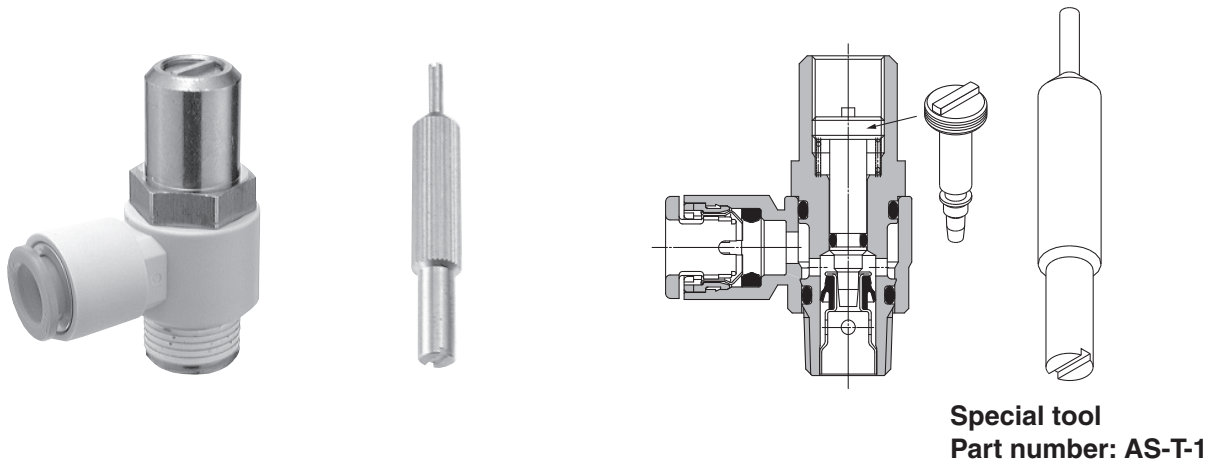


Tamper Proof Speed Controller with One-touch Fitting

RoHS

- Able to adjust flow by a special tool
- Prevention of an unnecessary manual operation



Tamper Proof Speed Controller with One-touch Fitting

AS□□□1F-T

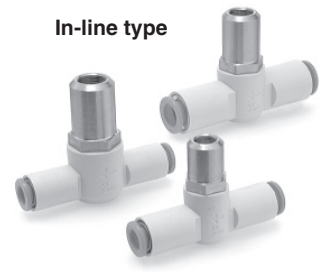
Elbow type



Universal type



In-line type



Tamper Proof Dual Speed Controller with One-touch Fitting

ASD□□□F-T



Tamper Proof Speed Controller Standard Type

AS□2□0-T

Elbow Type (Metal Body)



AS□□□1F-T Series



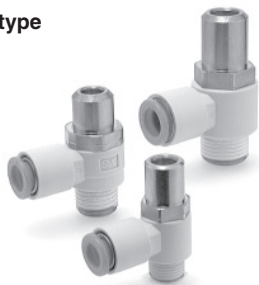
EMC-AS1F-T-01A-UK

Tamper Proof Speed Controller with One-touch Fitting Elbow Type/Universal Type

AS□□□1F-T Series

RoHS

Elbow type



Universal type



Model

Elbow type	Universal type	Port size	Applicable tubing O.D.																
			Metric size						Inch size										
			3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"				
AS12□1F-M5	AS13□1F-M5	M5 x 0.8	●	●	●														
AS22□1F-01	AS23□1F-01	R 1/8	●	●	●	●	●	*											
AS22□1F-02	AS23□1F-02	R 1/4		●	●	●	●												
AS32□1F-02	AS33□1F-02	R 1/4			●	●	●	●											
AS32□1F-03	AS33□1F-03	R 3/8			●	●	●	●											
AS42□1F-04	AS43□1F-04	R 1/2						●	●										
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF									●	●	●	●					
AS22□1F-N01	AS23□1F-N01	NPT 1/8									●	●	●	●	●				
AS22□1F-N02	AS23□1F-N02	NPT 1/4										●	●	●	●	●			
AS32□1F-N02	AS33□1F-N02	NPT 1/4												●	●	●			
AS32□1F-N03	AS33□1F-N03	NPT 3/8												●	●	●			
AS42□1F-N04	AS43□1F-N04	NPT 1/2															●	●	

Note 1) * Elbow type only

Note 2) Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.

Specifications

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)
Applicable tubing material ⁽¹⁾	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.

Note 2) Brass parts are all electroless nickel plated, provided as standard.

How to Order

AS 2 2 1 1 F - 01 - 06 S T -

Body size

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

Type

2	Elbow
3	Universal

Control

0	Meter-out
1	Meter-in

With One-touch fitting

Port size

M5	M5 x 0.8
01	R 1/8
02	R 1/4
03	R 3/8
04	R 1/2
U10/32	10-32 UNF
N01	NPT 1/8
N02	NPT 1/4
N03	NPT 3/8
N04	NPT 1/2

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

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.

Applicable tubing O.D. ^{Note)}

Metric size	Inch size
23	Ø 3.2*
04	Ø 4
06	Ø 6
08	Ø 8
10	Ø 10
12	Ø 12
01	Ø 1/8"
03	Ø 5/32"
05	Ø 3/16"
07	Ø 1/4"
09	Ø 5/16"
11	Ø 3/8"
13	Ø 1/2"

Made to Order
Refer to page 7 for details.

Note) For applicable tubing O.D. selection, refer to the Model.

* Use Ø 1/8" tube.



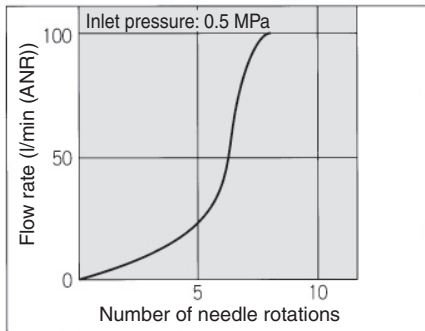
Made to Order
(For details, refer to page 7.)

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

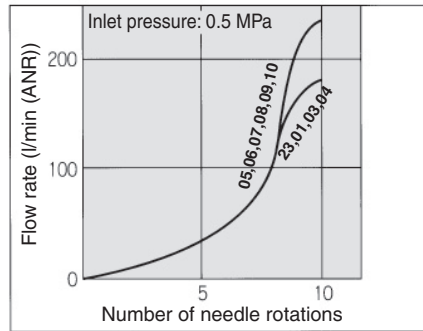
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

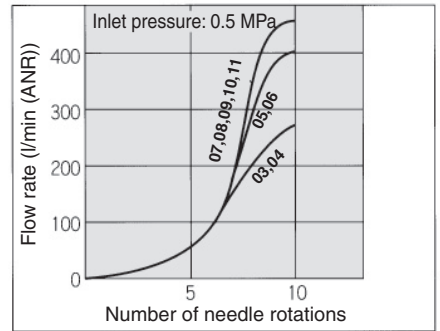
AS12□1F
AS13□1F



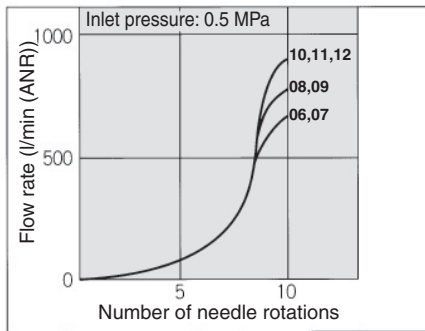
AS22□1F-□01
AS23□1F-□01



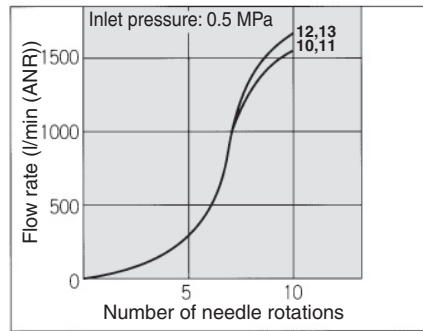
AS22□1F-□02
AS23□1F-□02



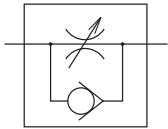
AS32□1F
AS33□1F



AS42□1F
AS43□1F



Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

Flow Rate and Sonic Conductance

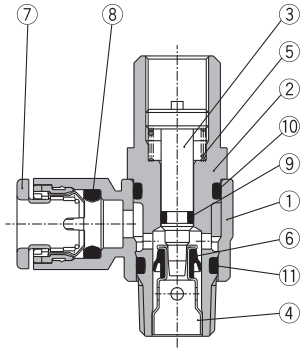
Model		AS12□1F AS13□1F	AS22□1F-□01 AS23□1F-□01	AS22□1F-□02 AS23□1F-□02	AS32□1F AS33□1F	AS42□1F AS43□1F				
Tubing O.D.	Metric size	Ø 3.2, Ø 4, Ø 6	Ø 3.2, Ø 4, Ø 6, Ø 8, Ø 10	Ø 4, Ø 6, Ø 8, Ø 10	Ø 6, Ø 8, Ø 10, Ø 12	Ø 10, Ø 12				
	Inch size	Ø 1/8", Ø 5/32", Ø 3/16", Ø 1/4"	Ø 1/8", Ø 3/16", Ø 1/4", Ø 5/32", Ø 5/16"	Ø 5/32", Ø 3/16", Ø 1/4", Ø 5/16", Ø 3/8"	Ø 1/4", Ø 5/16", Ø 3/8"	Ø 3/8", Ø 1/2"				
Controlled flow	Flow rate (l/min (ANR))	100	180	230	260 390	460	660 790	920	1580	1710
Free flow	Sonic conductance dm ³ /(s·bar)	0.3	0.54	0.7	0.8 1.2	1.4	2 2.4	2.8	4.8	5.2
Critical pressure ratio	Controlled flow	0.2	0.25	0.3	0.25	0.25				
	Free flow	0.4	0.2	0.3	0.2	0.3				

Note) Flow rate values are at a pressure of 0.5 MPa and a temperature of 20 °C.

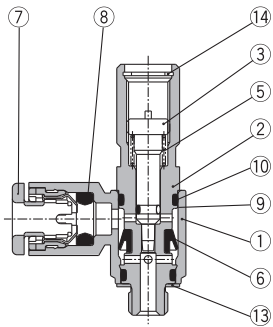
AS□□□1F-T Series

Construction

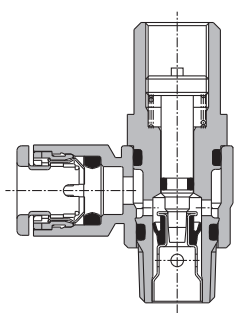
Elbow type
Meter-out type



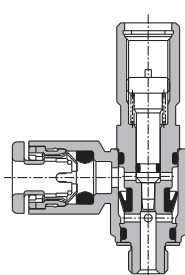
M5 type
U10/32 type



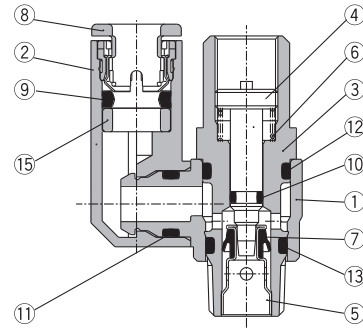
Meter-in type



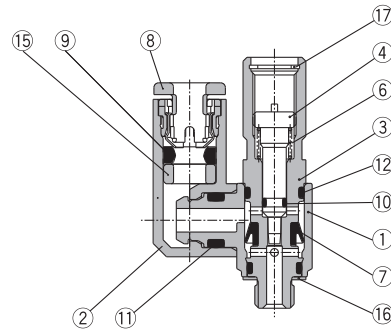
M5 type
U10/32 type



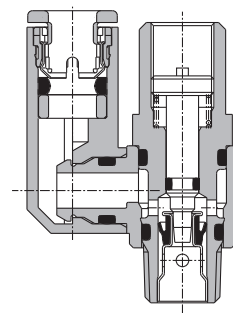
Universal type
Meter-out type



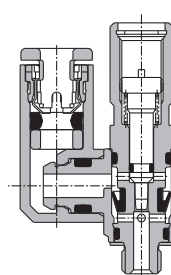
M5 type
U10/32 type



Meter-in type



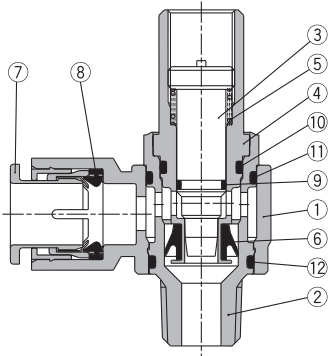
M5 type
U10/32 type



Construction

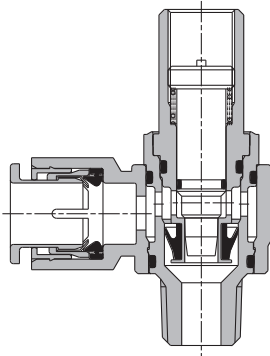
Elbow type Meter-out type

AS3201F-02



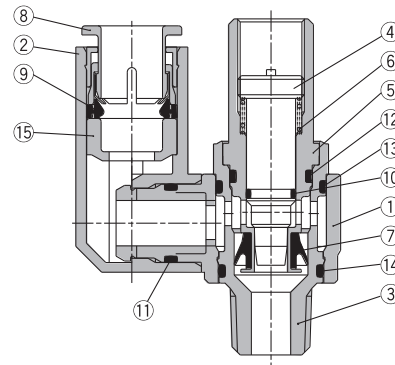
Meter-in type

AS3211F-02



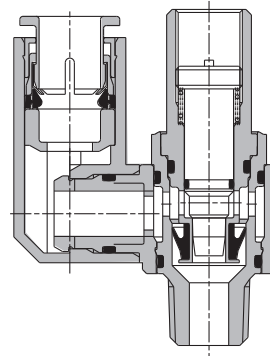
Universal type Meter-out type

AS3301F-02



Meter-in type

AS3311F-02



Component Parts

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

Note 1) M5 and U10/32 type: Stainless steel

Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Body B	Brass	Electroless nickel plated
4	Needle	Brass	Electroless nickel plated
5	Seat ring	Brass	Electroless nickel plated
6	Spring	Steel wire ⁽¹⁾	
7	U seal	HNBR	
8	Cassette	—	
9	Seal	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	O-ring	NBR	
13	O-ring	NBR	
14	O-ring	NBR	
15	Spacer	—	
16	Gasket	NBR, Stainless steel	
17	Retaining ring for hole type C	Tool steel	

Note 1) M5 and U10/32 type: Stainless steel

AS□□□1F-T Series

Made to Order Specifications



Please contact SMC for detailed dimensions, specifications and lead times.

Lubricant: Vaseline

X12

Ex.) AS1201F-M5-23T-X12

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

X21

Ex.) AS1201F-M5-23T-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.) AS1201F-M5-23T-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.

Tamper Proof Speed Controller with One-touch Fitting In-line Type

AS□□□1F-T Series

RoHS



Model

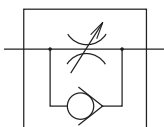
Model	Applicable tubing O.D.												
	Metric size						Inch size						
	3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"
AS1001F	●	●	●				●	●	●	●			
AS2001F		●	●					●	●	●			
AS2051F			●	●					●	●	●		
AS3001F			●	●	●	●			●	●	●	●	
AS4001F					●	●						●	●

Specifications

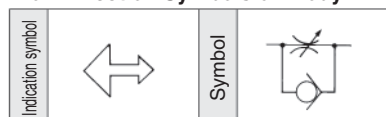
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60 °C (No freezing)
Applicable tubing material ⁽¹⁾	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
Note 2) Brass parts are all electroless nickel plated.

Symbol



Flow Direction Symbols on Body



Made to Order
(For details, refer to page 10.)

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

Flow Rate and Sonic Conductance

Model		AS1001F	AS2001F	AS2051F	AS3001F	AS4001F					
Tubing O.D.	Metric size	Ø 3.2, Ø 4, Ø 6	Ø 4	Ø 6	Ø 6	Ø 8	Ø 6	Ø 8	Ø 10, Ø 12	Ø 10	Ø 12
	Inch size	Ø 1/8", Ø 5/32", Ø 3/16", Ø 1/4"	Ø 5/32"	Ø 3/16", Ø 1/4"	Ø 3/16"	Ø 1/4", Ø 5/16"	Ø 1/4"	Ø 5/16"	Ø 3/8"	Ø 3/8"	Ø 1/2"
Controlled flow	Flow rate (l/min (ANR))	100	130	230	290	460	420	660	920	1050	1390
Free flow	Sonic conductance dm ² /(s·bar)	0.3	0.4	0.7	0.9	1.4	1.3	2	2.8	3.2	4.2
Critical pressure ratio	Controlled flow	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Free flow	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25

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

How to Order

AS **200** 1F — **06** T — **01**

Body size

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings

Tamper proof

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

Applicable tubing O.D. ^{Note)}

Metric size	Inch size
23	Ø 3.2 *
04	Ø 4
06	Ø 6
08	Ø 8
10	Ø 10
12	Ø 12
01	Ø 1/8"
03	Ø 5/32"
05	Ø 3/16"
07	Ø 1/4"
09	Ø 5/16"
11	Ø 3/8"
13	Ø 1/2"

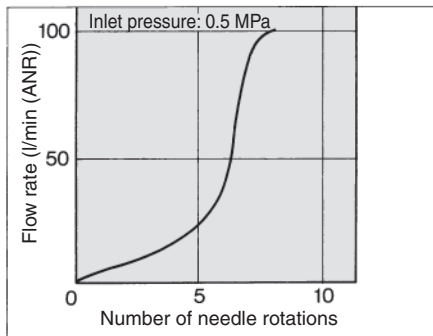
Made to Order
Refer to page 10 for details.

Note) For applicable tubing O.D. selection, refer to the Model.
* Use Ø 1/8" tube.

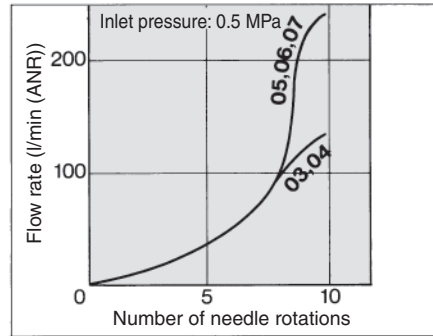
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

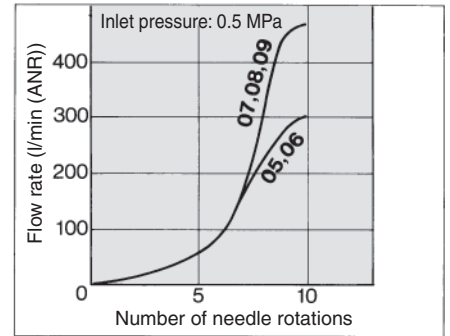
AS1001F



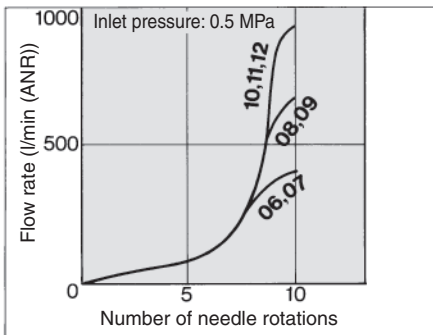
AS2001F



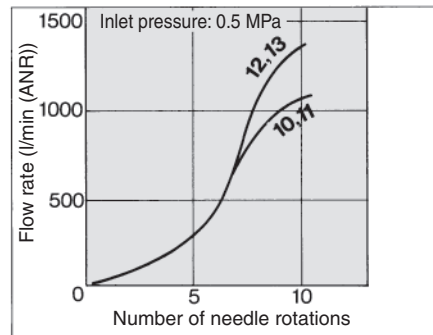
AS2051F



AS3001F

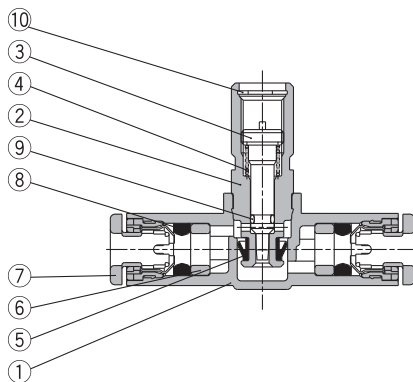


AS4001F

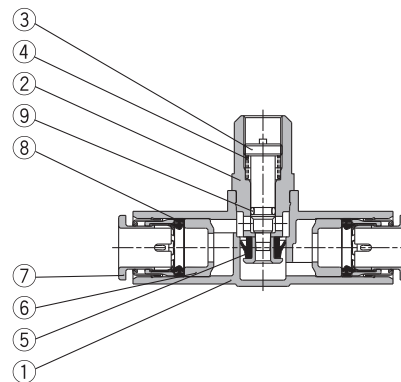


Construction

AS1001F



AS2001F to AS4001F



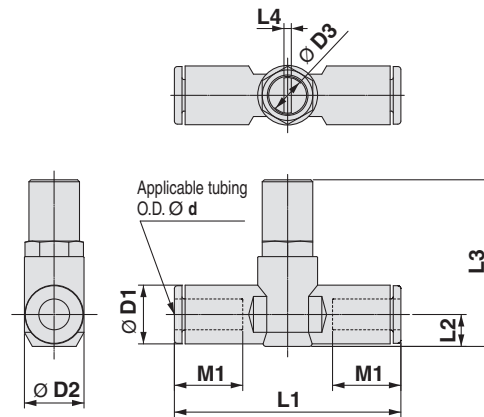
Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass	Electroless nickel plated
3	Needle	Brass	Electroless nickel plated
4	Spring	Steel wire ⁽¹⁾	
5	U seal	HNBR	
6	Spacer	—	
7	Cassette	—	
8	Seal	NBR	
9	O-ring	NBR	
10	Retaining ring for hole type C	Tool steel	

Note 1) AS1001F type: Stainless steel

AS□□□1F-T Series

Dimensions



Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1	Weight (g)
AS1001F-23T	3.2	8.4	10.5	4.5	38	4.5	26	0.7	12.7	8
AS1001F-04T	4	9.3			39.2	5.2	26.6		13.5	9
AS1001F-06T	6	11.6			40.7	6.2	27.7		15	10
AS2001F-04T	4	9.3	12.3	7	40.7	5.2	31.9	1.5	12.7	15
AS2001F-06T	6	11.6			44.8	6.3	33		13.5	16
AS2051F-06T	6	12.8	15.5	7	53.2	6.7	35.2	1.5	17	33
AS2051F-08T	8	15.2			59.8	8.1	36.5		18	36
AS3001F-06T	6	12.8	20.6	9.5	59	7.4	45	1.5	17	56
AS3001F-08T	8	15.2			64.4	8.2	45.8		18	60
AS3001F-10T	10	18.5			71.6	9.8	47.3		21	64
AS3001F-12T	12	20.9	27.6	12	76	11	48.5	1.5	22	68
AS4001F-10T	10	18.5			77.7	11.3	55.4		21	121
AS4001F-12T	12	20.9			82.1	11.3	56.4		22	125

Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1	Weight (g)
AS1001F-01T	1/8"	8.4	10.5	4.5	38	4.5	26	0.7	12.7	8
AS1001F-03T	5/32"	9.3			39.2	5.2	26.6		13.5	9
AS1001F-05T	3/16"	11.4			48.7	6.2	27.7		15	10
AS1001F-07T	1/4"	12	12.3	7	40.7	5.2	31.9	1.5	12.7	15
AS2001F-03T	5/32"	9.3			40.7	6.2	32.8		13.5	16
AS2001F-05T	3/16"	11.4	15.5	7	50	6.2	32.8	1.5	16.5	21
AS2001F-07T	1/4"	13.2			52.2	7.1	33.7		17	19
AS2051F-05T	3/16"	11.4	20.6	9.5	52.2	6.2	34.9	1.5	16.5	35
AS2051F-07T	1/4"	13.2			54.4	7.1	35.7		17	33
AS2051F-09T	5/16"	15.2			59.8	8.1	36.7		18	36
AS3001F-07T	1/4"	13.2	27.6	12	59	7.4	45.2	1.5	17	56
AS3001F-09T	5/16"	15.2			64.4	8.2	46		18	60
AS3001F-11T	3/8"	17.9			70.8	9.5	47.2		21	72
AS4001F-11T	3/8"	17.9	27.6	12	76.9	10.3	55.5	1.5	21	129
AS4001F-13T	1/2"	21.7			83.1	11.6	56.9		22	142

Made to Order



Lubricant: Vaseline

X12

Ex.) AS1001F-23T-X12

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

X21

Ex.) AS1001F-23T-X21

Note 1) Not particle-free

Throttle Valve (Without Check Valve)

X214

Ex.) AS1001F-23T-X214

Tamper Proof Dual Speed Controller with One-touch Fitting

ASD□□□F-T Series

RoHS

Specifications



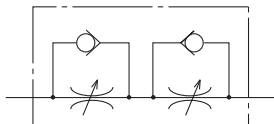
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60 °C (No freezing)
Applicable tubing material (1)	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
Note 2) Brass parts are all electroless nickel plated, provided as standard.

Model

Model	Port size	Applicable tubing O.D.														
		Metric size					Inch size									
		4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"				
ASD230F-M5	M5 x 0.8	●	●													
ASD330F-01	R1/8		●	●												
ASD430F-02	R1/4		●	●	●											
ASD530F-02	R1/4		●	●	●	●										
ASD530F-03	R3/8		●	●	●	●										
ASD630F-04	R1/2				●	●										
ASD230F-U10/32	10-32 UNF						●	●	●	●						
ASD330F-N01	NPT1/8								●	●	●					
ASD430F-N02	NPT1/4									●	●	●				
ASD530F-N02	NPT1/4										●	●	●			
ASD530F-N03	NPT3/8											●	●	●		
ASD630F-N04	NPT1/2															●

Symbol



Flow Rate and Sonic Conductance

Model		ASD230F	ASD330F	ASD430F		ASD530F			ASD630F	
Tubing O.D.	Metric size	Ø 4, Ø 6	Ø 6, Ø 8	Ø 6	Ø 8, Ø 10	Ø 6	Ø 8	Ø 10, Ø 12	Ø 10	Ø 12
	Inch size	Ø 1/8" Ø 5/32" Ø 3/16" Ø 1/4"	Ø 3/16" Ø 1/4"	—	Ø 1/4" Ø 5/16" Ø 3/8"	Ø 1/4"	Ø 5/16"	Ø 3/8"	—	Ø 3/8"
Controlled flow	Flow rate (l/min (ANR))	75	175	295	350	500	600	700	1200	1300
	Sonic conductance (dm ³ /(s·bar))	0.22	0.54	0.9	1.06	1.52	1.82	2.14	3.66	3.96
Critical pressure ratio	Controlled flow	0.25	0.2	0.2		0.2			0.2	
	Free flow	0.3	0.15	0.15		0.15			0.15	

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

Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

Made to Order



Lubricant: Vaseline

X12

ASD□□□F-T Series

How to Order

ASD 3 3 0 F — 01 — 06 S T —

Body size

2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard
6	1/2 standard

Universal

With One-touch fitting

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

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.

Applicable tubing O.D. Note)

Metric size	Inch size
04	Ø 4
06	Ø 6
08	Ø 8
10	Ø 10
12	Ø 12
01	Ø 1/8"
03	Ø 5/32"
05	Ø 3/16"
07	Ø 1/4"
09	Ø 5/16"
11	Ø 3/8"

Note) For applicable tubing O.D. selection, refer to the Model on page 11.

Port size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2
U10/32	10-32 UNF
N01	NPT1/8
N02	NPT1/4
N03	NPT3/8
N04	NPT1/2

Made to Order

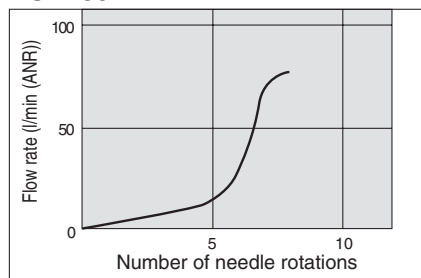
X12 Lubricant: Vaseline

Ex.) ASD230F-M5-04T-X12

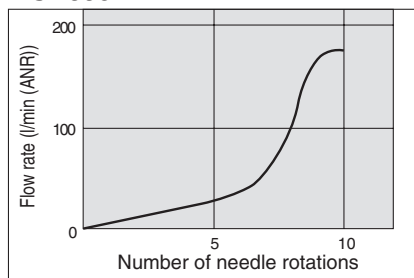
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

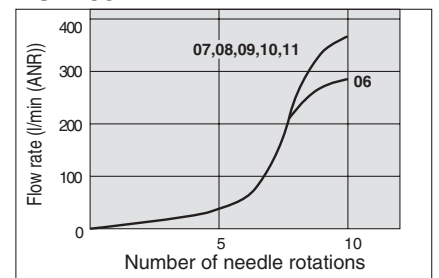
ASD230F



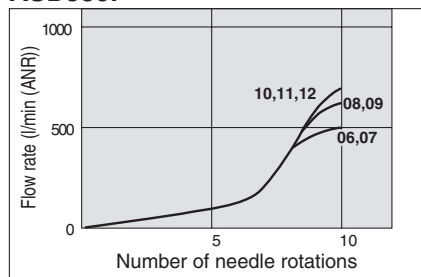
ASD330F



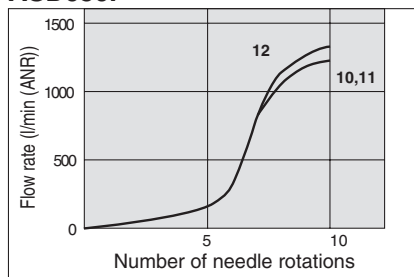
ASD430F



ASD530F

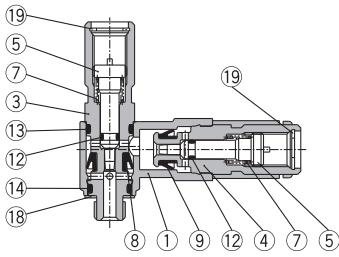


ASD630F

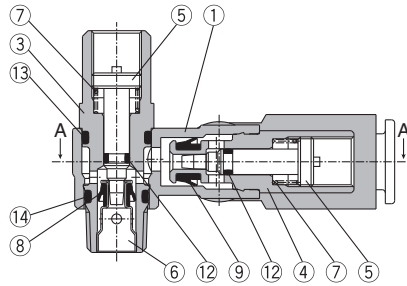


Construction

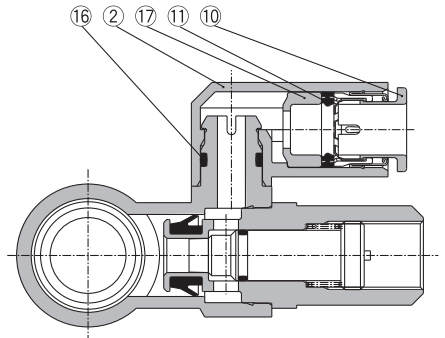
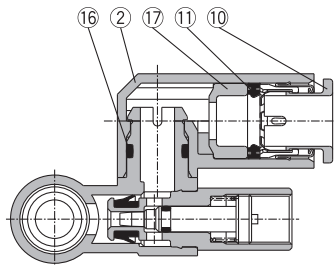
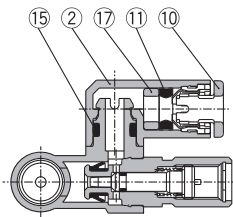
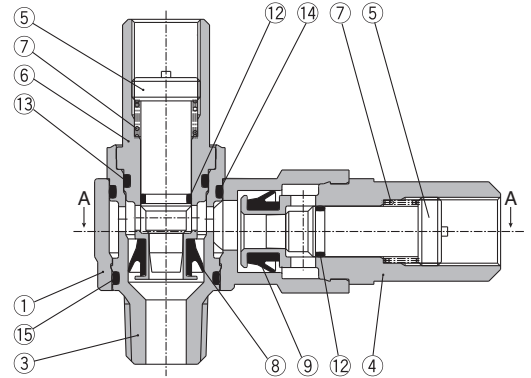
ASD230F



**ASD330F/430F
ASD530F/630F**



ASD530F-02



Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Body B	Brass	Electroless nickel plated
4	Body B	Brass	Electroless nickel plated
5	Needle	Brass	Electroless nickel plated
6	Seat ring	Brass	Electroless nickel plated
7	Spring	Steel wire ⁽¹⁾	
8	U seal	HNBR	
9	U seal	HNBR	
10	Cassette	—	
11	Seal	NBR	
12	O-ring	NBR	

Component Parts

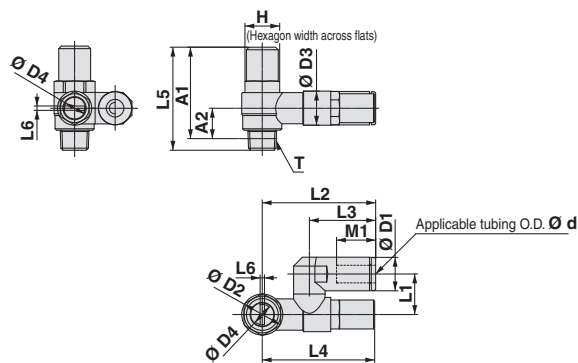
No.	Description	Material	Note
13	O-ring	NBR	
14	O-ring	NBR	
15	O-ring	NBR	
16	O-ring	NBR	
17	Spacer	—	
18	Gasket	NBR, Stainless steel	
19	Retaining ring for hole type C	Tool steel	

Note 1) ASD230F: Stainless steel

ASD□□□F-T Series

Dimensions

Metric size



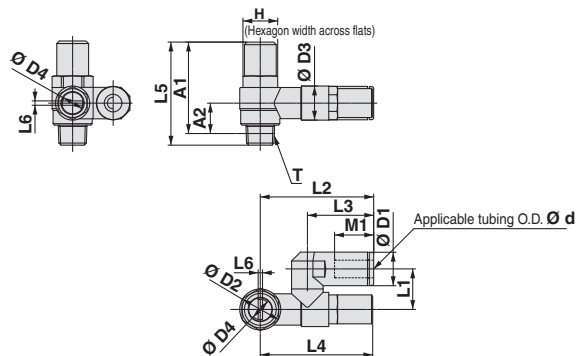
Metric Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1*	A2*	M1	Weight(g)
ASD230F-M5-04T	4	M5 x 0.8	8	9.3	9.6	10	4.5	11.7	29.4	17.5	30.7	31	0.7	27.4	7.8	12.9	17
ASD230F-M5-06T	6			11.6					32.5	20.6							18
ASD330F-01-06ST	6	R1/8	12	11.6	14.2	11.8	7	14	38.5	22.9	38.9	34.7	1.5	31.6	10.6	13.7	36
ASD330F-01-08ST	8			15.2					44.8	28.2							38.2
ASD430F-02-06ST	6	R1/4	17	12.8	18.5	15	7	18	43.5	25.2	41.7	40.2	1.5	34.7	11	17	72
ASD430F-02-08ST	8			15.2					46.5	28.2							18.5
ASD430F-02-10ST	10			18.5					49.3	31							21
ASD530F-02-06ST	6			12.8					48.3	25.2							17
ASD530F-02-08ST	8	R1/4	19	15.2	23	19.8	9.5	20.3	51.3	28.2	53.7	54.8	1.5	49.3	15.4	18.5	109
ASD530F-02-10ST	10			18.5					54.1	32.6							21
ASD530F-02-12ST	12			20.9					55.9	34.4							22
ASD530F-03-06ST	6			12.8					48.3	25.2							17
ASD530F-03-08ST	8	R3/8	19	15.2	23	19.8	9.5	20.3	51.3	28.2	53.7	52.6	1.5	47.4	14	18.5	135
ASD530F-03-10ST	10			18.5					54.1	32.6							21
ASD530F-03-12ST	12			20.9					55.9	34.4							22
ASD630F-04-10ST	10			18.5					64.3	32.6							21
ASD630F-04-12ST	12	20.9	66.1	34.4	22												

* Reference dimensions of M5 x 0.8, R threads after installation.

Dimensions

Inch size



Inch Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1*	A2*	M1	Weight(g)
ASD230F-U10/32-01T	1/8"	10-32 UNF	8	8.4	9.6	10	4.5	11.7	29.4	17.5	30.7	31	0.7	27.4	7.8	12.9	17
ASD230F-U10/32-03T	5/32"			9.3					35.2	23.3							18
ASD230F-U10/32-05T	3/16"			11.4					32.6	20.7							16.5
ASD230F-U10/32-07T	1/4"			12					32.6	20.7							20
ASD330F-N01-05ST	3/16"	NPT1/8	12.7	11.6	14.2	11.8	7	14	38.5	23.9	38.9	34.7	1.5	31.6	10.6	16.5	37
ASD330F-N01-07ST	1/4"			13.2					42.2	25.6							17
ASD330F-N01-09ST	5/16"			15.2					44.8	28.2							18.5
ASD430F-N02-07ST	1/4"	NPT1/4	17.5	13.2	18.5	15	7	18	43.9	25.6	41.7	40.2	1.5	34.7	11	17	74
ASD430F-N02-09ST	5/16"			15.2					46.5	28.2							18.5
ASD430F-N02-11ST	3/8"			18.5					49.3	31							21
ASD530F-N02-07ST	1/4"			13.2					48.7	25.6							17
ASD530F-N02-09ST	5/16"	NPT1/4	19	15.2	23	19.8	9.5	20.3	51.3	28.2	53.7	54.8	1.5	49.3	15.4	18.5	33
ASD530F-N02-11ST	3/8"			18.5					54.1	32.6							21
ASD530F-N03-07ST	1/4"			13.2					48.7	25.6							17
ASD530F-N03-09ST	5/16"	NPT3/8	19	15.2	23	19.8	9.5	20.3	51.3	28.2	53.7	52.6	1.5	47.4	14	18.5	135
ASD530F-N03-11ST	3/8"			18.5					54.1	32.6							21
ASD630F-N04-11ST	3/8"	NPT1/2	23.8	18.5	28.6	26.5	12	25.9	64.3	32.6	69.1	62.9	1.5	55.8	18.6	21	256

* Reference dimensions of 10-32 UNF and NPT threads after installation.



ASD□□□F-T Series Specific Product Precautions

Be sure to read this before handling the products.

Design/Selection

⚠ Caution

1. Single acting cylinder

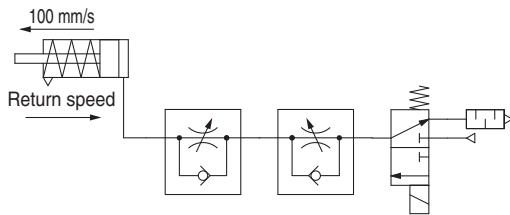
When controlling a single acting cylinder, the cylinder's return speed will differ depending on the operating conditions. Operate after confirming the maximum return speeds shown in the table below.

Speed Controller	Cylinder	Solenoid valve	Tubing	Silencer	Max. return speed (mm/s)		
					10	20	30
ASD230F	CJ2	SYJ500	TU0604 1m	AN110-01	Ø 6		
					Ø 10		
					Ø 16		
ASD330F	CM2	SYJ700	TU0604 1m	AN110-01	Ø 20		
					Ø 25		
					Ø 32		

* Values are measured at 0.5 MPa and 20 °C.

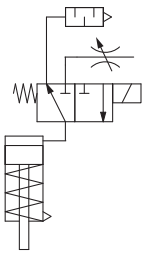
<Operating conditions>

- Cylinder extension speed: 100 mm/s
- Meter-out needle fully open



(Reference) Recommended circuit for high return speed

When low extension speed and high return speed are desired, the following circuit using 3-port is recommended.



Note) Use AS-F series with -X214 for the throttle valve.

Tamper Proof Speed Controller Standard Type Elbow Type (Metal Body)

AS□2□0-T Series

RoHS

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 <small>Note 4)</small>	3/8	1/2
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)						
Controlled flow	Flow rate (l/min (ANR))	105	230	460	920	1700		
	Free flow							
Critical pressure ratio	Sonic conductance $dm^3/(s \cdot bar)$	0.32	0.7	1.4	2.8	5.2		
	Controlled flow	0.2	0.25	0.3	0.25	0.25		
	Free flow	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-out and meter-in types can be visually differentiated by the flow direction symbol on the metal body.

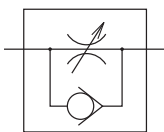
Note 3) Brass parts are all electroless nickel plated, provided as standard.

Note 4) Female thread port size (valve side) is 3/8 for AS32□0-□02.

How to Order

AS 2 2 0 0 - 01 - S T

Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

Body size

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

Elbow

Control

0	Meter-out
1	Meter-in

Tamper proof

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

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.

Port size

Symbol	Cylinder side	In the side of solenoid valve
M5	M5 x 0.8	M5 x 0.8
01	R1/8	Rc1/8
02	R1/4	Rc1/4 <small>Note 1)</small>
		Rc3/8 <small>Note 2)</small>
03	R3/8	Rc3/8
04	R1/2	Rc1/2
F01	R1/8	G1/8
F02	R1/4	G1/4 <small>Note 1)</small>
		G3/8 <small>Note 2)</small>
F03	R3/8	G3/8
F04	R1/2	G1/2
U10/32	10-32 UNF	10-32 UNF
N01	NPT1/8	NPT1/8
N02	NPT1/4	NPT1/4 <small>Note 1)</small>
		NPT3/8 <small>Note 2)</small>
N03	NPT3/8	NPT3/8
N04	NPT1/2	NPT1/2

Note 1) AS22□0-□02

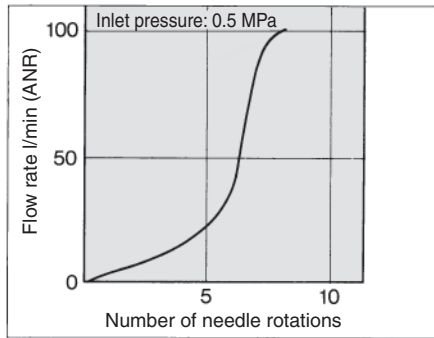
Note 2) AS32□0-□02

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

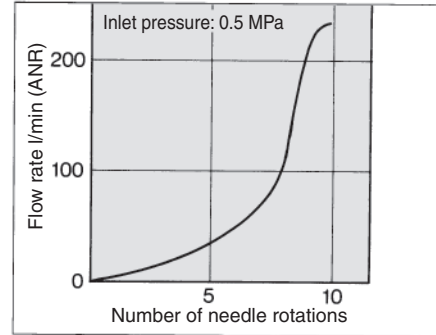
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

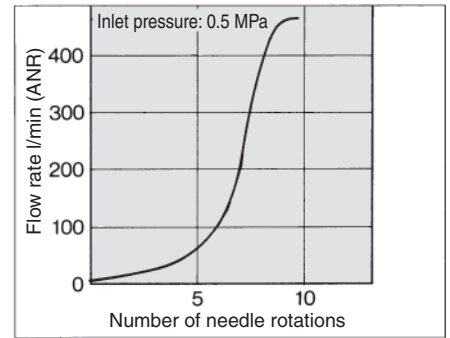
AS12□0-M5 · AS12□0-U10/32



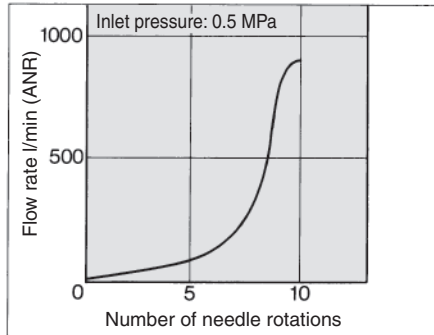
AS22□0-01



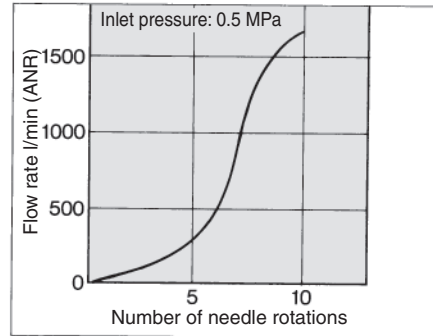
AS22□0-02



AS32□0

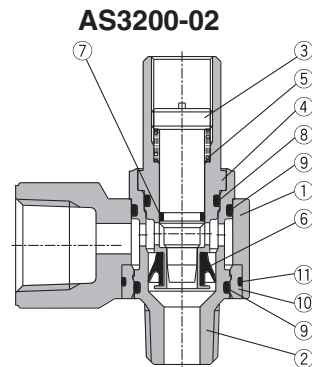
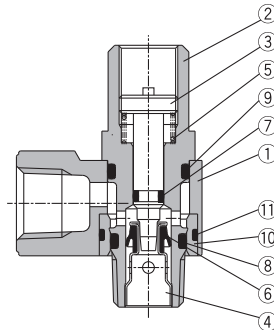
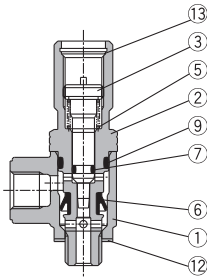


AS42□0

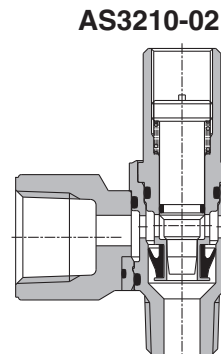
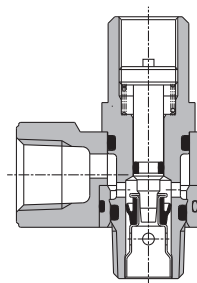
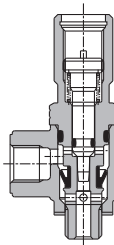


Construction

**Meter-out type
M5 type
U10/32 type**



**Meter-in type
M5 type
U10/32 type**



Component Parts

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

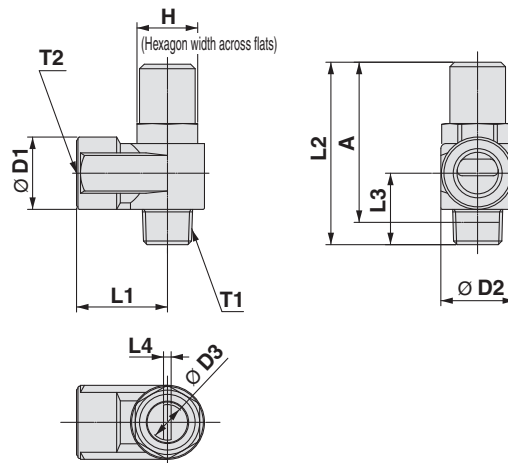
Component Parts

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	

Note 1) M5 and U10/32 type: Stainless steel

AS□2□0-T Series

Dimensions



Dimensions

Model	T1	T2	H	D1	D2	D3	L1	L2	L3	L4	A*	Weight (g)
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	13
AS12□0-U10/32-T	10-32 UNF	10-32 UNF										
AS22□0-01-ST	R1/8	Rc1/8	12	14.3	14.6	7	18	34.7	13.2	1.5	31.6	33
AS22□0-F01-ST		G1/8										
AS22□0-N01-ST	NPT1/8	NPT1/8	12.7	18	19.5	7	27.2	40.2	17.5	1.5	36.7	72
AS22□0-02-ST	R1/4	Rc1/4	17									
AS22□0-F02-ST		G1/4										
AS22□0-N02-ST	NPT1/4	NPT1/4	17.5	22.5	24.3	9.5	30	54.8	21.9	1.5	49.3	123
AS32□0-02-ST	R1/4	Rc3/8	19									
AS32□0-F02-ST		G3/8										
AS32□0-N02-ST	NPT1/4	NPT3/8	19	22.5	24.3	9.5	30	52.6	19.7	1.5	47.4	128
AS32□0-03-ST	R3/8	Rc3/8										
AS32□0-F03-ST		G3/8										
AS32□0-N03-ST	NPT3/8	NPT3/8	24	27.5	28.5	12	38.5	62.9	25.8	1.5	55.8	222
AS42□0-04-ST	R1/2	Rc1/2										
AS42□0-F04-ST		G1/2										
AS42□0-N04-ST	NPT1/2	NPT1/2	23.8									

* Reference thread dimensions after installation.

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