

Series (21-)AS-FPQ/FPG

Clean Speed Controller with One-touch Fittings (Elbow type)



How to Order

AS 2 2 1 1 F P G 01 06
21 - AS 2 2 1 1 F P Q 01 06

Body size

1	M5 standard
2	1/8, 1/4 standard
3	3/8 standard
4	1/2 standard

Type

2	Elbow
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Control type

0	Meter-out
1	Meter-in

Lock nut option

Nil	Hexagon lock nut
J	Round lock nut

Applicable tubing O.D. (mm) (Note)
Metric size

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Note) Refer to the following Model list for selection of applicable tubing O.D.

Connection port size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

Metal part material

Q	Brass (Electroless nickel plated)
G	Stainless steel (Stainless steel 304)

Metal part material

Q	Brass (Electroless nickel plated)
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AS-FPQ / Brass (Electroless nickel plated)
 Release button color: Light gray

AS-FPG / Stainless steel (Stainless steel 304)
 Release button color: Light blue

Copper, fluorine and silicone-free +
 Low particle generation

With One-touch fittings
 Clean specification

Model

Elbow type	Connection port size	Applicable tubing O.D. (mm)				
		4	6	8	10	12
(21-) AS12□1FP□-M5	M5 x 0.8	●	●			
(21-) AS22□1FP□-01	R1/8	●	●	●		
(21-) AS22□1FP□-02	R1/4	●	●	●	●	
(21-) AS32□1FP□-03	R3/8		●	●	●	●
(21-) AS42□1FP□-04	R1/2				●	●

Specifications

Proof pressure (20°C)	1.5 MPa
Max. operating pressure (20°C)	1 MPa ^{Note 1)}
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Grease	Fluorine grease 21-: Lithium soap based grease
Cleanliness class (ISO class)	Class 3

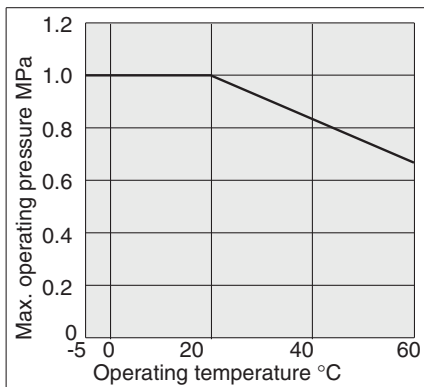
Note 1) The maximum operating pressure is the value at 20°C. Refer to operating pressure curve for values at other temperatures.

Flow Rate and Sonic Conductance

Model		(21-)AS12□1FP□-M5	(21-)AS22□1FP□-01		(21-)AS22□1FP□-02			(21-)AS32□1FP□-03			(21-)AS42□1FP□-04	
Tubing O.D.	Metric size	ø4	ø4	ø6	ø4	ø6	ø8	ø6	ø8	ø10	ø10	ø12
		ø6		ø8			ø10					
Controlled flow	Flow rate L/min (ANR)	100	180	230	260	390	460	660	790	920	1580	1710
Free flow	Sonic conductance dm ³ /(s·bar)	0.28	0.5	0.64	0.72	1.1	1.3	1.8	2.2	2.6	4.4	4.8
Critical pressure ratio	Controlled flow	0.2	0.25		0.3			0.25			0.25	
	Free flow	0.4	0.2		0.3			0.2			0.3	

Note) Flow rate values are measured at 0.5 MPa and 20°C.

Relationship Between Operating Temperature and Maximum Operating Pressure



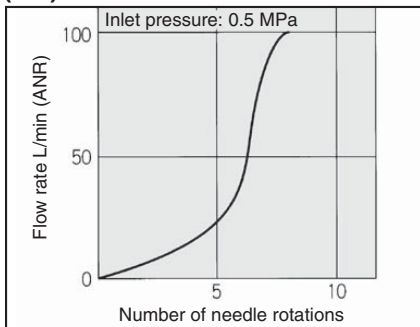
Recommended Applicable Tubing

Tubing material	Clean series polyurethane tubing: 10-series
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

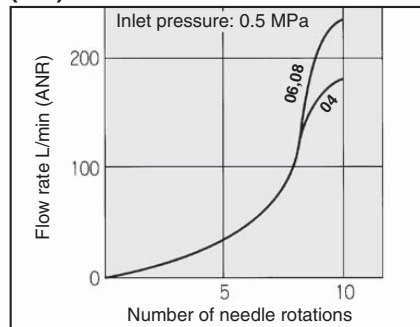
Polyurethane tubing: TU series, Nylon tubing: T series
Soft nylon tubing TS series can also be used. However, the degree of cleanliness will decline.

Needle Valve / Flow Rate Characteristics

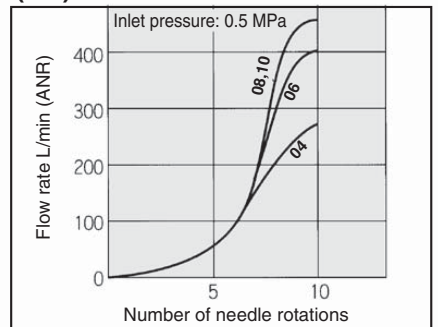
(21-)AS12□1FP□-M5



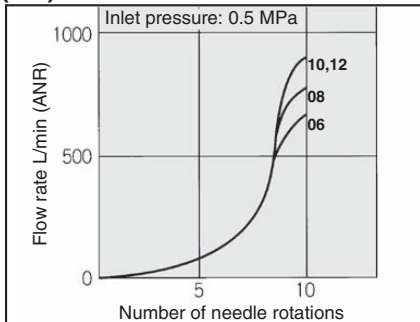
(21-)AS22□1FP□-01



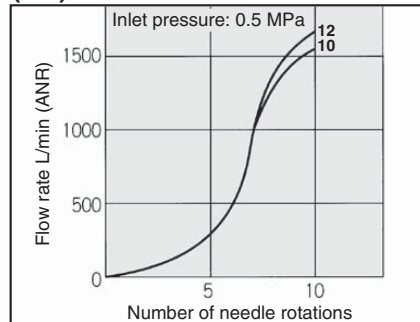
(21-)AS22□1FP□-02



(21-)AS32□1FP□-03

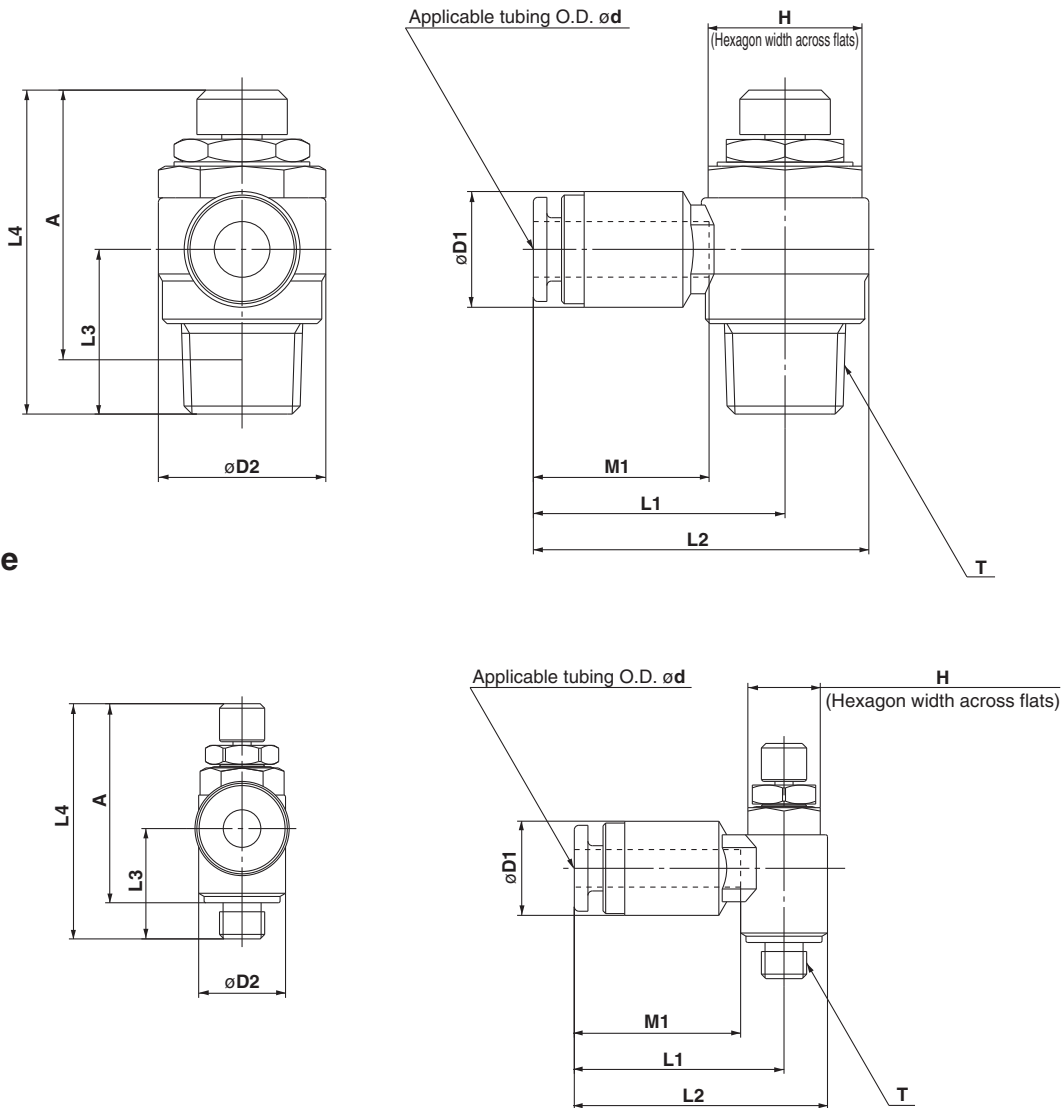


(21-)AS42□1FP□-04



Dimensions

M5 type



Model	Tubing O.D. d	T	H	D1	D2	L1	L2	L3	L4		A ^{Note 1)}		M1	Weight (g) ^{Note 2)}	
									MAX.	MIN.	MAX.	MIN.		* 1	* 2
(21-) AS12□1FP□-M5-04	4	M5 x 0.8	8	10.4	9.6	23.2	28	12.2	28.3	25.5	25	22.2	18.4	7	7
(21-) AS12□1FP□-M5-06	6			12.8		29	19.4						8	8	
(21-) AS22□1FP□-01-04	4	R1/8	12	10.4	14.2	25.3	32.4	14.3	36.4	31.4	32.4	27.4	18.4	17	17
(21-) AS22□1FP□-01-06	6			12.8		33.4	19.4						18	18	
(21-) AS22□1FP□-01-08	8			15.2		35.6	21.9						20	20	
(21-) AS22□1FP□-02-04	4	R1/4	17	10.4	18.5	27.8	37	18.2	40.8	35.8	34.8	29.8	18.4	33	33
(21-) AS22□1FP□-02-06	6			12.8		39.6	19.4						35		
(21-) AS22□1FP□-02-08	8			15.2		41.9	21.9	35					35		
(21-) AS22□1FP□-02-10	10			18.5		47.5	23.8	38					38		
(21-) AS32□1FP□-03-06	6	R3/8	19	12.8	23	30.4	41.9	20	46.9	41.9	40.6	35.6	19.4	59	55
(21-) AS32□1FP□-03-08	8			15.2		44.4	21.9						61	57	
(21-) AS32□1FP□-03-10	10			18.5		46.1	23.8	63					59		
(21-) AS32□1FP□-03-12	12			20.9		47.3	25	65					61		
(21-) AS42□1FP□-04-10	10	R1/2	24	18.5	28.6	36.6	50.9	25.4	55.6	50.6	47.4	42.4	23.8	107	100
(21-) AS42□1FP□-04-12	12			21.7		52.5	25						109	102	

Note 1) Reference dimensions of threads after installation.

Note 2) * 1 is the weight of type (21-)AS□□1FPQ (Brass + Electroless nickel plated). * 2 is the weight of type AS□□1FPG (SUS304).