

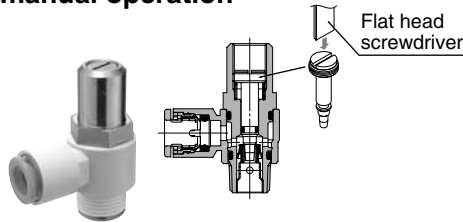
Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fitting Elbow Type/Universal Type

Series AS□□□1F-D

RoHS

Flow adjustable
by flat head screwdriver

Prevention of an unnecessary
manual operation



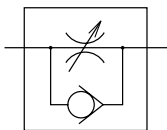
Elbow type



Universal type



JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		



Made to Order
(Refer to page 513 for details.)

Model

Elbow type	Universal type	Port size	Applicable tubing O.D.														Applicable cylinder bore size (mm)
			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	●	●	●												6, 10, 16, 20
AS22□1F-01	AS23□1F-01	R 1/8	●	●	●	●	●	*									20, 25, 32
AS22□1F-02	AS23□1F-02	R 1/4		●	●	●	●	●									20, 25, 32, 40
AS32□1F-02	AS33□1F-02	R 1/4			●	●	●	●	●								40, 50, 63
AS32□1F-03	AS33□1F-03	R 3/8			●	●	●	●	●								40, 50, 63
AS42□1F-04	AS43□1F-04	R 1/2						●	●								63, 80, 100
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF								●	●	●	●				6, 10, 16, 20
AS22□1F-N01	AS23□1F-N01	NPT 1/8								●	●	●	●	●			20, 25, 32
AS22□1F-N02	AS23□1F-N02	NPT 1/4									●	●	●	●	●		20, 25, 32, 40
AS32□1F-N02	AS33□1F-N02	NPT 1/4											●	●	●		40, 50, 63
AS32□1F-N03	AS33□1F-N03	NPT 3/8											●	●	●		40, 50, 63
AS42□1F-N04	AS43□1F-N04	NPT 1/2													●	●	63, 80, 100

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)
Number of needle rotations	10 turns (8 turns ⁽¹⁾)
Applicable tubing material ⁽²⁾	Nylon, Soft nylon, Polyurethane

Note 1) In the case of AS12□1F-M5 and AS12□1F-U10/32 types

In the case of AS13□1F-M5 and AS13□1F-U10/32 types

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 371 and 372 for details.)

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

Flow Rate and Effective Area

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 (Free flow)	Flow rate (ℓ/min (ANR))	100	180	230	260	390	460	660	790	920	1580	1710
	Effective area (mm²)	1.5	2.7	3.5	4	6	7	10	12	14	24	26

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

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 512.
* Use ø1/8" tube.

Made to Order



Lubricant: Vaseline

X12

Ex.) AS1201F-M5-23D-X12

Grease-free (Seal: Fluorine Coating) + 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)

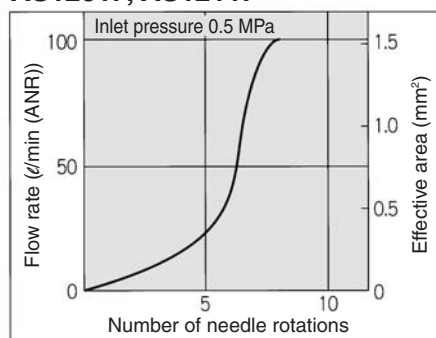
X214

Ex.) AS1201F-M5-23D-X214

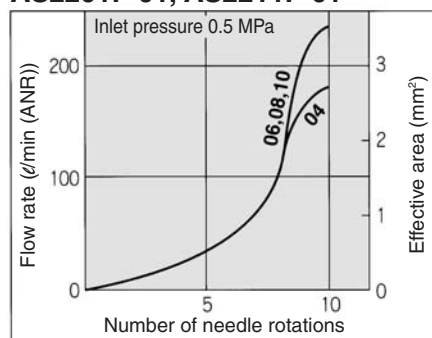
Note) Throttle valve is only compatible with the part no. of the meter-out type.

Needle Valve/Flow Characteristics

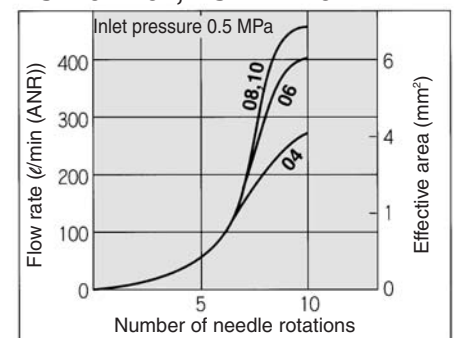
AS1201F, AS1211F



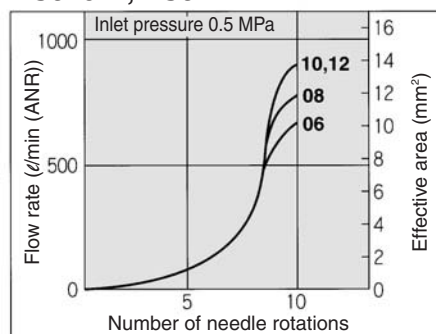
AS2201F-01, AS2211F-01



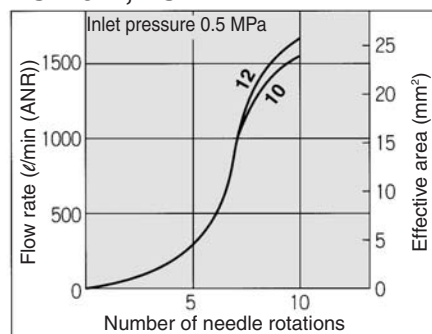
AS2201F-02, AS2211F-02



AS3201F, AS3211F

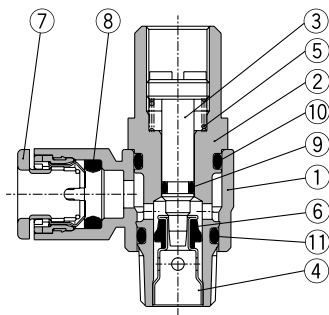


AS4201F, AS4211F

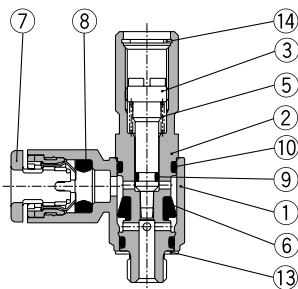


Construction

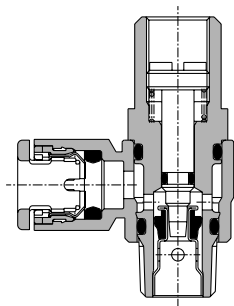
Elbow type
Meter-out type



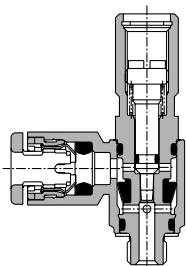
M5 type
U10/32 type



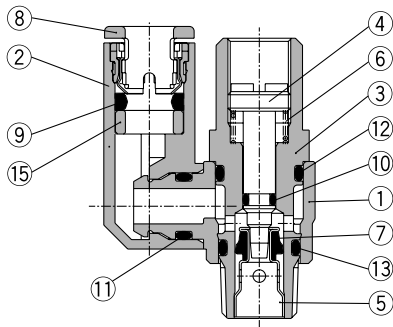
Meter-in type



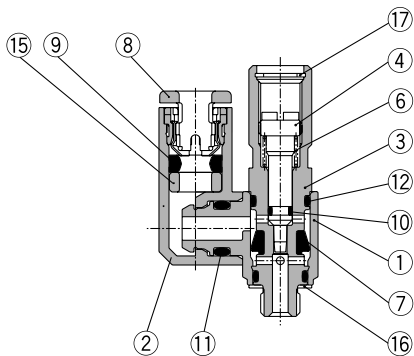
M5 type
U10/32 type



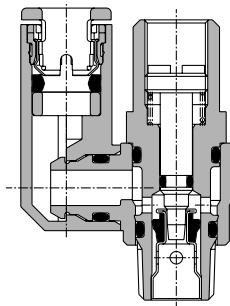
Universal type
Meter-out type



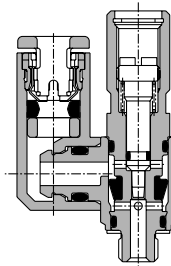
M5 type
U10/32 type



Meter-in type



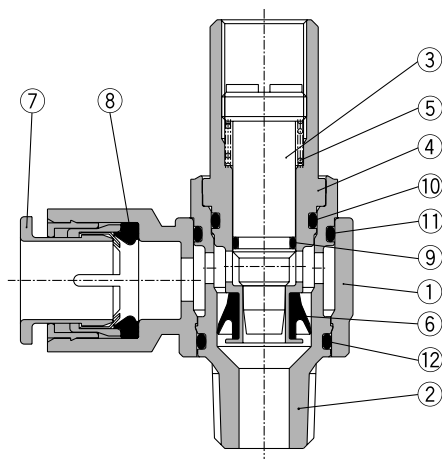
M5 type
U10/32 type



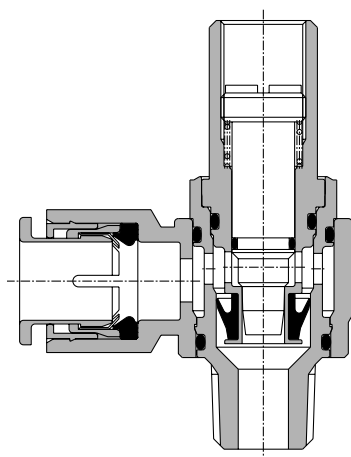
Construction

Elbow type

Meter-out AS3201F-02



Meter-in AS3211F-02

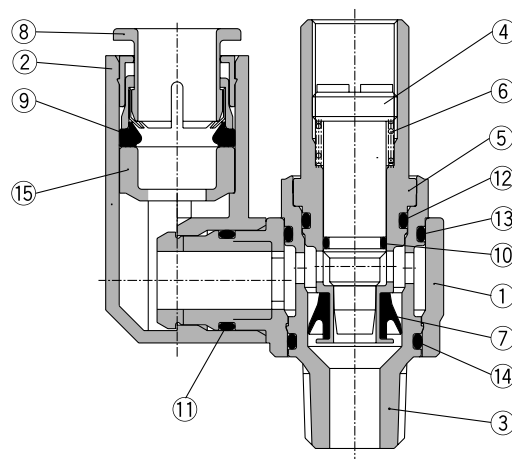


Component Parts

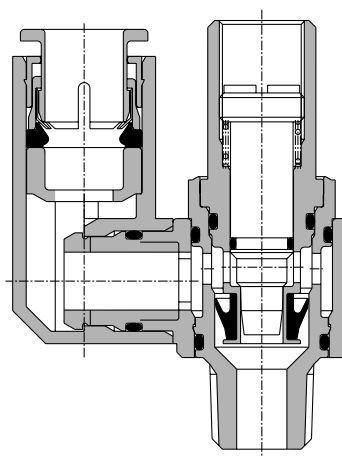
No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass	Electroless nickel plated
3	Needle	Brass	Electroless nickel plated
4	Seat ring	Brass	Electroless nickel plated
5	Spring	Steel wire	
6	U seal	HNBR	
7	Cassette	—	
8	Seal	NBR	
9	O-ring	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	O-ring	POM	
13	Gasket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

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	
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	

AS

ASP

ASN

AQ

ASV

AK

VCHC

ASS

ASR

ASQ

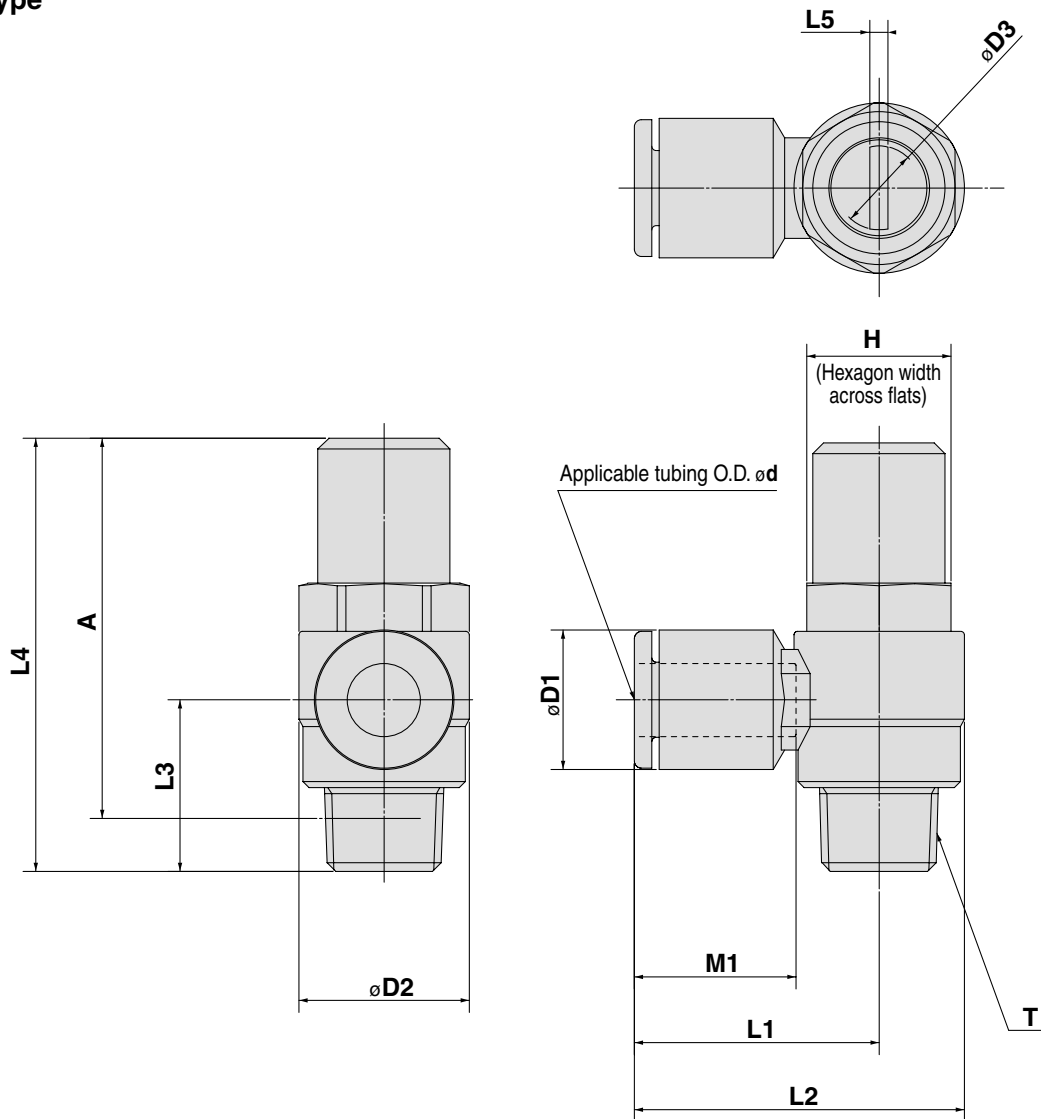
KE

TMH

Series AS□□□1F-D

Dimensions

Elbow type



Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Mass (g)
AS12□1F-M5-23D	3.2	M5 x 0.8	8	8.4	9.6	4.7	17.3	22.1	12.3	31	0.7	27.4	12.7	10
AS12□1F-M5-04D	4			9.3			18.1	22.9	11.7				13.5	
AS12□1F-M5-06D	6			11.6			25.3	32.4	14.1				21	
AS22□1F-01-23SD	3.2	R 1/8	12	8.4	14.2	7.2	20.4	27.5	13.4	34.7	1.2	31.6	12.7	20
AS22□1F-01-04SD	4			9.3			25.3	32.4	14.1				13.5	
AS22□1F-01-06SD	6			11.6			25.3	32.4	14.1				18.5	
AS22□1F-01-08SD	8	R 1/4	17	15.2	18.5	7.2	29.5	41	21.3	54.8	1.2	49.3	21	25
AS22□1F-01-10SD	10			18.5			31.8	43.3	21.3				22	
AS22□1F-02-04SD	4			10.4			27.2	36.4	17.7				16	
AS22□1F-02-06SD	6	R 1/2	24	12.8	23	9.8	29.5	41	21.3	54.8	1.2	49.3	17	40
AS22□1F-02-08SD	8			15.2			31.8	43.3	21.3				18.5	
AS22□1F-02-10SD	10			18.5			34.6	48.9	24.5				21	
AS32□1F-02-06SD	6	R 3/8	19	10.4	18.5	7.2	25.2	34.4	17.7	40.2	1.2	34.7	16	40
AS32□1F-02-08SD	8			12.8			27.8	39.3	19.8				17	
AS32□1F-02-10SD	10			15.2			29.5	41	21.3				18.5	
AS32□1F-03-06SD	6	R 1/2	24	12.8	23	9.8	27.8	39.3	19.8	52.6	1.2	47.4	17	77
AS32□1F-03-08SD	8			15.2			29.5	41	21.3				18.5	
AS32□1F-03-10SD	10			18.5			31.8	43.3	21.3				21	
AS42□1F-04-10SD	10	R 1/2	24	20.9	28.6	12.4	33.6	47.9	24.5	62.9	1.2	55.8	21	141
AS42□1F-04-12SD	12			20.9			34.6	48.9	24.5				22	

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

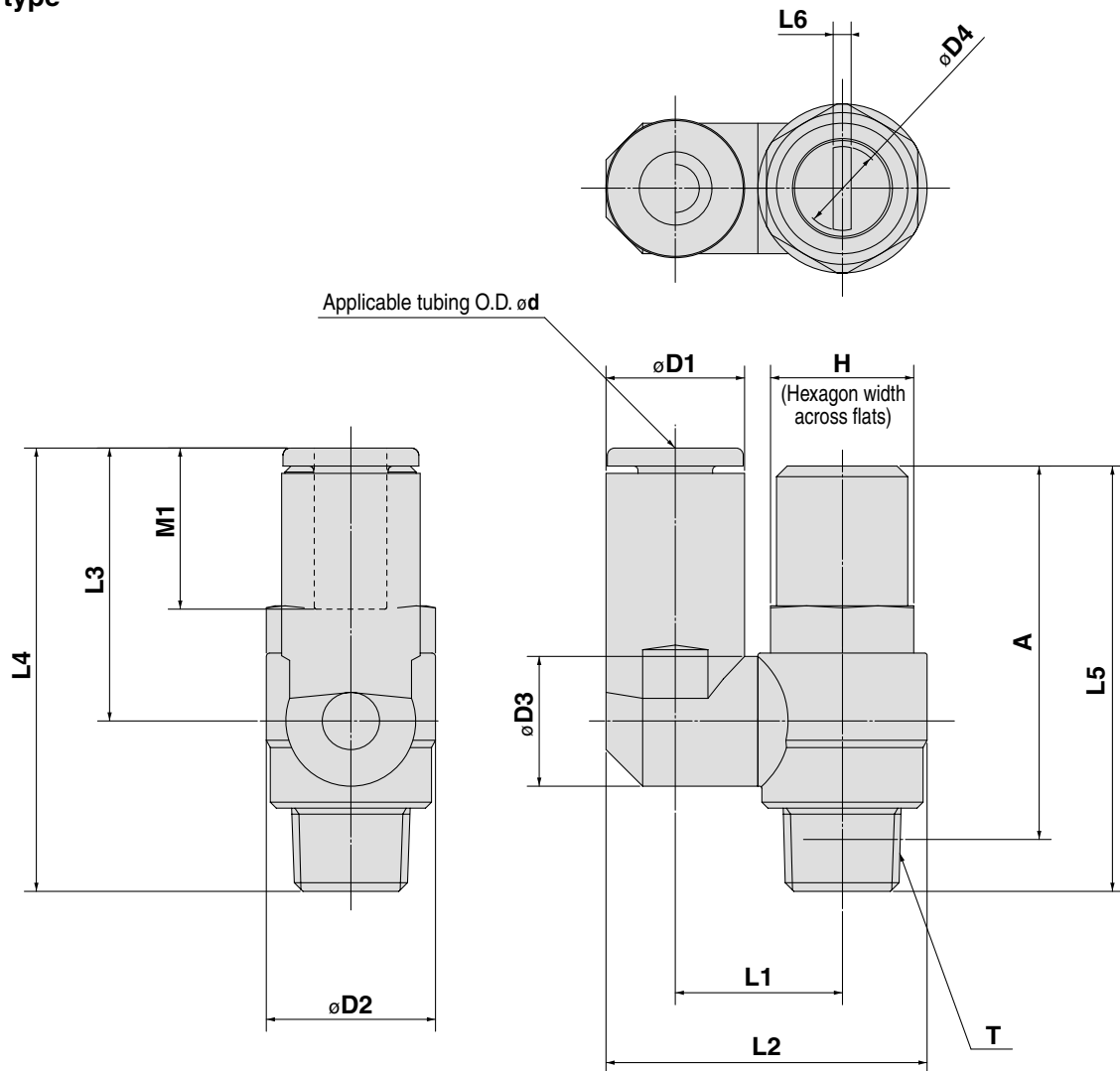
Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Mass (g)
AS12□1F-U10/32-01D	1/8"	10-32 UNF	8	8.4	9.6	4.7	17.3	22.1	12.3	31	0.7	27.4	12.7	10
AS12□1F-U10/32-03D	5/32"			9.3			21.3	26.1	11.7				16.5	
AS12□1F-U10/32-05D	3/16"			11.4			21.3	26.1	11.7				13.5	
AS12□1F-U10/32-07D	1/4"	NPT 1/8	12.7	12	14.2	7.2	20.4	27.5	13.4	34.7	1.2	31.6	12.7	20
AS22□1F-N01-01SD	1/8"			8.4			24	31.1	13.4				16.5	
AS22□1F-N01-03SD	5/32"			9.3			23.9	31	13.4				18.5	
AS22□1F-N01-05SD	3/16"	NPT 1/4	17.5	13.2	18.5	7.2	25.2	34.4	17.7	40.2	1.2	34.7	21	25
AS22□1F-N01-07SD	1/4"			13.2			25.2	34.4	17.7				16	
AS22□1F-N01-09SD	5/16"			15.2			27.2	36.4	19.8				17	
AS22□1F-N02-03SD	5/32"	NPT 3/8	19	10.4	23	9.8	29.5	41	21.3	54.8	1.2	49.3	16	40
AS22□1F-N02-07SD	3/16"			12.8			31.8	43.3	21.3				17	
AS22□1F-N02-09SD	5/16"			15.2			34.6	48.9	24.5				18.5	
AS22□1F-N02-11SD	3/8"	NPT 1/2	23.8	18.3	28.6	12.4	33.6	47.9	24.5	62.9	1.2	55.8	21	141
AS32□1F-N02-07SD	1/4"			13.2			31.8	43.3	21.3				22	
AS32□1F-N02-09SD	5/16"			15.2			34.6	48.9	24.5				22	
AS32□1F-N03-07SD	1/4"	NPT 3/8	19	13.2	23	9.8	27.8	39.3	19.8	52.6	1.2	47.4	17	77
AS32□1F-N03-09SD	5/16"			15.2			29.5	41	21.3				18.5	
AS32□1F-N03-11SD	3/8"			17.9			31.8	43.3	21.3				21	
AS42□1F-N04-11SD	3/8"	NPT 1/2	23.8	17.9	28.6	12.4	33.6	47.9	24.5	62.9	1.2	55.8	21	141
AS42□1F-N04-13SD	1/2"			21.7			35.2	49.5	24.5				22	

* 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	Mass (g)
AS13□1F-M5-23D	3.2			8.4					19.8	17.5	28.7	31	0.7	27.4	12.7	10
AS13□1F-M5-04D	4	M5 x 0.8	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					13.1	24.4	17.5	30.9			12.7	21
AS23□1F-01-04SD	4			9.3					24.9	17.5	30.9				13.5	22
AS23□1F-01-06SD	6			11.6					26.9	22.9	36.3				18.5	25
AS23□1F-01-08SD	8			15.2					30.9	28.2	40.8				18.5	25
AS23□1F-02-04SD	4			10.4					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			15.2					18.3	35.2	28.2	45.1			18.5	44
AS23□1F-02-10SD	10			18.5					20.2	38.7	31	47.9			21	48
AS33□1F-02-06SD	6			12.8					38.5	25.2	46.5				17	73
AS33□1F-02-08SD	8			15.2					39.7	28.2	49.5				18.5	76
AS33□1F-02-10SD	10			18.5					43.7	32.6	53.9				21	80
AS33□1F-02-12SD	12			20.9					44.9	34.4	55.7				22	82
AS33□1F-03-06SD	6			12.8					38.5	25.2	45				17	78
AS33□1F-03-08SD	8			15.2					39.7	28.2	48				18.5	81
AS33□1F-03-10SD	10			18.5					43.7	32.6	52.4				21	85
AS33□1F-03-12SD	12			20.9					44.9	34.4	54.2				22	87
AS43□1F-04-10SD	10			18.5					25.8	49.4	32.6	57.1			21	145
AS43□1F-04-12SD	12			20.9					26.8	52	36.3	60.8			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	Mass (g)
AS13□1F-U10/32-01D	1/8"			8.4					19.8	17.5	28.7	31	0.7	27.4	12.7	10
AS13□1F-U10/32-03D	5/32"			9.3					20.3	21.3	23.3	34.5			16.5	
AS13□1F-U10/32-05D	3/16"			11.4					21.3	23.3	34.5				13.7	11
AS13□1F-U10/32-07D	1/4"			12					21.6	20.7	31.9				13.7	11
AS23□1F-N01-01SD	1/8"			8.4					13.1	24.4	17.5	30.9			12.7	21
AS23□1F-N01-03SD	5/32"			9.3					24.9	17.5	30.9				13.5	22
AS23□1F-N01-05SD	3/16"			11.4					26.9	22.9	36.3				18.5	25
AS23□1F-N01-07SD	1/4"			12					30.9	28.2	40.8				18.5	25
AS23□1F-N01-09SD	5/16"			15.2					34.7	32.6	53.9				21	80
AS23□1F-N02-03SD	5/32"			10.4					16.2	30.6	21.9	39.6			16	40
AS23□1F-N02-05SD	3/16"			12.8					18.4	34	25.2	42.1			17	41
AS23□1F-N02-07SD	1/4"			15.2					18.3	35.2	28.2	45.1			18.5	44
AS23□1F-N02-09SD	5/16"			17.9					20.2	38.7	31	47.9			21	48
AS23□1F-N02-11SD	3/8"			19.4					22	40.8					22	82
AS23□1F-N02-13SD	1/2"			21.7					22	42.1					22	82
AS33□1F-N03-07SD	1/4"			13.2					16.2	30.6	21.9	39.6			16	40
AS33□1F-N03-09SD	5/16"			15.2					18.4	34	25.2	42.1			17	41
AS33□1F-N03-11SD	3/8"			17.9					18.3	35.2	28.2	45.1			18.5	44
AS33□1F-N03-13SD	1/2"			19.4					20.2	38.7	31	47.9			21	48
AS33□1F-N04-07SD	1/4"			13.2					16.2	30.6	21.9	39.6			16	40
AS33□1F-N04-09SD	5/16"			15.2					18.4	34	25.2	42.1			17	41
AS33□1F-N04-11SD	3/8"			17.9					18.3	35.2	28.2	45.1			18.5	44
AS33□1F-N04-13SD	1/2"			19.4					20.2	38.7	31	47.9			21	48
AS43□1F-N04-11SD	3/8"			17.9					22	40.8					22	82
AS43□1F-N04-13SD	1/2"			21.7					22	42.1					22	82

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

AS

ASP

ASN

AQ

ASV

AK

VCHC

ASS

ASR

ASQ

KE

TMH

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

Series **AS** **1F-D**



Model

Model	Applicable tubing O.D.														Applicable cylinder bore size (mm)
	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	●	●	●				●	●	●	●				6, 10, 16, 20	
AS2001F		●	●					●	●	●				20, 25, 32	
AS2051F			●	●					●	●	●			20, 25, 32, 40	
AS3001F			●	●	●	●				●	●	●		40, 50, 63	
AS4001F					●	●						●	●	63, 80, 100	

Specifications

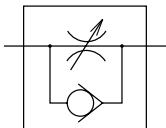
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns (8 turns (1))
Applicable tubing material (2)	Nylon, Soft nylon, Polyurethane

Note 1) In the case of AS1001F type

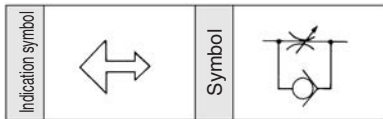
Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 371 and 372 for details.)

Note 3) Brass parts are all electroless nickel plated.

JIS Symbol



Flow Direction Symbols on Body



Made to Order
(Refer to page 521 for details.)

⚠ Caution

Be sure to read before handling.
Refer to front matters 58 and 59 for
Safety Instructions and pages 412 to 414
for Flow Control Equipment Precautions.

Flow Rate and Effective Area

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 (Free flow)	Flow rate (ℓ/min (ANR))	100	130	230	290	460	420	660	920	1050	1390
	Effective area (mm²)	1.5	2	3.5	4.5	7	6.5	10	14	16	21

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

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

Made to Order
Refer to page 521 for details.

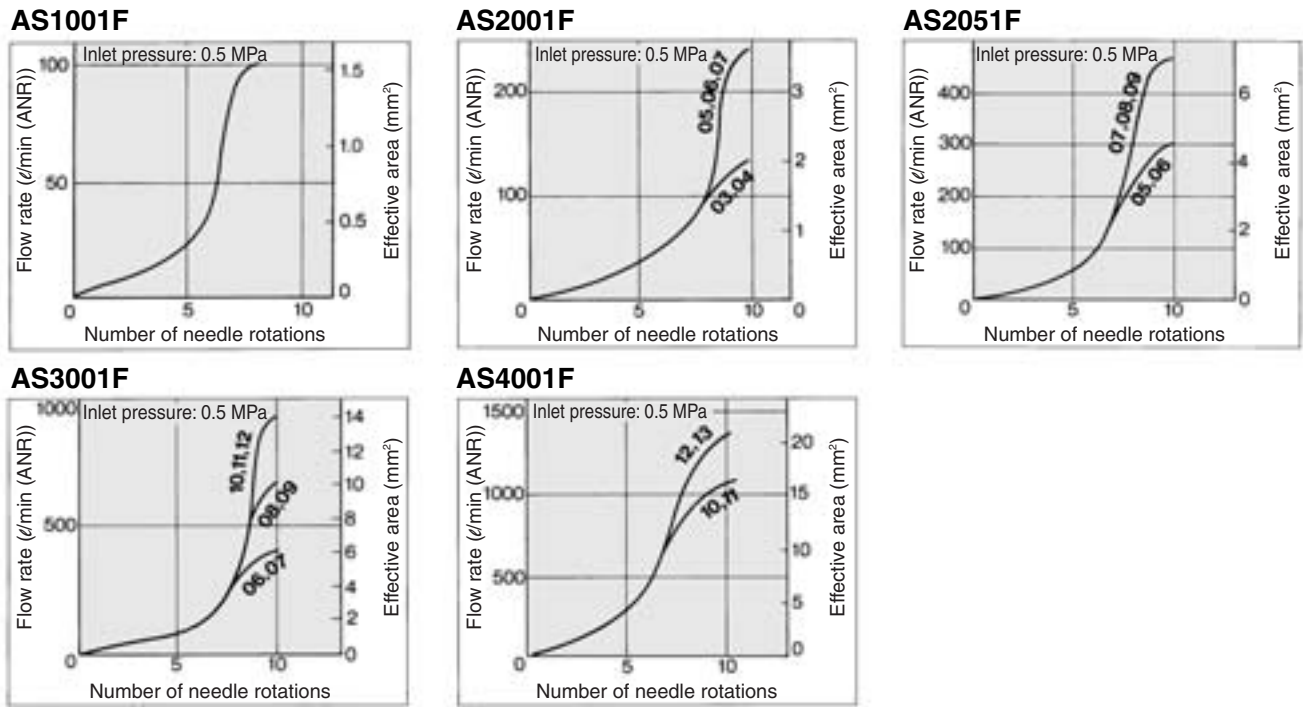
Applicable tubing O.D. (Note)

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"

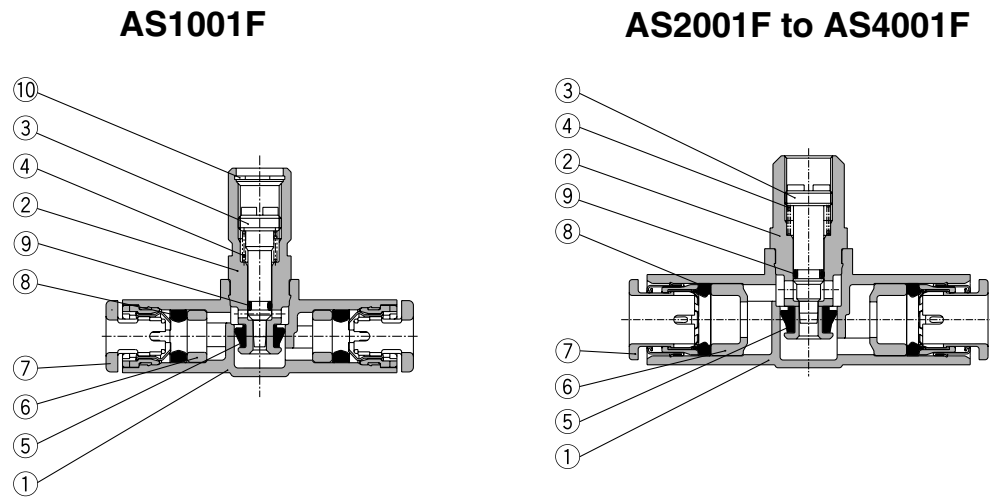
Note) For applicable tubing O.D. selection, refer to the Model.

* Use ø1/8" tube.

Needle Valve/Flow Characteristics



Construction



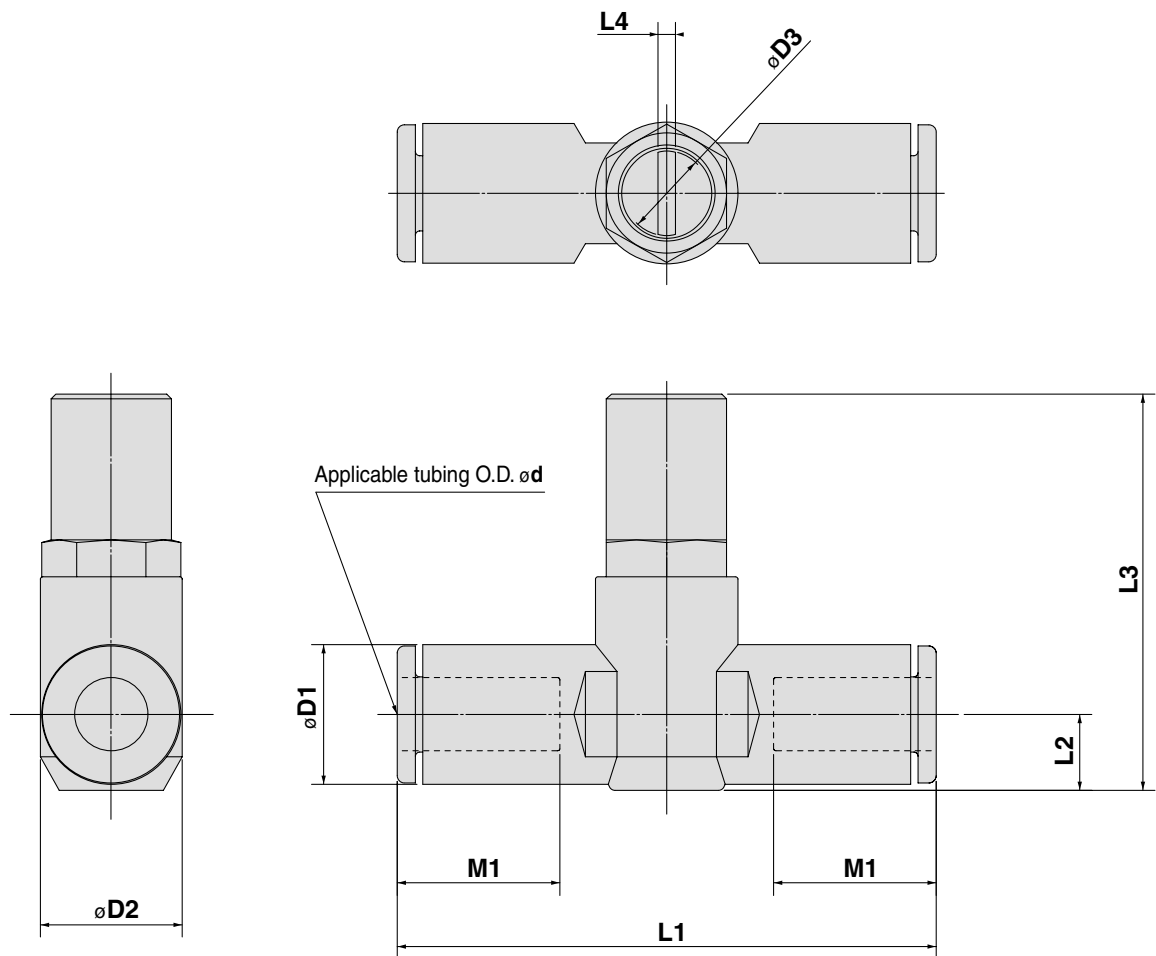
Component Parts

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	
5	U seal	HNBR	
6	Spacer	—	
7	Cassette	—	
8	Seal	NBR	
9	O-ring	NBR	
10	Retaining ring for hole type C	Tool steel	

AS
ASP
ASN
AQ
ASV
AK
VCHC
ASS
ASR ASQ
KE
TMH

Series AS□□□1F-D

Dimensions



Metric Size

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

Inch Size

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

ASP

ASN

AQ

ASV

AK

VCHC

ASS

ASR
ASQ

KE

TMH

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

Series ASD□□□F-D

RoHS

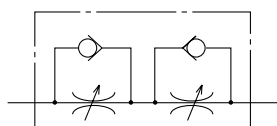
Model



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

JIS 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)
Number of needle rotations	10 turns (8 turns ⁽¹⁾)
Applicable tubing material ⁽²⁾	Nylon, Soft nylon, Polyurethane

Note 1) In the case of ASD230F type

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 371 and 372 for details.)

Note 3) 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 Effective Area

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 (Free flow)	Flow rate (ℓ/min (ANR))	75	175	295	350	500	600	700	1200	1300
		Effective area (mm²)	1.1	2.7	4.5	5.3	7.6	9.1	10.7	18.3	19.8

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

Port size

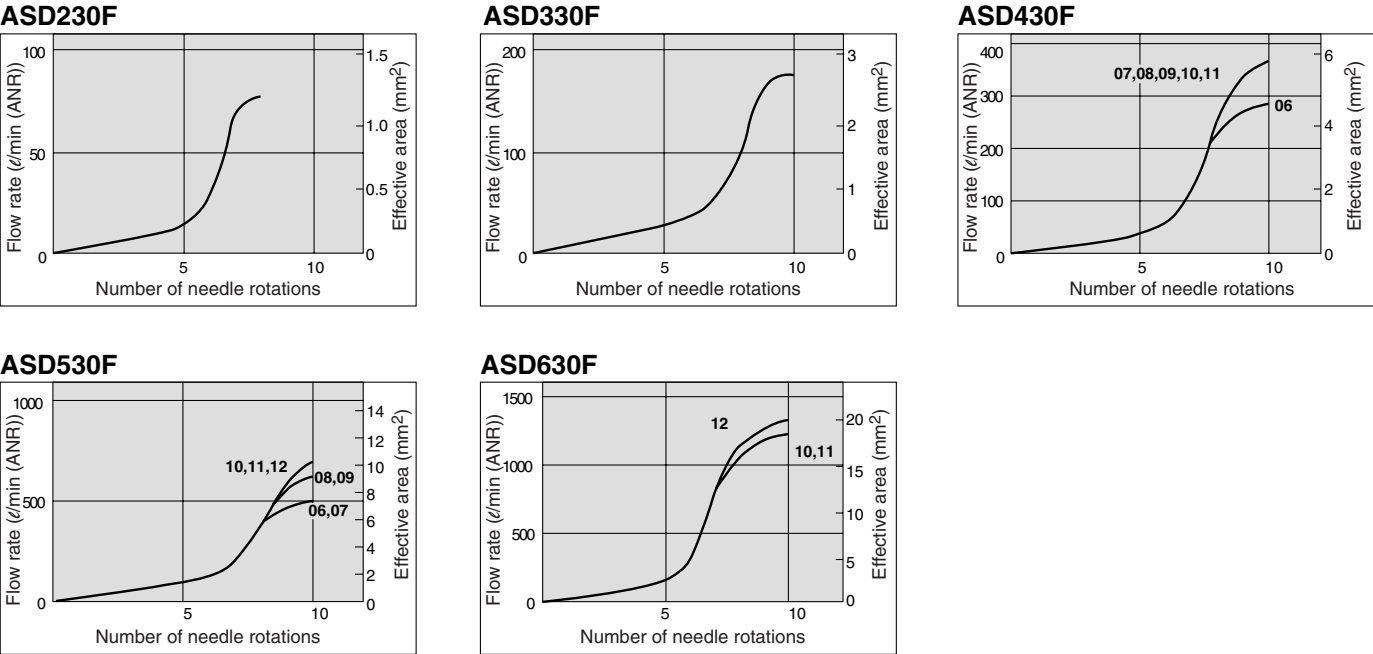
M5	M5 x 0.8
01	R 1/8
02	R 1/4
03	R 3/8
04	R 1/2
U10/32	10-32 UNF
N01	NPT 1/8
N02	NPT 1/4
N03	NPT 3/8
N04	NPT 1/2

⚠ Caution

Be sure to read before handling.
Refer to front matters 58 and 59 for
Safety Instructions and pages 412 to 414
for Flow Control Equipment Precautions.

- AS
- ASP
- ASN
- AQ
- ASV
- AK
- VCHC
- ASS
- ASR
- ASQ
- KE
- TMH

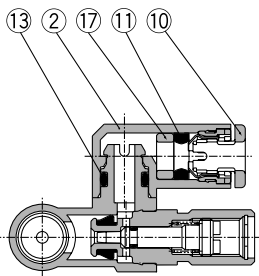
Needle Valve/Flow Characteristics



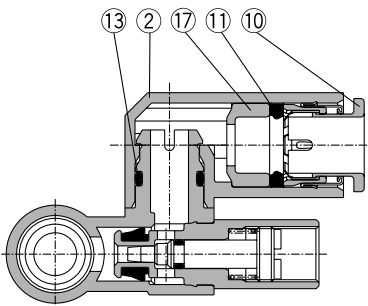
Series ASD□□□F-D

Construction

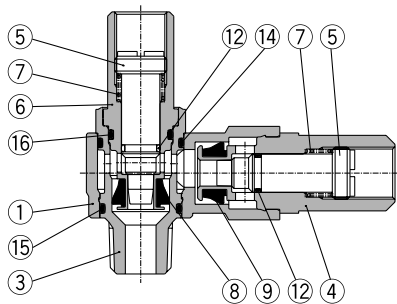
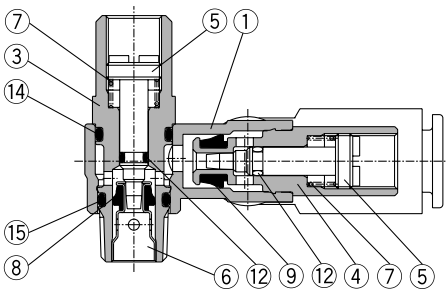
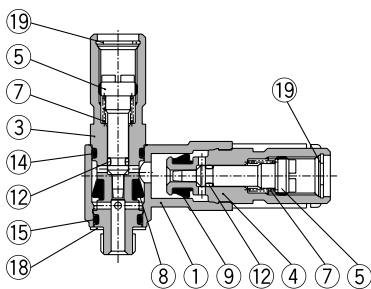
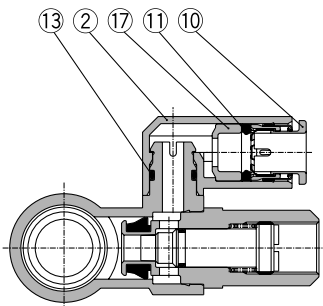
ASD230F



ASD330F/430F
ASD530F/630F



ASD530F-02



Component Parts

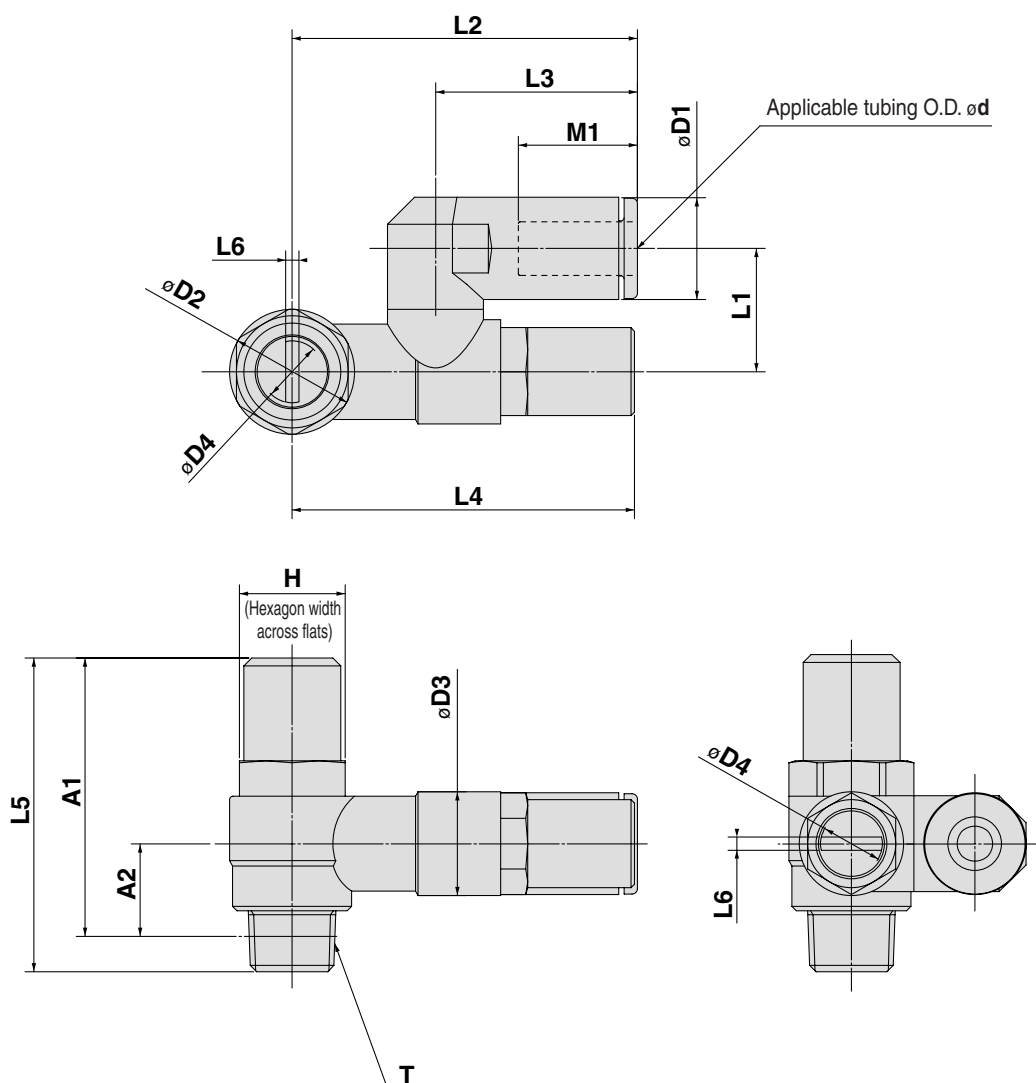
No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Body B	Brass	Electroless nickel plated
4	Body B	Brass	Electroless nickel plated
5	Needle	Brass	Electroless nickel plated
6	Seat ring	Brass	Electroless nickel plated
7	Spring	Steel wire	
8	U seal	HNBR	
9	U seal	HNBR	
10	Cassette	—	
11	Seal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

Dimensions

Metric size



Metric Size

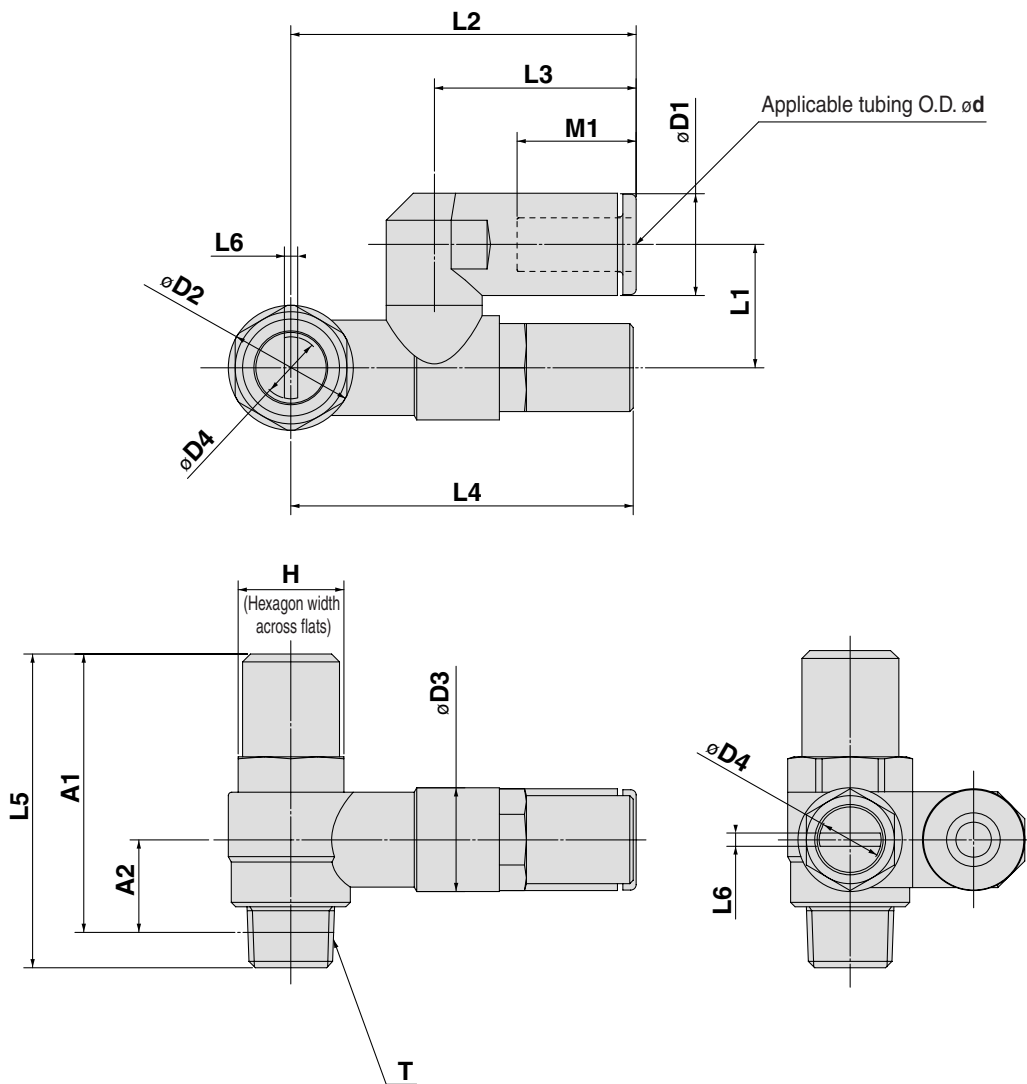
Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1*	A2*	M1	Mass (g)
ASD230F-M5-04D	4	M5 x 0.8	8	9.3	9.6	10	4.7	11.7	29.4	17.5	30.7	31	0.7	27.4	7.8	12.9	17
ASD230F-M5-06D	6			11.6					32.5	20.6						13.7	18
ASD330F-01-06SD	6	R 1/8	12	11.6	14.2	11.8	7.2	14	38.5	22.9	38.9	34.7	1.2	31.6	10.6	13.7	36
ASD330F-01-08SD	8			15.2				15.8	44.8	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				18	46.5	28.2						18.5	74
ASD430F-02-10SD	10			18.5				19.7	49.3	31						21	77
ASD530F-02-06SD	6	R 1/4	19	12.8	23	19.8	9.8	20.3	48.3	25.2	53.7	54.8	1.2	49.3	15.4	17	107
ASD530F-02-08SD	8			15.2				20.3	51.3	28.2						18.5	109
ASD530F-02-10SD	10			18.5				23.1	54.1	32.6						21	113
ASD530F-02-12SD	12			20.9				23.1	55.9	34.4						22	116
ASD530F-03-06SD	6	R 3/8	19	12.8	23	19.8	9.8	20.3	48.3	25.2	53.7	52.6	1.2	47.4	14	17	116
ASD530F-03-08SD	8			15.2				20.3	51.3	28.2						18.5	135
ASD530F-03-10SD	10			18.5				23.1	54.1	32.6						21	140
ASD530F-03-12SD	12			20.9				23.1	55.9	34.4						22	143
ASD630F-04-10SD	10	R 1/2	24	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	254
ASD630F-04-12SD	12			20.9				25.9	66.1	34.4						22	256

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

Series ASD□□□F-D

Dimensions

Inch size



Inch Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1*	A2*	M1	Mass (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						16.5	18
ASD230F-U10/32-05D	3/16"			11.4					32.6	20.7						13.5	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				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"	NPT 1/4	17.5	13.2	18.5	15	7.2	18	43.9	25.6	41.7	40.2	1.2	34.7	11	17	74
ASD430F-N02-09SD	5/16"			15.2					46.5	28.2						18.5	
ASD430F-N02-11SD	3/8"			18.5				19.7	49.3	31						21	
ASD530F-N02-07SD	1/4"	NPT 1/4	19	13.2	23	19.8	9.8	20.3	48.7	25.6	53.7	54.8	1.2	49.3	15.4	17	109
ASD530F-N02-09SD	5/16"			15.2					51.3	28.2						18.5	
ASD530F-N02-11SD	3/8"			18.5				23.1	54.1	32.6						21	
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					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	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)

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
Applicable cylinder bore size (mm)		6, 10, 16, 20, 25		20, 25, 32, 40		32, 40, 50, 63		80, 100
Fluid		Air						
Proof pressure		1.5 MPa						
Max. operating pressure		1 MPa						
Min. operating pressure		0.1 MPa						
Ambient and fluid temperature		-5 to 60°C (No freezing)						
Number of needle rotations		8 turns		10 turns				
Controlled flow (Free flow)	Flow rate (l/min (ANR))	105		230	460	920	1700	
	Effective area (mm ²)	1.6		3.5	7	14	26	

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

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

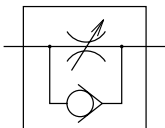
Note 3) Brass parts are all electroless nickel plated, provided as standard.

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

JIS 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)} Rc 3/8 ^{Note 2)}
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)} G 3/8 ^{Note 2)}
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)} NPT 3/8 ^{Note 2)}
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 before handling.
Refer to front matters 58 and 59 for
Safety Instructions and pages 412 to 414
for Flow Control Equipment Precautions.

AS

ASP

ASN

AQ

ASV

AK

VCHC

ASS

ASR

ASQ

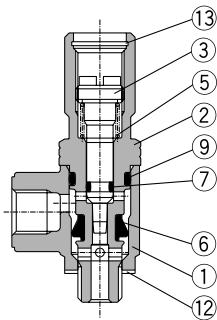
KE

TMH

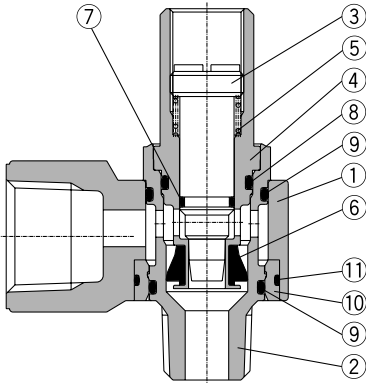
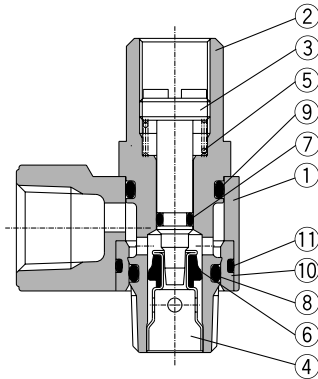
Series AS□2□0-D

Construction

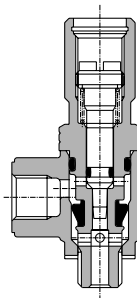
Meter-out
M5 type
U10/32 type



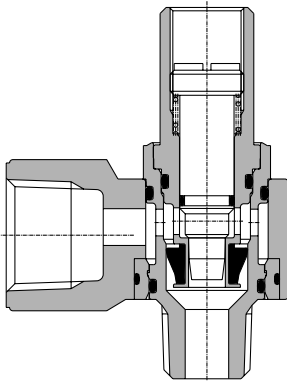
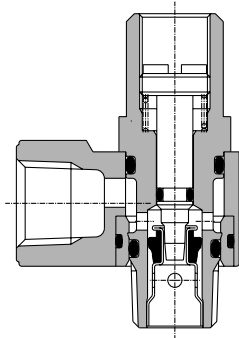
AS3200-02-D



Meter-in
M5 type
U10/32 type



AS3210-02-D

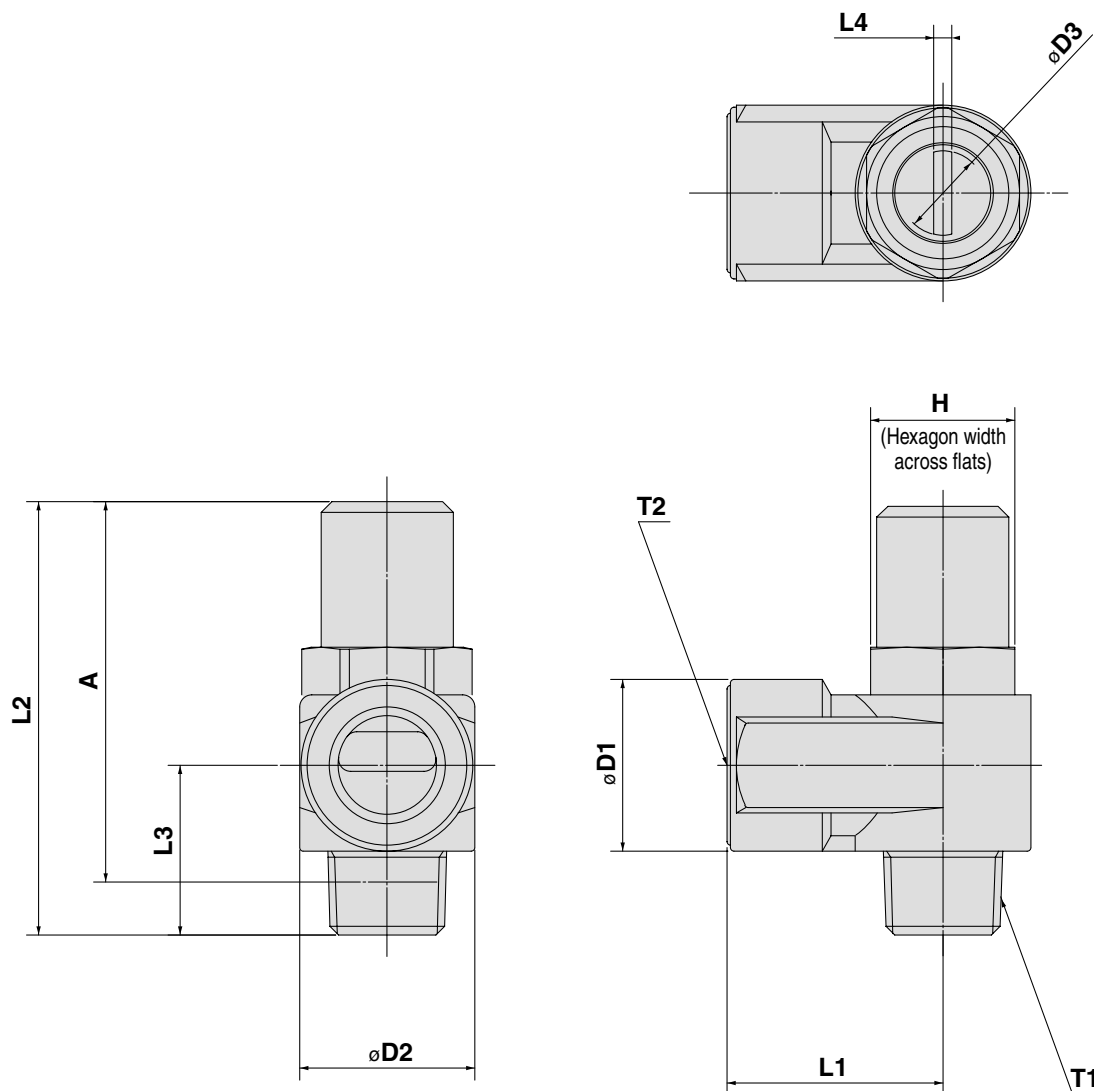


Component Parts

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	
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	

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

Dimensions



Dimensions

Model	T1	T2	H	D1	D2	D3	L1	L2	L3	L4	A *	Mass (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		G 1/4										
AS22□0-N02-SD	NPT 1/4	NPT 1/4	17.5	19	22.5	24.3	30	54.8	21.9	1.2	49.3	123
AS32□0-02-SD	R 1/4	Rc 3/8	19									
AS32□0-F02-SD		G 3/8										
AS32□0-N02-SD	NPT 1/4	NPT 3/8										
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		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		G 1/2										
AS42□0-N04-SD	NPT 1/2	NPT 1/2	23.8									

* Reference thread dimensions after installation.