

Miniature in-out speed control valve

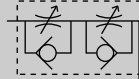
SCD-M3/M5 Series

Small, light weight and thin body. Speed control valve for air supply and exhaust.

JIS symbol

● SCD-M^{*}-S
(Straight)

● SCD-M^{*}-A
(Adjustable)



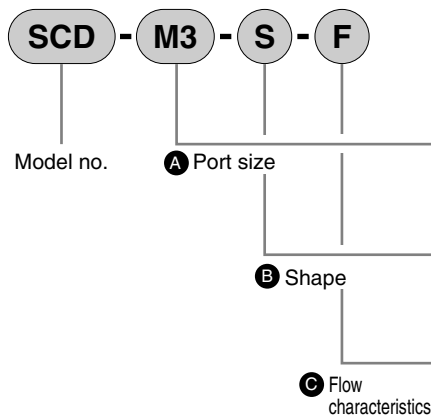
Specifications

Descriptions	SCD-M3-S	SCD-M3-A	SCD-M5-S	SCD-M5-A	SCD-M5-S-F	SCD-M5-A-F
Working fluid	Compressed air					
Max. working pressure MPa	0.7					
Min. working pressure MPa	0.1					
Withstanding pressure MPa	1.05					
Fluid temperature °C	5 to 60 (no freezing Note 1)					
Ambient temperature °C	0 to 60 (no freezing)					
Port size	M3 × 0.5			M5 × 0.8		
Applicable cylinder bore size mm	ø4 to ø8			ø6 to ø25		
Number of needle turn	10				14	
Product weight g	3.1	3.9	10	11.7	10.8	12.5
Control flow ℓ/min. (ANR)	13		37		6.7	
Effective sectional area mm ²	0.2		0.55		0.1	

Note 1: Freezing could occur by adiabatic expansion depending on air quality (dew point).

Note 2: Flow rate is the atmospheric pressure conversion value at pressure 0.5MPa.

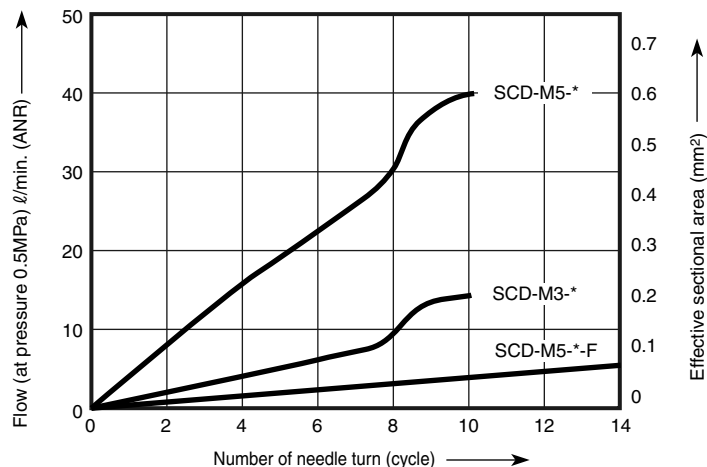
How to order



Symbol	Descriptions
A Port size	
M3	M3 × 0.5
M5	M5 × 0.8
B Shape	
S	Straight
A	Adjustable
C Flow characteristics	
Blank	Standard type
F	Fine speed type (only M5)

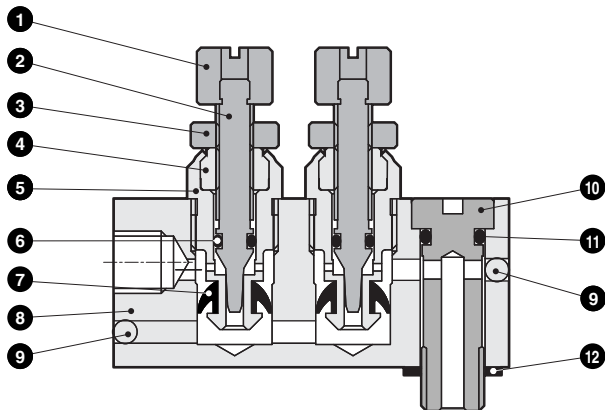
Note 1: For fine speed type, outside of lock nut is painted with blue.

Flow characteristics



Internal structure and parts list

● Adjustable type



No.	Parts name	Material
1	Knob	Aluminum alloy
2	Needle	Stainless steel
3	Lock nut	Aluminum alloy
4	Needle guide	Aluminum alloy (Stainless steel for fine speed type)
5	Check bracket	Aluminum alloy
6	O ring	Nitrile rubber
7	Packing seal	Hydrogen nitrile rubber
8	Body	Aluminum alloy
9	Steel ball	Stainless steel
10	Bolt	Brass
11	O ring	Nitrile rubber
12	Gasket	Steel + nitrile rubber

Note 1: For outside of handle, one side is painted with black.
(For adjustable type, black indicates meter in side)

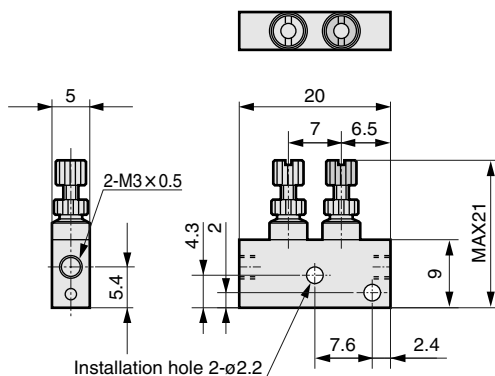
Note 2: Same materials are used for straight type (without ⑩ ⑪ ⑫).

Note 3: Brass parts are plated with electroless nickeling.

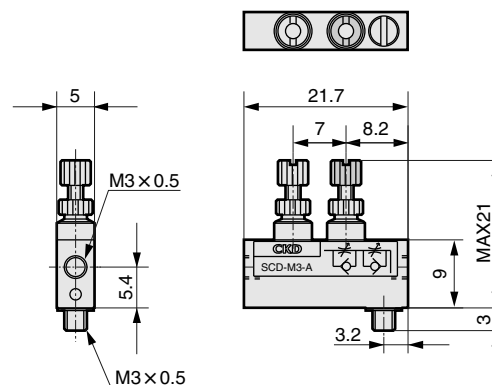
Dimensions



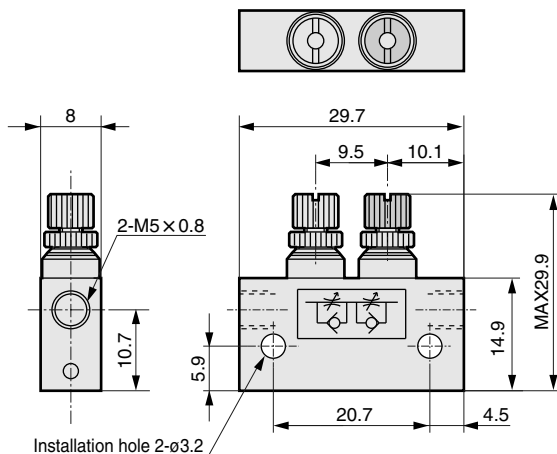
● SCD-M3-S (straight)



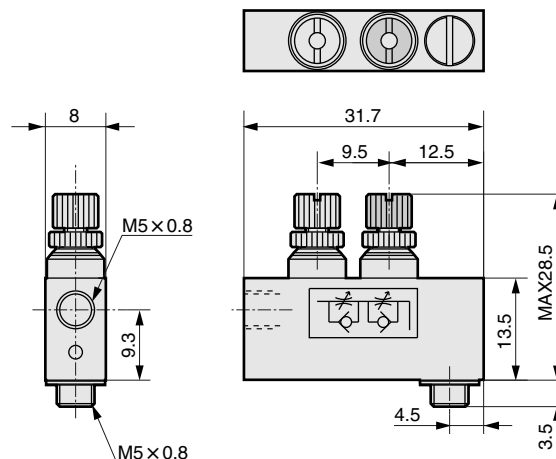
● SCD-M3-A (adjustable)



● SCD-M5-S (straight)



● SCD-M5-A (adjustable)



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 / 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

Miniature in-out type
Speed control valve

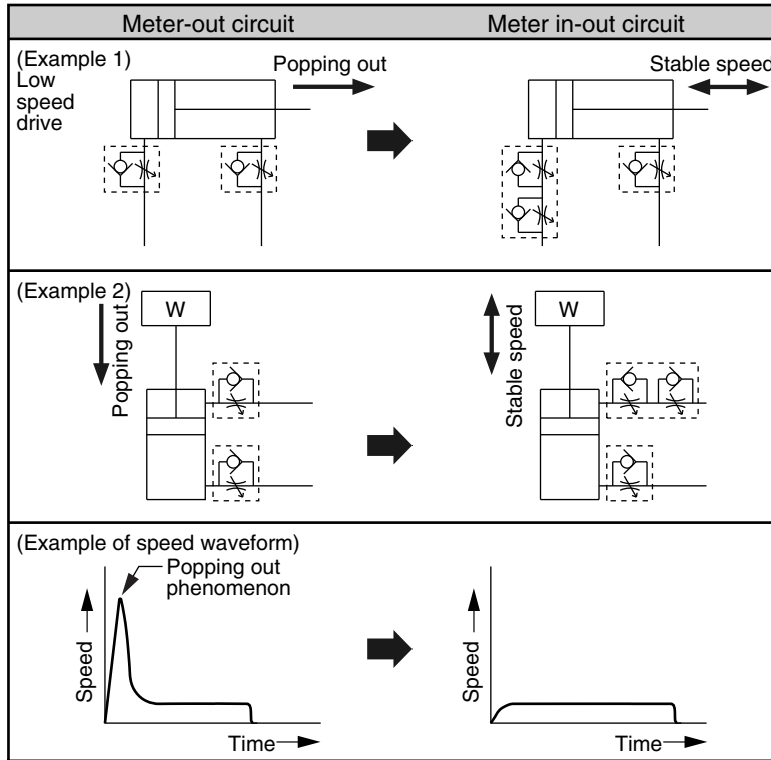
Applications

1 Speed is stabilized by controlling with an in-out speed control valve.

[E.g. 1] In low-speed control with a single rod air cylinder, the cylinder pops out immediately after the PUSH side operates if a meter-out circuit is used.

[E.g. 2] At vertical installation, the cylinder pops out immediately after operation because of the load's weight.

Speed is stabilized by using a meter in-out circuit.



(Cause of popping out)

When using the meter-out circuit, flow on the exhaust side is restricted, so both sides reach the same pressure immediately after the valve is switched. The thrust equivalent to the difference in the piston's pressurized area or the thrust equivalent to the load's weight causes popping out.

When the piston moves, exhaust pressure rises, speed decelerates, and the set speed is reached.

If popping out is caused by this phenomenon, fluctuation in sudden thrust is suppressed by restricting the flow on the supply side, and popping out is resolved.

2 Hazards can be prevented by suppressing popping out at beginning of movement after residual pressure is released.

3 Reciprocating speed control is possible with a single acting cylinder.

4 The flow rate of the air operated valve and drip prevention valve can be finely adjusted.