




Value in () is for low speed or fine speed type.

- 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 conf. 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

Model / appearance	Model no.	Port size (Rc or R)														Applicable tube O.D.						Effective sectional area (mm ²)		Flow (ℓ/min.) ANR 0.5MPa		Applicable cylinder bore size (mm)	Page																						
		M3	M5	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	ø1.8	ø3.2	ø4	ø6	ø8	ø10	ø12	Free flow	Controlled flow	Free flow	Controlled flow																										
	● Line type with push-in joint	SCL2-04-H22														●																						-0.2	-0.15	-13	-10	ø4 to ø25	860						
	SCL2-04-H42																●	●																				-0.2	-0.15	-13	-10	ø4 to ø25							
	SCL2-04-H24																●	●																				-0.2	-0.15	-13	-10	ø4 to ø25							
	SCL2-04-H44																	●																					1.9	1.9 (0.2)	130	130 (13)		ø4 to ø25					
	SCL2-06-H66																		●																				4.5	4.5 (0.2)	300	130 (13)		ø6 to ø40					
	SCL2-08-H66																			●																			6	6	400	400		ø20 to ø50					
	SCL2-08-H88																				●																		8	8	550	550		ø20 to ø50					
	SCL2-10-H88																					●																		13.5	13.5	900		900	ø32 to ø75				
	SCL2-10-H1010																							●																	16.5	16.5		1100	1100	ø32 to ø75			
	SCL2-10-H1212																								●																18	18		1200	1200	ø32 to ø75			
	● In out / line type with push-in joint	SCD2-04-H22															●																								-	-0.15	-	-10	ø4 to ø25	860			
	SCD2-04-H42																	●	●																							-	-0.15	-	-10		ø4 to ø25		
	SCD2-04-H44																		●																							-	1.5 (0.2)	-	100 (13)		ø4 to ø25		
	SCD2-06-H66																			●																							-	3.7 (0.2)	-		250 (13)	ø6 to ø40	
	SCD2-08-H66																				●																						-	5	-		330	ø20 to ø50	
	SCD2-08-H88																					●																					-	6	-		400	ø20 to ø50	
	SCD2-10-H88																						●																				-	11	-		750	ø32 to ø75	
	SCD2-10-H1010																								●																		-	12.5	-		850	ø32 to ø75	
	SCD2-10-H1212																									●																	-	13	-		900	ø32 to ø75	
	● Needle valve	SCL2-N-04-H44-010																																										-	0.2	-	13	-	864
	SCL2-N-04-H44-050																																											-	0.7	-	50	-	
	SCL2-N-06-H66-010																																											-	0.2	-	13	-	
	SCL2-N-06-H66-050																																											-	0.7	-	50	-	
	SCL2-N-06-H66-150																																										-	2.2	-	150	-		
	SCL2-N-08-H66-300																																										-	4.5	-	300	-		
	SCL2-N-08-H88-300																																									-	4.5	-	300	-			



Pneumatic components (speed control valve)

Safety precautions

Always read this section before starting use.

Refer to Intro 67 for general precautions, and to " ⚠ Safety precautions" in this section for details on each series.

Design & Selection

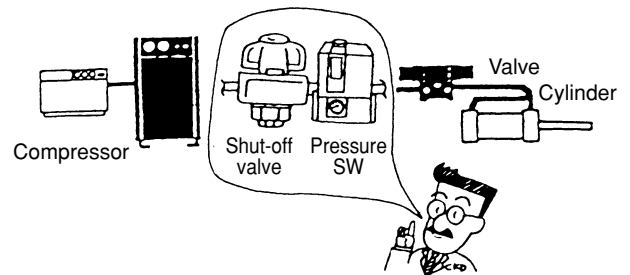
⚠ WARNING

- Do not constantly push down or apply a load onto the push-ring for the push-in joint.
 - The tube may lose its ability to hold.
 - When transporting an assembled product, avoid positions which constantly press down on the push ring.

⚠ CAUTION

- Use this product in accordance with the specifications range. Consult with CKD when using the product for special applications.
 - Use with exceeding the specifications range may result in insufficient performance, and safety can not be secured.
 - This product could not use in special applications and environment. For example, use for special applications including nuclear energy, railway, aircraft, marine vessel, vehicle, medical equipment, equipment, or applications coming into contact with beverage or food, amusement equipment, emergency shutoff circuits, press machine, brake circuits, or for safeguard.
- Confirm that the product will withstand the working environment.
 - This product cannot be used in environments where functional obstacles could occur. Such environments include high temperatures, a chemical atmosphere, or where chemicals, vibration, moisture, water drip, or gas are present; or where ozone is generated.
 - Do not use the product in the place that the product could directly contact with coolant or spatter, etc.
- Understand compressed air features before designing a pneumatic circuit.
 - The same functions as mechanical, hydraulic, and electrical methods cannot be anticipated if instantaneous service interruption and holding are required during an emergency stop.
 - Pop-out, air discharge, or leakage due to air compression and expansion could occur.
- This valve can not be used as a stop valve that has no leakage. Slight leakage is allowed in product specifications.

- Install a "pressure switch" and "shut-off valve" on the device's compressed air supply side.
 - The pressure switch will disable operation until set pressure is reached. The shut-off valve will exhaust compressed air in the pneumatic pressure circuit, and will prevent accidents caused by operation of pneumatic components by residual pressure.



- Confirm that PTFE can be used. The sealant contains PTFE (polytetrafluoroethylene resin) powder. Check that this poses no problem during use.
- Indicate the maintenance conditions in the device's instruction manual.
 - The product's function can drop markedly with working status, working environment, and maintenance, and can prevent safety from being attained. With correct maintenance, the product functions can be used to the fullest.
- Consult with CKD if ozone could occur in supplied air. (Ozone proof products are available.)
- Rubber parts deteriorate and life is shortened if ultra dry air is used.

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

Speed control valve

Installation & Adjustment

Piping

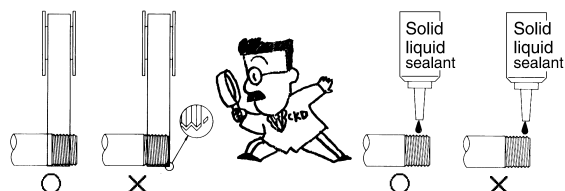
CAUTION

■ Do not remove the package or seal cap on the piping port until just before piping the product.

- If the piping port cap is removed from the piping port before piping work is started, foreign matter could enter the pneumatic component from the piping port and result in faults or faulty operation.

■ When connecting pipes, wrap sealing tape in the opposite direction from threads starting 2 mm inside from the end of piping threads.

- If sealing tape protrudes from pipe threads, it could be cut when screwed in. This could cause the tape to enter the pneumatic components and lead to faults.



■ M3 and M5 screws are sealed with the gasket.

■ Handling push-in joints and tubes

- Refer to Cautions of joint and tube, and "Safety Precautions" (pages 918 to 921) for handling push-in joints and tubes.

■ Always flush just before piping pneumatic component.

- Any foreign matter that has entered during piping must be removed so it does not enter the pneumatic component.

■ When supplying compressed air for the first time after connecting pipes, do not apply high pressure suddenly.

- Piping connection could be dislocated or the piping tube fly off, leading to accidents.

■ After connecting piping, check pipe connections for air leaks before supplying compressed air.

- Apply a leakage detection agent on pipe connections with a brush, and check for air leaks.

■ Apply recommended tightening torque when connecting pipes.

- To prevent air leakage and screw damage.
- First tighten the screw by hand to prevent threads are not damaged, then use a tool.
- Do not tighten while pressure is applied.



(Recommended tightening torque)

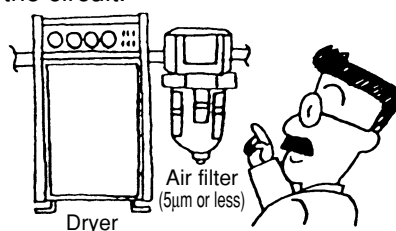
Port thread	Tightening torque N·m
M3	0.3 to 0.6
M5	1.0 to 1.5
Rc1/8	3 to 5
Rc1/4	6 to 8
Rc3/8	13 to 15
Rc1/2	16 to 18
Rc3/4	19 to 40
Rc1	41 to 70

■ Connect piping so that connections are not dislocated by system movement, vibration, or tension, etc.

- Control of actuator speed will be disabled if piping on the exhaust side of the pneumatic circuit is disengaged.
- When using the chuck holding mechanism, the chuck will be released creating a hazardous state.

■ Ensure spaces around the pneumatic component for installation, removal, wiring, and piping work.

■ Install an air filter just before the pneumatic component in the circuit.



■ Check that lock nuts are not loose.

- Actuator speed cannot be controlled if the lock nut is loose.

■ Check the needle valve speed of rotation.

- The needle valve has dislocation prevention that could break if the needle is turned too far. Check the number of turns for the product used.

■ Confirm the flow direction.

- If the product is installed in reverse, speed adjustment will not function and the actuator pop out, posing hazards.

■ Fully close the needle, and open to adjust speed.

- If the needle is opened, the actuator could pop out suddenly and pose a hazard. Open the needle after confirming that it is fully closed.
- The needle closes when turned to the right and opens when turned to the left.

Speed control valve

- Avoid use in applications involving continuous turning or swaying.
 - Joints could be damaged.

- Avoid using this product in places with high vibration or impact.

During Use & Maintenance

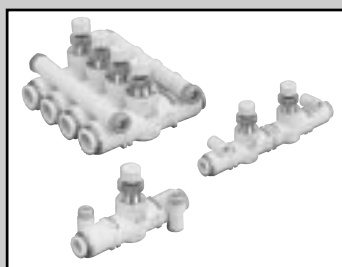
WARNING

- Stop air flow and confirm that there is no residual pressure before replacing the tube.

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

Speed control valve

Speed control valve Line type with push-in joint



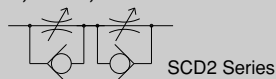
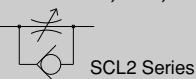
SCL2 Series

In – out speed control valve Line type with push-in joint

SCD2 Series

● Port size: $\varnothing 1.8, \varnothing 4, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 12$

JIS symbol



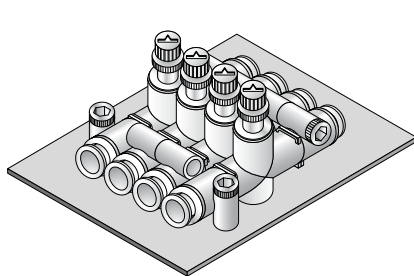
Overview

- The SCL2 Series is an inline speed control valve useful for remote or central actuator control.
- The SCD2 Series is an integrated metering in-out speed control valve that controls both air intake and exhaust flow. Depending on the circuit, the actuator can be prevented from popping out, speed can be stabilized, and reciprocating single-acting cylinder speed can be controlled.

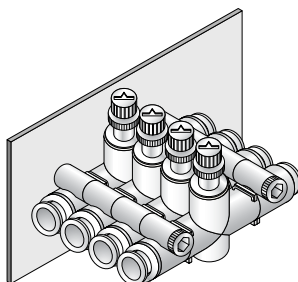
Features

Random installation attitude

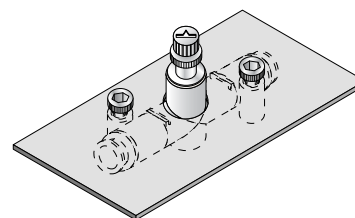
The installation area rotates by 360°, enabling installation and the installation method to be from base, side, or panel.
An installation bracket is not required.



Example of base installation



Example of wall surface installation



Example of panel mount

Wide range of choices

Fiber tubing specifications and large bore types have been added to the diverse lineup, expanding the size of applicable tubing to $\varnothing 1.8$ to $\varnothing 12$ diameter.

Large flow rate with compact type

The large flow rate achieved even with a compact body extends the selection range for cylinder size and speed control.

Fine speed type available

Low and fine speed and small bore size are easily controlled.

Quick connection

Push-in joints simplify tubing connection.

Standard ozone-resistant materials

Ozone-resistant materials are used as standard for check packing to prevent deterioration.

Standard flame-resistant resin: UL94 Standard V-O or equivalent

Refer to page 867 for SCL2/SCD2 Safety Precautions.

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

Specifications

● Speed control valve line type SCL2

Model no.	SCL2-04			SCL2-06	SCL2-08		SCL2-10			
Applicable tube outer diameter mm	ø1.8	ø1.8/ø4	ø4	ø6	ø6	ø8	ø8	ø10	ø12	
Working fluid	Compressed air									
Max. working pressure MPa	0.7			1.0						
Min. working pressure MPa	0.1									
Withstanding pressure MPa	1.05			1.5						
Fluid temperature °C	5 to 60 (no freezing Note 3)									
Ambient temperature °C	0 to 60 (no freezing)									
Product weight g	13	12	11.5	16	32	33	53	57	59	
Number of needle turn	12 [15]									
Free flow	Flow ℓ/min. (ANR)	[13]		130	300	400	550	900	1100	1200
	Effective sectional area mm ²	[0.2]		1.9	4.5	6	8	13.5	16.5	18
Controlled flow	Flow ℓ/min. (ANR)	[10]		130 [13]	300 [13]	400	550	900	1100	1200
	Effective sectional area mm ²	[0.15]		1.9 [0.2]	4.5 [0.2]	6	8	13.5	16.5	18

● In out speed control valve line type SCD2

Model no.	SCD2-04			SCD2-06	SCD2-08		SCD2-10		
Applicable tube outer diameter mm	ø1.8	ø1.8/ø4	ø4	ø6	ø6	ø8	ø8	ø10	ø12
Working fluid	Compressed air								
Max. working pressure MPa	0.7			1.0					
Min. working pressure MPa	0.1								
Withstanding pressure MPa	1.05			1.5					
Fluid temperature °C	5 to 60 (no freezing Note 3)								
Ambient temperature °C	0 to 60 (no freezing)								
Product weight g	23	22	21.5	29	63	64	108	112	114
Number of needle turn	12 [15]								
Flow ℓ/min. (ANR)	[10]	[10]	100 [13]	250 [13]	330	400	750	850	900
Effective sectional area mm ²	[0.15]	[0.15]	1.5 [0.2]	3.7 [0.2]	5	6	11	12.5	13

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

Note 2: Value in () is for fine speed type.

Note 3: Freezing could occur by adiabatic expansion depending on air quality (dew point).

Clean room specifications (catalog No. CB-033SA)

● Dust generation preventing structure for use in cleanrooms

SCL2—.....— P7*

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

Line type with push-in joint
Speed control valve

How to order

- Speed control valve line type

SCL2 - 04 - H44 - ○

- In out speed control valve line type

SCD2 - 04 - H44 - ○

Model no.

A Body size

B Applicable tube outer diameter

See the table at right for body size, applicable tube outer diameter, and flow characteristic combinations.

Note on model no. selection

Note 1: H24 cannot be used with SCD2. Use H42.

Note 2: There is no push-in joint compatible with Item **B** Applicable tube outer diameter 1.8. Refer to page 994 for line types with 1.8 diameter push-in joints.

C Flow characteristics

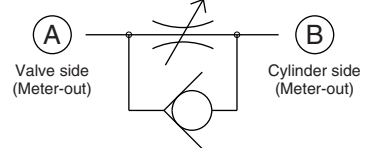
Symbol	Descriptions
A Body size	
04	M5 screw or equivalent
06	1/8 screw or equivalent
08	1/4 screw or equivalent
10	3/8 screw or equivalent
B Applicable tube outer diameter	
H22	ø1.8
H42	A side: ø4 B side: ø1.8
H24 (Note1)	A side: ø1.8 B side: ø4
H44	ø4
H66	ø6
H88	ø8
H1010	ø10
H1212	ø12
C Flow characteristics	
Blank	Standard type
F	Fine speed type

Combination of body size, applicable tube outer diameter and flow characteristics

		A Body size			
		04	06	08	10
B Applicable tube outer diameter	H22	ø1.8	○		
	H42	ø4/ø1.8	○		
	H24 (Note1)	ø1.8/ø4	○		
	H44	ø4	●○		
	H66	ø6		●○	●
	H88	ø8			●●
	H1010	ø10			●
	H1212	ø12			●

- Flow characteristics "Standard type"
- Flow characteristics "Fine speed type"
- not available

● Explanatory drawing of applicable tube outer diameter combinations (Only H24/H42)

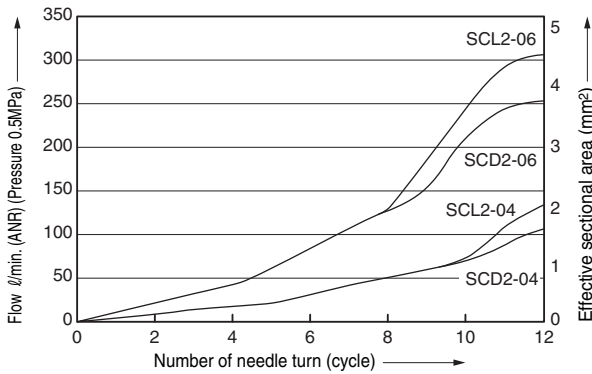


Free flow direction →
Controlled flow direction ←

Flow characteristics

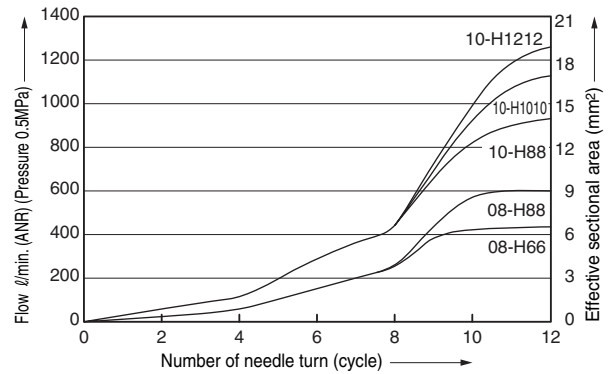
- Standard type

SCL2-04, SCL2-06, SCD2-04, SCD2-06



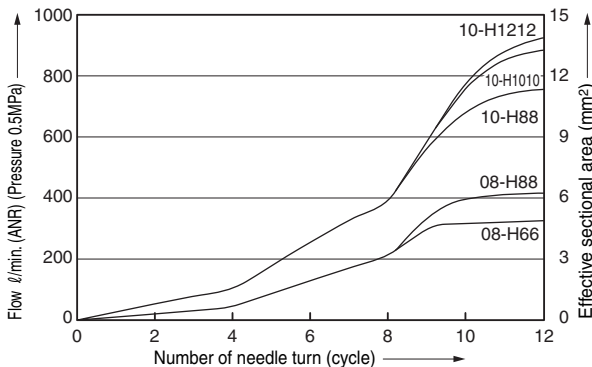
- Standard type

SCL2-08, SCL2-10

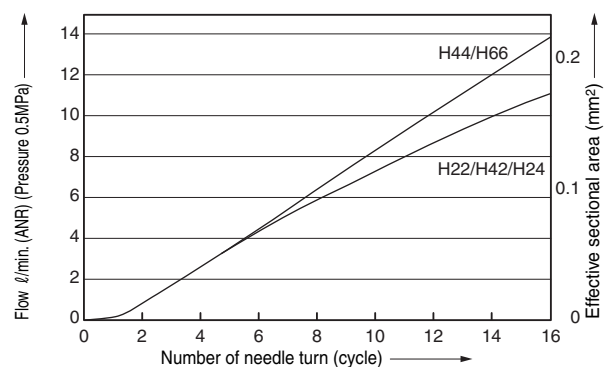


- Standard type

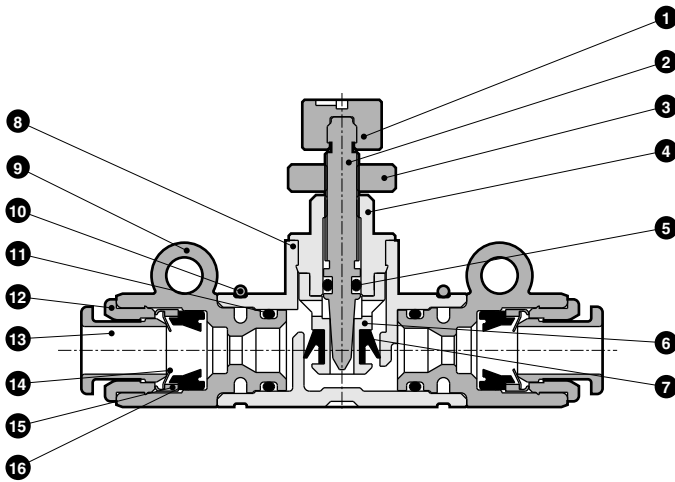
SCD2-08, SCD2-10



- Fine speed type



Internal structure and parts list



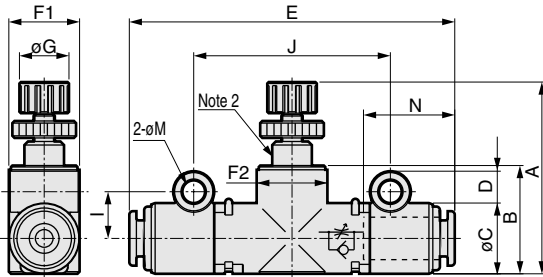
No.	Parts name	Material
1	Knob	PBT
2	Needle	Brass
3	Lock nut	Brass
4	Guide ring	Brass
5	O ring	Nitrile rubber
6	Check bracket	Brass
7	Check packing seal	Hydrogen nitrile rubber
8	Body	PBT
9	Joint case	PBT
10	Stopper ring	Stainless steel
11	O ring	Nitrile rubber
12	Outer ring	Brass
13	Push ring	PBT
14	Chuck	Stainless steel
15	Holder	Brass
16	Packing seal	Nitrile rubber

*1 All the brass parts are plated with electroless nickeling
 *2 All resin parts are flame resistance. (equivalent to UL94 standards V-0)
 Excluding applicable tube outer diameter ø1.8.

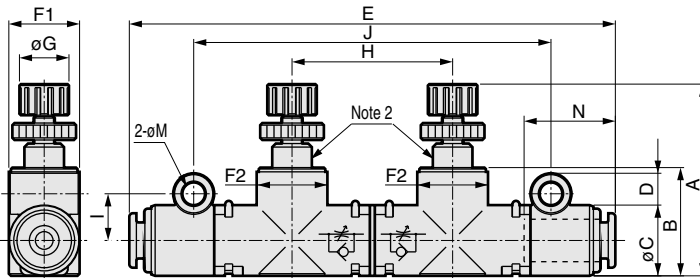
Dimensions



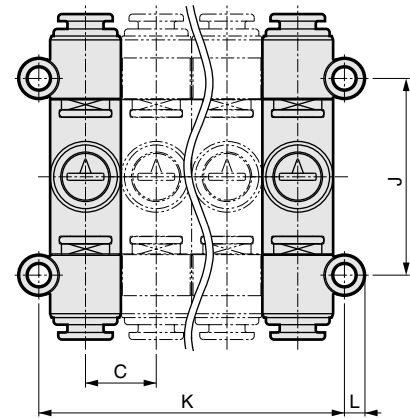
● SCL2 Series



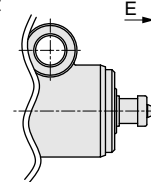
● SCD2 Series



● Installation spacing dimensions for manifolds



● Outline drawing of outer tubing connection diameter 1.8 joint

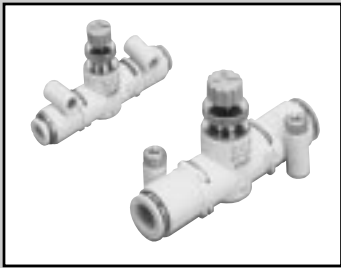


Model no.	Piping tube outer diameter	A		B	C	D	E	F1	F2	G	H	I	J	K	L	M (Installation hole diameter)	N (Tube insertion length)														
		MIN	MAX																												
SCL2-04-H22 Note1	ø1.8	27.1	31.6	15.3	10	4.5	50.8	10	10.6	7	-	6.6	27.8	10 × n + 3.2	2.9	3.3	-														
SCL2-04-H42 Note1	ø4/ø1.8						48.4										12.9/-														
SCL2-04-H24 Note1	ø1.8/ø4						48.4										-/12.9														
SCL2-04-H44	ø4						46										12.9														
SCL2-06-H66	ø6	28.8	33.3	17.7	12	5.6	49.4	12	12.2	7	-	8.1	30.8	12 × n + 4.2	3.5	4.3	13.7														
SCL2-08-H66	ø6						64										18														
SCL2-08-H88	ø8						38										44.5	22.9	15	5.6	66.5	15	15.5	11	-	9.5	41	15 × n + 4	19		
SCL2-10-H88	ø8						71										19														
SCL2-10-H1010	ø10	44	50.5	29.7	20	5.1	75	20	20.5	11	-	11.5	47	20 × n + 3	3.6	4.3	21														
SCL2-10-H1212	ø12						20.4										4.9	79	20.4 × n + 3	22											
SCD2-04-H22 Note1	ø1.8						27.1										31.6	15.3	10	4.5	73.5	10	10.6	7	22.7	6.6	50.5	10 × n + 3.2	2.9	3.3	-
SCD2-04-H42 Note1	ø4/ø1.8																				71.1										12.9/-
SCD2-04-H44	ø4	68.7	12.9																												
SCD2-06-H66	ø6	28.8	33.3	17.7	12	5.6		73.9	12	12.2	7	24.5	8.1	55.3	12 × n + 4.2	3.5					4.3										13.7
SCD2-08-H66	ø6	38	44.5	22.9	15	5.6	97.5	15	15.5	11	34	9.5	75	15 × n + 4	3.6	4.3	18														
SCD2-08-H88	ø8						100										19														
SCD2-10-H88	ø8						111										19														
SCD2-10-H1010	ø10						44										50.5	29.7	20	5.1	115	20	20.5	11	40.5	11.5	87.5	20 × n + 3	3.6	4.3	21
SCD2-10-H1212	ø12	44	50.5	29.7	20.4	4.9	119	20	20.5	11	-	-	-	20.4 × n + 3	3.6	4.3	22														

Note 1: Connection tubing is a joint dedicated to fiber tubing.
 Note 2: There is a slit at this location on the fine speed type.
 Note 3: F1 and F2 dimensions are oval.

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
 Line type with push-in joint
 Speed control valve

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



Needle valve Line type with push-in joint

SCL2-N Series

● Port size: $\varnothing 4$, $\varnothing 6$, $\varnothing 8$

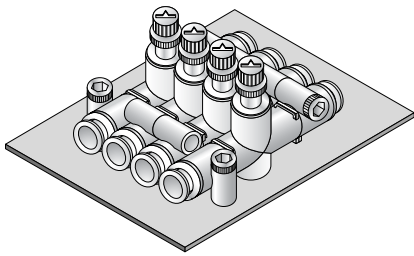
JIS symbol



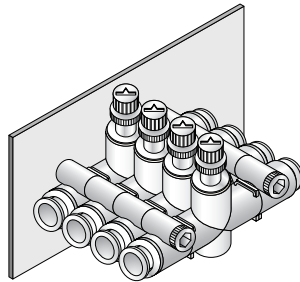
Features

Random installation attitude

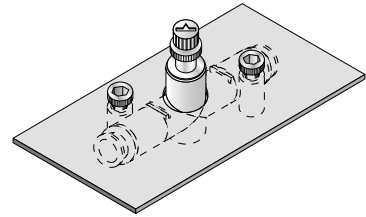
The installation area rotates by 360°, enabling installation and the installation method to be from base, side, or panel. An installation bracket is not required.



Example of base installation



Example of wall surface installation



Example of panel mount

Low-evaporation grease

This series is suitable for oil-sensitive environments and systems. This product is also compatible with oil-free clean packaging "oil-prohibited specifications."

Linear flow characteristics

A flat dedicated needle for flow adjustment is used.

Specifiable flow size

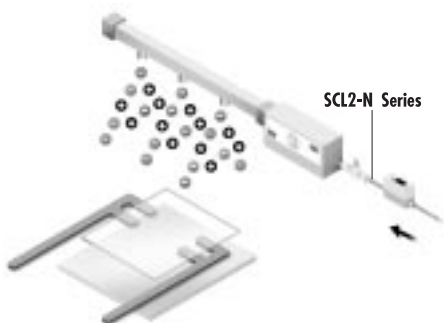
The flow size has been simplified with four stages - 13, 50, 150, and 300 l/min. at 0.5 MPa - to enable detailed flow adjustment.

Quick connection

Push-in joints simplify tubing connection.

Standard flame-resistant resin: UL94 Standard V-O or equivalent

■ SCL2-N Series applications



- Flow characteristics of ionizer purge gas
- Air blow in clean room
- N2 purge circuit
- Adjustment of work unloading blow rate for disk former
- Flow control at tension control

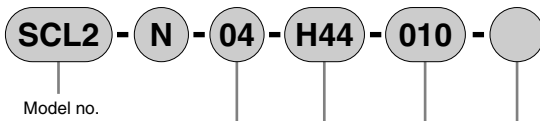
Specifications

Model no.	SCL2-N-04	SCL2-N-06	SCL2-N-08
Applicable tube outer diameter mm	ø4	ø6	ø6 or ø8
Working fluid	Compressed air / N2 gas		
Max. working pressure MPa	1.0		
Negative pressure kPa	-100		
Withstanding pressure MPa	1.5		
Fluid temperature °C	5 to 60 (no freezing Note)		
Ambient temperature °C	0 to 60 (no freezing)		
Product weight g	11.5	16	32
Number of needle turn	12 (flow type: 010 is 15 rotations)		

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

How to order

● Needle valve line type



See the table at right for the body size, applicable tube outer diameter, and flow type combinations

Symbol	Descriptions
A Body size	
04	M5 screw or equivalent
06	1/8 screw or equivalent
08	1/4 screw or equivalent
B Applicable tube outer diameter	
H44	ø4
H66	ø6
H88	ø8
C Flow type	
010	Refer to flow characteristics graph and specifications
050	
150	
300	
D Option	
Blank	Standard specifications
P80	Oil-prohibited specifications

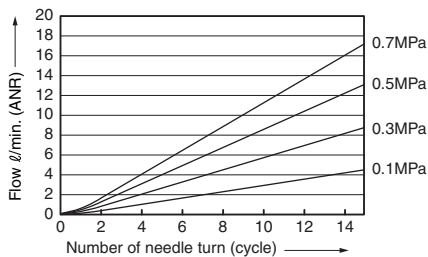
Combination of body size, applicable tube outer diameter, and flow type

		A Body size B Applicable tube outer diameter			
		04-H44	06-H66	08-H66	08-H88
C Flow type	010	●	●		
	050	●	●		
	150		●		
	300			●	●

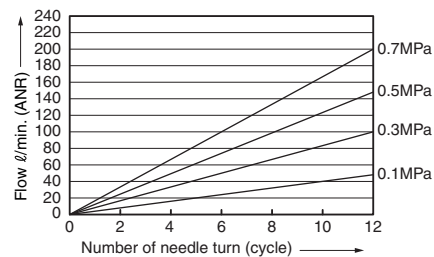
■ not available.

Flow characteristics

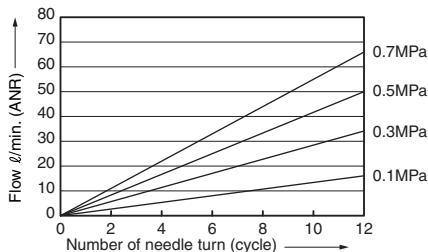
● Flow type "010"



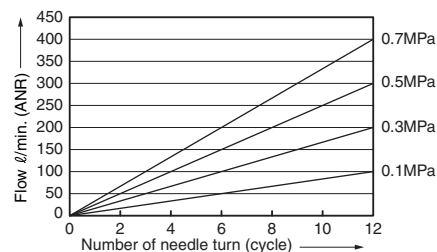
● Flow type "150"



● Flow type "050"



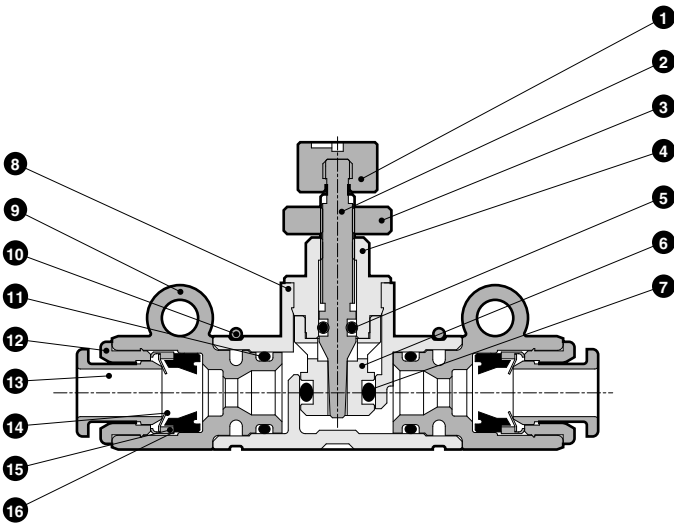
● Flow type "300"



- 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

Needle valve, line type with push-in joint
Speed control valve

Internal structure and parts list



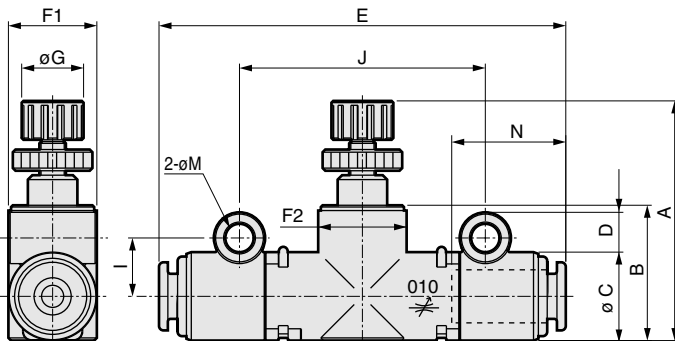
No.	Parts name	Material
1	Knob	PBT
2	Needle	Brass
3	Lock nut	Brass
4	Guide ring	Brass
5	O ring	Nitrile rubber
6	Check bracket	Brass
7	O ring	Nitrile rubber
8	Body	PBT
9	Joint case	PBT
10	Stopper ring	Stainless steel
11	O ring	Nitrile rubber
12	Outer ring	Brass
13	Push ring	PBT
14	Chuck	Stainless steel
15	Holder	Brass
16	Packing seal	Nitrile rubber (Hydrogen nitrile rubber) *2

*1 All the brass parts are plated with electroless nickeling
 *2 Materials in parentheses apply for P80.

Dimensions



● SCL2-N Series



Model no.	Piping tube outer diameter	A		B	C	D	E	F1	F2	G	I	J	K	L	M (Installation hole diameter)	N (Tube insertion length)
		MIN	MAX													
SCL2-N-04-H44	ø4	27.1	31.6	15.3	10	4.5	46	10	10.6	7	6.6	27.8	10×n+3.2	2.9	4.3	12.9
SCL2-N-06-H66	ø6	28.8	33.3	17.7	12	5.6	49.4	12	12.2	7	8.1	30.8	12×n+4.2	3.5		13.7
SCL2-N-08-H66	ø6	38	44.5	22.9	15	5.6	64	15	15.5	11	9.5	41	15×n+4	3.8		18
SCL2-N-08-H88	ø8						66.5								19	

Note: F1 and F2 dimensions are oval.

* The speed control valve is identified by dial color.
 Speed control valve Knob "white"
 Needle valve Knob "gray"

* The joint push ring is blue for option P80 (oil-prohibited specifications).

Design & Selection

⚠ CAUTION

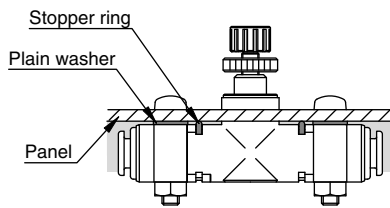
- Do not use this valve in circuits where ozone is generated intentionally. Ozone resistance is sufficient for naturally generated ambient ozone. Packing deteriorates if ozone levels are high.

- This valve can not be used as a stop valve that has no leakage. Slight leakage is allowed in product specifications.
- Not all of the needle valve's resin parts are flame-resistant.
- The flow path in the needle valve is not completely free of dust generation. A final clean filter should be used in circuits where dust generation could be a problem.

Installation & Adjustment

⚠ CAUTION

- Rotate the mounting hole section at no pressurized state.
- When installing on a panel, the stopper ring will interfere with the panel, so insert a flat washer between the mounting hole and panel.



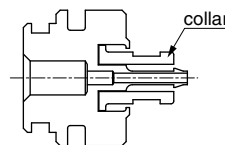
- Tighten bolts in mounting holes within the torque below.

Model no.	Tightening torque
SCL(D)2-04	0.5N·m
SCL(D)2-06/08/10	0.8N·m

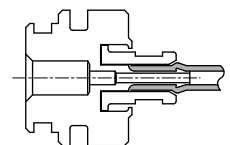
- Tubing could dislocate if the product sways or twists, so fix it with bolts or Insulock ties, etc., when piping.
- Do not turn the dial forcibly when fully closing or opening it (0.05 N·m or less). Do not use the lock nut to adjust the needle. Otherwise this could cause needle galling or damage.
- When the option "P80 (oil prohibited specifications)" is selected, the adjustment dial may not turn easily because the use of oil is prohibited.

- There is no direction for needle valve piping.
- Connect fiber tubing (1.8 diameter joint) as follows (1 to 5):

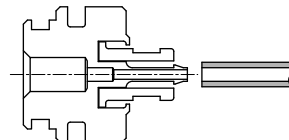
(1) Set the collar at the very back.



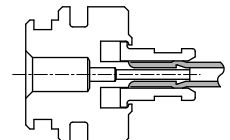
(4) Insert fiber tubing to the last position.



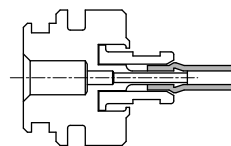
(2) Cut the end of fiber tubing at a right angle.



(5) Pull the collar forward to lock it.



(3) Pass the collar through, and confirm that the fiber tube is correctly inserted while carrying out the work.



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.
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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)

Needle valve, line type with push-in joint
Speed control valve

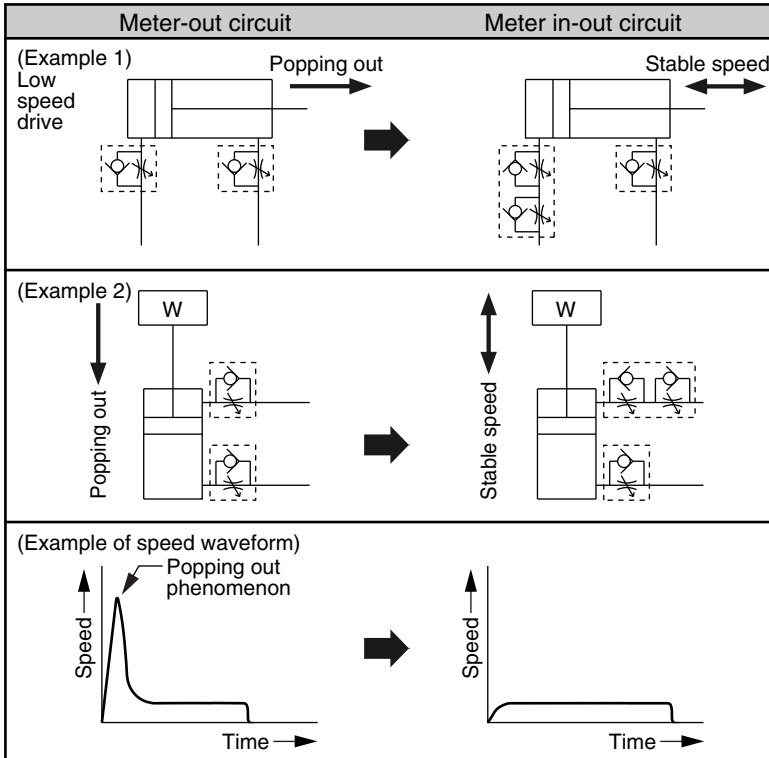
Example of in-out speed control valve

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.