

KOGANEI

Auxiliary

SPEED CONTROLLER TSC Series

INSTRUCTION MANUAL Ver.1.0

SPEED CONTROLLERS TSCO SERIES

M3×0.5

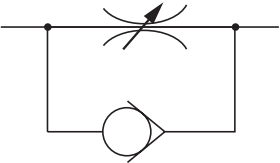


- Offer fine speed control for the M3 ported Pen Cylinders.
- Compact, lightweight, and easy to handle.

Specifications

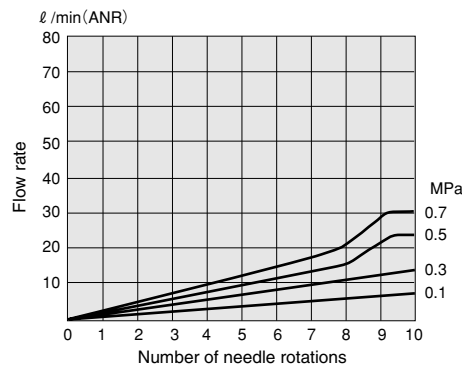
Item		Model	TSCO	TSCO-L	TSCO-UC	TSCO-UL
Piping type	Controlled flow P		Female thread		Universal male thread	
	Controlled flow A		Female thread			
Port size			M3×0.5			
Media			Air			
Operating pressure range		MPa [psi.]	0～0.7 [0～102]			
Proof pressure		MPa [psi.]	1.03 [149]			
Cracking pressure		MPa [psi.]	0.05 [7.3]			
Operating temperature range		°C [°F]	5～60 [41～140]			
Mass		g [oz.]	5 [0.18]	4 [0.14]	6 [0.21]	6 [0.21]

Symbol

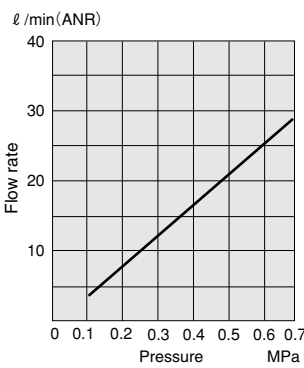


Flow Rate Characteristics

● Controlled flow

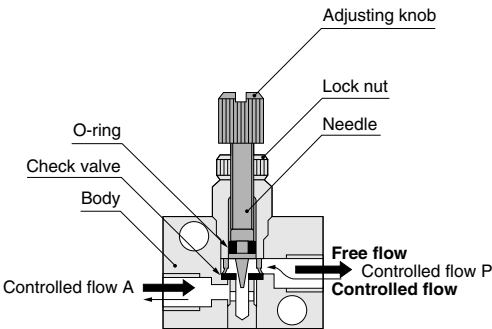


● Free flow



1MPa = 145psi. 1 l/min = 0.0353ft³/min.

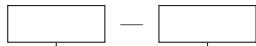
Inner Construction and Major Parts



Major Parts and Materials

Parts	Materials
Body	Brass (nickel plated)
Needle	Stainless steel
Lock nut	Brass (nickel plated)
Check valve	Synthetic rubber (NBR)
O-ring	
Adjusting knob	Brass (nickel plated)

Order Codes



Model

TSCO

TSCO-L

TSCO-UC

TSCO-UL

Non-ion specification

Blank

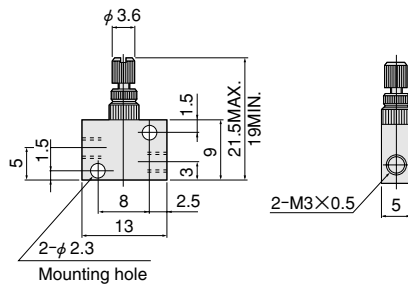
Standard specification

NCU

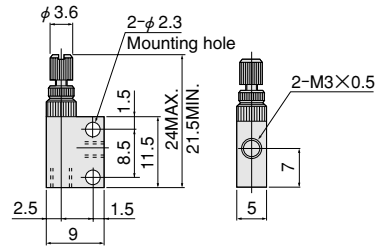
Non-ion specification

Dimensions (mm)

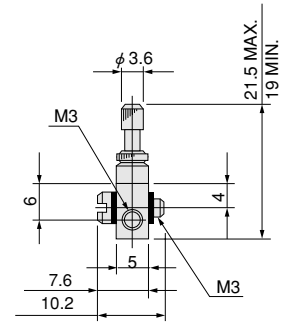
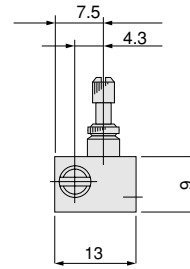
TSCO



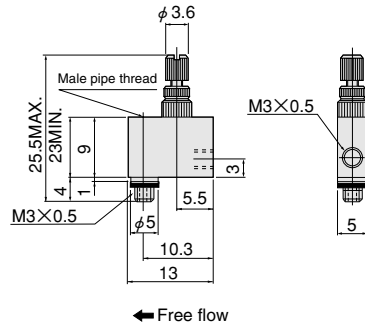
TSCO-L



TSCO-UC



TSCO-UL



Handling Instructions and Precautions

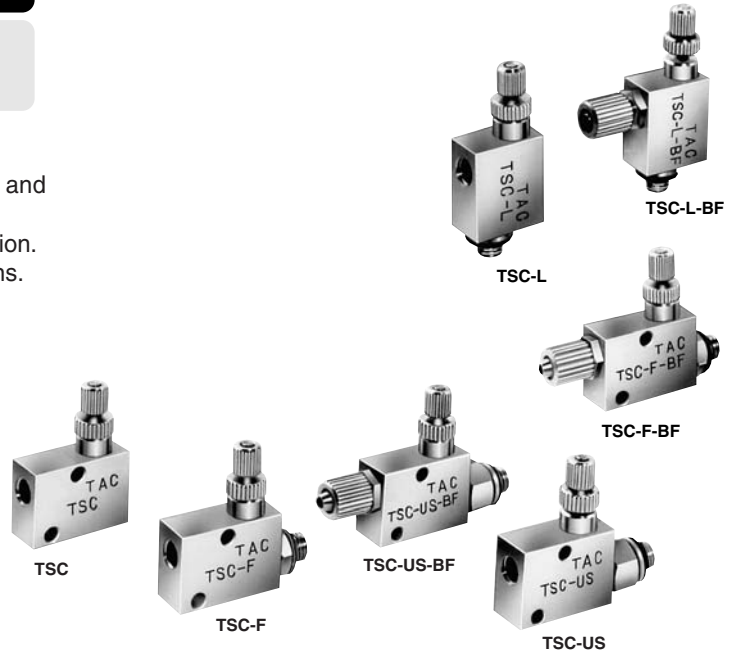
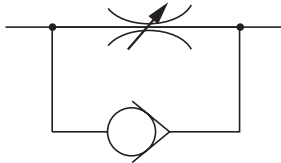
- Always use fingertips to rotate and tighten the lock nut and needle.
Use of excessive tightening force with tools, etc., could cause damage to the units.
- When using a universal male thread type for piping, secure at the male pipe thread portion. The tightening torque should not exceed $0.5 \text{ N} \cdot \text{m}$ [$4.4 \text{ in} \cdot \text{lbf}$].

SPEED CONTROLLERS TSC SERIES

M5×0.8, With Clamp Fitting

- Compact and lightweight, optimum for Pen Cylinders and Jig Cylinders.
- Wide variation of products allows mounting in any direction.
- Straight type and L type offer a choice of piping directions.

Symbol



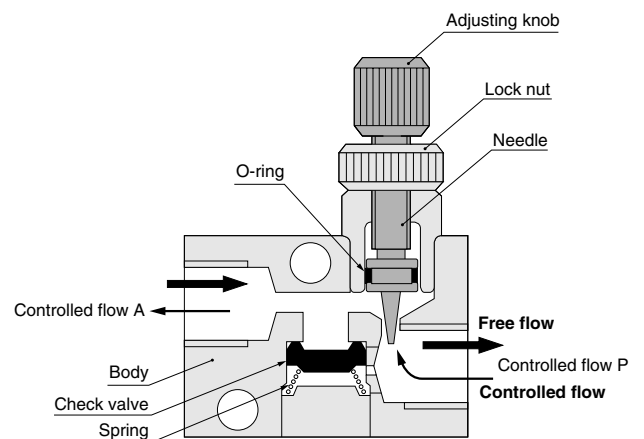
Specifications

Item	Model	TSC	TSC-F	TSC-F-BF	TSC-US	TSC-US-BF	TSC-L	TSC-L-BF
Piping type and port size	Controlled flow P	Female thread M5×0.8	Male thread M5×0.8		Union male thread M5×0.8		Male thread M5×0.8	
	Controlled flow A	Female thread M5×0.8		For urethane tube φ 4×2.5 Clamp fitting	Female thread M5×0.8	For urethane tube φ 4×2.5 Clamp fitting	Female thread M5×0.8	For urethane tube φ 4×2.5 Clamp fitting
Media		Air						
Operating pressure range	MPa [psi.]	0~0.9 [0~131]						
Proof pressure	MPa [psi.]	1.32 [191]						
Cracking pressure	MPa [psi.]	0.05 [7.3]						
Operating temperature range	°C [°F]	5~60 [41~140]						
Mass	g [oz.]	16 [0.56]	18 [0.63]	20.5 [0.72]	19 [0.67]	21.5 [0.76]	15 [0.53]	17 [0.60]

Order Codes

Model	Non-ion specification
TSC	Blank — Standard specification
TSC-F	NCU — Non-ion specification
TSC-F-BF	
TSC-US	
TSC-US-BF	
TSC-L	
TSC-L-BF	

Inner Construction and Major Parts



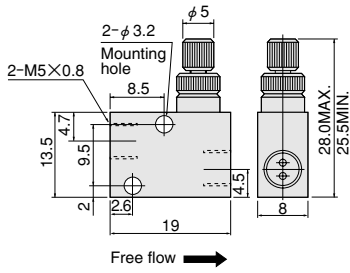
Major Parts and Materials

Parts	Materials
Body	Brass (nickel plated)
Needle	Stainless steel
Lock nut	Brass (nickel plated)
Check valve	Synthetic rubber (NBR)
O-ring	
Adjusting knob	Brass (nickel plated)

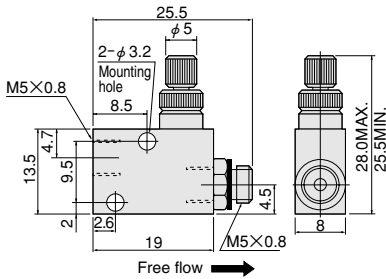
Dimensions (mm)

● Straight type

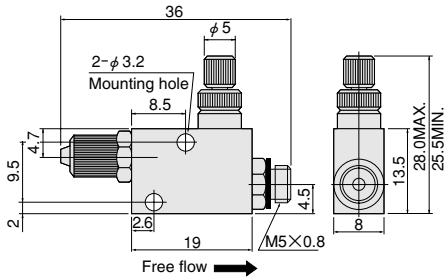
● TSC



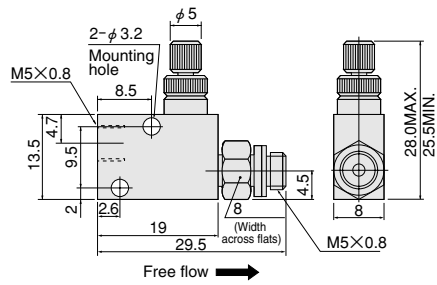
● TSC-F



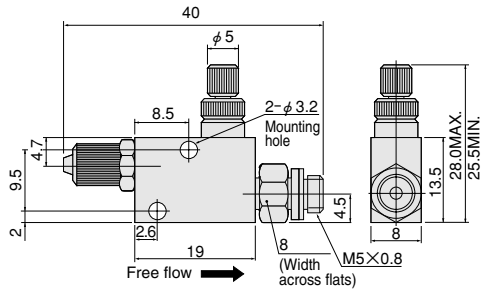
● TSC-F-BF



● TSC-US

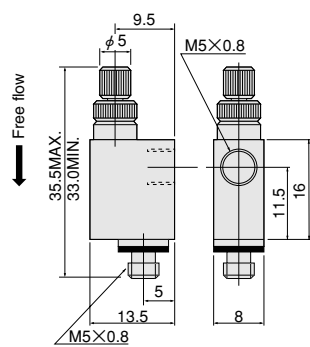


● TSC-US-BF

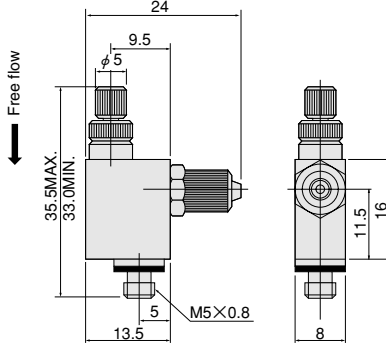


● L type

● TSC-L

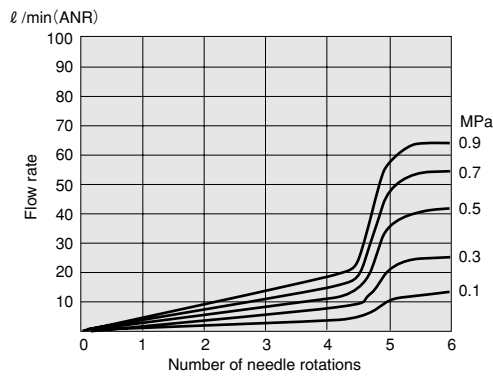


● TSC-L-BF



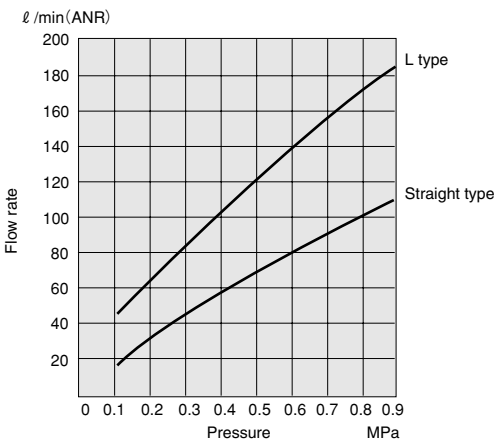
Flow Rate Characteristics

● Controlled flow



1MPa = 145psi. 1 l/min = 0.0353ft³/min.

● Free flow

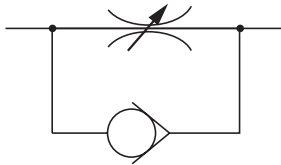


SPEED CONTROLLERS SC SERIES

M5×0.8, Rc1/8

- Compact and lightweight, optimum for Pen Cylinders, Jig Cylinders, and Slim Cylinders.
- Straight type and L type offer mounting in any direction.
- Union type allows piping and needle setting in any direction.

Symbol



Specifications

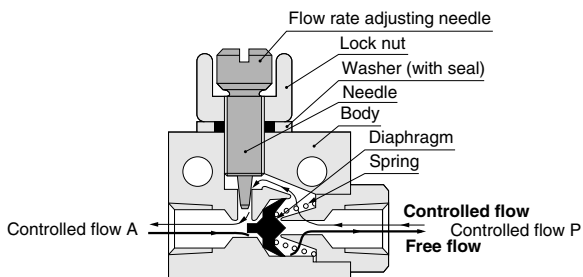
Item	Model	SC0	SC0-F	SC0-US	SC0-UL	SC1	SC2
Piping type		Female thread	Male thread	Union male thread		Female thread	
				Straight	Elbow		
Port size		M5×0.8					Rc1/8
Operating pressure range	MPa [psi.]	0~0.9 [0~131]					
Proof pressure	MPa [psi.]	1.32 [191]					
Cracking pressure	MPa [psi.]	0.05 [7.3]				0.04 [5.8]	0.03 [4.4]
Operating temperature range	°C [°F]	5~60 [41~140]					
Mass	g [oz.]	30 [1.06]	35 [1.23]	36 [1.27]	88 [3.10]	55 [1.94]	

Order Codes

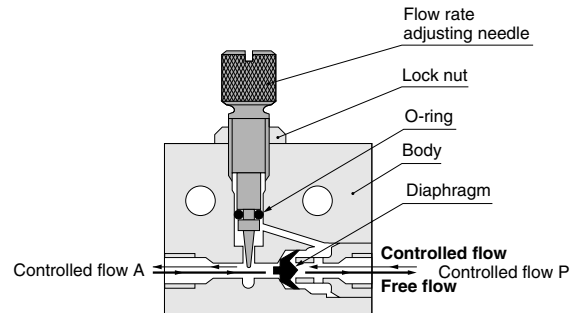
Model	Non-ion specification
SC0	Blank — Standard specification
SC0-F	NCU — Non-ion specification
SC0-US	
SC0-UL	
SC1	
SC2	

Inner Construction and Major Parts

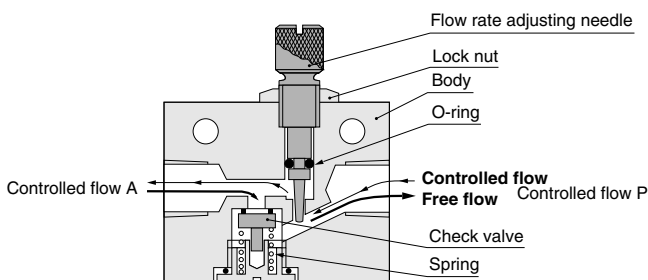
●SC0



●SC1



●SC2



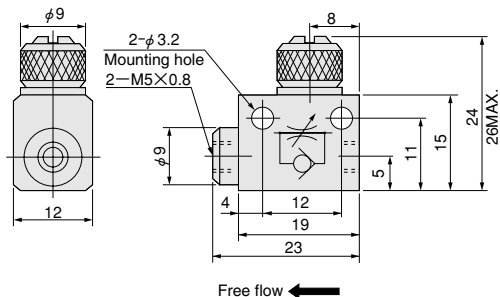
Major Parts and Materials

Parts	Materials
Body	Brass (nickel plated) ^{Note}
Needle	Stainless steel
Lock nut	Brass (nickel plated)
Check valve	Synthetic rubber (NBR)
O-ring	
Flow rate adjusting needle	Brass (nickel plated)

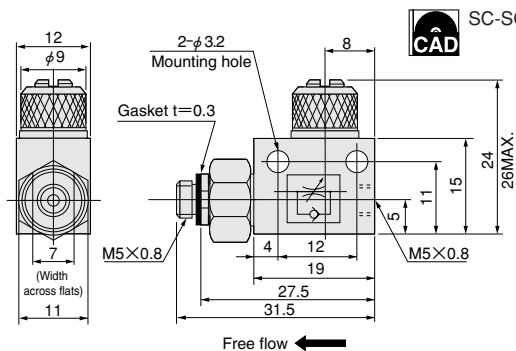
Note :SC2 is made of aluminum alloy (anodized).

Dimensions (mm)

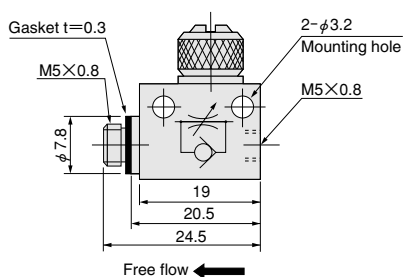
SC0



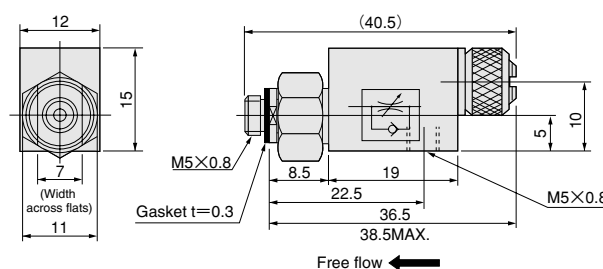
SC0-US



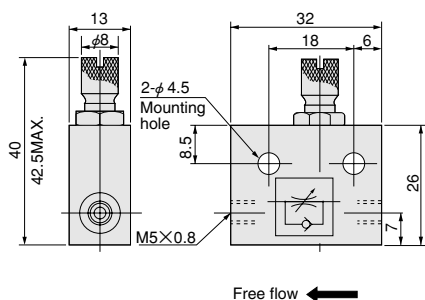
SC0-F



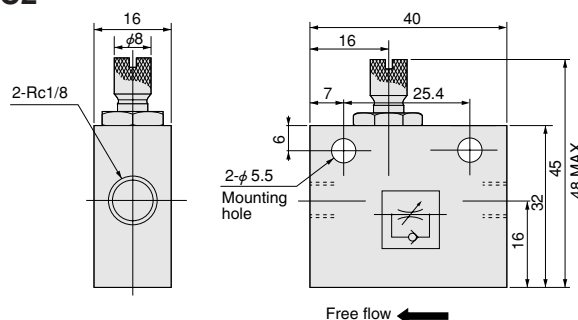
SC0-UL



SC1

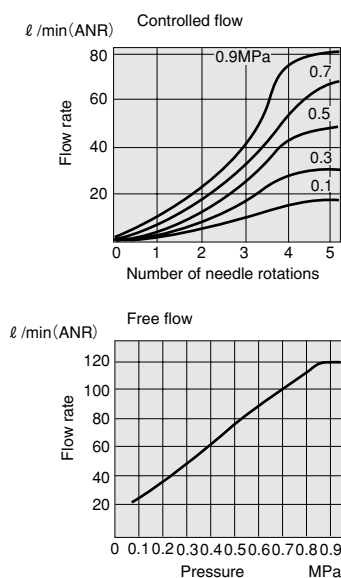


SC2

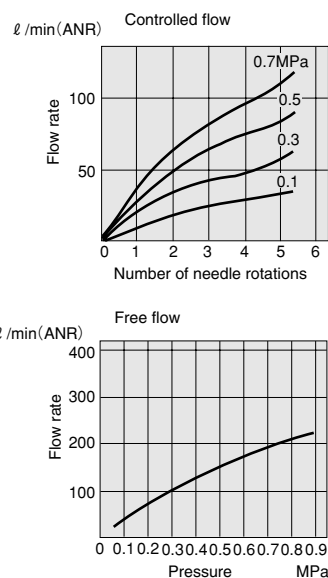


Flow Rate Characteristics

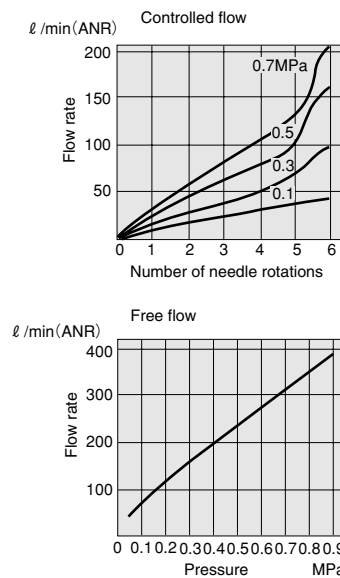
SC0



SC1



SC2



1 MPa = 145psi.
1 l/min = 0.0353ft³/min.

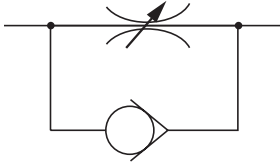
SPEED CONTROLLERS

SCL SERIES

Male thread, R1/8, R1/4
Female thread, Rc1/8, Rc1/4

- Compact and lightweight, optimum for Slim Cylinders, etc.
- Enables direct connection to cylinder connection ports, eliminating the piping work and materials.
- Can install L shaped piping to maintain compact piping setups.

Symbol



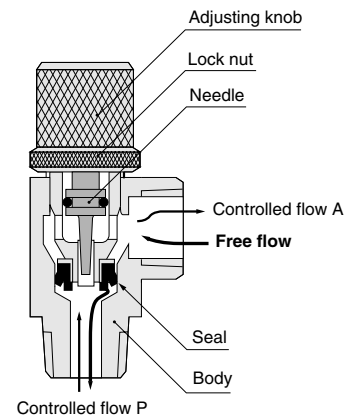
SCL1

SCL2

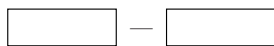
Specifications

Item	Model	SCL1	SCL2
Mounting type		Male thread specification, enabling direct cylinder mounting	
Port size		R1/8 Controlled flow P: male thread A: female thread Rc1/8	R1/4 Controlled flow P: male thread A: female thread Rc1/4
Media		Air	
Operating pressure range	MPa [psi.]	0~0.9 [0~131]	
Proof pressure	MPa [psi.]	1.32 [191]	
Cracking pressure	MPa [psi.]	0.06 [8.7]	
Operating temperature range	°C [°F]	5~60 [41~140]	
Mass	g [oz.]	46 [1.62]	125 [4.41]
Materials	Body	Brass (nickel plated)	
	Needle	Stainless steel	
	Seal	Synthetic rubber (NBR)	

Inner Construction and Major Parts



Order Codes

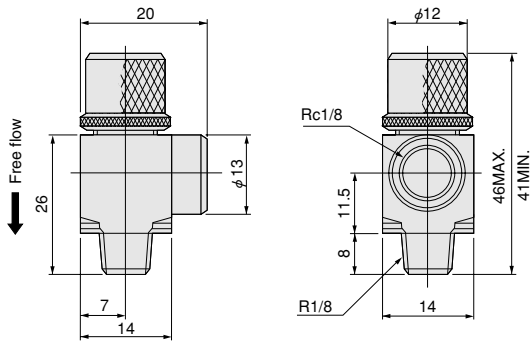


Model
SCL1
SCL2

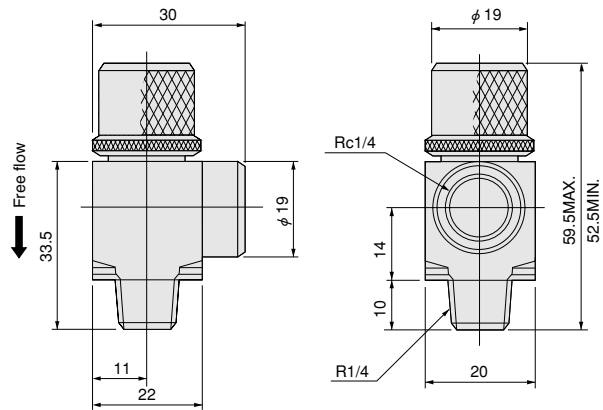
Non-ion specification
Blank — Standard specification
NCU — Non-ion specification

Dimensions (mm)

SCL1

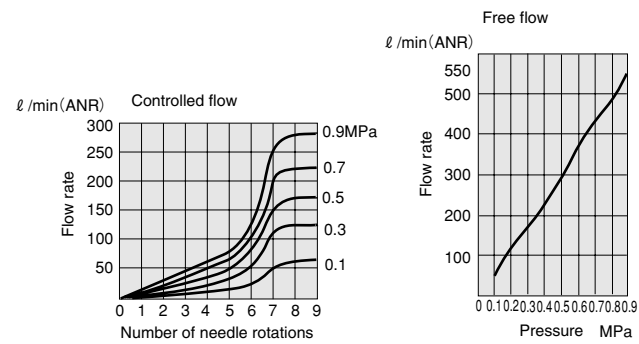


SCL2



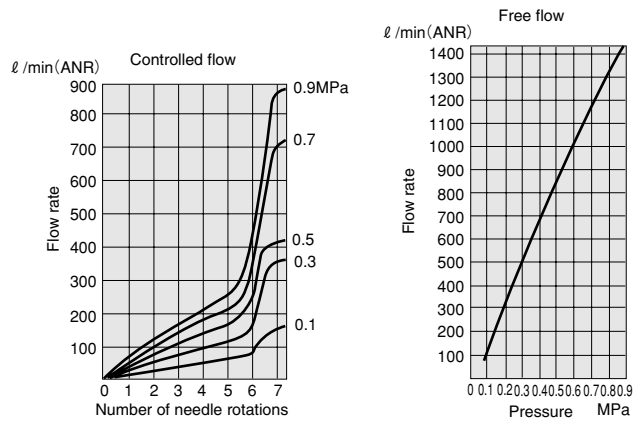
Flow Rate Characteristics

SCL1



1MPa = 145psi. 1 l/min = 0.0353ft³/min

SCL2



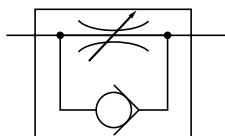
1MPa = 145psi. 1 l/min = 0.0353ft³/min.

SPEED CONTROLLERS KSC SERIES

Rc1/8 ~ Rc1

- Easy to adjust flow rate.
- Maintain stable flow rate.
- Compact and easy mounting.

Symbol



Specifications

Item \ Model		KSC11	KSC22	KSC21	KSC31	KSC41	KSC6	KSC8	
Port size Rc		1/8	1/4		3/8	1/2	3/4	1	
Effective area	mm ²	Free flow	5.5 [0.31]	10 [0.56]	32 [1.78]	38 [2.11]	38 [2.11]	67 [3.72]	90 [5]
	[Cv]	Controlled flow	3.0 [0.17]	6.5 [0.36]	22 [1.22]	22 [1.22]	22 [1.22]	62 [3.44]	103 [5.72]
Operating pressure range MPa [psi.]		0.9 [131]							
Proof pressure MPa [psi.]		1.3 [189]							
Cracking pressure MPa [psi.]		0.06 [8.7]	0.02 [2.9]				0.01 [1.5]		
Operating temperature range °C [°F]		5~60 [41~140]							
Mass g [oz.]		90 [3.17]	130 [4.59]	420 [14.8]			960 [33.9]	880 [31.0]	
Body material		Zinc die-casting			Aluminum die-casting				

Order Codes

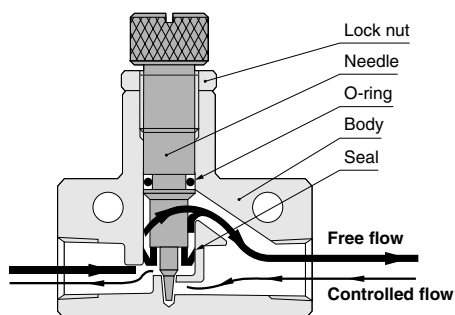


Model
KSC11
KSC22 KSC41
KSC21 KSC6
KSC31 KSC8

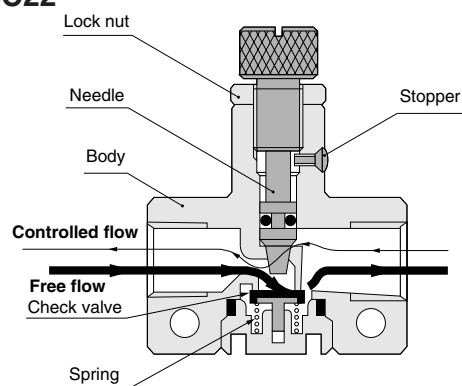
Non-ion specification
Blank — Standard specification
NCU — Non-ion specification

Inner Construction and Major Parts

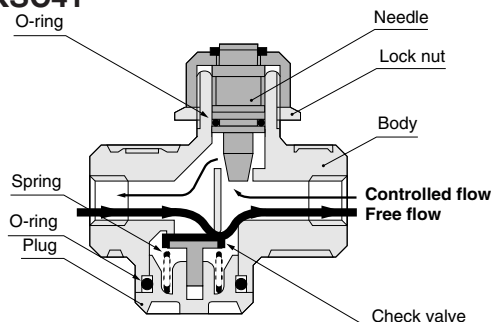
● KSC11



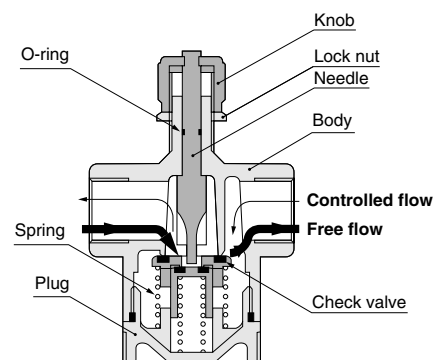
● KSC22



● KSC21 ● KSC31 ● KSC41



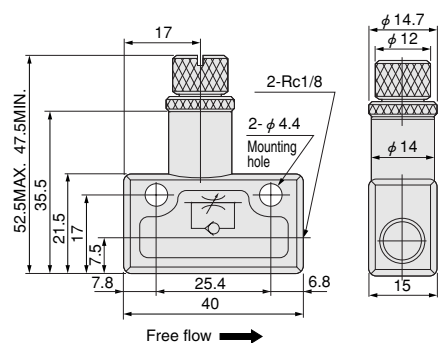
● KSC6 ● KSC8



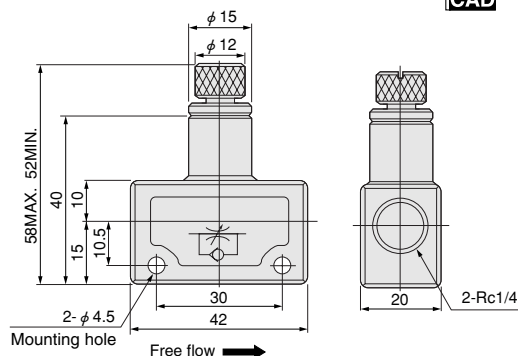
Note: In **KSC6** and **KSC8**, turning the knob clockwise increases the controlled flow rate, while turning the knob counterclockwise reduces it.
(For all other models, this is reversed.)

Dimensions (mm)

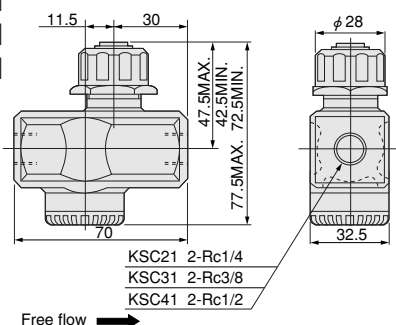
● KSC11



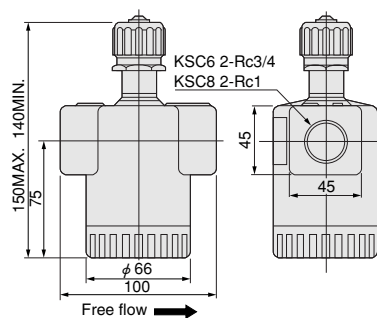
● KSC22



● KSC21 ● KSC31 ● KSC41

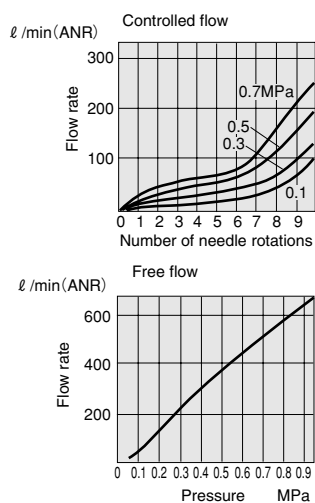


● KSC6 ● KSC8

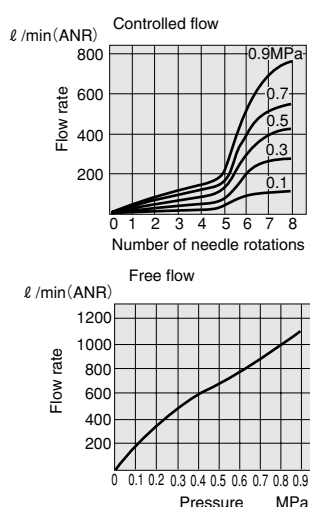


Flow Rate Characteristics

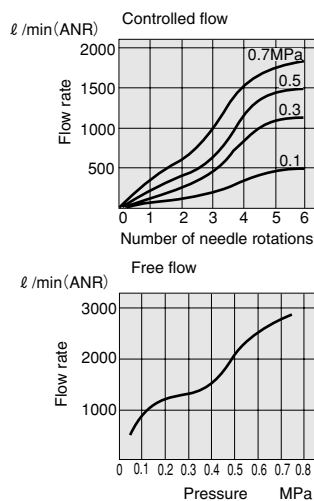
● KSC11



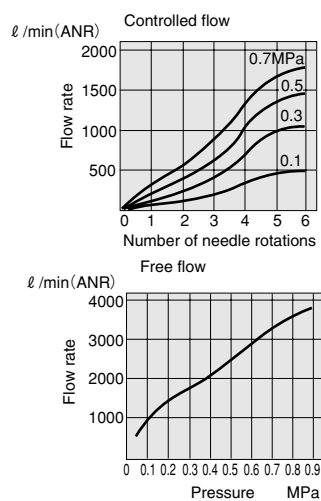
● KSC22



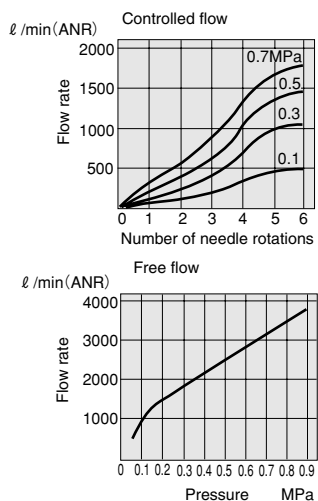
● KSC21



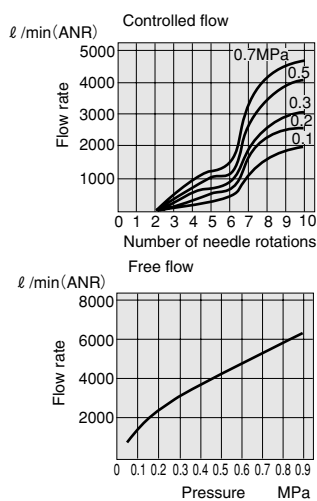
● KSC31



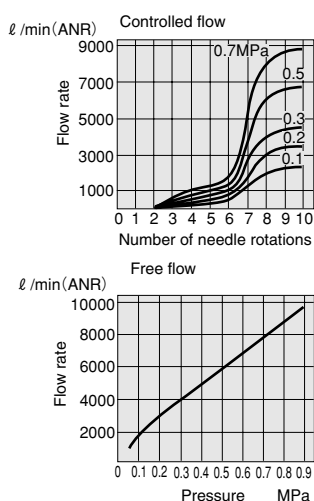
● KSC41



● KSC6



● KSC8



1MPa = 145psi.
1 l/min = 0.0353ft³/min.