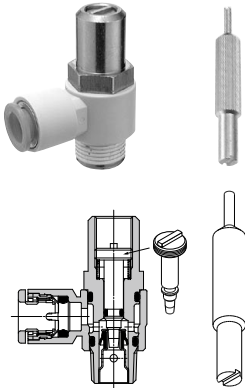


# Tamper Proof Speed Controller with One-touch Fitting Elbow Type/Universal Type

# Series AS□□□1F-T

RoHS

Able to adjust flow by a special tool  
Prevention of an unnecessary manual operation



Special tool  
Part number: AS-T-1

## Model

Elbow type	Universal type	Port size	Applicable tubing O.D.														
			Metric size						Inch size								
			3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"		
AS12□1F-M5	AS13□1F-M5	M5 x 0.8	●	●	●	●	●										
AS22□1F-01	AS23□1F-01	R 1/8	●	●	●	●	●										
AS22□1F-02	AS23□1F-02	R 1/4			●	●	●	●									
AS32□1F-02	AS33□1F-02	R 1/4			●	●	●	●									
AS32□1F-03	AS33□1F-03	R 3/8			●	●	●	●									
AS42□1F-04	AS43□1F-04	R 1/2						●	●								
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF								●	●	●	●				
AS22□1F-N01	AS23□1F-N01	NPT 1/8								●	●	●	●	●			
AS22□1F-N02	AS23□1F-N02	NPT 1/4									●	●	●	●	●		
AS32□1F-N02	AS33□1F-N02	NPT 1/4										●	●	●	●	●	
AS32□1F-N03	AS33□1F-N03	NPT 3/8											●	●	●	●	
AS42□1F-N04	AS43□1F-N04	NPT 1/2														●	●

Note 1) □ = Elbow type only

Note 2) Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.

## 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 <sup>(1)</sup>	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 411 and 412 for details.)

Note 2) Brass parts are all electroless nickel plated, provided as standard.

## Elbow type



## Universal type



## How to Order

AS 2 2 1 1 F - 01 - 06 S T - □

### Body size

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

### Type

2	Elbow
3	Universal

### Control

0	Meter-out
1	Meter-in

With One-touch fitting

### Port size

M5	M5 x 0.8
01	R 1/8
02	R 1/4
03	R 3/8
04	R 1/2
U10/32	10-32 UNF
N01	NPT 1/8
N02	NPT 1/4
N03	NPT 3/8
N04	NPT 1/2

### Tamper proof

Speed Controller requires a special tool for flow adjustment. Order separately with part number, AS-T-1.

### With seal

Note) In case that connecting port is either M5 or 10-32 UNF thread, it is not available with seal. With gasket is provided as standard.

### Applicable tubing O.D. <sup>Note)</sup>

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

### Made to Order

Refer to page 605 for details.

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

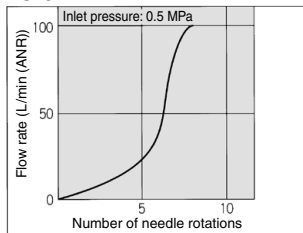
\* Use ø1/8" tube.

Made to Order  
Made to Order  
(Refer to page 605 for details.)

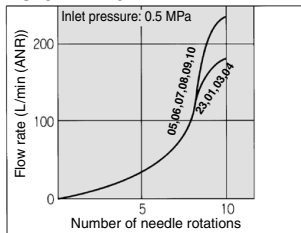
### Needle Valve/Flow Characteristics

Note) The flow characteristics are representative values.

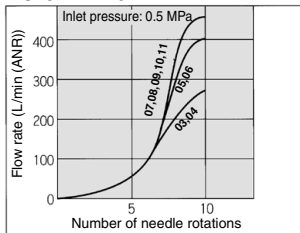
**AS12□1F**  
**AS13□1F**



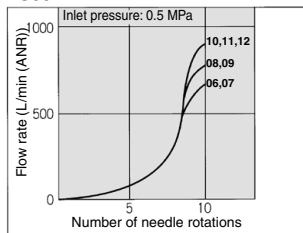
**AS22□1F-□01**  
**AS23□1F-□01**



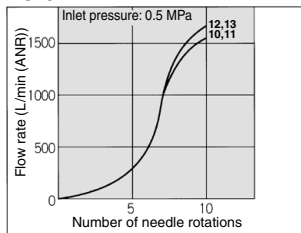
**AS22□1F-□02**  
**AS23□1F-□02**



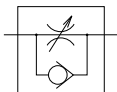
**AS32□1F**  
**AS33□1F**



**AS42□1F**  
**AS43□1F**



**Symbol**



**Flow Direction Symbols on Body**

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

**Caution**

Be sure to read before handling.  
Refer to front matter 56 for Safety Instructions and pages 468 to 471 for Flow Control Equipment Precautions.

### Flow Rate and Sonic Conductance

Model		AS12□1F AS13□1F	AS22□1F-□01 AS23□1F-□01	AS22□1F-□02 AS23□1F-□02	AS32□1F AS33□1F	AS42□1F AS43□1F
Tubing O.D.	Metric size	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", ø3/16", ø1/4"	ø1/8", ø3/16", ø1/4", ø5/32", ø5/16"	ø5/32", ø3/16", ø1/4", ø5/16", ø3/8"	ø1/4", ø5/16", ø3/8"	ø3/8", ø1/2"
Controlled flow	Flow rate (L/min (ANR))	100	180 230	260 390	460 660 790 920	1580 1710
	Sonic conductance (dm <sup>3</sup> /s·bar)	0.3	0.54 0.7	0.8 1.2	1.4 2 2.4 2.8	4.8 5.2
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 at a pressure of 0.5 MPa and a temperature of 20°C.

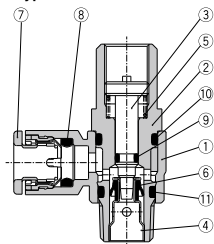
- AS
- TMH
- ASD
- AS
- AS-FE
- KE
- AS-FG
- AS-FP
- AS-FM
- AS-D
- AS-T
- ASP
- ASN
- AQ
- ASV
- AK
- VCHC
- ASS
- ASR
- ASQ

# Series AS□□□1F-T

## Construction

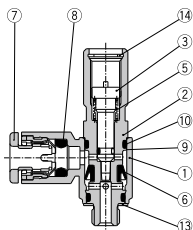
### Elbow type

Meter-out type

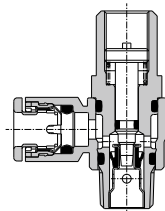


### M5 type

U10/32 type

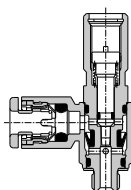


### Meter-in type



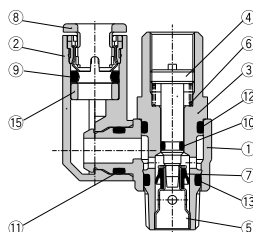
### M5 type

U10/32 type



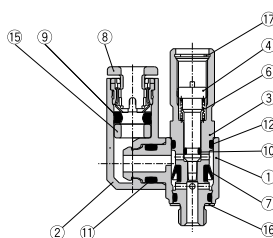
### Universal type

Meter-out type

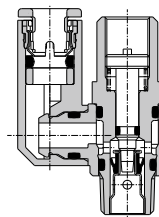


### M5 type

U10/32 type

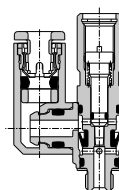


### Meter-in type



### M5 type

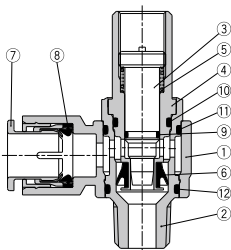
U10/32 type



## Construction

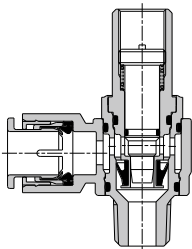
### Elbow type Meter-out type

AS3201F-02



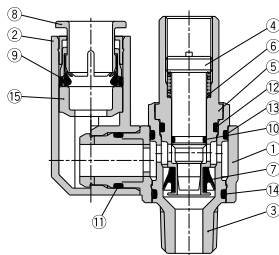
### Meter-in type

AS3211F-02



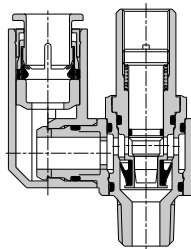
### Universal type Meter-out type

AS3301F-02



### Meter-in type

AS3311F-02



### Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass	Electroless nickel plated
3	Needle	Brass	Electroless nickel plated
4	Seat ring	Brass	Electroless nickel plated
5	Spring	Steel wire <sup>(1)</sup>	
6	U seal	HNBR	
7	Cassette	—	
8	Seal	NBR	
9	O-ring	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	O-ring	NBR	
13	Gasket	NBR, Stainless steel	
14	Retaining ring for hole type C	Tool steel	

Note 1) M5 and U10/32 type: Stainless steel

### Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Body B	Brass	Electroless nickel plated
4	Needle	Brass	Electroless nickel plated
5	Seat ring	Brass	Electroless nickel plated
6	Spring	Steel wire <sup>(1)</sup>	
7	U seal	HNBR	
8	Cassette	—	
9	Seal	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	O-ring	NBR	
13	O-ring	NBR	
14	O-ring	NBR	
15	Spacer	—	
16	Gasket	NBR, Stainless steel	
17	Retaining ring for hole type C	Tool steel	

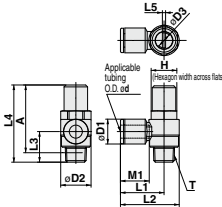
Note 1) M5 and U10/32 type: Stainless steel

AS
TMH
ASD
AS
AS-FE KE
AS-FG
AS-FP
AS-FM
AS-D AS-T
ASP
ASN
AQ
ASV
AK
VCHC
ASS
ASR ASQ

# Series AS□□□1F-T

## Construction

### Elbow type



### Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Weight (g)
AS12□1F-M5-23T	3.2						8.4							
AS12□1F-M5-04T	4	M5x0.8	8	9.3	9.6	4.5	17.3	22.1	12.3			0.7	27.4	12.7
AS12□1F-M5-06T	6						11.6			18.1	22.9	11.7		13.5
AS22□1F-01-23ST	3.2						8.4							20
AS22□1F-01-04ST	4						9.3			20.4	27.5			12.7
AS22□1F-01-06ST	6	R1/8	12	11.6	14.2	7	15.2			25.3	32.4	13.4		21
AS22□1F-01-08ST	8						18.5			33.1	40.2	15.3		18.5
AS22□1F-01-10ST	10						18.5							25
AS22□1F-02-04ST	4						10.4							16
AS22□1F-02-06ST	6						12.8			25.2	34.4		1.5	17
AS22□1F-02-08ST	8	R1/4	17	15.2		18.5	15.2			27.2	36.4	17.7	40.2	18.5
AS22□1F-02-10ST	10						18.5			35.3	44.5	18.3		21
AS22□1F-02-06ST	6						12.8			27.8	39.3			17
AS22□1F-02-08ST	8	R1/4	17	15.2		18.5	15.2			29.5	41	21.3	54.8	18.5
AS22□1F-02-10ST	10						18.5			31.8	43.3	21.3	49.3	21
AS32□1F-02-12ST	12						20.9			32.8	44.3			22
AS32□1F-03-06ST	6						12.8			27.8	39.3			17
AS32□1F-02-08ST	8	R3/8	19	18.5		23	15.2			29.5	41	19.8	52.6	18.5
AS32□1F-03-10ST	10						18.5			31.8	43.3			21
AS32□1F-03-12ST	12						20.9			32.8	44.3			22
AS42□1F-04-10ST	10	R1/2	24	20.9		28.6	12			35.2	47.9	24.5	62.9	21
AS42□1F-04-12ST	12						20.9			36.2	49.5		55.8	22

\* Reference dimensions of M5 x 0.8, R threads after installation.

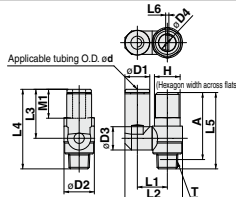
### Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Weight (g)
AS12□1F-U10/32-01T	1/8"						8.4							
AS12□1F-U10/32-03T	5/32"	10-32UNF	8	9.3	9.6	4.5	17.3	22.1	12.3			0.7	27.4	12.7
AS12□1F-U10/32-05T	3/16"						11.4			18.1	22.9	11.7		13.5
AS12□1F-U10/32-07T	1/4"						12							20
AS22□1F-N01-01ST	1/8"						8.4							21
AS22□1F-N01-03ST	5/32"	NPT1/8	12.7	13.2	14.2	7	10.4			20.4	27.5		1.5	17
AS22□1F-N01-05ST	3/16"						9.3			24	31.1	13.4	34.7	16.5
AS22□1F-N01-07ST	1/4"						13.2			23.9	31			17
AS22□1F-N01-09ST	5/16"						15.2			25.3	32.4			18.5
AS22□1F-N02-03ST	5/32"						10.4			25.2	34.4			16
AS22□1F-N02-05ST	3/16"	NPT1/4	17.5	13.2	18.5	7	12.8			27.2	36.4		1.5	17
AS22□1F-N02-07ST	1/4"						15.2			29.5	41	17.7	40.2	18.5
AS22□1F-N02-09ST	5/16"						18.5			31.8	43.3			21
AS22□1F-N02-11ST	3/8"						18.5			35.3	44.5	18.3		21
AS22□1F-N02-07ST	1/4"	NPT1/2	23.8	17.9	19.2	9.5	13.2			27.8	39.3		1.5	17
AS22□1F-N02-09ST	5/16"						15.2			29.5	41	21.3	54.8	18.5
AS22□1F-N02-11ST	3/8"	NPT1/4	19	15.2	23	9.5	13.2			31.8	43.3		1.5	17
AS22□1F-N03-07ST	1/4"						17.9			27.8	39.3			18
AS22□1F-N03-09ST	5/16"	NPT3/8	19	15.2	23	9.5	13.2			29.5	41	19.8	52.6	18.5
AS22□1F-N03-11ST	3/8"						17.9			31.8	43.3			21
AS22□1F-N03-13ST	7/16"						21.7			33.6	47.9		1.5	22
AS42□1F-N04-11ST	3/8"	NPT1/2	23.8	17.9	19.2	9.5	13.2			35.2	49.5	24.5	62.9	21
AS42□1F-N04-13ST	1/2"						21.7			36.2	49.5		55.8	22

\* Reference dimensions of 10-32 UNF and NPT threads after installation.

## Dimensions

### Universal type



### Metric Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A*	M1	Weight (g)
AS13□1F-M5-23T	3.2							8.4								
AS13□1F-M5-04T	4	M5x0.8	8	9.3	9.6	9.3	4.5	10.8	19.8	17.5	28.7			0.7	27.4	12.7
AS13□1F-M5-06T	6							11.6	20.3	17.5	28.7					10
AS13□1F-M5-06T	6							11.6	21.4	20.6	31.8					13.5
AS22□1F-01-23ST	3.2							8.4								21
AS22□1F-01-04ST	4							9.3								12.7
AS22□1F-01-06ST	6	R1/8	12	11.6	14.2	7		11.6	24.9	17.5	30.9			1.5	31.6	22
AS22□1F-01-08ST	8							15.2	24.9	22.9	36.3	34.7				18.5
AS22□1F-01-10ST	10							15.2	20.2	38.7	31	47.9				21
AS22□1F-02-04ST	4							10.4	18.2	30.6	21.9	39.6				16
AS22□1F-02-06ST	6	R1/4	17	15.2		18.5	12.9	10.9	18.4	34	25.2	42.1	40.2	1.5	34.7	17
AS22□1F-02-08ST	8							15.2	18.3	35.2	28.2	45.1				18.5
AS22□1F-02-10ST	10							18.5	20.2	38.7	31	47.9				21
AS22□1F-02-06ST	6							12.8	38.5	25.2	46.5					17
AS22□1F-02-08ST	8	R1/4	17	15.2		18.5	12.9	20.6	38.7	28.2	49.5			1.5	49.3	18.5
AS22□1F-02-10ST	10							18.5	43.7	32.6	53.9					21
AS22□1F-02-12ST	12							20.9	44.9	34.4	55.7					22
AS22□1F-02-06ST	6							12.8	38.5	25.2	46.5					17
AS22□1F-02-08ST	8	R3/8	19	18.5		23	9.5	10.6	39.7	28.2	48	52.6	1.5	47.4	18.5	21
AS22□1F-03-10ST	10							18.5	43.7	32.6	52.4					21
AS22□1F-03-12ST	12							20.9	44.9	34.4	54.2					22
AS32□1F-04-10ST	10	R1/2	24	20.9		28.6	12.9	25.8	49.4	32.6	57.1	62.9	1.5	55.8	21	145
AS42□1F-04-12ST	12							20.9	26.6	52	36.3	60.8				22

\* Reference dimensions of M5 x 0.8, R threads after installation.

### Inch Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A*	M1	Weight (g)
AS13□1F-U24/31-01T	1/8"							8.4								
AS13□1F-U24/31-03T	5/32"	10-32UNF	8	9.3	9.6	9.3	4.5	10.8	19.8	17.5	28.7			0.7	27.4	12.7
AS13□1F-U24/31-05T	3/16"							11.6	21.3	23.3	34.5					16.5
AS13□1F-U24/31-07T	1/4"							12	21.6	20.7	31.9					13.7
AS22□1F-N01-01ST	1/8"							8.4								21
AS22□1F-N01-03ST	5/32"	NPT1/8	12.7	11.4	14	10.9	7	14	26.8	23.9	37.3	34.7	1.5	31.6	16.5	22
AS22□1F-N01-05ST	3/16"							9.3	21.3	23.9	34.5					17
AS22□1F-N01-07ST	1/4"							13.2	23.9	25.6	38.2					18.5
AS22□1F-N01-09ST	5/16"							15.2	30.9	28.2	40.8					25
AS22□1F-N02-03ST	5/32"							10.4	30.6	21.9	39.6					16
AS22□1F-N02-05ST	3/16"	NPT1/4	17.5	13.2	19	9.5	10.9	11.4	31.1	23.9	41.6			1.5	34.7	17
AS22□1F-N02-07ST	1/4"							15.2	34.2	26.5	42.5	40.2	1.5	47	18.5	21
AS22□1F-N02-09ST	5/16"							18.5	35.2	28.2	45.1					18.5
AS22□1F-N02-11ST	3/8"							18.5	40.2	38.7	31	47.9				21
AS22□1F-N02-07ST	1/4"	NPT1/2	23.8	17.9	19.2	9.5	10.9	11.4	38.7	25.6	46.9			1.5	34.7	17
AS22□1F-N02-09ST	5/16"							15.2	39.7	28.2	49.5	54.8	1.5	49.3	18.5	21
AS22□1F-N02-11ST	3/8"	NPT1/4	19	15.2	23	9.5	10.9	11.4	43.7	32.6	53.9					21
AS22□1F-N03-07ST	1/4"							17.9	38.7	25.6	45.4					17
AS22□1F-N03-09ST	5/16"	NPT3/8	19	15.2	23	9.5	10.9	11.4	39.7	28.2	48	52.6	1.5	47.4	18.5	21
AS22□1F-N03-11ST	3/8"							17.9	43.7	32.6	52.4					21
AS22□1F-N03-13ST	7/16"							21.7	49.4	32.6	57.1					21
AS42□1F-N04-11ST	3/8"	NPT1/2	23.8	17.9	19.2	9.5	10.9	11.4	25.8	49.4	32.6	57.1		1.5	55.8	21
AS42□1F-N04-13ST	1/2"							21.7	26.8	52	36.3	60.8	62.9	1.5	55.8	22

\* Reference dimensions of 10-32 UNF and NPT threads after installation.

Series AS□□□1F-T

# Made to Order Specifications

Please contact SMC for detailed dimensions, specifications and delivery.



Lubricant: Vaseline

**X12**

Ex.) AS1201F-M5-23T-X12

Grease-free (Seal: Fluorine Coated) +  
Throttle Valve (Without Check Valve)

**X21**

Ex.) AS1201F-M5-23T-X21

Note 1) Not particle-free

Note 2) Throttle valve is only compatible with the part no. of the meter-out type.

Throttle Valve (Without Check Valve)

**X214**

Ex.) AS1201F-M5-23T-X214

Note) Throttle valve is only compatible with the product no. of the meter-out type.

AS

TMH

ASD

AS

AS-FE  
KE

AS-FG

AS-FP

AS-FM

AS-D  
AS-T

ASP

ASN

AQ

ASV

AK

VCHC

ASS

ASR  
ASQ

# Tamper Proof Speed Controller with One-touch Fitting In-line Type

## Series AS□□□1F-T



### Model

Model	Applicable tubing O.D.												
	Metric size						Inch size						
	3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"
AS1001F	●	●	●	●	●	●	●	●	●	●			
AS2001F		●	●					●	●	●			
AS2051F			●	●					●	●	●		
AS3001F			●	●	●	●				●	●	●	
AS4001F					●	●						●	●

### 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 <sup>(1)</sup>	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 411 and 412 for details.)

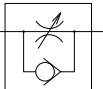
Note 2) Brass parts are all electroless nickel plated.

### Flow Rate and Sonic Conductance

Model		AS1001F	AS2001F	AS2051F	AS3001F	AS4001F					
Tubing O.D.	Metric size	ø3.2, ø4, ø6	ø4	ø6	ø8	ø6	ø8	ø10, ø12	ø10	ø12	
	Inch size	ø1/8", ø5/32", ø3/16", ø1/4"	ø5/32"	ø3/16", ø1/4"	ø3/16"	ø1/4", ø5/16"	ø1/4"	ø5/16"	ø3/8"	ø3/8"	ø1/2"
Controlled flow	Flow rate (L/min (ANR))	100	130	230	290	460	420	660	920	1050	1390
Free flow	Sonic conductance dm <sup>2</sup> /(s.bar)	0.3	0.4	0.7	0.9	1.4	1.3	2	2.8	3.2	4.2
	Controlled flow	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Critical pressure ratio	Controlled flow	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	Free flow	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25

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

### Symbol



### Flow Direction Symbols on Body



**Made to Order**  
(Refer to page 608 for details.)

### Caution

Be sure to read before handling.  
Refer to front matter 56 for Safety Instructions and pages 468 to 471 for Flow Control Equipment Precautions.

### How to Order

AS **200** 1F - **06** T - **01**

**Body size**

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings

**Tamper proof**  
Note) Speed controller requires a special tool for flow adjustment. Order separately with part number, AS-T-1.

**Applicable tubing O.D.** <sup>Note)</sup>

Metric size	Inch size
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"

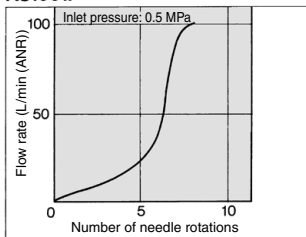
**Made to Order**  
Refer to page 608 for details.

Note) For applicable tubing O.D. selection, refer to the Model.  
\* Use ø1/8" tube.

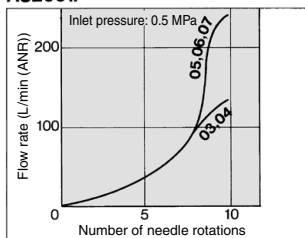
## Needle Valve/Flow Characteristics

Note) The flow characteristics are representative values.

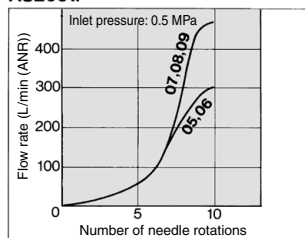
**AS1001F**



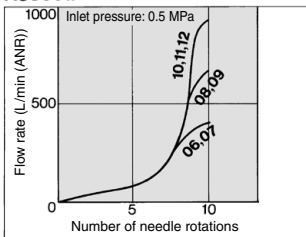
**AS2001F**



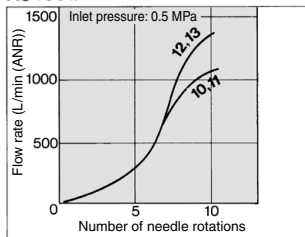
**AS2051F**



**AS3001F**

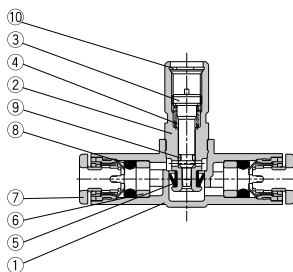


**AS4001F**

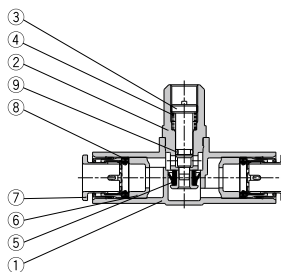


## Construction

**AS1001F**



**AS2001F to AS4001F**



### Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass	Electroless nickel plated
3	Needle	Brass	Electroless nickel plated
4	Spring	Steel wire <sup>(1)</sup>	
5	U seal	HNBR	
6	Spacer	—	
7	Cassette	—	
8	Seal	NBR	
9	O-ring	NBR	
10	Retaining ring for hole type C	Tool steel	

Note 1) AS1001F type: Stainless steel

AS

TMH

ASD

AS

AS-FE  
KE

AS-FG

AS-FP

AS-FM

AS-D  
AS-T

ASP

ASN

AQ

ASV

AK

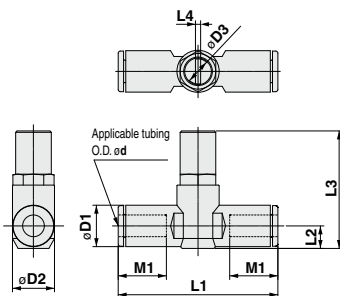
VCHC

ASS

ASR  
ASQ

# Series AS□□□1F-T

## Dimensions



### Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1	Weight(g)
AS1001F-23T	3.2	8.4	10.5	4.5	38	4.5	26	0.7	12.7	8
AS1001F-04T	4	9.3			39.2	5.2	26.6		9	
AS1001F-06T	6	11.6	12.3	7	40.7	6.2	27.7	1.5	13.5	10
AS2001F-04T	4	9.3			40.7	5.2	31.9		12.7	15
AS2001F-06T	6	11.6			44.8	6.3	33		13.5	16
AS2051F-06T	6	12.8	15.5	7	53.2	6.7	35.2	1.5	17	33
AS2051F-08T	8	15.2			59.8	8.1	36.5		18	36
AS3001F-06T	6	12.8	20.6	9.5	59	7.4	45	1.5	17	56
AS3001F-08T	8	15.2			64.4	8.2	45.8		18	60
AS3001F-10T	10	18.5			71.6	9.8	47.3		21	64
AS3001F-12T	12	20.9	27.6	12	76	11	48.5	1.5	22	68
AS4001F-10T	10	18.5			77.7	11.3	55.4		21	121
AS4001F-12T	12	20.9			82.1	11.3	56.4		22	125

### Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1	Weight(g)
AS1001F-01T	1/8"	8.4	10.5	4.5	38	4.5	26	0.7	12.7	8
AS1001F-03T	5/32"	9.3			39.2	5.2	26.6		9	
AS1001F-05T	3/16"	11.4	12.3	7	40.7	6.2	27.7	1.5	13.5	10
AS1001F-07T	1/4"	12			40.7	5.2	31.9		12.7	15
AS2001F-03T	5/32"	9.3			40.7	6.2	32.8		16.5	21
AS2001F-05T	3/16"	11.4	15.5	7	52.2	7.1	33.7	1.5	17	19
AS2001F-07T	1/4"	13.2			52.2	7.1	33.7		17	19
AS2051F-05T	3/16"	11.4	20.6	9.5	52.2	6.2	34.9	1.5	16.5	35
AS2051F-07T	1/4"	13.2			54.4	7.1	35.7		17	33
AS2051F-09T	5/16"	15.2			59.8	8.1	36.7		18	36
AS3001F-07T	1/4"	13.2	27.6	12	59	7.4	45.2	1.5	17	56
AS3001F-09T	5/16"	15.2			64.4	8.2	46		18	60
AS3001F-11T	3/8"	17.9			70.8	9.5	47.2		21	72
AS4001F-11T	3/8"	17.9	27.6	12	76.9	10.3	55.5	1.5	21	129
AS4001F-13T	1/2"	21.7			83.1	11.6	56.9		22	142

## Made to Order



Lubricant: Vaseline

**X12**

Ex.) AS1001F-23T-X12

Grease-free (Seal: Fluorine Coated) + Throttle Valve (Without Check Valve)

**X21**

Ex.) AS1001F-23T-X21

Note 1) Not particle-free

Throttle Valve (Without Check Valve)

**X214**

Ex.) AS1001F-23T-X214

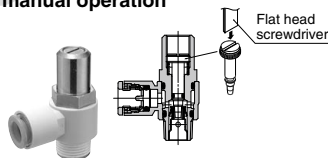
# Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fitting Elbow Type/Universal Type

## Series AS□□□1F-D

RoHS

Flow adjustable by flat head screwdriver

Prevention of an unnecessary manual operation



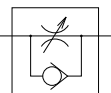
Elbow type



Universal type



Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

Model

Elbow type	Universal type	Port size	Applicable tubing O.D.															
			Metric size						Inch size									
			3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"			
AS12□1F-M5	AS13□1F-M5	M5 x 0.8	●	●	●													
AS22□1F-01	AS23□1F-01	R 1/8	●	●	●	●												
AS22□1F-02	AS23□1F-02	R 1/4		●	●	●	●											
AS32□1F-02	AS33□1F-02	R 1/4			●	●	●	●										
AS32□1F-03	AS33□1F-03	R 3/8				●	●	●	●									
AS42□1F-04	AS43□1F-04	R 1/2						●	●									
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF								●	●	●	●					
AS22□1F-N01	AS23□1F-N01	NPT 1/8								●	●	●	●	●				
AS22□1F-N02	AS23□1F-N02	NPT 1/4									●	●	●	●	●			
AS32□1F-N02	AS33□1F-N02	NPT 1/4										●	●	●	●			
AS32□1F-N03	AS33□1F-N03	NPT 3/8											●	●	●			
AS42□1F-N04	AS43□1F-N04	NPT 1/2														●	●	

Note 1) \* Elbow type only

Note 2) Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.

## 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 <sup>(1)</sup>	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 411 and 412 for details.)

Note 2) Brass parts are all electroless nickel plated, provided as standard.

## Flow Rate and Sonic Conductance

Model		AS12□1F AS13□1F	AS22□1F-□01 AS23□1F-□01	AS22□1F-□02 AS23□1F-□02	AS32□1F AS33□1F	AS42□1F AS43□1F
Tubing O.D.	Metric size	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", ø3/16", ø1/4"	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	Flow rate (L/min (ANR))	100	180, 230	260, 390	460	660, 790, 920, 1580, 1710
	Sonic Conductance dm <sup>3</sup> /(s.bar)	0.3	0.54	0.7	0.8, 1.2, 1.4	2, 2.4, 2.8, 4.8, 5.2
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.



Made to Order  
(Refer to page 583 for details.)

**How to Order**

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

**Body size**

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

**Type**

2	Elbow
3	Universal

**Control**

0	Meter-out
1	Meter-in

**Port size**

M5	M5 x 0.8
01	R 1/8
02	R 1/4
03	R 3/8
04	R 1/2
U10/32	10-32 UNF
N01	NPT 1/8
N02	NPT 1/4
N03	NPT 3/8
N04	NPT 1/2

**Applicable tubing O.D.** (Note)

Metric size	Inch size
23	ø3.2*
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Port size	Inch size
01	ø1/8"
03	ø5/32"
07	ø3/16"
09	ø1/4"
05	ø3/16"
06	ø3/16"
11	ø3/8"
13	ø1/2"

**Type adjustable by flat head screwdriver**  
**With seal**  
 Note) In the case that port size is either M5 or 10-32 UNF thread, it is not available with seal. Gasket is provided as standard.

**Made to Order**  
 Refer to the below for details.

Note) For applicable tubing O.D. selection, refer to the Model on page 582.  
 \* Use ø1/8" tube.

**Made to Order**



**Lubricant: Vaseline**

**X12**

Ex.) AS1201F-M5-23D-X12

**Grease-free (Seal: Fluorine Coated) + Throttle Valve (Without Check Valve)**

**X21**

Ex.) AS1201F-M5-23D-X21

Note 1) Not particle-free  
 Note 2) Throttle valve is only compatible with the part no. of the meter-out type.

**Throttle Valve (Without Check Valve)**

**X214**

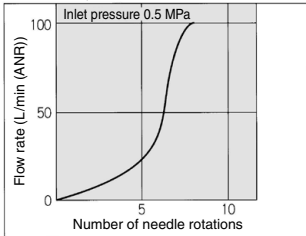
Ex.) AS1201F-M5-23D-X214

Note) Throttle valve is only compatible with the part no. of the meter-out type.

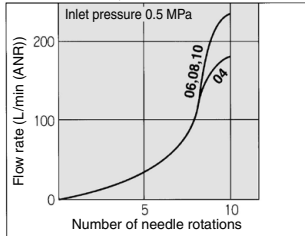
**Needle Valve/Flow Characteristics**

Note) The flow characteristics are representative values.

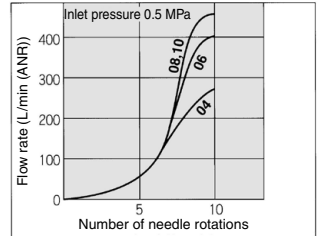
**AS1201F, AS1211F**



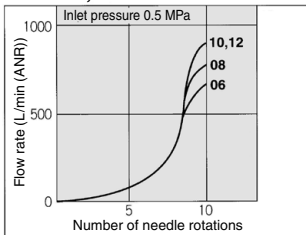
**AS2201F-01, AS2211F-01**



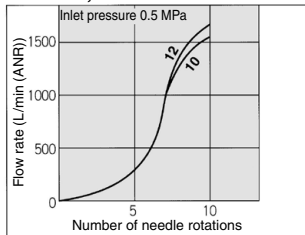
**AS2201F-02, AS2211F-02**



**AS3201F, AS3211F**



**AS4201F, AS4211F**

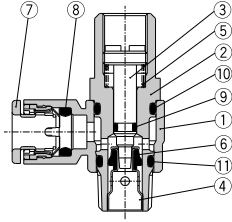


- AS
- TMH
- ASD
- AS
- AS-FE KE
- AS-FG
- AS-FP
- AS-FM
- AS-D AS-T
- ASP
- ASN
- AQ
- ASV
- AK
- VCHC
- ASS
- ASR ASQ

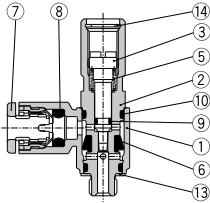
# Series AS□□□1F-D

## Construction

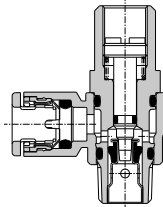
### Elbow type Meter-out type



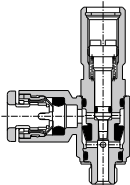
### M5 type U10/32 type



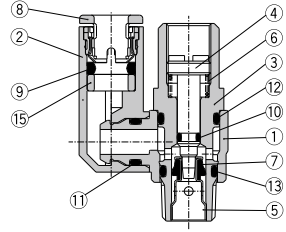
### Meter-in type



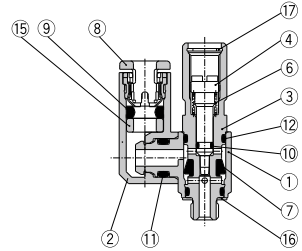
### M5 type U10/32 type



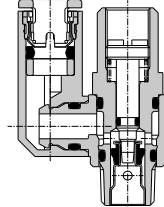
### Universal type Meter-out type



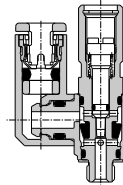
### M5 type U10/32 type



### Meter-in type



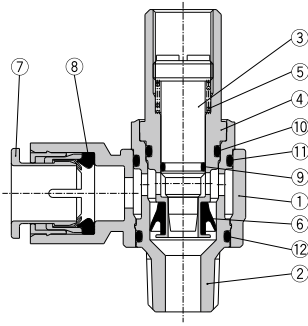
### M5 type U10/32 type



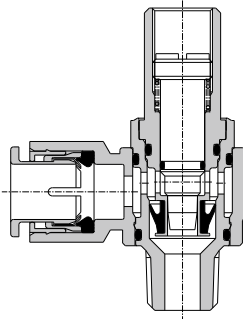
## Construction

### Elbow type

Meter-out AS3201F-02

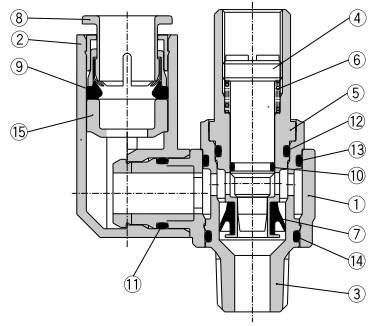


Meter-in AS3211F-02

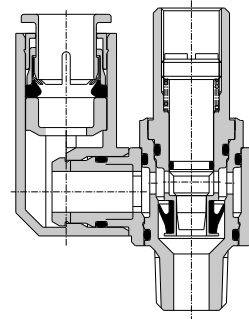


### Universal type

Meter-out AS3301F-02



Meter-in AS3311F-02



### Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass	Electroless nickel plated
3	Needle	Brass	Electroless nickel plated
4	Seat ring	Brass	Electroless nickel plated
5	Spring	Steel wire <sup>(1)</sup>	
6	U seal	HNBR	
7	Cassette	—	
8	Seal	NBR	
9	O-ring	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	O-ring	POM	
13	Gasket	NBR, Stainless steel	
14	Retaining ring for hole type C	Tool steel	

Note 1) M5 and U10/32 type: Stainless steel

### Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Body B	Brass	Electroless nickel plated
4	Needle	Brass	Electroless nickel plated
5	Seat ring	Brass	Electroless nickel plated
6	Spring	Steel wire <sup>(1)</sup>	
7	U seal	HNBR	
8	Cassette	—	
9	Seal	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	O-ring	NBR	
13	O-ring	NBR	
14	O-ring	NBR	
15	Spacer	—	
16	Gasket	NBR, Stainless steel	
17	Retaining ring for hole type C	Tool steel	

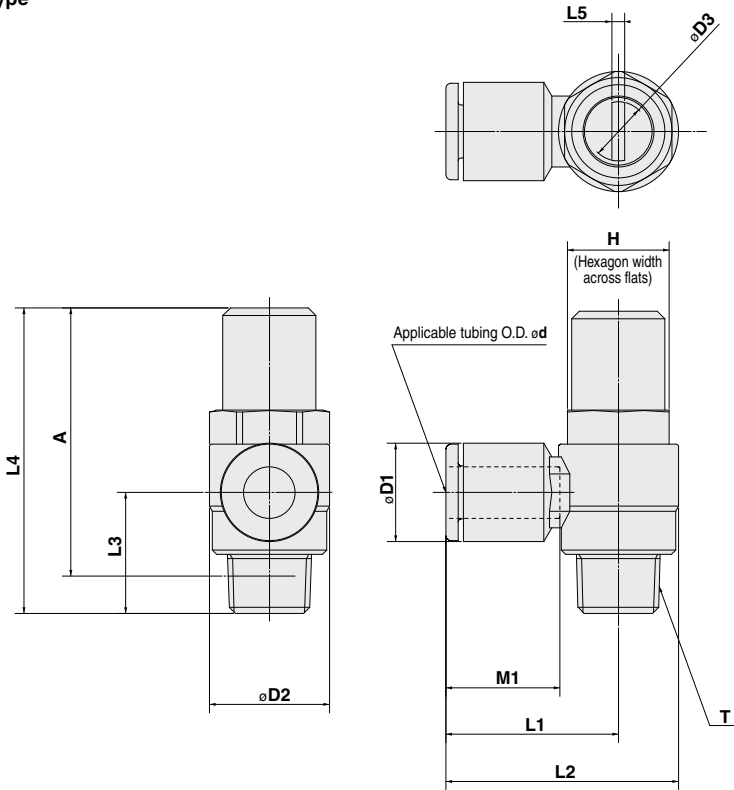
Note 1) M5 and U10/32 type: Stainless steel

AS  
TMH  
ASD  
AS  
AS-FE  
KE  
AS-FG  
AS-FP  
AS-FM  
AS-D  
AS-T  
ASP  
ASN  
AQ  
ASV  
AK  
VCHC  
ASS  
ASR  
ASQ

# Series AS□□□1F-D

## Dimensions

### Elbow type



### Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Weight (g)
AS12□1F-M5-23D	3.2			8.4			17.3	22.1	12.3				12.7	10
AS12□1F-M5-04D	4	M5 x 0.8	8	9.3	9.6	4.7	17.3	22.1	12.3	31	0.7	27.4	12.7	10
AS12□1F-M5-06D	6			11.6			18.1	22.9	11.7				13.5	20
AS22□1F-01-23SD	3.2			8.4			20.4	27.5	13.4				12.7	21
AS22□1F-01-04SD	4			9.3			20.4	27.5	13.4				13.5	23
AS22□1F-01-06SD	6	R 1/8	12	11.6	14.2	7.2	25.3	32.4		34.7	1.2	31.6	18.5	25
AS22□1F-01-08SD	8			15.2			35.3	44.5	15.3				21	25
AS22□1F-01-10SD	10			18.5									16	40
AS22□1F-02-04SD	4			10.4			25.2	34.4					17	42
AS22□1F-02-06SD	6	R 1/4	17	12.8	18.5	7.2	27.2	36.4	17.7	40.2	1.2	34.7	18.5	42
AS22□1F-02-08SD	8			15.2			35.3	44.5	18.3				21	44
AS22□1F-02-10SD	10			18.5									17	73
AS32□1F-02-06SD	6			12.8			27.8	39.3					17	76
AS32□1F-02-08SD	8			15.2			29.5	41					18.5	76
AS32□1F-02-10SD	10	R 1/4	19	18.5	23	9.8	31.8	43.3	21.3	54.8	1.2	49.3	21	80
AS32□1F-02-12SD	12			20.9			32.8	44.3					22	82
AS32□1F-03-06SD	6			12.8			27.8	39.3					17	77
AS32□1F-03-08SD	8			15.2			29.5	41					18.5	79
AS32□1F-03-10SD	10	R 3/8	19	18.5	23	9.8	31.8	43.3	19.8	52.6	1.2	47.4	21	81
AS32□1F-03-12SD	12			20.9			32.8	44.3					22	83
AS42□1F-04-10SD	10			18.5			33.6	47.9		24.5	1.2	55.8	21	141
AS42□1F-04-12SD	12	R 1/2	24	20.9	28.6	12.4	35.2	49.5		24.5	1.2	55.8	22	142

\* Reference dimensions of M5 x 0.8, R threads after installation.

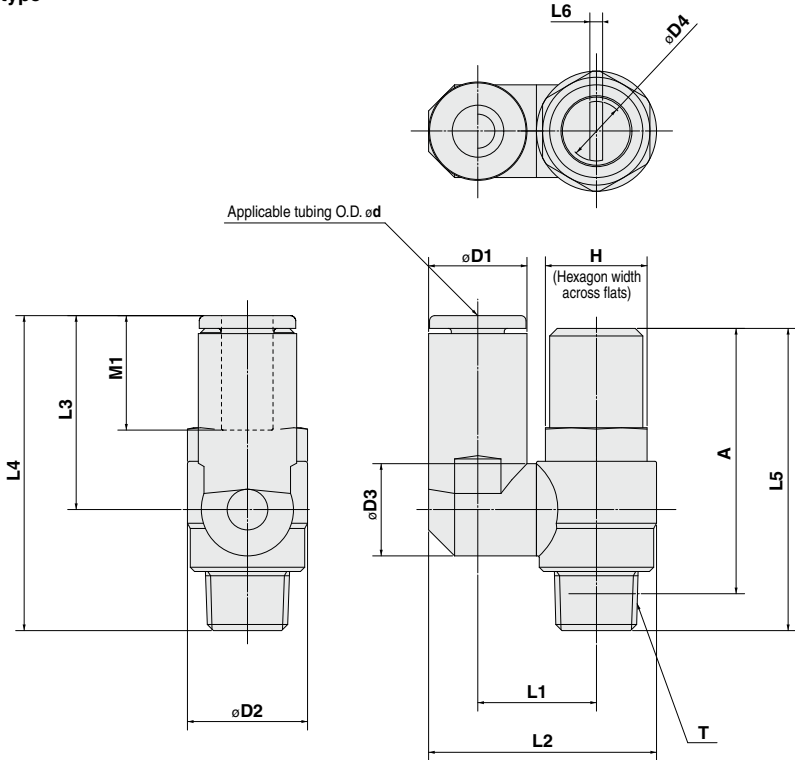
### Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Weight (g)
AS12□1F-U1032-01D	1/8"			8.4			17.3	22.1	12.3				12.7	10
AS12□1F-U1032-03D	3/32"	10-32 UNF	8	9.3			17.3	22.1	12.3	31	0.7	27.4	12.7	10
AS12□1F-U1032-05D	3/16"			11.4	9.6	4.7	18.3	23.1	11.7				16.5	20
AS12□1F-U1032-07D	1/4"			14.4			20.4	27.5					17	23
AS22□1F-N01-01SD	1/8"			8.4			20.4	27.5					12.7	20
AS22□1F-N01-03SD	3/32"			9.3			20.4	27.5					13.5	21
AS22□1F-N01-05SD	3/16"	NPT 1/8	12.7	13.2	14.2	7.2	25.3	32.4	13.4	34.7	1.2	31.6	18.5	25
AS22□1F-N01-07SD	1/4"			13.2			23.9	31					17	23
AS22□1F-N01-09SD	5/16"			15.2			25.3	32.4					18.5	25
AS22□1F-N02-03SD	3/32"			10.4			25.2	34.4					16	40
AS22□1F-N02-05SD	3/16"			12.8			25.2	34.5					16.5	40
AS22□1F-N02-07SD	1/4"	NPT 1/4	17.5	13.2	18.5	7.2	25.2	34.5	17.7	40.2	1.2	34.7	17	42
AS22□1F-N02-09SD	5/16"			15.2			27.2	36.4					18.5	44
AS22□1F-N02-11SD	3/8"			18.3			35.3	44.5	18.3				21	44
AS32□1F-N02-07SD	1/4"			13.2			27.8	39.3					17	73
AS32□1F-N02-09SD	5/16"	NPT 1/4	19	15.2	23	9.8	29.5	41	21.3	54.8	1.2	49.3	18.5	76
AS32□1F-N02-11SD	3/8"			17.9			31.8	43.3					21	80
AS32□1F-N03-07SD	1/4"			13.2			27.8	39.3					17	77
AS32□1F-N03-09SD	5/16"	NPT 3/8	19	15.2	23	9.8	29.5	41	19.8	52.6	1.2	47.4	18.5	79
AS32□1F-N03-11SD	3/8"			17.9			31.8	43.3					21	81
AS42□1F-N04-11SD	3/8"			17.9			33.6	47.9		24.5	1.2	55.8	21	141
AS42□1F-N04-13SD	1/2"	NPT 1/2	23.8	21.7	28.6	12.4	35.2	49.5		24.5	1.2	55.8	22	142

\* Reference dimensions of 10-32 UNF and NPT threads after installation.

**Dimensions**

**Universal type**



- AS
- TMH
- ASD
- AS
- AS-FE  
KE
- AS-FG
- AS-FP
- AS-FM
- AS-D  
AS-T
- ASP
- ASN
- AQ
- ASV
- AK
- VCHC
- ASS
- ASR  
ASQ

**Metric Size**

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A*	M1	Weight (g)	
AS13□1F-M5-23D	3.2		8.4						19.8	17.5	28.7			0.7	27.4	12.7	10
AS13□1F-M5-04D	4	M5×0.8	9.3	9.6	9.3	4.7	10.8	20.3	21.4	20.6	31.8						
AS13□1F-M5-06D	6		11.6						21.4	20.6	31.8					13.5	
AS23□1F-01-23SD	3.2		8.4		9.3			13.1	24.4	17.5	30.9					12.7	21
AS23□1F-01-04SD	4		9.3		10.9			14	24.9	22.9	36.3					13.5	22
AS23□1F-01-06SD	6	R 1/8	11.6		12.9			16.2	30.9	28.2	40.8					18.5	25
AS23□1F-01-08SD	8		15.2					18.4	34	25.2	42.1					17	41
AS23□1F-02-04SD	4		10.4		10.9			16.2	30.6	21.9	39.6					16	40
AS23□1F-02-06SD	6		12.8					18.3	35.2	28.2	45.1					17	41
AS23□1F-02-08SD	8	R 1/4	15.2		18.5			20.2	38.7	31	47.9					18.5	44
AS23□1F-02-10SD	10		18.5													21	48
AS33□1F-02-06SD	6		12.8		12.9			20.6	38.5	25.2	46.5					17	73
AS33□1F-02-08SD	8		15.2					20.6	39.7	28.2	49.5					18.5	76
AS33□1F-02-10SD	10	R 1/4	18.5		23			23	43.7	32.6	53.9	54.8	1.2	49.3		21	80
AS33□1F-02-12SD	12		20.9		16.2			23	44.9	34.4	55.7					22	82
AS33□1F-03-06SD	6		12.8		12.9			20.6	38.5	25.2	45					17	78
AS33□1F-03-08SD	8		15.2					20.6	39.7	28.2	48					18.5	81
AS33□1F-03-10SD	10	R 3/8	19		23			23	43.7	32.6	52.4	52.6	1.2	47.4		21	85
AS33□1F-03-12SD	12		20.9		16.2			23	44.9	34.4	54.2					22	87
AS43□1F-04-10SD	10		18.5		16.2		12.4	25.8	49.4	32.6	57.1					21	145
AS43□1F-04-12SD	12	R 1/2	24		20.9	28.6		26.8	52	36.3	60.8					22	147

\* Reference dimensions of M5 x 0.8, R threads after installation.

**Inch Size**

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A*	M1	Weight (g)	
AS13□1F-U1032-01D	1/8"		8.4						19.8	17.5	28.7					12.7	10
AS13□1F-U1032-03D	3/32"		9.3						20.3	21.3	34.5						
AS13□1F-U1032-05D	5/32"	10-32 UNF	11.4		9.6	9.3	4.7	10.8	21.4	20.6	31.8					16.5	11
AS13□1F-U1032-06D	3/16"		12.8						21.4	20.6	31.8					13.7	
AS13□1F-U1032-07D	1/4"		14.4						21.4	20.6	31.8					13.7	
AS23□1F-M01-01SD	1/8"		8.4		9.3			13.1	24.4	17.5	30.9					12.7	21
AS23□1F-M01-03SD	3/32"		9.3		10.9			14	24.9	22.9	36.3					13.5	22
AS23□1F-M01-03SD	3/16"	NPT 1/8	11.4		10.9	9.3		14	26.8	23.9	37.3	34.7	1.2	31.6		16.5	25
AS23□1F-M01-07SD	1/4"		13.2		12.9			16.2	29.9	25.6	38.2					17	23
AS23□1F-M01-09SD	9/16"		15.2					20.2	30.9	28.2	40.8					18.5	25
AS23□1F-M02-03SD	3/32"		10.4						30.6	21.9	39.6					16	40
AS23□1F-M02-05SD	3/16"		11.4		10.9			16.2	31.1	23.9	41.6					16.5	41
AS23□1F-M02-07SD	1/4"	NPT 1/4	13.2		12.9			18.3	34.2	25.6	42.5	40.2	1.2	34.7		17	44
AS23□1F-M02-09SD	9/16"		15.2					20.2	35.2	28.2	45.1					18.5	47
AS23□1F-M02-11SD	3/8"		17.9						36.3	28.2	48					21	48
AS23□1F-M02-13SD	1/2"		19.4						38.7	31	47.9					21	48
AS33□1F-M03-07SD	1/4"		13.2		12.9			20.6	38.7	25.6	46.9					17	73
AS33□1F-M03-09SD	9/16"	NPT 1/4	15.2		23			23	39.7	28.2	49.5	54.8	1.2	49.3		18.5	76
AS33□1F-M03-11SD	3/8"		17.9		16.2			23	43.7	32.6	53.9					21	82
AS33□1F-M03-07SD	1/4"		13.2		12.9			20.6	38.7	25.6	45.4					17	78
AS33□1F-M03-09SD	9/16"	NPT 3/8	15.2		23			23	39.7	28.2	48	52.6	1.2	47.4		18.5	81
AS33□1F-M04-11SD	3/8"		17.9		16.2			23	43.7	32.6	52.4					21	87
AS43□1F-M04-11SD	3/8"		17.9		16.2		12.4	25.8	49.4	32.6	57.1					21	145
AS43□1F-M04-13SD	1/2"	NPT 1/2	23.8		29			29	52	36.3	60.8					22	147

\* Reference dimensions of 10-32 UNF and NPT threads after installation.

# Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fittings In-line Type

## Series AS□□□1F-D



### Model

Model	Applicable tubing O.D.												
	Metric size						Inch size						
	3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"
AS1001F	●	●	●				●	●	●	●			
AS2001F		●	●					●	●	●			
AS2051F			●	●					●	●	●		
AS3001F			●	●	●	●				●	●	●	●
AS4001F					●	●						●	●

### Specifications

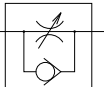
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Applicable tubing material <sup>(1)</sup>	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 411 and 412 for details.)

Note 2) Brass parts are all electroless nickel plated.

### Flow Rate and Sonic Conductance

#### Symbol



#### Flow Direction Symbols on Body



**Made to Order**  
(Refer to page 591 for details.)

#### Caution

Be sure to read before handling.  
Refer to front matter 56 for Safety Instructions and pages 468 to 471 for Flow Control Equipment Precautions.

Model	AS1001F	AS2001F	AS2051F	AS3001F	AS4001F						
Tubing O.D.	Metric size	ø3.2, ø4, ø6	ø4	ø6	ø6	ø8	ø6	ø8	ø10, ø12	ø10	ø12
	Inch size	ø1/8", ø5/32", ø3/16", ø1/4"	ø5/32"	ø3/16", ø1/4"	ø3/16"	ø1/4", ø5/16"	ø1/4"	ø5/16"	ø3/8"	ø3/8"	ø1/2"
Controlled flow	Flow rate (L/min (ANR))	100	130	230	290	460	420	660	920	1050	1390
	Sonic Conductance (dm <sup>3</sup> /(s·bar))	0.3	0.4	0.7	0.9	1.4	1.3	2	2.8	3.2	4.2
Critical pressure ratio	Controlled flow	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Free flow	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25

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

### How to Order

AS 200 1F — 06 D —

Body size ↓

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings ↓

Type adjustable by flat head screwdriver

Made to Order  
Refer to page 591 for details.

Applicable tubing O.D. <sup>Note)</sup>

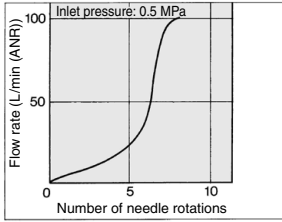
Metric size	Inch size
23	ø3.2"
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"
13	ø1/2"

Note) For applicable tubing O.D. selection, refer to the Model.  
\* Use ø1/8" tube.

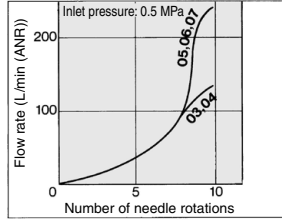
**Needle Valve/Flow Characteristics**

Note) The flow characteristics are representative values.

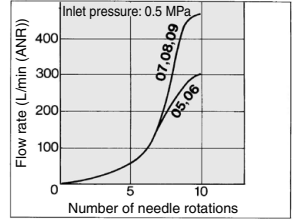
**AS1001F**



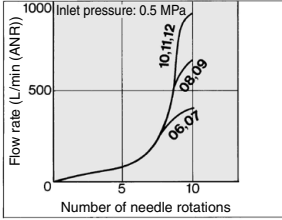
**AS2001F**



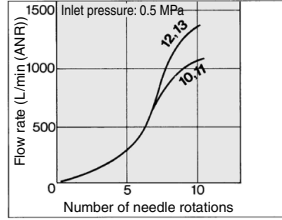
**AS2051F**



**AS3001F**

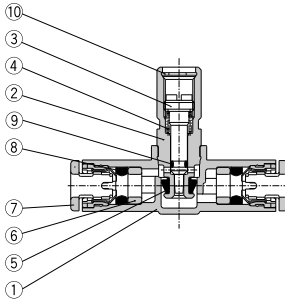


**AS4001F**

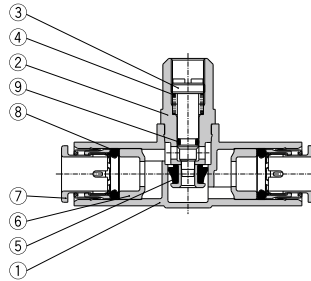


**Construction**

**AS1001F**



**AS2001F to AS4001F**



**Component Parts**

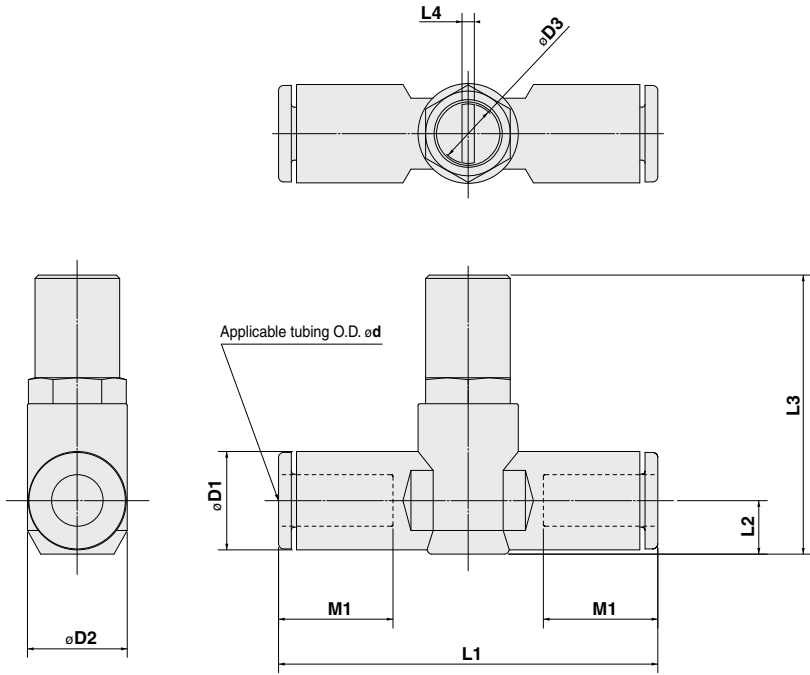
No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass	Electroless nickel plated
3	Needle	Brass	Electroless nickel plated
4	Spring	Steel wire <sup>(1)</sup>	
5	U seal	HNBR	
6	Spacer	—	
7	Cassette	—	
8	Seal	NBR	
9	O-ring	NBR	
10	Retaining ring for hole type C	Tool steel	

Note 1) AS1001F type: Stainless steel

- AS
- TMH
- ASD
- AS
- AS-FE
- KE
- AS-FG
- AS-FP
- AS-FM
- AS-D
- AS-T
- ASP
- ASN
- AQ
- ASV
- AK
- VCHC
- ASS
- ASR
- ASQ

# Series AS□□□1F-D

## Dimensions



### Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1	Weight (g)
AS1001F-23D	3.2	8.4			38	4.5	26		12.7	8
AS1001F-04D	4	9.3	10.5	4.7	39.2	5.2	26.6	0.7	13.5	9
AS1001F-06D	6	11.6			40.7	6.2	27.7		12.7	10
AS2001F-04D	4	9.3	12.3	7.2	40.7	5.2	31.9	1.2	13.5	15
AS2001F-06D	6	11.6			44.8	6.3	33		17	33
AS2051F-06D	6	12.8			53.2	6.7	35.2		18	36
AS2051F-08D	8	15.2	15.5	7.2	59.8	8.1	36.5	1.2	17	56
AS3001F-06D	6	12.8			59	7.4	45		18	60
AS3001F-08D	8	15.2	20.6	9.8	64.4	8.2	45.8	1.2	21	64
AS3001F-10D	10	18.5			71.6	9.8	47.3		22	68
AS3001F-12D	12	20.9			76	11	48.5		21	121
AS4001F-10D	10	18.5	27.6	12.4	77.7	11.3	55.4	1.2	22	125
AS4001F-12D	12	20.9			82.1		56.4			

### Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1	Weight (g)
AS1001F-01D	1/8"	8.4			38	4.5	26		12.7	8
AS1001F-03D	5/32"	9.3	10.5	4.7	39.2	5.2	26.6	0.7	13.5	9
AS1001F-05D	3/16"	11.4			40.7	6.2	27.7		12.7	10
AS1001F-07D	1/4"	12			40.7	5.2	31.9	1.2	13.5	15
AS2001F-03D	5/32"	9.3			44.8	6.3	33		17	33
AS2001F-05D	3/16"	11.4	12.3	7.2	50	6.2	32.8	1.2	18	36
AS2001F-07D	1/4"	13.2			52.2	7.1	33.7		17	19
AS2051F-05D	3/16"	11.4			52.2	6.2	34.9		16.5	35
AS2051F-07D	1/4"	13.2	15.5	7.2	54.4	7.1	35.7	1.2	17	33
AS2051F-09D	5/16"	15.2			59.8	8.1	36.7		18	36
AS3001F-07D	1/4"	13.2			59	7.4	45.2		17	56
AS3001F-09D	5/16"	15.2	20.6	9.8	64.4	8.2	46	1.2	18	60
AS3001F-11D	3/8"	17.9			70.8	9.5	47.2		21	72
AS4001F-11D	3/8"	17.9	27.6	12.4	76.9	10.3	55.5	1.2	21	129
AS4001F-13D	1/2"	21.7			83.1	11.6	56.9		22	142

Series AS□□□1F-D

# Made to Order Specifications

Please contact SMC for detailed dimensions, specifications and delivery.



Lubricant: Vaseline

**X12**

Ex.) AS1001F-23D-X12

Grease-free (Seal: Fluorine Coated) +  
Throttle Valve (Without Check Valve)

**X21**

Ex.) AS1001F-23D-X21

Note 1) Not particle-free

Throttle Valve (Without Check Valve)

**X214**

Ex.) AS1001F-23D-X214

AS

TMH

ASD

AS

AS-FE  
KE

AS-FG

AS-FP

AS-FM

AS-D  
AS-T

ASP

ASN

AQ

ASV

AK

VCHC

ASS

ASR  
ASQ