note 4	●	●	
M1	Lateral locking type (option)	Note 4	●	●	
M4	Non-locking, dust proof cover		●	●	
M6	Upward direction non-locking type (standard)		●	●	●
N	No manual override (option)		●	●	●
Ⓕ Electric connection					
Refer to the next page for electric connections.					
Ⓖ Pressure class					
Blank	Standard		●	●	●
V	Low pressure, low vacuum	Note 6	●	●	
Ⓗ Coil direction					
Blank	Standard direction		●	●	●
R	180° rotational direction	Note 7	●	●	●
Ⓘ Other options					
Blank	None		●	●	●
S	Surge suppressor attached		●	●	●
X	Continuous energizing (custom order)				●
Ⓙ Voltage					
AC100V	Standard	100 VAC 50/60 Hz	●	●	●
AC200V	Standard	200 VAC 50/60 Hz	●	●	●
DC24V	Standard	24 VDC	●	●	●
DC12V	Standard	12 VDC	●	●	●
AC110V	Option	110 VAC 50/60 Hz	●	●	●
AC220V	Option	220 VAC 50/60 Hz	●	●	●

Note on model no. selection

Note 1: Maximum station number is 25.

Note 2: When using only the 5 port valve, the orifice selected with the 2 port valve is used. When using mixed with the 2, 3 port valve, the orifice selected with the 3 port valve is used.

Note 3: The 2, 3 port valve orifice combination is available as custom order.

Note 4: M0 (lateral nonlocking type) and M1 (lateral locking type) cannot be used with the pressure class V (for low pressure, low vacuum pressure).

Note 6: When the pressure class V (for low pressure, low vacuum pressure) is designated, the orifice is "6". Draw the vacuum from the P(S) port.
There is no pressure class V (for low-pressure, low vacuum pressure) for the 5 port valve.

Note 7: If the coil direction R (180° rotation direction) is designated, the wire connection is compatible only with E as a standard. Consult with CKD for other wire connections.

<Example of model number>

N7P5132-M0B-S-AC100V

Miniature pneumatic valve block manifold

Ⓑ Station number : 7 stations
Ⓒ Solenoid valve : 3 port valve
Ⓓ Orifice : ø1.2
Ⓔ Manual override : Lateral non-locking type
Ⓕ Electric connection : Small terminal box
Ⓖ Pressure : Standard
Ⓗ Coil direction : Standard direction
Ⓘ Other options : Surge suppressor attached
Ⓙ Voltage : 100 VAC

(Electric connection list)

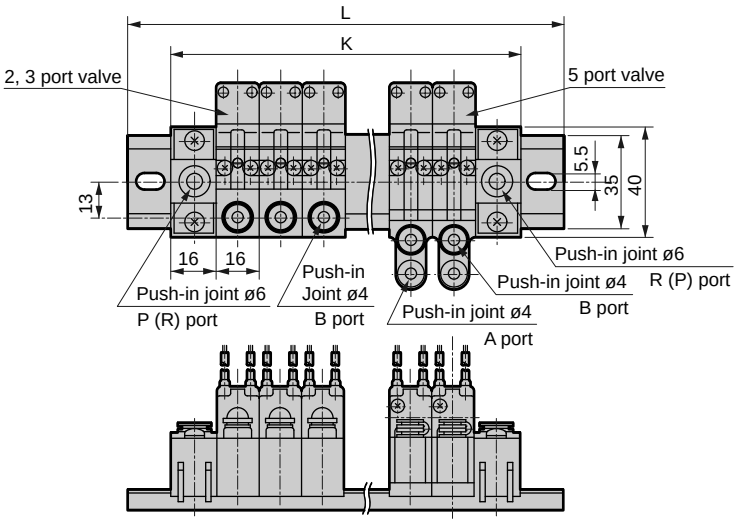
Symbol		Descriptions		Ⓐ Model no. 2 port N*P 512	3 port N*P 513	5 port N*P 514
Ⓕ Electric connection						
E	Standard	Grommet lead wire (300 mm)		●	●	●
B		Small terminal box		●	●	●
Q	Option	Grommet lead wire (300 mm)	With surge suppressor	●	●	●
C-connector (lead wire lateral)						
C	Standard	Lead wire length (300 mm)		●	●	●
C00	Option	Lead wire length (500 mm)		●	●	●
C01		Lead wire length (1000 mm)		●	●	●
C02		Lead wire length (2000 mm)		●	●	●
C03		Lead wire length (3000 mm)		●	●	●
C1		No lead wire		●	●	●
C2		Lead wire length (300 mm)	with surge suppressor, light	●	●	●
C20		Lead wire length (500 mm)	with surge suppressor, light	●	●	●
C21		Lead wire length (1000 mm)	with surge suppressor, light	●	●	●
C22		Lead wire length (2000 mm)	with surge suppressor, light	●	●	●
C23		Lead wire length (3000 mm)	with surge suppressor, light	●	●	●
C3		No lead wire	with surge suppressor, light	●	●	●
D-connector (lead wire upward)						
D	Option	Lead wire length (300 mm)		●	●	●
D00		Lead wire length (500 mm)		●	●	●
D01		Lead wire length (1000 mm)		●	●	●
D02		Lead wire length (2000 mm)		●	●	●
D03		Lead wire length (3000 mm)		●	●	●
D1		No lead wire		●	●	●
D2		Lead wire length (300 mm)	with surge suppressor, light	●	●	●
D20		Lead wire length (500 mm)	with surge suppressor, light	●	●	●
D21		Lead wire length (1000 mm)	with surge suppressor, light	●	●	●
D22		Lead wire length (2000 mm)	with surge suppressor, light	●	●	●
D23		Lead wire length (3000 mm)	with surge suppressor, light	●	●	●
D3		No lead wire	with surge suppressor, light	●	●	●
Small terminal box						
L	Option	No lead wire	With light	●	●	●
L2		Lead wire length (300 mm)	With light	●	●	●
LS		No lead wire	with surge suppressor, light	●	●	●
P		No lead wire	With surge suppressor	●	●	●

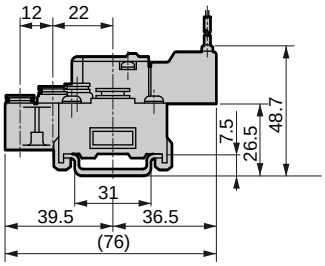
Note 5: If DC voltage is selected for L and L2, the surge suppressor is built in.

Dimensions CAD

N*P51

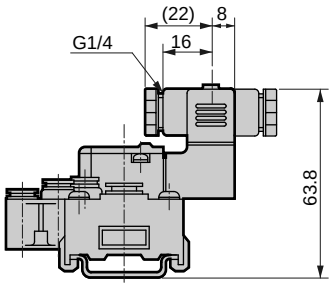
● Push-in joint upper porting: Grommet lead wire



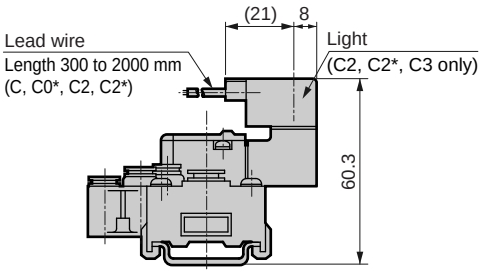


Station number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
K	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464

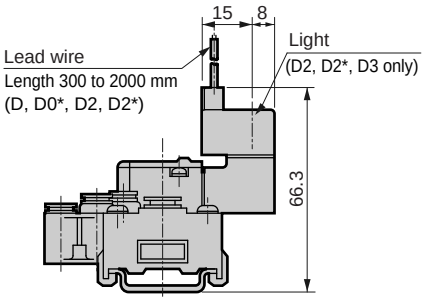
● Small terminal box: (B)



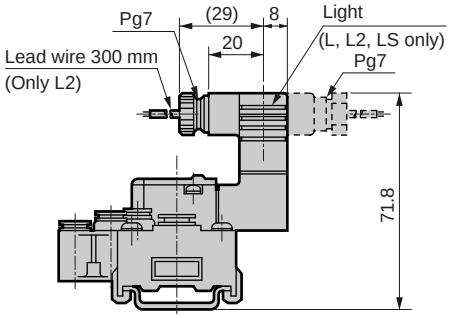
● C-connector: (C, C0*, C1, C2, C2*, C3)



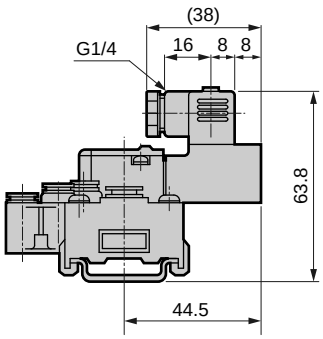
● D-connector: (D, D0*, D1, D2, D2*, D3)



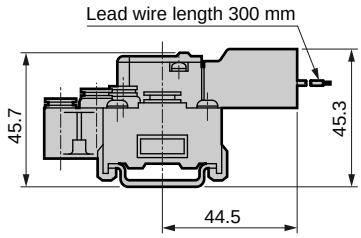
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



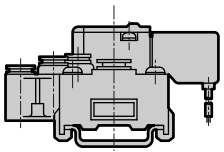
● Small terminal box
with surge suppressor: (P)



● Grommet lead wire
with surge suppressor: (Q)



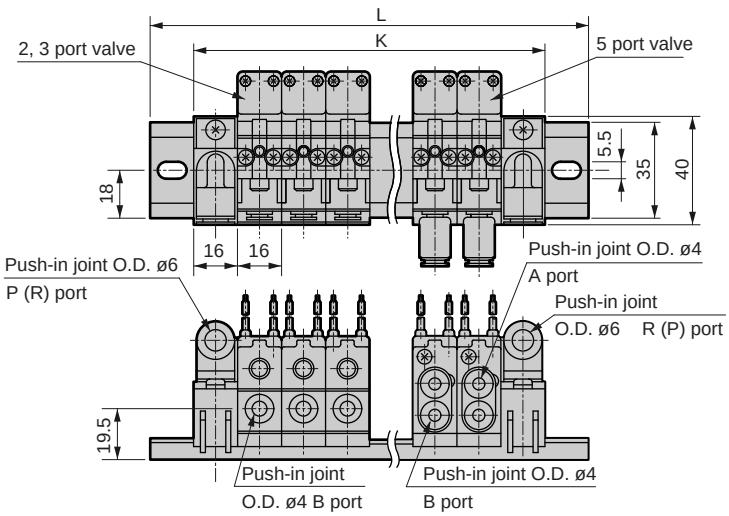
● Coil 180° rotation: (R)

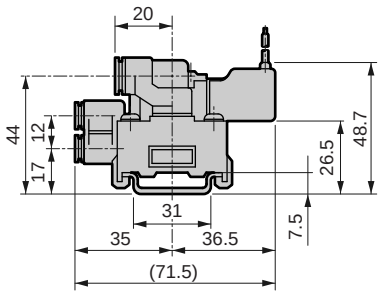


Dimensions

N*P51

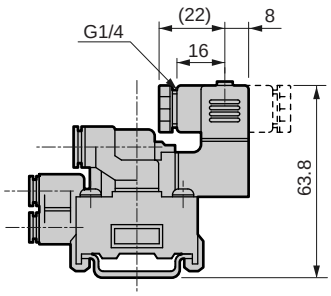
● Push-in joint side porting: Grommet lead wire



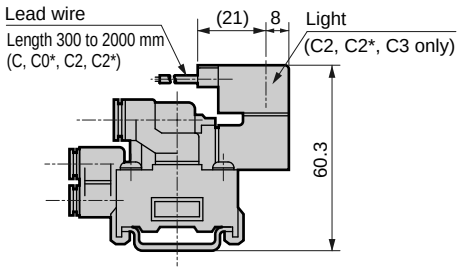


Station number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
K	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464

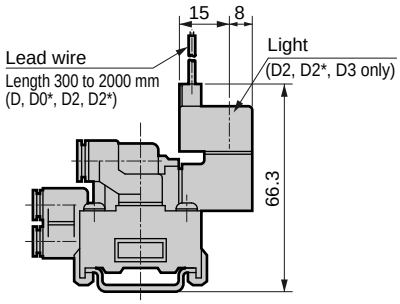
● Small terminal box: (B)



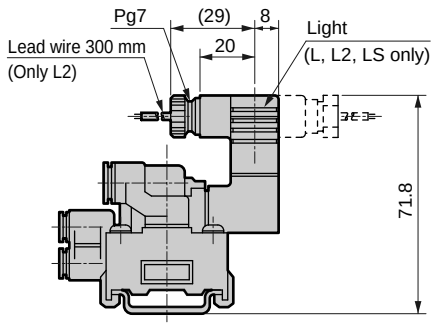
● C-connector: (C, C0*, C1, C2, C2*, C3)



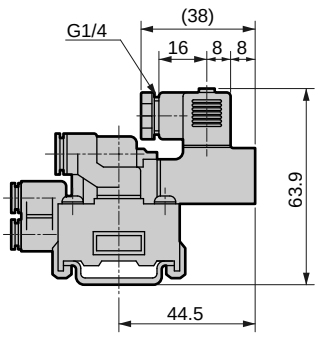
● D-connector: (D, D0*, D1, D2, D2*, D3)



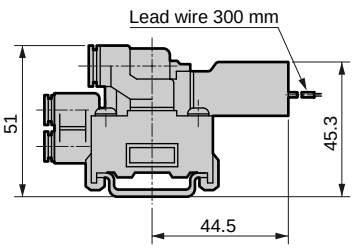
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



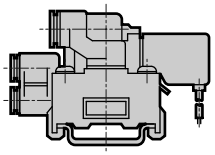
● Small terminal box
with surge suppressor: (P)



● Grommet lead wire
with surge suppressor: (Q)



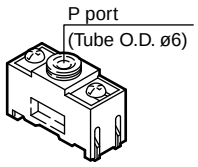
● Coil 180° rotation: (R)



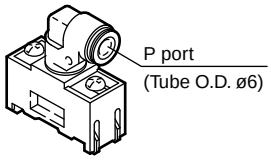
A Air supply block (**PL**) (**PR**)

Left side installation

● N5132-PLUH6

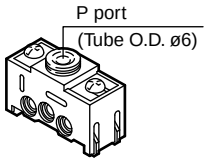


● N5132-PLSH6

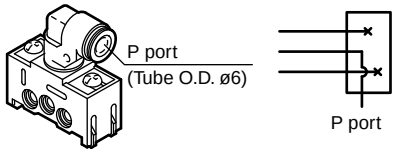


Right side installation

● N5132-PRUH6



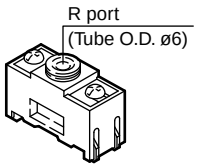
● N5132-PRSH6



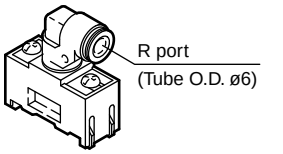
B Exhaust block (**RL**) (**RR**)

Left side installation

● N5132-RLUH6

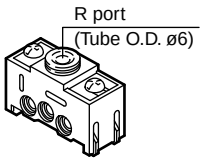


● N5132-RLSH6

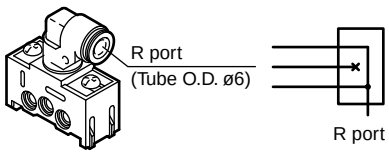


Right side installation

● N5132-RRUH6



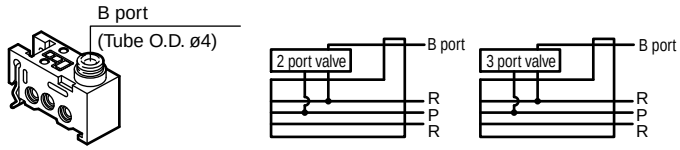
● N5132-RRSH6



C Discrete sub-block for 2, 3 port valve (**M3**)

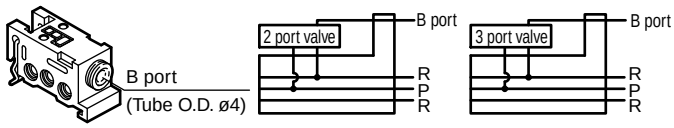
Upper porting

● N5132-M3UH4



Side porting

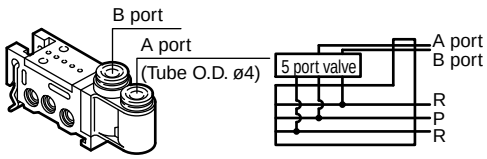
● N5132-M3SH4



D Discrete sub-block for 5 port valve (**M4**)

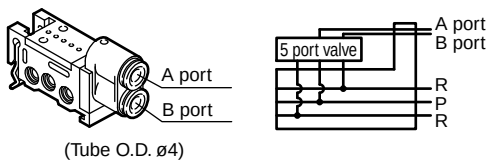
Upper porting

● N5142-M4UH4



Side porting

● N5142-M4SH4



E Solenoid valve for manifold (**N51**)

Discrete solenoid valve: **N51** **2** **2** – **M6** **E** ( ) ( ) — **0 0** — **S** – **AC100V**

Sub-block with solenoid valve: **N51** **2** **2** – **M6** **E** ( ) ( ) – **UH4** – **S** – **AC100V**

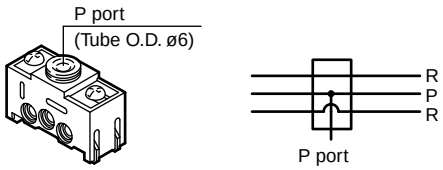
- **C** Solenoid valve
- **D** Orifice
- **E** Manual override
- **F** Electric connection
- **G** Pressure code
- **H** Coil direction
- **I** Other option
- **J** Voltage
- **K** Piping

K Upper porting	
UH4	Upper porting push-in joint ø4
SH4	Side porting push-in joint ø4
00	Without valve block

Details other than "K" in How to Order, such as "C" and "D", etc., are the same as the block manifold on page 1120.

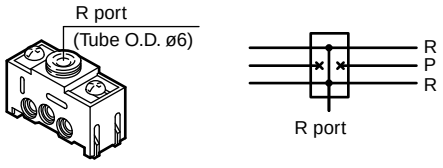
F Intermediate air supply block (**PM**)

Upper porting	Side porting
● N5132-PMUH6	● N5132-PMSH6



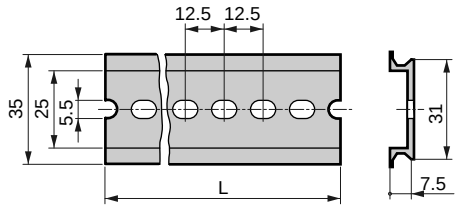
G Intermediate exhaust block (**RM**)

Upper porting	Side porting
● N5132-RMUH6	● N5132-RMSH6



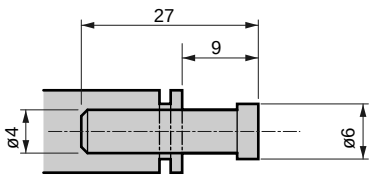
H Related products

● Mounting rail BAA

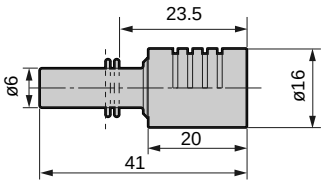


Model no.	L
BAA 500	500
BAA1000	1000

● Plug GWP4-B



● Silencer SLW-H6



● Urethane tube

How to order

U-95 **04**

Urethane tube

Ⓐ Applicable tube O.D. size	
04	ø 4
06	ø 6

* The dimension tolerance is manufactured within +0.1 mm/-0.15 mm.

● Soft nylon tube

How to order

F-15 **04**

Soft nylon tube

Ⓐ Applicable tube O.D. size	
04	ø 4
06	ø 6

* The dimension tolerance is manufactured within ±0.1 mm.

● New urethane tube

How to order

NU – **04**

New urethane tube

Ⓐ Applicable tube O.D. size	
04	ø 4
06	ø 6

* The dimension tolerance is manufactured within +0.1 mm/-0.15 mm.

CAUTION: Be sure to turn power OFF and release pressure before increasing or decreasing the manifolds.

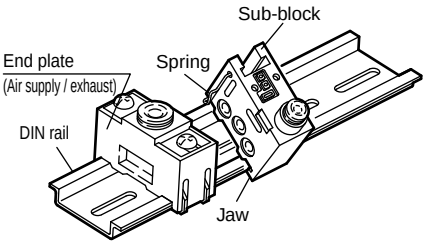
N51 Series

Assembling the block manifold

(1) Fix the DIN rail. (Place on a place as flat as possible.)
(2) Mount and fix one of the end plates (supply or exhaust) onto the rail.
(3) Mount the required number of sub-blocks and intermediate supply (or exhaust) blocks sequentially onto the rail, and slide them to integrate them.
(4) Mount and fix the end plate on the other end.
(5) Install the solenoid valve onto the sub-block. (The solenoid valve is installed at shipment.)
(6) Pipe the tube and connect the wires to complete the process.

Mounting each sub-block

Catch the end of the fixing claws onto the DIN rail, and press the movable claw (spring). When finished mounting onto the rail, slide toward the end plate and press so that there is no gap.



Removing the end plate

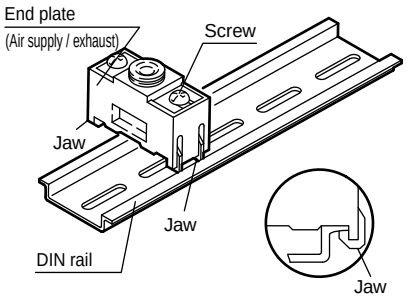
(1) Loosen the screw by 2 to 3 times, and slide the plate 3 mm or more.
(2) Open the claws and remove the end plate.

Removing the sub-block and intermediate block

(1) Loosen the end plate screw by 2 to 3 turns, and slide the plate 3 mm or more.
(2) Remove from the movable claw (spring).
*The end plate must be moved to remove the blocks.

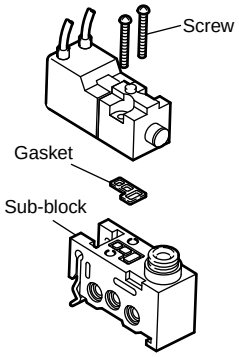
Installing the end plate

Catch the claws onto both sides as shown in the drawing, and temporarily tighten the screws. (Fully tighten after mounting the sub-blocks.)



Installing the solenoid valve

Using screws, tighten the solenoid valve with the dedicated gasket.

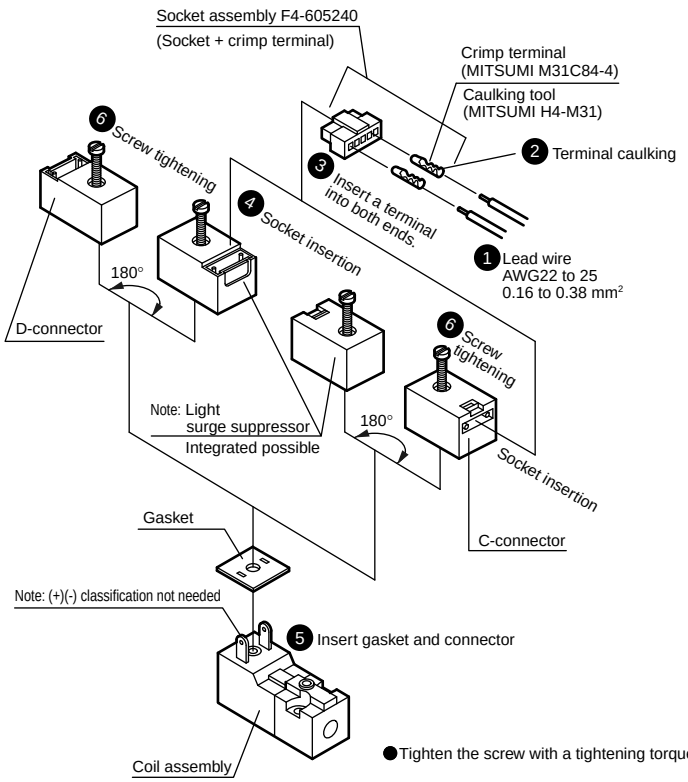


Applicable piping tubes

The push-in joint used with the block manifold holds the outer diameter of the piping tube, so use a tube that has the same dimensions and thickness as the CKD soft nylon tube, urethane tube, new urethane tube or flame-resistant tube, and which has a tube material hardness of 93° or more.
The tube may be difficult to remove or insert if the above specifications are not satisfied.

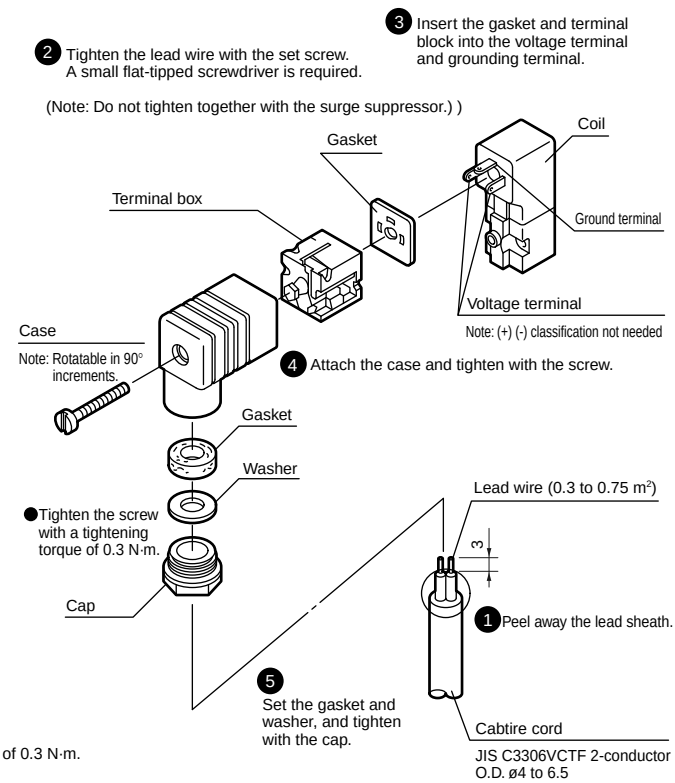
How to wire C/D-connector

Wire the connector following steps ❶ to ❻ below.



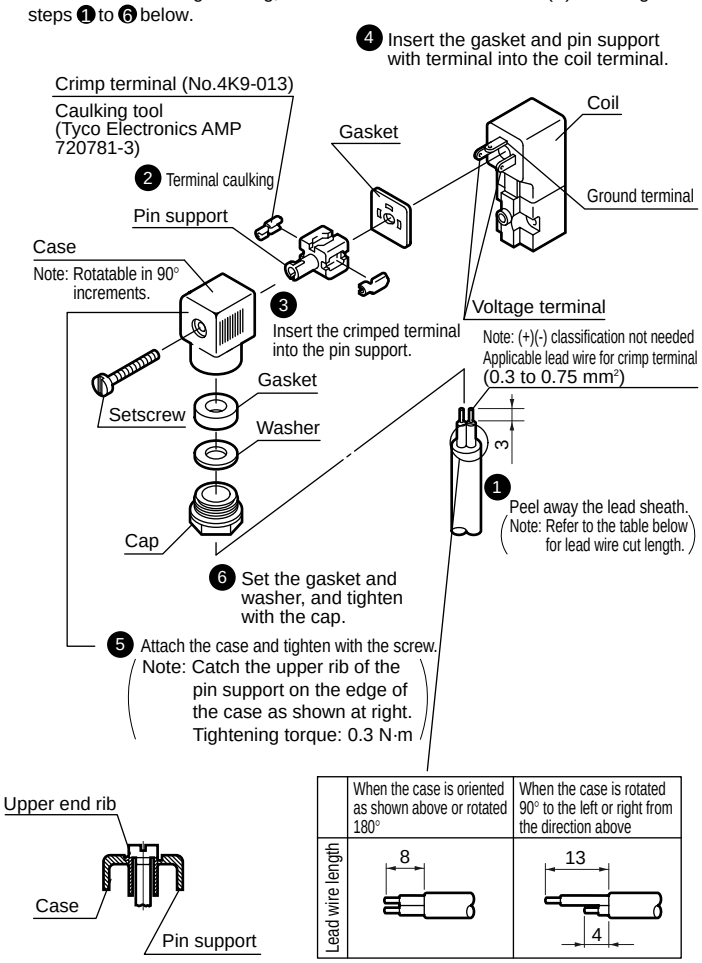
How to wire small terminal box with light

Wire the connector following steps ❶ to ❺ below.



Small terminal box (B) wiring methods

Refer to the following drawing, and wire the small terminal box (B) following steps ❶ to ❻ below.



	When the case is oriented as shown above or rotated 180°	When the case is rotated 90° to the left or right from the direction above
Lead wire length	8	13 4

Miniature pneumatic valve block manifold specifications

Issue / /

Your company name

Contact

Order No.

● Contact ● Quantity set ● Request date

Slip No.	Order No.

● Manifold model no.

N □ P51 □ □ - □ □ □ □ - □ - □

B: Solenoid valve station number
C: Solenoid valve
D: Orifice
E: Manual override
F: Pressure code
G: Coil direction
H: Other options
I: Voltage

Ⓑ Solenoid valve station number		Ⓒ Solenoid valve		Ⓓ Orifice	
2	2 stations	2	2 port valve	2	ø1.2
3	3 stations	3	3 port valve	6	ø1.6
to	to	4	5 port valve	8	mix
25	25 stations*	8	mix		

* Maximum station number is 25.

Note 1: For only 5 port valve, indicate the 2 port orifice, and when mixed with the 3 port valve, indicate the 3 port valve orifice.
Note 2: The 3 port valve orifice combination is a custom order part.

Ⓔ Manual override	
M6	Upward non-locking (standard)
N	No manual override (option)
M0	Lateral non-locking (standard)
M1	Lateral locking type (option)
M4	Non-locking, dust proof cover

M0 or M1 are not available for low vacuum pressure (V) and 5 port valve.

Ⓕ Electric connection		Lead wire length	
E	Grommet lead wire	300 mm	Standard
B	Small terminal box	None	
C	C-connector	300 mm	Option
C00		500 mm	
C01		1000 mm	
C02		2000 mm	
C03		3000 mm	
C1		None	
C2	C-connector (With surge suppressor and light)	300 mm	
C20		500 mm	
C21		1000 mm	
C22		2000 mm	
C23		3000 mm	
C3		None	
D	D-connector	300 mm	
D00		500 mm	
D01		1000 mm	
D02		2000 mm	
D03		3000 mm	
D1		None	
D2	D-connector (With surge suppressor and light)	300 mm	
D20		500 mm	
D21		1000 mm	
D22		2000 mm	
D23		3000 mm	
D3		None	
L	Small terminal box (with light)	None	
L2		300 mm	
LS	Small terminal box (with surge suppressor and light)	None	
P	Small terminal box (surge suppressor)	None	
Q	Grommet lead wire (with surge suppressor)	300 mm	

Ⓖ Pressure code	
Blank	Standard or mix
V	For low vacuum, for low pressure

V is applicable only for the 2, 3 port valve low pressure (0 to 0.29 MPa) and low vacuum [3.3 to 101.0 kPa (abs) {25 to 760 Torr}].
Draw the vacuum from the P (S) port. Low pressure and low vacuum applications for only the 5 port valve are not available.

Ⓗ Coil direction	
Blank	Standard direction
R	180° rotation

R is available as a standard only for the wire connection E (grommet lead). Consult with CKD for other wire connections.

Ⓘ Other options	
Blank	None
S	Surge suppressor attached

The suppression type is used for only the 24 VDC or less grommet lead.

X	Continuous energizing (only custom order 5 port valve)

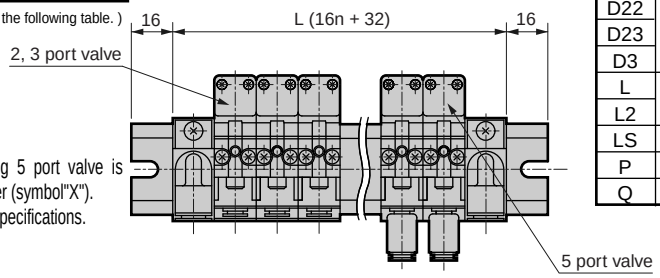
Ⓙ Voltage
AC100V
AC200V
DC12V
DC24V
AC110V
AC220V

Ⓚ Piping	
UH4	Upper porting push-in joint ø4
SH4	Side porting push-in joint ø4

(Indicate in field C in the following table.)

* The continuous energizing 5 port valve is available as a custom order (symbol"X"). Consult with CKD for the specifications.

● The following diagram indicates side porting.



Installation position No.1 2 3 4 n-2 n-1 n

Select the model from the "Block part configuration" (pages 1124 to 1125) when completing this form. * n indicates number of block.

	Part name	Model no.	Installation position No. (up to 25 stations) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	Quantity
A	Left air supply end plate	PL □ H6		
	Left exhaust end plate	RL □ H6		
B	Right air supply end plate	PR □ H6		
	Right exhaust end plate	RR □ H6		
C	Sub-block with solenoid valve	N51-C D K		
		N51-□ □		
		N51-□ □		
E	Intermediate air supply plate	PM □ H6		
	Intermediate exhaust plate	RM □ H6		
F	Silencer (ø6 push-in)	SLW-H6	Indicate the required quantity in the Quantity field.	
	Plug (ø4 push-in)	GWP4-B		
	Mounting rail length	LB = □	If □ is not indicated, the standard dimensions (L on pages 1122 to 1123) will be shipped.	

Complete the box □. Refer to the upper right drawing, and indicate the installation position No. from the left side. Indicate with a circle in the box □.