5 Port Solenoid Valve

SY3000/5000/7000/9000 Series

Rubber Seal

The EX510 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

The connection cable and various units for PLC connection in PC wiring systems have been discontinued by the manufacturer. Therefore, while they can no longer be provided, the valve manifold (manifold with built-in valves) can still be ordered. For details, refer to the **Web Catalog**.





• Flow Rate Characteristics

| Series | Flow rate ch | aracteristics | |
|--------|-----------------|---------------|------|
| Series | C [dm³/(s·bar)] | b | Cv |
| SY3000 | 1.1 | 0.28 | 0.29 |
| SY5000 | 2.8 | 0.37 | 0.90 |
| SY7000 | 4.5 | 0.28 | 1.4 |
| SY9000 | 10 | 0.29 | 2.5 |

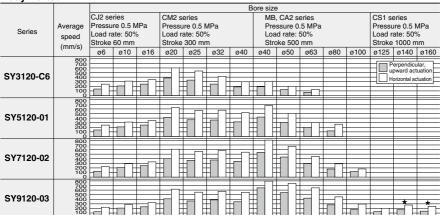
Long servise life

* Please contact SMC if life test data is required.

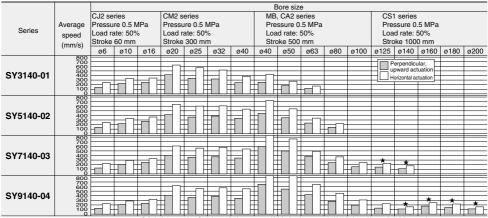
Cylinder Speed Chart

Body Ported

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.



Base Mounted



- Cylinder is in extending. Speed controller is meter-out, which is directly connected Average speed of cylinder is obtained by dividing the full stroke time by the stroke Load factor (Load mass x 9.8) Theoretical force) x 100%
- is with \bigstar marked are the case when piping is done by using steel.

Conditions

| Body | / ported | CJ2 series | CM2 series | MB, CA2 series | CS1 series |
|-----------|----------------------|-------------|-------------|----------------|------------|
| | Tubing bore x Length | T | 0604 x 1 r | n | |
| SY3120-C6 | Speed controller | A | S2052F-06 | 6A | |
| | Silencer | | AN120-M5 | 5 | |
| | Tubing bore x Length | T0604 x 1 m | T0806 | 3 x 1 m | |
| SY5120-01 | Speed controller | AS3002F-06A | AS300 | 2F-08A | |
| | Silencer | | AN101-01 | | _ |
| | Tubing bore x Length | T0604 x 1 m | T1075 | x 1 m | _ |
| SY7120-02 | Speed controller | AS3002F-06A | AS400 | 2F-10A | _ |
| | Silencer | | AN110-01 | | _ |
| | Tubing bore x Length | T0604 x 1 m | T1075 x 1 m | T1209 | x 1 m |
| SY9120-03 | Speed controller | AS3002F-06A | AS4002F-10A | AS400 | 2F-12A |
| | Silencer | | AN20-02 | | AN202-02 |

Conditions [When using SGP (steel pipe)]

| Body | / ported | CS1 series |
|-----------|----------------------|--------------|
| | Tubing bore x Length | SGP10A x 1 m |
| SY9120-03 | Speed controller | AS420-03 |
| | Silencer | AN20-02 |

Conditions

| Base | mounted | CJ2 series | CM2 series | MB, CA2 series | CS1 series |
|-----------|----------------------|-------------|-------------|----------------|------------|
| | Tubing bore x Length | Т | 0604 x 1 r | n | _ |
| SY3140-01 | Speed controller | A | S3002F-06 | SA . | - |
| | Silencer | | AN110-01 | | - |
| | Tubing bore x Length | | | x1m | - |
| SY5140-02 | Speed controller | AS3002F-06A | AS300 | 2F-08A | 1 |
| | Silencer | | AN20-02 | | - |
| | Tubing bore x Length | | | T1209 x 1 m | 1 |
| SY7140-03 | Speed controller | AS3002F-06A | AS400 | 2F-10A | 1 |
| | Silencer | | AN30-03 | | - |
| | Tubing bore x Length | | | | x 1 m |
| SY9140-04 | Speed controller | AS3002F-06A | AS4002F-10A | AS400 | 2F-12A |
| | Silencer | | AN4 | 0-04 | |

Conditions [When using SGP (steel pipe)]

| Base | mounted | CS1 series |
|-----------|----------------------|--------------|
| | Tubing bore x Length | SGP10A x 1 m |
| SY7140-03 | Speed controller | AS420-03 |
| | Silencer | AN30-03 |
| | Tubing bore x Length | SGP15A x 1 m |
| SY9140-04 | Speed controller | AS420-04 |
| | Silencer | AN40-04 |

Valve Variations

| | | | | | Ac | tuati | ion | | V | oltage | ı | Elec | trica | l ent | ry | Note 1) |
|--------------|--------|--------|--|---------------|--------|---------------|-------------------|--------------------|---|--|---------|------------------|------------------|--------------|--------------|--------------------------------|
| | Series | 5 | Sonic conductance C [dm³/(s·bar)] { 4/2→5/3 (A/B→EA/EB)} | Single Single | Double | Closed center | Exhaust center so | Pressure center oi | DC 24 V 12 V 6 V 5 V 3 V | AC 100 V 50/60 Hz 110 V 50/60 Hz 200 V 50/60 Hz 220 V 50/60 Hz | Grommet | L plug connector | M plug connector | DIN terminal | M8 connector | Light/surge voltage suppressor |
| ъ | P.732 | SY3□20 | 0.65 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| porte | | SY5□20 | 2.4 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Body ported | | SY7□20 | 3.3 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| " | | SY9□20 | 8.6 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| p | P.748 | SY3□40 | 1.1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| ounte | | SY5□40 | 2.8 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Base mounted | | SY7□40 | 4.5 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Ba | | SY9□40 | 10 | • | • | • | • | • | • | • | • | • | • | • | • | • |

| | | | anu ⁄erri | | | | P, E | | | 3 | | | | | , | 4, E | 3 p | ort | siz | е | | | | | | | Val | ve | op | tion | 1 | |
|--------------|--------|-----------------------|--------------------------------|------------------------------|---------|----|----------|-----|-----|-----|----|-----|-----|-----|-----|------|-----|-----|------|-----|------|------|----|-----|------------------|---|-----------------------|-----------------------------|-------------------------------|-------------------|--------------------|-----------------|
| | Series | Non-locking push type | Push-turn locking slotted type | Push-turn locking lever type | | M5 | 1/8 | 1/4 | 3/8 | 1/2 | M5 | 1/8 | 1/4 | 3/8 | 1/2 | | (| On€ | e-to | ucl | h fi | ttin | g | | hrottle | Oil resistant (Other than designated turbine oil) | Vacuum specifications | Low pressure specifications | | Note 3) | regulator | ve SY |
| | | Non-lockin | Push-tum loc | Push-turn loo | Bracket | | | | | | | | | | | | C6 | C8 | C10 | C12 | N3 | N7 | N9 | N11 | Exhaust throttle | Oil resistant (Other th | Vacuum sp | Low pressur | Dual pressure | Enclosure IP65 | Interface regulato | 3 Port valve SY |
| - | SY3□20 | • | • | • | • | | _ | _ | _ | _ | | _ | _ | _ | _ | • | • | _ | _ | _ | | • | _ | _ | | | | | | | | • |
| oorte | SY5□20 | • | • | • | • | _ | • | _ | _ | _ | _ | • | _ | - | _ | • | • | • | _ | _ | • | • | • | _ | | | | | | | | • |
| Body ported | SY7□20 | • | • | • | • | _ | (EA, EB) | (P) | _ | _ | _ | _ | • | _ | _ | _ | _ | • | • | _ | _ | _ | • | • | | | External Pilot | External Pilot | External Pilot (Note 2) | I DIN terminal | | _ |
| ш | SY9□20 | • | • | • | _ | _ | _ | • | _ | _ | _ | _ | • | • | _ | _ | _ | • | • | • | _ | _ | • | • | | | (Nute 2) | (Note 2) | (NUE 2) | connector | | _ |
| eq | SY3□40 | • | • | • | _ | _ | • | _ | _ | _ | _ | • | _ | - | _ | _ | - | _ | _ | _ | _ | - | _ | _ | | | | | | | | • |
| ount | SY5□40 | • | • | • | _ | _ | _ | • | _ | _ | _ | _ | • | _ | _ | _ | _ | _ | _ | _ | _ | _ | _ | _ | | | | | | | | • |
| Base mounted | SY7□40 | • | • | • | _ | _ | _ | • | • | _ | _ | _ | • | • | _ | _ | _ | _ | _ | _ | _ | _ | _ | _ | Sub- plate | | External pilot | External pilot | External pilot | terminal | | _ |
| ä | SY9□40 | • | • | • | _ | _ | _ | _ | • | • | _ | | _ | • | • | _ | _ | _ | _ | _ | _ | _ | _ | _ | | | | | | M8 connector | _ | Ē |

[●] Standard ● Option ▲ Made to order (Refer to page "Made to Order".)

Note 1) All AC voltage models have built-in surge voltage suppressor.



Note 2) Body ported external pilot type (made to order) is not available for DIN terminal.

Note 3) Only available for DIN terminal and M8 connector.

Note 4) SY3000 does not have a DIN terminal which can be connected to a manifold.

| | | | | | | | | nnecti | Nirin _o | g | | ^ | |
|-------------|---|--|----------------------------|-----------------|-------------------|-----------------------------|------------------|---------------|-----------------------------------|---------------------------------|-----------------------------|-----------------|-----------------|
| | Manifold Va | ariations | | Valve Series | Individual wiring | Flat ribbon cable (26 pins) | e (20 pins) x | | ype flat ribbon , 20, 10 pins) | n type terminal (9, 18 pins) | Serial transmission unit | Positive common | Negative common |
| | | | | 5 port | Indiv | Flat r (26 p | Flat rib | Plug- conn | Plug-i cable (| Plug-in t block (9 | Seria unit | Posit | Nega |
| | Bar stock type | | Туре 20 | SY3□20 | | | | | | | | | |
| | ■ Direct piping to the main unit of a valve. Combination of | | P. 766 | SY5□20 | • | - | — | _ | - | _ | _ | _ | - |
| | different fittings is possible. | | | SY7□20 | | | | | | | | | |
| | Bar stock type | | Type 20P | SY3□20 | | | | | | | | | Note) |
| | ■ A 26 pins MIL connector permits One-touch wiring of | | P. 776 | SY5□20 | - | • | — | _ | - | _ | _ | | |
| | external cables in a bundle. | and the second | | SY7□20 | | | | | | | | In con | nmon |
| rted | Stacking type Individual wiring Manifold stations can be increased or decr | eased. | Type 23 P. 772 | SY9□20 | • | _ | _ | _ | _ | ı | ı | _ | _ |
| Body ported | Stacking type Flat ribbon cable Manifold stations can be increased or decr | eased. | Type 23P P. 782 | SY9□20 | _ | • | _ | _ | _ | _ | _ | In cor | Note) |
| 000 | Bar stock type EX510 gateway type | | Type 20SA | SY3□20 | | | | | | | | | |
| 10 | Can be used with a serial transmission system. | | P. 786 | SY5□20 | _ | _ | _ | _ | _ | _ | | _ | - |
| | transmission system. | The same of the sa | | SY7□20 | | | | | | | | | |
| | Stacking type EX510 gateway type Can be used with a serial transmission system. | | Type 23SA P. 792 | SY9□20 | _ | _ | _ | _ | _ | _ | • | _ | _ |
| | Cassette type | | Туре 60 | SY3□60 | • | _ | _ | _ | _ | _ | _ | _ | _ |
| | Size and weight reduced by eliminating the manifold base | | P. 800 | SY5□60 | • | _ | _ | _ | _ | _ | _ | _ | |
| | Standard Option A Made to | 766 | Made to Orde | SY7□60 | • | _ | _ | _ | _ | _ | _ | _ | _ |

Standard ○ Option ▲ Made to order (Refer to page "Made to Order".)
Note) When there are polarities, the positive common specifications are used.

| | | Ma | nif | old | opt | ion | | | | | | | Α | , B | por | t siz | ze | | | | | | | | | Va | lve | opt | ion | | | | | cuum |
|----------------|-----------------------|-----------------------|----------------|----------------|----------------------|--------------------------------|-------------------|-----------|----|-----|-----|-----|----|-----|-----|-------|------|-------|------|----|-----|------------------|------------------------|---|-----------------------|-----------------------------|-----------------------------|------------------------------|-------------------|---------------|---------------------|--------------------|---------------------|--|
| Blanking plate | Individual SUP spacer | Individual EXH spacer | SUP block disk | EXH block disk | Label for block disk | Silencer for One-touch fitting | Built-in silencer | Connector | M5 | 1/8 | 1/4 | 3/8 | | | On | e-tc | oucl | n fit | ting | | | Mixed mounting | ort valve/Mixed unting | Oil resistant (Other than designated turbine oil) | Vacuum specifications | Low pressure specifications | Different pressure | Dual pressure | Exhaust throttle | Bundle wiring | Mixed fitting sizes | enclosure | Interface regulator | Valves with function/Vacuum release valve with restrictor |
| Blank | Individu | Individu | SUP | EXH | Label | Silencer | Built- | Conn | | | | | C4 | C6 | C8 | C10 | C12 | N3 | N7 | N9 | N11 | SY3000 SY5000 | SY300 SY500 | Oil resi | Vacuur | Low pres | Differ | Dual | Exha | Bund | Mixed | IP65 | Interfa | Valves |
| | | | | | | | | | | _ | — | _ | | | _ | _ | _ | | | _ | _ | | | | | | | | | | | Note) | | |
| | | | _ | _ | _ | _ | _ | _ | _ | • | _ | _ | • | | | _ | _ | | | • | _ | _ | • | ▲ | _ | _ | Indvidual | _ | Individual | _ | _ | Note) | _ | |
| P.795 | P.795 | P.795 | | | | | | | _ | _ | | _ | _ | _ | • | • | _ | _ | _ | • | • | | _ | | | | SUP interface | | EXH interface | | | Note) | | |
| | | | | | | | | | | _ | _ | _ | • | • | _ | _ | _ | • | | _ | _ | | • | | | | | | | | | | | |
| | | | - | _ | - | - | _ | - | _ | • | _ | _ | | • | | _ | _ | | | • | _ | _ | • | | _ | _ | Individual | - | Individual | • | _ | - | - | |
| P.795 | P.795 | P.795 | | | | | | | — | _ | | _ | _ | _ | • | • | _ | _ | _ | • | • | | _ | | | | SUP interface | | EXH interface | | | | | |
| | | • | | | • | _ | _ | _ | _ | _ | • | • | _ | _ | • | • | • | _ | _ | • | • | _ | _ | ▲ | External | External | Individual SUP | External | Individual | _ | _ | Note) | | |
| P.795 | P.795 | P.795 | P.797 | P.797 | P.797 | | | | | _ | | | | | | | | | | | | | | | pilot | pilot | block disk | pilot | EXH | | | | - | Н |
| | | | | | | _ | _ | _ | _ | - | | • | _ | _ | • | | • | _ | _ | • | • | _ | _ | ▲ | External | External | Individual SUP | External | Individual | | _ | - | | $\left -\right $ |
| P.795 | P.795 | P.795 | P.797 | P.797 | P.797 | | | | | | | | | | | | | | | | | | | | pilot | pilot | block disk | pilot | EXH | | | | | Н |
| | | | _ | _ | _ | _ | | | _ | | | | | | | | | | | | | _ | | | | _ | | _ | | | _ | | | |
| | | | | | | | | | | | | | | | • | | | | | | | | | | | | Individual SUP | | Individual EXH | | | | | |
| P.795 | P.795 | P.795 | | | | | | | | | | | | | | | | | | | | | | | | | interface | | interface | | | | | \vdash |
| • | | | - | - | - | - | - | | _ | - | • | • | - | - | • | • | • | _ | _ | • | • | - | - | ▲ | External | External | Individual SUP | External | Individual | | - | $\left - \right $ | - | $\left -\right $ |
| P.795 | P.795 | P.795 | | | | | | | | _ | | _ | | | | | | | | L | | | | _ | pilot | pilot | | pilot | EXH | | | Note) | | Н |
| | | | P.806 | P.806 | P.806 | P.806 | | | | | | | | | | | | | | | | | | _ | External pilot | | Individual SUP Dock disk | 000.00 | | | | Note) | | \exists |
| | | | P.806 | P.806 | P.806 | P.806 | | | | | _ | _ | | | • | _ | | | | | | | - | _ | External plot | External pilot | | Individual SUP Stock disk | | | | Note) | _ | H |
| | _ | _ | P.806 | P.806 | P.806 | P.806 | | | | | | | | | | | - | | | | | | | | External pilot | External pilot | Individual SUP Dods dok | Individual SUP block disk | | | | | | |

Note) When using DIN terminal or M8 connector. SY3000 does not have a DIN terminal which can be connected to a manifold.

| Manifold Variations Valve Series Valve Series Valve Series Valve Series Description Series Valve Series Description Series Valve Series Description Series Serie | Serial transmission unit | Positive common | Negative common suppose |
|--|--------------------------|-----------------|-------------------------|
| Valve Series Valve Series Series Valve Series | Serial transmission unit | | _ |
| Manifold Variations Series Series Series Manifold Variations Series Ser | Serial transmissic unit | Positive common | legative commo |
| Compact bar stock type Individual wiring The base mounting facilitates maintenance The part of the p | Serial transmi unit | Positive comr | legative com |
| Compact bar stock type Individual wiring The base mounting facilitates maintenance after valves are changed. P. 818 SY3 A1 SY3 A0 SY5 A0 | Serial tran | Positive c | egative |
| Compact bar stock type Individual wiring The base mounting facilitates maintenance after valves are changed. P. 818 SY3 A1 SY3 A0 SY5 A0 | Serial | Positiv | legat |
| Compact bar stock type Individual wiring The base mounting facilitates maintenance after valves are changed. P. 818 SY3 A1 SY3 A0 SY5 A0 | <u> </u> | ۵ | |
| Individual wiring ■ The base mounting facilitates maintenance after valves are changed. P. 818 SY5□40 | _ | | Z |
| after valves are changed. | | _ | _ |
| Compact har stock type | | | |
| Flat ribbon cable | _ | | Note) |
| ■ A 26 pins MIL connector permits one-touch wiring of external cables in a bundle. | | In com | nmon |
| Bar stock type/Common external EXH Individual wiring SY3□40 | | | |
| ■ The base mounting facilitates P. 818 SY5 40 ■ | _ | _ | - |
| maintenance after valves are changed. Vacuum/low pressure combination system is possible. SY7□40 | | | |
| Bar stock type/Common external EXH | | | |
| ■ A 26 pins MIL connector permits one-touch P. 834 SY5 40 — — — — | _ | ď | Note) |
| wiring of external cables in a bundle. ■ Vacuum/low pressure combination system is possible. SY7□40 | | In com | nmon |
| Stacking type // /2 | | | |
| Manifold stations can be increased as decreased | _ | _ | - |
| Stacking type | | ١, | Note) |
| Flat ribbon cable Manifold stations can be increased or decreased. SY9 40 | _ | • | |
| Bar stock type ANSA SY3□40 | | In com | IIIIOII |
| EX510 gateway type © Can be used with a serial P. 848 SY5 40 | | _ | _ |
| Stacking type Manifold stations can be increased or decreased. Manifold stations can be increased. Manifold stations can be increased. Manifold station | | | |
| Stacking type | | | |
| ■ Can be used with a serial SY9 40 | • | _ | - |
| transmission system. Stacking type/DIN rail mounted Individual wifeing | | | |
| ■ Stations can be increased on the DIN rail. Integrated | - | - | - |
| mounting of other electric parts is possible, too. Stacking type/DIN rail mounted Connector both | | | |
| Connector box ■ Sations can be increased or decreased on the DN rail. The provided P. 876 SY5 40 | - | | • |
| Stacking type/DIN rail mounted | | | |
| EX510 gateway type Can be used with a serial transmission system P. 884 SY5□40 | • | _ | - |
| transmission system. Stacking type/DIN rail mounted SY3 SY3 SY3 45 SY3 40 | | | |
| Plug-in Salions an increased or decreased on the Division A variety of controllined widers methods are necessity. P. 892 SY5 40 | • | | • |
| A vallety of centralized withing metrous are possible. | | | |
| Plug-in | • | _ | - |
| EX510 gateway type ■ Can be used with a serial transmission system. ■ Standard ■ Option ▲ Made to order (Refer to page "Made to Order".) | | | |

[●] Standard ● Option ▲ Made to order (Refer to page "Made to Order".)

Note) When there are polarities, the positive common specifications are used.

| | | M | anifo | old i | onti | ion | | | | | | | Δ | B | por | t eiz | , , | | | | | | | | | V/a | lvo | opti | ion | | | | |
|----------------|----------------------|----------------------|----------------|----------------|---------------------|--------------------------------|-------------------|-----------|------|-----|-----|-----|----|-----|-----|-------|--------|--------|-----|------|-----|------------------|------------------------|---|-----------------------|----------------------------|--------------------------------|-------------------|-------------------|---------------|---------------------|----------------|---------------------|
| | _ | | | Jiu ' | | _ | | | | | | | _^ | , D | POI | 312 | | | | | | | ь | = | 10 | _ | _ | | | | | | |
| Blanking plate | ndividual SUP spacer | ndividual EXH spacer | SUP block disk | EXH block disk | abel for block disk | Silencer for One-touch fitting | Built-in silencer | Connector | M5 | 1/8 | 1/4 | 3/8 | | | On | e-to | oucl | n fitt | ing | | | Mixed mounting | 855.3 Port valve/Mixed | Oil resistant (Other than designated turbine oil) | Vacuum specifications | ow pressure specifications | Different pressure | Dual pressure | Exhaust throttle | Bundle wiring | Mixed fitting sizes | IP65 enclosure | Interface regulator |
| Blan | Individ | Individ | SUP | EXH | Label | Silencer | Built | Conr | | | | | C4 | C6 | C8 | C10 | C12 | N3 | N7 | N9 | N11 | SY3000 SY5000 | SY300 SY500 | Oil res design | Vacuu | Low pre | Differ | Dual | Exha | Bunc | Mixed | IP65 | Interf |
| | | | | | | | | | | - | _ | - | | | _ | _ | _ | • | | _ | _ | | • | | | | | | | | | | |
| P.858 | P.858 | P.858 | | | | | | | _ | • | _ | _ | _ | • | • | _ | _ | _ | | • | _ | _ | • | | _ | | Individual SUP interface | | | | | Note) | |
| | | | | | | | | | | _ | _ | _ | • | • | _ | _ | _ | • | • | _ | _ | | • | | | | | | | | | | |
| P.858 | P.858 | P.858 | | | | _ | | _ | _ | • | _ | _ | _ | • | • | _ | _ | _ | • | • | _ | | • | | _ | | Individual SUP interface | | | | | _ | |
| | | | | | | | | | _ | • | _ | _ | • | • | _ | _ | _ | • | • | _ | _ | | • | | | | | | | | | Note) | |
| | | | _ | _ | _ | _ | _ | _ | _ | _ | • | _ | _ | • | • | _ | _ | _ | • | • | _ | _ | • | ▲ | • | | • | | _ | _ | _ | Note) | |
| P.858 | P.858 | P.858 | | | | | | | _ | _ | • | _ | _ | _ | _ | • | _ | _ | _ | _ | • | | _ | | External pilot | External pilot | Individual SUP interface | External pilot | | | | Note) | |
| | | | | | | | | | _ | • | _ | _ | • | • | _ | _ | _ | • | • | _ | _ | | • | | | | | | | | | | |
| | | | _ | _ | _ | _ | _ | _ | _ | _ | • | _ | _ | • | • | _ | _ | _ | • | • | _ | - | • | ▲ | External | External | Individual | External | _ | • | _ | _ | |
| P.858 | P.858 | P.858 | | | | | | | _ | _ | • | _ | _ | _ | _ | • | _ | _ | _ | _ | • | | _ | | pilot | pilot | SUP interface | pilot | | | | | |
| | | | | | | | | | | | | | | | • | | | | | | | | | | | | Individual | | | | | Note) | |
| P.858 | P.858 | P.858 | P.860 | P.860 | P.860 | P.860 | P.828 | | | | | | | | | | | | | | | | | | External pilot | External pilot | SUP block disk | External pilot | Individual EXH | | | | |
| | | • | | | | • | | | | | | | | | | | | | | | | | | | | | Irdividual | | | | | | |
| P.858 | P.858 | P.858 | | P.860 | | | P.842 | _ | | _ | | _ | | | • | | | | | | | _ | | • | External pilot | External pilot | SUP block disk | External pilot | Individual EXH | | | | |
| | | | | | | | | | _ | • | _ | _ | | | _ | _ | _ | | | _ | _ | | | | | | | | | | | | |
| | | | _ | _ | _ | - | _ | | _ | - | | - | — | | | _ | _ | _ | | | _ | - | • | ▲ | External | External | | External | _ | - | _ | _ | |
| P.858 | P.858 | P.858 | | | | | | P.859 | _ | _ | | _ | — | _ | _ | • | — | _ | _ | _ | • | | _ | | pilot | pilot | Individual SUP | pilot | | | | | |
| | | | | | | | | | | | | | | | • | • | • | | | | | | | | | | | • | | | | | |
| P.858 | P.858 | P.858 | P.860 | P.860 | P.860 | P.860 | | P.859 | | | | | | | | | | | | | | | | | External pilot | External pilot | Individual SUP | External | Individual EXH | | | | |
| | | | | | | | _ | _ | _ | _ | _ | _ | • | • | _ | _ | _ | • | • | _ | _ | | • | | | _ | Individual SUP | | | | | Note) | |
| | _ | P.867 | | P.867 | | P.867 | | | _ | _ | _ | _ | • | • | • | _ | _ | • | • | • | _ | | • | | External pilot | External pilot | spacer or block disk | | | | | Note) | |
| | | | | | | | _ | _ | _ | _ | _ | _ | • | • | _ | _ | _ | • | • | _ | _ | | • | | | | Individual | _ | | | | _ | |
| P.891 | P.878 | P.878 | P.878 | P.878 | P.878 | P.878 | | | _ | _ | _ | _ | | • | | _ | _ | • | • | • | _ | | • | | External pilot | External pilot | SUP spacer or block disk | | | | | | |
| | | | | | | | | | _ | - | _ | _ | | • | _ | _ | _ | • | • | _ | _ | _ | • | | | | Individual SUP | _ | _ | | | _ | |
| P.891 | | | | | | | | P.890 | _ | - | — | - | | • | • | _ | _ | • | • | • | _ | | • | | External pilot | External pilot | SUP spacer or block disk | | | | | | |
| | | | | | | | | _ | _ | _ | _ | _ | • | • | _ | _ | _ | • | • | _ | _ | _ | • | | | _ | Individual SUP | _ | | | | _ | |
| | P.925 | P.925 | P.925 | P.925 | | P.925 | | | _ | _ | _ | _ | • | • | • | _ | _ | • | • | • | _ | | • | | External pilot | External pilot | spacer or block disk | | | | | | |
| | | | | | | | | | _ | _ | _ | _ | | | _ | _ | _ | | • | _ | _ | _ | • | | | | Individual | | | • | | _ | |
| P.925 | P.925 | P.925 | P.925 | P.925 | P.925 | P.925 | | | _ | _ | _ | _ | | | | _ | _ | | | | _ | | • | | External pilot | External pilot | SUP spacer or block disk | | | | | | |
| Note | Mha | n uc | ina F | INI to | rmin | al or | 140 0 | onno | otor | CV2 | 000 | | | | DIN | torm | inal | biok | | ho o | | otod | + | moni | fold | | | | | | | | |

Note) When using DIN terminal or M8 connector. SY3000 does not have a DIN terminal which can be connected to a manifold.

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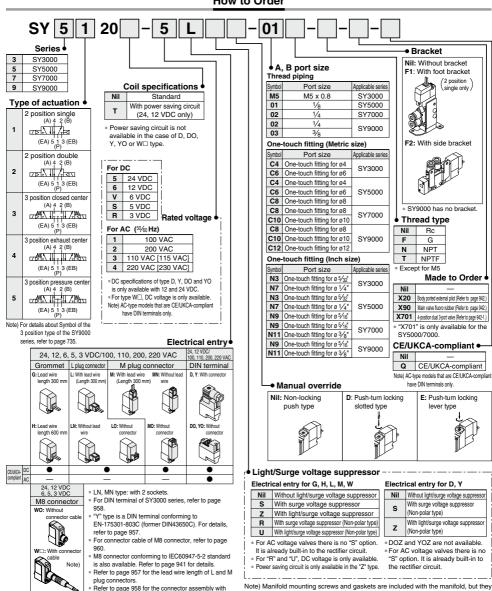


5 Port Solenoid Valve Body Ported/Single Unit

Note) AC-type models that are CE/UKCAcompliant have DIN terminals only.

SY3000/5000/7000/9000 Series

How to Order



warniou mourning screws and gaskets are included with the manifold, but they are not included when ordering a body ported solenoid valve as a single unit. Order them separately if necessary. (For details, refer to page 795.)

cover for L and M plug connectors.

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 961.

Body Ported **SY3000/5000/7000/9000** Series



Made to Order (For details, refer to pages 934 to 947.)

Specifications

| Series | | SY3000 | SY5000 | SY7000 | SY9000 | |
|----------------------|---------------------------|---|---------------|--------------|---------------|--|
| Fluid | | Air | | | | |
| Internal pilot | | 0.15 | to 0.7 | | | |
| Operating pressure | 2 position double | | 0.1 t | o 0.7 | | |
| range (MPa) | 3 position | | 0.2 t | o 0.7 | | |
| Ambient and fluid t | emperature (°C) | | -10 to 50 (I | No freezing) | | |
| Max. operating | 2 position single, double | 10 | 5 | 5 | 5 | |
| frequency (Hz) | 3 position | 3 | 3 | 3 | 3 | |
| Manual override (M | lanual operation) | Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type | | | | |
| Pilot exhaust meth | od | Common | exhaust type | for main and | pilot valve | |
| Lubrication | | | Not re | quired | | |
| Mounting orientation | on | Unrestricted | | | | |
| Impact/Vibration re | sistance (m/s²) Note) | 150/30 | | | | |
| Enclosure | • | Dust proof (| * DIN termina | l and M8 con | nector: IP65) | |

^{*} Based on IEC60529

Note) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

| Electrical entry | | | Grommet (G), (H) L plug connector (L) M plug connector (M) | DIN terminal (D), (Y) M8 connector (W) | | | | | | |
|-------------------|-------|------------------------------|--|--|--|--|--|--|--|--|
| | | | G, H, L, M, W | D, Y | | | | | | |
| Coil rated | | DC | 24, 12, 6, 5, 3 | 24, 12 | | | | | | |
| voltage (V) | | AC 50/60 Hz | 100, 110, | 200, 220 | | | | | | |
| Allowable voltage | fluct | uation | ±10% of rate | ed voltage * | | | | | | |
| Power | | Standard | 0.35 (With indicator light: 0.4 DIN | terminal with indicator light: 0.45) | | | | | | |
| consumption (W) | DC | With power saving circuit | 0.1 (With indicator light only) * [Starting 0.4, Holding 0.1] | | | | | | | |
| | | 100 V | 0.78 (With indicator light: 0.81) | 0.78 (With indicator light: 0.87) | | | | | | |
| Apparent power | | 110 V [115 V] | 0.86 (With indicator light: 0.89) [0.94 (With indicator light: 0.97)] | 0.86 (With indicator light: 0.97) [0.94 (With indicator light: 1.07)] | | | | | | |
| (VA) * | AC | 200 V | 1.18 (With indicator light: 1.22) | 1.15 (With indicator light: 1.30) | | | | | | |
| | | 220 V [230 V] | 1.30 (With indicator light: 1.34) 1.27 (With indicator light: 1.46) [1.42 (With indicator light: 1.46)] [1.39 (With indicator light: 1.60) | | | | | | | |
| Surge voltage sur | pres | sor | Diode (Varistor is for DIN terminal and Non-polar type.) | | | | | | | |
| Indicator light | | | LED (AC of DIN connector is neon light.) | | | | | | | |

- * In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
- For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.
 DIN terminal and M8 connector with power saving circuit are not available.
- * For details, refer to page 955.

Response Time

Note) Based on dynamic performance test, JIS B 8419: 2010. (Coil temperature: 20°C, at rated voltage)

SY3000

| | Response time (r | ns) (at the pressu | re of 0.5 MPa) |
|-------------------|---------------------|--------------------|----------------|
| Type of actuation | Without light/surge | oltage suppressor | |
| actuation | voltage suppressor | Type S, Z | Type R, U |
| 2 position single | 12 or less | 15 or less | 12 or less |
| 2 position double | 10 or less | 13 or less | 10 or less |
| 3 position | 15 or less | 20 or less | 16 or less |

SY5000

| | Response time (ms) (at the pressure of 0.5 MPa) | | | | | | | |
|-------------------|---|---------------------------------|------------|--|--|--|--|--|
| Type of | Without light/surge | With light/surge voltage suppre | | | | | | |
| actuation | voltage suppressor | Type S, Z | Type R, U | | | | | |
| 2 position single | 19 or less | 26 or less | 19 or less | | | | | |
| 2 position double | 18 or less | 22 or less | 18 or less | | | | | |
| 3 position | 32 or less | 38 or less | 32 or less | | | | | |

SY7000

| | Response time (ms) (at the pressure of 0.5 MPa) | | | | | | | |
|-------------------|---|--|------------|--|--|--|--|--|
| Type of actuation | Without light/surge | Without light/surge With light/surge voltage suppl | | | | | | |
| actuation | voltage suppressor | Type S, Z | Type R, U | | | | | |
| 2 position single | 31 or less | 38 or less | 33 or less | | | | | |
| 2 position double | 27 or less | 30 or less | 28 or less | | | | | |
| 3 position | 50 or less | 56 or less | 50 or less | | | | | |

SY9000

| | Response time (r | ns) (at the pressu | re of 0.5 MPa) | | | |
|-------------------|---------------------|---------------------|------------------------------|--|--|--|
| Type of | Without light/surge | With light/surge ve | ght/surge voltage suppressor | | | |
| actuation | voltage suppressor | Type S, Z | Type R, U | | | |
| 2 position single | 35 or less | 41 or less | 35 or less | | | |
| 2 position double | 35 or less | 41 or less | 35 or less | | | |
| 3 position | 62 or less | 64 or less | 62 or less | | | |



Flow Rate Characteristics/Weight

SY3000 series

| | | Poi | t size | Flo | w ra | te ch | arac | teris | tics | We | eight | (g) |
|----------------|----------------------------|-------------|-------------------------|------------------|-------------|----------------|--------------------|----------------|----------------|----------|-------------|---------|
| Valve model | Type of actuation | 1, 5, 3 | 4, 2 | 1→4/ C (kdm³/ | ′2 (P⊸ | A/B) | 4/2→5i C (kdm³/ | 3 (A/B- | →EA/EB) | Gro- | L/M pluq | W M8 |
| model | | (P, EA, EB) | (A, B) | (s-bar)) | b | Cv | (s-bar)) | b | Cv | mmet | connector | |
| | 2 Single position Doubl | | | 0.61 | 0.44 | 0.16 | 0.64 | 0.45 | 0.18 | 51 68 | 53 74 | 57 |
| SY3□20 | Closed center | 1 | | 0.48 | 0.46 | 0.13 | 0.47 | 0.43 | 0.13 | 00 | 74 | 82 |
| -□-M5 | 3 Exhaus position cente | | M5 x 0.8 | 0.47 | 0.42 | 0.13 | 0.47 (0.44) | 0.41 (0.37) | 0.13 (0.12) | 71 | 76 | 84 |
| | Pressur center | | | 0.50 (0.41) | 0.48 (0.35) | 0.15 (0.11) | 0.47 | 0.43 | 0.13 | | | |
| | 2 Single | _ | | 0.72 | 0.29 | 0.18 | 0.64 | 0.34 | 0.17 | 60 | 63 | 67 |
| | position Double | | | 0.72 | 0.23 | 0.10 | 0.04 0.04 | 0.34 | 0.17 | 78 | 83 | 91 |
| SY3□20 | Closed center | M5 x 0.8 | C4 / One- \ | 0.59 | 0.28 | 0.15 | 0.59 | 0.30 | 0.15 | | 86 | |
| -□-C4 | 3 Exhaus position cente | 1 | touch fitting for ø4 | 0.63 | 0.35 | 0.16 | 0.42 (0.41) | 0.34 (0.37) | 0.11 (0.11) | 81 | | 94 |
| | Pressur center | e | | 0.76 (0.46) | 0.42 (0.34) | 0.21 (0.12) | 0.59 | 0.29 | 0.15 | | | |
| | 2 Single | | | 0.76 | 0.30 | 0.19 | 0.65 | 0.39 | 0.17 | 56 | 59 | 63 |
| | position Double | | | 0.76 | 0.30 | 0.19 | 0.00 | 0.39 | 0.17 | 74 | 79 | 87 |
| SY3□20 | Closed center | | C6 / One- \ | 0.76 | 0.55 | 0.24 | 0.60 | 0.33 | 0.16 | | | |
| -□-C6 | 3 Exhau position cente | | touch fitting | 0.65 | 0.32 | 0.16 | 0.64 (0.42) | 0.31 (0.36) | 0.17 (0.11) | | | 90 |
| | Pressur center | | | 0.77 (0.49) | 0.34 (0.43) | 0.21 (0.15) | 0.61 | 0.34 | 0.16 | | | |

Note) []: denotes normal position.

SY7000 series

| | | | Por | t size | Flo | w ra | te ch | arac | teris | tics | , | Weig | ht (g) |) |
|----------------|-------------------------|--------------------|------------------------|-------------------------|--|----------------|----------------|--|----------------|----------------|--------------|--------------------------|-----------------|----------------------|
| Valve model | | e of ation | 1, 5, 3 (P, EA, EB) | 4, 2 (A, B) | 1→4, C (dm ³ / (s-bar)) | 2 (P b | Cv | 4/2→5/ C (dm ³ / (s-bar)) | 3 (A/B- b | EA/EB) Cv | Gro- mmet | L/M plug cornector | DIN terminal | W M8 connector |
| | 2 position | Single Double | | | 4.1 | 0.23 | 0.93 | 3.3 | 0.33 | 0.81 | 101 120 | 104 125 | 125 167 | 108 133 |
| SY7□20 | | Closed center | | 1/ | 2.9 | 0.31 | 0.70 | 2.4 | 0.38 | 0.63 | | | | |
| -□-02 | 3 position | Exhaust center | | 1/4 | 2.5 | 0.39 | 0.65 | 3.4 (2.1) | 0.35 (0.38) | | 133 | 133 175 | 141 | |
| | | Pressure center | | | 4.3 (2.4) | 0.23 (0.32) | 0.97 (0.61) | 2.2 | 0.39 | 0.58 | | | | |
| | 2 position | Single Double | 1 (P) Port | | 3.2 | 0.26 | 0.77 | 3.2 | 0.37 | 0.82 | 107 126 | 110 132 | 131 174 | 114 140 |
| SY7□20 | | Closed center | 1/4 | C8 / One- \ | 2.6 | 0.24 | 0.63 | 2.4 | 0.31 | 0.62 | 134 | 140 | | 148 |
| -□-C8 | 3 position | Exhaust center | 5, 3 (EA, EB) | touch fitting for ø8 | 2.4 | 0.25 | 0.57 | 2.6 (1.9) | 0.42 (0.46) | 0.70 (0.56) | | | 182 | |
| | | Pressure center | port 1/6 | (10.00) | 3.3 (2.4) | 0.28 (0.22) | 0.78 (0.57) | 2.2 | 0.34 | 0.60 | | | | |
| | 2 position | Single Double | | | 3.8 | 0.26 | 0.86 | 3.2 | 0.34 | 0.82 | 103 122 | 105 127 | 126 169 | 109 135 |
| SY7□20 | | Closed center | | C10 / One- \ | 2.8 | 0.27 | 0.67 | 2.4 | 0.21 | 0.59 | | | | |
| -□-C10 | 3 Exhaust touch fitting | | | 2.5 | 0.25 | 0.59 | 2.7 (2.0) | 0.38 (0.38) | 0.70 (0.56) | 130 | 135 | 177 | 143 | |
| | | Pressure center | | (| 3.8 (2.4) | 0.25 (0.31) | 0.89 (0.61) | 2.3 | 0.38 | 0.61 | | | | |

Note) []: denotes normal position.

SY5000 series

| | | | Por | t size | | | | | terist | | | Weig | jht (g |) |
|--------|---------------|--------------------|-------------|-------------------------|----------------------------------|-------------|----------------|----------------------------------|----------------|----------------|-----------|-------------------|-----------------|-----------------|
| Valve | | e of | 1. 5. 3 | | | 2 (P→ | A/B) | | /3 (A/B- | EA/EB) | Gro- | L/M | DIN. | W |
| model | actu | ation | (P, EA, EB) | /A D\ | C (dm ² / (s-bar)) | b | Cv | C (dm ³ / (s-bar)) | b | Cv | mmet | plug conrector | DIN terminal | M8 connector |
| | 2 position | Single Double | | | 1.9 | 0.35 | 0.49 | 2.4 | 0.39 | 0.61 | 70 88 | 72 93 | 93 135 | 76 101 |
| SY5□20 | | Closed center | | 1/8 | 1.7 | 0.43 | 0.45 | 1.8 | 0.35 | 0.46 | | | | |
| -□-01 | 3 position | Exhaust center | | 1/8 | 1.5 | 0.44 | 0.41 | 2.5 (1.5) | 0.32 (0.43) | 0.59 (0.40) | 93 | 98 | 140 | 106 |
| | | Pressure center | | | 2.2 (0.91) | 0.46 (0.58) | 0.61 (0.28) | 1.8 | 0.38 | 0.46 | | | | |
| | 2 | Single | | | 0.75 | 0.43 | 0.20 | 0.85 | 0.64 | 0.30 | 94 | 96 | 117 | 100 |
| | position | Double | | | 0.73 | 0.40 | 0.20 | 0.00 | 0.04 | 0.00 | 111 | 117 | 159 | 125 |
| SY5□20 | | Closed center | | C4 / One- \ | 0.74 | 0.40 | 0.19 | 0.84 | 0.57 | 0.28 | | | | |
| -□-C4 | 3 position | Exhaust center | | touch fitting | 0.75 | 0.36 | 0.19 | 0.84 (0.84) | 0.64 (0.53) | 0.30 (0.27) | 117 | 122 | | 130 |
| | | Pressure center | 1/8 | (10157) | 0.78 (0.71) | 0.44 (0.37) | 0.21 (0.18) | 0.84 | 0.57 | 0.27 | | | | |
| | 2 position | Single Double | 70 | | 1.5 | 0.33 | 0.33 | 2.0 | 0.37 | 0.52 | 88 106 | 91 111 | 112 153 | 95 119 |
| SY5□20 | | Closed center | | C6 / One- \ | 1.3 | 0.31 | 0.33 | 1.6 | 0.32 | 0.39 | | | | |
| -□-C6 | 3 position | Exhaust center | | touch fitting for ø6 | 1.3 | 0.33 | 0.33 | 1.8 (1.4) | 0.35 (0.37) | 0.44 (0.35) | 111 | 116 | 158 | 124 |
| | | Pressure center | | (10150) | 1.7 (0.80) | 0.31 (0.47) | 0.42 (0.23) | 1.7 | 0.33 | 0.44 | | | | |
| | 2 | Single | | | 1.9 | 0.21 | 0.45 | 2.3 | 0.29 | 0.57 | 80 | 82 | 103 | 86 |
| | position | Double | | | 1.9 | 0.21 | 0.45 | 2.3 | 0.29 | 0.07 | 98 | 103 | 145 | 111 |
| SY5□20 | | Closed center | | C8 / One- \ | 1.6 | 0.29 | 0.39 | 1.7 | 0.38 | 0.46 | | | | |
| -□-C8 | 3 position | Exhaust center | | touch fitting for ø8 | 1.4 | 0.38 | 0.39 | 2.0 (1.5) | 0.37 (0.41) | 0.52 (0.43) | 103 | 108 | 150 | 116 |
| | | Pressure center | | (101 90 / | 2.2 (1.6) | 0.32 (0.44) | 0.56 (0.44) | 1.8 | 0.41 | 0.50 | | | | |

Note) []: denotes normal position.

SY9000 series

| | T | | Por | t size | Flo | w ra | te ch | arac | teris | tics | 1 | Neigl | ht (g) | 1 |
|--------|---------------|--------------------|---------|-----------------------------------|----------------------------------|----------------|---------------|----------------------------------|----------------|---------------|------------|-------------------|-----------------|-----------------|
| Valve | | e of | 1. 5. 3 | 4, 2 | | 2 (P- | A/B) | 4/2→5 | /3 (A/B- | EA/EB) | Gro- | L/M | | W |
| model | actu | ation | | (A, B) | C (dm ³ / (s-bar)) | b | Cv | C (dm ³ / (s-bar)) | b | Cv | mmet | plug connector | DIN terminal | M8 cornector |
| | 2 position | Single Double | | | 7.0 | 0.33 | 1.7 | 7.6 | 0.35 | 2.0 | 241 260 | 244 266 | 265 308 | |
| SY9□20 | | Closed center | | ., | 6.7 | 0.37 | 1.7 | 6.4 | 0.34 | 1.6 | | | | |
| -□-02 | 3 position | Exhaust center | | 1/4 | 6.4 | 0.36 | 1.6 | 8.3 (4.1) | 0.41 (0.27) | 2.2 (0.91) | 284 | 290 | 332 | 298 |
| | | Pressure center | | | 8.0 (3.2) | 0.27 | 1.8 (0.76) | 6.5 | 0.22 | 1.4 | | | | |
| | 2 position | Single Double | | | 8.0 | 0.29 | 1.9 | 8.0 | 0.33 | 2.0 | 236 255 | 239 261 | 260 303 | |
| SY9□20 | | Closed center | | 3/2 | 7.9 | 0.33 | 1.9 | 6.6 | 0.27 | 1.6 | | | | |
| -□-03 | 3 position | Exhaust center | | 9/8 | 8.0 | 0.33 | 1.9 | 8.7 (8.3) | 0.34 (0.40) | 2.2 (2.3) | 279 | 285 | 327 | 293 |
| | | Pressure center | | | 8.9 (3.3) | 0.34 (0.40) | 2.2 (0.82) | 6.5 | 0.25 | 1.5 | | | | |
| | 2 position | Single Double | | | 4.3 | 0.28 | 0.96 | 7.1 | 0.32 | 1.7 | 293 312 | 296 318 | | 300 326 |
| SY9□20 | | Closed center | 1/4 | C8 | 4.3 | 0.31 | 0.99 | 6.1 | 0.28 | 1.4 | | 342 | | |
| -□-C8 | 3 position | Exhaust center | 1/4 | One- touch fitting for ø8 | 4.3 | 0.3 | 0.99 | 7.4 (3.8) | 0.36 (0.29) | 1.9 (0.86) | 336 | | | 350 |
| | | Pressure center | | (101 80) | 4.4 (3.2) | 0.35 (0.26) | 1.0 (0.71) | 2.1 | 0.41 | 0.53 | | | | |
| | 2 position | Single Double | | | 6.1 | 0.28 | 1.4 | 7.9 | 0.33 | 1.9 | 279 298 | 282 304 | 303 346 | |
| SY9□20 | | Closed center | | C10 / One- \ | 5.9 | 0.30 | 1.4 | 6.5 | 0.26 | 1.5 | | | | |
| -□-C10 | 3 position | Exhaust center | | touch fitting | 5.8 | 0.25 | 1.3 | 8.4 (4.1) | 0.33 (0.27) | 2.0 (0.93) | 322 | 328 | 370 | 336 |
| | | Pressure center | | (1012107 | 6.3 (3.2) | 0.29 (0.29) | 1.5 (0.72) | 6.4 | 0.25 | 1.5 | | | | |
| | 2 position | Single Double | | | 7.0 | 0.25 | 1.6 | 8.6 | 0.41 | 2.2 | 265 284 | | 289 332 | 272 298 |
| SY9□20 | | Closed center | | C12 | 6.9 | 0.24 | 1.6 | 7.0 | 0.33 | 1.7 | | | | |
| -□-C12 | 3 position | Exhaust center | | One- touch fitting for ø 12 | 6.6 | 0.23 | 1.4 | 9.4 (4.5) | 0.48 (0.32) | 2.6 (1.0) | 308 | 314 | 4 356 | 322 |
| | | Pressure center | | | 7.4 (3.2) | 0.25 (0.34) | 1.7 (0.74) | 6.6 | 0.23 | 1.5 | | | | |

Note) []: denotes normal position.





Body Ported **SY3000/5000/7000/9000** Series

Construction

SY series

Symbol 2 position single

(A)4 2(B) (EA)5 1 3(EB) (P)

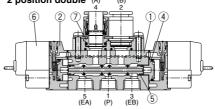
Symbol 2 position double

(A)4 2(B) (EA)5 1 3(EB)

2 position single (A) (B) (6) (2) (4) (7) (2) (1) (3)

(EA)

2 position double (A)



(EB)

3 position closed center / exhaust center / pressure center

Symbol 3 position closed center

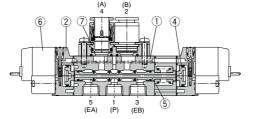


3 position exhaust center



3 position pressure center





(This figure shows a closed center type.)

Component Parts

| No. | Description | Material | Note |
|-----|----------------------|---|-------------------------|
| 1 | Body | Aluminum die-casted (SY3000: Zinc die-casted) | White |
| 2 | Adapter plate | Resin | White (SY9000: Gray) |
| 3 | End plate | Resin | White |
| 4 | Piston | Resin | _ |
| 5 | Spool valve assembly | Aluminum, H-NBR | - |

Replacement Parts

| No. | Description | Part no. | | | | | | |
|-----|------------------------|---|--|--|--|--|--|--|
| 6 | Pilot valve assembly | Refer to "How to Order Pilot Valve Assembly" on page 948. | | | | | | |
| 7 | M5 port block assembly | Refer to "How to Order Port Block Assembly" on page 948. | | | | | | |

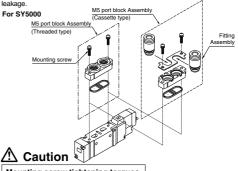
Bracket Assembly No.

| Description | Part no. |
|------------------|---|
| Bracket (For F1) | SX ₉ 000-16-2A (with mounting screw) |
| Bracket (For F2) | SX 000-16-1A (with mounting screw) |

^{*} SY9000 has no bracket.

How to Change Port Block Assembly

If using body port type, both A and B port sizes can be changed by replacing the port block assembly mounted on the body. When changing this block assembly, the correct screw torque must be achieved to avoid possible air leakage.



Mounting screw tightening torques

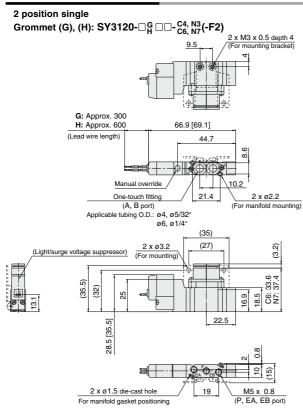
SY3000 (M2): 0.12 N·m SY⁵7000 (M3): 0.6 N·m SY9000 (M4): 1.4 N·m

* Referto "How to Order Port Block Assembly" on page 948 for part no.

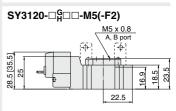


Dimensions: SY3000 Series

[]: AC



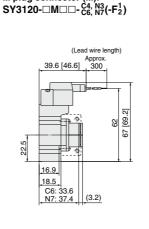
Foot bracket SY3120-□ G, N3-F1 38 31 13.1 2 x ø 3.2 (For mounting) 25 (3.2) (3.2) (3.2) (3.3)



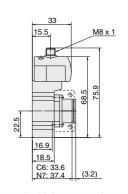
SY3120-\(\text{WO} \(\text{\bigcup} \) - C6\(\text{N7}\(\text{(-F}_2^1 \)

M8 connector (WO):

L plug connector (L): SY3120-□L□□- C4, N3 (-F1/2) 28.5 [35.5] 13.1 (ulbus) aum pres) (bL) 89 (b) 18.5 (C6: 33.6 N7: 37.4 (3.2)



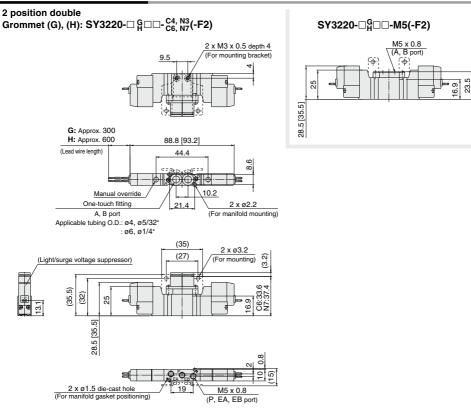
M plug connector (M):

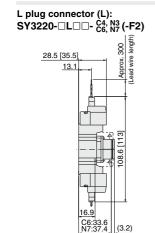


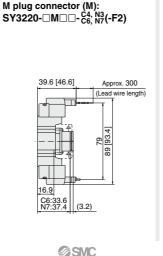
Body Ported **SY3000/5000/7000/9000** Series

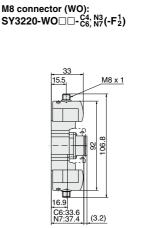
Dimensions: SY3000 Series







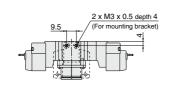


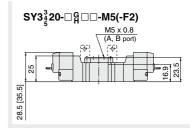


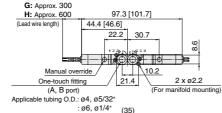
Dimensions: SY3000 Series

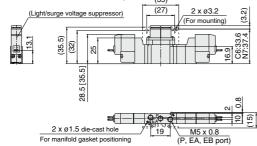
[]: AC

3 position closed center / exhaust center / pressure center Grommet (G), (H): SY3 $\frac{3}{4}$ 20- $\Box_{H}^{G}\Box\Box_{G}^{C4}$. N3(-F2)

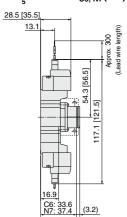




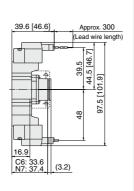




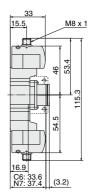




M plug connector (M): SY3³/₄20-□M□□-C6⁴/₆N3⁷(-F2)



M8 connector (WO): SY3³/₄20-□WO□□-^{C4}/_{C6}, N3/₇(-F2)

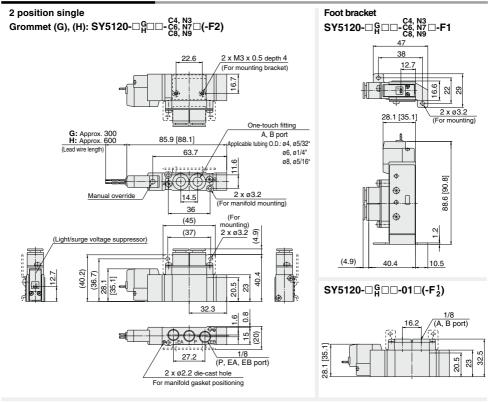


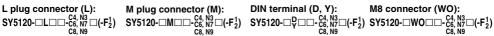
Note) Refer to page 961 for dimensions of connector types.

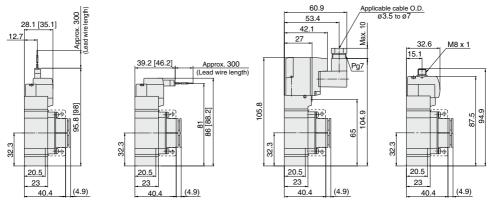
Body Ported **SY3000/5000/7000/9000** Series

Dimensions: SY5000 Series

[]: AC

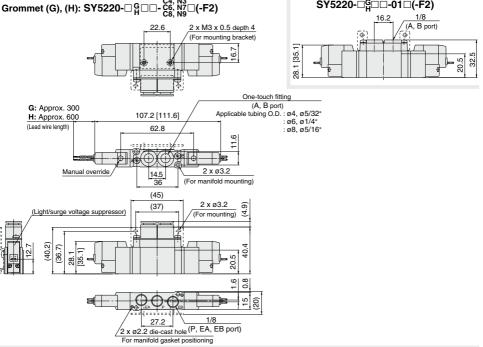




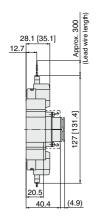


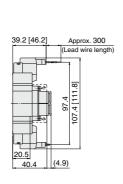
Note) Refer to page 961 for dimensions of connector types. 739

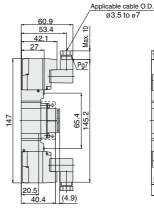
Dimensions: SY5000 Series []: AC 2 position double Grommet (G), (H): SY5220-□ GR □ □ - C6, N3 □ (-F2) SY5220-□G□□-01□(-F2) B port) 2 x M3 x 0.5 depth 4 (For mounting bracket)

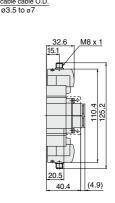


DIN terminal (D, Y): L plug connector (L): M plug connector (M): M8 connector (WO): SY5220-□\(\bar{P}\) □ □ - \(\bar{c}\)2, \(\bar{N}\)3 \(\bar{C}\)3, \(\bar{N}\)3 \(\bar{C}\)4, \(\bar{N}\)3 \(\bar{C}\)4, \(\bar{N}\)3 \(\bar{C}\)5, \(\bar{N}\)9 \(\bar{C}\)5, \(\bar{N}\)9 \(\bar{N}\)5, \(\bar{N} SY5220-□L□□-C6, N7 □(-F2) C8, N9 SY5220-□M□□





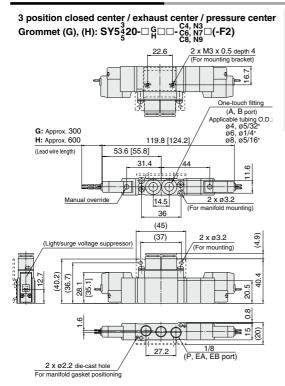


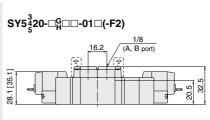


Body Ported **SY3000/5000/7000/9000** Series

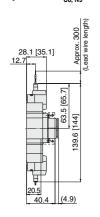
Dimensions: SY5000 Series

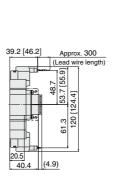
[]: AC

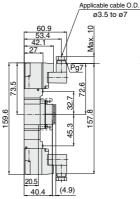


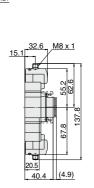


L plug connector (L): M plug connector (M): DIN terminal (D, Y): M8 connector (WO): SY5 420-□L□□- C6, N7 □(-F2) SY5 420-□M□□- C6, N7 □(-F2) SY5 420-□P□□- C6, N7 □(-F2) SY5 420-□WO□□- C6, N7 □(-F2)



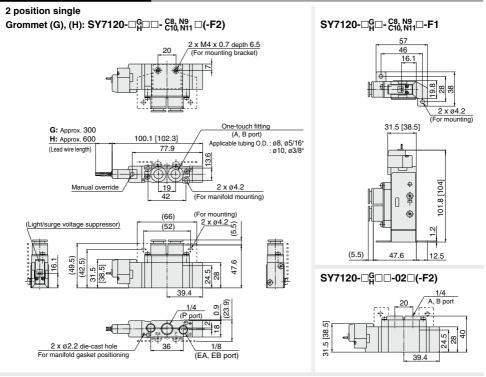


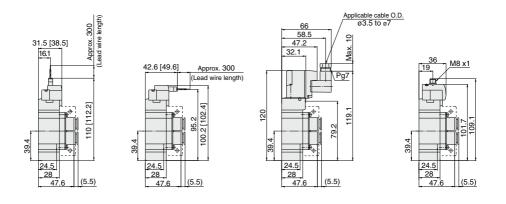




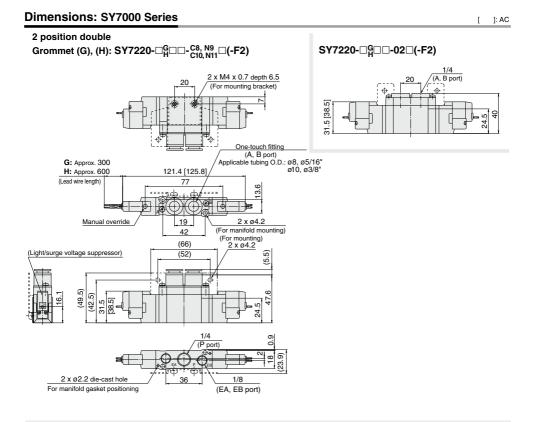
Dimensions: SY7000 Series

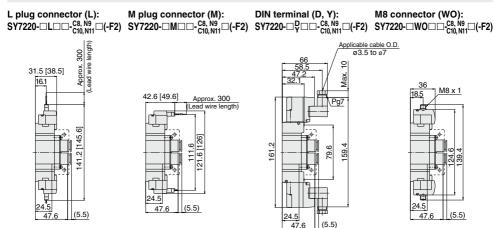
[]: AC





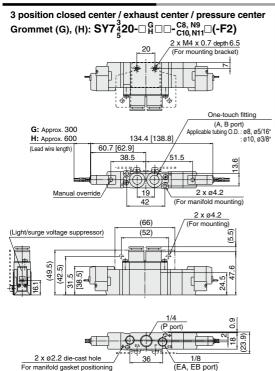
Body Ported **SY3000/5000/7000/9000** Series

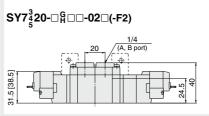




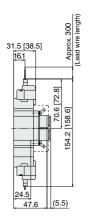
Dimensions: SY7000 Series

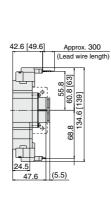


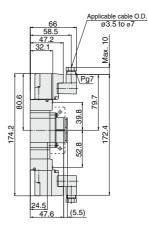


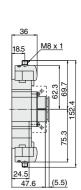


L plug connector (L): M plug connector (M): DIN terminal (D, Y): M8 connector (WO): $SY7\frac{3}{4}20-\Box L \Box -\frac{C8}{C10}\frac{N9}{M1}\Box (-F2)$ $SY7\frac{3}{4}20-\Box M \Box -\frac{C8}{C10}\frac{N9}{M1}\Box (-F2)$ $SY7\frac{3}{4}20-\Box V \Box -\frac{C8}{C10}\frac{N9}{M1}\Box (-F2)$ $SY7\frac{3}{4}20-\Box W \Box -\frac{C8}{C10}\frac{N9}{M1}\Box (-F2)$





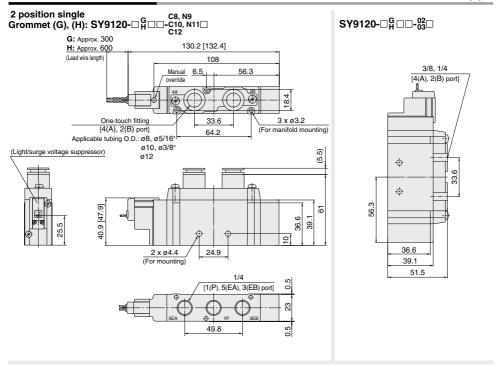




Body Ported **SY3000/5000/7000/9000** Series

Dimensions: SY9000 Series

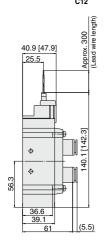
[] AC

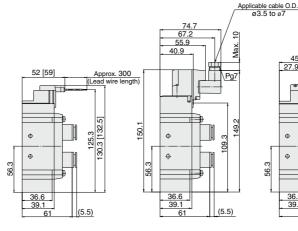


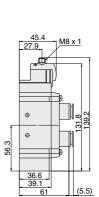
L plug connector (L): C8, N9 C12 C12

M plug connector (M): SY9120-□M□□-C10, N11□ C12 DIN terminal (D, Y): SY9120-□^D_Y□□-^{C10}_{C12}, N11□ C12

M8 connector (WO): SY9120-□WO□□-C10, N11□ C12

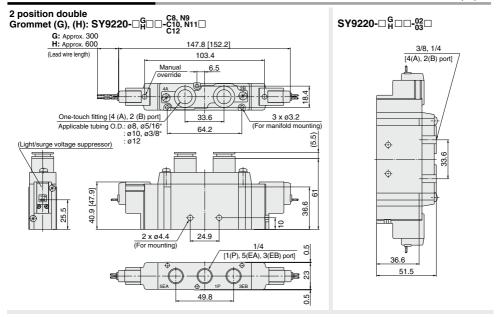






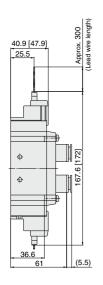
Dimensions: SY9000 Series

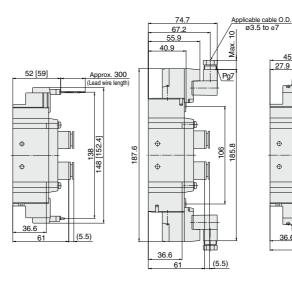
[]: AC

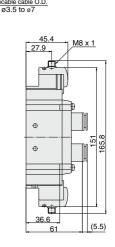


L plug connector (L): SY9220-□L□□-C10, N11□ C12 M plug connector (M): SY9220-□M□□-C10, N11□ C12 DIN terminal (D, Y): SY9220-□^D_Y□□-^{C10}, N11□ C12

M8 connector (WO): SY9220-□WO□□-C10, N11□ C12

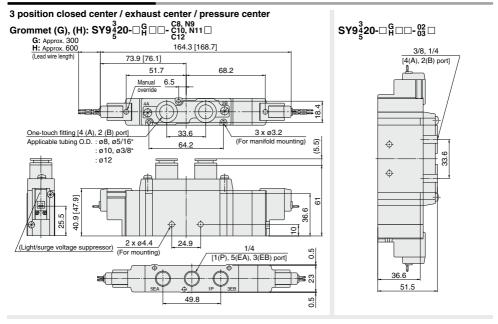






Dimensions: SY9000 Series

[]: AC



L plug connector (L):

C8, N9

SY9⁴/₅20-□L□□-C10, N11□
C12

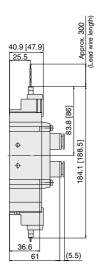
M plug connector (M):

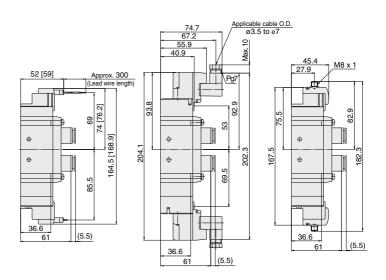
C8, N9

SY9⁴₅20-□M□□-C10, N11□

C12

DIN terminal (D, Y): C8, N9C10, N11 M8 connector (WO): SY9³/₅20-□WO□□□-C10, N11□ C12

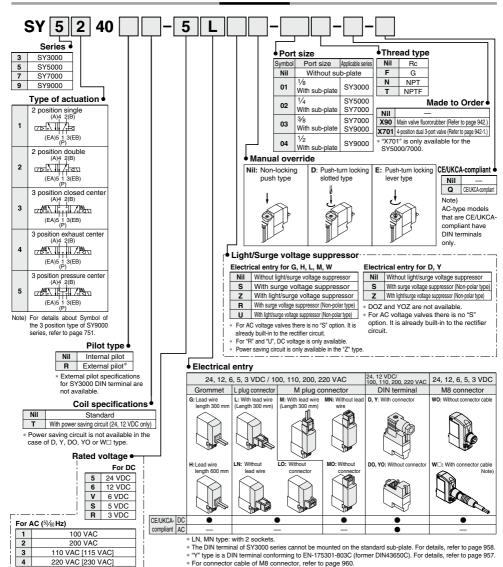




5 Port Solenoid Valve Base Mounted/Single Unit Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.

SY3000/5000/7000/9000 Series

How to Order



* DC specifications of type D, Y, DO and

YO is only available with 12 and 24 VDC. ∗ For type W□, DC voltage is only available

Note) AC-type models that are CE/UKCA-compliant

* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details.

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 961.

Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included

* Refer to page 958 for the connector assembly with cover for L and M plug connectors.

* Refer to page 957 for the lead wire length of L and M plug connectors.

Base Mounted SY3000/5000/7000/9000 Series





Specifications

| Series | | | SY3000 | SY5000 | SY7000 | SY9000 | | |
|--------------------------------------|------------|-------------------|--|---------------|--------------|---------------|--|--|
| Fluid | | | | Д | ir | | | |
| Internal pilot | 2 positio | on single | 0.15 to 0.7 | | | | | |
| Operating pressure | 2 positio | on double | | 0.1 t | o 0.7 | | | |
| range (MPa) | 3 positio | on | | 0.2 t | o 0.7 | | | |
| | Operating | g pressure range | | -100 kF | Pa to 0.7 | | | |
| External pilot Operating pressure | Pilot | 2 position single | | 0.25 | to 0.7 | | | |
| range (MPa) | pressure | 2 position double | 0.25 to 0.7 | | | | | |
| range (wir a) | range | 3 position | to 0.7 | | | | | |
| Ambient and fluid t | emperati | ure (°C) | -10 to 50 (No freezing.) | | | | | |
| Max. operating | 2 positio | n single, double | 10 | 5 | 5 | 5 | | |
| frequency (Hz) | 3 position | on | 3 | 3 | 3 | 3 | | |
| Manual override | | | Non-locking push type, | | | | | |
| (Manual operation) | | | Push-turn locking slotted type, Push-turn locking lever type | | | | | |
| Pilot exhaust | Internal | pilot | Common exhaust type for main and pilot valve | | | | | |
| method | Externa | l pilot | Pilot valve individual exhaust | | | | | |
| Lubrication | | | Not required | | | | | |
| Mounting orientation | | | Unrestricted | | | | | |
| Impact/Vibration re | sistance | (m/s²) Note) | 150/30 | | | | | |
| Enclosure | | | Dust proof (| * DIN termina | l and M8 con | nector: IP65) | | |

* Based on IEC60529

Note) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Response Time

Note) Based on dynamic performance test, JIS B 8419: 2010. (Coil temperature: 20°C, at rated voltage)

SY3000

| Type of | Response time (ms) (at the pressure of 0.5 MPa) | | | | | | | | | |
|-------------------|--|------------------------------------|------------|--|--|--|--|--|--|--|
| actuation | Without light/surge | With light/surge voltage suppresso | | | | | | | | |
| | voltage suppressor | Type S, Z | Type R, U | | | | | | | |
| 2 position single | 12 or less | 15 or less | 12 or less | | | | | | | |
| 2 position double | 10 or less | 13 or less | 10 or less | | | | | | | |
| 3 position | 15 or less | 20 or less | 16 or less | | | | | | | |

SY5000

| Type of | Response time (ms) (at the pressure of 0.5 MPa) | | | | | | | | | |
|-------------------|--|-----------------------------------|------------|--|--|--|--|--|--|--|
| actuation | Without light/surge | With light/surge voltage suppress | | | | | | | | |
| | voltage suppressor | Type S, Z | Type R, U | | | | | | | |
| 2 position single | 19 or less | 26 or less | 19 or less | | | | | | | |
| 2 position double | 18 or less | 22 or less | 18 or less | | | | | | | |
| 3 position | 32 or less | 38 or less | 32 or less | | | | | | | |

SY7000

| Type of | Response time (ms) (at the pressure of 0.5 MPa) | | | | | | | | | |
|-------------------|--|-------------------------------------|------------|--|--|--|--|--|--|--|
| actuation | Without light/surge | With light/surge voltage suppressor | | | | | | | | |
| | voltage suppressor | Type S, Z | Type R, U | | | | | | | |
| 2 position single | 31 or less | 38 or less | 33 or less | | | | | | | |
| 2 position double | 27 or less | 30 or less | 28 or less | | | | | | | |
| 3 position | 50 or less | 56 or less | 50 or less | | | | | | | |

SY9000

| Type of | Response time (ms) (at the pressure of 0.5 MPa) | | | | | | | | | |
|-------------------|--|-----------------------------------|------------|--|--|--|--|--|--|--|
| actuation | Without light/surge | With light/surge voltage suppress | | | | | | | | |
| | voltage suppressor | Type S, Z | Type R, U | | | | | | | |
| 2 position single | 35 or less | 41 or less | 35 or less | | | | | | | |
| 2 position double | 35 or less | 41 or less | 35 or less | | | | | | | |
| 3 position | 62 or less | 64 or less | 62 or less | | | | | | | |

Solenoid Specifications

| Flectrical entry | | | Grommet (G), (H) L plug connector (L) | DIN terminal (D), (Y) M8 connector (W) | | | | | |
|-------------------|---|----------------------|---|---|--|--|--|--|--|
| | Apparent power VA) * AC 50%0 Hz Standard With power saving circuit 100 V 110 V 110 V 115 VJ 200 V | M plug connector (M) | | | | | | | |
| | | | G, H, L, M, W | D, Y | | | | | |
| Coil rated | | DC | 24, 12, 6, 5, 3 | 24, 12 | | | | | |
| voltage (V) | | AC 50/60 Hz | 100, 110, | 200, 220 | | | | | |
| Allowable voltage | fluct | uation | ±10% of rate | ed voltage * | | | | | |
| Dower | | Standard | 0.35 (With indicator light: 0.4 DIN terminal with indicator light | | | | | | |
| | DC | With power saving | | dicator light only) * | | | | | |
| consumption (w) | | circuit | [Starting (| 0.4, Holding 0.1] | | | | | |
| | | 100 V | 0.78 (With indicator light: 0.81) | 0.78 (With indicator light: 0.87) | | | | | |
| | | 110 V | 0.86 (With indicator light: 0.89) | | | | | | |
| | ١., | [115 V] | [0.94 (With indicator light: 0.97)] | [0.94 (With indicator light: 1.07)] | | | | | |
| (VA) * | AC | 200 V | 1.18 (With indicator light: 1.22) | 1.15 (With indicator light: 1.30) | | | | | |
| | | 220 V | 1.30 (With indicator light: 1.34) | 1.27 (With indicator light: 1.46) | | | | | |
| | | [230 V] | [1.42 (With indicator light: 1.46)] | [1.39 (With indicator light: 1.60)] | | | | | |
| Surge voltage sur | pres | sor | Diode (Varistor is for DIN terminal and Non-polar type.) | | | | | | |
| Indicator light | | | LED (AC of DIN con | nector is neon light.) | | | | | |
| | | | | | | | | | |

- In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC. For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.
- DIN terminal and M8 connector with power saving circuit are not available.
- * For details, refer to page 955.



Flow Rate Characteristics/Weight

SY3000 series

| | т. | Type of actuation | | | Flow ra | ate chara | acteristics | Weight (g) Note 2) | | | | |
|-------------|----------|-------------------|-----|-----------------|----------|-----------|-------------------------|--------------------|--------|------------|-------------------|--------------|
| Valve model | | | | 1 → 4 | 1/2 (P → | A/B) | 4/2 → 5/3 (A/B → EA/EB) | | | Grommet | L plug connector, | W |
| | uoi | | | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | distilling | M plug connector | M8 connector |
| | 2 | Single | | 1.0 | 0.30 | 0.24 | | 0.00 | | 84 (50) | 85 (53) | 89 (57) |
| | position | Double | | 1.0 | 0.30 | 0.24 | 1.1 | 0.30 | 0.26 | 102 (68) | 107 (73) | 115 (81) |
| | | Closed center | 1/8 | 0.77 | 0.28 | 0.18 | 0.85 | 0.30 | 0.19 | | | |
| SY3□40-□-01 | ١. ا | Exhaust | | | 0.31 | 0.18 | 1.1 | 0.26 | 0.24 | | | |
| | position | center | | 0.73 | 0.31 | | [0.55] | [0.52] | [0.16] | 104 (69) | 109 (74) | 117 (82) |
| | | Pressure | | 1.2 | .2 0.24 | 0.29 | 0.47 | 0.24 | | | | |
| | | center | | [0.51] | [0.45] | [0.14] | 0.89 0 | 0.47 | 0.24 | | | |

Note 1) []: denotes the normal position. Note 2) (): denotes without sub-plate.

SY5000 series

| | Type of actuation | | D t | | Flow ra | ate chara | acteristics | Note 1) | Weight (g) Note 2) | | | | |
|-------------|-------------------|---------------|------|-----------------|----------|-----------|-----------------|-------------------------|--------------------|------------|-------------------|---------------|-------------------|
| Valve model | | | Port | 1 → 4 | 1/2 (P → | A/B) | 4/2 → 5/ | 4/2 → 5/3 (A/B → EA/EB) | | | L plug connector, | DIMA | W |
| | | | SIZE | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | Grommet | M plug connector | viiv terminai | W M8 connector |
| | 2 | Single | | 0.4 | 0.41 | 0.64 | 2.8 | 0.29 | | 121 (58) | 123 (61) | 154 (92) | 127 (65) |
| | position | Double | | 2.4 | 0.41 | 0.04 | 2.0 | 0.29 | 0.66 | 139 (76) | 144 (81) | 186 (123) | 152 (89) |
| | | Closed center | | 1.8 | 0.47 | 0.50 | 1.8 | 0.40 | 0.47 | | | | 1 |
| SY5□40-□-02 | | Exhaust | 1/4 | 1.4 | 0.55 | 0.44 | 3.0 | 0.33 | 0.72 | | | | |
| | 3 position | center | | | 0.55 | | [1.2] | [0.48] | [0.37] |] 144 (82) | 150 (87) | 192 (129) | 158 (95) |
| | position | Pressure | | 3.3 | 0.36 | 0.85 | | 8 0.40 | 0.48 | | | | |
| | | center | | [0.84] | [0.60] | [0.28] | | | | | | | |

Note 1) []: denotes the normal position. Note 2) (): denotes without sub-plate.

SY7000 series

| | Type of actuation | | Port | | Flow ra | ate chara | acteristics | Note 1) | Weight (g) Note 2) | | | | |
|-------------|-------------------|---------------|------|-------------------|---------|-----------|------------------------------|---------|--------------------|-------------------|------------------|--------------|--------------|
| Valve model | | | size | 1 → 4/2 (P → A/B) | | 4/2 → 5/ | '3 (A/B → | EA/EB) | Grommet | L plug connector, | DIN terminal | W | |
| | aci | dotadion | | C (dm3/(s-bar)) | b | Cv | C (dm ² /(s-bar)) | b | Cv | Grommet | M plug connector | Din terminal | M8 connector |
| | 2 | Single | | 4.1 | 0.41 | 1.1 | 4.1 | 0.29 | 1.0 | 218 (89) | 221 (92) | 242 (113) | 225 (96) |
| | position | Double | | 4.1 | 0.41 | 1.1 | 4.1 | 0.29 | 1.0 | 237 (108) | 242 (113) | 284 (155) | 250 (121) |
| | | Closed center | | 3.0 | 0.43 | 0.80 | 2.6 | 0.41 | 0.72 | | | | |
| SY7□40-□-02 | | Exhaust | 1/4 | 2.6 | 0.42 | 0.71 | 4.7 | 0.35 | 1.1 | | | 287 (158) | 253 (124) |
| | position | center | | 2.0 | 0.42 | 0.71 | [1.7] | [0.48] | [0.49] | 239 (110) | 245 (116) | | |
| | | Pressure | | 5.3 | 0.39 | 1.3 | 2.2 | 0.49 | 0.63 | | | | |
| | | center | | [2.3] | [0.49] | [0.65] | 2.2 | 0.49 | 0.03 | | | | |
| | 2 | Single | | 4.9 | 0.29 | 1.2 | 4.5 | 0.07 | 0.27 1.1 | 218 (89) | 221 (92) | 242 (113) | 225 (96) |
| | position | Double | | 4.9 | 0.29 | | | 0.27 | | 237 (108) | 242 (113) | 284 (155) | 250 (121) |
| | | Closed center | | 3.0 | 0.40 | 0.80 | 2.6 | 0.45 | 0.73 | | | | |
| SY7□40-□-03 | | Exhaust | 3/8 | 2.6 | 0.42 | 0.71 | 4.8 | 0.35 | 1.1 | | | | |
| | 3 position | center | | 2.6 | 0.42 | 0.71 | [1.7] | [0.48] | [0.49] | 239 (110) | 245 (116) | 287 (158) | 253 (124) |
| | position | Pressure | | 5.3 | 0.31 | 1.3 | 2.3 | 0.45 | 0.66 | | | | |
| | | center | | [2.3] | [0.51] | [0.64] | | 0.45 | 0.00 | | | | |

Note 1) []: denotes the normal position. Note 2) (): denotes without sub-plate.

SY9000 series

| | | | _ | | Flow r | ate char | acteristic | S Note1) | | | Weight | (g) Note 2) | |
|-------------|-------------------|---------------|-------|-------------------|--------|----------|----------------|-------------------------|----------|-----------|-------------------|-----------------|-------------------|
| Valve model | Type of actuation | | Port | 1 → 4/2 (P → A/B) | | | | 4/2 → 5/3 (A/B → EA/EB) | | | L plug connector, | DIN terminal | W M8 connector |
| SY9□40-□-03 | | | O.L.O | C (dm3/(s-bar)) | b | Cv | C (dm3(s-bar)) | b | Cv | Grommet | M plug connector | Direction miles | M8 connector |
| | 2 | Single | | 7.9 | 0.34 | 2.0 | 9.6 | 0.43 | 2.6 | 469(172) | 472(175) | 493(196) | 476(179) |
| | position | Double | 1 | 7.5 | 0.04 | 2.0 | 0.0 | 0.40 | 2.0 | 488(191) | 494(197) | 535(239) | 502(205) |
| | | Closed center | | 7.5 | 0.33 | 1.8 | 7.3 | 0.30 | 1.7 | | | | |
| SY9□40-□-03 | | Exhaust | 3/8 | 7.2 | 0.34 | 1.7 | 13 | 0.23 | 2.8 | | | | |
| | 3 position | center | | 7.2 0.54 | 0.34 | 1.7 | [4.0] | [0.41] | [0.95] | 512(215) | 518(221) | 560(263) | 526(229) |
| | μυδιμοιτ | Pressure | | 12 | 0.26 | 2.8 | 6.7 | 0.40 | 1.9 | | | | |
| | | center | | [3.3] | [0.41] | [0.84] | 6.7 | 0.40 | 1.9 | | | | |
| | 2 | Single | | | 0.40 | 0.0 | 40 | 0.00 | 0.5 | 448 (172) | 453 (175) | 472 | 457(179) |
| | position | Double | | 8.0 | 0.48 | 2.2 | 10 | 0.29 | 2.5 | 467 (191) | 473 (197) | 515 | 481(205) |
| | | Closed center | | 7.6 | 0.32 | 1.8 | 7.3 | 0.32 | 1.8 | | | | |
| SY9□40-□-04 | | Exhaust | 1/2 | 7.3 | 0.42 | 2.0 | 13 | 0.32 | 3.6 | | | | |
| | 3 position | center | 1 | 7.3 | 0.42 | 2.0 | [4.7] | [0.54] | [1.5] | 491 (215) | 497 (221) | 539 | 505(229) |
| | position | Pressure | | 12 | 0.33 | 3.3 | 7.4 | 0.33 | 0.33 1.9 | | | | , , |
| | | center | | [3.3] | [0.51] | [0.94] | 7.4 | 0.33 | | | | | |

Note 1) []: denotes the normal position. Note 2) (): denotes without sub-plate.



Base Mounted SY3000/5000/7000/9000 Series

Construction

SY Series

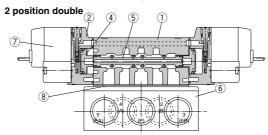
Symbol 2 position single

(A)4 2(B) (EA)5 1 3(EB) (P)

2 position single 2 4 5 3

Symbol 2 position double

(A)4 2(B) (EA)5 1 3(EB)



Symbol 3 position closed center

3 position exhaust center
(A)4 2(B) (A)4 2(B)
(EA)5 1 3(EB) (EA)5 1 3(EB)

(EA)5 1 3(EB) (EA)5 1 3(EB) (P) (SY9000)

3 position pressure center (A)4 2(B) (EA)5 1 3(EB) (EA)5 1 3(EB) (EA)5 1 3(EB) (EA)5 1 3(EB)

(This figure shows a closed center type.)

Component Parts

| No. | Description | Material | Note |
|-----|----------------------|--|-------------------------|
| 1 | Body | Aluminum die-casted (SY3000: Zinc die-casted) | White |
| 2 | Adapter plate | Resin | White (SY9000: Gray) |
| 3 | End plate | Resin | White |
| 4 | Piston | Resin | - |
| 5 | Spool valve assembly | Aluminum, H-NBR | _ |

(SY9000)

Replacement Parts

| No. | December | | Part No. | | | Ninte | |
|-----------------|------------|---|--------------|--------------|--|--------------------------------------|------------------------|
| No. Description | | scription | SY3□40 | SY5□40 | SY7□40 | SY9□40 | Note |
| 6 | Sub-pl | ate Note) | SY3000-27-1® | SY5000-27-1® | 1/4: SY7000-27-1 * 3/8: SY7000-27-2 * | %: SY9000-27-1 1/2: SY9000-27-2 ® | Aluminum die-casted |
| 7 | Pilot val | ilot valve assembly Refer to "How to Order Pilot Valve Assembly" on page 948. | | | | | |
| 8 | Gasket | Standard | SY3000-11-25 | SY5000-11-15 | SY7000-11-11 | SY9000-11-2 | H-NBR |
| ۰ | Gasket | CE/UKCA-compliant | SY3000-11-25 | SY5000-11-18 | SY7000-11-14 | SY9000-11-2 | n-INDN |
| | Round head | combination screw | SY3000-23-4 | AC00077 | AC00296 | SY9000-18-2 | For valve mounting |
| - | Reference | ce screw size | (M2 x 21) | (M3 x 26) | (M4 x 31) | (M3 x 42) | (Matt nickel plated) |

^{*} Thread type

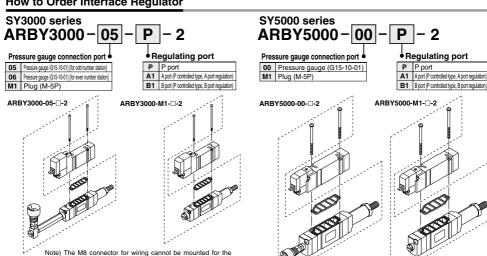


Mounting screw tightening torques M2: 0.16 N·m

M3: 0.8 N·m M4: 1.4 N·m



How to Order Interface Regulator



SY7000 series ARBY7000 -- | വ

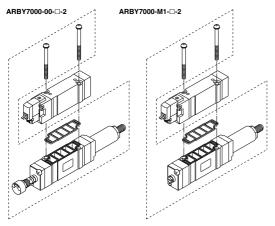
ARBY3000 series.

Pressure gauge connection port

00 Pressure gauge (G15-10-01) M1 Plug (M-5P)

Regulating port

| Р | P port |
|----|---|
| | A port (P controlled type, A port regulation) |
| B1 | B port (P controlled type, B port regulation) |



Accessory

| Series | Round head combination screw Reference screw size | Gasket | | |
|----------|---|-------------|--|--|
| ARBY3000 | SY3000-23-10 (M2 x 36) | SX3000-57-4 | | |
| ARBY5000 | AC00283 (M3 x 48.5) | SX5000-57-6 | | |
| ARBY7000 | AC00282 (M4 x 58) | SX7000-57-5 | | |

Note) ARBY is not CE/UKCA-compliant.



Mounting screw tightening torques

M2: 0.16 N·m M3: 0.8 N·m M4: 1.4 N·m

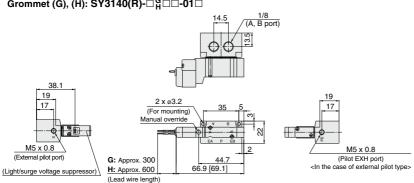
Base Mounted SY3000/5000/7000/9000 Series

Dimensions: SY3000 Series

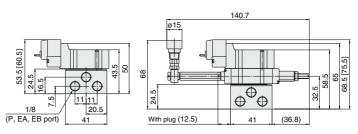
[]: AC

2 position single

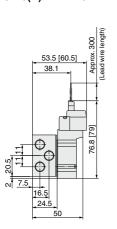
Grommet (G), (H): SY3140(R)-□ G □ □-01□



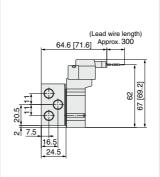
With interface regulator



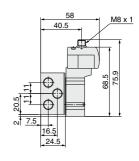
L plug connector (L): SY3140(R)-□L□□-01□



M plug connector (M): SY3140(R)-□M□□-01□



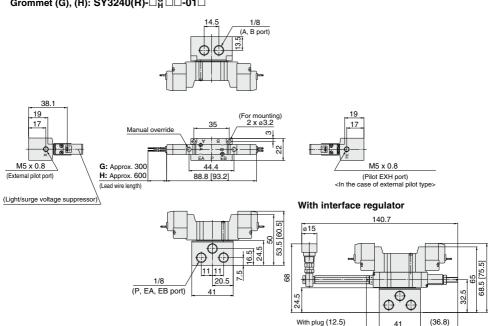
M8 connector (WO): SY3140(R)-□WO□□-01□



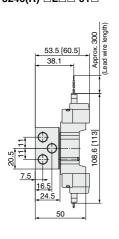
Dimensions: SY3000 Series []: AC

2 position double

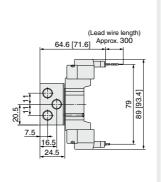
Grommet (G), (H): SY3240(R)-□G □□-01□



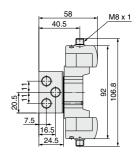
L plug connector (L): SY3240(R)-□L□□-01□



M plug connector (M): SY3240(R)-□M□□-01□



M8 connector (WO): SY3240(R)-□WO□□-01□



Note) Refer to page 961 for dimensions of connector types.

Base Mounted SY3000/5000/7000/9000 Series

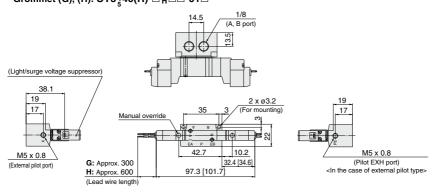
Dimensions: SY3000 Series

[]: AC

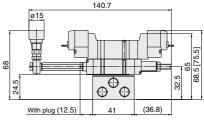
3 position closed center / exhaust center / pressure center Grommet (G), (H): SY3 $\frac{3}{4}$ 40(R)- \Box $\frac{6}{1}$ \Box 0-01 \Box

1/8

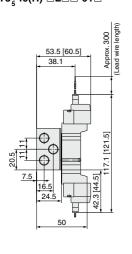
P, EA, EB port



With interface regulator



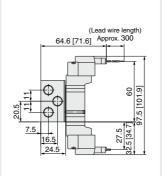
L plug connector (L): SY3³/₂40(R)-□L□□-01□



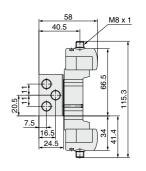
M plug connector (M): SY3³/₄40(R)-□M□□-01□

53.5 [60.5]

16.5



M8 connector (WO): SY3³/₄40(R)-□WO□□-01□

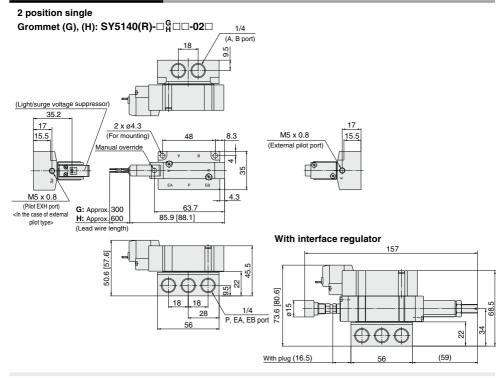


Note) Refer to page 961 for dimensions of connector types.



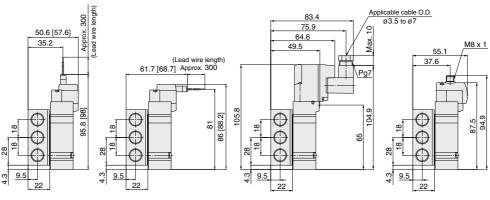
Dimensions: SY5000 Series

[]: AC



L plug connector (L): SY5140(R)-□L□□-02□ M plug connector (M): SY5140(R)-□M□□-02□ DIN terminal (D, Y): SY5140(R)-□^D_Y□□-02□

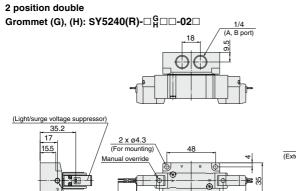
M8 connector (WO): SY5140(R)-□WO□□-02□



Base Mounted SY3000/5000/7000/9000 Series

Dimensions: SY5000 Series

[]: AC



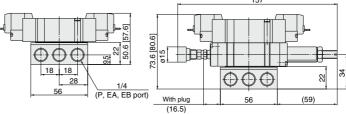
G: Approx. 300

H: Approx. 600

(Lead wire length)

17 15.5 M5 x 0.8 (External pilot port)

With interface regulator





M5 x 0.8

(Pilot EXH port)

<In the case of external

pilot type>

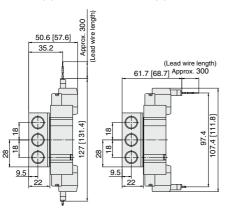
M plug connector (M): SY5240(R)-□M□□-02□

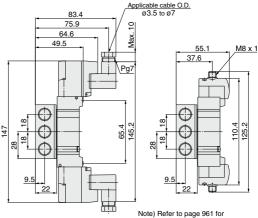
62.8

107.2 [111.6]

DIN terminal (D, Y): SY5240(R)-□♥□□-02□

M8 connector (WO): SY5240(R)-□WO□□-02□



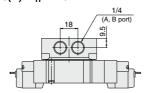


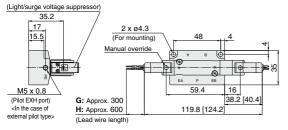
dimensions of connector types.

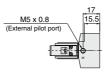
Dimensions: SY5000 Series

[]: AC

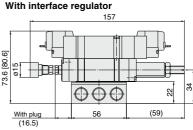
3 position closed center / exhaust center / pressure center Grommet (G), (H): SY5 $\frac{4}{5}40(R)-\Box \frac{G}{1}\Box\Box$ -02 \Box







(P. EA, EB port)

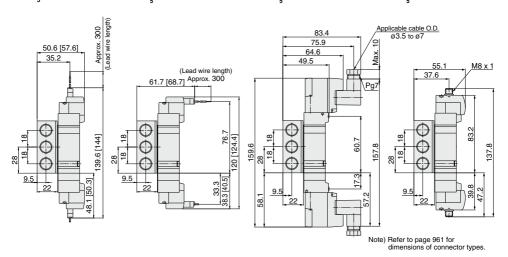


L plug connector (L): SY5³/₄40(R)-□L□□-02□

M plug connector (M): SY5³/₄40(R)-□M□□-02□

18 18

DIN terminal (D, Y): SY5³/₄40(R)-□^D/_Y□□-02□ M8 connector (WO): SY5 ³/₅40(R)-□WO□□-02□



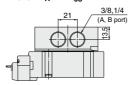
Base Mounted **SY3000/5000/7000/9000** Series

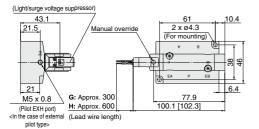
Dimensions: SY7000 Series

[]: AC

2 position single

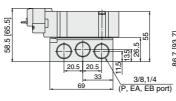
Grommet (G), (H): SY7140(R)-□ G□ □- 02 □

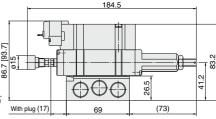






With interface regulator



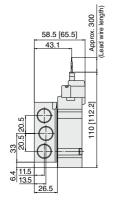


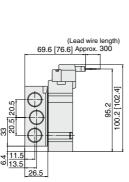
L plug connector (L): SY7140(R)- \Box L \Box - $^{02}_{03}\Box$

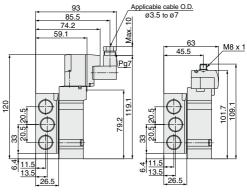
M plug connector (M): SY7140(R)-□M□□- 02 □

DIN terminal (D, Y): SY7140(R)- $\Box_{Y}^{D}\Box\Box$ - $_{03}^{02}\Box$

M8 connector (WO): SY7140(R)-□WO□□-03□







Note) Refer to page 961 for dimensions of connector types.

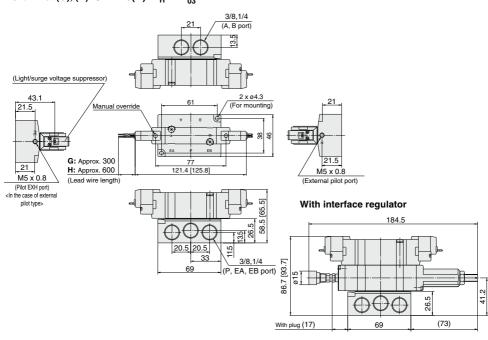


SY3000/5000/7000/9000 Series

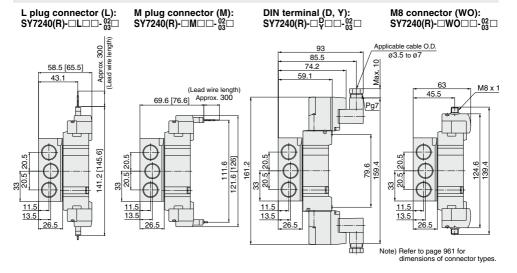
Dimensions: SY7000 Series

2 position double

Grommet (G), (H): SY7240(R)-□G□□-02□

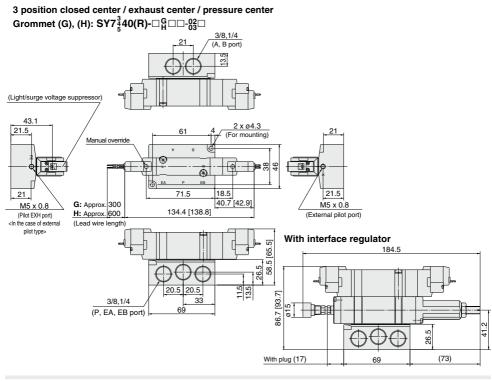


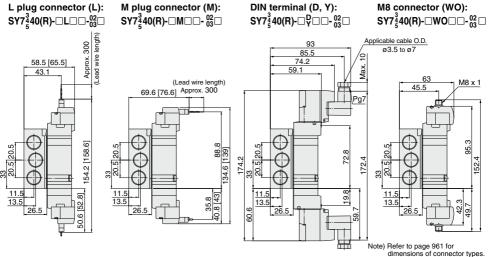
[]: AC



Dimensions: SY7000 Series

[]: AC





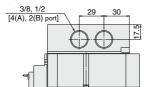
SY3000/5000/7000/9000 Series

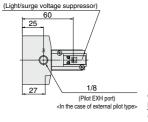
Dimensions: SY9000 Series

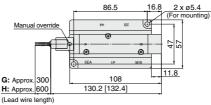
[]: AC

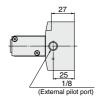
2 position single

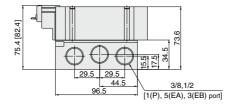
Grommet (G), (H): SY9140(R)-□ G□□- 03 □

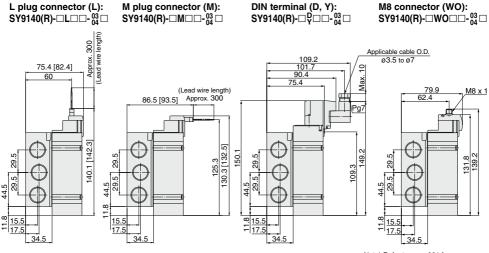












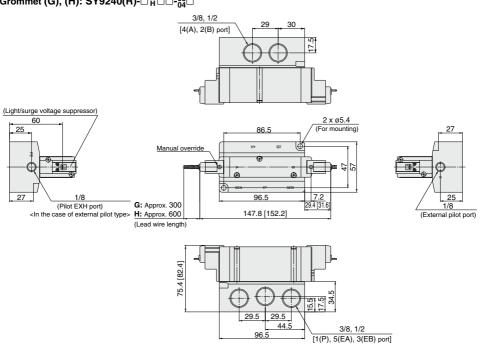
Base Mounted SY3000/5000/7000/9000 Series

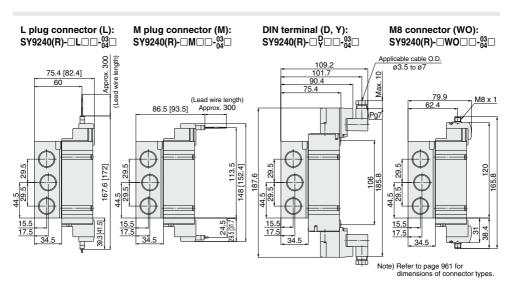
Dimensions: SY9000 Series

[]: AC

2 position double

Grommet (G), (H): SY9240(R)-□H□□-03□



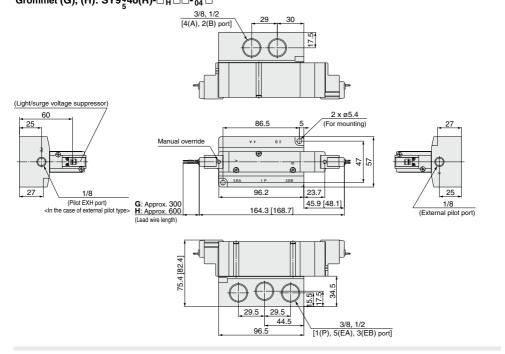


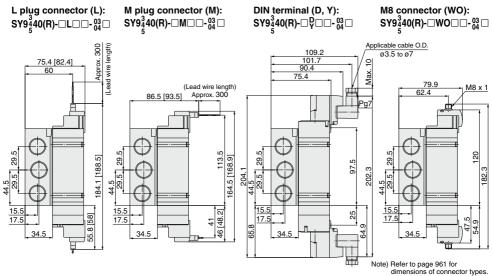
SY3000/5000/7000/9000 Series

Dimensions: SY9000 Series

[]: AC

3 position closed center / exhaust center / pressure center Grommet (G), (H): SY9 $_{\epsilon}^{3}$ 40(R)- $\Box_{H}^{G}\Box\Box$ - $_{04}^{03}\Box$





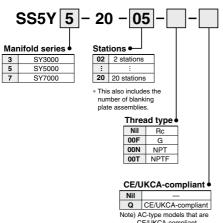


5 Port Solenoid Valve **Body Ported Manifold** Bar Stock Type/Individual Wiring



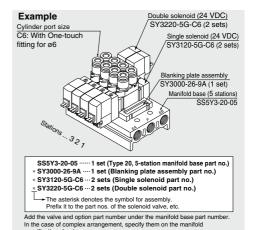
SY3000/5000/7000 Series

How to Order Manifold



CE/UKCA-compliant have DIN terminals only.

How to Order Manifold Assembly (Example)



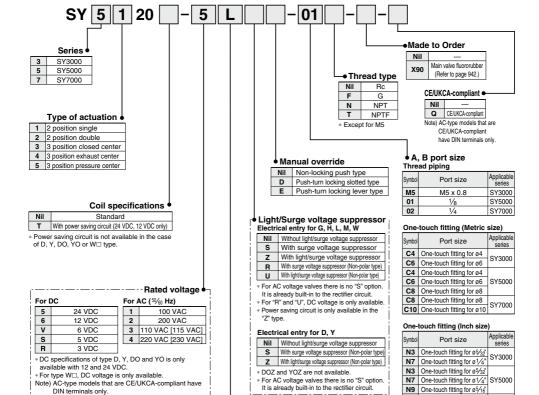
Body Ported **SY3000/5000/7000** Series 1792 20



How to Order Valve

Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.





Electrical entry

| | | | , 12, 6, 5, 3 VDC/ 0, 110, 200, 220 V | | 24, 12 VDC/ 100, 110, 200, 220 VAC | 24, 12, 6, 5, 3 VDC |
|-----------|--------|--|--|--|--|---|
| | | Grommet | L plug connector | M plug connector | DIN terminal | M8 connector |
| | | G: Lead wire length 300 mm H: Lead wire length 600 mm | L: With lead wire (Length 300 mm) LN: Without lead wire LO: Without connector | M: With lead wire (Length 300 mm) MN: Without lead wire MO: Without connector | (SY5000/7000 only) D: With connector DO: Without connector Y: With connector YO: Without connector | WO: Without connector cable W□: With connector cable Note 2) |
| Manifold | SY3000 | • | • | • | Note 1) | • |
| mounting | SY5000 | • | • | • | • | • |
| mounting | SY7000 | • | • | • | • | • |
| CE/UKCA- | DC | • | • | • | • | • |
| compliant | ۸۲ | _ | _ | _ | | _ |

Note 1) The DIN terminal of the SY3000 series cannot be mounted on a standard manifold. For details, refer to page 958.

Note 2) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 961. * LN, MN type: with 2 sockets.

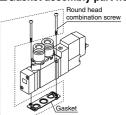
- * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C).
- For details, refer to page 957. * For connector cable of M8 connector, refer to page 960.
- * M8 thread conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details.
- * Refer to page 957 for the lead wire length of L and M plug connectors.
- * Refer to page 958 for the connector assembly with cover for L and M plug connectors.



Manifold mounting screws and gaskets are included with the manifold, but they are not included when ordering a body ported solenoid valve as a single unit. Order them separately if necessary.

N9 One-touch fitting for ø5/16" N11 One-touch fitting for ø3/8

■Gasket assembly part no.



| Series | Gasket assembly part no. |
|--------|--------------------------|
| SY3000 | SY3000-GS-1 |
| SY5000 | SY5000-GS-1 |
| SY7000 | SY7000-GS-1 |

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.



Manifold Specifications

| | Model | | SS5Y3-20(-Q) | SS5Y5-20(-Q) | SS5Y7-20(-Q) | | | | | | |
|---|-----------------------------|----------------|---|--|---|--|--|--|--|--|--|
| | Applicable v | alve | SY3□20 | SY5□20 | SY7□20 | | | | | | |
| | Manifold ty | ре | Single base/B mount | | | | | | | | |
| | P (SUP)/R (| EXH) | Common SUP, Common EXH | | | | | | | | |
| | Valve static | ons | 2 to 20 stations Note1) | | | | | | | | |
| 2 | A, B port lo | cation | Valve | | | | | | | | |
| | | P, EA, EB port | 1/8 | 1/4 | 1/4 | | | | | | |
| | Port size A, B port | | M5 x 0.8 C4(One-touch fitting for ø4) C6 (One-touch fitting for ø6) | 1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8) | 1/4 C8 (One-touch fitting for Ø8) C10 (One-touch fitting for Ø10) | | | | | | |
| | Manifold bas n: Stations | e weight W (g) | W = 13n + 24 | W = 36n + 64 | W = 43n + 35 | | | | | | |

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Flow Rate Characteristics

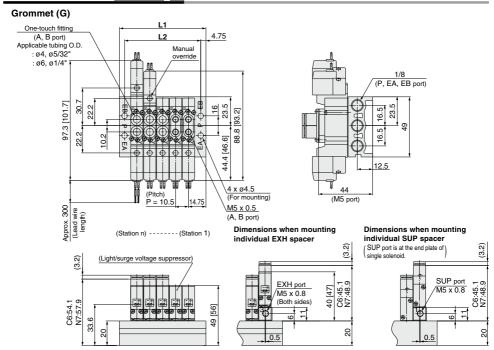
| | Port si | ze | Flow rate characteristics | | | | | | | | |
|--------------|-------------|--------|---------------------------|------------|------|-----------------|------------|--------|--|--|--|
| Model | 1, 5, 3 | 4, 2 | 1 → | 4/2 (P → A | VB) | 4/2 → | 5/3 (A/B → | EA/EB) | | | |
| | (P, EA, EB) | (A, B) | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | | | |
| SS5Y3-20(-Q) | 1/8 | C6 | 0.72 | 0.29 | 0.18 | 0.80 | 0.36 | 0.21 | | | |
| SS5Y5-20(-Q) | 1/4 | C8 | 1.9 | 0.28 | 0.48 | 2.2 | 0.20 | 0.53 | | | |
| SS5Y7-20(-Q) | 1/4 | C10 | 3.6 | 0.31 | 0.93 | 3.6 | 0.27 | 0.88 | | | |

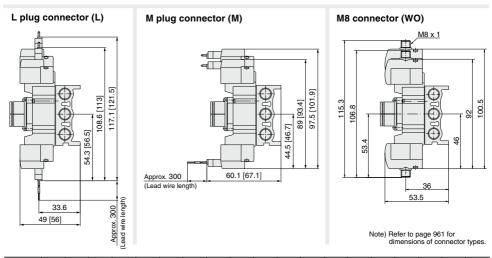
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Note 2) Refer to "Manifold Option" on page 795.

SY3000: SS5Y3-20-Stations -

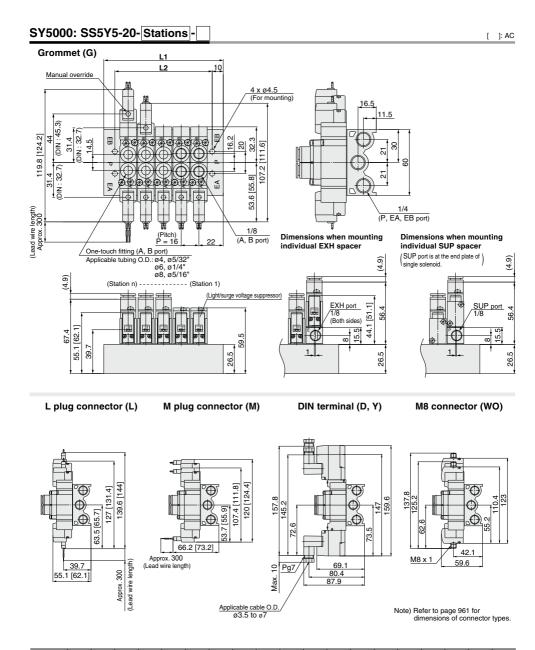
[]: AC





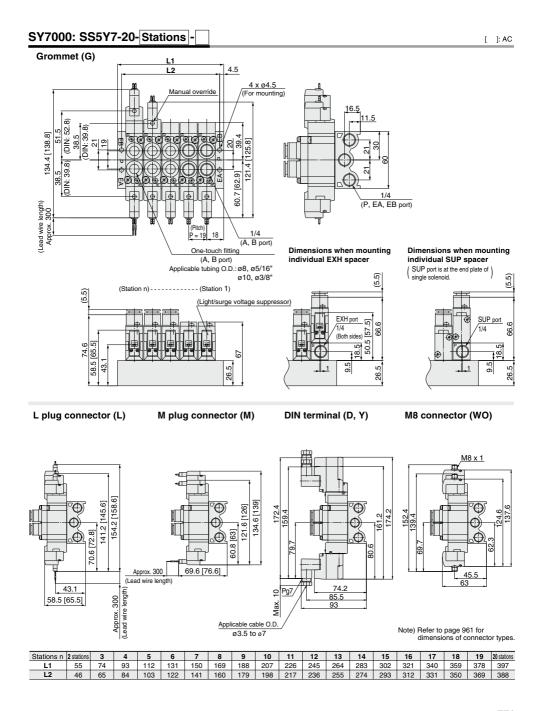
| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|------------|------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 40 | 50.5 | 61 | 71.5 | 82 | 92.5 | 103 | 113.5 | 124 | 134.5 | 145 | 155.5 | 166 | 176.5 | 187 | 197.5 | 208 | 218.5 | 229 |
| L2 | 30.5 | 41 | 51.5 | 62 | 72.5 | 83 | 93.5 | 104 | 114.5 | 125 | 135.5 | 146 | 156.5 | 167 | 177.5 | 188 | 198.5 | 209 | 219.5 |

w.20 SY3000/5000/7000 Series

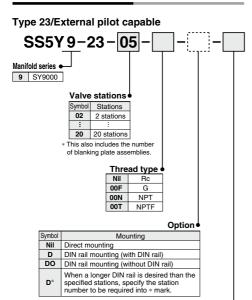


| S | tations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|---|-----------|------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|
| | L1 | 60 | 76 | 92 | 108 | 124 | 140 | 156 | 172 | 188 | 204 | 220 | 236 | 252 | 268 | 284 | 300 | 316 | 332 | 348 |
| | L2 | 40 | 56 | 72 | 88 | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 | 264 | 280 | 296 | 312 | 328 |



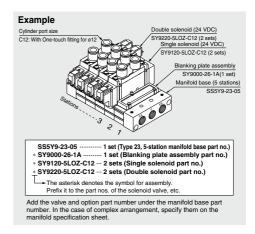


How to Order Manifold



CE/UKCA-compliant Q CE/UKCA-compliant Note) AC-type models that are CE/UKCA-compliant have DIN terminals

How to Order Manifold Assembly (Example)

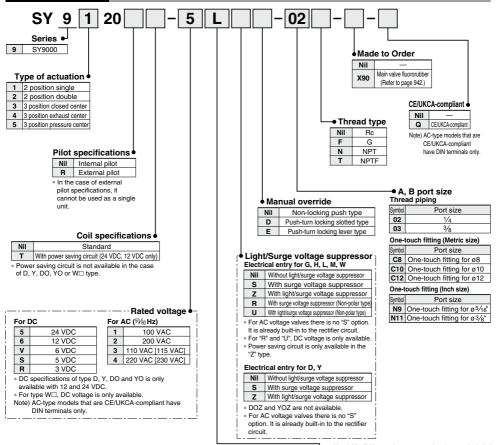






Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.





Flectrical entry

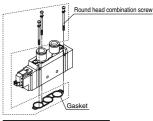
| | | | | | Ele | cuicai enu y • |
|-----------|----|--|--|--|--|---|
| | | | 4, 12, 6, 5, 3 VDC 00, 110, 200, 220 | | 24, 12 VDC/ 100, 110, 200, 220 VAC | 24, 12, 6, 5, 3 VDC |
| | | Grommet | L plug connector | M plug connector | DIN terminal | M8 connector |
| | | G: Lead wire length 300 mm H: Lead wire length 600 mm | L: With lead wire (Length 300 mm) LN: Without lead wire LO: Without connector | M: With lead wire (Length 300 mm) MN: Without lead wire MO: Without connector | D: With connector DO: Without connector Y: With connector YO: Without connector | WO: Without connector cable W□: With connector cable Note) |
| CE/UKCA- | DC | • | • | • | • | • |
| compliant | AC | | _ | | • | _ |

- * LN, MN type: with 2 sockets
- * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 957.
- * For connector cable of M8 connector, refer to page 960.
- * M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for
- * Refer to page 957 for the lead wire length of L and M plug connectors.
- * Refer to page 958 for the connector assembly with cover for L and M plug connectors.

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 961.

Note) Manifold mounting screws and gaskets are included with the manifold, but they are not included when ordering a body ported solenoid valve as a single unit. Order them separately if necessary.

■Gasket assembly part no.



| Series | Gasket assembly part no. |
|--------|--------------------------|
| SY9000 | SY9000-GS-1 |

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.







Manifold Specifications

| Model | | SS5Y9-23(-Q) | | | | | |
|---|-----------------------|---|--|--|--|--|--|
| Applicable | olicable valve SY9□20 | | | | | | |
| Manifold ty | уре | Stacking type | | | | | |
| P (SUP)/R | (EXH) | Common SUP, Common EXH | | | | | |
| Valve stati | ons | 2 to 20 stations Note1) | | | | | |
| A, B port location | | Valve | | | | | |
| , - - | P, EA, EB port | 3/8 | | | | | |
| Port size | A, B port | 1/4 3/6 3/6 C8 (One-touch fitting for Ø8) C10 (One-touch fitting for ø10) C12 (One-touch fitting for ø12) | | | | | |
| Manifold base weight W (g) n: Stations | | W = 66n + 246 | | | | | |

Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

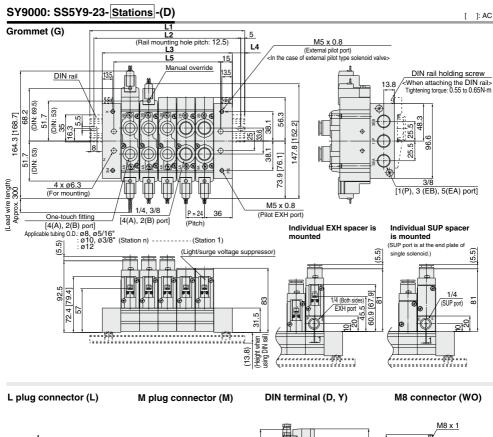
Flow Rate Characteristics

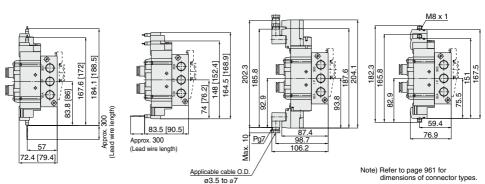
| | Port si | ze | | Flow rate characteristics | | | | | | | | | |
|--------------|-------------|--------|-----------------|---------------------------|-----|-------------------------|------|-----|--|--|--|--|--|
| Model | 1, 5, 3 | 4, 2 | 1 → | 4/2 (P → A | VB) | 4/2 → 5/3 (A/B → EA/EB) | | | | | | | |
| | (P, EA, EB) | (A, B) | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | | | | | |
| SS5Y9-23(-Q) | 3/8 | C12 | 6.3 | 0.20 | 1.5 | 8.2 | 0.28 | 1.9 | | | | | |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Note 2) Refer to "Manifold Option" on page 795.

Body Ported SY9000 Series Type 23





| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 123 | 148 | 173 | 198 | 223 | 248 | 273 | 298 | 323 | 335.5 | 360.5 | 385.5 | 410.5 | 435.5 | 460.5 | 485.5 | 510.5 | 535.5 | 560.5 |
| L2 | 112.5 | 137.5 | 162.5 | 187.5 | 212.5 | 237.5 | 262.5 | 287.5 | 312.5 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525 | 550 |
| L3 | 96 | 120 | 144 | 168 | 192 | 216 | 240 | 264 | 288 | 312 | 336 | 360 | 384 | 408 | 432 | 456 | 480 | 504 | 528 |
| L4 | 13.5 | 14 | 14.5 | 15 | 15.5 | 16 | 16.5 | 17 | 17.5 | 12 | 12.5 | 13 | 13.5 | 14 | 14.5 | 15 | 15.5 | 16 | 16.5 |
| L5 | 66 | 90 | 114 | 138 | 162 | 186 | 210 | 234 | 258 | 282 | 306 | 330 | 354 | 378 | 402 | 426 | 450 | 474 | 498 |

Note) In the case of direct mounting without DIN rail, total width of manifold is L3.



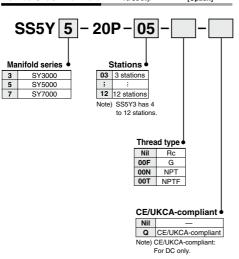
Type **20P**

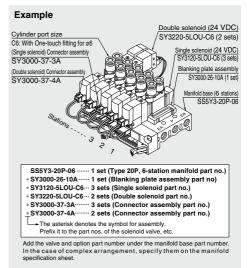
5 Port Solenoid Valve Body Ported Manifold Bar Stock Type/Flat Ribbon Cable

SY3000/5000/7000 Series



How to Order Manifold Assembly (Example)





Note) Please indicate the connector assembly part no. below that connects the valve and the manifold.

Connector Assembly

For 12, 24 VDC

| Specifications | For SY3000 | For SY5000/7000 |
|--|--------------|-----------------|
| For single solenoid | SY3000-37-3A | SY5000-37-3A |
| Double solenoid, 3 position type | SY3000-37-4A | SY5000-37-4A |
| Single with spacer assembly | SY5000-37-3A | SY5000-37-5A |
| Double, 3 position with spacer assembly | SY3000-37-6A | SY5000-37-6A |

Note) Spacer assembly indicates Individual SUP/EXH

For 100 VAC

| Specifications | For SY3000 | For SY5000/7000 |
|--|---------------|-----------------|
| For single solenoid | SY3000-37-32A | SY5000-37-15A |
| Double solenoid, 3 position type | SY3000-37-33A | SY5000-37-16A |
| Single with spacer assembly | SY5000-37-15A | SY5000-37-17A |
| Double, 3 position with spacer assembly | SY3000-37-34A | SY5000-37-18A |

For 100 VAC (115 VAC)

| Specifications | For SY3000 | For SY5000/7000 |
|--|---------------|-----------------|
| For single solenoid | SY3000-37-35A | SY5000-37-19A |
| Double solenoid, 3 position type | SY3000-37-36A | SY5000-37-20A |
| Single with spacer assembly | SY5000-37-19A | SY5000-37-21A |
| Double, 3 position with spacer assembly | SY3000-37-37A | SY5000-37-22A |

∧Caution

• For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

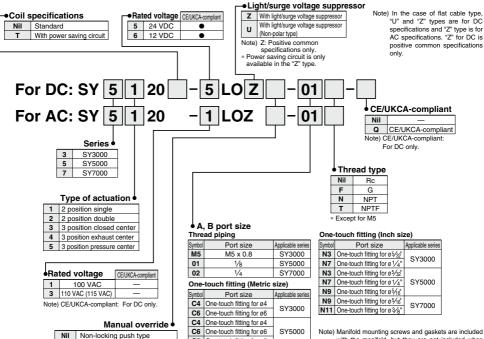
Body Ported **SY3000/5000/7000** Series



How to Order Valve

Note) CE/UKCA-compliant For DC only.





C8 One-touch fitting for ø8

C8 One-touch fitting for ø8

C10 One-touch fitting for ø10

SY7000

Push-turn locking slotted type

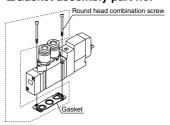
Push-turn locking lever type

Е

with the manifold, but they are not included when ordering a body ported solenoid valve as a single unit. Order them separately if necessary.

Note) Since the electrical entry is "LO", select a connector assembly part no. from those stated on page 776.

■Gasket assembly part no.



| Series | Gasket assembly part no. |
|--------|--------------------------|
| SY3000 | SY3000-GS-1 |
| SY5000 | SY5000-GS-1 |
| SY7000 | SY7000-GS-1 |

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.



Multiple valve wiring is simplified through the use of the flat cable connector

Clean appearance

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



Manifold Specifications

| Model | | SS5Y3-20P(-Q) | SS5Y5-20P(-Q) | SS5Y7-20P(-Q) | | | |
|--|--------------------|---|--|---|--|--|--|
| Applicable v | alve | SY3□20 | SY7□20 | | | | |
| Manifold ty | pe | | Single base/B mount | | | | |
| P (SUP)/R (| EXH) | Co | mmon SUP, Common E | XH | | | |
| Valve static | ons | 4 to 12 stations(1) | 3 to 12 sta | ations Note 1) | | | |
| A, B port lo | cation | | Valve | | | | |
| | P, EA, EB port | 1/8 | 1/4 | 1/4 | | | |
| Port size | A, B port | M5 x 0.8, C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) | 1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8) | 1/4 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10) | | | |
| Manifold base weight W (g) n: Stations | | W = 19n + 45 | W = 43n + 77 | W = 51n + 81 | | | |
| Applicable flat ribb | on cable connector | Flat ribbon cable connector, Socket: 26 pins MIL type with strain relief, Conforming to MIL-C-83503 | | | | | |
| Internal wir | ing | In common between +COM and -COM (Z type: +COM only). | | | | | |
| Rated volta | ge Note 4) | 12, 24 VDC 100, 110 VAC | | | | | |

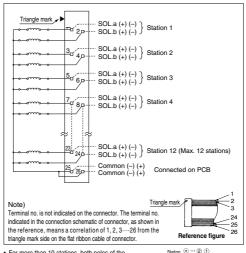
Note 1) For more than 10 stations (more than 5 stations in case of SSSY7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Flow Rate Characteristics

| | Port size | | | Flow rate characteristics | | | | | | | |
|-----------|-------------|--------|---|---------------------------|------|---|------|------|--------|--|--|
| Model | 1, 5, 3 | 4, 2 | $1 \rightarrow 4/2 (P \rightarrow A/B)$ | | | 4, 2 $1 \rightarrow 4/2 (P \rightarrow A/B)$ $4/2 \rightarrow 5/3 (A/B \rightarrow EA/B)$ | | | EA/EB) | | |
| | (P, EA, EB) | (A, B) | C [dm3/(s·bar)] | b | Cv | C [dm3/(s-bar)] | b | Cv | | | |
| SS5Y3-20P | 1/8 | C6 | 0.72 | 0.29 | 0.18 | 0.80 | 0.36 | 0.21 | | | |
| SS5Y5-20P | 1/4 | C8 | 1.9 | 0.28 | 0.48 | 2.2 | 0.20 | 0.53 | | | |
| SS5Y7-20P | 1/4 | C10 | 3.6 | 0.31 | 0.93 | 3.6 | 0.27 | 0.88 | | | |

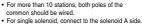
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Internal Wiring of Manifold





 For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.



 The maximum number of stations that can be accommodated is 12.





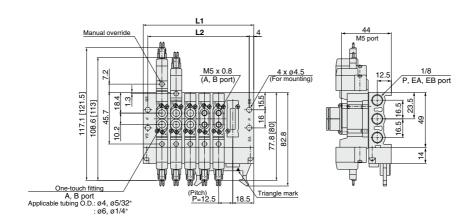
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent. Note 3) Refer to "Manifold Option" on page 795.

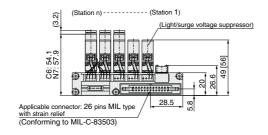
Note 4) CE/UKCA-compliant: For DC only.



SY3000: SS5Y3-20P-Stations

[]: AC

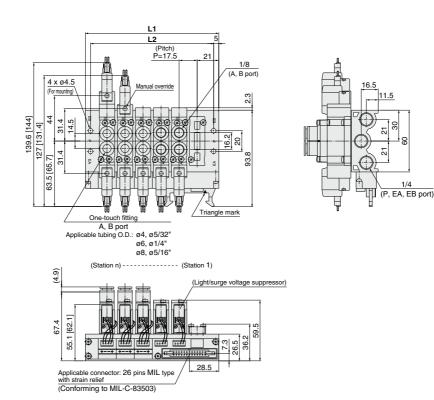




| Stations n | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------|------|----|------|-----|-------|-----|-------|-----|-------|
| L1 | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 |
| L2 | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 |

SMC

SY5000: SS5Y5-20P-Stations



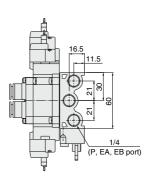
| Stations n | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|
| L1 | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 |
| 1.2 | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224 5 |



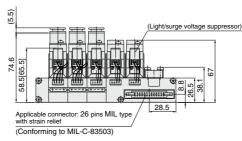
[]: AC

SY7000: SS5Y7-20P- Stations

| | L1 | 23.5 |
|--|--|--------|
| 1542 [158.6] 1542 [158.6] 1642 [158.6] 170.6 [72.8] 1915 1915 1915 1915 1915 1915 1915 191 | 1/4 A, B port S S S S S S S S S S S S S S S S S S S | e mark |



| One-touch fitting | - 1 | 11 | Ħ | Ħ | # | / Trian |
|------------------------------------|------------|----|---|---|----|------------|
| A. B port | | | | | | |
| Applicable tubing O.D.: Ø8, Ø5/16" | (Station i | n) | | | (5 | Station 1) |
| ø10, ø3/8" | (| ., | | | ,- | |



| Stations n | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| L1 | 88 | 108.5 | 129 | 149.5 | 170 | 190.5 | 211 | 231.5 | 252 | 272.5 |
| 12 | 68 | 88.5 | 109 | 129.5 | 150 | 170.5 | 191 | 2115 | 232 | 252.5 |

SMC

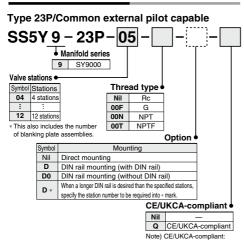
781

5 Port Solenoid Valve **Body Ported Manifold Stacking Type/Flat Ribbon Cable**

SY9000 Series

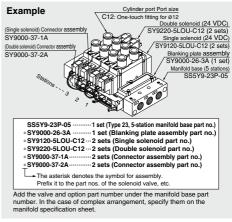


How to Order Manifold



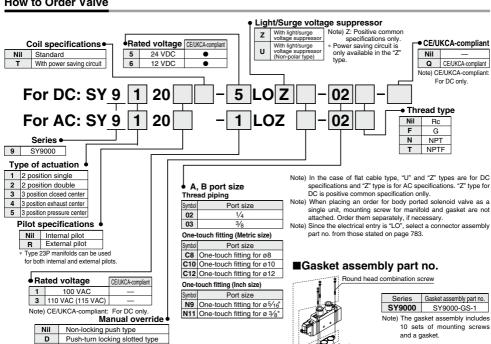
For DC only.

How to Order Manifold Assembly (Example)



Note) Please indicate the connector assembly part no. (page 783) that connects the valve and the manifold

How to Order Valve



Push-turn locking lever type

. Multiple valve wiring is simplified through the use of the flat cable connector.

Clean appearance

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



Manifold Specifications

| Model | | SS5Y9-23P(-Q) | | |
|--|-----------------|--|--|--|
| Applicable | valve | SY9□20 | | |
| Manifold ty | ре | Stacking type | | |
| P (SUP)/R | (EXH) | Common SUP, Common EXH | | |
| Valve stati | ons | 4 to 12 stations Note1) | | |
| A, B port lo | ocation | Valve | | |
| | P, EA, EB port | 3/8 | | |
| | | 1/4 | | |
| Port size | | 3/8 | | |
| FOIT SIZE | A, B port | C8 (One-touch fitting for ø8) | | |
| | | C10 (One-touch fitting for ø10) | | |
| | | C12 (One-touch fitting for ø12) | | |
| Manifold bas | se weight W (g) | W = 73n + 259 | | |
| | | First dishara and a constant of the Mill with about a first Ocade with a Mill O 00500 | | |
| Applicable flat ribbon cable connector | | Flat ribbon cable connector, Socket: 26 pins MIL with strain relief, Conforming to MIL-C-83503 | | |
| Internal wi | ring | In common between +COM and -COM (Z type: +COM only) | | |
| Rated voltage Note4) | | 12, 24 VDC, 100, 110 VAC | | |

Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides. Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent. Note 3) Refer to "Manifold Option" on page 795.

Note 4) CE/UKCA-compliant: For DC only.

Connector Assembly

For 12, 24 VDC

| Specifications | For SY9000 |
|---|--------------|
| For single solenoid | SY9000-37-1A |
| Double solenoid 3 position | SY9000-37-2A |
| Single with spacer assembly | SY9000-37-3A |
| Double, 3 position with spacer assembly | SY9000-37-4A |

For 100 VAC

| Specifications | For SY9000 |
|---|--------------|
| For single solenoid | SY9000-37-1B |
| Double solenoid 3 position | SY9000-37-2B |
| Single with spacer assembly | SY9000-37-3B |
| Double, 3 position with spacer assembly | SY9000-37-4B |

For 110 VAC (115 VAC)

| | - / |
|---|--------------|
| Specifications | For SY9000 |
| For single solenoid | SY9000-37-1C |
| Double solenoid 3 position | SY9000-37-2C |
| Single with spacer assembly | SY9000-37-3C |
| Double, 3 position with spacer assembly | SY9000-37-4C |

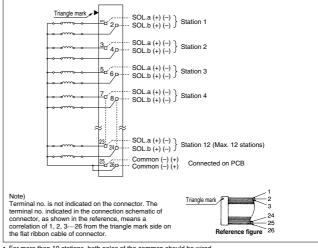
Note) Spacer assembly indicates Individual SUP/EXH.

Flow Rate Characteristics

| | Port si | ze | Flow rate characteristics | | | | | | | | | |
|---------------|-------------|--------|---------------------------|------------|-----|-------------------------|------|-----|--|--|--|--|
| Model | 1, 5, 3 | 4, 2 | 1 → | 4/2 (P → A | VB) | 4/2 → 5/3 (A/B → EA/EB) | | | | | | |
| | (P, EA, EB) | (A, B) | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | | | | |
| SS5Y9-23P(-Q) | 3/8 | C12 | 6.3 | 0.20 | 1.5 | 8.2 | 0.28 | 1.9 | | | | |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

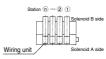
Internal Wiring of Manifold



- . For more than 10 stations, both poles of the common should be wired.
- . For single solenoid, connect to the solenoid A side.

SMC

The maximum number of stations that can be accommodated is 12.



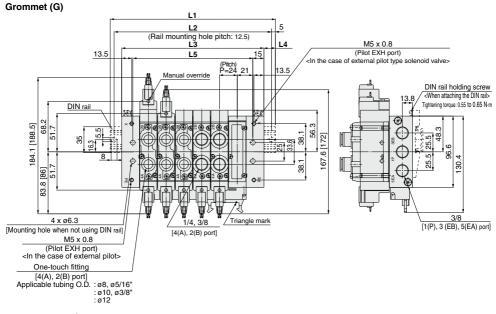
∕!\Caution

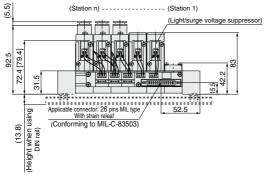
· For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.



SY9000: SS5Y9-23P-Stations -(D)

[]: AC





| Stations n | 4 stations | 5 | 6 | / | 8 | 9 | 10 | 11 | 12 stations |
|------------|----------------------|---|--|--|---|--|---|--|---|
| L1 | 173 | 198 | 223 | 248 | 273 | 298 | 323 | 335.5 | 360.5 |
| L2 | 162.5 | 187.5 | 212.5 | 237.5 | 262.5 | 287.5 | 312.5 | 325 | 350 |
| L3 | 144 | 168 | 192 | 216 | 240 | 264 | 288 | 312 | 336 |
| L4 | 14.5 | 15 | 15.5 | 16 | 16.5 | 17 | 17.5 | 12 | 12.5 |
| L5 | 114 | 138 | 162 | 186 | 210 | 234 | 258 | 282 | 306 |
| | L1 L2 L3 L4 | L1 173 L2 162.5 L3 144 L4 14.5 | L1 173 198 L2 162.5 187.5 L3 144 168 L4 14.5 15 | L1 173 198 223 L2 162.5 187.5 212.5 L3 144 168 192 L4 14.5 15 15.5 | L1 173 198 223 248 L2 162.5 187.5 212.5 237.5 L3 144 168 192 216 L4 14.5 15 15.5 16 | L1 173 198 223 248 273 L2 162.5 187.5 212.5 237.5 262.5 L3 144 168 192 216 240 L4 14.5 15 15.5 16 16.5 | L1 173 198 223 248 273 298 L2 162.5 187.5 212.5 237.5 262.5 287.5 L3 144 168 192 216 240 264 L4 14.5 15 15.5 16 16.5 17 | L1 173 198 223 248 273 298 323 L2 162.5 187.5 212.5 237.5 262.5 287.5 312.5 L3 144 168 192 216 240 264 288 L4 14.5 15 15.5 16 16.5 17 17.5 | L1 173 198 223 248 273 298 323 335.5 L2 162.5 187.5 212.5 237.5 262.5 287.5 312.5 325 L3 144 168 192 216 240 264 288 312 L4 14.5 15 15.5 16 16.5 17 17.5 12 |

Note) In the case of direct mounting without DIN rail, total width of manifold is L3.



....20SA

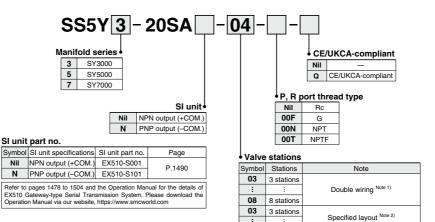
EX510 Gateway-type Serial Transmission System Body Ported Manifold/Integrated Base

SY3000/5000/7000 Series

The EX510 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

C E UK [Option]

How to Order Manifold

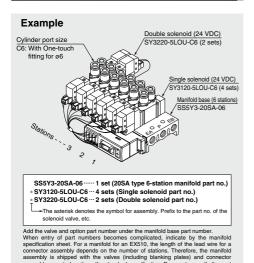


- 16 stations
 SS5Y3 can be set from 4 stations.
- The number of the blanking plate assembly is also included.
- Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

(Compatible with 16 solenoid valves)

Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

How to Order Manifold Assembly (Example)



assembly mounted on it, as the standard specification. Be sure to specify the part

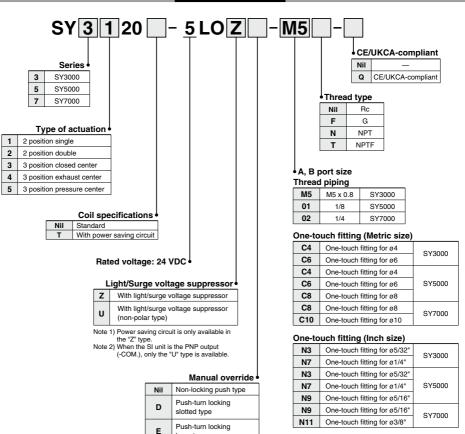
nos. of the solenoid valves to be mounted.

Body Ported Manifold SY3000/5000/7000 Series 1/1220SA



How to Order Valves

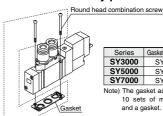




lever type

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary.

■Gasket assembly part no.

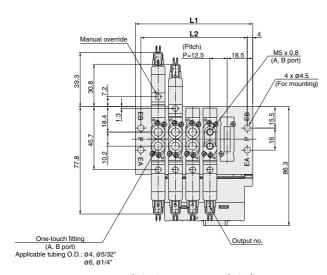


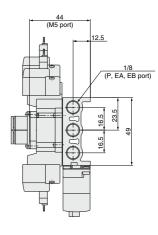
| Series | Gasket assembly part no. |
|--------|--------------------------|
| SY3000 | SY3000-GS-1 |
| SY5000 | SY5000-GS-1 |
| SY7000 | SY7000-GS-1 |
| | |

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

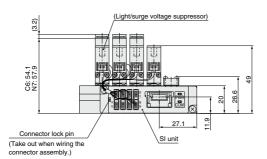
1000 Series

SY3000: SS5Y3-20SA - Stations -





(Station n) ----- (Station 1)

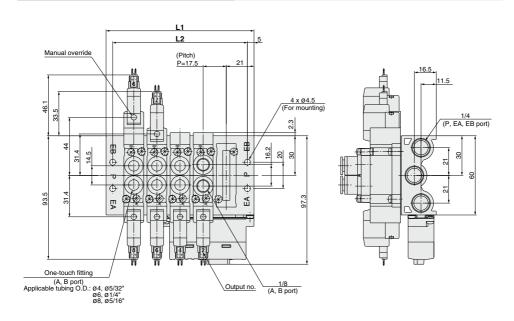


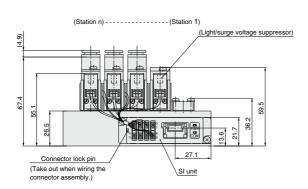
| Stati | ions n | 4 stations | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|-------|--------|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| L | _1 | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 | 185 | 197.5 | 210 | 222.5 |
| L | _2 | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 | 177 | 189.5 | 202 | 214.5 |

Body Ported Manifold SY3000/5000/7000 Series 1/12 20SA



SY5000: SS5Y5-20SA - Stations -



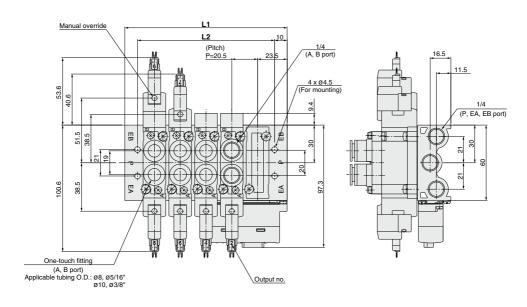


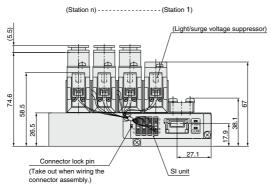
| Stations n | 3 stations | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|------------|------------|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| L1 | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 | 252 | 269.5 | 287 | 304.5 |
| L2 | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224.5 | 242 | 259.5 | 277 | 294.5 |

SMC

1000 Series

SY7000: SS5Y7-20SA - Stations -





| Stations | n 3 stations | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|----------|--------------|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| L1 | 88 | 108.5 | 129 | 149.5 | 170 | 190.5 | 211 | 231.5 | 252 | 272.5 | 293 | 313.5 | 334 | 354.5 |
| L2 | 68 | 88.5 | 109 | 129.5 | 150 | 170.5 | 191 | 211.5 | 232 | 252.5 | 273 | 293.5 | 314 | 334.5 |

790



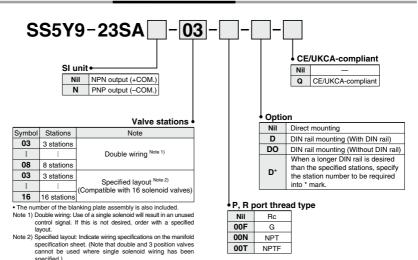
EX510 Gateway-type Serial Transmission System Body Ported Manifold/Stacking Type

Type 23SA

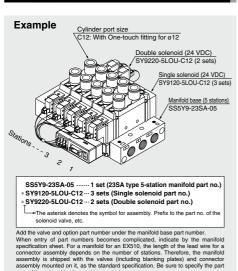
SY9000 Series (ELE

The EX510 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

How to Order Manifold



How to Order Manifold Assembly (Example)



SI unit part no.

| Symbol | SI unit specifications | SI unit part no. | Page |
|--------|------------------------|------------------|--------|
| Nil | NPN output (+COM.) | EX510-S001 | P.1490 |
| N | PNP output (-COM.) | EX510-S101 | F.1490 |

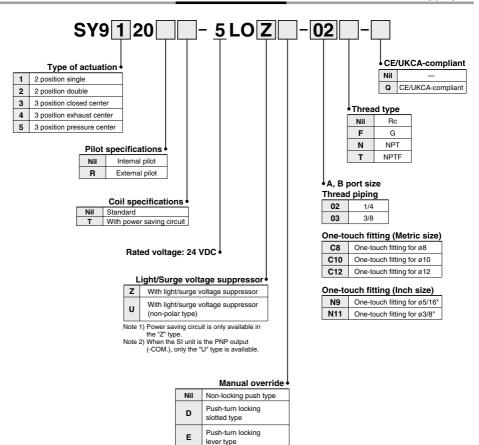
Refer to pages 1478 to 1504 and the Operation Manual for the details of EX510 Gateway-type Serial Transmission System. Please download the Operation Manual via our website, https://www.smcworld.com

nos. of the solenoid valves to be mounted.



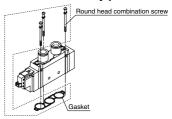
How to Order Valves





Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately,

■Gasket assembly part no.



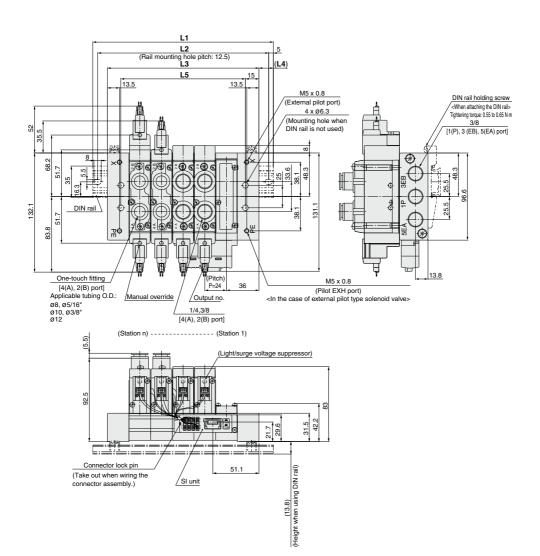
| Series | Gasket assembly part no. |
|--------|--------------------------|
| SY9000 | SY9000-GS-1 |

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.



SY9000 Series

SY9000: SS5Y9-23SA - Stations - (-D)



| Stations n | 3 stations | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 148 | 173 | 198 | 223 | 248 | 273 | 298 | 323 | 335.5 | 360.5 | 385.5 | 410.5 | 435.5 | 460.5 |
| L2 | 137.5 | 162.5 | 187.5 | 212.5 | 237.5 | 262.5 | 287.5 | 312.5 | 325 | 350 | 375 | 400 | 425 | 450 |
| L3 | 120 | 144 | 168 | 192 | 216 | 240 | 264 | 288 | 312 | 336 | 360 | 384 | 408 | 432 |
| L4 | 14 | 14.5 | 15 | 15.5 | 16 | 16.5 | 17 | 17.5 | 12 | 12.5 | 13 | 13.5 | 14 | 14.5 |
| L5 | 90 | 114 | 138 | 162 | 186 | 210 | 234 | 258 | 282 | 306 | 330 | 354 | 378 | 402 |

Note) In the case of direct mounting without DIN rail, total width of manifold is L3.

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Manifold Option

■ Type 20, 23, 20SA, 23SA Blanking plate assembly



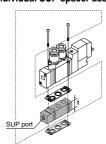
Standard>

| • | <3tailuai u> | | | |
|--------|--------------|-------------------|--|--|
| Series | | Assembly part no. | | |
| | SY3000 | SY3000-26-9A | | |
| | SY5000 | SY5000-26-20A | | |
| | SY7000 | SY7000-26-22A | | |
| | SY9000 | SY9000-26-1A | | |

<CE/UKCA-compliant>

| COL/OTTOR COMPILATE | | |
|-------------------------|-----------------|--|
| Series Assembly part no | | |
| SY3000 | SY3000-26-19A-Q | |
| SY5000 | SY5000-26-1A-Q | |
| SY7000 | SY7000-26-1A-Q | |
| SY9000 | SY9000-26-1A-Q | |

■ Individual SUP spacer assembly



| Series | Assembly part no. | Port size | t |
|--------|-------------------|-----------|------|
| SY3000 | SY3000-38-20A(-Q) | M5 x 0.8 | 10.5 |
| SY5000 | SY5000-38-1*A(-Q) | 1/8 | 15 |
| SY7000 | SY7000-38-1*A(-Q) | 1/4 | 18 |
| SY9000 | SY9000-38-1*A(-Q) | 1/4 | 20 |

Note) • The SUP port of SY300050007000 may be either on the lead wire side or on the end plate side. However, as the CENUKA-o-tompliant products (-0) must be mounted in the specified direction, the port directions cannot be changed. (An assembly is shipped under the conditions shown in the figure.)
• For the SY9000, it can only be used on the

end plate side

↑ Caution

Mounting screw tightening torques

M2: 0.16 N·m M3: 0.8 N·m M4: 1.4 N·m

⚠ Warning

When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions, and then mount it.

■ Type 20P, 23P Blanking plate assembly



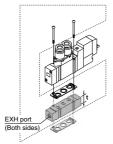
-Standard>

| <standard></standard> | | | |
|-----------------------|-------------------|--|--|
| Series | Assembly part no. | | |
| SY3000 | SY3000-26-10A | | |
| SY5000 | SY5000-26-21A | | |
| SY7000 | SY7000-26-23A | | |
| SY9000 | SY9000-26-3A | | |

<CE/UKCA-compliant:

| <ce ukca-compliant=""></ce> | | | |
|-----------------------------|-------------------|--|--|
| Series | Assembly part no. | | |
| SY3000 | SY3000-26-20A-Q | | |
| SY5000 | SY5000-26-3A-Q | | |
| SY7000 | SY7000-26-3A-Q | | |
| SY9000 | SY9000-26-3A-Q | | |
| | | | |

■ Individual EXH spacer assembly



| Series | Assembly part no. | Port size | t |
|--------|-------------------|-----------|------|
| SY3000 | SY3000-39-20A(-Q) | M5 x 0.8 | 10.5 |
| SY5000 | SY5000-39-1*A(-Q) | 1/8 | 15 |
| SY7000 | SY7000-39-1*A(-Q) | 1/4 | 18 |
| SY9000 | SY9000-39-1*A(-Q) | 1/4 | 20 |

Note) In case of 20P and 23P, for protection of the wiring unit section from drainage, piping at the EA port should be arranged so that it will not be directly exposed to exhaust from the valve.

* Thread type

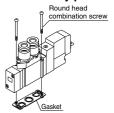
NPTF

Nil Ro

F G

N NPT

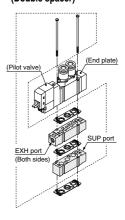
■ Gasket assembly part no.



| Series | Gasket assembly part no. |
|--------|--------------------------|
| SY3000 | SY3000-GS-1 |
| SY5000 | SY5000-GS-1 |
| SY7000 | SY7000-GS-1 |
| SY9000 | SY9000-GS-1 |

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

Individual SUP spacer assembly + Individual EXH spacer assembly (Double spacer)



[: Available ×: Not available]

| | | Individual SUP + Individual EXH Assemble part no. | Port size | Applicable manifold types | |
|--|--------|---|-----------|---------------------------|-----|
| | Series | | | 20 | 20P |
| | SY3000 | SY3000-120-1A(-Q) | M5 x 0.8 | • | × |
| | SY5000 | SY5000-75-2*A(-Q) | 1/8 | • | × |
| | SY7000 | SY7000-73-3*A(-Q) | 1/4 | • | × |

Note) The SUP spacer's port does not have an orientation. However, as the CE/UKCA-compliant products (-Q) must be mounted in the specified direction, the port directions cannot be changed. As for the EXH ports, adjust the symbol "5" to the pilot valve side. Also, please make sure to connect the individual ports to protect the wiring section of the pilot valve from drainage, etc.

The individual SUP spacer and EXH spacer can be mounted either on the upper side or lower side. (The above illustration shows the condition when the product is shipped out from a factory.)



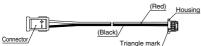


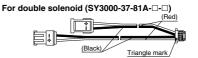
OSA SY3000/5000/7000/9000 Series

Manifold Option

■ Connector assembly

For single solenoid (SY3000-37-81A-□-N)





Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less))

| integrated type | | | |
|-----------------|-------------------|--|--|
| Model | Part no. | Connector mounting position | |
| | SY3000-37-81A-3-N | Single : For 1 to 4 stations | |
| SS5Y3-20SA | SY3000-37-81A-3-6 | Double/3 position: For 1 to 4 stations | |
| 33313-203A | SY3000-37-81A-2-N | Single : For 5 to 8 stations | |
| | SY3000-37-81A-2-4 | Double/3 position: For 5 to 8 stations | |
| SS5Y5-20SA | SY3000-37-81A-3-N | Single : For 1 to 8 stations | |
| 33313-203A | SY3000-37-81A-3-6 | Double/3 position: For 1 to 8 stations | |
| | SY3000-37-81A-3-N | Single : For 1 to 4 stations | |
| SS5Y7-20SA | SY3000-37-81A-3-6 | Double/3 position: For 1 to 4 stations | |
| 33317-203A | SY3000-37-81A-4-N | Single : For 5 to 8 stations | |
| | SY3000-37-81A-4-7 | Double/3 position: For 5 to 8 stations | |

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

■ Connector assembly SY3000-37-80A-□



■ Housing (8 pcs./set) SY3000-44-3A



Connector assembly order no. (Can be used for the manifold with a specified layout)

| Connector assembly order no. (Can be used for the manifold with a specified layout) | | | | |
|---|------------------|------------|-----------------------------|--|
| Model | Part no. | | Connector mounting position | |
| | SY3000-37-80A-3 | For A side | For 1 to 8 stations | |
| SS5Y3-20SA | SY3000-37-80A-6 | For B side | FOR 1 to 6 Stations | |
| 55513-205A | SY3000-37-80A-4 | For A side | For 9 to 16 stations | |
| | SY3000-37-80A-7 | For B side | For 9 to 16 stations | |
| | SY3000-37-80A-3 | For A side | For 1 to 8 stations | |
| SS5Y5-20SA | SY3000-37-80A-6 | For B side | FOR 1 to 8 Stations | |
| 55515-205A | SY3000-37-80A-7 | For A side | For 9 to 16 stations | |
| | SY3000-37-80A-9 | For B side | For 9 to 16 stations | |
| | SY3000-37-80A-4 | For A side | For 1 to 8 stations | |
| SS5Y7-20SA | SY3000-37-80A-7 | For B side | FOR 1 to 8 Stations | |
| 33317-203A | SY3000-37-80A-8 | For A side | For 9 to 16 stations | |
| | SY3000-37-80A-11 | For B side | For 9 to 16 stations | |
| | SY3000-37-80A-6 | For A side | For 4 to 0 stations | |
| | SY3000-37-80A-11 | For B side | For 1 to 8 stations | |
| SS5Y9-23SA | SY3000-37-80A-9 | For A side | For 9 to 12 stations | |
| 55519-235A | SY3000-37-80A-14 | For B side | For 9 to 12 stations | |
| | SY3000-37-80A-13 | For A side | For 13 to 16 stations | |
| | SY3000-37-80A-18 | For B side | FOI 13 IO 16 STATIONS | |

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.

Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire. Furthermore, do not reuse the lead wire after it has been inserted and removed.

Note 3) Wiring is set longer than the actual wiring distance



Body Ported Manifold **SY9000** Series Type



Manifold Option

SUP blocking disk (For SY9000)

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.



| Series | Part no. |
|--------|--------------|
| SY9000 | SY9000-61-2A |
| | |

■ EXH blocking disk (For SY9000)

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



| Series | Part no. |
|--------|--------------|
| SY9000 | SY9000-61-2A |

Label for blocking disk (For SY9000)

The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk







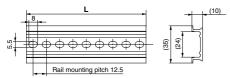
 When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

■ DIN Rail Dimensions/Weight for SY9000

VZ1000-11-4-

Refer to L dimensions

* Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.



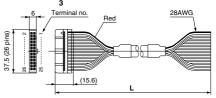
| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------|------|-------|------|-------|-------|-------|------|-------|-------|-------|
| L Dimension | 98 | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 |
| Weight (g) | 24.8 | 28 | 31.1 | 34.3 | 37.4 | 40.6 | 43.8 | 46.9 | 50.1 | 53.3 |
| No. | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| L Dimension | 223 | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 |
| Weight (g) | 56.4 | 59.6 | 62.7 | 65.9 | 69.1 | 72.2 | 75.4 | 78.6 | 81.7 | 84.9 |
| No. | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| L Dimension | 348 | 360.5 | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 |
| Weight (g) | 88 | 91.2 | 94.4 | 97.5 | 100.7 | 103.9 | 107 | 110.2 | 113.3 | 116.5 |
| No. | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | |
| L Dimension | 473 | 485.5 | 498 | 510.5 | 523 | 535.5 | 548 | 560.5 | 573 | |

Weight (g) 119.7 122.8 126 129.2 132.3 135.5 138.6 141.8 145

Note) · For DIN rail, refer to page 959.

Refer to L1 dimension on pages 775, 784 and 794 for lengths that correspond to the number of manifold stations.

■ Cable assembly (For 20P, 23P) AXT100-FC26-2



Flat ribbon cable connector

| Oalsta Janath (I) | Assembly part no. |
|-------------------|-------------------|
| Cable length (L) | 26 pins |
| 1.5 m | AXT100-FC26-1 |
| 3 m | AXT100-FC26-2 |
| 5 m | AXT100-FC26-3 |

- * When using a standard commercial connector, use a 26-pin type connector
- conforming to MIL-C-83503 with strain relief.
- * Cannot be used for movable wiring
- * Lengths other than the above are also available.

Connector Manufacturers' Example

- HIROSE ELECTRIC CO., LTD.
- 3M Japan Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

■ Plug

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

| Applicable fittings size Ød | Model | Α | L | D |
|-----------------------------|---------|------|------|------|
| 4 | KQ2P-04 | 16 | 32 | 6 |
| 6 | KQ2P-06 | 18 | 35 | 8 |
| 8 | KQ2P-08 | 20.5 | 39 | 10 |
| 10 | KQ2P-10 | 22 | 43 | 12 |
| 12 | KQ2P-12 | 24 | 44.5 | 14 |
| 1/8" | KQ2P-01 | 16 | 31.5 | 5 |
| 5/32" | KQ2P-03 | 16 | 32 | 6 |
| 1/4" | KQ2P-07 | 18 | 35 | 8.5 |
| 5/16" | KQ2P-09 | 20.5 | 39 | 10 |
| 3/8" | KQ2P-11 | 22 | 43 | 11.5 |



How to Increase Manifold Bases (SY9000 series only) Manifold case can be added at any location.

When a type 23 manifold base is added, tension bolts as well as manifold block assembly will be required. Order the tension bolt suitable for the stations after a station was increased (decreased), since the length of a tension bolt differs by the number of stations. (For changing the number of stations for a type 23P manifold, wiring unit for the stations and lead assembly will be required.)

Loosen the tension bolts 5 connecting the manifold base, and pull out both of 2 tension bolts.

(When equipped with a DIN rail, loosen one DIN rail holding screw on either U side or D side.)

Separate the blocks at the location where station expansion is desired.

3 Mount additional manifold block assembly.

4 Press block-to-block so that there's no gap. After connection, insert a tension bold for desired stations and then tighten it.

^ Caution (Tightening torque: 2.9 N⋅m)

(When equipped with a DIN rail, be sure to tighten the DIN rail holding screws after tightening the tension bolts. Tightening torque: 1.4 N·m)

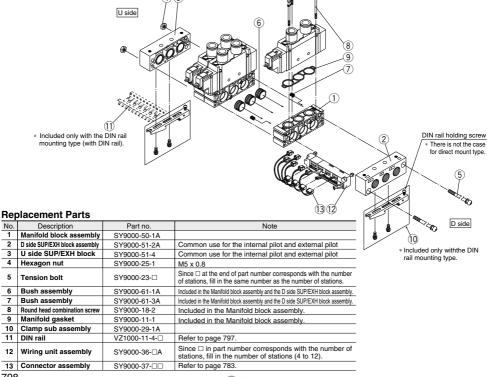
∕!∖ Caution

increase the manifold

- 1. Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
- 2. When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate.
- 3. By adding wiring unit assembly to type 23 manifold, it can be changed to type 23P manifold, too.

Body Ported Manifold Exploded View, 23/23P Common

As for body ported manifold, it is available only for SY9000 series to disassemble or





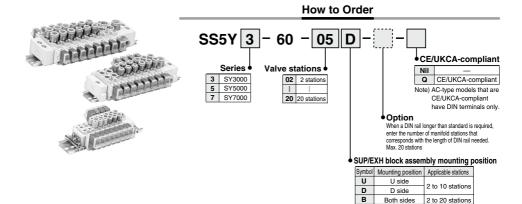
Body Ported Manifold Cassette Type

5 Port Solenoid Valve

CE/UKCA-compliant



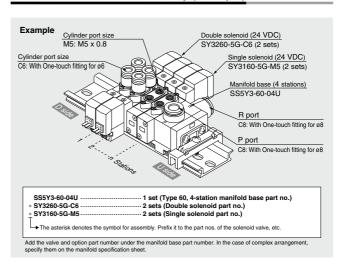
SY3000/5000/7000 Series



^{*} For special specifications, indicate separately by the manifold specification sheet

Special location

How to Order Manifold Assembly (Example)



Manifold Specifications

| Model | | SS5Y3-60(-Q) | SS5Y3-60(-Q) SS5Y5-60(-Q) | | | | |
|--|-----------|---|---|---|--|--|--|
| Applicable val | ve | SY3□60 | SY3□60 SY5□60 | | | | |
| Manifold type | | Stacking type/DIN rail mounted | | | | | |
| P (SUP)/R (EXI | H) | Common SUP/Common EXH | | | | | |
| Valve stations | | 2 to 20 stations Note 1) | | | | | |
| A, B port location | | Valve | | | | | |
| | P, R port | C8 (One-touch fitting for ø8) | C10 (One-touch fitting for ø10) | C12 (One-touch fitting for ø12) | | | |
| Port size | A, B port | M5 x 0.8 C4(One-touch fitting for ø4) C6 (One-touch fitting for ø6) | 1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8) | 1/4 C8 (One-touch fitting for Ø8) C10 (One-touch fitting for Ø10) | | | |
| Manifold base weight W (g) Note 2) (n: Number of SUP/EXH blocks, m: Weight of DIN rail) | | W = 13n + m + 36 | W = 41.2n + m + 77.6 | W = 65.4n + m + 128.2 | | | |

Note 1) In cases such as those where many valves are operated simultaneously, use "-<u>station</u>B (SUP/EXH block on both sides)", applying pressure to the P ports on both sides and exhausting from the R ports on both sides.

Flow Rate Characteristics

| | Port | Flow rate characteristics | | | | | | | |
|--------------|-------|---------------------------|-----------------|---------------------------------------|------|-----------------|--|------|--|
| Model | 1,5/3 | 4,2 | 1 | \rightarrow 4/2(P \rightarrow A/E | 3) | 4/2 | $4/2 \rightarrow 5/3(A/B \rightarrow R)$ | | |
| | (P,R) | (A,B) | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | |
| | | M5 | 0.55 | 0.29 | 0.14 | 0.72 | 0.24 | 0.18 | |
| SS5Y3-60(-Q) | C8 | C4 | 0.57 | 0.24 | 0.14 | 0.71 | 0.20 | 0.17 | |
| | | C6 | 0.68 | 0.28 | 0.17 | 0.77 | 0.24 | 0.19 | |
| | | 1/8 | 1.8 | 0.24 | 0.44 | 2.1 | 0.17 | 0.47 | |
| SS5Y5-60(-Q) | C10 | C6 | 1.5 | 0.30 | 0.37 | 2.0 | 0.16 | 0.46 | |
| | | C8 | 1.8 | 0.20 | 0.45 | 2.2 | 0.17 | 0.50 | |
| | | 1/4 | 3.7 | 0.25 | 0.96 | 3.8 | 0.19 | 0.94 | |
| SS5Y7-60(-Q) | C12 | C8 | 3.2 | 0.26 | 0.81 | 4.0 | 0.18 | 0.96 | |
| | | C10 | 3.7 | 0.28 | 0.98 | 4.1 | 0.19 | 1.0 | |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

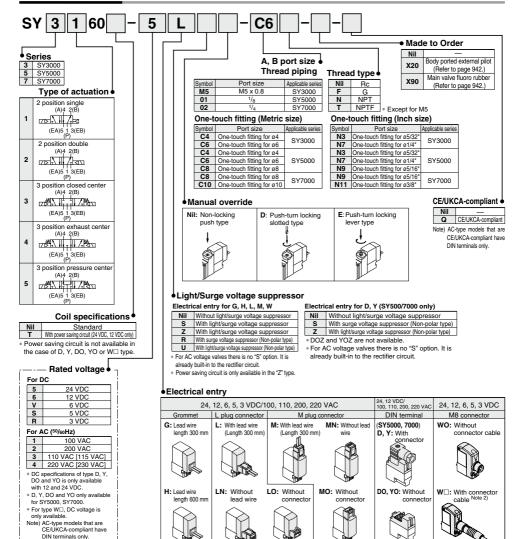
SMC

Note 2) For DIN rail weight, refer to page 806.

How to Order Valve

Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.





Note 1) The DIN terminal of the SY3000 series cannot be mounted on a standard manifold. For details, refer to page 958. Note 2) Enter the cable length symbols in . Please be sure to fill in the blank referring to page 961. Note 3) When ordering single unit of the cassette type solenoid valve, the bushing assembly is included.

Note 1)

- * LN. MN type; with 2 sockets.
- * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 957.
- * For connector cable of M8 connector, refer to page 960.

 * M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details. * Refer to page 957 for the lead wire length of L and M plug connectors.

* Refer to page 958 for the connector assembly with cover for L and M plug connectors.



Manifold

mounting

CE/UKCAcompliant SY5000

SY7000



Specifications

| Series | | SY3000 SY5000 SY7000 | | | |
|---------------------------------------|----------------------|---|-------------|---|--|
| Fluid | | | Air | | |
| Internal pilot | 2 position single | | 0.15 to 0.7 | | |
| Operating pressure | 2 position double | | 0.1 to 0.7 | | |
| range (MPa) | 3 position | | 0.2 to 0.7 | | |
| Ambient and flu | uid temperature (°C) | | Max. 50 | | |
| Max. operating | 2 position double | 10 | 5 | 5 | |
| frequency (Hz) | 3 position | 3 | 3 | 3 | |
| Manual override (Manual operation) | | Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type | | | |
| Pilot exhaus | t method | Common exhaust type for main and pilot valve | | | |
| Lubrication | | Not required | | | |
| Mounting position | | Unrestricted | | | |
| Impact/Vibration resistance Note) | | 150/30 | | | |
| Enclosure | | Dust proof (* DIN terminal, M8 connector: IP65) | | | |

Note) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition.

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz.

Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values in the initial stage)

Solenoid Specifications

| Electrical entry | | | Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D), (Y) M8 connector (W) | | |
|--------------------------|-------|--|---|--|--|
| | | | G, H, L, M, W | D, Y | |
| Coil rated | D | 0 | 24, 12, 6, 5, 3 | 24, 12 | |
| voltage (V) | A | C ⁵⁰ / ₆₀ Hz | 100, 110, | 200, 220 | |
| Allowable vo | ltage | fluctuation | ±10% of rat | ed voltage * | |
| Power consumption | DC | Standard | 0.35 [With indicator light: 0.4 (DIN terminal with indicator light: 0.45)] | | |
| (W) | | With power saving circuit | 0.1 (With indicator light only) * [Starting 0.4, Holding 0.1] | | |
| | AC | 100 V | 0.78 (With indicator light: 0.81) | 0.78 (With indicator light: 0.87) | |
| Apparent power | | 110 V [115 V] | 0.86 (With indicator light: 0.89) [0.94 (With indicator light: 0.97)] | 0.86 (With indicator light: 0.97) [0.94 (With indicator light: 1.07)] | |
| (VA) * | ** | 200 V | 1.18 (With indicator light: 1.22) | 1.15 (With indicator light: 1.30) | |
| | | 220 V [230 V] | 1.30 (With indicator light: 1.34) [1.42 (With indicator light: 1.46)] | 1.27 (With indicator light: 1.46) [1.39 (With indicator light: 1.60)] | |
| Surge voltage suppressor | | Diode (Varistor is for DIN terminal and non-polar) | | | |
| Indicator light | | | LED (AC of DIN connector is neon light.) | | |

^{*} In common between 110 VAC and 115 VAC, and between 220 VAC and 230

Response Time

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

SY3000

| | Response time (ms) (at the pressure of 0.5 MPa) | | | | | |
|-------------------|---|-------------------------------|------------|--|--|--|
| Type of actuation | Without surge voltage | With surge voltage suppressor | | | | |
| actuation | suppressor | S, Z type | R, U type | | | |
| 2 position single | 12 or less | 15 or less | 12 or less | | | |
| 2 position double | 10 or less | 13 or less | 10 or less | | | |
| 3 position | 15 or less | 20 or less | 16 or less | | | |

SY5000

| Type of actuation | Response time (ms) (at the pressure of 0.5 MPa) | | | | |
|-------------------|---|-------------------------------|------------|--|--|
| | Without surge voltage | With surge voltage suppressor | | | |
| | suppressor | S, Z type | R, U type | | |
| 2 position single | 19 or less | 26 or less | 19 or less | | |
| 2 position double | 18 or less | 22 or less | 18 or less | | |
| 3 position | 32 or less | 38 or less | 32 or less | | |

SY7000

| | Type of actuation | Response time (ms) (at the pressure of 0.5 MPa) | | | | | |
|--|-------------------|---|-------------------------------------|------------|--|--|--|
| | | | With light/surge voltage suppressor | | | | |
| | actuation | voltage suppressor | S, Z type | R, U type | | | |
| | 2 position single | 31 or less | 38 or less | 33 or less | | | |
| | 2 position double | 27 or less | 30 or less | 28 or less | | | |
| | 3 position | 50 or less | 56 or less | 50 or less | | | |

^{*} Based on IEC60529

VAC. * For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

^{*} For details, refer to page 955.

SY3000/5000/7000 Series

Weight

SY3000 series

| | Type of actuation | | Port size | Weight (g) | | |
|-------------|-------------------|-----------------|-------------------------------------|--------------|-----------------------|-----------------|
| Valve model | | | A, B | Gro- mmet | L/M plug connector | M8 Connector |
| | 2 | Single | | 49 | 51 | 55 |
| | position | Double | | 70 | 73 | 81 |
| SY3□60-□-M5 | | Closed center | M5 x 0.8 | | | |
| | 3 position | Exhaust center | | 73 | 76 | 84 |
| | μυδιμυπ | Pressure center | | | | |
| | 2 position | Single | | 62 | 61 | 65 |
| | | Double | C4 One-touch (fitting for ø4) | 80 | 83 | 91 |
| SY3□60-□-C4 | | Closed center | | | | |
| | 3 position | Exhaust center | | 82 | 86 | 94 |
| | μυδιμυπ | Pressure center | | | | |
| | 2 | Single | | 55 | 57 | 61 |
| | position | Double | C6 | 76 | 79 | 87 |
| SY3□60-□-C6 | | Closed center | / One-touch \ | | | |
| | 3 position | Exhaust center | fitting for ø6 | 78 | 82 | 90 |
| | | Pressure center | | | "- | |

Note) []: denotes normal position.

SY7000 series

| | | | Port size | Weight (g) | | | |
|--------------|-------------------|-----------------|------------------|--------------|-----------------------|-----------------|----------------------|
| Valve model | Type of actuation | | A, B | Gro- mmet | L/M plug connector | DIN terminal | M8 Conne- ctor |
| | 2 | Single | | 103 | 105 | 126 | 109 |
| | position | Double | | 125 | 128 | 170 | 136 |
| SY7□60-□-02 | | Closed center | 1/4 | | | | |
| | 3 position | Exhaust center | | 133 | 136 | 178 | 144 |
| | position | Pressure center | | | | | |
| | 2 | Single | | 138 | 139 | 160 | 143 |
| | position | Double | C8 | 160 | 163 | 205 | 171 |
| SY7□60-□-C8 | 3 position | Closed center | (One-touch) | | | | |
| | | Exhaust center | (fitting for ø8) | 168 | 171 | 213 | 179 |
| | | Pressure center | | | | | |
| | 2 | Single | | 123 | 125 | 146 | 129 |
| | position | Double | C10 | 145 | 149 | 191 | 157 |
| SY7□60-□-C10 | | Closed center | / One-touch \ | | | | |
| | 3 position | Exhaust center | fitting for ø10 | 153 | 157 | 199 | 165 |
| | | Pressure center | | | | | |

SY5000 series

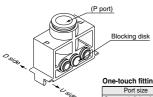
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| | | | Port size | Weight (g) | | | | |
|-------------|-------------------|-----------------|------------------|--------------|-----------------------|-----------------|----------------------|--|
| Valve model | Type of actuation | | A, B | Gro- mmet | L/M plug connector | DIN terminal | M8 Conne- ctor | |
| | 2 | Single | | 67 | 69 | 90 | 71 | |
| | position | Double | | 91 | 94 | 136 | 102 | |
| SY5□60-□-01 | , | Closed center | 1/8 | | | | | |
| | position | Exhaust center | | 97 | 100 | 142 | 108 | |
| | F | Pressure center | | | | | | |
| | 2 position | Single | | 91 | 93 | 114 | 97 | |
| | | Double | C4 | 113 | 116 | 158 | 124 | |
| SY5□60-□-C4 | 3 position | Closed center | One-touch | | | | | |
| | | Exhaust center | (fitting for ø4) | 119 | 122 | 164 | 130 | |
| | | Pressure center | | | | | | |
| | 2 position | Single | | 86 | 88 | 109 | 92 | |
| | | Double | C6 | 108 | 111 | 153 | 119 | |
| SY5□60-□-C6 | | Closed center | One-touch | | | | | |
| | 3 | Exhaust center | (fitting for ø6) | 114 | 117 | 159 | 125 | |
| | position | Pressure center | | | | | | |
| | 2 | Single | | 78 | 80 | 101 | 84 | |
| | position | Double | C8 | 100 | 103 | 145 | 111 | |
| SY5□60-□-C8 | | Closed center | / One-touch \ | | | | | |
| | 3 position | Exhaust center | (fitting for ø8) | 106 | 109 | 151 | 117 | |
| | position | Pressure center | | | | | | |



Manifold Option

■ Individual SUP block assembly



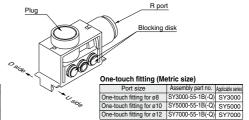
One-touch fitting (Metric size)

| Port size | Assembly part no. | Applicable series |
|---------------------------|-------------------|-------------------|
| | SY3000-54-2C(-Q) | |
| One-touch fitting for ø8 | | |
| One-touch fitting for ø10 | | |
| One-touch fitting for ø12 | SY7000-54-1C(-Q) | SY7000 |

One-touch fitting (Inch size)

| Port size | Assembly part no. | Applicable series |
|------------------------------|-------------------|-------------------|
| One-touch fitting for ø5/16" | SY3000-54-3C(-Q) | SY3000 |
| One-touch fitting for ø3/8" | SY5000-54-2C(-Q) | SY5000 |
| One-touch fitting for ø3/8" | SY7000-54-3C(-Q) | SY7000 |

■ Individual EXH block assembly

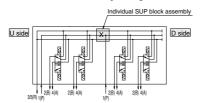


One-touch fitting (Inch size)

| Port size | Assembly part no. | |
|------------------------------|-------------------|--------|
| One-touch fitting for ø5/16" | SY3000-55-2B(-Q) | SY3000 |
| | SY5000-55-2B(-Q) | |
| One-touch fitting for ø3/8" | SY7000-55-3B(-Q) | SY7000 |

[When supplying the manifold with 2 different supply pressures.]

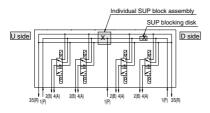
Specify arrangement of individual SUP block assembly on the manifold specification sheet. (When using SS5Y□-60-□□D, blocking disk is assembled on D side.) <Manifold model no.: SS5Y₅-60-□□ U_D>



[When a different supply pressure is required for only a middle valve.]

Specify arrangement of individual SUP block assembly and SUP blocking disk on the manifold specification sheet

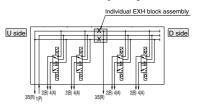
(Applicable manifold model no.: SS5Y□-60-□□B)



[When 2 different EXH passages are required.]

Specify arrangement of individual EXH block assembly on the manifold specification sheet. (When using SS5Y = -60- = D, blocking disk is assembled on D side.)

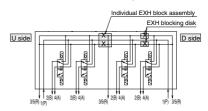
<Manifold model no.: SS5Y₅³-60-□□ U_D>



[When a separate exhaust passage is needed on only a middle valve.]

Specify arrangement of individual EXH block assembly and EXH blocking disk on the manifold specification sheet.

(Applicable manifold model no.: SS5Y□-60-□□B)



Type 60 SY3000/5000/7000 Series

Manifold Option

■ SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold. (This is the same block disk used with the individual SUP block assembly.)



| Series | Part no. | | | |
|--------|--------------|--|--|--|
| SY3000 | SY3000-52-6A | | | |
| SY5000 | SY5000-52-4A | | | |
| SY7000 | SY7000-70-2A | | | |

■ EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to separate both EXH passages. It is the same block disk that is used in the individual EXH block assembly.)



| 4 |
|---|
| ١ |
| ٩ |
| |

■ Label for block disk

The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

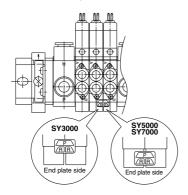
Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk





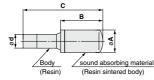


* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



■ Silencer with One-touch fitting

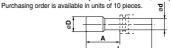
The silencer plugs directly into the One-touch fittings of the manifold.



| Series | Model | Effective area mm ² | Α | В | С |
|------------------|----------|--------------------------------|-------|------|------|
| SY3000 (for ø8) | AN15-C08 | 20 | ø13 | 20 | 45 |
| SY5000 (for ø10) | AN20-C10 | 30 | ø16.5 | 30.5 | 57.5 |
| SY7000 (for ø12) | AN30-C12 | 41 | ø20 | 43.5 | 71.5 |

■ Plug

These are inserted in unused cylinder ports and SUP, EXH ports.



Dimensions

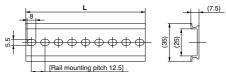
| Applicable fittings size ød | Model | Α | L | D |
|-----------------------------|---------|------|------|------|
| 4 | KQ2P-04 | 16 | 32 | 6 |
| 6 | KQ2P-06 | 18 | 35 | 8 |
| 8 | KQ2P-08 | 20.5 | 39 | 10 |
| 10 | KQ2P-10 | 22 | 43 | 12 |
| 12 | KQ2P-12 | 24 | 45.5 | 14 |
| 5/32" | KQ2P-03 | 16 | 32 | 6 |
| 1/4" | KQ2P-07 | 18 | 35 | 8.5 |
| 5/16" | KQ2P-09 | 20.5 | 39 | 10 |
| 3/8" | KQ2P-11 | 22 | 43 | 11.5 |

■ DIN Rail Dimensions/Weight for SY3000/5000

VZ1000-11-1-

Refer to the L dimension tables

* Enter a number from the DIN rail dimension table below in them.



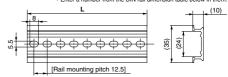
| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|
| L dimension | 98 | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 |
| Weight (g) | 17.6 | 19.9 | 22.1 | 24.4 | 26.6 | 28.9 | 31.1 | 33.4 | 35.6 | 37.9 |
| | | | | | | | | | | |
| No. | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| L dimension | 223 | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 |
| Weight (g) | 40.1 | 42.4 | 44.6 | 46.9 | 49.1 | 51.4 | 53.6 | 55.9 | 58.1 | 60.4 |
| | | | | | | | | | | |
| No. | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| L dimension | 348 | 360.5 | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 |
| Weight (g) | 62.6 | 64.9 | 67.1 | 69.4 | 71.6 | 73.9 | 76.1 | 78.4 | 80.6 | 82.9 |

■ DIN Rail Dimensions/Weight for SY7000

VZ1000-11-4-

Refer to the L dimension tables

* Enter a number from the DIN rail dimension table below in them.



| | 14 | | | | | | | | | |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|
| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| L dimension | 98 | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 |
| Weight (g) | 24.8 | 28 | 31.1 | 34.3 | 37.4 | 40.6 | 43.8 | 46.9 | 50.1 | 53.3 |
| | | | | | | | | | | |
| No. | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| L dimension | 223 | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 |
| Weight (g) | 56.4 | 59.6 | 62.7 | 65.9 | 69.1 | 72.2 | 75.4 | 78.6 | 81.7 | 84.9 |
| | | | | | | | | | | |

| No. | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
|-------------|-----|-------|------|-------|-------|-------|-----|-------|-------|-------|
| L dimension | 348 | 360.5 | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 |
| Weight (a) | 88 | 91.2 | 94.4 | 97.5 | 100.7 | 103.9 | 107 | 110.2 | 113.3 | 116.5 |

Note) For DIN rail mounting, refer to page 959.

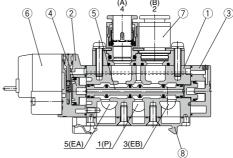
Construction

SY series

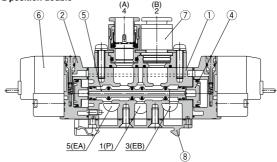
Symbol 2 position single (A)4 2(B) (EA)5 1 3(EB)

Symbol 2 position double (A)4 2(B) (EA)5 1 3(EB) (P)

2 position single



2 position double



Symbol 3 position closed center

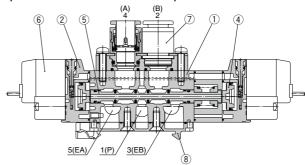
(A)4 2(B) (EA)5 1 3(EB)

3 position exhaust center (A)4 2(B) (EA)5 1 3(EB)

3 position pressure center (A)4 2(B)

(EA)5 1 3(EB)

3 position closed center / exhaust center / pressure center



(This figure shows a closed center type.)

Component Parts

| Component Faits | | | | | | | | | | | |
|-----------------|----------------------|---|-------|--|--|--|--|--|--|--|--|
| No. | Description | Material | Note | | | | | | | | |
| 1 | Body | Aluminum die-casted SY3000: Zinc die-casted | White | | | | | | | | |
| 2 | Adapter plate | Resin | White | | | | | | | | |
| 3 | End plate | Resin | White | | | | | | | | |
| 4 | Piston | Resin | _ | | | | | | | | |
| 5 | Spool valve assembly | Aluminum/H-NBR | _ | | | | | | | | |

Replacement Parts

| No. | Description | No. | | | | |
|-----|----------------------|---|--|--|--|--|
| 6 | Pilot valve assembly | Refer to "How to Order Pilot Valve Assembly" on page 948. | | | | |
| 7 | Port block assembly | Refer to "How to Order Port Block Assembly" on page 948. | | | | |
| 8 | Bottom cover | SY3000-41-2A (with screw, gasket) | | | | |
| ٠ | assembly Note) | SY5000-41-2A (with screw, gasket) | | | | |

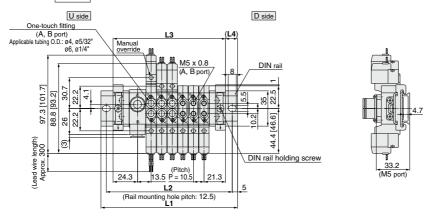
Note) There is no bottom cover assembly available for SY7000.



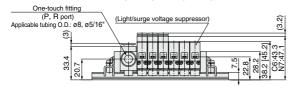
Type 60 SY3000/5000/7000 Series

Dimensions []: AC

SS5Y3-60- Stations U

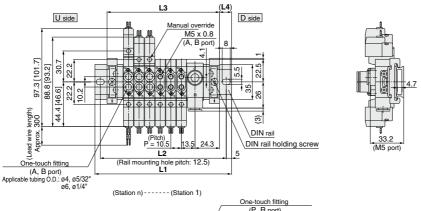






| Stations | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 98 | 110.5 | 123 | 135.5 | 135.5 | 148 | 160.5 | 173 | 185.5 |
| L2 | 87.5 | 100 | 112.5 | 125 | 125 | 137.5 | 150 | 162.5 | 175 |
| L3 | 69.5 | 80 | 90.5 | 101 | 111.5 | 122 | 132.5 | 143 | 153.5 |
| L4 | 14 | 15 | 16 | 17 | 12 | 13 | 14 | 15 | 16 |

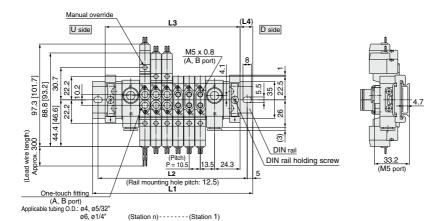
SS5Y3-60- Stations D

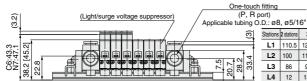


| | | One-touch litting | |
|----------------------|--|------------------------|----------|
| | | (P, R port) | |
| (3.2) | (Light/surge voltage suppressor) Applicab | le tubing O.D.: ø8, ø5 | 5/16" |
| (0) | | | |
| F | | ୍ଡି | |
| ω- <u>a</u> | | | 04-15 |
| 43.3 47.1 45.2 | | | Stations |
| C6:4 N7:4 | | 33.4 | _L1 |
| 0X 8 | ░ <mark>▎▗▃▐▊▃▘╊▝▐▞▐▞▐▞▐▞</mark> ▃▔▃ <u>▐▊</u> ▃▁ <u>▘</u> | 33 28. | L2 |
| • m | | 24 1 1 | L3 |
| | | T | |

| Stations | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 98 | 110.5 | 123 | 135.5 | 135.5 | 148 | 160.5 | 173 | 185.5 |
| L2 | 87.5 | 100 | 112.5 | 125 | 125 | 137.5 | 150 | 162.5 | 175 |
| L3 | 69.5 | 80 | 90.5 | 101 | 111.5 | 122 | 132.5 | 143 | 153.5 |
| L4 | 14 | 15 | 16 | 17 | 12 | 13 | 14 | 15 | 16 |
| | | | | | | | | | |

SS5Y3-60- Stations B

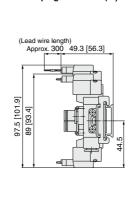




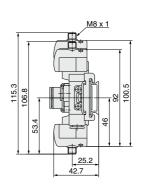
| S | Stations | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|---|----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| Ī | L1 | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 173 | 185.5 | 198 |
| Ī | L2 | 100 | 112.5 | 125 | 137.5 | 150 | 162.5 | 162.5 | 175 | 187.5 |
| Ī | L3 | 86 | 96.5 | 107 | 117.5 | 128 | 138.5 | 149 | 159.5 | 170 |
| | L4 | 12 | 13 | 14 | 15 | 16 | 17 | 12 | 13 | 14 |

| Stations | 11 stations | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|----------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 210.5 | 223 | 235.5 | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 |
| L2 | 200 | 212.5 | 225 | 225 | 237.5 | 250 | 262.5 | 275 | 287.5 | 300 |
| L3 | 180.5 | 191 | 201.5 | 212 | 222.5 | 233 | 243.5 | 254 | 264.5 | 275 |
| L4 | 15 | 16 | 17 | 11.5 | 12.5 | 13.5 | 14.5 | 15.5 | 16.5 | 17.5 |

L plug connector (L) 38.2 [45.2] 22.8 (Lead wire length) Approx. 300 117.1 [121.5] 108.6 [113] 75



M plug connector (M)



M8 connector (WO)

Note) Refer to page 961 for dimensions of connector types.

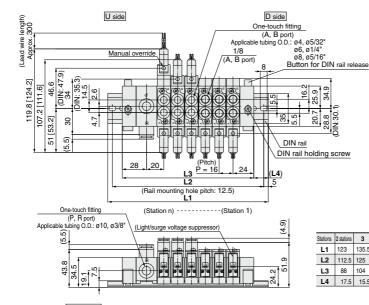


Dimensions []: AC

34.9

20.

SS5Y5-60-Stations U

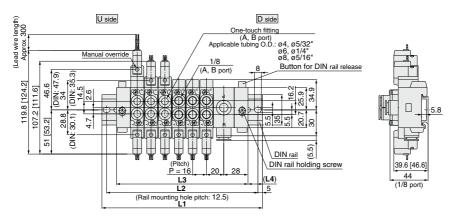


| Stations | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 123 | 135.5 | 148 | 160.5 | 185.5 | 198 | 210.5 | 235.5 | 248 |
| L2 | 112.5 | 125 | 137.5 | 150 | 175 | 187.5 | 200 | 225 | 237.5 |
| L3 | 88 | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 |
| L4 | 17.5 | 15.5 | 14 | 12 | 16.5 | 15 | 13 | 17.5 | 16 |

39.6 [46.6 44 (1/8 port)

5.8

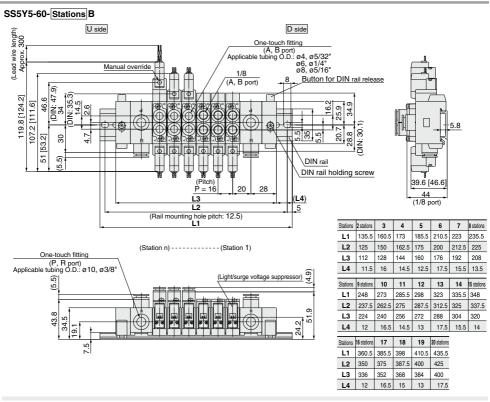
SS5Y5-60-Stations D

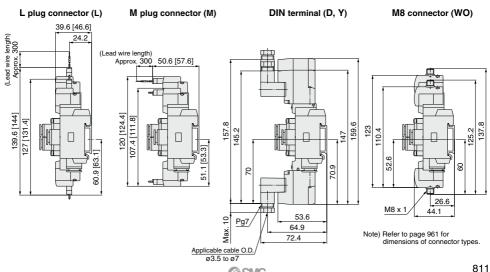


| (Station n) | (Station I) |
|----------------------------------|--------------------------------------|
| | One-touch fitting |
| (Light/surge voltage suppressor) | (P, R port) |
| (Light/surge voltage suppressor) | Applicable tubing O.D.: ø10, ø3/8" û |
| | |
| | |
| 2 2 2 | 3.88 |
| 24.2 | 7 5 8 4 |
| ¹ ∨¹ | |

| Stations | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 123 | 135.5 | 148 | 160.5 | 185.5 | 198 | 210.5 | 235.5 | 248 |
| L2 | 112.5 | 125 | 137.5 | 150 | 175 | 187.5 | 200 | 225 | 237.5 |
| L3 | 88 | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 |
| L4 | 17.5 | 15.5 | 14 | 12 | 16.5 | 15 | 13 | 17.5 | 16 |
| | | | | | | | | | |

[]: AC



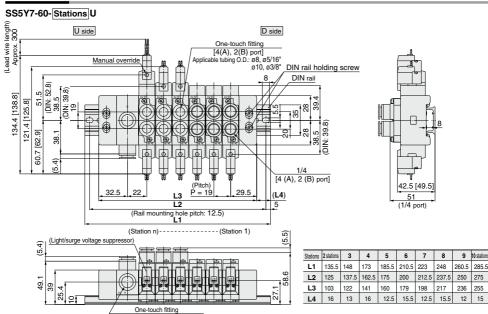


SMC

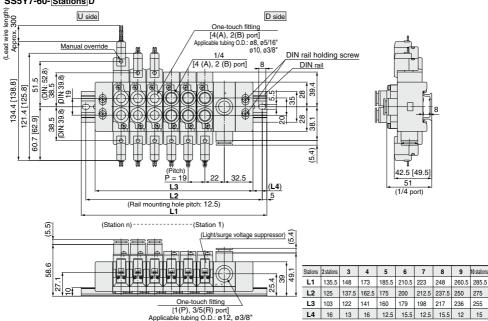
Type 60 SY3000/5000/7000 Series

[1(P), 3/5(R) port] Applicable tubing O.D.: Ø12, Ø3/8'

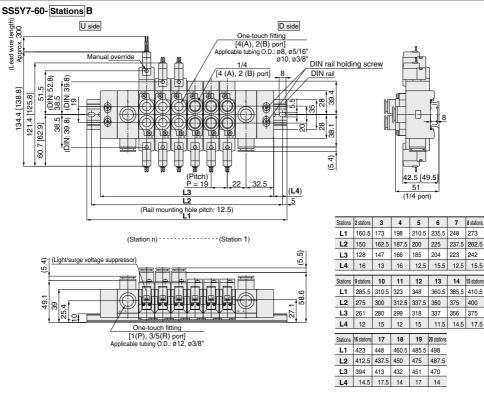
Dimensions []: AC

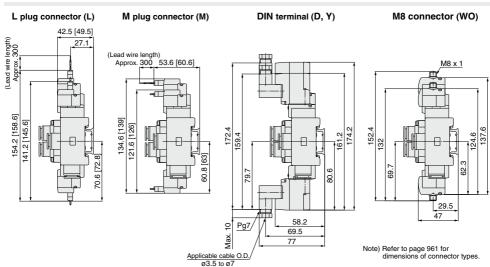






[]: AC



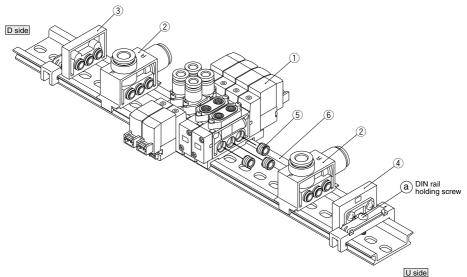


SMC

SY3000/5000/7000 Series

DIN Rail Manifold Exploded View

SY3000 Type 60

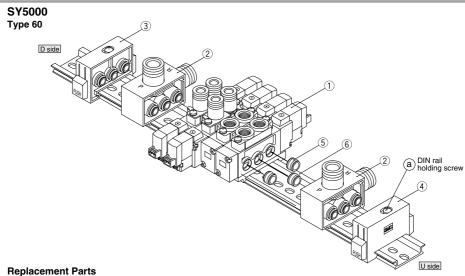


Replacement Parts

| iepiacement i arts | | | | | | | | | |
|--------------------|------------------------|------------------|--|--|--|--|--|--|--|
| No. | Description | Part no. | Note | | | | | | |
| 1 | Valve | SY3□60-□□-□(-Q) | ☐ at the end of part number denotes A. B port size: M5, C4, C6, N3, N7. Includes bushing assembly (SY3000-52-5A) 3 pcs. | | | | | | |
| 2 | SUP/EXH block assembly | SY3000-55-1A(-Q) | P, R port (1: One-touch fitting for ø8, 2: One-touch fitting for ø5/16") Includes bushing assembly (SY3000-52-5A) 3 pcs. | | | | | | |
| 3 | End block assembly | SY3000-56-1A(-Q) | For D side (Bushing assembly: Not available for SY3000-52-5A) | | | | | | |
| 4 | End block assembly | SY3000-56-1B(-Q) | For U side (Bushing assembly: Not available for SY3000-52-5A) | | | | | | |
| 5 | Bushing assembly | SY3000-52-5A | | | | | | | |
| 6 | DIN rail | VZ1000-11-1-□ | Refer to page 806. | | | | | | |

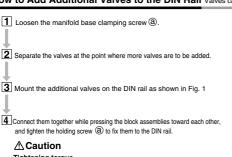
Body Ported **SY3000/5000/7000** Series 1/1960





| No. | Description | Part no. | Note | | | |
|-----|------------------------|------------------|--|--|--|--|
| 1 | Valve | SY5□60-□□-□(-Q) | $\hfill\Box$ at the end of part number denotes A. B port size: 01, C4, C6, C8, N3, N7, N9. Includes bushing assembly (SY5000-52-3A) 3 pcs. | | | |
| 2 | SUP/EXH block assembly | SY5000-55-1A(-Q) | P, R port (1: One-touch fitting for ø10, 2: One-touch fitting for ø3/8") Includes bushing assembly (SY5000-52-3A) 3 pcs. | | | |
| 3 | End block assembly | SY5000-56-1A(-Q) | For D side (Bushing assembly: Not available for SY5000-52-3A) | | | |
| 4 | End block assembly | SY5000-56-1B(-Q) | For U side (Bushing assembly: Not available for SY5000-52-3A) | | | |
| 5 | Bushing assembly | SY5000-52-3A | | | | |
| 6 | DIN rail | VZ1000-11-1-□ | Refer to page 806. | | | |

How to Add Additional Valves to the DIN Rail Valves can be added at any station on the rail.



Tightening torque SY3000: 1 N·m SY5000: 1.4 N·m

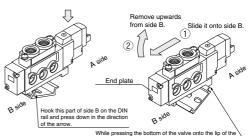
(While lightly holding the blocks after fixing an end block on one side, tighten the other end block for better sealing after no gap between valves is confirmed.)

- . Bushing assembly must be seated properly to each valve block in order to prevent air leaks from occurring.

· Refer to the fig. 2 when dismounting the valve from the DIN rail.

Fig. 1 Manifold mounting procedure

Fig. 2 Manifold dismounting procedure



DIN rail, pull side B upwards and dismount from the rail.

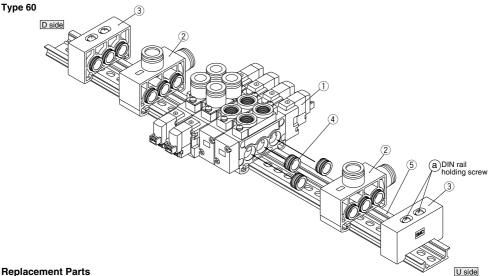
and that the end block is firmly secured to the DIN rain in order to ensure air supply without leakage.



Type 60 SY3000/5000/7000 Series

DIN Rail Manifold Exploded View

SY7000



| HCP | tepiacement i arts | | | | | | | | | |
|-----|------------------------|------------------|---|--|--|--|--|--|--|--|
| No. | Description | Part no. | Note | | | | | | | |
| 1 | Valve | SY7□60-□□-□(-Q) | □ at the end of part number denotes A. B port size: 02, C8, C10, N9, N11. Includes bushing assembly (SY7000-70-1A) 3 pcs. | | | | | | | |
| 2 | SUP/EXH block assembly | SY7000-75-1A(-Q) | P,R port size (1: ø12 One-touch fitting, 3: 3/8"One-touch fitting) Includes bushing assembley (SY7000-70-1A) 3pcs. | | | | | | | |
| 3 | End block assembly | SY7000-56-1A(-Q) | In common for D side and U side (Bushing assembly: Not available for SY7000-70-1A.) | | | | | | | |
| 4 | Bushing assembly | SY7000-70-1A | | | | | | | | |
| 5 | DIN rail | VZ1000-11-4-□ | Refer to page 806. | | | | | | | |

How to Add Additional Valves to the DIN Rail Valves can be added at any station on the rail.

- 1 Loosen the rail holding screw (a) at both of 2 locations which holds the manifold base either in the U side or D side. When removing the end block assembly from the DIN rail, loosen the
- holding screws for DIN rail at first, then slide it to the edge of the rail. 2 Separate the valves at the point where more valves are to be added.
- Mount the additional valves on the DIN rail as shown in Fig. 1.
- 4 Connect them together while pressing the block assemblies toward each other, and tighten the 2 holding screws (a) for DIN rail alternately (2 to 3 times) with the prescribed torque (1.4 N·m) to fix them to the DIN rail.

∧ Caution

Tightening torque

SY7000: 1.4 N·m

(While lightly holding the blocks after fixing an end block on one side, tighten the other end block for better sealing after no gap between valves

- . Bushing assembly must be seated properly to each valve block in order to prevent air leaks from occurring.
- Refer to the fig. 2 when dismounting the valve from the DIN rail.

Fig. 1 Manifold mounting procedure

Fig. 2 Manifold dismounting procedure

Remove upwards from side A Slide it onto side A A side B side While pressing the B side stopper valve onto the lip of the DIN rail, onto the DIN rail, insert into the rail pull side A upwards and dismount from the rail.

A Caution When clamping screw (a) of the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there are no gaps between valves and that the end block is firmly secured to the DIN rain in order to ensure air supply without leakage.



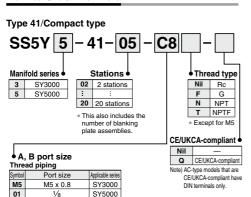


5 Port Solenoid Valve **Base Mounted Manifold**

Bar Stock Type/Individual Wiring Clivic/Compliant Pare Din Verminals only.

SY3000/5000/7000 Series

How to Order Manifold



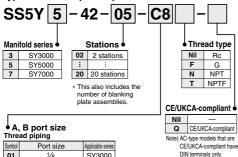
One-touch fitting (Metric size)

| Onc | todon namy (mean | o size) |
|--------|--------------------------|-------------------|
| Symbol | Port size | Applicable series |
| C4 | One-touch fitting for ø4 | SY3000 |
| C6 | One-touch fitting for ø6 | 513000 |
| C6 | One-touch fitting for ø6 | SY5000 |
| C8 | One-touch fitting for ø8 | 315000 |

One-touch fitting (Inch size)

| Symbol | Port size | Applicable series |
|--------|-------------------------------|-------------------|
| N3 | One-touch fitting for ø 5/32" | SY3000 |
| N7 | One-touch fitting for ø 1/4" | 313000 |
| N7 | One-touch fitting for ø 1/4" | SY5000 |
| N9 | One-touch fitting for ø5/16" | 313000 |

Type 42/External pilot capable



SY5000

SY7000

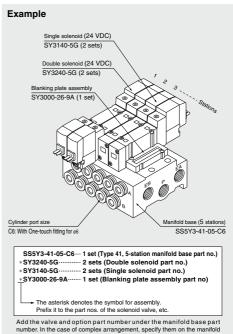
1/4 1/4 One-touch fitting (Metric size)

| | | , |
|--------|---------------------------|-------------------|
| Symbol | Port size | Applicable series |
| C4 | One-touch fitting for ø4 | SY3000 |
| C6 | One-touch fitting for ø6 | 513000 |
| C6 | One-touch fitting for ø6 | SY5000 |
| C8 | One-touch fitting for ø8 | 515000 |
| C10 | One-touch fitting for ø10 | SY7000 |

One-touch fitting (Inch size)

| 3 | Symbol | Port size | Applicable series |
|---|--------|------------------------------|-------------------|
| 1 | N3 | One-touch fitting for ø5/32" | SY3000 |
| | N7 | One-touch fitting for ø1/4" | 513000 |
| 1 | N7 | One-touch fitting for ø1/4" | SY5000 |
| | N9 | One-touch fitting for ø5/16" | 5Y5000 |
| 1 | N11 | One-touch fitting for ø3/8" | SY7000 |
| _ | | | |

How to Order Manifold Assembly (Example)



specification sheet.

02

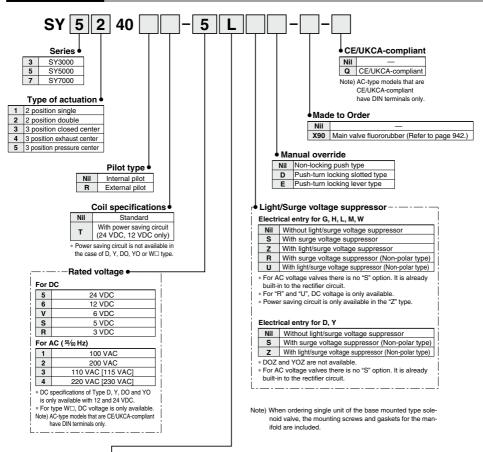
Base Mounted **SY3000/5000/7000** Series 1/10-1



How to Order Valve

Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.





Electrical entry

| | | • Liectifical effitiy | | | | |
|-----------|--------|---|--|------------------|--|---|
| | | 24, 12, 6, | 5, 3 VDC/100, 110, 200 | , 220 VAC | 24, 12 VDC/ 100, 110, 200, 220 VAC | 24, 12, 6, 5, 3 VDC |
| | | Grommet | L plug connector | M plug connector | DIN terminal | M8 connector |
| | | G: Lead wire length 300 mm lead H: Lead wire length 600 mm | L: With lead wire (Length 300 mm) LN: Without lead wire LO: Without connector | | (SY5000/7000 only) D: With connector DO: Without connector Y: With connector YO: Without connector | WO: Without connector cable W□: With connector cable Note 2) |
| Manifold | SY3000 | • | • | • | Note 1) | • |
| mounting | SY5000 | • | • | • | • | • |
| mounting | SY7000 | • | • | • | • | • |
| CE/UKCA- | DC | • | • | • | • | • |
| compliant | AC | _ | _ | _ | • | _ |

Note 1) The DIN terminal of the SY3000 series cannot be mounted on a standard manifold. For details, refer to page 958. Note 2) Enter the cable length symbols in \square . Please be sure to fill in the blank referring to page 961.

- * LN, MN type: with 2 sockets.
- * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 957.
- * For connector cable of M8 connector, refer to page 960.
- * M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details.
- * Refer to page 957 for the lead wire length of L and M plug connectors.
- * Refer to page 958 for the connector assembly with cover for L and M plug connectors.



Type 41 Type 42 SY3000/5000/7000 Series



Manifold Specifications

| Model | | | SS5Y3-41(-Q) | SS5Y3-42(-Q) | SS5Y5-41(-Q) | SS5Y5-42(-Q) | SS5Y7-42(-Q) | | | | | |
|---------------------|-----------------|-------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------------|--|--|--|--|--|
| Applica | able | valve | SY3 | □40 | SY5 | □40 | SY7□40 | | | | | |
| Manifo | old t | уре | | Si | ngle base/B mou | unt | | | | | | |
| P(SUP) | R(E) | (H) | | Comm | on SUP, Commo | on EXH | | | | | | |
| Valve | stati | ions | | 2 | to 20 stations Not | e 1) | | | | | | |
| A, B po | B port Location | | | | Base | | | | | | | |
| Porting specif | ications | Direction | Side | | | | | | | | | |
| | P, E | A, EB port | 1/ | ⁄8 | 1/ | 4 | 1/4 | | | | | |
| Port | | | M5 x 0.8, | 1/8 | 1/8 | 1/4 | 1/4 | | | | | |
| size | Α, | B port | C4 (One-touch fitting for ø4) | C4 (One-touch fitting for ø4) | C6 (One-touch fitting for ø6) | C6 (One-touch fitting for ø6) | C10 (One touch fitting for a 10) | | | | | |
| | | | C6 (One-touch fitting for ø6) | C6 (One-touch fitting for ø6) | C8 (One-touch fitting for ø8) | C8 (One-touch fitting for ø8) | OTO (One-toocal litting for 9 To) | | | | | |
| Manifol W (g) n: | | se weight ions | W = 30n + 50 | W = 37n + 63 | W = 61n + 101 | W = 79n + 127 | W = 100n + 151 | | | | | |

Note 1) For more than 10 stations (more than 5 stations in case of SSSY7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) Refer to "Manifold Option" on page 858.

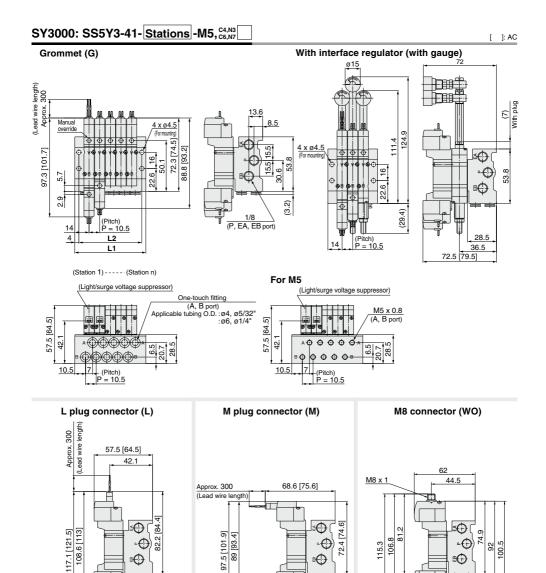
Flow Rate Characteristics

| | Port si | ze | | F | low rate ch | aracteristic | s | |
|--------------|-------------|--------|-----------------|-------------------------|-------------|-------------------|------------|--------|
| Model | 1, 5, 3 | 4, 2 | | $4/2 (P \rightarrow P)$ | VB) | 4/2 → | 5/3 (A/B → | EA/EB) |
| | (P, EA, EB) | (A, B) | C (dm3/(s-bar)) | b | Cv | C (dm3/ (s-bar)) | b | Cv |
| SS5Y3-41(-Q) | 1/8 | C6 | 0.75 | 0.19 | 0.18 | 0.81 | 0.23 | 0.20 |
| SS5Y3-42(-Q) | 1/8 | C6 | 0.75 | 0.20 | 0.18 | 0.82 | 0.20 | 0.20 |
| SS5Y5-41(-Q) | 1/4 | C8 | 1.8 | 0.23 | 0.44 | 1.9 | 0.16 | 0.45 |
| SS5Y5-42(-Q) | 1/4 | C8 | 1.9 | 0.20 | 0.46 | 1.9 | 0.12 | 0.43 |
| SS5Y7-42(-Q) | 1/4 | C10 | 3.0 | 0.25 | 0.75 | 3.0 | 0.12 | 0.66 |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Base Mounted **SY3000/5000/7000** Series Type 41





| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|------------|------------|----|------|----|------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| L1 | 38.5 | 49 | 59.5 | 70 | 80.5 | 91 | 101.5 | 112 | 122.5 | 133 | 143.5 | 154 | 164.5 | 175 | 185.5 | 196 | 206.5 | 217 | 227.5 |
| L2 | 30.5 | 41 | 51.5 | 62 | 72.5 | 83 | 93.5 | 104 | 114.5 | 125 | 135.5 | 146 | 156.5 | 167 | 177.5 | 188 | 198.5 | 209 | 219.5 |

Note) Refer to page 961 for dimensions of connector types.

Type 41 SY3000/5000/7000 Series

SY5000: SS5Y5-41- Stations -01, C6, N7 C8, N9

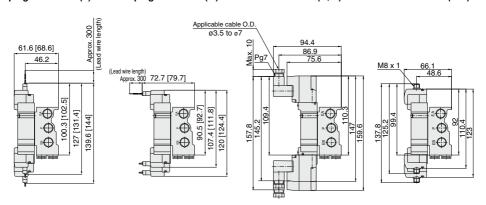
[]: AC

Grommet (G) (Lead wire length) Approx. 300 With interface regulator (with gauge) (14.5) With plug 1/4 (P. EA, EB port) 4 x ø4.5 90.4 [92.6] 107.2 [111.6] 119.8 [124.2] 4 x ø4.5 69.5) (DIN: 69. 5.4 (DIN: 4.1) 106.8 20 99 α 8 œ 13.8 15.2 (4.9) 27 18.5 = 16 (50.2)5.5 For 1/8 33 (Station 1) ---- (Station n) 18.5 84.6 [91.6] (Light/surge voltage suppressor) 58 [68.6] 61.6 [68.6] 900 46.2 46.2 61.6 C6, N7: 9 C8, N9: 7.5 ين One-touch fitting 9 (Pitch) (A, B port) (A, B port) Applicable tubing O.D.: Ø6, Ø1/4" Ø8, Ø5/16'

L plug connector (L) M plug connector (M)

tor (M) DIN terminal (D, Y)

M8 connector (WO)



Note) Refer to page 961 for dimensions of connector types.

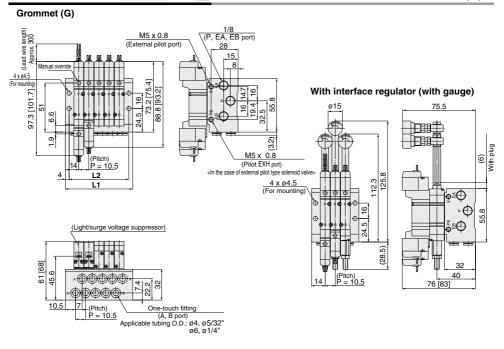
| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|------------|------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 52.5 | 68.5 | 84.5 | 100.5 | 116.5 | 132.5 | 148.5 | 164.5 | 180.5 | 196.5 | 212.5 | 228.5 | 244.5 | 260.5 | 276.5 | 292.5 | 308.5 | 324.5 | 340.5 |
| L2 | 42 | 58 | 74 | 90 | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330 |

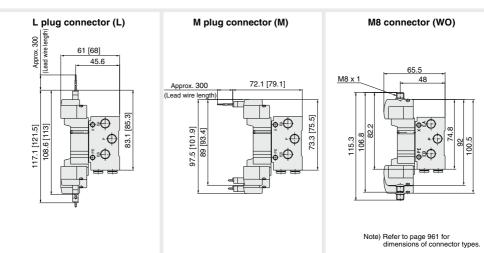
Base Mounted **SY3000/5000/7000** Series Type 42



SY3000: SS5Y3-42- Stations - C4, N3

[]: AC



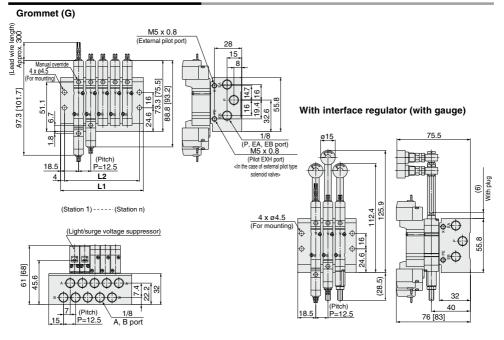


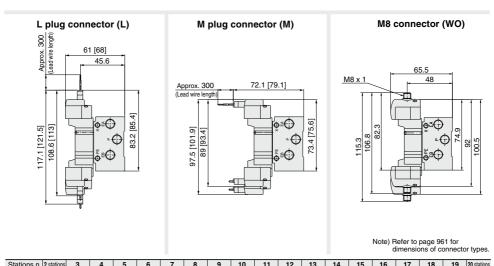
| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|------------|------------|----|------|----|------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| L1 | 38.5 | 49 | 59.5 | 70 | 80.5 | 91 | 101.5 | 112 | 122.5 | 133 | 143.5 | 154 | 164.5 | 175 | 185.5 | 196 | 206.5 | 217 | 227.5 |
| L2 | 30.5 | 41 | 51.5 | 62 | 72.5 | 83 | 93.5 | 104 | 114.5 | 125 | 135.5 | 146 | 156.5 | 167 | 177.5 | 188 | 198.5 | 209 | 219.5 |

Type 42 SY3000/5000/7000 Series

SY3000: SS5Y3-42- Stations -01

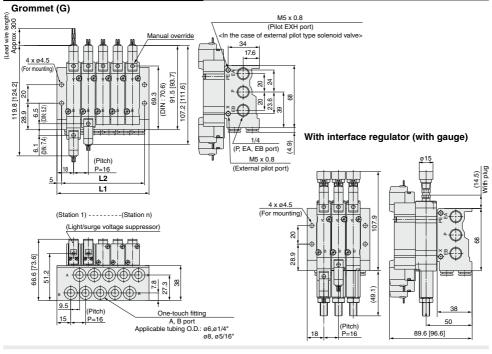
[]: AC





SY5000: SS5Y5-42- Stations -C6, N7 C8, N9

[]: AC

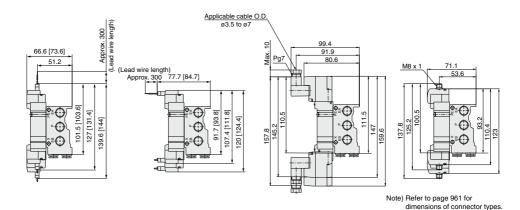


L plug connector (L)

M plug connector (M)

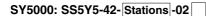
DIN terminal (D, Y)

M8 connector (WO)

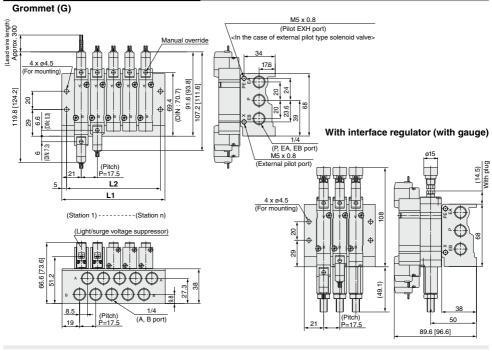


| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|------------|------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|
| L1 | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340 |
| L2 | 42 | 58 | 74 | 90 | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330 |

Type 42 SY3000/5000/7000 Series



[]: AC

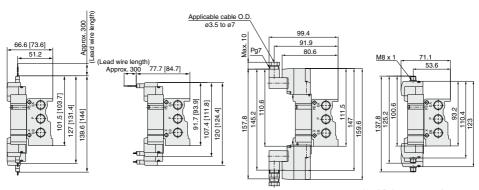


L plug connector (L)

M plug connector (M)

DIN terminal (D, Y)

M8 connector (WO)



Note) Refer to page 961 for dimensions of connector types.

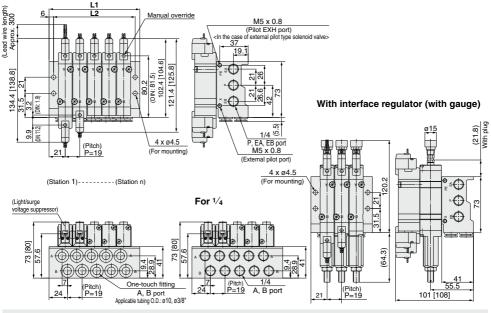
| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|------------|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| L1 | 59.5 | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 | 252 | 269.5 | 287 | 304.5 | 322 | 339.5 | 357 | 374.5 |
| L2 | 49.5 | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224.5 | 242 | 259.5 | 277 | 294.5 | 312 | 329.5 | 347 | 364.5 |



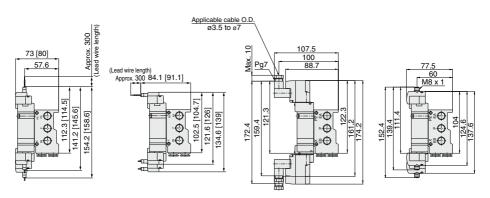
SY7000: SS5Y7-42- Stations -02, C10, N11

[]: AC

Grommet (G)



L plug connector (L) DIN terminal (D, Y) M8 connector (WO) M plug connector (M)



Note) Refer to page 961 for dimensions of connector types.

| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
|------------|------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|
| 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 |

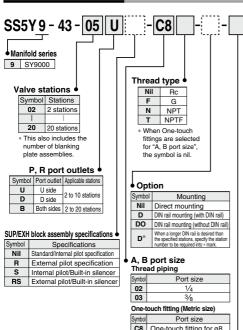
5 Port Solenoid Valve Base Mounted Manifold Stacking Type/Individual Wiring

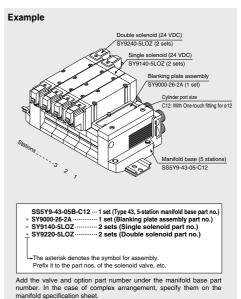
SY9000 Series (ELE

[Option] Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.

How to Order Manifold

How to Order Manifold Assembly (Example)





CE/UKCA-compliant

C12 One-touch fitting for ø12

M Mixed

One-touch fitting (Inch size)

Symbol Port size

N9 One-touch fitting for ø5/½

N11 One-touch fitting for ø3/½

M Mixed

In the case of mixed specifications
(M), indicate separately on the manifold specification seet.

| Nil | _ |
|-----|-------------------|
| Q | CE/UKCA-compliant |
| | |

Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.

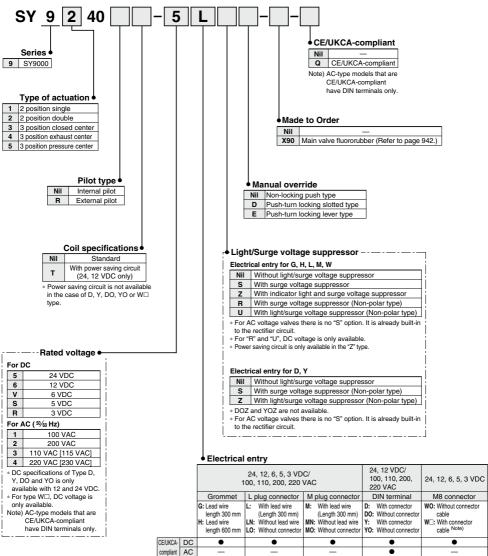
Base Mounted **SY9000** Series Type



How to Order Valve

Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.





- Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included
- * LN, MN type: with 2 sockets.
- DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available.
 For details, refer to page 957.
- * For connector cable of M8 connector, refer to page 960.
- M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details.
- * Refer to page 957 for the lead wire length of L and M plug connectors.
- * Refer to page 958 for the connector assembly with cover for L and M plug connectors.

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 961.







Manifold Specifications

| Model | | | SS5Y9-43(-Q) | | | | | |
|---|------------------|-----------|---------------------------------|--|--|--|--|--|
| Applic | able valve | | SY9□40 | | | | | |
| Manif | old type | | Stacking type | | | | | |
| P(SUP | /R(EXH) | | Common SUP, Common EXH | | | | | |
| Valve | stations | | 2 to 20 stations (1) | | | | | |
| A, B p | ort | Location | Base | | | | | |
| Porting | g specifications | Direction | Side | | | | | |
| | P, EA, EB po | rt | C12 (One-touch fitting for ø12) | | | | | |
| | | | 1/4 | | | | | |
| Port | | | 3/8 | | | | | |
| size | A, B port | | C8 (One-touch fitting for ø8) | | | | | |
| | | | C10 (One-touch fitting for ø10) | | | | | |
| | | | C12 (One-touch fitting for ø12) | | | | | |
| Manifold base weight W (g), n: Stations | | | W = 107n + 330 | | | | | |

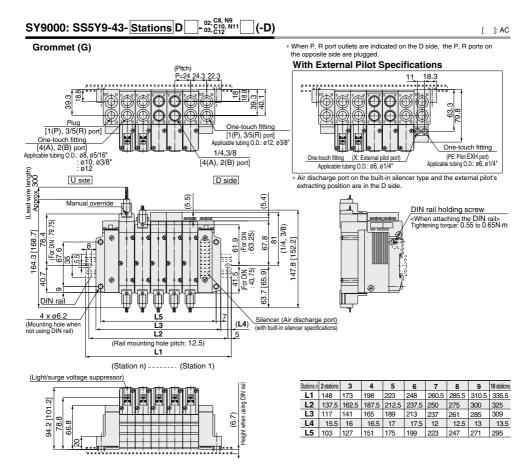
Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

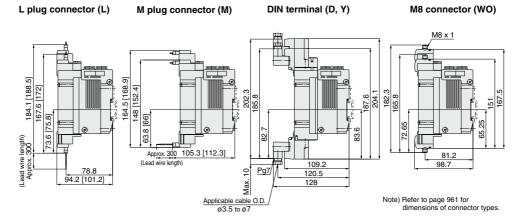
Flow Rate Characteristics

| | Port si | ze | Flow rate characteristics | | | | | | | |
|--------------|-------------|--------|---------------------------|------------|-----|---------------------|------|-----|--|--|
| Model | 1, 5, 3 | 4, 2 | 1- | -4/2 (P→A/ | B) | 4/2→5/3 (A/B→EA/EB) | | | | |
| | (P, EA, EB) | (A, B) | C (dm3/ (s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | | |
| SS5Y9-43(-Q) | C12 | C12 | 6.4 | 0.29 | 1.6 | 7.3 | 0.29 | 1.8 | | |

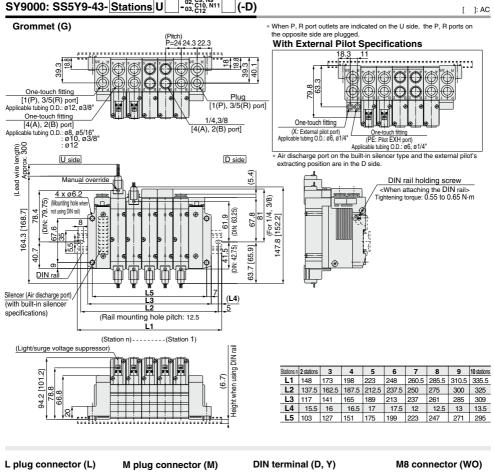
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

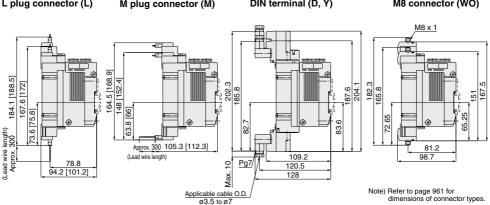
Note 2) Refer to "Manifold Option" on page 858.

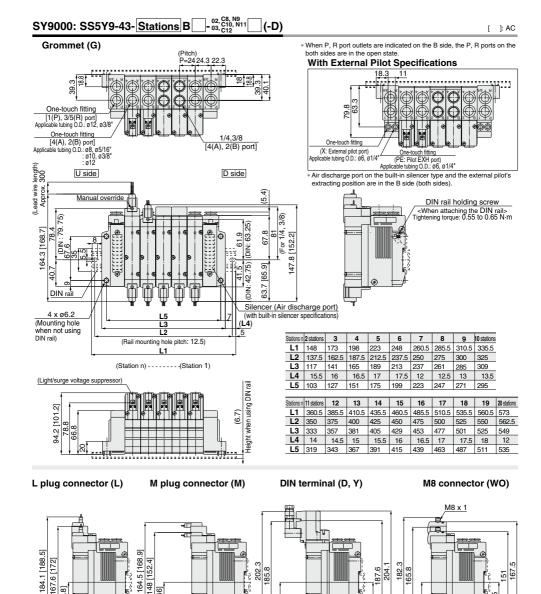




Type 43 SY9000 Series









82.

Pg7

Max.

Applicable cable O.D.

ø3.5 to ø7

83.6

109.2

120.5

128

72.0

73.6 [75.8]

78.8

94.2 [101.2]

(Lead wire length) Approx. 300 8 [66]

(Lead wire length)

Approx. 300 105.3 [112.3]

55.25

81.2

dimensions of connector types.

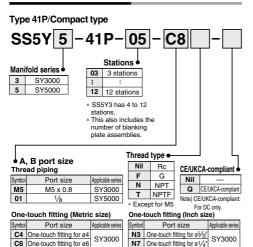
98.7

Note) Refer to page 961 for

5 Port Solenoid Valve Base Mounted Manifold Note) CE/UKCA-compliant: **Bar Stock Type/Flat Ribbon Cable**

SY3000/5000/7000 Series

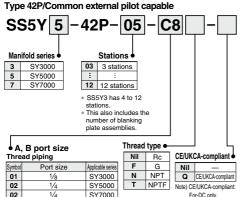
How to Order Manifold



SY5000

C6 One-touch fitting for ø6

C8 One-touch fitting for ø8



One-touch fitting (Metric size)

| Symbol | Port size | Applicable series | Syn |
|--------|---------------------------|-------------------|-----|
| C4 | One-touch fitting for ø4 | SY3000 | N |
| C6 | One-touch fitting for ø6 | 513000 | N |
| C6 | One-touch fitting for ø6 | SY5000 | N |
| C8 | One-touch fitting for ø8 | 515000 | N |
| C10 | One-touch fitting for ø10 | SY7000 | N1 |

One-touch fitting (Inch size)

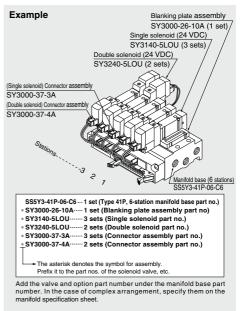
N7 One-touch fitting for ø 1/4"

N9 One-touch fitting for ø5/16

SY5000

| Symbol | Port size | Applicable series | | | |
|--------|------------------------------|-------------------|--|--|--|
| N3 | One-touch fitting for ø5/32" | SY3000 | | | |
| N7 | One-touch fitting for ø1/4" | 513000 | | | |
| N7 | One-touch fitting for ø1/4" | SY5000 | | | |
| N9 | One-touch fitting for ø5/16" | 315000 | | | |
| N11 | One-touch fitting for ø3/8" | SY7000 | | | |

How to Order Manifold Assembly (Example)



Note) Please indicate the connector assembly part no. (page 835) that connects the valve and the manifold

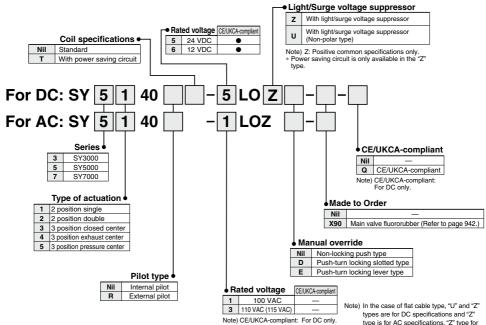
Base Mounted **SY3000/5000/7000** Series 1984



How to Order Valve

Note) CE/UKCA-compliant: For DC only.





Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included.

(ote) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" type for DC is positive common specification only. For the other combination, please contact SMC.

Note) Since the electrical entry is "LO", select an appropriate connector assembly part no.

Connector Assembly

For 12, 24 VDC

| For SY3000 | For SY5000/7000 |
|--------------|--|
| SY3000-37-3A | SY5000-37-3A |
| SY3000-37-4A | SY5000-37-4A |
| SY5000-37-3A | SY5000-37-5A |
| SY3000-37-6A | SY5000-37-6A |
| | SY3000-37-3A SY3000-37-4A SY5000-37-3A |

For 100 VAC

| FOI TOU VA | | | | |
|--|---------------|-----------------|--|--|
| Specifications | For SY3000 | For SY5000/7000 | | |
| For single solenoid | SY3000-37-32A | SY5000-37-15A | | |
| Double solenoid, 3 position type | SY3000-37-33A | SY5000-37-16A | | |
| Single with spacer assembly | SY5000-37-15A | SY5000-37-17A | | |
| Double, 3 position with spacer assembly | SY3000-37-34A | SY5000-37-18A | | |
| | | | | |

For 100 VAC (115 VAC)

| Specifications | For SY3000 | For SY5000/7000 |
|--|---------------|-----------------|
| For single solenoid | SY3000-37-35A | SY5000-37-19A |
| Double solenoid, 3 position type | SY3000-37-36A | SY5000-37-20A |
| Single with spacer assembly | SY5000-37-19A | SY5000-37-21A |
| Double, 3 position with spacer assembly | SY3000-37-37A | SY5000-37-22A |

Note) Spacer assembly indicates Individual SUP/EXH spacer.

Multiple valve wiring is simplified through the use of the flat cable connector.

Clean appearance

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



Flat Ribbon Cable Manifold Specifications

| Model | | CCEVA 44D/ O | SS5Y3-42P(-Q) | CCEVE 41D/ O | CCEVE 40D/ O | CCEVZ 40D/ O) | | | | | | | |
|----------------|----------------------------|---------------------------------|---|-------------------------------|-------------------------------|----------------------------------|--|--|--|--|--|--|--|
| Model | | 33313-41P(-Q) | 33313-42P(-W) | 33313-41P(-W) | 33313-42P(-W) | | | | | | | | |
| Applica | able valve | SYS | 3□40 | SY5 | 5□40 | SY7□40 | | | | | | | |
| Manifo | old type | | Single base/B mount | | | | | | | | | | |
| P(SUP) | /R(EXH) | | Comm | on SUP, Commo | on EXH | | | | | | | | |
| Valve | stations | 4 to 12 s | stations (1) | 3 | to 12 stations Not | e 1) | | | | | | | |
| A, B p | ort Locati | n | Base | | | | | | | | | | |
| Porting specif | ications Directi | on | Side | | | | | | | | | | |
| | P, EA, EB po | rt 1 | 1/8 1/4 | | | | | | | | | | |
| Port | | M5 x 0.8 | 1/8 | 1/8 | 1/4 | 1/4 | | | | | | | |
| size | A, B poi | t C4 (One-touch fitting for ø4) | C4 (One-touch fitting for ø4) | C6 (One-touch fitting for ø6) | C6 (One-touch fitting for ø6) | C10 (One touch filting for a 10) | | | | | | | |
| | | C6 (One-touch fitting for ø6 | C6 (One-touch fitting for ø6) | C8 (One-touch fitting for ø8) | C8 (One-touch fitting for ø8) | OTO (OTE-1000T Hilling for 9 To) | | | | | | | |
| | d base weig n: Stations | W = 39n + 83 | W = 48n + 99 | W = 67n + 118 | W = 88n + 151 | W = 109n + 174 | | | | | | | |
| Applicable fla | it ribbon cable conne | tor Flat ribbon cable | Flat ribbon cable connector, Socket: 26 pins MIL type with strain relief, Conforming to MIL-C-83503 | | | | | | | | | | |
| Intern | al wiring | In cor | In common between +COM and -COM (Z type: +COM only). | | | | | | | | | | |
| Rated | voltage Note | 4) | 12, 2 | 4 VDC, 100, 110 | VAC | | | | | | | | |

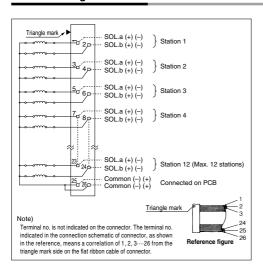
Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 4) CE/UKCA-compliant: For DC only. Flow Rate Characteristics

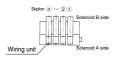
| | Port | size | Flow rate characteristics | | | | | | | | |
|-----------|-------------|--------|---------------------------|------------|------|-------------------------|------|------|--|--|--|
| Model | 1, 5, 3 | 4, 2 | 1 → | 4/2 (P → A | VB) | 4/2 → 5/3 (A/B → EA/EB) | | | | | |
| | (P, EA, EB) | (A, B) | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | | | |
| SS5Y3-41P | 1/8 | C6 | 0.75 | 0.19 | 0.18 | 0.81 | 0.23 | 0.20 | | | |
| SS5Y3-42P | 1/8 | C6 | 0.75 | 0.20 | 0.18 | 0.82 | 0.20 | 0.20 | | | |
| SS5Y5-41P | 1/4 | C8 | 1.8 | 0.23 | 0.44 | 1.9 | 0.16 | 0.45 | | | |
| SS5Y5-42P | 1/4 | C8 | 1.9 | 0.20 | 0.46 | 1.9 | 0.12 | 0.43 | | | |
| CCEV7 42D | 1/4 | C10 | 2.0 | 0.25 | 0.75 | 2.0 | 0.10 | 0.66 | | | |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Internal Wiring of Manifold



- For more than 10 stations, both poles of the common should be wired.
- . For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12.



∆ Caution

 For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

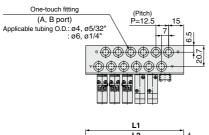
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent. Note 3) Refer to "Manifold Option" on page 858.

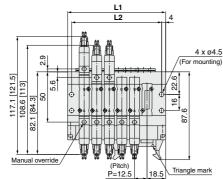
Base Mounted **SY3000/5000/7000** Series 1/12

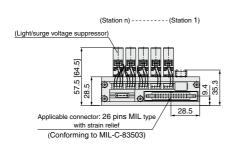


SY3000: SS5Y3-41P- Stations -M5, C4, N3

[]: AC

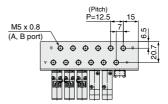


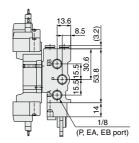




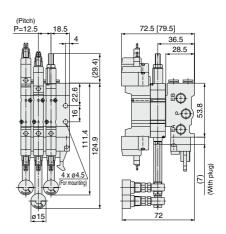
| Stations n | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------|------|----|------|-----|-------|-----|-------|-----|-------|
| L1 | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 |
| L2 | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 |

For M5 x 0.8





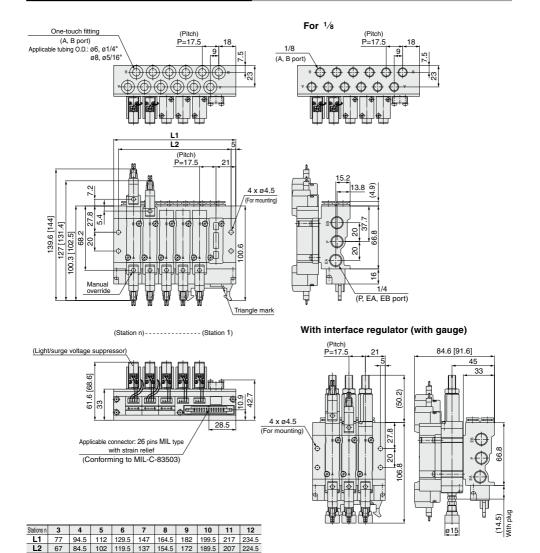
With interface regulator (with gauge)



4P SY3000/5000/7000 Series

SY5000: SS5Y5-41P-Stations -01, cs,N9

[]: AC

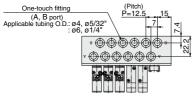


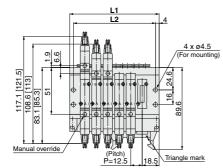
Base Mounted **SY3000/5000/7000** Series 1792 42P

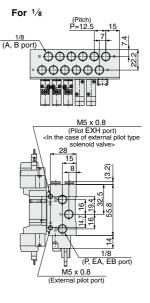


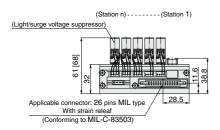
SY3000: SS5Y3-42P- Stations -01, C4, N3 C6, N7

[]: AC



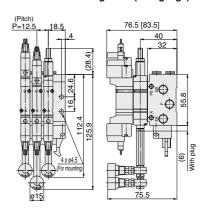






| Stations n | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------|------|----|------|-----|-------|-----|-------|-----|-------|
| L1 | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 |
| L2 | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 |

With interface regulator (with gauge)

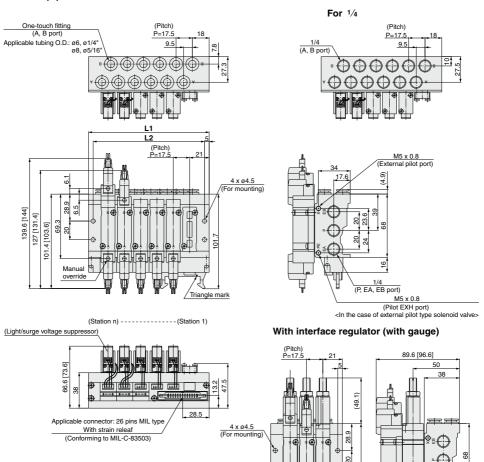


SY3000/5000/7000 Series

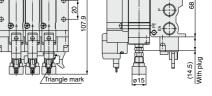
SY5000: SS5Y5-42P- Stations -02,C6, N7 CS, N9

[]: AC

Grommet (G)



| Stations n | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|
| L1 | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 |
| L2 | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224.5 |



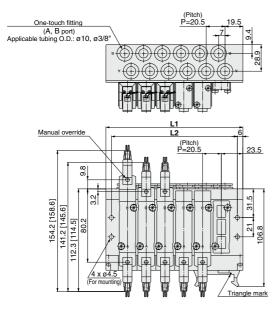
Base Mounted **SY3000/5000/7000** Series 17842P



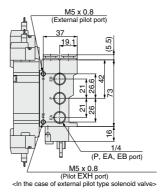
SY7000: SS5Y7-42P- Stations -02, C10, N11

[]: AC

Grommet (G)



For 1/4 (Pitch) P=20.5 1/4 (A, B port)



With interface regulator (with gauge)

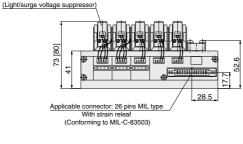
(64.3)

(Pitch) P=20.5

101 [108]

55.5 41

(Station n)-----(Station 1)



| | | | | | | _ | _ | | | | d | •€ | 31.5 | • |
|------------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------------------|----------------|------|--|---------|
| Stations n | 3 | 4 | 5 | 6 | / | 8 | 9 | 10 | 11 | 12 | | | | |
| L1 | 88 | 108.5 | 129 | 149.5 | 170 | 190.5 | 211 | 231.5 | 252 | 272.5 | | | | |
| L2 | 76 | 96.5 | 117 | 137.5 | 158 | 178.5 | 199 | 219.5 | 240 | 260.5 | J [¢] | 1. 1 | So.2 O.2 O.2 O.2 O.3 O.3 | |
| | | | | | | | | | (| 4 x ø4 For mou | | | 120 | (C.1.7) |

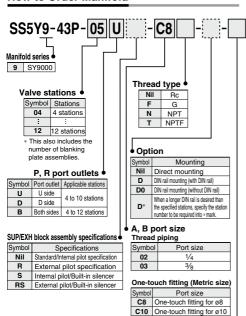
5 Port Solenoid Valve **Base Mounted Manifold Stacking Type/Flat Ribbon Cable**

SY9000 Series

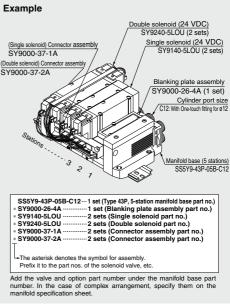
Note) CE/UKCA-compliant: For DC only.

How to Order Manifold

Type 43P



How to Order Manifold Assembly (Example)



Note) Please indicate the connector assembly part no. (page 843) that connects the valve and the manifold.

CE/UKCA-compliant

C12 One-touch fitting for ø12

One-touch fitting (Inch size) Port size

Symbol

Mixed

One-touch fitting for ø5/16" N11 One-touch fitting for ø3/8" Mixed * In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

| Nil | _ | | | | | | | | |
|---------------------|-------------------|--|--|--|--|--|--|--|--|
| Q | CE/UKCA-compliant | | | | | | | | |
| Netel OF/III/OAiiti | | | | | | | | | |

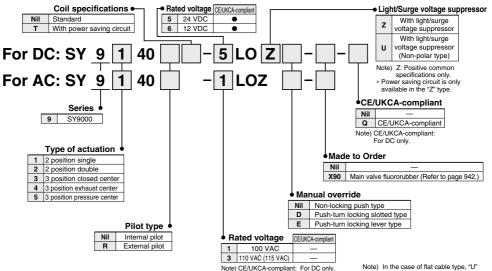
For DC only.



How to Order Valve

Note) CE/UKCA-compliant: For DC only.





Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included.

Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" type for DC is positive common specification only.

Note) Since the electrical entry is "LO", select an appropriate connector assembly part no.

Connector Assembly

For 12, 24 VDC

| Specifications | For SY9000 | | | |
|--|--------------|--|--|--|
| For single solenoid | SY9000-37-1A | | | |
| Double solenoid, 3 position type | SY9000-37-2A | | | |
| Single with spacer assembly | SY9000-37-3A | | | |
| Double, 3 position with spacer assembly | SY9000-37-4A | | | |
| | | | | |

Note) Spacer indicates Individual SUP/EXH spacer.

For 100 VAC

| 101 100 170 | |
|--|--------------|
| Specifications | For SY9000 |
| For single solenoid | SY9000-37-1B |
| Double solenoid, 3 position type | SY9000-37-2B |
| Single with spacer assembly | SY9000-37-3B |
| Double, 3 position with spacer assembly | SY9000-37-4B |

For 110 VAC (115 VAC)

| | , |
|--|--------------|
| Specifications | For SY9000 |
| For single solenoid | SY9000-37-1C |
| Double solenoid, 3 position type | SY9000-37-2C |
| Single with spacer assembly | SY9000-37-3C |
| Double, 3 position with spacer assembly | SY9000-37-4C |





Multiple valve wiring is simplified through the use of the flat ribbon cable connector.

Clean appearance

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



Flat Ribbon Cable Manifold Specifications

| Model | | SS5Y9-43P | | |
|--|----------------|---|--|--|
| Applicable v | alve | SY9□40 | | |
| Manifold ty | ре | Stacking type | | |
| P (SUP)/R (I | EXH) | Common SUP, Common EXH | | |
| Valve statio | ns | 4 to 12 stations Note 1) | | |
| A, B port | Location | Base | | |
| Porting specifications | Direction | Side | | |
| | P, EA, EB port | C12 (One-touch fitting for ø12) | | |
| Port size | A, B port | 1/4 3/6 3/6 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10) C12 (One-touch fitting for ø12) | | |
| Manifold base weight W (g) n: Stations | | W = 114n + 343 | | |
| Applicable flat ribbon cable connector | | Flat ribbon cable connection, Socket: 26 pins MIL with strain relief, Conforming to MIL-C-83503 | | |
| Internal wir | ing | In common between +COM and -COM (Z type: +COM only) | | |
| Rated volta | ge Note 4) | 12, 24 VDC, 100, 110 VAC | | |

Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.

Note 3) Refer to "Manifold Option" on page 858.

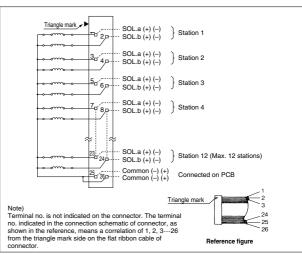
Note 4) CE/UKCA-compliant: For DC only.

Flow Rate Characteristics

| | Port | size | | Flow rate characteristics | | | | | |
|-----------|-------------|--------|-----------------|---------------------------|-----|-----------------|-------------|--------|--|
| Model | 1, 5, 3 | 4, 2 | 1 → | 4/2 (P → A | VB) | 4/2 → 5/ | '3 (A/B → I | EA/EB) | |
| | (P, EA, EB) | (A, B) | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | |
| SS5Y9-43P | C12 | C12 | 6.4 | 0.29 | 1.6 | 7.3 | 0.29 | 1.8 | |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

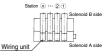
Internal Wiring of Manifold (Non-polar type)



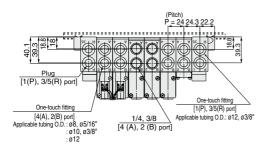


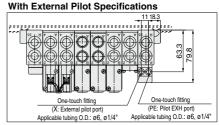
 For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12.

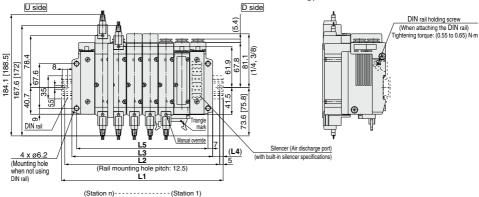


* When P, R port outlets are indicated on the D side, the P, R ports on the opposite side are plugged.





 Air discharge port on the built-in silencer type and the external pilot's extracting position are in the D side.



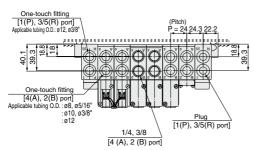
| (Station n)(Station 1) | |
|---|---|
| (Light/surge voltage suppressor) | |
| Applicable connector: 26 pins MIL type with strain relief (Conforming to MIL-C-83503) | (6.7) Height when using DIN rail) 27 |

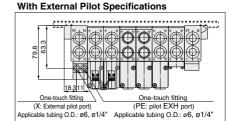
| Stations n | 4 stations | 5 | 6 | 7 | 8 | 9 | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------------|
| L1 | 198 | 223 | 248 | 260.5 | 285.5 | 310.5 | 335.5 |
| L2 | 187.5 | 212.5 | 237.5 | 250 | 275 | 300 | 325 |
| L3 | 165 | 189 | 213 | 237 | 261 | 285 | 309 |
| L4 | 16.5 | 17 | 17.5 | 12 | 12.5 | 13 | 13.5 |
| L5 | 151 | 175 | 199 | 223 | 247 | 271 | 295 |

SY9000: SS5Y9-43P- Stations U $-^{02}_{-03}^{C8, N9}_{C10, N11}$ (-D)

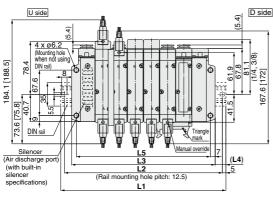
[]: AC

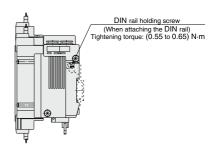
* When P, R port outlets are indicated on the U side, the P, R ports on the opposite side are plugged.



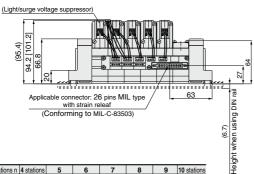


 Air discharge port on the built-in silencer type and the external pilot's extracting position are in the U side.



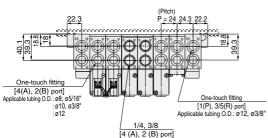


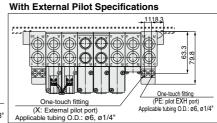




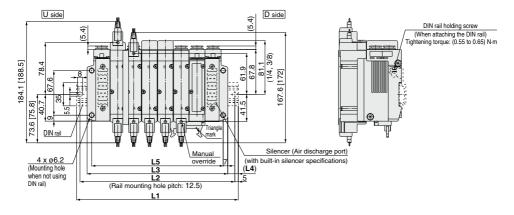
| Stations n | 4 stations | 5 | ь | / | 8 | 9 | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------------|
| L1 | 198 | 223 | 248 | 260.5 | 285.5 | 310.5 | 335.5 |
| L2 | 187.5 | 212.5 | 237.5 | 250 | 275 | 300 | 325 |
| L3 | 165 | 189 | 213 | 237 | 261 | 285 | 309 |
| L4 | 16.5 | 17 | 17.5 | 12 | 12.5 | 13 | 13.5 |
| L5 | 151 | 175 | 199 | 223 | 247 | 271 | 295 |
| | | | | | | | |

* When P, R port outlets are indicated on the B side, the P, R ports on the both sides are in the open state.

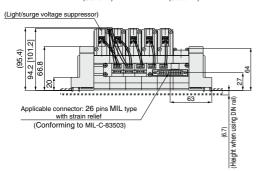




 Air discharge port on the built-in silencer type and the external pilot's extracting position are in the B side (both sides).



(Station n)-----(Station 1)



| Stations n | 4 stations | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 198 | 223 | 248 | 260.5 | 285.5 | 310.5 | 335.5 | 360.5 | 385.5 |
| L2 | 187.5 | 212.5 | 237.5 | 250 | 275 | 300 | 325 | 350 | 375 |
| L3 | 165 | 189 | 213 | 237 | 261 | 285 | 309 | 333 | 357 |
| L4 | 16.5 | 17 | 17.5 | 12 | 12.5 | 13 | 13.5 | 14 | 14.5 |
| L5 | 151 | 175 | 199 | 223 | 247 | 271 | 295 | 319 | 343 |

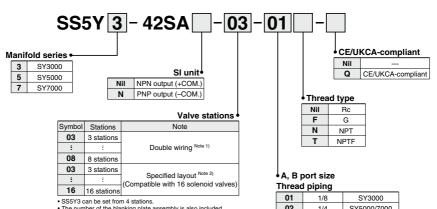


847

EX510 Gateway-type Serial Transmission System Base Mounted Manifold/Integrated Type SY3000/5000/7000 Series

The EX510 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

How to Order Manifold

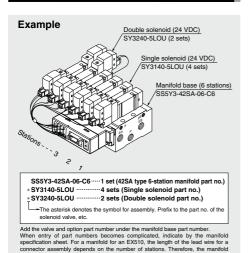


 The number of the blanking plate assembly is also included. Note 1) Double wiring: Use of a single solenoid will result in an

unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

How to Order Manifold Assembly (Example)



assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

| 01 | 1/8 | SY3000 |
|----|-----|-------------|
| 02 | 1/4 | SY5000/7000 |

One-touch fitting (Metric size)

| 0110 10 | don name (means size) | |
|---------|---------------------------|--------|
| C4 | One-touch fitting for ø4 | SY3000 |
| C6 | One-touch fitting for ø6 | 513000 |
| C6 | One-touch fitting for ø6 | SY5000 |
| C8 | One-touch fitting for ø8 | 313000 |
| C10 | One-touch fitting for ø10 | SY7000 |

One-touch fitting (Inch size)

| One-touch fitting (inch size) | | | | | |
|-------------------------------|------------------------------|---|--|--|--|
| N3 | One-touch fitting for ø5/32" | SY3000 | | | |
| N7 | One-touch fitting for ø1/4" | 313000 | | | |
| N7 | One-touch fitting for ø1/4" | SY5000 | | | |
| N9 | One-touch fitting for ø5/16" | 515000 | | | |
| N11 | One-touch fitting for ø3/8" | SY7000 | | | |
| | N3 N7 N7 N9 | N7 One-touch fitting for ø1/4" N7 One-touch fitting for ø1/4" N9 One-touch fitting for ø5/16" | | | |

SI unit part no.

| | p | | |
|--------|------------------------|------------------|--------|
| Symbol | SI unit specifications | SI unit part no. | Page |
| Nil | NPN output (+COM.) | EX510-S001 | P.1490 |
| N | PNP output (-COM.) | EX510-S101 | P.1490 |

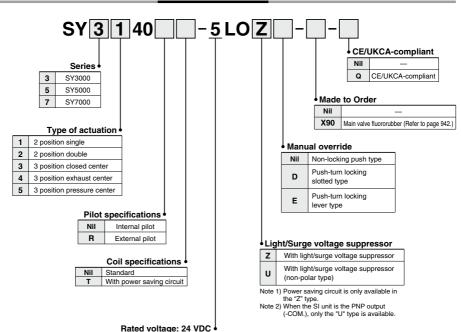
Refer to pages 1478 to 1504 and the Operation Manual for the details of EX510 Gateway-type Serial Transmission System. Please download the Operation Manual via our website, https://www.smcworld.com

Base Mounted Manifold SY3000/5000/7000 Series 17842SA



How to Order Valves



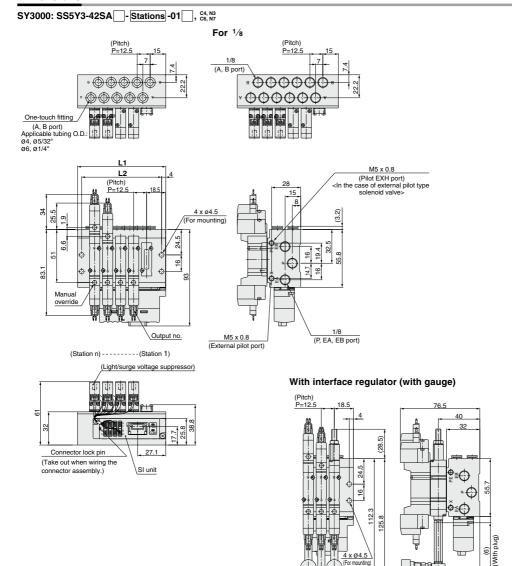


Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included.



100 42SA SY3000/5000/7000 Series

Dimensions

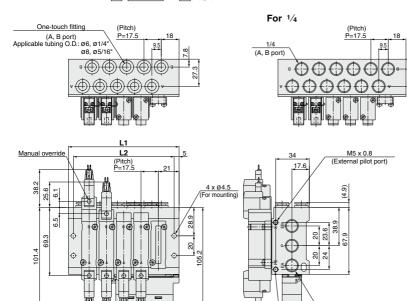


| Statio | ns n 4 | 4 stations | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|--------|---------------|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| L | 1 | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 | 185 | 197.5 | 210 | 222.5 |
| L | 2 | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 | 177 | 189.5 | 202 | 214.5 |

Base Mounted Manifold SY3000/5000/7000 Series Well-125A

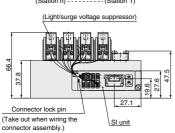


SY5000: SS5Y5-42SA - Stations -02 , C6, N7



Output no.

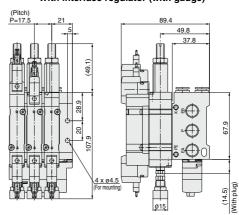
(Station n) - - - - - (Station 1)



With interface regulator (with gauge)

1/4 (P, EA, EB port) M5 x 0.8

(Pilot EXH port)
<In the case of external pilot type solenoid valve>

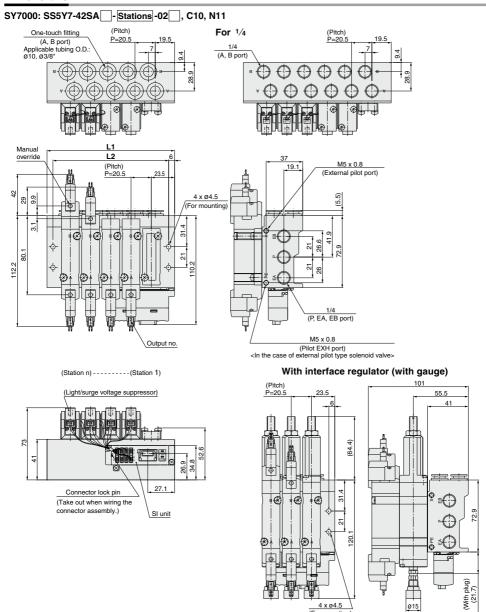


| Stations n | 3 stations | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|------------|------------|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| L1 | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 | 252 | 269.5 | 287 | 304.5 |
| L2 | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224.5 | 242 | 259.5 | 277 | 294.5 |

SMC

100 42SA SY3000/5000/7000 Series

Dimensions



| Sta | tions n | 3 stations | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|-----|---------|------------|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| | L1 | 88 | 108.5 | 129 | 149.5 | 170 | 190.5 | 211 | 231.5 | 252 | 272.5 | 293 | 313.5 | 334 | 354.5 |
| | L2 | 76 | 96.5 | 117 | 137.5 | 158 | 178.5 | 199 | 219.5 | 240 | 260.5 | 281 | 301.5 | 322 | 342.5 |

4 x ø4.5 (For mounting)

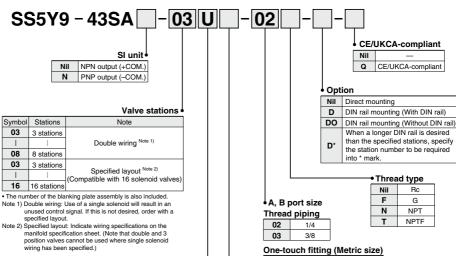
...43SA

EX510 Gateway-type Serial Transmission System Base Mounted Manifold/Stacking Type

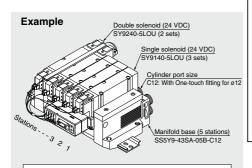
SY9000 Series (Electrical SY9000 Series

The EX510 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

How to Order Manifold



How to Order Manifold Assembly (Order Example)



SS5Y9-43SA-05B-C12 ··· 1 set (43SA type 5-station manifold part no.)

*SY9140-5LOU ············· 3 sets (Single solenoid part no.)

*SY9240-5LOU ··········· 2 sets (Double solenoid part no.)

The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.

Add the valve and option part number under the manifold base part number. When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos, of the solepoind valves to be mounted.

| C8 | One-touch fitting for ø8 |
|-----|---------------------------|
| C10 | One-touch fitting for ø10 |
| C12 | One-touch fitting for ø12 |
| M | Mixed |

One-touch fitting (Inch size)

| N9 | One-touch fitting for ø5/16 | " |
|-----|-----------------------------|---|
| N11 | One-touch fitting for ø3/8" | |
| М | Mixed | |
| | | |

For the mixed specification, indicate separately on a manifold specification sheet

SUP/EXH block assembly specifications

| - 001 / | Exil block assembly specific | | | | | | |
|-------------------------------------|-----------------------------------|--|--|--|--|--|--|
| Nil | Standard/Internal pilot | | | | | | |
| R External pilot | | | | | | | |
| S Internal pilot, Built-in silencer | | | | | | | |
| RS | External pilot, Built-in silencer | | | | | | |

→ P, R port outlets

| U | U side | O to 10 ototions | | |
|---|------------|------------------|--|--|
| D | D side | 3 to 10 stations | | |
| В | Both sides | 3 to 16 stations | | |

SI unit part no.

| Symbol | SI unit specifications | SI unit part no. | Page | | |
|--------|------------------------|------------------|--------|--|--|
| Nil | NPN output (+COM.) | EX510-S001 | P.1490 | | |
| N | PNP output (-COM.) | EX510-S101 | P.1490 | | |

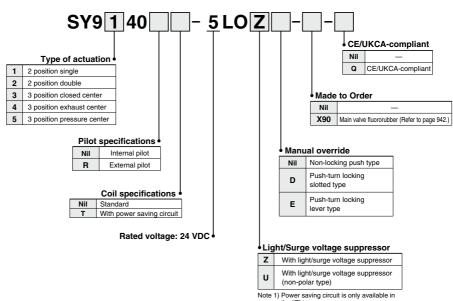
Refer to pages 1478 to 1504 and the Operation Manual for the details of EX510 Gateway-type Serial Transmission System. Please download the Operation Manual via our website, https://www.smcworld.com











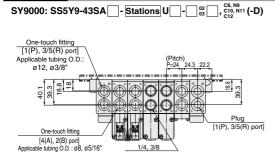
Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included.

the "Z" type.

Note 2) When the SI unit is the PNP output (-COM.), only the "U" type is available.

Base Mounted Manifold SY9000 Series 1/12 43S

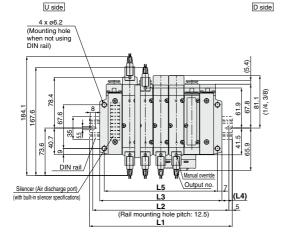
Dimensions



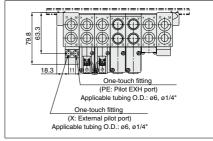
[4 (A), 2 (B) port]

: ø10, ø3/8"

:ø12

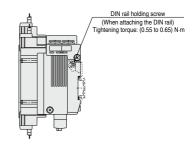


With External Pilot Specifications



- * When P, R port outlets are indicated on the D side, the P, R ports on the opposite
- Aid and the substance of the B stag, the F in points of the opposition are in the U side.

 Air discharge port on the built-in silencer type and the external pilot's extracting position are in the U side.

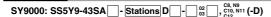


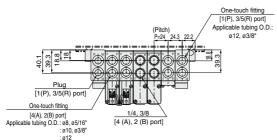
| (Station n)(Station 1) |
|---|
| (Light/surge voltage suppressor) SI unit |
| 20 60 60 60 60 60 60 60 60 60 6 |
| |
| Connector lock pin 61.6 |
| (Take out when wiring the Connector assembly.) |

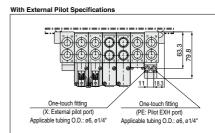
| Stations n | 3 stations | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 173 | 198 | 223 | 248 | 260.5 | 285.5 | 310.5 | 335.5 |
| L2 | 162.5 | 187.5 | 212.5 | 237.5 | 250 | 275 | 300 | 325 |
| L3 | 141 | 165 | 189 | 213 | 237 | 261 | 285 | 309 |
| L4 | 16 | 16.5 | 17 | 17.5 | 12 | 12.5 | 13 | 13.5 |
| L5 | 127 | 151 | 175 | 199 | 223 | 247 | 271 | 295 |

1ye43SA SY9000 Series

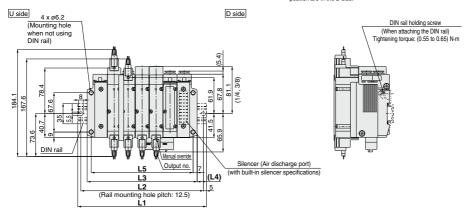
Dimensions

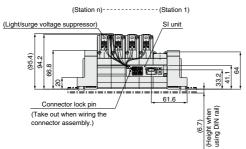






- When P, R port outlets are indicated on the D side, the P, R ports on the opposite side are plugged.
- Air discharge port on the built-in silencer type and the external pilot's extracting position are in the D side.



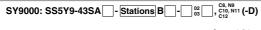


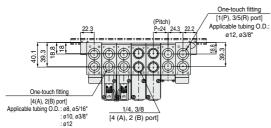
| Stations r | 3 stations | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 173 | 198 | 223 | 248 | 260.5 | 285.5 | 310.5 | 335.5 |
| L2 | 162.5 | 187.5 | 212.5 | 237.5 | 250 | 275 | 300 | 325 |
| L3 | 141 | 165 | 189 | 213 | 237 | 261 | 285 | 309 |
| L4 | 16 | 16.5 | 17 | 17.5 | 12 | 12.5 | 13 | 13.5 |
| L5 | 127 | 151 | 175 | 199 | 223 | 247 | 271 | 295 |

856

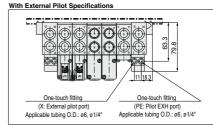
Base Mounted Manifold SY9000 Series 1978 435



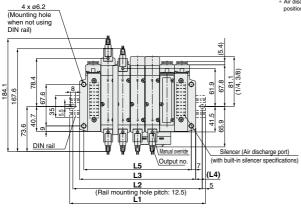




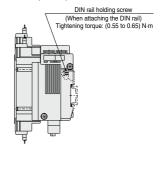
U side



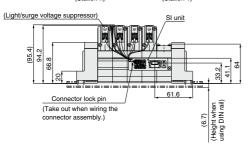
- * When P. R port outlets are indicated on the B side, the P. R ports on the both sides are in the open state
- Air discharge port on the built-in silencer type and the external pilot's extracting position are in the B side (both sides).



D side



(Station n)----- (Station 1)



| Stations n | 3 stations | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 173 | 198 | 223 | 248 | 260.5 | 285.5 | 310.5 | 335.5 | 360.5 | 385.5 | 410.5 | 435.5 | 460.5 | 485.5 |
| L2 | 162.5 | 187.5 | 212.5 | 237.5 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 |
| L3 | 141 | 165 | 189 | 213 | 237 | 261 | 285 | 309 | 333 | 357 | 381 | 405 | 429 | 453 |
| L4 | 16 | 16.5 | 17 | 17.5 | 12 | 12.5 | 13 | 13.5 | 14 | 14.5 | 15 | 15.5 | 16 | 16.5 |
| L5 | 127 | 151 | 175 | 199 | 223 | 247 | 271 | 295 | 319 | 343 | 367 | 391 | 415 | 439 |



41 415 42SA SY3000/5000/7000/9000 Series

Manifold Option

■ Type 41, 42, 43, 42SA, 43SA Blanking plate assembly



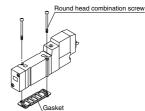
| Series | Assembly part no. |
|--------|-------------------|
| SY3000 | SY3000-26-9A(-Q) |
| SY5000 | SY5000-26-20A(-Q) |
| SY7000 | SY7000-26-22A(-Q) |
| SY9000 | SY9000-26-2A(-Q) |

■ Type 41P, 42P, 43P Blanking plate assembly



| Series | Assembly part no. |
|--------|-------------------|
| SY3000 | SY3000-26-10A(-Q) |
| SY5000 | SY5000-26-21A(-Q) |
| SY7000 | SY7000-26-23A(-Q) |
| SVONNO | SV9000-26-44(-O) |

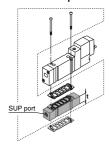
■ Gasket assembly part no.



| Series | Gasket assembly part no. |
|--------|--------------------------|
| SY3000 | SY3000-GS-2 |
| SY5000 | SY5000-GS-2(-Q) |
| SY7000 | SY7000-GS-2(-Q) |
| SY9000 | SY9000-GS-2 |

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

■ Individual SUP spacer assembly



| Series | Assembly part no. | Port size | t |
|--------|--------------------|-----------|----|
| SY3000 | SY3000-38-2A(-Q) | M5 x 0.8 | 11 |
| SY5000 | SY5000-38-16*A(-Q) | 1/8 | 15 |
| SY7000 | SY7000-38-16*A(-Q) | 1/4 | 18 |
| SY9000 | SY9000-38-2*A(-Q) | 1/4 | 20 |

- Note) The SUP port of SY3000, 5000 and 7000 may be either on the lead wire side or on the end plate side. However, as the CE/UKCA-compliant products (-Q) must be mounted in the specified direction, the port directions cannot be changed. (An assembly is
 - shipped under the condition shown in the figure.)

 For the SY9000, it can only be used on the end plate side.

↑ Caution

Caution * Thread type

Mounting screw tightening torques

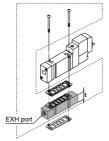
M2: 0.16 N·m M3: 0.8 N·m M4: 1.4 N·m

| Nil | Rc |
|-----|------|
| F | G |
| N | NPT |
| Т | NPTF |

⚠ Warning

When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions, and then mount it.

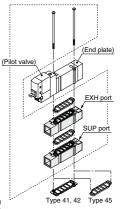
■ Individual EXH spacer assembly



| Series | Assembly part no. | Port size | t |
|--------|--------------------|-----------|----|
| SY3000 | SY3000-39-2A(-Q) | M5 x 0.8 | 11 |
| SY5000 | SY5000-39-16*A(-Q) | 1/8 | 15 |
| SY7000 | SY7000-39-16*A(-Q) | 1/4 | 18 |
| SY9000 | SY9000-39-2*A(-O) | 1/4 | 20 |

- Note) In case of 41P, 42P and 43P, for protection of the wiring unit section from drainage, piping at the EA port should be arranged so that it will not be directly exposed to exhaust from the valve. However, as the CE/UKCA-compliant products (-Q) must be mounted in the specified direction, the port directions cannot be changed. (An assembly is shipped under the condition shown in the flurre.)
 - For the SY9000, it can only be used on the end plate side.

■ Individual SUP spacer assembly + Individual EXH spacer assembly (Double spacer)



[●: Available X: Not available —: Not applicable manifold]

| | Individual SUP + | | | Applicable manifold types | | | | | |
|--------|-------------------------------------|-----------|----|---------------------------|----|-----|----|---------------|-----|
| Series | Individual EXP Assemble part no. | Port size | 41 | 41P | 42 | 42P | 45 | 45-A 45-NA | 45* |
| SY3000 | SY3000-120-2A(-Q) | M5 x 0.8 | • | × | • | × | • | × | × |
| SY5000 | SY5000-75-1*A(-Q) | 1/8 | • | × | • | × | • | × | × |
| SY7000 | SY7000-73-1*A(-Q) | 1/4 | • | × | • | × | _ | _ | _ |

Note) The port on a spacer can be directed to the pilot valve side or end plate side. However, as the CE/UKCA-compliant products (-Q) must be mounted in the specified direction, the port directions cannot be changed. For mounting the port to the pilot valve side, please make sure to connect the ports to protect the pilot valve wiring section from drainage.

The individual SUP spacer and EXH spacer can be mounted either on the upper side or lower side. (The above illustration shows the condition when the product is shipped out from a factory.)

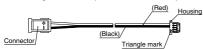
Base Mounted Manifold SY3000/5000/7000/9000 Series 1300 425

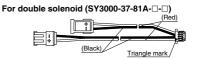


Manifold Option

■ Connector assembly

For single solenoid (SY3000-37-81A-□-N)





Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less))

| Part no. | Connector mounting position |
|-------------------|--|
| SY3000-37-81A-3-N | Single: For 1 to 4 stations |
| SY3000-37-81A-3-6 | Double/3 position: For 1 to 4 stations |
| SY3000-37-81A-2-N | Single: For 5 to 8 stations |
| SY3000-37-81A-2-4 | Double/3 position: For 5 to 8 stations |
| SY3000-37-81A-3-N | Single: For 1 to 8 stations |
| SY3000-37-81A-3-6 | Double/3 position: For 1 to 8 stations |
| SY3000-37-81A-3-N | Single: For 1 to 4 stations |
| SY3000-37-81A-3-6 | Double/3 position: For 1 to 4 stations |
| SY3000-37-81A-4-N | Single: For 5 to 8 stations |
| SY3000-37-81A-4-7 | Double/3 position: For 5 to 8 stations |
| | SY3000-37-81A-3-N SY3000-37-81A-3-6 SY3000-37-81A-2-N SY3000-37-81A-2-4 SY3000-37-81A-3-N SY3000-37-81A-3-6 SY3000-37-81A-3-N SY3000-37-81A-3-6 SY3000-37-81A-3-6 SY3000-37-81A-3-6 |

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

■ Connector assembly SY3000-37-80A-□



■ Housing (8 pcs./set) SY3000-44-3A



Connector assembly order no. (Can be used for the manifold with a specified layout)

| Connector assem | bly order no. (Can be used | for the ma | annoid with a specified layout) |
|-----------------|----------------------------|------------|---------------------------------|
| Model | Model Part no. | | Connector mounting position |
| | SY3000-37-80A-3 | For A side | For 1 to 8 stations |
| CCEVO 40CA | SY3000-37-80A-6 | For B side | FOI 1 to 6 Stations |
| SS5Y3-42SA | SY3000-37-80A-4 | For A side | For 9 to 16 stations |
| | SY3000-37-80A-7 | For B side | For 9 to 16 stations |
| | SY3000-37-80A-3 | For A side | For 4 to 0 stations |
| CCEVE 40CA | SY3000-37-80A-6 | For B side | For 1 to 8 stations |
| SS5Y5-42SA | SY3000-37-80A-7 | For A side | Fan Otta 40 atakiana |
| | SY3000-37-80A-9 | For B side | For 9 to 16 stations |
| | SY3000-37-80A-4 | For A side | For 1 to 8 stations |
| SS5Y7-42SA | SY3000-37-80A-7 | For B side | POT I to 8 Stations |
| 55517-425A | SY3000-37-80A-8 | For A side | Fan Otta 40 atakiana |
| | SY3000-37-80A-11 | For B side | For 9 to 16 stations |
| | SY3000-37-80A-6 | For A side | For 4 to 0 stations |
| | SY3000-37-80A-11 | For B side | For 1 to 8 stations |
| 0051/0 4004 | SY3000-37-80A-9 | For A side | Facility 40 ataliana |
| SS5Y9-43SA | SY3000-37-80A-14 | For B side | For 9 to 12 stations |
| | SY3000-37-80A-13 | For A side | Fan 40 to 40 atotions |
| | SY3000-37-80A-18 | For B side | For 13 to 16 stations |
| | | | |

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.

Note 3) Wiring is set longer than the actual wiring distance.

Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire. Furthermore, do not reuse the lead wire after it has been inserted and removed.

SY3000/5000/7000/9000 Series

Manifold Option

SUP blocking disk (For SY9000)

By installing a SUP blocking disk in the pressure supply passage of a manifold base, it is possible to supply two or more different high and low pressures to one manifold



| Series | No. |
|--------|--------------|
| SY9000 | SY9000-57-1A |
| | |

EXH blocking disk (For SY9000)

By installing an EXH blocking disk in the exhaust passage of a manifold base, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



| Series | No. |
|--------|--------------|
| SY9000 | SY9000-57-1A |

Label for block disk (For SY9000)

The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each)

Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk



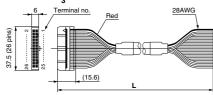




Note) When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted

Cable assembly (For 41P, 42P, 43P)

AXT100-FC26-2



Flat ribbon cable connector

| Cable length (L) | Assembly part no. |
|------------------|-------------------|
| | 26 pins |
| 1.5 m | AXT100-FC26-1 |
| 3 m | AXT100-FC26-2 |
| 5 m | AXT100-FC26-3 |

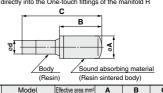
- * When using a standard commercial connector, use a 26-pin type connector conforming to MIL-C-83503 with strain relief.
- * Cannot be used for movable wiring
- * Lengths other than the above are also available.

Connector Manufacturers' Example

- HIROSE ELECTRIC CO., LTD.
- 3M Japan Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

■ Silencer with One-touch fitting (For SY9000)

The silencer plugs directly into the One-touch fittings of the manifold R (exhaust) port.



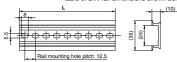
| | | , , , , , , | | ,, | |
|--------------|----------|--------------------------------|-----|------|------|
| For Series | Model | Effective area mm ² | Α | В | С |
| SY9000 (Ø12) | AN30-C12 | 41 | ø20 | 43.5 | 71.5 |

■ DIN Rail Dimensions/Weight for SY9000

VZ1000-11-4-□

Refer to L dimensions

Fill in ☐ with an appropriate no. listed on the table of DIN rail dimensions shown below.



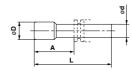
| | | 1 I | | | | _ | | | | |
|-------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| L Dimension | 98 | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 |
| Weight (g) | 24.8 | 28 | 31.1 | 34.3 | 37.4 | 40.6 | 43.8 | 46.9 | 50.1 | 53.3 |
| No. | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| L Dimension | 223 | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 |
| Weight (g) | 56.4 | 59.6 | 62.7 | 65.9 | 69.1 | 72.2 | 75.4 | 78.6 | 81.7 | 84.9 |
| No. | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| L Dimension | 348 | 360.5 | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 |
| Weight (g) | 88 | 91.2 | 94.4 | 97.5 | 100.7 | 103.9 | 107 | 110.2 | 113.3 | 116.5 |
| No. | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | |
| L Dimension | 473 | 485.5 | 498 | 510.5 | 523 | 535.5 | 548 | 560.5 | 573 | |
| Weight (g) | 119.7 | 122.8 | 126 | 129.2 | 132.3 | 135.5 | 138.6 | 141.8 | 145 | |

Note) . Refer to page 959 for DIN rail.

 Refer to L1 dimension on pages 831 to 833, 845 to 847 and 855 to 857 for lengths that correspond to the number of manifold stations.

Plua

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

| Applicable fittings size ød | Model | Α | L | D |
|-----------------------------|---------|------|------|------|
| 4 | KQ2P-04 | 16 | 32 | 6 |
| 6 | KQ2P-06 | 18 | 35 | 8 |
| 8 | KQ2P-08 | 20.5 | 39 | 10 |
| 10 | KQ2P-10 | 22 | 43 | 12 |
| 12 | KQ2P-12 | 24 | 44.5 | 14 |
| 1/8" | KQ2P-01 | 16 | 31.5 | 5 |
| 5/32" | KQ2P-03 | 16 | 32 | 6 |
| 1/4" | KQ2P-07 | 18 | 35 | 8.5 |
| 5/16" | KQ2P-09 | 20.5 | 39 | 10 |
| 3/8" | KQ2P-11 | 22 | 43 | 11.5 |

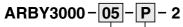
Base Mounted Manifold **SY3000/5000/7000 Series** 1709-422 1709-422



Manifold Option

■ How to Order Interface Regulator



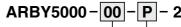


Pressure gauge connection port

| | Pressure gauge (G15-10-01) [for odd number station] |
|----|--|
| 06 | Pressure gauge (G15-10-01) [for even number station] |
| M1 | Plug (M-5P) |

Note) In the case of the ARBY3000 series with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid gauges from interfering from each others.

SY5000 series



| | J J |
|----|----------------------------|
| 00 | Pressure gauge (G15-10-01) |
| | |

M1 Plug (M-5P)

Regulating port

| P | P port |
|----|--|
| A1 | A port (P controlled type, A port regulation |
| B1 | B port (P controlled type, B port regulation |

ARBY3000-05- -2

(For odd number stations)

ARBY3000-06-□-2 (For even number stations)

Regulating port

P port

A1

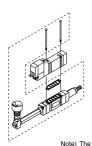
A port (P controlled type, A port regulation)

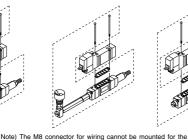
B1 B port (P controlled type, B port regulation)

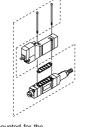
ARBY3000-M1-□-2

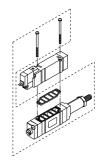
ARBY5000-00-□-2

ARBY5000-M1-□-2









SY7000 series

ARBY7000 - 00

ARBY3000 series

Pressure gauge connection port

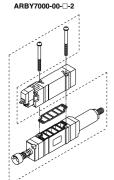
| | m - gange common por |
|----|----------------------------|
| 00 | Pressure gauge (G15-10-01) |
| M1 | Plug (M-5P) |

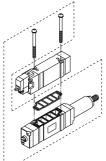
Regulating port

ARBY7000-M1-□-2

| Р | P port |
|----|---|
| A1 | A port (P controlled type, A port regulation) |
| B1 | B port (P controlled type, B port regulation) |

Note) ARBY is not CE/UKCA compliant.





Accessory

| Series | Round head combination screw Reference screw size | Gasket |
|----------|--|-------------|
| ARBY3000 | SY3000-23-10 (M2 x 36) | SX3000-57-4 |
| ARBY5000 | AC00283 (M3 x 48.5) | SX5000-57-6 |
| ARBY7000 | AC00282 (M4 x 58) | SX7000-57-5 |
| | • | |



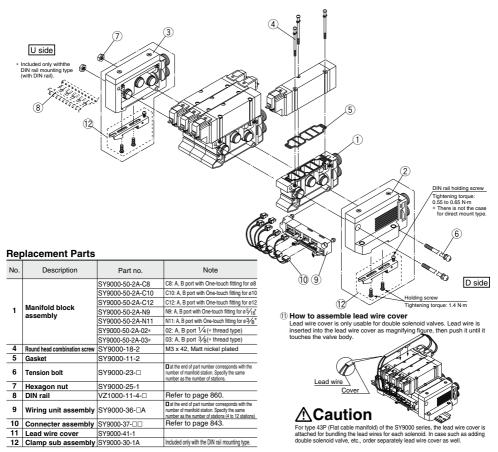
Mounting screw tightening torques M2: 0.16 N·m

M3: 0.8 N·m M4: 1.4 N·m

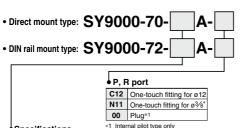


Type 43 Type 43P Type 43SA SY9000 Series

Base Mounted Manifold Exploded View



② SUP/EXH block assembly no. (D side mounting)



| Specifications | *1 | Internal pilot type onl |
|----------------|----|-------------------------|
| | | |

| 1 | Internal pilot type | | | | |
|---|---|--|--|--|--|
| 3 | External pilot type | | | | |
| 4 | Internal pilot / Built-in silencer type | | | | |
| 5 | External pilot / Built-in silencer type | | | | |

SUP/EXH block assembly no. (U side mounting)

| • Direct mount type: SY9000-71- A- |
|---|
| • DIN rail mount type: SY9000-73-A- |
| P, R port |

| | P, R port | | | | |
|----------------|------------------------------|-----------------------------|--|--|--|
| | C12 One-touch fitting for ø1 | | | | |
| | N11 | One-touch fitting for ø3/8" | | | |
| | 00 | Plug*1 | | | |
| Specifications | rnal pilot type only | | | | |

| Specifications |
|------------------------------------|
|------------------------------------|

| 1 | Internal pilot type |
|---|---|
| 3 | External pilot type |
| 4 | Internal pilot / Built-in silencer type |
| 5 | External pilot / Built-in silencer type |

Base Mounted Manifold SY9000 Series Type 43 Type 43



How to Increase Manifold Bases (SY9000 series only) Manifold case can be added at any location.

When a type 43 manifold base is added, tension bolts as well as manifold block assembly will be required. Order the tension bolt suitable for the stations after a station was increased (decreased), since the length of a tension bolt differs by the number of stations. (For changing the number of stations for a type 43P manifold, wiring unit for the stations and lead assembly will be required.)

1 Loosen the tension bolts connecting the manifold base, and pull out both of 2 tension bolts.

(When equipped with a DIN rail, loosen one DIN rail holding screw on either U side or D side.)

Separate the blocks at the location where station expansion is desired.

Mount additional manifold block assembly

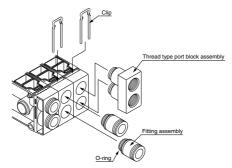
| Press block-to-block so that there's no gap. After connection, insert a tension bold for desired stations and then tighten it.

(When equipped with a DIN rail, be sure to tighten the DIN rail holding screws after tightening the tension bolts. Tightening torque: 0.55 to 0.65 N·m)

- 1. Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
- 2. When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate.
- 3. By adding wiring unit assembly to type 43 manifold, it can be changed to type 43P manifold, too.

How to Replace A, B Port Fitting Assembly

By replacing manifold block fitting assemblies or the threaded port block assembly of a type 43(P) manifold, the port size of the A and B ports can be changed. To replace these parts, remove the clip with a flat head screwdriver after the valve has been removed. Insert the fitting assemblies or threaded port block assembly, and then reinsert the clip so that it does not protrude from the manifold block.



Fitting Assembly Part No

| Fitting Assembly Fart No. | | | | | | |
|---------------------------------------|-----------------|---|--|--|--|--|
| Port size | No. | Note | | | | |
| One-touch fitting assembly for ø8 | VVQ4000-50B-C8 | | | | | |
| One-touch fitting assembly for ø10 | VVQ4000-50B-C10 | | | | | |
| One-touch fitting assembly for ø12 | VVQ4000-50B-C12 | | | | | |
| One-touch fitting for ø 5/16" | VVQ4000-50B-N9 | | | | | |
| One-touch fitting for ø 3/8" | VVQ4000-50B-N11 | | | | | |
| 1/4 threaded type port block assembly | SY9000-58A-02* | -* at the end of part number denotes the thread type. | | | | |
| 3/8 threaded type port block assembly | SY9000-58A-03* | -* at the end of part number denotes the thread type. | | | | |
| Plug assembly | SY9000-62-1A | | | | | |

Note 1) Be careful to avoid damage or contamination of O-rings, as this can cause air leakage.

Note 2) Although replacing One-touch fittings of P, R port is also possible, use caution to the cases, etc. in which solenoid valves are often used at the same time by using the smaller sized fittings than the standard size (ø12). Because there may not be able to supply or exhaust air sufficiently in comparison with the valve performances. Besides, although fittings used for A, B port are the same, it is not possible to use the threaded type port block assembly.

Note 3) The basic order unit of the One-touch fitting is 10 pcs.



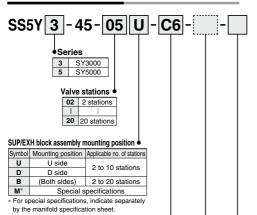
5 Port Solenoid Valve Base Mounted Manifold

Note) AC-type models that are CE/ÚKCA-compliant have DIN terminals only.

Stacking Type/DIN Rail Mounted/Individual Wiring

SY3000/5000 Series

How to Order Manifold



Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

CE/UKCA-compliant Nil

Q CE/UKCA-compliant Note) AC-type models that are CE/UKCA-compliant have DIN terminals only

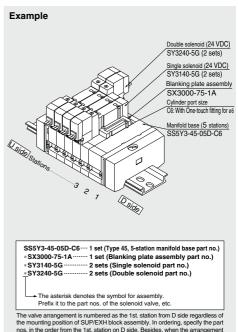
A, B port size

| One-touch fitting (Metric size | | | | | | |
|--------------------------------|--------------------------|-------------------|--|--|--|--|
| Symbol | Port size | Applicable series | | | | |
| | One-touch fitting for ø4 | | | | | |
| C6 | One-touch fitting for ø6 | SY3000 | | | | |
| M | Mixed | | | | | |
| C4 | One-touch fitting for ø4 | | | | | |
| C6 | One-touch fitting for ø6 | SY5000 | | | | |
| C8 | One-touch fitting for ø8 | 515000 | | | | |
| M | Mixed | | | | | |
| 1 11 4 1 1 10 1 | | | | | | |

| e) | One-touch fitting (Inch size) | | | | | | | |
|----|-------------------------------|-------------------------------|-------------------|--|--|--|--|--|
| | Symbol | Port size | Applicable series | | | | | |
| | N3 | One-touch fitting for ø 5/32" | | | | | | |
| | N7 | One-touch fitting for ø 1/4" | SY3000 | | | | | |
| | М | Mixed | | | | | | |
| | N3 | One-touch fitting for ø 5/32" | | | | | | |
| | N7 | One-touch fitting for ø 1/4" | SY5000 | | | | | |
| | N9 | One-touch fitting for ø 5/16" | 515000 | | | | | |
| | М | Mixed | | | | | | |
| | | | | | | | | |

- * In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
- * Refer to pages 934 to 938 for external pilot specifications and built-in silencer.

How to Order Manifold Assembly (Example)



will be complicated, fill out the manifold specification sheet to instruct us

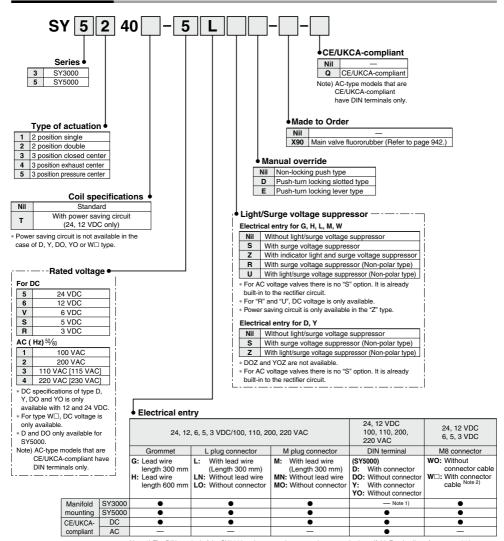
Base Mounted SY3000/5000 Series Type



How to Order Valve

Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.





Note 1) The DIN terminal of the SY3000 series cannot be mounted on a standard manifold. For details, refer to page 958. Note 2) Enter the cable length symbols in \square . Please be sure to fill in the blank referring to page 961.

- * LN, MN type: with 2 sockets
- * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C).
- Refer to page 957 for details.
- * Refer to page 960 for connector cable of M8 connector.
- M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details.
- * Refer to page 957 for the lead wire length of L and M plug connectors.
- * Refer to page 958 for the connector assembly with cover for L and M plug connectors.

[•] When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the integrated manifold are supplied with the solenoid valve, but the stacking type gaskets are not included. When the stacking type gaskets are required, order them separately.



Type 45 SY3000/5000 Series



Manifold Specifications

| Model | | SS5Y3-45(-Q) | SS5Y5-45(-Q) | | | |
|---|---------------------------|---|---|--|--|--|
| Applicable valve | | SY3□40 | SY5□40 | | | |
| Manifold type | | Stacking type/DIN rail mounted | | | | |
| P (SUP)/R (EXH) | H) Common SUP, Common EXH | | | | | |
| Valve stations | | 2 to 20 stations Note 1) | | | | |
| A, B port | Location | Base | | | | |
| Porting specifications | Direction | Side | | | | |
| | P, R port | C8 (One-touch fitting for ø8) | C10 (One-touch fitting for ø10) | | | |
| Port size | A, B port | A, B port C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø6) | | | | |
| Manifold base weight W (g), n: Stations | | 2 to 10 stations: W = 22n + 118 11 to 20 stations: W = 22n + 140 | 2 to 10 stations: W = 47n + 156 11 to 20 stations: W = 47n + 190 | | | |

Note 1) For more than 11 stations, supply pressure to P port on both sides and exhaust from R port on both sides.

Flow Rate Characteristics

| Port size Flow ra | | | | | low rate ch | characteristics | | | |
|-------------------|-----------|-------|-------------------|-------------------|-------------|-----------------|--|------|--|
| Model | 1,5,3 | 4 ,2 | 1 → | 1 → 4/2 (P → A/B) | | | $4/2 \rightarrow 5/3 \text{ (A/B} \rightarrow \text{EA/EB)}$ | | |
| | (P,EA,EB) | (A,B) | C (dm3/ (s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | |
| SS5Y3-45 | C8 | C6 | 0.88 | 0.21 | 0.22 | 0.95 | 0.18 | 0.22 | |
| SS5Y5-45 | C10 | C8 | 2.2 | 0.24 | 0.53 | 2.5 | 0.18 | 0.58 | |

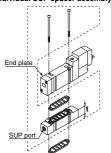
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

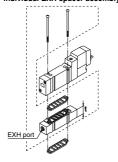




Manifold Option

■Individual SUP spacer assembly ■Individual EXH spacer assembly ■SUP blocking disk





Series Assembly part no. Port size | t

SY3000 SY3000-39-2A(-Q) M5 x 0.8 11

lead wire side or on the end plate side However, as the CE/UKCA-compliant products (-Q) must be mounted in the

specified direction, the port directions cannot be changed. (An assembly is

shipped under the condition shown in the figure.)

Nil Rc

N NPT NPTE т

∕!\ Caution Mounting screw tightening torques

M2: 0.16 N·m

M3: 0.8 N·m M4: 1.4 N·m

*: Thread type

G

Note) The EXH port may be either on the

1/8

SY5000 SY5000-39-16+A(-Q)

| Series | Assembly part no. | Port size | t |
|--------|--------------------|-----------|----|
| SY3000 | SY3000-38-2A(-Q) | M5 x 0.8 | 11 |
| SY5000 | SY5000-38-16*A(-Q) | 1/8 | 15 |

Note) The SUP port may be either on the lead wire side or on the end plate side However, as the CE/UKCA-compliant products (-Q) must be mounted in the specified direction, the port directions cannot be changed. (An assembly is shipped under the condition shown in the figure.)

Blanking plate assembly



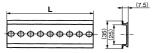
| Series | Assembly part no. |
|--------|-------------------|
| SY3000 | SX3000-75-1A(-Q) |
| SY5000 | SX5000-76-5A(-Q) |

Dimensions/DIN rail

VZ1000-11-1-□

Refer to L dimensions

Fill in
with an appropriate no. listed on the table of DIN rail dimensions shown below.



| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L Dimension | 98 | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 | 223 |
| No. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| L Dimension | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 360.5 |
| No. | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| L Dimension | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 473 | 485.5 | 498 |
| No. | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 |
| L Dimension | 510.5 | 523 | 535.5 | 548 | 560.5 | 573 | 585.5 | 598 | 610.5 | 623 | 635.5 |
| No. | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 |
| L Dimension | 648 | 660.5 | 673 | 685.5 | 698 | 710.5 | 723 | 735.5 | 748 | 760.5 | 773 |
| No. | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
| L Dimension | 785.5 | 798 | 810.5 | 823 | 835.5 | 848 | 860.5 | 873 | 885.5 | 898 | 910.5 |
| No. | 66 | 67 | 68 | 69 | 70 | 71 | | | | | |
| | | | | | | | | | | | |

^{*} Refer to L1 dimension on pages starting with pages 870 to 873 for lengths that correspond to the number of manifold stations.

L Dimension 923 935.5 948 960.5 973 985.5

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.



| Series | Part no. |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



| Series | Part no. |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

Label for block disk

The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk



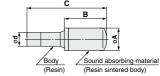




Note) When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

Silencer with One-touch fitting

The silencer plugs directly into the One-touch fittings of the manifold.



| Series | Model | Effective area mm² | Α | В | С |
|------------------|----------|--------------------|-------|------|------|
| For SY3000 (Ø8) | AN15-C08 | 20 | ø13 | 20 | 45 |
| For SY5000 (Ø10) | AN20-C10 | 30 | ø16.5 | 30.5 | 57.5 |

■Plua

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

| Applicable fittings size ød | Model | Α | L | D |
|-----------------------------|---------|------|------|-----|
| 4 | KQ2P-04 | 16 | 32 | 6 |
| 6 | KQ2P-06 | 18 | 35 | 8 |
| 8 | KQ2P-08 | 20.5 | 39 | 10 |
| 10 | KQ2P-10 | 22 | 43 | 12 |
| 1/8" | KQ2P-01 | 16 | 31.5 | 5 |
| 5/32" | KQ2P-03 | 16 | 32 | 6 |
| 1/4" | KQ2P-07 | 18 | 35 | 8.5 |
| 5/16" | KQ2P-09 | 20.5 | 39 | 10 |

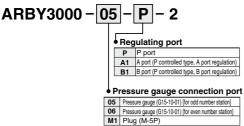


Type 45 SY3000/5000 Series

Manifold Option

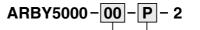
■ How to Order Interface Regulator (SY3000, 5000 only)





* In the case of the ARBY3000 series with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid gauges from interfering from each others.

SY5000 series



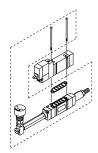
Regulating port

P port A1 A port (P controlled type, A port regulation) B1 B port (P controlled type, B port regulation)

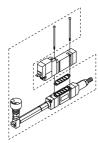
Pressure gauge connection port

00 Pressure gauge (G15-10-01) M1 Plug (M-5P)

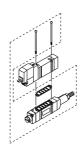
ARBY3000-05- -2 (For mounting odd number stations)





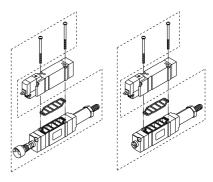


ARBY3000-M1-□-2



ARBY5000-00-□-2





Note) ARBY is not CE/UKCA-compliant.

Accessory

| Series | Round head combination screw Reference screw size | Gasket |
|----------|--|-------------|
| ARBY3000 | SY3000-23-10 (M2 x 36) | SX3000-57-4 |
| ARBY5000 | AC00283 (M3 x 48.5) | SX5000-57-6 |

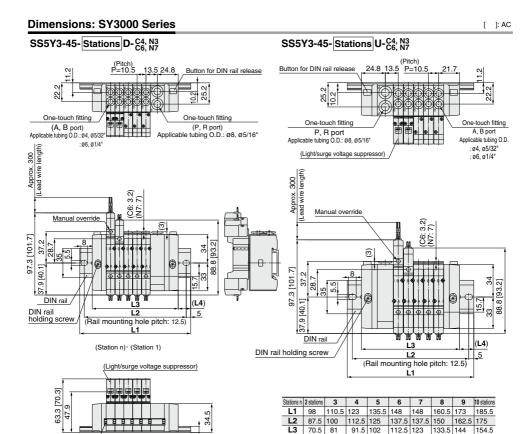
Caution

Mounting screw tightening torques

M2: 0.16 N·m M3: 0.8 N·m



Type 45 SY3000/5000 Series



L4 13.5 14.5 15.5

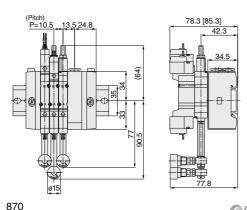
16.5 17.5 12.5

13.5 14.5

15.5

With interface regulator (with gauge)

Block separation button (Push type)

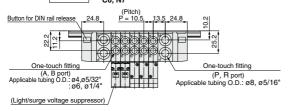


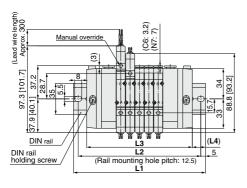


[]: AC

Dimensions: SY3000 Series

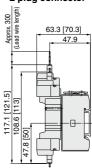
SS5Y3-45- Stations B-C4, N3 C6, N7



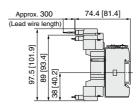


| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations | |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------------|------------|
| L1 | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 185.5 | 185.5 | 198 | |
| L2 | 100 | 112.5 | 125 | 137.5 | 150 | 162.5 | 175 | 175 | 187.5 | |
| L3 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | |
| L4 | 11.5 | 12.5 | 13.5 | 14.5 | 15.5 | 16.5 | 17.5 | 12.5 | 13.5 | |
| Stations n | 11 stations | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 station |
| L1 | 210.5 | 223 | 235.5 | 248 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 |
| L2 | 200 | 212.5 | 225 | 237.5 | 237.5 | 250 | 262.5 | 275 | 287.5 | 300 |
| L3 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 | 265.5 | 276 |
| L4 | 14.5 | 15.5 | 16.5 | 17.5 | 12 | 13 | 14 | 15 | 16 | 17 |

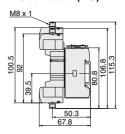
L plug connector



M plug connector



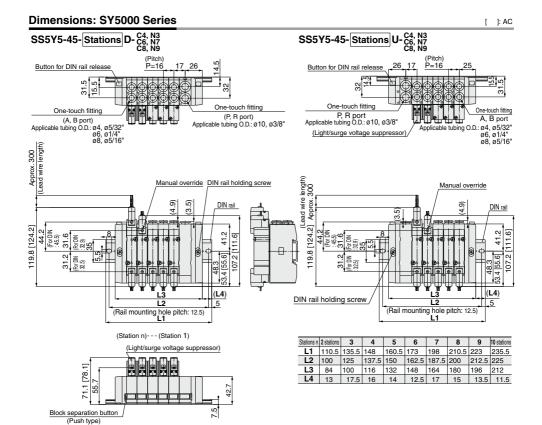
M8 connector (WO)



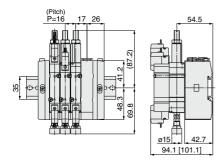
Note) Refer to page 961 for dimensions of connector types.

SMC

Type 45 SY3000/5000 Series

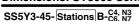


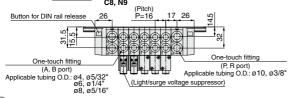
With interface regulator (with gauge)

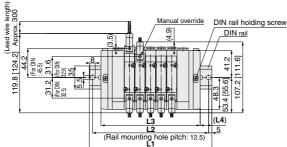


[]: AC

Dimensions: SY5000 Series

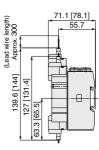




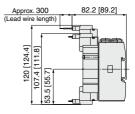


| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations | |
|------------|--------------------|-------|--------------------|-------|-------|-----------------|-------|-----------------|--------------|--------------------|
| L1 | 135.5 | 148 | 160.5 | 185.5 | 198 | 210.5 | 223 | 248 | 260.5 | |
| L2 | 125 | 137.5 | 150 | 175 | 187.5 | 200 | 212.5 | 237.5 | 250 | |
| L3 | 102 | 118 | 134 | 150 | 166 | 182 | 198 | 214 | 230 | |
| L4 | 16.5 | 15 | 13 | 17.5 | 16 | 14 | 12.5 | 17 | 15 | |
| A | | | | | | | | | | |
| Stations n | 11 stations | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 stations |
| Stations n | 11 stations 273 | | 13 310.5 | | | 16 360.5 | | 18 385.5 | _ | 20 stations 423 |
| | | 285.5 | 310.5 | | 335.5 | | | 385.5 | _ | 423 |
| L1 | 273 | 285.5 | 310.5 | 323 | 335.5 | 360.5 | 373 | 385.5 | 398 387.5 | 423 |

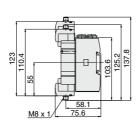
L plug connector



M plug connector

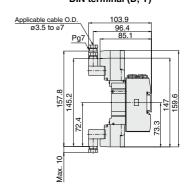


M8 connector (WO)



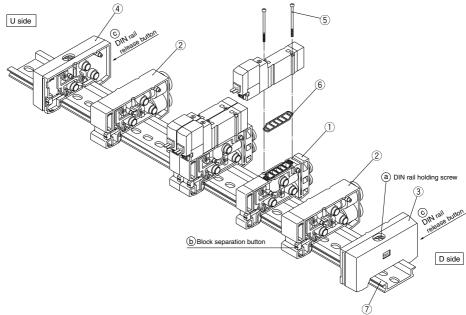
Note) Refer to page 961 for dimensions of connector types.

DIN terminal (D, Y)



Type 45 SY3000/5000 Series

DIN Rail Manifold Exploded View Type 45



Replacement Parts

| N | Description | Par | t no. | Note | | |
|-----|------------------------------|---|---|---|--|--|
| No. | Description | SY3000 | SY5000 | Note | | |
| 1 | Manifold block assembly | SX3000-50-1A-□□(-Q) | SX5000-50-1A-□□(-Q) | □□: SY3000 (Metric size) C4: With One-touch fitting for ø4 (Inch size) SY5000 (Metric size) C4: With One-touch fitting for ø4 (Inch size) SY5000 (Metric size) C4: With One-touch fitting for ø6 (Inch size) C6: With One-touch fitting for ø6 (Inch size) C8: With One-touch fitting for ø6 (Inch size) C8: With One-touch fitting for ø6 (Inch size) SY5000 (Metric size) C4: With One-touch fitting for ø6 (Inch size) N7: With One-touch fitting for ø5/1e* (Gasket 6 is supplied as an accessory.) | | |
| 2 | SUP/EXH block assembly | (Metric size) SX3000-51-1A (Inch size) SX3000-51-15A | (Metric size) SX3000-51-1A (Inch size) SX5000-51-15A | P, R port SY3000 (Metric size) With One-touch fitting for ø8 (Inch size) With One-touch fitting for ø5/re" P, R port SY5000 (Metric size) With One-touch fitting for ø10 (Inch size) With One-touch fitting for ø3/6" | | |
| 3 | End block assembly R | SX3000-52-1A(-Q) | SX5000-52-1A(-Q) | For D side | | |
| 4 | End block assembly L | SX3000-53-1A(-Q) | SX5000-53-1A(-Q) | For U side | | |
| 5 | Round head combination screw | SY3000-23-4 | AC00077 | | | |
| 3 | Reference screw size | (M2 x 21) | (M3 x 26) | | | |
| 6 | Gasket | SX3000-57-4 | SX5000-57-6 | | | |
| 7 | DIN rail | VZ1000 |)-11-1-□ | Refer to page 867. | | |

Base Mounted SY3000/5000 Series IVP



DIN Rail Manifold Exploded View

How to Increase Manifold Bases Station expansion is possible at any position.

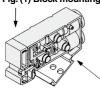
- Loosen DIN rail holding screw @ fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons ⓒ, at two locations, separate the manifold base from the DIN rail.)
- Press manifold block assembly dividing button (b), that are at the location where manifold bases are to be added, until button (b) locks, and then separate the block assemblies.
- Mount additional manifold block assembly on the DIN rail as shown in the figure 1.
- Press the block assemblies until a click sound is produced, and tighten the DIN rail holding screw (a) to fix them to the DIN rail. ∆Caution (Tightening torque: 1.4 N·m)
 - (While lightly holding the blocks after fixing an end block on one side, tighten the other end block for for better sealing.)

⚠ Caution

Note 1) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

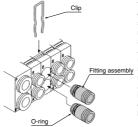
Note 2) When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate. Before supplying air, confirm that there are no gaps, etc. between blocks, and that manifold blocks are securely fastened to the DIN rail. Then supply air and confirm that there is no air leakage before operating.

Fig. (1) Block mounting procedure



Hook the DIN rail here and press down in the direction of the arrow until a click sound is heard.

How to Change Fitting Assembly



Type 45 manifold permits change in the A and B port sizes by changing the manifold block fitting assembly.

After removing the valve, remove the clip with a screwdriver, etc. For mounting a new fitting assembly, insert it and then insert a clip until it will not come out of the manifold block.

Fitting Assembly Part No.

Metric size

| SY3000 | One-touch fitting for ø4 | VVQ1000-50A-C4 |
|--------|--------------------------|----------------|
| 513000 | One-touch fitting for ø6 | VVQ1000-50A-C6 |
| | One-touch fitting for ø4 | VVQ1000-51A-C4 |
| SY5000 | One-touch fitting for ø6 | VVQ1000-51A-C6 |
| | One-touch fitting for ø8 | VVQ1000-51A-C8 |

Inch size

| ilicii size | | | | | | |
|-------------|------------------------------|----------------|--|--|--|--|
| SY3000 | One-touch fitting for ø5/32" | VVQ1000-50A-N3 | | | | |
| 513000 | One-touch fitting for ø 1/4" | VVQ1000-50A-N7 | | | | |
| SY5000 | One-touch fitting for ø5/32" | VVQ1000-51A-N3 | | | | |
| | One-touch fitting for ø 1/4" | VVQ1000-51A-N7 | | | | |
| | One-touch fitting for ø5/16" | VVQ1000-51A-N9 | | | | |

Note 1) P and R ports cannot be changed.

Note 2) Use caution that O-rings must be free from scratches and dust.
Otherwise, air leakage may result.

Note 3) Purchasing order is available in units of 10 pieces.



5 Port Solenoid Valve **Base Mounted Manifold**

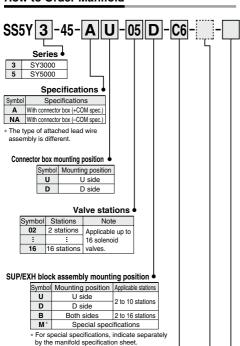
Stacking Type/DIN Rail Mounted/Connector Box





SY3000/5000 Series

How to Order Manifold



Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

A/B port size

| ne-touch | fitting | (Metric size) | |
|----------|---------|---------------|--|
| | | | |

| Symbol | Port size | Applicable series |
|--------|--------------------------|-------------------|
| C4 | One-touch fitting for ø4 | |
| C6 | One-touch fitting for ø6 | SY3000 |
| M | Mixed | |
| C4 | One-touch fitting for ø4 | |
| C6 | One-touch fitting for ø6 | SY5000 |
| C8 | One-touch fitting for ø8 | 515000 |
| M | Mixed | |

One-touch fitting (Inch size)

| Port size | Applicable series | |
|---|--|--|
| One-touch fitting for ø ⁵ /32" | | |
| One-touch fitting for ø 1/4" | SY3000 | |
| Mixed | | |
| One-touch fitting for ø5/32" | | |
| One-touch fitting for ø 1/4" | CVEOO | |
| One-touch fitting for ø5/16" | 515000 | |
| Mixed | | |
| | One-touch fitting for $\emptyset^5/32^n$ One-touch fitting for $\emptyset^1/4^n$ Mixed One-touch fitting for $\emptyset^5/32^n$ One-touch fitting for $\emptyset^5/12^n$ One-touch fitting for $\emptyset^5/12^n$ | |

Q

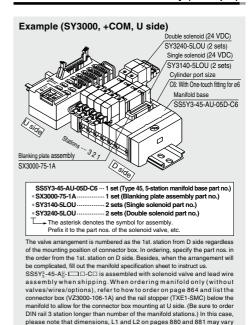
* In the case of mixed specifications, indicate separately on the manifold specification sheet.

CE/UKCA-compliant

CE/UKCA-compliant

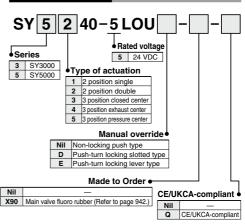
* Refer to pages 934 to 938 for external pilot specifications and built-in silencer

How to Order Manifold Assembly (Example)



How to Order Valve

slightly.) For other components, refer to page 882



* When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the integrated manifold are supplied with the solenoid valve, but the stacking type gaskets are not included. When the stacking type gaskets are required, order them separately.



Base Mounted **SY3000/5000** Series 1792.45





Manifold Specifications

| Model | | SS5Y3-45-A-(Q) | SS5Y5-45-AA-(Q) | |
|--|------------|---|---|--|
| Applicable valve | | SY3□40 | SY5□40 | |
| Manifold type | | Stacking type/D | IN rail mounted | |
| P (SUP)/R (EXH) | | Common SUP, | Common EXH | |
| Valve stations | | 2 to 16 sta | tions Note 1, 2) | |
| A, B port | Location | Ba | ise | |
| Porting specifications | Direction | Si | de | |
| | P, R port | C8 (One-touch fitting for ø8) | C10 (One-touch fitting for ø10) | |
| Port size | A, B port | C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) | C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8) | |
| Manifold base we n: Stations | ight W (g) | 2 to 10 stations: W = 26n + 207 11 to 20 stations: W = 26n + 229 | 2 to 10 stations: W = 52n + 245 11 to 16 stations: W = 52n + 279 | |
| Applicable flat ribbon cable connector | | Flat ribbon cable connector Socket: 20 pins MIL type with strain relief conforming to MIL-C-83503 | | |
| Wiring specifications | | +COM specifications (Type 45-A), -COM specifications (Type 45-NA) | | |

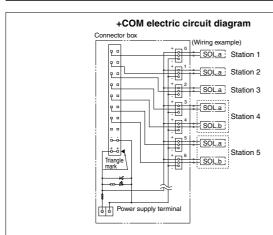
Note 1) For more than 11 stations, supply pressure to P port on both sides and exhaust from R port on both sides.

Flow Rate Characteristics

| | Port | size | | Flow rate characteristic | | | | |
|------------|-------------|--------|-----------------|--------------------------|------|--|------|--------|
| Model | 1, 5, 3 | 4, 2 | 1 → | 1 → 4/2 (P → A/B) | | $4/2 \rightarrow 5/3 \text{ (A/B} \rightarrow \text{EA/EB)}$ | | EA/EB) |
| | (P, EA, EB) | (A, B) | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv |
| SS5Y3-45-□ | C8 | C6 | 0.88 | 0.21 | 0.22 | 0.95 | 0.18 | 0.22 |
| SS5Y5-45- | C10 | C8 | 2.2 | 0.24 | 0.53 | 2.5 | 0.18 | 0.58 |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Manifold Wiring Diagram (Circuit diagram for the reference layout)



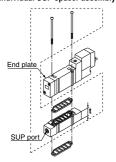
- Connector box for +COM allows transmission until G71-OD16, manufactured by OMRON Corp., to be connected directly for serial transmission.
- When an external power source must be supplied to the manifold, correct polarity must be observed, otherwise damage to PLC is possible.
- The wiring of solenoid valves, corresponds with the labeled connector box 0 to 15 from D side.
- If valves other than non-polar type are used, this may cause malfunction.

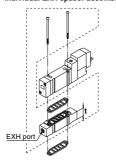
-COM electric circuit diagram Connector box (Wiring example) SOL.a Station 1 2 0 12 0 SOL.a Station 2 9 0 SOL.a Station 3 2 0 SOL.a Station 4 SOL.b SOL.a Station 5 SOL.b Power supply terminal Reference layout U side D side

Note 2) There is a limit depending on the number of solenoids. Refer to "How to Order".

Manifold Option

Individual SUP spacer assembly Individual EXH spacer assembly SUP blocking disk





| | | Port size | Į t |
|------------------|-------------------|-----------|-----|
| SY3000 S | Y3000-38-2A(-Q) | M5 x 0.8 | 11 |
| SY5000 SY | /5000-38-16*A(-Q) | 1/8 | 15 |

the lead wire side or on the end plate side. However, as the CE/UKCA-compliant products (-Q) must be mounted in the specified direction, the port directions cannot be changed. (An assembly is shipped under the condition shown in the figure.)

| Series | Assembly part no. | Port size | t |
|--------|--------------------|-----------|----|
| SY3000 | SY3000-39-2A(-Q) | M5 x 0.8 | 11 |
| SY5000 | SY5000-39-16*A(-Q) | 1/8 | 15 |

Note) The EXH port may be either on the lead wire side or on the end plate side. However, as the CE/UKCA-compliant products (-Q) must be mounted in the specified direction, the port directions cannot be changed. (An assembly is shipped under the condition shown in the figure.)

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.



| Series | Part no. |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

■ EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



| Series | Part no. |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

Label for block disk

The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

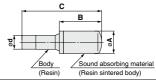
Label for SUP block disk Label for EXH block disk

Label for SUP/EXH block disk

Note) When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block dick is mounted

Silencer with One-touch fitting

The silencer plugs directly into the One-touch fittings of the manifold.



| Series | Model | Effective area mm ² | Α | В | С |
|------------------|----------|--------------------------------|-------|------|------|
| For SY3000 (Ø8) | AN15-C08 | 20 | ø13 | 20 | 45 |
| For SY5000 (Ø10) | AN20-C10 | 30 | ø16.5 | 30.5 | 57.5 |

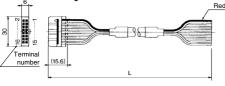
These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

| Applicable fittings size ød | Model | Α | L | D |
|-----------------------------|---------|------|------|-----|
| 4 | KQ2P-04 | 16 | 32 | 6 |
| 6 | KQ2P-06 | 18 | 35 | 8 |
| 8 | KQ2P-08 | 20.5 | 39 | 10 |
| 10 | KQ2P-10 | 22 | 43 | 12 |
| 1/8" | KQ2P-01 | 16 | 31.5 | 5 |
| 5/32" | KQ2P-03 | 16 | 32 | 6 |
| 1/4" | KQ2P-07 | 18 | 35 | 8.5 |
| 5/16" | KQ2P-09 | 20.5 | 39 | 10 |

| ■ Cable assembly | |
|------------------|--|
| AXT100-FC20-2 | |
| - 6 - | |
| I Null - Called | |



Connector Assembly for Flat Ribbon Cables

| Cable length (L) | Assembly part no. | Note |
|------------------|-------------------|---------------|
| 1.5 m | AXT100-FC20-1 | Cable 20 core |
| 3 m | AXT100-FC20-2 | x 28 AWG |
| 5 m | AXT100-FC20-3 | A 20 AWG |
| | | |

- * For other commercial connectors, use a 20 pins with strain relief conforming to MIL-C-83503.
- * Cannot be used for movable wiring
- * Lengths other than the above are also available.

Connector Manufacturers' Example

- 3M Japan Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- . J.S.T. Mfg. Co., Ltd.
- · Oki Electric Cable Co., Ltd.



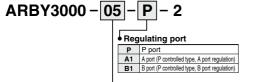
When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions, and then mount it.



Manifold Option

■ How to Order Interface regulator (SY3000, 5000 only)



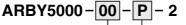


Pressure gauge connection port

| 05 | Pressure gauge (G15-10-01) | [for odd number station |
|----|----------------------------|-------------------------|
| 06 | Pressure gauge (G15-10-01) | [for even number statio |
| M1 | Plua (M-5P) | |

* In the case of the ARBY3000 series with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid gauges from interfering from each others.

SY5000 series



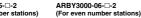
Regulating port

| | P port |
|----|---|
| | A port (P controlled type, A port regulation) |
| B1 | B port (P controlled type, B port regulation) |

Pressure gauge connection port

00 Pressure gauge (G15-10-01) M1 Plug (M-5P)

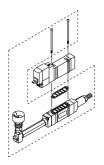
ARBY3000-05-□-2 (For odd number stations)

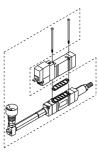


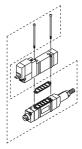
ARBY3000-M1-□-2

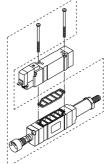
ARBY5000-00-□-2

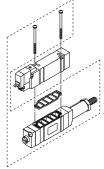
ARBY5000-M1-□-2











Note) ARBY is not CE/UKCA-compliant.

Accessory

| Series | Round head combination screw Reference screw size | Gasket |
|----------|--|-------------|
| ARBY3000 | SY3000-23-10 (M2 x 36) | SX3000-57-4 |
| ARBY5000 | AC00283 (M3 x 48.5) | SX5000-57-6 |

Caution

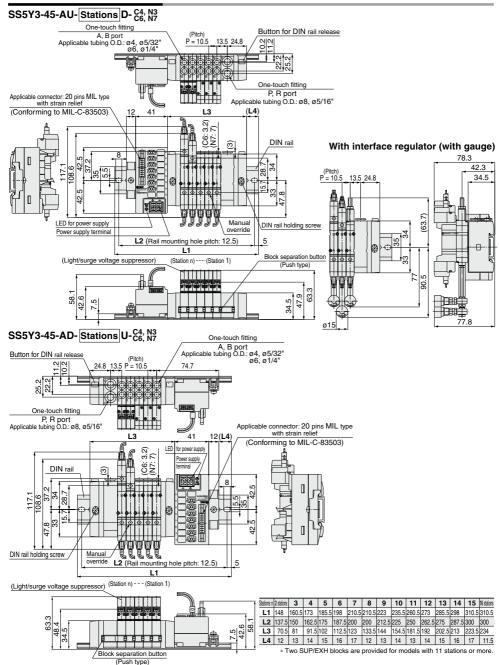
Mounting screw tightening torques

M2: 0.16 N·m M3: 0.8 N·m



Type 45-M SY3000/5000 Series

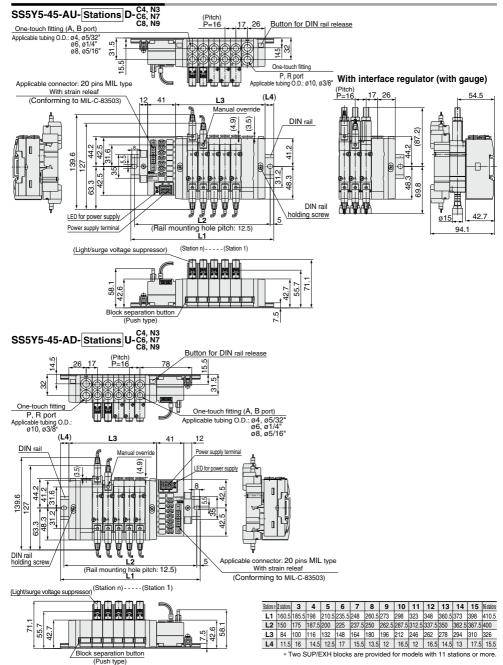
Dimensions: SY3000 Series



Base Mounted SY3000/5000 Series

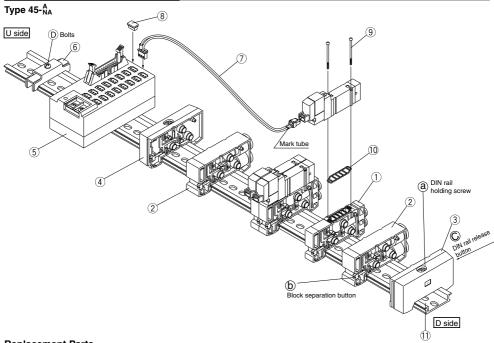


Dimensions: SY5000 Series



Type 45-M SY3000/5000 Series

DIN Rail Manifold Exploded View



| Vo. | Description | | t no. | | | No | 10 |
|-----|------------------------------|---|---|---|--|------------------------------|---|
| NO. | Description | SY3000 | SY5000 | | | INO | ie |
| 1 | Manifold block assembly | SX3000-50-1A-□□(-Q) | SX5000-50-1A-□□(-Q) | C6: With •SY5000 (Metric si C4: With C6: With C8: With | One-touch fitting for a One-touch fitting for a | 04 1 06 1 04 1 06 1 | Inch size) 13: With One-touch fitting for ø5/32' 17: With One-touch fitting for ø1/4' 11nch size) 13: With One-touch fitting for ø5/32' 17: With One-touch fitting for ø5/32' 19: With One-touch fitting for ø5/16' 10: With One-touch fitting for ø5/32' |
| 2 | SUP/EXH block assembly | (Metric size) SX3000-51-1A (Inch size) SX3000-51-15A | (Metric size) SX5000-51-1A (Inch size) SX5000-51-15A | | (Inch size) | With | n One-touch fitting for ø8 n One-touch fitting for ø5/16" n One-touch fitting for ø10 n One-touch fitting for ø3/6" |
| 3 | End block assembly R | SX3000-52-1A(-Q) | SX5000-52-1A(-Q) | Q) For D side | | side | |
| 4 | End block assembly L | SX3000-53-1A(-Q) | SX5000-53-1A(-Q) | (-Q) For U side | | side | |
| 5 | Connector box | VZ3000 | -106-1A | For 24 VDC only | | DC only | |
| 6 | Rail stopper | TXE1 | -SMC | Made by Kasuga Electric Works | | Electric Works | |
| | | SY3000-43-1A- | SY3000-43-2A-□ | +COM | Type D, 2 to 8 static Type U, 9 to 16 stat | | |
| 7 | Connecter assembly | SY3000-43-2A- | SY3000-43-3A-□ | +COM | Type D, 9 to 16 stat Type U, 2 to 8 static | | □ : Mark tube no. |
| , | | SY3000-43-1NA- | SY3000-43-2NA- | -СОМ | Type D, 2 to 8 station Type U, 9 to 16 station | | . Wark tube no. |
| | | SY3000-43-2NA- | SY3000-43-3NA- | -СОМ | Type D, 9 to 16 station Type U, 2 to 8 station | | |
| 8 | Dust cap | VZ3000-63-2 | | | | | |
| 9 | Round head combination screw | SY3000-23-4 | AC00077 | | | | |
| 9 | Reference screw size | (M2 x 21) | (M3 x 26) | | | | |
| 10 | Gasket | SX3000-57-4 | SX5000-57-6 | | | | |
| 11 | DIN rail VZ1000-11-1-□ | | -11-1-□ | | Refe | r to p | age 867. |



How to Increase Manifold Bases

Station expansion is possible at any position.

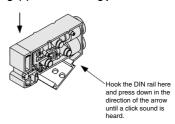
- 1 Loosen DIN rail holding screw (a) fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons ©, at two locations, separate the manifold base from the DIN rail.)
- Press manifold block assembly dividing button (b), that are at the location where manifold bases are to be added, until button (b) locks, and then separate the block assemblies.
- 3 Mount additional manifold block assembly on the DIN rail as shown in the figure 1.
- 4 Press the block assemblies until a click sound is produced, and tighten the DIN rail holding screw (a) to fix them to the DIN rail. **△Caution** (Tightening torque: 1.4 N·m)
 - (While lightly holding the blocks after fixing an end block on one side, tighten the other end block for for better sealing.)
- 5 Untighten the rail stopper bolt (1) to demount the connector box from the DIN rail, and when remounting it, tighten the bolt while pressing it against the rail.

∆Caution

- Note 1) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.
- Note 2) When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate. Before supplying air, confirm that there are no gaps, etc. between blocks, and that manifold blocks are securely fastened to the DIN rail. Then supply air and confirm that there is no air leakage before operating.
- Note 3) One connector assembly is necessary for one solenoid. When a number is necessary for the connector assembly mark tube, suffix the number to the part no. (0 to 15 are provided as mark tube numbers.)

Ex) +COM spec.: D type for 2 to 8 stations: No. 10 SY3000-43-1A-10

Fig. (1) Block mounting procedure



How to Change Fitting Assembly

Type 45 manifold permits change in the A and B port sizes by changing the manifold block fitting assembly.

After removing the valve, remove the clip with a screwdriver, etc. For mounting a new fitting assembly, insert it and then insert a clip until it will not come out of the manifold block.

Fitting Assembly Part No.

Metric size

| SY3000 | One-touch fitting for ø4 | VVQ1000-50A-C4 |
|--------|--------------------------|----------------|
| 513000 | One-touch fitting for ø6 | VVQ1000-50A-C6 |
| SY5000 | One-touch fitting for ø4 | VVQ1000-51A-C4 |
| | One-touch fitting for ø6 | VVQ1000-51A-C6 |
| | One-touch fitting for ø8 | VVQ1000-51A-C8 |

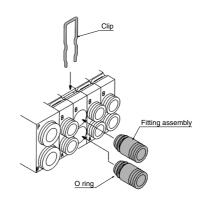
Inch size

| SY3000 | One-touch fitting for ø5/32" | VVQ1000-50A-N3 |
|--------|------------------------------|----------------|
| 513000 | One-touch fitting for ø 1/4" | VVQ1000-50A-N7 |
| | One-touch fitting for ø5/32" | VVQ1000-51A-N3 |
| SY5000 | One-touch fitting for ø 1/4" | VVQ1000-51A-N7 |
| | One-touch fitting for ø5/16" | VVQ1000-51A-N9 |

Note 1) P and R ports cannot be changed.

Note 2) Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.

Note 3) Purchasing order is available in units of 10 pieces.





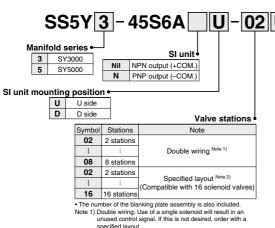
EX510 Gateway-type Serial Transmission System Base Mounted Manifold/Stacking Type



SY3000/5000 Series

The EX510 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

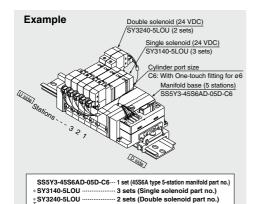
How to Order Manifold



Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid

How to Order Manifold Assembly (Order Example)

wiring has been specified.)



Add the valve and option part number under the manifold base part number. When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part

nos, of the solenoid valves to be mounted.

The asterisk denotes the symbol for assembly. Prefix to the part no. of the

CE/UKCA-compliant

Option

When a DIN rail that is longer than the specified stations is desired, specify the required station number. (Max. 20 stations)

CE/UKCA-compliant

A. B port size

One-touch fitting (Metric size)

| C4 | One-touch fitting for ø4 | | |
|----|---------------------------------|--------|--|
| C6 | One-touch fitting for ø6 | SY3000 | |
| M | Mixed | | |
| C4 | One-touch fitting for ø4 | | |
| C6 | One-touch fitting for ø6 | SY5000 | |
| C8 | One-touch fitting for ø8 Mixed | | |
| М | | | |

One-touch fitting (Inch size)

| One-touch fitting for ø5/32" | | | |
|----------------------------------|---|--|--|
| One-touch fitting for ø1/4" SY30 | | | |
| Mixed | | | |
| One-touch fitting for ø5/32" | | | |
| One-touch fitting for ø1/4" | SY5000 | | |
| One-touch fitting for ø5/16" | | | |
| Mixed | | | |
| | One-touch fitting for ø1/4" Mixed One-touch fitting for ø5/32" One-touch fitting for ø1/4" One-touch fitting for ø5/16" | | |

[·] For the mixed specification, indicate separately on a manifold specification sheet.

Pilot specifications

| Nil Internal pilot S Internal pilot/built-in silence | | Internal pilot |
|---|----|----------------------------------|
| | | Internal pilot/built-in silencer |
| | R | External pilot |
| | RS | External pilot/built-in silencer |

SUP/EXH block assembly mounting position

| U | U side | 2 to 10 stations | | |
|---|-----------------|------------------|--|--|
| D | D side | 2 to 10 stations | | |
| В | Both sides | 2 to 16 stations | | |
| М | specifications* | | | |

^{*}For the special specifications, indicate separately on a manifold specification sheet.

SI unit part no.

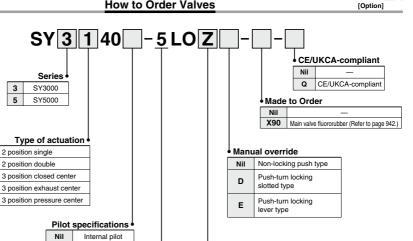
| Symbol | SI unit specifications | SI unit part no. | Page |
|--------|------------------------|------------------|--------|
| Nil | NPN output (+COM.) | EX510-S001 | P.1490 |
| N | PNP output (-COM.) | EX510-S101 | P.1490 |

Refer to pages 1478 to 1504 and the Operation Manual for the details of EX510 Gateway-type Serial Transmission System. Please download the Operation Manual via our website, https://www.smcworld.com

Base Mounted Manifold SY3000/5000 Series 1998 45S6A



How to Order Valves



U

Light/Surge voltage suppressor With light/surge voltage suppressor With light/surge voltage suppressor

(non-polar type)

* When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the integrated manifold are supplied with the solenoid valve, but the stacking type gaskets are not included. When the stacking type gaskets are required, order them separately.

External pilot

Rated voltage: 24 VDC

Series

SY3000

SY5000

5

2 position single

2 position double

3 position closed center

1

2

3

4

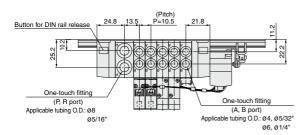
5

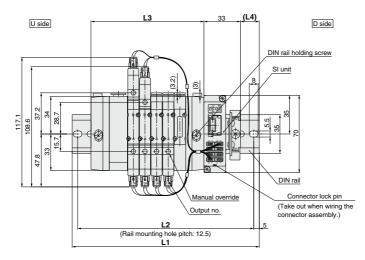


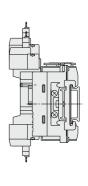
100 45S6A SY3000/5000 Series

Dimensions

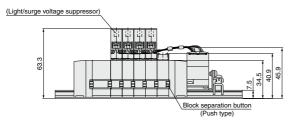
SY3000: SS5Y3-45S6A D- Stations U-C4, N3







(Station n)- - - (Station 1)



| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 135.5 | 148 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 | 223 |
| L2 | 125 | 137.5 | 137.5 | 150 | 162.5 | 175 | 187.5 | 200 | 212.5 |
| L3 | 70.5 | 81 | 91.5 | 102 | 112.5 | 123 | 133.5 | 144 | 154.5 |
| L4 | 16 | 17 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |

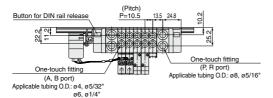
886



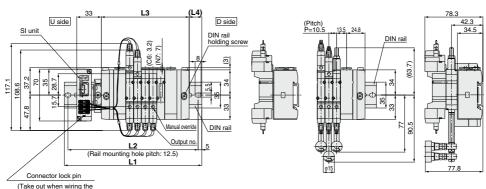
Base Mounted Manifold SY3000/5000 Series Type 45S6A



SY3000: SS5Y3-45S6A U- Stations B-C4, N3

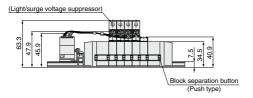


With interface regulator (with gauge)



(Station n) - - - (Station 1)

connector assembly.)



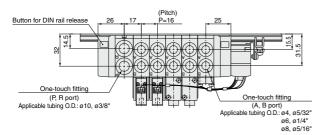
| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 148 | 160.5 | 173 | 185.5 | 185.5 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 | 260.5 | 273 | 285.5 | 298 |
| L2 | 137.5 | 150 | 162.5 | 175 | 175 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 250 | 262.5 | 275 | 287.5 |
| L3 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 |
| L4 | 14 | 15 | 16 | 17 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 12.5 | 13.5 | 14.5 | 15.5 |

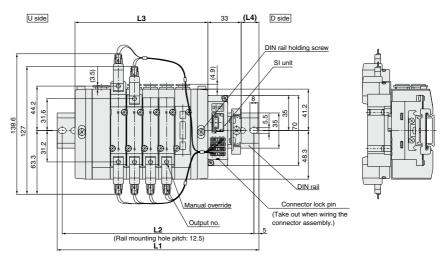
SMC

100 45S6A SY3000/5000 Series

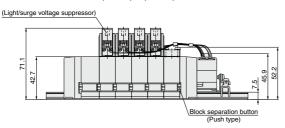
Dimensions











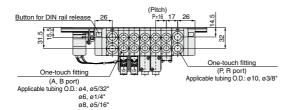
| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 148 | 160.5 | 173 | 198 | 210.5 | 223 | 248 | 260.5 | 273 |
| L2 | 137.5 | 150 | 162.5 | 187.5 | 200 | 212.5 | 237.5 | 250 | 262.5 |
| L3 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 |
| L4 | 15.5 | 14 | 12 | 16.5 | 15 | 13 | 17.5 | 16 | 14 |

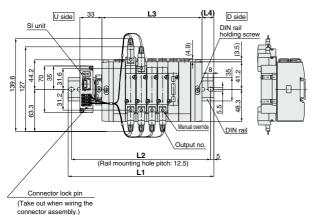
888

Base Mounted Manifold SY3000/5000 Series 1/194556

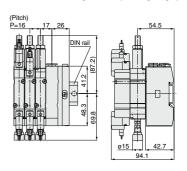


SY5000: SS5Y5-45S6A U- Stations B-C6, NO

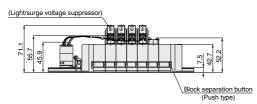




With interface regulator (with gauge)



(Station n) - - - (Station 1)

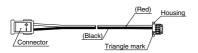


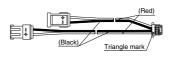
| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 160.5 | 185.5 | 198 | 210.5 | 223 | 248 | 260.5 | 273 | 298 | 310.5 | 323 | 335.5 | 360.5 | 373 | 385.5 |
| L2 | 150 | 175 | 187.5 | 200 | 212.5 | 237.5 | 250 | 262.5 | 287.5 | 300 | 312.5 | 325 | 350 | 362.5 | 375 |
| L3 | 102 | 118 | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 | 262 | 278 | 294 | 310 | 326 |
| L4 | 13 | 17.5 | 15.5 | 14 | 12 | 16.5 | 15 | 13 | 17.5 | 16 | 14 | 12.5 | 17 | 15 | 13.5 |

Manifold Option

■ Connector assembly For single solenoid (SY3000-37-81A-□-N)

For double solenoid (SY3000-37-81A-□-□)





Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less)) Integrated type

| | 5 : | |
|--------------|--------------------|---|
| Model | Part no. | Connector mounting position |
| | SY3000-37-81A-3-N | Single : Starting from the SI unit side From unit 1 to unit 4 |
| SS5Y3-45S6A | SY3000-37-81A-3-3 | Double/3 position: Starting from the SI unit side From unit 1 to unit 4 |
| 33313-4330A | SY3000-37-81A-4-N | Single : Starting from the SI unit side From unit 5 to unit 8 |
| | SY3000-37-81A-4-4 | Double/3 position: Starting from the SI unit side From unit 5 to unit 8 |
| | SY3000-37-81A-4-N | Single : Starting from the SI unit side From unit 1 to unit 4 |
| SS5Y5-45S6A | SY3000-37-81A-4-4 | Double/3 position: Starting from the SI unit side From unit 1 to unit 4 |
| 33313-4330A | SY3000-37-81A-6-N | Single : Starting from the SI unit side From unit 5 to unit 8 |
| | SY3000-37-81A-6-6 | Double/3 position: Starting from the SI unit side From unit 5 to unit 8 |
| | SY3000-37-81A-4-N | Single : For 1 to 4 stations |
| SS5Y9- 23 SA | SY3000-37-81A-4-9 | Double/3 position: For 1 to 4 stations |
| 33313- 43 3A | SY3000-37-81A-6-N | Single : For 5 to 8 stations |
| | SY3000-37-81A-6-11 | Double/3 position: For 5 to 8 stations |

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

■ Connector assembly SY3000-37-80A-□



■ Housing (8 pcs./set) SY3000-44-3A



Connector assembly order no. (Can be used for the manifold with a specified layout)

| Connector assembly order no. (Can be used for the mannoid with a specified layout) | | | | | | | | |
|--|------------------|---|--|--|--|--|--|--|
| Model | Part no. | Connector mounting position | | | | | | |
| | SY3000-37-80A-3 | Starting from the SI unit side: From unit 1 to unit 4 | | | | | | |
| SS5Y3-45S6A | SY3000-37-80A-4 | Starting from the SI unit side: From unit 5 to unit 8 | | | | | | |
| 33313-4330A | SY3000-37-80A-6 | Starting from the SI unit side: From unit 9 to unit 12 | | | | | | |
| | SY3000-37-80A-7 | Starting from the SI unit side: From unit 13 to unit 16 | | | | | | |
| | SY3000-37-80A-4 | Starting from the SI unit side: From unit 1 to unit 4 | | | | | | |
| SS5Y5-45S6A | SY3000-37-80A-6 | Starting from the SI unit side: From unit 5 to unit 8 | | | | | | |
| 33313-4330A | SY3000-37-80A-8 | Starting from the SI unit side: From unit 9 to unit 12 | | | | | | |
| | SY3000-37-80A-10 | Starting from the SI unit side: From unit 13 to unit 16 | | | | | | |

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.

Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire. Furthermore, do not reuse the lead wire after it has been inserted and removed.

Note 3) Wiring is set longer than the actual wiring distance.



Base Mounted SY3000/5000 Series Type 45 And Type 45



Stacking Type/DIN Rail Mounted/Individual Wiring: Common Manifold Option

■Blanking plate assembly



(The shape varies depending on the series.)

| Series | Assembly part no. |
|--------|-------------------|
| SY3000 | SX3000-75-1A(-Q) |
| SY5000 | SX5000-76-5A(-Q) |

* Thread type

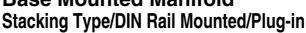
| Nil | Rc |
|-----|------|
| F | G |
| N | NPT |
| Т | NPTF |

Caution

Mounting screw tightening torques

M2: 0.16 N·m M3: 0.8 N·m M4: 1.4 N·m

5 Port Solenoid Valve **Base Mounted Manifold**

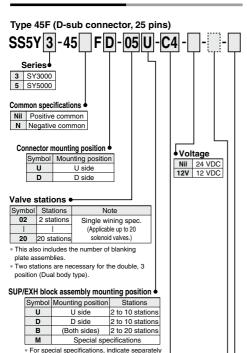






SY3000/5000 Series

How to Order Manifold



A, B port size •

| One-touch fitting (Metric size) | | | | | | | | |
|---------------------------------|--------------------------|-------------------|--|--|--|--|--|--|
| Symbol | Port size | Applicable series | | | | | | |
| C4 | One-touch fitting for ø4 | | | | | | | |
| C6 | One-touch fitting for ø6 | SY3000 | | | | | | |
| M | Mixed | | | | | | | |
| C4 | One-touch fitting for ø4 | | | | | | | |
| C6 | One-touch fitting for ø6 | SY5000 | | | | | | |
| C8 | One-touch fitting for ø8 | 313000 | | | | | | |
| M | Mixed | | | | | | | |
| | | | | | | | | |

manifold specification sheet.

by the manifold specification sheet.

N9 One-touch fitting for ø 5/16 М * In the case of mixed specifications (M), indicate separately on the

M

SY3000

SY5000

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

One-touch fitting (Inch size)

Port size

Mixed

N3 One-touch fitting for ø 5/32

N7 One-touch fitting for ø 1/4"

N3 One-touch fitting for ø 5/32

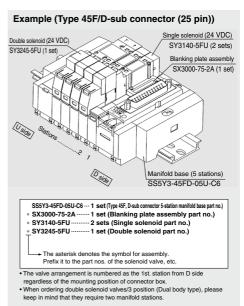
N7 One-touch fitting for ø 1/4

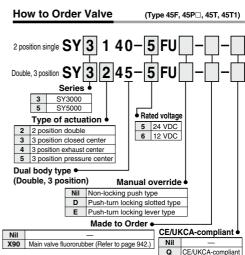
CE/UKCA-compliant

| Nil | _ |
|-----|-------------------|
| Q | CE/UKCA-compliant |

* Refer to pages 934 to 938 for external pilot specifications and built-in silencer.

How to Order Manifold Assembly (Example)





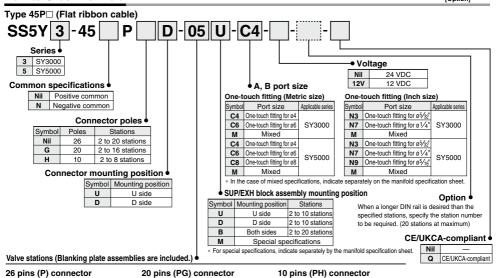
- * When ordering plug-in type solenoid valve as a single unit, gaskets are not included. Order them separately, if necessary.
- (Refer to page 908 for details.)
- * With light/surge voltage suppressor (Non-polar type)



Base Mounted SY3000/5000 Series Type 45



How to Order Manifold



Symbol Stations

02 2 stations

08 8 stations

:

Note

Single wiring spec.

(Applicable up to 8 solenoid valves)

| 26 pii | ns (P) | connector | 20 pii | 1S (PC | 3) connector |
|--------|-------------|----------------------|--------|-------------|----------------------|
| Symbol | Stations | Note | Symbol | Stations | Note |
| 02 | 2 stations | Single wiring spec. | 02 | 2 stations | Single wiring spec. |
| - : | : | (Applicable up to 20 | | : | (Applicable up to 16 |
| 20 | 20 stations | solenoid valves.) | 16 | 16 stations | solenoid valves.) |

Two stations are necessary for the double, 3 position (Dual body type).

D-sub connector

Manifold Specifications

| Mandal | | | D-sub connector | Flat ri | bbon cable Type | e 45PI | | |
|----------------------------------|---------------|---------------------------------|---|--|--|--|--|--|
| Model | Wodel | | | Type 45P | Type 45PG | Type 45PH | | |
| Manifold | | | | Plu | g-in | | | |
| P (SUP)/R (| EXH) | | | Common SUP | Common EXH | | | |
| Valve static | ns Note 1, 2) | | 2 to 20 | stations | 2 to 16 stations | 2 to 8 stations | | |
| A, B port Location | | | | Ba | ise | | | |
| Porting specifications Direction | | | | Si | de | | | |
| | D D | SY3000 | | C8 (One-touch fitting for ø8) | | | | |
| Port size | P, R port | SY5000 | C10 (One-touch fitting for ø10) | | | | | |
| FUIT SIZE | A, B port | SY3000 | C4 (One-touch fitting for ø4)/C6 (One-touch fitting for ø6) | | | | | |
| | | SY5000 | C4 (One-touch fitting for ø4)/C6 (One-touch fitting for ø6)/C8 (One-touch fitting for | | | | | |
| Applicable connector | | | D-sub connector Complies with MIL-C-24308 JIS-X-5101 | Flat ribbon cable connector Socket: 26 pins MIL type with strain relief Conforming to MIL-C-83503 | Flat ribbon cable connector Socket: 20 pins MIL type with strain relief Conforming to MIL-C-83503 | Flat ribbon cable connector Socket: 10 pins MIL type with strain relief Conforming to MIL-C-83503 | | |
| Internal wir | ing | | +COM (Type 45□), -COM (Type 45N□) | | | | | |
| Manifold base SY3000 | | 2 to 10 stations: W = 26n + 172 | | | | | | |
| weight W (g | 1) | 313000 | 11 to 20 stations: W = 26n + 199 | | | | | |
| n: Stations | | SY5000 | | 2 to 10 stations: | | | | |
| (D-sub connector) | | | 11 to 20 stations: W = 52n + 264 | | | | | |

Note 1) For more than 11 stations, supply pressure to P port on both sides and exhaust from R port on both sides. Note 2) There is a limit depending on the number of solenoids. Refer to "How to Order".

Flow Rate Characteristics

| | Port | size | Flow rate characteristics | | | | | | | |
|-----------|-----------|--------|--|------|------|-----------------|------|------|--|--|
| Model | 1 ,5 ,3 | 4 ,2 | $1 \rightarrow 4/2 \text{ (P} \rightarrow A/B)$ $4/2 \rightarrow 5/3 \text{ (A/B} \rightarrow I$ | | | EA/EB) | | | | |
| | (P,EA,EB) | (A ,B) | C (dm3/(s-bar)) | b | Cv | C (dm3/(s-bar)) | b | Cv | | |
| SS5Y3-45□ | C8 | C6 | 0.88 | 0.21 | 0.22 | 0.95 | 0.18 | 0.22 | | |
| SS5Y5-45□ | C10 | C8 | 2.2 | 0.24 | 0.53 | 2.5 | 0.18 | 0.58 | | |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

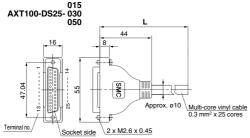


Base Mounted SY3000/5000 Series



Manifold Option

D-sub connector (25 pins)/Cable assembly



D-sub connector cable

| Cable length (L) | Assembly part no. | Note | | |
|---------------------------|-------------------|------------------------------|--|--|
| 1.5 m | AXT100-DS25-015 | Cable | | |
| 3 m | AXT100-DS25-030 | $0.3 \text{ mm}^2 \text{ x}$ | | |
| 5 m | AXT100-DS25-050 | 25 cores | | |

* When a commercially available connector is required, use a 25 pin female connector conforming to MIL-C24308.

Electric characteristics

| Item | Characteristics |
|-------------------------------------|-----------------|
| Conductor resistance Ω/km, 20°C | 65 or less |
| Voltage limit V, 1 min, AC | 1000 |
| Insulation resistance MΩkm, 20°C | 5 or more |

Note) The min. bending radius of D-sub cable assembly is 20 mm.

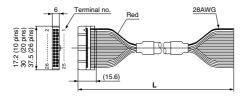
D-sub connector cable assembly

| Terminal numbers | | | | | | | | |
|------------------|-----------------|-------------|--|--|--|--|--|--|
| Terminal no. | Lead wire color | Dot marking | | | | | | |
| 1 | Black | None | | | | | | |
| 2 | Brown | None | | | | | | |
| 3 | Red | None | | | | | | |
| 4 | Orange | None | | | | | | |
| 5 | Yellow | None | | | | | | |
| 6 | Pink | None | | | | | | |
| 7 | Blue | None | | | | | | |
| 8 | Purple | White | | | | | | |
| 9 | Gray | Black | | | | | | |
| 10 | White | Black | | | | | | |
| 11 | White | Red | | | | | | |
| 12 | Yellow | Red | | | | | | |
| 13 | Orange | Red | | | | | | |
| 14 | Yellow | Black | | | | | | |
| 15 | Pink | Black | | | | | | |
| 16 | Blue | White | | | | | | |
| 17 | Purple | None | | | | | | |
| 18 | Gray | None | | | | | | |
| 19 | Orange | Black | | | | | | |
| 20 | Red | White | | | | | | |
| 21 | Brown | White | | | | | | |
| 22 | Pink | Red | | | | | | |
| 23 | Gray | Red | | | | | | |
| 24 | Black | White | | | | | | |
| 25 | White | None | | | | | | |

Connector manufacturers' example

- · HIROSE ELECTRIC CO., LTD.
- Fuiitsu Limited
- · Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.

■ Flat Ribbon Cable Connector/Cable assembly AXT100-FC20-1



Flat ribbon cable connector

| Cable | Assembly part no. | | | | | | | |
|------------|-------------------|---------------|---------------|--|--|--|--|--|
| length (L) | 26 pins | 20 pins | 10 pins | | | | | |
| 1.5 m | AXT100-FC26-1 | AXT100-FC20-1 | AXT100-FC10-1 | | | | | |
| 3 m | AXT100-FC26-2 | AXT100-FC20-2 | AXT100-FC10-2 | | | | | |
| 5 m | AXT100-FC26-3 | AXT100-FC20-3 | AXT100-FC10-3 | | | | | |

- * When using a standard commercial connector, use a 26-pin, 20-pin, or 10-pin type connector conforming to MIL-C-83503 with strain relief.
- * Cannot be used for movable wiring
- * Lengths other than the above are also available.

Connector Manufacturers' Example

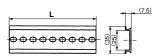
- · HIROSE ELECTRIC CO., LTD.
- 3M Japan Limited
- Fuiitsu Limited
- · Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd

■ Dimensions/DIN rail

VZ1000-11-1-□

◆ Refer to L dimensions

* Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.



| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L Dimension | 98 | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 | 223 |
| No. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| L Dimension | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 360.5 |
| No. | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| L Dimension | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 473 | 485.5 | 498 |
| No. | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 |
| L Dimension | 510.5 | 523 | 535.5 | 548 | 560.5 | 573 | 585.5 | 598 | 610.5 | 623 | 635.5 |
| No. | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 |
| L Dimension | 648 | 660.5 | 673 | 685.5 | 698 | 710.5 | 723 | 735.5 | 748 | 760.5 | 773 |
| No. | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
| L Dimension | 785.5 | 798 | 810.5 | 823 | 835.5 | 848 | 860.5 | 873 | 885.5 | 898 | 910.5 |
| No. | 66 | 67 | 68 | 69 | 70 | 71 | | | | | |
| L Dimension | 923 | 935.5 | 948 | 960.5 | 973 | 985.5 | | | | | |

* Refer to L1 dimension on pages starting with pages 900 to 907 for lengths that correspond to the number of manifold stations.



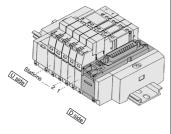
Typ.45 SY3000/5000 Series

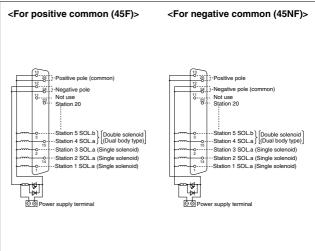
Manifold Internal Wiring

45(N)F/D-sub Connector

A D-sub connector used for electric wiring reduces labor during wiring operation.

Connectors conforming to MIL are used for interchangeability.

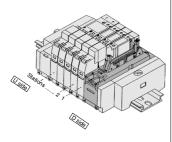


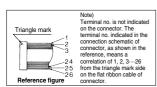


- . The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 20 manifold stations, with up to 20 solenoids.
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

Type 45(N)P/Flat Ribbon Cable (26 pins)

A flat ribbon cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.





<For positive common (45P)> <For negative common (45NP)> -Positive pole Positive pole (common) -Negative pole "-Negative pole (common) -Not use --Not use , 21 21 -Station 20 Station 20 20 · -Station 5 SOL.b | Double solenoid | Station 4 SOL.a | Double solenoid | (Dual body type) Station 5 SOL.b | Double solenoid | Station 4 SOL.a | (Dual body type) Station 3 SOL.a (Single solenoid) Station 3 SOL.a (Single solenoid) Station 2 SOL.a (Single solenoid) Station 2 SOL.a (Single solenoid) م ہ å p Station 1 SOL.a (Single solenoid) Station 1 SOL.a (Single solenoid) 1 Triangle mark Power supply terminal Power supply terminal

- . The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 20 manifold stations, with up to 20 solenoids.
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.



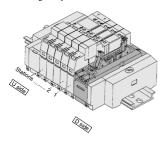
Base Mounted SY3000/5000 Series

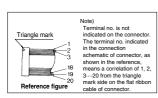


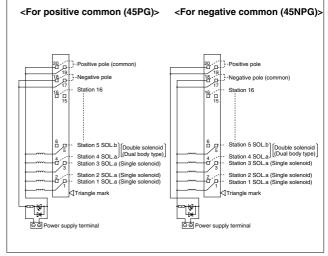
Manifold Internal Wiring

Type 45(N)PG/Flat Ribbon Cable (20 pins)

A flat ribbon cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.



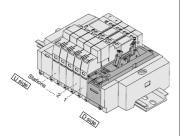


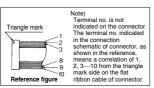


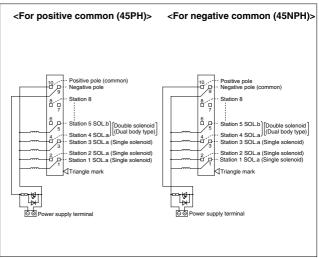
- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 16 manifold stations, with up to 16 solenoids
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

Type 45(N)PH/Flat Ribbon Cable (10 pins

A flat ribbon cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.







- . The power source terminal is used for connecting to an external power source.
- . The maximum number of stations that can be accommodated is 8 manifold stations, with up to 8 solenoids.
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

SY3000/5000 Series

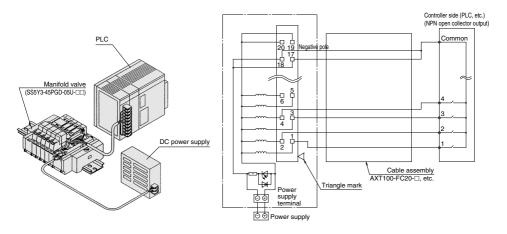
How to Connect SS5Y □-45 □ (Plug-in)

Power terminal is equipped with plug-in manifold of the SY series as standard.

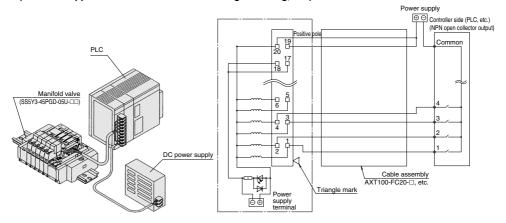
Power terminal enables the power supply to valve from either of manifold or controller side.

The wiring examples should be used for reference when wiring is performed.

1. Wiring example when using manifold power supply terminals



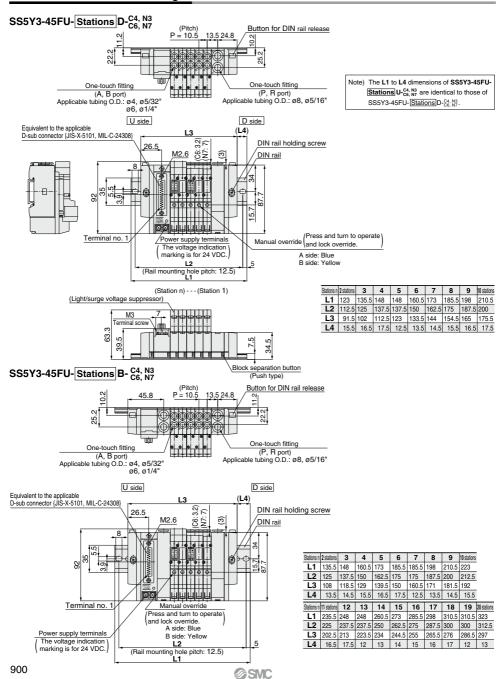
2. Wiring example when not using manifold power supply terminals (Power is supplied to the controller side or along the wiring, etc.)



Single wire, COM position, etc. of PLC are different from each manufacturer. When
connecting with PLC, read the specifications carefully and understand the electrical
circuit. Poor wiring could cause damage to PLC, power source, etc. as well as manifold
and valve.

SY3000/5000 Series

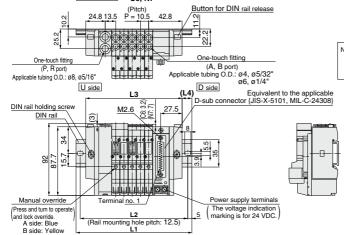
SY3000: D-sub Connector/Plug-in





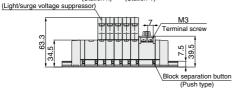
SY3000: D-sub Connector/Plug-in





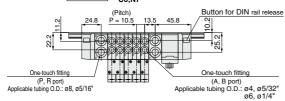
Note) The L1 to L4 dimensions of SS5Y3-45FD-Stations D-C4, N3 are identical to those of SS5Y3-45FD-Stations U-C4,N3 C6,N7-

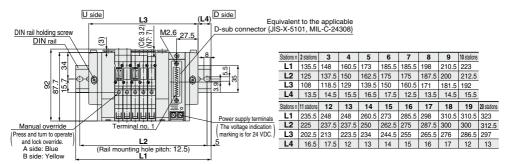
(Station n) - - - (Station 1)



| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1 | 123 | 135.5 | 148 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 |
| L2 | 112.5 | 125 | 137.5 | 137.5 | 150 | 162.5 | 175 | 187.5 | 200 |
| L3 | 91.5 | 102 | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 |
| L4 | 15.5 | 16.5 | 17.5 | 12.5 | 13.5 | 14.5 | 15.5 | 16.5 | 17.5 |

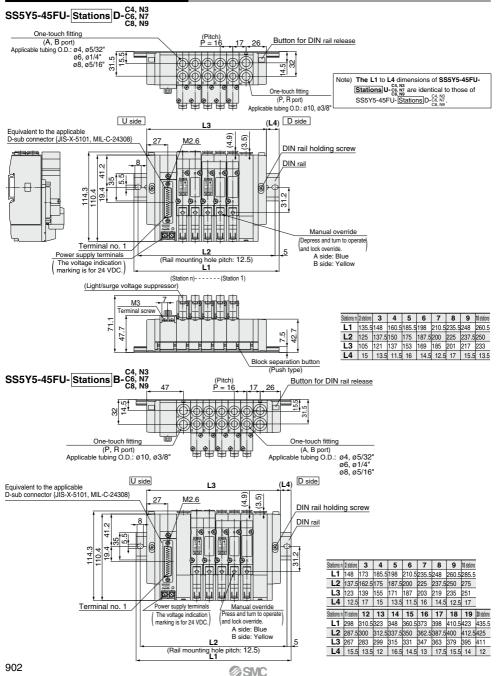
SS5Y3-45FD-Stations B-C4,N3





SY3000/5000 Series

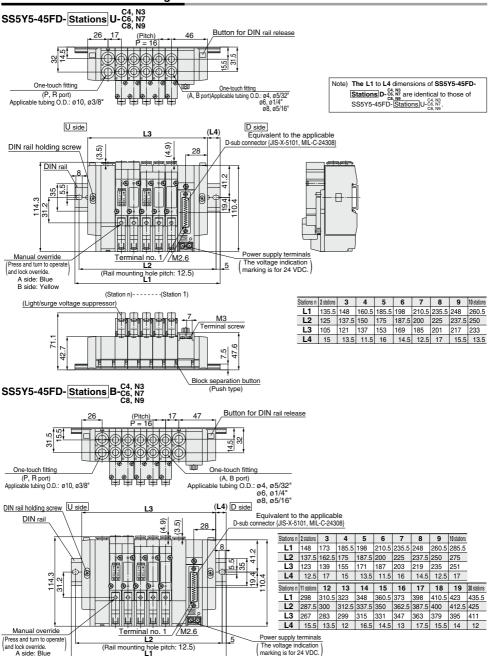
SY5000: D-sub Connector/Plug-in





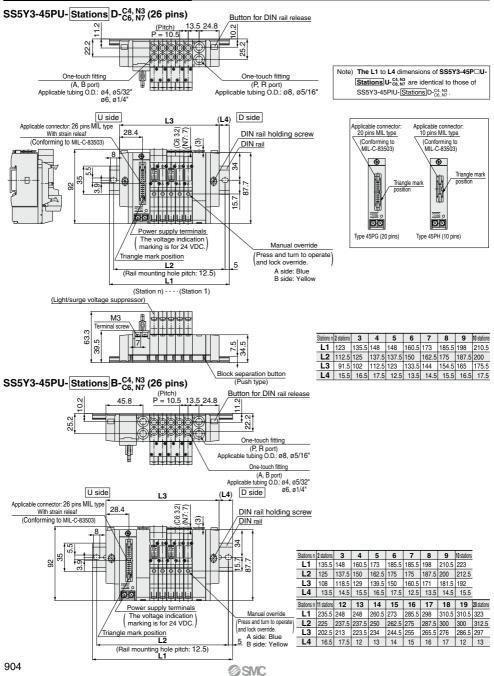
SY5000: D-sub Connector/Plug-in

B side: Yellow



SY3000/5000 Series

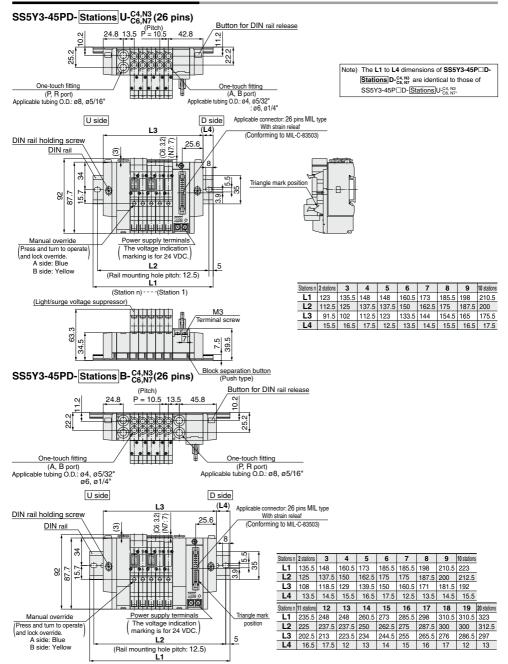
SY3000: Flat Ribbon Cable/Plug-in



Base Mounted SY3000/5000 Series

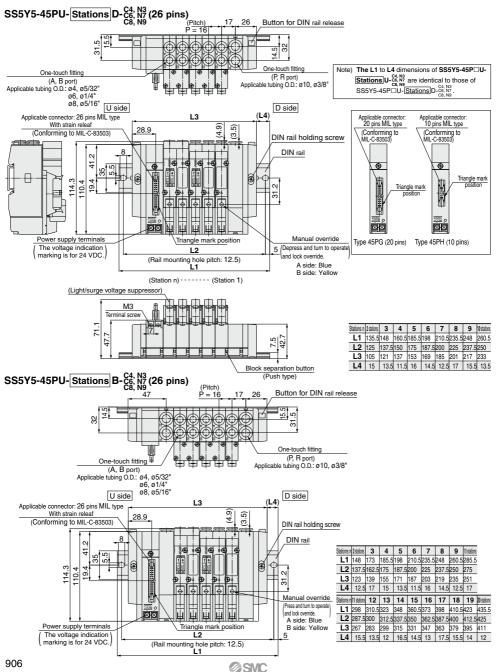


SY3000: Flat Ribbon Cable/Plug-in



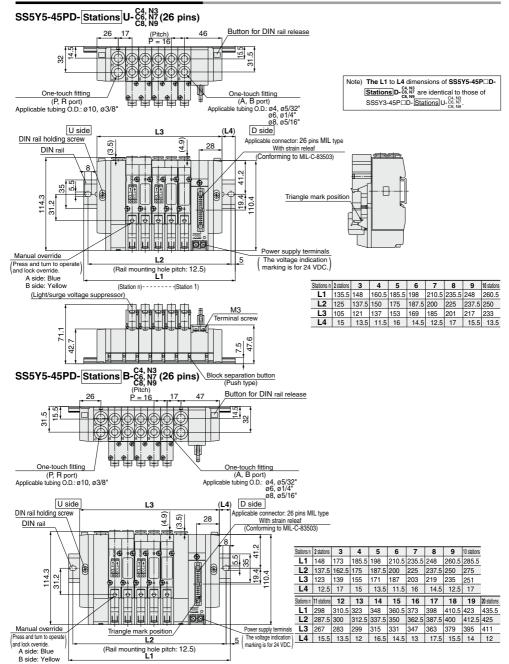
SY3000/5000 Series

SY5000: Flat Ribbon Cable/Plug-in





SY5000: Flat Ribbon Cable/Plug-in

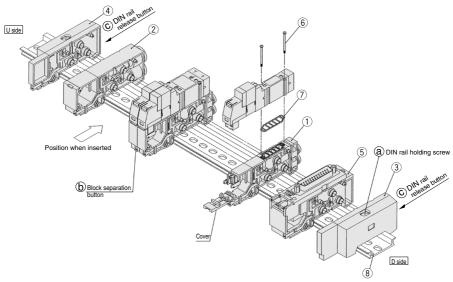


ØSMC

SY3000/5000 Series

DIN Rail Manifold Exploded View

Type 45F (D-sub Connector) Manifold



| Description | Part | no. | N | Note | | |
|---|---|---|--|-------------------------|--|--|
| Description | SY3000 | SY5000 | Note | | | |
| Manifold block assembly | | | | | | |
| SUP/EXH block assembly | (Metric size) SX3000-51-2A (Inch size) SX3000-51-16A | (Metric size) SX5000-51-2A (Inch size) SX5000-51-16A | Metric size Inch size SY3000: P, R port with One-touch fitting for ø8 With One-touch fitting for ø SY5000: P, R port with One-touch fitting for ø10 With One-touch fitting for ø | | | |
| End block assembly | SX3000-52-2A(-Q) | SX5000-52-2A(-Q) | For D side | | | |
| End block assembly | SX3000-53-2A(-Q) | SX5000-53-2A(-Q) | For U side | | | |
| Connector block assembly (for D-sub connector) | SX3000-64-1A | SX5000-64-1A | -1A: +COM -1NA: -COM | | | |
| Connector block assembly (for 26 pins flat cable) | SX3000-64-2A 2NA-26 | SX5000-64-2A 2NA-26 | | Note) | | |
| Connector block assembly (for 20 pins flat cable) | SX3000-64-2A 2NA-20 | SX5000-64-2A 2NA-20 | -2A: +COM -2NA: -COM | For 24 VDC | | |
| Connector block assembly (for 10 pins flat cable) | SX3000-64-2A 2NA-10 | SX5000-64-2A 2NA-10 | | | | |
| Round head combination screw | SY3000-23-4 | AC00077 | | | | |
| Reference screw size | (M2 x 21) | (M3 x 26) | | | | |
| Gasket | SX3000-57-4 | SX5000-57-6 | | | | |
| DIN rail | VZ1000 |)-11-1-l□ | Refer to page 895. | | | |
| | SUP/EXH block assembly End block assembly End block assembly Connector block assembly (for D-sub connector) Connector block assembly (for 26 pins flat cable) Connector block assembly (for 20 pins flat cable) Connector block assembly (for 10 pins flat cable) Round head combination screw Reference screw size Gasket DIN rail | Manifold block assembly | Manifold block assembly Manifold block assembly part number differs appropriate part number from the table of me SV3000-51-2A (Inch size) SX3000-51-2A (Inch size) SX3000-51-16A SX5000-51-16A SX5000-64-10A SX5000-54-10A SX5000-54-10A SX5000-54-10A SX5000-57-6 SX5 | Manifold block assembly | | |

Note 1) The numbers 5-1 to 4 are for 24 VDC. For 12 VDC, suffix "-12V" to the end of parts number. (Example) SX3000-64-1A-12 V

Note 2) Two manifold block assemblies are necessary for the double, 3 position (Dual body type).

| Type of manifold | Manifold block assembly part no. | Note |
|---|---|--|
| For 45(N)F (D-sub connector) | SX ³ ₅ 000-50-3A-□□(-Q) | □□: AB port SY3000 (metric size) C4: With One-touch fitting for ø4 C6: With One-touch fitting for ø6 N3: With One-touch fitting for ø5½: N7: With One-touch fitting for ø5½: |
| For 45(N) ^{PG} _{PH} (Flat ribbon cable) | SX ³ ₅ 000-50-5A-□□(-Q) | A, B port SY5000 (metric size) C4: With One-touch fitting for ø4 C6: With One-touch fitting for ø8 (inch size) N3: With One-touch fitting for ø8/w N7: With One-touch fitting for ø5/w N9: With One-touch fitting for ø5/w |

Note) The lead wire assembly is supplied with the manifold block assembly.



Base Mounted SY3000/5000 Series



How to Increase Manifold Bases

Loosen DIN rail holding screw (a) fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons ©, at two locations, separate the manifold base from the DIN rail.)

Additional bases are to be added to the U side. Press splitting button (6) of the manifold block assembly on the U side until button (b) locks, and then separate the block assemblies.

Separate the connector block assembly in the same manner as 2, and remove the connector mounting screw shown in Fig. 1.

Loosen the valve mounting screw on the U side, remove the valve, and take out the receptacle housing. (Refer to Fig. 2.)

Insert the common wire (red) of the manifold block assembly to be added into the pin insertion section (N mark) of the receptacle housing that was taken out in 4, mount it on the manifold block, and mount the removed valve.

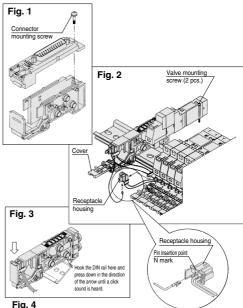
6 As shown in Fig. 3, mount the additional manifold block assembly on the DIN rail on the U side. Refer to the circuit diagram, and insert the lead wire (black) as shown in Fig. 4.

Press the blocks against each other until a click sound is produced, place the lead wire in the manifold block, and close the lid without pinching the lead wire.

8 While lightly holding the blocks together so that there are no gaps between them, secure them to the DIN rail by tightening the DIN rail holding screws (a). △ (Tightening torque: 1.4 N·m)



- ⚠ Caution 1. Depending on the connector, there is a limit to the number of solenoids that can be used. Manifold bases that can be added cannot exceed the number of usable solenoids.
 - 2. The manifold block assembly mounting position for additional manifold bases is always on the U side. because wires are connected to respective connectors sequentially from the D side
 - 3. When DIN rail holding screw (a) for the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there is no gap between blocks and that the manifold block is firmly fixed to the DIN rail in order to ensure air supply without leakage.



D-sub connector (45F)

After inserting pins, lightly pull lead

wiresto check that pins are locked.

Flat ribbon cable (45P□)

Insert pins after removing the connectorfrom the main unit. After inserting pins, lightly pull lead wires to check that the pins are locked.

How to Change Fitting Assembly

Type 45 manifold permits change in the A and B port sizes by changing the manifold block fitting assembly.

After removing the valve, remove the clip with a screwdriver, etc. For mounting a new fitting assembly, insert it and then insert a clip until it will not come out of the manifold block.

Fitting Assembly Part No.

Metric size

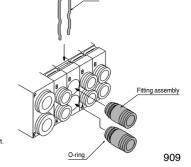
| | WICKI IO | 7120 | |
|--------|----------|--|-----------------|
| CA3000 | | One-touch fitting for ø4 One-touch fitting for ø6 | VVQ1000-50A-C4 |
| | 5 Y 3000 | One-touch fitting for ø6 | VVQ1000-50A-C6 |
| | | One-touch fitting for ø4 | VVQ1000-51A-C4 |
| SY50 | SY5000 | One-touch fitting for ø6 | VVQ1000-51A-C6 |
| | | One-touch fitting for as | V/VO1000-51A-C8 |

Inch size

| | evanno | One-touch fitting for ø 5/32" One-touch fitting for ø 1/4" | VVQ1000-50A-N3 |
|---|--------|---|----------------|
| 1 | 513000 | One-touch fitting for ø 1/4" | VVQ1000-50A-N7 |
| | | One-touch fitting for ø5/32" | VVQ1000-51A-N3 |
| | SY5000 | One-touch fitting for ø 1/4" | VVQ1000-51A-N7 |
| 1 | | One-touch fitting for ø5/16" | VVQ1000-51A-N9 |

Note 1) P and R ports cannot be changed

Note 2) Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result. Note 3) Purchasing order is available in units of 10 pieces.



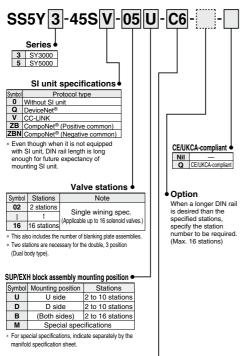
Clip





SY3000/5000 Base Mounted Manifold Stacking Type/DIN Rail Mounted EX122 Integrated-type (For Output) Serial Transmission System

How to Order Manifold



A, B port size •

| One-touch fitting (Metric size) | | | | One | -touch fitting (Inch s | size) |
|---------------------------------|--------------------------|-------------------|--|--------|------------------------------|----------|
| Symbol | Port size | Applicable series | | Symbol | Port size | Applical |
| C4 | One-touch fitting for ø4 | | | | One-touch fitting for ø5/32" | |
| C6 | One-touch fitting for ø6 | SY3000 | | N7 | One-touch fitting for ø 1/4" | SY |
| M | Mixed | | | M | Mixed | |
| | One-touch fitting for ø4 | | | | One-touch fitting for ø5/32" | |
| C6 | One-touch fitting for ø6 | SY5000 | | | One-touch fitting for ø 1/4" | |
| C8 | One-touch fitting for ø8 | 313000 | | N9 | One-touch fitting for ø5/16" | 313 |
| M | Mixed | | | М | Mixed | |
| | | | | | | |

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

SI Unit Part No.

| Symbol | Protocol type | SI unit No. | | | | | |
|--------|-----------------------------|-------------|--|--|--|--|--|
| Q | DeviceNet® | EX122-SDN1 | | | | | |
| V | CC-LINK | EX122-SMJ1 | | | | | |
| ZB | CompoNet® (Positive common) | EX122-SCM1 | | | | | |
| ZBN | CompoNet® (Negative common) | EX122-SCM3 | | | | | |

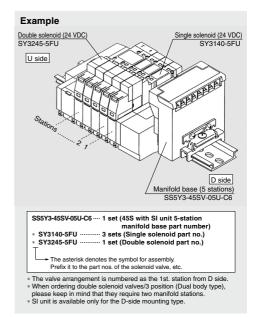
SY3000

SY5000

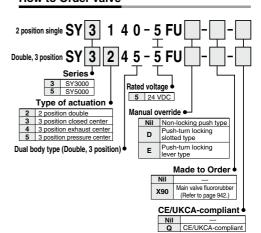
Refer to pages 1287 to 1294 and the Operation Manual for the details of EX122 Integrated-type (For Output) Serial Transmission System.

Please download the Operation Manual via our website, https://www.smcworld.com

How to Order Manifold Assembly (Example)



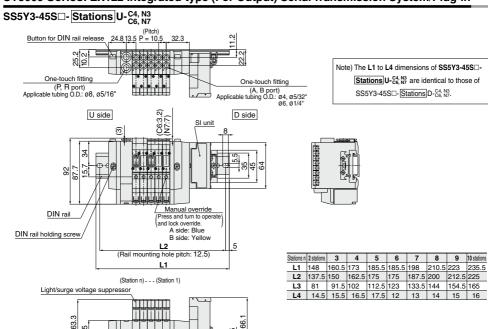
How to Order Valve



- * When ordering plug-in type solenoid valve as a single unit, gaskets are not included. Order them separately, if necessary (Refer to page 908 for details.)
- * With light/surge voltage suppressor (Non-polar type)



SY3000 Series: EX122 Integrated-type (For Output) Serial Transmission System/Plug-in



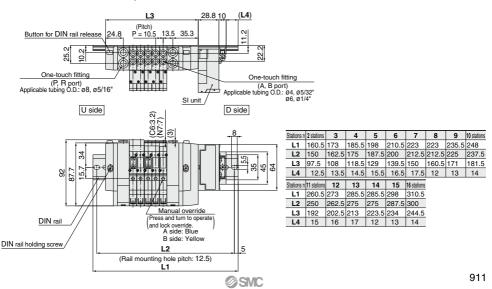
28.8 10

(L4)

SS5Y3-45S - Stations B-C4, N3

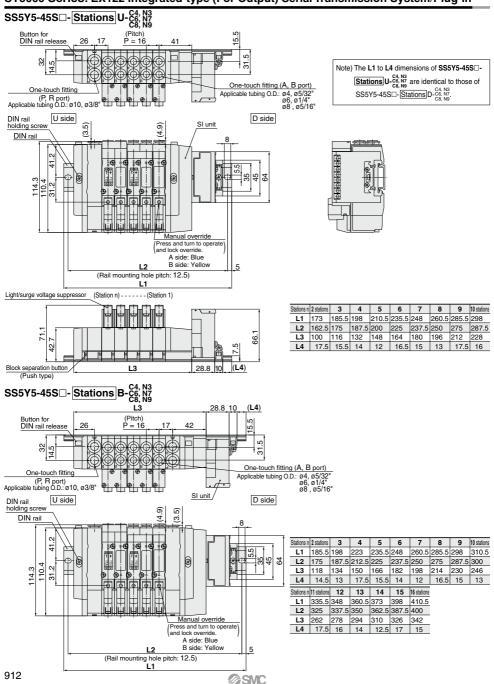
8

Block separation button (Push type)





SY5000 Series: EX122 Integrated-type (For Output) Serial Transmission System/Plug-in



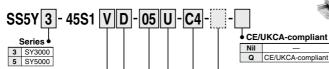


SY3000/5000 Base Mounted Manifold Stacking Type/DIN Rail Mounted

Stacking Type/DIN Rail Mounted

EX 121 Separate Type (For Output) Serial Transmission System

How to Order Manifold



SI unit specifications

| | Si unit specifications • | | | | |
|--|-------------------------------|--|--|--|--|
| Symbol | Protocol type | | | | |
| 0 | Without SI unit | | | | |
| Q | DeviceNet® | | | | |
| ٧ | CC-LINK | | | | |
| ZB | B CompoNet® (Positive common) | | | | |
| ZBN CompoNet® (Negative common) | | | | | |
| Even though when it is not equipped with SI. | | | | | |

 Even though when it is not equipped with SI unit, DIN rall length is long enough for future expectancy of mounting SI unit. When a shorter rail is required (same as type 45□), suffix "0" into optional blank at the end of part number.

SI unit mounting position

| | J |
|--------|-------------------|
| Symbol | Mounting position |
| U | U side |
| D | D side |

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 16 stations)

A, B port size

One-touch fitting (Metric size) One-touch fitting (Inch size)

| Symbol | Port size | Applicable series | Symbol | Port size |
|--------|--------------------------|-------------------|--------|-------------------------------|
| C4 | One-touch fitting for ø4 | | N3 | One-touch fitting for ø 5/32" |
| C6 | One-touch fitting for ø6 | SY3000 | N7 | One-touch fitting for ø 1/4" |
| M | Mixed | | M | Mixed |
| C4 | One-touch fitting for ø4 | | N3 | One-touch fitting for ø 5/32" |
| C6 | One-touch fitting for ø6 | SY5000 | N7 | One-touch fitting for ø 1/4" |
| C8 | One-touch fitting for ø8 | 313000 | N9 | One-touch fitting for ø 5/16" |
| М | Mixed | 1 | M | Mixed |

^{*} In the case of mixed specifications, indicate separately on the manifold specification sheet.

SUP/EXH block assembly mounting position

| Symbol | Mounting position Stations | | |
|--------|-----------------------------|--|--|
| U | U side 2 to 10 station | | |
| D | D side 2 to 10 stations | | |
| В | Both sides 2 to 16 stations | | |
| М | Special specifications | | |

^{*} For special specifications, indicate separately by the manifold specification sheet.

Valve stations

| Symbol | Stations | Note | | | |
|--------|-------------|----------------------|--|--|--|
| 02 | 2 stations | Single wiring spec. | | | |
| | : | (Applicable up to 16 | | | |
| 16 | 16 stations | solenoid valves.) | | | |

This also includes the number of blanking plate assemblies.

SI Unit Part No.

| Protocol type | SI unit No. |
|---|-------------|
| DeviceNet® | EX121-SDN1 |
| CC-LINK | EX121-SMJ1 |
| CompoNet [®] (Positive common) | EX121-SCM1 |
| CompoNet® (Negative common) | EX121-SCM3 |
| | DeviceNet® |

[•] For external pilot specifications and built-in silencer, refer to pages 934 to 938.

Refer to pages 1287 to 1294 and the Operation Manual for the details of EX121 Separate Type (For Output) Serial Transmission System.

Please download the Operation Manual via our website, https://www.smcworld.com



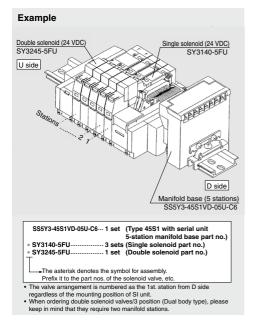
Applicable series SY3000

SY5000

Two stations are necessary for the double, 3 position (Dual body type).

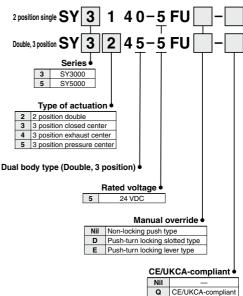


How to Order Valve Manifold Assembly (Example)



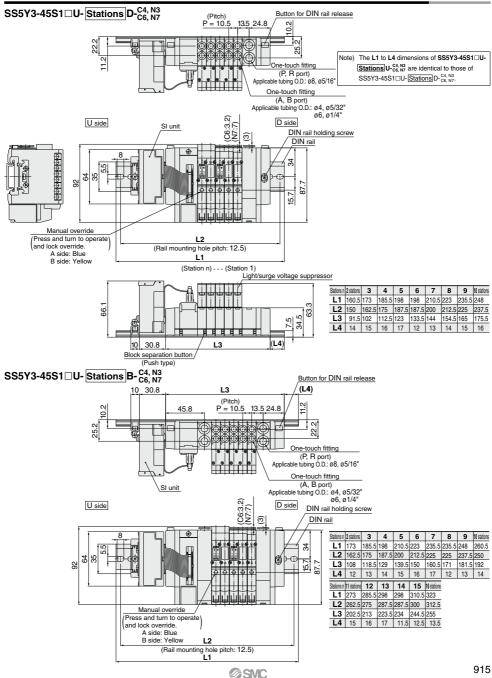
How to Order Valve





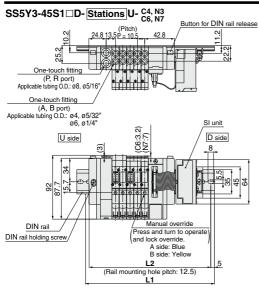
- * When ordering plug-in type solenoid valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 908 for details.)
- * With light/surge voltage suppressor (Non-polar type)

SY3000: EX121 Separate Type (For Output) Serial Transmission System/Plug-in



Type 45\$1 SY3000/5000

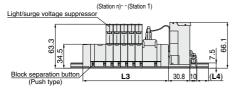
SY3000: EX121 Separate Type (For Output) Serial Transmission System/Plug-in



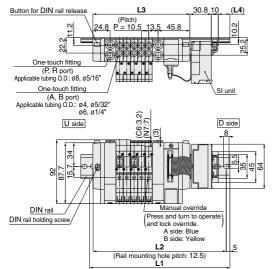
Note) The L1 to L4 dimensions of SS5Y3-45S1□D-Stations D-C4, N3 are identical to those of SS5Y3-45S1□D-Stations U-C6, N7.



| Ī | Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|---|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| | L1 | 160.5 | 173 | 185.5 | 198 | 198 | 210.5 | 223 | 235.5 | 248 |
| Ī | L2 | 150 | 162.5 | 175 | 187.5 | 187.5 | 200 | 212.5 | 225 | 237.5 |
| | L3 | 91.5 | 102 | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 |
| | L4 | 14 | 15 | 16 | 17 | 12 | 13 | 14 | 15 | 16 |

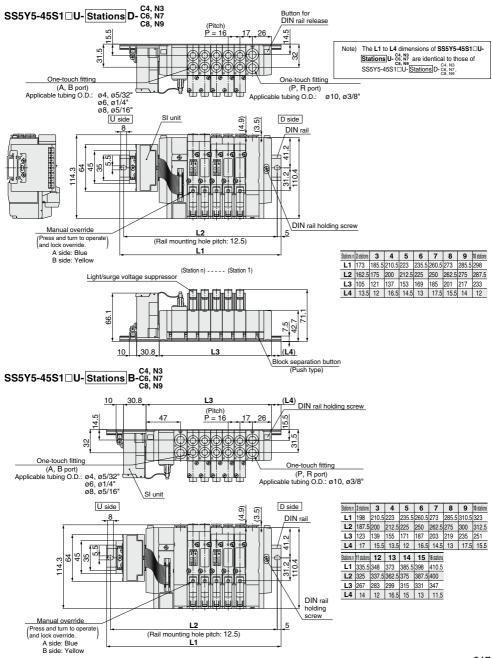


SS5Y3-45S1□D-Stations B-C4, N3 C6, N7



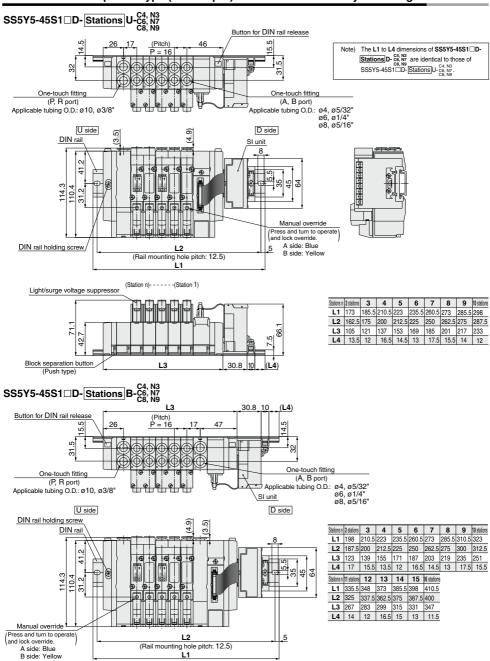
| Stations n | 2 stations | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 stations |
|------------|--------------------|--------------|--------------|---------------|--------------------|--------------------|-------|-------|-------------|
| L1 | 173 | 185.5 | 198 | 210.5 | 223 | 235.5 | 235.5 | 248 | 260.5 |
| L2 | 162.5 | 175 | 187.5 | 200 | 212.5 | 225 | 225 | 237.5 | 250 |
| L3 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 |
| L4 | 12 | 13 | 14 | 15 | 16 | 17 | 12 | 13 | 14 |
| | | | | | | | | | |
| Stations n | 11 stations | 12 | 13 | 14 | 15 | 16 stations | | | |
| Stations n | 11 stations 273 | | _ | 14 298 | 15 310.5 | 16 stations 323 | | | |
| | | 285.5 | 298 | | 310.5 | | | | |
| L1 | 273 | 285.5 275 | 298 | 298 | 310.5 | 323 312.5 | | | |
| L1 L2 | 273 262.5 | 285.5 275 | 298 287.5 | 298 287.5 | 310.5 300 | 323 312.5 | | | |

SY5000: EX121 Separate Type (For Output) Serial Transmission System/Plug-in





SY5000: EX121 Separate Type (For Output) Serial Transmission System/Plug-in





EX510 Gateway-type Serial Transmission System Base Mounted Manifold/Stacking Type/Plug-in Type

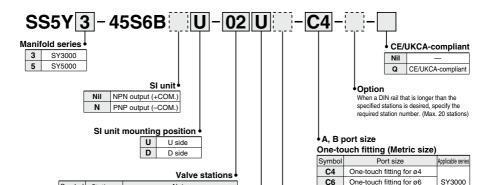




SY3000/5000 Series

The EX510 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

How to Order Manifold

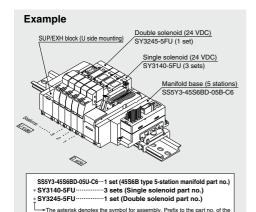


Symbol Stations 02 2 stations Compatible with 16 solenoid valves 16 stations

SI unit part no

| | pu | | |
|--------|------------------------|------------------|--------|
| Symbol | SI unit specifications | SI unit part no. | Page |
| Nil | NPN output (+COM.) | EX510-S002A | P.1490 |
| N | PNP output (-COM.) | EX510-S102A | P.1490 |

How to Order Manifold Assembly (Example)



They will be assembled in the order listed starting at the first station at the D side

solenoid valve, etc.

One-touch fitting (Inch size)

| Symbol | Port size | Applicable series |
|--------|------------------------------|-------------------|
| N3 | One-touch fitting for ø5/32" | |
| N7 | One-touch fitting for ø1/4" | SY3000 |
| M | Mixed | |
| N3 | One-touch fitting for ø5/32" | |
| N7 | One-touch fitting for ø1/4" | SY5000 |
| N9 | One-touch fitting for ø5/16" | |
| M | Mixed | |
| | | |

Mixed

One-touch fitting for ø4

One-touch fitting for ø6

One-touch fitting for ø8

SY5000

Pilot specifications

C4

C6

C8

| Nil | Internal pilot |
|-----|----------------------------------|
| S | Internal pilot/built-in silencer |
| R | External pilot |
| RS | External pilot/built-in silencer |

SUP/EXH block assembly mounting position

| U | U side | 2 to 10 stations |
|---|------------|------------------|
| D | D side | 2 to 10 stations |
| В | Both sides | 2 to 16 stations |
| M | Special | specifications* |

^{*}For the special specifications, indicate separately on a manifold specification sheet.

Refer to pages 1478 to 1504 and the Operation Manual for the details of EX510 Gateway-type Serial Transmission System. Please download the Operation Manual via our website, https://www.smcworld.com

^{*}The number of the blanking plate assembly is also included

whether the connector box is located at either end.

When ordering double solenoid valves/3 position (dual body type), please keep in mind that they require two manifold stations.

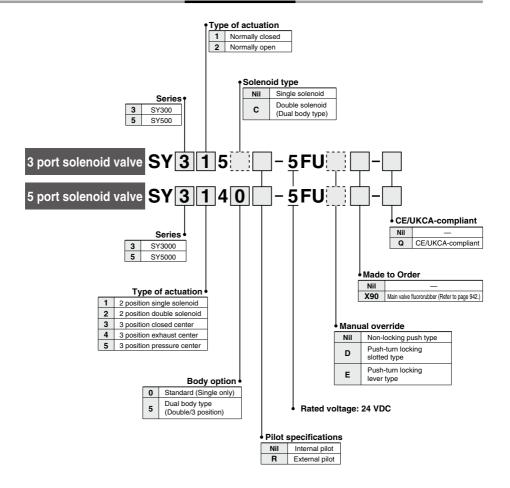
[·] For the mixed specification, indicate separately on a manifold specification sheet.

Base Mounted Manifold SY3000/5000 Series 1778 45868



How to Order Valves



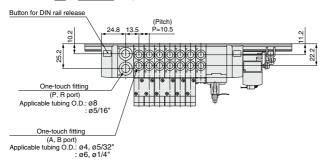


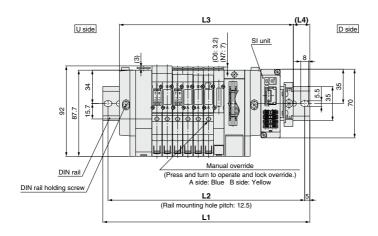
- * When ordering plug-in type solenoid valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 908 for details.)
- * With light/surge voltage suppressor (Non-polar type)

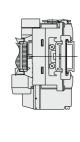
\$\frac{45\foating 45\foating B}{100}\$ \$\foating \foating \foating

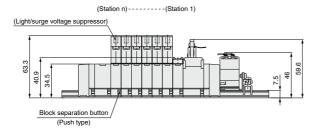
Dimensions

SS5Y3-45S6B D- Stations U-C4, N3









| L: Dimensions n: Station | | | | | | | | | |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| L1 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 | 223 | 223 | 235.5 |
| L2 | 137.5 | 150 | 162.5 | 175 | 187.5 | 200 | 212.5 | 212.5 | 225 |
| L3 | 124.5 | 135 | 145.5 | 156 | 166.5 | 177 | 187.5 | 198 | 208.5 |
| L4 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 12.5 | 13.5 |

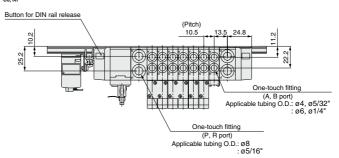
922

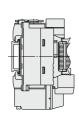


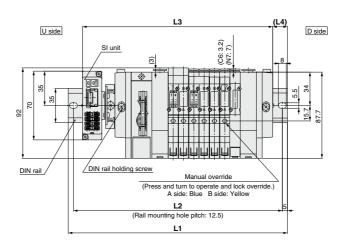
Base Mounted Manifold SY3000/5000 Series 174556B

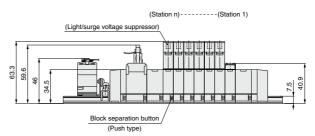
Dimensions

SS5Y3-45S6B U- Stations B-C4, N3





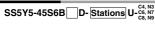


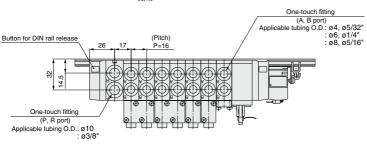


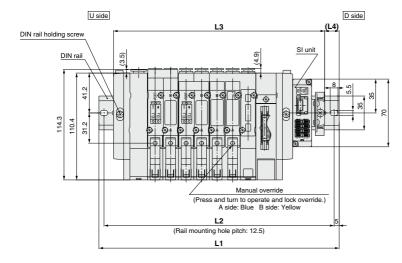
| L: Dimensions n: Station | | | | | | | | | | : Stations | | | | | |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|-------|-------|-------|-------|-------|
| _ n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| L1 | 173 | 185.5 | 198 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 | 273 | 273 | 285.5 | 298 | 310.5 | 323 |
| L2 | 162.5 | 175 | 187.5 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 262.5 | 262.5 | 275 | 287.5 | 300 | 312.5 |
| L3 | 141 | 151.5 | 162 | 172.5 | 183 | 193.5 | 204 | 214.5 | 225 | 235.5 | 246 | 256.5 | 267 | 277.5 | 288 |
| L4 | 16 | 17 | 18 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 13.5 | 14.5 | 15.5 | 16.5 | 17.5 |

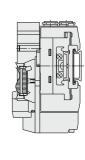
100 A Series SY3000/5000 Series

Dimensions

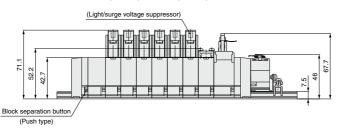








(Station n) - - - - - (Station 1)



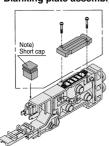
| L: Dimensions n: Stations | | | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| _ n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| L1 | 173 | 185.5 | 198 | 210.5 | 235.5 | 248 | 260.5 | 285.5 | 298 |
| L2 | 162.5 | 175 | 187.5 | 200 | 225 | 237.5 | 250 | 275 | 287.5 |
| L3 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 |
| L4 | 17.5 | 16 | 14 | 12.5 | 17 | 15 | 13.5 | 18 | 16 |

924



Manifold Option

■ Blanking plate assembly



| Series | Assembly part no. |
|--------|-------------------|
| SY3000 | SX3000-75-2A(-Q) |
| SV5000 | SY5000-76-64(-O) |

Note) • When mounting blanking plate, be sure to mount a short can

· Two stations are necessary for the double, 3 position (Dual body type).

■SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.



| Series | Part no. |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

■ EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



| Series | Part no. |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |
| | |

Label for block disk

The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each) VZ3000-123-1A (In common with SY3000, 5000)

Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk

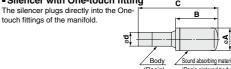






Note) When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

Silencer with One-touch fitting



| | nesiii) | (nesiii siiiteleu bouy) | | | |
|------------------|---|-------------------------|-------|------|------|
| Series | Series Model Effective area mm ² | | | | С |
| For SY3000 (Ø8) | AN15-C08 | 20 | ø13 | 20 | 45 |
| For SY5000 (Ø10) | AN20-C10 | 30 | ø16.5 | 30.5 | 57.5 |

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.

Dimensions

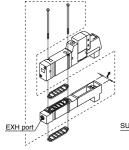
| Applicable fittings size ød | Model | Α | L | D |
|-----------------------------|---------|------|------|-----|
| 4 | KQ2P-04 | 16 | 32 | 6 |
| 6 | KQ2P-06 | 18 | 35 | 8 |
| 8 | KQ2P-08 | 20.5 | 39 | 10 |
| 10 | KQ2P-10 | 22 | 43 | 12 |
| 1/8" | KQ2P-01 | 16 | 31.5 | 5 |
| 5/32" | KQ2P-03 | 16 | 32 | 6 |
| 1/4" | KQ2P-07 | 18 | 35 | 8.5 |
| 5/16" | KQ2P-09 | 20.5 | 39 | 10 |

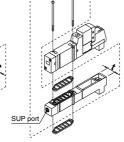
∕!\ Caution

Mounting screw tightening torques

M2: 0.16 N·m M3: 0.8 N·m M4: 1.4 N·m

■ Individual EXH spacer assembly ■ Individual SUP spacer assembly





| Series | Assembly part no. | Port no. | t | | | |
|-------------------------------------|-------------------|----------|----|--|--|--|
| SY3000 | SY3000-39-3A(-Q) | M5 x 0.8 | 11 | | | |
| SY5000 | SY5000-39-17A(-Q) | 1/8 | 15 | | | |
| Note) Please he careful hecause the | | | | | | |

| te) | Please be careful because the N |
|-----|-----------------------------------|
| | dual body type (double solenoid, |
| | 3-position) requires two pieces. |
| | In this case, the exhaust is |
| | performed in the direction of the |
| | arrow mark indicated on the |
| | valve surface. |

|] | Series | Assembly part no. | Port no. | t |
|---|--------|--|----------|----|
| 1 | SY3000 | SY3000-38-3A(-Q) | M5 x 0.8 | 11 |
| | SY5000 | Assembly part no. SY3000-38-3A(-Q) SY5000-38-17A(-Q) | 1/8 | 15 |

Note) Please be careful because the dual body type (double solenoid, 3-position) requires two pieces. In this case, both supply ports require the piping.

3 Port Valve Mixed Mounting Type on 5 Port Valve Manifold **SY300/500 Series**

3 port valve can be mounted on manifold for 5 port valve.



Single Unit

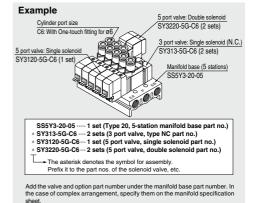
Brackets and sub-plates are the same as the SY3000/5000 series.

Applications

Possible to be mounted on all kinds of manifolds for the SY3000/5000 series.

Refer to "How to Order Manifold" for the details.

How to Order Manifold Assembly (Example)



Specifications

Dimensions, specifications, solenoid specifications, response time and effective area are the same as 5 port valve.



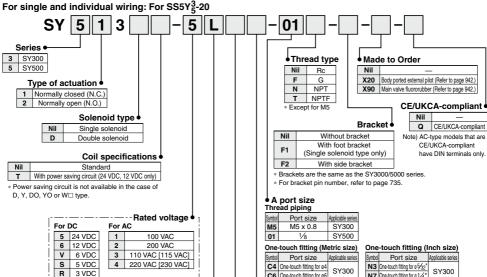
3 Port Valve SY300/500 Series

Body Ported/How to Order Valve

Note) AC-type models that are CE/UKCA compliant have DIN terminals only.







Electrical entry

| | | 1, 12, 6, 5, 3 110, 200, 22 | 24, 12 VDC 100, 110, 200, 220 VAC | 24, 12 VDC 6, 5, 3 VDC | |
|---|--|--|--|--|---|
| | Grommet | L plug connector | M plug connector | DIN terminal | M8 connector |
| | G: Lead wire length 300 mm H: Lead wire length 600 mm | L: With lead wire (Length 300 mm) LN: Without lead wire LO: Without connector | M: With lead wire (Length 300 mm) MN: Without lead wire MO: Without connector | (SY500 only) D: With connector DO: Without connector Y: With connector YO: Without connector | connect or cable W□: With connect or cable |
| 3 | • | • | • | • | • |
| C | _ | _ | _ | • | _ |

* DC specifications of Type D, Y, DO and YO is

Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.

∗ For type W□, DC voltage is only available

only available with 12 and 24 VDC.

* LN. MN type: with 2 sockets.

CE/UKCA- DO

compliant AC

- * Refer to page 958 for DIN terminal type of the SY3000 series.
- * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 957.
- * For connector cable of M8 connector, refer to page 960.
- * M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details.
- Refer to page 957 for the lead wire length of L and M plug connectors.
- * Refer to page 958 for the connector assembly with cover for L and M plug connectors.

Note) Enter the cable length symbols in \square . Please be sure to fill in the blank referring to page 961.

C6 One-touch fitting for ø6 N7 One-touch fitting for ø 1/4" C4 One

| anual ove | rride | | | |
|-----------------------|-------|----|-------------------------------|-------|
| -touch fitting for ø8 | | N9 | One-touch fitting for ø 5/16" | |
| -touch fitting for ø6 | SY500 | N7 | One-touch fitting for ø 1/4" | SY500 |
| -touch fitting for ø4 | | N3 | One-touch fitting for ø 3/32" | |

C6 One

C8 One

→ M

| Nil | Non-locking push type |
|-----|--------------------------------|
| D | Push-turn locking slotted type |
| Е | Push-turn locking lever type |
| | |

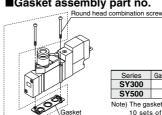
Light/Surge voltage suppressor

| Electrical entry for G, H, L, M, W | | | Electrical entry for D, Y | | |
|--|--|--------------|---------------------------|--|--|
| Nil | Without light/surge voltage suppressor | (SY500 only) | | only) | |
| S | With surge voltage suppressor | | Nil | Without light/surge voltage suppressor | |
| Z | With light/surge voltage suppressor | | S | With surge voltage suppressor | |
| R | With surge voltage suppressor (Non-polar type) | | Z | With light/surge voltage suppressor | |
| U With light/surge voltage suppressor (Non-polar type) | | | * DOZ | and YOZ are not | |
| * For A | C voltage valves there is no "S" option. | | availa | ible. | |

- It is already built-in to the rectifier circuit.
- * For "R" and "U", DC voltage is only available.
- * Power saving circuit is only available in the
- "Z" type.

Note) Manifold mounting screws and gaskets are included with the manifold, but they are not included when ordering a body ported solenoid valve as a single unit. Order them separately if necessary.

■Gasket assembly part no.



| Series | Gasket assembly part no. |
|--------|--------------------------|
| SY300 | SY3000-GS-1 |
| SY500 | SY5000-GS-1 |

* For AC voltage valves there is

built-in to the rectifier circuit

no "S" option. It is already

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.



SY300/500 Series

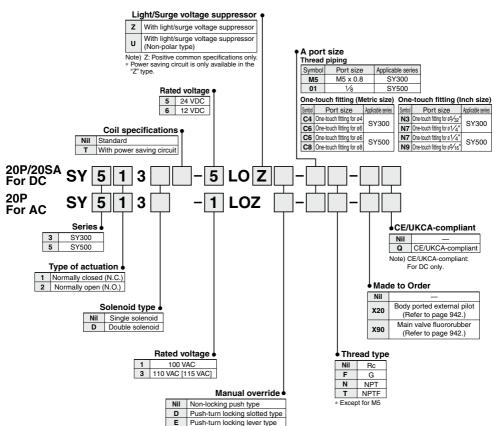
The EX510 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

Note) CE/UKCA-compliant: For DC only.



Body Ported/How to Order Valve

Flat ribbon cable :SS5Y₅ -20P/20SA EX510 Gateway-type serial transmission system:



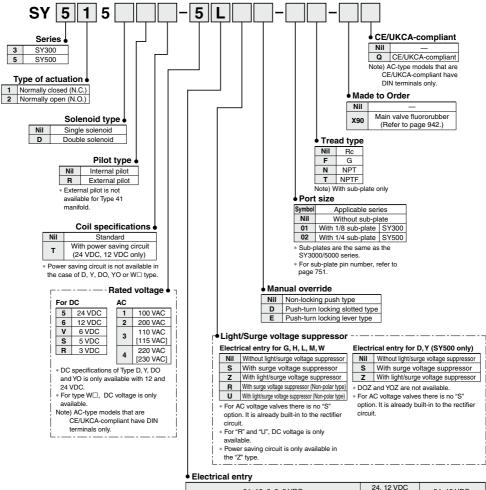
3 Port Valve SY300/500 Series

Base Mounted/How to Order Valve

Note) AC-type models that are CE/UKCAcompliant have DIN terminals only.



For single and individual wiring: ForSS5Y₅-41/42/45



| | 24, 12, 6, 5, 3 VDC 100, 110, 200, 220 VAC | | | 24, 12 VDC 100, 110, 200, 220 VAC | 24, 12 VDC 6, 5, 3 VDC |
|---|--|-----------------------|--|---|---|
| | Grommet | L plug connector | M plug connector | DIN terminal | M8 connector |
| | G: Lead wire length 300 mm H: Lead wire length 600 mm | LN: Without lead wire | M: With lead wire (Length 300 mm) MN: Without lead wire MO: Without connector | D: With connector Without connector W: With connector Y: With connector YO: Without connector | WO: Without connector cable W□: With connector cable Note) |
| С | • | • | • | • | • |
| С | _ | _ | _ | • | _ |

compliant AC —

* LN, MN type: with 2 sockets.

CE/UKCA- DO

- Refer to page 958 for DIN terminal type of the SY300 series.
 "Y" type is a DIN terminal conforming to EN-175301-803C
- "Y" type is a DIN terminal conforming to EN-175301-803 (former DIN43650C). For details, refer to page 957.
- * Refer to page 960 for connector cable of M8 connector
- M8 conector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details.
- * Refer to page 957 for the lead wire length of L
- and M plug connectors.
- Refer to page 958 for the connector assembly with cover for L and M plug connectors.
 Note) Enter the cable length symbols in □.

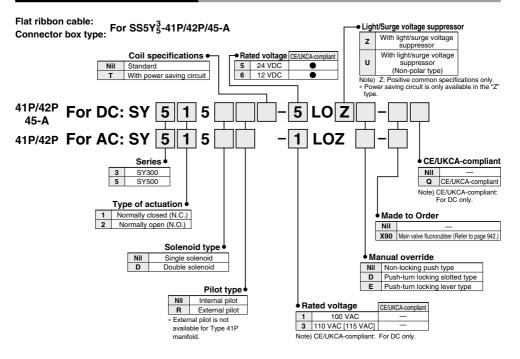
Please be sure to fill in the blank referring to page 961.



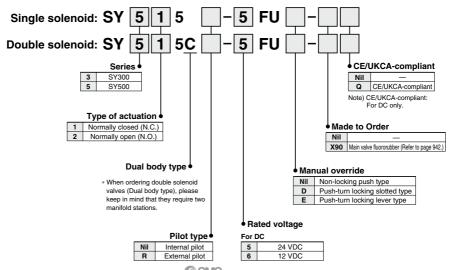
SY300/500 Series

Base Mounted/How to Order Valve

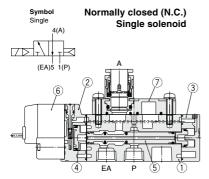


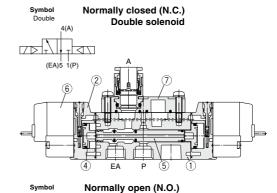


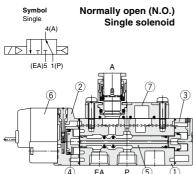
Plug-in: For SS5Y₅³-45□

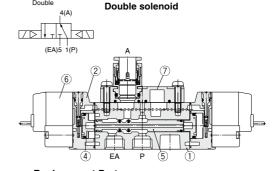


Construction: Body Ported









Component Parts

C6 One-touch fitting for ø6

C8 One-touch fitting for ø8

SY500

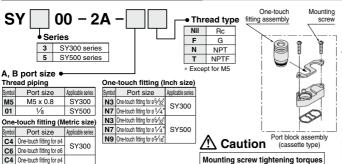
| No. | Description | Description Material | |
|-----|----------------------|---|-------|
| 1 | Body | Aluminum die-casted (SY3000: Zinc die-casted) | White |
| 2 | Adapter plate | Resin | White |
| 3 | End plate | Resin | White |
| 4 | Piston | Resin | - |
| 5 | Spool valve assembly | Aluminum, H-NBR | _ |

Replacement Parts

Double

| | No. | Description | No. |
|----|--------------------------|----------------------|---|
| | 6 | Pilot valve assembly | Refer to "How to Order Pilot Valve Assembly" on page 948. |
| Ĭ. | 7 M5 port block assembly | | Refer to "How to Order Port Block Assembly" below. |

How to Order M5 Port Block Assembly



Only replacement of the fittings assembly is possible.

Metric size

| CVAAA | One-touch fitting for ø4 | VVQ1000-50A-C4 |
|-------|--------------------------|----------------|
| 31300 | One-touch fitting for ø6 | VVQ1000-50A-C6 |
| | One-touch fitting for ø4 | VVQ1000-51A-C4 |
| SY500 | One-touch fitting for ø6 | VVQ1000-51A-C6 |
| | One-touch fitting for ø8 | VVQ1000-51A-C8 |

Inch size

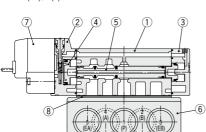
| SY300 | One-touch fitting for ø 5/32" | VVQ1000-50A-N3 |
|-------|-------------------------------|----------------|
| 31300 | One-touch fitting for ø 1/4" | VVQ1000-50A-N7 |
| | One-touch fitting for ø 5/32" | VVQ1000-51A-N3 |
| SY500 | One-touch fitting for ø 1/4" | VVQ1000-51A-N7 |
| | One-touch fitting for ø 5/16" | VVQ1000-51A-N9 |

SY300/500 Series

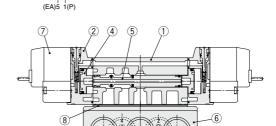
Construction: Base Mounted



Normally closed (N.C.) Single solenoid

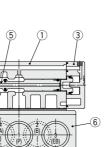


Symbol Normally closed (N.C.) Double 4(A) Double solenoid





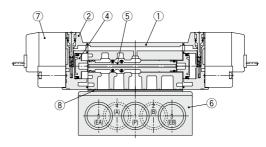
Normally open (N.O.) Single solenoid



Symbol Normally open (N.O.)

Double 4(A) Double solenoid





Component Parts

| No. | Description | Material | Note |
|-----|----------------------|---|-------|
| 1 | Body | Aluminum die-casted (SY3000: Zinc die-casted) | White |
| 2 | Adapter plate | Resin | White |
| 3 | End plate | Resin | White |
| 4 | Piston | Resin | _ |
| 5 | Spool valve assembly | Aluminum, H-NBR | |

Replacement Parts

| No | No. Description | | | Note | | | |
|------|------------------------------|--------------|---|--------------|------------------------------------|----------------------|--|
| INO. | | | SY3□40 | SY5□40 | SY7□40 | Note | |
| 6 | 6 Sub-plate Note) | | SY3000-27-1® | SY5000-27-1® | 1/4:SY7000-27-1 3/8:SY7000-27-2 | Aluminum die-casted | |
| 7 | Pilot val | ve assembly | Refer to "How to Order Pilot Valve Assembly" on page 948. | | | | |
| 8 | Gasket | Standard | SY3000-11-25 | SY5000-11-15 | SY7000-11-11 | H-NBR | |
| 8 | Gasket | CE-compliant | SY3000-11-25 | SY5000-11-18 | SY7000-11-14 | n-Non | |
| | Round head combination screw | | SY3000-23-4 | AC00077 | AC00296 | For valve mounting | |
| _ | Reference screw size | | (M2 x 21) | (M3 x 26) | (M4 x 31) | (Matt nickel plated) | |

^{*} Thread type



Mounting screw tightening torques

M2: 0.16 N·m M3: 0.8 N·m M4: 1.4 N·m

3 Port Valve SY300/500 Series

Weight

Body ported

SY300 series

| Valve model | Tune of actuation | Weight (g) | | |
|-------------------------|-------------------|------------|---------------------|--|
| valve model | Type of actuation | Grommet | L, M plug connector | |
| SY3 3 M5 Single | | 51 | 53 | |
| 31303-00-1013 | Double | 68 | 74 | |
| SY3□3-□□-C4 | Single | 56 | 59 | |
| 513U3-UU-N3 | Double | 74 | 79 | |
| SY3□3-□□-C6 | Single | 54 | 57 | |
| 513⊔3-⊔⊔- _{N7} | Double | 72 | 77 | |

SY500 series

| Valve model | Type of actuation | Weight (g) | | | | |
|-------------|-------------------|------------|---------------------|--------------|--|--|
| valve model | | Grommet | L, M plug connector | DIN terminal | | |
| SY5□3-□-01□ | Single | 69 | 72 | 93 | | |
| 31303-0-010 | Double | 87 | 93 | 135 | | |
| SY5□3-□-C4 | Single | 82 | 82 | 103 | | |
| 313⊔3-⊔-N3 | Double | 100 | 102 | 144 | | |
| SY5□3-□-C6 | Single | 79 | 77 | 98 | | |
| 313⊔3-⊔-N7 | Double | 97 | 98 | 140 | | |
| SY5□3-□-C8 | Single | 75 | 84 | 105 | | |
| 313⊔3-⊔-N9 | Double | 93 | 105 | 147 | | |

Base mounted SY300 series

| Valve model | Towns of a streeties | Note)Weight (g) | | |
|-------------|----------------------|-----------------|---------------------|--|
| valve model | Type of actuation | Grommet | L, M plug connector | |
| SY3□5-□□ | Single | 47(82) | 50(85) | |
| 31305-00 | Double | 65(100) | 70(105) | |

Note) The values shown in () are for values with sub-plate.

SY500 series

| Valve model | Type of actuation | Note)Weight (g) | | | | |
|-------------|-------------------|-----------------|---------------------|--------------|--|--|
| valve model | Type of actuation | Grommet | L, M plug connector | DIN terminal | | |
| SY5□5-□□ | Single | 55(118) | 58(121) | 79(142) | | |
| 31305-00 | Double | 73(136) | 78(141) | 120(183) | | |

Note) The values shown in () are for values with sub-plate.

SY3000/5000 Made to Order External Pilot/Built-in Silencer



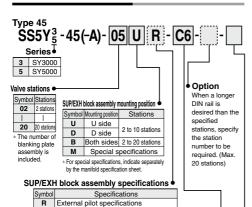


Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.

External pilot manifold bases for low-pressure/vacuum use are added to split type/ DIN rail manifolds. The built-in silencer has materialized a clear-cut appearance.

Individual Wiring/Connector Box Type

How to Order Manifold



One-touch fitting (Metric size)

s

| One | One-touch fitting (Metric size) | | | | One-touch fitting (Inch size) | | |
|--------|---------------------------------|-------------------|-----|-----|-------------------------------|-------------------|--|
| Symbol | Port size | Applicable series | Sym | bol | Port size | Applicable series | |
| C4 | One-touch fitting for ø4 | | N | 3 | One-touch fitting for ø5/32" | | |
| C6 | One-touch fitting for ø6 | SY3000 | N | 7 | One-touch fitting for ø 1/4" | SY3000 | |
| M | Mixed | | N | Λ | Mixed | | |
| C4 | One-touch fitting for ø4 | | N | 3 | One-touch fitting for ø5/32" | | |
| C6 | One-touch fitting for ø6 | SY5000 | N | 7 | One-touch fitting for ø 1/4" | SY5000 | |
| C8 | One-touch fitting for ø8 | 515000 | N | 9 | One-touch fitting for ø5/16" | 515000 | |
| M | Mixed | | Λ | Λ | Mixed | | |

Internal pilot/Built-in silencer RS External pilot/Built-in silencer

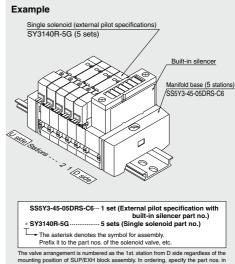
^{*} In the case of mixed specifications, indicate separately on the manifold specification sheet.

| CE/UKCA-compliant • | | | | | | |
|---------------------|--------------------|--|--|--|--|--|
| Nil | _ | | | | | |
| 0 | CE/LIKCA-compliant | | | | | |

A, B port size

Note) AC-type models that are CE/UKCA-compliant have DIN terminals only.

How to Order Manifold Assembly (Example)



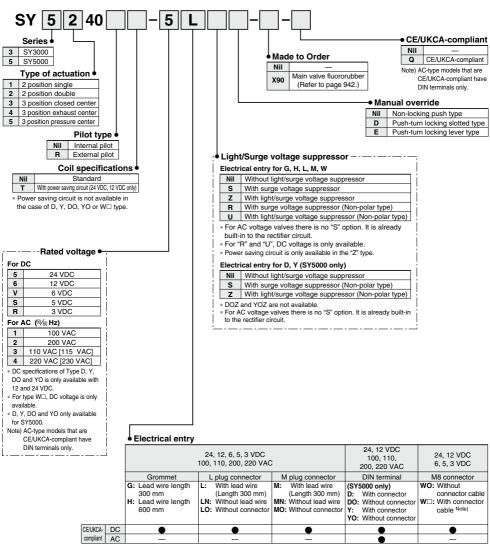
mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us. For manifolds with SUP/EXH block assembly at each end of the manifold, external pilot ports and silencers will be also located at each end of the manifold. The SUP/EXH block assembly (SX3/5000-51-1A), for special specifications as shown on page 874, can also be mounted. Please specify the mounting position, by correctly filling in the blank space on the manifold specification sheet.





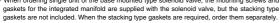
Note) AC-type models that are CE/UKCA-compliant have DIN terminals only





- * LN. MN type: with 2 sockets.
- * D, Y, DO and YO only available for SY5000.
- "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). Refer to page 957 for details.
- * Setting "-5LOU" is available only for connector box type. * Refer to page 960 for connector cable of M8 connector.
- * M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details.
- Refer to page 957 for the lead wire length of L and M plug connectors.
- * Refer to page 958 for the connector assembly with cover for L and M plug connectors. Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 961.

^{*} When ordering single unit of the base mounted type solenoid valve, the mounting screws and



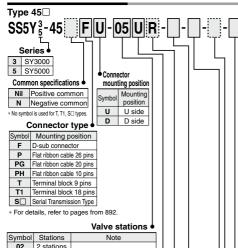


The SS5Y3/5-45T/T1□ type plug-in terminal block manifold is to be discontinued as of December 2019 Therefore, we recommend considering the SY3000/5000/7000 plug-in connector connecting base terminal block box type manifold as a substitute. (Click here for details.) However, keep in mind that there is no specification or mounting compatibility between the two products.



Plug-in





- Single wining spec 20 20 stations
- * This also includes the number of blanking plate assemblies. * Depending on the connector, the number of stations is limited. Refer to page 894.
- Two stations are necessary for the double, 3 position (Dual

SUP/EXH block assembly mounting position

| Symbol | Mounting position | Stations | |
|--------|---------------------------|------------------|--|
| U | U side | O to 10 stations | |
| D | D side | 2 to 10 stations | |
| В | Both sides 2 to 20 statio | | |
| M | Special specifications | | |

* For special specifications, indicate separately by the manifold specification sheet

SUP/EXH block assembly specifications

| zan zieta aeteinizi, epeemeanen | | | | | | |
|---------------------------------|--------|----------------------------------|--|--|--|--|
| ı | Symbol | Specifications | | | | |
| R External pilot specifications | | | | | | |
| | S | Internal pilot/Built-in silencer | | | | |
| | RS | External pilot/Built-in silencer | | | | |

A, B port size •

| One- | touch fitting (Me | etric size) | One-touch fitting (Inch size) | | | |
|--|--------------------------|-------------------|-------------------------------|------------------------------|-------------------|--|
| Symbol | Port size | Applicable series | Symbol | Port size | Applicable series | |
| C4 | One-touch fitting for ø4 | | N3 | One-touch fitting for ø5/32" | | |
| C6 | One-touch fitting for ø6 | SY3000 | N7 | One-touch fitting for ø1/4" | SY3000 | |
| M | Mixed | | M | Mixed | | |
| C4 | One-touch fitting for ø4 | | N3 | One-touch fitting for ø5/32" | | |
| C6 | One-touch fitting for ø6 | SY5000 | N7 | One-touch fitting for ø1/4" | SY5000 | |
| C8 | One-touch fitting for ø8 | 515000 | N9 | One-touch fitting for ø5/16" | 515000 | |
| M | Mixed | | M | Mixed | | |
| * In the case of mixed specifications, indicate separately on the manifold | | | | | | |

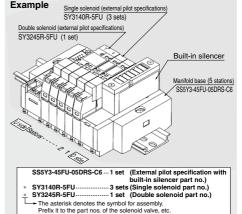
specification sheet. Voltage •

| | Nil | 24 VDC | | | |
|---|-----|--------|--|--|--|
| | 12V | 12 VDC | | | |
| * No symbol is used for T, T1, S□ types | | | | | |

Option • When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

CE/UKCA-compliant Nil CE/UKCA-compliant C

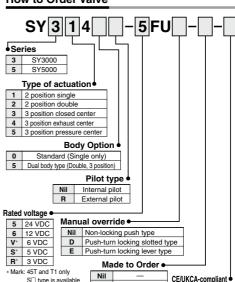
How to Order Manifold Assembly (Example)



The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUPEXH block assembly. In ordering, specify the part nos. In the order from the 1st station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us. For manifolds with SUPEXH block at each end of the manifold, external pilot ports and silencers will be also located at each end of the manifold. The SUPEXH block assembly (SXSS000511A), for special specifications, can also be

mounted. Please specify the mounting position, by correctly filling in the blank space on the manifold specification sheet. Two stations of the manifold base are necessary for the double, 3 position (Dual body type). Use caution when specifying the number of stations required for the manifold base.

How to Order Valve



Main valve fluororubbe

(Refer to page 942.)

Nil

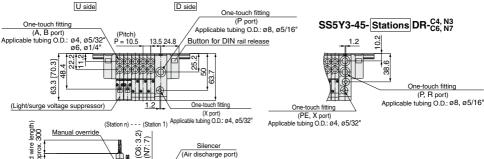
Q CE/UKCA-compliant

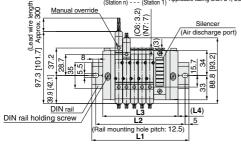
for 24 VDC only.

External Pilot/Built-in Silencer

]: AC

SY3000: SS5Y3-45- Stations DRS-C4, N3

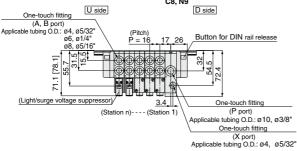




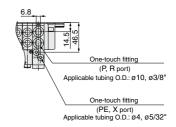


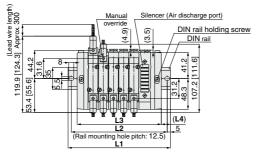
* The dimensions L1 to L4 are identical to those of SS5Y3-45-Stations D -C4, N3

SY5000: SS5Y5-45- Stations DRS



SS5Y5-45- Stations DF





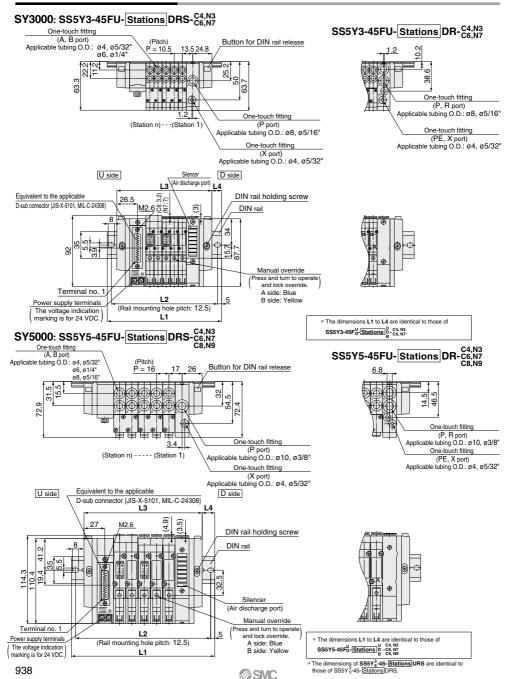


- * The dimensions L1 to L4 are identical to those of SS5Y3-45-Stations D - C6, N7.
- * The dimensions of SS5Y₅²-45-[Stations] URS are identical to those of SS5Y₅²-45-[Stations] DRS.





External Pilot/Built-in Silencer





SY3000/5000 **Made to Order** Mixed Mounting Type





Note) CE/UKCA-compliant:

This manifold makes it possible to mount SY3000 onto base of SY5000.

How to Order Manifold Type M45 (Mixed mounting type) Example SS5Y5-M45-05||U **C86** Mixed mounting type Valve stations SUP/EXH block assembly mounting position CE/UKCA-compliant Symbol Mounting positio Symbol Stations Nil 02 2 stations U U side 2 to 10 stations Q CE/UKCA-compliant D D side : 20 20 stations Both sides 2 to 20 stations М Special specifications * The number of oitaO • blanking plate * For special specifications, indicate separately When a longer DIN assembly is by the manifold specification heet. rail is desired than included too the specified SUP/EXH block assembly specifications stations, specify the Symbol Specifications station number to be Nil Standard/Internal pilot specifications required s Built-in silencer (Max 20 stations) Manifold block External pilot specification is unavailable for assembly for mixed mounting type A, B port size SY5000 SX5000-50-1A-One-touch fitting (Metric size)

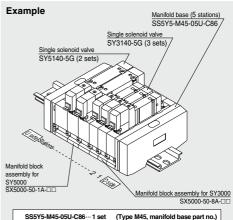
Port size

| C44 | SY5000: One-touch fitting for ø4 SY3000: One-touch fitting for ø4 |
|-----|--|
| C46 | SY5000: One-touch fitting for ø4 SY3000: One-touch fitting for ø6 |
| C64 | SY5000: One-touch fitting for Ø6 SY3000: One-touch fitting for Ø4 |
| C66 | SY5000: One-touch fitting for Ø6 SY3000: One-touch fitting for Ø6 |
| C84 | SY5000: One-touch fitting for Ø8 SY3000: One-touch fitting for Ø4 |
| C86 | SY5000: One-touch fitting for Ø8 SY3000: One-touch fitting for Ø6 |
| М | Mixed |

| One | One-touch fitting (inch size) | | | | | |
|--------|---|--|--|--|--|--|
| Symbol | Port size | | | | | |
| N33 | SY5000: One-touch fitting for ø5/32" SY3000: One-touch fitting for ø5/32" | | | | | |
| N37 | SY5000: One-touch fitting for ø5/32 SY3000: One-touch fitting for ø1/4" | | | | | |
| N73 | SY5000: One-touch fitting for ø1/4" SY3000: One-touch fitting for ø5/32 | | | | | |
| 14// | SY5000: One-touch fitting for ø1/4" SY3000: One-touch fitting for ø1/4" | | | | | |
| | SY5000: One-touch fitting for ø5/16 SY3000: One-touch fitting for ø5/32 | | | | | |
| N97 | SY5000: One-touch fitting for ø ⁵ /16 SY3000: One-touch fitting for ø ¹ /4" | | | | | |
| M | Mixed | | | | | |

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

How to Order Manifold Assembly (Example)

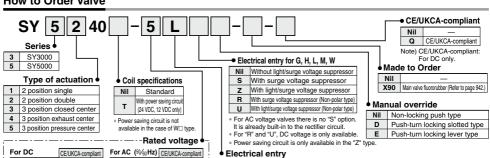


| SS5Y5-M45-05U-C861 set | (Type M45, manifold base part no. |
|------------------------------|-----------------------------------|
| * SY3140-5G3 sets | (Single solenoid part no.) |
| * SY5140-5G2 sets | (Single solenoid part no.) |
| The asterisk denotes the sym | bol for assembly. |

Prefix it to the part nos. of the solenoid valve, etc.

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.

How to Order Valve



s 5 VDC [115 VAC 3 VDC 220 VAC [230 VAC]

* For type W□, DC voltage is only available.

Note) CE/UKCA-compliant: For DC only.

5 24 VDC

6 12 VDC

٧ 6 VDC

* When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the integrated manifold are supplied with the solenoid valve, but the stacking type gaskets are not included. When the stacking type gaskets are required, order them separately.

100 VAC

200 VAC

110 VAC

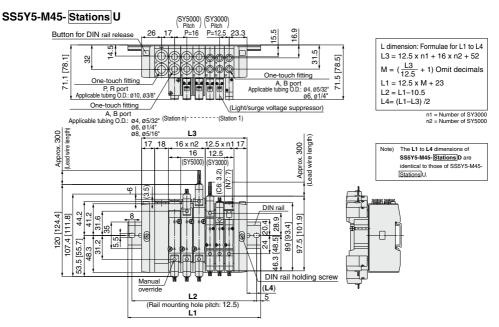
| | 24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC | | | | | | 12, 6, 5, 3 VDC |
|---|--|----|---|----|---|-----|---|
| | Grommet | Lp | olug connector | Μp | olug connector | M | 8 connector |
| - | | | With lead wire (Length 300 mm) Without lead wire Without connector | | With lead wire (Length 300 mm) Without lead wire Without connector | w□: | Without connector cable With connector cable Note) |

- * LN, MN type: with 2 sockets.
- * Refer to page 960 for connector cable of M8 connector.
- * M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 941 for details. Refer to page 957 for the lead wire length of L and M plug connectors.
- * Refer to page 958 for the connector assembly with cover for L and M plug connectors.
- Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 961.

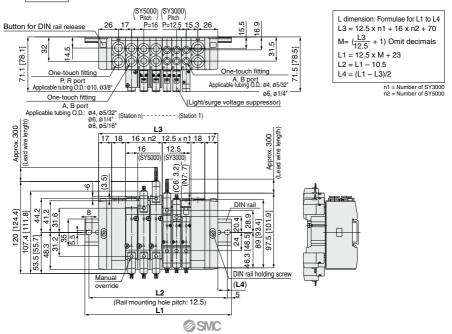




Dimensions: Mixed Mounting



SS5Y5-M45- Stations B



[*SY3000/5000/7000/9000/SY300/500 Series*] Made to Order

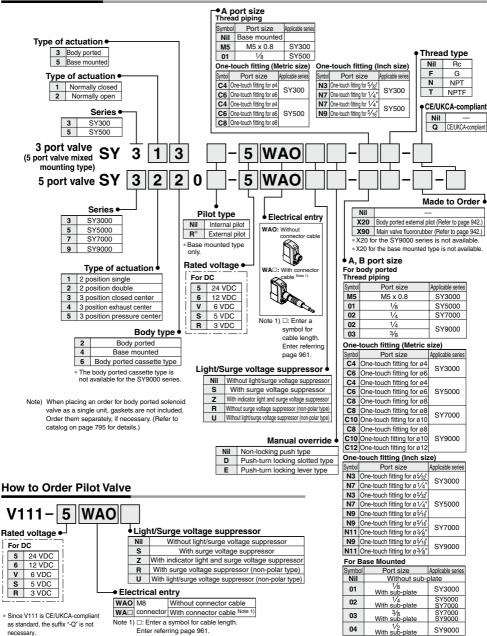
M8 Connector Conforming to IEC60947-5-2





How to Order Valve

* For details on specifications, refer to page 956.





SY3000/5000/7000/9000 Series

compliant have DIN terminals only.

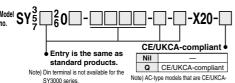




Body Ported External Pilot/Fluororubber for Main Valve

Body Ported External Pilot

Applicable solenoid valves: SY3□²₆0, SY5□²₆0, SY7□²₆0 series



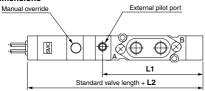
Operating pressure range MPa

| Operating pressure range | -100 kPa to 0.7 |
|--------------------------|-----------------|
| Pilot pressure range | 0.25 to 0.7 |

External pilot port

| Series | Port size | | | |
|---------|-----------|--|--|--|
| SY3000 | M3 x 0.5 | | | |
| SY 5000 | M5 x 0.8 | | | |

Dimensions



Dimentions/External Pilot Port Position

| Series | L1 dimensions | L2 dimensions |
|--------|---------------|---------------|
| SY3000 | 41.5 | 6.5 |
| SY5000 | 60.4 | 9 |
| SY7000 | 71.9 | 9 |

Symbol



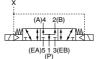








3 position pressure center X

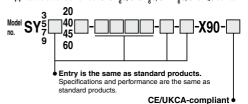


Main Valve Fluororubber Specifications

Fluororubber is used for rubber parts of the main valve to allow use in applications such as the following.

 When using a lubricant other than the recommended turbine oil, and there is a possibility of malfunction due to swelling of the spool valve seals.

Applicable solenoid valves: SY3□²₄0, SY5□²₄0, SY7□²₄0, SY9□²₄0 series



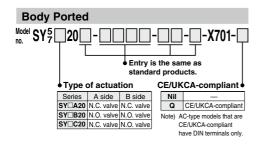
| Nil | | _ | | | | |
|-----|---------------------------------------|-------------------|--|--|--|--|
| | œ | CE/UKCA-compliant | | | | |
| No | Note) AC-type models that are CE/UKCA | | | | | |
| | compliant have DIN terminals only. | | | | | |

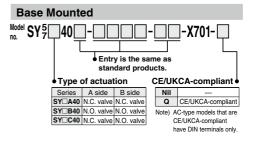
SY5000/7000 Series Made to Order Body Ported/Base Mount



Body Ported/Base Mounted 4-Position Dual 3-Port Valve

Features two 3-port valves built into one body





Note) For the thread type, only Rc and G are available.

Note) For the thread type, only Rc and G are available. Note) Only the internal pilot type is available.

Specifications

The dimensions are the same as those of the 2-position double.

Response time

| | Response time [ms] (at the pressure of 0.5 MPa) | | | | |
|----------------------------|---|------------------|------------|--|--|
| Series | Without surge voltage suppressor | S, Z type | R, U type | | |
| SY5A/B/C□0-X701 | 26 or less | 35 or less 26 or | | | |
| SY7A/B/C□0-X701 41 or less | | 51 or less | 44 or less | | |

Flow rate characteristics

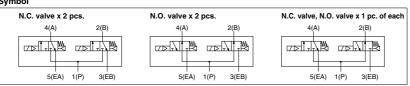
1) Body ported

| Series | | Port size | | Flow rate characteristics | | | |
|--------------------|-----------|-------------------------|----------------|----------------------------------|------|----------------------------------|------|
| | | 1, 5, 3 (P, EA, EB) | 4, 2 (A, B) | 1 → 4/2 (P → A/B) | | 4/2 → 5/3 (A/B → EA/EB) | |
| (Body ported) | | | | C [dm ³ / (s·bar)] | b | C [dm ³ / (s·bar)] | b |
| SY5A/B/C20-X701 | N.C./N.C. | -00 | 1.4 | 0.35 | 1.4 | 0.34 | |
| 515A/B/C2U-X/UI | N.O./N.O. | 1/8 | C6 | 1.3 | 0.36 | 1.2 | 0.32 |
| CV7 A /D /CO0 V701 | N.C./N.C. | 1 (P) port: 1/4 | 010 | 3.5 | 0.25 | 2.3 | 0.40 |
| SY7A/B/C20-X701 | N.O./N.O. | 5, 3 (EA, EB) port: 1/8 | C10 | 3.0 | 0.31 | 2.6 | 0.42 |

2) Base mounted

| L) Budo mountou | | | | | | | |
|-----------------|-------------------|------------------------|----------------|---|------|----------------------------------|------|
| | | Port size | | Flow rate characteristics | | | |
| Series | | | 4, 2 (A, B) | $1 \rightarrow 4/2 \ (P \rightarrow A/B)$ | | 4/2 → 5/3 (A/B → EA/EB) | |
| (Base mounted) | Type of actuation | 1, 5, 3 (P, EA, EB) | | C [dm ³ / (s·bar)] | b | C [dm ³ / (s·bar)] | b |
| SY5A/B/C40-X701 | N.C./N.C. | 4/4 | | 1.4 | 0.36 | 1.6 | 0.40 |
| 515A/b/C40-X/UI | N.O./N.O. | 1/4 | | 1.6 | 0.37 | 1.6 | 0.41 |
| SY7A/B/C40-X701 | N.C./N.C. | 2/0 | | 3.8 | 0.30 | 3.6 | 0.27 |
| 31/A/D/C40-X/01 | N.O./N.O. | 3/8 | | 3.9 | 0.26 | 3.9 | 0.32 |

Symbol





SY5000 Made to Order Body Ported Vacuum Release Valve with Throttle Valve



Vacuum Release Valve with Throttle Valve: SY5A2R

- · Line for vacuum adsorption transfer
- Built-in throttle valve in the vacuum release valve
- Can be mounted on the SS5Y5-20-type (Individual wiring type) and SS5Y5-20P-type (Flat ribbon cable type) Manifold
- Valve effective area

| B port | Effective area: mm² | | | |
|-------------------|---------------------|------|--|--|
| Port size Note 1) | EA→B Note 2) | B→EB | | |
| C6 | 4.4 | 6.8 | | |
| C8 | 4.5 | 7.0 | | |

Note 1) Refer to the part numbers for the port size. Note 2) When the built-in throttle valve is fully open.

Symbol SOLa SOLb EA P EB (P) (X) (Vac.)

Specifications

| Valve type | | External pilot type, Dual 2 port solenoid valve | |
|-------------------------------|------------------------------|--|--|
| Type of actuation | | Normally closed (N.C. valve) | |
| Fluid | | Air | |
| | P (External pilot pressure) | 0.15 to 0.7 MPa | |
| Operating pressure range | EA (Vacuum release pressure) | 0 to 0.7 MPa | |
| procedure range | EB (Vacuum) | -100 kPa to 0 MPa | |
| Pilot valve exhaust method | | Pilot valve individual exhaust | |
| Ambient and fluid temperature | | -10 to 50°C (No freezing) | |

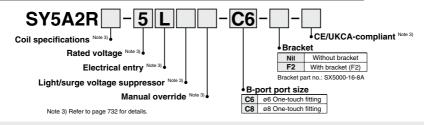
Effective Area/Weight

| B port | Effective a | Weight (g) | |
|-------------------|--------------|------------|-------------|
| Port size Note 1) | EA→B Note 2) | B→EB | vveigni (g) |
| C6 | 4.4 | 6.8 | 94 |
| C8 | 4.5 | 7.0 | 88 |

Note 1) Refer to the part numbers for the port size. Note 2) When the built-in throttle valve is fully open.

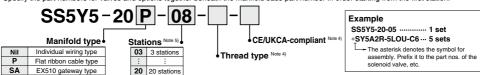
How to Order

Single unit: External pilot type dual 2 port solenoid valve



Manifold: Body ported bar stock (20/20P/20SA type)

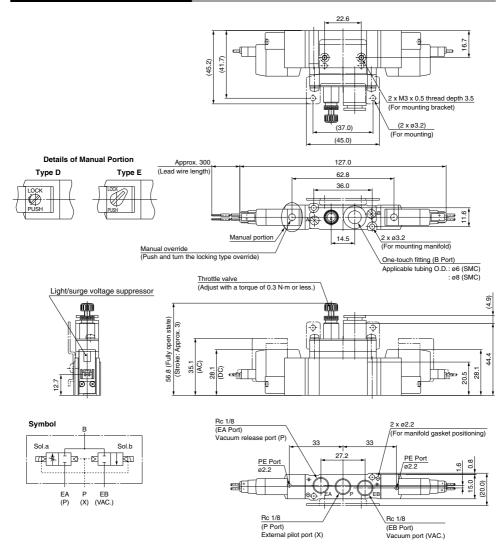
* Specify the part numbers for valves and options together beneath the manifold base part number in order starting from the first station.



Note 4) Refer to pages 766 and 776 for details. Note 5) 20P (Flat ribbon cable type): Max. 12 stations



Dimensions/Single Unit: SY5A2R



[Remarks for valves]

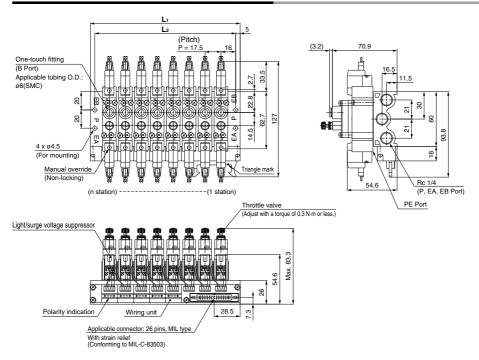
Note 1) Refer to pages 778, 955 and 956 for the details of electrical entry and electrical circuit with a light/surge voltage suppressor.

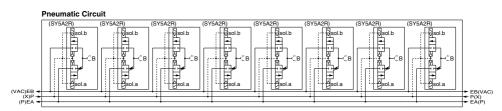
Note 2) Diagrams above are compatible with SY5A2R-□□□□□-□□-(F2).

Note 3) When mounted with brackets, the product is mounted in a place specified with one dot chain lines.

Note 4) Applicable pilot valves are SY114/SY115-

Dimensions/Manifold: SS5Y5-20P-Stations - - -





| L: Dimensions: mm n: Stations | | | | | | | | | Stations | |
|-------------------------------|----|------|-----|-------|-----|-------|-----|-------|----------|-------|
| <u>_</u> | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| L ₁ | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 |
| L ₂ | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224.5 |
| | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |

SS5Y5-20-□□: SY5000-26-20A (with screws and gaskets)
SS5Y5-20P-□□: SY5000-26-21A (with screws, gaskets and dust cap)
The product cannot be mounted with standard products the SY5000/500 series on a manifold

* Applicable blanking plate assembly part no.:

| | | | | | } | | } } [| | | | } | ļ |
|-----|-----------|-----------------|----------------------|----------------------------------|-------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------------------|---|
| ld. | 25 Loumoo | Unused terminal | Unused terminal o 81 | Station 8 { Solenoid b 45 p 45 p | Station 7 { Solenoid b Solenoid a 5 | Station 6 { Solenoid b | Station 5 { Solenoid b | Station 4 { Solenoid b | Station 3 { Solenoid b | Station 2 { Solenoid b | Station 1 { Solenoid b Solenoid a | • |

Schematic of Connector (Example: For this figure) (Light/surge voltage suppressor is not included.)



Triangle mark indication position

How to Use Manifold

△ Caution

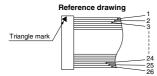
<20/20P Type>

A piping port is different from that for the standard product. When not connected properly, the product will not operate properly.

[P port: External pilot port, EA port: Vacuum release pressure port, EB port: Vacuum suction port]

<20P Type>

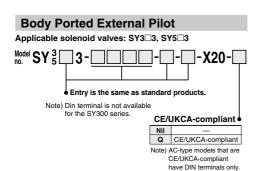
- If a large amount of drainage is included in the supply air, it may cause electrical trouble since a wiring unit is located in the place where exhaust from the PE port directly goes through. Be sure to control the supply air.
- For more than 10 stations, both poles of the common should be wired.
- When replacing a solenoid valve, etc., be sure to mount it by placing the solenoid a side on the connector (MIL type) side.
- 4. Terminal no. is not indicated on the connector.
- 5. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3...26 from the triangle mark side on the flat ribbon cable of connector. (Refer to the reference drawing.)



SY300/500 Series Made to Order Body Ported External Pilot



Body Ported External Pilot/Fluororubber for Main Valve



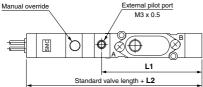
Operating pressure range MPa

| operating procedure range in t | - |
|--------------------------------|-----------------|
| Operating pressure range | -100 kPa to 0.7 |
| Pilot pressure range | 0.25 to 0.7 |

External pilot port

| Series | Port size |
|--------|-----------|
| SY300 | M3 x 0.5 |
| SY500 | M5 x 0.8 |

Dimensions



Dimentions/External Pilot Port Position

| Series | L1 dimensions | L2 dimensions |
|--------|---------------|---------------|
| SY300 | 41.5 | 6.5 |
| SY500 | 60.4 | 9 |

Symbol









Normally closed (N.C.) Double solenoid



Normally open (N.O.) Double solenoid

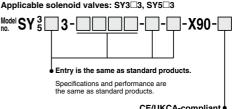


ØSMC

Main Valve Fluororubber Specifications

Fluororubber is used for rubber parts of the main valve to allow use in applications such as the following.

 When using a lubricant other than the recommended turbine oil, and there is a possibility of malfunction due to swelling of the spool valve seals.



CE/UKCA-compliant

Nii —
Q CE/UKCA-compliant

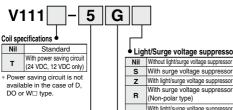
Note) AC-type models that are

CE/UKCA-compliant have DIN terminals only.

947

SY3000/5000/7000/9000 Series Pilot Valve Assembly **Port Block Assembly**

How to Order Pilot Valve Assembly



Rated voltage

| 5 | 24 VDC |
|---|-------------------|
| 6 | 12 VDC |
| V | 6 VDC |
| S | 5 VDC |
| R | 3 VDC |
| 1 | 100 VAC 50/60Hz |
| 2 | 200 VAC 51/60Hz |
| 3 | 110 VAC 50/60Hz |
| 3 | [115 VAC 51/60Hz] |
| _ | 220 VAC 50/66Hz |
| 4 | [230 VAC 51/60Hz] |
| | |

- * For type W□, DC voltage is only available
- CE/UKCA-compliant: For DC only

Light/Surge voltage suppressor Nil Without light/surge voltage suppressor

- With light/surge voltage suppressor With surge voltage suppressor With light/surge voltage suppressor (Non-polar type)
- * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit
- * For "R" and "U", DC voltage is only available
- * Power saving circuit is only available in the "Z" type.

Electrical entry

| G | Grommet, 300 mm lead wire | | | |
|----|---------------------------|------------------------------|--|--|
| Н | Gromme | et, 600 mm lead wire | | |
| L | Lalua | With lead wire | | |
| LN | L plug connector | Without lead wire | | |
| LO | COMMECTOR | Without connector | | |
| M | M plug | With lead wire | | |
| MN | connector | Without lead wire | | |
| MO | COMMICCION | Without connector | | |
| wo | M8 | Without connector cable | | |
| W□ | connector | With connector cable Note 1) | | |

* For connector cable of M8 connector, refer to page 960.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 961.

■ DIN terminal type V115 -



[230 VAC 50/60 Hz]

* DC specifications of type D and DO is only available with 12 and 24

Light/Surge voltage suppressor

| | gggg | | | | | |
|-----|--|--|--|--|--|--|
| Nil | Without light/surge voltage suppressor | | | | | |
| s | With surge voltage suppressor (Non-polar type) | | | | | |
| z | With light/surge voltage suppressor (Non-polar type) | | | | | |

- * DOZ and YOZ are not available.
- * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

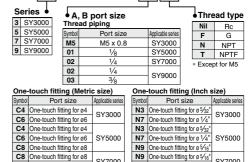
| D | DIN | With connector |
|----|----------------------|-------------------|
| DO | terminal (Type D) | Without connector |
| Υ | DIN | With connector |
| YO | terminal (Type Y) | Without connector |

Note) Do not replace V111 (G. H. I. M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order Port Block Assembly

000 - 6A

SY



How to Change Port Block Assembly

SY7000

SY9000

Connecting port size of A and B can be changed by replacing port block assembly mounted on body. When changing block assembly, correct screw torque must be achieved to avoid trouble; e.g. air leakage.

SY7000

SY9000

N11 One-touch fitting for ø 3/8

N9 One-touch fitting for ø 5/16"

N11 One-touch fitting for ø 3/8"

With the one-touch fitting port block assembly, it is only necessary to change the fitting and not the whole block. Refer to following part numbers.

One-touch fitting (Metric size)

C10 One-touch fitting for ø10

C8 One-touch fitting for ø8

C10 One-touch fitting for ø10

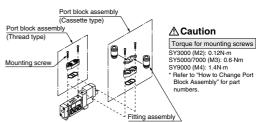
C12 One-touch fitting for ø12

| one todon many (metric cize) | | | | | |
|------------------------------|---------------------------|-------------------|--|--|--|
| Port size | Fitting assembly part no. | Applicable series | | | |
| One-touch fitting for ø4 | VVQ1000-50A-C4 | SY3000 | | | |
| One-touch fitting for ø6 | VVQ1000-50A-C6 | 513000 | | | |
| One-touch fitting for ø4 | VVQ1000-51A-C4 | | | | |
| One-touch fitting for ø6 | VVQ1000-51A-C6 | SY5000 | | | |
| One-touch fitting for ø8 | VVQ1000-51A-C8 | | | | |
| One-touch fitting for ø8 | VVQ2000-51A-C8 | SY7000 | | | |
| One-touch fitting for ø10 | VVQ2000-51A-C10 | 517000 | | | |
| One-touch fitting for ø8 | VVQ4000-50B-C8 | | | | |
| One-touch fitting for ø10 | VVQ4000-50B-C10 | SY9000 | | | |
| One-touch fitting for ø12 | VVQ4000-50B-C12 | | | | |

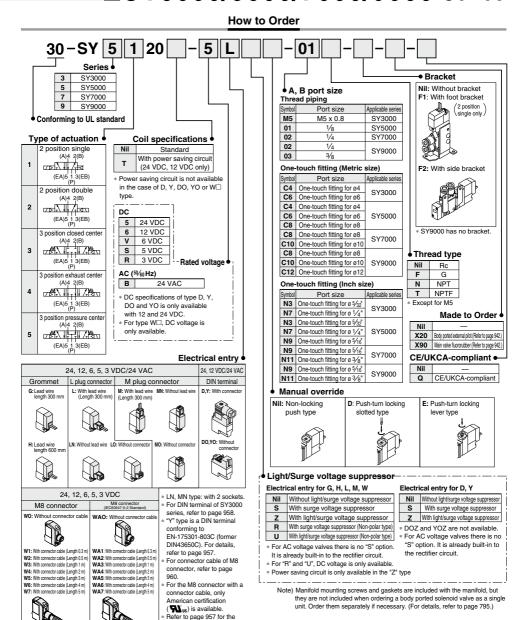
One-touch fitting (Inch size)

| Port size | Fitting assembly part no. | Applicable series |
|------------------------------|---------------------------|-------------------|
| One-touch fitting for ø5/32" | VVQ1000-50A-N3 | SY3000 |
| One-touch fitting for ø1/4" | VVQ1000-50A-N7 | 313000 |
| One-touch fitting for ø5/32" | VVQ1000-51A-N3 | |
| One-touch fitting for ø1/4" | VVQ1000-51A-N7 | SY5000 |
| One-touch fitting for ø5/16" | VVQ1000-51A-N9 | |
| One-touch fitting for ø1/4" | VVQ2000-51A-N9 | SY7000 |
| One-touch fitting for ø3/8" | VVQ2000-51A-N11 | 317000 |
| One-touch fitting for ø5/16" | VVQ4000-50B-N9 | SY9000 |
| One-touch fitting for ø3/8" | VVQ4000-50B-N11 | 319000 |

Note) Purchasing order is available in units of 10 pieces.



5 Port Solenoid Valve CECA CALUS Body Ported/Single Unit SY3000/5000/7000/9000 Series



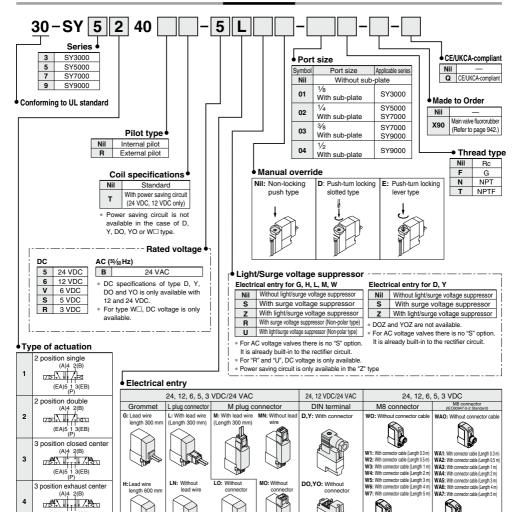
Refer to the standard product for specifications and dimensions.

lead wire length of L and M

plug connectors.

5 Port Solenoid Valve CECA CAUS Base Mounted/Single Unit SY3000/5000/7000/9000 Series

How to Order



- * LN, MN type: with 2 sockets
- * For DIN terminal of SY3000 series, refer to page 958.
- * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 957.
- * For connector cable of M8 connector, refer to page 960.
- * For the M8 connector with a connector cable, only American certification () is available.
- * Refer to page 957 for the lead wire length of L and M plug connectors.
- Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included.

 Refer to the standard product for specifications and dimensions.



5

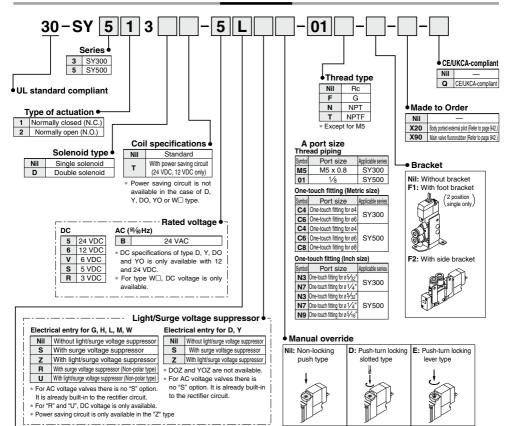
(EA)5 1 3(EB) (P) 3 position pressure center (A)4 2(B)

(EA)5 1 3(EB)

3 Port Solenoid Valve CE CA CALUS **Body Ported/Single Unit**

SY300/500 Series

How to Order



Electrical entry

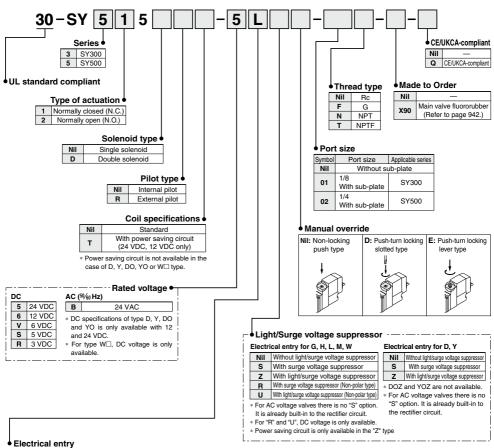
| | , | | | | | |
|-------------------------------|--|-----------------------|---|--|---|--|
| 24, | 24, 12, 6, 5, 3 VDC/24 VAC 24, 12 VDC/24 VAC | | | 24, 12, 6, 5, 3 VDC | | |
| Grommet | L plug connector | M plug connector | DIN terminal | M8 connector | M8 connector (IEC60947-5-2 Standard) | |
| length 300 mm H: Lead wire | L: With lead wire (Length 300 mm) LN: Without lead wire LO: Without connector | MN: Without lead wire | D: With connector DO: Without connector Y: With connector YO: Without connector | W2: With connector cable (Length 500 mm) W3: With connector cable (Length 1000 mm) W4: With connector cable (Length 2000 mm) W5: With connector cable (Length 3000 mm) W6: With connector cable (Length 4000 mm) | WAD: Without connector cable WA1: With connector cable (Length 300 mm) WA2: With connector cable (Length 500 mm) WA3: With connector cable (Length 1000 mm) WA4: With connector cable (Length 2000 mm) WA5: With connector cable (Length 3000 mm) WA6: With connector cable (Length 4000 mm) WA7: With connector cable (Length 5000 mm) | |

- * LN, MN type: with 2 sockets.
- * For DIN terminal of SY300 series, refer to page 958.
- * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 957.
- * For connector cable of M8 connector, refer to page 960
- * For the M8 connector with a connector cable, only American certification () is available.
- * Refer to page 957 for the lead wire length of L and M plug connectors.

Note) Manifold mounting screws and gaskets are included with the manifold, but they are not included when ordering a body ported solenoid valve as a single unit. Order them separately if necessary (Refer to page 795 for details.)



How to Order



| 24, | 12, 6, 5, 3 VDC/24 | VAC | 24, 12 VDC/24 VAC | VAC 24, 12, 6, 5, 3 VDC | | |
|--|--------------------|---------------------------------------|--|---|---|--|
| Grommet | L plug connector | M plug connector | DIN terminal M8 connector | | M8 connector (IEC60947-5-2 Standard) | |
| G: Lead wire length 300 mm H: Lead wire length 600 mm | | (Length 300 mm) MN: Without lead wire | Y: With connector YO: Without connector | W4: With connector cable (Length 2000 mm) W5: With connector cable (Length 3000 mm) W6: With connector cable (Length 4000 mm) | WAO: Without connector cable WAI: With connector cable (Length 300 mm) WA2: With connector cable (Length 500 mm) WA3: With connector cable (Length 1000 mm) WA4: With connector cable (Length 2000 mm) WA5: With connector cable (Length 3000 mm) WA6: With connector cable (Length 4000 mm) WA7: With connector cable (Length 4000 mm) | |

- * LN, MN type: with 2 sockets.
- * For DIN terminal of SY300 series, refer to page 958.
- * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 957.
- * For connector cable of M8 connector, refer to page 960.
- * For the M8 connector with a connector cable, only American certification () is available.
- * Refer to page 957 for the lead wire length of L and M plug connectors.

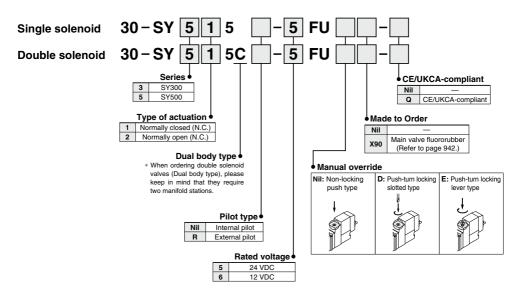
Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included.

3 Port Solenoid Valve Base Mounted/Single Unit **SY300/500** Series

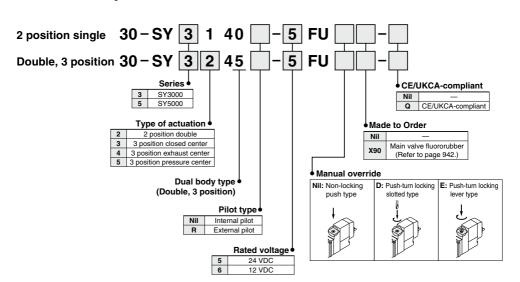
CE CA CANONS

Base Mounted/How to Order Valve

Plug-in: for SS5Y₅³-45□



Plug-in: For SS5Y₅-45F/45P□/45T/45T1





Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Manual Override Operation

∆Warning

■ Non-locking push type [Standard]

Press in the direction of the arrow



■ Push-turn locking slotted type [Type D]

While pressing, turn in the direction of the arrow. If it is not turned, it can be operated the same way as the non-locking type.





Locked position

⚠ Caution

When operating the locking type D with a screw driver, turn it gently using a watchmakers screw driver.

[Torque: Less than 0.1 N·m]

■ Push-turn locking lever type [Type E]

While pressing, turn it the direction of the arrow. If it is not turned, it can be operated the same way as the non-locking type.





∧Caution

When locking the manual override on the push-turn locking types (D, E), be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and trouble such as air leakage, etc.

Solenoid Valve for 200, 220 VAC Specifications

≜Warning

Solenoid valves with grommet and L/M type plug connector AC specifications have a built-in rectifier circuit in the pilot section to

With 200 V, 220 VAC specification pilot valves, this built-in rectifier generates heat when energized. The surface may become hot depending on the energized condition; therefore, do not touch the solenoid valves.

Exhaust Throttle

∧Caution

With the SY series, the pilot valve and main valve share a common exhaust inside the valve. Therefore, do not block the exhaust port when arranging the piping.

SY3000/5000/7000/9000 Series Used as a 3-Port Valve

∕ Caution

In case of using a 5-port valve as a 3-port valve

The SY3000/5000/7000/9000 series can be used as normally closed (N.C.) or normally open (N.C.) 3-port port valves by closing one of the cylinder ports (A or B) with a plug. However, they should be used with the exhaust ports kept open. (Refer to pages 926 to 933 for dedicated 3-port solenoid valve.)

| | position | B port | A port |
|---------------------|----------|-----------------------------------|-----------------------------------|
| Config | guration | N.C. | N.O. |
| Number of solenoids | Single | (A)4 2(B) (EA)5 1 3(EB) (P) | (A)4 2(B) (EA)5 1 3(EB) (P) |
| Number of | Double | (A)4 2(B) (EA)5 1 3(EB) (P) | (A)4 2(B) X (EA)513(EB) |



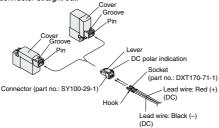
Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

How to Use Plug Connector

⚠ Caution

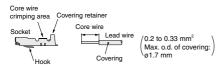
1. Attaching and detaching connectors

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



2. Crimping connection of lead wire and socket

Strip 3.2 to 3.7 mm at the end of lead wires, insert the end of the core wires evenly into the sockets, and then crimp it by a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area. (Please contact SMC for the dedicated crimping tools.)



3. Attaching and detaching lead wires with sockets

Attaching

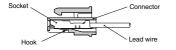
Insert the sockets into the square holes of the connector (+, indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector.

(When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip

If the socket will be used again, first spread the hook outward.



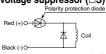
Surge Voltage Suppressor

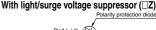
⚠ Caution

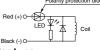
<For DC>

Grommet, L/M Plug Connector

■ Polar type With surge voltage suppressor (□S)









■ Non-polar type With surge voltage suppressor (□R)



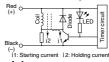
With light/surge voltage suppressor (□U)



- Connect the standard type in accordance with the +, polarity indication. (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than polar type 24 V and 12 VDC do not have diodes for polarity protection, be careful not to make errors in
- When wiring is done at the factory, positive (+) is red and negative (-) is black

■ With power saving circuit

Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 62 ms at 24 VDC.)



Operating Principle

With the above circuit, the current consumption when holding is reduced to save energy. Please refer to the electric wave data below.

· Please be careful not to reverse the polarity, since a diode to prevent the (In the case of SY $^{\tilde{5}}_{\tilde{4}}{***}0T$, the electric reversed current is not provided for the power saving circuit.

wave form of energy saving type)







Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Surge Voltage Suppressor

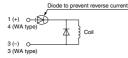
DIN Terminal



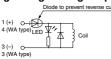
DIN terminal has no polarity.

M8 Connector

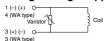
■ Polar type With surge voltage suppressor (□S)



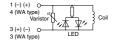
With light/surge voltage suppressor (□Z)



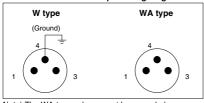
■ Non-polar type With surge voltage suppressor (□R)



With light/surge voltage suppressor (□U)



Solenoid valve side pin wiring diagram



Note) The WA-type valve cannot be grounded.

M8 Connector

- For wiring of the polar type, connect + to 1 and to 3 for Type W, while + to 4 and to 3 for Type WA.
- Since voltage specifications other than polar type 24 V and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.

Plua-in

Circuit for non-polar (FU)

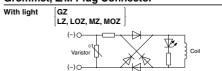


Plug-in valve has no polarity, so its possible to use for both manifold bases for positive (SS5Y $_{5}^{3}$ -45 \square) and negative its common (SS5Y $_{5}^{3}$ -45N \square) types.

<For AC>

(There is no "S" option, because the generation of surge voltage is prevented by a rectifier.)

Grommet, L/M Plug Connector



DIN Terminal

With light (DZ) (YZ) (-) NL U Varistor Coil

Note) Surge voltage suppressor of varistor has residual voltage corresponding to the protective element and rated voltage; therefore, protect the controller side from the surge voltage. The residual voltage of the diode is approximately 1 V.





Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Continuous Duty



If a valve is energized continuously for a long period of time, the rise in temperature due to heat-up of the coil assembly may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. In particular, if 3 or more adjacent stations on the manifold are energized simultaneously for extended periods of time, take special care as the temperature rise will be greater. In such cases, if it is possible to select a valve with a power-saving circuit, be sure to do so.

UL Approved Product

When conformity to UL is required, the product should be used with a UL1310 Class 2 power supply.

The product is a UL approved product only if it has a casus mark on the body.







Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Plug Connector Lead Wire Length

∕ Caution

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

How to Order Connector Assembly Lead wire color For DC: SY100-30-4A-Red, Black For 100 VAC: SY100-30-1A-Blue For 200 VAC: SY100-30-2A Red For other voltages of AC: SY100-30-3A-Gray Without lead wire: SY100-30-A (with connector and 2 of sockets only)

How to Order

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

<Example> Lead wire length 2000 mm

| For DC | For AC |
|----------------|----------------|
| SY3120-5LO-M5 | SY3120-1LO-M5 |
| SV100-30-44-20 | SY100-30-1A-20 |

Lead wire length 300 mm 600 mm 10 1000 mm 15 1500 mm 20 2000 mm 25 2500 mm 3000 mm 30 5000 mm 50

How to Use DIN Terminal

⚠ Caution

Connection

- 1.Loosen the holding screw and pull the connector out of the solenoid valve terminal block
- 2. After removing the holding screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing
- 3. Loosen the terminal screws (slotted screws) on the terminal block, insert the cores of the lead wires into the terminals according to the connection method, and fasten them securely with the terminal screws.
- 4. Secure the cord by fastening the gland nut.

When making connections, take note that using other than the supported size (ø3.5 to ø7) heavy duty cord will not satisfy IP65 (enclosure) standards. Also, be sure to tighten the gland nut and holding screw within their specified torque ranges.

Changing the entry direction

After separating the terminal block and housing, the cord entry can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).

* When equipped with a light, be careful not to damage the light with the cord's lead wires.

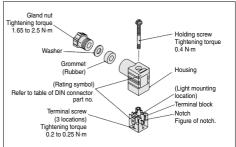
Precautions

Plug in and pull out the connector vertically without tilting to one side.

Compatible cable

Cord O.D.: ø3.5 to ø7

(Reference) 0.5mm2, 2-core or 3-core, equivalent to JIS C 3306



Type "Y"

DIN connector type Y is a DIN connector that confirms to the DIN pitch 8-mm standard.

- D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
 To distinguish from the D type DIN connector, "N" is listed at the end of voltage symbol. (For connector parts without lights, "N" is not indicated. Please refer to the name plate to distinguish.)
- Dimensions are completely the same as D type DIN connector.
 When exchanging the pilot valve assembly only, "V115-⊞D" is interchangeable with "V115-⊞7. Do not replace V111 (G, L, M) to V115-⊞D/⊞7 (DIN terminal), and vice versa.



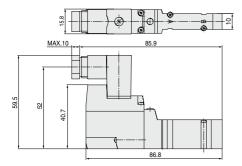


Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

SY300, SY3000 Series How to Use DIN Terminal Connector

∕\Caution

- SMC can provide a DIN type terminal connector (body ported type, sub-plate type) for the SY300 and SY3000 series. This cannot be assembled to a standard manifold and sub-plate since the DIN connector width (15.8mm) exceeds that of the valve body (10mm).
 Please also note: that bracket F1 cannot be mounted.
- * The DIN terminal connector has no body ported external pilot specifications for both single unit and manifold.



DIN Connector Part No.

_Caution

<Type D>

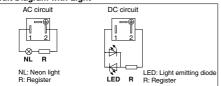
| Without light | SY100-61-1 | | | | |
|---------------|----------------|---------------|--|--|--|
| With light | | | | | |
| Rated voltage | Voltage symbol | Part no. | | | |
| 24 VDC | 24 V | SY100-61-3-05 | | | |
| 12 VDC | 12 V | SY100-61-3-06 | | | |
| 100 VAC | 100 V | SY100-61-2-01 | | | |
| 200 VAC | 200 V | SY100-61-2-02 | | | |
| 110 VAC | 110 V | SY100-61-2-03 | | | |
| 220 VAC | 220 V | SY100-61-2-04 | | | |

<Type Y>

Without light SY100-82-1

| With light | | |
|-------------------|----------------|---------------|
| Rated voltage | Voltage symbol | Part no. |
| 24 VDC | 24 VN | SY100-82-3-05 |
| 12 VDC | 12 VN | SY100-82-3-06 |
| 100 VAC | 100 VN | SY100-82-2-01 |
| 200 VAC | 200 VN | SY100-82-2-02 |
| 110 VAC (115 VAC) | 110 VN | SY100-82-2-03 |
| 220 VAC (230 VAC) | 220 VN | SY100-82-2-04 |

Circuit Diagram with Light

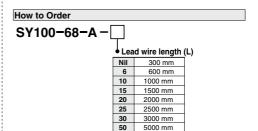


Connector Assembly with Cover

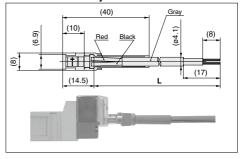
∧Caution

Connector assembly with dust proof protective cover.

- Effective to prevention of short circuit failure due to the entry of foreign matter into the connector.
- Chloroprene rubber for electrical use, which provides outstanding weather resistance and electrical insulation, is used for the cover material. However, do not allow contact with cutting oil, etc.
- Simple and unencumbered appearance by adopting roundshaped cord.



Connector Assembly with Cover: Dimensions



How to Order

Enter the part number for a plug connector solenoid valve without connector together with the part number for a connector assembly with cover.

<Example 1> Lead wire length of 2000 mm

SY3120-5LOZ-M5 SY100-68-A-20

<Example 2> Lead wire length of 300 mm (standard)

SY3120-5LPZ-M5

Symbol for connector assembly with cover

* In this case, the part number for the connector assembly with cover is not required.





Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Plug-in

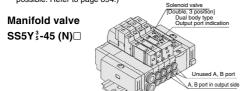
∕Caution

■ When using a double solenoid valve (Dual body type: SY³₅245□FU) on the plug-in type manifold (SS5Y³₅45(N)□), two manifold stations are required per valve.

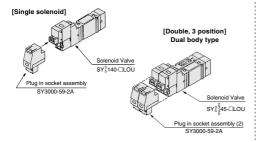
Output to A/B ports will be made through the manifold block on the side indicated by an arrow on the top of the solenoid valve. Therefore, arrange the piping on the side indicated by the arrow

Although the "T" side will not be used, plugs will not be necessary since it is sealed with the valve.

(However, insert a plug into the A/B ports if dust intrusion is possible. Refer to page 894.)



Plug-in type solenoid valves consist of a non-polar solenoid valve and a plug-in socket. When ordering them separately, refer to the following part numbers.



Note) Using a valve other than a non-polar type may cause trouble

DIN Rail for SY7000/9000 Series

∆Caution

The DIN rail used with the SY7000 and SY9000 series is stronger than that used with the SY3000 and SY5000 series. Use this exclusive DIN rail with the SY7000 and SY9000 series. Furthermore, if using a DIN rail other than that supplied by SMC, refer to the manifold mounting section below, and mount using the same method as prescribed for side facing and rear facing, regardless of the mounting orientation.

Manifold Mounting

∕.\Caution

1. For Type 23, 43, 45, 45□ and 60 DIN rail mounting, when attaching a manifold to a mounting surface, etc., with bolts, if the entire bottom surface of the DIN rail contacts the mounting surface in a horizontal mounting, it can be used by simply securing both ends of the DIN rail. However, for any other mounting method or for side facing and rear facing, etc., secure the DIN rail with bolts at uniform intervals using the following as a guide: 2 to 5 stations at 2 locations, 6 to 10 stations at 3 locations, 11 to 15 stations at 4 locations, and 16 to 20 stations at 5 locations. In addition, even in the case of a horizontal mounting, if the mounting surface is subject to vibration, etc., take the same measures indicated above. If secured at fewer than the specified number of locations, warping or twisting may occur in the DIN rail and manifold, causing trouble such as air leakage.

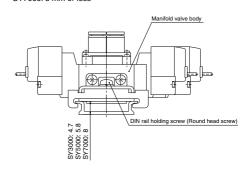
Also, when using mounting screws for the DIN rail on the bottom side (L3 dimension in the dimension table) of the manifold valve body, the height of the screw head has to be as follows.

Type 23, 43 (SY9000): 8 mm or less Type 45 (SY3000, 5000): 5.8 mm or less

For type 60:

SY3000: 4.7 mm or less

SY5000: 5.8 mm or less SY7000: 8 mm or less



[This is the case for type 60.]

 There will be slight variations in the width of manifold blocks due to tolerance (±0.15 mm) for the stacking manifold type of the SS5Y9-23 series and SS5Y9-43 series.

As the manifold is made up of a combination of manifold blocks, there will be an error due to accumulated tolerance between the actual pitch dimensions of the mounting holes used to secure the manifold and the values stated in the catalog. Keep this in mind when increasing the number of stations.





Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

One-touch Fittings

∕∆Caution

When fittings are used, they may interfere with one another depending on their types and sizes. Therefore, the dimensions of the fittings to be used should first be confirmed in their respective catalogs.

Tubing attachment/detachment for One-touch fittings

1) Attaching of tubing

- 1. Take a tubing having no flaws on its periphery and cut it off at a right angle. When cutting the tubing, use tubing cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tubing cutters, the tubing may be cut diagonally or become flattened, etc., making a secure installation impossible, and causing problems such as the tubing pulling out after installation or air leakage. Allow some extra length in the tubing.
- 2. Grasp the tubing, slowly push it straight (0 to 5°) into the One-touch fitting until it comes to a stop.
- After inserting the tubing, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tubing pulling out.

2) Detaching of tubing

- Push in the release button sufficiently, pushing its collar equally around the circumference.
- Pull out the tubing while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tubing and it will become more difficult to pull it out.
- 3. When the removed tubing is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tubing is used as is, this can cause trouble such as air leakage or difficulty in removing the tubing.

Other Tubing Brands

∧Caution

 When using other than SMC brand tubing, confirm that the following specifications are satisfied with respect to the outside diameter tolerance of the tubing.

1) Nylon tubing within ±0.1 mm 2) Soft nylon tubing within ±0.1 mm 3) Polyurethane tubing within +0.15 mm, within -0.2 mm.

Do not use tubing which do not meet these outside diameter tolerances. It may not be possible to connect them, or they may cause other trouble, such as air leakage or the tubing pulling out after connection.

M8 Connector

∕.\Caution

 M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note: these products are not intended for use in water.

Select a SMC connector cable (V100-49-1-□) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5mm or less when used with the SY3000 series manifold. If more than 10.5mm, it cannot be mounted due to the size.

- Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6 N·m)
- The excessive stress on the cable connector will not be able to satisfy the IP65 rating. Please use caution and do not apply a stress of 30 N or greater.

▲ Caution

Failure to meet IP65 performance may result if using alternative connectors than those shown above, or when insufficiently tightened.

Connector cable mounting



Note) Connector cable should be mounted in the correct direction.

Make sure that the arrow symbol on the connector is facing the triangle symbol on the valve when using SMC connector cable (V100-49-1- \square).

Be careful not to squeeze it in the wrong direction, as problems such as pin damage may occur.





Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

M8 Connector

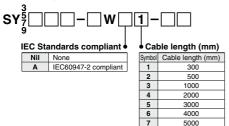
^Caution

■ Connector cable

- Connector cable for M8 can be ordered as follows:
- Refer to page 956 for the surge voltage suppressor.

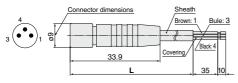
How to Order

 To order solenoid valve and connector cable at the same time.
 (Connector cable will be included in the shipment of the solenoid valve.)



Ex. 1) Cable length: 300mm
SY312-5W1ZE-C4
Symbol for electrical entry

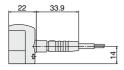
2. To order connector cable only



| Cable length (L) | Part no. |
|------------------|-------------|
| 300 mm | V100-49-1-1 |
| 500 mm | V100-49-1-2 |
| 1000 mm | V100-49-1-3 |
| 2000 mm | V100-49-1-4 |
| 5000 mm | V100-49-1-7 |
| 3000 mm | V100-49-1-5 |
| 4000 mm | V100-49-1-6 |

| Sheath O.D. | ø3.4 mm |
|----------------|----------------------|
| Cover diameter | ø1.16 mm |
| Conductor area | 0.16 mm ² |
| | |

[Dimensions when installed]



Solenoid Valve Mounting

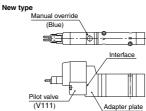
Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

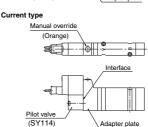
| - | _ | |
|--------|-------------|-------------------|
| Model | Thread size | Tightening torque |
| SY3000 | M2 | 0.16 N·m |
| SY5000 | M3 | 0.8 N·m |
| SY7000 | M4 | 1.4 N·m |
| SY9000 | M3 | 0.8 N·m |

Replacement of Pilot Valve

∧Caution

Pilot valves in this series are improved to provide excellent energy saving results. However following this improvement, these new valves are no longer compatible with the current pilot valve used at the interface.







Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Interface Regulator

. Caution

Specifications

| Interface regula | tor model | ARBY3000-□-P-2 ARBY3000-□- ^{A1} _{B1} -2 | | ARBY5000-□-P-2 |)-□-P-2 ARBY5000-□- ^{A1} -2 | | ARBY7000-□-P-2 ARBY7000-□ | | 0-□- ^{A1} -2 | | |
|-------------------------------------|---------------------|---|-------------------------------------|-----------------|--------------------------------------|--------|---------------------------|-----------------------|-----------------------|-----------------|--|
| Applicable solenoi | d valve model | SY3 | SY3□40(R) SY5□40(R) | | | | | SY7□40(R) | | | |
| Regulated port | | Р | Α | В | Р | Α | В | Р | Α | В | |
| Set pressure ran | nge | | | | 0.1 to 0 | .7 MPa | | | | | |
| Maximum operat | ing pressure | | | | 0.7 M | ИPа | | | | | |
| Fluid | | | | | Α | ir | | | | | |
| Ambient and fluid | temperature | | | | Max. | 50°C | | | | | |
| Connection port of p | ressure gauge | | | | M5 > | c 0.8 | | | | | |
| Weight W (g) | With pressure gauge | 46 g (05), | 46 g (05), 50 g (06) 66.8 g 110.8 g | | | | | | | | |
| | With plug | 20 g 60.4 g 103.2 g | | | | | | | | | |
| Supply side effective area Note 3) | | _ | 2.45 | mm ² | — 7.61 mm ² — | | _ | 13.54 | mm ² | | |
| Exhaust side effective area Note 3) | A,B→EA,EB | 4.05 mm ² | 3.91 | mm ² | 11.1 mm ² | 10.1 | mm ² | 15.71 mm ² | 15.71 | mm ² | |

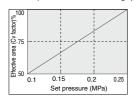
Note 1) Pressurize the interface regulator from P port on the base.

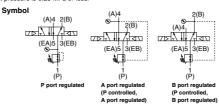
Note 2) With closed center and pressure center valves, the pressure can be regulated through P port only.

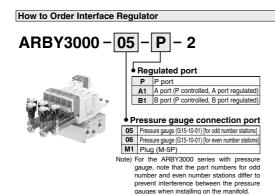
Note 3) Effective area, excluding the regulated port, when a primary pressure of 0.5 MPa is supplied with regulators mounted on the solenoid valves (2 positions) and sub-plate. Refer to "Flow Rate Characteristics" regarding the regulated port.

Note 4) Valves for weight include gasket and mounting screws.

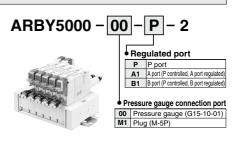
Note 5) With A, B ports regulated (P port controlled A, B ports regulated), the effective area (Cv factor) for the regulated port and unregulated passage (P to B or P to A) decreases as shown in the graph below when the set pressure is 0.25 MPa or less.

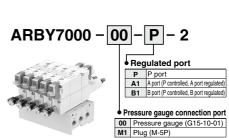






Note) The M8 connector for wiring cannot be mounted for the ARBY3000 series.







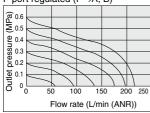
Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Flow Rate Characteristics

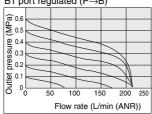
(Conditions: Inlet pressure 0.7 MPa when 2 position solenoid valve is mounted.)

ARBY3000

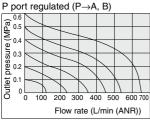
P port regulated (P→A, B)



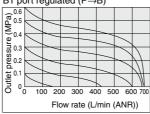
A1 port regulated ($P\rightarrow A$), B1 port regulated ($P\rightarrow B$)



ARBY5000

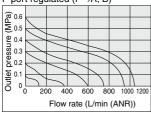


A1 port regulated (P→A), B1 port regulated (P→B)



ARBY7000

P port regulated (P→A, B)



A1 port regulated (P→A), B1 port regulated (P→B)

