

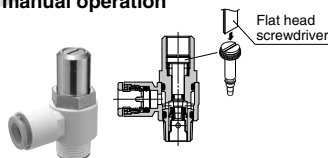
Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fitting Elbow Type/Universal Type

Series AS□□□1F-D

RoHS

Flow adjustable
by flat head screwdriver

Prevention of an unnecessary
manual operation



Flat head
screwdriver

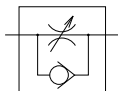
Elbow type



Universal type



Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

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. (Refer to pages 411 and 412 for details.)

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

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	ø3.2, ø4, ø6	ø3.2, ø4, ø6, ø8, ø10	ø4, ø6, ø8, ø10	ø6, ø8, ø10, ø12	ø10, ø12
	Inch size	ø1/8", ø5/32", ø3/16", ø1/4"	ø1/8", ø3/16", ø1/4", ø5/32", ø5/16"	ø5/32", ø3/16", ø1/4", ø5/16", ø3/8"	ø1/4", ø5/16", ø3/8"	ø3/8", ø1/2"
Controlled flow	Flow rate (L/min (ANR))	100	180 230	260 390	460 660 790 920	1580 1710
	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 measured at 0.5 MPa and 20°C.



Made to Order

(Refer to page 583 for details.)

How to Order

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

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

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

Applicable tubing O.D. (Note)

Metric size	Inch size
23	ø3.2*
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Metric size	Inch size
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"
13	ø1/2"

Type adjustable by flat head screwdriver
• **With seal**
Note) In the case that port size is either M5 or 10-32 UNF thread, it is not available with seal. Gasket is provided as standard.

Made to Order
Refer to the below for details.

Note) For applicable tubing O.D. selection, refer to the Model on page 582.
* Use ø1/8" tube.

Made to Order



Lubricant: Vaseline

X12

Ex.) AS1201F-M5-23D-X12

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

X21

Ex.) AS1201F-M5-23D-X21

Note 1) Not particle-free

Note 2) Throttle valve is only compatible with the part no. of the meter-out type.

Throttle Valve (Without Check Valve)

X214

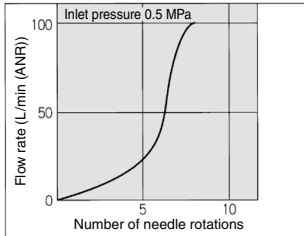
Ex.) AS1201F-M5-23D-X214

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

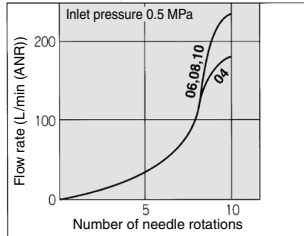
Needle Valve/Flow Characteristics

Note) The flow characteristics are representative values.

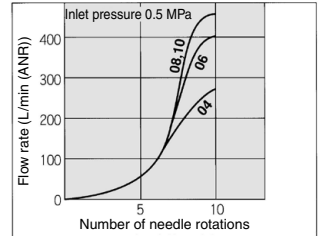
AS1201F, AS1211F



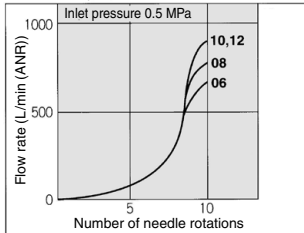
AS2201F-01, AS2211F-01



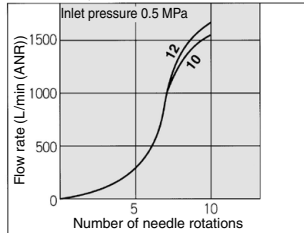
AS2201F-02, AS2211F-02



AS3201F, AS3211F

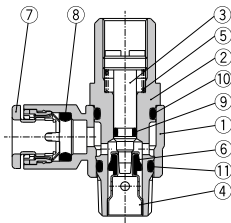


AS4201F, AS4211F

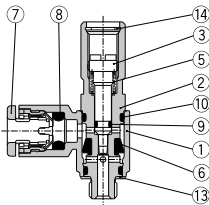


Construction

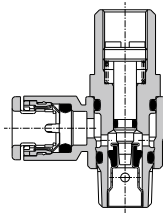
Elbow type
Meter-out type



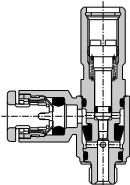
M5 type
U10/32 type



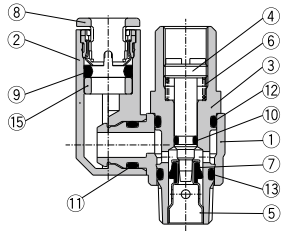
Meter-in type



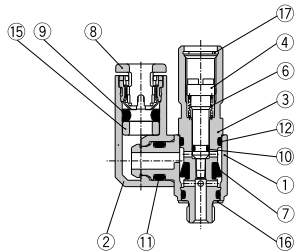
M5 type
U10/32 type



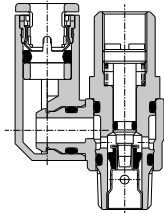
Universal type
Meter-out type



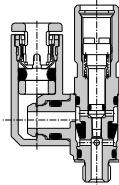
M5 type
U10/32 type



Meter-in type



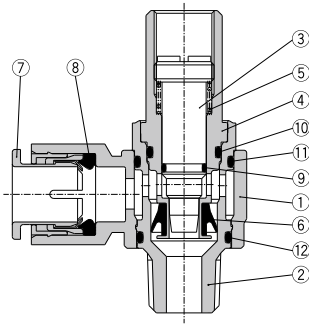
M5 type
U10/32 type



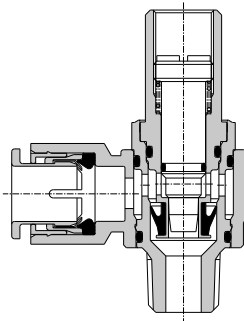
Construction

Elbow type

Meter-out AS3201F-02



Meter-in AS3211F-02



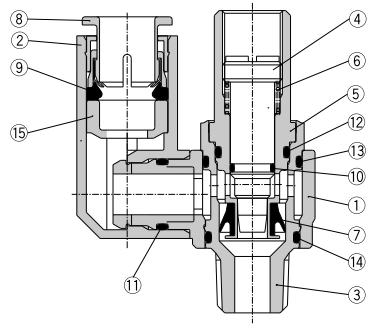
Component Parts

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	POM	
13	Gasket	NBR, Stainless steel	
14	Retaining ring for hole type C	Tool steel	

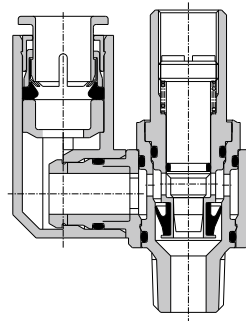
Note 1) M5 and U10/32 type: Stainless steel

Universal type

Meter-out AS3301F-02



Meter-in AS3311F-02



Component Parts

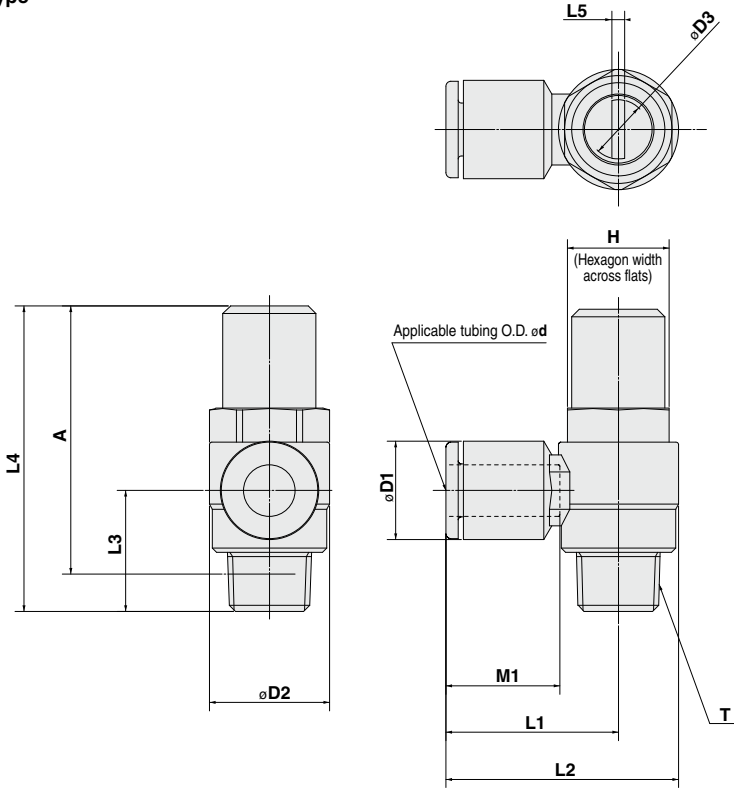
No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Body B	Brass	Electroless nickel plated
4	Needle	Brass	Electroless nickel plated
5	Seat ring	Brass	Electroless nickel plated
6	Spring	Steel wire ⁽¹⁾	
7	U seal	HNBR	
8	Cassette	—	
9	Seal	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	O-ring	NBR	
13	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
TMH
ASD
AS
AS-FE
KE
AS-FG
AS-FP
AS-FM
AS-D
AS-T
ASP
ASN
AQ
ASV
AK
VCHC
ASS
ASR
ASQ

Dimensions

Elbow type



Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Weight (g)
AS12□1F-M5-23D	3.2			8.4			17.3	22.1	12.3				12.7	10
AS12□1F-M5-04D	4	M5 x 0.8	8	9.3	9.6	4.7	17.3	22.1	12.3	31	0.7	27.4	12.7	10
AS12□1F-M5-06D	6			11.6			18.1	22.9	11.7				13.5	
AS22□1F-01-23SD	3.2			8.4			20.4	27.5	13.4				12.7	20
AS22□1F-01-04SD	4			9.3			25.3	32.4					18.5	23
AS22□1F-01-06SD	6	R 1/8	12	11.6	14.2	7.2	25.3	32.4		34.7	1.2	31.6	21	25
AS22□1F-01-08SD	8			15.2			35.3	44.5	15.3				21	25
AS22□1F-01-10SD	10			18.5									16	40
AS22□1F-02-04SD	4			10.4			25.2	34.4					17	77
AS22□1F-02-06SD	6			12.8			27.2	36.4					18.5	42
AS22□1F-02-08SD	8	R 1/4	17	15.2	18.5	7.2	35.3	44.5	18.3	40.2	1.2	34.7	21	44
AS22□1F-02-10SD	10			18.5			31.8	43.3					17	73
AS32□1F-02-06SD	6			12.8			27.8	39.3					17	73
AS32□1F-02-08SD	8			15.2			29.5	41					18.5	76
AS32□1F-02-10SD	10	R 1/4	19	18.5	23	9.8	31.8	43.3	21.3	54.8	1.2	49.3	21	80
AS32□1F-02-12SD	12			20.9			32.8	44.3					22	82
AS32□1F-03-06SD	6			12.8			27.8	39.3					17	77
AS32□1F-03-08SD	8			15.2			29.5	41					18.5	79
AS32□1F-03-10SD	10	R 3/8	19	18.5	23	9.8	31.8	43.3	19.8	52.6	1.2	47.4	21	81
AS32□1F-03-12SD	12			20.9			32.8	44.3					22	83
AS42□1F-04-10SD	10			18.5			33.6	47.9					21	141
AS42□1F-04-12SD	12	R 1/2	24	20.9	28.6	12.4	35.2	49.5	24.5	62.9	1.2	55.8	22	142

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

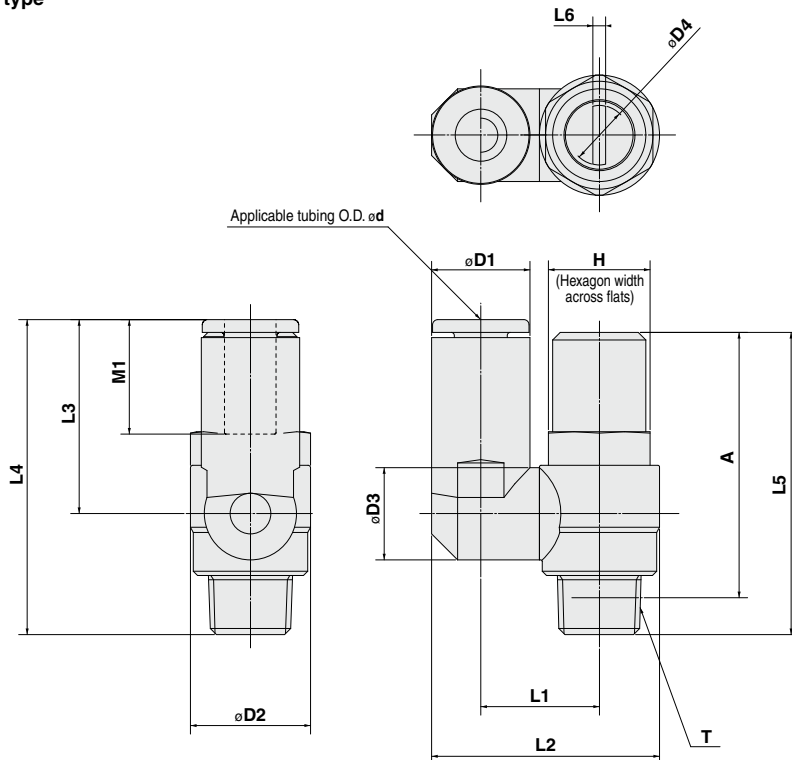
Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Weight (g)
AS12□1F-U10-32-01D	1/8"			8.4			17.3	22.1	12.3				12.7	10
AS12□1F-U10-32-03D	3/32"	10-32 UNF	8	9.3	9.6	4.7	17.3	22.1	12.3	31	0.7	27.4	12.7	10
AS12□1F-U10-32-05D	3/16"			11.4			18.3	23.1	11.7				13.5	
AS12□1F-U10-32-07D	1/4"			12			20.4	27.5					12.7	20
AS22□1F-N01-01SD	1/8"			8.4			20.4	27.5					12.7	20
AS22□1F-N01-03SD	3/32"			9.3			25.2	34.5					18.5	23
AS22□1F-N01-05SD	3/16"	NPT 1/8	12.7	13.2	14.2	7.2	24	31.1	13.4	34.7	1.2	31.6	17	25
AS22□1F-N01-07SD	1/4"			13.2			23.9	31					17	23
AS22□1F-N01-09SD	5/16"			15.2			25.3	32.4					18.5	25
AS22□1F-N02-03SD	3/32"			10.4			25.2	34.4					16	40
AS22□1F-N02-05SD	3/16"			12.8			25.2	34.5					16.5	40
AS22□1F-N02-07SD	1/4"	NPT 1/4	17.5	13.2	18.5	7.2	25.2	34.5	17.7	40.2	1.2	34.7	17	42
AS22□1F-N02-09SD	5/16"			15.2			27.2	36.4					18.5	44
AS22□1F-N02-11SD	3/8"			18.3			35.3	44.5	18.3				21	80
AS32□1F-N02-07SD	1/4"			13.2			27.8	39.3					17	73
AS32□1F-N02-09SD	5/16"	NPT 1/4	19	15.2	23	9.8	29.5	41	21.3	54.8	1.2	49.3	18.5	76
AS32□1F-N02-11SD	3/8"			17.9			31.8	43.3					21	80
AS32□1F-N03-07SD	1/4"			13.2			27.8	39.3					17	77
AS32□1F-N03-09SD	5/16"	NPT 3/8	19	15.2	23	9.8	29.5	41	19.8	52.6	1.2	47.4	18.5	79
AS32□1F-N03-11SD	3/8"			17.9			31.8	43.3					21	81
AS42□1F-N04-11SD	3/8"			17.9			33.6	47.9					21	141
AS42□1F-N04-13SD	1/2"	NPT 1/2	23.8	21.7	28.6	12.4	35.2	49.5	24.5	62.9	1.2	55.8	22	142

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

Dimensions

Universal type



Metric Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A*	M1	Weight (g)
AS13□1F-M5-23D	3.2			8.4					19.8							
AS13□1F-M5-04D	4	M5 x 0.8	8	9.3	9.6	9.3	4.7	10.8	20.3	17.5	28.7			0.7	27.4	10
AS13□1F-M5-06D	6			11.6					21.4	20.6	31.8					
AS23□1F-01-23SD	3.2			8.4		9.3			13.1	24.4	17.5	30.9				21
AS23□1F-01-04SD	4			9.3					14	24.9	22.9	36.3				22
AS23□1F-01-06SD	6	R 1/8	12	11.6		10.9	7.2		14	26.9	22.9	36.3				22
AS23□1F-01-08SD	8			15.2		12.9			16.2	30.9	28.2	40.8				25
AS23□1F-02-04SD	4			10.4		10.9			16.2	30.6	21.9	39.6				16
AS23□1F-02-06SD	6			12.8					18.4	34	25.2	42.1				17
AS23□1F-02-08SD	8	R 1/4	17	15.2		12.9	7.2		18.3	35.2	28.2	45.1				18.5
AS23□1F-02-10SD	10			18.5					20.2	38.7	31	47.9				21
AS33□1F-02-06SD	6			12.8		12.9			20.6	38.5	25.2	46.5				17
AS33□1F-02-08SD	8			15.2					20.6	38.5	25.2	46.5				17
AS33□1F-02-10SD	10			18.5					20.6	38.5	25.2	46.5				17
AS33□1F-02-12SD	12	R 1/4	19	20.9		23	9.8		23	43.7	32.6	53.9	54.8	1.2	49.3	21
AS33□1F-03-06SD	6			12.8		12.9			20.6	38.5	25.2	45				17
AS33□1F-03-08SD	8			15.2					20.6	38.5	25.2	45				17
AS33□1F-03-10SD	10	R 3/8	19	18.5		23	9.8		23	43.7	32.6	54.2	52.6	1.2	47.4	21
AS33□1F-03-12SD	12			20.9					23	44.9	34.4	54.2				22
AS43□1F-04-10SD	10			18.5		16.2			25.8	49.4	32.6	57.1	62.9	1.2	55.8	21
AS43□1F-04-12SD	12	R 1/2	24	20.9		28.6	12.4		26.8	52	36.3	60.8				22

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

Inch Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A	M	Weight (g)
AS13□1F-U1032-01D	1/8"			8.4					19.8							
AS13□1F-U1032-03D	3/32"	10-32 UNF	8	9.3					20.3	17.5	28.7					10
AS13□1F-U1032-05D	1/16"			11.4		9.6	9.3	4.7	10.8	21.3	23.3	34.5	31	0.7	37.4	16.5
AS13□1F-U1032-07D	1/4"			12						21.6	20.7	31.9				13.7
AS23□1F-M01-01SD	1/8"			8.4		9.3			13.1	24.4		17.5	30.9			21
AS23□1F-M01-03SD	3/32"			9.3					14	24.9		22.9	36.3			22
AS23□1F-M01-05SD	1/16"	NPT 1/8	12.7	11.4	14	10.9	7.2	14	26.8	23.9	37.3	34.7	1.2	31.6	16.5	22
AS23□1F-M01-07SD	1/4"			13.2		12.9			16.2	29.9	25.6	38.2			17	23
AS23□1F-M01-09SD	3/8"			15.2					18.3	30.9	28.2	40.8			18.5	25
AS23□1F-M02-03SD	3/32"			10.4					16.2	30.6	21.9	39.6			16	40
AS23□1F-M02-05SD	1/16"			11.4		10.9			16.2	31.1	23.9	41.6			16.5	41
AS23□1F-M02-07SD	1/4"	NPT 1/4	17.5	13.2	19		7.2		18.3	34.2	25.6	42.5	40.2	1.2	34.7	17
AS23□1F-M02-09SD	3/8"			15.2		12.9			20.2	38.7	31	47.9			18.5	47
AS23□1F-M02-11SD	3/4"			17.9					20.2	38.7	31	47.9			21	48
AS33□1F-M02-07SD	1/4"			13.2		12.9			20.6	38.7	25.6	46.9			17	73
AS33□1F-M02-09SD	3/8"	NPT 1/4	19	15.2	23		9.8		23	39.7	28.2	49.5	54.8	1.2	49.3	18.5
AS33□1F-M02-11SD	3/4"			17.9		16.2			23	43.7	32.6	53.9			21	82
AS33□1F-M03-07SD	1/4"			13.2		12.9			20.6	38.7	25.6	45.4			17	78
AS33□1F-M03-09SD	3/8"	NPT 3/8	19	15.2	23		9.8		23	39.7	28.2	48	52.6	1.2	47.4	18.5
AS33□1F-M03-11SD	3/4"			17.9		16.2			23	43.7	32.6	52.4			21	87
AS43□1F-M04-11SD	3/8"			17.9		16.2			25.8	49.4	32.6	57.1	62.9	1.2	55.8	21
AS43□1F-M04-13SD	1/2"	NPT 1/2	23.8	21.7	29	19.4	12.4		26.8	52	36.3	60.8			22	145

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

Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fittings In-line Type

Series AS□□□1F-D

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

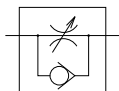
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Applicable tubing material ⁽¹⁾	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 411 and 412 for details.)

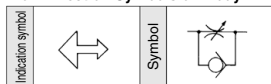
Note 2) Brass parts are all electroless nickel plated.

Flow Rate and Sonic Conductance

Symbol



Flow Direction Symbols on Body



Model	AS1001F	AS2001F	AS2051F	AS3001F	AS4001F
Tubing O.D.	Metric size ø3.2, ø4, ø6	ø4 ø6	ø6 ø8	ø6 ø8 ø10, ø12	ø10 ø12
	Inch size ø1/8", ø5/32" ø3/16", ø1/4"	ø5/32" ø3/16", ø1/4"	ø3/16" ø1/4", ø5/16"	ø1/4" ø5/16" ø3/8"	ø3/8" ø1/2"
Controlled flow	Flow rate (L/min (ANR)) 100	130	230	290	460
Free flow	Sonic Conductance dm ³ /[(s·bar)] 0.3	0.4	0.7	0.9	1.4
Critical pressure ratio	Controlled flow 0.2	0.2	0.2	0.2	0.2
	Free flow 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 D —

Body size

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

Type adjustable by flat head screwdriver

Made to Order

Refer to page 591 for details.

Applicable tubing O.D. ^{Note)}

Metric size	Inch size
23 ø3.2"	01 ø1/8"
04 ø4	03 ø5/32"
06 ø6	05 ø3/16"
08 ø8	07 ø1/4"
10 ø10	09 ø5/16"
12 ø12	11 ø3/8"
	13 ø1/2"

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

* Use ø1/8" tube.



Made to Order
(Refer to page 591 for details.)

Caution

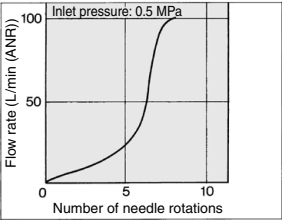
Be sure to read before handling.
Refer to front matter 56 for Safety Instructions and pages 468 to 471 for Flow Control Equipment Precautions.

Needle Valve/Flow Characteristics

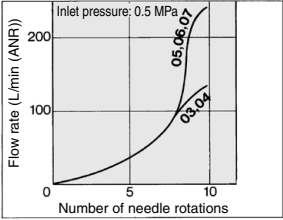
Note) The flow characteristics are representative values.

AS
TMH
ASD
AS
AS-FE KE
AS-FG
AS-FP
AS-FM
AS-D AS-T
ASP
ASN
AQ
ASV
AK
VCHC
ASS
ASR ASQ

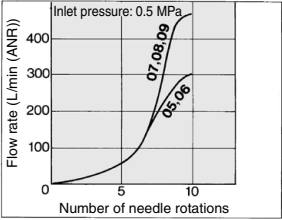
AS1001F



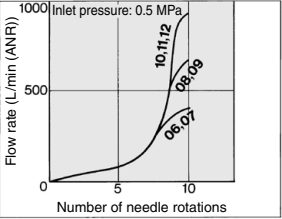
AS2001F



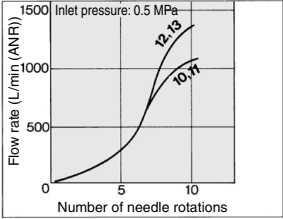
AS2051F



AS3001F

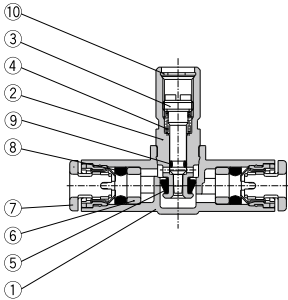


AS4001F

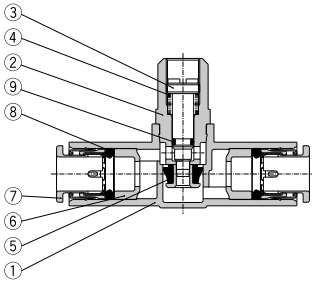


Construction

AS1001F



AS2001F to AS4001F



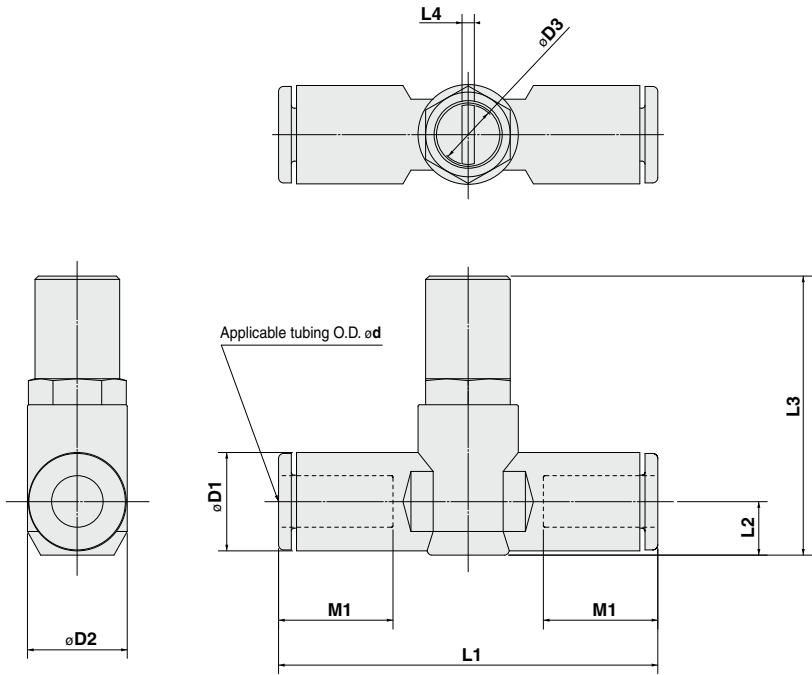
Component Parts

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

Series AS1F-D

Dimensions



Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1	Weight (g)
AS1001F-23D	3.2	8.4			38	4.5	26		12.7	8
AS1001F-04D	4	9.3	10.5	4.7	39.2	5.2	26.6	0.7	12.7	9
AS1001F-06D	6	11.6			40.7	6.2	27.7		13.5	10
AS2001F-04D	4	9.3	12.3	7.2	40.7	5.2	31.9	1.2	12.7	15
AS2001F-06D	6	11.6			44.8	6.3	33		13.5	16
AS2051F-06D	6	12.8			53.2	6.7	35.2		17	33
AS2051F-08D	8	15.2	15.5	7.2	59.8	8.1	36.5	1.2	18	36
AS3001F-06D	6	12.8			59	7.4	45		17	56
AS3001F-08D	8	15.2	20.6	9.8	64.4	8.2	45.8	1.2	18	60
AS3001F-10D	10	18.5			71.6	9.8	47.3		21	64
AS3001F-12D	12	20.9			76	11	48.5		22	68
AS4001F-10D	10	18.5	27.6	12.4	77.7	11.3	55.4	1.2	21	121
AS4001F-12D	12	20.9			82.1		56.4		22	125

Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	M1	Weight (g)
AS1001F-01D	1/8"	8.4			38	4.5	26		12.7	8
AS1001F-03D	5/32"	9.3	10.5	4.7	39.2	5.2	26.6	0.7	12.7	9
AS1001F-05D	3/16"	11.4			48.7	6.2	27.7		16.5	14
AS1001F-07D	1/4"	12			40.7				13.7	11
AS2001F-03D	5/32"	9.3			40.7	5.2	31.9		12.7	15
AS2001F-05D	3/16"	11.4	12.3	7.2	50	6.2	32.8	1.2	16.5	21
AS2001F-07D	1/4"	13.2			52.2	7.1	33.7		17	19
AS2051F-05D	3/16"	11.4			52.2	6.2	34.9		16.5	35
AS2051F-07D	1/4"	13.2	15.5	7.2	54.4	7.1	35.7	1.2	17	33
AS2051F-09D	5/16"	15.2			59.8	8.1	36.7		18	36
AS3001F-07D	1/4"	13.2			59	7.4	45.2		17	56
AS3001F-09D	5/16"	15.2	20.6	9.8	64.4	8.2	46	1.2	18	60
AS3001F-11D	3/8"	17.9			70.8	9.5	47.2		21	72
AS4001F-11D	3/8"	17.9	27.6	12.4	76.9	10.3	55.5	1.2	21	129
AS4001F-13D	1/2"	21.7			83.1	11.6	56.9		22	142

Series **AS□□□1F-D**

Made to Order Specifications

Please contact SMC for detailed dimensions, specifications and delivery.



Lubricant: Vaseline

X12

Ex.) AS1001F-23D-X12

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

X21

Ex.) AS1001F-23D-X21

Note 1) Not particle-free

Throttle Valve (Without Check Valve)

X214

Ex.) AS1001F-23D-X214

AS

TMH

ASD

AS

AS-FE
KE

AS-FG

AS-FP

AS-FM

AS-D
AS-T

ASP

ASN

AQ

ASV

AK

VCHC

ASS

ASR
ASQ

Dual Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fitting

Series ASD□□□F-D

RoHS

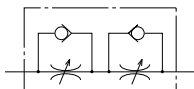
Model



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	R 1/8		●	●								
ASD430F-02	R 1/4		●	●	●							
ASD530F-02	R 1/4		●	●		●						
ASD530F-03	R 3/8		●	●	●	●						
ASD630F-04	R 1/2				●	●						
ASD230F-U10/32	10-32 UNF						●	●	●	●		
ASD330F-N01	NPT 1/8								●	●	●	
ASD430F-N02	NPT 1/4									●	●	●
ASD530F-N02	NPT 1/4									●	●	●
ASD530F-N03	NPT 3/8									●	●	●
ASD630F-N04	NPT 1/2											●

Specifications

Symbol



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.
(Refer to pages 411 and 412 for details.)

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

Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

Flow Rate and Sonic Conductance

Model		ASD230F	ASD330F	ASD430F		ASD530F			ASD630F	
Tubing O.D.	Metric size	ø4, ø6	ø6, ø8	ø6	ø8, ø10	ø6	ø8	ø10, ø12	ø10	ø12
	Inch size	ø1/8" ø5/32" ø3/16" ø1/4"	ø3/16" ø1/4"	—	ø1/4" ø5/16" ø3/8"	ø1/4"	ø5/16"	ø3/8"	—	ø3/8"
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.

Made to Order



Lubricant: Vaseline

X12

Ex.) ASD230F-M5-04D-X12

How to Order

ASD330F—01—06SD

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

Made to Order
X12 | Lubricant: Vaseline
Ex.) ASD230F-M5-04D-X12

Type adjustable by a flat head screwdriver

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

Applicable tubing O.D.

Metric size	Inch size
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"

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

⚠ Caution

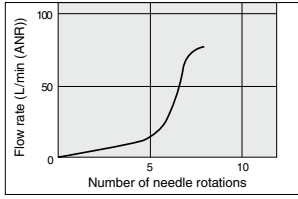
Be sure to read before handling.
Refer to front matter 56 for Safety Instructions and pages 468 to 471 for Flow Control Equipment Precautions.

- AS
- TMH
- ASD
- AS
- AS-FE KE
- AS-FG
- AS-FP
- AS-FM
- AS-D AS-T
- ASP
- ASN
- AQ
- ASV
- AK
- VCHC
- ASS
- ASR ASQ

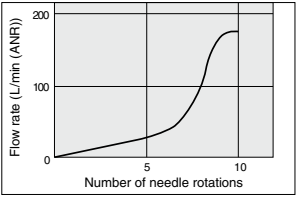
Needle Valve/Flow Characteristics

Note) The flow characteristics are representative values.

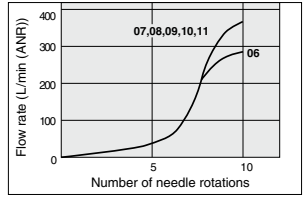
ASD230F



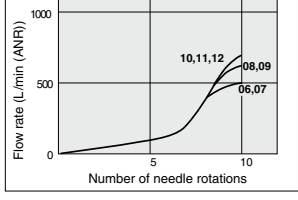
ASD330F



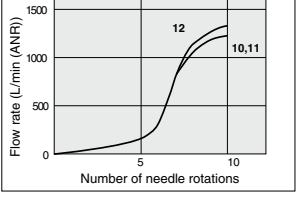
ASD430F



ASD530F

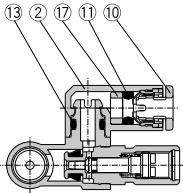


ASD630F

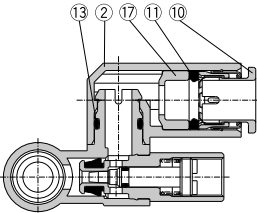


Construction

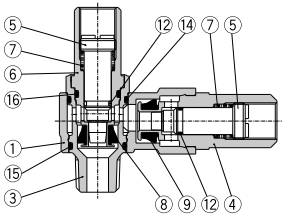
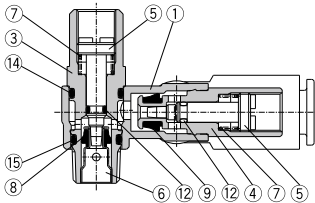
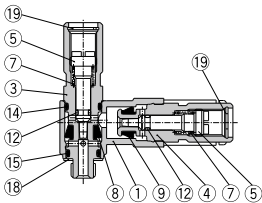
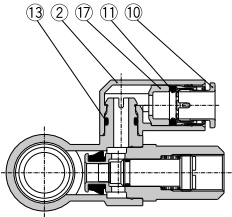
ASD230F



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	

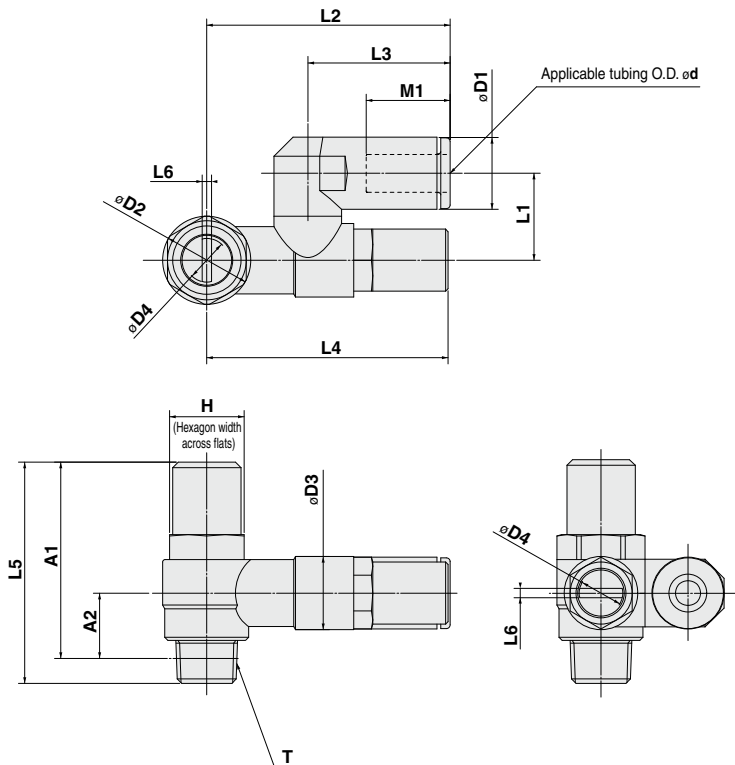
Component Parts

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

Dimensions

Metric size



AS
TMH
ASD
AS
AS-FE KE
AS-FG
AS-FP
AS-FM
AS-D AS-T
ASP
ASN
AQ
ASV
AK
VCHC
ASS
ASR ASQ

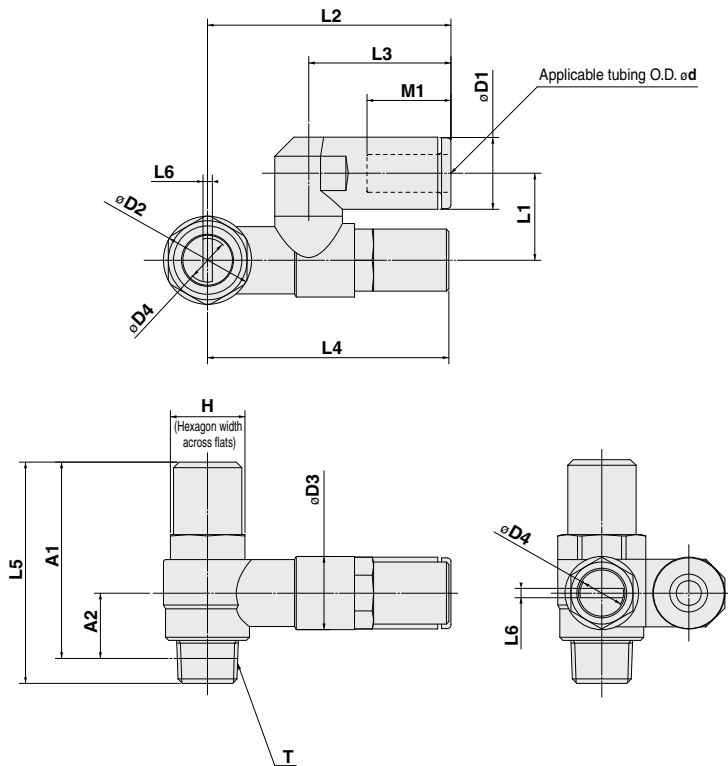
Metric Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1 *	A2 *	M1	Weight (g)
ASD230F-M5-04D	4	M5 x 0.8	8	9.3	9.6	10	4.7	11.7	29.4	17.5						12.9	17
ASD230F-M5-06D	6			11.6					32.5	20.6						13.7	18
ASD330F-01-06SD	6	R 1/8	12	11.6	14.2	11.8	7.2	14	38.5	22.9	38.9					13.7	36
ASD330F-01-08SD	8			15.2				15.8	44.8	28.2	38.2					18.5	38
ASD430F-02-06SD	6			12.8					43.5	25.2						17	72
ASD430F-02-08SD	8	R 1/4	17	15.2	18.5	15	7.2	18	46.5	28.2	41.7	40.2	1.2	34.7	11	18.5	74
ASD430F-02-10SD	10			18.5				19.7	49.3	31						21	77
ASD530F-02-06SD	6			12.8				20.3	48.3	25.2						17	107
ASD530F-02-08SD	8			15.2					51.3	28.2						18.5	109
ASD530F-02-10SD	10	R 1/4	19	18.5	23	19.8	9.8	23.1	54.1	32.6	53.7	54.8	1.2	49.3	15.4	21	113
ASD530F-02-12SD	12			20.9					55.9	34.4						22	116
ASD530F-03-06SD	6			12.8				20.3	48.3	25.2						17	116
ASD530F-03-08SD	8			15.2					51.3	28.2						18.5	135
ASD530F-03-10SD	10	R 3/8	19	18.5	23	19.8	9.8	23.1	54.1	32.6	53.7	52.6	1.2	47.4	14	21	140
ASD530F-03-12SD	12			20.9					55.9	34.4						22	143
ASD630F-04-10SD	10			18.5					64.3	32.6						21	254
ASD630F-04-12SD	12	R 1/2	24	20.9	28.6	26.5	12.4	25.9	66.1	34.4	69.1	62.9	1.2	55.8	18.6	22	256

* 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-U10/32-01D	1/8"	10-32 UNF	8	8.4	9.6	10	4.7	11.7	29.4	17.5	30.7	31	0.7	27.4	7.8	12.9	17
ASD230F-U10/32-03D	5/32"			9.3					35.2	23.3						18	20
ASD230F-U10/32-05D	3/16"			11.4					32.6	20.7						16.5	18
ASD230F-U10/32-07D	1/4"			12					32.6	20.7						13.5	18
ASD330F-N01-05SD	3/16"	NPT 1/8	12.7	11.6	14.2	11.8	7.2	14	38.5	23.9	38.9	34.7	1.2	31.6	10.6	16.5	37
ASD330F-N01-07SD	1/4"			13.2				15.8	42.2	25.6	38.2					17	38
ASD330F-N01-09SD	5/16"			15.2				44.8	28.2	18.5							
ASD430F-N02-07SD	1/4"			13.2				18	43.9	25.6						17	
ASD430F-N02-09SD	5/16"	NPT 1/4	17.5	15.2	18.5	15	7.2	19	46.5	28.2	41.7	40.2	1.2	34.7	11	18.5	74
ASD430F-N02-11SD	3/8"			18.5				49.3	31	21	81						
ASD530F-N02-07SD	1/4"			13.2				20.3	48.7	25.6	53.7					54.8	1.2
ASD530F-N02-09SD	5/16"	15.2	23	19.8	9.8	23.1	51.3	28.2	18.5	33							
ASD530F-N02-11SD	3/8"	18.5	23.1	54.1	32.6	21	117										
ASD530F-N03-07SD	1/4"	NPT 3/8	19	13.2	23	19.8	9.8	20.3	48.7	25.6	53.7	52.6	1.2	47.4	14	17	135
ASD530F-N03-09SD	5/16"			15.2				23.1	51.3	28.2						18.5	
ASD530F-N03-11SD	3/8"			18.5				23.1	54.1	32.6						21	
ASD630F-N04-11SD	3/8"			NPT 1/2				23.8	18.5	28.6						26.5	12.4

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

Speed Controller Adjustable by Flat Head Screwdriver: Standard Type Elbow Type (Metal Body)

Series AS□2□0-D

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 ^{Note 4)}	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	Sonic Conductance (dm ³ /s (bar))	0.32	0.7	1.4	2.8	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 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.

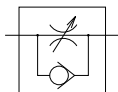
Note 3) Brass parts are all electroless nickel plated, provided as standard.

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 D

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

Type adjustable by flat head screwdriver

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.

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 ^{Note 1)}
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 ^{Note 1)}
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 ^{Note 1)}
N03	NPT 3/8	NPT 3/8 ^{Note 2)}
N04	NPT 1/2	NPT 1/2

Note 1) AS22□0□02

Note 2) AS32□0□02

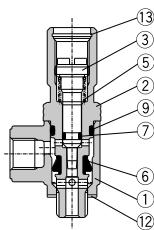
Caution

Be sure to read before handling.
Refer to front matter 56 for Safety Instructions and pages 468 to 471 for Flow Control Equipment Precautions.

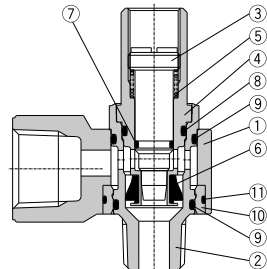
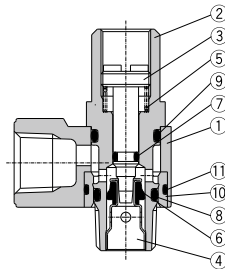
Series AS□2□0-D

Construction

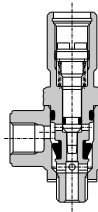
Meter-out
M5 type
U10/32 type



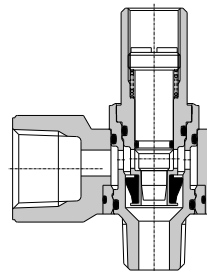
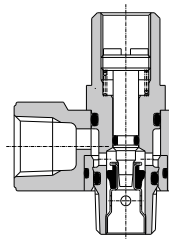
AS3200-02-D



Meter-in
M5 type
U10/32 type



AS3210-02-D



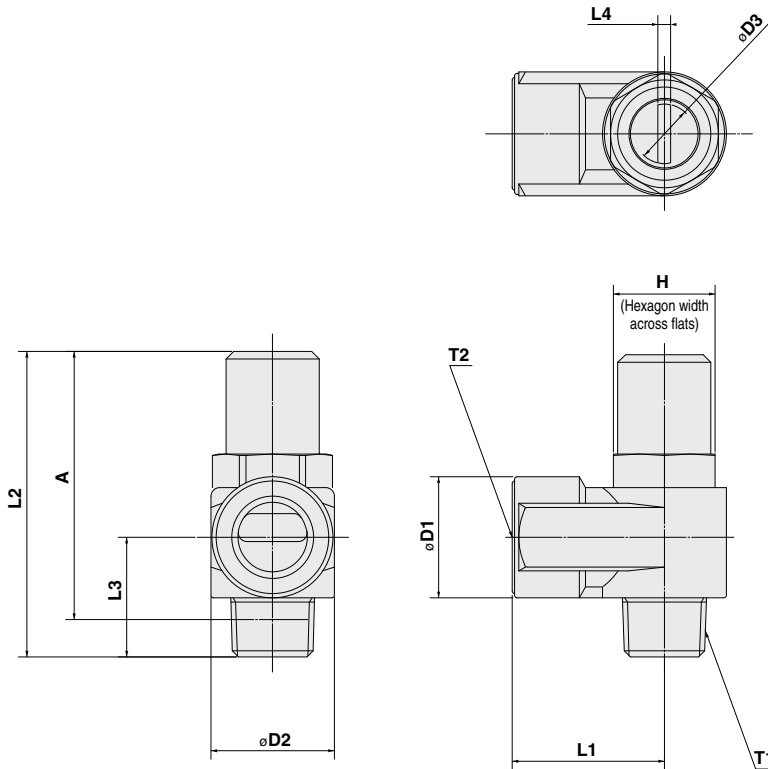
Component Parts

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	
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

Speed Controller Adjustable by Flat Head Screwdriver:
Standard Type, Elbow Type (Metal Body) **Series AS□2□0-D**

Dimensions



AS
TMH
ASD
AS
AS-FE
KE
AS-FG
AS-FP
AS-FM
AS-D
AS-T
ASP
ASN
AQ
ASV
AK
VCHC
ASS
ASR
ASQ

Dimensions

Model	T1	T2	H	D1	D2	D3	L1	L2	L3	L4	A *	Weight (g)											
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	13											
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	34.7	13.2	1.2	31.6	33											
AS22□0-F01-SD		G 1/8																					
AS22□0-N01-SD	NPT 1/8	NPT 1/8	12.7	18	19.5	7.2	27.2	40.2	17.5	1.2	36.7	72											
AS22□0-02-SD	R 1/4	Rc 1/4	17																				
AS22□0-F02-SD	NPT 1/4	G 1/4	17.5																				
AS22□0-N02-SD		NPT 1/4																					
AS32□0-02-SD	R 1/4	Rc 3/8	19	22.5	24.3	9.8	30	54.8	21.9	1.2	49.3	123											
AS32□0-F02-SD		G 3/8																					
AS32□0-N02-SD	NPT 1/4	NPT 3/8		19	22.5	24.3	9.8	30	52.6	19.7	1.2	47.4	128										
AS32□0-03-SD	R 3/8	Rc 3/8	19																				
AS32□0-F03-SD		G 3/8																					
AS32□0-N03-SD	NPT 3/8	NPT 3/8		24	27.5	28.5	12.4	38.5	62.9	25.8	1.2	55.8	222										
AS42□0-04-SD	R 1/2	Rc 1/2	24																				
AS42□0-F04-SD	NPT 1/2	G 1/2	23.8																				
AS42□0-N04-SD		NPT 1/2																					

* Reference thread dimensions after installation.