

Speed Controller Standard

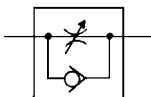
Series AS

In-line Style

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



JIS Symbol



Model

Model	Port size	Free flow		Controlled flow		Applicable cylinder bore size (mm)	Weight (g)
		Air flow (l/min(ANR))	Effective area (mm ²)	Air flow (l/min(ANR))	Effective area (mm ²)		
AS1000-M3	M3	20	0.3	20	0.3	2.5, 4, 6	4.7
AS1000-M5	M5	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) Supply pressure: 0.5MPa, Temperature: 20°C.

Specifications

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

Note 1) (): Values for AS1000.

Accessories

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

Note) AS1000 with nipple: AS1000-M5-N

How to Order

E AS 1 000 — M5

- Ordering source area code**

-	Japan, Asia Australia
E	Europe
N	North America
- Body size**

1	M3, M5
2	1/8, 1/4
3	3/8
4	1/2
5	1/2
- Thread**

-	M3, M5
N	NPT
F	G (PF)
- Lock nut option**

-	Hexagon lock nut
J ⁽³⁾	Round lock nut

Note 3) Only for AS1000
- Option**

H ⁽¹⁾	High temperature (-5 to 80°C)
L ⁽²⁾	Low temperature (-30 to 60°C)

Note 1) AS5000 is available as special
AS1000 is not applicable
Note 2) AS1000, AS2000 are not applicable
- Port size**

Port size	Applicable model
M3	M3 AS1000
M5	M5 AS1000
01	1/8 AS2000
02	1/4 AS2000, 3000, 4000, 5000
03	3/8 AS3000, 4000, 5000
04	1/2 AS4000, 5000

Series AS

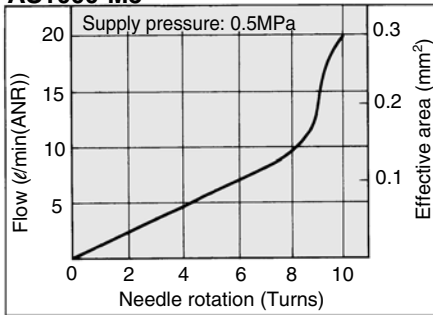


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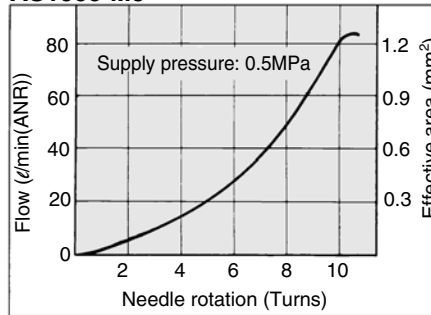
Series AS

Needle Valve/Flow Characteristics

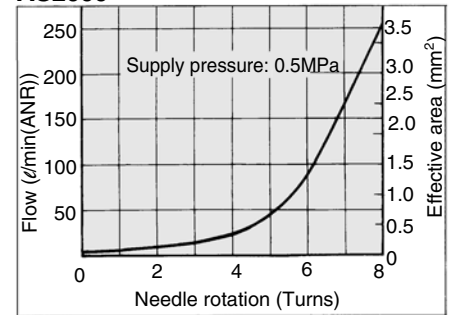
AS1000-M3



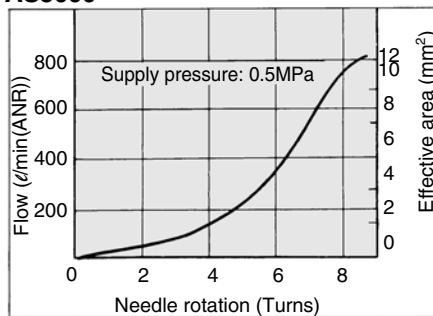
AS1000-M5



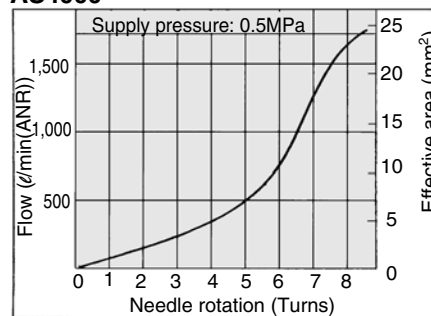
AS2000



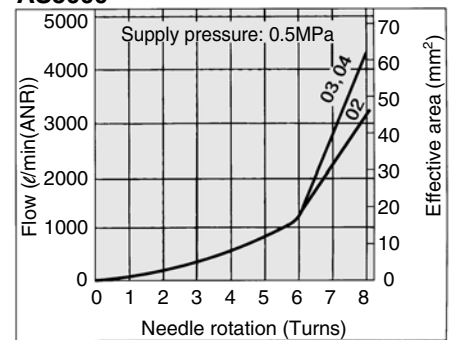
AS3000



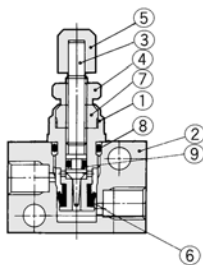
AS4000



AS5000



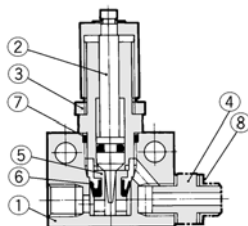
AS1000-M3/Construction



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	Steel	Zinc chromated
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

AS1000-M5/Construction



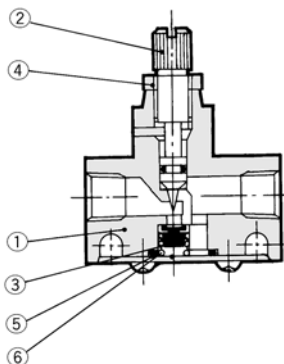
Component Parts

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

*Zinc chromated

No.	Description	Material
⑤	Valve seat	Brass
⑥	U-packing	NBR
⑦	O ring	NBR
⑧	Gasket	PVC

AS2000, 3000/Construction

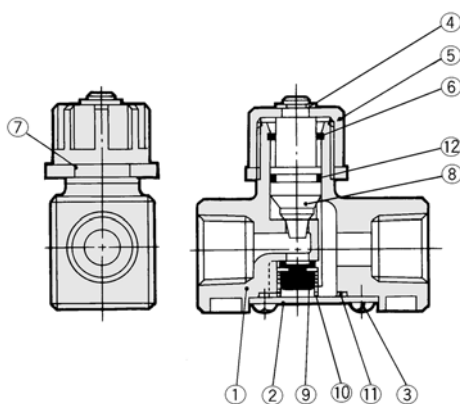


Component Parts

No.	Description	Model	
		AS2000	AS3000
①	Body	Zinc alloy	Aluminum alloy
②	Needle*	Brass	Brass
④	Lock nut*	Brass	Carbon steel
③	Valve		
⑤	O ring		
⑥	Spring		

*Electroless nickel plated

AS4000/Construction

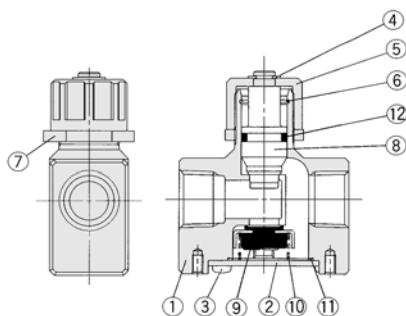


Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Chromated
②	Cap	Rolled steel	Zinc chromated
③	Head cap screw	Steel wire	4 X 0.7 X 8
④	E type snap ring	Stainless steel	JIS B2805 Nominal 6
⑤	Handle	Zinc	Chromated
⑥	Ring	Steel wire	Zinc chromated
⑦	Lock nut	Zinc alloy	
⑧	Needle	Aluminum alloy	
⑫	O ring	NBR	

No.	Description	Material
⑨	Valve	NBR, Brass
⑩	Spring	Stainless steel
⑪	O ring	NBR

AS5000/Construction



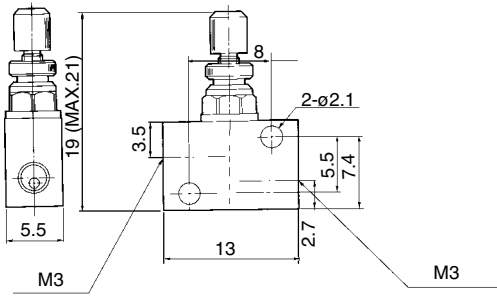
Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Chromated
②	Cap	Rolled steel	Nickel plated
③	Head cap screw	Steel wire	M4 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 B2401 P12

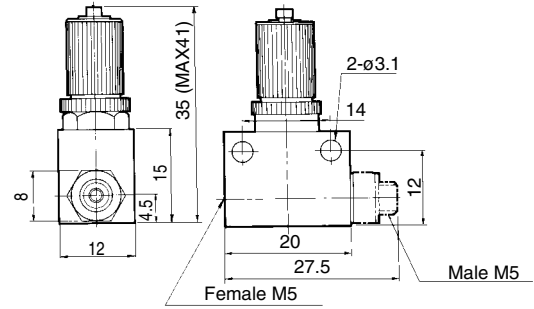
No.	Description	Material
⑨	Valve	NBR, Stainless steel
⑩	Spring	Stainless steel
⑪	Packing	NBR

Series AS

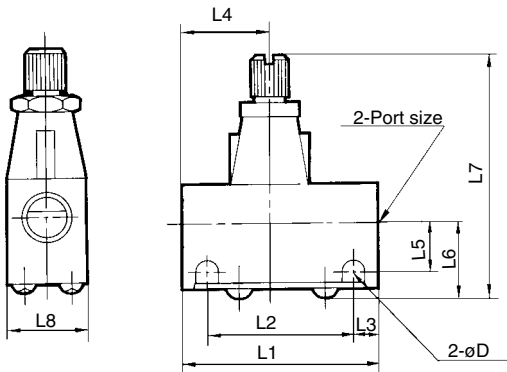
AS1000-M3/Dimensions



AS1000-M5/Dimensions



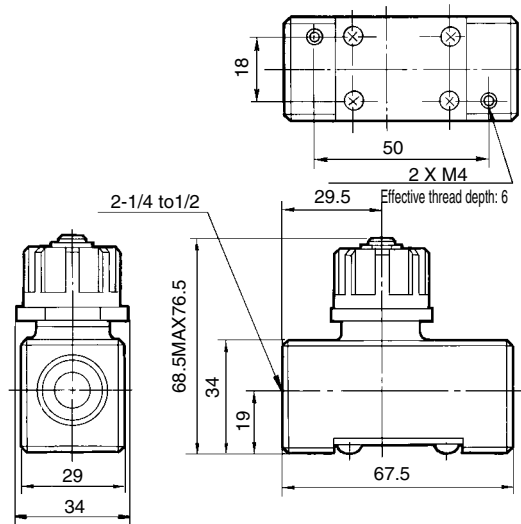
AS2000-3000/Dimensions



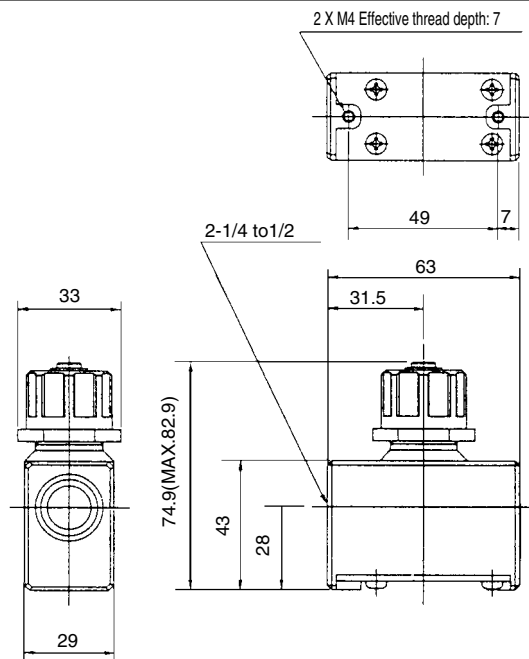
Dimensions

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

AS4000/Dimensions






AS5000/Dimensions



Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) ¹⁾, and other safety regulations.

-  **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
-  **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
-  **Danger:** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

- 1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
- ISO 10218-1: Manipulating industrial robots - Safety.
etc.

Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution

1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries. If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary. If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. ²⁾ Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Caution

SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

SMC Corporation (Europe)

Austria	+43 (0)2262622800	www.smc.at	office@smc.at
Belgium	+32 (0)33551464	www.smc.be	info@smc.be
Bulgaria	+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	+420 541424611	www.smc.cz	office@smc.cz
Denmark	+45 70252900	www.smc.dk.com	smc@smcdk.com
Estonia	+372 651 0370	www.smcee.ee	info@smcee.ee
Finland	+358 207513513	www.smc.fi	smcfl@smc.fi
France	+33 (0)164761000	www.smc-france.fr	supportclient@smc-france.fr
Germany	+49 (0)61034020	www.smc.de	info@smc.de
Greece	+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	+36 23513000	www.smc.hu	office@smc.hu
Ireland	+353 (0)14039000	www.smcautomation.ie	sales@smcautomation.ie
Italy	+39 03990691	www.smcitalia.it	mailbox@smcitalia.it
Latvia	+371 67817700	www.smc.lv	info@smc.lv

Lithuania	+370 5 2308118	www.smclt.lt	info@smclt.lt
Netherlands	+31 (0)205318888	www.smc.nl	info@smc.nl
Norway	+47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	+48 222119600	www.smc.pl	office@smc.pl
Portugal	+351 214724500	www.smc.eu	apoioclientept@smc.smces.es
Romania	+40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	+7 (812)3036600	www.smc.eu	sales@smcru.com
Slovakia	+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	+386 (0)73885412	www.smc.si	office@smc.si
Spain	+34 945184100	www.smc.eu	post@smc.smces.es
Sweden	+46 (0)86031240	www.smc.nu	smc@smc.nu
Switzerland	+41 (0)523963131	www.smc.ch	info@smc.ch
Turkey	+90 212 489 0 440	www.smcturkey.com.tr	satis@smcturkey.com.tr
UK	+44 (0)845 121 5122	www.smc.uk	sales@smc.uk

South Africa +27 10 900 1233 www.smcza.co.za zasales@smcza.co.za