

# 3 Port Solenoid Valve Rubber Seal

## Series SYJ300/500/700

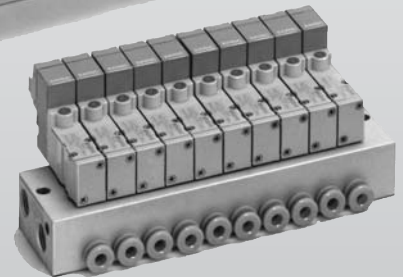
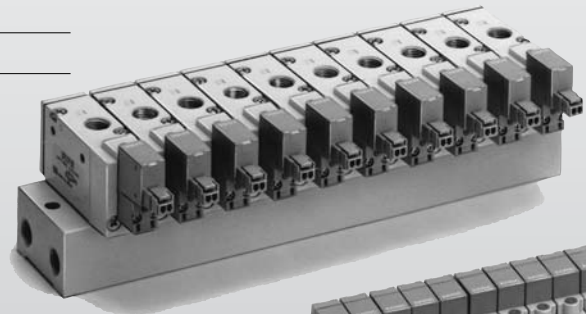
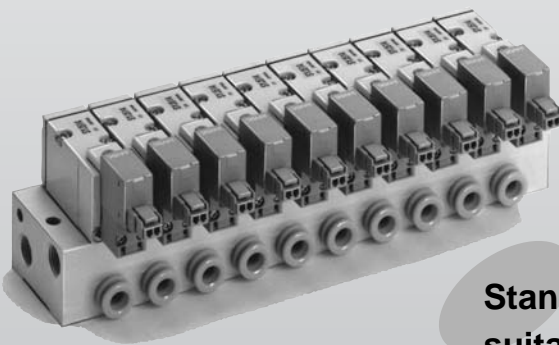
**Low power consumption: 0.5W** (Without light)  
(Current draw: 21mA at 24V DC)

**Completely interchangeable  
with the previous  
series VJ300/500/700 and VZ300/500.**

Mounts on the same subplates and manifolds as  
the VJ300/500/700 and the VZ300/500.

|               | Series VJ | Series VZ |
|---------------|-----------|-----------|
| <b>SYJ300</b> | VJ300     | —         |
| <b>SYJ500</b> | VJ500     | VZ300     |
| <b>SYJ700</b> | VJ700     | VZ500     |

Pilot exhaust



**Standard valve  
suitable for copper free applications**

**Valve can be piped for selector  
or divider applications.**

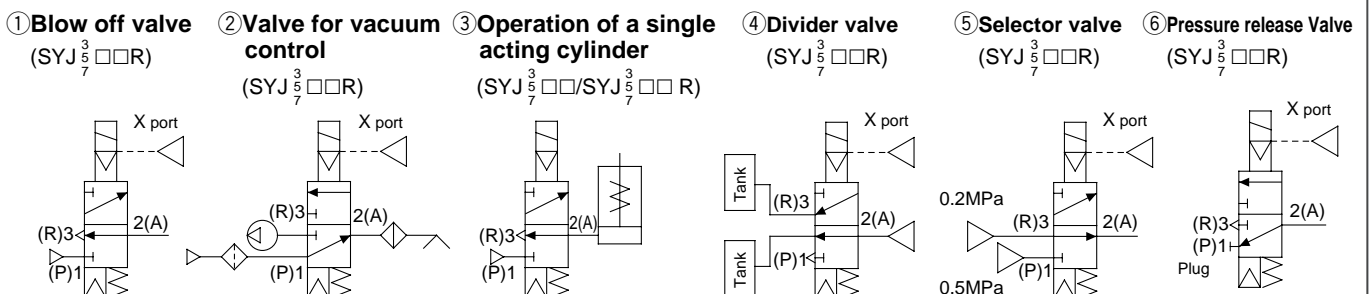
— Universal porting is possible.

**Bright colour tone and  
state of the art design**

**Vacuum applicable**

Up to -100kPa


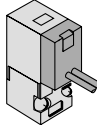

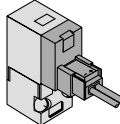

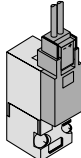

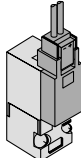


### Application Example



# 3 Port Solenoid Valve Rubber Seal

## Series *SYJ300/500/700*


### Variations

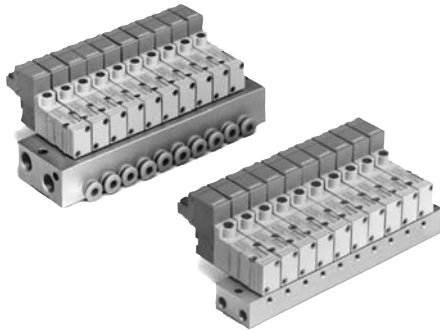
| Series   | Port size  | Effective area<br>(mm <sup>2</sup> )<br>(N/min) | Actuation      | Voltage   | Electrical entry  | Option  | Manual<br>override   |                 |   |   |   |  |                 |
|--|--|---|----------------|---|---|---|--|-----------------|---|---|---|--|-----------------|
|  |  |   |                |   |   | Indicator light and surge<br>voltage suppressor   |  |                 |   |   |   |  |                 |
| <b>SYJ300</b><br>   | M3   | 0.9<br>(49.08)                                  | ●N.C.<br>●N.O. | DC<br>■ 24V DC<br>12V DC<br>6V DC<br>5V DC<br>3V DC | Grommet<br> | DC<br>■ With surge voltage<br>suppressor<br><br>■ With indicator light<br>and surge voltage<br>suppressor | ■ Non-locking<br>push style<br><br>■ Push-locking<br>slotted style |                 |   |   |   |  |                 |
|  | <b>SYJ500</b><br>  | M5  |                |   |   |   |  | 3.6<br>(196.3)  | L plug<br>connector<br>  |   |   |  |                 |
|  | <b>SYJ700</b><br> | 1/8   |                |   |   |   |  | 9.0<br>(490.75) | M plug<br>connector<br> |   |   |  |                 |
| <b>SYJ300</b><br> | M5   | 1.8<br>(98.15)                                  |                |   |   |   |  | ●N.C.<br>●N.O.  | DC<br>■ 24V DC<br>12V DC<br>6V DC<br>5V DC<br>3V DC   | M plug<br>connector<br> | DC<br>■ With surge voltage<br>suppressor<br><br>■ With indicator light<br>and surge voltage<br>suppressor | ■ Non-locking<br>push style<br><br>■ Push-locking<br>slotted style |                 |
|  | <b>SYJ500</b><br> | 1/8   |                |   |   |   |  |                 |   |   |   |  | 4.5<br>(245.38) |
|  | <b>SYJ700</b><br> | 1/8/1/4   |                |   |   |   |  |                 |   |   |   |  | 9.0<br>(490.75) |

# Series SYJ300/500/700

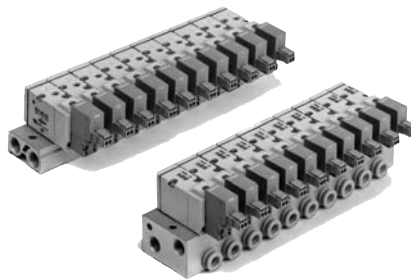
## Manifold Variations

| Valve series        | A Port location | P/R port size | A port size   |                  |     |                                 |    |                  |   |
|---------------------|-----------------|---------------|---------------|------------------|-----|---------------------------------|----|------------------|---|
|                     |                 |               | M3            | M5               | 1/8 | With built-in One-touch fitting |    |                  |   |
|                     |                 |               |               |                  |     | Applicable tube O.D.            |    |                  |   |
|                     |                 |               |               |                  |     | ø4                              | ø6 | ø8               |   |
| <b>Body ported</b>  | <b>SYJ300</b>   | Top           | M5            | ● <sup>(1)</sup> | —   | —                               | —  | —                | — |
|                     |                 |               | 1/8           | ● <sup>(2)</sup> | —   | —                               | —  | —                | — |
|                     | <b>SYJ500</b>   | Top           | 1/8           | —                | ●   | —                               | —  | —                | — |
|                     |                 |               | <b>SYJ700</b> | Top              | 1/8 | —                               | —  | ● <sup>(1)</sup> | — |
| 1/4                 | —               | —             |               |                  | ●   | —                               | —  |                  |   |
| <b>Base mounted</b> | <b>SYJ300</b>   | Side          | M5            | ● <sup>(1)</sup> | —   | —                               | —  | —                | — |
|                     |                 |               | 1/8           | —                | ●   | —                               | ●  | —                | — |
|                     | <b>SYJ500</b>   | Bottom        | 1/8           | —                | ●   | ●                               | —  | —                | — |
|                     |                 | Side          |               | —                | ●   | ●                               | ●  | ●                | — |
|                     | <b>SYJ700</b>   | Bottom        | 1/8           | —                | —   | ● <sup>(1)</sup>                | —  | —                | — |
|                     |                 |               | 1/4           | —                | —   | ●                               | —  | —                | — |
| Side                |                 | 1/4           | —             | —                | ●   | —                               | ●  | ●                |   |

 Note 1) Only internal pilot style  
 Note 2) Only external pilot style



Series SYJ300



Series SYJ500



Series SYJ700

SY

SYJ

VK

VZ

VT

VT

VP

VG

VQ

VQZ

## ⚠ Precautions

Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions on the products mentioned in this catalog.

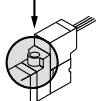
### ⚠ Warning

#### Operation of Manual Override

Use caution since manual override operation will operate any connected actuators.

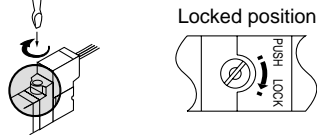
##### ■ Non-locking push style [Standard]

Press in the direction of the arrow.



##### ■ Push-locking slotted style [D]

While pressing, turn in the direction of the arrow. If you do not turn, the mechanism does not lock in position.



Note) A second manual override is located on the pilot valve assembly. It is only available as a non-locking push style. Simply depress in the direction of the arrow shown to operate.



### ⚠ Caution

#### Common Exhaust Port for The Pilot and Main Valve

Pilot air is exhausted through the main valve body rather than directly to atmosphere.

● Suitable for applications where exhausting the pilot valve to atmosphere would be detrimental to the surrounding working environment.

● For use in extremely dirty environments where there is the possibility that dust could enter the pilot exhaust and damage the valve. Ensure that the piping of exhaust air is not too restrictive.

### ⚠ Caution

#### Bracket

When with bracket of SYJ300, do not use it without a bracket.

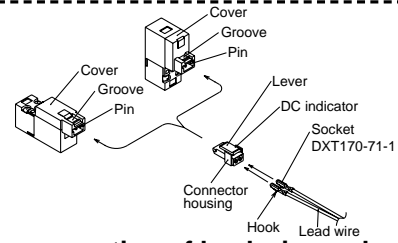
### ⚠ Caution

#### How to Use Plug Connector

##### ① Connection/Disconnection of connector

● Connection—Push the connector straight on to the pins of the solenoid, making sure the lip of the lever securely "locks" into the groove of the solenoid cover.

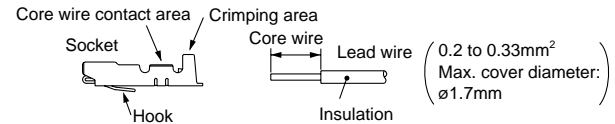
● Disconnection—Press the lever against the connector housing and pull it outward from the solenoid



##### ② Crimping connection of lead wire and socket

Strip 3.2 to 3.7mm of the lead wire ends, insert each stripped wire into a socket and crimp it using special crimping tool. Be careful that the outer insulation of the lead wires does not interfere with the socket contact part.

(Contact SMC for the special crimping tool.)



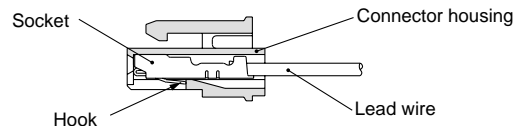
##### ③ Connection/Disconnection of socket with lead wire

###### ● Connection

Insert lead wire and crimped socket into square holes (indicated as positive or negative) of connector. Press the socket in fully until the hook of the socket locks into the groove of the connector housing. Confirm the locked position by lightly pulling on the lead wire.

###### ● Disconnection

To remove the socket from the connector, pull out lead wire while depressing the hook of the socket with a fine screw driver (or similar). If the socket is to be re-used, reposition the hook again.



### ⚠ Caution

#### Plug Connector Lead Wire Length

Standard length is 300mm, but the following lengths are also available.

##### How to Order Connector Assembly

For DC: **SY100-30-4A** - [ ]

Without lead wire (with connector and 2 sockets.): **SY100-30-A**

##### How to Order

To order a valve with lead wire length of other than 300mm, indicate part numbers of the valve without connector and the required connector assembly separately. (Example) 2000mm lead wire length

For DC  
SYJ312-5LO-M3  
SY100-30-4A-20

| ● Lead wire length (mm) |      |
|-------------------------|------|
| —                       | 300  |
| 6                       | 600  |
| 10                      | 1000 |
| 15                      | 1500 |
| 20                      | 2000 |
| 25                      | 2500 |
| 30                      | 3000 |
| 50                      | 5000 |

## ⚠ Caution

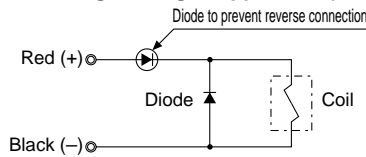
### Surge Voltage Suppressor

<For DC>

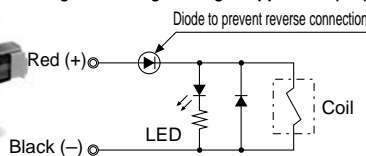
Grommet, L and M plug connector

#### ■ Standard style (With polarity)

##### With surge voltage suppressor (□S)

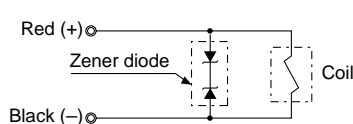


##### With light and surge voltage suppressor (□Z)

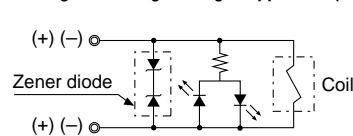


#### ■ Non-polar style

##### With surge voltage suppressor (□R)



##### With light and surge voltage suppressor (□U)



Please correctly connect the lead wires to ⊕ (positive) and ⊖ (negative) indications on the connector.

For non-polar style, the lead wires can be connected to either one.

For DC voltages other than 12, 24 incorrect wiring will cause damage to the surge voltage suppressor circuit. (Wrong polarity will cause trouble.) Solenoids, whose lead wires have been pre-wired, are positive side red and negative side black.

### Connector Assembly with Protective Cover

Connector assembly with protective cover enhances dust protection.

- Effective in preventing possible short circuit problems due to contaminants in contact with connector section.
- Cover material is chloroprene rubber which has excellent weatherability and electric insulation properties. However, be careful not to allow contact with cutting oil.
- Round cord provides neat appearance.

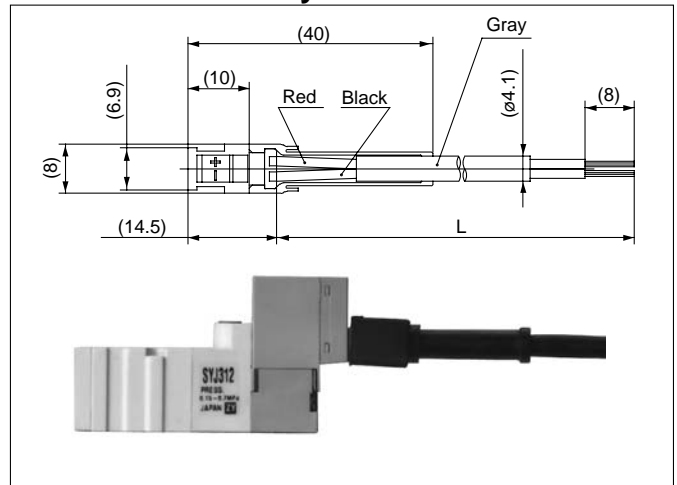
#### How to Order

SY100 - 68 - A -

● Lead wire length (L, mm)

|    |      |
|----|------|
| —  | 300  |
| 6  | 600  |
| 10 | 1000 |
| 15 | 1500 |
| 20 | 2000 |
| 25 | 2500 |
| 30 | 3000 |
| 50 | 5000 |

### Connector Assembly with Cover/Dimensions



#### How to Order Connector Assembly with Protective Cover

Specify the part numbers of the solenoid valve without connector and the connector assembly with protective cover separately.

EX. 1) In case of 2000mm of lead wire

SYJ312-5LOZ-M3-Q

SY100-68-A-20

EX. 2) In case of 300mm of lead wire (Standard)

SYJ312-5LPZ-M3-Q

Symbol of connector assembly with protective cover

SY

SYJ

VK

VZ

VT

VT

VP

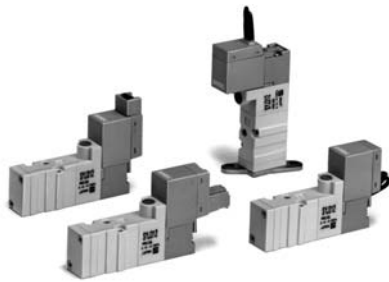
VG

VQ

VQZ

# 3 Port Pilot Solenoid Valve Rubber Seal

## Series SYJ300



Body ported



Base mounted

### Model

| Valve model                   |        | Actuation | Port size | Effective area (mm <sup>2</sup> )(N/min) | Weight (g) <sup>(1)</sup> |                                     |
|-------------------------------|--------|-----------|-----------|--|---------------------------|-------------------------------------|
|                               |        |           |           |  | Grommet                   | L plug connector, M plug connector. |
| Body ported                   | SYJ312 | N.C.      | M3        | 0.9 (49.08)                              | 29                        | 31                                  |
|                               | SYJ322 | N.O.      |           |  |                           |                                     |
| Base mounted (With sub-plate) | SYJ314 | N.C.      | M5        | 1.8 (98.15)                              | 50 (Without sub-plate 29) | 52 (Without sub-plate 31)           |
|                               | SYJ324 | N.O.      |           |  |                           |                                     |



Note 1) At DC.

### Specifications

| Fluid  |                | Air   |
|--|----------------|---|
| Operating pressure range (MPa)                                 | Internal pilot | 0.15 to 0.7   |
| Ambient and fluid temperature (°C)                             |                | Max. 50   |
| Response time (ms) (at 0.5MPa) <sup>(1)</sup>                  |                | 15 or less  |
| Max. operating frequency (Hz)                                  |                | 10  |
| Manual override  |                | Non-locking push style, Push-locking slotted style              |
| Pilot exhaust  |                | Individual pilot exhaust, Common exhaust (pilot and main valve) |
| Lubrication  |                | Not required  |
| Mounting position  |                | Free  |
| Impact/Vibration resistance (m/s <sup>2</sup> ) <sup>(2)</sup> |                | 150/30  |
| Protection structure   |                | Dust proof  |



Note 1) According to dynamic performance test JIS B8374-1981 (Coil temperature 20°C, at rated voltage, without surge voltage suppressor)

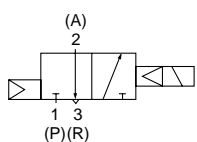
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage)

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed at both energized and de-energized states to axis and right angle directions of the main valve and armature. (Value in the initial stage)

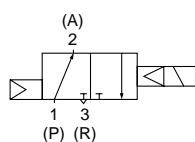
### JIS Symbol

#### Internal pilot

SYJ31<sub>4</sub><sup>2</sup>

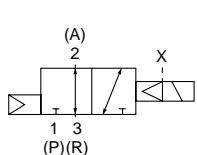


SYJ32<sub>4</sub><sup>2</sup>

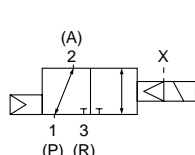


#### External pilot

SYJ31<sub>4</sub><sup>2</sup>R



SYJ32<sub>4</sub><sup>2</sup>R



P.2.2-47

### Solenoid Specifications

|                                      |   |                        |
|--------------------------------------|---|------------------------|
| Electrical entry                     | Grommet (G) (H), L plug connector (L), M plug connector (M) |                        |
| Coil rated voltage (V)               | DC  | 24, 12, 6, 5, 3        |
| Allowable voltage                    | ±10% rated voltage  |                        |
| Power consumption (W) <sup>(1)</sup> | DC  | 0.5 (With light: 0.55) |
| Surge voltage suppressor             | Diode   |                        |
| Indicator light                      | LED   |                        |

(1) At rated voltage

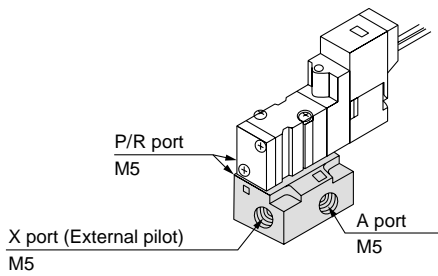
## External Pilot

### SYJ300R

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.  
 This model is suitable for low pressure (less than 0.15MPa) and vacuum (up to -100kPa) applications.

### Specifications

| Applicable model               | Base mounted (SYJ314R, SYJ324R) |                |
|--------------------------------|---------------------------------|----------------|
| Operating pressure range (MPa) | Main pressure                   | -100kPa to 0.7 |
|                                | External pilot pressure         | 0.15 to 0.7    |



Note 1) Refer to p.2.2-13 for manifold.  
 Note 2) External pilot style body ported valves (SYJ3□2R) can only be used on the manifold.

SY

SYJ

VK

VZ

VT

VT

VP

VG

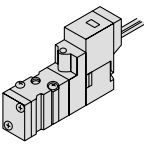
VQ

VQZ

# Series SYJ300

## How to Order

**3 port**




(For manifold type 20, 20R)

**Actuation**

|   |                 |
|---|-----------------|
| 1 | Normally closed |
| 2 | Normally open   |

**Rated voltage**

|   |             |
|---|-------------|
| 5 | 24V DC      |
| 6 | 12V DC      |
| V | 6V DC       |
| S | 5V DC       |
| R | 3V DC       |
| 9 | 50V or less |

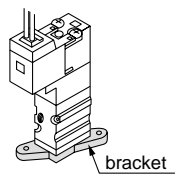
 Contact SMC for other voltages (9)

**Indicator light and surge voltage suppressor**

|   |   |
|---|---|
| — | Without indicator light and surge voltage suppressor          |
| S | With surge voltage suppressor                                 |
| Z | With indicator light and surge voltage suppressor             |
| U | With indicator light and surge voltage suppressor (Non-polar) |

**Bracket**

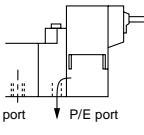
|   |                 |
|---|-----------------|
| — | Without bracket |
| F | With bracket    |



\*Bracket is supplied not mounted.  
\*Except external pilot style

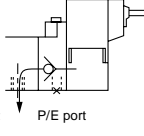
**Body option**

—: Individual exhaust for the pilot valve



R port P/E port


M: Common exhaust for the pilot and main valve



R port P/E port

(Pilot valve exhaust is centralized to main valve.)

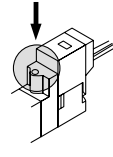
R: External pilot style\*



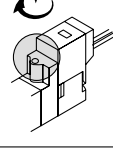
\*SYJ3□2R is only for manifold use.

**Manual override**

—: Non-locking push style

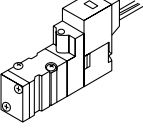
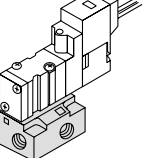


D: Push locking slotted style



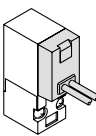
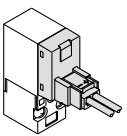
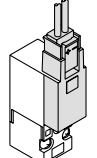
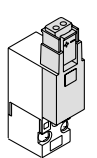
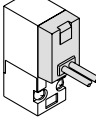
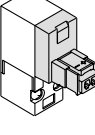
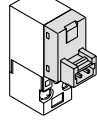
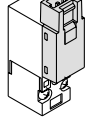
**Port size**

—: Without sub-plate    M5: With M5 port sub-plate

(With gasket and screws)

**Electrical entry**

| 24V, 12V, 6V, 5V, 3V DC   |   |  |   |
|---|---|--|---|
| Grommet   | L plug connector  | M plug connector   |   |
| G: 300mm lead wire  | L: 300mm lead wire  | M: 300mm lead wire   | MN: Without lead wire   |
|  |  |  |  |
| H: 600mm lead wire  | LN: Without lead wire   | LO: Without connector  | MO: Without connector   |
|  |  |  |  |

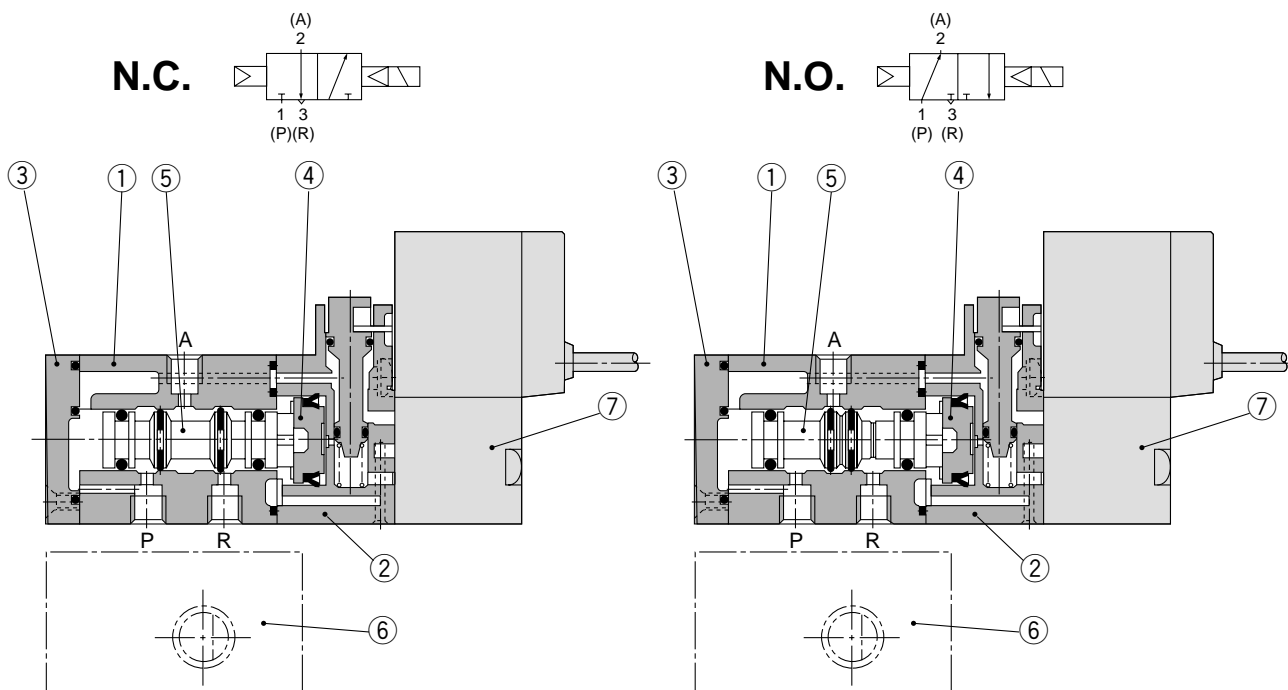
\*LN and MN types are with 2 sockets.

**Body ported** SYJ3 1 2 □ 5 M □ □ M3 □ -Q

**Base mounted** SYJ3 1 4 □ 5 M □ □ □ -Q



## Construction



- SY
- SYJ
- VK
- VZ
- VT
- VT
- VP
- VG

### Component Parts

| No. | Description       | Material      | Note  |
|-----|-------------------|---------------|-------|
| 1   | Body              | Zinc die cast | White |
| 2   | Piston plate      | Resin         | White |
| 3   | End cover         | Resin         | White |
| 4   | Piston            | Resin         | —     |
| 5   | Spool valve ass'y | Aluminum/NBR  | —     |

### Replacement Parts

| No. | Description | Parts No.    | Note          |
|-----|-------------|--------------|---------------|
| 6   | Sub-plate   | SYJ300-9-1-Q | Zinc die cast |
| 7   | Pilot valve | SY114-□□□□-Q |               |

- VQ
- VQZ

### How to Order Pilot Valve Assembly

SY114 — **5** **G** **□** -Q

#### Rated voltage

|   |        |
|---|--------|
| 5 | 24V DC |
| 6 | 12V DC |
| V | 6V DC  |
| S | 5V DC  |
| R | 3V DC  |

#### Indicator light and surge voltage suppressor

|   |   |
|---|---|
| — | Without indicator light and surge voltage suppressor          |
| S | With surge voltage suppressor                                 |
| Z | With indicator light and surge voltage suppressor             |
| U | With indicator light and surge voltage suppressor (Non-polar) |

#### Manual

|    |                            |                   |
|----|----------------------------|-------------------|
| G  | Grommet (Lead wire: 300mm) |                   |
| H  | Grommet (Lead wire: 600mm) |                   |
| L  | L plug connector           | With lead wire    |
| LN |                            | Without lead wire |
| LO |                            | Without connector |
| M  | M plug connector           | With lead wire    |
| MN |                            | Without lead wire |
| MO |                            | Without connector |

### How to Order Connector Assembly

DC : SY100-30-4A-□

Without lead wire: SY100-30-A  
(with connector and 2 sockets)

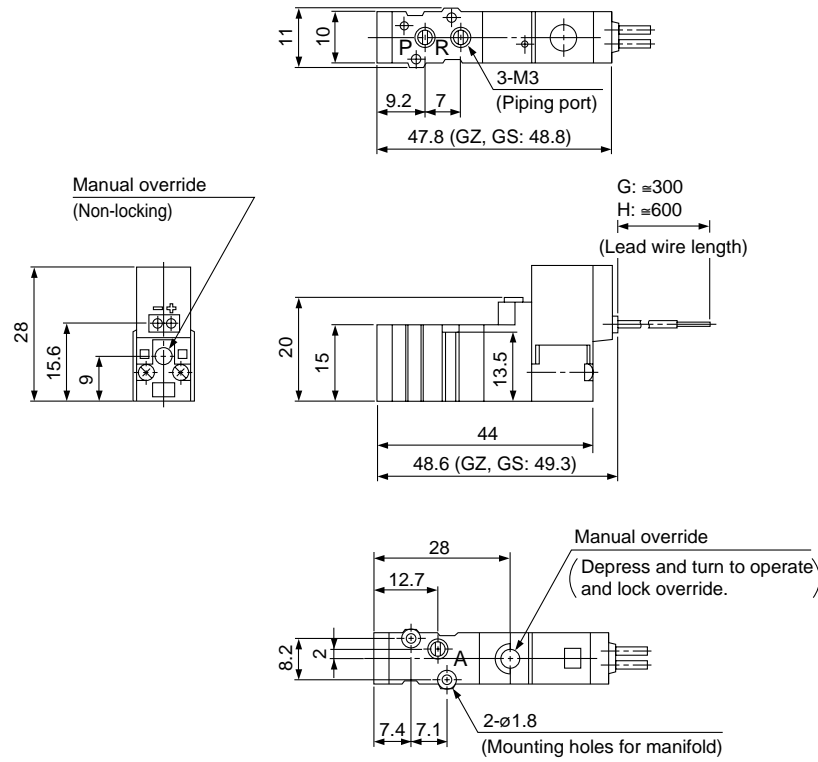
#### Lead wire length (mm)

|    |      |
|----|------|
| —  | 300  |
| 6  | 600  |
| 10 | 1000 |
| 15 | 1500 |
| 20 | 2000 |
| 25 | 2500 |
| 30 | 3000 |
| 50 | 5000 |

# Series SYJ300

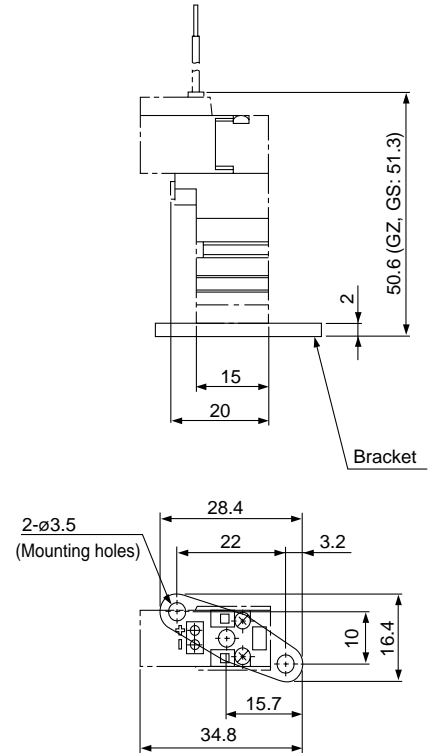
## Body Ported

Grommet (G), (H): SYJ3□2-□<sup>G</sup>□□-M3-Q



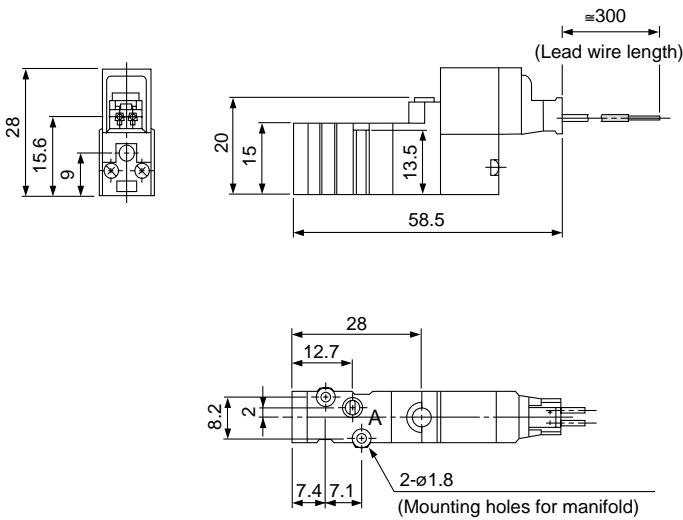
With bracket:

SYJ3□2-□<sup>G</sup>□□-M3-F-Q



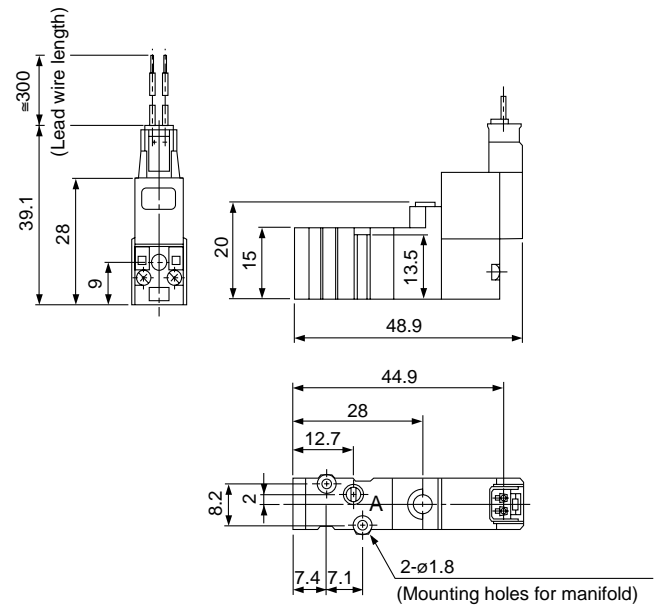
\* Other dimensions are the same as the grommet.

L plug connector (L): SYJ3□2-□L□□-M3-Q



\* Other dimensions are the same as the grommet.

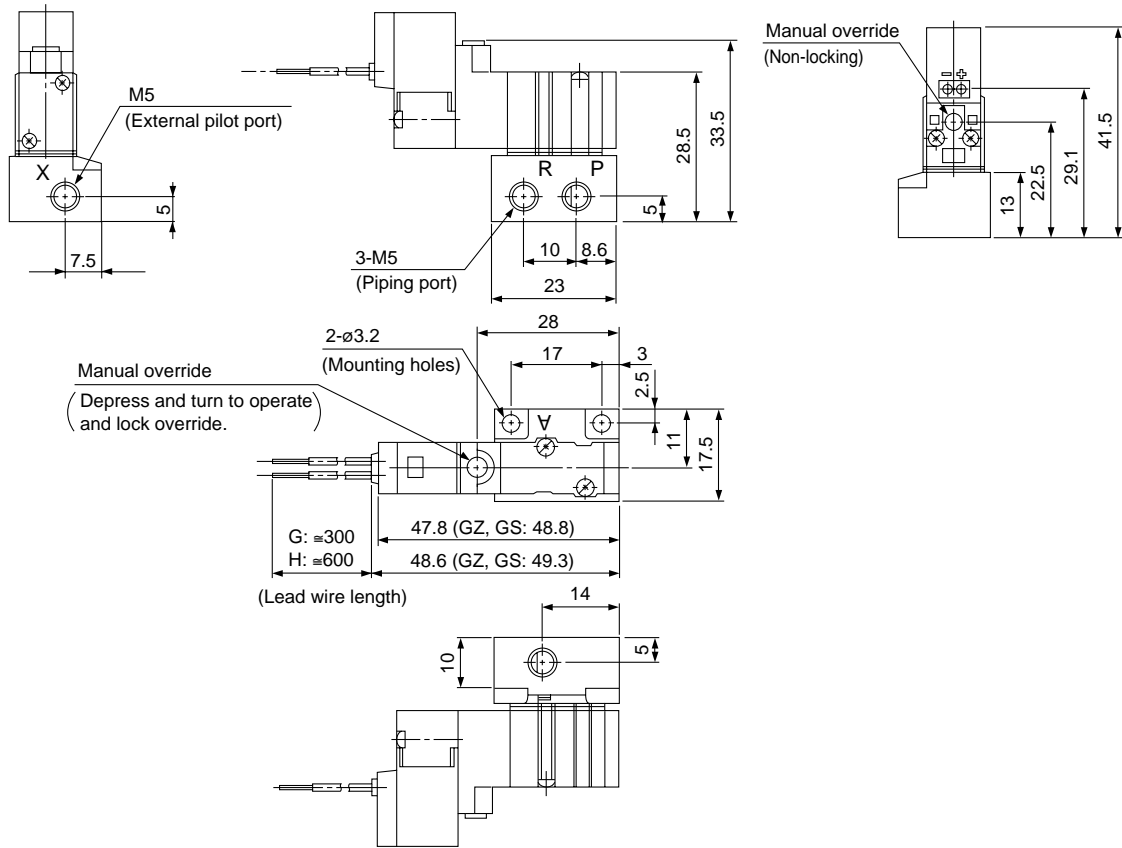
M plug connector (M): SYJ3□2-□M□□-M3-Q



\* Other dimensions are the same as the grommet.

## Base Mounted (With sub-plate)

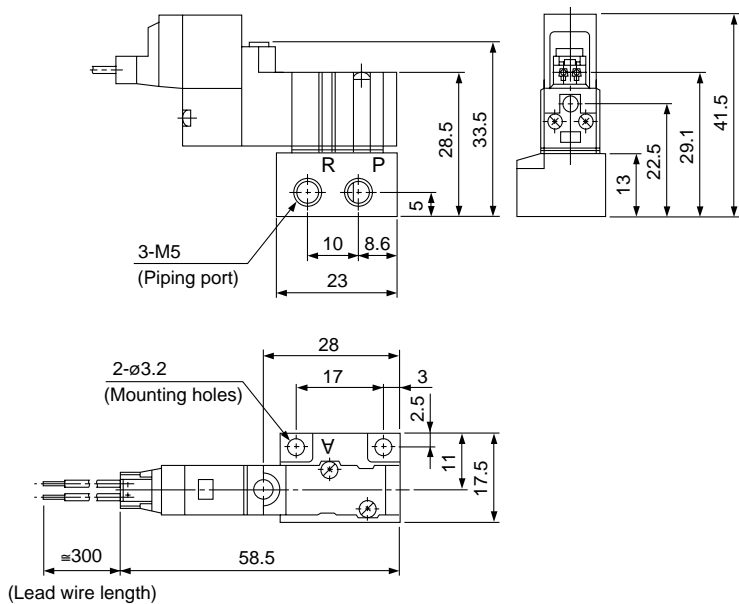
Grommet (G), (H): SYJ3□4-□<sup>G</sup>□□-M5-Q



- SY
- SYJ**
- VK
- VZ
- VT
- VT
- VP
- VG

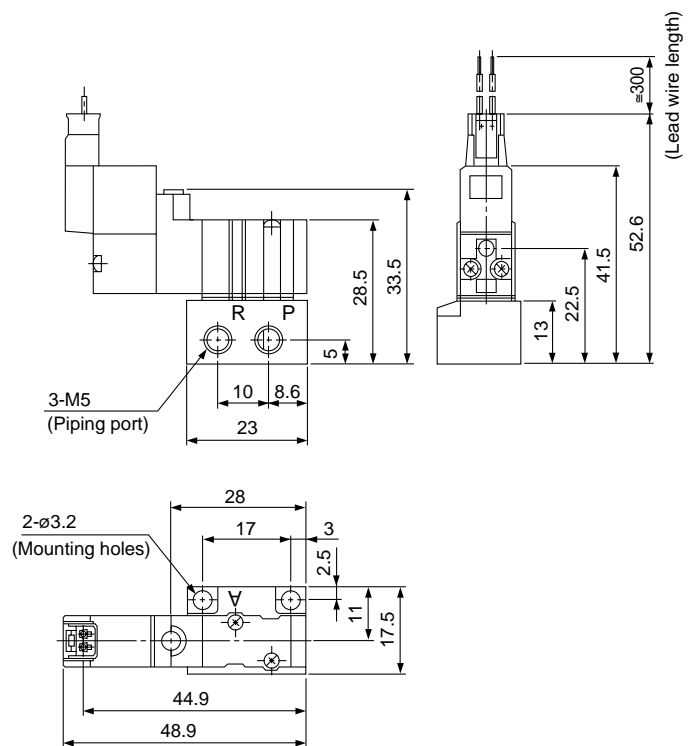
- VQ
- VQZ

L plug connector (L): SYJ3□4-□L□□-M5-Q



\* Other dimensions are the same as the grommet.

M plug connector (M): SYJ3□4-□M□□-M5-Q



\* Other dimensions are the same as the grommet.

# Series SYJ300 Manifold



## Manifold Specifications

| Type   | For internal pilot             | 20                        | 41, S41    | 42, S42                         |
|--|--------------------------------|---------------------------|------------|---------------------------------|
|  | For external pilot             | 20R                       | —          | 42R, S42R                       |
| Manifold style   |                                | Single base style/B mount |            |                                 |
| P(SUP)/R(EXH) style  |                                | Common SUP/Common EXH     |            |                                 |
| Valve stations   |                                | 2 to 20 stations          |            |                                 |
| A port specifications  | Location                       | Valve                     | Base       |                                 |
|  | Direction                      | Top                       | Side       |                                 |
| Port size  | P/R port                       | 1/8                       | M5         | 1/8                             |
|  |                                | M5                        |            |                                 |
|  | A port                         | M3                        | M3         | M5<br>C4 (ø4 One-touch fitting) |
|  | X port <sup>(1)</sup>          | M5                        | —          | M5                              |
| Valve effective area<br>(mm <sup>2</sup> ) (Nl/min) <sup>(2)</sup> | Body ported<br>SYJ3□2/SYJ3□2R  | 0.9 (49.08)               | —          |                                 |
|  | Base mounted<br>SYJ3□4/SYJ3□4R | —                         | 1.5(78.52) |                                 |



Note 1) Only for external pilot  
Note 2) Value when used on a manifold

## How to Order Manifold Assembly

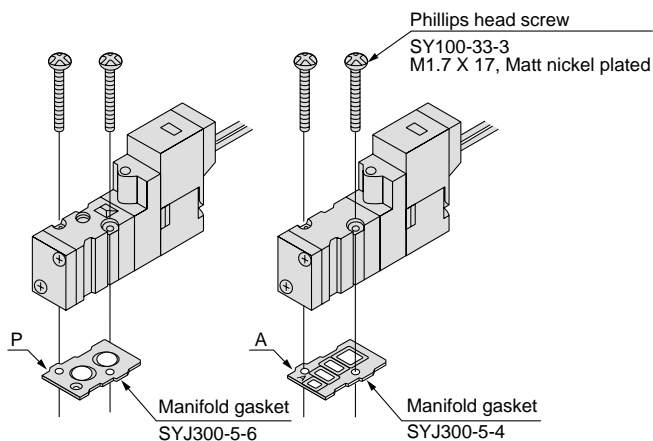
Specify the part numbers for the valve(s), blank plate assembly, and manifold base.

Example:

SS3YJ3-20-03-Q .....1 pc. (Manifold base)    SS3YJ3-42R-03-C4-Q .....1 pc. (Manifold base)  
 SYJ312-5LZ-M3-Q .....2 pcs. (Valve)        SYJ314R-5G-Q .....2 pcs. (Valve)  
 SYJ300-10-1A-Q .....1 pc. (Blank plate ass'y)    SYJ300-10-2A-Q .....1 pc. (Blank plate ass'y)

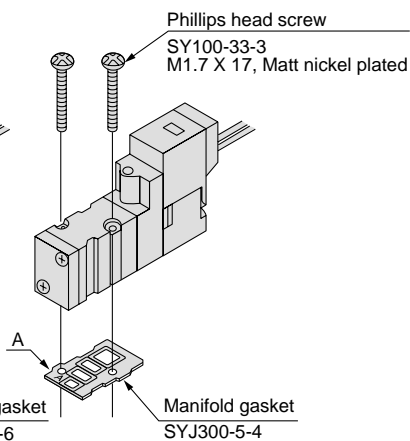
## Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

### Body ported (SYJ3□2)



**Applicable base**  
 SS3YJ3-20  
 SS3YJ3-20R } Manifold base

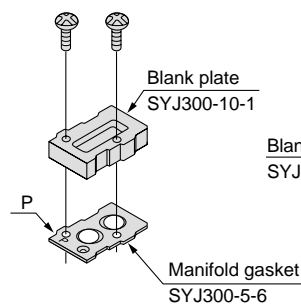
### Base mounted (SYJ3□4)



**Applicable base**  
**Sub-plate**  
 SS3YJ3-41  
 SS3YJ3-S41  
 SS3YJ3-42  
 SS3YJ3-S42  
 SS3YJ3-42R  
 SS3YJ3-S42R } Manifold base

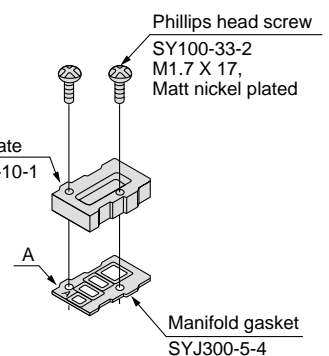
## Blank Plate Assembly

### SYJ300-10-1A-Q



**Applicable base**  
 SS3YJ3-20  
 SS3YJ3-20R } Manifold base

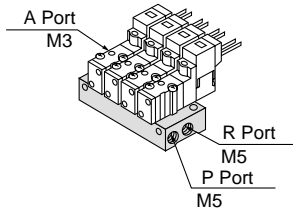
### SYJ300-10-2A-Q



**Applicable base**  
**Sub-plate**  
 SS3YJ3-41  
 SS3YJ3-S41  
 SS3YJ3-42  
 SS3YJ3-S42  
 SS3YJ3-42R  
 SS3YJ3-S42R } Manifold base

## Manifolds for Internal Pilot

### 20 Type



#### How to Order

SS3YJ3-20-05-□-Q

| Stations |             |
|----------|-------------|
| 02       | 2 stations  |
| ⋮        | ⋮           |
| 20       | 20 stations |

| Bracket |                 |
|---------|-----------------|
| -       | Without bracket |
| F       | With bracket    |

#### Applicable solenoid valve

SYJ312-□□□□-M3-Q  
SYJ312M-□□□□-M3-Q  
SYJ322-□□□□-M3-Q  
SYJ322M-□□□□-M3-Q

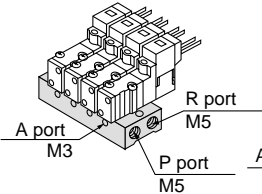
#### Applicable blank plate ass'y

SYJ300-10-1A-Q

Note) If more than 10 stations, supply air to both sides of "P" port and exhaust air from both sides of "R" port.

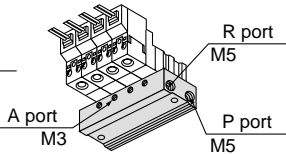
### 41 Type

#### 41 Type



#### S41 Type

(Coil is located on same side as the A port.)



#### How to Order

SS3YJ3-□-41-05-M3-Q

#### Valve mounting direction

|   |   |
|---|---|
| - | Coil is located on the opposite side of the A port. |
| S | Coil is located on same side as the A port.         |

#### Stations

|    |             |
|----|-------------|
| 02 | 2 stations  |
| ⋮  | ⋮           |
| 20 | 20 stations |

#### Applicable solenoid valve

SYJ314-□□□□-Q  
SYJ314M-□□□□-Q  
SYJ324-□□□□-Q  
SYJ324M-□□□□-Q

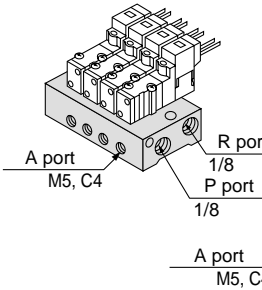
#### Applicable blank plate ass'y

SYJ300-10-2A-Q

Note) If more than 10 stations, supply air to both sides of "P" port and exhaust air from both sides of "R" port.

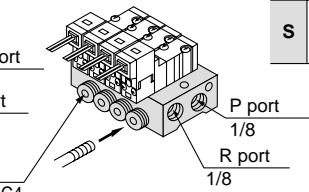
### 42 Type

#### 42 Type



#### S42 Type

(Coil is located on same side as the A port.)



#### How to Order

SS3YJ3-□-42-05-M5-□-Q

#### Valve mounting direction

|   |   |
|---|---|
| - | Coil is located on the opposite side of the A port. |
| S | Coil is located on same side as the A port.         |

#### Stations

|    |             |
|----|-------------|
| 02 | 2 stations  |
| ⋮  | ⋮           |
| 20 | 20 stations |

#### A port side

|    |                      |
|----|----------------------|
| M5 | M5                   |
| C4 | ø4 One-touch fitting |

#### Applicable solenoid valve

SYJ314-□□□□-Q  
SYJ314M-□□□□-Q  
SYJ324-□□□□-Q  
SYJ324M-□□□□-Q

#### Applicable blank plate ass'y

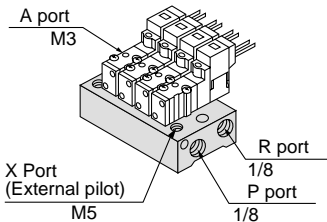
SYJ300-10-2A-Q

Note) If more than 8 stations, supply air to both sides of "P" Port and exhaust air from both sides of "R" port.

## Manifolds for External Pilot

Pilot valve pressure is isolated from main valve pressure through a separate supply line. This is suitable for vacuum (up to -100kPa) and low pressure 0.15MPa applications.

### 20R Type



#### How to Order

SS3YJ3-20R-05-□-Q

| Stations |             |
|----------|-------------|
| 02       | 2 stations  |
| ⋮        | ⋮           |
| 20       | 20 stations |

| P, R port Thread |         |
|------------------|---------|
| -                | Rc (PT) |
| 00F              | G (PF)  |
| 00N              | NPT     |
| 00T              | NPTF    |

#### Applicable solenoid valve

SYJ312R-□□□□-Q  
SYJ322R-□□□□-Q

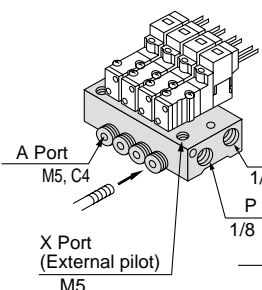
#### Applicable blank plate ass'y

SYJ300-10-1A-Q

Note) If more than 10 stations, supply air to both sides of "P" or "R" port and exhaust air from both sides of "R" or "P" port.

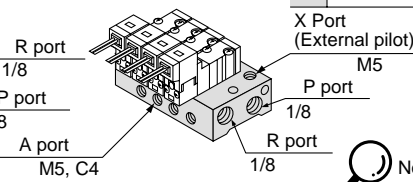
### 42R Type

#### 42R Type (External pilot)



#### S42R Type

(Coil is located on same side as the A port.)



#### How to Order

SS3YJ3-□-42R-05-M5-□-Q

#### Valve mounting direction

|   |   |
|---|---|
| - | Coil is located on the opposite side of the A port. |
| S | Coil is located on same side as the A port.         |

#### Stations

|    |             |
|----|-------------|
| 02 | 2 stations  |
| ⋮  | ⋮           |
| 20 | 20 stations |

#### A port side

|    |                      |
|----|----------------------|
| M5 | M5                   |
| C4 | ø4 One-touch fitting |

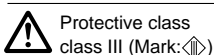
#### Applicable solenoid valve

SYJ314R-□□□□-Q  
SYJ324R-□□□□-Q

#### Applicable blank plate ass'y

SYJ300-10-2A-Q

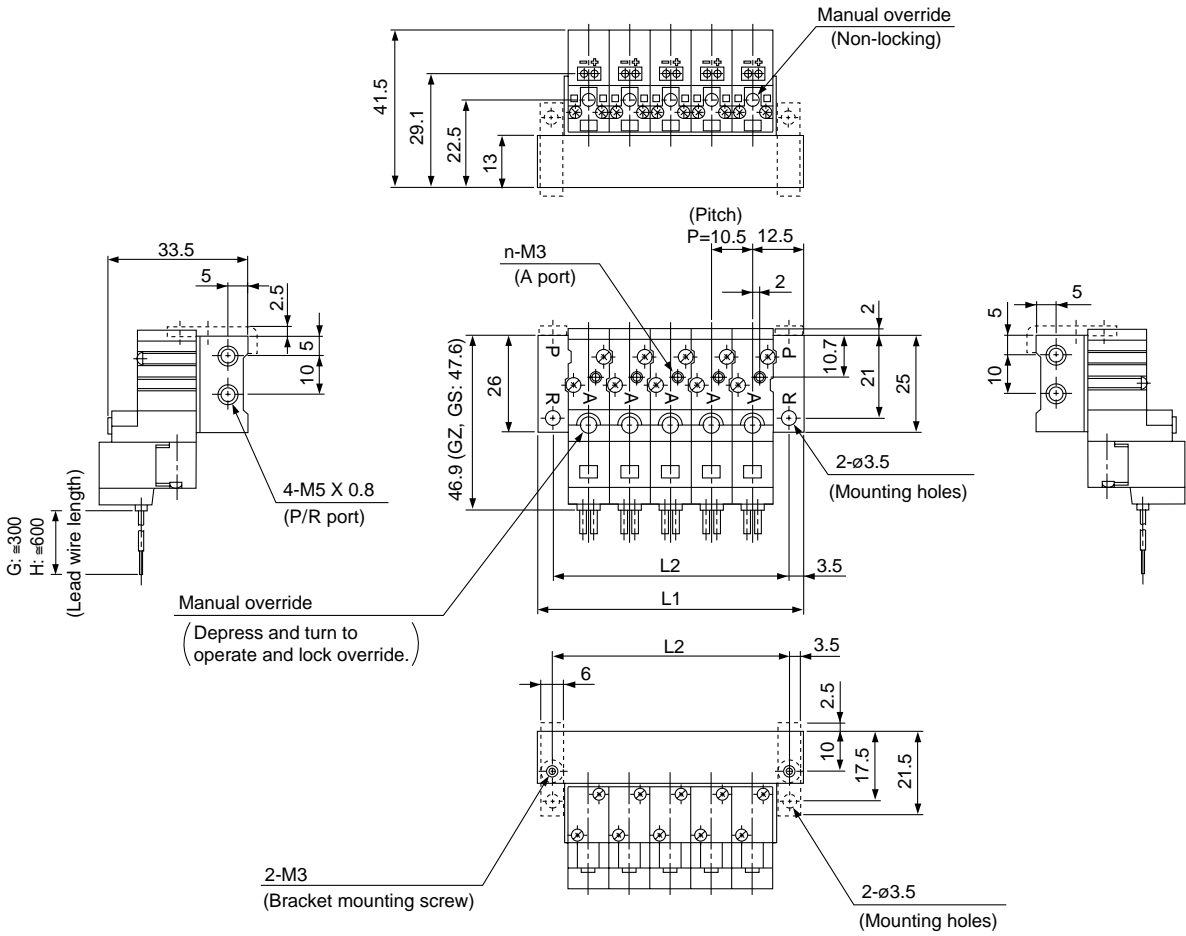
Note) If more than 8 stations, supply air to both sides of "P" or "R" port and exhaust air from both sides of "R" or "P" port.



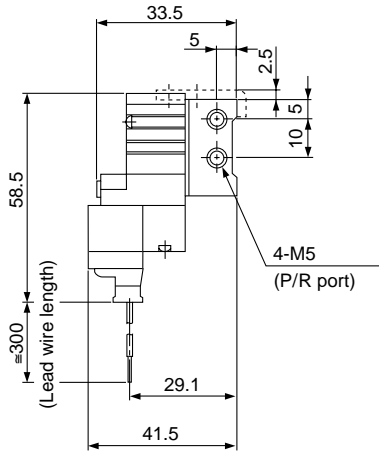
# Series SYJ300

## 20 Type Manifold: Top Ported/SS3YJ3-20- Station -Q

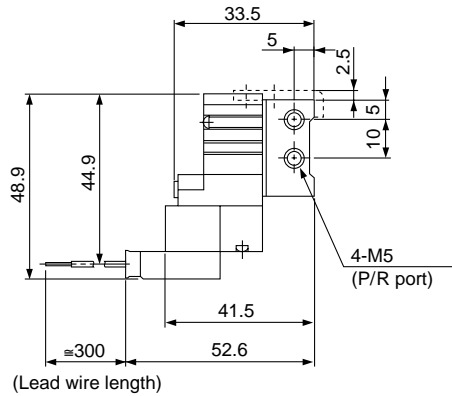
### Grommet (G), (H)



### L plug connector (L)



### M plug connector (M)



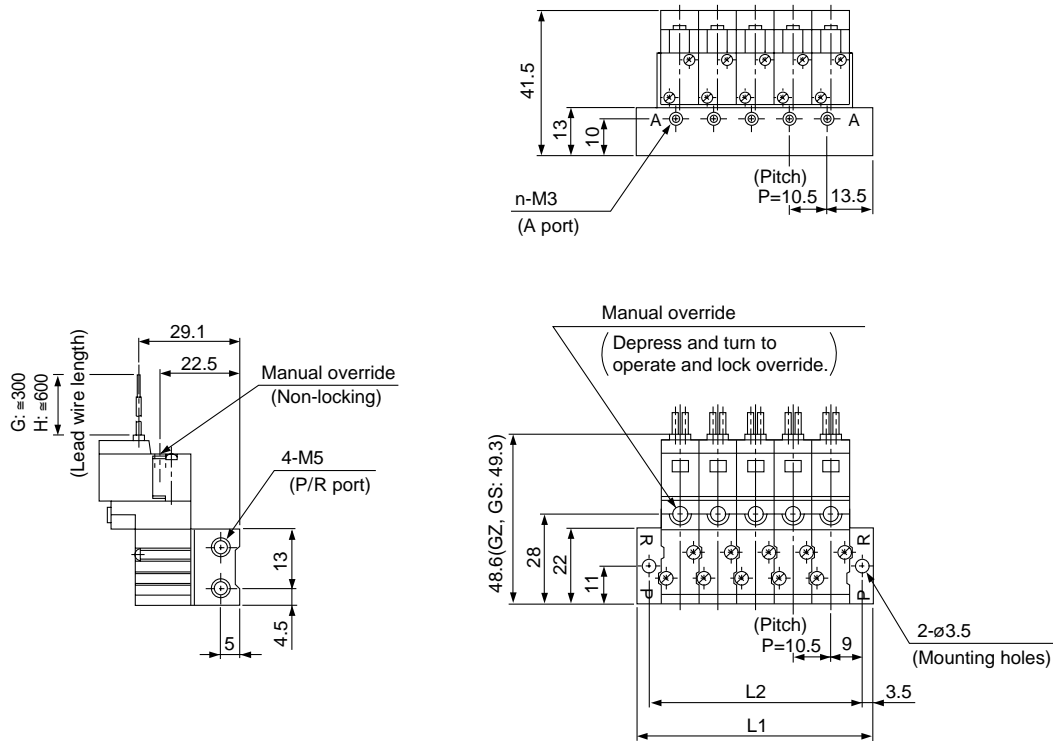
\* Other dimensions are the same as the grommet.

\* Other dimensions are the same as the grommet.

| Station | 2    | 3  | 4    | 5  | 6    | 7  | 8    | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20    |
|---------|------|----|------|----|------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| L1      | 35.5 | 46 | 56.5 | 67 | 77.5 | 88 | 98.5 | 109 | 119.5 | 130 | 140.5 | 151 | 161.5 | 172 | 182.5 | 193 | 203.5 | 214 | 224.5 |
| L2      | 28.5 | 39 | 49.5 | 60 | 70.5 | 81 | 91.5 | 102 | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 |

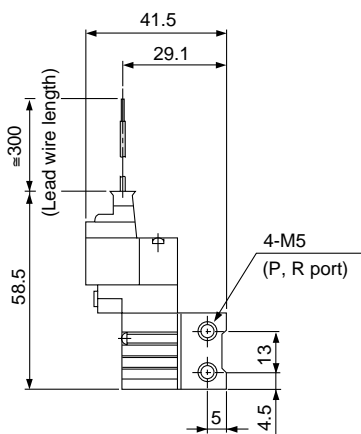
## 41 Type Manifold: Side Ported/SS3YJ3-41-Station -M3-Q

### Grommet (G), (H)

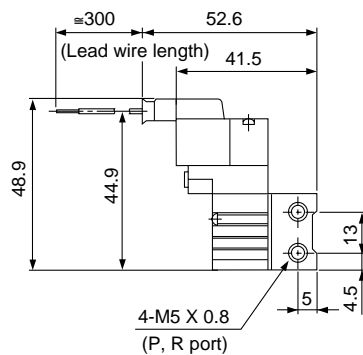


- SY
- SYJ**
- VK
- VZ
- VT
- VT
- VP
- VG
- VQ
- VQZ

### L plug connector (L)

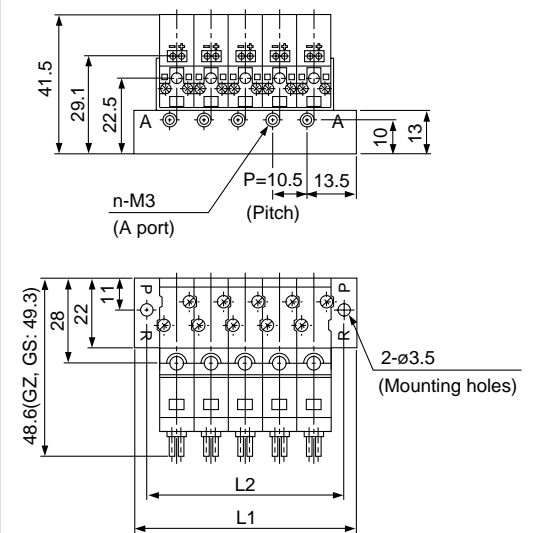


### M plug connector (M)



### S41 Type/Side Ported (Coil is located on same side as the A port.)

### SS3YJ3-S41-Station -M3-Q



\* Other dimensions are the same as type 41.

\* Other dimensions are the same as the grommet.

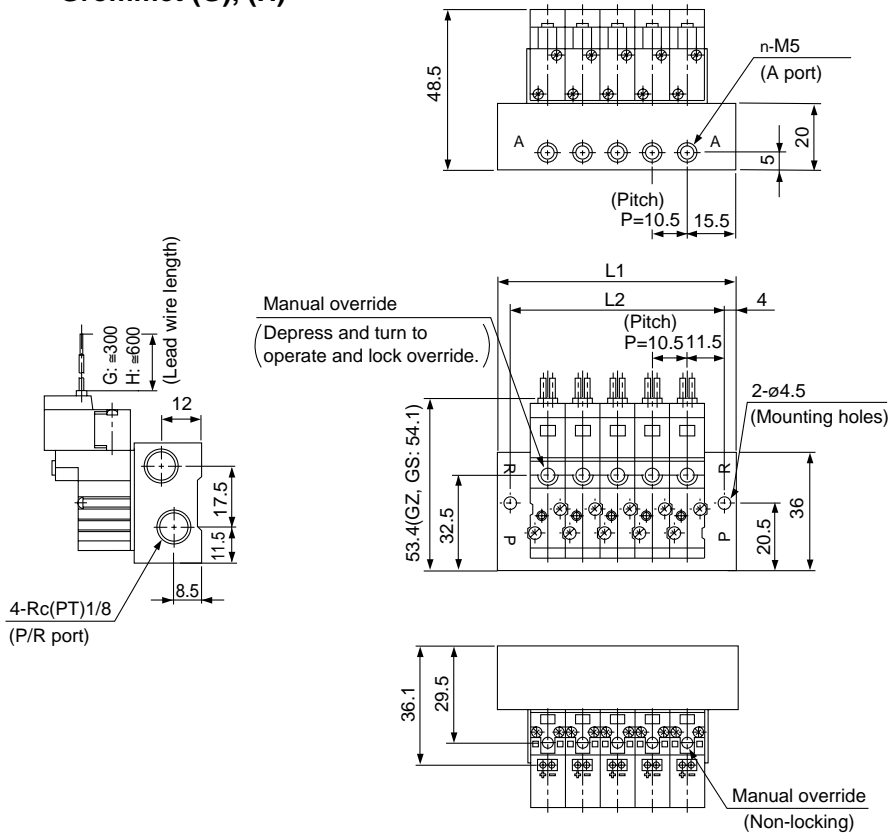
\* Other dimensions are the same as the grommet.

| Station | 2    | 3  | 4    | 5  | 6    | 7  | 8    | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20    |
|---------|------|----|------|----|------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| L1      | 35.5 | 46 | 56.5 | 67 | 77.5 | 88 | 98.5 | 109 | 119.5 | 130 | 140.5 | 151 | 161.5 | 172 | 182.5 | 193 | 203.5 | 214 | 224.5 |
| L2      | 28.5 | 39 | 49.5 | 60 | 70.5 | 81 | 91.5 | 102 | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 |

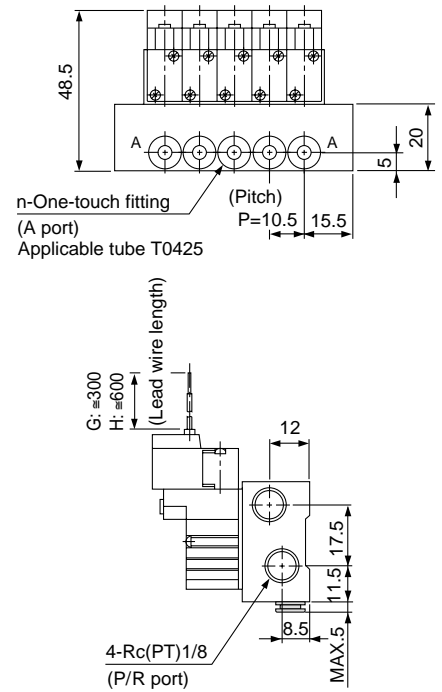
# Series SYJ300

## 42 Type Manifold: Side Ported/SS3YJ3-42- Station -M5, C4-Q

### Grommet (G), (H)

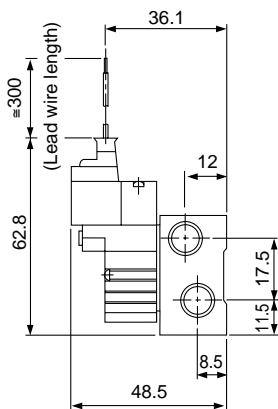


### C4 (Built-in one-touch fitting)



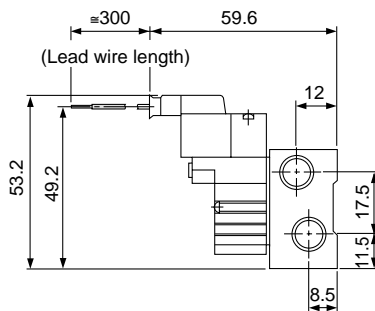
\* Other dimensions are the same as the M5.

### L plug connector (L)



\* Other dimensions are the same as the grommet.

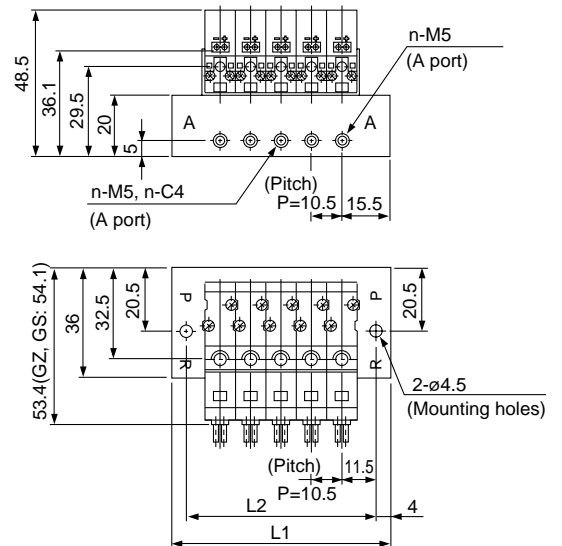
### M plug connector (M)



\* Other dimensions are the same as the grommet.

### S42 Type/Side Ported (Coil is located on same side as the A port.)

## SS3YJ3-S42- Station -M5, C4-Q



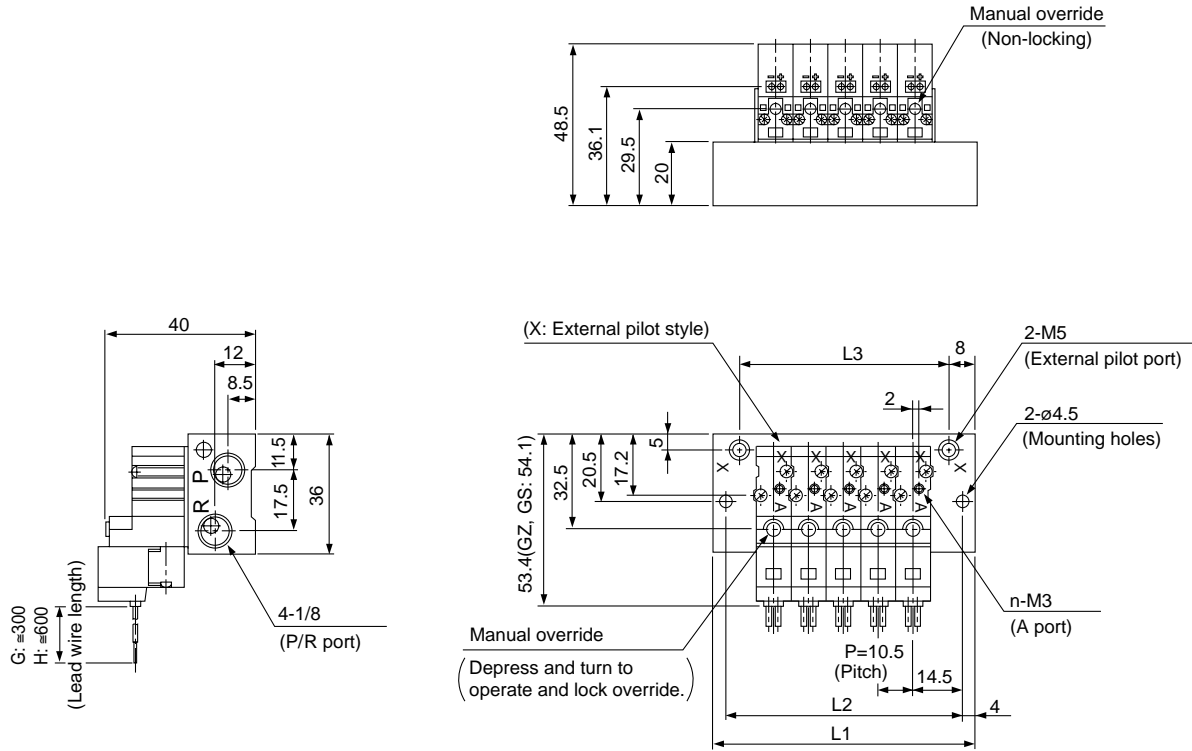
\* Other dimensions are the same as type 42.

| Station | 2    | 3  | 4    | 5  | 6    | 7  | 8     | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20    |
|---------|------|----|------|----|------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| L1      | 41.5 | 52 | 62.5 | 73 | 83.5 | 94 | 104.5 | 115 | 125.5 | 136 | 146.5 | 157 | 167.5 | 178 | 188.5 | 199 | 209.5 | 220 | 230.5 |
| L2      | 33.5 | 44 | 54.5 | 65 | 75.5 | 86 | 96.5  | 107 | 117.5 | 128 | 138.5 | 149 | 159.5 | 170 | 180.5 | 191 | 201.5 | 212 | 222.5 |



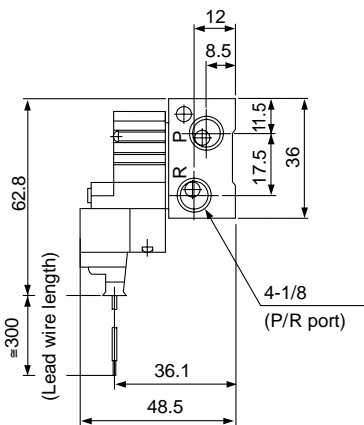
## 20R Type Manifold: Top Ported (External Pilot)/SS3YJ3-20R-Station-Q

### Grommet (G), (H)

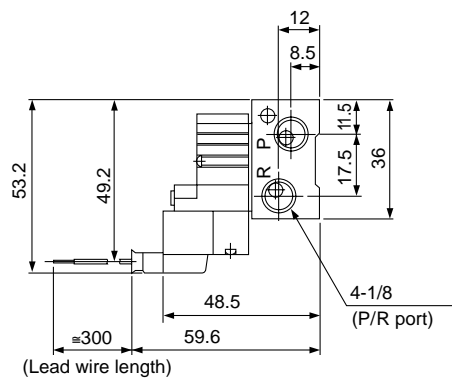


- SY
- SYJ
- VK
- VZ
- VT
- VT
- VP
- VG
- VQ
- VQZ

### L plug connector (L)



### M plug connector (M)



\* Other dimensions are the same as the grommet.

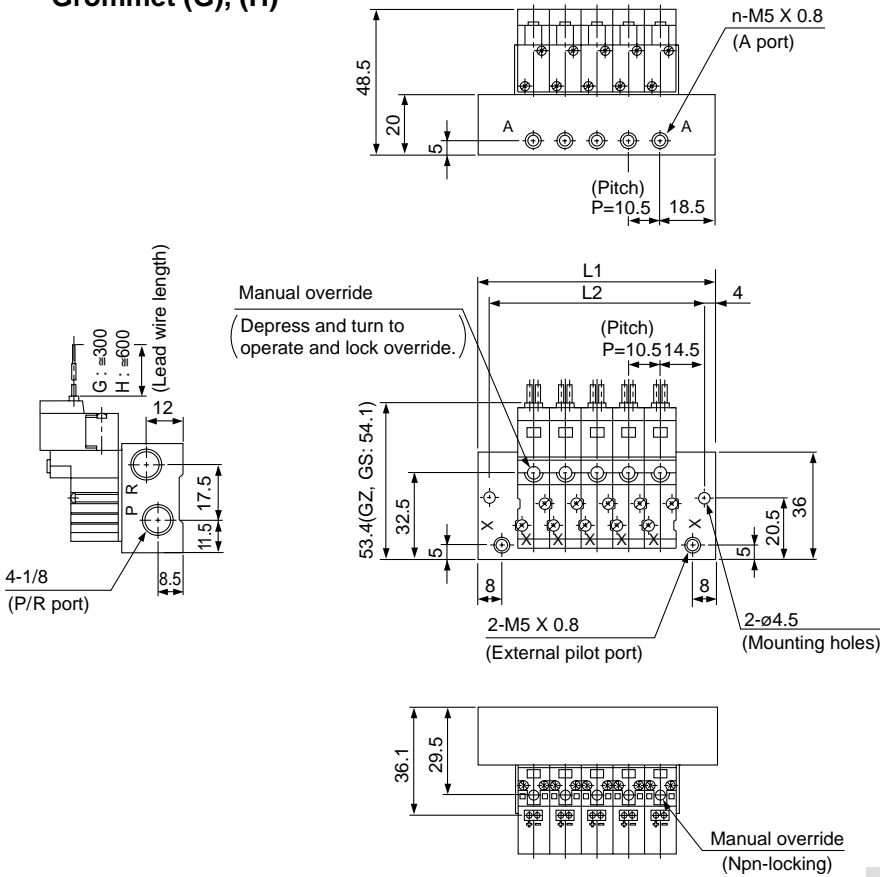
\* Other dimensions are the same as the grommet.

| Station | 2    | 3  | 4    | 5  | 6    | 7   | 8     | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20    |
|---------|------|----|------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| L1      | 47.5 | 58 | 68.5 | 79 | 89.5 | 100 | 110.5 | 121 | 131.5 | 142 | 152.5 | 163 | 173.5 | 184 | 194.5 | 205 | 215.5 | 226 | 236.5 |
| L2      | 39.5 | 50 | 60.5 | 71 | 81.5 | 92  | 102.5 | 113 | 123.5 | 134 | 144.5 | 155 | 165.5 | 176 | 186.5 | 197 | 207.5 | 218 | 228.5 |
| L3      | 31.5 | 42 | 52.5 | 63 | 73.5 | 84  | 94.5  | 105 | 115.5 | 126 | 136.5 | 147 | 157.5 | 168 | 178.5 | 189 | 199.5 | 210 | 220.5 |

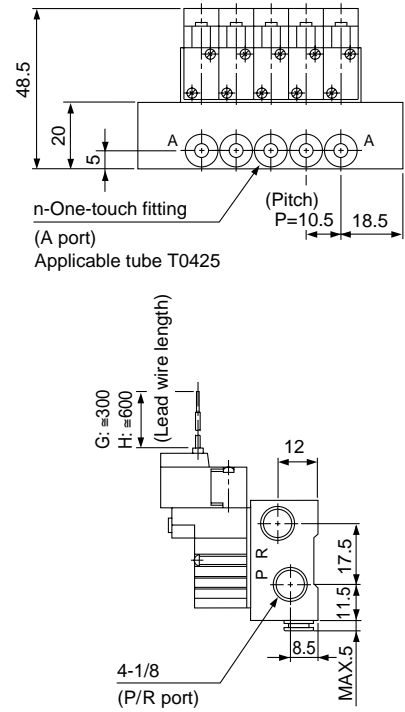
# Series SYJ300

## 42R Type Manifold: Side Ported (External Pilot)/SS3YJ3-42R-Station-M5, C4-Q

### Grommet (G), (H)

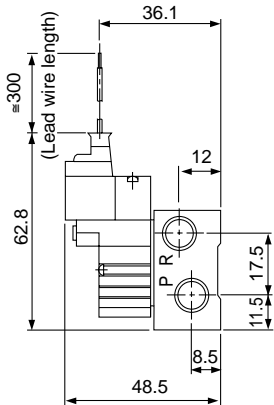


### C4 (Built-in one-touch fitting)

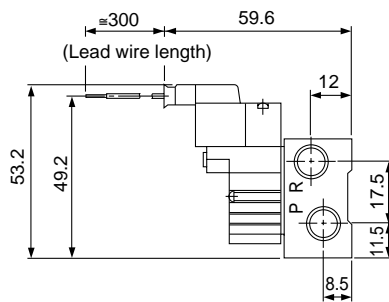


\* Other dimensions are the same as the M5.

### L plug connector (L)



### M plug connector (M)

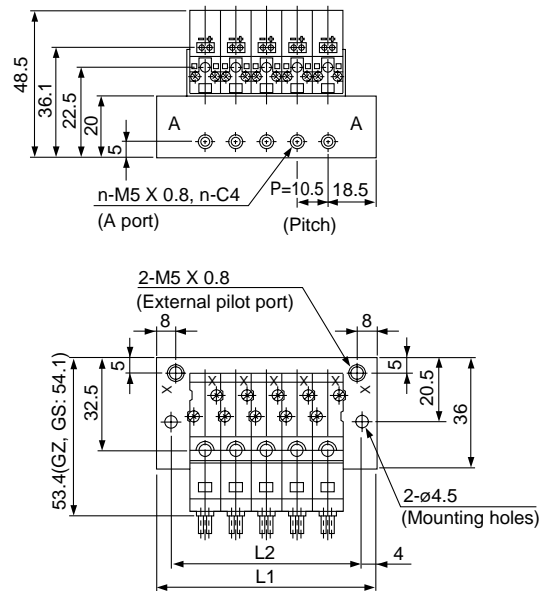


\* Other dimensions are the same as the grommet.

\* Other dimensions are the same as the grommet.

## S42R Type/Side Ported (Coil is located on same side as the A port.)

### SS3YJ3-S42R-Station-M5, C4-Q



\* Other dimensions are the same as type 42R.

| Station | 2    | 3  | 4    | 5  | 6    | 7   | 8     | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20    |
|---------|------|----|------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| L1      | 47.5 | 58 | 68.5 | 79 | 89.5 | 100 | 110.5 | 121 | 131.5 | 142 | 152.5 | 163 | 173.5 | 184 | 194.5 | 205 | 215.5 | 226 | 236.5 |
| L2      | 39.5 | 50 | 60.5 | 71 | 81.5 | 92  | 102.5 | 113 | 123.5 | 134 | 144.5 | 155 | 165.5 | 176 | 186.5 | 197 | 207.5 | 218 | 228.5 |

# 3 Port Pilot Solenoid Valve Rubber Seal

# Series SYJ500



Body ported type



Base mounted type

## Model

| Valve model                   | Actuation | Port size | Effective area (mm <sup>2</sup> ) (N <sub>d</sub> /min) | Weight (g)   |                                     |                              |
|-------------------------------|-----------|-----------|---|--------------|-------------------------------------|------------------------------|
|                               |           |           |   | Grommet      | L plug connector, M plug connector. |                              |
| Body ported                   | SYJ512    | N.C.      | M5  | 3.6 (196.3)  | 43                                  | 45                           |
|                               | SYJ522    | N.O.      |   |              |                                     |                              |
| Base mounted (With sub-plate) | SYJ514    | N.C.      | 1/8   | 4.5 (245.38) | 57<br>(Without sub-plate 43)        | 59<br>(Without sub-plate 45) |
|                               | SYJ524    | N.O.      |   |              |                                     |                              |

## Specifications

|  |   |             |
|--|---|-------------|
| Fluid  | Air   |             |
| Operating pressure range (MPa)                                 | Internal pilot  | 0.15 to 0.7 |
| Ambient and fluid temperature (°C)                             | Max. 50   |             |
| Response time (ms) (at 0.5MPa) <sup>(1)</sup>                  | 25 or less  |             |
| Max. operating frequency (Hz)                                  | 5   |             |
| Manual override  | Non-locking push style, Push-locking slotted style              |             |
| Pilot exhaust  | Individual pilot exhaust, Common exhaust (pilot and main valve) |             |
| Lubrication  | Not required  |             |
| Mounting position  | Free  |             |
| Impact/Vibration resistance (m/s <sup>2</sup> ) <sup>(2)</sup> | 150/30  |             |
| Protection structure   | Dust proof  |             |

Note 1) According to dynamic performance test JIS B8374-1981 (Coil temperature 20°C, at rated voltage, without surge voltage suppressor)

Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage)

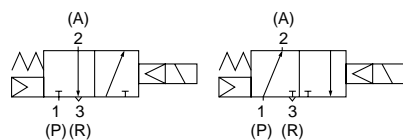
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed at both energized and de-energized states to axis and right angle directions of the main valve and armature. (Value in the initial stage)

## JIS Symbol

### Internal pilot

SYJ51<sub>4</sub><sup>2</sup>

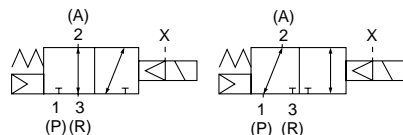
SYJ52<sub>4</sub><sup>2</sup>



### External pilot

SYJ51<sub>4</sub><sup>2</sup>R

SYJ52<sub>4</sub><sup>2</sup>R



## Solenoid Specifications

|                                      |   |                        |
|--------------------------------------|---|------------------------|
| Electrical entry                     | Grommet (G) (H), L plug connector (L), M plug connector (M) |                        |
| Coil rated voltage (V)               | DC  | 24, 12, 6, 5, 3        |
| Allowable voltage                    | ±10% rated voltage  |                        |
| Power consumption (W) <sup>(1)</sup> | DC  | 0.5 (With light: 0.55) |
| Surge voltage suppressor             | Diode   |                        |
| Indicator light                      | LED   |                        |

(1) At rated voltage

SY

SYJ

VK

VZ

VT

VT

VP

VG

VQ

VQZ

# Series SYJ500

## External Pilot

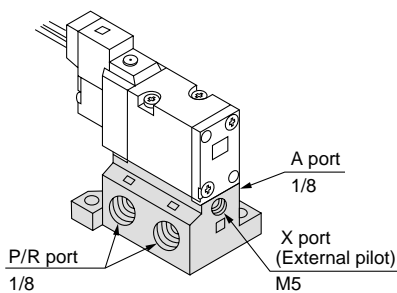
### SYJ500R

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.

This model is suitable for low pressure (less than 0.15MPa) and vacuum (up to -100kPa {10 Torr}) applications.

### Specifications

| Applicable model               | Base mounted (SYJ514R, SYJ524R) |                |
|--------------------------------|---------------------------------|----------------|
| Operating pressure range (MPa) | Main pressure                   | -100kPa to 0.7 |
|                                | External pilot pressure         | 0.15 to 0.7    |



Note 1) Refer to p.2.2-26 for manifold.

Note 2) External pilot style body ported valves (SYJ5□2R) can only be used on the manifold.

For body ported models with the external pilot option contact SMC.


## How to Order

### Indicator light and surge voltage suppressor

|   |   |
|---|---|
| — | Without indicator light and surge voltage suppressor          |
| S | With surge voltage suppressor                                 |
| Z | With indicator light and surge voltage suppressor             |
| U | With indicator light and surge voltage suppressor (Non polar) |

### Rated voltage

|   |             |
|---|-------------|
| 5 | 24V DC      |
| 6 | 12V DC      |
| V | 6V DC       |
| S | 5V DC       |
| R | 3V DC       |
| 9 | 50V or less |

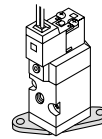
 Contact SMC for other voltages (9)

### Actuation

|   |                 |
|---|-----------------|
| 1 | Normally closed |
| 2 | Normally open   |

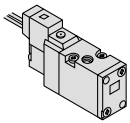
### Bracket

—: Without bracket  
F: With bracket



\* Bracket is supplied unmounted.  
\* Except on the external pilot style.

3 port



(For manifold type 20, 21R)

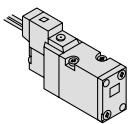
**Body ported**

SYJ5 1 2 □ 5 M □ □ — M5 — □ -Q

**Base mounted**

SYJ5 1 4 □ 5 M □ □ — 01 □ -Q

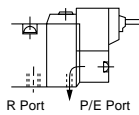
3 port



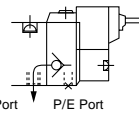
(For sub-plate style, manifold type 40, 40R, 41, 41R)

### Body option

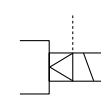
—: Individual exhaust for the pilot valve



M: Common exhaust for the pilot and main valve



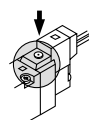
R: External pilot type\*



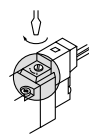
\* SYJ5□2R is only for manifold use.

### Manual override

—: Non-locking push style



D: Push locking slotted style

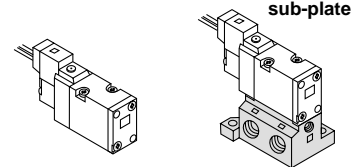


### Thread

|   |         |
|---|---------|
| — | Rc (PT) |
| F | G (PF)  |
| N | NPT     |
| T | NPTF    |

### Port size



—: Without sub-plate 01: With 1/8 Port sub-plate



(With gasket and screws)

### Electrical entry

| 24V, 12V, 6V, 5V, 3V DC |                       |                       |                       |
|-------------------------|-----------------------|-----------------------|-----------------------|
| Grommet                 | L plug connector      | M plug connector      |                       |
| G: 300mm lead wire      | L: 300mm lead wire    | M: 300mm lead wire    | MN: Without lead wire |
|                         |                       |                       |                       |
| H: 600mm lead wire      | LN: Without lead wire | LO: Without connector | MO: Without connector |
|                         |                       |                       |                       |

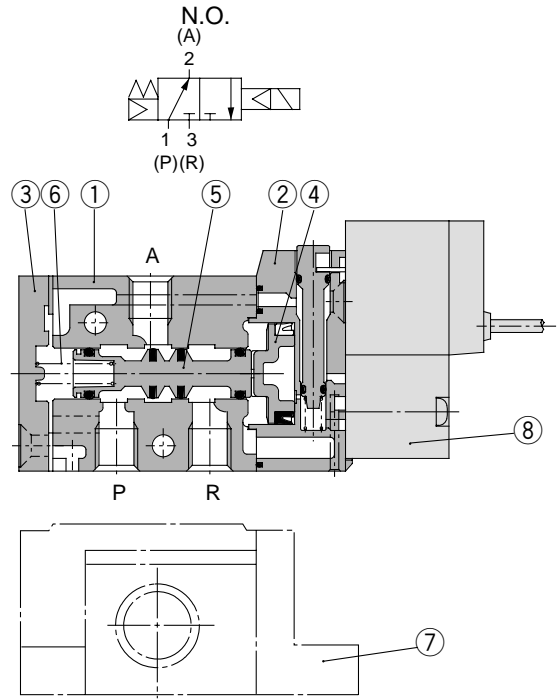
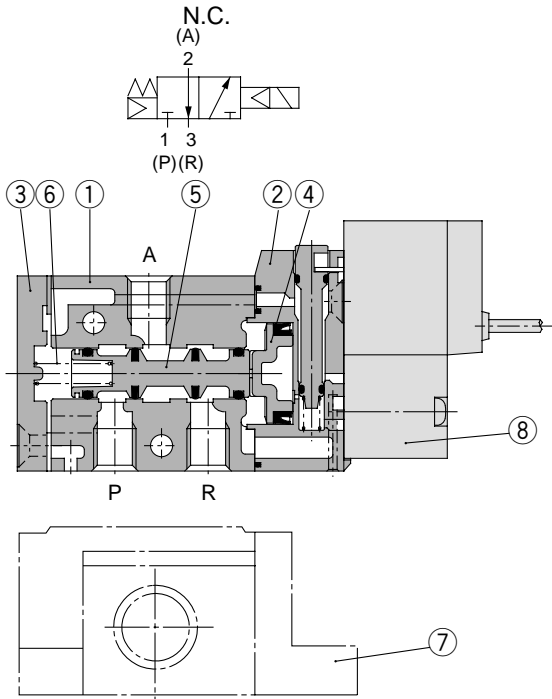
 Protective class class III (Mark: )

\* LN and MN types are with 2 sockets.



# Series SYJ500

## Construction



### Component Parts

| No. | Description       | Material          | Note  |
|-----|-------------------|-------------------|-------|
| 1   | Body              | Aluminum die cast | White |
| 2   | Piston plate      | Resin             | White |
| 3   | End cover         | Aluminum die cast | White |
| 4   | Piston            | Resin             | —     |
| 5   | Spool valve ass'y | —                 | —     |
| 6   | Spool spring      | Stainless Steel   | —     |

### Replacement Parts

| No. | Description | Part No.     | Note          |
|-----|-------------|--------------|---------------|
| 7   | Sub-plate   | SYJ500-9-1-Q | Zinc die cast |
| 8   | Pilot valve | SY114-□□□□-Q |               |

## How to Order Pilot Valve Assembly

SY114 — **5** **G** **□** -Q

Rated voltage ●

|   |        |
|---|--------|
| 5 | 24V DC |
| 6 | 12V DC |
| V | 6V DC  |
| S | 5V DC  |
| R | 3V DC  |

Indicator light and surge voltage suppressor ●

|   |  |
|---|--|
| — | Without indicator light and surge voltage suppressor         |
| S | With surge voltage suppressor                                |
| Z | With indicator light and surge voltage suppressor            |
| U | With indicator light and surge voltage suppressor(Non-polar) |

Manual ●

|    |                            |                   |
|----|----------------------------|-------------------|
| G  | Grommet (Lead wire: 300mm) |                   |
| H  | Grommet (Lead wire: 600mm) |                   |
| L  | L plug connector           | With lead wire    |
| LN | L plug connector           | Without lead wire |
| LO | L plug connector           | Without connector |
| M  | M plug connector           | With lead wire    |
| MN | M plug connector           | Without lead wire |
| MO | M plug connector           | Without connector |

## How to Order Connector Assembly

DC : SY100-30-4A-**□**

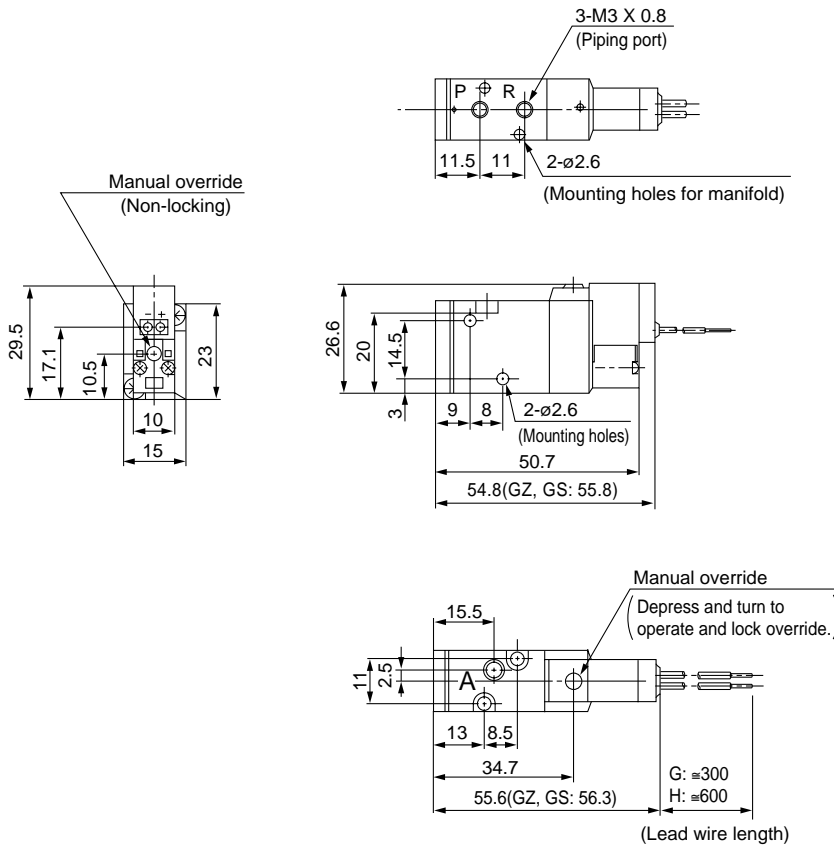
Without lead wire: SY100-30-A  
(with connector and 2 sockets)

Lead wire length (mm) ●

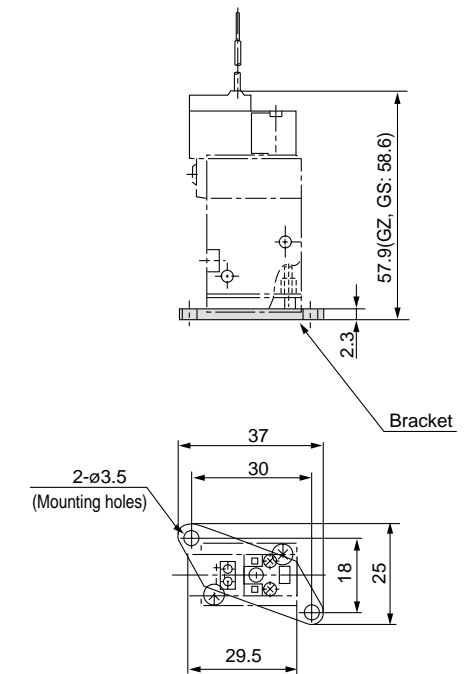
|    |      |
|----|------|
| —  | 300  |
| 6  | 600  |
| 10 | 1000 |
| 15 | 1500 |
| 20 | 2000 |
| 25 | 2500 |
| 30 | 3000 |
| 50 | 5000 |

## Body Ported

Grommet (G), (H): SYJ5□2-□<sup>G</sup>□□-M5-Q



With bracket:  
SYJ5□2-□<sup>G</sup>□□-M5-F-Q



\* Other dimensions are the same as the grommet.

SY

SYJ

VK

VZ

VT

VT

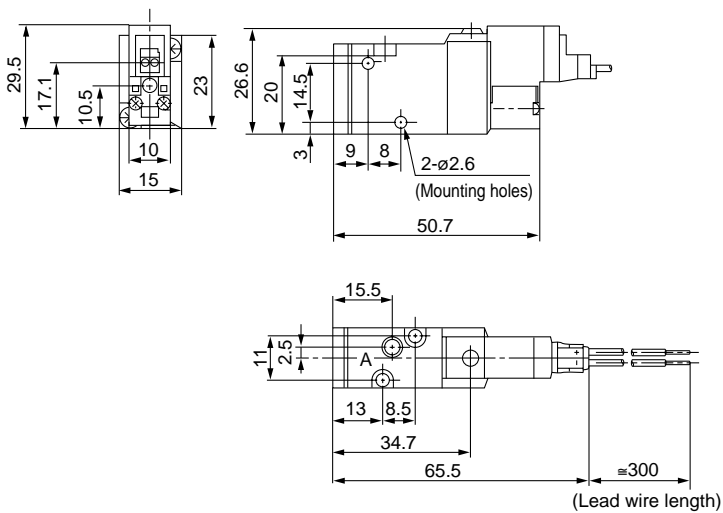
VP

VG

VQ

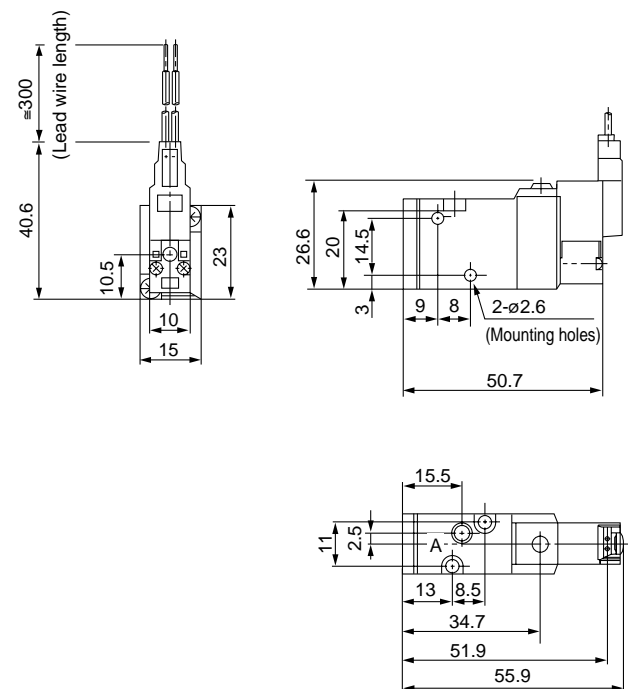
VQZ

L plug connector (L): SYJ5□2-□L□□-M5-Q



\* Other dimensions are the same as the grommet.

M plug connector (M): SYJ5□2-□M□□-M5-Q

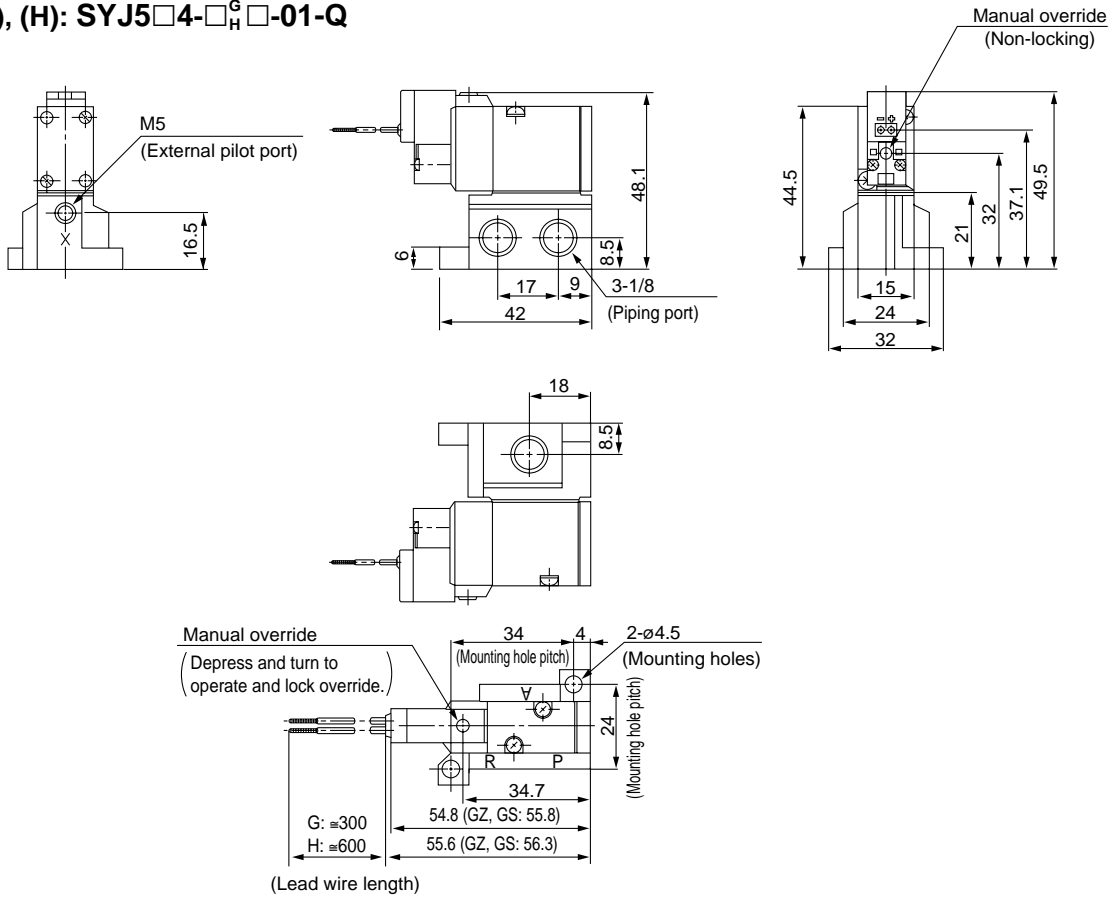


\* Other dimensions are the same as the grommet.

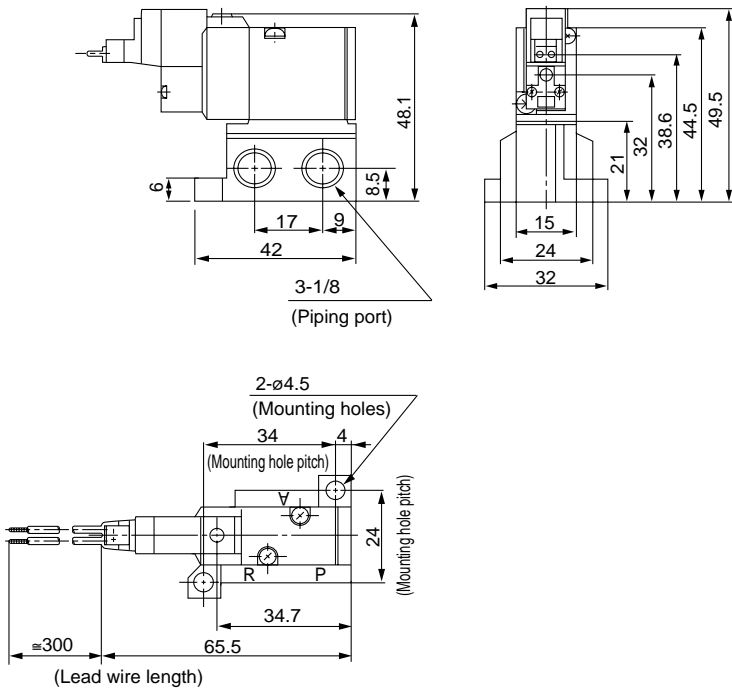
# Series SYJ500

## Base Mounted (With sub-plate)

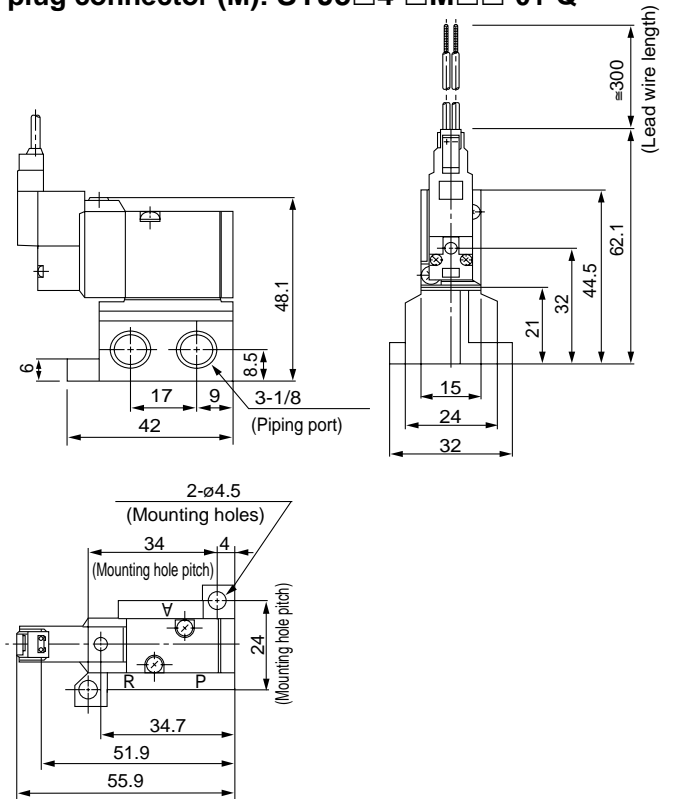
Grommet (G), (H): SYJ5□4-□<sup>G</sup>□<sup>H</sup>-01-Q



L plug connector (L): SYJ5□4-□L□□-01-Q



M plug connector (M): SYJ5□4-□M□□-01-Q

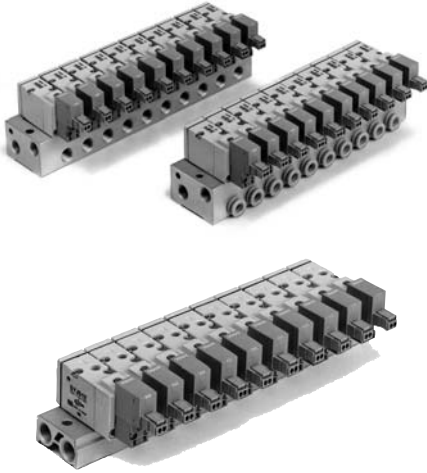


\* Other dimensions are the same as the grommet.

\* Other dimensions are the same as the grommet.



# Series SYJ500 Manifold



## Manifold Specifications

|   |                                      |                           |                                       |  |
|---|--------------------------------------|---------------------------|---------------------------------------|--|
| Type  | For internal pilot                   | 20                        | 40                                    | 41   |
|   | For external pilot                   | 21R                       | 40R                                   | 41R  |
| Manifold style  |                                      | Single base style B/mount |                                       |  |
| P(SUP)/R(EXH) style   |                                      | Common SUP/Common EXH     |                                       |  |
| Valve stations  |                                      | 2 to 20                   |                                       |  |
| A port specifications   | Location                             | Valve                     | Base                                  |  |
|   | Direction                            | Top                       | Bottom                                | Side   |
| Port size   | P/R port                             | 1/8                       | 1/8                                   | 1/8  |
|   | A port                               | M5                        | M5<br>1/8                             | M5 X 0.8, 1/8,<br>C4 (ø4 One-touch fitting)<br>C6 (ø6 One-touch fitting) |
|   | X port <sup>(1)</sup>                | M5                        | M5                                    | M5   |
| Valve effective area<br>(mm <sup>2</sup> )(Nl/min) <sup>(2)</sup> | Body ported style<br>SYJ5□2/SYJ5□2R  | 3.4 (186.49)              | —                                     |  |
|   | Base mounted style<br>SYJ5□4/SYJ5□4R | —                         | M5: 3.8 (206.12)<br>1/8: 4.7 (255.19) | M5: 3.3 (176.67)<br>1/8: 4.8 (265.01)<br>C4, C6: 3.8 (206.12)            |



Note 1) Only for external pilot  
Note 2) Value when used on a manifold

SY

SYJ

VK

VZ

VT

VT

VP

VG

## How to Order Manifold Assembly

Specify the part numbers for the valve(s), blank plate assembly, and manifold base.

Example:

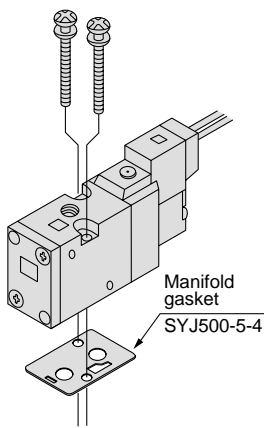
SS3YJ5-20-03-Q .....1 pc. (Manifold base)      SS3YJ5-41R-03-C6-Q .....1 pc. (Manifold base)  
 SYJ512-5LZ-M5-Q .....2 pcs. (Valve)              SYJ514R-5G-Q .....2 pcs. (Valve)  
 SYJ500-10-1A-Q .....1 pc. (Blank plate ass'y)      SYJ500-10-3A-Q .....1 pc. (Blank plate ass'y)

VQ

VQZ

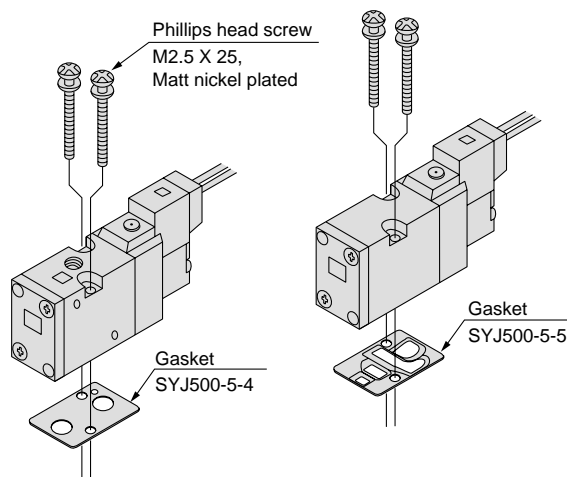
## Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

### Body ported (SYJ5□2)



Applicable base  
SS3YJ5-21R  
Manifold base

### Base mounted (SYJ5□4)

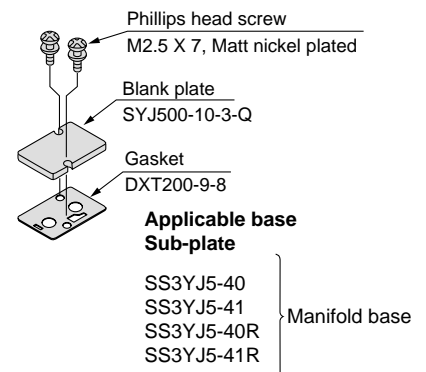


Applicable base  
SS3YJ5-20  
Manifold base

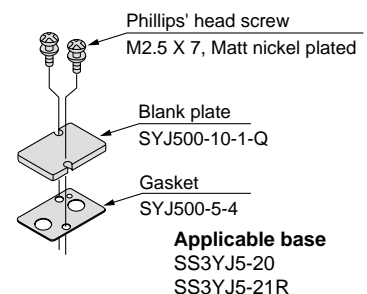
Applicable base  
Sub-plate  
SS3YJ5-40  
SS3YJ5-41  
SS3YJ5-40R  
SS3YJ5-41R } Manifold base

## Blank Plate Assembly

### SYJ500-10-3A-Q



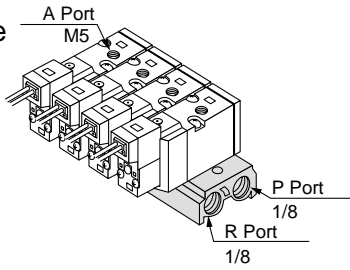
### SYJ500-10-1A-Q



# Series SYJ500

## Manifolds for Internal Pilot

### 20 Type



#### How to Order

**SS3YJ5-20-05-□-□-Q**

| Stations |             |
|----------|-------------|
| 02       | 2 stations  |
| :        | :           |
| 20       | 20 stations |

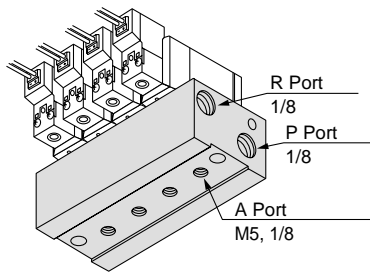
| P, R port Thread |         |
|------------------|---------|
| -                | Rc (PT) |
| 00F              | G (PF)  |
| 00N              | NPT     |
| 00T              | NPTF    |

**Applicable solenoid valve**  
 SYJ512-□□□□-M5-Q  
 SYJ512M-□□□□-M5-Q  
 SYJ522-□□□□-M5-Q  
 SYJ522M-□□□□-M5-Q

**Applicable blank plate ass'y**  
 SYJ500-10-1A-Q

Note) If more than 6 stations, supply air to both sides of "P" port and exhaust air from both sides of "R" port.

### 40 Type



#### How to Order

**SS3YJ5-40-05-M5-□-□-Q**

| Stations |             |
|----------|-------------|
| 02       | 2 stations  |
| :        | :           |
| 20       | 20 stations |

| A port side |     |
|-------------|-----|
| M5          | M5  |
| 01          | 1/8 |

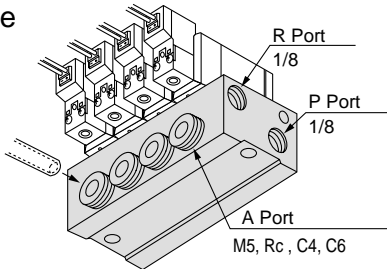
| P,R port Thread |         |
|-----------------|---------|
| -               | Rc (PT) |
| F               | G (PF)  |
| N               | NPT     |
| T               | NPTF    |

**Applicable solenoid valve**  
 SYJ514-□□□□-Q  
 SYJ514M-□□□□-Q  
 SYJ524-□□□□-Q  
 SYJ524M-□□□□-Q

**Applicable blank plate ass'y**  
 SYJ500-10-3A-Q

Note) If more than 9 stations, supply air to both sides of "P" port and exhaust air from both sides of "R" port.

### 41 Type



#### How to Order

**SS3YJ5-41-05-C6-□-□-Q**

| Stations |             |
|----------|-------------|
| 02       | 2 stations  |
| :        | :           |
| 20       | 20 stations |

| A port side |                      |
|-------------|----------------------|
| M5          | M5 X 0.8             |
| 01          | 1/8                  |
| C4          | ø4 One-touch fitting |
| C6          | ø6 One-touch fitting |

| P,R port Thread |         |
|-----------------|---------|
| -               | Rc (PT) |
| F               | G (PF)  |
| N               | NPT     |
| T               | NPTF    |

**Applicable solenoid valve**  
 SYJ514-□□□□-Q  
 SYJ514M-□□□□-Q  
 SYJ524-□□□□-Q  
 SYJ524M-□□□□-Q

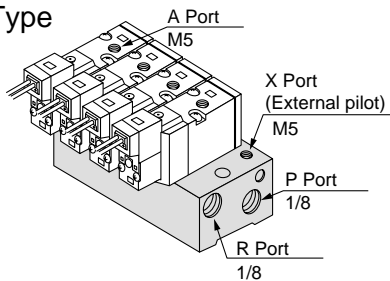
**Applicable blank plate ass'y**  
 SYJ500-10-3A-Q

Note) If more than 9 stations, supply air to both sides of "P" Port and exhaust air from both sides of "R" port.

## Manifolds for External Pilot

Pilot valve pressure is isolated from main valve pressure through a separate supply line. This is suitable for vacuum (up to -100kPa) and low pressure 0.15MPa applications.

### 21R Type



#### How to Order

**SS3YJ5-21R-05-□-□-Q**

| Stations |             |
|----------|-------------|
| 02       | 2 stations  |
| :        | :           |
| 20       | 20 stations |

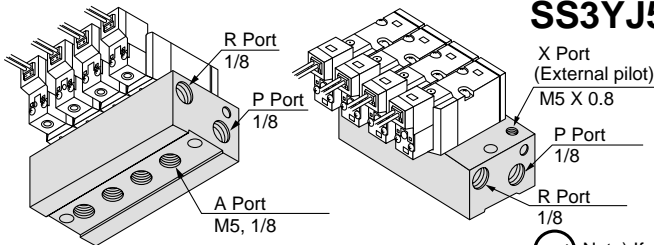
| P, R port Thread |         |
|------------------|---------|
| -                | Rc (PT) |
| 00F              | G (PF)  |
| 00N              | NPT     |
| 00T              | NPTF    |

**Applicable solenoid valve**  
 SYJ512R-□□□□-M5-Q  
 SYJ522R-□□□□-M5-Q

**Applicable blank plate ass'y**  
 SYJ500-10-3A-Q

Note) If more than 9 stations, supply air to both sides of "P" or "R" port and exhaust air from both sides of "R" or "P" port.

### 40R Type



#### How to Order

**SS3YJ5-40R-05-01-□-□-Q**

| Stations |             |
|----------|-------------|
| 02       | 2 stations  |
| :        | :           |
| 20       | 20 stations |

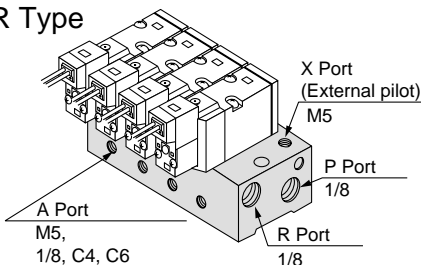
| P,R port Thread |         |
|-----------------|---------|
| -               | Rc (PT) |
| F               | G (PF)  |
| N               | NPT     |
| T               | NPTF    |

**Applicable solenoid valve**  
 SYJ514R-□□□□-Q  
 SYJ524R-□□□□-Q

**Applicable blank plate ass'y**  
 SYJ500-10-3A-Q

Note) If more than 9 stations, supply air to both sides of "P" or "R" port and exhaust air from both sides of "R" or "P" port.

### 41R Type



#### How to Order

**SS3YJ5-41R-05-M5-□-□-Q**

| Stations |             |
|----------|-------------|
| 02       | 2 stations  |
| :        | :           |
| 20       | 20 stations |

| A port side |                      |
|-------------|----------------------|
| M5          | M5 X 0.8             |
| 01          | 1/8                  |
| C4          | ø4 One-touch fitting |
| C6          | ø6 One-touch fitting |

| P,R port Thread |         |
|-----------------|---------|
| -               | Rc (PT) |
| F               | G (PF)  |
| N               | NPT     |
| T               | NPTF    |

**Applicable solenoid valve**  
 SYJ514R-□□□□-Q  
 SYJ524R-□□□□-Q

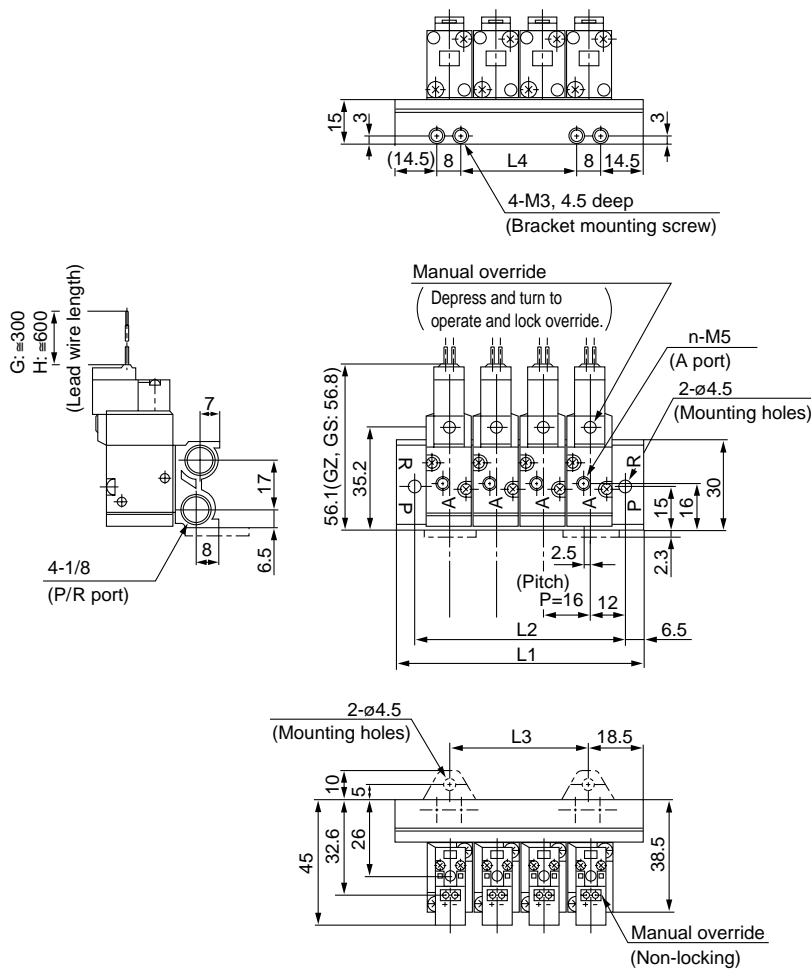
**Applicable blank plate ass'y**  
 SYJ500-10-3A-Q

Note) If more than 9 stations, supply air to both sides of "P" or "R" port and exhaust air from both sides of "R" or "P" port.

Protective class class III (Mark: ⚡)

## 20 Type Manifold: Top Ported/SS3YJ5-20-Station (-F)-Q

### Grommet (G), (H)



SY

SYJ

VK

VZ

VT

VT

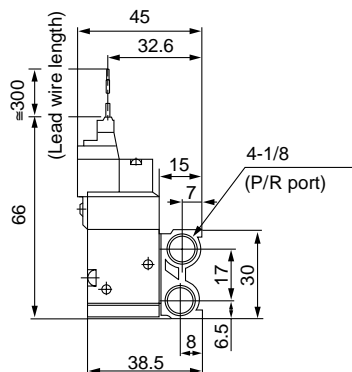
VP

VG

VQ

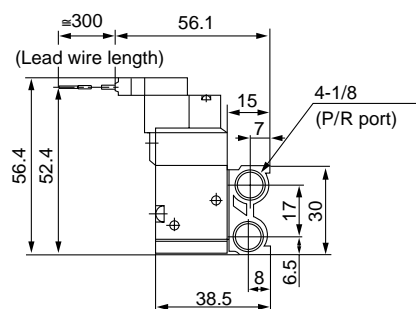
VQZ

### L plug connector (L)



\* Other dimensions are the same as the grommet.

### M plug connector (M)



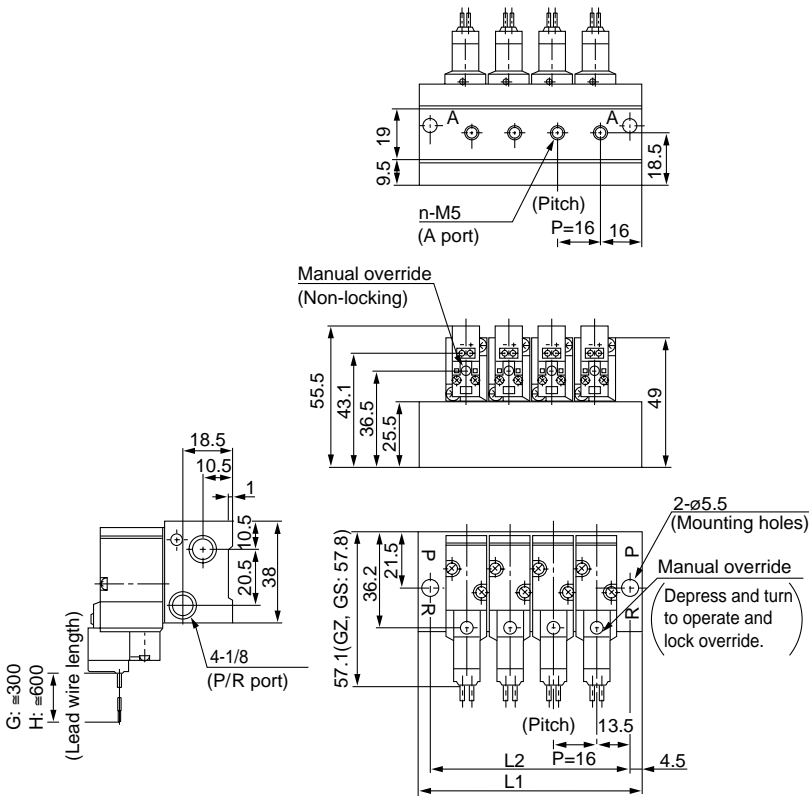
\* Other dimensions are the same as the grommet.

| Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1      | 53 | 69 | 85 | 101 | 117 | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 | 261 | 277 | 293 | 309 | 325 | 341 |
| L2      | 40 | 56 | 72 | 88  | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 | 264 | 280 | 296 | 312 | 328 |
| L3      | 16 | 32 | 48 | 64  | 80  | 96  | 112 | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 | 256 | 272 | 288 | 304 |
| L4      | 8  | 24 | 40 | 56  | 72  | 88  | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 | 264 | 280 | 296 |

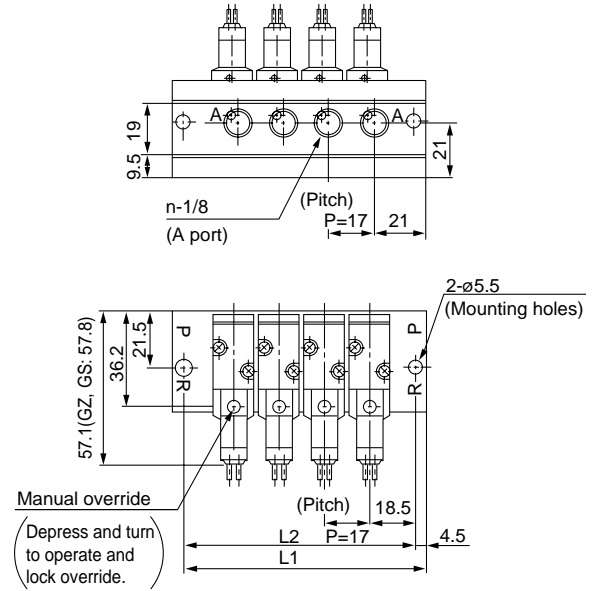
# Series SYJ500

## 40 Type Manifold: Bottom Ported/SS3YJ5-40-Station -M5, 01-Q

### Grommet (G), (H)

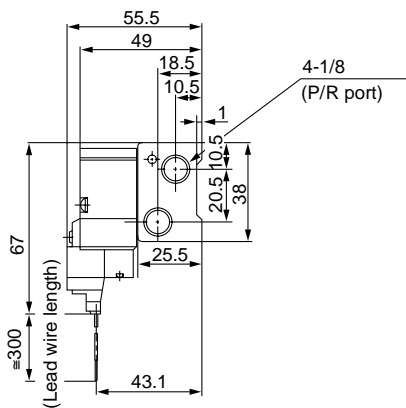


### 1/8



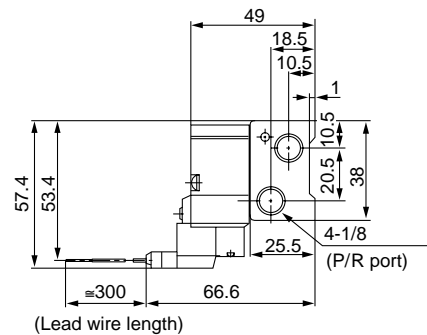
\* Other dimensions are the same as the M5.

### L plug connector (L)



\* Other dimensions are the same as the grommet.

### M plug connector (M)

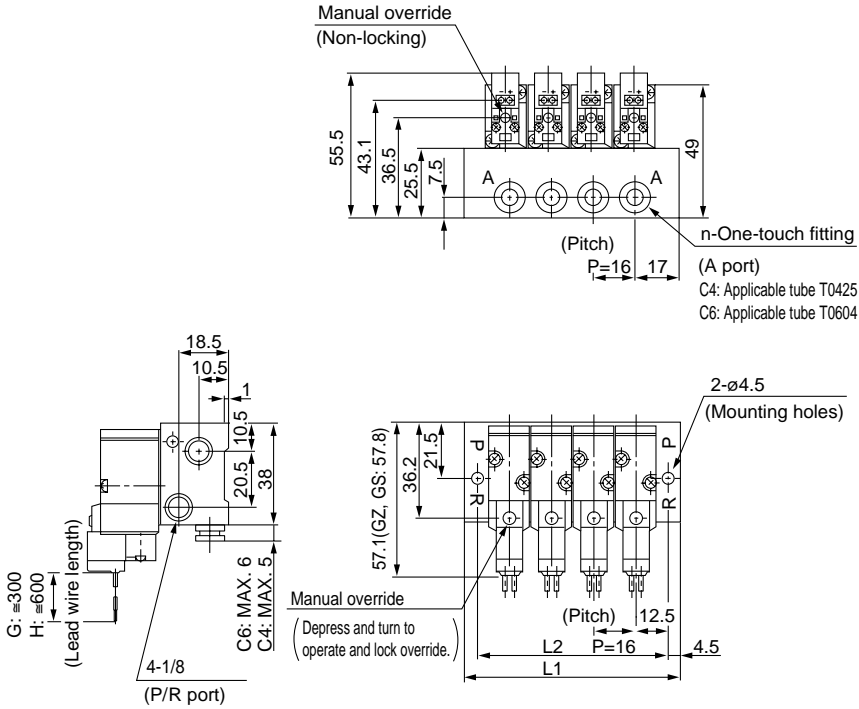


\* Other dimensions are the same as the grommet.

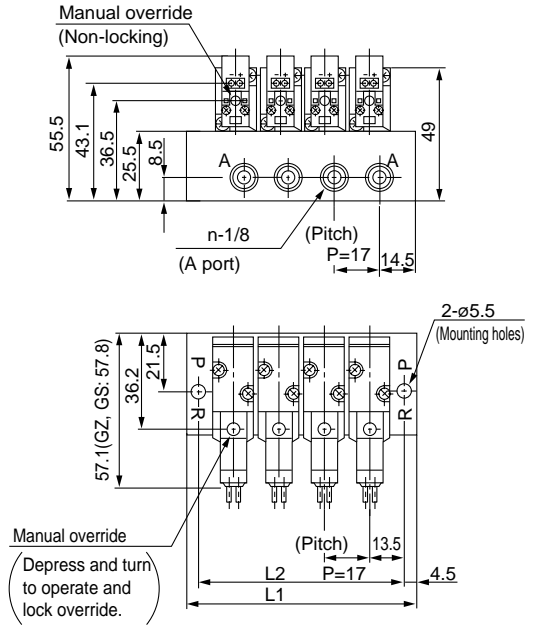
| Port size | Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-----------|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| M5        | L1      | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340 |
|           | L2      | 43 | 59 | 75 | 91  | 107 | 123 | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 | 267 | 283 | 299 | 315 | 331 |
| 1/8       | L1      | 63 | 80 | 97 | 114 | 131 | 148 | 165 | 182 | 199 | 216 | 233 | 250 | 267 | 284 | 301 | 318 | 335 | 352 | 369 |
|           | L2      | 54 | 71 | 88 | 105 | 122 | 139 | 156 | 173 | 190 | 207 | 224 | 241 | 258 | 275 | 292 | 309 | 326 | 343 | 360 |

## 41 Type Manifold: Side Ported/SS3YJ5-41-Station -M5, 01, C4, C6-Q

### Grommet (G), (H)



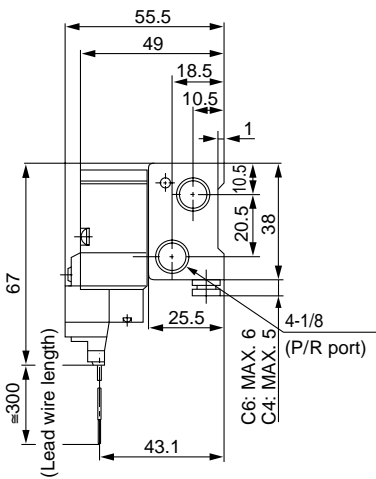
### 1/8



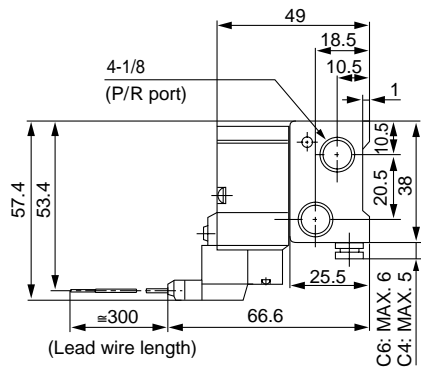
☞ \* Other dimensions are the same as the C4, C6.

- SY
- SYJ
- VK
- VZ
- VT
- VT
- VP
- VG

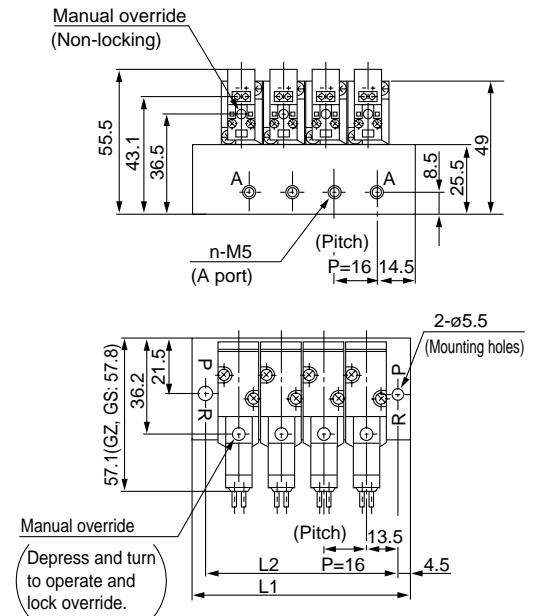
### L plug connector (L)



### M plug connector (M)



### With M5



☞ \* Other dimensions are the same as the C4, C6.

- VQ
- VQZ

☞ \* Other dimensions are the same as the grommet.

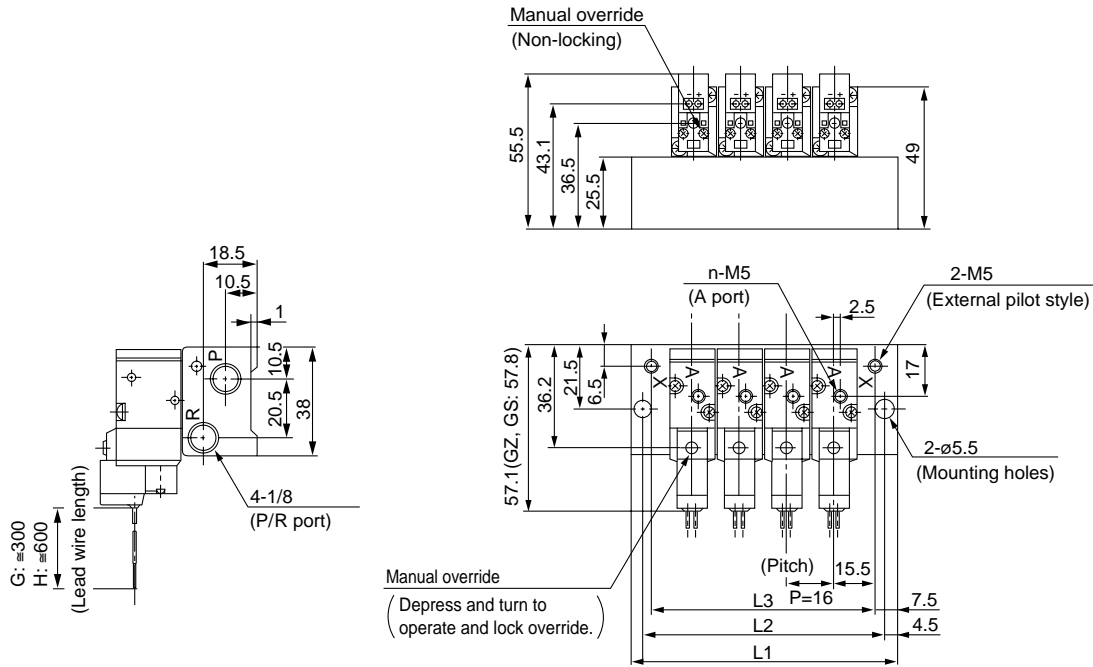
☞ \* Other dimensions are the same as the grommet.

| Port size         | Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-------------------|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| M5                | L1      | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340 |
|                   | L2      | 43 | 59 | 75 | 91  | 107 | 123 | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 | 267 | 283 | 299 | 315 | 331 |
| 1/8               | L1      | 53 | 70 | 87 | 104 | 121 | 138 | 155 | 172 | 189 | 206 | 223 | 240 | 257 | 274 | 291 | 308 | 325 | 342 | 359 |
|                   | L2      | 44 | 61 | 78 | 95  | 112 | 129 | 146 | 163 | 180 | 197 | 214 | 231 | 248 | 265 | 282 | 299 | 316 | 333 | 350 |
| One-touch fitting | L1      | 50 | 66 | 82 | 98  | 114 | 130 | 146 | 162 | 178 | 194 | 210 | 226 | 242 | 258 | 274 | 290 | 306 | 322 | 338 |
|                   | L2      | 41 | 57 | 73 | 89  | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 |

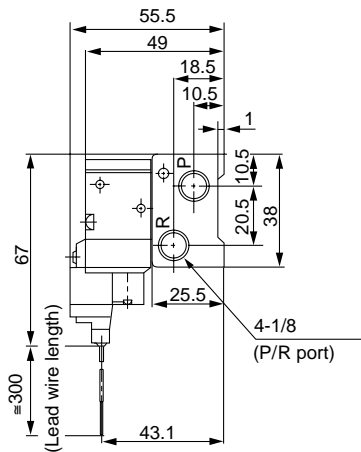
# Series SYJ500

## 21R Type Manifold: Top Ported (External Pilot)/SS3YJ5-21R-Station-Q

### Grommet (G), (H)

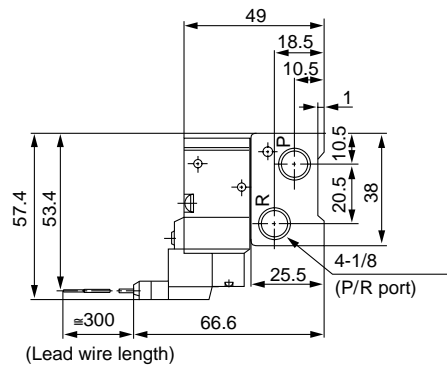


### L plug connector (L)



\* Other dimensions are the same as the grommet.

### M plug connector (M)

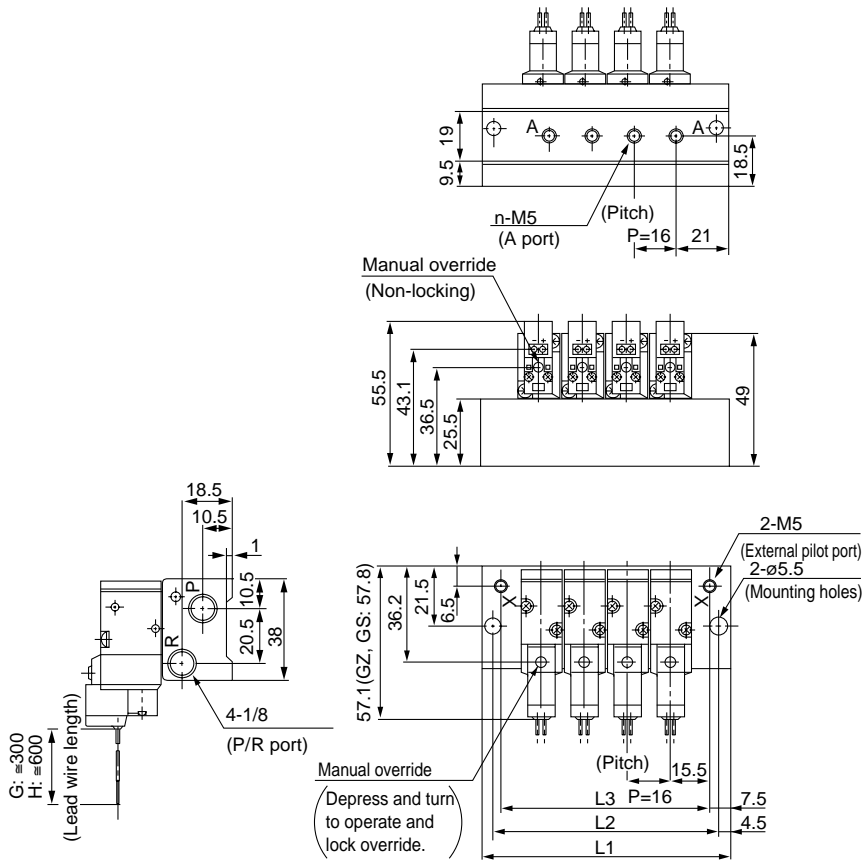


\* Other dimensions are the same as the grommet.

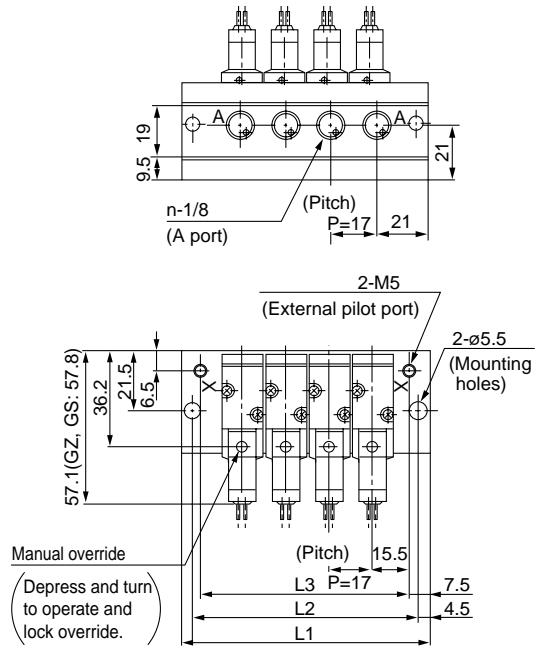
| Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1      | 62 | 78 | 94 | 110 | 126 | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 | 270 | 286 | 302 | 318 | 334 | 350 |
| L2      | 53 | 69 | 85 | 101 | 117 | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 | 261 | 277 | 293 | 309 | 325 | 341 |
| L3      | 47 | 63 | 79 | 95  | 111 | 127 | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 | 271 | 287 | 303 | 319 | 335 |

## 40R Type Manifold: Bottom Ported (External Pilot)/SS3YJ5-40R-Station-M5, 01-Q

### Grommet (G), (H)



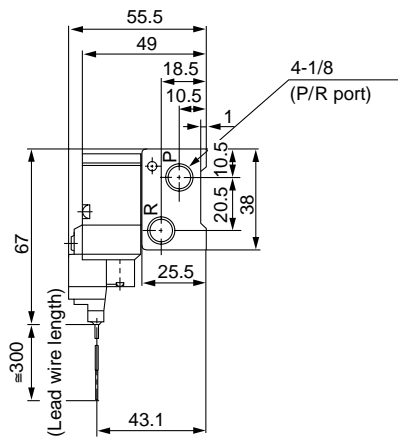
### 1/8



\* Other dimensions are the same as the M5.

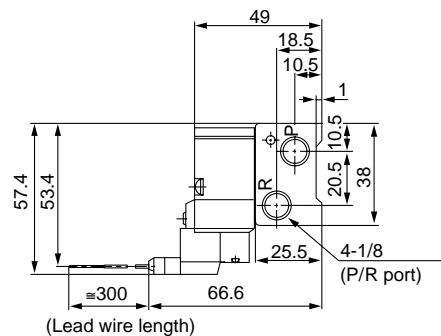
- SY
- SYJ
- VK
- VZ
- VT
- VT
- VP
- VG
- VQ
- VQZ

### L plug connector (L)



\* Other dimensions are the same as the grommet.

### M plug connector (M)



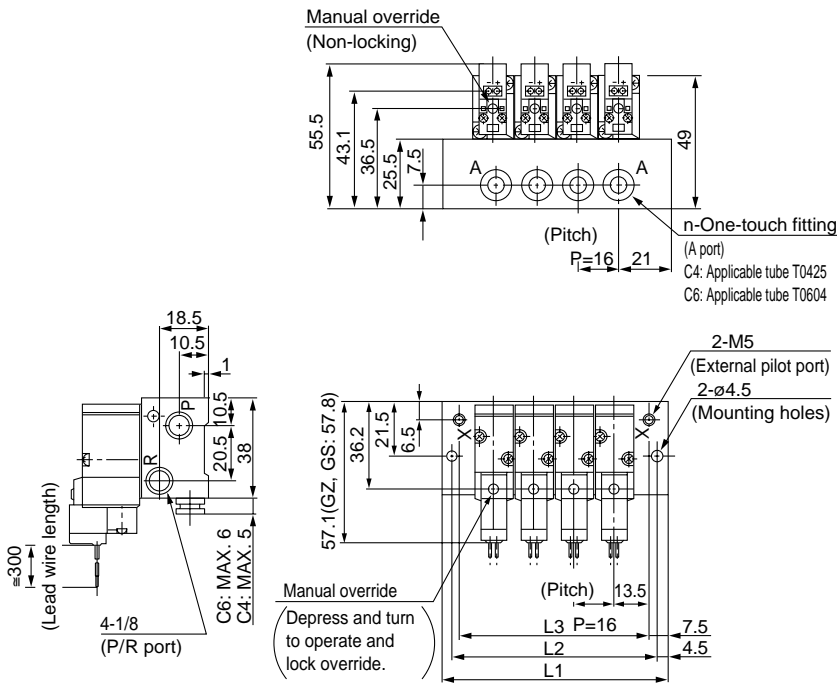
\* Other dimensions are the same as the grommet.

| Port size | Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-----------|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| M5        | L1      | 62 | 78 | 94 | 110 | 126 | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 | 270 | 286 | 302 | 318 | 334 | 350 |
|           | L2      | 53 | 69 | 85 | 101 | 117 | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 | 261 | 277 | 293 | 309 | 325 | 341 |
|           | L3      | 47 | 63 | 79 | 95  | 111 | 127 | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 | 271 | 287 | 303 | 319 | 335 |
| 1/8       | L1      | 63 | 80 | 97 | 114 | 131 | 148 | 165 | 182 | 199 | 216 | 233 | 250 | 267 | 284 | 301 | 318 | 335 | 352 | 369 |
|           | L2      | 54 | 71 | 88 | 105 | 122 | 139 | 156 | 173 | 190 | 207 | 224 | 241 | 258 | 275 | 292 | 309 | 326 | 343 | 360 |
|           | L3      | 48 | 65 | 82 | 99  | 116 | 133 | 150 | 167 | 184 | 201 | 218 | 235 | 252 | 269 | 286 | 303 | 320 | 337 | 354 |

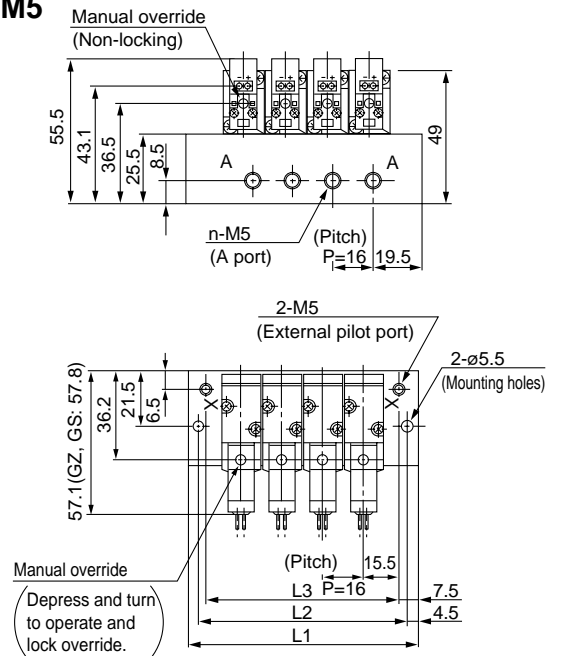
# Series SYJ500

## 41R Type Manifold: Side Ported (External Pilot)/SS3YJ5-41R-Station-M5, 01, C4, C6-Q

### Grommet (G), (H)

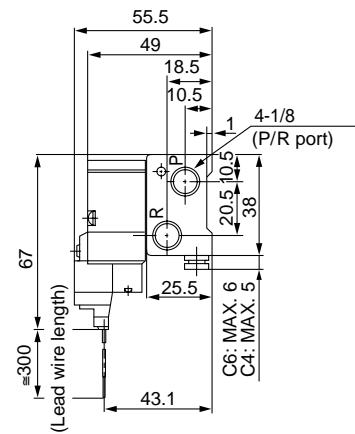


### M5



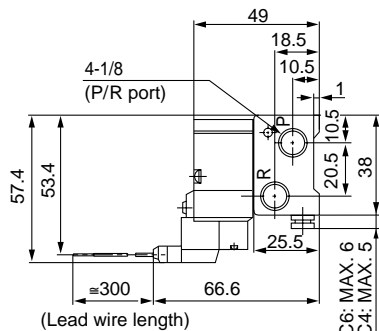
\* Other dimensions are the same as the C4, C6.

### L plug connector (L)



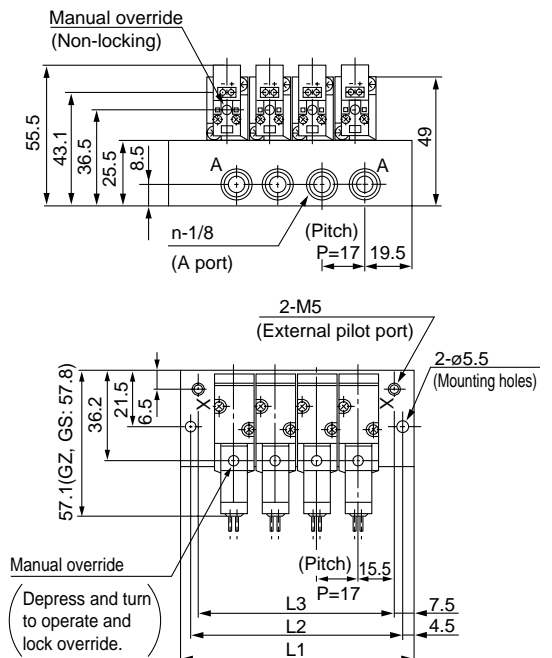
\* Other dimensions are the same as the grommet.

### M plug connector (M)



\* Other dimensions are the same as the grommet.

### 1/8



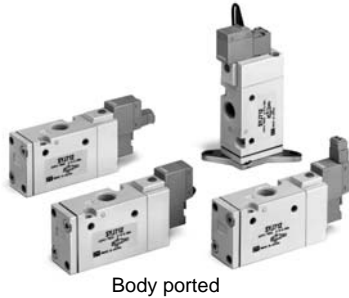
\* Other dimensions are the same as the C4, C6.

| Port size         | Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-------------------|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| M5                | L1      | 62 | 78 | 94 | 110 | 126 | 142 | 158 | 174 | 190 | 206 | 222 | 238 | 254 | 270 | 286 | 302 | 318 | 334 | 350 |
|                   | L2      | 53 | 69 | 85 | 101 | 117 | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 | 261 | 277 | 293 | 309 | 325 | 341 |
|                   | L3      | 47 | 63 | 79 | 95  | 111 | 127 | 143 | 159 | 175 | 191 | 207 | 223 | 239 | 255 | 271 | 287 | 303 | 319 | 335 |
| 1/8               | L1      | 63 | 80 | 97 | 114 | 131 | 148 | 165 | 182 | 199 | 216 | 233 | 250 | 267 | 284 | 301 | 318 | 335 | 352 | 369 |
|                   | L2      | 54 | 71 | 88 | 105 | 122 | 139 | 156 | 173 | 190 | 207 | 224 | 241 | 258 | 275 | 292 | 309 | 326 | 343 | 360 |
|                   | L3      | 48 | 65 | 82 | 99  | 116 | 133 | 150 | 167 | 184 | 201 | 218 | 235 | 252 | 269 | 286 | 303 | 320 | 337 | 354 |
| One-touch fitting | L1      | 58 | 74 | 90 | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330 | 346 |
|                   | L2      | 49 | 65 | 81 | 97  | 113 | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 | 257 | 273 | 289 | 305 | 321 | 337 |
|                   | L3      | 43 | 59 | 75 | 91  | 107 | 123 | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 | 267 | 283 | 299 | 315 | 331 |



# 3 Port Pilot Solenoid Valve Rubber Seal

## Series SYJ700



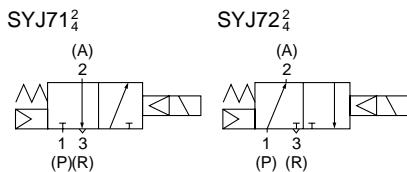
Body ported



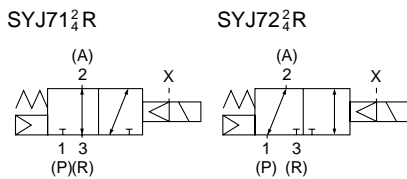
Base mounted

### JIS Symbol

#### Internal pilot



#### External pilot



P.2.2-47

### Model

| Valve model                   | Actuation | Port size | Effective area (mm <sup>2</sup> )(N <sub>d</sub> /min) | Weight (g)   |                                     |                            |
|-------------------------------|-----------|-----------|--|--------------|-------------------------------------|----------------------------|
|                               |           |           |  | Grommet      | L plug connector, M plug connector. |                            |
| Body ported                   | SYJ712    | N.C.      | 1/8  | 9.0 (490.75) | 72                                  | 74                         |
|                               | SYJ722    | N.O.      |  |              |                                     |                            |
| Base mounted (With sub-plate) | SYJ714    | N.C.      | 1/8  | 9.0 (490.75) | 132 (Without sub-plate 72)          | 134 (Without sub-plate 74) |
|                               | SYJ724    | N.O.      |  |              |                                     |                            |

SY

SYJ

VK

VZ

VT

VT

VP

VG

VQ

VQZ

### Specifications

|  |   |             |
|--|---|-------------|
| Fluid  | Air   |             |
| Operating pressure range (MPa)                                 | Internal pilot  | 0.15 to 0.7 |
| Ambient and fluid temperature (°C)                             | Max. 50   |             |
| Response time ms (0.5MPa) <sup>(1)</sup>                       | 30 or less  |             |
| Max. operating frequency (Hz)                                  | 5   |             |
| Manual override  | Non-locking push style, Push-locking slotted style                          |             |
| Pilot exhaust  | Individual pilot exhaust style, Common Exhaust (pilot and main valve) style |             |
| Lubrication  | Not required  |             |
| Mounting position  | Free  |             |
| Impact/Vibration resistance (m/s <sup>2</sup> ) <sup>(2)</sup> | 150/30  |             |
| Protection structure   | Dust proof  |             |



Note 1) According to dynamic performance test JIS B8374-1981

(Coil temperature 20°C, at rated voltage, without surge voltage suppressor)

Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester.

The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage)

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz.

Test was performed at both energized and de-energized states to axis and right angle directions of the main valve and armature. (Value in the initial stage)

### Solenoid Specifications

|                                      |   |                        |
|--------------------------------------|---|------------------------|
| Electrical entry                     | Grommet (G) (H), L plug connector (L), M plug connector (M) |                        |
| Coil rated voltage (V)               | DC  | 24, 12, 6, 5, 3        |
| Allowable voltage                    | ±10% rated voltage  |                        |
| Power consumption (W) <sup>(1)</sup> | DC  | 0.5 (With light: 0.55) |
| Surge voltage suppressor             | Diode   |                        |
| Indicator light                      | LED   |                        |

(1) At rated voltage

# Series SYJ700

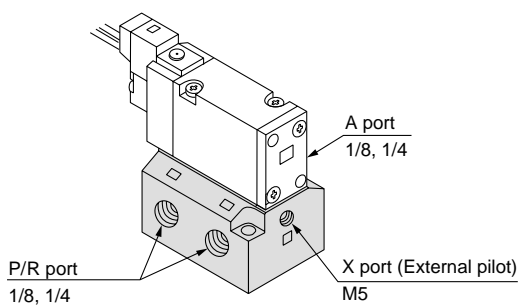
## External Pilot

### SYJ700R

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.  
This model is suitable for low pressure (less than 0.15MPa) and vacuum (up to -100kPa) applications.

### Specifications

| Applicable model               | Base mounted (SYJ714R, SYJ724R) |                |
|--------------------------------|---------------------------------|----------------|
| Operating pressure range (MPa) | Main pressure                   | -100kPa to 0.7 |
|                                | External pilot pressure         | 0.15 to 0.7    |



Note 1) Refer to p.2.2-40 for manifold.

Note 2) External pilot style body ported valves (SYJ7□2R) can only be used on the manifold.

For body ported models with the external pilot option contact SMC.

## How to Order

### Indicator light and surge voltage suppressor

|   |   |
|---|---|
| — | Without indicator light and surge voltage suppressor          |
| S | With surge voltage suppressor                                 |
| Z | With indicator light and surge voltage suppressor             |
| U | With indicator light and surge voltage suppressor (Non polar) |

### Actuation

|   |                 |
|---|-----------------|
| 1 | Normally closed |
| 2 | Normally open   |

### Rated voltage

|   |             |
|---|-------------|
| 5 | 24V DC      |
| 6 | 12V DC      |
| V | 6V DC       |
| S | 5V DC       |
| R | 3V DC       |
| 9 | 50V or less |

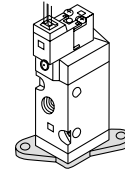
Contact SMC for other voltages (9)

### Thread

|   |         |
|---|---------|
| — | Rc (PT) |
| F | G (PF)  |
| N | NPT     |
| T | NPTF    |

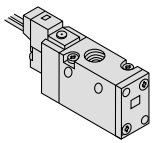
### Bracket

—: Without bracket  
F: With bracket



\* Bracket is supplied unmounted expect on the external pilot style.

### 3 port



(For manifold type 20, 21R)

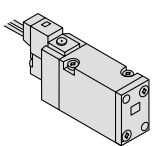
### Body ported

SYJ7 1 2 □ 5 M □ □ □ 01 □ □ -Q

### Base mounted

SYJ7 1 4 □ 5 M □ □ □ 01 -Q

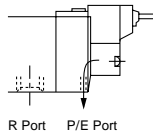
### 3 port



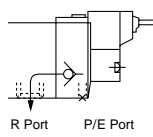
(For sub-plate style, manifold type 41R, 42, 42R)

### Body option

—: Individual exhaust for the pilot valve



M: Common exhaust for the pilot and main valve



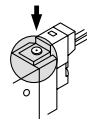
R: External pilot style\*



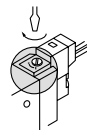
\* SYJ7□2R is only for manifold use.

### Manual override

—: Non-locking push style

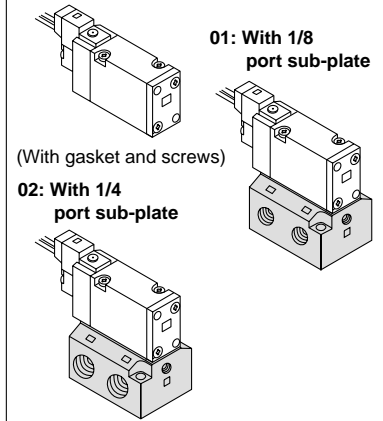


D: Push locking slotted style



### Port size

—: Without sub-plate



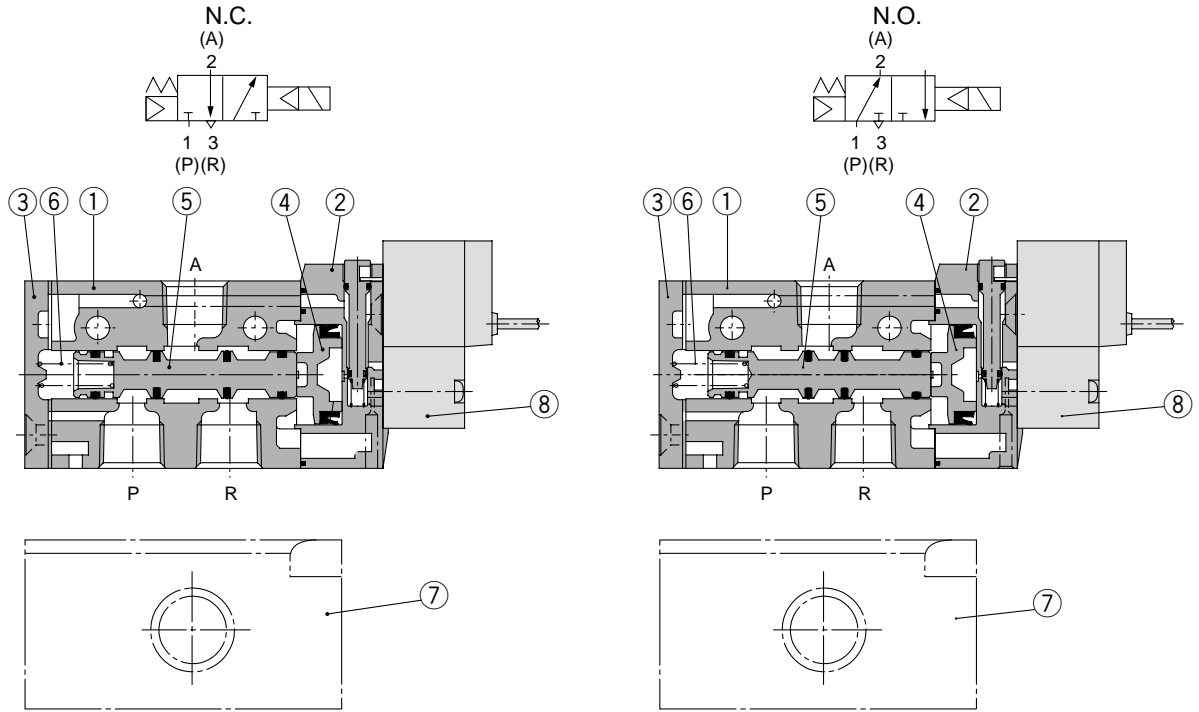
### Electrical entry

| 24V, 12V, 6V, 5V, 3V DC |                       |                       |                       |
|-------------------------|-----------------------|-----------------------|-----------------------|
| Grommet                 | L plug connector      | M plug connector      |                       |
| G: 300mm lead wire      | L: 300mm lead wire    | M: 300mm lead wire    | MN: Without lead wire |
|                         |                       |                       |                       |
| H: 600mm lead wire      | LN: Without lead wire | LO: Without connector | MO: Without connector |
|                         |                       |                       |                       |

\* LN and MN types are with 2 sockets.

# Series SYJ700

## Construction



### Component Parts

| No. | Description       | Material          | Note  |
|-----|-------------------|-------------------|-------|
| 1   | Body              | Aluminum die cast | White |
| 2   | Piston plate      | Resin             | White |
| 3   | End cover         | Aluminum die cast | White |
| 4   | Piston            | Resin             | —     |
| 5   | Spool valve ass'y | —                 | —     |
| 6   | Spool spring      | Stainless steel   | —     |

### Replacements Parts

| No. | Description | Parts No.    | Note              |
|-----|-------------|--------------|-------------------|
| 7   | Sub-plate   | SYJ700-9-1-Q | 1/8               |
|     |             | SYJ700-9-2-Q | 1/4               |
| 8   | Pilot valve | SY114-□□□□-Q | Aluminum die cast |

## How to Order Pilot Valve Assembly

SY114 — **5** **G** □ -Q

#### Rated voltage ●

|   |        |
|---|--------|
| 5 | 24V DC |
| 6 | 12V DC |
| V | 6V DC  |
| S | 5V DC  |
| R | 3V DC  |

#### Indicator light and surge voltage suppressor ●

|   |  |
|---|--|
| — | Without indicator light and surge voltage suppressor         |
| S | With surge voltage suppressor                                |
| Z | With indicator light and surge voltage suppressor            |
| U | With indicator light and surge voltage suppressor(Non-polar) |

#### Manual ●

|    |                            |                   |
|----|----------------------------|-------------------|
| G  | Grommet (Lead wire: 300mm) |                   |
| H  | Grommet (Lead wire: 600mm) |                   |
| L  | L plug connector           | With lead wire    |
| LN | L plug connector           | Without lead wire |
| LO | L plug connector           | Without connector |
| M  | M plug connector           | With lead wire    |
| MN | M plug connector           | Without lead wire |
| MO | M plug connector           | Without connector |

## How to Order Connector Assembly

DC : SY100-30-4A-□

Other AC voltages : SY100-30-A  
Without lead wire

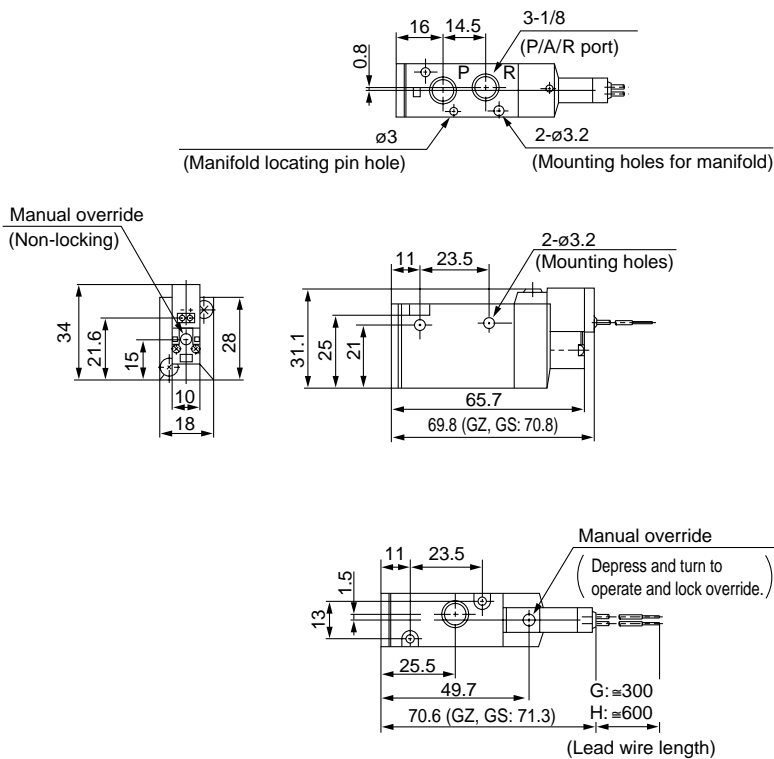
(with connector and 2 of sockets)

#### Lead wire length(mm) ●

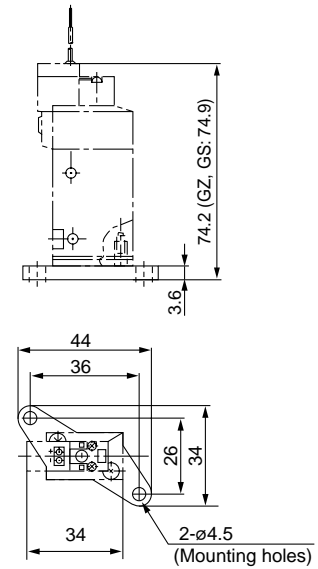
|    |      |
|----|------|
| —  | 300  |
| 6  | 600  |
| 10 | 1000 |
| 15 | 1500 |
| 20 | 2000 |
| 25 | 2500 |
| 30 | 3000 |
| 50 | 5000 |

## Body Ported

Grommet (G), (H): SYJ7□2-□<sup>G</sup>□□-01-Q



With bracket:  
SYJ7□2-□<sup>G</sup>□□-01-F-Q



SY

SYJ

VK

VZ

VT

VT

VP

VG

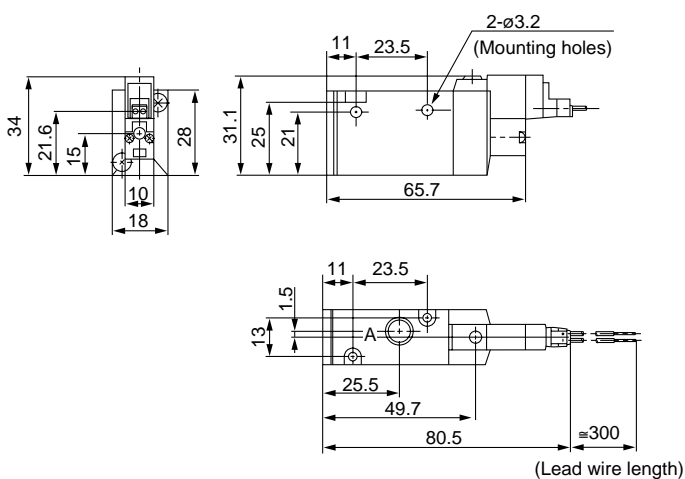
VQ

VQZ

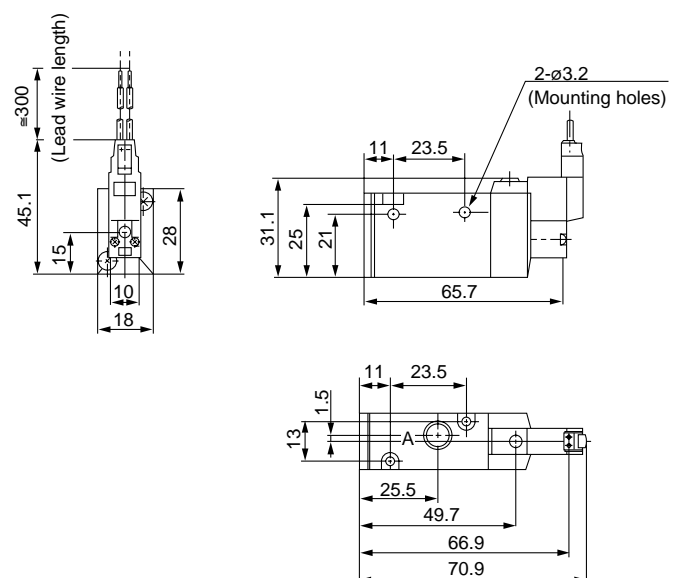


\* Other dimensions are the same as the grommet.

L plug connector (L): SYJ7□2-□L□□-01-Q



M plug connector (M): SYJ7□2-□M□□-01-Q



\* Other dimensions are the same as the grommet.

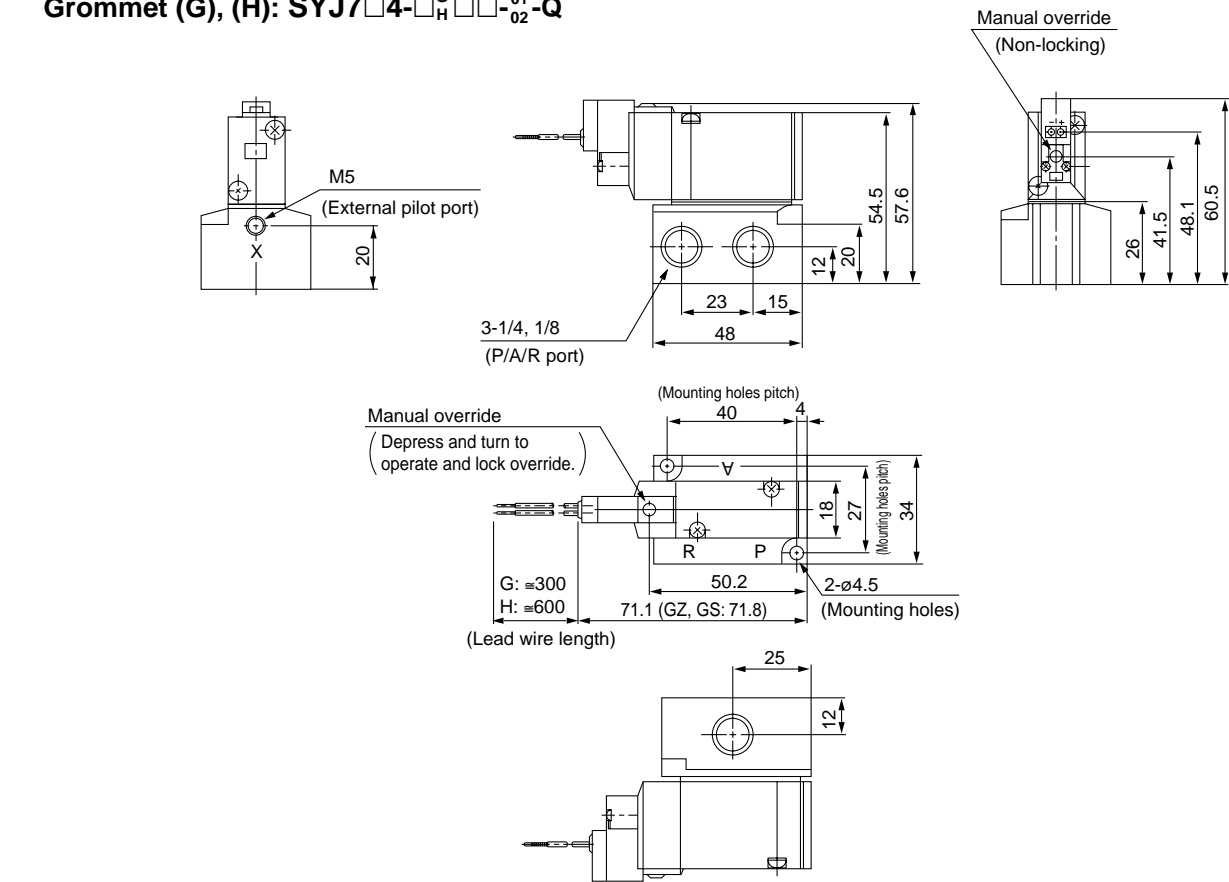


\* Other dimensions are the same as the grommet.

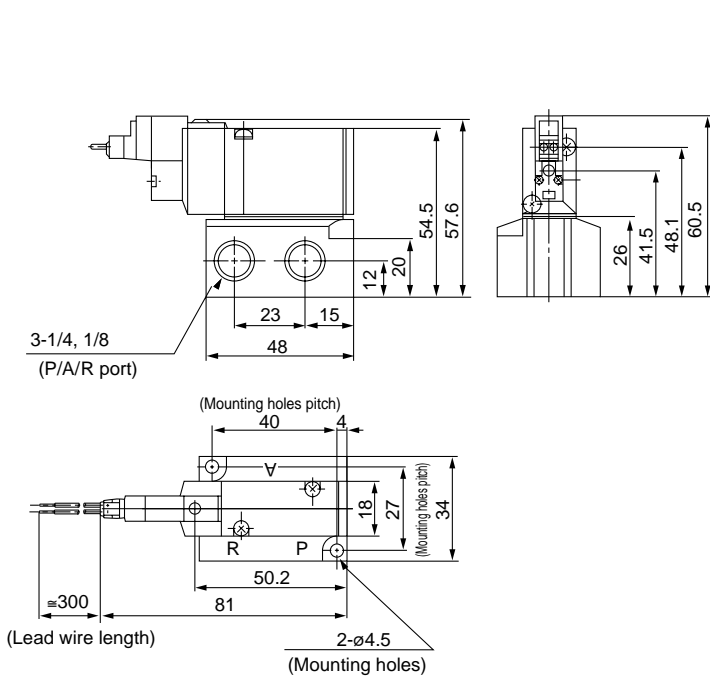
# Series SYJ700

## Base Mounted (With sub-plate)

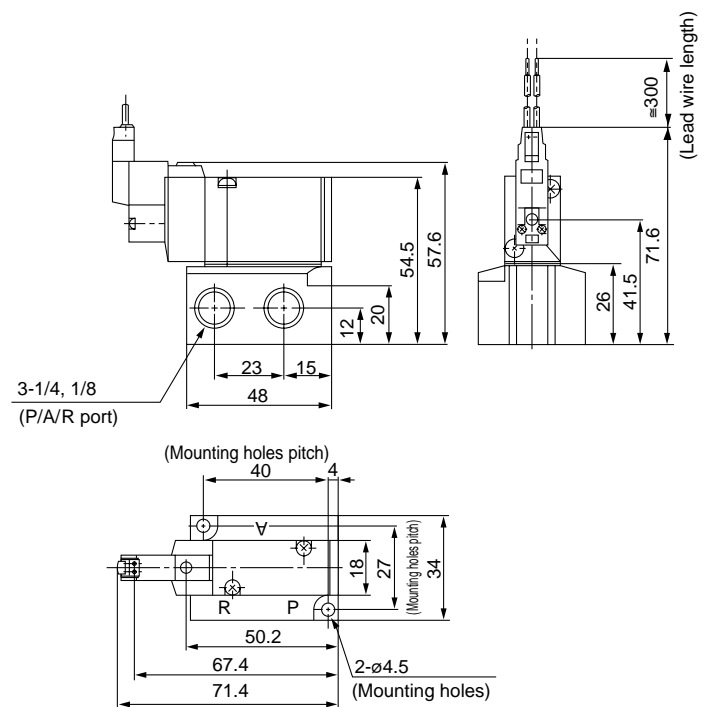
Grommet (G), (H): SYJ7□4-□<sup>G</sup>□□-<sup>01</sup>/<sub>02</sub>-Q



L plug connector (L): SYJ7□4-□L□□-<sup>01</sup>/<sub>02</sub>-Q



M plug connector (M): SYJ7□4-□M□□-<sup>01</sup>/<sub>02</sub>-Q



\* Other dimensions are the same as the grommet.

\* Other dimensions are the same as the grommet.

# Series SYJ700 Manifold



## Manifold Specifications

| Type  | For internal pilot           | 20            | 21    | 40            | 41            | 42  |  |
|---|------------------------------|---------------|-------|---------------|---------------|---|--|
|   | For external pilot           | —             | 21R   | —             | 41R           | 42R   |  |
| Manifold style  | Single base style/B mount    |               |       |               |               |   |  |
| P(SUP)/R(EXH) style   | Common SUP/Common EXH        |               |       |               |               |   |  |
| Valve stations  | 2 to 20 stations             |               |       |               |               |   |  |
| A port specifications   | Location                     | Valve         | Valve | Base          | Base          | Base  |  |
|   | Direction                    | Top           | Top   | Bottom        | Bottom        | Side  |  |
| Port size   | P/R port                     | 1/8           | 1/4   | 1/8           | 1/4           | 1/4   |  |
|   | A port                       | 1/8           | 1/8   | 1/8           | 1/8           | 1/8<br>C6 (ø6 One-touch fitting)<br>C8 (ø8 One-touch fitting) |  |
|   | X port <sup>(1)</sup>        | —             | M3    | —             | M5            | M5  |  |
| Valve effective area<br>(mm <sup>2</sup> )<br>(Nl/min) <sup>(2)</sup> | Body ported<br>SYJ□2/SYJ□2R  | 10.6 (579.09) |       |               |               | —   |  |
|   | Base mounted<br>SYJ□4/SYJ□4R | —             |       | 10.2 (559.46) | 10.2 (559.46) | 1/8: 9.2 (500.57)<br>C6: 8.8 (480.94)<br>C8: 10 (549.64)      |  |



Note 1) Only for external pilot  
Note 2) Value when used on a manifold

SY

SYJ

VK

VZ

VT

VT

VP

VG

## How to Order Manifold Assembly

Specify the part numbers for the valve (s), blank plate assembly, and manifold base.

Example:

**SS3YJ7-20-03-Q** .....1 pc.(Manifold base)      **SS3YJ7-42R-03-01-Q** .....1 pc. (Manifold base)  
**SYJ712-5LZ-01-Q** .....2 pcs. (Valve)              **SYJ714R-5G-Q** .....2 pcs. (Valve)  
**SYJ700-10-2A-Q** .....1 pc. (Blank plate ass'y)      **SYJ700-10-2A-Q** .....1 pc. (Blank plate ass'y)

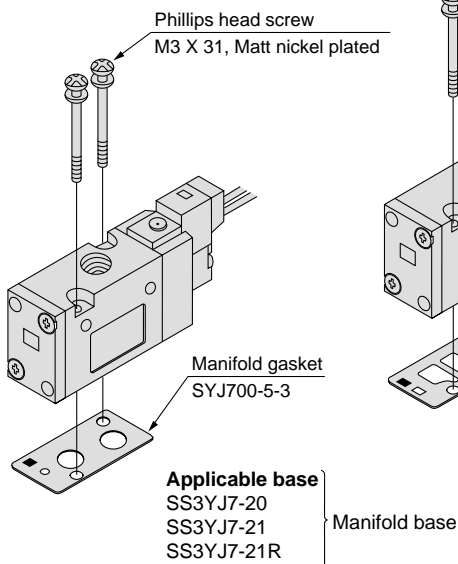
VQ

VQZ

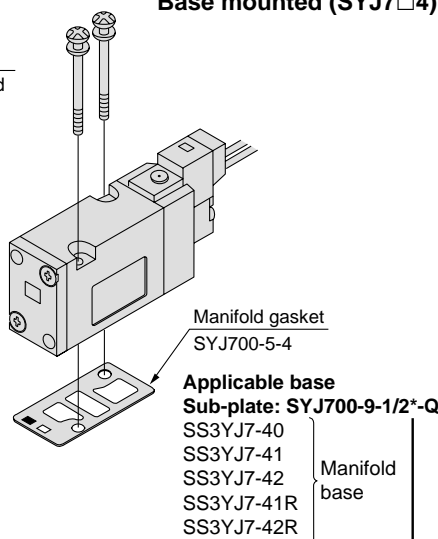
## Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

## Blank Plate Assembly

### Body ported (SYJ7□2)



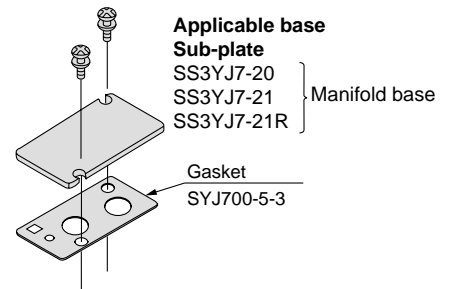
### Base mounted (SYJ7□4)



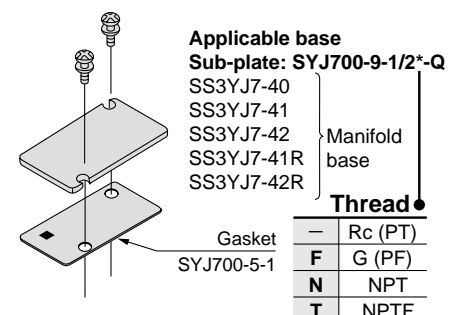
#### Thread

|   |         |
|---|---------|
| — | Rc (PT) |
| F | G (PF)  |
| N | NPT     |
| T | NPTF    |

### SYJ700-10-2A-1-Q



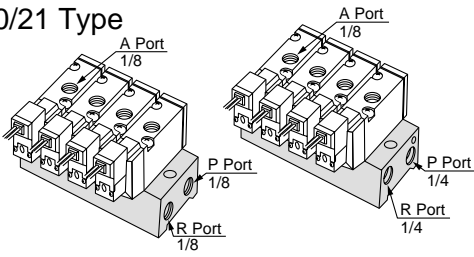
### SYJ700-10-2A-2-Q



# Series SYJ700

## Manifolds for Internal Pilot

### 20/21 Type



#### How to Order

**SS3YJ7-20-05-□-Q**

| Valve model | Stations       | P,R port Thread |
|-------------|----------------|-----------------|
| 20 20 Type  | 02 2 stations  | - Rc (PT)       |
| 21 21 Type  | :              | 00F G (PF)      |
|             | 20 20 stations | 00N NPT         |
|             |                | 00T NPTF        |

#### Applicable solenoid valve

SYJ712-□□□□-01-Q  
SYJ712M-□□□□-01-Q  
SYJ722-□□□□-01-Q  
SYJ722M-□□□□-01-Q

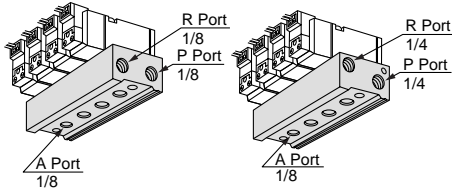
#### Applicable blank plate ass'y

SYJ700-10-2A-Q



Note) If there are more than 6 stations in type 20 or more than 9 stations in 21 type, supply air to both sides of "P" port and exhaust air from both sides of "R" port.

### 40/41 Type



#### How to Order

**SS3YJ7-40-05-01-□-Q**

| Valve model | Stations       | A port side | P,R port Thread |
|-------------|----------------|-------------|-----------------|
| 40 40 Type  | 02 2 stations  | 01 1/8      | - Rc (PT)       |
| 41 41 Type  | :              |             | F G (PF)        |
|             | 20 20 stations |             | N NPT           |
|             |                |             | T NPTF          |

#### Applicable solenoid valve

SYJ714-□□□□-Q  
SYJ714M-□□□□-Q  
SYJ724-□□□□-Q  
SYJ724M-□□□□-Q

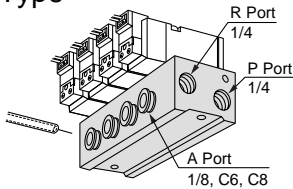
#### Applicable blank plate ass'y

SYJ700-10-2A-Q



Note) If there are more than 6 stations in type 40 or more than 9 stations in 41 type, supply air to both sides of "P" port and exhaust air from both sides of "R" port.

### 42 Type



#### How to Order

**SS3YJ7-42-05-C6-□-Q**

| Stations       | A port side             | P,R port Thread |
|----------------|-------------------------|-----------------|
| 02 2 stations  | 01 1/8                  | - Rc (PT)       |
| :              |                         | F G (PF)        |
| 20 20 stations | C6 ø6 One-touch fitting | N NPT           |
|                | C8 ø8 One-touch fitting | T NPTF          |

#### Applicable solenoid valve

SYJ714-□□□□-Q  
SYJ714M-□□□□-Q  
SYJ724-□□□□-Q  
SYJ724M-□□□□-Q

#### Applicable blank plate ass'y

SYJ700-10-2A-Q

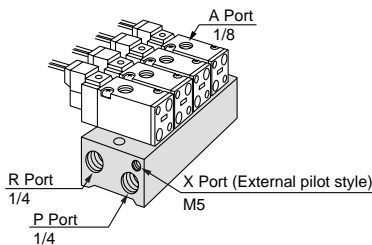


Note) If more than 9 stations, supply air to both sides of "P" Port and exhaust air from both sides of "R" port.

## Manifolds for External Pilot

Pilot valve pressure is isolated from main valve pressure through a separate supply line. This is suitable for vacuum (up to -100kPa) and low pressure 0.15MPa applications.

### 21R Type



#### How to Order

**SS3YJ7-21R-05-□-Q**

| Stations       | P,R port Thread |
|----------------|-----------------|
| 02 2 stations  | - Rc (PT)       |
| :              | 00F G (PF)      |
| 20 20 stations | 00N NPT         |
|                | 00T NPTF        |

#### Applicable solenoid valve

SYJ712R-□□□□-01-Q  
SYJ722R-□□□□-01-Q

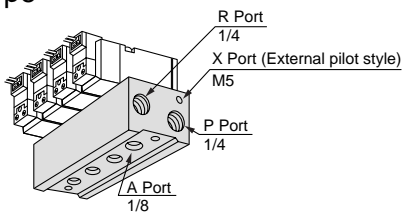
#### Applicable blank plate ass'y

SYJ700-10-2A-1-Q  
SYJ700-10-2A-2-Q



Note) If more than 9 stations, supply air to both sides of "P" or "R" port and exhaust air from both sides of "R" or "P" port.

### 41R Type



#### How to Order

**SS3YJ7-41R-05-01-□-Q**

| Stations       | A port side | P,R port Thread |
|----------------|-------------|-----------------|
| 02 2 stations  | 01 1/8      | - Rc (PT)       |
| :              |             | F G (PF)        |
| 20 20 stations |             | N NPT           |
|                |             | T NPTF          |

#### Applicable solenoid valve

SYJ714R-□□□□-Q  
SYJ724R-□□□□-Q

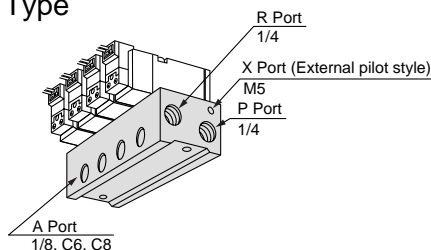
#### Applicable blank plate ass'y

SYJ700-10-2A-Q



Note) If more than 9 stations, supply air to both sides of "P" or "R" port and exhaust air from both sides of "R" or "P" port.

### 42R Type



#### How to Order

**SS3YJ7-42R-05-01-□-Q**

| Stations       | A port side             | P,R port Thread |
|----------------|-------------------------|-----------------|
| 02 2 stations  | 01 1/8                  | - Rc (PT)       |
| :              |                         | F G (PF)        |
| 20 20 stations | C6 ø6 One-touch fitting | N NPT           |
|                | C8 ø8 One-touch fitting | T NPTF          |

#### Applicable solenoid valve

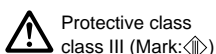
SYJ714R-□□□□-Q  
SYJ724R-□□□□-Q

#### Applicable blank plate ass'y

SYJ700-10-2A-Q



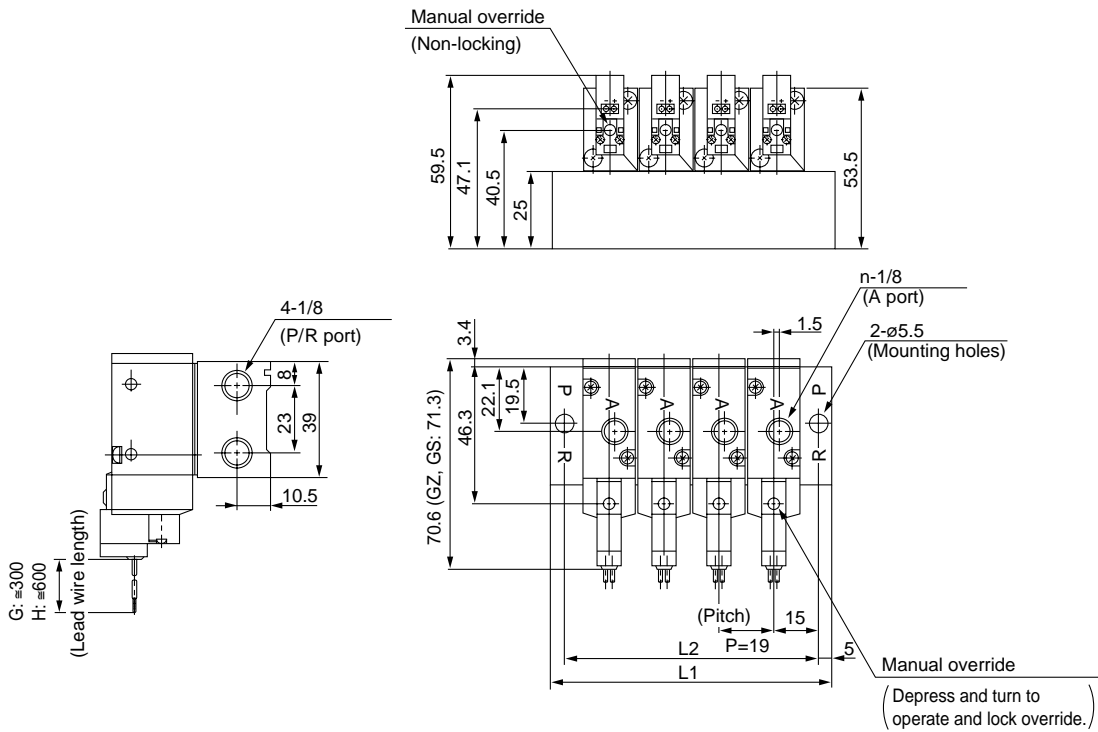
Note) If more than 9 stations, supply air to both sides of "P" or "R" port and exhaust air from both sides of "R" or "P" port.





## 20 Type Manifold: Top Ported / SS3YJ7-20-Station -Q

### Grommet (G), (H)



SY

SYJ

VK

VZ

VT

VT

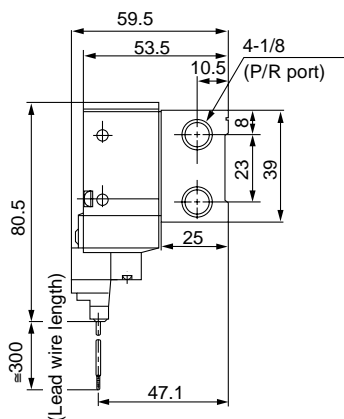
VP

VG

VQ

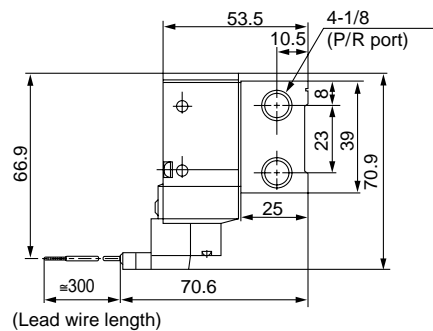
VQZ

### L plug connector (L)



\* Other dimensions are the same as the grommet.

### M plug connector (M)



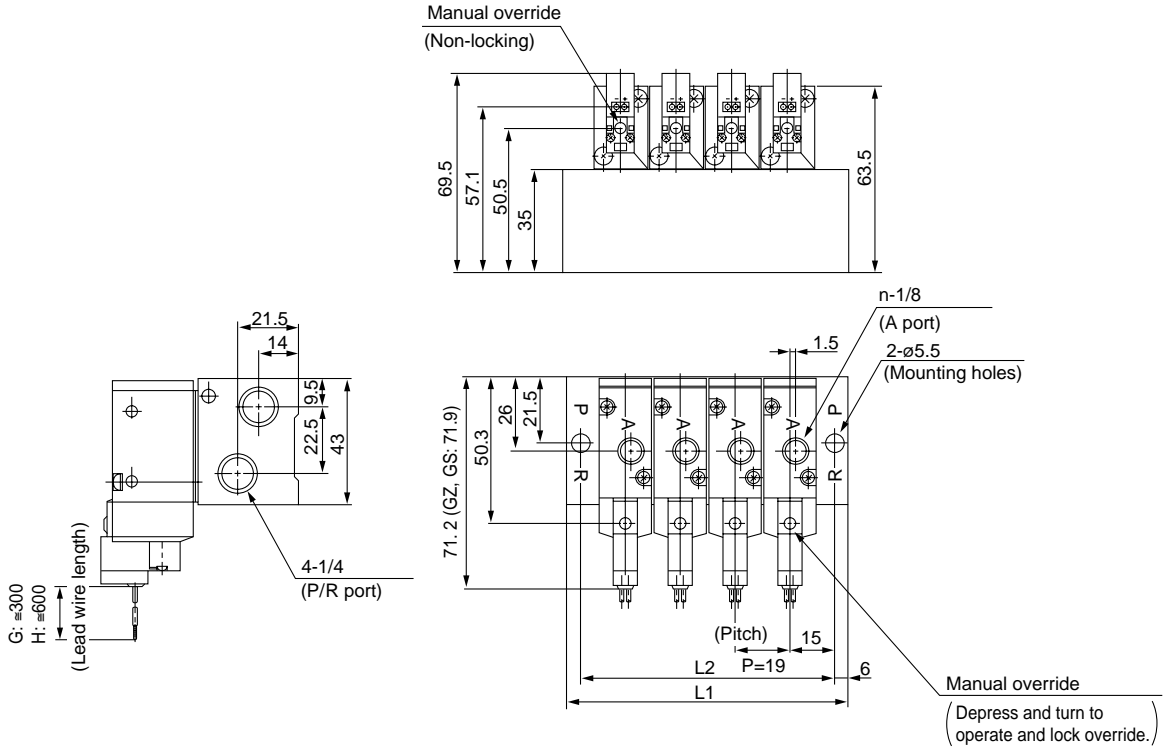
\* Other dimensions are the same as the grommet.

| Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1      | 59 | 78 | 97 | 116 | 135 | 154 | 173 | 192 | 211 | 230 | 249 | 268 | 287 | 306 | 325 | 344 | 363 | 382 | 401 |
| L2      | 49 | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391 |

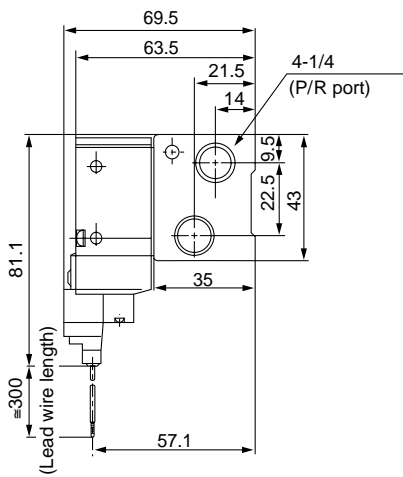
# Series SYJ700

## 21 Type Manifold: Top Ported/SS3YJ7-21-Station-Q

### Grommet (G), (H)

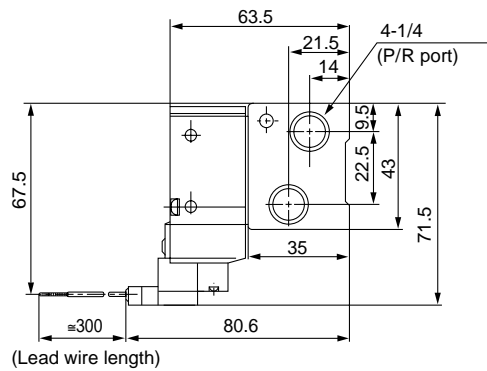


### L plug connector (L)



\* Other dimensions are the same as the grommet.

### M plug connector (M)

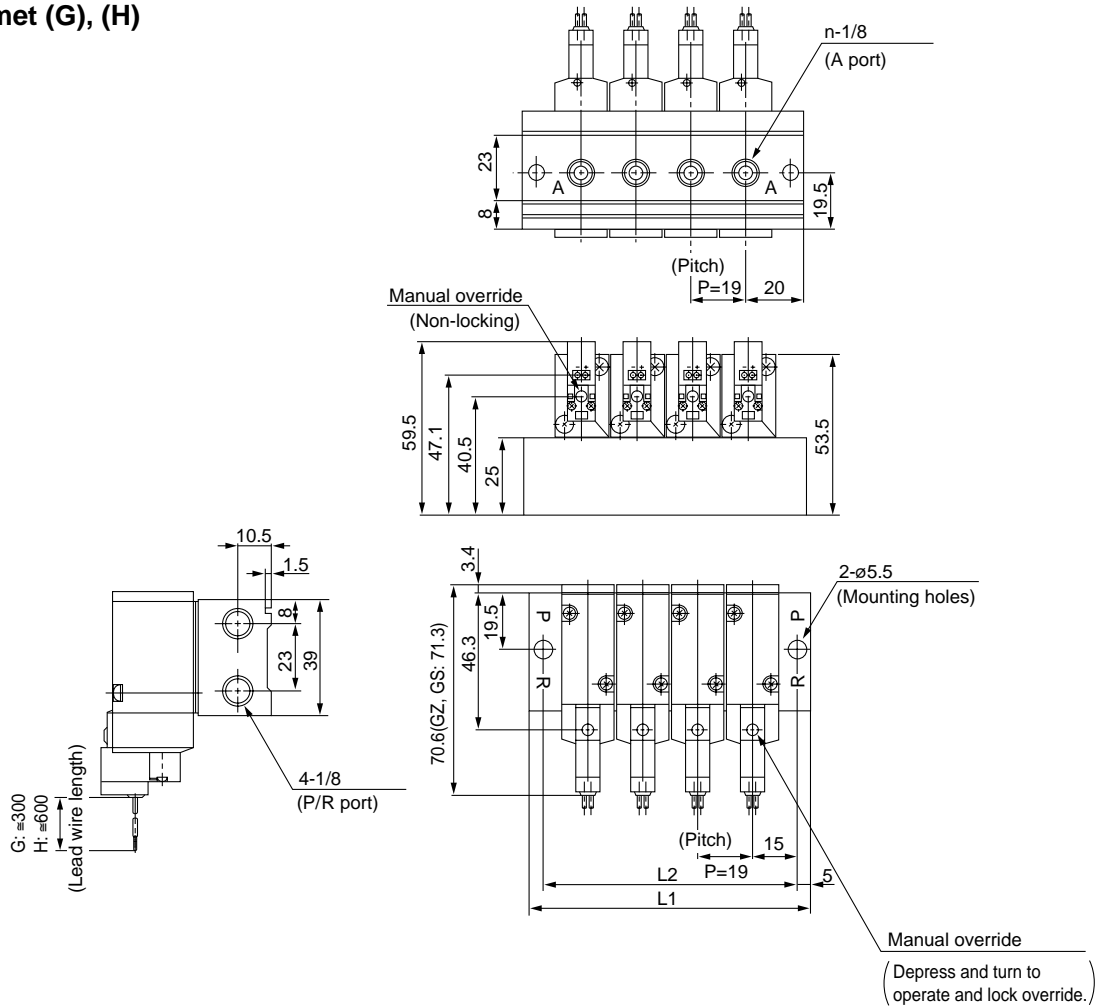


\* Other dimensions are the same as the grommet.

| Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1      | 61 | 80 | 99 | 118 | 137 | 156 | 175 | 194 | 213 | 232 | 251 | 270 | 289 | 308 | 327 | 346 | 365 | 384 | 403 |
| L2      | 49 | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391 |

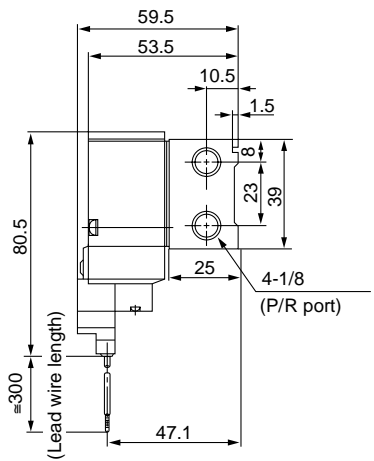
## 40 Type Manifold: Bottom Ported/SS3YJ7-40-Station -01-Q

### Grommet (G), (H)



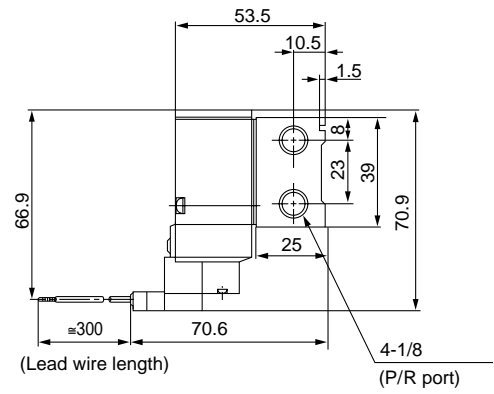
- SY
- SYJ**
- VK
- VZ
- VT
- VT
- VP
- VG
- VQ
- VQZ

### L plug connector (L)



\* Other dimensions are the same as the grommet.

### M plug connector (M)



\* Other dimensions are the same as the grommet.

| Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1      | 59 | 78 | 97 | 116 | 135 | 154 | 173 | 192 | 211 | 230 | 249 | 268 | 287 | 306 | 325 | 344 | 363 | 382 | 401 |
| L2      | 49 | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391 |

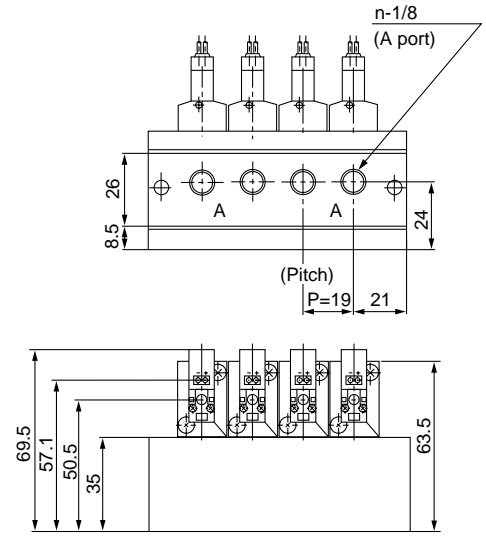
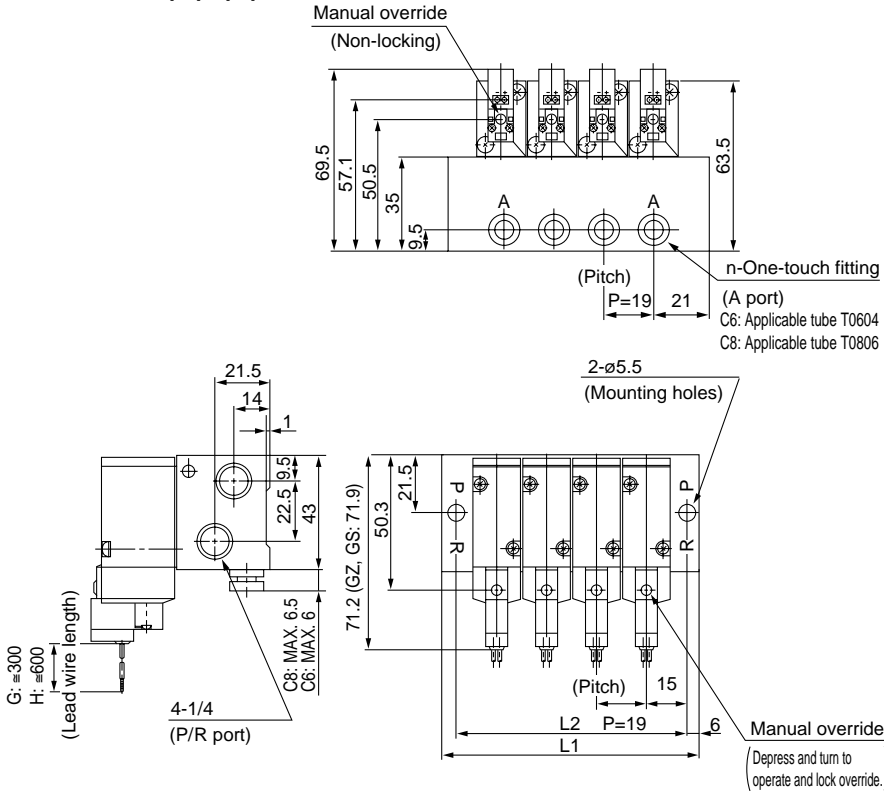
# Series SYJ700

42 Type Manifold: Side Ported/SS3YJ7-42-Station -01, C6, C8-Q

41 Type: Bottom Ported/SS3YJ7-41-Station -01-Q

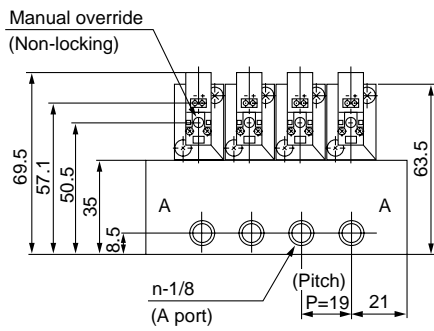
Grommet (G), (H)

SS3YJ7-41-Station -01-Q



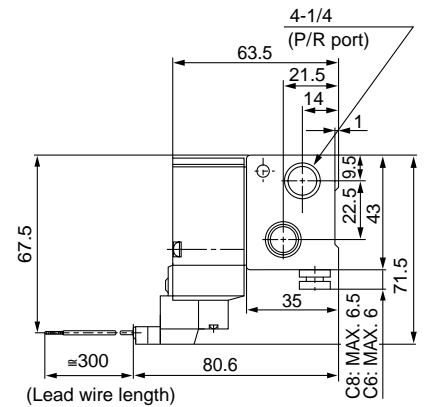
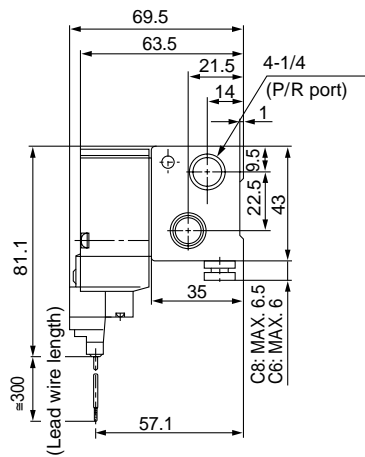
\* Other dimensions are the same as type 42.

1/8



L plug connector (L)

M plug connector (M)



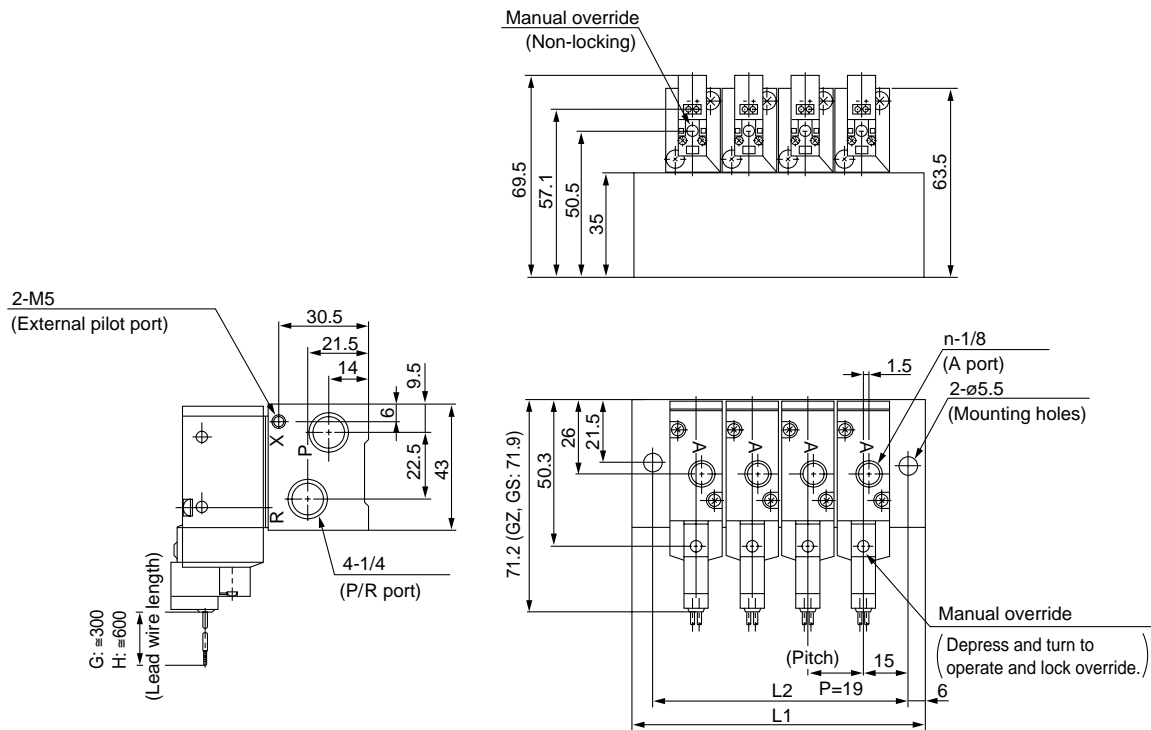
\* Other dimensions are the same as the grommet.

\* Other dimensions are the same as the grommet.

| Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1      | 61 | 80 | 99 | 118 | 137 | 156 | 175 | 194 | 213 | 232 | 251 | 270 | 289 | 308 | 327 | 346 | 365 | 384 | 403 |
| L2      | 49 | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391 |

## 21R Type Manifold: Top Ported (External Pilot)/SS3YJ7-21R- Station-Q

Grommet (G), (H)



SY

SYJ

VK

VZ

VT

VT

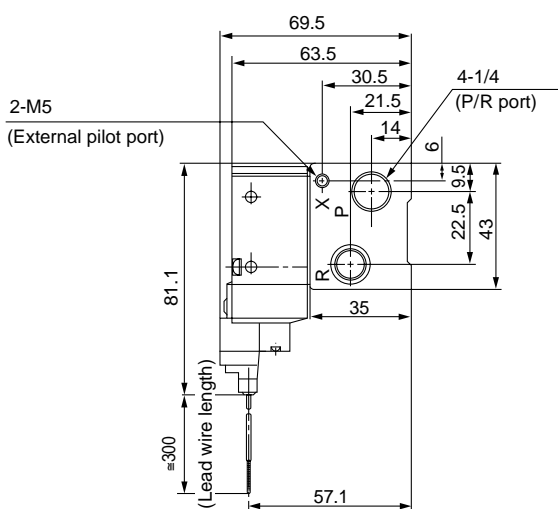
VP

VG

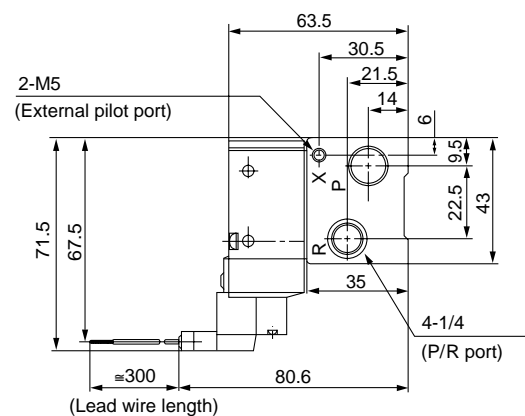
VQ

VQZ

### L plug connector (L)



### M plug connector (M)



\* Other dimensions are the same as the grommet.

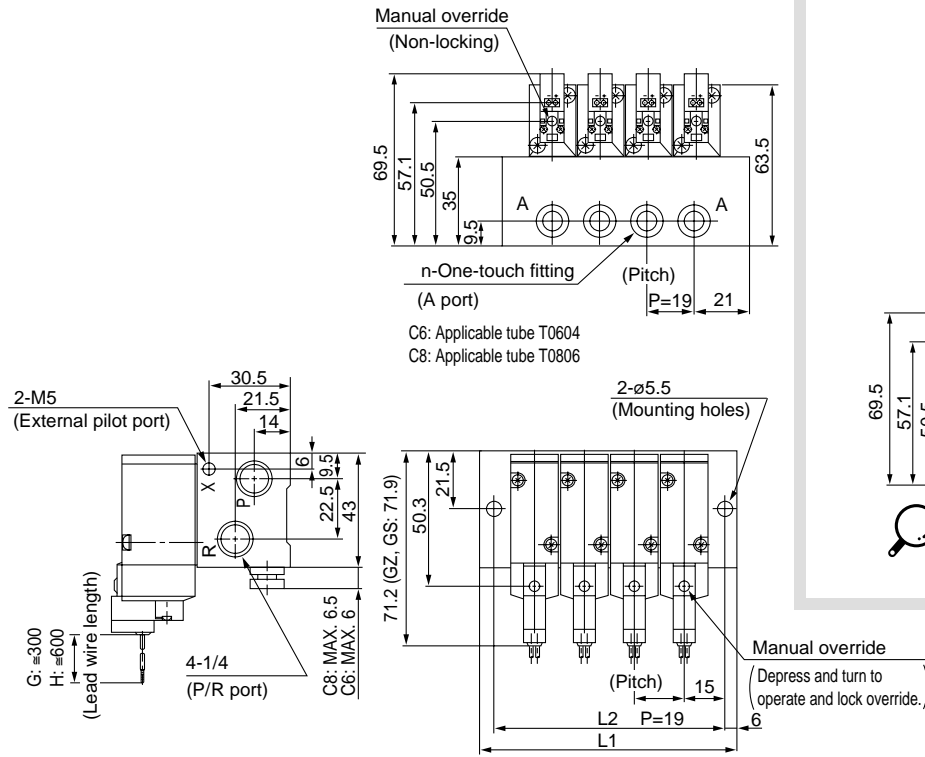
\* Other dimensions are the same as the grommet.

| Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1      | 61 | 80 | 99 | 118 | 137 | 156 | 175 | 194 | 213 | 232 | 251 | 270 | 289 | 308 | 327 | 346 | 365 | 384 | 403 |
| L2      | 49 | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391 |

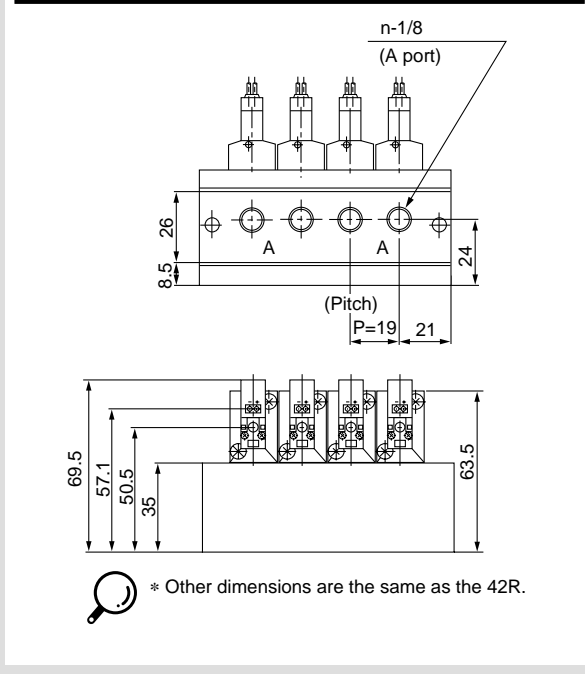
# Series SYJ700

42R Type Manifold: Side Ported/SS3YJ7-42R-Station -01, C6, C8-Q

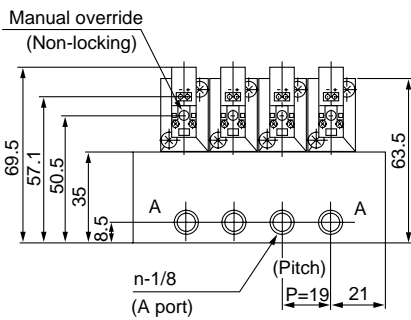
Grommet (G), (H)



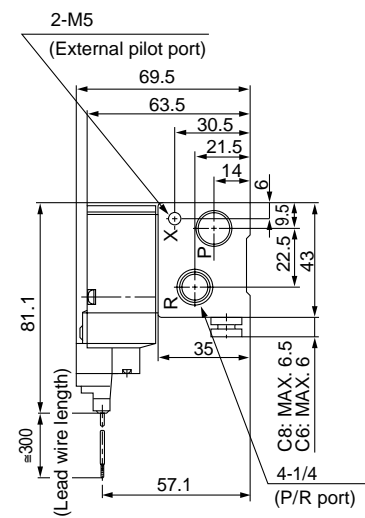
41R Type: Bottom Ported (External Pilot)/SS3YJ7-41R-Station -01-Q



1/8

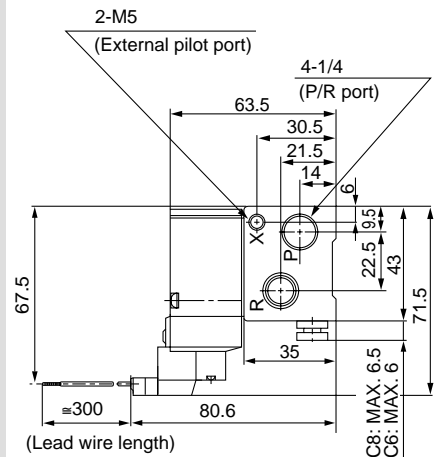


L plug connector (L)



\* Other dimensions are the same as the grommet.

M plug connector (M)



\* Other dimensions are the same as the grommet.

| Station | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|---------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1      | 61 | 80 | 99 | 118 | 137 | 156 | 175 | 194 | 213 | 232 | 251 | 270 | 289 | 308 | 327 | 346 | 365 | 384 | 403 |
| L2      | 49 | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391 |

# Series SYJ300/500/700 Made to Order

(Contact SMC regarding detailed specifications, dimensions and delivery.)



## Power Saver

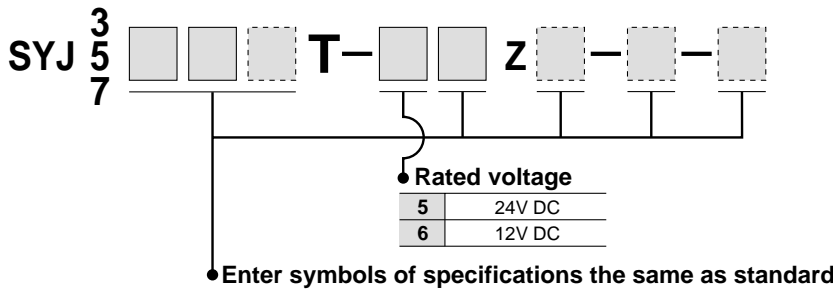
Power consumption is decreased by 1/3 reducing the wattage required to hold the valve in an energized state.  
(When the rated 24V DC is applied, its effectiveness will be exhibited at an energization time exceeding 62ms.)

### Specifications

|                        |   |      |
|------------------------|---|------|
| Series                 | SYJ <sup>300</sup> <sub>500</sub> <sup>T</sup> <sub>700</sub> |      |
| Coil rated voltage (V) | 24, 12V DC  |      |
| Power consumption (W)  | Inrush  | 0.55 |
|                        | Holding   | 0.22 |

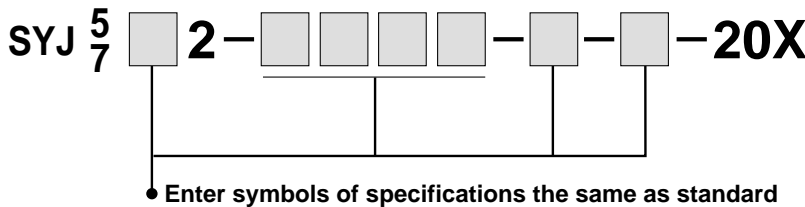
Specifications other than above are the same as standard models.

### How to Order



### Body ported external pilot

How to Order Applicable solenoid valve series/SYJ5□2, SYJ7□2



### Operating pressure range (MPa)

|                          |                |
|--------------------------|----------------|
| Operating pressure range | -100kPa to 0.7 |
| Pilot pressure range     | 0.15 to 0.7    |

### Dimensions

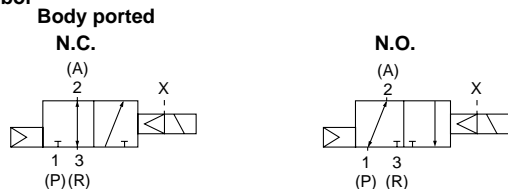
SYJ500: 8mm longer

SYJ700: 8mm longer

### External pilot port

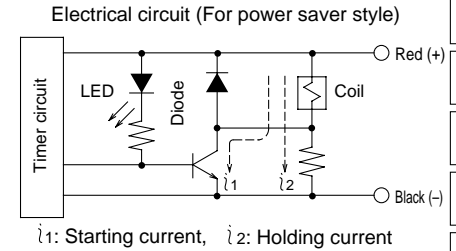
|                |           |
|----------------|-----------|
| Series         | Port size |
| SYJ500, SYJ700 | M5        |

### JIS symbol

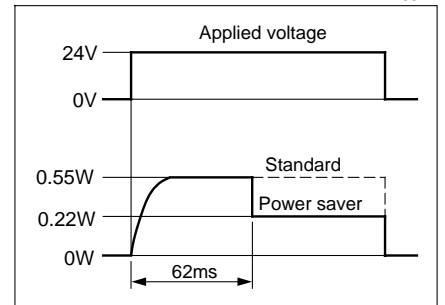


### Operating principle

The circuit shown below reduces current consumption at holding which reduces the overall power consumption.  
Refer to following power wave form.



<Power saver style power wave SYJ<sup>300</sup><sub>500</sub><sup>T</sup><sub>700</sub>>



SY

SYJ

VK

VZ

VT

VT

VP

VG

VQ

VQZ

