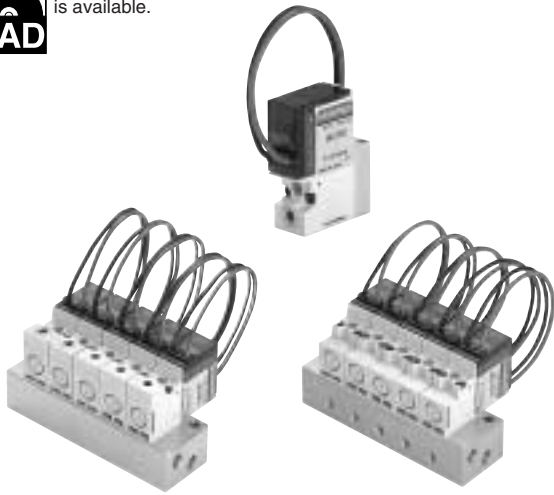




CAD drawing data catalog
is available.



KOGANEI

VALVES GENERAL CATALOG

SOLENOID VALVES G010 SERIES

SOLENOID VALVES G010 SERIES INDEX

Features	35
Basic Models and Configuration	36
Handling Instructions and Precautions	37
Specifications	41
Solenoid Valve Order Codes	45
Manifold Order Codes	46
Operating Principles and Symbols	47
Dimensions of Solenoid Valve	48
Dimensions of Manifold	51



Caution

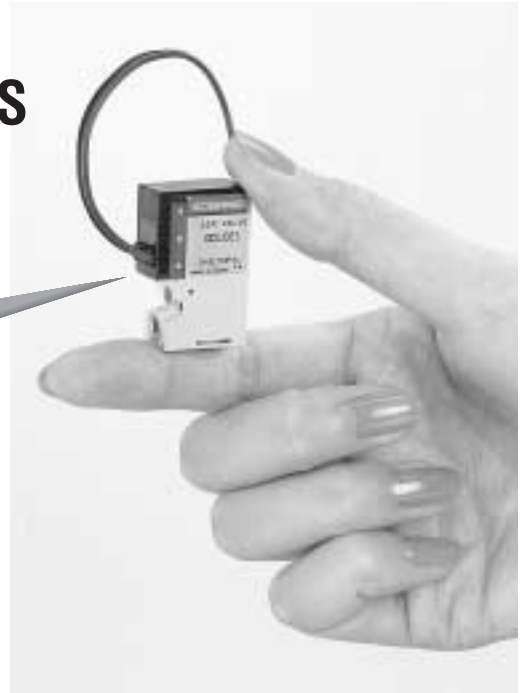
Before use, be sure to read the "Safety Precautions" on p. 31.

Powerful & Widely Varied

SOLENOID VALVES G010 SERIES

In response to diversified control requirements, our new line-up includes positive pressure normally open (NO) specifications, and vacuum specifications!

Now you can select the best possible control system for your production line machinery and equipment.



**Total Height:
32~34mm
[1.26~1.34in.]**

More compact than ever, in response to down-sizing requirements.

Note: Excluding the AC200V specification.

Wide voltage selection

STANDARD TYPE

Power consumption: 1.0W
Effective area: 0.2mm²
[Cv: 0.011]

Achieves power consumption of 0.5W

LOW CURRENT TYPE

Power consumption: 0.5W
Effective area: 0.1mm²
[Cv: 0.006]

Meets large flow & quick response requirements

LARGE FLOW TYPE

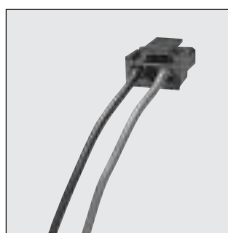
Power consumption: 3.2W^{Note}
Effective area: 0.45mm²
[Cv: 0.025]

Note: With power-saving circuit

Positive pressure specifications	Normally closed (NC)	G010E1	G010LE1	G010HE1
	Normally open (NO)	G010E1-11	G010LE1-11	G010HE1-11
Vacuum specifications	Normally closed (NC)	GV010E1	GV010LE1	GV010HE1
	Normally open (NO)	GV010E1-11	GV010LE1-11	GV010HE1-11







LED indicator is standard for the grommet type connector.

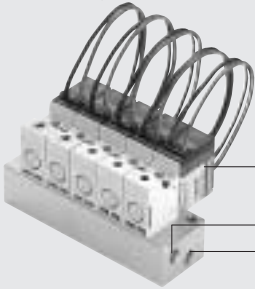
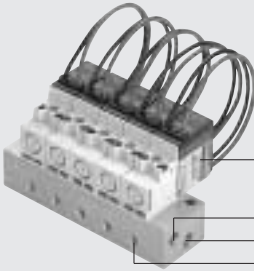
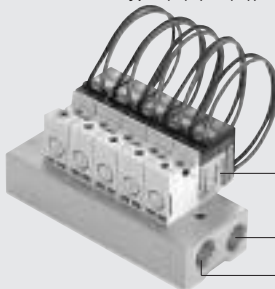
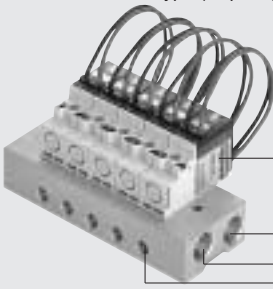


3-pin connector makes common wiring possible.



Locking type is standard for the manual override.

Single unit					
Direct acting solenoid valve					
Outward view	Normally closed (NC)		Normally open (NO)		
	Direct piping	Sub-base piping	Direct piping	Sub-base piping	
					
Type					
Positive pressure specifications	G010E1 (Standard)	G010E1-21	GA010E1-25	G010E1-11-21	GA010E1-11-25
	G010LE1 (Low current)	G010LE1-21	GA010LE1-25	G010LE1-11-21	GA010LE1-11-25
	G010HE1 (Large flow)	G010HE1-21	GA010HE1-25	G010HE1-11-21	GA010HE1-11-25
Vacuum specifications	GV010E1 (Standard)	GV010E1-21	GAV010E1-25	GV010E1-11-21	GAV010E1-11-25
	GV010LE1 (Low current)	GV010LE1-21	GAV010LE1-25	GV010LE1-11-21	GAV010LE1-11-25
	GV010HE1 (Large flow)	GV010HE1-21	GAV010HE1-25	GV010HE1-11-21	GAV010HE1-11-25

Manifold	
G(V)010E1, G(V)010LE1, G(V)010HE1	
1 (P), 3 (R) port (M5×0.8) type	<p>G010M□F—F type (1(P), 3(R)) manifold</p>  <p>G010E1, G010LE1, G010HE1 GV010E1, GV010LE1, GV010HE1</p> <p>3(R) 1(P)</p>
	<p>G010M□A—A type (all ports) manifold</p>  <p>GA010E1, GA010LE1, GA010HE1 GAV010E1, GAV010LE1, GAV010HE1</p> <p>3(R) 1(P) 2(A)</p>
1 (P), 3 (R) port (Rc1/8) type	<p>G010MH□F—F type (1(P), 3(R)) manifold</p>  <p>G010E1, G010LE1, G010HE1 GV010E1, GV010LE1, GV010HE1</p> <p>1(P) 3(R)</p>
	<p>G010MH□A—A type (all ports) manifold</p>  <p>GA010E1, GA010LE1, GA010HE1 GAV010E1, GAV010LE1, GAV010HE1</p> <p>1(P) 3(R) 2(A)</p>

Handling Instructions and Precautions



Piping Precautions

Use the piping shown below for the manifold, as well.

2-, 3-port valves valve functions and connection port configurations

Positive pressure specifications

		De-energized	Energized
2-port	Normally closed (NC)		
	Normally open (NO)		
3-port	Normally closed (NC)		
	Normally open (NO)		

Vacuum specifications

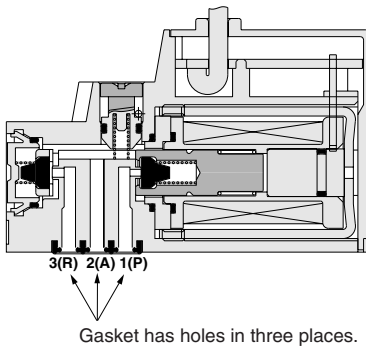
		De-energized	Energized
2-port	Normally closed (NC)		
	Normally open (NO)		
3-port	Normally closed (NC)		
	Normally open (NO)		

Caution: Normally closed (NC) and normally open (NO) valves cannot be mounted together on the same manifold.

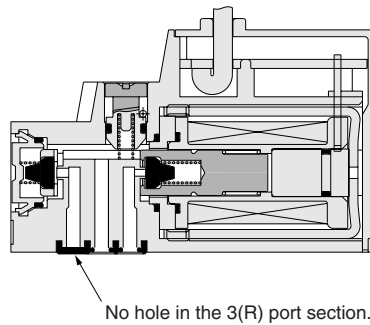
About the 2-, 3-port valves

The G010 series can be divided, by the types of gaskets used on the valves, into 3-port and 2-port valves. When replacing the valve, pay attention to the gasket shape and mounting direction.

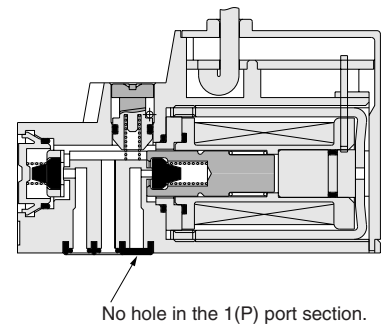
G□010□E1 (For 3-port)



G□010□E1-2 (For NC, 2-port)



G□010□E1-2-11 (For NO, 2-port)





Solenoid

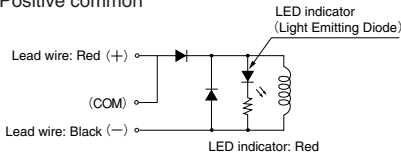
Internal circuit

< Standard type, low current type >

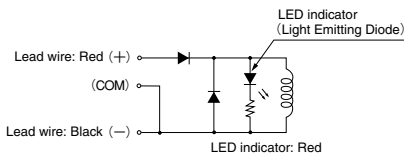
● DC5V, DC6V, DC12V, DC24V

Solenoid with LED indicator (Surge suppression)

● Positive common

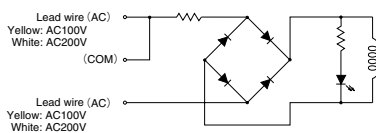


● Negative common (Made to order)



● AC100V, AC200V

Solenoid with LED indicator (Surge suppression)

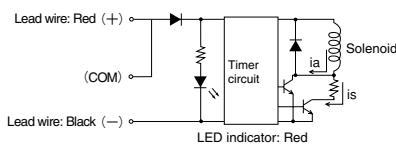


< Large flow type >

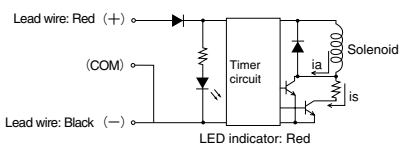
● DC12V, DC24V

Solenoid with LED indicator (Surge suppression)

● Positive common



● Negative common (Made to order)

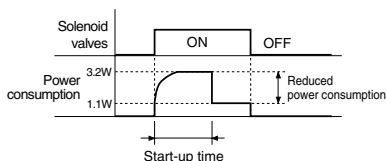


ia: Starting current
is: Steady-state current

Operating principles of large flow type

The large flow type uses a timer circuit, as shown above, that achieves power savings by switching to holding operations mode after a certain period of time to operate at about 1/3 of the starting power consumption.

● Power waveform



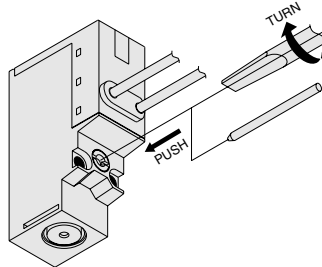
	Start-up time (Standard time)
DC12V	48ms
DC24V	27ms



Manual override

Locking type

To lock the manual override, use a small screwdriver to push down on the manual override all the way and turn it clockwise. When locked, turning the manual override in the counterclockwise direction releases a spring on the manual override, returns it to the original position, and releases the lock. When the manual override is not turned, this type acts just like the non-locking type, the valve is energized as long as the manual override is pushed down, and it returns to the rest position upon release.



- Cautions:**
1. Always release the lock of the locking type before commencing normal operation.
 2. Do not attempt to operate the manual override with a pin or other object having an extremely fine tip. It could damage the manual override button.

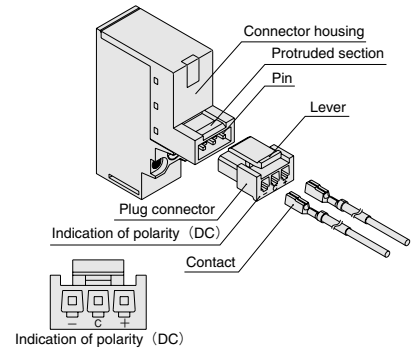
- Cautions:**
1. Do not apply megger between the lead wires.
 2. The DC solenoid will not short circuit even if the wrong polarity is applied, but the valve will not operate.
 3. Leakage current inside the circuit could result in failure of the solenoid valve to return, or in other erratic operation. Always use it within the range of the allowable leakage current. If circuit conditions, etc. cause the current leakage to exceed the maximum allowable leakage current, consult us.
 4. The large flow type will not operate if the supply voltage is increased slowly. Always apply the appropriate voltage.



Plug connector

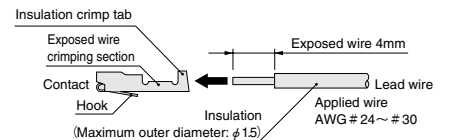
Attaching and removing plug connector

Use fingers to insert the connector into the pin, push it in until the lever claw latches onto the protruded section of the connector housing, and complete the connection. To remove the connector, squeeze the lever along with the connector, lift the lever claw up from the protruded section of the connector housing, and pull it out.



Crimping of connecting lead wire and contact

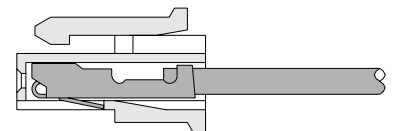
To crimp lead wires into contacts, strip off 4mm [0.16in.] of the insulation from the end of the lead wire, insert it into the contact, and crimp it. Be sure to avoid catching the insulation on the exposed wire crimping section.



Attaching and removing contact and connector

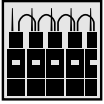
Insert the contact with lead wire into a plug connector hole until the contact hook latches on the connector and is secured to the plug connector. Confirm that the lead wire cannot be easily pulled out.

To remove it, insert a tool with a fine tip (such as a small screwdriver) into the rectangular hole on the side of the plug connector to push up on the hook, and then pull out the lead wire.



- Cautions:**
1. Do not pull hard on the lead wire. It could result in defective contacts, shorted lines, etc.
 2. If the pin is bent, use a small screwdriver, etc. to gently straighten out the pin, and then complete the connection to the plug connector.
 3. For crimping of connecting lead wire and contact, always use a dedicated crimping tool.
Contact: Model 706312-2MK
Manufactured by Sumiko Tech, Inc.
Crimping tool: Model F1
(for 706312-2MK)
Manufactured by Sumiko Tech, Inc.

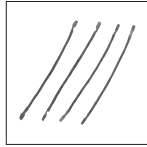
Handling Instructions and Precautions



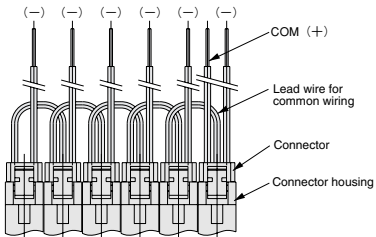
Lead wire for common wiring (only lead wire)

Using the lead wire for common wiring, provided as additional parts, saves wiring work.

Order code
G010-COM

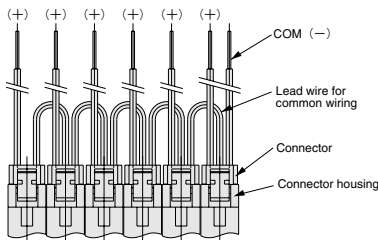


1. Wiring example of DC positive side and AC common terminal

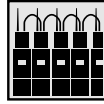


Shows polarity in DC case

2. Wiring example of DC negative side common terminal



- Cautions:**
1. The diagrams show the straight connector configuration.
 2. Since the COM terminal is connected to a crossover terminal inside the connector housing, the connector cannot be switched between a positive common and a negative common wiring by changing the connectors.



Common pre-wired lead wire assembly

Using the common pre-wired lead wire assembly, provided as additional parts, saves wiring work.

Order code
CR1652W



Common specifications
Blank — Positive common
M — Negative common

Lead wire length
Blank — 300mm [11.8in.]
1 — 1000mm [39in.]
3 — 3000mm [118in.]

Outlet position of common wiring

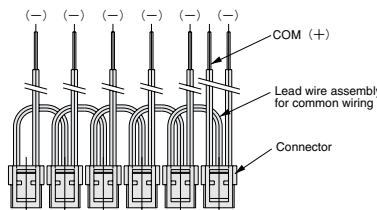
S — The type PS is **stn.1** side, the type PL is final **stn.** side.
E — The type PS is final **stn.** side, the type PL is **stn.1** side.

Number of wiring units

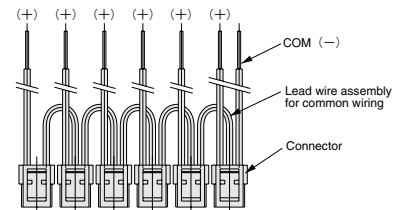
2 : 2 units
}
20 : 20 units

Common pre-wired lead wire assembly

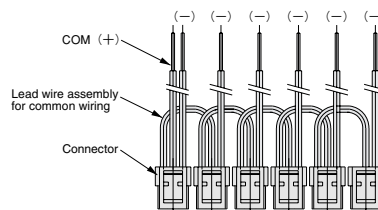
1. For CR1652W-6E□



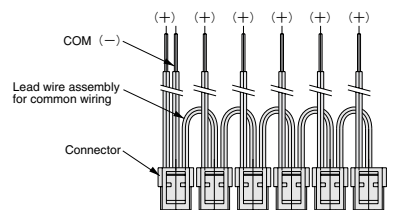
2. For CR1652W-6E□M



3. For CR1652W-6S□



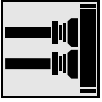
4. For CR1652W-6S□M



Caution: Since the COM terminal is connected to a crossover terminal inside the connector housing, the connector cannot be switched between a positive common and a negative common wiring by changing the connectors.

Number of valves which can be energized simultaneously with common wiring

Voltage	Model		
	G010		
	E1	LE1	HE1
DC5,6V	6	12	—
DC12V	12	20	4
DC24V	20	20	8
AC100V	20	—	—
AC200V	20	—	—



Fittings

Recommended fittings

G(V) 010 □ E1-21

Fitting		Connection port	2(A) port	1(P), 3(R) port
Quick fitting			TS4-M3M TS3-M3M TSH4-M3M TSH3-M3M TL4-M3M TL3-M3M	—
TAC fitting	For urethane tube		BF4BU-M3 BF3BU-M3	BF4BU-M3 BF3BU-M3
	For nylon tube		BF4-M3	BF4-M3

GA(V) 010 □ E1-25

Fitting		Connection port	2(A) port	1(P), 3(R) port
Quick fitting			TS4-M5M TSH4-M5M TL4-M5M TLL4-M5M	TS4-M5M TSH4-M5M TL4-M5M TLL4-M5M
TAC fitting	For urethane tube		BF4BU BF3BU	BF4BU BF3BU
	For nylon tube		BF4	BF4

SOLENOID VALVES

G010 SERIES

Specifications

Basic Models and Functions

Item	Basic model	For direct piping, F type manifold ^{Note1}			For A type manifold ^{Note2}		
		G010E1(-11) GV010E1(-11) (standard)	G010LE1(-11) GV010LE1(-11) (low current)	G010HE1(-11) GV010HE1(-11) (large flow)	GA010E1(-11) GAV010E1(-11) (standard)	GA010LE1(-11) GAV010LE1(-11) (low current)	GA010HE1(-11) GAV010HE1(-11) (large flow)
Number of positions		2 positions					
Number of ports		2, 3 ports					
Valve function		Normally closed (NC, standard) or normally open (NO, option)					

Remark: For optional specifications and order code, see p. 45~46.

Notes: 1. When using the G010□E1, GV010□E1 as a single unit, select it with a mounting base.

2. When using the GA010□E1, GAV010□E1 as a single unit, select it with a sub-base.

Specifications (Positive Pressure)

Item	Basic model	Direct piping, F type manifold			A type manifold		
		G010E1 (standard)	G010LE1 (low current)	G010HE1 (large flow)	GA010E1 (standard)	GA010LE1 (low current)	GA010HE1 (large flow)
Media		Air					
Operation type		Direct acting type					
Effective area [Cv] ^{Note 1} mm ²	1 (P)→2 (A)	0.2 [0.011]	0.1 [0.006]	0.45 [0.025]	0.2 [0.011]	0.1 [0.006]	0.45 [0.025]
	2 (A)→3 (R)	0.3 [0.017]	0.2 [0.011]	0.6 [0.033]	0.3 [0.017]	0.2 [0.011]	0.6 [0.033]
Port size ^{Note 2}		M3×0.5			M5×0.8		
Lubrication		Not required					
Operating pressure range MPa {kgf/cm ² } [psi.]		0~0.7 {0~7.1} [0~102]					
Proof pressure MPa {kgf/cm ² } [psi.]		1.05 {10.7} [152]					
Response time ^{Note3} ON/OFF ms		4/8	5/10	3/6	4/8	5/10	3/6
Maximum operating frequency Hz		5					
Operating temp. range (atmosphere and media) °C [°F] ^{Note4}		5~50 [41~122]					
Shock resistance m/s ² [G]		1373.0 {140.0} (Axial direction 196.2 {20.0})					
Rated voltage ^{Note 5}		(DC5V,DC6V) DC12V,DC24V AC100V,(AC200V)	(DC5V,DC6V) DC12V,DC24V	(DC12V) DC24V	(DC5V,DC6V) DC12V,DC24V AC100V,(AC200V)	(DC5V,DC6V) DC12V,DC24V	(DC12V) DC24V
Mounting direction		Any					

Item	Basic model	Direct piping, F type manifold			A type manifold		
		G010E1-11 (standard)	G010LE1-11 (low current)	G010HE1-11 (large flow)	GA010E1-11 (standard)	GA010LE1-11 (low current)	GA010HE1-11 (large flow)
Media		Air					
Operation type		Direct acting type					
Effective area [Cv] ^{Note 1} mm ²	2 (A)→1 (P)	0.3 [0.017]	0.15 [0.008]	0.55 [0.031]	0.3 [0.017]	0.15 [0.008]	0.55 [0.031]
	3 (R)→2 (A)	0.2 [0.011]	0.1 [0.006]	0.45 [0.025]	0.2 [0.011]	0.1 [0.006]	0.45 [0.025]
Port size ^{Note 2}		M3×0.5			M5×0.8		
Lubrication		Not required					
Operating pressure range MPa {kgf/cm ² } [psi.]		0~0.7 {0~7.1} [0~102]		0~0.5 {0~5.1} [0~73]	0~0.7 {0~7.1} [0~102]		0~0.5 {0~5.1} [0~73]
Proof pressure MPa {kgf/cm ² } [psi.]		1.05 {10.7} [152]					
Response time ^{Note 3} ON/OFF ms		4/8	5/10	3/6	4/8	5/10	3/6
Maximum operating frequency Hz		5					
Operating temp. range (atmosphere and media) °C [°F] ^{Note4}		5~50 [41~122]					
Shock resistance m/s ² [G]		1373.0 {140.0} (Axial direction 196.2 {20.0})					
Rated voltage ^{Note 5}		(DC5V,DC6V) DC12V,DC24V AC100V,(AC200V)	(DC5V,DC6V) DC12V,DC24V	(DC12V) DC24V	(DC5V,DC6V) DC12V,DC24V AC100V,(AC200V)	(DC5V,DC6V) DC12V,DC24V	(DC12V) DC24V
Mounting direction		Any					
Air supply port		3(R) port					

Notes: 1. For details, see the effective area on p.43.

2. For details, see the port size on p.43.

3. Values when air pressure is 0.5MPa {5.1kgf/cm²} [73psi.]. Due to switching phase timing, add a maximum of 5ms to the AC response time.

4. Provide heat radiation measures to ensure that the ambient temperature (or when used in a control box, the internal temperature of the box) always remains within the temperature range specifications.

And for long-time continuous energizing, consult us.

5. Values in parentheses () are for made to order items. See the corresponding table of solenoid options/voltage on p.50.

Specifications (Vacuum)

Item	Basic model	Direct piping, F type manifold			A type manifold		
		GV010E1 (standard)	GV010LE1 (low current)	GV010HE1 (large flow)	GAV010E1 (standard)	GAV010LE1 (low current)	GAV010HE1 (large flow)
Media		Air					
Operation type		Direct acting type					
Effective area $[C_v]$ mm ²	1 (P) → 2 (A)	0.3 [0.017]	0.15 [0.008]	0.55 [0.031]	0.3 [0.017]	0.15 [0.008]	0.55 [0.031]
	2 (A) → 3 (R)	0.2 [0.011]	0.1 [0.006]	0.45 [0.025]	0.2 [0.011]	0.1 [0.006]	0.45 [0.025]
Port size ^{Note 2}		M3×0.5			M5×0.8		
Lubrication		Not required					
Operating pressure range MPa [kgf/cm ²] [psi.]	1 (P) port	-100kPa~0 [-750.1mmHg~0] [-29.53in.Hg~0]					
	3 (R) port	0~0.5 [0~5.1] [0~73]		0~0.4 [0~4.1] [0~58]	0~0.5 [0~5.1] [0~73]		0~0.4 [0~4.1] [0~58]
Proof pressure	MPa [kgf/cm ²] [psi.]	1.05 [10.7] [152]					
Response time ^{Note 3} ON/OFF	ms	4/8	5/10	3/6	4/8	5/10	3/6
Maximum operating frequency	Hz	5					
Operating temp. range (atmosphere and media)	°C [°F] ^{Note 4}	5~50 [41~122]					
Shock resistance	m/s ² {G}	1373.0 {140.0} (Axial direction 196.2 {20.0})					
Rated voltage ^{Note 5}	(DC5V,DC6V) DC12V,DC24V AC100V,(AC200V)	(DC5V,DC6V) DC12V,DC24V	(DC12V) DC24V	(DC5V,DC6V) DC12V,DC24V AC100V,(AC200V)	(DC5V,DC6V) DC12V,DC24V	(DC12V) DC24V	
Mounting direction		Any					
Air supply port	Vacuum	1 (P) port					
	Positive pressure	3 (R) port					

Item	Basic model	Direct piping, F type manifold			A type manifold		
		GV010E1-11 (standard)	GV010LE1-11 (low current)	GV010HE1-11 (large flow)	GAV010E1-11 (standard)	GAV010LE1-11 (low current)	GAV010HE1-11 (large flow)
Media		Air					
Operation type		Direct acting type					
Effective area $[C_v]$ mm ²	2 (A) → 1 (P)	0.2 [0.011]	0.1 [0.006]	0.45 [0.025]	0.2 [0.011]	0.1 [0.006]	0.45 [0.025]
	3 (R) → 2 (A)	0.3 [0.017]	0.2 [0.011]	0.6 [0.033]	0.3 [0.017]	0.2 [0.011]	0.6 [0.033]
Port size ^{Note 2}		M3×0.5			M5×0.8		
Lubrication		Not required					
Operating pressure range MPa [kgf/cm ²] [psi.]	1 (P) port	0~0.5 [0~5.1] [0~73]		0~0.4 [0~4.1] [0~58]	0~0.5 [0~5.1] [0~73]		0~0.4 [0~4.1] [0~58]
	3 (R) port	-100kPa~0 [-750.1mmHg~0] [-29.53in.Hg~0]					
Proof pressure	MPa [kgf/cm ²] [psi.]	1.05 [10.7] [152]					
Response time ^{Note 3} ON/OFF	ms	4/8	5/10	3/6	4/8	5/10	3/6
Maximum operating frequency	Hz	5					
Operating temp. range (atmosphere and media)	°C [°F] ^{Note 4}	5~50 [41~122]					
Shock resistance	m/s ² {G}	1373.0 {140.0} (Axial direction 196.2 {20.0})					
Rated voltage ^{Note 5}	(DC5V,DC6V) DC12V,DC24V AC100V,(AC200V)	(DC5V,DC6V) DC12V,DC24V	(DC12V) DC24V	(DC5V,DC6V) DC12V,DC24V AC100V,(AC200V)	(DC5V,DC6V) DC12V,DC24V	(DC12V) DC24V	
Mounting direction		Any					
Air supply port	Vacuum	3 (R) port					
	Positive pressure	1 (P) port					

Notes: 1. For details, see the effective area on p.43.

2. For details, see the port size on p.43.

3. Values when air pressure is 0.5MPa {5.1kgf/cm²} [73psi.]. Due to the switching phase timing, add a maximum of 5ms to the AC response time.

4. Provide heat radiation measures to ensure that the ambient temperature (or when used in a control box, the internal temperature of the box) always remains within the temperature range specifications.
And for long-time continuous energizing, consult us.

5. Values in parentheses () are for made to order items. See the corresponding table of solenoid options/voltage on p.50.

Mass

Solenoid Valve Mass

g [oz.]

Basic model	Mass
G (V) 010E1	14.6 [0.515] (16.8 [0.593]) ^{Note1}
G (V) 010LE1	14.6 [0.515] (16.8 [0.593]) ^{Note1}
G (V) 010HE1	15.3 [0.540] (17.5 [0.617]) ^{Note1}
GA (V) 010E1	14.2 [0.501] (26.2 [0.924]) ^{Note2}
GA (V) 010LE1	14.2 [0.501] (26.2 [0.924]) ^{Note2}
GA (V) 010HE1	14.8 [0.522] (26.8 [0.945]) ^{Note2}

Notes: 1. Figures in parentheses () are the mass with mounting base: -21.

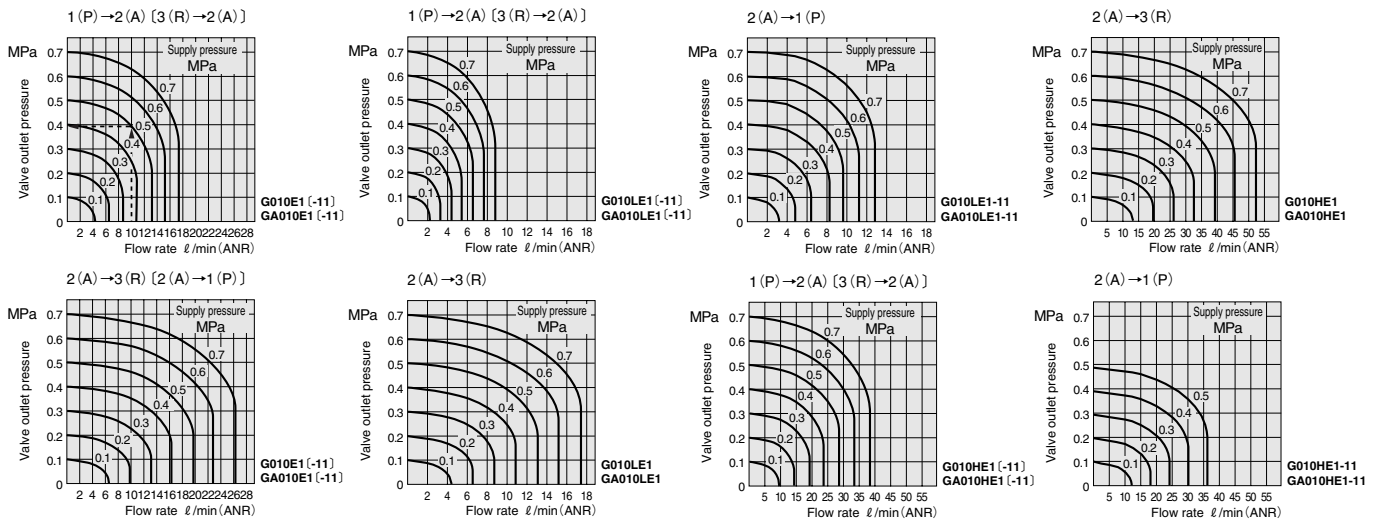
2. Figures in parentheses () are the mass with sub-base: -25.

Manifold Mass

g [oz.]

Manifold model	Mass calculation of each unit (n=number of units)	Block-off plate
G010M□F	(7×n) + 9 [(0.247×n) + 0.317]	1 [0.035]
G010M□A	(7×n) + 9 [(0.247×n) + 0.317]	1 [0.035]
G010MH□F	(7.2×n) + 33 [(0.254×n) + 1.164]	1 [0.035]
G010MH□A	(7.2×n) + 33 [(0.254×n) + 1.164]	1 [0.035]

Flow Rate



1MPa = 145psi., 1 l /min = 0.0353ft.³/min.

Note: 0.6MPa [73psi.] and 0.7MPa [102psi.] are not available for G010HE1-11, GA010HE1-11.

How to read the graph (for G□010E1, 1(P)→2(A))

When the supply pressure is 0.5MPa [73psi.] and flow rate is 10 l /min [0.35ft.³/min.] (ANR), the valve outlet pressure becomes 0.39MPa [57psi.].

Figures in brackets [] indicate the normally open (NO) type.

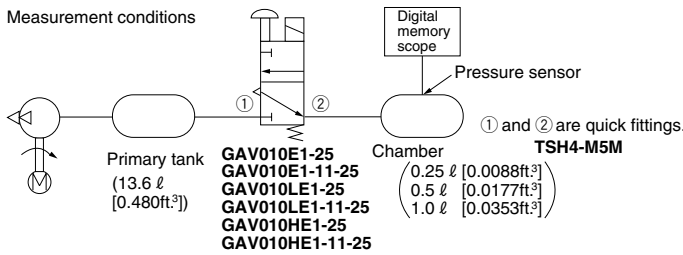
Air Supply Time and Exhaust Time

How to read the graph

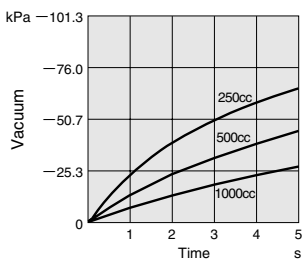
Exhaust time: Time required for chamber interior to convert from atmospheric pressure state to vacuum state.

Air supply time: Time required for chamber interior to convert from -100kPa [-29.53in.Hg] to atmospheric pressure state.

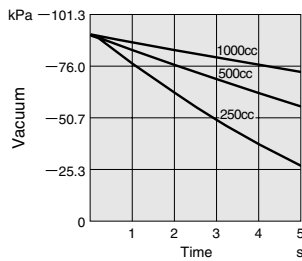
Measurement conditions



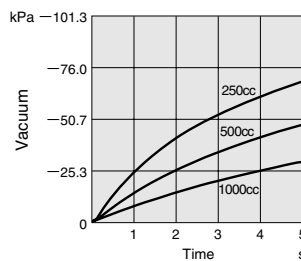
GAV010E1 Exhaust time



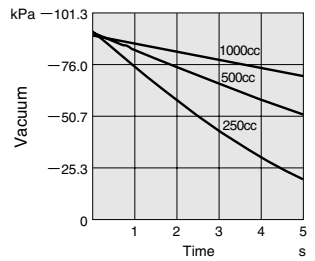
GAV010E1 Air supply time



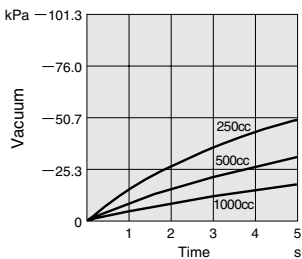
GAV010E1-11 Exhaust time



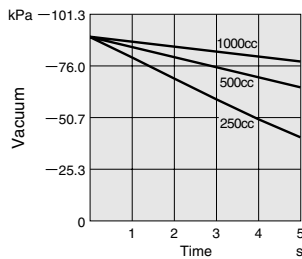
GAV010E1-11 Air supply time



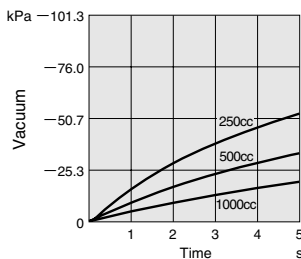
GAV010LE1 Exhaust time



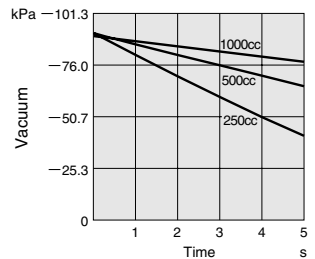
GAV010LE1 Air supply time



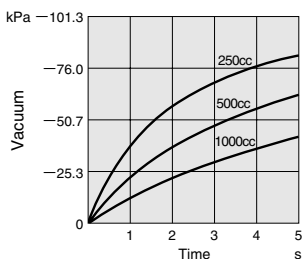
GAV010LE1-11 Exhaust time



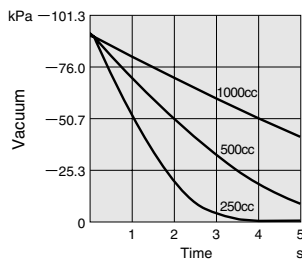
GAV010LE1-11 Air supply time



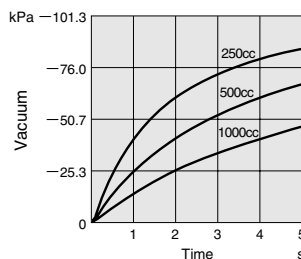
GAV010HE1 Exhaust time



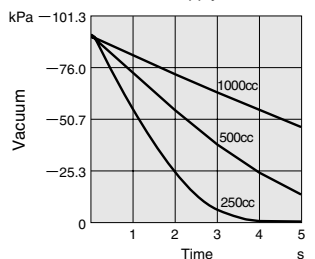
GAV010HE1 Air supply time



GAV010HE1-11 Exhaust time



GAV010HE1-11 Air supply time



-100kPa = -29.53in.Hg, 250cc = 0.0088ft.³, 500cc = 0.0177ft.³, 1000cc = 0.0353ft.³

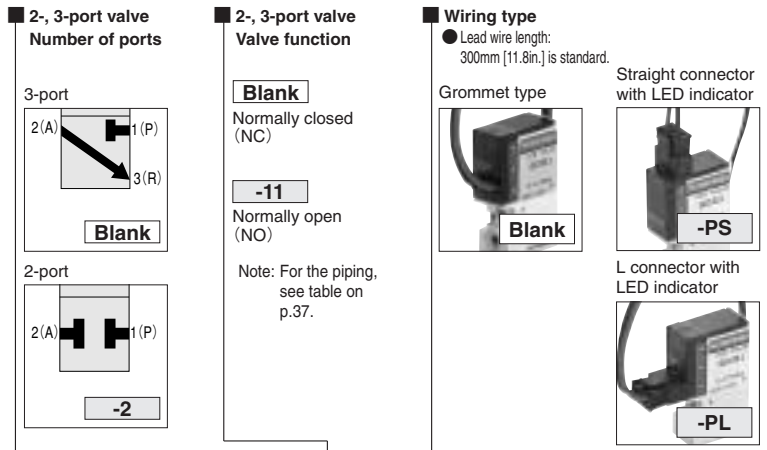
G010 Series Solenoid Valve Order Codes

		2-, 3-port valve Number of ports	2-, 3-port valve Valve function	Mounting base	Sub-base	Wiring type	Voltage		
		3-port Blank	Blank Normally closed (NC) -11 Normally open (NO) Note: For the piping, see table on p.37.	Without mounting base Blank	Without sub-base Blank	● Lead wire length: 300mm [11.8in.] is standard. Grommet type with LED indicator Blank			
		2-port -2		With mounting base -21 ● Attached to a valve body at shipping.	With sub-base -25 ● Attached to a valve body at shipping.	Straight connector with LED indicator -PS			
						L connector with LED indicator -PL			
Direct piping	Positive pressure	2-, 3-port standard type	G010E1	-2	-11 Note 2	-21 Note 1	-PS	-PL	DC12V, DC24V, AC100V
		2-, 3-port low current type	G010LE1						DC12V, DC24V
		2-, 3-port large flow type	G010HE1						DC24V
	Vacuum	2-, 3-port standard type	GV010E1						DC12V, DC24V, AC100V
		2-, 3-port low current type	GV010LE1						DC12V, DC24V
		2-, 3-port large flow type	GV010HE1						DC24V
Sub-base piping	Positive pressure	2-, 3-port standard type	GA010E1	-2	-11 Note 2	-25 Note 1	-PS	-PL	DC12V, DC24V, AC100V
		2-, 3-port low current type	GA010LE1						DC12V, DC24V
		2-, 3-port large flow type	GA010HE1						DC24V
	Vacuum	2-, 3-port standard type	GAV010E1						DC12V, DC24V, AC100V
		2-, 3-port low current type	GAV010LE1						DC12V, DC24V
		2-, 3-port large flow type	GAV010HE1						DC24V

Notes: 1. If using the solenoid valve as a single unit, always select it either with mounting base or with sub-base.
 2. Normally closed (NC) and normally open (NO) valves cannot be mounted together on the same manifold.

Made to Order (After the wiring order code, enter the codes below.)

Straight connector with LED indicator Negative common -MS	L connector with LED indicator Negative common -ML	Lead wire length -1L -3L ● For plug connector ● Length -1L: 1000 [39in.] (mm) -3L: 3000 [118in.]	Voltage specifications ● G□010E1 : DC5V, DC6V, AC200V ● G□010LE1 : DC5V, DC6V ● G□010HE1 : DC12V ● For AC110V~120V, AC220V~240V specifications, consult us.				
Straight connector with LED indicator (Without connector, contact and lead wire) Negative common -MSX	Straight connector with LED indicator (Without connector, contact and lead wire) Positive common -PSX	L connector with LED indicator (Without connector, contact and lead wire) Negative common -MLX	L connector with LED indicator (Without connector, contact and lead wire) Positive common -PLX	Straight connector with LED indicator (Connector, contact included.) Without lead wire. Negative common -MSN	Straight connector with LED indicator (Connector, contact included.) Without lead wire. Positive common -PSN	L connector with LED indicator (Connector, contact included.) Without lead wire. Negative common -MLN	L connector with LED indicator (Connector, contact included.) Without lead wire. Positive common -PLN



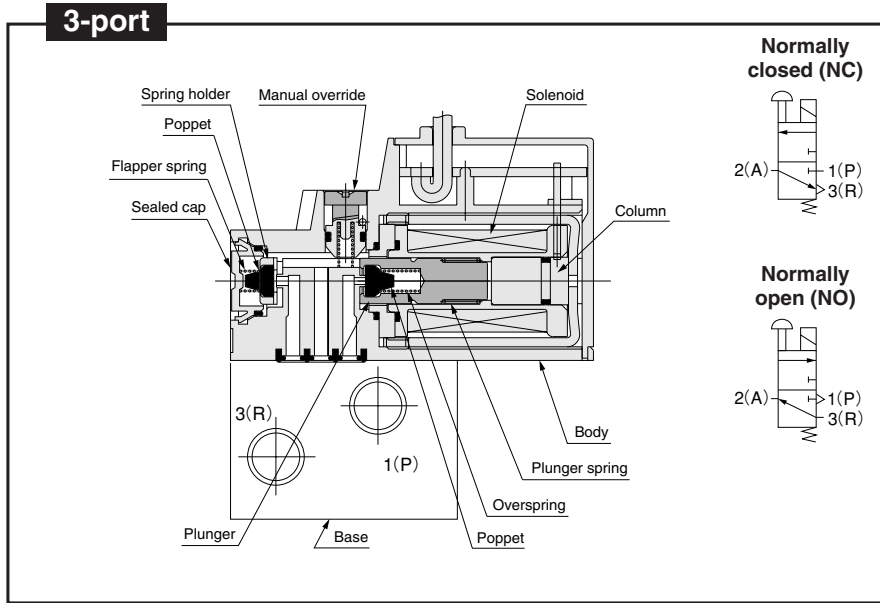
	Manifold model Number of units	Station	Basic model	Valve function	Wiring type	Voltage	
P, R port (M5X0.8) type	G010M	2 ⋮ 20	F	stn. <input type="checkbox"/>	-2	-11	-PS
			Blank	Blank			DC12V, DC24V, AC100V
			Blank	Blank			DC12V, DC24V
			Blank	Blank			DC24V
			Blank	Blank			DC12V, DC24V, AC100V
			Blank	Blank			DC12V, DC24V
			Blank	Blank			DC24V
			Blank	Blank			DC12V, DC24V, AC100V
			Blank	Blank			DC12V, DC24V
			Blank	Blank			DC24V
			Blank	Blank			DC12V, DC24V, AC100V
			Blank	Blank			DC12V, DC24V
Blank	Blank	DC24V					
P, R port (Rc1/8) type	G010MH	2 ⋮ 20	F	stn. <input type="checkbox"/>	-2	-11	-PS
			Blank	Blank			DC12V, DC24V, AC100V
			Blank	Blank			DC12V, DC24V
			Blank	Blank			DC24V
			Blank	Blank			DC12V, DC24V, AC100V
			Blank	Blank			DC12V, DC24V
			Blank	Blank			DC24V
			Blank	Blank			DC12V, DC24V, AC100V
			Blank	Blank			DC12V, DC24V
			Blank	Blank			DC24V
			Blank	Blank			DC12V, DC24V, AC100V
			Blank	Blank			DC12V, DC24V
Blank	Blank	DC24V					

- Valve mounting location from the left-hand side when facing the 2(A) port (□: 1~20)
- Specify the valve type for each station.
- Enter -BP when closing a station with a block-off plate without mounting a valve.
- Normally closed (NC) and normally open (NO) valves cannot be mounted together on the same manifold.

Additional Parts (To be ordered separately)

<p>Mounting base</p> <p>G010-21</p> <p>● For direct piping (With gasket)</p>	<p>Mounting base</p> <p>G010H-21</p> <p>● For direct piping. For G010HE1-11, GV010HE1 only (With gasket).</p>	<p>Sub-base</p> <p>G010-25</p> <p>● For sub-base piping (With gasket)</p>	<p>Lead wire for common wiring</p> <p>G010-COM</p> <p>● For -PS, -PL, -MS, -ML (Set of 10 pcs.)</p>	<p>Common pre-wired lead wire assembly</p> <p>CR1652W-□</p> <p>● For details, see p.39.</p>	<p>Block-off plate</p> <p>G010-BP</p>
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Operating Principles and Symbols



Major Parts and Materials

Parts		Materials
Valve	Body	Plastic
	Poppet	Synthetic rubber
	Plunger	Magnetic stainless steel
	Column	Aluminum alloy (anodized)
	Base	Aluminum alloy (anodized)
Manifold	Body	Aluminum alloy (anodized)
	Block-off plate	Plastic
	Seal	Synthetic rubber

Corresponding Table of Mounting Valve/Manifold

Valve specifications				Valve options				Applicable manifolds			
Piping configuration	Basic model	Power	Flow rate	-2 (2-port)	-11 ^{Note 1} (Normally open, NC)	-21 (Mounting base)	-25 (Sub-base)	G010M□F	G010M□A	G010MH□F	G010MH□A
Direct piping	G010E1	1.0W	Standard	●	●	●	□	●	□	●	□
	G010LE1	0.5W	Small flow	●	●	●	□	●	□	●	□
	G010HE1	3.2W (1.1W) ^{Note 2}	Large flow	●	●	●	□	●	□	●	□
	GV010E1	1.0W	Standard	●	●	●	□	●	□	●	□
	GV010LE1	0.5W	Small flow	●	●	●	□	●	□	●	□
	GV010HE1	3.2W (1.1W) ^{Note 2}	Large flow	●	●	●	□	●	□	●	□
Base piping	GA010E1	1.0W	Standard	●	●	□	●	●	□	●	●
	GA010LE1	0.5W	Small flow	●	●	□	●	●	□	●	●
	GA010HE1	3.2W (1.1W) ^{Note 2}	Large flow	●	●	□	●	●	□	●	●
	GAV010E1	1.0W	Standard	●	●	□	●	●	□	●	●
	GAV010LE1	0.5W	Small flow	●	●	□	●	●	□	●	●
	GAV010HE1	3.2W (1.1W) ^{Note 2}	Large flow	●	●	□	●	●	□	●	●
2(A) port								(M3)	M3	(M3)	M5
1(P), 3(R) port								M5	M5	Rc1/8	Rc1/8

●: Selectable or mountable

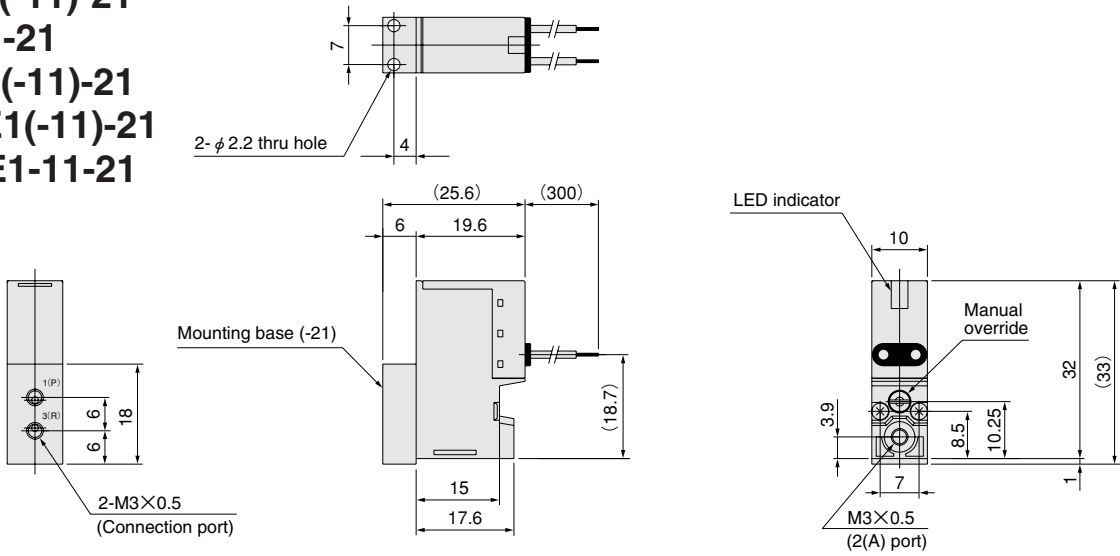
Notes: 1. Care should be taken when ordering, since the initial settings for the normally closed (NC) and normally open (NO) valves cannot be changed later on.

Normally closed (NC) and normally open (NO) valves cannot be mounted together on the same manifold.

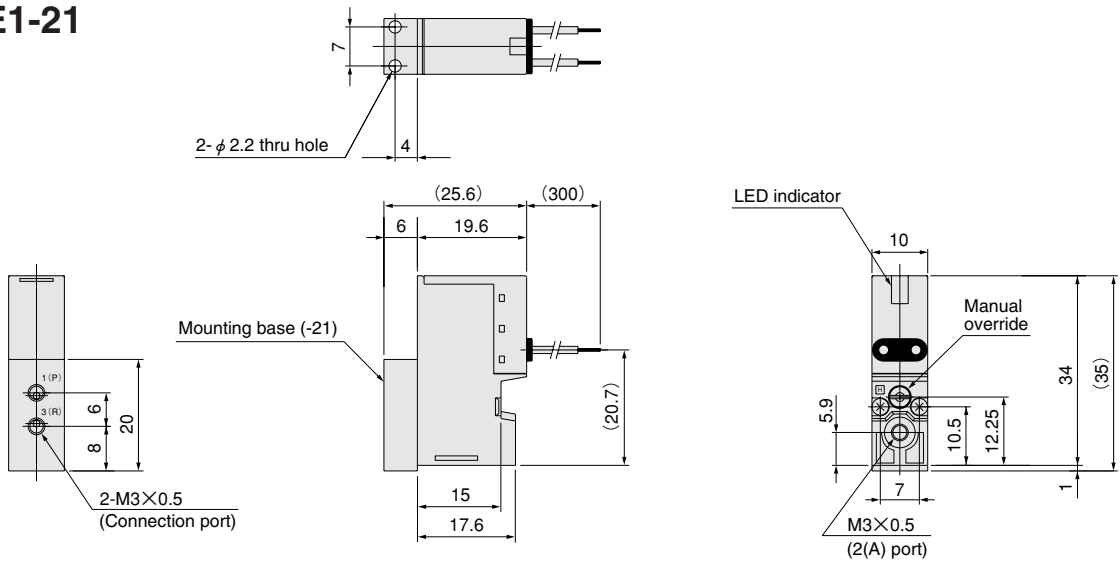
2. Values in parentheses () in power column are for holding state.

Dimensions of Direct Piping Solenoid Valve (mm)

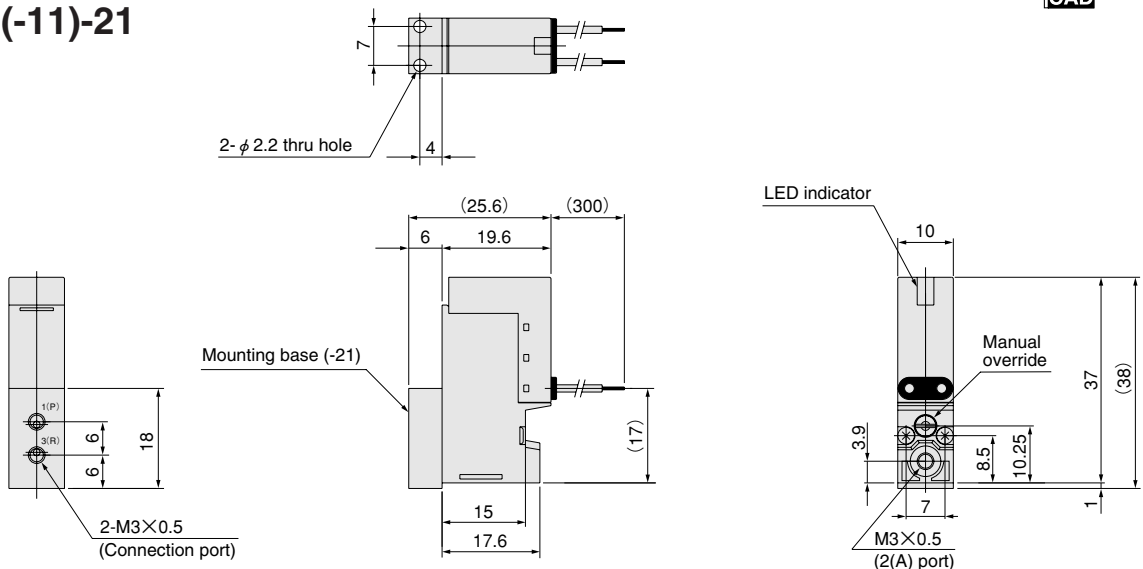
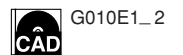
G010E1(-11)-21 (DC5V, DC6V, DC12V, DC24, AC100V)
 G010LE1(-11)-21
 G010HE1-21
 GV010E1(-11)-21
 GV010LE1(-11)-21
 GV010HE1-11-21



G010HE1-11-21 (DC24V)
 GV010HE1-21

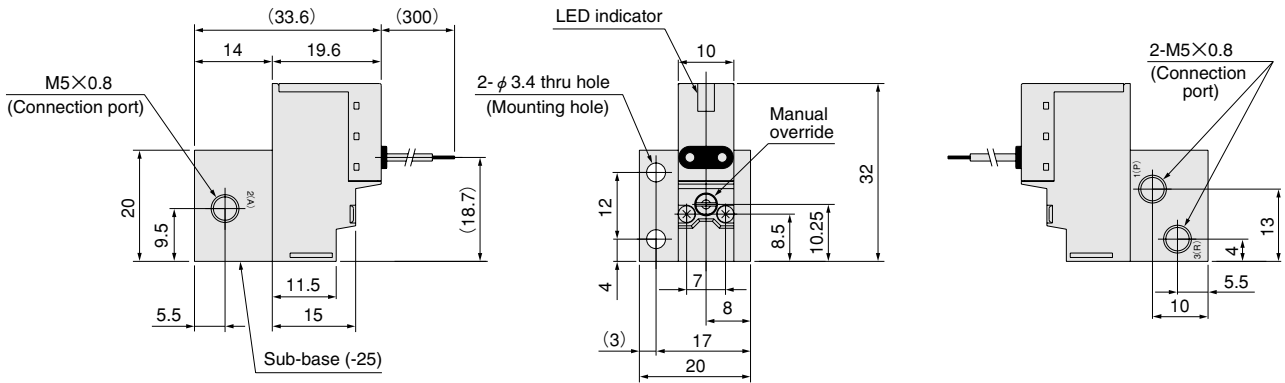


G010E1(-11)-21 (AC200V)
 GV010E1(-11)-21

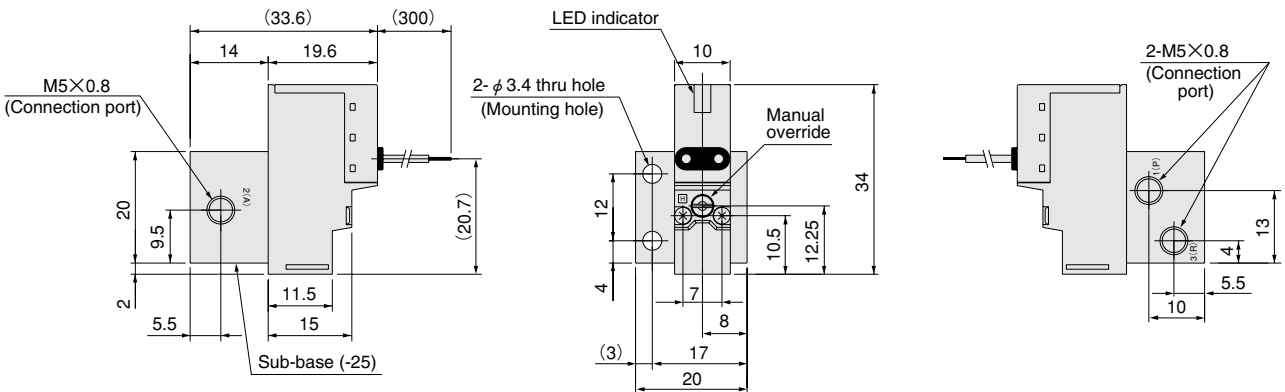


Dimensions of Sub-base Piping Solenoid Valve (mm)

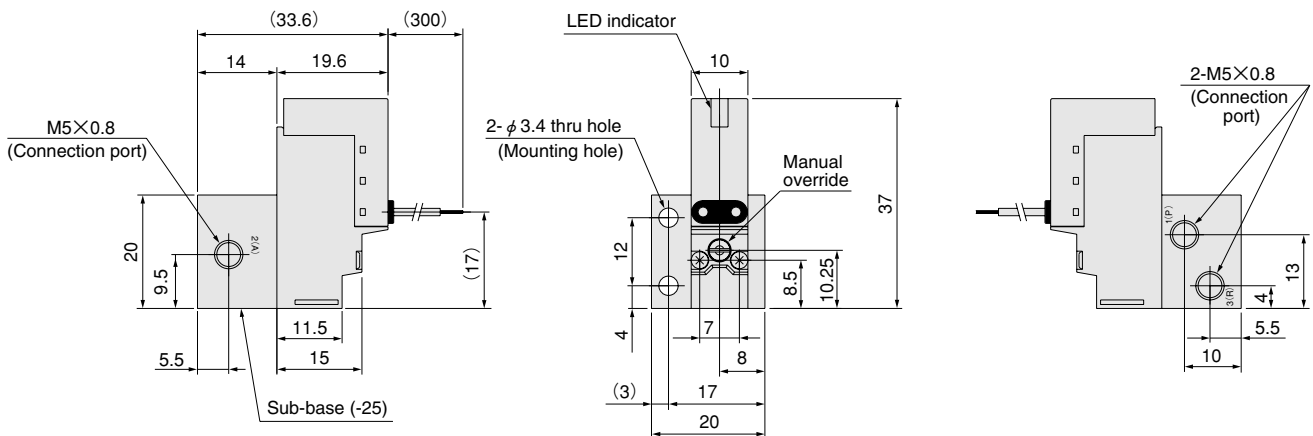
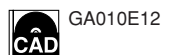
GA010E1(-11)-25 (DC5V, DC6V, DC12V, DC24V, AC100V)
GA010LE1(-11)-25
GA010HE1-25
GAV010E1(-11)-25
GAV010LE1(-11)-25
GAV010HE1-11-25



GA010HE1-11-25 (DC24V)
GAV010HE1-25





GA010E1(-11)-25 (AC200V)
GAV010E1(-11)-25





Dimensions of Connector (mm)

Options

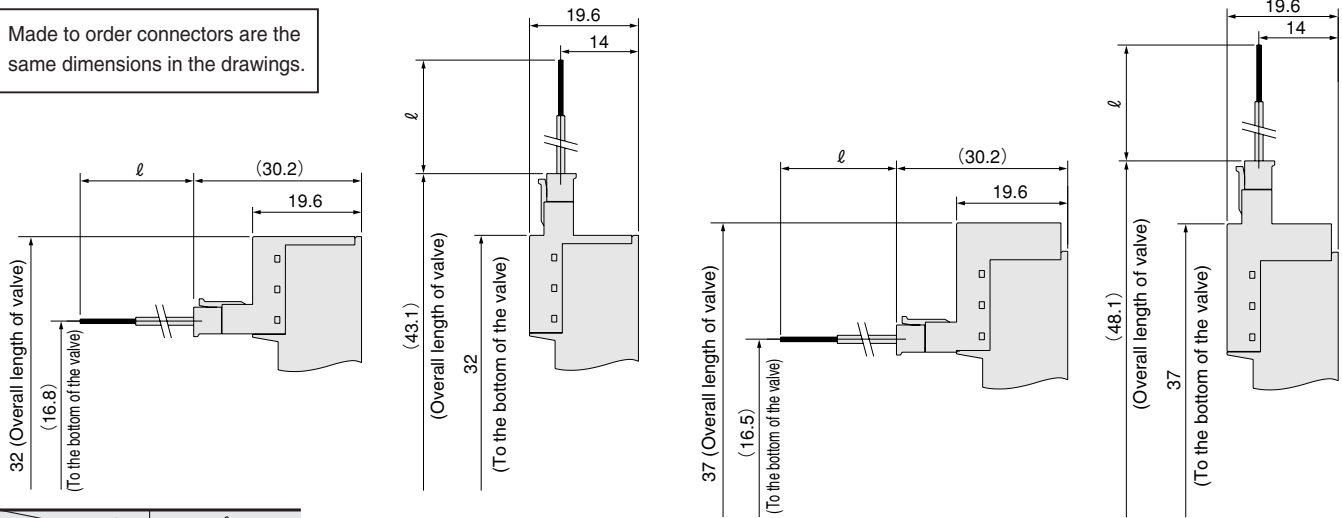
● Solenoid with L connector: **-PL**
 G010E1PL

● Solenoid with straight connector: **-PS**
 G010E1PS

● Solenoid with L connector (AC200V): **-PL**
 G010E1L2

● Solenoid with straight connector (AC200V): **-PS**
 G010E1P2

Made to order connectors are the same dimensions in the drawings.



Model	Code	ℓ
Blank		300
-1L		1000
-3L		3000

Corresponding Table of Solenoid Options/Voltage

Basic valve models	Voltage specifications	Connector specifications													
		Blank (grommet)	-PS	-PL	-MS	-ML	-PSX	-PLX	-MSX	-MLX	-PSN	-PLN	-MSN	-MLN	
G(A)010E1 [-11] G(A)V010E1 [-11] (standard type)	DC5V	△	△	△	△	△	△	△	△	△	△	△	△	△	
	DC6V	△	△	△	△	△	△	△	△	△	△	△	△	△	
	DC12V	●	●	●	△	△	△	△	△	△	△	△	△	△	
	DC24V	●	●	●	△	△	△	△	△	△	△	△	△	△	
	AC100V	●	●	●	△	△	△	△	△	△	△	△	△	△	
	AC200V	△	△	△	△	△	△	△	△	△	△	△	△	△	
G(A)010LE1 [-11] G(A)V010LE1 [-11] (low current type)	DC5V	△	△	△	△	△	△	△	△	△	△	△	△		
	DC6V	△	△	△	△	△	△	△	△	△	△	△	△		
	DC12V	●	●	●	△	△	△	△	△	△	△	△	△		
	DC24V	●	●	●	△	△	△	△	△	△	△	△	△		
G(A)010HE1 [-11] G(A)V010HE1 [-11] (large flow type)	DC12V	△	△	△	△	△	△	△	△	△	△	△	△		
	DC24V	●	●	●	△	△	△	△	△	△	△	△	△		
Lead wire length options same for all basic models	-1L	△	△	△	△	△	△	△	△	△	△	△	△		
	-3L	△	△	△	△	△	△	△	△	△	△	△	△		

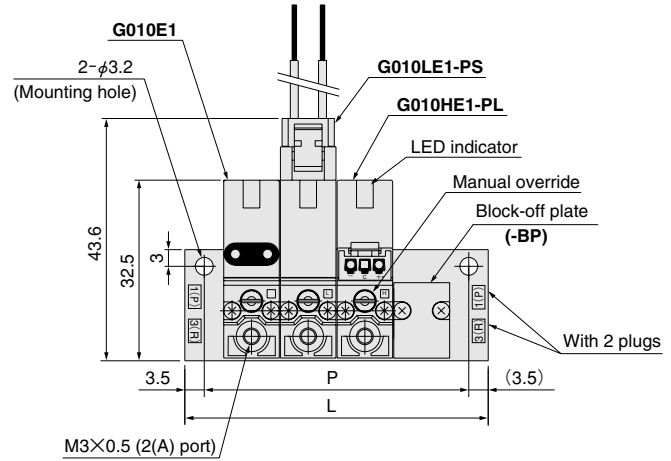
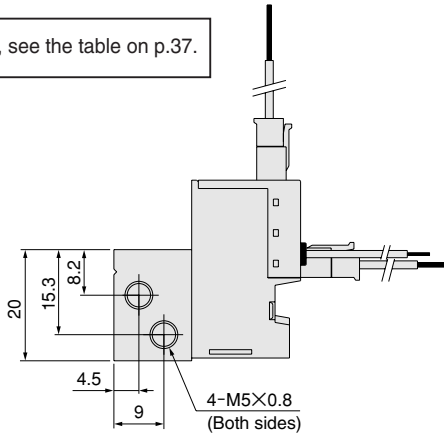
●: Standard specifications △: Made to order

Dimensions of F Type Manifold (for Direct Piping with Positive Pressure Solenoid Valves) (mm)

G010M□F (1(P), 3(R) port: M5×0.8)



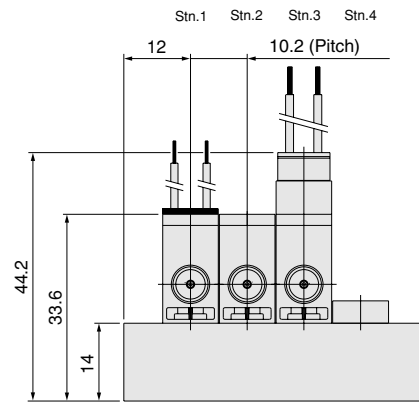
For the piping, see the table on p.37.



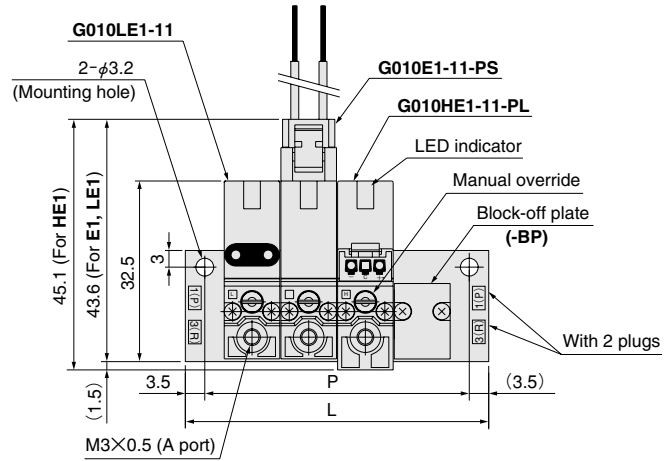
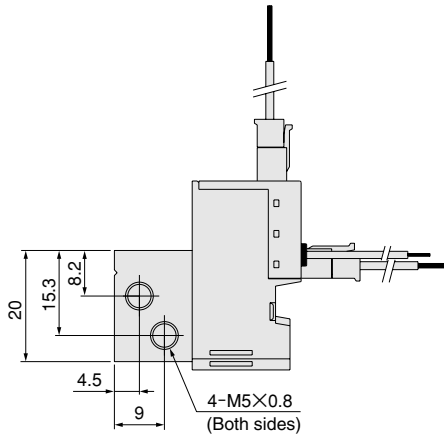
Unit dimensions

mm

Number of units	L	P	Number of units	L	P
2	34.2	27.2	12	136.2	129.2
3	44.4	37.4	13	146.4	139.4
4	54.6	47.6	14	156.6	149.6
5	64.8	57.8	15	166.8	159.8
6	75	68	16	177	170
7	85.2	78.2	17	187.2	180.2
8	95.4	88.4	18	197.4	190.4
9	105.6	98.6	19	207.6	200.6
10	115.8	108.8	20	217.8	210.8
11	126	119	—	—	—



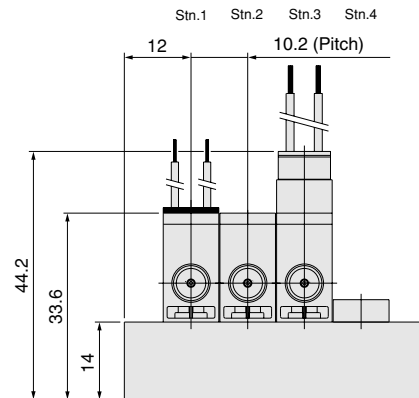
G010M□F (1(P), 3(R) port: M5×0.8)



Unit dimensions

mm

Number of units	L	P	Number of units	L	P
2	34.2	27.2	12	136.2	129.2
3	44.4	37.4	13	146.4	139.4
4	54.6	47.6	14	156.6	149.6
5	64.8	57.8	15	166.8	159.8
6	75	68	16	177	170
7	85.2	78.2	17	187.2	180.2
8	95.4	88.4	18	197.4	190.4
9	105.6	98.6	19	207.6	200.6
10	115.8	108.8	20	217.8	210.8
11	126	119	—	—	—

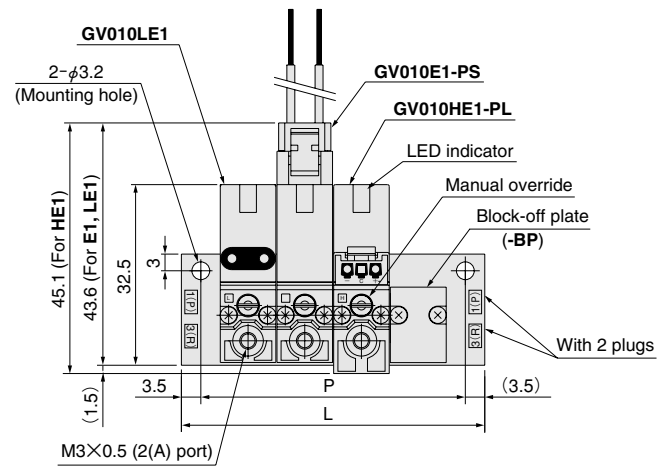
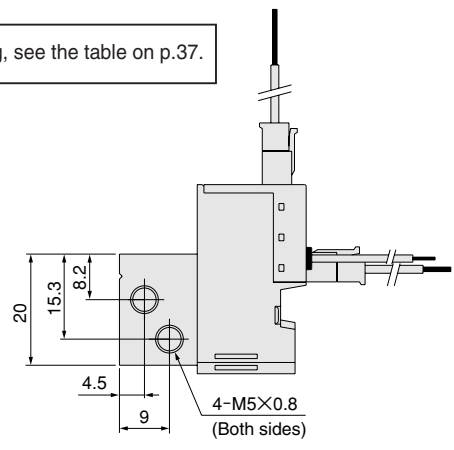


For optional wiring, see p.50.

Dimensions of F Type Manifold (for Direct Piping with Vacuum Solenoid Valves) (mm)

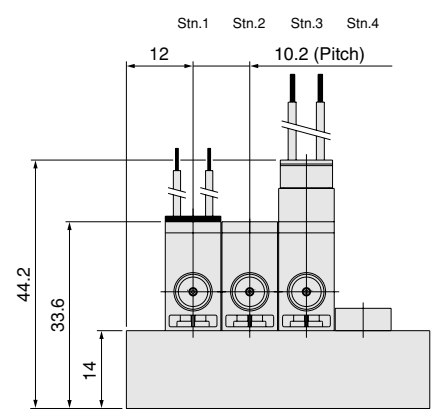
G010M□F (1(P), 3(R) port: M5×0.8)

For the piping, see the table on p.37.

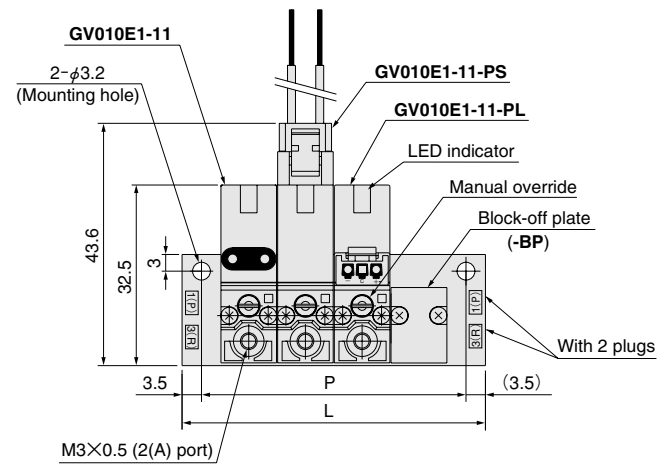
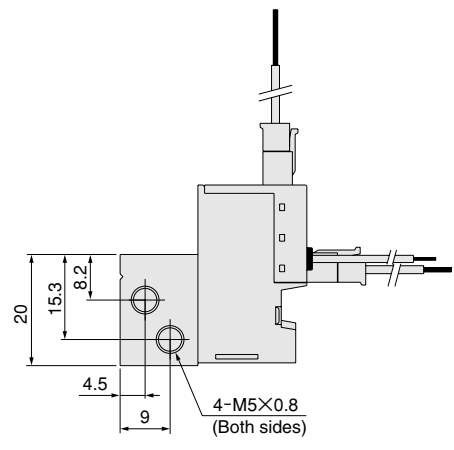


Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	34.2	27.2	12	136.2	129.2
3	44.4	37.4	13	146.4	139.4
4	54.6	47.6	14	156.6	149.6
5	64.8	57.8	15	166.8	159.8
6	75	68	16	177	170
7	85.2	78.2	17	187.2	180.2
8	95.4	88.4	18	197.4	190.4
9	105.6	98.6	19	207.6	200.6
10	115.8	108.8	20	217.8	210.8
11	126	119	—	—	—

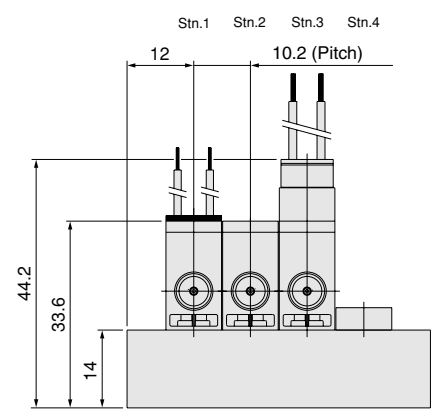


G010M□F (1(P), 3(R) port: M5×0.8)



Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	34.2	27.2	12	136.2	129.2
3	44.4	37.4	13	146.4	139.4
4	54.6	47.6	14	156.6	149.6
5	64.8	57.8	15	166.8	159.8
6	75	68	16	177	170
7	85.2	78.2	17	187.2	180.2
8	95.4	88.4	18	197.4	190.4
9	105.6	98.6	19	207.6	200.6
10	115.8	108.8	20	217.8	210.8
11	126	119	—	—	—



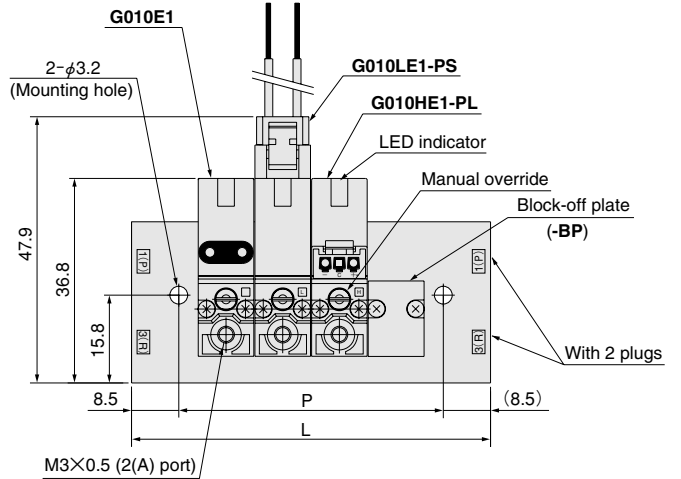
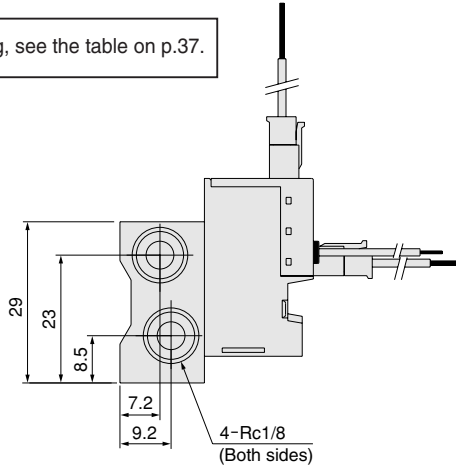
For optional wiring, see p.50.

Dimensions of F Type Manifold (for Direct Piping with Positive Pressure Solenoid Valves) (mm)

G010MH□F (1(P), 3(R) port: Rc1/8)



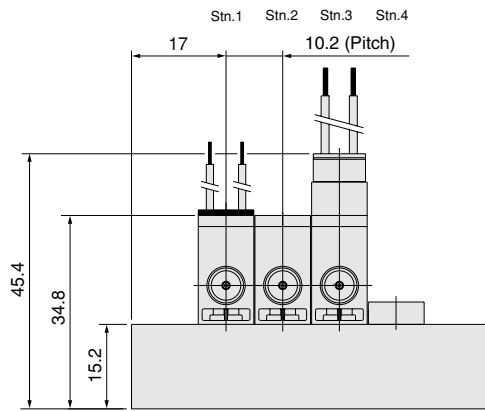
For the piping, see the table on p.37.



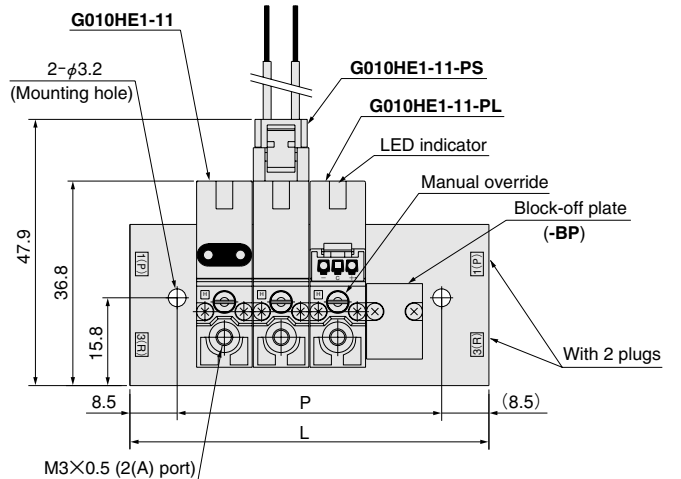
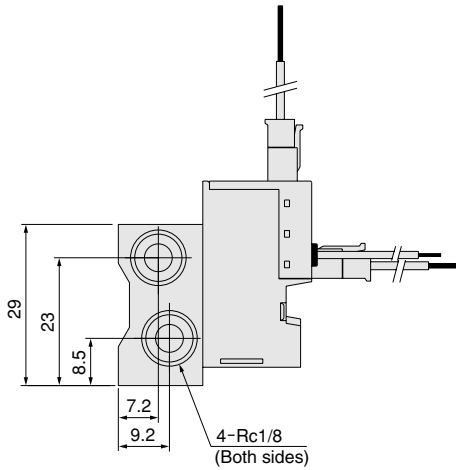
Unit dimensions

mm

Number of units	L	P	Number of units	L	P
2	44.2	27.2	12	146.2	129.2
3	54.4	37.4	13	156.4	139.4
4	64.6	47.6	14	166.6	149.6
5	74.8	57.8	15	176.8	159.8
6	85	68	16	187	170
7	95.2	78.2	17	197.2	180.2
8	105.4	88.4	18	207.4	190.4
9	115.6	98.6	19	217.6	200.6
10	125.8	108.8	20	227.8	210.8
11	136	119	—	—	—



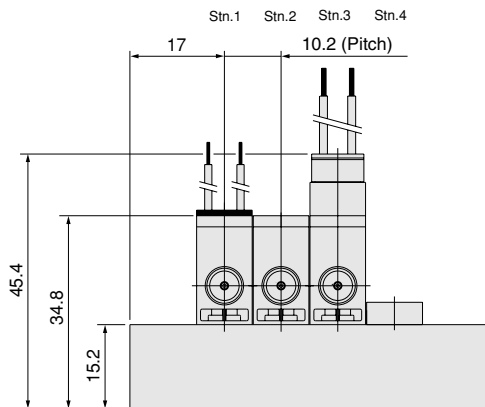
G010MH□F (1(P), 3(R) port: Rc1/8)



Unit dimensions

mm

Number of units	L	P	Number of units	L	P
2	44.2	27.2	12	146.2	129.2
3	54.4	37.4	13	156.4	139.4
4	64.6	47.6	14	166.6	149.6
5	74.8	57.8	15	176.8	159.8
6	85	68	16	187	170
7	95.2	78.2	17	197.2	180.2
8	105.4	88.4	18	207.4	190.4
9	115.6	98.6	19	217.6	200.6
10	125.8	108.8	20	227.8	210.8
11	136	119	—	—	—



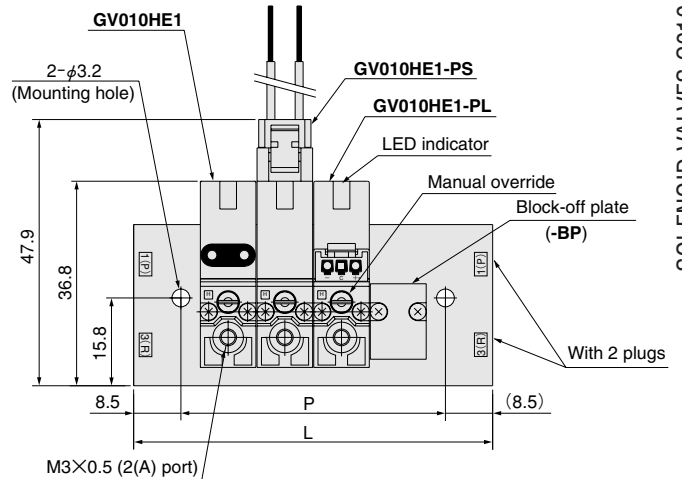
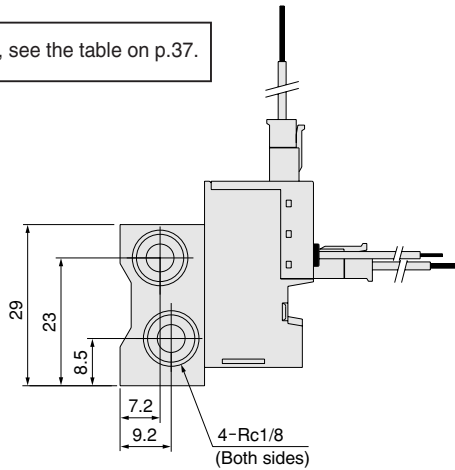
For optional wiring, see p.50.

Dimensions of F type Manifold (for Direct Piping with Vacuum Solenoid Valves) (mm)

G010MH□F (1(P), 3(R) port: Rc1/8)



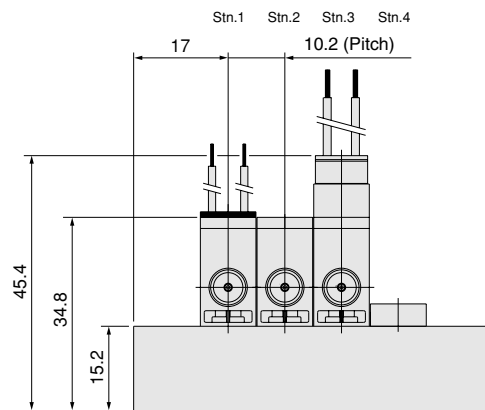
For the piping, see the table on p.37.



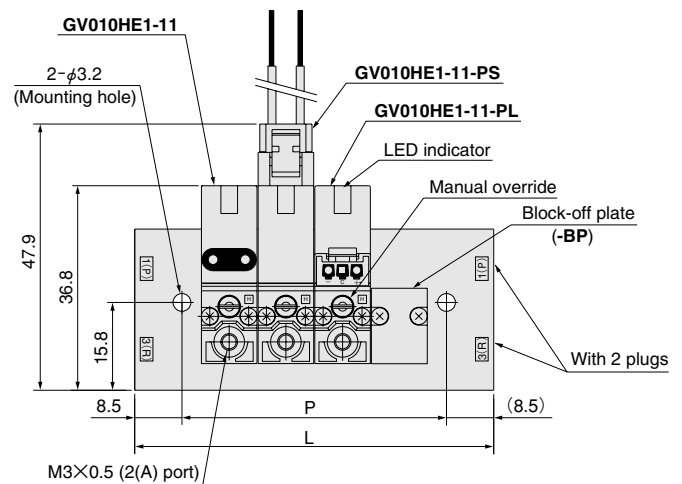
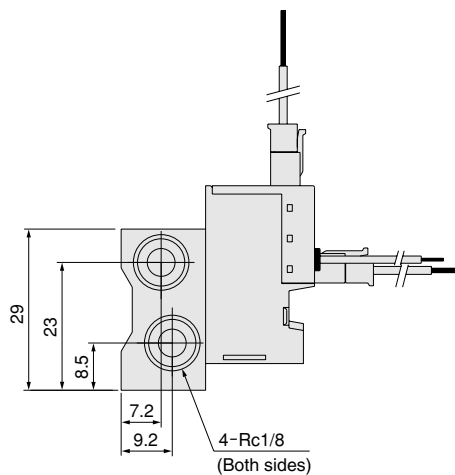
Unit dimensions

mm

Number of units	L	P	Number of units	L	P
2	44.2	27.2	12	146.2	129.2
3	54.4	37.4	13	156.4	139.4
4	64.6	47.6	14	166.6	149.6
5	74.8	57.8	15	176.8	159.8
6	85	68	16	187	170
7	95.2	78.2	17	197.2	180.2
8	105.4	88.4	18	207.4	190.4
9	115.6	98.6	19	217.6	200.6
10	125.8	108.8	20	227.8	210.8
11	136	119	—	—	—



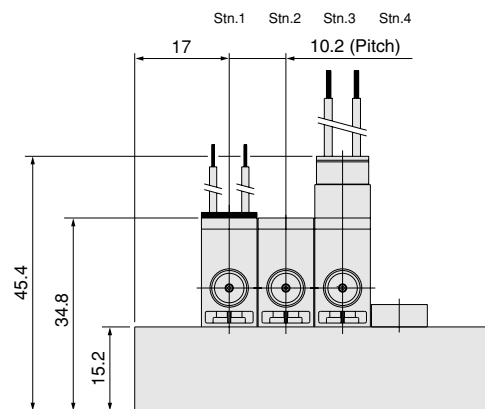
G010MH□F (1(P), 3(R) port: Rc1/8)



Unit dimensions

mm

Number of units	L	P	Number of units	L	P
2	44.2	27.2	12	146.2	129.2
3	54.4	37.4	13	156.4	139.4
4	64.6	47.6	14	166.6	149.6
5	74.8	57.8	15	176.8	159.8
6	85	68	16	187	170
7	95.2	78.2	17	197.2	180.2
8	105.4	88.4	18	207.4	190.4
9	115.6	98.6	19	217.6	200.6
10	125.8	108.8	20	227.8	210.8
11	136	119	—	—	—



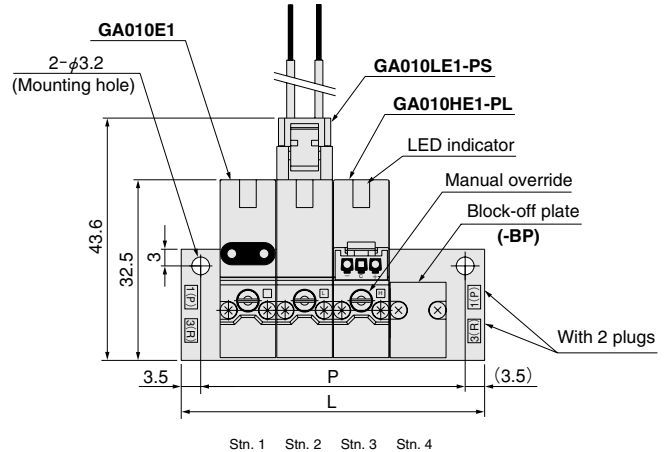
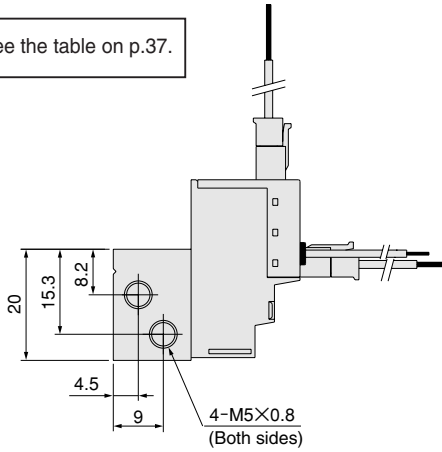
For optional wiring, see p.50.

Dimensions of A Type Manifold (for Manifold Piping with Positive Pressure Solenoid Valves) (mm)

G010M□A (1(P), 3(R) port: M5×0.8)

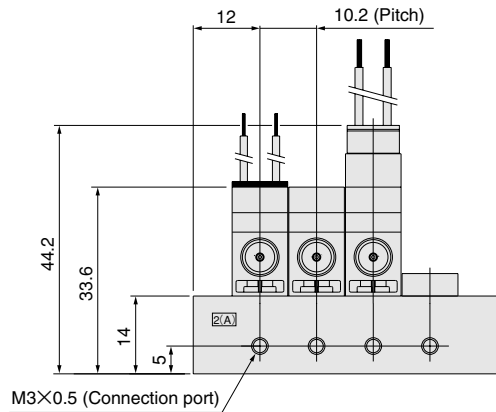


For the piping, see the table on p.37.

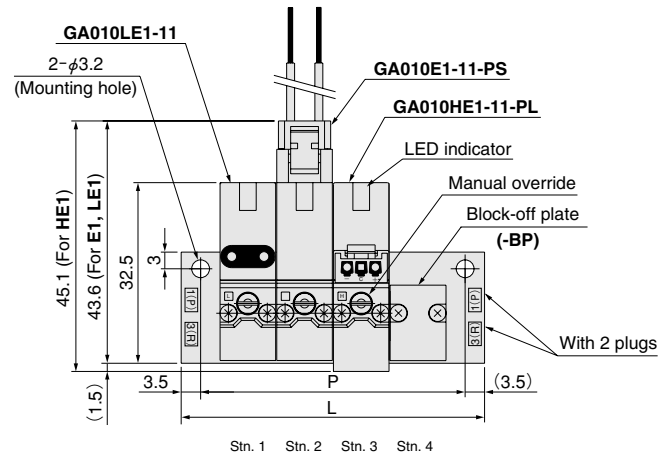
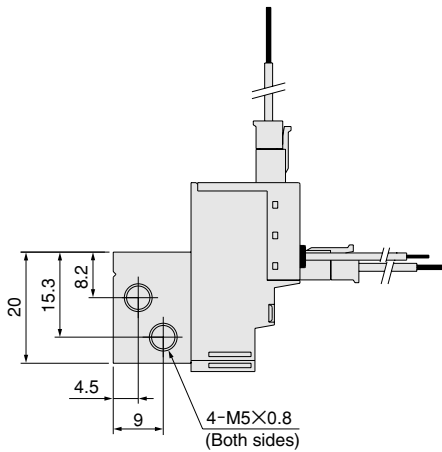


Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	34.2	27.2	12	136.2	129.2
3	44.4	37.4	13	146.4	139.4
4	54.6	47.6	14	156.6	149.6
5	64.8	57.8	15	166.8	159.8
6	75	68	16	177	170
7	85.2	78.2	17	187.2	180.2
8	95.4	88.4	18	197.4	190.4
9	105.6	98.6	19	207.6	200.6
10	115.8	108.8	20	217.8	210.8
11	126	119	—	—	—

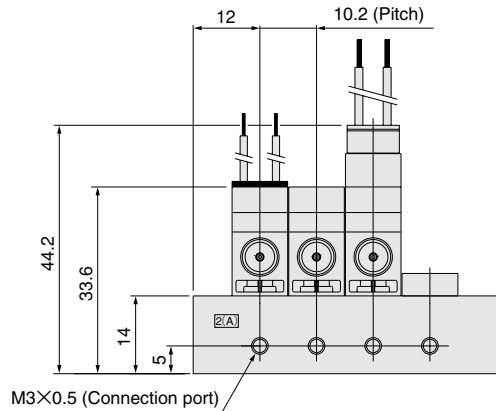


G010M□A (1(P), 3(R) port: M5×0.8)



Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	34.2	27.2	12	136.2	129.2
3	44.4	37.4	13	146.4	139.4
4	54.6	47.6	14	156.6	149.6
5	64.8	57.8	15	166.8	159.8
6	75	68	16	177	170
7	85.2	78.2	17	187.2	180.2
8	95.4	88.4	18	197.4	190.4
9	105.6	98.6	19	207.6	200.6
10	115.8	108.8	20	217.8	210.8
11	126	119	—	—	—



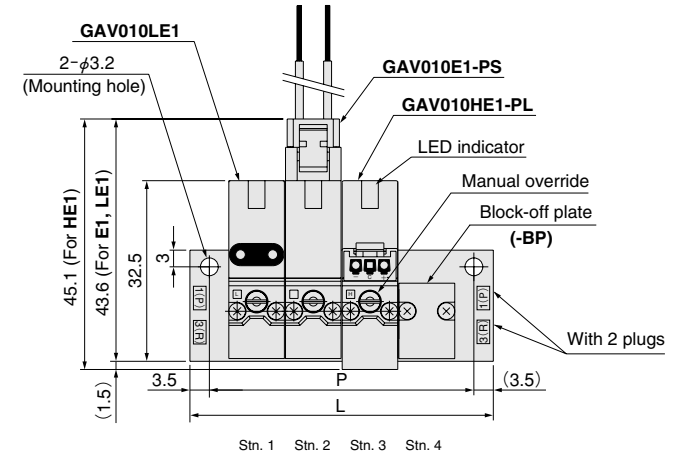
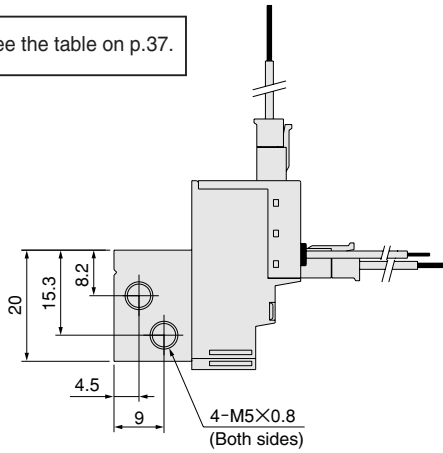
For optional wiring, see p.50.

Dimensions of A Type Manifold (for Manifold Piping with Vacuum Solenoid Valves) (mm)

G010M□A (1(P), 3(R) port: M5×0.8)

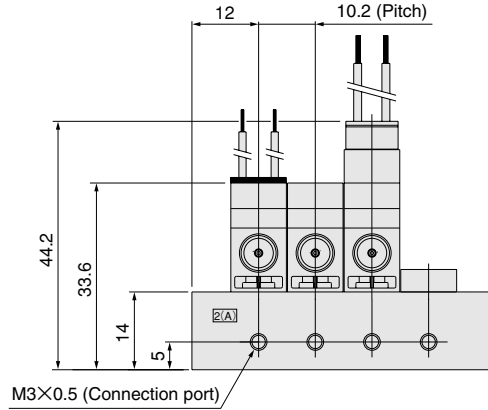


For the piping, see the table on p.37.

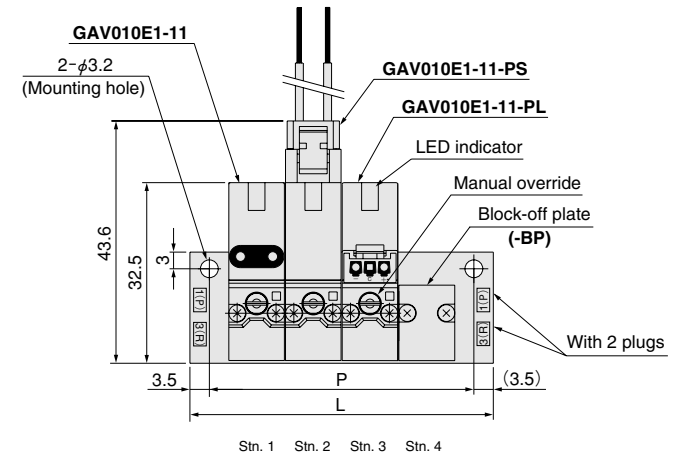
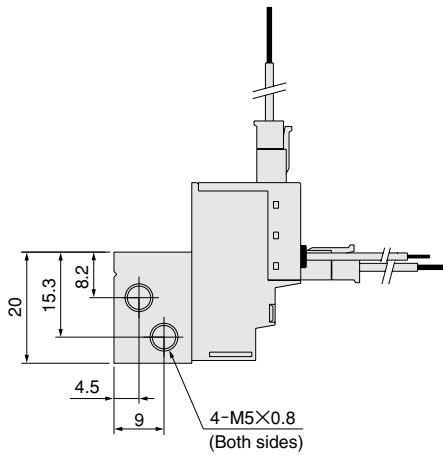


Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	34.2	27.2	12	136.2	129.2
3	44.4	37.4	13	146.4	139.4
4	54.6	47.6	14	156.6	149.6
5	64.8	57.8	15	166.8	159.8
6	75	68	16	177	170
7	85.2	78.2	17	187.2	180.2
8	95.4	88.4	18	197.4	190.4
9	105.6	98.6	19	207.6	200.6
10	115.8	108.8	20	217.8	210.8
11	126	119	—	—	—

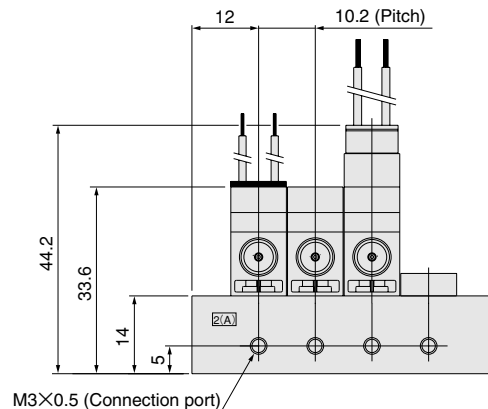


G010M□A (1(P), 3(R) port: M5×0.8)



Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	34.2	27.2	12	136.2	129.2
3	44.4	37.4	13	146.4	139.4
4	54.6	47.6	14	156.6	149.6
5	64.8	57.8	15	166.8	159.8
6	75	68	16	177	170
7	85.2	78.2	17	187.2	180.2
8	95.4	88.4	18	197.4	190.4
9	105.6	98.6	19	207.6	200.6
10	115.8	108.8	20	217.8	210.8
11	126	119	—	—	—



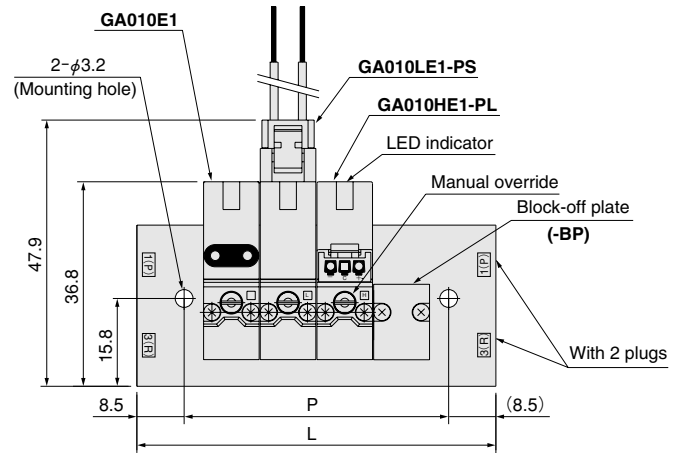
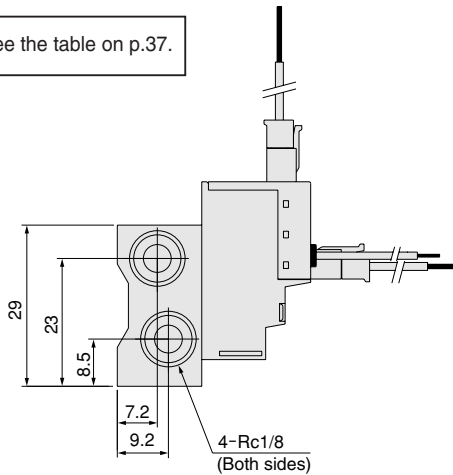
For optional wiring, see p.50.

Dimensions of A Type Manifold (for Manifold Piping with Positive Pressure Solenoid Valves) (mm)

G010MH□A (1(P), 3(R) port: Rc1/8)

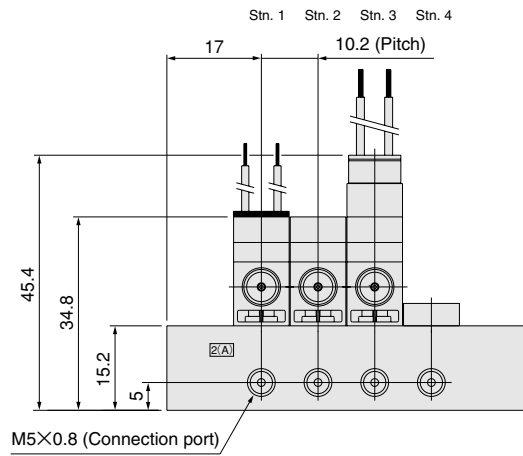


For the piping, see the table on p.37.

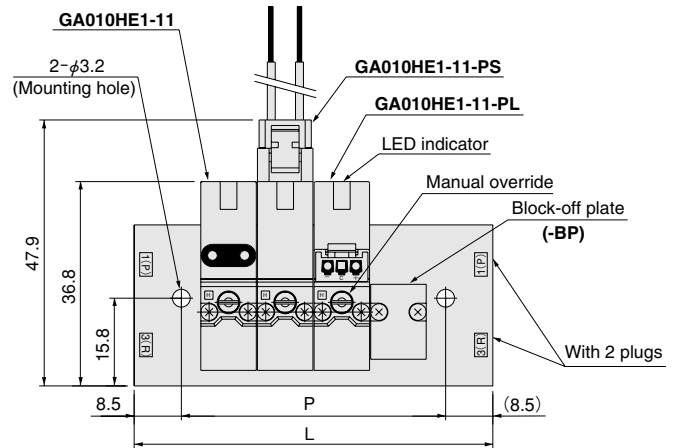
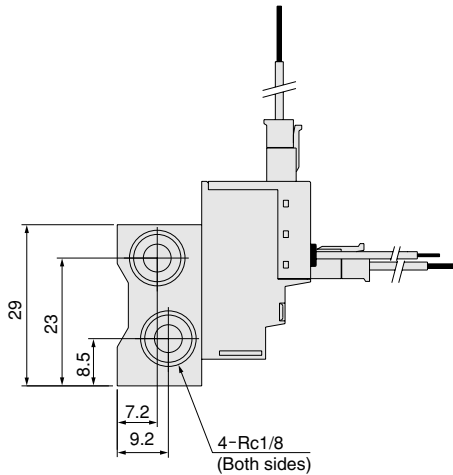


Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	44.2	27.2	12	146.2	129.2
3	54.4	37.4	13	156.4	139.4
4	64.6	47.6	14	166.6	149.6
5	74.8	57.8	15	176.8	159.8
6	85	68	16	187	170
7	95.2	78.2	17	197.2	180.2
8	105.4	88.4	18	207.4	190.4
9	115.6	98.6	19	217.6	200.6
10	125.8	108.8	20	227.8	210.8
11	136	119	—	—	—

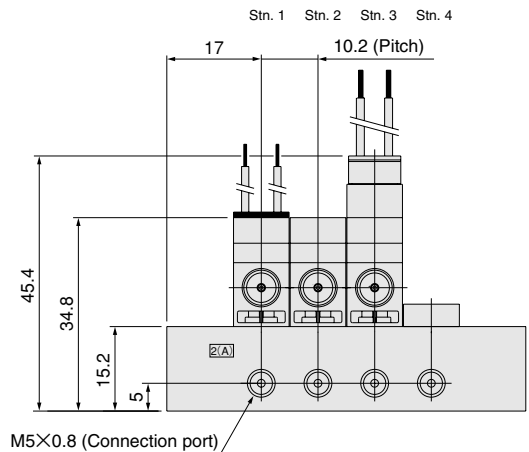


G010MH□A (1(P), 3(R) port: Rc1/8)



Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	44.2	27.2	12	146.2	129.2
3	54.4	37.4	13	156.4	139.4
4	64.6	47.6	14	166.6	149.6
5	74.8	57.8	15	176.8	159.8
6	85	68	16	187	170
7	95.2	78.2	17	197.2	180.2
8	105.4	88.4	18	207.4	190.4
9	115.6	98.6	19	217.6	200.6
10	125.8	108.8	20	227.8	210.8
11	136	119	—	—	—



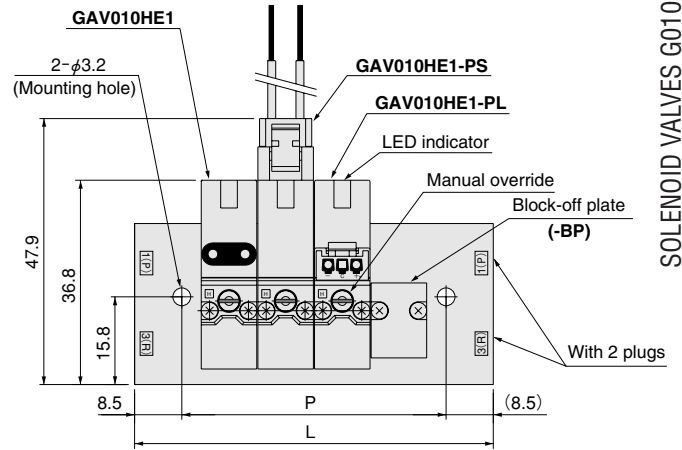
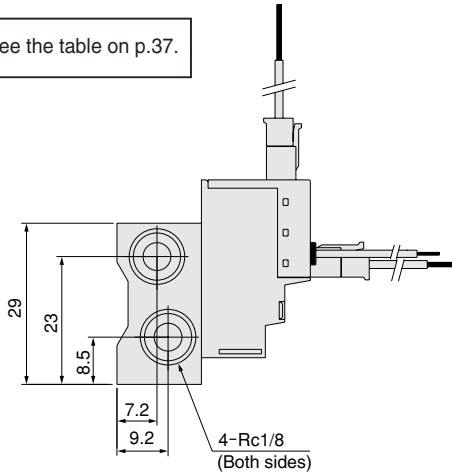
For optional wiring, see p.50.

Dimensions of A Type Manifold (for Manifold Piping with Vacuum Solenoid Valves) (mm)

G010MH□A (1(P), 3(R) port: Rc1/8)

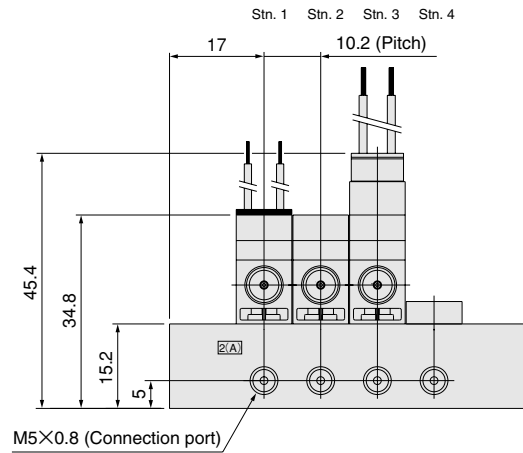


For the piping, see the table on p.37.

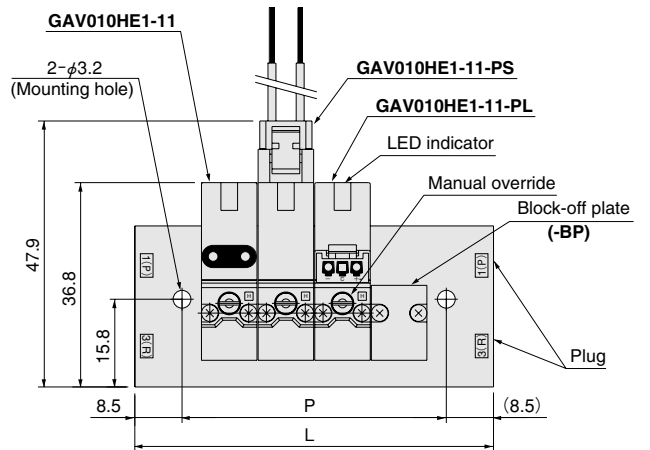
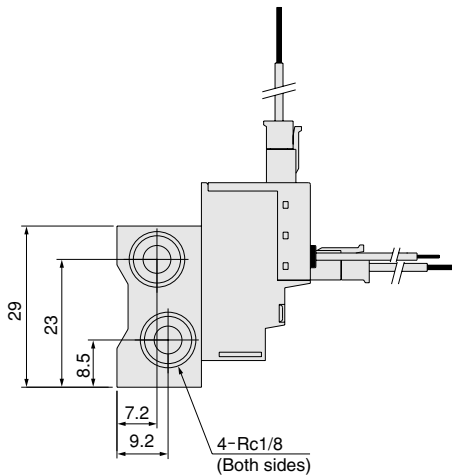


Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	44.2	27.2	12	146.2	129.2
3	54.4	37.4	13	156.4	139.4
4	64.6	47.6	14	166.6	149.6
5	74.8	57.8	15	176.8	159.8
6	85	68	16	187	170
7	95.2	78.2	17	197.2	180.2
8	105.4	88.4	18	207.4	190.4
9	115.6	98.6	19	217.6	200.6
10	125.8	108.8	20	227.8	210.8
11	136	119	—	—	—

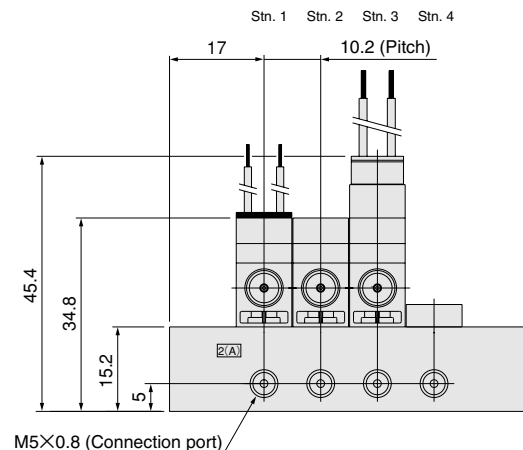


G010MH□A (1(P), 3(R) port: Rc1/8)



Unit dimensions

		mm			
Number of units	L	P	Number of units	L	P
2	44.2	27.2	12	146.2	129.2
3	54.4	37.4	13	156.4	139.4
4	64.6	47.6	14	166.6	149.6
5	74.8	57.8	15	176.8	159.8
6	85	68	16	187	170
7	95.2	78.2	17	197.2	180.2
8	105.4	88.4	18	207.4	190.4
9	115.6	98.6	19	217.6	200.6
10	125.8	108.8	20	227.8	210.8
11	136	119	—	—	—



For optional wiring, see p.50.