Speed Controller: Standard Type

Series AS

In-line Type

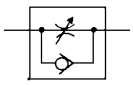
Compact size saves space.

Speed may be accurately controlled even at low speeds.

Constant speed easily set.

Retainer prevents an accidental loss of needle.

JIS Symbol



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^2)	Flow rate (ℓ/min (ANR))	Effective area (mm^2)		
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

AS 1 000 – □ M5 – □

Body size

1	M3, M5 standard
2	1/8, 1/4 standard
3	3/8 standard
4	1/2 standard
5	1/2 standard

Thread type

Nil	Metric thread (M3, M5)
	Rc
N	NPT
F	G

Bore size

Bore size		Applicable series
M3	M3 x 0.5	AS1000
M5	M5 x 0.8	AS1000
01	Rc 1/8	AS2000
02	Rc 1/4	AS2000/3000/4000/5000
03	Rc 3/8	AS3000/4000/5000
04	Rc 1/2	AS4000/5000

Option

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

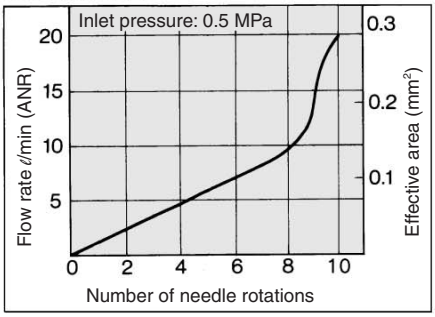
Note 1) AS5000 is available as special. AS1000 is not applicable.
Note 2) AS1000, AS2000 are not applicable.

⚠ Caution

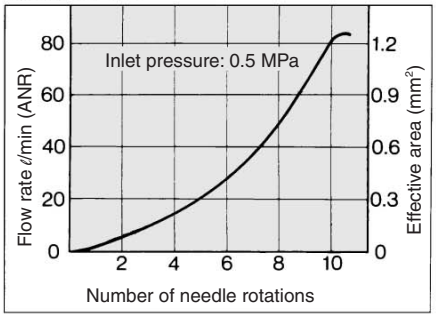
Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-8-6 to 15-8-8 for Precautions on every series.

Needle Valve/Flow Characteristics

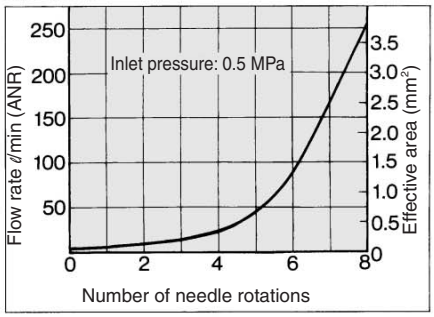
AS1000-M3



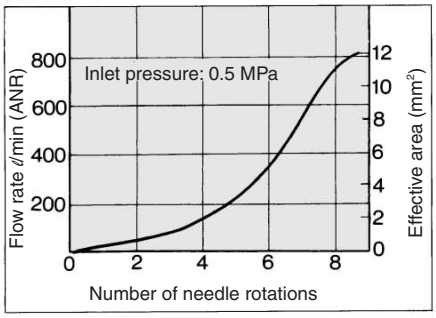
AS1000-M5



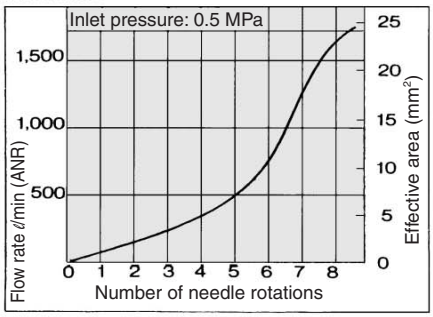
AS2000



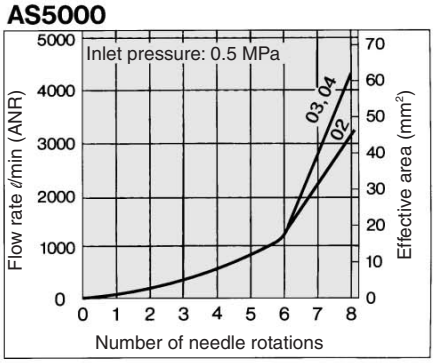
AS3000



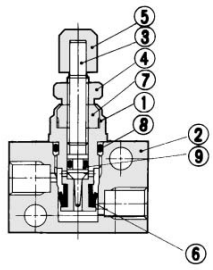
AS4000



AS5000



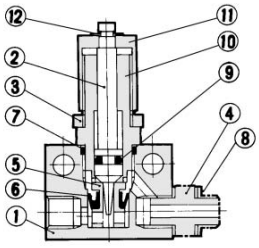
Construction: AS1000-M3



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

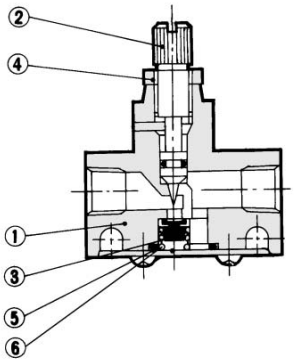
* Electroless nickel plated

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

Construction: AS2000/3000



Component Parts

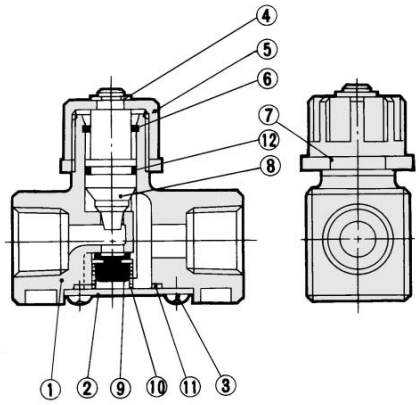
No.	Description	Model	
		AS2000	AS3000
①	Body	Zinc alloy	Aluminum alloy
②	Needle *	Brass	Brass
④	Lock nut *	Brass	Carbon steel

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



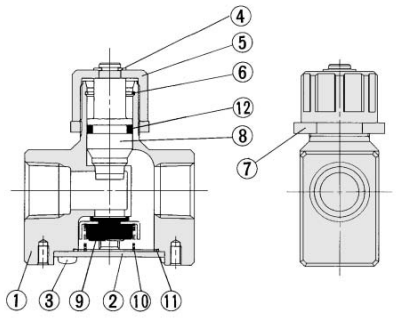
Component Parts

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



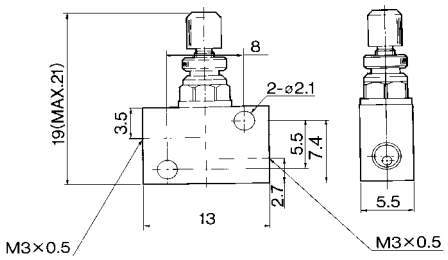
Component Parts

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

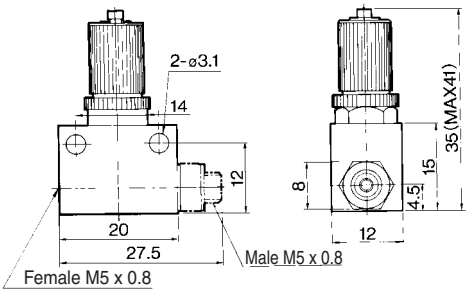
Replacement Parts

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

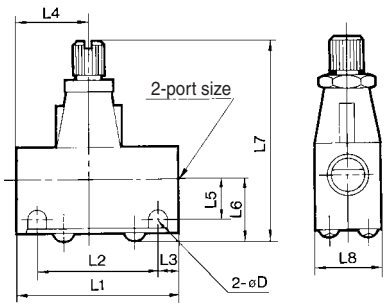
Dimensions: AS1000-M3



Dimensions: AS1000-M5



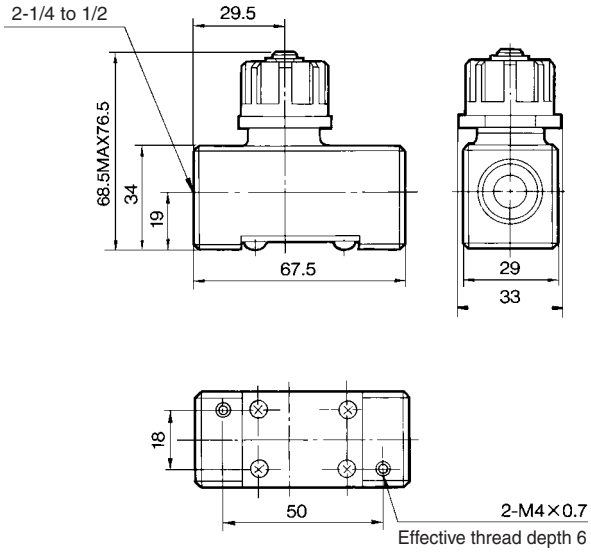
Dimensions: AS2000/3000



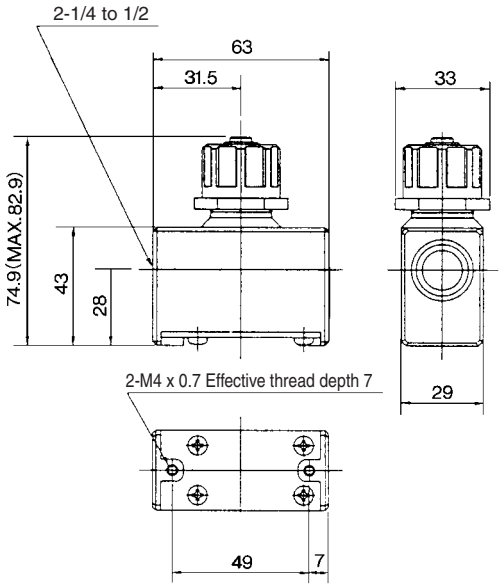
Dimensions

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: AS4000



Dimensions: AS5000



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.

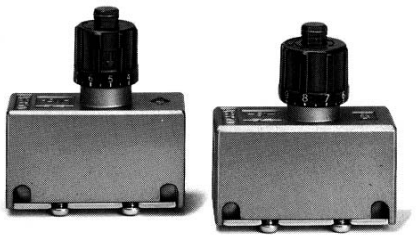
Convenient opening indication scale
The opening indication scale for the needle valve is provided on the handle to facilitate speed adjustments.

Easy speed control at low flow volume ranges

Possible to control the mass velocity

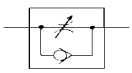
Constant handle constructed of metal to withstand heavy usage
In addition to the standard handle made of resin, a heavy-duty metal handle is also available.

Retainer prevents an accidental loss of needle



Resin handle Metal handle

JIS Symbol

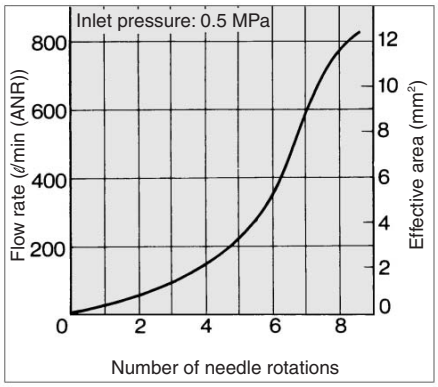


Model/Specifications

Model / Specifications		AS3500-02	AS3500-03
	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 (mm²)	12.3	
Controlled flow	Flow rate (ℓ/min (ANR))	810	
	Effective area (mm²)	12.3	

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

Needle Valve/Flow Characteristics AS3500



How to Order

AS3500 — [ ] [02] — [ ]

Thread type

Nil	Rc
N	NPT
F	G

Material for handle

Nil	Resin
2	Metal

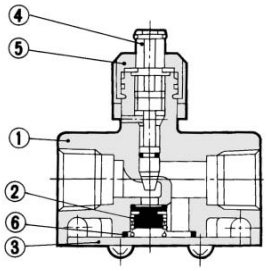
Port size

02	1/4
03	3/8

⚠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.

Construction



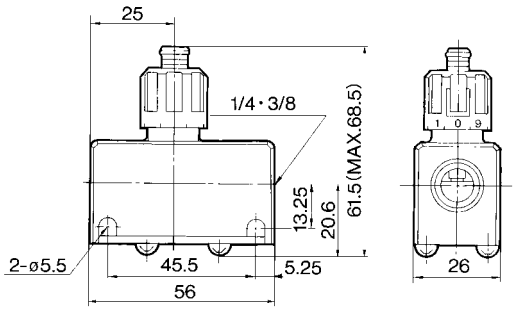
Component Parts

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

Dimensions



Speed Controller: Standard Type

Series AS

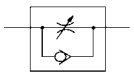
Large Flow In-line Type

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 (mm²)	Flow rate (ℓ/min (ANR))	Effective area (mm²)		
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	1¼	35,400	540	38,500	586	300	1.4
AS900-14	1½	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	AS420
03	3/8	
04	1/2	
06	3/4	AS500
10	1	AS600
12	1¼	AS800
14	1½	AS900
20	2	

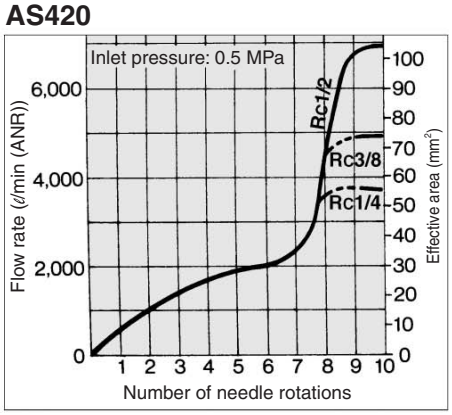
Option

Nil	None
H (1)	High temperature (–5 to 80°C)
L (2)	Low temperature (–30 to 60°C)

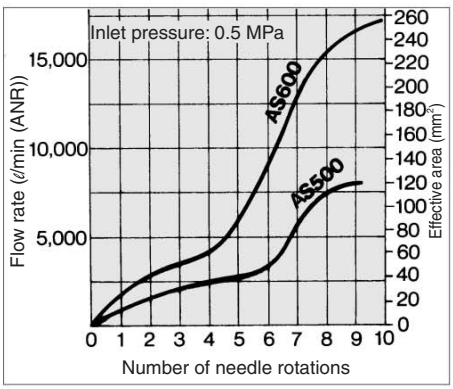
Note 1) AS800 is available as special.
Note 2) AS900 is available as special.

Needle Valve/Flow Characteristics

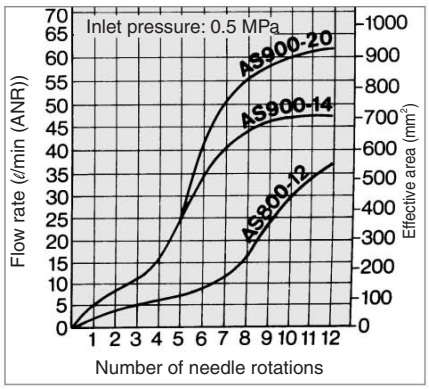
AS420



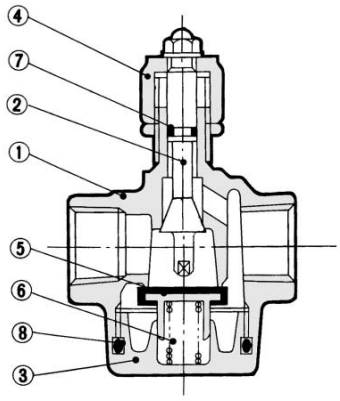
AS500/600



AS800/900



Construction: AS420/500/600



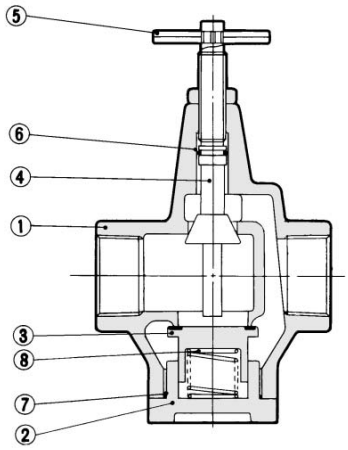
Component Parts

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

Construction: AS800/900



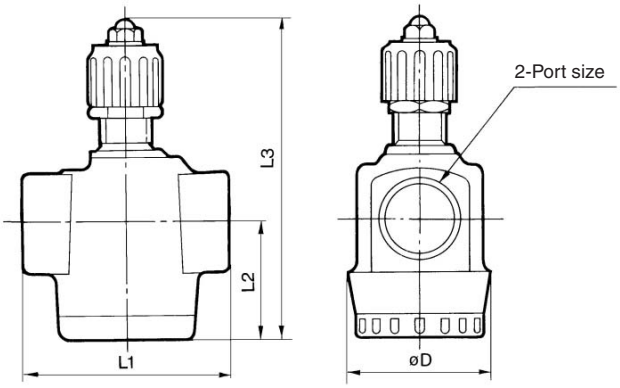
Component Parts

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

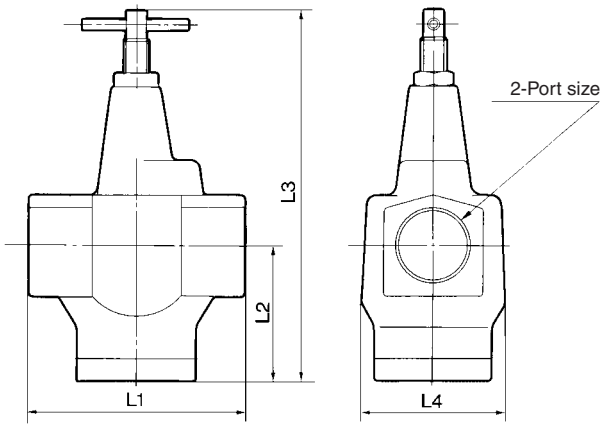
Dimensions: AS420/500/600



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

Dimensions: AS800/900



Dimensions

Model	Port size	L1	L2	L3		L4
				Max.	Min.	
AS800	1¼	120	74	204	192	80
AS900	1½, 2	150	93	262	250	94

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°

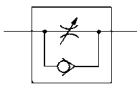
Swivel type allows free setting of piping.

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



Made to Order P.15-11-3

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
Controlled flow (Free flow) Effective area (mm²)	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 *	

* Male thread comes with R thread.

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

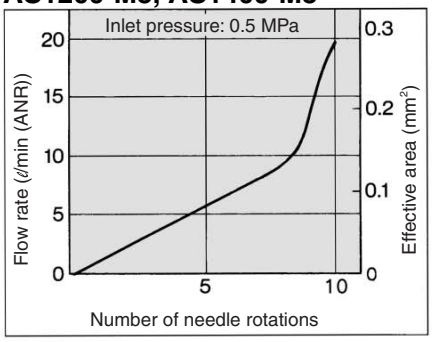
Option

Nil	None
S	With seal
K	Hexagonal lock nut
N	Electroless nickel plated

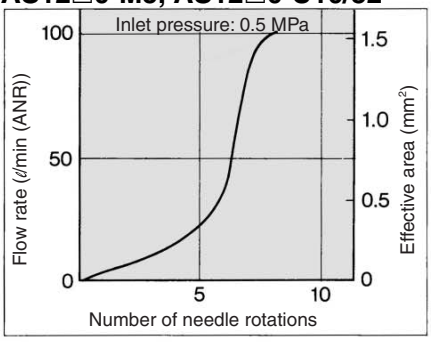
* If more than one option is required, write option part numbers in the order of "S", "K", "N".

Needle Valve/Flow Characteristics

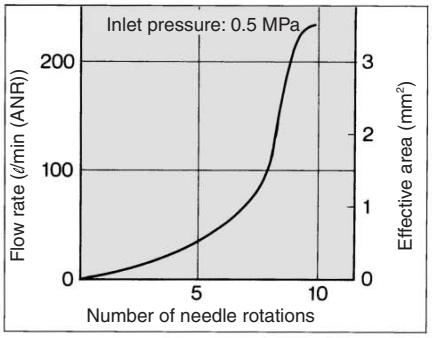
AS1200-M3, AS1400-M3



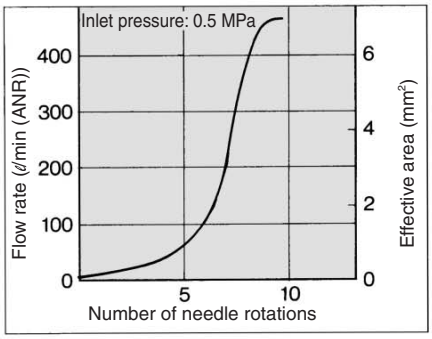
AS12□0-M5, AS12□0-U10/32



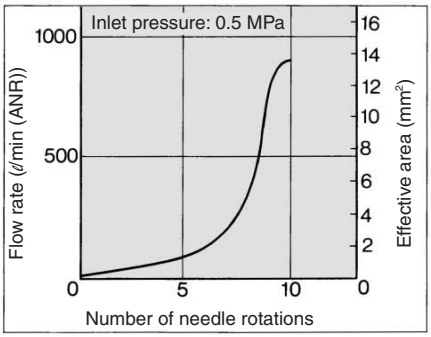
AS22□0-01



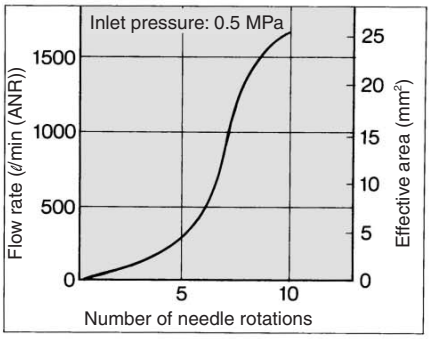
AS22□0-02



AS32□0



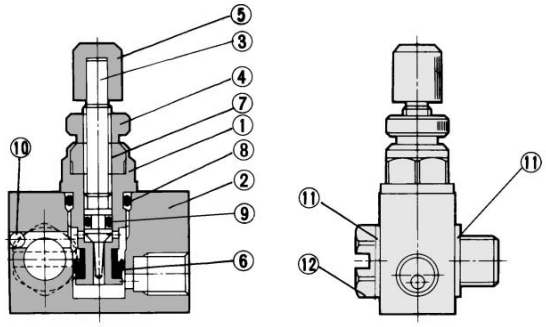
AS42□0



⚠ 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.

Construction: AS1400-M3



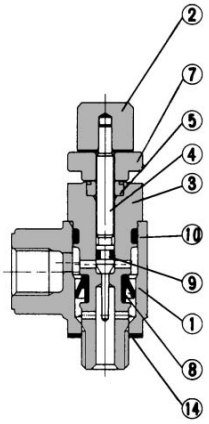
Component Parts

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	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	
⑨	O-ring	NBR	
⑩	Steel ball	Chromium bearing steel	
⑪	Gasket	PVC	
⑫	Joint	Brass	Electroless nickel plated

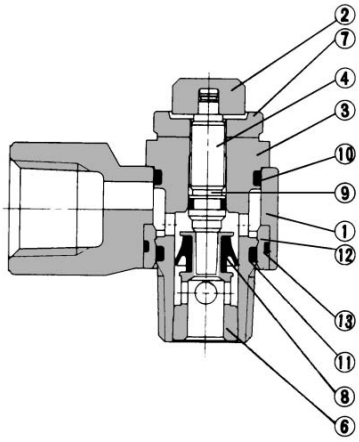
Construction: AS1200-M3, AS12□0-M5, AS22□0/32□0/42□0

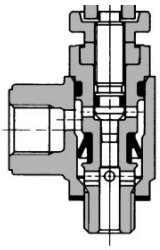
Meter-out type

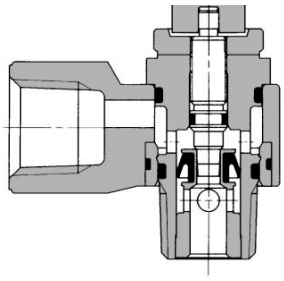
AS1200-M3, M5, U10/32



AS2200, 3200, 4200

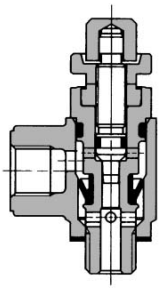




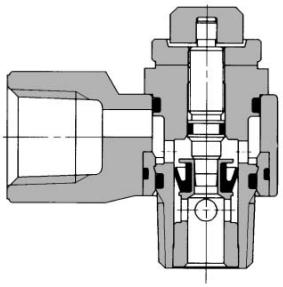


Meter-in type

AS1210-M5, U10/32



AS2210, 3210, 4210

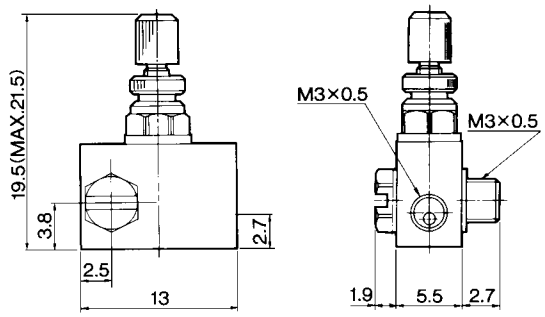


Component Parts

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	(1)
⑦	Lock nut	Brass(2)	Electroless nickel plated(3)
⑧	U seal	NBR	
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

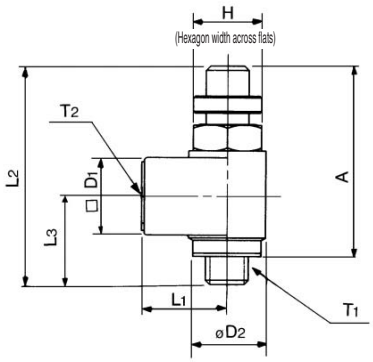
Note 1) AS22□0 type is electroless nickel plated.
Note 2) AS22□0 type is made of steel.
Note 3) Meter-in type is black zinc chromate plated.

Dimensions: AS1400-M3

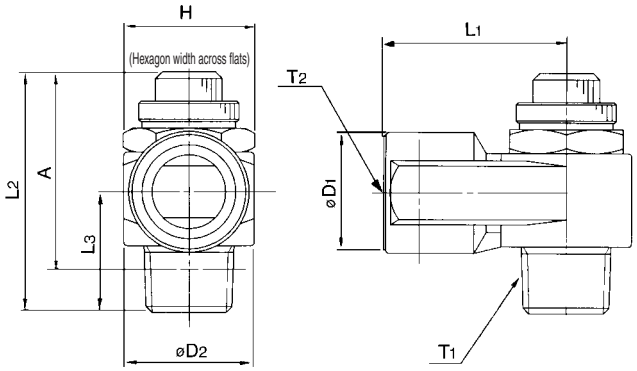


Dimensions: AS-1200-M3, AS12□0-M5, AS22□0, 32□0, 42□0

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
AS1200-M5	M5 x 0.8	M5 x 0.8	8	10	28.3	25.5	10.3	9	9	25	22.2
AS1200-U10/32	10-32 UNF	10-32 UNF									
AS22□0-01	1/8	1/8	12 (12.7)	18	36.4	31.4	14.1	14.3	14.6	32.4	27.4
AS22□0-02	1/4	1/4	17 (17.5)	27.2	40.8	35.8	18	18	19.5	34.8	29.8
AS32□0-03	3/8	3/8	19	30	46.9	41.9	20.8	22.5	24.3	40.6	35.6
AS42□0-04	1/2	1/2	24 (23.8)	38.5	55.6	50.6	26.7	27.5	28.5	47.4	42.4

Note 1) ( ) are the dimensions of "NPT" thread.
Note 2) Reference thread dimensions after installation.

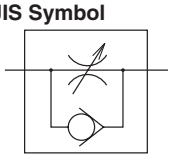
Tamper Proof Speed Controller
Standard Type
Series AS□2□0-T
Elbow Type (Metal Body)

Model/ Specifications

Specifications \ Model		AS12□0-M5	AS12□0-U10/32	AS22□0-□01	AS22□0-□02	AS32□0-□02	AS32□0-□03	AS42□0-□04
Port size		M5 x 0.8	10-32 UNF	1/8	1/4	1/4	3/8	1/2
Applicable cylinder bore size (mm)		6, 10, 16, 20, 25		20, 25, 32, 40		32, 40, 50, 63		80, 100
Fluid		Air						
Proof pressure		1.5 MPa						
Max. operating pressure		1 MPa						
Min. operating pressure		0.1 MPa						
Ambient and fluid temperature		–5 to 60°C (No freezing)						
Number of needle rotations		8 turns		10 turns				
Controlled flow (Free flow)	Flow rate (ℓ/min (ANR))	105		230	460	920		1700
	Effective area (mm^2)	1.6		3.5	7	14		26

Note 1) Flow rate values are measured at 0.5 MPa and 20°C.
Note 2) Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.
Note 3) Brass parts are all electroless nickel plated, provided as standard.

JIS Symbol



How to Order

AS 2 2 0 0 — 01 — S T

Body size

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

Type

2	Elbow

Control

0	Meter-out
1	Meter-in

Port size

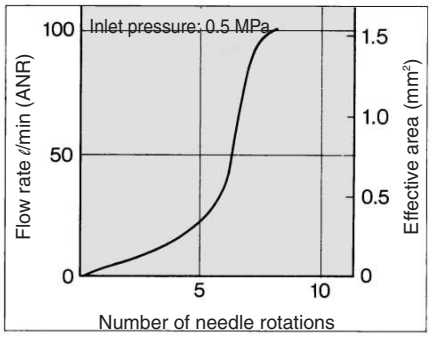
Symbol	Cylinder side	In the side of solenoid valve
M5	M5 x 0.8	M5 x 0.8
01	R 1/8	Rc 1/8
02	R 1/4	Rc 1/4
03	R 3/8	Rc 3/8
04	R 1/2	Rc 1/2
F01	R 1/8	G 1/8
F02	R 1/4	G 1/4
F03	R 3/8	G 3/8
F04	R 1/2	G 1/2
U10/32	10-32 UNF	10-32 UNF
N01	NPT 1/8	NPT 1/8
N02	NPT 1/4	NPT 1/4
N03	NPT 3/8	NPT 3/8
N04	NPT 1/2	NPT 1/2

With seal
Note) When connecting port is either M5 or 10-32 UNF thread, it is not available with seal. With gasket is provided as standard.

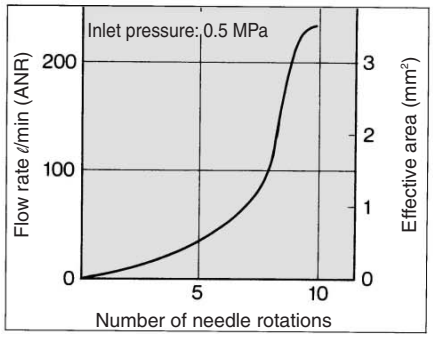
Tamper proof
Note) Speed controller requires a special tool for flow adjustment. Order separately with part number, AS-T-1.

Needle Valve/Flow Characteristics

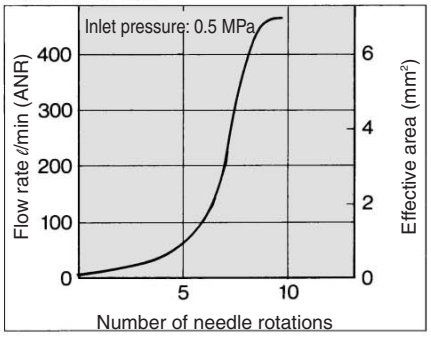
AS12□0-M5·AS12□0-U10/32



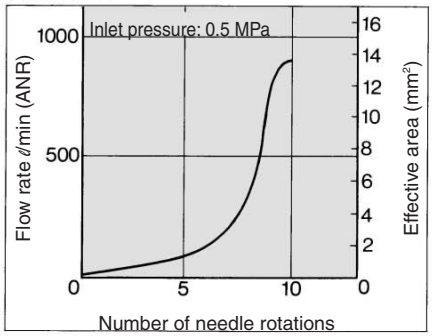
AS22□0-01



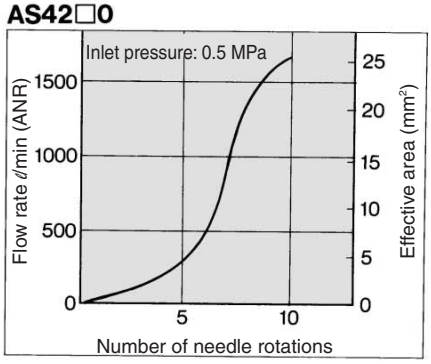
AS22□0-02



AS32□0

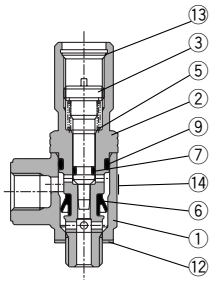


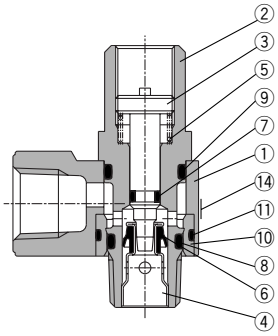
AS42□0



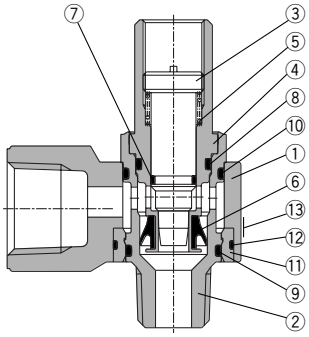
Construction

Meter-out type
M5 type
U10/32 port

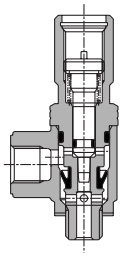


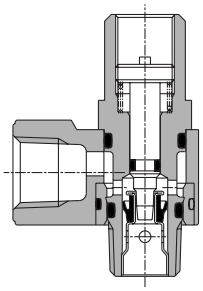


AS3200-02

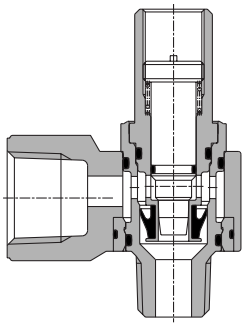


Meter-in type
M5 type
U10/32 port





AS3210-02

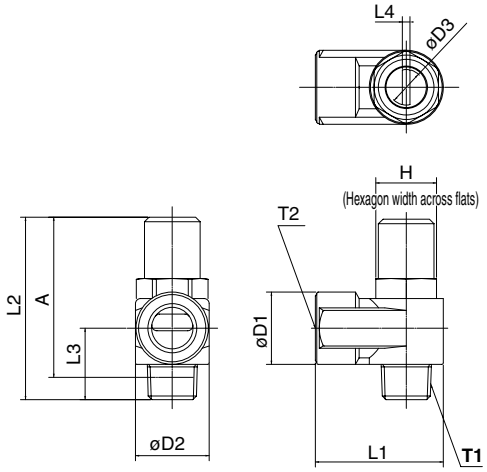


Component Parts

No.	Description	Material	Note
①	Body A	Zinc alloy	
②	Body B	Brass	Electroless nickel plated
③	Needle	Brass	Electroless nickel plated
④	Seat ring	Brass	Electroless nickel plated
⑤	Spring	Steel wire	
⑥	U seal	HNBR	
⑦	O-ring	NBR	

No.	Description	Material	Note
⑧	O-ring	NBR	
⑨	O-ring	NBR	
⑩	Bushing	PBT	
⑪	O-ring	NBR	
⑫	Gasket	NBR, Stainless steel	
⑬	Retaining ring for hole type C	Tool steel	

Dimensions



Dimensions

Model	T1	T2	H	D1	D2	D3	L1	L2	L3	L4	A*
AS12□0-M5-T	M5 x 0.8	M5 x 0.8	8	9	9	4.5	10	31	10.3	0.7	27.4
AS12□0-U10/32-T	10-32 UNF	10-32 UNF									
AS22□0-01-ST	R 1/8	Rc 1/8	12	14.3	14.6	7	18	35.6	14.1	1.5	31.6
AS22□0-F01-ST		G 1/8									
AS22□0-N01-ST	NPT 1/8	NPT 1/8	12.7								
AS22□0-02-ST	R 1/4	Rc 1/4	17	18	19.5	7	27.2	40.7	18	1.5	36.7
AS22□0-F02-ST		G 1/4									
AS22□0-N02-ST	NPT 1/4	NPT 1/4	17.5								
AS32□0-02-ST	R 1/4	Rc 1/4	19	22.5	24.3	9.5	30	55.3	22.4	1.5	49.3
AS32□0-F02-ST		G 1/4									
AS32□0-N02-ST	NPT 1/4	NPT 1/4									
AS32□0-03-ST	R 3/8	Rc 3/8	19	22.5	24.3	9.5	30	53.7	20.8	1.5	47.4
AS32□0-F03-ST		G 3/8									
AS32□0-N03-ST	NPT 3/8	NPT 3/8									
AS42□0-04-ST	R 1/2	Rc 1/2	24	27.5	28.5	12	38.5	63.8	26.7	1.5	55.8
AS42□0-F04-ST		G 1/2									
AS42□0-N04-ST	NPT 1/2	NPT 1/2	23.8								

* Reference thread dimensions after installation.

Speed Controller Adjustable by Flat Head Screwdriver: Standard Type

Series AS□2□0-D

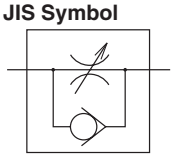
Elbow Type (Metal Body)

Model/Specifications

Specifications \ Model		AS12□0-M5	AS12□0-U10/32	AS22□0-□01	AS22□0-□02	AS32□0-□02	AS32□0-□03	AS42□0-□04
Port size		M5 x 0.8	10-32 UNF	1/8	1/4	1/4	3/8	1/2
Applicable cylinder bore size (mm)		6, 10, 16, 20, 25		20, 25, 32, 40		32, 40, 50, 63		80, 100
Fluid		Air						
Proof pressure		1.5 MPa						
Max. operating pressure		1 MPa						
Min. operating pressure		0.1 MPa						
Ambient and fluid temperature		–5 to 60°C (No freezing)						
Number of needle rotations		8 turns		10 turns				
Controlled flow (Free flow)	Flow rate (ℓ/min (ANR))	105		230	460	920		1700
	Effective area (mm^2)	1.6		3.5	7	14		26

Note 1) Flow rate values are measured at 0.5 MPa and 20°C.
Note 2) Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.
Note 3) Brass parts are all electroless nickel plated, provided as standard.

JIS Symbol



How to Order

AS 2 2 0 0 — 01 — S D

Body size

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

Type

2	Elbow

Control

0	Meter-out
1	Meter-in

Port size

Symbol	Cylinder side	In the side of solenoid valve
M5	M5 x 0.8	M5 x 0.8
01	R 1/8	Rc 1/8
02	R 1/4	Rc 1/4
03	R 3/8	Rc 3/8
04	R 1/2	Rc 1/2
F01	R 1/8	G 1/8
F02	R 1/4	G 1/4
F03	R 3/8	G 3/8
F04	R 1/2	G 1/2
U10/32	10-32 UNF	10-32 UNF
N01	NPT 1/8	NPT 1/8
N02	NPT 1/4	NPT 1/4
N03	NPT 3/8	NPT 3/8
N04	NPT 1/2	NPT 1/2

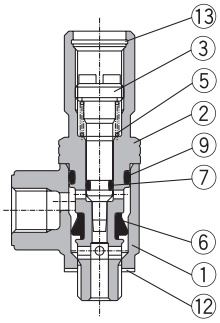
With seal
Note) In case that connecting port is either M5 or 10-32 UNF thread, it is not available with seal. With gasket is provided as standard.

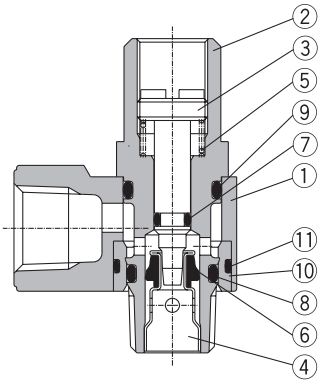
Type adjustable by flat head screwdriver

Construction

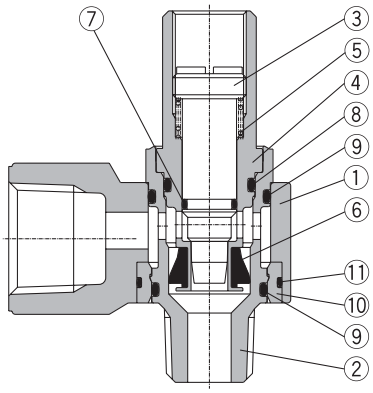
Meter-out
M5 type
U10/32 port

AS2200-01-D



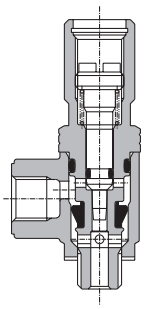


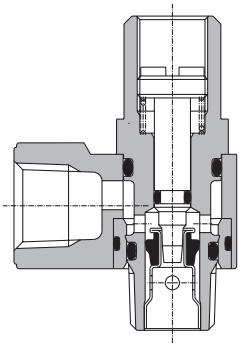
AS3200-02-D



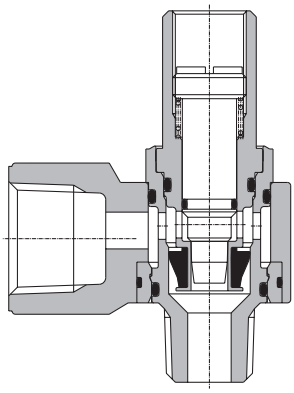
Meter-out
M5 type
U10/32 port

AS2210-01-D





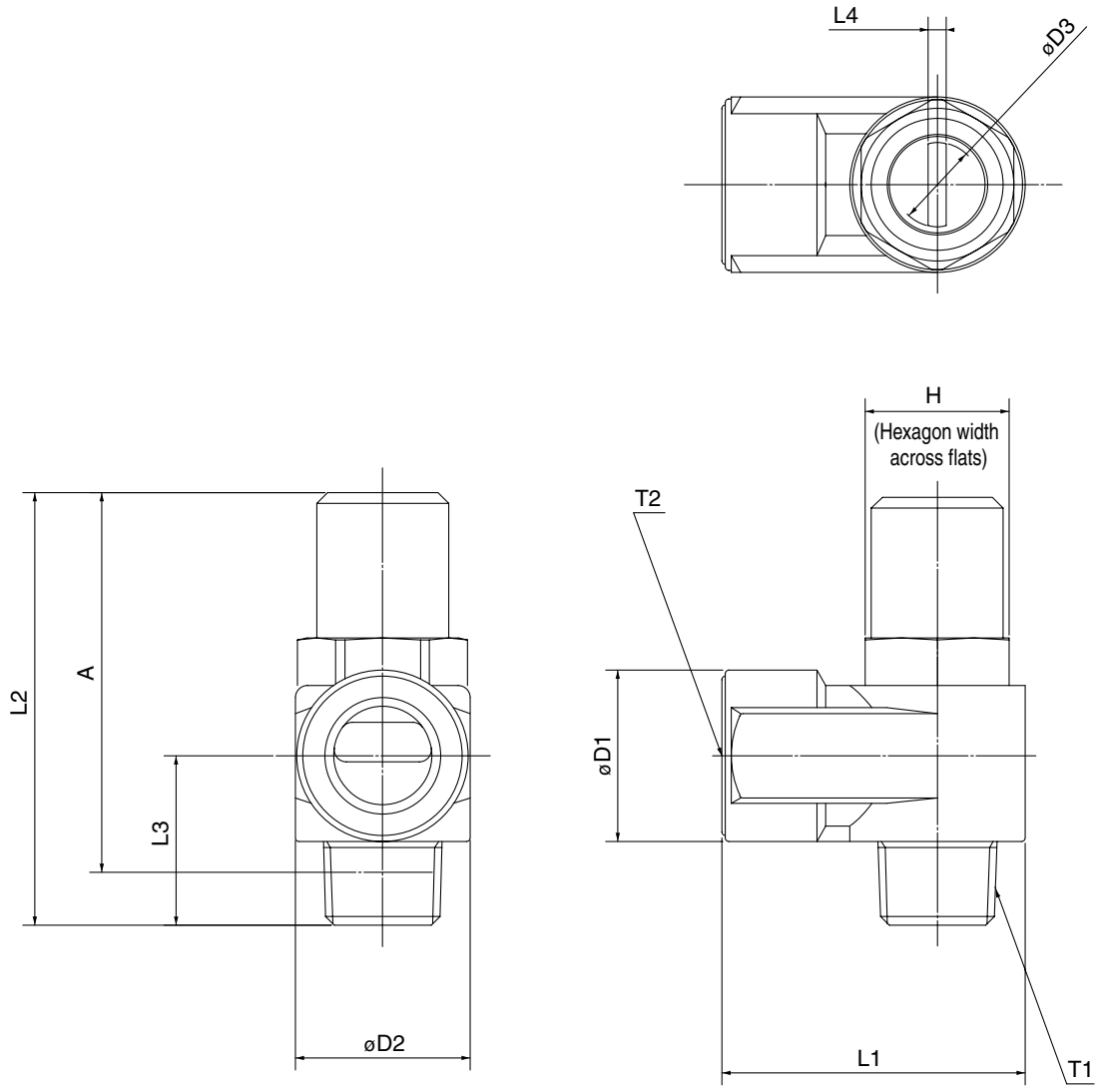
AS3210-02-D



Component Parts

No.	Description	Material	Note
①	Body A	Zinc alloy	
②	Body B	Brass	Electroless nickel plated
③	Needle	Brass	Electroless nickel plated
④	Seat ring	Brass	Electroless nickel plated
⑤	Spring	Steel wire	
⑥	U seal	HNBR	
⑦	O-ring	NBR	
⑧	O-ring	NBR	
⑨	O-ring	NBR	
⑩	Bushing	PBT	
⑪	O-ring	NBR	
⑫	Gasket	NBR, Stainless steel	
⑬	Retaining ring for hole type C	Tool steel	

Dimensions



Dimensions

Model	T1	T2	H	D1	D2	D3	L1	L2	L3	L4	A*
AS12□0-M5-D	M5 x 0.8	M5 x 0.8	8	9	9	4.7	10	31	10.3	0.7	27.4
AS12□0-U10/32-D	10-32 UNF	10-32 UNF									
AS22□0-01-SD	R 1/8	Rc 1/8	12	14.3	14.6	7.2	18	35.6	14.1	1.2	31.6
AS22□0-F01-SD		G 1/8									
AS22□0-N01-SD	NPT 1/8	NPT 1/8	12.7								
AS22□0-02-SD	R 1/4	Rc 1/4	17	18	19.5	7.2	27.2	40.7	18	1.2	36.7
AS22□0-F02-SD		G 1/4									
AS22□0-N02-SD	NPT 1/4	NPT 1/4	17.5								
AS32□0-02-SD	R 1/4	Rc 1/4	19	22.5	24.3	9.8	30	55.3	22.4	1.2	49.3
AS32□0-F02-SD		G 1/4									
AS32□0-N02-SD	NPT 1/4	NPT 1/4									
AS32□0-03-SD	R 3/8	Rc 3/8	19	22.5	24.3	9.8	30	53.7	20.8	1.2	47.4
AS32□0-F03-SD		G 3/8									
AS32□0-N03-SD	NPT 3/8	NPT 3/8									
AS42□0-04-SD	R 1/2	Rc 1/2	24	27.5	28.5	12.4	38.5	63.8	26.7	1.2	55.8
AS42□0-F04-SD		G 1/2									
AS42□0-N04-SD	NPT 1/2	NPT 1/2	23.8								

∗ Reference thread dimensions after installation.

Flow Control Equipment
Precautions

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 main text for more detailed precautions on every series.

⚠ Precautions

Selection

⚠ Warning

1. Products mentioned in this catalog are not designed for the use as stop valve with zero air leakage.

A certain amount of leakage is allowed in the product's specifications.

Mounting

⚠ Warning

1. Check that the lock nut is tightened.

A loose lock nut may cause actuator speed changes.

2. Confirm the degree of rotation of the needle valve.

Products mentioned in this catalog are retainer type so that the needle is not removed completely. Over rotation will cause damage.

3. Do not use tools such as pliers to rotate the handle.

It can cause idle rotation of the handle or damage.

4. Confirm air flow direction.

Mounting backwards is dangerous, because the speed adjustment needle will not work and the actuator may lurch suddenly.

5. Adjust needle by opening the needle slowly after having closed it completely.

Loose needle valves may cause unexpected sudden actuator extension. When needle valve is turned clockwise, it is closed and cylinder speed decreases. When needle valve is turned counter clockwise, it is open and cylinder speed increases.

6. Do not apply excessive force or shock to the body or fittings with an impact tool.

It can cause damage or air leakage.

Series AS-F/FE/FG/FM

Selection

⚠ Warning

1. Confirm that PTFE can be used in application.

PTFE powder (Polytetrafluoroethylene resin) is included in the seal material. Confirm if the use of it may cause any adverse effect in the system.

Mounting

⚠ Warning

1. To install/remove the Flow Control Equipment, tighten/loosen at wrench flat B as close to the thread as possible using the appropriate wrench.

Do not apply torque at other points as the product may be damaged. Rotate Body A manually for positioning after installation.

2. Do not use universal type fittings for applications involving continuous rotation.

The fitting section may be damaged.

Tightening Torque

⚠ Caution

1. The tightening torque for pipe fittings is as shown in the table. As a rule, they should be tightened 2 to 3 turns with a tool after first tightening by hand. Be careful not to cause damage by over-tightening.

Male thread	Suitable screw torque (N·m)	Hexagon width across flats (mm)	Adjustable spanner nominal (mm)
M3	1/4	4.5	—
M5 10/32-UNF	1/6 turn after hand tightening	8	100
1/8	7 to 9	14	150
1/4	12 to 14	17	200
3/8	22 to 24	21	200
1/2	28 to 30	24	200

Lock Nut Tightening Torque

⚠ Caution

1. Suitable screw torque for a hexagon lock nut is shown in the table below. For standard installation, turn 15 to 30° using tool, after fastening by hand. Pay attention not to over torque the product.

Body size	Suitable screw torque (N·m)
M3	0.07
M5	0.3
1/8	1
1/4	1.5
3/8	4
1/2	10