



Speed control valve
Universal type with push-in joint

SC3U Series

● Port size: M3,M5,R1/8 to R1/2

JIS symbol



(Meter-out)



(Meter in)



Features

- The piping direction of the universal type can be freely set 360°.
- Flame resistance resin is provided.
Flame resistance PBT (Equivalent to UL94 standards V-0) is provided as standard.
- The piping threads are coated with fluorine-based resin sealing agent.

Specifications

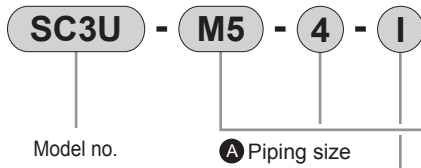
| Descriptions | SC3U-M3 | | SC3U-M5 | | | SC3U-6 | | | SC3U-8 | | | SC3U-10 | | | SC3U-15 | | |
|-----------------------------------|--|-------|------------------|----|-------|------------------|------|-----|-------------|-------------|-----|---------|-------------|------|---------|-------------|--|
| Applicable tube outer diameter mm | ø3.2 | ø4 | ø3.2 | ø4 | ø6 | ø4 | ø6 | ø8 | ø6 | ø8 | ø10 | ø8 | ø10 | ø12 | ø10 | ø12 | |
| Working fluid | Compressed air | | | | | | | | | | | | | | | | |
| Max. working pressure MPa | 1.0 | | | | | | | | | | | | | | | | |
| Min. working pressure MPa | 0.05 | | | | | | | | | | | | | | | | |
| Withstanding pressure MPa | 1.5 | | | | | | | | | | | | | | | | |
| Fluid temperature °C | 5 to 60 (no freezing Note 3) | | | | | | | | | | | | | | | | |
| Ambient temperature °C | 0 to 60 (no freezing) | | | | | | | | | | | | | | | | |
| Port size | M3 | | M5 | | | R1/8 | | | R1/4 | | | R3/8 | | | R1/2 | | |
| Product mass g | 6.3 | 7.2 | 10 | 11 | 12 | 24 | 26 | 27 | 52 | 54 | 57 | 83 | 85 | 87 | 140 | 143 | |
| Number of needle turn | 10 (14) and over | | 10 (16) and over | | | 10 (15) and over | | | 10 and over | 13 and over | | | 13 and over | | | 14 and over | |
| Free flow | Flow rate ℓ/min.(ANR) | 31 | 95 | | 105 | 215 | 270 | 270 | 475 | 510 | 540 | 985 | 1090 | | 1500 | 1630 | |
| | Effective sectional area mm ² | -24 | -95 | | (95) | -215 | -245 | 270 | 475 | 510 | 540 | 985 | 1090 | | 1500 | 1630 | |
| Controlled flow | Flow rate ℓ/min.(ANR) | 0.45 | 1.4 | | 1.6 | 3.2 | 4 | 4 | 7 | 7.5 | 8 | 14.5 | 16 | | 22 | 24 | |
| | Effective sectional area mm ² | -0.35 | -1.4 | | -1.4 | -3.2 | -3.7 | 4 | 7 | 7.5 | 8 | 14.5 | 16 | | 22 | 24 | |
| Controlled flow | Flow rate ℓ/min.(ANR) | 34 | 95 | | | 190 | 260 | 260 | 440 | 475 | | 950 | 1150 | 1220 | 1500 | 1630 | |
| | Effective sectional area mm ² | -5.4 | -9.5 | | | -17 | -17 | 260 | 440 | 475 | | 950 | 1150 | 1220 | 1500 | 1630 | |
| Controlled flow | Flow rate ℓ/min.(ANR) | 0.5 | 1.4 | | 2.8 | 3.8 | 3.8 | 6.5 | 7 | | 14 | 17 | 18 | 22 | 24 | | |
| | Effective sectional area mm ² | -0.08 | -0.14 | | -0.25 | -0.25 | 3.8 | 6.5 | 7 | | 14 | 17 | 18 | 22 | 24 | | |

Note 1: Flow rate is the atmospheric pressure conversion value at pressure 0.5MPa.

Note 2: The number in () is for low speed type.

Note 3: Could be frozen by adiabatic expansion depending on air quality (dew point).

How to order



B Applicable tube outer diameter

C Option Note 1
Note 2
Note 3

| Symbol | Descriptions | | | | | | |
|---|-------------------------------------|-------------|----|---|---|----|----|
| A Piping size | | | | | | | |
| M3 | M3×0.5 | | | | | | |
| M5 | M5×0.8 | | | | | | |
| 6 | R1/8 | | | | | | |
| 8 | R1/4 | | | | | | |
| 10 | R3/8 | | | | | | |
| 15 | R1/2 | | | | | | |
| B Applicable tube outer diameter | | | | | | | |
| | | Piping size | | | | | |
| | | M3 | M5 | 6 | 8 | 10 | 15 |
| 3 | ø3.2 | ● | ● | | | | |
| 4 | ø4 | ● | ● | ● | | | |
| 6 | ø6 | | ● | ● | ● | | |
| 8 | ø8 | | | ● | ● | ● | |
| 10 | ø10 | | | | ● | ● | ● |
| 12 | ø12 | | | | | ● | ● |
| C Option | | | | | | | |
| Blank | Meter-out | | | | | | |
| I | Meter in (Push ring color: black) | | | | | | |
| K | Hexagon head lock nut | | | | | | |
| O | Low speed type | | | | | | |
| P6 | Copper and PTFE free specifications | | | | | | |

■ not available.

⚠ Note on model no. selection

Note 1: Options are indicated as alphabetic order.

Note 2: "K" can be selected for piping size M3 and M5.

Note 3: "O" can be selected for applicable tube outer diameter "4"(ø4) or "6"(ø6) for port size M3, M5 and "6"(R1/8).

<Example of model number>

SC3U-M5-4-I

A Port size : M5×0.8

B Applicable tube outer diameter: ø4

C Option : Meter in

Ozone specifications (custom order)

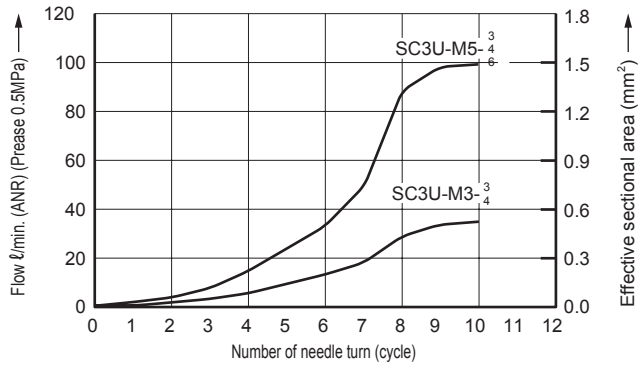
SC3U - - P11

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / diode contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

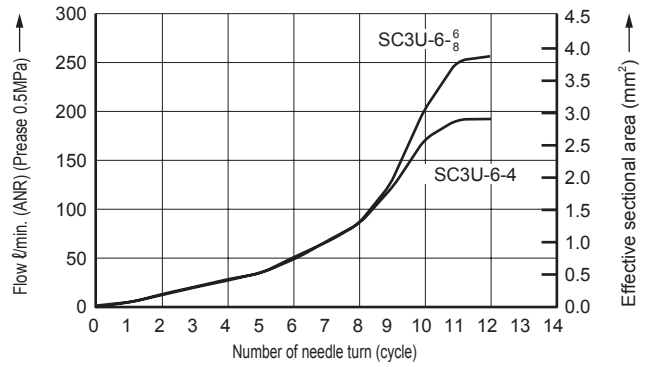
Universal type with push-in joint
Speed control valve

Flow characteristics

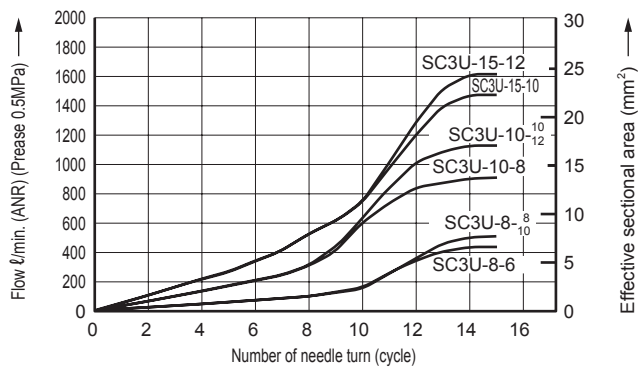
● Standard type (port size M3, M5)



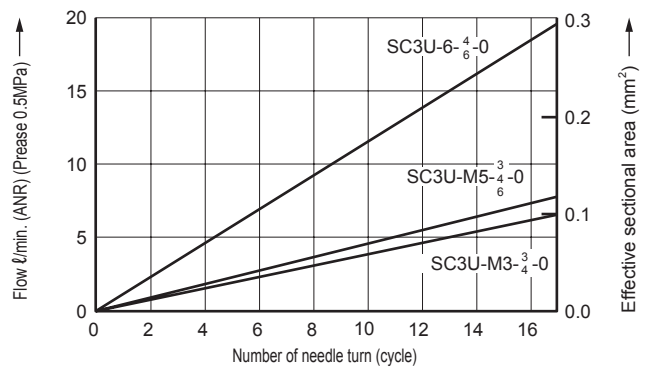
● Standard type (port size 1/8)



● Standard type (port size 1/4 to 1/2)



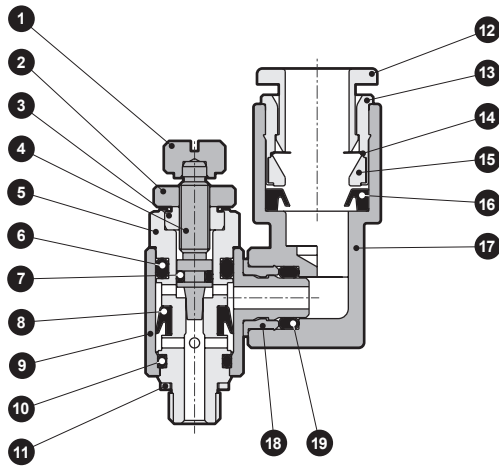
● Low speed type



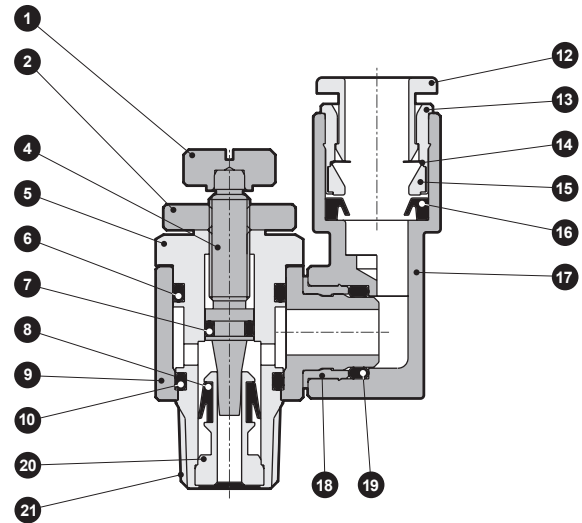
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| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Internal structure and parts list

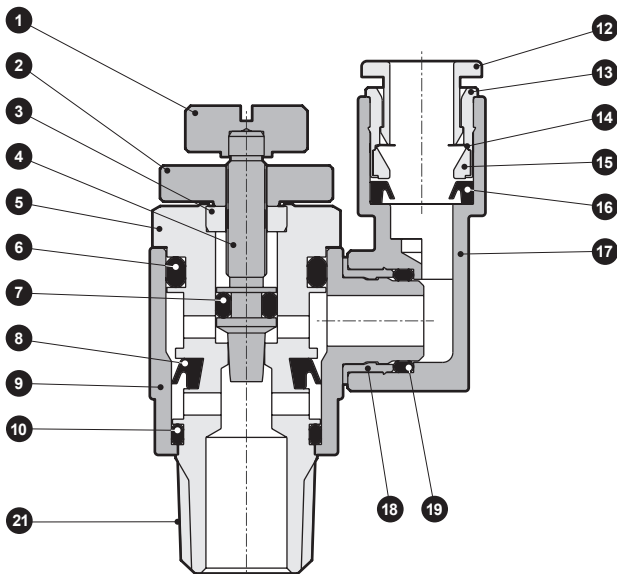
● SC3U-M3-M5



● SC3U-6*



● SC3U-10⁸-15*



*Integral structure for metering-out.

| No. | Parts name | Material | No. | Parts name | Material |
|-----|----------------|---------------------------------|-----|---------------|--|
| 1 | Knob | Brass | 11 | Gasket | Stainless steel + nitrile rubber |
| 2 | Lock nut | Brass | 12 | Push ring | PBT (flame resistance resin *2) |
| 3 | Gland nut | Brass | 13 | Outer ring | Brass |
| 4 | Needle | Stainless steel | 14 | Chuck | Stainless steel |
| 5 | Rotary shaft | Brass (M3 is stainless steel) | 15 | Chuck holder | Polyether amide (applicable tube outer diameter ø3.2 is brass) |
| 6 | O ring | Nitrile rubber | 16 | Packing seal | Nitrile rubber |
| 7 | O ring | Nitrile rubber | 17 | Joint | PBT (flame resistance resin *2) |
| 8 | V packing seal | Hydrogen nitrile rubber | 18 | Stopper | Brass |
| 9 | Rotor | PBT (flame resistance resin *2) | 19 | O ring | Nitrile rubber |
| 10 | O ring | Nitrile rubber | 20 | Check section | Brass |
| | | | 21 | Sealant | Fluorine system resin |

*1 All the brass parts are plated with electroless nickeling

*2 Equivalent to UL94 standards V-O

| |
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| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
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| Contact / diode contact cont. SW |
| Air sensor |
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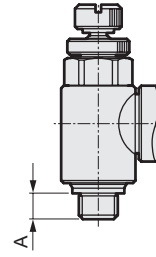
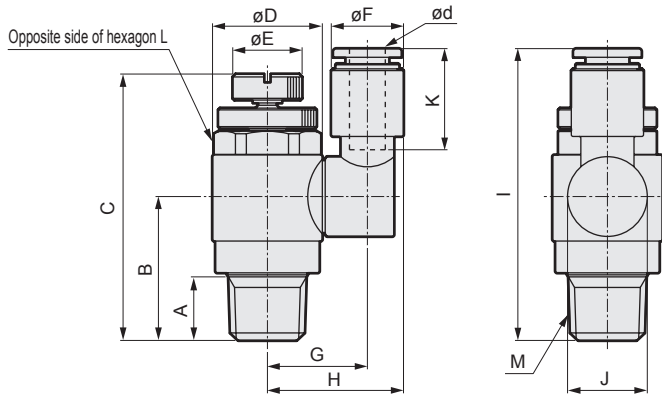
Ending

Universal type with push-in joint
Speed control valve

Dimensions

● SC3U-**-* (as same as low speed type/standard)

● SC3U-^{M3}/_{M5} A dimensions



| Symbol Model no. | ød (Applicable tube O.D.) | M | A | B | C | | D | E | F | G | H | I | J | K (tube insertion length) | L Opposite side of hexagon |
|---------------------|---------------------------------|--------|-----|------|------|------|------|----|------|------|------|------|------|---------------------------------|----------------------------------|
| | | | | | MAX | MIN | | | | | | | | | |
| SC3U-M3-3 | ø3.2 | M3×0.5 | 2.4 | 11.4 | 28.5 | 26 | 7.4 | 5 | 8.5 | 10 | 14.3 | 28.9 | 9.8 | 12.5 | 7 |
| SC3U-M3-4 | ø4 | | | | | | | | 10 | | 15 | 32.5 | | 16 | |
| SC3U-M5-3 | ø3.2 | M5×0.8 | 3.4 | 12.4 | 30.8 | 27.8 | 9.6 | 6 | 8.5 | 11.1 | 15.4 | 30 | 9.8 | 12.5 | 8 |
| SC3U-M5-4 | ø4 | | | | | | | | 10 | | 16.1 | 33.5 | | 16 | |
| SC3U-M5-6 | ø6 | | | | | | | | 12.5 | 12.1 | 18.4 | 35 | 17.5 | | |
| SC3U-6-4 | ø4 | R1/8 | 8 | 15.4 | 39.2 | 33.4 | 14.5 | 9 | 10 | 14.5 | 19.5 | 39 | 13 | 16 | 13 |
| SC3U-6-6 | ø6 | | | | | | | | 12.5 | 14.6 | 20.8 | 40.5 | | 17.5 | |
| SC3U-6-8 | ø8 | | | | | | | | 14.5 | 15.6 | 22.8 | 42 | | 19 | |
| SC3U-8-6 | ø6 | R1/4 | 11 | 24.9 | 51.2 | 46.1 | 19 | 12 | 12.5 | 17.3 | 23.6 | 50.5 | 17.5 | 17 | |
| SC3U-8-8 | ø8 | | | | | | | | 14.5 | 17.8 | 25.1 | 52 | | | 19 |
| SC3U-8-10 | ø10 | | | | | | | | 17.5 | 19.3 | 28.1 | 55.5 | | | 21.5 |
| SC3U-10-8 | ø8 | R3/8 | 12 | 29.8 | 60.2 | 53.1 | 22.5 | 14 | 14.5 | 19.6 | 26.8 | 57.9 | 16.7 | 19 | 19 |
| SC3U-10-10 | ø10 | | | | | | | | 17.5 | 21.1 | 29.8 | 60.9 | | 21.5 | |
| SC3U-10-12 | ø12 | | | | | | | | 20 | 22.3 | 32.3 | 63.2 | | 23 | |
| SC3U-15-10 | ø10 | R1/2 | 15 | 33.8 | 66.7 | 59.1 | 27 | 16 | 17.5 | 23.3 | 32.1 | 65.9 | 18.8 | 21.5 | 24 |
| SC3U-15-12 | ø12 | | | | | | | | 20 | 24.5 | 34.5 | 68.2 | | 23 | |

⚠ CAUTION

■ Safety Precautions

- Always use within the product specifications.
- This product is for compressed air. Avoid using with other fluids.
- Securely insert the tube to the tube end, and make sure that the tube cannot be pulled off.
- Cut the tube with a dedicated cutter, and cut at a right angle.
- Remove all swarf and foreign debris generated during piping and tube insertion before starting use.
- Provide sufficient allowance in the tube so that it does not bent suddenly.
- Avoid using this product in a hot humid place, outdoors or where it is subject to direct sunlight.
- Do not use the product in the place that the product could directly contact with coolant or spatter, etc.
- Avoid using this product in places with high levels of vibration or impact.
- The needle tolerates a slight leak even when fully closed, so do not use it as a stop valve.
- Consult with CKD for use in special environments.

■ Precautions for piping

- Always use within the recommended tightening torque range.
- Do not tighten while pressure is applied.
- Stop air and confirm that there is no residual pressure before replacing the tube.
- Mounting is possible by rotating in a random direction, but do not use this product in applications which constantly rotate or sway.
- Do not apply a load other than a rotation onto the connection of the rotating body and joint.

| Port thread | Tightening torque N·m |
|-------------|-----------------------|
| M3 | 0.3 to 0.6 |
| M5 | 1.0 to 1.5 |
| Rc1/8 | 3 to 5 |
| Rc1/4 | 6 to 8 |
| Rc3/8 | 13 to 15 |
| Rc1/2 | 16 to 18 |

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