

# Speed Controller: Standard Type

## Series AS

### In-line Type

Compact size saves space.  
Speed may be accurately controlled even at low speeds.  
Constant speed easily set.  
Retainer prevents an accidental loss of needle.



#### Model/Flow Rate and Effective Area

Model	Port size	Free flow		Controlled flow		Applicable cylinder bore size (mm)	Weight (g)
		Flow rate (ℓ/min (ANR))	Effective area (mm <sup>2</sup> )	Flow rate (ℓ/min (ANR))	Effective area (mm <sup>2</sup> )		
AS1000-M3	M3 x 0.5	20	0.3	20	0.3	2.5, 4, 6	4.7
AS1000-M5	M5 x 0.8	90	1.4	80	1.2	6, 10, 16, 20, 25	33
AS2000-01	1/8	340	5.2	250	3.8	20, 25, 32, 40	90
AS2000-02	1/4	340	5.2	250	3.8		115
AS3000-02	1/4	810	12.3	810	12.3	32, 40, 50, 63	130
AS3000-03	3/8	810	12.3	810	12.3		124
AS4000-02	1/4	1,670	25.5	1,670	25.5	40, 50, 63 80, 100	221
AS4000-03	3/8	1,670	25.5	1,670	25.5		214
AS4000-04	1/2	1,670	25.5	1,670	25.5		205
AS5000-02	1/4	2,840	44	2,840	44	40, 50, 63 80, 100	242
AS5000-03	3/8	4,270	66	4,270	66		233
AS5000-04	1/2	4,270	66	4,270	66		224

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

#### Specifications

Fluid	Air
Proof pressure note)	1.5 MPa (1.05 MPa)
Max. operating pressure note)	1 MPa (0.7 MPa)
Min. operating pressure note)	0.05 MPa (0.1 MPa)
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations note)	8 turns (10 turns)

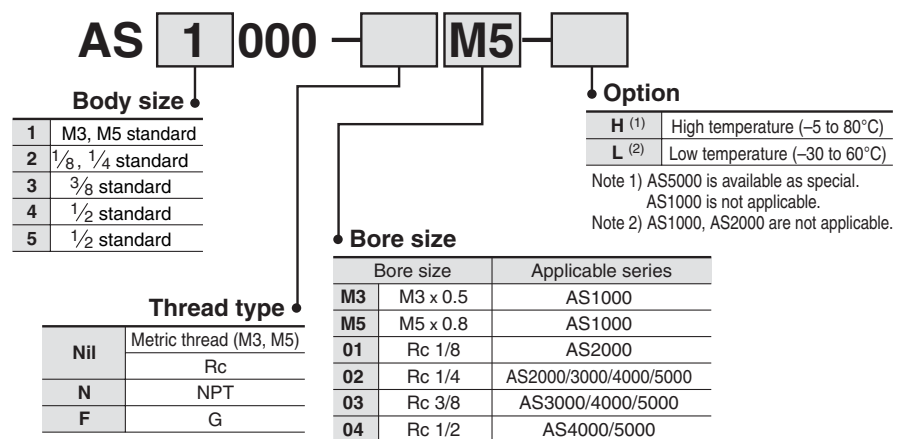
Note) ( ): Values for AS1000.

#### Accessory

Description	Part no.	Applicable model
Nipple	M-5N	AS1000

Note) AS1000 with nipple: AS1000-M5-N

#### How to Order

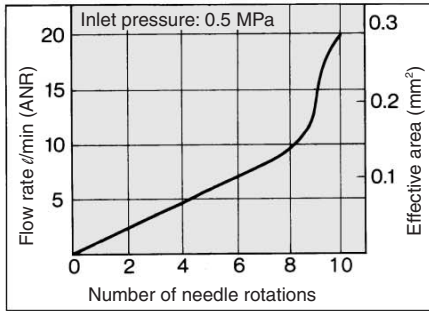


#### ⚠ Caution

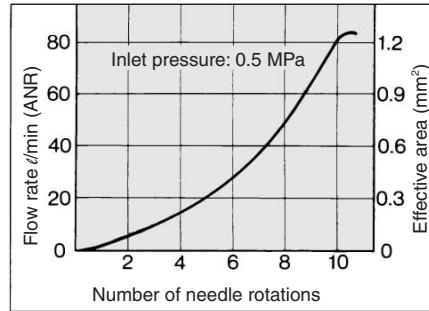
Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-8-6 to 15-8-8 for Precautions on every series.

## Needle Valve/Flow Characteristics

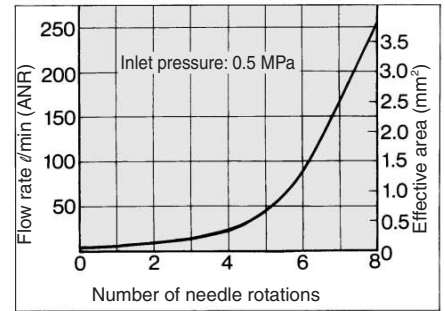
**AS1000-M3**



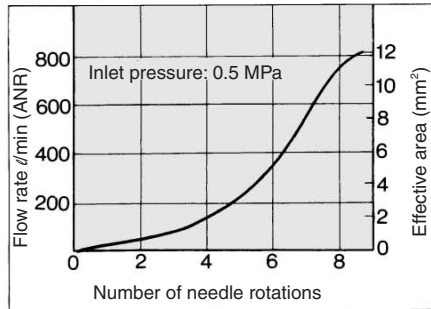
**AS1000-M5**



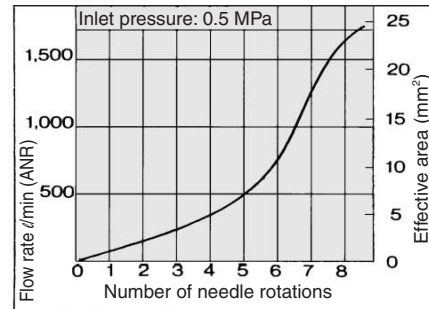
**AS2000**



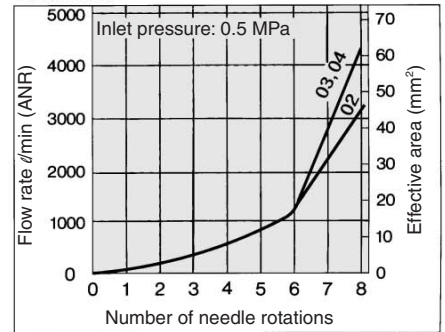
**AS3000**



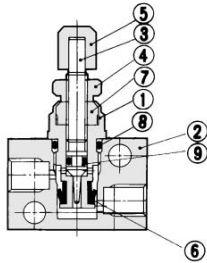
**AS4000**



**AS5000**



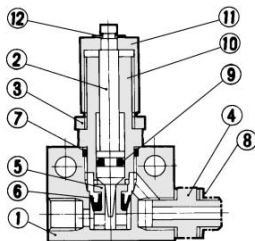
### Construction: AS1000-M3



#### Component Parts

No.	Description	Material	Note
①	Body B	Brass	Electroless nickel plated
②	Body	Brass	Electroless nickel plated
③	Needle	Brass	Electroless nickel plated
④	Lock nut	Brass	Electroless nickel plated
⑤	Handle	Brass	Electroless nickel plated
⑥	U seal	HNBR	
⑦	Needle guide	Brass	Electroless nickel plated
⑧	O-ring	NBR	4.5 x 3 x 0.75
⑨	O-ring	NBR	2.2 x 0.8 x 0.7

### Construction: AS1000-M5



#### Component Parts

No.	Description	Material
①	Body	Zinc alloy
②	Needle	Stainless steel
③	Lock nut *	Brass
④	Nipple	Stainless steel

\* Electroless nickel plated

No.	Description	Material	Note
⑨	O-ring	NBR	
⑩	Needle guide	Brass	Electroless nickel plated
⑪	Handle	Brass	Electroless nickel plated
⑫	E type snap ring	Steel	Black oxidized coated

#### Replacement Parts

No.	Description	Material	Part no.
⑤	Valve seat	Brass	1429138
⑥	U seal	HNBR	142964
⑦	O-ring	NBR	ø9 x ø7 x ø1
⑧	Gasket	PVC	M-5G1

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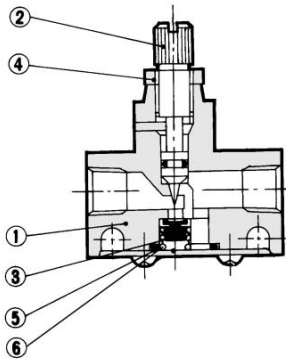
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# Series AS

## Construction: AS2000/3000



### Component Parts

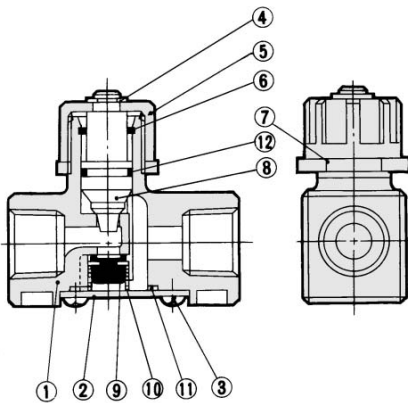
No.	Description	Model	
		AS2000	AS3000
①	Body	Zinc alloy	Aluminum alloy
②	Needle *	Brass	Brass
④	Lock nut *	Brass	Carbon steel

### Replacement Parts

No.	Description	Model	
		AS2000	AS3000
③	Valve	143022	14283
⑤	O-ring	143021	14284
⑥	Spring	143023	14282

\* Electroless nickel plated

## Construction: AS4000



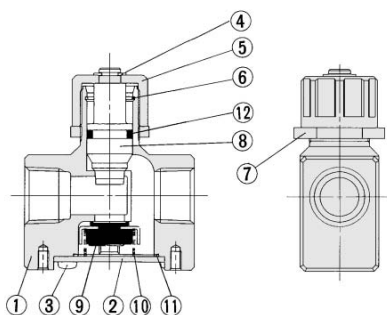
### Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Chromated
②	Cap	Rolled steel	Zinc chromated
③	Cross-recessed head cap screw	Steel wire	4 x 0.7 x 8
④	E type snap ring	Stainless steel	JIS B 2805 Nominal 6
⑤	Handle	Zinc alloy	Black zinc chromate plated
⑥	Ring	Steel wire	Zinc chromated
⑦	Lock nut	Zinc alloy	
⑧	Needle	Aluminum alloy	
⑫	O-ring	NBR	143112

### Replacement Parts

No.	Description	Material	Parts no.
⑨	Valve	NBR, Brass	143145
⑩	Spring	Stainless steel	143146
⑪	O-ring	NBR	143147

## Construction: AS5000



### Component Parts

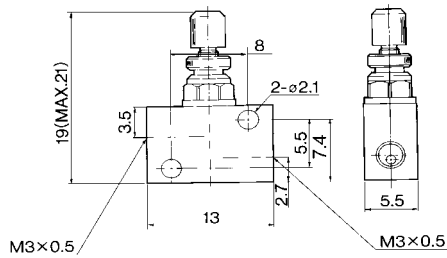
No.	Description	Material	Note
①	Body	Aluminum alloy	Chromated
②	Cap	Rolled steel	Nickel plated
③	Cross-recessed head cap screw	Steel wire	M4 x 0.7 x 8 Nickel plated
④	E type snap ring	Stainless steel	JIS B 2805 Nominal 6
⑤	Handle	Zinc alloy	Chromated
⑥	Ring	Stainless steel	
⑦	Lock nut	Zinc alloy	Chromated
⑧	Needle	Aluminum alloy	Chromated
⑫	O-ring	NBR	JIS B 2401 P12

### Replacement Parts

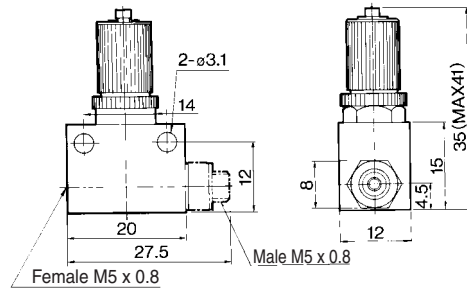
No.	Description	Material	Parts no.
⑨	Valve	NBR, Stainless steel	14143
⑩	Spring	Stainless steel	14144
⑪	Seal	NBR	14147

# Speed Controller: Standard Type In-line Type **Series AS**

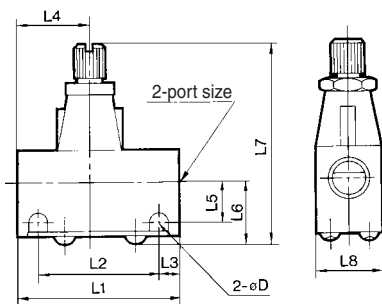
## Dimensions: AS1000-M3



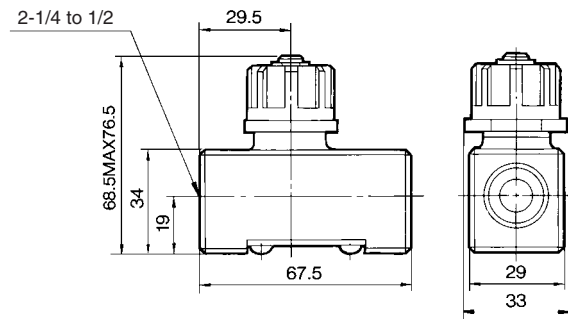
## Dimensions: AS1000-M5



## Dimensions: AS2000/3000

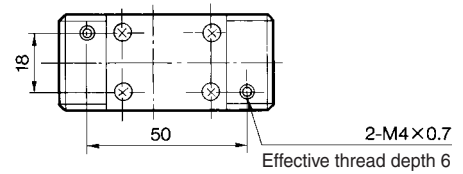


## Dimensions: AS4000

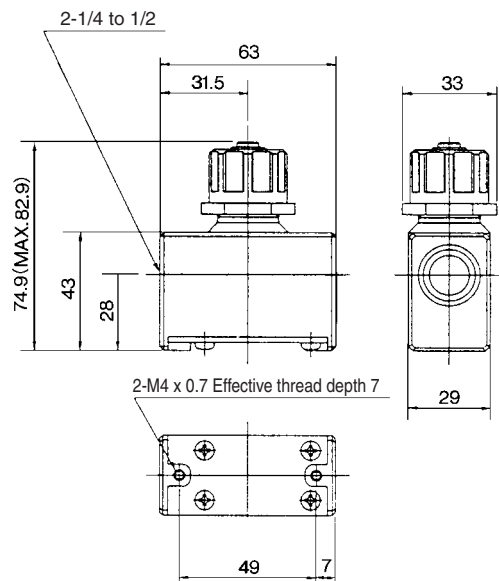


## Dimensions

Model	Bore size	L1	L2	L3	L4	L5	L6	L7		L8	D
								Max.	Min.		
AS2000-01	Rc 1/8	40	30	5	17	10	15.5	54.5	50	16	4.5
AS2000-02	Rc 1/4	40	30	5	23	11.5	17	56	51.5	20	4.5
AS3000-02, 03	Rc 1/4, 3/8	56	45.5	5.25	25	13.2	20.6	68	61	26	5.5



## Dimensions: AS5000



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# Speed Controller: Standard Type

## Series AS

### In-line Push Locking Type

#### Lock speed setting, with the touch of a button

It can be locked only by pushing the handle after adjustment.

#### Convenient opening indication scale

The opening indication scale for the needle valve is provided on the handle to facilitate speed adjustments.

#### Easy speed control at low flow volume ranges

#### Possible to control the mass velocity

#### Constant handle constructed of metal to withstand heavy usage

In addition to the standard handle made of resin, a heavy-duty metal handle is also available.

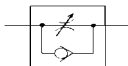
#### Retainer prevents an accidental loss of needle



Resin handle

Metal handle

JIS Symbol

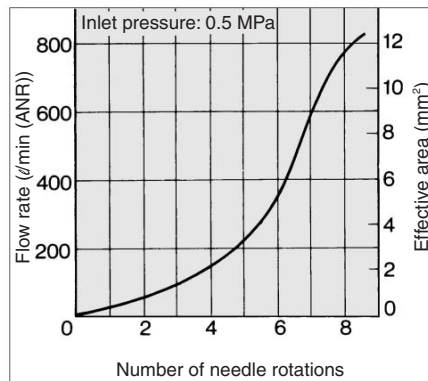


#### Model/Specifications

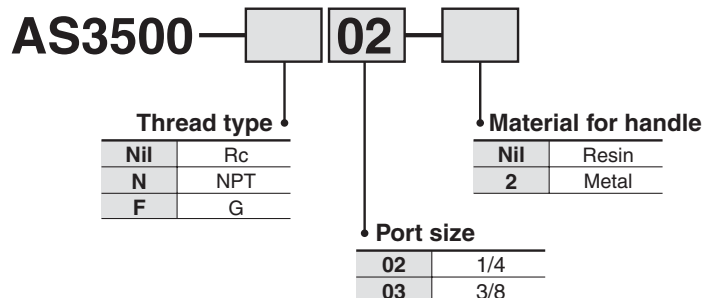
Model	Resin handle	AS3500-02	AS3500-03
	Metal handle	AS3500-02-2	AS3500-03-2
Port size		1/4	3/8
Applicable cylinder bore size (mm)		40, 50, 63	
Proof pressure		1.5 MPa	
Max. operating pressure		1 MPa	
Min. operating pressure		0.05 MPa	
Ambient and fluid temperature		-5 to 60°C (No freezing)	
Number of needle rotation		8 turns	
Weight		130 g (Metallic handle: 140 g)	
Free flow	Flow rate (l/min (ANR))	810	
	Effective area (mm <sup>2</sup> )	12.3	
Controlled flow	Flow rate (l/min (ANR))	810	
	Effective area (mm <sup>2</sup> )	12.3	

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

#### Needle Valve/Flow Characteristics AS3500



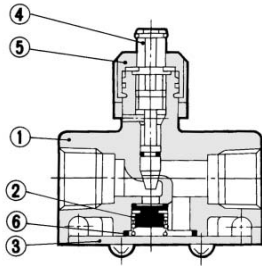
#### How to Order



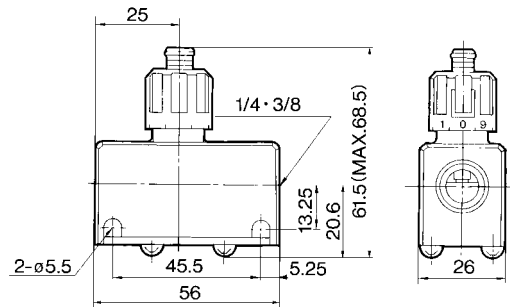
#### ⚠ Caution

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## Construction



## Dimensions



## Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Chromate plated
②	Valve	NBR	
③	Cap	Rolled steel	Electroless nickel plated
④	Needle	Brass	
⑤	Handle	POM	Black
		Zinc alloy	Black

## Replacement Parts

No.	Description	Material	Part no.
⑥	O-ring	NBR	14284

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# Speed Controller: Standard Type

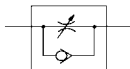
# Series AS

## Large Flow In-line Type

Able to control and set a constant speed easily.  
 Speed may be accurately controlled even at low speed.  
 Retainer prevents accidental loss of needle.



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.

### Model

Model	Port size	Free flow		Controlled flow		Applicable cylinder bore size (mm)	Weight (g)
		Flow rate (ℓ/min (ANR))	Effective area (mm <sup>2</sup> )	Flow rate (ℓ/min (ANR))	Effective area (mm <sup>2</sup> )		
AS420-02	1/4	2,500	38	3,600	55	63, 80, 100, 125	0.34
AS420-03	3/8	5,000	77	4,800	74		0.33
AS420-04	1/2	6,600	100	6,700	102		0.32
AS500-06	3/4	10,100	154	8,100	123	140, 160, 180, 200	0.36
AS600-10	1	15,100	230	16,900	258	160, 180, 200, 250	0.7
AS800-12	1 1/4	35,400	540	38,500	586	300	1.4
AS900-14	1 1/2	52,000	792	47,500	724		3.3
AS900-20	2	57,800	880	60,800	926		3.3

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

### Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.05 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns (12 turns Note)

Note) ( ): Values for AS800, AS900.

### How to Order

**AS 42 0 - [ ] 02 - [ ]**

**Body size**

42	1/2 standard
50	3/4 standard
60	1 standard
80	1 1/4 standard
90	1 1/2 standard

**Thread type**

Nil	Rc
N	NPT
F	G

**Bore size**

Bore size	Applicable series
02	1/4
03	3/8
04	1/2
06	3/4
10	1
12	1 1/4
14	1 1/2
20	2

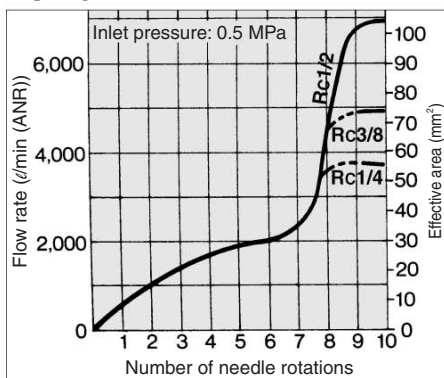
**Option**

Nil	None
H <sup>(1)</sup>	High temperature (-5 to 80°C)
L <sup>(2)</sup>	Low temperature (-30 to 60°C)

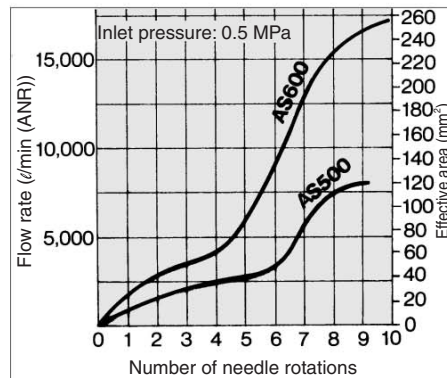
Note 1) AS800 is available as special.  
 Note 2) AS900 is available as special.

### Needle Valve/Flow Characteristics

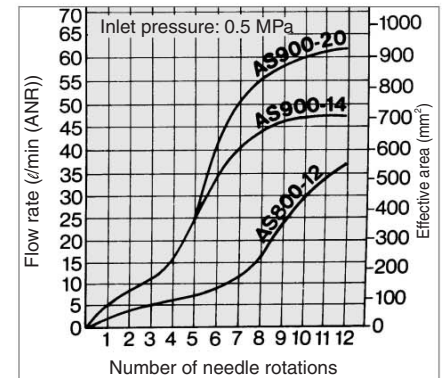
#### AS420



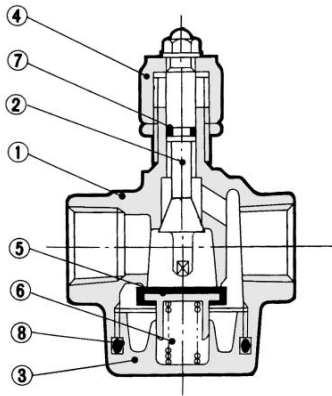
#### AS500/600



#### AS800/900



**Construction: AS420/500/600**



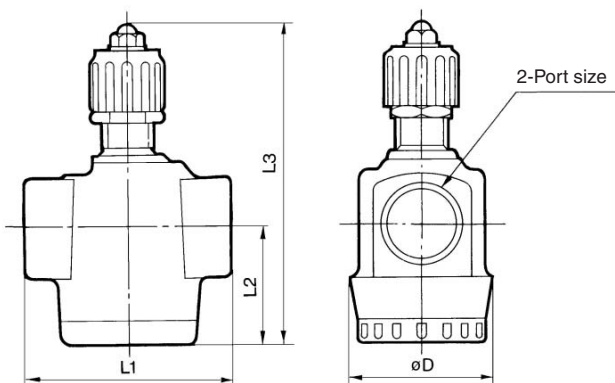
**Component Parts**

No.	Description	Material	Note
①	Body	Aluminum alloy	Chromated
②	Needle	Brass	—
③	Bottom cover	Aluminum alloy	Chromated
④	Handle	Zinc alloy	Black painted

**Replacement Parts**

No.	Description	Material	Part no.	
			AS420-500	AS600
⑤	Check Valve	Brass	14254	14273
⑥	Spring	Stainless steel	14255	14275
⑦	O-ring	NBR	JIS B 2401 P-7	JIS B 2401 P-7
⑧	O-ring	NBR	JIS B 2401 P-38	JIS B 2401 P-48

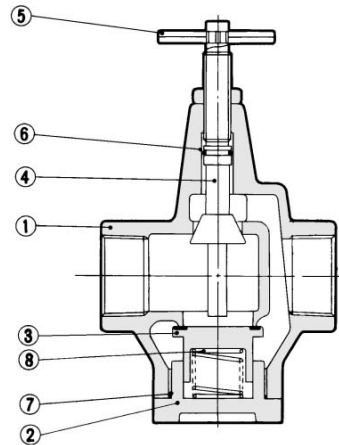
**Dimensions: AS420/500/600**



**Dimensions**

Model	Port size	L1	L2	L3		D
				Max.	Min.	
AS420	1/4, 3/8, 1/2	67.5	38	122	112	50
AS500	3/4	74	42	115	105	50
AS600	1	90	55	158	148	62

**Construction: AS800/900**



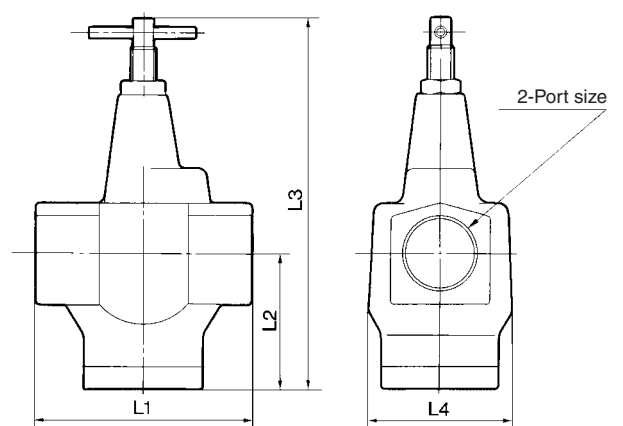
**Component Parts**

No.	Description	Material	Note
①	Body	Aluminum alloy	Chromated
②	Valve guide	Aluminum alloy	Chromated
③	Check valve	Brass	Rubber lining
④	Needle	Brass	—
⑤	Handle	Carbon steel	Chromated

**Replacement Parts**

No.	Description	Material	Part no.	
			AS800	AS900
⑥	O-ring	NBR	JIS B 2401 P-12	JIS B 2401 P-16
⑦	O-ring	NBR	JIS B 2401 G-50	JIS B 2401 G-65
⑧	Spring	Stainless steel	14115	14124

**Dimensions: AS800/900**



**Dimensions**

Model	Port size	L1	L2	L3		L4
				Max.	Min.	
AS800	1 1/4	120	74	204	192	80
AS900	1 1/2, 2	150	93	262	250	94

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ASF



# Speed Controller: Standard Type

# Series AS

## Elbow Type (Metal Body)

### 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.

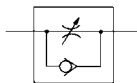
### Speed may be accurately controlled even at low speeds.

### Able to control and set a constant speed easily.

### Retainer prevents accidental loss of needle.



JIS Symbol



### Model/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	10-32UNF	1/8	1/4	3/8	1/2	
Applicable cylinder bore size (mm)		2.5, 4, 6	6, 10, 15, 20, 25	20, 25, 32, 40	32, 40, 50, 63	80, 100			
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)							
Number of needle rotation		10 turns	8 turns	10 turns					
Option		—		Hexagonal lock nut	With seal, Hexagonal lock nut, Nickel plated				
Weight (g)		3	6	10	29	64	106	181	
Controlled flow (Free flow)	Flow rate ℓ/min (ANR)	20		105	230	460	920	1700	
	Effective area (mm <sup>2</sup> )	0.3		1.6	3.5	7	14	26	

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 electroless nickel plated, while the meter-in type is black zinc chromate plated.

Note 4) AS1200, AS1400, AS22□0 are electroless nickel plated 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
Nil	R	Rc
	Metric thread (M3, M5) Unified thread (10-32UNF)	
N	NPT	
F	G*	

**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".

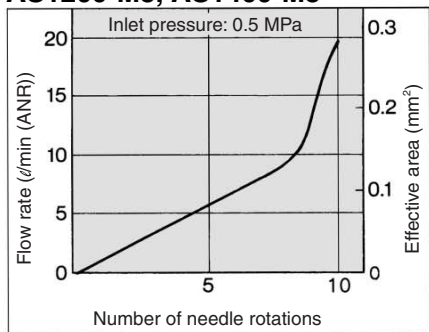
**Bore size**

Symbol	Bore size	Applicable series
M3	M3 x 0.5	AS1200-M3 AS1400-M3
M5	M5 x 0.8	AS12□0-M5
U10/32	10-32UNF	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

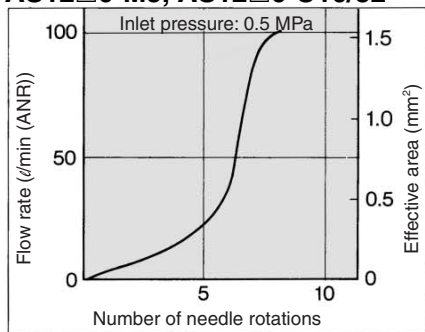
\* Male thread comes with R thread.

**Needle Valve/Flow Characteristics**

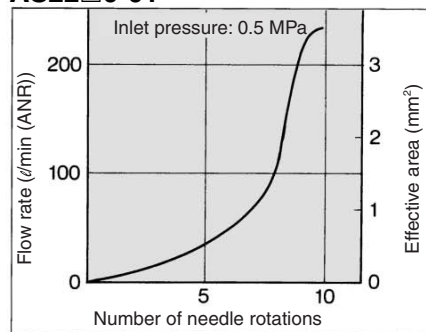
**AS1200-M3, AS1400-M3**



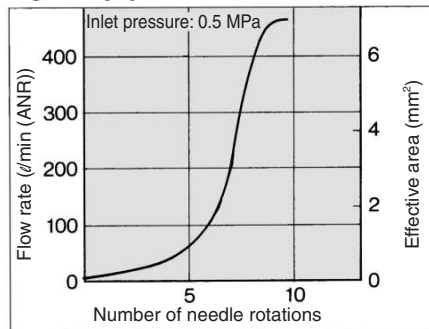
**AS12□0-M5, AS12□0-U10/32**



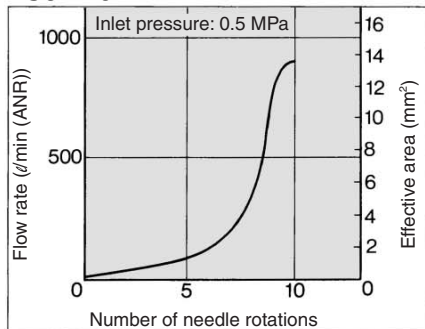
**AS22□0-01**



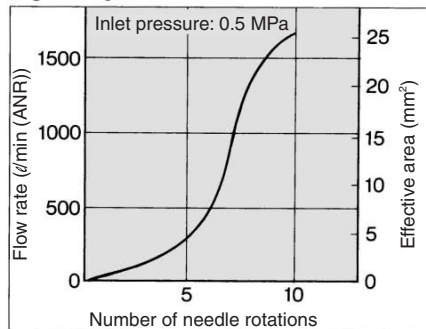
**AS22□0-02**



**AS32□0**



**AS42□0**



**⚠ Caution**

**Be sure to read 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**