Flow rate can be seen!

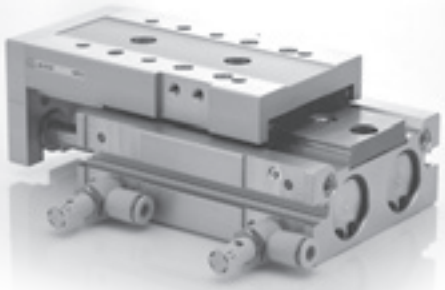
A compact type is added to the speed controller featuring a dial with linear characteristics

Smallest in the industry* Compact

Use of a small dial allows installation on the speed controller cylinder without interfering with the ground surface of the cylinder. (PAT.)

* Based on investigation in October, 2015 by CKD.

Industry's smallest



DESIGN AWARD 2018

Received the 2016 Good Design Award

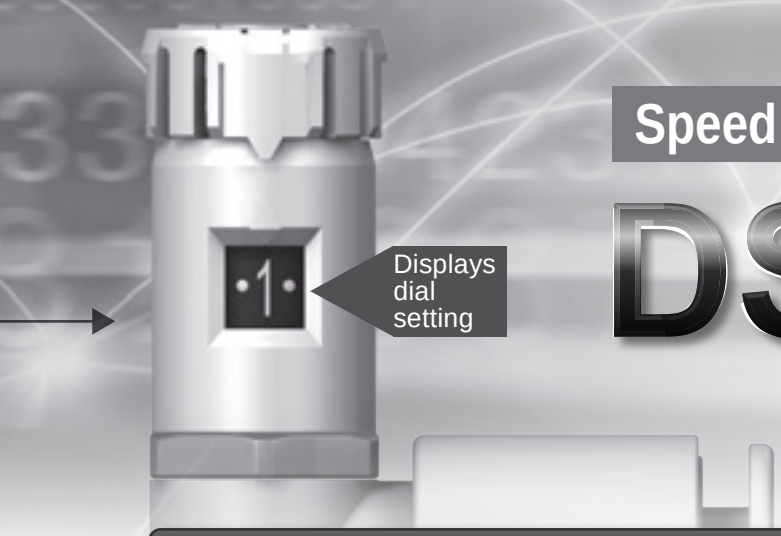
More precise quantification achieved Compact

Indicator displays the number of dial rotations in increments of 0.5.
Finer quantification is now possible.

Operability has been improved With "clickings" that can be felt with your fingertips, each 0.5 turn can now be confirmed even in situations where the dial display cannot be visually inspected.

Variety of models		Tube outer diameter	Port size				
			M5	R1/8	R1/4	R3/8	R1/2
Compact	Standard flow rate **DSC-C-*-*** / Low flow rate **DSC-C-*-*-L**	ø3.2	●				
		ø4	●	●			
		ø6	●	●			
		ø8		●			
	Ultra-low flow rate **DSC-C-*-*-F**	ø4	●	●			
		ø6	●	●			
Standard	Low flow rate **DSC-*-*-L** / Standard flow rate **DSC-*-***	ø4		●			
		ø6		●	●	●	
		ø8		●	●	●	
		ø10			●	●	●
		ø12				●	●

Broad lineup



Speed controller with adjusting dial

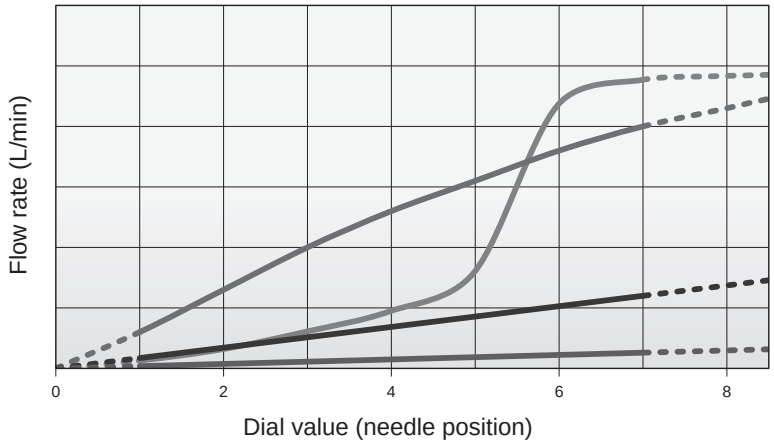
DSC Series

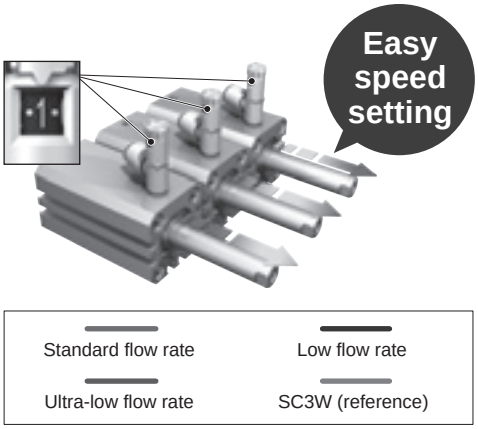
Flow characteristics proportional to dial value

Compact Standard

Thanks to the optimal design of the needle, linear flow characteristics proportional to the dial indicator value are achieved and cylinder speed setting is made easy.
Flow rate barely varies and can be reset by simply setting the dial to the same value during replacement.
Job-hours can be significantly reduced and misalignments prevented.

[Flow characteristics]

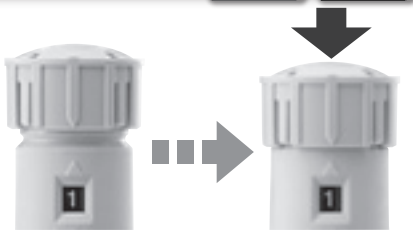




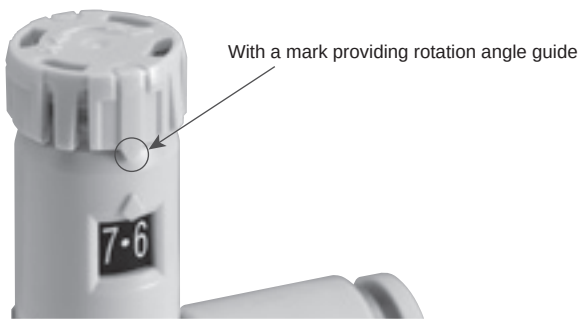
Easy adjustment

Compact Standard

Push locking method is used for fixing the needle.
Locking is secured without needle movement.
Adjustment is easy with simple operation.



Knob features rotation position indicators Easy management of cylinder speed values.



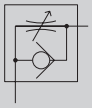
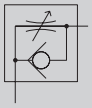
Dial indicator can be verified from 2 sides.

The dial indicator can be visually checked from the front and rear sides.

Speed controller with adjusting dial

DSC Series

● Port size: M5, R1/8 to R1/2

JIS symbol  (meter-out)  (meter-in)

RoHS CAD

Structure and material restriction

	Structure/treatment	Material restriction			Model No.
P7 Series	Dust generation preventing				– P70
	Dust generation preventing	Copper-based materials prohibited	Silicon-based materials prohibited	Halogen-based materials prohibited (fluorine, chlorine, bromine)	– P74

Specifications

● Compact

Descriptions			DSC-C-M5		DSC-C-6		
Applicable tube O.D.		mm	ø4	ø6	ø4	ø6	ø8
Port size			M5		R1/8		
Working fluid			Compressed air				
Max. working pressure		MPa	1.0				
Min. working pressure		MPa	0.05				
Proof pressure		MPa	1.5				
Fluid temperature		°C	5 to 60 (no freezing *2)				
Ambient temperature		°C	0 to 60 (no freezing)				
Needle control range			1 to 7 rotation				
Weight		g	11.5	12	22	23	24
Free flow	Flow rate	L/min (ANR)	100		210	270	
	Effective cross-sectional area	mm^2	1.5		3.2	4	
Control flow (standard flow rate)	Flow rate	L/min (ANR)	60		160	200	
	Effective cross-sectional area	mm^2	0.9		2.4	3	
Control flow (low flow rate)	Flow rate	L/min (ANR)	20		60		
	Effective cross-sectional area	mm^2	0.3		0.9		
Control flow (Ultra-low flow)	Flow rate	L/min (ANR)	6.7		13		–
	Effective cross-sectional area	mm^2	0.1		0.2		–

● Standard

Descriptions			DSC-6			DSC-8			DSC-10				DSC-15	
Applicable tube O.D.		mm	ø4	ø6	ø8	ø6	ø8	ø10	ø6	ø8	ø10	ø12	ø10	ø12
Port size			R1/8			R1/4			R3/8				R1/2	
Working fluid			Compressed air											
Max. working pressure		MPa	1.0											
Min. working pressure		MPa	0.05											
Proof pressure		MPa	1.5											
Fluid temperature		°C	5 to 60 (no freezing *2)											
Ambient temperature		°C	0 to 60 (no freezing)											
Needle control range			1 to 10 rotation											
Weight		g	33	34	35	45	46	48	60	61	64	65	95	97
Free flow	Flow rate	L/min (ANR)	210	270		470	530		670	1000	1070		1470	1600
	Effective cross-sectional area	mm^2	3.2	4		7	8		10	15	16		22	24
Control flow (standard flow rate)	Flow rate	L/min (ANR)	160	200		320	400		400	700	800		1120	1200
	Effective cross-sectional area	mm^2	2.4	3		5	6		6	10.5	12		17	17.5
Control flow (low flow rate)	Flow rate	L/min (ANR)	60			130			270				400	
	Effective cross-sectional area	mm^2	0.9			2			4				6	

*1: The flow is expressed by the atmospheric pressure conversion value at 0.5 MPa.
*2: Freezing could occur by adiabatic expansion depending on the air quality (dew point).

How to order

DSC - C - 6 - 6 - I L - P70

- A Product size
- B Port size
- C Applicable tube O.D.
- D Control method
- E Flow type
- F Clean room specifications

Code	Content
A Product size	
Blank	Standard
-C	Compact
B Port size	
M5	M5
6	R1/8
8	R1/4
10	R3/8
15	R1/2
C Applicable tube outer diameter	
4	ø4
6	ø6
8	ø8
10	ø10
12	ø12
D Control method	
Blank	Meter-out
I	Meter-in (Push ring color: Black)
E Flow type	
Blank	Standard flow rate
L	Low flow rate
F	Ultra-low flow (compact only)

F Clean room specifications

	Structure/treatment	Material restriction
P70	Dust generation preventing	–
P74	Dust generation preventing	Copper-based/silicon-based/ halogen-based materials (fluorine, chlorine, bromine) are prohibited

*No sealant is applied.

Combinations of Port size, Applicable tube O.D. and Flow type

Product size	Compact		Standard			
Port size	**M5**	**R1/8**	**R1/8**	**R1/4**	**R3/8**	**R1/2**
ø4	◎	◎	○			
ø6	◎	◎	○	○	○	
ø8		○	○	○	○	
ø10				○	○	○
ø12					○	○

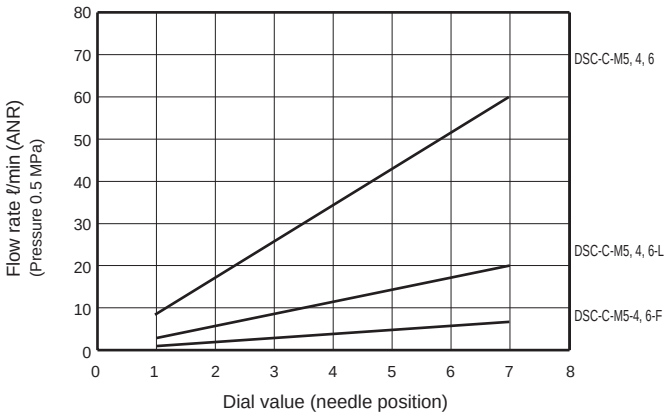
○: Flow type "F (ultra-low flow)" selection not allowed
◎: Flow type "F (ultra-low flow)" selection allowed

Flow characteristics

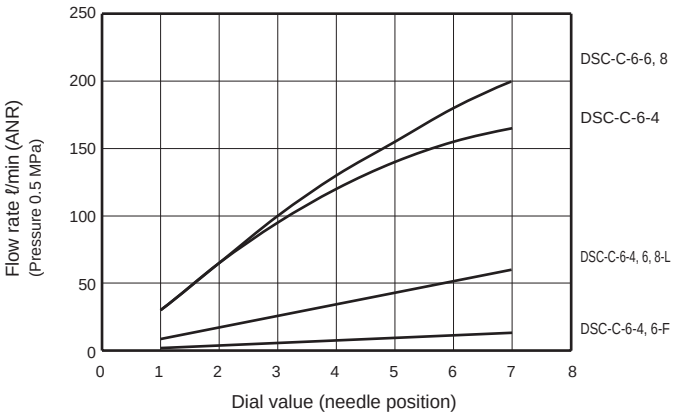
*The flow rate characteristics graph indicates reference values and does not guarantee the values.

● Compact

● DSC-C-M5-*-P7*

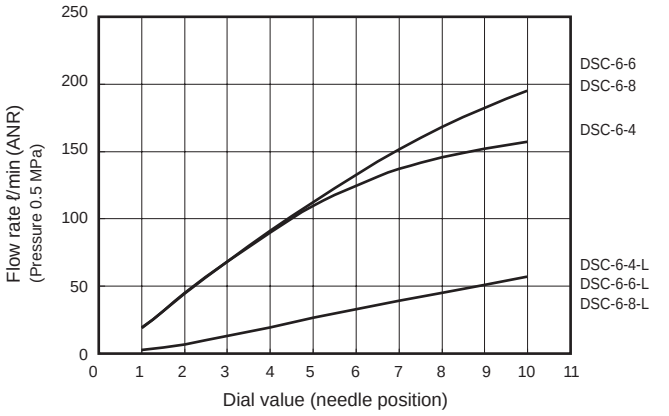


● DSC-C-6-*-P7*

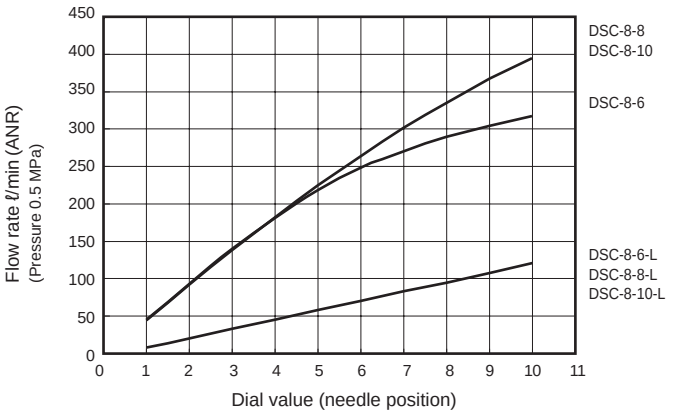


● Standard

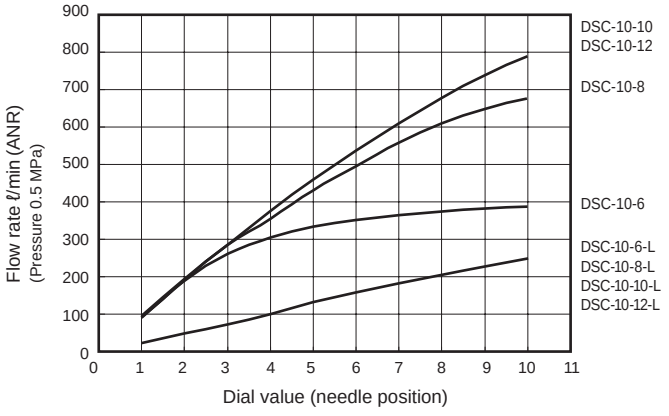
● DSC-6-*-P7*



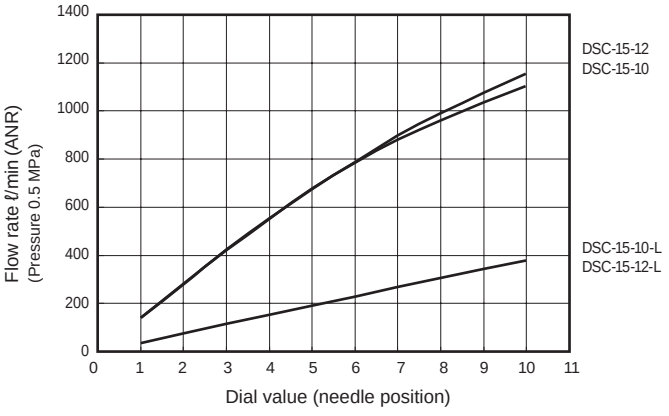
● DSC-8-*-P7*



● DSC-10-*-P7*



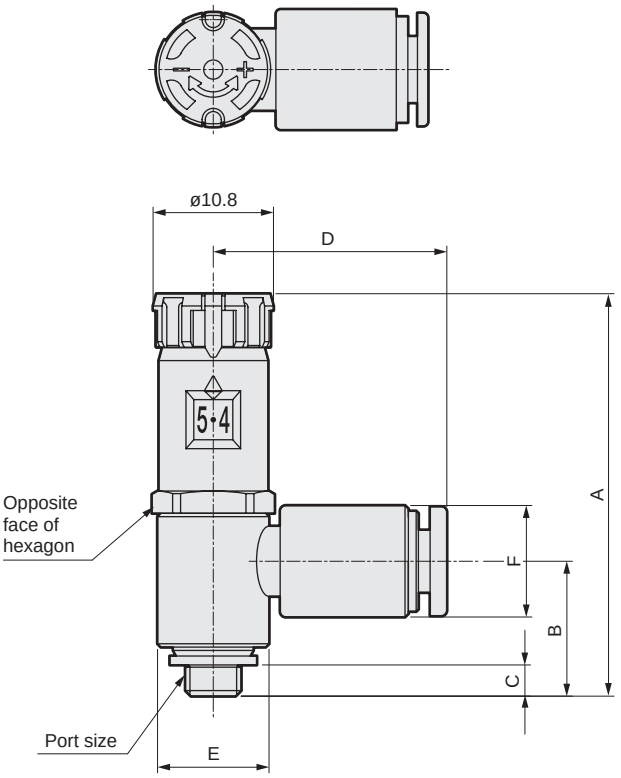
● DSC-15-*-P7*



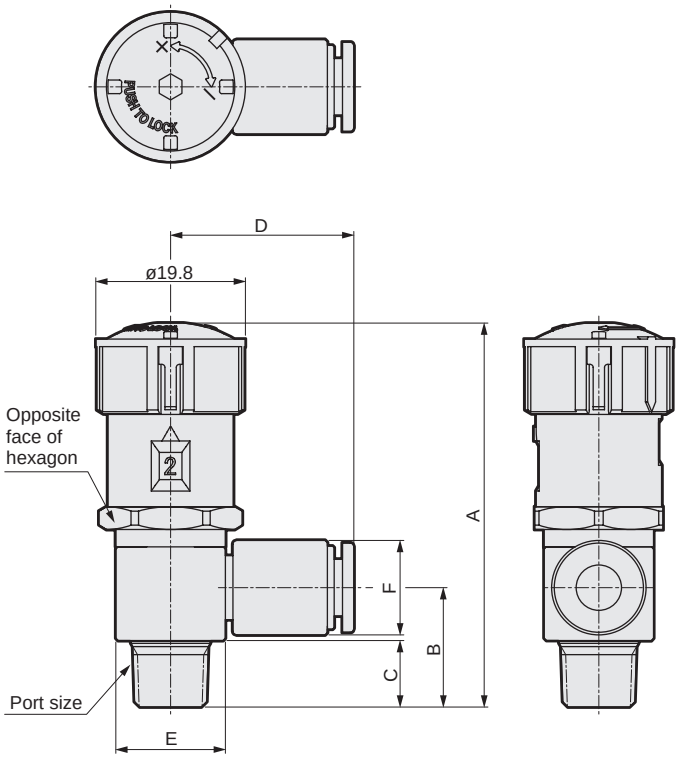
Note: The flow characteristics may differ depending on the piping conditions around the unit and the temperature change.

Dimensions

● Compact



● Standard



Model No.	Product size	Port size	Applicable tube O.D.	A		B	C	D	E	F	Opposite face of hexagon
				Locked	During adjustment						
DSC-C-M5-4-P7*	Compact	M5 × 0.8	ø4	36	37.5	11.9	3	21	10	10	10
DSC-C-M5-6-P7*			ø6			11.7		22.5		12.5	
DSC-C-6-4-P7*		R1/8	ø4	41.9	43.4	16.2	8.7	23.5	14.5	10	13
DSC-C-6-6-P7*			ø6			15.7		24.5		12.5	
DSC-C-6-8-P7*			ø8			15.4		26		14.5	
DSC-6-4-P7*	Standard	R1/8	ø4	51	54	16.2	8.7	23.5	14.5	10	17
DSC-6-6-P7*			ø6			15.7		24.5		12.5	
DSC-6-8-P7*			ø8			15.4		26		14.5	
DSC-8-6-P7*		R1/4	ø6	55.5	58.5	20	11.7	26	18	12.5	17
DSC-8-8-P7*			ø8			19		27.5		14.5	
DSC-8-10-P7*			ø10			19		30.5		17.5	
DSC-10-6-P7*		R3/8	ø6	58	61	23.1	12.7	28.5	22.5	12.5	19
DSC-10-8-P7*			ø8			21.3		30		14.5	
DSC-10-10-P7*			ø10			21.8		32		17.5	
DSC-10-12-P7*			ø12			21.7		33.5		20	
DSC-15-10-P7*		R1/2	ø10	63	66	25.2	15.7	34.5	27.5	17.5	24
DSC-15-12-P7*			ø12			25.7		36		20	

Safety Precautions

Always read this section before use.

Speed controller with dial

Design & selection

CAUTION

■ This valve can not be used as a stop valve that has no leakage.
Slight leakage is allowed in product specifications.

■ Note that the flow rate may differ from the values on page 904 depending on the piping conditions around the unit and the temperature change.

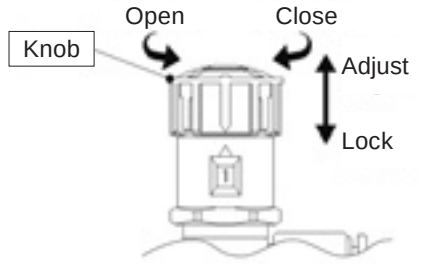
■ Do not use this valve in circuits where ozone is generated intentionally.
Ozone resistance is sufficient for naturally generated ambient ozone. Packing deteriorates if ozone levels are high.

Mounting / Installation / adjustment

CAUTION

■ The needle lock is released when the knob is pulled, and is locked when pressed.

■ To adjust the flow rate, turn the knob to the right to close or the left to open.



● When opening by rotating the knob to the left, the dial indicator will rotate clockwise: standard, and counterclockwise: compact.

■ Do not handle the knob too quickly or roughly.
● Doing so may cause an indication error or other failures.

■ After adjustment, push the knob to lock the needle.

■ Controllable range of the needle is from 1 to 7 or 1 to 10 turns; operate with a maximum of 0.05 N·m torque.
Turning the knob beyond the range forcibly may result in distorted flow characteristics or malfunctions.

■ Even when the needle is fully closed, the dial display is not 0.
Calibration of the flow rate against the dial indication is performed when the needle is not fully closed. Note that “0” is not always indicated when the needle is fully closed. A reading lower than "0" will be expressed by "-".

■ Adjust speed by opening when the needle is nearly closed.
If the needle is opened, the actuator could pop out suddenly and pose a hazard.

■ Confirm the final speed after each usage.
Confirm the final speed after each usage as the variabilitybetween products, actuators, conditions of use andambient temperatures will cause deviations.

■ Use the specified tightening torque (table 1-(1)) when connecting pipes. To additionally tighten to adjust the position of the rotation rate indication window, use the torque in (table 1-(2)).
Do not hold the knob when piping. Doing so may cause failure. Note that a pipe of port size:M5 cannot be aligned by re-tightening.

Thread size	(1) Connecting a pipe (N·m)	(2) Additional tightening (N·m)
M5	1.0 to 1.5	–
R1/8	3 to 5	9 or less
R1/4	6 to 8	14 or less
R3/8	13 to 15	24 or less
R1/2	16 to 18	30 or less

Tightening torque of port thread (table 1)

■ Do not apply a lateral load to the main unit during or after installation.