

# Speed Controller with One-touch Fitting Elbow Type/Universal Type

## Series AS

### Minimizes installation time and cost

Reduces the mounting height and enables compact machinery design. Effective area is larger than the former model.

### Tube swivels 360°

Universal type permits 360° piping swivel.

### ø2 size added to applicable tubing sizes

- **Metric size** (Release button: White color)  
ø2, ø3.2, ø4, ø6, ø8, ø10, ø12
- **Inch size** (Release button: Orange color)  
ø1/8", ø5/32", ø3/16", ø1/4", ø5/16", ø3/8", ø1/2"

### Maximum operating pressure 1 MPa max.

### Applicable tubing materials

Nylon, soft nylon, and polyurethane tubing are applicable.

### Retainer prevents accidental loss of needle.






























































### Option

Hexagonal lock nut, Nickel plated option

### Number of needle rotations has been increased (8 to 10 turns)

The increased number of needle rotations (8 to 10 turns) permits easy control at low speeds.

### Model

Elbow type	Universal type	Port size	Applicable tubing O.D.														Applicable cylinder bore size (mm)
			Metric size							Inch size							
			2	3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"	
AS12□1F-M3	AS13□1F-M3	M3 x 0.5															2.5, 4, 6
AS12□1F-M5	AS13□1F-M5	M5 x 0.8															6, 10, 16, 20 <sup>(1)</sup>
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF															6, 10, 16, 20
AS22□1F-01	AS23□1F-01	R 1/8															20, 25, 32
AS22□1F-02	AS23□1F-02	R 1/4															20, 25, 32, 40
AS32□1F-02	AS33□1F-02	R 1/4															40, 50, 63
AS32□1F-03	AS33□1F-03	R 3/8															40, 50, 63
AS42□1F-04	AS43□1F-04	R 1/2														 	63, 80, 100

Note 1) AS12□1F-M5-02 applicable cylinder bore sizes are 2.5, 4, 6.

Note 2) Elbow type only

Note 3) Meter-out and meter-in types can be visually differentiated by the lock nut. The lock nut on the meter-out type is electroless nickel plated, while the meter-in type is black zinc chromate plated.

Note 4) ● Marking is electroless nickel plated, provided as standard. (N specifications)

### Specifications

Fluid	Air
Proof pressure	1.5 MPa (1.05 MPa <sup>(1)</sup> )
Max. operating pressure	1 MPa (0.7 MPa <sup>(1)</sup> )
Mini. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns (8 turns <sup>(2)</sup> )
Applicable tubing material <sup>(3)</sup>	Nylon, Soft nylon, Polyurethane <sup>(4)</sup>
Option	With seal, Hexagon lock nut <sup>(5)</sup> , Electroless nickel plated <sup>(6)</sup>

Note 1) In case of AS12□1F-M3-02, AS12□1F-M5-02

Note 2) In case of AS12□1F-M5 and AS12□1F-U10/32 types.

In case of AS13□1F-M5 and AS13□1F-U10/32  
AS12□1F-M5-02: 10 turns.

Note 3) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 371 and 372 for details.)

Note 4) In case of AS12□1F-M3-02 and AS12□1F-M5-02, polyurethane only.

Note 5) M3, M5, 10-32UNF type ports are not available with seals.

Note 6) Brass parts are all electroless nickel plated.

### Flow Rate and Effective Area

Model	Metric size	AS12□1F-M3 AS13□1F-M3 AS12□1F-M5-02	AS12□1F-M5 AS13□1F-M5	AS22□1F-01 AS23□1F-01	AS22□1F-02 AS23□1F-02	AS32□1F AS33□1F	AS42□1F AS43□1F
		ø2, ø3.2, ø4	ø3.2, ø4, ø6	ø3.2, ø4, ø6, ø8, ø10	ø4, ø6, ø8, ø10	ø6, ø8, ø10, ø12	ø10, ø12
Tubing O.D.	Metric size	ø2, ø3.2, ø4	ø3.2, ø4, ø6	ø3.2, ø4, ø6, ø8, ø10	ø4, ø6, ø8, ø10	ø6, ø8, ø10, ø12	ø10, ø12
	Inch size	ø1/8", ø5/32"	ø1/8", ø3/16", ø1/4", ø5/32"	ø1/8", ø3/16", ø1/4", ø5/16"	ø5/32", ø3/16", ø1/4", ø5/16", ø3/8"	ø1/4", ø5/16", ø3/8"	ø3/8", ø1/2"
Controlled flow (Free flow)	Flow rate ℓ/min (ANR)	20	100	180	260 390	460 660 790	920 1580
	Effective area (mm <sup>2</sup> )	0.3	1.5	2.7	3.5 4 6	7 10 12 14	24 26

Note 1) Flow rate values are measured at 0.5 MPa and 20°C.

Note 2) U10/32 has the same specification as M5.

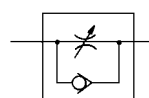
Elbow type  
Applicable tubing O.D. ø2



Universal type



### JIS Symbol



### Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

### Caution

Be sure to read before handling.  
Refer to front matters 58 and 59 for Safety Instructions and pages 412 to 414 for Flow Control Equipment Precautions.



Made to Order  
(Refer to page 422 for details.)

## How to Order

**AS 2 2 0 1 F - 01 - 06 S -**

**Body size**

1	M3, M5 standard
2	1/8, 1/4 standard
3	3/8 standard
4	1/2 standard

**Type**

2	Elbow
3	Universal

**Control type**

0	Meter-out
1	Meter-in

**With One-touch fitting**

**Thread type**

Nil	Metric thread (M3, M5)
	Unified thread (10-32 UNF)
	R
N	NPT

**Option**

Nil	None
S	With seal
K	Hexagonal lock nut
N	Electroless nickel plated

\*1 If more than one option is required, write option part numbers in the order of "S", "K", "N".  
\*2 M3, M5, and U10/32 are not available with seals.

**Applicable tubing O.D.**

Metric size	Inch size
02	ø2
23	ø3.2*
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"
13	ø1/2"

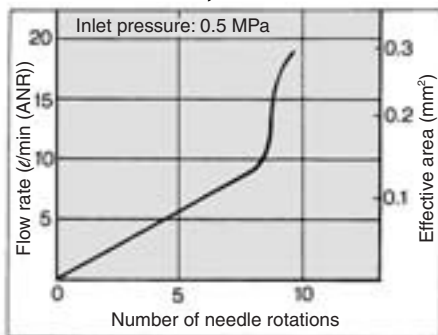
\*Use ø1/8" tube.

**Port size**

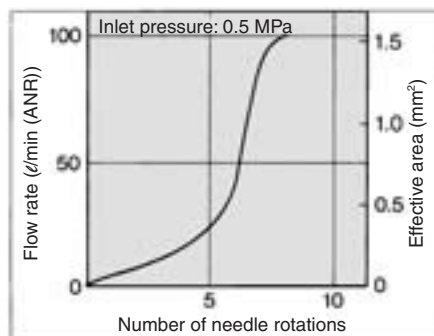
M3	M3 x 0.5
M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4
03	3/8
04	1/2

## Needle Valve/Flow Characteristics

AS1201F-M3, AS1211F-M3  
AS1301F-M3, AS1311F-M3  
AS1201F-M5-02, AS1211F-M5-02

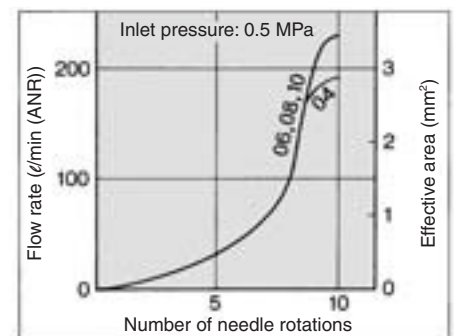


AS1201F-M5, AS1211F-M5  
AS1301F-M5, AS1311F-M5

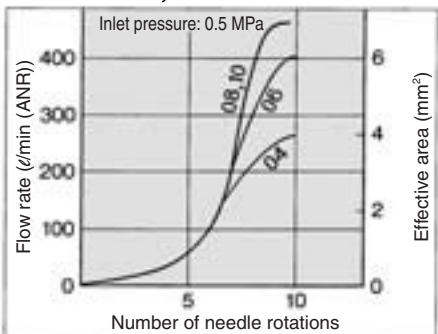


Note) "-U10/32" is the same as "M5".

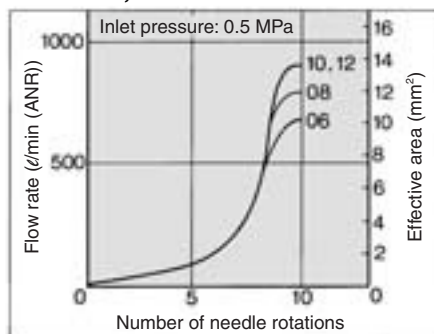
AS2201F-01, AS2211F-01  
AS2301F-01, AS2311F-01



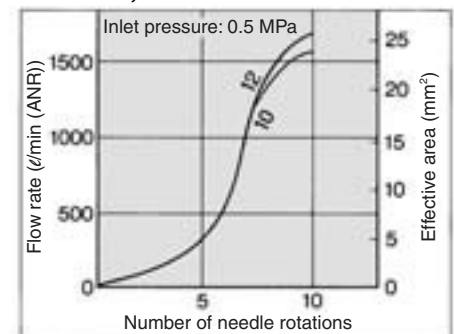
AS2201F-02, AS2211F-02  
AS2301F-02, AS2311F-02



AS3201F, AS3211F  
AS3301F, AS3311F



AS4201F, AS4211F  
AS4301F, AS4311F



AS  
ASP  
ASN  
AQ  
ASV  
AK  
VCHC  
ASS  
ASR  
ASQ  
KE  
TMH