

Speed Controller with One-touch Fitting

Series AS

Elbow Type/Universal Type

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.

Application to inch size tubing

- **Metric size** (Release bushing: White color)
ø3.2, ø4, ø6, ø8, ø10, ø12
- **Inch size** (Release bushing: 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							
			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
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF	●	●	●				●	●	●	●				6, 10, 16, 20
AS22□1F-01	AS23□1F-01	R 1/8	●	●	●	●	● ⁽¹⁾		●	●	●	●	●			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) * Elbow type only

Note 2) 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 3) ● Marking is electroless nickel plated, provided as standard. (N specifications)

Specifications

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

Note 1) In the case of AS12□1F-M5, AS12□1F-U10/32, AS13□1F-M5, AS13□1F-U10/32

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 15-6-3 to 15-6-5 for details.)

Note 3) M3, M5, and 10-32UNF type ports are not available with seal.

Note 4) Brass parts are all electroless nickel plated.

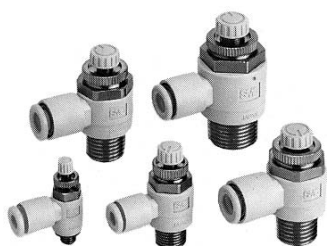
Flow Rate and Effective Area

Model		AS12□1F-M3	AS12□1F-M5	AS22□1F-01		AS22□1F-02			AS32□1F			AS42□1F	
		AS13□1F-M3	AS13□1F-M5	AS23□1F-01	AS23□1F-02	AS33□1F	AS43□1F						
Tubing O.D.	Metric size	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" ø5/32"	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	230	260	390	460	660	790	920	1580	1710
	Effective area (mm²)	0.3	1.5	2.7	3.5	4	6	7	10	12	14	24	26

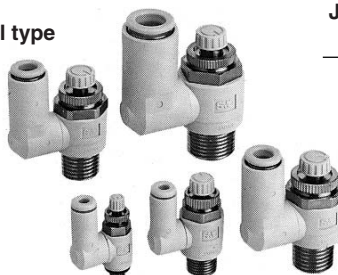
Note 1) Flow rate values are measured at 0.5 MPa and 20°C.

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

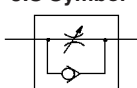
Elbow type



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 pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-8-6 to 15-8-8 for Precautions on every series.



P. 15-11-3

How to Order

AS 2 2 0 1F — 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

* If more than one option is required, write option part numbers in the order of "S", "K", "N".

Applicable tubing O.D.

Metric size	Inch size
23	01
04	03
06	05
08	07
10	09
12	11
	13

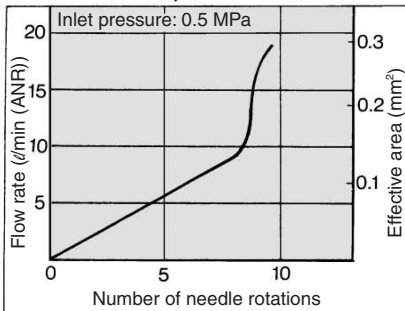
*Use 01/8" tube.

Port size

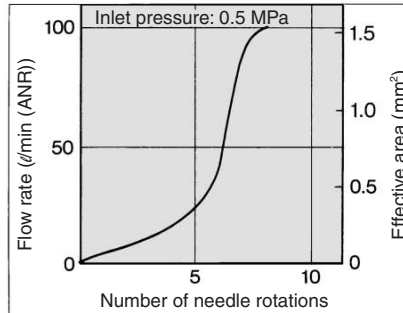
M3	M3 x 0.5
M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4
03	3/8
04	1/2

Needle Valve/Flow Characteristics

**AS1201F-M3, AS1211F-M3
AS1301F-M3, AS1311F-M3**

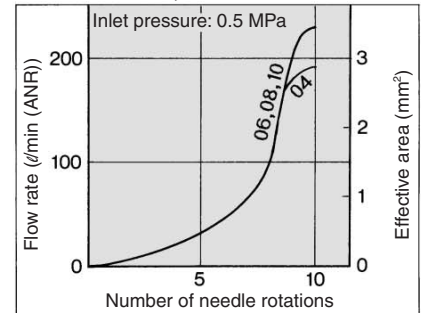


**AS1201F-M5, AS1211F-M5
AS1301F-M5, AS1311F-M5**

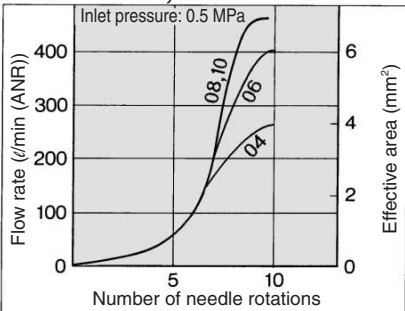


Note) "-U10/32" is the same as "M5".

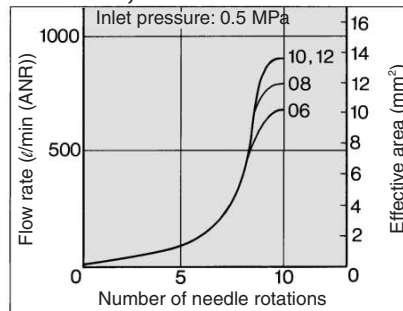
**AS2201F-01, AS2211F-01
AS2301F-01, AS2311F-01**



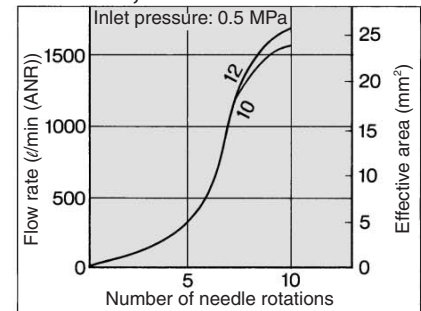
**AS2201F-02, AS2211F-02
AS2301F-02, AS2311F-02**



**AS3201F, AS3211F
AS3301F, AS3311F**



**AS4201F, AS4211F
AS4301F, AS4311F**



AS

ASP

ASN

AQ

ASV

AK

ASS

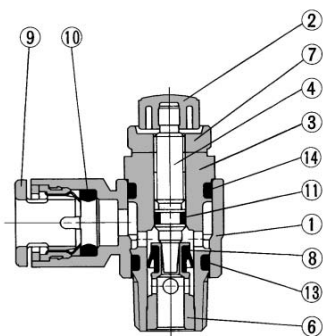
ASR

ASF

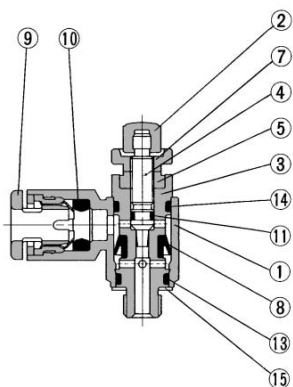
Series AS

Construction

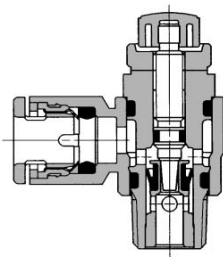
Elbow type Meter-out type



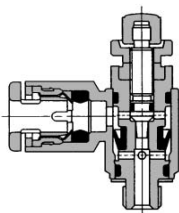
M3 port
M5 port
U10/32 port



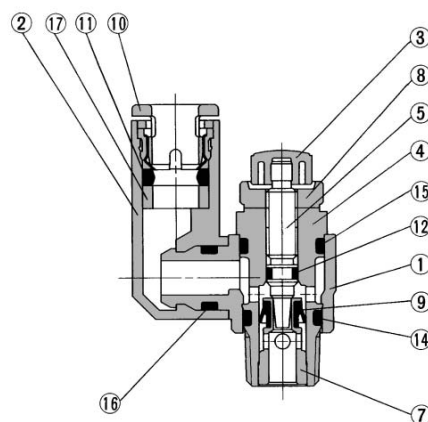
Meter-in type



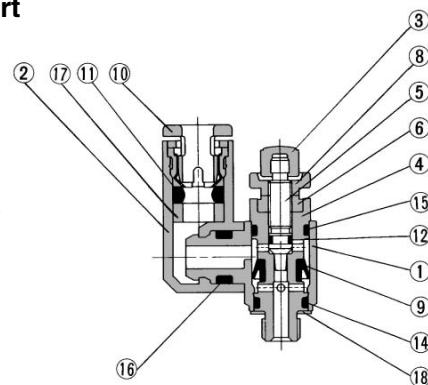
M3 port
M5 port
U10/32 port



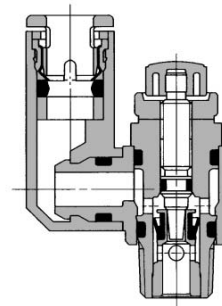
Universal type Meter-out type



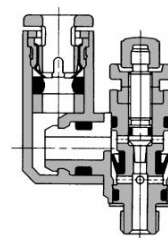
M3 port
M5 port
U10/32 port



Meter-in type

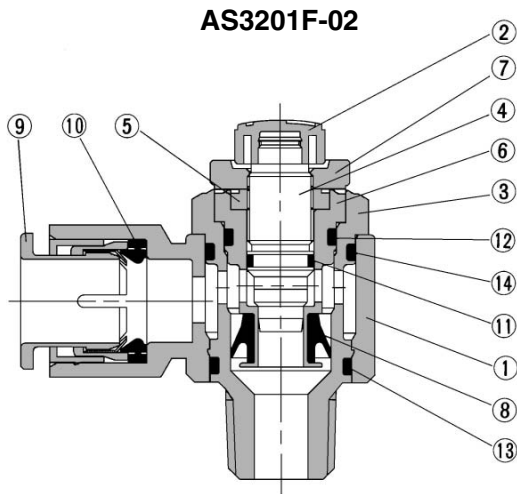


M3 port
M5 port
U10/32 port

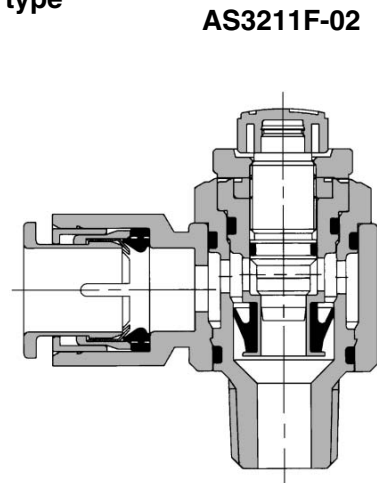


Construction

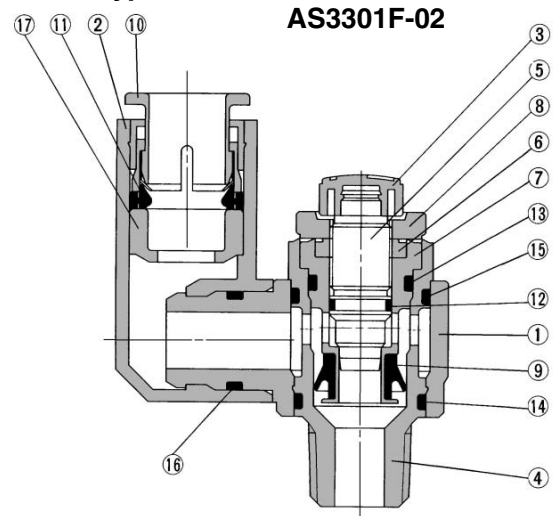
Elbow type Meter-out type



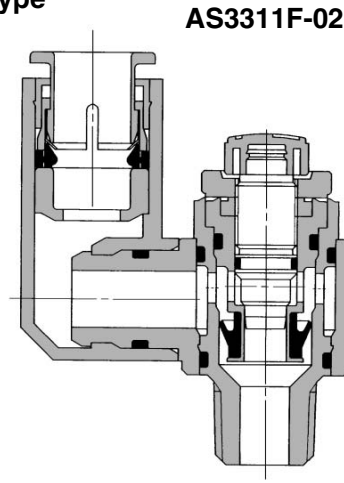
Meter-in type



Universal type Meter-out type



Meter-in type



Component Parts

No.	Description	Material	Note
①	Body A	PBT	
②	Handle	PBT	
③	Body B	Brass ⁽¹⁾	Electroless nickel plated
④	Needle	Brass	Electroless nickel plated
⑤	Needle guide	Brass	Electroless nickel plated
⑥	Seat ring	Brass	⁽²⁾
⑦	Lock nut	Brass ⁽³⁾	Electroless nickel plated ⁽⁴⁾
⑧	U-packing	HNBR	
⑨	Cassette	POM	
⑩	Seal	NBR	
⑪	O-ring	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	Gasket	NBR	

Note 1) AS12□1F-M3 is made of stainless steel.

Note 2) AS22□1F, AS32□1F-02: Electroless nickel plated.

Note 3) AS2□□1F type is made of steel.

Note 4) Meter-in type is black zinc chromate plated.

Component Parts

No.	Description	Material	Note
①	Body A	PBT	
②	Elbow body	PBT	
③	Handle	PBT	
④	Body B	Brass ⁽¹⁾	Electroless nickel plated
⑤	Needle	Brass	Electroless nickel plated
⑥	Needle guide	Brass	Electroless nickel plated
⑦	Seat ring	Brass	⁽²⁾
⑧	Lock nut	Brass ⁽³⁾	Electroless nickel plated ⁽⁴⁾
⑨	U seal	HNBR	
⑩	Cassette	POM, Stainless steel	
⑪	Seal	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	O-ring	NBR	
⑯	O-ring	NBR	
⑰	Spacer	PBT ⁽⁵⁾	
⑱	Gasket	NBR, Stainless steel	

Note 1) AS13□1F-M3 is made of stainless steel.

Note 2) AS23□1F, AS33□1F-02: Electroless nickel plated.

Note 3) AS2□□1F type is made of steel.

Note 4) Meter-in type is black zinc chromate plated.

Note 5) ø3/16", ø3/8", ø1/2" are made of brass

AS13□1F (ø3.2, ø4, ø6, ø1/8", ø5/32, ø1/4),

AS23□1F-□01(ø3.2, ø4, ø6, ø1/8", ø5/32) are POM.

AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

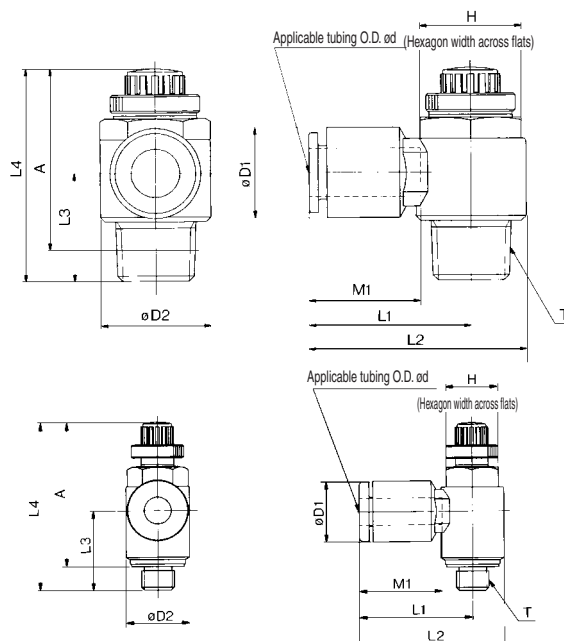
ASF

Series AS



Elbow Type

M3 port
M5 port
U10/32 port



Metric Size

Model	Applicable tubing O.D. ød	T	H ⁽¹⁾	D1	D2	L1	L2	L3	L4		A ⁽²⁾		M1	Weight (g)
									Max.	Min.	Max.	Min.		
AS12□1F-M3-23	3.2	M3 x 0.5	5.5	8.4	7.2	16.1	19.7	10.5	26.6	24.1	24	21.5	12.7	4
AS12□1F-M3-04	4			9.3				10						
AS12□1F-M5-23	3.2	M5 x 0.8	8	8.4		17.3	22.1	12.3					12.7	7
AS12□1F-U10/32-23	10-32UNF													
AS12□1F-M5-04	4	M5 x 0.8	8	9.3	9.6	17.3	22.1		28.6	25.8	25	22.2		
AS12□1F-U10/32-04	10-32UNF													
AS12□1F-M5-06	6	M5 x 0.8	11.6			18.1	22.9	11.7					13.5	
AS12□1F-U10/32-06	10-32UNF													
AS22□1F-01-23	3.2	1/8	12 (12.7)	9.3		20.4	27.5						16	
AS22□1F-01-04	4			9.3		20.4	27.5	14.3					12.7	
AS22□1F-01-06	6	1/8	12 (12.7)	11.6	14.2	20.4	27.5		36.1	31.1	32.1	27.1	13.5	17
AS22□1F-01-08	8			15.2		25.3	32.4						18.5	19
AS22□1F-01-10	10	1/8	12 (12.7)	18.5		33.1	40.2	15					21	21
AS22□1F-02-04	4			10.4		25.2	34.4						16	
AS22□1F-02-06	6	1/4	17 (17.5)	12.8		25.2	34.4	18.2					17	32
AS22□1F-02-08	8			15.2	18.5	27.2	36.4		40.4	35.4	34.4	29.4	18.5	34
AS22□1F-02-10	10	1/4	17 (17.5)	18.5		33.9	43.2	20					21	36
AS32□1F-02-06	6			12.8		27.8	39.3						17	60
AS32□1F-02-08	8	3/8	19	15.2	23	29.5	41	21.8	48.8	43.8	42.8	37.8	18.5	63
AS32□1F-02-10	10			18.5		31.8	43.3						21	67
AS32□1F-02-12	12	3/8	19	20.9		32.8	44.3						22	69
AS32□1F-03-06	6			12.8		27.8	39.3						17	55
AS32□1F-03-08	8	3/8	19	15.2	23	29.5	41	20.9	46.5	41.5	40.2	35.2	18.5	57
AS32□1F-03-10	10			18.5		31.8	43.3						21	59
AS32□1F-03-12	12	3/8	19	20.9		32.8	44.3						22	61
AS42□1F-04-10	10			18.5		33.6	47.9						21	100
AS42□1F-04-12	12	1/2	24 (23.8)	20.9	28.6	34.6	48.9	25.4	57.6	50.1	49.6	42.1	22	101

Note 1) () are the dimensions of NPT thread.

Note 2) Reference thread dimensions after installation.

Inch Size

Model	Applicable tubing O.D. ød	T	H ⁽¹⁾	D1	D2	L1	L2	L3	L4		A ⁽²⁾		M1	Weight (g)
									Max.	Min.	Max.	Min.		
AS12□1F-M3-01	1/8"	M3 x 0.5	5.5	8.4	7.2	16.1	19.7	10.5	26.6	24.1	24	21.5	12.7	4
AS12□1F-M3-03	5/32"			9.3				10						
AS12□1F-M5-01	1/8"	M5 x 0.8	8	8.4		17.3	22.1							
AS12□1F-U10/32-01	1/8"													
AS12□1F-M5-03	5/32"	M5 x 0.8	8	9.6		17.3	22.1	12.3	28.6	25.8	25	22.2	12.7	7
AS12□1F-U10/32-03	5/32"													
AS12□1F-M5-05	3/16"	M5 x 0.8	8	11.4		21.3	26.1						16.5	7
AS12□1F-U10/32-05	3/16"													
AS12□1F-M5-07	1/4"	M5 x 0.8	12	9.6		18.3	23.1	11.7	28.6	25.8	25	22.2		
AS12□1F-U10/32-07	1/4"												13.5	7
AS22□1F-01-01	1/8"	1/8	12 (12.7)	9.3		20.4	27.5						12.7	16
AS22□1F-01-03	5/32"			9.3		20.4	27.5						17	17
AS22□1F-01-05	3/16"	1/8	12 (12.7)	11.4	14.2	23.1	30.2	14.3	36.1	31.1	32.1	27.1	16.5	17
AS22□1F-01-07	1/4"			13.2		23.9	31						18.5	19
AS22□1F-01-09	5/16"	1/4	17 (17.5)	15.2		25.3	32.4	15					21	21
AS22□1F-02-03	5/32"			10.4		25.2	34.4						16	
AS22□1F-02-05	3/16"	1/4	17 (17.5)	11.4		24.9	34.2	18.2					17	32
AS22□1F-02-07	1/4"			13.2	18.5	25.2	34.5		40.4	35.4	34.4	29.4	18.5	34
AS22□1F-02-09	5/16"	1/4	17 (17.5)	15.2		27.2	36.4	20					21	36
AS22□1F-02-11	3/8"			17.9		33.9	43.2	20					21	36
AS32□1F-02-07	1/4"	3/8	19	13.2		27.8	39.3						17	60
AS32□1F-02-09	5/16"			15.2	23	29.5	41	21.8	48.8	43.8	42.8	37.8	18.5	63
AS32□1F-02-11	3/8"	3/8	19	17.9		31.8	43.3						21	67
AS32□1F-03-07	1/4"			13.2		27.8	39.3						17	55
AS32□1F-03-09	5/16"	3/8	19	15.2	23	29.5	41	20.9	46.5	41.5	40.2	35.2	18.5	57
AS32□1F-03-11	3/8"			17.9		31.8	43.3						21	59
AS42□1F-04-11	3/8"	1/2	24 (23.8)	17.9		33.6	47.9						21	100
AS42□1F-04-13	1/2"			21.7	28.6	35.2	49.5	25.4	57.6	50.1	49.6	42.1	22	101

Note 1) () are the dimensions of NPT thread.

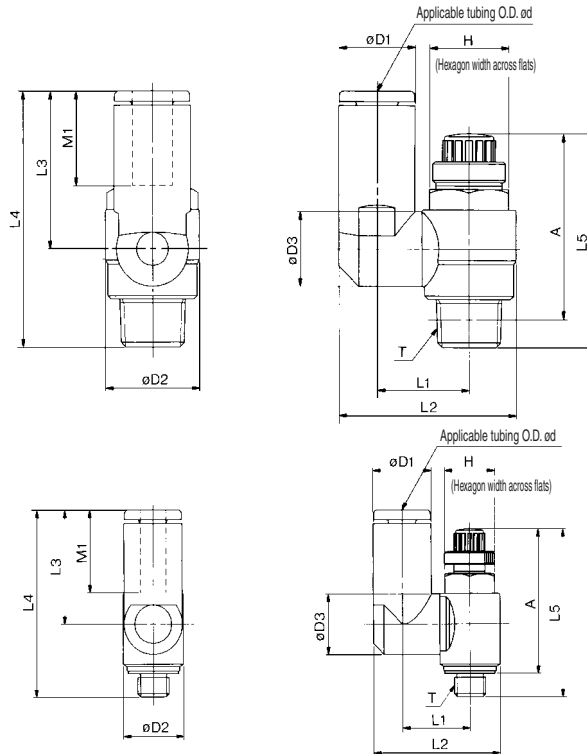
Note 2) Reference thread dimensions after installation.

Speed Controller with One-touch Fitting Elbow Type/Universal Type **Series AS**



Universal Type

M3 port
M5 port
U10/32 port



Metric Size

Model	Applicable tubing O.D. ød	T	H ⁽¹⁾	D1	D2	D3	L1	L2	L3	L4	L5		A ⁽²⁾		M1	Weight (g)
											Max.	Min.	Max.	Min.		
AS13□1F-M3-23	3.2	M3 x 0.5	5.5	8.4	7.2	7.2	10.1	17.9	17.6	28.3	26.6	24.1	24	21.5	12.7	4
AS13□1F-M3-04	4			9.3				18.3	17.9	28.6						5
AS13□1F-M5-23	3.2	M5 x 0.8	8	8.4				19.8							12.7	7
AS13□1F-U10/32-23	10-32UNF							17.5	28.7							
AS13□1F-M5-04	4	M5 x 0.8	8	9.3	9.6	9.3	10.8	20.3			28.6	25.8	25	22.2		
AS13□1F-U10/32-04	10-32UNF															
AS13□1F-M5-06	6	M5 x 0.8		11.6				21.4	20.6	31.8					13.5	
AS13□1F-U10/32-06	10-32UNF															
AS23□1F-01-23	3.2		12	8.4		9.3	13.1	24.4			36.1	31.1	32.1	27.1	12.7	17
AS23□1F-01-04	4		(12.7)	9.3	14.2			24.9	17.5	31.8						18
AS23□1F-01-06	6			11.6		10.9	14	26.9	22.9	37.2					13.5	
AS23□1F-01-08	8			15.2		12.9	16.2	30.9	28.2	41.7					18.5	21
AS23□1F-02-04	4			10.4		10.9	16.2	30.6	21.9	40.1					16	32
AS23□1F-02-06	6		17	12.8	18.5	12.9	18.4	34	25.2	42.6					17	33
AS23□1F-02-08	8		(17.5)	15.2		18.3	35.2	28.2	45.6		40.4	35.4	34.4	29.4	18.5	36
AS23□1F-02-10	10			18.5		20.2	38.7	31	48.4						21	40
AS33□1F-02-06	6			12.8		12.9	20.6	38.5	25.2	47					17	60
AS33□1F-02-08	8			15.2		12.9	20.6	39.7	28.2	50					18.5	63
AS33□1F-02-10	10			18.5	23	23	43.7	32.6	54.4		48.8	43.8	42.8	37.8	21	67
AS33□1F-02-12	12			20.9		23	44.9	34.4	56.2						22	69
AS33□1F-03-06	6		19	12.8		12.9	20.6	38.5	25.2	46.1					17	56
AS33□1F-03-08	8			15.2		12.9	20.6	39.7	28.2	49.1					18.5	59
AS33□1F-03-10	10			18.5		23	43.7	32.6	53.5		46.5	41.5	40.5	35.5	21	63
AS33□1F-03-12	12			20.9		23	44.9	34.4	55.3						22	65
AS43□1F-04-10	10		24	18.5	28.6	16.2	25.8	49.4	32.6	58					21	104
AS43□1F-04-12	12	1/2	(23.8)	21.7		19.4	26.8	52	36.3	61.7	57.6	50.1	49.6	42.1	22	106

Note 1) () are the dimensions of NPT thread

Note 2) Reference thread dimensions after installation.

Inch Size

Model	Applicable tubing O.D. ød	T	H ⁽¹⁾	D1	D2	D3	L1	L2	L3	L4	L5		A ⁽²⁾		M1	Weight (g)
											Max.	Min.	Max.	Min.		
AS13□1F-M3-01	1/8"	M3 x 0.5	5.5	8.4	7.2	7.2	10.1	17.9	17.6	28.3	26.6	24.1	24	21.5	12.7	4
AS13□1F-M3-03	5/32"			9.3				18.3	17.9	28.6						5
AS13□1F-M5-01	1/8"	M5 x 0.8	8	8.4				19.8							12.7	7
AS13□1F-U10/32-01	1/8"	10-32UNF						17.5	28.7							
AS13□1F-M5-03	5/32"	M5 x 0.8		9.3	9.6	9.3	10.8	20.3			28.6	25.8	25	22.2		
AS13□1F-U10/32-03	5/32"	10-32UNF														
AS13□1F-M5-05	3/16"	M5 x 0.8		11.4				21.3	23.3	34.5					16.5	
AS13□1F-U10/32-05	3/16"	10-32UNF														
AS13□1F-M5-07	1/4"	M5 x 0.8	8	9.6	9.3	10.8		28.6	25.8	25	22.2				8	
AS13□1F-U10/32-07	1/4"	10-32UNF		12				21.6	20.7	31.9					13.7	
AS23□1F-01-01	1/8"			8.4		9.3	13.1	24.4							12.7	17
AS23□1F-01-03	5/32"			9.3		10.9	14	26.8	23.9	31.8						18
AS23□1F-01-05	3/16"		12	11.6	14.2			24.9	17.5	31.8						
AS23□1F-01-07	1/4"		(12.7)	13.2		12.9	16.2	29.9	25.6	37.2					17	19
AS23□1F-01-09	5/16"			15.2		12.9	16.2	30.9	28.2	41.7					18.5	21
AS23□1F-02-03	5/32"			10.4		10.9	16.2	30.6	21.9	40.1					16	32
AS23□1F-02-05	3/16"			11.6		10.9	16.2	31.1	23.9	42.6					16.5	33
AS23□1F-02-07	1/4"			13.2	18.5	18.3	34.2	25.6	45.6	40.4	35.4	34.4	29.4		17	36
AS23□1F-02-09	5/16"			15.2		12.9	18.3	35.2	28.2	48.4					18.5	39
AS23□1F-02-11	3/8"			18.5		20.2	38.7	31	47						21	40
AS33□1F-02-07	1/4"			13.2		12.9	20.6	38.7	25.6	50					17	60
AS33□1F-02-09	5/16"			15.2	23	12.9	20.6	39.7	28.2	54.4					18.5	63
AS33□1F-02-11	3/8"			18.5		16.2	23	43.7	32.6	56.2					21	69
AS33□1F-03-07	1/4"			13.2		12.9	20.6	38.7	25.6	46.1					17	56
AS33□1F-03-09	5/16"			15.2	23	12.9	20.6	39.7	28.2	49.1					18.5	59
AS33□1F-03-11	3/8"			18.5		16.2	23	43.7	32.6	53.5					21	65
AS43□1F-04-11	3/8"			24	28.6	16.2	25.8	49.4	32.6	55.3					21	104
AS43□1F-04-13	1/2"		(23.8)	21.7		19.4	26.8	52	36.3	58	57.6	50.1	49.6	42.1	22	106

Note 1) () are the dimensions of NPT thread.

Note 2) Reference thread dimensions after installation.

Speed Controller with One-touch Fittings

Series AS

In-line Type

Minimizes installation time and cost

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

Application to inch size tubing

- **Metric size** (Release bushing: White color)
ø3.2, ø4, ø6, ø8, ø10, ø12
- **Inch size** (Release bushing: 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

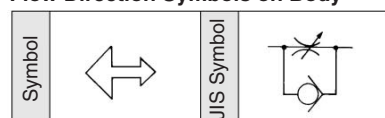
Hexagonal lock nut,
Nickel plated option

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.



Flow Direction Symbols on Body



15-9-10

Model

Model	Applicable tubing O.D.												Applicable cylinder bore size (mm)	
	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	●	●	●				●	●	●	●				6,10, 16, 20
AS2001F		●	●					●	●	●				20, 25, 32
AS2051F			●	●					●	●	●			20, 25, 32, 40
AS3001F			●	●	●	●				●	●	●		40, 50, 63
AS4001F					●	●						●	●	63, 80, 100

Note) ● Marking is 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)
Number of needle rotations	10 turns (8 turns ⁽¹⁾)
Applicable tubing material ⁽²⁾	Nylon, Soft nylon, Polyurethane
Option	Hexagonal lock nut, Electroless nickel plated ⁽³⁾

Note 1) In the case of AS1001F

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 15-6-3 to 15-6-5 for details.)

Note 3) Brass parts are all electroless nickel plated.

Flow Rate and Effective Area

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 (Free flow)	Air flow d/min (ANR)	100	130	230	290	460	420	660	920	1050	1390
	Effective area (mm²)	1.5	2	3.5	4.5	7	6.5	10	14	16	21

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

How to Order

AS 400 1F — 12 K

Body size

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

Option*

Nil	None
K	Hexagonal lock nut
N	Electroless nickel plated

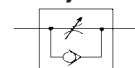
* If more than one option is required, write option part numbers in the order of "K", "N".

Applicable tubing O.D.

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"

* Use ø1/8" tube.

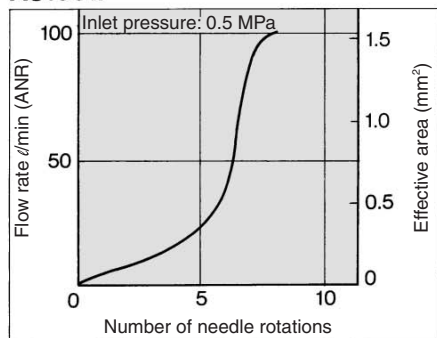
JIS Symbol



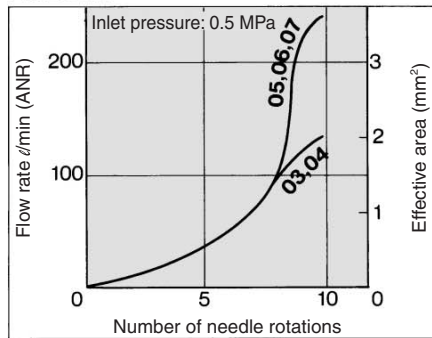
With One-touch fittings

Needle Valve/Flow Characteristics

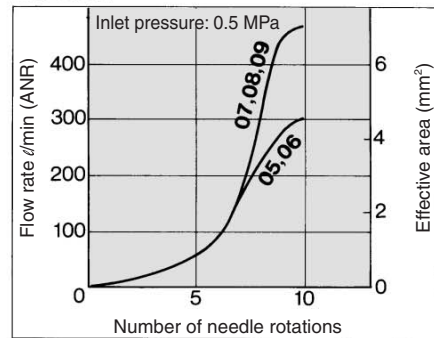
AS1001F



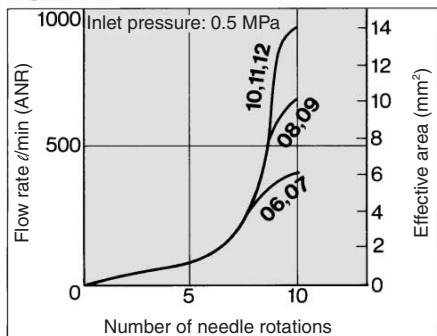
AS2001F



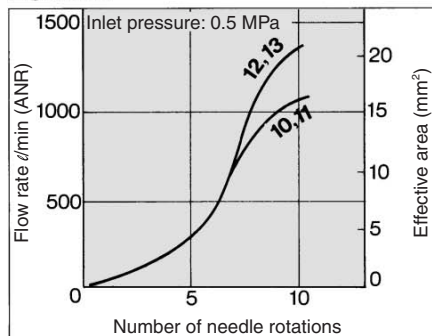
AS2051F



AS3001F



AS4001F



⚠ Caution

Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-8-6 to 15-8-8 for Precautions on every series.

AS

ASP

ASN

AQ

ASV

AK

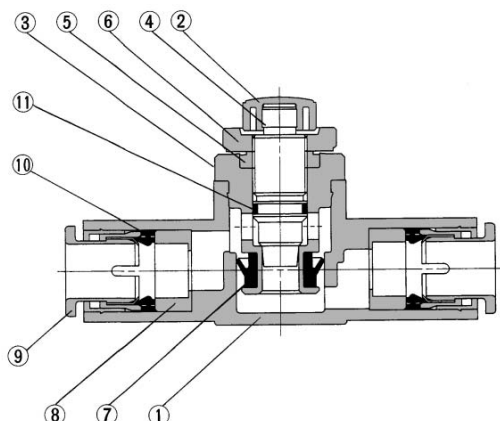
ASS

ASR

ASF

Series AS

Construction



Component Parts

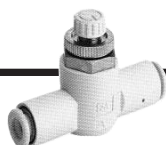
No.	Description	Material	Note
①	Body A	PBT	
②	Handle	PBT	
③	Body B	Brass	Electroless nickel plated
④	Needle	Brass	Electroless nickel plated
⑤	Needle guide	Brass	Electroless nickel plated
⑥	Lock nut	Brass ⁽¹⁾	Electroless nickel plated
⑦	U seal	HNBR	
⑧	Spacer	PBT ⁽²⁾	
⑨	Cassette	POM, Stainless steel	
⑩	Packing	NBR	
⑪	O-ring	NBR	

Note 1) AS2□□1F type is made of steel.

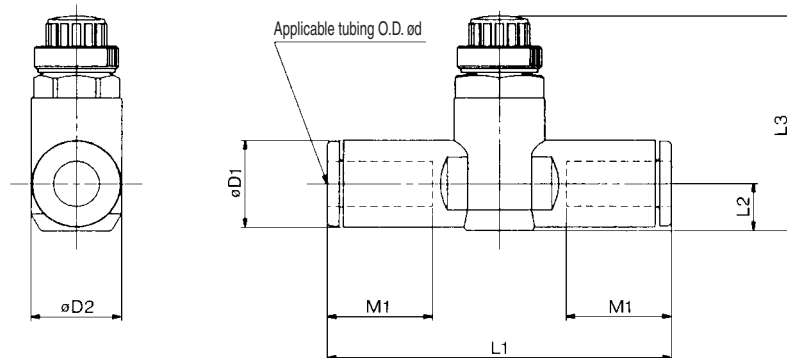
Note 2) $\phi 3/16"$, $\phi 3/8"$, $\phi 1/2"$ are made of brass.

AS1001F ($\phi 3.2$, $\phi 4$, $\phi 6$, $\phi 1/8"$, $\phi 5/32"$, $\phi 1/4"$),

AS2001F ($\phi 4$, $\phi 6$, $\phi 5/32"$) are POM.



In-line Type



Metric Size

Model	Applicable tubing O.D. ød	D1	D2	L1	L2	L3		M1	Weight (g)
						Max.	Min.		
AS1001F-23	3.2	8.4	10	38.0	4.5	23.5	20.7	12.7	6
AS1001F-04	4	9.3		39.2	5.2	24.2	21.4		7
AS1001F-06	6	11.6		40.7	6.2	25.2	22.4		8
AS2001F-04	4	9.3	11.8	40.7	5.2	32.6	27.6	12.7	12
AS2001F-06	6	11.6		44.8	6.3	33.7	28.7		13
AS2051F-06	6	12.8	14.8	53.2	6.7	35.2	30.2	17	26
AS2051F-08	8	15.2		59.8	8.1	36.5	31.5		31
AS3001F-06	6	12.8	19.8	59	7.4	38.3	33.3	17	18
AS3001F-08	8	15.2		64.4	8.2	39.1	34.1		21
AS3001F-10	10	18.5		71.6	9.8	40.6	35.6		32
AS3001F-12	12	20.9	26.5	76	11	41.8	36.8	22	33
AS4001F-10	10	18.5		51.1	11.3	43.6	21		36
AS4001F-12	12	20.9		52.1		44.6	22		40

Inch Size

Model	Applicable tubing O.D. ød	D1	D2	L1	L2	L3		M1	Weight (g)
						Max.	Min.		
AS1001F-01	1/8"	8.4	10	38	4.5	23.5	20.7	12.7	6
AS1001F-03	5/32"	9.3		39.2	5.2	24.2	21.4		7
AS1001F-05	3/16"	11.4	10	48.7	6.2	25.2	22.4	16.5	12
AS1001F-07	1/4"	12		40.7					13.7
AS2001F-03	5/32"	9.3	11.8	40.7	5.2	32.6	27.6	12.7	12
AS2001F-05	3/16"	11.4		50	6.2	33.6	28.6	16.5	18
AS2001F-07	1/4"	13.2		52.2	7.1	34.5	29.5	17	21
AS2051F-05	3/16"	11.4	14.8	52.2	6.2	34.6	29.6	16.5	24
AS2051F-07	1/4"	13.2		54.4	7.1	35.5	30.5	17	26
AS2051F-09	5/16"	15.2		59.8	8.1	36.5	31.5	18	31
AS3001F-07	1/4"	13.2	19.8	59	7.4	38.3	33.3	17	42
AS3001F-09	5/16"	15.2		64.4	8.2	39.1	34.1	18	46
AS3001F-11	3/8"	17.9		70.8	9.5	40.3	35.3	21	53
AS4001F-11	3/8"	17.9	26.5	76.9	10.3	51	43.5	21	97
AS4001F-13	1/2"	21.7		83.1	11.6	52.4	44.9	22	106

Speed Controller with One-touch Fittings Panel Mount Type

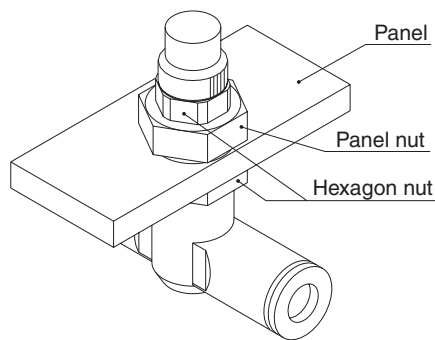
Series AS 1F-3

In-line Type

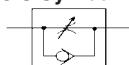
**Panel mount thickness:
35 mm at the maximum**

Easy installation and removal

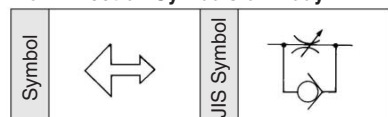
Installment of hexagon nuts on panel nuts up and down in two locations enables user to mount or remove it depending upon the situation.



JIS Symbol



Flow Direction Symbols on Body



Model

Model	Applicable tubing O.D.													Applicable cylinder bore size (mm)
	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	●	●	●				●	●	●	●				6, 10, 16, 20
AS2001F		●	●					●	●	●				20, 25, 32
AS2051F			●	●					●	●	●			20, 25, 32, 40
AS3001F			●	●	●	●				●	●	●		40, 50, 63
AS4001F					●	●						●	●	63, 80, 100

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) ⁽¹⁾
Number of needle rotations ⁽²⁾	10 turns (8 turns)
Applicable tubing material	Nylon, Soft nylon, Polyurethane

Note 1) In the case of AS1001F type

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

Flow Rate and Effective Area

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 (Free flow)	Flow rate (dm^3/ANR)	100	130	230	290	460	420	660	920	1050	1390
	Effective area (mm ²)	1.5	2	3.5	4.5	7	6.5	10	14	16	21

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

How to Order

AS 200 1 F — 06 — 3

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

Panel mount type

Applicable tubing O.D.

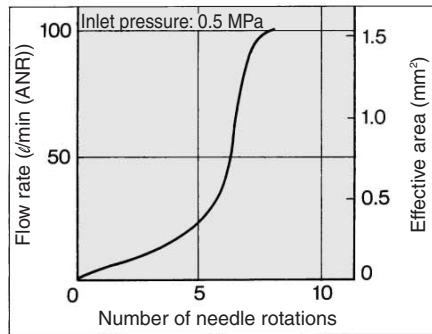
Metric size	Inch size
23	ø3.2 *
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"
13	ø1/2"

* Use ø1/8" tube.

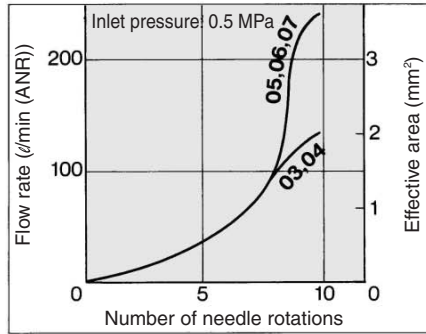
Speed Controller with One-touch Fittings Panel Mount Type, In-line Type

Needle Valve/Flow Characteristics

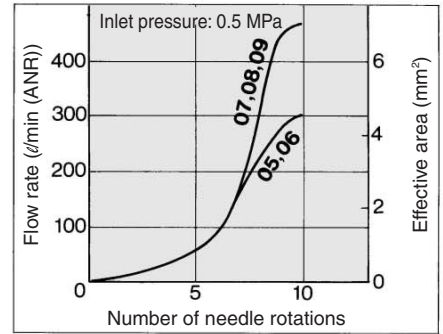
AS1001F



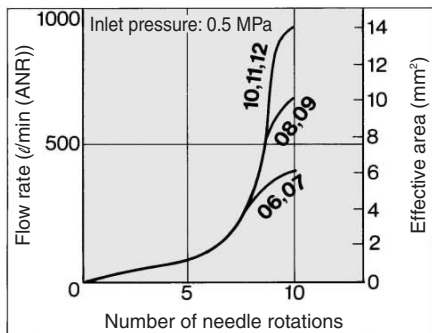
AS2001F



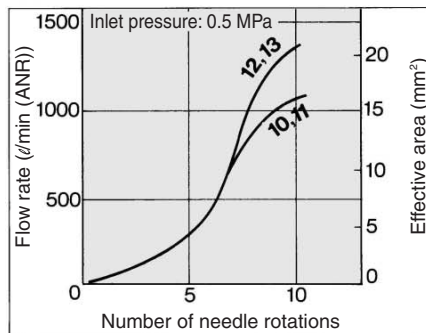
AS2051F



AS3001F



AS4001F



⚠ Caution

Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-8-6 to 15-8-8 for Precautions on every series.

AS

ASP

ASN

AQ

ASV

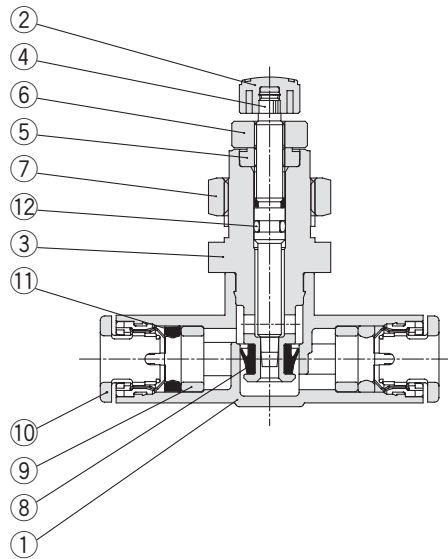
AK

ASS

ASR

ASF

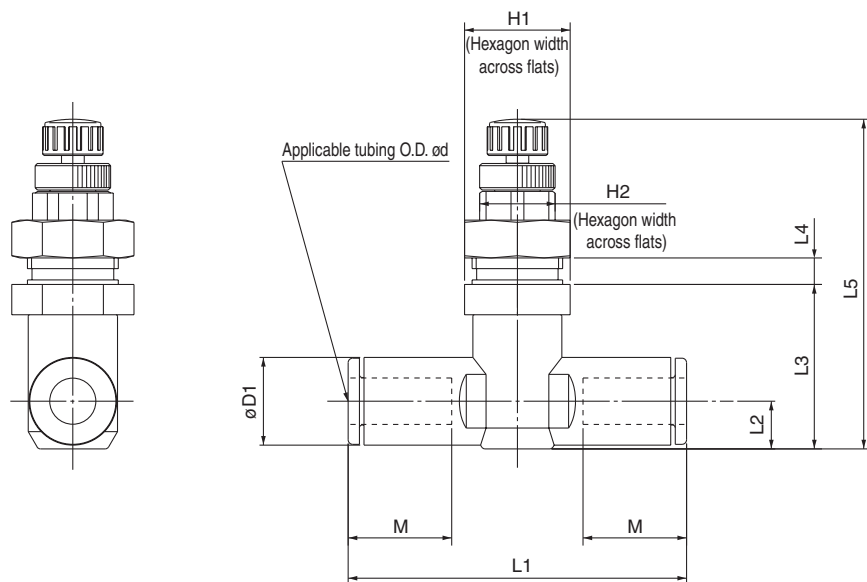
Construction



No.	Description	Material	Note
①	Body A	PBT	
②	Handle	PBT	
③	Body B	Brass	Electroless nickel plated
④	Needle	Brass	Electroless nickel plated
⑤	Needle guide	Brass	Electroless nickel plated
⑥	Lock nut	Brass	Electroless nickel plated
⑦	Panel nut	Brass	Electroless nickel plated
⑧	U seal	HNBR	
⑨	Spacer	PBT ^{Note)}	
⑩	Cassette	POM, Stainless steel	
⑪	Packing	NBR	
⑫	O-ring	NBR	

Note) AS1001F(ø3.2, ø4, ø6, ø1/8", ø5/32", ø1/4"), AS2001F(ø4, ø6, ø5/32") are made of POM. ø3/16", ø3/8", ø1/2" are made of brass (Electroless nickel plated).

Dimensions



Metric Size

Model	d	D1	H1	H2	L1	L2	L3	L4 Max.	L5		M	Panel-cut dimensions	
									Max.	Min.			
AS1001F-23-3	3.2	8.4	12	8	38	4.5	16.8	3.5	37.6	34.4	12.7	10.5	
AS1001F-04-3	4	9.3			39.2	5.2	17.4		38.2	35			
AS1001F-06-3	6	11.6			40.7	6.2	18.5		39.3	36.1			13.5
AS2001F-04-3	4	9.3	14	10	40.7	5.2	20.7	3.5	48	42.5	12.7	12.5	
AS2001F-06-3	6	11.6			44.8	6.3	21.8		49.1	43.6			13.5
AS2051F-06-3	6	12.8	17	13	53.2	6.7	25.7	3.5	53.5	48.1	17	15.5	
AS2051F-08-3	8	15.2			59.8	8.1	27		54.8	49.4			18
AS3001F-06-3	6	12.8	21	16	59	7.4	31.3	3.5	60.1	54.7	17	18.5	
AS3001F-08-3	8	15.2			64.4	8.2	32.1		60.9	55.5			18
AS3001F-10-3	10	18.5			71.6	9.8	33.7		62.5	57.1			21
AS3001F-12-3	12	20.9			76	11	34.9		63.7	58.3			22
AS4001F-10-3	10	18.5	27	21	82	11.3	35	3.5	69.3	61	21	24.5	
AS4001F-12-3	12	20.9					36		70.3	62			22

Inch Size

Model	d	D1	H1	H2	L1	L2	L3	L4 Max.	L5		M	Panel-cut dimensions	
									Max.	Min.			
AS1001F-01-3	1/8"	8.4	12	8	38	4.5	16.8	3.5	37.6	34.4	12.7	10.5	
AS1001F-03-3	5/32"	9.3			39.2	5.2	17.4		38.2	35			
AS1001F-05-3	3/16"	11.4			48.7	6.2	18.5		39.3	36.1			16.5
AS1001F-07-3	1/4"	12			40.7								13.7
AS2001F-03-3	5/32"	9.3	14	10	40.7	5.2	20.7	3.5	48	42.5	12.7	12.5	
AS2001F-05-3	3/16"	11.4			50	6.2	21.6		48.9	43.4	16.5		
AS2001F-07-3	1/4"	13.2			52.2	7.1	22.5		49.8	44.3	17		
AS2051F-05-3	3/16"	11.4	17	13	52.2	6.2	25.2	3.5	53	47.6	16.5	15.5	
AS2051F-07-3	1/4"	13.2			54.4	7.1	26		53.8	48.4	17		
AS2051F-09-3	5/16"	15.2			59.8	8.1	27		54.8	49.4	18		
AS3001F-07-3	1/4"	13.2	21	16	59	7.4	31.3	3.5	60.1	54.7	17	18.5	
AS3001F-09-3	5/16"	15.2			64.4	8.2	32.1		60.9	55.5	18		
AS3001F-11-3	3/8"	17.2			70.8	9.5	33.3		62.1	56.7	21		
AS4001F-11-3	3/8"	17.9	27	21	76.9	10.3	34.9	3.5	69.2	60.9	21	24.5	
AS4001F-13-3	1/2"	21.7			83.1	11.6	36.3		70.6	62.3	22		

Speed Controller with One-touch Fittings

Series AS

Applicable tubing O.D.. $\phi 2$
 Connection thread: M3 x 0.5
 M5 x 0.8



Elbow type



In-line type

Model/Flow Rate and Effective Area

Model	Port size	Applicable tubing O.D.	Control flow ^{Note 1)}		Free flow ^{Note 2)}		Applicable cylinder bore size (mm)
			^{Note 3)} Flow rate ℓ/min (ANR)	Effective area (mm^2)	^{Note 3)} Flow rate ℓ/min (ANR)	Effective area (mm^2)	
Elbow type	AS12□1F-M3-02	M3 x 0.5	20	0.3	20	0.3	2.5, 4, 6
	AS12□1F-M5-02	M5 x 0.8					6, 10
In-line type	AS1001F-02	—	20	0.3	20	0.3	2.5, 4, 6

Note 1) The flow rate and the effective area with the needle fully opened. Flow rate values are measured at 0.5 MPa and 20°C.

Note 2) The flow rate and the effective area with the needle fully closed. Flow rate values are measured at 0.5 MPa and 20°C.

Note 3) Flow rate values are measured at 0.5 MPa and 20°C.

Note 4) Distinction between meter-out/meter-in types by appearance. (Elbow type)

Those are distinguished by the lock nut. The meter-out type is electroless nickel plated, while the meter-in type is black zinc chromated.

Specifications

Fluid	Air
Proof pressure	1.05 MPa
Max. operating pressure	0.7 MPa ^{Note 1)}
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns
Applicable tubing material	Polyurethane
Applicable tubing O.D.	$\phi 2$
Copper-free (Standard)	Brass parts are all electroless nickel plated. ^{Note 2)}
Option	Hexagonal lock nut

Note 1) During the tube connection, apply the lower pressure after confirming the maximum operating pressure of the speed controller and the tube.

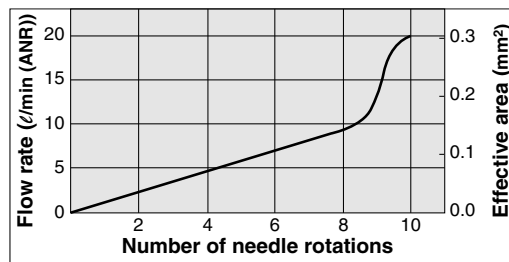
Note 2) In the case of an elbow type, only the brass parts on the lock nut for the meter-in type is black zinc chromated.

How to Order

In-line type	AS 1 0 0 1 F	02					
Elbow type	AS 1 2 0 1 F	M3	02				
Port size <table><tr><td>M3</td><td>M3 x 0.5</td></tr><tr><td>M5</td><td>M5 x 0.8</td></tr></table>				M3	M3 x 0.5	M5	M5 x 0.8
M3	M3 x 0.5						
M5	M5 x 0.8						
Applicable tubing O.D. ø2							
Control type <table><tr><td>0</td><td>Meter-out</td></tr><tr><td>1</td><td>Meter-in</td></tr></table>				0	Meter-out	1	Meter-in
0	Meter-out						
1	Meter-in						
Option <table><tr><td>Nil</td><td>None</td></tr><tr><td>K</td><td>Hexagonal lock nut</td></tr></table>				Nil	None	K	Hexagonal lock nut
Nil	None						
K	Hexagonal lock nut						

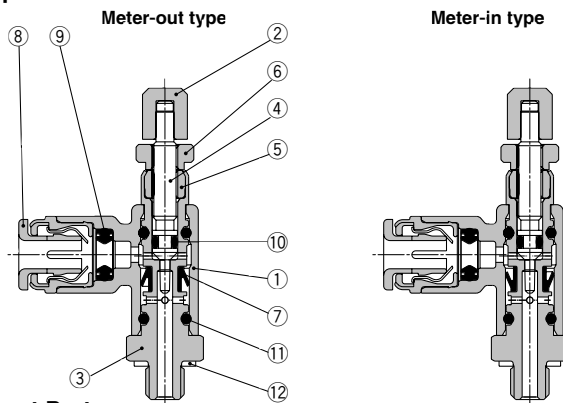
Needle Valve/Flow Characteristics

AS1201F-M3-02, AS1211F-M3-02
AS1201F-M5-02, AS1211F-M5-02
AS1001F-02



Construction

Elbow type

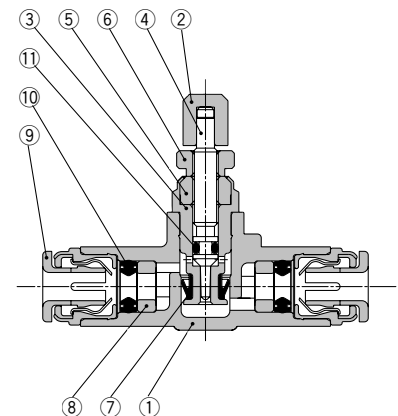


Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Handle	Brass	Electroless nickel plated
3	Body B	Brass	Note 1)
4	Needle	Brass	Electroless nickel plated
5	Needle guide	Brass	Electroless nickel plated
6	Lock nut	Brass	Electroless nickel plated
7	U seal	NHBR	
8	Cassette	—	Note 3)
9	Seal	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	Gasket	NBR, Stainless steel	

Note 1) AS12□1F-M3 is made of stainless steel.
Note 2) AS1211F type is black zinc chromated.
Note 3) Materials are POM, brass and stainless steel.

In-line type



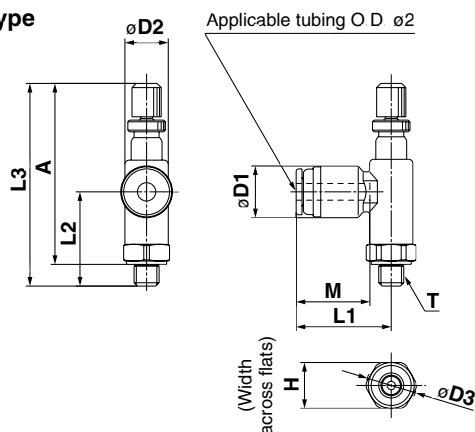
Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Handle	Brass	Electroless nickel plated
3	Body B	Brass	Electroless nickel plated
4	Needle	Brass	Electroless nickel plated
5	Needle guide	Brass	Electroless nickel plated
6	Lock nut	Brass	Electroless nickel plated
7	U seal	HNBR	
8	Spacer	Brass	Electroless nickel plated
9	Cassette	—	Note)
10	Seal	NBR	
11	O-ring	NBR	

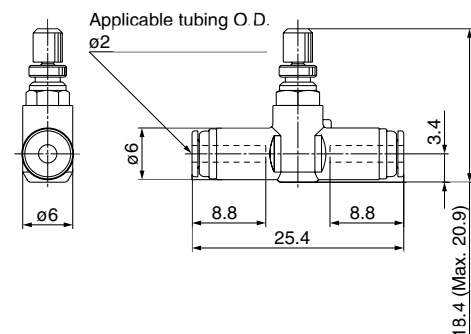
Note) Materials are POM, brass and stainless steel.

Dimensions

Elbow type



In-line type



Weight: 2.8 g

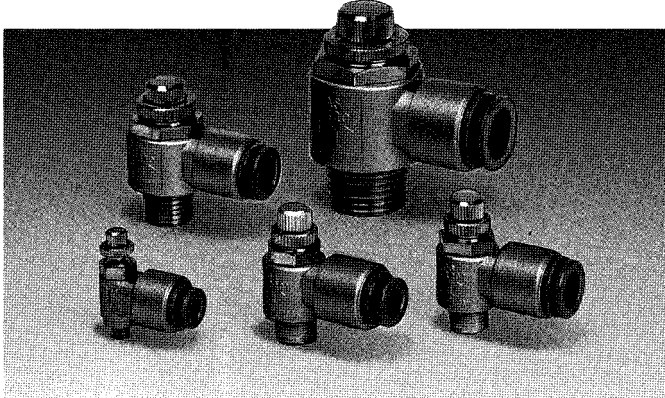
Model	Applicable tubing O.D.	T	H	D1	D2	D3	L1	L2	L3	A ^{Note)}	M	Weight (g)
AS12□1F-M3-02	2	M3 x 0.5	5.5	6	5.2	6	11	11	MAX. 26.8 MIN. 24.3	MAX. 24.3 MIN. 21.8	8.8	2.4
AS12□1F-M5-02		M5 x 0.8	7	6	5.2	7.5	11.4	11.5	27.3	24.8		3

Note) Reference thread dimensions after installation

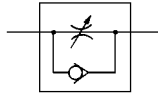
Speed Controller with One-touch Fitting

Series AS

Elbow Type (Metal Body)



JIS Symbol

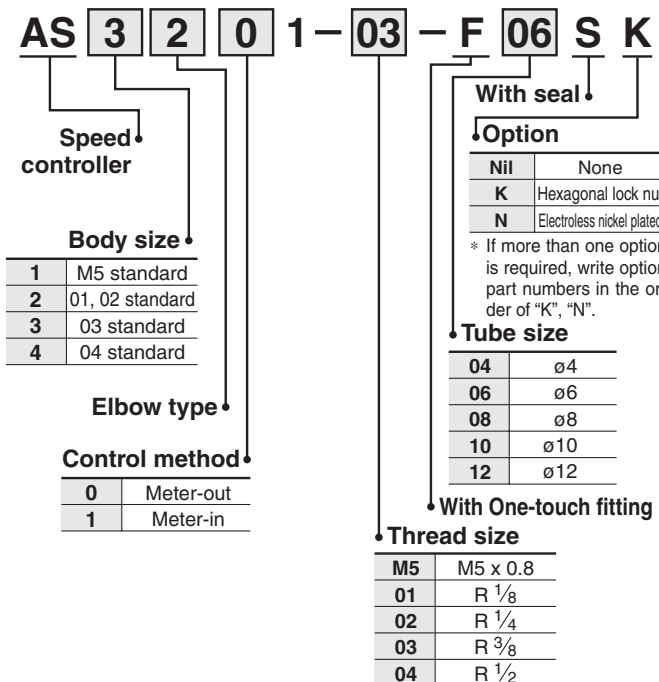


Model

Model	Port size	Applicable tubing O.D.					Applicable cylinder bore size (mm)
		4	6	8	10	12	
AS12□1-M5	M5 x 0.8	●	●				6, 10, 16, 20
AS22□1-01	R 1/8		●	●			20, 25, 32
AS22□1-02	R 1/4		●	●			20, 25, 32, 40
AS32□1-03	R 3/8			●	●		40, 50, 63
AS42□1-04	R 1/2				●	●	63, 80, 100

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

How to Order



Speed controller with One-touch fittings for metal body specifications

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

Specifications

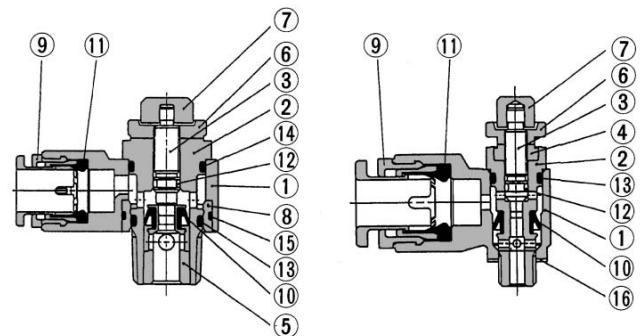
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	- 5 to 60°C (No freezing)
Number of needle rotations	10 turns (8 turns ⁽¹⁾)
Applicable tubing material	Nylon, Soft nylon, Polyurethane
Option	Hexagon lock nut, Electroless nickel plated ⁽²⁾

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 1) M5 size

Note 2) Brass parts are all electroless nickel plated.

Construction



Component Parts

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

Note 1) "AS22□1": Electroless nickel plated

Note 2) "AS22□1": Steel

Note 3) Meter-in type: Black zinc chromated

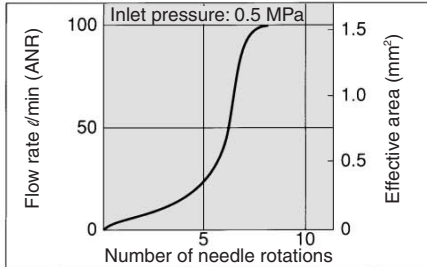
Speed Controller with One-touch Fitting Elbow Type (Metal Body) **Series AS**

Flow Rate and Effective Area

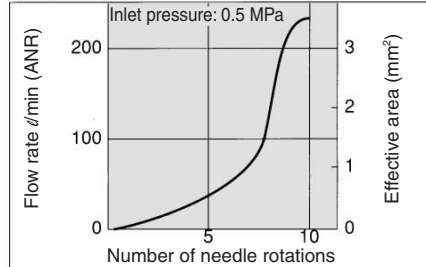
Model		AS12□1-M5	AS22□1-01	AS22□1-02		AS32□1-03		AS42□1-04	
Tubing O.D.		ø4, ø6	ø6, ø8	ø6	ø8	ø8	ø10	ø10	ø12
Controlled (Free) flow	Flow rate (ℓ/min (ANR))	100	230	390	460	790	920	1580	1710
	Effective area (mm ²)	1.5	3.5	6	7	12	14	24	26

Needle Valve/Flow Characteristics

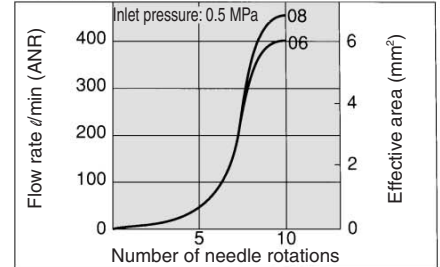
AS12□1



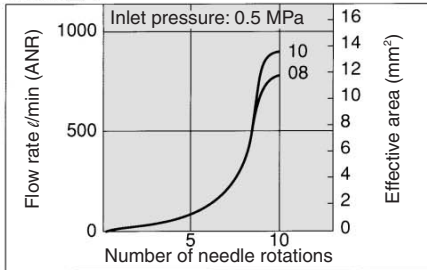
AS22□1-01



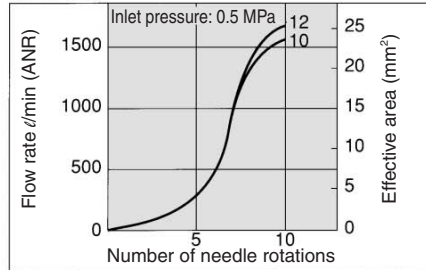
AS22□1-02



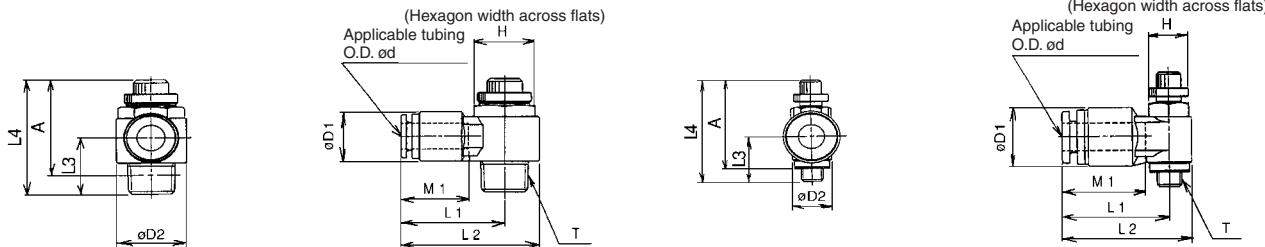
AS32□1



AS42□1



Dimensions



Model	Applicable tubing O.D. ød	T	H	D1	D2	L1	L2	L3	L4		A (Note)		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	12.7
AS12□1-M5-F06	6					21.5	26						17	12.5
AS22□1-01-F06S	6	R 1/8	12	15.5	14.6	26.6	33.9	14.7	36.4	31.4	32.4	27.4	17	33.7
AS22□1-01-F08S	8												18.5	30.7
AS22□1-02-F06S	6	R 1/4	17	15.5	19.5	28.7	38.5	17.7	40.8	35.8	34.8	29.8	17	56.3
AS22□1-02-F08S	8												18.5	52.1
AS32□1-03-F08S	8	R 3/8	19	18.2	24.3	32.7	44.9	20.1	46.9	41.9	40.6	35.6	18.5	92.9
AS32□1-03-F10S	10					33.3	45.5						21	87.6
AS42□1-04-F10S	10	R 1/2	24	22.3	28.5	36.1	50.4	25.5	55.6	50.6	47.4	42.4	21	153.8
AS42□1-04-F12S	12												22	145.5

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

⚠ Caution

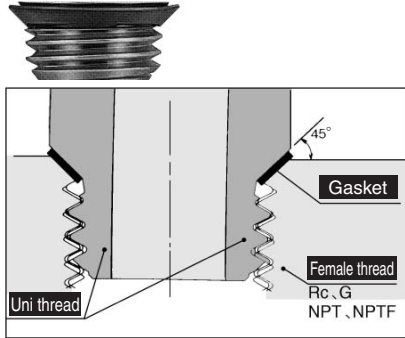
Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-8-6 to 15-8-8 for Precautions on every series.

Speed Controller with Uni One-touch Fitting

Series AS

Elbow Type/Universal Type

New-stand male threads for piping that reduces the screw-in time by 1/3.



Shape of Uni thread ridge

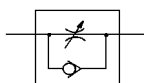
Use of the chamfered surface of the female thread as the seat surface and adoption of gaskets made by laminating NBR on both surfaces of stainless steel plates achieve secure sealing regardless of the difference of diameters due to the female thread type, deviations due to the tolerance, or the size of the chamfered corner.
(Any standard chamfered female thread can be used.)

A ridge shape has been created as a Uni thread for common applications for Rc, G, NPT and NPTF.

The male thread for piping drastically cuts piping man-hours.



JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Model

Model		Connection thread Uni thread	Applicable tubing O.D.													
Elbow type	Universal type		Metric size						Inch size							
			3.2	4	6	8	10	12	1 8⁄8	5 32⁄32	3 16⁄16	1 4⁄4	5 16⁄16	3 8⁄8	1 2⁄2	
AS22□IF-U01	AS23□IF-U01	1 8⁄8	●	●	●	●	●	*		●	●	●	●	●		
AS22□IF-U02	AS23□IF-U02	1 4⁄4		●	●	●					●	●	●	●	●	
AS32□IF-U02	AS33□IF-U02	1 4⁄4			●	●	●	●					●	●	●	
AS32□IF-U03	AS33□IF-U03	3 8⁄8			●	●	●	●					●	●	●	
AS42□IF-U04	AS43□IF-U04	1 2⁄2					●	●							●	●

Note 1) * Elbow type only

Note 2) □ indicates the control type ("0" for meter-out and "1" for meter-in).

Note 3) Models marked with "●" are nickel plated as standard.

Specifications

Fluid	Air
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Proof pressure	1.5 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns
Applicable tubing material ⁽¹⁾	Nylon, Soft-nylon, Polyurethane
Mounting thread	Uni-thread
Thread seal	Gasket
Option	Hexagon lock nut, Nickel plated ⁽²⁾

Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

Note 2) Brass parts are all electroless nickel plated.

Flow Rate and Effective Area

Model		AS22□IF-U01 AS23□IF-U02		AS22□IF-U02 AS23□IF-U02			AS32□IF AS33□IF			AS42□IF-U04 AS43□IF-U04	
Tubing O.D.	Metric size	ø3.2 ø4	ø6, ø8 ø4	ø4	ø6	ø8, ø10	ø6	ø8	ø10 ø12	ø10	ø12
	Inch size	1⁄8" 5⁄32	3⁄16", 1⁄4" 5⁄16	5⁄32	3⁄16	1⁄4", 5⁄16" 3⁄8	1⁄4"	5⁄16	3⁄8	3⁄8	1⁄2"
Controlled flow (Free flow)	Flow rate (ℓ/min (ANR))	180	230	260	390	460	660	790	920	1580	1710
	Effective area (mm²)	2.7	3.7	4	6	7	10	12	14	24	26

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

Note 2) □ indicates the control type ("0" for meter-out and "1" for meter-in).

How to Order

AS 2 2 1 1F U02 06 K

Body size

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

Option*

Nil	None
K	Hexagonal lock nut
N	Electroless nickel plated

* If more than one option is required, write option part numbers in the order of "K", "N".

Applicable tubing O.D.

Metric size	Inch size
23	03
04	05
06	07
08	09
10	11
12	13

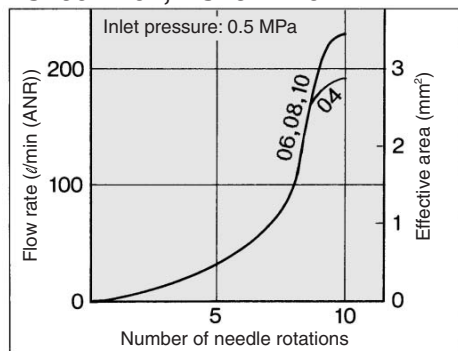
* Use $\phi 1/8"$ tube.

Bore size

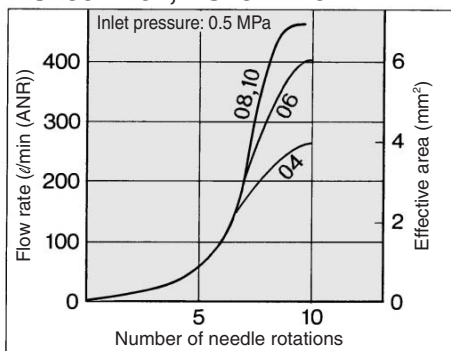
U01	1/8
U02	1/4
U03	3/8
U04	1/2

Needle Valve/Flow Characteristics

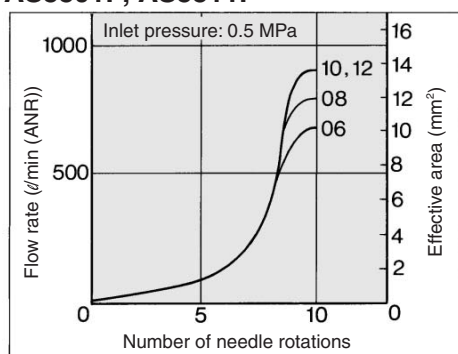
AS2201F-01, AS2211F-01
AS2301F-01, AS2311F-01



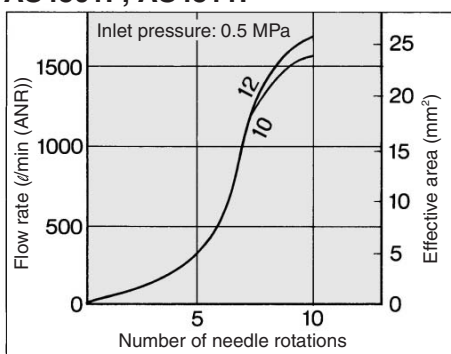
AS2201F-02, AS2211F-02
AS2301F-02, AS2311F-02



AS3201F, AS3211F
AS3301F, AS3311F

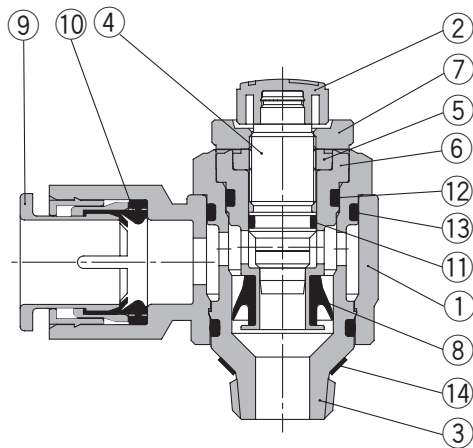


AS4201F, AS4211F
AS4301F, AS4311F

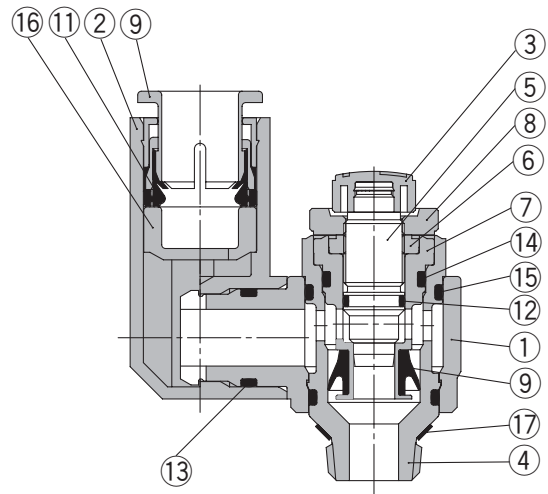


Construction/Component Parts

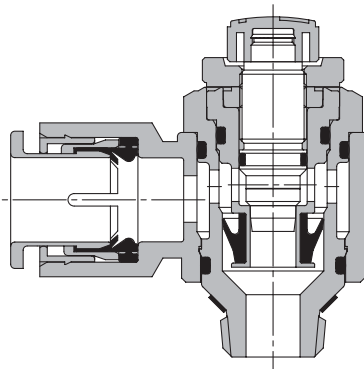
Elbow type
Meter-out type



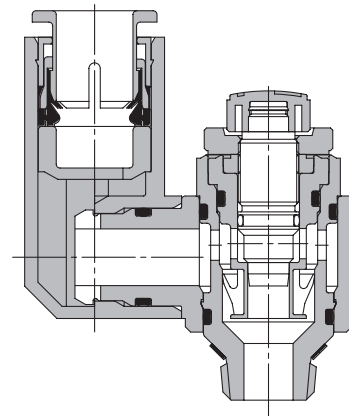
Universal type
Meter-out type



Meter-in type



Meter-in type



AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

ASF

Component Parts: Elbow Type

No.	Description	Material	Note
①	Body A	PBT	
②	Handle	PBT	
③	Body B	Brass	Electroless nickel plated
④	Needle	Brass	Electroless nickel plated
⑤	Gasket	Stainless steel, NBR	
⑥	Seat ring	Brass	(1)
⑦	Lock nut	Brass ⁽²⁾	Electroless nickel plated ⁽³⁾
⑧	U seal	HNBR	
⑨	Cassette	POM, Stainless steel	
⑩	Seal	NBR	
⑪	O-ring	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	

Note 1) Only AS22□1F-U01 and AS32□1F-U02 are electroless nickel plated.

Note 2) AS22□1F type is made of steel.

Note 3) Meter-in type is black zinc chromate plated.

Component Parts: Universal Type

No.	Description	Material	Note
①	Body A	PBT	
②	Elbow body	PBT	
③	Handle	PBT	
④	Body B	Brass	Electroless nickel plated
⑤	Needle	Brass	Electroless nickel plated
⑥	Gasket	Stainless steel, NBR	
⑦	Seat ring	Brass	(1)
⑧	Lock nut	Brass ⁽²⁾	Electroless nickel plated ⁽³⁾
⑨	U seal	HNBR	
⑩	Cassette	POM, Stainless steel	
⑪	Seal	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	O-ring	NBR	
⑯	Spacer	PBT ⁽⁴⁾	

Note 1) Only AS22□1F-U01 and AS32□1F-U02 are electroless nickel plated.

Note 2) AS22□1F type is made of steel.

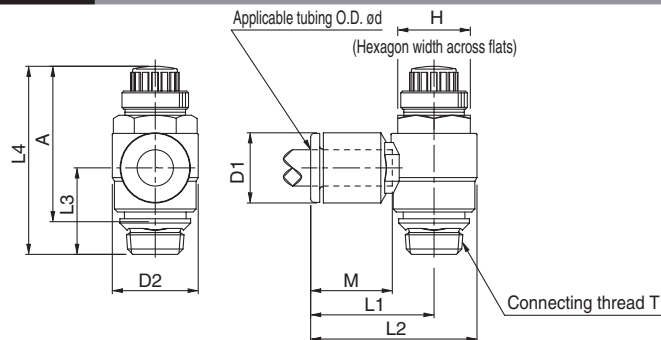
Note 3) Meter-in type is black zinc chromate plated.

Note 4) ø3/16", ø3/8", and ø1/2" are made of brass. AS23□1F-U01(ø3.2, ø4, ø6, ø1/8 and ø5/32) are made of POM.

Series AS



Elbow Type/Metric Size

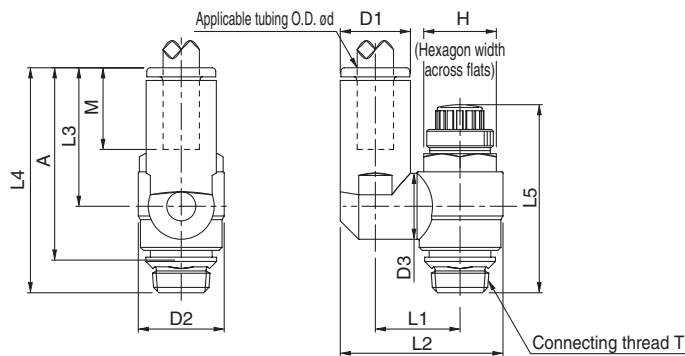


Model	Applicable tubing O.D. ød	T Uni thread	H	D1	D2	L1	L2	L3	L4		A*		M	Weight (g)
									Max.	Min.	Max.	Min.		
AS22□1F-U01-23	3.2	1/8	12	7.8	14.2	20.8	27.9	14.3	36.1	31.1	30.5	25.5	14.5	16.1
AS22□1F-U01-04	4			8.9		21.1	28.2						15.5	16.2
AS22□1F-U01-06	6			11.0		22.5	29.6						18.5	19.0
AS22□1F-U01-08	8			15.2		25.3	32.4						21.0	20.9
AS22□1F-U01-10	10	1/4	17	18.5	18.5	33.1	40.2	17.2	39.4	34.4	32.0	26.6	14.5	31.1
AS22□1F-U02-04	4			8.9		23.3	32.5						15.5	31.3
AS22□1F-U02-06	6			11.0		23.9	33.1						18.5	33.6
AS22□1F-U02-08	8			15.2		27.2	36.4						21.0	35.5
AS22□1F-U02-10	10	3/8	19	18.5	23.0	33.9	43.2	19	45.9	40.9	38.1	33.1	14.5	52.5
AS32□1F-U02-06	6			11.0		26.4	37.9						18.5	54.9
AS32□1F-U02-08	8			15.2		29.5	41.0						21.0	56.8
AS32□1F-U02-10	10			18.5		31.8	43.3						22.0	58.4
AS32□1F-U02-12	12	1/2	24	20.9	28.6	32.8	44.3	19.4	54.6	47.1	44.5	37.0	22.0	58.4
AS32□1F-U03-06	6			11.0		26.4	37.9						15.5	52.5
AS32□1F-U03-08	8			15.2		29.5	41.0						18.5	54.9
AS32□1F-U03-10	10			18.5		31.8	43.3						21.0	56.8
AS32□1F-U03-12	12	3/4	30	20.9	30.8	32.8	44.3	22.4	54.6	47.1	44.5	37.0	22.0	93.7
AS42□1F-U04-10	10			18.5		33.6	47.9						21.0	93.7
AS42□1F-U04-12	12			20.9		34.6	48.9						22.0	95.0

* Reference dimensions of Uni thread after installation.



Universal Type/Metric Size



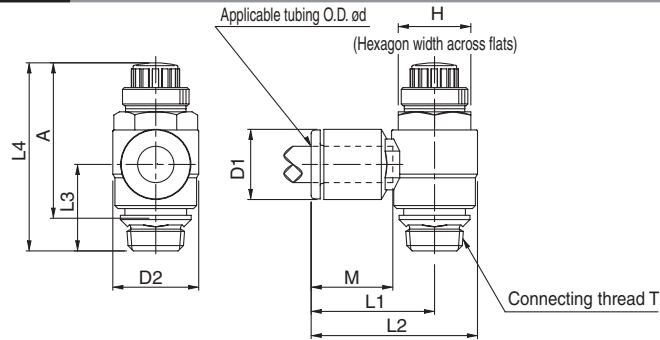
Model	Applicable tubing O.D. ød	T Uni thread	H	D1	D2	D3	L1	L2	L3	L4	L5		A*		M	Weight (g)
											Max.	Min.	Max.	Min.		
AS23□1F-U01-23	3.2	1/8	12	7.8	14.2	9.3	13.4	24.8	18.9	33.2	36.1	31.1	30.5	25.5	14.5	16.9
AS23□1F-U01-04	4			8.9		10.9	14.5	27.1	20.6	34.9					15.5	17.0
AS23□1F-U01-06	6			11.0		12.9	16.2	30.9	24.7	38.2					18.5	17.7
AS23□1F-U01-08	8			15.2		12.9	16.2	30.9	24.7	38.2					18.5	20.9
AS23□1F-U02-04	4	1/4	17	8.9	18.5	9.3	15.6	29.2	18.9	36.1	39.4	34.4	32.0	26.6	14.5	31.7
AS23□1F-U02-06	6			11.0		10.9	16.7	31.4	20.6	37.8					15.5	32.4
AS23□1F-U02-08	8			15.2		12.9	18.3	35.2	24.4	40.8					18.5	35.7
AS23□1F-U02-10	10			18.5		19.6	38.1	26.8	26.8	43.2					21.0	39.2
AS33□1F-U02-06	6	3/8	19	11.0	23.0	10.9	18.9	35.9	20.6	42.5	45.9	40.9	38.1	33.1	15.5	53.6
AS33□1F-U02-08	8			15.2		12.9	20.6	39.7	24.4	43.7					18.5	56.9
AS33□1F-U02-10	10			18.5		16.2	22.5	43.3	28.3	48.6					21.0	60.4
AS33□1F-U02-12	12			20.9		23.5	45.5	29.3	29.3	49.6					22.0	62.2
AS33□1F-U03-06	6	1/2	24	11.0	28.6	10.9	18.9	35.9	20.6	41.6	54.6	47.1	44.5	37.0	15.5	53.6
AS33□1F-U03-08	8			15.2		12.9	20.6	39.7	24.4	42.8					18.5	56.9
AS33□1F-U03-10	10			18.5		16.2	22.5	43.3	28.3	47.7					21.0	60.4
AS33□1F-U03-12	12			20.9		23.5	45.5	29.3	29.3	48.7					22.0	62.2
AS43□1F-U04-10	10	3/4	30	18.5	30.8	16.2	25.3	48.9	28.3	50.7	54.6	47.1	44.5	37.0	21.0	97.1
AS43□1F-U04-12	12			20.9		19.4	26.8	51.6	30.8	53.2					22.0	99.8

* Reference dimensions of Uni thread after installation.

Speed Controller with Uni One-touch Fitting Elbow Type/Universal Type **Series AS**



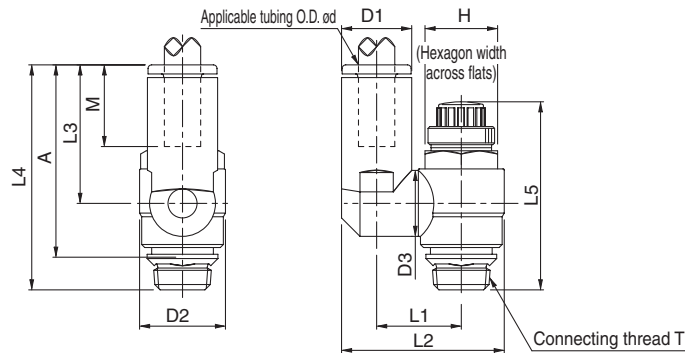
Elbow Type/Inch Size



Model	Applicable tubing O.D.ød	T Uni thread	H	D1	D2	L1	L2	L3	L4		A*		M	Weight (g)
									Max.	Min.	Max.	Min.		
AS22□1F-U01-01	1/8"	1/8	12	7.8	14.2	20.8	27.9	14.3	36.1	31.1	30.5	25.5	14.5	16.1
AS22□1F-U01-03	5/32"			8.9		21.1	28.2							16.2
AS22□1F-U01-05	3/16"			11.4		23.1	30.2							17.5
AS22□1F-U01-07	1/4"			13.2		23.9	31.0							18.1
AS22□1F-U01-09	5/16"			15.2		25.3	32.4							19.0
AS22□1F-U02-03	5/32"	1/4	17	8.9	18.5	23.3	32.5	17.2	39.4	34.4	32.0	26.6	14.5	31.1
AS22□1F-U02-05	3/16"			11.4		24.9	34.2							32.4
AS22□1F-U02-07	1/4"			13.2		25.2	34.5							32.9
AS22□1F-U02-09	5/16"			15.2		27.2	36.4							33.6
AS22□1F-U02-11	3/8"			17.9		33.9	43.2	19						35.3
AS32□1F-U02-07	1/4"	1/4	19	13.2	23.0	27.8	39.3	20.3	45.9	40.9	38.1	33.1	17.0	53.9
AS32□1F-U02-09	5/16"			15.2		29.5	41.0							54.9
AS32□1F-U02-11	3/8"			17.9		31.8	43.3							56.6
AS32□1F-U03-07	1/4"	3/8	19	13.2	23.0	27.8	39.3	19.4	45.0	40.0	37.6	32.6	17.0	53.9
AS32□1F-U03-09	5/16"			15.2		29.5	41.0							54.9
AS32□1F-U03-11	3/8"			17.9		31.8	43.3							56.6
AS42□1F-U04-11	3/8"	1/2	24	17.9	18.6	33.6	47.9	22.4	54.6	47.1	44.5	37.0	21.0	93.6
AS42□1F-U04-13	1/2"			21.4		35.2	49.5							95.4



Universal Type/Inch Size



Model	Applicable tubing O.D.øD	T Uni thread	H	D1	D2	D3	L1	L2	L3	L4	L5		A*		M	Weight (g)
											Max.	Min.	Max.	Min.		
AS23□1F-U01-01	1/8"	1/8	12	7.8	14.2	9.3	13.4	24.8	18.9	33.2	36.1	31.1	30.5	25.5	14.5	16.9
AS23□1F-U01-03	5/32"			8.9		10.3	14.2	27.0	21.5	35.9						17.0
AS23□1F-U01-05	3/16"			11.4		11.4	15.2	28.9	22.3	36.3						18.6
AS23□1F-U01-07	1/4"			13.2		12.9	16.2	30.9	24.7	38.2						19.4
AS23□1F-U01-09	5/16"			15.2		12.9	16.2	30.9	24.7	38.2						20.9
AS23□1F-U02-03	5/32"	1/4	17	8.9	18.5	9.3	15.6	29.2	18.9	36.1	39.4	34.4	32.0	26.6	14.5	31.7
AS23□1F-U02-05	3/16"			11.4		10.3	16.4	31.1	21.5	38.8						33.2
AS23□1F-U02-07	1/4"			13.2		11.4	17.4	33.2	22.3	39.5						33.9
AS23□1F-U02-09	5/16"			15.2		18.3	35.2	24.4	40.8							35.7
AS23□1F-U02-11	3/8"			17.9		12.9	19.6	38.1	26.8	43.2						39.0
AS33□1F-U02-07	1/4"	1/4	19	13.2	23.0	11.4	19.6	37.7	22.3	44.2	45.9	40.9	38.1	33.1	17.0	55.4
AS33□1F-U02-09	5/16"			15.2		12.9	20.6	39.7	24.4	43.7						56.9
AS33□1F-U02-11	3/8"			17.9		16.2	22.5	42.9	28.3	48.6						60.2
AS33□1F-U03-07	1/4"	3/8	19	13.2	23.0	11.4	19.6	37.7	22.3	43.3	45.0	40.0	37.6	32.6	17.0	55.4
AS33□1F-U03-09	5/16"			15.2		12.9	20.6	39.7	24.4	42.8						56.9
AS33□1F-U03-11	3/8"			17.9		16.2	22.5	42.9	28.3	47.7						60.2
AS43□1F-U04-11	3/8"	1/2	24	17.9	28.6	16.2	25.3	48.6	28.3	50.7	54.6	47.1	44.5	37.0	21.1	96.4
AS43□1F-U04-13	1/2"			21.7		19.4	26.8	52.5	30.8	53.2						99.9

* Reference dimensions of Uni thread after installation.

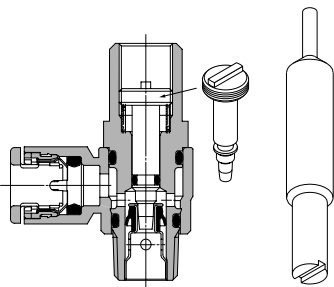
Tamper Proof Speed Controller with One-touch Fitting

Series AS□□□1F-T

Elbow Type/Universal Type

Able to adjust flow by a special tool

Prevention of an unnecessary manual operation



Special tool
Part number: AS-T-1

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)
Number of needle rotations	10 turns (8 turns ⁽¹⁾)
Applicable tubing material ⁽²⁾	Nylon, Soft nylon, Polyurethane

Note 1) In the case of AS12□1F-M5 and AS12□1F-U10/32 types
AS13□1F-M5, AS13□1F-U10/32

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

Note 3) Brass parts are all electroless nickel plated, provided as standard.

Model

Elbow type	Universal type	Port size	Applicable tubing O.D.												Applicable cylinder bore size (mm)
			Metric size						Inch size						
			3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	
AS12□1F-M5	AS13□1F-M5	M5 x 0.8	●	●	●										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
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF							●	●	●	●			6, 10, 16, 20
AS22□1F-N01	AS23□1F-N01	NPT 1/8							●	●	●	●	●		20, 25, 32
AS22□1F-N02	AS23□1F-N02	NPT 1/4								●	●	●	●	●	20, 25, 32, 40
AS32□1F-N02	AS33□1F-N02	NPT 1/4									●	●	●		40, 50, 63
AS32□1F-N03	AS33□1F-N03	NPT 3/8									●	●	●		40, 50, 63
AS42□1F-N04	AS43□1F-N04	NPT 1/2											●	●	63, 80, 100

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.

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.

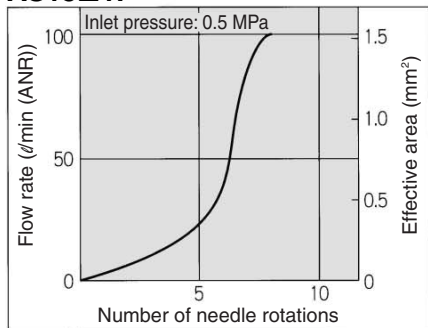
Metric size	Inch size
23	ø3.2"
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"
13	ø1/2"

* Use ø1/8" tube.

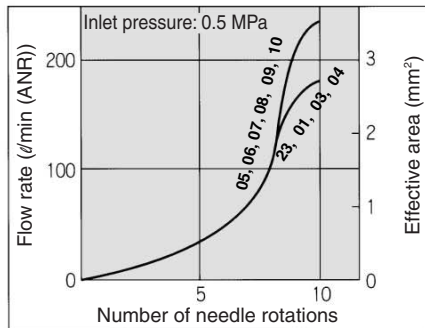
Tamper Proof Speed Controller **With One-touch Fitting, Elbow Type/Universal Type**

Needle Valve/Flow Characteristics

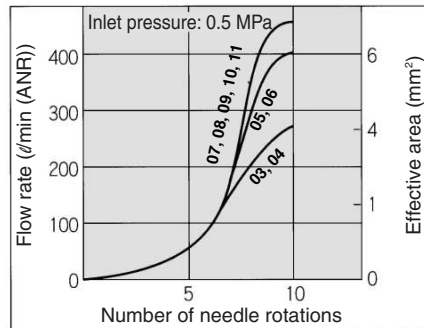
AS12□1F
AS13□1F



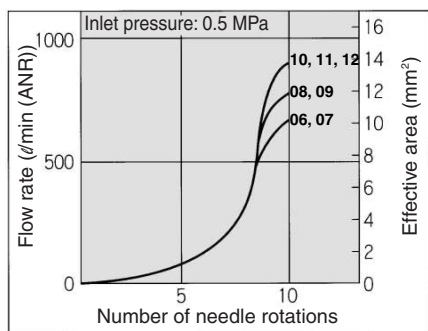
AS22□1F-□01
AS23□1F-□01



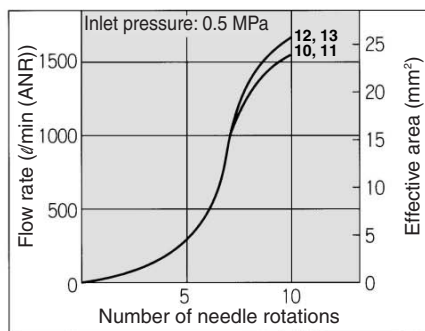
AS22□1F-□02
AS23□1F-□02



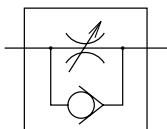
AS32□1F
AS33□1F



AS42□1F
AS43□1F



JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

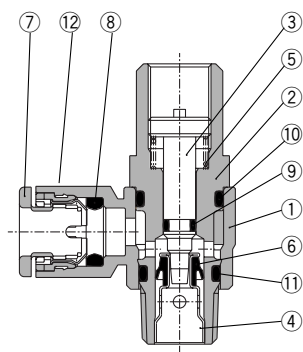
Flow Rate and Effective Area

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" ø5/32"	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))	100	180	230	260	390	460	660	790	920	1580	1710
	Effective area (mm²)	1.5	2.7	3.5	4	6	7	10	12	14	24	26

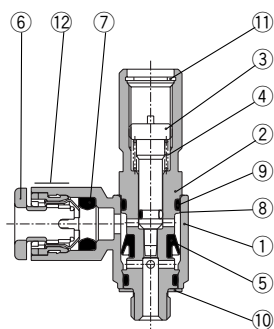
Note) Flow rate values are at a pressure of 0.5 MPa and a temperature of 20°C.

Construction

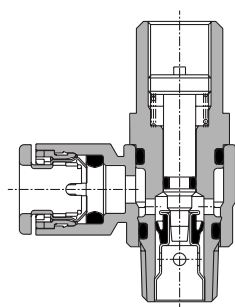
Elbow type Meter-out type



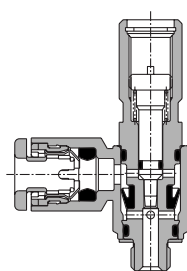
M5 type U10/32 type



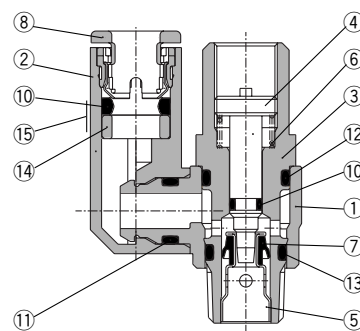
Meter-in type



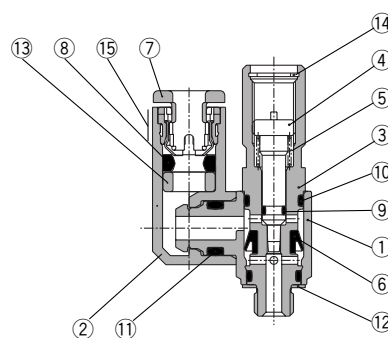
M5 type U10/32 type



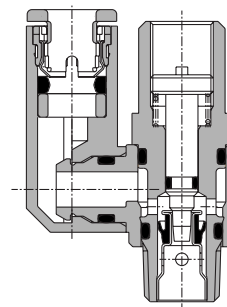
Universal type Meter-out type



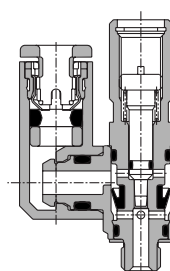
M5 type U10/32 type



Meter-in type



M5 type U10/32 type

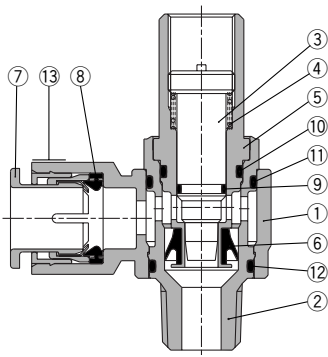


Tamper Proof Speed Controller **With One-touch Fitting, Elbow Type/Universal Type**

Construction

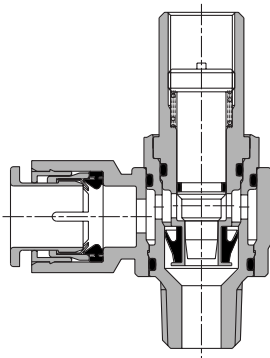
Elbow type **Meter-out type**

AS3201F-02



Meter-in type

AS3211F-02



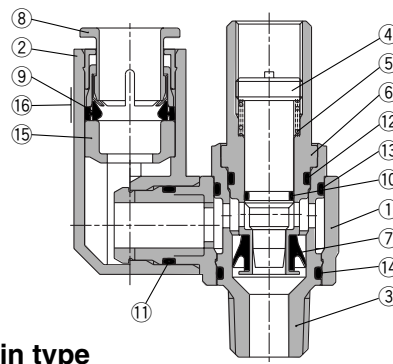
Component Parts

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	
⑥	U seal	HNBR	
⑦	Cassette	POM, Stainless steel ^(Note)	
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) $\phi 10$, $\phi 12$, $\phi 3/8"$, $\phi 1/2"$ are made of POM, stainless steel, and brass (Electroless nickel plated).

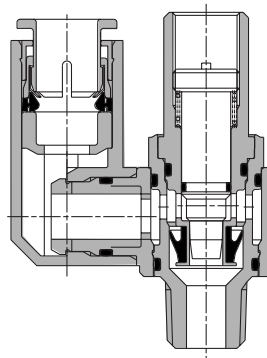
Universal type **Meter-out type**

AS3301F-02



Meter-in type

AS3311F-02



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	
⑦	U seal	HNBR	
⑧	Cassette	POM, Stainless steel ⁽¹⁾	
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	POM ⁽²⁾	
⑯	Gasket	NBR, Stainless steel	
⑰	Retaining ring for hole type C	Tool steel	

Note 1) $\phi 3/16"$, $\phi 5/16"$, $\phi 3/8"$, $\phi 1/2"$ are made of POM, stainless steel, brass (Electroless nickel plated).

Note 2) $\phi 3/16"$, $\phi 3/8"$, $\phi 1/2"$ are made of brass (Electroless nickel plated).

AS

ASP

ASN

AQ

ASV

AK

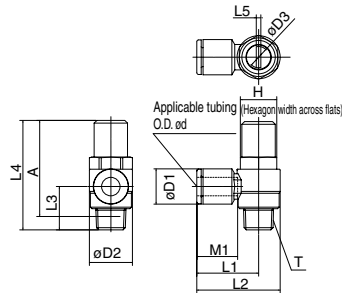
ASS

ASR

ASF

Dimensions

Elbow type



Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1
AS12□1F-M5-23T	3.2	M5 x 0.8	8	8.4	9.6	4.5	17.3	22.1	12.3	31	0.7	27.4	12.7
AS12□1F-M5-04T	4			9.3			18.1	22.9	11.7				13.5
AS12□1F-M5-06T	6			11.6			20.4	27.5	14.3				12.7
AS22□1F-01-23ST	3.2	R 1/8	12	8.4	14.2	7	25.3	32.4	15	35.6	1.5	31.6	13.5
AS22□1F-01-04ST	4			9.3			27.8	39.3					21
AS22□1F-01-06ST	6			11.6			33.1	40.2					16
AS22□1F-01-08ST	8	R 1/4	17	15.2	18.5	7	25.2	34.4	18.2	40.7	1.5	34.7	17
AS22□1F-01-10ST	10			15.2			27.2	36.4					18.5
AS22□1F-02-04ST	4			10.4			33.9	43.2					21
AS22□1F-02-06ST	6	R 1/4	19	12.8	23	9.5	27.8	39.3	20	55.3	1.5	49.3	17
AS22□1F-02-08ST	8			15.2			29.5	41					18.5
AS22□1F-02-10ST	10			18.5			31.8	43.3					21
AS32□1F-02-06ST	6	R 3/8	19	12.8	23	9.5	27.8	39.3	20.9	53.7	1.5	47.4	17
AS32□1F-02-08ST	8			15.2			29.5	41					18.5
AS32□1F-02-10ST	10			18.5			31.8	43.3					21
AS32□1F-02-12ST	12	R 1/2	24	20.9	28.6	12	32.8	44.3	33.6	63.8	1.5	55.8	22
AS42□1F-04-10ST	10			18.5			33.6	47.9					21
AS42□1F-04-12ST	12			20.9			34.6	48.9					22

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

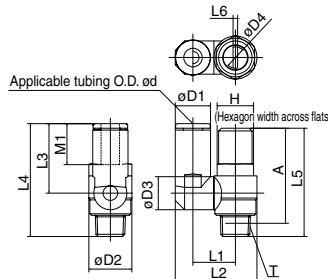
Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1
AS12□1F-U10/32-01T	1/8"	10-32 UNF	8	8.4	9.6	4.5	17.3	22.1	12.3	31	0.7	27.4	12.7
AS12□1F-U10/32-03T	5/32"			9.3			21.3	26.1	11.7				16.5
AS12□1F-U10/32-05T	3/16"			11.4			23.1	23.1	11.7				13.5
AS12□1F-U10/32-07T	1/4"	NPT 1/8	12.7	12	14.2	7	18.3	23.1	14.3	35.6	1.5	31.6	13.5
AS22□1F-N01-01ST	1/8"			8.4			20.4	27.5					12.7
AS22□1F-N01-03ST	5/32"			9.3			23.1	30.2					16.5
AS22□1F-N01-05ST	3/16"	NPT 1/4	17.5	11.4	18.5	7	23.9	31	15	40.7	1.5	34.7	18.5
AS22□1F-N01-07ST	1/4"			13.2			25.3	32.4					21
AS22□1F-N01-09ST	5/16"			15.2			27.2	36.4					17
AS22□1F-N02-03ST	5/32"	NPT 3/8	19	10.4	23	9.5	25.2	34.4	18.2	53.7	1.5	47.4	16
AS22□1F-N02-05ST	3/16"			11.4			24.9	34.2					17
AS22□1F-N02-07ST	1/4"			13.2			25.2	34.5					18.5
AS22□1F-N02-09ST	5/16"	NPT 1/2	23.8	15.2	28.6	12	27.2	36.4	20	63.8	1.5	55.8	21
AS22□1F-N02-11ST	3/8"			17.9			27.8	39.3					22
AS32□1F-N02-07ST	1/4"			13.2			27.8	39.3					17
AS32□1F-N02-09ST	5/16"	NPT 3/4	25.4	15.2	31.8	12.7	29.5	41	20.9	68.3	1.5	60.3	18.5
AS32□1F-N02-11ST	3/8"			17.9			31.8	43.3					21
AS32□1F-N03-07ST	1/4"			13.2			27.8	39.3					17
AS32□1F-N03-09ST	5/16"	NPT 1	31.8	15.2	38.1	15.2	29.5	41	20.9	76.2	1.5	68.3	18.5
AS32□1F-N03-11ST	3/8"			17.9			31.8	43.3					21
AS42□1F-N04-11ST	3/8"			17.9			33.6	47.9					21
AS42□1F-N04-13ST	1/2"	NPT 1 1/2	38.1	21.7	44.4	17.8	35.2	49.5	25.4	81.3	1.5	72.9	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
AS13□1F-M5-23T	3.2	M5 x 0.8	8	8.4	9.6	4.5	10.8	19.8	17.5	28.7	31	0.7	27.4	12.7	12.7
AS13□1F-M5-04T	4			9.3				20.3	17.5	28.7					
AS13□1F-M5-06T	6			11.6				21.4	20.6	31.8					
AS23□1F-01-23ST	3.2	R 1/8	12	8.4	14.2	7	14	24.9	17.5	31.8	35.6	1.5	31.6	13.5	12.7
AS23□1F-01-04ST	4			9.3				24.9	17.5	31.8					
AS23□1F-01-06ST	6			11.6				26.9	22.9	37.2					
AS23□1F-01-08ST	8	R 1/4	17	15.2	18.5	7	16.2	30.9	28.2	41.7	40.7	1.5	34.7	18.5	16
AS23□1F-02-04ST	4			10.4				30.6	21.9	40.1					
AS23□1F-02-06ST	6			12.8				34	25.2	42.6					
AS23□1F-02-08ST	8	R 1/4	19	15.2	23	9.5	20.2	35.2	28.2	45.6	40.7	1.5	34.7	18.5	21
AS23□1F-02-10ST	10			18.5				38.7	31	48.4					
AS33□1F-02-06ST	6			12.8				38.5	25.2	47					
AS33□1F-02-08ST	8	R 1/4	19	15.2	23	9.5	20.6	39.7	28.2	50	55.3	1.5	49.3	18.5	21
AS33□1F-02-10ST	10			18.5				43.7	32.6	53.5					
AS33□1F-02-12ST	12			20.9				44.9	34.4	56.2					
AS33□1F-03-06ST	6	R 3/8	19	12.8	23	9.5	20.6	38.5	25.2	46.1	53.7	1.5	47.4	17	18.5
AS33□1F-03-08ST	8			15.2				39.7	28.2	49.1					
AS33□1F-03-10ST	10			18.5				43.7	32.6	53.5					
AS33□1F-03-12ST	12	R 1/2	24	20.9	28.6	12	25.8	44.9	34.4	55.3	63.8	1.5	55.8	22	21
AS43□1F-04-10ST	10			18.5				49.4	32.6	58					
AS43□1F-04-12ST	12			20.9				52	36.3	61.7					

* 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		
AS13□1F-U10/32-01T	1/8"	10-32 UNF	8	8.4	9.6	9.3	4.5	10.8	19.8	17.5	28.7	31	0.7	27.4	12.7		
AS13□1F-U10/32-03T	5/32"			9.3					20.3	23.3	34.5				16.5		
AS13□1F-U10/32-05T	3/16"			11.4					21.3	20.7	31.9				13.7		
AS13□1F-U10/32-07T	1/4"			12					21.6	20.7	31.9				13.7		
AS23□1F-N01-01ST	1/8"	NPT 1/8	12.7	8.4	14	9.3	7	13.1	24.4	17.5	31.8	35.6	1.5	31.6	12.7		
AS23□1F-N01-03ST	5/32"			9.3					24.9	26.8					23.9	16.5	
AS23□1F-N01-05ST	3/16"			11.4					26.9	25.6					37.2	18.5	
AS23□1F-N01-07ST	1/4"			13.2					12.9	30.9					28.2	41.7	21
AS23□1F-N01-09ST	5/16"	NPT 1/4	17.5	15.2	19	10.9	7	16.2	30.6	21.9	40.1	40.7	1.5	34.7	16		
AS23□1F-N02-03ST	5/32"			10.4					31.1	23.9	42.6				17		
AS23□1F-N02-05ST	3/16"			11.4					34.2	25.6	45.6				18.5		
AS23□1F-N02-07ST	1/4"			13.2					18.3	35.2	28.2				48.4	21	
AS23□1F-N02-09ST	5/16"	NPT 1/4	19	15.2	23	12.9	9.5	20.6	38.7	28.2	54.4	55.3	1.5	49.3	18.5		
AS23□1F-N02-11ST	3/8"			17.9					16.2	39.7	32.6				56.2	21	
AS33□1F-N02-07ST	1/4"			13.2					12.9	20.6	38.7				25.6	50	17
AS33□1F-N02-09ST	5/16"			15.2					9.5	23	39.7				28.2	54.4	18.5
AS33□1F-N02-11ST	3/8"	NPT 3/8	19	17.9	23	12.9	9.5	20.6	43.7	32.6	56.2	53.7	1.5	47.4	21		
AS33□1F-N03-07ST	1/4"			13.2					23	38.7	25.6				46.1	17	
AS33□1F-N03-09ST	5/16"			15.2					9.5	23	39.7				28.2	49.1	18.5
AS33□1F-N03-11ST	3/8"			17.9					16.2	43.7	32.6				53.5	21	
AS43□1F-N04-11ST	3/8"	NPT 1/2	23.8	17.9	29	16.2	12	25.8	49.4	32.6	55.3	63.8	1.5	55.8	21		
AS43□1F-N04-13ST	1/2"			21.7		19.4		26.8	52	36.3	58				22		

Tamper Proof Speed Controller with One-touch Fittings

Series **AS** **1F-T** In-line Type



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)
Number of needle rotations	10 turns (8 turns (1))
Applicable tubing material (2)	Nylon, Soft nylon, Polyurethane

Note 1) In the case of AS1001F type

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

Model

Model	Applicable tubing O.D.												Applicable cylinder bore size (mm)	
	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	●	●	●				●	●	●	●				6, 10, 16, 20
AS2001F		●	●					●	●	●				20, 25, 32
AS2051F			●	●					●	●	●			20, 25, 32, 40
AS3001F			●	●	●	●				●	●	●		40, 50, 63
AS4001F					●	●						●	●	63, 80, 100

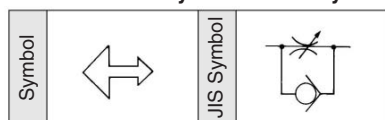
Flow Rate and Effective Area

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
(Free flow)	Effective area (mm²)	1.5	2	3.5	4.5	7	6.5	10	14	16	21

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

How to Order

Flow Direction Symbols on Body



AS 200 **1F** — 06 **T**

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.

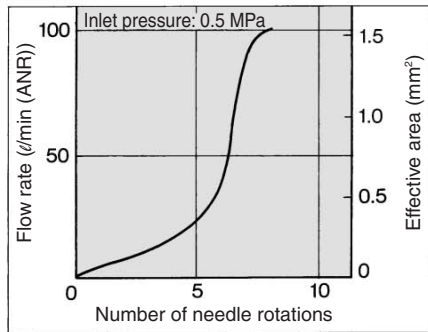
Applicable tubing O.D.

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"

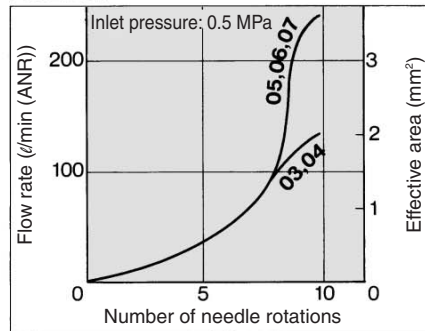
* Use ø1/8" tube.

Needle Valve/Flow Characteristics

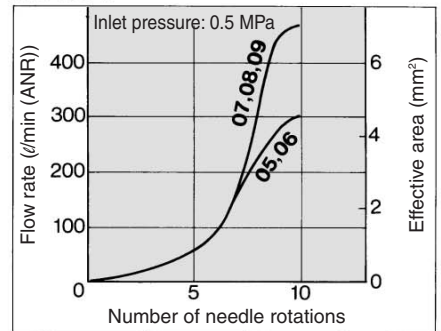
AS1001F



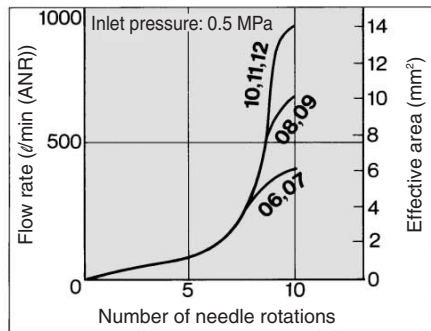
AS2001F



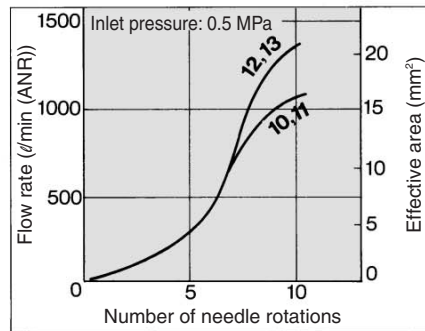
AS2051F



AS3001F

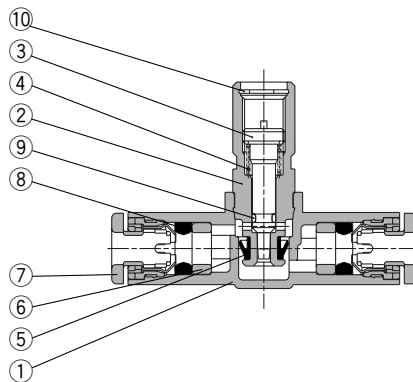


AS4001F

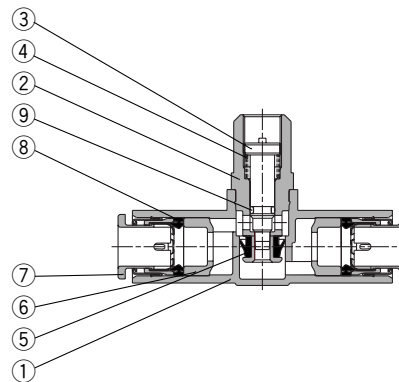


Construction

AS1001F



AS2001F to AS4001F



Component Parts

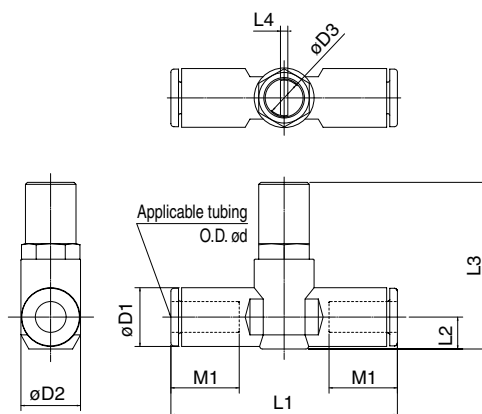
No.	Description	Material	Note
①	Body A	PBT	
②	Body B	Brass	Electroless nickel plated
③	Needle	Brass	Electroless nickel plated
④	Spring	Steel wire	
⑤	U seal	HNBR	
⑥	Spacer	POM ⁽¹⁾	
⑦	Cassette	POM, Stainless steel ⁽²⁾	
⑧	Seal	NBR	
⑨	O-ring	NBR	
⑩	Retaining ring for hole type C	Tool steel	

Note 1) $\phi 3/16"$, $\phi 3/8"$, $\phi 1/2"$ are made of brass (Electroless nickel plated).

Note 2) $\phi 3/16"$, $\phi 5/16"$, $\phi 3/8"$, $\phi 1/2"$ are made of POM, stainless steel, brass (Electroless nickel plated).

Tamper Proof Speed Controller **With One-touch Fittings, In-line Type**

Dimensions



Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1
AS1001F-23T	3.2	8.4	10	4.5	38	4.5	26	0.7	12.7
AS1001F-04T	4	9.3			39.2	5.2	26.6		13.5
AS1001F-06T	6	11.6	11.8	7	40.7	6.2	27.7	1.5	12.7
AS2001F-04T	4	9.3			40.7	5.2	31.9		13.5
AS2001F-06T	6	11.6	14.8	7	44.8	6.3	33	1.5	17
AS2051F-06T	6	12.8			53.2	6.7	35.2		18
AS2051F-08T	8	15.2	19.8	9.5	59.8	8.1	36.5	1.5	17
AS3001F-06T	6	12.8			59	7.4	45		18
AS3001F-08T	8	15.2	26.5	12	64.4	8.2	45.8	1.5	21
AS3001F-10T	10	18.5			71.6	9.8	47.3		22
AS3001F-12T	12	20.9			76	11	48.5	1.5	21
AS4001F-10T	10	18.5			82	11.3	55.4		22
AS4001F-12T	12	20.9					56.4		

Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1
AS1001F-01T	1/8"	8.4	10	4.5	38	4.5	26	0.7	12.7
AS1001F-03T	5/32"	9.3			39.2	5.2	26.6		16.5
AS1001F-05T	3/16"	11.4	11.8	7	48.7	6.2	27.7	1.5	13.7
AS1001F-07T	1/4"	12			40.7				
AS2001F-03T	5/32"	9.3	14.8	7	40.7	5.2	31.9	1.5	12.7
AS2001F-05T	3/16"	11.4			50	6.2	32.8		16.5
AS2001F-07T	1/4"	13.2	19.8	9.5	52.2	7.1	33.7	1.5	17
AS2051F-05T	3/16"	11.4			52.2	6.2	34.9		16.5
AS2051F-07T	1/4"	13.2	26.5	12	54.4	7.1	35.7	1.5	17
AS2051F-09T	5/16"	15.2			59.8	8.1	36.7		18
AS3001F-07T	1/4"	13.2			59	7.4	45.2	1.5	17
AS3001F-09T	5/16"	15.2			64.4	8.2	46		18
AS3001F-11T	3/8"	17.9			70.8	9.5	47.2	1.5	21
AS4001F-11T	3/8"	17.9			76.9	10.3	55.5		21
AS4001F-13T	1/2"	21.7			83.1	11.6	56.9		22

AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

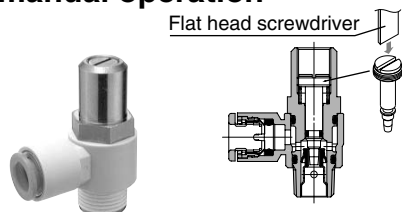
ASF

Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fitting

Series **AS** **1F-D**

Elbow Type/Universal Type

Flow adjustable
by flat head screwdriver
Prevention of an unnecessary
manual operation



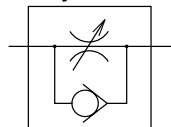
Elbow type



Universal type



JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Model

Elbow type	Universal type	Port size	Applicable tubing O.D.												Applicable cylinder bore size (mm)	
			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	●	●	●											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
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF								●	●	●	●			6, 10, 16, 20
AS22□1F-N01	AS23□1F-N01	NPT 1/8								●	●	●	●	●		20, 25, 32
AS22□1F-N02	AS23□1F-N02	NPT 1/4									●	●	●	●	●	20, 25, 32, 40
AS32□1F-N02	AS33□1F-N02	NPT 1/4										●	●	●		40, 50, 63
AS32□1F-N03	AS33□1F-N03	NPT 3/8											●	●	●	40, 50, 63
AS42□1F-N04	AS43□1F-N04	NPT 1/2													● ●	63, 80, 100

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)
Number of needle rotations	10 turns (8 turns ⁽¹⁾)
Applicable tubing material ⁽²⁾	Nylon, Soft nylon, Polyurethane

Note 1) In the case of AS121 F-M5 and AS12 1F-U10/32 types

AS13 1F-M5, AS13 1F-U10/32

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 15-6-3 to 15-6-5 for details.)

Note 3) Brass parts are all electroless nickel plated, provided as standard.

Flow Rate and Effective Area

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 (Free flow)	Flow rate (ℓ/min (ANR))	100	180	230	260 390	460	660 790	920	1580 1710
	Effective area (mm²)	1.5	2.7	3.5	4 6	7	10 12	14	24 26

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

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

With One-touch fitting

Type adjustable by flat head screwdriver

With seal

Note) In the 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.

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"

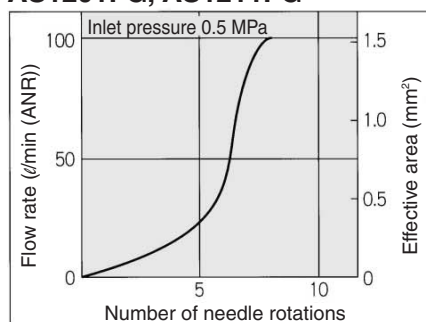
* Use ø1/8" tube.

Port size

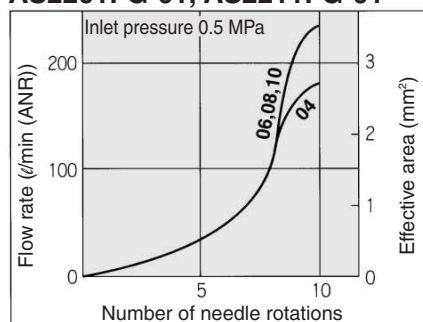
M5	M5 x 0.8
01	R 1/8
02	R 1/4
03	R 3/8
04	R 1/2
U10/32	10-32 UNF
N01	NPT 1/8
N02	NPT 1/4
N03	NPT 3/8
N04	NPT 1/2

Needle Valve/Flow Characteristics

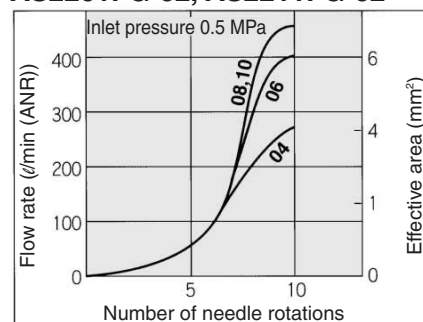
AS1201FG, AS1211FG



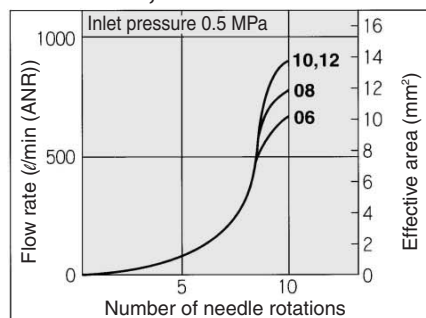
AS2201FG-01, AS2211FG-01



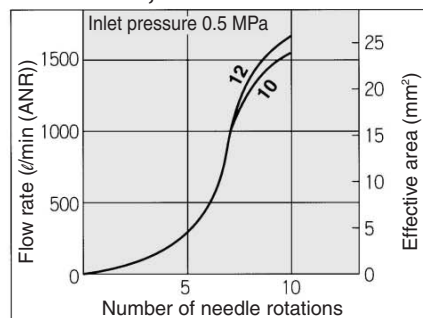
AS2201FG-02, AS2211FG-02



AS3201FG, AS3211FG



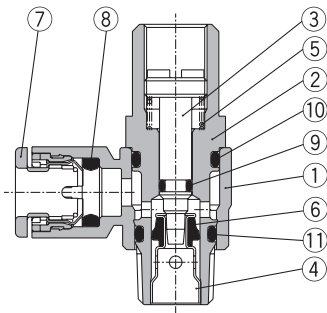
AS4201FG, AS4211FG



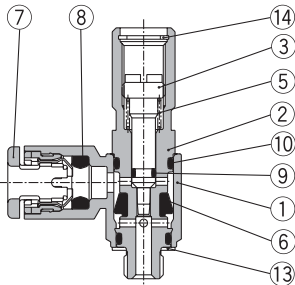
Speed Controller Adjustable by Flat Head Screwdriver With One-touch Fitting, Elbow Type/Universal Type

Construction

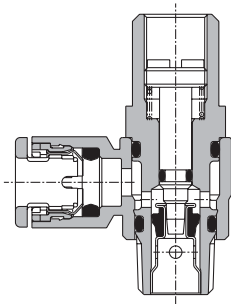
Elbow type
Meter-out type



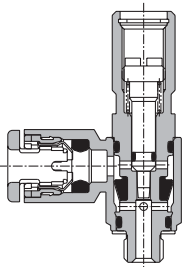
M5 type
U10/32 port



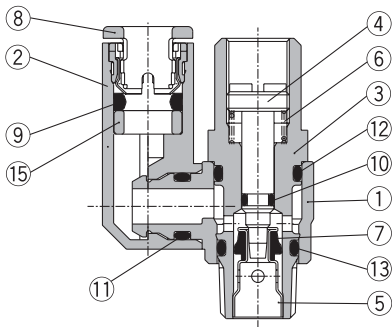
Meter-in type



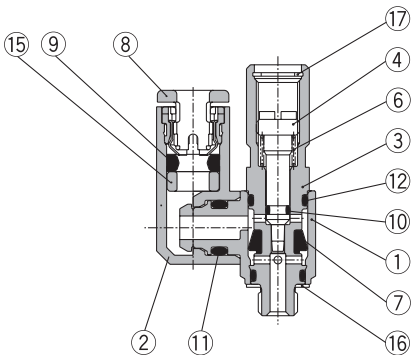
M5 type
U10/32 port



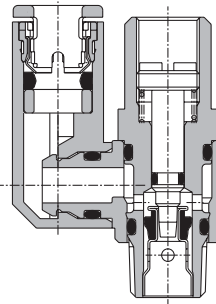
Universal type
Meter-out type



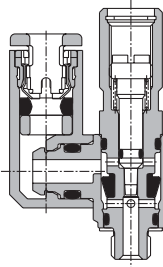
M5 type
U10/32 port



Meter-in type



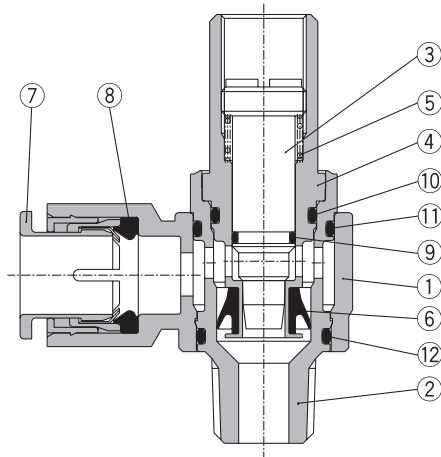
M5 type
U10/32 port



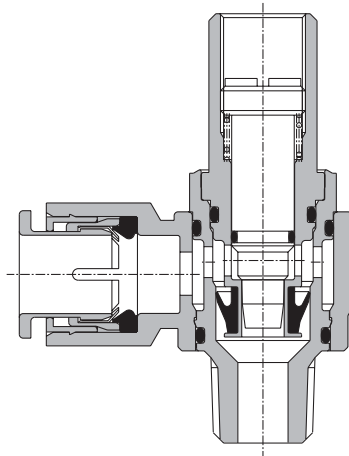
AS
ASP
ASN
AQ
ASV
AK
ASS
ASR
ASF

Construction

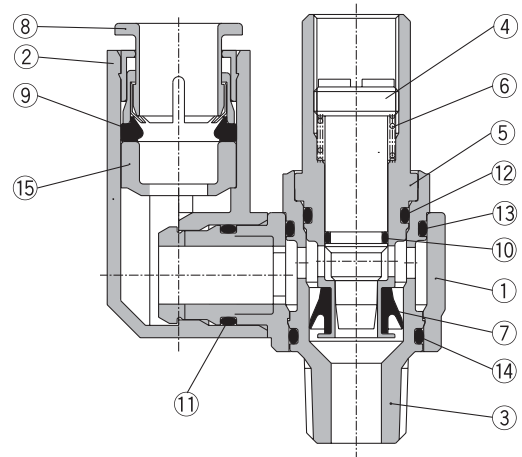
Elbow type Meter-out AS3201F-02



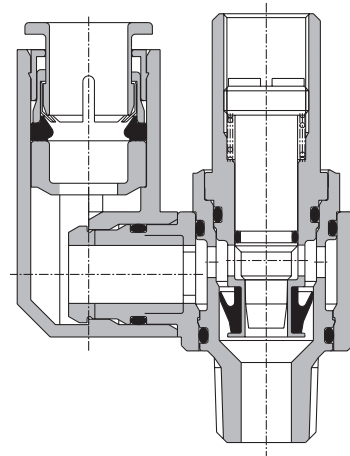
Meter-out AS3301F-02



Universal type Meter-out AS3301F-02



Meter-out 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	
⑥	U seal	HNBR	
⑦	Cassette	POM, Stainless steel ^{Note)}	
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) $\phi 10$, $\phi 12$, $\phi 1/8$ ", $\phi 1/2$ " are made of POM, stainless steel, brass (Electroless nickel plated).

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	
⑦	U seal	HNBR	
⑧	Cassette	POM, Stainless steel ⁽¹⁾	
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	POM ⁽²⁾	
⑯	Gasket	NBR, Stainless steel	
⑰	Retaining ring for hole type C	Tool steel	

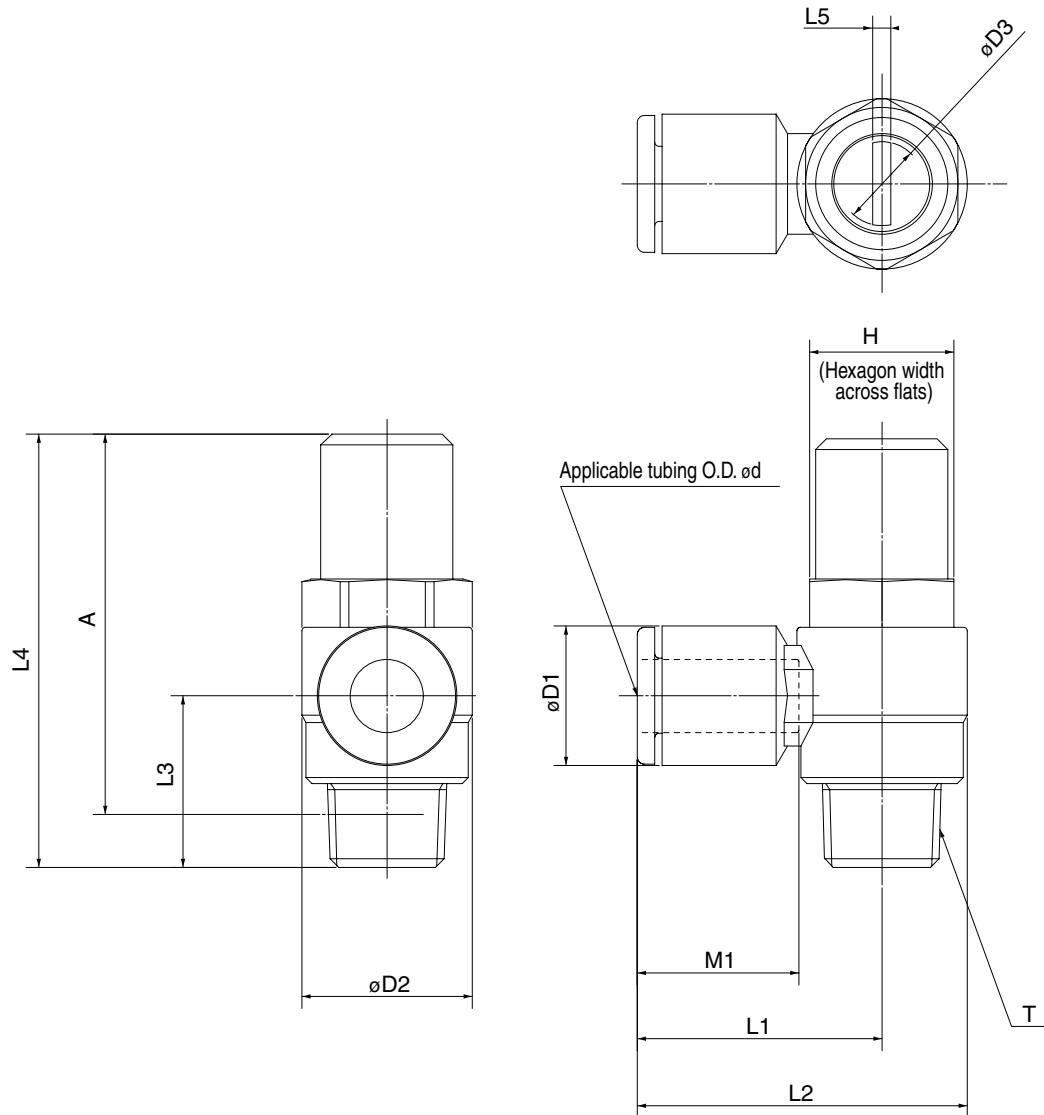
Note 1) $\phi 3/16$ ", $\phi 5/16$ ", $\phi 3/8$ ", $\phi 1/2$ " are made of POM, stainless steel, brass (Electroless nickel plated).

Note 2) $\phi 3/16$ ", $\phi 3/8$ ", $\phi 1/2$ " are made of brass (Electroless nickel plated).

Speed Controller Adjustable by Flat Head Screwdriver With One-touch Fitting, Elbow Type/Universal Type

Dimensions

Elbow type



Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1
AS12□1F-M5-23D	3.2	M5 x 0.8	8	8.4	9.6	4.7	17.3	22.1	12.3	31	0.7	27.4	12.7
AS12□1F-M5-04D	4			9.3			18.1	22.9	11.7				13.5
AS12□1F-M5-06D	6			11.6			20.4	27.5	14.3				12.7
AS22□1F-01-23SD	3.2	R 1/8	12	8.4	14.2	7.2	25.3	32.4	35.6	1.2	31.6		13.5
AS22□1F-01-04SD	4			9.3			33.1	40.2					18.5
AS22□1F-01-06SD	6			11.6			33.1	40.2					21
AS22□1F-01-08SD	8	R 1/4	17	15.2	18.5	7.2	25.2	34.4	18.2	40.7	1.2	34.7	16
AS22□1F-01-10SD	10			18.5			27.2	36.4					18.5
AS22□1F-02-04SD	4			10.4			33.9	43.2					21
AS22□1F-02-06SD	6	R 1/4	17	12.8	18.5	7.2	27.8	39.3	21.8	55.3	1.2	49.3	17
AS22□1F-02-08SD	8			15.2			29.5	41					18.5
AS22□1F-02-10SD	10			18.5			31.8	43.3					21
AS32□1F-02-06SD	6	R 1/4	19	12.8	23	9.8	27.8	39.3	20.9	53.7	1.2	47.4	17
AS32□1F-02-08SD	8			15.2			29.5	41					18.5
AS32□1F-02-10SD	10			18.5			31.8	43.3					21
AS32□1F-02-12SD	12	R 3/8	19	20.9	23	9.8	32.8	44.3	20.9	53.7	1.2	55.8	22
AS32□1F-03-06SD	6			12.8			27.8	39.3					17
AS32□1F-03-08SD	8			15.2			29.5	41					18.5
AS32□1F-03-10SD	10	R 1/2	24	18.5	28.6	12.4	31.8	43.3	25.4	63.8	1.2	55.8	21
AS32□1F-03-12SD	12			20.9			32.8	44.3					22
AS42□1F-04-10SD	10			18.5			33.6	47.9					21
AS42□1F-04-12SD	12			20.9			34.6	48.9					22

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

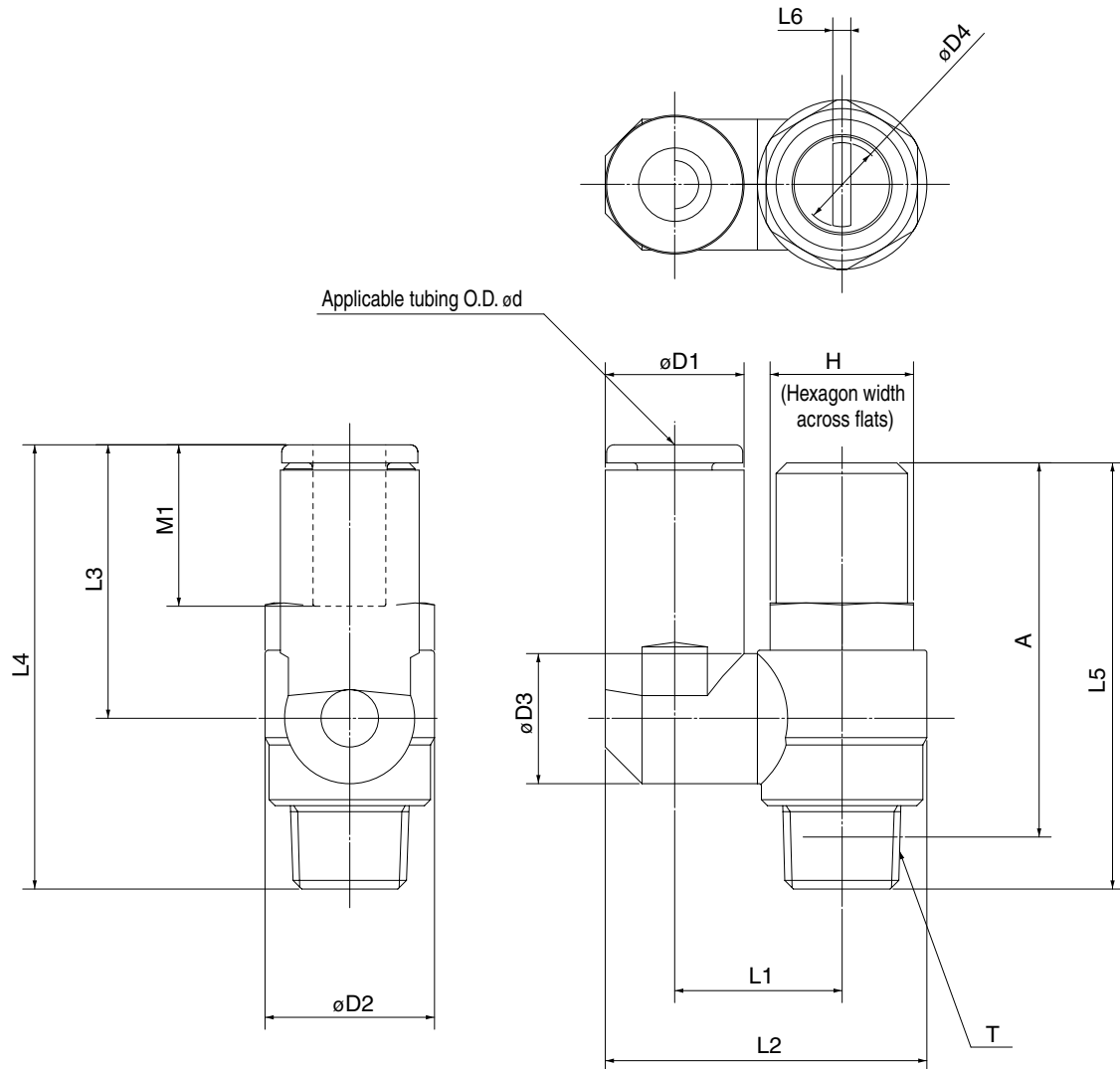
Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1
AS12□1F-U10/32-01D	1/8"	10-32 UNF	8	8.4	9.6	4.7	17.3	22.1	12.3	31	0.7	27.4	12.7
AS12□1F-U10/32-03D	5/32"			9.3			21.3	26.1	11.7				16.5
AS12□1F-U10/32-05D	3/16"			11.4			18.3	23.1					13.5
AS12□1F-U10/32-07D	1/4"	NPT 1/8	12.7	12	14.2	7.2	20.4	27.5	14.3	35.6	1.2	31.6	12.7
AS22□1F-N01-01SD	1/8"			8.4			23.1	30.2					16.5
AS22□1F-N01-03SD	5/32"			9.3			23.9	31					18.5
AS22□1F-N01-05SD	3/16"	NPT 1/4	17.5	13.2	18.5	7.2	25.3	32.4	15	40.7	1.2	34.7	16
AS22□1F-N01-07SD	1/4"			13.2			25.2	34.4					17
AS22□1F-N01-09SD	5/16"			15.2			27.2	36.4					18.5
AS22□1F-N02-03SD	5/32"	NPT 3/8	19	10.4	23	9.8	25.2	34.4	20.9	53.7	1.2	49.3	16
AS22□1F-N02-05SD	3/16"			11.4			24.9	34.2					17
AS22□1F-N02-07SD	1/4"			13.2			27.8	39.3					18.5
AS22□1F-N02-09SD	5/16"	NPT 1/2	23.8	15.2	28.6	12.4	29.5	41	25.4	63.8	1.2	55.8	21
AS22□1F-N02-11SD	3/8"			17.9			31.8	43.3					22
AS22□1F-N02-13SD	1/2"			21.7			35.2	49.5					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
AS13□1F-M5-23SD	3.2			8.4					19.8						
AS13□1F-M5-04D	4	M5 x 0.8	8	9.3	9.6	9.3	4.7	10.8	20.3	17.5	28.7	31	0.7	27.4	12.7
AS13□1F-M5-06D	6			11.6					21.4	20.6	31.8				13.5
AS23□1F-01-23SD	3.2			8.4					24.4						
AS23□1F-01-04SD	4	R 1/8	12	9.3	14.2	9.3	7.2	13.1	24.9	17.5	31.8	35.6	1.2	31.6	12.7
AS23□1F-01-06SD	6			11.6		10.9		14	26.9	22.9	37.2				13.5
AS23□1F-01-08SD	8			15.2	12.9			16.2	30.9	28.2	41.7				18.5
AS23□1F-02-04SD	4			10.4		10.9		16.2	30.6	21.9	40.1				16
AS23□1F-02-06SD	6	R 1/4	17	12.8	18.5		7.2	18.4	34	25.2	42.6	40.7	1.2	34.7	17
AS23□1F-02-08SD	8			15.2		12.9		18.3	35.2	28.2	45.6				18.5
AS23□1F-02-10SD	10			18.5				20.2	38.7	31	48.4				21
AS23□1F-02-06SD	6			12.8				38.5	25.2	47					17
AS33□1F-02-08SD	8			15.2		12.9		39.7	28.2	50					18.5
AS33□1F-02-10SD	10	R 1/4	19	18.5	23		9.8	43.7	32.6	54.4		55.3	1.2	49.3	21
AS33□1F-02-12SD	12			20.9		16.2		44.9	34.4	56.2					22
AS33□1F-03-06SD	6			12.8				38.5	25.2	46.1					17
AS33□1F-03-08SD	8			15.2		12.9		39.7	28.2	49.1					18.5
AS33□1F-03-10SD	10	R 3/8	19	18.5	23		9.8	43.7	32.6	53.5		53.7	1.2	47.4	21
AS33□1F-03-12SD	12			20.9		16.2		44.9	34.4	55.3					22
AS43□1F-04-10SD	10			18.5		16.2		49.4	32.6	58		63.8	1.2		21
AS43□1F-04-12SD	12	R 1/2	24	20.9	28.6	19.4	12.4	52	36.3	61.7				55.8	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
AS13□1F-U10/32-01D	1/8"			8.4					19.8						
AS13□1F-U10/32-03D	5/32"			9.3					20.3	17.5	28.7				12.7
AS13□1F-U10/32-05D	3/16"	10-32 UNF	8	11.4		9.3	4.7	10.8	21.3	23.3	34.5	31	0.7	37.4	16.5
AS13□1F-U10/32-07D	1/4"			12					21.6	20.7	31.9				13.7
AS23□1F-N01-01SD	1/8"			8.4					24.4						
AS23□1F-N01-03SD	5/32"			9.3					24.9	17.5	31.8				12.7
AS23□1F-N01-05SD	3/16"	NPT 1/8	12.7	11.4	14	10.9	7.2	14	26.8	23.9		35.6	1.2	31.6	16.5
AS23□1F-N01-07SD	1/4"			13.2					29.9	25.6	37.2				18.5
AS23□1F-N01-09SD	5/16"			15.2		12.9		16.2	30.9	28.2	41.7				21
AS23□1F-N02-03SD	5/32"			10.4					30.6	21.9	40.1				16
AS23□1F-N02-05SD	3/16"			11.4		10.9		16.2	31.1	23.9	42.6				17
AS23□1F-N02-07SD	1/4"	NPT 1/4	17.5	13.2	19	7.2		18.3	34.2	25.6	45.6	40.7	1.2	34.7	18.5
AS23□1F-N02-09SD	5/16"			15.2		12.9			35.2	28.2	48.4				21
AS23□1F-N02-11SD	3/8"			17.9				20.2	38.7	31	47				21
AS33□1F-N02-07SD	1/4"			13.2					38.7	25.6	50				17
AS33□1F-N02-09SD	5/16"	NPT 1/4	19	15.2	23	9.8		20.6	39.7	28.2	54.4	55.3	1.2	49.3	18.5
AS33□1F-N02-11SD	3/8"			17.9		16.2		23	43.7	32.6	56.2				21
AS33□1F-N03-07SD	1/4"			13.2					38.7	25.6	46.1				17
AS33□1F-N03-09SD	5/16"	NPT 3/8	19	15.2	23	12.9	9.8	20.6	39.7	28.2	49.1	53.7	1.2	47.4	18.5
AS33□1F-N03-11SD	3/8"			17.9		16.2		23	43.7	32.6	53.5				21
AS43□1F-N04-11SD	3/8"			17.9		16.2		25.8	49.4	32.6	55.3				21
AS43□1F-N04-13SD	1/2"	NPT 1/2	23.8	21.7	29	12.4		26.8	52	36.3	58	63.8	1.2	55.8	22

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

Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fittings

Series **AS** **1F-D**

In-line Type



Model

Model	Applicable tubing O.D.												Applicable cylinder bore size (mm)	
	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	●	●	●				●	●	●	●				6, 10, 16, 20
AS2001F		●	●					●	●	●				20, 25, 32
AS2051F			●	●					●	●	●			20, 25, 32, 40
AS3001F			●	●	●	●				●	●	●		40, 50, 63
AS4001F					●	●						●	●	63, 80, 100

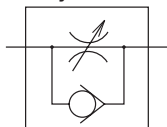
Specifications

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)
Number of needle rotations	10 turns (8 turns ⁽¹⁾)
Applicable tubing material ⁽²⁾	Nylon, Soft nylon, Polyurethane

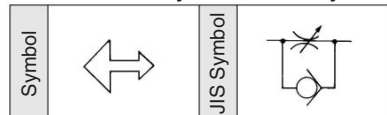
Note 1) In the case of AS1001F type

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

JIS Symbol



Flow Direction Symbols on Body



Flow Rate and Effective Area

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 (Free flow)	Flow rate (l/min (ANR))	100	130	230	290	460	420	660	920	1050	1390
	Effective area (mm²)	1.5	2	3.5	4.5	7	6.5	10	14	16	21

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

Type adjustable by flat head screwdriver

Applicable tubing O.D.

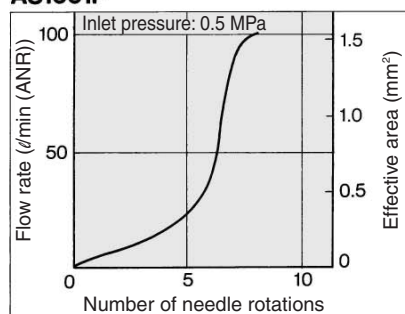
Metric size	Inch size
23	ø3.2"
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"
13	ø1/2"

With One-touch fittings

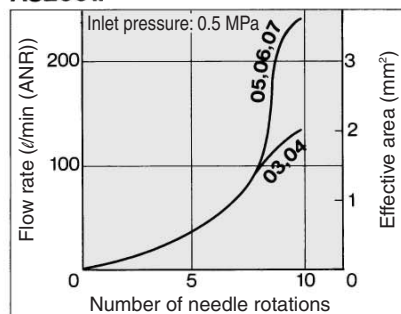
* Use ø1/8" tube.

Needle Valve/Flow Characteristics

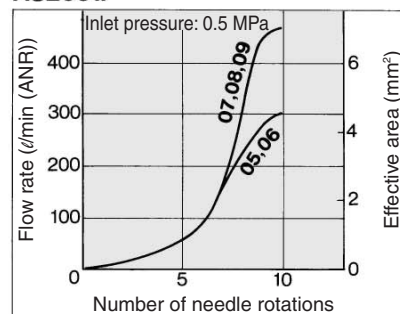
AS1001F



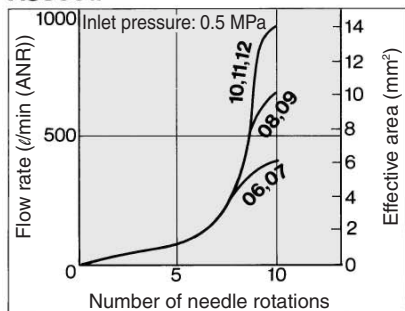
AS2001F



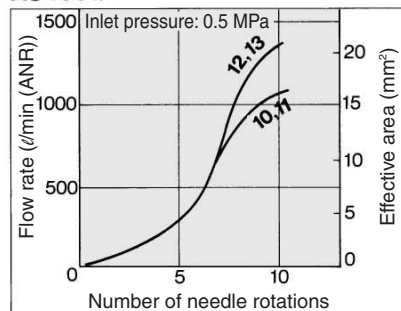
AS2051F



AS3001F

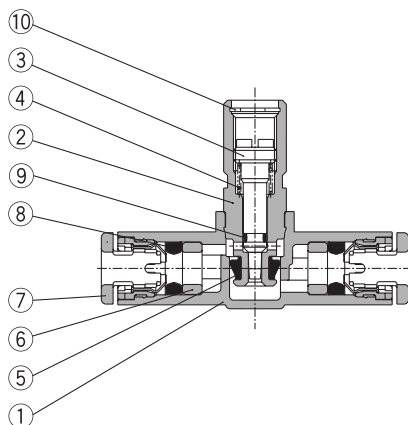


AS4001F

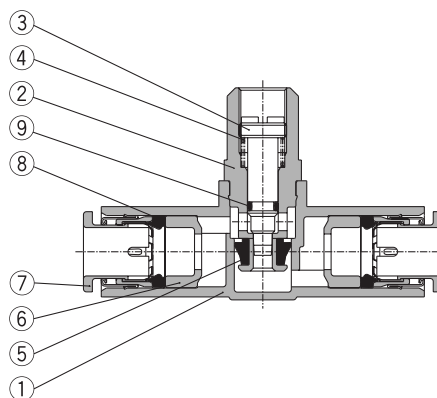


Construction

AS1001F



AS2001F to AS4001F



Component Parts

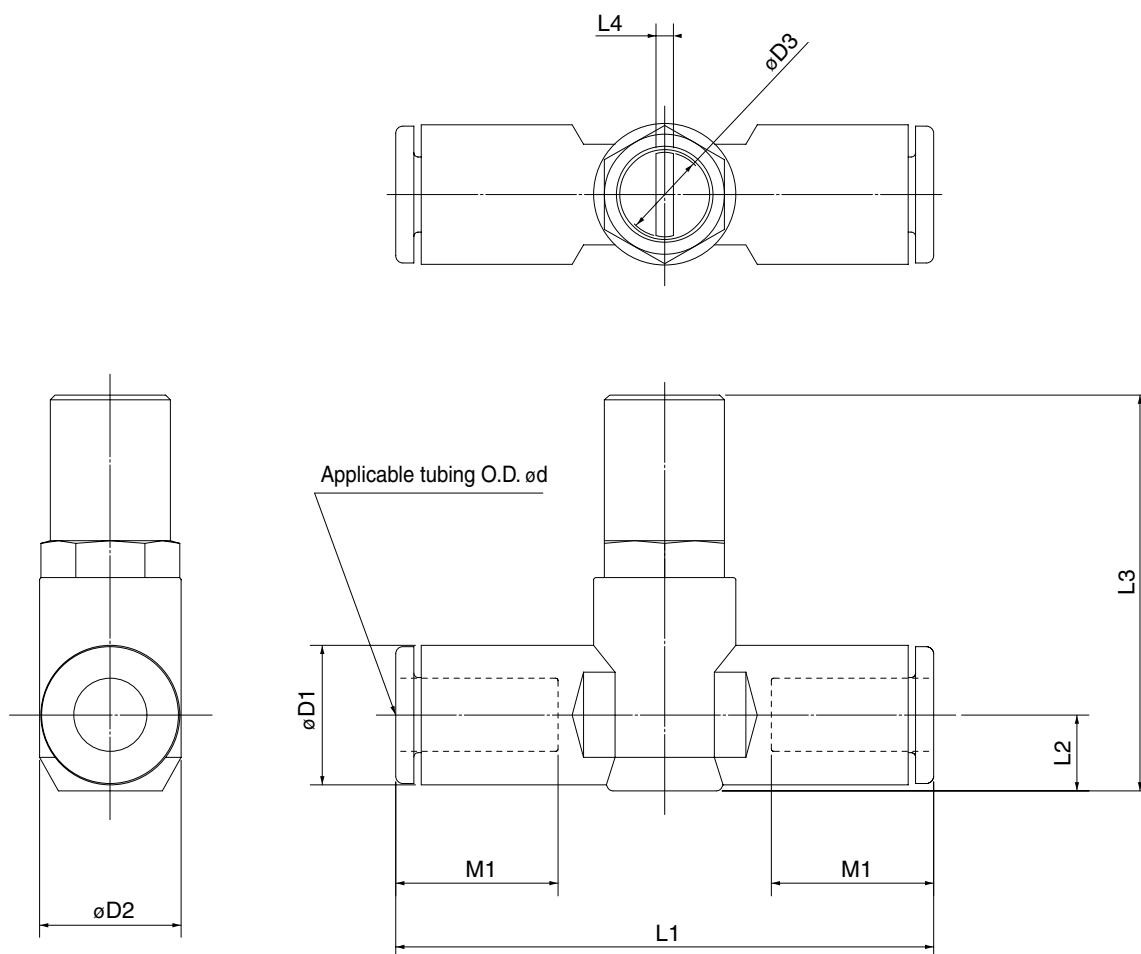
No.	Description	Material	Note
①	Body A	PBT	
②	Body B	Brass	Electroless nickel plated
③	Needle	Brass	Electroless nickel plated
④	Spring	Steel wire	
⑤	U seal	HNBR	
⑥	Spacer	POM ⁽¹⁾	
⑦	Cassette	POM, Stainless steel ⁽²⁾	
⑧	Seal	NBR	
⑨	O-ring	NBR	
⑩	Retaining ring for hole type C	Tool steel	

Note 1) $\phi 3/16"$, $\phi 3/8"$, $\phi 1/2"$ are made of brass (Electroless nickel plated).

Note 2) $\phi 3/16"$, $\phi 5/16"$, $\phi 3/8"$, $\phi 1/2"$ are made of POM, stainless steel, and brass (Electroless nickel plated).

Speed Controller Adjustable by Flat Head Screwdriver With One-touch Fittings, In-line Type

Dimensions



AS
ASP
ASN
AQ
ASV
AK
ASS
ASR
ASF

Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1
AS1001F-23D	3.2	8.4	10	4.7	38	4.5	26	0.7	12.7
AS1001F-04D	4	9.3			39.2	5.2	26.6		
AS1001F-06D	6	11.6			40.7	6.2	27.7		13.5
AS2001F-04D	4	9.3			40.7	5.2	31.9		12.7
AS2001F-06D	6	11.6	11.8	7.2	44.8	6.3	33	1.2	13.5
AS2051F-06D	6	12.8	14.8	7.2	53.2	6.7	35.2	1.2	17
AS2051F-08D	8	15.2			59.8	8.1	36.5		18
AS3001F-06D	6	12.8			59	7.4	45		17
AS3001F-08D	8	15.2			64.4	8.2	45.8		18
AS3001F-10D	10	18.5	19.8	9.8	71.6	9.8	47.3	1.2	21
AS3001F-12D	12	20.9			76	11	48.5		22
AS4001F-10D	10	18.5			82	11.3	55.4		21
AS4001F-12D	12	20.9					56.4		22

Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1
AS1001F-01D	1/8"	8.4	10	4.7	38	4.5	26	0.7	12.7
AS1001F-03D	5/32"	9.3			39.2	5.2	26.6		
AS1001F-05D	3/16"	11.4			48.7	6.2	27.7		16.5
AS1001F-07D	1/4"	12			40.7				13.7
AS2001F-03D	5/32"	9.3	11.8	7.2	40.7	5.2	31.9	1.2	12.7
AS2001F-05D	3/16"	11.4			50	6.2	32.8		16.5
AS2001F-07D	1/4"	13.2			52.2	7.1	33.7		17
AS2051F-05D	3/16"	11.4			52.2	6.2	34.9		16.5
AS2051F-07D	1/4"	13.2	14.8	7.2	54.4	7.1	35.7	1.2	17
AS2051F-09D	5/16"	15.2			59.8	8.1	36.7		18
AS3001F-07D	1/4"	13.2			59	7.4	45.2		17
AS3001F-09D	5/16"	15.2			64.4	8.2	46		18
AS3001F-11D	3/8"	17.9	26.5	12.4	70.8	9.5	47.2	1.2	21
AS4001F-11D	3/8"	17.9			76.9	10.3	55.5		21
AS4001F-13D	1/2"	21.7			83.1	11.6	56.9		22

Speed Controller with Residual Pressure Release Valve with One-touch Fitting

Series **AS** **FE**

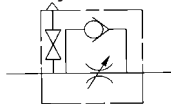
Elbow Type/Universal Type

Residual pressure can be easily released with one push of button.

Eye-catching red color release button.



JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Model

Elbow type	Universal type	Port size in the cylinder side	Applicable tubing O.D. (mm)					Applicable cylinder bore size (mm)
			ø4	ø6	ø8	ø10 ⁽¹⁾	ø12	
AS22□1FE-01	AS23□1FE-01	R 1/8	●	●	●	●		20, 25, 32
AS22□1FE-02	AS23□1FE-02	R 1/4	●	●	●	●		20, 25, 32, 40
AS32□1FE-03	AS33□1FE-03	R 3/8		●	●	●	●	40, 50, 63
AS42□1FE-04	AS43□1FE-04	R 1/2				●	●	63, 80, 100

Note 1) Elbow type only

Note 2) Distinction between meter-out/meter-in types by appearance

Those are distinguished by the lock nut. The meter-out type is electroless nickel plated, while the meter-in type is black zinc chromate plated.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns
Effective area of residual exhaust valve	0.8 mm ²
Applicable tubing material	Nylon, Soft nylon, Polyurethane

Flow Rate and Effective Area

Model		AS22□1FE-01 AS23□1FE-01		AS22□1FE-02 AS23□1FE-02			AS32□1FE AS33□1FE			AS42□1FE AS43□1FE	
Tubing O.D.	Metric size	ø4	ø6 ø8 ø10	ø4	ø6	ø8 ø10	ø6	ø8	ø10 ø12	ø10	ø12
Controlled flow (Free flow)	Flow rate (ℓ/min (ANR))	180	230	260	390	460	660	790	920	1580	1710
	Effective area (mm ²)	2.7	3.5	4	6	7	10	12	14	24	26

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

How to Order

AS

2

2

1

1

FE

01

06

S

K

Body size

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

Port size

01	R 1/8
02	R 1/4
03	R 3/8
04	R 1/2

Applicable tubing O.D. (mm)

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Hexagonal lock nut

With seal

Applicable tubing O.D. (mm)

Port size

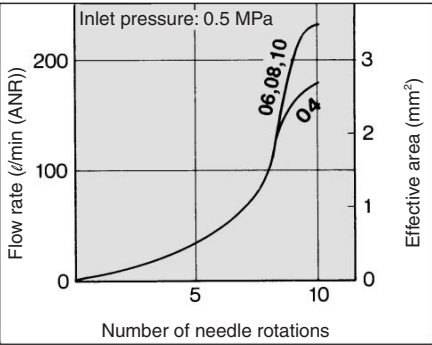
With residual pressure release valve

With One-touch fitting

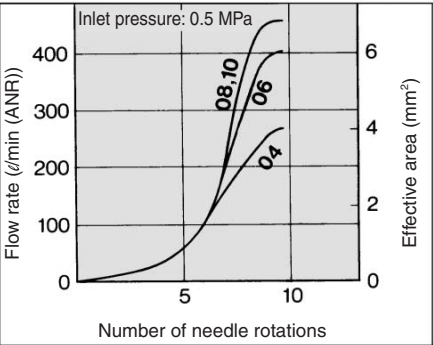
Speed Controller with Residual Pressure
Release Valve with One-touch Fitting, Elbow Type/Universal Type

Needle Valve/Flow Characteristics

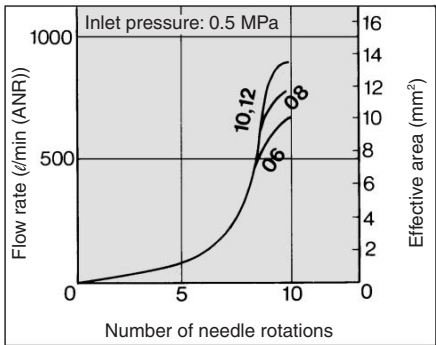
AS2201FE-01, AS2211FE-01
AS2301FE-01, AS2311FE-01



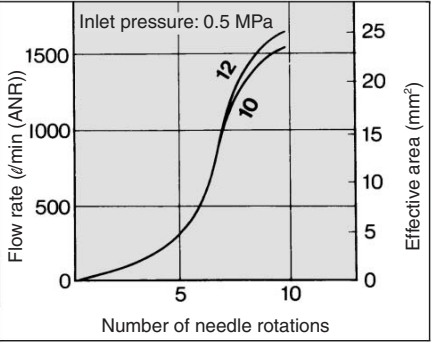
AS2201FE-02, AS2211FE-02
AS2301FE-02, AS2311FE-02



AS3201FE, AS3211FE
AS3301FE, AS3311FE



AS4201FE, AS4211FE
AS4301FE, AS4311FE



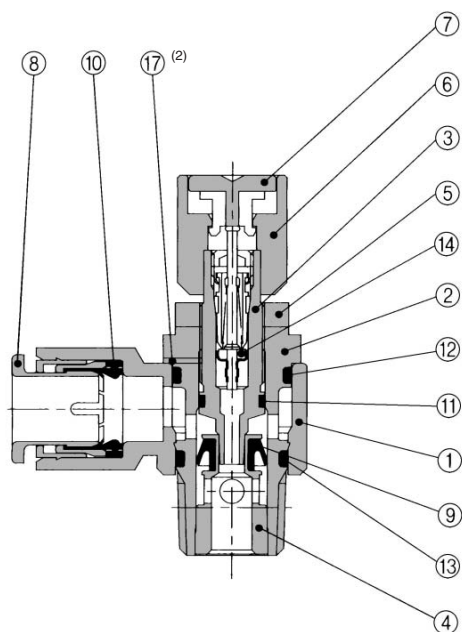
Caution

Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-8-6 to 15-8-8 for Precautions on every series.

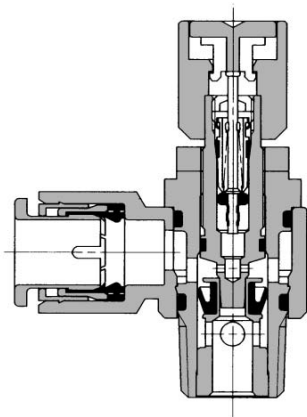
- AS
- ASP
- ASN
- AQ
- ASV
- AK
- ASS
- ASR
- ASF

Construction

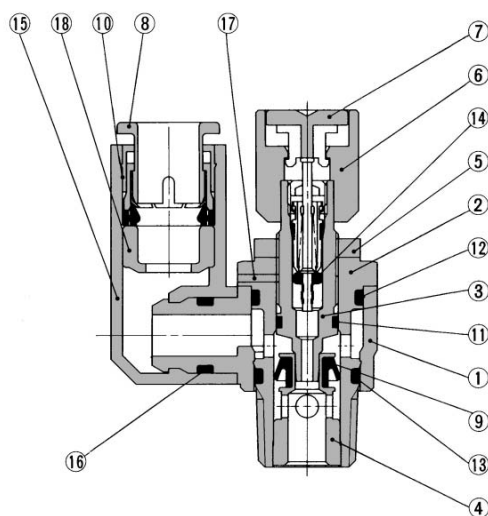
Elbow type, Meter-out type



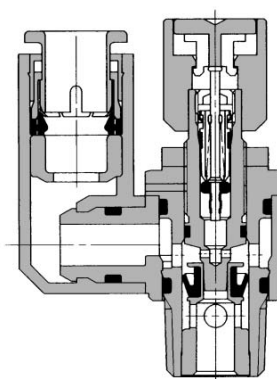
Meter-in type



Universal type Meter-out type



Meter-in type



Component Parts

No.	Description	Material	Note
①	Body A	PBT	White
②	Body B	Brass	Electroless nickel plated
③	Needle	Brass	Electroless nickel plated
④	Seat ring	Brass	(1)
⑤	Lock nut	Brass	Electroless nickel plated (2)
⑥	Handle	Aluminum alloy	Red painted
⑦	Push button	POM	Red
⑧	Cassette	POM, Stainless steel	
⑨	U seal	NBR	
⑩	Seal	NBR	
⑪	O-ring	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	Valve core	NBR, Brass, Stainless steel	
⑮	Elbow body	PBT	
⑯	O-ring	NBR	
⑰	Accidental release prevention screw	Stainless steel	AS2□□1FE-01 (3)
⑱	Spacer	PBT (4)	

Note 1) AS2□□1FE type is electroless nickel plated.
Note 2) Meter-in type is black zinc chromate plated.

Note 3) Only for AS2□□1FE-01.
Note 4) AS23□1FE-01 (ø4, ø6) is POM.

Speed Controller with One-touch Fitting Stainless Series

Series AS-FG

Elbow Type/Universal Type

Stainless specifications for use in corrosive environments. Stainless steel 303 used for metal parts.

Suitable for use on CRT lines where copper ions can cause damage, for washing food processing equipment where there is exposure to water and salt water, etc., and in clean rooms where dust from discoloration and rusting of copper materials is unacceptable.

Light colors to match equipment

White resin parts are used for bodies and release buttons.

Threads with and without seal are available as standard.

Applicable tubing: Inch sizes standardized

Inch sizes are now available for all models.

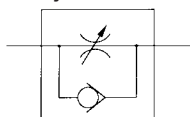


Elbow type



Universal type

JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Model

Elbow type	Universal type	Port size	Applicable tubing O.D.												Applicable cylinder bore size (mm)	
			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□1FG-M5	AS13□1FG-M5	M5×0.8	●	●	●											6, 10, 16, 20
AS22□1FG-01	AS23□1FG-01	R 1/8	●	●	●	●	●*									20, 25, 32
AS22□1FG-02	AS23□1FG-02	R 1/4		●	●	●	●									20, 25, 32, 40
AS32□1FG-02	AS33□1FG-02	R 1/4			●	●	●	●								40, 50, 63
AS32□1FG-03	AS33□1FG-03	R 3/8			●	●	●	●								40, 50, 63
AS42□1FG-04	AS43□1FG-04	R 1/2					●	●								63, 80, 100
AS12□1FG-U10/32	AS13□1FG-U10/32	10-32 UNF							●	●	●	●				6, 10, 16, 20
AS22□1FG-N01	AS23□1FG-N01	NPT 1/8							●	●	●	●	●			20, 25, 32
AS22□1FG-N02	AS23□1FG-N02	NPT 1/4								●	●	●	●	●		20, 25, 32, 40
AS32□1FG-N02	AS33□1FG-N02	NPT 1/4										●	●	●		40, 50, 63
AS32□1FG-N03	AS33□1FG-N03	NPT 3/8										●	●	●		40, 50, 63
AS42□1FG-N04	AS43□1FG-N04	NPT 1/2												●	●	63, 80, 100

Note 1) Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.

Note 2) * Elbow type only

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)
Number of needle rotations	10 turns (8 turns ⁽¹⁾)
Applicable tubing material	Nylon, Soft nylon, Polyurethane, Soft polyurethane

Note 1) In the case of AS12□1FG and AS13□1FG

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane, or polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

Flow Rate and Effective Area

Model		AS12□1FG AS13□1FG	AS22□1FG-□01 AS23□1FG-□01	AS22□1FG-□02 AS23□1FG-□02			AS32□1FG AS33□1FG			AS42□1FG AS43□1FG		
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" ø5/32" ø1/4" ø5/16"	ø5/32"	ø3/16"	ø1/4" ø5/16" ø3/8"	ø1/4"	ø5/16"	ø3/8"	ø3/8"	ø1/2"	
	Flow rate (ℓ/min (ANR))	100	180	230	260	390	460	660	790	920	1580	1710
Controlled flow (Free flow)	Effective area (mm ²)	1.5	2.7	3.5	4	6	7	10	12	14	12	26

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

AS

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ASF

How to Order

AS 2 3 0 1 F G - 01 - 06

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 type

0	Meter-out
1	Meter-in

With One-touch fitting

Stainless steel specifications (SUS303)

Thread type

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

Option

Nil	None
S	With seal*

* M5 and U10/32 are not available with seal.

Applicable tubing O.D.

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"

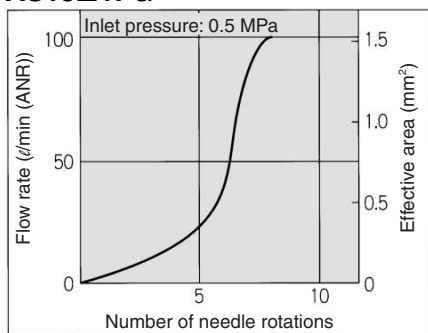
* Use ø1/8" tube.

Port size

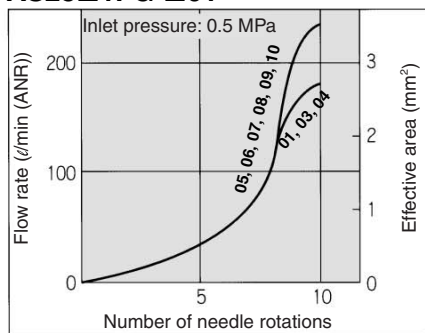
M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4
03	3/8
04	1/2

Needle Valve/Flow Characteristics

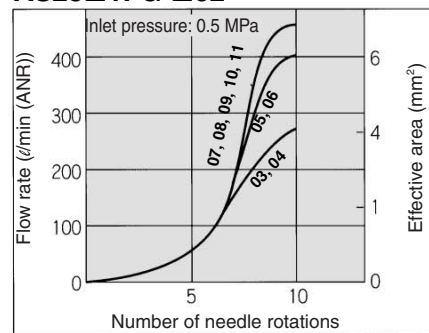
AS12□1FG
AS13□1FG



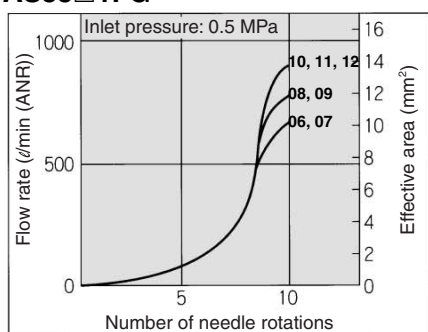
AS22□1FG-□01
AS23□1FG-□01



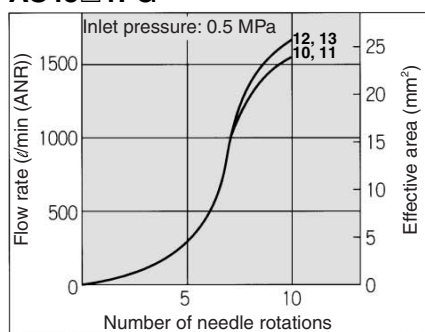
AS22□1FG-□02
AS23□1FG-□02



AS32□1FG
AS33□1FG



AS42□1FG
AS43□1FG



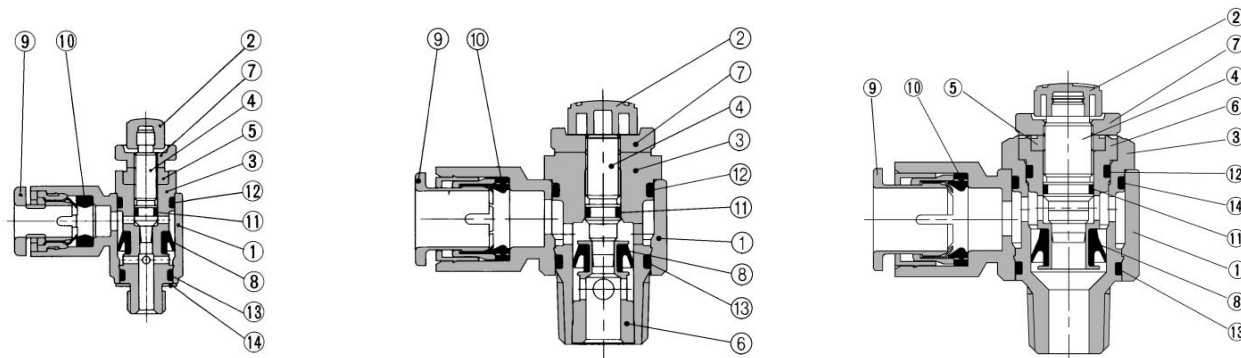
Construction: Elbow Type

Meter-out type

M5 type

U10/32 type

AS3201FG-02

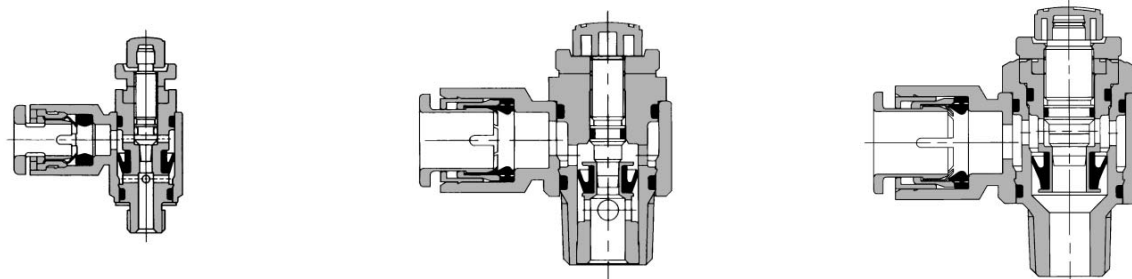


Meter-in type

M5 type

U10/32 type

AS3211FG-02



Component Parts

No.	Description	Material	Note
①	Body A	PBT	
②	Handle	PBT	
③	Body B	Stainless steel 303	
④	Needle	Stainless steel 303	
⑤	Needle guide	Stainless steel 303	
⑥	Seat ring	Stainless steel 303	
⑦	Lock nut	Stainless steel 303	
⑧	U seal	HNBR	
⑨	Cassette	POM, Stainless steel	
⑩	Seal	NBR	
⑪	O-ring	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	Gasket	NBR/stainless steel 304	M5 type only

⚠ Caution

Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-8-6 to 15-8-8 for Precautions on every series.

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Series AS-FG

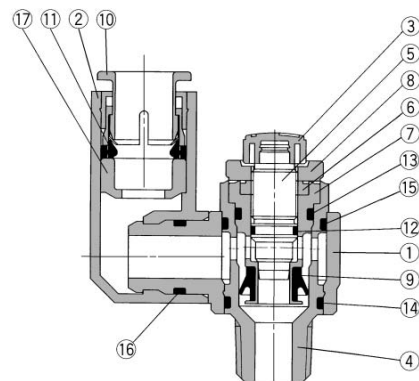
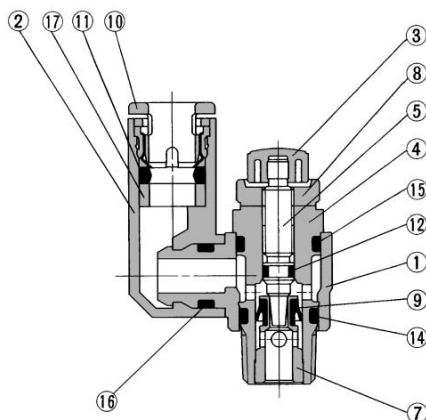
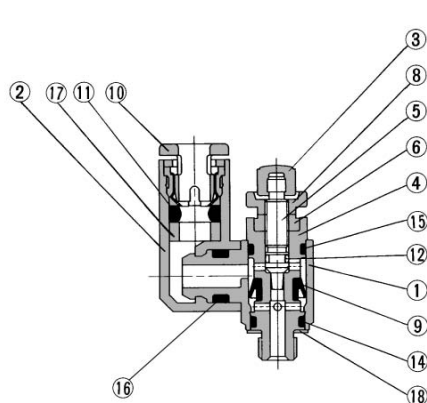
Construction: Universal Type

Meter-out type

M5 type

U10/32 type

AS3301FG-02

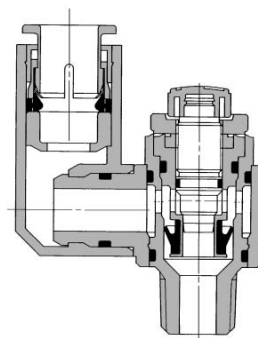
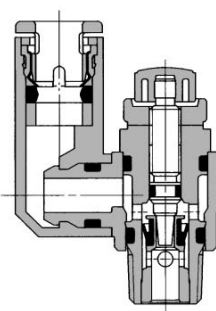
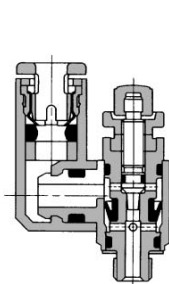


Meter-in type

M5 type

U10/32 type

AS3311FG-02



Component Parts

No.	Description	Material	Note
①	Body A	PBT	
②	Elbow body	PBT	
③	Handle	PBT	
④	Body B	Stainless steel 303	
⑤	Needle	Stainless steel 303	
⑥	Needle guide	Stainless steel 303	
⑦	Seat ring	Stainless steel 303	
⑧	Lock nut	Stainless steel 303	
⑨	U seal	HNBR	
⑩	Cassette	POM, Stainless steel	
⑪	Seal	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	O-ring	NBR	
⑯	O-ring	NBR	
⑰	Spacer	PBT (Note)	
⑱	Gasket	NBR, Stainless steel	

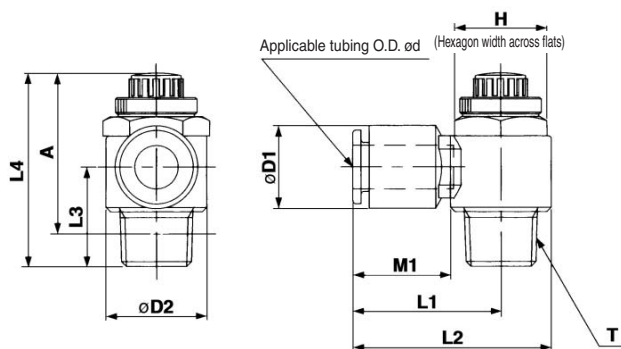
Note) $\phi 3/16"$, $\phi 3/8"$ and $\phi 1/2"$ are made of stainless steel 303.

AS13□1FG($\phi 3.2$, $\phi 4$, $\phi 6$, $\phi 1/8"$, $\phi 5/32"$, $\phi 1/4"$),

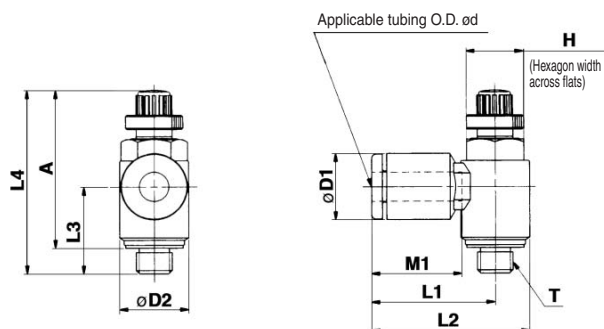
AS23□1FG-□01($\phi 3.2$, $\phi 4$, $\phi 6$, $\phi 1/8"$, $\phi 5/32"$) are made of POM.

Speed Controller with One-touch Fitting Stainless Series, Elbow Type/Universal Type **Series AS-FG**

Dimensions: Elbow Type



M5 type U10/32 type



Metric Size

Model	d	T	H	D1	D2	L1	L2	L3	L4		A*		M1	Weight (g)	
									Max.	Min.	Max.	Min.			
AS12□1FG-M5-23	3.2	M5 x 0.8	8	8.4	9.6	17.3	22.1	12.3	28.6	25.8	25	22.2	12.7	7	
AS22□1FG-01-23	3.2	R 1/8	12	9.3	14.2	20.4	27.5	14.3	36.1	31.1	32.1	27.1	12.7	16	
AS12□1FG-M5-04	4	M5 x 0.8	8	9.3	9.6	17.3	22.1	12.3	28.6	25.8	25	22.2	12.7	7	
AS12□1FG-M5-06	6			11.6		18.1	22.9	11.7					13.5		
AS22□1FG-01-04	4	R 1/8	12	9.3	14.2	20.4	27.5	14.3	36.1	31.1	32.1	27.1	12.7	17	
AS22□1FG-01-06	6			11.6		20.4	27.5						13.5		
AS22□1FG-01-08	8			15.2		25.3	32.4						18.5		
AS22□1FG-01-10	10			18.5		33.1	40.2						15		21
AS22□1FG-02-04	4	R 1/4	17	10.4	18.5	25.2	34.4	18.2	40.4	35.4	34.4	29.4	16	32	
AS22□1FG-02-06	6			12.8		25.2	34.4						17		
AS22□1FG-02-08	8			15.2		27.2	36.4						18.5		
AS22□1FG-02-10	10			18.5		33.9	43.2						20		21
AS32□1FG-02-06	6			R 1/4		19	12.8						23		27.8
AS32□1FG-02-08	8	15.2	29.5		41		18.5								
AS32□1FG-02-10	10	18.5	31.8		43.3		21								
AS32□1FG-02-12	12	20.9	32.8		44.3		22								
AS32□1FG-03-06	6	R 3/8	19		12.8		23	27.8	39.3	20.9	46.5	41.5		40.2	35.2
AS32□1FG-03-08	8			15.2	29.5	41		18.5							
AS32□1FG-03-10	10			18.5	31.8	43.3		21							
AS32□1FG-03-12	12			20.9	32.8	44.3		22							
AS42□1FG-04-10	10			R 1/2	24	18.5		28.6	33.6				47.9		
AS42□1FG-04-12	12	20.9	34.6			48.9	22								

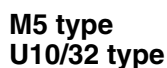
* Reference dimensions of M5 x 0.8, R threads after installation.

Inch Size

Model	d	T	H	D1	D2	L1	L2	L3	L4		A*		M1	Weight (g)		
									Max.	Min.	Max.	Min.				
AS12□1FG-U10/32-01	1/8"	10-32 UNF	8	8.4	9.6	17.3	22.1	12.3	28.6	25.8	25	22.2	12.7			
AS12□1FG-U10/32-03	5/32"			9.3												
AS12□1FG-U10/32-05	3/16"			11.4		21.3	26.1									
AS12□1FG-U10/32-07	1/4"			12		18.3	23.1	11.7								
AS22□1FG-N01-01	1/8"	NPT 1/8	12.7	9.3	14.2	20.4	27.5		36.1	31.1	32.1	27.1	12.7	16		
AS22□1FG-N01-03	5/32"													17		
AS22□1FG-N01-05	3/16"			11.4		23.1	30.2	14.3						16.5		
AS22□1FG-N01-07	1/4"			13.2		23.9	31							18.5	19	
AS22□1FG-N01-09	5/16"			15.2	25.3	32.4	15						21	21		
AS22□1FG-N02-03	5/32"	NPT 1/4	17.5	10.4	18.5	25.2	34.4		40.4	35.4	34.4	29.4	16	32		
AS22□1FG-N02-05	3/16"			11.4		24.9	34.2	18.2							17	
AS22□1FG-N02-07	1/4"			13.2		25.2	34.5								18.5	34
AS22□1FG-N02-09	5/16"			15.2		27.2	36.4								21	36
AS22□1FG-N02-11	3/8"	17.9	33.9	43.2	20		21									
AS32□1FG-N02-07	1/4"	NPT 1/4	19	13.2	23	27.8	39.3		48.8	43.8	42.8	37.8	17	60		
AS32□1FG-N02-09	5/16"			15.2		29.5	41	21.8						18.5	63	
AS32□1FG-N02-11	3/8"			17.9		31.8	43.3							21	67	
AS32□1FG-N03-07	1/4"	NPT 3/8	19	13.2	23	27.8	39.3		46.5	41.5	40.2	35.2	17	55		
AS32□1FG-N03-09	5/16"			15.2		29.5	41	20.9						18.5	57	
AS32□1FG-N03-11	3/8"			17.9		31.8	43.3							21	59	
AS42□1FG-N04-11	3/8"	NPT 1/2	23.8	17.9	28.6	33.6	47.9		57.6	50.1	49.6	42.1	21	100		
AS42□1FG-N04-13	1/2"			21.7		35.2	49.5	25.4						22	101	

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

Dimensions: Universal Type



Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5		A*		M1	Weight (g)			
											Max.	Min.	Max.	Min.					
AS13□1FG-M5-23	3.2	M5 × 0.8	8	8.4	9.6	9.3	10.8	19.8	17.5	28.7	28.6	25.8	25	22.2	12.7	7			
AS13□1FG-M5-04	4			9.3				20.3											
AS13□1FG-M5-06	6			11.6				21.4	20.6	31.8									
AS23□1FG-01-23	3.2	R 1/8 12		8.4	14.2	9.3	13.1	24.4	17.5	31.8	36.1	31.1	32.1	27.1	12.7	17			
AS23□1FG-01-04	4			9.3				24.9											
AS23□1FG-01-06	6			11.6				10.9	14	26.9					22.9		37.2	13.5	18
AS23□1FG-01-08	8			15.2				12.9	16.2	30.9					28.2		41.7	18.5	
AS23□1FG-02-04	4			10.4				10.9	16.2	30.6					21.9		40.1	16	
AS23□1FG-02-06	6	R 1/4 17		12.8	18.5	12.9	18.3	35.2	28.2	45.6	40.4	35.4	34.4	29.4	17	33			
AS23□1FG-02-08	8			15.2				20.2	38.7	31					48.4		18.5	36	
AS23□1FG-02-10	10			18.5				20.2	38.7	31					48.4		21	40	
AS33□1FG-02-06	6	R 1/4 19		12.8	23	12.9	20.6	38.5	25.2	47	48.8	43.8	42.8	37.8	17	60			
AS33□1FG-02-08	8			15.2				39.7	28.2	50					18.5		63		
AS33□1FG-02-10	10			18.5				43.7	32.6	54.4					21		67		
AS33□1FG-02-12	12			20.9				16.2	23	44.9					34.4		56.2	22	69
AS33□1FG-03-06	6			12.8				12.9	20.6	38.5					25.2		46.1	46.5	41.5
AS33□1FG-03-08	8	15.2	39.7	28.2	49.1	18.5	59												
AS33□1FG-03-10	10	18.5	43.7	32.6	53.5	21	63												
AS33□1FG-03-12	12	20.9	44.9	34.4	55.3	22	65												
AS43□1FG-04-10	10	R 1/2 24		18.5	28.6	16.2	25.8			49.4	32.6	58	57.6	50.1	49.6	42.1	21		
AS43□1FG-04-12	12			20.9				19.4	26.8	52	36.3	61.7					22	108	

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5		A*		M1	Weight (g)							
											Max.	Min.	Max.	Min.									
AS13□1FG-U10/32-01	1/8"	10-32 UNF	8	8.4	9.6	9.3	10.8	19.8	17.5	28.7	28.6	25.8	25	22.2	12.7	7							
AS13□1FG-U10/32-03	5/32"			9.3				20.3															
AS13□1FG-U10/32-05	3/16"			11.4				21.3	23.3	34.5									16.5	8			
AS13□1FG-U10/32-07	1/4"			12				21.6	20.7	31.9									13.7				
AS23□1FG-N01-01	1/8"	NPT 1/8	12.7	8.4	10.9	14	13.1	24.4	17.5	31.8	36.1	31.1	32.1	27.1	12.7	17							
AS23□1FG-N01-03	5/32"			9.3				24.9												12.7	18		
AS23□1FG-N01-05	3/16"			11.4				26.8	23.9											16.5			
AS23□1FG-N01-07	1/4"			13.2				29.9	25.6						37.2					18.5	19		
AS23□1FG-N01-09	5/16"			15.2				30.9	28.2						41.7					21	21		
AS23□1FG-N02-03	5/32"			10.4				30.6	21.9						40.1					16	32		
AS23□1FG-N02-05	3/16"	NPT 1/4	17.5	11.4	12.9	16.2	18.3	31.1	23.9	42.6	40.4	35	34.4	29.4	17	33							
AS23□1FG-N02-07	1/4"			13.2				34.2	25.6	45.6									18.5	36			
AS23□1FG-N02-09	5/16"			15.2				35.2	28.2	48.4									21	39			
AS23□1FG-N02-11	3/8"			17.9				38.7	31	47									40	40			
AS33□1FG-N02-07	1/4"			13.2				38.7	25.6	50									17	60			
AS33□1FG-N02-09	5/16"			19				39.7	28.2	54.4					48.8	43.8	42.8	37.8	18.5	63			
AS33□1FG-N02-11	3/8"	NPT 1/4	19	17.9	16.2	2.23	43.7	32.6	56.2						21	69							
AS33□1FG-N03-07	1/4"			13.2											38.7	25.6	46.1					17	56
AS33□1FG-N03-09	5/16"			15.2											39.7	28.2	49.1	46.5	41.5	40.2	35.2	18.5	59
AS33□1FG-N03-11	3/8"	NPT 3/8	19	17.9	16.2	2.23	43.7	32.6	53.5						21	65							
AS43□1FG-N04-11	3/8"			13.2											44.9	32.6	55.3					21	104
AS43□1FG-N04-13	1/2"			23.8											21.7	19.4	26.8	52	36.3	58	57.6	50.1	49.6

15-9-48

Speed Controller with One-touch Fittings Stainless Series

Series AS-FG

In-line Type



Model

Model	Applicable tubing O.D.													Applicable cylinder bore size (mm)
	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"	
AS1001FG	●	●	●				●	●	●	●				6, 10, 16, 20
AS2001FG		●	●					●	●	●				20, 25, 32
AS2051FG			●	●					●	●	●			20, 25, 32, 40
AS3001FG			●	●	●	●				●	●	●		40, 50, 63
AS4001FG					●	●						●	●	63, 80, 100

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)
Number of needle rotations	10 turns (8 turns ⁽¹⁾)
Applicable tubing material ⁽²⁾	Nylon, Soft nylon, Polyurethane, Soft polyurethane

Note 1) In the case of AS1001FG type

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane, or soft polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

Flow Rate and Effective Area

Model		AS1001FG	AS2001FG		AS2051FG		AS3001FG			AS4001FG	
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"	ø5/32"	ø3/16" ø1/4"	ø3/16"	ø1/4" ø5/16"	ø1/4"	ø5/16"	ø3/8"	ø3/8"	ø1/2"
Controlled flow (Free flow)	Flow rate (ℓ/min (ANR))	100	130	230	290	460	420	660	920	1050	1390
	Effective area (mm²)	1.5	2	3.5	4.5	7	6.5	10	14	16	21

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

Flow Direction Symbols on Body

Symbol		JIS Symbol	
--------	--	------------	--

AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

ASF

How to Order

AS 200 1 F G -06

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

Stainless steel specifications (SUS303)

Applicable tubing O.D.

Metric size

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

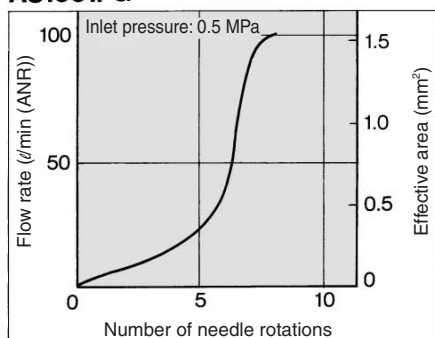
* Use ø1/8" tube.

Inch size

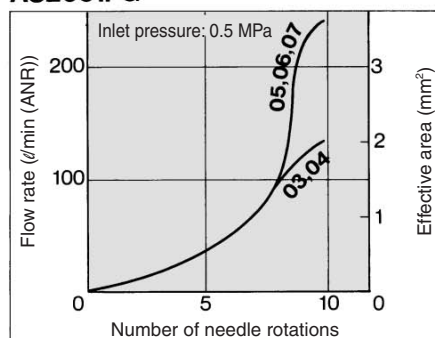
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"
13	ø1/2"

Needle Valve/Flow Characteristics

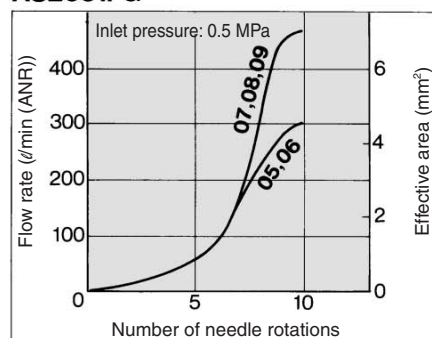
AS1001FG



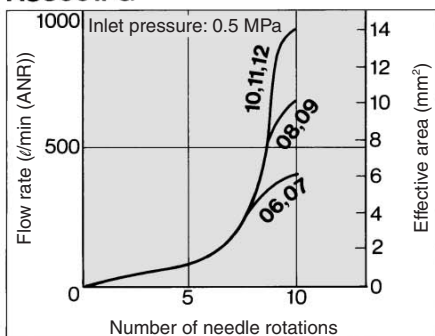
AS2001FG



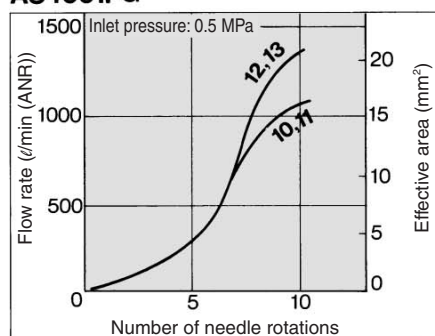
AS2051FG



AS3001FG

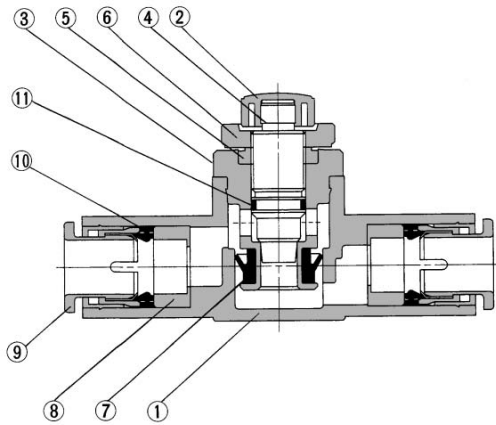


AS4001FG



Speed Controller with One-touch Fittings Stainless Series, In-line Type **Series AS-FG**

Construction

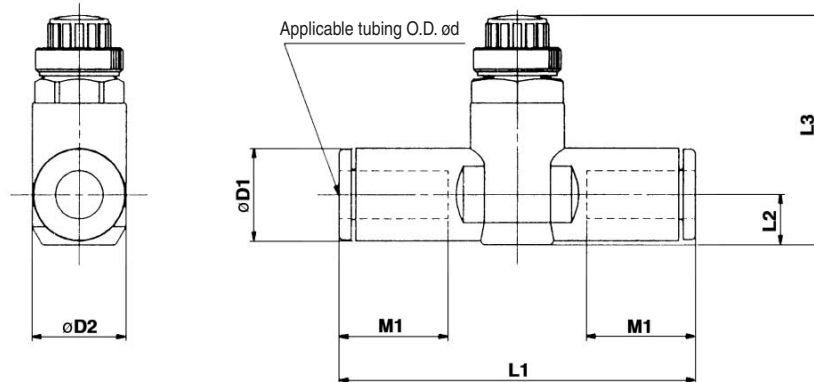


Component Parts

No.	Description	Material	Note
①	Body A	PBT	
②	Handle	PBT	
③	Body B	Stainless steel 303	
④	Needle	Stainless steel 303	
⑤	Needle guide	Stainless steel 303	
⑥	Lock nut	Stainless steel 303	
⑦	U seal	HNBR	
⑧	Spacer	PBT ^{Note)}	
⑨	Cassette	POM, Stainless steel	
⑩	Seal	NBR	
⑪	O-ring	NBR	

Note) $\phi 3/16"$, $\phi 3/8"$ and $\phi 1/2"$ are made of stainless steel 303.
AS1001FG($\phi 3.2$, $\phi 4$, $\phi 6$, $\phi 1/8"$, $\phi 5/32"$, $\phi 1/4"$),
AS2001FG($\phi 4$, $\phi 6$, $\phi 5/32"$) are POM.

Dimensions



Metric Size

Model	d	D1	D2	L1	L2	L3		M1	Weight (g)
						Max.	Min.		
AS1001FG-23	3.2	8.4	10	38	4.5	23.5	20.7	12.7	6
AS1001FG-04	4	9.3		39.2	5.2	24.2	21.4		7
AS1001FG-06	6	11.6		40.7	6.2	25.2	22.4		8
AS2001FG-04	4	9.3	11.8	40.7	5.2	32.6	27.6	12.7	12
AS2001FG-06	6	11.6		44.8	6.3	33.7	28.7		13
AS2001FG-08	8	12.8		53.2	6.7	35.2	30.2		26
AS2051FG-06	6	12.8	14.8	59.8	8.1	32.6	27.6	18	31
AS2051FG-08	8	15.2		59	7.4	38.3	33.3		18
AS3001FG-06	6	12.8		64.4	8.2	39.1	34.1		21
AS3001FG-08	8	15.2	19.8	71.6	9.8	40.6	35.6	21	32
AS3001FG-10	10	18.5		76	11	41.8	36.8		33
AS3001FG-12	12	20.9		82	11.3	51.1	43.6		36
AS4001FG-10	10	18.5	26.5	82	11.3	52.1	44.6	22	40
AS4001FG-12	12	20.9							

Inch Size

Model	d	D1	D2	L1	L2	L3		M1	Weight (g)
						Max.	Min.		
AS1001FG-01	1/8"	8.4	10	38	4.5	23.5	20.7	12.7	6
AS1001FG-03	5/32"	9.3		39.2	5.2	24.2	21.4		7
AS1001FG-05	3/16"	11.4		48.7	6.2	25.2	22.4		16.5
AS1001FG-07	1/4"	12	11.8	40.7	5.2	32.6	27.6	12.7	12
AS2001FG-03	5/32"	9.3		40.7	5.2	32.6	27.6		12
AS2001FG-05	3/16"	11.4		50	6.2	33.6	28.6		16.5
AS2001FG-07	1/4"	13.2	14.8	52.2	7.1	34.5	29.5	17	21
AS2051FG-05	3/16"	11.4		52.2	6.2	34.6	29.6		16.5
AS2051FG-07	1/4"	13.2		54.4	7.1	35.5	30.5		17
AS2051FG-09	5/16"	15.2	19.8	59.8	8.1	32.6	27.6	18	31
AS3001FG-07	1/4"	13.2		59	7.4	38.3	33.3		17
AS3001FG-09	5/16"	15.2		64.4	8.2	39.1	34.1		18
AS3001FG-11	3/8"	17.9	26.5	70.8	9.5	40.3	35.3	21	53
AS4001FG-11	3/8"	17.9		76.9	10.3	51	43.5		21
AS4001FG-13	1/2"	21.7		83.1	11.6	52.4	44.9		22

Speed Controller for Low Speed Operation with One-touch Fitting

Series AS-FM

Elbow Type/Universal Type (Resin Body)

Ideal for low speed control at 10 to 50 mm/sec

Since the effective area of the controlled flow is approximately 1/10 that of the standard model, it is ideal for speed control of low speed cylinders at 10 to 50 mm/sec. The dual type is particularly suitable for low speed control of small bore cylinders.

Low speed operating stroke and high speed return stroke drive

Effective area of free flow is the same as that of standard model.

10 needle turns (20 turns for M5 type)

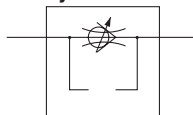
Speed control is easy, and uniform speed control is possible.

Applicable tubing: Inch sizes standardized

Inch sizes are now available for all models.



JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Model

Elbow type	Universal type	Port size	Applicable tubing O.D.										
			Metric size					Inch size					
			3.2	4	6	8	10	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"
AS12□1FM-M5	AS13□1FM-M5	M5 x 0.8	●	●	●								
AS22□1FM-01	AS23□1FM-01	R 1/8	●	●	●	●							
AS22□1FM-02	AS23□1FM-02	R 1/4		●	●	●	●						
AS12□1FM-U10/32	AS13□1FM-U10/32	10-32 UNF						●	●	●	●		
AS22□1FM-N01	AS23□1FM-N01	NPT 1/8						●	●	●	●	●	
AS22□1FM-N02	AS23□1FM-N02	NPT 1/4							●	●	●	●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa
Mini. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns (20 turns ⁽¹⁾)
Applicable tubing material ⁽²⁾	Nylon, Soft nylon, Polyurethane, Soft polyurethane
Option ⁽³⁾	With seal

Note 1) In the case of AS12□1FM and AS13□1FM types

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane, or soft polyurethane tubing is used.

(Refer to pages 15-6-3 to 15-6-5 for details.)

Note 3) M5 and 10-32UNF type ports are not available with seal.

Note 4) Brass parts are all electroless nickel plated. The handle of the M5 type and the lock nut of the meter-in type are black zinc chromate plated.

Flow Rate and Effective Area

Model		AS12□1FM AS13□1FM	AS22□1FM-□01 AS23□1FM-□01	AS22□1FM-□02 AS23□1FM-□02
Tubing O.D.	Metric size	ø3.2, ø4, ø6	ø3.2, ø4, ø6, ø8	ø4, ø6, ø8, ø10
	Inch size	ø1/8", ø5/32", ø3/16" ø1/4"	ø1/8", ø5/32", ø3/16", ø1/4" ø5/16"	ø5/32", ø3/16", ø1/4", ø5/16" ø3/8"
Controlled flow	Air flow (ℓ/min(ANR))	7	12	38
	Effective area (mm ²)	0.1	0.2	0.6
Free flow	Flow rate (ℓ/min(ANR))	100	180	230
	Effective area (mm ²)	1.5	2.7	3.5
			4	6
				7

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

AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

ASF

How to Order

AS 2 2 0 1 F M — 01 — 06

Body size

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

Type

2	Elbow
3	Universal

Control type

0	Meter-out
1	Meter-in

With One-touch fitting

For low speed control

Thread type

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

Option

Nil	None
S	With seal

* M5 and U10/32 are not available with seal.

Applicable tubing O.D.

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

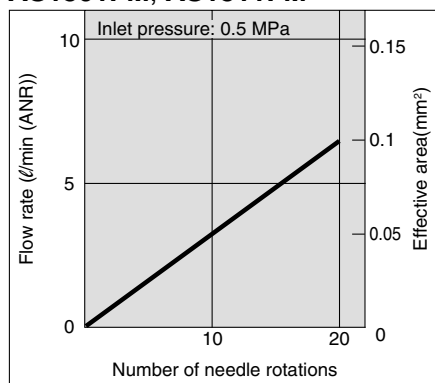
* Use ø1/8" tube.

Port size

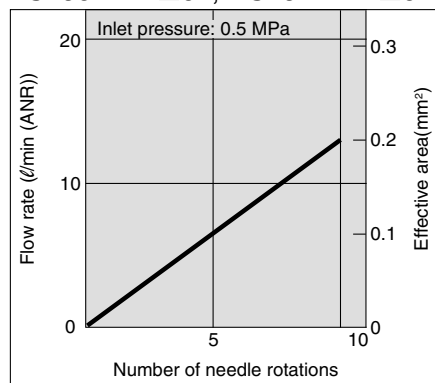
M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4

Needle Valve/Flow Characteristics

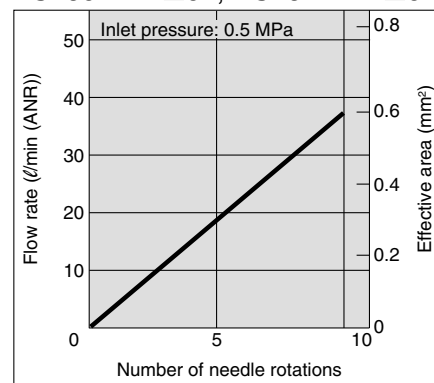
**AS1201FM, AS1211FM
AS1301FM, AS1311FM**



**AS2201FM-□01, AS2211FM-□01
AS2301FM-□01, AS2311FM-□01**



**AS2201FM-□02, AS2211FM-□02
AS2301FM-□02, AS2311FM-□02**

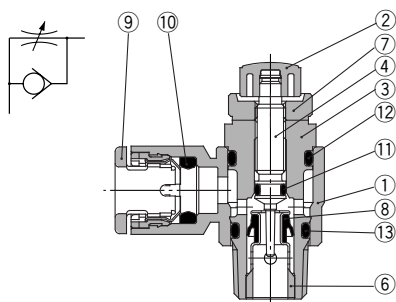


Speed Controller for Low Speed Operation With One-touch Fitting, Elbow Type/Universal Type (Resin Body) **Series AS-FM**

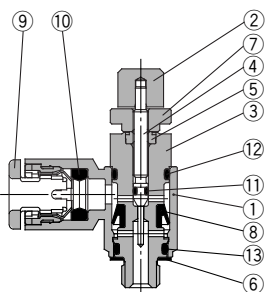
Construction: Elbow Type

Meter-out type

JIS Symbol

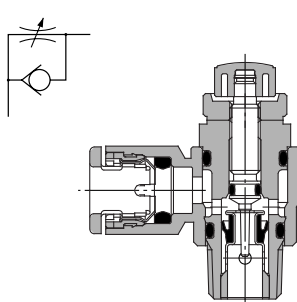


**M5 type
U10/32 type**

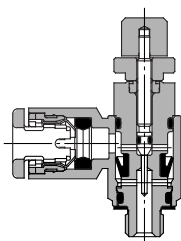


Meter-in type

JIS Symbol



**M5 type
U10/32 type**



Component Parts

No.	Description	Material	Note
①	Body A	PBT	White
②	Handle	PBT	Black ⁽¹⁾
③	Body B	Brass	Electroless nickel plated
④	Needle	Brass	Electroless nickel plated
⑤	Needle guide	Brass	Electroless nickel plated, M5 type only
⑥	Seat ring	Brass	Electroless nickel plated
⑦	Lock nut	Brass ⁽²⁾	Electroless nickel plated ⁽³⁾
⑧	U seal	HNBR	
⑨	Cassette	POM, Stainless steel	
⑩	Seal	NBR	
⑪	O-ring	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	Gasket	NBR, Stainless steel	M5 type only

Note 1) M5 and U10/32 types are black zinc chromate plated.

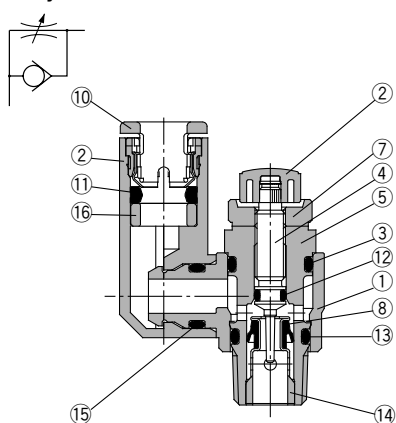
Note 2) AS22□1FM type is made of steel.

Note 3) Meter-in type is black zinc chromate plated.

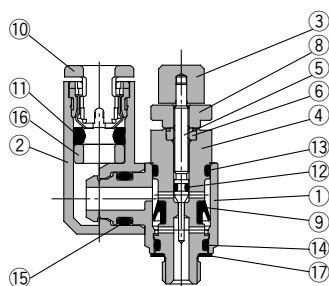
Construction: Universal Type

Meter-out type

JIS Symbol

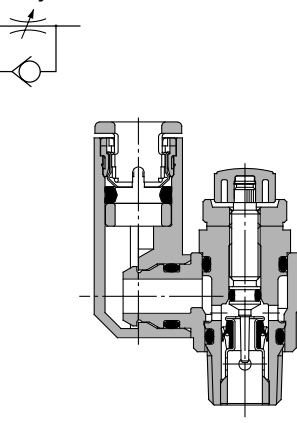


**M5 type
U10/32 type**

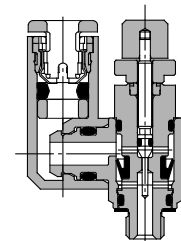


Meter-in type

JIS Symbol



**M5 type
U10/32 type**



Component Parts

No.	Description	Material	Note
①	Body A	PBT	White
②	Elbow body	PBT	White
③	Handle	PBT	Black ⁽¹⁾
④	Body B	Brass	Electroless nickel plated
⑤	Needle	Brass	Electroless nickel plated
⑥	Needle guide	Brass	Electroless nickel plated, M5 type only
⑦	Seat ring	Brass	Electroless nickel plated
⑧	Lock nut	Brass ⁽²⁾	Electroless nickel plated ⁽³⁾
⑨	U seal	HNBR	
⑩	Cassette	POM, Stainless steel	
⑪	Seal	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	O-ring	NBR	
⑯	Spacer	PBT ⁽⁴⁾	
⑰	Gasket	NBR, Stainless steel	M5 type only

Note 1) M5 and U10/32 types are black zinc chromate plated.

Note 2) AS23□1FM type is made of steel.

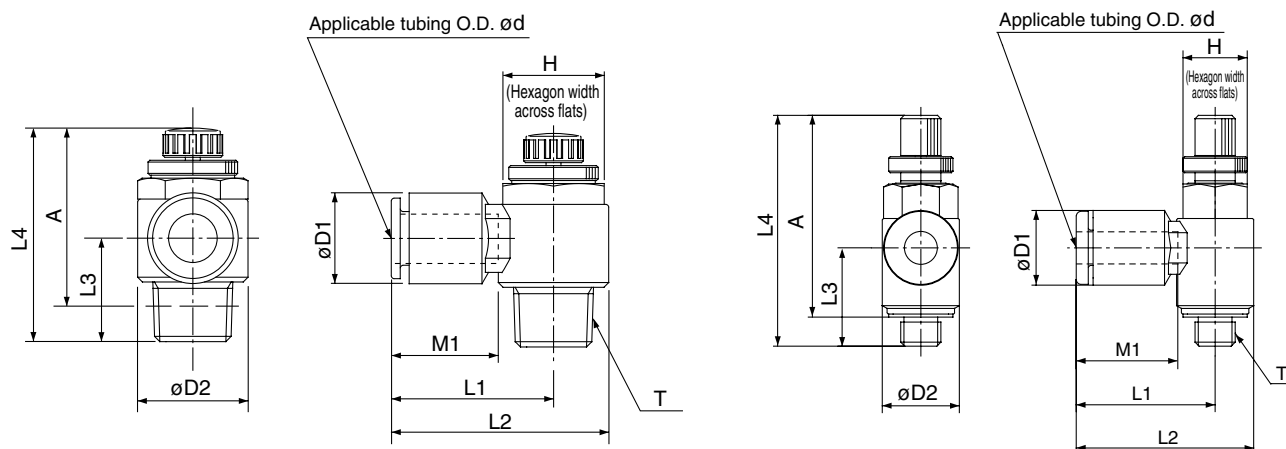
Note 3) Meter-in type is black zinc chromate plated.

Note 4) AS13□1FM(ø3.2, ø4, ø6, ø1/8", ø5/32", ø1/4") AS23□1FM-□01(ø3.2, ø4, ø6, ø1/8", ø5/32") is POM.
AS13□1FM(ø3/16"), AS23□1FM(ø3/16", ø3/8") is brass.

Series AS-FM

Dimensions: Elbow Type

M5 type U10/32 type



Metric Size

Model	d	T	H	D1	D2	L1	L2	L3	L4		A*		M1	Weight (g)
									Max.	Min.	Max.	Min.		
AS12□1FM-M5-23	3.2	M5 x 0.8	8	8.4	9.6	17.3	22.1	12.3	33.8	28.8	30.1	25.1	12.7	7
AS12□1FM-M5-04	4			9.3		17.3	22.1						13.5	
AS12□1FM-M5-06	6			11.6		18.1	22.9						13.5	
AS22□1FM-01-23	3.2	R 1/8	12	9.3	14.2	20.4	27.5	14.3	36.1	31.1	32.1	27.1	12.7	17
AS22□1FM-01-04	4			9.3		20.4	27.5						13.5	
AS22□1FM-01-06	6			11.6		20.4	27.5						13.5	
AS22□1FM-01-08	8	R 1/4	17	15.2	18.5	25.3	32.4	18.2	40.4	35.4	34.4	29.4	18.5	19
AS22□1FM-02-04	4			10.4		25.2	34.4						16	32
AS22□1FM-02-06	6			12.8		25.2	34.4						17	
AS22□1FM-02-08	8			15.2		27.2	36.4						18.5	
AS22□1FM-02-10	10			18.5		33.9	43.2	20.0					21.0	36

* Reference dimensions for M5 and R threads after installation.

Inch Size

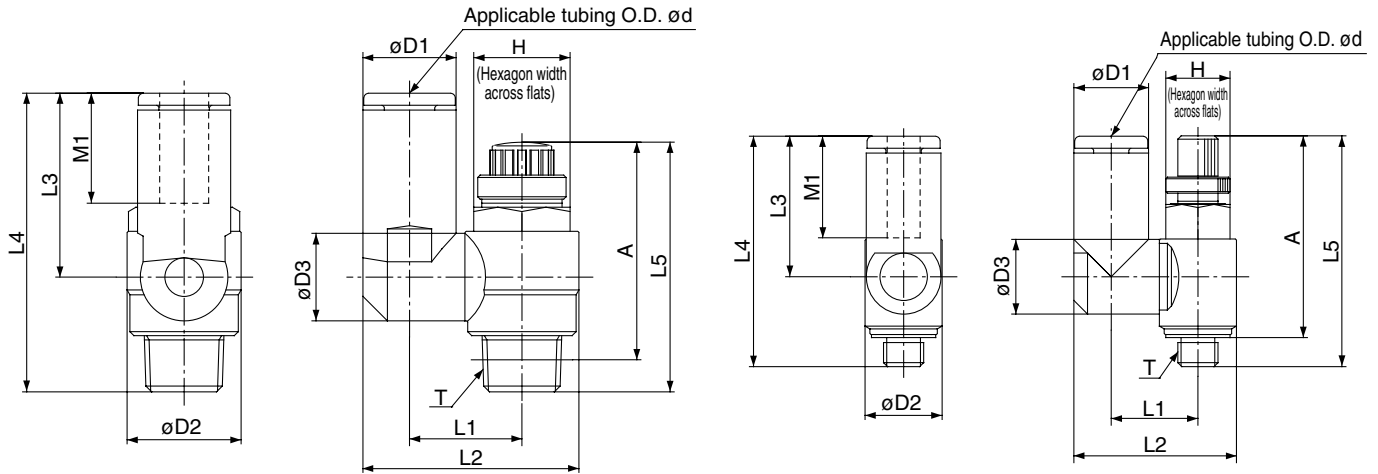
Model	d	T	H	D1	D2	L1	L2	L3	L4		A*		M1	Weight (g)
									Max.	Min.	Max.	Min.		
AS12□1FM-U10/32-01	1/8"	10-32 UNF	8	8.4	9.6	17.3	22.1	12.3	33.8	28.8	30.1	25.1	12.7	7
AS12□1FM-U10/32-03	5/32"			9.3		26.1	13.5							
AS12□1FM-U10/32-05	3/16"			11.4		23.1	16.5							
AS12□1FM-U10/32-07	1/4"			12		18.3	23.1	13.5						
AS22□1FM-N01-01	1/8"	NPT 1/8	12.7	9.3	14.2	20.4	27.5	14.3	36.1	31.1	32.1	27.1	12.7	16
AS22□1FM-N01-03	5/32"			11.4		23.1	30.2						16.5	17
AS22□1FM-N01-05	3/16"			13.2		23.9	31						18.5	19
AS22□1FM-N01-07	1/4"			15.2		25.3	32.4						21	21
AS22□1FM-N01-09	5/16"	NPT 1/4	17.5	15.2	18.5	25.3	32.4	15	40.4	35.4	34.4	29.4	21	21
AS22□1FM-N02-03	5/32"			10.4		25.2	34.4	18.2					16	32
AS22□1FM-N02-05	3/16"			11.4		24.9	34.2						17	
AS22□1FM-N02-07	1/4"			13.2		25.2	34.5						18.5	
AS22□1FM-N02-09	5/16"			15.2		27.2	36.4	20					21	36
AS22□1FM-N02-11	3/8"			17.9		33.9	43.2							

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

Speed Controller for Low Speed Operation
With One-touch Fitting, Elbow Type/Universal Type (Resin Body) Series AS-FM

Dimensions: Universal Type

M5 type



Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5		A*		M1	Weight (g)
											Max.	Min.	Max.	Min.		
AS13□1FM-M5-23	3.2	M5 x 0.8	8	8.4	9.6	9.3	10.8	19.8	17.5	28.7	33.8	28.8	30.1	25.1	12.7	8
AS13□1FM-M5-04	4			9.3				20.3							13.5	
AS13□1FM-M5-06	6			11.6				21.4							13.5	
AS23□1FM-01-23	3.2	R 1/8	14.2	8.4	14.2	9.3	13.1	24.4	17.5	31.8	36.1	31.1	32.1	27.1	12.7	17
AS23□1FM-01-04	4			9.3		10.9	14	24.9							13.5	
AS23□1FM-01-06	6			11.6				26.9							18.5	
AS23□1FM-01-08	8	R 1/4	18.5	12.9	18.5	16.2	30.9	28.2	41.7	40.1	40.4	35.4	34.4	29.4	16	33
AS23□1FM-02-04	4			10.4		10.9	16.2	30.6							17	
AS23□1FM-02-06	6			12.8		12.9	18.4	34							18.5	
AS23□1FM-02-08	8			15.2		12.9	18.3	35.2							21	
AS23□1FM-02-10	10			18.5		20.2	38.7	31							21	

* Reference dimensions for M5 and R threads after installation.

Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5		A*		M1	Weight (g)
											Max.	Min.	Max.	Min.		
AS13□1FM-U10/32-01	1/8"	10-32 UNF	8	8.4	9.6	9.3	10.8	19.8	17.5	28.7	33.8	28.8	30.1	25.1	12.7	7
AS13□1FM-U10/32-03	5/32"			9.3				20.3							16.5	
AS13□1FM-U10/32-05	3/16"			11.4				21.3							13.7	
AS13□1FM-U10/32-07	1/4"	NPT 1/8	12.7	12	14.2	10.9	14	21.6	20.7	31.9	36.1	31.1	32.1	27.1	13.7	17
AS23□1FM-N01-01S	1/8"			8.4				24.4							12.7	
AS23□1FM-N01-03S	5/32"			9.3				24.9							16.5	
AS23□1FM-N01-05S	3/16"			11.4				26.8							18.5	
AS23□1FM-N01-07S	1/4"			13.2		12.9	16.2	29.9							21	
AS23□1FM-N01-09S	5/16"	NPT 1/4	17.5	15.2	18.5	12.9	18.3	30.9	28.2	41.7	40.4	35.4	34.4	29.4	21	21
AS23□1FM-N02-03S	5/32"			10.4				30.6							16	
AS23□1FM-N02-05S	3/16"			11.4				31.1							17	
AS23□1FM-N02-07S	1/4"			13.2				34.2							18.5	
AS23□1FM-N02-09S	5/16"			15.2				35.2							39	
AS23□1FM-N02-11S	3/8"			17.9		20.2	38.7	31							21	

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

Speed Controller for Low Speed Operation with One-touch Fitting

Series **AS-FM**

In-line Type (Resin Body)



Model

Model	Applicable tubing O.D.									Applicable cylinder bore size (mm)
	Metric size				Inch size					
	3.2	4	6	8	1/8"	5/32"	3/16"	1/4"	5/16"	
AS1001FM	●	●	●		●	●	●	●		6, 10, 16, 20
AS2001FM		●	●			●	●	●		20, 25, 32
AS2051FM			●	●			●	●	●	20, 25, 32, 40

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)
Number of needle rotations	10 turns (20 turns ⁽¹⁾)
Applicable tubing material ⁽²⁾	Nylon, Soft nylon, Polyurethane, Soft polyurethane

Note 1) In the case of AS1001FM type

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane, or soft polyurethane tubing is used.

(Refer to pages 15-6-3 to 15-6-5 for details.)

Note 3) Brass parts are all electroless nickel plated. The handle of the M5 type is black zinc chromate plated.

Flow Rate and Effective Area

Model		AS1001FM	AS2001FM		AS2051FM	
Tubing O.D.	Metric size	ø3.2, ø4, ø6	ø4	ø6	ø6	ø8
	Inch size	ø1/8", ø5/32", ø3/16" ø1/4"	ø5/32"	ø3/16", ø1/4"	ø3/16"	ø1/4", ø5/16"
Controlled flow	Flow rate (ℓ/min (ANR))	7	12		38	
	Effective area (mm ²)	0.1	0.2		0.6	
Free flow	Flow rate (ℓ/min (ANR))	100	130	230	290	460
	Effective area (mm ²)	1.5	2	3.5	4.5	7

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

Flow Direction Symbols on Body

Symbol		JIS Symbol	
--------	--	------------	--

Speed Controller for Low Speed Operation With One-touch Fitting, In-line Type (Resin Body) **Series AS-FM**

How to Order

AS 200 1 F M — 06

Body size ●

100	M5 standard
200	1/8 standard
205	1/4 standard

With one-touch fitting ●

For low speed control ●

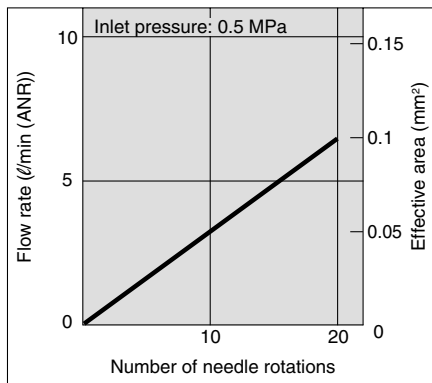
● Applicable tubing O.D.

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"
		09	ø5/16"

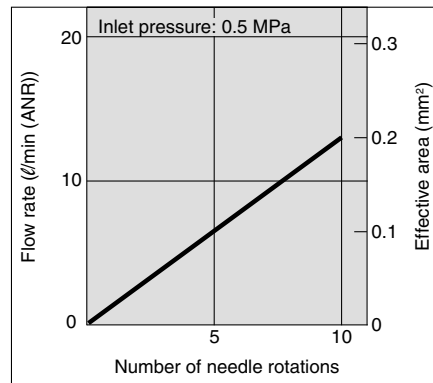
* Use ø1/8" tube.

Needle Valve/Flow Characteristics

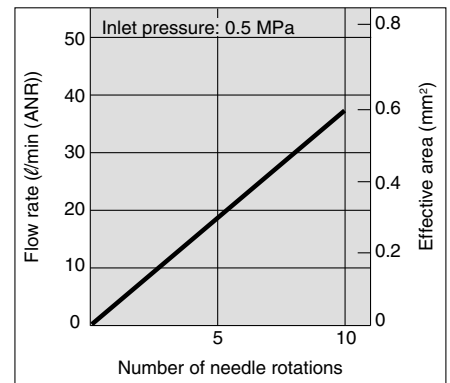
AS1001FM



AS2001FM



AS2051FM



AS

ASP

ASN

AQ

ASV

AK

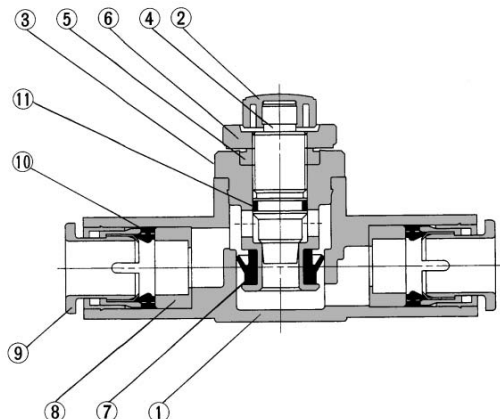
ASS

ASR

ASF

Series AS-FM

Construction



Component Parts

No.	Description	Material	Note
①	Body A	PBT	
②	Handle	PBT ⁽¹⁾	Black
③	Body B	Brass	Electroless nickel plated
④	Needle	Brass	Electroless nickel plated
⑤	Needle guide	Brass	Electroless nickel plated
⑥	Lock nut	Brass ⁽²⁾	Electroless nickel plated
⑦	U seal	HNBR	
⑧	Spacer	POM ⁽³⁾	
⑨	Cassette	POM, Stainless steel ⁽⁴⁾	
⑩	Seal	NBR	
⑪	O-ring	NBR	

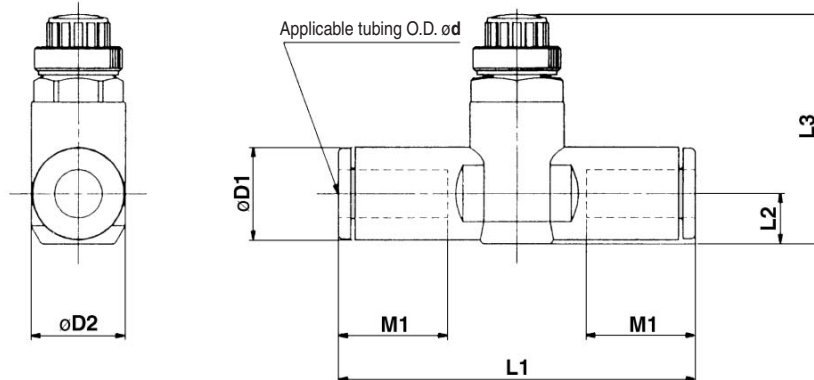
Note 1) AS1001FM type is made of brass (black zinc chromate plated).

Note 2) AS20□1FM type is made of steel.

Note 3) $\phi 3/16"$ is made of brass (electroless nickel plated). AS2001FM-07, AS2051FM ($\phi 6$, $\phi 8$, $\phi 1/4"$, $\phi 5/16"$) are made of PBT.

Note 4) $\phi 3/16"$ is made of POM, stainless steel, and brass (electroless nickel plated).

Dimensions



Metric Size

Model	d	D1	D2	L1	L2	L3		M1	Weight (g)
						Max.	Min.		
AS1001FM-23	3.2	8.4	10	38	4.5	27.7	24.9	12.7	6
AS1001FM-04	4	9.3		39.2	5.2	28.5	25.5		7
AS1001FM-06	6	11.6		40.7	6.2	29.8	26.6		8
AS2001FM-04	4	9.3	11.8	40.7	5.2	32.6	27.6	12.7	12
AS2001FM-06	6	11.6		44.8	6.3	33.7	28.7		13
AS2051FM-06	6	12.8	14.8	53.2	6.7	35.2	30.2	17	26
AS2051FM-08	8	15.2		59.8	8.1	36.5	31.5		31

Inch Size

Model	d	D1	D2	L1	L2	L3		M1	Weight (g)
						Max.	Min.		
AS1001FM-01	1/8"	8.4	10	38	4.5	27.7	24.9	12.7	6
AS1001FM-03	5/32"	9.3		39.2	5.2	28.5	25.5		7
AS1001FM-05	3/16"	11.4		48.7	6.2	27.7	24.7	16.5	8
AS1001FM-07	1/4"	12		40.7				13.7	9
AS2001FM-03	5/32"	9.3	11.8	40.7	5.2	32.6	29.6	12.7	12
AS2001FM-05	3/16"	11.4		50	6.2	33.6	28.6	16.5	18
AS2001FM-07	1/4"	13.2		52.2	7.1	34.5	29.5	17	21
AS2051FM-05	3/16"	11.4	14.8	52.2	6.2	34.6	29.6	16.5	24
AS2051FM-07	1/4"	13.2		54.4	7.1	35.5	30.5	17	26
AS2051FM-09	5/16"	15.2		59.8	8.1	36.5	31.5	18	31

Flow Control Equipment Precautions



Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to main text for more detailed precautions on every series.

Precautions

Selection

Warning

1. Products mentioned in this catalog are not designed for the use as stop valve with zero air leakage.

A certain amount of leakage is allowed in the product's specifications.

Mounting

Warning

1. Check that the lock nut is tightened.

A loose lock nut may cause actuator speed changes.

2. Confirm the degree of rotation of the needle valve.

Products mentioned in this catalog are retainer type so that the needle is not removed completely. Over rotation will cause damage.

3. Do not use tools such as pliers to rotate the handle.

It can cause idle rotation of the handle or damage.

4. Confirm air flow direction.

Mounting backwards is dangerous, because the speed adjustment needle will not work and the actuator may lurch suddenly.

5. Adjust needle by opening the needle slowly after having closed it completely.

Loose needle valves may cause unexpected sudden actuator extension. When needle valve is turned clockwise, it is closed and cylinder speed decreases. When needle valve is turned counter clockwise, it is open and cylinder speed increases.

6. Do not apply excessive force or shock to the body or fittings with an impact tool.

It can cause damage or air leakage.

Series AS-F/FE/FG/FM

Selection

Warning

1. Confirm that PTFE can be used in application.

PTFE powder (Polytetrafluoroethylene resin) is included in the seal material. Confirm if the use of it may cause any adverse effect in the system.

Mounting

Warning

1. To install/remove the Flow Control Equipment, tighten/loosen at wrench flat B as close to the thread as possible using the appropriate wrench.

Do not apply torque at other points as the product may be damaged. Rotate Body A manually for positioning after installation.

2. Do not use universal type fittings for applications involving continuous rotation.

The fitting section may be damaged.

Tightening Torque

Caution

1. The tightening torque for pipe fittings is as shown in the table. As a rule, they should be tightened 2 to 3 turns with a tool after first tightening by hand.

Be careful not to cause damage by over-tightening.

Male thread	Suitable screw torque (N·m)	Hexagon width across flats (mm)	Adjustable spanner nominal (mm)
M3	1/4	4.5	—
M5 10/32-UNF	1/6 turn after hand tightening	8	100
1/8	7 to 9	14	150
1/4	12 to 14	17	200
3/8	22 to 24	21	200
1/2	28 to 30	24	200

Lock Nut Tightening Torque

Caution

1. Suitable screw torque for a hexagon lock nut is shown in the table below. For standard installation, turn 15 to 30° using tool, after fastening by hand. Pay attention not to over torque the product.

Body size	Suitable screw torque (N·m)
M3	0.07
M5	0.3
1/8	1
1/4	1.5
3/8	4
1/2	10

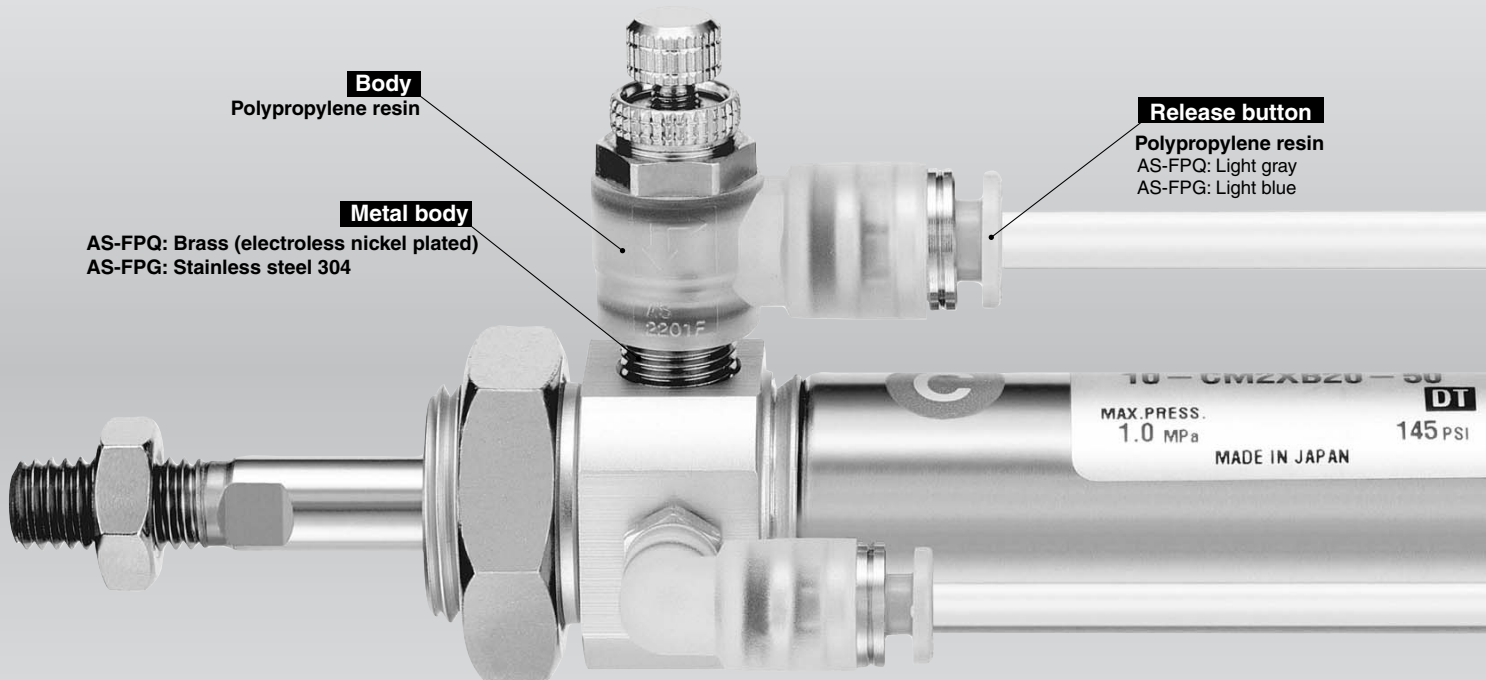
Clean Speed Controller with One-touch Fitting *Series AS-FPQ/AS-FPG*



**AS-FPQ: Brass (electroless nickel plated) and
AS-FPG: Stainless steel 304 are now available as a series.**

AS
ASP
ASN
AQ
ASV
AK
ASS
ASR
ASF

Low particulate generating speed controllers designed for use in clean rooms



Clean Speed Controller
with One-touch Fitting

Series AS-FPQ/FPG

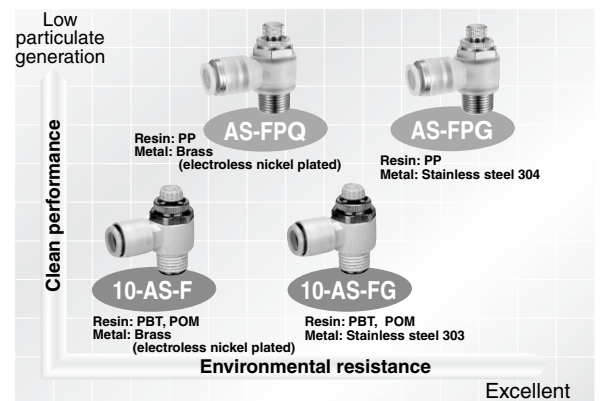


Series AS-FPQ
Brass (electroless nickel plated)



Series AS-FPG
Stainless steel 304

Elbow type	Port size	Applicable tube O.D. (mm)					Applicable cylinder bore size (mm)
		4	6	8	10	12	
AS12□1FP□-M5	M5 x 0.8	●	●	●	●	●	6, 10, 16, 20
AS22□1FP□-01	R 1/8	●	●	●	●	●	20, 25, 32
AS22□1FP□-02	R 1/4	●	●	●	●	●	20, 25, 32, 40
AS32□1FP□-03	R 3/8	●	●	●	●	●	40, 50, 63
AS42□1FP□-04	R 1/2	●	●	●	●	●	63, 80, 100



Clean Speed Controller with One-touch Fitting

Series AS-FPQ/FPG

Elbow Type

AS-FPQ/Brass (electroless nickel plated)

Release button color: Light gray

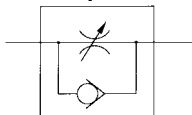


AS-FPG/Stainless steel 304

Release button color: Light blue



JIS symbol



Flow direction symbols on body

	Meter-out type	Meter-in type
Symbol		
JIS symbol		

Model

Elbow type	Port size	Applicable tubing O.D. (mm)					Applicable cylinder bore size (mm)
		4	6	8	10	12	
AS12□1FP□-M5	M5 x 0.8	●	●				6, 10, 16, 20
AS22□1FP□-01	R 1/8	●	●	●			20, 25, 32
AS22□1FP□-02	R 1/4	●	●	●	●		20, 25, 32, 40
AS32□1FP□-03	R 3/8		●	●	●	●	40, 50, 63
AS42□1FP□-04	R 1/2				●	●	63, 80, 100

Specifications

Particulate generation grade	Grade 1 Note 1)
Proof pressure	1.5MPa
Maximum operating pressure	1MPa
Minimum operating pressure	0.1MPa
Ambient and fluid temperature	-5 to 60°C (with no freezing)
Number of needle rotations	10 rotations (8 rotations Note 2))

Note 1) Refer to particulate generation grade classifications.

Note 2) For AS12□1FP□

Flow Rate and Effective Area

Model		AS12□1FP□-M5	AS22□1FP□-01	AS22□1FP□-02	AS32□1FP□-03	AS42□1FP□-04
Tubing O.D.	Metric sizes	ø4 ø6	ø4 ø6 ø8	ø4 ø6 ø8 ø10	ø6 ø8 ø10 ø12	ø10 ø12
	Flow rate l/min (ANR)	100	180 230	260 390 460	660 790 920	1580 1710
Controlled (free) flow	Effective area mm ²	1.5	2.7 3.5	4 6 7	10 12 14	24 26

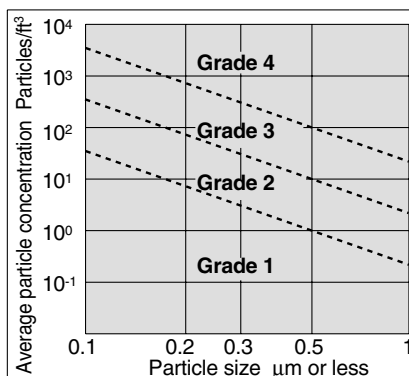
Note) Flow rate values are at a pressure of 0.5MPa, and temperature of 20°C.

Recommended Applicable Tubing

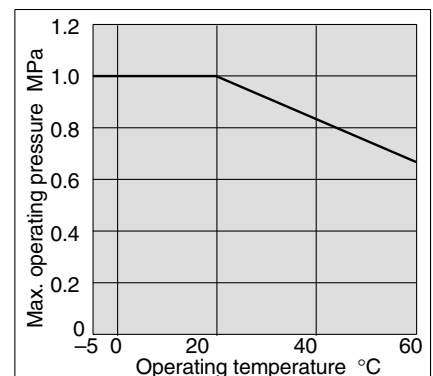
Tubing material	Clean series polyurethane tubing: Series 10
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

Polyurethane tubing: Series TU, Nylon tubing: Series T and Soft nylon tubing: Series TS can also be used. However, the degree of clean performance will decline.

Particulate Generation Grade Classifications



Relation between Operating Temp. and Max. Operating Pressure



How to Order

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
---	-------

Control type

0	Meter-out
1	Meter-in

With One-touch fitting

Clean specifications

Metal parts material

Q	Brass (electoless nickel plated)
G	Stainless steel 304

Applicable tubing O.D. Metric sizes

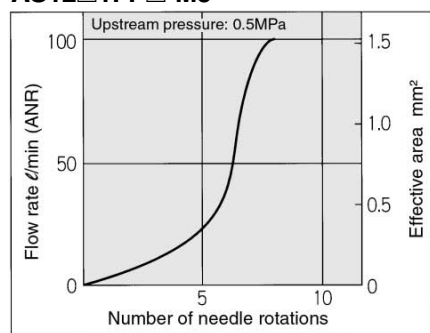
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Port size

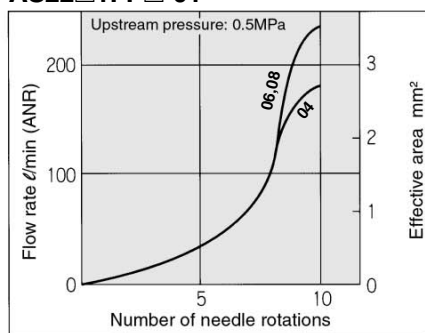
M5	M5 x 0.8
01	1/8
02	1/4
03	3/8
04	1/2

Needle Valve/Flow Characteristics

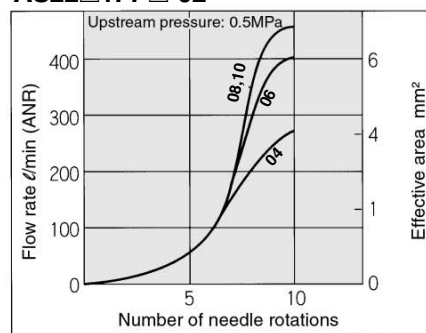
AS12□1FP□-M5



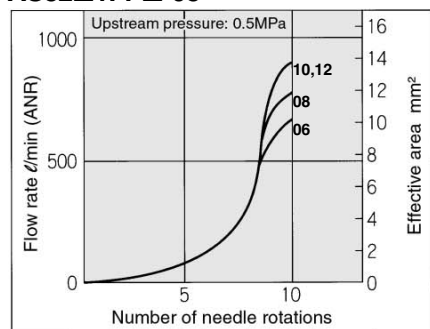
AS22□1FP□-01



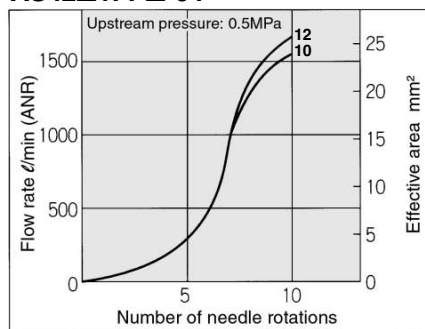
AS22□1FP□-02



AS32□1FP□-03

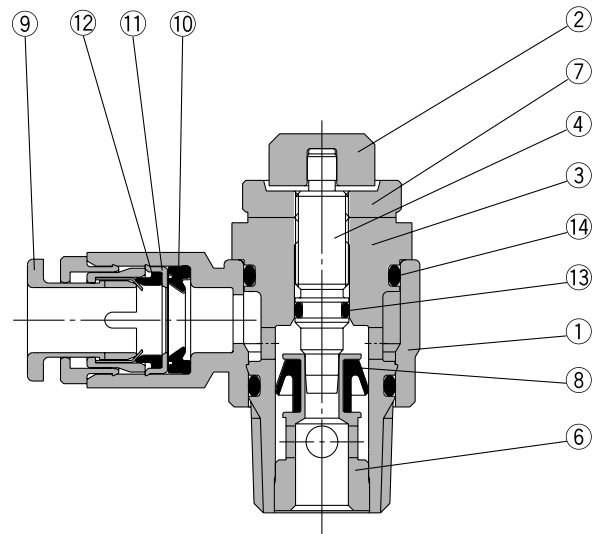
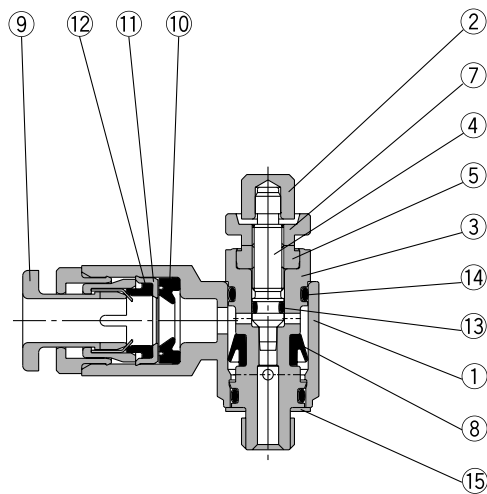


AS42□1FP□-04

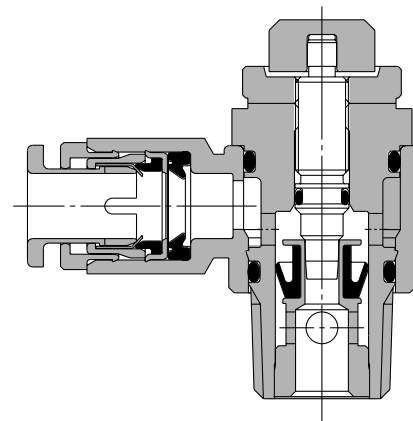
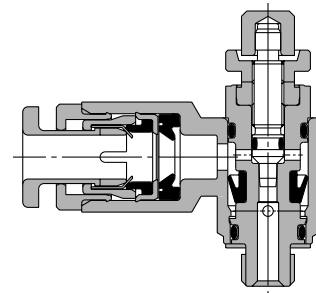


Construction

Meter-out type M5 type



Meter-in type M5 type



AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

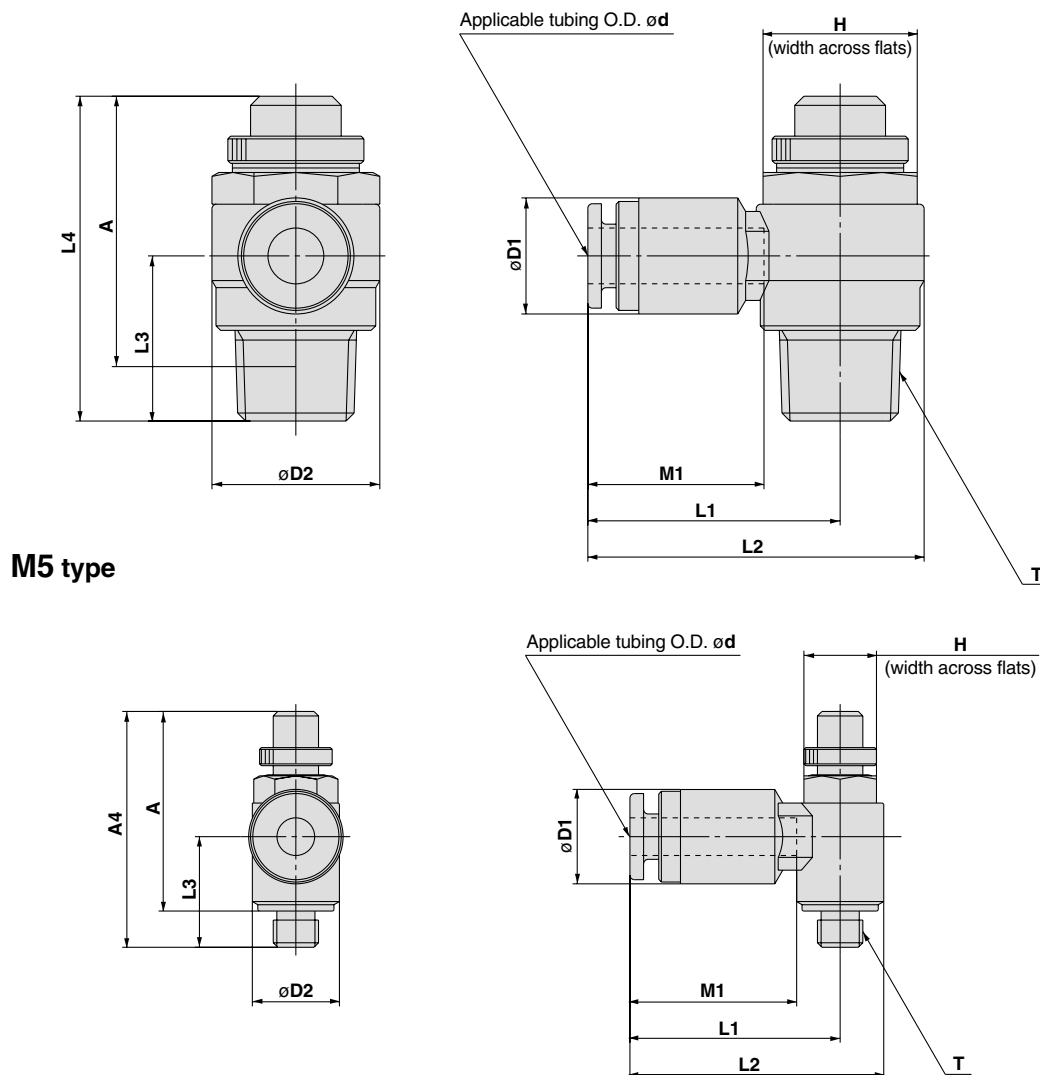
ASF

Component Parts

No.	Description	AS□□□1FPQ		AS□□□1FPG	
		Material	Note	Material	Note
①	Body A	Polypropylene resin		Polypropylene resin	
②	Knob	Brass	Electroless nickel plated	Stainless steel 304	
③	Body B	Brass	Electroless nickel plated	Stainless steel 304	
④	Needle	Brass	Electroless nickel plated	Stainless steel 304	
⑤	Needle guide	Brass	Electroless nickel plated	Stainless steel 304	
⑥	Seat ring	Brass	Electroless nickel plated	Stainless steel 304	
⑦	Lock nut	Brass	Electroless nickel plated	Stainless steel 304	
⑧	U seal	HNBR		HNBR	
⑨	Cassette	Polypropylene resin Stainless steel 304, Brass	Brass parts are electroless nickel plated	Polypropylene resin Stainless steel 304	
⑩	Seal	NBR		NBR	
⑪	Stopper	Stainless steel 304		Stainless steel 304	
⑫	Cushion	NBR		NBR	
⑬	O-ring	NBR		NBR	
⑭	O-ring	NBR		NBR	
⑮	Gasket	NBR, Stainless steel 304		NBR, Stainless steel 304	

Series AS-FPQ/FPG

Dimensions



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*
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
AS12□1FP□-M5-06	6			12.8		24.2	29						19.4	8	8
AS22□1FP□-01-04	4	R 1/8	12	10.4	14.2	25.3	32.4	14.3	36.4	31.4	32.4	27.4	18.4	17	17
AS22□1FP□-01-06	6			12.8		26.3	33.4						19.4	18	18
AS22□1FP□-01-08	8			15.2		28.5	35.6						21.9	20	20
AS22□1FP□-02-04	4	R 1/4	17	10.4	18.5	27.8	37	18.2	40.8	35.8	34.8	29.8	18.4	33	33
AS22□1FP□-02-06	6			12.8		27.8	37						19.4	33	33
AS22□1FP□-02-08	8			15.2		30.4	39.6						21.9	35	35
AS22□1FP□-02-10	10			18.5		38.3	47.5	20					23.8	38	38
AS32□1FP□-03-06	6	R 3/8	19	12.8	23	30.4	41.9	20.9	46.9	41.9	40.6	35.6	19.4	59	55
AS32□1FP□-03-08	8			15.2		32.9	44.4						21.9	61	57
AS32□1FP□-03-10	10			18.5		34.6	46.1						23.8	63	59
AS32□1FP□-03-12	12			20.9		35.8	47.3						25	65	61
AS42□1FP□-04-10	10	R 1/2	24	18.5	28.6	36.6	50.9	25.4	55.6	50.6	47.4	42.4	23.8	107	100
AS42□1FP□-04-12	12			20.9		38.2	52.5						25	109	102

Note 1) Reference dimension for threads after installation

Note 2) 1* is the weight for type AS□2□1FPQ (brass + electroless nickel plated), 2* is the weight for type AS□2□1FPG (Stainless steel 304).



Specific Product Precautions 1

Be sure to read before handling.

Selection

⚠ Warning

1. Confirm the specifications.

The products appearing in this catalog are designed for use only in compressed air systems.

Do not use outside the specified ranges of pressure, temperature, etc., as this may cause damage or malfunction. (Refer to specifications.)

Please consult with SMC if fluids other than compressed air are to be used.

2. This product cannot be used as a stop valve requiring zero air leakage.

A certain amount of leakage is allowed in the product's specifications.

Handling

⚠ Caution

1. Store away from direct sunlight at 40°C or less.
2. Open the inner package of the double packaging in a clean room or other clean environment.

Installation and Adjustment

⚠ Warning

1. Allow space for maintenance.

Allow the space necessary for maintenance and inspections

2. Tighten screws with the proper tightening torque.

When mounting the product, tighten screws with the recommended torque.

3. Install and remove by tightening or loosening the hexagon wrench flats on Body B with a suitable wrench.

Damage may occur if any other part is used. Adjustment of the position after mounting should be performed by turning Body A by hand.

4. Confirm that the lock nut is not loose.

If the lock nut is loose, there may be dangerous changes in actuator speed.

5. The number of opening and closing rotations of the needle valve should be adjusted within the range of the specifications.

Since it has a pull-out stop mechanism, it will not rotate past the limit. Confirm the number of rotations for the product being used, as excessive turning of the needle will cause damage.

6. Mount after confirming the direction of flow.

Mounting backwards is dangerous, because the speed adjustment needle will not work and the actuator may lurch suddenly.

7. To adjust the speed, start with the needle in the completely closed position, and then adjust by opening gradually.

When the needle valve is opening, the actuator may lurch suddenly creating a dangerous situation.

Moreover, the needle valve is closed by turning clockwise, and opened by turning counterclockwise. Therefore, the actuator speed is reduced by turning clockwise and increased by turning counterclockwise.

Installation and Adjustment

⚠ Caution

1. Before mounting confirm the model and size, etc. Also confirm that there are no scratches, nicks or cracks in the product.
2. When tubing is connected, consider factors such as changes in the tubing length due to pressure, and allow sufficient leeway.
3. Mount so that fittings and tubing are not subjected to twisting, pulling or moment loads. This can cause damage to fittings and flattening, bursting or disconnection of tubing, etc.

Piping

⚠ Caution

1. Preparation before piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe.

2. Be sure to wrap pipe tape around the taper threads. Using without pipe tape can cause air leakage.

3. Wrapping of pipe tape

When screwing together pipes, fittings, etc., be certain that chips from the pipe threads and sealant material do not get inside the piping.

Further, when pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.

Tightening Torque

⚠ Caution

1. The proper tightening torque for pipe fittings is as shown in the table. As a rule, they should be tightened 2 to 3 turns with a tool after first tightening by hand.

Furthermore, over-tightening can cause air leakage due to broken threads and deformation of the gasket, etc. Under-tightening can cause loose threads and air leakage, etc.

Male thread	Proper tightening torque N·m	Width across flats mm	Nominal size of adjustable angle wrench mm
M5	1/6 turn after hand tightening	8	100
1/8	7 to 9	12	150
1/4	12 to 14	17	200
3/8	22 to 24	19	200
1/2	28 to 30	24	200

Lock Nut Tightening Torque

⚠ Caution

1. The proper tightening torque for the hexagon lock nut is as shown in the table. As a rule, it should be tightened an additional 15 to 30° with a tool after first tightening by hand. Be careful not to cause damage by over tightening.

Body size	Proper tightening torque N·m
M5	0.3
1/8	1
1/4	1.5
3/8	4
1/2	10

AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

ASF



Specific Product Precautions 2

Be sure to read before handling.

Installation and Removal of Tubing

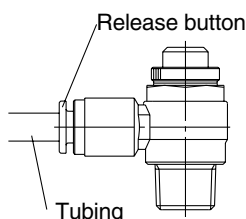
Caution

1. Installation of tubing

- 1) Using tube cutters TK-1, 2 or 3, take a tube having no flaws on its periphery and cut it off at a right angle. Do not use pinchers, nippers or scissors, etc. The tubing might be cut diagonally or flattened, making installation impossible or causing problems such as disconnection and leakage.
- 2) Hold the tube and push it in slowly, inserting it securely all the way into the fitting.
- 3) After inserting the tubing, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, problems such as leakage or disconnection of the tubing can occur.

2. Removal of tubing

- 1) Push in the release button sufficiently, pressing the collar evenly around its circumference.
- 2) Pull out the tubing while holding down the release button so that it does not pop out. If the release button is not pressed down sufficiently, there will be increased bite on the tubing and it will become more difficult to pull it out.
- 3) When the removed tubing is to be used again, first cut off the section of the tubing which has been chewed.
Using the chewed portion of the tube as it is can cause problems such as leakage or difficulty in removing the tubing.



Operating Environment

Warning

1. Do not use in environments or locations where there is a danger of the speed controller being adversely affected.
Refer to page 15-17-5 regarding speed controller materials.
2. Provide shade in locations which receive direct sunlight.
3. Do not operate in locations where vibration or impact occurs.
4. Provide shielding in locations near heat sources.
When there are heat sources in the surrounding area, the product's temperature may rise due to radiated heat and exceed its operating temperature range. Block off the heat with a cover, etc.
5. Do not use in locations where static electric charges will be a problem. Please consult with SMC regarding use in this kind of environment.
6. Do not use in locations where spatter occurs.
There is a danger of spatter causing a fire. Please consult with SMC regarding use in this kind of environment.

Maintenance

Warning

1. Maintenance work

Compressed air can be dangerous if handled improperly. Element replacement and other maintenance, etc., should be performed by personnel having sufficient knowledge and experience pertaining to pneumatic equipment, while also adhering to the product specifications.

2. Pre-maintenance checks

When the product is to be removed, be sure to shut off the supply pressure, release compressed air in the pipelines and confirm an atmospheric release condition before proceeding.

3. Post-maintenance checks

After mounting, repair or renovation, supply compressed air and perform suitable function and leak tests. If an audible leak is detected or equipment does not operate properly, stop operation and confirm that mounting is correct.

4. Disassembly and modification is prohibited.

Do not disassemble or modify the main unit.

Precautions on Use of Other Tubing Brands

Caution

1. When using tubing brands other than SMC, confirm that the tubing outside diameter tolerances satisfy the following specifications.

1) Polyurethane tubing	Max. +0.15mm Max. -0.2mm
2) Nylon tubing	Max. ±0.1mm
3) Soft nylon tubing	Max. ±0.1mm

Do not use tubing if the outside diameter tolerance is not satisfied. It may not be possible to connect the tubing, or air leakage or disconnection may occur after connection.