

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.

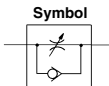
Body swivels 360°

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 |

*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.

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.

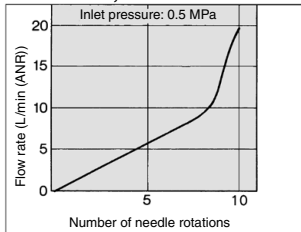
Bore size

| 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 |

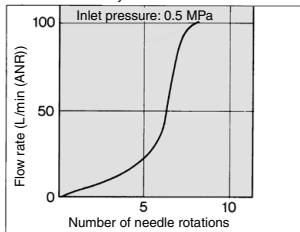
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

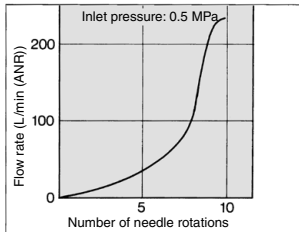
AS1200-M3, AS1400-M3



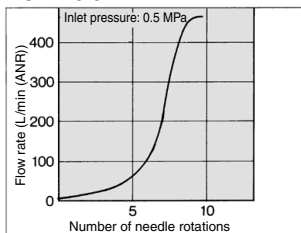
AS12□0-M5, AS12□0-U10/32



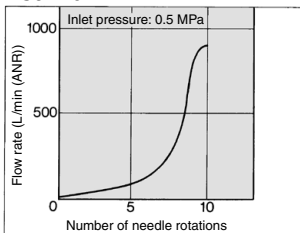
AS22□0-01



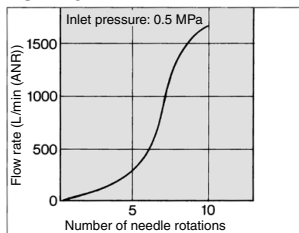
AS22□0-02



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

Ex.) AS2200-01-X12

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

X21

Ex.) AS2200-01-X21

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

Throttle Valve (Without Check Valve)

X214

Ex.) AS2200-01-X214

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

AS-F

TMH

ASD

AS

AS-FE

KE

AS-FG

AS-FP

AS-FM

AS-D

AS-T

ASP

ASN

AQ

ASV

AK

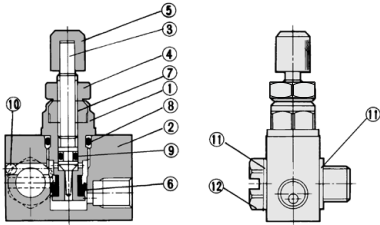
VCHC

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 |

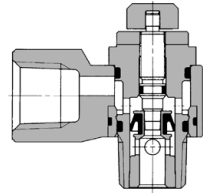
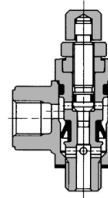
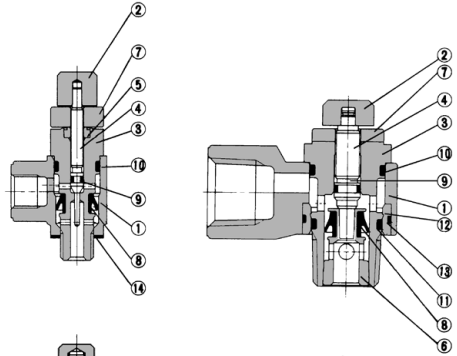
Note 1) The material and surface treatment of the lock nut option-J (round type) is brass and electroless nickel plating, respectively.

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

Meter-out type

AS1200-M3, M5, U10/32

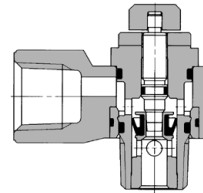
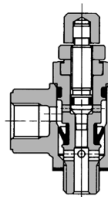
AS2200, 3200, 4200



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 |

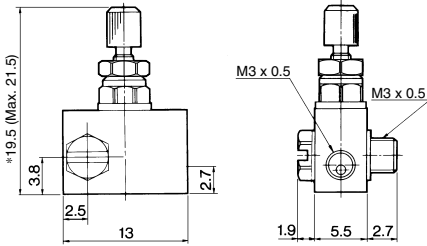
Note 1) For the AS4200 type only, the electroless nickel plating specification is available for option N.

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**

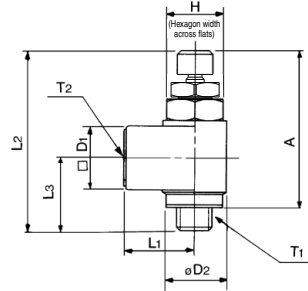
Dimensions: AS1400-M3



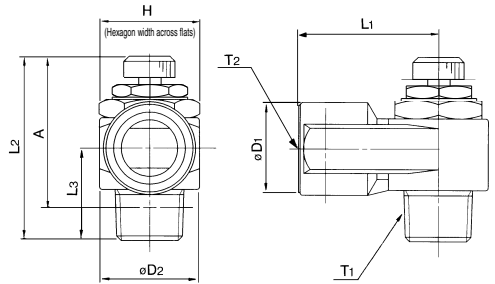
* Reference dimensions

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 | | | | | | | | | |
| AS22□0-01 | 1/8 | 1/8 | 12 (12.7) | 18 | 35.5 | 30.5 | 13.2 | 14.3 | 14.6 | 32.4 | 27.4 |
| AS22□0-02 | 1/4 | 1/4 | 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