

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)

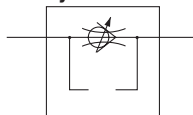
Speed control is easy, and uniform speed control is possible.

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	260	390	460
	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

Series AS-FM

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"

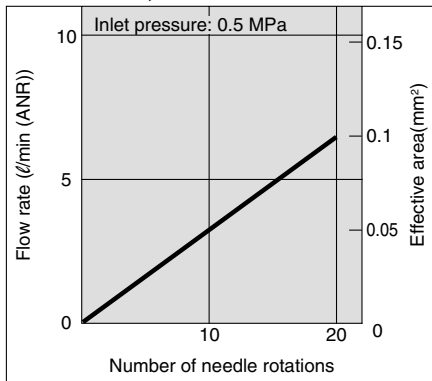
* Use ø1/8" tube.

Port size

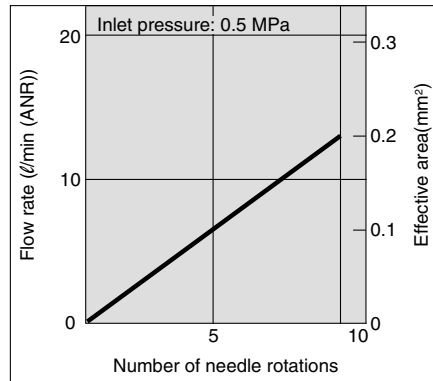
M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4

Needle Valve/Flow Characteristics

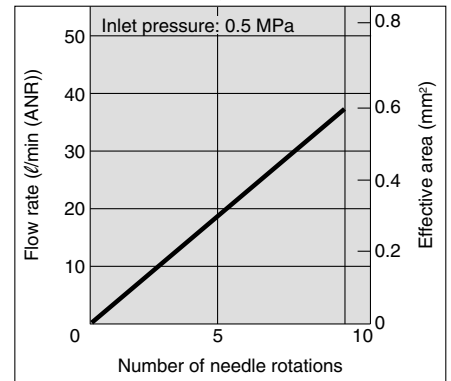
**AS1201FM, AS1211FM
AS1301FM, AS1311FM**



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



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

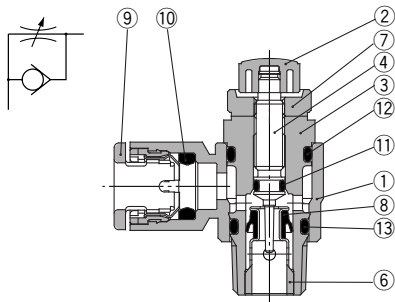


Speed Controller for Low Speed Operation With One-touch Fitting, Elbow Type/Universal Type (Resin Body) **Series AS-FM**

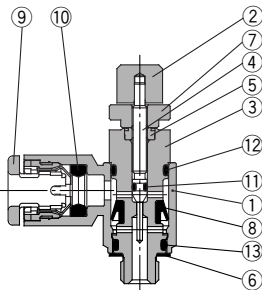
Construction: Elbow Type

Meter-out type

JIS Symbol

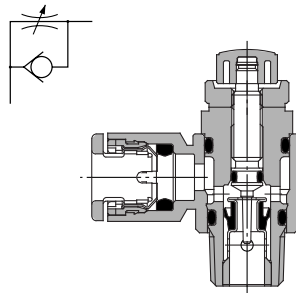


M5 type U10/32 type

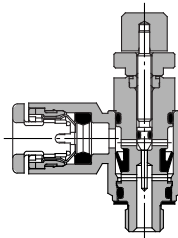


Meter-in type

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.

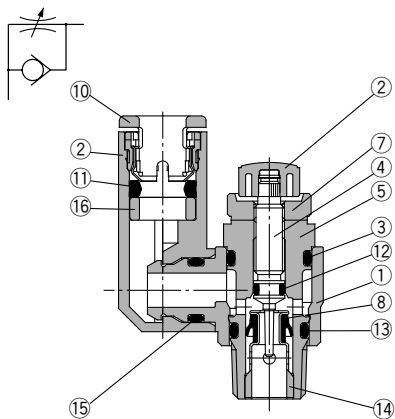
Note 2) AS22□1FM type is made of steel.

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

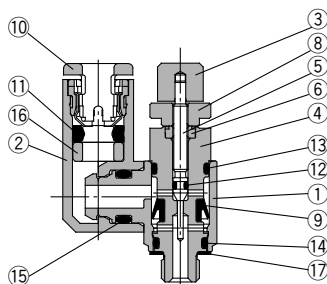
Construction: Universal Type

Meter-out type

JIS Symbol

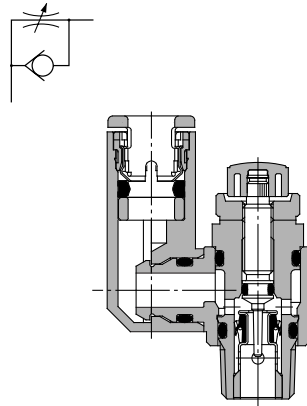


M5 type U10/32 type

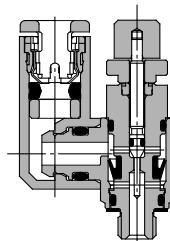


Meter-in type

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.

AS

ASP

ASN

AQ

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ASS

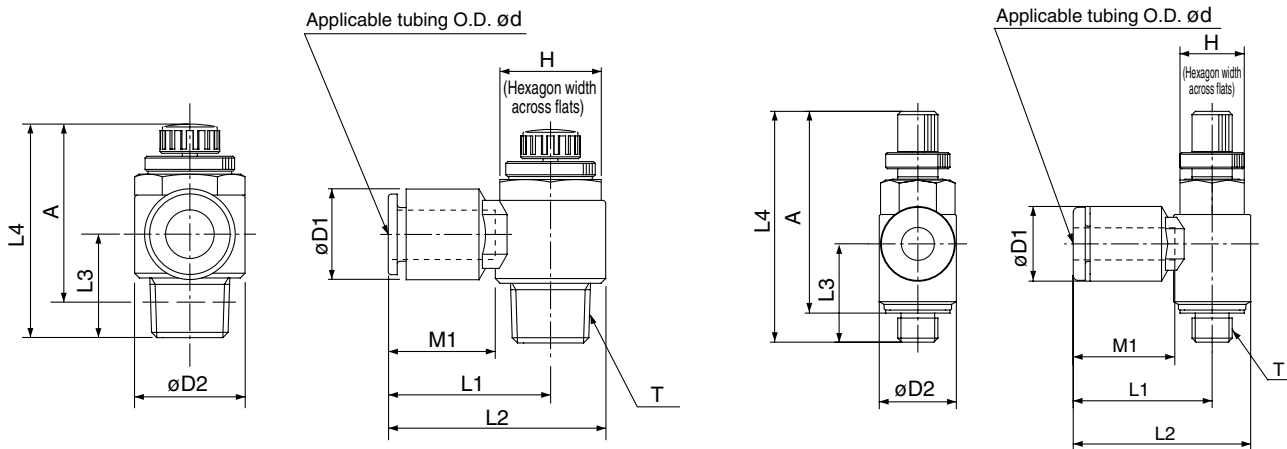
ASR

ASF

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		22.1								
AS12□1FM-M5-06	6			11.6		22.9								
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		27.5								
AS22□1FM-01-06	6			11.6		27.5								
AS22□1FM-01-08	8			15.2		25.3	32.4						18.5	19
AS22□1FM-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□1FM-02-06	6			12.8		34.4	17							
AS22□1FM-02-08	8			15.2		36.4	18.5						34	
AS22□1FM-02-10	10			18.5		43.2	20.0						36	

* Reference dimensions for M5 and R threads after installation.

Inch Size

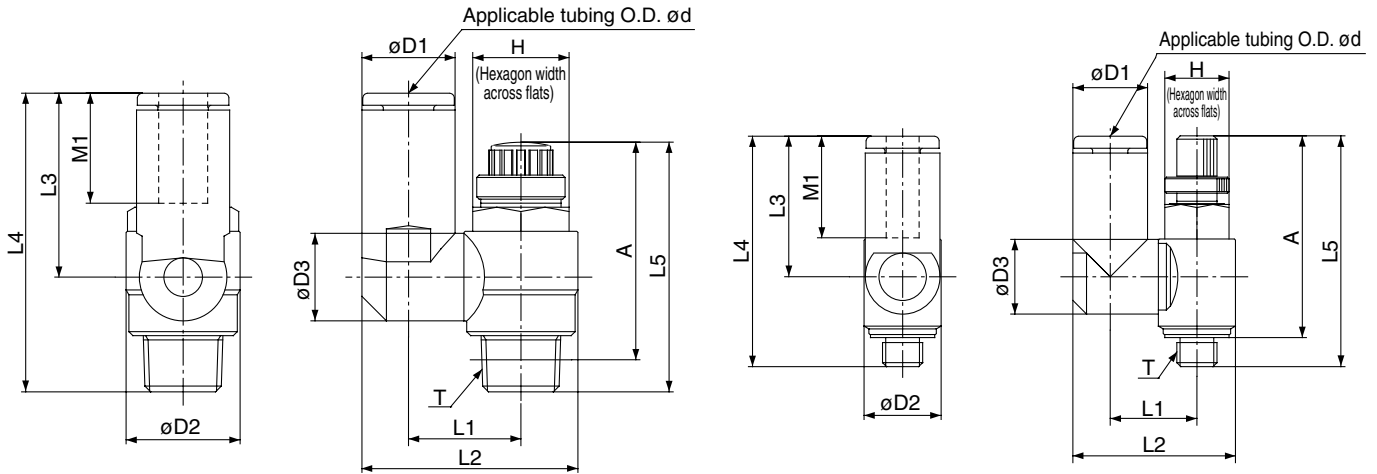
Model	d	T	H	D1	D2	L1	L2	L3	L4		A*		M1	Weight (g)
									Max.	Min.	Max.	Min.		
AS12□1FM-U10/32-01	1/8"	10-32 UNF	8	8.4	9.6	17.3	22.1	12.3	33.8	28.8	30.1	25.1	12.7	7
AS12□1FM-U10/32-03	5/32"			9.3		22.1								
AS12□1FM-U10/32-05	3/16"			11.4		26.1								
AS12□1FM-U10/32-07	1/4"			12		18.3	23.1						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"			9.3		27.5								
AS22□1FM-N01-05	3/16"			11.4		30.2								
AS22□1FM-N01-07	1/4"			13.2		23.9	31						18.5	19
AS22□1FM-N01-09	5/16"			15.2		25.3	32.4	15					21	21
AS22□1FM-N02-03	5/32"	NPT 1/4	17.5	10.4	18.5	25.2	34.4	18.2	40.4	35.4	34.4	29.4	16	32
AS22□1FM-N02-05	3/16"			11.4		34.2	17							
AS22□1FM-N02-07	1/4"			13.2		34.5	18.5						34	
AS22□1FM-N02-09	5/16"			15.2		36.4	20						36	
AS22□1FM-N02-11	3/8"			17.9		33.9	43.2						21	

* 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							21.4		20.6	31.8	13.5
AS13□1FM-M5-06	6			11.6				21.4							20.6		31.8	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				24.9							24.9		37.2	13.5	
AS23□1FM-01-06	6			11.6				24.9							22.9		37.2	18.5	
AS23□1FM-01-08	8			12.9		16.2	30.9	28.2	41.7										
AS23□1FM-02-04	4	R 1/4	18.5	10.4	18.5	10.9	16.2	30.6	21.9	40.1	40.4	35.4	34.4	29.4	16	33			
AS23□1FM-02-06	6			12.9				34							25.2		42.6	17	
AS23□1FM-02-08	8			15.2				35.2							28.2		45.6	18.5	
AS23□1FM-02-10	10			12.9		18.3	35.2	28.2	48.4						21	40			

* 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							21.3		23.3	34.5	16.5
AS13□1FM-U10/32-05	3/16"			11.4				21.3							23.3		34.5	16.5	
AS13□1FM-U10/32-07	1/4"			12		21.6	20.7	31.9							13.7				
AS23□1FM-N01-01S	1/8"	NPT 1/8	12.7	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-N01-03S	5/32"			9.3				24.9							24.9		31.8	16.5	
AS23□1FM-N01-05S	3/16"			11.4				24.9							23.9		37.2	18.5	
AS23□1FM-N01-07S	1/4"			13.2		29.9	25.6	37.2							19				
AS23□1FM-N01-09S	5/16"			15.2		30.9	28.2	41.7							21	21			
AS23□1FM-N02-03S	5/32"	NPT 1/4	17.5	10.4	18.5	10.9	16.2	30.6	21.9	40.1	40.4	35.4	34.4	29.4	16	32			
AS23□1FM-N02-05S	3/16"			11.4				31.1							23.9		42.6	17	
AS23□1FM-N02-07S	1/4"			13.2				34.2							25.6		45.6	18.5	
AS23□1FM-N02-09S	5/16"			15.2		12.9	18.3	35.2	28.2	48.4					21	39			
AS23□1FM-N02-11S	3/8"			17.9			20.2	38.7	31	47					21	40			

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