

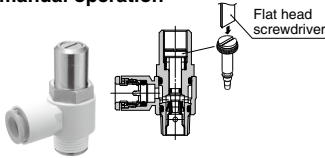
Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fitting Elbow Type/Universal Type

AS□□□1F-D Series



Flow adjustable by flat head screwdriver

Prevention of an unnecessary manual operation



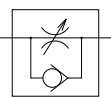
Elbow type



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"	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 678 and 682 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			
	Metric size	e3,2, e4, e6	e3,2, e4	e6, e8, e10	e4	e6	e8, e10	e6	e8	e10, e12	e10	e12	
Tubing O.D.	Inch size	e1/8", e5/32", e3/16", e1/4"	e1/8", e5/32", e3/16", e1/4"	e5/16"	e1/4", e5/16", e3/8"	e1/4", e5/16", e3/8"	e3/8"	e3/8"	e3/8"	e1/2"			
	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		0.25	
	Free flow	0.4	0.2		0.3		0.2		0.2		0.3		

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



Made to Order
(Refer to page 1073 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

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

Applicable tubing O.D. (Note)

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

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.

Note) For applicable tubing O.D. selection, refer to the Model on page 1072.
* Use ø1/8" tube.

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.

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) 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

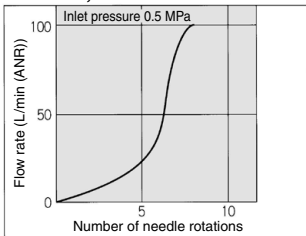
Ex.) AS1201F-M5-23D-X214

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.

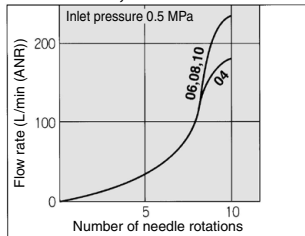
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

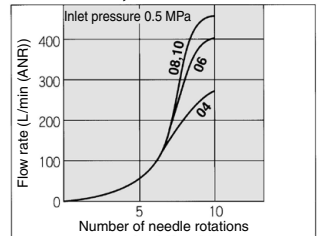
AS1201F, AS1211F



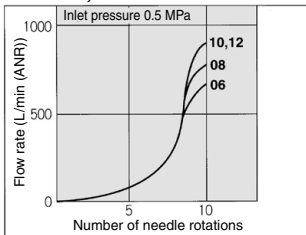
AS2201F-01, AS2211F-01



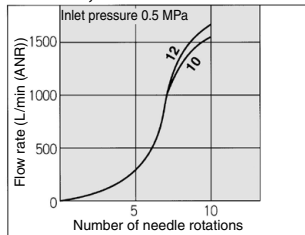
AS2201F-02, AS2211F-02



AS3201F, AS3211F



AS4201F, AS4211F

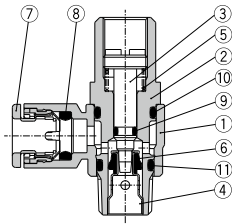


AS□□□1F-D Series

Construction

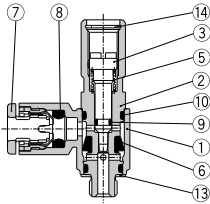
Elbow type

Meter-out type

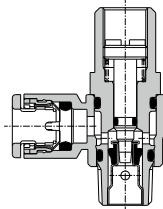


M5 type

U10/32 type

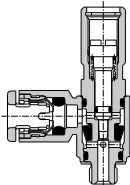


Meter-in type



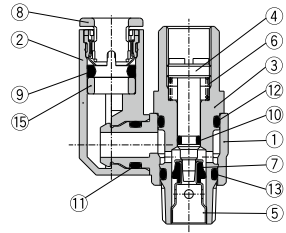
M5 type

U10/32 type



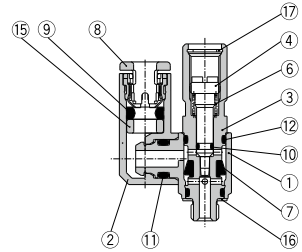
Universal type

Meter-out type

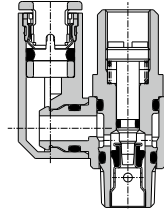


M5 type

U10/32 type

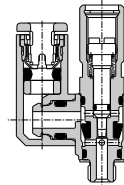


Meter-in type



M5 type

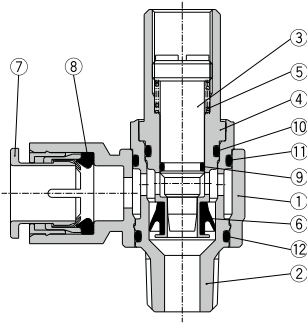
U10/32 type



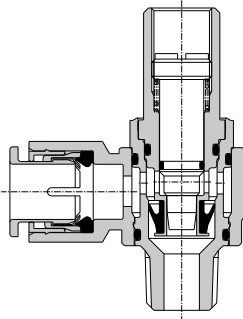
Construction

Elbow type

Meter-out AS3201F-02

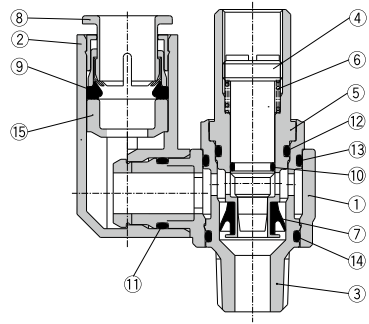


Meter-in AS3211F-02

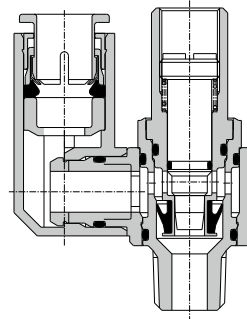


Universal type

Meter-out AS3301F-02



Meter-in 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	POM	
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

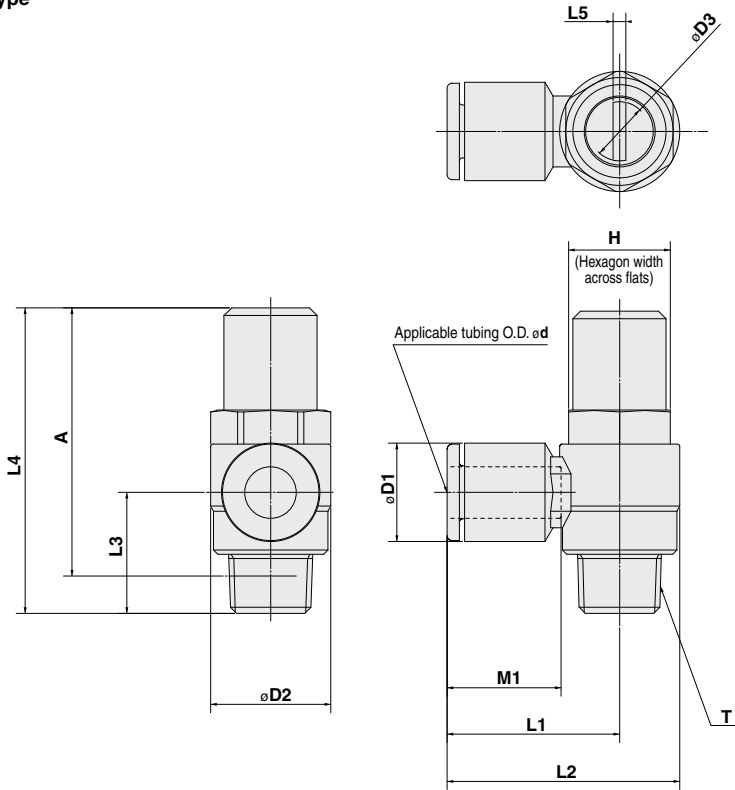
No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Body B	Brass	Electroless nickel plated
4	Needle	Brass	Electroless nickel plated
5	Seat ring	Brass	Electroless nickel plated
6	Spring	Steel wire ⁽¹⁾	
7	U seal	HNBR	
8	Cassette	—	
9	Seal	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	O-ring	NBR	
13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

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				0.7	27.4	12.7	10
AS12□1F-M5-04D	4	M5 x 0.8	8	9.3	9.6	4.7		12.3		31				18.5	20
AS12□1F-M5-06D	6			11.6			18.1	22.9	11.7					13.5	13.5
AS22□1F-01-23SD	3.2			8.4										12.7	20
AS22□1F-01-04SD	4			9.3			20.4	27.5	13.4					13.5	21
AS22□1F-01-06SD	6	R 1/8	12	11.6	14.2	7.2				34.7	1.2	31.6		18.5	23
AS22□1F-01-08SD	8			15.2			25.3	32.4						21	25
AS22□1F-01-10SD	10			18.5			35.3	44.5	15.3					16	40
AS22□1F-02-04SD	4			10.4			25.2	34.4	17.7					17	73
AS22□1F-02-06SD	6	R 1/4	17	12.8	18.5	7.2				40.2	1.2	34.7		18.5	42
AS22□1F-02-08SD	8			15.2			27.2	36.4						21	44
AS22□1F-02-10SD	10			18.5			35.3	44.5	18.3					16	79
AS32□1F-02-06SD	6			12.8			27.8	39.3						17	81
AS32□1F-02-08SD	8	R 1/4	19	15.2	23	9.8	29.5	41	21.3	54.8	1.2	49.3		21	80
AS32□1F-02-10SD	10			18.5			31.8	43.3						22	82
AS32□1F-02-12SD	12			20.9			32.8	44.3						17	77
AS32□1F-03-06SD	6			12.8			27.8	39.3						18.5	79
AS32□1F-03-08SD	8	R 3/8	19	15.2	23	9.8	29.5	41	19.8	52.6	1.2	47.4		21	81
AS32□1F-03-10SD	10			18.5			31.8	43.3						22	83
AS32□1F-03-12SD	12			20.9			32.8	44.3						17.9	141
AS42□1F-04-10SD	10	R 1/2	24	18.5	28.6	12.4	33.6	47.9	24.5	62.9	1.2	55.8		22	142
AS42□1F-04-12SD	12			20.9			35.2	49.5							

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

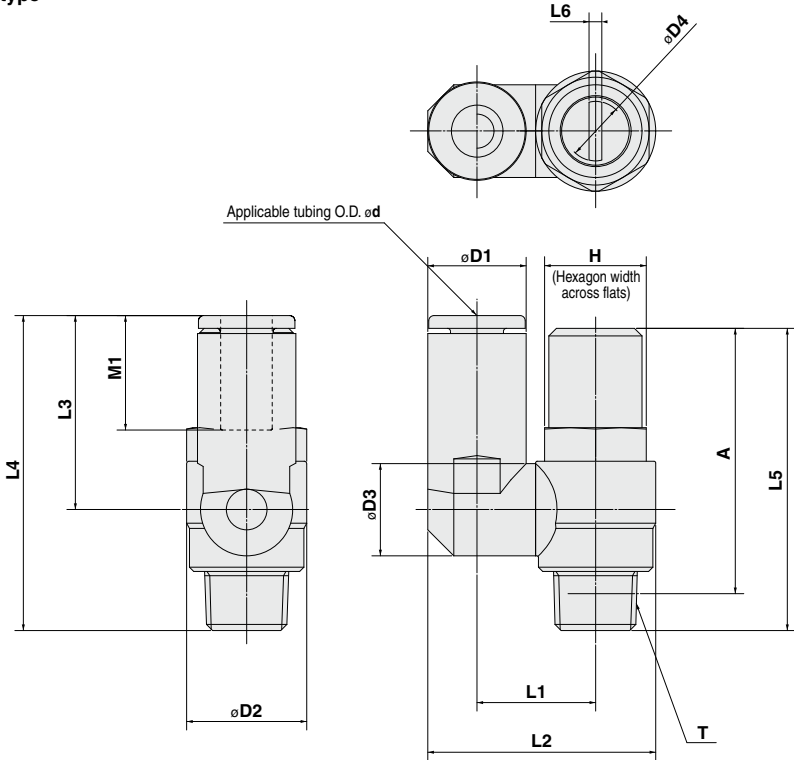
Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Weight (g)	
AS12□1F-U1032-01D	1/8"			8.4			17.3	22.1						12.7	10
AS12□1F-U1032-03D	3/32"	10-32 UNF	8	9.3					12.3					18.5	20
AS12□1F-U1032-05D	3/16"			11.4	9.6	4.7				31				16.5	13.5
AS12□1F-U1032-07D	1/4"			12			21.3	26.1	11.7					17	23
AS22□1F-N01-01SD	1/8"			8.4			20.4	27.5						12.7	20
AS22□1F-N01-03SD	3/32"			9.3										13.5	21
AS22□1F-N01-05SD	3/16"	NPT 1/8	12.7	13.2	14.2	7.2				31.4	1.2	31.6		16.5	21
AS22□1F-N01-07SD	1/4"			13.2			23.9	31						17	25
AS22□1F-N01-09SD	5/16"			15.2			25.3	32.4						18.5	23
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			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	81
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-N02-13SD	7/16"			19.8			33.6	47.9						17	77
AS32□1F-N03-07SD	1/4"			13.2			27.8	39.3						18.5	79
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		21	81
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	24.5	62.9	1.2	55.8		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	17.5	28.7				0.7	27.4	12.7	10		
AS13□1F-M5-04D	4	M5×0.8	9.3	9.6	9.3	4.7	10.8	20.3	21.4	20.6	31.8					13.5			
AS13□1F-M5-06D	6		11.6					21.4	20.6	31.8						13.5			
AS23□1F-01-23SD	3.2		8.4		9.3			13.1	24.4	17.5	30.9					12.7	21		
AS23□1F-01-04SD	4	R 1/8	9.3		14.2		7.2	14	24.9	22.9	36.3				31.6	13.5	22		
AS23□1F-01-06SD	6		11.6		10.9			14	26.9	22.9	36.3					13.5	22		
AS23□1F-01-08SD	8		15.2		12.9			16.2	30.9	28.2	40.8					18.5	25		
AS23□1F-02-04SD	4		10.4		10.9			16.2	30.6	21.9	39.6					16	40		
AS23□1F-02-06SD	6		12.8					18.4	34	25.2	42.1					17	41		
AS23□1F-02-08SD	8	R 1/4	17		18.5		7.2	18.3	35.2	28.2	45.1				34.7	18.5	44		
AS23□1F-02-10SD	10		18.5		12.9			20.2	38.7	31	47.9					21	48		
AS33□1F-02-06SD	6		12.8		12.9			20.6	38.5	25.2	46.5					17	73		
AS33□1F-02-08SD	8		15.2		9.8			39.7	28.2	49.5						18.5	76		
AS33□1F-02-10SD	10	R 1/4	19		23		9.8	43.7	32.6	53.9		54.8	1.2	49.3	21	80			
AS33□1F-02-12SD	12		18.5		16.2		23	44.9	34.4	54.2						22	82		
AS33□1F-03-06SD	6		12.8		12.9		20.6	38.5	25.2	45						17	78		
AS33□1F-03-08SD	8		15.2		9.8		20.6	39.7	28.2	48		52.6	1.2	47.4		18.5	81		
AS33□1F-03-10SD	10	R 3/8	19		23		9.8	43.7	32.6	52.4						21	85		
AS33□1F-03-12SD	12		20.9		16.2		23	44.9	34.4	54.2						22	87		
AS43□1F-04-10SD	10		18.5		16.2		2.4	25.8	49.4	32.6	57.1					21	145		
AS43□1F-04-12SD	12	R 1/2	24		28.6		2.4	26.8	52	36.3	60.8				62.9	1.2	55.8	22	147

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

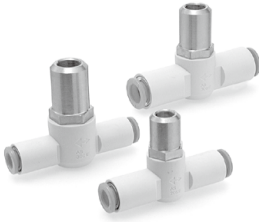
Inch Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A*	M1	Weight (g)		
AS13□1F-U10/32-01D	1/8"		8.4					19.8	17.5	28.7				0.7	27.4	12.7	10	
AS13□1F-U10/32-03D	3/32"	10-32 UNF	9.3	9.6	9.3	4.7	10.8	20.3	21.4	20.6	31.8					13.5	16.5	
AS13□1F-U10/32-05D	5/32"		11.4					21.4	20.6	31.8						13.5	13.7	
AS13□1F-U10/32-07D	7/32"		14"					21.4	20.6	31.8						13.5	11	
AS23□1F-M01-01SD	1/8"		8.4		9.3			13.1	24.4	17.5	30.9					12.7	21	
AS23□1F-M01-03SD	3/32"		9.3		10.9		7.2	14	24.9	22.9	36.3				31.6	13.5	22	
AS23□1F-M01-05SD	5/32"		11.4		12.9			16.2	30.9	28.2	40.8					18.5	25	
AS23□1F-M01-06SD	3/16"	NPT 1/8	12.7	11.4	14		10.9	7.2	14	28.8	23.9	37.3	34.7	1.2	31.6	16.5	23	
AS23□1F-M01-07SD	1/4"		14"		12.9			16.2	29.9	25.6	38.2					17	25	
AS23□1F-M01-08SD	5/16"		15.2		12.9			16.2	30.9	28.2	40.8					18.5	25	
AS23□1F-M02-03SD	3/32"		10.4		10.9			16.2	30.6	21.9	39.6					16	40	
AS23□1F-M02-05SD	3/16"		11.4		10.9			16.2	31.1	23.9	41.6					16.5	41	
AS23□1F-M02-07SD	1/4"	NPT 1/4	13.2	11.4	14		7.2	14	34.2	25.6	42.5	40.2	1.2	34.7	17	44		
AS23□1F-M02-08SD	5/16"		15.2		12.9			16.2	35.2	28.2	45.1					18.5	47	
AS23□1F-M02-11SD	3/8"		17.9		12.9			20.2	38.7	31	47.9					21	48	
AS33□1F-M02-07SD	1/4"	NPT 1/4	13.2		12.9			20.6	38.7	25.6	46.9					17	73	
AS33□1F-M02-09SD	5/16"	NPT 1/4	15.2	23	12.9		9.8	20.6	39.7	28.2	49.5	54.8	1.2	49.3	18.5	76		
AS33□1F-M02-11SD	3/8"		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	5/16"	NPT 3/8	15.2	23	12.9		9.8	20.6	39.7	28.2	48	52.6	1.2	47.4	18.5	81		
AS33□1F-M04-11SD	3/8"		17.9		16.2			23	43.7	32.6	52.4					21	87	
AS43□1F-M04-11SD	3/8"	NPT 1/2	23.8	21.7	29		12.4	25.8	49.4	32.6	57.1			62.9	1.2	55.8	22	145
AS43□1F-M04-12SD	1/2"		26.8	21.7	29		12.4	26.8	52	36.3	60.8					22	147	

* 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

AS□□□1F-D Series



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 678 and 682 for details.)

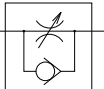
Note 2) Brass parts are all electroless nickel plated.

Flow Rate and Sonic Conductance

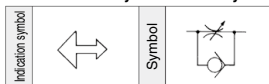
Model	AS1001F	AS2001F	AS2051F	AS3001F	AS4001F						
Tubing O.D.	Metric size	ø3.2, ø4, ø6	ø4	ø6	ø6	ø8	ø6	ø8	ø10, ø12	ø10	ø12
	Inch size	ø1/8", ø5/32", ø3/16", ø1/4"	ø5/32"	ø3/16", ø1/4"	ø3/16"	ø1/4", ø5/16"	ø1/4"	ø5/16"	ø3/8"	ø3/8"	ø1/2"
Controlled flow	Flow rate (L/min (ANR))	100	130	230	290	460	420	660	920	1050	1390
	Sonic Conductance dm ³ /(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

Symbol



Flow Direction Symbols on Body



Made to Order

Made to Order
(For details, refer to page 1081.)

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

⚠ Caution

Be sure to read this before handling the products. Refer to page 11 for safety instructions and pages 19 to 22 for flow control equipment precautions.

How to Order

AS 200 1F — 06 D — □

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

Applicable tubing O.D. ^{Note)}

Metric size	Inch size
23	ø3.2"
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"
13	ø1/2"

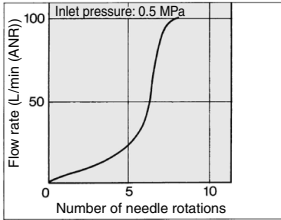
Made to Order
Refer to page 1081 for details.

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

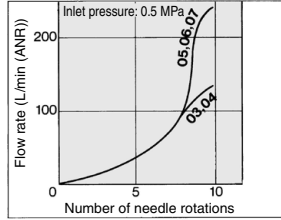
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

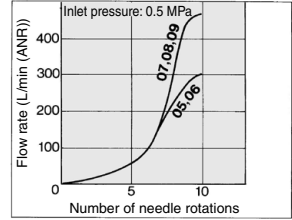
AS1001F



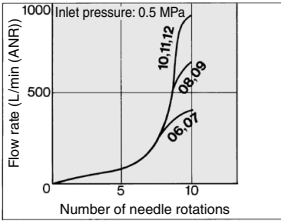
AS2001F



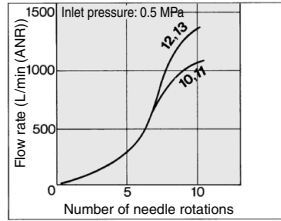
AS2051F



AS3001F

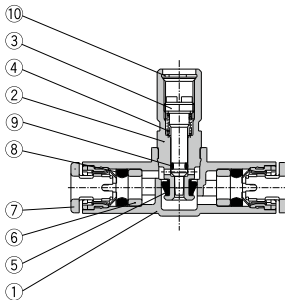


AS4001F

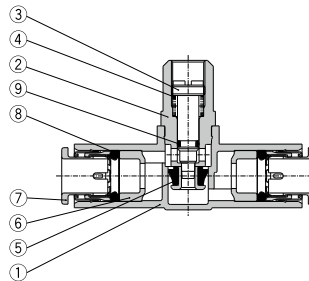


Construction

AS1001F



AS2001F to AS4001F



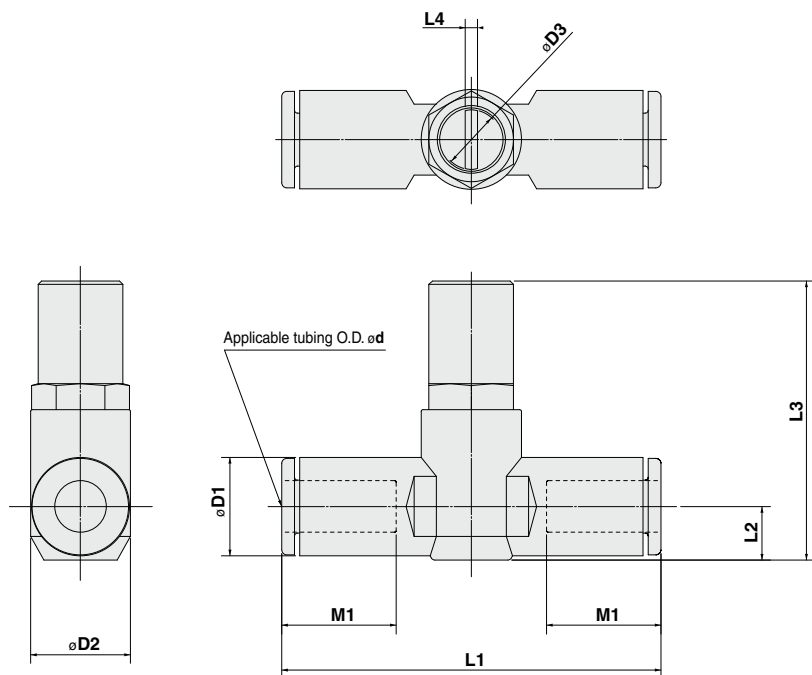
Component Parts

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-D Series

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	13.5	9
AS1001F-06D	6	11.6			40.7	6.2	27.7		12.7	15
AS2001F-04D	4	9.3	12.3	7.2	40.7	5.2	31.9	1.2	13.5	16
AS2001F-06D	6	11.6			53.2	6.7	35.2		17	33
AS2051F-06D	6	12.8			59.8	8.1	36.5	1.2	18	36
AS2051F-08D	8	15.2	15.5	7.2	59	7.4	45		17	56
AS3001F-06D	6	12.8			64.4	8.2	45.8	1.2	18	60
AS3001F-08D	8	15.2	20.6	9.8	71.6	9.8	47.3		21	64
AS3001F-10D	10	18.5			76	11	48.5		22	68
AS3001F-12D	12	20.9			77.7	11.3	55.4	1.2	21	121
AS4001F-10D	10	18.5	27.6	12.4	82.1		56.4		22	125
AS4001F-12D	12	20.9								

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	13.5	9
AS1001F-05D	3/16"	11.4			40.7	6.2	27.7		12.7	15
AS1001F-07D	1/4"	12			40.7	5.2	31.9	1.2	13.5	16
AS2001F-03D	5/32"	9.3	12.3	7.2	40.7	5.2	31.9	1.2	17	33
AS2001F-05D	3/16"	11.4			50	6.2	32.8		16.5	21
AS2001F-07D	1/4"	13.2			52.2	7.1	33.7		17	19
AS2051F-05D	3/16"	11.4	15.5	7.2	52.2	6.2	34.9	1.2	16.5	35
AS2051F-07D	1/4"	13.2			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	20.6	9.8	59	7.4	45.2	1.2	17	56
AS3001F-09D	5/16"	15.2			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

AS□□□1F-D Series

Made to Order Specifications

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



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

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

ASD□□□F-D Series

RoHS

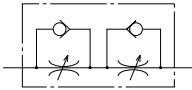
Model



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 678 and 682 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

ASD **F** - - **S** **D** -

Body size

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

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.

Universal

With One-touch fitting

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

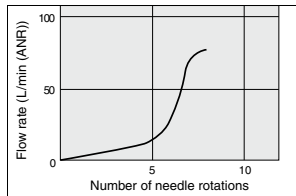
Caution

Be sure to read this before handling the products. Refer to page 11 for safety instructions and pages 19 to 22 for flow control equipment precautions.

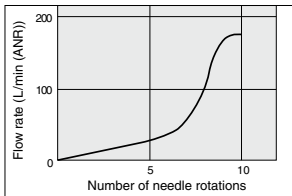
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

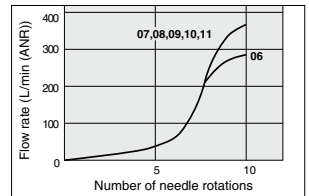
ASD230F



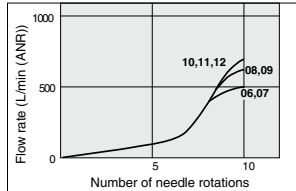
ASD330F



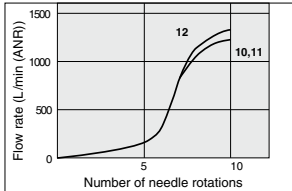
ASD430F



ASD530F



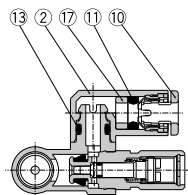
ASD630F



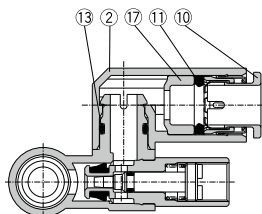
ASD□□□F-D Series

Construction

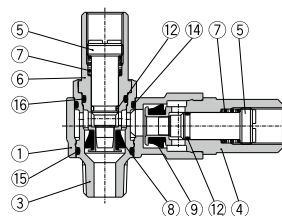
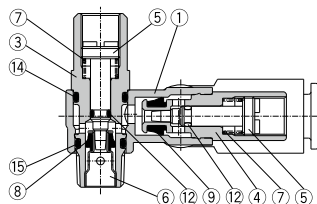
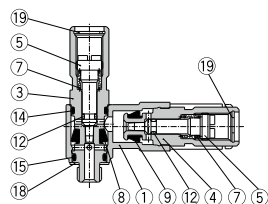
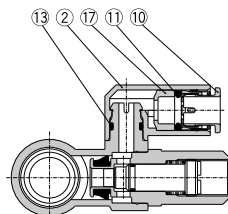
ASD230F



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

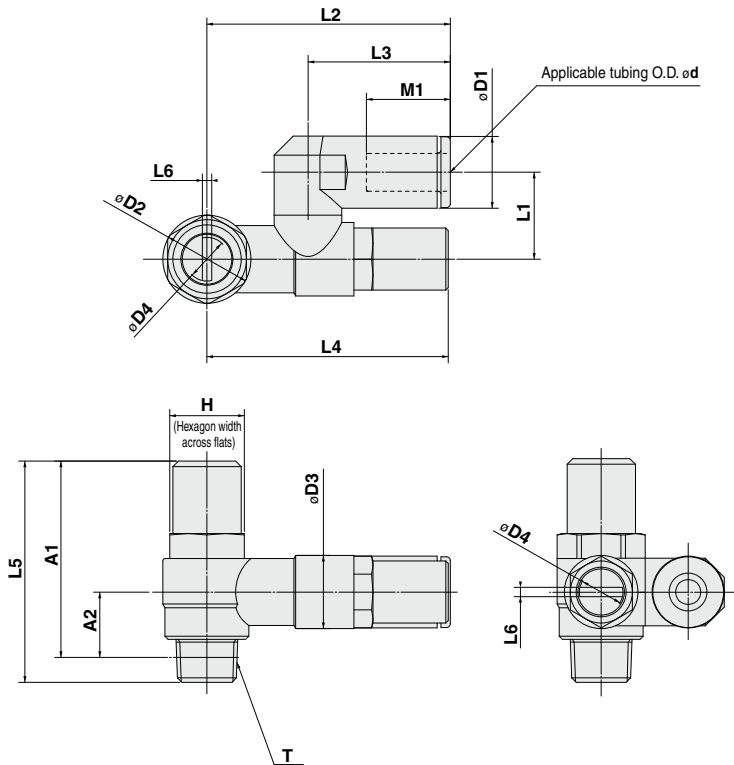
No.	Description	Material	Note
13	O-ring	NBR	
14	O-ring	NBR	
15	O-ring	NBR	
16	O-ring	NBR	
17	Spacer	—	
18	Gasket	NBR, Stainless steel	
19	Retaining ring for hole type C	Tool steel	

Note 1) ASD230F: Stainless steel

Dual Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fitting **ASD** **F-D Series**

Dimensions

Metric size



Metric Size

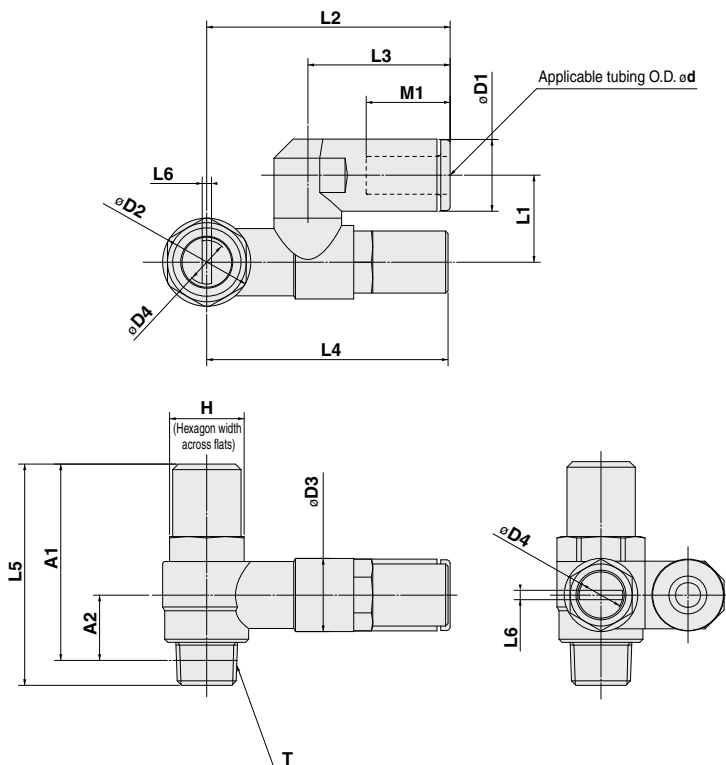
Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1*	A2*	M1	Weight (g)
ASD230F-M5-04D	4	M5 x 0.8	8	9.3	9.6	10	4.7	11.7	29.4	17.5	30.7	31	0.7	27.4	7.8	12.9	17
ASD230F-M5-06D	6			11.6					20.6	13.7						18	
ASD330F-01-06SD	6	R 1/8	12	11.6	14.2	11.8	7.2	14	38.5	22.9	38.9	34.7	1.2	31.6	10.6	13.7	36
ASD330F-01-08SD	8			15.2				28.2	38.2	18.5						38	
ASD430F-02-06SD	6	R 1/4	17	12.8	18.5	15	7.2	18	43.5	25.2	41.7	40.2	1.2	34.7	11	17	72
ASD430F-02-08SD	8			15.2				28.2	41.7	18.5						74	
ASD430F-02-10SD	10	R 1/4	19	18.5	23	19.8	9.8	19.7	49.3	31	53.7	54.8	1.2	49.3	15.4	21	77
ASD530F-02-06SD	6			20.3				48.3	25.2	17						107	
ASD530F-02-08SD	8	R 1/4	19	15.2	23	19.8	9.8	20.3	51.3	28.2	53.7	54.8	1.2	49.3	15.4	18.5	109
ASD530F-02-10SD	10			23.1				54.1	32.6	21						113	
ASD530F-02-12SD	12	R 3/8	19	20.9	23	19.8	9.8	23.1	55.9	34.4	53.7	52.6	1.2	47.4	14	22	116
ASD530F-03-06SD	6			20.3				48.3	25.2	17						116	
ASD530F-03-08SD	8	R 3/8	19	15.2	23	19.8	9.8	20.3	51.3	28.2	53.7	52.6	1.2	47.4	14	18.5	135
ASD530F-03-10SD	10			23.1				54.1	32.6	21						140	
ASD530F-03-12SD	12	R 1/2	24	20.9	28.6	26.5	12.4	23.1	55.9	34.4	69.1	62.9	1.2	55.8	18.6	22	143
ASD630F-04-10SD	10			28.6				64.3	32.6	21						254	
ASD630F-04-12SD	12	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.

ASD F-D Series

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					18								
ASD230F-U10/32-05D	3/16"			11.4					20								
ASD230F-U10/32-07D	1/4"			12					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				17									
ASD330F-N01-09SD	5/16"			15.2				18.5									
ASD430F-N02-07SD	1/4"			13.2				17									
ASD430F-N02-09SD	5/16"	NPT 1/4	17.5	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-N02-11SD	3/8"			18.5				21									
ASD530F-N02-07SD	1/4"			13.2				17									
ASD530F-N02-09SD	5/16"			15.2				23									
ASD530F-N02-11SD	3/8"	NPT 1/4	19	18.5	19.8	9.8	20.3	23.1	54.1	32.6	53.7	54.8	1.2	49.3	15.4	21	117
ASD530F-N03-07SD	1/4"			13.2				17									
ASD530F-N03-09SD	5/16"			15.2				23									
ASD530F-N03-11SD	3/8"			18.5				21									
ASD630F-N04-11SD	3/8"	NPT 1/2	23.8	18.5	28.6	26.5	12.4	25.9	64.3	32.6	69.1	62.9	1.2	55.8	18.6	21	256

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

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

AS□2□0-D 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 $\text{dm}^3/(\text{s}\cdot\text{bar})$	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	0.2		

Note 1) Flow rate values are measured at 0.5 MPa and 20°C.

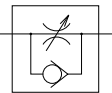
Note 2) Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the metal body.

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

Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

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

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 <small>Note 1)</small>
		Rc 3/8 <small>Note 2)</small>
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 <small>Note 1)</small>
		G 3/8 <small>Note 2)</small>
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 <small>Note 1)</small>
		NPT 3/8 <small>Note 2)</small>
N03	NPT 3/8	NPT 3/8
N04	NPT 1/2	NPT 1/2

Note 1) AS22□0-□02
Note 2) AS32□0-□02

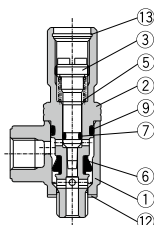
Caution

Be sure to read this before handling the products. Refer to page 11 for safety instructions and pages 19 to 22 for flow control equipment precautions.

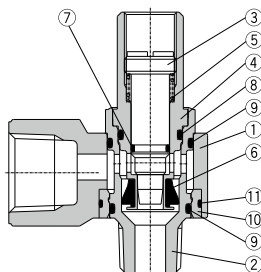
AS□2□0-D Series

Construction

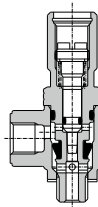
Meter-out
M5 type
U10/32 type



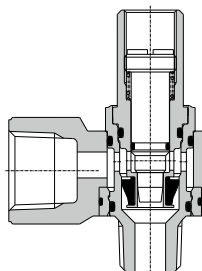
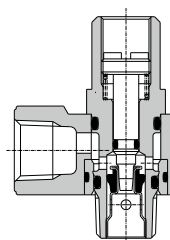
AS3200-02-D



Meter-in
M5 type
U10/32 type



AS3210-02-D



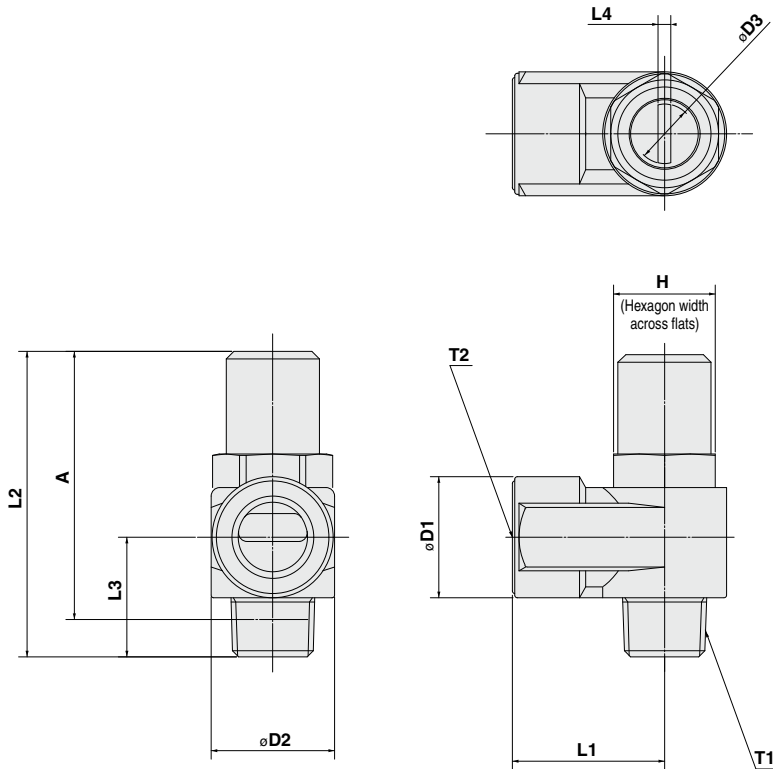
Component Parts

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) **AS□2□0-D Series**

Dimensions



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										
AS22□0-F02-SD		G 1/4	17.5	17.5	22.5	24.3	9.8	30	54.8	21.9	1.2	49.3
AS22□0-N02-SD	NPT 1/4	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										
AS32□0-F03-SD		G 3/8	24	27.5	28.5	12.4	38.5	62.9	25.8	1.2	55.8	222
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	62.9	25.8	1.2	55.8	222
AS42□0-F04-SD		G 1/2										
AS42□0-N04-SD	NPT 1/2	NPT 1/2	23.8									

* Reference thread dimensions after installation.