

# Speed Controller with One-touch Fitting Elbow Type (Metal Body)

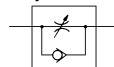
## AS Series

### Speed controller with One-touch fittings for metal body specifications

- Uses flame resistant resin as standard. (UL standard V-0)



Symbol



### Model

Model	Port size	Applicable tubing O.D.				
		4	6	8	10	12
AS12□1-M5	M5 x 0.8	●	●			
AS22□1-01	R 1/8		●	●		
AS22□1-02	R 1/4		●	●	●	
AS32□1-02	R 1/4			●	●	
AS32□1-03	R 3/8			●	●	
AS42□1-04	R 1/2				●	●

Note 1) ●: Brass parts are electroless nickel plated, provided as standard. (N specifications)

### Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	- 5 to 60°C (No freezing)
Applicable tubing material	FR double layer, FR Three-layer, FR soft nylon, Nylon, Soft nylon, Polyurethane
Option	Round lock nut, Electroless nickel plated (Note)

Meter-out and meter-in types can be visually differentiated by the lock nut. The lock nut on the meter-out type is zinc chromated (the round lock nut is electroless nickel plated) while the meter-in type is black zinc chromate plated.  
Note) Brass parts are all electroless nickel plated.

### How to Order

AS 3 2 0 1 - 03 - F 06 S [ ] - [ ] - [ ]

**Speed controller**

**Body size**

1	M5 standard
2	01, 02 standard
3	03 standard
4	04 standard

**Elbow**

**Control method**

0	Meter-out
1	Meter-in

**Thread size**

M5	M5 x 0.8
01	R 1/8
02	R 1/4
03	R 3/8
04	R 1/2

**Option**

Nil	None
N	Electroless nickel plated

**With seal**

**Tube size (Note)**

04	φ4
06	φ6
08	φ8
10	φ10
12	φ12

**Lock nut option**

Nil	Hexagon lock nut
J	Round lock nut

**Made to Order**  
Refer to page 612 for details.

**With One-touch fitting**

**Made to Order**  
(For details, refer to page 612.)

Symbol	Specifications
-X12	Lubricant: Vaseline
-X21	Grease-free (Seal: Fluorine-coated) + Throttle valve (Without check valve)
-X214	Throttle valve (Without check valve)

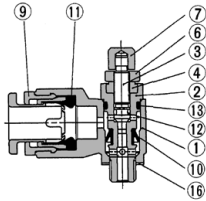
Note) For applicable tubing O.D. selection, refer to the Model.

Note) M5 size: S (with seal) is not necessary.

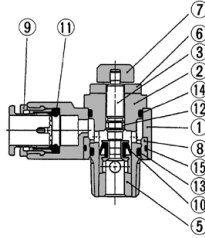
# AS Series

## Construction

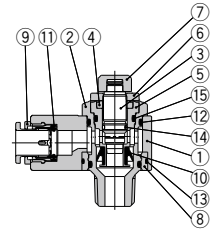
AS1201-M5



AS2201/3201/4201



AS3201-02



## Component Parts

No.	Description	Material	Note
1	<b>Body A</b>	Zinc alloy	Chromate plated
2	<b>Body B</b>	Brass	Electroless nickel plated
3	<b>Needle</b>	Brass	Electroless nickel plated
4	<b>Needle guide</b>	Brass	(1)
5	<b>Seat ring</b>	Brass	(2)
6	<b>Lock nut</b>	Steel (3)	Meter-out   Zinc chromate plated (Note 4) Meter-in   Black zinc chromate plated
7	<b>Handle</b>	Brass	Electroless nickel plated
8	<b>Bushing</b>	PBT	
9	<b>Cassette</b>	PBT/Stainless steel	
10	<b>U-packing</b>	HNBR	
11	<b>Seal</b>	NBR	
12	<b>O-ring</b>	NBR	
13	<b>O-ring</b>	NBR	
14	<b>O-ring</b>	NBR	
15	<b>O-ring</b>	NBR	
16	<b>Gasket</b>	NBR/Stainless steel	M5 port only

Note 1) M5 type, AS32□1-02 type: Electroless nickel plated.

Note 2) AS22□1 type, AS32□ type: Electroless nickel plated.

Note 3) The material of the lock nut option-J (round type) is brass. However, note that only the AS22□1F uses steel.

Note 4) The surface treatment of the lock nut option-J (round type) is electroless nickel plating.

## Made to Order



**1 Lubricant: Vaseline X12**

Ex.) AS1201-M5-F04-X12

**2 Grease-free (Seal: Fluorine Coating) + Throttle Valve (Without Check Valve) X21**

Ex.) AS1201-M5-F04-X21

Note 1) Not particle-free

Note 2) This product is a restrictor without a check valve (no control direction).

Be aware that all part numbers are for a meter-out type; there is no part number for a meter-in type.

**3 Throttle Valve (Without Check Valve) X214**

Ex.) AS1201-M5-F04-X214

Note) This product is a restrictor without a check valve (no control direction). Be aware that all part numbers are for a meter-out type; there is no part number for a meter-in type.

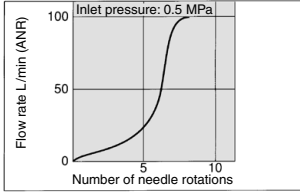
**Flow Rate and Sonic Conductance**

Model		AS12□1-M5	AS22□1-01	AS22□1-02		AS32□1		AS42□1-04	
Tubing O.D.		ø4, ø6	ø6, ø8	ø6	ø8, ø10	ø8	ø10	ø10	ø12
Controlled flow	Flow rate (L/min (ANR))	100	230	390	460	790	920	1580	1710
	Sonic conductance dm <sup>3</sup> /(s·bar)	0.3	0.7	1.2	1.4	2.4	2.8	4.8	5.2
Critical pressure ratio	Controlled	0.2	0.25	0.3		0.25		0.25	
	Free	0.4	0.2	0.3		0.2		0.3	

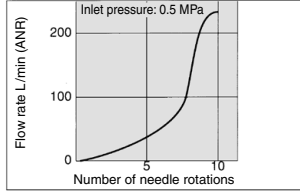
**Needle Valve/Flow Rate Characteristics**

Note) The flow rate characteristics are representative values.

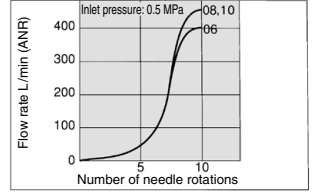
AS12□1



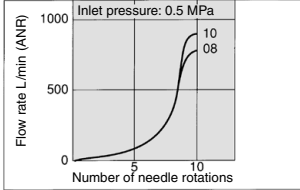
AS22□1-01



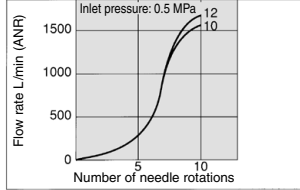
AS22□1-02



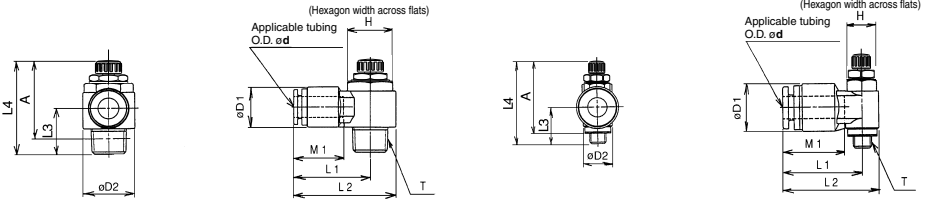
AS32□1



AS42□1



**Dimensions**



Model	Applicable tubing O.D. ød	T	H	D1	D2	L1	L2	L3	L4 <sup>(1)</sup>		A <sup>(2)</sup>		M1	Weight (g)		
									Max.	Min.	Max.	Min.				
AS12□1-M5-F04	4	M5 x 0.8	8	13	9	21	25.5	11.2	28.3	25.5	25	22.2	16	13		
AS12□1-M5-F06	6					21.5	26								17	13
AS22□1-01-F06S	6					R <sup>1</sup> / <sub>8</sub>	12								15.5	14.6
AS22□1-01-F08S	8	18.5	31													
AS22□1-02-F06S	6	R <sup>1</sup> / <sub>4</sub>	17	15.5	19.5	28.7	38.5	17.2	40.3	35.3	34.8	29.8	17	54		
AS22□1-02-F08S	8														18.5	50
AS22□1-02-F10S	10														18.2	52
AS32□1-02-F08S	8	R <sup>1</sup> / <sub>4</sub>	19	18.2	24.3	32.7	44.9	21	48.3	43.3	42.8	37.8	21	86		
AS32□1-02-F10S	10					33.3	45.5								21	81
AS32□1-03-F08S	8					R <sup>3</sup> / <sub>8</sub>	19								18.2	24.3
AS32□1-03-F10S	10	33.3	45.5	21	88											
AS42□1-04-F10S	10	R <sup>1</sup> / <sub>2</sub>	24	22.3	28.5			36.1	50.4	24.6	54.7	49.7	47.4	42.4		
AS42□1-04-F12S	12					22	146									

Note 1) Reference dimensions

Note 2) Reference dimensions of thread M5, R after installation.

**⚠ Caution**

Be sure to read this before handling the products.  
Refer to back page 50 for Safety Instructions and pages 543 to 546 for Flow Control Equipment Precautions.