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# KOGANEI

## ACCESSORIES GENERAL CATALOG

AIR TREATMENT, AUXILIARY, VACUUM,  
AND FLUORORESIN PRODUCTS

### SPEED CONTROLLERS WITH QUICK FITTINGS CONTENTS

SPEED CONTROLLERS WITH QUICK FITTINGS

Low Speed Control Type - SC / SSU Series	
Specifications (Low Speed Control Type)	393
Order Codes (Low Speed Control Type)	394
Dimensions (Low Speed Control Type)	395
Flow Rate Characteristics (Low Speed Control Type)	396
Free Type - SSF Series	
Specifications (Free Type)	397
Order Codes (Free Type)	398
Dimensions (Free Type)	399
Flow Rate Characteristics (Free Type)	400
Standard Type - SC / SS Series	
Mini Type	
Union Straight Type - SSU Series	
Large Flow Type - SCG Series	
Low Pressure Type	
Specifications (Standard Type, Mini Type, Union Straight Type, Large Flow Type, Low Pressure Type)	404
Order Codes, Size Table (Standard Type)	405
Order Codes, Size Table (Mini Type, Union Straight Type)	406
Order Codes, Size Table (Large Flow Type, Low Pressure Type)	407
Dimensions (Standard Type)	408
Dimensions (Mini Type)	410
Dimensions (Union Straight Type, Large Flow Type)	411
Dimensions (Low Pressure Type)	412
Flow Rate Characteristics (Standard Type)	414
Flow Rate Characteristics (Mini Type)	417
Flow Rate Characteristics (Union Straight Type)	419
Flow Rate Characteristics (Large Flow Type)	420
Flow Rate Characteristics (Low Pressure Type)	421
NCU Specification	423
Order Codes, Model Table	423
Safety Precautions, Handling Instructions and Precautions	425



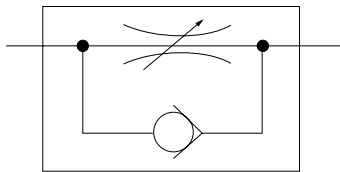
**Caution** Before use, be sure to read the "Safety Precautions" on p. 49.

# SPEED CONTROLLERS WITH QUICK FITTINGS

## Low Speed Control Type

- Speed controllers with quick fittings now available in new size of  $\phi$  1.8mm [0.071in.].
- More variation, with seven models available for  $\phi$  1.8mm [0.071 in.],  $\phi$  3mm [0.118in.], and  $\phi$  4mm [0.157in.] tubes.
- Offers best match for compact cylinders (Mini Guide Cylinders, Mini Bit Cylinders, etc.).

## Symbol



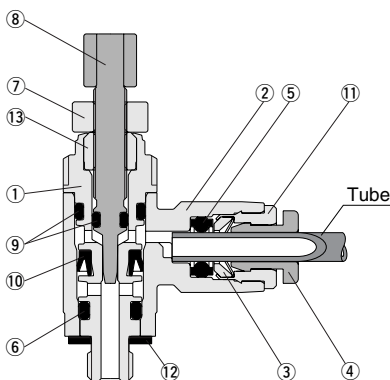
## Specifications

Item	Applicable tube size mm [in.]	$\phi$ 1.8 [0.071]	$\phi$ 3 [0.118]	$\phi$ 4 [0.157]
Media		Air (Can not be used in vacuum system)		
Operating pressure range		0 ~ 0.9MPa [0 ~ 131psi.]		
Cracking pressure		0.05MPa [7.3psi.]		
Operating temperature range		0 ~ 60°C [32 ~ 140°F]		
Recommended tube <sup>Note</sup>		Urethane tube		Urethane tube, soft nylon tube, nylon tube
Sales unit		1 pc.		

Remark: Supplied with a gasket (excluding **SSUC**□).

Note: Use tubes manufactured by Koganei. Be aware, however, that the conductive urethane tube **U2A-B** cannot be used.

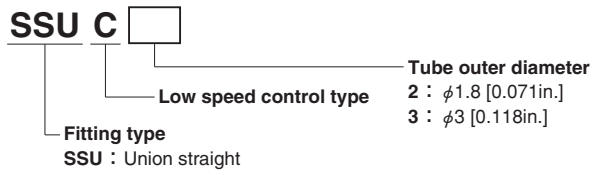
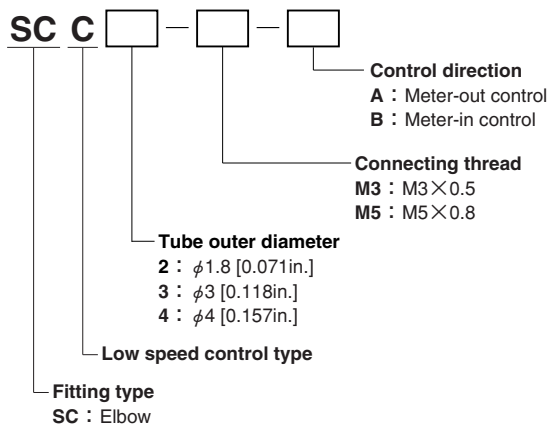
## Inner Construction and Major Parts



No.	Name	Material
①	Metal body	Stainless steel <sup>Note</sup>
②	Plastic body	Polybutylene terephthalate
③	Lock claw	Stainless steel
④	Release ring	Polyacetal
⑤	Elastic sleeve	Synthetic rubber (NBR)
⑥	O-ring	Synthetic rubber (NBR)
⑦	Lock nut	Stainless steel
⑧	Needle	Stainless steel
⑨	O-ring	Synthetic rubber (NBR)
⑩	Diaphragm	Synthetic rubber (H-NBR)
⑪	Guide ring	Brass (electroless nickel plated)
⑫	Gasket	Stainless steel and synthetic rubber (NBR)
⑬	Upper plug	Stainless steel

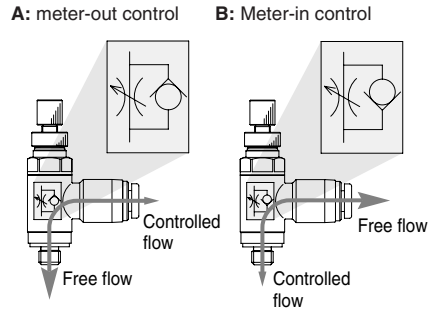
Note: The connecting screw **M5** and the union type **SSUC** are made of brass (electroless nickel plated).

## Order Codes

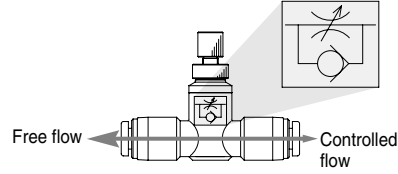


## Body Configuration and Control Direction

### ● Elbow type SCC



### ● Union Type SSUC



Remark: For the control direction, check the symbol on the main body.

### ● SCC Elbow



Tube size	Thread size	
	M3×0.5	M5×0.8
2	M3	M5
3	M3	M5
4	M3	— <sup>Note</sup>

### ● SSUC Union straight

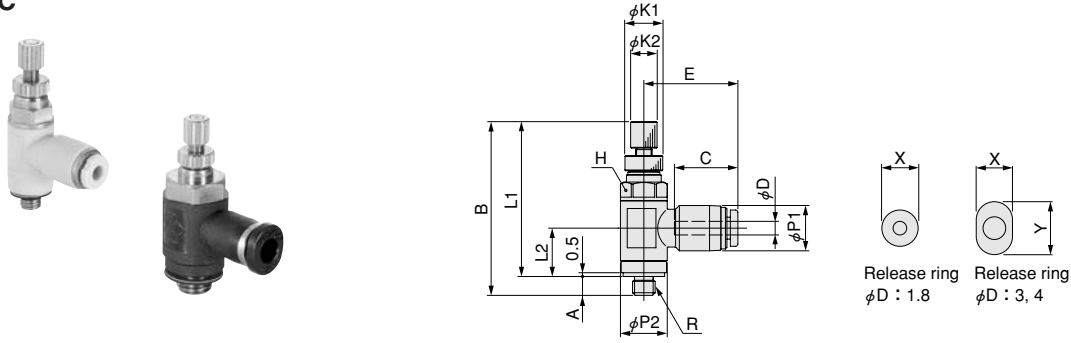


Tube size
2
3

Note: For tube sizes φ 4 [0.157in.] to φ 10 [0.394in.], see p.1540~1542 in the Actuators General Catalog.

# Dimensions mm [in.]

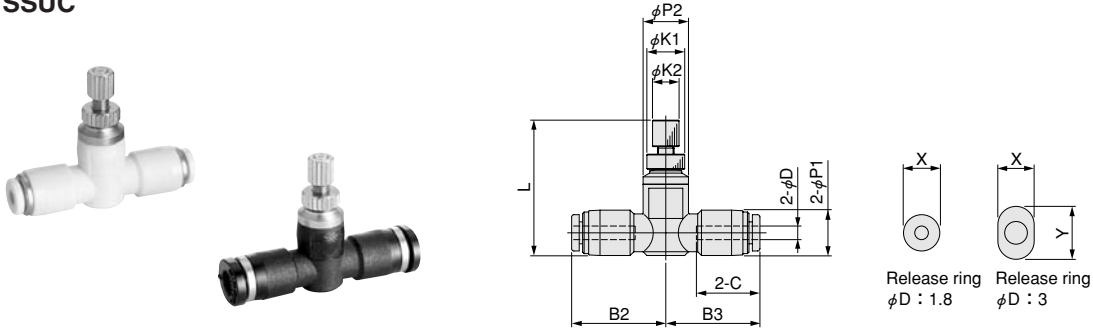
## ● Elbow SCC



Model	Tube diameter φ D	R	A	B		L1		L2	E	C	φ P1	φ P2	φ K1	φ K2	Width across flats H	X	Y	Mass (g) [oz.]
				MAX.	MIN.	MAX.	MIN.											
SCC2-M3-□	1.8 [0.071]	M3×0.5	2.5 [0.098]	25.7 [1.012]	23 [0.906]	23.2 [0.913]	20.5 [0.807]	6.4 [0.252]	12.5 [0.492]	8.4 [0.331]	6 [0.236]	6.2 [0.244]	5 [0.197]	3.5 [0.138]	5.5 [0.217]	4.8	—	2.7 [0.095]
SCC2-M5-□		M5×0.8	3 [0.118]	27.2 [1.071]	24.5 [0.965]	24.2 [0.953]	21.5 [0.846]	7.2 [0.283]	13.5 [0.531]									
SCC3-M3-□	3 [0.118]	M3×0.5	2.5 [0.098]	25.7 [1.012]	23 [0.906]	23.2 [0.913]	20.5 [0.807]	6.4 [0.252]	13 [0.512]	9.3 [0.366]	6 [0.236]	6.2 [0.244]	5 [0.197]	3.5 [0.138]	5.5 [0.217]	6	7	2.7 [0.095]
SCC3-M5-□		M5×0.8	3 [0.118]	27.2 [1.071]	24.5 [0.965]	24.2 [0.953]	21.5 [0.846]	7.2 [0.283]	14 [0.551]									
SCC4-M3-□	4 [0.157]	M3×0.5	2.5 [0.098]	25.7 [1.012]	23 [0.906]	23.2 [0.913]	20.5 [0.807]	6 [0.236]	14.7 [0.579]	11 [0.433]	8 [0.315]	6.2 [0.244]	5 [0.197]	3.5 [0.138]	5.5 [0.217]	7.8	9.8	3.1 [0.109]

Note: In the blank box □ shown at the end of the model code, enter **A** for meter-out control or **B** for meter-in control.

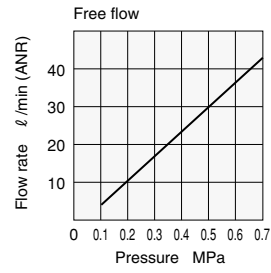
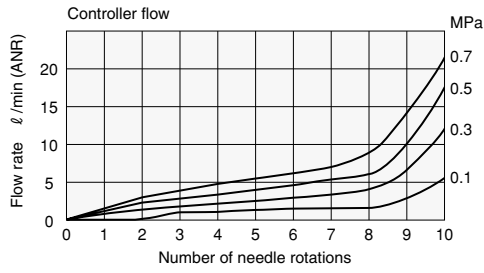
## ● Union SSUC



Model	Tube diameter φ D	L		B2	B3	C	φ P1	φ P2	φ K1	φ K2	X	Y	Mass (g) [oz.]
		MAX.	MIN.										
SSUC2	1.8 [0.071]	20.6 [0.811]	17.9 [0.705]	12.5 [0.492]	12.5 [0.492]	8.4 [0.331]	6 [0.236]	6 [0.236]	5 [0.197]	3.5 [0.138]	4.8 [0.189]	—	2.8 [0.099]
SSUC3	3 [0.118]	20.6 [0.811]	17.9 [0.705]	13 [0.512]	13 [0.512]	9.3 [0.366]							

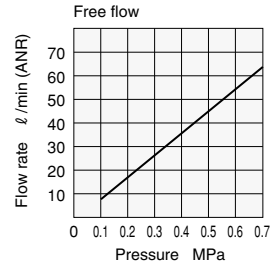
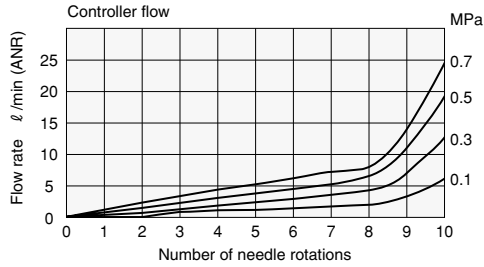
# Flow Rate Characteristics

## SCC2-M3-□



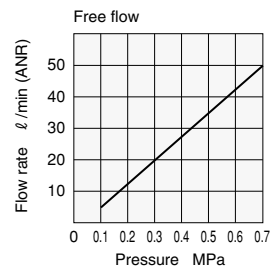
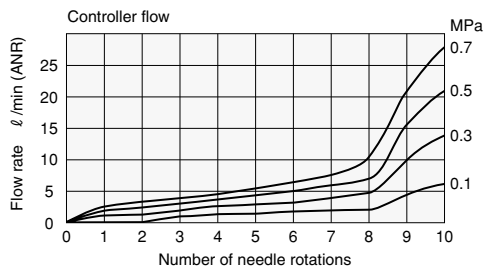
1 MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

## SCC2-M5-□



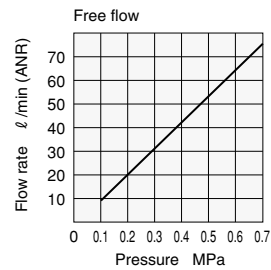
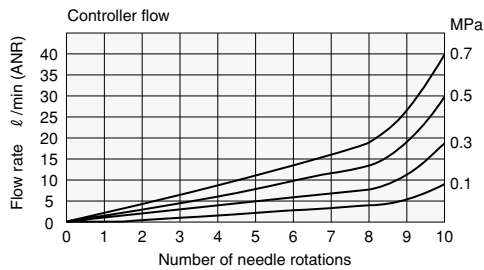
1 MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

## SCC3-M3-□



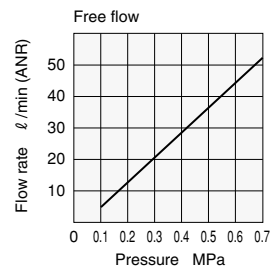
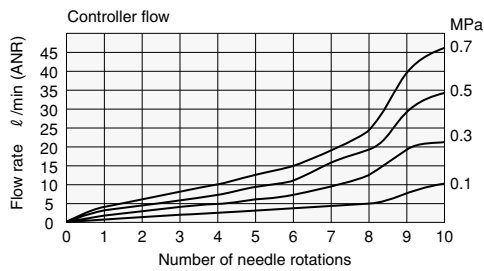
1 MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

## SCC3-M5-□



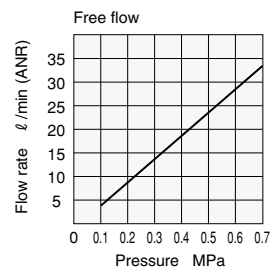
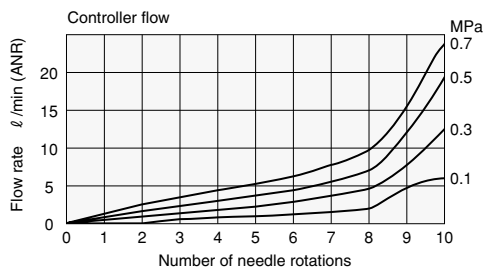
1 MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

## SCC4-M3-□



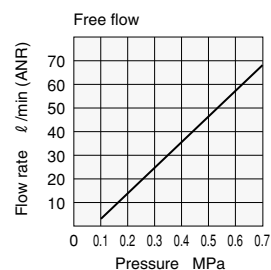
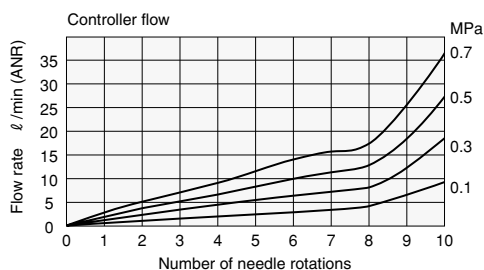
1 MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

## SSUC2



1 MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

## SSUC3

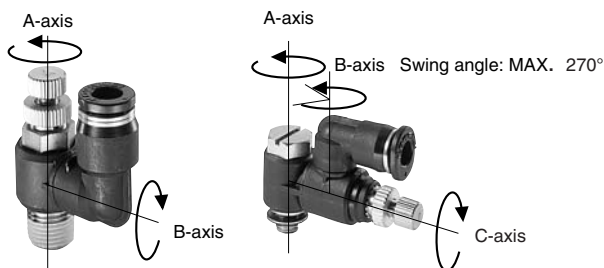


1 MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

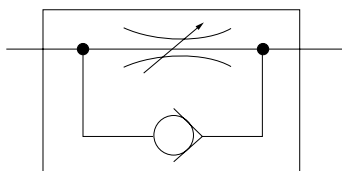
# SPEED CONTROLLERS WITH QUICK FITTINGS

Free Type, Horizontal Free Type, Free Type for Low Pressure, Horizontal Free Type for Low Pressure

● Can be rotated on the A, B (or C) axes, enabling any piping direction.



## Symbol

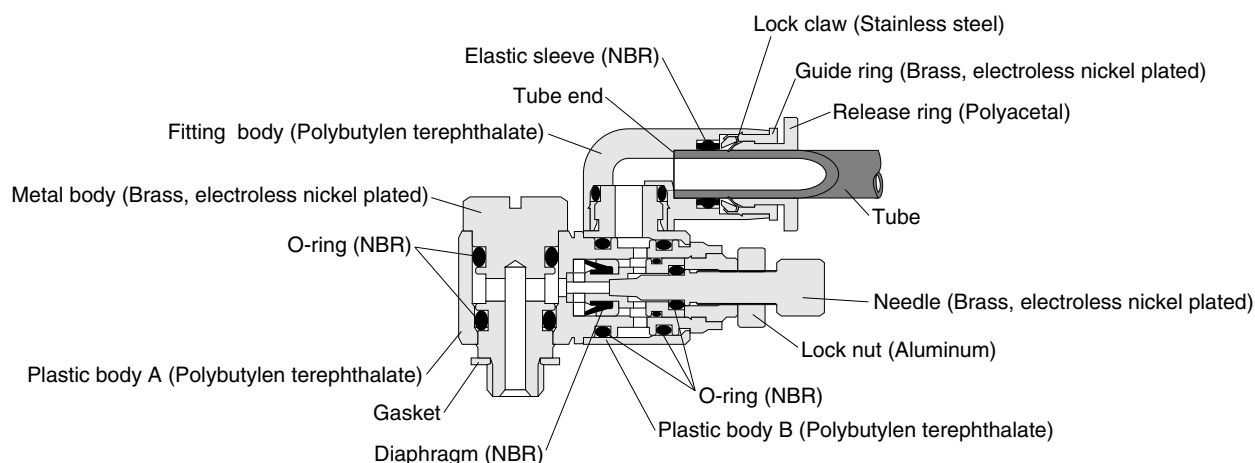


## Specifications

Item	Model	Free type	Free type for low pressure	Horizontal free type	Horizontal free type for low pressure
Media		Air (Cannot be used in vacuum systems)			
Operating pressure range		0~0.9MPa [0~131psi.]	0~0.5MPa [0~73psi.]	0~0.9MPa [0~131psi.]	0~0.5MPa [0~73psi.]
Cracking pressure		0.05MPa [7psi.]	0.02MPa [3psi.]	0.05MPa [7psi.]	0.02MPa [3psi.]
Operating temperature range		0~60°C [32~140°F]			
Recommended tube		Nylon tube, urethane tube			
Sales unit		1 pc.			

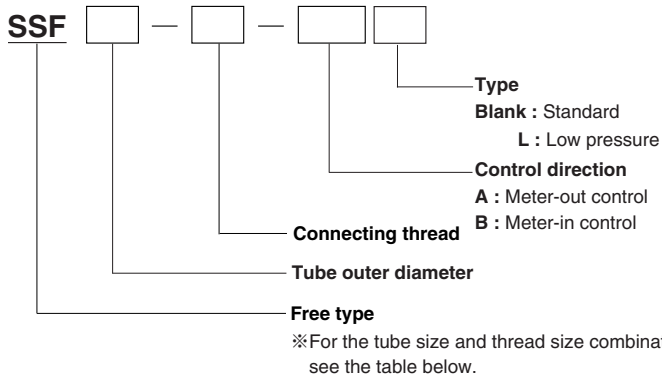
Remark: Supplied with a gasket or sealant coated.

## Inner Construction, Major Parts and Materials



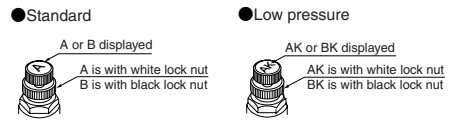
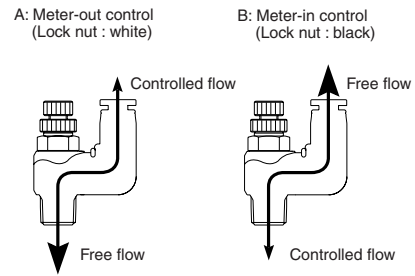
# Order Codes

## ● Free type      ● Free type for low pressure



● For the NCU specification, see p.423.

### Body configuration and control direction



※Use the stamped mark on the needle head, and the color of the nut, to distinguish between meter-out and meter-in control.



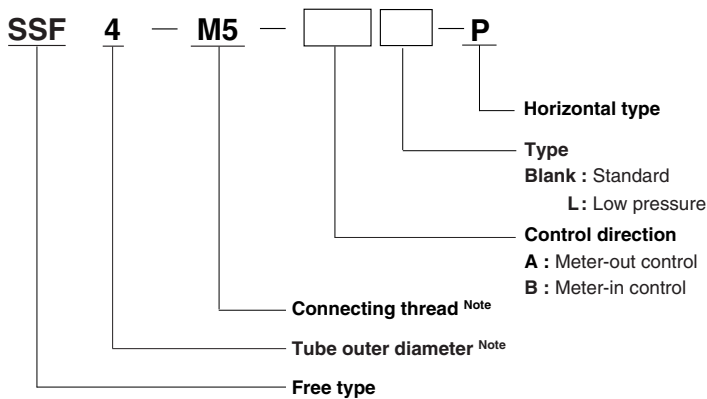
## ● Free type

Tube size	Thread size				
	M5×0.8	R1/8	R1/4	R3/8	R1/2
4	M5	01	—	—	—
6	M5	01	02	—	—
8	—	01	02	03	—
10	—	—	02	03	—
12	—	—	—	03	04

## ● Free type for low pressure

Tube size	Thread size		
	M5×0.8	R1/8	R1/4
4	M5	01	—
6	M5	01	02
8	—	01	02
10	—	—	02

## ● Horizontal free type      ● Horizontal free type for low pressure

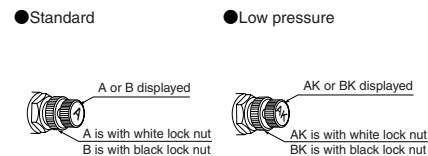
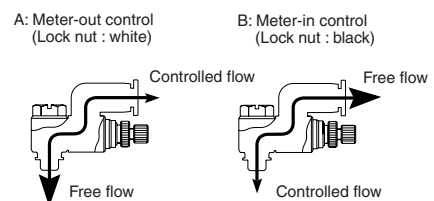


Note: The horizontal free type, and horizontal free type for low pressure are limited to tube outer diameter of  $\phi 4$ , and to connecting thread of M5×0.8 only.

● For the NCU specification, see p.423.

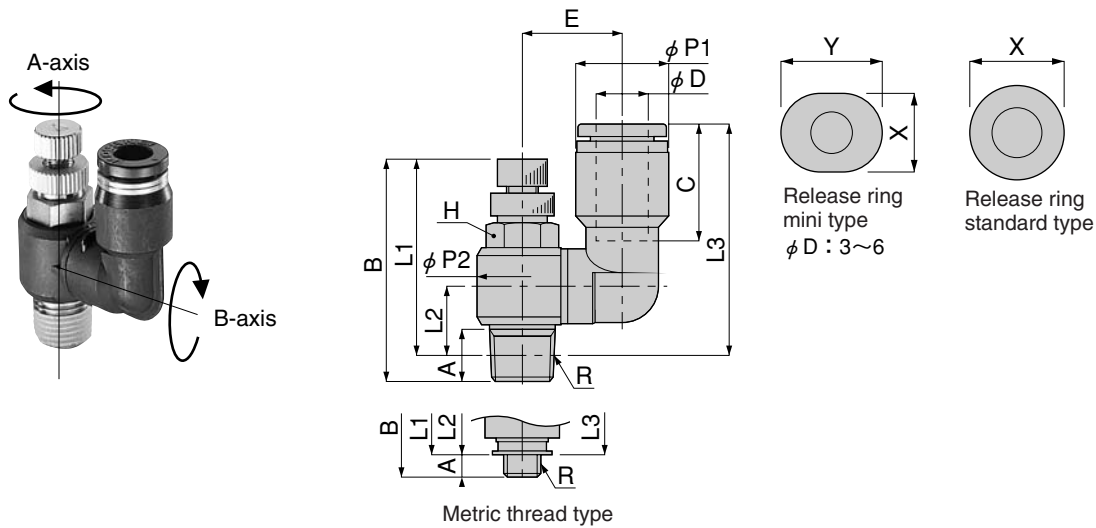


### Body configuration and control direction



※Use the stamped mark on the needle head, and the color of the nut, to distinguish between meter-out and meter-in control.

## Dimensions (Free Type, Free Type for Low Pressure) (mm)



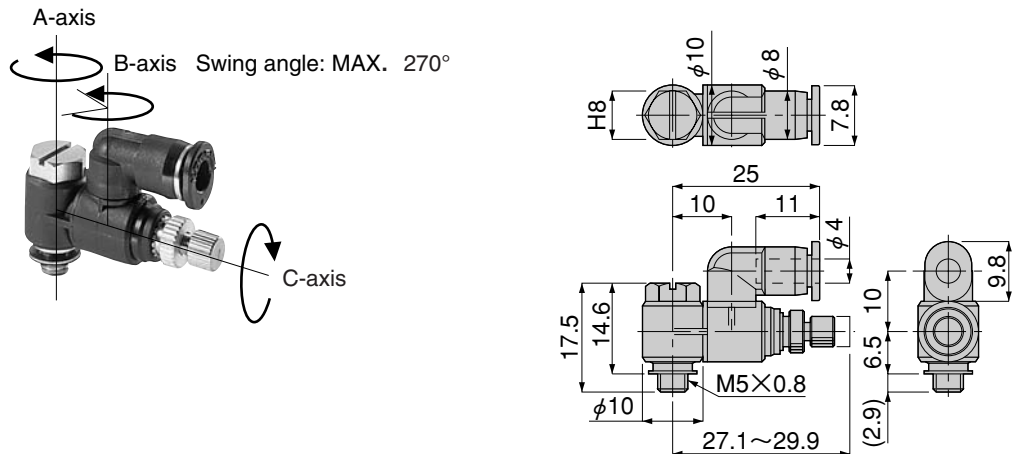
Model <sup>Note2</sup>	Tube outer diameter $\phi$ D	R	A	B		L1 <sup>Note 1</sup>		L2 <sup>Note 1</sup>	L3 <sup>Note 1</sup>	$\phi$ P1	$\phi$ P2	C	E	Width across flats H	X	Y	Mass (g) [oz.]	
				MAX	MIN	MAX	MIN											
SSF4-M5-□(L)	4	M5×0.8	2.9	29.7	27	26.8	24.1	6.7	22.8	8	9.8	11	10	8	7.8	9.8	7.7 [0.272]	
SSF4-01-□(L)		R1/8	8	40.7	34.4	36.7	30.4	10.7	26.8		14.4		12.2				10	18 [0.63]
SSF6-M5-□(L)	6	M5×0.8	2.9	29.7	27	26.8	24.1	6.7	24.2	10.5	9.8	11.6	10.5	8	9.8	11.8	8.4 [0.296]	
SSF6-01-□(L)		R1/8	8	40.7	34.4	36.7	30.4	10.7	28.2		14.4		12.7				10	18 [0.63]
SSF6-02-□(L)		R1/4	11.1	47.8	41.4	41.8	35.4	11.9	29.4		18.4		14.7				14	35 [1.23]
SSF8-01-□(L)	8	R1/8	8	40.7	34.4	36.7	30.4	10.7	36.4	14.5	14.4	18.1	15.5	10	13.8	-	22 [0.78]	
SSF8-02-□(L)		R1/4	11.1	47.8	41.4	41.8	35.4	11.9	37.6		18.4		17.5				14	39 [1.38]
SSF8-03-□		R3/8	13.2	53.7	46.5	47.3	40.1	15.6	43.3		22		20				19	68 [2.40]
SSF10-02-□(L)	10	R1/4	11.1	47.8	41.4	41.8	35.4	11.9	40.9	17.5	18.4	20.2	18	14	16.8	-	42 [1.48]	
SSF10-03-□		R3/8	13.2	53.7	46.5	47.3	40.1	15.6	45.6		22		20.5				19	71 [2.50]
SSF12-03-□	12	R3/8	13.2	53.7	46.5	47.3	40.1	15.6	49.3	21	22	23.4	21	19	19.8	-	74 [2.61]	
SSF12-04-□		R1/2	16	59.3	52.3	51.1	44.1	18	53.2		28		25				24	110 [3.88]

Notes : 1. The L1, L2 and L3 dimensions for the tapered thread type are the reference dimensions after the fittings are assembled.

2. In the blank box of the model order code, enter **A** for meter-out control or **B** for meter-in control. Also, the **(L)** listed to the right of the model order code refers to low pressure. For low pressure specification (cracking pressure of 0.02MPa [3psi.]), remove the parentheses and enter **L** into the order code. (Products without the **(L)** designation do not offer low pressure specification.)

## Dimensions (Horizontal Free Type, Horizontal Free Type for Low Pressure) (mm)

### SSF-4-M5-□□-P



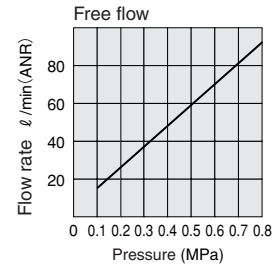
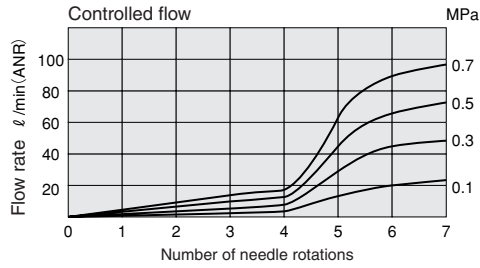
Mass : 9.5g [0.335oz.]



# Flow Rate Characteristics (Free Type)

SSF4-M5-□

SSF6-M5-□

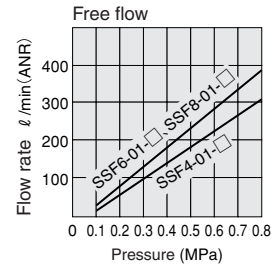
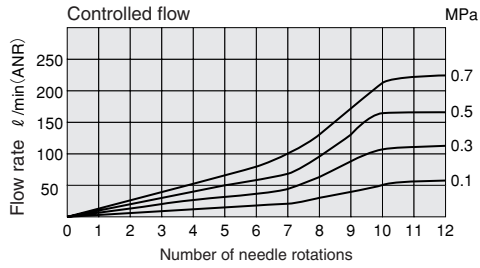


1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

SSF4-01-□

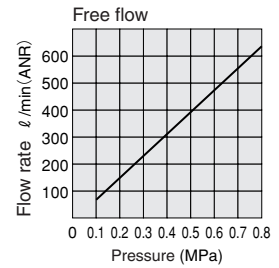
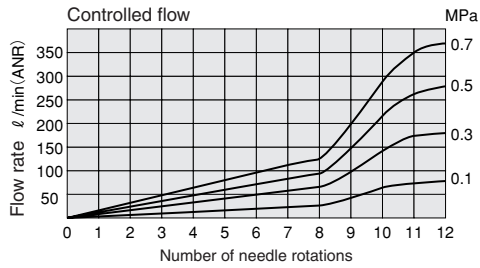
SSF6-01-□

SSF8-01-□



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

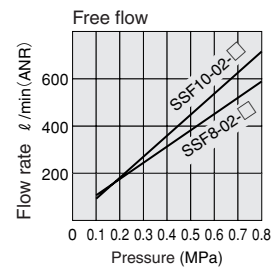
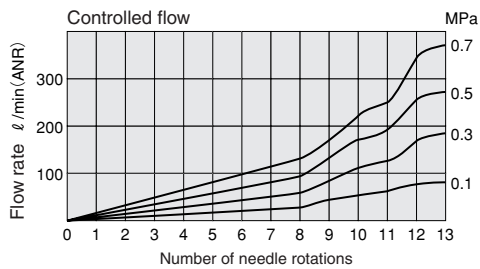
SSF6-02-□



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

SSF8-02-□

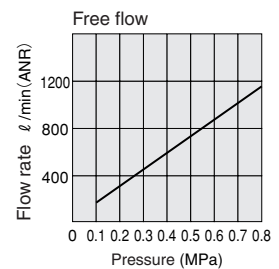
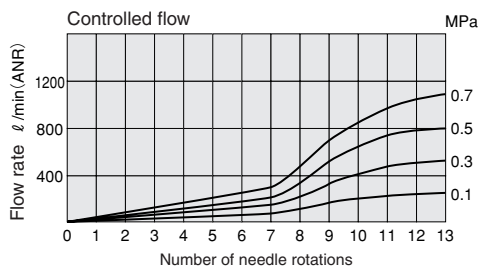
SSF10-02-□



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

SSF8-03-□

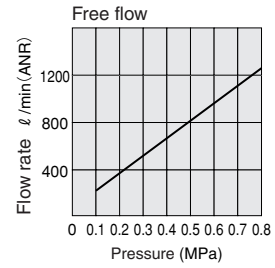
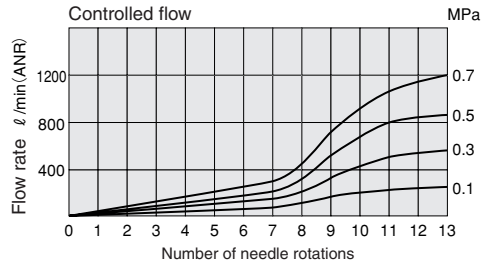
SSF10-03-□



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

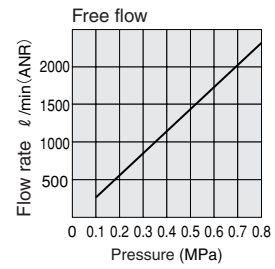
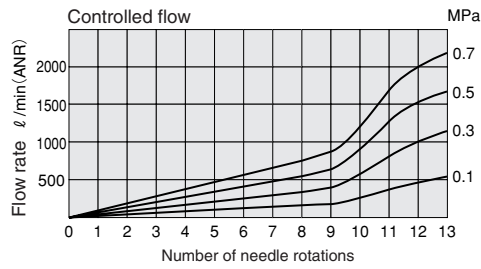
## Flow Rate Characteristics (Free Type)

SSF12-03-□



1MPa = 145psi. 1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

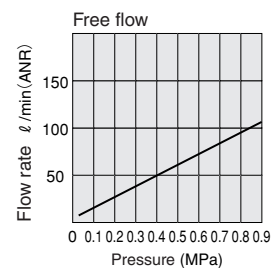
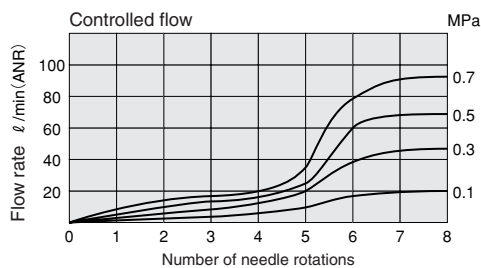
SSF12-04-□



1MPa = 145psi. 1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

## Flow Rate Characteristics (Horizontal Free Type)

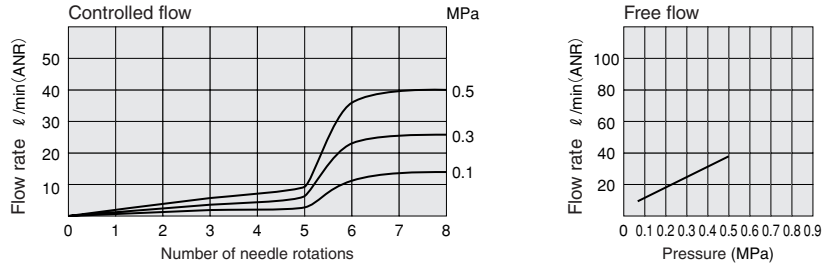
SSF4-M5-□-P



1MPa = 145psi. 1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

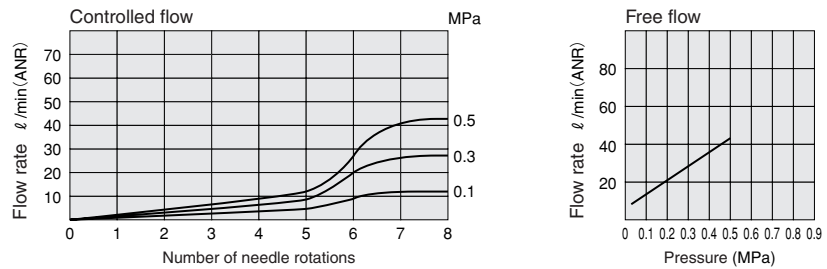
# Flow Rate Characteristics (Free Type for Low Pressure, Horizontal Free Type for Low Pressure)

## SSF4-M5-□L-P



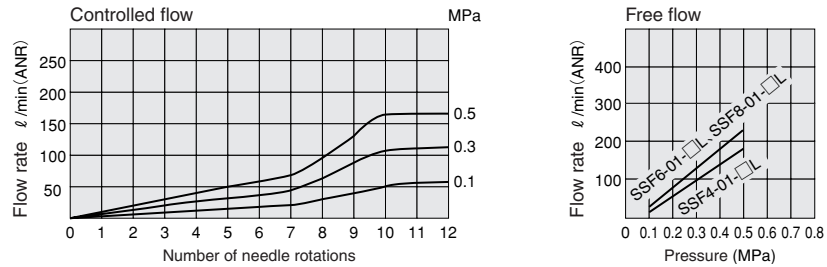
1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

## SSF4-M5-□L SSF6-M5-□L



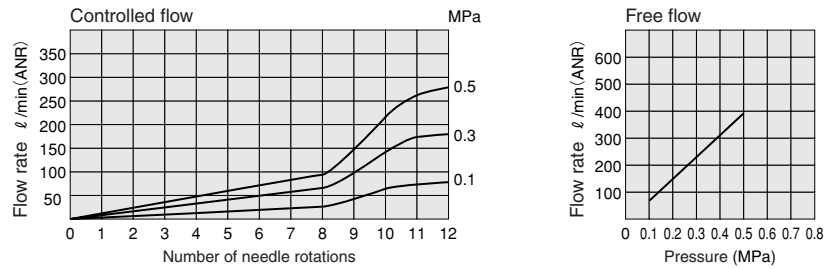
1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

## SSF4-01-□L SSF6-01-□L SSF8-01-□L



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

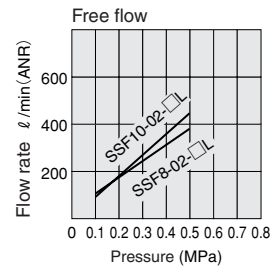
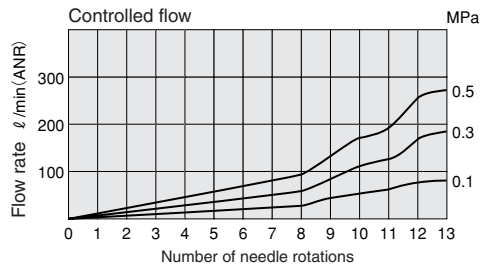
## SSF6-02-□L



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

# Flow Rate Characteristics (Horizontal Free Type for Low Pressure)

SSF8-02-□L  
 SSF10-02-□L



1MPa = 145psi. 1l/min = 0.0353ft<sup>3</sup>/min.

# SPEED CONTROLLERS WITH QUICK FITTINGS

## Standard Type, Mini Type, Union Straight Type, Large Flow Type, Low Pressure Type

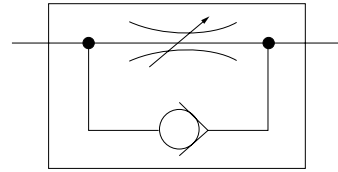
- Offer speed control fittings for cylinders and other actuators.
- Superior flow rate characteristics assure fine-tuned adjustment in low-speed ranges.
- Available model types include the standard type, union straight type, low pressure type, large flow type, and mini type.

### Specifications

Type	Standard type	Mini type	Union straight type	Large flow type	Low pressure type
Mounting type	Direct cylinder mounting		-----	Direct cylinder mounting	
Media	Air (Cannot be used in vacuum systems)				
Operating pressure range	0~0.9MPa [0~131psi.]				0~0.5MPa [0~73psi.]
Cracking pressure	0.05MPa [7psi.]				0.02MPa [3psi.]
Operating temperature range	5~60°C [41~140°F]				
Recommended tube	Nylon tube, urethane tube				
Sales unit	1 pc.				

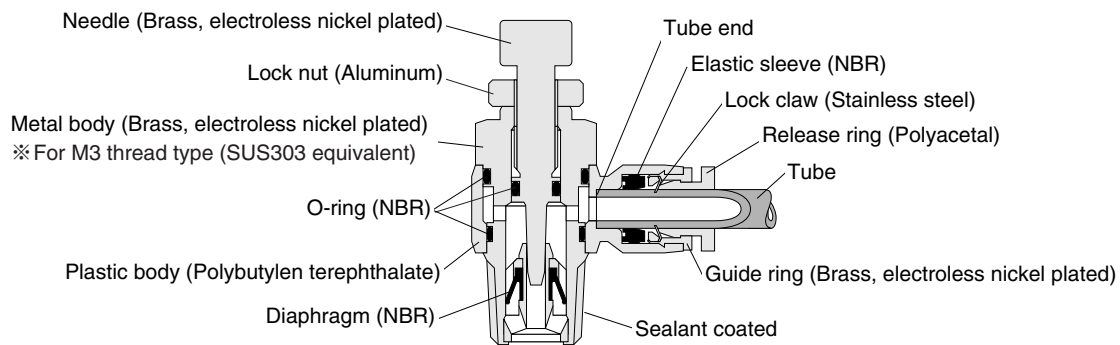
Remark: Supplied with a gasket or sealant coated.

### Symbol



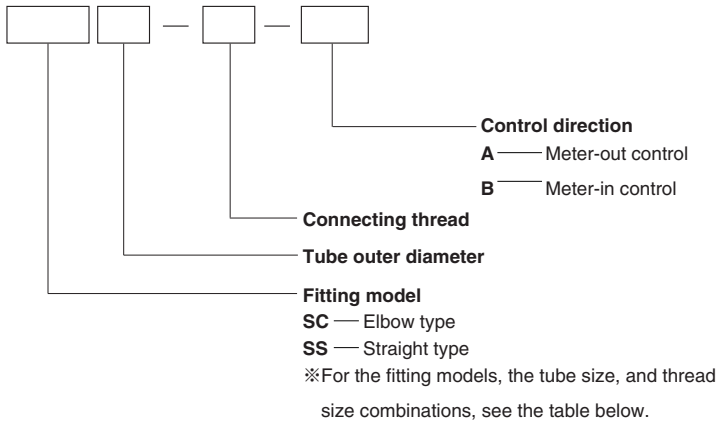
### Inner Construction, Major Parts and Materials

- Standard type
- Mini type
- Large flow type
- Low pressure type

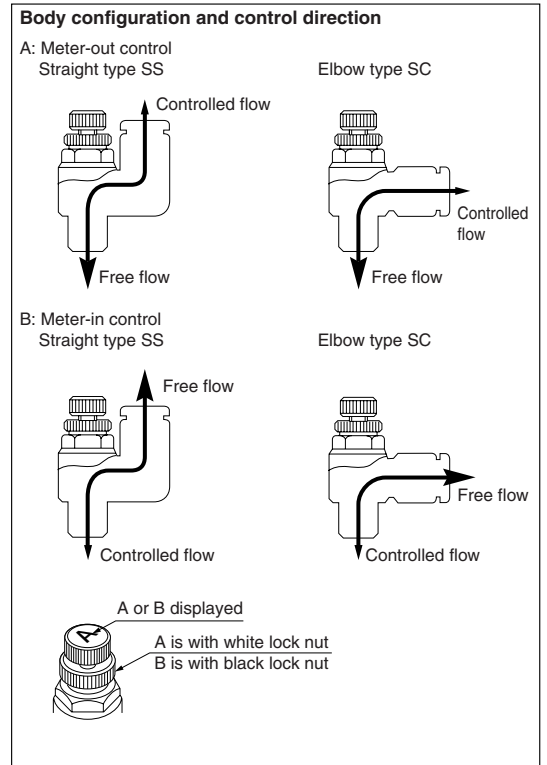


# Order Codes

## ● Standard type



● For the NCU specification, see p.423.



## ● SC Elbow 408



Tube size	Thread size				
	M5×0.8	R1/8	R1/4	R3/8	R1/2
4	M5	01	—	—	—
6	M5	01	02	03	—
8	—	01	02	03	04
10	—	—	02	03	04
12	—	—	—	03	04

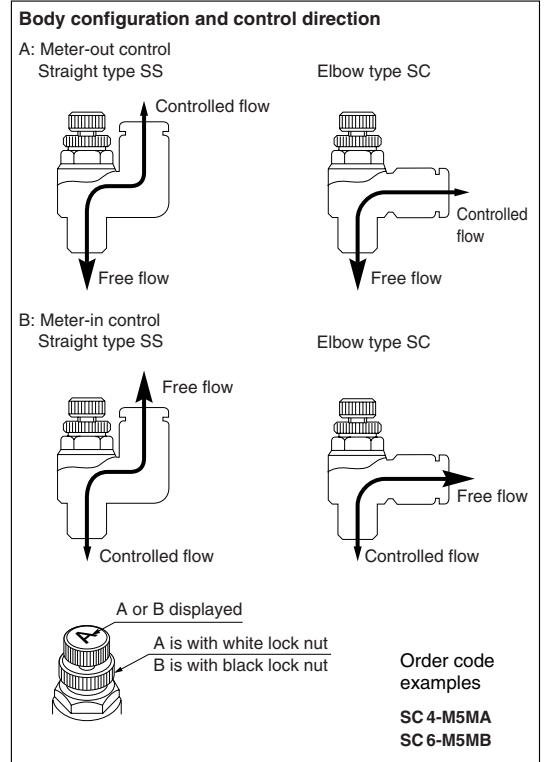
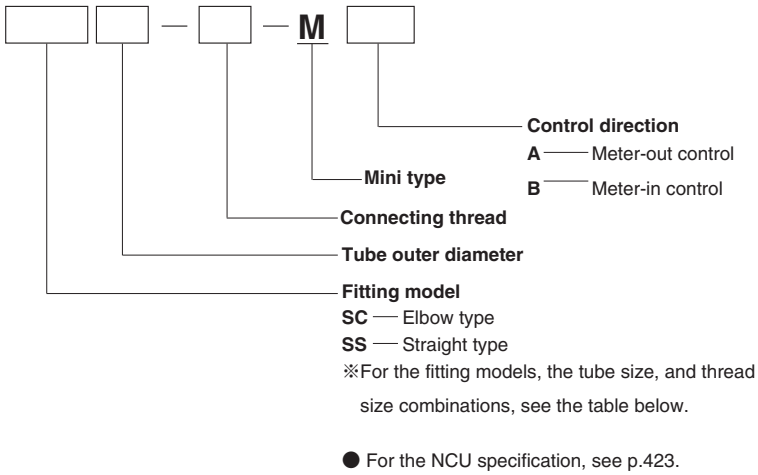
## ● SS Straight 409



Tube size	Thread size				
	M5×0.8	R1/8	R1/4	R3/8	R1/2
4	M5	01	—	—	—
6	M5	01	02	—	—
8	—	01	02	03	—
10	—	—	02	03	—
12	—	—	—	03	04

# Order Codes

## ● Mini Type



SPEED CONTROLLERS WITH QUICK FITTINGS

## ● SC Elbow 410



Tube size	Thread size			
	M3×0.5	M5×0.8	R1/8	R1/4
3	M3	M5	—	—
4	M3	M5	01	—
6	—	M5	01	02

## ● SS Straight 410



Tube size	Thread size			
	M3×0.5	M5×0.8	R1/8	R1/4
3	M3	M5	—	—
4	M3	M5	01	—
6	—	M5	01	—

## ● Union straight type

**SSU** [ ]



**Tube outer diameter**

4 —  $\phi$  4  
 6 —  $\phi$  6  
 8 —  $\phi$  8  
 10 —  $\phi$  10  
 12 —  $\phi$  12

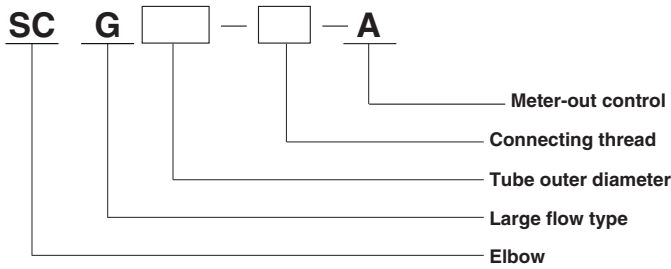
**Union straight type**

● For the dimensions, see p.411.  
 ● For the NCU specification, see p.423.

**Caution:** For the union straight type, no order code is available for control direction.  
 To determine the mounting direction, check the speed controller's symbol on the side of the body.

# Order Codes

## ● Large flow type



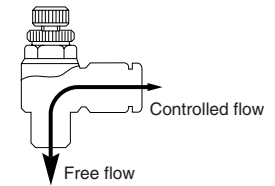
Tube size	Thread size			
	R1/8	R1/4	R3/8	R1/2
6	01	02	—	—
8	01	02	03	—
10	—	02	03	—
12	—	—	03	04

● For the dimensions, see p.411.

※For the fitting models, the tube size, and thread size combinations, see the table below.

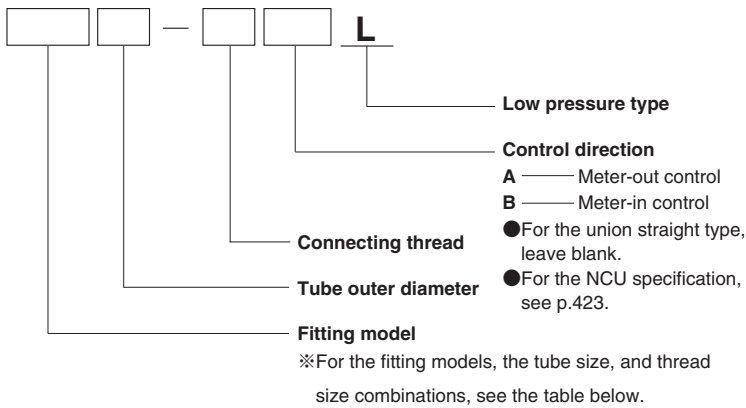
● For the NCU specification, see p.423.

### Body configuration and control direction



**Caution:** The large flow type can be identified by the AG mark on the needle head, and by a blue lock nut.

## ● Low pressure type



**Caution:** The low pressure type can be identified by the AK, BK, or K mark on the needle head.

- AK : Elbow, low pressure, meter-out
- BK : Elbow, low pressure, meter-in
- K : Union straight, low pressure

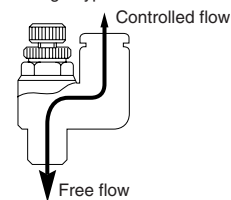
※For the fitting models, the tube size, and thread size combinations, see the table below.

● For the NCU specification, see p.423.

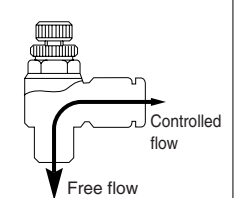
### Body configuration and control direction

A: Meter-out control (lock nut: white)

Straight type SS

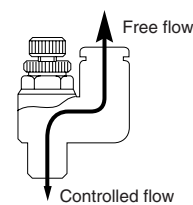


Elbow type SC

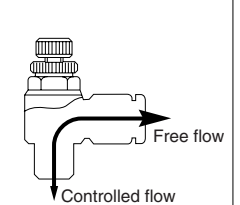


B: Meter-in control (lock nut: black)

Straight type SS



Elbow type SC



AK or BK displayed



AK is with white lock nut  
BK is with black lock nut

※The meter-out or meter-in control can be identified by the AK or BK mark on the needle head and lock nut color.

### ● Union straight type

※For the union straight type, no order code is available for control direction. To determine the mounting direction, check the speed controller's symbol on the side of the plastic body.

## ● SS Straight 412



Tube size	Thread size		
	M5×0.8	R1/8	R1/4
4	M5	01	—
6	M5	01	02

## ● SC Elbow 412



Tube size	Thread size		
	M5×0.8	R1/8	R1/4
4	M5	01	—
6	M5	01	02

## ● SSU Union straight 413

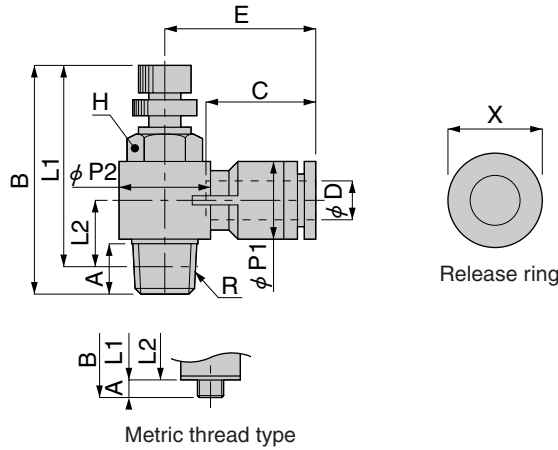


Tube size
4
6



# Dimensions (Standard Type) (mm)

## Elbow SC

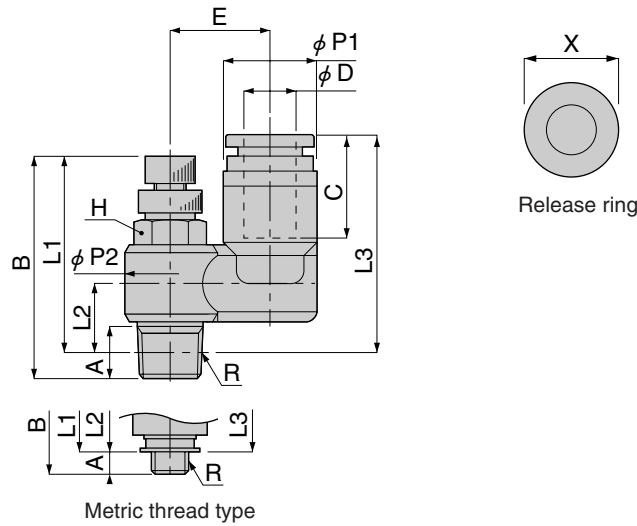


Model	Tube outer diameter $\phi$ D	R	A	B		L1 <sup>Note 1</sup>		L2 <sup>Note 1</sup>	$\phi$ P1	$\phi$ P2	C	E	Width across flats H	X	Mass (g) [oz.]
				MAX	MIN	MAX	MIN								
SC4-M5-□	4	M5×0.8	2.9	29.7	27	26.8	24.1	7.2	9.9	9.8	14.9	19.9	8	9.9	8.5 [0.300]
SC4-01-□		R1/8	8	40.7	34.4	36.7	30.4	9.7	10	14.4		21.4	10		18 [0.63]
SC6-M5-□	6	M5×0.8	2.9	29.7	27	26.8	24.1	8.4	12.4	9.8	17	24	8	11.8	9.6 [0.339]
SC6-01-□		R1/8	8	40.7	34.4	36.7	30.4	10.9		14.4		23.5	10		19 [0.67]
SC6-02-□		R1/4	11.1	47.8	41.4	41.8	35.4	12.2	18.4	25.5		14	36 [1.27]		
SC6-03-□		R3/8	13.2	53.7	46.5	47.3	40.1	15.4	14.4	22		29	19		65 [2.29]
SC8-01-□	8	R1/8	8	40.7	34.4	36.7	30.4	11.9	14.4	14.4	18.1	26.9	10	13.8	21 [0.74]
SC8-02-□		R1/4	11.1	47.8	41.4	41.8	35.4	13.2		18.4		28.4	14		38 [1.34]
SC8-03-□		R3/8	13.2	53.7	46.5	47.3	40.1	15.4		22		28.9	19		65 [2.29]
SC8-04-□		R1/2	16	59.3	52.3	51.1	44.1	18		28		31	24		101 [3.56]
SC10-02-□	10	R1/4	11.1	47.8	41.4	41.8	35.4	14.8	17.6	18.4	20.2	30.9	14	16.8	41 [1.45]
SC10-03-□		R3/8	13.2	53.7	46.5	47.3	40.1	16.7		22		31.2	19		69 [2.43]
SC10-04-□		R1/2	16	59.3	52.3	51.1	44.1	18		28		33.6	24		104 [3.67]
SC12-03-□	12	R3/8	13.2	53.7	46.5	47.3	40.1	18.4	21	22	23.4	36.9	19	19.8	72 [2.54]
SC12-04-□		R1/2	16	59.3	52.3	51.1	44.1	19.7		28		36.4	24		107 [3.77]

Notes : 1. The L1, L2 dimensions for the tapered thread type are the reference dimensions after the fittings are assembled.  
 2. In the blank box shown at the end of the model order code, enter **A** for meter-out control or **B** for meter-in control.

# Dimensions (Standard Type) (mm)

Straight  
SS



Model	Tube outer diameter $\phi D$	R	A	B		L1 <sup>Note 1</sup>		L2 <sup>Note 1</sup>	L3 <sup>Note 1</sup>	$\phi P1$	$\phi P2$	C	E	Width across flats H	X	Mass (g) [oz.]
				MAX	MIN	MAX	MIN									
SS4-M5-□	4	M5X0.8	2.9	29.7	27	26.8	24.1	6.8	23.9	10.2	9.8	14.9	10.5	8	9.9	9.1 [0.321]
SS4-01-□		R1/8	8	40.7	34.4	36.7	30.4	10.9	28.9		14.4		13	10		19 [0.67]
SS6-M5-□	6	M5X0.8	2.9	29.7	27	26.8	24.1	6.8	26	12.6	9.8	17	12.2	8	11.8	10 [0.35]
SS6-01-□		R1/8	8	40.7	34.4	36.7	30.4	10.9	31		14.4		14.2	10		21 [0.74]
SS6-02-□		R1/4	11.1	47.8	41.4	41.8	35.4	12	32.1		18.4		17.2	14		38 [1.34]
SS8-01-□	8	R1/8	8	40.7	34.4	36.7	30.4	10.9	32.4	14.6	14.4	18.1	15.2	10	13.8	22 [0.78]
SS8-02-□		R1/4	11.1	47.8	41.4	41.8	35.4	12	33.6		18.4		18.2	14		39 [1.38]
SS8-03-□		R3/8	13.2	53.7	46.5	47.3	40.1	15.4	37.8		22		19.2	19		68 [2.40]
SS10-02-□	10	R1/4	11.1	47.8	41.4	41.8	35.4	12	35.9	17.8	18.4	20.2	19.8	14	16.8	43 [1.52]
SS10-03-□		R3/8	13.2	53.7	46.5	47.3	40.1	15.4	40.1		22		20.8	19		71 [2.50]
SS12-03-□	12	R3/8	13.2	53.7	46.5	47.3	40.1	15.4	42.8	21.2	22	23.4	22.5	19	19.8	75 [2.65]
SS12-04-□		R1/2	16	59.3	52.3	51.1	44.1	18.2	47		28		25.5	24		112 [3.95]

Notes : 1. The L1, L2 and L3 dimensions for the tapered thread type are the reference dimensions after the fittings are assembled.  
2. In the blank box shown at the end of the model order code, enter **A** for meter-out control or **B** for meter-in control.

## Dimensions (Mini Type) (mm)

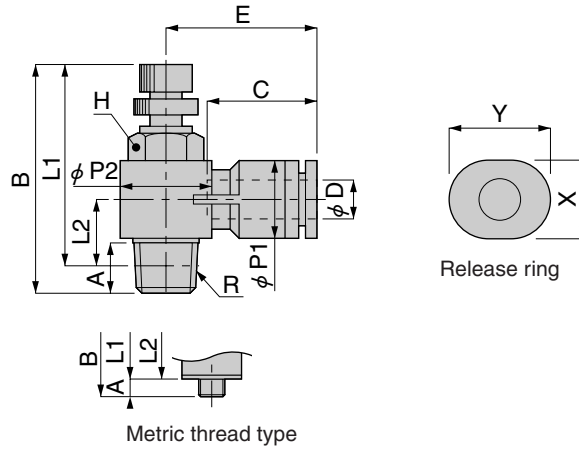
### Elbow SC



M3M, M5M



Taper thread



Model	Tube outer diameter $\phi$ D	R	A	B		L1 <sup>Note 1</sup>		L2 <sup>Note 1</sup>	$\phi$ P1	$\phi$ P2	C	E	Width across flats H	X	Y	Mass (g) [oz.]			
				MAX	MIN	MAX	MIN												
SC3-M3-M <input type="checkbox"/>	3	M3X0.5	2.5	29.2	26.5	26.7	24	6.6	8	9.8	11	15.4	8	7.8	9.8	6.6 [0.233]			
SC3-M5-M <input type="checkbox"/>		M5X0.8	2.9	29.7	27	26.8	24.1	6.7								7.3 [0.257]			
SC4-M3-M <input type="checkbox"/>	4	M3X0.5	2.5	29.2	26.5	26.7	24	6.6	8	9.8	11	15.4	8	7.8	9.8	6.6 [0.233]			
SC4-M5-M <input type="checkbox"/>		M5X0.8	2.9	29.7	27	26.8	24.1	6.7								7.2 [0.254]			
SC4-01-M <input type="checkbox"/>		R1/8	8	40.7	34.4	36.7	30.4	10.7								14.4	17.7	10	17 [0.60]
SC6-M5-M <input type="checkbox"/>	6	M5X0.8	2.9	29.7	27	26.8	24.1	7.5	10.5	9.8	11.6	17.5	8	9.8	11.8	7.9 [0.279]			
SC6-01-M <input type="checkbox"/>		R1/8	8	40.7	34.4	36.7	30.4	10.7								14.4	18.3	10	18 [0.63]
SC6-02-M <input type="checkbox"/>		R1/4	11.1	47.8	41.4	41.8	35.4	11.9								18.4	20.2	14	35 [1.23]

Notes : 1. The L1, L2 dimensions for the tapered thread type are the reference dimensions after the fittings are assembled.  
2. In the blank box shown at the end of the model order code, enter **A** for meter-out control or **B** for meter-in control.

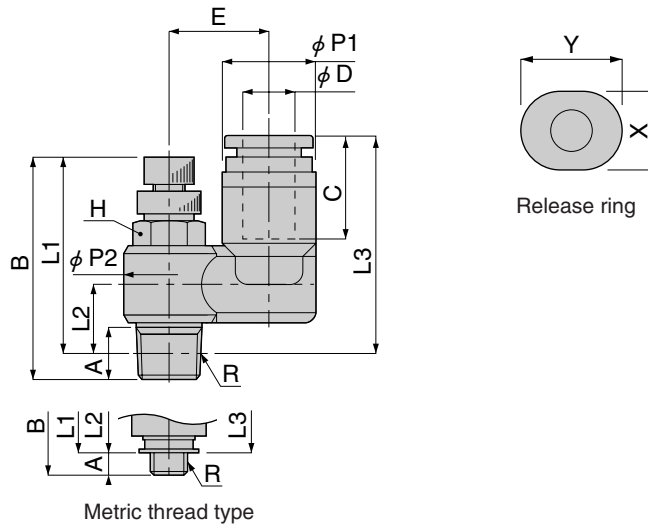
### Straight SS



M3M, M5M



Taper thread

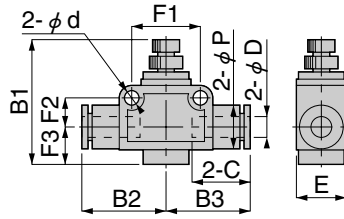


Model	Tube outer diameter $\phi$ D	R	A	B		L1 <sup>Note 1</sup>		L2 <sup>Note 1</sup>	L3 <sup>Note 1</sup>	$\phi$ P1	$\phi$ P2	C	E	Width across flats H	X	Y	Mass (g) [oz.]
				MAX	MIN	MAX	MIN										
SS3-M3-M <input type="checkbox"/>	3	M3X0.5	2.5	29.2	26.5	26.7	24	6.7	21.2	8	9.8	11	9	8	7.8	9.8	7 [0.247]
SS3-M5-M <input type="checkbox"/>		M5X0.8	2.9	29.7	27	26.8	24.1	6.8	21.3								7.7 [0.272]
SS4-M3-M <input type="checkbox"/>	4	M3X0.5	2.5	29.2	26.5	26.7	24	6.7	21.2	8	9.8	11	9	8	7.8	9.8	7 [0.247]
SS4-M5-M <input type="checkbox"/>		M5X0.8	2.9	29.7	27	26.8	24.1	6.8	21.3								7.6 [0.268]
SS4-01-M <input type="checkbox"/>		R1/8	8	40.7	34.4	36.7	30.4	10.9	25.6								14.4
SS6-M5-M <input type="checkbox"/>	6	M5X0.8	2.9	29.7	27	26.8	24.1	6.8	22.2	10.5	9.8	11.6	10.9	8	9.8	11.8	8.4 [0.296]
SS6-01-M <input type="checkbox"/>		R1/8	8	40.7	34.4	36.7	30.4	10.9	26.5								14.4

Notes : 1. The L1, L2 and L3 dimensions for the tapered thread type are the reference dimensions after the fittings are assembled.  
2. In the blank box shown at the end of the model order code, enter **A** for meter-out control or **B** for meter-in control.

## Dimensions (Union Straight Type) (mm)

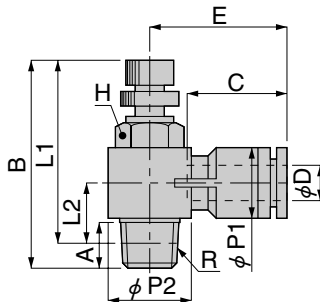
### Union straight SSU



Model	Tube outer diameter $\phi D$	B1		B2	B3	$\phi P$	E	C	$\phi d$	F1	F2	F3	Mass (g) [oz.]
		MAX	MIN										
SSU4	4	28.6	25.9	20.4	20.4	10.5	11	14.9	3.2	14	6.5	6.5	13 [0.46]
SSU6	6	41.5	35.7	24.9	24.9	13	15	16.9	4.3	20	8.5	11	29 [1.02]
SSU8	8	46	39.8	27.4	27.4	15	18	18.4	4.3	22	9.5	12	43 [1.52]
SSU10	10	55.6	48	31.7	31.7	18	21	20.7	4.3	26	11	12	71 [2.50]
SSU12	12	55.9	48.4	37.2	37.2	21	28	23.4	4.3	32	13	16	115 [4.06]

## Dimensions (Large Flow Type) (mm)

### Elbow SCG

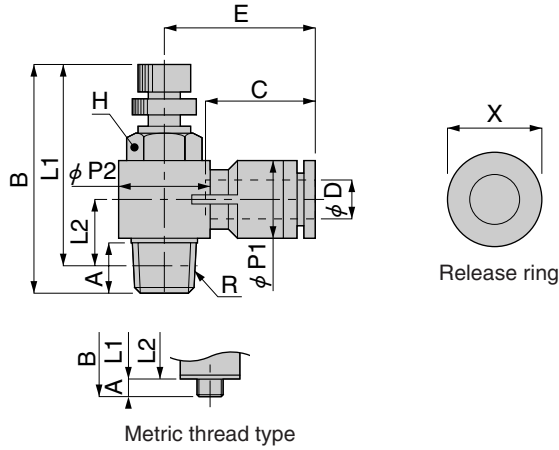


Model	Tube outer diameter $\phi D$	R	A	B		L1 <sup>Note</sup>		L2 <sup>Note</sup>	$\phi P1$	$\phi P2$	C	E	Width across flats H	Mass (g) [oz.]				
				MAX	MIN	MAX	MIN											
SCG6-01-A	6	R1/8	8.5	42.5	37.5	38.5	33.5	12.5	12.5	15.4	17	24.2	13	24 [0.85]				
SCG6-02-A		R1/4	11.6	50.8	44.8	44.8	38.8	14.1							19.6	26.8	17	43 [1.52]
SCG8-01-A	8	R1/8	8.5	42.5	37.5	38.5	33.5	12.5	14.5	15.4	18.1	26.2	13	26 [0.92]				
SCG8-02-A		R1/4	11.6	50.8	44.8	44.8	38.8	14.1							19.6	28.2	17	45 [1.59]
SCG8-03-A		R3/8	12.6	54.3	48.7	47.9	42.3	16.3							24.4	30.2	21	72 [2.54]
SCG10-02-A	10	R1/4	11.6	50.8	44.8	44.8	38.8	15.6	18	19.6	20.2	30.5	17	48 [1.69]				
SCG10-03-A		R3/8	12.6	54.3	48.7	47.9	42.3	16.3							24.4	32.5	21	75 [2.65]
SCG12-03-A	12	R3/8	12.6	54.3	48.7	47.9	42.3	17.8	21	24.4	23.4	35.2	21	78 [2.75]				
SCG12-04-A		R1/2	13.6	60.8	54.7	52.6	46.5	17.1							30	38.2	24	118 [4.16]

Note: The L1, L2 dimensions for the tapered thread type are the reference dimensions after the fittings are assembled.

## Dimensions (Low Pressure Type) (mm)

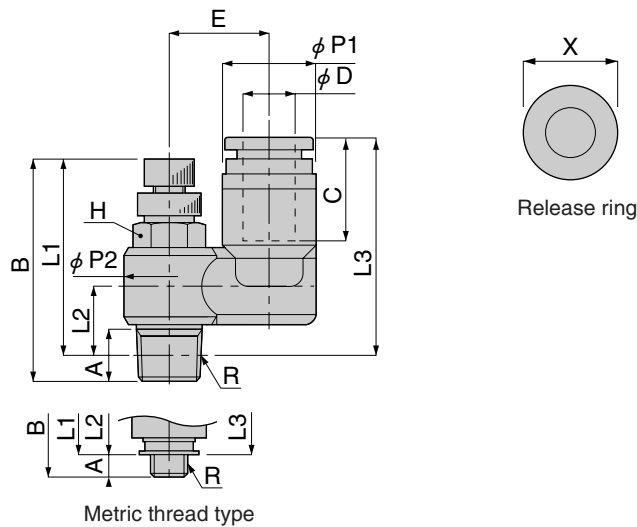
### Elbow SC□-□□L



Model	Tube outer diameter $\phi$ D	R	A	B		L1 <sup>Note 1</sup>		L2 <sup>Note 1</sup>	$\phi$ P1	$\phi$ P2	C	E	H	X	Mass (g) [oz.]
				MAX	MIN	MAX	MIN								
SC4-M5-□L	4	M5X0.8	2.9	29.7	27	26.8	24.1	7.2	9.9	9.8	14.9	19.9	8	9.9	8.5 [0.300]
SC4-01-□L		R1/8	8	40.7	34.4	36.7	30.4	9.7	10	14.4		21.4	10		18 [0.63]
SC6-M5-□L	6	M5X0.8	2.9	29.7	27	26.8	24.1	8.4	12.4	9.8	17	24	8	11.8	9.6 [0.339]
SC6-01-□L		R1/8	8	40.7	34.4	36.7	30.4	10.9		14.4		23.5	10		19 [0.67]
SC6-02-□L		R1/4	11.1	47.8	41.4	41.8	35.4	12.2		18.4		25.5	14		36 [1.27]

Notes : 1. The L1, L2 dimensions for the tapered thread type are the reference dimensions after the fittings are assembled.  
2. In the blank box of the model order code, enter **A** for meter-out control or **B** for meter-in control.

### Straight SS□-□□L

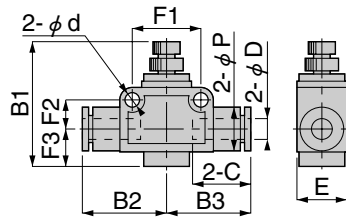


Model	Tube outer diameter $\phi$ D	R	A	B		L1 <sup>Note 1</sup>		L2 <sup>Note 1</sup>	L3 <sup>Note 1</sup>	$\phi$ P1	$\phi$ P2	C	E	H	X	Mass (g) [oz.]
				MAX	MIN	MAX	MIN									
SS4-M5-□L	4	M5X0.8	2.9	29.7	27	26.8	24.1	6.8	23.9	10.2	9.8	14.9	10.5	8	9.9	9.1 [0.321]
SS4-01-□L		R1/8	8	40.7	34.4	36.7	30.4	10.9	28.9		14.4		13	10		19 [0.67]
SS6-M5-□L	6	M5X0.8	2.9	29.7	27	26.8	24.1	6.8	26	12.6	9.8	17	12.2	8	11.8	10 [0.35]
SS6-01-□L		R1/8	8	40.7	34.4	36.7	30.4	10.9	31		14.4		14.2	10		21 [0.74]
SS6-02-□L		R1/4	11.1	47.8	41.4	41.8	35.4	12	32.1		18.4		17.2	14		38 [1.34]

Notes : 1. The L1, L2 and L3 dimensions for the tapered thread type are the reference dimensions after the fittings are assembled.  
2. In the blank box of the model order code, enter **A** for meter-out control or **B** for meter-in control.

## Dimensions (Low Pressure Type) (mm)

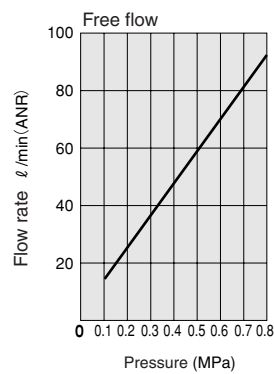
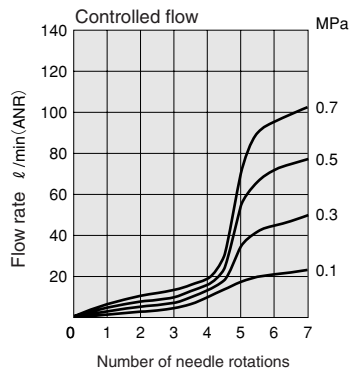
Union straight  
SSU□L



Model	Tube outer diameter $\phi D$	B1		B2	B3	$\phi P$	E	C	$\phi d$	F1	F2	F3	Mass (g) [oz.]
		MAX	MIN										
<b>SSU4L</b>	4	28.6	25.9	20.4	20.4	10.5	11	14.9	3.2	14	6.5	6.5	13 [0.46]
<b>SSU6L</b>	6	41.5	35.7	24.9	24.9	13	15	16.9	4.3	20	8.5	11	29 [1.02]

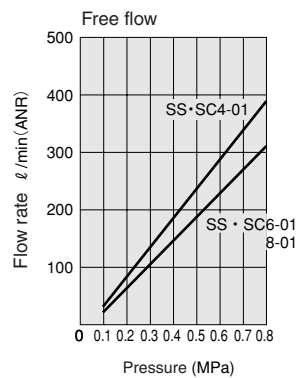
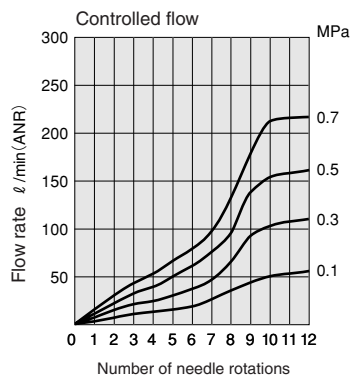
# Flow Rate Characteristics (Standard Type)

- SC4-M5-
- SC6-M5-
- SS4-M5-
- SS6-M5-



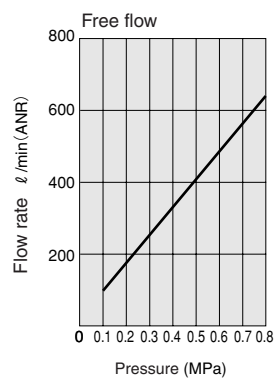
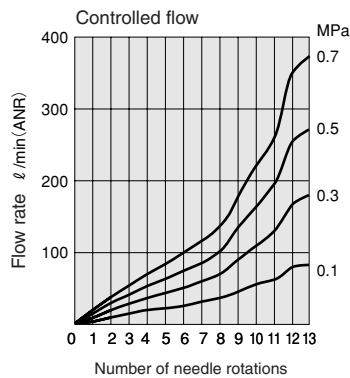
1MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

- SC4-01-
- SC6-01-
- SC8-01-
- SS4-01-
- SS6-01-
- SS8-01-



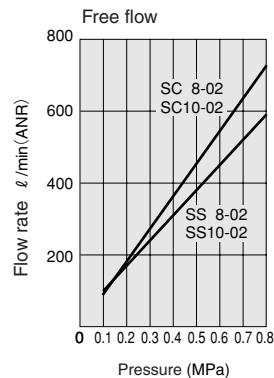
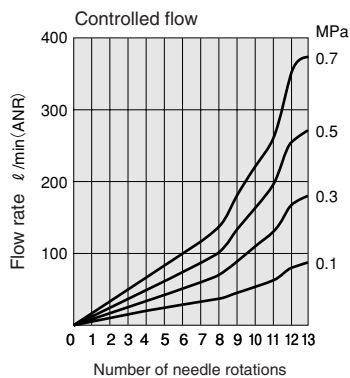
1MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

- SC6-02-
- SS6-02-



1MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

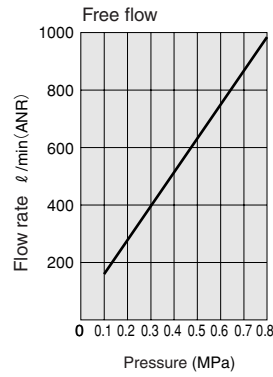
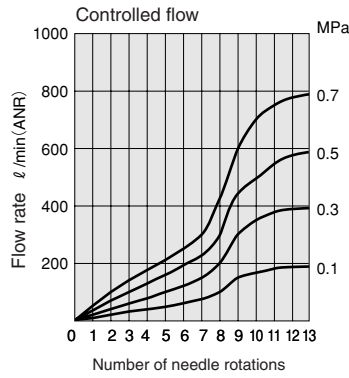
- SC8-02-
- SC10-02-
- SS8-02-
- SS10-02-



1MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

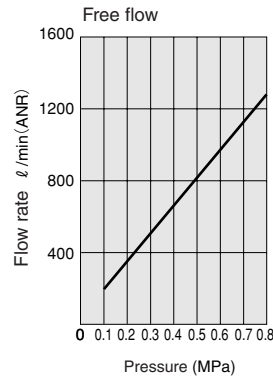
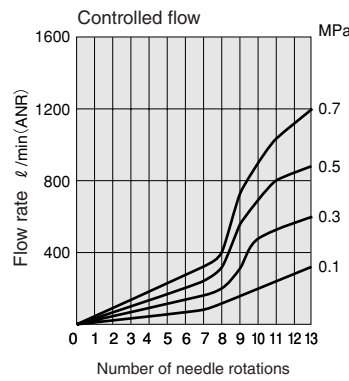
# Flow Rate Characteristics (Standard Type)

SC6-03-□



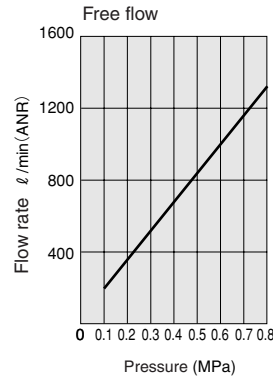
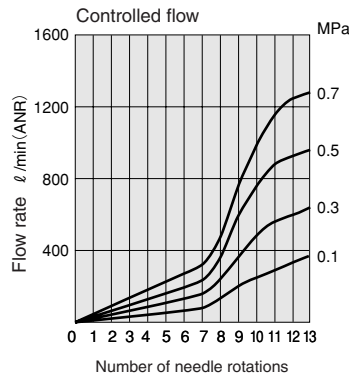
1MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

SC8-03-□



1MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

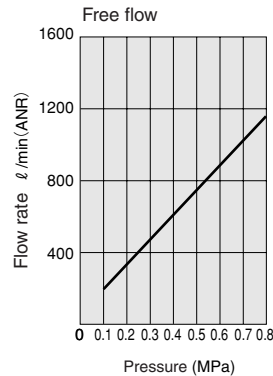
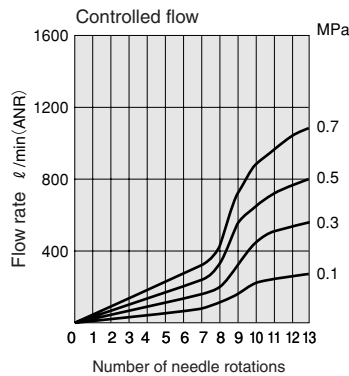
SC10-03-□



1MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.

SS8-03-□

SS10-03-□

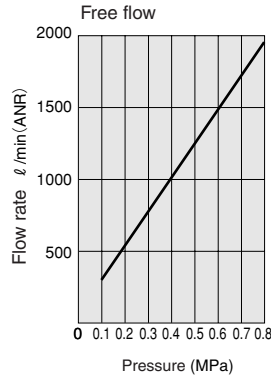
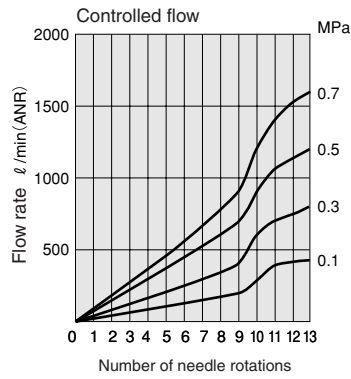


1MPa = 145psi.  
1  $\ell$ /min = 0.0353ft.<sup>3</sup>/min.



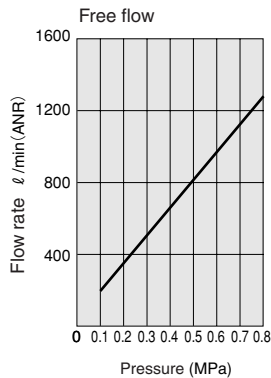
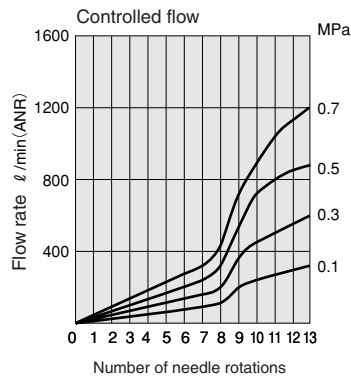
# Flow Rate Characteristics (Standard Type)

SC8-04-



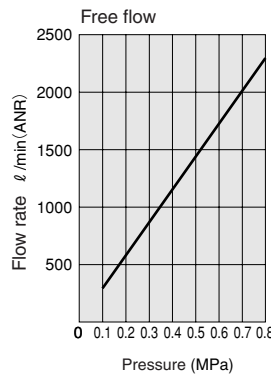
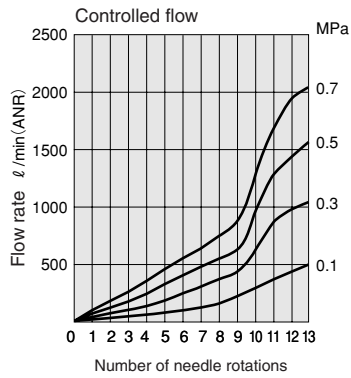
1MPa = 145psi.  
1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

SC12-03-  
SS12-03-



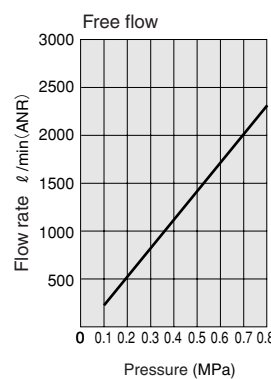
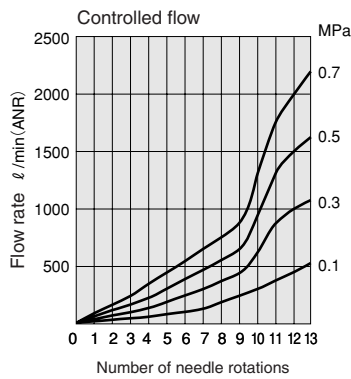
1MPa = 145psi.  
1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

SC10-04-



1MPa = 145psi.  
1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

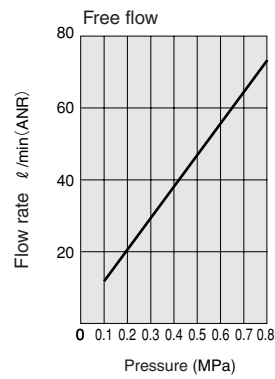
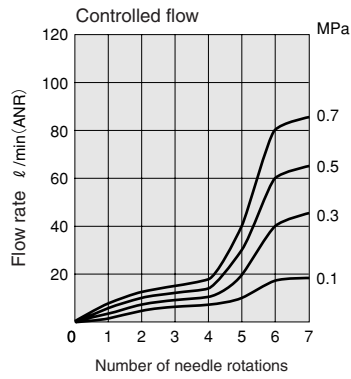
SC12-04-  
SS12-04-



1MPa = 145psi.  
1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

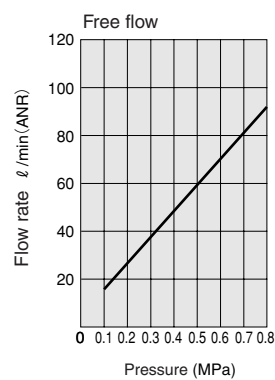
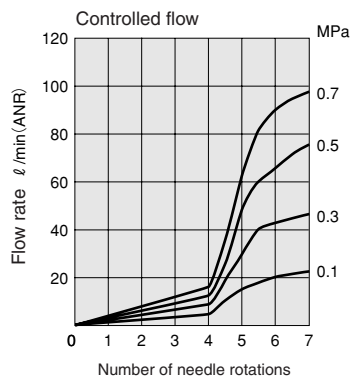
# Flow Rate Characteristics (Mini Type)

SC3-M3-M   
 SS3-M3-M



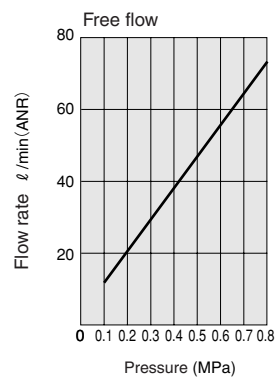
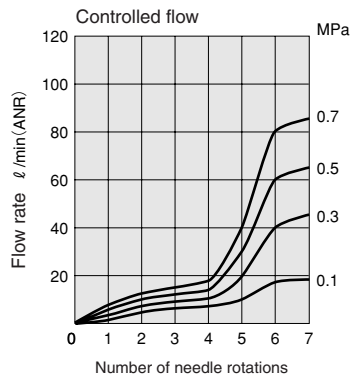
1MPa = 145psi.  
 1  $\ell/\text{min}$  = 0.0353ft.<sup>3</sup>/min.

SC3-M5-M   
 SS3-M5-M



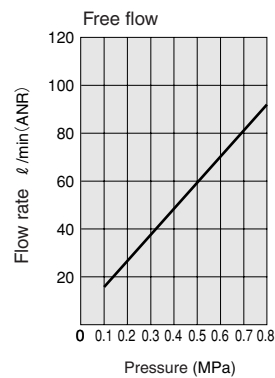
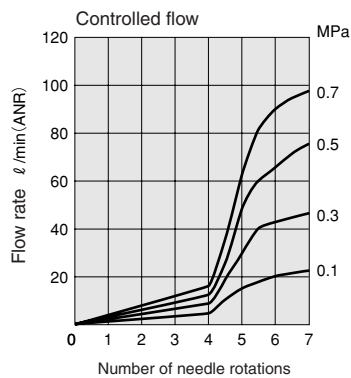
1MPa = 145psi.  
 1  $\ell/\text{min}$  = 0.0353ft.<sup>3</sup>/min.

SC4-M3-M   
 SS4-M3-M



1MPa = 145psi.  
 1  $\ell/\text{min}$  = 0.0353ft.<sup>3</sup>/min.

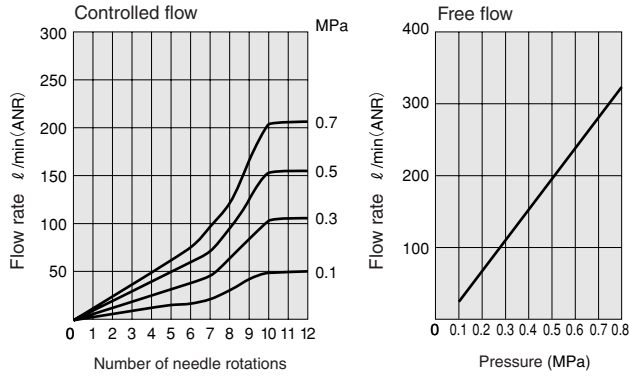
SC4-M5-M   
 SS4-M5-M



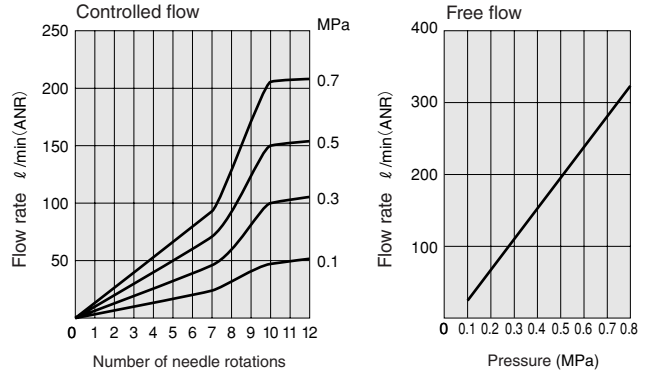
1MPa = 145psi.  
 1  $\ell/\text{min}$  = 0.0353ft.<sup>3</sup>/min.

# Flow Rate Characteristics (Mini Type)

## SC4-01-M



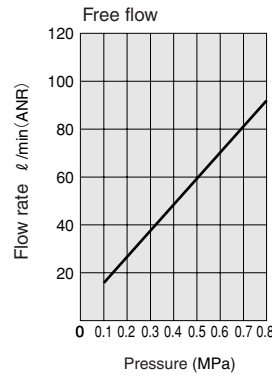
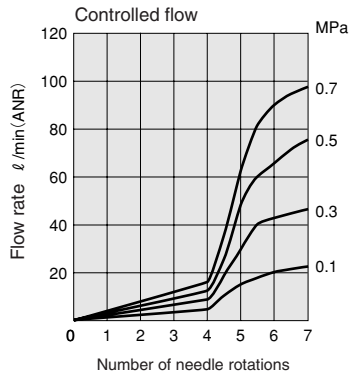
## SS4-01-M



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

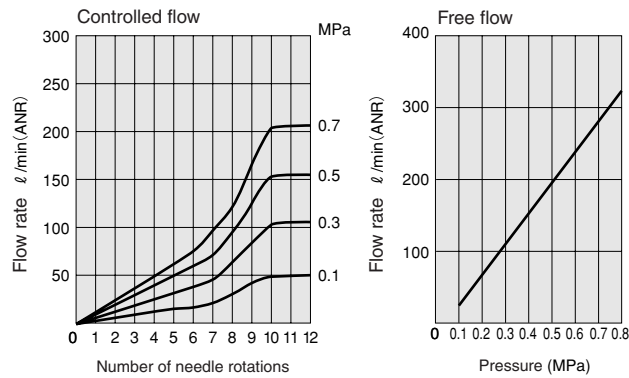
## SC6-M5-M

## SS6-M5-M

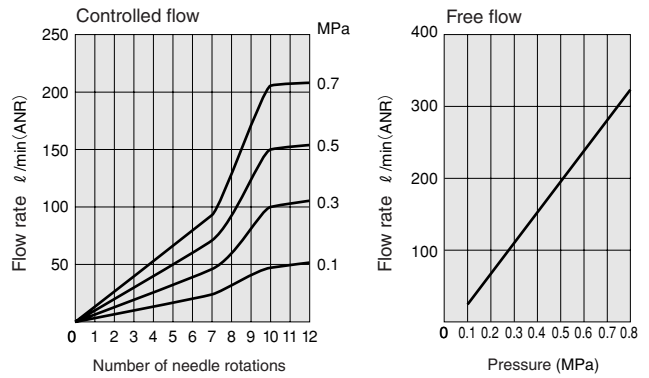


1MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

## SC6-01-M

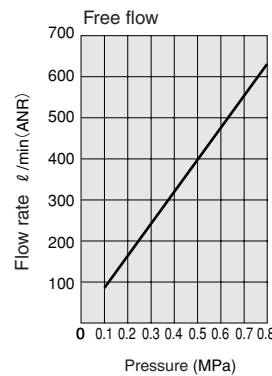
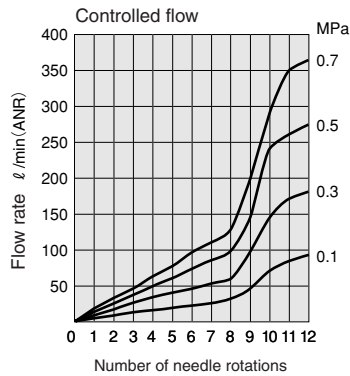


## SS6-01-M



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

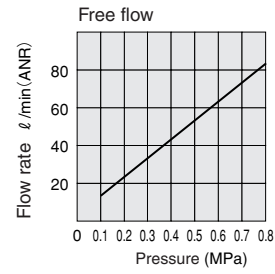
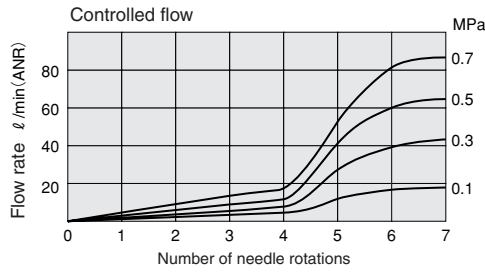
## SC6-02-M



1MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

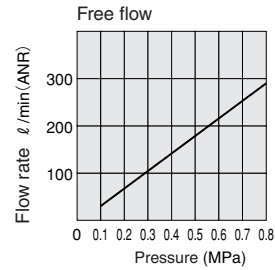
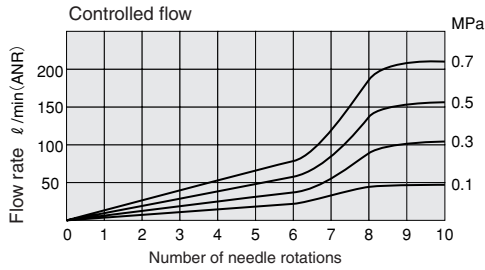
# Flow Rate Characteristics (Union Straight Type)

## SSU4



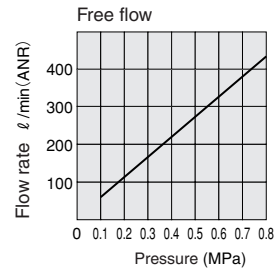
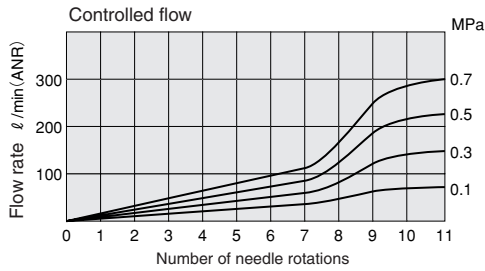
1MPa = 145psi.  
1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

## SSU6



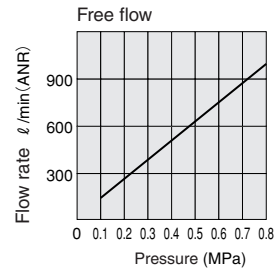
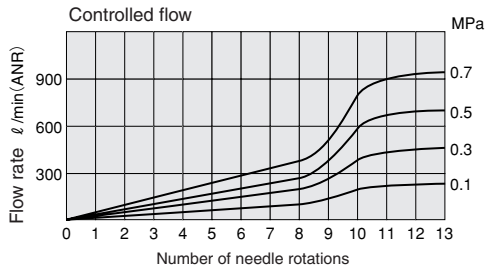
1MPa = 145psi.  
1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

## SSU8



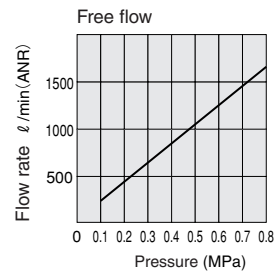
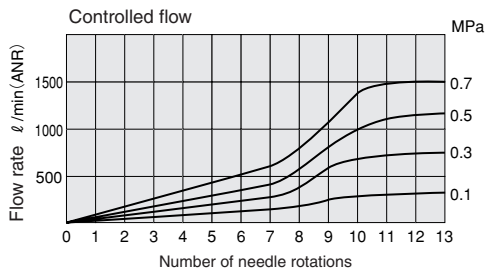
1MPa = 145psi.  
1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

## SSU10



1MPa = 145psi.  
1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

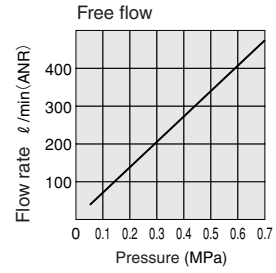
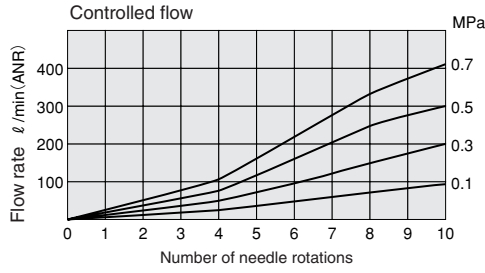
## SSU12



1MPa = 145psi.  
1  $\ell/\text{min}$  = 0.0353ft<sup>3</sup>/min.

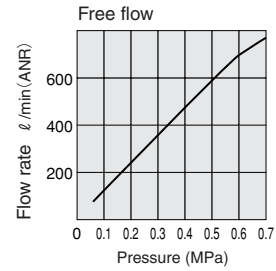
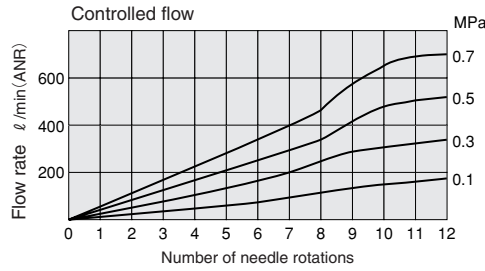
# Flow Rate Characteristics (Large Flow Type)

**SCG6-01-A**  
**SCG8-01-A**



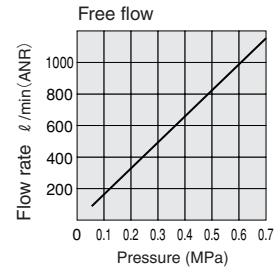
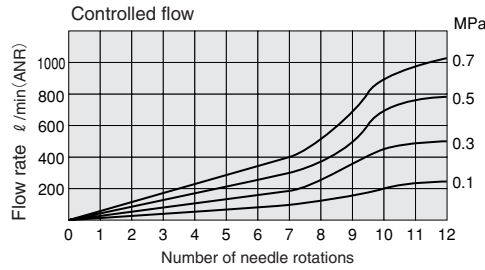
1 MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

**SCG6-02-A**



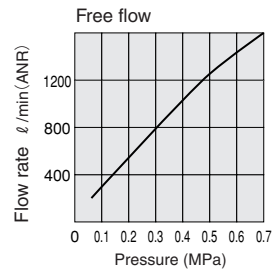
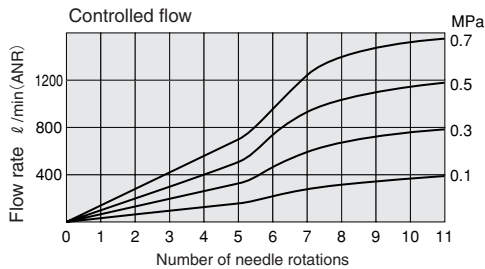
1 MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

**SCG8-02-A**  
**SCG10-02-A**



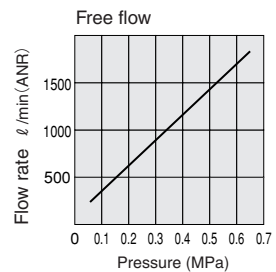
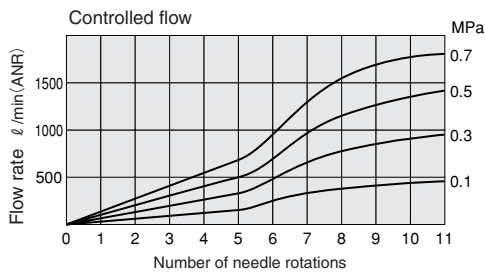
1 MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

**SCG8-03-A**



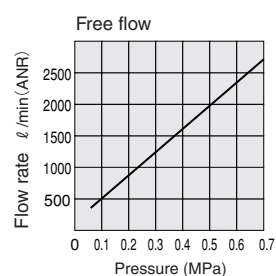
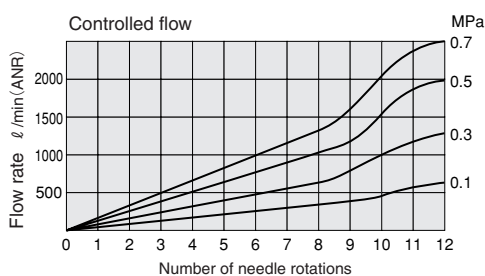
1 MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

**SCG10-03-A**  
**SCG12-03-A**



1 MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

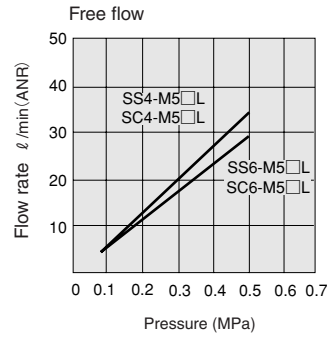
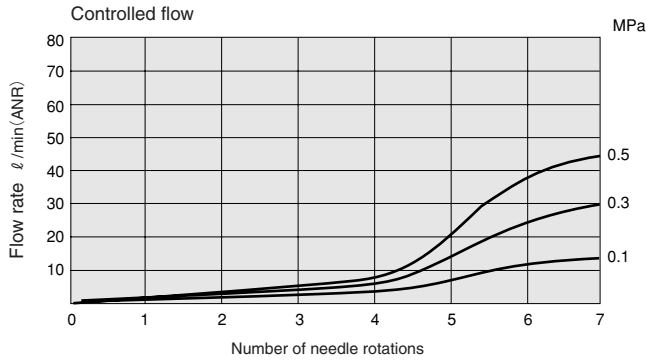
**SCG12-04-A**



1 MPa = 145psi.  
1 l/min = 0.0353ft<sup>3</sup>/min.

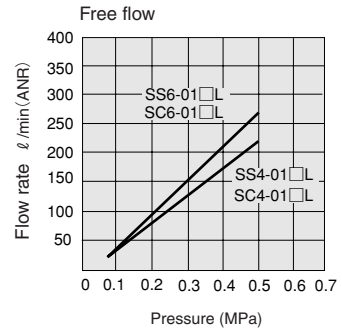
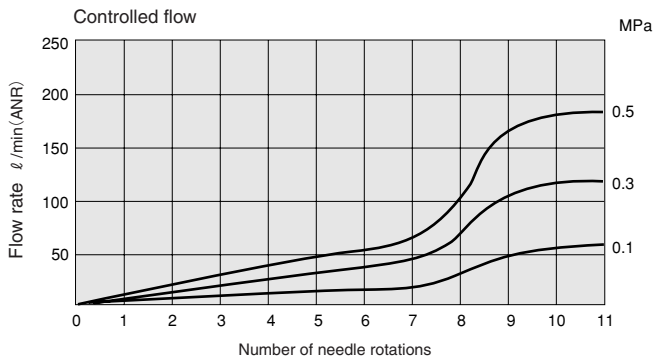
# Flow Rate Characteristics (Low Pressure Type, Elbow/Straight)

SC4-M5-□L SC6-M5-□L  
 SS4-M5-□L SS6-M5-□L



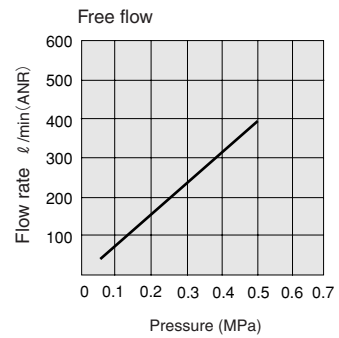
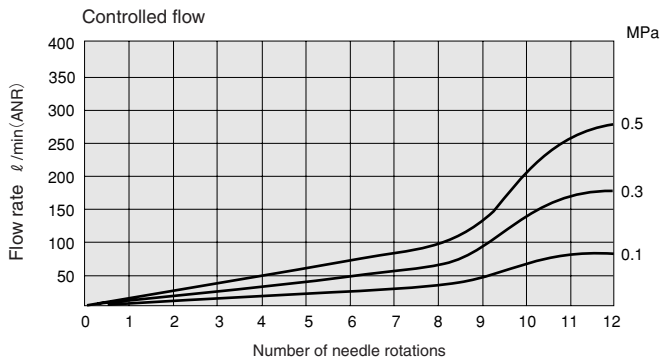
1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

SC4-01-□L SC6-01-□L  
 SS4-01-□L SS6-01-□L



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

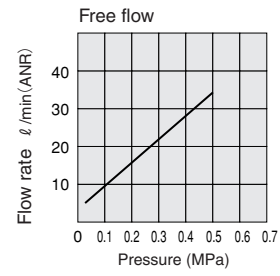
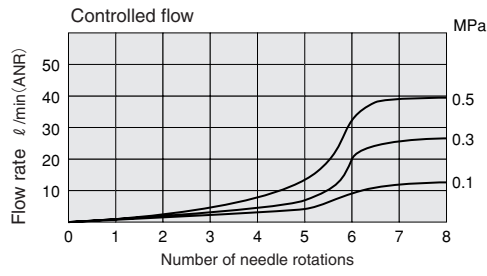
SC6-02-□L SS6-02-□L



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

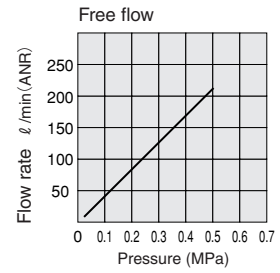
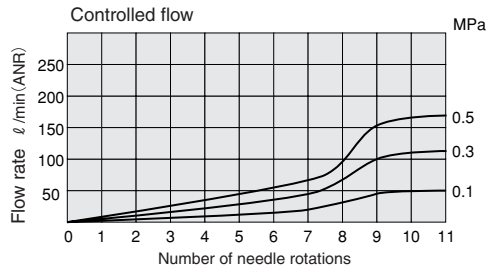
# Flow Rate Characteristics (Low Pressure Type, Union Straight)

## SSU4L



1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

## SSU6L



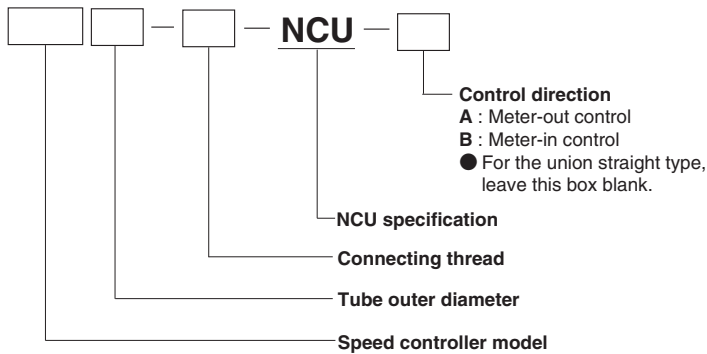
1MPa = 145psi. 1 l/min = 0.0353ft<sup>3</sup>/min.

# SPEED CONTROLLERS WITH QUICK FITTINGS

## NCU Specification

### NCU Specification

#### Order codes



※For the fitting models, the tube size and thread combinations, see the table below. Columns showing the “←” symbol indicate that standard products can be used as the NCU specification. In these cases, place orders for the standard products.

- For specifications, see p.397, 404.
- The dimensions, inner construction, major parts and materials for the NCU specification shown below are the same as the standard type. See inner construction, major parts and materials on p.397, 404, and dimensions on p.399, 408~413. The sealant is not applied to the R taper thread portion of the NCU specification fittings.

**Caution:** For delivery, consult us.

#### Model Table (NCU Specification)

Type	Tube outer diameter	Thread	Standard type model (reference)	NCU specification model
Standard type elbow SC	4	M5×0.8	SC4-M5-A	←
			SC4-M5-B	←
		R1/8	SC4-01-A	SC4-01-NCU-A
			SC4-01-B	SC4-01-NCU-B
	6	M5×0.8	SC6-M5-A	←
			SC6-M5-B	←
		R1/8	SC6-01-A	SC6-01-NCU-A
			SC6-01-B	SC6-01-NCU-B
		R1/4	SC6-02-A	SC6-02-NCU-A
			SC6-02-B	SC6-02-NCU-B
		R3/8	SC6-03-A	SC6-03-NCU-A
			SC6-03-B	SC6-03-NCU-B
	8	R1/8	SC8-01-A	SC8-01-NCU-A
			SC8-01-B	SC8-01-NCU-B
		R1/4	SC8-02-A	SC8-02-NCU-A
			SC8-02-B	SC8-02-NCU-B
		R3/8	SC8-03-A	SC8-03-NCU-A
			SC8-03-B	SC8-03-NCU-B
		R1/2	SC8-04-A	SC8-04-NCU-A
			SC8-04-B	SC8-04-NCU-B
10	R1/4	SC10-02-A	SC10-02-NCU-A	
		SC10-02-B	SC10-02-NCU-B	
	R3/8	SC10-03-A	SC10-03-NCU-A	
		SC10-03-B	SC10-03-NCU-B	
	R1/2	SC10-04-A	SC10-04-NCU-A	
		SC10-04-B	SC10-04-NCU-B	
12	R3/8	SC12-03-A	SC12-03-NCU-A	
		SC12-03-B	SC12-03-NCU-B	
	R1/2	SC12-04-A	SC12-04-NCU-A	
		SC12-04-B	SC12-04-NCU-B	

Type	Tube outer diameter	Thread	Standard type model (reference)	NCU specification model
Standard type straight SS	4	M5×0.8	SS4-M5-A	←
			SS4-M5-B	←
		R1/8	SS4-01-A	SS4-01-NCU-A
			SS4-01-B	SS4-01-NCU-B
	6	M5×0.8	SS6-M5-A	←
			SS6-M5-B	←
		R1/8	SS6-01-A	SS6-01-NCU-A
			SS6-01-B	SS6-01-NCU-B
		R1/4	SS6-02-A	SS6-02-NCU-A
			SS6-02-B	SS6-02-NCU-B
	8	R1/8	SS8-01-A	SS8-01-NCU-A
			SS8-01-B	SS8-01-NCU-B
		R1/4	SS8-02-A	SS8-02-NCU-A
			SS8-02-B	SS8-02-NCU-B
		R3/8	SS8-03-A	SS8-03-NCU-A
			SS8-03-B	SS8-03-NCU-B
	10	R1/4	SS10-02-A	SS10-02-NCU-A
			SS10-02-B	SS10-02-NCU-B
		R3/8	SS10-03-A	SS10-03-NCU-A
			SS10-03-B	SS10-03-NCU-B
12	R3/8	SS12-03-A	SS12-03-NCU-A	
		SS12-03-B	SS12-03-NCU-B	
	R1/2	SS12-04-A	SS12-04-NCU-A	
		SS12-04-B	SS12-04-NCU-B	



## ● Model Table (NCU Specification)

Type	Tube outer diameter	Thread	Standard type model (reference)	NCU specification model	
Free type <b>SSF</b>	4	M5×0.8	SSF4-M5-A	←	
			SSF4-M5-B	←	
		R1/8	SSF4-01-A	SSF4-01-NCU-A	
			SSF4-01-B	SSF4-01-NCU-B	
	6	M5×0.8	SSF6-M5-A	←	
			SSF6-M5-B	←	
		R1/8	SSF6-01-A	SSF6-01-NCU-A	
			SSF6-01-B	SSF6-01-NCU-B	
		R1/4	SSF6-02-A	SSF6-02-NCU-A	
			SSF6-02-B	SSF6-02-NCU-B	
	8	R1/8	SSF8-01-A	SSF8-01-NCU-A	
			SSF8-01-B	SSF8-01-NCU-B	
		R1/4	SSF8-02-A	SSF8-02-NCU-A	
			SSF8-02-B	SSF8-02-NCU-B	
		R3/8	SSF8-03-A	SSF8-03-NCU-A	
			SSF8-03-B	SSF8-03-NCU-B	
	10	R1/4	SSF10-02-A	SSF10-02-NCU-A	
			SSF10-02-B	SSF10-02-NCU-B	
		R3/8	SSF10-03-A	SSF10-03-NCU-A	
			SSF10-03-B	SSF10-03-NCU-B	
	12	R3/8	SSF12-03-A	SSF12-03-NCU-A	
			SSF12-03-B	SSF12-03-NCU-B	
		R1/2	SSF12-04-A	SSF12-04-NCU-A	
			SSF12-04-B	SSF12-04-NCU-B	
Horizontal free type <b>SSF</b>	4	M5×0.8	SSF4-M5-A-P	←	
SSF4-M5-B-P			←		
Mini type elbow <b>SC</b>	3	M3×0.5	SC3-M3-MA	←	
			SC3-M3-MB	←	
		M5×0.8	SC3-M5-MA	←	
			SC3-M5-MB	←	
	4	M3×0.5	SC4-M3-MA	←	
			SC4-M3-MB	←	
		M5×0.8	SC4-M5-MA	←	
			SC4-M5-MB	←	
		R1/8	SC4-01-MA	SC4-01-NCU-MA	
			SC4-01-MB	SC4-01-NCU-MB	
	6	M5×0.8	SC6-M5-MA	←	
			SC6-M5-MB	←	
		R1/8	SC6-01-MA	SC6-01-NCU-MA	
			SC6-01-MB	SC6-01-NCU-MB	
		R1/4	SC6-02-MA	SC6-02-NCU-MA	
			SC6-02-MB	SC6-02-NCU-MB	
	Mini type straight <b>SS</b>	3	M3×0.5	SS3-M3-MA	←
				SS3-M3-MB	←
M5×0.8			SS3-M5-MA	←	
			SS3-M5-MB	←	
4		M3×0.5	SS4-M3-MA	←	
			SS4-M3-MB	←	
		M5×0.8	SS4-M5-MA	←	
			SS4-M5-MB	←	
		R1/8	SS4-01-MA	SS4-01-NCU-MA	
			SS4-01-MB	SS4-01-NCU-MB	
6		M5×0.8	SS6-M5-MA	←	
			SS6-M5-MB	←	
	R1/8	SS6-01-MA	SS6-01-NCU-MA		
		SS6-01-MB	SS6-01-NCU-MB		

Type	Tube outer diameter	Thread	Standard type model (reference)	NCU specification model
Union straight <b>SSU</b>	4	——	SSU4	←
	6	——	SSU6	←
	8	——	SSU8	←
	10	——	SSU10	←
	12	——	SSU12	←
Large flow type elbow <b>SCG</b>	6	R1/8	SCG6-01-A	SCG6-01-NCU-A
		R1/4	SCG6-02-A	SCG6-02-NCU-A
	8	R1/8	SCG8-01-A	SCG8-01-NCU-A
		R1/4	SCG8-02-A	SCG8-02-NCU-A
		R3/8	SCG8-03-A	SCG8-03-NCU-A
	10	R1/4	SCG10-02-A	SCG10-02-NCU-A
		R3/8	SCG10-03-A	SCG10-03-NCU-A
	12	R3/8	SCG12-03-A	SCG12-03-NCU-A
		R1/2	SCG12-04-A	SCG12-04-NCU-A
	Low pressure type elbow <b>SC</b>	4	M5×0.8	SC4-M5-AL
SC4-M5-BL				←
R1/8		SC4-01-AL	SC4-01-NCU-AL	
		SC4-01-BL	SC4-01-NCU-BL	
6		M5×0.8	SC6-M5-AL	←
			SC6-M5-BL	←
		R1/8	SC6-01-AL	SC6-01-NCU-AL
			SC6-01-BL	SC6-01-NCU-BL
		R1/4	SC6-02-AL	SC6-02-NCU-AL
			SC6-02-BL	SC6-02-NCU-BL
Low pressure type straight <b>SS</b>	4	M5×0.8	SS4-M5-AL	←
			SS4-M5-BL	←
		R1/8	SS4-01-AL	SS4-01-NCU-AL
			SS4-01-BL	SS4-01-NCU-BL
	6	M5×0.8	SS6-M5-AL	←
			SS6-M5-BL	←
		R1/8	SS6-01-AL	SS6-01-NCU-AL
			SS6-01-BL	SS6-01-NCU-BL
		R1/4	SS6-02-AL	SS6-02-NCU-AL
			SS6-02-BL	SS6-02-NCU-BL
Free type low pressure <b>SSF</b>	4	M5×0.8	SSF4-M5-AL	←
			SSF4-M5-BL	←
		R1/8	SSF4-01-AL	SSF4-01-NCU-AL
			SSF4-01-BL	SSF4-01-NCU-BL
	6	M5×0.8	SSF6-M5-AL	←
			SSF6-M5-BL	←
		R1/8	SSF6-01-AL	SSF6-01-NCU-AL
			SSF6-01-BL	SSF6-01-NCU-BL
		R1/4	SSF6-02-AL	SSF6-02-NCU-AL
			SSF6-02-BL	SSF6-02-NCU-BL
	8	R1/8	SSF8-01-AL	SSF8-01-NCU-AL
			SSF8-01-BL	SSF8-01-NCU-BL
R1/4		SSF8-02-AL	SSF8-02-NCU-AL	
		SSF8-02-BL	SSF8-02-NCU-BL	
10	R1/4	SSF10-02-AL	SSF10-02-NCU-AL	
		SSF10-02-BL	SSF10-02-NCU-BL	
Horizontal free type for low pressure <b>SSF</b>	4	M5×0.8	SSF4-M5-AL-P	←
SSF4-M5-BL-P			←	
Low pressure type union straight <b>SSU</b>	4	——	SSU4L	←
	6	——	SSU6L	←

SPEED CONTROLLERS WITH QUICK FITTINGS

## Safety Precautions (Speed Controllers with Quick Fittings)

The following is a safety precaution to Speed Controllers with Quick Fittings. For other safety precautions, be sure to read the precautions on p.49.

### Warning

- Since the air control direction depends on the product, be sure to check this guide, and identification mark of the body, for use. An error in control direction is dangerous, resulting in injury to persons and damage to equipment.
- When adjusting the actuator speed, begin adjustment with the body needle in a completely closed state and then steadily open it up. When the needle is open, there is a danger of the actuator rod's popping out. Note that the needle is rotated clockwise to close and counterclockwise to open.
- Do not force the product to rotate or swing even if the plastic body is rotatable. Such application could cause damage or leakage in the body.
- Do not use a mechanical tool to tighten the product's lock nut, instead, manually tighten to firmly secure the lock nut in place. Using a mechanical tool to tighten could result in damage to the lock nut or the body. Also, if the lock nut is not firmly tightened, it could become loose, causing the initial setting to change.

## Handling Instructions and Precautions

### Mounting

#### Precautions for mounting the body

1. To mount the body, use a suitable tool to tighten it to the outer hexagonal section of the body.
2. When attaching fittings, tighten to the recommended tightening torque shown in the table below. Tightening to more than the recommended torque could result in broken threads or air leaks due to deformed gaskets. Tightening to less than the recommended torque could lead to loose screws or air leaks.

#### Recommended tightening torque

Thread type	Thread size	Tightening torque
Metric thread	M3×0.5	0.7N·m [6.2in·lbf]
	M5×0.8	1.5~1.9N·m [13.3~16.8in·lbf]
	M6×1	2~2.7N·m [17.7~23.9in·lbf]
Taper pipe thread	R1/8	7~9N·m [62~80in·lbf]
	R1/4	12~14N·m [106~124in·lbf]
	R3/8	22~24N·m [195~212in·lbf]
	R1/2	28~30N·m [248~266in·lbf]

#### Precautions for removing the body

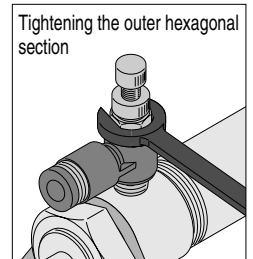
1. To remove the body, use a suitable tool to loosen it from the outer hexagonal section of the body.
2. Clean off the sealant coating on the thread of the removed mating part. The coated sealant could enter other relating parts, and cause breakdowns.

### Caution

- The speed controller allows a certain amount of leakage. Do not use for situations where zero leakage volume are required.

#### Method for tightening screws

1. Tightening screws  
For tightening screws, use a wrench on outer hexagonal section.

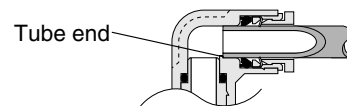


**Caution:** While the quick fitting sealant can be reused a number of times, the thread on the mating part may also be adhered with sealant. Always clean out the inside of the equipment's female thread.

### Tube connection and disconnection

#### Precautions for connecting the tube

1. Check that the cut section of the tube has been cut at straight angle, that the outer surface of the tube is not scratched, and that the tube has not become oval shaped.
2. When connecting a tube, failure to insert the tube all the way to the end could result in air leaks.



3. After connection, pull the tube to check that it will not disconnect.

#### Precautions for disconnecting the tube

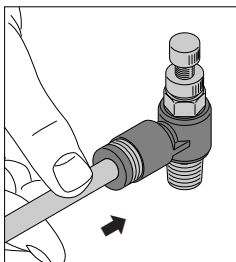
1. Before disconnecting a tube, check that the pressure inside the tube is down to zero.
2. Push the release ring evenly all the way to the end, and then pull the tube out. An insufficient push could make it impossible to pull the tube out, or could scratch the tube, leaving scratched tube material inside the fitting.

# Handling Instructions and Precautions

## Tube connection and disconnection method

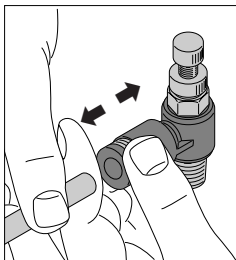
### 1. Tube connection

The Speed Controller with Quick Fitting is equipped with a lock claw that holds the tube in place when it has been pushed all the way to the end, and with an elastic sleeve for sealing the tube periphery.



### 2. Tube disconnection

To disconnect the tube, first push on the release ring, releasing the lock claw, and then pull the tube out. Always stop the air supply before removing the tube.



For cases where tight or cramped piping spaces hinder tube removal operations, a special tool is available. Consult us for details.

### Special tool for tube removal

For  $\phi$  3 [0.118in.],  $\phi$  4 [0.157in.] and  $\phi$  6 [0.236in.] tubes  
Order code : **UJ-1**



For  $\phi$  6 [0.236in.],  $\phi$  8 [0.315in.],  
 $\phi$  10 [0.394in.] and  $\phi$  12 [0.472in.] tubes  
Order code : **UJ-2**



## ● Usable tubes

Either nylon or urethane tubes can be used. The tube outer diameter accuracy should be, for nylon tubes, within  $\pm 0.1\text{mm}$  [ $\pm 0.004\text{in.}$ ] of the nominal dimensions, and for urethane tubes, within  $\pm 0.15\text{mm}$  [ $\pm 0.006\text{in.}$ ] of the nominal dimensions, while the ovalness (difference between long diameter and short diameter) should be within  $0.2\text{mm}$  [ $0.008\text{in.}$ ].

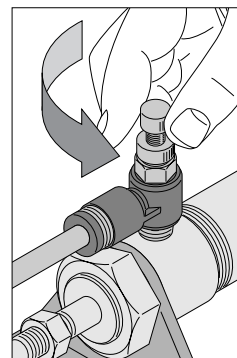
- Cautions:**
1. Use tubes with no visible scratches on the outer surface. If a scratch is made during repeated use, cut off the scratched portion.
  2. Do not bend or twist the tube too much near the connection to the fitting. It could result in air leaks. The minimum bending radius for nylon tubes is as shown in the table below.

Tube size	Minimum bending radius
$\phi$ 3 [0.118]	18 [0.7]
$\phi$ 4 [0.157]	20 [0.8]
$\phi$ 6 [0.236]	30 [1.2]
$\phi$ 8 [0.315]	50 [2.0]
$\phi$ 10 [0.394]	80 [3.2]
$\phi$ 12 [0.472]	150 [5.9]

## ● Speed adjustment of actuator

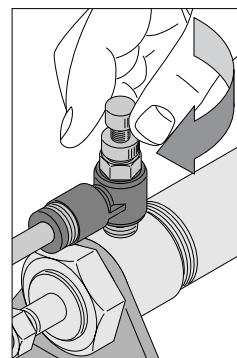
### 1. To increase the speed

From a completely closed position, rotate the speed controller needle in the counterclockwise direction to increase the speed of the actuator. When the desired speed has been reached, always tighten the lock nut to ensure that the speed setting does not change.



### 2. To reduce the speed





If the speed controller needle has been rotated too far (the speed is now too fast), rotate it in the clockwise direction to reduce the speed. When the desired speed has been reached, always tighten the lock nut to ensure that the speed setting does not change.





Before selecting and using the product, please read all the Safety Precautions carefully to ensure proper product use. The Safety Precautions shown below are to help you use the product safely and correctly, and to prevent injury or damage to you, other people, and assets beforehand. Follow the Safety Precautions for: ISO4414 (Pneumatic fluid power—Recommendations for the application of equipment to transmission and control systems), JIS B 8370 (Pneumatic system regulations)

**The directions are ranked according to degree of potential danger or damage: “DANGER!”, “WARNING!”, “CAUTION!”, and “ATTENTION!”**

 <b>DANGER</b>	Expresses situations that can be clearly predicted as dangerous. If the noted danger is not avoided, it could result in death or serious injury. It could also result in damage or destruction of assets.
 <b>WARNING</b>	Expresses situations that, while not immediately dangerous, could become dangerous. If the noted danger is not avoided, it could result in death or serious injury. It could also result in damage or destruction of assets.
 <b>CAUTION</b>	Expresses situations that, while not immediately dangerous, could become dangerous. If the noted danger is not avoided, it could result in light or semi-serious injury. It could also result in damage or destruction of assets.
 <b>ATTENTION</b>	While there is little chance of injury, this content refers to points that should be observed for appropriate use of the product.

- This product was designed and manufactured as parts for use in General Industrial Machinery.
- In the selection and handling of the equipment, the system designer or other person with fully adequate knowledge and experience should always read the Safety Precautions, Catalog, Owner’s Manual and other literature before commencing operation. Making mistakes in handling is dangerous.
- After reading the Owner’s Manual, Catalog, etc., always place them where they can be easily available for reference to users of this product.
- If transferring or lending the product to another person, always attach the Owner’s Manual, Catalog, etc., to the product where they are easily visible, to ensure that the new user can use the product safely and properly.
- The danger, warning, and caution items listed under these “Safety Precautions” do not cover all possible cases. Read the Catalog and Owner’s Manual carefully, and always keep safety first.

 **DANGER**

- Do not use the product for the purposes listed below:
  1. Medical equipment related to maintenance or management of human lives or bodies.
  2. Mechanical devices or equipment designed for the purpose of moving or transporting people.
  3. Critical safety components in mechanical devices.
 This product has not been planned or designed for purposes that require advanced stages of safety. It could cause injury to human life.
- Do not use the product in locations with or near dangerous substances such as flammable or ignitable substances. This product is not explosion-proof. It could ignite or burst into flames.
- When mounting the product and workpiece, always firmly support and secure them in place. Dropping or falling the product or improper operation could result in injury.
- Persons who use a pacemaker, etc., should keep a distance of at least 1 meter [3.28ft.] away from the product. There is a possibility that the pacemaker will malfunction due to the strong magnet built into the product.
- Never attempt to remodel the product. It could result in abnormal operation leading to injury, electric shock, fire, etc.
- Never attempt inappropriate disassembly, or assembly of the product relating to its basic inner construction, or to its performance or functions. It could result in injury, electric shock, fire, etc.
- Do not splash water on the product. Spraying it with water, washing it, or using it underwater could result in malfunction of the product leading to injury, electric shock, fire, etc.
- While the product is in operation, avoid touching it with your hands or otherwise approaching too close. In addition, do not make any adjustments to the interior or to the attached mechanisms (manual override, disconnection or connection of wiring connectors, adjustment of pressure switches, or disconnection of piping tubes or plugs, positioning of mounting products). Improper handling of the product could cause it to fall or operate abnormally, which could result in injury.

 **WARNING**

- Do not use the product in excess of its specification range. Such use could result in product breakdowns, function stop, damage, or drastically reduce the operating life.
- Before supplying air to the device and before starting operation, always conduct a safety check of the area of machine operation. Unintentional supply of air or electricity could possibly result in electric shock, or in injury caused by contact with moving parts.
- Do not touch the terminals and the miscellaneous switches, etc., while the device is powered on. There is a possibility of electric shock and abnormal operation.
- Do not throw the product into fire. The product could explode and/or release toxic gases.
- Do not sit on the product, place your foot on it, or place other objects on it. Accidents such as falling could result in injury. Dropping or toppling the product may result in injury, or it might also damage or break it, resulting in abnormal or erratic operation, runaway, etc.
- When conducting any kind of operation for the product, such as maintenance, inspection, repair, or replacement, always turn off the air supply completely and confirm that residual pressure inside the product or in piping connected to the product is zero before proceeding. In particular, be aware that residual air will still be in the air compressor or vacuum pump or air storage tank. The actuator could abruptly move if residual air pressure remains inside the piping, causing injury.
- In preparation for equipment shutdowns due to emergency stops, power blackouts, or other system problems, prepare safety circuit and equipment designs that prevent the occurrence of equipment damage or personal injury.
- Always release the lock on the locking type manual override before commencing normal operations. An unreleased lock could result in incorrect operation.
- Always shut OFF the power before wiring operations. Wiring with the power ON could result in electrical shocks.
- Always apply the stipulated amount of voltage to the solenoids. Applying the wrong voltage could result in failure to perform the intended function, and could damage or burn the product itself.
- Avoid scratching the cords for the sensor switch lead wires, etc. Letting the cords be subject to scratching, excessive bending, pulling, rolling up, or being placed under heavy objects or squeezed between two objects, may result in current leaks or defective continuity that lead

## CAUTION

For Fluoresin Products, always read the Safety Precautions on p.819 and 866 carefully before use.

to fire, electric shock, or abnormal operation.

- Do not pull out or plug in the connectors while the power is ON. Also, do not put unnecessary stress on the connector. It could result in erratic equipment operation that could lead to personal injury, equipment breakdown, or electrical shock, etc.
- Always check the Catalog to ensure that the product wiring and piping is done correctly. Errors in wiring and piping could lead to abnormal operation of the actuators, etc.
- When mounting a solenoid valve or electro-pneumatic transducing regulator inside a control panel, or when supplying electrical power to such units over long periods of time, take heat radiation measures to ensure that temperatures surrounding the solenoid valve or electro-pneumatic transducing regulator remain within the specified ambient temperature range. If planning long periods of continuous energizing, consult us.
- In low frequency use (more than 30 days between uses), there is a possibility that contacting parts may have stuck together, resulting in equipment operation delays or sudden movements that could lead to personal injury. Run a test operation at a minimum operations frequency of 30 days between tests to confirm that movement is normal.
- Do not locate solenoid valves, electro-pneumatic transducing regulators, or the wiring for controlling such units near power lines carrying large electrical currents, or in areas subject to the generation of powerful magnetic fields or electrical surges. Such location could result in unintentional operations.
- Surge voltages and electromagnetic pulses could occur when solenoid valves and electro-pneumatic transducing regulators are being switched OFF, which could have an effect on the operations of surrounding equipment. Either use solenoids with surge suppression, or take protective measures against surges and electromagnetic pulses on electrical circuits.
- Do not use the product where ozone may be generated, such as near ocean beaches or other places subject to direct sunlight or mercury lamps. Ozone can cause rubber parts to deteriorate, which can lead to degraded performance and functions, or to equipment stoppages. (Excludes items where measures against ozone have been taken.)
- Do not use any media other than shown on the specifications. Use of non-specified media could lead to functional shutdown after a short period, to sudden performance drops, or to shorter operating life.
- In initial operations after the equipment has been idle for 48 hours or more, or has been in storage, there is a possibility that contacting parts may have stuck together, resulting in equipment operation delays or sudden movements. For these initial operations, always run a test operation before use to check that operating performance is normal.
- After wiring operations, always check to ensure that no wiring connection errors exist before turning ON the power.

## CAUTION

- Do not use the product in locations that are subject to direct sunlight (ultraviolet rays), dust, salt, iron powder, high temperature, high humidity, or in the ambient atmospheres that include organic solvents, phosphate ester type hydraulic oil, sulphur dioxide, chlorine gas, acids, etc. It could lead to an early shutdown of some functions or a sudden degradation of performance, and result in a reduced operating life. For the materials used, see Major Parts and Materials.
- When installing the product, leave room for adequate working space around it. Failure to ensure adequate working space will make it more difficult to conduct daily inspections or maintenance, which could eventually lead to system shutdown or damage to the product.
- For mounting or transport of heavy products, use a lift, supporting tool, or several people, to provide firm support, and proceed with due caution to ensure personal safety.
- Always post an "operations in progress" sign for installations, adjustments, or other operations, to avoid unintentional supplying of air, electrical power, etc. Such accidental supplies may cause electric shock or sudden activation of the product that could result in physical injury.
- Do not bring floppy disks or magnetic media, etc., within 1 meter [3.28ft.] of the energized valves or electro-pneumatic transducing regulators. There is the possibility that the data on the floppy disks will be destroyed due to the magnetism of the magnet.
- Depending on the product, generation of leakage current on a control circuit could result in unintentional equipment motion. Take measures to ensure that the amount of current leaking into the control circuit does not exceed the leakage current limits allowed in the product specifications.

- For lubrication of sliding areas, use the specified lubricants. Use of the wrong lubricant could result in alteration or deterioration of the operating material's physical properties, or in degradation of its performance.
- Do not block the product's breathing holes. This will result in pressure changes due to changes in volume during operation. Blocking the breathing holes destroys the pressure balance, and could cause failure of the intended operation, equipment damage, or personal injury.
- The pressure used in vacuum equipment is vacuum (negative) pressure. Be careful to prevent positive pressure from intruding, which could cause damage to vacuum gauges and vacuum pumps. Moreover, supply of pressure greater than 0.2MPa [29psi.] for **VR100**, or 0.5MPa [73psi.] for **VR200** and **NVRA200**, could result in damage to the product.
- The properties of the lubrication oil can change if using in dry air where dew point temperatures is lower than  $-20^{\circ}\text{C}$  [ $-4^{\circ}\text{F}$ ]. It could result in degraded performance or in functional shutdown.

## ATTENTION

- When considering the possibility of using this product in situations or environments not specifically noted in the Catalog or Owner's Manual, or in applications where safety is an important requirement such as in an airplane facility, combustion equipment, leisure equipment, safety equipment, and other places where human life or assets may be greatly affected, take adequate safety precautions such as an application with enough margins for ratings and performance or fail-safe measure. Be sure to consult us about such applications.
- Always check the catalog and other reference materials for product wiring and plumbing setup.
- Use a protective cover, etc., to ensure that human bodies do not come into direct contact with the operating portion of mechanical devices, etc.
- Do not control in a way that would cause workpieces to fall during power failure. Take control measures so that they prevent the table or workpieces, etc., from falling during power failure or emergency stop of the mechanical devices.
- Install a muffler, etc., on the exhaust port. It is effective in reducing exhaust noise.
- After adjusting the pressure, lock the pressure regulating knob.
- When handling the product, wear protective gloves, safety glasses, safety shoes, etc., to keep safety.
- When the product can no longer be used, or is no longer necessary, dispose of it appropriately as industrial waste.
- Pneumatic equipment can exhibit degraded performance and function over its operating life. Always conduct daily inspections of the pneumatic equipment, and confirm that all requisite system functions are satisfied, to prevent accidents from happening.
- For inquiries about the product, contact your nearest Koganei sales office or Koganei overseas department. The address and telephone number is shown on the back cover of this catalog.

## OTHERS

- Always observe the following items.
  1. When using this product in pneumatic systems, always use genuine KOGANEI parts or compatible parts (recommended parts). When conducting maintenance and repairs, always use genuine KOGANEI parts or compatible parts (recommended parts). Always observe the required methods.
  2. Do not attempt inappropriate disassembly or assembly of the product relating to basic configurations, or its performance or functions.

Koganei cannot be responsible if these items are not properly observed.