

Speed Controller: Standard Type Elbow Type (Metal Body)

AS Series



Minimizes installation time and cost

Fittings and tubing are not necessary because this type screws directly into the actuator. Thus, piping labor and cost can be eliminated.

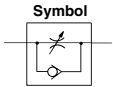
Body swivels 360°

Swivel type allows free setting of piping.

Speed may be accurately controlled even at low speeds.

Able to control and set a constant speed easily.

Retainer prevents accidental loss of needle.



Made to Order
(For details, refer to page 647.)

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

Specifications

Specifications	Model	AS1200-M3	AS1400-M3	AS12□0-M5	AS12□0-U10/32	AS22□0-01	AS22□0-02	AS32□0-03	AS42□0-04
Port size		M3 x 0.5		M5 x 0.8	10-32 UNF	1/8	1/4	3/8	1/2
Fluid		Air							
Proof pressure		1.05 MPa		1.5 MPa					
Max. operating pressure		0.7 MPa		1 MPa					
Min. operating pressure		0.1 MPa		0.1 MPa					
Ambient and fluid temperature		-5 to 60°C (No freezing)							
Option		—		Round lock nut		With seal, Round lock nut, Nickel plated			
Weight (g)		3	6	10	29	64	106	181	181
Controlled flow	Flow rate L/min (ANR)	20		105	230	460	920	1700	
Free flow	Sonic conductance dm ³ /s/bar	0.06		0.32	0.7	1.4	2.8	5.2	
	Controlled flow	0.2		0.2	0.25	0.3	0.25	0.25	
Critical pressure ratio	Controlled flow	0.2		0.2	0.25	0.3	0.25	0.25	
	Free flow	0.4		0.4	0.2	0.3	0.2	0.3	

Note 1) Flow rate values are measured at 0.5 MPa and 20°C.
 Note 2) Meter-in type not available on AS1200-M3, AS1400-M3.
 Note 3) Distinction between meter-out/meter-in types by appearance. Those are distinguished by the lock nut. The meter-out type is zinc chromated (the round lock nut is electroless nickel plated), while the meter-in type is black zinc chromate plated.
 Note 4) AS12□0, AS1400, AS22□0, AS32□0: Brass parts are electroless nickel plated, provided as standard. (N specifications)

How to Order

AS 2 2 0 0 - 01 - S -

Body size

1	M3, M5 standard
2	1/8, 1/4 standard
3	3/8 standard
4	1/2 standard

Type

2	Direct cylinder elbow type
4	Direct cylinder flat elbow type

Control type

0	Meter-out
1	Meter-in

Thread type

Symbol	Cylinder side	Tube side
	Nii	R
Metric thread (M3, M5)		
Unified thread (10-32 UNF)		
N	NPT	
F	R #1	G #2

Made to Order
Refer to page 647 for details.

Lock nut option

Nii	Hexagon lock nut
J	Round lock nut

Option

Nii	None
S	With seal
N	Electroless nickel plated (AS42□0 only)

* If more than one option is required, write option part numbers in the order of "S", "N".
 Note) M3 and M5 sizes: s (with seal) is not necessary.

Bore size

Symbol	Bore size	Applicable series
M3	M3 x 0.5	AS1200-M3 AS1400-M3
M5	M5 x 0.8	AS12□0-M5
U10/32	10-32 UNF	AS12□0-U10/32
01	1/8	AS22□0-01
02	1/4	AS22□0-02
03	3/8	AS32□0-03
04	1/2	AS42□0-04

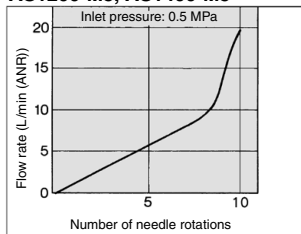
*1 When using a G female thread, be sure to select the option with a seal (S) as the thread requires sealant. Also, if a G thread is required for on the cylinder side, it will need to be special ordered, so please contact SMC separately for details.
 *2 The R thread can be screwed into the G female thread.



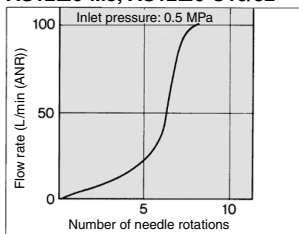
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

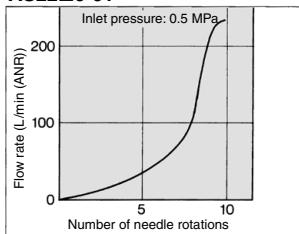
AS1200-M3, AS1400-M3



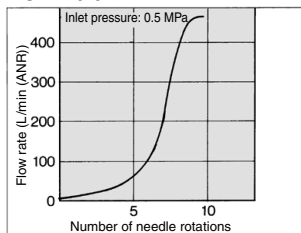
AS12□0-M5, AS12□0-U10/32



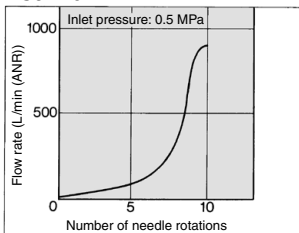
AS22□0-01



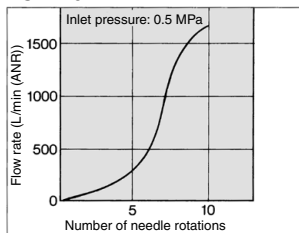
AS22□0-02



AS32□0



AS42□0



⚠ Caution

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

Made to Order



Lubricant: Vaseline

X12

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

X21

Ex.) AS2200-01-X12

Ex.) AS2200-01-X21

Note 1) Not particle-free
Note 2) This product is a restrictor without a check valve (no control direction).
Be aware that all part numbers are for a meter-out type; there is no part number for a meter-in type.

Throttle Valve (Without Check Valve)

X214

Ex.) AS2200-01-X214

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

AS-F

TMH

ASD

AS

AS-FE

KE

AS-FG

AS-FP

AS-FM

AS-D

AS-T

ASP

ASN

AQ

ASV

AK

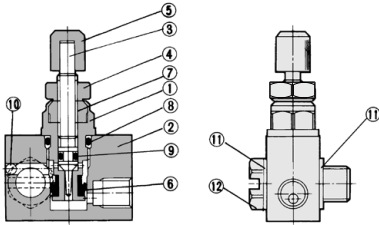
VCHC

ASR

ASQ

AS Series

Construction: AS1400-M3



Component Parts

No.	Description	Material	Note
1	Body B	Brass	Electroless nickel plated
2	Body A	Brass	Electroless nickel plated
3	Needle	Brass	Electroless nickel plated
4	Lock nut	Steel ⁽¹⁾	Zinc chromated ⁽¹⁾
5	Handle	Brass	Electroless nickel plated
6	U seal	HNBR	
7	Needle guide	Brass	Electroless nickel plated
8	O-ring	NBR	
9	O-ring	NBR	
10	Steel ball	Chromium bearing steel	
11	Gasket	PVC	
12	Joint	Brass	Electroless nickel plated

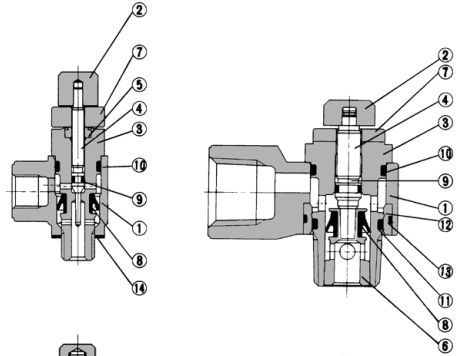
Note 1) The material and surface treatment of the lock nut option-J (round type) is brass and electroless nickel plating, respectively.

Construction: AS1200-M3, AS1200-M5, AS2200/32/42

Meter-out type

AS1200-M3, M5, U10/32

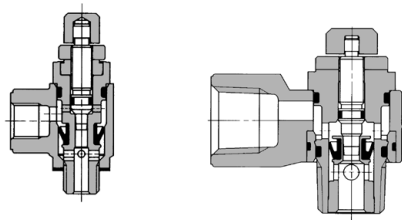
AS2200, 3200, 4200



Meter-in type

AS1210-M5, U10/32

AS2210, 3210, 4210



Component Parts

No.	Description	Material	Note
1	Body A	Zinc alloy	
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	Seat ring	Brass	Electroless nickel plated ⁽¹⁾
7	Lock nut	Steel ⁽²⁾	Meter-out Zinc chromate plated ⁽³⁾
			Meter-in Black zinc chromate plated
8	U seal	HNBR	
9	O-ring	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	Bushing	PBT	01 to 04 type
13	O-ring	NBR	01 to 04 type
14	Gasket	PVC	M3 type
		NBR, Stainless steel	M5, U10/32 type

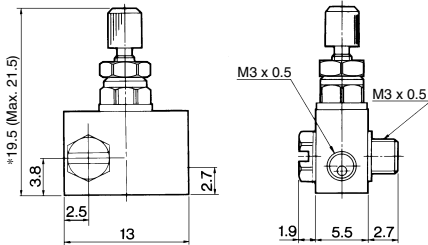
Note 1) For the AS4200 type only, the electroless nickel plating specification is available for option N.

Note 2) The material of the lock nut option-J (round type) is brass. However, note that only the AS2200 uses steel.

Note 3) The surface treatment of the lock nut option-J (round type) is electroless nickel plated.

Speed Controller: Standard Type Elbow Type (Metal Body) **AS Series**

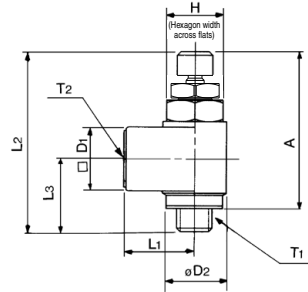
Dimensions: AS1400-M3



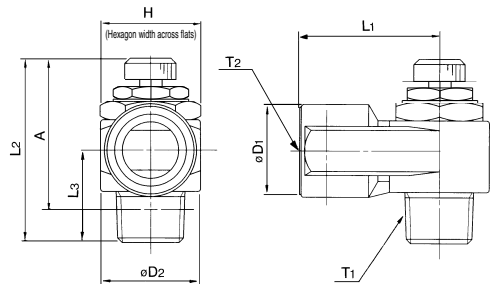
* Reference dimensions

Dimensions: AS-1200-M3, AS12□0-M5, AS22□0/32□0/42□0

AS1200-M3
AS12□0-M5
AS12□0-U10/32



AS22□0, 32□0, 42□0



Dimensions

Model	T1	T2	H (1)	L1	L2		L3	D1	D2	A (2)	
					Max.	Min.				Max.	Min.
AS1200-M3	M3 x 0.5	M3 x 0.5	4.5	6.6	23.5	21.5	8	5	5	20.5	18.5
AS12□0-M5	M5 x 0.8	M5 x 0.8	8	10	28.3	25.5	10.3	9	9	25	22.2
AS12□0-U10/32	10-32UNF	10-32UNF	12 (12.7)	18	35.5	30.5	13.2	14.3	14.6	32.4	27.4
AS22□0-01	1/8	1/8	17 (17.5)	27.2	40.3	35.3	17.5	18	19.5	34.8	29.8
AS32□0-03	3/8	3/8	19	30	45.8	40.8	19.7	22.5	24.3	40.6	35.6
AS42□0-04	1/2	1/2	24 (23.8)	38.5	54.7	49.7	25.8	27.5	28.5	47.4	42.4

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

Note 2) Reference thread dimensions after installation.

Note 3) L2: Reference dimensions

AS-F

TMH

ASD

AS

AS-FE

KE

AS-FG

AS-FP

AS-FM

AS-D

AS-T

ASP

ASN

AQ

ASV

AK

VCHC

ASR

ASQ