

Speed Controller with One-touch Fittings

Series AS

Elbow Style, Universal Style

RoHS

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 style 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"

Operating pressure 1MPa max.

Accepts

Nylon, Soft nylon and Polyurethane tubing.

Retainer prevents accidental loss of needle

Optional: 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 easier control at lower speed.

Model

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

Note 1) *Only elbow style.

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

They are distinguished by the lock nut. The lock nut on the meter-out type is zinc chromated, while the meter-in type is black zinc chromate plated.

Note 3) ●: Brass parts are electroless nickel plated, provided as standard (N specifications).

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

Specifications

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

Note 1) AS12□1F-M5, AS12□1F-U10/32

AS13□1F-M5, AS13□1F-U10/32

Note 2) Pay attention to the maximum operating pressure when soft nylon or Polyurethane is used. (Refer to p.7-146 and 7-147 in "Best Pneumatics" for further information.)

Note 3) Nickel plated AS12□1F and AS13□1F are standard, not equipped with a seal.

Note 4) Brass parts are all electroless nickel plated.

Air Flow/Effective Area

Model		AS12□1F-M3 AS13□1F-M3 AS12□1F-M5-02	AS12□1F-M5 AS13□1F-M5	AS22□1F-01 AS23□1F-01	AS22□1F-02 AS23□1F-02			AS32□1F AS33□1F			AS42□1F AS43□1F		
Tube O.D.	Metric size	ø2, ø3.2, ø4	ø3.2, ø4, ø6	ø3.2, ø4 ø6, ø8, ø10	ø4 ø6	ø8, ø10		ø6 ø8	ø10, ø12		ø10	ø12	
	Inch size	ø1/8", ø5/32"	ø1/8", 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 (Free) flow	Air (ℓ/min(ANR))	20	100	180	230	260	390	460	660	790	920	1580	1710
	Eff. area (mm ²)	0.3	1.5	2.7	3.5	4	6	7	10	12	14	24	26

Notes) Supply pressure: 0.5MPa, Temperature: 20°C.

U10/32 has the same specification as M5.

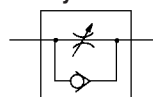
Elbow style



Universal style



JIS Symbol



Indication of air flow direction on body

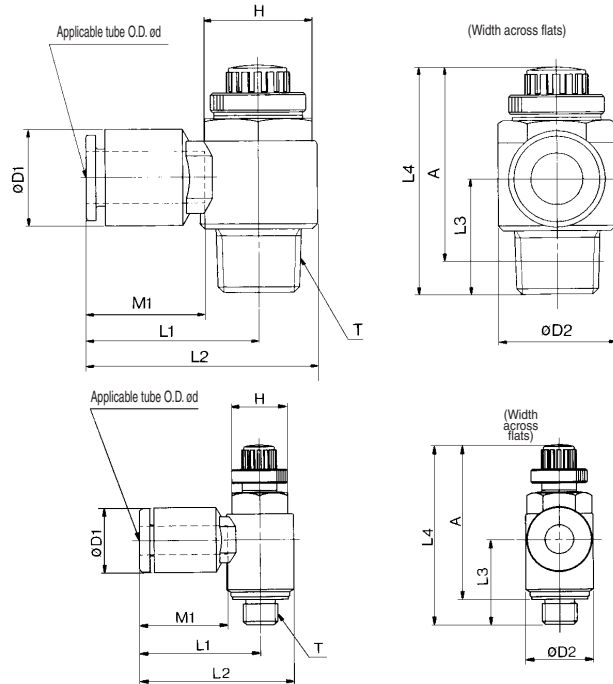
	Meter-out	Meter-in
Symbol		
JIS Symbol		

With One-touch Fittings: Elbow/Universal Style *Series AS*



Elbow Style

M3 port
M5 port
U10/32 port



Metric

Model	Tube O.D. d	T	H ⁽¹⁾	D1	D2	L1	L2	L3	L4		A ⁽²⁾		M1	Weight (g)
									MAX.	MIN.	MAX.	MIN.		
AS12□1F-M3-02	2	M3	5.5	6	5.2	11.4	—	11	26.8	24.3	24.3	21.8	8.8	2.4
AS12□1F-M3-02	2	M5	7	—	—	—	—	11.5	27.3	24.8	—	—	—	3
AS12□1F-M3-23	3.2	M3	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	M3	5.5	9.3	—	—	—	10	—	—	—	—	—	—
AS12□1F-M5-23	3.2	M5	8.4	—	—	—	—	12.3	—	—	—	—	12.7	—
AS12□1F-U10/32-23	3.2	10-32UNF	8.4	—	—	—	—	12.3	—	—	—	—	12.7	—
AS12□1F-M5-04	4	M5	9.3	9.6	17.3	22.1	—	28.6	25.8	25	22.2	—	7	—
AS12□1F-U10/32-04	4	10-32UNF	9.3	—	—	—	—	—	—	—	—	—	—	—
AS12□1F-M5-06	6	M5	11.6	—	18.1	22.9	11.7	—	—	—	—	—	13.5	—
AS12□1F-U10/32-06	6	10-32UNF	11.6	—	—	—	—	—	—	—	—	—	—	—
AS22□1F-01-23	3.2	R(PT) 1/8	9.3	20.4	27.5	—	—	—	—	—	—	—	12.7	16
AS22□1F-01-04	4		9.3	20.4	27.5	—	—	—	—	—	—	—	—	—
AS22□1F-01-06	6		11.6	20.4	27.5	—	—	—	—	—	—	—	—	—
AS22□1F-01-08	8		15.2	25.3	32.4	—	—	—	—	—	—	—	18.5	19
AS22□1F-01-10	10	R(PT) 1/4	18.5	33.1	40.2	14.1	—	—	—	—	—	—	21	21
AS22□1F-02-04	4		10.4	25.2	34.4	—	—	—	—	—	—	—	16	—
AS22□1F-02-06	6		12.8	25.2	34.4	—	—	—	—	—	—	—	17	—
AS22□1F-02-08	8		15.2	27.2	36.4	—	—	—	—	—	—	—	18.5	34
AS22□1F-02-10	10	R(PT) 3/8	18.5	33.9	43.2	19.5	—	—	—	—	—	—	21	36
AS32□1F-02-06	6		12.8	27.8	39.3	—	—	—	—	—	—	—	17	60
AS32□1F-02-08	8		15.2	29.5	41	—	—	—	—	—	—	—	18.5	63
AS32□1F-02-10	10		18.5	31.8	43.3	—	—	—	—	—	—	—	21	67
AS32□1F-02-12	12	R(PT) 1/2	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		15.2	29.5	41	—	—	—	—	—	—	—	18.5	57
AS32□1F-03-10	10		18.5	31.8	43.3	—	—	—	—	—	—	—	21	59
AS32□1F-03-12	12	R(PT) 3/4	20.9	32.8	44.3	—	—	—	—	—	—	—	22	61
AS42□1F-04-10	10		24	33.6	47.9	—	—	—	—	—	—	—	21	100
AS42□1F-04-12	12		28.6	34.6	48.9	—	—	—	—	—	—	—	22	101

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

Note 2) Reference thread dimensions after being screwed in.

Inch

Model	Tube O.D. d	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	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	8.4	—	—	—	—	—	—	—	—	—	—	—
AS12□1F-U10/32-01	1/8"	10-32UNF	8.4	—	—	—	—	—	—	—	—	—	—	—
AS12□1F-M5-03	5/32"	M5	9.3	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"	10-32UNF	9.3	—	—	—	—	—	—	—	—	—	—	—
AS22□1F-01-01	1/8"	1/8	9.3	20.4	27.5	—	—	—	—	—	—	—	12.7	—
AS22□1F-01-03	5/32"		9.3	20.4	27.5	—	—	—	—	—	—	—	—	—
AS22□1F-01-05	3/16"		11.4	23.1	30.2	—	—	—	—	—	—	—	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	15.2	25.3	32.4	14.1	—	—	—	—	—	—	21	21
AS22□1F-02-03	5/32"		10.4	25.2	34.4	—	—	—	—	—	—	—	16	—
AS22□1F-02-05	3/16"		11.4	24.9	34.2	17.7	—	—	—	—	—	—	17	—
AS22□1F-02-07	1/4"		13.2	25.2	34.5	—	—	—	—	—	—	—	18.5	34
AS22□1F-02-09	5/16"	3/8	15.2	27.2	36.4	19.5	—	—	—	—	—	—	21	36
AS22□1F-02-11	3/8"		17.9	33.9	43.2	19.5	—	—	—	—	—	—	21	36
AS32□1F-02-07	1/4"		13.2	27.8	39.3	—	—	—	—	—	—	—	17	60
AS32□1F-02-09	5/16"		15.2	29.5	41	—	—	—	—	—	—	—	18.5	63
AS32□1F-02-11	3/8"	1/2	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"		15.2	29.5	41	—	—	—	—	—	—	—	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	33.6	47.9	—	—	—	—	—	—	—	21	100
AS42□1F-04-13	1/2"		28.6	35.2	49.5	—	—	—	—	—	—	—	22	101

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

Note 2) Reference thread dimensions after being screwed in.

Elbow Style

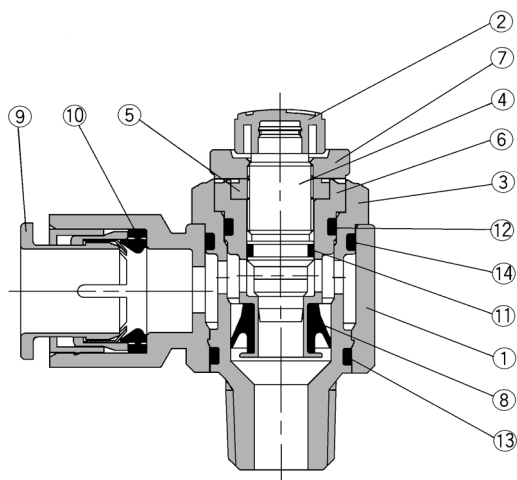
File	Model	Port size	Detail No.					
			Tube O.D.					
			3.2	4	6	8	10	12
SAS21F1N	AS12□1F-M3-□	M3	#1	#2	—	—	—	—
	AS12□1F-M5-□	M5	#3	#4	#5	—	—	—
	AS22□1F-01-□S	R(PT)1/8	#6	#7	#8	#9	#10	—
	AS22□1F-02-□S	R(PT)1/4	—	#11	#12	#13	#14	—
	AS32□1F-03-□S	R(PT)3/8	—	—	#15	#16	#17	#18
	AS42□1F-04-□S	R(PT)1/2	—	—	—	—	#19	#20

Series AS

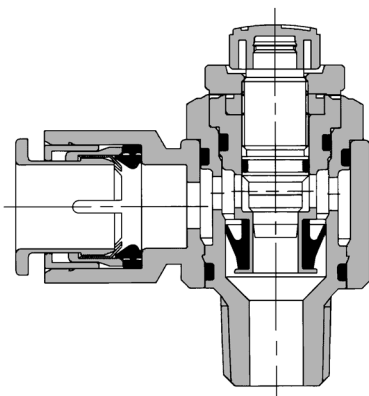
Construction

Elbow style

Meter-out AS3201F-02



Meter-in AS3211F-02



Component Parts

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

Note 1) AS12□1F-M3-02 and AS12□1F-M5-02 are made of electroless nickel plated brass.

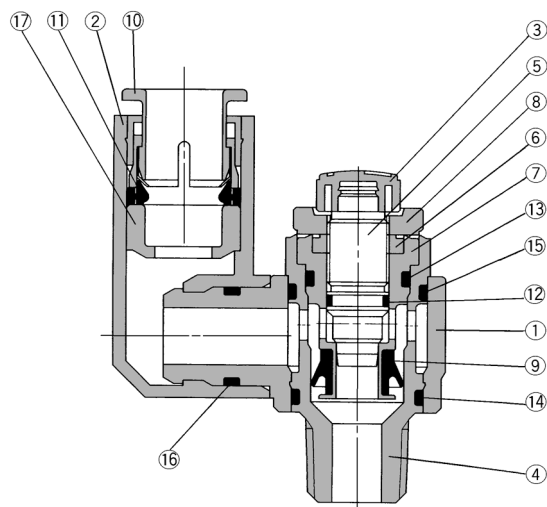
Note 2) AS12□1F-M3: Stainless

Note 3) AS22□1F, AS32□1F-02: Electroless nickel plated

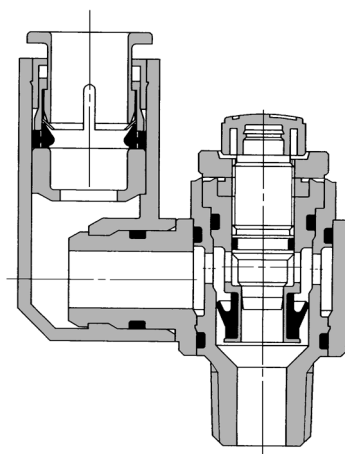
Note 4) Meter-in type: Black zinc chromated

Universal style

Meter-out AS3301F-02



Meter-in AS3311F-02



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	See Note 2
⑧	Lock nut	Steel	Zinc chromated ⁽³⁾
⑨	U-packing	HNBR	
⑩	Cassette	POM, Stainless steel	
⑪	Packing	NBR	
⑫	O ring	NBR	
⑬	O ring	NBR	
⑭	O ring	NBR	
⑮	O ring	NBR	
⑯	O ring	NBR	
⑰	Spacer	POM	
⑱	Gasket	NBR, Stainless steel	

Note 1) AS13□1F-M3: Stainless

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

Note 3) Meter-in type: Black zinc chromated